

City of Gilroy

General Guidelines
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Section 1

GENERAL

Section 1

GENERAL

1. PURPOSE AND INTENT

The purpose and intent of this document is to clarify and consolidate present design criteria in the City of Gilroy. These standards are understood to be the minimum acceptable and more rigorous standards may be required depending on the nature of the development.

The City of Gilroy recommends that the Community Design and Transportation Guidelines published by the Santa Clara Valley Transportation Authority (VTA) be followed for design where possible. The Community Design and Transportation Guidelines emphasize a roadway design that encourages residents and workers to walk, bike, and to take transit.

2. SCOPE

The Design Standards as hereinafter specified shall be used as the basis of design for all development within the jurisdiction of the City of Gilroy.

3. FINAL AUTHORITY

The City Engineer is the final authority on all questions which may arise as to the interpretation of these standards.

4. GENERAL NOTES

Required City General Notes for all improvement plans are included as Appendix A – Section 1 of these Design Standards.

5. DRAWINGS

GENERAL

- Final original plans shall be mylar; no sepias or vellums shall be accepted.
- Mylars shall be 24 in x 36 in.
- All construction documents shall be signed along with the Engineer's seal by a qualified individual appropriately licensed in the State of California.

RECORD DRAWINGS - Mylar

The Contractor shall be responsible for maintaining and fully completing a "Job Set" of Contract Documents throughout the duration of the project construction. These plans shall indicate all approved deviations from original contract documents and precise physical layouts of exposed and concealed work. Before final inspection, the Contractor shall submit the "Job Set" to the City for review (see Appendix A – Section 3 "Development Project Closeout").

Once approved by the City, the Contractor shall submit the "Job Set" to the Designer to draft on mylar with permanent ink. All deviations shall be outlined with a "cloud" with pertinent notations. Each sheet shall be stamped "Record Drawings" along with the Designer's signature and date. After the Designer has incorporated all the Record drawing information, the "Record Drawing Set" shall then be submitted back to the City in mylar form.

RECORD DRAWINGS – Autocad

Autocad files of the Record Drawings shall be submitted for Tract Maps, Parcel Maps, Improvement Plans, and Capital Projects.

The Autocad file shall be submitted as single drawings via the “x-bind” command. Separate “x-reference” files shall not be allowed. Please call the City for the latest version of Autocad.

SITE PLANS for Addressing

Site Plans shall be submitted so that addressing can be assigned to the project and shall show the following (Submitted in AutoCAD):

1. Tract Number or Parcel Map Number
2. Tract Name or Parcel Map Name
3. Lot Numbers
4. Street Names
5. Property and Right of Way Lines
6. North Arrow
7. Curb Cuts for driveway (if possible)
8. Location of existing and proposed Fire hydrants
9. Vicinity Map

RECORD DRAWING SUBMITTAL SUMMARY BY PLAN TYPE

PLAN TYPE	WHAT IS SUBMITTED
Tract Map	Mylar, Autocad, Site Plan
Parcel Map	Mylar, Autocad, Site Plan
Improvement Plans	Mylar, Autocad
Capital Projects	Mylar, Autocad

SCANNING

If Scanning of Record Drawings is requested by the City, Contractor shall contact the City for file name convention. Scanning Specifications are as follows:

File type: TIF
Resolution: 400 dots per inch
Media: CD

All TIF images shall be placed on a CD. The CD shall be labeled appropriately as shown below:

- Tract Map shall contain Tract # and Tract Name
- Parcel Map shall contain Parcel Map Name and Parcel Map # (book and page)
- Improvement Plans shall contain Tract# and Tract Name;
- Capital Projects shall contain the name of the Capital project

Scanning shall occur at the following times:

PLAN TYPE	WHEN PLAN IS SCANNED
Tract Map	After the Final Map has been Recorded
Parcel Map	After the Map has been Recorded

Improvement Plans	At the beginning of the project AND At the end (after Record Drawings have been created)
Capital Projects	At the beginning of the project AND At the end (after Record Drawings have been created)

ELECTRONIC FILES

All electronic files submitted to the City shall follow the following format:

Type	Comments
CD	CD shall be labeled appropriately. If necessary, large files may be compressed via "WINZIP"
Text	Microsoft Word 98 (minimum)
Spreadsheet	Microsoft Excel, Version 7.0 (minimum)
CAD	Autocad , Release 14 minimum (please call City for latest version)

6. CHECK LISTS

An Improvement Plan and Final Map checklist are included as Appendix A&B of these Design Standards. Their purpose is to familiarize the development engineer with most of the items checked by the City to ensure compliance and completeness of improvement plans and Subdivision Final Maps submitted for review.

The development engineer shall provide a checked-off copy of the appropriate checklist when submitting the plans for initial review. Any areas not applicable, not in compliance or requiring a variance from these design standards shall be so noted.

7. EXCEPTIONS

All standards listed herein shall be followed unless an exception or deviation is approved in writing by the City Engineer.

8. FLOODPLAIN MANAGEMENT (excerpts from Floodplain Management Ordinance #)

Provisions for flood hazard reduction.

8.1 Standards of construction In all areas of special flood hazards the following standards are required:

(A) Anchoring

1. All new construction and substantial improvements shall be adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
2. All manufactured homes shall meet the anchoring standards of Section 5.4.

(B) Construction Materials and Methods

1. All materials and utility equipment shall be resistant to flood damage;
2. All methods and practices that minimize flood damage shall be used;
3. All electrical, heating, ventilation, plumbing and air conditioning equipment and other

service facilities that area designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding shall be used; and

4. If within Zones AH or AO, there are to be adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures.

(C) Elevation and Flood proofing. (see Section 2 definitions for “basement,” “lowest floor”, “new construction”, “substantial damage” and “substantial improvement”)

1. Residential construction, new or substantial improvement, shall have the lowest floor, including basement,
 - a. In an AO zone, elevated above the highest adjacent grade to a height equal to or exceeding the depth number specified in feet on the FIRM, or elevated at least two feet above the highest adjacent grade if no depth number is specified. The City of Gilroy requires that the lowest floor be elevated above the highest adjacent grade to a height exceeding the depth number specified in feet on the FIRM by at least one foot, or elevated at least three feet above the highest adjacent grade if no depth number is specified.
 - b. In an A zone, elevated to or above the base flood elevation, as determined by this community. The City of Gilroy requires that the lowest floor be elevated at least one foot above the base flood elevation, as determined by the community.
 - c. In all other Zones, elevated to or above the base flood elevation, as determined by this community. The City of Gilroy requires that the lowest floor be elevated at least one foot above the base flood elevation.

Upon the completion of the structure, the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, and verified by the community building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator.

2. Nonresidential construction, new or substantial improvement, shall either be elevated to conform with Section 5.1C.1 or together with attendant utility and sanitary facilities.
 - a. Must be flood proofed below the elevation recommended under Section 5.1C.1 so that the structure is watertight with walls substantially impermeable to the passage of water;
 - b. Must have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
 - c. Must be certified by a registered professional engineer or architect that the standards of this section (5.1C.2) are satisfied. Such certification shall be provided to the Floodplain Administrator.
3. All new construction and substantial improvement with fully enclosed areas below the lowest floor (excluding basements) that are usable solely for parking of vehicles, building access or storage, and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater. Designs for meeting this requirement must exceed the following minimum criteria:
 - a. Must be certified by a registered professional engineer or architect; or
 - b. Have a minimum of two openings having a total net area of not less than one square

inch for every square foot of enclosed area subject to flooding. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwater.

4. Manufactured homes shall also meet the standards in Section 5.4.

8.2 Standards for utilities

- A. All new and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate:
 - 1. infiltration of flood waters into the systems, and
 - 2. discharge from the systems into flood water.
- B. On-site waste disposal systems shall be located to avoid impairment to them, or contamination from them during flooding.

8.3 Standards for subdivisions

- A. All preliminary subdivision proposals shall identify the flood hazard area and the elevation of the base flood.
- B. All subdivision plans will provide the elevation of proposed structure(s) and pad(s). If the site is filled above the base flood elevation, the lowest floor and pad elevations shall be certified by a registered professional engineer or surveyor and provided to the Floodplain Administrator.
- C. All subdivision proposals shall be consistent with the need to minimize flood damage.
- D. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
- E. All subdivisions shall provide adequate drainage to reduce exposure to flood hazards.

8.4 Standards for manufactured homes

- A. All manufactured homes that are placed or substantially improved, within Zones A1-30, AH, and AE on the City's Flood Insurance Rate Map, on sites located:
 - 1. outside of a manufactured home park or subdivision,
 - 2. in a new manufactured home park or subdivision,
 - 3. in an expansion to an existing manufactured home park or subdivision, or
 - 4. in an existing manufactured home park or subdivision on a site upon which a manufactured home has incurred "substantial damage" as the result of a flood, shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to at least one foot above the base flood elevation and be securely fastened to an adequately anchored foundation system to resist flotation collapse and lateral movement.
- B. All manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision within Zones A1-30, AH, and AE on the community's Flood Insurance Rate Map that are not subject to the provisions of paragraph 5.4.A will be securely fastened to an adequately anchored foundation system to resist flotation collapse and lateral movement, and elevated so that either the:

1. lowest floor of the manufactured home is at least one foot above the base flood elevation, or
2. manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade.

Section 2

TENTATIVE MAPS

Section 2

TENTATIVE MAPS

1. FILING

- (a) No tentative map involving residential sites except for those specifically exempted by the residential development ordinances will be received for filing unless the city council, through competitive evaluation, has given the project a ranking and a build out schedule assignment. The number of copies required by the tentative map application of any proposed subdivision shall be filed with the planning department by the developer or by his agent.
- (b) The tentative map submitted shall not be considered to be complete or ready for filing until a completed environmental clearance document for the project has been approved.
- (c) Vesting tentative map submittals shall not be considered to be complete or ready for filing until submitted simultaneously with a completed application for architectural and site review. (Ord. No. 81-11, 1, 3-16-81; Ord. No. 85-15, 1, 8-19-85)

2. FORM

The tentative map shall show the following information:

- (a) The tract number and name, or designation;
- (b) Sufficient legal description of the land as to define the boundaries of the proposed tract;
- (c) Name and address of the owner, the developer, and of the registered civil engineer or licensed surveyor who prepared the map;
- (d) The location, names and widths of all adjoining highways, streets and roads;
- (e) The width and approximate grades of rights-of-way and roadways for all highways, streets and roads within such proposed development, with typical cross-sections showing proposed improvements;
- (f) The widths and approximate locations of all existing or proposed easements, whether public or private, for roads, drainage, sewers, slope, or public utility purposes;
- (g) Approximate radii of all curves;
- (h) The proposed lot layout and the approximate dimensions of each lot;
- (i) Approximate location, names and directions of flow of all watercourses and natural drainage channels; and approximate locations of all areas covered by water or subject to overflow by one percent flood;
- (j) Source of water supply and proposed distribution system;
- (k) Proposed method of sewage collection and disposal;

- (l) Proposed route of drainage system;
- (m) Proposed use of property;
- (n) Proposed public areas, if any;
- (o) Approximate contours where topography controls the street layout;
- (p) Date, north point, and scale;
- (q) Approximate location and outline to scale of each: Building, tree with six-inch or greater caliper trunk at a level of three (3) feet above existing ground, or structure on the site and the identification of which of the above will not be moved or removed by development;
- (r) Each street shown by its actual street name or by temporary name or letter for purpose of identification until the proper name of such street is determined. All names shall be as accepted by the street naming committee, the county communications agency and the fire chief and then approved by the city council. Duplication of existing names will not be allowed.

The following information shall be required for all vesting tentative maps at the time of application submittal:

- (s) A soils report shall be prepared that examines the property of all phases from the proposed subdivision.
- (t) Proposed off-site routing plans for sewer, water, storm drainage, primary vehicular street access, and secondary emergency access shall be provided.
- (u) Complete grading plans shall be prepared that illustrate all proposed cuts and fills. (Ord. No. 85-15, 2, 8-19-85)

If it is impossible or impracticable to place upon the tentative map any matter hereinabove in this section required, such matter or information shall be furnished in a written statement which shall be submitted with such map. (Ord. No. 81-11, 1, 3-16-81; Ord. No. 85-15, 2, 8-19-85)

Section 3

STREETS

Section 3

STREETS

1. GENERAL

All streets shall be designed in accordance with accepted engineering principles and shall conform to these Design Standards and the Standard Details.

The City of Gilroy recommends that the Community Design and Transportation Guidelines published by the Santa Clara Valley Transportation Authority (VTA) be followed for design where possible. The Community Design and Transportation Guidelines emphasize a roadway design that encourages residents and workers to walk, bike, and to take transit.

Underground Service Alert shall be contacted at (800) 642-2444 a minimum of two working days prior to any work being done.

2. STREET RIGHTS OF WAY

- (a) Right-of-way widths and typical sections for various classes of streets, including private roads, shall conform to the latest edition of the City of Gilroy Standard Details.
- (b) Additional right-of-way and improved street width may be required at intersections for turn lanes. The need for turn lanes and the lengths of turn pockets and transitions will be based on anticipated traffic volumes, design speed, level of service, and other design factors.
- (c) Additional right-of-way (10') and improved street width (10') will be required for Class II bike lanes as shown on the Bikeways Plan.

3. ALLEY RIGHTS OF WAY

See City of Gilroy Code Section 2112.

4. STRUCTURAL SECTION

- (a) Relative compaction for at least the top 8 inches of subgrade shall be 95%. In areas of fill, a minimum of 24 inches from finished grade shall be compacted to 95% relative compaction.
- (b) Pavement shall be designed in accordance with the procedures contained in the State of California Department of Transportation Highway Design Manual.
- (c) The Traffic Index shall be established by the City Engineer.
- (d) A qualified geotechnical engineer shall prepare the necessary soils report and shall recommend the pavement section and address the relative expansiveness of the soil.
- (e) The minimum structural section shall be 4-inches of asphalt concrete over 8-inches of aggregate base.

5. DESIGN SPEEDS

Design speeds will be as follows:

	<u>Speed</u>	<u>Normal Crown (Centerline Radius)</u>
Local Streets	25 mph	290 ft
Collector and Industrial Streets	35 mph	610 ft
Arterial Streets	45 mph	1090 ft
Expressways	55 mph	1840 ft

Design criteria specified in the Caltrans Design Manual is applicable.

6. HORIZONTAL ALIGNMENT

- (a) Intersection Angle: Streets shall intersect at right angles. Curved streets shall have at least 50 feet of centerline tangent from the projected curb line of the intersecting street.
- (b) Opposing Streets: All streets entering upon opposite sides of any given street shall have their centerline directly opposite each other or separated by at least 100 feet.
- (c) Street Curvature: Design of curved arterial and collector streets shall be based on the State of California Department of Transportation Highway Design Manual.
- (d) There shall be a tangent between reversing curves of at least 150 feet on arterial and collector streets, and 50 feet on all other streets.
- (e) Cul-de-sac: The maximum number of lots on a cul-de-sac street, from center of intersecting street to center of turn-around, shall be 25. If cul-de-sac is longer than 500 feet, it shall require a mid-block turn around.
- (f) Curb Return Radii (Face of Curb)
 - 1. Residential and Non-Residential - Minimum radius shall be 30 feet.
 - 2. Commercial - Minimum radius shall be 30 feet.
 - 3. Industrial - Minimum radius shall be 40 feet.
- (g) Minor Streets: Minor streets shall be laid out in such a way that their use by through traffic is discouraged.

7. VERTICAL ALIGNMENT

- (a) Top of Curb Grades: Grades shall not be less than 0.5 percent and not greater than 20 percent point grade - 15 percent average. Where matching existing controls, the minimum grade may be reduced with the approval of the City Engineer.
- (b) Grades on opposite sides on the street shall be the same wherever practical.
- (c) Curves: Where the curb radius is less than 100 feet it shall have a grade of not less than 0.50 percent.
- (d) Curb Returns: The minimum fall around returns shall be 0.20 feet.

- (e) Cross Slope: The standard cross slope of the street shall be 2.0 percent. Where necessary when matching existing facilities, the cross slope may vary between 2 percent and 4 percent.
- (f) Vertical Curves: Vertical parabolic curves shall be used to connect grade profiles where the algebraic difference in grade rates exceeds 1.5 percent. The length of vertical curve required shall be determined by the following:

Class of Street	Minimum Stopping Sight Distance	Minimum Length of Curve
Arterial and Industrial	350 feet	200 feet
Collector	200 feet	100 feet
Minor	100 feet	100 feet
Cul-de-Sac	100 feet	100 feet

* The minimum length may be reduced in specific design situations upon approval of the City Engineer.

8. SIGNALIZED INTERSECTIONS

- (a) Traffic signals shall be designed and installed in conformance with the latest applicable Caltrans Standard Specifications and Plans unless otherwise specified by the City Engineer in writing.
- (b) Light emitting diode (LED) signal modules shall be used for all 8" & 12" red/yellow/green sections, red/yellow/green arrow sections and pedestrian signal faces. All LED signal modules shall meet Caltrans approval.
- (c) A model 170E Traffic Controller Assembly unit with BI Tran Systems, Inc., 233 Program and internal modem (GDI Model 5M 2400SA) shall be installed in a Caltrans Model 332 cabinet. The front door shall face away from the intersection.
- (d) Type III-AF Service Equipment Enclosure shall conform to Caltrans Standard Plans.
- (e) One internally illuminated street name sign shall be mast arm mounted for each approach (a four-leg intersection would have four signs). Signs shall be Type A and "double sided." Lettering shall be series E, 8-inch uppercase and 6-inch lowercase. Refer to Caltrans Standard Plans for mounting and wiring requirements.
- (f) One pole mounted reflective street name sign with associated block numbers conforming to City of Gilroy Standards shall be provided per east-west and north-south direction. A four-leg intersection would have two signs, one installed at the northwest corner and one at the southeast corner.
- (g) Traffic Signal Priority Control System for Emergency Vehicle Preemption shall be installed. The system shall be compatible with Type 170 Controller and existing Opticom components and software. Two Emergency Preemption Phase Selectors (Opticom Model 752, as manufactured by 3M Corporation) or approved equal, Four Optical 2-channel Detectors(Opticom Model 721) or equal, and 3-M 757 Auxiliary Wiring Harness shall be installed with the 3M Opticom Priority Control System/Model170E controller.
- (h) Battery Backup System (BBS) shall be included in the controller cabinet. The BBS shall provide sufficient backup power to operate the intersection traffic signal equipment for a minimum of 4 hours.

9. CURB, GUTTER AND SIDEWALK

- (a) Curb, gutter and sidewalk shall be installed in conformance with the City of Gilroy Standard Details and in conformance with Caltrans Standard Specifications, July 1995, Section 90.
- (b) Curb and Gutter
 - 1. Rolled curb shall not be allowed.
 - 2. Depressed-type curb and gutter, 1" minimum height, shall be installed at all driveway locations.
 - 3. All private streets and commercial/industrial driveways shall have a standard driveway curb cut. Exceptions to be approved by the City Engineer.
- (c) Sidewalk
 - 1. Residential: Minimum sidewalk width shall be 5 feet (excluding curb width on monolithic curb, gutter, and sidewalk.)
 - 2. Industrial: None, unless pedestrian traffic is anticipated.
 - 3. Commercial: Minimum sidewalk width shall be 10 feet (excluding curb width on monolithic curb, gutter, and sidewalk).
 - 4. Sidewalk widths shall provide a minimum of a 4-foot clearance around street lights and fire hydrants.
- (d) Pedestrian Ramp for the Handicapped: Pedestrian ramps for the handicapped shall be installed according to the latest State of California Design Standard.
- (e) Replacement and Repair: Where existing curb, gutter, sidewalk and driveways do not meet the current City standards and are in need of repairs, it shall be the developer's responsibility to remove and replace the deficient curb, gutter and sidewalk. Where curb, gutter, sidewalk and/or driveways are removed, the concrete shall be removed to the nearest expansion, weakened plane or construction joint or sawed at the nearest score line to a minimum depth of 1-1/2 inches.
- (f) The permanent street name signs shall be installed immediately after the curb and gutter construction is completed.

10. DRIVEWAY

- (a) The following driveway approach standards are not applicable to freeway or controlled access highways where access is limited by deed restrictions or other controls.
- (b) The number and width of permitted driveway approaches is regulated by the Public Works Department and shall be based on the needs of the parcel served. They shall not be detrimental to the abutting streets capacity, safety, and/or efficiency.
- (c) Driveway approach width is measured at the curb line and includes only the width of the fully depressed section.

- (d) The City Engineer may modify any of the following standards to improve traffic flow or because of special or unusual conditions.
- (e) Width
 - 1. Residential - Maximum driveway approach width is 24 feet. Minimum driveway approach width is 16 feet or clear opening of garage space whichever is greater.
 - 2. Industrial/Commercial - Maximum driveway approach width is 45 feet. Minimum driveway approach width is 35 feet.
- (f) Driveway transitions are not permitted closer than 10 feet from the nearest BCR/ECR on residential streets.
- (g) Distance from Utility or Safety Devices: The driveway transition shall clear all public facilities such as electroliers, traffic signal standards, utility poles, fire hydrants, and street trees by a minimum of 5 feet in residential and 10-foot in commercial. Any relocation of public facilities required to maintain such clearance shall be at the expense of the owner who is installing the driveway.
- (h) Distance From Property Line: A minimum of 2 feet of full curb height shall be maintained between the property line and top of driveway transition.
- (i) Common Use Driveways: Common use driveways may be permitted in special cases.
- (j) Grade: Driveway grades shall be designed to keep the automobile from dragging or "bottoming out" on the street or driveway and to keep water collected in the street from flowing onto the lots..

11. STREET LIGHTING

All electroliers shall consist of a high pressure sodium luminaire with electrolier ownership dedicated to the City of Gilroy. Any proposed deviation on street light type must be approved by the City.

All residential areas shall consist of 70 W High Pressure Sodium luminaries. All industrial areas, cul de sacs, intersections, and dog legs shall consist of 100 W High Pressure Sodium Luminaries.

Streetlights shall be staggered maximum 150 feet on center. Wider streets may require closer spacing.

12. SOUNDWALLS

Sound walls shall be required on all expressways, and on divided arterials adjacent to residential areas.

13. LANDSCAPING

- (a) Planter strips on arterial roads adjacent to residential uses will be increased from 6' to 10' to accommodate larger trees. Where sound walls are required, the planter strip will be adjacent to the sound wall and the sidewalk monolithic.

- (b) Two samples of all landscape materials (mulch, amendments, fertilizers, chemicals, etc.) are to be submitted to the construction manager.
- (c) A list of all irrigation components (with cut sheet) to be used on the project are to be submitted to the City's appointed representative.
- (d) All trees must be inspected by the Urban Forester. If the location of the trees precludes timely inspection, a picture showing height, structure, and trunk caliper must be submitted to the City Project Manager and the Urban Forester for approval.
- (e) All plants are to be inspected by the City Project Manager when they are received on site.
- (f) The City Project Manager will coordinate submittal reviews by the Project Landscape Architect at the expense of the Project Proponent.
- (g) The City Project Manager will coordinate submittal reviews by other City Staff.
- (h) Notify the City Project Manager two working days prior to the application of any pesticide. Provide the City with a current specimen label and material safety data sheet for any pesticide to be applied. Follow all label directions.

14. EROSION CONTROL

- (a) An erosion control plan shall be required prior to any physical development of a property planned between October 15th and April 15.
- (b) Erosion control plans shall be required for all Hillside single family residential development regardless of time of year.
- (c) Erosion control bonds are required on all hillside single family residential development regardless of time of year.

Section 4

WATER

Section 4

WATER

1. GENERAL

- (a) Water facilities shall be designed in accordance with accepted engineering principles and shall conform to these Design Standards and the Standard Details.
- (b) All materials shall conform to current American Water Works Association Standards.
- (c) The latest edition of the California State Department of Health Services "Criteria for the Separation of Water Mains and Sanitary Sewers" shall take precedence in horizontal and vertical alignment issues.
- (d) All water facilities shall be designed and installed with line and grade.

2. VERTICAL ALIGNMENT

The minimum cover on water mains shall be 36 inches. When crossing a sanitary sewer it is required that the water main be installed crossing the sanitary sewer with a clearance of 12 inches. It is preferred to have water mains over top of sanitary sewer.

3. HORIZONTAL ALIGNMENT

- (a) Water mains shall be installed within street rights-of-way 7 feet from face of curb. Alignment shall be parallel to the street centerline wherever possible.
- (b) The alignment may vary, but in no case shall there be less than 10 feet horizontal clearance to a sanitary sewer, or 6 feet horizontal clearance to a storm drain.

4. PIPE

- (a) Water mains shall be sized according to the City's Master Water Plan and Grid system. For waterlines in residential and commercial areas the minimum diameter shall be 8 inches. For waterlines in industrial areas the minimum diameter shall be 12 inches.
- (b) All pipe shall be Ductile Iron Pipe. Strength of pipe shall depend on installation conditions.

5. WATER SERVICE

- (a) The minimum size service for residential is 1 inch except for hillside lots which shall be 2 inches.
- (b) All pipe material shall be copper.
- (c) Commercial and industrial services shall be sized according to use.

6. FIRE HYDRANTS

- (a) All fire hydrants must be supplied from the largest available main, minimum 8 inch diameter.

- (b) Fire hydrant spacing and distribution shall be determined as follows:
 1. The maximum fire hydrant spacing in residential areas shall be 300 feet.
 2. The maximum fire hydrant spacing in commercial and industrial areas shall be 300 feet on both sides of the street.
 3. On divided streets, planned divided streets or state highway, the above spacing shall apply to both sides of the street.
 4. On-site hydrants may also be required by the Fire Marshall.
- (c) Fire flow and fire hydrant distribution, including the number of hydrants required and specific locations, shall be approved by the City Engineer and the Fire Chief.
 1. Upon installation, a fire flow test must be performed prior to acceptance.
- (d) Fire hydrants are to be located at mid-block on cul-de-sac streets.

7. VALVES

Valves shall be spaced and located in conformance with the following criteria:

1. 700 foot maximum spacing in residential areas and 600 foot maximum spacing in commercial/industrial areas.
2. Water mains shall be valved on each side of railroad, freeway and canal right-of way crossings.
3. At "tees", 3 valves will be required.
4. At "crosses", 4 valves will be required.
5. At locations so that future tie-ins will not interrupt service and provide isolation and pressure testing of new systems.
6. Valves shall be located at the extension of the line of the face of curb.

8. BLOW OFFS

Blow-offs shall be constructed at the end of all dead-end runs.

9. AIR VACUUM / AIR RELIEF VALVES

Air vacuum/air relief valves shall be installed at high points. Air reliefs shall be installed above ground a minimum of 12".

10. THRUST BLOCKS

- (a) Thrust blocks shall be installed in conformance with the City of Gilroy Standard Details.
- (b) Mechanically restrained joints will be allowed in place of thrust blocks.
- (c) All permits required prior to installation shall be obtained from the building department.
- (d) Inspections required:
 - a.) prior to pouring,
 - b.) for hydrostatic testing, and
 - c.) for flush. Schedule all inspections 48 hours in advance. Inspections canceled after 1 p.m. on the day before the scheduled date will be subject to a reinspection fee. Call OCFA inspection scheduling at (714) 744-0567.

- (e) Installation, inspection, and testing shall conform to 1999 NFPA 13 and 1995 NFPA 24.
- (f) All pipe shall be approved for use in Fire service systems (Class 150 minimum). Class 200 pipe shall be used where the pressure may exceed 150 PSI.
- (g) A 12" bed of clean fill sand shall be provided below and above the pipe (total 24").
- (h) All bolts used for underground connections shall be stainless steel.
- (i) A minimum of 30" of cover, from finish grade to the top of the pipe, shall be provided. When surface loads are expected, a minimum of 36" cover shall be provided.
- (j) Thrust blocks, or other approved method of thrust restraint, shall be provided wherever pipe changes direction.
- (k) The trench shall be excavated for thrust blocks and inspected prior to pour. All corrosion protection shall be in place.
- (l) A hydrostatic test (200 psi for two hours or 50 psi over maximum static pressure, whichever is greater) shall be witnessed by an OFCA Inspector. The trench shall be back-filled between the joints to prevent movement of the pipe.
- (m) The system shall be thoroughly flushed before connection is made to overhead piping. Flow shall be through a minimum of a 4" hose or pipe unless otherwise approved by the OFCA inspector. An OFCA Inspector shall witness the flush.
- (n) Private fire hydrants, sprinkler control valves, post indicating valves, post indicating and fire department connections shall be painted OSHA red and the above ground double detector check assembly shall be forrest green or approved equal.
- (o) All control valves shall be locked in the open position. Valves shall be monitored if they serve 100 or more sprinkler heads.
- (p) Provide conduit to both riser and control valves for monitoring system even if system is below the monitoring level threshold. Future TI's and/or code changes could require monitoring.

11. WATER LINE ACCEPTANCE TEST

Water lines shall be pressure tested, disinfected, flushed, and tested for bacteria prior to final acceptance by the City of Gilroy.

Section 5

SANITARY SEWER

Section 5

SANITARY SEWER

1. GENERAL

- (a) Sanitary sewers shall be designed in accordance with accepted engineering principles and shall conform to these Design Standards and the Standard Details.
- (b) Storm water shall not be connected or discharged into a sanitary sewer.
- (c) The latest edition of the California State Department of Health Services "Criteria for the Separation of Water Mains and Sanitary Sewers" shall take precedence in horizontal and vertical alignment issues.
- (d) Engineering calculations are required for the design of proposed sanitary sewer systems and shall be submitted to the City Engineer. The calculations shall include the following items:
 - 1. A plan showing the proposed street system, tributary sub-areas, existing and future tributary areas, outside the project limits, zoning, projected land use, and any features affecting the system design.
 - 2. Design flows at major junction points including flows coming from outside the project limits.
 - 3. Size, length, slope, and invert elevations of all proposed lines and locations of manholes.
 - 4. Engineering calculations may be waived by the City Engineer.
- (e) Design of sanitary sewers shall not require backflow devices to be installed in laterals.
- (f) Sanitary sewers shall be designed in compliance with the City's Sanitary Sewer Master Plan.

2. AVERAGE FLOW

- (a) The average residential flows shall be computed on a per-capita basis using a minimum of 70 gallons per capita per day. Commercial and light industrial shall be computed at 500 gallons per acre per day. All other industrial shall be computed utilizing 2500 gallons per acre per day. When the exact density is not known, the zoning map and the General Plan shall be used to determine the appropriate densities. Multi-family residential shall be 2.5 persons per unit. All other uses shall be 3.5 persons per unit.
- (b) Schools and churches shall be computed at commercial/light industrial rates.
- (c) The averages indicated above are minimum flows and in some situations may have to be increased due to large point loads, higher densities or differing land uses.

3. DESIGN FLOW

The total design flow shall be determined by multiplying the average design flow by a peak factor of 3.0.

4. VERTICAL ALIGNMENT

- (a) The minimum cover on sanitary sewer lines shall be 36 inches. When minimum cover cannot be achieved, polyurethane-lined ductile iron, or PVC C900 shall be used.
- (b) When crossing a water main, the sanitary sewer shall be installed crossing the water main with a minimum clearance of 12 inches.
- (c) At points of convergence of pipes of various sizes, the tops of the pipe elevations shall match within a manhole structure.

5. HORIZONTAL ALIGNMENT

- (a) Sanitary sewers shall be placed within street rights-of-way unless placement in an easement is specifically approved by the City Engineer.
- (b) Alignment shall be parallel to the street centerline wherever possible.
- (c) Curved sewers are not allowed, unless approved in writing by the City Engineer.
- (d) Sanitary sewers shall not be constructed within 50 feet of any existing or proposed well site.

6. SLOPE

- (a) Sanitary sewers shall be designed to flow at $d/D=1.0$.
- (b) The minimum velocity shall be 2.0 feet per second.
- (c) The maximum velocity shall be 10 feet per second.

7. PIPE

- (a) Pipe used for sanitary sewers shall have a minimum diameter of 8-inches when located in the street right-of-way. The pipe shall have rubber gasket joints and shall conform to the latest edition of the following ASTM Standards:
 - 1. VITRIFIED CLAY PIPE (Extra Strength)
- (b) Ductile Iron Pipe in conformance with section 71-1.03
- (c) PVC SDR 26 for 8-inch diameter pipe and smaller.

8. BUILDING LATERAL

The minimum size lateral shall be 4 inches and installed per Standard Detail.

9. MANHOLES

Manholes shall be placed at the intersections of all sanitary sewers, at all locations where there is change in size, grade or direction.

Manhole spacing shall not exceed the following limits:

<u>Diameter</u>	<u>Maximum Spacing</u>
10" and under.	400 feet
12" to 18".	600 feet
21" and over.	900 feet

Manholes shall be constructed at all service lateral connections where the main line is not at least 1.5 times the size of the service lateral.

Section 6

STORM DRAIN

Section 6

STORM DRAIN

1. GENERAL

All drainage facilities shall be designed in accordance with accepted engineering principles, and shall conform to these Design Standards and the Standard Details.

2. DRAINAGE CALCULATIONS

Drainage calculations are required for any new subdivision or development. Submittal of drainage calculations shall include the following items:

- (a) Hydrology and hydraulic calculations together with assumptions, charts, tables, references and methods used.
- (b) A plan showing the proposed street system, existing and proposed drainage system, tributary sub-areas (including offsite drainage), and peak flow in all pipes.
- (c) A plan showing the hydraulic grade line (HGL), the proposed storm drain including slopes and sizes and top of curb in profile. Elevations should be shown at all changes in slope of the HGL, proposed storm drain and top of curb.

3. DESIGN FLOW

- (a) The Rational Method ($Q=CIA$) shall be used to determine the quantity of runoff (Q) in designing a storm drain system as determined by the City Engineer.
- (b) Values for the coefficient of runoff (c) area as follows:

Parks and natural ground	0.20
Residential	0.40
Institutional	0.60
Commercial	0.60
Industrial	0.90
- (c) Values for rainfall intensity (i) for corresponding time of concentration shall be taken from the latest version of the Drainage Manual of the County of Santa Clara. Maximum roof to gutter time of 15 minutes shall be used.
- (d) The Area (A) shall be the tributary drainage area in acres.
- (e) Manning's formula shall be used to determine the relation of design flow, slope, velocity and pipe diameter. The friction factor, " n ", shall be 0.013 for concrete pipe.
- (f) The underground system shall be designed to handle a 10-year storm.
- (g) The streets shall be designed to carry a 100-year storm. The streets should carry this water to a release point where the water can return to the natural water course or flood control facility.

- (h) Storm drain systems shall be designed at 100% full.
- (i) Storm drain mains are to be designed per the City's Master Storm Drain Plan.

4. STREET DESIGN FOR FLOOD CONTROL

Street gradients shall be designed to fall toward the nearest existing or proposed 100 year design capacity flood control facility.

5. PAD ELEVATION AND LOT GRADING

House pad elevations shall be determined by the following criteria while assuming construction of a slab on grade foundation (first floor 7 inches minimum above pad). The latest Flood Insurance Rate Map shall be used.

- (a) In an X zone, the lowest floor shall be at least 1 foot higher than the depth number specified on the FIRM or 1 foot above the nearest high point in the drainage release path, or 2 feet higher than lowest top of curb, whichever is highest.
- (b) In an A zone, the lowest floor shall be at least 1 foot higher than the base flood elevation, as determined by this community or 1 foot above the nearest high point in the drainage release path, or 2 feet higher than lowest top of curb, whichever is highest.
- (c) In all other zones, the lowest floor shall be at least 1 foot higher than the base flood elevation, or 1 foot above the nearest high point in the drainage release path, or 2 feet higher than lowest top of curb, whichever is highest.
- (d) Minimum finish grade of lots shall be 1%. No slopes shall be greater than 2:1 unless allowed by a Soils Report and approved by the City Engineer.

6. HYDRAULIC GRADE LINE

All storm drains shall be designed for the 10 year flow storm water entering the drain at the point of concentration and shall have a minimum of 1 foot of freeboard between the top of curb and the Hydraulic Grade Line at the 10 year event.

7. VERTICAL ALIGNMENT

- (a) The minimum cover on main line storm drains shall be 3 feet from finished grade.
- (b) Catch basin laterals that have less than 36 inches of cover from finished grade shall be encased in concrete.
- (c) A minimum vertical clearance of 6 inches shall be maintained between a sanitary sewer, water main, or other underground utility.
- (d) At points of convergence of pipes of various sizes, the tops of the pipe elevations shall match unless specifically approved by the City Engineer.

8. HORIZONTAL ALIGNMENT

- (a) Storm drains shall be placed within street rights-of-way.
- (b) Alignment shall be parallel to the street centerline wherever possible.
- (c) Curved storm drains are not allowed unless special approval is given by the City Engineer.

9. SLOPE

- (a) Storm drains shall have minimum slopes equal to that necessary to give a velocity of 2.0 feet per second when flowing full regardless of the slope of the Hydraulic Grade Line.
- (b) Catch basin laterals shall have a minimum fall of 0.30 feet between the catch basin and manhole.

10. PIPE

- (a) The minimum size for storm drains shall be 18-inch diameter.
- (b) All catch basin laterals shall have a minimum diameter of 15 inches.
- (c) All pipe shall conform to the following ASTM specifications:

CONCRETE PIPE

Reinforced pipe with rubber gasket joint	C 76
Rubber Gasketed Joints	C 361 Joint & C 443 Gasket

- (d) Cast-in-place concrete pipe may be used for pipelines 24 inches and larger.

11. MANHOLES

- (a) Manholes shall be placed at the intersections of all storm drains, at all locations where there is a change in size, change in horizontal or vertical alignment and at the ends of all permanent lines.
- (b) Manhole spacing shall conform to the following limits:

<u>Diameter</u>	<u>Maximum Spacing</u>
15" to 30"	400 feet
33" to 54"	600 feet
60" & over	1000 feet

- (c) All storm drain manholes shall be constructed in conformance with the Standard Details.

12. CATCH BASINS

- (a) Side inlet catch basins shall be located at all low points and shall be spaced in such a manner that design flows will be contained within the gutter pan.

- (b) The total gutter run contributing to any catch basin shall not exceed 350 feet. It is desirable to locate catch basins on the BCR or ECR which will intercept the most runoff and also keep the main pedestrian crossing as dry as possible. Additional catch basins may be required at the direction of the City Engineer.

13. SIPHONS

Inverted siphons are not permitted.

14. ON-SITE DRAINAGE

All developed areas larger than one acre shall tie on-site drainage into the City of Gilroy storm drain system.

15. DETENTION BASINS

Detention basins on private or public property shall be designed using the following criteria:

- (a) A 24-hour, 25-year storm, total rainfall of 4.79 inches shall be used if a reasonable outlet is provided (detention). If no disposal other than evaporation, percolation or irrigation is provided (retention), a 24-hour, 100-year storm, total rainfall of 5.59 inches, shall be used. 25% of the total basin volume shall be considered as freeboard.
- (b) The maximum water surface of the basin shall be 1 foot below the elevation of the top of curb at the lowest catch basin inlet within the tributary area and a maximum of one foot above the design hydraulic grade line at the basin.
- (c) Fencing with gates shall be provided around all basins greater than 3 feet in depth.
- (d) Adequate "all weather" access shall be provided.
- (e) The tributary drainage system shall be designed to connect to the City's future storm drainage system.
- (f) The maximum slope ratio for turfed or landscaped side slopes shall be 4:1.
- (g) Basins shall be lined with an impermeable liner.

Section 7

HILLSIDE DEVELOPMENT

Section 7

HILLSIDE DEVELOPMENT

1. PURPOSE

The purpose of the Hillside Development guidelines is to provide specific requirements and guidelines for development in the City's hillside areas. These guidelines are incorporated by reference into the RH (Residential Hillside) zone and shall be used in conjunction with the City of Gilroy Standard Specifications and Details as criteria for design review of all projects within the RH zone.

2. INTENT

The intent of these guidelines is to minimize the impact on the native environment and provide for the safe use of the hillside areas. These guidelines represent a minimum standard for hillside development.

3. ENVIRONMENT

(a) Soil and Geology Reports

Soil and geology reports shall be required for the foundation site of each structure which is to be located on a slope greater than 10%. Soil and geology reports shall also be required to identify and mitigate suspected fault lines, creep, and landslide areas. The determination of the scope of the report shall be made by the City Engineer.

(b) Seismic Safety

Structures shall not be constructed within 50 feet of any trace fault lines.

(c) Erosion

No building shall be sited on areas subject to significant erosion, sedimentation, soil creep, landslide, or below an area subject to landslide. No structural work shall commence until all cut and fill slopes have been stabilized.

(d) Drainage

Existing drainage patterns shall be preserved to the greatest extent possible. Man-made alterations of the natural drainage system shall be minimized. All geotechnical reports shall identify possible springs as a source of underfloor water and the need for foundation drains.

4. SITE PLANNING

(a) Grading

1. In order to preserve the natural environment, any alterations to existing contours and slopes shall be kept to a minimum. All grading in this district shall be verified

by the City Engineer as being the least amount necessary to provide services to the proposed structures.

2. Grading, cut and fill, and retaining walls shall be minimized for hillside development by using innovative building techniques which reflect the natural topography of the site. when cut and fill is unavoidable, it shall be stabilized by rounding and landscaping. Retaining walls may be permitted in order to reduce cut and fill.
3. Upon completion of grading, and prior to the start of construction, bare soil shall be protected as set forth in the City of Gilroy Erosion Control ordinance.
4. Grading shall not be permitted during the winter season as set forth in the City of Gilroy Erosion control ordinance, unless specific erosion control measures are reviewed and approved by the City Engineer.

(b) Building and Lot Design

Padding and terracing of building sites will not be allowed. Buildings and lots shall be laid out to reduce the amount of visual impact of the structures. This shall include designing the buildings to conform to the contours of the site, and arranging driveways and patio areas to be compatible with the slopes and building design.

All structures within the hillside area are to be in conformance with all ordinances, codes, regulations, and standard plans and specifications held by all divisions within the City of Gilroy.

(c) Energy Conservation

Passive and active solar heating is encouraged in the hillside areas.

(d) Paving

Paved areas shall be designed to minimize runoff that is channeled to one location. Pathway paving shall be kept to a minimum and shall be porous in nature, wherever feasible.

(e) Livestock

Grazing animals are permitted, but only where they will be utilized to reduce the fire hazard of grassy areas. They shall be kept only where they will not adversely affect neighboring residences. Care should be taken to prevent over-grazing. (City code Chapter 4).

(f) Fences

1. Fences will be allowed adjoining structures to provide adjacent private outdoor areas. Fencing shall be an integral part of the building design, so as to minimize the visual impact to surrounding properties.
2. Wire fencing for pasture areas shall be designed to minimize visual impact. Wood fencing for pasture areas will not be allowed.
3. Yards with swimming pools shall be fenced as defined in zoning ordinance section 34.23. Fencing shall be approved during Architectural 46 Site Review, or by the Planning Division if requested at a later date.

(g) Landscaping

1. Ground Cover

Existing ground cover shall be maintained to the greatest extent possible.

2. Native Vegetation

Native shrubs and trees shall be retained on hillside terrain wherever possible to help maintain natural drainage swales, reduce erosion, and preserve the character of the hillside environment. Native vegetation and trees shall be protected from damage during construction.

3. Existing Trees

(i) Development in forested areas shall be carefully designed to minimize removal or damage to existing trees and to allow their continued healthy existence.

(ii) Existing trees six inches or more in diameter, at a point 4-1/2 feet above the ground, shall be identified on all site and grading plans. In addition, their drip lines shall also be delineated. None of these trees, whether in public right-of-way or on private property, shall be removed unless they are clearly indicated on the plans, and approved by the City Planning Division. Naturally occurring tree species meeting this criteria shall be subject to the Significant Tree Policy, under Section 6.0 of the City's Consolidated Landscaping Policy.

(iii) Now plant material requiring permanent irrigation shall not be placed under existing oak trees.

4. New Landscaping

Landscaping installed in conjunction with new construction shall be consistent with the City's consolidated Landscaping Policy, and applicable sections of the uniform Fire code. (UPC app. 11-A).

5. View

Vegetation shall be considered an important element used to preserve existing vistas. Native trees should be installed in order to screen new development in such a way and to preserve existing views from neighboring residences. Development shall not occur on exposed ridges or rock outcroppings.

6. Street Trees

Street trees shall not be installed in the hillside areas. Any trees that are provided shall be native or similar to natives and shall be arranged in natural-appearing clusters.

7. Irrigation

Irrigation installed in conjunction with new landscaping shall be consistent with the City's consolidated Landscaping Policy.

5. DESIGN

(a) Color and Materials

Color and materials used for buildings shall be compatible with the natural landscape. Earth tone colors and natural materials, such as wood, natural brick, slump block walls, tile or earth tone concrete shingles are recommended.

(b) Foundations

Houses to be located on slopes over 15% shall utilize special foundation designs. These foundation designs shall be approved by the City Engineer. A house may be elevated to a level point on the hillside through the use of poles and/or piers. Traditional pad foundations may be used, but only if it does not necessitate a high wall or bank around the home. Split-level homes and cantilever foundations shall be used to minimize soil disruption. Stepped foundations may be used if soil disruption is minimized and the method will follow the natural contours of the hillside.

(c) Roof

1. Use of "Class A" roofing materials shall be required in order to reduce fire hazards in the hillside areas (UFC app. II-A 16[a]).
2. Roof lines of buildings shall not project above ridge lines in order to preserve the natural outline of the hills.

(d) Chimneys

Chimneys shall be equipped with spark arresters, and should not be located within 10 feet of trees (UFC app. II-A, 7 and 16).

(e) House Address Numbers

If address numbers on a dwelling are not clearly visible from the street, those numbers must be provided on a 4 inch square post, 36 inches tall, installed with the mailbox, or separately at the driveway entrance. All main address numerals shall be a minimum of 2-1/2 inches in height with a 3/8-inch stroke, and placed to read from left to right and/or from top to bottom. (UFC 10.301).

(f) Antennas

Exterior roof antennas shall not be permitted in the Hillside district.

(g) Sprinklers

Fire sprinklers shall be required in all buildings in the RH district and shall be monitored by local alarm. (City Council Resolution No. 89-52).

6. UTILITIES

(a) Transformers, Control Points and Other Utility Housings

1. Utility housings shall be located so as to minimize their visual impact and shall be safely screened with shrubbery.

2. All utilities to, through, and on the site shall be installed underground. (City Code Section 21.120).

(b) Water

1. Water mains (eight inch minimum) and fire hydrants shall be installed and approved prior to commencing construction with combustible materials. (UFC 10.401)
2. Fire hydrants shall be located in clustered areas as required by the Fire Department, and shall have a static pressure of at least 43 psi. All required zone 2 and 3 pressure booster pumps and reservoirs shall be paid for by the developer. Reservoirs and booster pumping facilities, etc., shall be located to minimize or eliminate their visual impacts, and shall be screened by the planting of native shrubs.
3. The Developer shall provide modeling studies of the water pipe system to assure the system design meets the following:
 - (i) Pipe sizes are sized for maximum efficiency;
 - (ii) Fire hydrant flow meets Fire Department requirements of 2000 gpm @ 20 psi residual; (UPC app. III-A);
 - (iii) Minimum and maximum pressures at each pad elevation are within acceptable limits to avoid the use of in-house booster pumps or pressure reduction;
 - (iv) End of main pressures are within acceptable limits. Several main break failure scenarios shall be reviewed to see how many homes could be affected should a main break occur;
 - (v) Deficiencies in any of the above systems will be corrected by the Developer as directed by the City Engineer.
4. The Developer shall perform field verification testing of the water system and will modify any part of the system that does not perform to the standards established by the City.
5. The developer shall pay for a Kantor Plan model review if the water system mains deviate from those shown on the Master Plan.
6. 2" service is required for hillside lots to accommodate fire sprinklers.

(c) Sewer and Storm

1. Every lot shall be provided with sanitary sewer service, connected to the public sanitary sewer system. Eight-inch minimum sewer mains shall be required.
2. Only where necessary, in order to provide for gravity flow, will sanitary sewer laterals be allowed to cross lot lines in Private Service Easements (PSE).
3. The Developer shall provide sewer backflow valves for sewer laterals on all lots where the upstream sewer main is at an elevation above the lot.
4. All sanitary sewer, storm drain, and water mains shall be located within the street right-of-way, and shall be owned and maintained by the City. All storm drain

ditches which do not connect to City owned storm facilities, or are not accessible in all-weather conditions, shall be maintained by a homeowners association or the owner of the property.

5. All street improvements, the design of all storm drainage, sewer and water lines, street sections and widths shall be subject to approval by the City Engineer.
6. One sewer allocation shall be required for each proposed lot, including lots for future model homes.
7. The Developer shall pay for updating of the Sewer Master Plan model if the sewer system mains deviate from those shown on the Sewer Master Plan.
8. The Developer shall pay for updating of the Storm Master Plan model if the storm drain mains deviate from those shown on the Storm Master Plan.

(d) Easements

All easements shall meet the approval of the City Engineer. The Developer shall obtain all on-site and off-site rights-of-way and easements which may be required for slope easements, drainage facilities, secondary access, etc. The Developer shall provide proof that all needed acquisitions are under his control. All needed acquisitions not under the control of the Developer at time of final tentative map approval shall be so noted on the tentative map.

(e) Maintenance Districts

In order to accommodate additional maintenance required in a RH zone the developer may be required to add lots within the hillside development to Maintenance District Number One.

(f) Trash Collection

Trash collection locations shall be designed to minimize the need for special collection facilities by the trash collection company.

7. ENGINEERING

(a) Roads

1. Type streets shall follow the natural contours of the hillside to minimize cut and fill. Cul-de-sacs or loop roads will be encouraged where necessary to fit the terrain.

2. Street Standards

Street Standards shall be consistent with the City of Gilroy Standard Specifications and Details.

3. Emergency Vehicle Access

Access roads approved by the Fire Department shall be provided prior to commencing construction using combustible materials. Twelve foot wide trails connecting terminal points of streets are encouraged to provide an alternative to

a large turnaround at the end of a street for emergency vehicle movement. such trails shall not exceed 3000 feet in length. Any planting, gates, fences, or bollards in such an area must have the capability of either being flattened by such emergency vehicles, or being easily removed. (UFC 10.502).

(b) Driveways

1. Common driveways are encouraged in clustered areas to reduce the amount of paving. Driveways shall be at least 12 feet wide. Turning areas shall be designed to meet minimum fire-turning requirements. Driveways shall be at a right angle with the street, wherever feasible. Driveway approaches shall have a minimum 2% slope to the street for a minimum of 10 feet from the face of curb, whenever feasible, as determined by the City Engineer. (UFC 10.201).
2. If a driveway exceeds 250 foot in length, one 8 foot by 40 foot turnout shall be required every 250 feet.

(c) Paths and Trails

Paths and trails are encouraged in hillside areas, if designed in a fashion to minimize disturbance of the native slopes and vegetation. They shall be of a non-impervious material. These paths and trails shall be maintained by the homeowner(s).

(d) Parking

On-street curb-side parking shall not be permitted on hillside standard streets. Parking areas shall be provided through the use of parking bays and on-site parking at residential units.

(e) Bridges

When bridges must be built over natural or man-made drainage channels, the bridge should be constructed so as to minimize visual and physical impact.

(f) Street Lights

There shall be a minimum level of street lighting in hillside areas. Street lighting shall be located at all intersections and where necessary to reduce traffic hazards, subject to review and approval by the City Engineer. Light poles shall be per City standards.

Section 8

LANDSCAPING

Section 8

LANDSCAPING

1. PURPOSE

The purpose of the Landscaping guidelines is to provide specific requirements and guidelines for all Landscaping within the City of Gilroy. These guidelines are to be incorporated into all new developments within the City of Gilroy's Residential, Commercial, and Industrial areas. These guidelines shall be used in conjunction with the City of Gilroy Standard Specifications and Details as criteria for design review of all projects within the City of Gilroy.

2. SOUNDWALL

1. The minimum design standard shall conform to the latest revision of the Uniform Building Code with revisions that have been adopted by the City of Gilroy. (Resolution No. 90-38, adopted July 2, 1990)

Unacceptable designs are:

1. A pre-cast wall and post assembly which is welded to a reinforced concrete pier. This type of wall exhibits a tendency to crack or break the weld at the base of the post.
 2. A pre-cast wall panel which is mounted between two posts which are built-up of concrete blocks with unreinforced wall retainers. The retainers on this type of wall exhibit a tendency to break off, in some cases, resulting in the collapse of the wall.
 3. Designs which meet the structural requirements of the UBC but have elements which will contribute to failure in an earthquake in the opinion of the City Engineer.
2. Landscape grade should not be greater than a slope of 4:1.
 3. In areas where it is not possible to have a slope less than or equal to 4:1, a terraced grade with retaining walls is acceptable.

3. LANDSCAPE MEDIANS IN PUBLIC RIGHT-OF-WAY

1. If a median is less than three feet wide from face of curb to face of curb, no landscape shall be installed. Areas that are less than three feet from face of curb to face of curb shall be covered with dyed red, stamped concrete.
2. All public landscaped medians shall include an eighteen inch maintenance strip inside curb constructed of red dyed, stamped concrete.
3. Trees shall only be planted in medians that are more than ten feet in width from face of curb to face of curb.

4. PLANTING

1. Contractor shall supply all plants required to fulfill design intent as shown on the plans.
2. Contractor shall protect and maintain all plant material from time of delivery to time of final

acceptance. Owner shall not be responsible for losses due to vandalism, theft, or severe weather.

3. Contractor shall place plant materials so they do not interfere with irrigation system or inhibit required coverage. Plant locations may be adjusted as long as design intent is not compromised. Contractor shall set out plant material as per plan and receive acceptance from owner's representative with respect to plant health and location prior to installation. Contractor shall give a minimum of two (2) working days notice for observation and shall have all plant material in specified locations for review at one time. Contractor shall replace any material as requested by owner's representative.
4. All non-turf planting areas shall receive a 3" layer of bark mulch top dress (unless noted otherwise). Refer to Specifications.
5. When work has to occur under the drip line of existing trees not scheduled for removal, the contractor shall use all possible care to avoid injury to the trees and tree roots. Grade in lines radial to the existing trees rather than tangential. All partial cuts or tears through roots two inches in diameter and larger shall be cut clean. Trenches adjacent to trees shall be filled within 24 hours after excavation but where this is not possible, the side of the trench and adjacent to the tree and any exposed roots shall be kept shaded and moist with dampened burlap or canvas.

5. MAINTENANCE

1. All landscaping and irrigation shall be installed and maintained:
 - A. In accordance with the approved landscape plan.
 - B. With the use of only healthy, well formed and vigorous plant materials.
 - C. With the use of adequate soil amendments where poor soil conditions exist.
 - D. Continuously maintained so as not to restrict the required access to any public utility and easement.
 - E. Maintained in a live and healthy condition free of weeds. The developer and/or owner shall be required to remove all weeds and replace all sick or dead plant materials for 12 month (1 year) period after final installation.
 - F. Irrigation systems shall be monitored to ensure sufficient watering of planted areas.
 - G. General maintenance shall consist of regular watering, aerating, pruning, fertilizing, clearing of debris and weeds, and removal and replacement of dead plants.
 - H. Should the contractor fail to maintain the project, they will provide the city with adequate funds to maintain the project.

6. PROJECT INFORMATION

1. Contractor shall provide information pertaining to the maintenance of all systems. This includes model numbers, warranties, manufacturer's specifications and instructions.
2. The Contractor shall be responsible for providing a maintenance schedule for all elements following completion of the one year (unless otherwise specified) maintenance period. All pertinent information will be provided on the Project Material Information.
3. Schedules that provide distinct maintenance periods and strategies should be provided to differentiate between different plant species. For example, turf, shrubs, and trees should have distinct maintenance schedules.

7. WARRANTY

1. The Contractor shall provide a written guarantee covering all defects in workmanship, installation, and equipment for period of one year from the date of Final Acceptance.

8. GENERAL DESIGN GUIDELINES

1. Residential Development

- A. Multi-family residential developments shall landscape all yard areas, which are not specifically used for driveways, walkways, patios or similar purposes. At least 35% of the required landscaped area shall be designed to be usable as open recreational area.
- B. All residential development in the RH Zoning District shall provide landscaping plans consistent with the following criteria:
 1. Native vegetation shall be thinned of all dead limbs to reduce foliage mass, and all dead plants and plant litter shall be removed within a distance of thirty (30) feet from all proposed structures and fifteen (15) feet from the main access drive to a dwelling.
 2. New landscaping introduced to the site, which is within thirty (30) feet from any structure, shall be fire-resistant and shall be augmented with an irrigation system.
 3. New landscaping within fifteen (15) feet from any structure shall consist of selected vegetation with low-growing characteristics;
 4. New trees shall be kept a minimum distance of twenty (20) feet from all proposed chimneys.
 5. New landscaping within twenty (20) feet from a publicly dedicated street shall consist of selected vegetation with low-growing and fire-resistant characteristics.

2. Commercial Development

- A. All commercial development shall provide landscaping within the areas of the development most visible from adjacent streets.
- B. A minimum ten (10) foot wide planter area, in addition to the public right-of-way, shall be provided along each street frontage.
- C. At least eight percent (8%) of the gross land area in addition to the public right-of-way shall be landscaped, except in the C2 (Central District Commercial) zoning district where front and side yard setbacks are not utilized.
- D. All portions of a site over forty (40) square feet in area not specifically used for parking, driveways, walkways or similar access shall be landscaped.
- E. Landscaped islands shall be located in parking lots at the rate of fifty (50) square feet for every twelve (12) stalls, and shall be evenly distributed throughout the parking area.
- F. All planter areas shall be at least five (5) feet wide, except as approved by the Director of Planning due to a specific site situation where the minimum width is impractical.
- G. Fences and walls should complement the building architecture and landscaping. Long building expanses shall be architecturally designed or landscaped to prevent monotony.
- H. Parking areas shall be screened from adjacent residential areas and streets, except at driveways and street corners where visibility is needed.

3. Industrial Development

- A. All industrial developments are required by City Zoning Ordinance to landscape the front and side yard areas adjacent to streets that are not specifically used for parking, driveways, or walkways. Additional landscaping may be required to screen parking lots, exposed storage yards, fences, and loading areas. Planter areas shall be at least five (5)

feet wide, except as approved by the Director of Planning due to a specific site situation where the minimum width is impractical.

- B. Landscaping shall be designed to enhance the aesthetic quality of the development by using the following design guidelines:
 - 1. The fronts of all industrial sites as well as exposed side and rear yards shall be landscaped; site fronts shall receive landscaping emphasis.
 - 2. Heavy buffering shall be required where any new industrial development abuts commercial or residential uses. An eight (8) foot wide minimum landscaped buffer shall be required.
 - 3. Loading facilities shall be located in the rear rather than in the front of a building, unless well screened from the adjacent street by landscaping and building design.
 - 4. Fences shall complement the building architecture. Long building expanses shall be architecturally designed or landscaped to prevent monotony.
 - 5. Outdoor storage areas shall be screened by landscaping and/or materials integral with the building design.
 - 6. Industrial development visible from the South Valley Freeway shall be screened from view with dense landscaping.

9. DEMOLITION AND TREE PROTECTION

- 1. Follow the tree protection guidelines in the City of Gilroy Street Tree Program and the Consolidated Landscaping Policy.
- 2. Reference the city standard specifications for all project related demolition information.

10. GENERAL OPERATIONS AND VISIBILITY

- 1. Refer to the Gilroy Street Tree Program and Section 6-H of the Gilroy Standards.

11. LANDSCAPE USES

- 1. Landscaping shall be a positive element of the site plan and not merely a treatment for leftover space. The landscaping shall be designed to enhance the aesthetic quality of the development by using the following guidelines:
 - A. Extensive landscaping shall be provided and properly maintained to enhance building design and sitting.
 - B. In certain locations (such as around trash enclosures, carports, pool equipment, electric transformers, cable boxes, etc.) landscaping shall be designed to provide a visual screen from less pleasing features of a development. However, landscaping shall not be placed so as to interfere with the accessibility to and maintenance of such structures and equipment.
 - C. Mounding and dense landscaping shall be encouraged to screen parking and trash areas from adjacent streets.
 - D. Gravel, redwood bark chips and similar material shall not be used as a major landscaping design feature except in children's play areas. These materials may be used only to cover bare soil between plant materials until the plants fill in at maturity.
 - E. Trees shall be provided to shade walkways and parking areas for climate modification, and to screen long building frontages.
 - F. All existing on-site trees shall be shown on preliminary plans, and significant trees shall be preserved and enhanced by building and site design, in accordance with Landscape Policy section 6.

12. GENERAL IRRIGATION

1. Contractor shall verify pressure prior to beginning work. Contact owner immediately should discrepancy arise and re-direct work to avoid delay.
2. Contractor shall coordinate electrical supply with general contractor. General contractor shall stub appropriate power supply in vicinity of controller location.
3. Contractor shall adjust irrigation heads for optimum coverage while reducing over-spray onto walkways and adjacent structures. Valves shall be adjusted to avoid misting as applicable.
4. Irrigation system design is diagrammatic. Where piping, valves, quick couplers, etc., are shown outside planting areas, or limit of work, intent is for piping, valves, etc., to be installed within planting areas of property. Indicate exact locations of irrigation equipment on record drawings.
5. Contractor shall program controller to insure proper irrigation based on plant type, exposure and season.
6. Contractor shall use pressure-compensating screens (rainbird "PCS" or acceptable equal) as necessary to obtain proper spray head radius. The "PCS" screens are color coded by radius for ease of use.
7. Contractor shall use extreme care where it is necessary to trench near existing trees. Excavation in areas exhibiting root 3" and larger shall be done by hand. Roots 2" or larger in diameter damaged in construction shall be cleanly cut.
8. Contractor shall make minor adjustments to head locations in field as necessary.
9. Contractor shall refer to details and specifications for additional information.

13. IRRIGATION AND HYDROZONES

The following design elements shall be incorporated into all commercial and industrial projects utilizing fresh water:

1. A minimum of seventy-five percent (75%) of the plants selected shall be drought tolerant, as listed in either of the following two sources:
 - A. Water-Conserving Plants and Landscapes for the Bay Area,
Published by East Bay Municipal Utility District.
 - B. New Western Garden Book, list of "Drought Tolerant Plants,"
Published by Sunset Magazine.
2. Proposed turf and/or non-drought tolerant planting areas shall be limited to a maximum of twenty-five percent (25%) of the total landscaped areas.
3. Turf shall not be allowed within a city parkway strip or right-of-way, in landscaped areas less than eight feet (8') in width, and on berms.
4. Turf and non-drought tolerant plant material shall be grouped together.
5. The irrigation system shall incorporate multiple water lines in order to separate drought tolerant plants from non-drought tolerant plant material. Minimum water consumption shall be the primary objective in the design of the irrigation system, which should include (but not limited to) drip emitters, bubbler heads, micro spray units, etc.
6. Irrigation systems, which result in minimum runoff and evaporation, are strongly encouraged.
7. An electronic control box shall operate the irrigation system, and shall have the capability

- to accept ground moisture sensors and automatic rain shut-off devices.
- 8. Ground moisture sensors and automatic rain shut-off devices are strongly recommended accessories for the irrigation system.
- 9. A minimum of two inches (2") of mulch shall be added to the entire landscaped ground surface in all non-turf areas.
- 10. Open water bodies (including but not limited to ponds, decorative fountains, basins, reflective pools, and spray/mist fountains, etc.) are not recommended as a landscaping feature.

14. IRRIGATION EQUIPMENT

The following irrigation materials are standard for products that will be maintained by the city.

- 1. Irrigation Controllers** Rainmaster SA3-RM8 w/ PMR + communications

Controller shall have a permanent mount remote receiver. Communications mode (radio, hardwire, phone) and other options (flow monitoring, other sensors, etc) will be specified on per project basis.
- 2. Controller Enclosures** ETS, 16" or 24" front opening controller assembly. (SA Series)

Freestanding enclosures shall be mounted no closer than 1 foot from walls. There shall be sufficient room in front of the controller for staff to service the unit. If the controller is located adjacent to heavily used sidewalks, the controller should be set back sufficiently so that staff can service the unit without excessive interference to pedestrians. The controller shall be located and the irrigation system designed so that sprinklers will not directly spray onto the controller, or into the cabinet when it is being serviced.
- 3. Remote Control Valve** Weathermatic #21000 series. Contact the City for other specifications if system hydraulics will be outside the specs for this valve or if recycled water will be used. (One valve per box unless otherwise specified)

Valves shall be centered in valve box to allow for servicing. A Christy's standard size (2.25" x 2.75") yellow polyurethane valve tag shall be affixed to each remote control valve indicating controller and station number.

No more than four (4) remote control valves may be placed in one manifold.

Install a threaded PVC schedule 80 union on the upstream and downstream side of each valve.

Install a threaded PVC schedule 80 ball valve upstream of each valve or manifold.

- 4. Quick Coupling Valves** Buckner QB44LRC-10, or Rainbird 44LRC.

Valves shall be installed in approved ten inch (10") round valve boxes with green locking cover. Should the box be subject to heavy loads, the box shall be suitably supported.

Top of valve shall be one inch (1") below bottom of lid. Sand may be used for backfill.

In turf: box shall be flush with grade,
In planted areas: top of box shall be one inch (1") above grade.

For projects with four or more quick coupler valves installed, Contractor shall provide two (2) quick coupler keys with swivel hose ells, upon City acceptable of project.
- 5. Gate Valves** Nibco #T-113, Class 125, Bronze
- 6. Ball Valves** Nibco #T-595-Y, Full Port, Bronze Body
- 7. Backflow Preventers** Febco
- 8. Backflow Preventer Enclosures** NW U Utilities
- 9. Pop-up Rotor Heads** Turf: Hunter I-40 Series, or I-20 series (for areas too small for I-60 series only)

Shrub: Hunter PGH Series, 12" pop-up rotor head
- 10. High-pop Spray Heads** Rainbird #1812 PRS-SAM Series 12" high-pop body with check valve
- 11. Pop-up Shrub Spray Heads** Rainbird #1806 PRS-SAM Series 6" pop-up body with check valve
- 12. Fixed Spray Heads** Rainbird #1800 PRS-SAM. All heads shall be installed on triple swing joints.

Turf: #1804 or #1806; heads shall be installed two inches (2") from pavement.

Groundcover, annual color, shrub beds: #1812; heads shall be a minimum of six to twelve inches (6-12") in from pavement or buildings. Distance shall be dependent on the distance

to the first row of plant material.

- 13. Bubbler Heads** Hunter Bubblers
- 14. Remote Control Valve Box** Brooks #1100, 1200 or 1419, or equal, 12" deep rectangular plastic valve box with bolt-down green lid.
- 15. Gate Valve and Quick Coupling Valve Box** Brooks #1100, Carson #910, or equal, 10" deep round plastic valve box with bolt-down green lid. Tan lid for Gate and ball valves.
- 16. Wire Splice** Spears DS-400 Wire Connectors
All splices shall be located in splice boxes or valve boxes. Each splice shall have a 24" expansion coil to allow future maintenance. No splices are allowed to be directly buried or located in sleeves.
- 17. Low Voltage Irrigation Control Wire** Type UF Irrigation Control Wire, U/L approved for direct burial, #14 AWG.

All wires will be looped up into each valve or splice box, through which the wires pass.

An electrical resistance test shall be conducted on all station field wires and the results recorded and forwarded to the City. In addition, ETS shall inspect and certify the installation.
- 18. Irrigation Control Wire Colors** Single Controller Installations: Common wire - white
Pilot Wires - red
Master Valve Pilot - yellow
Sensor - blue
Spare - black
Trace - green

Multiple Controller Installations: contact city for details

All field wires will be labeled with the corresponding station number.
- 19. Main Line Piping** 4" size and smaller: Schedule 40 PVC with Schedule 40 Solvent-weld fittings; 6" and larger: Twin-gasketed P.R. 200—SDR 21 PVC (> 2.5 may use 315).
- 20. Lateral Line Piping** Class 200 PVC with Schedule 40 solvent-weld fittings
- 21. Sleeve Material** Schedule 40 PVC, two pipe sizes (minimum) larger than line size.

- | | |
|--|---|
| 22. Conduit for Control Wires | Schedule 40 PVC U/L electrical conduit.

All conduit openings into the controller shall be sealed (duct seal, silicon, or Urethane foam) to prevent insects from entering the unit. The conduit sweep for the field wires shall terminate in a pull box (Christy N9 or FL9) and may be called for on the 120VAC conduit prior to entering the controller. |
| 23. Prefabricated Swing Joint for Quick Coupling Valves and Rotor Heads | 150 PSI rating, with three 90 degree ells, each with an O-ring; as manufactured by Dura, Lasco, or equal. |
| 24. Flow Sensor | ETS Flow Sensor |
| 25. Filter for drip station | Senninger pressure regulators and Amiad wye filters. Contact the City for information if the site requires flows greater than twenty gallons per minute. |

15. STREET TREES

Refer to Gilroy Parks and Recreation Department Master Street Tree Planting Plan (City Code, Sec. 26.5-1).

City street trees shall be provided as required under Sections 3.0 and 4.0 from this Policy.

1. The City will install street trees in the public right-of-way in the R1 Zoning District (A planting and replacement fee shall apply). Developers may choose to plant street trees in the R1 Zoning District by obtaining a Street Tree Permit from the Department of Parks & Recreation prior to obtaining a building permit (an inspection and replacement fee shall apply).
2. The developer shall install city street trees in all commercial, industrial, and multi-family residential developments per approved landscape plans (an inspection and replacement fee shall apply). A properly licensed landscape contractor shall install the street tree. The developer, prior to issuance of a building permit shall obtain a Street Tree Permit.
3. Residential developments in the Residential Hillside (RH) zoning district are not required to plant city street trees.
4. City street trees shall be selected and installed in accordance with the following criteria:
 - A. City street trees shall be planted in the public right-of-way as per City of Gilroy Standard Detail plan.
 - B. Street trees shall be a minimum size of fifteen (15) gallons. Where an existing street tree must be removed to accommodate development, a replacement tree as near the same size as removed shall be planted.
 - C. All city street trees shall be irrigated with an automatic irrigation system, except in the R1 Zoning District.
 - D. A fee shall be assessed for the planting of a city street tree by the Building Department at the time a building permit is issued (as authorized under City Code Section 21.34 and 26.16).

- E. The developer shall use the tree species as designated by the Master Street Tree Planting Plan (as authorized under City Code Section 26.5-1). Applicants may request a substitution of the designated tree species, by formal request in writing, subject to approval from the Parks & Recreation Commission.
- F. Spacing of city street trees shall be thirty (30) feet on center, unless other restrictions prohibit this spacing.
- G. Street trees shall be spaced at least ten (10) feet from sewer laterals and streetlights, and at least five (5) feet from water laterals, gas laterals, fire hydrants, driveway aprons, and telephone/cable/electrical junction boxes.
- H. All work in the public right-of-way (including street tree planting) shall be done in such a manner as to avoid creating hazards to the public. Traffic control devices, such as signs, barricades, flagmen, etc., shall be provided as required in the state "Manual of Traffic Controls."
- I. All trees shall be inspected by a Department of Parks and Recreation representative prior to installation and acceptance as a city street tree. Trees planted without prior inspection shall be deemed defective and shall be removed by the installer. Request for inspection shall be made forty-eight (48) hours prior to planting, by calling the Department of Parks and Recreation.
- J. City street trees planted by the developer shall be guaranteed for growth and health for ninety (90) days, and workmanship for one (1) year after final acceptance by the City Department of Parks and Recreation.
- K. When required, the developer shall install city street trees adjacent to sound walls and in medians as per section 4 of the Consolidated Landscaping Policy.
- L. Deep root planters (or an equivalent as approved by the Parks Department) shall be provided for city street trees in sidewalk cut-outs. Deep root planters may also be required in other situations depending on the type of tree and the specific planting situation. When required, deep root planters and a tree well covering shall be installed per City of Gilroy Standard Detail plans.
- M. No person shall construct or put in place any concrete, brick, asphalt, wood product, plastic sheeting, or other material impervious to air and water around the base of any street tree within a distance of three (3) feet. In addition, no excess soil, mulch, or other organic or inorganic material shall be placed above a tree's root crown within a distance of three (3) feet.
- N. No person shall cut, trim, prune. Spray, brace, move, remove, or replace any street tree in the public right-of-way without a written permit from the Department of Parks and Recreation.

16. PLANTING GUIDELINES

1. GENERAL GUIDELINES

- A. Trees and shrubs should be clustered together for accent in order to form aesthetically pleasing groupings and patterns.
- B. The density and placement of plants are to be determined by the plant size at maturity. When initially installed, ground cover shall give enough coverage for a pleasing appearance in all landscaped areas.
- C. Drought tolerant planting requiring little irrigation is strongly encouraged.
- D. Existing trees and shrubs in good condition shall be saved whenever possible. New plant materials shall be carefully selected in accord with the following criteria:

1. The overall compatibility of the ultimate form, size, density, and color of trees, shrubs, and ground cover at maturity shall be considered.
 2. The tolerance of the plant materials to existing physical conditions, and resistance to insect pests and disease shall be considered.
 3. The intended use (such as shade, screening, windbreak, erosion control, etc.) as well as the ease of maintenance shall be considered.
 4. The mutual compatibility of the water needs for the various plan materials shall be considered.
- E. During Project preliminary review, staff shall determine if existing trees shall be designated significant. This determination shall be based upon the following guidelines:
1. Existing native trees (naturally occurring species in Gilroy) six (6") inches or more in diameter, at a point four and one half (4 1/2") feet above the ground.
 2. Important to the historical or visual aspect of Gilroy (the hillside tree stands).
- F. If a significant tree is present, the applicant may be required to hire a certified consulting arborist for the entire span of the project. All arborist recommendations shall be listed on the final landscape plans.
- G. The consulting arborist shall sign the Final Landscape Plans certifying that the plan is consistent with the recommendations made in the arborist's report.
- H. All significant trees shall be maintained by the property owner until deemed insignificant by a public hearing or deemed a threat to the public health, safety, and welfare, by the Director of Planning.

2. TREES

- A. Refer to the Master Street Tree Planting Plan (City Code, Sec. 26.5-1) for species selection guidelines for street trees.
- B. Refer to Section 02050 for Tree Protection, Products, and Execution.
- C. Watering and Tree Staking
 1. Refer to Section VI. A, of the Street Tree Program booklet
 2. Refer to Details

3. SHRUBS, PERENNIALS, & GROUNDCOVERS

- A. All shrubs, perennials, & groundcovers should be drought tolerant and have a proven record for success in the planting zones appropriate for Gilroy.
- B. Trees and shrubs should be clustered together for accent in order to form aesthetically pleasing groupings and patterns.
- C. Careful consideration shall be taken for all potentially toxic plant material, in regards to site usage.

4. TURF

- A. Grass sod shall be healthy, well-established mown lawn grass turf and shall be free of weeds and any other harmful or deleterious matter.
- B. At least 80 percent of the grass plants in the cut sod shall be composed of

the species or varieties specified in the standard specifications.

17. PLAY AREA IMPROVEMENTS

All components of the play equipment shall be International Play Equipment Manufacturers Association (IPEMA) certified, and conform to the California Health and Safety Code.

18. MEDIANS IN PUBLIC RIGHT-OF-WAYS

1. If a median is less than three feet wide from face of curb to face of curb, no landscape shall be installed.
2. Areas that are less than three feet from face of curb to face of curb shall be covered with stamped concrete.
3. All public landscaped medians shall include an eighteen inch maintenance strip inside curb constructed of colored and stamped concrete.
4. Trees shall only be planted in medians that are more than ten feet in width from face of curb to face of curb.

19. SITE FURNISHINGS

The specific models listed here should be used for city owned and maintained property. These models are recommended as they are tried and proven. Private residential and other private non-city maintained property are not required to use these models.

1. Drinking fountains – Haws 3202
2. Trash can – Dumor # 87

20. LIGHTING AND SAFETY

Double-masted electroliers are required where feasible, especially in areas adjacent to streets.

21. SPORT & RECREATION SITE IMPROVEMENTS

Elements here should be generated by City council approved master plans.

22. OTHER LANDSCAPE FACILITIES

All other Landscape Facilities, such as pump stations, parking lots, etc. must comply with the standard specifications and details presented by the City of Gilroy. Any designs which do not comply will be reviewed in a case by case manner.

23. UTILITIES

1. For all utility design and installation, contact the following (contact information can be found in the Reference section on page four of the Landscape Standards):
 - A. City of Gilroy Water and Sewage to obtain the correct static water

pressures and the correct locations and elevations of water and sanitary sewer lines.

B. Pacific Gas and Electric for all electrical applications, such as line placement, regulations, etc.

C. Gilroy Telecom for all telephone line needs.

2. Utility box covers (city maintained) should comply with the following standard colors:

- A. Shut-off valves: Tan
- B. Splice boxes: Black
- C. Coupler boxes: Green
- D. Recycled water: Purple

24. EROSION CONTROL

Erosion control plans and measures should be provided when appropriate. Contact the city on a per project basis for erosion control compliance.

Appendix A

IMPROVEMENT PLANS

Appendix A – Section 1

IMPROVEMENT PLAN REQUIRED GENERAL NOTES

The following General Notes are required on all improvement plans submitted for approval to the City of Gilroy Community Development Department, Engineering Division, and shall not be modified. Additional notes may be added under the title of Project Notes. However, conflicts between the City's required General Notes and the Project Notes shall be resolved by the City Engineer.

1. Temporary Bench Mark - Based on a City approved benchmark as shown on these plans.
Elevation_____ Location_____
2. All existing elevations shall be field verified by contractor unless otherwise noted.
3. All survey monuments shall be installed at locations shown on the corresponding final map before acceptance of the subdivision.
4. Contractor shall not destroy existing permanent survey monuments. Any monuments destroyed shall be replaced at the contractor's expense.
5. All work shall conform to the latest edition of the City of Gilroy Standards which are hereby made a part of these plans. Deviations from the Standards must be approved by the City Engineer in writing.
6. Developer shall arrange for a pre-construction meeting with the City Engineer (Municipal Code 17.32.250b) prior to commencing any construction. An encroachment permit shall be obtained from the City of Gilroy Community Development Department, Engineering Division upon completion of said meeting and prior to construction of any improvements within an existing or offered for dedication right-of-way, public utility easement or public service easement. A completed set of plans signed by the City Engineer is equal to an encroachment permit.
7. A grading permit shall be obtained from the City of Gilroy Building Division prior to any grading of building pads. Applicant for the grading permit shall provide a plan review letter from the Soils Engineer. A grading permit does not give contractor permission to commence off-site (street) grading. Only upon City approval (plans signed by City Engineer) of the improvement plans and completion of a pre-construction meeting, shall contractor commence off-site grading.
8. Contractor shall notify the Community Development Department 2 working days prior to commencement of any work phase.
9. Contractor shall preserve all surrounding property by confining operations to within the "Limits of Work" and/or within site property lines. Contractor shall be responsible for maintaining access for all adjoining residents, places of business, and properties at all times and in a safe manner. Contractor shall make proper notification two weeks in advance and again three days in advance of any interruption in access or service to the above property owners as well as to the City Engineer's Representative.
10. Contractor shall only use equipment provided with a spark arrestor device to reduce a potential fire hazard.

11. Right of Modification:

Approval of this plan does not release Subdivider of the responsibility for correction of mistakes, errors, or omission, contained therein. If during the course of construction, public interest requires a modification of or a departure from these improvement plans or the City Standards, the City Engineer shall have the authority to require such modifications and departures and to specify the manner in which the same is to be made.

12. Off-Site Water & Dust Control:

Contractor shall provide a water truck onsite at all times. Contractor will be allowed to draw water from the City of Gilroy Water Distribution System only after obtaining a hydrant meter from the Community Services Department and an inspection of the water truck for a proper backflow device or air-gap filling pipe. Developer has paid for off-site construction water which shall be used for site grading only. Contractor shall keep down dust from construction activity to the maximum extent possible. Contractor shall clean all existing streets, curbs, gutters, and sidewalks affected by the project at the end of each working day.

13. Material Storage:

No material shall be stored near the edge of pavement, traveled way, sidewalk, gutters, driveway, or shoulder line which may create a hazard for vehicular and pedestrian traffic, or wash into the storm drain system.

14. Traffic Control:

Contractor shall submit a traffic control plan prepared by a licensed California Professional Engineer with experience in Traffic Control for approval to the City Engineer or Representative a minimum of 5 working days prior to any work within an existing public street. Contractor shall provide all necessary traffic control in accordance with the latest edition of the 2003 MUTCD and MUTCD 2003 CA Supplement, while working within the public right-of-way. Two traffic lanes (10' min.) shall be open to vehicular traffic during all hours, weekends, and holidays. One lane one way traffic, may be permitted under the control of not less than 2 (two) competent flagmen during construction operations. Lane closures, Street closures and detours shall only take place upon City Engineer approval. The City Engineer shall be notified of any closure date and its duration at least 5 working days in advance of closure.

15. Trench restoration shall be according to City of Gilroy Standards.

16. Trench Safety:

It shall be Contractor's responsibility to provide all necessary trench safety measures for excavations. All trench safety measures shall be in accordance with the latest CAL-OSHA guidelines. Contractor shall provide evidence of a CAL-OSHA trenching permit at the pre-construction meeting for all trenching over 4 feet.

17. Excavations within the public right-of-way shall be backfilled, compacted, and temporarily paved with cold mix cut back type A.C. to allow for vehicular and pedestrian traffic prior to 4:00 P.M. The use of trench plates is allowed, provided the Contractor covers all edges of the plates with cold mix material. Non-skid trench plates shall be used in the pavement areas on all arterials. It shall be the Contractor's responsibility to maintain on a daily basis, including weekends, the amount of material necessary to maintain the trench surface flush with the existing street or sidewalk. In addition, the Contractor shall respond to and correct shifting trench plates regardless of the time of day. If Contractor fails to correct sinking backfill material or shifting

trench plates in a timely manner, City shall reserve the right to correct the problem and back charge the contractor.

18. Joining Existing Pavement:

Existing pavement which is to be joined by new pavement shall be saw cut vertical to provide straight, true and neat joints. Overlapping of existing pavement without saw cutting or grinding shall not be permitted. The vertical edges shall be tacked prior to paving. Terminals of all surfacing indicated on the plans shall join any existing surface in a smooth butt joint. Conform paving by method of abrasive grinding will be allowed upon approval of the City Engineer.

19. Sanitary Sewers:

All manholes, sewer mains, and laterals must pass a leakage test as described in the City of Gilroy Standard Details for Construction. After all backfill, testing, and pavement restoration has been completed, the contractor shall flush and clean all sewer lines 24 inches or less in diameter by the Wayne Ball Method. After the leakage test, but prior to paving, a television inspection shall be performed at all locations of newly installed sewer mains at contractor's expense. The underground contractor must keep an accurate record of manholes and the distance between them and each wye branch lateral, and their direction.

20. Before any upstream sewers are constructed, the contractor shall expose and verify the elevation and location of existing sewer lines to be connected.

21. The end of each new lateral shall be marked as shown in City of Gilroy Standards. The concrete contractor shall stamp an "S" on the face of curb directly above the lateral.

22. Water Lines:

All water lines shall be installed with line and grade.

Contractor shall not turn off or on any valves belonging to the City's water system without permission of the Water Division. Only (Community Services Department) personnel shall open the necessary valves to connect new lines. Failure to follow this requirement shall be considered an "unlawful connection" and may result in issuing of a citation and fines as specified in Section 13.04 of the Gilroy Municipal Code. The Water Division may authorize the contractor to operate designated valves.

23. Connections requiring shut down of the system shall be done between the hours of Midnight and 6:00 AM, and only upon coordination with the Community Services Department.

24. All water lines shall be tested after completion of the trench backfill and compaction of the final base material, but prior to placement of the final roadway surface.

25. Contractor shall place marker posts adjacent to all air relief valves and blow off assemblies along water mains located in unimproved areas or fields. The markers shall be blue 72" curb-flex utility markers with an appropriate label.

26. The concrete contractor shall stamp a letter "W" on the face of curb directly above the water service.

27. Backfill & Compaction:

Backfill material shall be in accordance with City Standards.

28. Jetting and/or flooding of trench backfill material will **not** be permitted.
29. Any excess excavation material may be deposited onsite in areas and at depths designated by the Owner, and with written approval of the City Engineer and the Soils Engineer.
30. The minimum relative compaction for trench backfill, subgrade and base material shall be 95% throughout the project unless recommended otherwise in the Soils Report and approved by the City Engineer.
31. If trench backfill material is 100% sand, the City shall conduct compaction tests of the lifts specified. If the trench backfill material is native soil, contractor shall provide compaction test results of the lifts specified in the soils report to the City Engineer from a certified testing laboratory at contractor's expense.
32. Any aggregate base that becomes contaminated during construction shall be removed and replaced with uncontaminated base.

33. Erosion Control:

An erosion control plan shall be required prior to any physical development of a property planned between October 15th and April 15th. Said plan shall meet the minimum standards and specifications of the Loma Prieta Resource Conservation District. Contractor shall be responsible for initiating the required erosion control measures during the above time period.

34. Electroliers:

All electroliers shall be installed by the per City, at the locations shown on these plans. See Electrical Section of the Standard Details.

35. Streets:

- A. All work shall be installed in accordance with the latest edition of the State of California Department of Transportation (Cal-Trans) Standard Specifications and shall conform to the minimum standards and/or specifications of any applicable local, state, or federal governing codes.
- B. Permits required for any construction depicted in these plans shall be paid for and obtained by the contractor unless otherwise noted.
- C. The contractor shall verify the locations of all existing utilities, structures, and services before commencing work. The locations of utilities, structures and services shown in the contract documents shall be deemed to be approximations only. All discrepancies between what is shown and the actual field conditions shall be reported to the owner's representative. The contractor shall contact Underground Service Alert (USA) at (800) 642-2444 a minimum of 2 working days prior to any demolition or excavation upon completion of USA marking operations, contractor shall record all utility markings on a separate set of drawings. This set shall be kept on-site for reference for duration of contract. Notify the owner's representative immediately should conflicts arise and redirect work to avoid delay.
- D. The contractor shall protect all existing utilities and features on and adjacent to the project site during construction. The contractor shall repair, at no additional cost to the

owner, all damage resulting from construction operations or negligence. All repairs shall be made to an "as-was" or better condition per the discretion of the owner(s).

- E. The contractor shall be responsible for coordinating the work with the owner(s), owner's representative, utility companies, and other construction trades and governing agencies.
- F. For items of work requiring inspection or observation, the contractor shall give the owner's representative a minimum of two working day notice prior to the time of required inspection or observation.
- G. Prior to bidding, the contractor shall visit the site and familiarize themselves with the existing site conditions. Contractor shall immediately notify the owner's representative if discrepancy is suspected between the site and what is contained in the contract documents. No allowances will be made to the contractor due to their lack of familiarity with the site conditions.
- H. Contractor shall provide and maintain erosion control measures in conformance with the standard construction practices as required to protect the project and/or adjacent properties from damages due to natural or man-made erosive forces. Contractor shall be responsible for repairing or replacing damages or damaged areas to an "as-was" or better condition if it can be reasonably construed that such damages were due to the contractor's construction activity or lack of ample protective measures. Repairs shall be made subject to the discretion of the owner's representative.
- I. Upon completion of the work, the contractor shall certify that all work has been installed in accordance with the contract documents. All variations from the documentation must be presented to the owner's representative accurately and/or graphically on record drawings prior to final acceptance. Refer to specifications for additional closeout information and procedures.
- J. Contractor shall diligently strive to protect the project site and all construction materials from vandalism damage until project final acceptance. Contractor shall be responsible for all damages and/or losses due to vandalism until project final acceptance.
- K. Contractor shall develop and implement a Safety Program and diligently protect workers and the public from injury due to any construction activity. Protective measures shall conform to those described in Cal-Trans State specification section 7-1.09 "Public Safety" at a minimum.
- L. Contractor shall provide drinking water and portable restroom facilities for worker use during construction at contractor expense.
- M. All permanent street name signs shall be installed immediately after the curb and gutter construction is completed.

36. General Notes:

These notes are for the general reference in conjunction with, and as a supplement to the written specifications and details associated with any contract documentation.

- A. The contractor shall visit the site prior to bid submittal to determine the exact extent of the site demolition required and verify compliance with drawings. The project manager shall be notified immediately of any discrepancies.

- B. The contractor shall perform all clearing, demolition, removal of obstructions and site preparations necessary for the proper execution of all work shown on the plans and as described within the specifications.
- C. Locations of Existing structures and utilities shown on the plans are based on the best available information. Contractor is responsible for the removal of all designated items per site conditions at direction of the City. The project manager and landscape architect assume no responsibility for the accuracy of this information or inadvertent omission of any such information.
- D. Prior to beginning of work, verify all existing utilities in the field. Failure to do so shall act as acceptance by the contractor of existing conditions and utilities in the field. Locations shown on the plans are approximate.
- E. The contractor shall become familiar with the locations of existing and future underground services and improvements which may affect the work being done. Contractor shall be responsible for notification of all the utility companies, 48 hours prior to beginning work. Contact the Underground Service Alert (USA) at (800) 642-2444, a minimum of 48 working hours prior to start of construction. Notify the project Manager immediately should conflict arise.
- F. The contractor shall be responsible for repairing and replacing at contractor's expense, any structure, paving, fencing, walls, or plant material damaged or destroyed by his or her's subcontractor's operations. Contractor shall be responsible for repairing or replacing any and all damaged on site and adjacent properties. The damaged items will be restored to their original condition or replaced and to the satisfaction of the city.
- G. All existing items and/or structures are to remain unless otherwise noted on the plan.
- H. For protection of existing trees refer to tree protection specifications.
- I. Notify the project manager in writing two weeks prior to start of demolition phase, before removal of any items.
- J. When construction fencing is shown within limit of work, contractor shall provide and maintain full access as required. When work is required between limit of work and construction fencing, submit a written request to the owner stating work to be performed and approximate time of completion. No work shall be allowed within these areas without prior approval of the owner. Fencing shall be replaced promptly following completion of said work.
- K. Demolition shall include: Removal of item and any foundation or structural support related to item and to dispose of off site in a manner acceptable to the owner and in compliance with all Federal, State and Local codes and ordinances.
- L. "Remove and Return" shall mean carefully disassemble or dismantle without damage. Any unnecessary damage, as deemed by the owner during removal, shall be repaired and replaced by the contractor at no additional cost.

37. Demolition

- A. The contractor shall perform all clearing, demolition, removal of obstructions and site preparations necessary for the proper execution of all work shown on the plans and as described within the specifications.

- B. The contractor shall visit the site prior to bid submittal to determine the exact extent of the site demolition required and verify compliance with drawings. The project manager shall be notified immediately of any discrepancies.
- C. The contractor shall verify the locations of all existing structures, utilities, and services prior to commencing work. Contractor is responsible for the removal of all designated items per site conditions at direction of the City/owner. The project manager and landscape architect assume no responsibility for the accuracy of this information or inadvertent omission of any such information. The locations of structures, utilities, and services shown in the plans, specification, and contract documents shall be deemed to be approximations only. All discrepancies between what is shown and the actual field conditions shall be reported to the owner's representative. The contractor shall contact Underground Service Alert (USA) at (800) 642-2444, a minimum of 48 hours prior to any demolition or excavation. Upon completion of USA Marking operations, contractor shall record all utility markings on a separate set of drawings. This set shall be kept on site for reference for the duration of the contract/project. Notify the owner's representative immediately should conflicts arise and redirect work to avoid delay.
- D. All existing items are to remain unless otherwise noted. The contractor shall be responsible for repairing and replacing at contractor's expense, any existing item damaged or destroyed by construction operations. Contractor shall be responsible for repairing or replacing any and all damages to adjacent properties. The damaged items shall be restored to an "as-was" or better condition or replaced per the discretion of the owner's representative.
- E. Prior to any demolition work, contractor shall install self-supporting interlocking chain-link temporary construction fencing to enclose and secure the project area limit of work. The fencing shall contain pedestrian and/or vehicular access gates as necessary and shall be minimum 6 feet high with a top and bottom rail with knuckled top and bottom selvage (no barbed wire permitted). The construction fencing work shall be subject to the discretion of the owner's representative.
- F. Prior to any demolition work, contractor shall protect all existing plant material not scheduled for removal by installing temporary 4-foot high "Blaze Orange" construction safety fencing at the drip line or perimeter. The fencing shall be secured with driven metal stakes. All tree protection work shall be subject to the discretion of the owner's representative.
- G. Contractor shall verify location of all exiting utilities and provide the required coordination for their temporary disconnection, protection, removal and/or storage as may be required during construction. Contractor shall coordinate with the owner to determine whether temporary services are necessary.
- H. Demolition shall include the removal of item(s) and any foundation or structural support related to the item(s) for plan material. This shall include stumps and roots over 2 inches in diameter. Disposal shall be off site in a legal manner acceptable to the owner's representative and in compliance with all Federal, State and Local codes and ordinances.
- I. Refer to specifications for additional clearing, grubbing, topsoil, stockpiling and other pertinent information.

38. Grading & Drainage Notes

- A. Existing grades are based on information provided by a surveyor. Contractor shall verify existing grades for accuracy prior to the start of grading. Contractor shall notify the owner's representative immediately should conflict arise and should redirect work to avoid delay.
- B. The contractor shall verify the locations of all existing structures, utilities, and services prior to commencing work. The locations of structures, utilities and services shown within the plans, specifications and contract documents shall be deemed to be approximations only. All discrepancies between what is shown and the actual field conditions shall be reported to the owner's representative. The contractor shall contact Underground Service Alert (USA) at (800) 642-2444, a minimum of 48 hours prior to any demolition or excavation. Upon completion of USA Marking operations, contractor shall record all utility markings on a separate set of drawings. This set shall be kept on site for reference for the duration of the contract/project. Notify the owner's representative immediately should conflicts arise and redirect work to avoid delay.
- C. Proposed grades shall meet existing grades with a smooth and continuous transition as to avoid trapping water. Contractor shall notify district representative if puddling is suspected and redirect work so as to avoid delay while awaiting response.
- D. All existing drainage structures, boxes, utility vaults, etc., shall be brought to final finish grade prior to final surface treatment.
- E. Any conditions not specifically noted or detailed on the plans shall be called to the attention of the District Representative for review prior to installation.
- F. Contractor shall be responsible for adjusting all existing drainage structures and existing utilities to finished grades. If final grades differ from those noted on plans, contact district representative for approval. Any changes to grades shown shall be recorded on as-built plans.
- G. Contractor shall be responsible for cleaning all existing drainage structures and pipes to remain.

39. Layout/Material

- A. The contractor shall coordinate all construction elements including utility locations and required sleeving prior to installation. Verify critical dimension, reference point locations and construction conditions prior to initiating construction. Temporary benchmarks or reference points shall be set by the contractor as necessary. Notify the owner's representative immediately should discrepancy arise and redirect work to avoid delays.
- B. All dimensions shall be verified in field and chalked, string-lined or flagged by the contractor prior to construction. Any minor adjustments made to achieve overall design layout shall be accepted by the owner prior to construction.
- C. Layout is based on the point(s) of beginning (P.O.B.) and baseline(s) or grid system as shown. Dimensions shown are rounded to the nearest inch.

Appendix A – Section 2

CHECKLIST FOR IMPROVEMENT PLANS

Planning Division Name: _____ Tentative Map No: _____

Subdivision Name: _____ Tract No: _____

Assessor's Parcel No: _____

Tentative Map Approval Date: _____

Engineering Firm: _____

Job Number: _____

Project Engineer: _____

Telephone Number: _____

(Appropriate sections to be checked off by the Engineering firm and provided along with 1st submittal)

Engineers Checklist

() 1st Check () 2nd Check () 3rd Check

6 Sets of Improvement Plans with Landscape Irrigation Plan _____

Sets of Hydrology Map and Calculations _____

Retention Pond Design Criteria on Plans _____

Copy of Engineer's Estimate _____

Coy of Soils Report and Pavement Design Calculations (Arterials) _____

Set of Sewer Map and Calculations _____

Copy of Final Conditions of Approval (Resolutions) _____

Copies of Fireflow Calculations (commercial) _____

REVIEWED BY:

1. Planning Division _____

2. Engineering Division _____

3. City of Gilroy Fire Marshal _____

4. Sent to PG&E, Telephone & Cable TV by Engineer _____

5. Other Agency Review – by Engineer _____

a. Santa Clara Valley Water District _____

b. Other (specify) _____

SECTION 1 -- DRAWINGS

A. GENERAL

- 1. Sheet size is 24" x 36" with 2" space on left side of border and 1" space on right side

- 2. Title Block/Border of each sheet (contains as a minimum):
 - a. City Engineer's signature block

 - b. Design Engineer's signature block

 - c. Design Engineer's seal, R.C.E. number and original signature (stamped signatures are not acceptable on final submittal)

 - d. Horizontal scale (1"=40' max) & Vertical scale (1"=4' max)

 - e. Name of Subdivision or Project and Sheet Name

- 3. Stationing referenced to nearest intersection

- 4. All offset distances measured from centerline

- 5. City Standard Details referenced correctly

- 6. Details other than standard, properly detailed

- 7. Construction quantities/Scope of Work shown and itemized

B. TITLE SHEET

- 1. Project Area Diagram:
 - a. Project limits shown as well as any City-County boundaries

 - b. Phase boundaries (if applicable)

 - c. Lots and lot numbers and lot areas

 - d. New/existing abutting right of ways, easements & street names

 - e. New electroliers

 - f. TBM shown with reference to an approved City benchmark

 - g. Plan Sheet references

- 2. Sheet Index

- 3. Symbol/Abbreviations Legend

- 4. Location Map with North Arrow

- 5. Required City General Standard Notes – can be on separate sheet

SECTION 2 – GRADING PLANS

- 1. Erosion control plan included when project is planned for construction between October 15th and April 15th.

- 2. Existing elevations or contours shown.

- 3. Existing and proposed storm drain lines and structures shown.

- 4. Proposed pad grades & lot numbers shown. Minimum grade of lots 1%

- 5. Lowest Floor shall be minimum 1' above calculated high water point or FIRM base flood elevation, whichever is greater. See Design Standards for further details.

- 6. Retaining walls and sound walls shown.

- 7. Section of typical lot shows property lines and slopes/grades.

- 8. Elevations at rear of lots shown.

- 9. Elevation of surrounding lots shown.

- 10. Shows grading required for off-site drainage.

- 11. Profile shows back-of-curb/sidewalk and original ground.

- 12. Grading conforms to adjacent properties and does not create possible
adverse effects on future development.

- 13. Drainage does not occur across lot lines. Lots shall drain to streets
where practicable.

- 14. All slopes are maximum 2:1 or per Soils Report.

SECTION 3 – STREETS

A. PLAN VIEWS

- 1. Handicap ramps are designed per Standard Details.

- 2. Property corner cutoffs used where handicap ramps installed
otherwise concentric with curb.

- 3. Curb curve data given – central angle, length and radius.

- 4. Phase boundary shown (if applicable).

- 5. R/W and street width dimensions shown.

- 6. Centerline stationing at 100' and at BC & EC of horizontal curves.

- 7. Lot/parcel lines and numbers/letters shown.

- 8. Cul-de-sac cross slopes from high point to gutter lip - .025 min.

- 9. Rim and invert elevation and station given at all drainage structures.

- 10. TC elevation and station at property line extensions.

- 11. TC elevation and station at grade breaks and at curb returns.

- 12. 0.0050 minimum slope observed on all streets at curb line with
Minimum 0.2 foot fall around returns.

- 13. Location of underground pipes and utilities shown.

- 14. Fire hydrant and electrolier per Standard Detail.

- 15. Street monuments shown.

- 16. Street names shown.

- 17. All notes and standard symbols conform to legend.

- 18. All ex. Utility poles, manholes, valves, signs, mail, boxes, trees, etc.
shown. Indicates those to be removed, relocated or adjusted to
grade.

- 19. Continuations and cross streets properly referenced i.e. (see sheet #___) _____
- 20. Street knuckles are per Standard Detail. _____
- 21. Street signs, traffic signs and barricades shown in proper locations. _____
- 22. Driveway locations & stationing shown in proper locations. _____
- 23. Shows existing manholes, water valves and other facilities to be adjusted to grade. _____
- 24. North arrow shown for each plan view area. _____

B. PROFILES

- 1. Vertical curves designed for proper speeds per Highway Design Manual. _____
- 2. Minimum vertical curve lengths observed. _____
- 3. Vertical scale 1" = 2' or 1" = 4' _____
- 4. Vertical curves used for grade-breaks where algebraic difference exceeds 1%. _____
- 5. Cul-de-sacs, show profiles @ centerline through radius point to TC at end of cul-de-sac (dashed line). _____
- 6. 2% maximum grade observed across intersections. _____
- 7. All underground pipes and utilities shown to include storm drain, water and sewer. _____
- 8. Existing ground on centerline shown. _____
- 9. Finished grade profile for top of curb shown. _____
- 10. Centerline profiles of intersecting streets shown to their point of intersection. _____
- 11. New road profile conforms to off-site existing road profile. _____
- 12. Centerline stations and elevations shown @ all BVC, EVC, PIVC, grade breaks, low points and high points. _____
- 13. All slopes in profile shown. _____
- 14. Shows all utility crossings with clearances indicated. _____
- 15. Manhole and drop inlet invert and flowline elevations shown. _____
- 16. Elevation at high and low points of water mains shown. _____

SECTION 4 – WATER

- 1. Design conforms to City of Gilroy Design Standards and the Standard Details. _____
- 2. Design conforms to Water Master Plan. _____
- 3. Minimum distances to sanitary sewer and storm lines maintained. _____
- 4. Length shown as distance between crosses or tees. _____
- 5. Air relief valves at high points. _____
- 6. Invert elevations shown at all grade breaks and air relief valves. _____
- 7. Sizes of all existing lines shown. _____

- 8. Fire services shown. (if applicable) _____
- 9. Size and type of pipe shown in profile. _____
- 10. Blowoffs at dead-end lines. _____
- 11. Valves on all legs of a “cross” or “tee”. _____
- 12. Minimum cover 36 inches. _____
- 13. Minimum water service size 1 inch. _____
- 14. Size and location of water services laterals and meter boxes shown. _____
- 15. Fire Hydrant spacing per Design Standards section 4.600. _____
- 16. Valves spaced per Design Standards section 4.700. _____

SECTION 5 – SANITARY SEWERS

- 1. System in agreement with approved tentative map and master plan. _____
- 2. Design conforms to City Design Standards and Details. _____
- 3. Adequate cover. 3’ min to finished grade. _____
- 4. Minimum horizontal and vertical clearances from water main. _____
- 5. Pipe size, type, slope, and length between structures shown. _____
- 6. Connection to existing facilities shown. Manhole installed when tying to existing lines. _____
- 7. Where sewer line extension is possible, do proposed lines extend to at least the subdivision boundary? _____
- 8. Station and invert & top of manhole elevations shown. _____
- 9. Sizes of existing lines shown. _____
- 10. 400’ maximum distance form manhole to manhole and 250’ from manhole to clean out (at end of line). _____
- 11. Minimum 2 fps velocity, 10 fps maximum. _____
- 12. 0.1’ drop around corner through manhole, or matches soffit elevation. _____
- 13. Bolted manhole covers for any off street manholes. _____
- 14. In unimproved area, manholes extended 1’ above ground. _____
- 15. Elevations, slopes and distances all mathematically correct. _____
- 16. Minimum vertical and horizontal distances to water lines maintained. _____

SECTION 6 – DRAINAGE

A. HYDROLOGY – HYDRAULICS

- 1. Calculations conform to City Design Standards. Underground system designed to handle a 10-year storm, streets designed to carry a 100-year storm. _____
- 2. Tributary drainage system designed to connect to City’s future storm drainage system and conforms to Storm Drainage Master Plan. _____

3. Calculations shall include: HGL, FL EI, Q, A, S, V, freeboard at structures, structure losses, and tailwater assumptions.

4. Adequacy of in-tract and off-tract drainage system verified.

5. All starting water surface calculations adequately verified.

6. Drainage map showing street system, existing and proposed drainage System, slope arrows, tributary sub-areas in acres, peak flow in all Pipes (1" = 100' preferred)

7. All pipe in tributary areas labeled to correspond with calculations.

8. Base Flood Elevation verified for the project area.

B. EASEMENTS

1. Off-tract drainage improvements (plan and profile) and accompanying easements shown. Off-tract offers of dedication for drainage easement submitted for review.

2. Off-tract work to be done but no easement required; right-of-entry submitted for review.

3. Easement widths indicated.

C. STRUCTURES

1. 1.00' minimum HGL to TC.

2. Special structure calculations provided.

D. PIPE

1. Minimum slope for flow of 2 fps. Size (15" min. laterals & 18" min. mains), class, slope, length, and type of pipe (RCP) shown in profiles.

2. Indicates clearly on plans where non-standard pipes are used.

3. Elevations, slopes and distances all mathematically correct.

4. Matches hydraulic/hydrology calculations.

5. Manhole inverts and rim elevations shown along with catch basin invert elevations.

E. CHANNELS

1. Maximum velocity in earth channel verified by soils report.

2. Channel side slopes as specified by soils report.

3. Channel design per City Specific Plan (if applicable)

F. STORM DRAIN DETENTION BASINS

- 1. Runoff and volume calculations per City Design Standards.
- 2. High water level shown on basin section.
- 3. Basin bottom 5' above water table unless statement from soils Engineer indicates range of depths, then 2' minimum allowed.
- 4. Outfall protection using rip-rap required.
- 5. Chain link fence with slats required around basins greater than 3 feet in depth.
- 6. Pedestrian access ramps (if any) meet ADA requirements.
- 7. Off-tract basins have an access road around the basin.
- 8. Easement boundary shown.
- 9. Maximum sloped ratios for turfed or landscaped side slope = 4:1

G. GENERAL

- 1. Shows winterization procedures and erosion control measures.
- 2. Copy of winterization provided (if applicable) necessary for outfall.
- 3. Provide Joint Trench Plan
- 4. Provide PG&E-approved Utility Sheets
- 5. Santa Clara Valley Water District Well Map/Site must be checked
- 6. SWPPP
- 7. Trash can pad for roads less than 30' wide
- 8. Street Names approved by Street Naming Committee
- 9. Lot numbers on improvement plans match lot numbers on Final Map
- 10. Tract number on First Plan Sheet
- 11. Traffic Control Plan

Appendix A – Section 3

Development Project Closeout

The following information serves as an informational checklist for contractors and/or developers to identify the process for the completion of a new development.

1. “Punch List” provided to the Developer by the City of Gilroy Engineering Division. Punch list to include:
 - i. Request for a final cost estimate.
 - ii. Request for Electronic files of all “as-built” plans and maps.
2. Developer to return requested items to the City of Gilroy, Engineering Division.
3. Engineering Division to determine if additional money is due to City or if refund is due to Developer and determine if electronic files are as-built and complete.
4. Upon the determination of the fees, If they are:
 - i. Due **by** the Developer to the City of Gilroy, a request for payment is sent to Developer.
 - ii. **Owed** to the Developer by the City of Gilroy, a refund will be processed for the over-payment.
5. Developer requests final inspection.
6. After Final Inspection is complete, Developer to submit within 14 days Record Drawings for Improvement Plans as per General Section 1.5 of Standards. Submittal shall include:
 - i. Mylar set of plans
 - ii. Electronic set of plans in the following format:
 1. Autocad - DWG format, Autocad Release 14 minimum
7. Items 1-6 to be completed prior to sending the Notice of Completion of Project to the City Council.
8. Once approved by Council, Documents recorded.
9. Developer to request a partial release of their bond (bond release cannot occur until 35 days after recording of the Notice of Completion and no liens have been filed against the City).
10. City sends Developer in writing the determination of the bond reduction.
 - i. If approved, Bond reduction released in exchange for maintenance bond. Maintenance bond is to be for a one-year period (one year from the Council meeting date of acceptance), automatically renewable.
11. Inspectors review project one month prior to expiration of maintenance bond and advises contractor/developer of any deficiencies to be completed prior to release of maintenance bond.

Appendix B

FINAL MAPS

Appendix B – Section 1

CHECKLIST FOR FINAL MAPS

Date: _____ Subdivision No. _____

A. GENERAL

Engineers Checklist

- 1. Agrees with the approved Tentative Map.
- 2. Compliance with conditions of approval: (i.e. survey, dedications, notes).
- 3. Easements and monuments correspond with Improvement Plans.
- 4. Title Report current (within six months).

B. DEDICATION AND CERTIFICATION

- 1. Owner's Statement.
- 2. Trustee's Statement. Note: Check signature requirements, Land Development.
- 3. Surveyor's/Engineer's Statement, including signature, seal and number.
- 4. Name of person authorizing map.
- 5. All certificates signed and acknowledged with signatures and notary seals legible, using black India ink (final submittal).
- 6. Statement of the Planning Commission.
- 7. Certificate of the City Clerk.
- 8. Recorder's Certificate
- 9. City Engineer's Statement

C. MONUMENTATION

- 1. All found monuments tied by survey and described with tag numbers and recorded reference.
- 2. Basis of Bearings, two found monuments of record must appear in a statement and be labeled on each sheet of the map.
- 3. Tie to Basis of Bearings.
- 4. Monument R/W at B.C., E.C. and property line, if necessary.
- 5. A monumented line shall be shown on all new subdivision streets, with ties to right-of-way.

D. MATHEMATICAL ACCURACY AND GEOMETRY

- 1. All bearings, distances and curve information shown to nearest .01 ft. and nearest second.
- 2. Curve data (, R, L).
- 3. Radial bearing, non-tangent curve.
- 4. Sum of increments equals total distance or delta.
- 5. Areas net and gross (as required to nearest .01 of area).
- 6. Minimum road centerline radius; 750, 500, 250. Street width setback lines, and/or required widening must be shown on map.
- 7. Math closures must be correct to 1 part in 20,000 and they must be certified.
- 8. Individual parcel area, table form or per lot.

E. MAP BODY

Engineers Checklist

1. Map suitable for microfilming.
2. Full map size 18" x 26" on tracing cloth or polyester with 1" border (16" x 24" inside border). Should have scale 40 ft., 50 ft., or 60 ft. to 1"; other scales must have Engineering Division's approval.
3. Legend: Found mon., solid; set mon., open; show corner monument type, size and tag no.; show on each map sheet.
4. Distinctive border.
5. Map tie to next street intersection or a vicinity map.
6. Road names, spelling R/W width, setback lines and/or required widening.
7. Parcel designation, lots designated by numbers; parcels designated by letters.
8. City boundaries must appear on the map, when applicable.
9. Future street lines and original property lines.
10. Each lot/parcel must be shown completely on one sheet. If more than one sheet is required, the first sheet shall contain a small-scale, undimensioned map of the parcel.
11. Key or index map showing sheet numbers.
12. Corner monument each lot corner. Okay to call out in a note.

Appendix B – Section 2

Requirements for Council Approval

Upon completion of Final Map the following listed items are to be provided. When all items have been received and the bonds have been approved, the project will be agendized for City Council approval.

1. Payment for Improvements to be provided to the City of Gilroy for Engineering fees as outlined in the Development Cost Schedule that is attached to the Property Improvement Agreement.
2. Improvement Agreement to be signed, sealed, notarized and returned to the City of Gilroy.
3. Performance Bond and Payment Bond to be provided to the City of Gilroy. Amounts outlined within the Development Cost Schedule.
4. A check made payable to the County of Santa Clara Recorder to be provided. This will cover the recording fee for the Development Agreement.
5. Current City of Gilroy Business License to be submitted.
6. Insurance certificates to be provided.
7. Final Map to be submitted in the following formats:
 - Mylar
 - an Autocad file - DWG format (Release 14 version minimum)
8. Improvement Plans to be provided in the following format:
 - Mylar
 - An Autocad file - DWG format (Release 14 version minimum)

Note:

- A. **After Council Approves Final Map**, Developer to submit to City within 30 days a **Recorded** copy as a
 - Mylar
 - Autocad file - DWG format (Release 14 version minimum)
- B. **At the End of the Project**, Developer to submit Improvement Plan **Record Drawings** as a Mylar and Autocad file.
 - Mylar
 - Autocad file - DWG format (Release 14 version minimum)

Appendix C

EXISTING DEVELOPMENTS

Appendix C

GENERAL CHECKLIST FOR EXISTING DEVELOPMENTS

The following information serves as a checklist for contractors or developers to identify/investigate prior to the construction process for the improvements to existing developments:

General Property Data:

- Location of Property (address, a.p.n., etc.)
- Legal description of property
- Site survey, including benchmark information
- Legal setbacks and building codes
- Easements
- Right-of-ways

Utilities (on-site and off-site)

- Sewer: mains, laterals, building sewers, manholes, clean outs, rim and invert elevations, direction of flow, etc.
- Storm drain: mains, basins, manholes, curb inlets, elevations, direction of flow, etc.
- Electrical: poles, vaults, underground and overhead lines, lights, meters, etc.
- Gas: mains, manholes, meters, etc.
- Water: mains, available water pressure, fire hydrants, meters, etc.
- Cable TV and other utilities specific to site
- Easements
- Existing springs, wells, and any known subsurface water conditions

Site Specific Information

- Buildings, structures on property, and adjacent properties
- Site furnishings and respective footings, etc. (i.e. fences, walls)
- Paving, including sidewalks, driveways, pads, etc.
- Underground structures, i.e. holes, trenches
- Soil composition
- Geotechnical information
- Existing monuments
- Existing springs, wells, ponds, creeks, standing water, etc.
- Existing rock outcrops
- Existing trees and planting areas

Appendix D

GENERAL REFERENCES

City of Gilroy References

Governmental Agencies

City of Gilroy

7351 Rosanna Street
Gilroy, CA 95020
Ph: (408) 846-0400
Fax: (408) 842-0429
Website: www.ci.gilroy.ca.us

County of Santa Clara (County Government Center)

70 West Hedding Street, Tenth Floor
San Jose, CA 95110
Ph: (408) 299-2323
Fax: (408) 298-8460
Website: www.sccgov.org

Flood Control and Waterways

Santa Clara Valley Water District (SCVWD)
5750 Almaden Expressway
San Jose, CA 95118-3686
Ph: (408) 265-2600
Fax: (408) 266-9751
Website: www.valleywater.org

State of California-Department of Fish and Game (Central Coast Region, Region 3)

7329 Silverado Trail
Napa, CA 94558
P.O. Box 47
Yountville, CA 94599
Ph: (707) 944-5500
F: (707) 944-5563
Website: www.dfg.ca.gov

California Department of Transportation District 4

111 Grand Ave.
Oakland, CA 94612
Ph: (510) 286-4444
Website: www.dot.ca.gov

U.S. Army Corps of Engineers

333 Market Street
San Francisco, CA
Ph: (415) 977-8618
Website: www.usace.army.mil

Utility Companies

Pacific Gas and Electric

Service and Planning
Ph: (408) 494-1700
Toll Free: (800) 743-5000

Water and Sewage

City of Gilroy
7351 Rosanna Street
Gilroy, CA 95020
Ph: (408) 846-0400
Fax: (408) 842-0429
Website: www.ci.gilroy.ca.us

Telephone

Verizon
7373 Monterey Street
Gilroy, CA 95020
Ph: (800) 483-4000 (RES)
Ph: (800) 483-5000 (COM)

Garbage Removal

South Valley Refuse Disposal
7110 Alexander Street
Gilroy, CA 95020
Ph: (408) 842-3358

Cable Television

Charter Communications
8100 Camino Arroyo
Gilroy, CA 95020
Ph: (408) 842-5653

