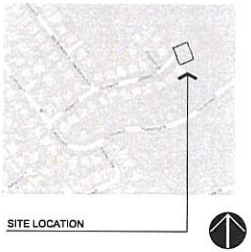
HIGHLAND ESTATES

LOT 10 – LANDSCAPE PLANS

VICINITY MAP

SITE MAP



SHEET INDEX

REVISION LOG

DATE	SHEET NUMBER	DESCRIPTION

OWNER
CHAMBERLAIN GROUP
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San Carlos, CA 94070
(650) 595.5582

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VAN DORN ABED
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ZIP 94103 PH (415) 864-9103 FAX(415) 864-4796

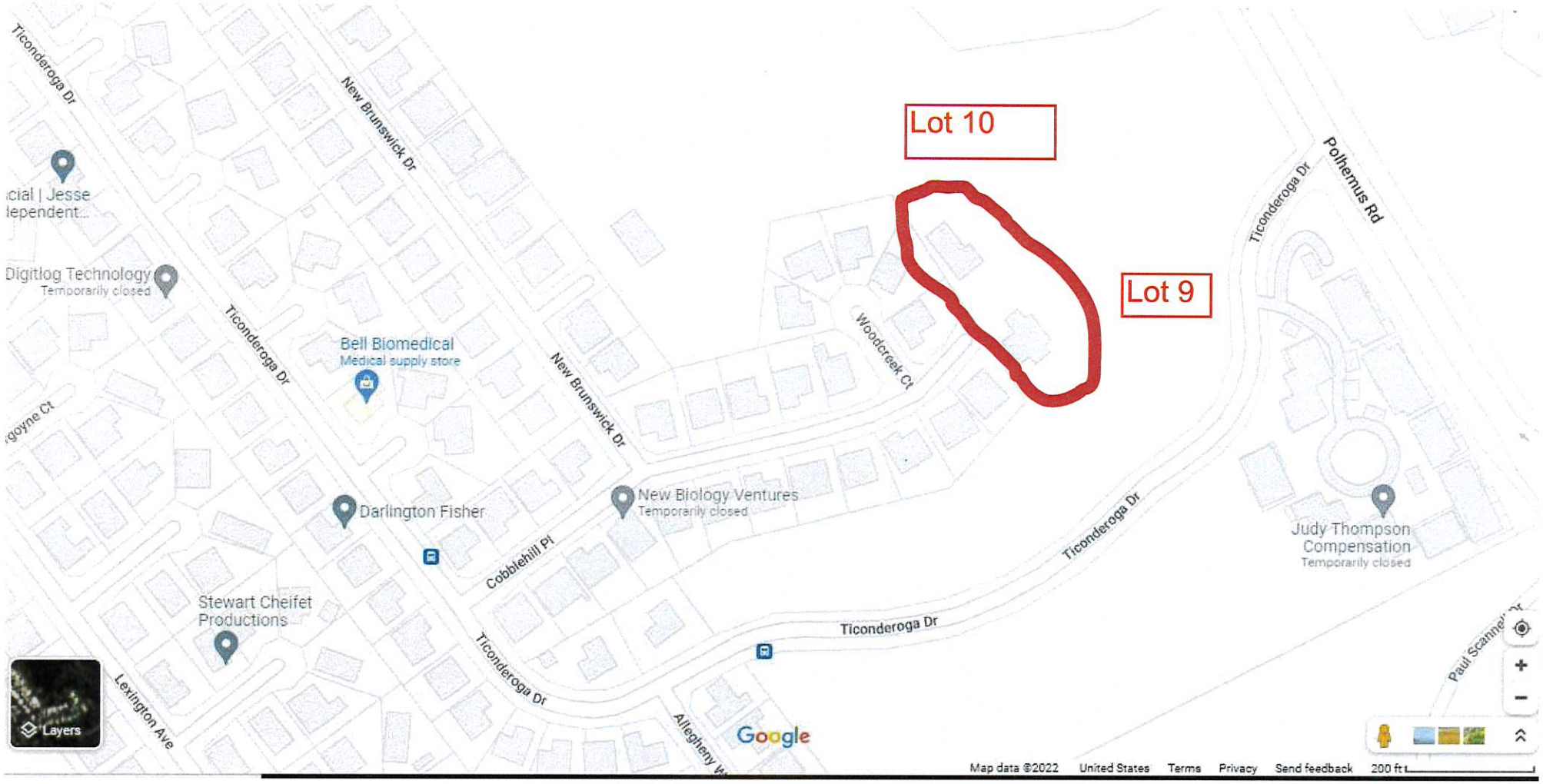
PROJECT MANAGER: KTB
DRAWN BY: ZA
CHECKED BY:

PROJECT NAME/LOCATION:
HIGHLAND ESTATES
CALIFORNIA
SAN MATEO
DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS
LOT 10

REVISIONS: NO. | DESCRIPTION | BY | DATE

SHEET TITLE
COVER SHEET

SCALE: NTS
ISSUE DATE: 3/17/17
PROJECT NO: V1355
SHEET NO.: L0.0


Lot 10
Lot 9
Ticonderoga Dr
New Brunswick Dr
Polhemus Rd
Woodcreek Ct
Cobblehill Pl
Digitlog Technology
Temporarily closed
Bell Biomedical
Medical supply store
Darlington Fisher
New Biology Ventures
Temporarily closed
Judy Thompson
Compensation
Temporarily closed
Stewart Cheifet
Productions
Lexington Ave
Layers
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200 ft

Appendix B – Water Efficient Landscape Worksheet : Lot 10

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Reference Evapotranspiration (ETo): 42.8

Hydrozone # /Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (sq, ft,)	ETAF x Area	Estimated Total Water Use (ETWU)[e]
Regular Landscape Areas							
#1 Sun	**0.3**	**Drip**	**0.81**	**0.37**	**2575**	**953**	**25282**
#2 Shade	**0.3**	**Drip**	**0.81**	**0.37**	**497**	**184**	**4880**
				Totals	3072	1137	**30162**
Special Landscape Areas N/A							
				Totals	(C)	(D)	
						ETWU Total	**30162**
						Maximum Allowed Water Allowance (MAWA)[e]	**44835**

[redacted]

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

[b] ***Irrigation Method***
overhead spray or drip

[c] ***Irrigation Efficiency***
0.75 for spray head
0.81 for drip

[d] ***ETWU* (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.

[e] ***MAWA (Annual Gallons Allowed) =*** *(42.8) (0.62) [(0.55 x LA) + ((1-ETAF) x SLA)]*
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and 0.45 for non-residential areas.

0.55 used in MAWA calculation.

ETAF Calculations

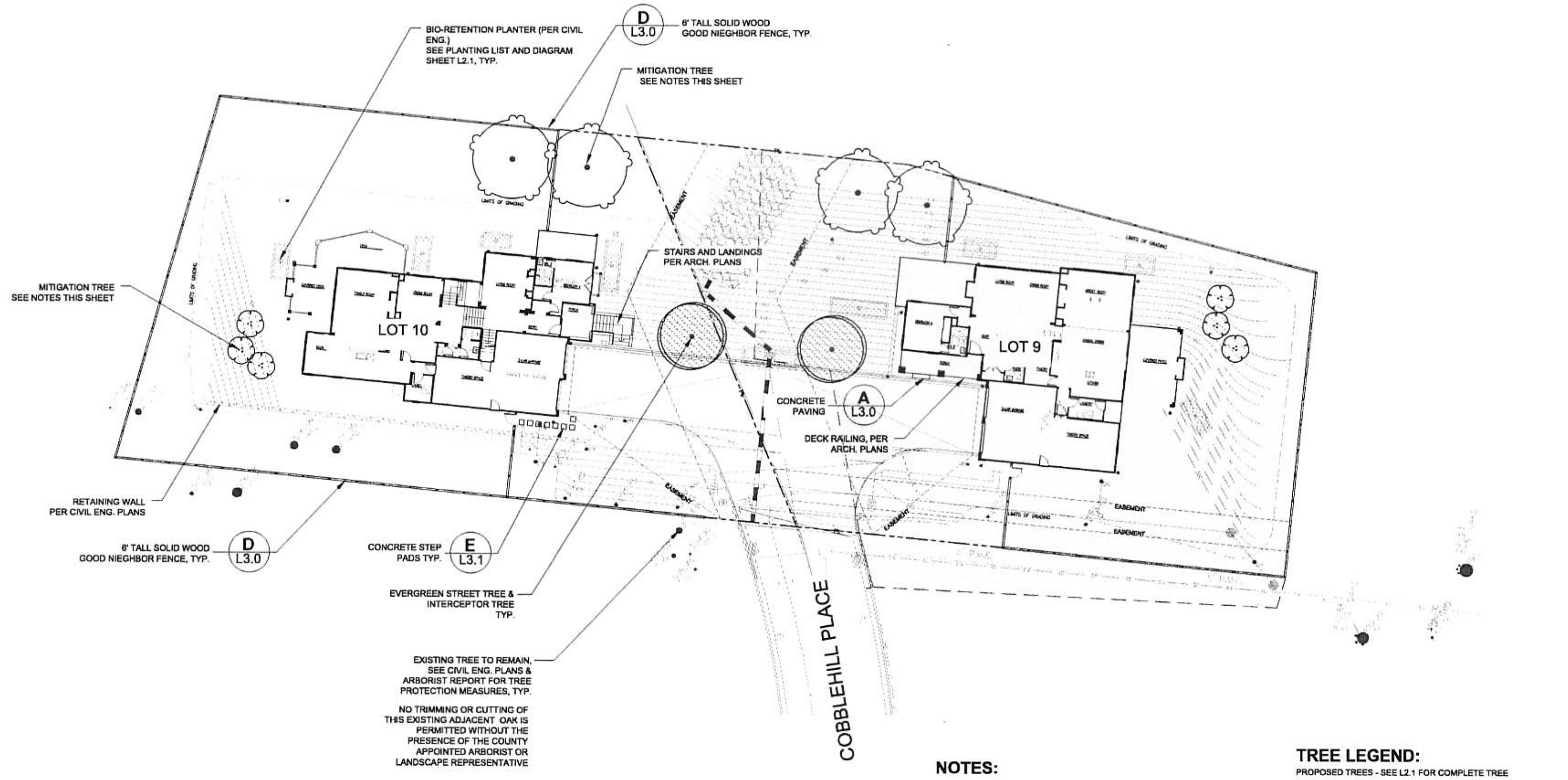
Regular Landscape Areas

Total ETAF x Area	1137
Total Area	3072
Average ETAF	**0.37**

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

All Landscape Areas

Total ETAF x Area	1137
Total Area	3072
Sitewide ETAF	**0.37**



NOTES:

1. **<u>NO PLANTING OR IRRIGATION SHALL OCCUR UNDER THE CANOPIES OF THE EXISTING OAK TREES. FIELD ADJUST NEW REPLACEMENT TREES AS NEEDED.</u>**

TREE LEGEND:

PROPOSED TREES - SEE L2.1 FOR COMPLETE TREE SPECIES/LEGEND

	QUALIFIES FOR STORMWATER CREDIT WHEN WITHIN 25' OF IMPERVIOUS SURFACE.
	TOTAL SITE (LOT 5-11): 22 MITIGATION TREES REQUIRED 49 MITIGATION TREES PROVIDED PROVIDED - LOT 9 - LOT 11: 3 = REAR YARD MITIGATION TREES MIN. PROVIDED PER COA AES-1B, EACH LOT 14 TOTAL MITIGATION TREES, WITH MIN. 4 OAKS.
•	EXISTING TREES TO REMAIN, TYP. SEE CIVIL PLANS AND ARBORISTS REPORT FOR TREE PROTECTION MEASURES.

0 8 16 32 64

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HIGHLAND ESTATES
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS
LOT 10

REVISIONS:

NO	DESCRIPTION	BY	DATE

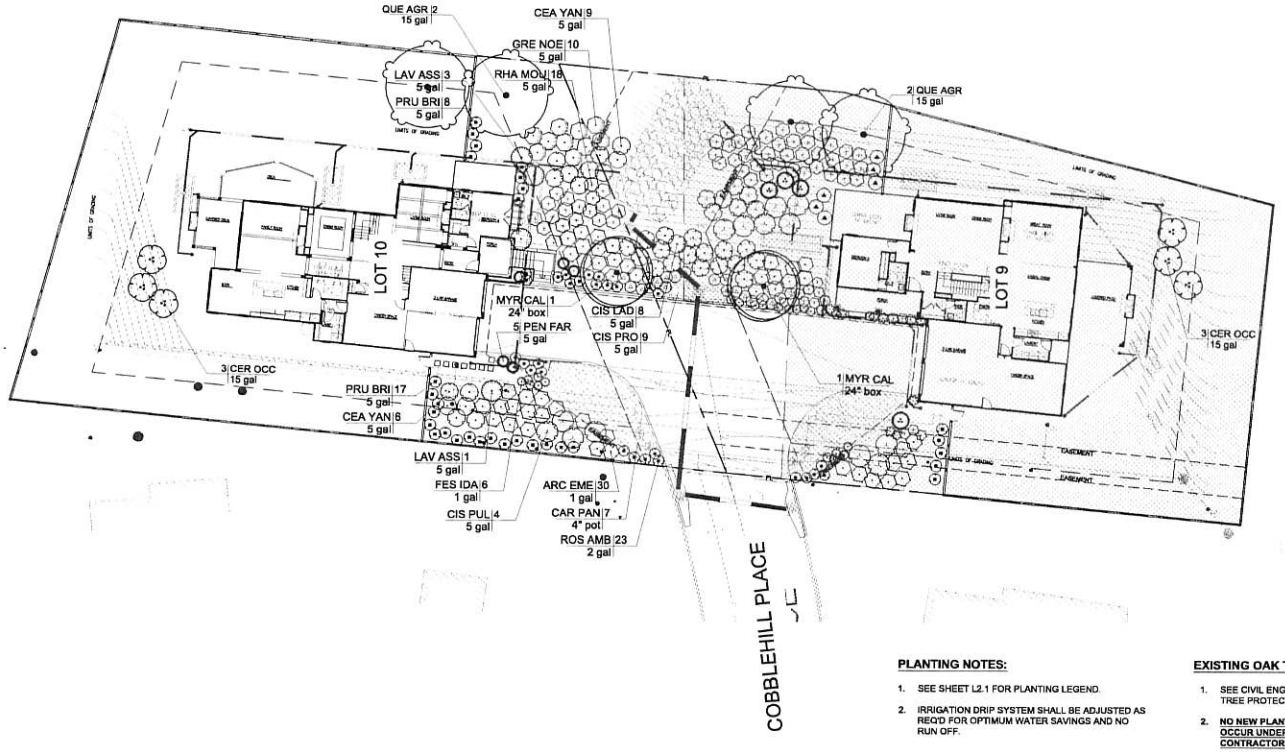
SHEET TITLE:
CALLOUT & LAYOUT PLAN

SCALE: 1/16" = 1'-0"

ISSUE DATE: 3/17/17

PROJECT NO: V1355

SHEET NO.
L1.0



PLANTING NOTES:

1. SEE SHEET L2.1 FOR PLANTING LEGEND.
2. IRRIGATION DRIP SYSTEM SHALL BE ADJUSTED AS REQ'D FOR OPTIMUM WATER SAVINGS AND NO RUN OFF.

EROSION CONTROL NOTES:

1. LEAVE EROSION CONTROL MAT ON ALL SLOPES. CUT HOLES FOR NEW SHRUBS/TREES AS NEEDED.
2. SEE CIVIL IMPROVEMENT PLANS, SHEET C10.10 - C10.90 FOR COMPLETE EROSION CONTROL MEASURES.

EXISTING OAK TREE NOTES:

1. SEE CIVIL ENG. PLANS & ARBORIST REPORT FOR TREE PROTECTION MEASURES, TYP.
2. **NO NEW PLANTING OR IRRIGATION SHALL OCCUR UNDER ANY EXISTING OAK TREES. CONTRACTOR TO FIELD ADJUST AS NECESSARY.**
3. CONTRACTOR SHALL PROTECT EXISTING OAK TREES FROM IRRIGATION & ANY POTENTIAL IRRIGATION RUN OFF.
4. NATIVE LEAF LITTER MULCH SHALL REMAIN UNDER ALL EXISTING OAK TREES . IN ANY BARE AREAS UNDER TREES, CONTRACTOR SHALL APPLY A 3-INCH LAYER OF MULCH AROUND THE BASE OF OAK TREES. APPLY BROADLY. DO NOT PLACE MULCH IMMEDIATELY AGAINST THE TRUNK. KEEP MULCH CLEAR FROM THE TRUNK OF THE OAK TREE BY 12 INCHES.

SAN MATEO COUNTY WATER EFFICIENT LANDSCAPE ORDINANCE COMPLIANCE STATEMENT:

"I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN."

ZEKI ABED - LICENSED LANDSCAPE ARCHITECT

0 8 16 32 64

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SAN MATEO CALIFORNIA

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LANDSCAPE IMPROVEMENT PLANS
LOT 10

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SHEET TITLE
PLANTING PLAN

SCALE
1/16" = 1'-0"
ISSUE DATE
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SHEET NO
L2.0

BIO-RETENTION PLANTERS ON THE NORTH & NORTHEAST SIDES OF BUILDINGS

5 GAL	CORNUS SERICEA "ISANTI"	QTY: 1
1 GAL	CAREX PRAEGRACILUS	QTY: CAN-TO-CAN FULL
ALTERNATIVE:		
5 GAL	CARPENTERIA CALIFORNICA	QTY: 1
1 GAL	CAREX PRAEGRACILUS	QTY: CAN-TO-CAN FULL

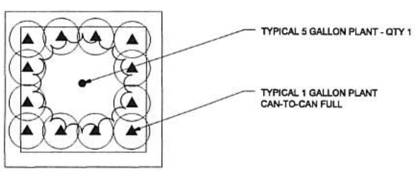
BIO-RETENTION PLANTERS ON THE SOUTH & SOUTHWEST SIDES OF BUILDINGS

5 GAL	MUHLENBERGIA RIGENS	QTY: 1
1 GAL	MIMULUS AURANTIACUS & CAREX PRAEGRACILUS (ALTERNATING)	QTY: CAN-TO-CAN FULL

NOTES:

1. CONTRACTOR TO HAND WATER PLANTS IN BIO-RETENTION PLANTERS UNTIL ESTABLISHED.
2. SEE CIVIL ENGINEER'S PLANS AND SPECIFICATIONS FOR BIO-RETENTION SOIL MIX.
3. PLANT SPECIES LISTED ABOVE ARE APPROVED FOR USE IN BIO-PLANTERS PER THE SAN MATEO COUNTY STORMWATER MEASURES PLANT LIST

PLANTING DIAGRAM:



TREE PLANTING LIST (lots 5-11)

CODE	BOTANICAL NAME	COMMON NAME	CONT	QTY	WUCOLS	REMARKS
ARC MAN	Arctostaphylos manzanita MULTI-TRUNK	Manzanita	15 gal	8	L	Multi-Trunk/Native Mitigation tree
CER OCC	Cercis occidentalis - MULTI-TRUNK	Western Redbud	15 gal	22	L	Multi-trunk/Native Mitigation Tree
HET AR2	Heteromeles arbutifolia	Toyon	24"box	8	L	Evergreen/Native Mitigation Tree (Interceptor Tree) Min. install size 9' tall x 5' wide
MYR CA2	Myrica californica	Pacific Wax Myrtle	15 gal	2	L	Evergreen/Native Tree
MYR CAL	Myrica californica	Pacific Wax Myrtle	24"box	4	L	Evergreen Tree/Native Tree (Interceptor Tree) Min. install size 9' tall x 5' wide
QUE AGR	Quercus agrifolia	Coast Live Oak	15 gal	5	L	Single-Trunk/Native Mitigation tree
SAM MEX	Sambucus mexicana - MULTI-TRUNK	Mexican Elderberry	15 gal	5	L	Multi-Trunk/Native Mitigation tree

SHRUB/GROUNDCOVER PLANTING LIST (Lots 5-11)

SHRUBS

CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY	IRRIGATION/WATER USE
ACA COG	Acacia cognata 'Cousin Itt'	River Wattle	5 gal	17	L
ALY MON	Alyogyne huegelii 'Monterey Bay'	Blue Hibiscus	5 gal	11	L
ARB ELF	Arbutus unedo 'Elfin King'	Dwarf Strawberry Tree	5 gal	8	L
ARC EME	Arctostaphylos x 'Emerald Carpet'	Emerald Carpet Manzanita	1 gal	121	L
CEA YAN	Ceanothus griseus horizontalis 'Yankee Point'	California Lilac	5 gal	102	L
CEA CON	Ceanothus x 'Concha'	California Lilac	5 gal	7	L
CIS LAD	Cistus ladanifer	Crimson Spot Rockrose	5 gal	31	L
CIS PUL	Cistus pulverulentus 'Sunset'	Rockrose	5 gal	34	L
CIS PRO	Cistus salviifolius 'Prostratus'	Sageleaf Rockrose	5 gal	54	L
CIS HYB	Cistus x hybridus	White Rockrose	5 gal	58	L
CIT MEY	Citrus x meyeri	Meyer Lemon	5 gal	3	L
DIE BIC	Dietes bicolor	Fortnight Lily	1 gal	46	L
ERI WAY	Erigeron glaucus 'Wayne Roderick'	Seaside Daisy	1 gal	36	L
GRE NOE	Grevillea x 'Noellii'	Grevillea	5 gal	45	L
LAV ASS	Lavatera assurgentiflora	Mallow	5 gal	9	L
PEN FAR	Pennisetum x 'Fairy Tails'	Evergreen Fountain Grass	5 gal	12	L
PIT TEN	Pittosporum tenuifolium 'Marjorie Channon'	Tawhiwhi	5 gal	30	L
PIT CRE	Pittosporum tobira 'Cream De Mint' TM	Cream De Mint Dwarf Mock Orange	5 gal	15	L
PIT WHE L	Pittosporum tobira 'Wheelers Dwarf'	Wheeler's Dwarf Mock Orange	5 gal	34	L
PRU BRI	Prunus caroliniana 'Bright 'N Tight' TM	Bright 'N Tight Carolina Laurel	5 gal	44	L
RHA MOU	Rhamnus californica 'Mound San Bruno'	California Coffeeberry	5 gal	120	L
RHA SEA	Rhamnus californica 'Seaview'	California Coffee Berry	5 gal	22	L
ROS AMB	Rosa x 'Flower Carpet Amber'	Amber Carpet Rose	2 gal	65	L
ROS RED	Rosa x 'Flower Carpet Red'	Rose	2 gal	35	L
WES MOR	Westringia fruticosa 'Morning Light'	Morning Light Coast Rosemary	5 gal	9	L

GRASSES

CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY	REMARKS
FES IDA	Festuca idahoensis	Idaho Fescue	1 gal	67	L

GROUND COVERS

CODE	BOTANICAL NAME	COMMON NAME	CONT	SPACING	QTY	REMARKS
CAR PAN	Carex pansa	Sanddune Sedge	4" pot	6" o.c.	13 sf	L

PLANTING QUANTITIES SHOWN L2.1 ARE TOTAL QUANTITIES FOR LOTS 5-11.

SEE L2.0 FOR INDIVIDUAL LOT PLANTING PLANS.

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SAN MATEO CALIFORNIA
DRAWING TITLE: LANDSCAPE IMPROVEMENT PLANS

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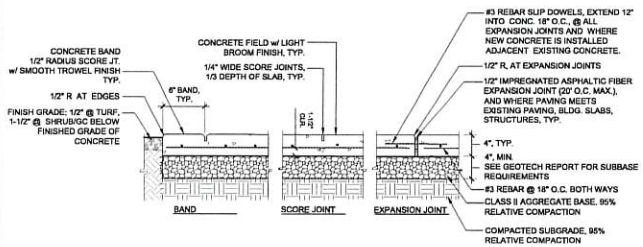
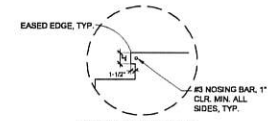
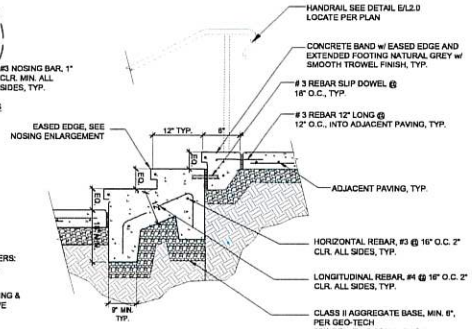
SHEET TITLE: PLANTING LEGEND
SCALE: NTS
ISSUE DATE: 3/17/17
PROJECT NO: V1355
SHEET NO: L2.1



A CONCRETE PAVING
1" = 1'-0"





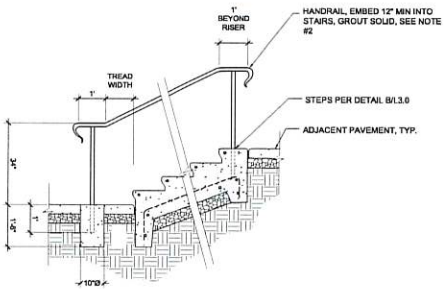
NOTES:

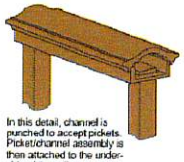
1. CONCRETE STAIRS TO HAVE LIGHT BROOM FINISH.
2. COLOR TO MATCH THE ADJACENT PAVING.
3. SEE PLAN FOR GENERAL STEP LAYOUT. RISERS: 5" MIN. TO 7-3/4" MAX AND EQUAL. SEE CIVIL GRADING PLANS FOR RISER HEIGHTS.
4. MAXIMUM 2% DIRECTIONAL SLOPE ON LANDING & WALKS IN ANY DIRECTION. PROVIDE POSTIVE DRAINAGE ON STAIRS.

B CONCRETE STEPS
3/4" = 1'-0"

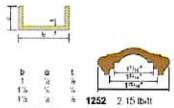
CONCRETE NOTES:

1. SCORING PATTERN TO MEET ALL ACI INTERNATIONAL GUIDELINES.
2. ALL FORMWORK/SCORING/PROPOSED JOINT SPACING TO BE APPROVED AND REVIEWED BY OWNERS' REPRESENTATIVE PRIOR TO POURING.
3. ALL SCORING/CONTRACTION JOINTS TO BE MINIMUM 1/3 DEPTH OF SLAB.
4. DISTANCE BETWEEN CONTRACTION JTS TO BE MAXIMUM 24 TIMES SLAB THICKNESS. ALL CONTRACTION JTS TO BE CONTINUOUS,NOT STAGGERED OR OFFSET. REFER TO ACI INTL. CCS-1 SERIES GUIDELINES FOR ALL CONCRETE WORK. ANY DISCREPANCIES WITH DRAWINGS TO BE BROUGHT TO ATTENTION OF OWNER/ARCHITECT PRIOR TO COMMENCEMENT OF WORK.
5. CONCRETE PANELS TO BE AS SQUARE AS PRACTICAL. NEVER MAKE LONG SIDE MORE THAN 1-1/2 TIMES LENGTH OF SHORT SIDE. NO ONE PANEL TO BE MORE THAN 100 SQ. FT.
6. INSTALL EXPANSION JOINTS WHERE NEW PAVING MEETS EXISTING PAVING, WALLS, CURBS, FOUNDATIONS, OR OTHER FIXED OBJECTS, AND CHANGES IN WALK DIRECTIONS.
7. CONCRETE COLOR TO BE NATURAL GRAY.
8. BROOM FINISH SHALL BE PERPENDICULAR TO PATH OF TRAVEL.
9. CONTRACTOR SHALL COORDINATE INSTALLATION OF REBAR SLIP DOWELS WHERE DRIVEWAY MEETS GARAGE CONCRETE PAD WITH OWNER'S REPRESENTATIVE AND PROJECT STRUCTURAL ENGINEER. DOWELS SHALL BE #4 REBAR SPACED 24" O.C. EXTENDING 12" INTO DRIVEWAY AND GARAGE PAD, OR AS SPECIFIED BY STRUCTURAL ENGINEER. CONTRACTOR SHALL ONLY INSTALL REBAR DOWELS IF APPROVED BY OWNER'S REPRESENTATIVE AND PROJECT STRUCTURAL ENGINEER. SUBMIT TO OWNER'S REPRESENTATIVE PROPOSED DOWEL LOCATIONS.
10. FOR ALL PAVING DETAILS SHOWN, THE PAVING PROFILE, AGGREGATE, SUBBASE PREPARATION & COMPACTION PER GEOTECH ENGINEER, TYP. PROFILES ARE SHOWN FOR DESIGN INTENT & BIDDING PURPOSES ONLY. SEE GEOTECH REPORT FOR PAVING & SUBBASE REQUIREMENTS.





HANDRAIL, CHANNEL & POST



HANDRAIL MAKE AND MODEL

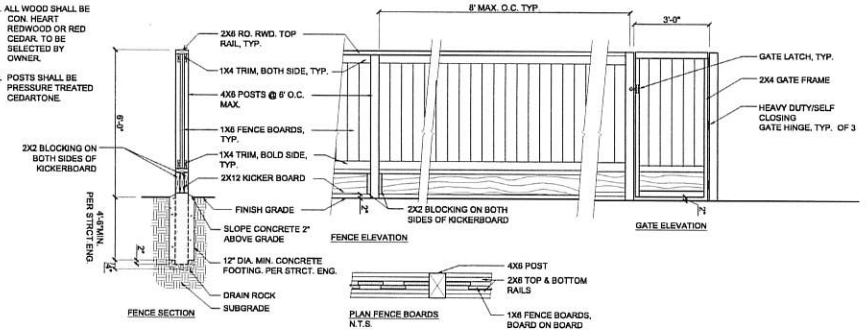
HANDRAIL NOTES:

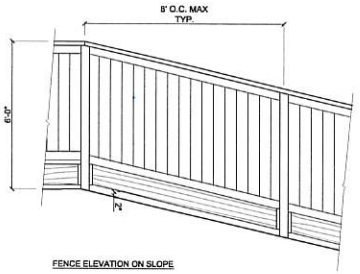
1. HANDRAILS TO BE 1-9/16" MODEL H2901 ALUMINUM HANDRAIL WITH LAMBS TONGUE TERMINUS AS SHOWN. ALUMINUM CHANNEL SHALL BE MODEL C2100512. POSTS SHALL BE 1" SQUARE STEEL BAR WELDED TO BASE OF CHANNEL.
2. PRIME AND PAINT WITH ZINC-RICH PRIMER AND 2 COATS ENAMEL. COLOR TO BE DARK BRONZE. SUBMIT PAINT SAMPLE TO OWNER FOR APPROVAL.
3. AVAILABLE THROUGH R&B WAGNER, INC. (888) 243-6914.

C HANDRAIL
1/2" = 1'-0"

NOTES:

1. ALL WOOD SHALL BE CON. HEART REDWOOD OR RED CEDAR, TO BE SELECTED BY OWNER.
2. POSTS SHALL BE PRESSURE TREATED CEDARTONE.





D 6' TALL WOOD FENCE & GATE
NTS

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HIGHLAND ESTATES
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

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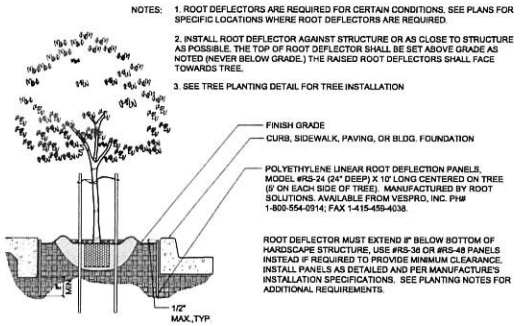
LANDSCAPE DETAILS

SCALE:
AS NOTED

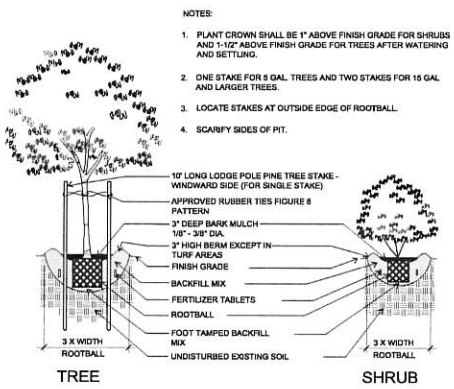
ISSUE DATE:
3/17/17

PROJECT NO.
V1355

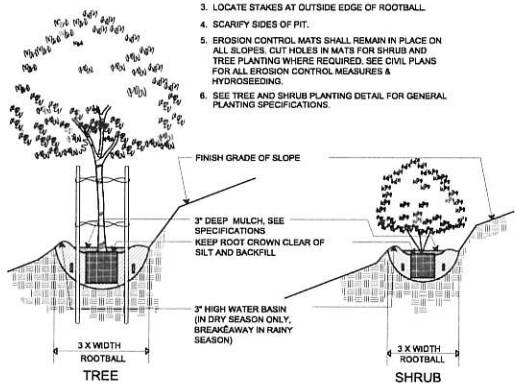
SHEET NO.
L3.0



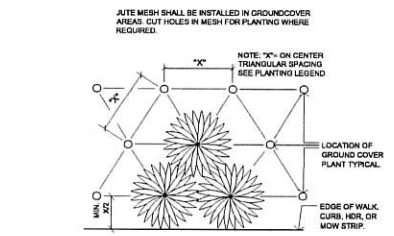
A ROOT DEFLECTOR
NTS



B TREE AND SHRUB PLANTING
NTS



C HILLSIDE TREE AND SHRUB PLANTING
NTS



D GROUNDCOVER PLANTING
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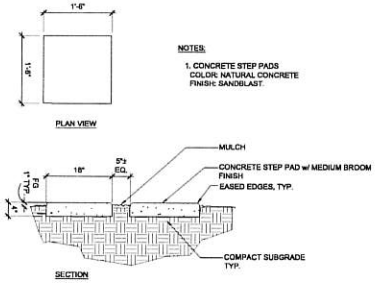

E CONCRETE STEP PADS
3/4" = 1'-0"

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SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

NO.	DESCRIPTION	DATE
1		

SHEET TITLE:
LANDSCAPE DETAILS

SCALE:
AS NOTED

ISSUE DATE:
3/17/17

PROJECT NO:
V1355

SHEET NO.
L3.1

GENERAL NOTES:

1. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE, UNLESS OTHERWISE NOTED. AVOID ANY CONFLICTS BETWEEN THE IRRIGATION SYSTEM, PLANTING AND ARCHITECTURAL FEATURES.
2. CONTRACTOR SHALL PERFORM PRESSURE TESTS (STATIC & DYNAMIC) AND FLOW TESTS (GPM) AT POINT OF CONNECTION (P.O.C.) PRIOR TO BEGINNING WORK. SEE IRRIGATION NOTES FOR PRESSURE AND FLOW TEST REQUIREMENTS AND PROCEDURES. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CORRECTIVE MEASURES REQUIRED TO IRRIGATION SYSTEM, AT NO ADDITIONAL COST TO THE OWNER, IF IRRIGATION SYSTEM IS INSTALLED WITHOUT REQUIRED TESTS, AND DISCREPANCIES IN PRESSURE AND FLOW AT THE P.O.C. ARE DISCOVERED THAT PREVENT THE IRRIGATION SYSTEM FROM FUNCTIONING CORRECTLY.

WATER PRESSURE AT P.O.C. NOTES:

1. CONTRACTOR SHALL VERIFY WATER PRESSURE ON SITE. IF PRESSURE IS 65 PSI OR HIGHER AT P.O.C., CONTRACTOR SHALL INSTALL A PRESSURE REDUCER AS SHOWN, AND SET PRESSURE REDUCER TO 65 PSI. PRESSURE REDUCER SHALL BE 1-1/4" WILKINS LEAD FREE 500XL-YSBR (INCLUDES PRESSURE REDUCER & FILTER), SEE IRRIGATION DETAILS.
2. IF PRESSURE IS LESS THAN 65 PSI OMIT PRESSURE REDUCER.
3. IF PRESSURE IS LESS THAN 55 PSI NOTIFY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT FOR CORRECTIVE MEASURES.

SLEEVE NOTES:

1. FOR DESIGN CLARITY, NOT ALL SLEEVES SHOWN. CONTRACTOR SHALL SLEEVE ALL PIPES CROSSING UNDER PAVED AREAS.
2. WHERE LATERAL LINES WITH SLEEVES CROSS ROADS OR DRIVEWAYS, CONTRACTOR SHALL INSTALL ONE SPARE 4" CLASS 315 PVC SLEEVE.
3. WHERE MAIN LINES WITH SLEEVES CROSS ROADS OR DRIVEWAYS, CONTRACTOR SHALL INSTALL ONE SPARE 6" CLASS 315 PVC SLEEVE.

SPECIAL REQUIREMENTS AT EXISTING TREES

1. ALL UNDERGROUND IRRIGATION LINES SHALL BE ROUTED OUTSIDE THE DRIP LINES WHERE POSSIBLE.
2. IF UNDERGROUND IRRIGATION LINES MUST TRAVERSE THROUGH THE DRIP LINE AREA, LOCATION OF IRRIGATION LINES SHALL BE REVIEWED WITH PROJECT ARBORIST AND MODIFIED AS NEEDED PRIOR TO INSTALLATION. WHEN LINES ARE PROPOSED WITHIN A DISTANCE FROM THE TRUNKS OF FIVE (5) TIMES THEIR DIAMETER, THE PROJECT ARBORIST MAY RECOMMEND THAT A PNEUMATIC AIR DEVICE IS USED TO EXCAVATE THE TRENCH.

EXISTING OAK TREE NOTES:

1. SEE CIVIL ENG. PLANS & ARBORIST REPORT FOR TREE PROTECTION MEASURES, TYP.
2. NO NEW PLANTING OR IRRIGATION SHALL OCCUR UNDER ANY EXISTING OAK TREES. CONTRACTOR TO FIELD ADJUST AS NECESSARY.
3. CONTRACTOR SHALL PROTECT EXISTING OAK TREES FROM IRRIGATION & ANY POTENTIAL IRRIGATION RUN OFF.

NOTE: CONTRACTOR SHALL FIELD STAKE ALL TREE LOCATIONS PRIOR TO INSTALLATION OF IRRIGATION SYSTEM TO AVOID CONFLICTS WITH TREE LOCATIONS AND MAIN LINES/LATERAL LINES. IRRIGATION LATERAL LINES AND MAIN LINES SHALL BE LOCATED 3' MINIMUM HORIZONTALLY FROM TREE LOCATIONS. FIELD ADJUST ROUTING OF IRRIGATION LINES AS NECESSARY TO MEET MINIMUM CLEARANCE NOTED ABOVE.

EXISTING TREE TO REMAIN, SEE CIVIL ENG. PLANS & ARBORIST REPORT FOR TREE PROTECTION MEASURES, TYP.

IRRIGATION CONTROLLER, WALL MOUNT IN GARAGE AS DIRECTED BY OWNER'S REPRESENTATIVE. CONTRACTOR TO PROVIDE 120 VOLT AC POWER TO CONTROLLER, TYP.

WIRELESS WEATHER SENSOR, LOCATE ON EDGE OF ROOF/GUTTER IN AREA OPEN TO SKY WITH FULL SUN EXPOSURE, IN LOCATION APPROVED BY OWNER'S REPRESENTATIVE; INSTALL PER MANUFACTURER'S INSTRUCTIONS, TYP.

CAP MAIN LINE FOR HOMEOWNER'S FUTURE USE. CONTRACTOR SHALL ROUTE LOW VOLTAGE CONTROL WIRES FROM LOT CONTROLLER'S UNUSED STATIONS TO CAP LOCATION FOR HOMEOWNER'S FUTURE USE. LOCATE CONTROL WIRES IN 9" ROUND PLASTIC VALVE BOX (E.G., IF LOT HAS 5 VALVE/CONTROLLER STATIONS USED, CONTRACTOR SHALL ROUTE LOW VOLTAGE CONTROL WIRES FOR THE REMAINING 7 UNUSED STATIONS TO MAIN LINE CAP LOCATION), TYP.

NOTE: LOCATE RCV'S ADJACENT TO RETAINING WALL. IF RCV'S ARE WITHIN EXISTING TREE CANOPY/ROOT ZONE, LOCATE RCV'S ALONG SIDE OF HOUSE (SIMILAR TO HOW RCV'S ARE LOCATED AT LOT 9).

AT DRIPLINE TUBING ON ALL SLOPES: PLACE THE DRIPLINE LATERALS PARALLEL TO THE SLOPE CONTOUR WHERE POSSIBLE. INCREASE THE LATERAL SPACING BY 25% ON THE LOWER ONE-THIRD OF THE SLOPE TO AVOID EXCESS DRAINAGE. DRIPLINE TUBING DETAILS FOR ADDITIONAL REQUIREMENTS.

NOTE: DRIPLINE TUBING IS ONLY INSTALLED AT CAREX PANSA (4" POTS) GROUND COVER PLANTING AREAS, ADJUSTE TUBING LAYOUT TO MATCH GROUND COVER PLANTING AREAS AS NECESSARY.

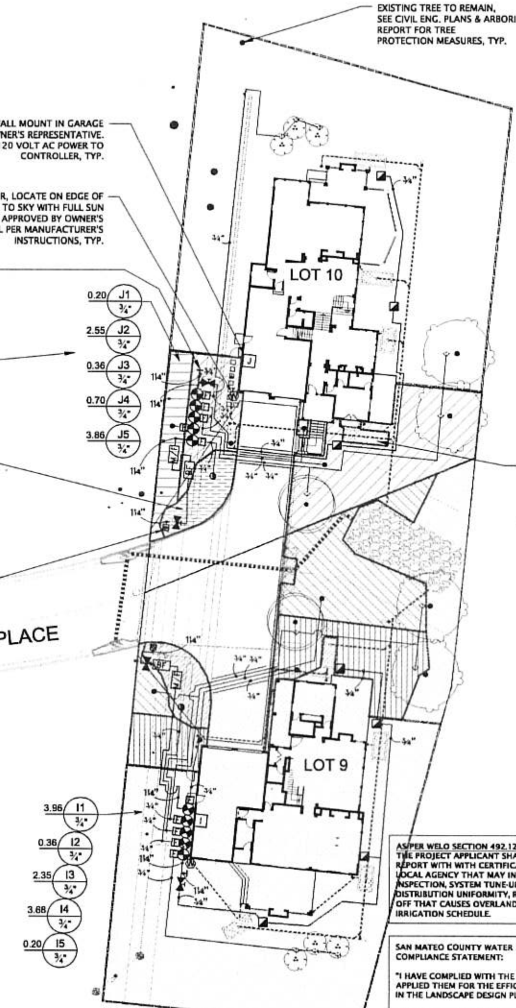
BIO-RETENTION BOXES, NON-IRRIGATED. CONTRACTOR TO HAND WATER FOR 3 MONTH PERIOD (MIN.) TO ESTABLISH PLANT MATERIALS, TYP. QUICK COUPLERS ARE LOCATED IN VICINITY OF BIO-RETENTION BOXES FOR USE FOR HAND WATERING.

POINT OF CONNECTION NOTES (TYP. FOR EACH LOT):

P.O.C. IS AT 1" HOUSE WATER METER, SEE P.O.C. DETAIL. WATER METER BY OTHERS, SEE CIVIL PLANS. FIELD VERIFY METER LOCATION & SIZE. CONTRACTOR SHALL VERIFY STATIC & DYNAMIC PRESSURE AND FLOW RATES AVAILABLE AT P.O.C. PRIOR TO BEGINNING WORK (SEE IRRIG. SPECIFICATIONS). SUBMIT TO OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT RESULTS OF PRESSURE AND FLOW TESTS PRIOR TO BEGINNING WORK. IF THERE ARE DISCREPANCIES OF 10 PSI OR MORE OR FLOW RATES LOWER THAN STATED IRRIGATION DEMAND ON PLANS, SYSTEM MAY NOT PERFORM CORRECTLY. SEE "WATER PRESSURE AT P.O.C. NOTES" & IRRIGATION SPECS FOR PRESSURE AND FLOW TEST REQUIREMENTS AND PROCEDURES.

IRRIGATION DEMAND: 12 GPM @ 65 PSI.

SEE "WATER PRESSURE AT P.O.C. NOTES" FOR PRESSURE REDUCER INSTALLATION REQUIREMENTS.



AS PER WELO SECTION 492.12 (1):
THE PROJECT APPLICANT SHALL SUBMIT AN IRRIGATION AUDIT REPORT WITH WITH CERTIFICATE OF COMPLETION TO THE LOCAL AGENCY THAT MAY INCLUDE, BUT IS NOT LIMITED TO: INSPECTION, SYSTEM TUNE-UP, SYSTEM TEST WITH DISTRIBUTION UNIFORMITY, REPORTING OVERSPRAY OR RUN OFF THAT CAUSES OVERLAND FLOW, AND PREPARATION OF AN IRRIGATION SCHEDULE.

SAN MATEO COUNTY WATER EFFICIENT LANDSCAPE ORDINANCE COMPLIANCE STATEMENT:

"I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLAN."

ZEKI ABED - LICENSED LANDSCAPE ARCHITECT

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CALL BEFORE YOU DIG — 800.227.2600

REGISTERED LANDSCAPE ARCHITECT — ZEKI R. ABED — STATE OF CALIFORNIA

VAN DORN ABED
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81 14TH ST. SAN FRANCISCO, CA
ZIP 94103 PH (415) 864-1921 FAX(415) 864-4796

PROJECT MANAGER: MW
DRAFTED BY: EO
CHECKED BY: ZA

PROJECT NAME/LOCATION: HIGHLAND ESTATES
SAN MATEO CALIFORNIA

DRAWING TITLE: LANDSCAPE IMPROVEMENT PLANS
LOT 10

NO.	DESCRIPTION	BY	DATE

SHEET TITLE: IRRIGATION PLAN

SCALE: 1" = 20'-0"

ISSUE DATE: 3/17/17

PROJECT NO: V1355

SHEET NO: L4.0

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
•	PVC lateral line to drip area with Rainbird 8-outlet emitter units. Route PVC lateral line thru drip area and install required quantity of Xerl-Bird 8 Multi Outlet devices necessary to irrigate plants in the drip area.
⊕	Rain Bird XBT-6 Six multi-outlet drip emitter/bubbler Six-Outlet, Pressure Compensating, with 1.0 GPH Black Drip Emitters at each emitter outlet. Comes with 1/2" FPT Inlet x Barb Outlet. Install DBC-625 Diffuser Bug Caps at end of each emitters 1/4" distribution line. Install 4 (four) 1/4" distribution lines with Diffuser Bug Caps at 5Gal & 15Gal trees: Install 6 (six) 1/4" distribution lines with Diffuser Bug Caps at 24"Box trees. Plug unused emitter outlets.
A1 A1 A1 A1 — CONTROLLER VALVE CIRCUIT NO. NOTE: DRIP AREA PATTERNS VARY FOR DESIGN CLARITY	Area to Receive Drip Emitters Rain Bird XBD81-PRS w/XB-10 Xerl-Bird 8 Multi Outlet Emission Device with Xerl-Bug emitters at 1gph each, with built-in 200 mesh filter, Pressure Regulator in-stem. Emitter Notes: OCT8-16 emitters (1 assigned to each 1 gal plant) OCT8-16 emitters (4 assigned to each 15 gal plant) OCT8-16 emitters (2 assigned to each 2 gal plant) OCT8-16 emitters (6 assigned to each 24"box plant) XB10PC emitters (1 assigned to each 4" pot plant) OCT8-16 emitters (2 assigned to each 5 gal plant)
A1 A1	Area to Receive Dripline Toro RGP-212 (12) Rootguard and 0.53 gph emitters at 12" o.c., or approved equivalent. Dripline spacing shall be as follows: Dripline lateral rows shall be spaced at 12" apart, with emitters offset for triangular pattern. See notes on irrigation plans and details for spacing at sloped areas.

NOTE: TUBING INSTALLED ON GRADE, SEE DRIP DETAILS. FLUSH VALVE AND AIR RELIEF VALVES NOT SHOW ON PLANS FOR DESIGN CLARITY, SEE DRIP DETAILS FOR TYPICAL INSTALLATION LOCATIONS AT EACH DRIP CIRCUIT.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Irritrol 700 with OMR-100 Electric Remote Control Valve, with Omni-Reg 5-100psi regulator. Set pressure regulator at 40 PSI.
	Rain Bird 33-DRC 3/4" Brass Quick-Coupling Valve, with Corrosion-Resistant Stainless Steel Spring, Thermoplastic Rubber Cover, Double Track Key Lug, and 2-Piece Body. Provide two 33-DK 3/4" valve key with SH-3 3/4" hose swivels to Owner for each lot.
	Nibco T-113-LF Lead free Class 125 bronze gate shut off valve with wheel handle, same size as mainline pipe diameter at valve location. Size Range - 1/4" - 3"
M/F	Master Valve & Flow Sensor: 1-1/4" Griswold 216GJE - 1-1/4" Solenoid, Normally Open Master Valve. Epoxy Coating. Cast Iron and Bronze Material. NPT End Connection & Creative Sensor Technology FSI-T10-001 - 1" (25mm) PVC tee type flow sensor w/socket ends, custom mounting tee and ultra-lightweight impeller enhances low flow measurement, 2 wire digital output compatible w/all irrigation controllers. Flow range: .86-52 GPM.
BF	Febco LF825Y 1" Lead Free Reduced Pressure Backflow Preventer
E	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
F	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
G	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
H	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
I	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
J	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
K	Irritrol MC-12-E 12- Station, Commercial-Grade, Outdoor/Indoor Controller. Equipped in a rugged, lockable, vandal-proof, weather resistant steel cabinet. Wall mounted. Connect Flow Sensor and Climate Logic receiver unit per manufacturers specifications.
	Irritrol CL Wireless Weather Sensing System. 100-Receive and Transmitter Kit. Outdoor sensor, and receiver attaches to Irritrol Controller. Compatible with Rain Dial-R, Total Control-R, KwikDial, adn MC-E controllers. Monitors weather data.
	Amiad 150 mesh Y-Filter with flush valve, or approved equivalent, at drip remote control valves. Select filter size with gpm flow rate compatible with valve circuit gpm flow rate.
WM	Water Meter 1"

FOR MOUNTING INFO, SEE NOTES ON PLANS

Y-FILTER TO BE INSTALLED AT DRIP CIRCUITS.

NOTE: SEE P.O.C. NOTES ON IRRIGATION PLANS.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Irrigation Mainline: PVC Schedule 40 and Class 315 with solvent weld Sch.40 fittings. PVC Schedule 40 to 1-1/2". PVC Class 315 SDR 13.5 for pipes 2" and larger. 18" min. bury.
	Pipe Sleeve: PVC Class 315 SDR 13.5 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction. 24" min. bury.
	Valve Callout Valve Number Valve Flow Valve Size
	Drip zone connection point: PVC lateral line connection to subsurface dripline tubing manifold. Note-location diagrammatic, see drip details for PVC lateral to drip tubing.
	Cap main line for Homeowner's future use. Contractor shall route low voltage control wires from lot controller's unused stations to cap location for Homeowner's future use. Locate control wires in 9" round plastic valve box (e.g., if lot has 5 valve/controller stations used. Contractor shall route low voltage control wires for the remaining 7 unused stations to main line cap location).
	Irrigation Lateral Line: PVC Class 200 SDR 21 with solvent weld Sch.40 fittings. Only lateral transition pipe sizes 1" and above are indicated on the plan, with all others being 3/4" in size. 12" min. bury.

IRRIGATION RUN TIME SCHEDULE NOTES:

1. IRRIGATION CONTROLLER RUN TIMES ARE NOT INCLUDED ON LANDSCAPE PLANS. IRRIGATION CONTROLLERS ARE ET BASED SMART CONTROLLERS THAT GENERATE OPTIMUM RUN TIME SCHEDULES BASED UPON LOCAL WEATHER CONDITIONS.
2. CONTROLLERS ARE INITIALLY PROGRAMMED WITH IRRIGATION SYSTEM COMPONENT INFORMATION, PLANT MATERIAL WATER USE REQUIREMENTS, SOIL TYPE, AND LOCAL MICRO CLIMATIC INFORMATION. CONTROLLERS AUTOMATICALLY GENERATE RUN TIME SCHEDULES FROM THIS INFORMATION. EACH DAY CONTROLLERS RECEIVES LOCAL WEATHER CONDITION DATA WIRELESS WEATHERS SENSORS, AND AUTOMATICALLY ADJUST THEIR WATERING SCHEDULES FOR OPTIMUM WATER CONSERVATION. EACH CONTROLLER HAS IT'S OWN WIRELESS WEATHER SENSOR, LOCATED ON-SITE.
3. CONTRACTOR SHALL PROGRAM CONTROLLER'S FLOW MONITORING FEATURE TO DETECT FLOWS OF 5 GPM ABOVE PEAK RECORDED GPM FLOW FOR MAIN LINE AND LATERAL LINES/RCVS. CONTROLLER SHALL BE SET TO SHUT MASTER VALVE AND CONTROLLER OFF IN THE EVENT OF AN OVERFLOW CONDITION (MAIN LINE OR LATERAL LINE BREAK).

AGENT
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ZIP 9403 PH (415) 864-7071 FAX(415) 864-4796

PROJECT NAME/LOCATION
HIGHLAND ESTATES
CALIFORNIA
SAN MATEO

DRAWING TITLE
LANDSCAPE IMPROVEMENT PLANS

BY	DATE	DESCRIPTION

DRAWING SHEET TITLE
IRRIGATION LEGEND

SCALE: NA
ISSUE DATE: 3/17/17
PROJECT NO: V1355
SHEET NO: L4.1

Appendix B – Water Efficient Landscape Worksheet : Lot 10

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Documentation Package.

Reference Evapotranspiration (ETo): 42.8

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 (ETWU)*
Regular Landscape Areas							
#1 Sun	0.3	Drip	0.81	0.37	2575	953	25262
#2 Shade	0.3	Drip	0.81	0.37	497	184	4880
				Totals	3072	1137	30162
Special Landscape Areas N/A							
				Totals	(C)	(D)	
						ETWU Total	30162
				Maximum Allowed Water Allowance (MAWA)*			44835

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

Irrigation Method
overhead spray or drip

Irrigation Efficiency
0.75 for spray head
0.81 for drip

ETWU (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.

MAWA (Annual Gallons Allowed) = (42.8) (.62) ((0.55 x LA) + ((1-ETAF) x SLA))
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year, LA is the total landscape area in square feet, SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and 0.45 for non-residential areas.

0.55 used in MAWA calculation.

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	1137
Total Area	3072
Average ETAF	**0.37**

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

All Landscape Areas

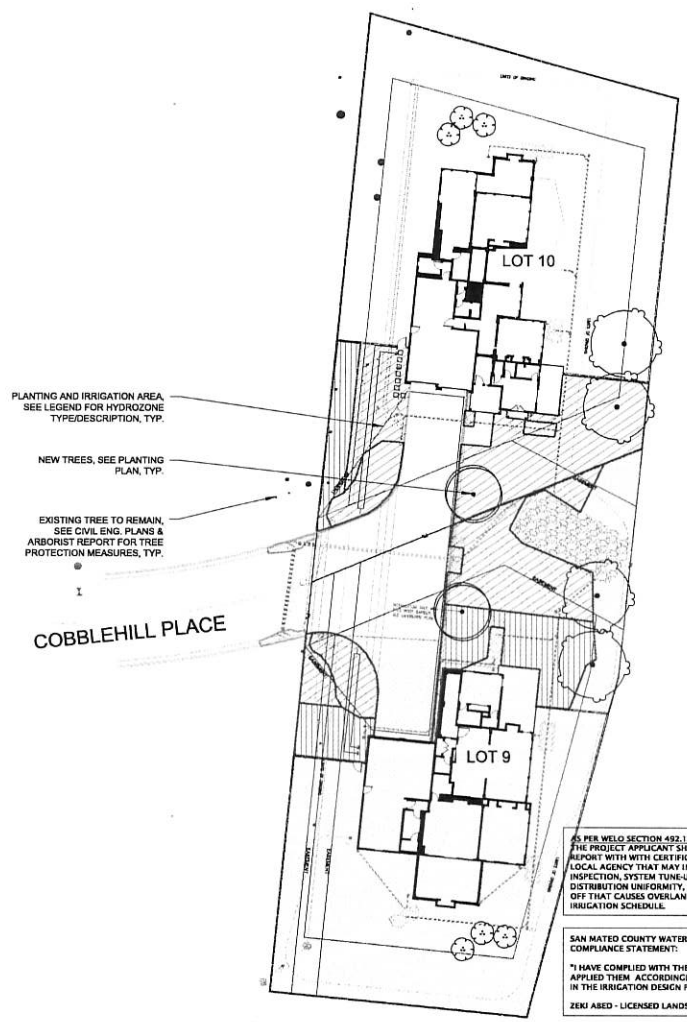
Total ETAF x Area	1137
Total Area	3072
Sitewide ETAF	**0.37**

WATER EFFICIENT LANDSCAPE WORKSHEET NOTES:

1. THE LANDSCAPE WATER USE CALCULATIONS ARE PER THE SAN MATEO COUNTY WATER EFFICIENT LANDSCAPING ORDINANCE (WELO).
2. THIS PROJECTS WATER USE IS LESS THAN THE MAXIMUM PERMITTED, THEREFORE THIS PROJECT IS A WATER CONSERVING LANDSCAPE DESIGN.

HYRDOZONE AREA LEGEND

SYMBOL	HYDROZONE	DESCRIPTION	IRRIG. METHOD	SF AREA	%LANDSCAPE AREA
	1	LOW WATER USE, SUN EXPOSURE, DRIP IRRIGATED TREE, SHRUB & GROUND COVER AREAS	DRIP	2,575 SF	83.8%
	2	LOW WATER USE, SHADE EXPOSURE, DRIP IRRIGATED TREE, SHRUB & GROUND COVER AREAS	DRIP	497 SF	16.2%
			TOTAL SF AREA =	3,072 SF	100%



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SAN MATEO COUNTY WATER EFFICIENT LANDSCAPE ORDINANCE COMPLIANCE STATEMENT:

"I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN."

ZEKI ABED - LICENSED LANDSCAPE ARCHITECT

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PROJECT MANAGER: MK
DRAWN BY: ZA
CHECKED BY: ZA

PROJECT NAME/LOCATION
HIGHLAND ESTATES
SAN MATEO CALIFORNIA
DRAWING TITLE
LANDSCAPE IMPROVEMENT PLANS
LOT 10

NO	DESCRIPTION	BY	DATE

SHEET TITLE
HYDROZONE PLAN & WATER CALCS

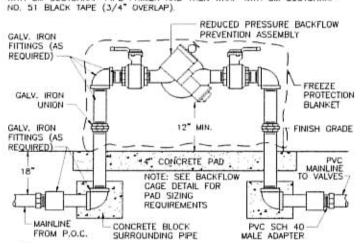
SCALE
1" = 20'-0"

ISSUE DATE
3/17/17

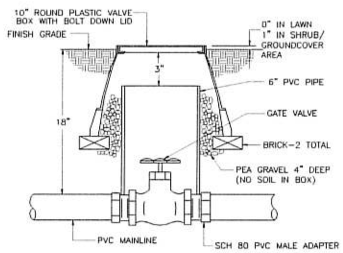
PROJECT NO.
V1355

SHEET NO.
L4.2

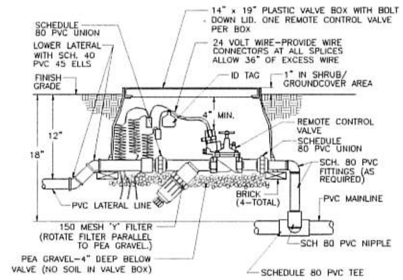
NOTE: EVENLY COAT METAL FITTINGS EXPOSED TO SOIL AND CONCRETE WITH 3M SCOTCHRAP PIPE PRIMER AND THEN WRAP WITH 3M SCOTCHRAP NO. 51 BLACK TAPE (3/4" OVERLAP).



1 REDUCED PRESSURE BACKFLOW PREVENTER DETAIL
NOT TO SCALE



2 GATE VALVE DETAIL
NOT TO SCALE



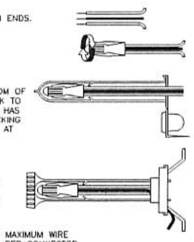
3 REMOTE CONTROL VALVE & 'Y' FILTER DETAIL
NOT TO SCALE

STEP 1: STRIP WIRES 1/2" FROM ENDS.

STEP 2: APPLY SCOTCHLOK Y SPRING CONNECTOR IN A CLOCKWISE DIRECTION.

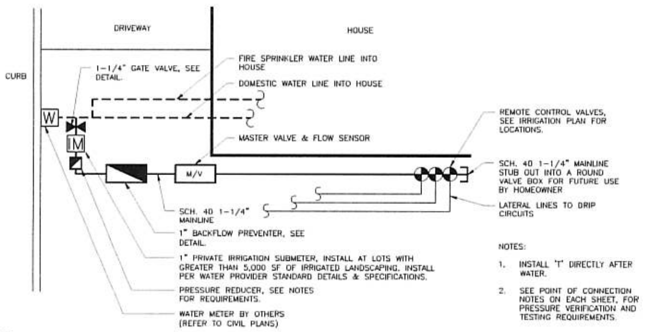
STEP 3: INSERT SPLICE TO BOTTOM OF GEL-FILLED TUBE. CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST LOCKING FINGERS AND IS SEATED AT BOTTOM OF TUBE.

STEP 4: POSITION WIRES IN WIRE CHANNELS AND CLOSE INSULATOR TUBE COVER.



NOTE: MAXIMUM WIRE SIZES PER CONNECTOR ARE THREE # 14'S OR TWO #12'S.

4 WIRE CONNECTION DETAIL
NOT TO SCALE



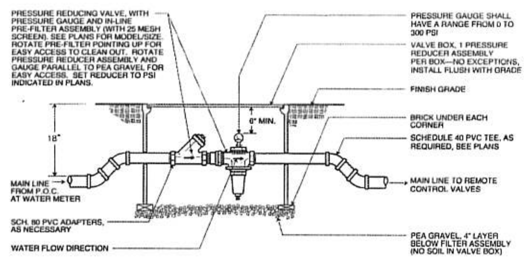
NOTES:

1. INSTALL 'T' DIRECTLY AFTER WATER.
2. SEE POINT OF CONNECTION NOTES ON EACH SHEET, FOR PRESSURE VERIFICATION AND TESTING REQUIREMENTS.

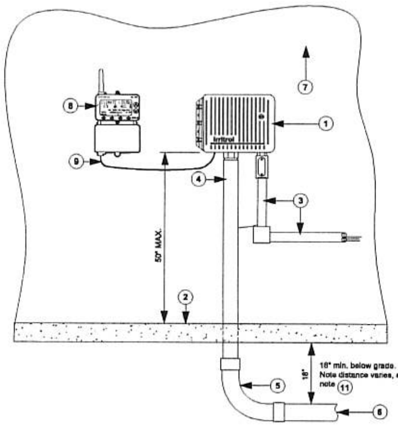
5 IRRIGATION SYSTEM P.O.C. AT EACH LOT DETAIL
NOT TO SCALE

NOTES:

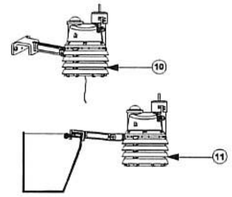
PRESSURE REDUCER SHALL BE 1-1/4" LEAD FREE WILKINS 500XLYSBR (INCLUDES PRESSURE REDUCER & FILTER), SET AT 50 PSI. SEE NOTES ON IRRIGATION PLANS FOR INSTALLATION REQUIREMENTS.



6 PRESSURE REDUCER DETAIL
NOT TO SCALE



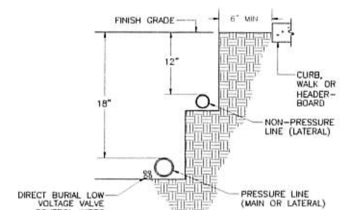
1. Irrigation controller. Install controller in location as directed by Owner's Representative.
2. Garage finish surface.
3. 1/2" UL approved electrical conduit, ring nut and junction box for 120V AC electrical power. Contractor to proved 120 volt AC electrical power to controller, see notes on Irrigation Plans.
4. PVC schedule 40 control wire conduit (size as required)
5. PVC sweep ell to conduit through bldg. to exterior planting area 18" below grade.
6. End conduit 12" beyond edge of bldg., 18" below grade.
7. Interior wall in garage area.
8. Climate Logic™ receiver module mounted near the compatible controller. Mount with screws at eye level.
9. Single connection cord plugged into controllers remote port.
10. Climate Logic™ weather sensor mounted outdoors on flat surface using screws, , see notes on Irrigation Plans.
11. Climate Logic™ weather sensor mounted on a rain gutter using QuickClip™ guttermount, see notes on Irrigation Plans.
11. Note: at lots where garage areas are elevated above grade, route conduit down side of bldg./structural piers out site where possible, to 18" below grade. Paint exposed conduit to match house color as directed by Owner's Representative.



NOTES:

1. Irrigation controller is not shown on the irrigation plan. Irrigation controller to be installed in garage as directed by Owner's Representative.
2. 120 volt AC power to controller per Electrical Plans.
3. Wireless weather sensor unit to be installed on edge of bldg. in area open to sky with full sun exposure, in location approved by Owner's Representative. Locate sensor unit within radio communication range of controller.
4. All electrical work must conform to local codes. Refer to product literature for additional installation requirements.

7 IRRIGATION CONTROLLER & WIRELESS WEATHER SENSOR DETAIL
NOT TO SCALE



NOTES:
1. TRENCHING AND BACKFILLING SHALL BE PER STANDARD SPECIFICATIONS.
2. MINIMUM BACKFILL RELATIVE COMPACTION SHALL BE 90%.
3. BUNDLE CONTROL WIRES TOGETHER AND TAPE AT 10' INTERVALS.
4. 4" MIN. HORIZONTAL DISTANCE BETWEEN PIPES IN COMMON TRENCH.
5. ALL PLASTIC IRRIGATION PIPING TO BE SNAKED IN TRENCHES.

8 IRRIGATION LINE TRENCHING
NOT TO SCALE

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

800.227.2600

VAN DORN ABED
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ZIP 94103 PH (415) 864-1921 FAX(415) 864-4796

PROJECT MANAGER: MW
DRAFTED BY: EO
CHECKED BY: ZA

PROJECT NAME/LOCATION:
HIGHLAND ESTATES
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS NO.	DESCRIPTION	BY	DATE

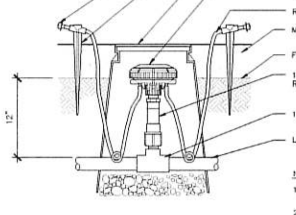
SHEET TITLE: IRRIGATION DETAILS

SCALE: AS SHOWN

ISSUE DATE: 3/17/17

PROJECT NO. V1355

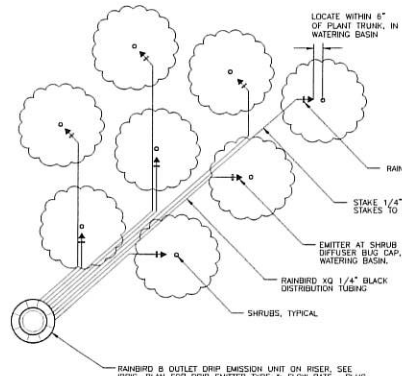
SHEET NO. L4.3



SECTION

NOTES:

1. APPLY TEFLON TAPE TO ALL THREADED CONNECTIONS.
2. SEE DRIP LATERAL PIPE SIZING CHART FOR SIZING LATERAL LINES.
3. 1/4" DISTRIBUTION TUBING MAXIMUM LENGTH SHALL NOT EXCEED 20'.



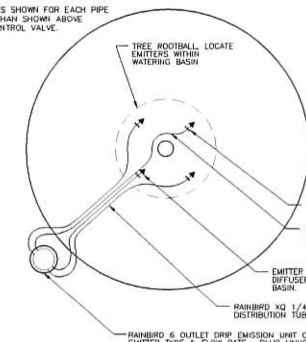
PLAN VIEW – RAINBIRD 8 OUTLET DRIP EMITTER LAYOUT @ SHRUBS/GROUND COVERS

DRIP SHRUB/GC LATERAL PIPE SIZING CHART

GPM FLOW RATES	SIZE OF CLASS 200 PVC PIPE	MAX. QUANTITY OF RAINBIRD 8-OUTLET DRIP EMISSION UNITS (WITH 1.0 GPM EMITTERS)
5 to 8	3/4"	58
9 to 14	1"	102
15 to 20	1-1/4"	150

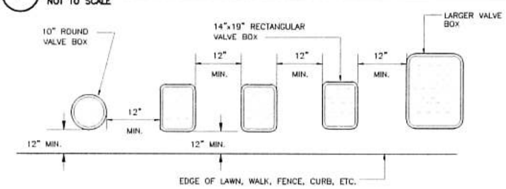
NOTE: DO NOT EXCEED MAXIMUM FLOW RATES SHOWN FOR EACH PIPE SIZE. IF CIRCUITS REQUIRE HIGHER FLOWS THAN SHOWN ABOVE CONTRACTOR SHALL ADD A NEW REMOTE CONTROL VALVE.

INSTALL:
1 EMITTER @ 1 GAL. PLANTS
1 EMITTER @ 2 GAL. PLANTS
2 EMITTERS @ 5 GAL. PLANTS
4 EMITTERS @ 15 GAL. PLANTS
4 EMITTERS @ 24" BOX TREES
4 EMITTERS @ 36" BOX TREES



PLAN VIEW – RAINBIRD 6 OUTLET DRIP EMITTER LAYOUT @ TREES

(1) 8-OUTLET & 6-OUTLET DRIP EMITTER ON RISER DETAIL
NOT TO SCALE



TOP VIEW

NOTES

1. CENTER BOX OVER VALVE TO FACILITATE SERVICING VALVE.
2. SET BOXES 1" ABOVE FINISH GRADE OR MULCH COVER IN GROUND COVER/SHRUB AREA AND FLUSH WITH FINISH GRADE IN TURF AREA.
3. SET VALVE BOX ASSEMBLY IN GROUND COVER/SHRUB AREA WHERE POSSIBLE. INSTALL IN LAWN AREA ONLY IF GROUND COVER/SHRUB AREA DOES NOT EXIST ADJACENT TO LAWN.
4. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE.
5. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOX EDGES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOX SIDES.
6. VALVE BOXES SHALL HAVE BOLT DOWN LIDS WITH BOLTS INSTALLED.
7. VALVE BOXES SHALL BE BY CARSON, OR EQUIVALENT

(2) VALVE BOX LAYOUT DETAIL
NOT TO SCALE

TORO DRIP TUBING MAXIMUM LENGHT OF RUN CHART:

TUBING TYPE: TORO RGP-212(12); 5/8" DIA. TUBING WITH 0.53 GPH EMITTERS AT 12" O.C.

TORO

Performance Specifications (continued)

Maximum length of run

- RGP-212-XX:
  250' @ 15 psi (76m @ 1,03 Bar)
  360' @ 25 psi (110m @ 1,72 Bar)
  400' @ 30 psi (122m @ 2,07 Bar)
  460' @ 40 psi (140m @ 2.76 Bar)

TUBING LAYOUT CHART NOTES:

1. CONTRACTOR SHALL FIELD LAYOUT DRIP TUBING ZONE AREAS AS INDICATED ON THE PLANS, AND FIELD VERIFY/CALCULATE EACH ZONES TOTAL GPM DOES NOT EXCEED THE DRIP ZONE VALVE CIRCUIT GPM'S SHOWN ON THE PLANS. IF DRIP ZONE(S) GPM'S EXCEED GPM'S SHOWN ON PLANS, CONTRACTOR SHALL SPLIT DRIP ZONE(S) INTO TWO OR MORE DRIP ZONE VALVE CIRCUITS AREAS TO REDUCE GPM FLOW RATES AS NECESSARY.
2. PSI AVAILABLE AT EACH DRIP CIRCUIT'S TUBING WILL VARY AND DEPEND UPON PSI AT WATER METER/P.O.C AND PSI LOSSES FROM P.O.C TO DRIP TUBING REMOTE CONTROL VALVE. CONTRACTOR SHALL FIELD VERIFY PSI AVAILABLE AT EACH DRIP CIRCUIT'S VALVE, AND SELECT THE APPROPRIATE MAXIMUM TUBING LENGTH RUN FROM CHART BELOW. DO NOT EXCEED MAXIMUM TUBING RUN LENGTHS.
3. WHERE NECESSARY, INSTALL ADDITIONAL PVC LATERAL SUPPLY MANIFOLDS IN DRIP ZONE AREAS TO KEEP TUBING RUN LENGTHS FROM EXCEEDING MAXIMUM RUN LENGTHS.
4. PVC LATERAL SUPPLY MANIFOLDS SHALL BE SAME SIZE AS LATERAL LINE SIZE THAT FEEDS ENTIRE DRIP ZONE AREA.

(3) DRIP CIRCUIT MAXIMUM TUBING LENGTH CHART
NOT TO SCALE

TORO

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RIVERSIDE, CA 92504
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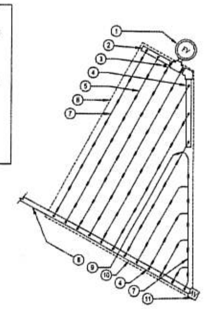
www.toro.com

LEGEND

1. TORO DL2000 AUTOMATIC FLUSH VALVE (FCH-H-FIPT) PLUMBED TO FLUSH MANIFOLD AT LOW POINT.
2. PVC FLUSH MANIFOLD.
3. TORO DL2000 OPERATION INDICATOR (DL-MPI), OPTIONAL.
4. TORO DL2000 MANIFOLD-TO-ELBOW CONNECTION (TYP).
5. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
6. AREA PERIMETER.
7. PERIMETER LATERALS 2" TO 4" FROM EDGE.
8. PVC LATERAL LINE FROM DRIP ZONE KIT.
9. TORO LOC-EZE TEE (FTT16).
10. PVC SUPPLY MANIFOLD.
11. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO SUPPLY MANIFOLD AT HIGH POINT.

DL2000 DRIPLINE:
RPG212(12)-5/8" DIA.
TUBING WITH 0.53GPH
EMITTERS AT 12" O.C.

NOTE:
THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH. SEE TORO SUBSURFACE IRRIGATION DESIGN GUIDE (FORM #ALT111).



PLAN
NOT TO SCALE

NOTES:
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2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-188.

(4) DRIP CIRCUIT ODD SHAPE LAYOUT – END FEED DETAIL
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crc@toro.com
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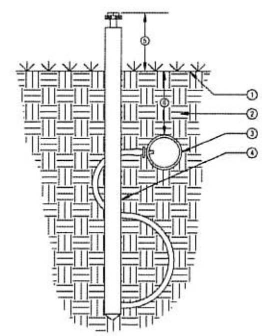

LEGEND:
(1) FINISH GRADE
(2) NATIVE SOIL BACKFILL PER SPECIFICATIONS.
(3) TORO DL2000 DRIPLINE (RGP-XXX-XX).
(4) TORO DL2000 OPERATION INDICATOR (DL-MPI). USE ONE PER ZONE AND LOCATED AT FLUSH END OF ZONE.
(5) 2"-3" ABOVE FINISH GRADE.
(6) SEE DRIP DETAILS FOR DEPTH

SECTION/ELEVATION
NOT TO SCALE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTOR'S NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 065-189.

(5) DL2000 DRIPLINE OPERATION INDICATOR
NOT TO SCALE

CLIENT:
CHAMBERLAIN GROUP
655 Skyway, Suite 230
San Carlos, CA 94070
(650) 595.5582

CALL BEFORE YOU DIG
800.227.2600

REGISTERED LANDSCAPE ARCHITECT — STATE OF CALIFORNIA

VAN DORN ABED
LANDSCAPE ARCHITECTS, INC.
81 14TH ST. SAN FRANCISCO, CA
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PROJECT MANAGER: MW
DRAFTED BY: EO
CHECKED BY: ZA

PROJECT NAME/LOCATION:
HIGHLAND ESTATES
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO	DESCRIPTION	BY	DATE

SHEET TITLE:
IRRIGATION DETAILS

SCALE: AS SHOWN
ISSUE DATE: 3/17/17
PROJECT NO: V1355
SHEET NO: L4.4

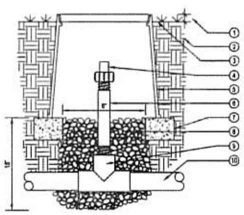
DRIP CIRCUIT NOTES (FOR DETAILS 1–6):

1. ALL PVC LATERALS LINES, INCLUDING PVC FEED LINES SHALL BE INSTALLED 12" BELOW GRADE.
2. SEE IRRIGATION LEGEND FOR TUBING SPECIFICATIONS.
3. SEE NOTES AT EACH DRIP DETAIL FOR ADDITIONAL REQUIREMENTS.
4. SEE "DRIPLINE TUBING NOTES" ON IRRIGATION PLANS FOR ADDITIONAL REQUIREMENT.
5. CONTACT CHRIS STEELE, TORO IRRIGATION SPECIFICATION SALES MANAGER, 559-779-8676, PRIOR TO INSTALLATION OF DRIP TUBING TO REVIEW INSTALLATION REQUIREMENTS.

TORO

LEGEND

1. 1" ABOVE FINISH GRADE.
2. NATIVE SOIL PER SPECIFICATIONS.
3. FINISH GRADE.
4. TORO DL2000 FLUSH VALVE (FCH-H-FIPT).
5. 6" ROUND PLASTIC VALVE BOX . HEAT BRAND "FV" ON LID IN 1" HIGH CHARACTERS.
6. 3/4" SCH 80 PVC NIPPLE (LENGTH AS REQUIRED).
7. BRICK SUPPORTS (2 COMMON BRICKS REQUIRED).
8. PEA GRAVEL SUMP (6" x 18").
9. PVC TEE (SxSxT) WITH 3/4" THREADED OUTLET.
10. PVC PIPING.



SECTION/ELEVATION
NOT TO SCALE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-180w.

① DRIP CIRCUIT FLUSH VALVE DETAIL
NOT TO SCALE

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5825 JASMINE STREET
RIVERSIDE, CA 92504
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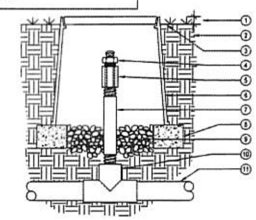
www.toro.com

LEGEND

1. 1" ABOVE FINISH GRADE.
2. NATIVE SOIL PER SPECIFICATIONS.
3. FINISH GRADE.
4. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34).
5. 1/2" PVC COUPLING (TxT).
6. 6" ROUND PLASTIC VALVE BOX . HEAT BRAND "AR" ON LID IN 1" HIGH CHARACTERS.
7. 1/2" SCH 80 PVC NIPPLE (LENGTH AS REQUIRED).
8. BRICK SUPPORTS (2 COMMON BRICKS REQUIRED).
9. PEA GRAVEL SUMP (6" DEEP).
10. PVC ELL (SxT) WITH 1/2" THREADED OUTLET.
11. PVC PIPING.

NOTE:
USE ONE AIR/RELIEF VALVE FOR EVERY 7 GPM PER ZONE. LOCATE AT HIGH POINTS. REFER TO TORO PUBLICATION #ALT111 FOR SPECIFICATIONS.



SECTION/ELEVATION
NOT TO SCALE

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2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-180g.

② DRIP CIRCUIT AIR VACUUM RELIEF VALVE DETAIL
NOT TO SCALE

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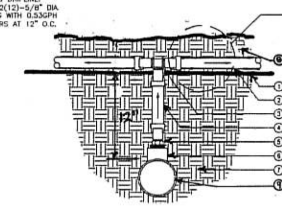
FAX: (951) 359-1870
www.toro.com

LEGEND

1. FINISH GRADE.
2. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
3. TORO LOC-EZE TEE (FTT16).
4. TORO BLUE STRIPE POLY TUBING (EHD1645-XXX).
5. TORO LOC-EZE X 1/2" MPT ADAPTER (FAM16).
6. PVC TEE (SxSxT) WITH 1/2" FPT OUTLET.
7. NATIVE SOIL BACKFILL PER SPECIFICATIONS.
8. 3" BARK MULCH LAYER
9. PVC LATERAL FEED LINE

DL2000 DRIPLINE:
RPG212(12)–5/8" DIA. TUBING WITH 0.53GPH EMITTERS AT 12" O.C.



SECTION/ELEVATION
NOT TO SCALE

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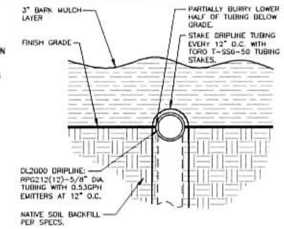
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-180a.

③ DRIP CIRCUIT FEED MANIFOLD CONNECTION DETAIL
NOT TO SCALE



ENLARGED TUBING ON GRADE DETAIL
NTS

DRIPLINE TUBING NOTES:

1. DRIPLINE TUBING LAYOUT ON PLANS IS DIAGRAMMATIC. INSTALL DRIPLINE AND COMPONENTS PER MANUFACTURERS INSTRUCTIONS AND INSTALLATION DETAILS.
2. DRIPLINE SPACING SHALL BE AS INDICATED IN IRRIGATION LEGEND. INSTALL DRIPLINE 2" FROM PERIMETER OF PLANTED AREA. THERE SHALL BE A MINIMUM OF TWO DRIPLINE LATERALS IN EACH PLANTED AREA. DRIPLINE SHALL BE INSTALLED AT A CONSISTENT DEPTH THROUGHOUT THE CIRCUIT. SEE IRRIGATION LEGEND AND DRIP CIRCUIT DETAILS FOR DRIPLINE TUBING DEPTH.
3. PLACE AIR/VACUUM RELIEF VALVES AT THE HIGHEST POINTS OF EACH ZONE AND JUST BELOW CHECK VALVES ON SLOPES. INSTALL ONE AIR/VACUUM RELIEF VALVE FOR 7 GPM PER ZONE (OR FOR EVERY 800' OF 0.53 GPH/12" EMITTER SPACING DRIPLINE). SEE DRIP CIRCUIT AIR RELIEF VALVE DETAIL FOR ADDITIONAL REQUIREMENTS.
4. PLACE FLUSH VALVES AT THE HYDRAULIC CENTER OF THE EXHAUST HEADER OR AT LOW POINT ON SLOPES. INSTALL ONE AIR/VACUUM RELIEF VALVE FOR EVERY 7 GPM PER ZONE (OR FOR EVERY 800' OF 0.53 GPH/12" EMITTER SPACING DRIPLINE). SEE DRIP CIRCUIT FLUSH VALVE DETAIL FOR ADDITIONAL REQUIREMENTS.
5. INSTALL IN-LINE CHECK VALVES ON SLOPES GREATER THAN 3% AND WHERE LOW-LINE DRAINAGE COULD CAUSE WET AREAS IN THE LOWEST AREAS OF AN IRRIGATION ZONE. CHECK VALVES SHALL BE PLACED EVERY 4-5 FEET BETWEEN DRIPLINE LATERALS AND BEFORE THE FLUSH VALVE.
6. ON ALL SLOPES AND MOUNDS, PLACE THE DRIPLINE LATERALS PARALLEL TO THE SLOPE CONTOUR WHERE POSSIBLE. INCREASE THE LATERAL SPACING BY 25% ON THE LOWER ONE-THIRD OF THE SLOPE TO AVOID EXCESS DRAINAGE.
7. PVC SUPPLY LATERAL LINE AND DRIP CIRCUIT MANIFOLDS LINES SHALL BE THE SAME SIZE WITHIN THE DRIP CIRCUIT ZONE.
8. SEE "DRIP CIRCUIT MAXIMUM TUBING LENGTH CHART" FOR MAXIMUM DRIPLINE TUBING LENGTHS AND DRIP CIRCUIT PSI AND GPM FIELD VERIFICATION REQUIREMENTS.
9. FITTINGS SHALL BE OF THE SAME MANUFACTURER AS DRIPLINE. SEE DRIP CIRCUIT DETAILS FOR FITTING TYPE.
10. THOROUGHLY FLUSH EACH INSTALLATION SEGMENT TO ENSURE NO DEBRIS CONTAMINATION OCCURS.
11. RUN THE DRIPLINE SYSTEM EVERY DAY OR EVERY OTHER DAY TO ESTABLISH PLANT MATERIAL. MAINTAIN A CONSISTENT MOISTURE BALANCE IN THE SOIL. IT IS IMPORTANT TO KEEP THE SOIL MOIST WITHOUT SATURATION.

TORO

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5825 JASMINE STREET
RIVERSIDE, CA 92504
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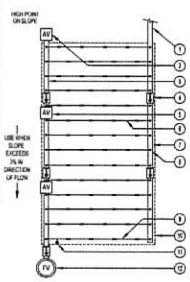
PHONE: (951) 785-3152
FAX: (951) 359-1870
www.toro.com

LEGEND

1. PVC LATERAL LINE FROM DRIP ZONE KIT.
2. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO PVC FLUSH MANIFOLD AT HIGH POINT.
3. PVC FLUSH MANIFOLD.
4. INLINE SPRING CHECK VALVE (JV0500-S2) TO HELP CONTROL LOW-HEAD DRAINAGE (TYP).
5. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO PVC FLUSH MANIFOLD JUST BELOW EACH CHECK VALVE (TYP).
6. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
7. PVC SUPPLY MANIFOLD.
8. TORO DL2000 MANIFOLD-TO-ELBOW CONNECTION (TYP).
9. PERIMETER LATERALS 2" TO 4" FROM EDGE.
10. AREA PERIMETER.
11. TORO DL2000 OPERATION INDICATOR (DL-MPI), OPTIONAL.
12. TORO DL2000 AUTOMATIC FLUSH VALVE (FCH-H-FIPT) PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

DL2000 DRIPLINE:
RPG212(12)–5/8" DIA. TUBING WITH 0.53GPH EMITTERS AT 12" O.C.

NOTE:
THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH. SEE TORO SUBSURFACE IRRIGATION DESIGN GUIDE (FORM #ALT111).



PLAN
NOT TO SCALE

NOTES:
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3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-180j.

④ DRIP CIRCUIT LAYOUT – SLOPE DETAIL

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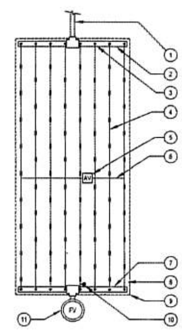
www.toro.com

LEGEND

1. PVC LATERAL LINE FROM DRIP ZONE KIT.
2. PVC SUPPLY MANIFOLD.
3. TORO DL2000 MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
5. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO TORO BLUE STRIPE POLY TUBING (EHD1645-XXX) AT EACH HIGH POINT.
6. AIR/VACUUM RELIEF LATERAL. TORO BLUE STRIPE POLY TUBING (EHD1645-XXX) CENTERED ON MOUND OR BERM.
7. PVC FLUSH MANIFOLD.
8. PERIMETER LATERALS 2" TO 4" FROM EDGE.
9. AREA PERIMETER.
10. TORO DL2000 OPERATION INDICATOR (DL-MPI), OPTIONAL.
11. TORO DL2000 AUTOMATIC FLUSH VALVE (FCH-H-FIPT) PLUMBED TO FLUSH MANIFOLD AT LOW POINT.

DL2000 DRIPLINE:
RPG212(12)–5/8" DIA. TUBING WITH 0.53GPH EMITTERS AT 12" O.C.

NOTE:
THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH. SEE TORO SUBSURFACE IRRIGATION DESIGN GUIDE (FORM #ALT111).



PLAN
NOT TO SCALE

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⑤ DRIP CIRCUIT LAYOUT – END FEED DETAIL

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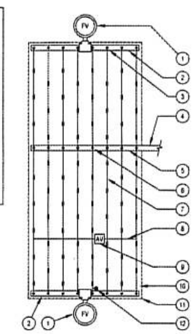
www.toro.com

LEGEND

1. TORO DL2000 AUTOMATIC FLUSH VALVE (FCH-H-FIPT) PLUMBED TO FLUSH MANIFOLD AT LOW POINT.
2. PVC FLUSH MANIFOLD.
3. TORO DL2000 MANIFOLD-TO-ELBOW CONNECTION (TYP).
4. PVC LATERAL LINE FROM DRIP ZONE KIT.
5. PVC SUPPLY MANIFOLD.
6. TORO DL2000 MANIFOLD-TO-TEE CONNECTION.
7. TORO DL2000 DRIPLINE LATERAL (RGP-XXX-XX).
8. AIR/VACUUM RELIEF LATERAL. TORO BLUE STRIPE POLY TUBING (EHD1645-XXX) CENTERED ON MOUND OR BERM.
9. TORO DL2000 AIR/VACUUM RELIEF VALVE (YD-500-34) PLUMBED TO TORO BLUE STRIPE POLY TUBING (EHD1645-XXX) AT EACH HIGH POINT.
10. PERIMETER LATERALS 2" TO 4" FROM EDGE.
11. AREA PERIMETER.
12. TORO DL2000 OPERATION INDICATOR (DL-MPI), OPTIONAL.

DL2000 DRIPLINE:
RPG212(12)–5/8" DIA. TUBING WITH 0.53GPH EMITTERS AT 12" O.C.

NOTE:
THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH. SEE TORO SUBSURFACE IRRIGATION DESIGN GUIDE (FORM #ALT111).



PLAN
NOT TO SCALE

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 065-180g.

⑥ DRIP CIRCUIT LAYOUT – CENTER FEED DETAIL

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PROJECT MANAGER: MW
DRAFTED BY: EO
CHECKED BY: ZA

PROJECT NAME/LOCATION: HIGHLAND ESTATES
SAN MATEO CALIFORNIA
DRAWING TITLE: LANDSCAPE IMPROVEMENT PLANS

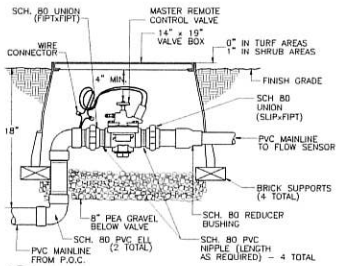
REVISIONS: NO	DESCRIPTION	BY	DATE

SHEET TITLE: IRRIGATION DETAILS
SCALE: AS SHOWN
ISSUE DATE: 3/17/17
PROJECT NO.: V1355
SHEET NO.: L4.5

IRRIGATION NOTES:

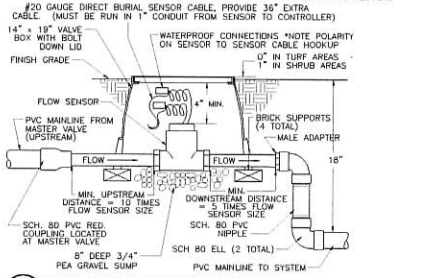
1. Irrigation system shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed Landscape Contractor who shall obtain all necessary permits and pay all required fees.
2. Prior to the start of construction, the Contractor shall verify with the City, Water District, and/or other governing agency(s) if a reclaimed water source will be available in the future for connection to the irrigation system. If local regulations so stipulate, then the Contractor shall follow all requirements, specifications, construction details, codes, etc., for the installation of irrigation systems utilizing reclaimed water sources for irrigation of landscaping.
3. The Contractor shall be responsible for any damage to existing facilities caused by or during the performance of his work. All repairs shall be made at no cost to the Owner.
4. This design is diagrammatic: install parallel lines in a common trench with minimum horizontal distance of 4" and lines not one above the other. Snake pipe in trenches. All piping, valves, etc., shown within paved areas is for design clarification only and shall be installed in planting areas where possible. Avoid any conflicts between the irrigation system, planting and architectural features.
5. Do not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or differences in the area dimensions exist that might not have been considered in the engineering. Such obstructions or differences should be brought to the attention of the Owner's authorized representative. In the event this notification is not performed, the Contractor shall assume full responsibility for any revisions necessary.
6. It is the responsibility of the Contractor to familiarize himself with all grade differences, location of walls, retaining walls etc. Contractor shall coordinate his work with the General Contractor and other Subcontractors for the location and the installation of pipe sleeves through walls, under roadways, paving, structures, etc.
7. Due to the scale of the drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan his work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation system, planting, and architectural features..
8. Notify Landscape Architect of any other aspects of layout which will provide incomplete or insufficient water coverage of plant material and do not proceed until his instructions are obtained.
9. Sprinklers/bubblers/multi-out drip emitters located where low head drainage will cause erosion and excess water run-off, use pop-up bodies with an integral check valve, and shrub risers with King Bros. CV series check valve in lieu of Schedule 80 coupling.
10. Electrical Contractor to supply 120 volt A.C. (2.5 AMP) service to controller location. Contractor to make final connection from electrical stub-out to controller. Paint conduit to controller with 2 coats Rustoleum brown paint if installed outdoors; color to be approved by Owner's representative. 120 volt A.C. J-Box to controller by others. All 120 volt A.C. and 24 volt connections to be made by Contractor.
11. Each controller shall have its own independent ground wire.
12. Program irrigation controller(s) to operate between the hours of 10:00 P.M. and 7:00 A.M.
13. Valve locations shown are diagrammatic. Install in ground cover/shrub areas where possible (not in lawn area).
14. Install valve boxes 12" from and perpendicular to walk, curb, lawn, building or landscape feature. At multiple valve box groups, each box shall be an equal distance from the walk, curb, lawn, etc., and each box shall be 12" apart. Short side of valve box shall be parallel to walk, curb, lawn, etc.
15. Install U.L. approved direct-burial wire #14 minimum and #14 common ground at 16" depth minimum. Splicing of 24 volt wires will not be permitted except in valve boxes. Leave a 24" coil of excess wire at each splice and 100 feet on center along wire run. Tape wire in bundles 10 feet on center. No taping permitted inside sleeves.
16. Install controller wiring as specified on the irrigation plans.
17. Prior to trenching, call Underground Service Alert, 1-800-642-2444 to locate all cables, conduits, and other utilities and take proper precautions not to damage or disturb existing utilities.
18. All Main lines and Lateral lines under paving shall be in PVC sleeves which extend 12" into planting areas. All backfill shall be free of rocks greater than 1" diameter. For ring-lite PVC main line piping inside sleeves use 1120-315 PSI PVC plastic pipe with schedule 40 PVC couplings.
19. When applicable, Schedule 80, ASTM D2466 male adapters to be used where mainline connects to copper pipe service lines installed by others.
20. Copper pipe shall be joined to steel or cast iron pipe with a dielectric union.
21. In addition to the sleeves and conduits shown on the plans the Contractor shall be responsible for the installation of sleeves and conduits of sufficient size under all paved areas.
22. Locate quick coupling valve 12" from hardscape area.
23. The irrigation system design is based on the minimum operating Pressure (PSI) and Flow (GPM) shown on the irrigation drawings (see Irrigation Demand at P.O.C.). The Contractor shall verify the Static and Dynamic water pressure (PSI) and Flow Rate (GPM) at the point of connection (P.O.C.) prior to construction as follows:
    A. Static Pressure: take PSI reading at P.O.C. with no water flowing.
    B. Dynamic Pressure: Install at P.O.C. a pressure (PSI) and flow gauge (GPM) assembly of suitable size* to take flow (GPM) readings in the range of the stated Irrigation Demand for the irrigation system design. Open valve or meter at P.O.C. until GPM flow reading equals or exceeds irrigation GPM demand. Note dynamic pressure and flow readings. If the GPM flow does not equal or exceed the GPM demand, note highest flow reading possible.
    C. Readings shall be taken at the following times: 1PM, 5PM, 9PM, 1AM, 5AM, 8AM.
    * Irrigation systems with high irrigation demand GPM flow rates, will require large capacity test gauge assemblies.

    Submit to Owner's Representative and Landscape Architect results of Pressure and Flow Tests prior to beginning work. Note any discrepancies of 10 PSI or more or flow rates lower than stated Irrigation Demand on plans to Owner's Representative and Landscape Architect. If there are discrepancies of 10 PSI or more or flow rates lower than stated Irrigation Demand on plans, system may not perform correctly - do not proceed with irrigation system installation until corrective measures are determined. Note, Contractor shall be responsible for any corrective measures required to the irrigation system, at no additional cost to the Owner, if irrigation system is installed without required tests, and discrepancies in Pressure and Flow at the P.O.C. are discovered that prevent the irrigation system from functioning correctly.
24. Meter(s) indicated on the Drawing(s) is supplied and installed by others, unless otherwise indicated. The Contractor is responsible for furnishing all proper fittings.
25. All irrigation piping shall be subjected to hydrostatic pressure tests as follows before backfilling trenches: Valves, pumps, and accurately calibrated recording gauges shall be installed in at least two places. Supply lines shall be tested at 125 psi for at least 4 hours with an allowable loss of 5 psi. Laterals lines shall be tested at the existing static psi for at least 1 hour with an allowable loss of 5 psi. Any leaks shall be corrected and piping re-tested until the system meet the requirements. The Contractor shall notify the Owner's Representative at least 3 days in advance of the time that the irrigation system piping is to be tested. Submit written test results to Owner's Representative and Landscape Architect.
26. Contractor to notify all local jurisdictions for inspection and testing of installed backflow prevention device.
27. Irrigation demand: See Irrigation Plans.
28. The entire irrigation system shall be operating properly before any lawn or ground cover is planted.
29. The Contractor shall provide Owner with a clean set of marked prints of "RECORD DRAWINGS" drawings. Reference all trenches, valves, controllers, splice boxes, quick couplers, backflow preventers, water meters, with dimensions to nearest building or paving.
30. See notes on irrigation plans for additional requirements.
31. Bio-treatment grass areas with buried dripline irrigation tubing shall be hand watered by Contractor until plant material is established.
32. The Contractor shall guarantee the irrigation system will be free of defects of workmanship and materials for a period of one year. All repairs necessary shall be made at no cost to the Owner, with the exception of repairs and labor cost made necessary by vandalism.



1 MASTER REMOTE CONTROL VALVE DETAIL
NOT TO SCALE

NOTES:
1. FLOW SENSOR MUST BE INSTALLED WITH INSERT (TOP) VERTICAL AND BODY (TEE) POSITIONED HORIZONTALLY.
2. INSTALL CREATIVE TECHNOLOGY ISOFLOW MODEL 300 UNIT IN FLOW SENSOR VALVE BOX. CONNECT TO FLOW SENSOR & CONTROLLER'S "A" & "B" PER MANUFACTURER'S SPECS, TO ALLOW BOTH CONTROLLERS TO SHARE THE FLOW SENSOR CONNECTION.



2 FLOW SENSOR INSTALLATION DETAIL
NOT TO SCALE

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PROJECT MANAGER: MM
DESIGNED BY: EO
DRAWN BY: ZA

PROJECT NAME/LOCATION
HIGHLAND ESTATES
SAN MATEO CALIFORNIA

LANDSCAPE IMPROVEMENT PLANS

NO.	DESCRIPTION	BY	DATE

SHEET TITLE
IRRIGATION SPECIFICATIONS & DETAILS

SCALE
AS SHOWN

ISSUE DATE
3/17/17

PROJECT NO.
V1355

SHEET NO.
L4.6

GENERAL NOTES:

1. Contractor shall verify all existing site conditions prior to beginning construction. Notify Owner's Representative of any discrepancies.
2. The Contractor shall provide all materials, labor and equipment to complete all landscape work as shown on the plans and specifications.
3. If there is a conflict with the utilities and the planting, the Owner's Representative is to be responsible for spotting new plant locations prior to the planting process.
4. The Contractor shall be responsible for any damage to existing utilities, pavement or improvements. All repairs shall be made at no expense to the Owner.
5. The Contractor shall notify the Owner's Representative prior to beginning construction and shall keep the Owner's Representative informed of progress of work throughout landscape construction.
6. All work shall be installed in conformance with all applicable local codes and ordinances by experienced workmen and a licensed Contractor who shall obtain all necessary permits and pay all required fees.
7. Any requirement in the Plans and / or Notes and Specifications shall be considered binding. In case of discrepancies, the Owner's Representative shall be contacted immediately
8. It is the Contractor's responsibility to schedule regular site visits by the Owner's Representative/Landscape Architect throughout landscape construction, at the beginning of the maintenance period, and final site review will be required.
9. Execute weekly cleaning of the site throughout the contract period to remove all waste materials, rubbish, plant containers, etc.
10. See Civil Engineer's Improvement plans for all general grading information and notes.
11. All written dimensions supersede scaled distances. All dimensions are taken from back of curb, face of building, face of wall finish or face of fence.
12. Upon award of bid and prior to any construction, the Contractor shall perform the Percolation and Soils Testing as specified in the Planting Notes, if these tests have not already been performed. If drainage is found to be insufficient, or soils test results identify conditions requiring extraordinary or corrective measures, the Contractor shall immediately alert the Owner's Representative and Landscape Architect of any such problems, for corrective action and/or additional drainage treatment.

GRADING NOTES:

1. See Civil Engineer's Grading & Erosion Control Plans.
2. Rough grading and site drainage shall have been completed prior to Landscaping work. Verify all existing site conditions and report any discrepancies to Owner's Representative.
3. Contractor shall be responsible for finish grading. Verify positive drainage at a minimum 2% slope in landscape areas away from buildings and paved surfaces. Shrub areas shall be 1-1/2" below top of adjacent paving, headers, or curbs. No low spots which hold standing water will be permitted.
4. All salvageable, clean top soil from areas to be paved shall be stockpiled to be used as fill in planting areas.
5. Avoid soil compaction in existing and proposed landscaped areas. All equipment or stockpiling should be located away from all proposed landscaping to reduce compaction.

CONSTRUCTION NOTES:

1. Concrete work: Install concrete work as detailed. Layout of concrete work shall be as shown on construction plans and as specified below.

   A. Layout shall be approved by Owner's representative/Landscape Architect prior to concrete pour. Contact Owner's Representative two days in advance.

2. Paving Installation:

   B. Concrete Materials: For paving, concrete shall be a 5 sack mix producing concrete having a 28 day strength not less than 2500 psi. For walls concrete shall be 6 sack mix.

1. Portland cement: Conforming to ASTM. C150, Type I or II. Total alkali content not to exceed 0.60%. Deliver cement and all materials in labeled, unopened containers.
2. Form coatings: Standard product resin type sealer. Do not use form oil or any oil-bearing material.
3. Concrete aggregates: Conform to ASTM C33. Maximum 3/4" size aggregate.
4. Base course aggregates: Conform to ASTM C33. Maximum 3/4" size aggregate.
5. Water: Clean and potable.
6. Forms: Form material is Sub-contractor's option.
7. Admixtures or finish retardants: For workability, where approved by Owner's representative, and admixture may be added in accordance with manufacturer's recommendations. Obtain approval of material prior to use.
8. Expansion joint material: 3/8" thick pre-molded joint filler, conforming to ASTM D1751 or D1752.
9. Reinforcing steel:

   a. Bars: Deformed, intermediate grade, conforming to ASTM A615, Grade 40 for sizes #5 and smaller.

   b. Tie wire: Annealed copper-bearing steel wire, minimum 16 gauge.

10. Welded wire mesh: 6" x 6" x #10.
11. Liquid curing compound as required: Thompson's approved standard product fugitive resin type, or equal conforming to ASTM C309, free of wax or oil, compatible with subsequently applied finishes or coverings, not deleterious to bond of cementitious materials to aggregate
12. Patching mortar: One part Portland cement or equal (part white and part gray adjusted to match color of surrounding concrete) and 2-1/2 parts sand with the least water required to produce a workable mass. Rework this mortar until it is the stiffest consistency that will permit placing.

   C. Concrete Installation:

1. Construct the subgrade true to grade and detail as shown. Compact subgrade to 90% maximum density at optimum moisture content.
2. Set forms with upper edges true to line and grade. Properly brace or tie together to maintain position and shape. Remove side forms not sooner than 12 hours after finishing has been completed. Form curves and straight sections for smooth and continuous lines. Secure Owner's representative's approval of subgrade compaction and moisture content and form alignment prior to pouring concrete.
3. Embedded items: Do not place any concrete until all inserted items such as sleeves, anchor bolts, wood, nails, dowels, etc. are installed in their proper locations, secured against displacement, cleaned, inspected and approved. Furnish ties and supports necessary to keep embedded items in place when concrete is placed.
4. Weather: Do not place concrete during rain unless approved measures are taken to prevent damage to concrete.
5. Deposit concrete evenly, consolidate with mechanical vibrators, particularly at side forms and strike off to indicated elevations and contour.
6. Concrete finishes shall be even surfaces of uniform texture and appearance, free of unsightly bulges, depressions and other imperfections and as follows:

   Medium broom finish: Broom with coarse bristled broom across width of flatwork to a uniformly roughened surface. Finished surface and edges shall be clean with uniform and reasonably straight lines. Submit Sample.

   Light broom finish: Broom with janitor's push broom type, with soft bristles, across width to a uniformly roughened surface. There shall be no deeply incised or obvious lines. Submit sample.

   Steel trowel finish: After floating, and no free water is evident and/or no cement sticks to the finger when touching slab, steel trowel until hard. All trowel marks eliminated. Final trowelling done when a ringing sound is produced as the trowel is moved over the surface.

   Joints: Joints shall be tooled with one-quarter inch (1/4") radius edging tool or as shown on plans.

   Edges: Edge slabs one-half (1/2") inch radius, edge curbs and other structures three-quarters inch (3/4") radius unless otherwise shown.

7. Remove flange marks: Remove flange marks resulting from tooling of edges by carefully trowelling out, unless specifically detailed in plans.

CARPENTRY NOTES:

   A. Wood materials: See details for type of wood for each item.

1. Wood shall be selected for straightness and smoothness, size and grade as shown in plans.

   B. Workmanship: Carefully plan and layout the work as required. Properly accommodate the work of other trades. Accurately saw-cut and fit lumber into the respective locations, true to line, grade, and level, as indicated or required, and permanently secure in proper position with spikes, nails, lag screws, bolts, hangers, or other fastenings to make the work substantial and rigid in all parts and connections.

   C. Connections: Make connections between members tight, accurate and secure. Place fastenings without splitting wood; predrill when required. Drill bolt holes same size as bolt diameter. Drill holes for lag screws same size as thread root diameter; and counterbore, same depth and diameter as shank. Turn lag screws into place; do not drive. Provide bolts and lag screws with washers under every head and nut bearing on wood. Tighten bolts and lag screws at installation; carefully retighten just prior to closing in, or at completion of project.

   D. Finishing: As per plan.

   E. Redwood header layout: All curved sections shall be smooth and continuous. Layout shall be approved by Owner's representative.

2. Hardware:

   A. All metal bolts, nails, screws and other hardware shall be galvanized steel, sized as shown on the plans.

   B. All visible hardware shall be painted with two coats of black rustproof paint or to match architectural colors. Color to be approved by Owner's representative.

   C. All hardware for metal gates to be approved by Owner's representative.

3. Metal:

   A. Provide complete shop drawings for all metal fabrication.

   B. Fabricate all exterior steel work in shop, including all welding. All metal work shall conform to ASTM specifications. Miter corners and angles of moldings or frames unless otherwise noted.

   C. Shop primer: One coat of primer, semi-quick drying. Painting: After material has been properly cleaned, apply shop prime coat of paint to all surfaces. Apply all paint in accordance with manufacturer's directions. Spot paint all abrasions and field connections after assembly.

   D. Installation: Set all work plumb, true, rigid and neatly trimmed out as detailed. Provide all necessary connections, anchor bolts etc. required to fit metal with other work.

   E. Protect all metal from damage to surface, profile or to shape from shop through construction to final acceptance of project.

   F. Color: Color to be approved by Owner's representative, submit sample for approval.

   G. All defective work shall be repaired or replaced as directed Owner's representative.

   H. All exposed site metal for utilities, irrigation, etc., shall be painted with one coat brown rustproof paint.

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STATE OF CALIFORNIA

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PROJECT MANAGER: MW
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SAN MATEO CALIFORNIA

DRAWING TITLE:
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REVISIONS NO.	DESCRIPTION	BY	DATE

SHEET TITLE
LANDSCAPE NOTES & SPECIFICATIONS

SCALE
-

ISSUE DATE
3/17/17

PROJECT NO.
V1355

SHEET NO.
L5.0

PLANTING NOTES:

1. Submittals: Contractor shall submit the following items to Owner's Representative and Landscape Architect for review/approval prior to beginning planting installation operations:

   A. Soils tests: Initial site soils test & post amendment installation test.

   B. Vendor data for landscape products, including: bark mulch, root barriers, fertilizers, soil amendments, and soil conditioners.

   C. Written results of percolation tests.

3. The Contractor shall verify the availability of all landscape plants within 10 days following award of the contract. Discrepancies or other problems and all plant substitutions shall be resolved at this time. If a substitute is authorized by the Owner's Representative, it must be of the same size, value and quality as the original plant.

4. All trees and representative samples of shrubs/ground covers shall be inspected at the site for approval by the Owner's Representative and meet the following standards:

   A. Quality and size shall conform to the State of California Grading Code of Nursery Stock, No. 1 grade and to the current issue of the American Standard for Nursery Stock published by the American Association of Nurserymen. Use only nursery-grown stock. The Owner's Representative will inspect plants for approval prior to any installation.

   B. Plant material must be selected from nurseries that have been inspected by state or federal agencies.

   C. Nomenclature will be in accordance with Hortus III.

   D. Plant materials will not be accepted that are overgrown, root-bound, or too recently canned so that the root system is not thoroughly established throughout the can. Pruning shall not be done prior to delivery except as authorized by the Owner's Representative.

5. Soil, Mulch, Amendments:

   A. Soil Test: Contractor shall submit three (3) representative soil samples to Soil and Plant Laboratory, Santa Clara or approved equal to be tested for agricultural suitability and fertility with pre-plant and post-plant recommendations, immediately following the completion of rough grading. Soil samples shall be taken from location determined by the Owner's Representative. Soil shall be certified as clean and free of hazardous material or waste contamination. Notify Owner's Representative of any soils problems noted in the soils test report that could potentially affect/impact plant health, including but not limited to the following: high or low soil pH, poor soil drainage, excessive soil compaction, different soil types in the same test sample, deficient or excess nutrient levels, high salt levels, high boron or other elements and compounds toxic to plants, etc. Submit report to Landscape Architect and Owner's Representative for review and approval prior to beginning work. Do not proceed with any amending operations until soils report has been reviewed and approved.

   B. Compost to be used for soil amendment at the rate indicated by the soil analysis to bring the soil organic matter content to a minimum of 3.5% by dry weight or 2" of compost. Contractor may 1) import topsoil to meet organic matter content listed, or 2) submit soils report that identifies existing topsoil meets or exceeds the specified organic matter content. (Bay-Friendly score card item C.7.a.l)

      Compost to be added as follows in all planting areas at a rate of a minimum of four cubic yards per 1,000 square feet of permeable area shall be incorporated to a depth of six inches into the soil. Soils with greater than 6% organic matter in the top six inches of soil are exempt from adding compost and tiling. **(Applied rates of soil amendment and commercial fertilizer shall be <u>used for bidding purpose</u> until determined by soil tests.)**

      Amount per 1000 square feet:

      4 cubic yards Compost

      20 lbs. 6-20-20 fertilizer (Best's Cropmaker)

      10 lbs. 0-25-0 Single super phosphate

      10 lbs. Iron sulfate

   C. Soil amendment in all planting areas shall be uniformly spread and thoroughly incorporated to a soil depth of 6" minimum by repeated rotary hoe cultivation prior to planting.

   D. Post Amendment Installation Soil Testing for Compliance: After incorporating amendments, fertilizers and conditioners, Contractor shall take three (3) representative soil samples and have samples tested for Agricultural Suitability and Fertility by an approved soils analysis laboratory for compliance with original soil test report recommendations. Add any additional amendments, fertilizers and conditioners recommended by soils analysis laboratory at no cost to Owner. Notify Owner's Representative of any potential soils problems noted in the report. Submit report for amendment/fertilizer/conditioner compliance to Landscape Architect and Owner's Representative prior to beginning planting operations.

   E. A minimum three inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf areas, groundcover, or direct seeding/hydroseed applications. Organic mulch materials made from recycled or post-consumer shall take precedence over inorganic materials or virgin forest products unless organic or recycled, post consumer products are not locally available. Organic mulches are not required where prohibited by local Fuel Modification Plan Guidelines or other applicable local ordinances.

6. Tree and Shrub Planting:

   Prior to digging holes for final planting, the Contractor shall spot all trees as shown on the Drawings for approval by the Landscape Architect.

   A. Soil amendments and fertilizer shall have been incorporated into the soil prior to tree and shrub planting.

   B. Dig pits as shown on Drawings.

   C. After pits are dug, break sides and bottom of holes to open wall of pit for root penetration.

   D. Percolation Test: All plant pits shall be tested for sufficient drainage prior to planting. Representative plant pits shall be dug (at least 2) at site upon award of Bid to test for general site subgrade drainage conditions. Individual planting pits shall also be tested again for sufficient drainage prior to planting. Contractor shall fill plant pits with water, to see if subsoil conditions will cause retention of water within plant pits overnight. If standing water is still observed after 12 hours, then Contractor shall alert Owner's Representative and Landscape Architect of the problem.

   E. Planting backfill mix for trees and shrubs shall be:

      Amount per Cubic Yard:

      3/4 cubic yard On site soil

      1/4 cubic yard compost

      1.5 lbs. 6-20-20 fertilizer (Best's Cropmaker)

      2.5 lbs. 0-25-0 Single super phosphate

      1 lb. Iron sulfate

   (Applied rates of soil amendment and commercial fertilizer shall be used for bidding purpose until determined by soil tests)

   F. Fertilize plants at the time of planting with Agriform 21-gram fertilizer packets, 20-10-5: 2 per 1 gallon can; 3 per 5 gallon can; 4 per 15 gallon can; specimen trees-3 per inch of caliper.

   G. Plants shall be erect after planting, and staked or guyed as detailed at the time of planting. Remove nursery stakes.

   H. Rootball crown shall be 2" above finish grade after watering and settling.

   I. Tree and shrub plantings shall be watered and flooded to eliminate air pockets within 2 hours of the time of planting.

   J. All vines shall be trained to posts, fences or walls by tying select individual branches with plastic covered wire ties as follows: ties shall be attached to wood surfaces with 3/4" galvanized iron staples and attached to stucco or masonry surfaces with epoxy as recommended by manufacturer. See planting details.

   K. All trees shall be planted 10'-0" minimum from buildings including overhangs and 5'-0" minimum from curbs, paving, fences, etc. Orient main branches of trees away from building. Should any discrepancies occur between field conditions and planting plans contact Owner's Representative. All trees closer than 5'-0" from curbs, foundations, sidewalks, or other hardscape items, shall be installed with linear root deflector panels protecting adjacent hardscape items, but never fully surrounding rootball. Install a 10 foot by 24 inch deep section of linear interlocking root deflector panels, centered on tree (5 feet on each side), located at curb, foundation, sidewalks, other hardscape items, unless otherwise indicated. See plans for detail.

   L. All trees shall be planted a minimum of 5'-0" away from storm drain, or other underground utility lines (or per code), and 10'-0" away from sanitary sewer lines (or per code), and 15'-0" minimum away from utility poles or light standards (or per code).

   M. All planting areas to receive 3" layer of bark mulch, natural color, no dyes. Maintain a 6" clear area around base of trees and shrubs to allow for air flow and not to suffocate the new planting with mulch.

   N. All trees and shrubs shall have watering basins around them. Basin diameters shall be the same size as the tree or shrub's rootball. Basins shall be formed with level bottoms and 3 inch high walls.

   O. Soil amendments shall have been incorporated into the soil prior to planting.

   P. Clear planting areas of rocks and debris greater than 1" diameter.

   Q. Apply a pre-emergent herbicide, per manufacturer's directions.

   R. Maintain erosion control mats & hydroseed or mulch on all disturbed slopes as indicated on Erosions Control Plans.

   S. Thirty (30) days after planting, replace all dead plants and fill in bare areas. Top dress with 16-6-8 fertilizer at 7 lbs./1000 sq. ft. when ground is dry and thoroughly irrigate promptly after application

      (Applied rates of soil amendment and commercial fertilizer shall be used for bidding purpose until determined by soil tests)

7. NOT USED

8. Workmanship:

   Precautions shall be taken to avoid damage to existing plants, turf and structures. Any areas damaged shall be restored to their original condition.

9. Clean-up:

   Keep all areas of work clean, neat and orderly at all times. Keep all paved areas clean during planting and maintenance operations.

10. Site Visits and Approvals:

   The Contractor shall contact the Owner's Representative for review and approval of plant materials and plant locations. The maintenance period begins following acceptance of plant installation.

11. Maintenance:

   A. Begin maintenance after each plant is installed and continue until Final Acceptance.

   B. Maintenance Period shall begin upon inspection and approval by Owner's Representative and shall be for 60 calendar days.

   C. Maintenance of new planting shall consist of watering, cultivating, weeding, mulching, re-staking, tightening and repairing of guys, resetting plants to proper grades or upright position, restoration of the planting saucer, and furnishing and applying such sprays and invigorates as are necessary to keep the plantings free of insects and disease and in thriving condition.

   D. Protect planting areas and plants at all times against damage of all kinds, including frost, for duration of maintenance period. Maintenance includes temporary protection fences, barriers, covers during frost and signs as required for protection. If any plants become damaged or injured, treat or replace as directed by Landscape Architect at no additional cost to Owner.

13. Guarantee:

   A. Replacement trees shall be in thriving condition 3 years from the date of final acceptance. Any replacement trees which have lost at least 30% of their normal foliage or are not in vigorous growing condition shall be replaced.

   B. All other trees, shrubs, grasses, ground covers shall be in thriving condition 1 year from the date of final acceptance. Replace any trees which have lost at least 30% of their normal foliage or are not in vigorous growing condition.

CLIENT:
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REGISTERED LANDSCAPE ARCHITECT · STATE OF CALIFORNIA

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PROJECT MANAGER: MW
CREATED BY: MW
CHECKED BY: ZA

PROJECT NAME/LOCATION:
HIGHLAND ESTATES
SAN MATEO CALIFORNIA

DRAWING TITLE:
LANDSCAPE IMPROVEMENT PLANS

REVISIONS: NO | DESCRIPTION | BY | DATE

SHEET TITLE:
LANDSCAPE NOTES & SPECIFICATIONS

SCALE: -

ISSUE DATE: 3/17/17

PROJECT NO: V1355

SHEET NO.: L5.1