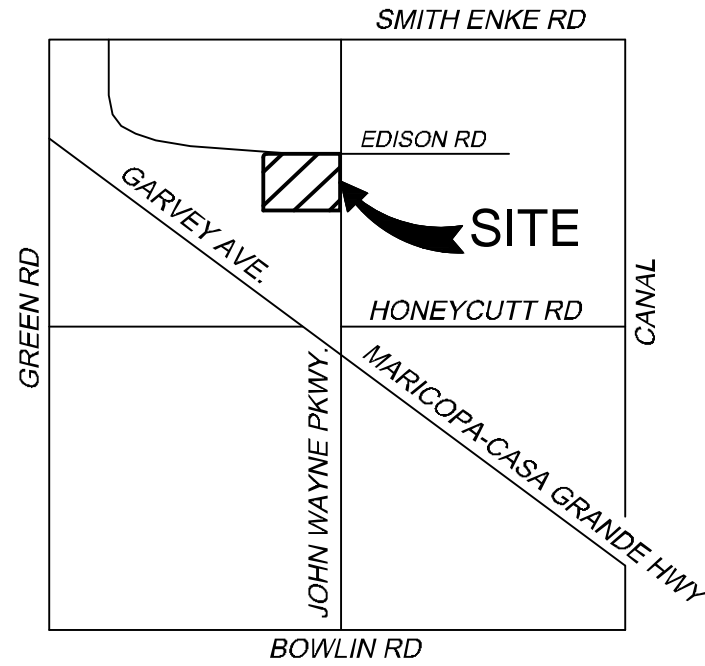


LANDSCAPE PLAN FOR:
SONORAN CREEK
JOHN WAYNE PARKWAY & EDISON RD.



GENERAL NOTES:

ANY CHANGES MADE TO THE PLANS AND DETAILS SHOWN ON THESE DOCUMENTS WHICH ARE NOT APPROVED BY THE LANDSCAPE ARCHITECT RELEASES RICK ENGINEERING OF ANY LIABILITY INCURRED AS A RESULT OF SAID CHANGES.

A. IT IS THE CONTRACTORS RESPONSIBILITY TO INSPECT THE JOB SITE TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT COULD AFFECT THE INSTALLATION OF ANY WORK SET FORTH IN THESE PLANS OR SPECIFICATIONS PRIOR TO SUBMITTING A BID. BEFORE BEGINNING WORK, THE CONTRACTOR SHALL VERIFY THE ACCURACY OF THE PLANS TO THE SITE CONDITIONS AND SHALL REPORT ALL DISCREPANCIES TO THE OWNERS REPRESENTATIVE. WRITTEN DIMENSIONS AND GRADES PREVAIL OVER SCALED DIMENSIONS. NOTIFY OWNERS REPRESENTATIVE OF ANY DISCREPANCIES.

B. IF ANY UTILITIES CONFLICT WITH THE ORIGINAL PLACEMENT OF INTENDED PLANT MATERIAL ON SITE THE LANDSCAPE ARCHITECT WILL AID THE CONTRACTOR IN THE RELOCATION OR SHIFTING OF PLANT MATERIAL ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY TYPE AND LOCATION OF UTILITIES AS NECESSARY TO AVOID DAMAGE THERETO. ALL UTILITIES SHALL BE LOCATED AND VERIFIED PRIOR TO ANY EXCAVATION. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNERS REPRESENTATIVE IMMEDIATELY. PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL CONTACT 1 800 227-2600 TO VERIFY LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THIS WORK, AND SHALL BE RESPONSIBLE FOR DAMAGES TO SUCH UTILITIES CAUSED AS A RESULT OF THE WORK.

C. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, RULES AND REGULATION OF ALL AUTHORITIES HAVING JURISDICTION OVER THE PREMISES. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR THIS WORK.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING CONSTRUCTION AND SHALL ACQUIRE A DUST CONTROL PERMIT IF REQUIRED FROM THE COUNTY HEALTH DEPARTMENT. ALL COSTS ASSOCIATED WITH DUST CONTROL AND PERMITS IS CONSIDERED INCIDENTAL TO THE PROJECT.

E. LANDSCAPE CONTRACTOR SHALL PROVIDE FINISH GRADING AND REMOVAL OF DEBRIS IN PLANTING AREAS TO INSURE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES. NO GRADING IS ALLOWED WITHIN DRIP LINE OF EXISTING TREES.

F. CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN A COPY OF THE GEOTECHNICAL SOILS REPORT. CONTRACTOR SHALL OBTAIN AND REVIEW A SOILS AGRONOMY TEST PRIOR TO BEGINNING CONSTRUCTION, AND SHALL ABIDE BY IT TOWARDS THE COMPLETION OF THIS WORK. ANY DISCREPANCIES BETWEEN THE REPORT AND THESE PLANS SHOULD BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNERS REPRESENTATIVE PRIOR TO CONSTRUCTION. .

OPEN SPACE CALCULATION

SITE AREA:	872,927 SQ. FT. (20.04 AC.)
LANDSCAPE AREA:	71,000 SQ. FT. (1.63 AC.)
EXISTING BASIN/ POND AREA	224,315 SQ. FT. (5.15 AC.)
OPEN SPACE PROVIDED: (LANDSCAPE AREAS + EXIST. BASIN/POND)	295,315 SQ. FT. (34% OF SITE AREA) (6.78 AC.)

G. PRIOR TO PLANTING, THE CONTRACTOR SHALL PERFORM ONE (1) PERCOLATION TEST PER 10,000 SQUARE FEET OF PLANTING AREA. THE CONTRACTOR SHALL FILL A 24" BOX SIZE HOLE WITH WATER, IF IT DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS THE CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE. TEST SHALL BE DONE UNDER THE SUPERVISION OF THE OWNERS REPRESENTATIVE. IF PROPER DRAINAGE DOES NOT OCCUR WITHIN 24 HOURS CONTRACTOR WILL BE REQUIRED TO INSTALL DRAINAGE CHIMNEYS IN PLANT PITS PER PLANTING DETAILS.

H. PRIOR TO PLANTING THE IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL AND ALL PLANTING AREAS SHALL BE THOROUGHLY SOAKED.

I. WHEN CALICHE OR HARD PAN IS ENCOUNTERED DURING PLANT PIT EXCAVATION: IF IMPERVIOUS LAYER IS LESS THAN 6" THICK, REMOVE COMPLETELY FROM PLANTING PIT. IF LAYER IS 6"-18" THICK, AUGER A HOLE THROUGH THE LAYER PER PLANTING DETAILS. IF LAYER IS GREATER THAN 18" THICK, ENLARGE THE PLANTING PIT TO TWICE THAT (IN EACH DIRECTION) CALLED OUT IN PLANTING DETAILS.

J. CONTRACTOR SHALL VERIFY ROCK AND SOIL CONDITIONS WITHIN THE PROJECT SITE PRIOR TO BIDDING. NO EXTRA PAYMENT OR TIME EXTENSION WILL BE GIVEN DUE TO ROCKY SOIL CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR CONDUCTING SITE INSPECTIONS AND CHECKING SOIL BORING LOGS TO DETERMINE SUBSURFACE CONDITIONS PRIOR TO BIDDING.

K. ROOT BARRIERS ARE REQUIRED FOR ALL TREES WITHIN 5' FEET OF WALLS, WALKWAYS, STREETS, CURBS AND OTHER HARDSCAPE AREAS. ROOT BARRIER TO EXTEND 10' IN EACH DIRECTION FROM THE CENTERLINE OF THE TREE.

L. ALL PLANT MATERIALS SHALL CONFORM TO NURSERY STANDARDS ACCORDING TO AMERICAN ASSOCIATION OF NURSERYMEN INC. DENVER AMERICAN HORTICULTURE STANDARD AND SHALL BE FREE FROM PESTS, EGGS, DISEASES AND TO BE REPRESENTATIVE OF SPECIES IN SIZE, QUALITY, FORM, COLOR AND NOT BE ROOT BOUND, DAMAGED OR SUBSTANDARD IN ANY WAY. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE APPROVED BY THE OWNERS REPRESENTATIVE PRIOR TO INSTALLATION. ANY PLANT SUBSTITUTIONS SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PURCHASE. REMOVE NURSERY STAKES AND TIES FROM ALL CONTAINER STOCK.

M. 10% OF EACH PLANT MATERIAL SPECIES SHALL BE TAGGED WITH BOTANICAL NAME FROM NURSERY OR SUPPLIER; TAGS TO REMAIN ON PLANT MATERIAL UNTIL FINAL ACCEPTANCE.

N. NO PLANT SUBSTITUTIONS, TYPE, OR QUANTITY DEVIATIONS FROM THE APPROVED LANDSCAPE OR IRRIGATION PLANS WITHOUT PRIOR APPROVAL FROM THE OWNERS REPRESENTATIVE.

O. TREAT ALL ROCK MULCH AREAS WITH PRE-EMERGENT HERBICIDE BEFORE THE ROCK MULCH INSTALLATION.

P. TRANSPORTATION AND NURSERY STAKES SHALL BE REMOVED AT INSTALLATION. INSTALL NEW TREE STAKES PER DETAIL PROVIDED.

Q. THE PLANTING PLAN IS DIAGRAMMATIC. THE QUANTITIES AND SITE CONDITIONS SHOWN ON THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY THE ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK COVERED BY THESE PLANS AND SPECIFICATIONS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE OF DISCREPANCIES BETWEEN QUANTITIES AND SYMBOLS SHOWN.

R. THE CONTRACTOR SHALL VERIFY AVAILABLE WATER PRESSURE ON THE SITE PRIOR TO BEGINNING WORK. IF THERE IS A DISCREPANCY BETWEEN THIS READING AND THE MINIMUM PRESSURE REQUIRED, AS NOTED ON PLAN, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNERS REPRESENTATIVE.

S. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE, SEE SPECIFICATIONS FOR DURATION, MAINTENANCE SHALL BEGIN UPON WALK FOR LANDSCAPE MAINTENANCE AND GUARANTEE PERIOD. MAINTENANCE SHALL CONSIST OF BUT NOT BE LIMITED TO KEEPING AREAS CLEAN, WEED FREE, TRIMMED, WATERED, RAKED, PEST AND DISEASE FREE AND ALL OTHER WORK NECESSARY FOR HEALTHY, VIGOROUS GROWTH AND CLEAN APPEARANCE. PRIOR TO COMMENCEMENT OF MAINTENANCE PERIOD, CONTRACTOR SHALL SUBMIT A WATERING/MAINTENANCE SCHEDULE TO THE CONSTRUCTION MANAGER FOR APPROVAL.

T. LANDSCAPE CONTRACTOR SHALL REPLACE ALL PLANT MATERIAL FOUND TO BE IN AN UNHEALTHY, DAMAGED, IMPAIRED CONDITION, MISSING OR DEAD DURING THE MAINTENANCE PERIOD.

U. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND LEGAL DISPOSAL OF ANY DEBRIS RESULTING FROM THE CONSTRUCTION. AT NO TIME SHALL ANY OF THIS MATERIAL OBSTRUCT THE NORMAL OPERATION OF ANY ADJOINING STREET ASSOCIATED WITH THIS PROJECT.

V. THE JOB SITE AT THE COMPLETION OF THE CONSTRUCTION SHALL BE CLEANED OF AN DEBRIS RESULTING FROM CONSTRUCTION. NO JOB WILL BE CONSIDERED UNTIL ALL CURBS, GUTTERS, AND PAVEMENT HAVE BEEN SWEEPED CLEAN OF ALL DIRT AND DEBRIS AND ARE IN COMPLIANCE WITH THE AGENCY SPECIFICATIONS.

W. THE CONTRACTOR IS ADVISED THAT DAMAGE TO ANY PORTION OF ANY EXISTING CURBS, GUTTERS, PAVEMENTS, FENCING, WALLS, LIGHTING AND SURROUNDING AREAS THAT ARE NOT NOTED ON THE PLANS TO BE DISTURBED ARE TO BE REPAIRED AT THE CONTRACTORS EXPENSE.

X. FINAL ACCEPTANCE- A FINAL SITE WALK INSPECTION BY OWNERS REPRESENTATIVE IS REQUIRED AT THE END OF THE LANDSCAPE MAINTENANCE PERIOD PRIOR TO FINAL PROJECT ACCEPTANCE.

OWNER/DEVELOPER

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CIVIL ENGINEER

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LANDSCAPE ARCHITECT

RICK ENGINEERING COMPANY
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TUCSON, ARIZONA 85712
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LANDSCAPE AREA CALCULATION*

LANDSCAPE AREA:	49,750 SQ. FT.
TREES REQUIRED:	76
TREES PROVIDED:	138
SHRUBS REQUIRED:	456
SHRUBS PROVIDED:	627
GROUND COVER: REQUIRED	40%
GROUND COVER: PROVIDED	40%

* EXCLUDING AREAS WITHIN THE TRANSPORTATION CORRIDOR OVERLAY ZONE

**TRANSPORTATION CORRIDOR OVERLAY
ZONE LANDSCAPE AREA CALCULATION**

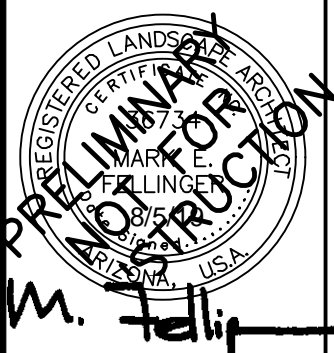
LANDSCAPE AREA:	21,250 SQ. FT.
TREES REQUIRED:	49
TREES PROVIDED:	49
SHRUBS REQUIRED:	294
SHRUBS PROVIDED:	297
GROUND COVER: REQUIRED	40%
GROUND COVER: PROVIDED	40%



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L-01
LANDSCAPE COVER SHEET

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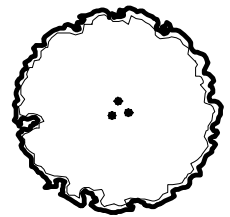
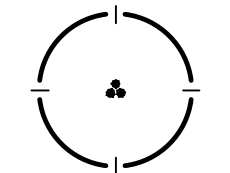
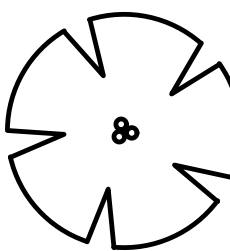
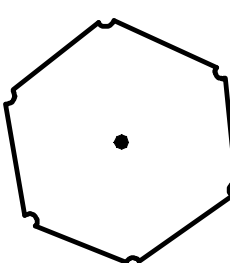
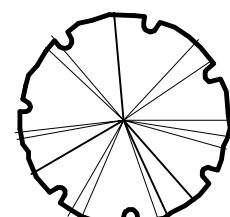
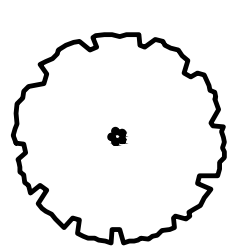
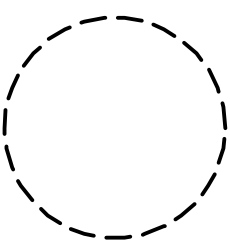
6150 NORTH 16TH STREET PHOENIX, AZ 85016 (602) 263-1100 (FAX) 602-265-2396 San Diego - Riverside - Orange - Sacramento - San Luis Obispo - Tucson - Denver	CALL TWO WORKING DAYS BEFORE YOU DIG (602) 263-1100 1-800-STAKE-IT (OUTSIDE MARICOPA COUNTY)	rickengineering.com COPYRIGHT 2019 RICK ENGINEERING COMPANY	DESIGNED: MEF DRAWN: MEF	PROJECT NO. 5114 DATE: 27-JUNE-2019
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SHEET 1 OF 17

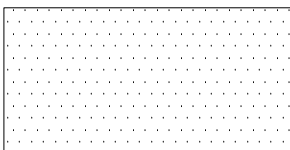
PLANT MATERIAL LEGEND

SYMBOL	BOTANICAL NAME COMMON NAME	QTY.	SIZE	H x W (CALIPER)
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TREES



	CAESALPINIA CACALACO 'SMOOTHIE' CASCALOTE	19	24" BOX	7' x 4' (1.5")
	CHILOPSIS LINEARIS DESERT WILLOW	41	24" BOX	7' x 4' (1.25")
	DALBERGIA SISSOO SISSOO TREE	15	24" BOX	8' x 4' (1.5")
	PROSOPIS SEEDLES HYBRID 'AZT' SEEDLESS HYBRID MESQUITE	20	24" BOX	8' x 4' (1.5")
	QUERCUS BUCKLEI TEXAS RED OAK	14	24" BOX	7' x 4' (1.5")
	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	94	24" BOX	7' x 4' (1.5")
	EXISTING TREE TO REMAIN PROTECT IN PLACE			

INORGANIC GROUNDCOVER

	A MIN. 2" DEPTH LAYER OF DECORATIVE ROCK SHALL BE PLACED IN ALL PLANTING AREAS INDICATED ON THE PLANS. SIZE SHALL BE 7/8" SCREENED. COLOR SHALL BE 'APACHE BROWN' AVAILABLE THROUGH KALAMAZOO MATERIALS (520-575-9601), OR AS APPROVED BY OWNER.
---	--

LANDSCAPE BOULDER SCHEDULE

BOULDERS SHALL BE PIT RUN 'APACHE BROWN' AS AVAILABLE THROUGH KALAMAZOO MATERIALS, OR AS APPROVED BY OWNER.

	W x H x L	QTY.
	3' x 3' x 3'	38
	2' x 2' x 2'	175

SYMBOL	BOTANICAL NAME COMMON NAME	QTY.	SIZE
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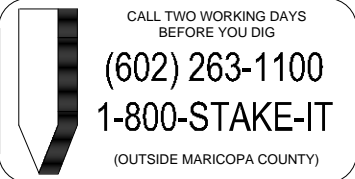
SHRUBS AND ACCENTS

	CALLIANDRA CALIFORNICA BAJA FAIRY DUSTER	82	5 GAL.
	CALLISTEMON 'LITTLE JOHN' LITTLE JOHN BOTTLE BRUSH	91	5 GAL.
	CAESALPINIA PULCHERRIMA RED BIRD OF PARADISE	21	5 GAL.
	DASYLIRION WHEELERI DESERT SPOON	19	5 GAL.
	ENCELIA FARINOSA BRITTLE BUSH	163	5 GAL.
	FOUQUIERIA SPLENDENS OCOTILLO	6	3 CANE MIN.
	HESPERALOE FUNIFERA GIANT HESPERALOE	10	5 GAL.
	HESPERALOE PARVIFLORA RED YUCCA	211	5 GAL.
	DALEA CAPITATA LEMON DALEA	354	1 GAL.
	EREMOPHILA 'VALENTINE' VALENTINE SHRUB	183	5 GAL.
	LONICERA 'PAM'S PINK' PAM'S PINK HONEYSUCKLE	2	5 GAL.
	MUHLENBERGIA 'AUTUMN GLOW' AUTUMN GLOW DEER GRASS	54	5 GAL.
	PEDILANTHUS MACROCARPA SLIPPER PLANT	86	5 GAL.
	PENSTEMON EATONII FIRECRACKER PENSTEMON	128	1 GAL.
	SALVIA CLEVELANDII CLEVELAND'S SAGE	7	5 GAL.
	SALVIA GREGGII AUTUMN SAGE	18	5 GAL.
	SENNA NEMOPHILA DESERT SENNA	56	5 GAL.
	TECOMA STANS MEXICAN YELLOW BELLS	10	5 GAL.

ACCENTS IN CONCRETE PLANTERS/POTS

AGAVE BRACREOSA SQUID AGAVE
ALOE 'BLUE ELF' BLUE ELF ALOE
LANTANA MONTEVIDENSIS TRAILING LANTANA
MANFREDA MACULOSA TEXAS TUBEROSE
PENSTEMON EATONII FIRECRACKER PENSTEMON
PORTULACARIA AFRA MINIMA DWARF ELEPHANT FOOD

L-02
PLANTING LEGEND



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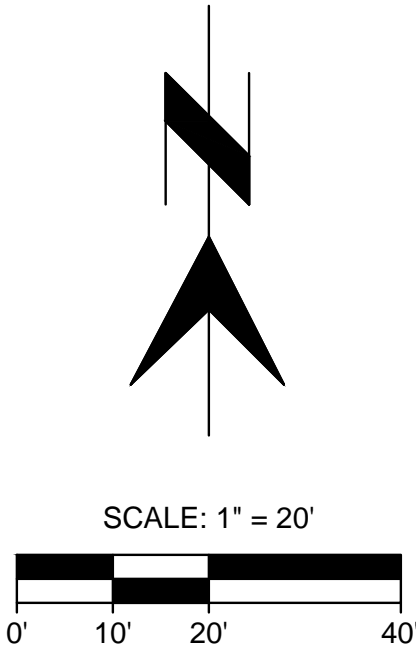
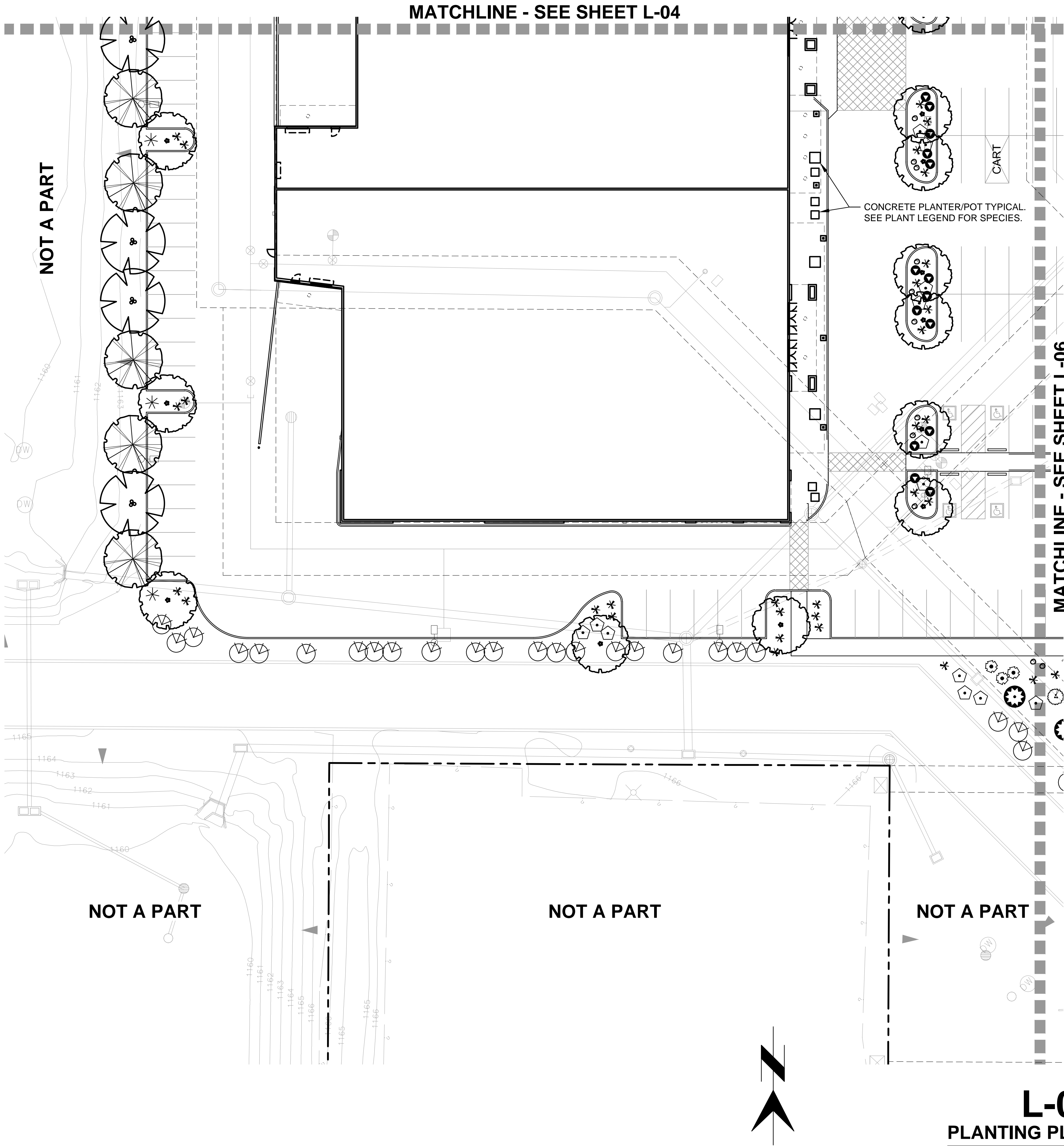
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SONORAN CREEK
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LANDSCAPE PLAN



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L-05
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SONORAN CREEK
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LANDSCAPE PLAN

MATCHLINE - SEE SHEET L-05

MATCHLINE - SEE SHEET L-03

JOHN WAYNE PKWY.

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J-5114

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DATE: 27-JUNE-2019

SHEET 6 OF 17


SONORAN CREEK
JOHN WAYNE PARK WAY & EDISON RD.
LANDSCAPE PLAN

L-06

PLANTING PLAN

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SCALE: 1" = 20'



A horizontal scale bar with alternating black and white segments. It is marked with 0', 10', 20', and 40'.



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PLANTING SPECIFICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1.1.1 DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2. SUMMARY

1.2.1. THIS SECTION INCLUDES PROVISIONS FOR THE FOLLOWING ITEMS:

- 1.2.1.1. TREES
- 1.2.1.2. SHRUBS
- 1.2.1.3. GROUND COVER
- 1.2.1.4. SOIL AMENDMENTS
- 1.2.1.5. FINISH GRADING
- 1.2.1.6. MAINTENANCE PERIOD

1.2.2. RELATED SECTIONS AND REFERENCE DOCUMENTS: THE FOLLOWING SECTIONS AND REFERENCE DOCUMENTS CONTAIN REQUIREMENTS THAT RELATE TO THIS SECTION.

1.2.3. UNDERGROUND IRRIGATION SYSTEM IS SPECIFIED IN DIVISION 2 SECTION 02810, "IRRIGATION SYSTEM."

1.2.4. REFERENCE DOCUMENTS:

1.2.4.1. AMERICAN JOINT COMMITTEE ON HORTICULTURE NOMENCLATURE (AJCHN), STANDARDIZED PLANT NAMES, LATEST EDITION.

1.2.4.2. AMERICAN ASSOCIATION OF NURSERYMEN, INC. (AAN), AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION.

1.2.4.3. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

1.3. QUALITY ASSURANCE

1.3.1. SUBCONTRACT LANDSCAPE WORK TO A SINGLE FIRM SPECIALIZING IN LANDSCAPE WORK. THE CONTRACTOR SHALL POSSESS ALL LICENSES AND PERMITS REQUIRED TO PERFORM THE WORK INCLUDING A A-21 LANDSCAPING LICENSE.

1.3.2. SOURCE QUALITY CONTROL:

1.3.2.1. GENERAL: SHIP LANDSCAPE MATERIALS WITH CERTIFICATES OF INSPECTION REQUIRED BY GOVERNING AUTHORITIES. COMPLY WITH REGULATIONS APPLICABLE TO LANDSCAPE MATERIALS.

1.3.2.2. DO NOT MAKE SUBSTITUTIONS. IF SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, SUBMIT PROOF OF NON-AVAILABILITY TO LANDSCAPE ARCHITECT, TOGETHER WITH PROPOSAL FOR USE OF EQUIVALENT MATERIAL.

1.3.2.3. ANALYSIS AND STANDARDS: PACKAGE STANDARD PRODUCTS WITH MANUFACTURER'S CERTIFIED ANALYSIS. FOR OTHER MATERIALS, PROVIDE ANALYSIS BY RECOGNIZED LABORATORY MADE IN ACCORDANCE WITH METHODS ESTABLISHED BY THE ASSOCIATION OF OFFICIAL AGRICULTURE CHEMISTS, WHEREVER APPLICABLE.

1.3.2.4. TREES, SHRUBS, AND PLANTS: PROVIDE TREES, SHRUBS, AND PLANTS OF QUANTITY, SIZE, GENUS, SPECIES, AND VARIETY SHOWN AND SCHEDULED FOR LANDSCAPE WORK AND COMPLYING WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK". PROVIDE HEALTHY, VIGOROUS STOCK, GROWN IN RECOGNIZED NURSERY CONTAINER SIZES, IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE AND FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, ABRASIONS, OR DISFIGUREMENT.

1.3.2.5. LABEL EACH TREE AND SHRUB WITH SECURELY ATTACHED WATERPROOF TAG BEARING LEGIBLE DESIGNATION OF BOTANICAL AND COMMON NAME.

1.3.2.6. WHERE FORMAL ARRANGEMENTS OR CONSECUTIVE ORDER OF TREES OR SHRUBS ARE SHOWN, SELECT STOCK FOR UNIFORM HEIGHT AND SPREAD, AND LABEL WITH NUMBER TO ASSURE SYMMETRY IN PLANTING.

1.3.2.7. SELECTION: THE LANDSCAPE ARCHITECT MAY CHECK TREES AND SHRUBS EITHER AT PLACE OF GROWTH OR AT SITE BEFORE PLANTING, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE CONTRACTOR SHALL SUBMIT PHOTOGRAPHS TO LANDSCAPE ARCHITECT OF TYPICAL TREES (15 GAL. AND LARGER CONTAINER SIZES) FOR LANDSCAPE WORK. LANDSCAPE ARCHITECT RETAINS RIGHT TO FURTHER CHECK TREES AND SHRUBS FOR SIZE AND CONDITION OF ROOT BALL ROOT SYSTEMS, INSECTS, INJURIES AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. CONTRACTOR SHALL REMOVE REJECTED TREES OR SHRUBS IMMEDIATELY FROM PROJECT SITE UPON REQUEST.

1.4. SUBMITTALS

1.4.1. GENERAL: SUBMIT THE FOLLOWING IN ACCORDANCE WITH CONDITIONS OF CONTRACT AND DIVISION 1 SPECIFICATION SECTIONS.

1.4.2. PLANT AND MATERIAL CERTIFICATIONS:

1.4.2.1. CERTIFICATES OF INSPECTION AS REQUIRED BY LOCAL MUNICIPALITY AND/OR GOVERNMENTAL AUTHORITIES.

1.4.2.2. MANUFACTURER'S OR VENDOR'S CERTIFIED ANALYSIS FOR SOIL AMENDMENTS AND FERTILIZER MATERIALS.

1.4.2.3. LABEL DATA SUBSTANTIATING THAT PLANTS, TREES, SHRUBS AND PLANTING MATERIALS COMPLY WITH SPECIFIED REQUIREMENTS.

1.4.2.4. SEED VENDOR'S CERTIFIED STATEMENT FOR EACH SEED MIXTURES REQUIRED, STATING BOTANICAL AND COMMON NAME, PERCENTAGES BY WEIGHT, AND PERCENTAGES OF PURITY, GERMINATION, AND WEED SEED FOR EACH SEED SPECIES.

1.5. DELIVERY, STORAGE AND HANDLING

1.5.1. PACKAGED MATERIALS: DELIVER PACKAGED MATERIALS IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. PROTECT MATERIALS FROM DETERIORATION DURING DELIVERY AND WHILE STORED AT SITE.

1.5.2. TREES AND SHRUBS: DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE APPROVED BY LANDSCAPE ARCHITECT. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING DELIVERY.

1.5.3. DO NOT REMOVE CONTAINER-GROWN STOCK FROM CONTAINERS UNTIL PLANTING TIME.

1.5.4. CONTRACTOR SHALL PROVIDE COMPLETE CARE TO ALL ON-SITE STORAGE OF CONTAINER-GROWN STOCK. ALL CONTAINER-GROWN STOCK FOUND TO BE DAMAGE DURING STORAGE SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST.

1.6. JOB CONDITIONS

1.6.1. UTILITIES: DETERMINE LOCATION OF UNDERGROUND UTILITIES AND PERFORM WORK IN A MANNER, WHICH WILL AVOID POSSIBLE DAMAGE. HAND EXCAVATE, AS REQUIRED. MAINTAIN GRADE STAKES SET BY OTHERS UNTIL REMOVAL IS MUTUALLY AGREED UPON BY PARTIES CONCERNED.

1.6.2. EXCAVATION: WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS, NOTIFY LANDSCAPE ARCHITECT BEFORE PLANTING.

1.7. SEQUENCING AND SCHEDULING

1.7.1. PLANTING TIME: PROCEED WITH, AND COMPLETE LANDSCAPE WORK AS RAPIDLY AS PORTIONS OF SITE BECOME AVAILABLE, AND SHALL BE PERFORMED DURING THOSE PERIODS WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE IN ACCORDANCE WITH LOCALLY ACCEPTED HORTICULTURAL PRACTICE.

1.8. SPECIAL PROJECT WARRANTY

1.8.1. WARRANTY SHRUBS FOR A PERIOD OF 90 DAYS AFTER DATE OF FINAL ACCEPTANCE.

1.8.2. WARRANTY TREES, FOR A PERIOD OF ONE YEAR AFTER DATE OF FINAL ACCEPTANCE AGAINST DEFECTS, INCLUDING DEATH, EXCEPT FOR DEFECTS RESULTING FROM NEGLIGENCE BY OWNER, ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS, WHICH ARE BEYOND LANDSCAPE INSTALLER'S CONTROL.

1.8.3. CONTRACTOR SHALL REMOVE AND REPLACE TREES, SHRUBS, OR OTHER PLANTS FOUND TO BE DEAD OR IN AN UNHEALTHY CONDITION DURING WARRANTY PERIOD. MAKE REPLACEMENTS WITHIN 14 CALENDAR DAYS. REPLACE TREES AND SHRUBS, WHICH ARE IN DOUBTFUL CONDITION AT END OF WARRANTY PERIOD; UNLESS, IN OPINION OF LANDSCAPE ARCHITECT, IT IS ADVISABLE TO EXTEND WARRANTY PERIOD FOR A FULL GROWING SEASON.

1.8.4. ANOTHER WARRANTY SITE OBSERVATION VISIT WILL BE CONDUCTED AT END OF EXTENDED WARRANTY PERIOD, IF ANY, TO DETERMINE ACCEPTANCE OR REJECTION. REPLACEMENT SHALL BE THE PLANTS USED FOR SAME KIND AND SIZE AS SPECIFIED FOR LANDSCAPE WORK. REPLACEMENTS SHALL BE FURNISHED, AND PLANTED AS ORIGINALLY SPECIFIED BY THE CONTRACTOR.

PART 2 - PRODUCTS

2.1 SOIL AMENDMENTS

2.2.1. COMMERCIAL FERTILIZER: COMPLETE FERTILIZER OF NEUTRAL CHARACTER, WITH SOME ELEMENTS DERIVED FROM ORGANIC SOURCES AND CONTAINING THE FOLLOWING PERCENTAGES OF AVAILABLE PLANT NUTRIENTS:

2.2.1.1. PRE-PLANT FERTILIZER: PROVIDE FERTILIZER WITH NOT MORE THAN 6 PERCENT TOTAL NITROGEN; AND NOT LESS THAN 20 PERCENT AVAILABLE PHOSPHORIC ACID AND 20 PERCENT SOLUBLE POTASH.

2.2.1.2. POST-PLANT FERTILIZER: PROVIDE FERTILIZER WITH PERCENTAGE OF NITROGEN REQUIRED TO PROVIDE NOT LESS THAN 6 POUNDS OF ACTUAL NITROGEN, 2 PERCENT PHOSPHORIC ACID, 4 PERCENT POTASSIUM, 5 PERCENT SULFUR, 20% HUMIC ACIDS (FROM LEONARDARITE) AND 75% HUMATE (MINERALS/ORGANIC MATTER/CARBON). POST-PLANT FERTILIZER SHALL BE TRI-C 6-2-4 OR APPROVED EQUAL.

2.2.1.3. PLANT TABLETS, AGRIFORM (20-10-5-) BLUE CHIP TABLETS 21 GRAM.

2.2.2. SOIL SULPHUR, SHALL BE ELEMENTAL SULPHUR (99.5%) COMMERCIALLY MANUFACTURED SO THAT A PURE SULPHUR PRODUCT IS USED.

2.2.3. ORGANIC SOIL CONDITIONER, SHALL BE A PRODUCT THAT AIDS THE STRUCTURE OF THE SOIL CONSISTING OF RAPIDLY DECAYING SLOWLY DECAYING, AND NON-DECAYING MATERIAL. NITROGEN (ORGANIC OR AMMONIC) 0.5% TO 0.8%, PH BETWEEN 5.5 TO 6.5 SALINITY (ECE X 103 AT 25° C) = 2.5, ORGANIC MATTER MORE THAN 87% (DRY WEIGHT BASIS). THE COMMERCIAL GRADE PRODUCT USED SHALL BE NUMEX LIF, LOAMEX, OR FOREST HUMUS OR APPROVED EQUAL BY LANDSCAPE ARCHITECT.

2.2.4. SOIL CONDITIONER, GRANULAR, TRI-C HUMATE PLUS, SHALL CONTAIN 25% HUMIC ACIDS. IT SHALL BE FREE FLOWING, SUITABLE FOR APPLICATION WITH APPROVED EQUIPMENT AND SHALL CONTAIN THE MINIMUM AVAILABLE PERCENTAGES OF 7% CALCIUM AND 5% SULPHUR.

2.2.5. PLANTING BACKFILL, SHALL BE A THOROUGHLY BLENDED MIXTURE OF EXCAVATED SOIL FROM THE PITS AND SOIL AMENDMENTS AT THE FOLLOWING MIXTURE SOIL CONDITIONER:

- 2.2.5.1. ORGANIC SOIL CONDITIONER 1/3
- 2.2.5.2. ON SITE SOIL 2/3
- 2.2.5.3. SOIL CONDITIONER 8 LBS PER CUBIC YARD MIX
- 2.2.5.4. PRE-PLANT FERTILIZER 2 LBS PER CUBIC YARD MIX

2.3. PLANT MATERIALS

2.3.1. QUALITY: PROVIDE TREES, SHRUBS, AND OTHER PLANTS OF SIZE, GENUS, SPECIES, AND VARIETY SHOWN AND SCHEDULED FOR LANDSCAPE WORK AND COMPLYING WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK."

2.3.2. CONTAINER STOCK (1 GAL., 5 GAL., 15 GAL., BOXES) SHALL HAVE BEEN GROWN IN CONTAINER FOR AT LEAST SIX MONTHS, BUT NOT OVER TWO YEARS. NO CONTAINER PLANTS THAT HAVE CRACKED OR BROKEN BALLS OF EARTH WHEN TAKEN FROM THE CONTAINER SHALL BE PLANTED, EXPECT UPON SPECIAL APPROVAL. NO TREES WITH DAMAGED ROOTS OR BROKEN BALLS SHALL BE PLANTED.

2.3.3. TREES: PROVIDE TREES OF HEIGHT AND WIDTH SCHEDULED OR SHOWN AND WITH BRANCHING CONFIGURATION RECOMMENDED BY ANSI Z60.1 FOR TYPE AND SPECIES REQUIRED, UNLESS OTHERWISE SPECIFIED QUANTITIES SHALL BE FURNISHED AS NEEDED TO COMPLETE WORK SHOWN ON DRAWINGS. PROVIDE SINGLE STEM TREES EXCEPT WHERE SPECIAL FORMS ARE SHOWN OR LISTED.

2.3.4. SHRUBS: PROVIDE SHRUBS OF THE HEIGHT AND WIDTH SHOWN OR LISTED AS REQUIRED BY ANSI Z60.1 FOR TYPE AND HEIGHT OF SHRUB REQUIRED.

2.4. MISCELLANEOUS LANDSCAPE MATERIALS

2.4.1. STAKING MATERIAL: STAKES SHALL BE OF LODGEPOLE PINE. THESE SHALL BE STRAIGHT SHAFTS, SHAVED AND CUT CLEAN AND BARE OF BRANCHES AND STUBS, OF UNIFORM THICKNESS WITH A MINIMUM DIAMETER OF 2 INCHES, FREE OF LOOSE KNOTS, SPLITS OR BENDS. STAKES SHALL BE NO LESS THAN TEN (10) FEET IN LENGTH. TREE TIES SHALL BE V.I.T. CINCH-TIE OR APPROVED EQUAL.

2.5. WEED CONTROL

2.5.1. PRE-PLANTING HERBICIDE: ROUNDUP OR EQUAL

2.5.2. PRE-EMERGENT WEED CONTROL: RONSTAR-G, TREFLAN, EPTAM, VEGITEX, OR EQUAL, AS RECOMMENDED BY LICENSED PEST CONTROL APPLICATOR.

PART 3 - EXECUTION

3.1 PREPARATION - GENERAL

3.1.1 LAY OUT PLANTING AREAS SHALL MEAN ALL AREAS TO BE PLANTED WITH TREES, SHRUBS, GROUNDCOVERS AND AREAS FOR MULTIPLE PLANTINGS. STAKE LOCATIONS AND OUTLINE AREAS AND SECURE LANDSCAPE ARCHITECT'S ACCEPTANCE BEFORE START OF PLANTING WORK. MAKE MINOR ADJUSTMENTS AS MAY BE REQUIRED.

3.1.2 ALL ROCK AND OTHER GROWTH OR DEBRIS ACCUMULATED DURING THE DURATION OF THE PROJECT SHALL BE REMOVED FROM THE SITE. UPON COMPLETION OF ALL GRADING OPERATIONS, SOIL SAMPLES (3 LOCATIONS MIN.) WITH IDENTIFY REFERENCE SHALL BE TAKEN BY THE CONTRACTOR AND ANALYZED BY A SOIL LABORATORY. THE RESULTS OF THESE TESTS ARE TO BE REVIEWED BY THE LANDSCAPE ARCHITECT FOR ANY REQUIRED MODIFICATIONS TO SPECIFIED SOIL PREPARATION.

3.1.3 GRADING AND SOIL PREPARATION WORK SHALL BE PERFORMED ONLY DURING THE PERIOD WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. IF THE MOISTURE CONTENT OF THE SOIL SHOULD REACH SUCH A LEVEL THAT WORKING IT WOULD DESTROY SOIL STRUCTURE, SPREADING AND GRADING OPERATIONS SHALL BE SUSPENDED UNTIL THE MOISTURE CONTENT IS INCREASED OR REDUCED TO ACCEPTABLE LEVELS AND THE DESIRED RESULTS ARE LIKELY TO BE OBTAINED.

3.1.4 ALL SCALED DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH ANY WORK, CAREFULLY CHECK AND VERIFY ALL DIMENSIONS AND IMMEDIATELY INFORM THE LANDSCAPE ARCHITECT OF ANY DISCREPANCY BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS AND ACTUAL CONDITIONS.

3.1.5 QUANTITIES FOR PLANT MATERIALS ARE SHOWN FOR CONVENIENCE ONLY, AND NOT GUARANTEED. CHECK AND VERIFY COUNT AND SUPPLY SUFFICIENT NUMBER TO FULFILL INTENT OF DRAWINGS. CERTIFY ANY CLARIFICATIONS WITH THE LANDSCAPE ARCHITECT. ADEQUATELY STAKE, BARRICADE, AND PROTECT ALL IRRIGATION EQUIPMENT, MANHOLES, UTILITY LINES, AND OTHER EXISTING PROPERTY DURING ALL PHASES OF THE SOIL AMENDING PLANTING AND GRADING OPERATIONS.

3.1.6 UPON DELIVERY OF MATERIAL AND/OR COMPLETION OF ALL SOIL CONDITIONING AND GRADING BUT PRIOR TO INITIATING PLANTING OPERATIONS, THE LANDSCAPE ARCHITECT WITH THE HERETOFORE SPECIFIED SIGNED COPIES OF REQUIRED CERTIFICATES, TRIP SLIPS, AND INVOICES FOR SOIL PREPARATION MATERIALS, SHALL INVOICE SUCH MATERIAL, COMPARING THE TOTAL QUANTITIES OF EACH MATERIAL FURNISHED AGAINST THE TOTAL AREA TO EACH OPERATION. IF THE MINIMUM RATES OF APPLICATION HAVE NOT BEEN MET, THE LANDSCAPE ARCHITECT WILL REQUIRE THE DISTRIBUTION OF ADDITIONAL QUANTITIES OF THESE MATERIALS TO FULFILL THE MINIMUM APPLICATION REQUIREMENTS SPECIFIED AT NO COST TO OWNER.

3.2 FINISH GRADING

3.2.1 FINISH GRADING: FINISH GRADES SHALL BE AS INDICATED ON THE CIVIL ENGINEER'S DRAWINGS AND LANDSCAPE DRAWINGS.

3.2.2 FINISH GRADES SHALL BE MEASURED AS THE FINAL WATER COMPACTED AND SETTLED SURFACE GRADES; AND SHALL BE WITHIN PLUS OR MINUS 0.1 FOOT OF THE SPOT ELEVATIONS AND GRADE LINES INDICATED ON THE DRAWING.

3.2.3 FINISH GRADES SHALL BE MEASURED AT THE TOP SURFACE OF SURFACE MATERIALS.

3.2.4 MOLDING AND ROUNDING OF THE GRADES SHALL BE PROVIDED AT ALL CHANGES IN SLOPE.

3.2.5 ALL UNDULATIONS AND IRREGULARITIES IN THE PLANTING SURFACES RESULTING FROM TILLAGE, ROTOTILLING AND ALL OTHER OPERATIONS SHALL BE LEVELED AND FLOATED OUT BEFORE PLANTING OPERATIONS ARE INITIATED.

3.2.6 THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PROTECT AND AVOID DAMAGE TO SPRINKLER HEADS, IRRIGATION LINES, AND OTHER UNDERGROUND UTILITIES DURING HIS GRADING AND CONDITIONING OPERATIONS.

3.2.7 FINAL FINISH GRADES SHALL INSURE POSITIVE DRAINAGE OF THE SITE WITH ALL SURFACE DRAINAGE AWAY FROM BUILDINGS, WALLS, AND TOWARD ROADWAYS, DRAINS AND CATCH BASINS.

3.2.8 FINAL GRADES SHALL BE ACCEPTABLE TO THE LANDSCAPE ARCHITECT BEFORE PLANTING OPERATIONS WILL BE ALLOWED TO BEGIN.

3.2.9 PLANTING SURFACES SHALL BE GRADED WITH NO LESS THAN 2 PERCENT SURFACE SLOPE FOR POSITIVE DRAINAGE UNLESS OTHERWISE NOTED ON PLANS.

3.3 DEEP WATERING AND WEED CONTROL:

3.3.1 AFTER COMPLETE INSTALLATION AND TESTING OF THE IRRIGATION SYSTEM AND PREPARATION OF PLANTING AREAS, ALL PLANTING AREAS SHALL BE DEEP WATERED AND COMPACTED AND SETTLED BY CONTINUOUS APPLICATION OF IRRIGATION WATER UNTIL THE SOIL IS MOIST TO A MINIMUM DEPTH OF 8".

3.3.2 CARE SHALL BE TAKEN THAT THE RATE OF APPLICATION OF WATER DOES NOT CAUSE EROSION OR SLOUGHING OF SOILS.

3.3.3 ALL DEPRESSIONS, VOIDS, EROSION SCARS AND SETTLED TRENCHES GENERATED BY THE DEEP WATERING SHALL BE FILLED WITH CONDITIONED TOPSOIL AND BROUGHT TO FINISH GRADE.

3.3.4 WEED CONTROL:

3.3.4.1 MANUALLY REMOVE ALL EXISTING WEEDS AND GRASSES AND REMOVE FROM SITE.

3.3.4.2 APPLY 200 LBS/ACRE COMMERCIAL FERTILIZER TO ALL PLANTING AREAS. IRRIGATE 4 TIMES PER DAY DURING THE SUMMER SEASON AND 2 TIMES PER DAY DURING OTHER SEASONS FOR 3 WEEKS TO GERMINATE SEEDS.

3.3.4.3 DISCONTINUE IRRIGATION FOR 2 DAYS AND APPLY A NON-SELECTIVE CONTACT HERBICIDE, PER MANUFACTURER'S DIRECTION, TO ERADICATE GERMINATED WEEDS AND GRASSES. ALLOW HERBICIDE TO KILL WEEDS AND GRASSES. MANUALLY REMOVE WEEDS AND GRASSES FROM SITE. MINIMIZE SOIL DISTURBANCE ON SLOPED AREAS OF THE SITE.

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6150 NORTH 16TH STREET
PHOENIX, AZ 85016
(602) 263-1100
(FAX) 602-265-2396

RICK
ENGINEERING COMPANY
Phoenix

PROJECT NO. 5114
DATE: 27-JUNE-2019

DESIGNED: MEF
DRAWN: MEF

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SONORAN CREEK
JOHN WAYNE PARKWAY & EDISON RD.
LANDSCAPE PLAN



REVISIONS		
NO.	DESCRIPTION	DATE

ANY CHANGES MADE TO THE PLANS AND DETAILS SHOWN ON THESE DOCUMENTS WHICH ARE NOT APPROVED BY THE LANDSCAPE ARCHITECT RELEASES RICK ENGINEERING OF ANY LIABILITY INCURRED AS A RESULT OF SAID CHANGES.

B. IF ANY UTILITIES CONFLICT WITH THE ORIGINAL PLACEMENT OF INTENDED PLANT MATERIAL ON SITE THE LANDSCAPE ARCHITECT WILL AID THE CONTRACTOR IN THE RELOCATION OR SHIFTING OF PLANT MATERIAL ON SITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY TYPE AND LOCATION OF UTILITIES AS NECESSARY TO AVOID DAMAGE THERETO. ALL UTILITIES SHALL BE LOCATED AND VERIFIED PRIOR TO ANY EXCAVATION. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNERS REPRESENTATIVE IMMEDIATELY. PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL CONTACT CALL BEFORE YOU DIG 1 800 227-2600 TO VERIFY LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THIS WORK, AND SHALL BE RESPONSIBLE FOR DAMAGES TO SUCH UTILITIES CAUSED AS A RESULT OF THE WORK.

D. DO NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY FIELD CHANGES.












F. VALVE MANIFOLDS, BALL VALVES, RCV'S, QUICK COUPLERS, ETC SHALL BE LOCATED WITHIN SHRUB PLANTING AREAS. VERIFY ACTUAL LOCATIONS IN THE FIELD WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.

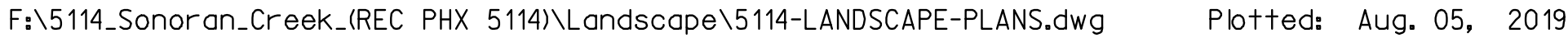
H. THE SPRINKLER SYSTEM DESIGN IS BASED ON THE MINIMUM PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE IRRIGATION DRAWINGS AT THE POINT OF CONNECTION (P.O.C.). THE IRRIGATION CONTRACTOR SHALL VERIFY THE WATER PRESSURE PRIOR TO CONSTRUCTION. REPORT ANY DIFFERENCE BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POC TO THE OWNERS REPRESENTATIVE. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO START OF CONSTRUCTION, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS AND COSTS ASSOCIATED WITH SAID REVISIONS.

OVERSPRAY. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

L. SHOULD FIELD CONDITIONS REQUIRE PIPE INSTALLATION OTHER THAN THAT SHOWN ON PLANS, THE CONTRACTOR SHALL LIMIT EXCESS FLOW AND SIZE ALL PIPE NOT TO EXCEED A VELOCITY OF 5 FEET PER SECOND (FPS) IN PVC PIPE. FLOW THROUGH ANCILLARY EQUIPMENT, COPPER PIPE SHALL NOT EXCEED 7.5 FPS. ALL ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

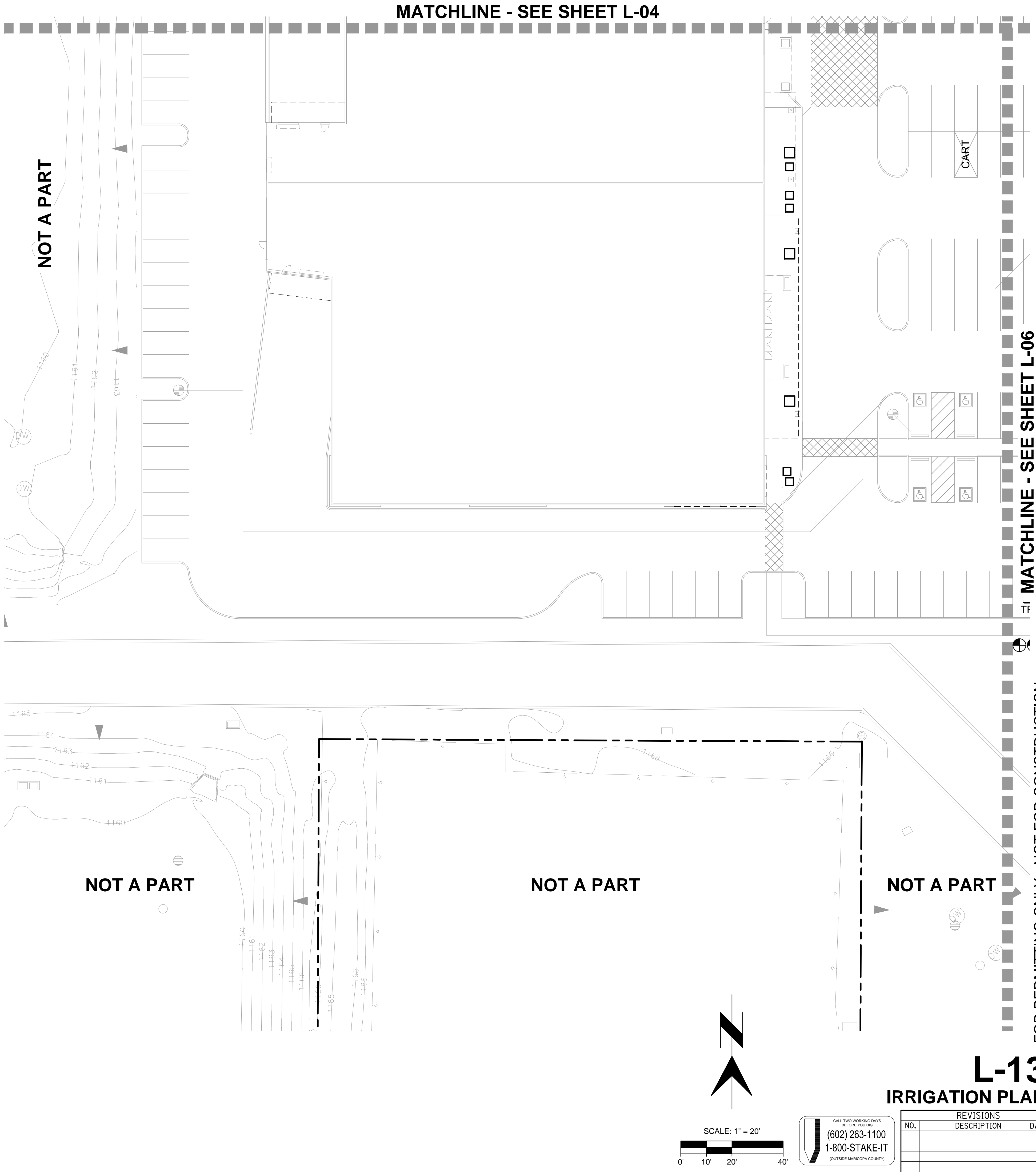
P. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS, COORDINATION AND SEQUENCING DURING CONSTRUCTION UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THESE PLANS AND SPECIFICATIONS.

SYMBOL	DESCRIPTION	MANUFACTURER / MODEL	REMARKS
	NEW 1" POTABLE WATER METER		
	AUTOMATIC CONTROLLER	HUNTER XXXX	
	RAIN SENSOR	HUNTER SOLAR SYNCH	INSTALL PER MANUFACTURER RECOMMENDATIONS
	BACKFLOW PREVENTION ASSEMBLY	1" FEBCO 825Y	INSTALL AS DETAILED, WITH GUARDSHACK ENCLOSURE (TAN)
	QUICK COUPLER	RAINBIRD 33DRC, OR EQUAL	INSTALL AS DETAILED
	PVC BALL VALVE	NIBCO, OR EQUAL	LINE SIZE, INSTALL AS DETAILED
	DRIP REMOTE CONTROL VALVE ASSEMBLY	RAINBIRD CONTROL ZONE KIT XXXX	INSTALL AS DETAILED
	PVC MAINLINE PIPE	CRESLINE, OR EQUAL	PVC SCH 40, SIZE PER PLAN
	PVC LATERAL LINE PIPE	CRESLINE, OR EQUAL	3/4" MINIMUM; PVC SCH 40
	PVC SLEEVE	CRESLINE, OR EQUAL	PVC SCH 40; TWO TIMES DIA. OF PIPE OR WIRE BUNDLE UNLESS SIZE IS NOTED OTHERWISE ON PLAN.
NOT SHOWN	SINGLE OUTLET EMITTER	RAINBIRD XB-10, OR EQUAL	
NOT SHOWN	MULTI-OUTLET EMITTER	RAINBIRD XB-10-6, OR EQUAL	
	FLUSH CAP	AS DETAILED	INSTALL IN 6" ROUND VALVE BOX

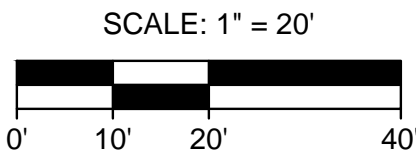


SHEET 11 OF 17

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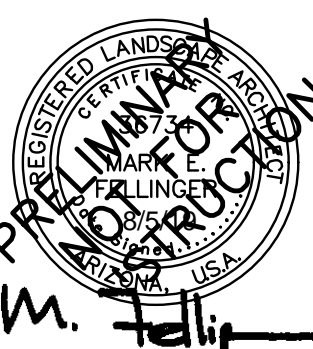
L-13
IRRIGATION PLAN



CALL TWO WORKING DAYS
BEFORE YOU DIG
(602) 263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

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rick engineering company
6150 NORTH 16TH STREET
PHOENIX, AZ 85016
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FAX: 602-285-2396
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PROJECT NO. 5114
DATE: 27-JUNE-2019

SONORAN CREEK
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MATCHLINE - SEE SHEET L-05

MATCHLINE - SEE SHEET L-03

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J-5114

Professional Engineer Seal for Mark E. Fellingner, State of Arizona, License No. 9855, Mechanical Engineering.

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PROJECT NO: 5114
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SHEET 14 OF 17

L-14

IRRIGATION PLAN

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SCALE: 1" = 20'



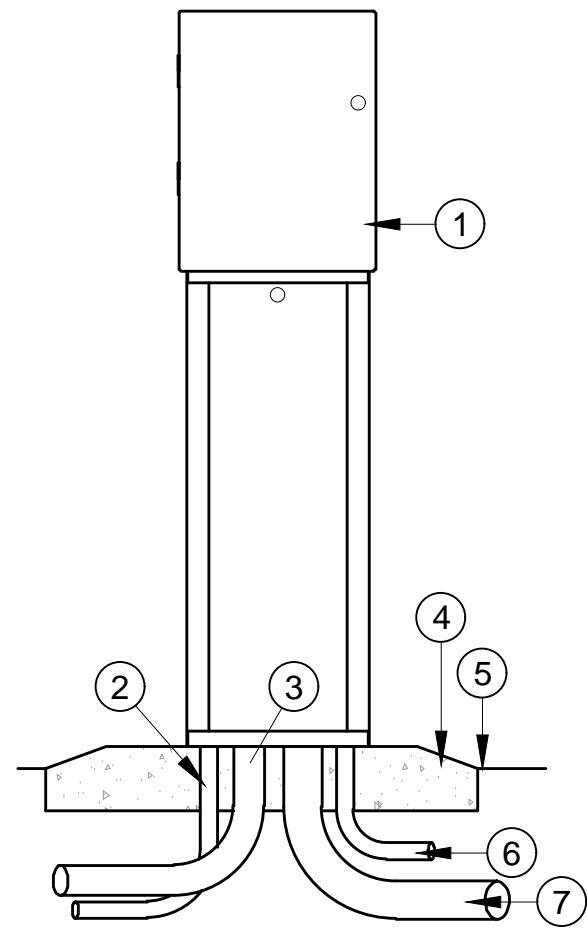
A horizontal scale bar with alternating black and white segments. It is marked with 0', 10', 20', and 40'.



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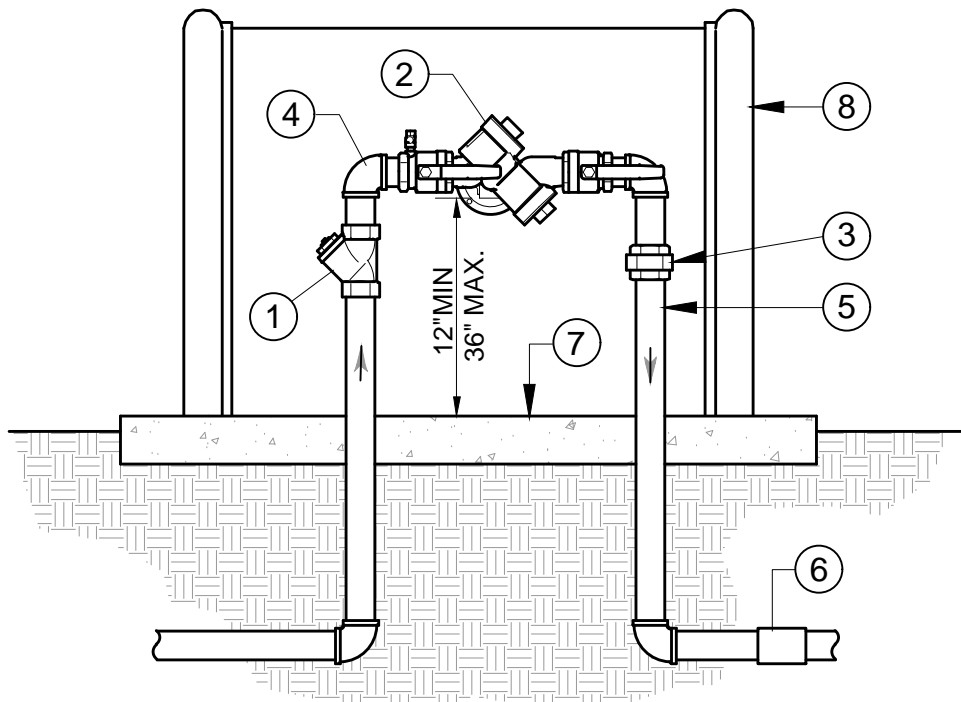
Plotted: Aug. 05, 2019



- 1 ENCLOSURE AND AUTOMATIC CONTROLLER PER IRRIGATION LEGEND
- 2 3/4" POWER CONDUIT: SIZE, TYPE, DEPTH PER LOCAL CODE
- 3 GROUND WIRE CONDUIT, MIN. 1-1/2". GROUND PER ASIC GUIDELINES
- 4 6" THICK FORMED AND POURED-IN-PLACE CONCRETE BASE
- 5 FINISH GRADE
- 6 CONDUIT FOR GBL WIRING
- 7 CONDUIT FOR DECODER WIRES

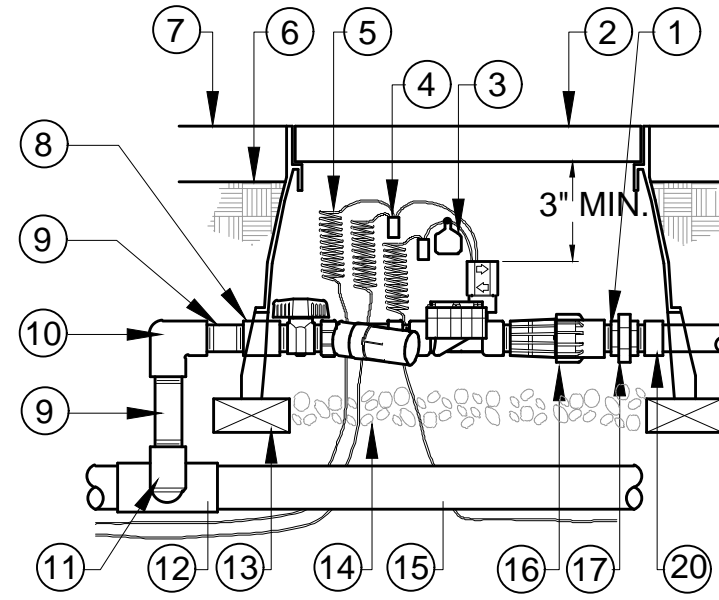
NOTES:
1. SEE INSTRUCTION MANUAL FOR MOUNTING INSTRUCTIONS.
2. ALL WIRING SHALL BE INSTALLED PER LOCAL CODES.
3. 120 VOLT POWER TO BE SUPPLIED BY OWNER.

A IRRIGATION CONTROLLER NOT TO SCALE



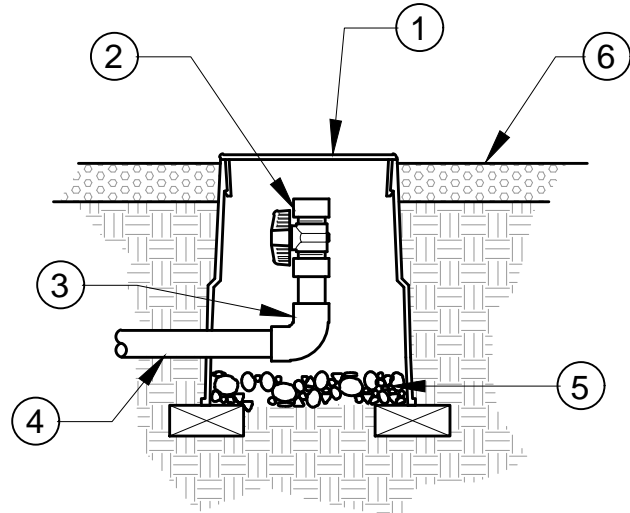
- 1 BRASS WYE STRAINER (LINE SIZE).
- 2 REDUCED PRESSURE BACKFLOW DEVICE WITH 2 BALL VALVES, REFER TO PLAN FOR TYPE AND SIZE
- 3 BRASS UNION
- 4 BRASS ELL (TYPICAL)
- 5 BRASS NIPPLE, TYPICAL
- 6 PVC MALE ADAPTER
- 7 3" THICK CONCRETE PAD. WRAP PIPES W/ 10 MIL. TAPE. SATURATE AND COMPACT SUB-GRADE TO 90% PRIOR TO POUR.
- 8 ENCLOSURE PER LEGEND.

B BACKFLOW PREVENTION DEVICE NOT TO SCALE



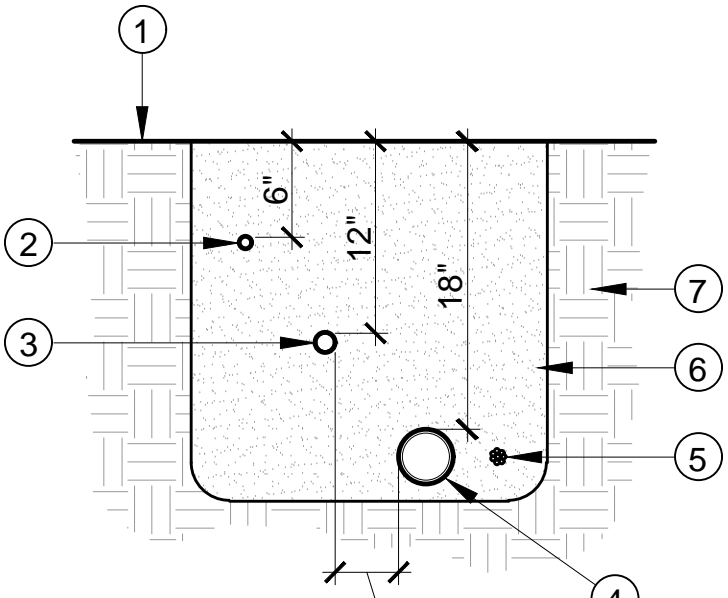
- 1 PVC SCH. 80 NIPPLE (CLOSE)
- 2 VALVE BOX W/ COVER: 24" SIZE
- 3 ID TAG
- 4 WATER PROOF CONNECTION (1 OF 2)
- 5 30-INCH LINEAR LENGTH OF WIRE, COILED
- 6 FINISH GRADE
- 7 TOP OF MULCH
- 8 PVC SCH. 40 COUPLING
- 9 PVC SCH. 80 NIPPLE (LENGTH AS REQ'D)
- 10 PVC SCH. 40 ELL
- 11 PVC SCH. 80 NIPPLE (2" LENGTH, HIDDEN) AND PVC SCH. 40 ELL
- 12 PVC SCH. 40 TEE OR ELL
- 13 BRICK (1 OF 4)
- 14 3" MIN. DEPTH OF 3/4" WASHED GRAVEL
- 15 PVC MAINLINE, SIZE PER PLANS
- 16 DRIP VALVE ASSEMBLY PER LEGEND
- 17 PVC SCH. 80 UNION FOR SERVICING ASSEMBLY
- 20 PVC SCH. 40 MALE ADAPTER

C REMOTE CONTROL VALVE (DRIP) NOT TO SCALE



- 1 6" ROUND VALVE BOX
- 2 BALL VALVE PER LEGEND
- 3 90° ELBOW
- 4 LATERAL LINE
- 5 3" MIN. DEPTH OF 3/4" WASHED GRAVEL
- 6 FINISH GRADE OF DG.

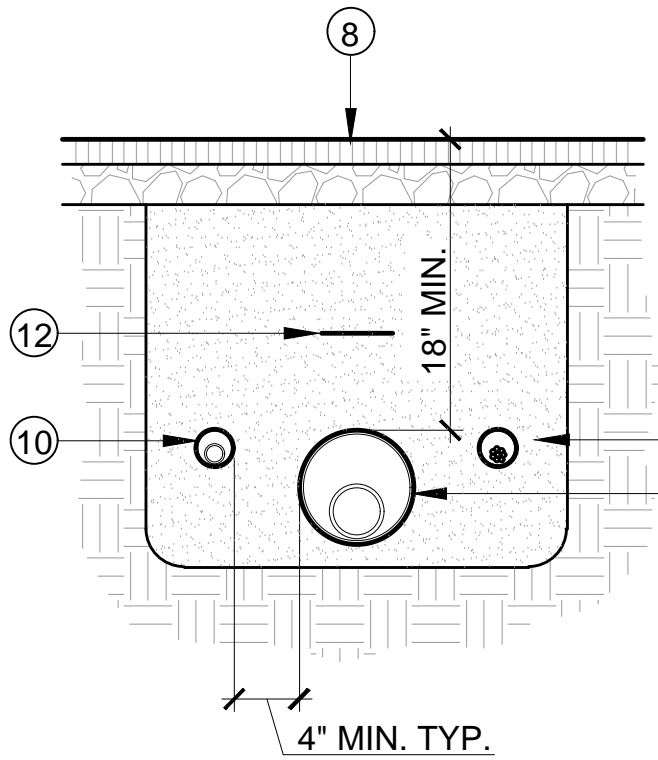
D BALL VALVE/FLUSH VALVE NOT TO SCALE



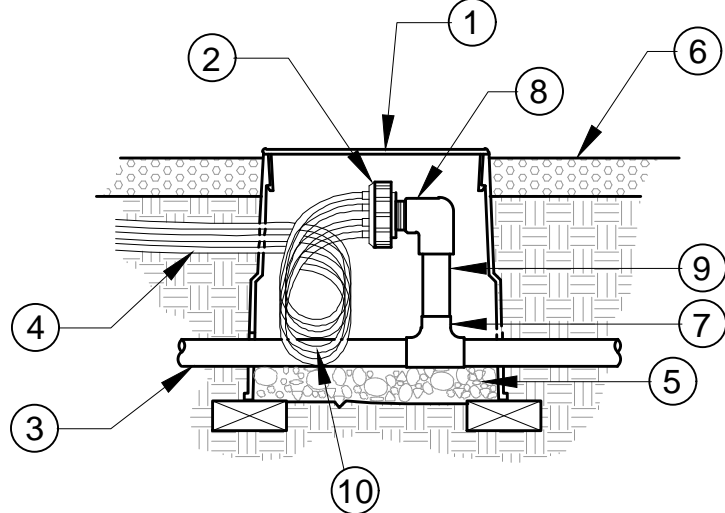
- 1 FINISH GRADE
- 2 POLYETHYLENE LATERAL LINE OR LANDSCAPE DRIPLINE.
- 3 PVC LATERAL LINE
- 4 PVC MAINLINE
- 5 DIRECT BURIAL LOW VOLTAGE CONTROL WIRES, BUNDLE AT 10 FT. O.C., BURY AT SAME DEPTH AS MAINLINE
- 6 CLEAN BACKFILL, SATURATE AND COMPACT TO 90%
- 7 UNDISTURBED SOIL

NOTE: EXTEND SLEEVE ENDS 24" BEYOND BACK OF CURB, WALK, OR PAVEMENT EDGE. A CONTINUOUS MAGNETIC MARKING TAPE SHALL BE PLACED 12 INCHES BELOW FINISHED GRADE ABOVE THE SLEEVE. AT ROAD CROSSINGS, THE CURB SHALL BE MARKED BY A STAMPED LABEL "I" (IRRIGATION SYSTEM). SLEEVE ENDS SHALL BE COVERED WITH HEAVY DUTY TAPE TO PREVENT SOIL FROM ENTERING SLEEVES UPON BACK FILLING.

E TRENCHING AND SLEWING NOT TO SCALE

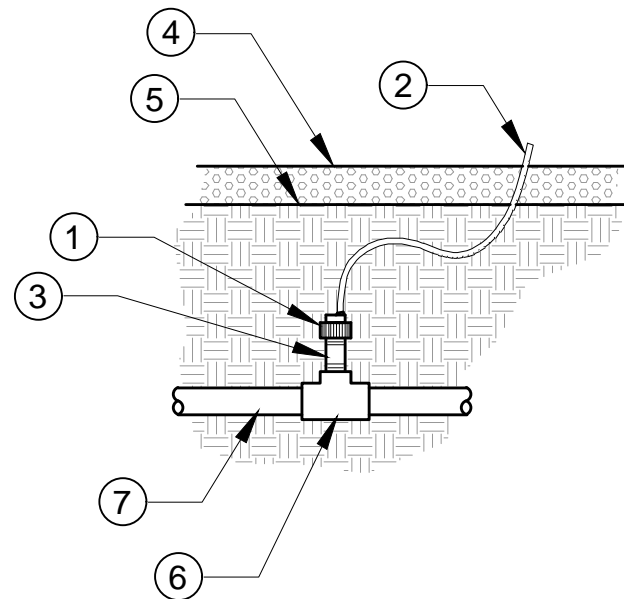


- 8 PAVED SURFACE
- 9 MAIN LINE SLEEVE
- 10 LATERAL LINE SLEEVE
- 11 CONTROL WIRE SLEEVE
- 12 MARKING TAPE



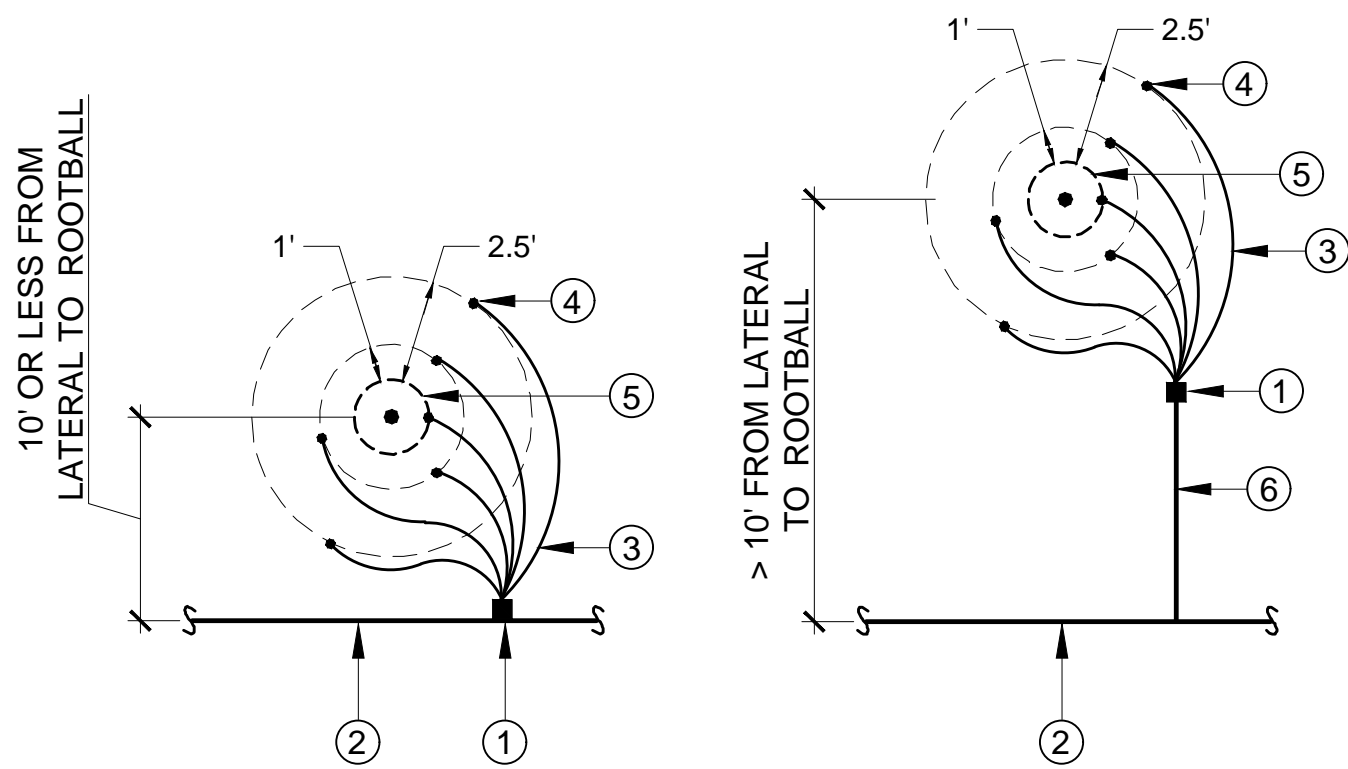
- 1 6" ROUND PURPLE RECLAIMED WATER VALVE BOX
- 2 MULTI-OUTLET DRIP EMITTER PER LEGEND
- 3 3/4" PVC LATERAL
- 4 1/4" DISTRIBUTION TUBING
- 5 3" MIN. DEPTH OF 3/4" WASHED GRAVEL
- 6 FINISH GRADE
- 7 PVC SCH 40 TEE
- 8 PVC SCH 40 ELL
- 9 1/2" PVC RISER
- 10 PROVIDE 12" LOOP OF ADDITIONAL 1/4" TUBING IN EACH BOX.

F MULTI-OUTLET DRIP EMITTER NOT TO SCALE



- 1 SINGLE OUTLET 1/2" FPT INLET X BARB OUTLET EMITTER: RAIN BIRD XERI-BUG XBT EMITTER
- 2 1/4" DISTRIBUTION TUBING
- 3 PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- 4 TOP OF MULCH
- 5 FINISH GRADE
- 6 PVC SCH 40 TEE OR ELL
- 7 PVC LATERAL PIPE

G SINGLE-OUTLET DRIP EMITTER NOT TO SCALE



- 1 MULTI-OUTLET DRIP EMITTER
- 2 LATERAL LINE PER LEGEND
- 3 1/4" DISTRIBUTION TUBING, TYP.
- 4 DISCHARGE POINT, TYP., TO BE 1" ABOVE FINISH GRADE
- 5 TREE ROOTBALL
- 6 INSTALL SUBLATERALS WHERE TREE ROOTBALL IS GREATER THAN 10' FROM LATERAL

H EMITTER PLACEMENT @ TREES NOT TO SCALE

L-15 IRRIGATION DETAILS

CALL TWO WORKING DAYS
BEFORE YOU DIG
(602) 263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

REVISIONS		
NO.	DESCRIPTION	DATE

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6150 NORTH 16TH STREET
PHOENIX, AZ 85016
PHONE: 602-973-7315
FAX: 602-285-2396

PROJECT NO. 5114
DATE: 27-JUNE-2019

SHEET 15 OF 17

REGISTERED LANDSCAPE ARCHITECT
STATE OF ARIZONA
RICK ENGINEERING COMPANY
W. M. WILSON, JR.
Landscape Architect
No. 1411

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IRRIGATION SPECIFICATIONS

SECTION 02810 - IRRIGATION
PART 1 - GENERAL

1.1. RELATED DOCUMENTS:

1.1.1. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION-1 SPECIFICATION SECTIONS, APPLY TO WORK OF THIS SECTION.

1.2. REQUIREMENTS:

1.2.1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE PUBLISHED BY THE WESTERN PLUMBING OFFICIALS ASSOCIATION, ALL STATE AND LOCAL CODES AND REGULATIONS. SHOULD THE CONSTRUCTION DOCUMENTS OR INSTRUCTIONS BE AT VARIANCE WITH THE AFOREMENTIONED RULES AND REGULATIONS, NOTIFY THE MUNICIPAL WATER DISTRICT AND AWAIT THEIR INSTRUCTIONS BEFORE PROCEEDING WITH THE WORK EFFECTED.

1.2.2. MANUFACTURER'S DIRECTIONS: MANUFACTURER'S DIRECTIONS AND DETAILED DRAWINGS SHALL BE FOLLOWED IN ALL CASES WHERE THE MANUFACTURER OR ARTICLES USED IN THIS CONTRACT FURNISH DIRECTIONS COVERING POINTS NOT SHOWN IN THE DRAWINGS AND SPECIFICATIONS.

1.2.3. MANUFACTURER'S WARRANTIES: MANUFACTURER'S WARRANTIES SHALL NOT RELIEVE LIABILITIES UNDER GUARANTEE.

1.2.4. ALL WORK CALLED FOR ON THE DRAWINGS BY NOTES SHALL BE FURNISHED AND INSTALLED WHETHER OR NOT SPECIFICALLY NOTED IN THE SPECIFICATIONS. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS INDICATED ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR GRADE DIFFERENCES EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE IRRIGATION DESIGN, OR IF DISCREPANCIES IN THE CONSTRUCTION DETAILS, LEGEND, OR SPECIFIC NOTES ARE DISCOVERED. ALL SUCH OBSTRUCTIONS OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. IN THE EVENT THAT THIS IS NOT DONE, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THE NECESSARY REVISIONS.

1.2.5. DUE TO THE SCALE OF DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, SLEEVES, ETC. WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISHED CONDITIONS AFFECTING ALL OF HIS WORK AND PLAN HIS WORK ACCORDINGLY, FURNISHING SUCH FITTINGS, ETC., AS MAY BE REQUIRED TO MEET SUCH CONDITIONS. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. THE WORK SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID CONFLICTS BETWEEN IRRIGATION SYSTEMS, PLANTING AND ARCHITECTURAL FEATURES.

1.3. PROTECTION AND DAMAGE:

1.3.1. PROTECT WORK AND MATERIALS FROM DAMAGE DURING CONSTRUCTION AND STORAGE. PVC PIPE AND FITTINGS SHALL BE PROTECTED FROM DIRECT SUNLIGHT.

1.3.2. ASSUME ALL RESPONSIBILITY FOR DAMAGE TO EXISTING CONSTRUCTION AND RESTORE TO ITS ORIGINAL CONDITION SHOULD DAMAGE OCCUR AS A RESULT OF THIS WORK.

1.3.3. CONTRACTOR SHALL SECURELY COVER OPENINGS INTO SYSTEM AND COVER APPARATUSES, EQUIPMENT, AND APPLIANCES BOTH BEFORE AND AFTER BEING SET IN PLACE TO PREVENT OBSTRUCTION IN THE PIPES AND PREVENT BREAKAGE, MISUSE, OR DISFIGUREMENT OF THE APPARATUSES, EQUIPMENT OR APPLIANCES.

1.4. DESCRIPTION OF WORK:

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

1.4.2. THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO INDICATE AND SPECIFY A COMPLETE SPRINKLER SYSTEM, INSTALLED READY FOR USE WITHOUT FURTHER COST IN LABOR OR MATERIALS TO THE OWNER.

1.5. QUALITY ASSURANCE:

1.5.1. SUBCONTRACT WORK TO A SINGLE FIRM SPECIALIZING IN IRRIGATION WORK. CONTRACTOR SHALL POSSESS ALL LICENSES AND PERMITS REQUIRED TO PERFORM THE WORK OF THIS CONTRACT INCLUDING AN A-21 LANDSCAPING LICENSE.

1.6. SUBMITTALS:

1.6.1. THE CONTRACTOR SHALL FURNISH THE ARTICLES, EQUIPMENT, MATERIALS OR PROCESSES SPECIFIED BY NAME IN THE DRAWINGS AND SPECIFICATIONS. NO SUBSTITUTION WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY THE LANDSCAPE ARCHITECT, OR THE OWNER'S AUTHORIZED REPRESENTATIVE.

1.6.2. THE CONTRACTOR SHALL SUBMIT TO THE LANDSCAPE ARCHITECT CATALOG DATA AND FULL DESCRIPTIVE LITERATURE FOR APPROVAL OF ITEMS DIFFERENT THAN THOSE SPECIFIED.

1.6.3. EQUIPMENT OR MATERIALS INSTALLED OR FURNISHED WITHOUT THE PRIOR APPROVAL OF THE LANDSCAPE ARCHITECT MAY BE REJECTED AND THE CONTRACTOR MAY BE REQUIRED TO REMOVE SUCH MATERIALS FROM THE SITE AT HIS OWN EXPENSE.

1.6.4. APPROVAL OF ANY ITEM, ALTERNATE OR SUBSTITUTE INDICATES ONLY THAT THE PRODUCT(S) APPARENTLY MEET THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS ON THE BASIS OF THE INFORMATION OR SAMPLES SUBMITTED.

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

1.7. GUARANTEE:

1.7.1. FURNISH GUARANTEE IN ACCORDANCE WITH THE GENERAL CONDITIONS, FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE - AT THE CONCLUSION OF THE MAINTENANCE PERIOD - ON COMPLETE WATER IRRIGATION SYSTEM, INCLUDING NON-SETTLING OF THE BACKFILL IN TRENCHES, WHICH, IF OCCURS, SHALL BE CORRECTED, INCLUDING REPAIRS AND/OR REPLACEMENT OF ANY MATERIAL DAMAGED THEREBY OR THERE FROM.

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

PART 2 - PRODUCTS

2.1. MATERIALS:

2.1.1. PRESSURE PIPE: COMPLY WITH FOLLOWING:

2.1.1.1. PVC PLASTIC PRESSURE LINES: FOR PIPING UPSTREAM OF REMOTE CONTROL VALVES AND QUICK COUPLERS. ALL TWO (2) INCHES AND LARGER SHALL BE CLASS 315 POLYVINYL CHLORIDE (PVC) SIMPSON OR APPROVED EQUAL. ALL ONE AND ONE-HALF (1-1/2) INCHES AND SMALLER SHALL BE TYPE I, GRADE 2, DESIGNATED AS PVC 1220, SCHEDULE 40.

2.1.1.2. NON-PRESSURE PIPE: (DOWNSTREAM FROM REMOTE CONTROL VALVES): COMPLY WITH FOLLOWING:

2.1.2. PLASTIC NON-PRESSURE LINES: FOR PIPING DOWNSTREAM OF REMOTE CONTROL VALVES, TYPE 1, GRADE 2 (IMPACT MODIFIED), AS DESIGNATED AS PVC 1220, CLASS 200, (SDR21), CONFORMING TO COMMERCIAL STANDARDS CS256-63.

2.1.3. POLYETHYLENE NON-PRESSURE TUBING: FOR PIPING DOWNSTREAM OF REMOTE CONTROL DRIP VALVES, CONFORMING TO ASTM D-2239 REQUIREMENTS FOR SDR 19, NSF LISTED.

2.1.4. PIPE SLEEVES SHALL BE PVC SCHEDULE 40.

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

2.1.6. BRASS PIPE: BRASS PIPE SHALL BE IPS STANDARD WEIGHT 125 POUNDS, 85% RED BRASS.

2.1.7. PIPE FITTINGS AND CONNECTIONS: COMPLY WITH FOLLOWING:

2.2. FITTINGS AND CONNECTIONS:

2.2.1. POLYVINYL CHLORIDE PIPE FITTINGS AND CONNECTIONS: TYPE II, GRADE 1, SCHEDULE 40, HIGH IMPACT MOLDED FITTINGS, MANUFACTURED FROM VIRGIN COMPOUNDS AS SPECIFIED FOR PIPING TAPERED SOCKET OR MOLDED THREAD TYPE, SUITABLE FOR EITHER SOLVENT WELD OR SCREWED CONNECTIONS. MACHINE THREADED FITTINGS AND PLASTIC SADDLE AND FLANGE FITTINGS ARE NOT ACCEPTABLE. FURNISH FITTINGS PERMANENTLY MARKED WITH FOLLOWING INFORMATION: NOMINAL PIPE SIZE, TYPE AND SCHEDULE OF MATERIAL, AND NATIONAL SANITATION FOUNDATION (NSF) SEAL OF APPROVAL. PVC FITTING SHALL CONFORM TO ASTM D2464 AND D2466.

2.2.1.1. ALL PVC THREADED NIPPLES SHALL BE STANDARD WEIGHT SCHEDULE 80 WITH MOLDED THREADS AND SHALL CONFORM TO ASTM D1785:

2.2.2. BRASS PIPE FITTINGS AND CONNECTIONS: STANDARD 125 POUND CLASS 85% RED BRASS FITTINGS AND CONNECTIONS.

2.2.3. FLEXIBLE TUBING SHALL BE OF LINE SIZE IPS, PVC PLASTIC BARB ADAPTORS SECURELY HELD TO HEAVY-DUTY PVC FLEX TUBING, PRESSURE RATED TO 150 POUND MINIMUM. HUNTER OR APPROVED EQUAL.

2.2.4. SOLVENT CEMENTS SHALL COMPLY WITH ASTM D2564. SOCKET JOINTS SHALL BE MADE PER RECOMMENDED PROCEDURES FOR JOINING PVC PLASTIC PIPE AND FITTINGS WITH PVC SOLVENT CEMENT BY THE PIPE AND FITTING MANUFACTURER AND PROCEDURES OUTLINED IN THE APPENDIX OF ASTM D2564.

2.2.5. THREAD LUBRICANT SHALL BE TEFLON RIBBON-TYPE, OR APPROVED EQUAL, SUITABLE FOR THREADED INSTALLATIONS AS PER MANUFACTURER'S RECOMMENDATIONS.

2.3. VALVES: MANUFACTURER'S STANDARD, OF TYPE AND SIZE INDICATED, AND AS FOLLOWS:

2.3.1. REMOTE CONTROL VALVES SHALL BE OF THE MANUFACTURER SIZE, AND TYPE INDICATED ON THE PLANS. VALVE SHALL BE OPERABLE MANUALLY WITHOUT ELECTRICITY.

2.3.2. DRIP VALVE ASSEMBLY SHALL BE OF THE MANUFACTURER SIZE, AND TYPE INDICATED ON THE PLANS AND SHALL CONSIST OF A REMOTE CONTROL VALVE, WYE FILTER, AND PRESSURE REGULATING DEVICE.

2.4. BACKFLOW PREVENTER ASSEMBLY:

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

2.5. VALVE BOXES:

2.5.1. FOR REMOTE CONTROL VALVES: TAN STANDARD 12" NOM. PLASTIC VALVE BOX SHALL BE MANUFACTURED BY ARMOR (PART# 170106)

2.5.2. FOR DRIP ASSEMBLY VALVE: TAN JUMBO PLASTIC VALVE BOX SHALL BE MANUFACTURED BY ARMOR (PART# 190106)

2.5.3. FOR MULTI-OUTLET DRIP EMITTER: TAN 6" DIAMETER VALVE BOX SHALL BE MANUFACTURED BY ARMOR (PART# 182101)

2.6. CONCRETE THRUST BLOCK AND SUPPORTS:

2.6.1. ALL CONCRETE WORK SHALL BE 2,000 PSI MINIMUM COMPRESSIVE STRENGTH AT TWENTY-EIGHT (28) DAYS, 5 SACK MIX, TOOL FINISHED ON EXPOSED SURFACES.

2.7. AUTOMATIC CONTROL SYSTEM:

2.7.1. GENERAL: FURNISH LOW VOLTAGE SYSTEM MANUFACTURED EXPRESSLY FOR CONTROL OF AUTOMATIC CIRCUIT VALVES OF UNDERGROUND IRRIGATION SYSTEMS. PROVIDE UNIT OF CAPACITY TO SUIT NUMBER OF CIRCUITS AS INDICATED.

2.7.2. AUTOMATIC CONTROLLER:

2.7.2.1. CONTROLLER SHALL BE FURNISHED AND INSTALLED COMPLETE WITH ALL ELECTRICAL CONNECTIONS, READY FOR OPERATION.

2.7.2.2. CONTROLLER SHALL BE THE LATEST MODEL OF THE PARTICULAR MANUFACTURER SUPPLIED.

2.7.2.3. UNIT SHALL HAVE AN INPUT OF 110/120 VOLT, 60 CYCLE AND BE COMPLETELY AUTOMATIC.

2.7.3. IRRIGATION CONTROLLER ENCLOSURE SHALL BE OF THE MANUFACTURER SIZE, AND TYPE INDICATED ON THE PLANS.

2.7.4. IRRIGATION ASSEMBLY AND OPTIONS SHALL BE OF THE MANUFACTURER SIZE, AND TYPE INDICATED ON THE PLANS.

2.8. AUTOMATIC CONTROL WIRE:

2.8.1. ELECTRIC WIRING RUNS FROM CONTROLLER TO THE AUTOMATIC CONTROL VALVES SHALL BE SOLID, SINGLE CONDUCTOR, COPPERWIRE, 4/64 IN. INSULATION, 4/64 IN. NEOPRENE JACKET, STYLE DB (DIRECT BURIAL) OR EQUAL, COLOR CODE WIRES TO EACH VALVE, COMMON WIRE SHALL BE BLACK. (EXCEPT AS NOTED ON DRAWINGS FOR CITY STANDARD REQUIREMENTS). WIRES SHALL CONFORM TO FEDERAL SPECIFICATION JC-30.

2.9. DRIP IRRIGATION EMITTERS

2.9.1. SINGLE OUTLET EMITTERS SHALL HAVE A 1/2 INCH FEMALE NATIONAL PIPE THREAD (FNPT) INLET FOR CONNECTING TO THE PIPING SYSTEM OR A 1/4 INCH BARBED INLET FOR CONNECTING TO THE PIPING SYSTEM, AS SPECIFIED ON THE PLANS AND SHALL HAVE AN OUTLET PORT THAT IS BARBED TO RETAIN 1/4 INCH DRIP EMITTER TUBING PROVIDING A LEAK-FREE COMPRESSION FIT..

2.9.2. MULTI-OUTLET EMITTERS SHALL HAVE A 1/2 INCH FEMALE NATIONAL PIPE THREAD (FNPT) INLET FOR CONNECTING TO THE PIPING SYSTEM OR A 1/4 INCH BARBED INLET FOR CONNECTING TO THE PIPING SYSTEM, AS SPECIFIED ON THE PLANS AND SHALL HAVE SIX OUTLET PORTS THAT ARE BARBED TO RETAIN 1/4 INCH DRIP EMITTER TUBING PROVIDING A LEAK-FREE COMPRESSION FIT.

2.9.3. THE EMITTER SHALL OPERATE WITHIN A PRESSURE RANGE OF 5-50 PSI.

2.9.4. THE EMITTER BODY SHALL BE CONSTRUCTED OF DURABLE HEAT-RESISTANT ACETYL PLASTIC (UV RESISTANT). THE FLOW REGULATING DIAPHRAGM SHALL BE OF SILICONE RUBBER.

2.9.5. PRODUCTS: THE EMITTER SHALL BE THE MANUFACTURER SIZE, AND TYPE INDICATED ON THE PLANS.

2.10. DRIP EMITTER TUBING

2.10.1. DRIP EMITTER TUBING SHALL BE 1/4 INCH POLYETHYLENE TUBING MADE FROM EXTRUDED LINEAR LOW-DENSITY POLYETHYLENE RESIN.

2.10.2. INSIDE DIAMETER SHALL BE SUCH THAT A LEAK-FREE SEAL IS ACHIEVED WITH THE BARBED FITTINGS OF THE SPECIFIED EMITTERS.

2.11. DRIP WYE FILTER

2.11.1. WYE FILTER SHALL BE OF THE MANUFACTURER SIZE AND TYPE INDICATED ON THE PLANS.

2.12. DRIP PRESSURE REGULATOR

2.12.1. PRESSURE REGULATOR SHALL BE OF THE MANUFACTURER SIZE AND TYPE INDICATED ON THE PLANS.

2.13. DRIP FLUSH VALVE

2.13.1. FLUSH VALVE SHALL BE OF THE MANUFACTURER SIZE AND TYPE INDICATED ON THE PLANS.

2.13.2. FLUSH VALVE SHALL OPERATE AUTOMATICALLY WITH THE OPERATION OF THE CONTROL VALVE.

PART 3 - EXECUTION

3.1 SYSTEM DESIGN:

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

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

3.1.3. SHOULD UTILITIES NOT LOCATED OR MARKED BE FOUND DURING EXCAVATION, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER AND SHALL DISCONTINUE WITH WORK IN THE AREA, EXCEPT FOR NECESSARY EMERGENCY WORK, TO REPAIR OR PREVENT DAMAGE UNTIL INSTRUCTIONS ARE GIVEN TO THE CONTRACTOR BY THE OWNER'S REPRESENTATIVE.

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

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

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

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

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

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

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

3.2 INSTALLATION:

3.2.1. GENERAL: UNLESS OTHERWISE INDICATED, COMPLY WITH REQUIREMENTS OF UNIFORM PLUMBING CODE.

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

3.2.1.2. DEPTH OF TRENCH:

3.2.1.2.1. POLYVINYL CHLORIDE PRESSURE LINE 18" MIN.
3.2.1.2.2. POLYVINYL CHLORIDE NON-PRESSURE LINE 12" MIN.
3.2.1.2.3. POLYETHYLENE NON-PRESSURE LINE 8" MIN.

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

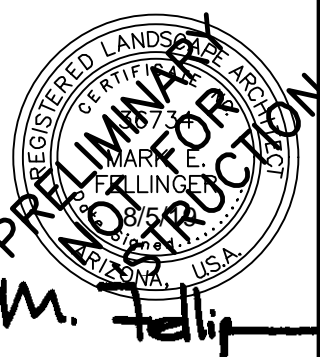
3.2.1.4. REPAIR ANY LEAKS AND REPLACE ALL DEFECTIVE PIPE OR FITTINGS UNTIL LINES MEET TEST REQUIREMENTS. DO NOT COVER ANY LINES UNTIL THEY HAVE BEEN CHECKED AND APPROVED FOR TIGHTNESS, QUALITY OF WORKMANSHIP AND MATERIALS.

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

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

3.2.1.7. PIPES INSTALLED IN COMMON TRENCH SHALL HAVE A 4" MINIMUM SPACE BETWEEN PIPES.

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DESIGNED: MEF
DRAWN: MEF
PROJECT NO. 5114
DATE: 27-JUNE-2019

RICK
ENGINEERING COMPANY
PHOENIX

SHEET 16 OF 17

