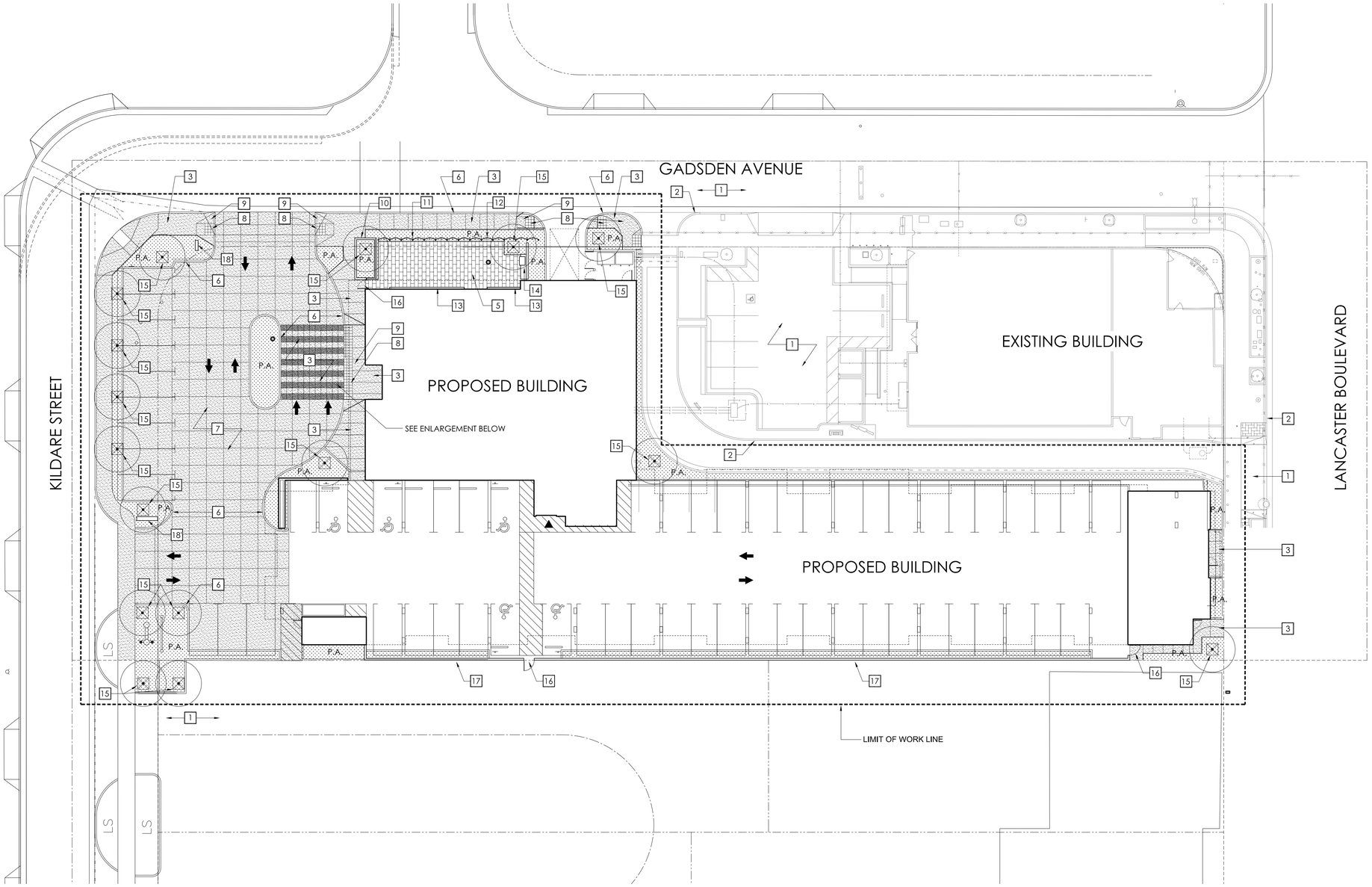
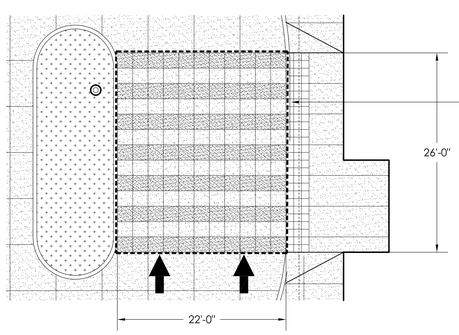


PLAN VIEW 0 16' 32' 48'

HARDSCAPE LEGEND



PAVING AT DROP OFF

1. NEW PRECAST CONCRETE PEDESTAL PAVERS SEE DETAIL 6, SHEET L-102
2. EXISTING CURB PROTECT IN PLACE
3. NEW CONCRETE PAVING SEE DETAIL 2, SHEET L-102
4. NEW FIRE BOWL ELEMENT SEE DETAIL 8, SHEET L-102
5. NEW TILE PAVING (MATCH LOBBY) SEE DETAIL 3, SHEET L-102
6. NEW CONCRETE CURB SEE CIVIL ENGINEER'S PLANS
7. NEW C.I.P. CONCRETE PARKING LOT SEE CIVIL ENGINEER'S PLANS & DTL. 2, SHT. L-102
8. NEW DETECTABLE WARNING TILES SEE DETAIL 5, SHEET L-102
9. NEW CURB RAMP SEE CIVIL PLANS
10. NEW C.I.P. CONCRETE PLANTER WALLS SEE DETAIL 10, SHEET L-102
11. NEW METAL PANEL FENCE SEE DETAIL 1, SHEET L-101
12. NEW LED UP LIGHTS SEE SEE ELECTRICAL PLANS
13. NEW GRAVEL STRIP SEE DETAIL 6, SHEET L-102
14. NEW BUILT-IN B.B.Q. AND COUNTER SEE DETAIL 11, SHEET L-102
15. NEW BOXED TREE SEE PLANTING PLAN SHEET L-300
16. NEW METAL GATE (SELF-CLOSING) SEE DETAIL 13, SHEET L-102
17. NEW 6' HIGH C.M.U. WALL SEE DETAIL 12, SHEET L-102
18. NEW MONUMENT SIGN SEE SIGNAGE PACKAGE

GENERAL NOTES

1. SEE CIVIL ENGINEER'S PLANS FOR EROSION CONTROL , GRADING AND DRAINAGE PLANS AND DETAILS.
2. SEE ELECTRICAL ENGINEER'S PLANS CIRCUITING DIAGRAM OF LIGHT STANDARDS AND CONVENIENCE POWER.

SYMBOLS

EXPANSION JOINT
TYPICAL SYMBOL
EJ

NOTE:
EXPANSION JOINTS WILL OCCUR WHERE PAVING MEETS BUILDING OR PLANTER WALLS AND STEPS.

P.A. = PLANTING AREA

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PROJECT NAME

Residence Inn® Marriott.
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REGISTERED LANDSCAPE ARCHITECT
FRANCE T. FONG
No. 2070
STATE OF CALIFORNIA

NO.	DATE	ISSUES AND REVISIONS	BY
	2.16.18	PLAN CHECK	

DATE 2-16-18
SCALE 1/16"=1'-0"

PROJECT NUMBER LA1628
COMPUTER FILE
PROJECT NAME

DESCRIPTION
LANDSCAPE SITE PLAN

SHEET NUMBER
L-100

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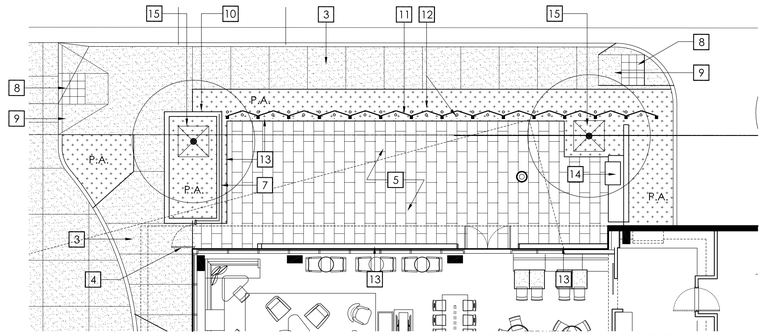
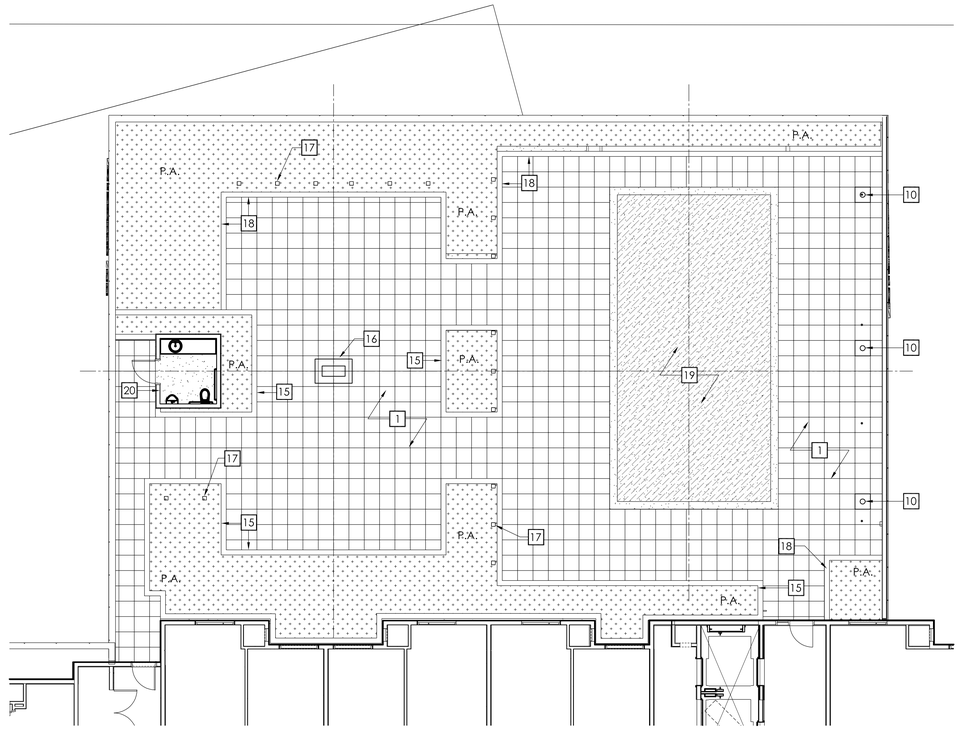


GROUND FLOOR TERRACE
PLAN VIEW

0 8' 16' 24'

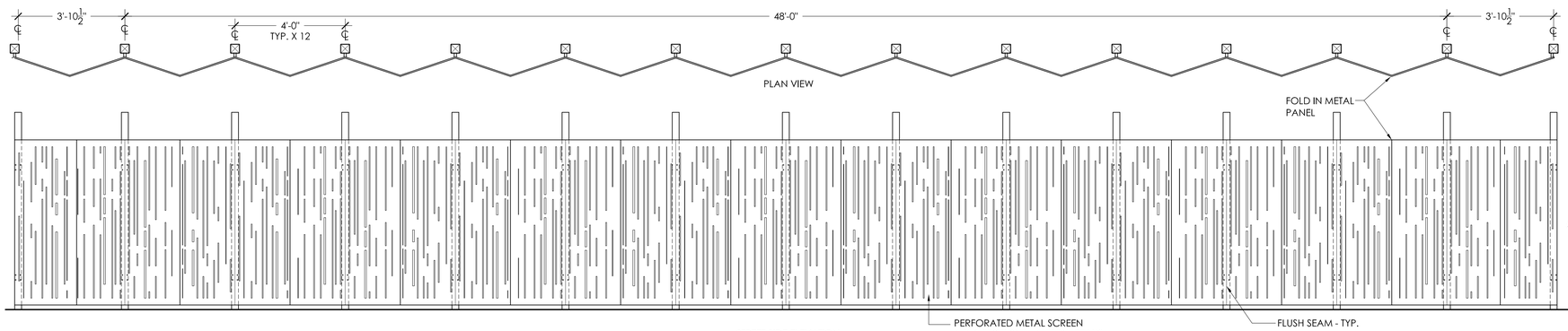
HARDSCAPE LEGEND

1	NEW PRECAST CONCRETE PEDESTAL PAVERS SEE DETAIL 4, SHEET L-102	11	NEW METAL PANEL FENCE SEE DETAIL 1, SHEET L-101
2	EXISTING CURB PROTECT IN PLACE	12	NEW LED UP LIGHTS SEE SEE ELECTRICAL PLANS
3	NEW CONCRETE PAVING SEE DETAIL 2, SHEET L-102	13	NEW GRAVEL STRIP SEE DETAIL 6, SHEET L-102
4	NEW METAL GATE (SELF-CLOSING) SEE DETAIL 13, SHEET L-102	14	NEW BBQ & COUNTER SEE DETAIL 11, SHEET L-102
5	NEW TILE PAVING (MATCH LOBBY) SEE DETAIL 3, SHEET L-102	15	NEW C.I.P. CONCRETE PLANTER (RAISED COND.) SEE DETAIL 7, SHEET L-102
6	NEW CONCRETE CURB SEE CIVIL ENGINEER'S PLANS	16	NEW FIRE ELEMENT SEE DETAIL 9, SHEET L-101
7	NEW C.I.P. CONCRETE PLANTER WALLS SEE DETAIL 10, SHEET L-102	17	NEW METAL TRELLIS SEE ARCHITECTS PLANS
8	NEW DETECTABLE WARNING TILES SEE DETAIL 5, SHEET L-102	18	NEW C.I.P. CONCRETE PLANTER (FLUSH COND.) SEE DETAIL 8, SHEET L-102
9	NEW CURB RAMP SEE CIVIL PLANS	19	NEW SWIMMING POOL SEE ARCHITECTS PLANS
10	NEW LIGHT STANDARDS SEE ELECTRICAL PLANS	20	NEW RESTROOM BUILDING SEE ARCHITECTS PLANS

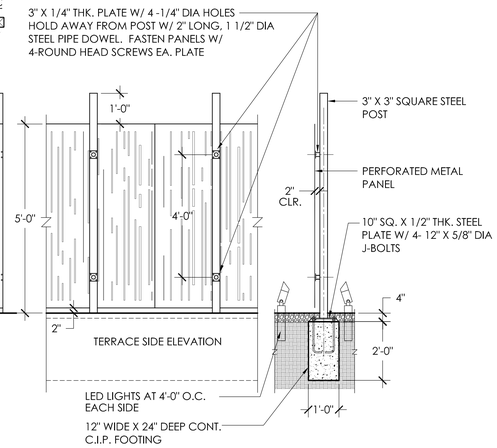


THIRD FLOOR TERRACE
PLAN VIEW

0 8' 16' 24'



1 5' METAL SCREEN AT GROUND FLOOR TERRACE
SCALE: 1/2"=1'-0"



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REGISTERED LANDSCAPE ARCHITECT
TERRANCE E. HART
STATE OF CALIFORNIA

NO.	DATE	ISSUES AND REVISIONS	BY
	2.16.18	PLAN CHECK	

DATE 2-16-18
SCALE AS NOTED

PROJECT NUMBER LA1628
COMPUTER FILE
PROJECT NAME

DESCRIPTION
PARTIAL ENLARGEMENT
HARDSCAPE PLAN

SHEET NUMBER
L-101

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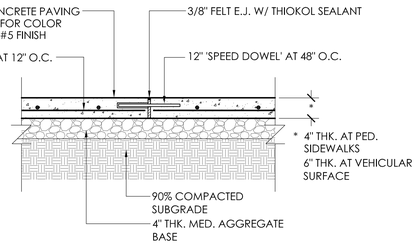
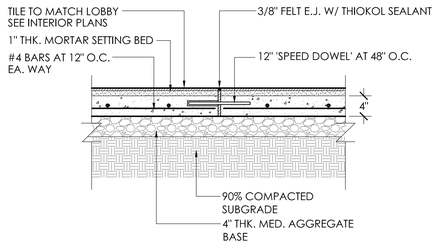
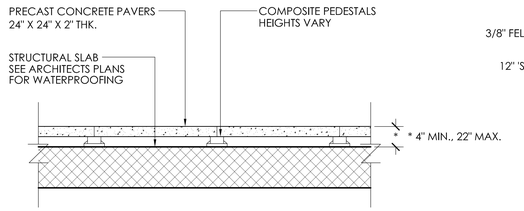


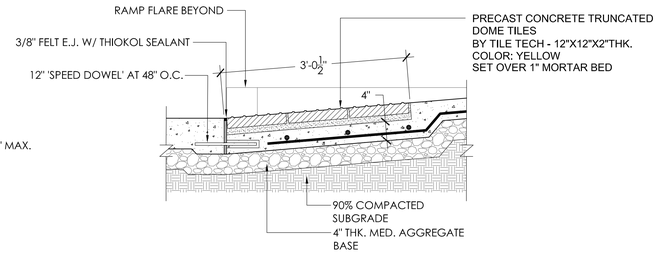
2 | CONCRETE PAVING
SCALE: 1"=1'-0"



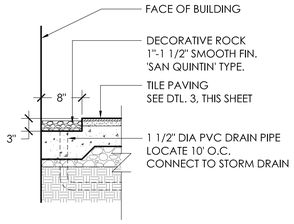
3 | TILE PAVING
SCALE: 1"=1'-0"



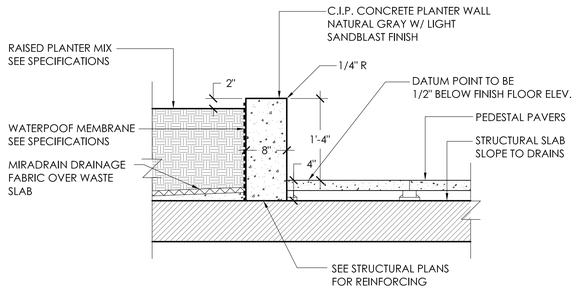
4 | PEDESTAL PAVERS
SCALE: 1"=1'-0"



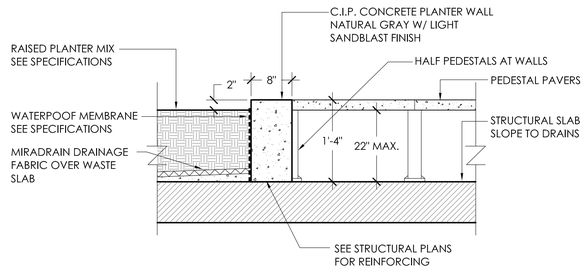
5 | TRUNCATED DOME TILES
SCALE: 1"=1'-0"



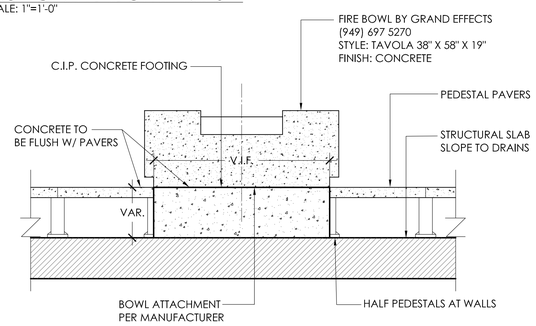
6 | GRAVEL BAND
SCALE: 1"=1'-0"



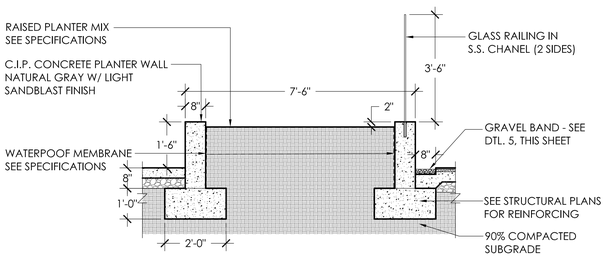
7 | RAISED PLANTER WALL OVER STRUCTURE
SCALE: 1"=1'-0"



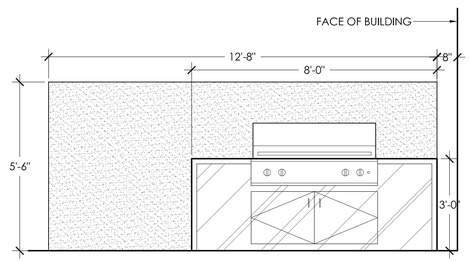
8 | FLUSH PLANTER WALL OVER STRUCTURE
SCALE: 1"=1'-0"

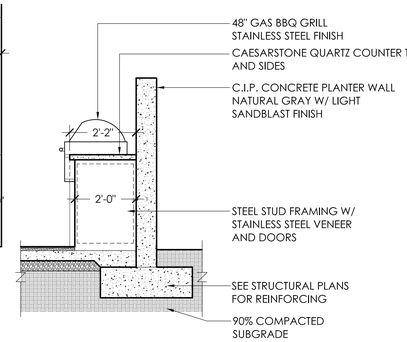


9 | FIRE BOWL AT POOL TERRACE
SCALE: 1"=1'-0"

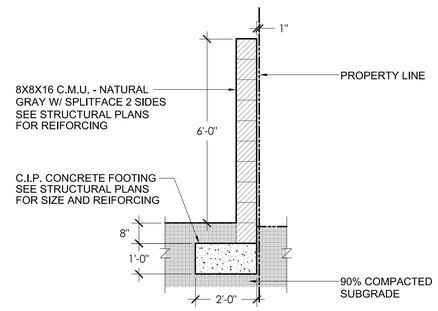


10 | RAISED PLANTER AT GROUND FLR.
SCALE: 1"=1'-0"

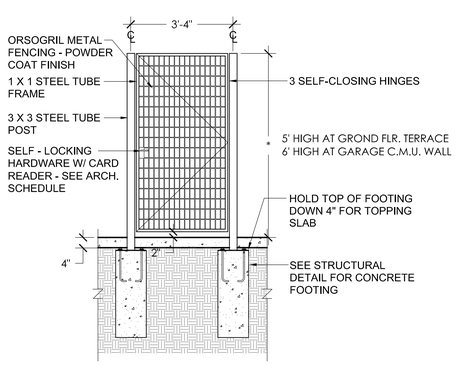




11 | BBQ AT GROUND FLOOR TERACE
SCALE: 1"=1'-0"



12 | C.M.U. PROPERTY LINE WALL
SCALE: 1/2"=1'-0"



13 | METAL GATE
SCALE: 1"=1'-0"

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PROJECT NAME

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NO.	DATE	ISSUES AND REVISIONS	BY
	2.16.18	PLAN CHECK	

DATE 2-16-18
SCALE AS NOTED

PROJECT NUMBER LA1628
COMPUTER FILE
PROJECT NAME

DESCRIPTION
HARDSCAPE DETAILS

SHEET NUMBER
L-102

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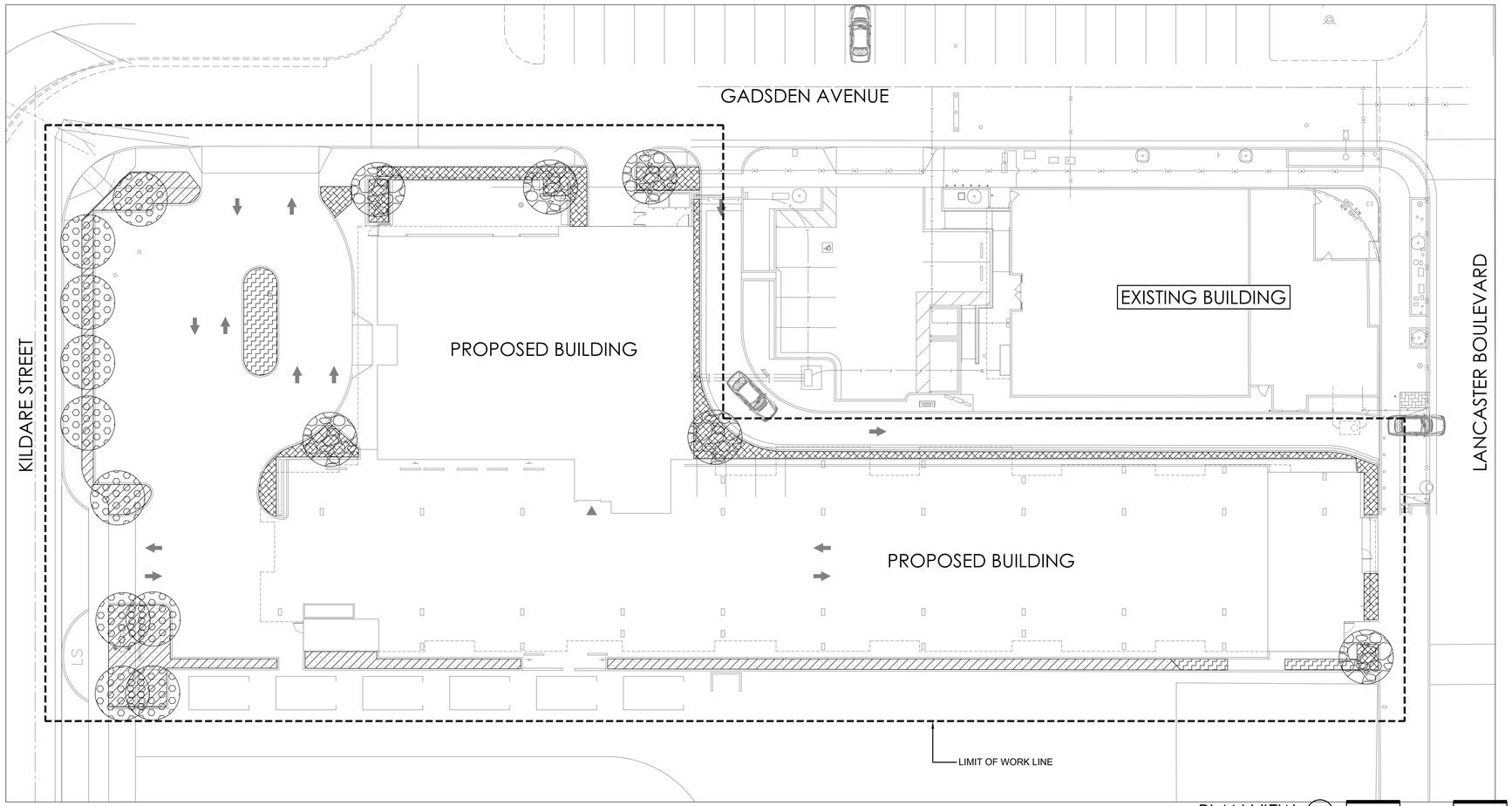

PLAN VIEW 0 16' 32' 48'

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VARIABLES AND CONSTANTS FOR MAWA

Where: Eto	=	Reference Evapotranspiration (CIMIS)
ETAF	=	ET Adjustment Factor (.55% for MAWA calculation)
S.ETAF	=	ET Adjustment Factor add for Special Landscape Area (45% for MAWA calculation)*
LA	=	Landscape Area
S.LA	=	Special Landscape Area* Defined as areas: Dedicated to edible plants, active recreation, recycled water.
Const	=	Constant to convert to gallons per year (GPY)
GPY	=	Gallons Per Year

WATER USE CALCULATIONS FOR:
RESIDENCE INN MARRIOTT LANDCASTER POC-A

MAWA= Maximum Applied Water Allowance

BASIC MAWA= Eto x ETAF x LA (sq.ft.) x Const. = MAWA GPY

S.LA MAWA= Eto x S.ETAF x LA (sq.ft.) x Const. = S.LA MAWA GPY

POC "B" MAWA CALCULATIONS

BASIC MAWA= 71 x 0.45 x 7,670 x 0.62 = 151,935 GPY

S.LA MAWA= 71 x 0.55 x 0 x 0.62 = 0 GPY

TOTAL MAWA= 151,935 GPY
0.4663 AC.FT.

ETWU CALCULATIONS BY HYDROZONE

ETWU= Estimated Total Water Use

ETWU= Eto x (Ks x Kd x Kmc) / IE x LA (sq.ft.) x Const. = ETWU GPY

HYDROZONE DESCRIPTION Exposure / Plant Type / WUCOLS Characterization	HYDROZONE #	(Ks x Kd x Kmc) / IE	LA (sq.ft.)	Const.	ETWU
Sun / Shrub & G.C. / Medium Consumptive Grid Pattern Drip	1	71.0 x (0.4 x 1.0 x 1.00) / 0.81	2,284	0.62	49,650 GPY
Part Sun / Shrub & G.C. / Medium Consumptive Grid Pattern Drip	2	71.0 x (0.4 x 1.0 x 0.85) / 0.81	419	0.62	7,742 GPY
Sun / Shrub & G.C. / Medium Consumptive Grid Pattern Drip	3	71.0 x (0.4 x 1.0 x 1.00) / 0.81	1,656	0.62	35,999 GPY
Sun / Trees / Low Consumptive Grid Pattern Drip	4	71.0 x (0.3 x 0.5 x 1.00) / 0.81	2,074	0.62	16,907 GPY
Shade / Trees / Low Consumptive Grid Pattern Drip	5	71.0 x (0.3 x 0.5 x 0.75) / 0.81	1,237	0.62	7,563 GPY

Total Understory Area **7,670** **117,861 GPY**
Total Area with Tree Canopies **N.A.** OR
0.3617 AC.FT./Y
OR
15,757 CU.FT./Y

ETWU= 78% of MAWA

VARIABLES AND CONSTANTS FOR ETWU

IE = Defined as a range of:

	L	M	H
Drip	0.75	0.81	0.90
Rotor	0.75	0.80	0.85
Rotator	0.70	0.75	0.80
Spray	0.55	0.63	0.75

Ks = Defined as a range of:

	L	M	H
Very Low	0.05	0.07	0.09
Low	0.1	0.2	0.3
Med	0.4	0.5	0.6
High	0.7	0.8	0.9

Kd = Defined as a range of:

Sparce	0.5
Medium/Sparce	0.8
Medium/Dense	1.0
Dense	1.3

Kmc = Defined as a range of:

Radient Heat	1.25
Sun	1.00
Part Sun	0.85
Shade	0.75

VARIABLES AND CONSTANTS FOR ETWU

Where: Eto	=	Reference Evapotranspiration (CIMIS)
KL	=	Landscape Coefficient (Ks x Kd x Kmc)
LA	=	Landscape Area
Const	=	Convert to units of gallons
GPY	=	Gallons Per Year
IE	=	Irrigation Efficency**

WATER USE CALCULATIONS FOR:
RESIDENCE INN MARRIOTT LANDCASTER POC-B

MAWA= Maximum Applied Water Allowance

BASIC MAWA= Eto x ETAF x LA (sq.ft.) x Const. = MAWA GPY

S.LA MAWA= Eto x S.ETAF x LA (sq.ft.) x Const. = S.LA MAWA GPY

POC "B" MAWA CALCULATIONS

BASIC MAWA= 71 x 0.45 x 2,289 x 0.62 = 45,343 GPY

S.LA MAWA= 71 x 0.55 x 0 x 0.62 = 0 GPY

TOTAL MAWA= 45,343 GPY
0.1392 AC.FT.

ETWU CALCULATIONS BY HYDROZONE

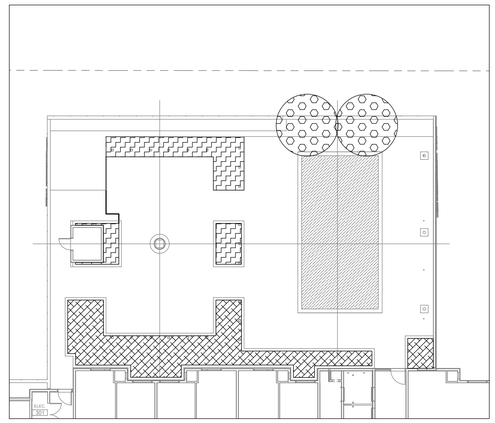
ETWU= Estimated Total Water Use

ETWU= Eto x (Ks x Kd x Kmc) / IE x LA (sq.ft.) x Const. = ETWU GPY

HYDROZONE DESCRIPTION Exposure / Plant Type / WUCOLS Characterization	HYDROZONE #	(Ks x Kd x Kmc) / IE	LA (sq.ft.)	Const.	ETWU
Sun / Shrub & G.C. / Medium Consumptive Grid Pattern Drip	1	71.0 x (0.4 x 1.0 x 1.00) / 0.81	774	0.62	16,825 GPY
Part Sun / Shrub & G.C. / Medium Consumptive Grid Pattern Drip	2	71.0 x (0.4 x 1.0 x 0.85) / 0.81	378	0.62	6,985 GPY
Sun / Shrub & G.C. / Medium Consumptive Grid Pattern Drip	3	71.0 x (0.4 x 1.0 x 1.00) / 0.81	728	0.62	15,825 GPY
Sun / Trees / Low Consumptive Grid Pattern Drip	4	71.0 x (0.3 x 0.5 x 1.00) / 0.81	409	0.62	3,334 GPY
Shade / Trees / Low Consumptive Grid Pattern Drip	5	71.0 x (0.3 x 0.5 x 0.75) / 0.81	0	0.62	0 GPY

Total Understory Area **2,289** **42,969 GPY**
Total Area with Tree Canopies **N.A.** OR
0.1319 AC.FT./Y
OR
5,745 CU.FT./Y

ETWU= 95% of MAWA



THIRD FLOOR TERRACE 0 16' 32' 48'

NO.	DATE	ISSUES AND REVISIONS	BY
	2.16.18	PLAN CHECK	

DATE

SCALE 1/16"=1'-0"

PROJECT NUMBER LA1628

COMPUTER FILE

PROJECT NAME

DESCRIPTION

IRRIGATION
HYDROZONE MAP

SHEET NUMBER

L-200

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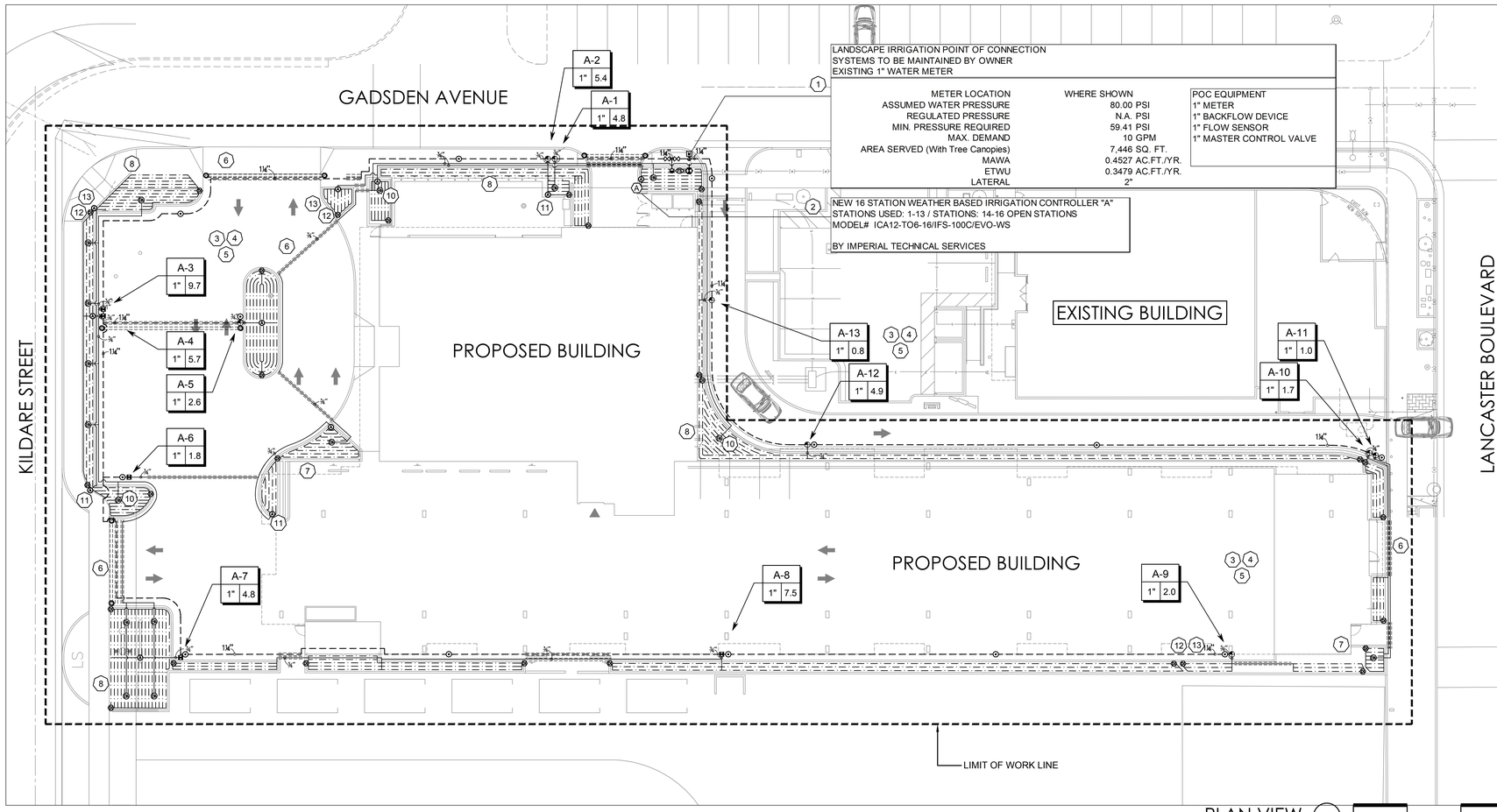
IRRIGATION NOTES:

1. POINT OF CONNECTION - CONTRACTOR TO MAKE CONNECTION DOWNSTREAM OF A DEDICATED WATER IRRIGATION METER APPROXIMATELY WHERE SHOWN. INSTALL CONTROL HEAD AND EXTEND SYSTEM AS SHOWN.
2. IRRIGATION CONTROLLER-
IRRIGATION CONTROLLER IS A WEATHER BASE UNIT AS SPECIFIED IN THE IRRIGATION LEGEND. BY IMPERIAL TECHNICAL SERVICES.
3. REMOTE CONTROL VALVES TO BE HIDDEN FROM CASUAL SIGHT WHEN POSSIBLE. STAKE LOCATION OF ALL VALVES FOR APPROVAL BY LANDSCAPE ARCHITECT AND OR OWNER'S REPRESENTATIVE. (TYPICAL ALL LOCATIONS)
4. SINGLE REMOTE CONTROL VALVES TO BE INSTALLED ON MANIFOLD IN 12" RECTANGULAR VALVE BOX. INSTALL NO MORE THAN 4 VALVE BOXES IN ONE AREA. SEPARATE VALVE BOX GROUPS BY 4' MIN.
5. LOCATIONS SHOWN DIAGRAMMATICALLY. ALL EQUIPMENT TO BE INSTALLED WITHIN PLANTING AREAS OR LOCATED AS DIRECTED BY THE LANDSCAPE ARCHITECT.
ROUTE IRRIGATION MAINLINE AND CONTROL WIRE APPROXIMATELY AS SHOWN 12" TO 18" FROM BACK OF CURB OR WALK.
6. DRIVEWAY AND SIDEWALK CROSSING- MAINLINE, LATERAL LINE AND CONTROL WIRE SLEEVES UNDER ALL PAVING. SLEEVES TWO TIMES DIA. OF PIPE, 2" MIN. (TYP.)PULL BOX- CONTROL WIRE SLEEVES UNDER ALL PAVING TO INCLUDE PULL BOX AT ENDS OF SLEEVES. (TYP.)
7. DESIGN PROVIDES ZONE SEPARATION REQUIRED BY DIFFERENCES IN APPLICATION RATE, ENVIRONMENTAL EXPOSURE, TOPOGRAPHY AND PLANT WATER CONSUMPTION.
8. DRIP IRRIGATION FOR SHRUB AND GROUND COVER PLANTINGS. DRIP TUBING WITH PRE-INSERTED, 1.0 GPH PRESSURE COMPENSATING EMITTERS AT 18" O.C. TUBING TO BE UNIFORMLY SPACED 16" TO 18" O.C. IN GRID PATTERN AS SHOWN. SECURE WITH STAPLES 3' O.C. AND PROVIDE 4" TOP SOIL COVER. (AVG. APPLICATION RATE = .75 in/hr)
9. DRIP IRRIGATION FOR SHRUB PLANTINGS WITHIN SMALL NARROW PLANTERS. DRIP TUBING WITH PRE-INSERTED, 1.0 GPH PRESSURE COMPENSATING EMITTERS AT 12" O.C. TUBING TO BE UNIFORMLY SPACED ALONG LENGTH OF PLANTER 10" TO 12" O.C. BETWEEN ROWS AS SHOWN. SECURE WITH STAPLES 3' O.C. AND PROVIDE MULCH COVER AS SPECIFIED IN THE PLANTING PLANS. (AVG. APPLICATION RATE = 1.62 in/hr) THESE ARE DESIGNATED AS HIGH FLOW SYSTEMS TO INCREASE FLOW FOR PROPER VALVE FUNCTION.
10. DRIP IRRIGATION FOR TREES WITHIN SHRUB AND GROUND COVER PLANTINGS- DRIP TUBING WITH PRE-INSERTED, 0.5 GPH PRESSURE COMPENSATING EMITTERS AT 18" O.C. TUBING TO BE UNIFORMLY SPACED IN CONCENTRIC RINGS AROUND TREE ROOT BALL AT APPROXIMATELY 16" O.C. AS DETAILED. SECURE WITH STAPLES 3' O.C. AND PROVIDE 4" TOP SOIL COVER.(AVG. APPLICATION RATE = 0.4 IN/HR ADDED TO GROUND COVER SYSTEMS. 1.25 IN/HR IN LOCALIZED AREA OVER AND ADJACENT TO TREE ROOT BALL)
11. AIR/VACUUM RELIEF VALVE. LOCATION SHOWN DIAGRAMMATICALLY. VALVE TO BE INSTALLED ON MANIFOLD AT HIGHEST LOCAL ELEVATION (TYP. THROUGHOUT).
12. DRIP SYSTEM FLUSHING-
STATION FLOW 10 GPM OR GREATER; MANUAL FLUSH VALVE AS DETAILED AND INSTALLED AT FLUSH MANIFOLDS.
STATION FLOW 9 GPM OR LESS; DRIP OPERATION INDICATOR WITH GPH GDFN-T NOZZLE AT LATERAL ENDS OR TERMINAL MANIFOLDS.
13. DRIP OPERATION INDICATOR INSTALLED ON INLET MANIFOLD, NEAR CONTROL VALVE AND/OR AT LATERAL ENDS OR ON FLUSH MANIFOLDS OF ALL DRIP SYSTEMS (TYP. 2 UNITS PER SYSTEM MINIMUM.) ON SMALL SYSTEMS OR SUB-SYSTEMS THE DRIP OPERATION INDICATOR CAN ALSO ACT AS A FLUSH DEVICE.
14. PROVIDE A NEATLY DRAWN LAMINATED IRRIGATION LAYOUT CHART FOR AUTOMATIC CONTROLLERS.
CENTRAL CONTROLLER SHALL INCLUDE A MANUFACTURER SUPPORT PAGE.
PEDESTALS SHALL BE LOCATED WITHIN PLANTER AREAS WITH AN 18" PAD OF DG OR MULCH AT FRONT FOR ACCESS.
CONTROLLER AND WEATHER SENSOR SHALL BE CONNECTED AND OPERATING PRIOR TO FINAL INSPECTION.

ALL BASE INFORMATION FOR THESE PLANS HAS BEEN OBTAINED FROM THE LANDSCAPE ARCHITECT AND REFLECTS ARCHITECTURAL, CIVIL AND/OR MECHANICAL DESIGN AND/OR PLANS. THE LANDSCAPE ARCHITECT OR IRRIGATION CONSULTANT DEPENDS ON ACCURACY OF THIS OBTAINED INFORMATION. CONTRACTOR MUST FIELD VERIFY ACTUAL LOCATIONS.



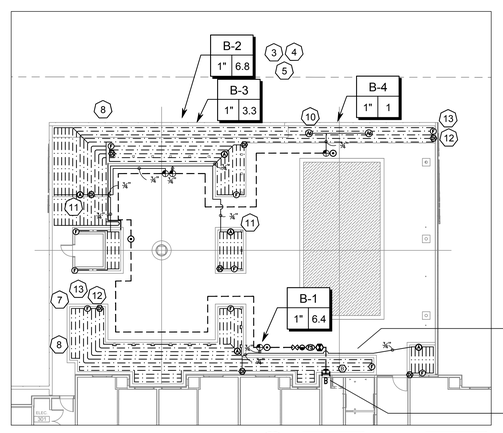
LANDSCAPE IRRIGATION POINT OF CONNECTION
SYSTEMS TO BE MAINTAINED BY OWNER
EXISTING 1" WATER METER

METER LOCATION	WHERE SHOWN	POC EQUIPMENT
ASSUMED WATER PRESSURE	80.00 PSI	1" METER
REGULATED PRESSURE	N.A. PSI	1" BACKFLOW DEVICE
MIN. PRESSURE REQUIRED	59.41 PSI	1" FLOW SENSOR
MAX. DEMAND	10 GPM	1" MASTER CONTROL VALVE
AREA SERVED (With Tree Canopies)	7,446 SQ. FT.	
MAWA	0.4527 AC.FT./YR.	
ETWU	0.3479 AC.FT./YR.	
LATERAL	2"	

NEW 16 STATION WEATHER BASED IRRIGATION CONTROLLER "A"
STATIONS USED: 1-13 / STATIONS: 14-16 OPEN STATIONS
MODEL# ICA12-TO6-16/IFS-100C/EVO-WS

BY IMPERIAL TECHNICAL SERVICES

PLAN VIEW 0 16' 32' 48'



NEW 4 STATION WEATHER BASED IRRIGATION CONTROLLER "B"
STATIONS USED: 1-4 / NO OPEN STATIONS
MODEL# ICA12-TO6-4/IFS-100C/EVO-WS

BY IMPERIAL TECHNICAL SERVICES

LANDSCAPE IRRIGATION POINT OF CONNECTION
SYSTEMS TO BE MAINTAINED BY OWNER
3/4" IRRIGATION POINT OF CONNECTION

METER LOCATION	WHERE SHOWN	POC EQUIPMENT
ASSUMED WATER PRESSURE	65.00 PSI	3/4" POINT OF CONNECTION
REGULATED PRESSURE	N.A. PSI	3/4" RP DEVICE
MIN. PRESSURE REQUIRED	58.75 PSI	1" FLOW SENSOR
MAX. DEMAND	6 GPM	1" MASTER CONTROL VALVE
AREA SERVED (With Tree Canopies)	2,167 SQ. FT.	
MAWA	0.1317 AC.FT./YR.	
ETWU	0.1237 AC.FT./YR.	
LATERAL	1"	

THIRD FLOOR TERRACE 0 16' 32' 48'

AXIS GFA
1130 WESTWOOD BLVD
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PROJECT NAME

Residence Inn® Marriott.
840 KILDARE STREET,
LANCASTER, CA

OWNER:

INSITE REAL ESTATE DEVELOPMENT
6265 VARIEL AVENUE
WOODLAND HILLS, CA 91367

FONG HART SCHNEIDER + PARTNERS
Landscape Architecture Planning Urban Design
31742 Coast Highway
Laguna Beach, California
92651-6874
Tel: 949 645 9444
Fax: 949 715-7295

NO.	DATE	ISSUES AND REVISIONS	BY
	2.16.18	PLAN CHECK	

DATE

SCALE 1/16"=1'-0"

PROJECT NUMBER LA1628

COMPUTER FILE

PROJECT NAME

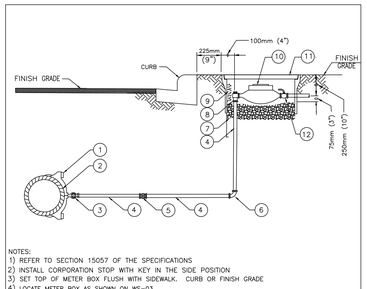
DESCRIPTION
LANDSCAPE IRRIGATION PLAN

SHEET NUMBER
L-201

ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTE ORIGINAL AND UNPUBLISHED WORK OF THE ARCHITECT AND MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE ARCHITECT

IRRIGATION EQUIPMENT LEGEND (RECYCLED WATER)

SYMBOL	DESCRIPTION	MANUFACTURER / MODEL	REMARKS	DETAIL
M	WATER METER	POTABLE WATER POINT OF CONNECTION	PRIMARY POINT OF CONNECTION AT WATER METER DEDICATED TO IRRIGATION OF GROUND LEVEL LANDSCAPE. CONTRACTOR TO MAKE CONNECTION DIRECTLY DOWNSTREAM, OUTSIDE OF METER BOX.	A1
BF	BACKFLOW PREVENTION DEVICE ASSEMBLY	1" WILKINS 975 XLSE WITHIN STRONG BOX ENCLOSURE	ASSEMBLY WITH STRAINER AND/OR PRESSURE REGULATOR. INSTALL WITH REDUCING ELBOWS ON MAINLINE SIZED BRASS RISERS. INSTALL WITHIN ENCLOSURE AS DETAILED.	A2
FS	FLOW SENSOR	FS1-T10-001	FLOW SENSOR AS A PART OF THE CONTROLLER ASSEMBLY BY ITS. MINIMUM VELOCITY REQ.=.25 FPS OR 0.61 GPM	A3, F
MV	1" MASTER CONTROL VALVE	SUPERIOR 3200	MASTER CONTROL VALVE TO REMAIN, SHOWN FOR REFERENCE ONLY.	A4, F
C / C	AUTOMATIC WEATHER BASED IRRIGATION CONTROLLER	ASSEMBLED WITH OPTIONS BY IMPERIAL TECHNICAL SERVICES (ITS)	SEE PLAN SHEETS FOR SPECIFIC MODEL #. CONTACT CONTACT IMPERIAL TECHNICAL SERVICES AT (714) 696-7535. INSTALLATION SHALL BE SUBSTANTIALLY AS DETAILED AND TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT OR OTHER OWNER'S REPRESENTATIVE.	B SERIES
NO SYMBOL	TRADITIONAL CONTROL WIRE	PAIGE ELECTRIC OR EQUAL	COPPER, SINGLE CONDUCTOR, 600 VOLT WITH DIRECT BURIAL INSULATION, 14 AWG MINIMUM. CONTROL WIRE TO FOLLOW IRRIGATION MAINLINE IN COMMON TRENCH WHENEVER POSSIBLE.	B SERIES E SERIES
∞	BALL VALVE FOR MAINLINE ISOLATION	ZURN/WILKINS 850XL-U-55	SIZED EQUAL TO PIPE SIZE. FOR MAINLINE AND MANIFOLD ISOLATION ON LINES 2-1/2" AND SMALLER.	E1, F
⊙	QUICK COUPLER VALVE	SIGNATURE 7645 (ACME THREADED) WITH 7641 KEY AND 8812 SWIVEL	INSTALL WHERE SHOWN OR WHERE EXISTING AND WITHIN 10" ROUND VALVE BOX. WITH LOCKING PURPLE COVER. QUICK COUPLER TO BE FED BY A MIN. OF 1-1/2" LINE.	E2, F
	REMOTE CONTROL VALVE OVERHEAD/BUBBLER SYSTEMS	TORO P-220-26-XX (XX = VALVE SIZE)	SIZE AS SHOWN. PRESSURE REGULATING REMOTE CONTROL VALVE FOR OVERHEAD SYSTEMS. INSTALL RCV ASSEMBLY WITH CONTROLLER/STATION I.D. TAG.	E3, F
1" 1"	DRIP VALVE ASSEMBLY- REMOTE CONTROL VALVE PRE-SET PRES. REG. VALVE, BASKET SCREEN FILTER, ISOLATION BALL VALVE.	TORO/RAINBIRD/SENNINGER/ SPEARS- TPVF100-EFF / GKCHK-100 / PMR-40-LF FOR 2 TO 9 GPM TPVF100-EFF / GKCHK-100 / PMR-40-MF FOR 3 TO 10 GPM	ALL EQUIPMENT TO BE SIZED AS ILLUSTRATED IN THE DETAIL DRAWING. INSTALL WITH STATION ID, R.W. WARNING TAG AND WITHIN VALVE BOX AS FOLLOWS: 1" ASSEMBLY WITHIN STANDARD RECTANGULAR VALVE BOX W/ GREEN LID. 1-1/2" ASSEM. WITHIN JUMBO RECTANGULAR VALVE BOX W/ GREEN LID.	E4, E5, F
⊗	PULL BOX FOR CONTROL WIRE	CONTRACTOR FABRICATED SEE DETAIL DRAWING	PULL BOXES TO BE INSTALLED AT ROAD OR DRIVE CROSSINGS AND IN CONDUIT RUNS IN EXCESS OF 250 FT.	D, F
NO SYMBOL	DRIP START CONNECTION	CONTRACTOR FABRICATED SEE DETAIL DRAWING	TRANSITION FROM PVC TO POLY DRIP LINES.	G SERIES
⊗	AIR/VACUUM RELIEF VALVE	TORO T-YD-500-34 AND TL-T-F50 TRI-LOC TEE	WITHIN 10" ROUND VALVE BOX. INSTALL ON COMMON POLY MANIFOLD LOCATED AT HIGHEST LOCAL ELEVATION APPROXIMATELY WHERE SHOWN.	G SERIES
F	DRIP SYSTEM FLUSH VALVE ASSEMBLY	CONTRACTOR FABRICATED SEE DETAIL DRAWING	MANUAL SHUT-OFF VALVE WITHIN 10" ROUND VALVE BOX. INSTALL AT POLY LATERAL END OR PVC EXHAUST MANIFOLD APPROXIMATELY WHERE SHOWN AND CONSTRUCTED AS DETAILED.	G SERIES
O	DRIP OPERATION INDICATOR	TORO 570Z-12P WITH GPM MODEL # GDFN-T NOZZLE	INSTALL AT LEAST TWO PER DRIP ZONE, ONE NEAR THE REMOTE CONTROL VALVE AND ONE AT THE DISTAL END, NEAR THE FLUSH MANIFOLD. INDICATORS TO BE VISIBLE FROM A PAVED SURFACE.	G SERIES
	POLYETHYLENE DRIP LINE CURVED OR STRAIGHT SYMBOL	TORO DL 2000 #RSP-212-XXX (BLACK WITH RED STRIPE FOR USE WITH P.W.)	DRIPLINE W/ PRE-INSERTED 0.53 GPH EMITTERS @ 12" O.C. LINE SPACED 10"-12" O.C. SECURE DRIP LINE WITH STAPLES 5' O.C. INSTALL W/ 4" MIN. AND MAX. 5" TOP SOIL COVER. ALL TUBING CONNECTIONS TO BE WITH TORO TRI-LOC FITTINGS.	G SERIES
36" BOX 48" BOX	POLYETHYLENE DRIP LINE FOR TREES	TORO DL 2000 #RSP-418-XXX (BLACK WITH RED STRIPE FOR USE WITH P.W.)	DRIPLINE W/ PRE-INSERTED 1.0 GPH EMITTERS @ 18" O.C. LINE SPACED 10"-12" O.C. SECURE DRIP LINE WITH STAPLES 5' O.C. INSTALL W/ 4" MIN. AND MAX. 5" TOP SOIL COVER. ALL TUBING CONNECTIONS TO BE WITH TORO TRI-LOC FITTINGS.	
	PVC MAINLINE PIPE 2.5" AND SMALLER	PACIFIC PLASTICS OR EQUAL.	1" - 11/2" = PVC SCH 40; 2"-3"= PVC CLASS 315. ALL FITTINGS TO BE SCH 80 PVC, SOLVENT WELD. (WHITE PVC PIPE FOR POTABLE WATER)	A SERIES E SERIES
	PVC LATERAL LINE PIPE 2.5" AND SMALLER	PACIFIC PLASTICS OR EQUAL.	LATERAL LINES 2.5" AND SMALLER TO BE PVC SCH 40 WITH SCH 40 SOLVENT WELD FITTINGS AS NOTED AND DETAILED. (WHITE PVC PIPE FOR POTABLE WATER)	C SERIES E SERIES
	PVC SLEEVE	PACIFIC PLASTICS OR EQUAL.	PVC SCH 40. SIZED 2X SLEEVED PIPE OR WIRE BUNDLE.	C SERIES E SERIES



NOTES:
1) REFER TO SECTION 15057 OF THE SPECIFICATIONS
2) INSTALL CORPORATION STOP WITH KEY IN THE SIDE POSITION
3) SET TOP OF METER BOX FLUSH WITH SIDEWALK. CURB OR FINISH GRADE
4) LOCATE METER BOX AS SHOWN ON WS-03
5) INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01
6) WATER LATERALS INSTALLED FOR THE USE OF RECLAIMED WATER SHALL BE IDENTIFIED AS DESCRIBED IN SECTION 15151 OF THE SPECIFICATIONS
7) CONNECTIONS TO STEEL MAINS SHALL BE IN ACCORDANCE WITH SECTION 15061
8) MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST

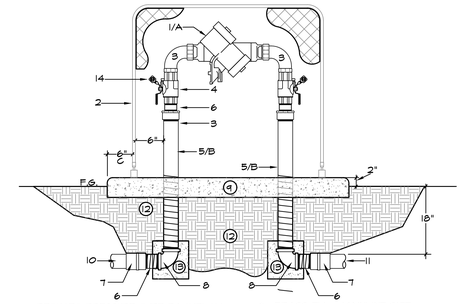
W 50mm (2")
GW 50mm (2")
LEGEND ON PLANS

ITEM NO	SIZE AND DESCRIPTION	ITEM NO	SIZE AND DESCRIPTION
1	SIZE x 50mm (2") SERVICE SADDLE	8	50mm (2") BRONZE ANGLE METER STOP WITH LOCKWING
2	WATER MAIN	9	TRACER WIRE (AS REQUIRED). SEE WP-01
3	50mm (2") BRONZE CORPORATION STOP	10	WATER METER FURNISHED AND INSTALLED BY THE WATER AGENCY OF JURISDICTION
4	50mm (2") x REQUIRED LENGTH COPPER PIPE TYPE "K" SOFT/RIGID	11	METER BOX WITH LID. #25MM x 750mm (17" x 30")
5	50mm (2"0 BRONZE COMPRESSING COUPLING COPPER TO COPPER (IF REQUIRED)	12	CUSTOMER SHUT-OFF VALVE (LOCKABLE)
6	50mm (2") 90° BRONZE COMPRESSION ELL		
7	10mm (3/8") ROCK. 100mm x 150mm (4" TO 6") DEEP		

50mm (2") WATER SERVICE INSTALLATION

WATER AGENCIES STANDARDS
COMMITTER APPROVAL: 12/31/2003
DRAWING NUMBER: WS -02

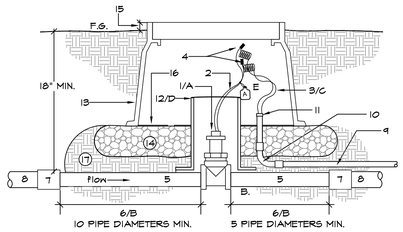
A1 2" COPPER SERVICE INSTALLATION
SECTION - NO SCALE



1- REDUCED PRESSURE TYPE BACKFLOW PREVENTION DEVICE ASSEMBLY.
2- STAINLESS STEEL ENCLOSURE- VIT STRONG BOX-SIZED TO FIT
3- SWEEP ELL WITH UNION - INTEGRAL
4- BALL VALVE - INTEGRAL
5- BRASS RISERS WITH REDUCING FITTINGS- MAINLINE SIZE X ASSEMBLY SIZE - L.A.R.
6- BRASS NIPPLES -LAR- NO CLOSE NIPPLES.
7- PVC SCH 80 OR COPPER SWEAT FEMALE ADAPTER ON SERVICE OR IRRIGATION MAINLINE
8- BRASS ELL - MAINLINE SIZE
9- CONCRETE SLAB-6" THICK.
10- BRASS, TYPE K COPPER OR CL315 PVC FROM METER.
11- CL315 PVC MAINLINE TO IRRIGATION SYSTEM.
12- UNDISTURBED OR COMPACTED SUBGRADE.
13- 12"x12"x12" 480-C2000 CONCRETE THRUST BLOCK - TYP.
14- RECYCLED WATER WARNING TAG

NOTE:
A. BACKFLOW PREVENTION DEVICE ASSEMBLY SHALL BE INSTALLED IN ACCORDANCE TO GOVERNING CODES AND ORDINANCE.
B. WRAP SUBSURFACE BRASS PIPING WITH 10 MILL UPC PIPE WRAP.
C. PROVIDE 6" CLEARANCE ALL AROUND ENCLOSURE. SLOPE TO DRAIN AWAY AND FINISH WITH 1/4" ROUND OVER.
D. INSTALL ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

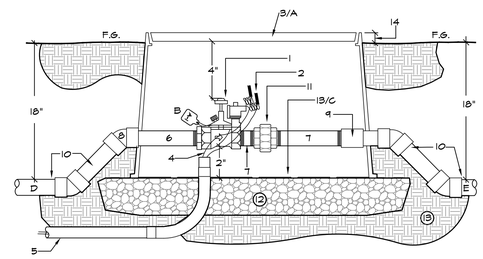
A2 BACKFLOW PREVENTION DEVICE ASSEMBLY WITH ENCLOSURE
SECTION - NO SCALE
B_RP-E-COMP-RW.dwg



1- FLOW SENSOR
2- SENSOR WIRE LEADS
3- COMMUNICATION CABLE- COIL W/ 4' EXTRA WIRE.
4- WATER PROOF CONNECTORS.
5- PVC PRESSURE MAIN SIZED EQUAL TO SENSOR FOR REQUIRED LENGTH.
6- REQUIRED DISTANCE FROM ANY FITTING OR HARDWARE.
7- REDUCING FITTING OR HARDWARE.
8- PVC PRESSURE MAIN - SIZED PER PLAN
9- PVC SCH 80 ELECTRICAL CONDUIT.
10- PVC SCH 80 CONDUIT SWEEP ELL.
11- PVC SCH 80 CONDUIT BUSHING.
12- 6" PVC CLASS 200 ACCESS SLEEVE.
13- STANDARD RECT. DURA DRI-BOX. #121-DB-S-DS W/ GREEN LOCKING LID.
14- 3/8' GRAVEL SUMP AND LEVELING PAD, 3" DEEP MINIMUM.
15- AT FINISH GRADE IN TURF; 1" IN SHRUB AREA
16- DURA DIRT SKIRT-
17- UNDISTURBED OR COMPACTED SUBGRADE.

NOTE:
A. FOLLOW MANUFACTURERS DIRECTIONS FOR CORRECT INSTALLATION.
B. NO SIZE OR DIRECTION CHANGE WITHIN 10x PIPE DIAMETER UPSTREAM AND 5x PIPE DIAMETER DOWNSTREAM OF SENSOR.
C. COMMUNICATION CABLE SHALL BE TWO CONDUCTOR, SHEILDED CABLE AEF 4516-2SP CONNECTION TO TRANSMITTER.
D. ACCESS SLEEVE FLARED-OUT TO SIT ON PVC PRESSURE PIPE.
E. CONTROLLER I.D. TAG, WARNING TAG TO BE IN ENGLISH AND SPANISH.
F. DIRT SKIRT OF THE DURA DRI-BOX TO BE DRILLED FOR DRAINAGE AND/OR NEATLY CUT AROUND PENETRATIONS.

A3 FLOW SENSOR
SECTION - NO SCALE
C_FLO-SEN-CON-PW-DB.DWG



1- MASTER CONTROL VALVE.
2- WATERPROOF WIRE SPLICE.
3- STANDARD RECT. DURA DRI-BOX. #121-DB-2-DS W/ GREEN LOCKING LID
4- CONTROL WIRES- STATION WIRE AND COMMON
5- PVC SCH 40 ELECT. CONDUIT FROM PULL BOX OR CONTROLLER/SATELLITE.
6- PVC SCH 80 NIPPLE -TOE- L.A.R.
7- PVC SCH 80 NIPPLE -TBE- L.A.R.
8- PVC SCH 80 45 DEG. ELL -TYP 4X.
9- PVC SCH 80 FEMALE ADAPTER.
10- PVC PREWIRE PIPE FOR MCV.
11- PVC SCH 80 UNION -VALVE SIZE- WITH REDUCING BUSHING IF REQUIRED.
12- 3/8' GRAVEL SUMP AND LEVELING PAD, 3" DEEP MINIMUM.
13- DIRT SKIRT OF THE DURA DRI-BOX.
14- UNDISTURBED/COMPACTED SUBGRADE.
15- FLUSH IN TURF, 1" IN GROUNDCOVER.

NOTES:
A. VALVE BOX LID SHALL BE BRANDED AS SHOWN IN VALVE BOX INSTALLATION AND IDENTIFICATION DETAIL DRAWINGS.
B. CONTRACTOR SHALL INCLUDE A CHRISTY'S IRRIGATION I.D. TAG INDICATING CONTROLLER AND MASTER CONTROL VALVE. TAGS SHALL BE ATTACHED TO VALVE BONNET BOLT.
C. DIRT SKIRT OF THE DURA DRI-BOX TO BE DRILLED FOR DRAINAGE AND/OR NEATLY CUT AROUND PENETRATIONS.
D. MAINLINE FROM SOURCE.
E. MAINLINE TO SYSTEM.

A4 MASTER CONTROL VALVE
SECTION - NO SCALE
V_MCV-CON-PW-DB.DWG

for the latest rev. go to http://www.asic.org/design_guides.htm

IRRIGATION NOTES

THE PROJECT
1. IRRIGATION SYSTEMS DESCRIBED BY THESE PLANS ARE FOR THE SUPPORT OF DECORATIVE LANDSCAPE PLANTINGS. THESE SYSTEMS ARE INTENDED FOR USE OF DOMESTIC/POTABLE WATER. ALL SYSTEMS SHALL BE INSTALLED ACCORDING TO THE RULES AND REGULATIONS OF THE LOCAL MUNICIPALITY AND COUNTY REGARDING THE PROPER USE OF THIS RESOURCE.

2. THIS IS A REFURBISHMENT PROJECT WHICH WILL REQUIRE AN INTERFACE WITH NUMEROUS CONDITIONS OF EXISTING IRRIGATION EQUIPMENT. THE CONTRACTOR MUST BE AWARE OF THE NATURE OF RETROFIT WORK, THAT UNDERGROUND PIPE, WIRE AND OTHER EQUIPMENT IS OF UNKNOWN CONDITION, SIZE, ARRANGEMENT OR EXISTENCE.

3. THESE PLANS ARE PRODUCED WITHOUT ACTUAL AS-BUILT INFORMATION AND EXACT LOCATION OF CONNECTIONS TO EXISTING EQUIPMENT ARE UNKNOWN. LOCATIONS AND ARRANGEMENT OF ALL EQUIPMENT ARE APPROXIMATE AND/OR CONCEPTUAL. ALL PIPE AND CONTROL WIRE CONNECTIONS SHOWN ON THE PLAN ARE DIAGRAMMATIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING POINTS OF CONNECTION TO EXISTING CONTROL WIRE AND IRRIGATION MAINLINE. THE CONTRACTOR SHALL STAKE THESE LOCATIONS, INTENDED ROUTING OF MAINLINE AND CONTROL WIRE AND LOCATION OF INTENDED RCV INSTALLATIONS FOR APPROVAL OF THE LANDSCAPE ARCHITECT WHICH MUST BE OBTAINED BEFORE PROCEEDING WITH INSTALLATIONS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL RECONNAISSANCE WORK REQUIRED TO COMPLETE THE INTENT OF THE DRAWINGS. TO INTERFACE WITH ALL EXISTING CONDITIONS THE CONTRACTOR MUST BECOME VERY FAMILIAR WITH THESE CONDITIONS. THE CONTRACTOR SHALL COORDINATE WITH ALL WORK AFFECTED BY EXISTING CONDITIONS WITH APPROPRIATE ON-SITE LANDSCAPE MAINTENANCE PERSONNEL.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND MAINTENANCE OF EXISTING LANDSCAPE AND IRRIGATION EQUIPMENT OUTSIDE LIMITS-OF-WORK BUT AFFECTED BY THE SCOPE OF THIS PROJECT. THIS MAY INCLUDE BUT NOT BE LIMITED TO:
*TEMPORARY CONNECTIONS AND BYPASS LINES TO AVOID AREAS OF DEMOLITION AND CONSTRUCTION.
*REPAIR AND/OR REPLACEMENT OF DAMAGED PLANTING AND/OR IRRIGATION EQUIPMENT.
*MANUAL AND/OR HAND WATERING LANDSCAPE AREAS LEFT TEMPORARILY WITHOUT AUTOMATIC IRRIGATION.
THE CONTRACTOR SHALL COORDINATE ALL WORK AFFECTED BY TEMPORARY INTERRUPTIONS OF WATER SERVICE WITH APPROPRIATE ON-SITE PERSONNEL.

6. THE CONTRACTOR SHALL OBTAIN STUDY AND COORDINATE ALL PERTINENT ENGINEERING AND/OR ARCHITECTURAL PLANS, SPECIFICATIONS AND COORDINATE WITH THE WORK DESCRIBED BY THESE PLANS.

7. ALL IRRIGATION SYSTEMS FOR THE GENERAL LANDSCAPE WITHIN THE LIMITS OF THIS PROJECT ARE TO BE CONNECTED TO A F.O.C. INTENDED FOR USE OF RECYCLED WATER. USE OF RECYCLED WATER REQUIRES THAT ALL PIPE, SLEEVES, SPRINKLER HEADS, REMOTE CONTROL VALVES, QUICK COUPLER VALVES AND VALVE BOXES BE IDENTIFIED AS CONTAINING RECYCLED WATER. DECALS AND/OR ADHESIVE LABELS ARE NOT ACCEPTABLE. ALL INSTALLATIONS SHALL BE ACCORDING TO RULES AND REGULATIONS OF THE SERVING WATER DISTRICT AND ALL OTHER CODES AND ORDINANCES AFFECTING CONSTRUCTION WITH OR USE OF RECYCLED WATER.

WATER SOURCE
1. STATIC WATER PRESSURE IS ASSUMED AND IS THE LOWEST OR MINIMUM PRESSURE REQUIRED FOR PROPER PERFORMANCE.

2. THE CONTRACTOR SHALL VERIFY WATER PRESSURE BY DIRECT MEASUREMENT IN THE FIELD. IF EXISTING PRESSURES ARE NOT AS STATED ON THE PLANS THE CONTRACTOR SHALL NOTIFY THE OWNERS' REPRESENTATIVE BEFORE PURCHASE OF EQUIPMENT AND/OR BEGINNING INSTALLATION. PURCHASE OF EQUIPMENT AND ANY INSTALLATIONS WHEN EXISTING STATIC PRESSURE IS BELOW THAT STATED ABOVE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

3. IRRIGATION POINT OF CONNECTION SHALL BE DOWNSTREAM OF A DEDICATED IRRIGATION WATER METER APPROXIMATELY WHERE SHOWN (SEE CIVIL DRAWINGS). THE CONTRACTOR SHALL MAKE CONNECTION DOWNSTREAM OF THIS METER AND INSTALL THE CONTROL HEAD (BACKFLOW PREVENTION DEVICE, FLOW SENSOR, MASTER CONTROL VALVE,) AND EXTEND SYSTEM AS SHOWN.

GENERAL
1. PLANS ARE DEVELOPED OVER BASE INFORMATION PROVIDED BY THE LANDSCAPE ARCHITECT. THIS INFORMATION AND ALL NEEDED UPDATES ARE THE RESPONSIBILITY OF THE PROVIDER.

2. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO ARRANGE FOR AND SCHEDULE A PRE-CONSTRUCTION MEETING AND ADHERE TO THE SPECIFICATIONS REGARDING THE SCHEDULE OF SITE OBSERVATIONS.

3. UNOBSERVED, UNPROVED, INADEQUATE INSTALLATIONS ARE THE SOLE RESPONSIBILITY OF THE INSTALLING CONTRACTOR AND WILL BE SUBJECT TO REMOVAL AND REINSTALLATION WITH NEW MATERIAL AT NO ADDITIONAL COST TO THE BUILDER/OWNER.

4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM WORK DESCRIBED BY THESE PLANS BEFORE BEGINNING WORK.

5A. THE CONTRACTOR SHALL OBTAIN, STUDY ALL PERTINENT ENGINEERING AND/OR ARCHITECTURAL PLANS AND SPECIFICATION AND COORDINATE WITH WORK DESCRIBED BY THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL RECONNAISSANCE WORK REQUIRED TO COMPLETE THE INTENT OF THE DRAWINGS. TO INTERFACE WITH ALL EXISTING CONDITIONS THE CONTRACTOR MUST BECOME VERY FAMILIAR WITH THESE CONDITIONS. THE CONTRACTOR SHALL COORDINATE ALL WORK AFFECTED BY EXISTING CONDITIONS WITH APPROPRIATE ON-SITE PERSONNEL.

5B. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES WITHIN WORK AREA PRIOR TO START OF CONSTRUCTION. AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION, THE CONTRACTOR SHALL REQUEST MARKOUT OF UNDERGROUND UTILITIES BY CALLING THE REGIONAL NOTIFICATION CENTER FOR AN INQUIRY IDENTIFICATION NUMBER. THE CONTRACTOR SHALL ALSO REFER TO ALL OTHER IMPROVEMENT PLANS FOR THIS PROJECT FOR UTILITY LOCATIONS.

6. THE CONTRACTOR SHALL NOT INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS THAT FIELD CONDITIONS SUCH AS OBSTRUCTIONS, DIFFERENCES IN GRADING OR, IN SIZE AND SHAPE OF THE PLANTED AREAS MAY NOT HAVE BEEN ACCOMMODATED IN THE ORIGINAL DESIGN. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF SUCH CHANGE IN FIELD CONDITIONS. IF NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE INSTALLATION AND FOR ANY NEED OF SUBSEQUENT REVISIONS.

7. ALL LOCAL, MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF WORK DESCRIBED AND/OR DIRECTED BY THESE DRAWINGS ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS. THE CONTRACTOR SHALL PERFORM WORK ACCORDING TO PROVISIONS OF ALL GOVERNING LOCAL, MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS.

8. UNLESS OTHERWISE SPECIFIED ON THE PLANS:
* ALL LATERAL END RUNS ARE TO BE 3/4"
* ALL SUB-MAINS (NON-PRESSURE LINE CONNECTED DIRECTLY DOWNSTREAM OF THE REMOTE CONTROL VALVE) SHALL BE ONE SIZE LARGER THAN THAT REMOTE CONTROL VALVE.
* MAINLINE END RUNS ARE TO BE 1 1/2".
* ALL PIPE SHALL BE DOWN SIZED IN DIRECTION OF FLOW ONLY.
* MAINLINE LOCATION SHALL BE 12"-18" BEHIND SIDEWALKS, TOP OF SLOPES, OR BROW DITCHES.

9. THE PLANS AND DRAWINGS ARE DIAGRAMMATIC. THE SCALE OF THE PLANS SOMETIMES MAKES IT NECESSARY TO SHOW IRRIGATION PIPELINES WITHIN THE BUILDINGS, WALKS OR OTHERWISE OUTSIDE OF THE PLANTING AREAS. THIS IS ONLY FOR CLARITY OF THE PLANS. ALL IRRIGATION EQUIPMENT SHALL BE INSTALLED IN PLANTER AREAS WHENEVER POSSIBLE. IN THE FOLLOWING PLANS THE IRRIGATION MAINLINE IS OFTEN SHOWN WITHIN THE PLAN VIEW OF SIDEWALKS, STREETS, DRIVES OR BUILDINGS. GENERALLY THE MAINLINE IS SHOWN ON THESE PLANS INDICATES AN EXISTING LINE TO BE PROTECTED IN PLACE FOR CONTINUED USE. REMOVE CONTROL VALVE SHOWN ARE TO BE INSTALLED IN PLACE OF THE EXISTIONS VALVE. THERE IS NO INTENTION OR DIRECTION WITHIN THESE PLANS TO INCLUDE THE INSTALLATION OF NEW MAINLINE. IF NEW MAINLINE NEEDS TO BE INSTALLED TO PROVIDE A VALVE AT A DIFFERENT LOCATION OR, FOR ANY OTHER REASON, THE FOLLOWING GUIDELINE ARE PROVIDED:
* 12" TO 18" FROM FACE OF WALKWAY OR MAINTENANCE PATH OR DRIVE.
* 48" BACK FROM THE TOP OF SLOPE
* 24" BACK FROM TOE OF SLOPE.

10. ALL PIPE LINES AND CONTROL WIRE CONDUIT CROSSING UNDER NEW PAVING SHALL BE SLEEVED. SLEEVES SHALL BE PVC SCH 40 PIPE WITH BELLED ENDS AND SHALL BE TWO TIMES THE DIAMETER OF THE SLEEVED PIPE OR WIRE CONDUIT (2" MINIMUM) OR SIZED AS SHOWN ON THE PLANS. CONTROL WIRE TO BE SLEEVED SEPARATELY FROM PIPE.

11. IN THE INTEREST OF WATER CONSERVATION, PUBLIC SAFETY AND CONTAINMENT OF RECYCLED WATER WHERE OVERHEAD IRRIGATION SYSTEMS AS PART OF THE EXISTING CONDITIONS ARE REALIGNED OR REVISED, OVER-SPRAY IS NOT ACCEPTABLE. THE CONTRACTOR SHALL ADJUST SPRINKLER HEAD SPACING, NOZZLES, RADIUS-OF-THROUGH, ARC OF COVERAGE, OPERATING PRESSURES TO PREVENT OVER-SPRAY BEYOND INTENDED AREAS OF COVERAGE.

12. WHERE SPRINKLER HEADS ARE RELOCATED OR ADDED TO RECONFIGURE OR REALIGN EXISTING OVERHEAD SYSTEMS THEY SHALL BE POP-UP TYPE SPRINKLERS AS LISTED IN THE LEGEND OR EQUAL TO THE EXISTING.

13. ALL INSTALLED AND/OR RELOCATED SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE, WITH THE EXCEPTION OF SLOPE CONDITIONS WHERE HEAD SHALL BE SET BETWEEN PLUMB AND NORMAL TO SLOPE. ALL SPRINKLER HEADS SHALL BE SET AT HEIGHT AS SHOWN IN THE DETAIL DRAWINGS.

14. TO PROTECT DECODER CABLE, ALL CABLE RUNS SHALL BE INSTALLED WITHIN PVC SCH 40 ELECTRICAL CONDUIT. THIS CONDUIT WILL FOLLOW THE IRRIGATION MAINLINE ROUTE AS DETAILED. ALL VALVES ALONG THE ROUTE WILL ALSO SERVES AS PULL BOXES OR HAND HOLES. AT EACH VALVE BOX THERE WILL BE PROVIDED A SPARE LOOP OF DECODER CABLE (APPROX. 48') TO ALLOW EASY ACCESS FOR MAINTENANCE AND/OR TROUBLESHOOTING

DRIP IRRIGATION
1. IN THE INTEREST OF WATER CONSERVATION, PUBLIC SAFETY AND THE STRICT CONTROL OF WATER APPLICATION, DRIP IRRIGATION METHODS AND TECHNIQUES ARE EMPLOYED PREDOMINANTLY ON THIS PROJECT. THE CONTRACTOR MUST BE QUALIFIED TO INSTALL DRIP IRRIGATION EQUIPMENT AND MUST ARRANGE AND SCHEDULE A PRE-CONSTRUCTION MEETING WITH BOTH THE LANDSCAPE ARCHITECT AND THE DRIP EQUIPMENT MANUFACTURER (RAINBIRD CORPORATION) PRIOR TO ANY INSTALLATIONS.

2. THE CONTRACTOR SHALL PRACTICE CAUTION WHEN INSTALLING DRIP IRRIGATION EQUIPMENT. ALL MANUFACTURERS ILLUSTRATIONS, DIRECTIONS, INSTRUCTIONS, REGOMMENDATIONS, WRITTEN LITERATURE AND VIDEO TAPE ILLUSTRATIONS SHALL BE FOLLOWED.

3. PVC SHAVINGS AND BURRS WILL NOT BE TOLERATED IN THE SYSTEM. ALL PVC PIPE SHALL BE CUT WITH THE APPROPRIATE PVC PIPE CUTTERS. USE OF ANY TYPE OF SAW FOR CUTTING PVC PIPE IS NOT ACCEPTABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEBRIS INTRODUCED INTO THE SYSTEM DURING CONSTRUCTION AND SUBSEQUENT MAINTENANCE PERIOD.

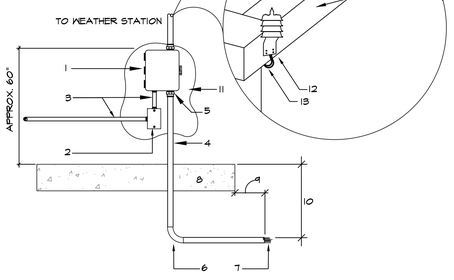
CONTROLS
1. SYSTEMS OF THIS PROJECT WILL BE CONTROLLED BY A TWO-WIRE DECODER IRRIGATION CONTROLLER CAPABLE OF CENTRAL CONTROL AND ETo BASED SCHEDULING VIA THE MANUFACTURER'S INTERNET SITE. THE CONTRACTOR SHALL CONTACT RAINMASTR AND/OR IMPERIAL TECHNICAL SERVICES FOR SITE SPECIFIC TECHNICAL ASSISTANCE AND FINAL SPECIFICATION OF THE CONTROLLER. CONTRACTOR SHALL EXERCISE STRICT COMPLIANCE WITH THE MANUFACTURERS' INSTRUCTIONS FOR INSTALLATION AND GROUNDING.
RAINMASTER- (800) 777-4777
IMPERIAL TECHNICAL SERVICES- (714) 696-7535.

2. TO PREVENT UNNECESSARY IRRIGATION, RAIN SENSING DEVICES ARE USED TO INTERRUPT SCHEDULED IRRIGATION EVENTS UPON MEASUREMENT OF SUBSTANTIAL RAINFALL

3. THE CONTROLLER ASSEMBLY, MOUNTED ON A STAINLESS STEEL BACKBOARD WITH ALL SPECIFIED OPTIONS AND WITHIN STAINLESS STEEL ENCLOSURE.

MEANS AND METHODS
IRRESPECTIVE OF ANY OTHER TERM IN THESE CONSTRUCTION DOCUMENTS, THE IRRIGATION CONSULTANT SHALL NOT CONTROL OR BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SCHEDULES, SEQUENCES OR PROCEDURES, OR FOR CONSTRUCTION SAFETY OR ANY OTHER RELATED PROGRAMS, OR FOR ANOTHER PARTIES' ERRORS OR OMISSIONS OR FOR ANOTHER PARTIES' FAILURE TO COMPLETE THEIR WORK OR SERVICES IN ACCORDANCE WITH IRRIGATION CONSULTANT'S DOCUMENTS.

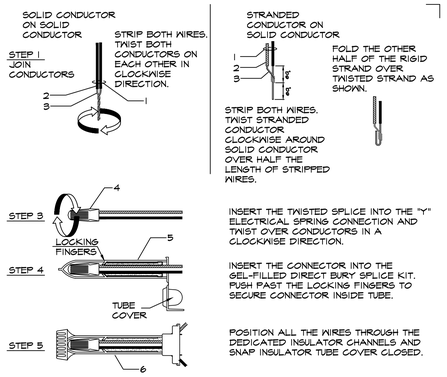
PROJECT MAINTENANCE
A LACK OF MAINTENANCE OR IMPROPER MAINTENANCE IN AREAS SUCH AS OR ASSOCIATED WITH, BUT NOT LIMITED TO, LANDSCAPE PLANTING, HARDSCAPE, LIGHTING, GRADING, DRAINAGE, WATER FEATURES, FURNISHINGS, AND IRRIGATION OR WATER MANAGEMENT WHETHER ASSOCIATED WITH THE PROJECT OR NOT MAY RESULT IN DAMAGE TO PROPERTY OR PERSONS.
THE CONTRACTOR ACKNOWLEDGES AND AGREES THAT PROPER PROJECT MAINTENANCE IS REQUIRED AFTER THE PROJECT IS COMPLETE AND TO INFORM THE OWNER OF HIS/HER SOLE RESPONSIBLE FOR THE RESULTS OF ANY LACK OF MAINTENANCE OR IMPROPER MAINTENANCE.



1- CONTROLLER.
2- JUNCTION BOX
3- 3/4" SCH 80 CONDUIT FOR 120VAC FROM METERED POWER SOURCE.
4- 1-1/2" SCH 80 CONDUIT FOR CONTROL WIRES.
5- PVC SCH 40 MALE ADAPTER
6- PVC SCH 80 SWEEP ELL.
7- CONTROL WIRES TO REMOTE CONTROL VALVES.
8- CONCRETE PAD OR FOOTING.
9- 12" PAST EDGE OF PAD OR FOOTING.
10-18" BELOW FINISH GRADE.
11- EXTERIOR WALL.
12- WEATHER STATION.
13- LEAD WIRES FROM RAIN SENSOR AND TEMPERATURE SENSOR.
14- FACIA BOARD.

NOTE:
A. DETAIL FOR ILLUSTRATION OF GENERAL CONDITIONS ONLY. CONTRACTOR SHALL FOLLOW MANUFACTURERS INSTRUCTIONS FOR MOUNTING & GROUNDING.

B1 IRRIGATION CONTROLLER OUTDOOR WALL-MOUNT WEATHER STATION
SECTION - N



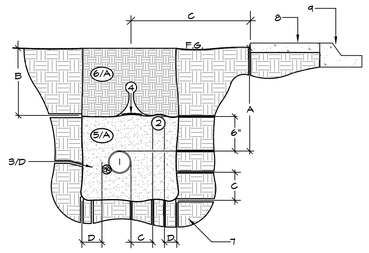
1- DIRECT BURIAL IRRIGATION CONTROL WIRE
2- INSULATION
3- COPPER CONDUCTOR SOLID AND/OR STRANDED
4- ELECTRICAL SPRING CONNECTOR
5- GEL-FILLED CAPSULE.
6- COMPLETED SPLICE

NOTE:
A. ALL WIRE SPLICES TO BE WITHIN A VALVE BOX.
B. WIRE CONNECTOR SHALL BE DBY OR DBY-6 DIRECT BURY SPLICE KIT BY THE 3M COMPANY.
KIT SHALL INCLUDE A SCOTCHLOK SPRING CONNECTOR, A POLYPROPYLENE TUBE AND
C. A WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PREFILLED WITH GEL
D. DIRECT BURY SPLICE KIT SHALL BE USED TO ELECTRICALLY CONNECT 2 - 3 #14 OR 2 #12 PRE-STRIPPED COPPER WIRES. LARGER WIRES OR GREATER QUANTITIES OF WIRESSHALL REQUIRE A LARGER APPROVED WIRE CONNECTION.

B4 WATERPROOF WIRE CONNECTOR/SPLICE

SECTION - NO SCALE

C_3M-DBY CONNECTOR.dwg



DIMENSION	A	B	C	D
1/2" TO 2-1/2"	18"	12"	6"	4"
3" TO 6"	24"	18"	6"	4"

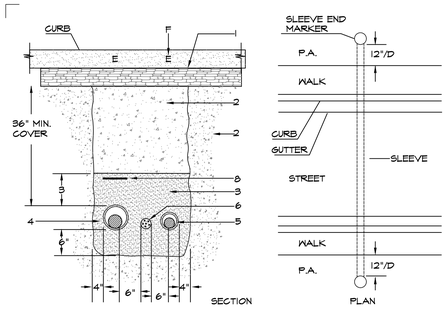
1- IRRIGATION PRESSURE LINE
2- IRRIGATION NON-PRESSURE LINE
3- CONTROL WIRES-BUNDLE
4- WARNING TAPE- 3" WIDE - IF REQ.
5- SAND BEDDING- OR APPROVED NATIVE SOIL.
6- CLEAN BACKFILL- APPROVED NATIVE SOIL.
7- UNDISTURBED NATIVE SOIL
8- SIDEWALK
9- CURB AND GUTTER

NOTE:
A. SEE SPECIFICATIONS FOR APPROVED BACKFILL AND OTHER REQUIREMENTS.
B. SNAKE PIPE IN TRENCH TO ALLOW FOR EXPANSION AND CONTRACTION.
C. IRRIGATION PIPE LINES SHOWN DIAGRAMMATICALLY. PIPE SHALL BE INSTALLED 12" TO 18" BEHIND WALK OR CURB.
D. BUNDLE WIRE AND SECURE TO MAINLINE WITH ELECTRICAL TAPE EVERY 10 FT.
E. PIPE AND WIRE TO BE INSTALLED IN SLEEVES UNDER ALL PAVING. SLEEVE SHALL EXTEND 12" PAST EDGE OF PAVING. SLEEVES TO BE:
-30"TO 36" COVER UNDER ROADS AND DRIVES.
-18" TO 24" COVER UNDER WALKS.

G1 TRENCHING

SECTION - NO SCALE

P_SS.dwg



1- PAVING SURFACE BY OTHERS.
2- REFER TO ENGINEER FOR SPECIFIC MATERIAL AND COMPACTION REQUIREMENTS.
3- SAND BEDDING- PER CIVIL ENG. REQUIREMENTS.
4- PRESSURE MAIN LINE W/ SLEEVE.
5- LATERAL LINE WITH SLEEVE.
6- LOW VOLTAGE CONTROL WIRES W/ SLEEVE- SIZE AS REQUIRED.
7- WARNING TAPE - 3" WIDE IF REQ.

THIS DRAWING SHOWS RELATIVE PIPE DEPTHS AND SLEEVE MARKING ONLY. BACKFILL MATERIAL COMPACTION REQUIREMENTS. ROAD BED REQUIREMENTS SHALL BE ACCORDING TO CIVIL PLANS.

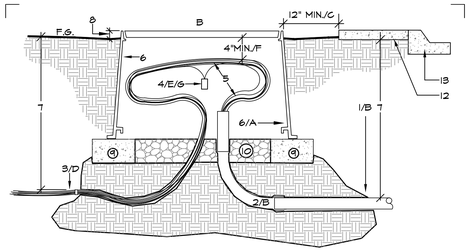
NOTE:

A. ALL SLEEVES TO BE PVC SCH 40 PIPE.
B. USE BLUE "IRRIGATION LINE BURIED BELOW" WARNING TAPE FOR ALL SLEEVES.
C. ALL SLEEVES TO BE SIZED TWICE THE DIA. OF THE PIPE (3" MIN.)
D. ALL SLEEVES TO RUN A MIN. OF 12" TO 18" BEYOND HARDSCAPE EDGES.
E. SLEEVE ENDS SHALL BE MARKED WITH 10" ROUND VALVE BOX AND GREEN LOCKING COVER. SEE ALSO SLEEVE MARKER DETAIL DRAWING.
F. ETCH THE LETTER "E" INTO CURB DIRECTLY ABOVE THE SLEEVE.

G2 PIPE AND WIRE UNDER PAVING

SECTION - NO SCALE

P_SG-PAV-SLV-POT.dwg



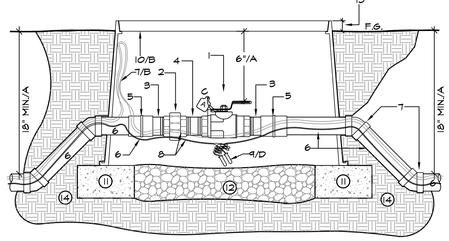
1- PVC SCH 40 OR 80 SLEEVE.
2- 90 DEG. SWEEP ELL
3- CONTROL WIRES.
4- WATER PROOF WIRE CONNECTORS FOR SPLICED CONNECTION
5- EXPANSION LOOPS- LABEL WIRES WITH CONTROLLER AND STATION #.
6- 6"X2" x 18" VALVE BOX.
7- 18 " MINIMUM - SEE SPECS. AND TRENCH DETAIL FOR DEPTHS.
8- FLUSH IN TURF. 1" IN GROUND COVER.
9- BRICK SUPPORT- ONE EACH CORNER
10-3" DEEP PEA GRAVEL SUMP.
11- UNDISTURBED OR COMPACTED SUB-GRADE.
12-SIDEWALK
13-CURB AND GUTTER

NOTE:
A. INSTALL PULL BOXES AS SHOWN ON PLANS, AT ALL STREET CROSSINGS AND OTHER PAVING CROSSINGS IN EXCESS OF 20 FEET. CONDUIT AND SWEEP ELL APPLY ONLY TO PAVING CROSSING.
B. PULL BOX COVER SHALL BE PERMANENTLY MARKED AND LOCATED AS SHOWN IN VALVE BOX ID DETAIL DRAWING.
C. CONDUCTORS FOR EACH CONTROLLER CLOCK SHALL BE HARNESSED SEPARATELY AND AT SUFFICIENT INTERVALS TO MAINTAIN A DEFINITE BUNDLE.
D. ALL SPARE WIRE ENDS SHALL BE INSULATED IN THE SAME MANNER AS WIRE SPLICES.
E. WIRE BUNDLES INSIDE PULL BOXES SHALL BE AT LEAST 4" FROM THE UNDER SIDE OF THE BOX COVER. MINIMUM SIZE PULL BOX SHALL BE AS SHOWN ABOVE. LARGER
F. BOXES AND/OR EXTENSIONS MAY BE NECESSARY TO MEET THE 4" CLEARANCE REQUIREMENT.
G. LOOP CONTROL WIRES INTO PULL BOX. ALL SPLICES ARE TO BE MADE IN PULL BOXES OR REMOTE CONTROL VALVE BOXES.

D PULL BOX

SECTION - NO SCALE

P_PBOX.dwg



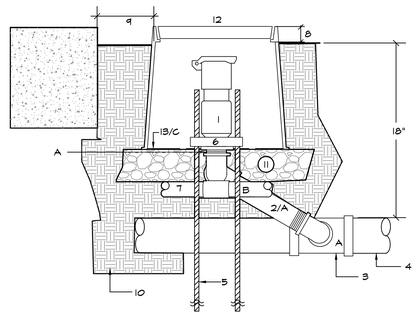
1- BALL VALVE WITH INTEGRAL UNION.
2- BRASS UNION - VALVE SIZE.
3- PVC SCH 80 NIPPLE - T.O.E.
4- PVC SCH 80 NIPPLE - T.B.E.
5- PVC SCH 80 COUPLING.
6- PVC PRESSURE MAIN - TYP.
7- PVC SCH 80 45 DEGREE ELLS - TYP. 4 PLACES.
8- CONTROL WIRES WITH SPARE STATION WIRES LOOPED INTO EACH ISOLATION VALVE BOX ON RUN.
9- WIRE SPLICE - 3M DBY. IF REQUIRED- MUST BE WITHIN VALVE BOX.
10- VALVE BOX. W/ GREEN LOCKING LID.
11- BRICK OR BLOCK SUPPORTS - 1 EA. CORNER.
12- PEA GRAVEL SUMP 3" DEEP.
13- AT FINISH GRADE IN TURF, 1" IN SHRUB AREA
14- UNDISTURBED OR COMPACTED SUBGRADE.

NOTE:
A. 4-45 DEGREE PVC SCH 80 ELBOW FITTINGS SHALL BE USED TO RAISE BALL HANDLE TO WITHIN 6" OF FINISH GRADE.
B. VALVE BOX LID SHALL BE BRANDED TO IDENTIFY VALVE.
C. CONTROLLER I.D.TAG.
D. SPLICING WITH APPROVAL OF OWNER REP.

E1 BALL VALVE FOR MAINLINE ISOLATION

SECTION - NO SCALE

V_BV-BR-MAIN-ISO-POT.dwg



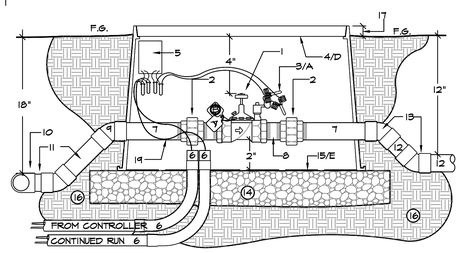
1- QUICK COUPLER VALVE W/YELLOW LOCKING CAP.
2- DURA O-RING SEALED SWING JOINT. Q.C. STANDARD UNIBODY #1"-A2 I II 1B
3- PVC TEE-SSS OR EL-SS ON PRESSURE MAINLINE
4- PVC PRESSURE MAINLINE
5- #4 REBAR STAKE 24" LONG
6- QUICK LOCK-VERTICAL SUPPORT
7- HORIZONTAL STABILIZER
8- FLUSH IN TURF, 1" IN IN SHRUB AREA.
9- 12" FROM WALKS, CURBS OR WALLS.
10- UNDISTURBED/COMPACTED SUBGRADE.
11- 3/8" GRAVEL SUMP AND LEVELING PAD, 3" DEEP, MINIMUM.
12- VALVE BOX W/GREEN LOCKING LID.
13- DIRT SKIRT OF THE DURA DRI-BOX.

NOTE:
A. FOR 3/4" Q.C. USE 1"X3/4" REDUCING BUSHING
B. 1"X18" CL. 315 PVC THROUGH HORIZONTAL STABILIZER
C. DIRT SKIRT OF THE DURA DRI-BOX TO BE DRILLED FOR DRAINAGE AND/OR NEATLY CUT AROUND PENETRATIONS.

E2 QUICK COUPLER VALVE

SECTION - NO SCALE

V_QCV-SJ-DB-POT.dwg



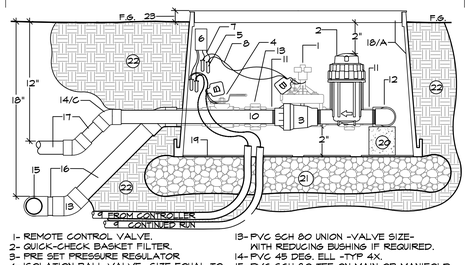
1- REMOTE CONTROL VALVE.
2- PVC SCH 80 UNION -VALVE SIZE- WITH REDUCING BUSHING IF REQUIRED.
3- WATERPROOF WIRE SPLICE- 3M DBY OR EQUAL.
4- STANDARD RECT. DURA DRI-BOX. #121-DB-2-DS W/ GREEN CAM-LOC LID.
~~5- DECODER~~
~~6- CONDUIT FOR DECODER CABLE WIRE~~
7- PVC SCH 80 NIPPLE -T.O.E.- L.A.R.
8- PVC SCH 80 NIPPLE -T.B.E.- L.A.R.-TYP. 2X
9- PVC SCH 80 45 DEG. ELL -TYP. 2X.
10- PVC SCH 80 TEE OR ELL ON MAINLINE OR MANIFOLD.
11- PVC PRESSURE PIPE.
12- PVC NON-PRESSURE PIPE.
13- PVC SCH 40 45 DEG. ELL -TYP. 2X.
14- 3/8" GRAVEL SUMP AND LEVELING PAD, 3" DEEP, MINIMUM.
15- DIRT SKIRT OF THE DURA DRI-BOX.
16- UNDISTURBED/COMPACTED SUBGRADE.
17- FLUSH IN TURF, 1" IN GROUNDCOVER.
18- SPARE STATION WIRES LOOPED INTO EACH VALVE BOX ON RUN.
19- CONTROL WIRES OR TWISTED PAIR FROM DECODER ON CONTINUED RUN.

NOTES:
A. PROVIDE EXPANSION COILS AT EACH WIRE CONNECTION WITHIN VALVE BOX- WRAP AROUND 1/2" PIPE 15 TIMES. REMOVE PIPE.
B. CONTRACTOR SHALL INCLUDE A CHRISTY'S STATION I.D. TAG SHALL BE ATTACHED TO VALVE BONNET BOLT.
C. COMPACT SOIL AROUND VALVE BOX TO SAME DENSITY AS UNDISTURBED
D. ADJACENT SOIL.
D. VALVE BOX LID SHALL BE BRANDED AS SHOWN IN VALVE BOX INSTALLATION AND
E. IDENTIFICATION DETAIL DRAWING.
E. DIRT SKIRT OF THE DURA DRI-BOX TO BE DRILLED FOR DRAINAGE AND/OR NEATLY CUT AROUND PENETRATIONS.

E3 REMOTE CONTROL VALVE WITH DECODER CABLE IN CONDUIT

SECTION - NO SCALE

V_RCV-CON-DEC-RW-DB-REDIRECTED.dwg

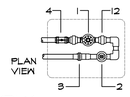


1- REMOTE CONTROL VALVE.
2- QUICK-CHECK BASKET FILTER.
3- PRE SET PRESSURE REGULATOR
4- ISOLATION BALL VALVE -SIZE EQUAL TO RCV.- EPDM INTERNAL PARTS
5- WATERPROOF WIRE SPLICE. 3M-DBY
~~6- STATION DECODER~~
~~7- DECODER LEADS COIL W/ 2' EXTRA WIRE.~~
8- SOLENOID WIRES
~~9- NETAFIM SINGLE NET CABLE AND CONDUIT OR SCH 40 PVC WITH DECODER CABLE~~
10- PVC SCH 80 NIPPLE -TOE- L.A.R.
11- PVC SCH 80 NIPPLE -TBE- L.A.R. BEHIND
12- PVC SCH 40 90DEG. ELBOWS
13- PVC SCH 80 UNION -VALVE SIZE- WITH REDUCING BUSHING IF REQUIRED.
14- PVC 45 DEG. ELL -TYP 4X.
15- PVC SCH 80 TEE ON MAIN OR MANIFOLD.
16- PVC PRESSURE PIPE
17- PVC NON-PRESSURE PIPE
18- STND. RECT. DURA DRI-BOX. #121-DB-2-DS W/ GREEN CAM LOCK LID.
19- DIRT SKIRT OF THE DURA DRI-BOX.- DRILL DRAINAGE HOLES.
20- BRICK OR BLOCK SUPPORT 3/8" GRAVEL SUMP AND LEVELING PAD, 3" DEEP, MINIMUM.
22- UNDISTURBED/COMPACTED SUBGRADE.
23- FLUSH IN TURF, 1" IN GROUNDCOVER.

NOTES:
A. DRIP VALVE ASSEMBLIES OF LOW AND MEDIUM FLOW SITUATIONS.
B. CONTRACTOR SHALL INCLUDE A CHRISTY'S RIN WARNING AND I.D. TAG INDICATING CONTROLLER AND STATION NUMBER. TAGS SHALL BE ATTACHED TO VALVE BONNET BOLT.
C. 45 DEG. ELBOWS TO BE SCH 80 UPSTREAM SIDE AND SCH 40 DOWNSTREAM SIDE
D. LOW FLOW REGULATOR TO INCLUDE 1"X3/4" TT BUSHING ON INLET AND OUTLET.
E. SIZE ASSEMBLY ACCORDING TO FLOW AS FOLLOWS:

GPM	RCV	FILTER	REGULATOR
.10 - 3	TPVF100-EFF	QKCHK-100-200M	PMR-40-LF
3.1 - 8	TPVF100-EFF	QKCHK-100-200M	PMR-40-MF
8.1 - 15	P-220S-26-04	QKCHK-100-200M	PMR-40-HF

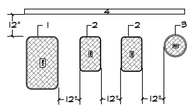
RCV BY TORO; FILTER BY RAINBIRD;
REGULATOR BY SENNINGER; VALVE BOX BY DURA
BALL VALVE TO BE #3624 BY SPEARS.



E4 DRIP IRRIGATION RCV ASSEMBLY LOW AND MEDIUM FLOW SITUATIONS

SECTION - NO SCALE

RCV-TORO-DRIP-ZONE-LF-MF-PW-STND-CON-DEC-DB.dwg

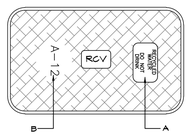


IDENTIFICATION GUIDE

POTABLE WATER	RECLAIMED WATER	CONTROLLER	DESIGNATION	
DW	RW	A	IRR COMM	COMMUNICATION SPLICES
DW	RW	A	(STATION #)	REMOTE CONTROL VALVES
DW	RW	A	MV	MASTER CONTROL VALVES
DW	RW	A	FS	FLOW SENSORS
DW	RW	A	MS	MOISTURE SENSORS
DW	RW	A	GV	GATE VALVES
DW	RW	A	BV	BALL VALVES
DW	RW	A	AVR	AIR/VACUM RELIEF
DW	RW	A	FI	FERTILIZER INJECTORS
DW	RW	A	BS	BASKET STRAINERS
DW	RW	A	DF	DISK FILTER
DW	RW	A	BO	BLOW-OUT (MAINLINE)
DW	RW	A	PB	PULL BOX
DW	RW	A	SLV	SLEEVE MARKER
DW	RW	A	QC	QUICK COUPLERS
DW	RW	A	DV	DRAIN VALVE
DW	RW	A	DFV	DRIP FLUSH VALVE
DW	RW	A	DBO	DRIP BLOW OUT
DW	RW	A	DAV	DRIP AIR/VACUM RELIEF
DW	RW	A	DBF	DRIP BASKET FILTER
DW	RW	A	DDF	DRIP DISK FILTER

CONTACT IRRIGATION CONSULTANT FOR INFO ON ANY DEVICE IN A BOX NOT LISTED.

1- JUMBO RECTANGULAR VALVE BOX 20"X14"
2-STANDERED RETANGULAR VALVE BOX 16"X11"
3-ROUND VALVE BOX 10" DIA.
4-EDGE OF AREA. CURB WALK OR WALL



NOTES:
A-CHRISTY'S WARNING TAG MODEL # ID-MAX-PI-RC005 TO BE RIVITED TO THE BOX LID.
B-CONTROL VALVES SHALL BE INSTALLED TO ALLOW ORDERLY ARRANGEMENT OF VALVE BOXES.
C-LOCATION OF VALVE ASSEMBLIES SHALL BE STAKED FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
D-CENTER VALVE BOXES OVER VALVE ASSEMBLE TO FACILITATE ACCESS AND MAINTENANCE.
E-SET VALVE BOXES AT EQUAL ELEVATIONS WITH TOPS AT FINISH GRADE IN TURF AREAS OR 2" ABOVE FINISH GRADE IN SHRUB/ GROUND COVER AREAS.
F-VALVE BOXES SHALL BE SET PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE OF AREA.
G-DO NOT DEFOREM OR COLLAPSE VALVE BOX BY EXESSIVE SOIL COMPACTION AROUND BOX.
H-SEE ALSO INDIVIDUAL VALVE INSTALLATION DETAILS.

F TYPICAL VALVE BOX INSTALLATION AND IDENTIFICATION

SECTION - NO SCALE

V_RCV-BOXID-2.dwg

AXIS GFA
1130 WESTWOOD BLVD
LOS ANGELES, CA 90024
T 310.209.7520
F 310.209.7516
www.axisgfa.com

PROJECT NAME

GADSDEN AVENUE
LANCASTER, CA

OWNER:

INSITE REAL ESTATE DEVELOPMENT
6265 VARIEL AVENUE
WOODLAND HILLS, CA 91367

FONG HART SCHNEIDER + PARTNERS
Landscape Architecture . Planning . Urban Design
31742 Coast Highway
Laguna Beach, California
92651-6816
Tel: 949 643 9444
Fax: 949 715-7286

NO.	DATE	ISSUES AND REVISIONS	BY
	02-16-18	PLAN CHECK	

DATE 2-16-18
SCALE N / A

PROJECT NUMBER LA1628
COMPUTER FILE
PROJECT NAME

DESCRIPTION
LANDSCAPE IRRIGATION DETAILS

SHEET NUMBER
L-203

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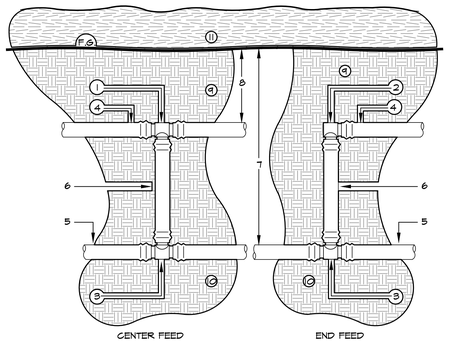
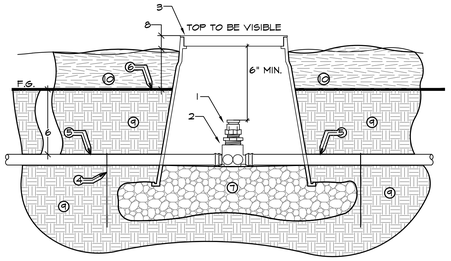


1- LOC-EZE T-FTT-16 INSERT TEE
2- LOC-EZE T-FEE-16 INSERT ELL.
3- LOC-EZE INSERT TEE OR ELBOW ON MANIFOLD
4- DL200 DRIPLINE- SEE SPECS &
5- LEGEND.
BLANK TUBING - INLET OR EXHAUST MANIFOLD.
6- BLANK POLY TUBING RISER.
7- AT PVC LATERAL LINE DEPTH
8- 4.5" TO 5" TOP SOIL COVER TO TOP OF DRIP LINE
SEE SPECS FOR DEPTH.
9- TOP SOIL COMPACTED TO PLANTING SPECIFICATIONS
10- UNDISTURBED/COMPACTED SOIL
11- MULCH - SEE PLANTING PLANS

G1 START CONNECTION POLY SUB-GRADE

SECTION - NO SCALE

D_ST-CENTER-END-POL-SG-TORO.dwg



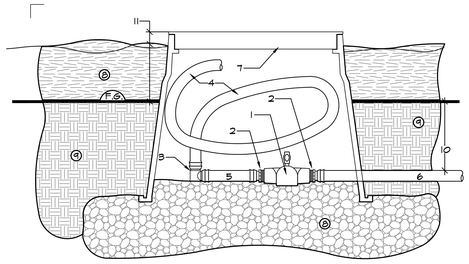
1- TORO T-YD-500-34 RELIEF VALVE.
2- TORO T-FTF16 TEE.
3- 10" ROUND VALVE BOX.
4- SECURE DRIPLINE WITH TORO T-666-50 TIE DOWN STAKES, 5' O.C.
5- TORO DL 2000 DRIPLINE OR BLANK TUBING ON COMMON MANIFOLD.
6- 4" MINIMUM COVER. SEE OTHER DETAIL AND SPECIFICATIONS FOR COVER DEPTH.
7- .75" CRUSHED GRAVEL LEVELING PAD AND SUMP. FILL TO SUPPORT BASE OF VALVE.
8- BOX TO BE EXPOSED ABOVE MULCH. SEE PLANTING PLAN FOR DEPTH OF MULCH TO DETERMINE DEPTH OF BOX BELOW FINISH GRADE.
9- UNDISTURBED OR COMPACTED SUB-GRADE.
10- MULCH.

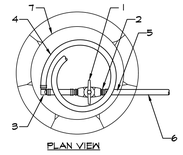
NOTE:
A. AIR/VAC TO BE INSTALLED AT HIGHEST LOCAL ELEVATION ON MANIFOLD LINE SO THAT ALL LATERALS SEE VACUUM RELIEF. SEE DRIP LAYOUT DETAILS.
B. THREAD AIR VACUUM RELIEF VALVE INTO ADAPTOR TEE WITH TEFLON TAPE.
C. NOTCH SIDE OF BOX FOR UNOBSTRUCTED LINE ACCESS.
D. PROVIDE CONT. SUPPORT OF TUBING & AIR/VACUUM VALVE.
E. BRAND "AVR" CONTROLLER AND STATION NUMBER INTO VALVE BOX LID. REFER TO VALVE BOX I.D. DETAIL DRAWING.

G2 AIR/VACUUM RELIEF FOR DRIPLINE SUB-GRADE IN SHRUB/ GROUND COVER PLANTING

SECTION - NO SCALE

D_AVAC-TORO-SG-SH.dwg





PLAN VIEW

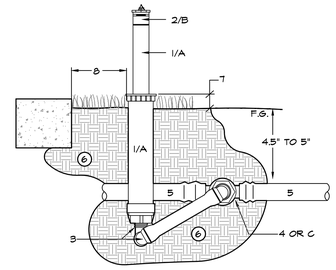
1- 5" PVC BALL VALVE - KBI EBV-0500 OR EQUAL
2- TORO T-FAM16 INSERT MALE ADAPTER
3- TORO T-FEE16 ELBOW LOC-EZE FITTING
4- 18" X 536" I.D. FLEX PVC HOSE.
5- TORO DL-2000 DRIP TUBING
6- BLANK TUBING FLUSH MANIFOLD.
7- 10" ROUND VALVE BOX.
8- .75" CRUSHED GRAVEL LEVELING PAD AND SUMP. FILL TO SUPPORT BASE OF VALVE.
9- UNDISTURBED OR COMPACTED SUB-GRADE
10- SEE OTHER DETAILS, NOTES AND SPECIFICATIONS FOR DRIP LINE INSTALLATION AND DEPTH OF COVER.
11- BOX TO BE EXPOSED ABOVE MULCH. SEE PLANTING PLAN FOR DEPTH OF MULCH TO DETERMINE DEPTH OF BOX BELOW FINISH GRADE.

NOTE:
A. BRAND "DBO" - DRIP BLOWOUT, CONTROLLER AND STATION NUMBER INTO VALVE BOX LID. REFER TO TECHNICAL SPECIFICATIONS.

G3 DRIP LINE BLOW-OUT (MANUAL)

SECTION AND PLAN - NO SCALE

D_BLOWOUT-M-TORO-SG.dwg



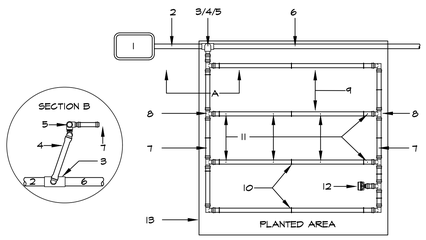
1- 12" POP-UP SPRAY HEAD
2- GPH # SDFN-R NOZZLE.
3- MANUFACTURED SWING JOINT- TORO MODEL SPFA-5125
4- TORO TL-T-F50 ADAPTER
5- POLYETHLENE BLANK TUBING-17MM.
6- SOIL COMPACTED TO EQUAL ADJACENT HORTICULTURAL SOILS
7- AT FINISH GRADE IN TURF; 2" IN SHRUB AREA.
8- 6" TO 10" FROM HARDSCAPE

NOTE:
A. POP-UP BODY TO BE RAINBIRD RD-12-S-NP
B. NOZZLE TO BE ADJUSTED CLOSED DURING NORMAL OPERATION, OPENED DURING SYSTEM FLUSHING MAINTENANCE OPERATION.
C. PVC MANIFOLD SIZE TEE W 3/4 IN. THREADED SIDE OUTLET.

G4 DRIP SYSTEM OPERATION INDICATOR

SECTION - NO SCALE

D_OPERATION-INDICATOR-TORO12-GPH-PW.dwg

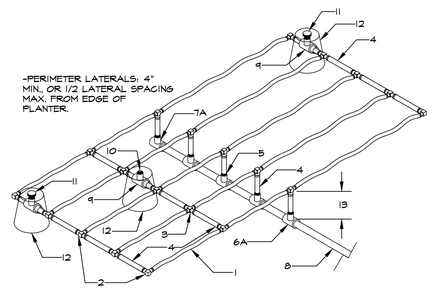


1- RVC, FILTER, PRV ASSEMBLY- SEE PLAN
2- PVC SUB-MAIN, SUPPLY HEADER OR LATERAL LINE- SEE PLAN
3- PVC TEE OR ELL ON SUPPLY LINE
4- PREFABICATED SWING JOINT TORO SPFA 585
5- PVC FIPT X FIPT ELL WITH MIPT X BARB ADAPTER
6- PVC SUPPLY HEADER, CONTINUE TO NEXT PLANTING AREA.
7- POLY BLANK TUBING INLET OR EXHAUST MANIFOLD.
8- BARBED INSERT FITTINGS BY TUBING MANUFACTURER
9- DRIP LINE WITH PREINSERTED EMITTERS PER PLANS AND SPECS.
10- SECURE POLY LINES WITH JUTE NET STAPLES AS SHOWN
11- EMISSION POINTS - TYP.
12- AUTOMATIC FLUSH VALVE
13- TREE CUT OUT OR PLANTER.

G5 DRIP LAYOUT WITH PVC BYPASS

SECTION - NO SCALE

D_LT-BYPASS-TORO.dwg



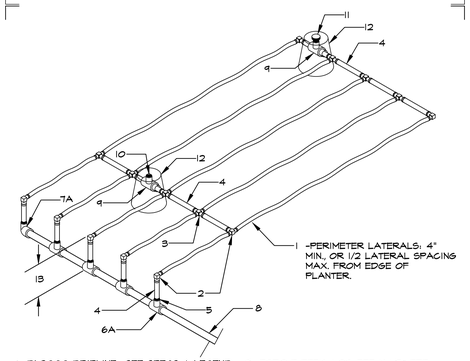
1- DL2000 DRIPLINE- SEE SPECS & LEGEND.
2- DL2000 INSERT TEE OR ELL.
3- DRIPLINE INSERT CROSS
4- BLANK DRIPLINE TUBING
5- TORO T-FAM16 LOC-EZE X 1/2" MPT
6- ADAPTER
7- PVC TEE - 5X5X1/2" THREADED.
8- PVC EL - 5X1/2" THREADED
PVC PIPING INLET OR EXHAUST MANIFOLD.
9- TORO T-FTF16 LOC-EZE X 1/2" FPT
10- TORO DL 2000 AIR/VACUUM RELIEF
11- VALVE- YD-500-34.
12- NETAFIM TLOSOMFV-1 LINE FLUSH VALVE 10" ROUND VALVE BOX-
13- SEE ACCOMPANYING DETAILS FOR INSTALLATION
BURY DEPTH- SEE NOTES AND SPECS

NOTE:
A. RUN OF EL OR TEE TO BE SIZED EQUAL TO LATERAL.
B. DRIP-LINES TO BE LAID FLAT AND SECURED TO SUBGRADE WITH STAPLES AT 5' CENTERS PRIOR TO BACK-FILL OR MULCH COVER.
C. USE CAUTION WHEN SECURING DRIP-LINE WITH STAPLES. DRIP-LINE SHALL NOT BE OBSTRUCTED, KINKED, OR STRETCHED.

G6 START CONNECTION CENTER FEED PVC TO POLY SUB-GRADE

SECTION - NO SCALE

D_ST-PVC-SG-TORO-CF-ISO.dwg



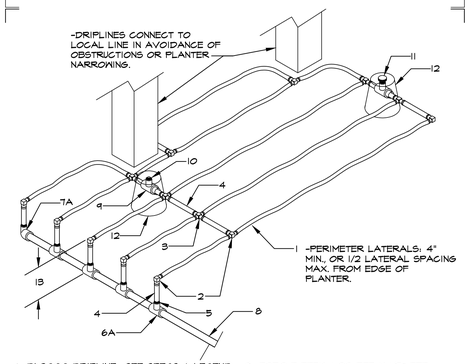
1- DL2000 DRIPLINE- SEE SPECS & LEGEND.
2- DL2000 INSERT TEE OR ELL.
3- DRIPLINE INSERT CROSS
4- BLANK DRIPLINE TUBING
5- TORO T-FAM16 LOC-EZE X 1/2" MPT
6- ADAPTER
7- PVC TEE - 5X5X1/2" THREADED.
8- PVC EL - 5X1/2" THREADED
PVC PIPING INLET OR EXHAUST MANIFOLD.
9- TORO T-FTF16 LOC-EZE X 1/2" FPT
10- TORO DL 2000 AIR/VACUUM RELIEF
11- VALVE- YD-500-34.
12- NETAFIM TLOSOMFV-1 LINE FLUSH VALVE 10" ROUND VALVE BOX-
13- SEE ACCOMPANYING DETAILS FOR INSTALLATION
BURY DEPTH- SEE NOTES AND SPECS

NOTE:
A. RUN OF EL OR TEE TO BE SIZED EQUAL TO LATERAL.
B. DRIP-LINES TO BE LAID FLAT AND SECURED TO SUBGRADE WITH STAPLES AT 5' CENTERS PRIOR TO BACK-FILL OR MULCH COVER.
C. USE CAUTION WHEN SECURING DRIP-LINE WITH STAPLES. DRIP-LINE SHALL NOT BE OBSTRUCTED, KINKED, OR STRETCHED.

G7 START CONNECTION END FEED PVC TO POLY SUB-GRADE

SECTION - NO SCALE

D_ST-PVC-SG-TORO-EF-ISO.dwg



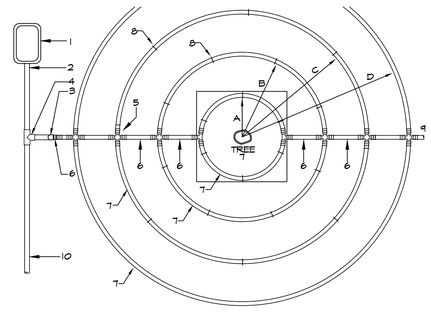
1- DL2000 DRIPLINE- SEE SPECS & LEGEND.
2- DL2000 INSERT TEE OR ELL.
3- DRIPLINE INSERT CROSS
4- BLANK DRIPLINE TUBING
5- TORO T-FAM16 LOC-EZE X 1/2" MPT
6- ADAPTER
7- PVC TEE - 5X5X1/2" THREADED.
8- PVC EL - 5X1/2" THREADED
PVC PIPING INLET OR EXHAUST MANIFOLD.
9- TORO T-FTF16 LOC-EZE X 1/2" FPT
10- TORO DL 2000 AIR/VACUUM RELIEF
11- VALVE- YD-500-34.
12- NETAFIM TLOSOMFV-1 LINE FLUSH VALVE 10" ROUND VALVE BOX-
13- SEE ACCOMPANYING DETAILS FOR INSTALLATION
BURY DEPTH- SEE NOTES AND SPECS

NOTE:
A. RUN OF EL OR TEE TO BE SIZED EQUAL TO LATERAL.
B. DRIP-LINES TO BE LAID FLAT AND SECURED TO SUBGRADE WITH STAPLES AT 5' CENTERS PRIOR TO BACK-FILL OR MULCH COVER.
C. USE CAUTION WHEN SECURING DRIP-LINE WITH STAPLES. DRIP-LINE SHALL NOT BE OBSTRUCTED, KINKED, OR STRETCHED.

G8 START CONNECTION END FEED (OBSTRUCTED) PVC TO POLY SUB-GRADE

SECTION - NO SCALE

D_ST-PVC-SG-TORO-EF-ISO-OBST.dwg



TREE SIZE	RAD."A" RAD./EMT.'S	RAD."B" RAD./EMT.'S	RAD."C" RAD./EMT.'S	RAD."D" RAD./EMT.'S	TOTAL # EMT'S	TOTAL GPH
15 GAL	8" / 2	16" / 5	N.A.	N.A.	7	7
24"BOX	10" / 3	26" / 9	N.A.	N.A.	12	12
36"BOX	14" / 4	30" / 10	46" / 16	N.A.	30	30
48"BOX	20" / 6	34" / 12	50" / 17	66" / 23	58	58
60" BOX	24" / 8	40" / 13	56" / 19	72" / 25	65	65

1- RCV, FILTER, PRV ASSEMBLY AND FILTER.
2- PVC SUPPLY HEADER.
3- PVC START CONNECTION TO ALLOW POLY DRIP LINE INSTALLATION AT SPECIFIED DEPTH.
4- PVC SCH 40 TEE OR EL AND LATERAL.
5- TORO LOC-EZE CROSS OR 2 TEE'S
6- BLANK TUBING
7- TORO DL2000 418 DRIP LINE TUBING WITH PREINSERTED 1.0 GPH EMITTERS AT 18" O.C. IN CONCENTRIC RINGS.
8- SECURE DRIPLINE TO SUBGRADE WITH JUTE NET STAPLES AT EVERY FITTING AND 3' TO 5' O.C.
9- BLANK PE TUBING TO NEXT TREE, FLUSH VALVE, OR DRIP INDICATOR
10- PVC SCH 40 LATERAL LINE TO NEXT TREE

NOTE:
POLY DRIPLINE TO BE INSTALLED ON SUBGRADE WITH 3" TO 4" TOPSOIL COVER. SEE LANDSCAPE PLANTING PLANS AND SPECS.

- DRIP LAYOUT WITH PREINSERTED EMITTERS TREE SEPARATE ZONE

SECTION - NO SCALE

D_LT-TR1-TORO-DL2000-2.dwg

CRITICAL ANALYSIS

Generated:	2017-12-13 04:45
P.O.C. NUMBER: "A" AT GROUND LEVEL	
Water Source Information:	
FLOW AVAILABLE	
Water Meter Size:	1"
Flow Available:	18.20 gpm
PRESSURE AVAILABLE	
Static Pressure at POC:	80.00 psi
Elevation Change:	5.00 ft
Service Line Size:	1"
Length of Service Line:	20.00 ft
Pressure Available:	75.00 psi
DESIGN ANALYSIS	
Maximum Station Flow:	9.67 gpm
Flow Available at POC:	18.20 gpm
Residual Flow Available:	8.53 gpm
Critical Station:	3
Design Pressure:	30.00 psi
Friction Loss:	2.58 psi
Fittings Loss:	0.26 psi
Elevation Loss:	0.00 psi
Loss through Valve:	13.34 psi
Pressure Req. at Critical Station:	46.24 psi
Loss for Fittings:	0.13 psi
Loss for Main Line:	1.25 psi
Loss for POC to Valve Elevation:	0.00 psi
Loss for Backflow:	11.58 psi
Loss for Master Valve:	0.71 psi
Loss for Water Meter:	0.67 psi
Critical Station Pressure at POC:	60.58 psi
Pressure Available:	75.00 psi
Residual Pressure Available:	14.42 psi

P1 WATER PRESSURE CALCULATIONS - POC "A". GROUND LEVEL SYSTEMS

CRITICAL ANALYSIS

Generated:	2017-12-13 04:42
P.O.C. NUMBER: 02	
Water Source Information:	3/4" STUB-OUT WITH 3/4" BACKFLOW
FLOW AVAILABLE	
Point of Connection Size:	3/4"
Flow Available:	12.50 gpm
PRESSURE AVAILABLE	
Static Pressure at POC:	65.00 psi
Pressure Available:	65.00 psi
DESIGN ANALYSIS	
Maximum Station Flow:	6.41 gpm
Flow Available at POC:	12.50 gpm
Residual Flow Available:	6.09 gpm
Critical Station:	B-2
Design Pressure:	30.00 psi
Friction Loss:	0.71 psi
Fittings Loss:	0.07 psi
Elevation Loss:	0.00 psi
Loss through Valve:	12.00 psi
Pressure Req. at Critical Station:	42.79 psi
Loss for Fittings:	0.03 psi
Loss for Main Line:	0.31 psi
Loss for POC to Valve Elevation:	0.00 psi
Loss for Backflow:	10.80 psi
Loss for Master Valve:	0.64 psi
Critical Station Pressure at POC:	54.57 psi
Pressure Available:	65.00 psi
Residual Pressure Available:	10.43 psi

P2 WATER PRESSURE CALCULATIONS - POC "B". GROUND LEVEL SYSTEMS

AXIS GF/-
1130 WESTWOOD BLVD
LOS ANGELES, CA 90024
T 310.209.7520
F 310.209.7516
www.axisgfa.com

PROJECT NAME

GADSDEN AVENUE
LANCASTER, CA

OWNER:

INSITE REAL ESTATE DEVELOPMENT
6265 VARIEL AVENUE
WOODLAND HILLS, CA 91367

FONG HART SCHNEIDER + PARTNERS
Landscape Architecture . Planning . Urban Design
31742 Coast Highway
Laguna Beach, California
92651-6835
Tel: 949 643 9444
Fax: 949 715-7286

REGISTERED LANDSCAPE ARCHITECT
STATE OF CALIFORNIA

NO.	DATE	ISSUES AND REVISIONS	BY
	02-16-18	PLAN CHECK	

DATE 2-16-18
SCALE N / A

PROJECT NUMBER LA1628
COMPUTER FILE
PROJECT NAME

DESCRIPTION
LANDSCAPE IRRIGATION DETAILS

SHEET NUMBER
L-204

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LANDSCAPE IRRIGATION SPECIFICATIONS

PART 1 - GENERAL PROVISIONS

1.1. DEFINITIONS:

1.1.1. CITY: LANDCASTER, CA

1.1.2. LANDSCAPE ARCHITECT: FONG HART SCHNEIDER + PARTNERS

1.1.3. IRRIGATION CONSULTANT: INDEPENDENT IRRIGATION CONSULTANTS, INC.

1.2. SCOPE OF CONTRACT:

1.2.1. THE FOLLOWING TERMS, CONDITIONS, AND INSTRUCTIONS, AS WELL AS THE LANDSCAPE ARCHITECT'S PLANS AND SPECIFICATIONS, THE CONTRACTOR'S CONTRACT AND SHOP DRAWINGS AND ANY CHANGE ORDERS AND/OR ADDENDUM'S ISSUED BY LANDSCAPE ARCHITECT SHALL FORM THE GENERAL CONTRACT.

1.2.2. NO CHANGE FROM THE GENERAL CONTRACT SHALL BE MADE WITHOUT AUTHORIZATION FROM THE LANDSCAPE ARCHITECT AND/OR OWNER. ALL SUCH INSTRUCTIONS SHALL BE IN WRITING ON A "CHANGE ORDER" FORM. UNLESS CONTRACTOR NOTIFIES LANDSCAPE ARCHITECT WITHIN FORTY-EIGHT (48) HOURS UPON RECEIPT OF A CHANGE ORDER, SUCH ORDER SHALL CONSTITUTE A PART OF THE GENERAL CONTRACT. THE LANDSCAPE ARCHITECT SHALL HAVE AUTHORITY TO MAKE MINOR CHANGES. ANY CHANGES INVOLVING EXTRA COST OR ALTERATION OF THE OVERALL APPEARANCE OF THE PROJECT SHALL BE COUNTER-SIGNED BY THE OWNER. THE LANDSCAPE ARCHITECT MAY INSTRUCT THE CONTRACTOR TO ISSUE CHANGE ORDERS FOR ANY ADDITION, ALTERATION, OR DEDUCTION HE WISHES TO MAKE. THE CONTRACT PRICE SHALL BE ADJUSTED BY EQUITABLE AGREEMENT TO COVER SUCH CHANGES. IF ANY INSTRUCTION BY LANDSCAPE ARCHITECT INVOLVES EXTRA COST TO THE CONTRACTOR, HE SHALL GIVE WRITTEN NOTICE TO THE OWNER BEFORE PROCEEDING WITH WORK.

1.3. LANDSCAPE CONSTRUCTION DOCUMENTS

1.3.1. THE OWNER SHALL FURNISH THE CONTRACTOR WITH ALL DRAWINGS, SPECIFICATIONS, REVISIONS ORDERED BY THE LANDSCAPE ARCHITECT, AND CHANGE ORDERS. THE CONTRACTOR WILL FURNISH HIS CONTRACT, ANY SHOP DRAWINGS REQUIRED AND A WORK SHEET ON WHICH HE WILL NOTE ANY DEVIATION FROM THE CONTRACT NOT OTHERWISE COVERED. THE CONTRACTOR WILL KEEP ON THE JOB AT ALL TIMES A FIELD SET OF DRAWINGS, WORK SHEET AND SHOP DRAWINGS, UPDATED WEEKLY, UPON WHICH DEVIATIONS ARE NOTED.

1.3.2. THESE PLANS ARE PREPARED FOR THE CONVENIENCE OF THE CONTRACTOR; THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS, WHICH MAY AFFECT THE INTENDED DESIGN OF THE LANDSCAPE WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE IMMEDIATELY.

1.3.3. THE IRRIGATION DESIGN AS INDICATED ON THE PLANS IS DIAGRAMMATIC. SCALED DIMENSIONS ARE APPROXIMATE. VERIFY ALL SITE DIMENSIONS PRIOR TO PROCEEDING WITH THE WORK.

1.4. RELATED DOCUMENTS:

1.4.1. LOCAL, MUNICIPAL AND STATE CODES, LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY MADE A PART OF THESE PLANS AND SPECIFICATIONS AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK) 2012 EDITION, AND ASSOCIATED SUPPLEMENTS.

1.4.2. CITY LANDSCAPE MANUAL, LATEST EDITION AND THE DEPARTMENT OF PUBLIC WORKS DESIGN STANDARDS, LATEST EDITION.

1.4.3. THE WATER DISTRICT'S STANDARD SPECIFICATIONS FOR WATER, SEWER AND RECYCLED FACILITIES, DATED LATEST EDITION.

1.4.4. COUNTY OF SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH, RECYCLED WATER PLAN CHECK AND INSPECTION MANUAL, DATED LATEST EDITION.

1.4.5. AWWA - AMERICAN WATERWORKS ASSOCIATION GUIDELINES FOR DISTRIBUTION OF NON-POTABLE WATER

1.4.6. CCR - CALIFORNIA CODE OF REGULATIONS TITLE 22 AND TITLE 17.

1.4.7. DOHS - DEPARTMENT OF HEALTH SERVICES

1.4.8. WAS (WATER AGENCY STANDARDS) STANDARD DRAWINGS

1.4.9. WAS (WATER AGENCY STANDARDS) STANDARD SPECIFICATION 01000

1.5. DESCRIPTION OF WORK

1.5.1. THE WORK CONSISTS OF FURNISHING LABOR, TOOLS, MACHINERY, MATERIALS, AND PROCESSES REQUIRED TO COMPLETE THE SPRINKLER IRRIGATION SYSTEM DESCRIBED HEREIN AND SHOWN ON THE DRAWINGS.

1.5.2. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO INDICATE AND SPECIFY A COMPLETE IRRIGATION SYSTEM FOR THE SUPPORT AND MAINTENANCE OF DECORATIVE LANDSCAPE PLANTINGS, INSTALLED READY FOR USE WITHOUT FURTHER COST IN LABOR OR MATERIALS TO THE OWNER AND COMPLYING WITH ALL APPLICABLE CODES, SPECIFICATIONS AND DETAILS.

1.6. QUALITY ASSURANCE:

1.6.1. SUBCONTRACT WORK TO A SINGLE FIRM SPECIALIZING IN IRRIGATION WORK. CONTRACTOR SHALL POSSESS ALL LICENSES AND PERMITS REQUIRED TO PERFORM THE WORK OF THIS CONTRACT INCLUDING A C-27 LANDSCAPING LICENSE.

1.7. PRODUCT DATA SUBMITTALS:

1.7.1. THE CONTRACTOR SHALL SUBMIT TO THE LANDSCAPE ARCHITECT CATALOG DATA AND FULL DESCRIPTIVE LITERATURE FOR APPROVAL OF ITEMS DIFFERENT THAN THOSE SPECIFIED. APPROVAL OF ANY ITEM, ALTERNATE OR SUBSTITUTE INDICATES ONLY THAT THE PRODUCT(S) APPARENTLY MEET THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS ON THE BASIS OF THE INFORMATION OR SAMPLES SUBMITTED.

1.8. RECORD DRAWINGS:

1.8.1. PRIOR TO THE INITIATION OF IRRIGATION WORK, THE LANDSCAPE CONTRACTOR SHALL REQUEST FROM THE OWNER, A DIGITAL FILE, IN PDF FORMAT , OF THE COMPLETE IRRIGATION PLAN SET FOR USE IN PREPARING THE FIELD RECORD DRAWINGS AND AS-BUILT DRAWINGS.

1.8.2. AS-BUILT/RECORD DRAWINGS SHALL INCLUDE ALL FIELD REVISIONS TO THE IRRIGATION SYSTEMS AND THE FOLLOWING:

POWER SOURCE - ELECTRICAL METER OR OTHER POINT OF CONNECTION
AUTOMATIC CONTROLLER ASSEMBLY
CONTROL WIRE ROUTE.
WEATHER AND/OR ET SENSORS
WATER SOURCE - WATER METER OR OTHER POINT OF CONNECTION.
CROSS CONNECTION CONTROL OR TEST STATION
CONTROL HEAD - BACKFLOW PREVENTION DEVICE ASSEMBLY OR OTHER TYPE
IRRIGATION MAINLINE AND/OR MANIFOLD ISOLATION VALVES
QUICK COUPLING VALVES
IRRIGATION PRESSURE SUPPLY/MAINLINE ROUTE
IRRIGATION REMOTE CONTROL VALVES W/ STATION DESIGNATION.
SLEEVING UNDER VEHICULAR USE AREAS

1.8.3. IMMEDIATELY UPON THE INSTALLATION OF ANY BURIED PIPE OR EQUIPMENT, THE CONTRACTOR SHALL INDICATE ON THE DRAWINGS THE LOCATIONS OF SAID EQUIPMENT. DIMENSIONS SHALL BE PROVIDED FROM TWO SEPARATE GIVEN PERMANENT OBJECTS SUCH AS BUILDINGS, SIDEWALKS, CURBS AND DRIVEWAYS.

1.8.4. PRIOR TO FINAL ACCEPTANCE OF WORK, THE CONTRACTOR SHALL SUBMIT TO THE LANDSCAPE ARCHITECT AND/OR OWNWER'S REPRESENTATIVE A COMPLETE SET OF AS-BUILT DRAWINGS IN FULL SIZE PAPER AND DIGITAL PDF.

1.8.5. UPON APPROVAL FROM GOVERNING AGENCIES, ALL FIELD REVISIONS SHALL BE RECORDED ON THE RECORD MYLAR DRAWINGS AND RESUBMITTED TO THE GOVERNING AGENCY.

1.8.6. THE CONTRACTOR/LANDSCAPE ARCHITECT SHALL PROVIDE TO THE GOVERNING AGENCY EITHER AN ELECTRIC FILE (IN PDF FORMAT OR AS DIRECTED BY THE AGENCY'S LANDSCAPE INSPECTOR) OF THE APPROVED "AS-BUILT" PLANS. EACH VALVE SYSTEM AND ASSOCIATED CALLOUTS SHALL BE COLOR CODED TO THE SATISFACTION OF THE AGENCY

1.9. CONTROLLER CHARTS:

1.9.1. THE CONTRACTOR SHALL PREPARE COLOR-CODED CHARTS SHOWING THE VALVES, MAINLINE, AND SPRINKLER HEADS SERVICED BY THAT PARTICULAR CONTROLLER.

1.9.2. WITHIN EACH CONTROLLER, EACH VALVE/SYSTEM SHALL BE IDENTIFIED BY A UNIQUE COLOR.

1.9.3. ALL VALVES SHALL BE NUMBERED TO MATCH THE OPERATION SCHEDULE AND THE DRAWINGS. ONLY THOSE AREAS CONTROLLED BY THAT CONTROLLER SHALL BE SHOWN.

1.9.4. CONTROLLER CHARTS SHALL BE A PLOT PLAN, ENTIRE OR PARTIAL, SHOWING BUILDINGS, WALKS, ROADS AND WALLS. A PHOTOSTATIC PRINT OF THIS PLAN, REDUCED AS NECESSARY AND LEGIBLE IN ALL DETAILS, SHALL BE MADE TO A SIZE THAT WILL FIT INTO THE CONTROLLER ENCLOSURE.

1.9.5. THIS PRINT SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR THE OWNER'S AUTHORIZED REPRESENTATIVE AND SHALL BE HERMETICALLY SEALED BETWEEN TWO PIECES OF TEN MIL. THICK PLASTIC.

1.9.6. FOR EACH CONTROLLER, THE CONTRACTOR SHALL PROVIDE TWO SETS OF 11" X 17" CONTROLLER CHARTS AS FOLLOWS:

ONE COLOR CODED LAMINATED SET TO: THE GOVERNNING AGENCY (IF APPLICABLE) AND ONE COPY TO THE OWNER'S REPRESENTATIVE..

ONE COLOR CODED LAMINATED SET TO: SECURED ON THE INSIDE SURFACE OF THE COVER OF EACH AUTOMATIC CONTROLLER.

1.10. EQUIPMENT, KEYS, MANUALS & CERTIFICATIONS:

1.10.1. UPON COMPLETION OF THE CONTRACTOR'S MAINTENANCE PERIOD, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING EQUIPMENT TO THE OWNER'S REPRESENTATIVE:

A. (2) CONTROLLER ENCLOSURE KEYS FOR EACH ENCLOSURE. (IF NEW EQUIPMENT IS INSTALLED)
B.(1) KEYS TO ACCESS SPECIAL ELECTRICAL SWITCH INSIDE EACH CONTROLLER ENCLOSURE. (IF NEW EQUIPMENT IS INSTALLED)
C.(1) QUICK COUPLING KEY AND MATCHING SWIVELS FOR EACH OF 5 QUICK COUPLER VALVES INSTALLED. (ONE MINIMUM)
D.(2) SETS OF TOOLS REQUIRED FOR SERVICING AND/OR ADJUSTING EACH SPRINKLER AND VALVE TYPE.
E.(1) COPY OF THE BACKFLOW PREVENTION DEVICE CERTIFICATION, IF APPLICABLE.
F.(2) SETS OF SERVICE MANUALS FOR ALL IRRIGATION EQUIPMENT INSTALLED.

1.1. GUARANTEES:

1.1.1. CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE IN ACCORDANCE WITH THE GENERAL CONDITIONS, FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE AND CONCLUSION OF THE NINETY (90) DAY MAINTENANCE PERIOD. GUARANTEE SHALL COVER THE COMPLETE IRRIGATION SYSTEM, INCLUDING SETTLING OF THE BACKFILL IN TRENCHES AND REPAIRS AND/OR REPLACEMENT OF ANY MATERIAL DAMAGED THEREBY OR THEREFROM.

1.1.2. MANUFACTURER'S WARRANTIES SHALL NOT RELIEVE THE CONTRACTOR OF HIS LIABILITY UNDER THE GUARANTEE. SUCH WARRANTY SHALL ONLY SUPPLEMENT THE GUARANTEE.

1.2. WATER SERVICE:

1.2.1. POINT OF CONNECTIONS SHOWN ON PLANS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH OWNER'S AUTHORIZED REPRESENTATIVE AND GOVERNING WATER DISTRICT TO HAVE WATER AVAILABLE WHEN REQUIRED.

1.2.2. INDIVIDUALLY OWNED, ACCESSED OR MAINTAINED AREAS SHALL BE SEPARATELY METERED AND CONTROLLED.

1.2.3. EACH POINT OF CONNECTION SHALL BE SERVICED BY A BACKFLOW PREVENTION DEVICE, LOCATED DOWNSTREAM OF THE METER AND APPROVED BY THE CITY, THE WATER DISTRICT AND THE SAN DIEGO COUNTY DEPARTMENT OF ENVIRONMENTAL HEALTH.

1.3. ELECTRICAL SERVICE:

1.3.1. POINT OF CONNECTION SHOWN ON PLANS IS APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH OWNER'S AUTHORIZED REPRESENTATIVE TO HAVE POWER AVAILABLE WHEN REQUIRED.

1.3.2. INDIVIDUALLY OWNED, ACCESSED OR MAINTAINED AREAS SHALL BE SEPARATELY METERED AND CONTROLLED.

1.3.3. CONTROLLERS SHALL OPERATE ON SINGLE PHASE, 110 TO 120 VOLT, 60 CYCLE, ALTERNATING CURRENT AND "U.L." LISTED. (UNDERWRITERS LABORATORY)

1.3.4. CONTROLLERS SHALL BE ENCLOSED IN A U.L. LISTED WEATHERPROOF CORROSION-RESISTANT ENCLOSURE WITH LOCKING COVER.

1.3.5. CONDUIT FOR 120 VOLT AND 24 VOLT WIRING SHALL BE APPROVED BY GOVERNING BUILDING CODES AND INSPECTIONS FOR ELECTRICAL SERVICE.

1.4. COMMUNICATION SERVICE: (N.A. THIS PROJECT)

1.4.1. CENTRAL CONTROL SYSTEM AND METHOD OF COMMUNICATION TO INDIVIDUAL CONTROLLERS SHALL BE AS SPECIFIED ON PLANS.

1.4.2. POINT OF CONNECTION SHOWN ON PLANS IS APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH OWNER'S AUTHORIZED REPRESENTATIVE TO HAVE COMMUNICATION LINE AVAILABLE WHEN REQUIRED.

1.4.3. PRIOR TO INSTALLATION, CONTRACTOR SHALL FIELD VERIFY THAT PHONE OR, OTHER METHOD OF COMMUNICATION TO EACH CONTROLLER LOCATION IS ADEQUATE AND UNOBSTRUCTED.

2.1. GENERAL:

2.1.1. ALL MATERIALS AND EQUIPMENT SHALL BE PURCHASED NEW, SPECIFICALLY FOR THIS PROJECT, UNLESS OTHERWISE NOTED ON THE PLANS.

2.1.2. THE CONTRACTOR SHALL FURNISH THE ARTICLES, EQUIPMENT, MATERIALS OR PROCESSES SPECIFIED BY NAME IN THE DRAWINGS AND SPECIFICATIONS. NO SUBSTITUTION WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY THE LANDSCAPE ARCHITECT, OR THE OWNER'S AUTHORIZED REPRESENTATIVE. EQUIPMENT OR MATERIALS INSTALLED OR FURNISHED WITHOUT THE PRIOR APPROVAL OF THE LANDSCAPE ARCHITECT MAY BE REJECTED AND THE CONTRACTOR REQUIRED TO REMOVE AND REPLACE SUCH MATERIALS FROM THE SITE AT HIS OWN EXPENSE. CONTRACTOR SHALL ALSO INCLUDE A DOCUMENTED CONTINUITY TEST OF ALL CONTROLLER FIELD WIRE PRIOR TO BACKFILLING ANY TRENCHES.

2.1.3. CROSS CONNECTION TEST STATIONS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE APPROVED PLANS AND DETAILED ON THE STANDARD DRAWINGS. IN GENERAL, ONE TEST STATION SHALL BE INSTALLED DIRECTLY DOWNSTREAM OF EACH POINT OF CONNECTION, DOWNSTREAM OF ANY PRESSURE REDUCING VALVES. ADDITIONAL CROSS CONNECTION STATION(S) MAY BE REQUIRED AS INDICATED ON THE APPROVED PLANS.

2.2. BACKFLOW PREVENTION DEVICES:

2.2.1. FOR POTABLE WATER SYSTEMS: ONLY POTABLE WATER SHALL BE USED FOR HYDROTESTING, FLUSHING, THE OPERATIONAL TEST AND THE CROSS CONNECTION TEST (IF REQUIRED). POTABLE WATER SHALL BE SUPPLIED THROUGH A SEPARATE TEMPORARY WATER METER OBTAINED FROM THE DISTRICT AND LOCATED AT A DISTRICT-APPROVED POTABLE WATER SOURCE. A REDUCED PRESSURE PRINCIPAL BACKFLOW DEVICE SHALL BE INSTALLED AT GROUND LEVEL IMMEDIATELY DOWNSTREAM OF THE TEMPORARY POTABLE WATER METER. A TEMPORARY HIGH LINE SHALL BE INSTALLED TO SUPPLY THE PROPOSED RECYCLED IRRIGATION SYSTEM DURING THE CONSTRUCTION AND TESTING PERIOD.

2.2.1.1. REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL BE BRASS, BRONZE, OR EPOXY COATED CAST IRON BODIES WITH ALL BRONZE OR STAINLESS STEEL TRIM AND ALL MOVING PARTS OF NON-CORROSIVE MATERIALS, AND SHALL COMPLETELY AND POSITIVELY PREVENT BACK-SIPHONING OF WATER. THE BACKFLOW PREVENTER ASSEMBLY SHALL INCLUDE INLET AND DISCHARGE SHUTOFF BALL VALVES WITH ALL RISERS, CONNECTORS, AND APPURTENANCES OF CLASS 1 RED BRASS PIPE, CONFORMING TO WW-P-351, AND RED BRASS FITTINGS WITH PRESSURE RATING 1 CONFORMING TO WW-P-460. BACKFLOW PREVENTERS SHALL BE OF THE TYPE AND SIZE DESIGNATED ON THE DRAWINGS.

2.2.1.2. ATMOSPHERIC AND ANTI-SIPHON BACKFLOW PREVENTERS SHALL BE BRASS WITH NON-CORROSIVE PARTS AND SHALL COMPLETELY AND POSITIVELY PREVENT BACK-SIPHONING OF WATER. ANTI-SIPHON VALVES SHALL BE CONVERTIBLE TO AUTOMATIC CONTROL. BACKFLOW PREVENTERS SHALL BE TYPE AND SIZE AS DESIGNATED ON THE DRAWINGS.

2.2.2. FOR RECYCLED WATER SYSTEMS: SPRING CHECK VALVE WITH WYE-STRAINER. CONSTRUCTED OF ASTM B-584 CAST BRONZE. CHECK VALVE SHALL BE IN-LINE AND SPRING LOADED WITH STAINLESS STEEL SPRING AND BRASS SEATS. WYE STRAINER WITH EPDM O-RING CAP GASKET. WYE STRAINER TO BE WITH 30 MESH STAINLESS STEEL SCREEN. WYE STRAINER SHALL HAVE 1/2" BRONZE BALL VALVE ON THE WYE LEG. SIZES TO MATCH WATER METER. SEE LEGEND FOR MANUFACTURES AND PART NUMBERS.

2.2.3. ATMOSPHERIC AND ANTI-SIPHON BACKFLOW PREVENTERS SHALL BE BRASS WITH NON-CORROSIVE PARTS AND SHALL COMPLETELY AND POSITIVELY PREVENT BACK-SIPHONING OF WATER. ANTI-SIPHON VALVES SHALL BE CONVERTIBLE TO AUTOMATIC CONTROL. BACKFLOW PREVENTERS SHALL BE TYPE AND SIZE AS DESIGNATED ON THE DRAWINGS.

2.3. PRESSURE REGULATION DEVICES:

2.3.1. IF REQUIRED, SHALL BE AS SPECIFIED IN THE IRRIGATION LEGEND.

2.4. AUTOMATIC CONTROL SYSTEM: (TWO WIRE DECODER SYSTEM)

2.4.1. CONTRACTOR SHALL FURNISH LOW VOLTAGE SYSTEM MANUFACTURED EXPRESSLY FOR CONTROL OF AUTOMATIC CIRCUIT VALVES OF UNDERGROUND IRRIGATION SYSTEMS BY MEANS OF A PLUG-IN DECODER OUTPUT MODULE AND TWISTED PAIR CONTROL WIRES AND ADDRESSED DECODERS AT THE CONTROL VALVES.

2.4.2. MECHANISM SHALL BE HOUSED IN A STURDY, VANDAL-PROOF ENCLOSURE, MANUFACTURED OF 14 GAUGE STEEL, OR CASE ALUMINUM, FURNISHED FOR MAXIMUM PROTECTION, AS CALLED FOR ON THE DRAWINGS (SIZE AS REQUIRED).

2.5. AUTOMATIC CONTROL STATION WIRE : (TRADITIONAL SYSTEM) AND COMMUNICATION CABLE.

2.5.1. AUTOMATIC CONTROL STATION WIRE SHALL BE DIRECT BURIAL COPPER WIRE AWG-U.F. 600 VOLT, SINGLE CONDUCTOR SOLID COPPER, PLASTIC INSULATED CABLE, U.L. APPROVED FOR DIRECT BURIAL APPLICATION.

2.5.1.1. STATION CONTROL WIRE TO EACH REMOTE CONTROL VALVE SHALL BE SIZED AS FOLLOWS:

WIRE RUN	PILOT WIRE SIZE	COMMON WIRE SIZE
TO 1200'	14 GA.	12 GA.
EXCEEDING 1200'	12 GA.	12 GA.

2.5.1.2. STATION CONTROL WIRE TO EACH REMOTE CONTROL VALVE SHALL BE COLOR CODED AS FOLLOWS:
PILOT WIRES SHALL NOT BE WHITE OR RED AND MUST BE UNIQUE IN COLOR FOR EACH CONTROLLER. COMMON WIRE SHALL BE WHITE WITH COLORED STRIP EQUAL IN COLOR TO PILOT WIRE. EXAMPLE AS FOLLOWS:

CONTROLLER	PILOT	COMMON	SPARE
"SL-20"	BLACK	WHITE W/ BLACK STRIPE	RED W/ BLACK STRIPE
"SL-21"	BLUE	WHITE W/ BLUE STRIPE	RED W/ BLUE STRIPE

2.5.2. FLOW SENSOR AND MASTER CONTROL VALVE CABLE SHALL BE PVC JACKETED TWO CONDUCTOR, 16 AWG 7 STRAND ANNEALED COPPER AS MANUFACTURED BY ARIZONA ELECTRIC FABRICATORS #9516-2SPOR, AS NOTED IN THE PLANS.

2.6. FLOW, RAIN, MOISTURE SENSING DEVICES:

2.6.1. ALL SENSING DEVICES SHALL BE AS SPECIFIED IN DRAWINGS.

2.7. MASTER CONTROL / REMOTE CONTROL VALVES: AS SPECIFIED IN DRAWINGS.

2.7.1. VALVES SHALL BE OPERABLE MANUALLY WITHOUT ELECTRICITY BY MEANS OF AN INTERNAL BLEED. IF SPECIFIED IN THE PLANS, THE VALVE SHALL HAVE A PRESSURE REGULATING MODULE CAPABLE OF REGULATING OUTLET PRESSURE BETWEEN 15 AND 100 P.S.I. (+OR- 5 P.S.I.). MODULE SHALL HAVE AN ADJUSTING SCREW FOR SETTING PRESSURE AND A SCHRADER VALVE CONNECTION FOR MONITORING PRESSURE. PRESSURE REGULATOR SHALL BE ADJUSTED AT EACH VALVE FOR PROPER DOWNSTREAM PRESSURE REQUIRED.

2.8. QUICK COUPLING VALVES:

2.8.1. QUICK COUPLING VALVES SHALL BE 2-PIECE BRASS BODY WITH STAINLESS SPRING. SIZED AS SPECIFIED ON THE DRAWINGS.

2.8.2. QUICK COUPLING VALVES SERVICING POTABLE WATER IRRIGATION SYSTEMS SHALL ACCEPT A STANDARD BAYONET STYLE KEY. VALVE BODY SHALL BE WITH LOCKING YELLOW RUBBER COVER.

2.8.3. QUICK COUPLING KEY SHALL BE OF BRASS/BRONZE WITH SWIVEL ASSEMBLY. SUPPLY ONE (1) KEY/SWIVEL ASSEMBLY FOR EACH OF FIVE (5) QUICK COUPLING VALVE INSTALLED.

2.9. MAINLINE AND/OR MANIFOLD ISSOLATION VALVES:

2.9.1. BALL VALVES: AS SPECIFIED IN DRAWINGS.

2.9.2. GATE VALVES: AS SPECIFIED IN DRAWINGS.

2.10. NON-PRESSURE LATERAL LINE ANTI-DRAIN VALVES:

2.10.1. ANTI-DRAIN VALVES SHALL BE REQUIRED TO PREVENT LOW HEAD DRAINAGE OF IRRIGATION WATER FROM SPRINKLER SYSTEM AT SHUT-DOWN DUE TO CHANGES IN ELEVATION

2.10.2. ANTI-DRAIN VALVES SHALL BE HUNTER HCV-SERIES.

2.11. MANUAL AND ANTI-SIPHON VALVES:

2.11.1. MANUAL AND ANTI-SIPHON CONTROL VALVES SHALL BE BRASS OR PLASTIC WITH NON-CORROSIVE INTERNAL PARTS AND CONVERTIBLE TO AUTOMATIC CONTROL. VALVES SHALL BE THE TYPE AND SIZE AS DESIGNATED ON THE DRAWINGS.

2.12. VALVE AND PULL BOXES:

2.12.1. MASTER CONTROL VALVE/PRESSURE REG. ASSEMBLY -FOR RECYCLED WATER IRRIGATION SYSTEMS.
1" VALVE ASSEMBLY. SHALL BE 14"X20"X12" NOM. RECT. JUMBO PLASTIC VALVE BOX AND 6" EXTENSION WITH LOCKABLE PURPLE TOP. MANUFACTURED BY AMETEK, PART #192110 AND #190110, OR EQUAL.
1-1/2" AND 2" VALVE ASSEMBLY. SHALL BE 17"X30"X18" NOM. RECT. JUMBO PLASTIC VALVE BOX WITH LOCKABLE GREEN TOP MANUFACTURED BY AMETEK, PART #195103, OR EQUAL. TOP TO INCLUDE CHRISTY'S ENTERPRISES MODEL #3800 RECYCLED WATER PURPLE VALVE BOX NAMEPLATE.

2.12.2. MASTER CONTROL VALVE/PRESSURE REG. ASSEMBLY -FOR POTABLE WATER IRRIGATION SYSTEMS.
1" VALVE ASSEMBLY. SHALL BE 14"X20"X12" NOM. RECT. JUMBO PLASTIC VALVE BOX AND 6" EXTENSION WITH LOCKABLE GREEN TOP. MANUFACTURED BY AMETEK, PART #190106 AND #190110, OR EQUAL.
1-1/2" AND 2" VALVE ASSEMBLY. SHALL BE 17"X30"X18" NOM. RECT. JUMBO PLASTIC VALVE BOX WITH LOCKABLE GREEN TOP MANUFACTURED BY AMETEK, PART #195103, OR EQUAL.

2.12.3. REMOTE CONTROL VALVE, BALL VALVE -FOR POTABLE WATER IRRIGATION SYSTEMS SHALL BE 10"X16"X12" NOM. RECT. PLASTIC VALVE BOX WITH LOCKABLE GREEN TOP, MANUFACTURED BY AMETEK, PART #170106, OR EQUAL.

2.12.4. REMOTE CONTROL VALVE, BALL VALVE -FOR RECYCLED WATER IRRIGATION SYSTEMS SHALL BE 10"X16"X12" NOM. RECT. PLASTIC VALVE BOX WITH LOCKABLE PURPLE TOP, MANUFACTURED BY AMETEK, PART #170131, OR EQUAL.

2.12.5. REMOTE CONTROL VALVE/PRESS. REG. ASSEMBLY -FOR POTABLE WATER DRIP IRRIGATION SYSTEMS SHALL BE 10"X16"X12" NOM. RECT. PLASTIC VALVE BOX WITH LOCKABLE GREEN TOP, MANUFACTURED BY AMETEK, PART #170106, OR EQUAL.

2.12.6. REMOTE CONTROL VALVE/PRESS. REG. ASSEMBLY -FOR RECYCLED WATER DRIP IRRIGATION SYSTEMS SHALL BE 10"X16"X12" NOM. RECT. PLASTIC VALVE BOX WITH LOCKABLE PURPLE TOP, MANUFACTURED BY AMETEK, PART #170131, OR EQUAL.

2.12.7. QUICK COUPLER VALVES -FOR POTABLE WATER IRRIGATION SYSTEMS SHALL BE PLASTIC VALVE BOX WITH LOCKABLE GREEN TOP, MANUFACTURED BY AMETEK, PART #181104, OR EQUAL.

2.12.8. QUICK COUPLER VALVES -FOR RECYCLED WATER IRRIGATION SYSTEMS SHALL BE PLASTIC VALVE BOX WITH LOCKABLE PURPLE TOP, MANUFACTURED BY AMETEK, PART #181113, OR EQUAL.

2.12.9. PULL OR SPLICE BOXES -FOR POTABLE WATER IRRIGATION SYSTEMS SHALL BE PLASTIC VALVE BOX WITH LOCKABLE GREEN TOP, MANUFACTURED BY AMETEK OR EQUAL AS FOLLOWS:
FOR 16 CONTROL WIRES OR LESS -10" ROUND BOX, PART #181104.
FOR MORE THAN 16 CONTROL WIRES OR FOR CONDUITED PULL BOX -10"X16"X12" RECT. BOX, PART #170106.
PLASTIC VALVE BOX WITH LOCKABLE GREEN TOP MANUFACTURED BY AMETEK, PART #181104, OR EQUAL.

2.12.10. PULL OR SPLICE BOXES -FOR RECYCLED WATER IRRIGATION SYSTEMS SHALL BE PLASTIC VALVE BOX WITH LOCKABLE PURPLE TOP, MANUFACTURED BY AMETEK OR EQUAL AS FOLLOWS:
FOR 16 CONTROL WIRES OR LESS -10" ROUND BOX, PART #181113.
FOR MORE THAN 16 CONTROL WIRES OR FOR CONDUITED PULL BOX -10"X16"X12" RECT. BOX, PART #170106.
PLASTIC VALVE BOX WITH LOCKABLE GREEN TOP MANUFACTURED BY AMETEK, PART #181104, OR EQUAL.

2.13. PIPE AND FITTINGS:

2.13.1. POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS:

2.13.1.1. ALL ON-SITE RECYCLED WATER IRRIGATION PIPING, AND ON-SITE POTABLE WATER PIPING INSTALLED UNDER THIS DESIGN SHALL BE IDENTIFIED IN ACCORDANCE WITH THE STANDARDS OF THE GOVERNING AGENCIES; CITY, WATER DISTRICT, DEPARTMENT OF HEALTH.

2.13.1.2. ALL PVC PIPE SHALL BE MADE FROM N.S.F. APPROVED, TYPE I, GRADE I PVC COMPOUND CONFORMING TO ASTM RESIN SPECIFICATION D1784. PIPE SHALL MEET REQUIREMENTS SET FORTH IN FEDERAL SPECIFICATION PS-22-70 WITH AN APPROPRIATE STANDARD DIMENSION RATIO.

2.13.1.3. FURNISH PLASTIC PIPE CONTINUOUSLY AND PERMANENTLY MARKED WITH FOLLOWING INFORMATION: MANUFACTURER'S NAME OR TRADE MARK, SIZE, CLASS AND TYPE OF PIPE, WORKING PRESSURE AT 73.4 DEGREES F., AND NATIONAL SANITATION FOUNDATION (N.S.F.) RATING.

2.13.1.4. ALL PRESSURE SUPPLY LINES LOCATED UPSTREAM OF REMOTE CONTROL VALVES AND QUICK COUPLERS SHALL MEET THE FOLLOWING CRITERIA:

2.13.1.4.1. ALL TWO (2) INCH AND LARGER SIZED PIPE SHALL BE CLASS 315 POLYVINYL CHLORIDE (PVC) WITH A STANDARD DIMENSION RATIO (SDR) OF 13.5. CONFORMING TO ASTM RESIN SPECIFICATION D1784 AND PRODUCT DESIGN SPECIFICATION ASTM D2241.

2.13.1.4.2. ALL ONE AND ONE-HALF (1-1/2) INCH AND SMALLER SIZED PIPE SHALL BE SCHEDULE 40 POLYVINYL CHLORIDE (PVC) CONFORMING TO ASTM RESIN SPECIFICATION D1784 AND PRODUCT DESIGN SPECIFICATION ASTM 1785.

2.13.1.5. ALL NON-PRESSURE DISTRIBUTION (LATERAL) LINES LOCATED DOWNSTREAM OF REMOTE CONTROL VALVES SHALL MEET THE FOLLOWING CRITERIA:

2.13.1.5.1. ALL NON-PRESSURE LATERAL LINES SHALL BE SCHEDULE 40 POLYVINYL CHLORIDE (PVC) CONFORMING TO ASTM RESIN SPECIFICATION D1784 AND PRODUCT DESIGN SPECIFICATION ASTM D1785

2.13.1.5.3. MINIMUM LATERAL LINE PIPE SIZE IS 3/4". 1/2" DIAMETER PIPE IS NOT PERMITTED.

2.13.1.6. NO CLOSE NIPPLES SHALL BE USED.

2.13.1.7. ALL ON-SITE POTABLE WATER PIPING SHALL BE WHITE PVC.

2.13.1.8. ALL ON-SITE RECYCLED WATER PIPING SHALL BE PURPLE COLORED PVC, CONTINUOUSLY STENCILED ON OPPOSITE SIDES OF THE PIPE WITH THE WORDS "CAUTION-RECYCLED WATER". PACIFIC PLASTIC CYCLE SLOW RECYCLED WATER PIPE OR EQUAL.

2.13.1.9. POLYVINYL CHLORIDE PIPE FITTINGS AND CONNECTIONS SHALL BE PRODUCED FROM TYPE I, GRADE 1, POLYVINYL CHLORIDE CONFORMING TO ASTM RESIN SPECIFICATION D1784. FITTINGS SHALL BE HIGH IMPACT MOLDED FITTINGS, MANUFACTURED FROM VIRGIN COMPOUNDS AS SPECIFIED FOR PIPING TAPERED SOCKET OR MOLDED THREAD TYPE, SUITABLE FOR EITHER SOLVENT WELD OR SCREWED CONNECTIONS. MACHINE THREADED FITTINGS AND PLASTIC SADDLE AND FLANGE FITTINGS ARE NOT ACCEPTABLE. FURNISH FITTINGS PERMANENTLY MARKED WITH THE FOLLOWING INFORMATION: NOMINAL PIPE SIZE, TYPE AND SCHEDULE OF MATERIAL, AND NATIONAL SANITATION FOUNDATION (N.S.F.) SEAL OF APPROVAL.

2.13.1.9.1. FITTINGS FOR PRESSURE SUP

PART 3 - EXECUTION

3.19. GENERAL:

3.19.1. PLANS ARE DIAGRAMMATIC. ALL PIPING, VALVE BOXES, AND ASSOCIATED EQUIPMENT SHALL BE LOCATED IN LANDSCAPE AREAS. NO IRRIGATION EQUIPMENT SHALL BE LOCATED IN HARDSCAPE. GROUP VALVE BOXES TOGETHER AND LOCATE IN SHRUB AREAS, WHENEVER POSSIBLE.

3.19.2. UNLESS OTHERWISE INDICATED: CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF UNIFORM PLUMBING CODE.

3.19.3. PLANT MATERIAL INSTALLED PRIOR TO IRRIGATION: ALL 24" BOX SIZE AND LARGER SHALL BE PLANTED PRIOR TO THE INSTALLATION OF IRRIGATION PIPING WITHIN THE IMMEDIATE AREA.

3.19.4. WATER PRESSURE VERIFICATION: AT EACH POINT OF CONNECTION, PRIOR TO INITIATING WORK, NOTIFY THE OWNER'S AUTHORIZED REPRESENTATIVE IF PRESSURE IS LESS THEN INDICATED ON DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ALL FIELD REVISIONS IF OWNER'S AUTHORIZED REPRESENTATIVE IS NOT INFORMED OF DISCREPANCIES AND ANY REQUIRED MITIGATION NOT CONSIDERED.

3.19.5. POINT OF CONNECTION:

3.19.5.1. ON NEW INSTALLATIONS- CONNECT TO EXISTING STREET SERVICE LINE DOWNSTREAM OF METERING DEVICE AT APPROXIMATE LOCATION INDICATED ON THE PLANS AND IN ACCORDANCE TO THE GOVERNING AGENCIES.

3.19.5.2. ON REFURBISHMENT OR RETROFIT INSTALLATIONS- CONNECT TO EXISTING IRRIGATION MAINLINE LINE APPROXIMATELY WHERE SHOWN. INSURE ALL CONNECTIONS ARE DOWNSTREAM OF METERING DEVICE AND REQUIRED BACKFLOW PREVENTION DEVICE IN ACCORDANCE TO THE GOVERNING AGENCIES.

3.19.6. FOR TECHNICAL ASSISTANCE DURING INSTALLATION CONTACT:
FOR NEW CONTROL SYSTEMS - CONTACT THE CONTROLLER MANUFACTURER.
FOR SUBSURFACE DRIP IRRIGATION - CONTACT RAIN BIRD (800) 458-3005.

3.19.7. SYSTEM DESIGN:

3.19.7.1. ALL SCALED DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON THE SITE PRIOR TO PROCEEDING WITH WORK UNDER THIS CONTRACT.

3.19.7.2. 14 DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL NOTIFY THE UTILITY UNDERGROUND SERVICE ALLERT (DIG ALLERT) OF SOUTHERN CALIFORNIA AT 1-800-227-2600. AND SUBMIT ALL NECESSARY INFORMATION REGARDING THE PROJECT AND LOCATION.

3.19.7.3. THE CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING UTILITIES SUCH AS POWER, TELEPHONE, DOMESTIC WATER, WATER, AND TILE DRAINS. EXTREME CARE SHALL BE TAKEN BY THE CONTRACTOR WHEN EXCAVATING OR WORKING IN THESE AREAS AND COORDINATION AND COOPERATION BETWEEN THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR IS REQUIRED AS THE WORK PROGRESS TO THE AREA. CONTRACTOR SHALL GIVE 24 HOURS NOTICE TO REPRESENTATIVE AS WORK PROGRESSES TO UNDERGROUND UTILITY AREAS. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY UTILITIES.

3.19.7.4. SHOULD UTILITIES MARKED AND LOCATED OR, BE FOUND DURING EXCAVATION, THE CONTRACTOR SHALL IMMEDIATELY DISCONTINUE WITH WORK IN THE AREA, EXCEPT NECESSARY EMERGENCY WORK, TO REPAIR OR PREVENT DAMAGE AND PROMPTLY NOTIFY THE OWNER OF THE INCEDENCE AND TO OBTAIN INSTRUCTIONS. NO OTHER WORK SHALL COMMENCE INSTRUCTED BY THE OWNER OR OWNER'S REPRESENTATIVE.

3.19.7.5. FAILURE TO NOTIFY THE OWNER OF DISCOVERY OF SUCH UTILITIES OR DAMAGE THERETO WILL RESULT IN THE CONTRACTOR BEING LIABLE FOR ANY AND ALL DAMAGE CAUSED TO THE UTILITIES AS A RESULT OF HIS ACTIONS.

3.19.7.6. THE CONTRACTOR SHALL, BEFORE STARTING WORK ON THE SPRINKLER SYSTEM, CAREFULLY NOTE ALL FINISH GRADES IN ORDER TO SATISFY HIMSELF THAT HE MAY PROCEED WITH THE WORK, AND TO RESTORE FINISH GRADES TO ORIGINAL CONTOURS BEFORE COMPLETION.

3.19.7.7. THE INSTALLATION OF ALL SPRINKLER MATERIALS, INCLUDING PIPE, SHALL BE COORDINATED WITH THE LANDSCAPE DRAWINGS TO AVOID INTERFERING WITH THE TREES, SHRUBS, OR OTHER PLANTING.

3.19.7.8. LAY OUT SPRINKLER HEADS AND MAKE ANY MINOR ADJUSTMENTS REQUIRED DUE TO DIFFERENCE BETWEEN SITE AND DRAWINGS. ANY SUCH DEVIATIONS IN LAYOUT SHALL BE WITHIN THE INTENT OF THE ORIGINAL DRAWINGS, AND WITHOUT ADDITIONAL COST TO THE OWNER. WHEN DIRECTED BY THE OWNER, THE LAYOUT SHALL BE APPROVED BEFORE INSTALLATION.

3.19.7.9. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS INDICATED ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT PREVIOUSLY UNKNOWN OBSTRUCTIONS OR GRADE DIFFERENCES EXIST, THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.

3.19.7.10. THE CONTRACTOR SHALL CONNECT TO THE WATER SOURCE AS INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL VERIFY STATIC PRESSURE AS STATED ON THE PLANS PRIOR TO BEGINNING WORK. IF STATIC PRESSURE OR POINT OF CONNECTION DIFFER FROM THAT SHOWN ON THE PLANS, THE CONTRACTOR WILL PROMPTLY NOTIFY LANDSCAPE ARCHITECT BEFORE STARTING WORK.

3.19.7.11. THE ROUTING OF THE PRESSURE SUPPLY LINES AS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. LOCATE ALL PRESSURE SUPPLY LINES IN PLANTING AREAS. CROSS PERPENDICULAR UNDER PAVEMENT IN A SLEEVE AS DESCRIBED IN THESE SPECIFICATIONS.

3.20. BACKFLOW PREVENTER:

3.20.1. BACKFLOW PREVENTER ASSEMBLY SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND THE REQUIREMENTS OF ALL GOVERNING AGENCIES, LOCATED AND AS DIRECTED ON DRAWINGS ADJACENT TO THE POINT OF CONNECTION, AND SHALL CONFORM TO ALL APPLICABLE HEALTH CODE AND ORDINANCE REQUIREMENTS.

3.20.2. BACKFLOW PREVENTER ASSEMBLIES SHALL BE LOCATED IN SHRUB AREAS WHERE POSSIBLE. EXACT LOCATION AND POSITIONING SHALL BE VERIFIED ON THE SITE AND SHALL BE APPROVED BY THE GOVERNING AGENCY AND THE OWNER'S REPRESENTATIVE.

3.20.3. BACKFLOW PREVENTER ASSEMBLIES FOR POTABLE WATER IRRIGATION SYSTEMS SHALL BE PAINTED FLAT BLACK.

3.20.4. BACKFLOW PREVENTER ASSEMBLIES FOR RECYCLED WATER IRRIGATION SYSTEMS SHALL BE PAINTED PURPLE

3.21. PRESSURE REGULATION DEVICES:

3.21.1. PRESSURE REGULATION DEVICES SHALL BE INSTALLED AS DIRECTED BY THE PLANS AND DETAIL DRAWINGS.

3.22. AUTOMATIC CONTROL SYSTEM:

3.22.1. AUTOMATIC CONTROLLER SHALL BE INSTALLED AS SHOWN AND AS DIRECTED. CONTROLLER SHALL BE TESTED WITH COMPLETE ELECTRICAL CONNECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POWER TO THE CONTROLLER FOR OPERATION AND TESTING PURPOSES.

3.22.2. CONNECTIONS TO CONTROL WIRING SHALL BE MADE WITHIN AUTOMATIC CONTROLLER ENCLOSURE. ALL WIRE SHALL FOLLOW THE PRESSURE MAIN INSOFAR AS POSSIBLE.

3.22.3. ELECTRICAL WIRING FOR 120 VAC POWER SHALL BE WITHIN A RIGID PVC PLASTIC CONDUIT FROM CONTROLLER TO ELECTRICAL OUTLET. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL WIRING TO THE SUB-PANELS, CLOCKS, OR ELSEWHERE AS REQUIRED, IN ORDER TO COMPLETE THIS INSTALLATION. A DISCONNECT SWITCH SHALL BE INCLUDED WITHIN THE CONTROLLER ENCLOSURE.

3.22.4. EARTH GROUNDING SHALL BE CONNECTED VIA A FACTORY SUPPLIED COPPER GROUND LUG INSIDE THE CONTROLLER, FOR CONNECTION TO EARTH GROUND HARDWARE VIA 6 AWG (4MM DIA.) COPPER WIRE (SEE ASIC EARTH GROUNDING GUIDELINE 100-2002 FOR DETAILS OF EARTH GROUNDING IRRIGATION CONTROL SYSTEMS AVAILABLE ONLINE AT WWW.ASIC.ORG). GROUND WIRE SHALL BE EXTENDED UNDERGROUND, AT RIGHT ANGLES TO ANY COMMUNICATIONS WIRING, TO APPROVED DIRECT BURIAL EARTH GROUNDING HARDWARE AT LEAST 8 FT./2.5M FROM THE CONTROLLER LOCATION. EARTH GROUND SHALL BE HAVE AN IMPEDANCE OF 10 OHMS OR LESS, OR SHALL MEET THE STANDARDS OF THE EARTH GROUNDING GUIDELINE CITED ABOVE.

3.22.5. SYSTEM ENCLOSURES SHALL BE EQUIPPED WITH AN AUTOMATIC RAIN SHUT-OFF DEVICE.

3.22.6. CONTROL SYSTEM SHALL BE PROGRAMMED TO OPERATE ONE SYSTEM AT A TIME.

3.22.7. IN THE CASE OF NEW SYSTEM INSTALLATION, PRIOR TO SUBSTANTIAL COMPLETION OF PROJECT INSTALLATION, THE CONTRACTOR SHALL CAUSE THE CONTROL SYSTEM TO BE TESTED AND CERTIFIED BY THE MANUFACTURER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER. TESTING AND CERTIFICATION MUST INCLUDE THE ENTIRE OPERATION OF THE CONTROLLER, FLOW SENSING, WEATHER SENSING, OPERATION OF STATION AND MASTER CONTROL VALVES, AND PROPER GROUNDING OF THE CONTROLLER .

3.22.8. FOR CERTIFICATION AND PROJECT TURN-OVER CONTACT:
CONTROLLER SUPPLIER - JOHN DEERE GREEN TECH (800) 427-0779.
CONTROLLER MANUFACTURER - RAINMASTER (800) 777-1477.

3.5. AUTOMATIC CONTROL STATION WIRE AND COMMUNICATION CABLE: LOW VOLTAGE

3.5.1. INSTALL CONTROL STATION WIRES FROM THE CONTROLLER TO ALL REMOTE CONTROL VALVES. CONTROL STATION WIRES SHALL BE ROUTED WITH THE IRRIGATION MAINLINE PIPING IN COMMON TRENCHES WHEREVER POSSIBLE. PROVIDE A MINIMUM OF 4" FROM MAINLINE PIPE OR FITTINGS EXCEPT AT TERMINAL POINTS.

3.5.1.1. WHEN NOT ROUTED WITH MAINLINE, INSTALL STATION CONTROL WIRES AT LEAST 18" BELOW FINISH GRADE.

3.5.1.2. STATION CONTROL WIRE TO RUN THROUGH SLEEVES SHOWN ON THE DRAWINGS. PULL BOXES SHOWN AT CROSSINGS OF VEHICULAR PAVING ARE TO BE USED AS HAND-HOLES AND/OR SPLICE LOCATIONS. CONTROL WIRE CONDUIT SHALL BE SEPARATE FROM WATER LINES AND 120V ELECTRICAL SERVICE LINE.

3.5.1.3. ALL SPLICES, WHEN APPROVED FOR USE, SHALL BE ENCASED IN PRE-APPROVED WATERPROOF CONNECTORS MODEL # 3M DBY AS MANUFACTURED BY THE 3M COMPANY.

3.5.1.4.. END OF SPARE WIRES SHALL BE ENCASED IN A WATERPROOF CONNECTOR.

3.5.2. INSTALL COMMUNICATION CABLE FROM CONTROLLER/SATELLITE TO FLOW SENSOR WITHIN 1" PVC SCH. 40 CONDUIT AS NOTED AND DETAILED AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE..

3.5.2.1 SPLICES FOR FLOW SENSOR CABLE ARE PERMITTED ONLY AT THE FLOW SENSOR WITHIN THE VALVE BOX. WATER PROOF CONNECTORS SHALL BE DBY SPLICE KIT AS MANUFACTURED BY THE 3M COMPNY.

3.5.8. TWO (2) SPARE CONTROL WIRES SHALL RUN ALONG EACH MAINLINE BRANCH TO THE FURTHEST VALVE MANIFOLD.

3.6. FLOW, RAIN, MOISTURE SENSING DEVICE:

3.6.1. ALL SENSING DEVICES SHALL BE LOCATED AND/OR ARRANGED APPROXIMATELY AS INDICATED ON PLANS AND SUBJECT TO FIELD APPROVAL BY THE OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT.

3.6.1.1. IN GENERAL LOCATIONS SHALL BE AS FOLLOWS:

FLOW SENSING - LOCATED DOWNSTREAM OF MASTER CONTROL VALVE ON COMMON MAINLINE SECTION.

RAIN SENSING - LOCATED TO PROVIDE A CLEAR VIEW OF THE SKY AND WHERE IT WILL NOT BE AFFECTED BY SPRAY FROM AN IRRIGATION SYSTEM.

3.6.2. ALL SENSING DEVICES SHALL BE INSTALLED PER MANUFACTURE'S DIRECTIONS, INSTRUCTIONS AND SPECIFICATIONS.

3.6.3. EACH CONTROLLER ASSEMBLY SHALL BE EQUIPPED WITH ITS OWN RAIN SENSING DEVICE, UNLESS SYSTEM IS OPERATED BY A CENTRAL CONTROL SYSTEM.

3.6.3. EACH CONTROLLER ASSEMBLY SHALL BE EQUIPPED WITH ITS OWN FLOW SENSING DEVICE.

3.7. MASTER CONTROL / REMOTE CONTROL VALVE:

3.7.1. LOCATE AND INSTALL IN LEVEL GROUND WITHIN SHRUB AREAS, AT APPROXIMATE LOCATIONS AS SHOWN ON THE DRAWINGS.

3.7.2. INSTALLATION SHALL INCLUDE A PVC OR BRASS UNION ON THE DOWNSTREAM SIDE OF THE VALVE. ALL CONNECTIONS TO VALVES SHALL BE MADE HORIZONTALLY.

3.7.3. LOCATE MASTER CONTROL VALVE ON COMMON MAINLINE SECTION DOWNSTREAM OF THE BACKFLOW PREVENTION EQUIPMENT AND UPSTREAM OF THE FLOW SENSING DEVICE.

3.7.4. WHERE POSSIBLE, VALVES SHALL BE GROUPED TOGETHER IN A MANIFOLD DOWNSTREAM OF A MANIFOLD ISOLATION VALVE AS DETAILED AND SHOWN ON THE PLANS.

3.8. QUICK COUPLING VALVES:

3.8.1. WHERE POSSIBLE, INSTALL QUICK COUPLING VALVES IN SHRUB AREAS, AT APPROXIMATE LOCATIONS AS SHOWN ON THE DRAWINGS.

3.8.2. QUICK COUPLING VALVES SHALL BE INSTALLED WITHIN A VALVE BOX AS DETAILED AND SPECIFIED IN PART 2. VALVE AND BOX SHALL BE LOCATED TO ALLOW APPROXIMATELY 12 INCH CLEARANCE FROM VALVE BOX TO PAVING, WALKS, HEADERS OR CURBS, AND AS SHOWN ON PLANS AND AS DIRECTED.

3.8.3. QUICK COUPLING VALVES ON RECYCLED WATER SYSTEMS MUST BE SUCH THAT ACCESS AND OPERATION CAN BE ACCOMPLISHED ONLY WITH A SPECIAL ACME THREADED KEY.

3.9. MAINLINE ISOLATION VALVES (BALL VALVE OR GATE VALVE):

3.9.1. WHERE POSSIBLE, INSTALL ISOLATION VALVES IN SHRUB AREAS, AT APPROXIMATE LOCATIONS AS SHOWN ON THE DRAWINGS.

3.9.2. ISOLATION VALVES SHALL BE INSTALLED TO ISOLATE INDIVIDUAL VALVES OR VALVE MANIFOLDS AND/OR SECTIONS OF THE IRRIGATION MAINLINE.

3.9.3. ISOLATION VALVES SHALL BE INSTALLED TO SECTION THE IRRIGATION MAINLINE INTO MANAGEABLE AREAS, TO LIMIT DRAINING OR COMPLETE SHUT-DOWN OF MAINLINE DURING REPAIRS.

3.10. NON-PRESSURE LATERAL LINE ANTI DRAIN VALVES:

3.10.1. PROVIDE MANUFACTURER'S INSTALLED ANTI-DRAIN VALVES IN ALL POP-UP SPRINKLER HEADS.

3.10.2. WHERE MANUFACTURER'S INSTALLED ANTI-DRAIN VALVES ARE NOT AVAILABLE INSTALL ANTI-DRAIN VALVES ON POP-UP SPRINKLER SWING JOINT ASSEMBLY OR THE RISER BELOW THE HEAD FOR SHRUB HEADS ON RISERS.

3.10.3. ADDITIONAL IN-LINE ANTI-DRAIN VALVES SHALL BE INSTALLED WHEREVER NECESSARY TO PREVENT LOW HEAD DRAINAGE AFTER THE SYSTEM IS SHUT OFF.

3.11. MANUAL AND ANTI-SIPHON VALVES:

3.11.1. MANUAL AND ANTI-SIPHON CONTROL VALVES SHALL BE INSTALLED AS DIRECTED BY THE PLANS AND DETAIL DRAWINGS.

3.12. VALVE AND PULL BOXES:

3.12.1. INSTALL NO MORE THAN ONE VALVE PER BOX.

3.12.2. VALVE BOXES SHALL BE INSTALLED ON LEVEL GROUND WITHIN PLANTED AREAS ADJACENT TO PAVED SURFACES WITH CLEARANCE AS DETAILED, WHERE POSSIBLE.

3.12.3. VALVE BOXES SHALL BE SET AT HEIGHTS AS FOLLOWS:
IN SHRUB AREAS - TOP OF COVER SET ONE INCH ABOVE FINISH GRADE.
IN TURF AREAS - TOP OF COVER SET ONE-HALF INCH ABOVE OR EVEN WITH FINISH GRADE
IN ALL CONDITIONS - TOP OF COVER SET NO HIGHER THAN ADJACENT PAVING SURFACE.

3.12.4. ON THE INSIDE SURFACE OF EACH REMOTE CONTROL VALVE BOX, PULL BOX AND QUICK COUPLING BOX, WRITE THE VALVE DESIGNATION NUMBER IN PERMANENT BLACK MARKER OR PAINT. DO NOT WRITE ON VALVE BOX LID.

3.12.5. ALL VALVE BOX LIDS SHALL BE MARKED TO IDENTIFY INCLUDED EQUIPMENT AS SHOWN IN THE VALVE BOX I.D. DETAIL DRAWING.

3.12.6. IN ADDITION TO THE "E" IDENTIFICATION FOR A PULL BOX, WHERE PULL BOXES ARE LOCATED AT STREET CROSSINGS, THE CONTRACTOR SHALL STAMP OR ETCH THE LETTER "E" INTO THE IMPROVEMENT DIRECTLY OVER THE SLEEVE.

3.12.7. WHEN CONTROL WIRE IS SPECIFIED TO BE INSTALLED WITHIN CONDUIT, PULL BOXES SHOULD BE INSTALLED AT NO MORE THAN 250' FEET APART (WITH 3' LOOP IN EACH BOX) AND AT EACH CHANGE OF DIRECTION TO FACILITATE INSTALLATION.

3.13. INSTALLATION OF PIPE:

3.13.1. INSTALLATION OF POLYVINYL CHLORIDE PIPE:

3.13.1.1. BECAUSE OF THE FRAGILE NATURE OF PLASTIC PIPE AND FITTINGS, EXERCISE CAUTION IN HANDLING, LOADING AND STORING, TO AVOID DAMAGE.

3.13.1.2. THE PIPE AND FITTINGS SHALL BE STORED UNDER COVER UNTIL USED AND SHALL BE TRANSPORTED IN A VEHICLE WITH A BED LONG ENOUGH TO ALLOW THE LENGTH OF PIPE TO LAY FLAT SO AS NOT BE SUBJECTED TO UNDUE BENDING OR CONCENTRATED EXTERNAL LOAD AT ANY POINT.

3.13.1.3. ANY PIPE THAT HAS BEEN DENTED OR DAMAGED SHALL BE DISCARDED UNLESS SUCH DENT OR DAMAGED SECTION IS CUT OUT AND PIPE REJOINED WITH A COUPLING.

3.13.1.4. TRENCH DEPTH SHALL BE AS SPECIFIED ABOVE FROM THE FINISH GRADE TO THE TOP OF THE PIPE. THE BOTTOM OF THE TRENCH SHALL BE FREE OF ROCKS, CLODS, AND OTHER SHARP-EDGED OBJECTS.

3.13.1.5. PIPE ENDS AND FITTINGS SHALL BE WIPED WITH "MEK" PRIMER, OR APPROVED EQUAL, BEFORE WELDING SOLVENT IS APPLIED. WELDED JOINTS SHALL BE GIVEN A MINIMUM OF 15 MINUTES TO SET BEFORE MOVING OR HANDLING. ALL FIELD CUTS SHALL BE BEVELED TO REMOVE BURRS AND EXCESS MATERIAL BEFORE FITTING AND GLUING TOGETHER.

3.13.1.6. PIPE SHALL BE SNAKED FROM SIDE-TO-SIDE OF TRENCH BOTTOM TO ALLOW FOR EXPANSION AND CONTRACTION.

3.13.1.7. CENTER LOAD PIPE WITH SMALL AMOUNT OF BACKFILL TO PREVENT ARCHING AND SLIPPING UNDER PRESSURE. LEAVE JOINTS EXPOSED FOR SITE OBSERVATION DURING TESTING.

3.13.1.8. NO WATER SHALL BE PERMITTED IN THE PIPE UNTIL SITE OBSERVATION HAS BEEN COMPLETED AND A PERIOD OF AT LEAST 24 HOURS HAS ELAPSED FOR SOLVENT WELD SETTING AND CURING.

3.13.1.9. PLASTIC TO METAL JOINTS SHALL BE MADE WITH PLASTIC MALE ADAPTERS, METAL NIPPLE HAND TIGHTENED, PLUS ONE TURN WITH A STRAP WRENCH.

3.13.1.10. PLASTIC TO PLASTIC JOINTS: SOLVENT-WELD, USING SOLVENT RECOMMENDED BY PIPE MANUFACTURER ONLY.

3.13.1.11. SOLVENT-WELD JOINTS: ASSEMBLE PER MANUFACTURER'S RECOMMENDATIONS.

3.13.1.12. PROVIDE MINIMUM OF 6" OF CLEARANCE BETWEEN PIPES SHARING THE SAME TRENCH.

3.13.1.13. ALL SLEEVES FOR INSTALLATION OF PIPE, WIRE OR WIRE CONDUIT UNDER PAVING SHALL RUN CONTINUOUSLY UNDER THE PAVED AREA AND EXTEND A MINIMUM OF 12 INCHES PAST EDGE OF HARDSCAPE. SEE DETAIL DRAWINGS.

3.13.2. INSTALLATION OF METALLIC PIPE:

3.13.2.1 CUT BY POWER HACKSAW, CIRCULAR CUTTING MACHINE USING AN ABRASIVE WHEEL, OR HAND HACKSAW. CUT NO PIPING WITH METALLIC WHEEL CUTTER OF ANY DESCRIPTION. REAM AND REMOVE ROUGH EDGES OF BURRS SO SMOOTH AND UNOBSTRUCTED FLOW IS OBTAINED.

3.13.2.2. CAREFULLY AND SMOOTHLY PLACE THREAD LUBRICANT ON MALE THREAD ONLY. TIGHTEN SCREWED JOINTS WITH TONGS OR WRENCHES. CAULKING IS NOT PERMITTED.

3.13.2.3. USE DIELECTRIC FITTINGS AT CONNECTION WHERE PIPES OF DISSIMILAR METAL ARE JOINED.

3.13.3. EXCAVATION OF TRENCHES:

3.13.3.1. EXCAVATE TRENCHES, PREPARE SUB GRADE, AND BACKFILL TO LINE AND GRADE WITH SUFFICIENT ROOM FOR PIPE FITTINGS, TESTING AND INSPECTING OPERATIONS. DO NOT BACKFILL UNTIL THE PIPE SYSTEM HAS BEEN SUBJECTED TO A HYDROSTATIC TEST AS SPECIFIED.

3.13.3.2. TRENCH DEPTH, MEASURED FROM FINISH GRADE TO TOP OF PIPE, FOR IRRIGATION PIPE LINES SHALL BE AS FOLLOWS:

3.13.3.3. R.W. AND P.W. PRESSURE LINE:
2-1/2" I.D. PIPE AND SMALLER 18" MIN.
6" AND LARGER 30" MIN.

3.13.3.4. RECYCLED NON-PRESSURE LINE:
2-1/2" I.D. PIPE AND SMALLER 12" MIN.
3" AND LARGER 18" MIN.

3.13.3.5. POTABLE NON-PRESSURE LINE:
2-1/2" I.D. PIPE AND SMALLER 12" MIN.
3" AND LARGER 18" MIN.
3.13.3.6. R.W. AND P.W. PRESSURE LINE IN SLEEVE:
UNDER VEHICULAR PAVING 36" MIN.
UNDER PEDESTRIAN PAVING,
WALLS OR DRAINAGE FEATURES 18" MIN.

3.13.3.7. R.W. AND P.W. NON-PRESSURE LINE IN SLEEVE:
UNDER VEHICULAR PAVING 36" MIN.
UNDER PEDESTRIAN PAVING,
WALLS OR DRAINAGE FEATURES 18" MIN.

3.13.3.8. ELECTRICAL AND COMMUNICATION CABLE IN SLEEVE:
UNDER VEHICULAR PAVING 36" MIN.
UNDER PEDESTRIAN PAVING,
WALLS OR DRAINAGE 18" MIN.

3.13.4. SUBSOIL SHALL BE FREE OF ALL ROCKS OVER ONE (1) INCH DIAMETER, DEBRIS, AND LITTER PRIOR TO USE AS BACKFILL.

3.13.5. REPAIR ANY LEAKS AND REPLACE ALL DEFECTIVE PIPE OR FITTINGS UNTIL LINES MEET TEST REQUIREMENTS. DO NOT COVER ANY LINES UNTIL THEY HAVE BEEN CHECKED AND APPROVED FOR TIGHTNESS, QUALITY OF WORKMANSHIP AND MATERIALS.

3.13.6. BACKFILL TRENCHES, AFTER APPROVAL OF PIPING, WITH SUITABLE AND APPROVED MATERIAL, TAMP SOIL AROUND PIPE AND THOROUGHLY COMPACT ALL TRENCH FILLS UNTIL 90% COMPACTION HAS BEEN ACHIEVED.

3.13.7. BACKFILL MATERIAL SHALL BE AN APPROVED SOIL, FREE FROM ROCKS AND CLODS. PROVIDE BACKFILL UNDER, AROUND AND ABOVE TOP OF PIPE FOR PVC PLASTIC PIPE AND BRASS PIPING.

3.14. CONCRETE THRUST BLOCKS AND SUPPORTS:

3.14.1. THRUST BLOCKS AND FOOTINGS SHALL BE FORMED AND PLACED ON NINETY-PERCENT (90%) MINIMUM COMPACTED OR UNDISTURBED SUB GRADE. CONSTRUCT TO SHAPES SPECIFIED AND PARALLEL TO WALKWAYS. TOOL FINISH EXPOSED SURFACE.

3.15. WARNING/IDENTIFICATION TAPE:

3.15.1. WARNING/IDENTIFICATION TAPE SHALL BE INSTALLED ON ALL ONSITE POTABLE AND RECYCLED LINES AS CALLED FOR IN SECTION 15000.

3.16. RECYCLED WATER WARNING AND VALVE/STATION IDENTIFICATION TAG:

3.16.1. PROVIDE AND INSTALL AS DIRECTED BY THE PLANS AND DETAIL DRAWINGS AND AS REQUIRED BY THE DISTRICT.

3.16.2. RECYCLED WATER WARNING TAG SHALL BE INSTALLED AS DIRECTED BY THE PLANS AND DETAIL DRAWINGS AND AS REQUIRED BY THE DISTRICT.

3.16.3. VALVE/STATION IDENTIFICATION TAG SHALL BE INSTALLED AS DIRECTED BY THE PLANS AND DETAIL DRAWINGS.

3.17. SPRINKLER HEADS:

3.17.1. ALL SPRINKLER HEADS SHALL BE INSTALLED AS PER DETAILS SHOWN.

3.17.2. SHRUB HEADS ON RISERS ARE NOT PERMITTED ADJACENT TO PAVING SURFACES, HEADERS, AT TOP OF RETAINING WALLS, IN FRONT OF PROJECT SIGNAGE OR IN TURF AREAS.

3.17.3. TOP OF POP-UP SPRINKLER HEADS SHALL BE INSTALLED FLUSH WITH ADJACENT PAVING SURFACE.

3.17.4. POP-UP SPRINKLER HEADS SHALL BE INSTALLED APPROXIMATELY FOUR INCHES AWAY FROM ANY PAVING SURFACE. IN SHRUB AREAS, WHERE POP-UP SPRINKLER HEADS ARE LOCATED AT THE HEAD ON A PARKING STALL, POP-UP SPRINKLERS SHALL BE LOCATED EIGHTEEN INCHES FROM BACK OF CURB.

3.17.5. SPRINKLER HEADS SHALL BE LOCATED OR ADJUSTED TO MINIMIZE OR ELIMINATE OVER-SPRAYING ON SIDEWALKS, STREETS, WINDOWS, WALLS AND ALL OTHER NON-DESIGNATED USE AREAS.

3.17.6. SPRINKLER HEADS WITHIN THE SAME CIRCUIT SHALL BE OF THE SAME MANUFACTURER AND SERIES AND HAVE A UNIFORM PRECIPITATION RATE.

3.17.7. SPACING OF SPRINKLER HEADS SHALL NOT EXCEED MAXIMUM DISTANCES AS INDICATED IN THE IRRIGATION LEGEND.

3.17.8. ADJUST NOZZLES ARCS AND PRESSURE COMPENSATING DEVICES TO SUIT ANY PARTICULAR CONDITIONS OF THE AREA. THIS SHALL BE DONE AFTER THE SYSTEM HAS BEEN THOROUGHLY TESTED, IMMEDIATELY AFTER WRITTEN NOTIFICATION BY THE LANDSCAPE ARCHITECT TO DO SO.

3.18. DRIP IRRIGATION EQUIPMENT: SEE DETAIL DRAWINGS.

3.18.1. PRESSURE REGULATORS:

3.18.1.1. PRESSURE REGULATING SHALL BE AN INTEGRAL PART OF THE DRIP IRRIGATION CONTROL VALVE ASSEMBLY INSTALLED WITHIN A VALVE BOX AS DETAILED.

3.18.2. STRAINER/FILTER UNITS:

3.18.2.1. SCREEN FILTER SHALL BE AN INTEGRAL PART OF THE DRIP IRRIGATION CONTROL VALVE ASSEMBLY INSTALLED WITHIN A VALVE BOX AS DETAILED.

3.18.3. DRIP LATERAL BLOW-OUT:

3.18.3.1. DRIP LATERAL BLOW-OUT SHALL BE CONTRACTOR FABRICATED AS DETAILED.

3.18.3.2. DRIP LATERAL BLOW-OUT SHALL BE INSTALLED AT HYDRAULIC END POINTS (SINGLE DRIP LINES OR EXHAUST MANIFOLDS) WITHIN VALVE BOX AS DETAILED.

3.18.4. DRIP LATERAL AIR/VACUUM RELIEF VALVE:

3.18.4.1. DRIP LATERAL AIR/VACUUM RELIEF VALVE SHALL BE INSTALLED AT LOCAL HIGH POINTS TO ALLOW AIR TO ENTER THE LATERALS UPON SYSTEM SHUT-DOWN TO ELIMINATE A VACUUM CONDITION THAT MAY DRAW CONTAMINATION INTO THE SYSTEM
AS SHOWN ON THE DRAWINGS THESE VALVES ARE PLACED ON, AT OR, NEAR MANIFOLDS SO THAT ALL LATERALS CAN "SEE" THE VACUUM RELIEF.

3.18.4.2. DRIP LATERAL AIR/VACUUM RELIEF VALVE SHALL BE INSTALLED WITHIN VALVE BOX AS DETAILED.

3.18.5. DRIP TUBING (LATERAL):

3.18.5.1. DRIP TUBING FOR SUBSURFACE IRRIGATION OF DENSE SHRUB AND/OR GROUND COVER PLANTINGS SHALL BE INSTALLED IN A GRID NETWORK WITH EMISSION POINT AND LATERAL SPACING AS LISTED IN THE IRRIGATION LEGEND, AS ILLUSTRATED BY THE PLANS AND DETAIL DRAWINGS AND AS NOTED.

3.18.5.2. INSTALLATION METHOD:

A. DRIP TUBING CAN BE PLACE AND SECURED TO PREPARED AND FINISHED GRADE MINUS 4.5" THEN COVERED TO SPECIFIED DEPTH WITH APPROVED TOP SOIL.

B. DRIP TUBING CAN BE SECURED TO BOTTOM OF SHALLOW "SLIT" TRENCHES THEN COVERED TO SPECIFIED DEPTH WITH APPROVED TOP SOIL.

C. INSTALLATION OF TUBING IS CRITICAL AND AT ALL TIMES DURING INSTALLATION MUST BE PROTECTED TO ABSOLUTELY PREVENT INTRODUCTION OF DEBRIS.

D. AFTER DRIP TUBING INSTALLATION AND BEFORE ATTACHMENT TO INLET AND/OR EXHAUST MANIFOLDS OR TO AIR VACUUM RELIEF VALVES TUBING TO BE PROTECTED BY CONTRACTOR CHOSEN METHOD OF KINKING OR PLUGGING OF EXPOSED ENDS.

3.18.6. DISTRIBUTION TUBING: DISTRIBUTION TUBING SHALL BE USED TO LOCATE EMISSION POINTS AS DETAILED. TUBING SHALL BE PROVIDED WITH 4" OF SOIL COVER AS NOTED.

3.18.7. DRIP FITTINGS: ALL DRIP FITTING FOR THE JOINING OF DRIP TUBING SHALL BE INSTALLED SO THAT TUBING BUTTS TO THE STOP AS INSTRUCTED BY THE MANUFACTURER.

3.18.8. DRIP STAKES OR STAPLES: DRIP STAKES OR STAPLES FOR SECURING DRIP TUBING SHALL BE INSTALLED SO THAT NO TUBING BECOMES KINKED AS INSTRUCTED BY THE MANUFACTURER.

3.19. FLUSHING SYSTEMS:

3.19.1. AFTER PIPING AND RISERS ARE IN PLACE, BUT PRIOR TO THE INSTALLATION OF THE SPRINKLER HEADS, A FULL HEAD OF WATER SHALL BE USED TO FLUSH OUT THE SYSTEM. AFTER SYSTEM IS THOROUGHLY FLUSHED, CAP ALL RISERS.

3.20. TESTING:

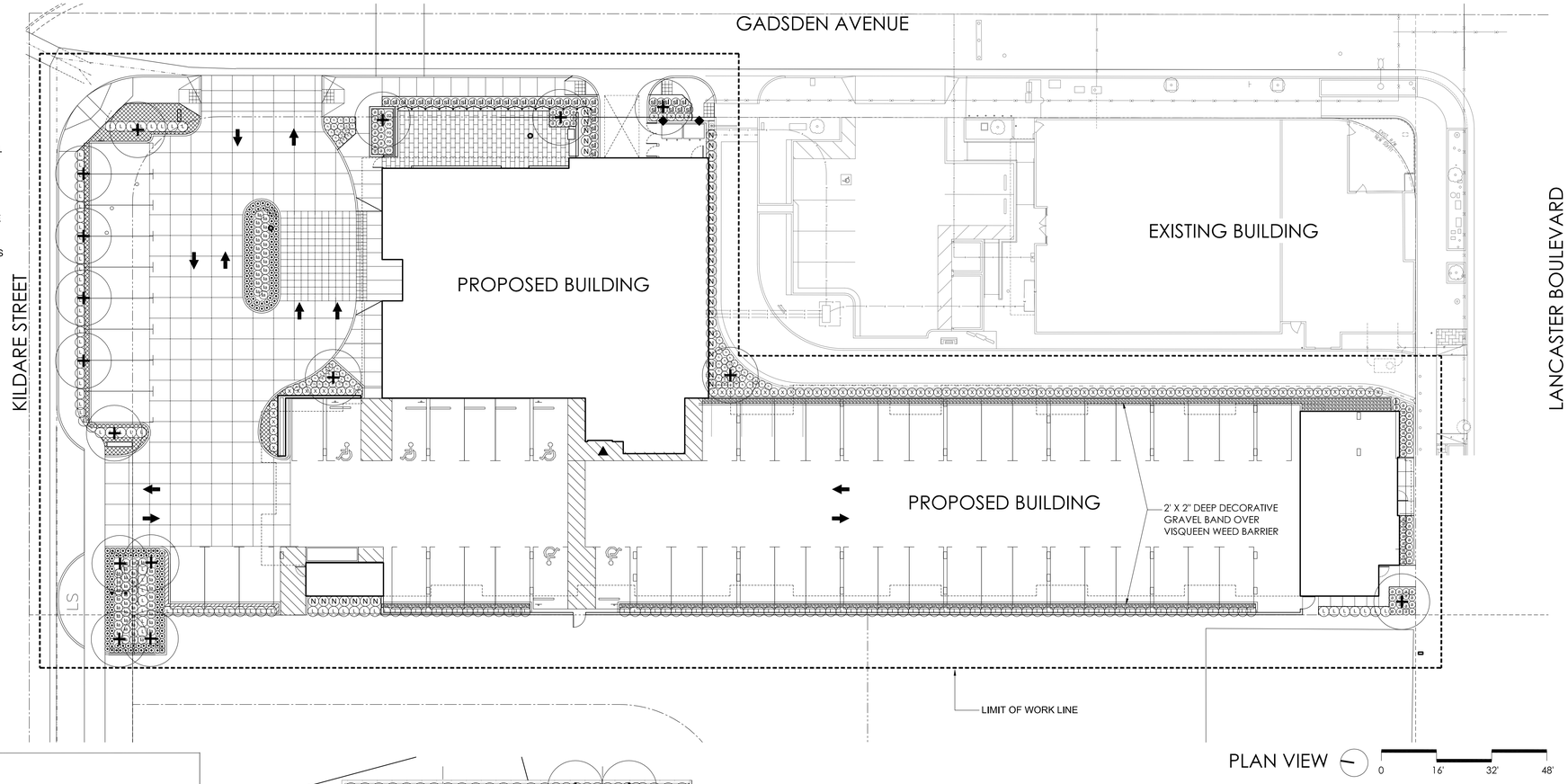
3.20.1.1. TESTING SHALL BE CONDUCTED IN THE PRESENCE OF CITY AND WATER DISTRICT INSPECTORS AND THE LANDSCAPE ARCHITECT AS REQUIRED. NOTIFY APPROPRIATE PARTY IN WRITING WHEN TESTING WILL BE CONDUCTED.

3.20.1.2. PRIOR TO BACKFILL OF TRENCHES EACH CIRCUIT SHALL BE TESTED FOR CONTINUITY.

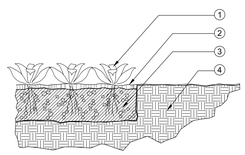
3.20.1.3. TESTING OF CONTROL WIRE AND/OR COMMUNICATION CABLE-

PLANTING NOTES

1. SEE SPECIFICATIONS FOR ITEMS NOT COVERED ON THESE PLANS.
2. CONTRACTOR SHALL SUPPLY PLANT MATERIAL IN QUANTITIES INDICATED IN THE INDIVIDUAL CALL-OUTS ON THE PLANTING PLANS. THE QUANTITIES INDICATED IN THE PLANT LIST MAY BE INCORRECT AND SHALL NOT BE USED TO DETERMINE FINAL PLANT QUANTITIES.
3. ALL PLANT MATERIAL IS TO BE SUPPLIED BY THE LANDSCAPE CONTRACTOR.
4. THE LANDSCAPE ARCHITECT SHALL RETAIN THE OPTION TO TAG BOXED TREE MATERIAL AT A WHOLESALE NURSERY OF HIS/HER CHOICE AFTER THE BID HAS BEEN AWARDED.
5. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL OF THE LANDSCAPE ARCHITECT UPON DELIVERY TO THE SITE.
6. PLANT MATERIAL LOCATIONS ON THE PLANTING PLAN ARE APPROXIMATE AND SHALL BE ADJUSTED AS DIRECTED BY THE LANDSCAPE ARCHITECT.
7. ALL GROUND COVERS SHALL BE WELL ESTABLISHED ROOTED PLANT MATERIAL IN FLATS OR POTS.
8. BUDS AND BLOOMS ON ALL PLANTS MUST BE PROTECTED AT ALL TIMES, INCLUDING TRANSPORTATION AND INSTALLATION.
9. STAKING AND/OR GUYING SHALL BE DONE ONLY WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT, NOT NECESSARILY ON EVERY TREE.
10. REMOVE TREE STAKES/GUYS AS SOON AS TREE HAS GROWN SUFFICIENT ROOTS TO BECOME STABLE - NO LATER THAN THE END OF THE FIRST GROWING SEASON AFTER PLANTING.
11. IF USED, STAKE AND/OR GUY TREES AS DIRECTED IN DETAILS HEREON.
12. TREES AND SHRUBS MAY BE LIGHTLY PRUNED DURING THE 60-DAY MAINTENANCE PERIOD AS DIRECTED BY THE LANDSCAPE ARCHITECT. PRUNING SHALL ONLY BE USED TO ELIMINATE CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES.
13. THE CONTRACTOR SHALL GUARANTEE SHRUBS, GROUND COVERS AND PERENNIALS FOR A PERIOD OF SIX MONTHS AND TREES FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
14. ALL VINES SHALL BE REMOVED FROM STAKES AND ATTACHED TO WALLS, FENCES, COLUMNS, ETC., AS DIRECTED BY LANDSCAPE ARCHITECT. VERIFY PRIOR TO INSTALLATION.
15. ALL VINES WHOSE SYMBOLS ARE SHOWN INSIDE BUILDINGS OR YARDS ARE TO BE PLANTED IN ADJACENT PLANTING AREAS.
16. THE CONTRACTOR SHALL PROTECT AND MAINTAIN EXISTING TREES TO REMAIN AS SHOW ON PLANS.
17. PROTECT AND MAINTAIN ALL EXISTING VINES ON ANY WALLS WHICH ARE TO REMAIN.



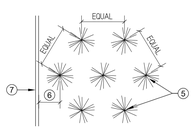
PLAN VIEW



SECTION:

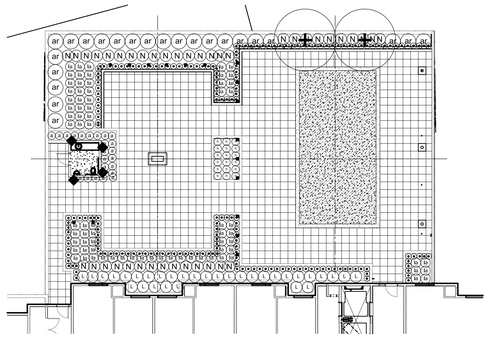
LEGEND:

1. GROUNDCOVER CUTTINGS
2. 1" THICK MULCH LAYER - SEE SPECS.
3. 10" - 12" THICK TILLED PLANTING BED - EXISTING SOIL COMBINED WITH AMENDMENTS, SEE SPECS.
4. NATIVE EARTH
5. LOCATE PLANTS WITH EQUAL, TRIANGULAR SPACING AS INDICATED
6. 1/2 ON-CENTER SPACING
7. PAVING, BUILDING OR HEADER AT EDGE OF PLANTING.

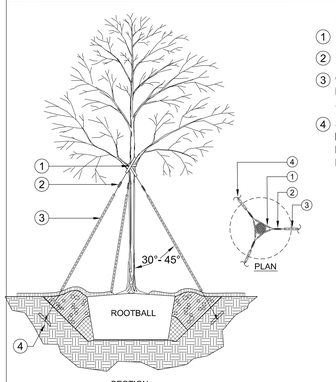


PLAN:

1 GROUNDCOVER PLANTING



THIRD FLOOR TERRACE 0 16' 32' 48'



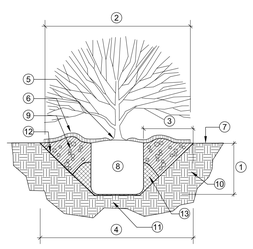
LEGEND:

1. REINFORCED 3/4" BLACK RUBBER HOSE
2. GALVANIZED STEEL TURNBUCKLE - SEE SPECS.
3. GALVANIZED WIRE CABLE WITH WHITE 1/2" DIA. SEMI-RIGID PLASTIC TUBING TO COVER - SEE SPECS.
4. SECURE CABLES OUTSIDE OF ROOTBALL AND INTO UNDISTURBED GROUND WITH DUCKBILL EARTH ANCHORS AS MFR'D BY: FORESIGHT PRODUCTS, TEL. (800) 325-5360

NOTES:

1. ATTACH TO TREE AT MAJOR TRUNKS OR BRANCHES ONLY.
2. THREE GUY WIRES PER TREE
3. GUYS ARE FOR STANDARD TRUNK TREES 30" BOX AND LARGER AND MULTI-TRUNK TREES.
4. REFER TO PLANTING SPECIFICATIONS FOR SIZES OF ALL TREE GUYING COMPONENTS BASED ON TREE SIZES

2 TREE GUYING



LEGEND:

1. ROOTBALL DEPTH
2. 3" THICK MULCH LAYER, DIA. OF DRIP LINE, MIN. - DO NOT ALLOW CONTACT WITH TRUNK.
3. 1/2 ROOTBALL WIDTH
4. 2 TIMES THE ROOTBALL DIAMETER
5. TRUNK FLARE MUST BE VISIBLE WHEN PLANTED. IF NOT VISIBLE, SHRUB SHALL BE CAREFULLY REPLANTED. SET TOP OF ROOT BALL FLUSH TO GRADE OR 1" HIGHER IN SLOW DRAINING SOILS. DO NOT COVER WITH SOIL.
6. 2" HIGH WATERING BASIN BEYOND EDGE OF ROOT BALL.
7. FINISH GRADE
8. ROOTBALL
9. BACKFILL WITH EXISTING SOIL COMBINED WITH AMENDMENTS - SEE SPECS.
10. NATIVE EARTH
11. UNEXCAVATED OR COMPACTED EARTH UNDER ROOT BALL TO PREVENT SETTLING
12. 1:1 SLOPE ON SIDES OF PLANTING HOLE
13. TAMP SOIL AT ROOT BALL BASE TO PREVENT SHIFTING

3 SHRUB PLANTING

PLANTING LEGEND

	TREES:				
+	OLEA EUROPAEA	OLIVE	48" BOX 36" BOX	15 2	LOW
	SHRUBS:				
a	ANIGOZANTHOS 'YELLOW JUMPER'	YELLOW JUMPER	5 GALLON	96	LOW
ar	ARBUTUS MARINA	ARBUTUS	15 GALLON	23	MODERATE
	BUXUS M. 'GREEN BEAUTY'	JAPANESE BOXWOOD	5 GALLON	395	MODERATE
h	HESPERALOE PARVIFLORA	RED YUCCA	5 GALLON	99	LOW
N	LEUCOPHYLLUM FRUTESCENS 'R.B.'	'RIO BRAVO' TEXAS RANGER	5 GALLON	77	LOW
la	LAVANDULA X HYBRID 'GREY HEDGE'	LAVENDER	5 GALLON	133	LOW
L	LIGUSTRUM JAP. 'TEXANUM'	TEXAS PRIVET	5 GALLON	182	MODERATE
sl	SALVIA LEUCANTHA 'FIGUERORA'	MEXICAN BUSH SAGE	5 GALLON	41	LOW
X	XYLOSMA CONGESTUM	XYLOSMA	5 GALLON	97	MODERATE
◆	CLYTOSTOMA CALLISTEGIOIDES	VIOLET TRUMPET VINE	15 GALLON	6	MODERATE
	GROUND COVERS				
	ROSMARINUS O. 'IRENE'	PROSTRATE ROSEMARY	1 GALLON	24" O.C.	LOW
	LONICERA JAPONICA 'HALLIANA'	HALL'S HONEYSUCKLE	1 GALLON	12" O.C.	LOW

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	02/16/18	Plan Check	

DATE 2-16-18
SCALE 1/16"=1'-0"

PROJECT NUMBER LA1628
COMPUTER FILE
PROJECT NAME

DESCRIPTION
LANDSCAPE PLANTING PLAN

SHEET NUMBER
L-300

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