



**NATIVE SOIL INC.**  
LANDSCAPE DESIGN - BUILD

Irrigation Principles Related to Native Plants - Efficient Irrigation Systems

Emmanuel Gomez - President of Native Soil Inc

# About Us

Native Soil Inc was founded in 2015 based out of Oakland, CA. We specialize in landscape construction and design, including new irrigation systems, planting, hardscaping, outdoor kitchens and fireplaces, artificial and natural turf installations. Our team consists of Cal Poly alumni as well as a foreman that have been in the landscape industry for over 30 years. We are family-owned and operated and can turn a set of plans into a reality within an enjoyable family work environment.

# Our Mission

Native Soil Inc. is a construction, education, and social organization dedicated to the protection of water, plants, and soils, while empowering disenfranchised communities.

# Our Founder

## EMMANUEL GOMEZ



Emmanuel Gomez, a native of Oakland, California, founded Native Soil in 2015 in an effort to empower his community by providing jobs, education, and training, to those that weren't fortunate enough to receive higher education. Emmanuel started doing landscape construction when he was 12 and saw the need for a Latino-owned landscape business as most of the labor force in this field is made up of Latinos but unfortunately not many Latinos own these businesses. Emmanuel received his Bachelors of Landscape Architecture from Cal Poly, San Luis Obispo, in 2013 and after a few years of managing experience with large landscape companies, he obtained his Landscape Contractor License from the state of California. Emmanuel truly cares about instilling sustainable landscape practices and passing down any of his knowledge to his employees that can then be passed down to our future generations, creating a planet where people are living in harmony with nature, plants, water, wildlife, bugs, and insects. Leaving a better world for our children and grandchildren.

# Native Plants

What are Native Plants?

**Native plants** are those that occur naturally in a region in which they evolved.

What is the Importance of Native Plants?

Landscaping choices have meaningful effects on the populations of birds and the insects they need to survive. The bottom line is this—homeowners, landscapers, and local policy makers can benefit birds and other wildlife by simply selecting native plants when making their landscaping decisions.

<https://www.audubon.org/content/why-native-plants-matter#:~:text=Native%20plants%20provide%20nectar%20for,for%20all%20forms%20of%20wildlife.>



## Efficient Irrigation Systems for Native Plants

Every efficient Irrigation system must have these components

- Water Meter
- Backflow
- Master Valve
- Flow Sensor
- Smart Controller
- Rain Sensor

Drip Irrigation is Ideal and recommended for Plants and Shrubs. Rotator systems are ideal for grass although there are drip systems for grass.



## Water Meter

A dedicated irrigation meter is a water meter that **exclusively meters water used for outdoor watering and irrigation**





## Backflow Prevention Device

A backflow preventer valve is designed **to prevent the water in your main water supply lines from flowing in a reverse direction.**



## Master Valve

A master valve is **an automatic valve that is installed at the point where the irrigation system connects to the water supply.**

## Normally Closed Master Valves

**When power is applied to the solenoid, a normally closed valve will open.** The valve closes when the power to its solenoid is cut off. Normally-closed is the industry standard, so if a valve description doesn't say which type it is, it is usually safe to assume it is the normally-closed type. An advantage of normally-closed valves used as master valves is that they close when there is no power, ie: a power failure, or if the wires to the valve are cut or broken. The normally-closed valve will shut-off the water supply in any of those situations.



## Normally Open Master Valves

**Normally open valves close when the solenoid is energized.** If there is no power applied to the solenoid a normally open valve will open and remain open until power is applied. Sometimes you need a valve that closes when power is supplied to it.





## Flow Sensor

Flow sensors **measure how slowly or quickly water is flowing through an irrigation system and send that information to an irrigation controller.** ... For example, if water is flowing at an unusually high rate, a flow sensor works in conjunction with an irrigation controller to take corrective action.



## Smart Controller

Smart sprinkler controllers **let you turn your sprinklers on and off remotely, through an app**. The app also helps you schedule when your sprinklers water your lawn, and for how long. Some even use daily weather reports to adjust when the sprinklers turn on, and how much water is required for that particular day



## Rain Sensor

It's a **device that communicates with your sprinkler timer about the level of rainfall**. If enough rain has fallen, then the sensors let the timer know to skip the next cycle and not run



## Hydrometer

A Flow Sensor, Master Valve, and Water Meter in One.



Water Meter



Back Flow



Smart Controller



Rain Sensor



Master Valve



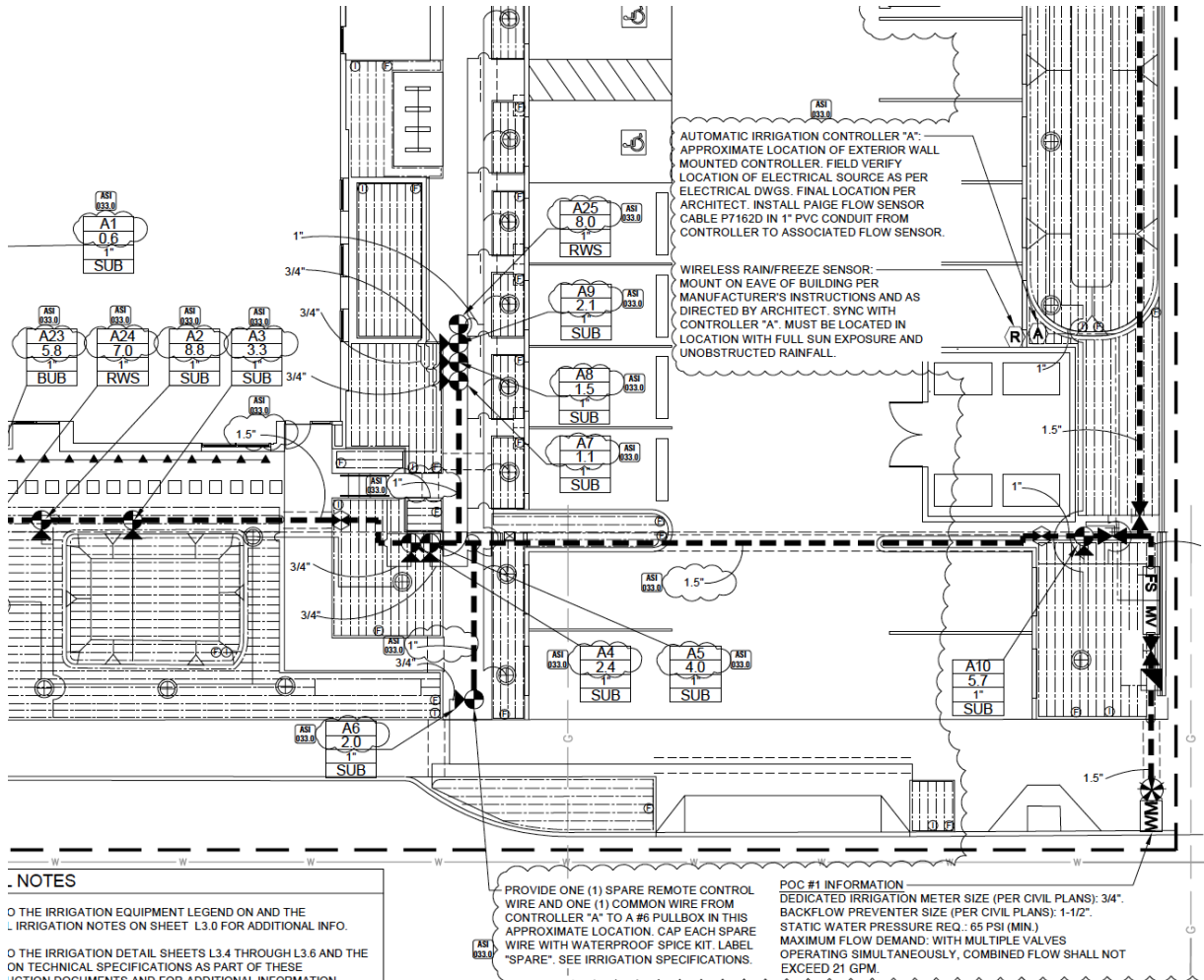
Flow Sensor



## LANDSCAPE IRRIGATION EQUIPMENT LEGEND

SYMBOL	MFG'R	MODEL #	DESCRIPTION	REMARKS	DETAIL
	PER CIVIL	PER CIVIL	DEDICATED IRRIGATION WATER METER	3/4" SIZE. REFER TO CIVIL DWGS FOR ADDITIONAL INFORMATION. FIELD VERIFY SIZE, LOCATION AND STATIC PRESSURE.	N/A
	PER CIVIL	PER CIVIL	BACKFLOW PREVENTION DEVICE	1-1/2" SIZE. REFER TO CIVIL DWGS FOR ADDITIONAL INFORMATION. FIELD VERIFY SIZE AND LOCATION	N/A
	N/A	N/A	POINT-OF-CONNECTION (POC)	SIZES PER PLANS. REFER TO CIVIL DWGS. FIELD VERIFY SIZES, LOCATIONS & STATIC PRESSURE PRIOR TO COMMENCING CONSTRUCTION.	N/A
	RAIN BIRD	ESP12LXMEF/ LXMMSS/IQ3G- USA/WR2RFC-48	AUTOMATIC IRRIGATION CONTROLLER	ESP WALL MOUNTED CONTROLLER: FOURTY-FOUR (44) STATION CONVENTIONAL WIRE CONTROLLER WITHIN STAINLESS STEEL WALL MOUNTED ENCLOSURE, CELLULAR NETWORK COMMUNICATION CARTRIDGE. INSTALL WITH WIRELESS RAIN/ FREEZE SENSOR AND 1" SIZE FLOW SENSOR. PROVIDE TWO (2) ESPLXMSM12 12-STATION EXPANSION MODULES AND ONE (1) ESPLXMSM8 8-STATION EXPANSION MODULE. CONTACT RAIN BIRD SALES REPRESENTATIVE JOHN OSSA AT (415) 378-8404.	2/L3.5
	RAIN BIRD	ESP12LXMEF/ LXMMSS/IQ3G- USA/WR2RFC-48	AUTOMATIC IRRIGATION CONTROLLER	ESP WALL MOUNTED CONTROLLER: TWELVE (12) STATION CONVENTIONAL WIRE CONTROLLER WITHIN STAINLESS STEEL WALL MOUNTED ENCLOSURE, CELLULAR NETWORK COMMUNICATION CARTRIDGE. INSTALL WITH WIRELESS RAIN/ FREEZE SENSOR AND 1" SIZE FLOW SENSOR. CONTACT RAIN BIRD SALES REPRESENTATIVE JOHN OSSA AT (415) 378-8404.	2/L3.5
NOT SHOWN	RAIN BIRD	AS PROVIDED W/ CONTROLLER	WIRELESS RAIN/ FREEZE SENSOR	WIRELESS RAIN FREEZE SENSOR. DISTANCE FROM CONTROLLER SHALL NOT EXCEED 500-FEET. REFER TO PLAN FOR ADDITIONAL INFO. SENSOR SHALL BE FIELD LOCATED TO PROVIDE OPTIMAL EXPOSURE TO WEATHER ELEMENTS AS PER MFG'R RECOMMENDATIONS. 48 HOUR HOLD.	PER MFG'R
	GRISWOLD	2000H	MASTER CONTROL VALVE	1" SIZE, NORMALLY CLOSED. CAST IRON AND BRONZE.	3/L3.5
	HUNTER	AS PROVIDED W/ CONTROLLER	IMPELLER-TYPE SENSOR WITH TEE	1" SIZE. PLASTIC, WIRE DIRECTLY TO CONTROLLER. 2 GALLON PER MINUTE MINIMUM FLOW REQUIRED TO REGISTER FLOW.	3/L3.5
	PAIGE	P7162D	MASTER VALVE/FLOW SENSOR COMMUNICATION CABLE	MASTER VALVE CONTROL WIRES AND FLOW SENSOR COMMUNICATION CABLE WITHIN 1" SIZE, GRAY SCHEDULE 40 PVC CONDUIT WITH SWEEPS FROM FLOW SENSOR TO CONTROLLER. LENGTH AS REQUIRED. REFER TO IRRIGATION PLANS.	1/L3.4 2/L3.4
NOT SHOWN			PULL/ SPLICE BOXES	LOCATE PULL/ SPLICE BOXES AT ENDS OF ALL SLEEVES, APPROXIMATELY 200' O.C. AND AS DIRECTED BY OWNER'S REPRESENTATIVE. ALL WIRING SHALL BE INSTALLED IN GRAY SCH. 40 PVC CONDUIT W/ SWEEPS.	3/L3.4
NOT SHOWN	NIBCO	T-FP-600-A SERIES	MANIFOLD ISOLATION BALL VALVE (SUB-MAINS)	LINE SIZE. TWO-PIECE BODY, FULL PORT WITH NPT THREADED ENDS. BALL VALVES SHALL ON BE USED ON MANIFOLD SUB-MAINS.	5/L3.4 7/L3.4
	NIBCO	T-113-K	MAINLINE ISOLATION BALL VALVE	LINE SIZE.	5/L3.4 6/L3.4
	RAIN BIRD	44-LRC	QUICK COUPLING VALVE	1" SIZE. NPT THREAD WITH YELLOW LOCKING RUBBER COVER. PROVIDE WITH (2) QUICK COUPLING KEYS WITH KEY SWIVELS AND TWO (2) LOCKING COVER KEYS. INSTALL QCV ON 1-1/2" MAINLINE STUB-OFF. LOCATE QCV AS SHOWN ON PLANS, BUT NO MORE THAN 150' O.C.	5/L3.4 8/L3.4
	GRISWOLD	100-DW-PRV	REMOTE CONTROL VALVE (RCV)	BRASS GLOBE VALVE WITH PRESSURE REGULATING MODULE. SIZE PER PLAN. INSTALL WITHIN VALVE MANIFOLD WHEN GROUPED WITH OTHER VALVES. SIZE MANIFOLD TO MATCH MAINLINE SIZE OR LARGEST LATERAL LINE SIZE, WHICH EVER ONE IS LARGER.	5/L3.4 1/L3.5
	GRISWOLD / RAIN BIRD	100-DW-PRV / LCRBY100D	DRIP REMOTE CONTROL VALVE (RCV) / DISC FILTER	BRASS GLOBE VALVE WITH PRESSURE REGULATING MODULE. SIZE PER PLAN. INSTALL WITHIN VALVE MANIFOLD WHEN GROUPED WITH OTHER VALVES. SIZE MANIFOLD TO MATCH MAINLINE SIZE OR LARGEST LATERAL LINE SIZE, WHICH EVER ONE IS LARGER. VALVE SHALL BE INSTALLED WITH INLINE LARGE CAPACITY DISC FILTER. USE ONE (1) RAIN BIRD MODEL LCRBY-100D FOR FLOWS GREATER THAN 0.2 GPM BUT LESS THAN 21 GPM.	5/L3.4 7/L3.6

7/ SIZE PER PLAN. USE SCH. 40 PVC PIPE FOR MAINLINE PIPE 1-1/2" OR SMALLER. USE CI



Smart Controller/  
Rain Sensor



Master Valve/Flow Sensor



Back Flow



Water Meter

**NOTES**

○ THE IRRIGATION EQUIPMENT LEGEND ON AND THE IRRIGATION NOTES ON SHEET L3.0 FOR ADDITIONAL INFO.

○ THE IRRIGATION DETAIL SHEETS L3.4 THROUGH L3.6 AND THE ON TECHNICAL SPECIFICATIONS AS PART OF THESE JUNCTION DOCUMENTS AND FOR ADDITIONAL INFORMATION.

○ LINE LATERAL PIPE VALVES AND OTHER IRRIGATION

PROVIDE ONE (1) SPARE REMOTE CONTROL WIRE AND ONE (1) COMMON WIRE FROM CONTROLLER "A" TO A #6 PULLBOX IN THIS APPROXIMATE LOCATION. CAP EACH SPARE WIRE WITH WATERPROOF SPOKE KIT. LABEL "SPARE". SEE IRRIGATION SPECIFICATIONS.

**POC #1 INFORMATION**  
DEDICATED IRRIGATION METER SIZE (PER CIVIL PLANS): 3/4".  
BACKFLOW PREVENTER SIZE (PER CIVIL PLANS): 1-1/2".  
STATIC WATER PRESSURE REQ.: 65 PSI (MIN.)  
MAXIMUM FLOW DEMAND: WITH MULTIPLE VALVES OPERATING SIMULTANEOUSLY, COMBINED FLOW SHALL NOT EXCEED 21 GPM.





Hunter Eco Wrap



Rain Bird XFS Copper



Before



After



Drip Pattern



Hunter Eco-Mat



Rainbird Copper XFS



Hunter Eco-Wrap





## Hunter MP Rotators

Hunter's MP Rotator is a revolutionary alternative to traditional sprinkler heads and pop up sprinkler heads that spray the landscape. MP Rotator nozzles feature unique, multi-trajectory rotating streams that deliver water at a steady rate. This slower application rate allows water to gently soak in at rates that soils can absorb. Use the MP Rotator to replace the sprinkler head on any conventional spray head body or pop up sprinkler for water savings of up to 30%.





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Any Questions?

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