

LANDSCAPE SPECIFICATIONS

PART 1 – GENERAL

- A. THIS WORK IN ITS ENTIRETY SHALL CONFORM TO THE CURRENT SPECIFICATIONS AND SUPPLEMENTS EXCEPT AS AMENDED AND MODIFIED HEREIN.
- B. BIDDER SHALL VISIT AND INSPECT SITE TO THOROUGHLY INFORM THEMSELVES OF ALL EXISTING CONDITIONS. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN ON DRAWINGS SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER AND LANDSCAPE ARCHITECT FOR CLARIFICATIONS.
- C. **WORK SPECIFIED HEREIN:** THE WORK OF THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO COMPLETE THE WORK OF LANDSCAPING AS DETAILED AND SPECIFIED, AND ALL WORK INCIDENTAL THERETO. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING WORK UNLESS OTHERWISE SPECIFIED ON THE PLANS. COORDINATION OF THE IRRIGATION WORK TO INSURE SUCCESSFUL INTEGRATION WITH THE LANDSCAPING.
1. NO CHANGE FROM THE DESIGN SHALL BE MADE WITHOUT THE WRITTEN AUTHORIZATION OF THE LANDSCAPE ARCHITECT.
 2. ACCEPTING THE FINISH GRADE PROVIDED BY THE GENERAL CONTRACTOR ± 0.1 OF A FOOT AS SHOWN ON CIVIL GRADING PLANS. FINISHED GRADE SHALL GENERALLY BE 2" TO 3" BELOW ADJACENT WALKS AT CURBS.
 3. SOIL CONDITION AND FINE RAKE PRIOR TO PLANTING OR GROUNDCOVER.
- D. **SAMPLES AND TESTS:** THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO OBTAIN AND ANALYZE SAMPLES OF MATERIALS FOR CONFORMITY TO SPECIFICATIONS AT ANY TIME. CONTRACTOR SHALL FURNISH SAMPLES UPON REQUEST BY LANDSCAPE ARCHITECT. REJECTED MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND REPLACED AT THE CONTRACTOR'S EXPENSE. COST OF TESTING OF MATERIALS NOT MEETING SPECIFICATION SHALL BE PAID BY CONTRACTOR.
- E. **PERMITS AND FEES:** OBTAIN ALL PERMITS AND PAY REQUIRED FEES TO ANY GOVERNMENTAL AGENCY HAVING JURISDICTION OVER THE WORK. ARRANGE INSPECTIONS REQUIRED BY LOCAL AGENCIES AND ORDINANCES DURING THE COURSE OF CONSTRUCTION AS REQUIRED.
- F. **COORDINATION AND RESPONSIBILITY:** COORDINATE AND COOPERATE WITH OTHER CONTRACTORS WORKING ON SITE FOR SUCCESSFUL COMPLETION OF THE PROJECT. BEFORE COMMENCING WORK ON THE SITE BECOME THOROUGHLY ACQUAINTED WITH THE LAYOUT OF ALL UNDERGROUND UTILITIES AND STRUCTURES OVER THE ENTIRE SITE. ALL REQUIRED REPAIRS TO DAMAGE CAUSED BY WORK OF THIS SECTION SHALL BE AT THE CONTRACTOR'S EXPENSE.
- G. **PERSONNEL:** PLANTING SHALL BE PERFORMED BY EXPERIENCED WORKMEN FAMILIAR WITH PLANTING PROCEDURES AND UNDER THE SUPERVISION OF A QUALIFIED FOREMAN. THE FOREMAN SHALL BE ON THE JOB SITE WHENEVER PLANTING IS IN PROGRESS.
- H. **WEATHER:** NO PLANTING SHALL OCCUR OR WILL BE PERMITTED PERMITTED DURING HOT AND COLD WEATHER CONDITIONS WHICH WILL ADVERSELY AFFECT MATERIALS. NOR WILL IT BE PERMITTED WHEN SOIL IS IN MUDDY CONDITION.
- I. **EXISTING PLANTS:** ALL EXISTING PLANT MATERIAL NOT INDICATED FOR REMOVAL SHALL BE PROTECTED AS NECESSARY TO ENSURE SURVIVAL TO THE GREATEST EXTENT POSSIBLE.

PART 2 – MATERIAL STANDARDS

- A. **PLANT MATERIALS:** PLANTS SHALL BE QUALITY MATERIAL CONFORMING TO THE FOLLOWING PARAMETERS.
1. HAVING THE HABIT AND GROWTH WHICH IS NORMAL FOR THE SPECIES; SOUND, VIGOROUS, HEALTHY, FREE FROM INSECTS, PLANT DISEASES AND INJURY. CAN, BALL, HEIGHT AND SPREAD DIMENSIONS SHALL BE MEASURED ACCORDING TO ACCEPTED STANDARDS AND GOOD PRACTICE.
 2. PLANT NAMES SHALL CONFORM TO THOSE GIVEN IN "STANDARDIZED PLANT NAMES" LATEST EDITION, PREPARED BY THE AMERICAN COMMITTEE ON HORTICULTURAL NOMENCLATURE, OR SHALL BE NAMES GENERALLY ACCEPTED BY THE TRADE.
 3. SELECT, DIG, TRANSPORT, PROTECT AND PLANT IN ACCORDANCE WITH THE REQUIREMENTS OF THESE SPECIFICATIONS AND "AMERICAN STANDARDS FOR NURSERY STOCK" AND ACCEPTED GOOD PRACTICE.
 4. LANDSCAPE ARCHITECT WILL CONSIDER SUBSTITUTION OF NEAREST EQUIVALENT VARIETY IF REASONABLE EVIDENCE IS SUBMITTED THAT A PLANT IS NOT OBTAINABLE.
 5. CONTAINER PLANTS SHALL HAVE BEEN IN THE CONTAINERS FOR A SUFFICIENT LENGTH OF TIME FOR THE ROOT SYSTEM TO HOLD THE EARTH WHEN TAKEN FROM THE CONTAINER, BUT NOT LONG ENOUGH TO BECOME ROOT- BOUND OR CAUSE "HARDENING-OFF".

PART 3 – EXECUTION

- A. **GRADING:** BRING ALL AREAS TO FINISH GRADE, AFTER SOIL PREPPING, WHICH SHALL BE 1/2" TO 3/4" MIN. BELOW PAVING AND CURBS OR AS NOTED BY SPOT ELEVATIONS OR DETAILS. SPECIAL ATTENTION SHALL BE GIVEN TO MAINTAINING CONTINUOUS AND EVEN FLOWLINES. DRAIN AWAY FROM STRUCTURES, AND PROVIDE POSITIVE DRAINAGE TO INLETS AND FROM OUTLETS.
- B. **TREES, SHRUBS, GROUNDCOVER AND VINES:** PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL OR REJECTION AT PLACE OF GROWTH OR ON THE PROJECT SITE AT ANY TIME, BEFORE OR DURING PROGRESS OF WORK AS TO SIZE, VARIETY, CONDITION, LATENT DEFECTS AND INJURIES. REJECTED PLANTS SHALL BE REMOVED FROM THE PROJECT SITE IMMEDIATELY.
- C. **TREE LAYOUT:** LAYOUT TREE LOCATIONS WITH STAKES OR GYPSUM IN LOCATIONS SHOWN ON DRAWINGS. CONTACT LANDSCAPE ARCHITECT TO CHECK THE PROPOSED LOCATION OF PLANTS IN THE FIELD. ADJUSTMENTS MAY BE MADE TO DETERMINE EXACT POSITIONS BEFORE PLANTING BEGINS.
- D. **PIT DRAINAGE:** TEST DRAINAGE OF PLANT BEDS AND PITS BY FILLING WITH WATER. CONDITIONS CAUSING THE RETENTION OF WATER IN PLANTING BEDS FOR MORE THAN 24 HOURS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO PLANTING.
- E. **OBSTRUCTIONS:** IF ROCK, UNDERGROUND CONSTRUCTION WORK, OR OTHER CONSTRUCTION IS ENCOUNTERED IN THE EXCAVATION OF PLANT PITS, ALTERNATIVE LOCATIONS MAY BE SELECTED BY THE LANDSCAPE ARCHITECT, WHERE LOCATIONS CANNOT BE CHANGED AS DETERMINED BY THE LANDSCAPE ARCHITECT, SUBMIT COST REQUIRED TO REMOVE THE OBSTRUCTIONS TO A DEPTH AS PER PLANT DETAIL. PROCEED WITH WORK AFTER APPROVAL BY LANDSCAPE ARCHITECT.
- F. **CONTAINERS:** TAP THE OUT SIDE EDGES OF THE CONTAINER TO LOOSEN THE PLANT – TIP THE CONTAINER UPSIDE DOWN AND SLIDE THE PLANT OUT (DO NOT PULL THE PLANT BY THE TRUNK, HOLD THE TRUNK FOR STABILIZATION WITH ONE UNDER ROOT BALL) WITHOUT INJURING ROOT BALL. DO NOT CUT CONTAINER WITH SPADE. ANY PLANT INJURED OR ROOT BALL BROKEN DURING PLANTING OPERATIONS WILL BE REJECTED.

IRRIGATION SPECIFICATIONS

PART 1 – GENERAL

- F. **PLANT PITS:** DIG PITS PER TREE AND SHRUB PLANTING DETAILS. ALL PALM TREES SHALL HAVE A SAND MATERIAL BACKFILL WITH A CLAY CONTENT OF LESS THAN 10 PERCENT.
- G. **CRUSHED ROCK:** ALL CRUSHED ROCK OR OTHER MULCH AREAS SHALL BE TREATED WITH A PRE-EMERGENT AS CALLED OUT IN PART 4 – CRUSHED GRANITE / WEED CONTROL.
- FINISH GRADE IN GROUNDCOVER AREAS SHALL BE 1" BELOW TOPS OF CONCRETE HEADER, WALKS, ETC.
- SURROUNDING SIDEWALKS AND PAVING SHALL BE KEPT. BROOM CLEAN DAILY DURING PLANTING OPERATION. PLANT CONTAINERS, EMPTY FERTILIZER BAGS AND SEED BAGS AND CONTAINERS ARE TO BE PICKED UP AND DISPOSED OF DAILY. CONTRACTORS' TRASH SHALL BE REMOVED FROM THE SITE AT THE COMPLETION OF WORK.
- H. **CONTAINER PLANTS:** PLANTS SHALL HAVE BEEN GROWN IN CONTAINERS SHALL REMAIN IN THOSE CONTAINERS UNTIL TRANSPLANTED. AT TIME OF TRANSPLANTING, THE FLAT SOIL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT THE SOIL DOES NOT FALL APART WHEN LIFTING PLANTS FROM THE FLAT. EACH PLANT SHALL BE PLANTED WITH IT'S PROPORTIONATE AMOUNT OF FLAT SOIL IN A MANNER THAT WILL INSURE A MINIMUM DISTURBANCE TO THE ROOT SYSTEM.
- AFTER PLANTING PLANTS SHALL BE IMMEDIATELY WATERED TO AVOID DRYING OUT UNTIL THE ENTIRE PLANTED AREA IS COMPLETED.

PART 4 – CRUSHED GRANITE / WEED CONTROL

- A. **WEED CONTROL:** THE APPLICATOR OF ALL WEED CONTROL MATERIALS SHALL BE LICENSED BY THE GOVERNING STATE AS A PEST CONTROL OPERATOR IN ADDITION TO HOLDING ANY SUBCONTRACTOR LICENSE THAT IS REQUIRED.
- B. **PLACING GRANITE:** PRIOR TO PLACING GRANITE OR OTHER MULCH GROUNDCOVER, THE AREA SHALL BE TOTALLY FREE OF WEEDS, USING CHEMICAL CONTROL AS NECESSARY. APPLY A PRE-EMERGENT CONTROL USING 1-2 OZ USING 5-POUNDS PER 1000 SF ACCORDING TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS. THE CRUSHED GRANITE SHALL BE EVENLY DISTRIBUTED IN THE DESIGNATED AREAS TO A DEPTH OF 2" UNLESS NOTED OTHERWISE ON THE DRAWINGS. AFTER PLACING AND GRADING, WATER TO ACTIVATE PRE-EMERGENT AND WASH AND WATER SETTLE THE CRUSHED ROCK. APPLY A SECOND APPLICATION OF PRE- EMERGENT CONTROL PER THE CRUSHED ROCK DETAIL AND SPECIFICATIONS.
- C. **POST-EMERGENT HERBICIDE USE** ROUND-UP OR EQUIVALENT TO REMOVE WEED GROWTH DURING CONSTRUCTION TO REMOVE BERKUDA AND OTHER WEED TYPES, CONTINUE HERBICIDE APPLICATIONS UNTIL WEEDS ARE DEAD.
- D. **TYPE OF GRANITE:** CRUSHED GRANITE COLOR AND SIZE AS SPECIFIED PER DRAWING, FREE FROM LUMPS OR BALLS OF CLAY, AND SHALL NOT CONTAIN CALCAREOUS COATINGS, CALICHE, ORGANIC MATTER OR DELETERIOUS SUBSTANCES. COLOR AND SOURCE OF CRUSHED GRANITE SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT. ALL MATERIAL SHALL BE FROM A SINGLE PRODUCTION SOURCE AND SHALL PRESENT A UNIFORM APPEARANCE. MATERIAL CONTAINING CLUMPS WHICH WILL NOT DISINTEGRATE WITH A SHOVEL BLOW SHALL BE REJECTED.

PART 5 – CLEANUP, MAINTENANCE AND GUARANTEE

- A. **CLEANUP:** KEEP ALL AREAS OF THE PROJECT IN A CLEAN, NEAT AND ORDERLY CONDITION AT ALL TIMES. TRASH BURNING AND DISPOSAL SHALL NOT BE DONE ON THE SITE. PRIOR TO ACCEPTANCE PUT ALL AREAS OF THE WORK IN A FINISHED CONDITION ACCEPTABLE TO THE LANDSCAPE ARCHITECT, AND THE OWNER.
- B. **PRUNING AND REPAIR:** UPON COMPLETION OF THE WORK ALL TREES AND SHRUBS SHALL HAVE BEEN PRUNED AND INJURIES REPAIRED. LIMIT AMOUNT OF PRUNING TO THE MINIMUM NECESSARY TO REMOVE DEAD OR INJURED TWIGS AND BRANCHES AND TO COMPENSATE FOR THE LOSS OF ROOTS AS A RESULT OF PLANTING AND CONSTRUCTION OPERATIONS.
- C. **MAINTENANCE:** CONTINUE MAINTAIN FOR NEW LANDSCAPE AREAS UNTIL FINAL ACCEPTANCE OF THE WORK.
- MAINTENANCE SHALL CONSIST OF WEEDING, CULTIVATING, STRAIGHTENING TREES, TRIMMING, INSECT CONTROL, FEEDING OF SHRUBS AND TREES, ADJUSTING IRRIGATION SCHEDULES PER SEASONAL REQUIREMENTS.
- PRE-EMERGENT APPLICATIONS: APPLY FIRST APPLICATIONS DURING INITIAL CRUSHED ROCK INSTALL AND FINAL APPLICATION 1-DAY PRIOR TO FINAL ACCEPTANCE WALK.
- FERTILIZER APPLICATIONS: EVERY 30 DAYS APPLY GROW-POWER 4-8-2 LIQUID FERTILIZER RATIO 1-TABLESPOONS PER GALLON OF WATER.
- 1 TO 5 GALLON PLANTS (0.05)-GALLON 15 GALLON PLANTS (0.75)-GALLON 24" BOX PLANTS (1.0)-GALLON 36" BOX & LARGER PLANTS (1.5)-GALLONS PALM TREES (1.5)-GALLONS
- CONTRACTOR TO PROVIDE A PRE-EMERGENT AND/OR FERTILIZER APPLICATION REPORT TO THE OWNER EVERY TIME AN APPLICATION IS MADE PER THE SCHEDULE ABOVE.
- APPLY WATER EVENLY AROUND THE PLANTS ROOTBALL AND TURN THE EMITTERS ON AFTER FERTILIZER APPLICATION IS COMPLETE.
- MAINTAIN IRRIGATION SYSTEM IN PERFECT OPERATING CONDITION DURING THE MAINTENANCE PERIOD.
- EXISTING ON-SITE PLANT MATERIAL NOT DESIGNATED FOR REMOVAL SHALL BE INCLUDED IN THE WORK OF MAINTENANCE.
- DURING THE MAINTENANCE PERIOD, KEEP THE PROJECT NEAT AND FREE FROM DEBRIS AT ALL TIMES. VISIT SITE AT LEAST ONCE PER WEEK DURING THE MAINTENANCE PERIOD. OBTAIN OWNER'S APPROVAL FOR ONSITE STORAGE OF EQUIPMENT, OR ANY MAINTENANCE MATERIALS.
- D. **GUARANTEE AND REPLACEMENT:** GUARANTEE ALL PLANTING FOR A PERIOD OF 121 DAYS FROM THE DATE OF FINAL ACCEPTANCE. ALL PLANTING SHALL BE ALIVE AND IN SATISFACTORY GROWTH AT THE END OF THE GUARANTEE PERIOD.
- DURING THE GUARANTEE PERIOD ALL PLANTS SHALL BE IN A HEALTHY, VIBRANT CONDITION. PLANTS NOT IN A HEALTHY CONDITION WHEN NOTIFIED BY THE LANDSCAPE ARCHITECT, SHOULD ANY DIFFERENCE OF OPINION ARISE OVER REPLACEMENT, THE LANDSCAPE ARCHITECT'S DECISION IS FINAL.
- THE GUARANTEE PERIOD FOR THE DECIDUOUS TREES SHALL BE IN EFFECT UNTIL ALL ARE SHOWING NEW GROWTH THE SPRING FOLLOWING PLANTING.

PART 2 – PRODUCTS

- A. **GENERAL:** MATERIALS THROUGHOUT THE SYSTEM SHALL BE AS SHOWN ON THE DRAWINGS AND SHALL BE NEW AND IN PERFECT CONDITION. NO DEVIATIONS FROM THE SPECIFICATIONS SHALL BE ALLOWED. THE DECISION OF THE LANDSCAPE ARCHITECT SHALL BE FINAL IN THE DETERMINATION OF THE QUALITY OF MATERIALS AND EQUIPMENT. PROTECT WORK AND MATERIALS FROM DAMAGE DURING CONSTRUCTION AND STORAGE.
- PROTECT POLYVINYL CHLORIDE (PVC) PIPE AND RELATED FITTINGS FROM DIRECT SUNLIGHT. BEDS ON WHICH PIPE IS STORED MUST BE FULL LENGTH OF PIPE. DO NOT USE ANY PIPE OR FITTING THAT HAS BEEN DAMAGED OR DENTED.
- B. **PLASTIC PIPE:** PLASTIC PIPE FURNISHED SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE CONFORMING THE REQUIREMENTS OF ASTM D2241 FOR SDR-PR PIPE PVC 1120 OR PVC 1220. PLASTIC PIPE SHALL BE SDR 21 OR HEAVIER.
- C. **MAINLINE FITTINGS:** PVC FITTINGS SCHEDULE 80. POLYVINYL CHLORIDE AS MANUFACTURED BY LASCO OR APPROVED EQUAL.
- D. **LATERAL FITTINGS:** PVC FITTINGS SCHEDULE 40 POLYVINYL CHLORIDE AS MANUFACTURED BY LASCO OR APPROVED EQUAL.
- E. **FITTINGS AND GALVANIZED STEEL PIPE:** SCHEDULE 40 STANDARD WEIGHT AS MANUFACTURED BY GRINNEL, OR APPROVED EQUAL.
- F. **AUTOMATIC CONTROLLERS:** AUTOMATIC CONTROLLERS SHALL BE AS SPECIFIED ON DRAWINGS.
- G. **CONTROL WIRE:** SOLID COPPER WIRE, UL APPROVED FOR DIRECT BURIAL IN GROUND. COMMON WIRE #12 GAUGE OTHER WIRES #14.
- H. **SPLICING MATERIALS:** STA-KON NO. PT-70 CONNECTOR. SCOTCHLOK #3576 SEALING PACK. RAIN BIRD PT-103 OR AN APPROVED EQUAL.
- I. **AUTOMATIC VALVES:** AUTOMATIC VALVES SHALL BE AS SPECIFIED ON DRAWINGS.
- J. **MANUAL VALVES:** MANUAL VALVES SHALL BE AS SPECIFIED ON DRAWINGS.
- K. **PLASTIC VALVE BOX AND LOCKING COVER:** VALVE BOXES AND LOCKING COVERS SHALL BE MANUFACTURED BY CARSON BROOKS, OR APPROVED EQUAL.
- L. **EMITTERS:** EMITTER HEADS SHALL BE AS SPECIFIED ON DRAWINGS.
- M. **BACKFLOW PREVENTION UNIT:** BACKFLOW PREVENTER SHALL BE AS SPECIFIED ON THE DRAWINGS (WHEN NOT PROVIDED BY THE CIVIL ENGINEERS).
- N. **QUICK COUPLING VALVES OR HOSE SWIVELS:** SHALL BE AS INDICATED ON THE DRAWINGS.

PART 3 – EXECUTION

- A. **LAYOUT:** CONTRACTOR SHALL INSTALL SPRINKLERS AS SHOWN ON PLANS. WHERE CONNECTIONS TO STUBOUTS ARE REQUIRED, MAKE NECESSARY ADJUSTMENTS IN LAYOUT TO CONNECT SHOULD STUBS NOT BE LOCATED EXACTLY AS SHOWN. ADJUST LAYOUT AS NECESSARY TO INCLUDE AROUND EXISTING WORK. CONTRACTOR SHALL GUARANTEE FULL COVERAGE UPON COMPLETION OF JOB.
- B. **EXCAVATING AND TRENCHING:** PERFORM ALL EXCAVATIONS AS REQUIRED FOR INSTALLATION OF WORK INCLUDING SHORING OF EARTH BANKS. RESTORE ALL SURFACES, EXIST, UNDERGROUND INSTALLATION, ETC. DAMAGE OR CUT AS A RESULT OF THE EXCAVATIONS, TO THEIR ORIG. CONDITION.
- SHOULD UTILITIES NOT SHOWN ON THE PLANS BE FOUND DURING EXCAVATIONS, CONTRACTOR SHALL PROMPTLY NOTIFY LANDSCAPE ARCHITECT FOR INSTRUCTIONS AS TO FURTHER ACTION. FAILURE TO DO SO WILL MAKE CONTRACTOR LIABLE FOR ANY AND ALL DAMAGE THERETO ARISING FROM HIS OPERATIONS SUBSEQUENT TO DISCOVERY OF SUCH UTILITIES.
- C. **GRADES:** BEFORE STARTING WORK, CHECK ALL GRADES FROM KNOWN ELEV. (SEE LANDSCAPE CONSTRUCTION OR CIVIL PLANS) TO BE SURE THAT ROUGH GRADES ARE PROPERLY EST. AND THAT ALL PIPELINE WILL BE AT THE PROPER GRADE OR LOWER UPON THE COMPLETION OF FINAL GRADING.
- DIG TRENCHES WIDE ENOUGH TO ALLOW MINIMUM OF 6" BETWEEN PARALLEL PIPELINES. TRENCHES SHALL BE OF SUFFICIENT DEPTH TO PROVIDE MINIMUM COVER FROM FINISH GRADE AS FOLLOWS:
1. OVER PIPE ON PRESSURE SIDE OF IRRIG. CONTROL VALVE: 24"
 2. OVER CONTROL WIRE: 24"
 3. OVER PIPE ON NON-PRESSURE SIDE OF IRRIG. CONTROL VALVE: 12"
- D. **SLEEVING:** CONDUITS FOR CONTROL WIRE AND SLEEVES FOR IRRIG. PIPING SHALL BE INSTALLED BY THIS CONTRACTOR UNLESS NOTIFIED BY THE LANDSCAPE ARCHITECT OR THE GENERAL CONTRACTOR. DO ALL WORK NECESSARY FOR COMPLETION OF IRRIGATION SYSTEM.
- E. **PIPE LINE ASSEMBLY:** INSTALL PIPE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SOLVENT WELD PVC PIPE AND FITTINGS USING SOLVENTS AND METHODS RECOMMENDED BY MANUFACTURER, EXCEPT WHERE SCREW CONNECTIONS ARE REQUIRED. CLEAN AND FITTINGS OF DIRT AND MOISTURE BEFORE REASSEMBLY. PVC PIPE MAY BE ASSEMBLED ON GROUND SURFACE BESIDE TRENCH. MAKE ALL CONNECTIONS BETWEEN PVC PIPE AND METAL VALVES OR PIPE THREADED FITTINGS USING SCH.80 TOE NIPPLES. USE PIPE JOINT COMPOUND ON GALVANIZED STEEL FITTINGS.
- F. **IRRIGATION CONTROL VALVES:** INSTALL CONTROL VALVES IN VALVE BOXES WHERE SHOWN AND GROUP TOGETHER WHERE PRACTICAL. PLACE NO CLOSER THAN 12" FROM WALK EDGES, BUILDINGS AND WALLS. VALVE BOXES SHALL BE FLUSH WITH FINISH CRUSHED ROCK GRADE. PLACE PEA GRAVEL BELOW ALL VALVES, AS PER DETAIL ON PLANS.
- G. **AUTOMATIC CONTROLLERS:** INSTALL PLUMB, AS DRAWN AND SPECIFIED. CONNECT REMOTE VALVES TO CONTROLLERS AS SHOWN. ELECTRICAL POWER TO CONTROLLER BY OTHERS. CONNECT TO ELECTRICAL POWER.
- H. **CONTROL WIRING:** INSTALL CONTROL WIRES WITH SPRINKLER MAINS AND MATERIALS IN COMMON TRENCHES WHENEVER POSSIBLE. LAY TO SIDE AND BELOW PIPE LINE. PROVIDE LOOPED SLACK AT VALVES AND TAPE WIRES IN BUNDLES IN 10' INTERVALS. CONTROL WIRE SPLICES WILL BE ALLOWED ONLY IN CONTROLLER OR VALVE BOXES. CRIMP WIRES TOGETHER AND SEAL CONNECTIONS WITH SPECIFIED SPLICING MATERIALS.
- I. **HEADS:** INSTALL ALL EMITTERS AS SHOWN ON DRAWING. TOP OF EMITTER HEADS ARE TO BE FLUSH TO FINISH ROCK GRADE OR SOIL GRADE.
- A. **WORK SPECIFIED HEREIN:** THE WORK IN ITS ENTIRETY SHALL CONFORM TO THE CURRENT SPECIFICATIONS AND SUPPLEMENTS EXCEPT AS AMENDED AND MODIFIED HEREIN. THE WORK OF THIS SECTION SHALL INCLUDE FURNISHING ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO PROVIDE A COMPLETE IRRIGATION SYSTEM AS DESIGNED AND SPECIFIED, AND ALL WORK INCIDENTAL THERETO.
- B. **JOB CONDITIONS:** THE WORK CONSISTS OF FURNISHING AND INSTALLING ALL TRENCHING AND BACKFILLING, POLYETHYLENE TUBING, POLYVINYL CHLORIDE, PIPE AND FITTINGS, REMOTE CONTROL VALVES, (AND BACKFLOW PREVENTION UNITS, WATER METERS WHEN NOT SUPPLIED BY GENERAL CONTRACTOR OR CURRENTLY EXISTING), VALVE BOXES, CONTROLLER(S), AND METAL CONTROLLER CABINET(S), AND SLEEVES AS REQUIRED FOR A COMPLETE SYSTEM AS SHOWN AND CALLED FOR IN THESE SPECIFICATIONS OR AS MAY BE REQUIRED FOR PROPER OPERATION OF THE SYSTEM. THE SYSTEM SHALL BE A COMPLETE AUTOMATIC SYSTEM GIVING 100% COVERAGE TO ALL PLANT MATERIAL. THE IRRIGATION SYSTEM IS DESIGNED FOR 45 STATIC PSI. THE CONTRACTOR SHALL VERIFY WATER PRESSURE IN FIELD PRIOR TO CONSTRUCTION. SHOULD A DISCREPANCY EXIST BETWEEN DESIGN PRESSURE AND THE FIELD PRESSURE, THIS OFFICE SHALL BE NOTIFIED IMMEDIATELY.
- C. **WORK BY OTHERS:** THE FOLLOWING ITEMS OF WORK SHALL BE PERFORMED BY OTHERS AND ARE NOT A PART OF THIS CONTRACT.
1. ELECTRICAL STUB OUT(S) FOR IRRIGATION CONTROLLER(S).
 2. POLES AND ELECTRICAL METERS.
 3. WATER METERS AND BACKFLOW DEVICES IRRIGATION CONTRACTOR SHALL VERIFY THE SAME.
- D. **INSPECTION OF CONDITIONS:** EXAMINE RELATED WORK AND SURFACES BEFORE STARTING WORK. REPORT TO THE LANDSCAPE ARCHITECT, IN WRITING ANY CONDITIONS WHICH WILL PREVENT THE PROPER INSTALLATION OF THIS WORK. BEGINNING THE WORK OF THIS SECTION WITHOUT REPORTING AND THEN RECEIVING A WRITTEN RESPONSE FROM THE LANDSCAPE ARCHITECT CONSTITUTES ACCEPTANCE OF CONDITIONS BY THE CONTRACTOR, ANY REQUIRED REMOVAL, REPAIR OR REPLACEMENT OF THIS WORK CAUSED BY UNSUITABLE CONDITIONS SHALL BE DONE AT NO ADDITIONAL COST TO OWNER.
- E. **CODES, RULES AND SAFETY ORDERS:** ALL WORK AND MATERIALS TO BE IN FULL ACCORDANCE WITH LATEST RULES AND REGULATIONS OF SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY; THE UNIFORM PLUMBING CODE PUBLISHED BY WESTERN PLUMBING OFFICIALS' ASSOCIATION; AND OTHER APPLICABLE LAWS OR REGULATIONS, INCLUDING MUNICIPAL PLUMBING CODE. NOTHING IN THESE SPECIFICATIONS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. SHOULD THE CONSTRUCTION DOCUMENTS, OR INSTRUCTION, BE AT VARIANCE WITH THE AFOREMENTIONED RULES AND REGULATIONS, NOTIFY LANDSCAPE ARCHITECT AND GET HIS INSTRUCTIONS BEFORE PROCEEDING WITH THE WORK AFFECTED.
- F. **PROTECTION:** FURNISH AND MAINTAIN ALL WARNING SIGNS, SHORING, BARRICADES, RED LANTERNS, ETC., AS REQUIRED BY THE SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY AND LOCAL ORDINANCES.
- G. **STANDARDS:** COMMERCIAL STANDARDS (CS): AS DEVELOPED IN COOPERATION WITH COMMODITY STANDARDS DIVISION OF THE OFFICE OF TECHNICAL SERVICES, BUSINESS AND DEFENSE SERVICES ADMINISTRATION, AND WITH THE NATIONAL BUREAU OF STANDARDS. AVAILABLE FROM THE U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402.
- H. **PERMITS AND FEES:** OBTAIN ALL PERMITS AND PAY REQUIRED FEES TO ANY GOVERNMENTAL AGENCY HAVING JURISDICTION OVER THE WORK. ARRANGE INSPECTIONS REQUIRED BY LOCAL AGENCIES AND ORDINANCES DURING THE COURSE OF CONSTRUCTION AS REQUIRED.
- I. **APPROVAL:** WHENEVER THE TERMS "APPROVE", "APPROVAL", OR "APPROVED" ARE USED IN THE SPECIFICATIONS, THEY MEAN APPROVAL OF THE LANDSCAPE ARCHITECT IN WRITING.
- J. **SUBSTITUTIONS:** NO SUBSTITUTIONS WILL BE PERMITTED WITHOUT WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT.
- K. **PROTECTION OF EXISTING CONDITIONS:** CONTRACTOR SHALL ACQUAINT HIMSELF WITH ALL SITE CONDITIONS AND "CALL 811 BEFORE YOU DIG" PRIOR TO CONSTRUCTION. SHOULD UTILITIES OR OTHER WORK NOT SHOWN ON THE PLANS BE FOUND DURING CONSTRUCTION, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE LANDSCAPE ARCHITECT OR OWNER FOR FURTHER INSTRUCTION. FAILURE TO DO SO WILL MAKE THE CONTRACTOR LIABLE FOR ANY AND ALL DAMAGE ARISING FROM HIS OPERATIONS SUBSEQUENT TO DISCOVERY OF SUCH UTILITIES NOT SHOWN ON PLANS. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT SITE CONDITIONS AND EXISTING PLANTS TO REMAIN. SHOULD DAMAGE BE INCURRED, THIS CONTRACTOR SHALL REPAIR DAMAGE TO ITS ORIGINAL CONDITION OR FURNISH AND INSTALL EQUAL REPLACEMENT AT HIS EXPENSE.
- L. **COORDINATION:** COORDINATE AND COOPERATE WITH OTHER CONTRACTORS TO ENABLE THE WORK TO PROCEED AS RAPIDLY AND EFFICIENTLY AS POSSIBLE.
- M. **SAMPLES:** LANDSCAPE ARCHITECT MAY RESERVE THE RIGHT TO OBTAIN AND ANALYZE SAMPLES OF MATERIALS FOR CONFORMITY TO SPECIFICATIONS AT ANY TIME. CONTRACTOR SHALL FURNISH SAMPLES UPON REQUEST BY THE LANDSCAPE ARCHITECT. REJECTED MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND REPLACED AT CONTRACTOR'S EXPENSE. COST OF TESTING MATERIALS NOT MEETING SPECIFICATIONS SHALL BE PAID BY CONTRACTOR.
- N. **SUBMITTALS:** PREPARE "AS-BUILT" DRAWINGS ON PRINTS WHICH SHOW DEVIATIONS FROM THE BID DOCUMENTS MADE DURING CONSTRUCTION WHICH AFFECT SLEEVES, MAIN LINE PIPE, CONTROLLER LOCATIONS, REMOTE CONTROL VALVES, QUICK COUPLERS, AND ALL SPRINKLER HEADS. DRAWINGS SHALL BE DELIVERED TO THE OWNER BEFORE FINAL ACCEPTANCE OF WORK. PROVIDE THE OWNER WITH THE FOLLOWING, IN ADDITION TO WHAT IS SHOWN ON THE DRAWINGS:
1. MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS.
 2. PROJECT RECORD DRAWINGS OF THE SYSTEM.
 3. SCHEDULE SHOWING THE LENGTH OF TIME EACH VALVE IS TO BE OPEN TO PRODUCE A GIVEN AMOUNT OF PRECIPITATION.
 4. FIFTY EXTRA EMITTERS OF EACH SIZE AND TYPE.
 5. TWO VALVE KEYS FOR MANUAL VALVES.
 6. WRENCH FOR EACH TYPE HEAD CORE.
 7. WRENCH FOR REMOVING AND INSTALLING EACH TYPE HEAD.
 8. A PERMANENT IDENTIFICATION OF VALVE STATIONS AND AREAS IRRIGATED ON THE 8 1/2" X 11" CHART TO BE PLACED ON THE INSIDE DOOR TO THE APPROPRIATE CONTROLLER. THE CHART SHALL BE PLASTICIZED AND SEALED FOR PERMANENT RECORD. REDUCTION OF PRINT, SEALED IN PLASTIC WILL BE ACCEPTABLE.
 9. ONE VALVE KEY FOR MAINLINE GATE VALVES WHEN MAINLINE GATE VALVES ARE REQUIRED PER PLANS.

- J. **CLOSING OF PIPE AND FLUSHING OF LINES:** CAP OR PLUG ALL OPENINGS AS SOON AS LINES HAVE BEEN INSTALLED TO PREVENT ENTRANCE OF MATERIALS THAT WOULD OBSTRUCT THE PIPE. LEAVE IN PLACE UNTIL REMOVAL IS NECESSARY FOR COMPLETION OF INSTALLATION.
- K. **THOROUGHLY FLUSH OUT ALL WATER LINES BEFORE INSTALLING HEADS, VALVES AND OR OTHER EQUIPMENT.**
- L. **INSPECTIONS AND TEST:** SUBMIT REQUEST FOR INSPECTIONS TO LANDSCAPE ARCHITECT AT LEAST 72 HOURS PRIOR TO ANTICIPATED INSPECTION.
- INSPECTION OF COMPLETED INSTALLATION WILL BE MADE BY THE LANDSCAPE ARCHITECT PRIOR TO BACKFILLING OF TRENCHES AND WILL BE MADE DURING HYDROSTATIC TESTING.
- MAKE HYDROSTATIC TESTS WHEN WELDED PVC JOINTS HAVE CURED AT LEAST 24 HOURS. APPLY CONT. AVAILABLE STATIC WATER PRESSURE AS FOLLOWS:
1. ALL PIPING ON THE NON-PRESSURE SIDE OF CONTROL VALVES SHALL PASS A VISUAL INSPECTION BEFORE BACKFILLING.
 2. ALL PIPING ON THE PRESSURE SIDE OF CONTROL VALVES SHALL BE TESTED FOR 24 HOURS AT 120 PSI. LEAKS RESULTING FROM TESTS SHALL BE REPAIRED AND TESTS REPEATED UNTIL SYSTEM PASSES TESTS.
- UPON COMPLETION OF TESTING, COMPLETE ASSEMBLY AND ADJUST SPRINKLER HEADS FOR PROPER DISTINCTION.
- M. **BACKFILLING AND COMPACTING:** AFTER SYSTEM IS OPERATING AND REQUIRED TESTS AND INSPECTIONS HAVE BEEN MADE, BACKFILL EXCAVATION AND TRENCHES WITH CLEAN SOIL, FREE OF DEBRIS AND ROCKS (ROCKS NO LARGER THAN 1" ALLOWED).
- BACKFILL FOR ALL TRENCHES, REGARDLESS OF THE TYPE OF PIPE COVERED, SHALL BE COMPACTED TO 95% MINIMUM DENSITY UNDER PAYMENTS, 85% UNDER PLANTED AREAS.
- COMPACT ALL TRENCHES BY THOROUGHLY FLOODING DURING AND AFTER BACKFILL OPERATION. JETTING PROCESS MAY BE USED IN THOSE AREAS.
- DRESS OFF ALL AREAS TO FINISH GRADE. NOTIFY LANDSCAPE ARCHITECT FOR FINAL COVERAGE INSPECTION PRIOR TO FINAL ACCEPTANCE.
- N. **CLEAN UP:** KEEP ALL AREAS OF WORK CLEAN AND ORDERLY AT ALL TIMES. KEEP PAVED AREAS CLEAN DURING INSTALLATION. ALL DEBRIS SHALL BE REMOVED FROM THE ENTIRE PROJECT PRIOR TO FINAL ACCEPTANCE.
- O. **FINAL ACCEPTANCE:** WORK UNDER THIS SECTION WILL BE ACCEPTED BY LANDSCAPE ARCHITECT AND OWNER UPON SATISFACTORY COMPLETION OF ALL WORK. UPON FINAL ACCEPTANCE, THE IRRIGATION MAINTENANCE PERIOD WILL BEGIN AND END WITH THE PLANTING MAINTENANCE PERIOD. THE CONTRACTOR SHALL KEEP THE IRRIGATION SYSTEM IN PERFECT OPERATING CONDITION DURING THE MAINTENANCE.
- P. **WARRANTY:** IN ADDITION TO MANUFACTURER'S GUARANTEES OR WARRANTIES, ALL WORK SHALL BE WARRANTED FOR A MINIMUM OF (121) DAYS FROM THE DATE OF FINAL ACCEPTANCE AGAINST DEFECTS IN MATERIAL, EQUIPMENT AND WORKMANSHIP BY THE CONTRACTOR. WARRANTY SHALL ALSO COVER REPAIRS TO ANY PART OF THE PREMISES RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIALS. SUBMIT WRITTEN WARRANTY. THE CONTRACTOR IS TO SIGN A DOCUMENT STATING THAT THE PROJECT HAS A 1-YEAR WARRANTY FROM THE CONTRACTOR IN CHARGE OF THE WORK INSTALLED. BOTH THE OWNER AND CONTRACTOR ARE TO SIGN THE AGREEMENT.
- Q. **SUBMITTALS:** SUBMIT THE FOLLOWING FOR REVIEW BY THE OWNER'S REPRESENTATIVE:
1. CONTROLLER
 2. VALVE ASSEMBLY (INCLUDING FILTER, VALVE(S), AND PRESSURE REGULATOR)
 3. FLUSH VALVES
 4. EMITTERS
 5. VALVE BOXES
 6. CRUSHED ROCK
 7. FERTILIZER
 8. AMENDMENTS
 9. IMPORTED TOPSOIL
 10. PRE-EMERGENT
 11. OTHER PRODUCTS AS REQUESTED BY THE OWNER'S REPRESENTATIVE.

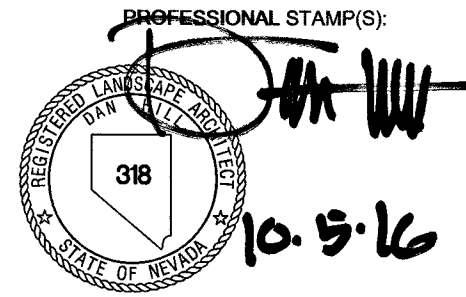
NOTE:
CALL BEFORE YOU
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CALL BEFORE YOU
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11.05.2016

CLIENT PROJECT NO

PROJECT:

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LAS VEGAS, NV 89143

PUBLIC AGENCY SUBMITTAL: N/A
ISSUED FOR BIDDING: N/A
ISSUED FOR CONSTRUCTION: N/A

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PROJECT DATE: 07.26.2016
DRAWING TITLE:

LANDSCAPE
SPECIFICATIONS

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