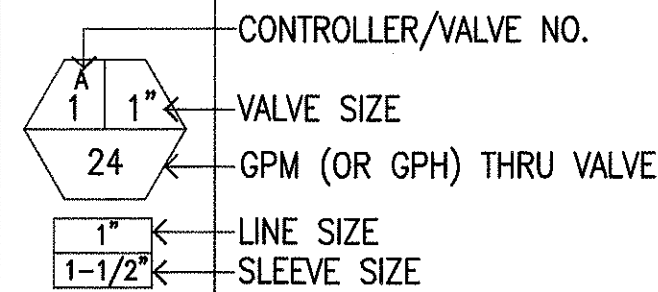


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-K-03-98	2001	11	150

## IRRIGATION LIST AND LEGEND

IRRIGATION EQUIPMENT SHALL BE AS NOTED, SUBJECT TO PRE-QUALIFIED ACCEPTABLE SUBSTITUTES AS GOVERNED BY THE SPECIFICATIONS.

SYMBOL	DESCRIPTION	NOTES
-----	MAIN (PRESSURE) LINE	SIZE AS NOTED
-----	LATERAL (NON-PRESSURE) LINE	SIZE AS NOTED
-----	SLEEVE	SIZE AS NOTED
-----	CONDUIT	1-1/2" SIZE MIN.
⌘	GATE VALVE: AMERICAN MADE CLASS 125 CAST BRONZE, 200 PSI WOG, WITH THREADED CONNECTIONS	LINE SIZED
Ⓛ	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER: WATTS 909 SERIES, FEBCO 825Y SERIES, OR CLA-VAL RP-1 SERIES	2" SIZE
⊗	REMOTE CONTROL VALVE, 200 PSI MIN.: RAINBIRD GB SERIES, TORO 220 SERIES, OR GRISWOLD DWS SERIES	1" SIZE
⊗ DRIP	DRIP VALVE ASSEMBLY: 3/4" PVC BALL VALVE: RAINBIRD XBV-075 200 MESH (75 MICRON) WYE FILTER: RAINBIRD RBY-075-200MX LOW FLOW, 0.2-22 GPM, REMOTE CONTROL VALVE: RAINBIRD 75-DVX PRE-SET 30 PSI OUTLET IN-LINE PRESSURE REGULATOR: RAINBIRD PSI-L30X	3/4" SIZE
▼	2 PC., QUICK COUPLING VALVE W/LOCKING VINYL OR RUBBER COVER: RAINBIRD 44LRC, TORO 474-03, OR BUCKNER QB-44LRC-10	1" W/2 COUPLER KEYS AND 1" HOSE SWIVELS
■	FOUR PROGRAM MINIMUM, SOLID STATE IRR. CONTROLLER: RAINBIRD ESP-LX SERIES, TORO V2 PLUS SERIES, OR BUCKNER AS SERIES	24 STATIONS MINIMUM
—	AUTOMATIC RAIN SHUT-OFF: RAINBIRD RAIN-CHECK, TORO RAIN SWITCH, OR WCX RAIN GUARD	
—	STAINLESS STEEL CONTROLLER ENCLOSURE: STRONGBOX SB-18SS, OR LEMEUR SAFEGUARD A JR.	
—	1" DIA., 50' LONG, COMMERCIAL GRADE, REINFORCED ALL RUBBER, NON-KINK HOSE.	PROVIDE 2 TOTAL
—	RISER MOUNTED, PART CIRCLE, IMPACT SPRINKLER W/DISTANCE CONTROL FLAP AND 3/4" MALE THREAD: RAINBIRD 35A-PJDA-TNT-10 (4 GPM @ 30 PSI)	PROVIDE 2 TOTAL



## IRRIGATION HEADS

GPM-PSI RADIUS ARC

⊙	4" POP-UP LOW ANGLE (15' MAX. TRAJECTORY) SPRAY HEAD W/INTEGRAL CHECK VALVE: RAINBIRD 1804-SAM-10 SERIES, TORO 570Z-4P-COM-10 SERIES, OR BUCKNER 604-P10 SERIES		
⊙	4" POP-UP LOW ANGLE SPRAY	0.39-30	10' QUAR.
⊙	4" POP-UP LOW ANGLE SPRAY	0.52-30	10' THIRD
⊙	4" POP-UP LOW ANGLE SPRAY	0.79-30	10' HALF
⊙	4" POP-UP LOW ANGLE SPRAY	1.57-30	10' FULL
Ⓛ	12" POP-UP LOW ANGLE (15' MAX. TRAJECTORY) SPRAY HEAD W/INTEGRAL CHECK VALVE: RAINBIRD 1812-SAM-10 SERIES, TORO 570Z-12P-COM-10 SERIES, OR BUCKNER 612-P10 SERIES		
Ⓛ	12" POP-UP LOW ANGLE SPRAY	0.39-30	10' QUAR.
Ⓛ	12" POP-UP LOW ANGLE SPRAY	0.79-30	10' HALF
Ⓛ	LOW ANGLE (15' MAX. TRAJECTORY) SPRAY HEAD ON 12" RISER: RAINBIRD PA-8S-10 SERIES, TORO 570SR-6-10 SERIES, OR BUCKNER PA-1-10 SERIES		
Ⓛ	SPRAY ON SHRUB RISER	0.40-30	10' QUAR.
Ⓛ	SPRAY ON SHRUB RISER	0.90-30	10' HALF
Ⓛ	4" POP-UP SPRAY HEAD W/INTEGRAL CHECK VALVE: RAINBIRD 1804-SAM-STRIP SERIES, TORO 570Z-4P-COM-4-XST SERIES, OR BUCKNER 604-P-15-XST SERIES		
Ⓛ	4" POP-UP SPRAY	0.61-30	4'X15' END STRIP
Ⓛ	4" POP-UP SPRAY	1.21-30	4'X30' SIDE STRIP
Ⓛ	12" POP-UP SPRAY HEAD W/INTEGRAL CHECK VALVE: RAINBIRD 1812-SAM-STRIP SERIES, TORO 570Z-12P-COM-XST SERIES, OR BUCKNER 612-P-15-XST SERIES		
Ⓛ	12" POP-UP SPRAY	0.61-30	4'X15' END STRIP
Ⓛ	12" POP-UP SPRAY	1.21-30	4'X30' SIDE STRIP
Ⓛ	4" POP-UP, GEAR DRIVEN, ADJUSTABLE ARC AND RADIUS, SINGLE STREAM ROTOR W/INTEGRAL CHECK VALVE: RAINBIRD T-4-XC-T-TREE-LA-XX SERIES		
Ⓛ	POP-UP STREAM ROTOR	0.80-35	24' QUAR.
Ⓛ	POP-UP STREAM ROTOR	1.46-35	25' HALF
Ⓛ	POP-UP STREAM ROTOR	3.64-35	29' FULL
Ⓛ	DRIP LINE WITH TREFLAN ROOT INTRUSION PROTECTION AND INTEGRAL, CONTINUOUS SELF CLEANING, INTERNAL PRESSURE COMPENSATING EMITTERS SPACED AT 12" O.C.: TORO DL2000 RGP-2-12-XX		
Ⓛ	DRIP LINE	0.53 GPH	- -

## IRRIGATION NOTES

- IRRIGATION SYSTEMS ARE DIAGRAMMATIC AND SUBJECT TO MINOR ADJUSTMENTS DUE TO UNANTICIPATED FIELD CONDITIONS. IRRIGATION HEADS SHALL BE INSTALLED WHERE SHOWN, AND 6" FROM WALKWAYS AND 12" FROM BUILDINGS. ADJUSTMENTS TO HEAD PLACEMENT MAY BE MADE IN THE FIELD ONLY TO AVOID OBSTACLES OR TO IMPROVE COVERAGE. HEADS SHALL NOT BE SPACED FURTHER THAN SHOWN ON THE DRAWINGS. VALVES SHALL BE INSTALLED IN THE VICINITY OF THE LOCATIONS SHOWN AND BE ACCESSIBLE FOR SERVICE AND USE.
- COORDINATE WITH OTHER TRADES TO INSURE INSTALLATION OF IRRIGATION LINES AND APPURTENANCES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH OTHER CONTRACTORS ON THE JOB TO INSURE THEIR INSTALLATION AND TO PROVIDE PROPER CLEARANCES FOR CONNECTIONS.
- PRIOR TO EXCAVATION FOR IRRIGATION LINES, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE EXACT LOCATION AND DEPTH OF THE LINES AND EXERCISE CAUTION WHEN EXCAVATING.
- THE IRRIGATION SYSTEM DESIGN IS BASED ON A MINIMUM STATIC PRESSURE OF 95 PSI AT THE POINT OF CONNECTION. TEST THE PRESSURE AND REPORT THE RESULTS TO THE ENGINEER.
- INSTALL THE IRRIGATION CONTROLLER AS NOTED ON THE DRAWING AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR, THE ENGINEER AND THE DOT REPRESENTATIVE IN CHARGE OF GROUNDS MAINTENANCE, SHALL PROGRAM THE CONTROLLER TO ACCOMMODATE THE LANDSCAPE AND SITE REQUIREMENTS. SUBMIT THE IRRIGATION SCHEDULE USED TO PROGRAM THE CONTROLLER. INSTRUCT THE DOT REPRESENTATIVE IN CHARGE OF GROUNDS MAINTENANCE ON THE OPERATION OF THE COMPLETE SYSTEM.
- IRRIGATION SYSTEMS SHALL BE OPERATED DURING "OFF PEAK" EVENING HOURS. OPERATION DURING OTHER TIMES SHALL BE WITH THE APPROVAL OF THE ENGINEER.

## GENERAL NOTES

- THE CONTRACTOR SHALL VISIT THE SITE, VERIFY EXISTING DIMENSIONS, AS BUILT CONDITIONS, STRUCTURE, SITE IMPROVEMENTS, ETC. DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER. BY COMMENCING WITH THE WORK, THE CONTRACTOR ACCEPTS THE EXISTING CONDITIONS AND THE RESPONSIBILITY FOR MAINTAINING THOSE CONDITIONS.
- THE UNDERGROUND UTILITIES ARE INDICATED ON THE DRAWINGS. THEIR LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL PERFORM AN INDEPENDENT CHECK WITH THE GENERAL CONTRACTOR TO ASCERTAIN THEIR EXACT LOCATION AND DEPTH. THE CONTRACTOR SHALL EXERCISE PROPER CARE IN EXCAVATING THE AREA.
- EXISTING STRUCTURES, UTILITIES AND APPURTENANCES ADJACENT TO CONSTRUCTION LIMITS SHALL BE PROTECTED. EXISTING STRUCTURES, UTILITIES AND APPURTENANCES DAMAGED BY WORK UNDER THIS CONTRACT SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.
- PROVIDE SAFEGUARDS AND EXERCISE CAUTION AGAINST INJURY OR DEFACEMENT OF EXISTING SITE IMPROVEMENTS. VEHICLES SHALL NOT PASS OVER WALKWAYS AND CURBS, UNLESS PROTECTION HAS BEEN PROVIDED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE RESULTING FROM HIS OPERATIONS AND REPAIR OR REPLACE SUCH DAMAGE AT CONTRACTOR'S EXPENSE. REPAIR DAMAGE IN A MANNER SATISFACTORY TO THE ENGINEER.
- WHEN EXCAVATIONS ARE ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
- PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND TAKE NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.
- THE CONTRACTOR SHALL NOT DEVIATE FROM THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF ERRORS OR DISCREPANCIES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.

## PLANTING NOTES

- EXCAVATE AND PREPARE SUBGRADE AS NECESSARY TO INSTALL A MINIMUM DEPTH OF 4 INCHES OF TOPSOIL WITHIN ALL EXPOSED AREAS TO RECEIVE LANDSCAPING. THE CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE AND PROVIDE ADEQUATE QUANTITIES OF TOPSOIL. CAREFULLY COORDINATE TO INSURE PROPER PLACEMENT TO FINISH GRADES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN FINISH GRADES AS DESIGNED, OR TO MAINTAIN EXISTING DRAINAGE PATTERNS.
- PLANT QUANTITIES ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY QUANTITIES AND PROVIDE THE QUANTITY OF PLANT MATERIALS REQUIRED AT THE SIZES AND SPACING SHOWN OR NOTED.
- IN INSTANCES WHERE IRRIGATION SYSTEMS ARE NOT INSTALLED, THE CONTRACTOR SHALL PROVIDE TEMPORARY IRRIGATION AS REQUIRED FOR THE ESTABLISHMENT OF PLANT MATERIALS FOR THE DURATION OF THE PLANT MAINTENANCE PERIOD. SUCH TEMPORARY IRRIGATION SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED UPON PROJECT COMPLETION. TYPE AND MEANS OF TEMPORARY IRRIGATION SHALL BE AT THE OPTION OF THE CONTRACTOR.



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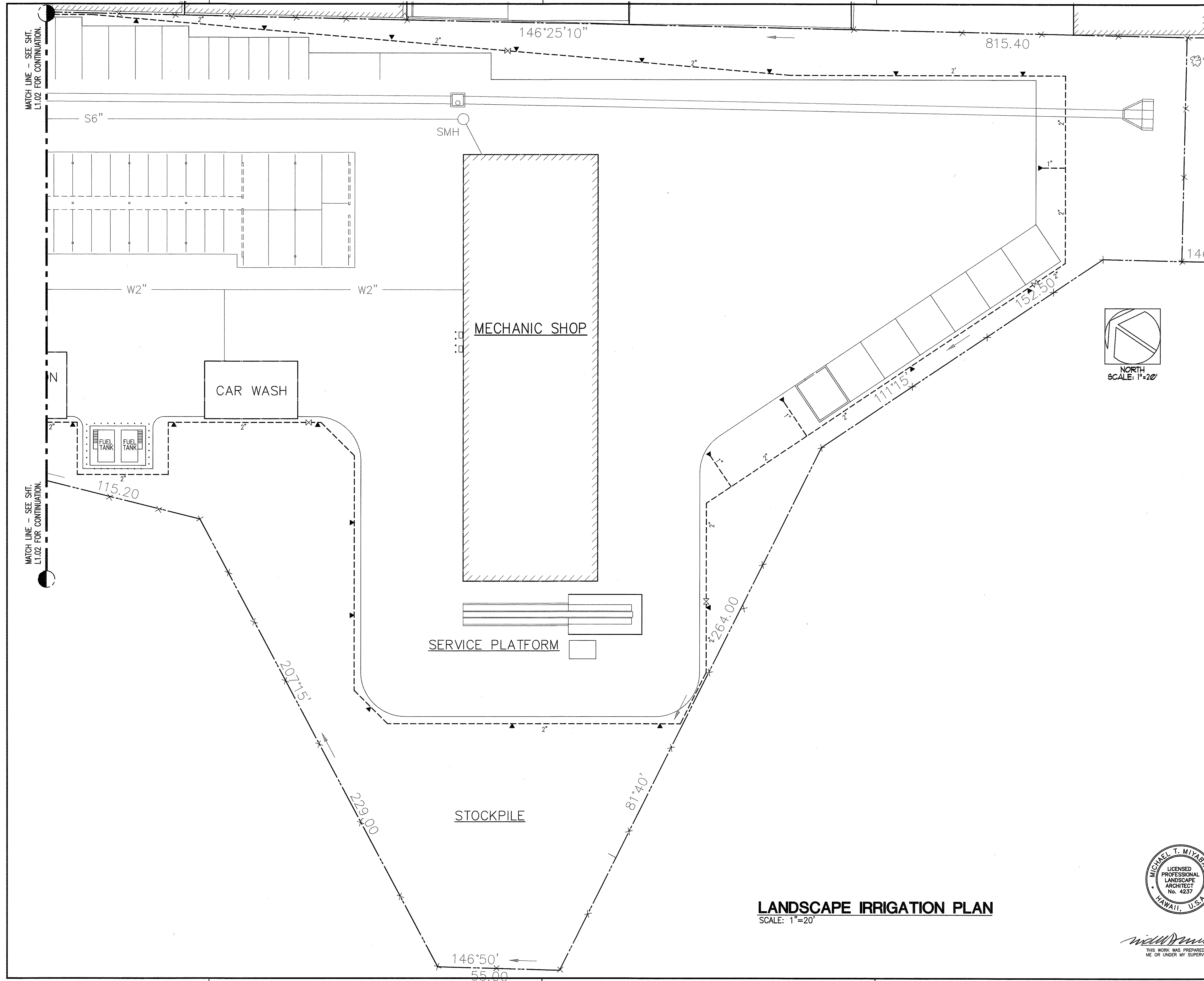
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**CENTRALIZED DISTRICT OFFICE  
AND BASEYARD COMPLEX**  
LHUE, KAUAI  
PROJECT NO. HWY-K-03-98  
**LANDSCAPE NOTES  
AND LEGEND**

SCALE: NO SCALE DATE: MAR. 30, 01  
SHEET NO. L1.01 OF 150 SHEETS





FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-K-03-98	2001	13	150



LANDSCAPE IRRIGATION PLAN  
SCALE: 1"=20'



*Michael T. Miyadera*  
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ME OR UNDER MY SUPERVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

CENTRALIZED DISTRICT OFFICE  
AND BASEYARD COMPLEX  
LHUE, KAUAI  
PROJECT NO. HWY-K-03-98  
LANDSCAPE IRRIGATION  
PLAN

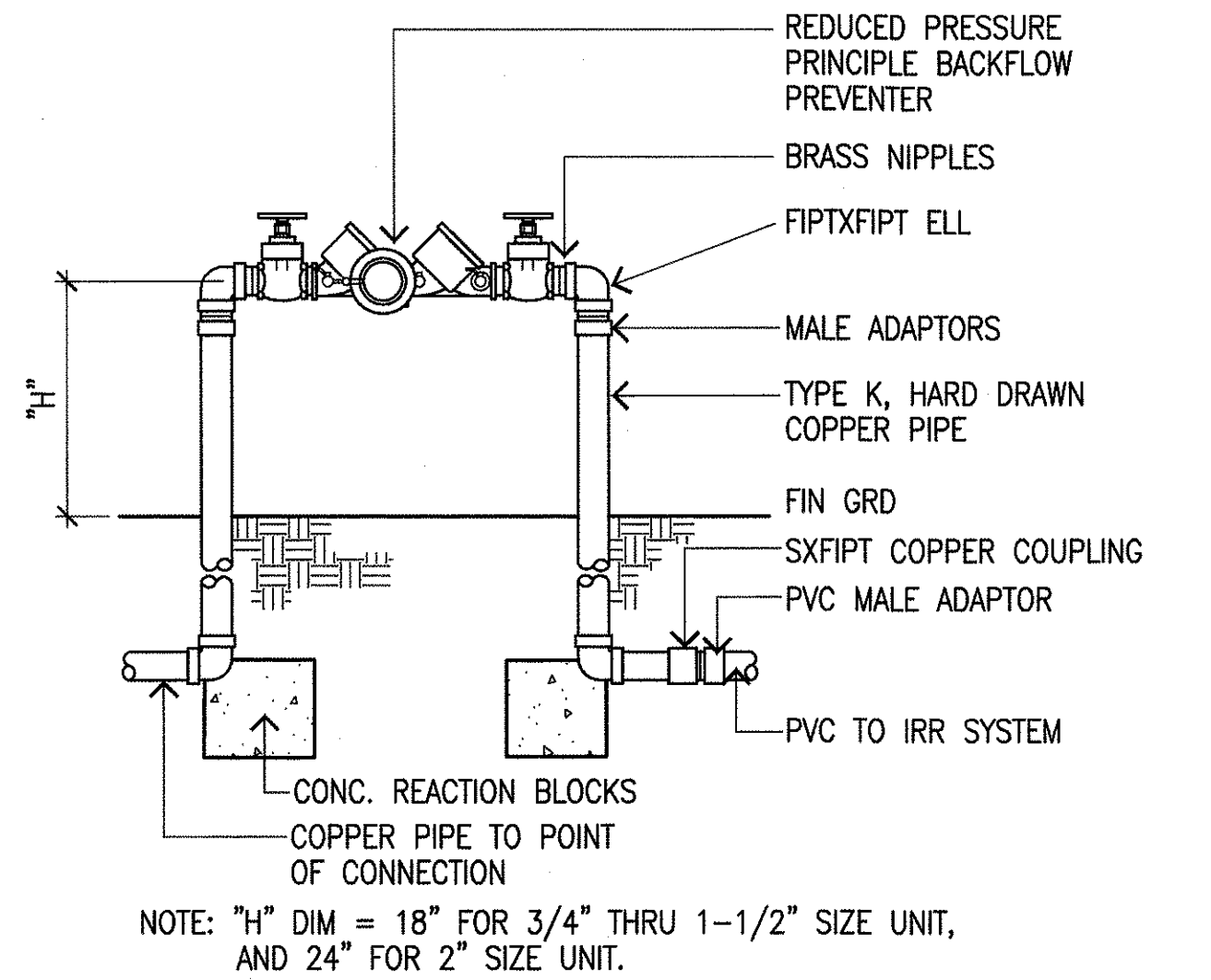
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SHEET NO. L103 OF 150 SHEETS

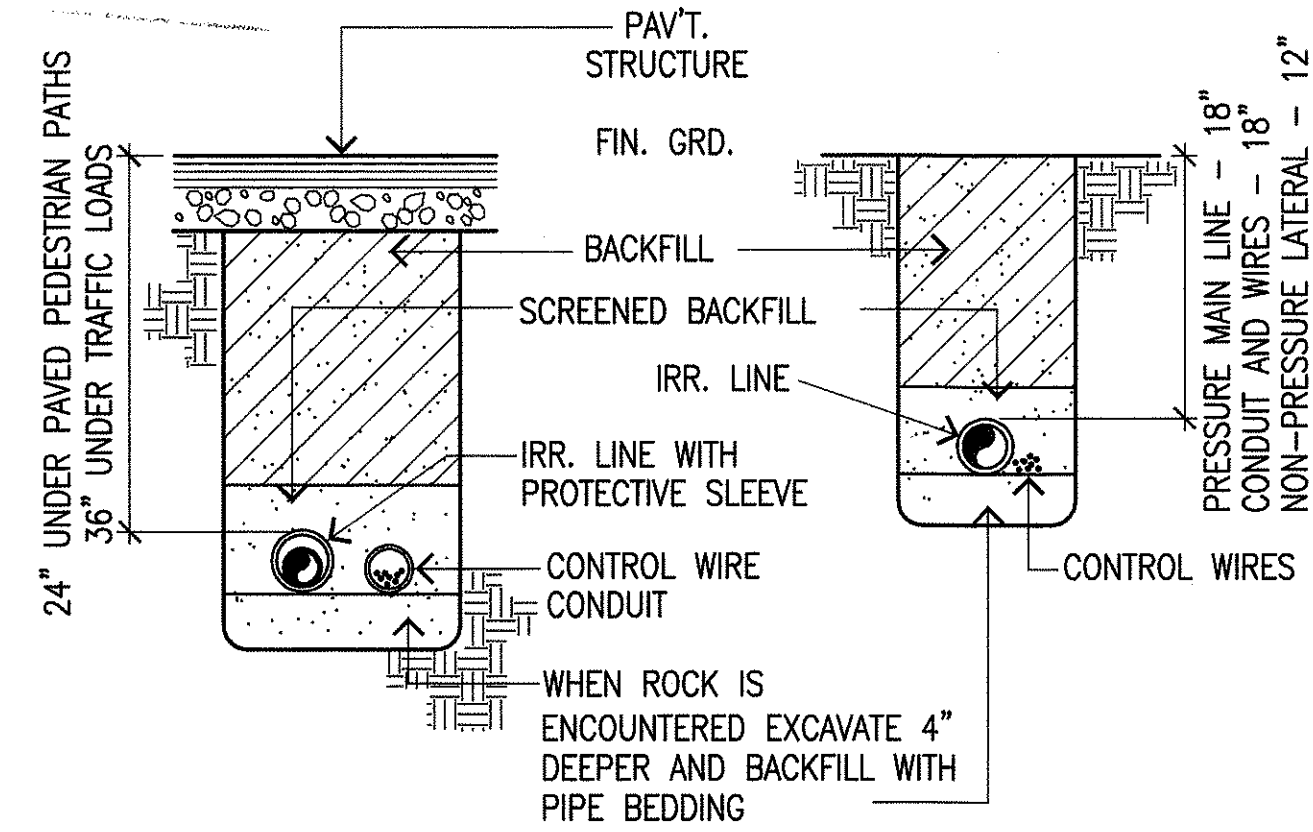




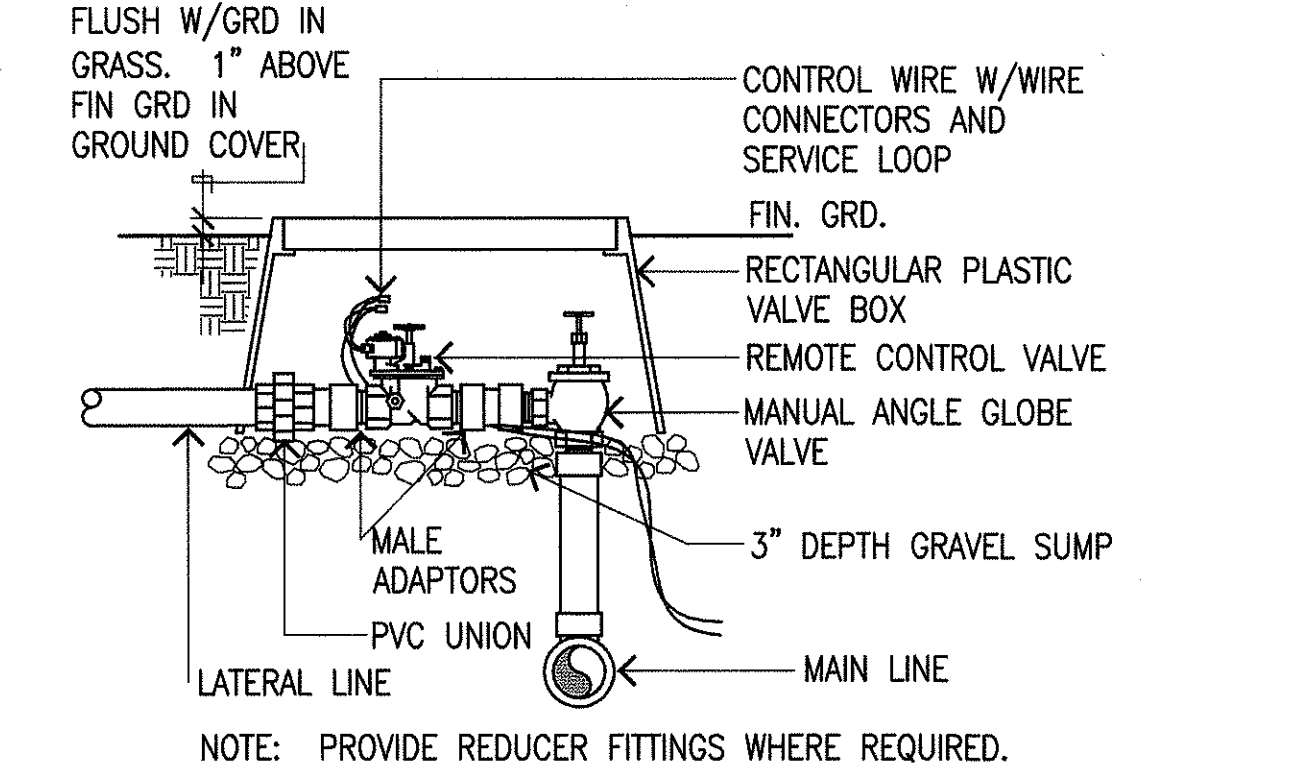
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HAWAII	HAW.	HWY-K-03-98	2001	15	150



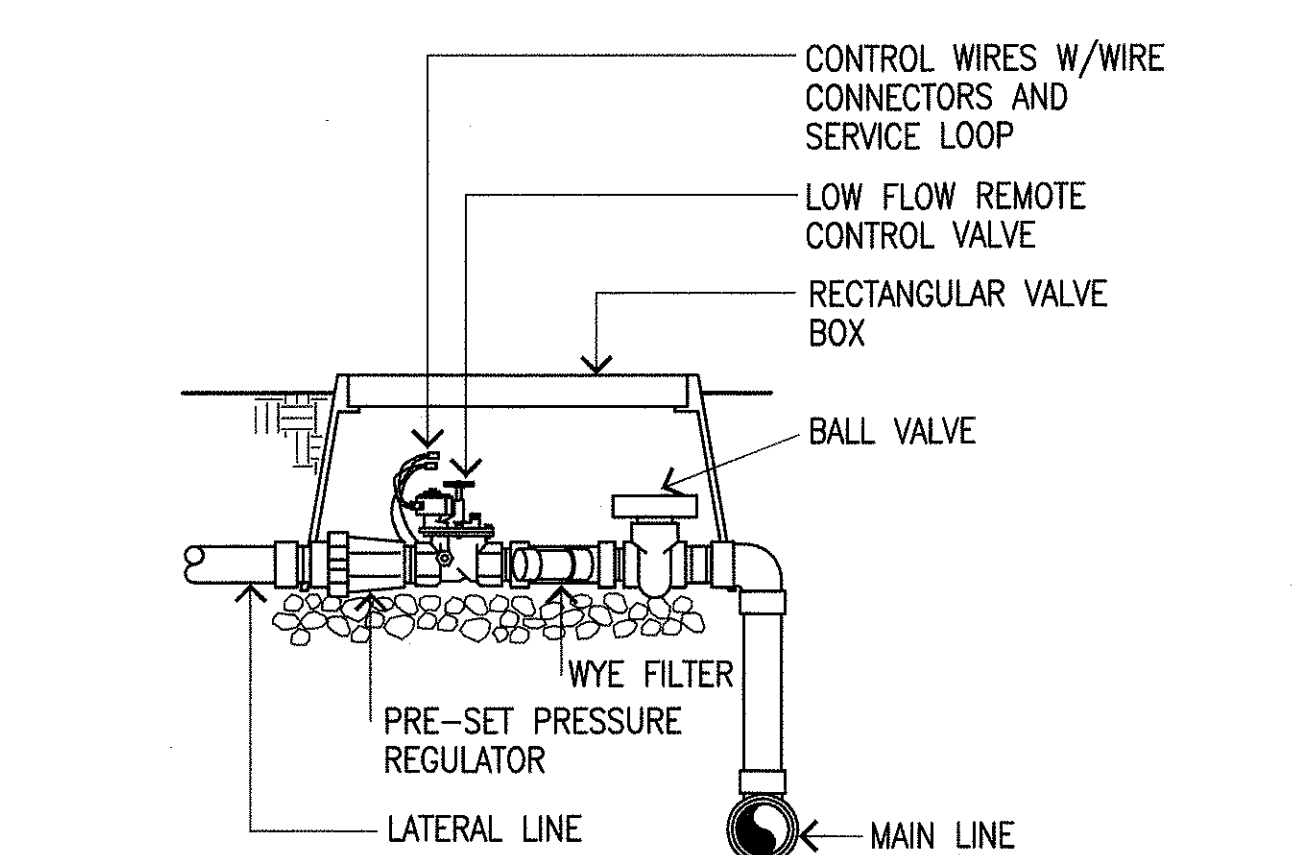
1  
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**REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER**  
NOT TO SCALE



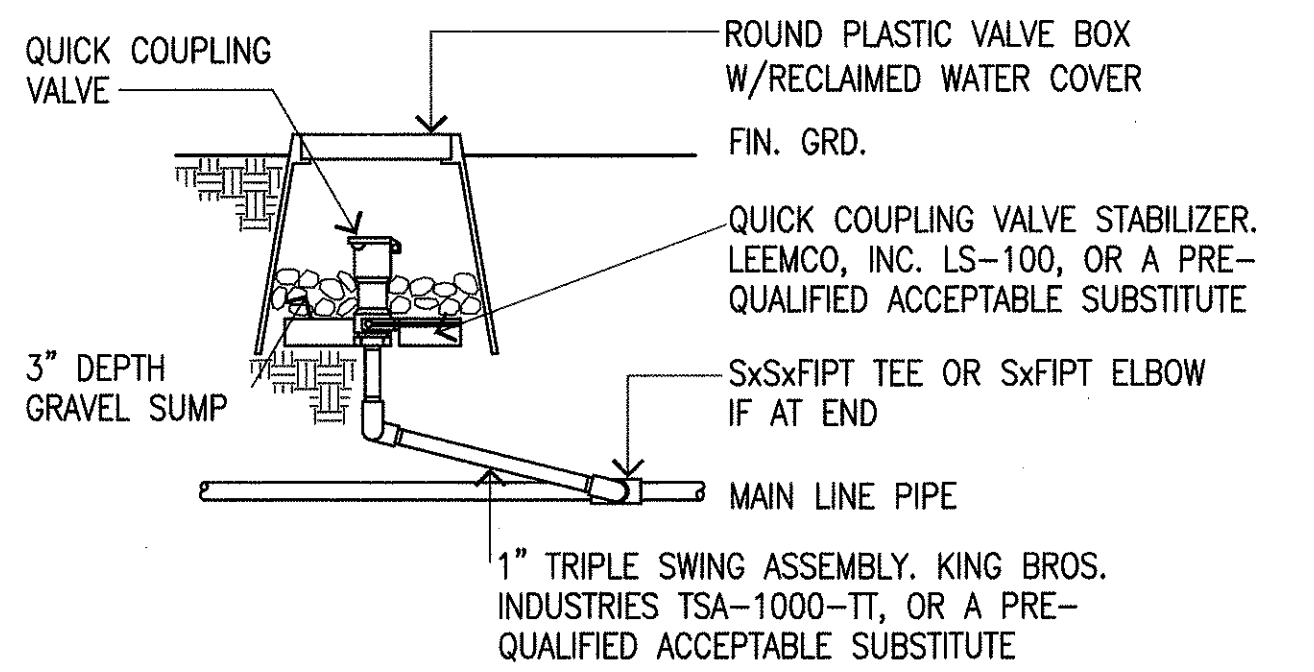
2  
L1.05  
**TRENCHING**  
NOT TO SCALE



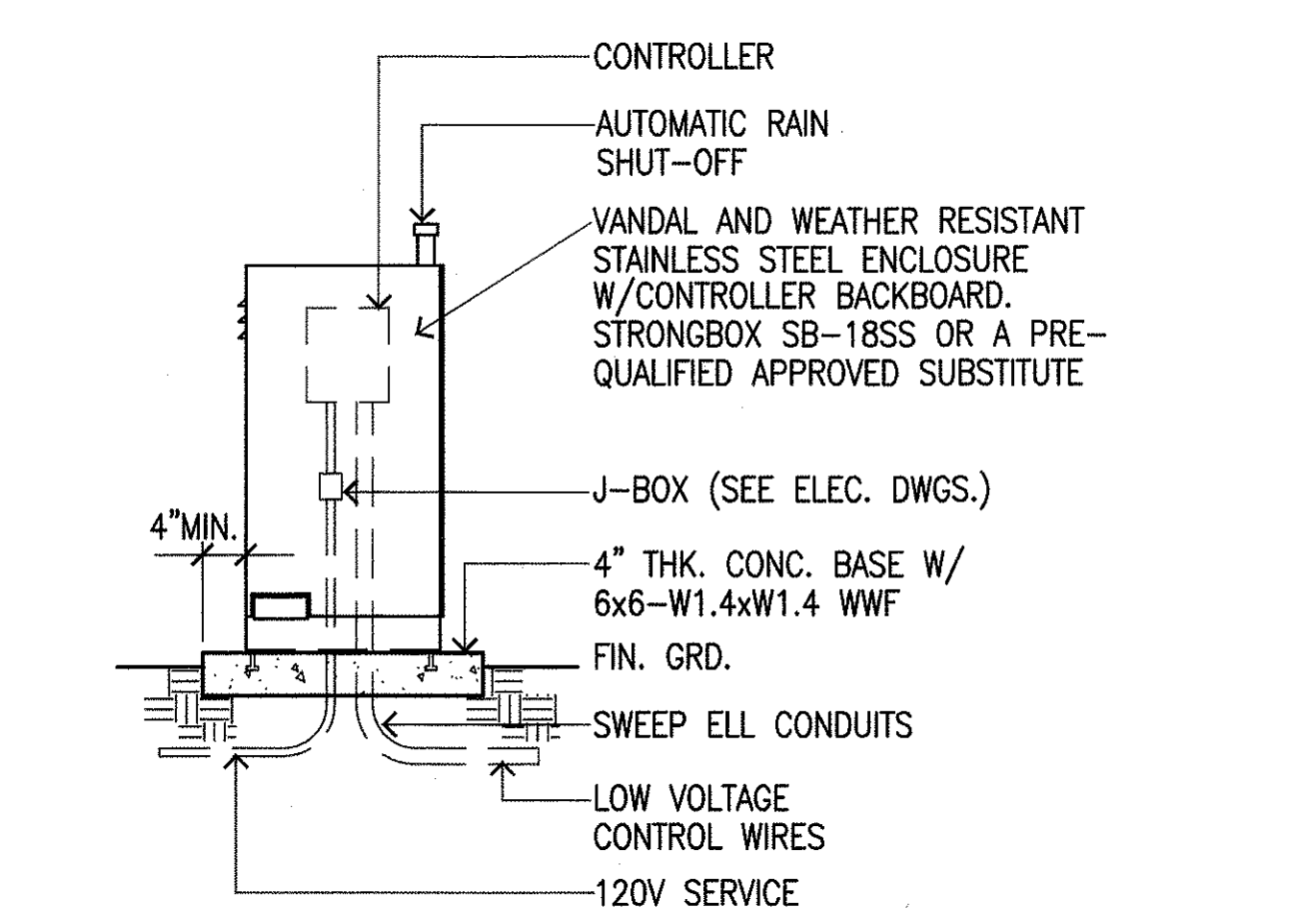
3  
L1.05  
**REMOTE CONTROL VALVE**  
NOT TO SCALE



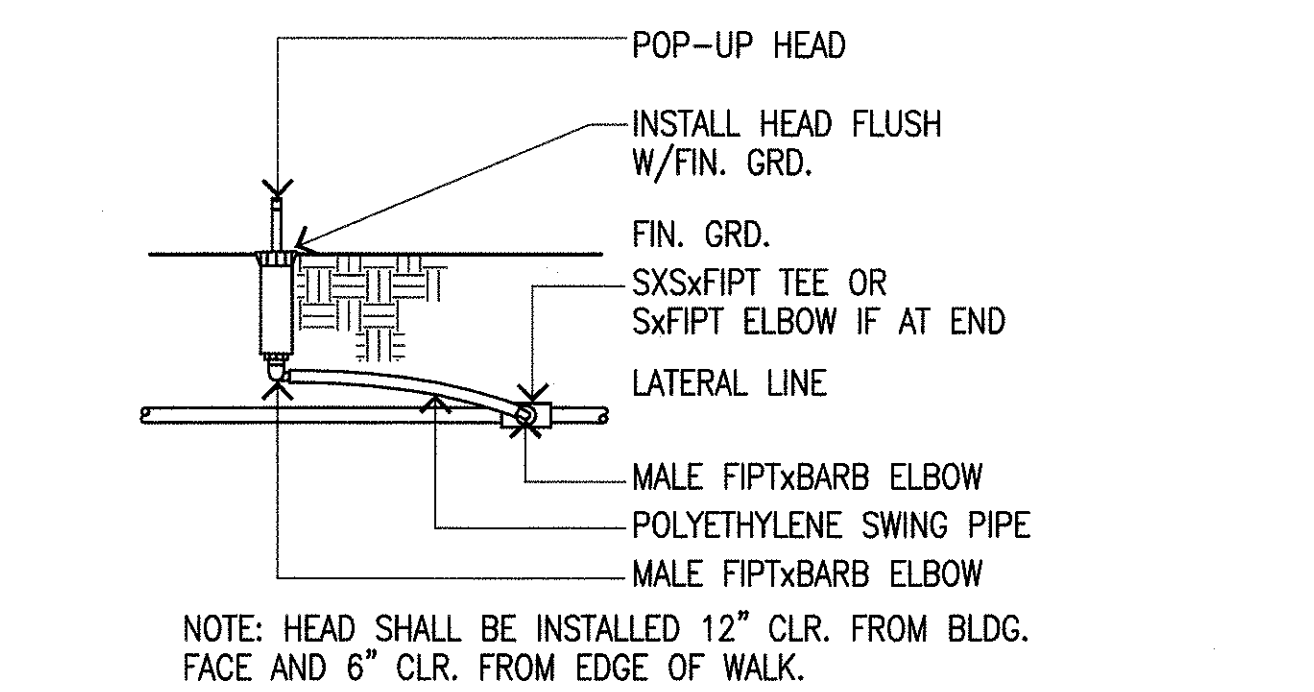
4  
L1.05  
**DRIP VALVE ASSEMBLY**  
NOT TO SCALE



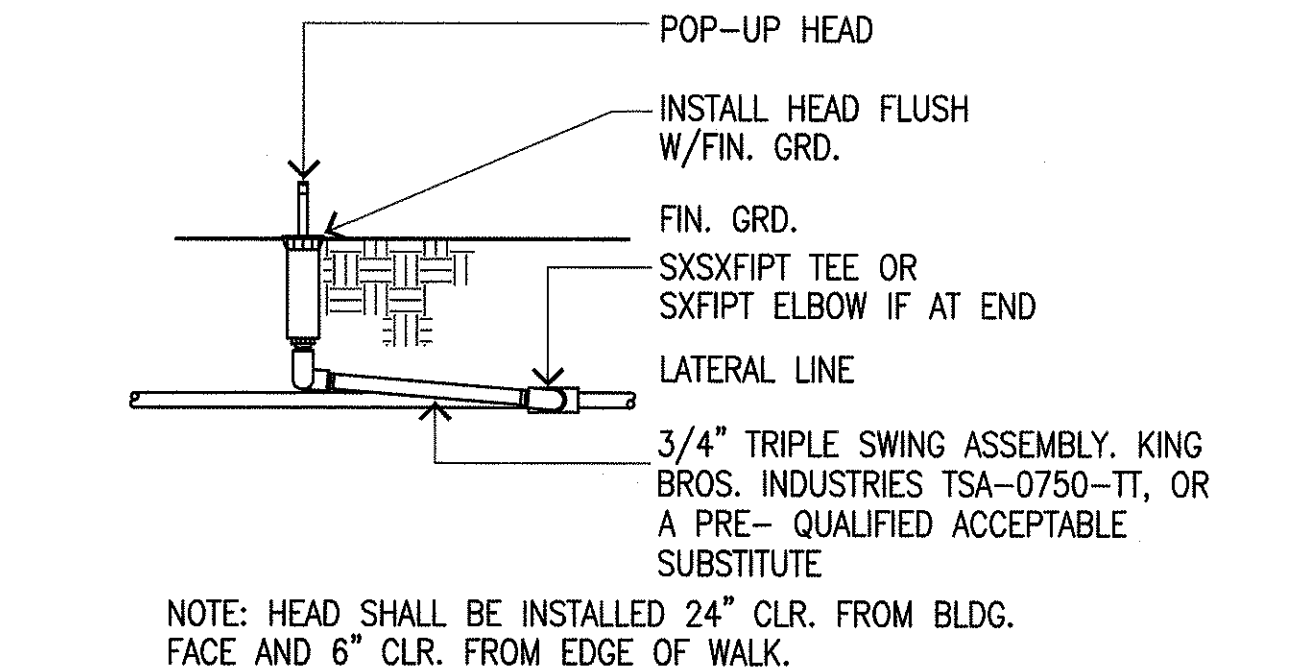
5  
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**QUICK COUPLING VALVE**  
NOT TO SCALE



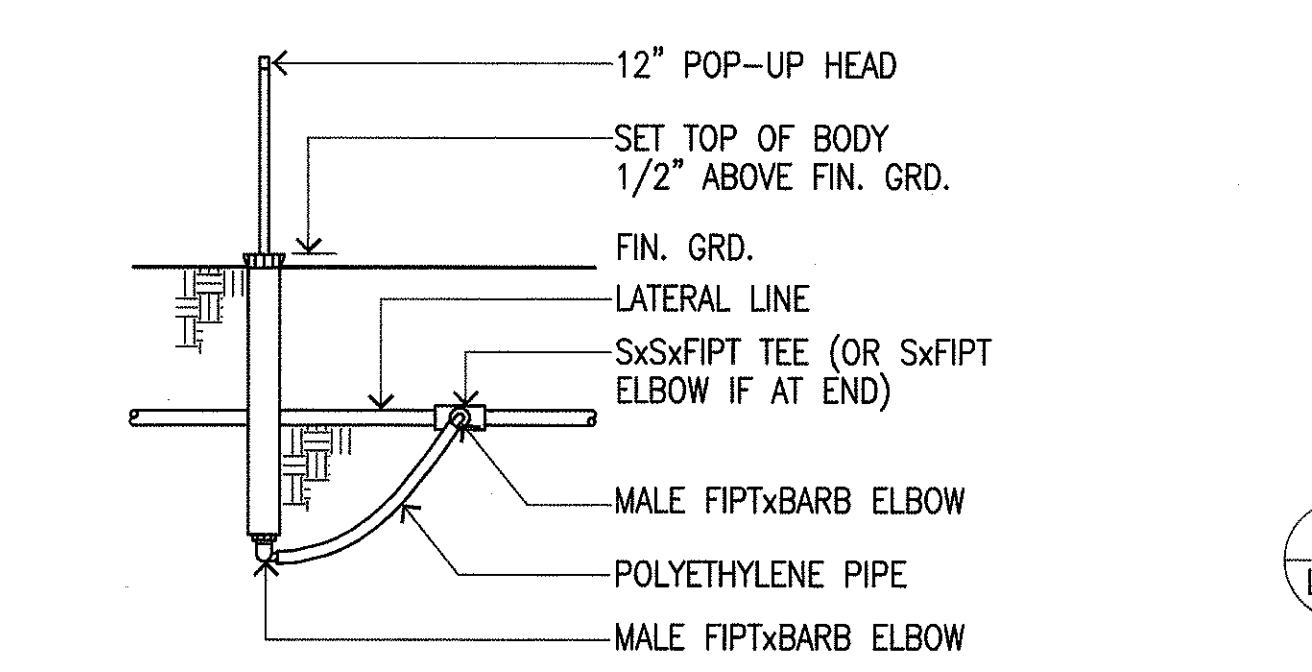
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**CONTROLLER ENCLOSURE**  
NOT TO SCALE



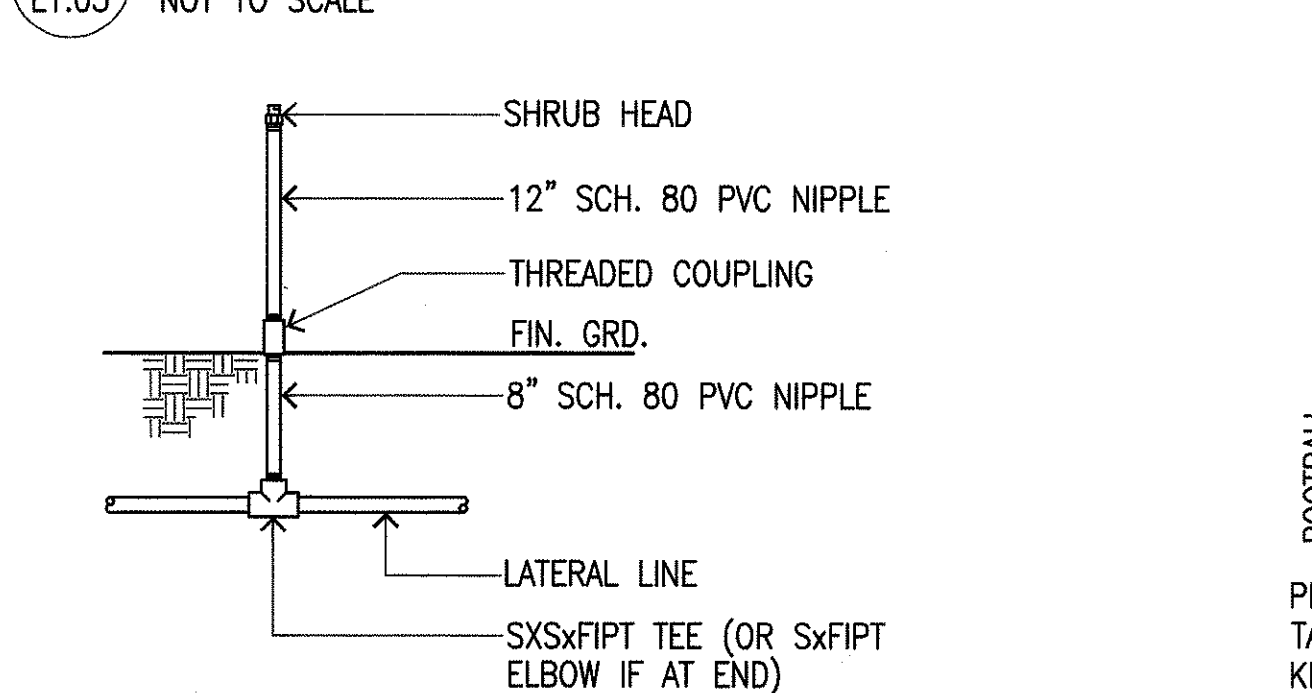
7  
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**POP-UP SPRAY HEAD**  
NOT TO SCALE



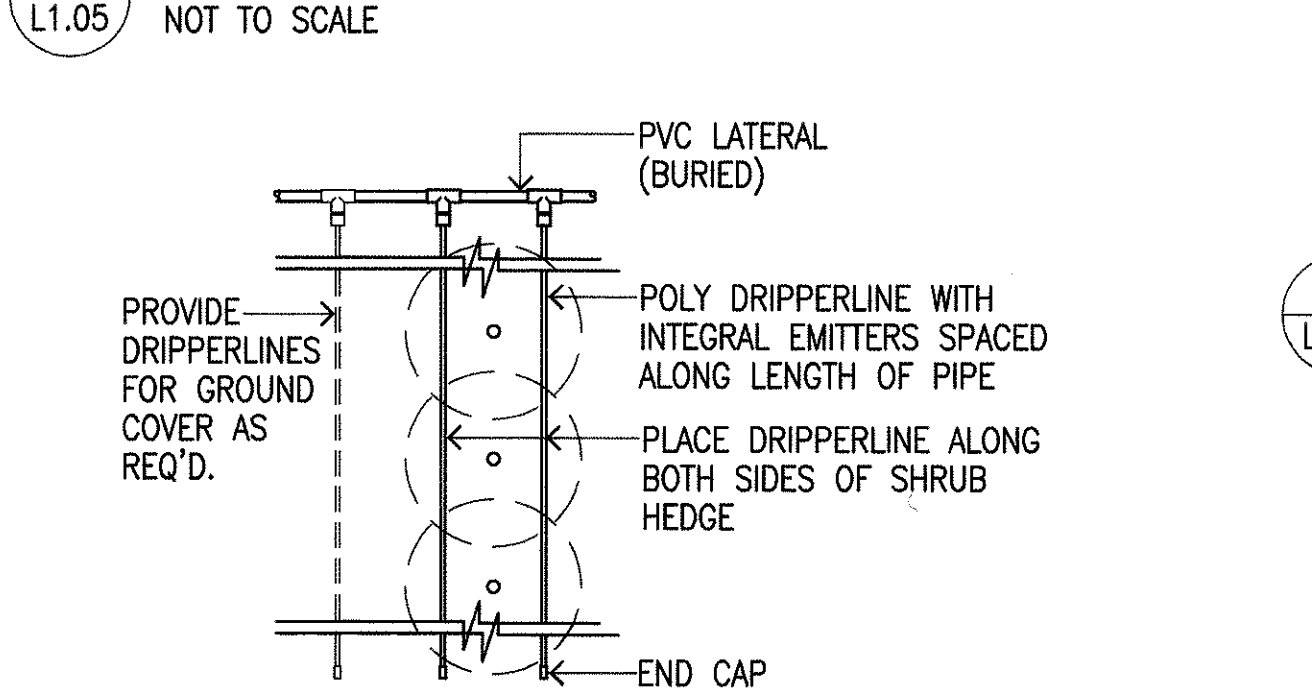
8  
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**POP-UP STREAM ROTOR**  
NOT TO SCALE



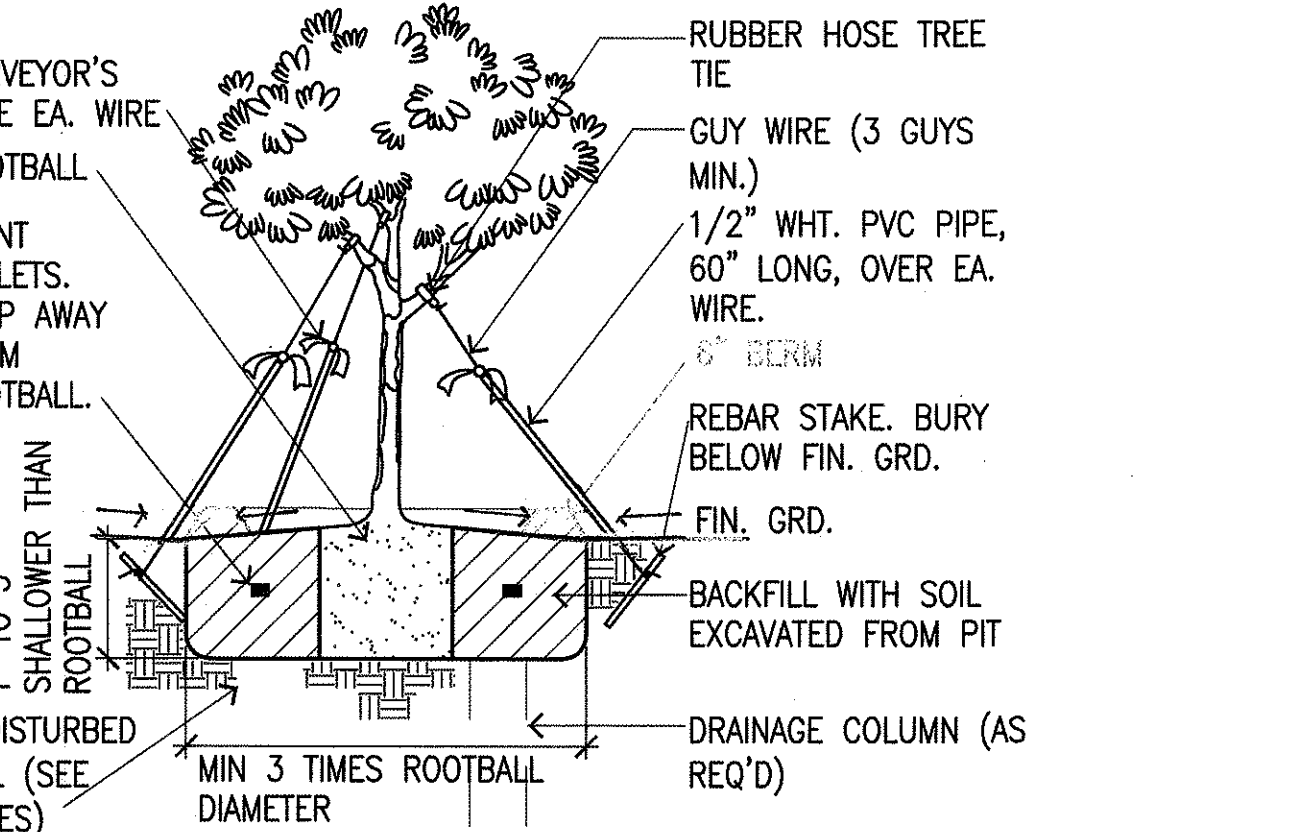
9  
L1.05  
**12" POP-UP HEAD**  
NOT TO SCALE



10  
L1.05  
**SHRUB HEAD**  
NOT TO SCALE

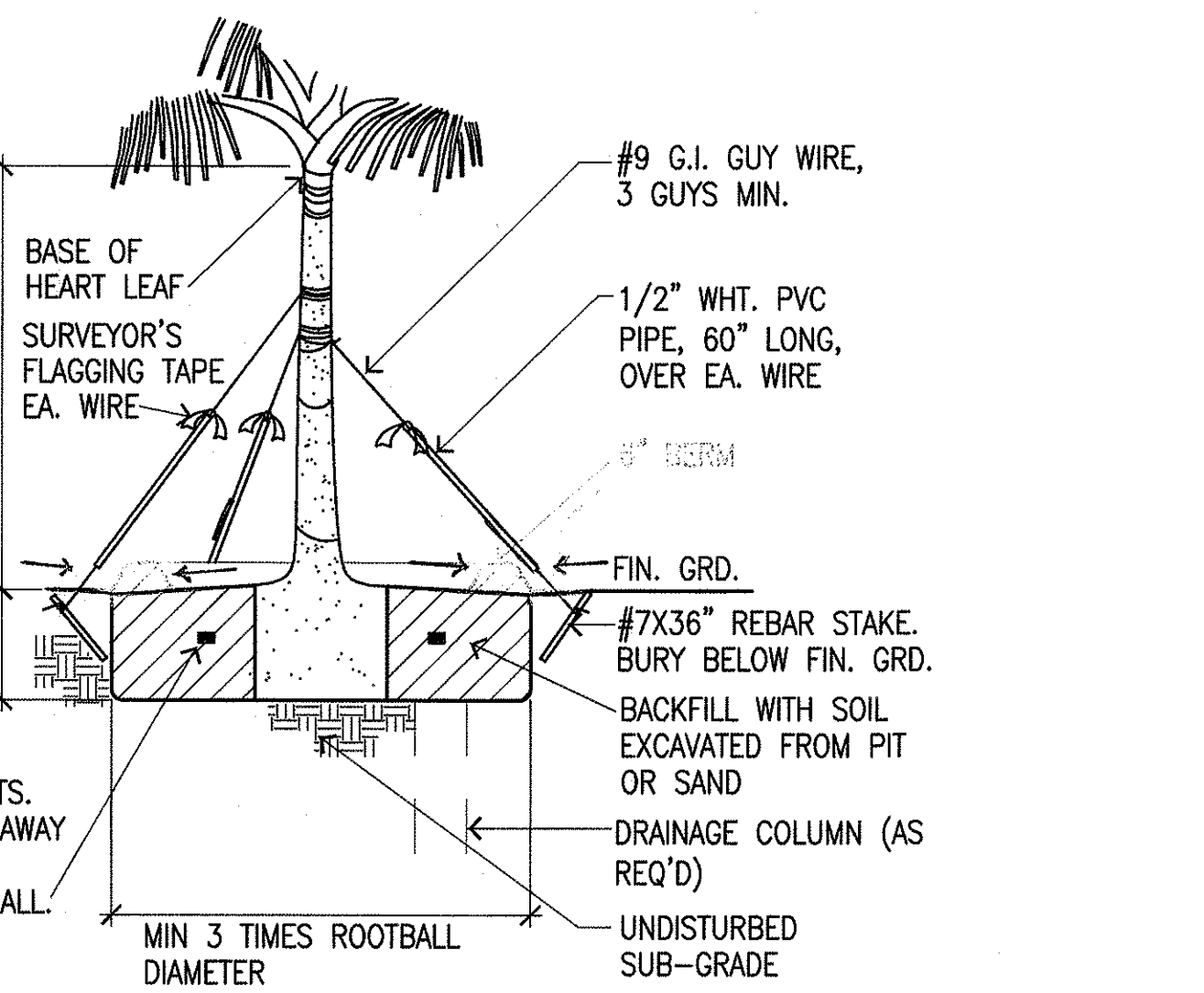


11  
L1.05  
**DRIPPERLINE EMITTER**  
NOT TO SCALE



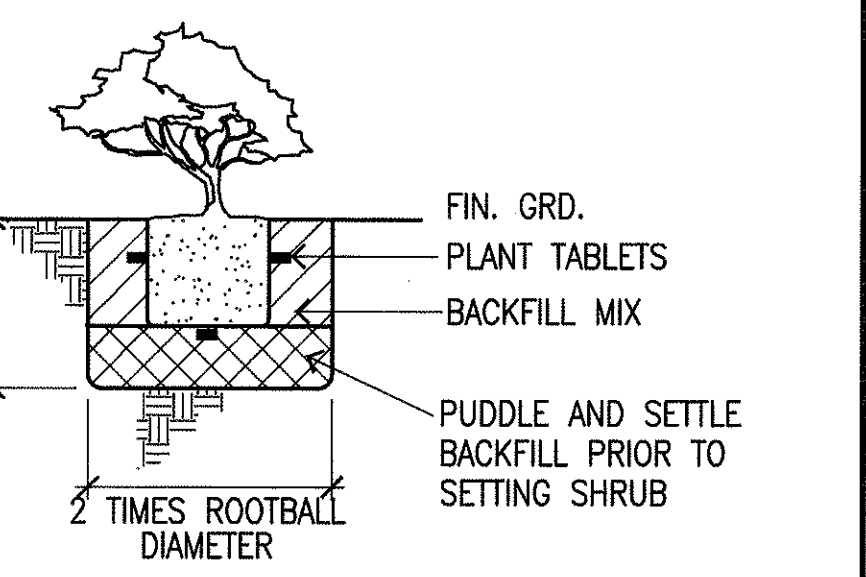
- GUY WIRE SIZES  
#12 FOR 15 AND 25 GAL.  
#9 FOR FLD. SPECIMENS
- REBAR STAKE SIZES  
#4x24" FOR 15 AND 25 GAL.  
#7x36" FOR FLD. SPECIMENS
- NOTES:
1. IF HARDPAN OR ROCK IS ENCOUNTERED, CONSTRUCT DRAINAGE COLUMN THROUGH THE HARDPAN OR ROCK AT THE SIDE OF THE ROOTBALL, NOT UNDER.
  2. IF SERIOUSLY POT BOUND, CUT CIRCLING ROOTS.
  3. MINIMIZE REMOVAL OF CANOPY FOLIAGE. PRUNE ONLY TO REMOVE BROKEN, DAMAGED, DISEASED OR DEAD BRANCHES, OR AS REQ'D FOR TRANSPORTATION.

12  
L1.05  
**TREE PLANTING**  
NOT TO SCALE

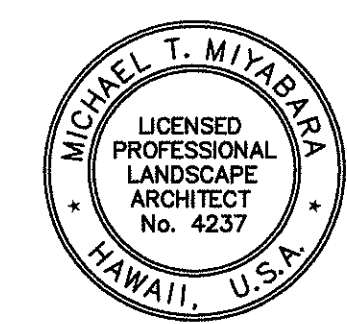


- NOTES:
1. IF HARDPAN OR ROCK IS ENCOUNTERED, CONSTRUCT DRAINAGE COLUMN THROUGH THE HARDPAN OR ROCK AT THE SIDE OF THE ROOTBALL, NOT UNDER.
  2. IF SERIOUSLY POT BOUND, CUT CIRCLING ROOTS.

13  
L1.05  
**PALM PLANTING**  
NOT TO SCALE



14  
L1.05  
**SHRUB PLANTING**  
NOT TO SCALE



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CENTRALIZED DISTRICT OFFICE  
AND BASEYARD COMPLEX**  
LIHUE, KAUAI  
PROJECT NO. HWY-K-03-98

**LANDSCAPE DETAILS**

SCALE: NOT TO SCALE      DATE: MAR. 30, 01

SHEET NO. L1.05 OF 150 SHEETS