

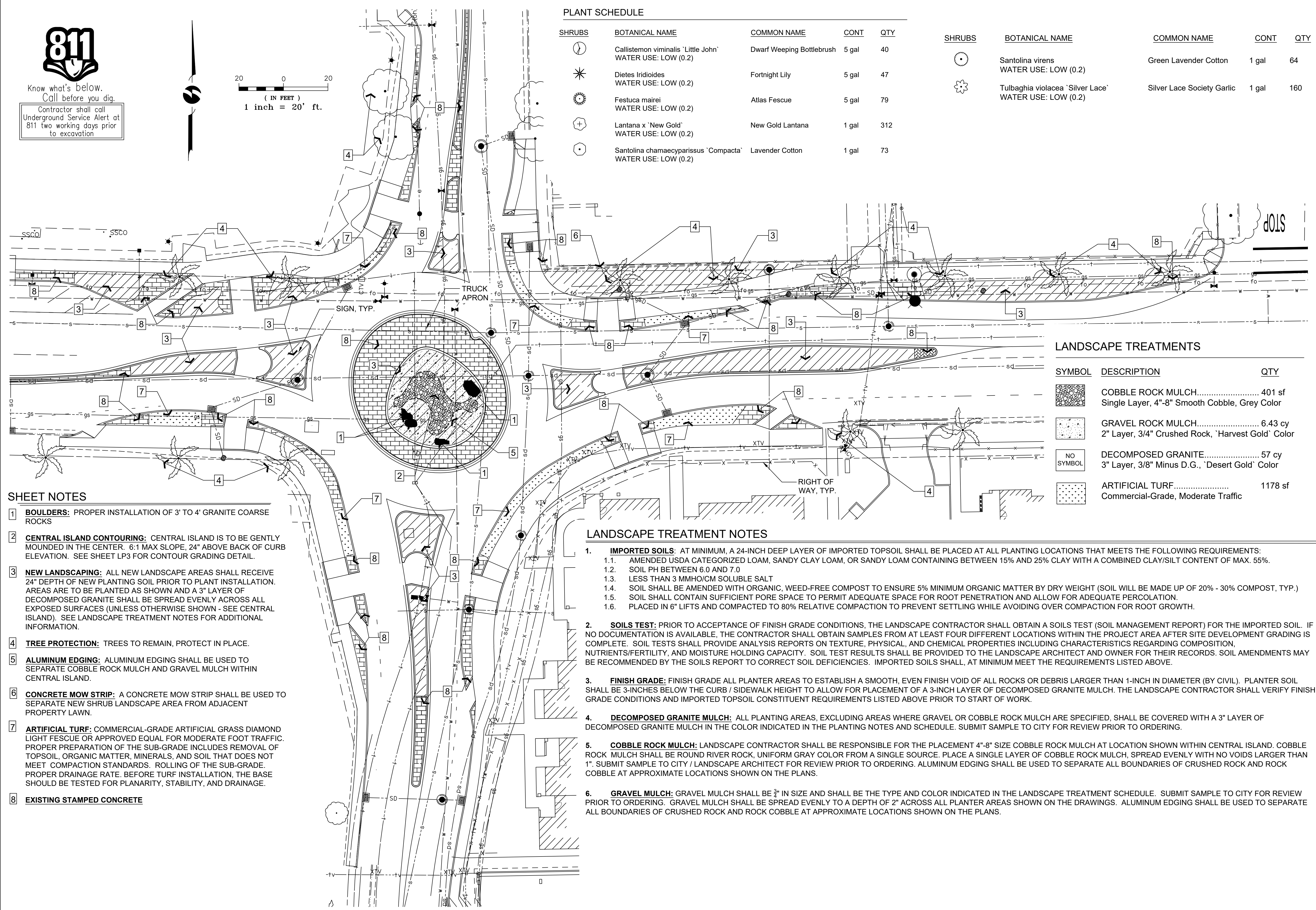


Know what's below.
Call before you dig.
Contractor shall call
Underground Service Alert at
811 two working days prior
to excavation

20 0 20
(IN FEET)
1 inch = 20' ft.

PLANT SCHEDULE

SHRUBS	BOTANICAL NAME	COMMON NAME	CONT	QTY	SHRUBS	BOTANICAL NAME	COMMON NAME	CONT	QTY
⊙	Callistemon viminalis 'Little John' WATER USE: LOW (0.2)	Dwarf Weeping Bottlebrush	5 gal	40	⊙	Santolina virens WATER USE: LOW (0.2)	Green Lavender Cotton	1 gal	64
✱	Diets Iridioides WATER USE: LOW (0.2)	Fortnight Lily	5 gal	47	✿	Tulbaghia violacea 'Silver Lace' WATER USE: LOW (0.2)	Silver Lace Society Garlic	1 gal	160
⊘	Festuca mairei WATER USE: LOW (0.2)	Atlas Fescue	5 gal	79					
+	Lantana x 'New Gold' WATER USE: LOW (0.2)	New Gold Lantana	1 gal	312					
⊙	Santolina chamaecyparissus 'Compacta' WATER USE: LOW (0.2)	Lavender Cotton	1 gal	73					



LANDSCAPE TREATMENTS

SYMBOL	DESCRIPTION	QTY
	COBBLE ROCK MULCH..... Single Layer, 4"-8" Smooth Cobble, Grey Color	401 sf
	GRAVEL ROCK MULCH..... 2" Layer, 3/4" Crushed Rock, 'Harvest Gold' Color	6.43 cy
	DECOMPOSED GRANITE..... 3" Layer, 3/8" Minus D.G., 'Desert Gold' Color	57 cy
	ARTIFICIAL TURF..... Commercial-Grade, Moderate Traffic	1178 sf

SHEET NOTES

- 1 **BOULDERS:** PROPER INSTALLATION OF 3' TO 4' GRANITE COARSE ROCKS
- 2 **CENTRAL ISLAND CONTOURING:** CENTRAL ISLAND IS TO BE GENTLY MOUNDED IN THE CENTER. 6:1 MAX SLOPE, 24" ABOVE BACK OF CURB ELEVATION. SEE SHEET LP3 FOR CONTOUR GRADING DETAIL.
- 3 **NEW LANDSCAPING:** ALL NEW LANDSCAPE AREAS SHALL RECEIVE 24" DEPTH OF NEW PLANTING SOIL PRIOR TO PLANT INSTALLATION. AREAS ARE TO BE PLANTED AS SHOWN AND A 3" LAYER OF DECOMPOSED GRANITE SHALL BE SPREAD EVENLY ACROSS ALL EXPOSED SURFACES (UNLESS OTHERWISE SHOWN - SEE CENTRAL ISLAND). SEE LANDSCAPE TREATMENT NOTES FOR ADDITIONAL INFORMATION.
- 4 **TREE PROTECTION:** TREES TO REMAIN, PROTECT IN PLACE.
- 5 **ALUMINUM EDGING:** ALUMINUM EDGING SHALL BE USED TO SEPARATE COBBLE ROCK MULCH AND GRAVEL MULCH WITHIN CENTRAL ISLAND.
- 6 **CONCRETE MOW STRIP:** A CONCRETE MOW STRIP SHALL BE USED TO SEPARATE NEW SHRUB LANDSCAPE AREA FROM ADJACENT PROPERTY LAWN.
- 7 **ARTIFICIAL TURF:** COMMERCIAL-GRADE ARTIFICIAL GRASS DIAMOND LIGHT FESCUE OR APPROVED EQUAL FOR MODERATE FOOT TRAFFIC. PROPER PREPARATION OF THE SUB-GRADE INCLUDES REMOVAL OF TOPSOIL, ORGANIC MATTER, MINERALS, AND SOIL THAT DOES NOT MEET COMPACTION STANDARDS. ROLLING OF THE SUB-GRADE. PROPER DRAINAGE RATE. BEFORE TURF INSTALLATION, THE BASE SHOULD BE TESTED FOR PLANARITY, STABILITY, AND DRAINAGE.
- 8 **EXISTING STAMPED CONCRETE**

LANDSCAPE TREATMENT NOTES

- 1. **IMPORTED SOILS:** AT MINIMUM, A 24-INCH DEEP LAYER OF IMPORTED TOPSOIL SHALL BE PLACED AT ALL PLANTING LOCATIONS THAT MEETS THE FOLLOWING REQUIREMENTS:
 - 1.1. AMENDED USDA CATEGORIZED LOAM, SANDY CLAY LOAM, OR SANDY LOAM CONTAINING BETWEEN 15% AND 25% CLAY WITH A COMBINED CLAY/SILT CONTENT OF MAX. 55%.
 - 1.2. SOIL PH BETWEEN 6.0 AND 7.0
 - 1.3. LESS THAN 3 MMHO/CM SOLUBLE SALT
 - 1.4. SOIL SHALL BE AMENDED WITH ORGANIC, WEED-FREE COMPOST TO ENSURE 5% MINIMUM ORGANIC MATTER BY DRY WEIGHT (SOIL WILL BE MADE UP OF 20% - 30% COMPOST, TYP.)
 - 1.5. SOIL SHALL CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE SPACE FOR ROOT PENETRATION AND ALLOW FOR ADEQUATE PERCOLATION.
 - 1.6. PLACED IN 6" LIFTS AND COMPACTED TO 80% RELATIVE COMPACTION TO PREVENT SETTLING WHILE AVOIDING OVER COMPACTION FOR ROOT GROWTH.
- 2. **SOILS TEST:** PRIOR TO ACCEPTANCE OF FINISH GRADE CONDITIONS, THE LANDSCAPE CONTRACTOR SHALL OBTAIN A SOILS TEST (SOIL MANAGEMENT REPORT) FOR THE IMPORTED SOIL. IF NO DOCUMENTATION IS AVAILABLE, THE CONTRACTOR SHALL OBTAIN SAMPLES FROM AT LEAST FOUR DIFFERENT LOCATIONS WITHIN THE PROJECT AREA AFTER SITE DEVELOPMENT GRADING IS COMPLETE. SOIL TESTS SHALL PROVIDE ANALYSIS REPORTS ON TEXTURE, PHYSICAL, AND CHEMICAL PROPERTIES INCLUDING CHARACTERISTICS REGARDING COMPOSITION, NUTRIENTS/FERTILITY, AND MOISTURE HOLDING CAPACITY. SOIL TEST RESULTS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT AND OWNER FOR THEIR RECORDS. SOIL AMENDMENTS MAY BE RECOMMENDED BY THE SOILS REPORT TO CORRECT SOIL DEFICIENCIES. IMPORTED SOILS SHALL, AT MINIMUM MEET THE REQUIREMENTS LISTED ABOVE.
- 3. **FINISH GRADE:** FINISH GRADE ALL PLANTER AREAS TO ESTABLISH A SMOOTH, EVEN FINISH VOID OF ALL ROCKS OR DEBRIS LARGER THAN 1-INCH IN DIAMETER (BY CIVIL). PLANTER SOIL SHALL BE 3-INCHES BELOW THE CURB / SIDEWALK HEIGHT TO ALLOW FOR PLACEMENT OF A 3-INCH LAYER OF DECOMPOSED GRANITE MULCH. THE LANDSCAPE CONTRACTOR SHALL VERIFY FINISH GRADE CONDITIONS AND IMPORTED TOPSOIL CONSTITUENT REQUIREMENTS LISTED ABOVE PRIOR TO START OF WORK.
- 4. **DECOMPOSED GRANITE MULCH:** ALL PLANTING AREAS, EXCLUDING AREAS WHERE GRAVEL OR COBBLE ROCK MULCH ARE SPECIFIED, SHALL BE COVERED WITH A 3" LAYER OF DECOMPOSED GRANITE MULCH IN THE COLOR INDICATED IN THE PLANTING NOTES AND SCHEDULE. SUBMIT SAMPLE TO CITY FOR REVIEW PRIOR TO ORDERING.
- 5. **COBBLE ROCK MULCH:** LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT 4"-8" SIZE COBBLE ROCK MULCH AT LOCATION SHOWN WITHIN CENTRAL ISLAND. COBBLE ROCK MULCH SHALL BE ROUND RIVER ROCK, UNIFORM GRAY COLOR FROM A SINGLE SOURCE. PLACE A SINGLE LAYER OF COBBLE ROCK MULCH, SPREAD EVENLY WITH NO VOIDS LARGER THAN 1". SUBMIT SAMPLE TO CITY / LANDSCAPE ARCHITECT FOR REVIEW PRIOR TO ORDERING. ALUMINUM EDGING SHALL BE USED TO SEPARATE ALL BOUNDARIES OF CRUSHED ROCK AND ROCK COBBLE AT APPROXIMATE LOCATIONS SHOWN ON THE PLANS.
- 6. **GRAVEL MULCH:** GRAVEL MULCH SHALL BE 3/8" IN SIZE AND SHALL BE THE TYPE AND COLOR INDICATED IN THE LANDSCAPE TREATMENT SCHEDULE. SUBMIT SAMPLE TO CITY FOR REVIEW PRIOR TO ORDERING. GRAVEL MULCH SHALL BE SPREAD EVENLY TO A DEPTH OF 2" ACROSS ALL PLANTER AREAS SHOWN ON THE DRAWINGS. ALUMINUM EDGING SHALL BE USED TO SEPARATE ALL BOUNDARIES OF CRUSHED ROCK AND ROCK COBBLE AT APPROXIMATE LOCATIONS SHOWN ON THE PLANS.

NO.	REVISION	DATE	BY

Original work by
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PLANTING PLAN
HERMOSA ST WESTWOOD AVE ROUNDABOUT
LANDSCAPE PROJECT
CITY OF LINDSAY

LINDSAY
CALIFORNIA

SCALE	1"=10'
JOB NO.	CS21-1
DESIGNED	LRP
DRAWN	LRP
FILE	
UPDATED	EG
DATE	10/06/2020

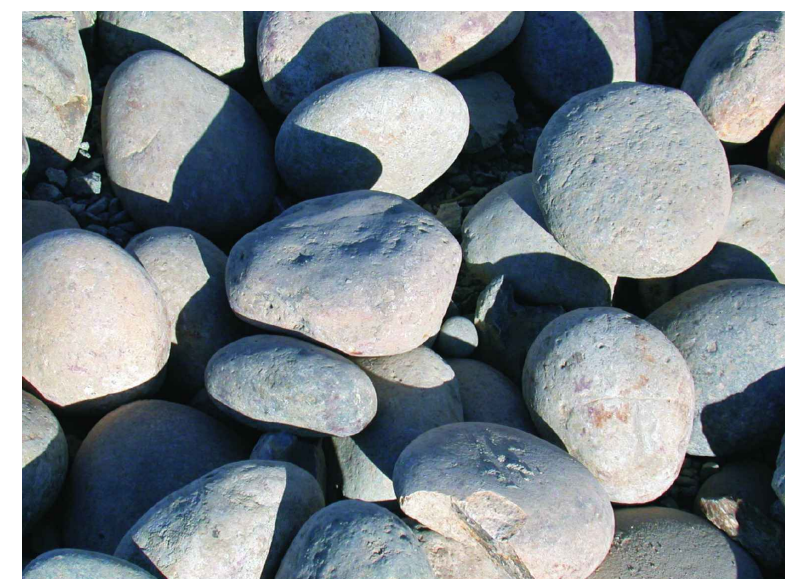
PLANT SCHEDULE

SHRUBS	BOTANICAL NAME	COMMON NAME	CONT	QTY
	Callistemon viminalis 'Little John' WATER USE: LOW (0.2)	Dwarf Weeping Bottlebrush	5 gal	40
	Dietes Iridioides WATER USE: LOW (0.2)	Fortnight Lily	5 gal	47
	Festuca mairei WATER USE: LOW (0.2)	Atlas Fescue	5 gal	79
	Lantana x 'New Gold' WATER USE: LOW (0.2)	New Gold Lantana	1 gal	312
	Santolina chamaecyparissus 'Compacta' WATER USE: LOW (0.2)	Lavender Cotton	1 gal	73
	Santolina virens WATER USE: LOW (0.2)	Green Lavender Cotton	1 gal	64
	Tulbaghia violacea 'Silver Lace' WATER USE: LOW (0.2)	Silver Lace Society Garlic	1 gal	160

MULCH SCHEDULE

SYMBOL	DESCRIPTION	QTY
	COBBLE ROCK MULCH..... Single Layer, 4"-8" Smooth Cobble, Grey Color	401 sf
	GRAVEL ROCK MULCH..... 2" Layer, 3/4" Crushed Rock, 'Harvest Gold' Color	6.43 cy
	DECOMPOSED GRANITE..... 3" Layer, 3/8" Minus D.G., 'Desert Gold' Color	57 cy

MULCH TYPE AND COLOR EXAMPLES (Provide samples prior to order)



COBBLE ROCK MULCH



GRAVEL ROCK MULCH



DECOMPOSED GRANITE

GENERAL PLANTING NOTES

- QUANTITIES:** THE PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE OWNER. THE CONTRACTOR SHALL VERIFY ALL PLANT COUNTS LISTED AND SHOWN ON PLANS. IF A DISCREPANCY EXISTS, THE PLANS SHALL GOVERN. NOTIFY LANDSCAPE ARCHITECT IF MATERIALS ARE NOT AVAILABLE AS SPECIFIED. ALL SUBSTITUTIONS ARE SUBJECT TO THE WRITTEN APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT.
- PRE-EMERGENT:** A PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL LANDSCAPED AREAS BEFORE APPLYING SURFACE MULCH. THE LANDSCAPE CONTRACTOR SHALL OBTAIN A PEST CONTROL ADVISOR (PCA) WRITTEN RECOMMENDATION PRIOR TO APPLICATION. ALL HERBICIDES SHALL BE APPLIED BY A QUALIFIED APPLICATOR.
- PLANT LOCATIONS AND SPACING:** PLANTS SHALL BE INSTALLED AT LOCATIONS SHOWN. PLANT LOCATIONS ADJACENT TO CURBS AND SIDEWALKS SHALL BE PLANTED AT A DISTANCE OF NO CLOSER THAN 1/2 THE FULL GROWN WIDTH OF THE SPECIES INSTALLED.
- INERT MATERIAL:** SEE PLANTING PLAN SHEET LP1 FOR INERT MATERIAL (COBBLE, GRAVEL, AND DECOMPOSED GRANITE MULCH) PLACEMENT LOCATIONS, MATERIAL REQUIREMENTS, AND INSTALLATION. REFER TO THIS SHEET FOR EXAMPLES OF MULCH TYPE AND COLOR.
- INERT MATERIAL LAYOUT:** THE LAYOUT OF THE INERT MATERIAL IS APPROXIMATE. EVERY EFFORT SHOULD BE TAKEN TO STAKE / MARK BOUNDARIES OF DIFFERENT COBBLE ROCK, GRAVEL ROCK, AND DECOMPOSED GRANITE MULCH IN THE FIELD AS CLOSE TO THE LOCATIONS SHOWN ON THE PLANS. MARKED BOUNDARIES SHALL BE APPROVED BY THE CITY / LANDSCAPE ARCHITECT TO VERIFY CORRECT LAYOUT AND SPACING OF MATERIAL AND BOUNDARIES.
- EDGING:** SEE PLANTING PLAN SHEET LP1 FOR EDGING TYPE AND LOCATION. SEE SHEET LP3 FOR INSTALLATION DETAILS.
- SITE MAINTENANCE:** THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE SITE AND THE ASSOCIATED STREETS CLEAN AND FREE FROM RUBBISH AND DEBRIS. THE CONTRACTOR SHALL ALSO ABATE DUST NUISANCE BY CLEANING, SWEEPING, AND SPRINKLING WITH WATER, OR OTHER MEANS AS NECESSARY. THE USE OF WATER RESULTING IN MUD ON PUBLIC STREETS WILL NOT BE PERMITTED AS A SUBSTITUTE FOR SWEEPING OR OTHER METHODS.
- NOTICE:** 48 HOUR NOTICE SHALL BE GIVEN BY THE CONTRACTOR WHERE APPROVAL OF THE CITY / LANDSCAPE ARCHITECT IS REQUIRED IN THE FIELD.
- SPECIFICATIONS AND DETAILS:** REFER TO THESE DRAWINGS FOR ADDITIONAL PLANTING SPECIFICATIONS AND DETAILS. SEE PLANT DETAIL SHEET LP3 AND PLANTING SPECIFICATIONS SHEET LP4.

NO.	REVISION	DATE	BY

Original work by
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PLANTING NOTES AND SCHEDULE
HERMOSA ST/WESTWOOD AVE ROUNDABOUT
LANDSCAPE PROJECT
CITY OF LINDSAY

LINDSAY
CALIFORNIA

SCALE	AS SHOWN
JOB NO.	CS21-1
DESIGNED	LRP
DRAWN	LRP
FILE	
UPDATED	EG
DATE	10/06/2020

LP2

R:\CS-2024\1996 REVISED: 10-06-20

PLANTING

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. The work included under this Section consists of providing all necessary soil preparation and amending, finish on fine grading, furnishing and planting of all trees, shrubs, and ground cover, application of pre-emergent herbicide, mulching, maintenance, and all other materials, labor, and equipment required to complete the work indicated on the Planting Plans.

1.02 RELATED SECTIONS:

A. Section – Irrigation System: Provision of automatic irrigation system.

1.03 QUALITY ASSURANCE

- A. Alternates: Verify whether alternates as specified affect the work of this Section.
- B. Contractor is to provide the Owner's Representative with copies of all Project material invoices and retain all empty material containers for count.
- C. The Contractor shall furnish, without any extra charge, any additional material and labor when required by the compliance on these Specifications and Drawings.
- D. The Contractor shall erect and maintain barricades, guards, warning signs, and lights as necessary or required for the protection of the work, the workmen, and public.
- E. Any existing buildings equipment, piping, sewers, sidewalks, landscaping or other Site improvements damaged by the Contractor during the course of his work shall be replaced or repaired by the Contractor in a manner satisfactory to the Engineer and at the Contractor's own expense, and before the final payment is made.
- F. Contractor shall obtain and pay all fees, licenses, and permits required for this portion of the Project work.
- G. Before making bid, examine the Site carefully, verifying dimensions and other Site conditions in relation to the Plans. The Contractor is responsible for informing himself of all conditions under which work is to be done before submitting his Bid.
- H. When conditions detrimental to planting of trees, shrubs, and ground cover are encountered notify Owner's Representative before proceeding with work.
- I. Contractor to verify quantities shown in the Plant List to assure conformance with Landscape Drawings. Bring any discrepancies to the attention of the Owner's Representative.
- J. For standard products, the manufacturer's analysis guarantee will be accepted. For all other materials, analysis will be a recognized laboratory as required by the Owner's Representative.
- K. All plants shall be true to type and name in accordance with the current edition of Standardized Plant Names, Second Edition, and of size and caliper as shown in the Plant List.
- L. Provide trees, shrubs, and other plants of size, genus, species and variety shown on Project Plant List and complying with recommendations and requirements of ANSI-Z60.1-90 American Standard for Nursery Stock.
- M. Plantings shall be performed by personnel familiar with planting procedures and under the supervision of a qualified planting foreman. The planting foreman shall be on the job Site whenever planting is in progress.
- N. No extra work shall be done without prior written approval of the Owner's Representative.
- O. Contractor shall coordinate his work with that of any other Contractors working in, and adjacent to, the areas included in the Project work, and coordinate with these Contractors in performance of this work.
- P. All work shall be in strict accordance with sound horticultural practice and shall include maintenance and watering of all materials installed in the Contract until final acceptance by the Owner's Representative.
- Q. Keep the job Site free from accumulations of waste material or rubbish resulting from this work. At the completion of the work, the Contractor shall remove all rubbish tools, and surplus materials, and shall leave the completed project neat and orderly.

1.04 JOB CONDITIONS

- A. Proceed with and complete planting work as rapidly as portions of Site become available, working with seasonal limitations.
- B. Determine locations of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required.
- C. Maintain grade stakes set by other until removal is mutually agreed on by parties concerned.
- D. Contractor shall verify the extent that the Project engineered fill extends into the planting areas. Where the engineered fill material is in conflict with sound horticultural practice, the contractor is to confer with the Owner's Representative to ascertain to what extent the engineered fill, in the planting areas, can be removed. The Landscape Contractor will be responsible for the removal of whatever engineered fill that is a problem and is agreed to by the Owner's Representative.
- E. Before making bid, examine the Site carefully, verifying dimensions and other Site conditions in relation to the Plans. The Contractor is responsible for informing himself of all conditions under which work is to be done before submitting his bid.

PART 2 – PRODUCTS

2.01 TREES, SHRUBS, AND GROUND COVER

- A. Plant materials shall be supplied in sizes as indicated in the Plant List. Container stock shall be well established in the container and the roots shall not have grown beyond the limits of the container, nor shall they be root bound. All plants shall have normal or average branching systems and shall be first class representatives of their species in the appearance of healthy, vigorous growth. Plants shall be free of pests and disease and disfiguring injury. Trees shall be select and choice material, with symmetrical and full rounded heads appropriate for the species.
- B. All plant materials delivered to the Site must conform to the Specifications of Federal, State and County laws, requiring inspection for plant diseases and insect infestations. Any inspection certificates required by law must accompany each shipment when plant materials arrive at the Site.
- C. Plants delivered to the Site shall be adequately protected from the sun and wind during delivery and then stockpiled on the Site prior to planting. They shall be watered adequately. Containers shall be free of weeds or grasses.
- D. Substitutions are not permitted except on proof that plant specified is not available. Request for substitution must be made in writing to the Landscape Architect. No additional charge shall be made for substitutions except by the written authorization of the Landscape Architect.
- E. The Landscape Architect shall be notified in writing, one week prior to planting, to inspect all or major portions of the plant materials to be used in the Project, if requested by owner or Architect.
- F. The Landscape Architect shall be the final arbitrator in decisions regarding identification and nomenclature.
- G. The Landscape Architect shall have the right to reject plants prior to and during the progress of work for size, conditions of top structure, conditions of root structure, defects or injuries or nonconformity to Specifications.

2.02 SOIL AMENDMENTS

- A. Fir Bark soil amendment:
 1. Physical properties: 0 inches to 1/4 inches
 2. Source: Fir or Pine bark
 3. Nitrogen content (dry weight basis): minimum 0.5%
 4. Dry bulk density: 450-580 #/ cubic yards
 5. Iron content (dry weight basis): minimum 0.08% dilute acid soluble iron
 6. Salinity (ECe) maximum 4.0 millimhos l centimeter @ 25 degrees C.
 7. Organic content: Minimum 90% of dry weight by ash method
 8. Reaction (ph) minimum 4.0
- B. Pelletized fertilizer 6-20-20
- C. Soil Sulfur
- D. Dolomite Lime

2.03 FERTILIZERS

- A. Agriform planting tables, as manufactured by Sierra Chemical. 21 gram size with 20-10-5 analysis.
- B. Commercial fertilizer, as manufactured by Best Fertilizer Co. with a 16-6-8 + iron analysis.

2.04 EXISTING TOPSOIL

- A. It will be the Landscape Contractor's responsibility to provide all labor and equipment to remove all site topsoil spoils and dig-out as may be required to complete the finish the fine grading work.

2.05 TREE STAKES, TIES and ROOT BARRIERS

- A. Tree stakes shall be 2 inches diameter x 8 feet long, treated lodge pole stakes, free from knots and splits.
- B. Tree ties shall be "Cinch-Ties", length as required, as manufactured by V.I.T. Products, Inc. or equal.
- C. All trees planted within 4' of paving, buildings, walls, and/or utility equipment shall receive high impact root barriers per detail this plan set.

2.06 PRE-EMERGENT HERBICIDE(S)

- A. The pre-emergent herbicide is to be one that has proven successful in the local area, is recommended by a license Pest Control Advisor and has the approval of the Owner's Representative.

2.07 FIR BARK MULCH

- A. Bark mulch shall be wood residual derived and manufactured from Pine, White and/or Red Fir Tree bark. The material shall be equal to that referred to as 'Walk on Bark' in the trade.
- B. Install 3" depth fir bark mulch at all locations identified on the plans.

2.08 DECOMPOSED GRANITE AND GRAVEL ROCK MULCH

- A. Decomposed granite is to be 1/4" inch minus size placed at a minimum depth of 3". Install at locations and extents shown on the plans. Type and color shall be same as indicated on the plans.
- B. Gravel is to be 3/4" minus size. install to a minimum depth of 2". install at locations and extents shown on the plans. Type and color shall be the same as indicated on the plans.
- D. Provide samples for each material type for approval of the owner's representative.

2.09 COBBLE ROCK MULCH

- A. Cobble rock is to be 4"-8" inch size placed as a single layer spread evenly without void larger than 1" in any direction. Install at locations and extents shown on the plans. Type and color shall be same as indicated on the plans.
- B. Provide samples for each material type for approval of the owner's representative.

PART 3 – EXECUTION

3.01 SOIL PREPARATION AND AMENDING

- A. Thoroughly cultivate all planting areas to a depth of eight (8) inches.
- B. Rough finish grade all areas.
- C. Broadcast soil amendments in accordance with the recommendations from the soil management report.
- D. Cultivate and thoroughly incorporate the amendments into the top eight (8) inches of soil.
- E. De-rock area to be planted by using a mechanical rock picker. All rocks larger than 1-inch in diameter are to be removed.

3.02 FINISH GRADING

- A. Fine grade areas to a smooth even surface, with loose uniform texture. Rake and drag areas to remove ridges and fill depressions as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.
- B. The finish grade of all shrubs and/or ground cover planting areas is to be 3 inches below the top of all adjacent concrete walks, curbs, and asphalt paving.
- C. Remove all debris, exposed rocks, and compacted soil clods 1 inch in diameter or larger, from all planting areas. Use a mechanical rock picker for this work. All finish grades shall be subject to the approval of the Engineer.

3.03 PLANTING OF TREES AND SHRUBS

- A. The planting work shall be deferred until earthwork, construction, irrigation, soil preparation and finish grading work has been completed.
- B. No planting shall occur during unfavorable weather conditions or when the soil is excessively wet, as determined by the Owner's Representative.
- C. Stake or spot all plant locations, as shown on the Planting Plans. Obtain approval of plant locations, by the Owner's Representative or Landscape Architect, prior to commencement of planting.
- D. Planting Procedure:
 1. Excavate plant holes to the dimensions indicated on Planting Plans. Refer to Planting Details. Planting areas are not to be over compacted after cultivation shall be free of deleterious material, including construction debris, rocks sticks and dirt clods larger than 1-inch. Scarify all plant hole sides. Plant hole back fill mix shall consist of pulverized native soil free of roots, sticks, and stones larger than 1-inch in diameter, mixed with 1-CY of compost.
 2. Excavated pits (2-times the container size) shall have positive drainage within 2-hours when fully flooded with water. Contractor to demonstrate to Owner' Representative that plant holes drain in 2-hours before planting may commence. Contractor shall correct deficient drainage utilizing drilled drain holes filled with 3/4" drain rock. Depth of drain holes as needed.
 3. Add and firm backfill soil to bring the plant root ball to the proper planting elevation. The backfill soil is to consist of the excavated site topsoil with all rocks larger than 1 inch diameter removed from backfill soil. Use unconditioned site topsoil for backfill below the 8 inch depth which has been limed by premixing one (1) cubic yard of site topsoil with organic compost.
 4. All plant material is to be removed from containers by approved methods. Loosen the bottom and sides of the exposed root ball and unwind or cut any circling roots. Protect root ball from the drying effects of sun and wind.
 5. Place plant in the center of the excavation and adjust root ball elevation so that top of root ball is one (1) inch above the level of the surrounding soil grade.
 6. Complete the backfilling of the root ball with light tamping as the backfill soil is placed.
 7. Add 21-gram size Agriform (20-10-5) planting tablets to the backfill of all plant material. Reference planting details on plan. Plant Container Size #1, #2, #5, #15, 24-inch box: 1, 2, 3, 5, 5, tablets required respectively.
 8. Construct a water retention basin around each plan, 4" high for trees and 3" high for shrubs. Water newly installed plant immediately / thoroughly to settle the backfill soil. Add backfill as required by settling.
 9. After planting is complete, spread wood mulch to a minimum depth of 3-inches. Wood mulch shall be aged nitrogen fortified redwood, cedar, or fir woods chips and bark, three-inch (3") minus in size, and shall contain a minimum of one percent (1%) available nitrogen. Contractor shall submit a sample of the bark mulch to the Owner and Landscape Architect for review and approval.

3.04 TREE STAKING AND GRASS-FREE AREA

- A. All trees are to be staked as per the Tree Staking Details occurring on the Planting Plans.
- B. Care is to be exercised to maintain tree stakes in the proper horizontal alignment, and vertically to be set plumb.
- C. Leave a 24 inch diameter grass-free circle around tree trunks occurring in grass areas. Cover over with a 3" depth layer of bark mulch.

3.05 PLANT MATERIAL GUARANTEE

- A. The Contractor shall guarantee all plant material from latent defects, disease or death, and injury for a period of twelve (12) months after final acceptance of the total Project by the Owner's Representative.
- B. The Contractor shall promptly replace, at no additional cost, plants that are not in a vigorous, healthy, growing condition. Replacement shall be of the same kind and size as originally specified and shall be planted as described on the Planting Plans and in these Specifications.
- C. This guarantee does not include plant loss, due to physical damage or neglect during normal maintenance, by others, subsequent to the end of the project contract maintenance period.

3.06 OBSERVATION AND ACCEPTANCE

- A. After all plants have been installed, the Owner's Representative will make a preliminary observation.
 1. Upon preliminary observation and approval of the work, a ninety (90) day calendar day maintenance period will begin.
 2. If any plants or work are not approved, immediate replacement and/or repair will be made and regular maintenance then continued for ninety (90) days after replacement.
- B. Final observation will be made at the end of the ninety (90) day maintenance period.
- C. Submit written notice requesting this observation at least one week in advance.
 1. Plant basins shall be repaired, all plantings given a final watering, and the job cleared of all weeds and debris and presented in a neat and orderly fashion.
 2. The work, exclusive of the replacement of plant materials, shall be accepted by the Owner's Representative upon completion of the ninety (90) day maintenance period and upon written approval of the work by the Owner's Representative.

- 3. Clean paved areas by sweeping and/or washing. Remove any defacement or stains caused by work of this Section.
- 4. Remove construction equipment, excess materials, tools, debris, and rubbish.
- 5. Repair any existing property damaged or areas altered due to work of the landscape planting.

3.07 INSTRUCTIONS TO THE OWNER

- A. Full and complete typewritten instructions for long term maintenance of the landscaping are to be furnished to the Owner's Representative at least 10 days prior to the end of the Contractor's maintenance period. The Owner may retain final payment if this item is not completed.

3.12 GENERAL CLEAN-UP

- A. During the process of the work, the Site shall be kept in a reasonably neat and clean condition, free from the accumulation of cans, surplus materials, and waste materials.
- B. Upon completion of the work, remove all equipment, dispose of all waste, refuse, or debris resulting from this work, and leave the premises in a neat and clean condition.
- C. All planting areas shall be neatly dressed and finished and all walks, paved areas, curbs, and gutters flushed clean to the satisfaction of the Owner's Representative.

3.08 PLANTING MAINTENANCE

- A. Provide all necessary maintenance during specified maintenance period, including but not limited to, watering, weeding, replanting, fertilizing, treatment of diseases and pests, and protection from rodents, and people encroachment.
 1. Check all tree ties and adjust if too tight or too loose. Remove all nursery stakes and ties.
 1. Provide supplementary deep watering for trees at one month intervals during maintenance period, using a slowly trickling water hose. Fill planting basins, let water soak in, and refill.
 3. Replace any plants not in a healthy and thriving condition
 4. Arrange watering schedule to avoid wetting of foliage when exposed to hot sunlight.
 5. Keep planting basins in good repair and free of weeds.
 6. Plants blown over shall be replanted and re-staked, or replaced if damaged.
 7. Protect all plants against damage from any source. Treat or replace all damaged trees during the maintenance period.
 8. Re-set any plants where root crowns have settled below adjacent finish grade or where tree trunks are leaning from vertical position.
 9. Prune only to remove broken twigs, unbalanced branching conditions or suckers.
 10. At conclusion of maintenance period, re-surface planting beds as needed with a fresh layer of mulch to maintain the required depth.

PART 4- CLOSEOUT PROCEDURES

4.1 DESCRIPTION

- A. The work includes, but is not necessarily limited to, performing all operations necessary for and properly incidental to closing out the project and assisting in Owner's final inspection as hereinafter specified.

4.2 FINAL COMPLETION

- A. When the Contractor considers the work or a designated portion of the work complete, submit written request to Owner's Representative for inspection. By submittal of request, Contractor certifies that:
 1. Contract Documents have been reviewed.
 2. Work has been completed in accordance with the Contract Documents and is ready for inspection.
 3. Equipment systems have been tested, adjusted, balanced and is fully operational.
- B. Submit request for review a minimum of five (5) working days in advance of requested inspection date. Contractor shall be responsible for allowing sufficient time during contract period to complete inspection and any correction.
- C. Should Owner's Representative inspection find work incomplete, Owner's Representative will notify Contractor in writing, listing observed deficiencies.
- D. Contractor shall remedy listed deficiencies and sent a request for final inspection. At the Owner's option, a re-inspection(s) of the work to identify additional deficiencies, if any, may be required. Owner's costs associated with re-inspection(s) are subject to provisions of Article 4.04 of this Section.
- E. When Owners confirm work is complete, and close-out submittals as referred to in Article 1.04 of this Section are provided, Owner's Representative will notify Contractor of date of completion in writing.

4.3 RE-INSPECTIONS

- A. Should status of completion of work require re-inspection(s) by Owner due to failure of work to comply with Contractor's claim on initial inspection, Owner may deduct the amount of compensation for re-inspection services from final payment to Contractor. Observed deficiencies in excess of ten (10) will be reason for re-inspection.
- B. Inspection initiated at the request of the Owner will not be subjected to the provisions of this Article.

4.4 CLOSE-OUT SUBMITTALS

- A. Project Record Documents
- B. Operation and Maintenance Data
- C. Warranties and Guarantees
- D. Spare Parts and Maintenance Materials
- E. Evidence of Payment and Lien Releases along with a list of all subcontractors which contributed labor or materials to the project.
- F. Other data and material as may be required in individual Sections of the Specifications.

4.5 APPLICATION FOR FINAL PAYMENT

- A. Submit application for final payment in accordance with provisions of the contract for Construction.

Inspection Schedule

The Owner's representative or Landscape Architect (if requested by the Owner) shall accomplish the following inspections in concert with the Project Coordinator, and the Landscape Contractor. Call at least 48 hours in advance of the requested inspection:

- A. Pre-Landscape Construction Meeting with Owner's / Landscape Architect, Landscape Contractor and Construction Site Supervisor
- B. Owner's representative or Landscape Architect irrigation inspections:
 1. Irrigation System Layout and Coverage Inspection
 2. Irrigation Mainline and Lateral Pressure Check Layout inspection or deviation from
 3. Irrigation system as per plans
 4. Installation inspection of main lines
 5. Installation inspection of laterals and non-pressure system trenches
- C. Owner's representative or Landscape Architect planting inspections:
 1. Review/approve amendments
 2. Soil preparation
 3. Finish grade verification
 4. Plant material quality
 5. Layout in conformance with Project plans/specification
- D. Owner's representative or Landscape Architect post-construction inspection:
 1. Final Landscape Improvements Inspection and approval
- E. Commencement of Maintenance Period with letter of approval from the Owner's representative. All punch list items from previous inspection must be complete
- F. Requests for progress payments must include approved inspection reports authorized by the Owner's representative.

END OF SECTION.

NO.	DATE	REVISION							

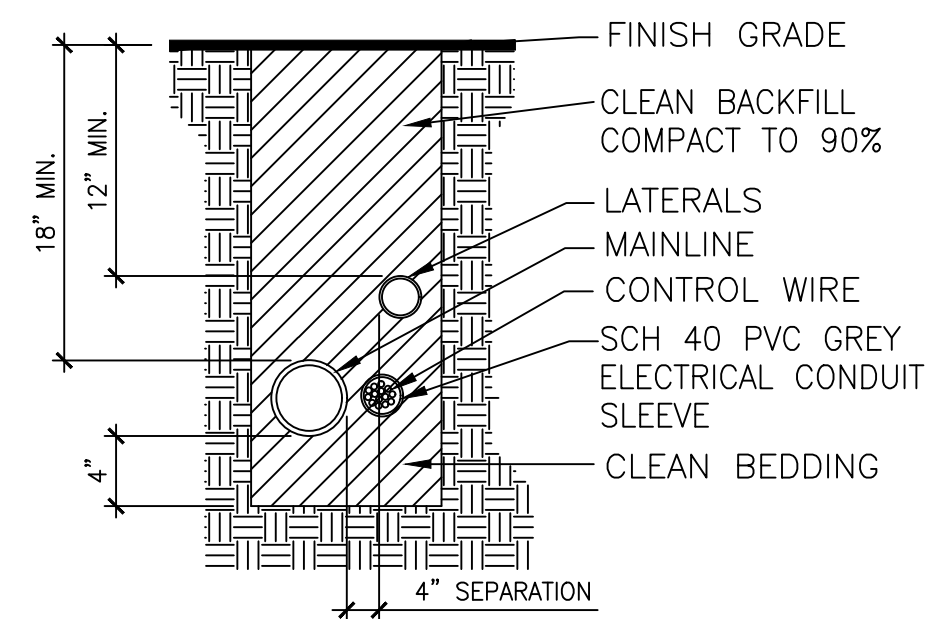
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PLANTING SPECIFICATIONS
HERMOSA SU WESTWOOD AVE ROUNDABOUT
LANDSCAPE PROJECT
CITY OF LINDSAY

SCALE	AS SHOWN
JOB NO.	CS21-1
DESIGNED	LRP
DRAWN	LRP
FILE	
UPDATED	EG
DATE	10/06/2020

LP4

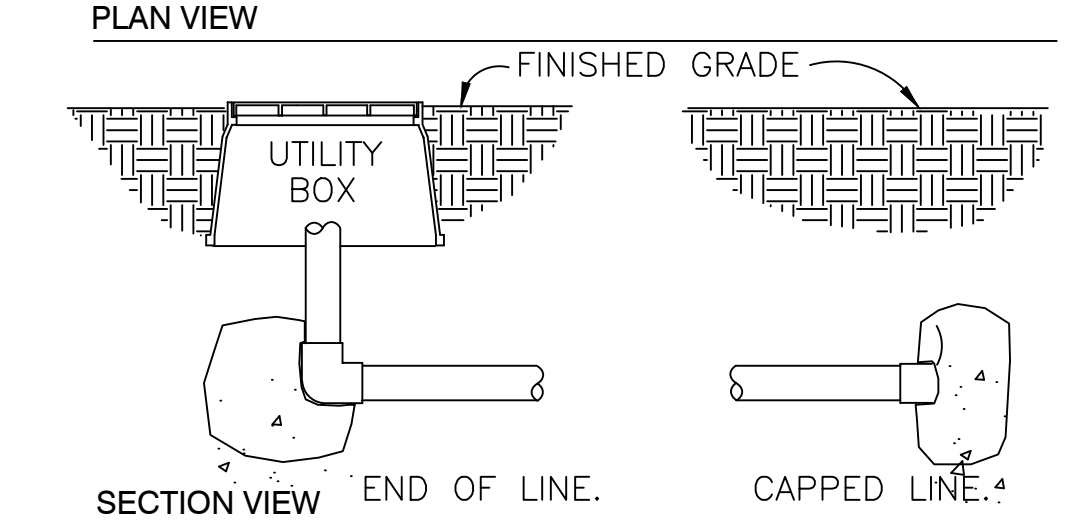
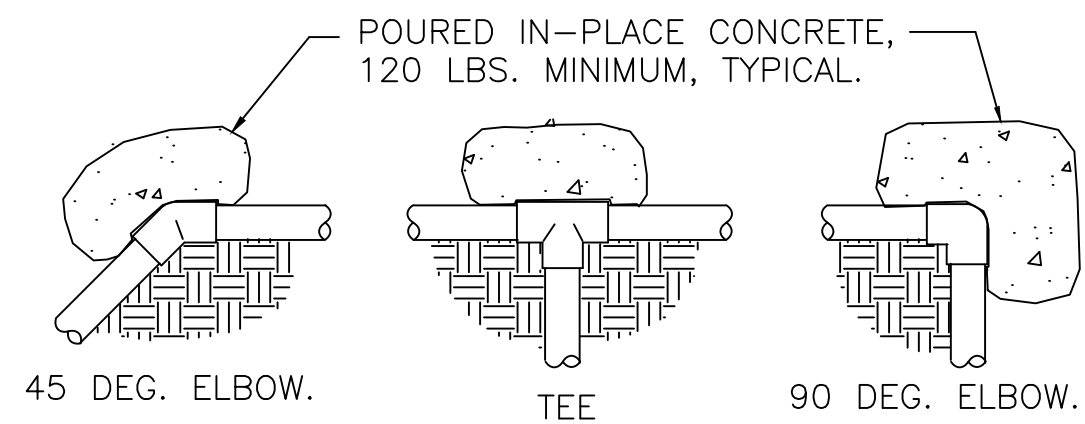


SCH 40 PVC SLEEVE UNDER CONCRETE WALK PAVING

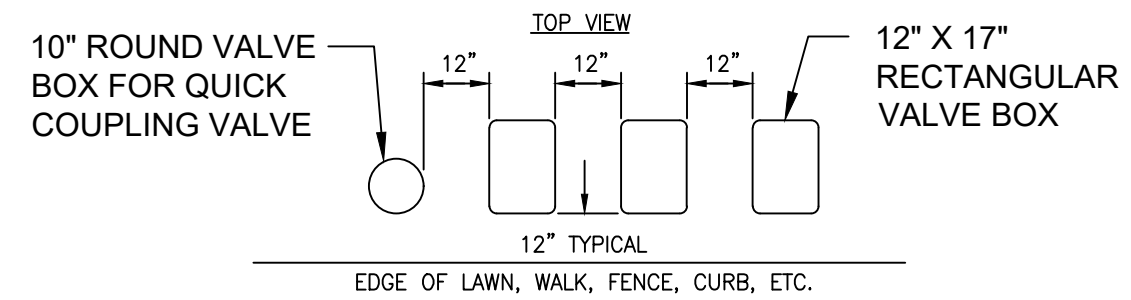
SECTION: PLANTING AREAS

1. ALL PIPE, WIRE, &/OR SLEEVES TO GO UNDER SIDEWALK PAVEMENT TO BE INSTALLED PRIOR TO PAVING BEING INSTALLED.
2. BUNDLE AND TAPE ALL CONTROL WIRE AT 10' INTERVALS; TAPE TO MAINLINE AT 20' INTERVALS.
3. TIE A LOOSE 2' LOOP IN WIRE AT CHANGES IN DIRECTION OF 30 DEG. OR GREATER. UNTIE AFTER CONNECTIONS HAVE BEEN MADE.
4. INSTALL LOCATOR WIRE ALONGSIDE MAINLINE WHERE THERE IS NO CONTROL WIRE.
5. SEE CALTRANS STANDARD PLANS FOR IRRIGATION CROSSOVERS AND CONDUIT DETAILS BELOW STREET PAVING.

1 IRRIGATION PIPE AND CONTROL WIRE TRENCHING
NOT TO SCALE P-HE-26

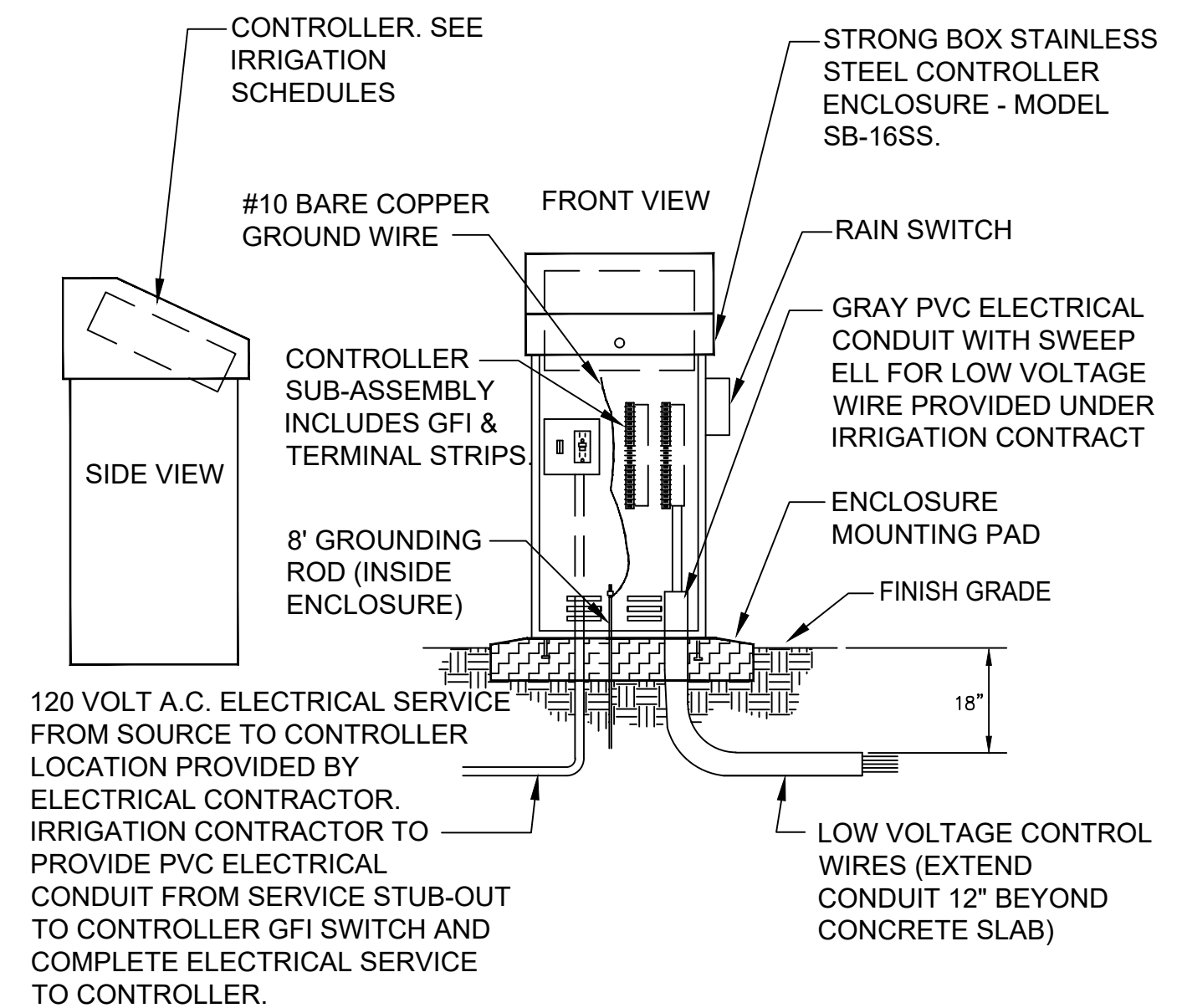


2 THRUST BLOCKING
NOT TO SCALE P-HE-29

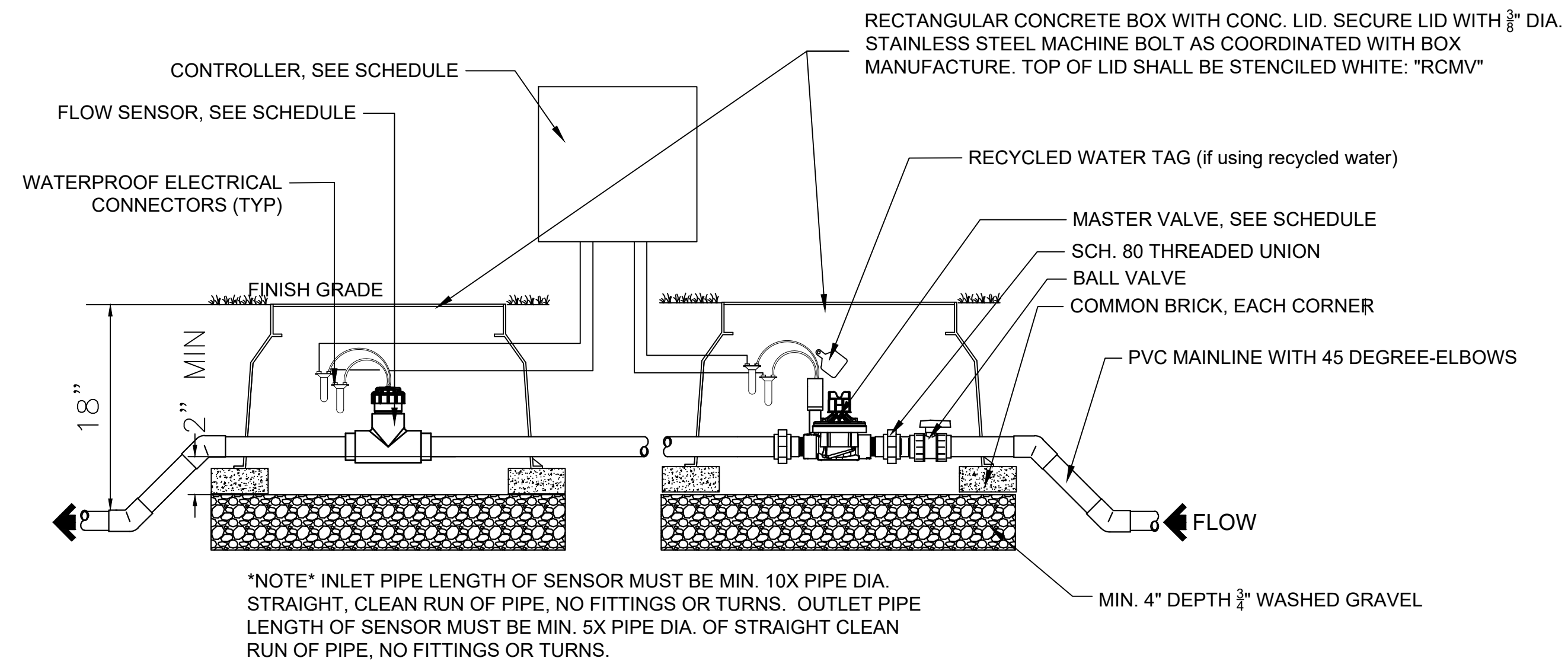


1. CENTER VALVE BOX OVER REMOTE CONTROL VALVE TO FACILITATE SERVICING VALVE.
2. SET BOXES 1\"/>

3 VALVE BOX LAYOUT
NOT TO SCALE



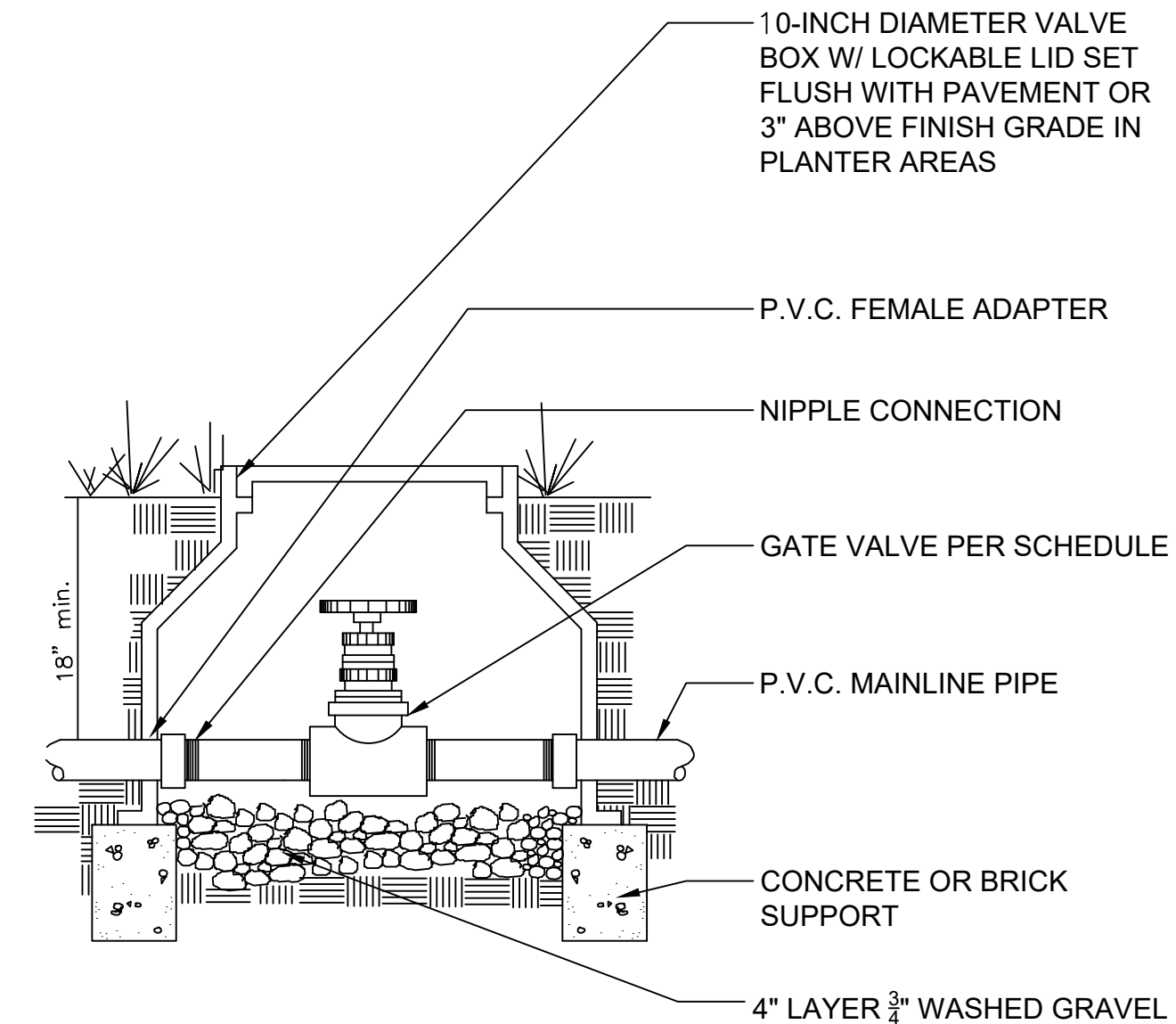
4 TOP OPENING PEDESTAL MOUNT CONTROLLER
NOT TO SCALE



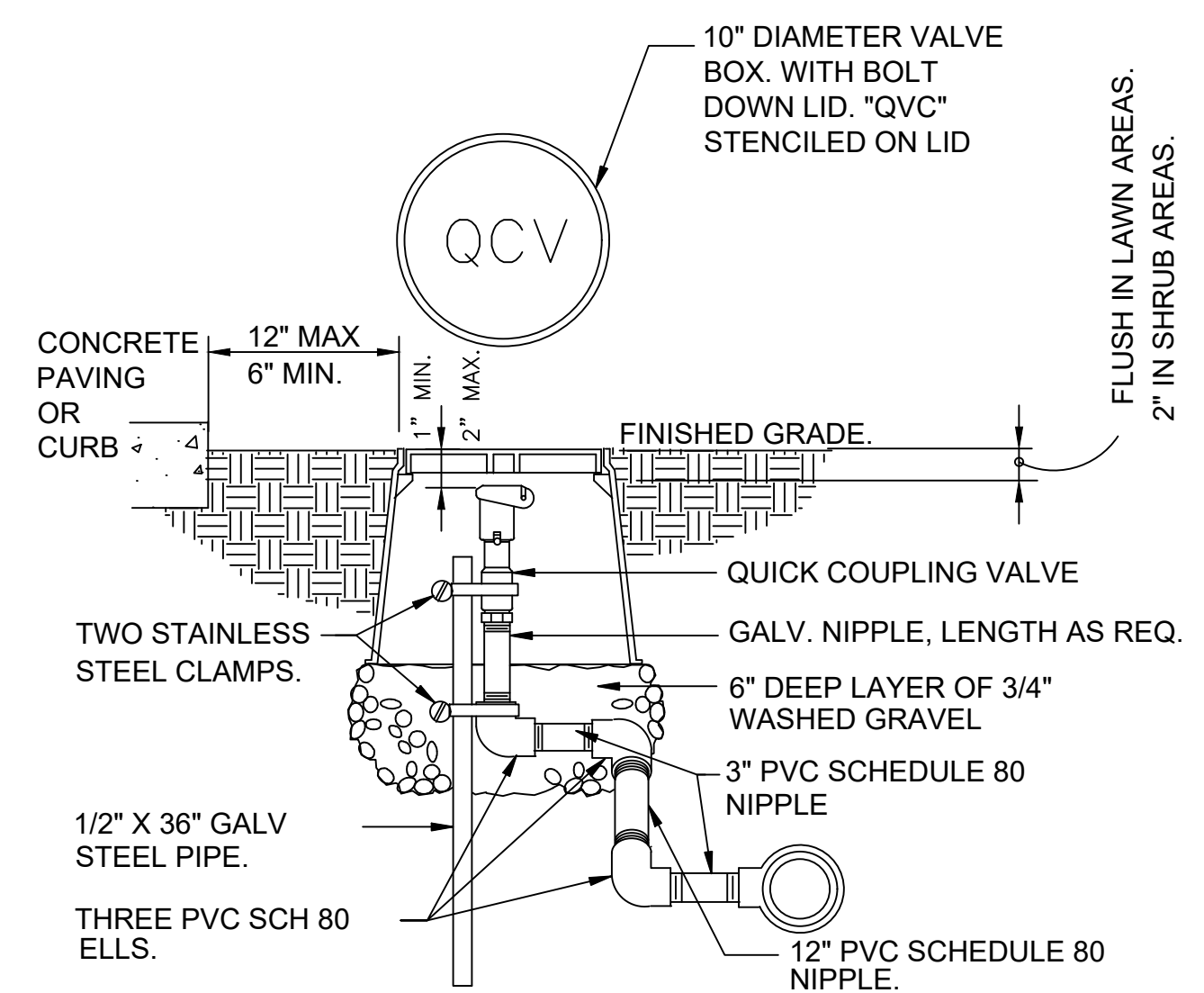
NOTE INLET PIPE LENGTH OF SENSOR MUST BE MIN. 10X PIPE DIA. STRAIGHT, CLEAN RUN OF PIPE, NO FITTINGS OR TURNS. OUTLET PIPE LENGTH OF SENSOR MUST BE MIN. 5X PIPE DIA. OF STRAIGHT CLEAN RUN OF PIPE, NO FITTINGS OR TURNS.

TWO WIRE SYSTEMS - INSTALL PER MANUFACTURE'S SPECIFICATIONS AND DETAILS.

5 MASTER VALVE AND FLOW SENSOR ASSEMBLY
1 1/2" = 1'-0" P-HE-27



6 GATE VALVE
NOT TO SCALE P-HE-59



7 QUICK COUPLING VALVE
1 1/2" = 1'-0" P-HE-30

NO.	REVISION	DATE	BY

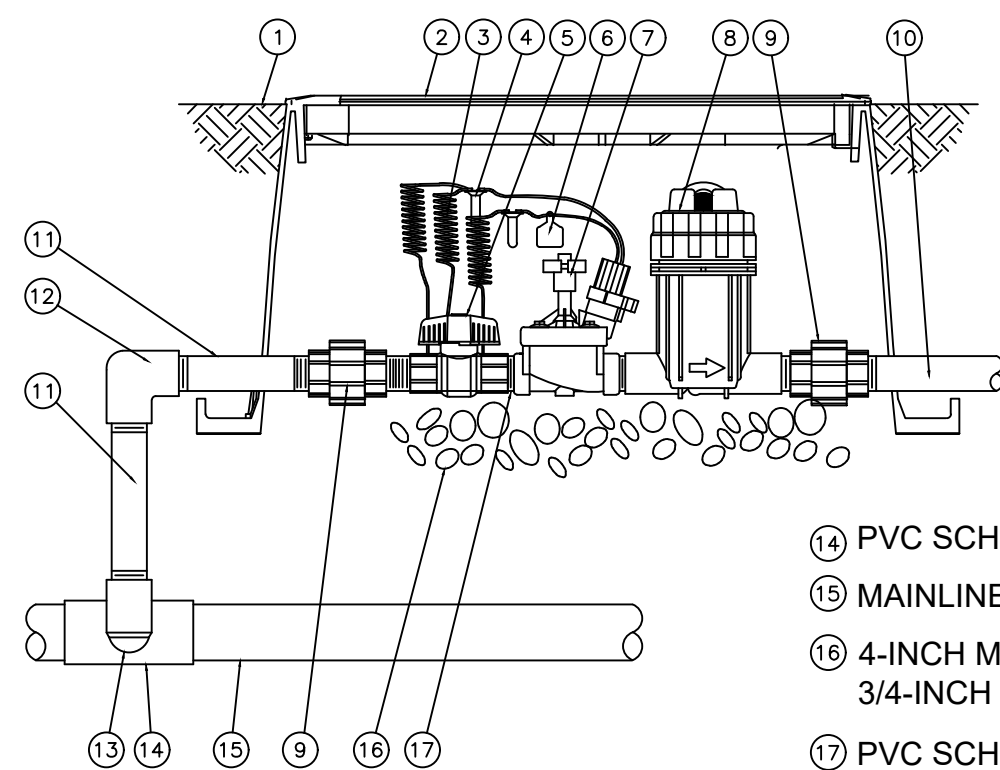
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IRRIGATION DETAILS 1
HERMOSA ST WESTWOOD Ave ROUNDABOUT
LANDSCAPE PROJECT
CITY OF LINDSAY

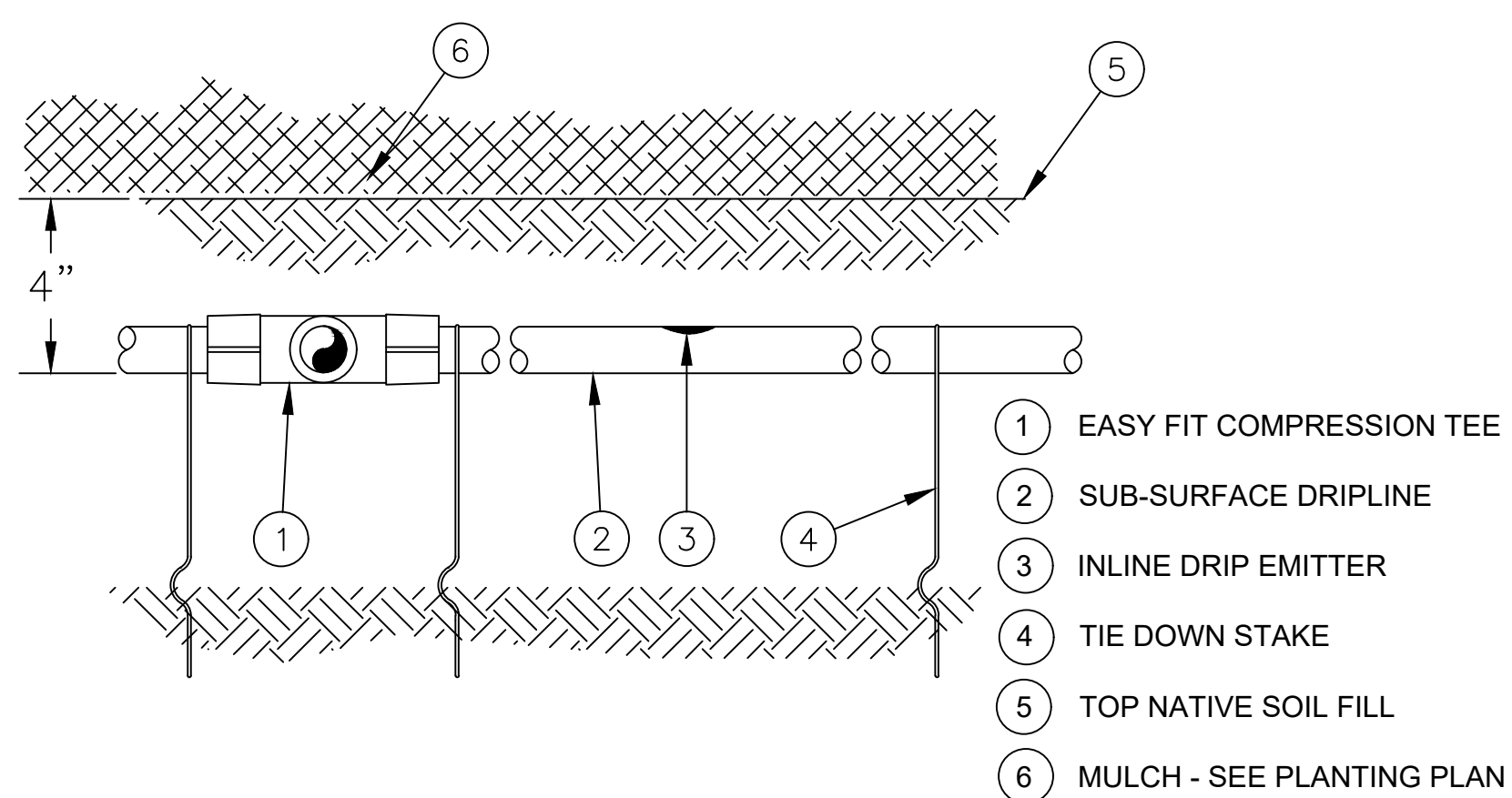
LINDSAY CALIFORNIA

SCALE	AS SHOWN
JOB NO.	CS21-1
DESIGNED	LRP
DRAWN	LRP
FILE	
UPDATED	EG
DATE	10/06/2020

- ① FINISH GRADE/TOP OF MULCH
- ② VALVE BOX WITH COVER
- ③ 30-INCH LINEAR LENGTH OF WIRE, COILED
- ④ WATERPROOF CONNECTION
- ⑤ 1-INCH BALL VALVE
- ⑥ ID TAG
- ⑦ REMOTE CONTROL VALVE
- ⑧ PRESSURE REGULATING QUICK CHECK BASKET FILTER
- ⑨ UNION CONNECTOR
- ⑩ LATERAL PIPE
- ⑪ PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- ⑫ PVC SCH 40 ELL
- ⑬ PVC SCH 40 NIPPLE AND ELL

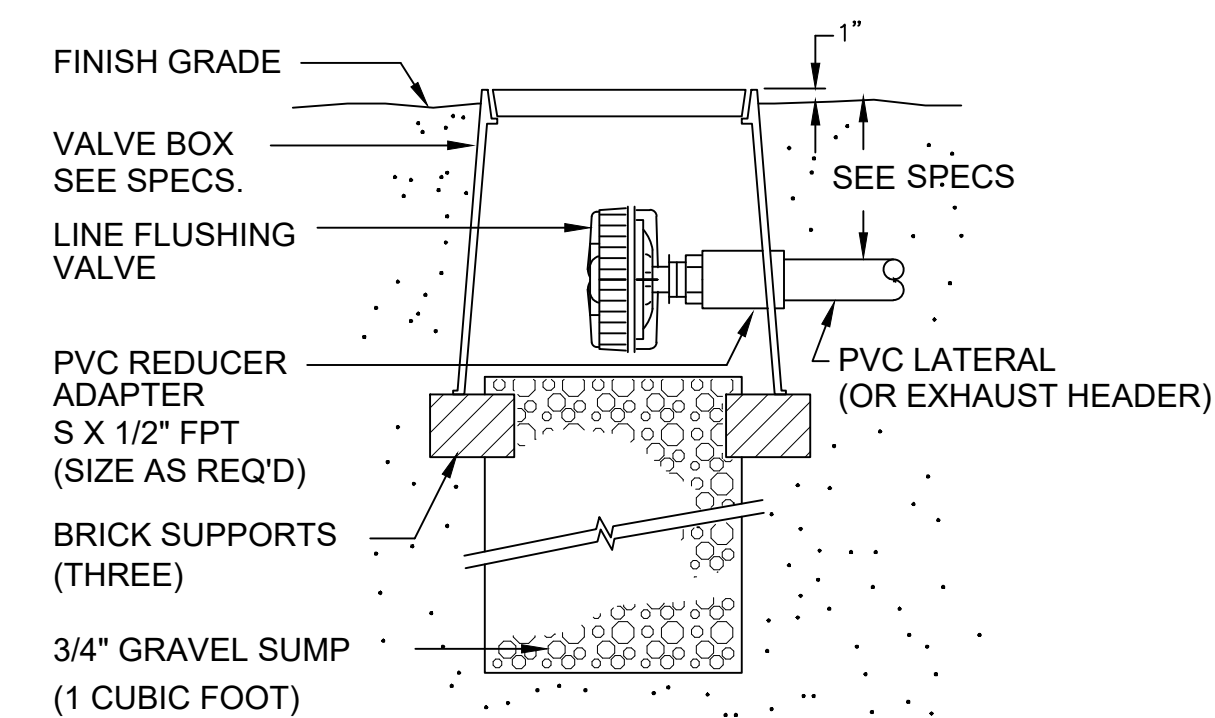


1 DRIP VALVE KIT
NOT TO SCALE

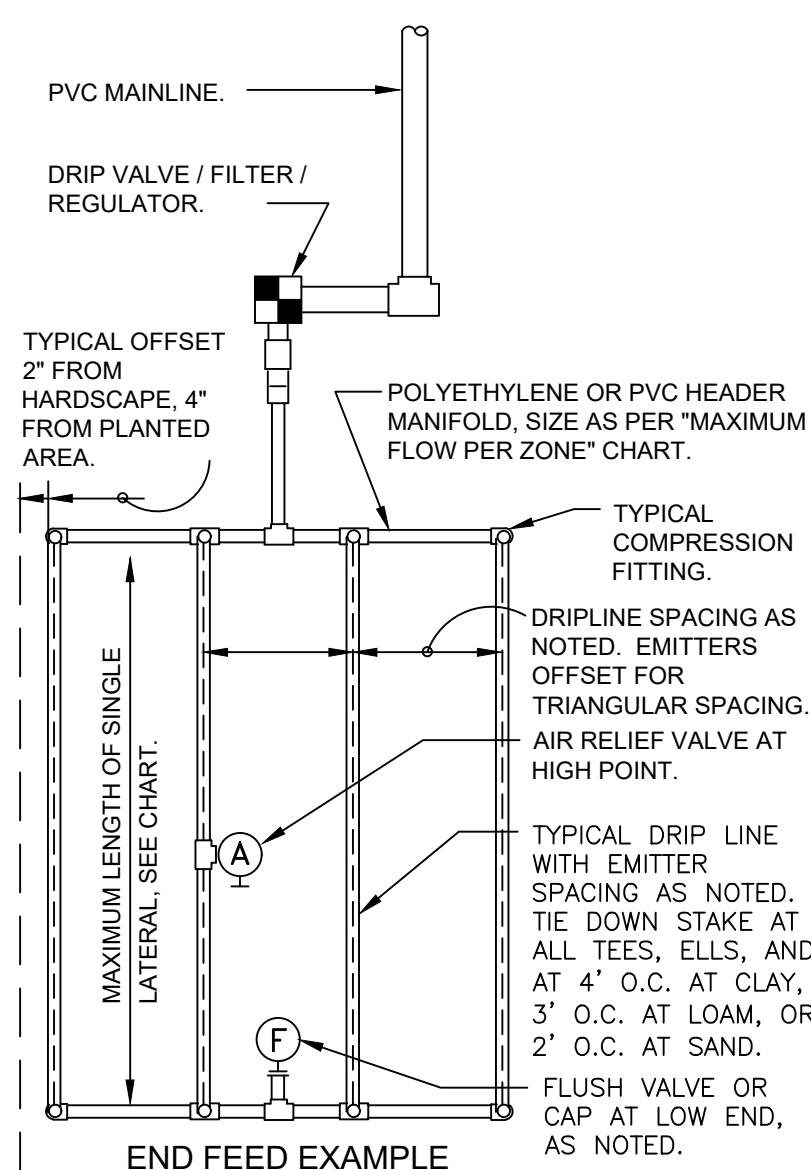


2 BELOW SURFACE IN-LINE DRIP IRRIGATION
1" = 1"

NOTES:
1. PLACE TIE DOWN STAKES EVERY THREE FEET IN SAND, FOUR FEET IN LOAM, AND FIVE FEET IN CLAY.
2. AT FITTINGS WHERE THERE IS A CHANGE OF DIRECTION SUCH AS TEES OR ELBOWS, USE TIE-DOWN STAKES ON EACH LEG OF THE CHANGE OF DIRECTION.
3. INSERTION FLOW AND TRENCHED INSTALLATIONS DO NOT REQUIRE TIE DOWN STAKES.



3 END LINE FLUSH DETAIL - DRIP
1" = 1"



4 TYPICAL RAIN BIRD DRIPLINE REQUIREMENTS
N.T.S.

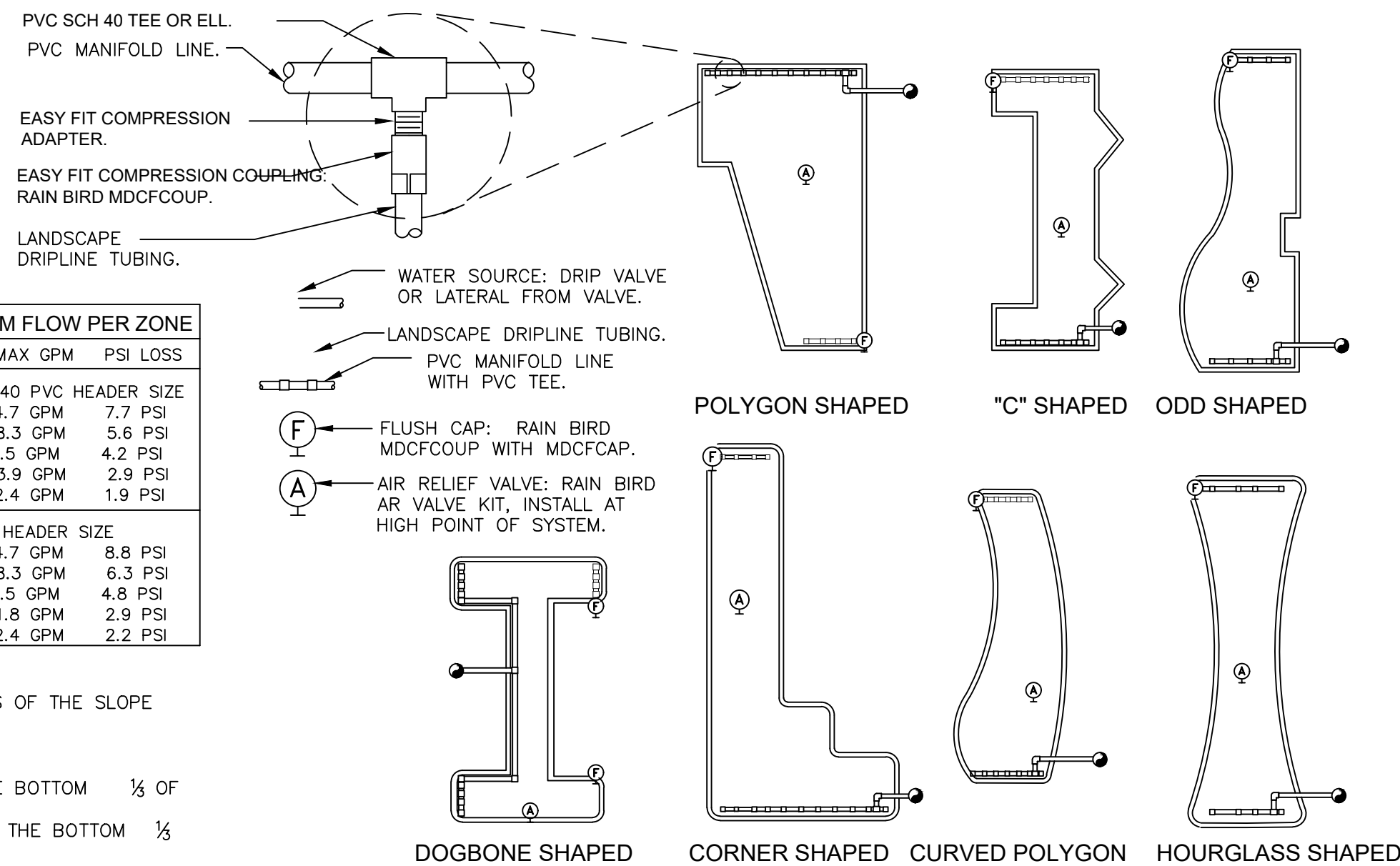
PSI	MAXIMUM LATERAL LENGTH (FEET)					
	EMITTER FLOW RATE GPH					
	12" SPACING		18" SPACING		24" SPACING	
10	125	96	175	135	218	171
20	249	191	350	171	442	340
30	307	236	434	333	550	422
40	350	268	495	380	627	171
50	125	96	175	135	218	171
60	125	96	175	135	218	171

EMITTER SPACING	LATERAL SPACING	EMITTER FLOW RATE	
		0.6	0.9
12	12	0.96	1.44
18	18	0.69	1.03
24	24	0.28	0.41

EMITTER FLOW	LATERAL FLOW PER 100 FT (GPM)			
	12" SPACING	18" SPACING	24" SPACING	
0.6 GPH	1.0 GPM	0.67 GPM	0.50 GPM	
0.9 GPH	1.5 GPM	1.0 GPM	0.75 GPM	

SCHEDULE 40 PVC HEADER SIZE	MAXIMUM FLOW PER ZONE	
	MAX GPM	PSI LOSS
1/2"	4.7 GPM	7.7 PSI
3/4"	8.3 GPM	5.6 PSI
1"	13.5 GPM	4.2 PSI
1-1/2"	33.9 GPM	2.9 PSI
2"	52.4 GPM	1.9 PSI

- SLOPED CONDITION NOTE:**
1. DRIPLINE LATERALS SHOULD FOLLOW THE CONTOURS OF THE SLOPE WHENEVER POSSIBLE.
 2. INSTALL AIR RELIEF VALVE AT HIGHEST POINT.
 3. NORMAL SPACING WITHIN THE TOP 2/3 OF SLOPE.
 4. INSTALL DRIPLINE AT 25% GREATER SPACING AT THE BOTTOM 1/3 OF THE SLOPE.
 5. WHEN ELEVATION CHANGE IS 10 FT OR MORE, ZONE THE BOTTOM 1/3 ON A SEPARATE VALVE.



P-HE-25

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IRRIGATION DETAILS 2
HERMOSA ST/WESTWOOD AVE ROUNDABOUT
LANDSCAPE PROJECT
CITY OF LINDSAY

LINDSAY
CALIFORNIA

SCALE	AS SHOWN
JOB NO.	CS21-1
DESIGNED	LRP
DRAWN	LRP
FILE	
UPDATED	EG
DATE	10/06/2020

IRRIGATION SYSTEM

PART 1 – GENERAL

For the purpose of these specifications, the Owner's Representative shall be defined as the Landscape Architect, The Project Superintendent, and or the Architect.

1.01 SECTION INCLUDES

- A. The work included under this Section consists of furnishing all fees and permits, all labor, tools, materials, equipment, transportation, and services required to complete the installation of the Underground Sprinkler Irrigation system, including revisions to existing systems, as shown on the Drawings and as specified in this section.
B. Related Sections:
1. Section 2900 – Planting: Provision of requirements for fine grading of planting areas.

1.02 REFERENCES

- A. National Electric Code (NEC).
B. Uniform Plumbing Code (UPC).
C. Underwriters Laboratories Inc. (UL):

1.03 QUALITY ASSURANCE

- A. All work and materials shall be in full accordance with the latest rules and regulations of the National Electric Code, the Uniform Plumbing Code, and other applicable State or local laws or regulations.
B. When the Specifications call for materials or construction of a better quality or larger size than required by the above mentioned rules and regulations, the provision of the Specifications shall take precedence over the requirements of the said rules and regulations.
C. The Contractor shall furnish, without any extra charge, any additional material and labor when required by the compliance mentioned on these particular Specifications or shown on the Drawings.
D. The Contractor shall erect and maintain barricades, guards, warning signs, and lights as necessary or required by OSHA regulations and as required by these contract documents for the protection of the public or workmen.
E. Any existing buildings, equipment, piping, sewers, sidewalks, landscaping or other Site improvements damaged by the Contractor during the course of his work shall be replaced or repaired by the Contractor in a manner satisfactory to the Owner's representative and at the Contractor's own expense, and before the final payment is made.
F. Installing company and its job site superintendent shall have at least 3 years immediate and continuous experience installing systems of similar design and type of equipment.
G. The Contractor shall obtain and pay all fees, licenses, and permits required for the Project.
H. Before making bid, examine the Site carefully, verifying dimensions and other Site conditions in relation to the Plans. The Contractor is responsible for informing himself of all conditions under which work is to be done before submitting his bid.
I. In case of an apparent discrepancy among Drawings, Specifications, and actual Site conditions, bring the discrepancy to the attention of the Owner's Representative in writing.

1.04 PERFORMANCE REQUIREMENTS

- A. Irrigation System:
1. Construct irrigation system to sizes, grades, and locations indicated on the Drawings.
2. Irrigation lines indicated on the Drawings are essentially diagrammatic.
3. Establish exact locations of tree well bubblers and drip zone tubing, at time of construction.

1.05 SUBMITTALS

- A. Submit and cut sheets provide for all irrigation system components.
B. Record Drawings
1. The Contractor shall maintain, in good order, in the field office, one complete Set of Irrigation Drawings showing all water lines, valves, controllers, stub-outs, and sleeves.
2. All underground stub-outs and sleeves for future connections (if noted on the plans) shall be located and dimensioned accurately from the building walls on these Record Drawings.
3. Upon completion of the work, and prior to final acceptance, the Contractor shall provide the 'As Built' conditions.
C. Contract Closeout Submittals:
1. Submit to Owner's Representative
a. Project Record Documents: After final acceptance of project, turn over record documents to the Owner's Representative.
b. Operation and Maintenance: Provide operation and maintenance manuals covering the system and its components including a detailed typewritten instructions for Winter and Summer controller programming, including demonstration.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping:
1. Deliver plastic pipe, fittings, and connectors to project site in unbroken bundles or rolls, packaged in such manner as to provide adequate protection for pipe ends, threaded or plain.
B. Storage and Protection
1. During construction and storage protect materials from damage and prolonged exposure to sunlight, excessive heat, and/or deleterious materials.

1.07 JOB CONDITIONS

- A. Proceed with and complete irrigation work as rapidly as portions of Site become available, working within seasonal limitations.
B. Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate as required.
C. Maintain grade stakes set by others until removal is mutually agreed on by parties concerned.

1.08 SUBSTITUTION AND VERIFICATION

- A. Certain numbers on the Drawings and the Specifications are taken from the catalogues of the manufacturers named. The Contractor shall be responsible for verifying that listed numbers correspond to appropriate equipment currently available from the manufacturers.
B. Numbers on the Drawings refer to the basic equipment required and the Contractor shall be responsible for determining additional incidental parts necessary for the attachment or assembly of equipment within the system.
C. Requests for substitutes must be in writing and approved of by the Owner's Representative.

PART 2 – PRODUCTS

2.01 PVC PLASTIC PIPING AND FITTINGS

- A. Exterior main lines (pressure lines) & Exterior lateral lines (non-pressure): All piping is to be PVC Schedule 40 (ATM D 1785) plastic pipe. Use Type 1 Schedule 40 High Impact PVC solvent weld fittings.
B. Connections between mainlines and RCV's shall be of Schedule 80 PVC nipples and fittings as per Detail on Plan.
C. Plastic to metal connections shall be made with Schedule 80 male adapter or threaded nipple.
D. Plastic saddles and flange type fittings are not to be used.

2.02 GALVANIZED STEEL PIPE AND FITTINGS

- A. Steel pipe shall be standard weight Schedule 40 as specified in Section 15252, mild steel pipe of domestic origin, galvanized, and shall be new and scale free. All nipples shall be of the same material.
B. Steel pipe fittings shall be heavy pattern, banded, galvanized malleable iron, threaded pipe fittings.
C. Nipples are to be of some material as pipe.
D. Crosses, bushings, and close nipples are not to be used.
E. All galvanized steel pipe and fittings occurring below grade, including to 6 inches above finish grade, are to be field wrapped with a PVC tape.
F. All dissimilar metal piping are to be joined with a dielectric fitting.

2.03 SLEEVES AND CHASES

- A. All irrigation pipe sleeves and/or electrical chases shall be PVC Schedule 40 (ASTM D 1785). Size twice the diameter of the sum of the pipe or pipes total diameter.
B. Class 1 and Class 2 electrical conductors are not to be placed in the same conduit.

2.04 IRRIGATION SYSTEM EQUIPMENT

- A. The backflow prevention assembly, automatic sprinkler controller, control valves, and other miscellaneous equipment shall be as specified on the Plans (or on the civil engineering plans) and/or in the Irrigation System Legend.
B. Drip system components as indicated on the plans.

2.05 CONTROL WIRE

- A. Control wire shall be type UF, 600 volt, single conductor wire with PVC insulation 4/64 inches thick (minimum). Control wire shall be #14 single conductor solid copper wire. All control or 'hot' wires shall be of one color (RED) and all common or 'ground' wires shall be (WHITE).
B. Electrical wire connections shall be 3M Brand DBY Direct Bury Splice Kit, shall splice and effectively moisture seal two or more conductors. The electrical connector shall be a 'Scotchlok' Y.

2.06 AUTOMATIC CONTROLLER

- A. Provide and install automatic irrigation controller, as indicated in the irrigation legend, and in approximate location shown on the Plans.
B. Controller shall have correct number of modules to allow for operation of all wired valves.
C. Coordinate electrical input connection with electrical service provider to ensure appropriate power supply.

2.07 BACKFLOW PREVENTERS

- A. Backflow prevention devices are to be installed as per plan details and specifications (see civil plans). Verify point of connection size and location in field. Contact Owner's Representative if contrary to plan.

2.08 MASTER VALVE AND FLOW SENSOR

- A. Master Valve and Flow Sensor as specified on the plans.

2.9 REMOTE CONTROL VALVES

- A. Remote Control Valves specified on the plans. Wire runs between valves and the controller. Each valve shall have a unique and individual hot wire and shared common ground.
B. Remote Control Valves shall be as indicated on the plans.

2.10 GATE VALVES

- A. Gate Valves shall be as indicated on the plans.

2.11 VALVE BOXES

- A. Valve boxes shall be Carson #1419-13 as manufactured by Carson Industries, Inc. and are to have bold down lids, with "RCV" cast on lid, or approved equal.
B. Install only one RCV or gate valve per valve box.
C. Install all valve boxes on a pea gravel or 3/4" wash base as indicated on the details.

2.12 MISCELLANEOUS EQUIPMENT AND MATERIALS

- A. PVC pipe connections: Solvent cement and primer for solvent weld joints shall be of make and type approved by manufacturer of pipe and fittings.
B. Galvanized pipe connections: Pipe joint compound shall be 'Rectorseal' or equivalent, non-hardening, non-toxic material designed specifically for use on threaded connections in water-carrying pipe.
C. PVC threaded connections: Use Teflon tape or approved equal.
D. Provide the Owner, at completion of the maintenance period, three each of all operating and servicing keys, wrenches, and adjustment screwdrivers required for complete maintenance and operation of all heads and valves. Include all wrenches necessary for complete disassembly of all heads and valves.

PART 3 – EXECUTION

3.01 SUPERVISION AND WORKMANSHIP

- A. The Contractor, personally or through an authorized and competent representative, shall supervise the work constantly and shall, as far as possible, keep the same foreman and workmen on the job from commencement to completion. The workmanship of the entire job shall in every way be first class, and only experienced and competent workmen shall be allowed on the job.

3.02 LAYOUT OF THE WORK

- A. Stake out the irrigation system as shown on the Drawings. Any necessary changes from the original system shall be determined at this time. Verify location of existing underground utilities and make any necessary adjustments to avoid damage.

3.03 INSTALLATION PREPARATION

- A. Schedule and coordinate placement of materials and equipment in a manner to complete the work as quickly as possible in conformance with construction and progress schedules.

3.04 COORDINATION OF WORK

- A. Coordinate work with other trades. In particular, schedule placement of irrigation line and wiring (Schedule 40) sleeves prior to paving work.

3.05 EXCAVATING, TRENCHING AND BACKFILL

- A. Excavation and Backfill for Sprinkler Lines:
1. Excavation: Place when pipe and soil temperatures are approximately the same.
2. Backfill and Compaction: Top 6 inches in landscaped areas may be 85 percent.
B. Excavation shall be in all cases ample space for joining. Provide warning signs and barricades as needed for open trenches. Bottom of trenches shall provide continuous support for pipe.
C. Make trenches for pipe lines deep enough to provide minimum cover from finish grade as follows:
1. 18 inches minimum cover over mainlines and control wires to control valves and quick coupler valves, 24 inches under paving.
2. 12 inches minimum cover over lateral lines. 24 inches under paving.
3. When rocky conditions exist, as determined by the Owner's Representative, the bottom of all trenches shall have 3 inches of sand placed in them. Trenching depth shall be sufficient to allow for the 3 inches of bedding sand.
D. Restore surfaces, existing underground installations, or other Site improvements damaged or cut as a result of excavations, to original condition in a manner approved by the Owner's Representative.
E. Where other utilities interfere with irrigation trenching and pipe work, adjust the trench depth as instructed by the Owner's Representative.
F. No work on excavating, trenching, or backfilling shall be done when soil is muddy, as determined by the Owner's Representative.

3.06 PIPELINE ASSEMBLY / PLASTIC PIPE

- A. All pipe shall be assembled free from dirt. Field cut ends shall be reamed only to full diameter, with rough edges and burrs removed.
B. Solvent weld joints: Assemble PVC pipe using primer, solvents, and methods in accordance with manufacturer's recommendations. Wipe excess cement off the outside of the joints.
C. For long pipe runs, 'snake' pipe from side to side in trench to allow for thermal expansion. Install pipe with manufacturer's labels face up for inspection before backfill.
D. Threaded Joints:
1. Field threading of plastic pipe or fittings is not permitted, factory formed threads only will be permitted.
2. All plastic to metal connections shall be made with PVC male adapters. All screwed joints shall have Teflon tape applied to the male threads.
3. Where assembling threaded plastic fittings, take up joint no more than one full turn beyond hand tight. Use strap-eye friction wrench only; do not use metal jawed wrench.
E. Cap or plug openings as pipeline is assembled to prevent entrance of dirt or obstruction. Remove caps or plugs only when necessary to continue assembly.
F. Where pipes or control wires pass through sleeves, provide removable non-decaying seal at ends of sleeve to prevent entrance of earth.
G. Install concrete thrust blocks on the main line at all changes in pipe direction associated with PVC tee's, el's,

and other fittings as needed and as per detail on the plans. Do not cover thrust blocks until fully acceptable to the Owner's Representative.

3.07 REMOTE CONTROL VALVES (RCV)

- A. Install where shown and group together where practical. Limit one RCV per valve box. Locate in shrub or ground cover beds wherever possible.
B. The valve designation (i.e.: controller and station no.) shall be painted on the inside of each valve box lid.
C. Locate valves no closer than 12 inches from pavement or curbs, buildings, and walks.
D. Thoroughly flush main line before installing valve.

3.08 AUTOMATIC CONTROL WIRING

- A. Run wires along main lines wherever practical. Tie wires in bundles with pipe wrapping tape at 20 foot intervals and allow slack for contraction between strapping. Place all above ground wiring in conduit.
B. Make connections with 3M Brand DBY Direct Bury Splice Kit, shall splice and effectively moisture seal two or more conductors. The electrical connector shall be a 'Scotchlok' Y. The device shall be installed per manufacture's instructions and all applicable codes.
C. Loop a minimum of three (3) feet of extra control wire and ground wire in each valve box and at all corners and at 200 foot intervals.
D. Splicing will be permitted only at valve locations or in junction boxes, equivalent to valve boxes, and approved by Engineer.
E. Where control lines pass under paving, or where interior wires are exposed, they shall pass through Schedule 40 PVC conduit.

3.09 AUTOMATIC CONTROLLER

- A. The automatic sprinkler controller is to be a new automatic controller. Reference irrigation equipment legend. Contractor is to provide the following:
1. Furnish and install the new auto controller, controller steel enclosure, and or enclosure concrete base as specified.
2. Provide all 100X electrical work required to heat the new controller.
3. Provide all 120 volt electrical work required to reconnect the existing systems control wires to the new auto controller.
4. Provide telephone service to controller location, if required per plan legend. Coordinate with installing contractor.
5. Provide adequate electrical surge protection for the new automatic controller and as approved by the Owner's Representative.

3.10 ROOT ZONE WATER SYSTEM BUBBLER AND DRIP SYSTEM

- A. Install all root zone water system bubblers and sub-surface drip line in accordance with the plans and details contained within these drawings.

3.11 BACKFILLING

- A. Use earth excavated from trenches, free from rocks or other deleterious material. Avoid any sharp objects adjacent to pipe which could cause damage.
B. All PVC piping is to be covered with a 3 inch layer of sand wherever the backfill is rocky in nature as determined by Owner's Representative.
C. The sprinkler system trenches are to be backfilled in 6 inch lifts and adequately compacted to prevent subsequent settling.
D. Finish Site. Site grade areas of backfill to match adjacent grade, removing any rocks or debris from the Obtain approval from the Owner's Representative for relocating any excess earth on
E. If settlement occurs along trenches, make all necessary adjustments to bring irrigation system, soil and turf or paving to proper grade at no additional cost to the Contract.

3.12 FIELD QUALITY CONTROL

- A. PIPE TESTING: Notify Owner's Representative at least three (3) working days in advance of testing. All tests shall be at Contractor's expense. Use small amounts of backfill to stabilize pipe before testing, but keep all joints exposed. Test lines as follows:
B. Trench Inspection and Main Line Pressure Test
1. The Contractor shall not backfill pressure main line trench until an open trench inspection has been conducted and approved.
2. Test all pressure lines and connections to quick coupler valves, remote control valves and gate valves under hydrostatic pressure of 120 pounds per square inch prior to installation of remote control valves.
3. All piping under paved areas shall be tested under hydrostatic pressure of 120 pounds per square inch prior to paving.
4. Sustain pressure in pressure lines for not less than twenty-four (24) hours. If leaks develop, replace joints and repeat test until entire system is proven watertight.
5. All hydrostatic tests shall be made only in the presence of the Owner. No pipe shall be backfilled, except for center loading, until it has been observed, tested and approved in writing by the Owner. Should any work be covered up before such observation and tests are completed, the Contractor shall, at his own expense, uncover the work; and after it has been observed, tested and approved, he then shall make all repairs with such materials as required to restore all work disturbed to original and proper condition.
6. Furnish necessary force pump and all other test equipment.
C. Flushing and Testing:
a. After new sprinkler piping and risers are in place and connected and necessary work has been completed, and prior to installation of sprinkler heads, open control valves and apply full head of water to flush out system.
b. After the system is thoroughly flushed, and prior to backfilling, cap off and pressure test system.
c. All testing to be in full compliance with the requirements of the specifications. B. Final System Test:
1. When irrigation system is complete and all adjustments have been made, notify the Owner's Representative to arrange final testing of system. A complete test of the system shall be made with all equipment connected and operating. Make any necessary adjustments as required by the Owner's Representative and retest as needed for final approval of system.
C. Manufacturer's Field Service:
1. Equipment manufacturer for controllers and automatic control valves shall provide one half day of field training in the operation and maintenance of the equipment to the Owner.
2. Equipment manufacturer for controllers, automatic control valves, and sprinklers shall inspect the installed system and its operation and certify in writing its proper installation and operation.

3.13 GUARANTEE

- A. Submit in writing to the Owner's Representative.
B. It shall be the responsibility of the Contractor to fill and repair all depressions and replace all necessary paving or plating due to the settlement of irrigation trenches for one year following completion and acceptance of the job.
C. The Contractor shall guarantee all materials, equipment, and workmanship furnished by him to be free of all defects of workmanship and materials, and shall agree to replace at his expense at any time within one year after installation is accepted, any and all defective parts that may be found. In cases where emergency repairs are needed, or if the Contractor is not immediately available for repair work, the Owner shall have the option of making repairs at the Contractor's expense.

3.14 CLEAN-UP

- A. The Contractor shall keep his work areas in a workmanlike and safe condition and so his rubbish, waste, and debris does not interfere with the work.
B. Upon completion of work in this Section, remove all rubbish, waste and debris from Site.
C. Remove all equipment and implements of service, leave entire area in a neat and clean condition to meet acceptance by the Owner's Representative.

3.15 WATER EFFICIENT LANDSCAPE COMPLIANCE CERTIFICATE OF COMPLETION

- A. The Contractor shall comply with the completion of all forms associated with the Certificate of Completion associated with the Water Efficient Landscape Compliance Certificate of Completion.

END OF SECTION

Table with columns for DATE, REVISION, and No. for tracking changes and updates.

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IRRIGATION SPECIFICATIONS. HERMOSA SU WESTWOOD Ave ROUNDABOUT LANDSCAPE PROJECT. CITY OF LINDSAY

Table with columns for SCALE (AS SHOWN), JOB NO. (CS21-1), DESIGNED (LRP), DRAWN (LRP), FILE, UPDATED (EG), and DATE (10/06/2020).

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