IRRIGATION NOTES:

1. Contractor shall install irrigation lines, wires, valves and heads per specifications. Existing gate valves, point of connection, etc. are derived from the best available information and on-site inspection. The Contractor shall verify those points of connection noted and report any discrepancies to the Engineer

2. This plan is diagrammatic. Irrigation system is subject to field adjustments due to unanticipated site conditions. Locate all mainlines, laterals, valves and sprinklers heads within planting areas, unless otherwise noted. Place mainline in planting areas where no sleeves are shown. Avoid any conflict between underground utilities, structures and plantings. The Contractor shall be responsible for locating and protecting all existing utilities. Bury pressure mainlines 18" and lateral lines 10" deep minimum.

3. This irrigation system was designed with a minimum static water pressure of 75 psi at the point of connection. Notify the Project Engineer, if water pressure is less than psi or greater than 50 psi.

4. Contractor shall secure all necessary permits and observe all local codes and regulations. The Contractor shall confirm all sites dimensions and conditions, and report any discrepancies to the Engineer.

5. Contractor shall coordinate the installation of all sleeves, conduits, mainlines and laterals under pavement and through walls. Contractor shall assure that these items are laid prior to placement of pavement or wall structures.

6. Locate and install all sprinkler heads 6" from sidewalks, curbs, driveways, building and wall unless otherwise noted. Flex tubing shall be installed on all sprinkler head along sidewalks, driveways, and parking spaces. Adjust all sprinkler heads and flow control for maximum coverage and minimum overthrow and misting. Operate only one valve at a time per controller.

7. Within 30 days after award of the contract, submit for the Engineer's acceptance six (6) copies of detailed scaled drawings and wiring diagrams for permanent and temporary irrigation systems. Not proposed deviations from the contract. Include samples of materials, if required by contract.

8. Perform hydrostatic test by applying continuous static pressure of 60 psi for one (1) hour. Notify the Engineer at least three (3) days in advance of test. Repair leaks that develop and repeat test. Do not backfill until there is no further sign of leakage.

9. Perform operability test by opening remote control valve and test circuits for leaks around barbed and threaded pvc fittings. Repair leaks and repeat tests. Notify the Engineer at least three (3) days in advance of test. Do not backfill until there is no further sign of leakage.

10. Perform coverage test. Before planting period, run automatic controller through all it's cycles. Check watering for coverage and uniformity in company of the Engineer. Run system until there are puddles or there is sheet flow to determine initial irrigation time and number of cycles per week needed to water requirements of plants.

11. Locate valve boxes so that the outer edges are no closer than five feet to roadway pavement. Group valve boxes where feasible.

12. If plans do not specify depth of excavation, provide minimum cover to finish grade as follows.
    - (a) 4 inches for drip irrigation main.
    - (b) 18 inches for irrigation main.
    - (c) 10 inches for irrigation lateral.
    - (d) 24 inches for sleeve or conduit under landscape pavement.
    - (e) 36 inches for sleeve or conduit under roadway pavement.
    - (f) For controller wires and conduits in unpaved areas, depth equal to that pressure irrigation pipe.

Irrigation Schedule

Symbol	Quantity	Catalog Number	Description	G.P.M.	Radius (ft.)	P.S.I.
□	~~17~~	Rainbird 1804-SAM-R17-24F Stream Rotary	4" Pop-Up Spray Head Full Circle	3.00	20	30
○	~~84~~ 66	Rainbird 1804-SAM-PRS-U10F	4" Pop-Up Nozzle Full Circle	1.60	10	30
▲	~~2~~ 6	Rainbird 1804-SAM-PRS-U10Q	4" Pop-Up Nozzle Quarter Circle	0.75	10	30
●	~~16~~ 0	Rainbird 1804-SAM-PRS-5F	4" Pop-Up Nozzle Full CIrcle	0.41	5	30
◡	~~14~~ 9	Rainbird 1804-SAM-PRS-8H	4" Pop-Up Nozzle Half Circle Tree Bubbler	1.05	8	30
⊕	~~4~~	Rainbird 150-PEB-PRS-D with LEMA 1600HE Solenoid with 30-921 Plastic Adapter	1 ½" Remote Control Valve w/actuator			
⊕	~~4~~ 0	Rainbird 100-PEB-PRS-D with LEMA 1600HE Solenoid with 30-921 Plastic Adapter	1" Remote Control Valve w/actuator			
	3	Rainbird 33-DRC with LEEMCO LS-120	¾" Quick Coupler Valve			
⋈	3	1 ¼" WATTS 009QT-125-RPB or B.W.S. approved equal with security enclosure	Backflow preventer with security enclosure			
◪	3	DIG LEIT 4004 on 4000 series mounting column with LEIT Stainless Steel Enclosure ENCL 4000 with Hunter Mini-Clik2 Rain Sensor with LEIT Switch Sensor Adapter SKIT8821-4 with V.I.T. Strongbox Rain Sensor Enclosure RGVRSS	Irrigation controller and rain sensor in stainless enclosure			
		3M Scotchcast 3570G Electrical insulating resin sealing pact per each connection with Scotchlok Y wirenut	Wire connectors			
○	3	U.S. Bronze NIBCO T113 Gate Valve	Gate Valve			
⊤	1	U.S. Brass NIBCO "T"- Size to Exist. (Price 2" dia.)	Brass "T"			
———		PVC Schedule 40	Irrigation Pipe			

LEGEND FOR AS-BUILT POSTINGS

~~/\/\/\~~	Squiggly line for as-built deletion
~~100.00~~	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN	SURVEY PLOTTED BY ______ DATE ______
	DRAWN BY
	TRACED BY
NOTE BOOK	DESIGNED BY
	QUANTITIES BY
	CHECKED BY

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

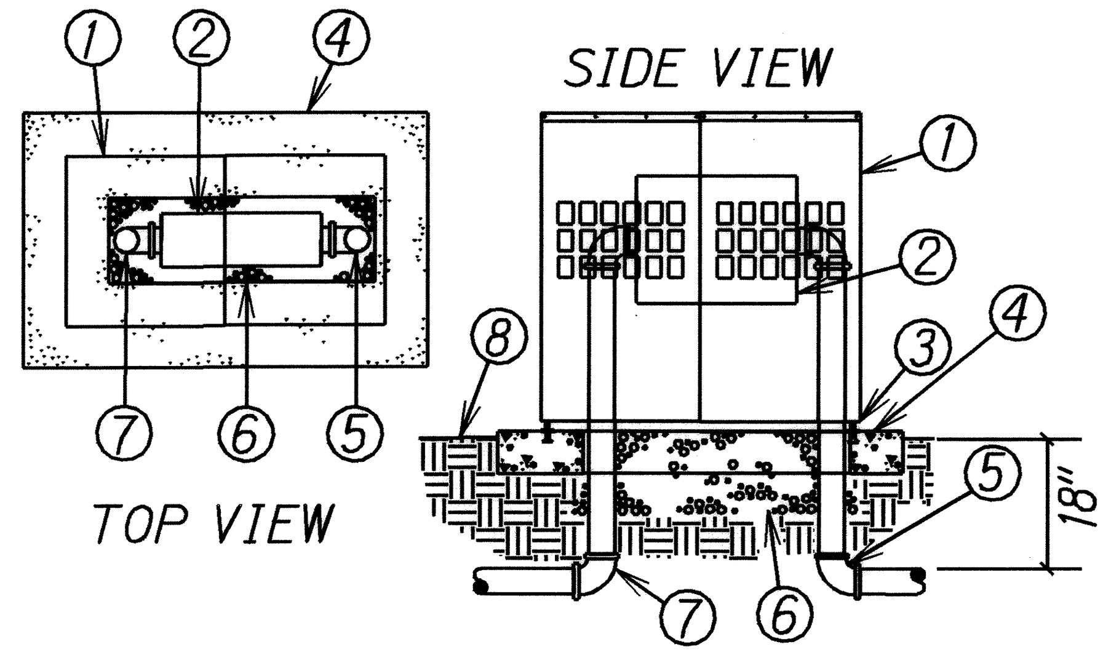
IRRIGATION NOTES

NIMITZ HIGHWAY
MEDIAN EROSION CONTROL
Sumner Street to Richards Street
Project No. 92A-02-09M

Scale: NTS   Date: April, 2009

SHEET No. 1 OF 3 SHEETS

"AS-BUILT"



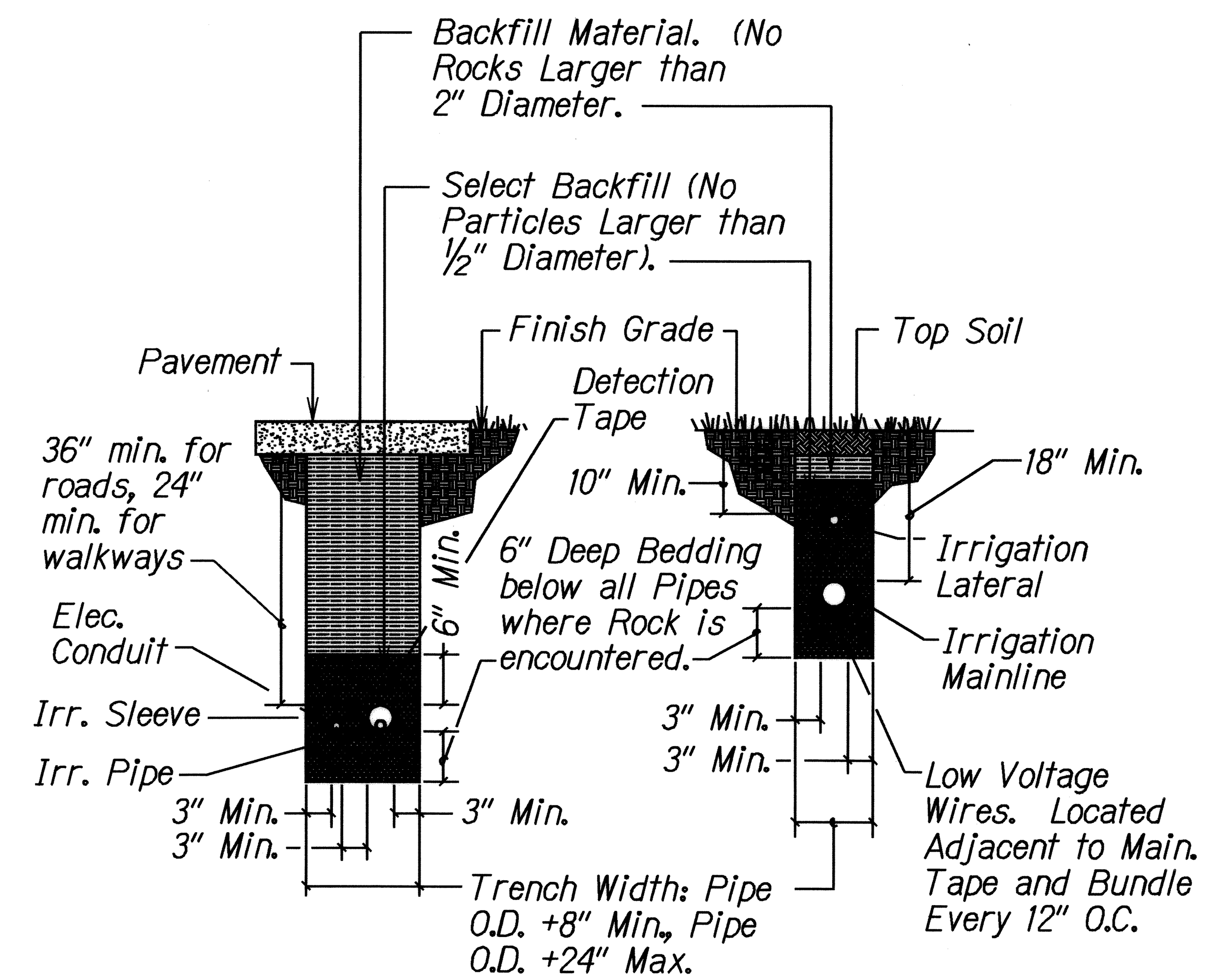
LEGEND

1. Back Flow Preventer Enclosure made by V.I.T. Products Inc. Strongbox SBBC-45SS, labeled with "DOT Irrigation Backflow Preventor" manner acceptable to Engineer.
2. Backflow Preventer
3. Anchor Rod (Typ.)
4. Poured Concrete Base - 6" min. thickness - Extend 4" beyond outside dimensions of enclosure.
5. Water Service Inlet Piping.
6. 4" Layer, ¾" Diameter Washed Rock.
7. Water Service Outlet Piping.
8. Finish Grade.

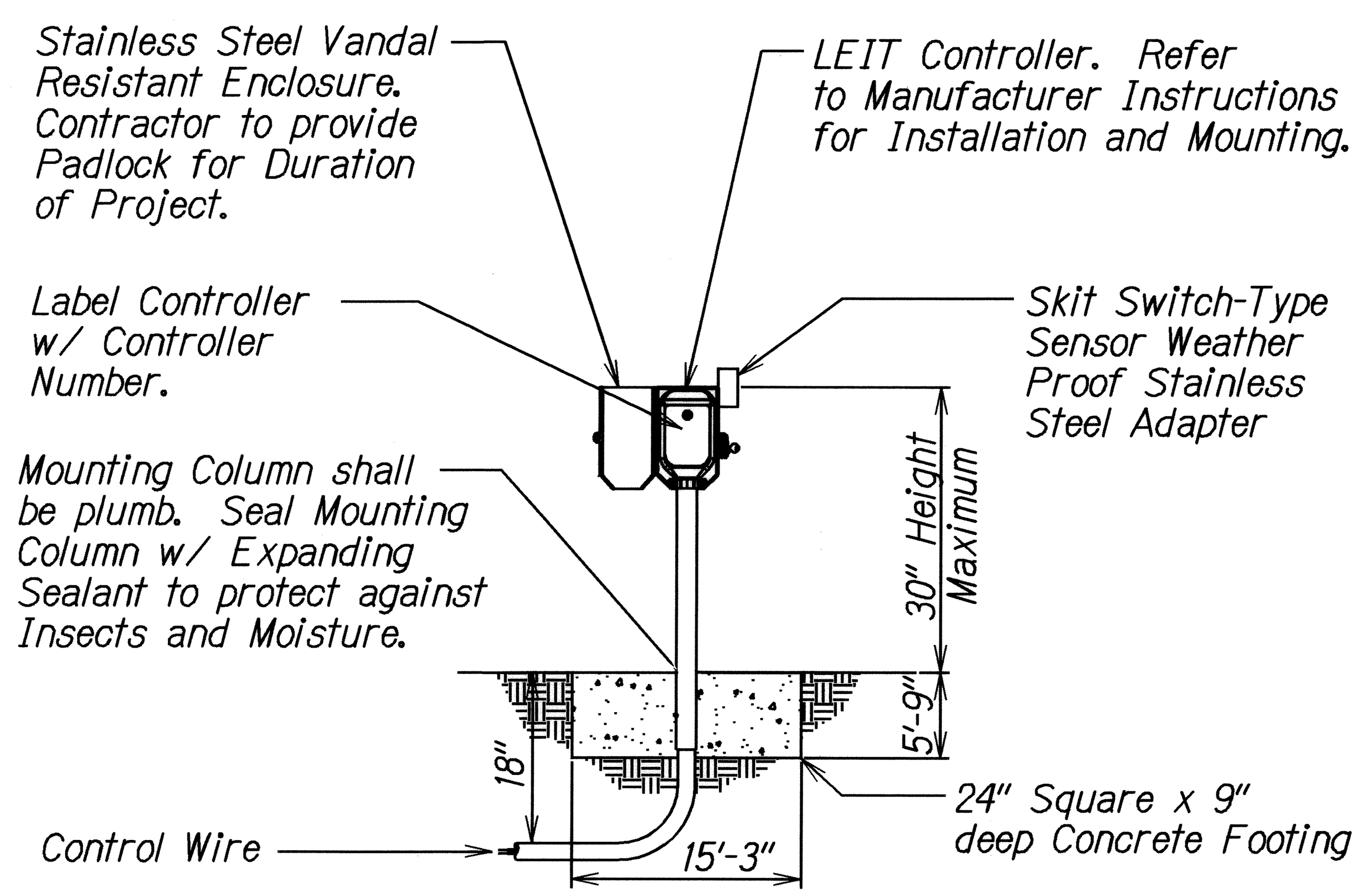
NOTES

1. Contractor shall provide padlock for duration of the project.
2. Back Flow Preventer shall be located in an area well protected from vehicles (Clear Zone). If the Back Flow Preventer is located in an unprotected area, then four (4) 6" pipe bollards filled with concrete shall surround the Back Flow Preventer.

A B.F.P. ENCLOSURE DETAIL N.T.S.



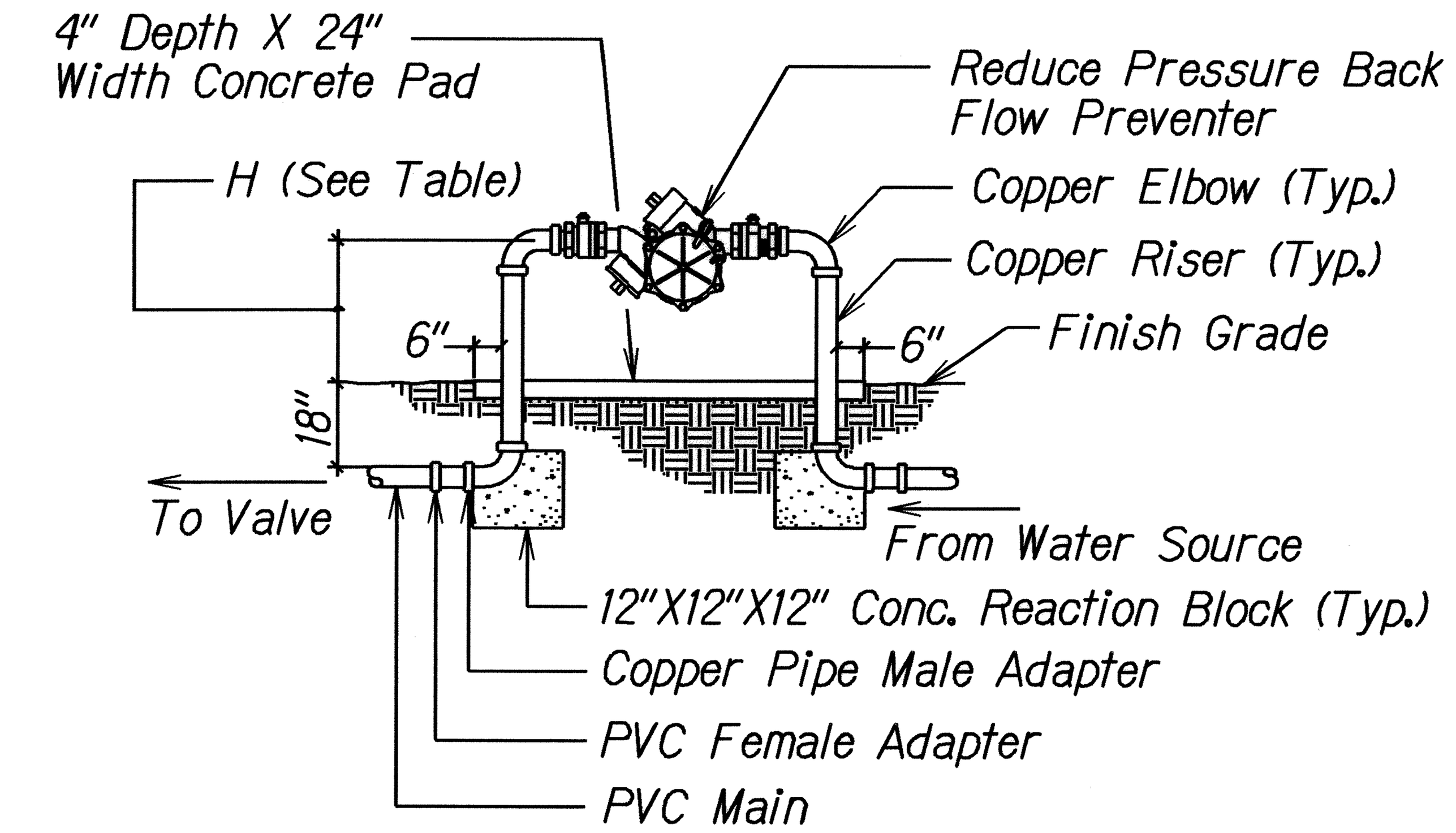
B IRRIGATION TRENCH DETAIL N.T.S.



NOTE:

Controller Location shall be located in an area well protected from vehicles. If the Controller is located in an unprotected area, then four 6" Pipe Bollards filled w/ Concrete shall surround Controller. Provide one (1) Leit Key per Controller.

C SOLAR POWERED CONTROLLER DETAIL N.T.S.



Size (Inches)	H (Inches)
3/4 TO 1-1/2	18
2 TO 3	24

NOTES:

1. All Pipes and Fittings Installed above Grade shall be either Copper or Bronze only.
2. Back Flow Preventer shall be Plumb.
3. Back Flow Preventer shall be located in an area well protected from Vehicles (Clear Zone). If the Back Flow Preventor is located in an Unprotected Area, then four (4) 6" Pipe Bollards filled with Concrete shall surround the Back Flow Preventer.

D REDUCED PRESSURE B.F.P DETAIL N.T.S.

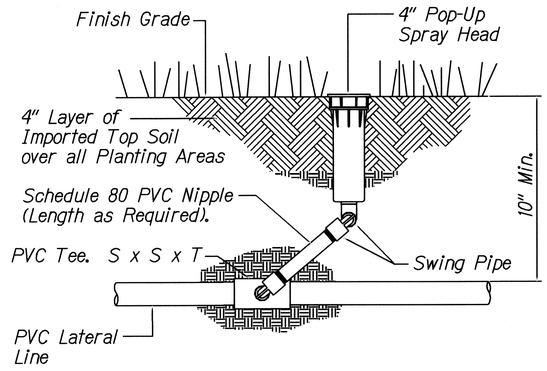
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

IRRIGATION DETAILS

NIMITZ HIGHWAY
MEDIAN EROSION CONTROL
Sumner Street to Richards Street
Project No. 92A-02-09M

Scale: NTS Date: April, 2009

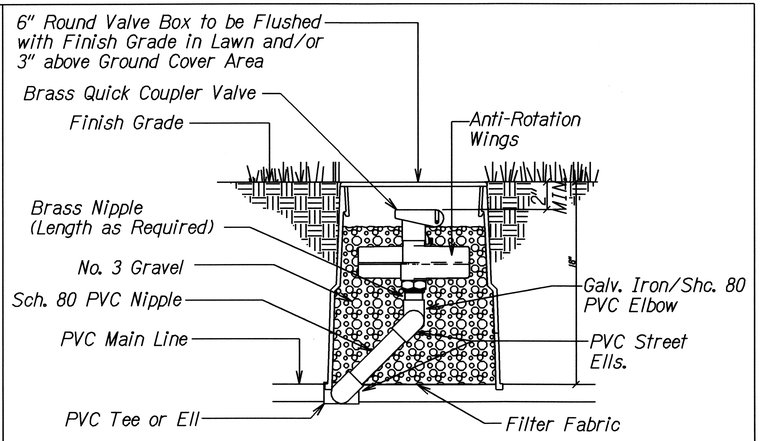
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	92A-02-09M	2009	13	18



NOTES:

1. KBI or Lasco Swing Joints may be used upon arrival by Engineer.
2. Install Part Circle Pop-Up Heads 6" from Edge of Paved Areas.

E LAWN SPRAY POP-UP SPRINKLER DETAIL N.T.S.



NOTES:

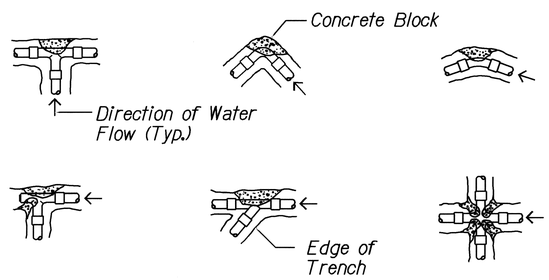
1. KBI or Lasco Swing Joints upon approval by Engineer.
2. All Valve Box Cover Shall be Labeled Valve Type, Zone Number, and Controller Number.
3. Controller shall Provide one (1) Quick Coupler Key and one (1) Hose Ell for each Quick Coupler Valve.
4. Minimum one Quick Coupler Valve per Point of Connection.

F QUICK COUPLER VALVE DETAIL N.T.S.

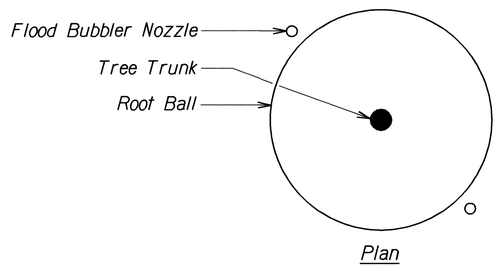
THRUST BLOCK BEARING AREA (SQ. FT.)				
PIPE SIZE	1 1/4" - 2 1/2"	3"	4"	6"
Tees/Ells	1.00	1.00	1.25	3.2
90 Bends	1.00	1.25	2.00	4.5
45 Bends	1.00	1.00	1.00	2.4

NOTES:

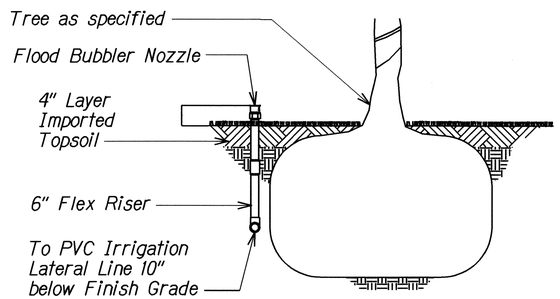
1. Install Thrust Block at all Machine Bends, Tees or Ells as shown below. Thrust Blocks shall be minimum of (1) cu. ft. Redi-Mix Concrete or 2500 PSI 28 Day Concrete.
2. Set all Thrust Blocks against Undisturbed Soil.



G THRUST BLOCK DETAIL N.T.S.



Plan



H TREE BUBBLER DETAIL N.T.S.

ORIGINAL PLAN
NOTE BOOK
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

IRRIGATION DETAILS

NIMITZ HIGHWAY
MEDIAN EROSION CONTROL
Sumner Street to Richards Street
Project No. 92A-02-09M

Scale: NTS Date: April, 2009

SHEET No. 3 OF 3 SHEETS