

Residential Bathroom Remodel Requirements

INTRODUCTION

Bathroom remodels generally require permits. The following information can be used as a guideline for the bathroom requirements. Bathroom remodels require compliance with the following:

- 2016 California Residential Code (CRC)
- 2016 California Plumbing Code (CPC)
- 2016 California Mechanical Code (CMC)
- 2016 California Electric Code (CEC)
- 2016 California Energy Code (CEC)
- 2016 California Green Building Standards Code (CalGreen)

A bathroom remodel includes the removal and replacement and/or relocation of vanity cabinets, toilets, sinks, tubs & showers, replacement/changes to the lighting or removal & replacement of the wallboard. The replacement of the towel bars, mirrors, paint, and floor coverings where no other work is included is considered a maintenance item and no permit is required for these items. The following details the minimum requirements of the bathroom electrical, mechanical and plumbing systems:

ELECTRICAL

- Provide a 20 AMP GFCI protected electrical outlet within 36" of the outside edge of each bathroom sink basin. Outlet shall be located on a wall or partition that is adjacent to the basin or installed on the side or face of the basin cabinet not more than 12" below the countertop. [CEC 210.52(D)]
- Receptacles shall be listed as tamper-resistant.
- A minimum of one (1) 20-amp circuit is required for bathrooms. Such circuits shall have no other outlets. This circuit may serve more than one bathroom. [CEC 210.52(D)]
- No pendant light fixtures in zone, 3 ft. away and 8 ft. above the bathtub or shower. [CEC 410.10(D)]
- Luminaires located within the actual outside dimensions of the tub, shower, and ceiling suspended paddle fans, up to 8 feet vertically from the top of the bathtub rim or shower threshold, shall be marked as suitable for damp locations, provided with a solid lens and be GFCI protected. [CEC 410.10(D)]

Bathroom lighting shall be high efficacy luminaires in accordance with Table 150.0-A and have at least one luminaire in each space controlled by a vacancy sensor. 150.0(K)2.

- Recessed luminaires installed in an insulated ceiling shall be IC rated (zero clearance) and AT rated (air tight) and shall be sealed and/or gasket between ceiling and housing. For occupancies with a horizontal (floor/ceiling assembly) rated separation, the recessed fixtures shall be protected to the rating of the separation (1 hour) or be listed for the required protection. This generally applies to residential condominium construction where units are above or below other units.
- Hydro-massage tubs (i.e. Jacuzzi tubs) shall have access to the motor, be supplied by a GFCI protected dedicated circuit, and listed by a recognized testing agency. All piping, fitting, metal cables or other metal surfaces, within 5 feet of the inside wall of the Hydro-massage tub shall be properly bonded. Hydro-massage tubs shall be bonded with a minimum #8 AWG bare copper wire and the bonding shall be accessible. [CEC 680.60]

All recessed downlight luminaires shall be in accordance with Reference Joint Appendix JA8 and be marked as meeting JA8.

MECHANICAL

- A bath exhaust fan w/back draft damper is required regardless of the presence of a window. Exhaust must vent to outdoors in an approved duct. Terminate the outlet a minimum of 3 ft from an opening or property line. [CMC 502.2.1] A minimum rate of 50 cfm is required. Fan shall meet ASHRA standard 62.2. A maximum of 3 zone rating is required.

PLUMBING

- Provide tempered glass at tub/shower doors and at windows less than 60" from tub/shower drain.
- Shower and tub/shower control valves shall be pressure balancing set at a maximum 120 degrees F. The water-filler valve in bathtub/whirlpools shall have a temperature limiting device set a maximum of 120 degrees F. The water heater thermostat cannot be used to meet these provisions. [CPC 408.3, 409.4]
- Fixtures shall meet the following maximum flow rates: [CPC 403.0 & 408.0]
 - o Water Closets = 1.28 gallons/flush — Shower Heads = 2.0 GPM — Sink Faucets = 1.2 GPM
- Minimum shower size is 1024 square inches (30" circle). [CPC 408.5] Shower without threshold shall be considered a wet location and shall comply with California Building, Residential, and Electrical Codes.

Permit # _____ Address: _____

2016 California Residential Code requirements

- Each bathroom containing a tub, a shower or a tub/shower combination shall have an exhaust fan. CRC R303.3.1.
- New bathroom exhaust fans shall be humidity controlled per CMC Chapter 4 and California Green Building Standards Code Chapter 4, Division 4.5.
- Wall covering shall be cement plaster, tile or approved equal to 72" above the floor at showers or tub with showers. Materials other than structural elements to be moisture resistant. (CRC R307.2.)
- Provide a temperature limiting device for the showers, tubs, shower/tub combinations and whirlpool bathtubs to a maximum of 120 degrees F. The thermostat of the water heater is not considered a control for meeting this provision. (CPC 414.5 and 418.0)
- Provide safety glazing or tempered glass in the following hazardous locations per CRC section 308:
 - Fixed and sliding panels of sliding door assemblies and panels in swinging doors.
 - Doors and enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers and in any portion of a building wall enclosing these compartments where the bottom exposed edge of the glazing is less than 60 inches above a standing surface and drain inlet.
 - Fixed or operable panels in the same plane of a door where the nearest exposed edge of the glazing is 24-inches of either vertical edge of the door in a closed position and where the bottom exposed edge of the glazing is less than 60 inches above the walking surface.
 - Where glazing is perpendicular to the plane of the door, in a closed position, within 24' of the hinge side, on the inside.
- Individual fixed or operable panels, other than those locations described above, that meet all of the following conditions:
 - Exposed area of an individual pane is greater than 9 square feet, and:
 - Exposed bottom edge is less than 18 inches above the floor, and:
 - Exposed top edge is greater than 36 inches above the floor, and:
 - One or more walking surfaces are within 36 inches horizontally of the plane of the glazing.
- Glass railings, regardless of height, above a walking surface (including structural baluster panels and nonstructural in-fill panels). All glass guard rails shall have a top rail continuous over three panels minimum.
- Walls and fences used as the barrier for indoor and outdoor swimming pools and spas when all of the following conditions are present:
 - The bottom edge of the glazing is less than 60 inches above the pool side of the glazing, and:
 - The glazing is within 5 feet of a swimming pool or spa water's edge.
- Walls enclosing stairway landings or within 5 feet of the bottom and top of stairways where the bottom edge of the glass is less than 36 inches above a walking surface. Exception: The side of the stair has a guardrail or handrail including balusters or in-fill panels, complying with the provisions of Section 5 1013 and 1607.7 and the pane of glass is greater than 18 inches from the railing.
- All bedrooms, basements or rooms used for sleeping shall have emergency rescue windows or doors. (CRC R310.1):
 - Minimum net clear opening of 5.7 square feet. First floor may be 5.0 Sq. Ft. minimum
 - Minimum net clear opening width of 20 inches.
 - Minimum net clear height of 24 inches.
 - The bottom of the clear opening shall not be more than 44 inches above the floor.
- Verify installation and location(s) of hard wired smoke detectors as follows: (CRC R314.)
 - Installation of smoke detectors shall comply with UL 217 and NFPA 72.
 - On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of the bedrooms, and inside each room used for sleeping purposes.
 - Smoke detectors shall be inter-connected per CRC R314.5.
 - Smoke detectors in new construction shall be "hard wired" and shall be equipped with battery back up and be inter-connected in all new construction. (CRC R314.4 & R314.5.)

Residential Bathroom Remodel Requirements

- Site built shower stalls shall comply with CPC 408.7.
- Stall shower door to provide a min. of 22" wide unobstructed opening. [CPC 408.5].
- Toilet and/or Bidet require a total minimum 30" clear space, 15" from the center of the fixture to the wall, and a minimum of 24" clear space in front of the fixture. [CPC 402.5]
- When additional water closets (toilets) are installed, a maximum of 3 water closets are allowed on a 3" waste line. [Table 703.2, Note 4]
- The hot water valve shall be installed on the left side. [CPC 417.5]
- A minimum 12" x 12" access panel is required when a slip joint p-trap waste & overflow is provided.
- Where plumbing fixtures (water closets, tubs, etc.) comes into contact with the wall or floor, the joint shall be caulked and sealed to be watertight. [CPC 402.2]

WHIRLPOOL/SPA TUBS

- Whirlpool (spa) bathtubs shall have a readily accessible access panel. [CPC 409.6]
- The circulation pump shall be located above the crown weir of the trap. [CPC 409.6]
- The pump and the circulation piping shall be self-draining to minimize water retention. [CPC 409.6]
- Suction fittings on whirlpool bathtubs shall comply with the listed standards. [CPC 409.6]
- The maximum hot water temperature discharging from a bidet is limited to 110 degrees by a device that conforms to ASSE 1070, Standard for Water Temperature Limiting Devices, or CSA B125.3, Standard for Plumbing Fittings. The water heater thermostat shall not be considered a control for meeting this provision. [CPC 410.3]
- Flexible PVC hoses and tubing for whirlpool bathtubs must comply with IAPMOZ1033.[409.6.1].

BIDETS

- The water supply shall be protected with air gap or vacuum breaker. [CPC 440.2]
- The maximum hot water temperature discharging from a bidet is limited to 110 degrees by a device that conforms to ASSE 1070, Standard for Water Temperature Limiting Devices, or CSA B125.3, Standard for Plumbing Fittings. The water heater thermostat shall not be considered a control for meeting this provision.

PLUMBING FIXTURE REPLACEMENT

Effective January 1, 2014, Senate Bill (SB) 407 and California Civil Code Section 1101.1-1101.8 requires all noncompliant plumbing fixtures to be replaced with water-conserving plumbing fixtures when building is undergoing alterations or improvements if the residential property was built and available for use on or before January 1, 1994. Please refer to "Plumbing Fixture Replacement (SB407) Requirements and Policy" to determine if the project requires compliance.

SMOKE ALARMS & CARBON MONOXIDE ALARMS

Bathroom remodels (projects over \$1,000) will require the smoke and carbon monoxide alarms for the dwelling to meet the current code prior to the final inspection as follows: [CRC R314 & R315]

- o Smoke alarms are required in all sleeping rooms, outside each sleeping area in the immediate vicinity of the bedrooms, on each floor level including basements and habitable attics, but not including crawl spaces and uninhabitable attics.
- o Carbon Monoxide alarms are required in dwelling units and sleeping units when fuel-burning appliances are installed and/or dwelling units have attached garages. Either condition requires alarms.
- o When more than one alarm of either type is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that activation of one alarm will activate all the other alarms.
- o In existing conditions, alarms may be battery operated when the repairs or alterations do not result in the removal of the wall and ceiling finishes or there is no access by means of an attic, basement or crawlspace.
- o Multipurpose alarms that combine both a smoke alarm and carbon monoxide alarm shall comply with all applicable standards of both CRC Sections R314 and R315 and be listed by the Office of the State Fire Marshal.
- o Smoke alarms shall be listed in accordance with UL217. Combination smoke and carbon monoxide alarms shall be listed in accordance with UL217and UL2034.
- o Smoke alarm shall not be installed less than 3 feet horizontally from the door or opening of a bathroom that contains a bathtub or shower. [R314.3]

Title 24 Energy

- Provide a minimum 100 cfm kitchen hood exhaust to the exterior with metal duct work. A ceiling or wall exhaust may be used that provides 5 air changes per hour.
- For kitchen, bath and other exhaust fans, size the ducts per ASHRAE 62.2, Table 7.1, or Table 4-9 of the 2016 Residential Compliance Manual.
- Intermittently operated (kitchen, bath, etc.) local exhaust fans shall be rated at 3.0 sones or less.
- Provide R-6 duct insulation for ductwork in unconditioned spaces.
- Connections of metal ducts and inner core flex ducts shall be mechanical.
- For instantaneous water heaters greater than 6.8 Kbtu/s, or 2 KW, provide isolation valves.
- Provide gas capacity of at least 200,000 Btu/hr. for the tankless water heaters. CEC 150.0 (n) 1. D.
- In residential occupancies, all lighting fixtures should be high efficacy fixtures. CEC 150 (k) 1. A.
- High efficacy fixtures should be pin type or GU -24 fixtures, unless an exception is met.
- In other than recessed ceiling lights, LED luminaires, with a standard screw base may be used where:
 - The luminaire is identified as being JA8-2016 or JA8-2016-E compliant.
 - The fixtures are to be controlled by a dimmer switches or vacancy sensors.
- In baths, provide at least one high efficacy fixture, controlled by a vacancy sensor. CEC 150.0 (k) 5.
- Lighting in garages, laundry rooms, utility rooms and closets over 70 sq. ft., shall be high efficacy and controlled by vacancy sensors. CEC 150.0 (k) 6.
- Note on plans: "The builder must provide the owner with a luminaire schedule that includes a list of lamps installed in the luminaires, so the owner knows what light sources they are entitled to, when they take possession of the home."
- For outdoor lighting attached to the building(s), provide high efficacy fixtures on motion detectors, and controlled either by photo control, astronomical controlled time clocks, or an energy management system.

California Green Building Standards Code

- All new plumbing fixtures need to be low water use as follows:
 - Toilets: 1.28 gpf
 - Lavatories: 1.5 gpm
 - Kitchen Sinks: 1.8 gpm
 - Showers: 2.0 gpm

Residential Kitchen Remodel Requirements

INTRODUCTION

Kitchen additions, alterations or renovations require Building permits. The following information can be used as a guideline for the minimum requirements for a kitchen renovation project. Additions, alterations or renovations require compliance with the following:

- 2016 California Residential Code (CRC)
- 2016 California Plumbing Code (CPC)
- 2016 California Mechanical Code (CMC)
- 2016 California Electric Code (CEC)
- 2016 California Green Building Standards Code (CalGreen)

A kitchen renovation includes, but is not limited to, the removal and/or relocation of base cabinets, countertops, sinks, dishwasher, garbage disposal, installed appliances, changes to the lighting, removal and replacement of any wallboard, modifications to the structural elements of the dwelling and changes to the electrical, mechanical and plumbing systems. Removal and replacement of the base cabinets and countertop will require compliance with the electrical outlet location requirements of the code. The following details the minimum requirements for the kitchen electrical, mechanical, and plumbing systems:

ELECTRICAL

- All kitchen countertop outlets shall be GFCI protected. [CEC 210.8(A)(6)]
- Receptacles shall be listed as tamper resistant.
- 12" or wider countertops require an outlet. [CEC 210.52(C)(1)]
- Outlets are required within 24" of any location along the countertop. [CEC 210.52(C)(1)]
- Kitchen outlets positioned a maximum 20" above countertop. [CEC 210.52(C)(5)]
- Appliance garage outlets are not counted as a required countertop outlet. [CEC 210.52(C)(5)]
- Appliances and sinks break up the countertop run, requirement each side to comply individually. [CEC 210.52(C)(4)]
- The electrical outlet requirements include islands, peninsulas, kitchen desks, wet bars, and serving bars. A large window across the back of a sink or lack of a backsplash does not exempt the countertop from the outlet requirements. These outlets may be in a drop front cabinet face, under cabinet plug strip, pop up or tomtstone-type receptacle. [CEC 210.52(C)(2),(3),(4)]
- Two small appliance outlet circuits, 20s amp each, are required for kitchens. Circuits shall be balanced and have no other outlets. [CEC 210.52(B)(1),(2)]
- Individual dedicated circuits are required for all major appliances. The rating of an individual branch circuit shall not be less than the marked rating of the appliance or the marked rating of an appliance having combined loads as provided in 422.62, [210.11 (C) & 422.10 (A)].
- Garbage disposal cord and plug connected 18" to 36" long. [CEC 422.16(B)(1)]
- Dishwasher cord 36" to 48" long. Romex installed with a plug is not an approved flexible cord. [CEC 422.16(B)(2)]
- Minimum 15 amp circuit for the dishwasher and a 15 amp circuit for the disposal [CEC 210.23(A)]
- If using a split outlet (two circuits on the same yoke) for dishwasher/disposal, provide a listed handle tie at the two circuit breakers in the panel. [CEC 210.7]
- Residential Kitchen Lighting is required to meet the energy efficiency standards. [CEC 150(K)(3)]
- IC (direct contact) and AT (air tight) rated cans are required for recessed lighting if installed in an insulated ceiling. For occupancies with a horizontal (floor/ceiling assembly) rated separation, the recessed fixtures shall be protected to the rating of the separation (1 hour) or be listed for the required protection. This generally applies to residential condominium construction where units are above or below other units. [CEC 150(K)(3)]
- Fluorescent recessed lighting, when used to comply with the lighting requirements, must be of a pin base type design. Incandescent screw type base is not approved.
- Incandescent and fluorescent lighting must be on separate switches. [CEC 150(K)(2)]
- AFCI Protection is required to kitchen by any of the means described in 210.12(A)(1) – through (6). [CEC 210.12 (A);
- GFI protection for Laundry Area. [CEC 210.8 (A)(10)]
- GFI protection for Dishwasher. [CEC 210.8(D)].

24. In residences constructed before 1994, plumbing fixtures must be low flow fixtures as follows:

- Toilets: 1.6 gpf
- Lavatories: 2.2 gpm
- Kitchen Sinks: 2.2 gpm
- Showers: 2.5 gpm

Or the fixtures must be updated to the current standards.

- When a shower is provided with multiple shower heads, the sum of flow to all the heads shall not exceed the 20% reduced limit, or the shower shall be designed so that only one head is on at a time. CGBSC 4.303.2.
- A minimum of 65% of the construction waste shall be recycled. CGBSC 4.408
- The builder is to provide an operation manual for the owner at the time of final inspection. CGBSC 4.410.1.
- Note on the plans "During construction all ducts and other air distribution equipment shall be covered with tape, plastic, sheet metal, or other methods to reduce the amount of dust or debris which may collect in the system."
- VOC's are to be documented for: Adhesives, Paints and Coatings, Carpet, Composition Wood Products. Documentation to be provided by Product Certifications & Specifications, Chain of Custody Certifications, or other means acceptable to the enforcing agency. CGBSC 4.504.2.
- Moisture content of wood shall not exceed 19% before it is enclosed in construction. The moisture content needs to be certified by one of 3 methods specified. Building materials with visible signs of water damage should not be used in construction. Insulation that appears wet, or has a high moisture content should be removed, or allowed to dry prior to enclosure.

PLUMBING/MECHANICAL/ELECTRICAL PLAN

- The center of toilets shall be no closer than 15" to a side wall or other obstruction. Provide a 24" deep by 30" wide clear space in front of the toilets. CPC 407.5.
- All new plumbing fixtures need to be low water use as follows:
 - Toilets: 1.28 gpf
 - Lavatories: 1.2 gpm (post 7/1/16)
 - Kitchen Sinks: 1.8 gpm
 - Showers: 2.0 gpm
- All new domestic hot water piping is to be insulated per (CPC 609.11)
- Environmental air duct exhaust shall terminate not less than 3 feet from openings into the building. (CMC 502.2.1)
- Furnace and water heater installations shall comply with CMC Chapter 3 and CPC Chapter 507. Combustion air shall comply with UMC Chapter 7.
- Show how heat producing appliances (water heater/dryer/furnace) in garage will be protected from automobile damage (wheel blocks are not sufficient). Elements of appliances which create a glow, spark, or flame shall be located a minimum of 18" above garage floor. (CPC 608.14)
- Provide GFCI protection to all 120 volt, 15 and 20 amp receptacles installed outdoors. In bathrooms & bathing areas, in basement, at kitchen counter top surfaces, within 6 feet of a bar or utility sinks, laundry areas, and in garages. Exception: Basement outlets serving fire or burglar alarms. (CEC 210.8(A))
- Provide GFCI protection for 15 & 20 amp outlets serving kitchen appliances within 6' 0" of the outer edge of a sink, including under-counter outlets. (CEC 210.8(A)(7))
- Provide GFCI protection for circuits serving dishwashers. CEC 210.8 (D).
- All electrical outlets specified in 210.52 shall be tamper resistant. CEC 406.12 (A)
- Circuits serving 15 and 20 amp outlets in all rooms and closets, including kitchens, laundry areas and baths, must be arc-fault circuit-interrupter protected per CEC 210-12.
- Where outlets are required to have both AFCI and GFCI protection, dual protection is required.
- One switched light fixture or switch controlled lighting outlet shall be installed in every habitable room, bathroom, stairway, hall, attached garage, and at outdoor entrances. (CEC 210-70(a))

Residential Kitchen Remodel Requirements

All recessed downlight luminaries shall be in accordance with Reference Joint Appendix JA8 and be marked as meeting JA8.

MECHANICAL

- A ducted residential exhaust hood is required. A metal, smooth interior surface duct required on vent hood or down draft exhaust vent. Aluminum flex duct not approved. Provide back draft damper [504.3]
- Minimum 30" vertical clearance to combustibles from cook top surface.
- Kitchen local exhaust ventilation requires a minimum rate of 100cfm meeting the requirements of ASHRA 62.2. This includes a maximum sound rating of 3 sone @ 100cfm.

PLUMBING

- A gas test is required on piping modifications (10 psi for 15 minutes). A maximum 15 psi gauge is required for the gas test. A lower gas pressure test may be performed when using a recording test gauge per Section 1213.3 of the CPC.
- Gas lines that run under a slab shall run through an approved, vented, gas tight conduit. Gas line shall be encased in an approved conduit designed to withstand the imposed loads and installed in accordance with Sect. 1210.1.6.1 or 1210.1.6.2. Or encasement system that is listed for installation beneath building.
- An accessible shutoff valve shall be installed outside each appliance and ahead of the union connected thereto and in addition to any valve on the appliance [CPC 1210.1.1]
- Provide maximum 6-ft long listed gas flexible connector and shut off to freestanding range.
- A listed air gap is required for the dishwasher drain. [CPC 807.3]
- The maximum flow rate standards for the sink faucets are 1.8 GPM at 60psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 GPM at 60psi, and must default to a maximum flow rate of 1.8 GPM. [CPC 407.1.1]

PLUMBING FIXTURE REPLACEMENT

Effective January 1, 2014, Senate Bill (SB) 407 and California Civil Code Section 1101.1-1101.8 requires all noncompliant plumbing fixtures to be replaced with water-conserving plumbing fixtures when building is undergoing alterations or improvements if the residential property was built and available for use on or before January 1, 1994. Please refer to "Plumbing Fixture Replacement (SB407) Requirements and Policy" to determine if the project requires compliance.

SMOKE ALARMS & CARBON MONOXIDE ALARMS

Kitchen renovations (projects over \$1,000) will require the smoke and carbon monoxide alarms for the dwelling to meet the current code prior to the final inspection as follows: [CRC R314 & R315]

- o Smoke alarms are required in all sleeping rooms, outside each sleeping area in the immediate vicinity of the bedrooms, on each floor level including basements and habitable attics, but not including crawl spaces and uninhabitable attics.
- o Carbon Monoxide alarms are required in dwelling units and sleeping units when fuel-burning appliances are installed and/or dwelling units have attached garages. Either condition requires alarms.
- o When more than one alarm of either type is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that activation of one alarm will activate all the other alarms.
- o In existing conditions, alarms may be battery operated when the repairs or alterations do not result in the removal of the wall and ceiling finishes or there is no access by means of an attic, basement or crawlspace.
- o Multipurpose alarms that combine both a smoke alarm and carbon monoxide alarm shall comply with all applicable standards of both CRC Sections R314 and R315 and be listed by the Office of the State Fire Marshal.
- o Smoke alarms shall be listed in accordance with UL217. Combination smoke and carbon monoxide alarms shall be listed in accordance with UL217 and UL2034.
- o Smoke alarms or smoke detectors shall be installed a minimum of 20 feet horizontal distance from a permanently install cooking appliance. [R314.3.1]

44. Provide at least one outside weatherproof GFCI 120-volt receptacle at front and back of dwelling unit. (CEC 210-52(e))/(CEC 406.8(A)8)

45. Provide at least one receptacle in garage or basement in addition to any receptacle provided for stationary appliances. (CEC 210-52(g))/(CEC 406.8(A) 8)

46. Walls 2' wide or greater shall have an outlet. Outlets shall be spaced no more than 12' apart, and a maximum of 6' from end of walls or opening. (CEC 210-52(e))

47. In the kitchen and dining area, a receptacle shall be provided for each counter space wider than 12" so that no point is more than 24" from an outlet. (4' 0" max spacing between outlets.) (CEC 210-52(c))

48. Surface mounted fully enclosed lighting fixtures in clothes closets must be 12" from storage area(s). Flush mounted fully enclosed and fluorescent lights must be 6" away. (CEC 410.8)

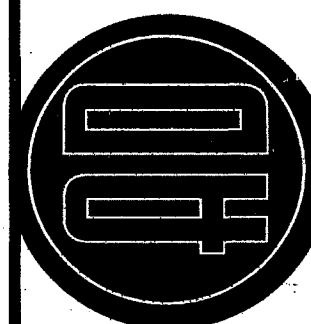
49. At bathrooms, provide at least on GFCI outlet within 3 feet of each lavatory in the baths. CEC 210-52 (d).

50. Bathroom outlets shall be on a 20 amp circuit, with no other outlets allowed. CEC 210-11 (c) (3).

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE DESIGNER OF ANY DIMENSIONAL ERRORS, OMISSIONS OR DISCREPANCIES BEFORE BEGINNING OR FABRICATING ANY WORK.

REVISIONS	BY

AUDELO DESIGN
 COMMERCIAL | RESIDENTIAL | DESIGN | PLANNING
 4612 Allende Ave | OceanSide, CA 92057 | 760.672.6222 | pcaudelo@att.net
 AUDELODESIGN.COM

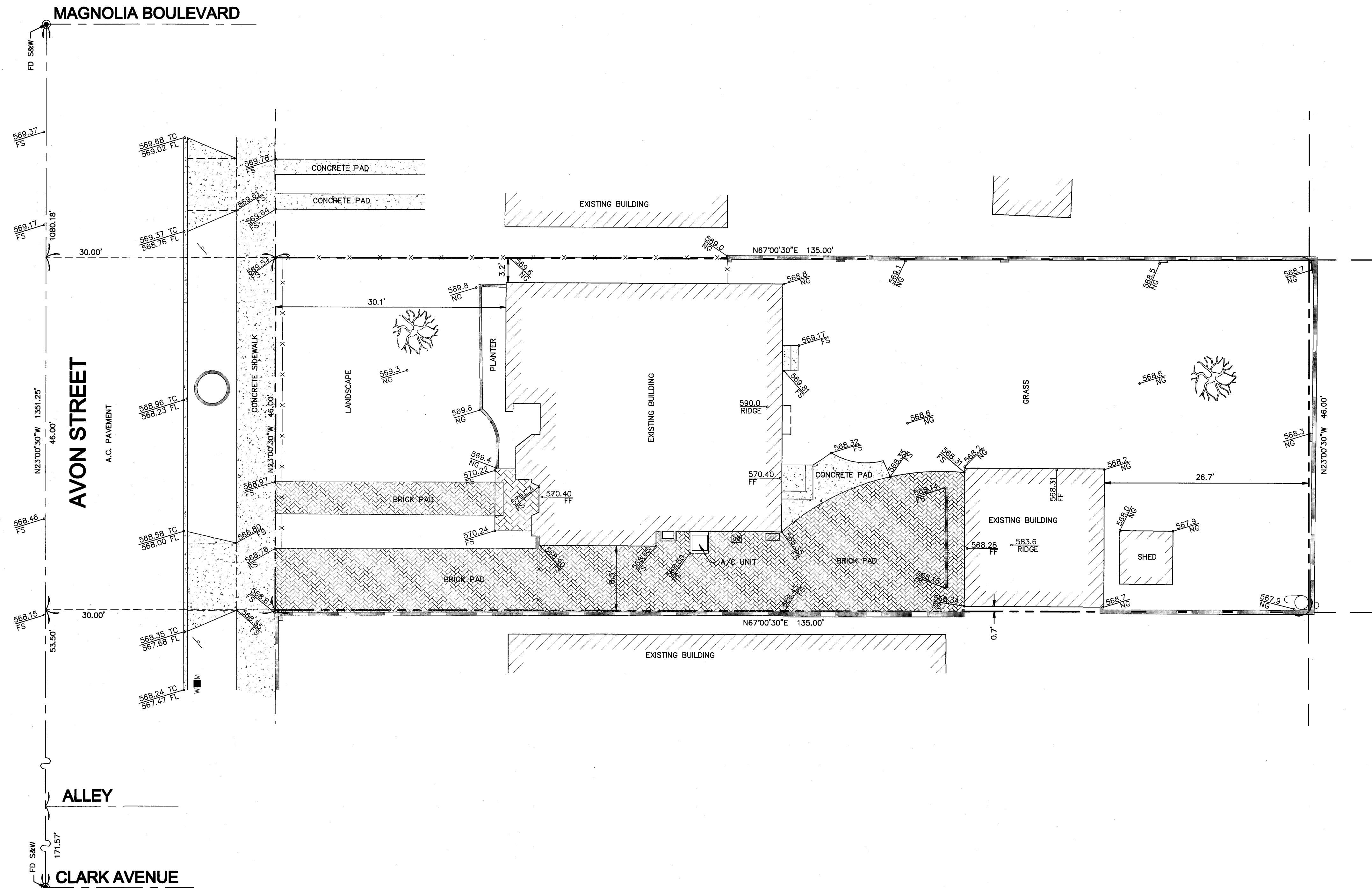


THE BECKET / KULA RESIDENCE
 816 N. AVON STREET
 BURBANK, CALIFORNIA 91505

DATE
SCALE
DRAWN
JOB
SHEET
A1.1
OF

LEGEND

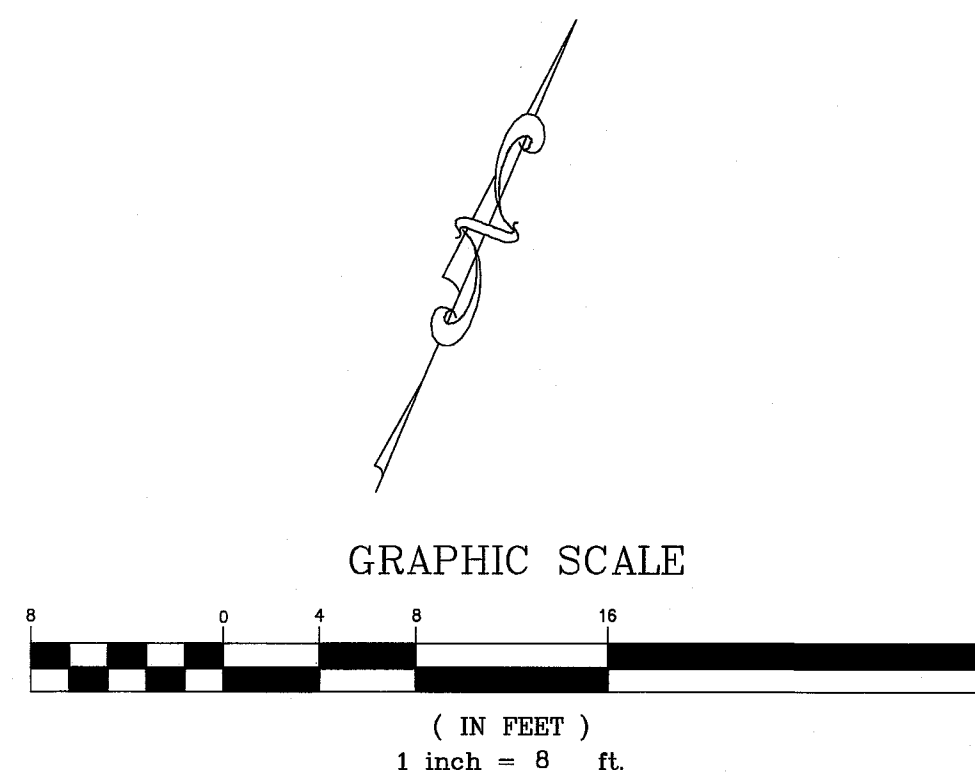
- AREA DRAIN
- CENTERLINE
- - - FENCE LINE
- ⊠ ELECTRIC VAULT/PULL BOX
- ▨ EXISTING BUILDING
- FOUND MONUMENT AS NOTED
- ⊠ GAS METER/VALVE
- - - LOT LINE
- ⊕ POWER OR TELEPHONE POLE
- - - PROPERTY LINE
- ⊙ SANITARY SEWER MANHOLE
- ⊕ SIGN
- ⊕ TREE
- WALL
- ⊕ W/M WATER METER
- ⊕ W/V WATER VALVE
- FS FINISHED SURFACE
- FF FINISHED FLOOR
- FL FLOWLINE
- NG DIRT
- TC TOP OF CURB



BOUNDARY NOTE:
THIS IS NOT A BOUNDARY SURVEY. THE BOUNDARY LINES AND ANNOTATIONS SHOWN ON THIS SURVEY ARE BASED ON THE RECORDED PLATS AND MAPS AND DO NOT REPRESENT THE ACTUAL LOCATION OF BOUNDARY LINES.

LEGAL DESCRIPTION:
LOT 151 OF TRACT NO. 7897, RECORDED IN BOOK 84 OF MAPS, PAGES 89 AND 90 OF THE LOS ANGELES COUNTY OFFICIAL RECORDS. LOCATED IN THE CITY OF BURBANK, STATE OF CALIFORNIA.

BENCHMARK:
CITY OF BURBANK BENCHMARK NO. 1404-1,
2-1/2" BRASS CAP STMP CITY OF BURBANK BM 1404-1, AT 3400 CLARK AVENUE, SOUTHWEST QUADRANT OF THE CENTERLINE OF THE INTERSECTION OF CLARK AVENUE AND LIMA STREET, ABOUT 22 FEET SOUTH OF THE CENTERLINE OF CLARK AVENUE AND ABOUT 86 FEET WEST OF THE CENTERLINE OF LIMA STREET, SET IN THE TOP SOUTHWEST CORNER A 7X3.5 FOOT CATCH BASIN, ABOUT 19 FEET WESTERLY OF THE SOUTHERLY BCR PF CLARK AVENUE AND LIMA STREET.
ELEVATION= 563.867



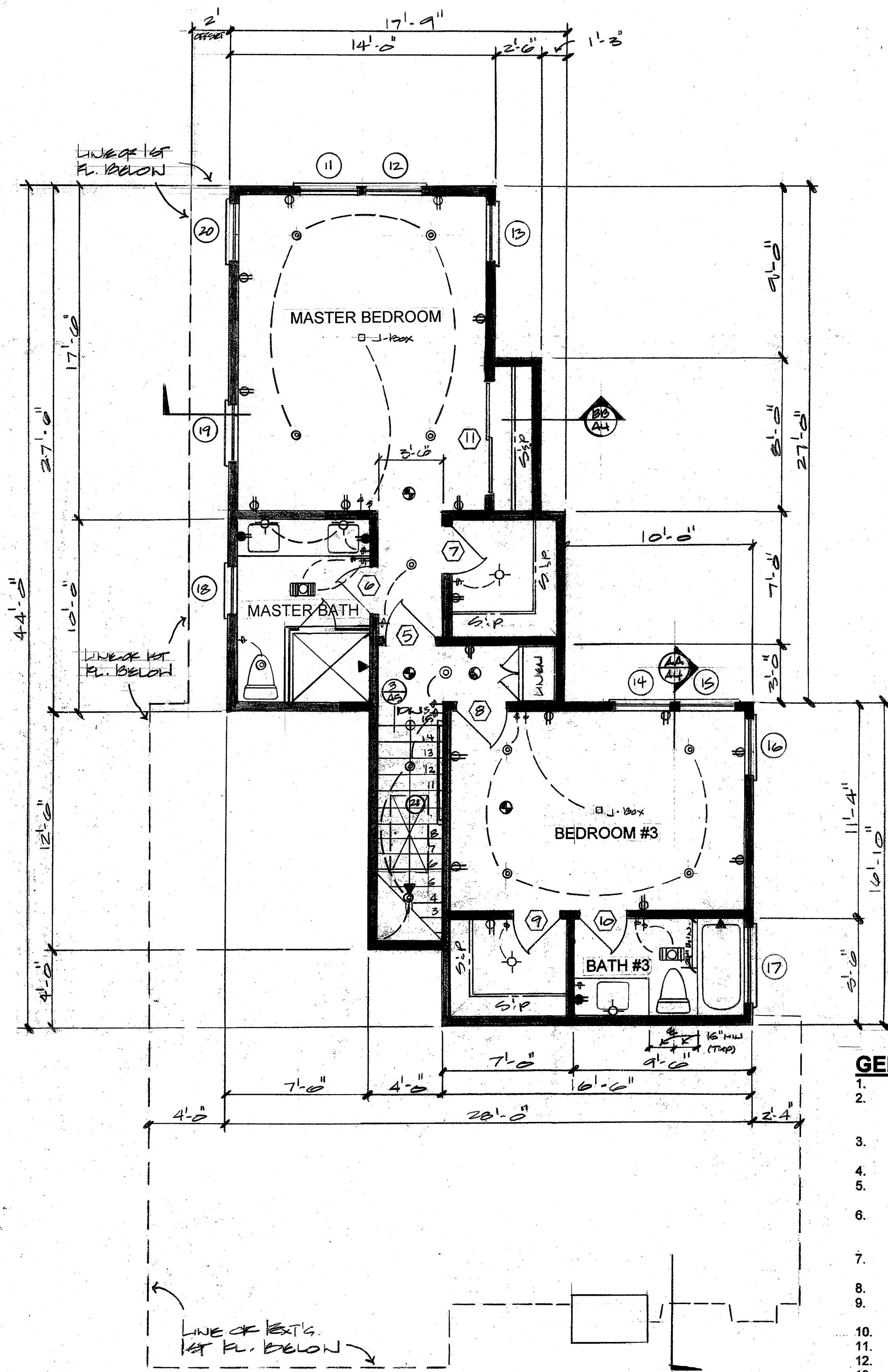
APPROVED BY:	REVISIONS	DATE

H.J. BURKE, INC.	
7848 WEST SAHARA AVENUE, LAS VEGAS, NEVADA 89117	
T: (310) 633-1213, (702) 4228753, EMAIL: info@hjburke.com	
DRAWN BY: JOHN	DATE OF SURVEY: 05-26-2020
CHECKED BY: HICB	DWG. NAME: 816 AVON STREET

TOPOGRAPHIC SURVEY	816 AVON STREET
	BURBANK, CALIFORNIA

FOR REVIEW AND COMMENTS ONLY	DATE
HOOSHMAND JAHANPOUR-BURKE, LS 8230	

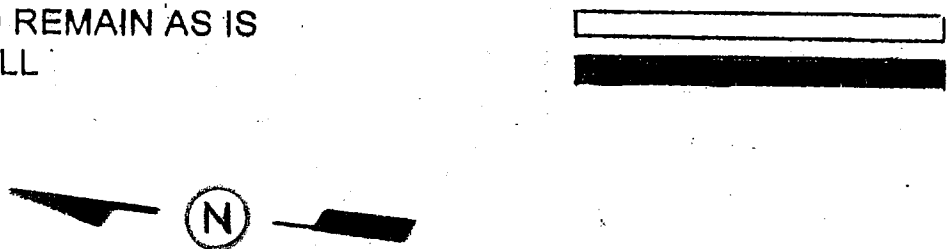
SHEET:	A1.2
--------	------



PROPOSED SECOND FLOOR PLAN
1/4"=1'-0"

WALL LEGEND

DENOTES WALL TO REMAIN AS IS
DENOTES NEW WALL

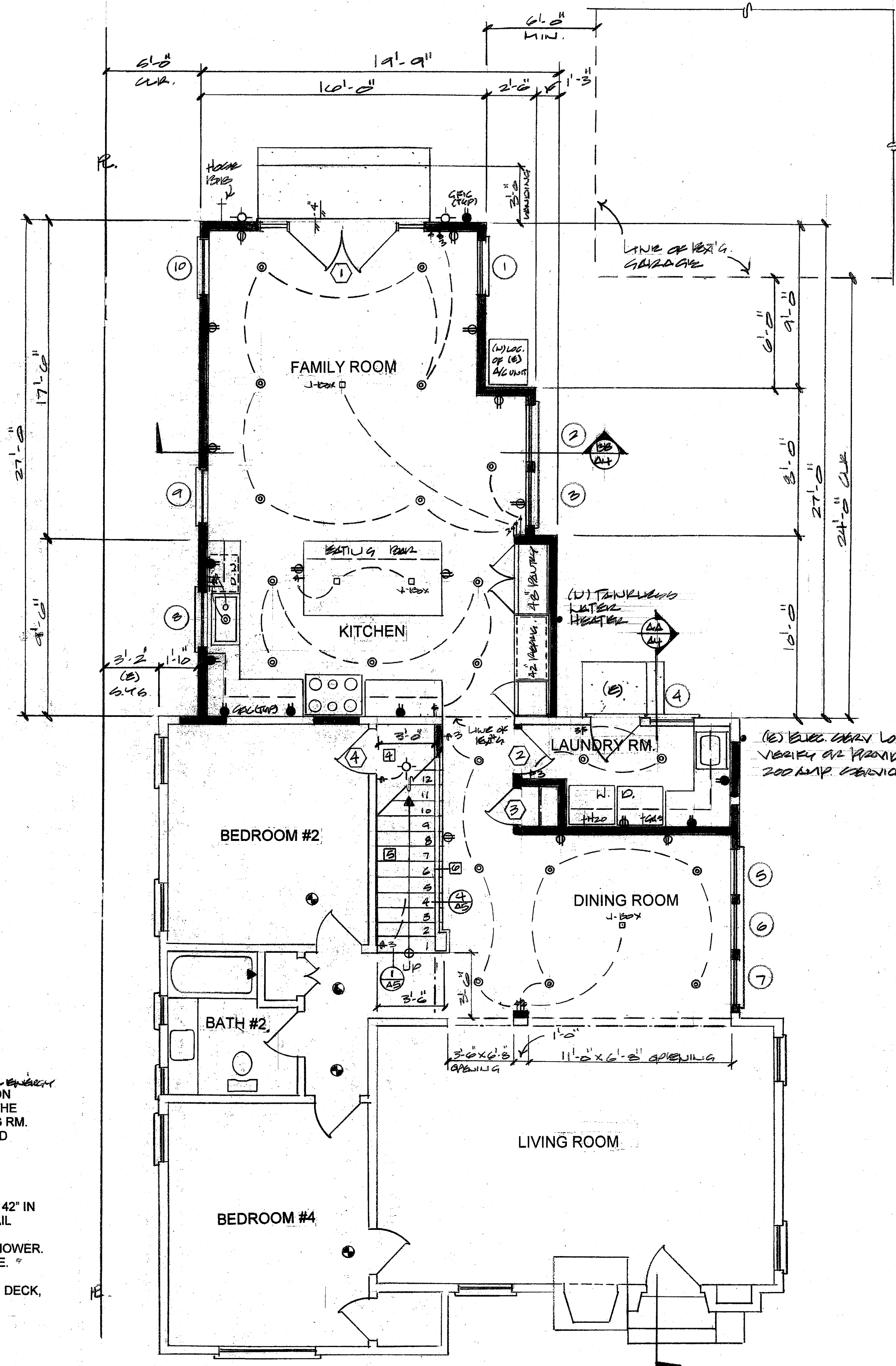


ELECTRICAL SYMBOL LEGEND

- CARBON MONOXIDE DETECTOR
- ⊕ DUPLEX OUTLET
- ⊕ 4-PRX OUTLET
- ⊕ GFI OUTLET
- ⊕ 220-250 V OUTLET
- ⊕ 1/2 SWITCHED OUTLET
- ⊕ FLOOR OUTLET
- ⊕ TELEPHONE OUTLET
- ⊕ JUNCTION BOX
- ⊕ SWITCH
- + THREE WAY SWITCH
- + 3 SWITCH W/ DIMMER
- ⊕ CEILING MOUNTED LIGHT
- ⊕ WALL MOUNTED LIGHT
- ⊕ RECESSED LIGHT 4" LED
- ⊕ RECESSED WALL WASHERS
- ⊕ EXH. FAN / LIGHT / HEATER
- ⊕ LIGHT / EXH. FAN
- ⊕ WATER PROOF LIGHT / EXH. FAN
- ⊕ TRACK LIGHTING OR UNDER CABINET
- ⊕ APPROVED CANOPY DETECTOR
- ⊕ FLOOD LIGHT
- ⊕ HOSE BIB
- ⊕ TV/VIDEO OUTLET
- ⊕ FIRE/COAS
- ⊕ WIRE STUB OUT FOR LOCK WALKER

GENERAL BUILDING SPECIFICATIONS:

1. THIS PROJECT SHALL COMPLY W/ THE 2010 CBC, CBC, CEC, CMC, CPC & CONVENTION
2. IN EACH DWELLING UNIT & GUEST RM., PROVIDE A SMOKE DETECTOR MOUNTED ON CEILING OR WALL OF EACH SLEEPING RM. AT A POINT CENTRALLY LOCATED ON THE WALLS OR CEILING OF THE HALLWAY OR ROOM GIVING ACCESS TO THE SLEEPING RM.
3. PROVIDE TYPE "X" DRYWALL IN GARAGE WALLS & CEILINGS WHERE THEY LOCATED SHARING COMMON WALLS & CEILING TO LIVING AREA'S.
4. PROVIDE TYPE "X" DRYWALL IN USEABLE SPACE UNDER STAIRWAY.
5. STAIRCASE TO HAVE MAXIMUM RISE OF 7 1/2". MINIMUM TREAD OF 10" (SEE DETAIL DENOTED FOR FURTHER SPECIFICATIONS).
6. STAIRWAY RAILING, 2ND FL. SAFETY RAILING & HAND RAILING TO BE A MINIMUM OF 42" IN HEIGHT & BE CAPABLE OF WITHSTANDING 20 LBS. OF LATERAL FORCE (SEE DETAIL DENOTED FOR FURTHER SPECIFICATIONS).
7. PROVIDE 70" HIGH NON ABSORBENT SURFACE ON WALLS FLOOR ADJACENT TO SHOWER. PROVIDE APPROVED SHATTER-RESISTANT MATERIALS FOR SHOWER ENCLOSURE.
8. PROVIDE 1.28 LOW CONSUMPTION WATER CLOSETS.
9. NEW WHIRLPOOL BATHTUB TO BE PROVIDED WITH NON ABSORBENT SURFACE ON DECK, SPLASH & APRON.
10. PROVIDE 12" MINIMUM PLUMBING ACCESS PANEL.
11. EXHAUST FAN TO BE CAPABLE OF 6 COMPLETE AIR CHANGES PER HOUR.
12. FIRST LIGHT TO BE TURNED ON IN EITHER NEW BATH & KITCHEN TO BE LED.
13. PROVIDE 22" x 34" MINIMUM ATTIC ACCESS PANEL.

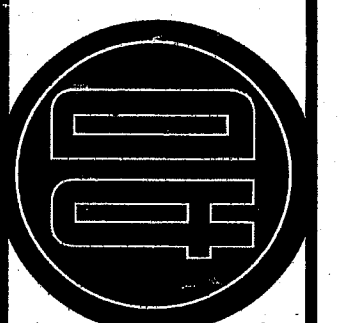


PROPOSED FIRST FLOOR PLAN
1/4"=1'-0"

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE DESIGNER OF ANY DIMENSIONAL ERRORS, OMISSIONS OR DISCREPANCIES BEFORE BEGINNING OR FABRICATING ANY WORK.

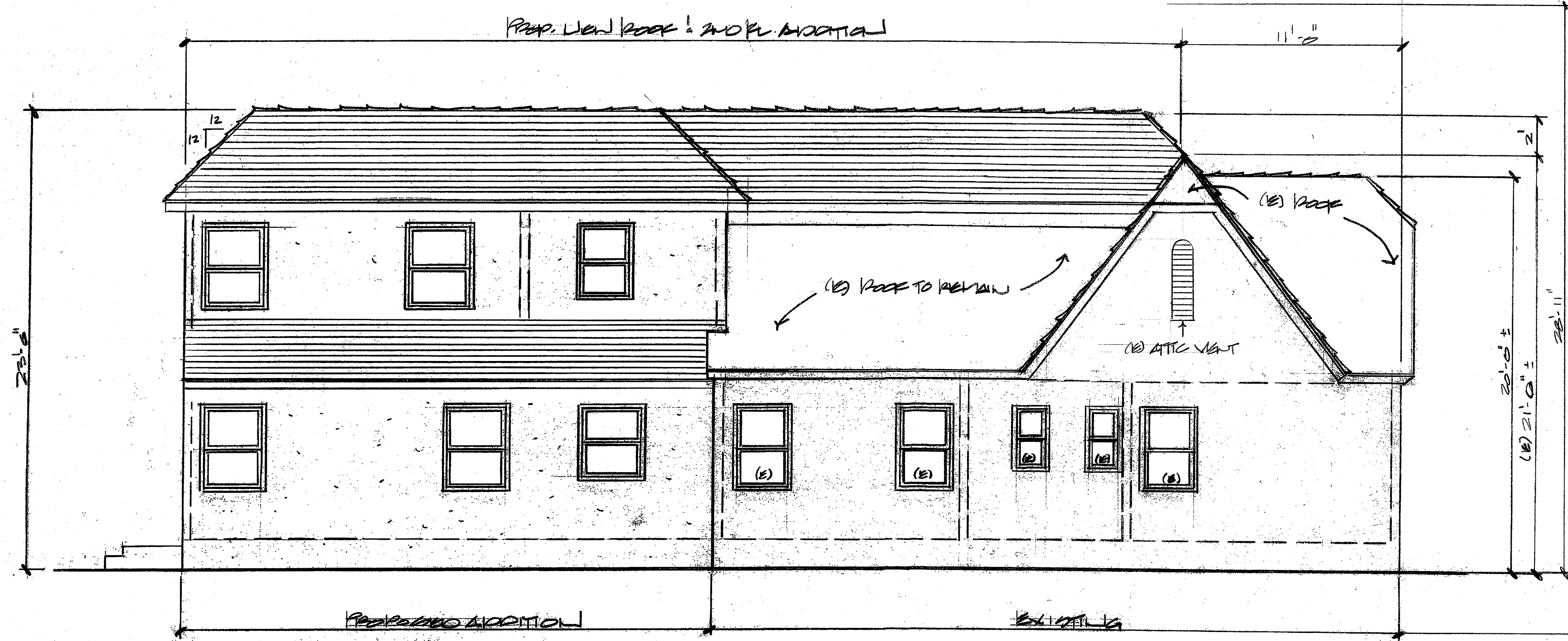
REVISIONS	BY

AUDELO DESIGN
COMMERCIAL | RESIDENTIAL | DESIGN | PLANNING
4612 Allende Ave | Oceanside, CA 92057 | 760.672.5222 | pcaudelo@att.net
AUDELODESIGN.COM

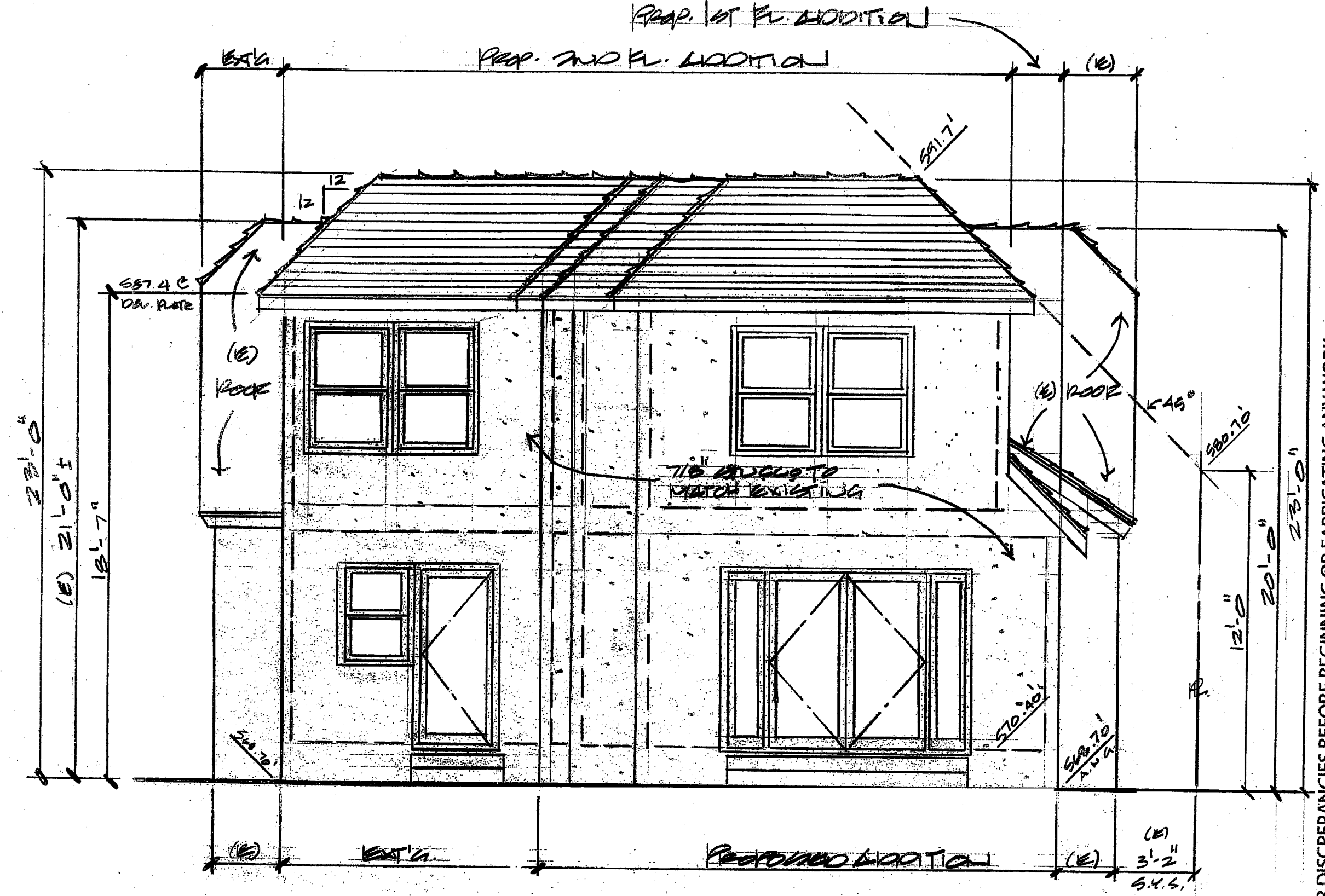


THE BECKETT / KULA RESIDENCE
816 N. AVON STREET
BURBANK, CALIFORNIA 91505

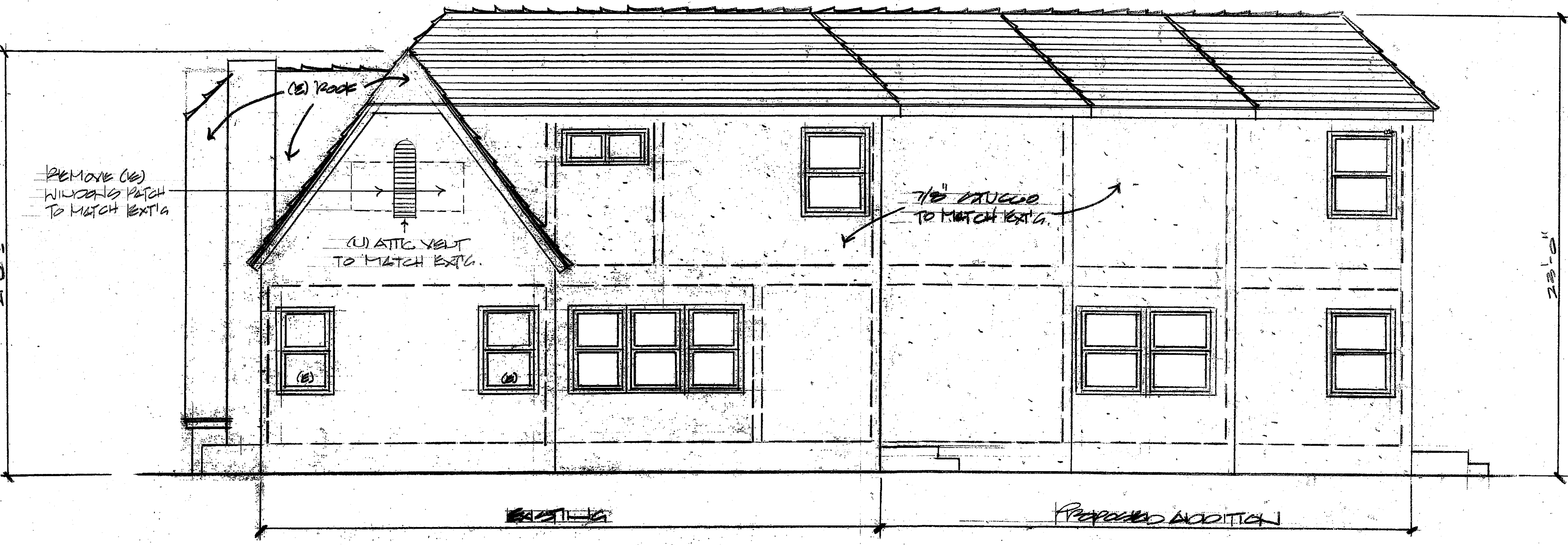
DATE	
SCALE	
DRAWN	
JOB	
SHEET	
OF	A2



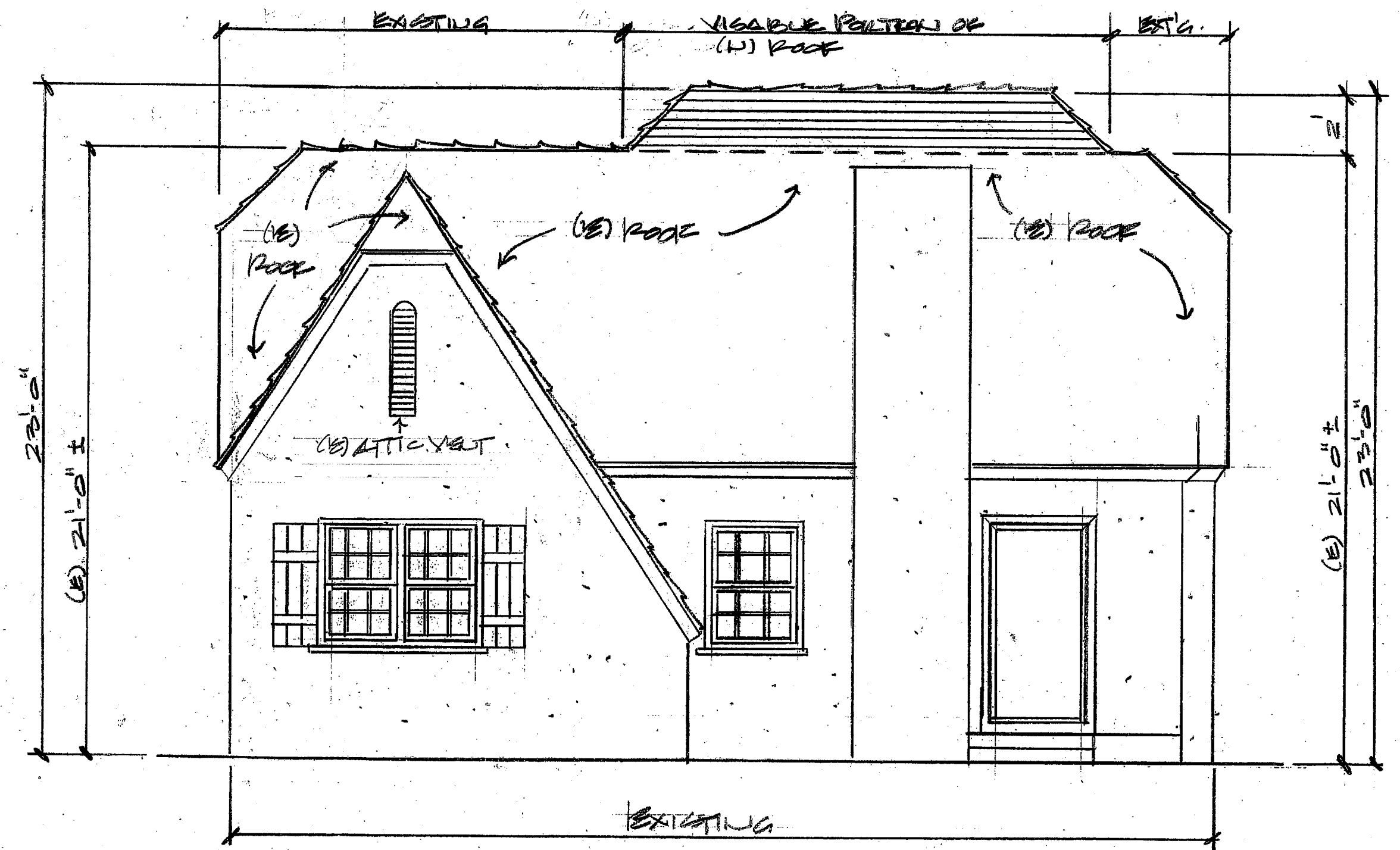
NORTH EXTERIOR ELEVATION
1/4"=1'-0"



EAST EXTERIOR ELEVATION
1/4"=1'-0"



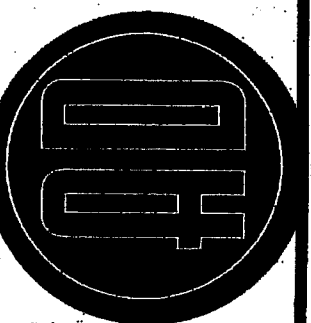
SOUTH EXTERIOR ELEVATION
1/4"=1'-0"



WEST EXTERIOR ELEVATION
1/4"=1'-0"

REVISIONS	BY

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE DESIGNER OF ANY DIMENSIONAL ERRORS, OMISSIONS OR DISCREPANCIES BEFORE BEGINNING OR FABRICATING ANY WORK.



AUDELO DESIGN
COMMERCIAL | RESIDENTIAL | DESIGN | PLANNING
4812 Altitude Ave | Oceanside, CA 92057 | 760.672.5222 | praudelo@att.net
AUDELODESIGN.COM

THE BECKET / KULA RESIDENCE
816 N. AVON STREET
BURBANK, CALIFORNIA 91505

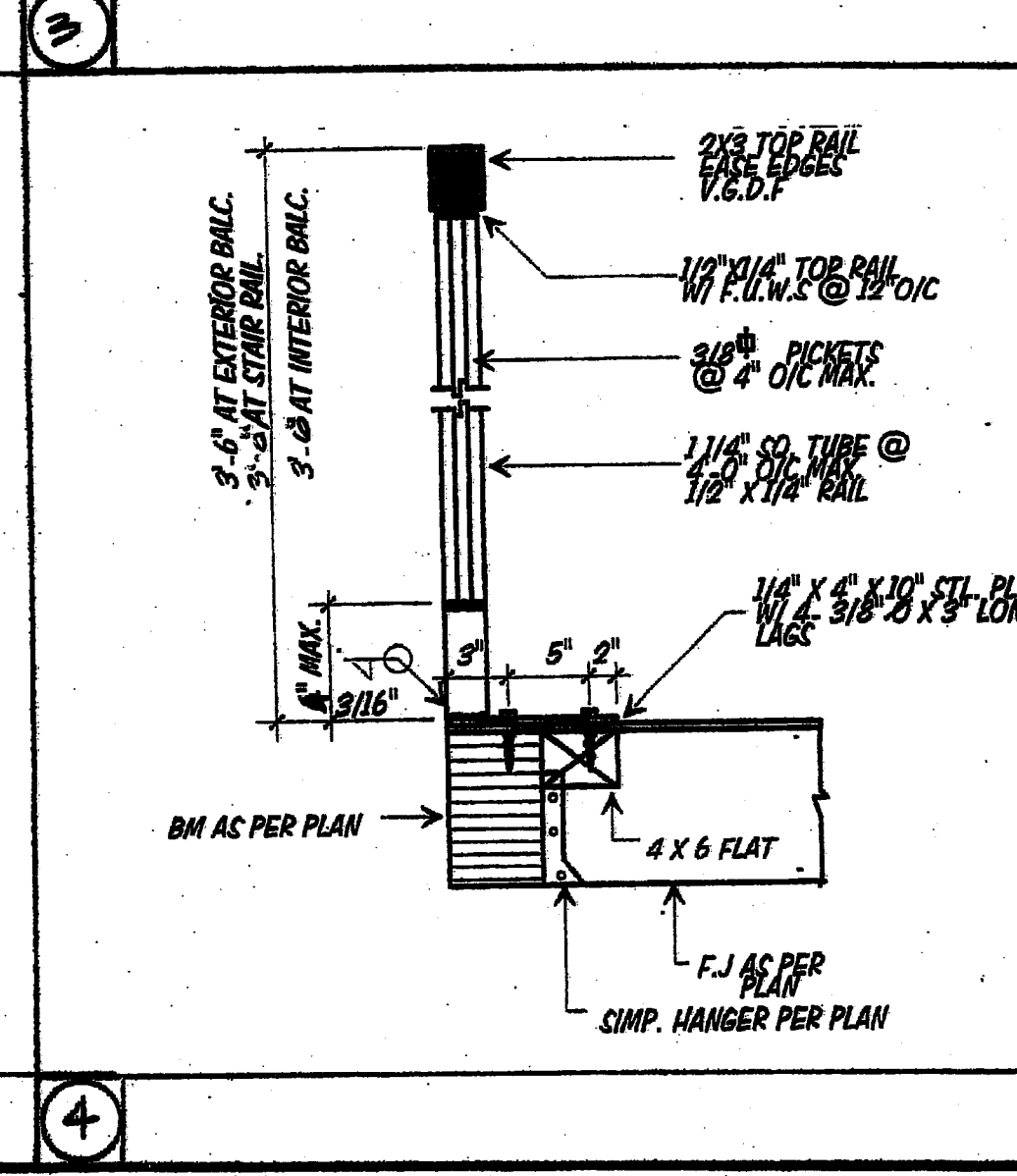
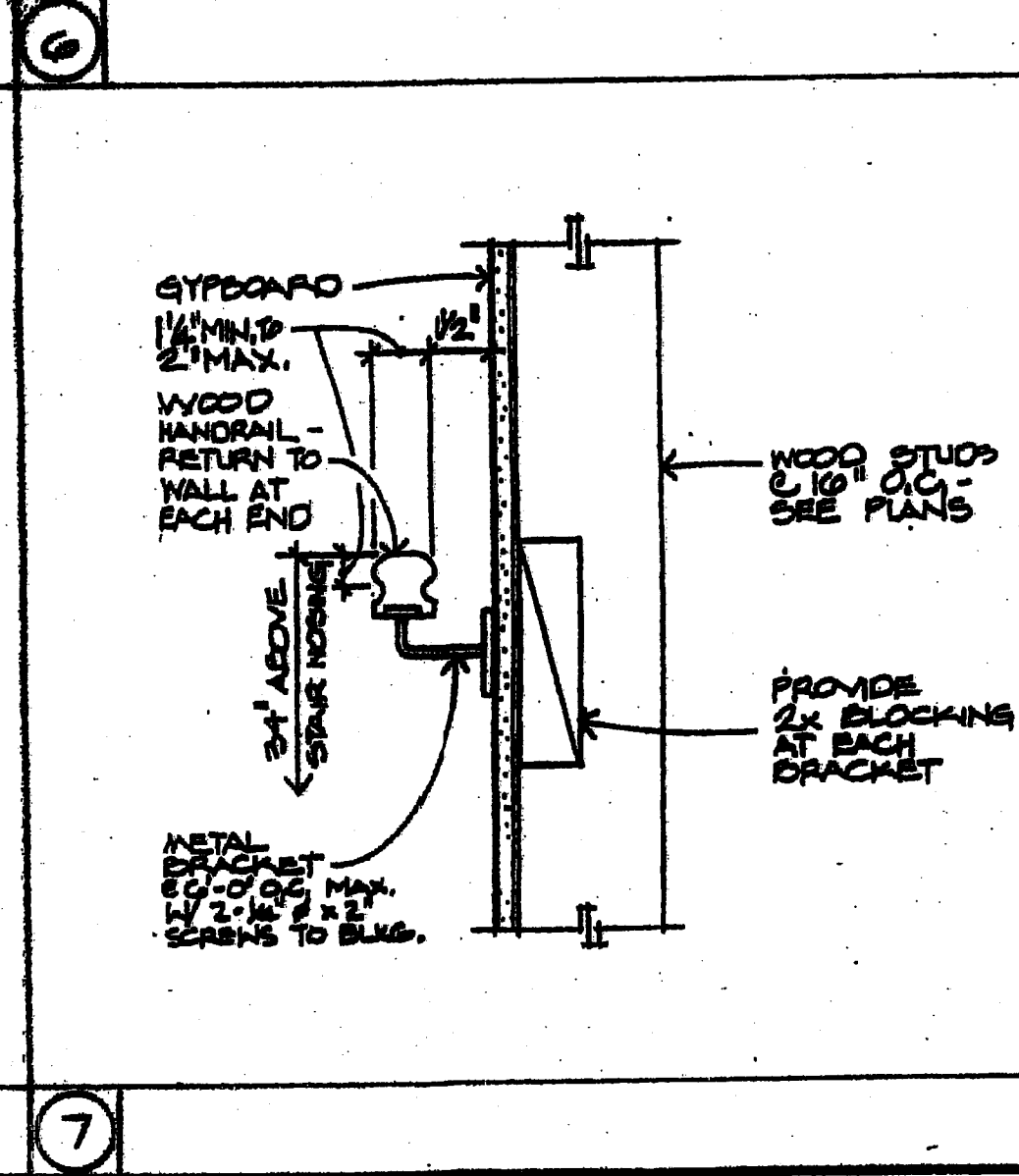
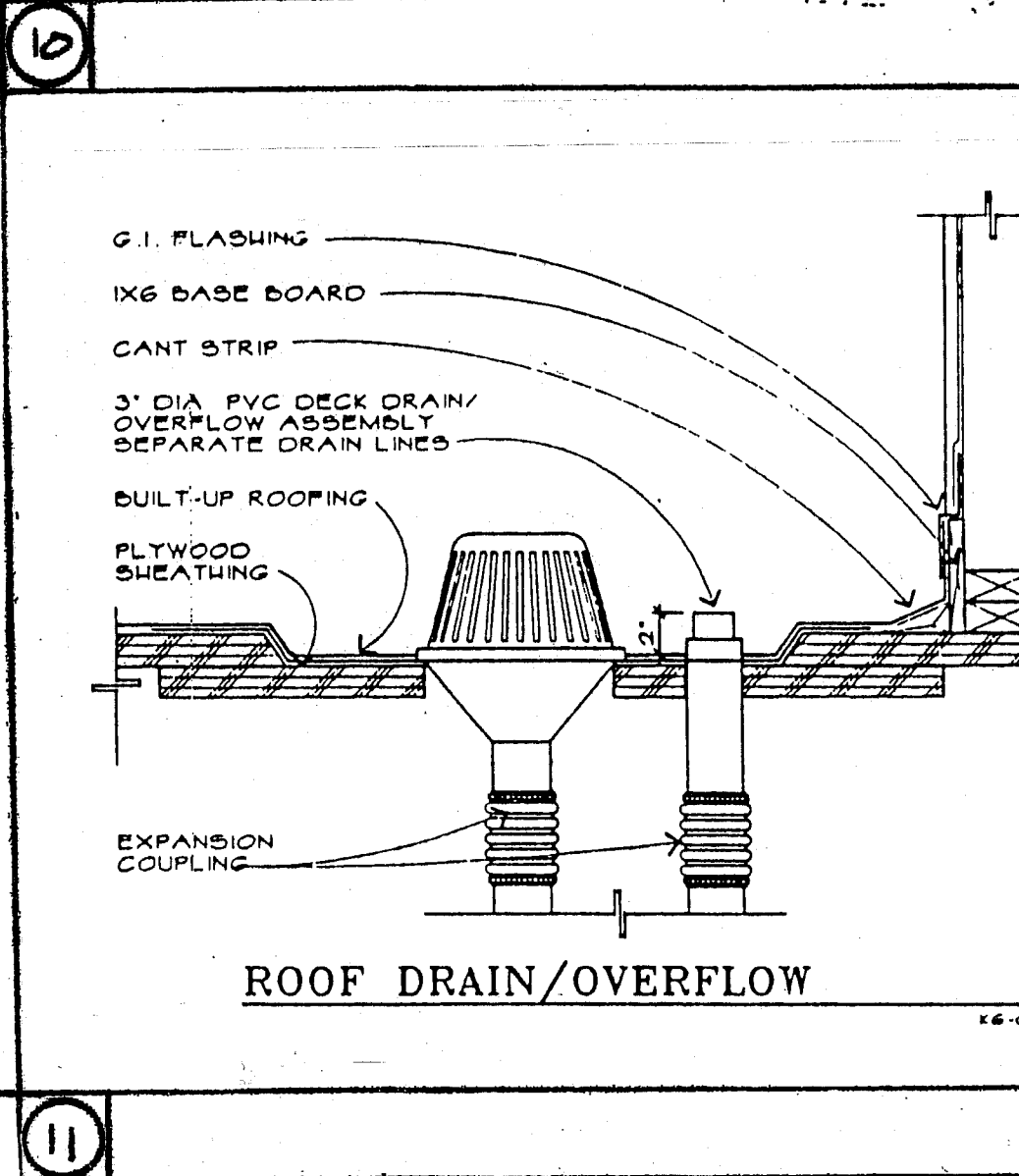
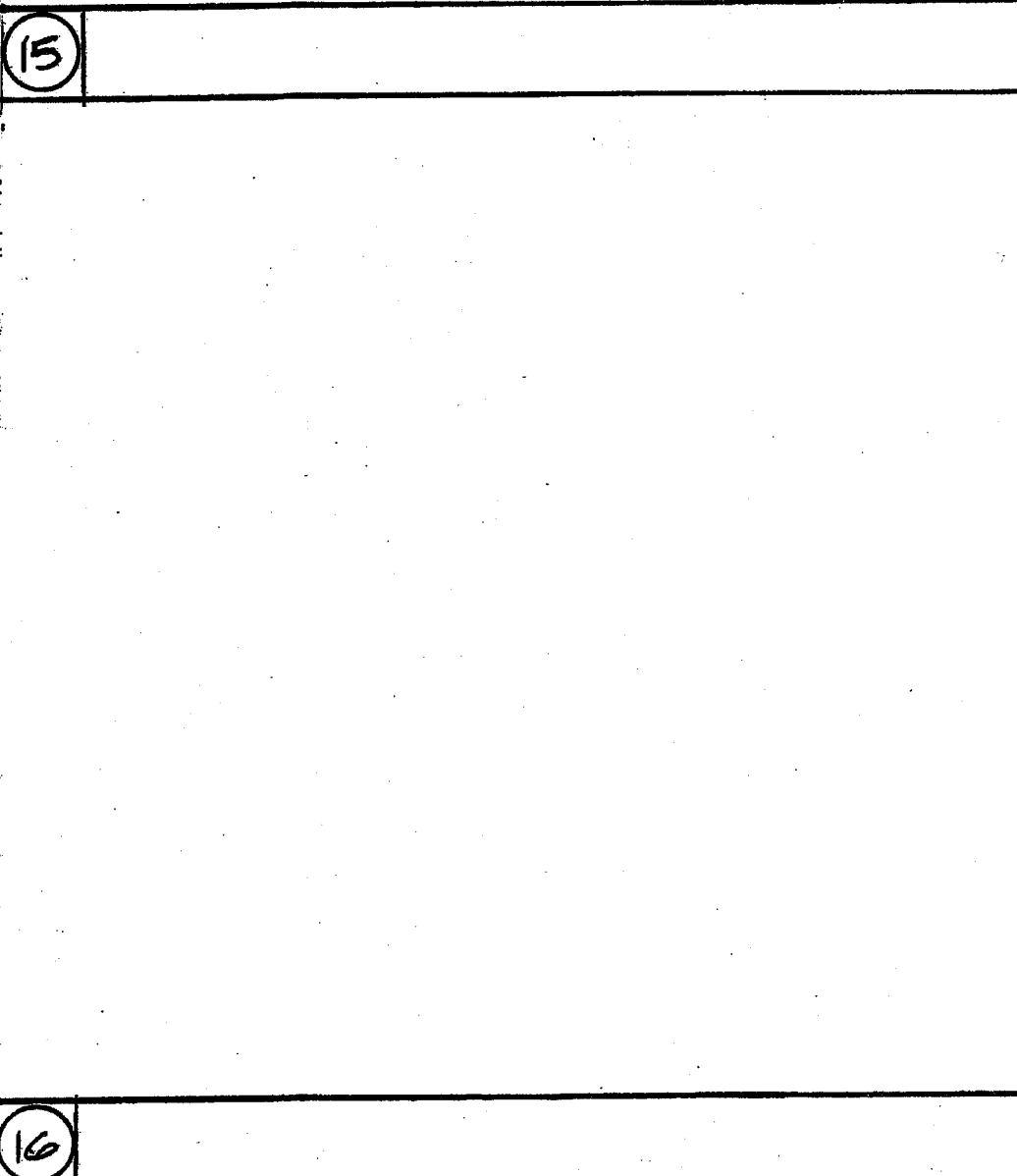
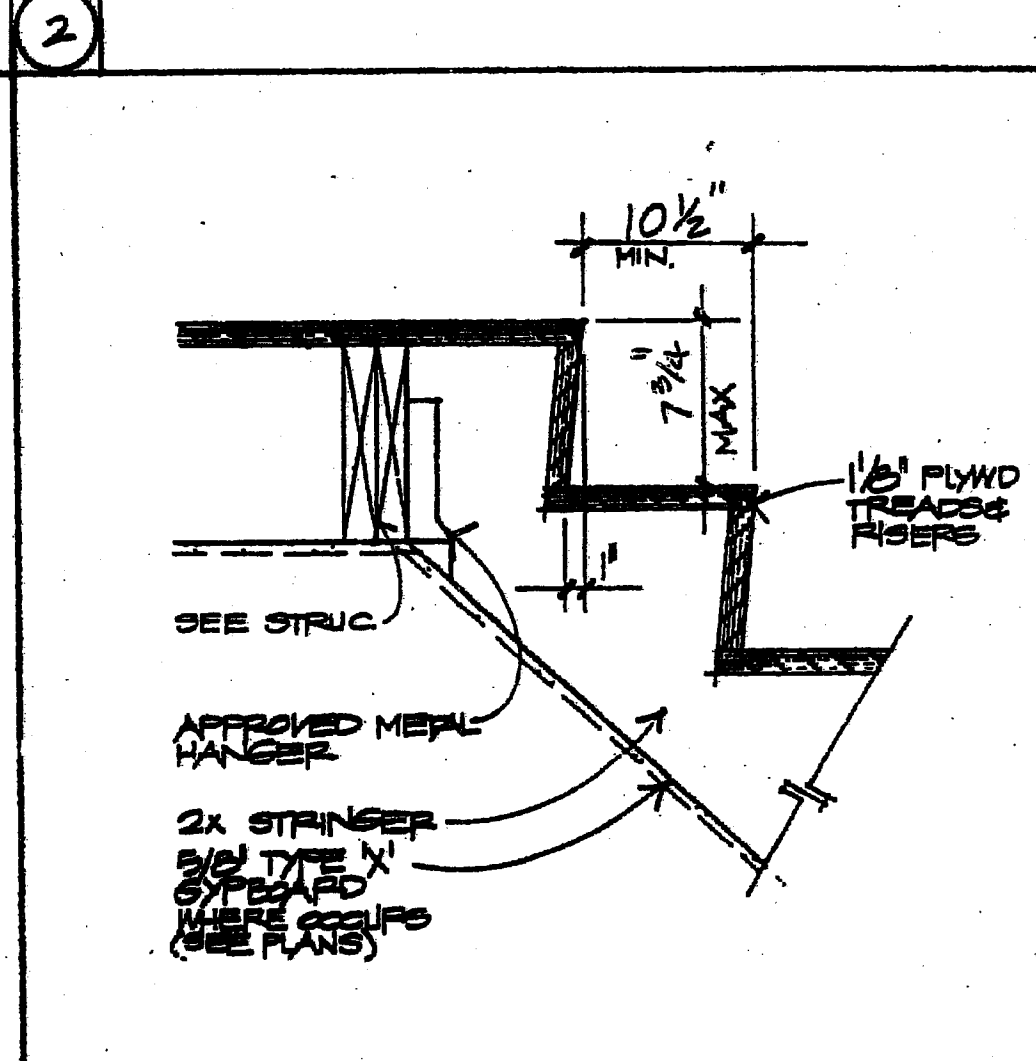
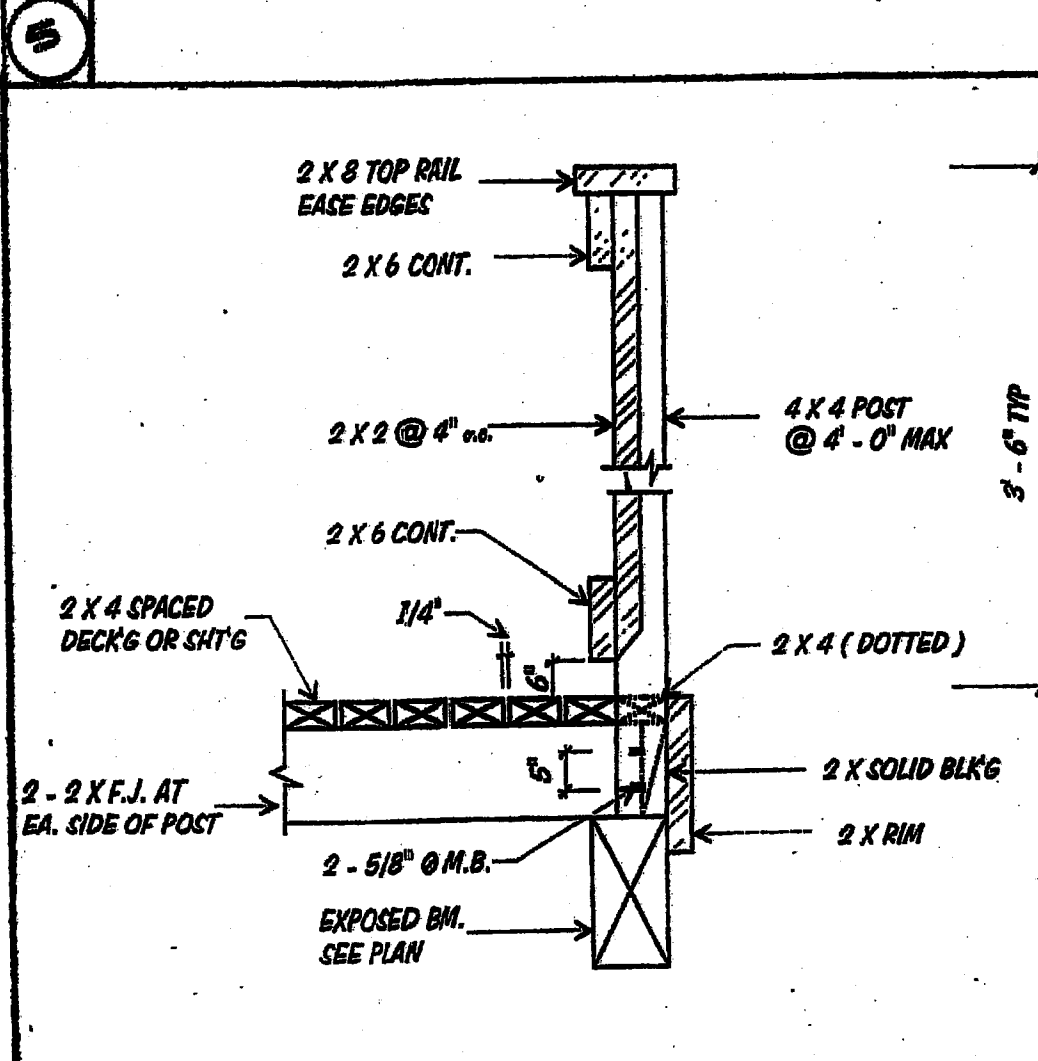
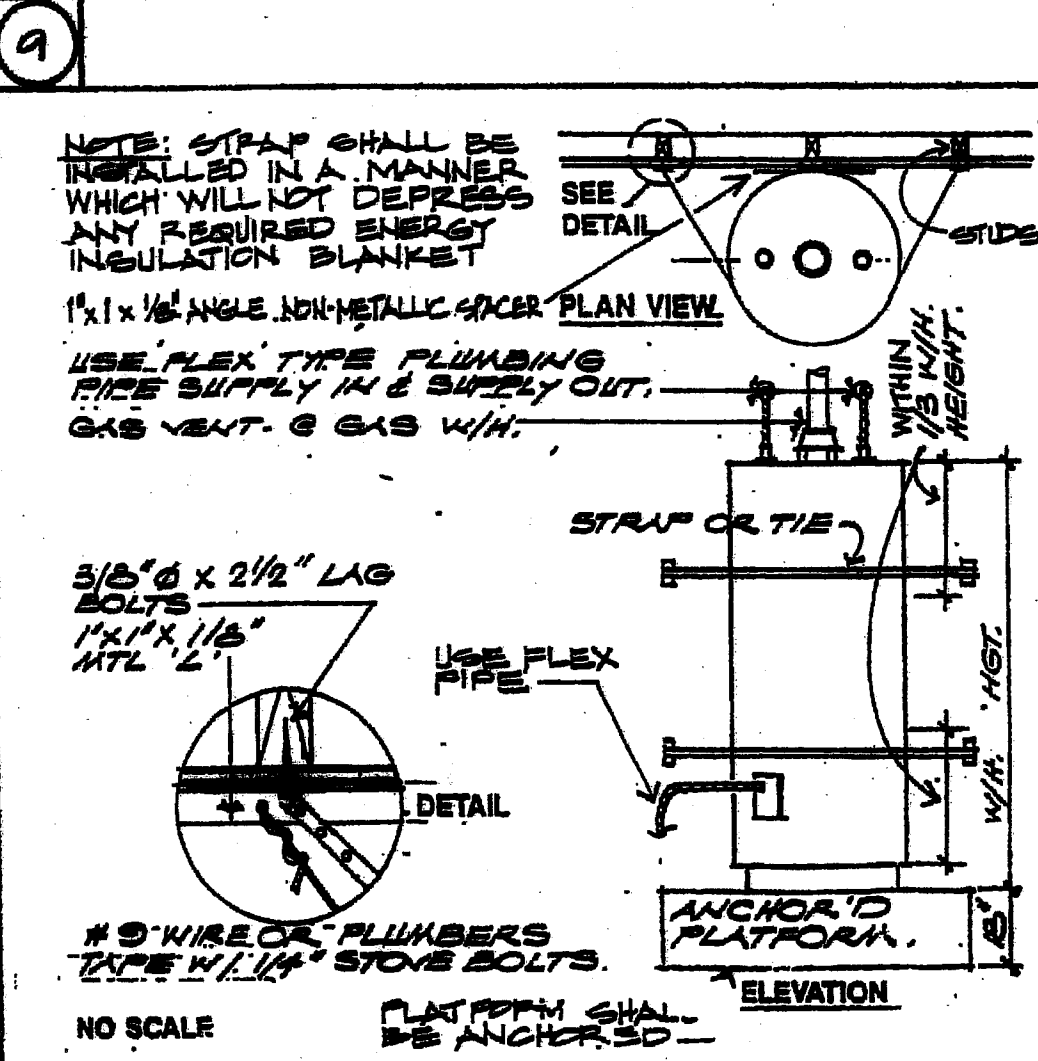
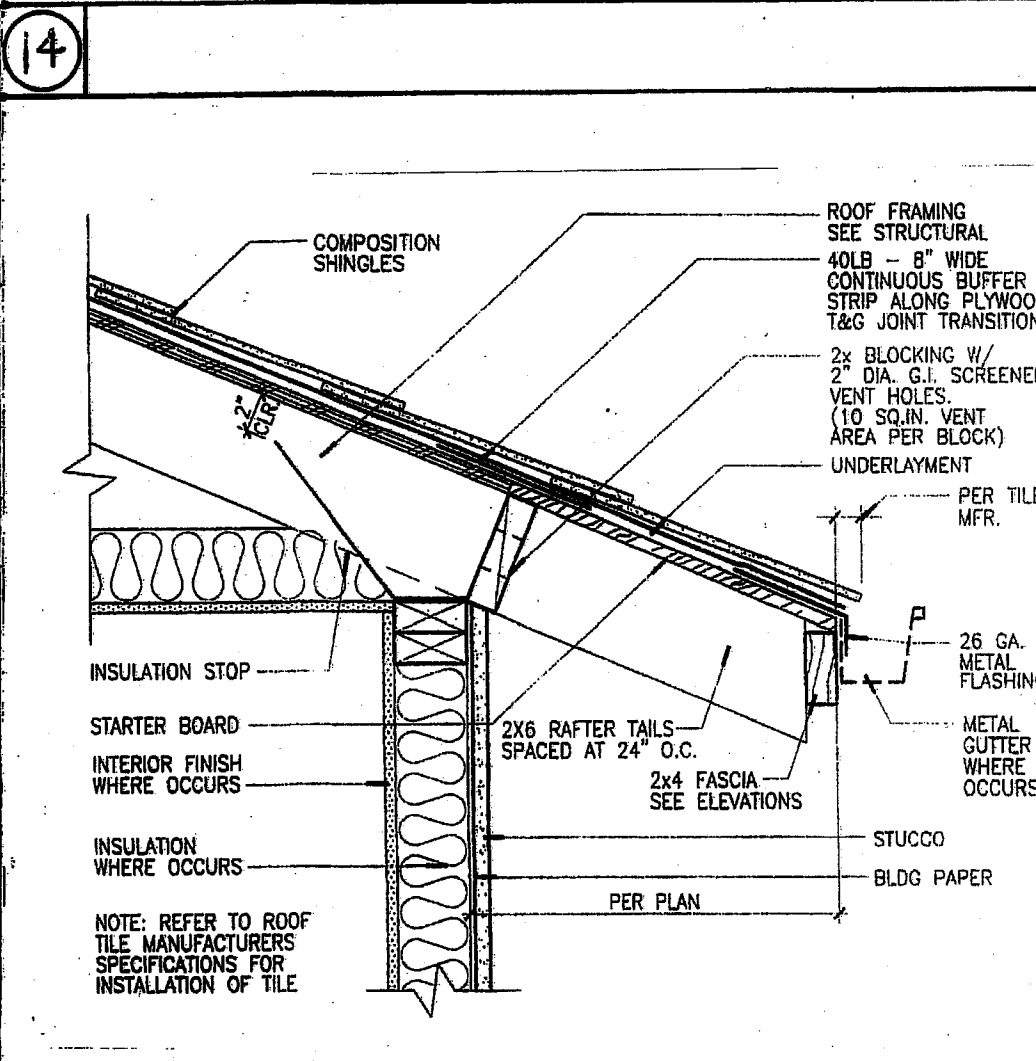
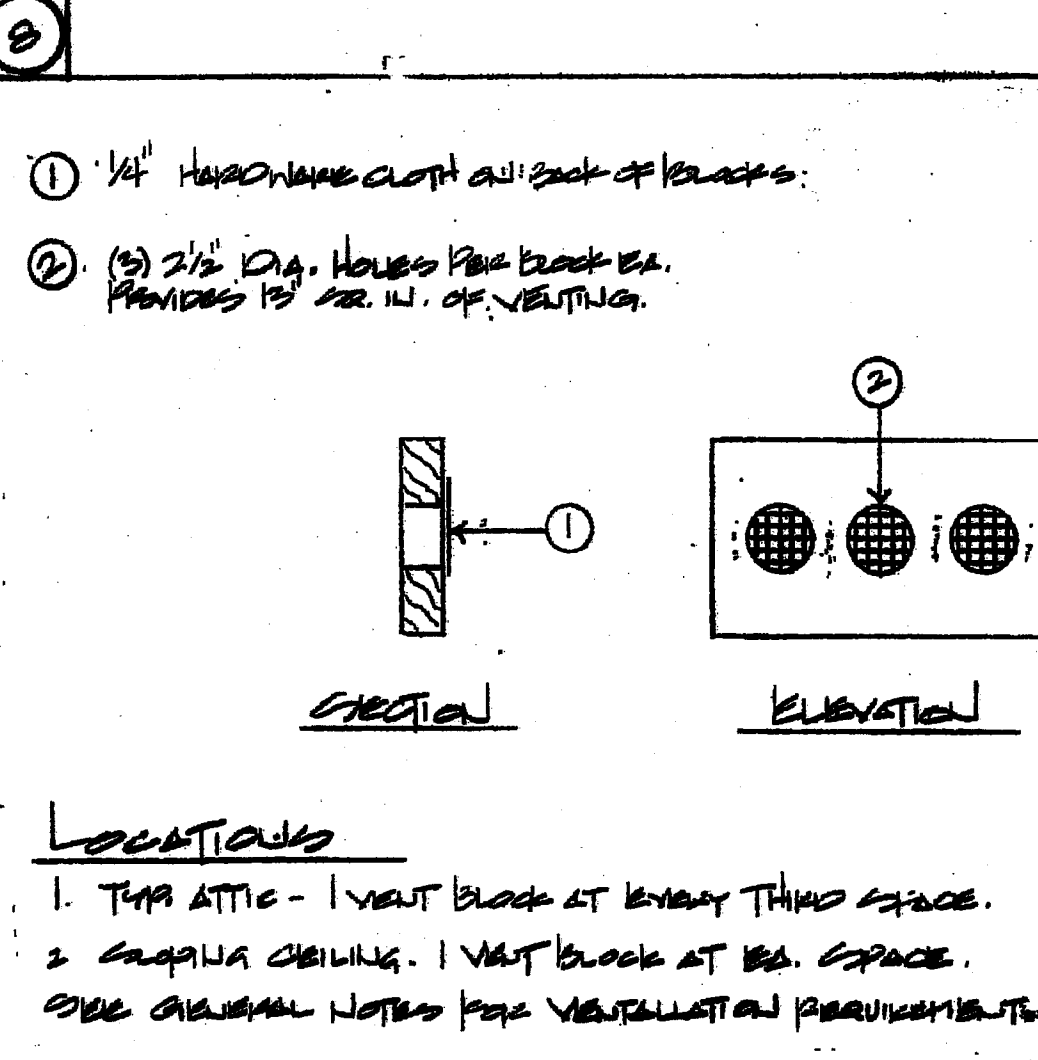
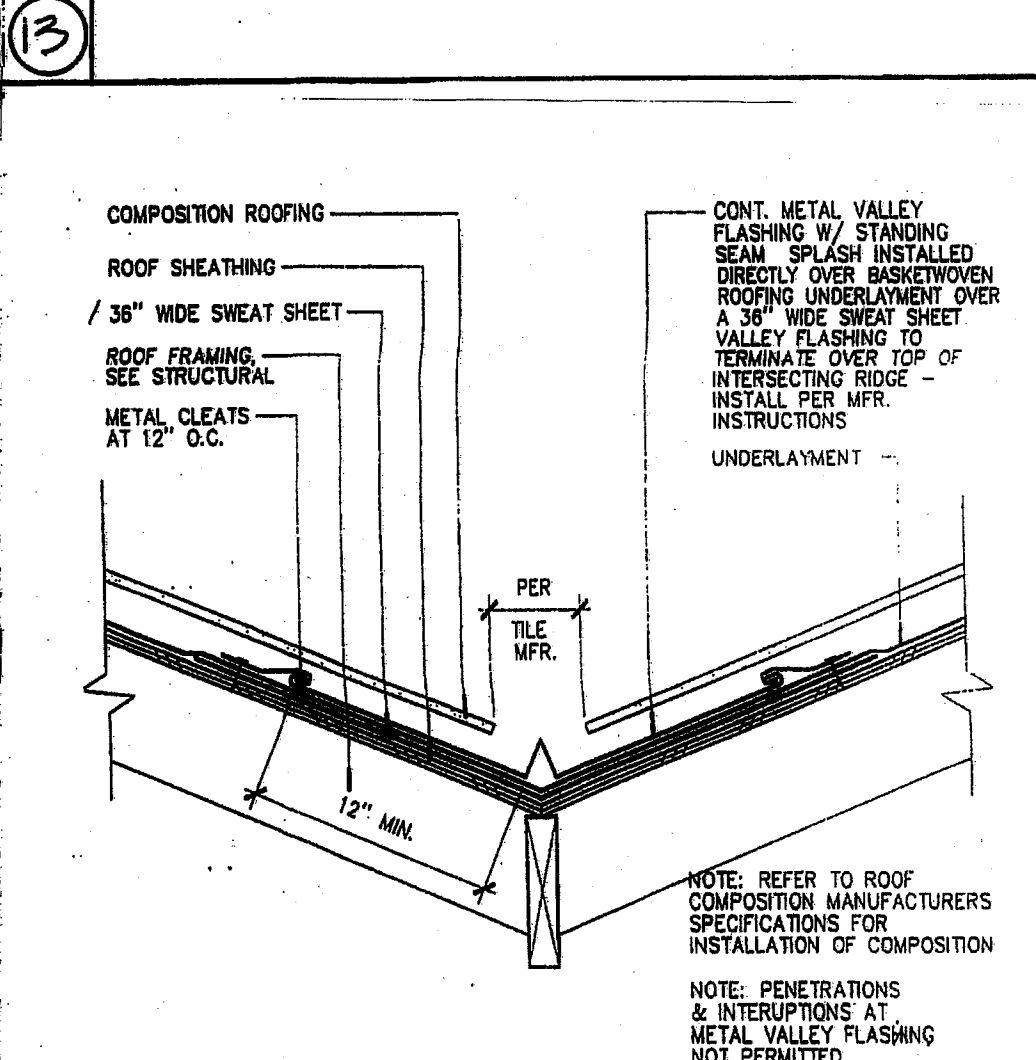
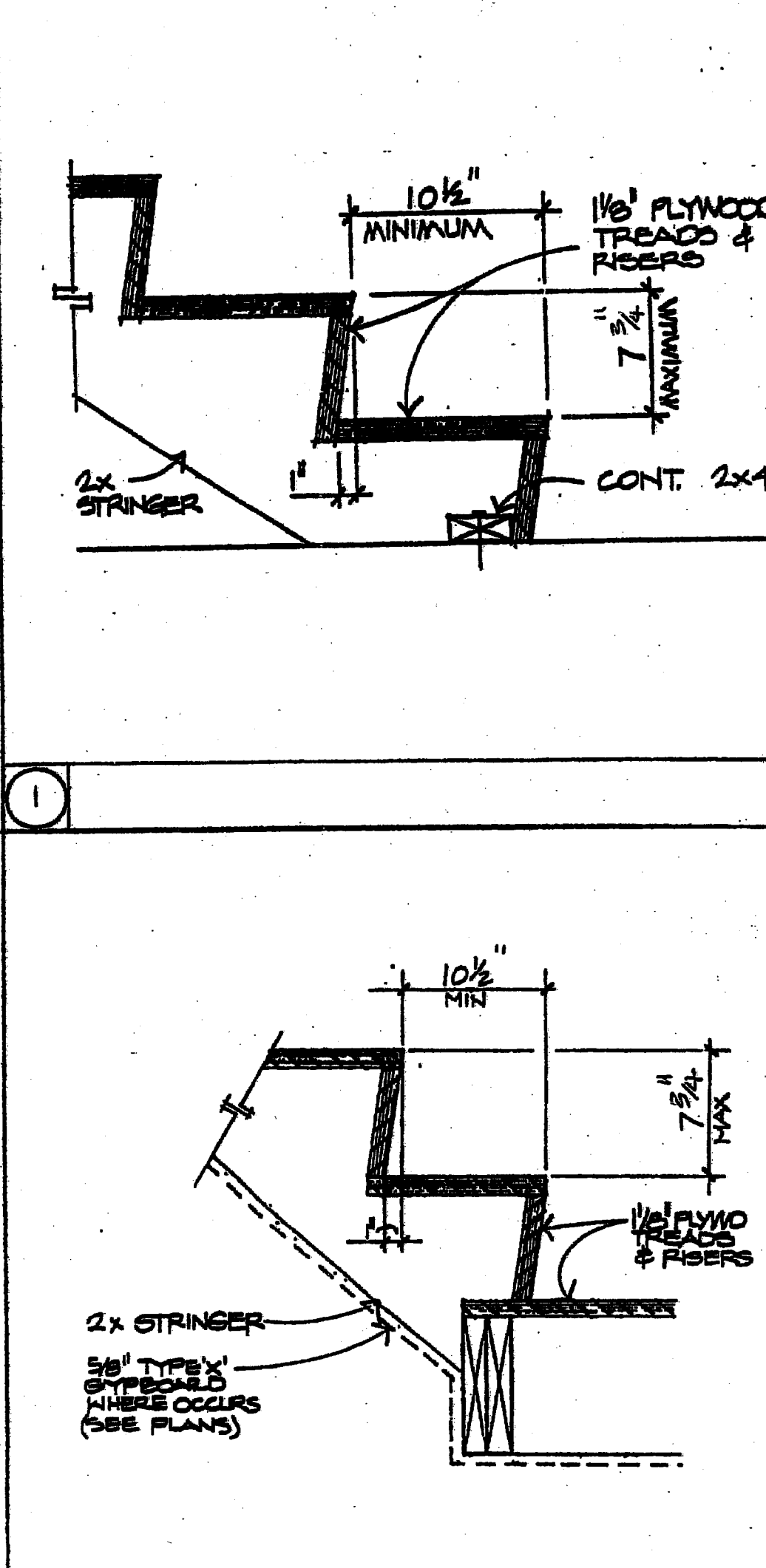
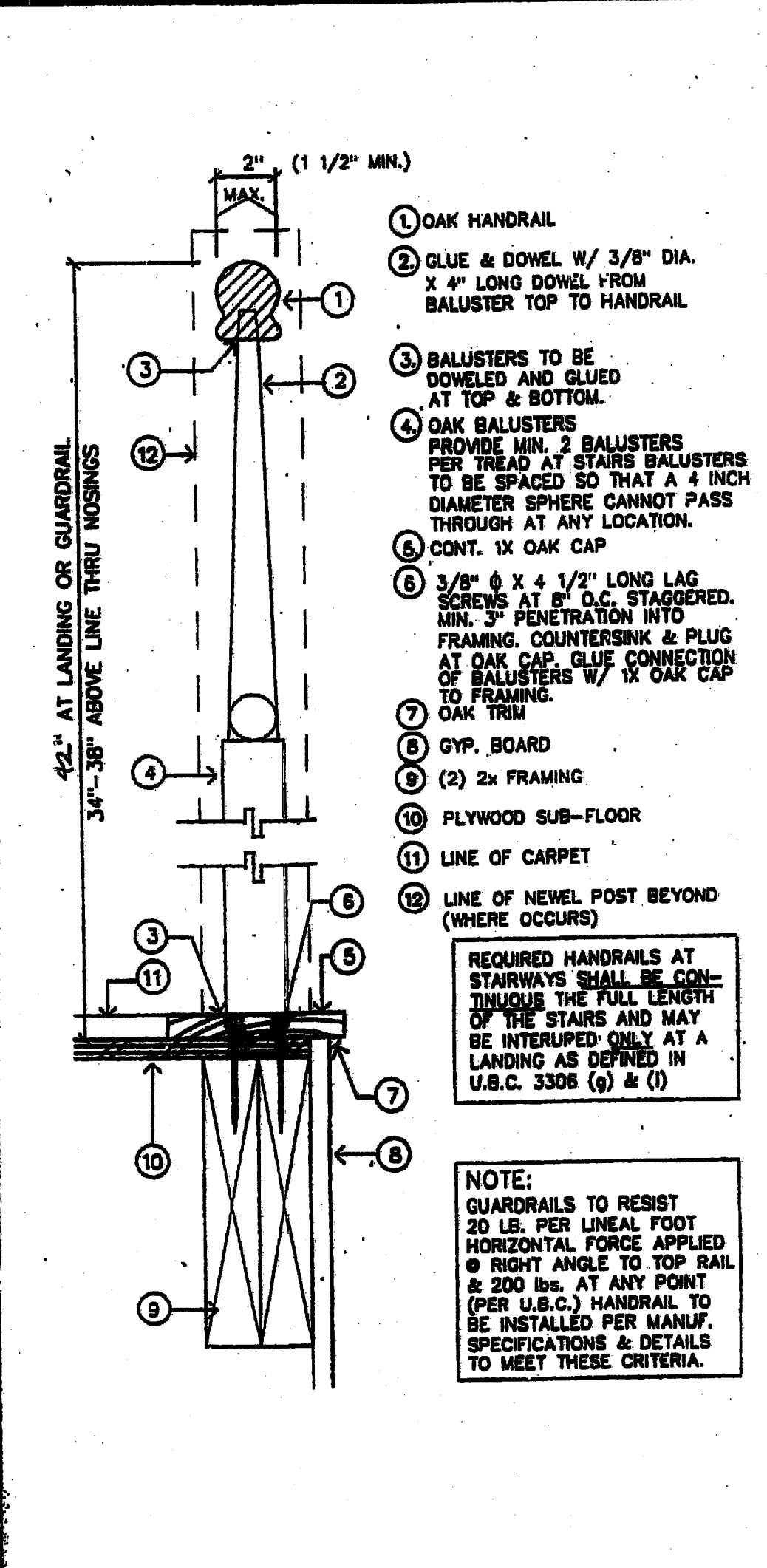
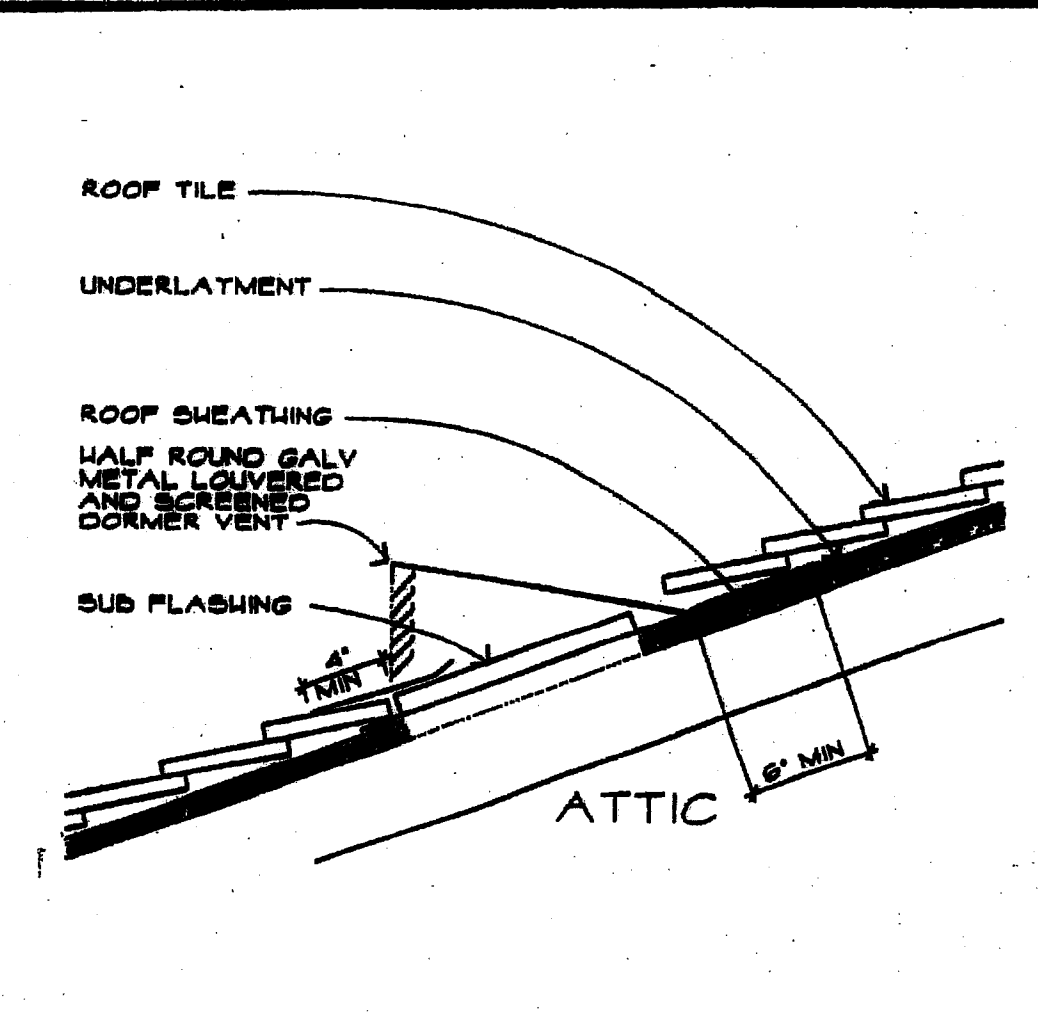
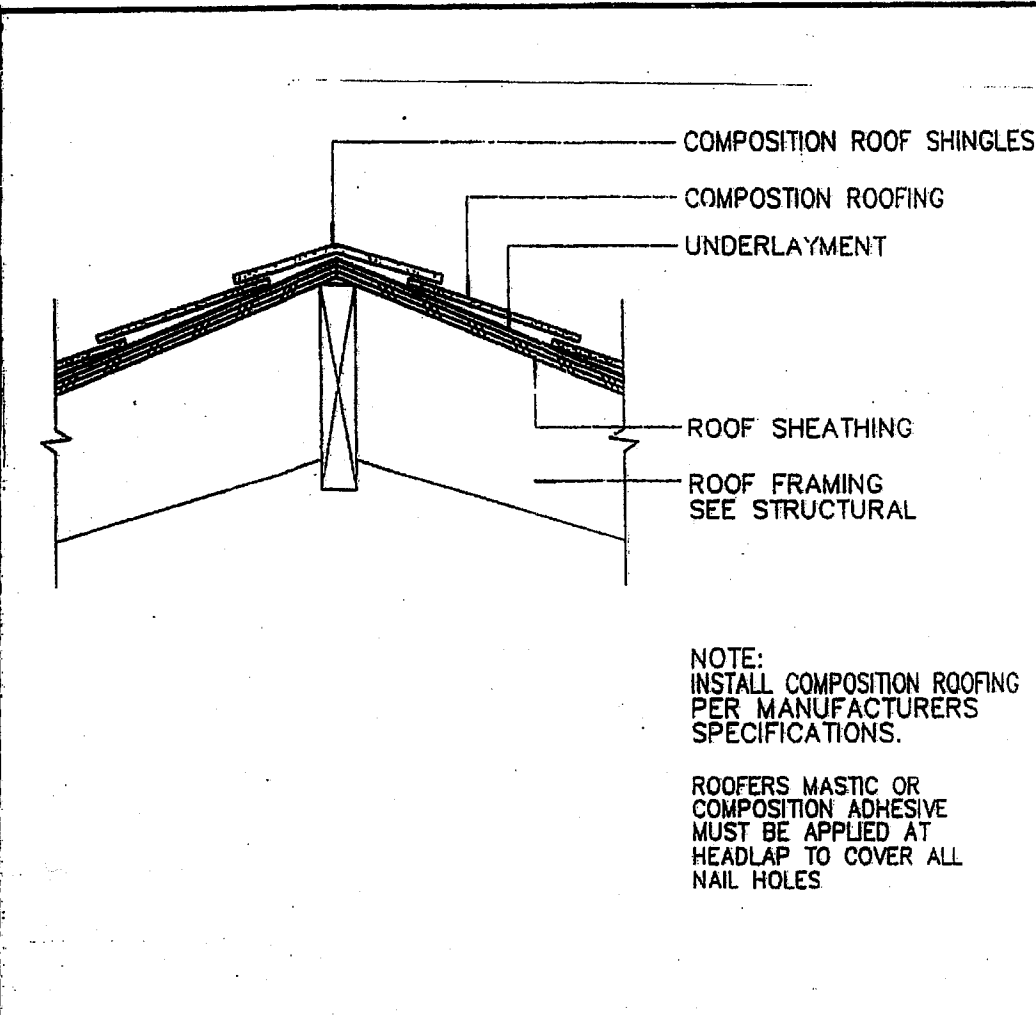
DATE
SCALE
DRAWN
JOB
SHEET
A3
OF

WINDOW SCHEDULE

NO.	SIZE	TYPE	MATERIAL	GLAZING	REMARKS
1	3'-0" W. x 4'-0" H.	DR. HUNG	VINYL	GL.	
2					
3					
4	2'-0" W. x 3'-0" H.	DR. HUNG	VINYL	GL.	
5	2'-0" W. x 4'-0" H.	DR. HUNG	VINYL	GL.	
6					
7					
8	3'-0" W. x 3'-0" H.				
9	3'-0" W. x 4'-0" H.				
10					
11					
12					
13					
14					
15					
16					
17	4'-0" W. x 11'-0" H.	SLIDING	ALUMINUM	GLASS	
18	3'-0" W. x 3'-0" H.	DR. HUNG	VINYL	GL.	
19	3'-0" W. x 4'-0" H.				
20					
21	4'-0" W. x 2'-0" H.	FR. BLIND SLIDING	ALUMINUM	GLASS	BRAND NAME: K&K 1012-3177
22					
23					
24					
25					
26					
27					
28					
29					
30					

DOOR SCHEDULE

NO.	SIZE	TYPE	MATERIAL	GLAZING	REMARKS
1	1 Pair 3'-0" W. x 6'-0" H.	FR. BLIND	WOOD FRAME	TEMP. GLASS	
2	2'-0" W. x 6'-0" H.	DOOR	WOOD		
3	2'-0" W. x 6'-0" H.	DOOR	WOOD		
4	2'-0" W. x 6'-0" H.	DOOR	WOOD		
5	2'-0" W. x 6'-0" H.	DOOR	WOOD		
6	2'-0" W. x 6'-0" H.	DOOR	WOOD		
7	2'-0" W. x 6'-0" H.	DOOR	WOOD		
8	2'-0" W. x 6'-0" H.	DOOR	WOOD		
9	2'-0" W. x 6'-0" H.	DOOR	WOOD		
10					
11	6'-0" W. x 6'-0" H.	SLIDING	ALUMINUM	GLASS	
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					





height of dodonaea viscosa



All Images Shopping News Videos Maps Books Flights Search tools

Dodonaea viscosa height



Dodonaea viscosa 'Purpurea' (Purple-leaved Hop-bush) - This rapid growing, evergreen shrub reaches **12 to 16 feet tall** and about as wide - more upright when young - spreading out with age. †

<https://www.smgrowers.com> · plants

[Dodonaea viscosa 'Purpurea' at San Marcos Growers](#)

About featured snippets Feedback

People also ask

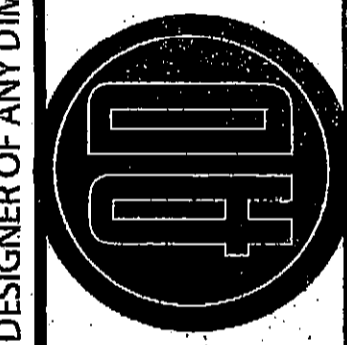
How fast does Dodonaea grow?

How do you plant viscosa Dodonaea?

How do you prune a Dodonaea viscosa purpurea?

REVISIONS	BY

CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE AND NOTIFY THE DESIGNER OF ANY DIMENSIONAL ERRORS, OMISSIONS OR DISCREPANCIES BEFORE BEGINNING OR FABRICATING ANY WORK.



AUDELO DESIGN
 COMMERCIAL | RESIDENTIAL | DESIGN | PLANNING
 4612 Allende Ave | Oceanside, CA 92057 | 760.672.5222 | pcaudelo@aol.net
 AUDELODESIGN.COM

THE BECKETT / KULA RESIDENCE
 816 N. AVON STREET
 BURBANK, CALIFORNIA 91505

DATE	8-3-20
SCALE	1/8" = 1'-0"
DRAWN	LGT
JOB	L-2

Reference Evapotranspiration (ET_o) / 51.7

Hydrozone # / Planting Description	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF*IE)	Landscape Area (sq. ft.)	ETAF x Area	Estimated Total Water Use (ETWHU)
Regular Landscape Areas							
A-1/LX	.3	B	.81	.37	1710	1807	11,049
A-2/LX	.3	B	.81	.37	108	79	1,250
A-3/LX	.3	B	.81	.37	108	79	1,103
A-4/LX	.3	S	.75	.4	25	148.4	1,500
A-5/LX	.5	S	.75	.4	350	232.4	1,350
A-6/LX	.3	S	.75	.4	551	220.4	1,615
Totals						2,100	9,000
Special Landscape Areas						(43)	29,052
ETWHU Total							29,052
Maximum Allowed Water Allowance (MAWA)							

*Hydrozone #/Planting Description E.g.
 1) front lawn
 2) low water use plantings
 3) medium water use plantings

*Irrigation Method
 (S) overhead spray or drip
 (B) - BUBBLER

*Irrigation Efficiency
 0.75 for spray head or drip
 0.81 for drip

*ETWHU (Annual Gallons Required) = Eto x 0.62 x ETAF x Area
 where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year, EA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .25 for residential areas and 0.45 for non-residential areas.

$$(51.7) (0.62) (.55) (2,100) + (0)$$

$$MAWA = 37,020 \text{ GPY}$$

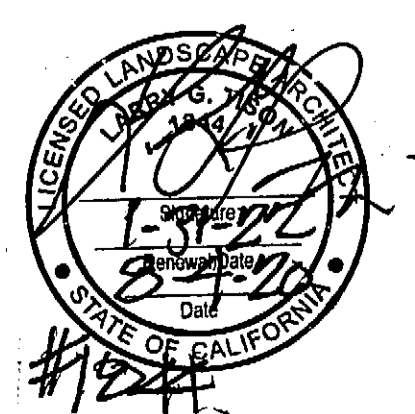
$$ETWHU = 29,052 \text{ GPY}$$

SPRINKLER HEADS

SYMBOL	DESCRIPTION	MODEL NO	CPIC	RADIUS	PSI
■	RAINBIRD POPUP/RTZ	180U-RVNH-90	.45	10'	30
□	" " 1/2" HALF	180U-RVNH-180	.85	16'	30
▽	" " 1" RTZ	1812-RVNH-90	.42	10'	30
▽	" " 1" RTZ	1812-RVNH-180	.85	16'	30
◐	" " 1" HALF	1812-RVNH-90	.42	10'	30
◐	" " 1" HALF	1812-RVNH-180	.85	16'	30
●	" " 1" BUBBLER	1812-1401	.25	-	30

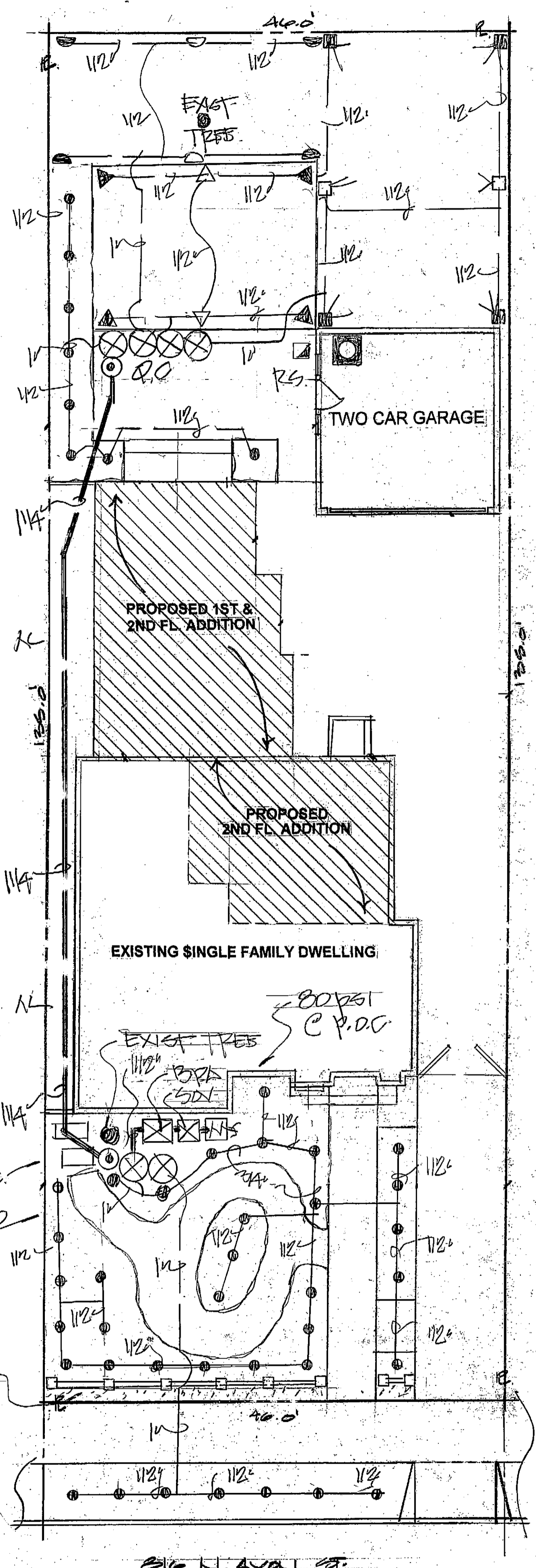
- LEGEND**
- WEATHER BASED CONTROLLER (RAINBIRD ESP-LXME 8 STATION)
 - RAIN SENSOR (RAINBIRD RSD BEX)
 - BACKFLOW PREVENTER (FEBCO 825-Y-1 1/2")
 - QUICK COUPLER (RAINBIRD 44LC)
 - VALVE (RAINBIRD PEB SERIES)
 - VALVE NO. / GPM
 - MAINLINE / SCHD. 40 PVC.
 - LATERAL LINE / SCHD. 40 PVC
 - SHUT-OFF VALVE
 - IRRIGATION METER

CHECK VALVES OR ANTI-DRAIN VALVES ARE REQUIRED ON ALL SPRINKLER HEADS WHERE LOW POINT DRAINAGE CAN OCCUR.
 MANUAL SHUT-OFF VALVES SHALL BE REQUIRED, AS CLOSE AS POSSIBLE TO THE POINT OF CONNECTION TO THE WATER SUPPLY. TO MINIMIZE WATER LOSS IN CASE OF EMERGENCY OR ROUTINE REPAIR.
 PRESSURE REGULATING DEVICES ARE REQUIRED IF WATER PRESSURE IS BELOW OR EXCEEDS THE RECOMMENDED PRESSURE OF THE SPECIFIED IRRIGATION DEVICES.
 A DIAGRAM OF THE IRRIGATION PLAN; SHOWING HYDROZONES SHALL BE KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES.
 AN IRRIGATION AUDIT REPORT SHALL BE COMPLETED AT THE TIME OF INSPECTION.
 AT THE TIME OF THE FINAL INSPECTION, THE PERMIT APPLICANT MUST PROVIDE THE OWNER OF THE PROPERTY WITH A CERTIFICATE OF COMPLETION, CERTIFICATION OF INSTALLATION, IRRIGATION SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE.
 RECIRCULATING WATER SYSTEMS SHALL BE USED FOR WATER FEATURES.



IRRIGATION PLAN

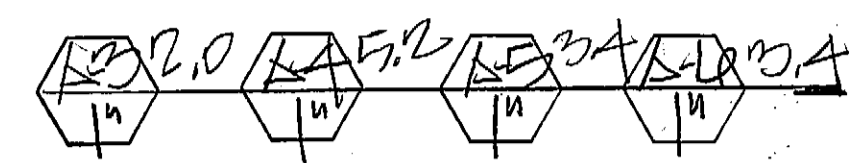
LARRY G. TISON & ASSOCIATES
 LARRY G. TISON, A.S.L.A.
 LANDSCAPE ARCHITECTURE
 314 E. BROADWAY, SUITE D, GLENDALE, CALIFORNIA 91205
 818-241-9169



PRESSURE CALCULATION FOR VALVE A-1

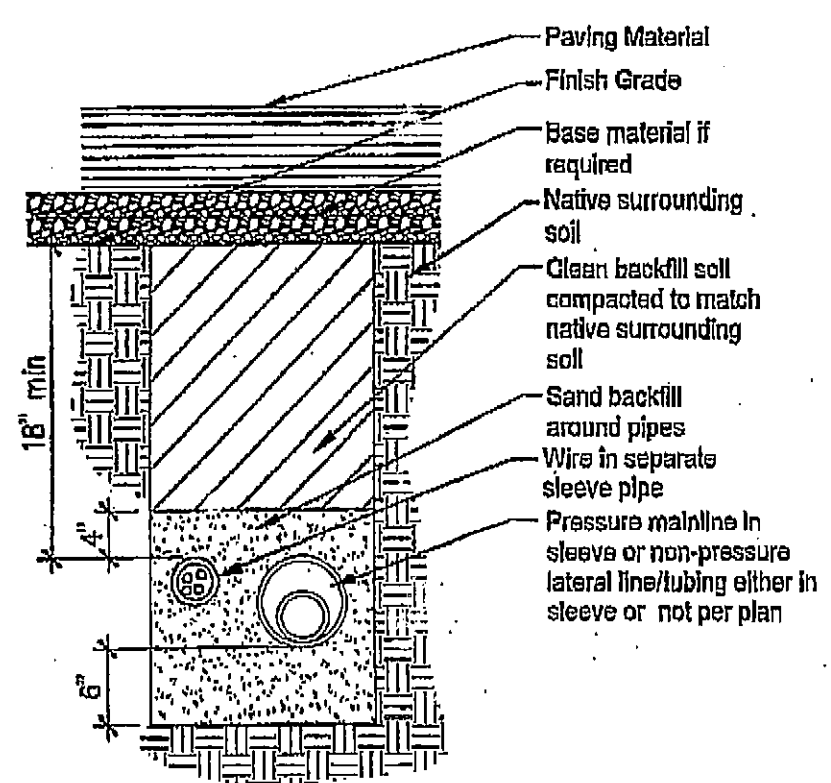
1" WATER METER @ 7.5 G.P.M.	1.5
1 1/2" BACKFLOW PREVENTER UNIT	1.5
FT. OF 1" PVC MAIN LINE	-
FT. OF 1" PVC MAIN LINE	-
FT. OF 1" PVC MAIN LINE	-
FT. OF 1" PVC MAIN LINE	-
FT. OF 1" PVC MAIN LINE	-
1" ELECT. CONTROL VALVE	5.0
LATERAL LINE FRICTION LOSS	.5
PRESSURE REQ'D AT SPRINKLERS	30.0
FITTING LOSS (20% of MAIN LINE)	-
PRESSURE (0) DUE TO ELEVATION	-
MISCELLANEOUS	5.0
TOTAL PRESSURE REQ'D FOR OPERATION	46.5

EXISTING WATER PRESSURE @ P.O.C.	80.0
TOTAL PRESSURE REQ'D FOR OPERATION	46.5
RESIDUAL WATER PRESSURE	37.5

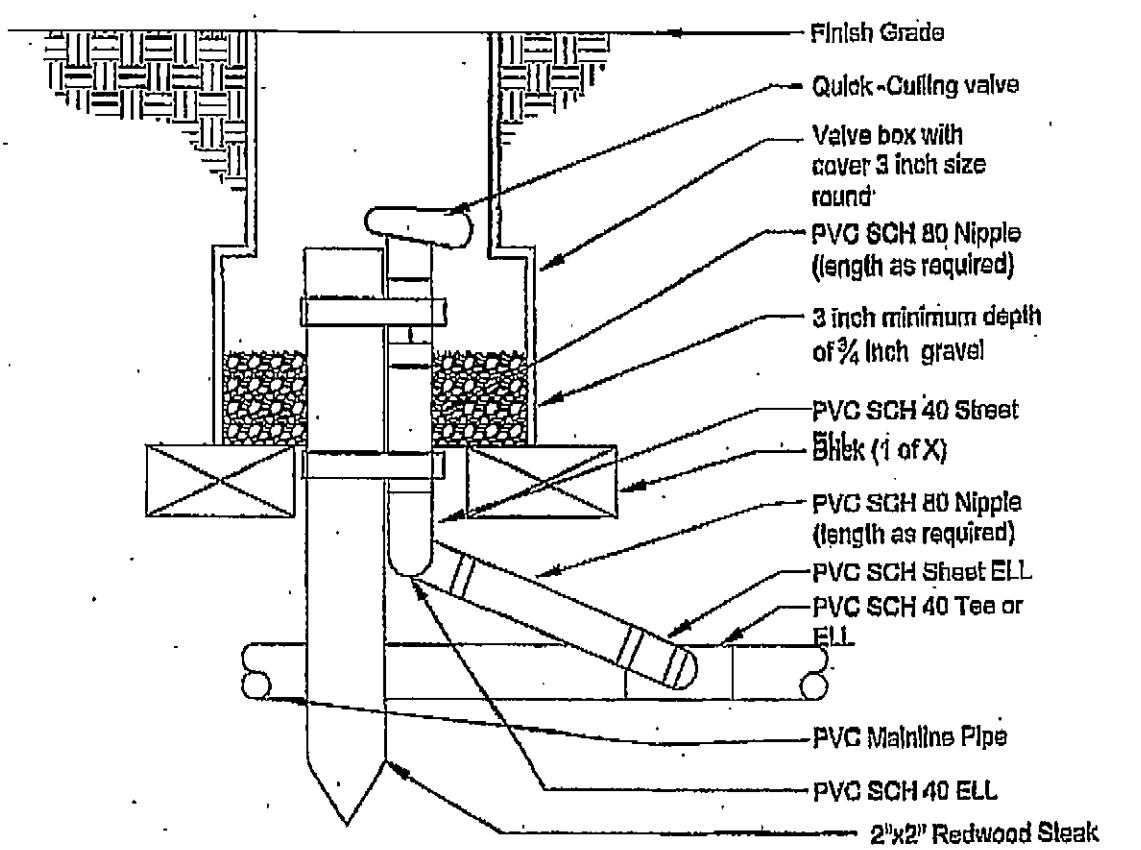


POUR FLOOR

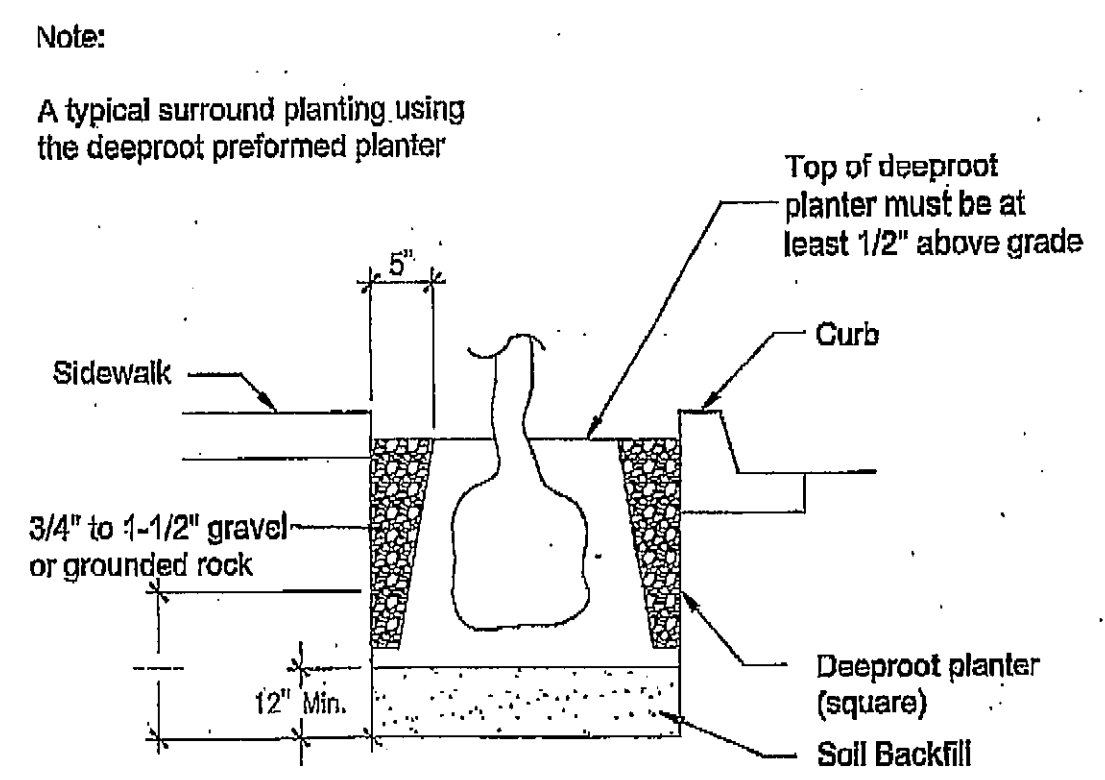
816 N. AVON ST.



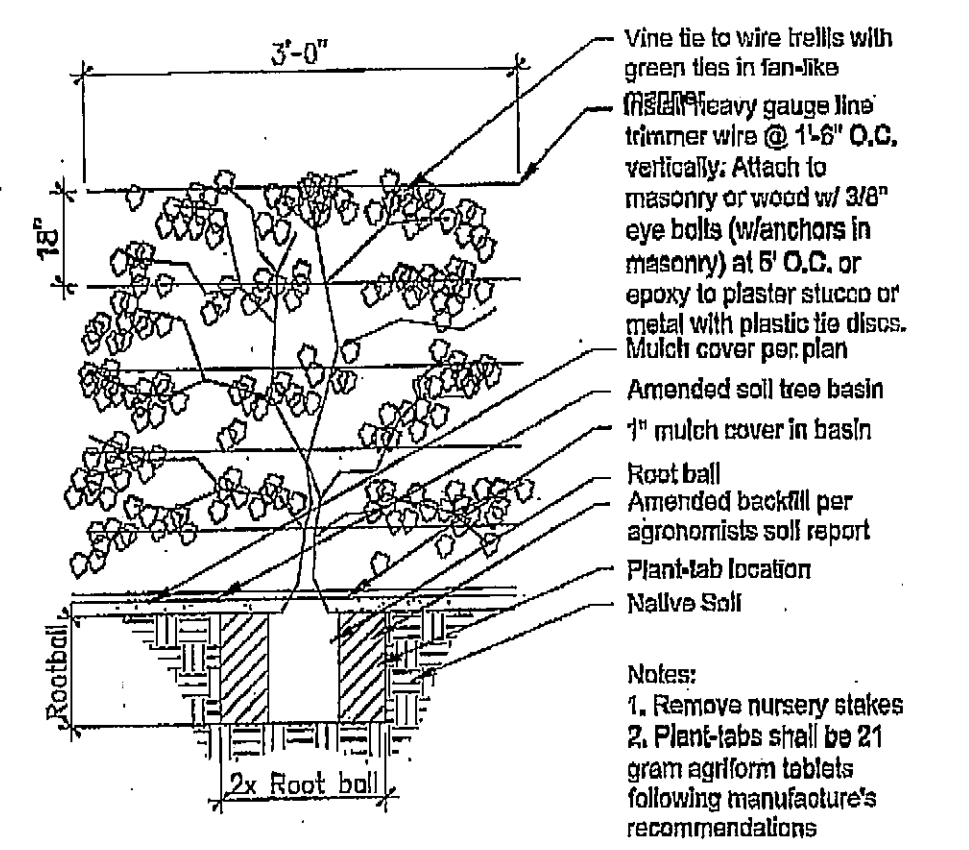
Pipe & wire trenching



Quick coupling valve



Tree Root barriers



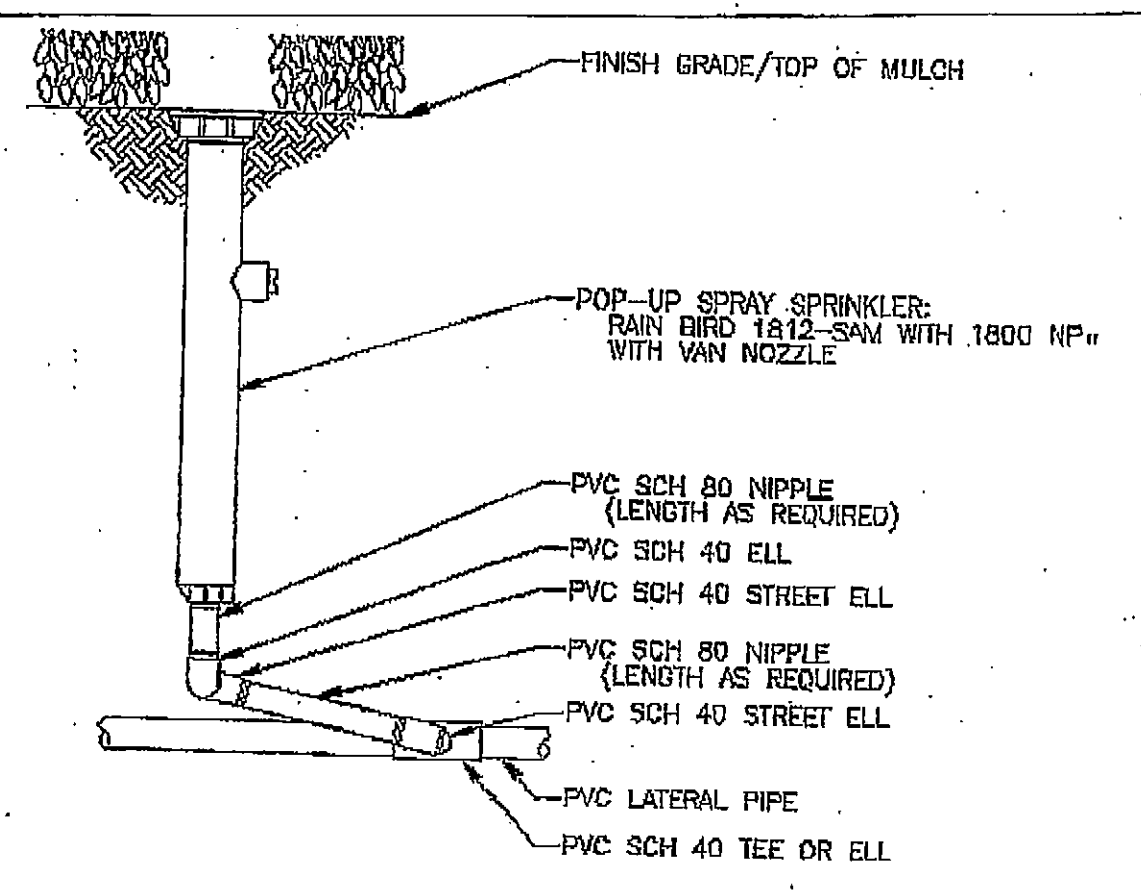
Vine Planting detail

- Contractor shall verify plant count for bidding purposes.
- Ground cover indicated by shall be continuous under shrub.
- Planting areas which have no cover indicated shall receive 3" min. fine redwood bark as a ground cover.
- Contractor shall guarantee plant material for 90 days after installation and replace any diseased or damaged materials during that one year period.
- The following amendments shall be uniformly broadcast and thoroughly incorporate to a depth of 12" min. by rototiller equal amount per 1,000 sq.ft. Cu. yd. (2") nitrogen stabilized organic amendment from redwood sawdust, fir dust, or finely ground bark 5 lbs. ammonium sulfate.
- Note: This formula is a Std. mix and will change if there are any unusual soil conditions at the site. Compacted backfill shall be 100% on site soil.

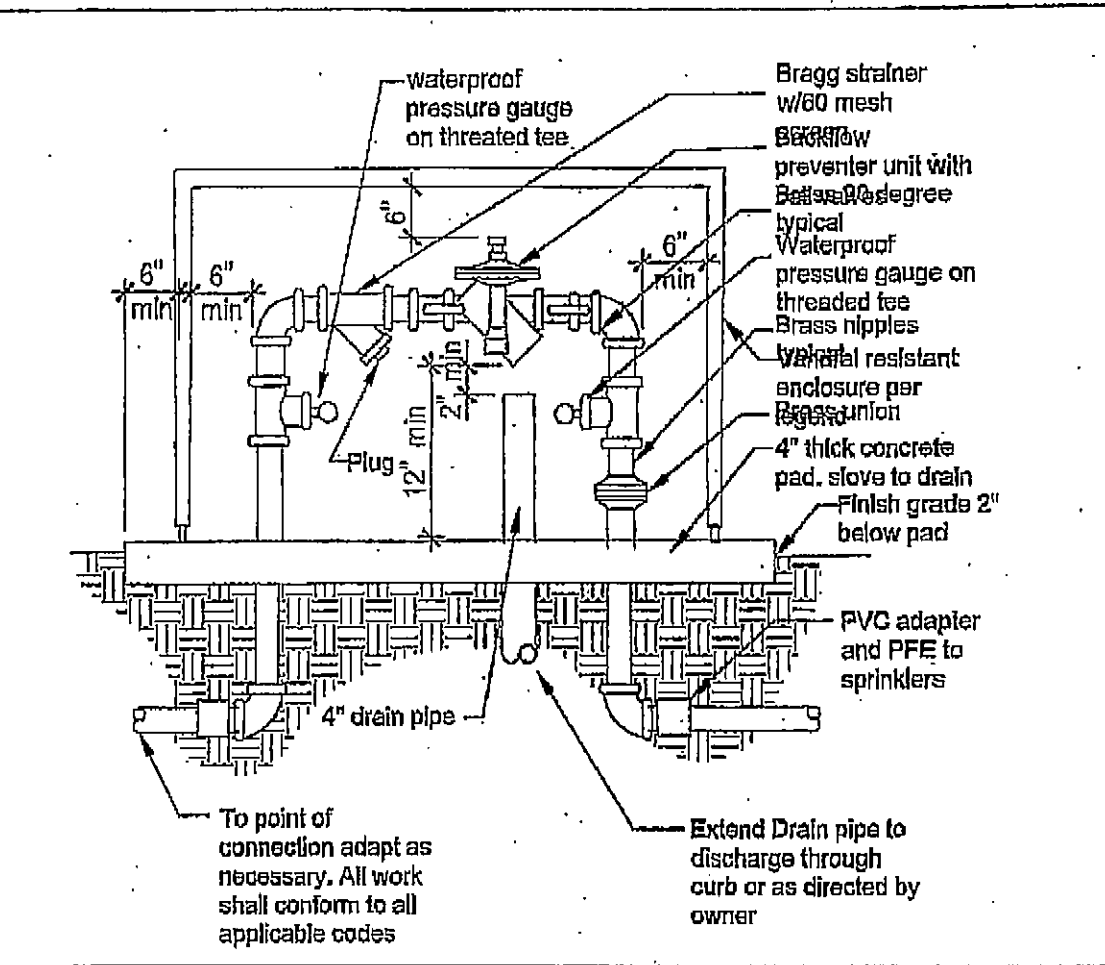
Landscape Notes

Soil Texture	Maximum rate inch per hour							
	Cover	Bar	Cover	Bar	Cover	Bar	Cover	Bar
Course Sandy Soil	2.00	2.00	2.00	1.50	1.50	1.00	1.00	0.50
Course sandy soil over compact lawn	1.75	1.50	1.25	1.50	1.00	0.75	0.75	0.40
Light Sandy	1.75	1.00	1.25	0.50	1.00	0.80	0.75	0.40
Light Sandy compacted subsoil	1.25	0.75	1.00	0.50	0.75	0.40	0.50	0.30
Uniform Soil	1.00	0.50	0.80	0.40	0.50	0.30	0.40	0.20
Light over compact soil	0.50	0.30	0.50	0.25	0.40	0.15	0.30	0.10
Light clay over	0.20	0.15	0.15	0.10	0.12	0.05	0.10	0.05

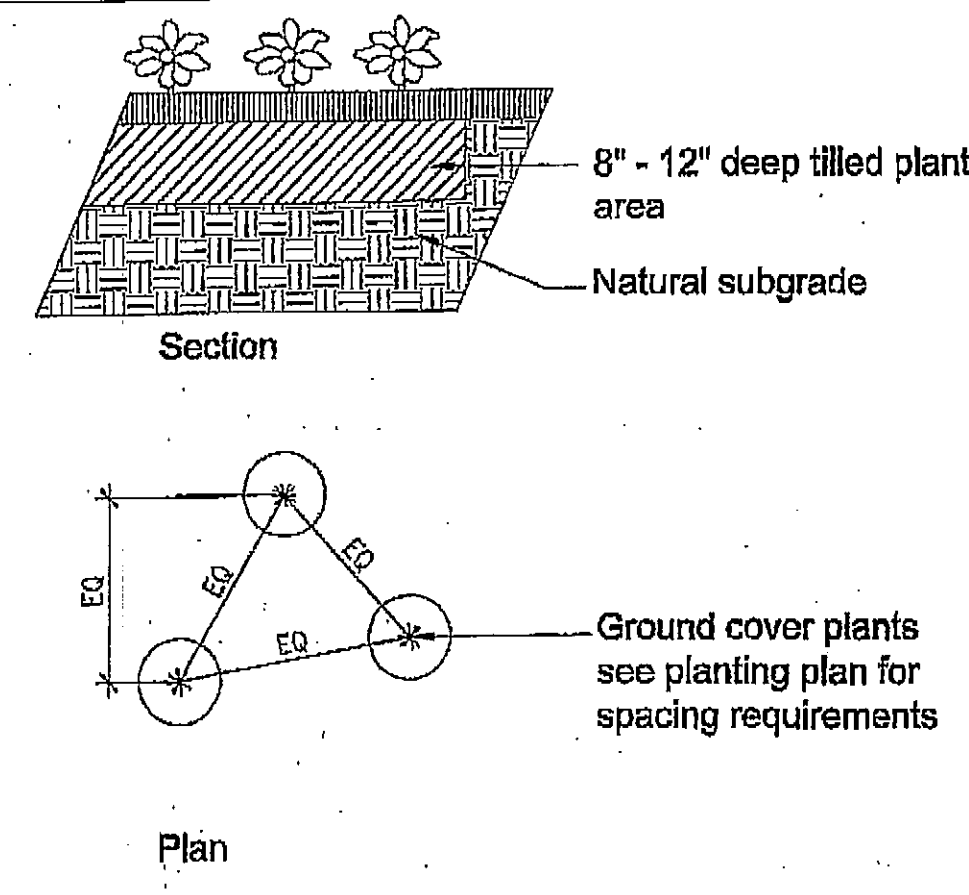
Soil characteristics



POP-UP SPRAY SPRINKLER



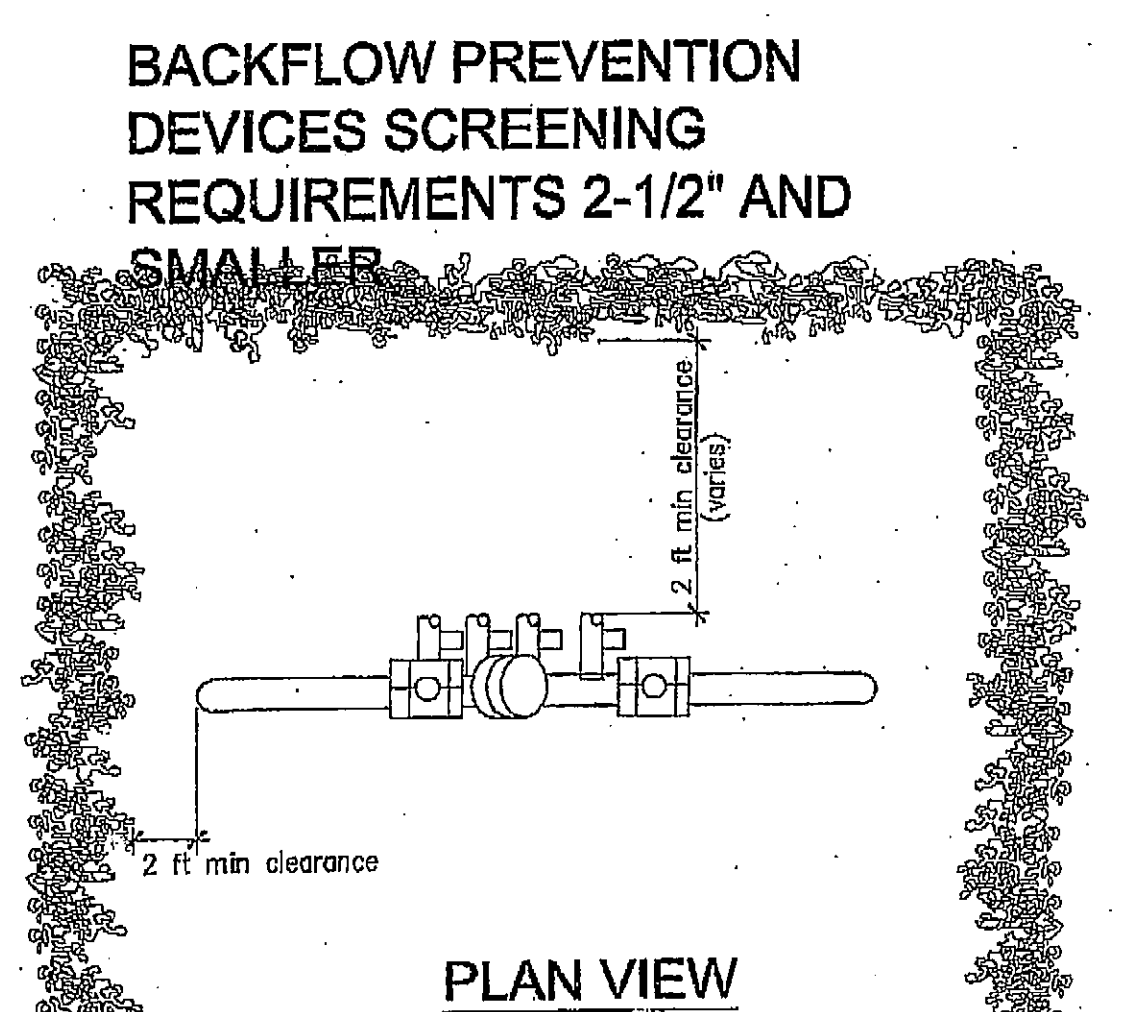
Backflow preventer



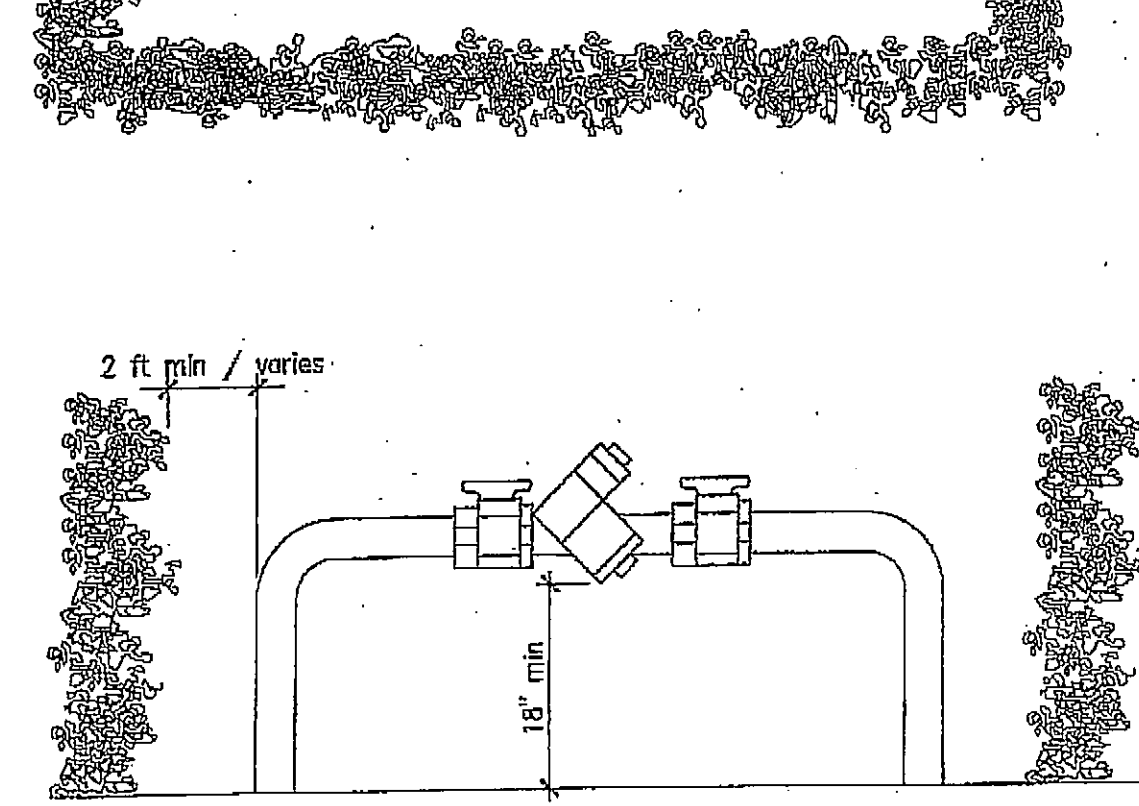
Ground Cover planting detail

- All irrigation lines under drives to be installed in pvc sleeve @ 18" depth min.
- Locate all RCV's and HB's in planting areas. (typ.)
- Jet all lines and trenches under paving 90% min.
- Install remote control valve in ametex 12" box or equal (one valve per box) & marked "irrigation", located boxes in ground cover areas whenever possible and a min. 12" from paving or curbs.
- The contractor shall provide owner with a completely operation system and clean set of marked prints as "as-built" drawing. Reference all trenches with dimensions to nearest building or paving.
- The contractor shall warrant that the system will be a free from defects of workmanship and materials for a period of one year. All repairs necessary shall be made at no cost to the owner.

Note: All other requirements to be per city standards and specifications.

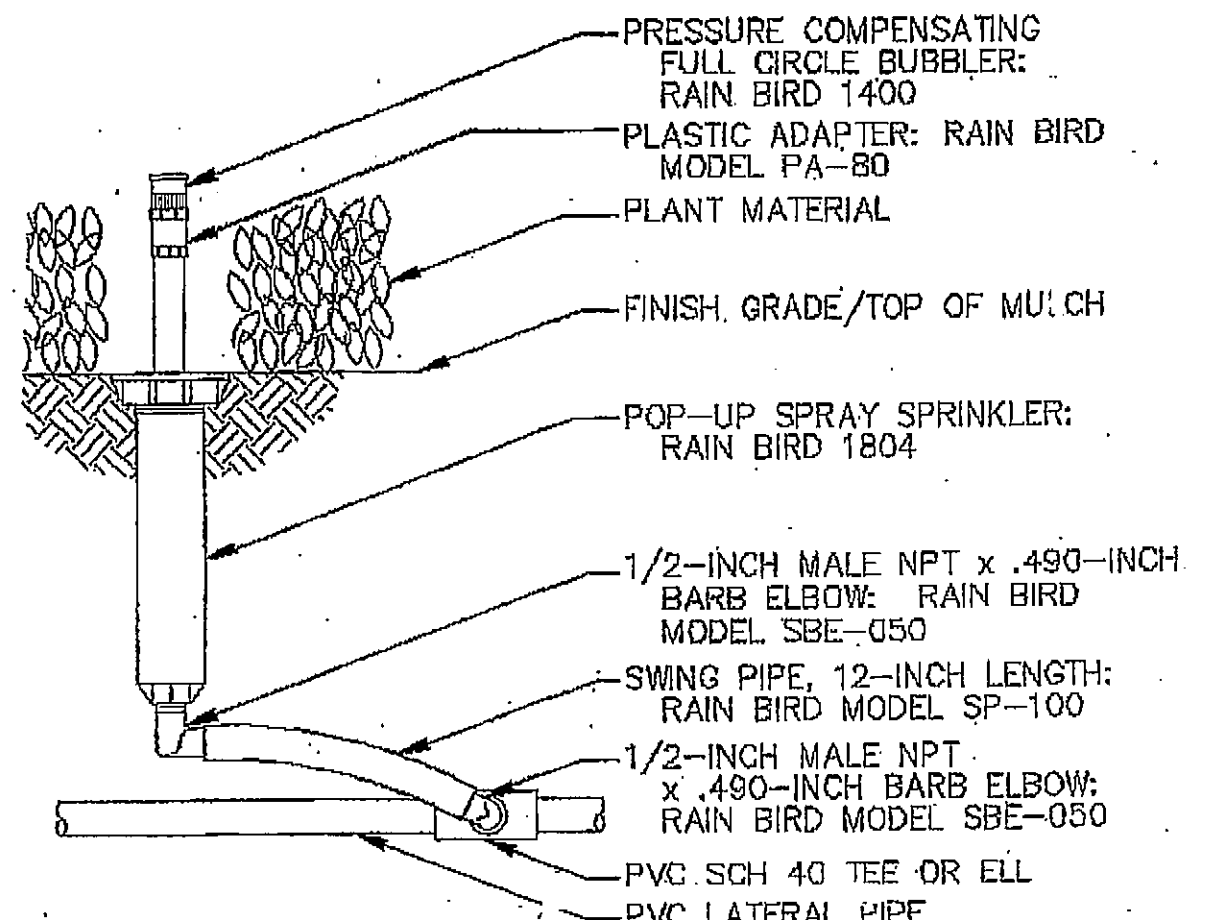


PLAN VIEW

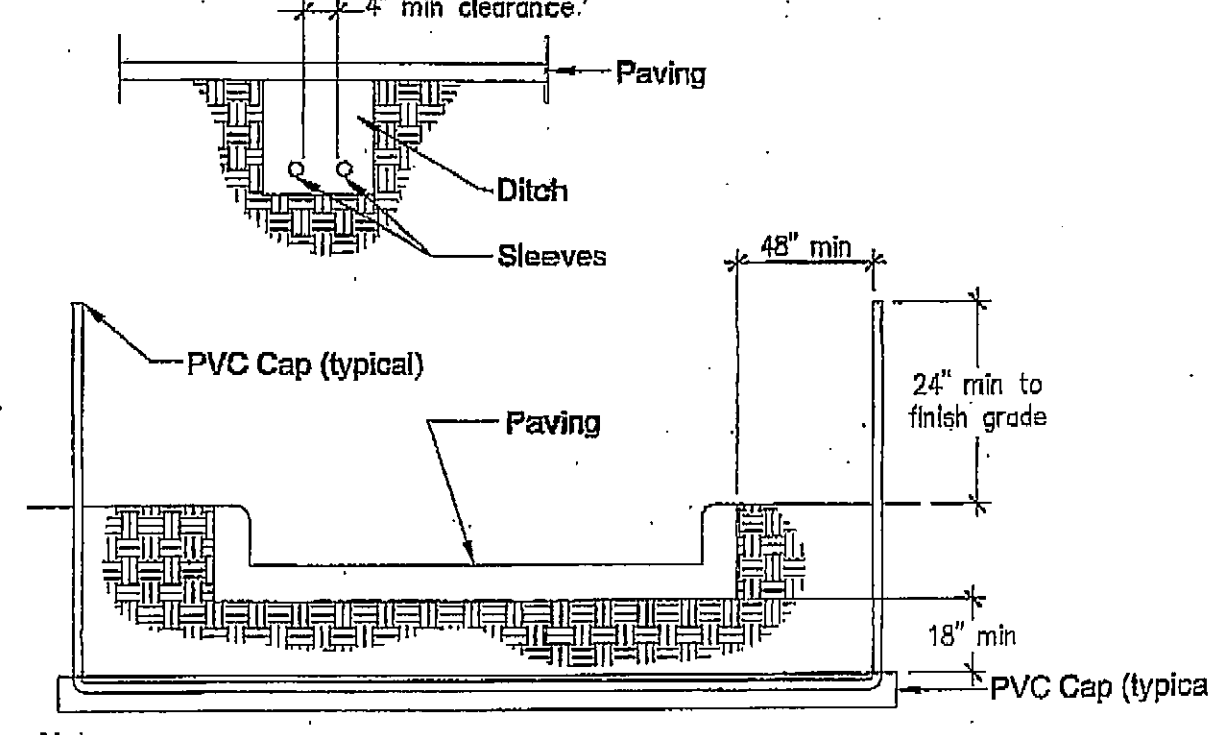


ELEVATION

BACKFLOW DEVICE DETAIL

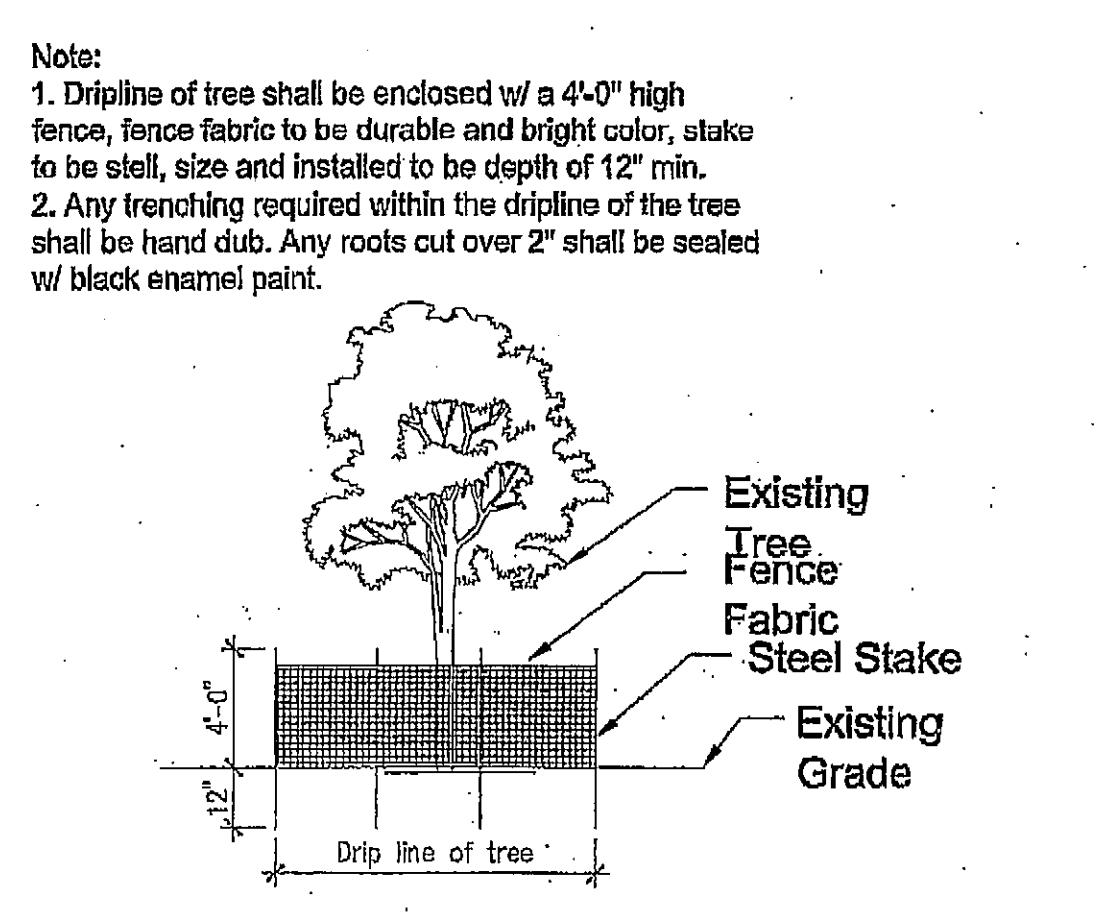


PRESSURE COMPENSATING FULL-CIRCLE BUBBLER

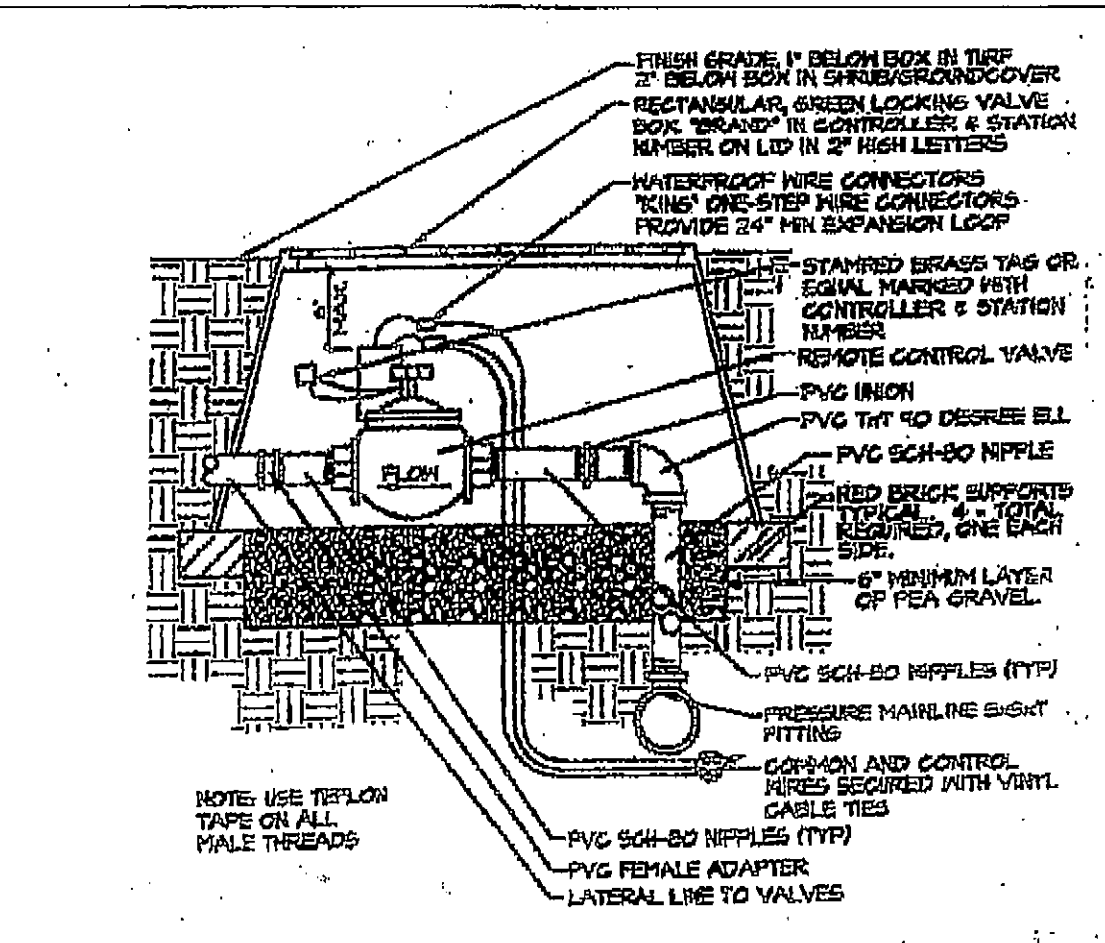


- Notes:
- All PVC irrigation sleeves to be class 200 pipe
 - All joints to be solvent welded and watertight
 - Where there is more than one sleeve, extend the smaller sleeve to 24-inches minimum above finish grade
 - Mechanically temp to 95% compaction.

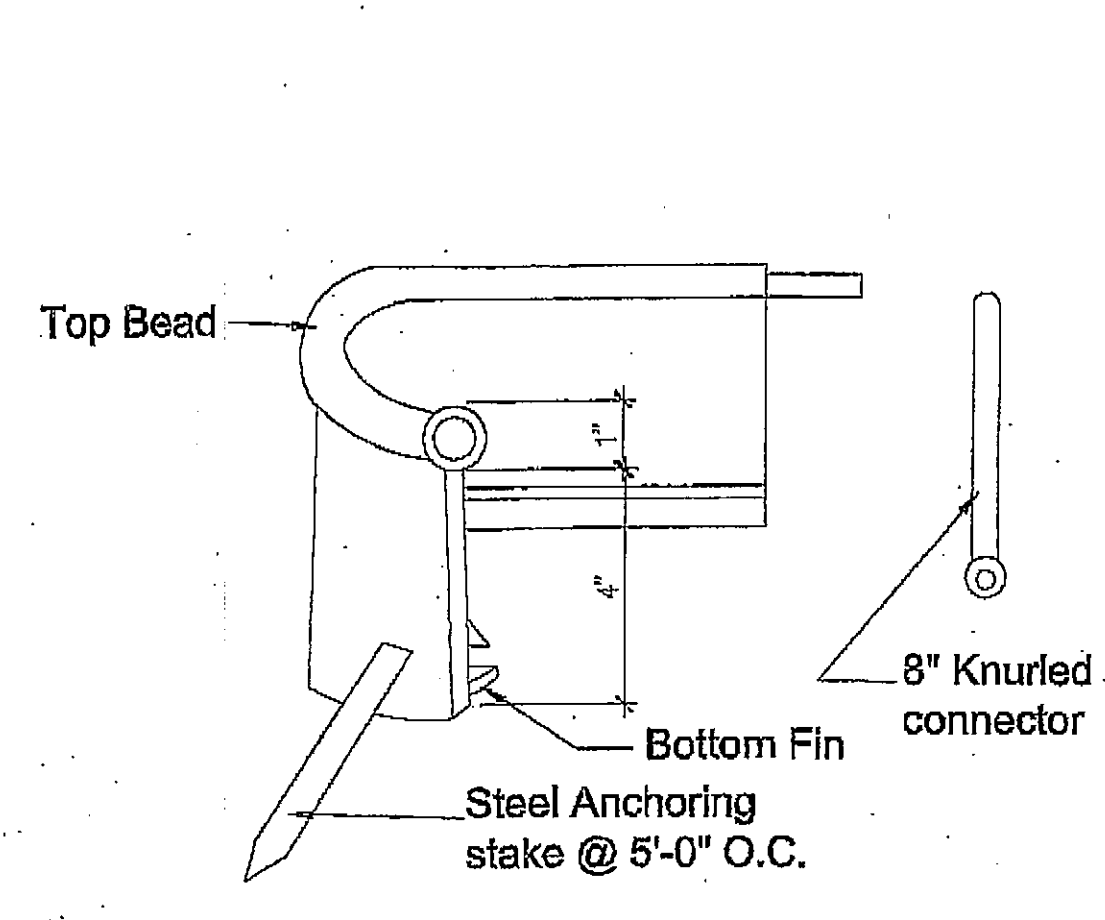
Sleeving



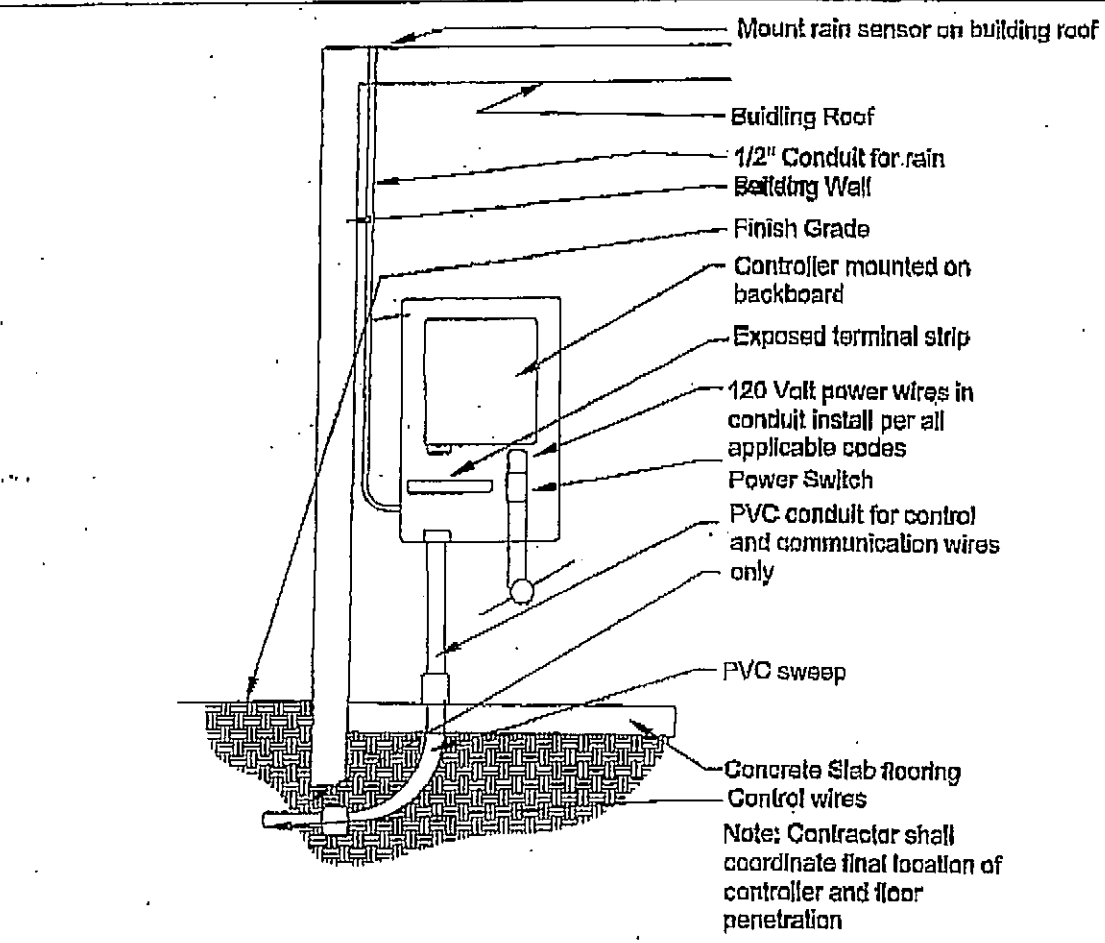
Protection of Existing Tree



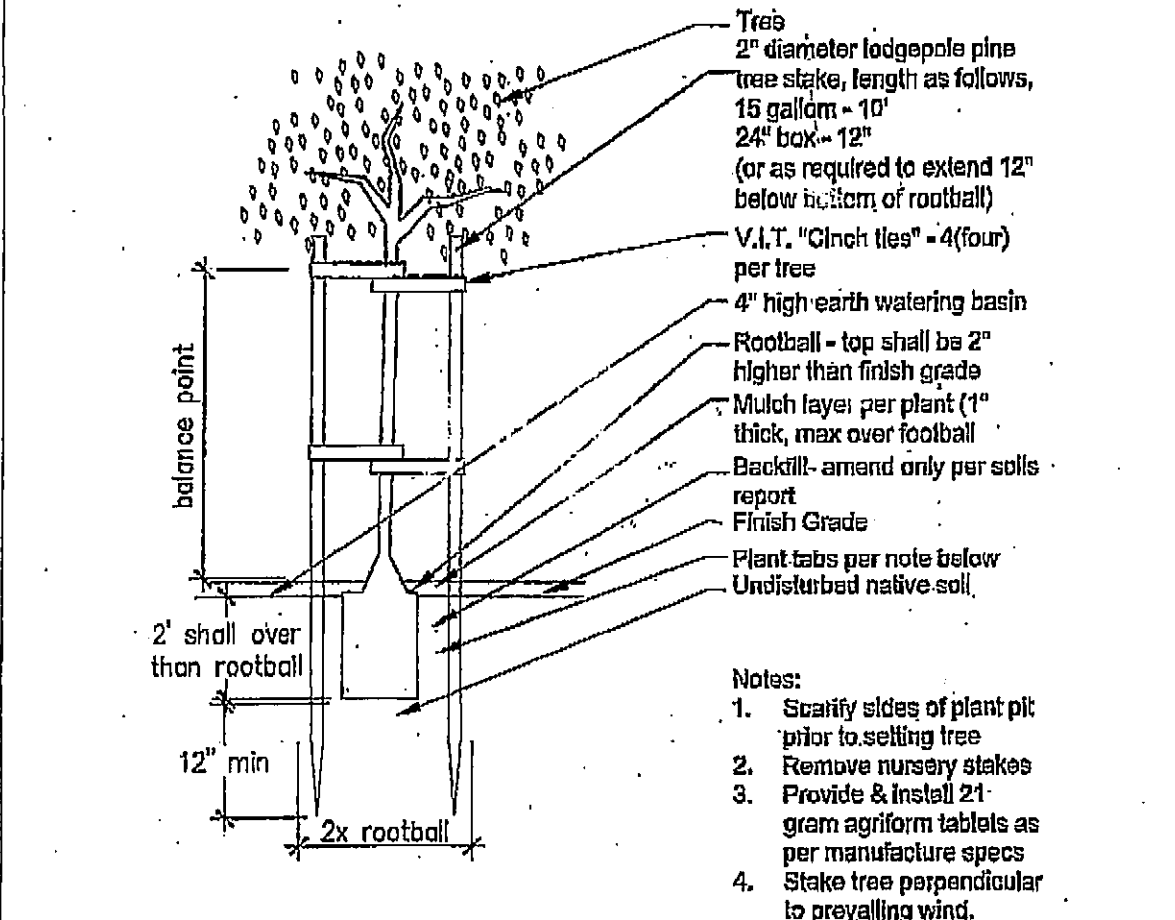
REMOTE CONTROL VALVE



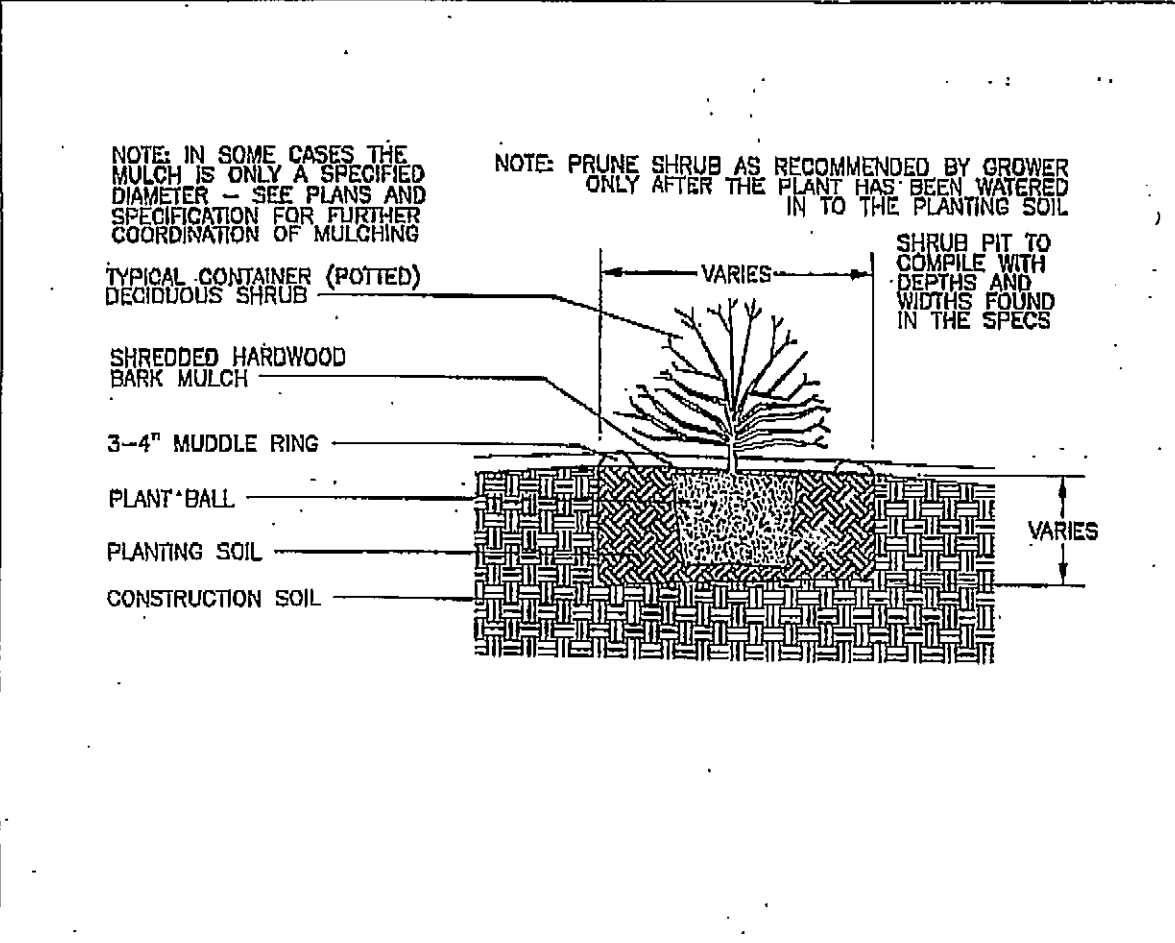
Polyethylene edging



Solid-state Controller



Tree staking detail



CONTAINER SHRUB PLANTING DETAIL

Revisions

THE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY AND COPYRIGHT OF THE DESIGNER AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF THE DESIGNER.

LANDSCAPE ARCHITECTURE

314 E. Broadway Suite 61205
818-241-9168
LarryG@lga.com

Note: use details as applicable to this project only.

LANDSCAPE DETAIL & SPECIFICATION PLAN



DATE: _____

CHECKED: _____

JOB NO.: _____

SHEET