





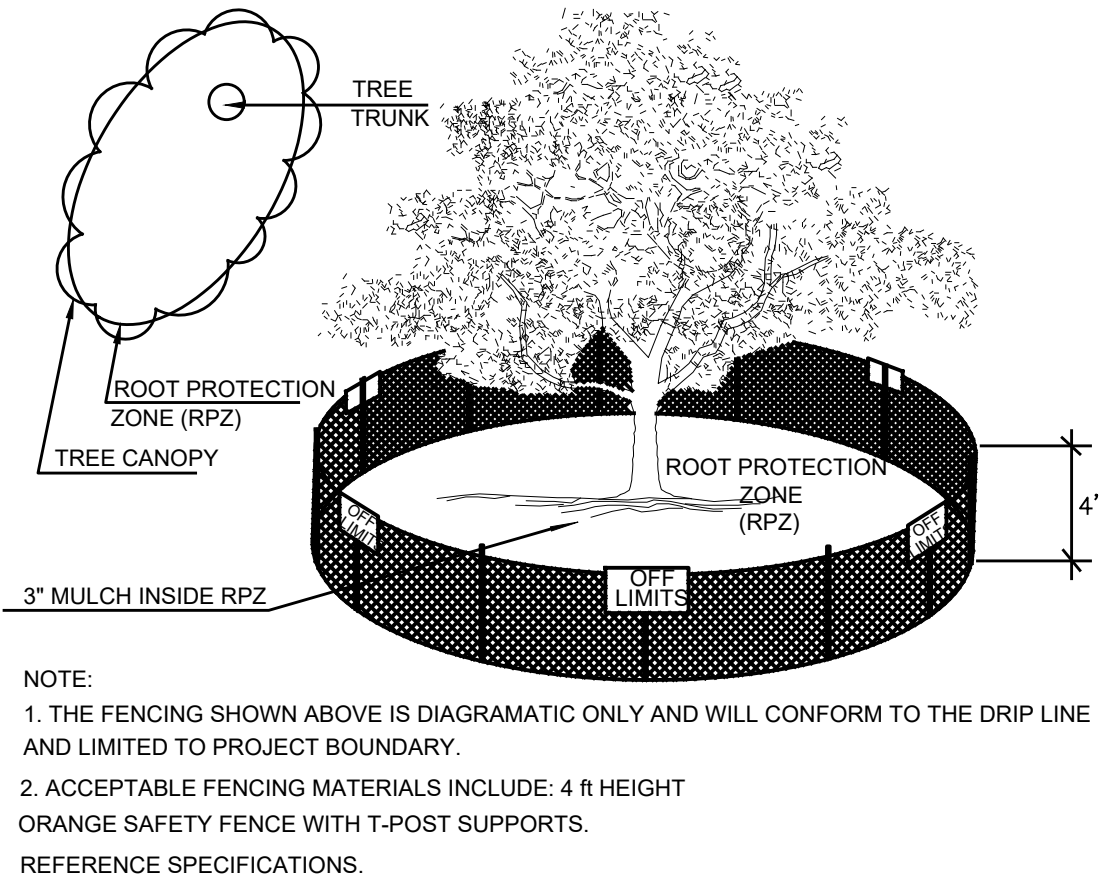
BONNIE LANE MOBILE HOMES UPLAND TREE INVENTORY													
Tag #	Species	Tree Caliper	Understory Species* 5.0" - 11.5"		Significant Tree 6" - 23.5"		Significant Tree** 10.0" - 23.5"		Heritage 3:1		Heritage 1:1		Additional Inches Preserved for Mitigation ***
			Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	
5504	HACKBERRY	22					22						
5505	MESQUITE	16					16						
5506	HACKBERRY	12					12						
5512	HACKBERRY	32									32		
5513	MESQ EASEMEN	21											
5515	HACKBERRY	18					18						
5516	CONDALIA	13								13			
5517	CONDALIA	15								15			
5518	HACKBERRY	43									43		
5519	LIVE OAK	24							24				
5521	CONDALIA	10		10									
5522	HACKBERRY	22					22						
5525	MESQUITE	20					20						
5526	HACKBERRY	11					11						
5527	HACKBERRY	15					15						
5528	HACKBERRY	13					13						
5529	HACKBERRY	10					10						
5530	HACKBERRY	12					12						
Sub. Tot. Inches=			0	10	0	0	141	30	0	52	75	0	0
Total inches by category=				10		0		171		52		75	
Presenation percentage=			100%		Significant		18%		Heritage Preservation=		41%		
Mitigation required (Commercial) =			-6		Commercial (inches)=		38.4		Heritage Mitigation (inches)=		75		
Mitigation required (Residential) =					Residential (inches)=								

BONNIE LANE MOBILE HOMES ENVIRONMENTAL SENSITIVE AREA (ESA) TREE INVENTORY													
Tag #	Species	Tree Caliper	Understory Species* 5.0" - 11.5"		Significant Tree 6" - 23.5"		Significant Tree** 10.0" - 23.5"		Heritage 3:1		Heritage 1:1		Additional Inches Preserved for Mitigation ***
			Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	
5507	HACKBERRY	17					17						
5508	HACKBERRY	21					21						
Sub. Tot. Inches=			0	0	0	0	38	0	0	0	0	0	0
Total inches by category=				0		0		38		0		0	
Presenation percentage=			#DIV/0!		Significant		0%		Heritage Preservation=		#DIV/0!		
Mitigation required (Commercial) =			0		Commercial (inches)=		30.4		Heritage Mitigation (inches)=		0		
Mitigation required (Residential) =					Residential (inches)=								

BONNIE LANE MOBILE HOMES FLOODPLAIN TREE INVENTORY													
Tag #	Species	Tree Caliper	Understory Species* 5.0" - 11.5"		Significant Tree 6" - 23.5"		Significant Tree** 10.0" - 23.5"		Heritage 3:1		Heritage 1:1		Additional Inches Preserved for Mitigation ***
			Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	Removed	Preserved	
5509	HACKBERRY	16						16					
5510	HACKBERRY	27									27		
5523	MESQUITE	14						14					
5524	MESQUITE	14						14					
5531	MESQUITE	23						23					
5532	HACKBERRY	11						11					
Sub. Tot. Inches=			0	0	0	0	0	78	0	0	0	27	0
Total inches by category=				0		0		78		0		27	
Preservation percentage=			#DIV/0!		Significant		100%		Heritage Preservation=		100%		
Mitigation required (Commercial) =			0		Commercial (inches)=		-15.6		Heritage Mitigation (inches)=		0		
Mitigation required (Residential) =					Residential (inches)=								

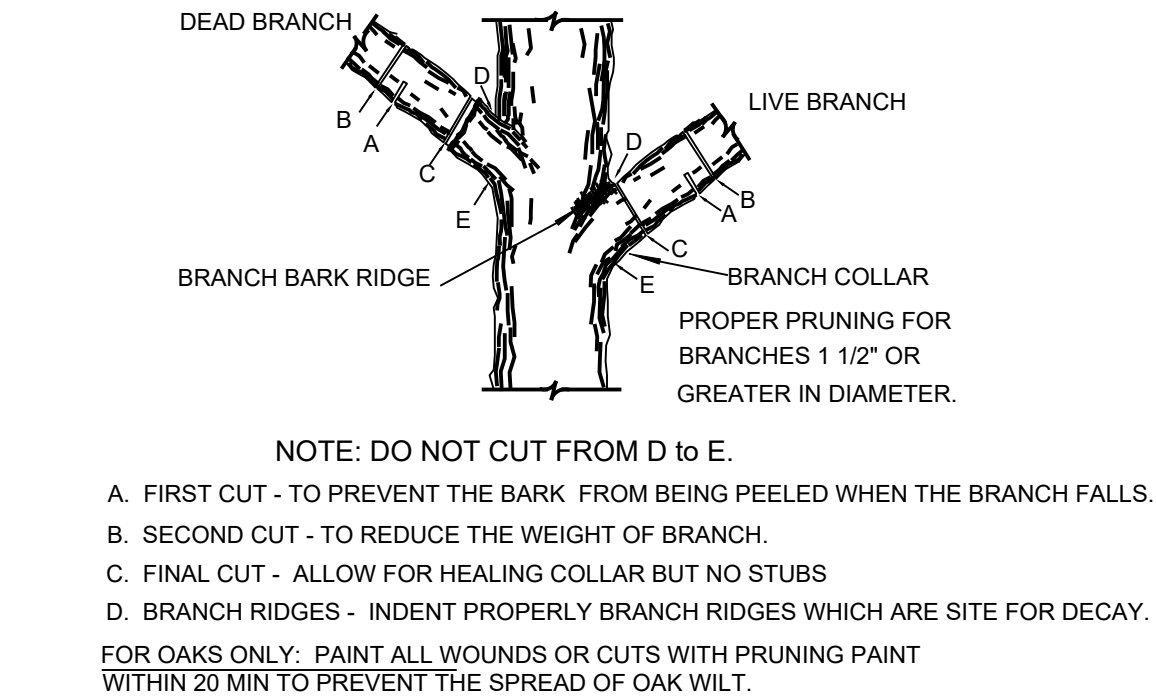
## EXISTING TREE NOTES

- ALL THE TREES WITH A DIAMETER GREATER THAN 3 INCHES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AND ROOTS TRIMMED AND PRUNED ACCORDING TO TREE PRUNING, SOIL AMENDING AND FERTILIZATION, UNLESS SPECIFIED TREES SHALL RECEIVE PROTECTION AS SHOWN ON TREE PROTECTION DETAIL ON THIS SHEET.
- ALL TREES SHALL REMAIN UNLESS NOTED ON THE PLANS.
- NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED BY CITY INSPECTOR.
- TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.
- THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR.
- THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER, WITHIN 20 MINUTES TO PREVENT OAK WILT.
- ACCESS TO FENCED AREAS WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER OR CITY INSPECTOR.
- GRADING, IF REQUIRED, SHALL BE LIMITED TO A 3 INCH CUT OR FILL WITHIN THE FENCED ROOT ZONE AREAS.
- TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND AS DIRECTED BY THE PROJECT MANAGER OR CITY INSPECTOR.
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF EACH DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST PRIOR TO ITS REMOVAL.



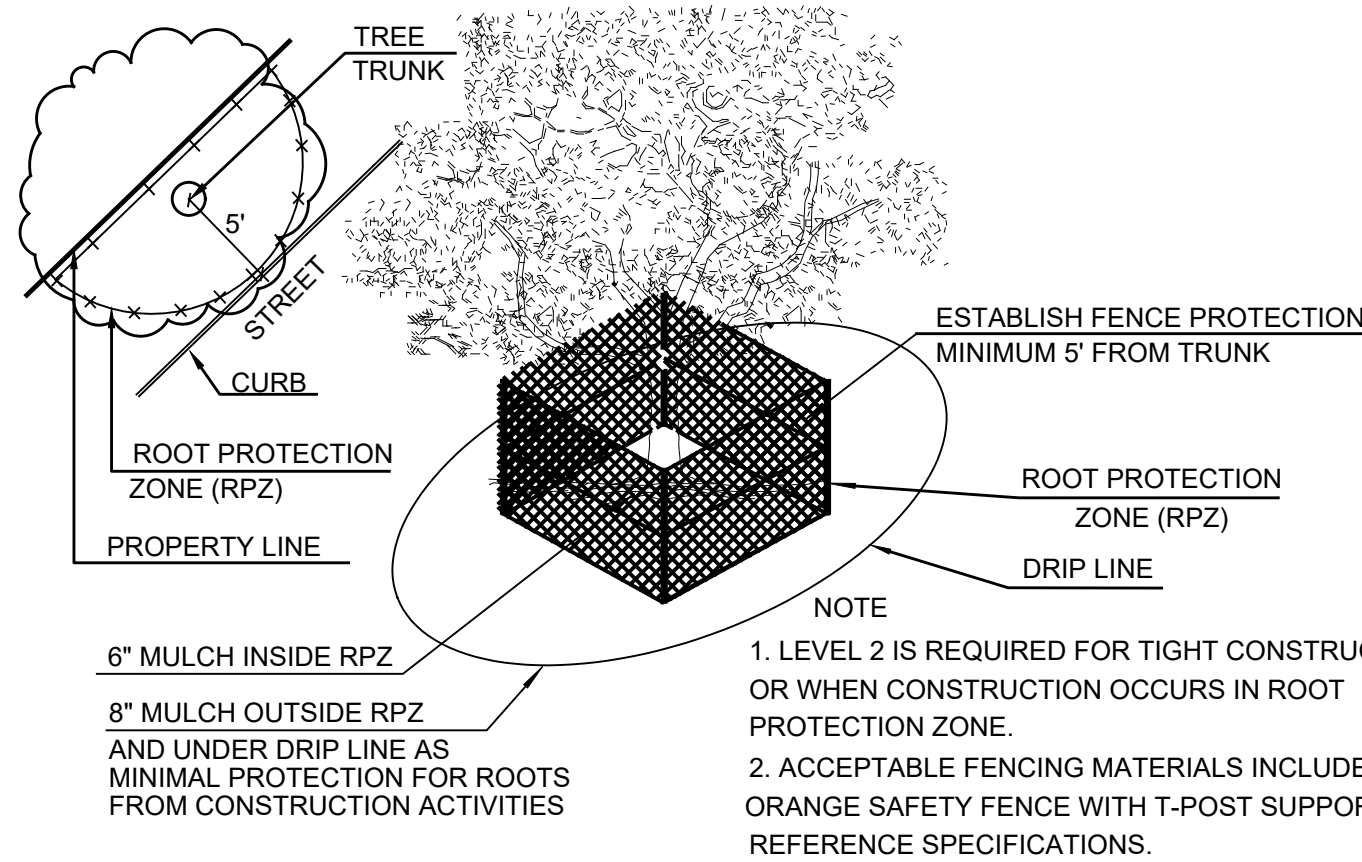
## 1 EXISTING I-A TREE PROTECTION

ELEVATION - PLAN - 3D VIEW NOT TO SCALE



## 2 TREE BRANCH PRUNING

ELEVATION NOT TO SCALE

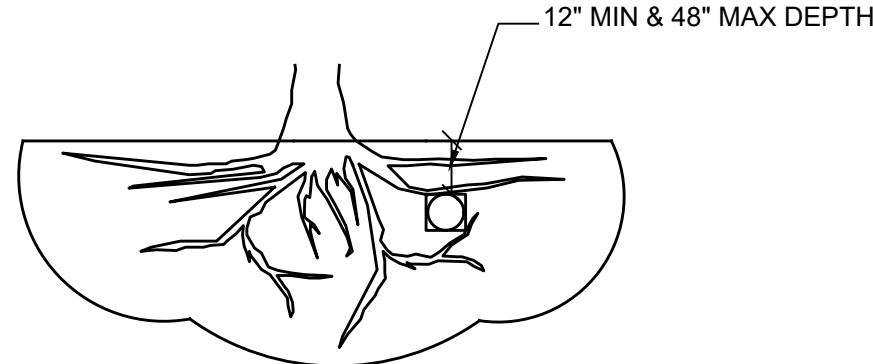


## 3 LEVEL II A TREE PROTECTION

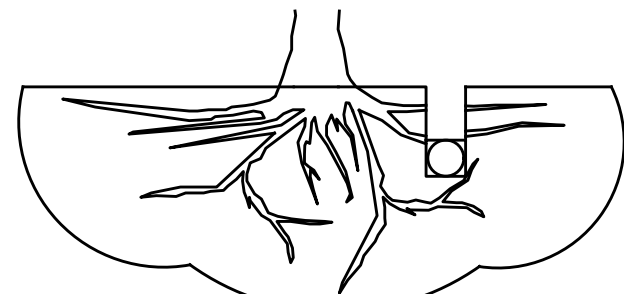
ELEVATION NOT TO SCALE

TREES THAT ARE MARKED TO BE PRESERVED ON A SITE PLAN AND FOR WHICH UTILITIES MUST PASS TROUGH THEIR ROOT PROTECTION ZONES MAY REQUIRE TUNNELING AS OPPOSED TO OPEN TRENCHES. THE DECISION TO TUNNEL WILL BE DETERMINED ON A CASE BY CASE BASIS BY THE ENGINEER.

TUNNELS SHALL BE DUG THROUGH THE ROOT PROTECTION ZONE IN ORDER TO MINIMIZE ROOT DAMAGE.



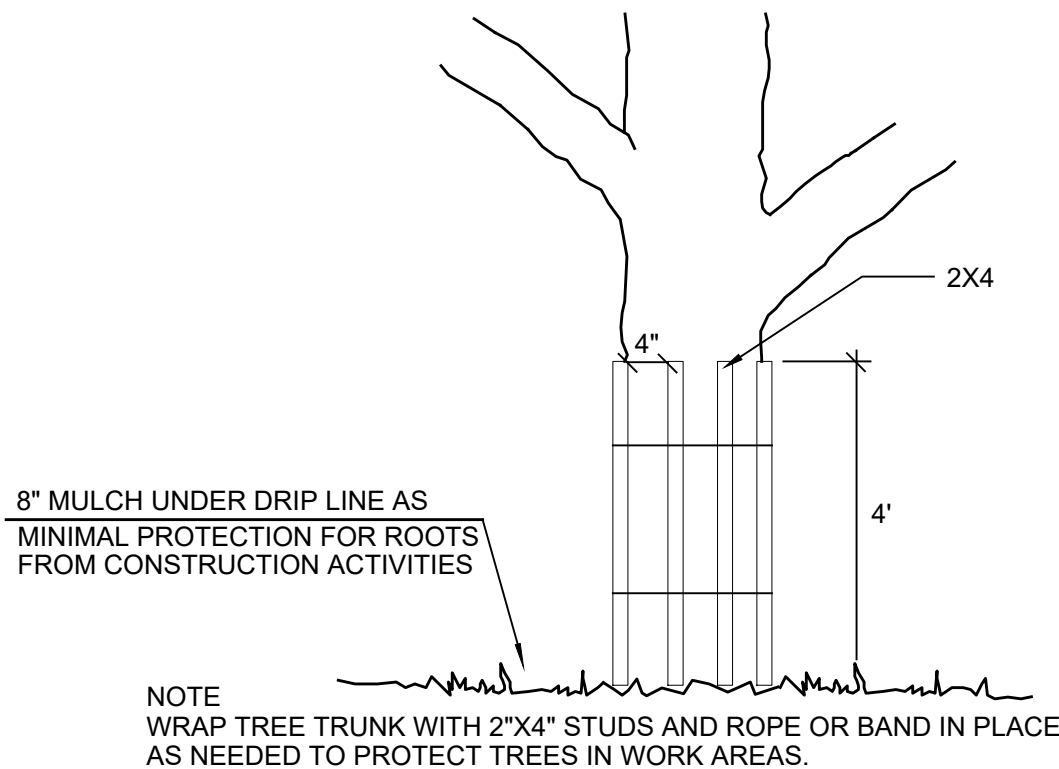
TUNNEL TO MINIMIZE ROOT DAMAGE (TOP) AS OPPOSED TO SURFACE-DUG TRENCHES IN ROOT PROTECTION ZONE WHEN THE 5' MINIMUM DISTANCE FROM TRUNK CAN NOT BE ACHIEVED.



OPEN TRENCHING MAY BE USED IF EXPOSED TREE ROOTS DO NOT EXCEED 3\"/>

## 4 BORING THROUGH TREE ROOT (RPZ)

SECTION NOT TO SCALE



NOTE  
WRAP TREE TRUNK WITH 2\"/>

## 5 LEVEL II B TREE PROTECTION

ELEVATION NOT TO SCALE



201 GROVETON | SATX 78210  
210.314.5582 | MPSTUD.IO



07-12-2023

## PROJECT

## BONNIE LANE

MOBILE HOMES

## PROJECT ADDRESS

4618 WEBBLES DR  
SAN ANTONIO, TX. 78218

## OWNER | CLIENT

## BULLET VC PROPERTY MANAGEMENT

218 PRIMROSE PLACE  
SAN ANTONIO, TX. 78209

## OWNER'S REPRESENTATIVE

RYAN PLAGENS  
ryan@upengineering.com

## SUBCONSULTANT

## REVISIONS

NO.	DATE	DESCRIPTION
1	07.12.23	CITY COMMENTS

## ISSUE SETS

## SHEET INFORMATION

## PROJECT NO.

23029

## DATE ISSUED

JULY 12, 2023

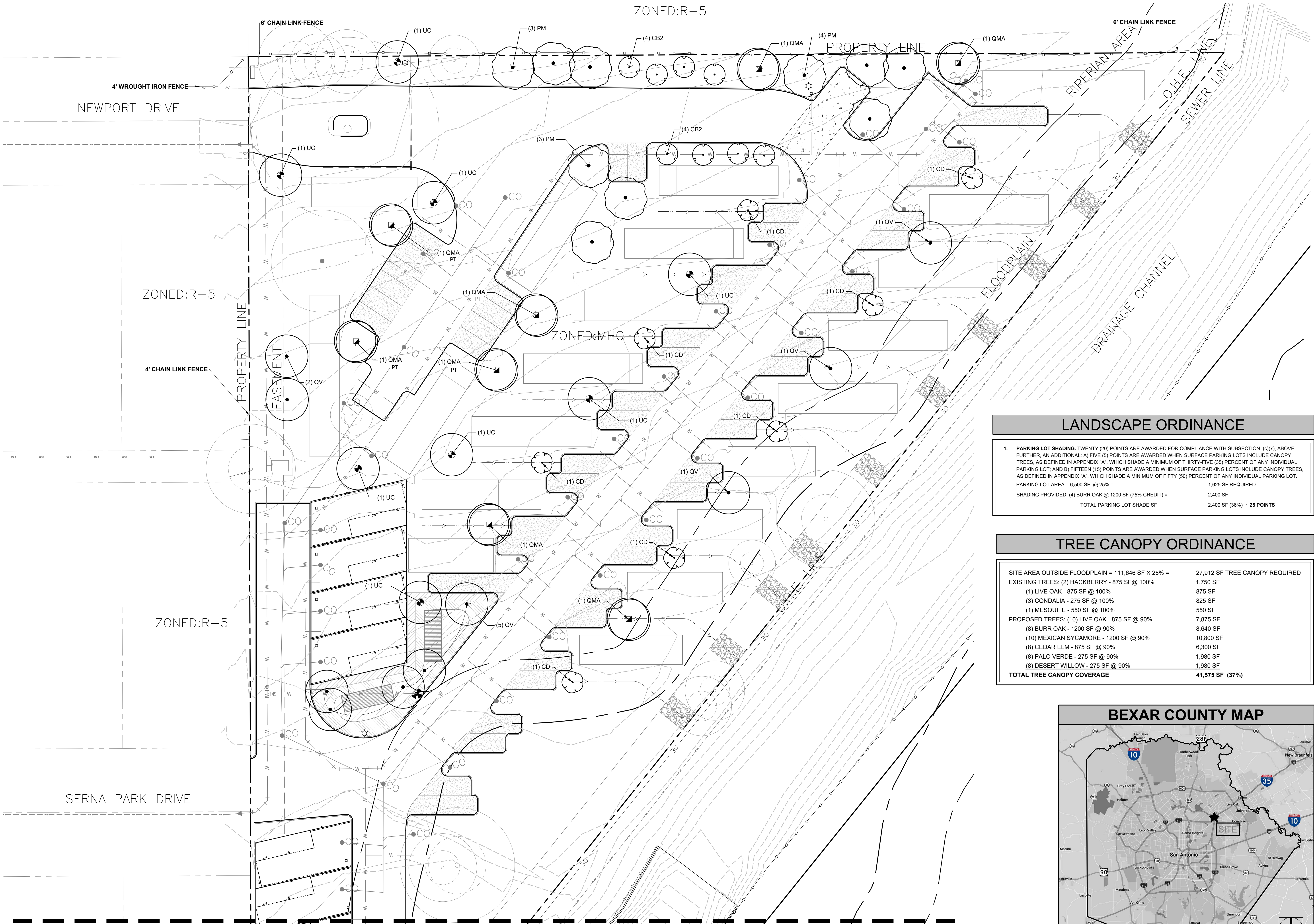
## SHEET NAME

## TREE PRESERVATION LIST/ NOTES & DETAILS

## SHEET NUMBER

## TP 2.1





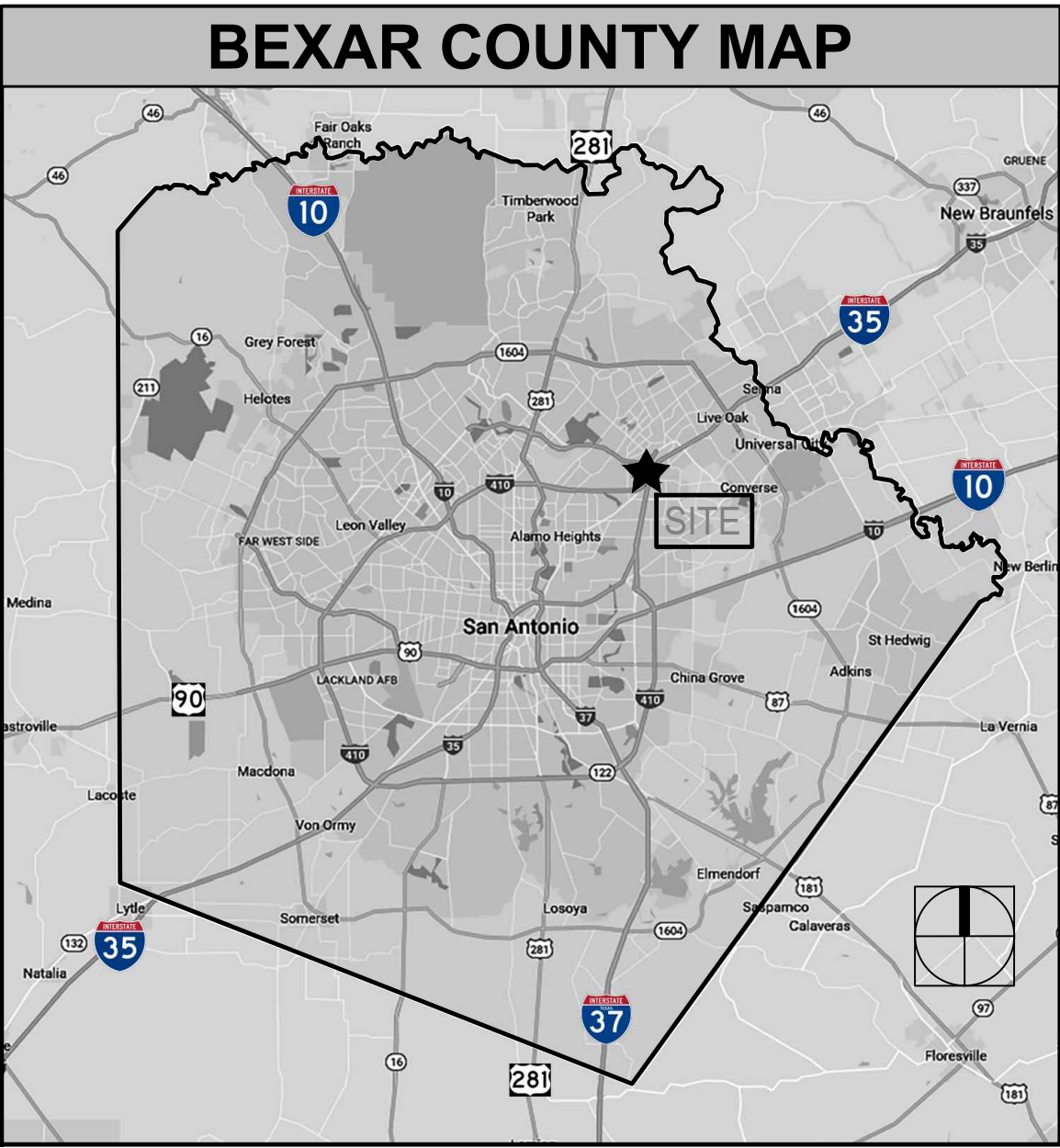
**LANDSCAPE ORDINANCE**

1. **PARKING LOT SHADING.** TWENTY (20) POINTS ARE AWARDED FOR COMPLIANCE WITH SUBSECTION (c)(7), ABOVE. FURTHER, AN ADDITIONAL: A) FIVE (5) POINTS ARE AWARDED WHEN SURFACE PARKING LOTS INCLUDE CANOPY TREES, AS DEFINED IN APPENDIX "A", WHICH SHADE A MINIMUM OF THIRTY-FIVE (35) PERCENT OF ANY INDIVIDUAL PARKING LOT; AND B) FIFTEEN (15) POINTS ARE AWARDED WHEN SURFACE PARKING LOTS INCLUDE CANOPY TREES, AS DEFINED IN APPENDIX "A", WHICH SHADE A MINIMUM OF FIFTY (50) PERCENT OF ANY INDIVIDUAL PARKING LOT.

PARKING LOT AREA = 6,500 SF @ 25% =	1,625 SF REQUIRED
SHADING PROVIDED: (4) BURR OAK @ 1200 SF (75% CREDIT) =	2,400 SF
TOTAL PARKING LOT SHADE SF	2,400 SF (36%) ~ 25 POINTS

**TREE CANOPY ORDINANCE**

SITE AREA OUTSIDE FLOODPLAIN = 111,646 SF X 25% =	27,912 SF TREE CANOPY REQUIRED
EXISTING TREES: (2) HACKBERRY - 875 SF @ 100%	1,750 SF
(1) LIVE OAK - 875 SF @ 100%	875 SF
(3) CONDALIA - 275 SF @ 100%	825 SF
(1) MESQUITE - 550 SF @ 100%	550 SF
PROPOSED TREES: (10) LIVE OAK - 875 SF @ 90%	7,875 SF
(8) BURR OAK - 1200 SF @ 90%	8,640 SF
(10) MEXICAN SYCAMORE - 1200 SF @ 90%	10,800 SF
(8) CEDAR ELM - 875 SF @ 90%	6,300 SF
(8) PALO VERDE - 275 SF @ 90%	1,980 SF
(8) DESERT WILLOW - 275 SF @ 90%	1,980 SF
TOTAL TREE CANOPY COVERAGE	41,575 SF (37%)



MPSTUDIO

201 GROVETON | SATX 78210  
210.314.5582 | MPSTUD.IO

PROJECT

BONNIE LANE

MOBILE HOMES

PROJECT ADDRESS

4618 WEBBLES DR  
SAN ANTONIO, TX. 78218

OWNER | CLIENT

BULLET VC PROPERTY MANAGEMENT  
218 PRIMROSE PLACE  
SAN ANTONIO, TX. 78209

OWNER'S REPRESENTATIVE

RYAN PLAGENS  
ryan@upengineering.com

SUBCONSULTANT

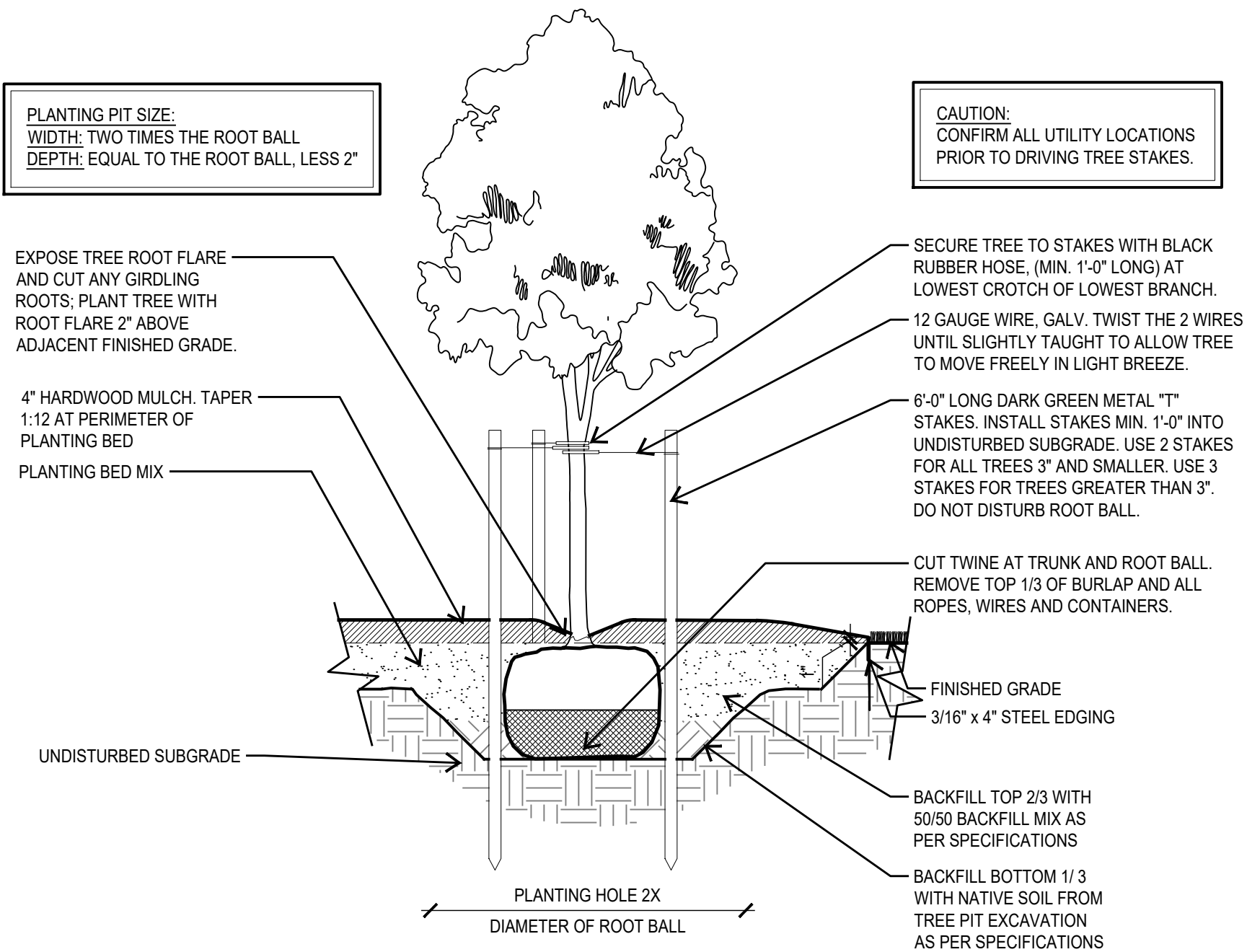
REVISIONS		
NO.	DATE	DESCRIPTION
1	07.12.23	CITY COMMENTS

ISSUE SETS

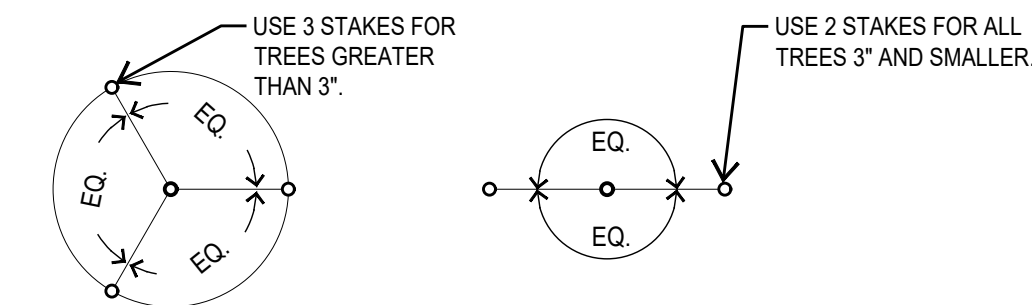
SHEET INFORMATION	
PROJECT NO.	23029
DATE ISSUED	JULY 12, 2023
SHEET NAME	

PLANTING PLAN
SHEET NUMBER
LP 1.1

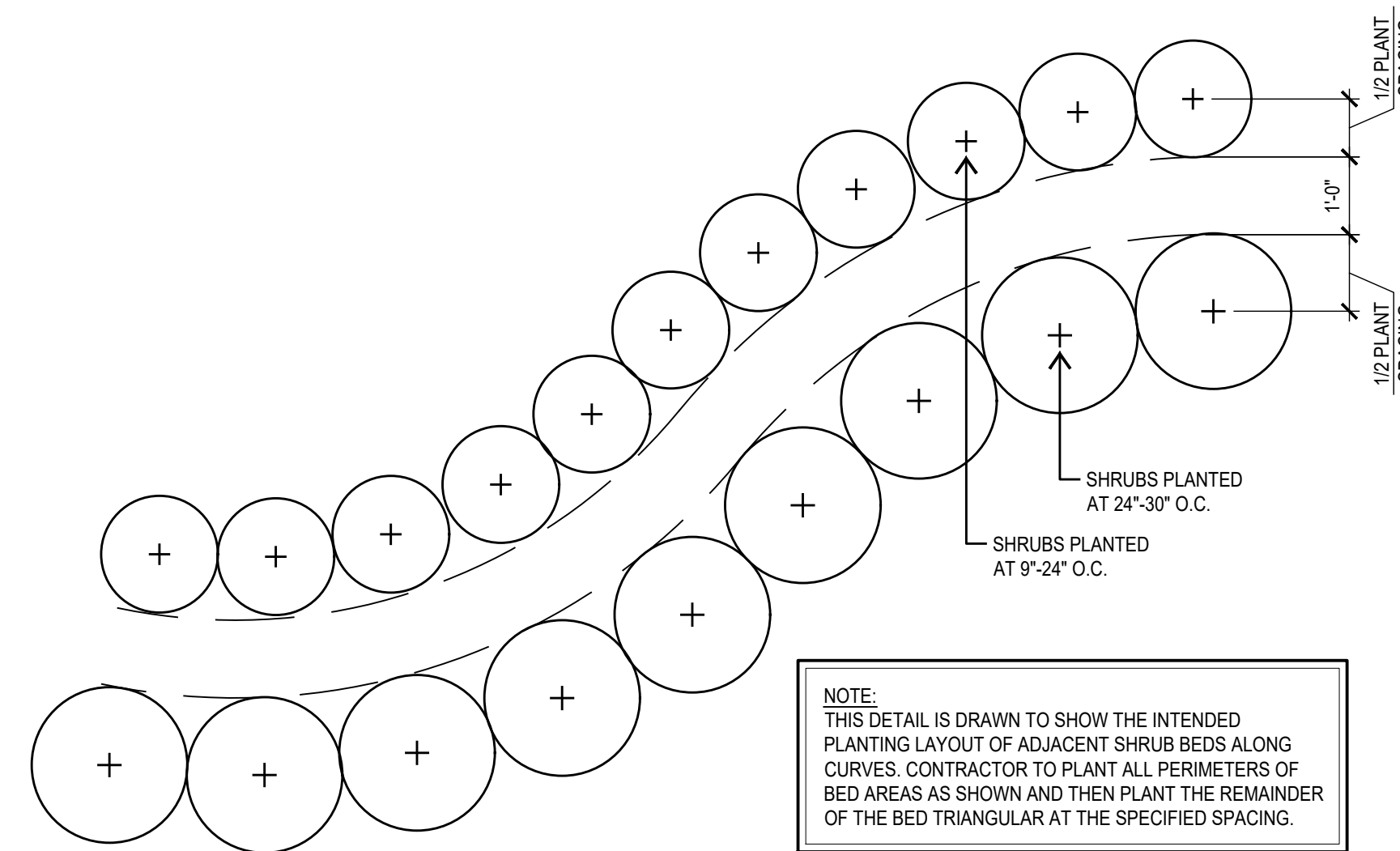




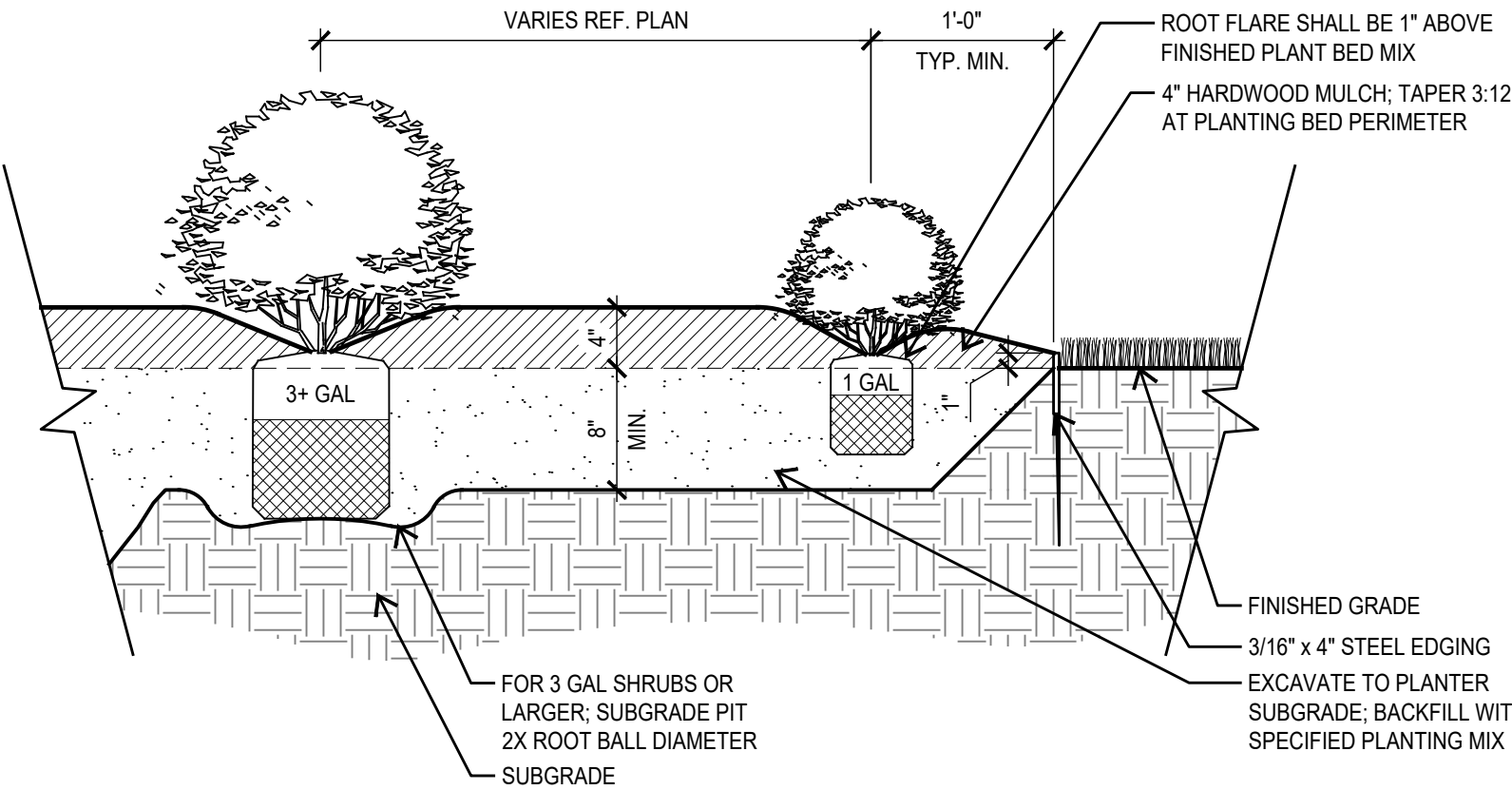
1 **TYPICAL TREE PLANTING AT BED**  
SECTION NOT TO SCALE



2 **TYPICAL TREE STAKING**  
PLAN NOT TO SCALE



3 **TYPICAL SHRUB SPACING**  
PLAN NOT TO SCALE

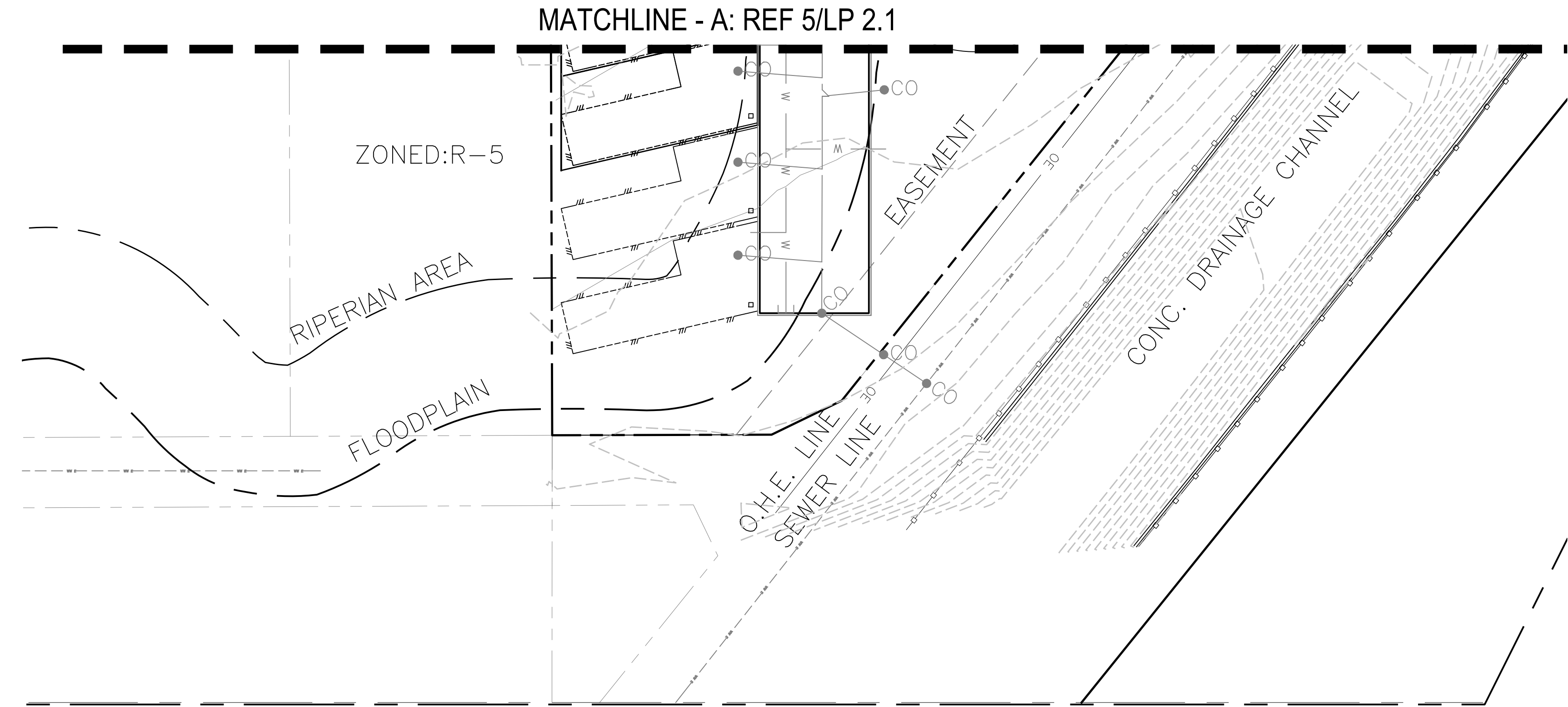


4 **TYPICAL SHRUB PLANTING**  
SECTION NOT TO SCALE

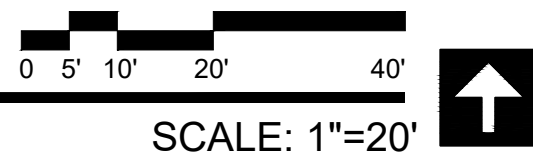
Tree Mitigation	Count	Caliper	Total
LIVE OAK	10	4	40
BURR OAK	4	3	12
BURR OAK-PARKING	4	1.5	6
MEXICAN SYCAMORE	10	3	30
PALO VERDE	8	1.5	12
DESERT WILLOW - buffer	8	1.5	12
CEDAR ELM	8	4	32
TOTAL TREE MITIGATION			144

PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
	PM	10	PLATANUS MEXICANA	MEXICAN SYCAMORE 'ALAMO'	3" CAL.	SINGLE TRUNK CONTAINER GROWN; STRAIGHT TRUNK WITH FULL AND UNIFORM CANOPY; PARK GRADE NOT ACCEPTABLE
	QMA	8	QUERCUS MACROCARPA	BURR OAK	3" CAL.	SINGLE TRUNK B&B; STRAIGHT TRUNK WITH FULL AND UNIFORM CANOPY; PARK GRADE NOT ACCEPTABLE
	QV	10	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	4" CAL.	SINGLE TRUNK B&B; STRAIGHT TRUNK WITH FULL AND UNIFORM CANOPY; PARK GRADE NOT ACCEPTABLE
	UC	8	ULMUS CRASSIFOLIA	CEDAR ELM	4" CAL.	SINGLE TRUNK B&B; STRAIGHT TRUNK WITH FULL AND UNIFORM CANOPY; PARK GRADE NOT ACCEPTABLE
ORNAMENTAL TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
	CD	8	CERCIDIUM X 'DESERT MUSEUM'	DESERT MUSEUM PALO VERDE	1.5" CAL.	MULTI-TRUNK B&B; STRAIGHT TRUNK WITH FULL AND UNIFORM CANOPY; PARK GRADE NOT ACCEPTABLE
	CB2	8	CHILOPSIS LINEARIS 'BUBBA'	BUBBA DESERT WILLOW	1.5" CAL.	MULTI-TRUNK B&B; STRAIGHT TRUNK WITH FULL AND UNIFORM CANOPY; PARK GRADE NOT ACCEPTABLE



5 **LANDSCAPE**  
PLAN



201 GROVETON | SATX 78210  
210.314.5582 | MPSTUD.IO



PROJECT

BONNIE LANE

MOBILE HOMES

**PROJECT ADDRESS**  
4618 WEBBLES DR  
SAN ANTONIO, TX. 78218

**OWNER | CLIENT**  
BULLET VC PROPERTY MANAGEMENT  
218 PRIMROSE PLACE  
SAN ANTONIO, TX. 78209

**OWNER'S REPRESENTATIVE**  
RYAN PLAGENS  
ryan@upengineering.com

SUBCONSULTANT

REVISIONS

NO.	DATE	DESCRIPTION
1	07.12.23	CITY COMMENTS

ISSUE SETS

SHEET INFORMATION

**PROJECT NO.**  
23029

**DATE ISSUED**  
JULY 12, 2023

**SHEET NAME**

PLANT LIST & DETAILS

**SHEET NUMBER**

LP 2.1





PROJECT

BONNIE LANE

MOBILE HOMES

PROJECT ADDRESS

4618 WEBBLES DR  
SAN ANTONIO, TX. 78218

OWNER | CLIENT

BULLET VC PROPERTY MANAGEMENT

218 PRIMROSE PLACE  
SAN ANTONIO, TX. 78209

OWNER'S REPRESENTATIVE

RYAN PLAGENS  
ryan@upengineering.com

SUBCONSULTANT

REVISIONS

NO.	DATE	DESCRIPTION
1	07.12.23	CITY COMMENTS

ISSUE SETS


SHEET INFORMATION

PROJECT NO.

23029

DATE ISSUED

JULY 12, 2023

SHEET NAME

LANDSCAPE  
NOTES

SHEET NUMBER

LP 2.2

GENERAL LANDSCAPE NOTES

PART 1 :

LANDSCAPE CONTRACTOR SHALL ACCEPT THE SITE IN ITS EXISTING CONDITION AND SHALL TIE NEW WORK TO EXISTING CONDITIONS AND CONTROLS (SUCH AS EXISTING GRADES AND WALK ELEVATIONS) AS NECESSARY TO MEET THE INTENT OF THE PLANS.

BEFORE PROCEEDING WITH ANY WORK IN AN AREA, LANDSCAPE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LAYOUTS AND SIZES AND SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL SITE CONDITIONS. IF ANY UTILITIES OR OBSTRUCTIONS ARE DISCOVERED DURING CONTRACT WHICH MAY NOT HAVE BEEN KNOWN DURING DESIGN, CONTRACTOR SHALL STOP WORK AND IMMEDIATELY NOTIFY LANDSCAPE ARCHITECT BEFORE PRECEDING. LANDSCAPE CONTRACTOR SHALL BE LIABLE FOR ALL MODIFICATIONS AND DAMAGE IF WORK PROCEEDS IN EITHER OF THE ABOVE SITUATIONS WITHOUT NOTIFYING LANDSCAPE ARCHITECT.

PRIOR TO ANY EXCAVATION, LANDSCAPE CONTRACTOR SHALL CONTACT APPROPRIATE AUTHORITIES INCLUDING, BUT NOT LIMITED TO, TEXAS ONE CALL SYSTEM AT 1-800-245-4545 TO LOCATE EXISTING UNDERGROUND UTILITIES.

LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ANY DAMAGE TO ANY UTILITIES OR PROPERTY THAT MAY OCCUR IN THE EXECUTION OF HIS CONTRACT WORK. WHEN WORK REQUIRES CROSSING EXISTING WALKS OR CURBS WITH EQUIPMENT, LANDSCAPE CONTRACTOR SHALL PROVIDE APPROVED BRIDGE MATERIAL SUCH AS WOOD PLANKS AND EARTH TO PREVENT DAMAGE TO FINISHED WORK. LANDSCAPE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS THAT MAY BE WORKING ON THE SITE SIMULTANEOUSLY AND SHALL COORDINATE STAGING OF HIS WORK WITH OWNER AND LANDSCAPE ARCHITECT. ALL TRASH AND DEBRIS GENERATED FROM CONTRACT OPERATIONS SHALL BE REMOVED ON A DAILY BASIS. ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES AND ORDINANCES. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR JOB SITE SAFETY IN CONJUNCTION WITH HIS CONTRACT WORK.

REFERENCES

- A.)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) Z60.1 - NURSERY STOCK.
- B.)

TEXAS STATE DEPARTMENT OF AGRICULTURE (TDA) - NURSERY FLORAL LICENSING PROGRAM.

1.1 SUBMITTALS FOR REVIEW

A.) PRODUCT DATE: LIST OF CHEMICALS TO BE USED ON SITE.

B.) SAMPLES:

1.

1 QUART SAMPLES OF EACH SOIL AMENDMENT WITH ANALYTICAL DATA FROM A RECOGNIZED TESTING LABORATORY SHOWING MANUFACTURER'S GUARANTEED ANALYSIS.
2.

1 CUBIC FOOT SAMPLES OF PREMIXED BACKFILL MIXES.

C.) TEST RESULTS:

1.

PROVIDE SOIL SAMPLE TEST RESULTS INDICATING PH, FERTILITY LEVELS, AND PERCENTAGES OF SAND, SILT, AND CLAY.
2.

PROVIDE RECOMMENDATIONS FOR SOIL AMENDMENTS AND FERTILIZERS BASED ON SOIL ANALYSIS; FOR CONTRACT PURPOSES, USE MIXTURE SPECIFIED IN THIS SECTION.

D.) NURSERY QUALIFICATIONS: COMPANY SPECIALIZING IN GROWING AND CULTIVATING PLANTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEAR DOCUMENTED EXPERIENCE, AND CERTIFIED BY THE STATE OF TEXAS.

E.) INSTALLER QUALIFICATIONS:

1.

COMPANY SPECIALIZING IN LANDSCAPE INSTALLATION WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.
2.

PROVIDE FULL-TIME SUPERINTENDENT ON-SITE DURING INSTALLATION.

F.) PLANT MATERIALS:

1.

PLANT MATERIALS ARE SUBJECT TO EXAMINATION BY LANDSCAPE ARCHITECT AT PLACE OF GROWTH OR UPON DELIVERY TO PROJECT.

1.2 DELIVERY, STORAGE AND HANDLING

A.) DELIVER FERTILIZER IN WATERPROOF BAGS SHOWING WEIGHT, GUARANTEED CHEMICAL ANALYSIS, MANUFACTURER AND BRAND NAME, AND APPROVALS OF AUTHORITIES HAVING JURISDICTION.

B.) DELIVER PLANT MATERIAL WITH IDENTIFICATION TAG SHOWING BOTANICAL NAME AND PLANT SIZE.

C.) DELIVER PLANT MATERIAL IMMEDIATELY PRIOR TO INSTALLATION; PLANT MATERIALS ON SAME DAY AS DELIVERED, IF PLANTING CANNOT BE ACCOMPLISHED ON SAME DAY AS DELIVERY, PROVIDE ADDITIONAL PROTECTION TO MAINTAIN PLANTS IN HEALTHY AND VIGOROUS CONDITION.

D.) KEEP PLANT MATERIAL MOIST AND PROTECT FROM DAMAGE AND DESICCATION OF LEAVES UNTIL PLANTING.

E.) DO NOT HANDLE PLANT MATERIALS BY STEM OR TRUNK.

F.) KEEP CONTAINERS INTACT UNTIL JUST PRIOR TO PLANTING.

1.3 SEQUENCING

A.) INSTALL TREES, SHRUBS, AND LINER STOCK PLANT MATERIALS PRIOR TO INSTALLATION OF LAWNS.

1.4 WARRANTY

A.) FURNISH WRITTEN WARRANTY THAT PLANT MATERIALS WILL BE IN HEALTHY, VIGOROUS, GROWING CONDITION ONE (1) YEAR AFTER FINAL ACCEPTANCE. DAMAGE DUE TO ACTS OF GOD, VANDALISM, OR NEGLIGENCE BY OWNER IS EXCLUDED.

B.) REPLACE DEAD, UNHEALTHY AND UNSIGHTLY PLANT MATERIALS WITHIN WARRANTY PERIOD, UPON NOTIFICATION BY OWNER OR LANDSCAPE ARCHITECT.

C.) NOTIFY OWNER AND LANDSCAPE ARCHITECT 30 DAYS PRIOR TO EXPIRATION OF WARRANTY PERIOD AND ARRANGE FINAL ACCEPTANCE INSPECTION BY ALL PARTIES.

1.

REMOVE DEAD, UNHEALTHY, AND UNSIGHTLY PLANT MATERIALS.
2.

REMOVE GUYING AND STAKING MATERIALS.
3.

WARRANT REPLACEMENT PLANTS UNDER SAME PROVISIONS AND FOR SAME TIME PERIOD AS ORIGINAL PLANTS.

1.5 MAINTENANCE

1.

MAINTAIN PLANT LIFE IMMEDIATELY AFTER PLACEMENT AND FOR NINETY (90 DAYS) AFTER FINAL ACCEPTANCE...
2.

REPLACE DEAD OR DYING PLANTS WITH PLANTS OF SAME SIZE AND SPECIES SPECIFIED.
3.

REMOVE TRASH, DEBRIS, AND LITTER, WATER, PRUNE, FERTILIZE, WEED, AND MOW. SPOT APPLY HERBICIDES, AND FUNGICIDE ONLY AS REQUIRED.
4.

REMOVE CLIPPINGS AND DEBRIS FROM SITE PROMPTLY.
5.

COORDINATE WITH OPERATION OF IRRIGATION SYSTEM TO ENSURE THAT PLANTS ARE ADEQUATELY WATERED. HAND WATER AREAS NOT RECEIVING ADEQUATE WATER FROM IRRIGATION SYSTEM.
6.

RESET SETTLED PLANTS.
7.

REAPPLY MULCH TO BARE AND THIN AREAS.

1.6 MATERIALS

A.) PLANT MATERIALS:

1.

CERTIFIED IN ACCORDANCE WITH TDA REQUIREMENTS.
2.

SPECIES AND SIZE AS INDICATED IN PLANT SCHEDULE. LARGER SIZE MAY BE SUBSTITUTED WITHOUT ADDITIONAL COST TO OWNER, PROVIDED ROOT BALL OR SPREAD INCREASES PROPORTIONATELY.
3.

WHERE MATERIALS ARE PLANTED IN MASSES, PROVIDE PLANTS OF UNIFORM SIZE.
4.

GROWN IN CLIMATIC CONDITIONS SIMILAR TO THOSE AT SITE. FREE FROM DISEASE, INSECT INFESTATIONS, DEFECTS INCLUDING WEAK OR BROKEN LIMBS, CROTCHES, AND DAMAGED TRUNKS, ROOTS OR LEAVES, SUN SCALD, FRESH BARK ABRASIONS, EXCESSIVE ABRASIONS, AND OBJECTIONABLE DISFIGUREMENTS. EXHIBIT NORMAL GROWTH HABITS; VIGOROUS, HEALTHY, FULL, WELL-PROPORTIONED, AND SYMMETRICAL.
5.

TREE TRUNKS TO BE STURDY AND EXHIBIT HARDENED SYSTEMS AND VIGOROUS AND FIBROUS ROOT SYSTEMS, NOT ROOT OR POT BOUND.
6.

NOT PRUNED, TRIMMED, OR TOPPED.
7.

CONTAINER-GROWN STOCK: GROWN IN CONTAINERS FROM SEEDING.

B.) TOPSOIL:

1.

USE SITE GENERATED SOIL FROM PLANTING PREPARATIONS, REASONABLY FREE FROM CLAY LUMPS, COARSE SANDS, STONES, ROOTS, FOREIGN MATTER.
2.

IF SUFFICIENT ON-SITE MATERIALS DO NOT EXIST, PROVIDE SIMILAR OFF-SITE TOPSOIL FROM APPROVED LOCAL SOURCE. SUBMIT SAMPLE AND SOURCE FOR APPROVAL PRIOR TO DELIVERY OF ANY SOIL TO SITE.

C.) MULCH:

1.

SHREDDED, COMPOSTED HARDWOOD BARK OF VARYING LENGTH BY NEW EARTH LLC, ph. 210-6615180 OR APPROVED SUBSTITUTE, PARTIALLY DECOMPOSED; FREE FROM STICKS, STONES, CLAY, AND GROWTH AND GERMINATION-INHIBITING INGREDIENTS.

D.) SOIL AMENDMENTS:

1.

SOIL SULFUR: AGRICULTURAL GRADE SULFUR CONTAINING MINIMUM 99 PERCENT SULFUR EXPRESSED AS ELEMENTAL.
2.

IRON SULFATE: 20 PERCENT IRON EXPRESSED AS METALLIC IRON DERIVED FROM FERRIC AND FERROUS SULFATE AND 10 PERCENT SULFUR EXPRESSED AS ELEMENTAL. WHEN REQUIRED BY SOIL TESTS.
3.

GYPSUM: AGRICULTURAL GRADE, CONTAINING MINIMUM 98 PERCENT CALCIUM SULFATE, WHEN REQUIRED BY SOIL TEST.
4.

HERBICIDE: PRE-EMERGENT TYPE; SURFLAN OR APPROVED SUBSTITUTE.
5.

FERTILIZER FOR TREES AT PLANTING: PLANT HEALTH CARE GROUP "PHC TREE SAVER" APPLIED AS PER P.H.C.G. DIRECTIONS AND APPLICATION RATES.
6.

FERTILIZER FOR LAWN: PLANT HEALTH CARE GROUP "PHC FOR TURF 15-1-6" APPLIED AT A RATE OF SEVEN (7) POUNDS PER 1,000 SQUARE FEET.
7.

SOIL INOCULATES FOLLOWING TREE PLANTING: PLANT HEALTH CARE GROUP "PHC INJECTABLE INOCULANT FOR TREES", APPLIED AS PER PHCG MIXING DIRECTIONS AND APPLICATION RATES.
8.

FERTILIZER FOR PLANTER BED MIX: PLANT HEALTH CARE GROUP "HEALTHY START 3-4-3" APPLIED AT A RATE OF 25 POUNDS CUBIC YARD OF PLANT BED MIX.

H.) TURF:

1.

ALL SEED USED SHALL BE HIGH QUALITY, EXTRA FANCY, TREATED LAWN TYPE SEED AT 98% PURITY AND 85% GERMINATION, AND SHALL BE FURNISHED AND SHOWN IN SEALED STANDARD CONTAINERS WITH SIGNED COPIES OF A STATEMENT FROM THE VENDOR CERTIFYING THAT EACH CONTAINER OF SEED DELIVERED IS FULLY LABELED IN ACCORDANCE WITH THE TEXAS STATE AGRICULTURAL CODE AND IS EQUAL TO OR BETTER THAN THE REQUIREMENT OF THESE SPECIFICATIONS. LAWN SEED TO BE FREE OF WEEDS OR NOXIOUS GRASS SEEDS.
2.

SEED WHICH HAS BECOME WET, MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR STORAGE WILL NOT BE ACCEPTED.
3.

GRASS SEED SCHEDULE:

A.)

BERMUDA GRASS SEED:

B.)

MARCH-OCTOBER SHALL BE SPECIFIED BERMUDA.

C.)

OCTOBER-MARCH SHALL BE ANNUAL RYE GRASS.

4.

"HYDRO-MULCH" AS MANUFACTURED BY CONVED, OR APPROVAL EQUAL.

5.

THE HYDO-MULCH SHALL BE COMPOSED OF WOOD CELLULOSE FIBER AND CONTAIN NO GERMINATION OR GROWTH-INHIBITING FACTORS.

6.

HYRO-SEEDING ADDITIVE (BINDER); ECOLOGY CONTROL-M BINDER ORGANIC SEEDING ADDITIVE.

7.

SOD: PROVIDE FULL, DARK GREEN, UNIFORM, STRONGLY ROOTED SOD IN 16" X 24" STRIPS FREE FROM WEEDS, UNDESIRABLE GRASSES, DISEASES AND PESTS. SOD SHALL BE CUT FROM THE FIELD NO LONGER THAN 48 HOURS BEFORE PLANTING. ROOTS OF SOD SHALL BE KEPT MOIST.

8.

BRACING: TREE ANCHORS SHALL BE AS PER DETAILS.

9.

TREE PAINT: MORRISON TREE SEAL, CABOT TREE PAINT, OR OTHER PRODUCT APPROVED BY LANDSCAPE ARCHITECT.

10.

PLANTER BED EDGING SHALL BE 3/16"X 4" STEEL EDGING WITH MANUFACTURERS STANDARD GREEN FINISH.
- F.) MIXES:
1.

PLANT BED MIX:  
PLANT BED MIX (BACKFILL MIX) SHALL BE NEW EARTH'S 4 WAY MIX AS PRODUCED BY NEW EARTH LLC, PH. 210-661-5180. DOCUMENTATION OF PURCHASE OF THIS SPECIFIC MIX SHALL BE SUBMITTED TO LANDSCAPE ARCHITECT. IF EQUAL IS PROPOSED, CONTRACTOR SHALL SUBMIT SAMPLE AND COMPLETE ANALYSIS WITH TEST RESULTS AND METHOD OF PRODUCTION FOR EVALUATION AS AN EQUAL SUBSTITUTE.
- PART 2 EXECUTION:
- 2.1 PREPARATION
- LANDSCAPE CONTRACTOR SHALL RECEIVE THE SITE AT APPROXIMATELY FINISH GRADE LESS ANY SETTLEMENT THAT MAY HAVE OCCURRED SINCE SITE CONSTRUCTION AND BACKFILLING. THIS GRADE SHALL BE RAKED TO REMOVE ALL DEBRIS INCLUDING STICKS, CLODS, AND STONES AND SHALL BE FINE GRADED TO ELIMINATE ALL HUMPS, RUTS, DEPRESSIONS AND ABRUPT CHANGES IN GRADE AND ANY AREA THAT COULD CAUSE WATER TO POND.
- A.) IF VEGETATION IS GROWING IN PLANTING/LAWN AREA, APPLY HERBICIDE AT RATES RECOMMENDED BY MANUFACTURER. ALLOW TO DIE, AND THEN GRUB OUT ROOTS TO MINIMUM 1/2 INCH DEPTH.
- B.) MARK LOCATION OF TREES AND OUTLINES OF PLANTS BEDS USING COLORED WOOD STAKES OR FLAGS PRIOR TO BEGINNING PLANTING; OBTAIN LANDSCAPE ARCHITECT'S APPROVAL PRIOR TO PROCEEDING.
- 2.2 PLANTING TREES AND SHRUBS
- A.)

REMOVE CONTAINERS WITHOUT DAMAGE TO ROOTS.

B.)

REMOVE BOTTOM OF PLANT BOXES PRIOR TO PLACING PLANTS; REMOVE SIDES AFTER PLACEMENT AND PARTIAL BACKFILLING. PREVENT DAMAGE TO ROOTS.

C.)

REMOVE UPPER THIRD OF BURLAP FROM BALLED AND BURLAP TREES AFTER PLACEMENT.

D.)

PLACE PLANT UPRIGHT AND PLUMB IN CENTER OF HOLE. PULL ANY WEEDS GROWING IN TREE BALL AND EXPOSE ROOT FLARE (THIS WILL BE THE TOP MOST IDENTIFIABLE ROOT). REMOVE ANY GIRDLING ROOTS AND SET PLANT SO THAT ROOT FLARE IS 1" ABOVE FINISH GRADE. ORIENT PLANTS FOR BEST APPEARANCE. BACKFILL THE BOTTOM 1/3 OF THE EXCAVATION WITH SOIL CUT FROM EXCAVATION OF PIT AND THOROUGHLY WATER THIS SOIL TO SETTLE IN. BACKFILL THE REMAINDER OF THE EXCAVATION WITH A 50/50 MIX OF NEW EARTH'S 4 WAY MIX AND NATIVE SOIL EXCAVATED FROM THE PIT. PLACE PLANT HEALTH CARE GROUP'S "TREE SAVER" IN BACKFILL AS PER P.H.C.G. DIRECTION AND APPLICATION RATES. LIGHTLY TAMP AND WATER SOIL TO REMOVE ALL AIR POCKETS. FOR PLANTS OUTSIDE OF PLANTING BEDS, CONSTRUCT 3 INCH HIGH WATER CONTAINMENT RING AROUND PLANT. SPREAD MULCH TO MINIMUM 4 INCH DEPTH OVER PLANT BASIN.

E.)

ADJUST PLANT HEIGHT IF SETTLEMENT OCCURS AFTER BACKFILL AND STAKE AS DETAILED.

1.

TWO TO THREE WEEKS FOLLOWING PLANTING, INJECT PLANT HEALTH CARE INJECTABLE INOCULANT AROUND ROOT BALL FOLLOWING MANUFACTURER'S DIRECTIONS AND APPLICATION RATES. CONTACT LANDSCAPE ARCHITECT TO OBSERVE THIS OPERATION.

F.)

TRIM PLANTS TO REMOVE DEAD AND INJURED BRANCHES ONLY. TREAT CUTS OVER 3/4 INCH DIAMETER WITH TREE PAINT.

G.)

BRACE PLANTS OVER 65 GALLONS SIZE IMMEDIATELY AFTER PAINTING:

1.

FOR TREES 2" CAL. AND GREATER PROVIDE STAKING AS DETAILED. POSITION TO PREVENT HAZARDS TO PEDESTRIANS.

2.

DO NOT RESTRICT PLANT MOVEMENT UNDER LIGHT WIND LOADS OR DAMAGE BARK.
- 2.3 PLANTING MASS SHRUBS, GROUNDCOVERS, AND ANNUALS (SEE DETAILS)
- A.)

EXCAVATE PLANT BED TO DEPTH AS DETAILED ON PLANS.

B.)

BACKFILL WITH SPECIFIED 4-WAY MIX AND TILL IN SPECIFIED PLANT HEALTH CARE'S, "HEALTHY START 3-4-3" AT A RATE OF 25 LBS. PER CUBIC YARD OF PLANT BED MIX.

C.)

INSTALL METAL EDGINGS TO SEPARATE ALL PLANTER BEDS FROM TURF AND AT LOCATIONS INDICATED ON PLANS.

D.)

PLACE PLANTS IN STRAIGHT, EVENLY SPACED ROWS AT SPACING INDICATED ON DRAWINGS, TO UNIFORMLY FILL BEDS. USE TRIANGULAR SPACING METHOD UNLESS OTHERWISE INDICATED.

E.)

WATER PLANTS THOROUGHLY IMMEDIATELY AFTER PLANTING. REPAIR SETTLED AREAS.

F.)

ADJUST FINAL GRADES TO 1/2 INCH BELOW ADJACENT PAVING CURBS.

G.)

SPREAD MULCH TO MINIMUM 4 INCH DEPTH OVER PLANTING BEDS AS DETAILED.
- 2.4 CLEANING AND ADJUSTING
- A.)

REMOVE PLANT CONTAINERS, TRASH, RUBBISH, AND EXCESS SOILS FROM SITE DAILY AND AT COMPLETION OF TREE, SHRUBS AND GROUNDCOVER PLANTING.

B.)

REPAIR RUTS, HOLES AND SCARS IN GROWING SURFACE.
- 2.4 LAWN APPLICATION (AT COMPLETION OF TREE, SHRUB AND GROUNDCOVER PLANTINGS)
- A.) COORDINATION:
1.

HYDROMULCH AND SOD AFTER TREE, SHRUB AND GROUNDCOVER INSTALLATION IS COMPLETE.

1.

CONTRACTOR TO COORDINATE WITH IRRIGATION CONTRACTOR TO INSURE FUNCTIONAL IRRIGATION SYSTEM PRIOR TO ANY LAWN INSTALLATION.
- B.) PREPARATION:
1.

PRE-PLANT WEED CONTROL:

1.

IF WEEDS EXIST WITHIN PROPOSED LANDSCAPE AREAS AT THE BEGINNING OF WORK, SPRAY WITH A NON-SELECTIVE SYSTEMIC CONTACT HERBICIDE, AS RECOMMENDED AND APPLIED BY AN APPROVED LICENSED APPLICATOR. CLEAR AND REMOVE THESE EXISTING WEEDS UPON HERBICIDE'S COMPLETED ACTION BY GRUBBING OFF ALL PLANTS AT LEAST 1/2"-1" BELOW THE SURFACE OF THE SOIL.

2.

CONTRACTOR TO SCARIFY GROUND SURFACE TO A MINIMUM 2" DEPTH FOR ALL GRASSES AND REMOVE ALL STICKS, TRASH, ROCKS AND OTHER DEBRIS AND DISPOSE OFF SITE.

3.

IF EXISTING SOIL IN AN AREA IS FOUND TO BE CONTAMINATED OR OTHERWISE UNSUITABLE, CONTRACTOR SHALL PROVIDE COST PER CUBIC YARD TO REPLACE WITH SOIL SUITABLE FOR TURF.

4.

CONTRACTOR TO RAKE ENTIRE AREA, LEVELING ANY IMPERFECTIONS IN THE GRADE. LANDSCAPE CONTRACTOR TO ENSURE THAT THERE WILL BE POSITIVE DRAINAGE AND NO PONDING ON SITE. FINISHED GRADE OF LAWN AREAS TO BE 1/2" BELOW TOP OF CURBS, SIDEWALKS AND OTHER PAVEMENTS. REMOVE ANY LARGE (GREATER THAN 1") DIRT CLODS, ROCKS, AND TRASH AND PREPARE A SMOOTH, LEVEL, LOOSE AND COARSE SURFACE. LANDSCAPE ARCHITECT TO APPROVE FINE GRADING PRIOR TO ANY LAWN INSTALLATION. LAWN BED SHALL BE MOIST (BUT NOT MUDDY) TO RECEIVE SEED AND SOD.
- C.) HYDROMULCH APPLICATION:
1.

FOR ALL HYDROMULCH AREAS, INSTALL SOD STRIPS OF BERMUDA GRASS AT ALL BACKS OF CURBS WITHIN THE LIMITS OF CONSTRUCTION.

2.

LAWN AREAS TO BE SEEDED IMMEDIATELY AFTER PREPARATION OF THE BED. APPLY A UNIFORM COAT OF HYDROMULCH AT THE RATES SPECIFIED BELOW:

A.)

SEED (REF. SCHEDULE, 1.6 H-3):

1.)

BERMUDA (HULLED)-2 LBS./1,000 S.F.

2.)

ANNUAL RYE GRASS-8 LBS./1,000 S.F.

B.)

WOOD CELLULOSE FIBER MULCH - 60 LBS./1,000 S.F.

C.)

FERTILIZER: "PHC FOR TURF" AT A RATE OF SEVEN (7) POUNDS PER 1,000 SQUARE FEET.

D.)

INCORPORATE A TACKIFIER WITH MULCH CAP. DELAY IRRIGATION 8 HOURS TO PERMIT TACKIFIER TO SET.

3.

SEED AREAS WITHIN SEEDING LIMITS INDICATED ON THE PLAN AND AREAS DISTURBED BY CONSTRUCTION OPERATIONS. PROTECT EXISTING UTILITIES (INCLUDING IRRIGATION SYSTEM), PLANTING, PAVING, FENCING, AND OTHER SITE AMENITIES FROM DAMAGE CAUSED BY HYDROMULCHING OPERATION.

5.

IMMEDIATELY FOLLOWING APPLICATION OF HYDROMULCH, THE CONTRACTOR SHALL WASH EXCESS HYDROMULCHING MATERIAL FROM PREVIOUSLY PLANTED MATERIAL, ARCHITECTURAL FEATURES, ETC.. CARE SHALL BE EXERCISED TO AVOID WASHING OR ERODING MULCH MATERIALS FROM LAWN AREA.

6.

UPON ESTABLISHMENT OF LAWN, APPLY A POST-EMERGENT HERBICIDE FOR CONTROL OF NUT GRASS AND WEEDS. FERTILIZE AT 45 DAY INTERVALS WITH SPECIFIED PLANT HEALTH GROUP'S FERTILIZER AT A RATE OF SEVEN (7) POUNDS PER 1,000 SQUARE FEET DURING AT 45 DAY INTERVALS DURING THE 90 DAY MAINTENANCE PERIOD.

7.

DURING THE MONTHS OF OCTOBER THROUGH MARCH CONTRACTOR SHALL HYDROSEED ALL LAWN AREAS WITH ANNUAL RYE GRASS. THE CONTRACTOR SHALL RETURN TO THE SITE BETWEEN APRIL 1ST AND MAY 15 TO RE-PREPARE SEED BED AND HYDROMULCH WITH SPECIFIED BERMUDA SEED IN ORDER TO ESTABLISH A PERMANENT TURF COVER IN ALL LAWN AREAS.

D.) SOD INSTALLATION:

1.

INCORPORATE SPECIFIED LAWN FERTILIZER AT SEVEN (7) POUNDS PER 1000 SQUARE FEET OF LAWN AREA FOR SOD.

2.

PRE-EMERGE HERBICIDE APPLICATION: APPLY RECOMMENDED HERBICIDE TO LABEL INSTRUCTIONS IN TWO APPLICATIONS. THE FIRST APPLICATION WILL BE UP TO 10 DAYS PRIOR TO PLANTING. THE SECOND APPLICATION WILL BE 5 DAYS PRIOR TO PLANTING. USE CARE TO AVOID WIND DRIFT OR RUNOFF TO ADJACENT ORNAMENTAL TREE OR SHRUB PLANTINGS.

3.

LAY SOD WITHIN 24 HOURS FROM TIME OF STRIPPING.

4.

LAY SOD TO FORM SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES. WORK SIFTED SOIL INTO MINOR CRACKS BETWEEN PIECES OF SOD; REMOVE EXCESS SOD TO AVOID SMOTHERING ADJACENT GRASS.

5.

SOD PADS SHALL BE OF FULLEST SIZE POSSIBLE-NO SOD SLIVERS WILL BE PERMITTED.

6.

FINISHED GRADE OF NEW SOD SHALL BE FLUSH WITH ADJACENT LAWN AND PAVEMENT. ENSURE POSITIVE DRAINAGE.

7.

ROLL ENTIRE SODDED AREA WITH SOD ROLLER. WATER SOD THOROUGHLY.

8.

CONTRACTOR SHALL OVERSEED SOD AREAS WITH ANNUAL RYE GRASS IF LAWN INSTALLATION OCCURS SEPTEMBER 15 THROUGH APRIL 15 AT 8 LBS., 1,000 S.F.

9.

SHOULD LAWN AREAS BE SEEDED WITH ANNUAL RYE GRASS THE CONTRACTOR SHALL RETURN TO THE SITE BETWEEN APRIL 15 AND MAY 15 TO RE-PREPARE SEED BED AND SEED WITH BERMUDA.

2.5 ACCEPTANCE

A.)

PRIOR TO SCHEDULING A SUBSTANTIAL COMPLETION INSPECTION LANDSCAPE CONTRACTOR SHALL THOROUGHLY CLEAN SITE OF ALL DEBRIS AND TRASH AND REPAIR ANY DAMAGE TO FINISH GRADE. WHEN LANDSCAPE WORK IS COMPLETE A SUBSTANTIAL COMPLETION INSPECTION WILL BE HELD. FOLLOWING COMPLETION OF ANY PUNCH LIST ITEMS GENERATED FROM THE SUBSTANTIAL COMPLETION INSPECTION A FINAL INSPECTION WILL BE HELD AND IF FOUND ACCEPTABLE A CERTIFICATE OF FINAL ACCEPTANCE WILL BE ISSUED.

B.)

LANDSCAPE CONTRACTOR SHALL CONTINUE MAINTENANCE UNTIL FINAL ACCEPTANCE AT WHICH TIME THE SPECIFIED MAINTENANCE PERIOD WILL BEGIN.

END OF SPECIFICATIONS



WATERING SCHEDULE					
PRECIPITATION RATE (IN/HR)	WATER DESIRED (IN/WK)	TIME/CYCLE (MIN)	NUMBER OF ZONES	TOTAL TIME MIN.    HRS	
TREE BUBBLERS (3.87)	.80	12.0	7	84	1.40
TOTAL SYSTEM HOURS OF OPERATION PER WEEK:					1.40
NOTE: A TYPICAL SCHEDULE WOULD ALLOW WATERING TO OCCUR TWO TIMES PER WEEK. TOTAL WATERING TIME WOULD BE DIVIDED BY THE NUMBER OF WATERING DAYS. THIS SCHEDULE IS DESIGNED FOR SUMMER WATER USAGE AND ESTABLISHMENT OF NEW PLANTING.					

DESIGN STATISTICS FOR CALCULATIONS	
TOTAL ZONE FLOW:	14.0 g.p.m.
ELECTRIC VALVE SIZE:	1"
STATIC PRESSURE LESS 10% (STATIC @ 65 psi):	58.5 p.s.i.
ACCUMULATIVE LOSSES FROM CITY MAIN TO FURTHEST HEAD:	
SPRINKLER HEAD REQUIREMENT:	30.0 p.s.i.
ZONE PIPE/FITTING LOSS:	1.9 p.s.i.
1" ELECTRIC VALVE LOSS:	3.0 p.s.i.
ELEVATION NET LOSS: (+ - FT):	n/a
SYSTEM MAINLINE LOSS (2 SCH 40 LOOP):	0.8 p.s.i.
BACKFLOW PREVENTOR LOSS (1"):	4.0 p.s.i.
WATER METER LOSS (1"):	1.1 p.s.i.
MASTER ELECTRIC VALVE LOSS (1.5"):	1.5 p.s.i.
TYPE K COPPER SERVICE LOSS:	
TOTAL NET LOSS:	12.3 p.s.i.
DESIGN PRESSURE:	42.3 p.s.i.
NOTE: ACTUAL STATIC WATER PRESSURE WAS UNAVAILABLE AT THE TIME OF IRRIGATION DESIGN. 65 PSI IS USED AS A STANDARD PRESSURE FOR DESIGN. PRESSURE MUST BE CONFIRMED 65 OR GREATER BY IRRIGATION CONTRACTOR BEFORE ANY INSTALLATION. PIPE HAS BEEN SIZE TO INSURE THAT VELOCITY DOES NOT EXCEED 5 FPS. DO NOT CHANGE PIPE SIZE IN THE FIELD WITHOUT CONSULTING SYSTEM DESIGNER.	

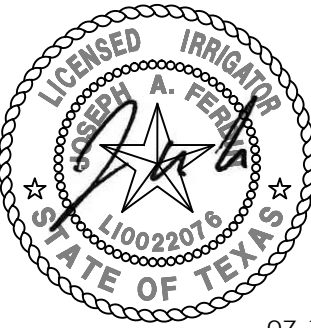
IRRIGATION CONSTRUCTION NOTES	
1. IT IS THE IRRIGATION CONTRACTORS SOLE RESPONSIBILITY TO CONFIRM THE ACTUAL ONSITE WATER PRESSURE FROM THE SOURCE. IF WATER PRESSURE IS LESS THAN MANDATED THEN IMMEDIATELY NOTIFY THE OWNERS REPRESENTATIVE. IF ACTUAL SITE STATIC PRESSURE EXCEEDS DESIGN PRESSURE BY 15 P.S.I. IN ANY ZONE, A PRESSURE REDUCING VALVE SHALL BE INSTALLED.	
2. DO NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGN WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE. THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.	
3. THE IRRIGATION CONTRACTOR IS REQUIRED BY LAW TO NOTIFY TEXAS ONE CALL (800-245-4545) 72 HOURS PRIOR TO ANY EXCAVATION. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THEMSELVES FAMILIAR WITH ALL UNDERGROUND UTILITIES AND PIPES. IRRIGATION CONTRACTORS SHALL TAKE SOLE RESPONSIBILITY FOR ANY COSTS INCURRED DUE TO DAMAGE OF SAID UTILITIES WHETHER OR NOT TEXAS ONE CALL IS NOTIFIED.	
4. DUE TO SCALE OF DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, ETC. WHICH MAY BE REQUIRED. IRRIGATION CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISHED CONDITIONS AFFECTING ALL OF HIS WORK AND PLAN HIS WORK ACCORDINGLY. FURNISHINGS SUCH FITTINGS, ETC AS MAY BE REQUIRED TO MEET SUCH CONDITIONS. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. THE WORK SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID CONFLICTS BETWEEN IRRIGATION SYSTEM, PLANTING, AND ARCHITECTURAL FEATURES. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS AND WITHIN PROPERTY LINES.	
5. LATERAL PIPE SHALL BE INSTALLED AT MIN. DEPTH OF 12" WITH MAINLINE PIPE / WIRE TO BE INSTALLED AT A MINIMUM OF 18". NO MACHINE TRENCHING IS TO BE DONE WITHIN DRIPLINE OF TREES. TRENCHING IS TO BE DONE BY HAND OR BY TUNNELING UNDER ROOT SYSTEM BY METHOD APPROVED BY OWNER'S REPRESENTATIVE. PIPING LAYOUT IS DIAGRAMMATIC AND PIPING SHALL BE ROUTED AROUND EXISTING PLANT MATERIAL TO AVOID DAMAGE TO EXISTING PLANTS. DO NOT CUT ANY ROOT OVER 3/4" DIAMETER. ANY CUTS MADE SHALL BE CLEAN AND WITHOUT FRAYED ENDS.	
6. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR SLEEVES WHEREVER PIPING OR CONDUIT PASSES, UNDER ALL PAVING, THROUGH WALLS, ETC. ALL SLEEVE LOCATIONS MAY NOT BE SHOWN ON PLAN, COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS, GENERAL CONTRACTOR, AND OTHER SUBCONTRACTORS AS REQUIRED. ALL SLEEVES SHALL BE SCH 40 PVC, SIZED TWICE THE DIAMETER OF PIPE OR COMBINATION OF PIPES ENCLOSED WITHIN THE SLEEVE.	
7. ALL PIPE CONNECTIONS SHALL BE PRIMED WITH AN APPROVED COLOR PRIMER BEFORE BEING CHEMICAL WELDED.	
8. IT IS THE IRRIGATION CONTRACTORS RESPONSIBILITY TO COORDINATE PIPING WITH THE LANDSCAPE SUBCONTRACTOR TO AVOID CONFLICT WITH PLANTING BEDS. IT WILL BE THE RESPONSIBILITY OF THE IRRIGATION SUBCONTRACTOR TO MOVE PIPING TO ALLOW PROPER ADJUSTMENTS TO ENSURE PROPER COVERAGE AT NO ADDITIONAL COST TO THE OWNER.	
9. ALL ROTORS SHALL BE LOCATED 12" FROM PAVEMENT, CURBS OR EDGE OF STRUCTURE, ALL SPRAY HEADS SHALL BE LOCATED 6" FROM PAVEMENT, CURBS OR EDGE OF STRUCTURE.	
10. USE RIGID SCH 80 PVC SWING JOINT ASSEMBLIES TO CONNECT ALL ROTARY HEADS AND QUICK COUPLERS.	
11. ALL SPRAY HEADS SHALL BE CONNECTED WITH A 12" MINIMUM LENGTH OF 1/2" FLEX PVC.	
12. ALL LANDSCAPE PLANTING AREAS IRRIGATED WITH DRIP SHOULD BE INSTALLED AT 18" SPACING.	
13. ALL TURF AREAS IRRIGATED WITH DRIP SHOULD BE INSTALLED 12" SPACING.	
14. ALL IRRIGATION WIRES SHALL BE UL LISTED FOR DIRECT BURIAL AND BE A MINIMUM #14 GAUGE. WIRE SPLICES SHALL INCLUDE DBY CONNECTORS AS RECOMMENDED BY 3M COMPANY.	
15. ELECTRIC POWER SHALL BE PROVIDED TO CONTROLLER LOCATION BY GENERAL CONTRACTOR. IRRIGATION CONTRACTOR SHALL PROVIDE FINAL HARD-WIRE TO CONTROLLERS.	
16. VALVE BOXES SHALL BE INSTALLED FLUSH WITH GRADE, SUPPORTED BY BRICKS IF NECESSARY. INSTALL 3" OF PEA GRAVEL BELOW THE VALVE. USE 12" X 17" RECTANGULAR VALVE BOXES WITH A PURPLE LID FOR QUICK COUPLING VALVES AND 10" ROUND BOXES FOR ELECTRIC VALVES UNLESS NOTED OTHERWISE.	
17. VALVE AND CIRCUIT SHALL BE SEPARATED BASED ON WATER USE, SO THAT TURF AREAS ARE WATERED SEPARATELY FROM SHRUB AND GROUNDCOVER AREAS. IRRIGATION HEADS IN THE TURF AREAS WILL BE VALVED SEPARATELY FROM SHRUB AND/OR GROUNDCOVER AREAS. IT IS RECOMMENDED THAT SEASONAL COLOR AREAS BE WATERED SEPARATELY. UNDER NO CIRCUMSTANCES ARE ZONE TYPES TO BE COMBINED.	
18. FINAL LOCATION OF CONTROLLER, WATER METER, BACKFLOW DEVICE, MASTER VALVE, FLOW SENSOR, AND WEATHER SENSOR SHALL BE APPROVED BY GENERAL CONTRACTOR, LANDSCAPE ARCHITECT, OR AN OWNERS REPRESENTATIVE.	
19. AFTER AWARD OF CONTRACT AND BEFORE ANY IRRIGATION SYSTEM MATERIALS ARE ORDERED FROM SUPPLIERS OR DELIVERED TO THE JOB SITE, SUBMIT TO THE OWNER A COMPLETE LIST OF ALL IRRIGATION SYSTEM MATERIALS, OR PROCESSES PROPOSED TO BE FURNISHED AND INSTALLED AS PART OF THIS CONTRACT. THE LANDSCAPE ARCHITECT OR OWNERS'S AUTHORIZED REPRESENTATIVE WILL ALLOW NO SUBSTITUTIONS WITHOUT PRIOR WRITTEN ACCEPTANCE.	
20. IRRIGATION CONTRACTOR WILL SUPPLY A COMPLETE AS BUILT DRAWING TO INCLUDE EXACT LOCATION OF ALL MAINLINE, VALVES, CONTROLLERS, QUICK COUPLERS, POINT OF CONNECTION, AND WIRE PATH. IRRIGATION CONTRACTOR WILL SUPPLY A COMPLETE SET OF OPERATION AND MAINTENANCE MANUALS.	
21. PROVIDE A COLORED LAMINATED ZONE MAP AND INSTALL AT THE CONTROLLER.	
22. THE IRRIGATION CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND STATE MANDATED IRRIGATION ORDINANCES AND SHALL SECURE ALL NECESSARY PERMITS AND PAY ALL ASSOCIATED FEES UNLESS OTHERWISE NOTED. ANY DISCREPANCIES SHALL BE DISCUSSED PRIOR TO CONSTRUCTION.	

Statement of Conformance:  
I, JOSEPH A. FERDIN, LICENSED IRRIGATOR #0022076, HEREBY CERTIFIES THAT THIS IRRIGATION DESIGN CONFORMS TO THE DESIGN AND INSTALLATION PARAMETERS OF THE IRRIGATION DESIGN AND EQUIPMENT STANDARDS SET OUT 35-510(J) AND 35-511(C) (6) OF THE CITY OF SAN ANTONIO UNIFIED DEVELOPMENT CODE.

Joseph A Ferdin TX LI # 22076

IRRIGATION LEGEND	
KEY	EXPLANATION
	1" DEDICATED IRRIGATION METER
	1" DOUBLE CHECK BACKFLOW DEVICE IN SEPARATE VALVE BOX PER LOCAL CODES.
	1.5" MASTER VALVE, HUNTER ICV-151G NORMALLY CLOSED VALVE
	TREE BUBBLER ASSEMBLY - ON 6" POP UP
	IRRIGATION CONTROLLER HUNTER ACC-99D. FINAL LOCATION TO BE DETERMINED AFTER CONSULTING WITH LANDSCAPE ARCHITECT
	WEATHER SENSOR HUNTER SOLAR-SYNC. FINAL LOCATION TO BE DETERMINED AFTER CONSULTING WITH LANDSCAPE ARCHITECT
	HUNTER ICV-AS-ADJ SERIES - REMOTE CONTROL VALVE
	MANUAL ISOLATION VALVE - SIZE OF MAINLINE
	MAIN LINE - USE SCH-40 PVC PIPE AS DESIGNATED ON PLANS
	LATERAL LINE - SIZE AS NOTED ON PLANS. USE CLASS 315 ON 1/2" PIPE AND CLASS 200 IPS PVC ON 3/4" AND LARGER PIPE.
	IRRIGATION SLEEVE - USE 2 SIZES LARGER THAN TOTAL DIAMETER OF PIPE/S DESIGNATED FOR CROSSING PAVING. VALVE WIRING MAY RUN IN THE SAME SLEEVES. USE SCH 40 PVC PIPE.

	ZONE IDENTIFICATION
	IRRIGATION ZONE SIZE IN GALLONS PER MINUTE
	ZONE SIZE



07-12-2023

PROJECT

BONNIE LANE

MOBILE HOMES

PROJECT ADDRESS

4618 WEBBLES DR  
SAN ANTONIO, TX. 78218

OWNER | CLIENT

BULLET VC PROPERTY MANAGEMENT

218 PRIMROSE PLACE  
SAN ANTONIO, TX. 78209

OWNER'S REPRESENTATIVE

RYAN PLAGENS  
ryan@upengineering.com

SUBCONSULTANT

REVISIONS

NO.	DATE	DESCRIPTION
1	07.12.23	CITY COMMENTS

ISSUE SETS


SHEET INFORMATION

PROJECT NO.

23029

DATE ISSUED

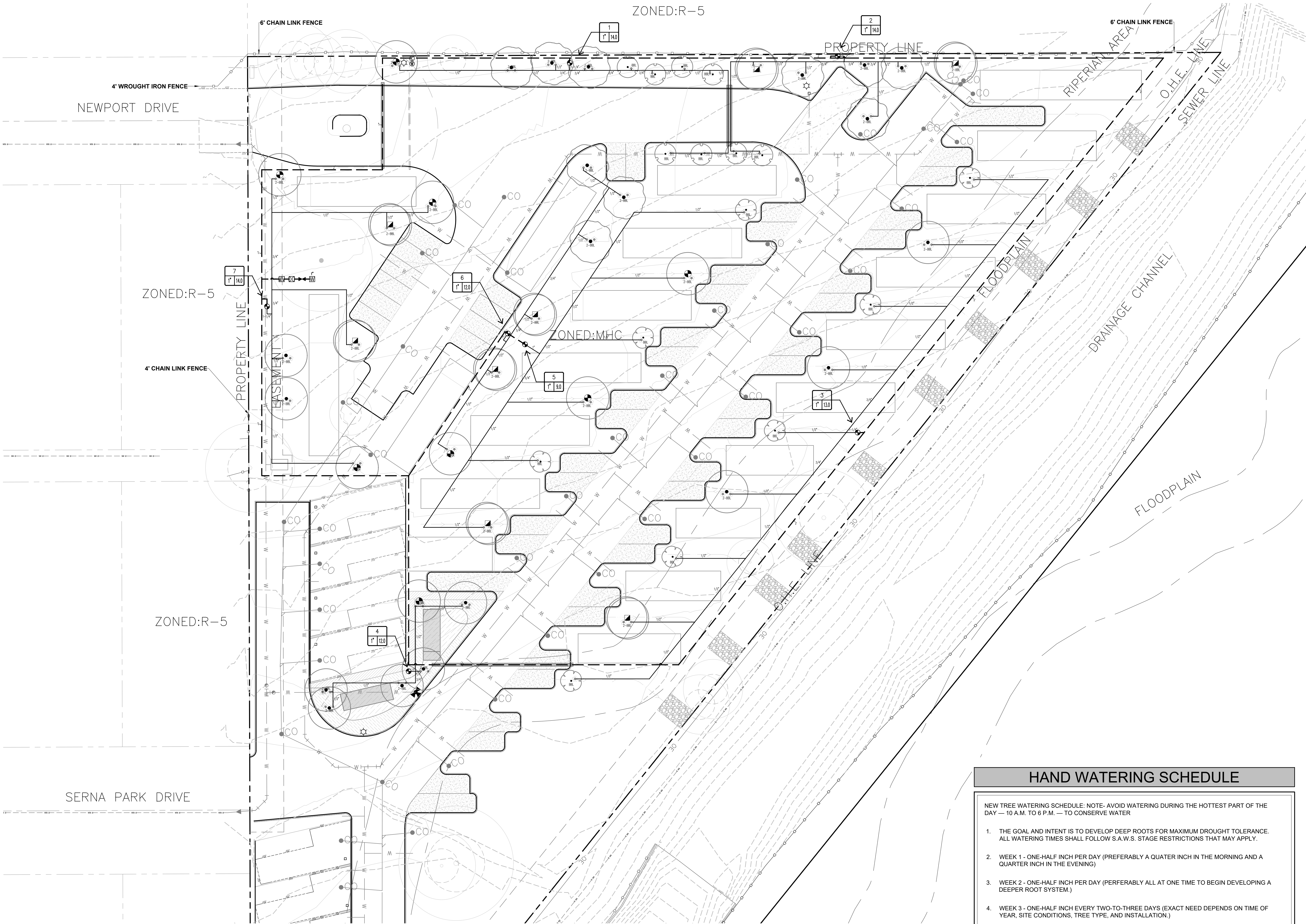
JULY 12, 2023

SHEET NAME

IRRIGATION NOTES,  
LEGEND & CALCS

SHEET NUMBER

LI 1.0



HAND WATERING SCHEDULE

NEW TREE WATERING SCHEDULE: NOTE- AVOID WATERING DURING THE HOTTEST PART OF THE DAY — 10 A.M. TO 6 P.M. — TO CONSERVE WATER

- THE GOAL AND INTENT IS TO DEVELOP DEEP ROOTS FOR MAXIMUM DROUGHT TOLERANCE. ALL WATERING TIMES SHALL FOLLOW S.A.W.S. STAGE RESTRICTIONS THAT MAY APPLY.
- WEEK 1 - ONE-HALF INCH PER DAY (PREFERABLY A QUATER INCH IN THE MORNING AND A QUARTER INCH IN THE EVENING)
- WEEK 2 - ONE-HALF INCH PER DAY (PERFERABLY ALL AT ONE TIME TO BEGIN DEVELOPING A DEEPER ROOT SYSTEM.)
- WEEK 3 - ONE-HALF INCH EVERY TWO-TO-THREE DAYS (EXACT NEED DEPENDS ON TIME OF YEAR, SITE CONDITIONS, TREE TYPE, AND INSTALLATION.)
- WEEK 4 TO MONTH 6 - ONE-INCH TO ONE & ONE-HALF INCH EVERY 3 DAYS (EXACT NEED DEPENDS ON TIME OF YEAR, SITE CONDITIONS, TREE TYPE, AND INSTALLATION.)



PROJECT

BONNIE LANE

MOBILE HOMES

PROJECT ADDRESS

4618 WEBBLES DR  
SAN ANTONIO, TX. 78218

OWNER | CLIENT

BULLET VC PROPERTY MANAGEMENT

218 PRIMROSE PLACE  
SAN ANTONIO, TX. 78209

OWNER'S REPRESENTATIVE

RYAN PLAGENS

ryan@upengineering.com

SUBCONSULTANT

REVISIONS

NO.	DATE	DESCRIPTION
1	07.12.23	CITY COMMENTS

ISSUE SETS

SHEET INFORMATION

PROJECT NO.

23029

DATE ISSUED

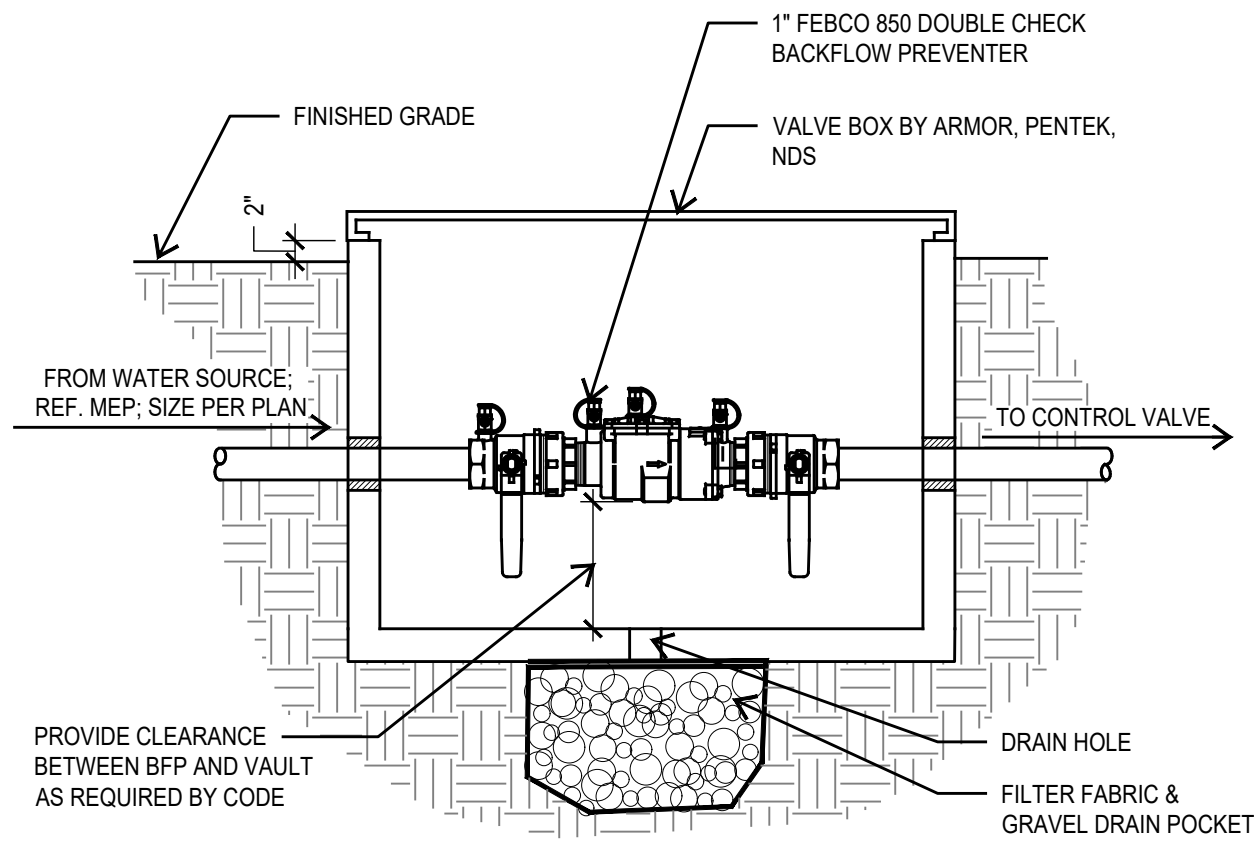
JULY 12, 2023

SHEET NAME

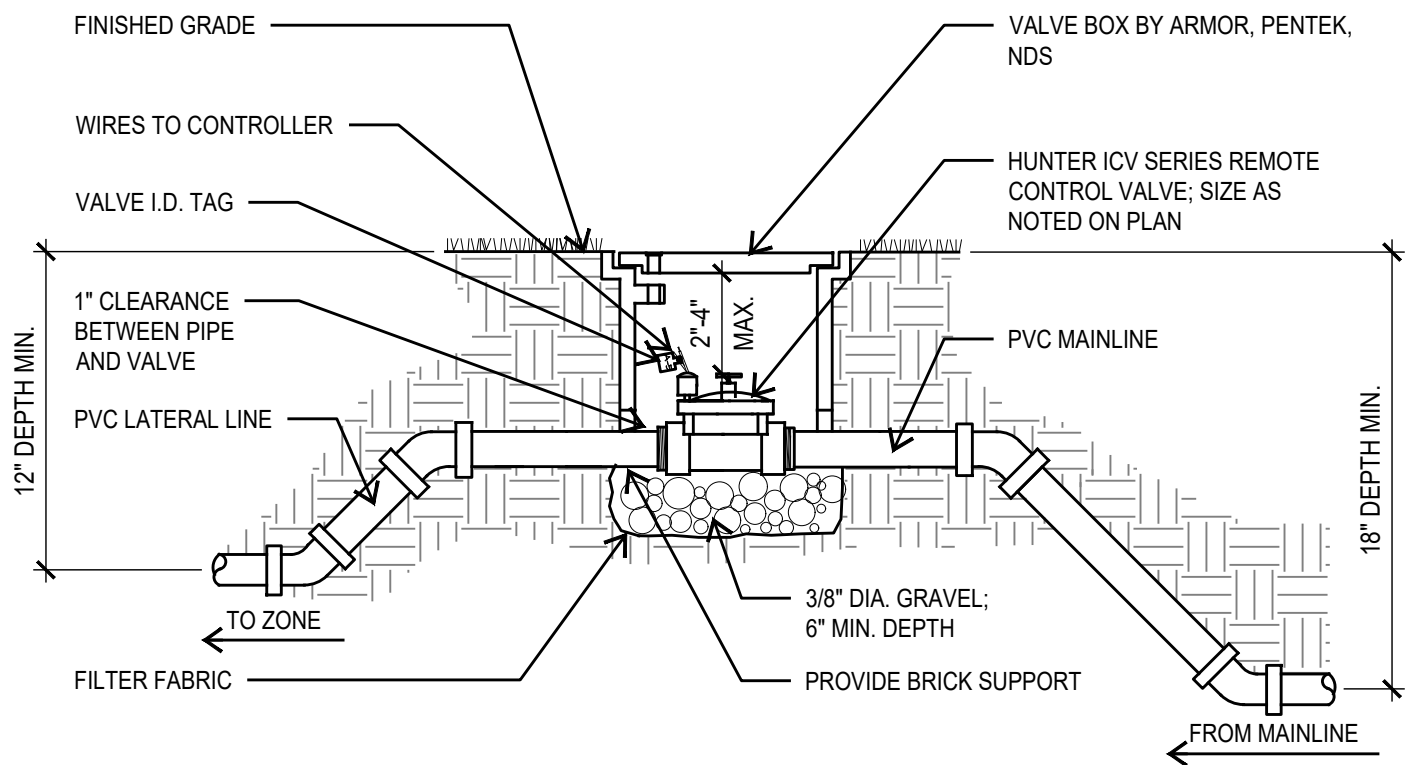
IRRIGATION PLAN

SHEET NUMBER

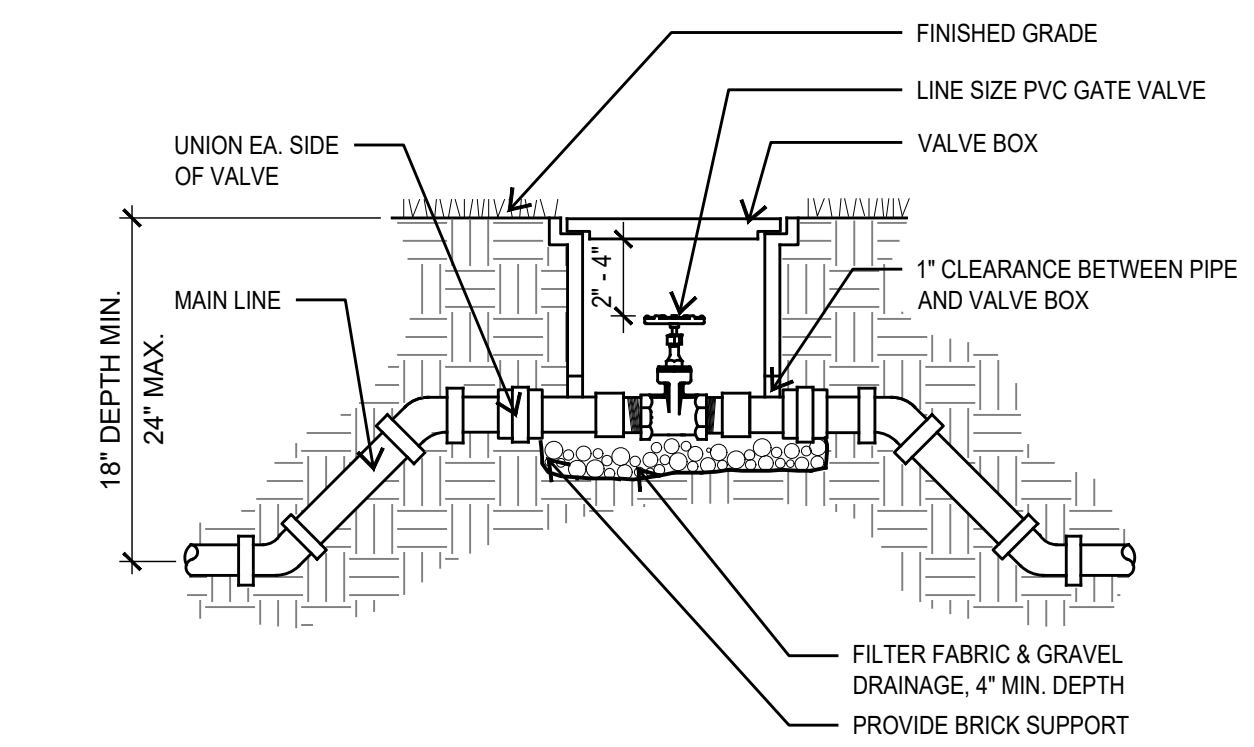




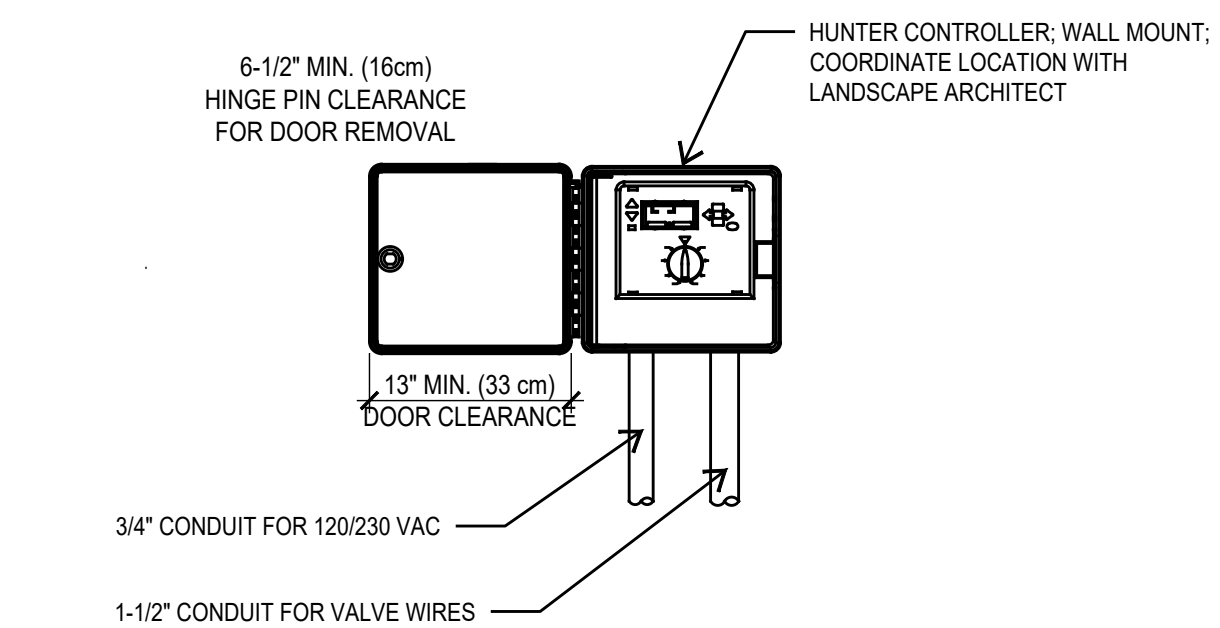
1 **BACKFLOW DEVICE**  
SECTION NOT TO SCALE



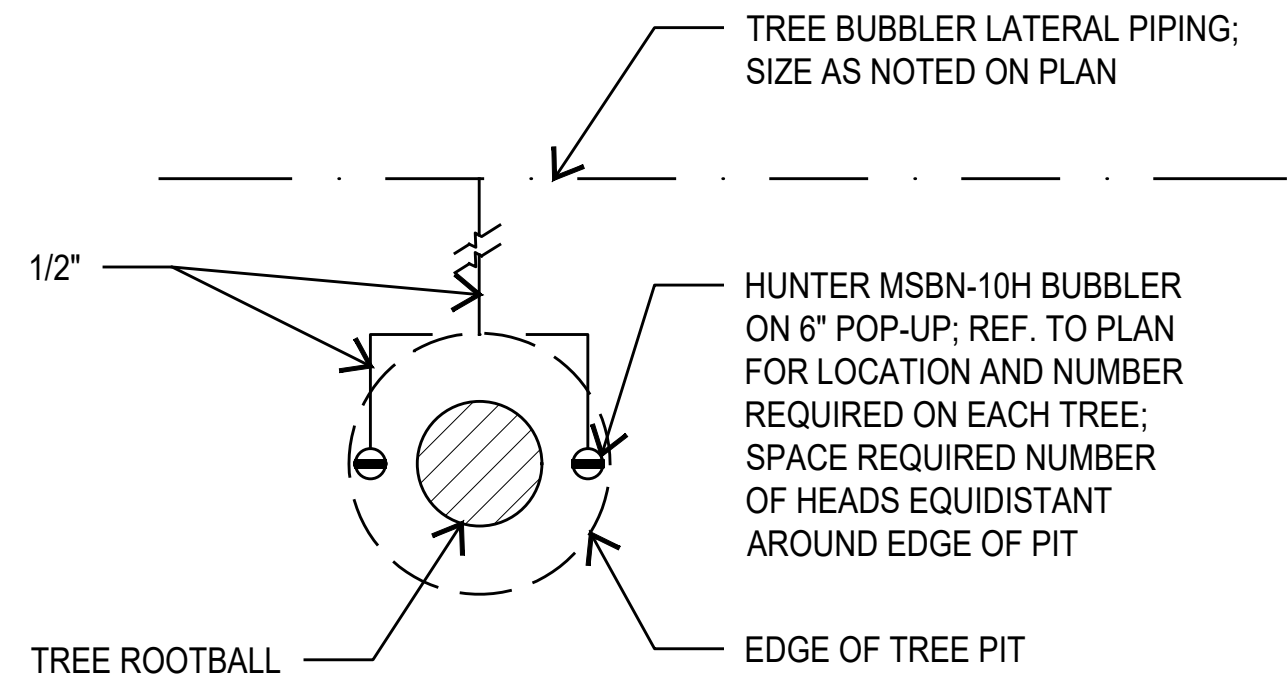
2 **ZONE VALVE**  
SECTION NOT TO SCALE



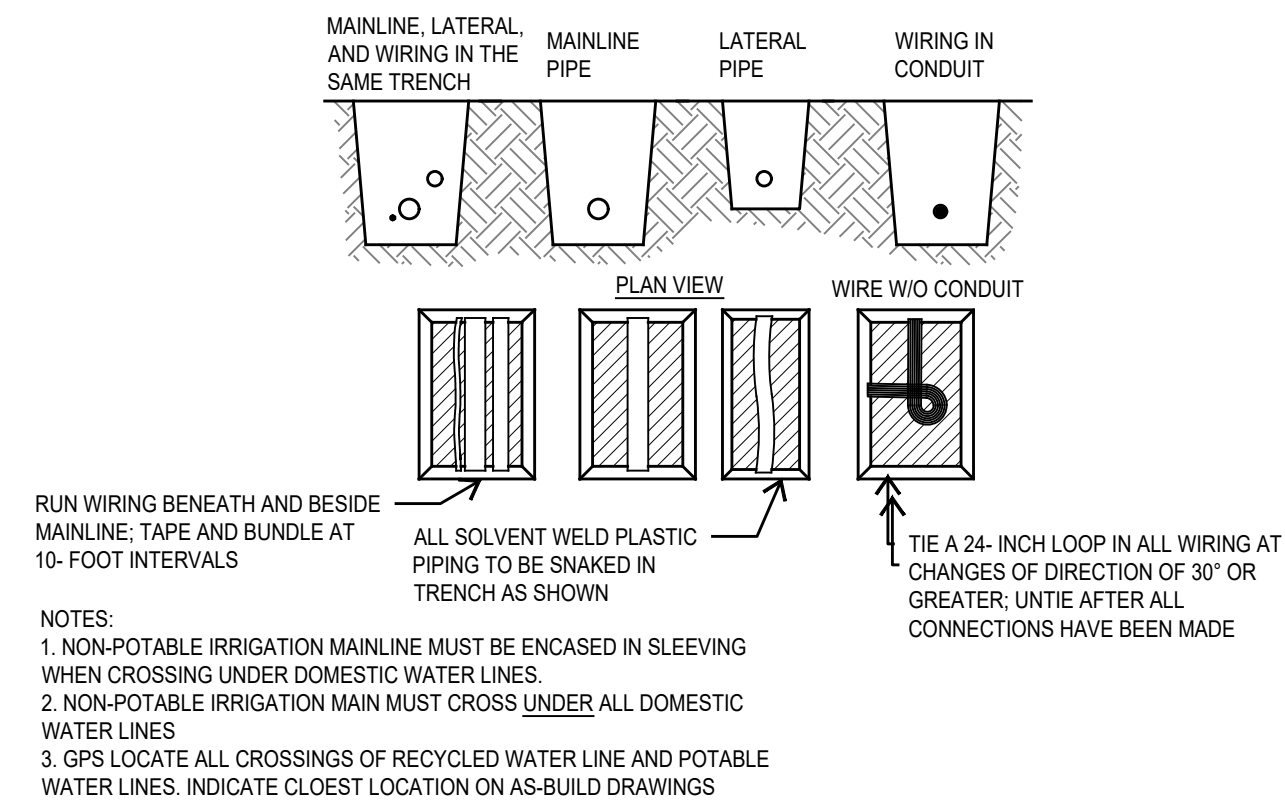
3 **MANUAL ISOLATION VALVE**  
SECTION NOT TO SCALE



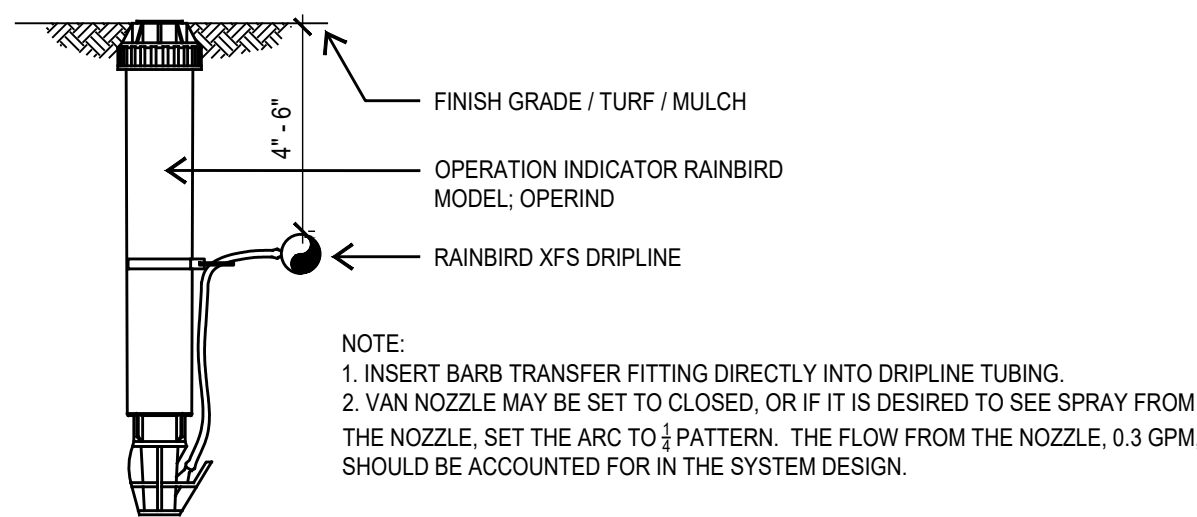
4 **IRRIGATION CONTROLLER**  
SECTION NOT TO SCALE



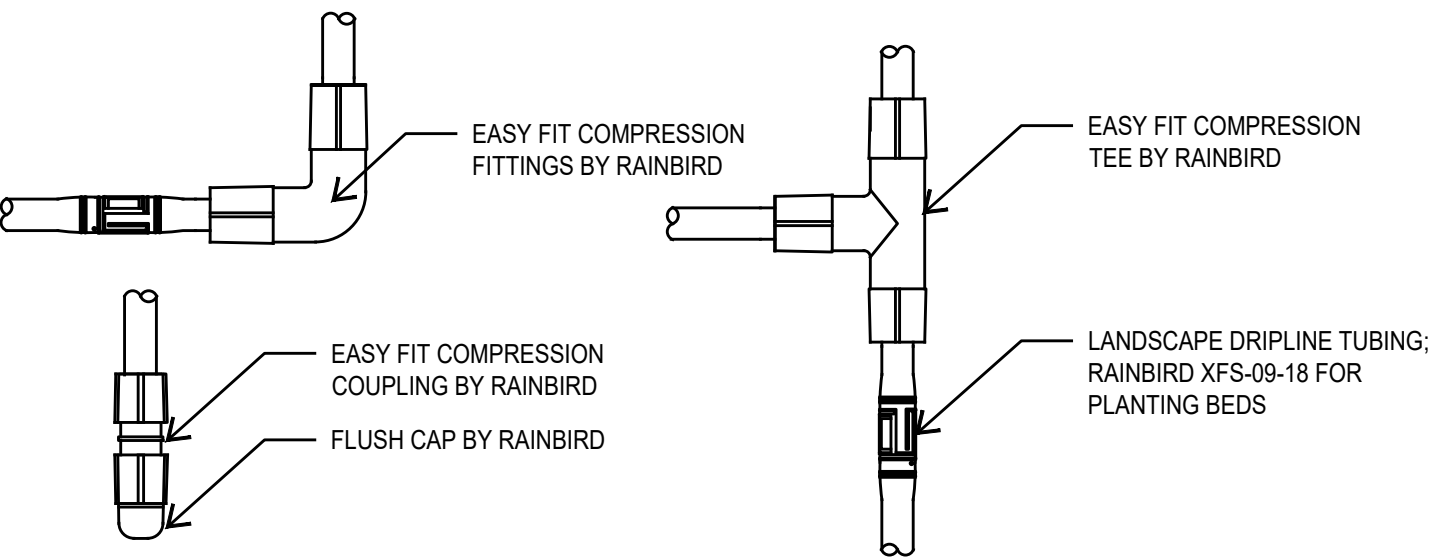
5 **TREE BUBBLER ASSEMBLY**  
SECTION NOT TO SCALE



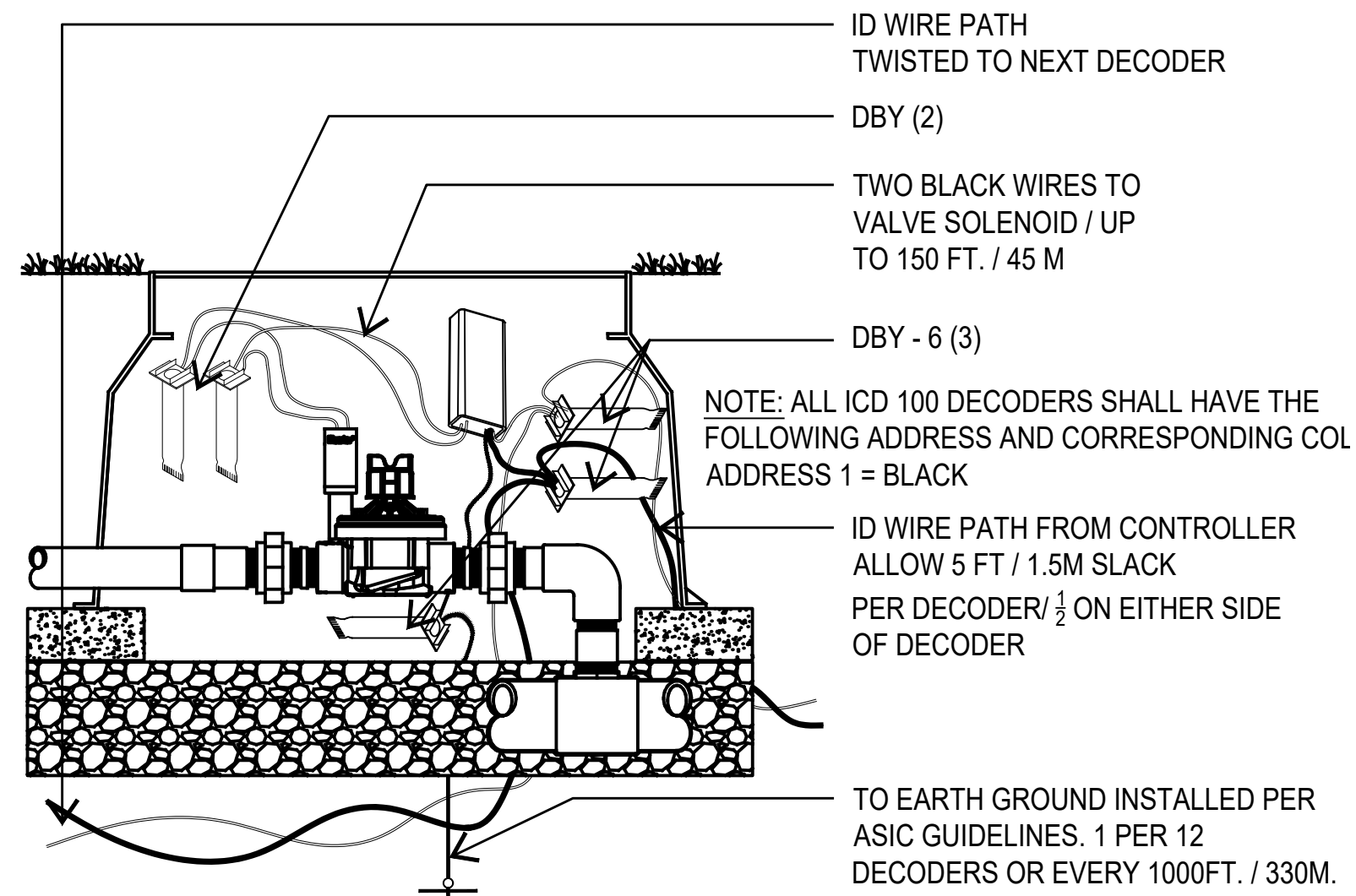
6 **IRRIGATION TRENCH**  
SECTION NOT TO SCALE



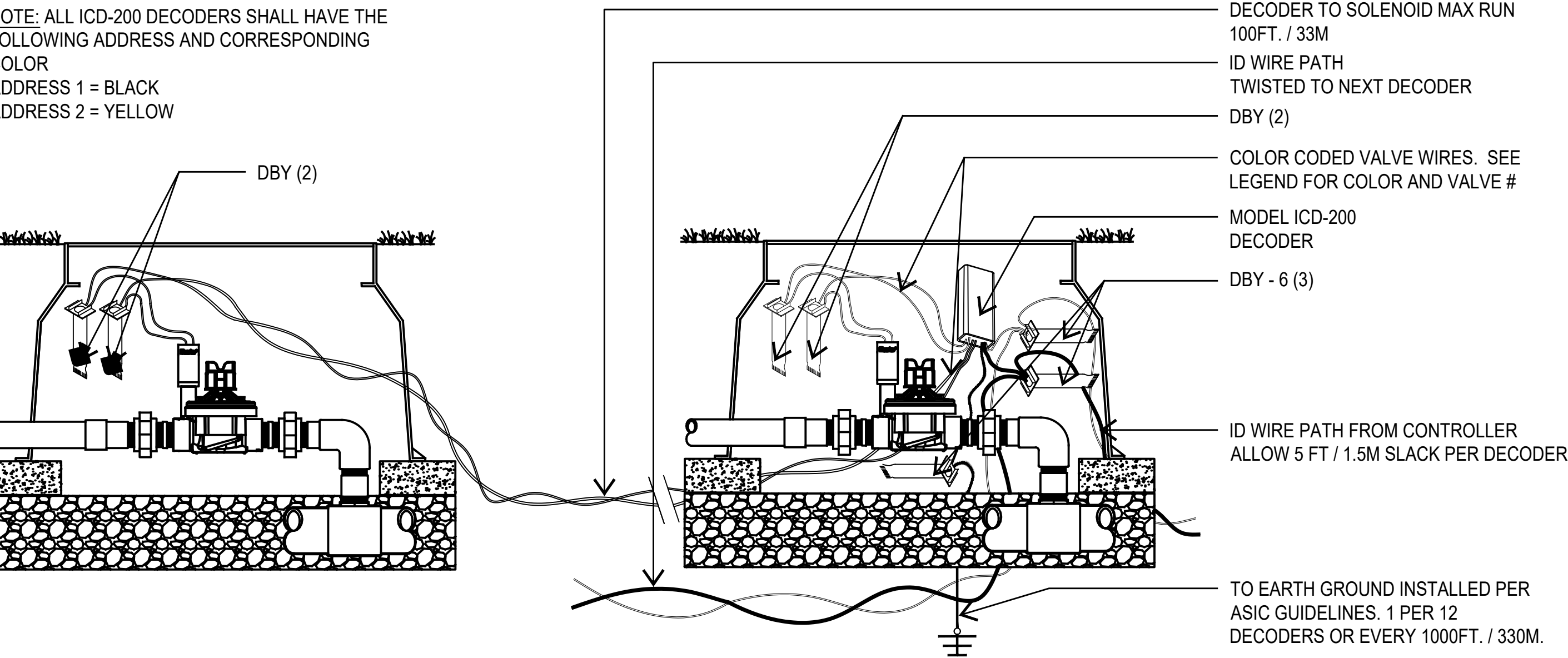
7 **DRIP OPERATION INDICATOR**  
SECTION NOT TO SCALE



8 **DRIPLINE FITTINGS**  
SECTION NOT TO SCALE

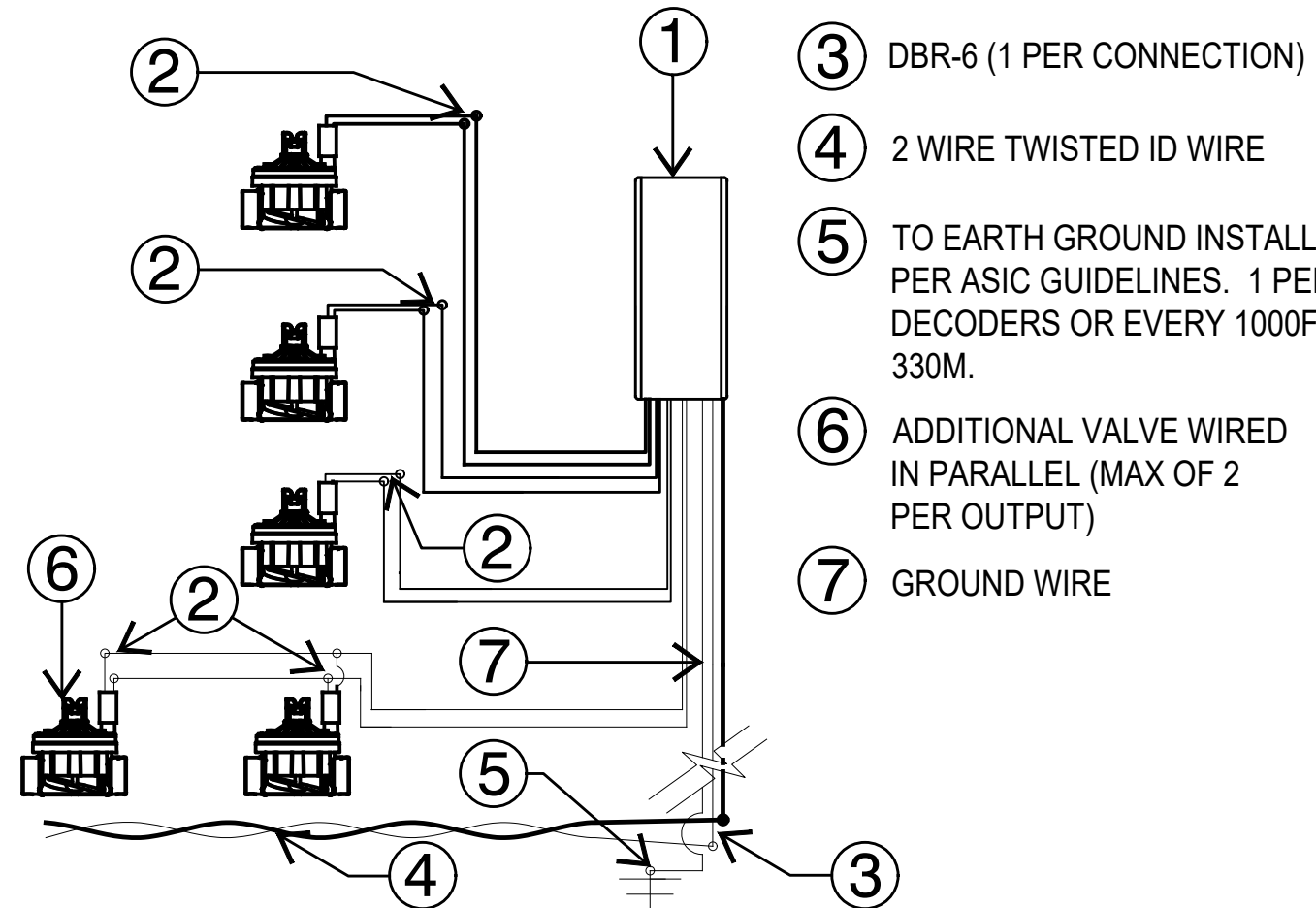


9 **HUNTER ICD 100 DECODER**  
SECTION NOT TO SCALE

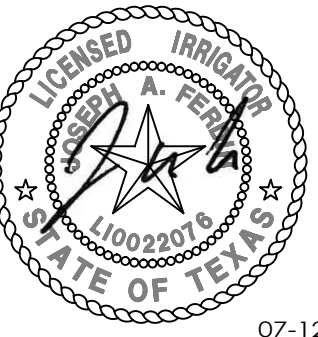


10 **HUNTER ICD 200 DECODER**  
SECTION NOT TO SCALE

NOTE: ALL ICD 400 DECODERS SHALL HAVE THE FOLLOWING ADDRESS AND CORRESPONDING COLOR  
ADDRESS 1 = BLACK ADDRESS 3 = GREEN  
ADDRESS 2 = YELLOW ADDRESS 4 = WHITE



11 **HUNTER ICD 400 DECODER**  
SECTION NOT TO SCALE



07-12-2023

PROJECT

**BONNIE LANE**

MOBILE HOMES

PROJECT ADDRESS

4618 WEBBLES DR  
SAN ANTONIO, TX. 78218

OWNER | CLIENT

**BULLET VC PROPERTY MANAGEMENT**

218 PRIMROSE PLACE  
SAN ANTONIO, TX. 78209

OWNER'S REPRESENTATIVE

**RYAN PLAGENS**

ryan@upengineering.com

SUBCONSULTANT

REVISIONS

NO.	DATE	DESCRIPTION
1	07.12.23	CITY COMMENTS

ISSUE SETS

SHEET INFORMATION

PROJECT NO.

23029

DATE ISSUED

JULY 12, 2023

SHEET NAME

IRRIGATION DETAILS

SHEET NUMBER

**LI 2.1**