U.S.A. AT 1-800-642-2444 OR 1-800-227-2600 TO FIELD LOCATE ALL EXISTING UTILITIES.

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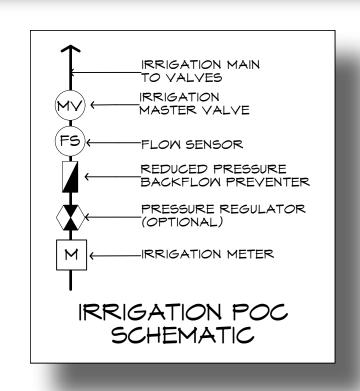
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# BIORETENTION AREAS

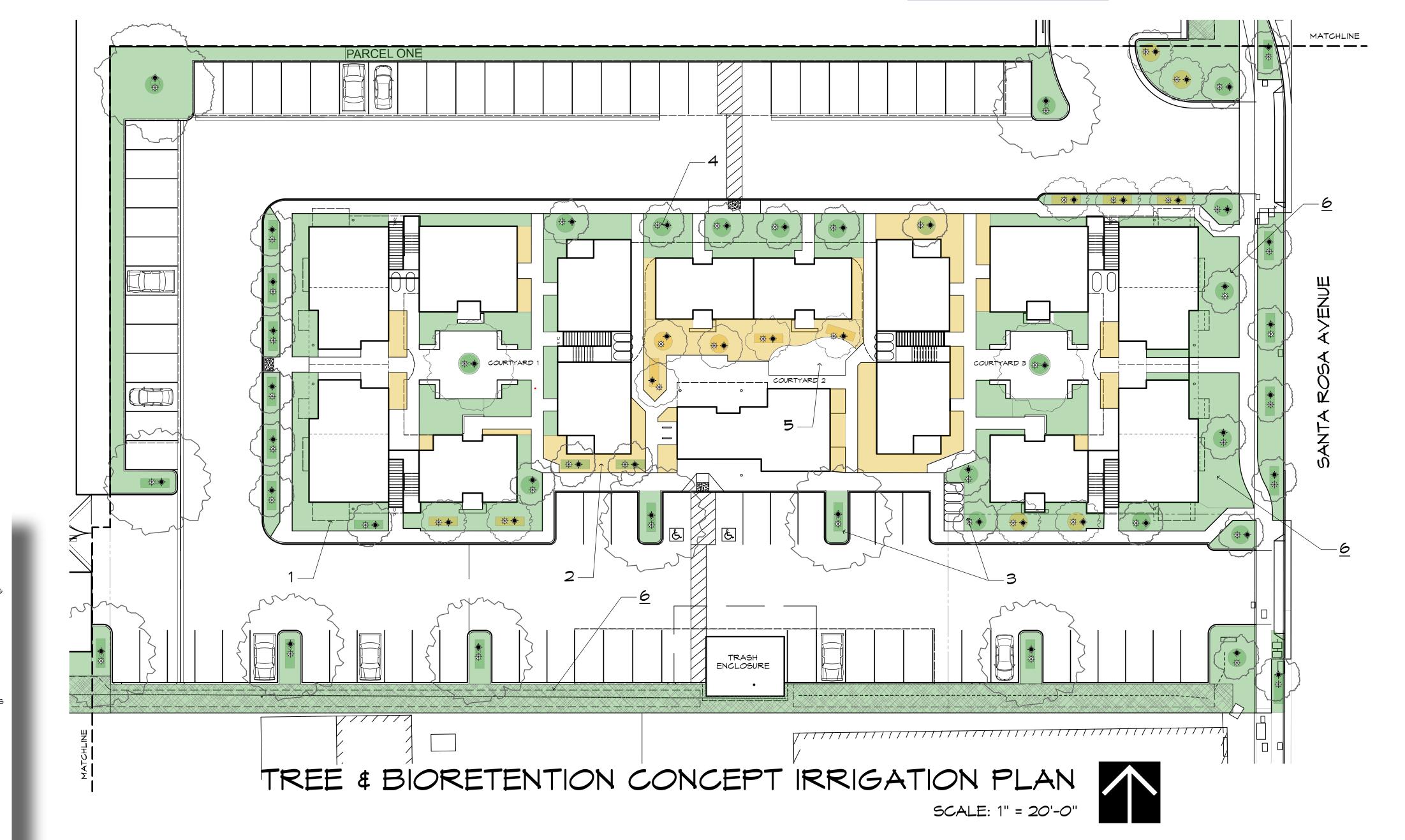
#### SUPPLEMENTAL TEMPORARY IRRIGATION

CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SUPPLEMENTAL IRRIGATION OF ALL BIO-RETENTION AREAS THROUGH THE SOD OR PLANT ESTABLISHMENT PERIOD. METHOD OF IRRIGATION APPLICATION IS DISCRETIONARY AND MAY INCLUDE HAND MATERING OR INSTALLATION OF A TEMPORARY, ABOVE GRADE OVERHEAD SPRAY CIRCUIT. ANY REPLACEMENT NECESSARY FOR LOSS OR DAMAGE TO SOD OR PLANTS DUE TO LACK OF WATER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT CONTRACTOR'S EXPENSE.



### IRRIGATION NOTES

- 1. ALL SPRINKLER HEADS SHALL BE SET PERPENDICULAR TO FINISH GRADE OF THE AREA TO BE IRRIGATED UNLESS OTHERWISE NOTED ON THE PLANS.
- 2. THE SPRINKLER SYSTEM DESIGN IS BASED ON THE MINIMUM STATIC PRESSURE OF 35 PSI AT THE VALVES AND THE MAXIMUM FLOW DEMAND SHOWN ON THE IRRIGATION DRAWINGS AT THE POINT OF CONNECTION. THE IRRIGATION CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION OF THE IRRIGATION SYSTEM. IF THE WATER PRESSURE SHOWN ON THE DRAWINGS DIFFERS FROM THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IMMEDIATELY. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO THE START OF CONSTRUCTION, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
- 3. THE LOCATION OF THE CONTROLLER TO BE VERIFIED BY OWNER. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTING ALL PROPOSED STATIONS TO THE CONTROLLER. CONTROLLER TO BE CONFIGURED TO OPERATE 9 STATIONS. CONTROLLER SHALL BE HUNTER IC-600-M WITH ICM-600 EXPANSION
- 4. ALL CONSTRUCTION IS TO BE PER THE LATEST EDITION OF THE UNIFORM BUILDING CODE.
- 5. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ROOT BARRIERS, ETC. SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY. INSTALL PIPING AND VALVES IN PLANTING AREAS WHERE POSSIBLE, AND LOCATE ELECTRIC CONTROL AND QUICK COUPLING VALVES IN GROUND COVER/SHRUB AREAS, 6" TO 12" AWAY FROM HARDSCAPE OR TURF AREA FOR EASY ACCESS.
- 6. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVER SPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS. THIS SHALL INCLUDE SELECTING THE BEST DEGREE OF ARC TO FIT THE EXISTING SITE CONDITIONS AND THROTTLING THE FLOW CONTROL AT EACH VALVE TO OBTAIN THE OPTIMUM OPERATING PRESSURE FOR EACH SYSTEM.
- 7. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE THEMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, STRUCTURES, AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL EXERCISE EXTREME CARE, AND BE RESPONSIBLE FOR ANY DAMAGE IN EXCAVATING AND WORKING NEAR UTILITIES. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB-CONTRACTORS FOR THE LOCATION OF UTILITIES AND THE INSTALLATION OF PIPE SLEEVES THROUGH MALLS, UNDER ROADMAYS, AND NEAR STRUCTURES. PRIOR TO CONSTRUCTION, CONTACT ALL APPLICABLE
- AGENCIES AND U.S.A. AT 1-800-642-2444 TO FIELD LOCATE ALL EXISTING UTILITIES. 8. FIELD ADJUSTMENTS MAY BE REQUIRED TO PROVIDE OPTIMUM OPERATING EFFICIENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LANDSCAPE ARCHITECT TO REVIEW FIELD ADJUSTMENTS PRIOR TO INSTALLATION. IN THE EVENT THAT NO CONTACT IS MADE WITH THE LANDSCAPE ARCHITECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS.
- 9. SLEEVE ALL IRRIGATION PIPE AND CONTROL WIRES UNDER STREETS AND CONCRETE WALKWAYS WITH THE
- PROPER SIZE CLASS 200 PVC PIPE TO DEPTH AS SPECIFIED. 10. FOR ADDITIONAL INFORMATION, SEE PROJECT DETAILS AND SPECIFICATIONS.
- 11. ALL WORK SHALL CONFORM TO ALL APPLICABLE CITY OF SANTA ROSA CONSTRUCTION STANDARDS.
- 12. NO GALVANIZED IRON PIPE OR FITTINGS SHALL BE ALLOWED.
- 13. A BALL VALVE IN A SEPARATE ROUND VALVE BOX IS TO BE INSTALLED IMMEDIATELY UPSTREAM FROM EACH REMOTE CONTROL VALVE OR GHROUP OF VALVES. VALVE SHALL BE SIZED TO MAINLINE SUPPLY AT THE RC VALVE. SEE DETAIL.
- 14. INSTALL 3" WIDE DETECTABLE TAPE (#3" DTP, AS MANUFACTURED BY T. CHRISTY). TAPE SHALL BE INSTALLED 6" ABOVE THE IRRIGATION MAIN.
- 15. INSTALL ALL LANDSCAPE DRIPLINE BENEATH MULCH. INSTALL ALL TUBING 3" BELOW GRADE, PARALLEL AT SPACING INDICATED. USE LANDSCAPE STAPLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO
- 16. A SIGNED CERTIFICATE OF COMPLETION IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY OF SANTA ROSA. IF THE INSTALLATION OF THE LANDSCAPE DOES MEET OR SUBSTANTIALLY COMPLY WITH THE APPROVED LANDSCAPE CONSTRUCTION DOCUMENTS, THE CERTIFICATE OF COMPLETION WILL NOT BE SIGNED OR APPROVED BY THE
- LANDSCAPE ARCHITECT OF RECORD.



## IRRIGATION AND HYDROZONE KEYNOTES

- 1. GREEN AREA DENOTES LOW MATER USE HYDROZONES
- 2. YELLOW AREA DENOTES MODERATE WATER USE HYDROZONES
- 3. TREE AREA IS CALCULATED AT A WETTED DIAMETER OF 6 FT. OR EQUIVALENT AREA. THE SAME AREA IS REMOVED FROM THE HYDROZONE BELOW THE TREE AND THE HIGHER WATER USE IS APPLIED IN THE ETWU CALCULATION.
- 4. TREE BUBBLERS, TWO PER TREE. ONE ABOVE GRADE STREAM BUBBLER AND ONE SUB-SUFACE BUBBLER
- 5. LAWN AREAS WITH ECO-MAT, TYP.
- 6. BIORETENTION AREAS WITH ECO-MAT, TYP.

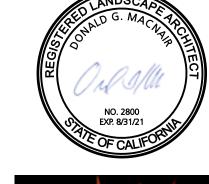
# IRRIGATION LEGEND

SYMBOL	EQUIPMENT	MANUFACTURER	MODEL	REMARKS	
$\boxtimes$	STREAM BUBBLER: 6" POP-UP	HUNTER	PROS-06-CV-R-PRS30-MSBN-25Q	TREE WELL BUBBLER, AIM AT ROOT BALL; 1 PER TREE	
	ROOT WATERING SYSTEM	HUNTER	RZWS-18-25-CV	1 PER TREE	
MV	1" NORMALLY CLOSED MASTER VALVE	HUNTER HUNTER HUNTER	ICV-101G	INSTALL DOWNSTREAM FROM BACKFLOW PREVENTER TREE BUBBLER CIRCUIT VALVE; SEE PLAN FOR SIZE DRIP CIRCUIT VALVE	
•	REMOTE CONTROL VALVE: TREE BUBBLER		ICV-101G-AS-ADJ		
	REMOTE CONTROL VALVE: DRIP CIRCUIT		ICZ-101-LF-25, ICZ-101-25		
O	6 STATION BASE CONTROLLER (2 WIRE CONFIGURATION)	HUNTER	IC-600-SS	MOUNT ON PANEL AT EYE LEVEL	
	DUAL DECODER MODULE	HUNTER	DUAL -1, DUAL -2, DUAL -S		
	DUAL SURGE ARRESTOR	HUNTER	DUAL -S		
	DUAL DECODER OUTPUT MODULE	HUNTER	DUAL-48M		
(ss)	SOLAR SYNC SENSOR (WIRELESS)	HUNTER	WSS-SEN	MOUNT AT ROOF LINE ABOVE CONTROLLER LOCATION	
	R.P. BACKFLOW PREVENTER - 1"	FEBCO	860U		
E-[•]	BACK FLOW PREVENTER ENCLOSURE	LE MEUR	BF 18" X 30" X 30"	INSTALL PER MANUF. SPECS	
•	QUICK COUPLER W/ COVER	CHAMPION	QCV-075V	SEE PLAN FOR SIZE	
M	BALL VALVE IN VALVE BOX	WATTS	B6400 SERIES	MATCH MAINLINE SIZE; REFER TO DETAIL	
SEE DETAIL	AUTOMATIC LINE FLUSH VALVE	HUNTER	AFV-T	INST. IN 6" VALVE BOX @ END OF CIRCUIT	
SEE DETAIL	AIR RELIEF VALVE	HUNTER	AVR-075	INST. IN 6" VALVE BOX @ HIGH POINT OF CIRCUIT	
4"0"=	PIPE AND WIRE CHASE	PVC	CL 200	SEE PLAN FOR SIZE	
	SUB-SURFACE BIOSWALE IRRIGATION	HUNTER	ECO-MAT 17MM	INSTALL 4" BELOW GRADE ALL BIOSWALE AREAS	
	POLY TO PVC CONNECTOR W/ COMPRESSION FITTING		SEE DETAIL G/L3		
	LANDSCAPE DRIPLINE	RAINBIRD	XFS-06-12-XX	INSTALL 3" BELOW GRADE @ SPACING SHOWN	
	MAINLINE	PVC	SCH 40 (1-1/2" AND SMALLER)		
	LATERAL	PVC	SCH 40		
FS	FLOW SENSOR	CST	FSI-T10-000	INSTALL AT POINT OF CONNECTION	
M	WATER METER			REFER TO CIVIL DRAWINGS	
12.9/1E	VALVE STATION AND SEQUENCE				
十一 一	ELECTRIC CONTROL VALVE SIZE				
	FLOW RATE IN GALLONS PER MINUTE				

REFER TO SHEET L1.2 FOR IRRIGATION CALCULATIONS

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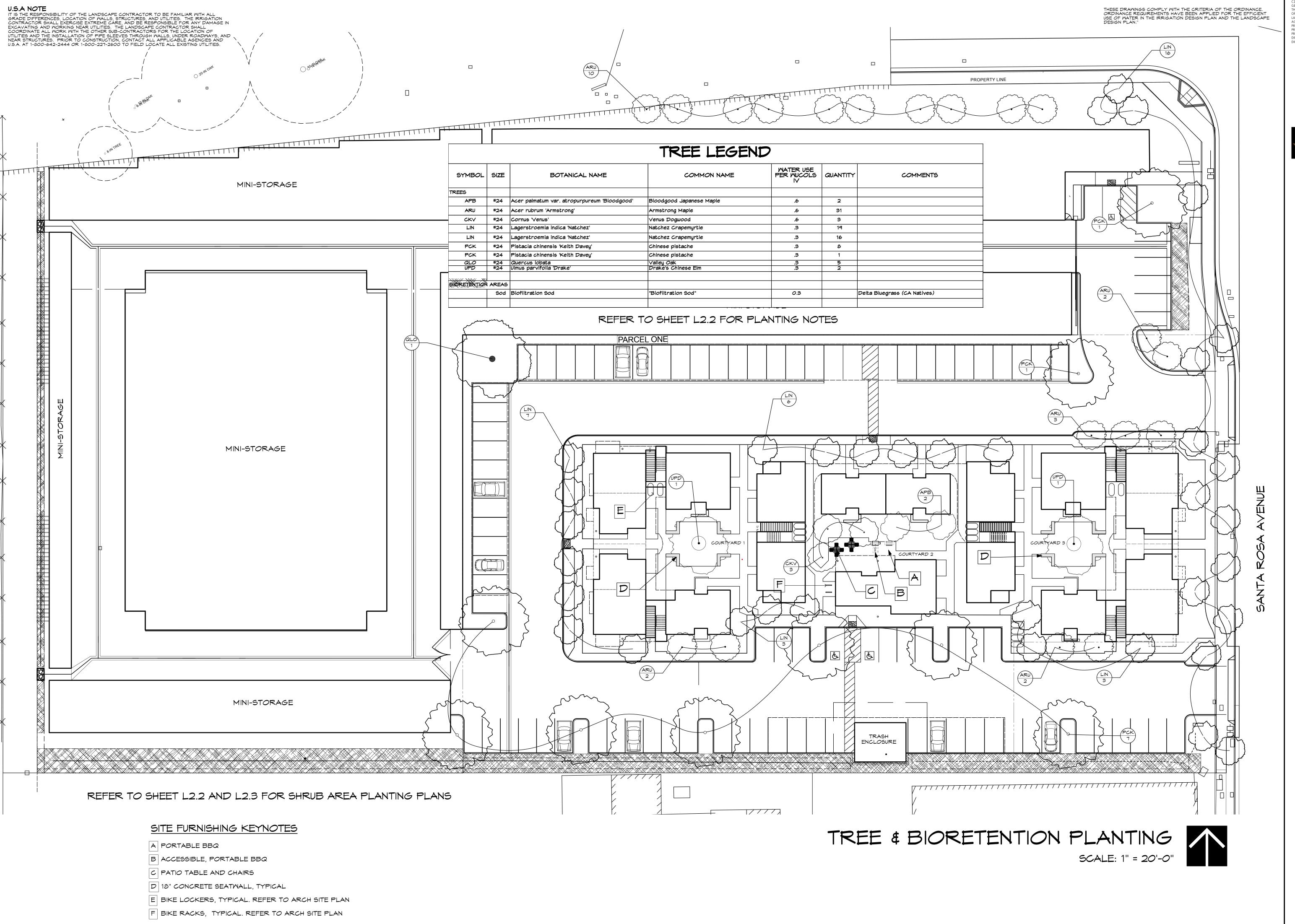
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TREE & BIORETENTION CONCEPT IRRIGATION

SCALE: 1" = 20'-0"



10/11/21 DATE: MLA JOB #: 2020-28 DRAMN:



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don@macnairlandscapes.com

#### CITY REQUIREMENT OF DOCUMENT OF COMPLIANCE

(ITEMS TO BE INCLUDED WITH CERTIFICATE OF COMPLETION)

A. PROJECT APPLICANT MUST SUBMIT DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE CITY WITH CERTIFICATE OF COMPLETION B. THE CERTIFICATE OF COMPLETION MUST BE ACCOMPANIED BY AN IRRIGATION AUDIT THAT

- CONTAINS THE FOLLOWING: ◆ OPERATING PRESSURE OF THE IRRIGATION SYSTEM
- ◆ DISTRIBUTION UNIFORMITY OF OVERHEAD IRRIGATION
- \* PRECIPITATION RATE OF OVERHEAD IRRIGATION \* REPORT OF ANY OVERSPRAY OR BROKEN IRRIGATION EQUIPMENT
- \* IRRIGATION SCHEDULE INCLUDING:
- 1. PLANT ESTABLISHMENT IRRIGATION SCHEDULE
- 2. REGULAR IRRIGATION SCHEDULE BY MONTH (SEE ORDINANCE FOR DETAILS)
- 3. VERIFICATION THAT A DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES IS KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES .
- ♦ ALL LANDSCAPE IRRIGATION AUDITS MUST BE CONDUCTED BY A CITY CERTIFIED LANDSCAPE IRRIGATION AUDITOR OR A THIRD PARTY CERTIFIED LANDSCAPE
- ♦ AN IRRIGATION MAINTENANCE SCHEDULE TIMELINE MUST BE ATTACHED TO THE
- CERTIFICATE OF COMPLETION (SEE ORDINANCE FOR DETAILS) C. IRRIGATION AUDIT: AN IN-DEPTH EVALUATION OF THE PERFORMANCE OF AN IRRIGATION SYSTEM CONDUCTED BY A CERTIFIED LANDSCAPE IRRIGATION AUDITOR (SEE ORDINANCE FOR DETAILS). THE AUDIT MUST BE CONDUCTED IN A MANNER CONSISTENT MITH THE IRRIGATION ASSOCIATION'S LANDSCAPE IRRIGATION AUDITOR CERTIFICATION PROGRAM OR OTHER U.S. EPA "MATERSENSE" LABELED AUDITING PROGRAM.

#### CITY REQUIRED NOTES

- 1. UPON COMPLETION OF INSTALLATION, CONTRACTOR SHALL SUBMIT TO THE ENGINEERING DEVELOPMENT SERVICES INSPECTOR A COMPLETED AND SIGNED "CERTIFICATE OF COMPLETION" STATING THE PROJECT HAS BEEN INSTALLED AS DESIGNED.
- 2. THE CERTIFICATE OF COMPLETION SHALL BE ACCOMPANIED BY AN IRRIGATION AUDIT, IRRIGATION SCHEDULE AND A MAINTENANCE SCHEDULE, AS DESCRIBED IN THE CITY ORDINANCE.
- 3. A FINAL CITY INSPECTION SHALL BE PERFORMED. THE INSTALLATION CONTRACTOR SHALL ATTEND THIS INSPECTION AND MAKE ALL REQUIRED REPAIRS AND ADJUSTMENTS TO ACHIEVE APPROVAL AND COMPLETION FROM THE CITY, TO SCHEDULE AN INSPECTION, CONTACT ENGINEERING DEVELOPMENT SERVICES AT (707) 543-4611.
- 4. A MINIMUM OF 8" OF NON-MECHANICALLY COMPACTED SOIL SHALL BE AVAILABLE FOR MATER ABSORPTION AND ROOT GROWTH IN PLANTED AREAS.
- 5. INCORPORATE COMPOST OR NATURAL FERTILIZER INTO THE SOIL TO A MINIMUM DEPTH OF 8" AT A MINIMUM RATE OF 8 CUBIC YARDS PER 1000 SQUARE FEET OR PER SPECIFIC AMENDMENT RECOMMENDATIONS FROM A SOILS LABORATORY REPORT.
- 6. A MINIMUM 3" LAYER OF MULCH SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS EXCEPT IN TURF AREAS, CREEPING OR ROOTING GROUNDCOVERS OR DIRECT SEEDING

# SOIL ANALYSIS REPORT

## (REQUIRED BY CITY OF SANTA ROSA):

IN ORDER TO REDUCE RUNOFF AND ENGOURAGE HEALTHY PLANT GROWTH. A SOIL ANALYSIS REPORT SHALL BE COMPLETED BY THE PROJECT APPLICANT, OR THEIR DESIGNEE, AS FOLLOWS:

> (1) SUBMIT SOIL SAMPLES TO A LABORATORY FOR ANALYSIS AND RECOMMENDATIONS. (A) SOIL SAMPLING SHALL BE CONDUCTED IN ACCORDANCE MITH LABORATORY PROTOCOL, INCLUDING PROTOCOLS REGARDING ADEQUATE SAMPLING DEPTH FOR THE

INTENDED PLANTS. 2) THE SOIL ANALYSIS SHALL INGLUDE:

(A) SOIL TEXTURE;

(B) INFILTRATION RATE DETERMINED BY LABORATORY TEST OR SOIL TEXTURE INFILTRATION RATE TABLE;

(D) TOTAL SOLUBLE SALTS; (E) SODIJM;

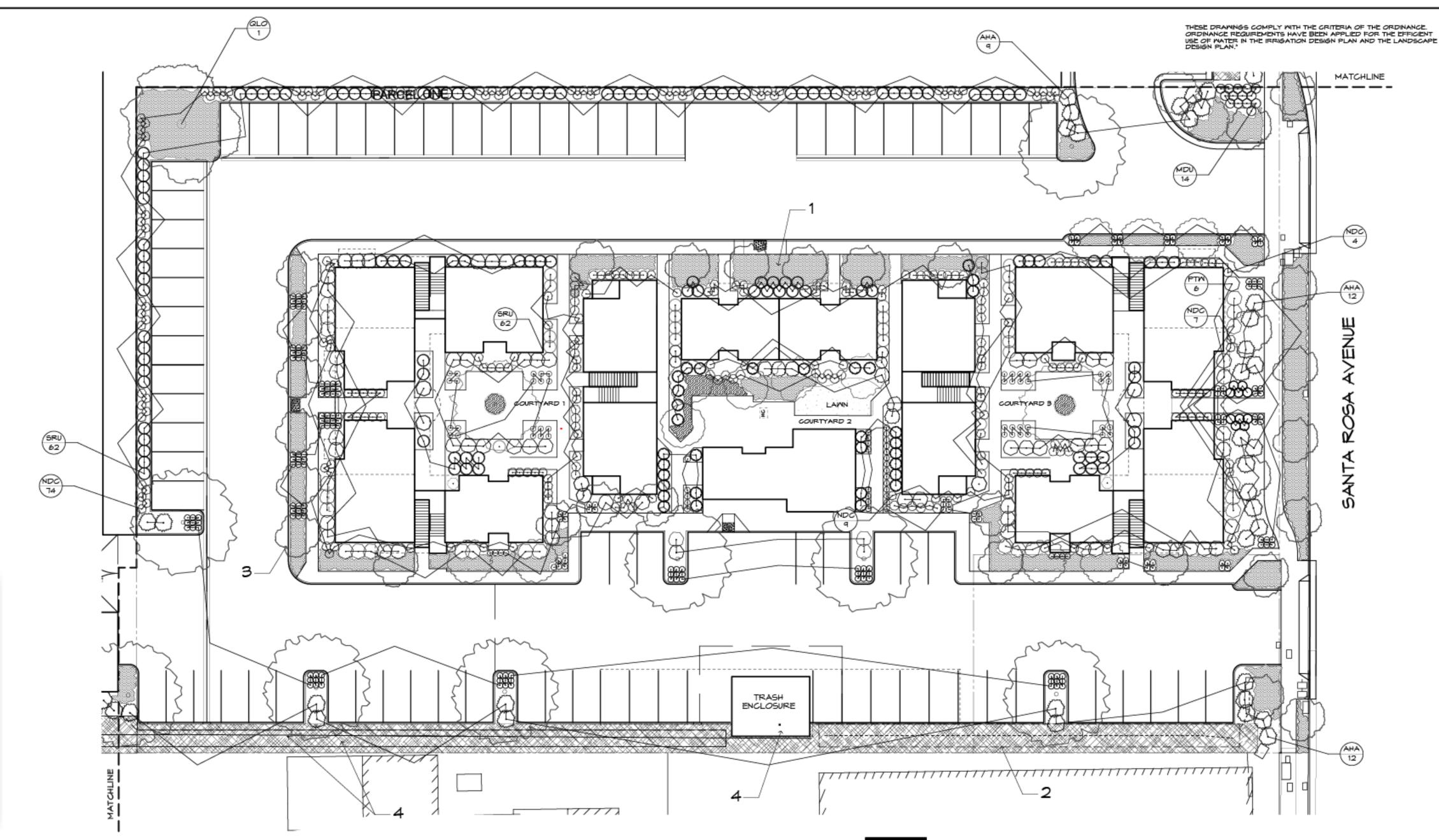
(F) PERCENT ORGANIC MATTER; AND 6) RECOMMENDATIONS.

(3) IN PROJECTS WITH MULTIPLE LANDSCAPE INSTALLATIONS (I.E. PRODUCTION HOME DEVELOPMENTS) A SOIL SAMPLING RATE OF 1 IN 7 LOTS OR APPROXIMATELY 15% WILL SATISFY THIS REQUIREMENT, LARGE LANDSCAPE PROJECTS SHALL SAMPLE AT A

RATE EQUIVALENT TO 1 IN 7 LOTS. (4) THE SOIL ANALYSIS REPORT SHALL BE MADE AVAILABLE, IN A TIMELY MANNER, TO THE PROFESSIONALS PREPARING THE LANDSCAPE DESIGN PLANS AND IRRIGATION DESIGN PLANS TO MAKE ANY NECESSARY ADJUSTMENTS TO THE DESIGN PLANS. (5) IF A GRADING PERMIT IS REQUIRED, THE SOIL ANALYSIS REPORT SHALL BE SUBMITTED TO THE CITY WITH THE CERTIFICATE OF COMPLETION. IF A GRADING PERMIT IS NOT REQUIRED, THE SOIL

LANDSCAPE DOCUMENTATION PACKAGE. (6) THE PROJECT APPLICANT, OR HIS/HER DESIGNEE, SHALL SUBMIT DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE CITY WITH CERTIFICATE OF

ANALYSIS REPORT SHALL BE SUBMITTED TO THE CITY WITH THE



# SHRUB PLANTING PLAN SCALE: 1" = 20'-0"



REFER TO SHEET L2.3 FOR PLANT LEGEND

# PLANTING NOTES

- ALL GROUND COVER TO BE SPACED IN A TRIANGULAR PATTERN. CONTRACTOR RESPONSIBLE FOR COMPLETE COVERAGE.
- 2. SUPPLY AGRIFORM 21 GRAM TABLETS AS FOLLOWS: 5-15 GAL., 3-5 GAL., 1-1 GAL. 3. DIG PLANTING PITS 2 TIMES THE DIAMETER AND EQUAL THE HEIGHT OF ROOTBALL.
- 4. BACKFILL PITS WITH 2/3 EXISTING SOIL, 1/3 ORGANIC AMENDMENT
- 5. ALL PLANTS TO BE SPOTTED IN THE FIELD BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
- 6. WHEN LANDSCAPING IN EXISTING PLANTED AREAS, CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE OR DESTROY ANY EXISTING PLANT MATERIAL OR IRRIGATION. EXISTING PLANT MATERIAL AND IRRIGATION THAT IS DAMAGED SHALL BE REPLACED WITH LIKE, SIZE, QUALITY, ETC. BY THE CONTRACTOR AT HIS EXPENSE.
- 7. SPECIAL ATTENTION IS TO BE PAID TO THE PLANTING AREAS SURROUNDING THE BUILDINGS, COMPACTED SOIL IS TO BE SUFFICIENTLY EXGAVATED TO ALLOW FOR PROPER ROOT GROWTH AND DRAINAGE OF ALL AREAS. CHECK SOIL FOR PROPER DRAINAGE PRIOR TO
- PLANTING. AUGER THROUGH COMPACTED SOIL MHERE NECESSARY. DO NOT PLANT IN THE DRAINAGE SMALES.
- 8. ALL CONSTRUCTION IS TO BE PER ALL APPLICABLE AND PREVAILING CITY OF SANTA ROSA CONSTRUCTION STANDARDS. 9. A SIGNED CERTIFICATE OF COMPLETION IS REQUIRED PRIOR TO FINAL ACCEPTANCE BY THE CITY OF SANTA ROSA. IF THE INSTALLATION OF
- THE LANDSCAPE DOES MEET OR SUBSTANTIALLY COMPLY WITH THE APPROVED LANDSCAPE CONSTRUCTION DOCUMENTS, THE CERTIFICATE OF COMPLETION WILL NOT BE SIGNED OR APPROVED BY THE LANDSCAPE ARCHITECT OF RECORD.

# PLANTING KEYNOTES

- 1. 3" DEEP MULCH, ALL LANDSCAPE AREAS
- 2. BIO-FILTRATION SOD, TYPICAL
- 3. 24" DEEP ROOT BARRIER, REFER TO DETAIL SHEET L-3, TYPICAL
- 4. EXISTING TREES TO BE REMOVED

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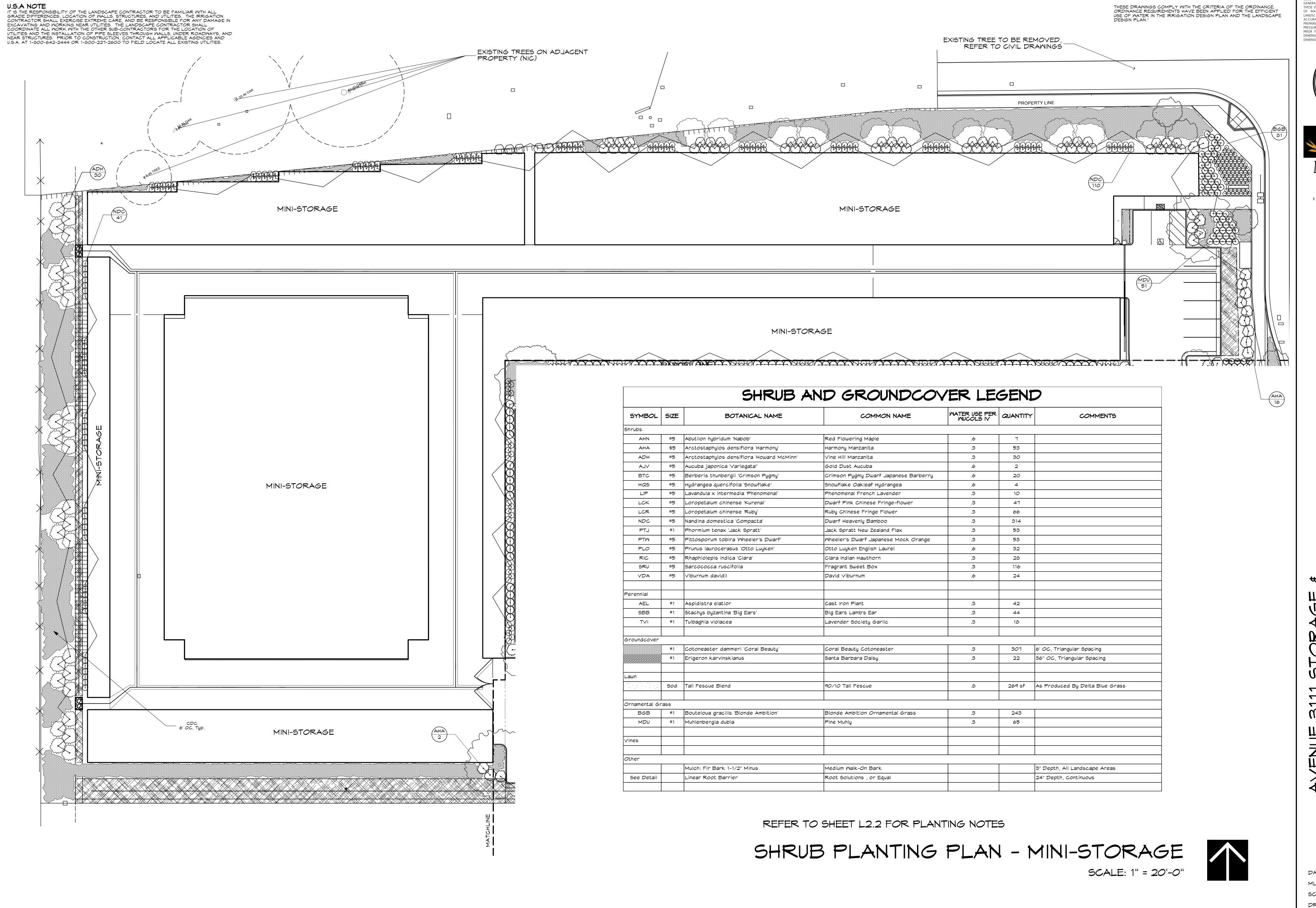
PREFARED BY THEM. SITE DIMENSIONS, GRADES, WATER PRESSURES AND GENERAL CONDITIONS SHALL BE VERIFIED PRIOR TO BEGINNING OF ANY WORK ON SITE. WRITTEN

DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED

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SHEET L-2.2 OF 8



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MACNAIR

LANDSCAPE
ARCHITECTURE

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FRUB PLANTING PLAI MINI-STORAGE

NUE 3111 STORAGE & APARTMENTS

DATE: 10/11/21

MLA JOB #: 2020-28

SCALE: 1" = 20'

DRAWN: DM

L 2.5

DRAMN: DM

L-2.4

SHEET L-2.4 OF 8





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ACER PALMATUM 'BLOODGOOD'



ACER RUBRUM 'ARMSTRONG'



CORNUS 'VENUS'



LAGERSTROMIA INDICA 'NATCHEZ'



PISTACIA CHINENSIS 'KEITH DAVEY'



QUERCUS LOBATA



ULMUS PARVIFOLIA 'DRAKE'

SITE FURNISHINGS										
TAG ID	ITEM	MANUFACTURER	STYLE	MODEL #		DESCRIPTION	NOTES			
A	вва	Lynx	Sedona	L600F-LP	1	36" Grill with 3 Stainless Steel Burners Freestanding	Or Approved Equal By Owner			
В	вва	Lynx	Sedona	L600ADA-LP	1	36" Grill – ADA 36 Inch 1 Prosear Burner & 2 Stainless Steel Burners (freestanding)	Or Approved Equal By Owner			
C	Picnic Table	Landscape Forms	Mellspring	MP568-01	2	48" Round Teak Table	Or Approved Equal By Owner			
D	Picnic Table	Landscape Forms	Mellspring	MP569-01	8	Patio Chair	Or Approved Equal By Owner			
E	Concrete Seat Mall	Poured in Place	Board Formed		8					









(C/D) PICNIC TABLE AND CHAIRS

3/4" to 1-1/2" GRAVEL OR PRUSHED ROCK

NTS

BACKFILL MIX AND FERTILIZER. SEE SPECIFICATIONS

1) DO NOT PLACE MULCH IN TREE BASIN.

TREE PLANTING DETAIL

DIG HOLE 2 TIMES THE —ROOTBALL DIAMETER AND EQUAL TO THE ROOTBALL HEIGHT.

1) DO NOT PLACE MULCH IN TREE BASIN.

NOT DRAIN WITHIN 4 HOURS CONTACT LANDSCAPE ARCHITECT 3) INSTALL ROOT BARRIER ON ALL FOUR SIDES OF PLANTER.

TREE MELL MITH

2) PLANTING HOLE TO BE TESTED FOR DRAINAGE PRIOR TO PLANTING. IF HOLES DO

2 X ROOTBALL

MIDTH

SHRUB PLANTING DETAIL

ACCURACY OF ANY PLANS OR SURVEYS NOT DIRECTLY PREPARED BY THEM. SITE DIMENSIONS, GRADES, WATER PRESSURES AND GENERAL CONDITIONS SHALL BE VERIFIED PRIOR TO BEGINNING OF ANY WORK ON SITE. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED

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**M** 4

DATE: 10/11/21 MLA JOB #: 2020-28 AS SHOWN DRAWN: DM

SHEET L-3 OF 8

SECTION 02750

to the following:

1. Furnish and install complete irrigation system. Trenching and backfilling.

3. Sleeves for irrigation piping and remote control valve wiring under pavements and walls as noted.

B. Related Work in Other Sections: The following items of associated work are included in other sections of these specifications:

1. Landscaping, Section 02800

C. By Others: The following items of work will be performed by others and are not included in the contract.

1. Electrical stub-out for irrigation controller. 2. Irrigation water meter

Water stub-out(s) for irrigation system.

1.02 INSPECTION OF CONDITIONS: Examine related work and surfaces before starting work of this section. Report to the landscape architect, in writing, conditions which will prevent the proper provision of this work. Beginning the work of this section without reporting unsuitable conditions to the landscape architect constitutes acceptance of conditions by the contractor. Any required removal, repair, or replacement of this work caused by unsuitable conditions to be done at no additional cost to the

1.03 CODES, RULES AND SAFETY ORDERS

A. All work and materials to be in full accordance with the latest rules and regulations of safety orders of Division of Industrial Safety: the Uniform Plumbing Code published by the Western Plumbing Officials' Association: and other applicable laws or regulations, including the presiding local plumbing code. Nothing in these drawings or specifications is to be construed to permit work not conforming to these codes. Should the construction documents, or instructions, be at variance with the aforementioned rules and regulations, notify the landscape architect and get instructions before proceeding with the work affected.

B. Furnish and maintain all warning signs, shoring, barricades, red lanterns etc., as required by the Safety Orders of the Division of Industrial Safety and local ordinances.

C. Contact U.S.A. for location of underground utilities.

1.04 STANDARDS: American Society of Testing and Materials (ASTM).

1.05 PERMITS AND FEES: Obtain all permits and pay required fees to any governmental agency having jurisdiction over the work. Arrange inspections required by local agencies and ordinances during the course of

1.06 APPROVAL: Wherever the terms "approve", "approval", or "approved" are used in the specifications, they mean approval of landscape

1.07 WORK SCHEDULE: Submit a proposed work schedule to landscape architect at least 5 days prior to start of work under this Section. After approval, no modification shall be made to this schedule with out written authorization by the landscape architect.

1.08 OBSERVATION SCHEDULE Schedule a job start meeting with the landscape architect at least 5 days before beginning work under this Section. All requests for observation must be made 72 hours in advance.

C. Pre-maintenance

The purpose of this conference is to review questions the contractor may have regarding the work, administrative procedures during construction and project work schedule.

B. Irrigation installation and hydrostatic tests

Observation of installation and hydrostatic test results to be made by the landscape architect prior to backfilling of trenches.

When all work has been completed a pre-maintenance walk-through will be conducted. If approved, the 90 calendar day maintenance period will begin

D. Final Observation Final Observation will be after the 90 calendar day maintenance period and all required work is completed. Please give 1 week notice for this

1.09 SUBSTITUTIONS

A. Specific reference to manufacturer's names and products specified in this Section are used as standards, but this implies no right to substitute other material or methods without written approval of the landscape architect.

B. Installation of any approved substitution is contractor's responsibility. Any changes required for installation of any approved substitution must be made to the satisfaction of the landscape architect and without additional cost to

1.10 PROTECTION OF EXISTING CONDITIONS

A. Contractor shall acquaint themself with all site conditions. Should utilities or other work not shown on the plans be found during excavations. contractor shall promptly notify landscape architect for instructions as to further action. Failure to do so will make contractor liable for any and all damage thereto arising from their operations subsequent to discovery of such utilities not shown on plans.

1.11 COORDINATION: Coordinate and cooperate with other contractors to enable the work to proceed as rapidly and efficiently as

1.12 PRODUCT HANDLING: Protect work and materials under this Section from damage during construction and storage. Protect polyviny chloride (PVC) pipe and fittings from direct sunlight. Beds on which PVC is stored must be full length of pipe. Do not use any pipe or fitting that has been damaged or dented.

1.13 SAMPLES: Landscape architect reserves the right to take and analyze samples of materials for conformity to specifications at any time. Contractor shall furnish samples upon request by the landscape architect Rejected material shall be removed from the site immediately and replaced at the contractors expense. Cost of testing materials not meeting specifications shall be paid by contractor.

1.14 HYDROSTATIC TESTS A. Make hydrostatic tests when welded PVC joints have cured at least 24 hours. Apply continuous static water pressure of 100 psi as follows:

1. All piping on the pressure side of control valves shall be tested for two 2. At completion of hydrostatic test, mainline shall be opened at farthest

most point from the location of the pump to verify continuity of the mainline B. Leaks resulting from tests shall be repaired and tests repeated until system passes tests.

1.15 "AS-BUILT" IRRIGATION DRAWINGS: Contractor shall furnish Record Drawings of the complete irrigation system. Procure from the landscape architect full sized sepias of Contract Drawings. Construction drawings shall be on the construction site at all times while the irrigation system is being installed. Actual location of valves and all irrigation and drainage piping shall be shown on the prints by dimensions from easily identified permanent features, such as buildings, curbs, fences, walks or property lines. Drawings shall show approved substitutions, if any, of material including manufacturer's name and catalog number. The drawings shall be at scale and all indications shall be neat. All information noted or the print shall be transferred to the prints by contractor and all indications shall be recorded in a neat, orderly way. The record drawings shall be turned over to the landscape architect at or before the Final Acceptance of

1.16 CONTROLLER CHARTS

1. As-built drawings shall be approved by the landscape architect before charts are prepared. 2. Provide one controller chart for each controller supplied.

3. The chart shall show the area controlled by automatic controller and shall be the maximum size controller door will allow. 4. The chart is to be reduced drawing of the actual as-built system. However, in the event the controller sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when 5. Chart shall be black line print and a different color shall be used to show area of coverage for each station 6. The chart shall be mounted using Velcro, or an approved equal 7. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 20 mils, thick 8. These charts shall be completed and approved prior to final inspection of the irrigation system.

1.17 MATERIALS TO BE FURNISHED A. Prior to final inspection the contractor shall furnish the following materials

Two wrenches for disassembling and adjusting each type of sprinkler head supplied. 2. Two keys for each automatic controller

Four keys for loose key hose bibs and/or hose bibs. 4. Twelve 12 inch pop-up sprinkler bodies.

1.18 CLEAN-UP: Keep all areas of work clean, neat and orderly at all times. Keep paved areas clean during installation. Clean up and remove all debris from the entire work area prior to Final Acceptance to satisfaction of landscape architect.

1.19 FINAL ACCEPTANCE: Work under this Section will be accepted by landscape architect upon satisfactory completion of all work. Upon Final Acceptance, owner will assume responsibility for maintenance of the work. Said assumption does not relieve contractor of obligations under Warranty.

1.20 WARRANTY: In addition to manufacturer's guarantees or warranties, all work shall be warranted for one year from the date of Final Acceptance against defects in material, equipment and workmanship by contractor. Warranty shall also cover repair of damage to any part of the premises resulting from leaks or other defects in materials, equipment and workmanship to the satisfaction of the owner.

to the owner:

GENERAL: Materials throughout the system shall be new and in perfect condition. At least 14 days prior to beginning work, submit for approval 2 copies of manufacturer's catalog cuts, specifications, and operating instructions of the complete list of materials and assemblies to be installed. Quantities of materials and equipment need not be included. No deviations from the specifications shall be allowed. The decision of the landscape architect shall be final in the determination of the quality of materials and equipment.

2.02 WATER METERS: Shall be provided by others.

2.03 PIPE

Mainline piping on pressure side of irrigation control valves:

1. 2" size and greater to be Polyvinyl Chloride (P.V.C.) 1120-1220, Class 315 and shall conform to ASTM D 2241-73 and D 2672-73. 2. Up to and including 1-1/2" size to be Polyvinyl Chloride (P.V.C.) 1120-1220, Schedule 40 and shall conform to ASTM D 1785-73. 3. Galvanized Steel: Standard wall, Schedule 40, capable of working pressure up to 600 psi shall run from the point of connection to back flow prevention device. 4. Piping from the point of connection to the back flow prevention device shall be as approved by local code.

Lateral line piping on non-pressure side of irrigation control

1. 2" size and greater to be Polyvinyl Chloride (P.V.C.) 1120-1220. Class 315 and shall conform to ASTM D 2241-73 and D 2672-73. 2. Up to and including 1-1/2" size to be Polyvinyl Chloride (P.V.C.) 1120-1220, Schedule 40 and shall conform to ASTM D 1785-73.

A. PVC Fittings: Schedule 40, Polyvinyl Chloride, high impact weight, as manufactured by Sloane, Lasco, medium or approved equal.

B. Fittings for Galvanized Steel Pipe: Schedule 40, standard weight as manufactured by Grinnell, or approved equal.

C. Connections between main and valves shall be PVC Schedule 80 nipples

2.05 SLEEVE MATERIALS

A. For Control Wires: PVC 1120-1220, Class 200 pipe or heavy wall galvanized steel conduit. B. For Water Lines: PVC 1120-1220, Class 200 pipe or heavy wall

galvanized steel conduit. 2.06 IRRIGATION CONTROLLERS

A. Controller to be as shown on plans and is to be installed as per detail and manufacturer's specifications.

2.07 IRRIGATION CONTROL VALVES

A. Remote Control Valves: Valves to be as shown on plans and installed per details and manufacturer's specifications

2.08 CONTROL WIRE A. Wire: Solid copper wire, U.L. approved for direct burial in ground.

Minimum gauge: #14. Common ground wire shall be white. B. Splicing Materials: Wire connectors shall be Pentite or snap connectors. C. All wires shall be labeled with the valve number at the controller and

D. 120 wiring shall be as required by local code and installed by an electrician. It shall not be on a switched circuit.

E. Common wire shall be white. Control wires shall be other than white. Use a different color control wire for each controller.

A. Remote Control Valves: To be Brooks, Green or approved equal, one per B. Gate Valves and Control Wire Stub-out Locations: To be Brooks, Green

2.10 QUICK-COUPLING VALVES

2.09 VALVE BOXES

A. Quick coupling valves to be as per plans and details.

or approved equal, one per valve or stub-out location.

B. Furnish 2 valve keys fitted with hose valve assembly. C. All valve boxes shall be purple in color or clearly labeled by the manufacturer to designate reclaimed water.

2.11 LANDSCAPE DRIP-LINE: Tubing as shown in legend and

Install in parallel and consistent rows at spacing indicated in all specified areas.

Install 3" below grade.

2.12 SPRINKLER HEADS Heads as shown in legend and drawings.

2.13 BACK-FLOW PREVENTION ASSEMBLIES A. Back-flow prevention device as shown in legend and drawings.

PART 3 EXECUTION

A. Layout work as accurately as possible to drawings. Drawings are diagrammatic to the extent that swing joints, offsets and all fittings are not

B. Full and complete coverage is required. Contractor shall make any necessary minor adjustments to layout required to achieve full coverage of irrigated areas at no additional cost to owner.

C. Dig trenches wide enough to allow a minimum of 6 in. between parallel pipe lines. Trenches shall be of sufficient depth to provide minimum cover from finish grade as follows:

1. Over PVC pipe on pressure side of irrigation control valve, control wires and quick coupling valves: 18 inches. 2. Over pipe on non-pressure side of irrigation control valve:

3.03 BACK FLOW PREVENTION DEVICE INSTALLATION A. Install according to local code and manufacturer's instructions.

B. Install with union on discharge side for servicing, or with flanges, as required.

A. Where pipes or wires must be installed under paving place them in sleeves with a 24" minimum depth and sufficient size to accommodate irrigation lines and/or wires

B. Lack of pipe chase coordination does not relieve the contractor from

installing the pipes and control wire shown on the drawing. In the event

pipe chases were not installed prior to paving the contractor shall bore under the paving to accommodate pipes and wires. C. All control wire shall be in Schedule 40 conduit from trench to controller. When valves are grouped together allow 12" between valve boxes, each valve in a separate box, (not to be placed in drainage

3.05 PIPE LINE ASSEMBLY

swales, but kept in ground cover areas.)

3.04 SLEEVING

B. Solvent weld all PVC pipe and fittings using solvents (including primer) and methods as recommended by the manufacturer, except where screw connections are required. Clean pipe and fittings of dirt and moisture before assembly. PVC pipe may be assembled on ground surface beside trench. Snake pipe from side to side of trench bottom to allow for expansion and contraction. Make all connections between PVC pipe and metal valves or pipe with threaded fittings using PVC male adapters.

A. Install pipe in accordance with manufacturer's instructions.

C. Use Teflon tape on all threaded fittings.

water pressure.

D. Thrust blocks shall be installed where the irrigation main changes direction as at ells and tees and where the irrigation main terminates Pressure tests shall not be made for a period of 36-48 hours following the completion of pouring of the thrust blocks. Concrete thrust blocks for supply mains shall be sized and placed in strict accordance with the pipe manufacturer's specifications and shall be of an adequate size and so placed as to take all thrust created by the maximum internal

3.06 IRRIGATION CONTROL VALVES:

A. Install control valves in valve boxes where shown and group together where practical. Place no closer than 18 in. to walk edges, buildings and walls and other valves. Valve boxes shall be placed in relation to finish grade as follows:

1. 1" above grade when no mulch is used 2. 1/2" with seeded lawr 3. 1 1/2" with sod lawr 4. 2" with plant beds

stenciled letters with the value number as designated on the plan. C. Clearance between the highest part of the valve and the bottom of the valve box lid shall be 2" minimum and 4" maximum. (Lid must not rest on any part of valve and valves must not be buried too deep for

B. The contractor shall paint on the cover of each valve box in 2" white

convenient access.) D. Clearance between the top of the piping and the bottom of the valve box and/or the valve box knock outs, shall be a minimum of 2". (The box must not rest on the piping.)

E. Clearance between the valve and the sides of the valve box shall be a minimum of 3".

3.07 SPRINKLER HEADS A. Install heads as per details.

B. Nozzles may be changed to control precipitation rate and G.P.M. with approval from the landscape architect.

3.08 QUICK COUPLING VALVES: Quick coupling valves to be installed as per detail.

3.09 AUTOMATIC CONTROLLER A. Install per local code and manufacturer's instructions.

recommendations and as per local code. 3.10 CONTROL WIRING A. Install control wires with sprinkler mains and laterals in common

B. Grounding of Irrigation controller shall be as per manufacturer's

trenches wherever possible. Lay to the side of pipe line. Provide looped slack at valves of 18" and snake wires in trench to allow for contraction of wires. Tie wires in bundles at 10 ft. intervals. Provide expansion loop at all 90 degree angles, and every 100' of straight wire

B. Control wire splices at remote control valves to be crimped and sealed with specified splicing materials. Line splices will be allowed only on runs of more than 500 ft. All line splices to be in separate

C. Install one continuous ground wire and one extra wire to all valves. 3.11 CLOSING OF PIPE AND FLUSHING OF LINES

A. Thoroughly flush out all water lines before installing heads, valves and other hydrants. B. Test as specified

3.12 PRESSURE TESTS A. The contractor shall partially backfill, leaving all fittings exposed before testing.

B. Cap all valve openings and test the mainline pipe at full line working pressure and visually check all fittings

3.13 BACKFILL AND COMPACTING A. After system is operating and required tests and inspections have been made, backfill excavations and trenches with clean soil, free of

rubbish. All pipe shall have a bedding of 2" under and 4" over of select, B. Backfill for all trenches, regardless of the type of pipe covered, shall be compacted to minimum 95% density under pavements, 85% under

C. Compact trenches in areas to be planted by thoroughly flooding the backfill. Jetting process may be used in those areas.

D. Dress off all areas to finish grades. right of inspection and condition of ball and roots, latent defects or injuries. E. Any settling more than 1" which may occur during the guarantee period shall be brought to finish grade by the contractor at his expense. END OF SECTION 02750

**SECTION 02800** LANDSCAPING

PART 1 GENERAL 1.01 SCOPE

A. Work Included: Perform all work necessary and required for the construction of the project as indicated. Such work includes but is not

limited to the following: 1. Site preparation including weed and rubble removal. 2. Laboratory soil analysis. 3. Furnishing and spreading topsoil. 4. Finish grading of planted areas. 5. Soil amendment.

B. Related Work: The following items of associated work are included in other sections of these specifications

1. Section 02750: Underground Irrigation System.

C. Use Teflon tape on all threaded fittings.

1 02 REQUIREMENTS OF REGULATORY AGENCIES

authorities in furnishing, transporting and installing materials.

A. Perform work in accordance with all applicable laws, codes, and

B. Certificates of inspection required by law for transportation shall

accompany the invoice for each shipment of plants. File copies of

certificates with landscape architect after acceptance of material.

regulations required by authorities having jurisdiction over such work and

provide for all inspections and permits required by federal, state, and local

nspections of federal and state governments at place of growth does not

1.03 SELECTION, TAGGING AND ORDERING OF PLANT MATERIAL

A. Submit documentation to landscape architect at least 7 days prior to start

of work under this section that all plant material has been ordered. Arrange

architect at place of growth or upon delivery for conformity to specifications.

Such approval shall not impair the right of observation and rejection during

material at place of growth to landscape architect. Written request shall

observed. Landscape architect reserves the right to refuse observation at

this time if. in his iudament. a sufficient number of plants are not available

C. Substitution of plant material will not be permitted unless authorized in

writing by landscape architect. If proof is submitted that any plant specified

equivalent size or variety with corresponding adjustment of contract price.

1.04 COORDINATION: Contractor shall coordinate and cooperate with

other contractors to enable the work to proceed as rapidly and efficiently as

1.05 INSPECTION OF SITE: Contractor shall visit site and inspect

conditions as they exist prior to submitting bid. Site dimensions, water

pressure and general conditions shall be verified prior to beginning of any

1.06 INTENT OF DRAWINGS AND SPECIFICATIONS: It is the intent

of the drawings and specifications to provide planting with plants in vigorous

drawings or called for in the specifications, but normally required to conforn

APPROVAL: Wherever the terms "approve", "approval" or

"approved" are used herein, they mean approval of landscape architect in

A. Furnish standard products in manufacturer's standard containers bearing

original labels showing quantity, analysis and name of manufacturer.

would damage or impair the effectiveness of the product.

B. Store products with protection from weather or other conditions which

PROTECTION OF EXISTING PLANTS TO REMAIN

equipment within designated plant protection zones as specified on the

A. Do not store materials or equipment, permit burning, or operate or park

B. Notify landscape architect in any case where contractor feels grading or

other construction called for by Contract Documents may damage existing

plants to remain. Do not proceed with such work until directed by landscape

replace such plants of the same species and size as those damaged at no

A. Prior to planting grading will be brought to within .10 + foot of finish grade

responsibility of the landscape contractor to verify that no conflict exists with

B. Finish grade in ground cover areas shall be 2 inches below surrounding

seeded areas shall be 1 inch below sidewalks, header boards, or mow strips

operations. Clean up and remove all deleterious materials and debris from

landscape architect. The landscape contractor shall bear final responsibility

precludes establishing proper drainage shall be brought to the attention of

the landscape architect, owner or his representative for correction or the

1.12 SAMPLES, TESTS AND SUBMITTALS: Landscape architect

manufacturer's specification sheets for any construction material or item

immediately removed from the site at contractor's expense. The cost of

1.13 PROJECT SCHEDULE: Contractor shall submit for approval a

1.14 OBSERVATION SCHEDULE: Schedule a job start meeting with

complete work schedule indicating tentative dates for inspections. This

schedule is to be submitted prior to the job start meeting.

testing materials not meeting specifications shall be paid by the contractor.

upon request by the landscape architect. Rejected materials shall be

specifications at any time. Contractor shall furnish samples and/or

reserves the right to take and analyze samples of materials for conformity to

CLEAN-UP: Keep all areas of work clean, neat and orderly at all

concrete or asphalt. In lawn areas, sodded areas shall be 2 inches and

and examined by the landscape architect, owner, or his representative.

times. Keep all paved areas clean during planting and maintenance

the entire work area prior to Final Acceptance to the satisfaction of

for proper surface drainage of planted areas. Any prior work done by

another party or obstructions on the site which the contractor feels

with soil suitable for planting by the landscape contractor. It is the

the grading plan. Fine finish grading will be done by the landscape

C. If existing plants are damaged during construction, contractor shall

growth, ready for owner's use. Any items not specifically shown in the

with such intent, are to be considered as part of the work. Written

dimensions take precedence over scale dimensions.

PRODUCT HANDLING

plant shall rest solely with landscape architect.

1.10 GRADING

relief of responsibility.

A. Job Start Meeting

project work schedule.

is not obtainable, a proposal will be considered for use of the nearest

procedure for observation with landscape architect at time of submission.

B. Plants shall be subject to observation and approval by landscape

progress of the work. Submit written request for observation of plant

state the place of growth and the quantity and variety of plants to be

for observation or not in the landscape architect's contract.

are not included in the contract.

preclude rejection of plants at project site.

D. Thrust blocks shall be installed where the irrigation main changes direction as at ells and tees and where the irrigation main terminates. Pressure tests shall not be made for a period of 36-48 hours following the completion of pouring of the thrust blocks. Concrete thrust blocks for supply mains shall be sized and placed in strict accordance with the pipe manufacturer's specifications and shall be of an adequate size and so placed as to take all thrust created by the maximum internal B. Related Work: The following items of associated work are included in other sections of these specifications.

architect at no additional cost to owner. 1. Section 02750: Underground Irrigation System.

C. By Others: The following items of work will be performed by others and

responsibility for maintenance of the work.

B. Any delay in completion of planting operations which extends the planting period shall extend the Maintenance and Warranty Periods correspondingly

C. Replace, without cost to owner, and as soon as weather conditions permit, all dead plants and all plants not in vigorous, thriving condition, as determined by landscape architect during and at the end of Warranty Period. Plants shall be free of dead or dying branches and branch tips, and shall bear foliage of a normal density, size and color. Replacements shall closely match adjacent specimens of the same species and shall be subject to all requirements of this specification.

D. Contractor shall not be held responsible for failures due to neglect by conditions to landscape architect in writing.

2.01 PLANTS

are not met.

A. Plant Quality: Plants shall be fresh, well established, vigorous, of norma habit of growth, free of disease, insects, insect eggs and larvae. Roots shall be healthy and extend to the bottom and sides of the container, and rooting shall be extensive enough to hold the rood ball together during planting, but not so dense as to discourage root establishment into surrounding soils. Roots shall not show any signs of restriction due to kinked, circular, or distorted growth. No trees will be accepted that will not stand on their own trunks after the nursery stakes have been removed. All plants will be inspected prior to planting and may be rejected if noted quality standards

B. Plant Quantity: Plant materials shall be furnished in size, quantities, species and at the spacing indicated or as noted on the plans. Ground cover material shall be provided in quantity adequate to fill the entire ground cover

C. Plant Spacing: No planting, except for ground covers, espaliers and vines shall be placed closer than two feet to pavement, structures or other landscape edges. Ground covers adjacent to pavement, structures or landscape edges shall be no closer to these than 75% of their spacing. No plants that would obstruct the sprinkler coverage shall be placed closer than 30% of the radius of the sprinkler throw as specified by the sprinkler manufacturer at the optimum operating pressure unless approved by the landscape architect.

2.02 LANDSCAPE AREA PLANTING SOILS

B. All landscape area planting soils shall be equal or coarser in texture to larger than 1 in. in size, sub-soil, refuse, plants or roots, clods, weeds,

texture and quality as determined by approved soil laboratory analysis. C. Soil Chemistry: All planting soils shall meet the following soil chemistry parameters.

> Reaction - pH of saturated paste = 5.5 to 7.5 Salinity (Electrical conductivity in mmho/cm) = <4.0 Sodium Adsorption Ratio (SAR) = <6.0Sodium = <5.0 milliequivalents per liter Chloride = <5.0 milliequivalents per liter Boron (Parts Per Million in extract) = <1.0

Soil shall be analyzed for fertility and any deficiencies shall be treated with inorganic fertilizer amendments prior to planting. E. Lime Treated Soil: If lime is used for soil compaction in landscape areas,

of the treated soil. Soil shall be replaced with import soil as described in the landscape specifications

A. Prior to any work in planting areas all construction debris shall be B. Structural fill and/or compacted engineered fill and/or any other soil and 2.2-C, shall be excavated and removed to a depth of 12 inches in

be obtained through stockpiling of existing topsoil or imported soil of equal quality as determined by approved soil laboratory analysis. It shall be free from stones larger than 1 in. in size, sub-soil, refuse, plants or roots, clods, weeds, sticks, or other extraneous material. It shall be capable of sustaining healthy plant life. C. All landscape area soils shall be ripped in two directions to a depth of 12

compacted to 85%± relative compaction. Never apply the topsoil when the site or the topsoil is wet. 2.04 COMMERCIAL FERTILIZER

the landscape architect at least 5 days before beginning work under this Section. All requests for observation must be made 72 hours in advance. A. Pre-plant fertilizer for soil incorporation shall consist of the following percent by weight The purpose of this conference is to review questions the contractor may have regarding the work, administrative procedures during construction and

B. Planting - Fine Grading and Soil Preparation The fine grading and soil preparation of all planting areas must be observed prior to installation of plant material. C. Plant Material Landscape architect shall observe plant material for quality prior to planting. Plants shall be subject to observation and approval at place of growth or upon delivery for quality, size and variety; such approval shall not impair the

Rejected plants shall be removed immediately from site. D. Plant Layout Layout plants (in containers) in locations shown on drawings. Landscape architect will check location of plants in the field and adjust to exact position before planting begins. Landscape architect reserves the right to refuse inspection if, in his opinion, an insufficient quantity of plants is available for lavout check. E. Pre-maintenance

When all work has been completed a pre-maintenance walk-through will be

Final Observation will be after the 90 calendar day maintenance period and

conducted. If approved, the 90 calendar day maintenance period will begin.

all required work is completed. Please give 1 week notice for this observation meeting.

cover is installed and continue until Final Acceptance

landscape architect and shall be for 90 calendar days.

1.15 MAINTENANCE

F. Final Observation

A. All landscape areas shall be substantially weed free at beginning of maintenance period and at final acceptance. B. Begin maintenance after each plant and each portion of lawn or ground

C. Maintenance Period shall begin upon inspection and approval by

2 07 ROOT BARRIERS A. "Root Solutions" control planter, or equal. Install according to local code and manufacturer's instructions. Use in all areas where tree is

D. Maintenance of new planting shall consist of watering, cultivating, within 7 feet of any walkway, wall, building or other structural edge. Linear weeding, fertilizing, mulching, re-staking, tightening and repairing of guvs type barrier shall be used in all cases. Linear barriers shall be installed a minimum of 7 feet to either side of tree's relative position to sidewalk or resetting plants to proper grades or upright position, restoration of the plant saucer, and furnishing and applying such sprays and fertilizers as are structural edge. necessary to keep the plants free of insects and disease and in thriving

2.09 MULCH: Fir bark 1" to 2", free of sticks, dirt, dust and other

planted or in annual beds. Shredded bark mulch shall be used in

conjunction with jute netting on all slopes greater than 6:1.

manufacturers instructions carefully

by tops, stems, or trunks at any time.

3.03 SPREADING OF TOPSOIL

topsoil when the site or the topsoil is wet.

per 1,000 sq.ft. at zero to eight inches depth:

20 pounds pre-plant fertilizer

3.06 EXCAVATION OF PLANTING AREAS

(Rhododendron and azaleas 3 times the diameter)

2. The depth should be equal to the root ball height.

3 08 PLANTING OPERATIONS

B. Planting Soil (excluding trees):

eliminating all air pockets.

wider that the root ball diameter.

C. Attach tree straps as per details.

3.11 GROUND COVER PLANTING

Avoid air pockets.

friable condition

from leaves of plant materials.

3.11 BIOSWALE SOD

3.12 SOD BED PREPARATION

A. Roll amended soil with 200 lb. water ballast roller.

3.09 STAKING

plumb after staking.

G. Water all plants immediately after planting.

protected, and shall be kept well watered

dimensions:

3.04 AMENDMENT OF SOIL

3.01 HANDLING OF PLANT MATERIAL

PART 3 EXECUTION

backhoe or manually.

debris, as approved, to a depth of 3" to be placed in all landscaped areas

except where flats have been planted or annual beds and drainage swales

Fir bark, 1/2" minus, free of sticks, dirt, dust and other debris, as approved,

to a depth of 1" to be placed in all landscaped areas where flats have been

2.10 PRE-EMERGENT WEED CONTROL: All herbicides used to

control weeds shall comply with all governmental regulations and shall be

appropriate to weed species. Contact the local county agricultural agent or pest control advisor for proper herbicide recommendations. Follow

A. Canned stock shall be removed carefully after cans have been cut on two

sides. Do not use spade to cut cans. Do not lift or handle container plants

3.02 PREPARATION OF SUB-GRADE AND/OR EXISTING SOILS

A. Prior to any work in planting areas by landscape contractor, the general

B. Soil shall be ripped in two directions to a depth of 12". In areas not

accessible by large equipment, ripping shall be accomplished by small

A. After sub-grade has been prepared, the landscape contractor shall be

responsible for furnishing and installing topsoil to within (1) inches of finish

B. Topsoil should be spread evenly over the site. Minimum depth of friable

other areas. If this condition does not exist on the site, the balance of topsoi

Import soil shall be compacted to 85% relative compaction. Never apply the

to be 12 inches within five feet of all structures and 24 inches deep in all

shall be imported by the landscape contractor to meet this requirement.

A. Apply amendments to all planting and lawn areas at the following rates

Additional amendments as determined from soil test

amended soil to finish grades and elevations shown on Contract

planted areas. Any discrepancy in the drawings or specifications,

obstructions on the site, or prior work done by another party, which

Documents. Do not work soils under frozen or muddy conditions

3.05 SURFACE DRAINAGE OF PLANTED AREAS: Landscape

Contractor shall bear final responsibility for proper surface drainage of

contractor feels precludes establishing proper drainage shall be bought to

A. Excavate container grown tree, shrub, and vine pits to the following

1. Two times as large in diameter as the original growing container

compacted soil or hardpan if encountered or as directed by landscape

3.07 DRAINAGE, DETRIMENTAL SOIL AND OBSTRUCTIONS

A. Notify landscape architect in writing of all soil or drainage conditions

and submit proposal and cost estimate for correcting condition.

contractor considers detrimental to growth of plant material. State condition

A. Protect plants at all times from sun or drying winds. Plants that cannot

2/3 Existing Soil

C. Prior to planting test hole for drainage by filling with water, if hole does

finished grade. Set plant plumb and brace rigidly in position until planting

have been backfilled approximately 2/3 full, water thoroughly, saturating

F. Form saucer with 4 in. high berm around tree and shrub pits 12 inches

A. Staking shall be completed immediately after planting. Plants shall stand

D. Need for auxiliary stake shall be determined in the field by the landscape

polyethylene nursery tape at 10 inch intervals. Auxiliary stake to be bamboo

landscape architect in accordance with current I.S.A. Standards. Remove all

dead wood, suckers and broken or badly bruised branches. Use only clean

A. Plant ground cover plant at optimum depth for proper growth. Do not bury

deeper than the original soil level which was established in the nursery can

B. Apply post plant or surface application fertilizer at the rate of 5 lbs. per

A. To be "Biofiltration Sod" as produced by Delta Bluegrass Company, or

B. Sod immediately thereafter, provided the sod bed has remained in a

1000 sq.ft. Water bed thoroughly after fertilizer application. Wash all fertilizer

architect and shall only be used when trees are exceptionally spindly. If

necessary, place auxiliary stake adjacent to tree leader and tie with

3.10 PRUNING: Prune plants only at the time of planting and

according to standard horticultural practices to preserve the natural

character of the plant. Trees shall be pruned at the direction of the

sharp tools. Do not prune to compensate for root loss. Landscape

contractor is responsible for replacement of all improperly pruned plant

B. Locate stakes in position relative to the prevailing wind as shown on

soil has been tamped solidly around the ball and roots. When plant pits

rootball, before installing remainder of the planting soil to top of pit,

D. Use planting soil to backfill plant pits. Crown of root ball shall be 1" above

E. Smooth planting areas to conform to specified grades after full settlement

not drain within four hours, do not plant. Contact landscape architect.

1/3 Organic Amendments

be planted immediately on delivery shall be kept in the shade, well

Scarify all sides of planting hole. Auger through structural fill,

the attention of landscape architect in writing for correction or relief of said

8 cubic yards organic amendment as specified.

contractor shall clear all construction debris from planting areas.

B. All root barriers to be 24" deep, interlocking linear panels. C. All root barriers shall be installed 4" from the back of curb or other E. Protect planting areas and plants at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary hardscape edge with 4" of 3/4" gravel drain rock 24" deep on the root barrier protection fences, barriers and signs as required for protection. If any plants side away from the tree. become damaged or injured, treat or replace as directed by landscape 2.08 WATER: Furnished by owner. Transport as required.

1.16 FINAL ACCEPTANCE: Work under this Section will be accepted by landscape architect upon satisfactory completion of all work, including maintenance, but exclusive of replacement of plant materials under the Warranty Period. Upon Final Acceptance, the owner will assume

1.17 WARRANTY PERIOD AND REPLACEMENTS A. Contractor shall warrant that all plant material except annual color

planted under this contract will be healthy and in flourishing condition of active growth one year from date of Final Acceptance.

owner, vandalism, or acts of god, etc., during Warranty Period. Report such

PART 2 MATERIALS

areas at the spacing shown.

A. Soil to be tested by testing agency as per specifications. the original on-site topsoil. All landscape area soils shall be free from stones sticks, or other extraneous material. All landscape area soils shall be tested by an approved soils laboratory for horticultural suitability and verified to be capable of sustaining healthy plant life. Landscape area planting soils may be obtained through stockpiling of existing topsoil or imported soil of equa

calcium, and magnesium shall be available to support healthy plant growth all lime treated soil shall be removed to a depth equal or more to the depth

2.03 PREPARATION OF LANDSCAPE AREA PLANTING SOILS

deemed unsuitable for horticultural use as defined by Sections 2.2-A, 2.2-B landscape planting areas by the landscape contractor. Replacement planting soil shall be equal or coarser to the on-site soil in texture. This may

inches. In areas not accessible by large equipment, ripping shall be accomplished by small backhoe or manually to thoroughly cultivate the soil

to a depth of 12 inches. D. Landscape area planting soil, imported or otherwise, shall be spread evenly over the site. Minimum depth of friable soil shall be 12 inches deep in all landscape planting areas and finish surface shall be within one inch of finish grade. Import topsoil shall be supplied by the landscape contractor to meet this requirement and shall meet all specifications as defined Sections 2.2-A, 2.2-B and 2.2-C. Imported landscape area planting soils shall be

> 6% Nitrogen 20% Phosphoric Acid

20% Potash B. Post Planting/Surface Application Fertilizer:

16% Nitrogen

8% Phosphoric Acid 8% Potash C. Fertilizer requirement is subject to change based on soil testing for horticultural suitability.

2.05 SOIL AMENDMENTS

Organic Amendment: Shall be nitrolized and derived from fir wood Physical Properties: 1/2" minus fir bark, nitrolized fortified or

Chemical Amendments: As required by soil analysis with approval of landscape architect. 2.06 STAKING MATERIALS

A. Contractor shall use staking materials necessary to meet

requirements of specifications, subject to approval of landscape architect.

Tree Stakes: 2" x 2" X 8' lodgepole pine pressure treated stakes

Construction heart grade. (Do not drive stakes through the rootball). Use 2 stakes per tree. C. Tree Ties: Corded rubber tree ties, 18" without wire.

3.13 SODDING OPERATIONS

A. Sod must be delivered to site within 24 hours of cutting. Lay sod so that adjacent strips butt tightly with no spaces between strips. Lay sod on slopes and mounds with strips parallel to contours. Stagger joints and do not overlap seams. Sodded areas shall be flush with adjoining seeded areas.

B. Tamp and roll sod thoroughly to make contact with sod bed.

C. Apply post planting fertilizer at a rate of 5 lbs. per 1000 s.f. D. Water sod thoroughly.

E. No portion of the sod lawn will be allowed to dry out until the sod is wel

F. Supplemental Temporary Irrigation: Contractor shall be responsible for temporary supplemental irrigation of all bio-retention areas through the sod establishment period. Method of irrigation application is discretionary and may include hand watering or installation of a temporary, above grade overhead spray circuit. Any replacement of sod necessary for loss or damage to sod due to lack of water shall be the responsibility of the contractor at contractor's expense.

PART 4 TREE PRESERVATION

minimize impact on the area.

balance the projected loss of roots.

4.01 CONSTRUCTION IMPACT: The impact of construction within the project area will be minimal when appropriate protection measures are implemented. The following specifications have been developed to

A The landscape architect shall be called to inspect and verify staked location of trenches within the project zone. No trenching, pruning or tree removal shall take place without the approval of the landscape architect. B. The smallest possible equipment shall be used for all construction work

to minimize damage to the existing trees. C. If the installation of storm drains or irrigation lines is to occur within the drip line of any major tree, a professional arborist shall be called upon to inspect the tree and determine whether head pruning will be necessary to

D. Following completion of grading, all soil shall be brought back to original grade. No additional soil shall be allowed to remain at the base of any shrub or tree, and grade shall not be changed to allow collection of surface drainage at the base of any shrub or tree

E. Minimal disturbance to the natural setting is to occur during trenching and

G. Existing foliage shall be preserved wherever possible. When it becomes

I. Following the installation of the pipelines all soil from the trenches shall be

brought back to the original grade. No soil shall be allowed to remain at the

installation of pipe lines. The mainlines are to be set 18" below grade. F. Trenches shall be the minimum width possible to accommodate the specified diameter of pipe.

necessary to remove any limbs from remaining trees the following

quidelines shall be followed: No branches shall be damaged or broken. Prior to installation of lines it shall be determined what foliage needs to be removed and pruning shall be done using a sharp saw. 3. Limbs shall be removed back to the nearest lateral branch or trunk, using 4. All cuts shall be painted with a commercial asphaltic compound designed

B. Incorporate thoroughly with top 8 in. soil layer and remove stones over 1 H. No roots over 2" in diameter shall be torn or damaged. When it becomes in. in diameter, roots, clods, weeds, and other extraneous material. Bring necessary to remove any major roots over 2" in diameter, a sharp saw shall be used and the wound treated as described in G-4 above.

specifically for covering pruning wounds.

collection of surface drainage at the base of any tree or shrub. J. All pruning and plant debris associated with the installation shall be

removed from the site and disposed in an appropriate manner.

base of any tree or shrub, and grade shall not be changed to allow

4.02 IMPACT OF GRADING :Protection of all existing trees within the construction zone is to be given the highest priority. As described in the following section, the trees within the project area will be protected by a temporary construction fence during all construction phases, including rough and final grading. Grade changes will be prevented around the base of these trees by this fence, and the impact of grading will be negligible as it will occur outside the drip line of all trees.

4.03 MEASURES TO PROTECT VEGETATION FROM CONSTRUCTION ACTIVITIES: A minimum six foot cyclone fence shall be erected aRound the drip line of all trees located within the project area prior to the beginning of any construction activities, including grading. General Contractor shall direct all equipment, subcontractors and personnel to remain outside the fenced area. Warning signs shall be posted on the fence indicating a protected area. As shown on the irrigation plan the cyclone fence will be placed around all existing trees to be saved. The purpose of this fence is to discourage the parking of vehicles under the trees and

prevent grading or storage of material too close to the tree trunks. END OF SECTION 02800

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PRESSURES AND GENERAL CONDITIONS SHALL BE VERIFIED

PRIOR TO BEGINNING OF ANY WORK ON SITE. WRITTEN

DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED





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