TERRENO DOMINGUEZ

CARSON, CALIFORNIA

SHEET INDEX

I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND SUBMIT A COMPLETE LANDSCAPE DOCUMENTATION PACKAGE

APPLICANT

I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE PRESCRIPTIVE COMPLIANCE OPTION OF THE MWELO.

APPLICANT

AN IRRIGATION AUDIT REPORT SHALL BE COMPLETED AT THE TIME OF FINAL INSPECTION.

AT THE TIME OF FINAL INSPECTION, THE PERMIT APPLICANT MUST PROVIDE THE OWNER OF THE PROPERTY WITH A CERTIFICATE OF COMPLETION, CERTIFICATE OF INSTALLATION, IRRIGATION SCHEDULE AND A SCHEDULE OF LANDSCAPE AND IRRIGATION MAINTENANCE.

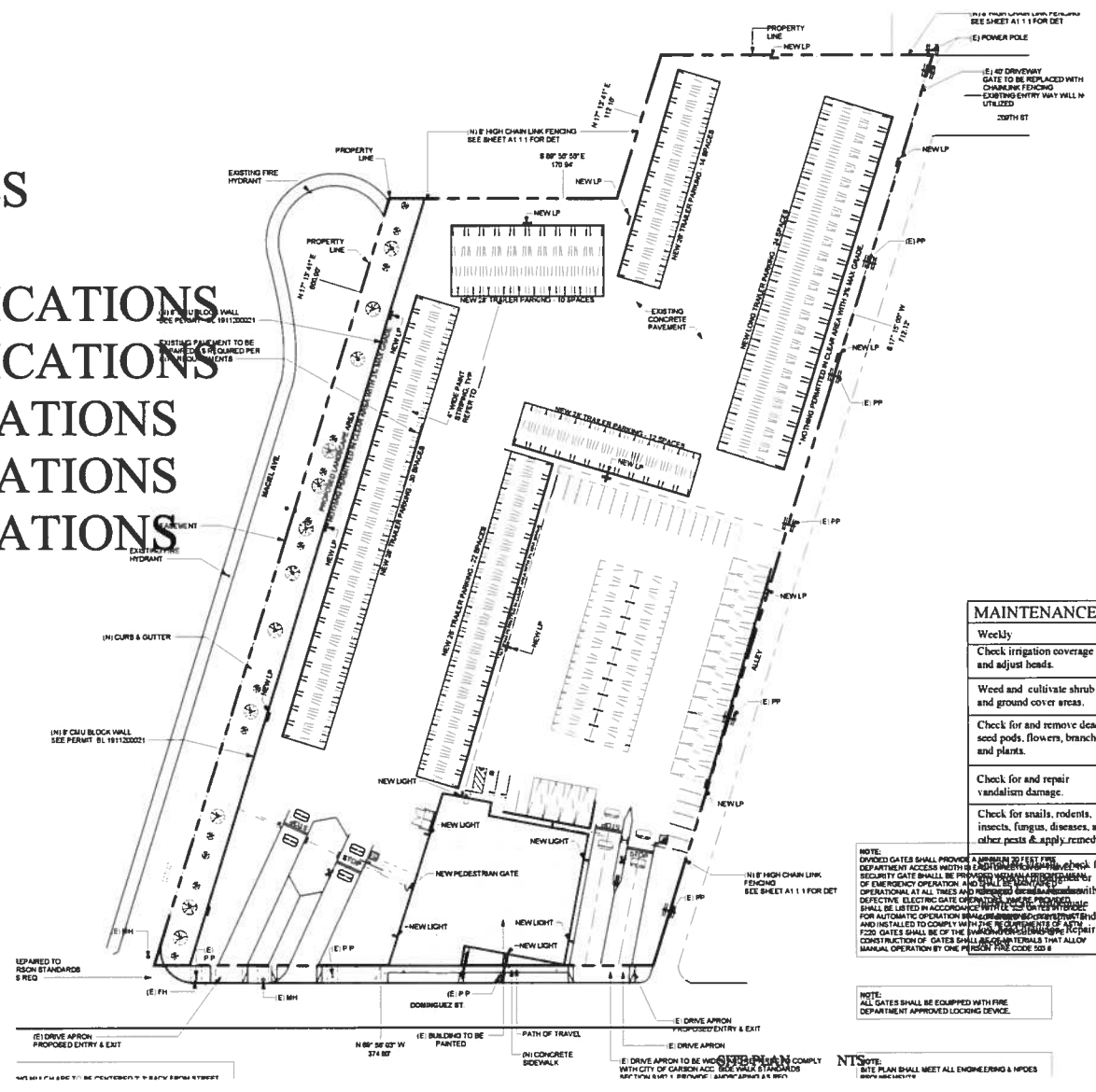
I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM FOR THE EFFICIENT USE OF WATER IN THE LANDSCAPE DESIGN PLANS.

A DIAGRAM OF THE IRRIGATION PLAN SHOWING HYDROZONES SHALL BE KEPT WITH THE IRRIGATION CONTROLLER FOR SUBSEQUENT MANAGEMENT PURPOSES.

A CERTIFICATE OF COMPLETION SHALL BE FILLED OUT AND CERTIFIED BY EITHER THE SIGNER OF THE LANDSCAPE PLANS, THE SIGNER OF THE LANDSCAPE PLANS, THE SIGNER OF THE IRRIGATION PLANS OR THE LICENSED LANDSCAPE CONTRACTOR FOR THE PROJECT.

FOR PROJECTS THAT INCLUDE LANDSCAPE WORK, THE LANDSCAPE CERTIFICATION, FORM GRN 12 SHALL BE COMPLETED PRIOR TO FINAL INSPECTION APPROVAL LOCKS SHALL BE INSTALLED ON ALL PUBLICLY ACCESSIBLE EXTERIOR FAUCETS AND HOSE BIBS FOR SITES WITH OVER 500 SQUARE FEET OF LANDSCAPE AREA, WASTE PIPING SHALL BE ARRANGED TO PERMIT DISCHARGE FROM THE CLOTHES WASHER, BATHTUB, SHOWERS, AND BATHROOM/RESTROOMS WASH BASINS TO BE USED FOR A FUTURE GRAY WATER IRRIGATION SYSTEM.

AUTOMATIC LANDSCAPE IRRIGATORS SHALL BE INSTALLED IN SUCH A WAY THAT IT DOESENT SPRAY ON THE BUILDING



SITE PLAN NTS

MAINTENANCE SCHEDULE	ADD TO IRRIGATION CONTROLLER CABINET				
Weekly	Bimonthly	Monthly	Quarterly	Biannually	Annually
Check irrigation coverage and adjust heads.	Verify ET irrigation controller is functioning properly	Check mulch coverage and replace	Conduct general inspection with owner	Prune and trim shrubs and fast growing evergreen trees.	Prune and trim slow-growing and deciduous trees.
Weed and cultivate shrub and ground cover areas.	Edge ground cover and lawns.	Check water basins around trees and shrubs and replace.	*Controller Cabinet*- Open Cabinet And Clean Out Debris And Replace Battery As Necessary. Check Wiring And Repair As Needed And Check Clock And Reset If Necessary.	Inspect trees for girdling by stake ties or guys and replace.	Mow ground covers.
Check for and remove dead seed pods, flowers, branches and plants.	Fertilize seasonal color and bedding plants.	Trim hedges and topiary shrubs.	*Pac*- Visually Inspect Components For Leaks, Pressure Settings, Settlement Or Other Damage Affecting The Operation of A Component Repair As Needed.	Mow Fast - Growing Ground Covers	Fertilize trees, shrubs, and ground cover
Check for and repair vandalism damage.		Submit to owner a record of extra work, and chemicals used.	Remote control valves, isolation valves and quick coupler valves visually inspect for leaks, settlement, wire connections and pressure settings. Repair or adjust as needed.		
Check for snails, rodents, insects, fungus, diseases, and other pests & apply remedy.		*Irrigation Schedule* - verify ET controller if functioning properly and adjusting schedule for seasonal variations and other conditions which may affect the amount of water needed to maintain plant health, adjust as necessary.	Mainline and laterals visually inspect for leaks or settlement of trench.		
		Filters and strainers visually check for leaks, broken fitting clean and flush screens			

NOTE: DIVIDED GATES SHALL PROVIDE A MINIMUM 30" FEET FIRE DEPARTMENT ACCESS WIDTH IN EACH DIRECTION. [illegible] check for SECURITY GATE SHALL BE PROVIDED WITH A MINIMUM [illegible] OF EMERGENCY OPERATION AND SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES AND REPAIRED OR REPLACED [illegible] with DEFECTIVE ELECTRIC GATE OPERATORS. [illegible] PROVIDED SHALL BE LISTED IN ACCORDANCE WITH UL 325 OR OTHER [illegible] FOR AUTOMATIC OPERATION [illegible] AND INSTALLED TO COMPLY WITH THE REQUIREMENTS OF ASTM F220. GATES SHALL BE OF THE [illegible] CONSTRUCTION OF GATES SHALL [illegible] MANUAL OPERATION BY ONE PERSON. FIRE CODE 503.6

NOTE: SITE PLAN SHALL MEET ALL ENGINEERING & NPDES [illegible]

DIGALERT
DIAL TOLL FREE 1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

PROGRESS DRAWING
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SCALE: PER PLAN

DATE	REVISION	BY

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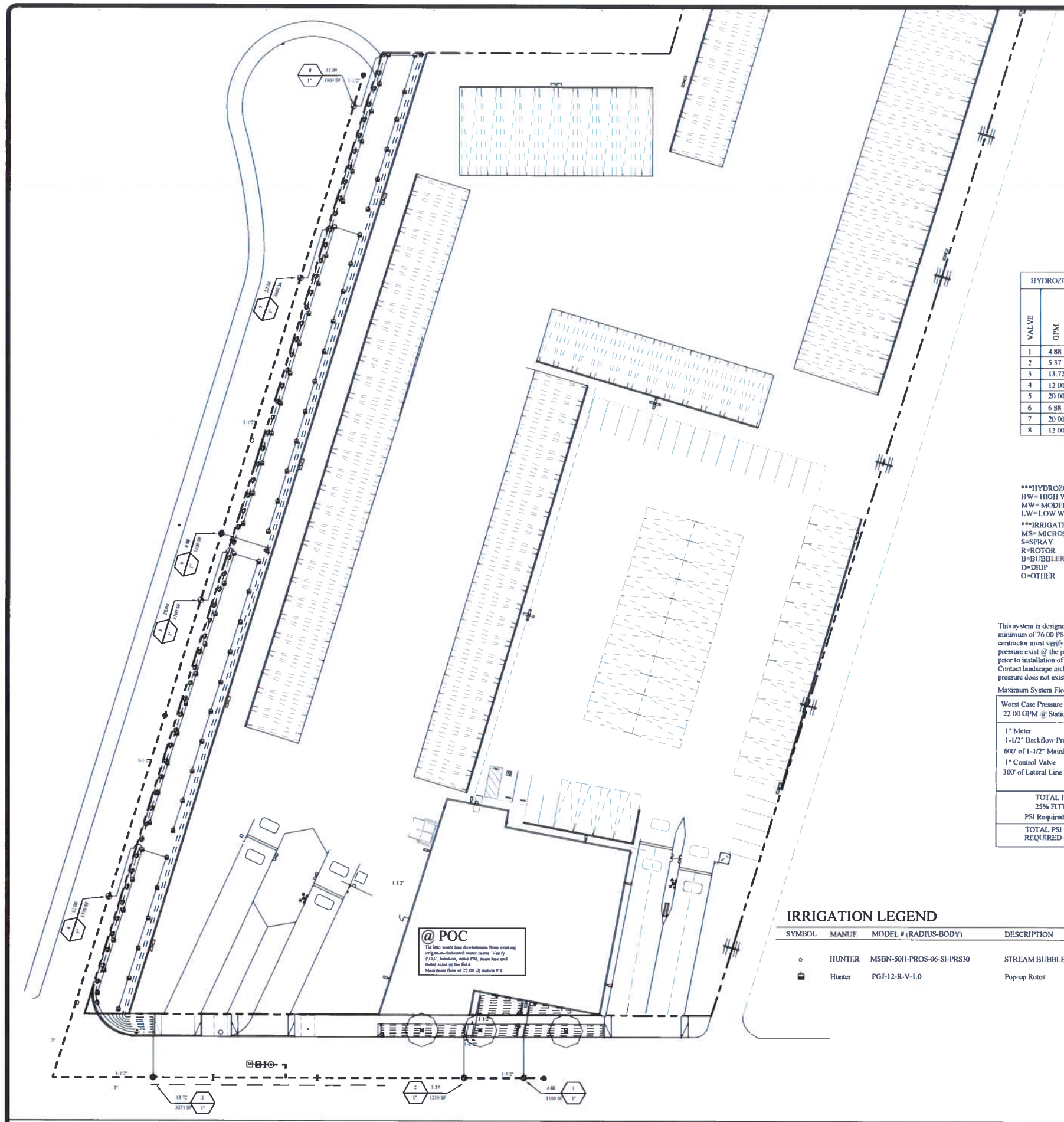
SIMON GLOVER
3293 PACIFIC AVENUE
LONG BEACH, CA

TERRENO DOMINGUEZ
2315 EAST DOMINGUEZ STREET
CARSON, CA

LANDSCAPE INDEX SHEET

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	CSL
DATE:	06-06-19

SHEET NO. I1



IRRIGATION LEGEND

SYMBOL	MANUF	MODEL #	DESCRIPTION
	Irritrol	Total Control TC-12EX	12 Station wall mounted automatic ET controller. Mount on wall where shown or as directed by owner. Coordinate with electrician to provide 120VAC power to controller
	Irritrol	Climate Logic CL-100- Wireless	Wireless Weather sensing system. Install Unobstructed, 2' Below Top of Roof on Outside Wall

CONTRACTOR MUST PROVIDE ALL COMPONENTS, PROGRAMMING AND DATA INPUT FOR IMMEDIATE ET BASED SCHEDULING BY THE IRRIGATION CONTROLLER. PROVIDE MANUFACTURER DOCUMENTATION / CERTIFICATION THAT THIS HAS BEEN COMPLETED. AFTER THIS IS DONE TEMPORARY MANUAL PROGRAMMING IS ALLOWED FOR A MAXIMUM 3 MONTH ESTABLISHMENT PERIOD.

M	-	-	1" Water Meter
	Febco	825-Y	1-1/2" Reduced Pressure Type Backflow Preventer & Ball Valves - Located in Shrub Area to screen
	Nibco	113T	Line-sized Gate Valve
	Irritrol	100 Series	1" Master Control Valve
	Rainbird	PEB Series	Plastic In-line Electric Remote Control Valve-Sized Noted
	Rainbird	33 DRC	3/4" Quick Coupler Valve

DRIP IRRIGATION

SYMBOL	MANUF	MODEL #	DESCRIPTION
	Rainbird	PEB Series	Plastic In-line Electric Remote Control Valve -Sized Noted
	Netafim	Disc Filter	≤17 gpm = 3/4" Filter 17≤22 gpm = 1" Filter 22≤35 gpm = 1-1/2" Filter
	Netafim	PRV075 Series	Inline 3/4" Pressure Regulator- Low Flow Inline PR= (0.25-4.40 GPM) High Flow Inline PR= (4.50-17.60 GPM)
	Netafim	TLSOV	Manual Line Flushing Valve in Valve Box
	Netafim	Air/Vacuum Relief Valve	3/4" Air/Vacuum Relief Valve Locate at highest point in system regardless of where shown on plan. Add additional air relief valve if multiple high point exist with a grade difference > 6'

* Contractor shall Install all Netafim Products per Manufactures Specifications
Netafim Contact Info phone: 888-638-2346 web: www.netafimusa.com

HYDROZONE CHART				
VALVE	GPM	AREA (SQ. FT)	IRRIGATION METHOD	HYDROZONE
1	4.88	1100	D	LW
2	5.37	1210	D	LW
3	13.72	3275	D	LW
4	12.00	1750	R	LW
5	20.00	3100	R	LW
6	6.88	1100	D	LW
7	20.00	3600	R	LW
8	12.00	1800	R	LW

***HYDROZONE
HW= HIGH WATER USE PLANTS
MW= MODERATE WATER USE PLANTS
LW= LOW WATER USE PLANTS

***IRRIGATION METHOD
MS= MICROSPRAY
S=SPRAY
R=ROTOR
B=BUBBLER
D=DRIP
O=OTHER

This system is designed to operate with a minimum of 76.00 PSI of pressure. The contractor must verify that minimum pressure exist @ the point of connection prior to installation of irrigation system. Contact landscape architect if minimum pressure does not exist (714) 680-0417

Maximum System Flow @ Station 10 = 22.00 GPM

Worst Case Pressure Calculations POC 22.00 GPM @ Station 10	
1" Meter	2.80
1-1/2" Backflow Preventer	12.00
600' of 1-1/2" Mainline	8.22
1" Control Valve	2.90
300' of Lateral Line	1.28
TOTAL PSI LOSS	27.20
25% FITTING	6.80
PSI Required @ Head	40.0
TOTAL PSI REQUIRED @ POC	74.00

IRRIGATION LEGEND

SYMBOL	MANUF	MODEL # (RADIUS-BODY)	DESCRIPTION	PSI	GPM	RAD	Precip/ Rate
	HUNTER	MSBN-50H-PROS-06-SI-PRS30	STREAM BUBBLER	30	.50	12"	
	Hunter	PGJ-12-R-V-1.0	Pop-up Rotor	40	1.0	19'	0.62

IRRIGATION PIPE & VALVE LEGEND

Schedule 40 PVC Pipe Mainline up to 1-1/2" and Class 315 for 2" and larger- Size Noted

Schedule 40 PVC Pipe for Lateral lines- To be 3/4" & Larger
"OR" Drip irrigation supply header (where occurs)-
0 to 8 GPM= 3/4" PVC
8 to 12 GPM= 1" PVC
12 to 22 GPM= 1 1/4" PVC
22 to 30 GPM= 1 1/2" PVC

Schedule 40 PVC Pipe Sleeve - Size shall be two sizes larger than pipe servicing

Techline CV Dripline 18" emitter spacing and 18" Max Row Spacing
(By Netafim USA, To be Buried 4"min - 6"max. Dripper Flow Rate- 0.6, Inlet Pressure- 35 psi)

Saw cut paving to install new lateral or main lines.
(Only if needed) Patch to match existing.

California Water Efficient Landscape Worksheet

Reference Evapotranspiration (ET_o)	50.1	Project Type	Non-Residential			0.45
Hydrozone # / Planting Description[a]	Plant Factor (PF)	Irrigation Method[b]	Irrigation Efficiency (IE)[c]	ETAF (PF/IE)	Landscape Area (Sq. Ft.)	ETAF x Area	Estimated Total Water Use (ETWU)[d]
Regular Landscape Areas							
1	0.3	Drip	0.81	0.37	1100	407	12655
2	0.3	Drip	0.81	0.37	1210	448	13920
3	0.3	Drip	0.81	0.37	3275	1213	37677
4	0.3	Overhead	0.75	0.40	1750	700	21743
5	0.3	Overhead	0.75	0.40	3100	1240	38517
6	0.3	Drip	0.81	0.37	1100	407	12655
7	0.3	Overhead	0.75	0.40	3600	1440	44729
8	0.3	Overhead	0.75	0.40	1800	720	22365
			0.75	0.00		0	0
			0.75	0.00		0	0
			0.75	0.00		0	0
			0.75	0.00		0	0
			0.75	0.00		0	0
				Totals	16935	6576	204261
Special Landscape Areas							
				1		0	0
				1		0	0
				1		0	0
				1		0	0
				Totals	0	0	0
						ETWU Total	204261
						Maximum Allowed Water Allowance (MAWA)[e]	236716

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	6576
Total Area	16935
Average ETAF	0.39

All Landscape Areas

Total ETAF x Area	6576
Total Area	16935
Average ETAF	0.39

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

0 30' 60' 90' 120'

SCALE: 1"=30'-0"

DATE	REVISION	BY

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Fullerton, California 92832
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Email: clark@emeraldesigns.com

SIMON GLOVER
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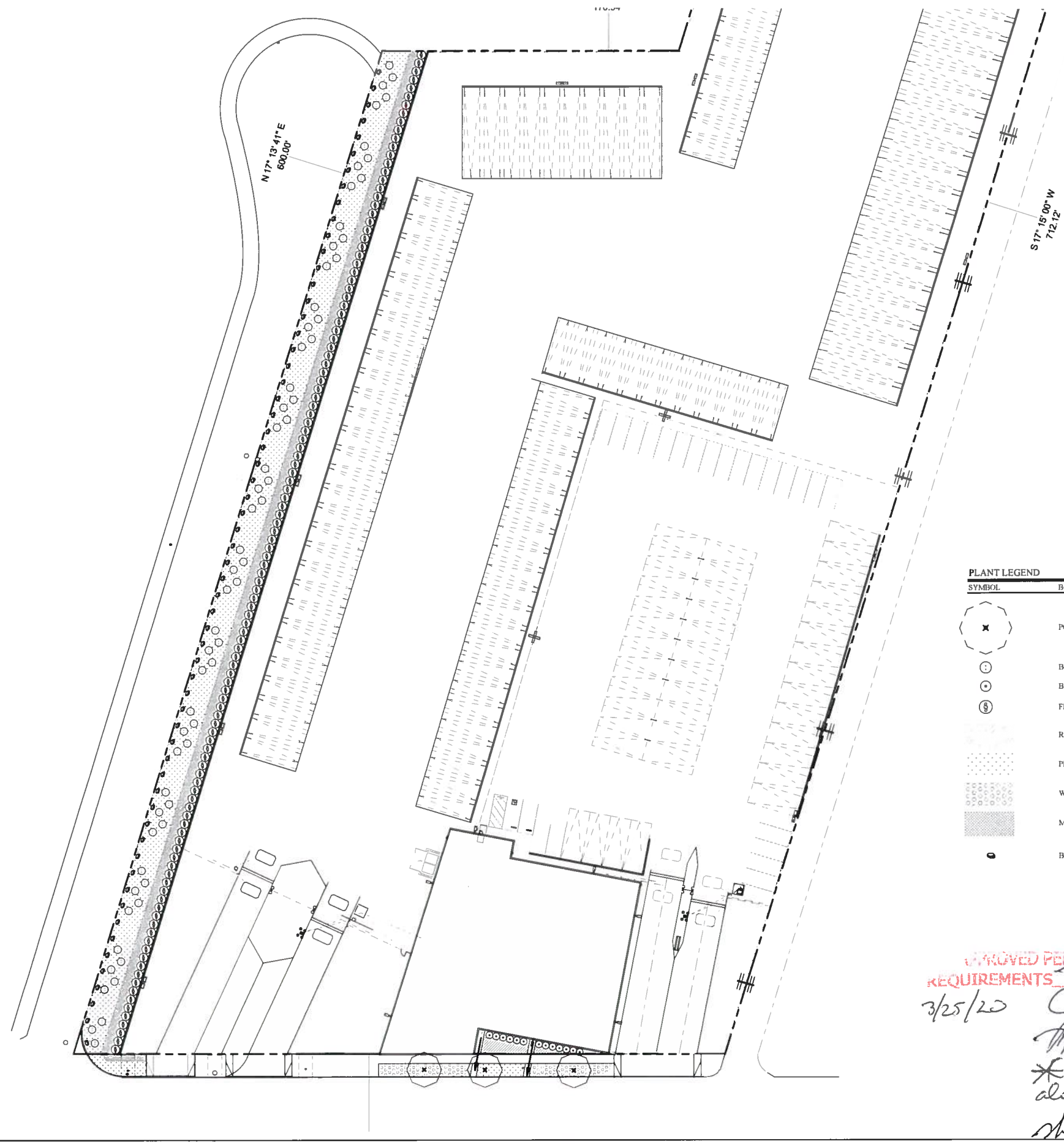
LONG BEACH, CA

TERRENO DOMINGUEZ
2315 EAST DOMINGUEZ STREET
CARSON, CA

LANDSCAPE IRRIGATION

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	CSL
DATE:	06-06-19

SHEET NO.
L1



PLANT LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY	WATER USE
	PODOCARPUS GRACILIOR	YEW PINE	EXISTING	TO REMAIN	
	BOUGAINVILLEA RASPBERRY ICE	BOUGAINVILLEA	5 GAL	64	LOW
	BERBERIS THUNBERGII	BERBERRY	5 GAL	13	LOW
	FICUS PUMILA	CREEPING FIG	5 GAL	120	LOW
	ROSMARINUS 'TUSCAN BLUE'	UPRIGHT ROSEMARY	1 GAL	@36" O C	LOW
	PHYLLA NODIFLORA	KURAPIA	PLUGS	@12" O C	LOW
	WESTRINGIA MUNDI	LOW COAST ROSEMARY	5 GAL	@24" O C	LOW
	MULCH	3" LAYER SHREDDED BARK MULCH			
	BOULDER 2-3' GRANITE BOULDERS LOCALLY SOURCED				

APPROVED PER PLANNING DIVISION REQUIREMENTS
PLANNER
3/25/20

Approved for drought tolerant landscaping along Pacific Ave only (CUP 17-18)
* Replacement for "Podocarpus" along Dominguez Cul de sacs shall be Chinese Pistache

0 30' 60' 90' 120'
SCALE: 1"=30'-0"

DATE	REVISION	BY

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SIMON GLOVER
3293 PACIFIC AVENUE
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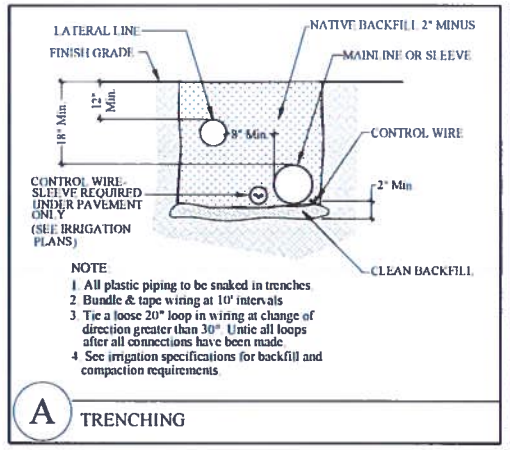
TERRENO DOMINGUEZ
2315 EAST DOMINGUEZ STREET
CARSON, CA

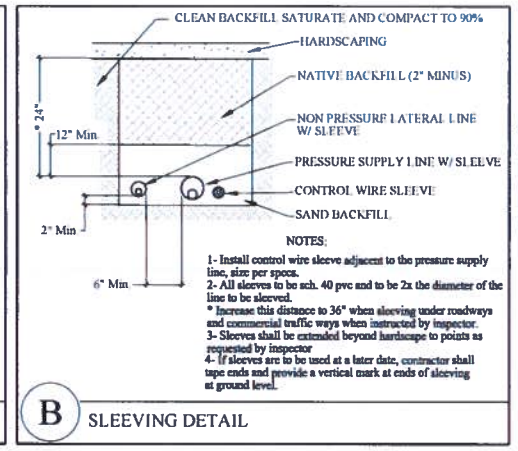
LANDSCAPE PLANTING

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	CSL
DATE:	08-06-19

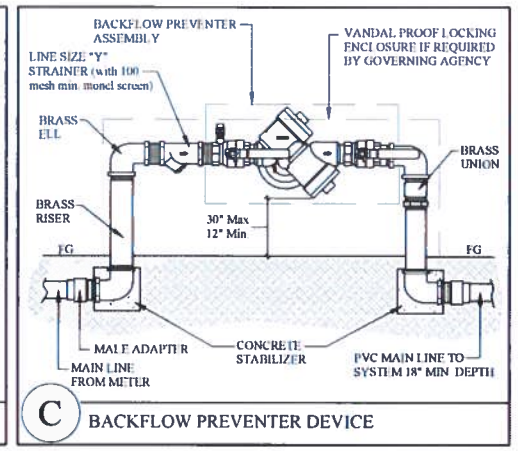
SHEET NO.
L2



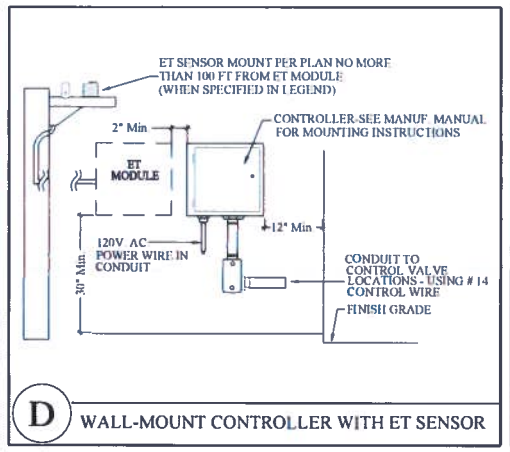
A TRENCHING



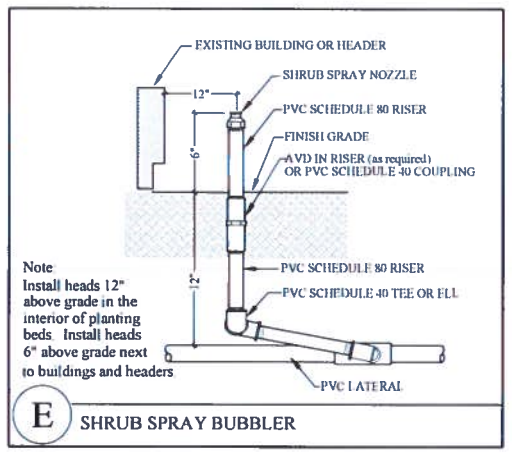
B SLEEVING DETAIL



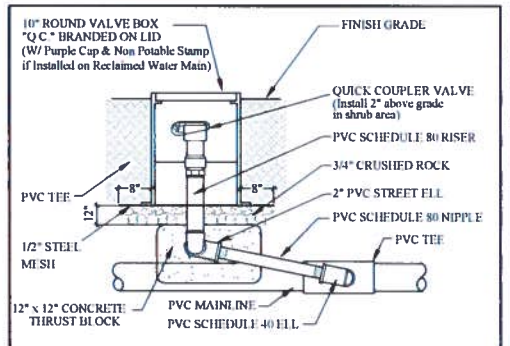
C BACKFLOW PREVENTER DEVICE



D WALL-MOUNT CONTROLLER WITH ET SENSOR

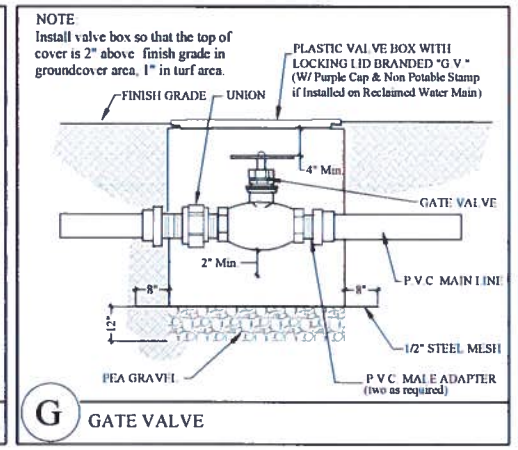


E SHRUB SPRAY BUBBLER

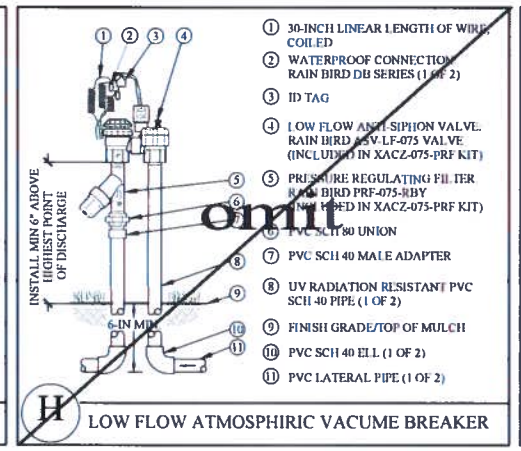


Note: Install 6" from nearest adjacent paved area

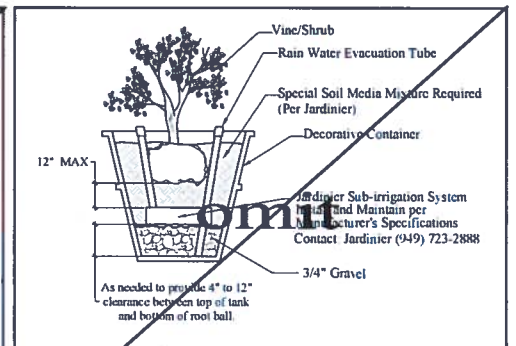
F QUICK COUPLING VALVE



G GATE VALVE

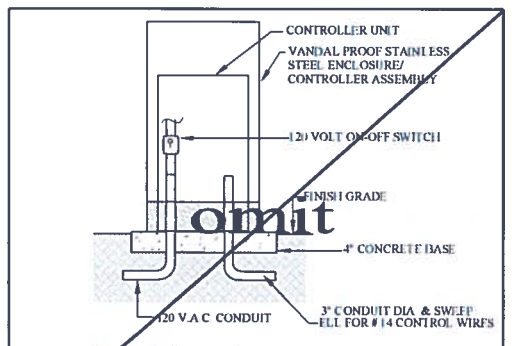


H LOW FLOW ATMOSPHIRIC VACUME BREAKER



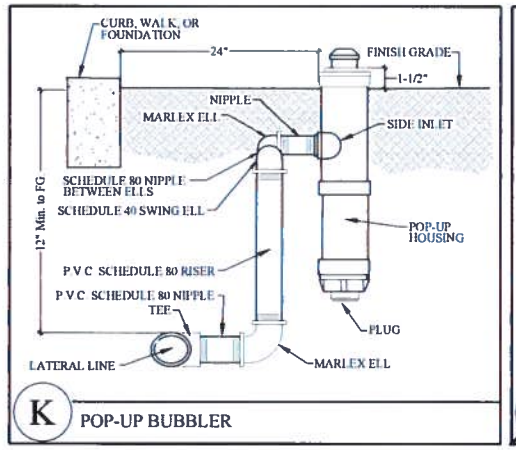
* Note: All Plants in Pots/Containers Shall Be Manually Irrigated Using Jardinier Sub-Irrigation Sys.

I CONTAINER IRRIGATION (TYP)

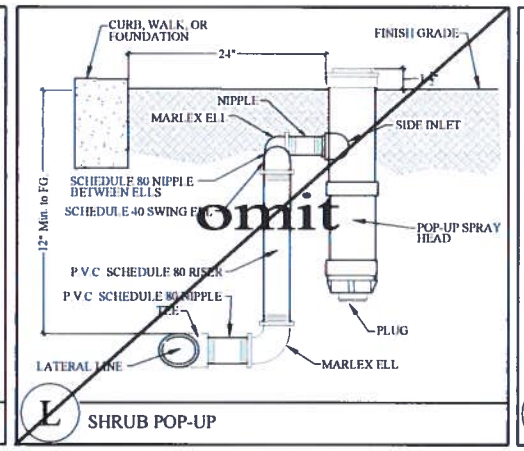


NOTE All wire to be installed as per local code
Provide commercial padlock and two (2) keys to owner.

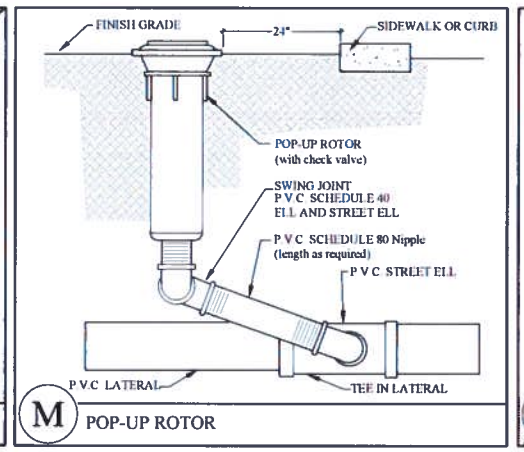
J PEDISTAL-MOUNT CONTROLLER



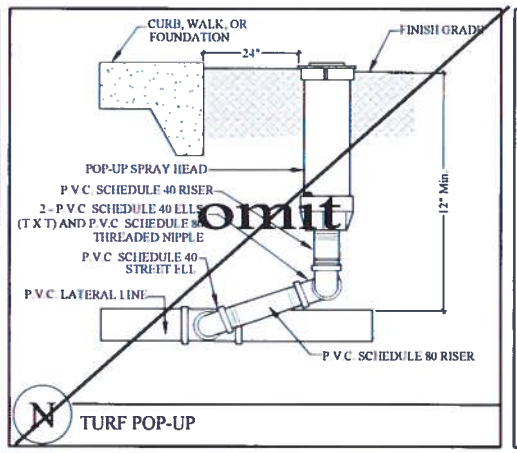
K POP-UP BUBBLER



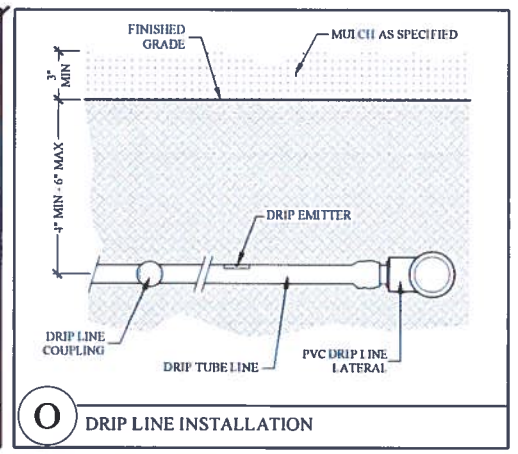
L SHRUB POP-UP



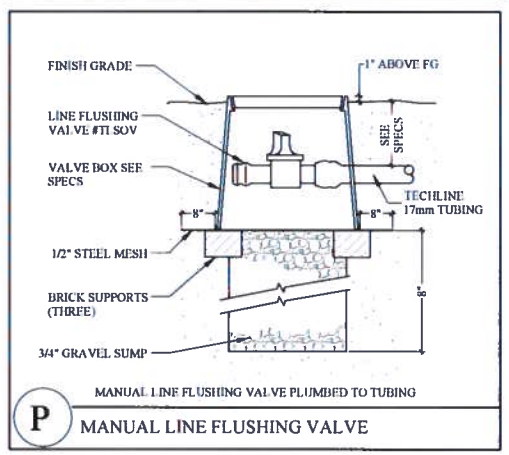
M POP-UP ROTOR



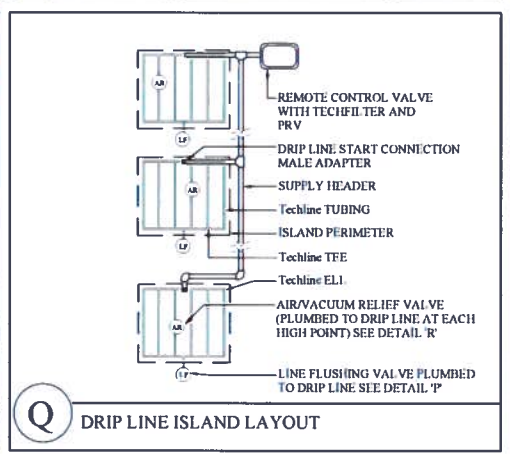
N TURF POP-UP



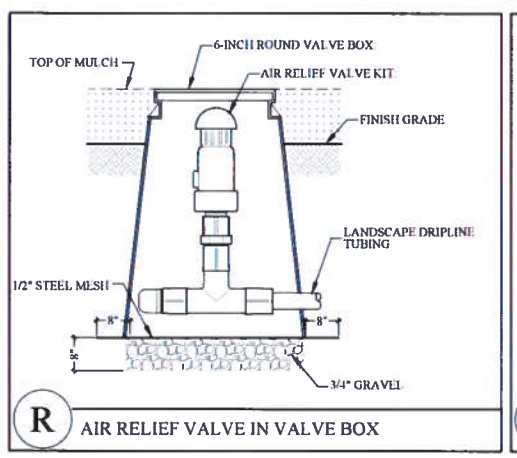
O DRIP LINE INSTALLATION



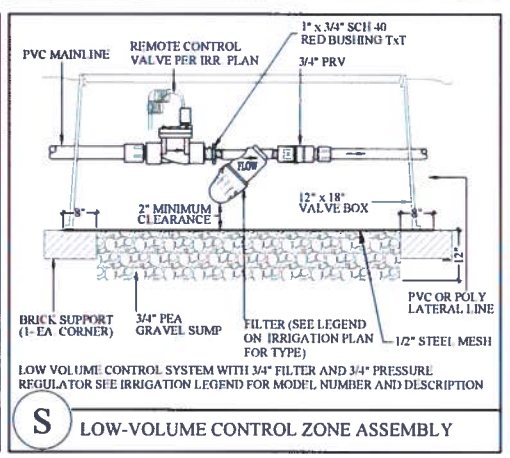
P MANUAL LINE FLUSHING VALVE



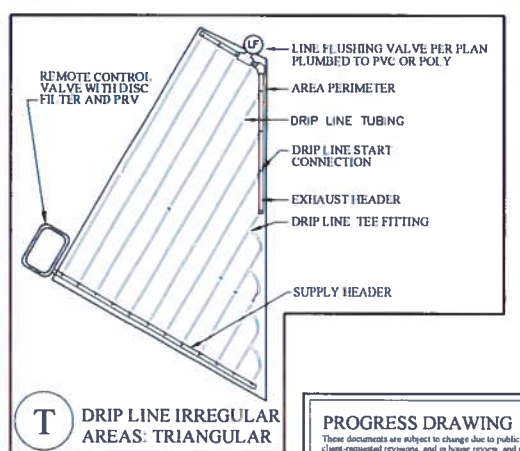
Q DRIP LINE ISLAND LAYOUT



R AIR RELIEF VALVE IN VALVE BOX



S LOW-VOLUME CONTROL ZONE ASSEMBLY



T DRIP LINE IRREGULAR AREAS: TRIANGULAR

PROGRESS DRAWING

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SCALE: NTS

DATE	REVISION	BY

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TERRENO DOMINGUEZ
2315 EAST DOMINGUEZ STREET
CARSON, CA

IRRIGATION DETAILS

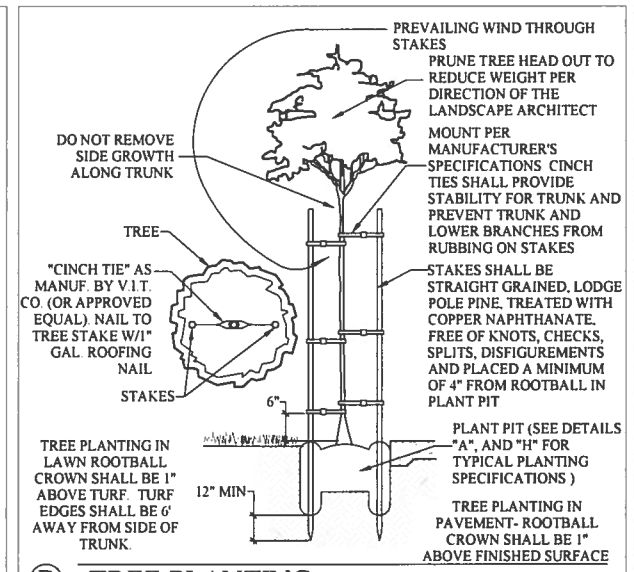
JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	C S L
DATE:	08-06-19

SHEET NO.
L3

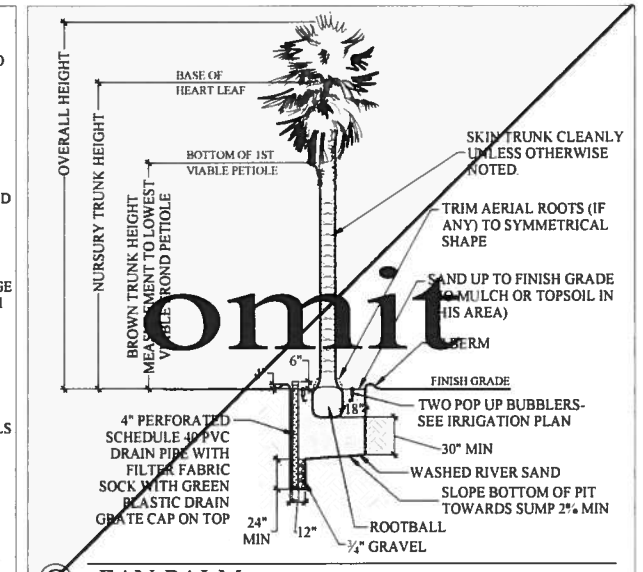
Container Size	A	B	C	D
1 Gallon	12"	7"	4"	-
2 Gallon	18"	8"	4"	-
5 Gallon	24"	12"	4"	-
7 Gallon	26"	16"	6"	-
15 Gallon	36"	18"	6"	48"
18" Box	42"	18"	6"	48"
24" Box	48"	22"	6"	48"
30" Box	54"	27"	12"	48"
36" Box	66"	32"	12"	48"
42" Box	78"	32"	12"	60"
48" Box	90"	36"	12"	60"
54" Box	102"	36"	12"	60"
60" Box	108"	42"	12"	72"
72" Box	120"	42"	12"	72"

A, B, C and D refer to Details "B", "G" and "H" below

(A) PLANTING PIT LEGEND



(B) TREE PLANTING



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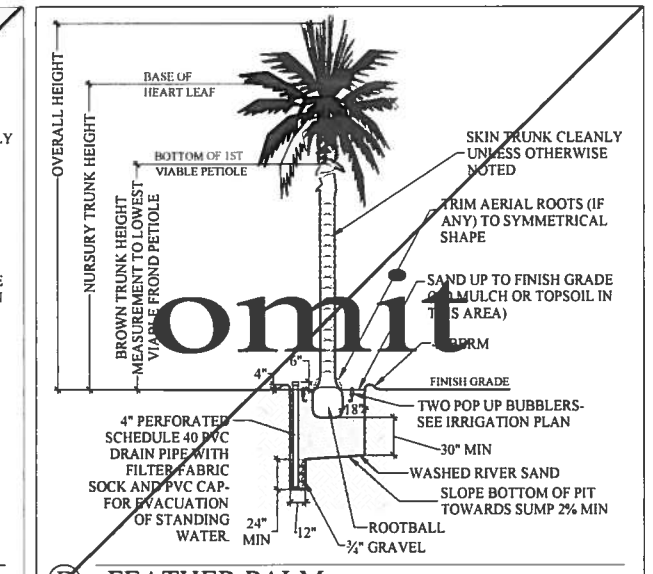
(C) FAN PALM



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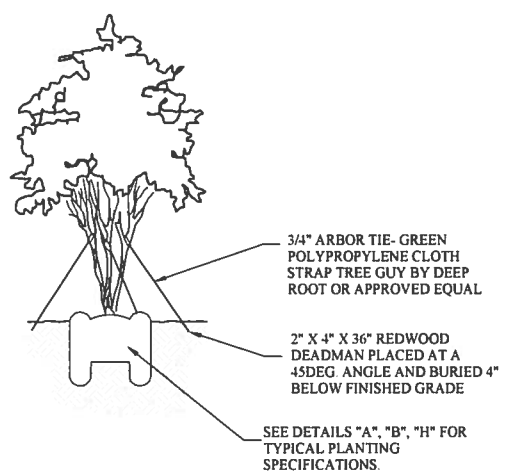
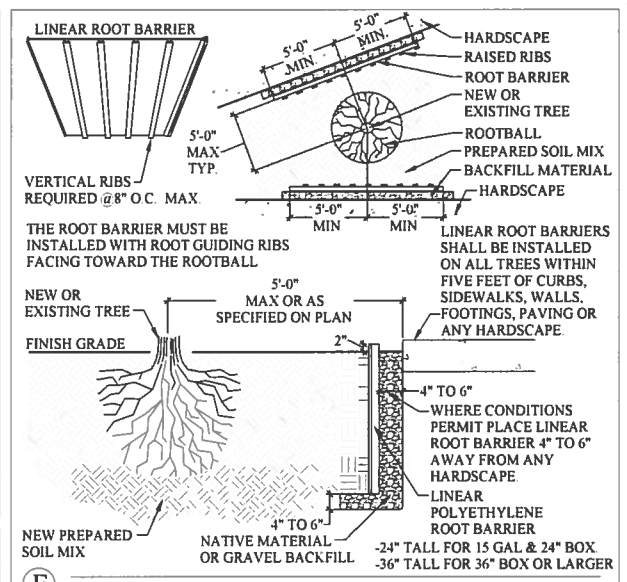
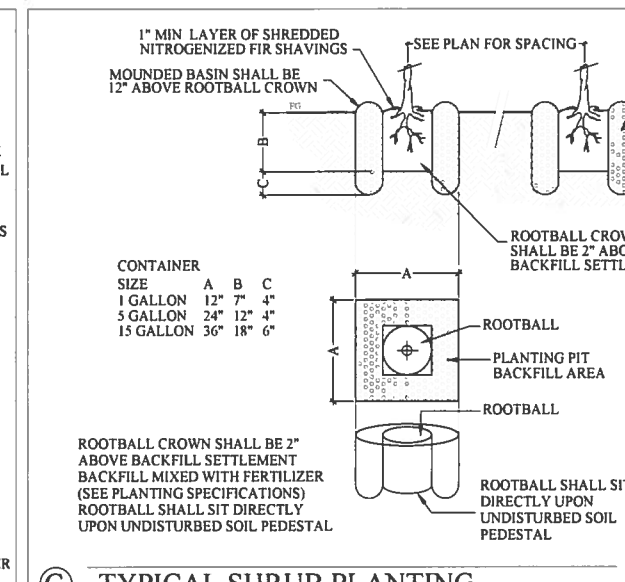
(D) FEATHER PALM



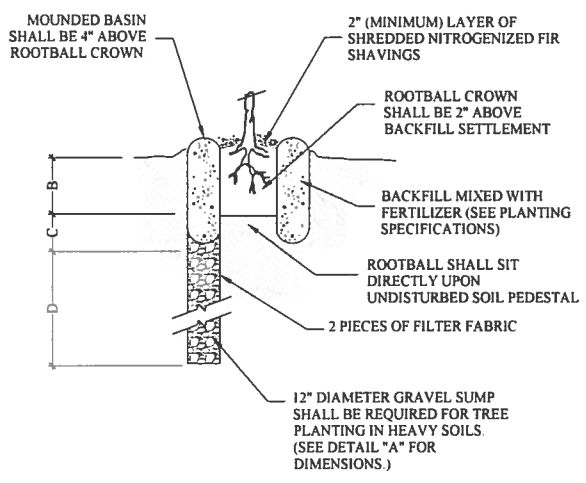
(E) MULTIPLE TRUNK GUYING



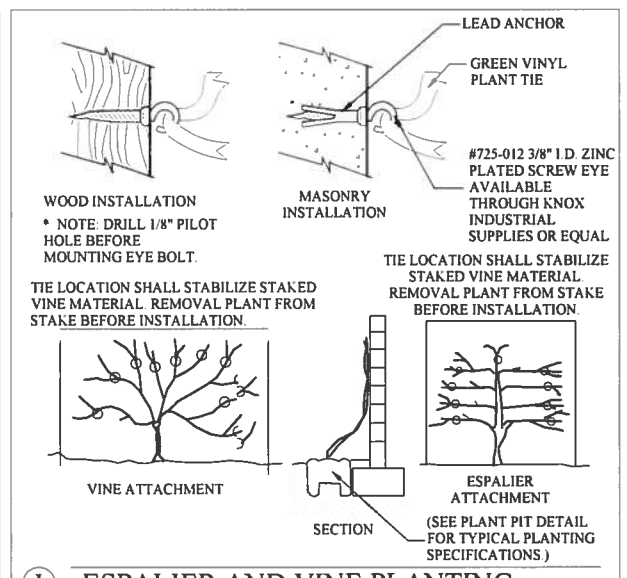
(F) LINEAR ROOT BARRIER PLANTING



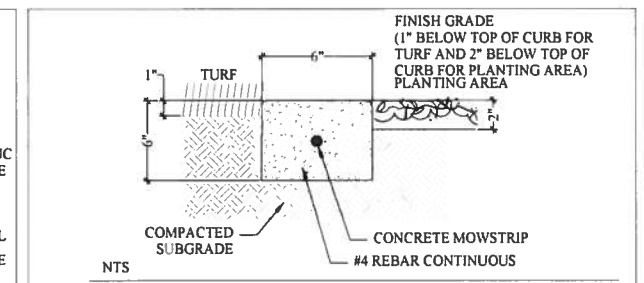
(G) TYPICAL SHRUB PLANTING



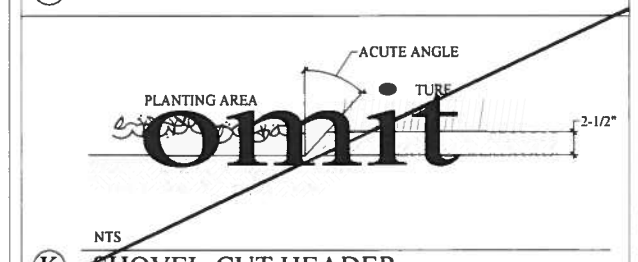
(H) HEAVY SOIL PLANTING



(I) ESPALIER AND VINE PLANTING



(J) 6" CONCRETE MOWSTRIP



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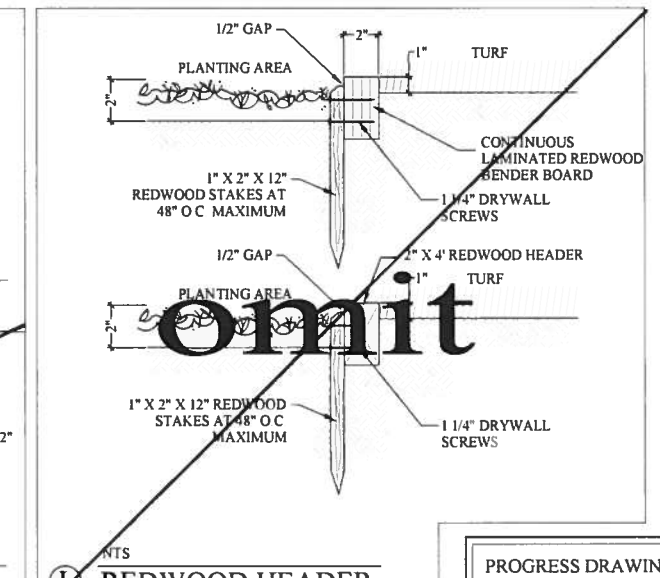
(K) SHOVEL-CUT HEADER



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(L) REDWOOD HEADER

PROGRESS DRAWING

These documents are subject to change due to public agency comment, client-requested revisions, and in house review, and are therefore NOT ACCEPTABLE FOR BIDDING OR CONSTRUCTION. The landscape architect is not responsible for contract bids or project construction made from any document bearing this notice

SCALE: NTS

DATE	REVISION	BY

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SIMON GLOVER
3293 PACIFIC AVENUE
LONG BEACH, CA

TERRENO DOMINGUEZ
2315 EAST DOMINGUEZ STREET
CARSON, CA

PLANTING DETAILS

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	C S L
DATE:	08-05-19

SHEET NO.
L4

IRRIGATION SYSTEM SPECIFICATIONS

Note: The general and specific conditions of these specifications are an integral part of the landscape construction documents and must be complied with.

I. GENERAL

A. SCOPE OF WORK

Provide all labor, materials, equipment, and services necessary to furnish and install Irrigation System as shown on the drawings and described herein.

B. QUALITY ASSURANCE AND REQUIREMENTS

1. Permits and Fees

The Contractor shall obtain and pay for any and all permits and all inspections as required.

2. Manufacturer's Directions

Manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of materials and articles used in this contract furnish directions covering points not shown in the drawings and specifications.

3. Ordinances and Regulations

All local, municipal and state laws, and rules and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these specifications and their provisions shall be carried out by the Contractor. Anything contained in these specifications shall not be construed to conflict with any of the above rules and regulations of the same. However, when these specifications and drawings call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the conditions of these specifications and drawings shall take precedence.

4. Explanation of Drawings

Contractor is responsible for all offsets, fittings, sleeves, fixtures, and appurtenant devices etc., which may be required for proper operation and construction of the system. Contractor will carefully investigate the structural and finished conditions affecting all of the work and plan the work accordingly, furnishing such fittings, etc., as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, other utilities planting, and architectural features.

The contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that unknown obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the Owner's authorized representative. In the event this notification is not performed, the Contractor shall assume full responsibility for any revision necessary at no additional cost to the Owner.

C. SUBMITTALS

1. Material List

Furnish the articles, equipment, materials or processes specified by name in the drawings and specifications. No substitution will be allowed without prior written approval by the Architect.

Substitute equipment or materials installed or furnished without prior approval of the architect may be rejected and the Contractor required to remove such materials from the and replace them with approved materials site at his own expense.

Approval of any item, alternate or substitute indicates only that the product or products apparently meet the requirements of the drawings and specifications on the basis of the information or samples submitted.

2. Record Drawings

a. The contractor shall prepare Record Drawings or As-Built plans showing the final construction field condition irrigation system

b. The Record Drawings/ As-Built plans shall be accurate, legible, and to a measurable scale, i.e.; 1"=20', 1/8" =1'-0" or other standard scale. These drawings are to be prepared on mylar or other reproductive material

c. On the Record Drawings/ As-Builts the contractor shall dimension from two permanent points of reference points of reference, building corners, sidewalk, or road intersections; etc., the locations of the following items:

(1) Connection to existing water lines.
(2) Connection to existing electrical power.
(3) Gate valves.
(4) Routing of sprinkler pressure lines (dimension max. 100' along routing)
(5) Sprinkler control valves.
(6) Routing of control wiring.
(7) Quick coupling valves.
(8) Other related equipment as directed by the Architect.

d. On or before the date of the final inspection, the Contractor shall deliver the corrected and completed Record Drawings/ As-Builts to the Owner. Delivery of theses drawings will not relieve the Contractor of the responsibility of furnishing required information that may be omitted from the prints.

3. Controller Charts

a. Record drawings shall be approved by the Architect before controller charts are prepared.
b. Provide one controller chart for each controller supplied.
c. The chart shall show the area controlled by the automatic controller and shall be the maximum size which the controller door will allow.
d. The chart is to be a reduced drawing of the actual As-Built system. However, in the event the controller sequence is not legible when the drawing is reduced, the information shall be enlarged to a size that will be readable when reduced.
e. The circuits shown on the chart shall be color-coded and a different color shall be used to indicate the area of coverage for each controller station.
f. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum 10 mils thick.
g. These charts shall be completed and approved prior to final inspection of the irrigation system.

4. Operating and Maintenance Manuals

Prepare and deliver operation and maintenance manuals as specified in Division 1 and as follows:
a. Catalog and parts sheets on every material and all equipment installed under this Contract.
b. Guarantee statement.
c. Complete operating and maintenance instructions on all major equipment.
d. In addition to the above mentioned maintenance manuals, provide the Owner's maintenance personnel with instructions for major equipment and show evidence in writing to the Architect at the conclusion of the project that this service has been rendered.

5. Equipment to be Furnished

Supply as a part of this Contract the following tools:
a. Two sets of any special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on this project.
b. Two five-foot valve keys for operation of gate valves.
c. Two keys for each automatic controller.
d. One quick coupler key and matching hose swivels per four quick coupling valves installed.
e. Two sets of operation manuals for automatic controllers and valves.
f. Any other equipment deemed necessary by the Manufacturer's instructions to the proper operation of the irrigation system.

The above-mentioned equipment shall be turned over to the Owner at the conclusion of the project. Before final inspection can occur, evidence that Owner has received material must be shown to the Architect.

D. PRODUCT DELIVERY, STORAGE AND HANDLING

Handling of PVC Pipe and Fittings: The Contractor is cautioned to exercise care in handling, loading unloading, and storing PVC pipe and fittings. Do not subject PVC pipe to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and, if installed, shall be replaced with new piping.

E. GUARANTEE

The guarantee for the sprinkler irrigation shall be made in accordance with the form shown below. A copy of the guarantee form shall be included in the operations and maintenance manual. The guarantee form shall be re-typed onto the Contractor's letterhead and contain the following information:

GUARANTEE FOR SPRINKLER IRRIGATION SYSTEM

We hereby guarantee that the sprinkler irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications, ordinary wear and tear and unusual abuse or neglect excepted. We agree to repair or replace and defects in material or workmanship which may develop during the period of one year from date of acceptance and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the Owner. We shall make such repairs or replacements within reasonable time, as determined by the Owner, after receipt of written notice. In the event of our failure to make such repairs or replacements within a reasonable time after receipt of written notice from the Owner, we authorize the Owner to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefor upon demand.

PROJECT:_____
LOCATION:_____

SIGNED:_____
Contractor _____
ADDRESS:_____

PHONE:_____
DATE OF ACCEPTANCE:_____

II PRODUCTS

A. MATERIALS

1. General: Use only new materials of brands and types noted on drawings, specified herein, or approved equals.

2. PVC Pressure Main Line Pipe and Fittings

a. Pressure main line piping for all sizes shall be PVC Class 315 for 2" and larger, schedule 40 for 1-1/2" and smaller.
b. Pipe shall be made from NSF approved type 1, Grade 1 PVC compound conforming to ASTM resin specification 1785. All pipe shall meet requirements as set forth in Federal Specifications PS-21-70. (Solvent-weld pipe).
c. PVC solvent-weld fittings shall be Schedule 40, 1-2, II-I NSF approved conforming to ASTM test procedure D2466.
d. Solvent cement and primer for PVC solvent-weld pipe and fittings shall be of type and installation methods prescribed by the manufacturer.
e. All PVC pipe shall bear the following markings:
(1) Manufacturer's name.
(2) Nominal pipe size.
(3) Schedule or Class.
(4) Pressure rating in PSI.
(5) NSF (National Sanitation Foundation) approval.
f. All fittings shall bear the manufacturer's name or trademark material designation, size, applicable I.P.S. schedule and NSF seal of approval.

3. PVC Non-Pressure Lateral Line Piping

a. Non-pressure buried lateral line piping shall be PVC schedule 40 with solvent weld joints.
b. Pipe shall be made from NSF approved, Type 1 Grade II PVC compound conforming to ASTM resin specification D1784. All pipe shall meet requirements set forth in Federal Specification PS-22-70, with an appropriate standard dimension ratio.
c. Except as noted in section II-A2, a & b, all requirements for non-pressure lateral line pipe and fittings shall be the same as for solvent-weld pressure main line pipe and fittings as set forth in section II-A-2 of these specifications.

4. UVR I PVC Pipe on Grade

a. All pipe on grade shall be schedule 40 UVR/ PVC pipe.
b. All pipe and fittings shall bear a permanent identifiable label of "Brownline UVR/ PVC. The piping and installation shall be in accordance with the requirements of the latest edition of the International Association of Plumbing and Mechanical Officials (IAPMO) Standard 1S-8.
c. All lateral piping shall be installed on the surface and anchored at 10' O.C. by a #3 rebar with a "J" hooked radius driven 24" into solid ground.
d. Horizontal piping stakes shall be within 12" of the sprinkler riser.
e. Each pipe riser serving a sprinkler head shall be anchored by a riser stabilizer assembly constructed of a #4 rebar driven 24" into solid ground and fastened to the riser by two (2) galvanized or stainless steel bands.
f. All risers and fittings used on UVR IPVC pipe shall be IFS schedule 40 or 80 as manufactured by " Brownline Pipe C.o.".

5. Brass Pipe and Fittings

a. Where indicated on the drawings, use red brass screwed pipe conforming to Federal Specification #WW-P-351.
b. Fittings shall be red brass conforming to Federal Specification #WW-P-460.

6. Gate Valves

a. Gate valves 3" and smaller shall be 125 lb. SWP bronze gate valve with screw-in bonnet, non-rising stem and solid wedge disc.
b. Gate valves 3" smaller shall be threaded ends and shall be equipped with a bronze handwheel.
c. Gate valve 3" and smaller shall be similar to those manufactures by Nibco or approved equal.
d. All gate valves shall be installed per installation detail.

7. Quick Coupling Valves

a. Quick coupling valves shall have a brass two-piece body designed for working pressure of 150 P.S.I.

8. Backflow Prevention Units

a. Backflow prevention units shall be of size and type indicated on the irrigation drawings. Install backflow prevention units in accordance with irrigation constructions details, and local prevailing codes.
b. Wye Strainers at backflow prevention units shall have a bronzed screwed body with 60 mesh model screen and shall be Watts #777 or approved equal.

9. Check Valves

Anti-drain valves shall be of heavy-duty virgin PVC construction with F.I.P. thread inlet and outlet. Internal parts shall be stainless steel and neoprene. Anti-drain valves shall be field adjustable again draw out from 5 to 40 feet of head. The anti-drain valve shall be similar to the Valcon ADV or approved equal.

PROGRESS DRAWING

These documents are subject to change due to public agency comment, client requested revisions, and as house review, and are therefore, NOT ACCEPTABLE FOR BIDDING OR CONSTRUCTION. The landscape architect is not responsible for contract bids or project construction made from any document bearing this note

SCALE: N/A

DATE	REVISION	BY

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SIMON GLOVER
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LONG BEACH, CA

TERRENO DOMINGUEZ
2315 EAST DOMINGUEZ STREET
CARSON, CA

IRRIGATION SPECIFICATIONS

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	C.S.L.
DATE:	08-05-19

SHEET NO.
L5

10. Control Wiring
a. Connections between the automatic controllers and the electric control valves shall be made with direct burial copper wire AWG-U.F. 600 volt. Pilot wires shall be a different color wire from each automatic controller. Common wires shall be white with a different color stripe for each automatic controller. Install in accordance with valve manufacturer's specifications and wire chart. In no case shall wire size be less than #14.
b. Wiring shall occupy the same trench and shall be installed along the same route as pressure supply or lateral lines wherever possible.
c. Where more than one (1) wire is placed in a trench, wiring shall be taped together at intervals of ten (10) feet.
d. An expansion curl shall be provided within three (3) feet of each wire connection. Expansion curl shall be of sufficient length so that in case of repair, the valve bonnet may be brought to the surface without disconnection of the control wires. Control wires shall be laid loosely in trench without stress or stretching of control wire conductors.
e. All splices shall be made with Scotch-Lok #3576 Connector Sealing Packs, Rainbird snap-rite connector, or approved equal. Use one splice per connector sealing pack.

11. Automatic Controllers
a. Automatic controllers and climate sensors and flow sensors shall be of size and type shown on the Plans.
b. Final location of automatic controllers shall be approved by the Owner's authorized representative.
c. Unless otherwise noted on the plans, the 120 volt electrical power to the automatic controller location to be furnished by others. The coordination with Electrical Contractor and final electrical hook-up shall be the responsibility of the irrigation contractor.
d. The contractor is responsible for properly programming the controller inconjunction with specified sensors. Coordinate with the manufacturer for any needed assistance.

12. Electric Control Valves
a. All electric control valves shall have a manual flow adjustment.
b. Provide and install one control valve box for each electric control valve.

13. Control Valve Boxes
a. Use 9 by 24 inch round box for all gate valves, Brooks #9 or approved equal.
b. Use 9-1/2 by 16 by 1 I-inch rectangular box for all electrical control valves, Carson Industries 1419-12B or approved equal.

14. Sprinkler Heads
a. All sprinkler heads shall be of the same size, type, and deliver the same rate of precipitation with the diameter (or radius) of throw, pressure, and discharge as shown on the plans and/or specified on these special provisions.
b. Spray heads shall have a screw adjustment.
c. Riser units shall be fabricated in accordance with the details.
d. Riser nipples for all sprinkler heads shall be the same size as the riser opening in the sprinkler head.

III. EXECUTION

A. INSPECTION

1. Site Conditions
a. All scaled dimensions are approximate. The contractor shall check and verify all size dimensions and receive Architect's approval prior to proceeding with work under this Section.
b. Exercise extreme care in excavating and working near utilities. Contractor shall be responsible for damages to utilities which are caused by his operation or neglect. Check existing utilities drawings for existing utility locations.
c. Coordinate installation of sprinkler irrigation materials, including pipe, so there shall be no interference with utilities or other construction or difficulty in planting trees, shrubs, or groundcovers.

B. PREPARATION
1. Physical Layout
a. Prior to installation, the Contractor shall stake out all pressure supply lines, routing and location of sprinkler heads.
b. All layout shall be approved by Architect prior to trenching.
2. Water Supply
a. Sprinkler irrigation system shall be connected to water supply points of connections as indicated on the drawings.
3. Electrical Supply
a. Electrical connections for automatic controller shall be made to electrical points of connections as indicated on the drawings.
b. Contractor is responsible for minor changes caused by actual site conditions.

C. INSTALLATION
1. Trenching
a. Dig trenches straight and support pipe continuously on sand or native bedding at bottom of trench. Remove all stones or sharp objects from trench . Lay pipe to an even grade. Trenching excavation shall follow layout indicated on drawings and as noted.
b. Provide for a minimum of eighteen (18") inches cover for all pressure supply lines.
c. Provide for a minimum cover of (12") inches for all non-pressure lines.
d. Provide for minimum cover of eighteen (18") inches for all control wiring.

2. Backfilling
a. The trenches shall not be backfilled until all required tests are performed. Trenches shall be carefully backfilled with the excavated material approved by the Soils Engineer for backfilling consisting of earth, loam, sandy clay, sand, or other approved materials, free from large clods of earth or stones. Backfill shall be compacted in landscape areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill will conform to adjacent grades without dips, sunken, areas, humps or other surface irregularities.
b. No foreign matter larger than one-half (1/2) inch in size will be permitted in the initial backfill.
c. Flooding of trenches will be permitted only with the approval of the Soils Engineer and Architect.
d. If settlement occurs and subsequent adjustments in pipe, valves sprinkler heads, lawn or planting, or other construction are necessary, the Contractor shall make all required adjustments without cost to the Owner.

3. Trenching and Backfill Under Paying
a. Trenches located under areas of paving, asphaltic concrete shall be backfilled with sand (a layer six inches below the pipe and three inches above the pipe) and compacted in layers to 90% left flush with the adjoining grade. The sprinkler irrigation Contractor shall set in place, cap and pressure test all piping under paving prior to the paving work.
b. Generally, piping under existing walks is done by jacking, boring or hydraulic driving, but where any cutting or breaking of sidewalks and or concrete is necessary, it shall be done and replaced by the Contractor as part of the Contract cost. Permission to cut or break sidewalks and or concrete shall be obtained from the Property Owner.
c. Provide for a minimum cover of twenty-four inches between the top of the pipe and the bottom of the aggregate base for all pressure and non-pressure piping installed under asphaltic concrete paving.

4. Assemblies
a. Routing of sprinkler irrigation lines as indicate on the drawing is diagrammatic. Install lines and various assemblies to confirm with the details shown on drawings.
b. Install no multiple assemblies on plastic lines. Provide each assembly with its own outlet.
c. Install all assemblies specified herein in accordance with respective detail. In absence of detail drawings or specifications pertaining to specific items required to complete work, perform, such work in accordance with best standard practice with prior approval of Architect.
d. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust, and moisture before installation. Installation and solvent-welding methods shall be as recommended by the pipe and fittings manufacture.
e. On PVC to metal connections, the Contractor shall work the metal connections first. Teflon tape or approved equal shall be used on all threaded PVC to PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required use threaded PVC adapters into which the pipe may be welded.

5. Line Clearance
a. All lines shall have a minimum clearance of six inches from each other. Parallel lines shall not be installed directly over one another.
No other trades are allowed in same trench with irrigation pipe

6. Automatic Controller
a. Install controller in a vandal-proof enclosure.
b. Install as per manufacturer's instructions. Remote control valves shall be connected to controller in numerical sequences shown on the drawing.
c. Automatic controllers shall be of size and type shown on the plans.
d. Final location of automatic controllers shall be approved by the Owner's authorized representative.
e. Unless otherwise noted on the plans, the 120 volt electrical power to the automatic controller location to be furnished by others. The final electrical hook-up shall be the responsibility of the irrigation contractor.
f. Remote Control Valves Install where shown on drawings and details. When grouped together, allow at least twelve inches between valves. Install each remote control valve in a separate valve box.

7. Flushing of System
a. After all new sprinkler pipe lines and risers are in place and connected, all necessary diversion work has been completed and prior to installation of sprinkler heads the control valves shall be opened and a full head of water used to flush out the system.
b. Sprinkler heads shall be installed only after flushing of the system has been accomplished to the complete satisfaction of the Architect

8. Sprinkler Heads
a. Install the sprinkler heads as designated on the drawings. Sprinkler heads to be installed in this work shall be equivalent in all respects to those itemized.
b. Spacing of heads shall not exceed the maximum indicated on the drawings. In no case shall the spacing exceed the maximum recommended by the manufacturer.

D. TEMPORARY REPAIRS
a. The Owner reserves the right to make temporary repairs as necessary to keep the sprinkler system equipment in operating condition. The exercise of this right by the builder-Developer shall not relieve the Contractor of his responsibilities under the terms of the guarantee as herein specified.

E. FIELD QUALITY CONTROL

1. Adjustment of the System
a. The Contractor shall flush and adjust heads for optimum performance and to prevent overspray onto walks, roadways, walls fences, windows, and buildings as much as possible.
b. If it is determined that adjustments in the irrigation equipment will provide proper and more adequate coverage, the Contractor shall make such adjustments prior to planting. Adjustments may also include changes in nozzle sizes and degrees of are as required.
c. Lowering raised sprinkler heads by the Contractor shall be accomplished within ten days after notification by Owner.
d. All sprinkler heads shall be set perpendicular to finished grades unless otherwise designated on the plans.

2. Testing of Irrigation System
a. The Contractor shall request the presence of the Architect in writing at least 48 hours in advance of testing.
b. Test all pressure lines under hydrostatic pressure of 150 pounds per square inch and prove watertight.
NOTE: Testing of pressure main lines shall occur prior to installation of electric control valves.
c. All piping under paved areas shall be tested under hydrostatic pressure of 150 pounds per square inch and proved watertight prior to paving.
d. Sustain pressure in mainlines for not less than 4 hours. If leaks develop, replace joints and repeat test until entire system is proven water-tight.
e. All hydrostatic tests shall be made only in the presence of the Architect and City Landscape Inspector or other duly authorized representative of the Owner. No pipe shall be backfilled until it has been inspected, tested and approved in writing and shall be re-tested after backfill operations are complete.
f. Furnished necessary force pump and all other test equipment.
g. When the sprinkler irrigation system is completed, perform a coverage test in the presence of the Architect to determine if the water coverage for planting areas is complete and adequate. furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from plans or where the system has been willfully installed as indicated on the drawings when it is obviously inadequate without bringing this to the attention of the Architect. This test shall be accomplished before any groundcover is planted.
h. Upon completion of each phase of work, the entire system shall be tested and adjusted to meet site requirements.

F. MAINTENANCE

1. The entire sprinkler irrigation system shall be under full automatic operation for a period of seven days prior to any planting.
2. The Architect reserves the right to waive or shorten the operation period.

G. CLEAN-UP

Clean-Up shall be made as each portion of work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained to the site or the work of others shall be repaired to its original condition.

H. FINAL OBSERVATION PRIOR TO ACCEPTANCE

1. The Contractor shall operate each system in its entirety for the Architect at time of final observation. Any items deemed not acceptable by the Observer shall be reworked to the complete satisfaction of the Architect.
2. The Contractor shall show evidence to the Architect that the Owner has received all accessories, charts, record drawings, and equipment as required before final observation can occur.

I. OBSERVATION SCHEDULE

1. Contractor shall be responsible for notifying the Architect in Advance for the following observations according to the time indicated:
a. Pre-Job Conference - 7 days
b. Pressure supply line installation and testing - 4 days
c. Automatic Controller installation - 4 days
d. Control wire installation - 4 days
e. Lateral line and sprinkler installation - 4 days
f. Coverage test - 4 days
g. Final observation - 7 days

2. When inspections have been conducted by other than the Architect, show evidence of when and by whom these inspections were made.

3. No observation shall commence without As-Built drawings. In the event the Contractor calls for an observation without As-Built drawings, without completing previously noted corrections, or without preparing the system for observations, he shall be responsible for reimbursing the Architect at the hourly rate in effect at the time the observation, portal to portal plus transportation cost. Subsequent inspections will not be performed until this charge is paid.

PROGRESS DRAWING
These documents are subject to change due to public agency comment, client requested revisions, and in house review, and are therefore, NOT ACCEPTABLE FOR BIDDING OR CONSTRUCTION.
The landscape architect is not responsible for contract bids or project construction made from any document bearing this note

SCALE: N/A

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IRRIGATION SPECIFICATIONS

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	C S L
DATE:	08-06-19

SHEET NO.
L6

LANDSCAPE PLANTING SPECIFICATIONS

Note: The general and specific conditions of these specifications are an integral part of the landscape construction documents and must be complied with.

I. GENERAL

A. SCOPE OF WORK
Furnish all labor, materials, equipment, and services necessary to provide all landscape planting as shown on the drawings and specified.

B. QUALITY ASSURANCE
1. Source Quality Control
a. Submit documentation that all plant material has been ordered to least five days prior to start of work under this Section. Arrange procedure for inspection of plant material with Architect at time of submission.
b. Plants shall be subject to inspection and approval of Architect at place of growth upon delivery for conformity to specifications. Such approval shall not impair the right of inspection and rejection during progress of the work. Submit written request for inspection of plant material of plants to be inspected at this time if, in his judgment, a sufficient quantity of plants is not available for inspection.
c. The Landscape Architect and Owner have contractually agreed to notify the Landscape Contractor that he will be responsible for financial reimbursement to the Landscape Architect for Additional and unanticipated time and materials required to organize, re-design, re-inspect or to do whatever is required to guide a substandard installation or one which is not within substantial conformance to the Plans and Specifications back to an acceptable installation. Said reimbursement will in the form of a charge to the Contractor from the Owner.

C. SUBMITTALS
Certificate of Inspection of plant material by State or Federal Authority.

D. PRODUCT DELIVERY, STORAGE AND HANDLING
1. Delivery
a. Deliver fertilizer to site in original, unopened containers bearing manufacturer's guaranteed chemical analysis, name, trademark and conformance to State Law.
b. Deliver plants with legible identification labels.
1. Label trees, evergreens, bundles of containers of like shrubs or groundcover plants.
2. State correct plant name and size indicated on plant list.
3. Use durable, waterproof labels with water-resistant ink which will remain legible for at least 60 days.
c. Protect material during delivery to prevent damage to rootball or desiccation of leaves.
d. The contractor shall notify the Landscape inspector four days in advance delivery of all plant materials and shall submit an itemized list of plants in each delivery.
2. Pruning
At no time shall the tree or plant materials be pruned, trimmed or topped prior to delivery, and alteration of their shape shall be conducted only with the approval of the Landscape Architect.
3. Right of Inspection
The Landscape Architect reserves the right to approve or reject at any time upon delivery or during the work any or all plant material regarding size, variety or condition.
4. Soils Test
Two copies of soils tests performed by an approved agronomic soils testing laboratory shall be submitted with plans. All soil samples shall be taken in the field by a qualified soils technician and submitted with plans to testing labs unless prior approval for alternative procedures is given by the City Engineer. Tests shall include a fertility and suitability analysis with written recommendations. Contractor shall comply with recommendations given for soil amendments, plant material selections and irrigation equipment.
5. Storage
a. Store plant material in shade and protect from weather.
b. Maintain and protect plant material not to be planted within four hours.
6. Handling
a. Do not drop plant material.
b. Do not pick up container plant material by stems or trunks.

E. JOB CONDITIONS
1. Planting
Perform actual planting only when weather and soil conditions are suitable in accordance with locally accepted practice.
2. Scheduling
Install trees, shrubs and liner stock plant material before hydraulic seeded lawn areas are installed.

F. SAMPLES AND TESTS
1. The Landscape Architect reserves the right to take and analyze samples of materials for conformity to specifications at any time. Contractor shall furnish samples upon request by Landscape Architect. Rejected materials shall be immediately removed from the site and premises at Contractor's expense. Cost of testing of materials not meeting specifications shall be paid by Contractor.

2. Agricultural Suitability of the soil shall be determined by a credentialed soil science laboratory. The Laboratory shall prepare a written report on the soil testing which shall include a detailed description of test results along with recommendations for backfill and surface soil amendments. The contractor shall be responsible for the testing and for following the recommendations of the agronomic soils report.

3. Agricultural suitability analysis of soil.
a. Must include pH measurement in the Saturation Extract, Electrical Conductivity of the saturation extract and Sodium Adsorption Ratio of the saturation extract. The approved procedures are the following:

pH	Method 21
Saturation Extract	Method 2
Sodium Adsorption Ratio	Method 20b

Methods of the United States Salinity Laboratory as published in the Agricultural Handbook Number 60 entitled "Diagnosis and Improvement of Saline and Alkali Soils".

b. The following nutrients and elements must be determined with an American Society of Agronomy or Soil Science Society of America approved extraction method. Interpretation data must be given citing concentrations which are considered to be low, medium and high: boron, calcium, copper, iron, magnesium, manganese, molybdenum, phosphorus, potassium, sodium, sulfur, and zinc.
(1) The approved methods are those cited by the Council on Soil Testing and Plant Analysis and those methods currently published by Soil Science Society of America manuals, Communications in Soil Science and Plant Analysis, Soil Science and Soil Science Society of America Journal. Approved methods for phosphorus are Bray P1, Bray P2, Olsen P, DTPA, ammonium acetate, and ammonium bicarbonate-DTPA. Approved methods for boron are hot water extract and ammonium bicarbonate-DTPA extract.
c. The saturation extract must be analyzed for calcium, magnesium, sodium, boron, chloride, phosphorus, nitrate and sulfate.
d. The following trace metals must be measured by the DTPA extract: aluminum, arsenic, cadmium, chromium, cobalt, lead, lithium, nickel, selenium, silver, strontium, tin and vanadium.
e. The presence of calcium carbonate and/or magnesium carbonate must be determined.
f. Soil Texture (gravel, sand, silt and clay) must be determined. Determine organic matter content by the measurement of organic carbon. The quality of the organic matter shall be determined by measuring organic carbon and total nitrogen.
g. Interpretation of nutritional deficiencies or excesses and potential toxicities must be given.
h. Determine the following by methods approved by the American Society of Agronomy as published in the Methods of Soil Analysis, methods of the United States Salinity Laboratory as published in the Agricultural Handbook Number 60, entitled "Diagnosis and Improvement of Saline and Alkali Soils, " and bulk density of clods by the method published in Soil Science, vol 155, 325-330 (1993).
Exchangeable Ammonium cation
Base Saturation
Cation Exchange Capacity
Water Infiltration Rate - Method 34b of Agricultural Handbook Number 60

i. If required for more complete soil characterization, determine the following by methods approved by the American Society of Agronomy as published in the Methods of Soil Analysis, methods of the United States Salinity Laboratory as published in the Agricultural Handbook Number 60 entitled "Diagnosis and Improvement of Saline and Alkali Soils, " and bulk density of clods by the method published in Soil Science, vol 155, 325-330 (1993).
Carbonates Measurement
Soil Bulk Density (Compaction)

3. Elemental determinations to made according to methods approved by the EPA or by the American Society of Agronomy.
a. Optional - Growth Test for Toxic Constituents and/or Poor Physical Properties
1. Grow a dicot plant species and a monocot species with and without activated charcoal. Measure yield and percent of germination for all treatments. Report conclusions and findings.

G. GUARANTEE AND REPLACEMENTS
1. Guarantee
All plant material installed under the Contract shall be guaranteed against any and all poor, inadequate or inferior materials and/or workmanship for a period of one year (trees) or 6 months (shrubs) after date of acceptance by Owner. Any plant found to be dead or in poor condition due to faulty materials or workmanship, as determined by the Landscape Architect, shall be replaced by the Contractor at his expense.
2. Replacement Any materials found to be dead, missing or in poor ion during the establishment period shall be replaced immediately. The Landscape Architect, or his/her consultants, shall be the sole judge as to the condition of material. Material to be replaced within the guarantee period shall be replaced by the contractor within 15 days of written notification by the Owner.

II. PRODUCT

A. GENERAL
The following organic soil amendments and fertilizer are to be used for bid price basis only. Specific amendments and fertilizer specifications will be made after grading operations are complete and soil samples are tested by Owner. All materials shall be of standard, approved and first-grade quality and shall be in prime condition when installed and accepted. Any commercially processed or packaged material shall be delivered to the site in the original, unopened container bearing the manufacturer's guaranteed analysis. Contractor shall supply Landscape Architect with a sample of all supplied materials accompanied by analytical data from an approved laboratory source illustrating compliance or bearing the manufacturer's guaranteed analysis.

B. SPECIFIC
1. Suitable Import, Borrow Topsoil or Reclaimed soil
a. General - Topsoil shall be free of roots, clods, stones larger than 1-inch in the greatest dimension, pockets of coarse sand, noxious weeds, sticks, lumber, brush and other litter. It shall not be infested with nematodes or other undesirable disease-causing organisms such as insects and plant pathogens.
(1) Topsoil shall be friable and have sufficient structure in order to give good health and aeration to the soil.

b. Gradation limits - soil shall be a sandy loam, loam, or clay loam. The definition of soil texture shall be the USDA classification scheme. Gravel over ¼-inch in diameter shall be less than 20% by weight.
c. Permeability Rate - Hydraulic conductivity rate shall be not less than one inch per hour nor more than 20 inches per hour when tested in accordance with the USDA Handbook Number 60, method 34b or other approved methods.
d. Fertility - The range of the essential elemental concentration in soil shall be as follows:

Ammonium Bicarbonate/DTPA Extraction parts per million (mg/kilogram) dry weight basis	
phosphorus	2 - 40
potassium	40 - 220
iron	2 - 35
manganese	0.3 - 6
zinc	0.6 - 8
copper	0.1 - 5
boron	0.2 - 1
magnesium	50 - 150
sodium	0 - 100
sulfur	25 - 500
molybdenum	0.1 - 2

Soil may need to be amended and conditioned to optimize plant growth. The above listed fertility is for soil selection.

Concentration of nutrients for final acceptance

Ammonium Bicarbonate/DTPA Extraction parts per million (mg/kilogram dry weight basis	
phosphorus	10 - 40
potassium	100 - 220
iron	24- 35
manganese	0.6 - 6
zinc	1 - 8
copper	0.3 - 5
boron	0.2 - 1
magnesium	50 - 150
sodium	0 - 100
sulfur	25 - 500
molybdenum	0.1 - 2

e. Acidity - The soil pH range measured in the saturation extract (Method 21a, USDA Handbook Number 60) shall be 6.0 - 7.9.
f. Salinity - The salinity range measured in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 0.5 - 2.5 dS/m.
g. Chloride - The maximum concentration of soluble chloride in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 150 mg/l (parts per million).
h. Boron - The maximum concentration of soluble boron in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 1 mg/l (parts per million).
i. Sodium Adsorption Ratio (SAR) - The maximum SAR shall be 3 measured per Method 20b, USDA Handbook Number 60.
j. Aluminum - Available aluminum measured with the Ammonium Bicarbonate/DTPA Extraction shall be less than 3 parts per million.
k. Soil Organic Matter Content - Sufficient soil organic matter shall be present to impart good physical soil properties but not be excessive to cause toxicity or cause excessive reduction in the volume of soil due to decomposition of organic matter. The desirable range is 3% to 5%. The carbon nitrogen ratio should be about 10. A high carbon nitrogen ratio can indicate the presence of hydrocarbons or non-humified organic matter.
l. Calcium Carbonate Content - Free calcium carbonate (limestone) shall not be present for acid-loving plants.
m. Heavy Metals - The maximum permissible elemental concentration in the soil shall not exceed the following concentrations:

Ammonium Bicarbonate/DTPA Extraction parts per million (mg/kilogram) dry weight basis	
arsenic	1
cadmium	1
chromium	10
cobalt	2
lead	30
mercury	1
nickel	5
selenium	3
silver	0.5
vanadium	3

(1) If the soil pH is between 6 and 7, the maximum permissible elemental concentration shall be reduced 50%. If the soil pH is less than 6.0, the maximum permissible elemental concentration shall be reduced 75%. No more than three metals shall be present at 50% or more of the above values.
(2) Phytotoxic constituent, herbicides, hydrocarbons etc. - Germination and growth of monocots and dicots shall not be restricted more than 10% compared to the reference soil. Total petroleum hydrocarbons shall not exceed 50 mg/kg dry soil measured per the modified EPA Method No. 8015. Total aromatic volatile organic hydrocarbons (benzene, toluene, xylene and ethylbenzene) shall not exceed 0.5 mg/kg dry soil measured per EPA Methods No. 8020.

2. Soil Conditioners and Fertilizers
a. Soil conditioner with fertilizer included shall consist of organic materials comprised of decomposed animal and vegetable matter and composted to support bacterial cultures. Soil conditions shall be "Grow-Power Plus" or approved equal, and shall conform to the following analysis:

(1) Particle Size: 63 1/2 % through 100 Screen pH: 4.5 to 4.7
(2) Organic Content: Humus--50%, Humic Acids-15
(Note: Poultry, animal or human waste is not acceptable. See the definition of Humus in Western Fertilizer Handbook, Fifth Edition.)
(3) Chemical Analysis:
- Ammonic Nitrogen 1.00%
(derived from ammonium phosphate)
- Organic Nitrogen 4.00 %
(derived from compost, meat meal and urea)
- Total Nitrogen 5.00%
- Available phosphoric Acid 3.00%
(derived from compost, meat meal and diammonium phosphate)
-Soluble Potash 1.00%
(derived from compost and muriate of Potash)
-Iron 1.00%
(derived from iron sulfate)
- Zinc 0.05%
(derived from zinc sulfate)
- Manganese 0.05%
(derived from manganese sulfate)
(4) Soil Penetrant: Alkyl Naphthalene
-Sodium Sulfonate 2.00%
(5) Materials shall be mixed thoroughly and bagged in 50 or 80 lb. bags.
b. Organic Soil Amendments shall be derived from Redwood, Fir or Cedar wood bark, granular in nature, stabilized with nitrogen and having the following properties:
(1) Particle Size: minimum 955 passing 4 mesh screen (6.35 MM standard sieve), minimum 80% passing 8 mesh screen (2.33 MM standard sieve)
(2) Nitrogen Content: 0.5% based on dry weight for redwood sawdust, 0.7% based on dry weight for fir sawdust, 1.0% based on dry weight for fir or pine.
(3) Salinity: Saturation extract conductivity shall not exceed 3.5 millimhos/ centimeter at 25 degrees centigrade.
(4) Organic Content: Minimum 90% weight
c. Minerals
(1) Soil Sulfur (S): as required from soil report
(2) Ferrous Sulfate: as metallic 20% as required from soil report
(3) Agricultural Gypsum (CaSO42HpO): as required from soil report
(4) Lime (CaO): as required from soil report
d. Redwood Shavings shall be leeched.
e. Pre-Plant Commercial Fertilizer shall be nitrogen-fortified and have uniform in composition, free- flowing suitable for application with approved equipment and delivered to the project site in unopened, original container or package, each bearing the manufacturer's statement of guaranteed analysis and shall contain the minimum available percentage by weight of plant food as specified in the approved agronomic soils report.
f. Planting Tablets
(1) slow-release type, containing the following percentages of nutrients by weight: 20% nitrogen, 10% phosphoric acid, 5% potash
(2) 21 gram tablets as manufactured by Agriform or approved equal, applied per manufacturer's instructions
(3) Subsurface Root Barrier-
Root barrier incorporated into street tree planting for the purpose of long-term root control shall be prefabricated, manufactured of high impact, polyethylene as manufactured by Deep Root Corporation or approved equal.

PROGRESS DRAWING
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SCALE: N/A

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PLANTING SPECIFICATIONS

LICENSED LANDSCAPE ARCHITECT CHARLES MOWS
LIC# 2422 EXP. AUGUST 31, 2020
XX-XX-XX
STATE OF CALIFORNIA

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	C.S.L.
DATE:	08-06-19

SHEET NO.
L7

4. Plant Material

a. Plants shall be in accordance with the California State Department of Agriculture's regulation for nursery inspections, rules and ratings. All plants shall have a normal habit of growth and shall be sound, healthy, vigorous and free of insect infestations, plant diseases, sunscalds, fresh abrasions of the bark excessive abrasions or other objectionable disfigurements. Tree trunks shall be sturdy and well "hardened" off. All plants shall have normally well developed branch systems and vigorous and fiberous root systems which are not root or pot-bound. In the event of disagreement as to condition of root system, the root conditions of the plants furnished by the Contractor in containers will be determined by removal of earth from the roots of not less than two plants, or more than two percent of the total number of plants of species or variety. Where container-grown plants are from several sources, the roots of not less than two plants be inspected. In case the sample plants inspected are found to be defective, the Landscape Architect is the sole judge as to acceptability. Any plants rendered unsuitable for planting because of this inspection will be considered as samples and will be provided at the expense of the Contractor.

b. The size of the plants will correspond with that normally expected for species and variety of commercially available nursery stock or as specified in the Special Conditions, drawings or details. The minimum acceptable size of all plants, measured before pruning with the branches in normal position, shall conform with the measurements, if any, specified on the drawings in the list of plants to be furnished. Plants larger in size than specified may be used with the approval of the Landscape Architect. If the use of larger plant is approved, the ball of earth or spread of roots for each plant will be increased proportionately.

c. All Plants not to the requirements herein specified shall be considered defective and such plants, whether in place or not, shall be removed from the site of work and replaced with new plants at the Contractor's expense. The plants shall be of the species, variety, size and condition specified herein or as shown on the drawings. Under no conditions will there by any substitution of plants, except with the expressed consent of the Landscape Architect and City Landscape Inspector.

d. At no time shall trees or plant material be pruned, trimmed or topped prior to delivery, and any alteration of their shape shall be conducted only with the approval and when in the presence of the Landscape Architect and as noted on the Planting Specifications

e. Plant material shall be true to botanical and common name and variety as specified in "A Checklist of Woody Ornamental Plants in California," Manual 32 published by the University of California School of Agriculture (1963).

5. Nursery-Grown and Collected Stock

a. Grown under climatic conditions similar to those in locality of project.

b. Container-grown stock in vigorous, healthy condition; no root bound plant or plants with root system hardened off

c. Substitute plant material will not be permitted unless specifically approved in writing by the Architect.

6. Tree Staking Material

a. Stakes for Tree Support

(1) Full length, lodge pole, pine stakes, treated with copper naphthanate

(2) Minimum nominal size: 2" in diameter x 12' long and pointed at one end (adjusted length to fit tree)

b. Hose and Wire Ties

(1) Galvanized wire with cinch tie; Wire shall be zinc-coated iron, 10-gauge minimum and solid core.

(2) All guys are to be flagged. Ninety percent wire length is to be covered. White PVC 1/4 inch diameter tube covering shall be used.

7. Bark Chips

Bark chips shall be regular, ground, redwood or fir bark, consisting of 1/2" to 3/4" (acorn size) chips. Prior to delivery to the site, the Contractor shall submit samples to the City Landscape Inspector for approval.

8. Erosion Control Matting

Erosion control matting shall be of open weave, furnished in rolled strips as follows: It shall be approximately 225 feet long with a width of 48 inches plus or minus one inch and an approximate one (1) inch square mesh. Fabric shall average .4 pounds per linear foot. The erosion control matting shall be manufactured from loosely twisted jute yarn not varying in thickness by more than one-half its normal diameter, equal in quality to "Ludlow Soil Saver #48" or approved equal. Staples for erosion control shall be 11 gauge steel wire bent in a U shape six inches minimum length and one inch wide. Wetting Agent to be 95% alkyl Polyethylene glycol ether such as "Commercial Water In" or approved equal.

9. Seed

All seed used for lawn planting or erosion control planting or for any other reasons specified in the plans shall be labeled and furnished in sealed, standard containers with duplicate signed copies of a statement from the vendor, certifying that each container of seed delivered is fully -labeled in accordance with the California State Agriculture Code. Seed which has become wet, moldy or otherwise damaged in transit or storage will not be accepted.

10. Sod

Sod shall be fully mature, well-maintained, of the grass variety specified, free of all other grasses or weeds and shall be evenly cut with a conventional sod cutting machine to a thickness of 1-1/2 inches. All material shall be from the same growing ground and delivered fresh to the job site. If, after installation, any areas of sod die or become brown, these areas are to be replaced with sod immediately. Replacement sod is to match original.

11. Hydromulching

a. Wood Cellulose Mulch shall be calm, natural, wood cellulose fiber. Natural wood cellulose fiber shall be processed in such a manner that it will contain no growth or germination-inhibiting factors and shall be dyed green to facilitate metering of materials. It shall be manufactured in such a manner that after each addition and agitation in slurry tanks with fertilizer, seed water and other approved additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry and that when hydraulically sprayed on the ground cover impregnated uniformly with seed; which after application, will allow the absorption of moisture and will allow rainfall to percolate to the underlying soil.

b. Fertilizer shall consist of organic materials comprised of decomposed animal and vegetable matter and composted to support bacterial cultures. Fertilizer shall be "Gro-Power" or approved equal.

c. Soil Binder: Terra Tack III or approved equal

d. Humectant: HL-80 Humectant or approved equal

12. Equipment

Hydraulic equipment used for the application of slurry shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend and homogeneously mix above slurry. Distribution lines shall be large enough to prevent stoppage and to provide even distribution of the slurry over the ground. In order to facilitate proper coverage, the pump must be capable of exerting up to 150 psi at the nozzle. The slurry tanks shall have a minimum capacity of 1,500 gallons and shall be mounted on a traveling unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be seeded so as to provide uniform distribution without waste.

13. Weed Abatement Program

The herbicide "Round-Up" or approved equal shall be used for slope/ planting areas. See Sections III-D-2 and III-D-7 for guidelines for proper application procedures

14. Miscellaneous Materials

a. sand-washed river sand or equal

b. post emergent weed killer: "Round-Up"

c. tree wound paint-as-approved

III. EXECUTION

A. INSPECTION

Verify that final grades have been established prior to beginning planting operations. Inspect trees, shrubs, and material for injury and insect infestation, and inspect trees and shrubs for improper pruning. Do not begin planting trees until deficiencies are corrected or plants replaced.

B. PREPARATION

Stake out locations for plants and outline of planting beds on ground. Do not begin excavation until plant locations and plant beds are acceptable to Architect. The irrigation system shall have been installed and approved prior to soil preparation.

C. INSTALLATION

1. Excavation of Planting

a. Shape

(1) Vertical sides and flat bottom

(2) Plant pits to be square for box material, circular for canned material.

b. Size

All trees shall have planted pits dug twice the diameter and to the depth of the root ball. Backfill around the rootball with prepared backfill mix. Refer to planting Details for specific method.

2. Preparation of Planting Areas

a. After approximate finished grades have been established, soil shall be conditioned and fertilized in the following manner: Nitrogen-stabilized organic amendment and ammonium phosphate shall at the following rates, be uniformly spread and cultivated thoroughly by means of mechanical tiller into top 6" of soil.

(1) Nitrogen-Stabilized Organic Amendment
4 cu. yards/1,000 sq. ft.

(2) Ammonium Phosphate 6-20-20: 15 lbs./1,000 sq. ft.

(3) 150 lbs. Agriculture Gypsum I 1,000 sq. ft.

b. All soil area shall be compacted and settled by application of heavy irrigation to a minimum depth of twelve inches.

c. At time of planting, the top two inches of turf areas to be sodded or seeded shall be free of stones, stumps or other deleterious matter 1" in diameter or larger. In groundcover areas, the top two inches shall be free of stones, stumps or other deleterious matter 2-1/2inch diameter or larger. All planting areas shall be free from all wire, plaster or similar objects.

3. Final Grades

a. After the foregoing specified deep watering, minimum modifications to grade may be required to establish the final grade. These areas shall not be worked until the moisture content has been reduced to a point where working it will not destroy soil structure.

b. Finish grading shall insure proper drainage of the site.

c. All areas shall be graded so that the final grades will be 1" below adjacent paved areas, sidewalks, valves boxes, headers, clean-outs, drains, manholes, etc. in turf areas, and 2" below in groundcover areas.

d. Surface drainage shall be away from all building foundations.

e. Eliminate all erosion scars.

f. Planting areas receiving sod shall sustain a finish grade of a depth that installed sod shall be flush with finish surfaces (walks, paved areas, etc.).

g. All planting areas shall have a finish grade conforming to approved plans and specifications after full settlement has occurred.

4. Dispose of unacceptable or unused excess soil off site and premises.

D. PLANTING INSTALLATION

1. General

a. Actual planting shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted practice, as approved by the Landscape Architect.

b. Only as many plants as can be planted and watered on that same day shall be distributed in a planting area. In extreme heat, plants shall be watered immediately after planting.

c. Containers shall be opened and plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken, and they shall be planted and watered as herein specified immediately after removal from the containers. Containers shall not be opened prior to placing the plants in the planting area.

2. Weed Control:

After soil preparation and establishment of final grades prior to any planting, the Contractor shall irrigate thoroughly for a period of time, two to three weeks or until the weed seeds have germinated. When there is sufficient weed seed germination, the Contractor shall apply a post emergent contact weed killer according to the directions of the manufacturer. The Contractor shall then wait an additional two weeks to allow the weed killer to dissipate, then plant as indicated in the plans and specifications. Contractor shall remove any residual foliage and/or roots.

3. Layout of Major Plantings:

Locations for plants and outlines of areas to be planted shall be marked on the ground by the contractor before any plant pits are dug. All such locations shall be approved by the landscape Architect. If an underground construction or utility line is encountered in the excavation of planting areas, other locations may be selected by the landscape Architect.

4. Planting of Trees and Shrubs

a. Excavation for planting shall include the stripping and stacking of all acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plants pits and planting beds.

b. Can Removal

(1) Cut cans on two sides with an acceptable can cutter

(2) Do not injure root ball

(3) Do not cut cans with a spade or axe.

(4) Carefully remove plants without injury or damage to root ball.

(5) After removing plant, superficially cut edge-roots with knife on three sides.

c. Box Removal

(1) Remove bottom of plant boxes before planting

(2) remove sides of box without damage to rootball after positioning plant and partially backfilling.

d. All excavated holes shall have vertical sides with roughened surfaces and shall be of a size that is at least two times the width and one and the depth of the original plant container. The holes shall be, in all cases, large enough to permit handling and planting, without injury or breakage to the roots or root ball. Refer to Standard Planting Details.

e. Excavated holes for slope plantings shall be dug two times original plant container width, providing a permanent 6 inch berm around plant pit.

f. Protect all areas from excessive compaction when trucking plants or other material to the planting site:

g. Center plant in pit or trench.

h. Face plants with fullest growth into prevailing wind.

See plant plumb and hold rigidly in position until soil has been tamped firmly around ball or roots.

Container plants shall be backfilled with:

- 8 parts by volume on-site topsoil
- 2 parts by volume organic amendment
- 6-20-20 fertilizer mix as per chart below:

1 gallon	1 handful
5 gallon	2 handfuls
15 gallon	3 handfuls
18" box	4 handfuls
24" box	5 handfuls
30" box	6 handfuls
36" box	7 handfuls
42" box	8 handfuls
48" box	9 handfuls
60" box	10 handfuls

(- 1 handful approximately equals 4-6 ounces)

i. All plants which settle deeper than specified above shall be raised to the correct level. After the plant has been placed, additional backfill shall be added to the hole to cover approximately one-half of the height of the root ball. At this stage, water shall be added to the top of the partly-filled hole to thoroughly saturate the root ball and adjacent soil.

j. Excess soil generated from the planting holes may be distributed on the site and amended as specified in general soil preparation.

k. Hand place plants which are in containers less than one gallon in size

l. Hand backfill and hamp tamp, leaving a slight depression around bases of plants.

m. Planting tablets shall be set with each plant on the top of the root ball while the plants are still in their containers so the required number of tablets to be used in each hole can be easily verified.

n. After the water has completely drained, planting tablets shall be placed as indicated per container size below:

1 gallon	1 tablet
5 gallon	2 tablets
15 gallon	3 tablets
18" box	4 tablets
24" box	5 tablets
30" box	6 tablets
36" box	7 tablets
42" box	8 tablets
48" box	9 tablets
60" box	10 tablets

PROGRESS DRAWING

These documents are subject to change due to public agency comment, client-requested revisions, and in-house review, and are therefore NOT ACCEPTABLE FOR BIDDING OR CONSTRUCTION. The landscape architect is not responsible for construction bids or project construction made from any documents bearing this note

SCALE: N/A

DATE	REVISION	BY

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SIMON GLOVER
3293 PACIFIC AVENUE
LONG BEACH, CA

TERRENO DOMINGUEZ
2315 EAST DOMINGUEZ STREET
CARSON, CA

PLANTING SPECIFICATIONS

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	C.S.L.
DATE:	06-06-19

SHEET NO.
L8

o. The remainder of the hole shall be backfilled.
p. After backfilling, an earthen basin shall be constructed around each plant. Each basin shall be of a depth sufficient to hold at least two inches of water. Basins shall be of a size suitable for the individual plant. In no case shall the basin for a fifteen-gallon plant be less than four feet in diameter, for a five-gallon plant less than three feet in diameter and for a one-gallon plant less than less than two feet in diameter. The basins shall be constructed of amended backfill materials.
q. Pruning shall be limited to the minimum necessary to remove injured twigs and branches and to compensate for loss of roots during transplanting, but never to exceed one-third of the branching structure. Upon approval of the Landscape Architect, pruning my not be done before delivery of plant, but not before plants have been inspected and approved. Cuts over 3/4" in diameter shall be painted with tree seal.
r. Staking and Guying
(1) Staking of all trees shall conform to three staking and tree guying details.
(2) Tree stakes shall be straight-grained, lodge pole pine. Stakes shall be free from knots, checks, splits or disfigurements. Guy as indicated immediately after planting, using three guys per tree, guys placed as to five equal support to tree from any direction. Install a warning flag on each guy. Protect bark of tree by connecting wire with "Cinch-Tie". Anchor guy wires with "deadmen" buried at least 2 feet below finish grade. Tighten guy lines to a firm tension. Install additional guys should tree growth be such that three guy wires do not give required equal support from all directions.
s. Vine Planting
Vines shall have wood stake support removed without damage to plant and the vine trained upon the adjacent posts and walls as directed by the plan or Landscape Architect. Vines shall be held to posts and overheads by plastic green ribbon ("heavy duty") and eye bolts, not nails, as directed by the Landscape Architect or details.
t. Where street trees occur within tree wells or are adjacent to a substantial amount of pavement, a sub-surface planter box ("Deep-Root" or approved equal) shall be used. Box shall be installed per Details.
u. Location for street trees adjacent to any light standards or utility equipment shall be adjusted to maintain a suitable clearance, as approved by the City Landscape Architect.

5. Planting of Ground Covers
a. Ground cover plants shall be grown in flats or peat pots or taken as cuttings, as indicated on the plans. Flat grown plants (rooted cuttings) shall remain in those flats until transplanting. The flat's soil shall contain sufficient moisture that it will not fall apart when lifting the plants. If plants from peat pots are used, the pots shall be protected at all times prior to planting to prevent unnecessary drying of the root ball.
b. Ground cover shall be planted in straight rows and evenly spaced, unless otherwise noted, at intervals called called out in the drawings. Triangular spacing shall be used unless otherwise noted in the drawings.
c. Each rooted plant shall be planted with its proportionate amount of flat soil or in a peat pot, in a manner that will insure minimum disturbance of the root system, but in no case shall this depth be less than two nodes. To avoid drying out, plantings shall be immediately sprinklered after planting until the entire area is soaked to the full depth of each hole, unless otherwise noted on the drawings.
d. Care shall be exercised at all times to protect the plants after planting. Any damage to plants by tramping or other operations of the Contractor shall be repaired immediately.

6. Planting of Lawn
a. Lawn will be planted by hand seeding, hydroseeding, and /or sodding as indicated on the plans.
b. After preparation of soil in accordance with the section on "Grading and Soil Preparation," the areas to be planted to lawn shall be rolled, raked and floated to finish grade by any acceptable method, with the finish grade by any acceptable method, with the finish grade being smooth and even, free of rocks and clods and reasonably well-firmed. Prior to planting, the surface of the area shall be sufficiently loose and friable to receive the seeds of sod.
c. Pre-Fertilization. Just prior to the planting of turf, evenly broadcast appropriate fertilizer as specified in the approved soils report.
d. Method
(1) Seed: A satisfactory method of sowing shall be employed, using an approved, mechanical, power-drawn driller-seeder, mechanical hand-seeder or other approved equipment. The rate of application of seed will be specified on the plans and and in the specifications. The seed shall be covered by means of a wire drag, spike-toothed, harrow cultipacker or other approved device. Seeded areas shall immediately be compacted by means of a cultipacker, roller or other approved equipment weighing 60 to 90 pounds per linear foot of roller. Final rolling shall be at right angles to slopes to prevent erosion wherever possible metal staples typical for those used used on erosion control matting, if necessary.
(2) Sod: Soil preparation, finish grading and fertilization shall be as specified for seeded lawns, except that the sub-soil finish grade shall be two inches below final grade to allow for the thickness of sod. Lay sod down in one direction only, with close fitted joints. The ends of each strip shall be staggered to eliminate continuous joining. Staple sod on steep slopes with metal staples typical for those used on erosion control matting, if necessary.
e. Watering
Immediately following planting or top dressing, if applied, apply a light fine, mist spray to anchor the seed and/or dressing to to the soil, forming a protective crust to prevent wind erosion and drying of the seed. The lawn areas shall be kept moist until fully germinated. Fully germinated lawn areas shall be allowed to dry sufficiently to permit rolling with approximately two hundred to three hundred pound water-weighted roller to satisfactorily compact the soil around the grass roots and provide a firm, smooth mowing surface.

7. Hydroseeded Application Procedures and Equipment
a. Weed Control
Upon the completion of the irrigation system and and after all existing weeds and growth have been removed from the commercial fertilizer (21-0-0) per acre as per planting area, apply 200 pounds of a manufacturer's instructions. Water all areas for times daily and until weed seeds have germinated. Cease watering for three days. Spray the non-selective herbicide "Round-up" to eradicate the germinated weeds. Translocation or approved equal period should be 7-10 days. Allow herbicide to kill all weeds. Rake or hoe off all dead weeds to a depth of 1/4 inch below the surface of the soil. If perennial weeds or grasses still exists, re-water four times daily for fourteen consecutive days, until the new growth appears. Re-apply a non-selective herbicide. Remove weeds after herbicide has had sufficient time to kill.
b. Equipment
Hydraulic equipment used for the application of the fertilizer, seed and slurry of prepared wood pulp shall be of the "Super Hydro-Seeder" type. This equipment shall have a built-in agitation system and operating capacity sufficient to agitate, suspend and homogeneously mix a slurry contained not less than 40% of fibre mulch plus a combined total of #7 fertilizer solids for each 100 gallons of water. The slurry distribution lines shall be large enough to prevent stoppage and shall be equipped with a set of hydraulic spray nozzles which will provide a continuous non-fluctuating discharge. The slurry tank shall have a minimum capacity of 1,500 gallons and shall be mounted on a traveling unit, either self-propelled or drawn by a separate unit, which will place the slurry tank spray nozzles within sufficient proximity to the areas to be seeded.
c. Preparation
The slurry preparation shall take place at the site of work. Begin by adding water to the tank when the engine is at half throttle. When the water level has reached the height of the agitator shaft, good re-circulation shall be established and the seed shall be added. Fertilizer shall then be added, followed by wood pulp mulch. The wood pulp mulch shall only be added to the mixture after the seed and when the tank is at least one-third filled with water. The engine throttle shall be opened to full speed when the tank is half-filled with water. All the wood pulp mulch shall be added by the time the tank is two-thirds to three-fourths full. Spraying shall commence immediately when the tank is full.
d. Application
The operator shall spray the slopes with a uniform, visible coat by using the green color of the wood pulp as a guide. the slurry shall be applied in a sweeping motion in an arched stream so as to fall like rain, allowing the wood fibers to build on each other until a good coat is achieved and the material is spread at the required rate per acre.
e. The Limit
All slurry mixture which has not been applied to the slopes within four hours after mixing will be rejected and removed from the project at the Contractor's expense.
f. Protection
Special care should be exercised by the Contractor in preventing any of the slurry to be sprayed inside any reservoir basin or into drainage ditches and channels which may impede the free flow of rain or irrigation water. Any slurry spilled into restricted areas shall be cleaned up at the Contractor's expense to the satisfaction of the Owner or City. All areas designated for hydroseeding shall be thoroughly watered prior to the hydroseeding. The Contractor shall note any discrepancy for complete water coverage and correct. The Contractor shall at this time note wind and weather conditions and submit a watering program to the Landscape Architect for approval prior to hydroseeding.
g. Reseeding
All bare spots shall be reseeded within 10 days to the satisfaction of the Owner and/or Landscape Architect.
h. Watering
(1) A balanced, full-coverage watering program shall be maintained to ensure proper germination until the acceptance of work.
(2) Plants which cannot be watered efficiently with the existing water system shall be watered by means of a hose.
i. Fertilization (Turf)
Apply recommended fertilization program 45 days after the first mowing. Continue every 90-120 days.
j. Maintenance and Irrigation
Maintenance shall be the responsibility of the Landscape Contractor for a period of forty-five days. It is his responsibility to provide sufficient water. Moisture must be maintained on the soil once the slurry mulch has been applied and allowed to set for one day. The slopes can then be irrigated.Three are no set irrigation requirements in gallons per minute, duration of time or number of gallons to be applied to the hydroseeded slopes. This will vary from day to day depending on the rate of growth and climatic conditions encountered. The soil surface shall be kept moist at all times, particularly during the seeding germination period. Failure to provide adequate moisture will result in desiccation of the new seedlings, in turn making it necessary for an additional application of seed, fertilizer and mulch.
k. Soil test
Contractor shall take soil samples from these approved locations. Agricultural suitability test shall be made of the soil samples. Test shall include, but not limited to Ph, ECE, SAR, NPK, BORON and half-saturation test. Copies of the results shall be sent to the Landscape Architect for review. Hydroseeded mix is subject to change upon review of a soil analysis.

8. Erosion Control
a. Erosion control installation will be required in locations specifically delineated on the drawings or as necessary due to field conditions.
b. Surface of the slopes shall be uniformly smooth and even, with all debris and rocks raked out. The soil shall be sufficiently moist to permit the firm laying of erosion control matting and to prevent sloughing of topsoil.
c. The erosion control matting shall be laid with the direction of flow of surface drainage and in accordance with the manufacturer's directions. The matting shall be cut to provide a visually pleasing slope.
d. The matting shall be stapled in place and firmly embedded by means of tamping or rolling as approved by the Landscape Architect to insure that the matting is in contact with the soil and that no erosion can take place under the matting.
e. Planting of turf, ground covers, shrubs and/or vines may be required in area protected by erosion control matting as specified in the plans or as becomes necessary.

9. Native Plant Areas

a. Any planting areas designated as natural planting that are cleared off during any phase of the development must be re-established with an approved planting prior to acceptance of the tract.
b. Comply with City Zoning and Subdivision Ordinance.
c. Natural vegetation areas are subject to review and approval by the Landscape Architect, Fire Marshall and City Landscape Architect. Appropriate fuel management programs shall be addressed as a part of the contracts documents for execution during site development. Budgeting for on-going fuel management programs should also be addressed as a part of the maintenance programs.

E. CLEAN-UP

After all planting operations have been completed remove all trash, excess soil, empty plant containers and rubbish from the property. All scars, ruts or other marks in the ground caused by this work shall be repaired and the ground left in a neat and orderly condition throughout the site. Clean-up Contractor shall pick-up all trash resulting from this work no less frequently than each Friday before leaving the site, once a week and/or the last working day of each week. All trash shall be removed completely from the site. The Contractor shall leave the site area broom-clean and shall wash down all paved areas within the Contract area, leaving the premises in a clean condition. The Contractor shall arrange for offsite disposal of surplus soil and shall, upon request, furnish the City or County's authorized representative with the disposal site Owner's written consent.

F. INSPECTIONS

Normal progress inspections shall be requested by the Contractor from the Landscape Architect at least 4 days in advance of an anticipated inspection. Inspections are required as follows:
1. upon the completion of fine grading
2. upon the completion of soil conditioning
3. prior to application of post-emergent weed killers
4. pre or post-delivery of all plant material
5. upon the completion of major plant layout
6. at the tree-staking example prior to sodding

LANDSCAPE MAINTENANCE

I. GENERAL REQUIREMENTS

a. Scope of Work
Work specified in this Section furnish all labor, material, equipment and services required to maintain the landscape in an attractive condition as specified herein for a period of ninety (90) days after final acceptance by Owner.
b. Quality Assurance
The Contractor's representative shall be experienced in landscaping maintenance and shall have received an education in ornamental.
c. Maintenance Period
The Contractor shall continuously maintain all areas involved in this Contract during the progress of the work and the maintenance period until final acceptance of the work by the owner. Improper maintenance or possible poor condition of any planting at the termination of the scheduled maintenance period may cause postponement of the final completion date of the Contract. Maintenance shall be continued by the Contractor until work is acceptable. Maintenance period shall not start until all elements of construction, planting and irrigation for the entire project are in accordance with Plans and Specifications. The Contractor shall request an inspection to begin the maintenance period after all planting and related work has been completed in accordance with the Contract documents. A prime requirement is that all lawn areas shall show an even, healthy strand of grass seedlings or sod, either of which shall have been mown twice. If such criteria is met to the satisfaction of the Landscape Architect, a field notification will be issued to the Contractor to establish the effective beginning date of the maintenance period. Any day when the Contractor fails to adequately maintain plantings, replace unsuitable plants or do weed control or other work, as determined necessary by the Landscape Architect, will not be credited as a maintenance period working days. The maintenance period will be extended if the provisions required the plans and specifications are not filled.

D. EMERGENCY NUMBERS

(1) The Contractor shall provide and maintain a current list of emergency telephone numbers for 24-hour emergency response.
(2) The Contractor shall initiate remedial action within two hours from the time of notification.

E. PROTECTION OF EXISTING FACILITIES AND STRUCTURES

The Contractor shall exercise due care in protecting from damage all existing facilities, structures and utilities both above and below surface on the City/ Owner's property. Any damage to City's/ Owner's property deemed to be caused by the Contractor's responsibility to verify and locate any underground systems (i.e., utility line). This does not release the Contractor from the responsibility of taking reasonable precautions when working in these areas. Any damage or problems shall be reported immediately to the City/ Owner's representative.

F. PROJECT INSPECTIONS
Upon request the Contractor or his representative will walk the project with the City/ Owner's representative for the purpose of determining compliance with the specifications.

PROGRESS DRAWING
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The landscape architect is not responsible for construct bids or project construction made from any document bearing this note.

SCALE: N/A

DATE	REVISION	BY

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CARSON, CA

PLANTING SPECIFICATIONS

LICENSED LANDSCAPE ARCHITECT
No. 6067
Exp. 04/30/20 or 2020
XX-XX-XX
STATE OF CALIFORNIA

JOB NAME:	TERRENO
DRAWN BY:	KL
CHECKED BY:	C.S.L.
DATE:	08-06-19

SHEET NO.
L9