

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #2	+	5.5 fc	10.5 fc	2.5 fc	4.2:1	2.2:1
Calc Zone #3	+	2.1 fc	5.5 fc	0.4 fc	13.8:1	5.3:1
Calc Zone #4	+	5.6 fc	10.6 fc	2.6 fc	4.1:1	2.2:1
Calc Zone #1	+	3.3 fc	11.7 fc	0.1 fc	117.0:1	33.0:1

NOTES:
EXISTING LIGHT
CONTRIBUTION FROM THE
CITY OF MARCO ISLAND
LIGHT IS APPROXIMATED

ADDITIONAL LIGHT
CONTRIBUTION FROM
OFF-SITE SOURCES AND
LANDSCAPE LIGHTING ARE
NOT FACTORED INTO
THESE CALCULATIONS

Schedule

Symbol	Label	Image	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power	Polar Plot
	A		28	ARCHITECTURAL AREA LIGHTING	KB6-Y5-1040	KICK BOLLARD. ALUMINUM HOUSING. LED ARRAY CONSIST OF HEATSINK, LEDS AND OPTICS. CLEAR LENS.	1	1189	1	14	 Max: 510cd
	B		1	CREE, INC.	ARE-EHO-3M-xx-12-E-UL-xx-1000-40K or BXAKx312E-UX7 (1000mA)	CREE EDGE HIGH OUTPUT, TYPE IIII MEDIUM, 120 LEDS, 1000MA, 4000K	120	258	1	427.9	 Max: 15143cd
	C		10	VISA LIGHTING	OW2484	WALL MOUNT LINEAR FORWARD THROW LENS	1	1809	1	26.88	 Max: 738cd
	D		8	KIM LIGHTING	EL817-9L4K-UNV	DIE CAST LOW COPPER ALLOY ALUMINUM HOUSING, DIE CAST ALUMINUM LENS FRAME. 9 219B LEDS MOUNTED TO A BRACKET. TEMPERED PRISMATIC GLASS MOUNTED TO LENS FRAME.	1	176	1	10.5	 Max: 247cd
	E		2	ARCHITECTURAL AREA LIGHTING	UCM2-ANG-36L-260-3K7-3-CL	UNIVERSE COLLECTION MEDIUM 2.0 WITH CLEAR LENS	1	3404	1	31.52	 Max: 2746cd

Reviewed for code compliance
M Holden
02/22/2023 2:26:01 PM

Reviewed for code compliance
Joshua Ooyemai
02/23/2023 8:46:40 AM

FIXTURE LABEL "A" - LOUVERED BOLLARD

DATE: LOCATION:
TYPE: PROJECT:
CATALOG #:

KB6-LED
BOLLARDS

DIMENSIONS

MODEL	KB6-SMK
Overall Height	42" / 1067mm
Overall Length	6" / 152mm
Overall Width	6" / 152mm
Window Height	19.9" / 50cm
Window Width	4" / 10cm
WEIGHT	30 lbs. / 13.6kg

*Housing and optical distribution are independently field available in 90° increments. Default factory orientations shown above.

DISTRIBUTION OUTPUT*
SHIELDING SIZE

FRONT LEFT BACK RIGHT
A Street Side B C House Side D

FIXTURE LABEL "D" - STEPLIGHT

KIMLIGHTING®

Type:
Job:
Fixture Catalog number:

Finish: /

Specifications

Housing: Die-cast low copper alloy (<0.6% Cu) aluminum with clear anodized finish. Two 1/2" NPT in sides. Housing mounts into concrete, brick, or masonry (non-combustible materials). Internal splice area provided behind lamp plate.

Lens Frame: Die-cast aluminum, with silicone gasket, attaches to housing with two captive 10-32 stainless steel, hex socket cap screws.

Lens: Tempered prismatic glass with silicone gasket, concealed above lens frame opening.

Finish: On Lens Frame only, each luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat finish. Standard colors are Black (BL), Dark Bronze (DB), and Verde Green (GR).

Optical System: A total of 3 or 9 LED emitters are configured together as a module. Available in 3000K, 4200K, and 5100K.

Driver: Universal Voltage from 120 to 277V with a ±10% tolerance. -40° F. starting temperature. All drivers are Underwriters Laboratories recognized.

FIXTURE LABEL "B" EXISTING CITY OF MARCO ISLAND FIXTURE (NO PRODUCT SHEET SHOWN)

FIXTURE LABEL "C" - COVE LIGHTING COVE LIGHTING TO BE COORDINATED WITH ARCHITECTURAL BAND

OW2484 PASSAGE™
Mullion Mount with Remote Power Supply

VISA LIGHTING
Visalighting.com/products/Passage

Type: Project: Location:



FIXTURE LABEL "E" - STANDARD AT MAIN ENTRY

UCM2
ARCHITECTURAL AREA/SITE

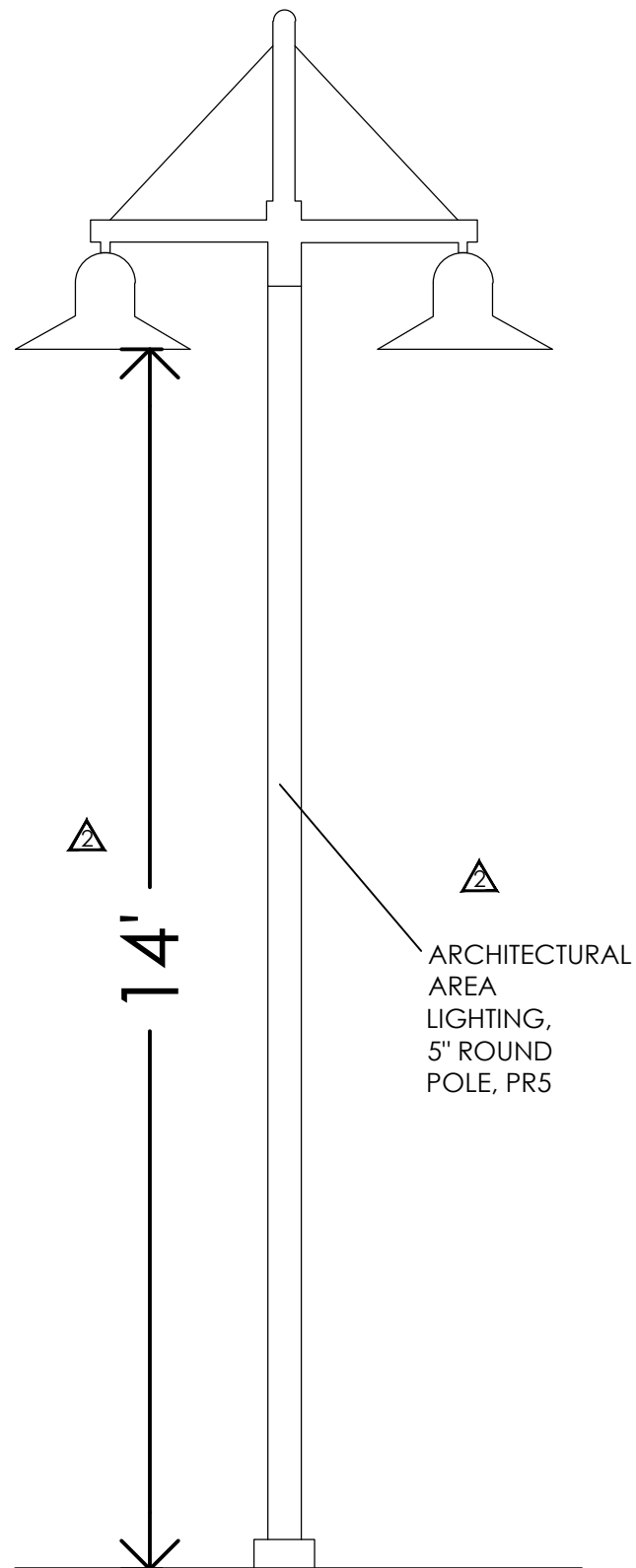
DIMENSIONS

ANGLED HOOD CONFIGURATION

BELL HOOD CONFIGURATION

FLARE HOOD CONFIGURATION

STRAIGHT HOOD CONFIGURATION

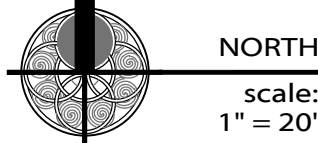
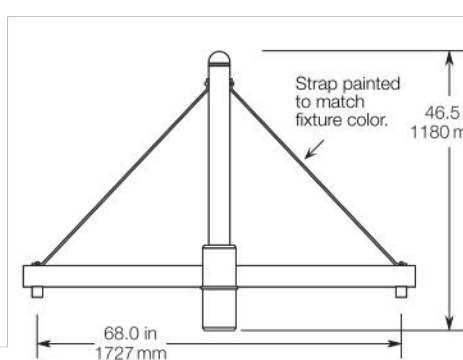


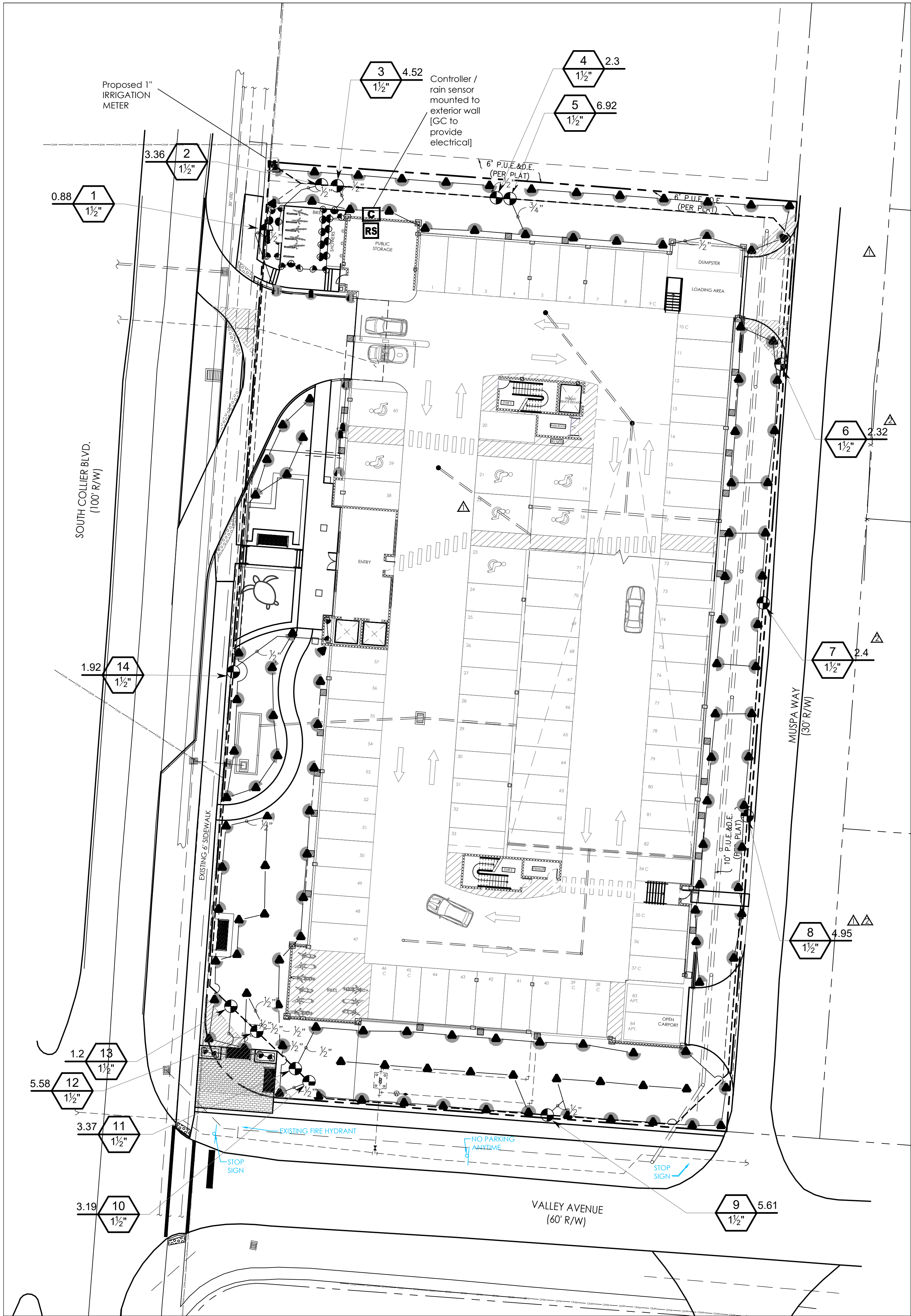
SLA 17 (5)-2
Twin arms, slips over 5" pole
WEIGHT: 33 LBS. EPA: 2.09

The arms shall be of one piece unitized aluminum construction, fully welded and assembled. The slip fitter shall be cast aluminum with an internal wireway and pole stop. The arm shall be prewired with a quick connector for easy installation.

The arms shall have a cast aluminum fitter welded to the top of the arm(s) for attaching the fixture. The fixture shall be mounted with three stainless steel bolts through the top of the arm fitter into the fixture. The attachment point shall have a silicone pad for sealing the fixture to arm connection.

The arm shall slip over a 5/125mm diameter pole or tenon. The cast aluminum slip fitter shall have six stainless steel cup point set screws for securing the arm to the pole or tenon.





IRRIGATION ZONES SHALL BE SEPARATED FOR TURF AND GROUPED ACCORDING TO WATER DEMAND / MICROCLIMATE. VALVE LOCATIONS SHALL BE FIELD VERIFIED, GROUPED, AND MARKED PER NOTES.

WATERING SCHEDULE SHALL BE MODIFIED DURING IRRIGATION DROUGHT RESTRICTIONS TO ACHIEVE A 1" APPLICATION PER WEEK. SCHEDULE SHOWN IS FOR TWO PER WEEK, PER HEAD TYPE WITH OPERATION TIMES FROM MIDNIGHT TO 8:00 A.M.

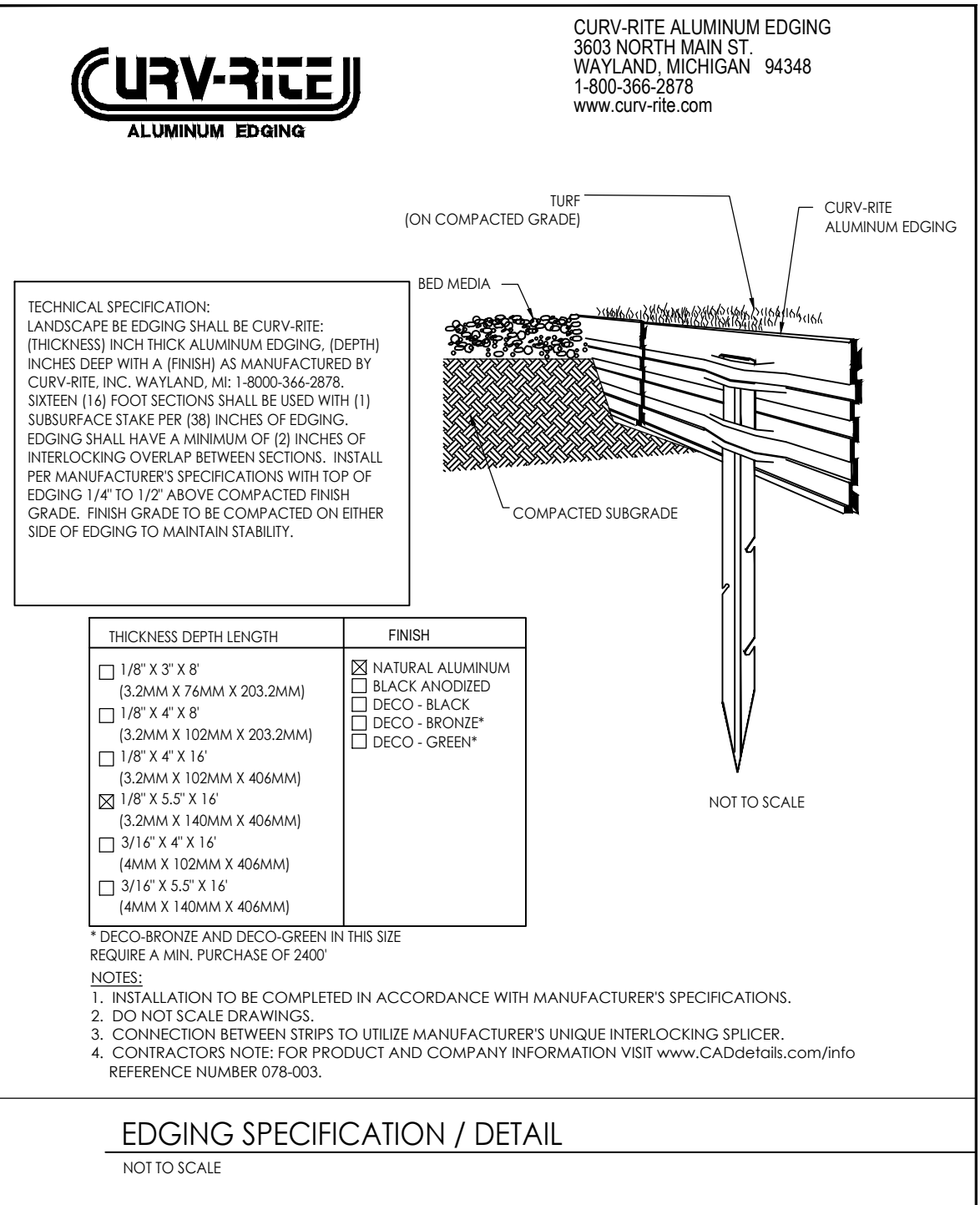
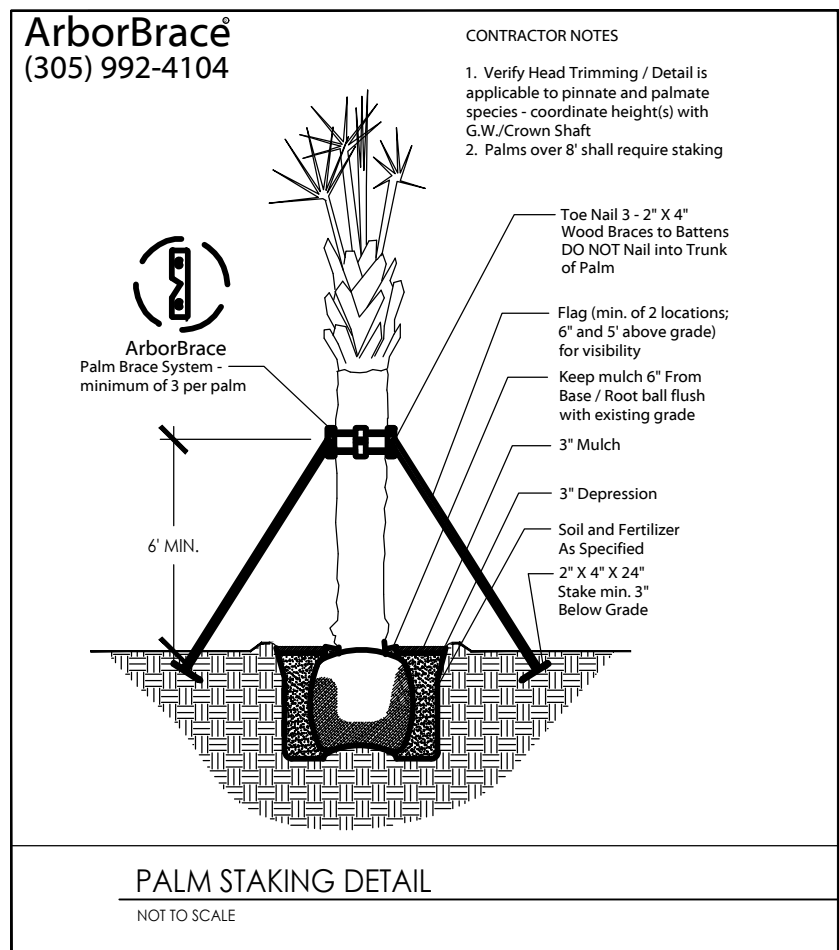
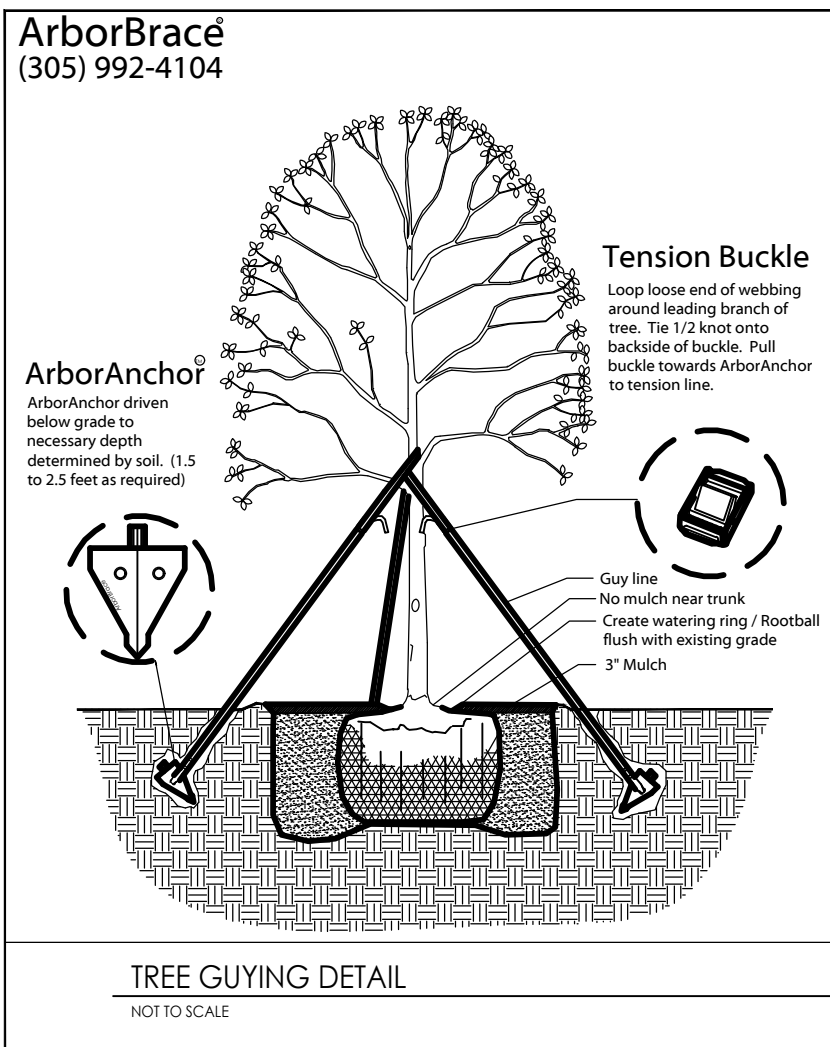
- IRRIGATION NOTES:**
- Sleeving indicated shall be coordinated with existing structures, sized according to lateral piping (or group of laterals) to be contained, and adjusted to final field conditions. Coordinate with other trades, such as electrical, to group sleeving in the same trench.
 - No pressurized piping shall be run under roadways, drives, or other structures without sleeving.
 - Valve locations / scale indicated are graphic representations of approximate locations and angles. Field location will be necessary according to the final coverage, circuiting, and area to be irrigated.
 - The calculations are based upon Manufacturer guidelines for PGV valves, MP Rotator heads, and other equipment by Hunter Industries.
 - Sod shall be zoned SEPARATELY from remaining landscape materials. Irrigation within the R.O.W. is not shown and shall be permitted separately.

IRRIGATION SCHEDULE			
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
	Hunter PROS-00 SR Series Shrub Spray, Fixed Riser. Co-molded wiper seal with UV Resistant Material.	30	40
	Hunter MP Strip PROS-12-PRS40-CV Shrub Rotator, 12" pop-up with factory installed check valve, pressure regulated to 40 psi, MP Rotator nozzle. LST=Ivory left strip, SST=Brown side strip, RST=Copper right strip, on PRS40 body.	7 ^Δ	40
	Hunter MP1000 PROS-12-PRS40-CV Shrub Rotator, 12" pop-up with check valve, pressure regulated to 40 psi, MP Rotator nozzle. M=Maroon adj arc 90 to 210, L=Light Blue 210 to 270 arc, O=Olive 360 arc on PRS40 body.	127 ^Δ	40
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
	Hunter PGV-151 Globe 1-1/2' Plastic Electric Remote Control Valve, for Residential/Light Commercial Use. Female NPT Inlet/Outlet, With Flow Control. Globe Configuration.	14	
	Hunter HCC-2400-PL 24 Station Outdoor Wi-Fi enabled, full-functioning controller with touchscreen & two ICM-800 Module. Commercial Use. Plastic Cabinet.	1	
	Hunter MWS Weather Station with rain sensor, wind sensor, 120 VAC, 5 amp. 5 year warranty.	1	
	Irrigation Lateral Line: PVC Class 200	2,103 l.f. ^Δ	
	Irrigation Mainline: PVC Schedule 40	889.4 l.f.	
	Pipe Sleeve: PVC SCH 40 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.	231.9 l.f.	
	Valve Callout Valve Number Valve Flow Valve Size		

WATERING SCHEDULE													
NUMBER	MODEL	TYPE	PRECIP	SUN	MON	TUE	WED	THU	FRI	SAT	IN./WEEK	MIN./WEEK	GAL./WEEK
1	Hunter PGV-151 Globe	Shrub Rotary	0.46 in/h				66 min		66 min		1	132	116
2	Hunter PGV-151 Globe	Shrub Spray	2.84 in/h			11 min		11 min			1	22	73.9
3	Hunter PGV-151 Globe	Shrub Spray	3.18 in/h			10 min		10 min			1	19	85.9
4	Hunter PGV-151 Globe	Shrub Rotary	0.2 in/h				150 min		150 min		1	299	687
5	Hunter PGV-151 Globe	Shrub Rotary	0.25 in/h				119 min		119 min		1	238	1,647
6	Hunter PGV-151 Globe	Shrub Rotary	0.45 in/h				67 min		67 min		1	134	265
7	Hunter PGV-151 Globe	Shrub Rotary	Unknown								1		
8	Hunter PGV-151 Globe	Shrub Rotary	0.33 in/h				92 min		92 min		1	184	911
9	Hunter PGV-151 Globe	Shrub Rotary	0.3 in/h				102 min		102 min		1	203	1,140
10	Hunter PGV-151 Globe	Shrub Rotary	0.19 in/h				155 min		155 min		1	309	984
11	Hunter PGV-151 Globe	Shrub Rotary	0.19 in/h				157 min		157 min		1	314	1,057
12	Hunter PGV-151 Globe	Shrub Rotary	0.25 in/h				119 min		119 min		1	237	1,322
13	Hunter PGV-151 Globe	Shrub Spray	1.39 in/h			22 min		22 min			1	44	52.8
14	Hunter PGV-151 Globe	Shrub Spray	0.65 in/h			46 min		46 min			1	92	177
TOTALS:						89	1,027	89	1,027			2,227	8,519

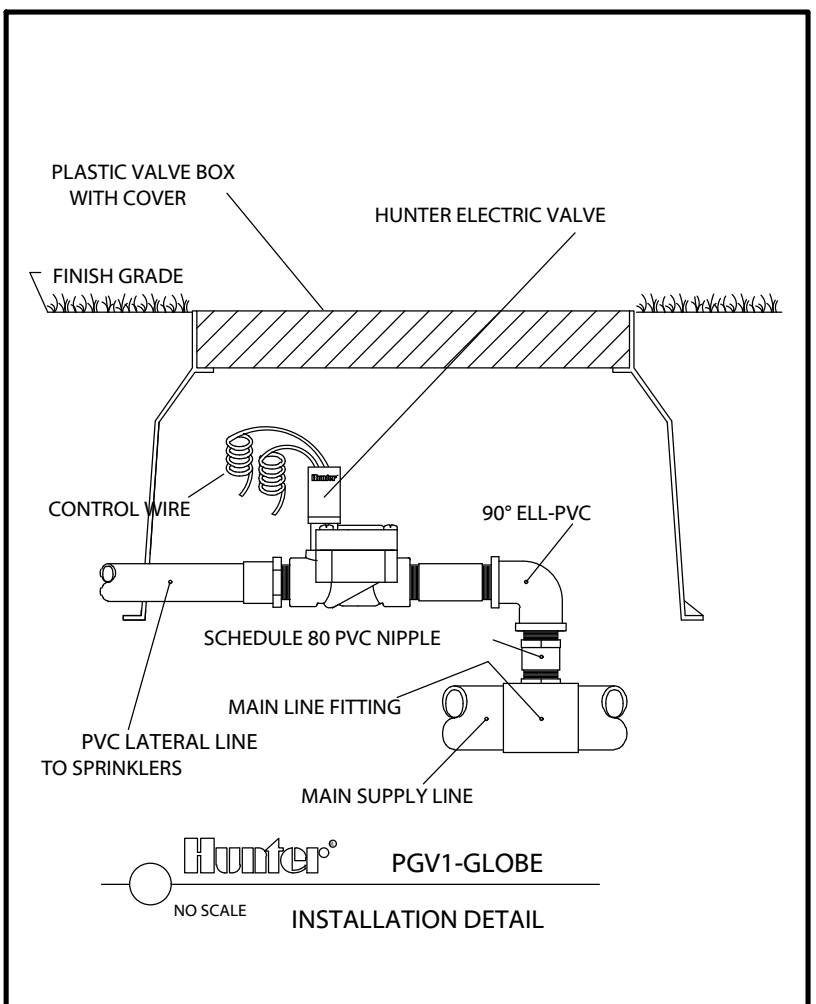
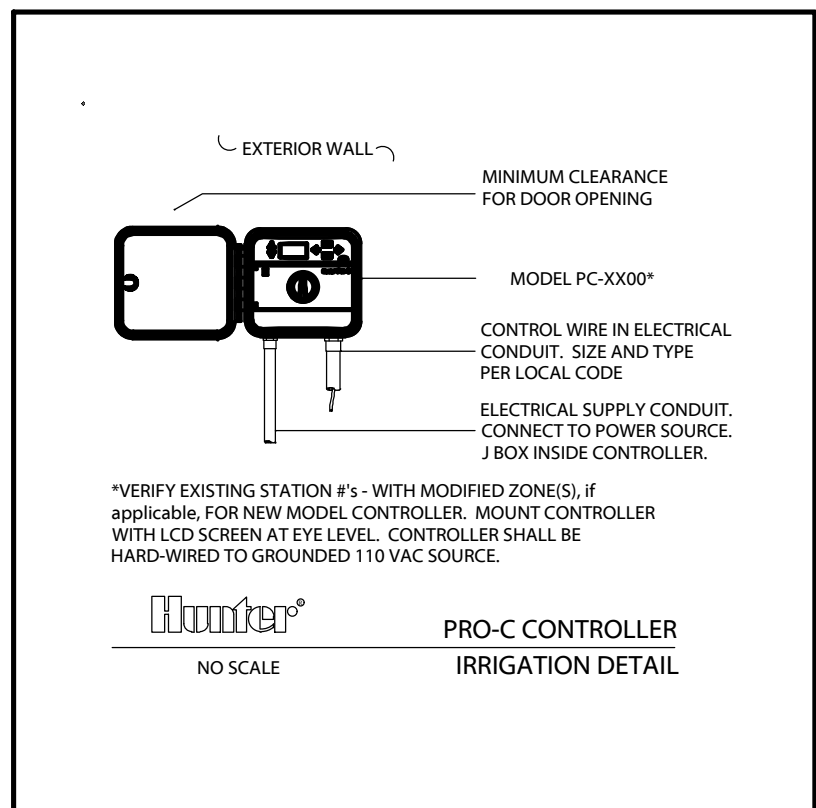
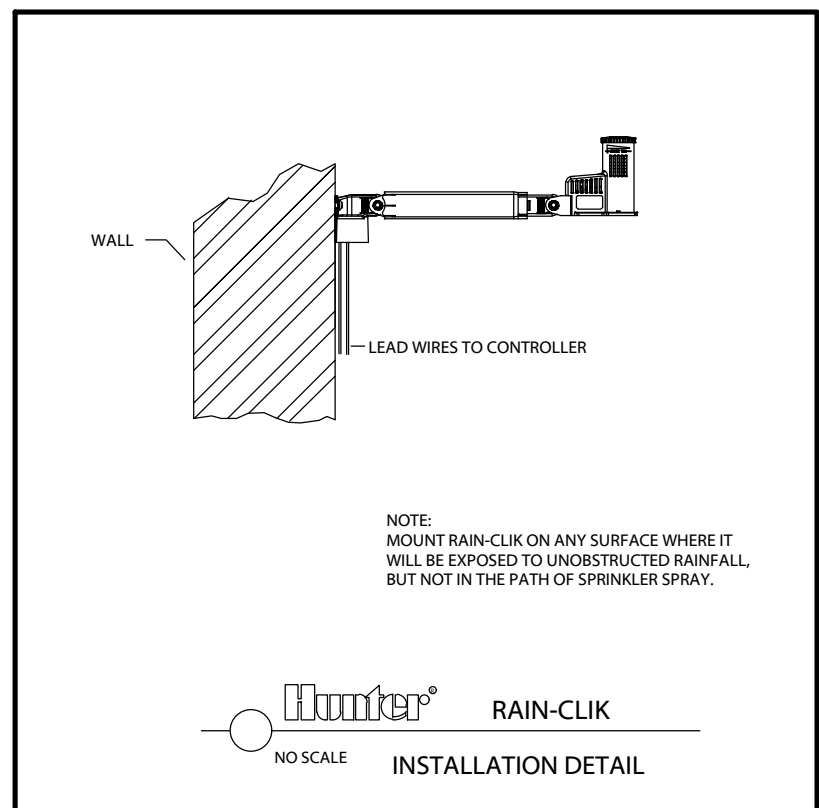
Jeffrey S. Curl ASLA CLARB
Registered Landscape Architect
FLA LIC: LA#6666769

1. A set of Construction Documents and/or Approved Code-required Plans shall be on site at all times.
2. All utilities, easements, right-of-way, Ownership, and/or other survey data shall be verified by the General Contractor, Sitework Contractor, and/or Landscape Contractor prior to the Commencement of Work.
3. Compliance / Permit acquisition and/or display is required for Code-relevant requirements (such as, but not limited to: removals, trimming, replacement, etc.).
4. Verify Plant Quantities and Specifications with the Landscape Architect (also referenced as "L.A." hereafter). Notify the Landscape Architect immediately if discrepancies are noted. Planting Plan shall take precedence over 'Plant List Quantities.' The L.A. reserves the right for material rejection if the installation does not correspond to the Plant List 'Specification / Remark'.
5. Plant material is to be Florida Grade #1 minimum and Florida Fancy for plant material specified as "Specimen." Trees are to be considered single trunk and meet the minimum standard for Code within the applicable jurisdiction.
6. Sizes/specifications are considered minimum. Installation material is to meet or exceed these requirements - verify any discrepancy prior to material purchase, delivery, and/or installation.
7. The Landscape Contractor shall verify the location of plant material with the L.A. prior to installation - contact the L.A. for specific guidelines. If a site conflict / potential is noted, notify the Landscape Architect prior to material installation. The L.A. reserves the right for material relocation if the installation does not correspond to the Planting Plan.
8. The Landscape Contractor and/or Irrigation Contractor shall be responsible for damaged site utilities, infrastructure, etc. Repair / Replace shall be a requirement.
9. Verify site removals, relocations, and/or protected items prior to Bid Preparation. This may include but not be limited to: sod, soil, plant material, stumps, etc. The Landscape Contractor shall be required to complete work as outlined with the Planting Plan(s), Specifications, and Notes.
10. Quantities and specification are subject to adjustment, relocation, and/or removal during or after the installation and subsequent approval process by the L.A.
11. Exotic(s) or Nuisance Plants as defined by the local agency(ies) shall supersede State requirements; however, the Florida Exotic Pest Plant Council (FLEPPC) and/or UF-IFAS Standards shall be used as a database to justify removals if no local ordinance/Code requirement exists.
12. The Landscape Contractor shall execute pruning via a Certified Arborist and using standards as established by the International Society of Arboriculture. All pruning, upon request, shall be advised by the L.A.
13. Trees and palms over 8' in height shall be staked.
14. The Landscape Contractor and/or Irrigation Contractor shall be responsible for: 1) plant warranties and replacements, as specified within their respective agreement(s) 2) plant material maintenance until "Substantial Completion" 3) plant material protection adequacy 4) Scope of Work verification and execution 5) coordination of all Subcontractor(s)
15. The Owner / General Contractor shall be responsible for: 1) Providing Final Grade, Site Access, Security of the site 2) Contract review and acceptance of terms 3) Plant / Irrigation Maintenance coordination 4) Payment milestones
16. Contractor shall ensure placement of all trees maintain a minimum 12.5' horizontal clearance between the trunk and face of street light poles.



1. The site is to be installed 100% Irrigation Coverage via an efficient system utilizing standards common to the industry.
2. The Irrigation system is to be controlled by a rain sensor switch connected to the System controller. The location of the System controller is to be verified and coordinated as necessary to provide access and electrical connection(s).
3. Verify irrigation meter location and see note #5.
4. Irrigation sleeving locations indicated are diagrammatic and serve only as a guide for installation purposes. Irrigation sleeving is to be a minimum of Schedule 40 PVC. This work is to be coordinated by the General Contractor. The Irrigation Contractor/Subcontractor shall not be responsible for sleeving installation unless this work is in the Irrigation Scope of Work. Sleeving shall be clearly marked, flagged, or otherwise delineated above grade to avoid damage and provide ease of location for future use. Sleeving shall be utilized in areas where piping must cross a greater than 5" width, such as roads and walks.
5. Backflow Preventer shall be required per Industry standards and City of Maricopa Island Codes.
6. Avoid overspray on pavement, buildings, etc. Utilize pressure-compensating heads for elimination of aerosol spray (This is a standard feature of MP Rotator, Hunter spray heads).
7. Verify pressure and flow rate after the Meter/Backflow assembly prior to bid submission. The design is based upon the following operating parameters: 60 GPM Max. and 40 PSI Min.-60 PSI Max.

FRICTION LOSS CHARACTERISTICS PSY SCHEDULE 40 IPS PLASTIC PIPE															IRRIGATION MAINLINE SIZING															
PSI loss per 100 feet of pipe (PSI/100 ft)																														
Size 1/2" thru 6"																														
Flow GPM 1 inch 600																														
Size	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000
1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
3/4	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
1	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
1 1/4	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
1 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
2 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
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4	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
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5	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
5 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
6	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
6 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
7	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
7 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
8	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
8 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
9	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
9 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
10	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
10 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
11	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
11 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
12	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
12 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
13	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
13 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
14	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
14 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
15	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
15 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
16	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
16 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
17	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
17 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
18	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
18 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
19	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
19 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
20	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
20 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
21	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0	16.6	17.2	17.8	18.4
21 1/2	1.0	1.6	2.2	2.8	3.4	4.0	4.6	5.2	5.8	6.4	7.0	7.6	8.2	8.8	9.4	10.0	10.6	11.2	11.8	12.4	13.0									



FRICTION LOSS CHARACTERISTICS PVC CLASS 200 IPS PLASTIC PIPE										IRRIGATION LATERAL SIZING	
PSI loss per 100 Net of Pipe (20°F/7°C)											
1120 3/4" thru 6" Flow (GPM) thru 600'											
SIZE IN.	WT. LB./FT.	1 IN. PSI	1.5 IN. PSI	2 IN. PSI	3 IN. PSI	4 IN. PSI	5 IN. PSI	6 IN. PSI	7 IN. PSI	8 IN. PSI	9 IN. PSI
1/2	0.38	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3/4	0.50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	0.63	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1 1/4	0.86	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1 1/2	1.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	1.34	0.023	0.035	0.048	0.073	0.101	0.134	0.168	0.202	0.236	0.270
2 1/2	1.82	0.040	0.064	0.088	0.132	0.176	0.220	0.264	0.308	0.352	0.396
3	2.30	0.067	0.105	0.143	0.215	0.287	0.359	0.431	0.503	0.575	0.647
3 1/2	2.68	0.084	0.128	0.172	0.256	0.340	0.424	0.508	0.592	0.676	0.760
4	3.16	0.112	0.172	0.232	0.344	0.456	0.568	0.680	0.792	0.904	1.016
4 1/2	3.54	0.130	0.200	0.270	0.400	0.530	0.660	0.790	0.920	1.050	1.180
5	4.02	0.158	0.238	0.318	0.468	0.618	0.768	0.918	1.068	1.218	1.368
5 1/2	4.40	0.176	0.266	0.356	0.526	0.696	0.866	1.036	1.206	1.376	1.546
6	4.88	0.204	0.304	0.404	0.604	0.804	1.004	1.204	1.404	1.604	1.804
6 1/2	5.26	0.222	0.332	0.442	0.662	0.882	1.102	1.322	1.542	1.762	1.982
7	5.74	0.250	0.370	0.490	0.740	0.990	1.240	1.490	1.740	1.990	2.240
7 1/2	6.12	0.268	0.408	0.548	0.818	1.098	1.378	1.658	1.938	2.218	2.498
8	6.60	0.296	0.456	0.616	0.916	1.236	1.556	1.876	2.196	2.516	2.836
8 1/2	6.98	0.314	0.484	0.654	0.984	1.324	1.664	1.994	2.324	2.654	2.984
9	7.46	0.342	0.522	0.702	1.072	1.432	1.792	2.152	2.512	2.872	3.232
9 1/2	7.84	0.360	0.550	0.740	1.132	1.512	1.892	2.272	2.652	3.032	3.412
10	8.32	0.388	0.588	0.798	1.212	1.612	2.012	2.412	2.812	3.212	3.612
10 1/2	8.70	0.406	0.616	0.836	1.272	1.682	2.092	2.492	2.892	3.292	3.692
11	9.18	0.434	0.644	0.874	1.352	1.782	2.202	2.602	3.002	3.402	3.802
11 1/2	9.56	0.452	0.672	0.914	1.412	1.862	2.282	2.682	3.082	3.482	3.882
12	10.04	0.480	0.700	0.954	1.492	1.962	2.382	2.782	3.182	3.582	3.982
12 1/2	10.42	0.498	0.728	0.982	1.552	2.042	2.462	2.862	3.262	3.662	4.062
13	10.90	0.526	0.756	1.024	1.632	2.142	2.562	2.962	3.362	3.762	4.162
13 1/2	11.28	0.544	0.784	1.064	1.692	2.222	2.642	3.042	3.442	3.842	4.242
14	11.76	0.572	0.812	1.104	1.772	2.322	2.742	3.142	3.542	3.942	4.342
14 1/2	12.14	0.590	0.840	1.144	1.832	2.402	2.822	3.222			
15	12.62	0.618	0.868	1.184	1.912	2.502	2.922	3.322			
15 1/2	13.00	0.636	0.896	1.224	1.972	2.582	3.002	3.402			
16	13.48	0.664	0.924	1.264	2.052	2.682	3.102	3.502			
16 1/2	13.86	0.682	0.952	1.304	2.112	2.762	3.182	3.582			
17	14.34	0.710	0.980	1.344	2.192	2.862	3.282	3.682			
17 1/2	14.72	0.728	1.008	1.384	2.252	2.942	3.362	3.762			
18	15.20	0.756	1.036	1.424	2.332	3.042	3.462	3.862			
18 1/2	15.58	0.774	1.064	1.464	2.392	3.122	3.542	3.942			
19	16.06	0.802	1.092	1.504	2.472	3.222	3.642	4.042			
19 1/2	16.44	0.820	1.120	1.544	2.532	3.302	3.722	4.122			
20	16.92	0.848	1.148	1.584	2.612	3.402	3.822	4.222			
20 1/2	17.30	0.866	1.176	1.624	2.672	3.482	3.902	4.302			
21	17.78	0.894	1.204	1.664	2.752	3.582	4.002	4.402			
21 1/2	18.16	0.912	1.232	1.704	2.812	3.662	4.082	4.482			
22	18.64	0.940	1.260	1.744	2.892	3.762	4.182	4.582			
22 1/2	19.02	0.958	1.288	1.784	2.952	3.842	4.262	4.662			
23	19.50	0.986	1.316	1.824	3.032	3.942	4.362	4.762			
23 1/2	19.88	1.004	1.344	1.864	3.092	4.022	4.442	4.842			
24	20.36	1.032	1.372	1.904	3.172	4.122	4.542	4.942			
24 1/2	20.74	1.050	1.400	1.944	3.232	4.202	4.622	5.022			
25	21.22	1.078	1.428	1.984	3.312	4.302	4.722	5.122			
25 1/2	21.60	1.096	1.456	2.024	3.372	4.382	4.802	5.202			
26	22.08	1.124	1.484	2.064	3.452	4.482	4.902	5.302			
26 1/2	22.46	1.142	1.512	2.104	3.512	4.562	4.982	5.382			
27	22.94	1.170	1.540	2.144	3.592	4.662	5.082	5.482			
27 1/2	23.32	1.188	1.568	2.184	3.652	4.742	5.162	5.562			
28	23.80	1.216	1.596	2.224	3.732	4.842	5.262	5.662			
28 1/2	24.18	1.234	1.624	2.264	3.792	4.922	5.342	5.742			
29	24.66	1.262	1.652	2.304	3.872	5.022	5.442	5.842			
29 1/2	25.04	1.280	1.680	2.344	3.932	5.102	5.522	5.922			
30	25.52	1.308	1.708	2.384	4.012	5.202	5.622	6.022			
30 1/2	25.90	1.326	1.736	2.424	4.072	5.282	5.702	6.102			
31	26.38	1.354	1.764	2.464	4.152	5.382	5.802	6.202			
31 1/2	26.76	1.372	1.792	2.504	4.212	5.462	5.882	6.282			
32	27.24	1.400	1.820	2.544	4.292	5.562	5.982	6.382			
32 1/2	27.62	1.418	1.848	2.584	4.352	5.642	6.062	6.462			
33	28.10	1.446	1.876	2.624	4.432	5.742	6.162	6.562			
33 1/2	28.48	1.464	1.904	2.664	4.492	5.822	6.242	6.642			
34	28.96	1.492	1.932	2.704	4.572	5.922	6.342	6.742			
34 1/2	29.34	1.510	1.960	2.744	4.632	6.002	6.422	6.822			
35	29.82	1.538	1.988	2.784	4.712	6.102	6.522	6.922			
35 1/2	30.20	1.556	2.016	2.824	4.772	6.182	6.602	7.002			
36	30.68	1.584	2.044	2.864	4.852	6.282	6.702	7.102			
36 1/2	31.06	1.602	2.072	2.904	4.912	6.362	6.782	7.182			
37	31.54	1.630	2.100	2.944	4.992	6.462	6.882	7.282			
37 1/2	31.92	1.648	2.128	2.984	5.052	6.542	6.962	7.362			
38	32.40	1.676	2.156	3.024	5.132	6.642	7.062	7.462			
38 1/2	32.78	1.694	2.184	3.064	5.192	6.722	7.142	7.542			
39	33.26	1.722	2.212	3.104	5.272	6.822	7.242	7.642			
39 1/2	33.64	1.740	2.240	3.144	5.332	6.902	7.322	7.722			
40	34.12	1.768	2.268	3.184	5.412	7.002	7.422	7.822			
40 1/2	34.50	1.786	2.296	3.224	5.472	7.082	7.502	7.902			
41	34.98	1.814	2.324	3.264	5.552	7.182	7.602	8.002			
41 1/2	35.36	1.832	2.352	3.304	5.612	7.262	7.682	8.082			
42	35.84	1.860	2.380	3.344	5.692	7.362	7.782	8.182			
42 1/2	36.22	1.878	2.408	3.384	5.752	7.442	7.862	8.262			
43	36.70	1.906	2.436	3.424	5.832	7.542	7.962	8.362			
43 1/2	37.08	1.924	2.464	3.464	5.892	7.622	8.042	8.442			
44	37.56	1.952	2.492	3.504	5.972	7.722	8.142	8.542			
44 1/2	37.94	1.970	2.520	3.544	6.032	7.802	8.222	8.622			
45	38.42	1.998	2.548	3.584	6.112	7.902	8.322	8.722			
45 1/2	38.80	2.016	2.576	3.624	6.172	7.982	8.402	8.802			
46	39.28	2.044	2.604	3.664	6.252	8.082	8.502	8.902			
46 1/2	39.66	2.062	2.632	3.704	6.312	8.162	8.582	8.982			
47	40.14	2.090	2.660	3.744	6.392	8.262	8.682	9.082			
47 1/2	40.52	2.108	2.688	3.784	6.452	8.342	8.762	9.162			
48	41.00	2.136	2.716	3.824	6.532	8.442	8.862	9.262			
48 1/2	41.38	2.154	2.744	3.864	6.592	8.522	8.942	9.342			
49	41.86	2.182	2.772	3.904	6.672	8.622	9.042	9.442			
49 1/2	42.24	2.200	2.800	3.944	6.732	8.702	9.122	9.522			
50	42.72	2.228	2.828	3.984	6.812	8.802	9.222	9.622			
50 1/2	43.10	2.246	2.856	4.024	6.872	8.882	9.302	9.702			
51	43.58	2.274	2.884	4.064	6.952	8.982	9.402	9.802			
51 1/2	43.96	2.292	2.912	4.104	7.012	9.062	9.482	9.882			
52	44.44	2.320	2.940	4.144	7.092	9.162	9.582	9.982			
52 1/2	44.82	2.338	2.968	4.184	7.152	9.242	9.662	10.062			
53	45.30	2.366	2.996	4.224	7.232	9.342	9.762	10.162			
53 1/2	45.68	2.384	3.024	4.264	7.292	9.422	9.842	10.242			
54	46.16	2.412	3.052	4.304	7.372	9.522	9.942	10.342			
54 1/2	46.54	2.430	3.080	4.344							

