

CITY OF COACHELLA CA

LANDSCAPE PLANS

Oraway Engineering Office

54101 Enterprisw Way, Coachella Ca 92274

- APN: 763280015

A COMMERCIAL PROJECT

WATER BUDGET CALCULATIONS

ESTIMATED WATER USE FOR: Oraway Engineering Office

TREES/SHRUBS/GC - (LOW DRIP)	=	13478	sq. ft.	(71%)
TREES/SHRUBS/GC - (MODERATE DRIP)	=	5452	sq. ft.	(70%)
TOTAL LANDSCAPE - Square Feet	=	18930	sq. ft.	(29%)

TREE/SHRUB/GC: MODERATE

$$\frac{16.82 \times 0.50 \times 5452 \times 0.62}{.9 \times 748} = 42.22 \text{ CCF}$$

SUMMER

$$\frac{46.63 \times 0.50 \times 5452 \times 0.62}{.9 \times 748} = 117.06 \text{ CCF}$$

FALL / WINTER

$$\frac{12.93 \times 0.50 \times 5452 \times 0.62}{.9 \times 748} = 4.84 \text{ CCF}$$

TOTAL = 191.86 CCF

TREE/SHRUB/GC: LOW

$$\frac{16.82 \times 0.20 \times 13478 \times 0.62}{.9 \times 748} = 41.75 \text{ CCF}$$

SUMMER

$$\frac{46.63 \times 0.20 \times 13478 \times 0.62}{.9 \times 748} = 115.76 \text{ CCF}$$

FALL / WINTER

$$\frac{12.93 \times 0.20 \times 13478 \times 0.62}{.9 \times 748} = 32.09 \text{ CCF}$$

TOTAL = 189.6 CCF

ESTIMATED TOTAL WATER USE=380.95

PLANT FACTOR: TREE/SHRUB/GC(MODERATE)	=	0.50
TREE/SHRUB/GC(LOW)	=	0.20
TREE/SHRUB/GC(HIGH)	=	0.80

ESTIMATED TOTAL WATER USE

TREE/SHRUB/GC: MODERATE	=	191.86 CCF
TREE/SHRUB/GC: LOW	=	189.6 CCF

ETWU = 380.95 CCF

$$\text{MAXIMUM WATER ALLOWANCE} = 76.38 \times .45 \times 18930 \times 0.62/748 = 539.30 \text{ CCF}$$

ETo (ZONE 4) FOR: SPRING	=	16.82
SUMMER	=	46.63
FALL / WINTER	=	12.93

TOTAL =76.38

WATER CONSERVATION CONCEPT STATEMENT

PROJECT SITE: 54101 Enterprisw Way, Coachella Ca 92274
- APN: 763280015

PROJECT LOCATION: CITY OF COACHELLA CA

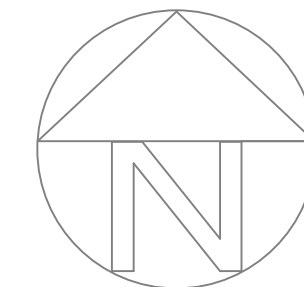
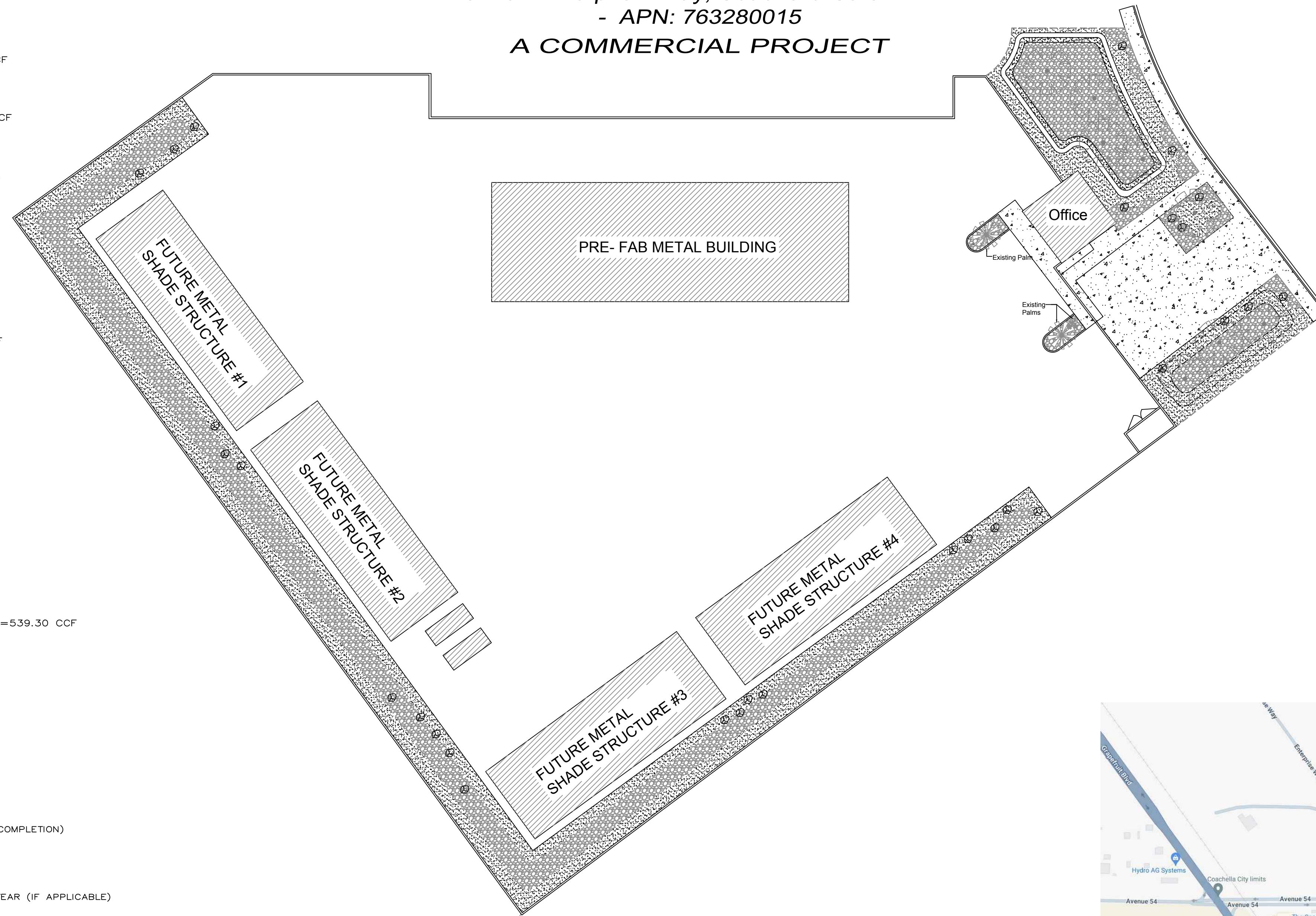
LANDSCAPE ARCHITECT/IRRIGATION DESIGNER/CONTRACTOR:

INCLUDED IN THIS PROJECT SUBMITTAL PACKAGE ARE:(CHECK TO INDICATE COMPLETION)

- X 1. MAXIMUM ANNUAL APPLIED WATER ALLOWANCE:
CONVENTIONAL LANDSCAPE: 539.30 - 100 CUBIC FEET/YEAR
+RECREATIONAL TURF GRASS LANDSCAPE: -0- 100 CUBIC FEET/YEAR (IF APPLICABLE)
CONVENTIONAL LANDSCAPE: -0- 100 CUBIC FEET/YEAR
MAXIMUM ANNUAL APPLIED WATER ALLOWANCE: 539.30 - 100 CUBIC FEET/YEAR
- X 2. ESTIMATED APPLIED WATER USE BY HYDROZONES:
TURF GRASS HYDROZONES: -0- 100 CUBIC FEET/YEAR
RECREATIONAL TURF GRASS HYDROZONES: 0 -100 CUBIC FEET/YEAR
LOW PLANT HYDROZONES: 189.6 - 100 CUBIC FEET/YEAR
MEDIUM PLANT HYDROZONES: 191.86 - 100 CUBIC FEET/YEAR
HIGH PLANT HYDROZONES: -0- 100 CUBIC FEET/YEAR
WATER FEATURES: -0- 100 CUBIC FEET/YEAR
OTHER: -0- 100 CUBIC FEET/YEAR
ESTIMATED ANNUAL TOTAL APPLIED WATER USE: 380.95 -100 CUBIC FEET/YEAR
- X 3. EATAWU < MAAWA
- X 4. LANDSCAPE DESIGN PLAN
- X 5. IRRIGATION DESIGN PLAN
- ____5. GRADING DESIGN PLAN
- ____6. SOIL CHEMICAL ANALYSIS (OPTIONAL)

DESCRIPTION OF PROJECT(WATER CONSERVATION STATEMENT):BRIEFLY DESCRIBE THE PLANNING AND DESIGN ACTIONS THAT ARE INTENDED TO ACHIEVE CONSERVATION AND EFFICIENCY IN WATER USE. THE DESIGN CRITERIA FOR THIS PROJECT IS MAINTAIN A WATER CONSERVATION ENVIRONMENT WITH WATER EFFICIENT IRRIGATION. NO LAWN WILL BE USED FOR THIS PROJECT

DATE: 05-05-2024 PREPARED BY: Paul Sturwold Associates



SITE PLAN

NO SCALE

NOTE: FOR GRADING AND DRAINAGE SEE ENGINEER PLANS

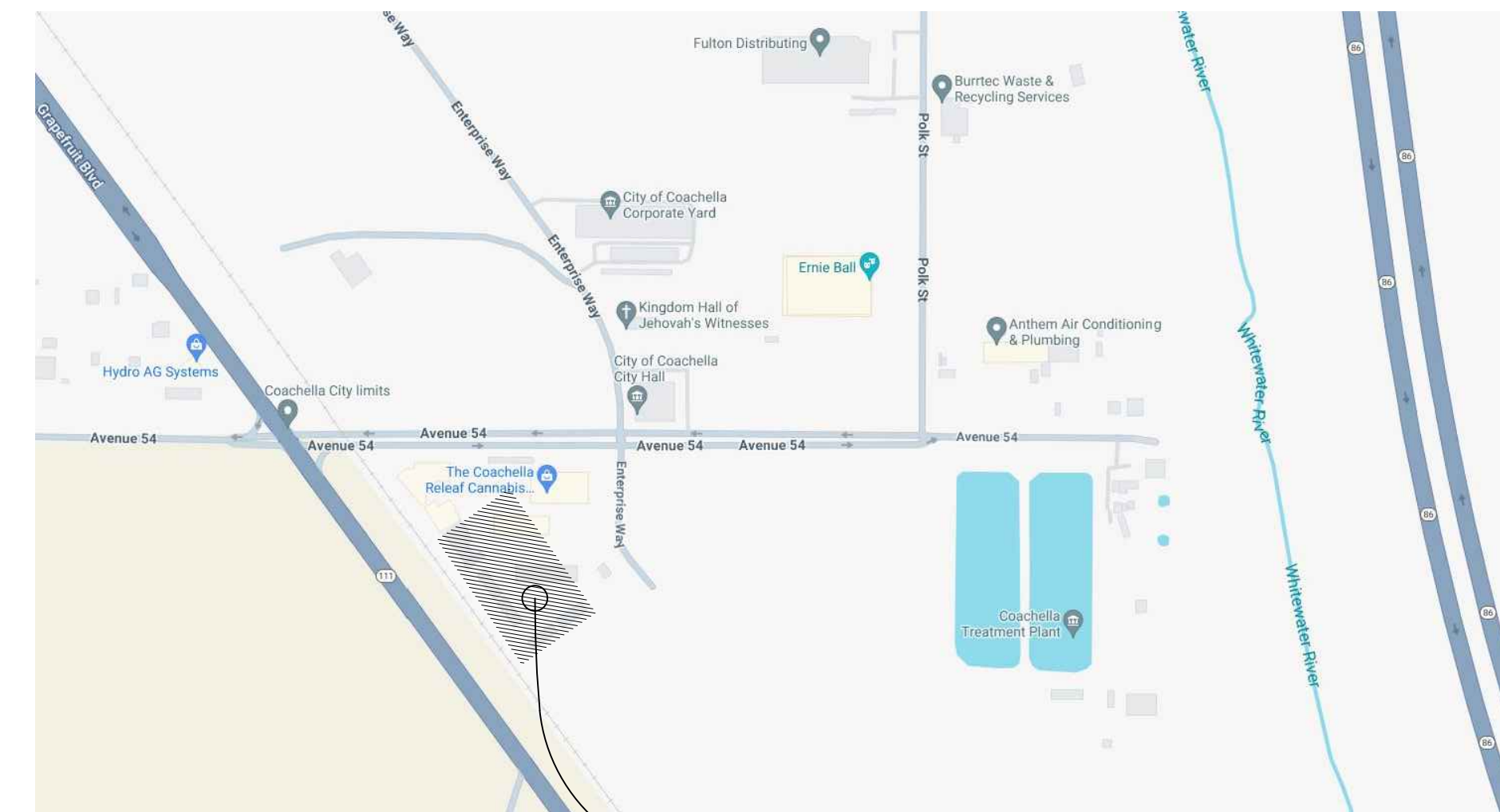
DRAWING INDEX	
L-1	COVER SHEET
L-2	PLANTING PLAN
L-3	PLANTING LEGEND
L-4	PLANTING DETAILS & IRRIGATION LEGEND
IR-1	IRRIGATION PLAN
IR-2	IRRIGATION DETAILS
IR-3	IRRIGATION NOTES

NOTES:

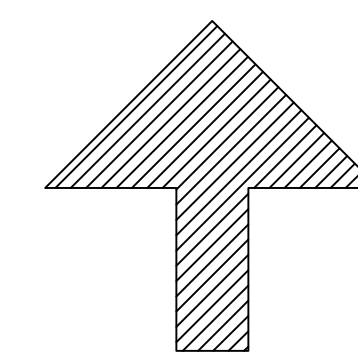
NOTE: NO LOW HEAD DRAINAGE ALLOWED

NOTE: ALL IRRIGATION REPAIR EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY SPECIFIED MATERIALS OR THEIR APPROVED EQUIVALENTS.

NOTE: IRRIGATION PLAN IS DIAGRAMMATIC. INSTALL ALL IRRIGATION EQUIPMENT IN PLANTER AREAS EXCEPT WHEN CROSSING PAVEMENTS. EMITTERS SHALL BE INSTALLED TWO INCH ABOVE FINISH GRADE, ANY EMITTER LEFT AT AN UNACCEPTABLE HEIGHT SHALL BE REINSTALLED AT NO COST TO THE OWNER. VERIFY ACTUAL QUANTITIES AND FINAL LOCATION OF PLANT MATERIAL WITH THE OWNER'S REPRESENTATIVE BEFORE ANY INSTALLATION OF THE IRRIGATION SYSTEM. LANDSCAPE CONTRACTOR SHALL VERIFY CONTROLLER ACTUAL SIZE, POWER SOURCE AND LOCATION AT TIME OF INSTALLATION.



VICINITY MAP SITE
NOT TO SCALE



NORTH

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54101 Enterprise Way
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SITE:

Cover Sheet

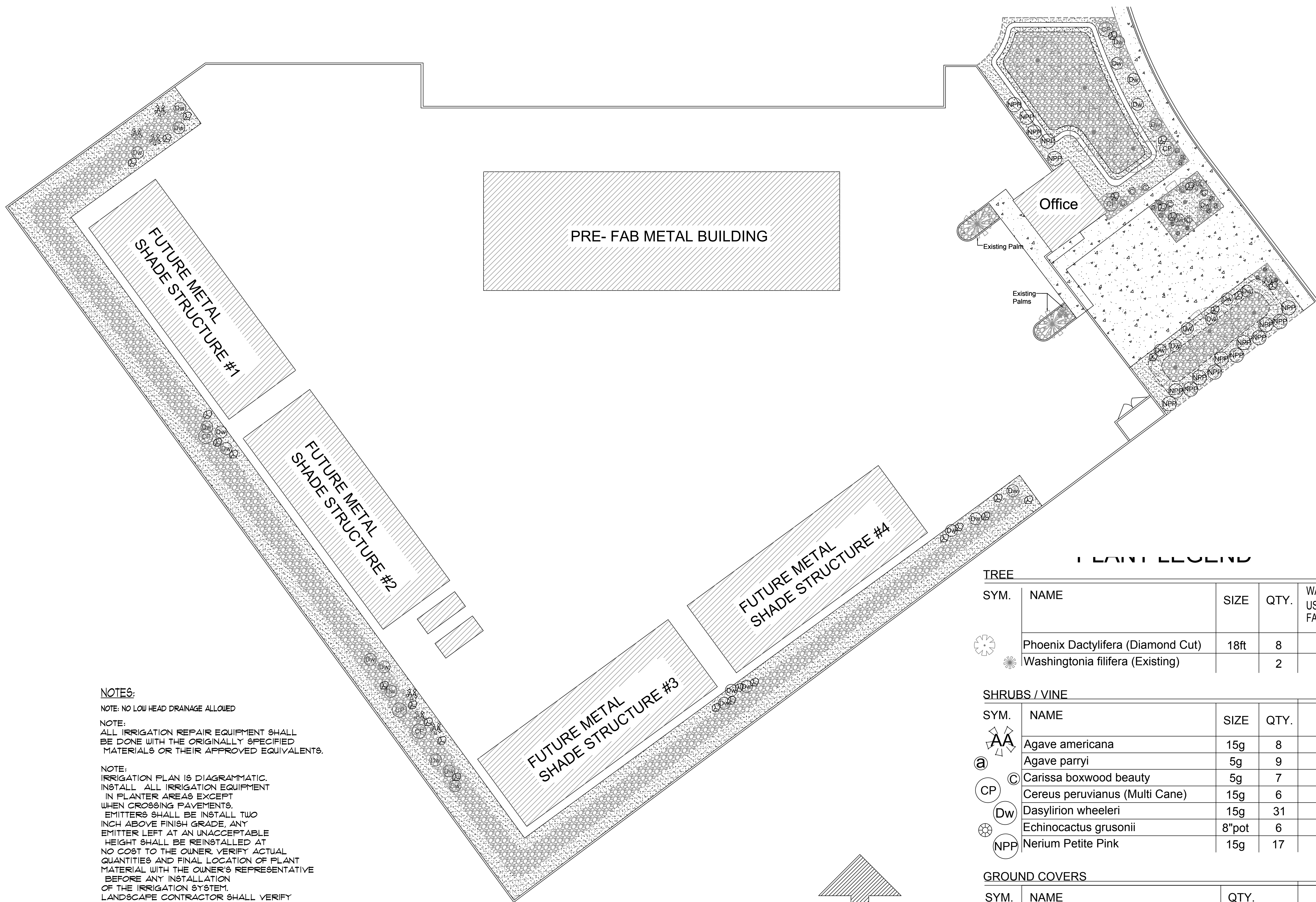
David Navarro

David Navarro

Drawn: DN

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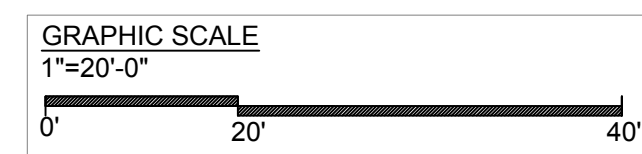
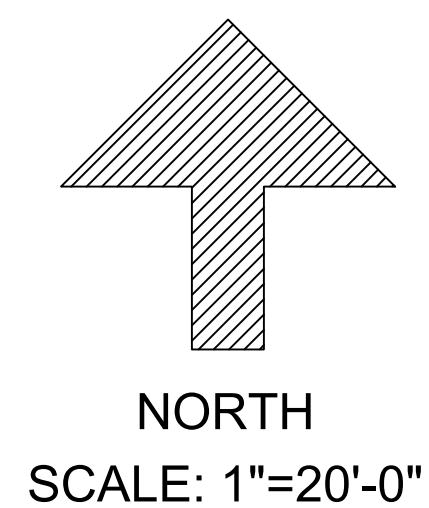


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PLANT LEGEND

TREE

SYM.	NAME	SIZE	QTY.	WATER USAGE FACTOR	PLANT FACTOR OF PLANTS	EMITTER SIZE
	Phoenix Dactylifera (Diamond Cut)	18ft	8	M	0.5	1401 BUBBLER
	Washingtonia filifera (Existing)		2	M	0.5	1401 BUBBLER

SHRUBS / VINE

SYM.	NAME	SIZE	QTY.	WATER USAGE FACTOR	PLANT FACTOR OF PLANTS	EMITTER SIZE
	Agave americana	15g	8	L	0.2	XB-10-PC-1032
	Agave parryi	5g	9	L	0.2	XB-10-PC-1032
	Carissa boxwood beauty	5g	7	L	0.2	XB-10-PC-1032
	Cereus peruvianus (Multi Cane)	15g	6	L	0.2	XB-10-PC-1032
	Dasyliirion wheeleri	15g	31	L	0.2	XB-10-PC-1032
	Echinocactus grusonii	8"pot	6	L	0.2	XB-10-PC-1032
	Nerium Petite Pink	15g	17	M	0.5	XB-10-PC-1032

GROUND COVERS

SYM.	NAME	QTY.			
	Desert Gold 3/4"	10,400 SQ.FT			
	Sierra Cobble 4" minus	8,530 SQ.FT			
	Gray Cresta Boulder 24"-36"	30			

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Planting Plan

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PLANT LEGEND




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Phoenix dactylifera



Agave americana



Agave parryi



Carissa macrocarpa 'Boxwood Beauty'



Cereus peruvianus



Dasyliion wheeleri



Echinocactus grusonii



Nerium Petite 'Pink'



Desert Gold 3/4"



Sierra Cobble 4" minus



Gray Cresta Boulders 24"-36"

NOTES:

NOTE: NO LOW HEAD DRAINAGE ALLOWED

NOTE:
ALL IRRIGATION REPAIR EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY SPECIFIED MATERIALS OR THEIR APPROVED EQUIVALENTS.

NOTE:
IRRIGATION PLAN IS DIAGRAMMATIC. INSTALL ALL IRRIGATION EQUIPMENT IN PLANTER AREAS EXCEPT WHEN CROSSING PAVEMENTS. EMITTERS SHALL BE INSTALL TWO INCH ABOVE FINISH GRADE, ANY EMITTER LEFT AT AN UNACCEPTABLE HEIGHT SHALL BE REINSTALLED AT NO COST TO THE OWNER. VERIFY ACTUAL QUANTITIES AND FINAL LOCATION OF PLANT MATERIAL WITH THE OWNER'S REPRESENTATIVE BEFORE ANY INSTALLATION OF THE IRRIGATION SYSTEM. LANDSCAPE CONTRACTOR SHALL VERIFY CONTROLLER ACTUAL SIZE, POWER SOURCE AND LOCATION AT TIME OF INSTALLATION.

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SITE:

Planting Legend

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Drawn: DN

REV	DATE
0	04/24/24

IRRIGATION SCHEDULE BEGINNING PERIOD

VALVES	DAYS 1 TO 10	
	FREQUENCY	TIME
TREES	3X PER DAY	45 MIN
SHRUBS	3X PER DAY	20 MIN
PALMS	3X PER DAY	40 MIN

VALVES	DAYS 11 TO 30	
	FREQUENCY	TIME
TREES	2X PER DAY	30 MIN
SHRUBS	3X PER DAY	15 MIN
PALMS	3X PER DAY	35 MIN

IRRIGATION SCHEDULE (SPRING FEB-APRIL)

VALVES	ESTABLISHED PERIOD	
	FREQUENCY	TIME
TREES	2X PER DAY	25 MIN
SHRUBS	2X PER DAY	15 MIN
PALMS	2X PER DAY	45 MIN

IRRIGATION SCHEDULE (SUMMER MAY-SEP)

VALVES	ESTABLISHED PERIOD	
	FREQUENCY	TIME
TREES	3X PER DAY	25 MIN
SHRUBS	3X PER DAY	20 MIN
PALMS	3X PER DAY	40 MIN

IRRIGATION SCHEDULE (WINTER OCT-JANUARY)

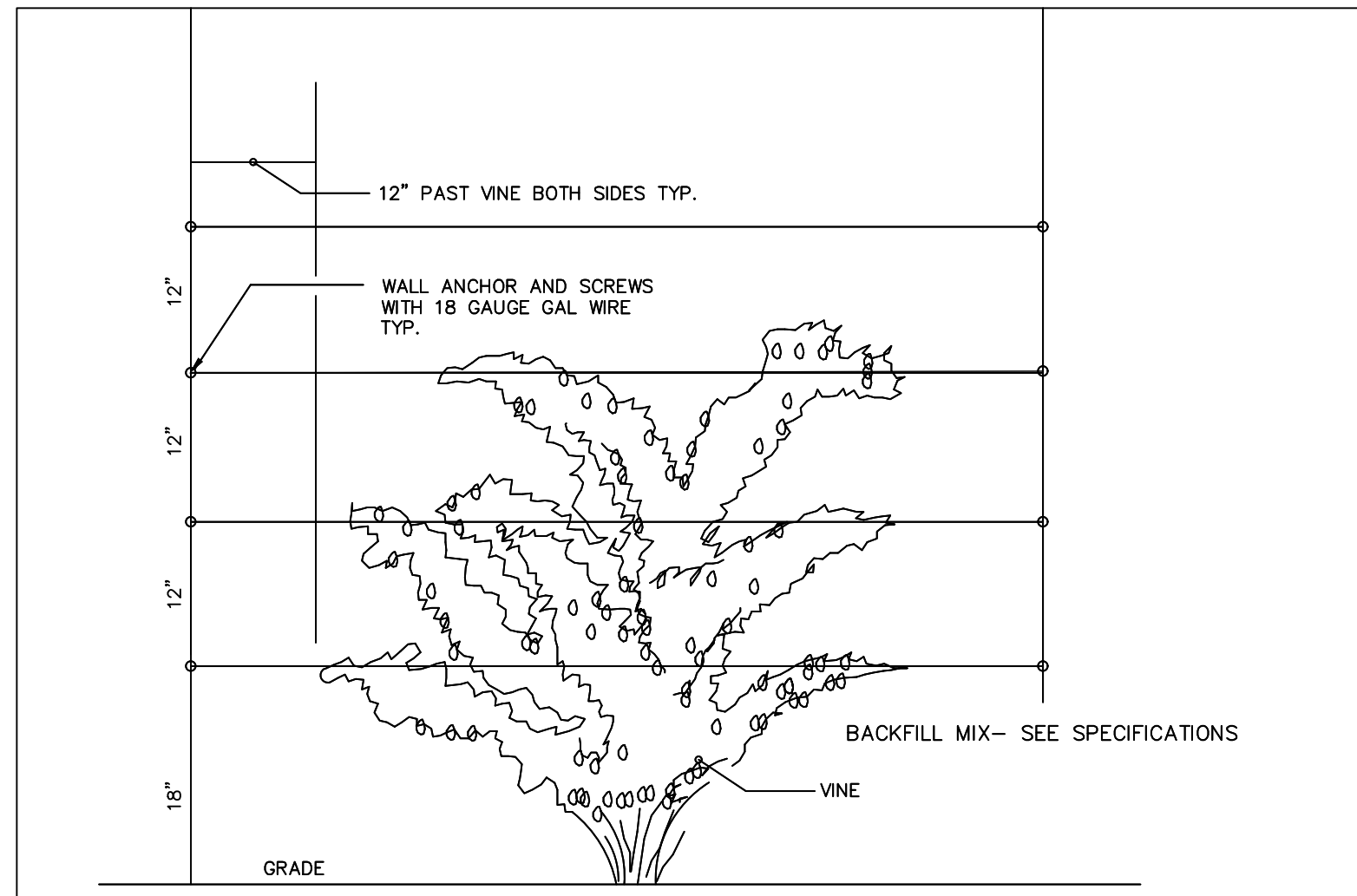
VALVES	ESTABLISHED PERIOD	
	FREQUENCY	TIME
TREES	2X PER DAY	20 MIN
SHRUBS	2X PER DAY	15 MIN
PALMS	2X PER DAY	45 MIN

NOTES:

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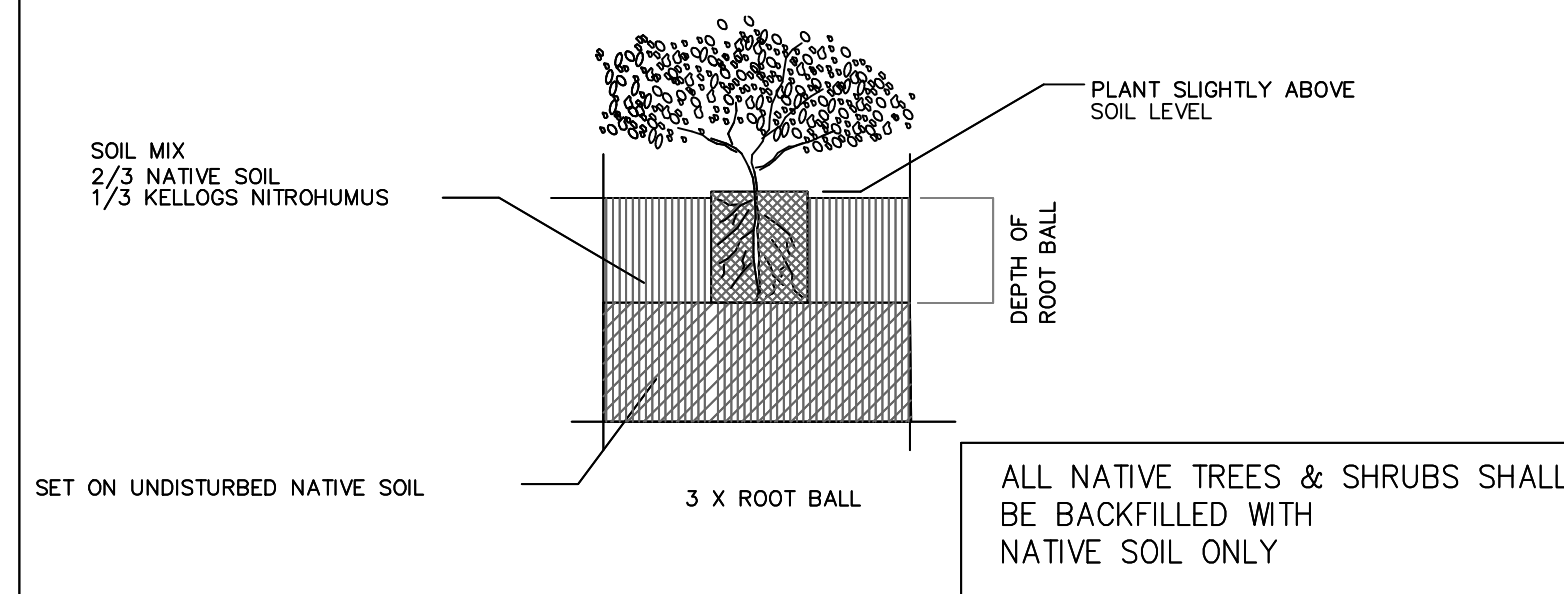
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VINE/ESPALIER DETAIL

N.T.S.



SHRUB PLANTING DETAIL

N.T.S.

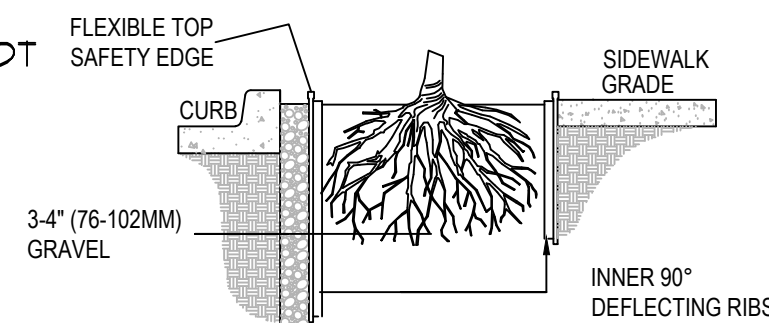
SPECIFICATIONS:

DWS SERIES: DWS12-20, DWS24-20, 90 DEGREE ROOT DEFLECTING RIBS. CONNECTED WITH ROOT IMPERVIOUS JOINER STRIPS.

MATERIAL: HIGH IMPACT POLYSTYRENE WITH ULTRAVIOLET STABILIZER THICKNESS-WALL: .060

TENSILE STRENGTH CHART	
STYLE	ONE PIECE ROLL
THICKNESS-WALL	.060"
STRENGTH	3800 PSI
TENSILE ASTM D 638 MODULES OF ELASTICITY PSI (10")	2.5
ELONGATION:	36%
FLEXURAL PROPERTIES ASTM D 790-B	
STRENGTH PSI	6500 PSI
MODULES ELASTICITY PSI(10")	3.0
IMPACT PROPERTIES ASTM D 256-73	
IZOD FOOT POUNDS	2.0
GARDNER FALLING DART INCH-POUND	70

NOTE: ROOT BARRIER SHOULD NOT ENCIRCLE THE TREE BUT SHALL BE LOCATED AT EDGE OF HARDSCAPE AND EXTEND BEYOND CENTER OF TREE A MINIMUM OF 5' IN EACH DIRECTION



LINEAR APPLICATION

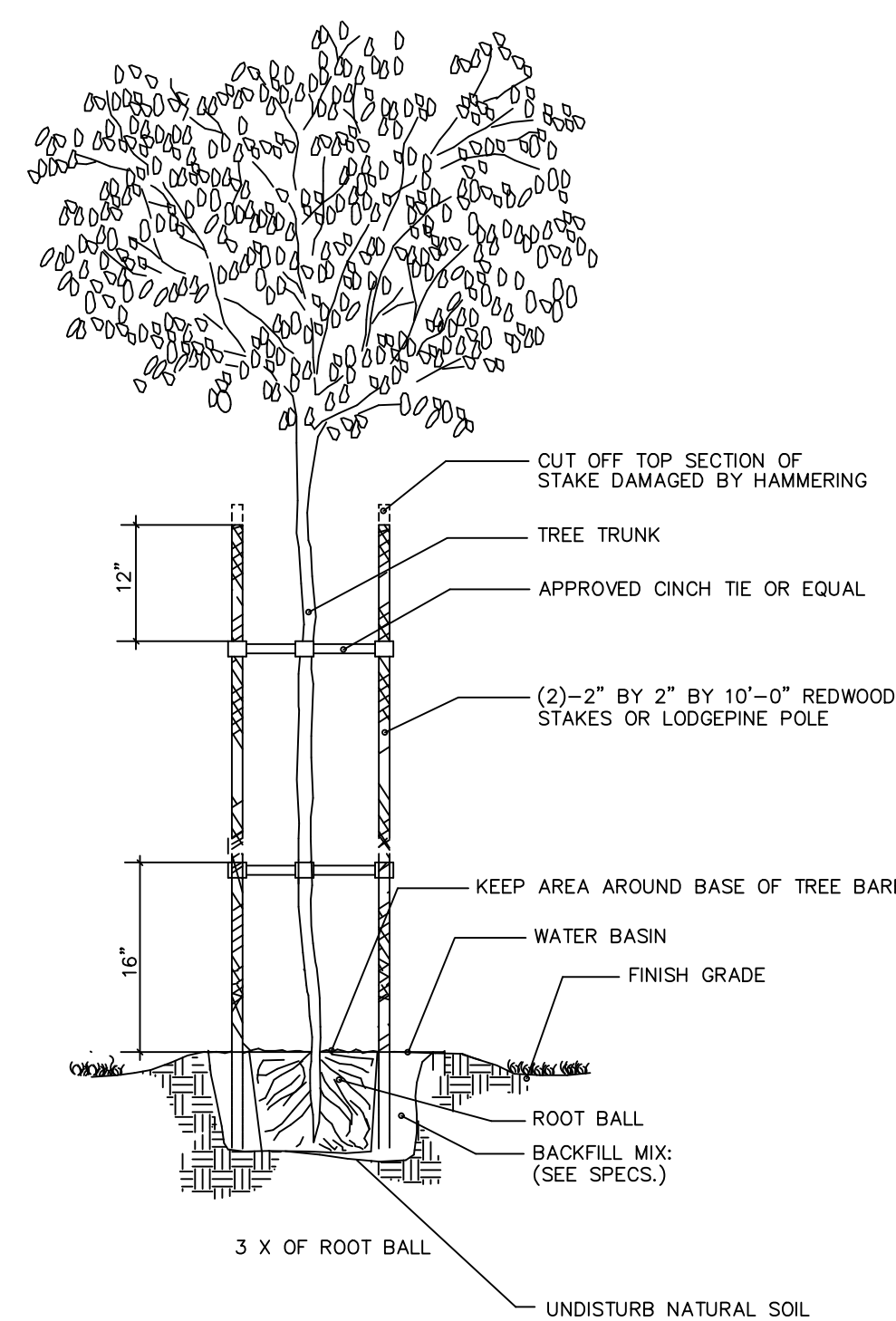
NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 005-002A.

CENTURY ROOT BARRIERS INC.
1144 N. GROVE ST.
ANAHEIM, CA 92806
TOLL FREE: 1-800-480-8084
PHONE: (714) 632-7083
FAX: (714) 632-5470
www.centuryrootbarrier.com

ROOT BARRIER DETAIL

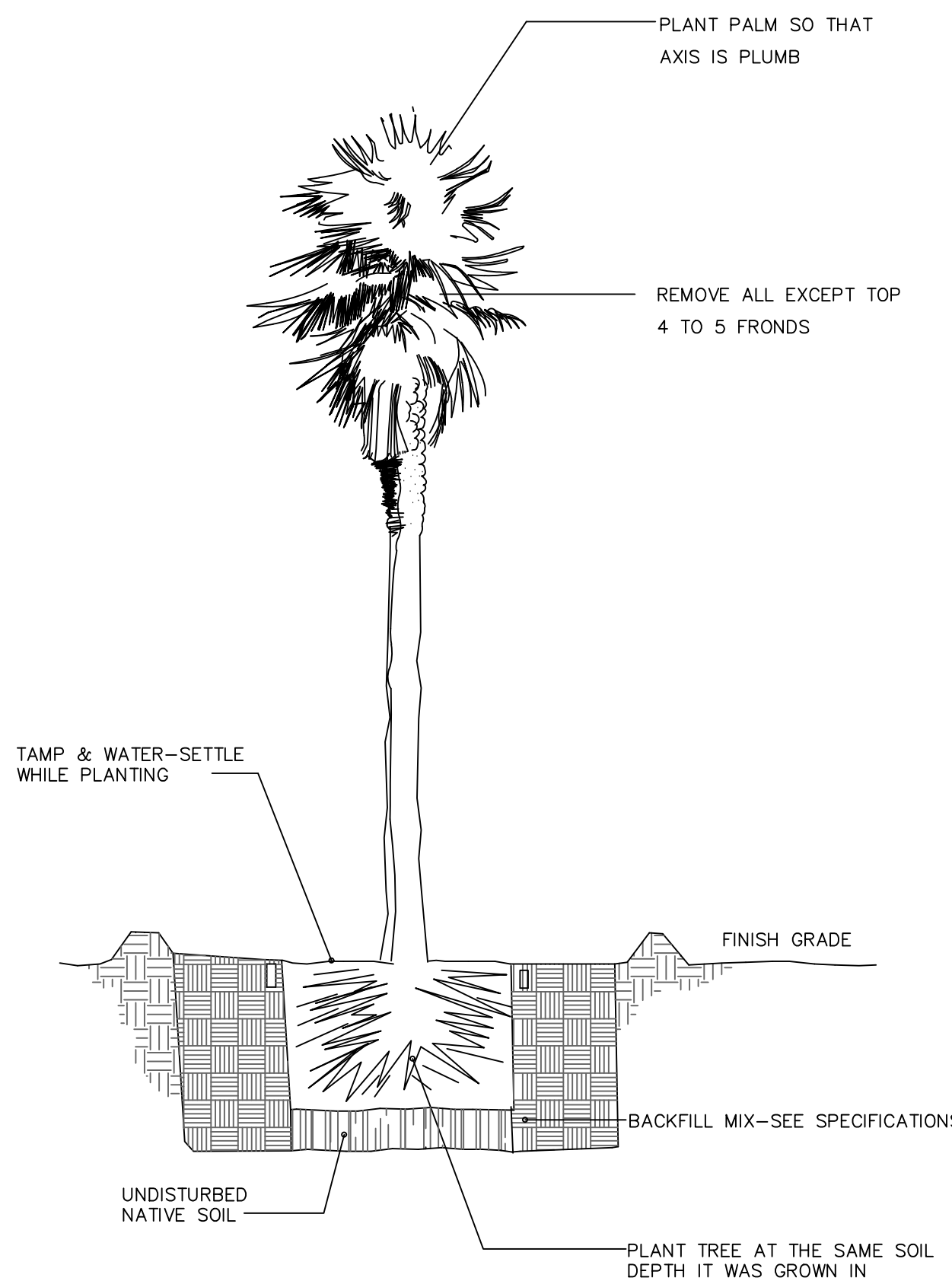
DWS SERIES DETAIL

ALL NATIVE DESERT TREES & SHRUBS SHALL BE BACKFILLED WITH NATIVE SOIL ONLY



DOUBLE STAKE TREE DETAIL

N.T.S.



PALM TREE PLANTING DETAIL

N.T.S.

GENERAL PLANTING NOTES

- ALL PLANTED AREAS ARE TO BE GRADED IN AN ACCEPTABLE MANNER TO ASSURE POSITIVE DRAINAGE. DO THIS BEFORE LOCATING ANY PLANTS.
- PLANT SHRUBS A MINIMUM OF 30" FROM ALL LANDSCAPE LIGHT FIXTURES.
- WHERE CIRCUMSTANCES PERMIT, PLANT SHRUBS NO CLOSER THAN 3' (THREE FEET) FROM AN EDGE OF PAVING OR HEADER BOARD (EXCEPT FOR GROUND COVERS, WHICH ARE TO BE PLANTED PER PLAN).
- LANDSCAPE PLANS ARE DIAGRAMMATIC FOR CLARITY OF READING. ACTUAL PLANT LOCATIONS MAY BE ADJUSTED IN THE FIELD.
- EARTH MOUNDS SHALL NOT EXCEED THREE FEET AT THE HIGHEST POINT ABOVE NEAREST PAVEMENT OR CURB. MAXIMUM SLOPE FOR SHRUB AREAS IS TO BE 3:1.
- WHERE MOUNDING OCCURS ADJACENT TO THE CURB, STREET, OR WALLS SWALES SHALL BE FORMED TO CONTROL WATER RUNOFF.
- IRRIGATION SYSTEM IS TO BE FULLY AUTOMATIC. THERE SHALL BE COMPLETE SEPARATION BETWEEN DIFFERENT PLANT GROUPS SUCH AS TREES, SHRUBS, GROUND COVERS AND POTS. SEE IRRIGATION PLAN.
- PLANT CONTRACTORS SHALL VERIFY PLANT QUANTITIES ON PLAN
- IF REQUIRED, THE OWNER OR OWNER'S REPRESENTATIVE SHALL SUBMIT PLANS TO THE APPROPRIATE PLANNING AND AGRICULTURAL AGENCIES PRIOR TO SUBMITTAL FOR BUILDING PERMITS.
- NO TREE SHALL BE CLOSER THAN 5' FROM HARDSCAPE
- ANY TREE PLANTED WITHIN SIX FEET OF HARDSCAPE SURFACES SUCH AS EDGE OF SIDEWALK, WALLS, CURBS, PAVEMENT, INTERLOCKING PAVERS, ETC., MUST HAVE "ROOT GUARD" INSTALLED PRIOR TO PLANTING PER MFRS SPECIFICATIONS.

COMMISSIONER'S NOTE:

12. WARNING PLANT MATERIAL LISTED MAY OR MAY NOT HAVE BEEN APPROVED BY THE AGRICULTURAL COMMISSIONER'S OFFICE. LANDSCAPE CONTRACTOR, PLEASE CONTACT THE DEVELOPER FOR STATUS OF AGRICULTURAL COMMISSIONER'S APPROVAL OR DENIAL. PLANT MATERIAL NOT CONFORMING WITH QUARANTINE LAWS MAY BE DESTROYED AND CIVIL ACTION TAKEN. ALL PLANT MATERIAL IS SUBJECT TO INSPECTION AT THE DISCRETION OF THE AGRICULTURAL COMMISSIONER'S OFFICE. ALL PLANT MATERIAL MUST BE FREE FROM RED SCALE (ACONIDIELLA AURANTII)

PLANTING NOTES

IRRIGATION LEGEND

	RAINBIRD	Rainbird: ESP-SMT Smart Modular System & STATIONS, OUTDOOR ET MANAGER CARTRIDGE.
	RAINBIRD	XCZ-T5 DZK-100 TORO DRIP ZONE KIT
	NIBCO	T-113 GATE VALVE (LINE SIZE); TO BE INSTALLED AT ALL SINGLE VALVES AND/OR VALVE GROUPINGS. VALVES ARE TO BRANCH-OFF MAINLINE COURSE AND ISOLATED VIA GATE VALVE. REFER TO IRRIGATION DETAIL SHEET.
		1-1/4" PRESSURE MAINLINE PIPING USE SCHEDULE 40 - SIZE AS NOTED
		NON-PRESSURE LATERAL LINE PIPING - PVC CLASS 200 PALM TREE BUBBLERS
		IRRIGATION POINT OF CONNECTION - WATER METER. INSTALL PER WD(VERIFY EXACT LOCATION IN FIELD.)
		REDUCED PRESSURE BACKFLOW- 1" FEBCO MODEL 825Y PER LOCAL AND STATE CODES. INSTALLED BY CONTRACTOR (verify exact location in field)
		MASTER VALVE- RAINBIRD EFB-CP IN A TAN JUMBO IRRIGATION BOX.
		FLOW SENSOR-743-012- IRRITROL CLIMATE LOGIC
		QUICK COUPLER VALVE- RAINBIRD QUICK COUPLER VALVE 44-LRC IN A TAN IRRIGATION BOX. PROVIDE OWNER WITH TWO 44K QUICK COUPLER KEYS.
		Bubbler Nozzle - RAINBIRD 1401 - (0.25 gpm)
		PSI GPH DRIPEMITTER- RAINBIRD XB-20-PC-1032 20 2.0 NOTE: INSTALL EMITTERS ON RAINBIRD PFR/FRA POLYFLEX RISERS(TYPICAL).
		AUTOMATIC END SELF-FLUSHING VALVE- AG PRODUCTS FCH VALVE IN IRRIGATION VALVE BOX. PIPE SLEEVING SHALL OCCUR UNDER ALL MAJOR HARDSCAPE. SLEEVING SHALL BE 2X THE DIAMETER OF THE PIPE.
		INDICATES CONTROLLER NUMBER
		INDICATES FLOW IN GALLONS PER MINUTE
		INDICATES ZONE TYPE
		INDICATES ELECTRIC CONTROL VALVE SIZE

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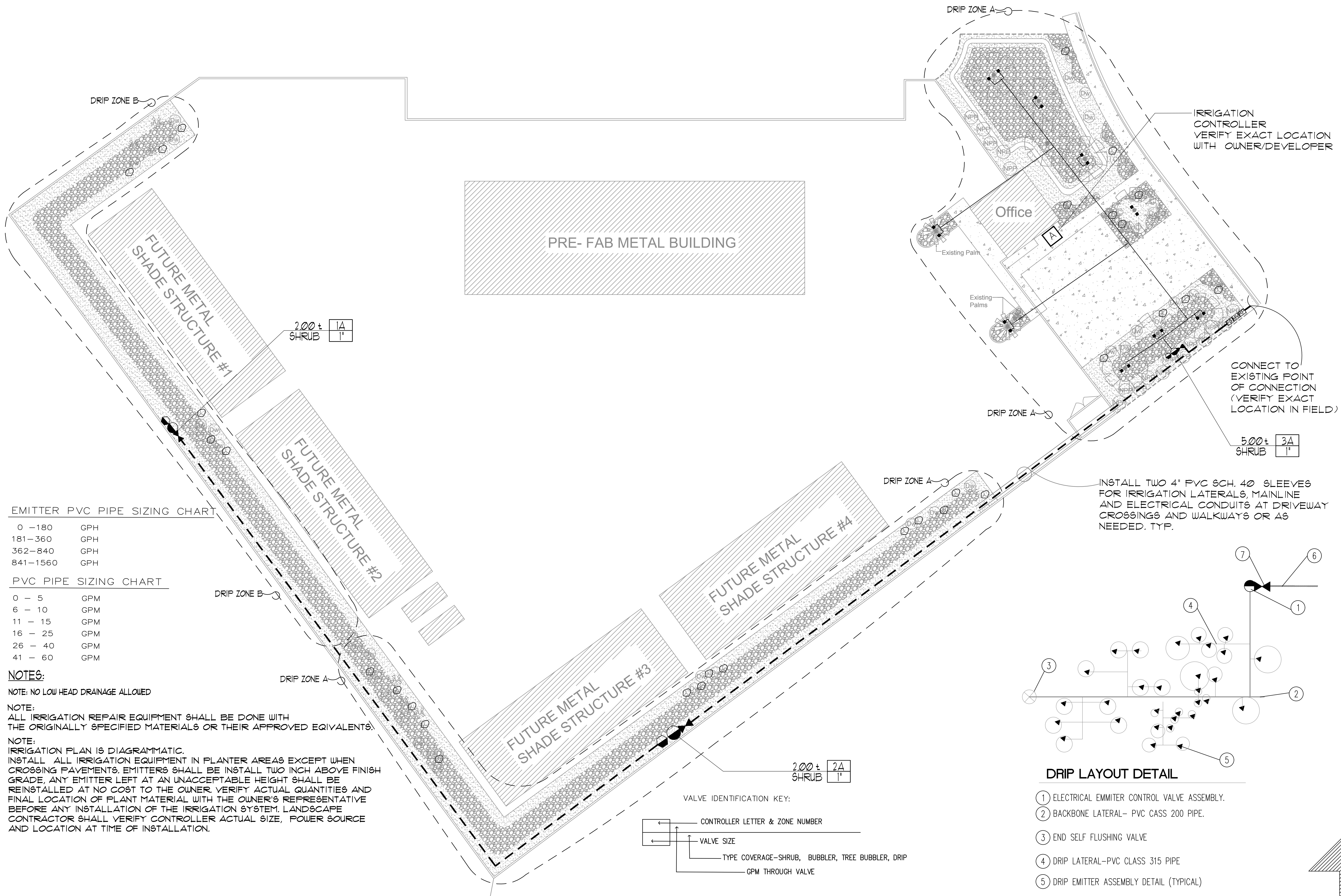
SITE:
Planting Details &
Irrigation Legend
David Navarro

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Drawn: DN

REV	DATE
0	05/03/24

L-4



EMITTER PVC PIPE SIZING CHART

0 - 180	GPH
181 - 360	GPH
362 - 840	GPH
841 - 1560	GPH

PVC PIPE SIZING CHART

0 - 5	GPM
6 - 10	GPM
11 - 15	GPM
16 - 25	GPM
26 - 40	GPM
41 - 60	GPM

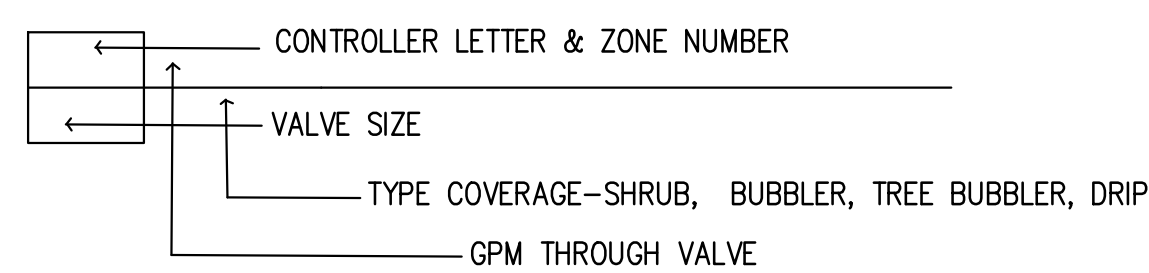
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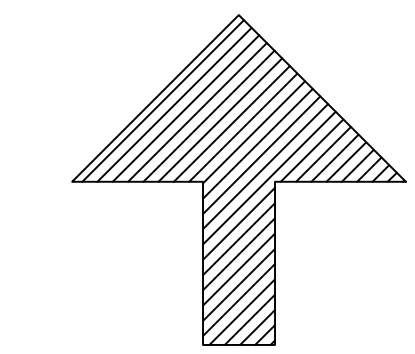
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VALVE IDENTIFICATION KEY:

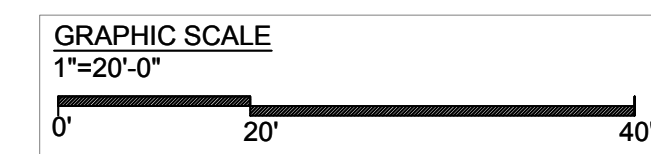


DRIP LAYOUT DETAIL

- ① ELECTRICAL EMITTER CONTROL VALVE ASSEMBLY.
- ② BACKBONE LATERAL- PVC CASS 200 PIPE.
- ③ END SELF FLUSHING VALVE
- ④ DRIP LATERAL-PVC CLASS 315 PIPE
- ⑤ DRIP EMITTER ASSEMBLY DETAIL (TYPICAL)
- ⑥ MAIN LINE
- ⑦ BALL VALVE



NORTH
SCALE: 1"=20'-0"



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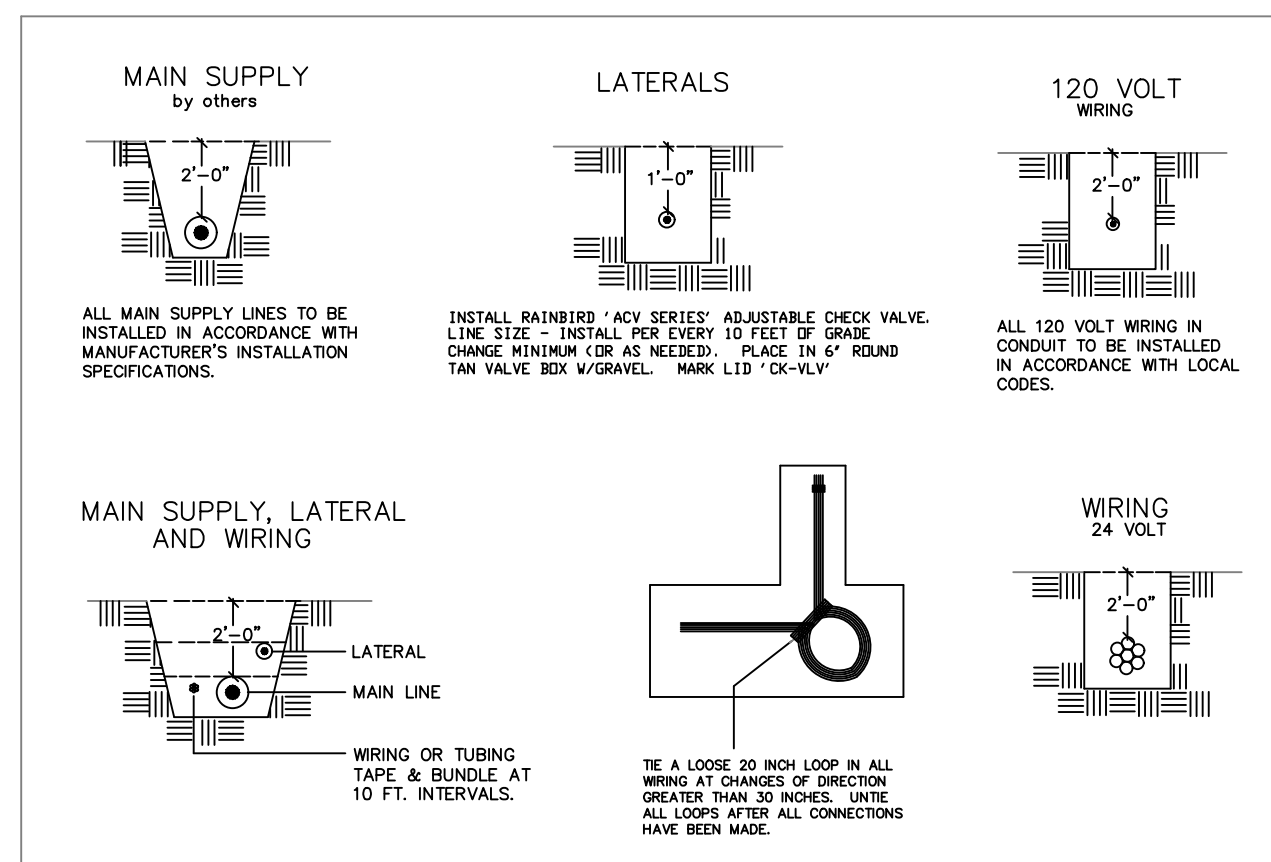
SITE:

Irrigation Plan
David Navarro

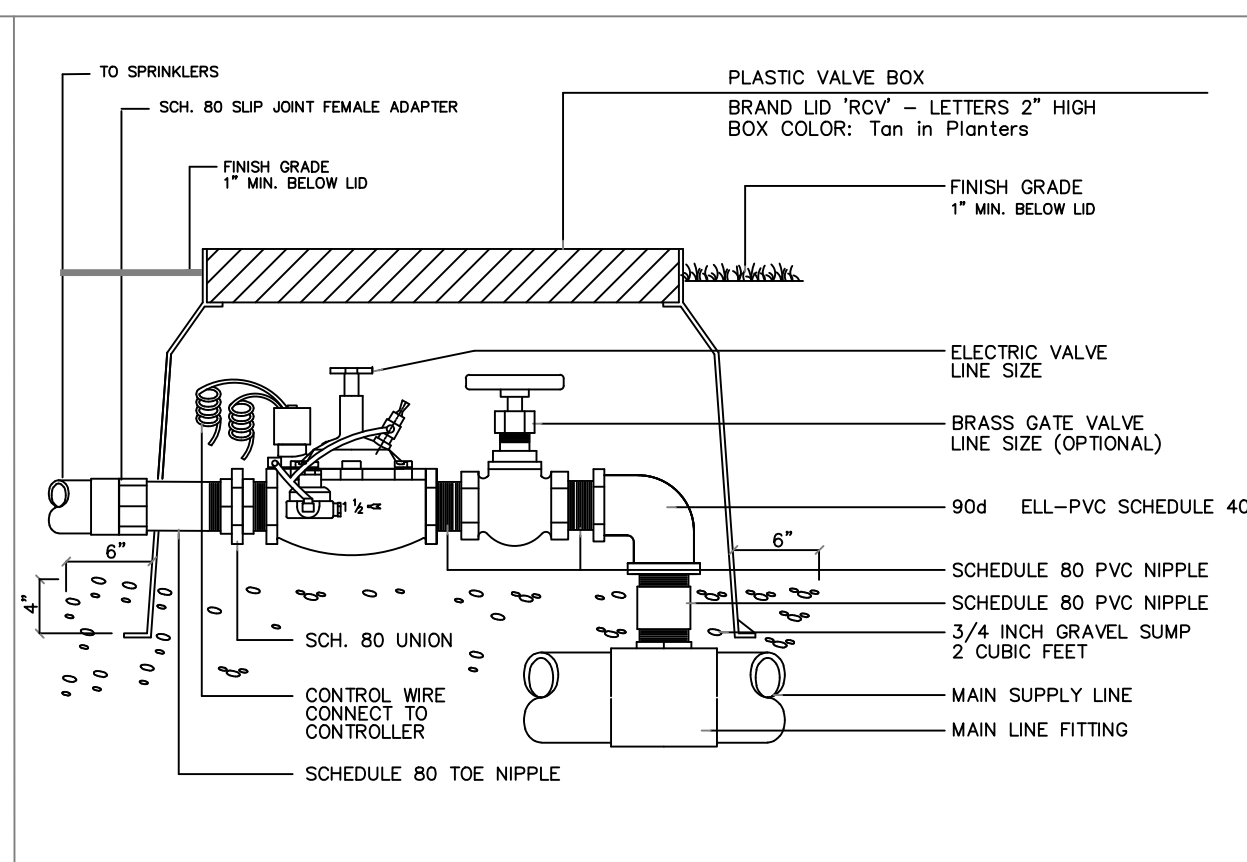
David Navarro

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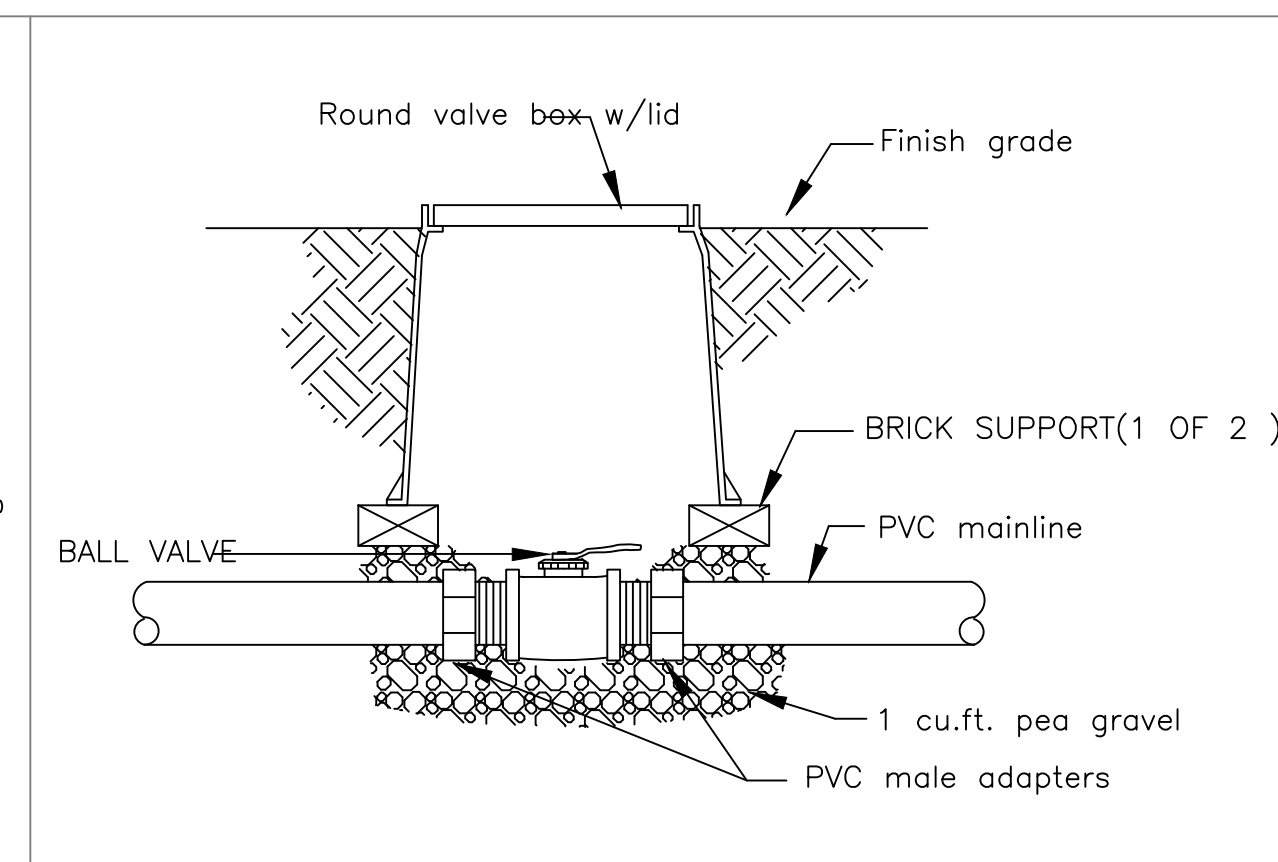
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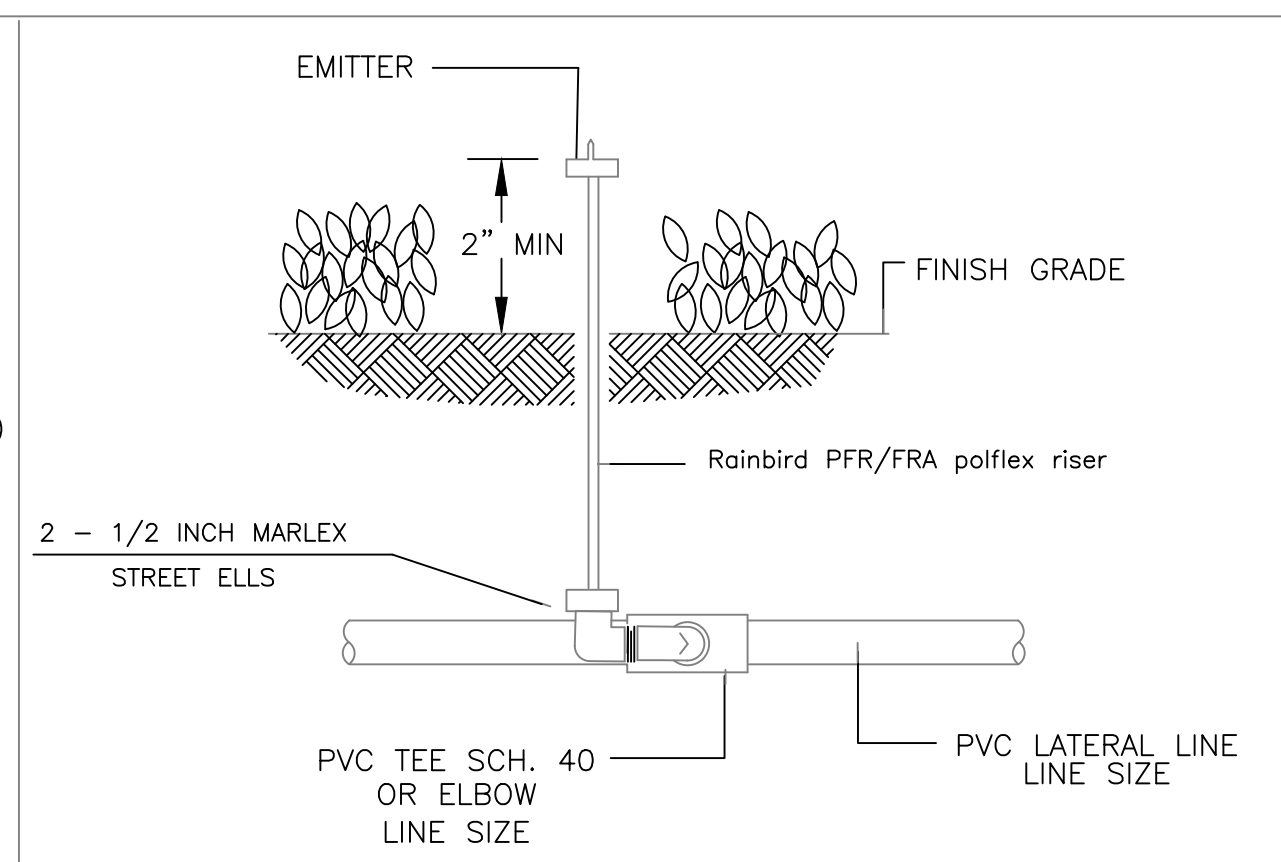
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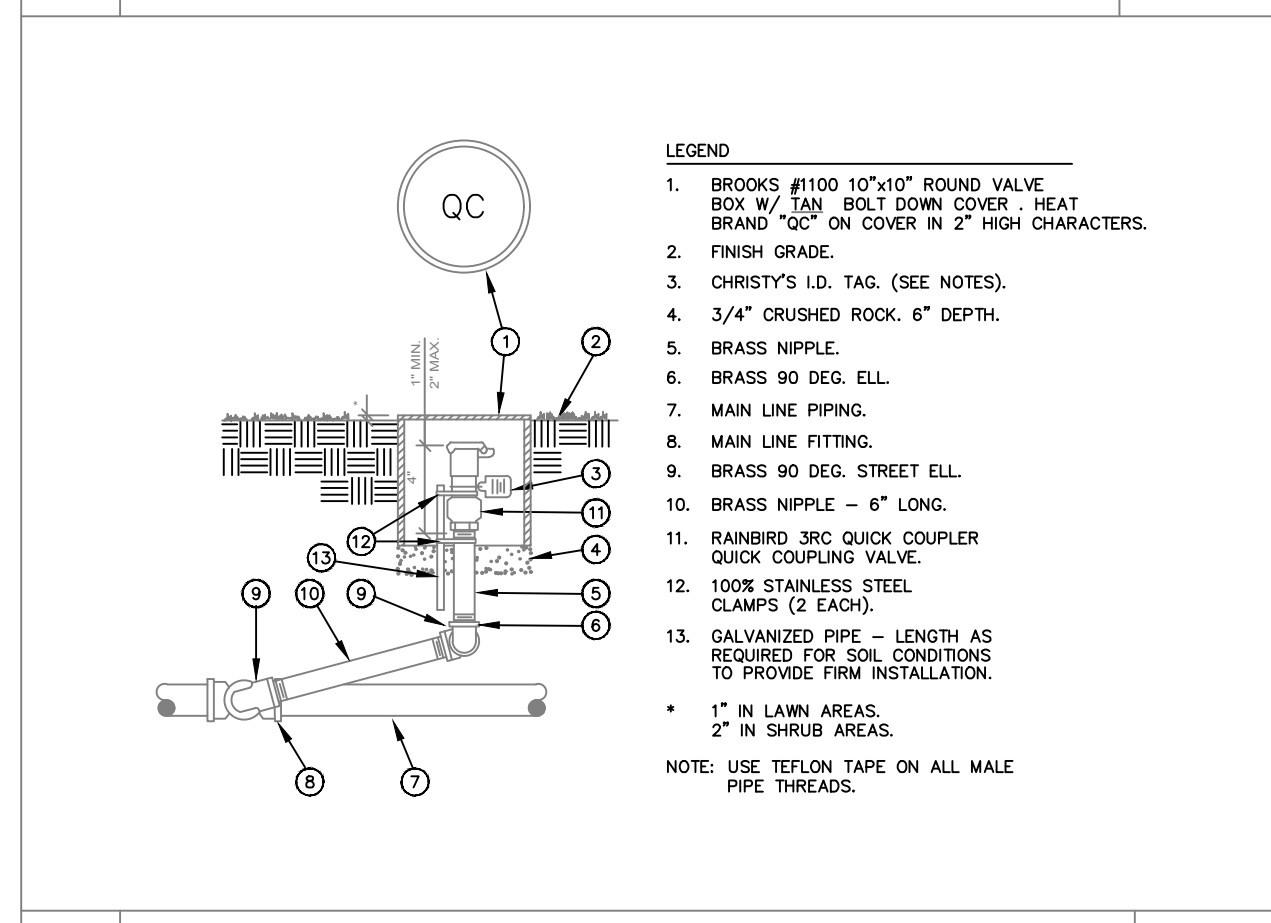
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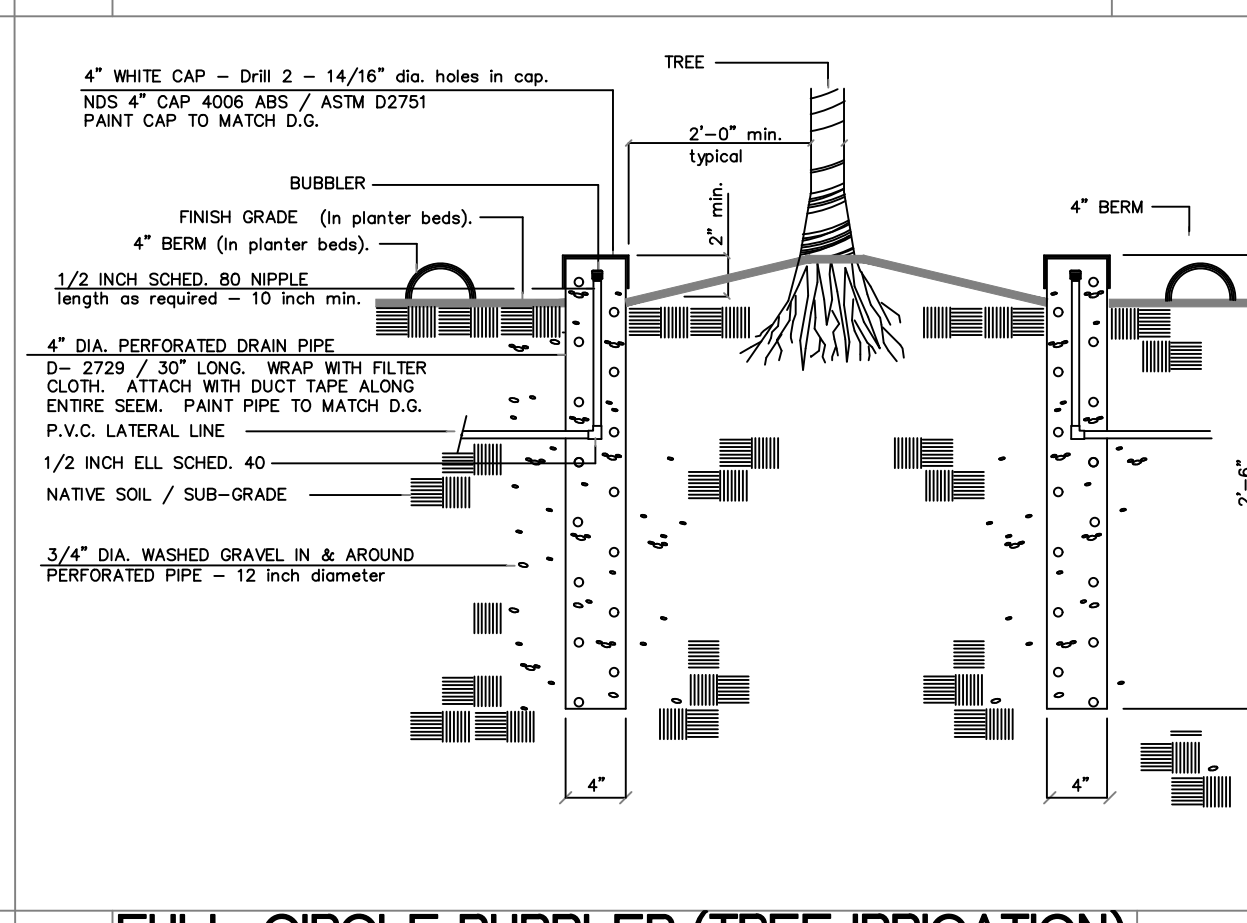
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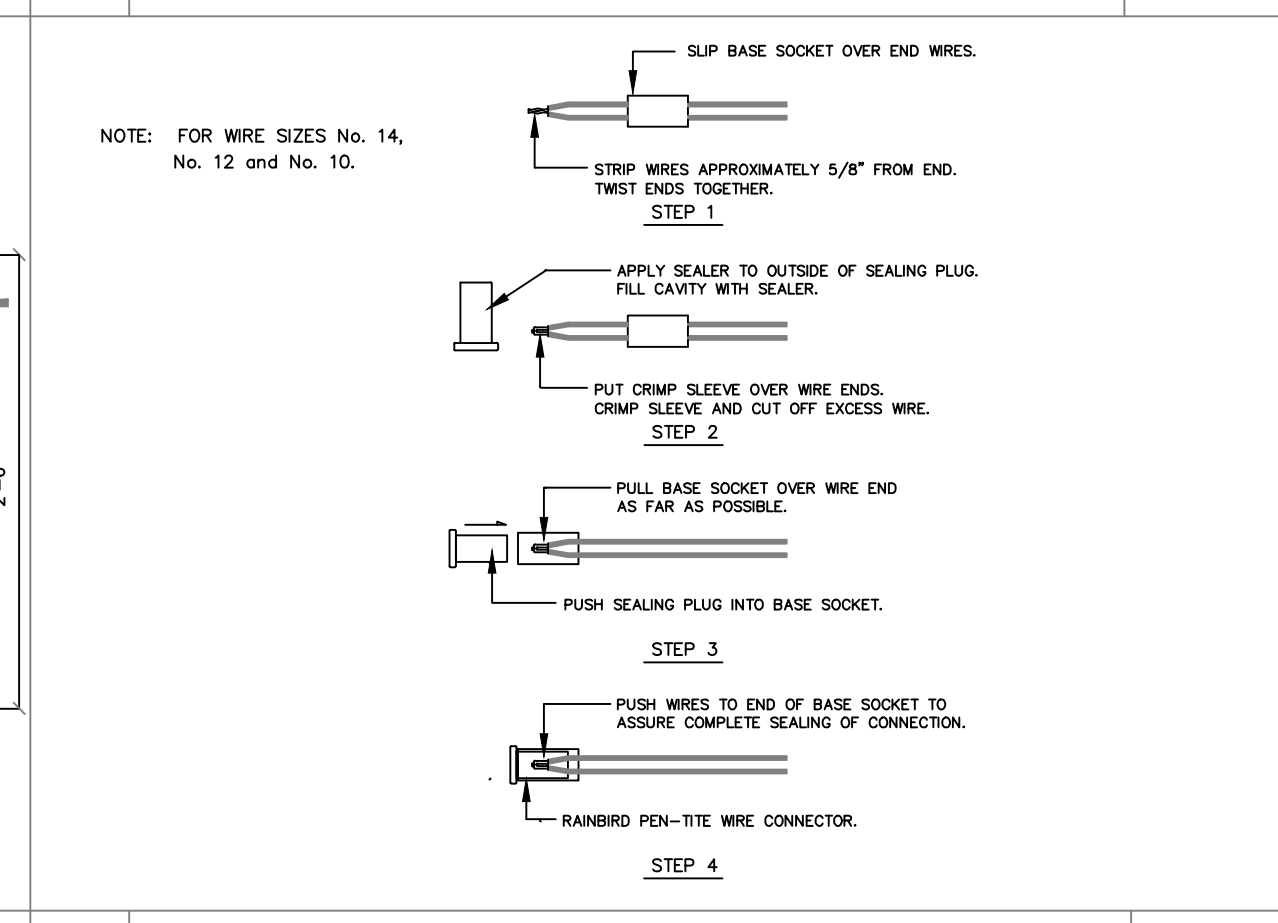
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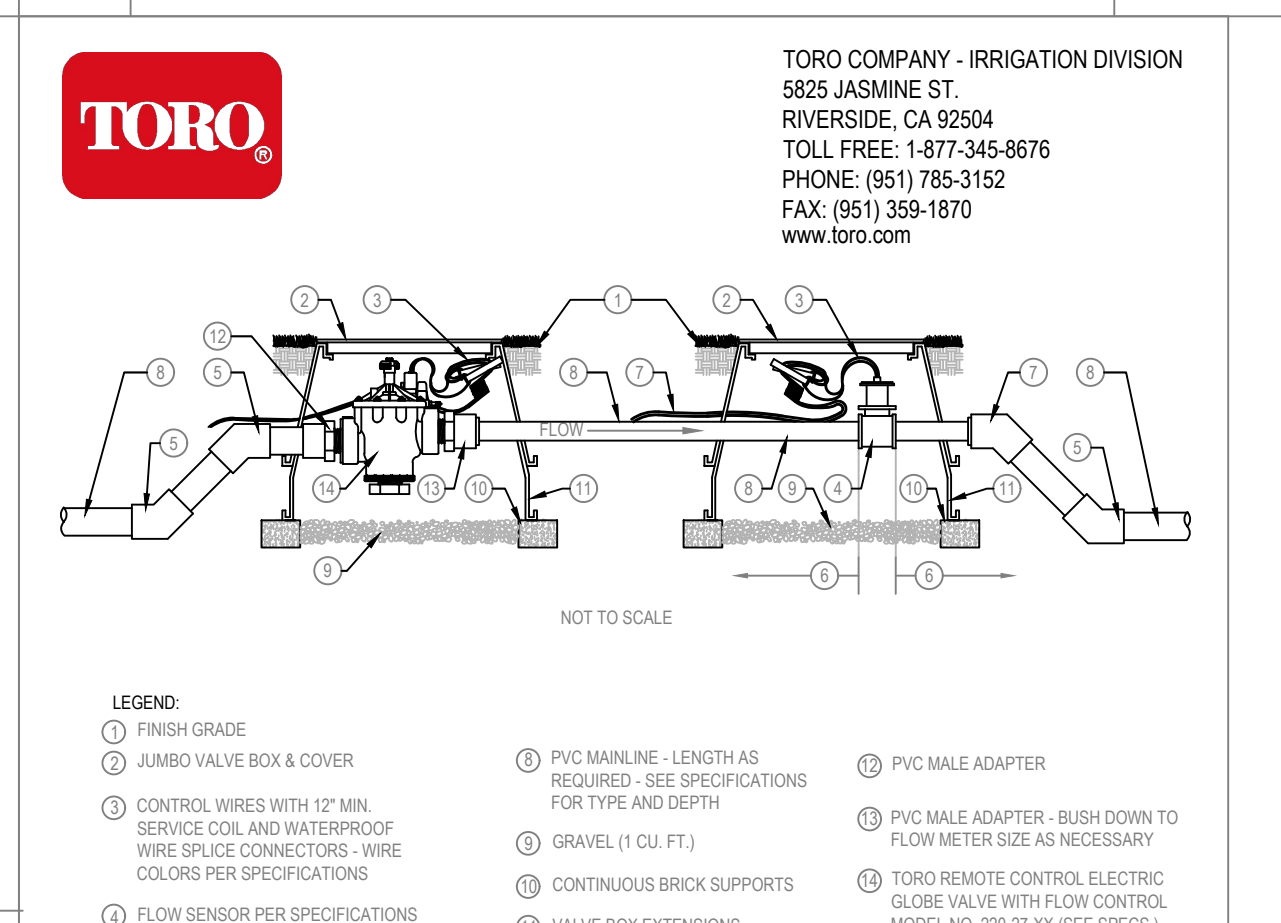
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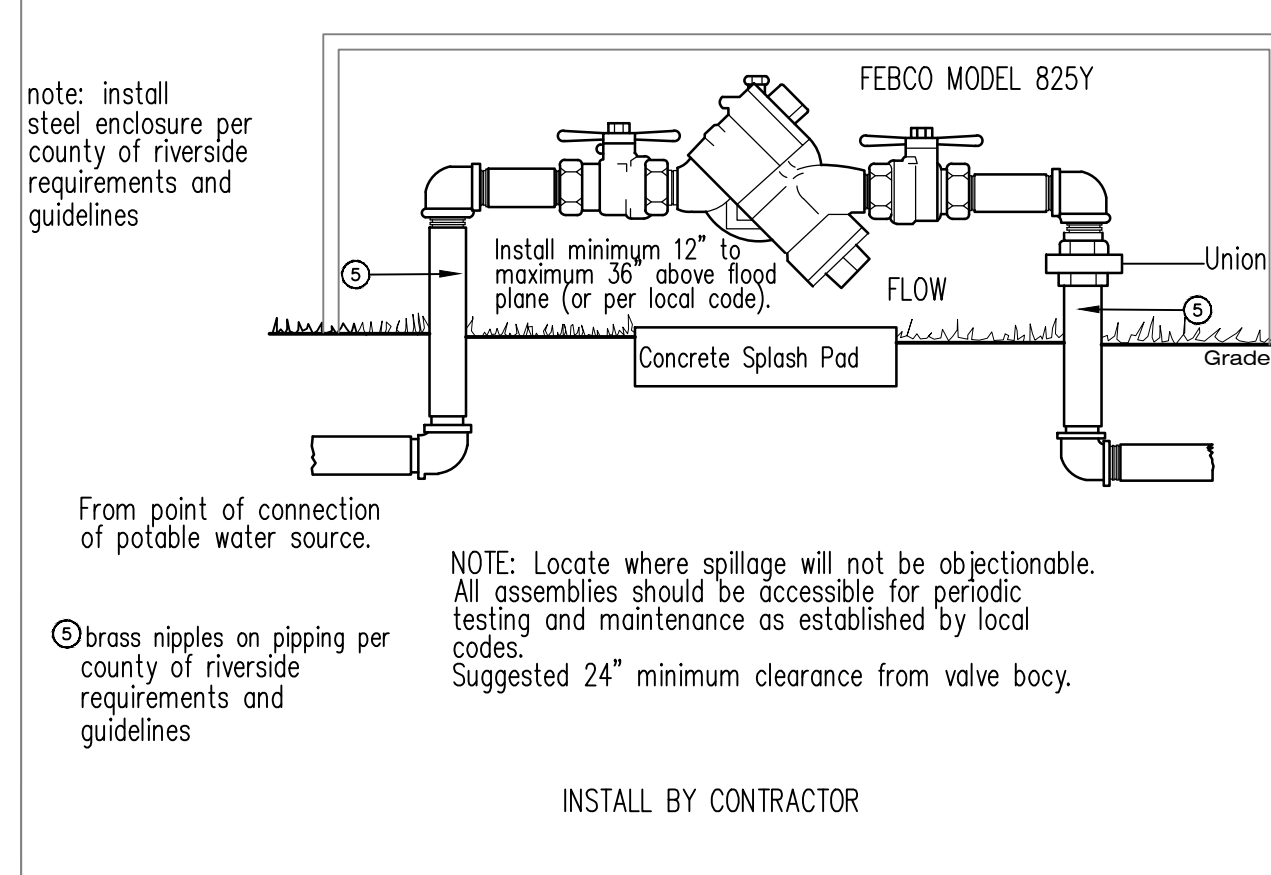
F FULL-CIRCLE BUBBLER (TREE IRRIGATION) 1401 SERIES ON RISER NO SCALE



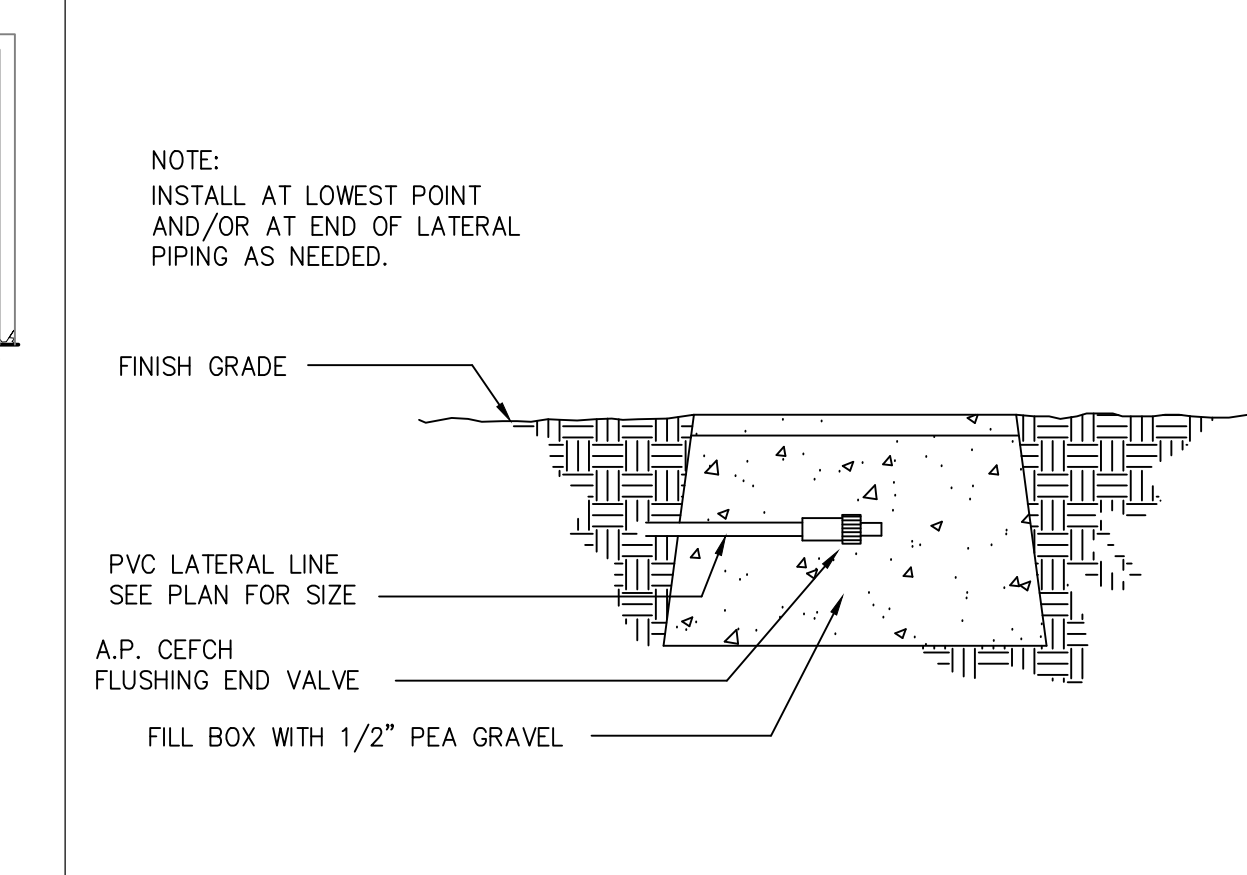
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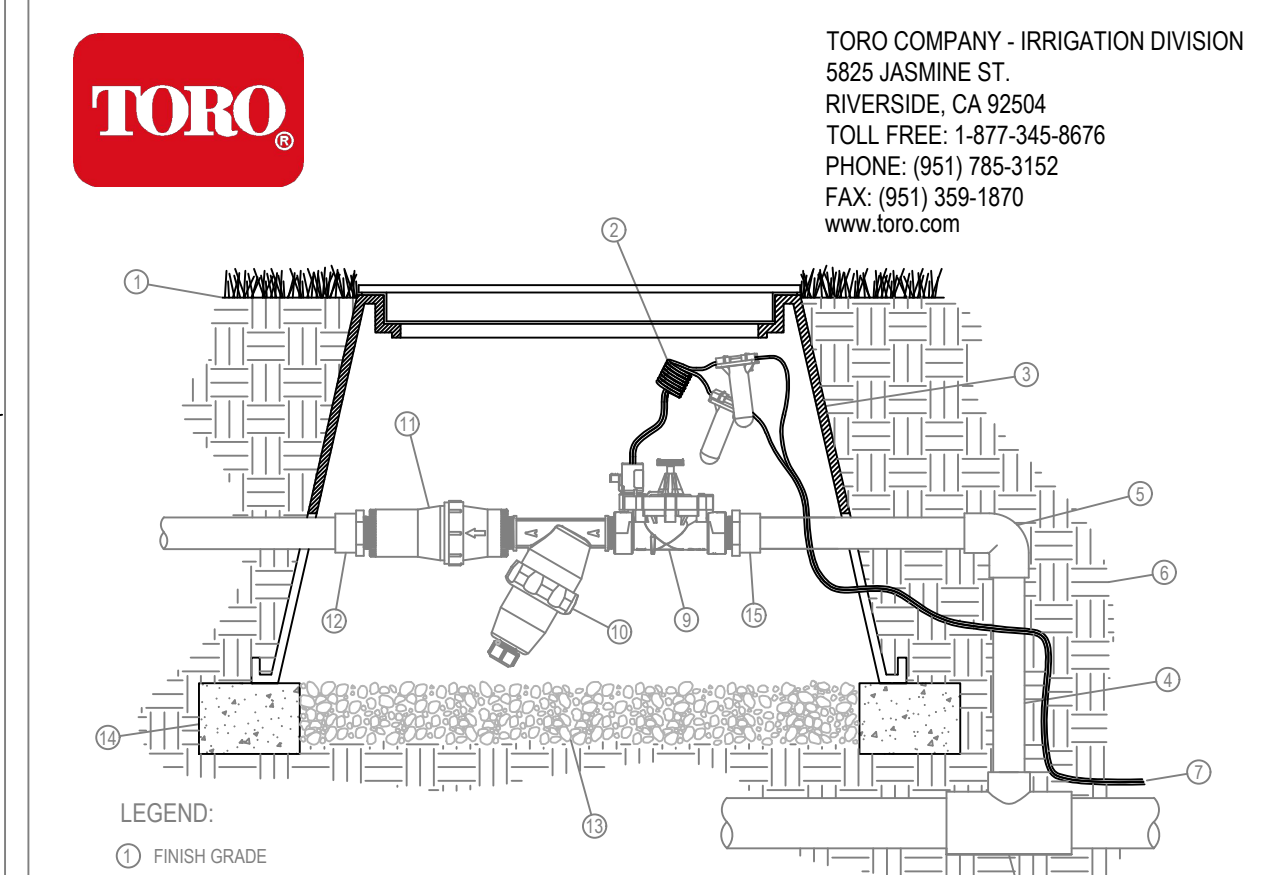
H REDUCED PRESSURE BACKFLOW DETAIL NO SCALE



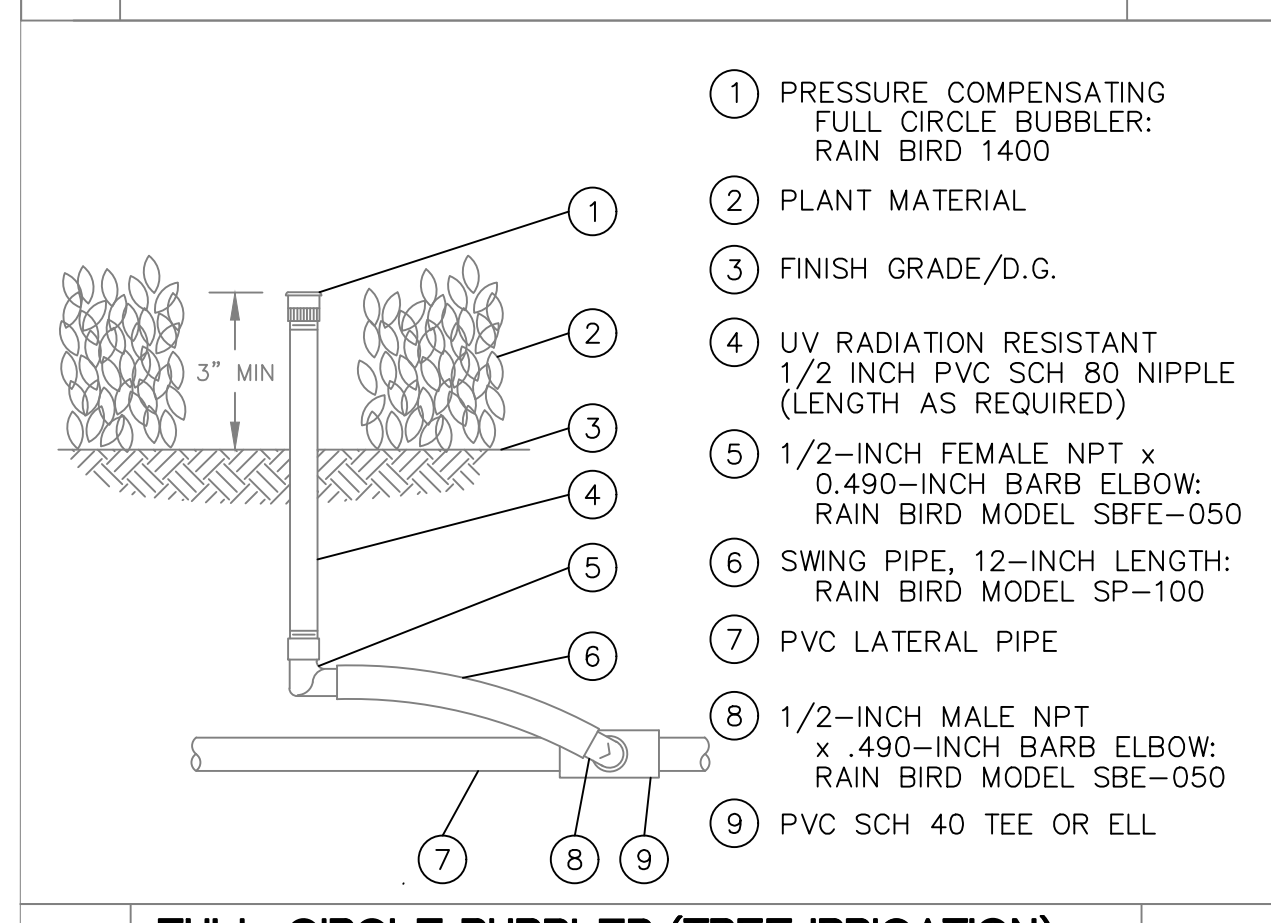
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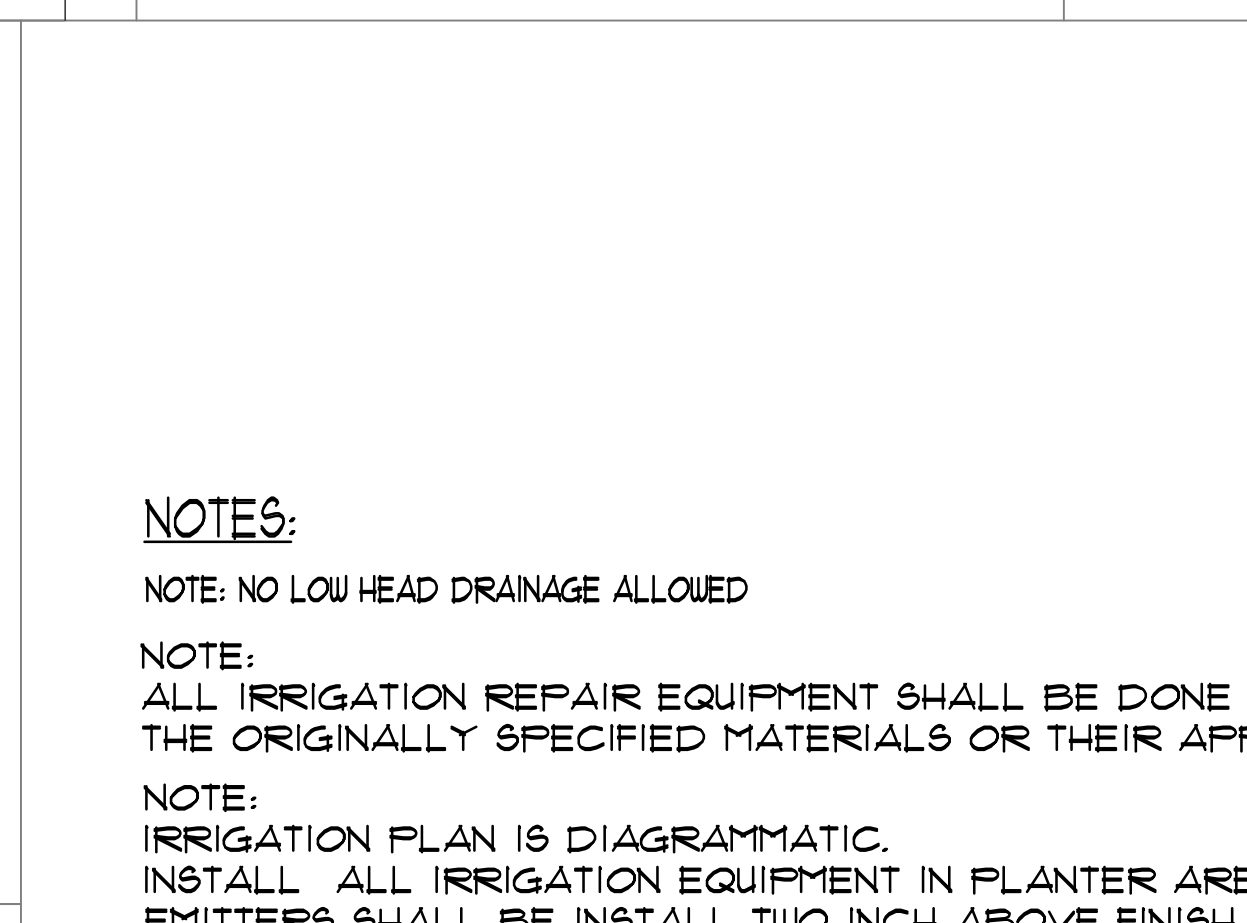
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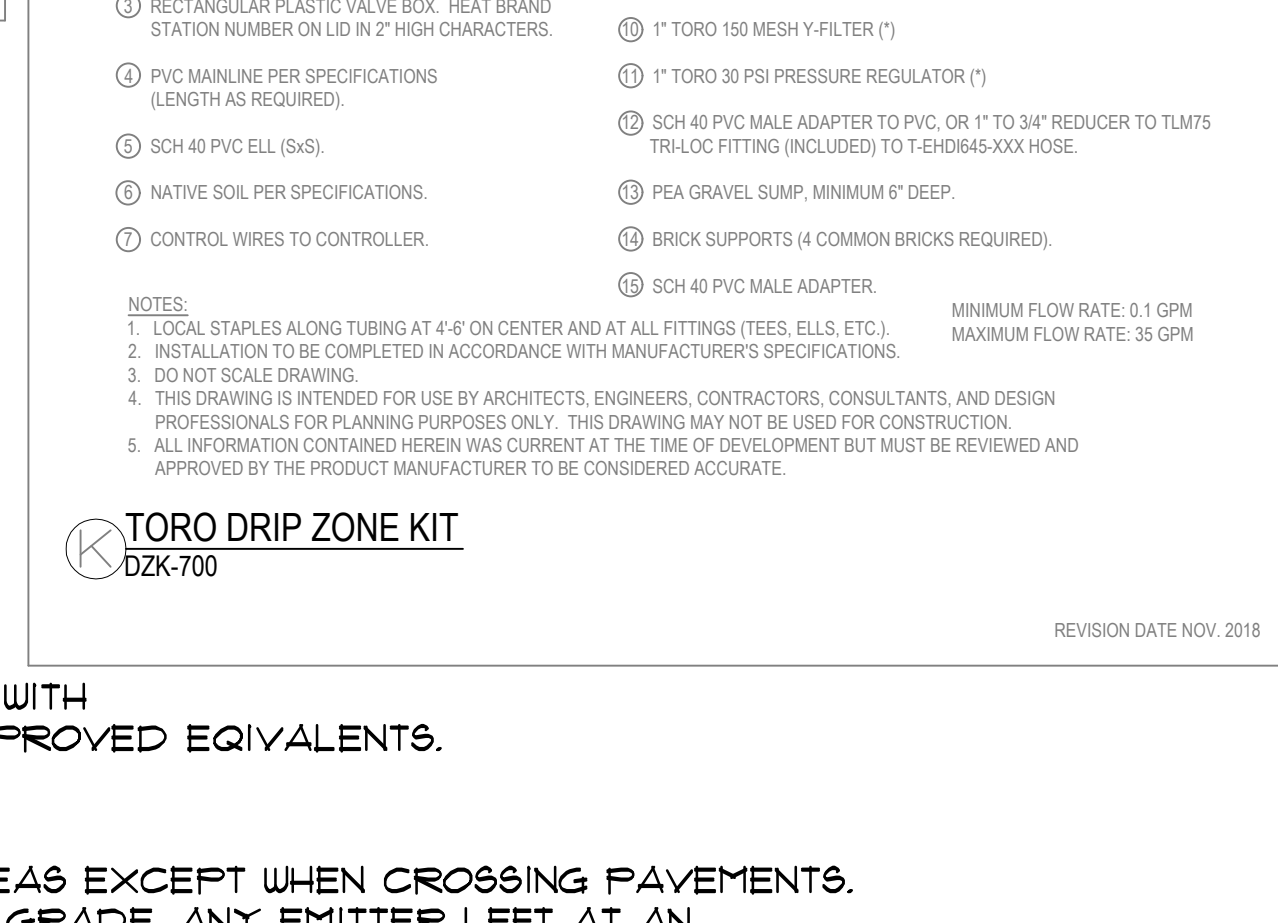
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J FULL-CIRCLE BUBBLER (TREE IRRIGATION) 1401 SERIES ON RISER NO SCALE

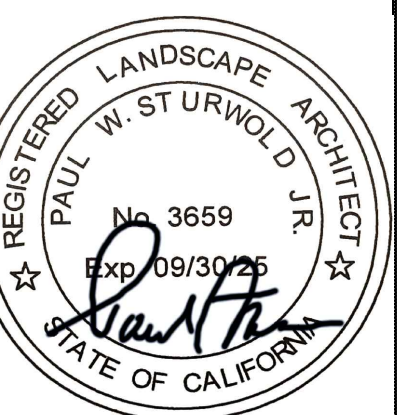


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J FULL-CIRCLE BUBBLER (TREE IRRIGATION) 1401 SERIES ON RISER NO SCALE

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1.00 IRRIGATION SYSTEM SCOPE OF WORK

- A. WORK IN THIS SECTION INCLUDES PROVIDING ALL LABOR, MATERIAL EQUIPMENT, TOOLS, PERMITS, AND TRANSPORTATION NECESSARY TO FURNISH AND INSTALL A COMPLETE IRRIGATION SYSTEM WITH 100% COVERAGE OF DESIGNATED AREAS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.
- B. THE WORK SHALL INCLUDE BUT SHALL NOT BE NECESSARILY BE LIMITED TO THE FOLLOWING UNLESS SPECIFIED OTHERWISE:
 - 1. THE LANDSCAPE CONTRACTOR SHALL VISIT THE CONSTRUCTION SITE, TAKE ALL MEASUREMENTS, AND OBTAIN ANY OTHER INFORMATION NECESSARY FOR A COMPLETE AND CONCLUSIVE BID.
 - 2. ORDERING, FURNISHING, AND INSTALLING MATERIALS FOR COMPLETE SYSTEM INCLUDING PIPING, VALVES, FITTINGS, BACKFLOW PREVENTOR (UNLESS SPECIFIED OTHERWISE), DRIPPER LATERAL LINES, AUTOMATIC CONTROLLER, AND FINAL ADJUSTMENT OF LINES TO INSURE COMPLETE COVERAGE.
 - 3. TRENCHING, STOCKPILING EXCAVATION MATERIALS AND REFILLING TRENCHES, INCLUDING COMPACTION OF BACK FILL AND INSTALLATION OF SLEEVES.
 - 4. LINE VOLTAGE CONNECTIONS TO THE IRRIGATION CONTROLLERS AND LOW VOLTAGE CONTROL WIRING FROM CONTROLLERS TO REMOTE CONTROL VALVES.
 - 5. REPLACEMENT OF UNSATISFACTORY MATERIALS.
 - 6. CLEANUP, INSPECTION AND APPROVAL.
 - 7. OPERATIONAL TESTS.
 - 8. 'AS BUILT' RECORD DRAWINGS, SHOP DRAWINGS, WARRANTIES AND GUARANTEES.
 - 9. VERIFY UNDERGROUND UTILITY LOCATIONS.

2.00 CODES, PERMITS, FEES, LICENSE AND INSURANCE:

- A. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE, THE PLUMBING CODE, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER APPLICABLE STATE AND LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- B. THE LANDSCAPE CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR OF ANY WORK OUTLINED ON THE PLANS OR SPECIFICATIONS THAT IS NOT IN ACCORDANCE WITH APPLICABLE LAWS, CODES, AND REGULATIONS. WITHOUT SUCH NOTICE AND APPROPRIATE MODIFICATIONS BY THE OWNER'S REPRESENTATIVE, THE LANDSCAPE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY WORK EXECUTED WHICH IS CONTRARY TO SUCH LAWS, CODES, AND REGULATIONS.
- C. LICENSE:
ALL WORK SHALL BE PERFORMED BY A C-21 CALIFORNIA LICENSED LANDSCAPE IRRIGATION CONTRACTOR.
- D. PERMITS AND INSPECTIONS:
THE LANDSCAPE CONTRACTOR SHALL OBTAIN, COORDINATE, AND PAY FOR ANY PERMITS, FEES, AND AGENCY INSPECTIONS AS REQUIRED AND SUBMIT ALL CERTIFICATES OF APPROVAL UPON COMPLETION OF WORK.
- E. INSURANCE:
THE LANDSCAPE CONTRACTOR SHALL CARRY ALL WORKER'S COMPENSATION, PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE AS REQUIRED BY ALL APPLICABLE CODES, REGULATIONS, AND THE GENERAL CONTRACTOR.
- F. SITE VERIFICATION:
PRIOR TO COMMENCEMENT OF WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS NECESSARY TO ACHIEVE THE INTENDED DESIGN OF THE IRRIGATION SYSTEM. ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR.
- G. COORDINATION:
THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THIS WORK WITH ALL OTHER TRADES. THIS INCLUDES, BUT IS NOT LIMITED TO, PROVISIONS FOR RACEWAYS AND SLEEVING AS WELL AS WATER AND POWER SOURCES. ALL IRRIGATION WORK SHALL BE COORDINATED WITH AND APPROVED BY OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR.
- H. SCHEDULING:
THE LANDSCAPE CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR NOT LESS THAN TWO (2) WORKING DAYS IN ADVANCE OF ANY REQUESTED OBSERVATION.
 - 1. LAYOUT OF WORK:
 - 1. THE LANDSCAPE CONTRACTOR SHALL STAKE OUT THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS. THESE AREAS SHALL BE CHECKED BY THE LANDSCAPE CONTRACTOR AND OWNER'S REPRESENTATIVE /GENERAL CONTRACTOR BEFORE CONSTRUCTION IS STARTED. ANY CHANGES, DELETIONS SHALL BE DETERMINED AT THIS CHECK.
 - 2. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ADHERENCE TO THE CONTRACT DOCUMENTS RELATIVE TO EQUIPMENT TYPE, SIZE INSTALLATION, AND LOCATION. HOWEVER, THE LANDSCAPE CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS, MODIFICATIONS, AND REVISIONS TO THE IRRIGATION SYSTEM, AS REQUIRED, TO CONFORM TO SIZE CONDITIONS AND TO PROVIDE CONSISTENT 100% COVERAGE OF ALL IRRIGATION AREAS.
 - 3. ANY DEVIATION FROM THE CONTRACT DOCUMENTS SHALL BE VERIFIED WITH THE OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR PRIOR TO ANY IRRIGATION SYSTEM INSTALLATION. THE LANDSCAPE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ADJUSTMENTS TO ANY MATERIAL OR WORK THAT IS NOT APPROVED.

3.00 SUPERVISION AND WORKMANSHIP:

THE LANDSCAPE CONTRACTOR, PERSONALLY OR THROUGH AN AUTHORIZED AND COMPETENT REPRESENTATIVE, SHALL SUPERVISE THE WORK CONSTANTLY, AND SHALL AS FAR AS POSSIBLE KEEP THE SAME FORMAN AND WORKMAN ON THE JOB FROM COMMENCEMENT TO COMPLETION. THE WORKMANSHIP OF THE ENTIRE JOB MUST IN EVERY WAY BE FIRST CLASS, AND ONLY EXPERIENCE AND COMPETENT WORKMEN WILL BE ALLOWED ON THE JOB.

4.00 GUARANTEE:

- A. ALL MATERIAL AND WORKMANSHIP SHALL BE GUARANTEED AND SHALL PERFORM TO THE COMPLETE SATISFACTION OF OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR FOR A MINIMUM OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE OF THE JOB. DURING THIS GUARANTEE PERIOD, ALL REQUIRED REPAIRS AND ADJUSTMENTS, INCLUDING ADJUSTMENT TO GRADE, SHALL BE MADE WITHOUT ADDITIONAL EXPENSE FOR REPAIRS TO OTHER WORK.
- B. ALL DAMAGE TO PAVING, PLANTING, STRUCTURES, AND OTHER IMPROVEMENTS DUE TO SETTLEMENT OF IMPROPERLY COMPACTED TRENCH BACKFILL SHALL BE PROMPTLY REPAIRED TO THE SATISFACTION OF OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR AT NO ADDITIONAL EXPENSE.
- C. THIS GUARANTEE EXCLUDES THEFT, VANDALISM, NATURAL DISASTER, OR WORK ON THE SYSTEM BY OTHERS AFTER FINAL ACCEPTANCE. THE LANDSCAPE CONTRACTOR SHALL CHECK, CLEAN, AND ADJUST ALL IRRIGATION LATERAL LINES AND OTHERWISE INSURE ADEQUATE OPERATION OF THE SYSTEM THROUGHOUT THE GUARANTEE PERIOD.

5.00 MATERIALS:

- A. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODES, THE UNIFORM PLUMBING CODES, PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION; AND OTHER APPLICABLE STATE OR LOCAL LAWS OR REGULATIONS. NOTHING IN THESE DRAWINGS OR SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- B. ALL EQUIPMENT SHALL BE AS LISTED IN THE LEGEND, DETAILS, AND SPECIFIED HEREIN. INSTALL ALL EQUIPMENT PER DETAILS AND SPECIFICATIONS OR MANUFACTURER'S RECOMMENDATIONS. ANY SUBSTITUTIONS SHALL BE APPROVED BY OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR IN WRITING. ANY UNSPECIFIED EQUIPMENT SHALL BE REPLACED AT LANDSCAPE CONTRACTOR'S EXPENSE.
- C. WHEN THE SPECIFICATIONS CALL FOR MATERIALS OR CONSTRUCTION OF A BETTER QUALITY OR LARGER SIZE THAN REQUIRED BY THE ABOVE MENTIONED RULES AND REGULATIONS, THE SPECIFICATIONS SHALL TAKE PRECEDENCE OVER THE REQUIREMENTS OF THE SAID RULES AND REGULATIONS. THE LANDSCAPE CONTRACTOR SHALL FURNISH WITHOUT ANY EXTRA CHARGE ANY ADDITIONAL MATERIAL AND LABOR WHEN REQUIRED BY THE COMPLIANCE WITH THESE RULES AND REGULATIONS, THOUGH THE WORK BE NOT MENTIONED IN THESE PARTICULAR SPECIFICATIONS OR SHOWN ON THE DRAWINGS.
- D. THE IRRIGATION MATERIAL SHALL INCLUDE BUT SHALL NOT NECESSARILY BE LIMITED TO THE FOLLOWINGS:
 - 1. PLASTIC PIPE:
 - A. EXTENDED FROM 100% VIRGIN POLYVINYL CHLORIDE (PVC). OUTSIDE DIAMETER OF PLASTIC PIPE SHALL BE THE SAME SIZE AS IRON PIPE, WITH PLAIN ENDS, ALL PIPE AND FITTINGS SHALL BE IN ACCORDANCE WITH THE SOCIETY OF PLASTIC INDUSTRY STANDARDS.
 - B. PIPE SHALL BE CONTINUOUSLY AND PERMANENTLY MARKED WITH THE FOLLOWING INFORMATION: MANUFACTURER'S NAME, NORMAL PIPE SIZE ± PVC TYPE, S.D.R. OR PRESSURE RATING ± AND EXTRUSION DATE.
 - C. ALL PLASTIC PIPE SHALL BE HANDLE WITH CARE AND SHALL BE ESPECIALLY PROTECTED FROM PROLONGED EXPOSURE TO SUNLIGHT.
 - D. PROTECT ALL PVC PLASTIC PIPE FROM DAMAGE DURING CONSTRUCTION AND STORAGE.
 - 2. PVC FITTINGS:
 - A. PLASTIC FITTINGS SHALL BE OF POLYVINYL CHLORIDE (PVC), TYPE I, SCHEDULE 40, N.S.F. AND OF IPS SOLVENT WELD OR SCREWED TYPE, LASCO, SLOANE (SAME MANUFACTURER AS OF PIPE), WHERE THREADS ARE REQUIRED, THESE SHALL BE INJECTED MOLDED AND SCHEDULE 80. ALL CONNECTIONS SHALL BE SOLVENT WELDED.
 - B. PLASTIC TO PLASTIC JOINTS SHALL BE SOLVENT-WELD JOINTS. PIPE SOLVENT SHALL BE JOHN'S-MANVILLE 'BLUE' SOLVENT WELD CEMENT.
 - C. PLASTIC TO METAL JOINTS SHALL BE WITH MALE ADAPTERS, THE MALE ADAPTER SHALL BE HAND TIGHTENED, PLUS ONE TURN WITH A STRAP WRENCH. JOINT COMPOUND SHALL BE PERMATEX TYPE II (ONLY SCHEDULE PLASTIC MAY BE THREADED).
 - 3. REMOTE CONTROL VALVES:
 - A. ALL VALVE LOCATIONS ARE SHOWN SCHEMATICALLY ON IRRIGATION PLAN AND NEED TO BE VERIFIED WITH AND APPROVED BY OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR. IRRIGATION VALVES WILL NOT BE ALLOWED IN GRASS AREAS UNLESS APPROVED BY OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR.

6.00 IMPLEMENTATION:

- A. PRIOR TO INSTALLATION, LANDSCAPE CONTRACTOR SHALL VERIFY STATIC PRESSURE AT PROJECT SITE. THIS SYSTEM IS DESIGNED TO OPERATE FROM 22 GPM AT A MAXIMUM STATIC PRESSURE OF 65 PSI. NOTIFY OWNER'S REPRESENTATIVE/GENERAL CONTRACTOR AT THE SITE IMMEDIATELY OF ANY DISCREPANCIES AND PROCEED AS DIRECTED.
- B. IF IRRIGATION SYSTEM IS TO OPERATE FROM THE GOLF COURSE, VERIFY ALL SITE CONDITIONS: GRADING, STATIC PRESSURE, AND POINT OF CONNECTION FOR REMOTE CONTROL VALVES.
- C. COORDINATE THE INSTALLATION OF ALL IRRIGATION MATERIALS, INCLUDING PIPE, WITH THE LANDSCAPE DRAWINGS TO AVOID INTERFERING WITH THE PLANTING OF TREES, SHRUBS OR OTHER PLANT MATERIAL.
- D. ALL IRRIGATION LINES, VALVES, AND WIRING SHOWN ON PLAN UNDER PAVING ARE SCHEMATIC ONLY. INSTALL THESE ITEMS IN PLANTING AREAS WHENEVER POSSIBLE, EXCEPT WHEN LINES MUST CROSS PAVING TO CONNECT PLANTING AREAS OR UNLESS NOTED ON PLAN.
- E. IRRIGATION DESIGNER SHALL APPROVE ALL DESIGN CHANGES DUE TO SITE PLAN CHANGES, OR SCALING ERRORS IN IRRIGATION PLAN TO GUARANTEE 100% SPRINKLER COVERAGE. IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR 100% COVERAGE WHEN INFIELD CHANGES ARE MADE WITHOUT APPROVAL FROM IRRIGATION DESIGNER.
- F. IRRIGATION DESIGNER SHALL NOT BE RESPONSIBLE FOR IMPROPER OPERATION OF SYSTEM DUE TO LANDSCAPE CONTRACTOR NOT INSTALLING THE IRRIGATION SYSTEM PER PLAN, POOR WORKMANSHIP, INCORRECT PIPE SIZING THAN SPECIFIED ON PLANS OR INADEQUATE STATIC PRESSURE FROM WATER SOURCE. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO NOTIFY THE IRRIGATION DESIGNER OF ANY SITE OR EQUIPMENT CHANGES ON APPROVED IRRIGATION PLANS PRIOR TO ANY INSTALLATION OF THE IRRIGATION SYSTEM SO AS TO PROVIDE DESIGN MODIFICATIONS.
- G. PROVIDE OWNER OR HIS REPRESENTATIVE WITH ALL OPERATING INSTRUCTIONS, TOOLS, KEYS, ETC. AS REQUIRED FOR OPERATION AND MAINTENANCE OF THE IRRIGATION SYSTEM.
- H. LANDSCAPE CONTRACTOR SHALL ALSO PROVIDE OWNER WITH TWO (2) SETS OF 'AS BUILT DRAWINGS' OF THE INSTALLED IRRIGATION SYSTEM.
- I. RECORD ACCURATELY ON ONE SET OF REPRODUCIBLE PRINTS OF THE DRAWINGS, A RECORD PLAN DRAWING SHOWING ANY CHANGES. KEEP IT UP-TO-DATE AS THE PROJECT IS UNDER CONSTRUCTION. IN ADDITION, DIMENSION FOR TWO PERMANENT POINTS OF REFERENCE THE LOCATION OF THE PRESSURE SUPPLY LINE, VALVE PLUG TEES, AND CONTROL WIRE.

7.00 BACKFLOW PREVENTER:

- A. PROVIDE AND INSTALL BACKFLOW PREVENTER UNIT (UNLESS SPECIFIED OTHERWISE) PER STATE AND LOCAL HEALTH DEPARTMENT CODES AND CURRENT LISTINGS. BACKFLOW PROTECTION UNIT SHALL BE LOCATED IN SUCH MANNER AS TO ALLOW FOR SCREENING BY PLANT MATERIAL. REFER TO PLAN FOR LOCATION.

8.00 TRENCHING:

- A. TRENCHING SHALL BE FREE OF ALL ROCKS, DEBRIS, AND SHARP ARTICLES. BACK FILLING SHALL BE ACCOMPLISHED IN A MANNER TO INSURE NO FURTHER SETTLEMENT OF DITCH AND TO MATCH ADJACENT GRADES. NO BACK FILLING SHALL BE DONE UNTIL SCHEDULED OBSERVATION ARE MADE.
- B. CAP OR PLUG OPENINGS AS PIPELINE IS ASSEMBLED TO PREVENT ENTRANCE OF DIRT OR OBSTRUCTION BY FOREIGN OBJECTS. REMOVE CAPS OR PLUGS WHEN NECESSARY TO CONTINUE ASSEMBLY. THIS IS ESPECIALLY CRITICAL FOR DRIP LATERAL LINES.
- C. INSTALL MAINLINE PIPES, LATERAL PIPES, AND WIRING IN COMMON TRENCH WHEREVER POSSIBLE. MAINLINE PIPE SHALL HAVE A MINIMUM OF 24" COVER (30" COVER UNDER ROADS AND STREETS). LATERAL PIPES SHALL HAVE A MINIMUM OF 12" COVER (18" COVER UNDER ROADS AND STREETS). PROVIDE A MINIMUM OF 4" OF SAND ALL AROUND PIPE FOR RUNS UNDER STREETS, DRIVEWAYS, AND VEHICULAR ACCESS AREAS. PROVIDE A MINIMUM 24" COVER FOR ALL WIRING. TAPE AND BUNDLE WIRING AT 10' INTERVALS. TIE A LOOSE 20' LOOP IN ALL WIRING AT CHANGES OF DIRECTION GREATER THAN 30'. UNTIE ALL LOOP AFTER ALL CONNECTIONS HAVE BEEN MADE.

- 4. VALVE BOXES:
 - A. VALVE BOXES SHALL BE GREEN CARSON NO. 910 IN LAWN AREAS AND TAN CARSON NO. 910 IN SHRUB AREAS. MARK LID 'IRRIGATION CONTROL VALVE'. INSTALL 2" ABOVE GRADE IN GROUND COVER AREAS WHEREVER POSSIBLE.
- 5. VALVE CONTROL WIRE:
 - A. VALVE CONTROL WIRE SHALL BE INSTALLED PER CODE. WHEREVER POSSIBLE, PLACE WIRE IN COMMON TRENCH WITH MAINLINE. WIRE SHALL BE UL-APPROVED FOR DIRECT BURIAL IN GROUND, SIZE #14-1 (UNLESS SPECIFIED DIFFERENTLY ON IRRIGATION PLAN) MINIMUM WITH MAXIMUM VOLTAGE DROP OF 5% BETWEEN VALVE AND CONTROLLER. COMMON GROUND WIRE SHALL HAVE WHITE INSULATING JACKET; CONTROL WIRE SHALL HAVE JACKET OF COLOR OTHER THAN WHITE. SPLICES SHALL BE MADE WITH #2006-S BUCHANON SPLICE CAPS AND 3M #516 SCOTCHLOK SEAL PAKS.

9.00 IRRIGATION SYSTEM INSTALLATION PROCEDURES:

- A. IRRIGATION PLAN IS DIAGRAMMATIC. IRRIGATION LATERALS AND MAINLINES SHOWN IN HARDSCAPE IS FOR CLARITY ONLY. INSTALL ALL IRRIGATION EQUIPMENT IN PLANTER BED AREAS. LANDSCAPE CONTRACTOR SHALL VERIFY ACTUAL LOCATION OF POWER SOURCE AND CONTROLLER BEFORE ANY IRRIGATION INSTALLATION.
- B. INSTALL ALL EMITTERS AND TREE BUBBLERS ON UPHILL SIDE OF PLANT MATERIAL. EMITTERS SHALL BE INSTALL TWO (2') ABOVE FINISH GRADE. ANY EMITTER LEFT AT AN UNACCEPTABLE HEIGHT SHALL BE REINSTALLED AT NO COST TO THE OWNER.
- C. VERIFY ACTUAL QUANTITIES AND FINAL LOCATION OF PLANT MATERIAL WITH THE OWNER'S REPRESENTATIVE BEFORE ANY INSTALLATION OF THE IRRIGATION SYSTEM.
- D. INSTALL RAINBIRD PCS SCREENS AS REQUIRED TO ELIMINATE MISTING AND OVERSPRAY UNTO HARDSCAPE, STREETS, AND STRUCTURES.

10.00 IRRIGATION MAINLINE AND LATERAL LINES:

- A. ENTIRE SYSTEM SHALL BE CAPPED AND PRESSURIZED TO 125 PSI AND SHALL REMAIN SO FOR A SIX (6) HOUR PERIOD. CHECK ALL JOINTS AND CONNECTIONS FOR LEAKS. REPAIR AND CORRECT AS NECESSARY.
- B. THE ENTIRE SYSTEM SHALL BE FLUSHED PRIOR TO INSTALLATION SHALL INSTALL ANTI-DRAIN CHECK VALVES (PRIMARILY ON SLOPE AREAS) TO ALLEVIATE LOW HEAD DRAINAGE/EROSION. OF SPRINKLER HEADS. WHEREVER NECESSARY, LANDSCAPE CONTRACTOR

12.00 AUTOMATIC CONTROLLER:

- A. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL ELECTRICAL CONNECTION FINAL CONTROLLER LOCATION SHALL BE VERIFIED WITH AND APPROVED BY OWNER'S REPRESENTATIVE /GENERAL CONTRACTOR.
- B. ATTACH A TYPEWRITTEN LEGEND INSIDE EACH CONTROLLER DOOR, STATING THE AREAS COVERED BY EACH REMOTE CONTROL VALVE.

13.00 COVERAGE TEST:

- A. WHEN THE SPRINKLER SYSTEM IS COMPLETED, THE LANDSCAPE CONTRACTOR, IN THE PRESENCE OF THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE, SHALL PERFORM A TEST WHICH INDICATES THE WATER COVERAGE AFFORDED THE PLANTING AREAS IS COMPLETE, ADEQUATE, AND DOES NOT SPRINKLE ANY STRUCTURE WALLS, WALKS OR PAVED AREAS. THE LANDSCAPE CONTRACTOR SHALL FURNISH ALL MATERIALS AND PERFORM ALL WORK REQUIRED TO CORRECT ANY INADEQUACIES DISCLOSED.

14.00 CLEAN UP:

- A. DURING CONSTRUCTION, THE LANDSCAPE CONTRACTOR SHALL KEEP PREMISES AS CLEAR AS POSSIBLE OF MATERIAL AND DEBRIS.
- B. UPON COMPLETION OF THE WORK UNDER THIS SECTION, THE LANDSCAPE CONTRACTOR SHALL REMOVE FROM THE PREMISES ALL SURPLUS MATERIAL, TOOLS, EQUIPMENT, RUBBISH, AND DEBRIS RESULTING FROM HIS WORK, AND SHALL LEAVE THE INSTALLATION SITE IN A CLEAN, NEAT CONDITION.

NOTES:

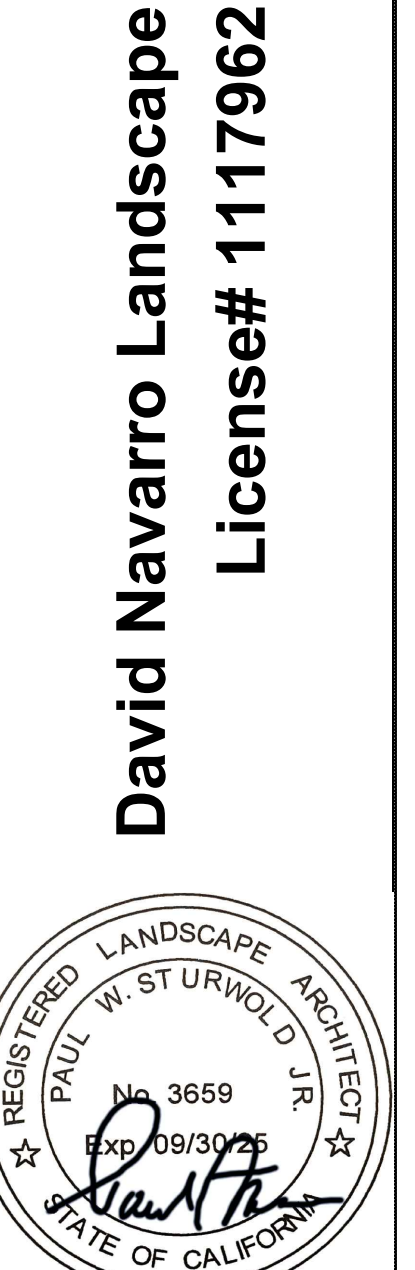
NOTE: NO LOW HEAD DRAINAGE ALLOWED

NOTE:

ALL IRRIGATION REPAIR EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY SPECIFIED MATERIALS OR THEIR APPROVED EQUIVALENTS.

NOTE:

IRRIGATION PLAN IS DIAGRAMMATIC. INSTALL ALL IRRIGATION EQUIPMENT IN PLANTER AREAS EXCEPT WHEN CROSSING PAVEMENTS. EMITTERS SHALL BE INSTALL TWO INCH ABOVE FINISH GRADE. ANY EMITTER LEFT AT AN UNACCEPTABLE HEIGHT SHALL BE REINSTALLED AT NO COST TO THE OWNER. VERIFY ACTUAL QUANTITIES AND FINAL LOCATION OF PLANT MATERIAL WITH THE OWNER'S REPRESENTATIVE BEFORE ANY INSTALLATION OF THE IRRIGATION SYSTEM. LANDSCAPE CONTRACTOR SHALL VERIFY CONTROLLER ACTUAL SIZE, POWER SOURCE AND LOCATION AT TIME OF INSTALLATION.



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Drawn: DN	
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