



RETI
9537 HARDING AVENUE
SURFSIDE, FL 33154
305.867.6344

WWW.RETIAMI.COM
REVUELTA INTERNATIONAL
2950 SW 27TH STREET,
110 MIAMI, FL 33133
305.590.5000

WWW.REVUELTA-ARCHITECTURE.COM
CLARO DEVELOPMENT
1035 N MIAMI AVENUE,
201 MIAMI, FL 33136
305.324.4700

WWW.CLAROCORP.COM
OCEAN ENGINEERING, INC.
333 NE 24TH STREET,
408 MIAMI, FL 33137
786.253.5252

WWW.OCEANENGINEERING.COM

7140 COLLINS HOTEL

7140 COLLINS AVENUE | MIAMI BEACH, FLORIDA 33141

S. TYLER NIELSEN -
LA6657067

NOT FOR CONSTRUCTION



01.22.2018

IRRIGATION LEGEND & NOTES	
DATE	
10.17.2016	PLANNING BOARD
10.28.2016	M. BEACH DRB
11.02.2016	M. BEACH REVIEW
11.27.2016	50% SCHEMATIC
12.21.2016	100% SCHEMATIC
06.22.2017	80% D.DEVELOPMENT
07.20.2017	100% D.DEVELOPMENT
09.01.2017	50% CD
12.21.2017	PERMIT DRAWINGS
02.22.2018	COORDINATION

L805

© COPYRIGHT NIELSEN LANDSCAPE ARCHITECTS, LLC



IRRIGATION NOTES

- ALL LOCAL MUNICIPAL AND STATE LAWS, 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.
- THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING OR ARCHITECTURAL PLANS BEFORE BEGINNING WORK.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
- THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS.
- THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE OWNER.
- INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH LOCAL CITY, COUNTY AND STATE REQUIREMENTS FOR BOTH EQUIPMENT AND INSTALLATION.
- CONTRACTOR IS TO PROVIDE AN ADDITIONAL PILOT WIRE FROM CONTROLLER ALONG ENTIRETY OF MAIN LINE TO THE LAST RCV ON EACH AND EVERY LEG OF MAIN LINE. LABEL SPARE WIRES AT BOTH ENDS.
- ALL PIPE UNDER PAVED AREAS TO BE INSTALLED IN SLEEVEING 2.5 TIMES THE DIAMETER OF THE PIPE CARRIED. SEE LEGEND FOR TYPE. ALL WIRE UNDER PAVED AREAS TO BE INSTALLED IN A SCH. 40 SLEEVE THE SIZE REQUIRED TO EASILY PULL WIRE THROUGH. ALL SLEEVES TO BE INSTALLED WITH A MINIMUM DEPTH AS SHOWN ON THE SLEEVEING DETAILS. SLEEVES TO EXTEND AT LEAST 12" PAST THE EDGE OF THE PAVING.
- ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED IN SHRUB OR GROUND COVER AREAS WHERE POSSIBLE. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED AS SHOWN ON THE INSTALLATION DETAILS. INSTALL ALL QUICK COUPLER AND REMOTE CONTROL VALVES WITHIN 18" OF HARDSCAPE.
- ALL HEADS ARE TO BE INSTALLED WITH THE NOZZLE, SCREEN AND ARCS SHOWN ON THE PLANS. ALL HEADS ARE TO BE ADJUSTED TO PREVENT OVERSPRAY ONTO BUILDINGS, WALLS, FENCES AND HARDSCAPE. THIS INCLUDES, BUT NOT LIMITED TO, ADJUSTMENT OF DIFFUSER PIN OR ADJUSTMENT SCREW, REPLACEMENT OF PRESSURE COMPENSATING SCREENS, REPLACEMENT OF NOZZLES WITH MORE APPROPRIATE RADIUS UNITS AND THE REPLACEMENT OF NOZZLES WITH ADJUSTABLE ARC UNITS.
- CONTRACTOR SHALL INSTALL ADDITIONAL CHECK VALVES TO HEADS AND LATERALS AS REQUIRED TO PREVENT LOW HEAD DRAINAGE.
- THE CONTRACTOR SHALL USE PROPER GROUNDING TECHNIQUES FOR GROUNDING THE CONTROLLER AND RELATED EQUIPMENT PER MANUFACTURERS SPECIFICATIONS. SWEENEY AND ASSOCIATES RECOMMENDS MEASURING FOR PROPER GROUND AT LEAST ONCE ANNUALLY, AND NECESSARY ADJUSTMENTS MADE TO COMPLY WITH MANUFACTURER SPECIFICATIONS.

IRRIGATION SYSTEM DESCRIPTION

THE IRRIGATION SYSTEM SHALL BE A FULLY AUTOMATIC SYSTEM AS DESCRIBED BELOW:

APPLICATION METHODS:

ALL TURF AREAS SHALL BE IRRIGATED WITH POP-UP SPRINKLER HEADS THAT PROVIDE HEAD-TO-HEAD (100%) COVERAGE OF THE TURF AREA. POP-UP HEADS SHALL BE 6" TYPE. NOZZLES USED ON SPRINKLER HEADS SHALL BE ADJUSTABLE ARC SPRAY HEADS WITH MATCHED PRECIPITATION RATES. HEADS SHALL BE INSTALLED ON SWING JOINTS.

ALL SHRUB AND GROUND COVER AREAS SHALL BE IRRIGATED WITH SUB-SURFACE DRIP TUBING IRRIGATION SYSTEMS. DRIP TUBING SYSTEMS SHALL BE BURIED 2" BELOW FINISHED SOIL GRADE. DRIP TUBING SHALL BE SPACED 18" APART AT A MAXIMUM WITH THE PERIMETER ROWS OF TUBING NO FARTHER THAN 4" FROM HARDSCAPE EDGES.

ALL TREES TO BE IRRIGATED WITH POP-UP STREAM BUBBLER HEADS. POP-UP HEADS SHALL BE 6" TYPE. HEADS SHALL BE INSTALLED ON SWING JOINTS

VALVES:

MASTER VALVE SHALL BE NORMALLY CLOSED TYPE, ELECTRICALLY OPERATED, PLASTIC BODY, INSTALLED BELOW GRADE IN A VALVE BOX. FLOW SENSOR SHALL BE A PVC BODIED IMPELLER TYPE INSTALLED BELOW GRADE IN A VALVE BOX. MAINLINE ISOLATION VALVES SHALL BE PVC BALL TYPE INSTALLED BELOW GRADE IN A VALVE BOX. QUICK COUPLER VALVES SHALL BE 3/4" SIZE INSTALLED BELOW GRADE IN A VALVE BOX. REMOTE CONTROL VALVES SHALL BE ELECTRICALLY OPERATED, PLASTIC BODY, INSTALLED BELOW GRADE IN A VALVE BOX. DRIP CONTROL VALVES SHALL BE INSTALLED WITH PLASTIC FILTER AND PRESSURE REGULATOR.

CONTROLS:

THE IRRIGATION CONTROLLER (TIME CLOCK) SHALL BE A SOLID STATE CONTROLLER WITH THE CAPABILITY OF READING A FLOW SENSOR AND AUTOMATICALLY ADJUSTING THE PROGRAM BASED ON CURRENT WEATHER CONDITIONS. WIRES FOR CONTROL SYSTEM TO THE VALVES SHALL BE #14UF AWG DIRECT BURIAL TYPE. WIRES INSTALLED INSIDE LOW VOLTAGE WIRE CONDUITS IN BUILDING MAY BE #14 THHN TYPE. ALL WIRE CONNECTIONS SHALL BE WATERPROOF TYPE.

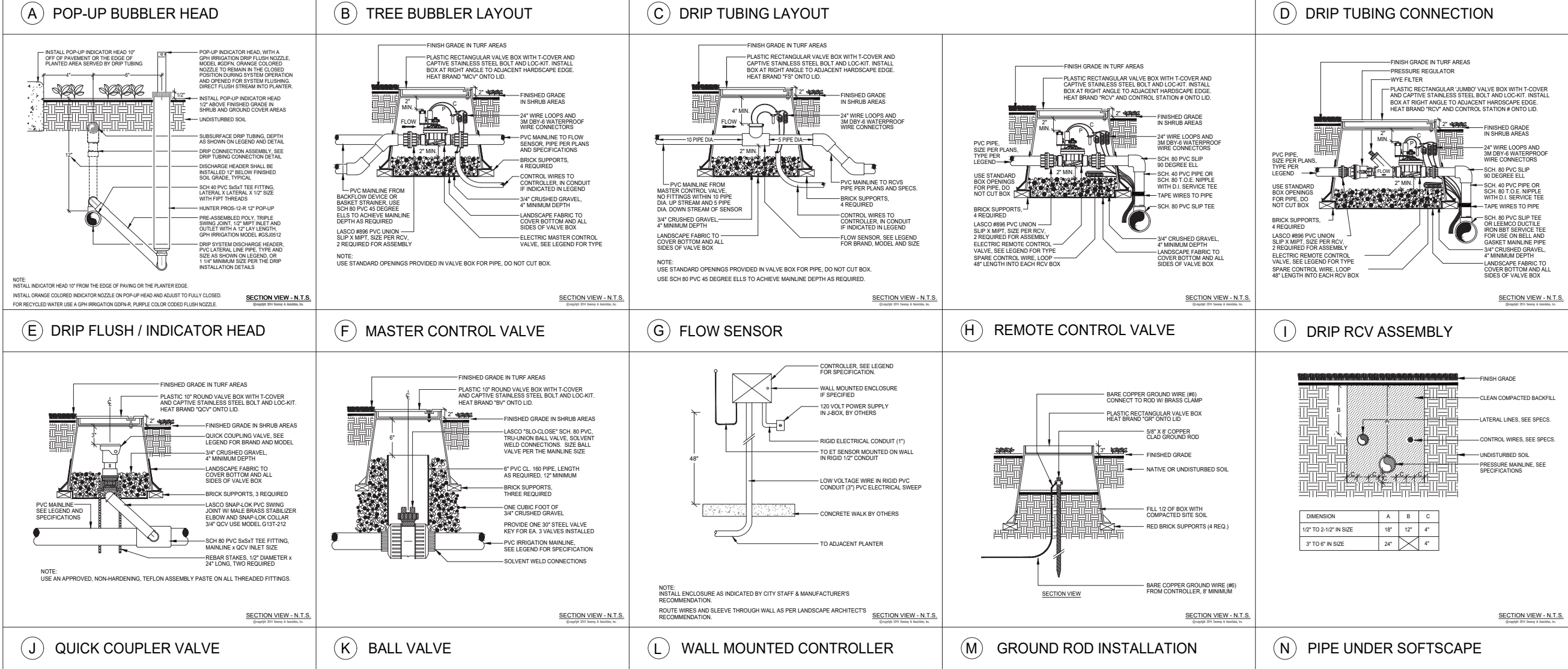
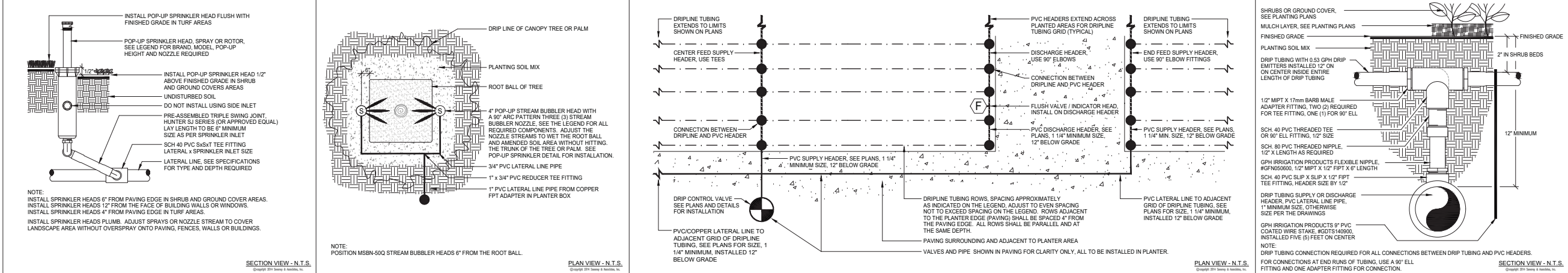
PIPE:

MAINLINE PIPE WITHIN PLANTERS SHALL BE SCHEDULE 40 PVC, 1 1/2" SIZE. LATERAL LINE PIPE WITHIN PLANTERS SHALL BE SCHEDULE 40 PVC, 3/4" TO 1 1/2" SIZE. SLEEVES BETWEEN PLANTERS SHALL BE SCHEDULE 40 PVC, 2" MINIMUM SIZE. MAINLINE PIPE WITHIN BUILDING SHALL BE TYPE K COPPER, 1 1/2" SIZE. LATERAL PIPE WITHIN BUILDING SHALL BE TYPE K COPPER, 1" TO 1 1/2" SIZE. LOW VOLTAGE WIRE CONDUIT WITHIN BUILDING SHALL BE STEEL, 2" SIZE.

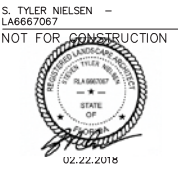
IRRIGATION SYSTEM SHALL BE SERVED FROM WATER IN A STORAGE TANK AND PUMPED TO THE THREE LEVELS OF PLANTING. WATER TANK AND PUMP SHALL BE AS PROVIDED BY THE CIVIL OR MEP ENGINEER WITH PUMP REQUIREMENTS (FLOW AND PRESSURE) AS PROVIDED BY THE IRRIGATION CONSULTANT.

SYMBOL	MANUFACT.	MODEL NO. / DESCRIPTION	GPM	PSI	RADIUS	PR (TRI.)	DETAIL
	HUNTER	PROS-06-PRS30-CV 6" POP-UP TURF HEAD WITH 50/5H NOZZLES	12, 23		30	5 FT	2.05 IN./HR. A
	HUNTER	PROS-06-PRS30-CV 6" POP-UP TURF HEAD WITH 80/8T/8H/8F NOZZLES	24, 32, 47, 97		30	8 FT	1.69 IN./HR. A
	HUNTER	PROS-06-PRS30-CV 6" POP-UP TURF HEAD WITH 10Q/10T/10H/10F NOZZLES	42, 57, 88, 1.59		30	10 FT	1.77 IN./HR. A
	HUNTER	PROS-04-CV 4" POP-UP BUBBLER HEAD WITH A MSBN-50Q PRESSURE COMPENSATING STREAM BUBBLER NOZZLE. EACH SYMBOL REPRESENTS ONE (1) BUBBLER PER PALM. PLACE THE BUBBLER HEADS 6" FROM THE EDGE OF THE ROOT BALL OF THE TREE OR PALM AND ON OPPOSITE SIDES OF THE TREE OR PALM. TYPICAL. ADJUST BUBBLER STREAMS TO WET THE ROOT BALL AND ADJACENT AMENDED SOIL WITHOUT HITTING THE TRUNK OF THE PALM.	50		30	N/A	N/A A.B
	HUNTER	PROS-04-CV 4" POP-UP BUBBLER HEAD WITH A MSBN-50Q PRESSURE COMPENSATING STREAM BUBBLER NOZZLE. EACH SYMBOL REPRESENTS TWO (2) BUBBLERS TO PROVIDE TWO (2) BUBBLERS PER TREE. PLACE THE BUBBLER HEADS 6" FROM THE EDGE OF THE ROOT BALL OF THE TREE OR PALM AND ON OPPOSITE SIDES OF THE TREE OR PALM. TYPICAL. ADJUST BUBBLER STREAMS TO WET THE ROOT BALL AND ADJACENT AMENDED SOIL WITHOUT HITTING THE TRUNK OF THE PALM.	50 (1.0)		30	N/A	N/A A.B
	NETAFIM	TLHCVRX5-12 SUBSURFACE DRIP TUBING WITH 0.53 GPH, PRESSURE COMPENSATING EMITTERS INTERNALLY INSTALLED IN THE DRIP TUBING AT 12" O.C. SPACING. DRIP TUBING SHALL BE EQUIPPED WITH COPPER OXIDE INFUSED EMITTERS AND A PHYSICAL BARRIER TO PREVENT ROOT INTRUSION INTO THE DRIP EMITTER. DRIP EMITTERS SHALL BE CONTINUOUS FLUSHING TYPE AND EQUIPPED WITH A CHECK VALVE AND ANTI-SIPHON FEATURE. DRIP TUBING SHALL BE INSTALLED 2" BELOW FINISHED SOIL GRADE (NOT COUNTING MULCH) AND IN PARALLEL ROWS A MAXIMUM OF 18" ON CENTER. THE PERIMETER ROW OF DRIP TUBING SHALL BE INSTALLED A MAXIMUM OF 4" FROM THE EDGE OF ANY HARDSCAPE OR TURF EDGE. ALL SUBSEQUENT INTERIOR ROWS SHALL BE ADJUSTED TO PROVIDE AN EVEN SPACING ACROSS THE PLANTER WITHOUT EXCEEDING 18" MAXIMUM SPACING. INSTALL 8" PVC COATED GALVANIZED TUBING STAKES A MAXIMUM OF FIVE (5) FEET ON CENTER ALONG THE LENGTH OF THE TUBING. TUBING STAKES SHALL BE MODEL #GDT514090 AS MANUFACTURED BY GPH IRRIGATION PRODUCTS (866) 582-9884. THE HATCH PATTERN SYMBOLS ON THE PLANS REPRESENT THE APPROXIMATE DIRECTION AND SPACING OF THE DRIP TUBING ROWS. SEE SPACING REQUIREMENTS ABOVE AND IN DETAILS.					C.D
	AS APPROVED	PVC SUPPLY AND DISCHARGE HEADERS SHALL BE PVC LATERAL LINE PIPE (AS SHOWN BELOW), 1 1/4" MINIMUM SIZE WITH SCH. 40 PVC FITTINGS.					C
	NETAFIM	CONNECTION BETWEEN HCVRX DRIP TUBING AND PVC SUPPLY AND DISCHARGE HEADERS SHALL BE MADE USING TL DRIP LINE BARBED FITTINGS, SCH. 40 PVC THREADED FITTINGS, SCH. 80 NIPPLES AND FLEXIBLE NIPPLES. WHEN THE CONNECTION IS AT THE END RUN OF THE TUBING USE A 1/2" SCH. 40 PVC THREADED 90° ELBOW. A 1/2" X LENGTH AS REQUIRED SCH. 80 PVC THREADED NIPPLE, A 1/2" X 8" MPT X FPT FLEXIBLE NIPPLE, AND A TLO50MA 17mm BARB X 1/2" MPT ADAPTER FITTING. WHEN THE CONNECTION IS IN THE MIDDLE OF THE TUBING RUN USE A 1/2" SCH. 40 PVC THREADED TEE FITTING, A 1/2" X LENGTH AS REQUIRED SCH. 80 PVC THREADED NIPPLE, A 1/2" X 8" MPT X FPT FLEXIBLE NIPPLE, AND TWO (2) TLO50MA 17mm BARB X 1/2" MPT ADAPTERS. ALL END RUNS OF TUBING SHALL BE CONNECTED WITH A PVC DISCHARGE HEADER. FLEXIBLE NIPPLES SHALL BE MODEL #GFN050600 AS MANUFACTURED BY GPH IRRIGATION PRODUCTS (866) 582-9884.					C.D
	NETAFIM	TL SERIES 17mm BARBED FITTINGS FOR CONNECTIONS BETWEEN DRIP TUBING (TUBING-TO-TUBING ONLY). NO HEATING OF TUBING SHALL BE ALLOWED.					D
	GPH IRRIGATION/ HUNTER	CDPNA DRIP FLUSH / INDICATOR NOZZLE. INSTALLED ONTO A HUNTER PROS-12-R 1/2" POP-UP SPRINKLER BODY. THE FLUSH NOZZLE SHALL BE ORIENTED TO SEND FLUSH WATER INTO THE PLANTER AREA AND CLOSED FOR NORMAL OPERATION OF THE DRIP SYSTEM.					E
	G.P.S.	IRRIGATION PUMP SYSTEM. CONTRACTOR SHALL CONTACT DARYL GREEN AT GREEN PRODUCT SERVICES, (849) 584-7311, FOR PRICE AND ORDERING. REFER TO DESIGN SPECIFICATIONS BELOW AND CONFIRM SYSTEM PARAMETERS WITH GPS PRIOR TO ORDERING. POINT OF OPERATION #1: 16 GPM, 82 PSI BOOST					N/A
	BUCKNER	3200 1 1/2" NORMALLY CLOSED, BRASS MASTER CONTROL VALVE. WIRE MCV TO THE CONTROLLER USING A SEPARATE PILOT AND GROUND WIRE. ROUTE INSIDE CONDUIT WITH FLOW SENSOR WIRE. INSTALL INSIDE A STANDARD RECTANGULAR VALVE BOX.					F
	N/A	ELECTRICAL POWER FOR PUMP SYSTEM, PROVIDED BY ELECTRICIAN. VERIFY ACTUAL LOCATION IN FIELD. MINIMUM REQUIRED 230 VOLT (THREE) PHASE.					N/A
	N/A	KC-XXX-S SPRING CHECK VALVE. SIZE PER MAINLINE. INSTALL WITHIN A 10" ROUND VALVE BOX					N/A
	RAIN BIRD	FS150P SERIES FLOW SENSOR IN A 1 1/2" PVC TEE, INSTALL PER MANUFACTURER'S RECOMMENDATION AND WIRE TO CONTROLLER					G
	HUNTER	ICV-101G-FS-AS-ADJ 1" PRESSURE REGULATING, PLASTIC REMOTE CONTROL VALVE (RCV). SET AS-ADJ PRESSURE REGULATOR TO PROVIDE THE OPERATING PRESSURE OF THE SPRINKLER / BUBBLER HEAD TO THE HIGHEST OR FARTHEST HEAD ON THE CONTROL VALVE ZONE. INSTALL THE RCV INSIDE A STANDARD RECTANGULAR VALVE BOX.					H
	HUNTER/ TORO/ SENNINGER	ICV-101G-FS 1" SERIES DRIP REMOTE CONTROL VALVE ASSEMBLY. SIZE AS SHOWN. INSTALL TORO T-ALFD75150L 3/4" DISC FILTER AND SENNINGER PRESSURE REGULATOR PR-40HF FOR DEMANDS LESS THAN 18 GPM. TORO T-ALFD10150L 1" DISC FILTER AND SENNINGER PR-40HF PRESSURE REGULATOR FOR DEMANDS GREATER THAN 18 GPM. INSTALL BOTH ON THE DOWNSTREAM SIDE OF EACH DRIP RCV					I
	HUNTER	HQ-33DLRC 3/4" QUICK COUPLER VALVE. INSTALL WITHIN A RECTANGULAR VALVE BOX WITH ISOLATION VALVE.					J
	LASCO	V1710N-SCH 1 1/2" SLQ-CLOSE SCH. 80 PVC TRUE-UNION BALL VALVE WITH SOLVENT WELD SOCKET CONNECTIONS. LINE SIZE PER MAINLINE. INSTALL INSIDE A 10" ROUND VALVE BOX.					K
	HUNTER	IC-600-PL CONTROLLER WITH FIVE (5) ICM-600 EXPANSION MODULES TO MAKE IT AN 36 STATION CONTROLLER, INSTALLED WITHIN PLASTIC WALL MOUNT ENCLOSURE AS PART OF MODEL					L.M
	PAIGE ELECTRIC	THE CONTROLLER SHALL BE GROUNDED USING A #182000 5/8" X 8 FOOT COPPER CLAD GROUND ROD, A #182005 CAST BRONZE ROD CLAMP AND THE REQUIRED LENGTH OF #8AWG BARE, SINGLE STRAND COPPER GROUND WIRE. INSTALL INSIDE A 10" ROUND VALVE BOX.					M
	HUNTER	MINI-CLK RAIN SENSOR, MOUNT ON EXTERIOR OF BUILDING AND WIRE TO CONTROLLER WITHIN CONDUIT. PAINT CONDUIT TO MATCH BUILDING COLOR					M
	N/A	120 VOLT ELECTRICAL POWER FOR CONTROLLER, PROVIDED BY ELECTRICIAN, VERIFY ACTUAL LOCATION IN FIELD					N/A
	AS APPROVED	PVC PIPE 1 1/2" SCH. 40, SOLVENT WELD WITH SCH. 80 PVC FITTINGS, AS MAINLINES INSTALLED 18" BELOW FINISHED GRADE					N.O,P
	AS APPROVED	PVC PIPE 3/4" - 1 1/4" SCH. 40, SOLVENT WELD WITH SCH. 40 PVC FITTINGS, AS LATERAL LINES INSTALLED 12" BELOW FINISHED GRADE					N.O,P
	AS APPROVED	TYPE K COPPER PIPING ROUTED BETWEEN PLANTERS, AND THROUGH BUILDING AND GARAGES. COPPER PIPING SHALL BE DESIGNED BY THE PLUMBING ENGINEER AND BE SHOWN ON THE PLUMBING PLANS. COPPER PIPING SHALL BE INSTALLED BY THE PLUMBER. COPPER PIPING SHOWN IS FOR REFERENCE ONLY. VERIFY LOCATION, SIZE AND STUB-OUTS OF COPPER PIPING IN THE FIELD PRIOR TO STARTING WORK.					N/A
	AS APPROVED	SYMBOL REPRESENTS PENETRATION THROUGH WALLS WITH FEMALE ADAPTERS, DESIGNED BY PLUMBING ENGINEER AND SUPPLIED BY PLUMBER					N/A
	AS APPROVED	CONNECTION POINT BETWEEN COPPER PIPING (PROVIDED BY PLUMBER) AND PVC IRRIGATION PIPING. COPPER PIPE STUB-OUT SHALL HAVE A LINE SIZED 5/8X4 X FPT COPPER ADAPTER PROVIDED FOR CONNECTION TO THE IRRIGATION PIPING. USE A LINE SIZED X 8" SCH. 80 T.O.E. PIPE NIPPLE AND A LINE SIZED PVC COUPLING FOR THE CONNECTION. VERIFY LOCATION, SIZE AND STUB-OUTS OF COPPER PIPING IN THE FIELD PRIOR TO STARTING WORK.					N/A
	AS APPROVED	PVC PIPE SCH. 40 AS SLEEVEING, 2 TIMES THE DIAMETER OF PIPE OR WIRE BUNDLE CARRIED PLACE BELOW ALL PAVING, HARDSCAPE ETC. AND AS DIRECTED BY OWNER'S AUTHORIZED REPRESENTATIVE.					O
	AS APPROVED	2" STAINLESS STEEL CONDUIT FOR WIRES, INSTALL PARALLEL TO COPPER LINE CONNECTING GROUND AND AMENITY LEVELS					N/A
	AS APPROVED	IRRIGATION CONTROL WIRE #14UF AWG DIRECT BURIAL (U.L. APPROVED)					N.O,P
	3M	DBRY-X DIRECT BURIAL WATER-PROOF WIRE CONNECTORS FOR USE ON ALL WIRE CONNECTIONS (U.L. APPROVED)					P
	K.B.I.	KSC-XXX-S SWING CHECK VALVE. LINE SIZE: 1 DOWNSTREAM OF EACH RCV WHEN RCV IS LOWER THAN THE SPRINKLERS. INSTALL WITHIN SPRINKLER/DRIP ZONES AS REQUIRED TO PREVENT LOW HEAD/EMITTER DRAINAGE.					N/A
	K.B.I.	KC-XXX-S SPRING CHECK VALVE. LINE SIZE: 1 DOWNSTREAM OF EACH RCV IMMEDIATELY ABOVE FIRST LATERAL LINE TEE WHEN RCV IS HIGHER THAN THE SPRINKLERS. INSTALL WITHIN SPRINKLER/DRIP ZONES AS REQUIRED TO PREVENT LOW HEAD/EMITTER DRAINAGE.					N/A
	LASCO	ALL FITTINGS USED WITH SOLVENT WELD LATERAL LINE PIPE SHALL BE SCH. 40 PVC, WHITE IN COLOR, AND SIZED TO MATCH THE LATERAL LINE PIPE. ALL THREADED PVC NIPPLES SHALL BE SCH. 80 PVC PIPE, DARK GRAY IN COLOR, WITH MOLDED THREADS.					N/A
	AS APPROVED	ALL SOLVENT WELD CONNECTIONS FOR LATERAL LINE SHALL BE MADE USING THE TWO-STEP PROCESS OF PRIMER AND SOLVENT CEMENT. PRIMER SHALL BE LOW VOC "PURPLE PRIMER". LATERAL LINE SOLVENT CEMENT SHALL BE LOW VOC, GRAY OR BLUE COLORED MEDIUM BODIED CEMENT. USE DAUBERS SIZED AT LEAST ONE-HALF THE SIZE OF THE LARGEST PIPE BEING JOINED. ALL SOLVENT CEMENTED JOINTS SHALL BE MADE PER THE PIPE AND FITTING MANUFACTURER'S RECOMMENDATIONS.					N/A
	RAIN BIRD	ALL VALVE BOXES SHALL BE VB SERIES, PLASTIC TYPE WITH OVERLAPPING LIDS. VALVE BOX BODIES SHALL BE BLACK IN COLOR. LIDS FOR BOXES IN TURF AREAS SHALL BE GREEN. LIDS FOR VALVE BOXES IN SHRUB AREAS SHALL BE BLACK. ALL BOXES SHALL BE SECURED WITH A RAIN BIRD VB-LOCK-P PENTA HEAD BOLT, WASHER AND CLIP. BOXES SHALL BE AS SHOWN BELOW:					N/A
DESCRIPTION			TURF AREAS (GREEN LIDS)	SHRUB AREAS (BLACK LIDS)			
7" ROUND BOXES			VB-7RND	VB-7RND BK (RB ITEM ID #11484)			
10" ROUND BOXES			VB-10RND	VB-10RND BK (RB ITEM ID #61461)			
STANDARD RECTANGULAR BOXES			VB-STD	VB-STD BK (RB ITEM ID #61411)			
JUMBO RECTANGULAR BOXES			VB-JMB	VB-JMB BK (RB ITEM ID #A61441)			





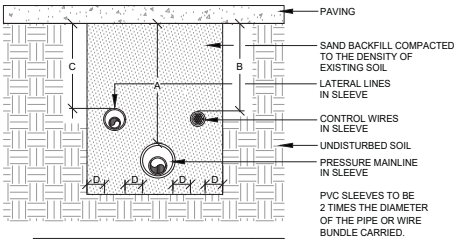
7140 COLLINS HOTEL
7140 COLLINS AVENUE | MIAMI BEACH, FLORIDA 33141



IRRIGATION DETAILS

DATE	
10.17.2016	PLANNING BOARD
10.28.2016	M. BEACH DRB
11.02.2016	M. BEACH REVIEW
11.27.2016	50% SCHEMATIC
12.21.2016	100% SCHEMATIC
06.22.2017	80% D DEVELOPMENT
07.20.2017	100% D DEVELOPMENT
09.01.2017	30% CD
12.21.2017	PERMIT DRAWINGS
02.22.2018	COORDINATION

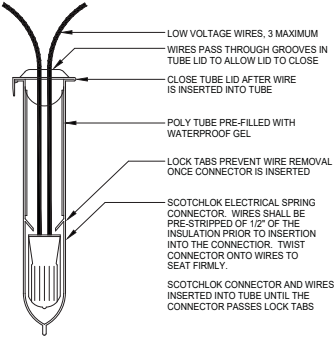
NOTE:
SLEEVES TO EXTEND AT LEAST 24" PAST THE EDGE OF THE PAVING.



DIMENSION	A	B	C	D
1/2" TO 6" IN SIZE	36"	24"	24"	4"

DETAIL ALSO FOR PIPE
INSTALLED IN ROCK SOIL.

SECTION VIEW - N.T.S.
Copyright 1993 Nielsen & Nielsen, Inc.



NOTE:
WIRE CONNECTOR SHALL BE A 3M DBY-6 DIRECT BURY SPLICE KIT (U.L. APPROVED).
KIT SHALL INCLUDE A SCOTCHLOK Y SPRING CONNECTOR, A POLYPROPYLENE TUBE AND A
WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PREFILLED WITH GEL.
DIRECT BURY SPLICE KIT SHALL BE USED TO ELECTRICALLY CONNECT 2 - 3 #14 OR
2 #12 PRE-STRIPPED COPPER WIRES. LARGER WIRES OR GREATER QUANTITIES OF
WIRES SHALL REQUIRE A LARGER APPROVED WIRE CONNECTION.

SECTION VIEW - N.T.S.
Copyright 1993 Nielsen & Nielsen, Inc.

PIPE INSTALLATION IN HARDSCAPE

WIRE CONNECTORS

7140 COLLINS HOTEL

7140 COLLINS AVENUE | MIAMI BEACH, FLORIDA 33141

S. TYLER NIELSEN -
LA6667067

NOT FOR CONSTRUCTION



IRRIGATION DETAILS

DATE	
10.17.2016	PLANNING BOARD
10.28.2016	M. BEACH DRB
11.02.2016	M. BEACH REVIEW
11.27.2016	50% SCHEMATIC
12.21.2016	100% SCHEMATIC
06.22.2017	80% D DEVELOPMENT
07.20.2017	100% D DEVELOPMENT
09.01.2017	30% CD
12.21.2017	PERMIT DRAWINGS
02.22.2018	COORDINATION

- ## EXTERIOR LIGHTING CUT SHEETS

© 2015 Pearson Education, Inc. or its affiliate(s). All rights reserved. Printed in the United States of America. This publication is protected by copyright. Permission is granted to reproduce copies for personal or internal use, or the personal or internal use of specific clients, on the condition that the copier pay the stated per-copy fee through the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923. For those organizations that have been granted a photocopy licence by CCC, a separate system of payment has been arranged. The fee code for users of the Copyright Clearance Center Transactional Reporting Service is 0893-4000/15 \$12.00. ISBN 978-0-321-91700-0. ISBN 978-0-321-91701-7 (hardcover). ISBN 978-0-321-91702-4 (loose-leaf). ISBN 978-0-321-91703-1 (eBook). ISBN 978-0-321-91704-8 (eBook). ISBN 978-0-321-91705-5 (eBook). ISBN 978-0-321-91706-2 (eBook). ISBN 978-0-321-91707-9 (eBook). ISBN 978-0-321-91708-6 (eBook). ISBN 978-0-321-91709-3 (eBook). ISBN 978-0-321-91710-0 (eBook). ISBN 978-0-321-91711-7 (eBook). ISBN 978-0-321-91712-4 (eBook). ISBN 978-0-321-91713-1 (eBook). ISBN 978-0-321-91714-8 (eBook). ISBN 978-0-321-91715-5 (eBook). ISBN 978-0-321-91716-2 (eBook). ISBN 978-0-321-91717-9 (eBook). ISBN 978-0-321-91718-6 (eBook). ISBN 978-0-321-91719-3 (eBook). ISBN 978-0-321-91720-0 (eBook). ISBN 978-0-321-91721-7 (eBook). ISBN 978-0-321-91722-4 (eBook). ISBN 978-0-321-91723-1 (eBook). ISBN 978-0-321-91724-8 (eBook). ISBN 978-0-321-91725-5 (eBook). ISBN 978-0-321-91726-2 (eBook). ISBN 978-0-321-91727-9 (eBook). ISBN 978-0-321-91728-6 (eBook). ISBN 978-0-321-91729-3 (eBook). ISBN 978-0-321-91730-0 (eBook). ISBN 978-0-321-91731-7 (eBook). ISBN 978-0-321-91732-4 (eBook). ISBN 978-0-321-91733-1 (eBook). ISBN 978-0-321-91734-8 (eBook). ISBN 978-0-321-91735-5 (eBook). ISBN 978-0-321-91736-2 (eBook). ISBN 978-0-321-91737-9 (eBook). ISBN 978-0-321-91738-6 (eBook). ISBN 978-0-321-91739-3 (eBook). ISBN 978-0-321-91740-0 (eBook). ISBN 978-0-321-91741-7 (eBook). ISBN 978-0-321-91742-4 (eBook). ISBN 978-0-321-91743-1 (eBook). ISBN 978-0-321-91744-8 (eBook). ISBN 978-0-321-91745-5 (eBook). ISBN 978-0-321-91746-2 (eBook). ISBN 978-0-321-91747-9 (eBook). ISBN 978-0-321-91748-6 (eBook). ISBN 978-0-321-91749-3 (eBook). ISBN 978-0-321-91750-0 (eBook). ISBN 978-0-321-91751-7 (eBook). ISBN 978-0-321-91752-4 (eBook). ISBN 978-0-321-91753-1 (eBook). ISBN 978-0-321-91754-8 (eBook). ISBN 978-0-321-91755-5 (eBook). ISBN 978-0-321-91756-2 (eBook). ISBN 978-0-321-91757-9 (eBook). ISBN 978-0-321-91758-6 (eBook). ISBN 978-0-321-91759-3 (eBook). ISBN 978-0-321-91760-0 (eBook). ISBN 978-0-321-91761-7 (eBook). ISBN 978-0-321-91762-4 (eBook). ISBN 978-0-321-91763-1 (eBook). ISBN 978-0-321-91764-8 (eBook). ISBN 978-0-321-91765-5 (eBook). ISBN 978-0-321-91766-2 (eBook). ISBN 978-0-321-91767-9 (eBook). ISBN 978-0-321-91768-6 (eBook). ISBN 978-0-321-91769-3 (eBook). ISBN 978-0-321-91770-0 (eBook). ISBN 978-0-321-91771-7 (eBook). ISBN 978-0-321-91772-4 (eBook). ISBN 978-0-321-91773-1 (eBook). ISBN 978-0-321-91774-8 (eBook). ISBN 978-0-321-91775-5 (eBook). ISBN 978-0-321-91776-2 (eBook). ISBN 978-0-321-91777-9 (eBook). ISBN 978-0-321-91778-6 (eBook). ISBN 978-0-321-91779-3 (eBook). ISBN 978-0-321-91780-0 (eBook). ISBN 978-0-321-91781-7 (eBook). ISBN 978-0-321-91782-4 (eBook). ISBN 978-0-321-91783-1 (eBook). ISBN 978-0-321-91784-8 (eBook). ISBN 978-0-321-91785-5 (eBook). ISBN 978-0-321-91786-2 (eBook). ISBN 978-0-321-91787-9 (eBook). ISBN 978-0-321-91788-6 (eBook). ISBN 978-0-321-91789-3 (eBook). ISBN 978-0-321-91790-0 (eBook). ISBN 978-0-321-91791-7 (eBook). ISBN 978-0-321-91792-4 (eBook). ISBN 978-0-321-91793-1 (eBook). ISBN 978-0-321-91794-8 (eBook). ISBN 978-0-321-91795-5 (eBook). ISBN 978-0-321-91796-2 (eBook). ISBN 978-0-321-91797-9 (eBook). ISBN 978-0-321-91798-6 (eBook). ISBN 978-0-321-91799-3 (eBook). ISBN 978-0-321-91800-0 (eBook). ISBN 978-0-321-91801-7 (eBook). ISBN 978-0-321-91802-4 (eBook). ISBN 978-0-321-91803-1 (eBook). ISBN 978-0-321-91804-8 (eBook). ISBN 978-0-321-91805-5 (eBook). ISBN 978-0-321-91806-2 (eBook). ISBN 978-0-321-91807-9 (eBook). ISBN 978-0-321-91808-6 (eBook). ISBN 978-0-321-91809-3 (eBook). ISBN 978-0-321-91810-0 (eBook). ISBN 978-0-321-91811-7 (eBook). ISBN 978-0-321-91812-4 (eBook). ISBN 978-0-321-91813-1 (eBook). ISBN 978-0-321-91814-8 (eBook). ISBN 978-0-321-91815-5 (eBook). ISBN 978-0-321-91816-2 (eBook). ISBN 978-0-321-91817-9 (eBook). ISBN 978-0-321-91818-6 (eBook). ISBN 978-0-321-91819-3 (eBook). ISBN 978-0-321-91820-0 (eBook). ISBN 978-0-321-91821-7 (eBook). ISBN 978-0-321-91822-4 (eBook). ISBN 978-0-321-91823-1 (eBook). ISBN 978-0-321-91824-8 (eBook). ISBN 978-0-321-91825-5 (eBook). ISBN 978-0-321-91826-2 (eBook). ISBN 978-0-321-91827-9 (eBook). ISBN 978-0-321-91828-6 (eBook). ISBN 978-0-321-91829-3 (eBook). ISBN 978-0-321-91830-0 (eBook). ISBN 978-0-321-91831-7 (eBook). ISBN 978-0-321-91832-4 (eBook). ISBN 978-0-321-91833-1 (eBook). ISBN 978-0-321-91834-8 (eBook). ISBN 978-0-321-91835-5 (eBook). ISBN 978-0-321-91836-2 (eBook). ISBN 978-0-321-91837-9 (eBook). ISBN 978-0-321-91838-6 (eBook). ISBN 978-0-321-91839-3 (eBook). ISBN 978-0-321-91840-0 (eBook). ISBN 978-0-321-91841-7 (eBook). ISBN 978-0-321-91842-4 (eBook). ISBN 978-0-321-91843-1 (eBook). ISBN 978-0-321-91844-8 (eBook). ISBN 978-0-321-91845-5 (eBook). ISBN 978-0-321-91846-2 (eBook). ISBN 978-0-321-91847-9 (eBook). ISBN 978-0-321-91848-6 (eBook). ISBN 978-0-321-91849-3 (eBook). ISBN 978-0-321-91850-0 (eBook). ISBN 978-0-321-91851-7 (eBook). ISBN 978-0-321-91852-4 (eBook). ISBN 978-0-321-91853-1 (eBook). ISBN 978-0-321-91854-8 (eBook). ISBN 978-0-321-91855-5 (eBook). ISBN 978-0-321-91856-2 (eBook). ISBN 978-0-321-91857-9 (eBook). ISBN 978-0-321-91858-6 (eBook). ISBN 978-0-321-91859-3 (eBook). ISBN 978-0-321-91860-0 (eBook). ISBN 978-0-321-91861-7 (eBook). ISBN 978-0-321-91862-4 (eBook). ISBN 978-0-321-91863-1 (eBook). ISBN 978-0-321-91864-8 (eBook). ISBN 978-0-321-91865-5 (eBook). ISBN 978-0-321-91866-2 (eBook). ISBN 978-0-321-91867-9 (eBook). ISBN 978-0-321-91868-6 (eBook). ISBN 978-0-321-91869-3 (eBook). ISBN



RETI
9537 HARDING AVENUE
SURFSIDE, FL 33154
305.867.6344
WWW.RETIMIAMI.COM

REVUELTA INTERNATIONAL
2950 SW 27TH STREET, 110
MIAMI, FL 33133
305.590.5000

WWW.REVUELTA-ARCHITECTURE.COM

CLARO DEVELOPMENT
1035 N MIAMI AVENUE, 201
MIAMI, FL 33136
305.324.4700

WWW.CLAROCORP.COM



OCEAN ENGINEERING, INC.
333 NE 24TH STREET, 408
MIAMI, FL 33137
786.253.5252

WWW.OCEANENGINEERINGINC.COM



EXTERIOR LIGHTING NOTES

1. THE EXTERIOR LIGHTING PLAN ILLUSTRATES FIXTURE LOCATION AND TYPE SOLELY. ALL ELECTRICAL LOADS, WIRING, AND CALCULATIONS ARE BY OTHERS.
2. CONTRACTOR TO COORDINATE WITH CLIENT AND LANDSCAPE ARCHITECT CONTROL SYSTEM FOR EXTERIOR LIGHTING.
3. THE CONTRACTOR TO PROVIDE SLEEVES AND CONDUIT AS NEEDED FOR ALL EXTERIOR LIGHTING FIXTURES..
4. THE CONTRACTOR IS TO STAKE ALL EXTERIOR LIGHTING FIXTURES FOR LANDSCAPE ARCHITECT REVIEW.
5. ALL EXTERIOR FIXTURES TO BE INSTALLED TO PREVENT GLARE AND UNWANTED DIRECTED LIGHT. CONTRACTOR TO ENSURE ALL FIXTURES DO NOT DIRECT LIGHT ONTO ADJACENT PROPERTIES.
6. THE CONTRACTOR IS TO NOTIFY THE LANDSCAPE ARCHITECT TWO WEEKS IN ADVANCE OF SCHEDULED EXTERIOR LIGHT INSTALLATION. UPON COMPLETION OF THE EXTERIOR LIGHT INSTALLATION, CONTRACTOR TO PROVIDE NIGHTTIME WALK THROUGH WITH LANDSCAPE ARCHITECT FOR FINAL REVIEW.


EXTERIOR LIGHTING SCHEDULE GROUND LEVEL

SYMBOL	QUANTITY	TYPE	MANUFACTURER	SPECIFICATION NUMBER	LAMP	NOTES
	22	IN-GROUND	AURORA - MICRO WELL	SQ-BR - M - 30 - BLP XD		
	10	ACCENT	AURORA - KENTIA	BR - M - 30 - GS - BLP XD	LED 3.6 WATTS	


EXTERIOR LIGHTING SCHEDULE GARAGE LEVEL

SYMBOL	QUANTITY	TYPE	MANUFACTURER	SPECIFICATION NUMBER	LAMP	NOTES
	0	IN-GROUND PATH	AURORA LIGHT	BR - 180 - 27 d - R - BLP XD	LED	NOTES
	0	ACCENT	AURORA - KENTIA	BR - M - 30 - GS - BLP XD	LED 3.6 WATTS	

EXTERIOR LIGHTING SCHEDULE AMENITY LEVEL

SYMBOL	QUANTITY	TYPE	MANUFACTURER	SPECIFICATION NUMBER	LAMP	NOTES
	48	ACCENT	AURORA - KENTIA	BR - M - 30 - GS - BLP XD	LED 3.6 WATTS	

EXTERIOR LIGHTING SCHEDULE ROOF LEVEL

SYMBOL	QUANTITY	TYPE	MANUFACTURER	SPECIFICATION NUMBER	LAMP	NOTES
	13	ACCENT	AURORA - KENTIA	BR - M - 30 - GS - BLP XD	LED 3.6 WATTS	

EXTERIOR LIGHTING CUT SHEETS



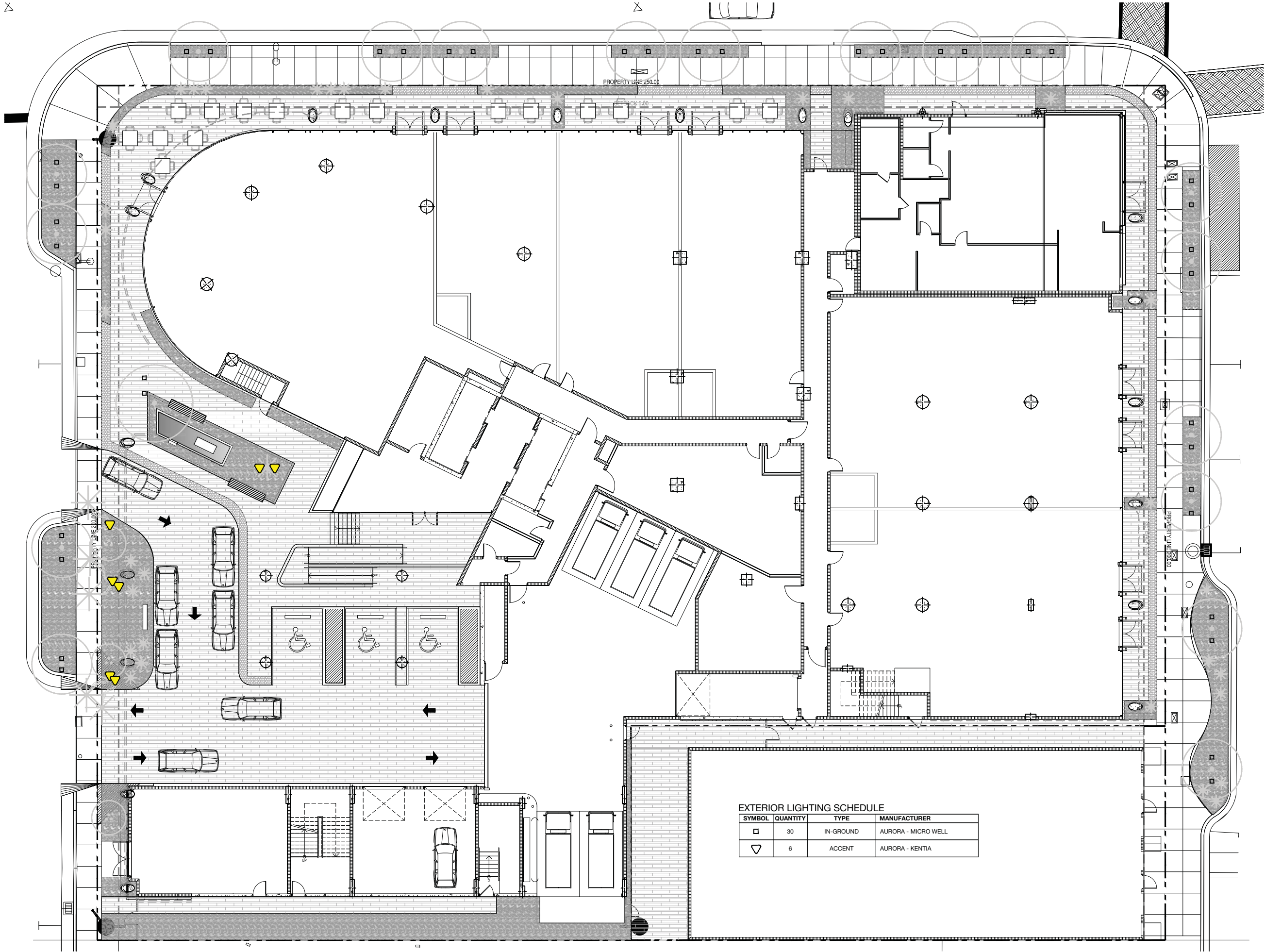
S. TYLER NIELSEN - LA6667067



LIGHTING SCHEDULE & NOTES

DATE	
10.17.2016	PLANNING BOARD
10.28.2016	M. BEACH DRB
11.02.2016	M. BEACH REVIEW
11.27.2016	50% SCHEMATIC
12.21.2016	100% SCHEMATIC
06.22.2017	80% D.DEVELOPMENT
07.20.2017	100% D.DEVELOPMENT
09.01.2017	30% CD
12.21.2017	PERMIT DRAWINGS
03.23.2018	MB PLANNING FINAL

L900



ORIGINAL DESIGN SUBMITTED FOR REVIEW



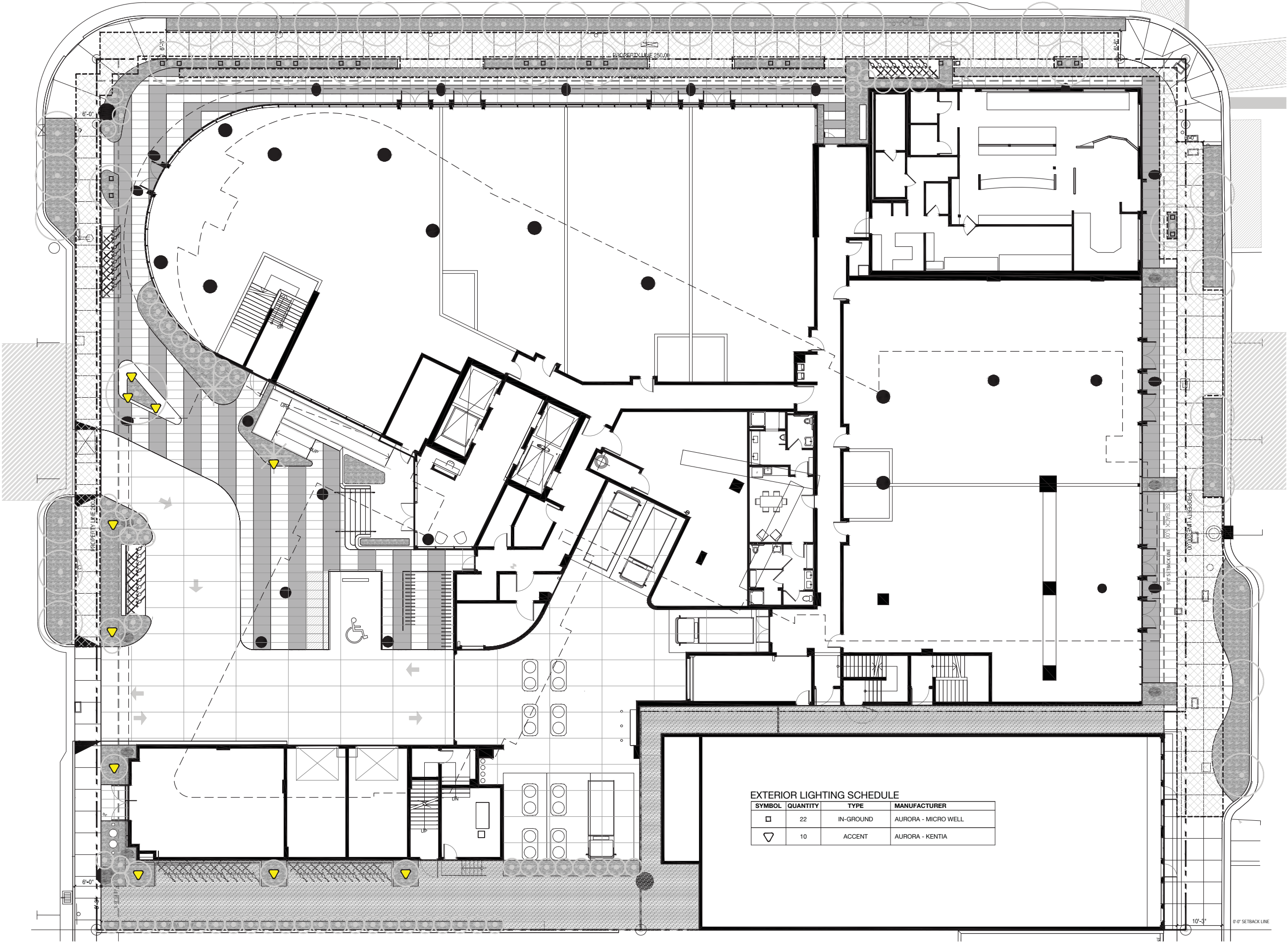
NIELSEN
landscape architects
1016 clare avenue, 5
west palm beach, fl 33154
561.402.9414
www.nielsenlandarch.com

RETI
9537 HARDING AVENUE
SURFSIDE, FL 33154
305.987.6344
WWW.RETIMIAMI.COM

REVUELTA INTERNATIONAL
2950 SW 27TH STREET, 110
MIAMI, FL 33133
305.590.5000
WWW.REVUELTA-ARCHITECTURE.COM

CLARO DEVELOPMENT
1035 N MIAMI AVENUE, 201
MIAMI, FL 33136
305.324.4700
WWW.CLAROCORP.COM


OCEAN ENGINEERING, INC.
333 NE 24TH STREET, 408
MIAMI, FL 33137
786.253.9252
WWW.OCEANENGINEERINGINC.COM



7140 COLLINS HOTEL

7140 COLLINS AVENUE | MIAMI BEACH, FLORIDA 33141

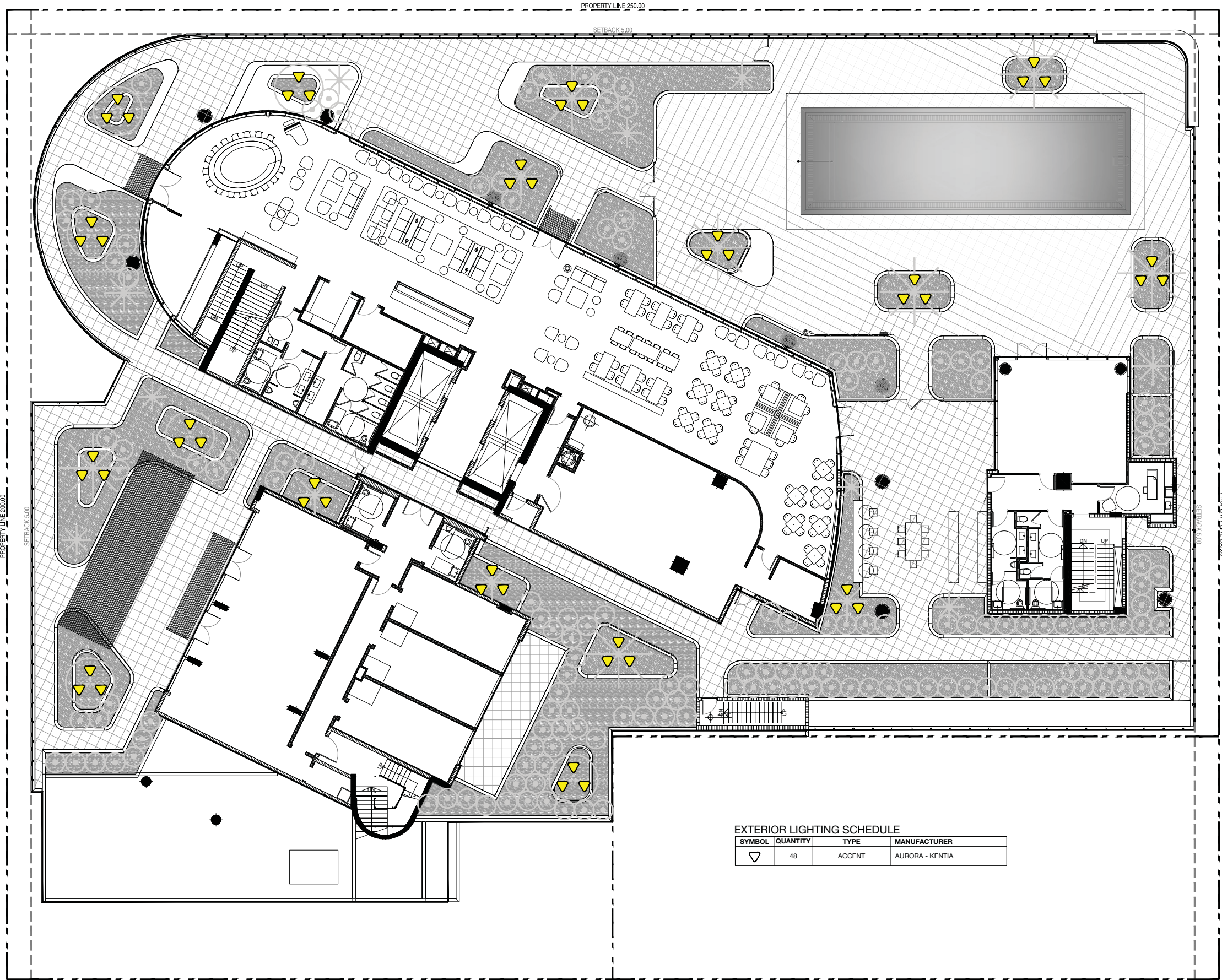
S. TYLER NIELSEN - LA6667067



LIGHTING PLAN	
DATE	
10.17.2016	PLANNING BOARD
10.28.2016	M. BEACH DRB
11.02.2016	M. BEACH REVIEW
11.27.2016	50% SCHEMATIC
12.21.2016	100% SCHEMATIC
06.22.2017	80% D.DEVELOPMENT
07.20.2017	100% D.DEVELOPMENT
09.01.2017	30% CD
12.21.2017	PERMIT DRAWINGS
03.23.2018	MB PLANNING FINAL



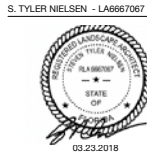
L901



EXTERIOR LIGHTING SCHEDULE

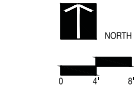
SYMBOL	QUANTITY	TYPE	MANUFACTURER
▽	48	ACCENT	AURORA - KENTIA

7140 COLLINS HOTEL
7140 COLLINS AVENUE | MIAMI BEACH, FL 33141

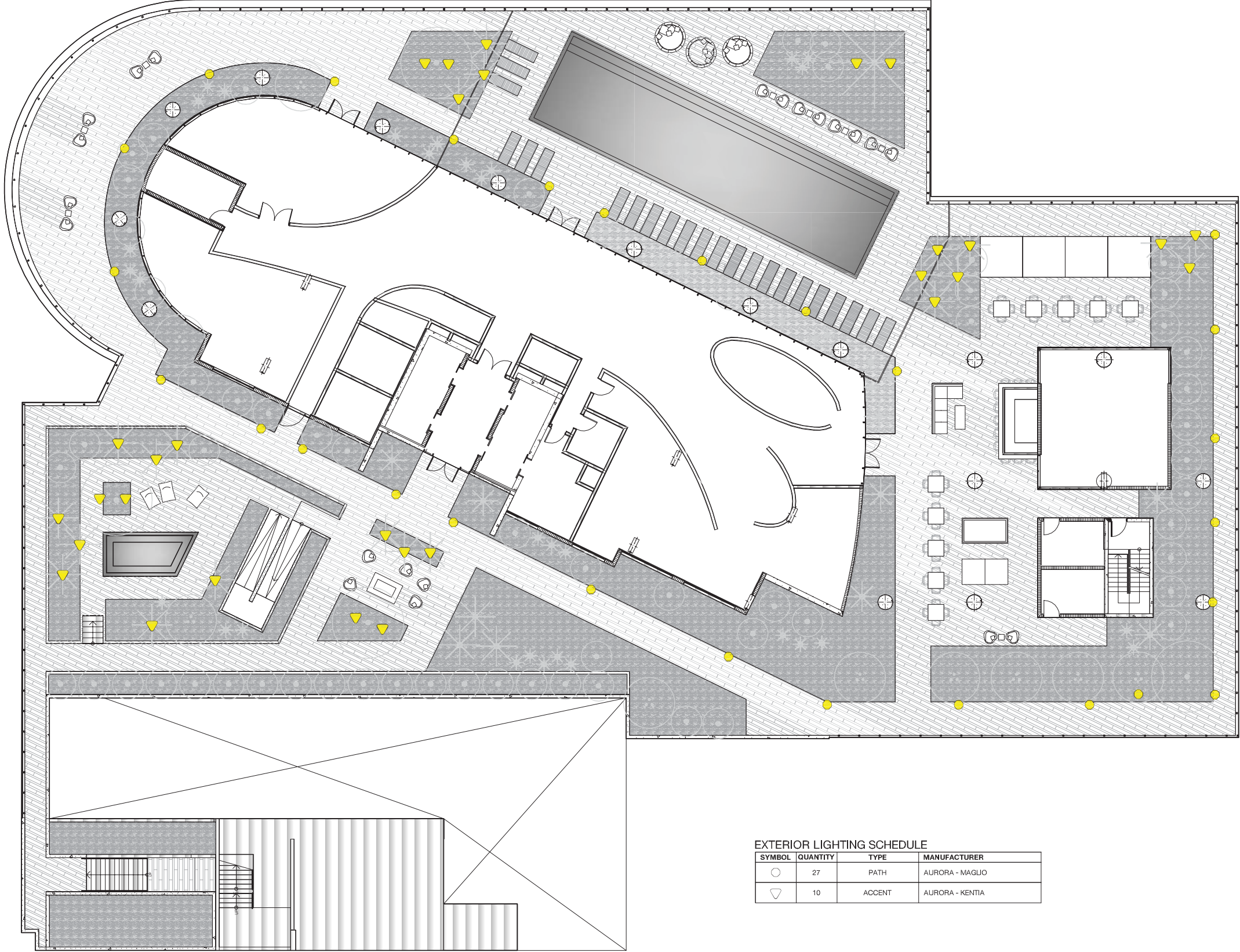


LIGHTING PLAN

DATE	
10.17.2016	PLANNING BOARD
10.28.2016	M. BEACH DRB
11.02.2016	M. BEACH REVIEW
11.27.2016	50% SCHEMATIC
12.21.2016	100% SCHEMATIC
06.22.2017	80% D. DEVELOPMENT
07.20.2017	100% D. DEVELOPMENT
09.01.2017	30% CD
12.21.2017	PERMIT DRAWINGS
03.23.2018	MB PLANNING FINAL



L903



EXTERIOR LIGHTING SCHEDULE			
SYMBOL	QUANTITY	TYPE	MANUFACTURER
○	27	PATH	AURORA - MAGLIO
▽	10	ACCENT	AURORA - KENTIA

ORIGINAL DESIGN SUBMITTED FOR REVIEW



NIELSEN
landscape architects

1016 clare avenue, 5
west palm beach, fl
561.402.9414

www.nielsenlandarch.com

RETI
9537 HARDING AVENUE
SURFSIDE, FL 33154
305.867.6344

WWW.RETIMIAMI.COM

REVUELTA INTERNATIONAL
2950 SW 27TH STREET, 110
MIAMI, FL 33133
305.590.5000

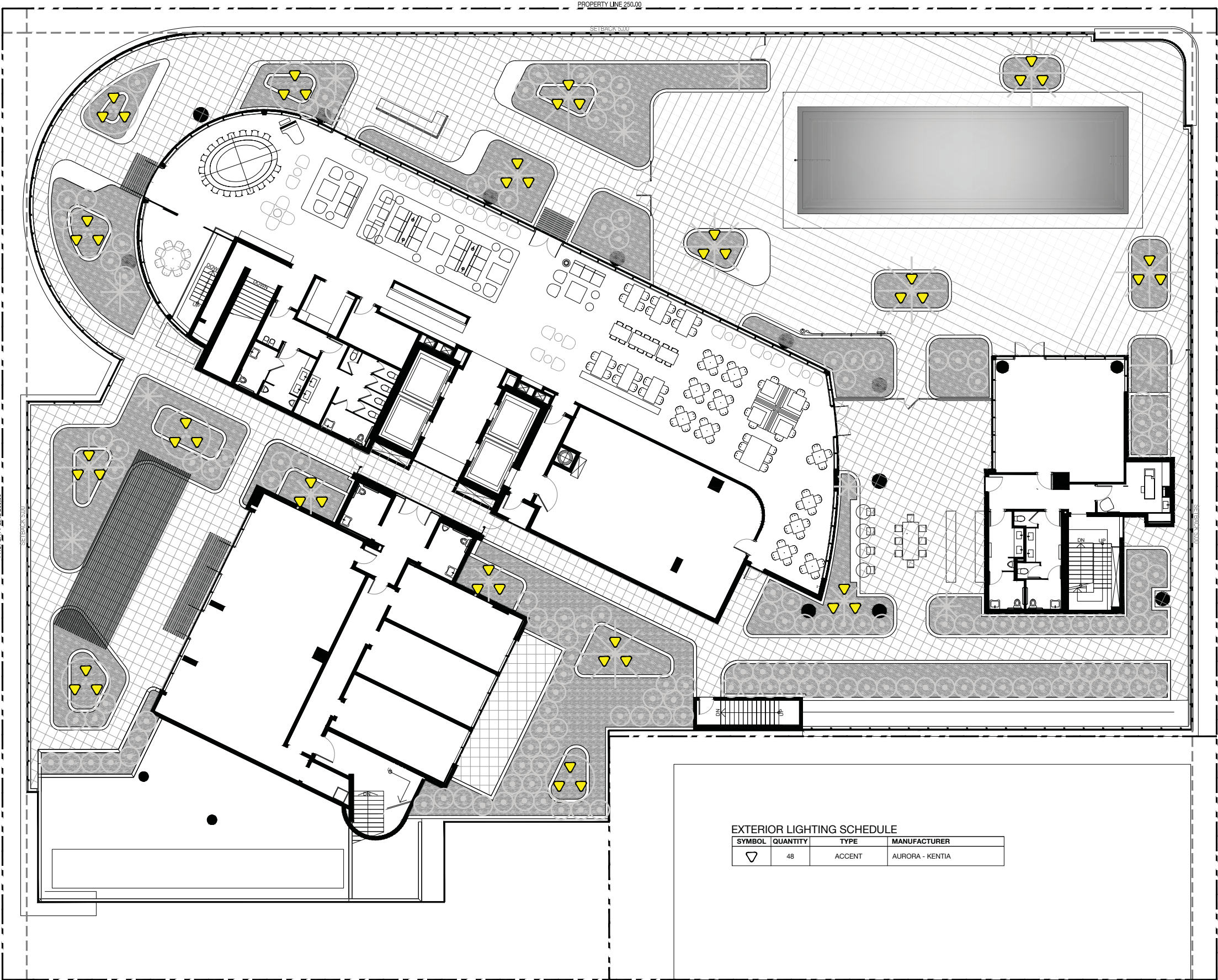
WWW.REVUELTA-ARCHITECTURE.COM

CLARO DEVELOPMENT
1025 N MIAMI AVENUE, 201
MIAMI, FL 33136
305.324.4700

WWW.CLAROCORP.COM


OCEAN ENGINEERING, INC.
333 NE 24TH STREET, 408
MIAMI, FL 33137
786.253.5252

WWW.OCEANENGINEERINGINC.COM



7140 COLLINS HOTEL
7140 COLLINS AVENUE | MIAMI BEACH, FLORIDA 33141

S. TYLER NIELSEN - LA6667067



02.22.2018

LIGHTING PLAN

DATE

10.17.2016	PLANNING BOARD
10.28.2016	M. BEACH DRB
11.02.2016	M. BEACH REVIEW
11.27.2016	50% SCHEMATIC
12.21.2016	100% SCHEMATIC
06.22.2017	80% D DEVELOPMENT
07.20.2017	100% D DEVELOPMENT
09.01.2017	30% CD
12.21.2017	PERMIT DRAWINGS
02.22.2018	COORDINATION



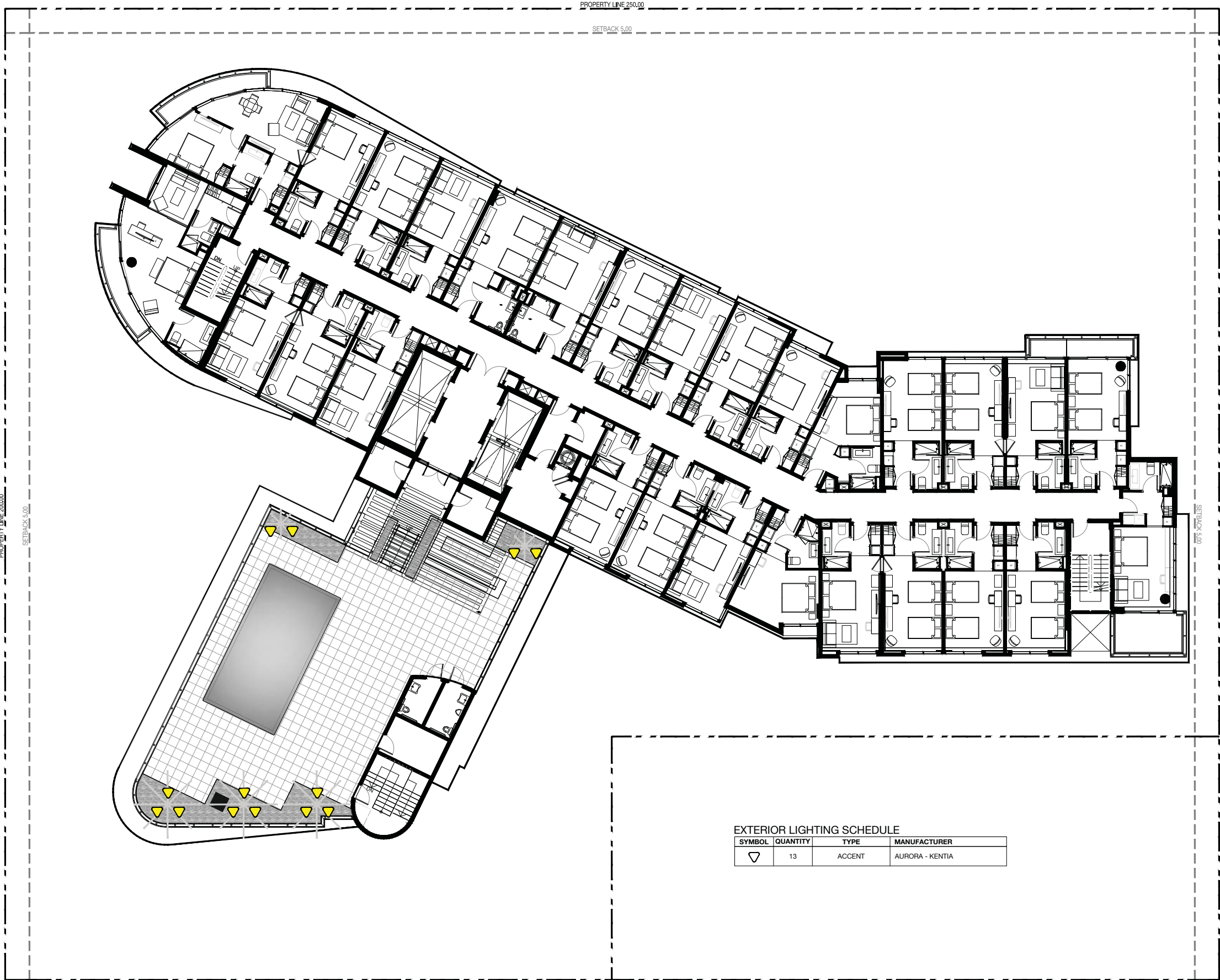
NIELSEN
landscape architects
1016 clare avenue, 5
west palm beach, fl
561.402.9414
www.nielsenlandarch.com

RETI
9537 HARDING AVENUE
SURFSIDE, FL 33154
305.867.6344
WWW.RETIMIAMI.COM

REVUELTA INTERNATIONAL
2950 SW 27TH STREET, 110
MIAMI, FL 33133
305.590.5000
WWW.REVUELTA-ARCHITECTURE.COM

CLARO DEVELOPMENT
1035 N MIAMI AVENUE, 201
MIAMI, FL 33136
305.524.4700
WWW.CLAROCORP.COM

OCEAN ENGINEERING, INC.
333 NE 24TH STREET, 408
MIAMI, FL 33137
786.253.5252
WWW.OCEANENGINEERINGINC.COM



EXTERIOR LIGHTING SCHEDULE			
SYMBOL	QUANTITY	TYPE	MANUFACTURER
▽	13	ACCENT	AURORA - KENTIA

7140 COLLINS HOTEL
7140 COLLINS AVENUE | MIAMI BEACH, FL 33141

S. TYLER NIELSEN - LA6667067



LIGHTING PLAN	
DATE	
10.17.2016	PLANNING BOARD
10.28.2016	M. BEACH DRB
11.02.2016	M. BEACH REVIEW
11.27.2016	50% SCHEMATIC
12.21.2016	100% SCHEMATIC
06.22.2017	80% D DEVELOPMENT
07.20.2017	100% D DEVELOPMENT
09.01.2017	30% CD
12.21.2017	PERMIT DRAWINGS
03.23.2018	MB PLANNING FINAL



L904