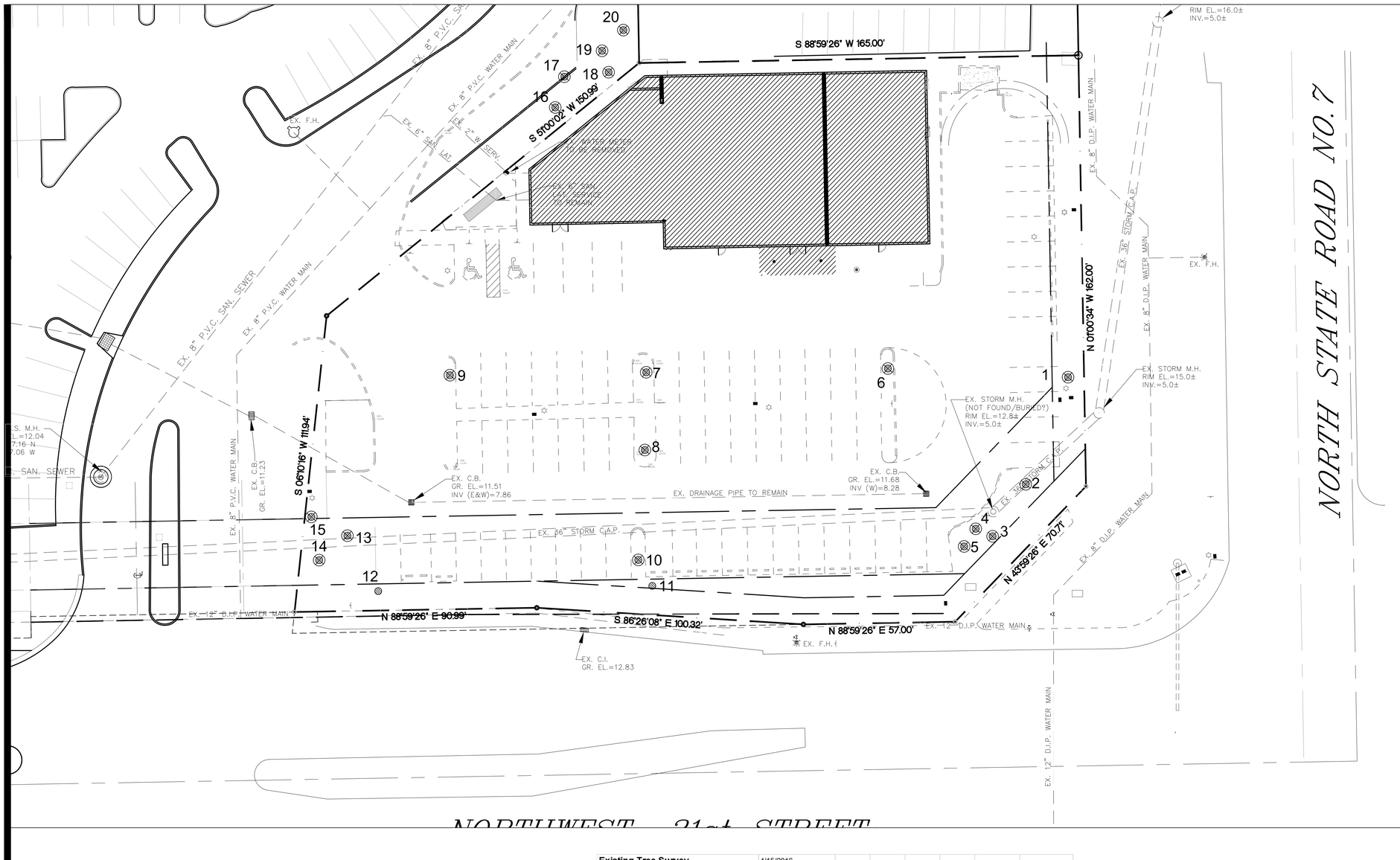
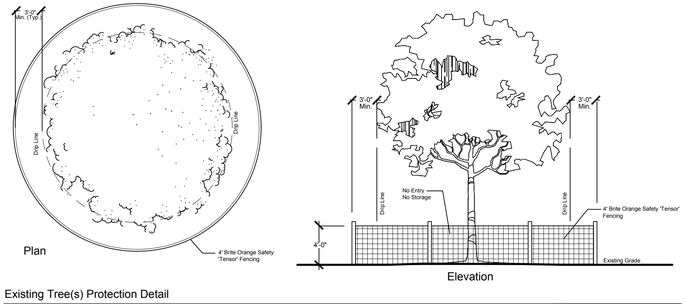


TREE DISPOSITION LEGEND

- TREES/PALMS TO REMAIN
- TREES/PALMS TO BE RELOCATED
- TREES/PALMS TO BE REMOVED



Existing Tree(s) Protection Detail

NTS

NOTE:
ALL EXISTING TREES AND PALMS INDICATED TO REMAIN SHALL BE PROTECTED WITH A TREE BARRICADE. REFER TO DETAIL ON THIS SHEET. THIS BARRICADE MUST BE INSTALLED PRIOR TO THE BEGINNING OF PROPOSED WORK.

Existing Tree Survey 4/15/2016

Leder Retail - Margate (Penn Dutch Shopping Center)

KEY	BOTANTICAL NAME	COMMON NAME	CALIPER (INCHES)	HEIGHT (FEET)	CANOPY (FEET)	NATIVE	CONDITION	DISPOSITION
1	*Syagrus romanzoffiana*	Queen Palm	8	16	10	No	30%	Remove
2	*Syagrus romanzoffiana*	Queen Palm	8	18	10	No	40%	Remove
3	*Syagrus romanzoffiana*	Queen Palm	8	14	10	No	40%	Remove
4	*Syagrus romanzoffiana*	Queen Palm	8	16	10	No	30%	Remove
5	*Syagrus romanzoffiana*	Queen Palm	8	16	10	No	40%	Remove
6	*Tabebuia caraiba*	Silver Trumpet Tree	8	16	14	No	30%	Remove
7	*Tabebuia caraiba*	Silver Trumpet Tree	8	18	14	No	30%	Remove
8	*Tabebuia caraiba*	Silver Trumpet Tree	8	16	12	No	30%	Remove
9	*Tabebuia caraiba*	Silver Trumpet Tree	6	16	14	No	30%	Remove
10	*Tabebuia caraiba*	Silver Trumpet Tree	6	16	12	No	20%	Remove
11	*Swietenia mahagoni*	Mahogany	12	24	20	Yes	50%	Remain
12	*Quercus virginiana*	Live Oak	6	20	14	Yes	50%	Remove
13	*Syagrus romanzoffiana*	Queen Palm	8	16	10	No	30%	Remove
14	*Syagrus romanzoffiana*	Queen Palm	8	18	10	No	40%	Remove
15	*Syagrus romanzoffiana*	Queen Palm	8	16	10	No	30%	Remove
16	*Syagrus romanzoffiana*	Queen Palm	8	15	10	No	50%	Remove
17	*Syagrus romanzoffiana*	Queen Palm	8	16	10	No	40%	Remove
18	*Syagrus romanzoffiana*	Queen Palm	8	18	10	No	40%	Remove
19	*Syagrus romanzoffiana*	Queen Palm	8	16	10	No	50%	Remove
20	*Syagrus romanzoffiana*	Queen Palm	8	14	10	No	45%	Remove
21	*Quercus virginiana*	Live Oak	15	24	26	Yes	60%	Remain

NOTE: All height and canopy numbers are in feet. Palm height is overall height.

NORTH

SCALE: 1"=20'-0"

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Architectural Alliance Landscape
612 SW 4th Ave., Fort Lauderdale, FL 33315 LC26000237
TEL: 954-764.8858 EMAIL: HJohnson@archallnet

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DRC Comments 1-17-17 Revision Dates

DRC SUBMITTAL SET

MARGATE RETAIL

3101 NORTH STATE ROAD 7
MARGATE, FLORIDA

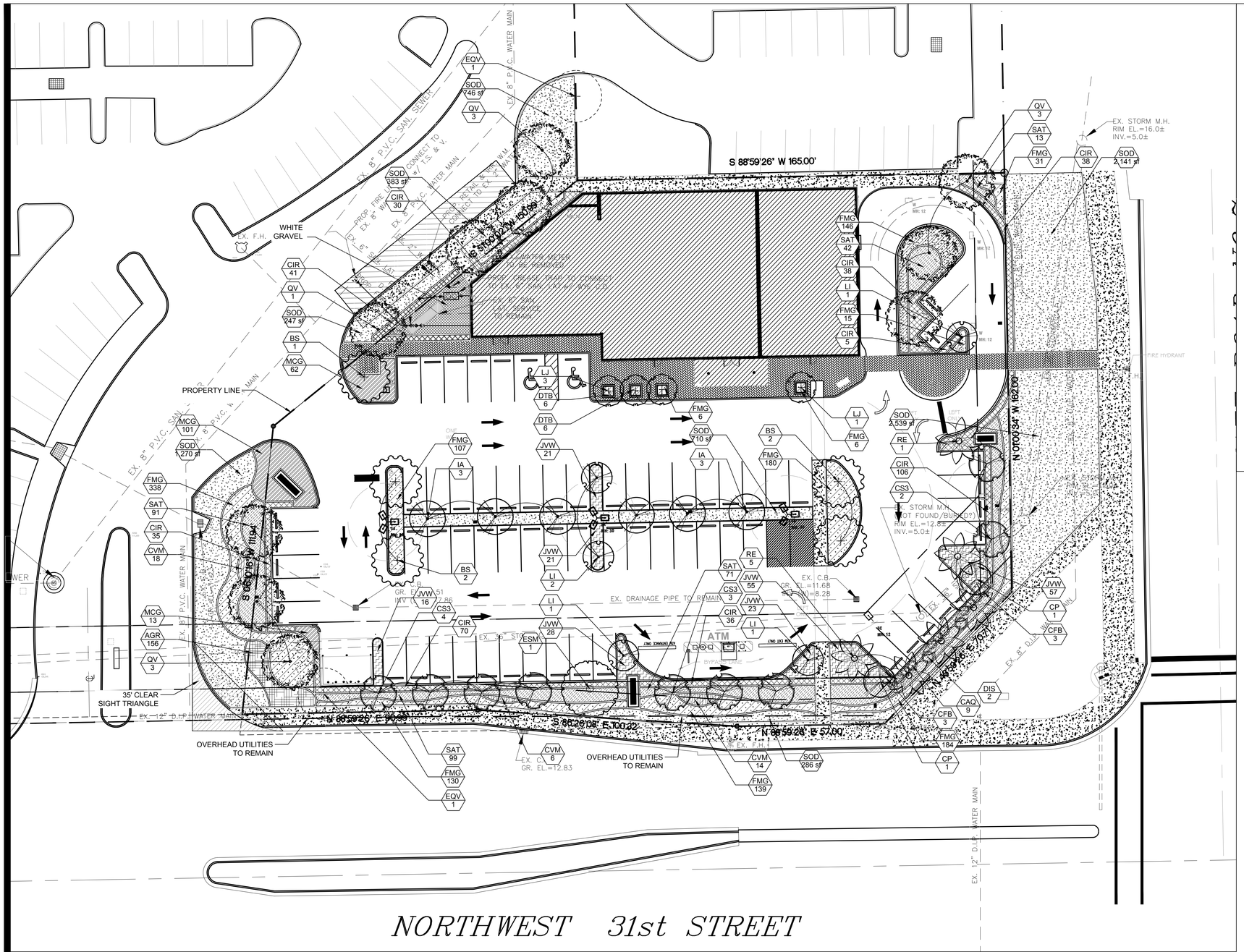
Sheet Description: TREE DISPOSITION PLAN

Release Date: 4-25-16

Project Number: 1624

Drawing Number: TD-1

Sheet 1 of 1



NOTES:

1. A SEPARATE PERMIT IS REQUIRED FOR THE TREE REMOVAL. SUB-CONTRACTOR SHALL APPLY AND SUBMIT FOR THIS PERMIT PRIOR TO ANY WORK BEING PERFORMED ON SITE.
2. A SEPARATE PERMIT IS REQUIRED FOR THE LANDSCAPING. SUB-CONTRACTOR SHALL APPLY AND SUBMIT FOR THIS PERMIT PRIOR TO ANY WORK BEING PERFORMED ON SITE.
3. ALL SOD AND LANDSCAPE RECEIVE 100% COVERAGE FROM AN AUTOMATIC IRRIGATION SYSTEM USING AN APPROVED WATER SOURCE.
4. IRRIGATION SYSTEM SHALL ALSO BE EQUIPPED WITH RAIN SENSOR.
5. SEE SHEET LP-2 FOR LANDSCAPE DETAILS AND NOTES.
6. SEE SHEET LP-2 FOR PLANTING SCHEDULE AND PLANT SPECIFICATIONS.

PLANT SCHEDULE MARGATE RETAIL

2017-01-09 10:0

TREES	BOTANICAL NAME	COMMON NAME
BS	BURSERA SIMARUBA	GUMBO LIMBO
CS3	CONOCARPUS ERECTUS `SERICEUS`	SILVER BUTTONWOOD
IA	ILEX CASSINE	DAHOON HOLLY
LJ	LIGUSTRUM JAPONICUM	JAPANESE PRIVET
EQV	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK
QV	QUERCUS VIRGINIANA	LIVE OAK
ESM	SWIETENIA MAHOGANY	MAHOGANY
FLOWERING TREES	BOTANICAL NAME	COMMON NAME
CP	CAESALPINIA PULCHERRIMA	DWARF POINCIANA
LI	LAGERSTROEMIA INDICA `TUSCARORA`	TUSCARORA CRAPE MYRTLE `STANDARD`
PALM TREES	BOTANICAL NAME	COMMON NAME
RE	ROYSTONEA ELATA	ROYAL PALM
SHRUBS	BOTANICAL NAME	COMMON NAME
CFB	CORDYLINE FRUTICOSA `BLACK MAGIC`	BLACK MAGIC TI
CAQ	CRINUM AUGUSTUM `QUEEN EMMA`	`QUEEN EMMA` CRINUM
DIS	DIOON SPINULOSUM	CYCAD
SHRUB AREAS	BOTANICAL NAME	COMMON NAME
CIR	CHRYSOBALANUS ICACO `REDTIP`	RED TIP COCOPLUM
CVM	CODIAEUM VARIEGATUM `MAMMEY`	MAMMEY CROTON
FMG	FICUS MICROCARPA `GREEN ISLAND`	GREEN ISLAND FICUS
JVW	JASMINUM VOLUBILE	WAX JASMINE
MCG	MUHLENBERGIA CAPILLARIS	PINK MUHLY
SAT	SCHEFFLERA ARBORICOLA `TRINETTE`	SCHEFFLERA
GROUND COVERS	BOTANICAL NAME	COMMON NAME
AGR	ARACHIS GLABRATA	PERENNIAL PEANUT
DTB	DIANELLA TASMANICA	BLUEBERRY FLAX LILY
SOD/SEED	BOTANICAL NAME	COMMON NAME
SOD	STENOTAPHRUM SECUNDATUM `FLORITAM`	`FLORITAM` ST. AUGUSTINE SOD

Landscape Calculations

Code Requirement	Calculation	Required	Provided
Sec. 23.6 - Landscaping Abutting ROW			
	1 tree per 40 lf		
State Road 7	76 lf / 40 lf = 1.9	2	3
NW 31st Street	250 lf / 18 lf = 13.8	14	14
Sec. 23.7 - Landscaping adjacent to other perimeters			
	1 tree per 75 lf		
West Perimeter	263 lf / 75 lf = 3.5	4	6
North Perimeter	165 lf / 75 lf =2.2	3	3
Sec. 23.8 Parking Area & Pedestrian zone interior landscaping			
	20 sf per parking space		
Site parking spaces	65 spaces x 20 sf	1,300 sf	2,200 sf +
	1 tree per 200 sf	7	12

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NORTH

SCALE: 1"=20'-0"

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DRC Comments 1-17-17 — Revision Dates

DRC SUBMITTAL SET

MARGATE RETAIL

3101 NORTH STATE ROAD 7
MARGATE, FLORIDA

Sheet Description: LANDSCAPE PLAN

Release Date: 4-25-16

Project Number: 1624

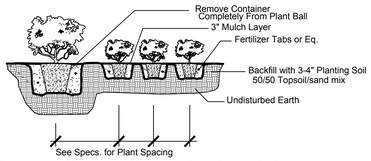
Drawing Number: LP-1

Sheet 1 of 2

PLANT SCHEDULE MARGATE RETAIL

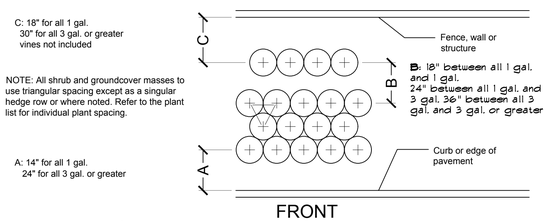
2017-01-13 13:34

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	DROUGHT	
BS	5	BURSERA SIMARUBA	GUMBO LIMBO	FG/B&B	3"CAL	12` HT, 6` SPR, 5` CT	YES	HIGH	
CS3	9	CONOCARPUS ERECTUS `SERICEUS`	SILVER BUTTONWOOD	FG/B&B	2"CAL	10` HT. X 5` SPR., SINGLE TRUNK	YES	HIGH	
IA	6	ILEX CASSINE	DAHOON HOLLY	FG/B&B	2"CAL	12` HT X 6` SPR	YES	HIGH	
LJ	4	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	FG/B&B	MULTI STEM	12` HT. X 5` SPR.	NO	MEDIUM	
EQV	2	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	EXISTING			YES	HIGH	
QV	10	QUERCUS VIRGINIANA	LIVE OAK	FG/B&B	3"CAL	14` HT X 6` SPR	YES	HIGH	
ESM	1	SWIETENIA MAHOGANY	MAHOGANY	EXISTING			YES	HIGH	
FLOWERING TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONT**	**CAL**	**SIZE**	**NATIVE**	**DROUGHT**	
CP	2	CAESALPINIA PULCHERRIMA	DWARF POINCIANA	FG/B&B	2"CAL	10` HT. X 5` SPR.	NO	MEDIUM	
LI	5	LAGERSTROEMIA INDICA `TUSCARORA`	TUSCARORA CRAPE MYRTLE `STANDARD`	FG/B&B	2"CAL	10` HT. X 5` SPR., STD.	NO	MEDIUM	
PALM TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONT**	**CAL**	**SIZE**	**NATIVE**	**DROUGHT**	
RE	6	ROYSTONEA ELATA	ROYAL PALM	FG/B&B		8` GW, MATCHED	YES	MEDIUM	
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONT**	**CAL**	**SIZE**	**NATIVE**	**DROUGHT**	**SPACING**
CFB	6	CORDYLINE FRUTICOSA `BLACK MAGIC`	BLACK MAGIC TI	7 GAL.		4-5` OA, FULL TO BASE	NO	MEDIUM	48" o.c.
CAQ	9	CRINUM AUGUSTUM `QUEEN EMMA`	`QUEEN EMMA` CRINUM	7 GAL.		4` OA.	NO	MEDIUM	48" o.c.
DIS	2	DIOON SPINULOSUM	CYCAD	15 GAL		4`-6` OA, FULL	NO	HIGH	60" o.c.
SHRUB AREAS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONT**	**CAL**	**SIZE**	**NATIVE**	**DROUGHT**	**SPACING**
CIR	399	CHRYSOBALANUS ICACO `REDTIP`	RED TIP COCOPLUM	3 GAL.,		30"HT X 24"SPR	YES	HIGH	24" o.c.
CVM	38	CODIAEUM VARIEGATUM `MAMMEY`	MAMMEY CROTON	3 GAL.,		24"HT X 24"SPR	NO	MEDIUM	24" o.c.
FMG	1,282	FICUS MICROCARPA `GREEN ISLAND`	GREEN ISLAND FICUS	3 GAL.,		16" HT X 16" SPR	NO	MEDIUM	18" o.c.
JVW	221	JASMINUM VOLUBILE	WAX JASMINE	3 GAL.,		18"HT X 18"SPR	NO	MEDIUM	24" o.c.
MCG	176	MUHLENBERGIA CAPILLARIS	PINK MUHLY	3 GAL.,		24"HT X 24"SPR	YES	HIGH	24" o.c.
SAT	316	SCHEFFLERA ARBORICOLA `TRINETTE`	SCHEFFLERA	3 GAL.,		24"HT X 24"SPR	NO	MEDIUM	24" o.c.
GROUND COVERS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONT**	**CAL**	**SIZE**	**NATIVE**	**DROUGHT**	**SPACING**
AGR	156	ARACHIS GLABRATA	PERENNIAL PEANUT	1 GAL.,		4" HT. X 12" SPR.	NO	MEDIUM	16" o.c.
DTB	12	DIANELLA TASMANICA	BLUEBERRY FLAX LILY	3 GAL.,		16" HT. X 16" SPR.	NO	MEDIUM	18" o.c.
SOD/SEED	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**CONT**	**CAL**	**SIZE**	**NATIVE**	**DROUGHT**	**SPACING**
SOD	8,323 SF	STENOTAPHRUM SECUNDATUM `FLORITAM`	`FLORITAM` ST. AUGUSTINE SOD	SOD					



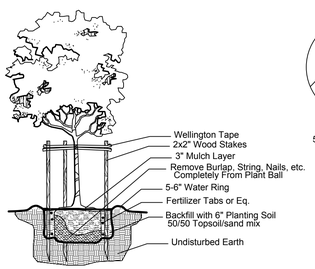
Shrub & Ground Cover Planting Detail

NTS



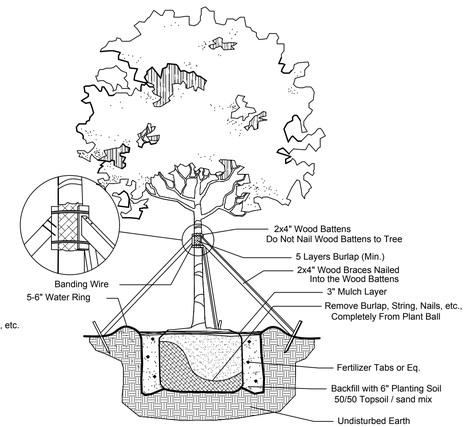
Typical Plant Spacing

NTS



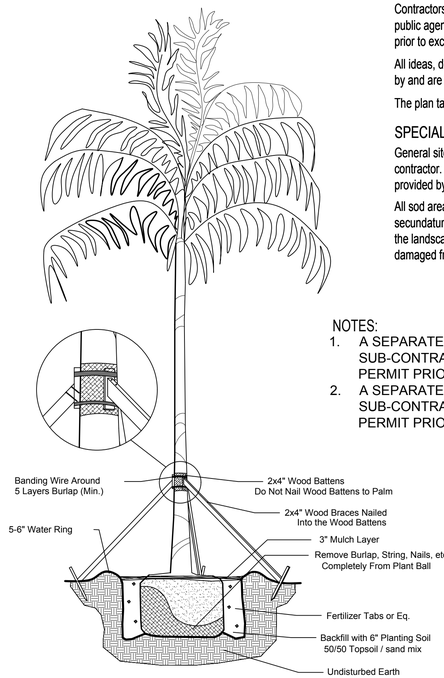
Small Tree Planting Detail

NTS



Large Tree Planting Detail

NTS



Palm Planting Detail

NTS

NOTES:

GENERAL PLANTING REQUIREMENTS

All sizes shown for plant material on the plans are to be considered Minimum. All plant material must meet or exceed these minimum requirements for both height and spread. Any other requirements for specific shape or effect as noted on the plan(s) will also be required for final acceptance.

All plant material furnished by the landscape contractor shall be Florida #1 or better as established by "Grades and Standards for Florida Nursery Plants" and "Grades and Standards for Florida Nursery Trees". All material shall be installed as per CSI specifications.

All plant material as included herein shall be warrantied by the landscape contractor for a minimum period as follows: All trees and palms for 12 months, all shrubs, vines, groundcovers and miscellaneous planting materials for 90 days, and all lawn areas for 60 days after final acceptance by the owner or owner's representative.

All plant material shall be planted in planting soil that is delivered to the site in a clean loose and friable condition. All soil shall have a well drained characteristic. Soil must be free of all rocks, sticks, and objectionable material including weeds and weed seeds as per CSI specifications.

Twelve inches (12") of planting soil 50/50 sand/topsoil mix is required around and beneath the root ball of all trees and palms, and 1 cubic yard per 50 bedding or groundcover plants.

All landscape areas shall be covered with Eucalyptus or sterilized seed free Melaleuca mulch to a minimum depth of three inches (3") of cover when settled. A four-inch clear space must be left for air between plant bases and the mulch. Cypress bark mulch shall not be used.

All plant material shall be thoroughly watered in at the time of planting; no dry planting permitted. All plant materials shall be planted such that the top of the plant ball is flush with the surrounding grade.

All landscape and lawn areas shall be irrigated by a fully automatic sprinkler system adjusted to provide 100% coverage of all landscape areas. All heads shall be adjusted to 100% overlap as per manufacturers specifications and performance standards utilizing a rust free water source. Each system shall be installed with a rain sensor.

It is the sole responsibility of the landscape contractor to insure that all new plantings receive adequate water during the installation and during all plant warranty periods. Deep watering of all new trees and palms and any supplemental watering that may be required to augment natural rainfall and site irrigation is mandatory to insure proper plant development and shall be provided as a part of this contract.

All plant material shall be installed with fertilizer, which shall be State approved as a complete fertilizer containing the required minimum of trace elements in addition to N-P-K, of which 50% of the nitrogen shall be derived from an organic source as per CSI specifications.

Contractors are responsible for coordinating with the owners and appropriate public agencies to assist in locating and verifying all underground utilities prior to excavation.

All ideas, designs and plans indicated or represented by this drawing are owned by and are the exclusive property of Architectural Alliance.

The plan takes precedence over the plant list.

SPECIAL INSTRUCTIONS

General site and berm grading to +/- 1 inch (1") shall be provided by the general contractor. All finished site grading and final decorative berm shaping shall be provided by the landscape contractor.

All sod areas as indicated on the planting plan shall receive Stenotaphrum secundatum, St. Augustine 'Palmetto' solid sod. It shall be the responsibility of the landscape contractor to include in the bid, the repair of any sod which may be damaged from the landscape installation operations.

NOTES:

1. A SEPARATE PERMIT IS REQUIRED FOR THE TREE REMOVAL. SUB-CONTRACTOR SHALL APPLY AND SUBMIT FOR THIS PERMIT PRIOR TO ANY WORK BEING PERFORMED ON SITE.
2. A SEPARATE PERMIT IS REQUIRED FOR THE LANDSCAPING. SUB-CONTRACTOR SHALL APPLY AND SUBMIT FOR THIS PERMIT PRIOR TO ANY WORK BEING PERFORMED ON SITE.

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HUGH JOHNSON
FLA #855
Seal

DRC Comments 1-17-17
Revision Dates

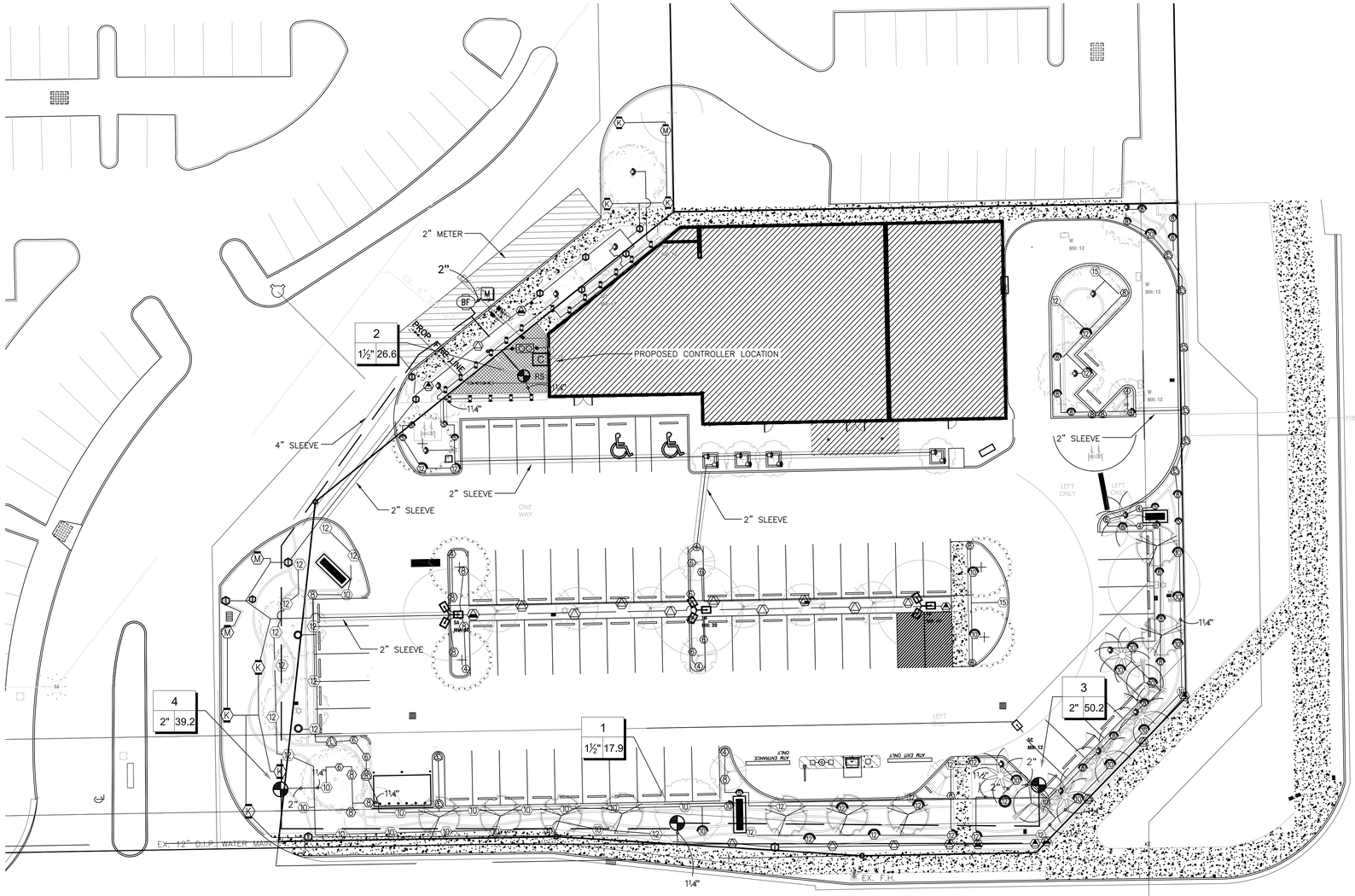
DRC SUBMITTAL SET
MARGATE RETAIL
3101 NORTH STATE ROAD 7
MARGATE, FLORIDA

Sheet Description
LANDSCAPE NOTES AND DETAILS

Release Date
4-25-16

Project Number
1624

Drawing Number
LP-2
Sheet 2 of 2



MAINLINE LOCATION, WHERE SHOWN, IS FOR GRAPHIC CLARITY PURPOSES ONLY. INSTALL AT THE BACK OF CURB, FRONT OF WALK, BACK OF WALK, OR ADJACENT TO OTHER HARDSCAPES TO FACILITATE FUTURE LOCATION AND TO PROTECT FROM DAMAGE. ENSURE MAINLINE IS INSTALLED ACCORDING TO IRRIGATION SPECIFICATIONS AND DETAILS.

NORTHWEST 31st STREET

NORTH STATE ROAD NO. 7

NON-VEHICULAR SLEEVING SCHEDULE	
PIPE SIZE	SLEEVING PIPE SIZE
3/4"	2"
1"	2"
1-1/4"	3"
1-1/2"	3"
2"	4"
3"	6"
4"	8"
6"	12"
8"	16"

SLEEVING NOTES:

1. VEHICULAR CROSSINGS ARE SHOWN AND SIZED ON THE PLANS.
2. NON-VEHICULAR SLEEVES ARE SHOWN BUT NOT SIZED.
3. SIZE ALL NON-VEHICULAR SLEEVES ACCORDING TO THE ADJACENT CHART.
4. MAINLINE CROSSINGS MUST ALSO INCLUDE A 2" CONDUIT SLEEVE FOR CONTROL WIRE.
5. CONTRACTOR TO DUCT TAPE END OF SLEEVES TO KEEP SLEEVE CLEAN AND CLEAR.
6. CONTRACTOR TO STAKE END OF EACH SLEEVE ABOVE GROUND AND PAINT FLUORESCENT ORANGE. LABEL EACH STAKE WITH THE WORD "SLEEVE" AND ITS SIZE.
7. CONTRACTOR TO PROVIDE A 3 FT MINIMUM DEPTH OF COVERAGE OVER ALL SLEEVES.

SLEEVE LABEL:
12"/6"/2" SLEEVES MEANS TO INSTALL ONE 12", ONE 6" AND ONE 2" SLEEVE.

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TEL: 954-764-8858 EMAIL: HJohnson@archall.net

REGISTERED LANDSCAPE ARCHITECT H. JOHNSON LA0000855 STATE OF FLORIDA

DRC Comments 1-17-17

Revision Dates

DRC SUBMITTAL SET

MARGATE RETAIL

3101 NORTH STATE ROAD 7
MARGATE, FLORIDA

Sheet Description
IRRIGATION PLAN

Release Date
4-25-16

Project Number
1624

Drawing Number
IR-1

Sheet 1 of 3

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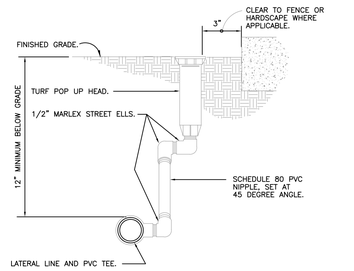
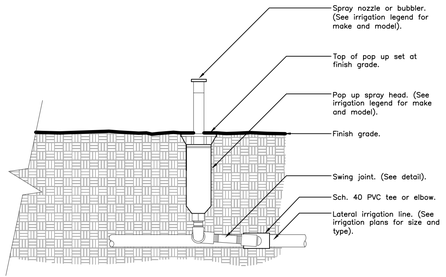
NORTH

SCALE: 1"=20'-0"



1 TURF SPRAY MARLEX ASSEMBLY

3" = 1'-0" 32 8403.13-01



Note:
1- 6" pop ups shall be used in turf areas.

2- Contractor shall settle soil around the pop up after installation.

3- All pop up spray heads shall have check valves.

4- All Sch. 40 PVC to Sch. 80 PVC connections shall be made using teflon tape.

1 POP UP-SPRAY HEAD

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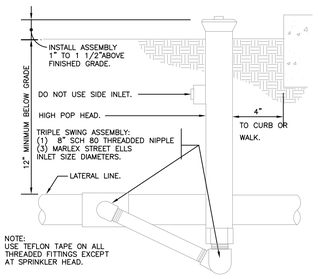
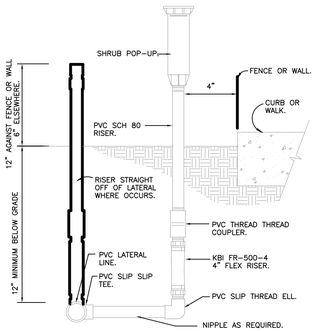
1 1/2" = 1'-0" FX-IR-FX-HEAD-01



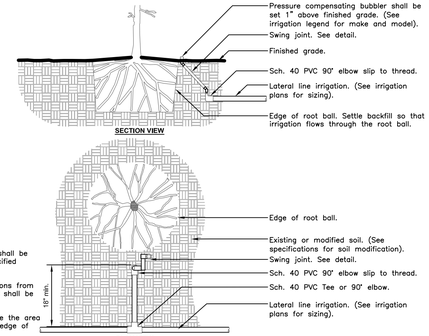
2 SHRUB SPRAY HIGHPOP MARLEX ASSEMBLY

3" = 1'-0" 32 8403.29-10



3 SHRUB SPRAY KBI FIXED RISER

3" = 1'-0" 32 8403.23-01



Notes:
1- All irrigation fittings shall be Sch. 40 PVC unless specified otherwise.

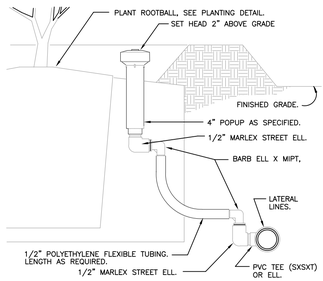
2- All threaded connections from Sch. 40 to Sch. 80 PVC shall be made using teflon tape.

3- Contractor shall settle the area around the bubbler and edge of the root ball so that all irrigation flows through the root ball.

4 IRRIGATION BUBBLER W/ LAYOUT

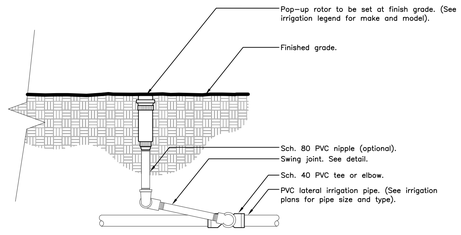
URBAN TREE FOUNDATION ©2014 OPEN SOURCE FREE TO USE

3/4" = 1'-0" FX-IR-FX-BUBB-04



4 POPUP BUBBLER

3" = 1'-0" 32 8403.53-04



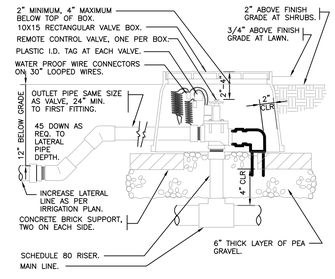
Notes:
1- All threaded connection points between Sch. 40 PVC and Sch. 80 PVC fitting shall be installed using teflon tape.

2- Contractor shall compact soil around rotor and riser prior to planting, plugging, seeding, or laying of sod.

5 ROTOR SPRAYHEAD

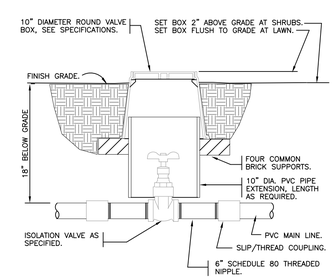
URBAN TREE FOUNDATION ©2014 OPEN SOURCE FREE TO USE

1 1/2" = 1'-0" FX-IR-FX-HEAD-02



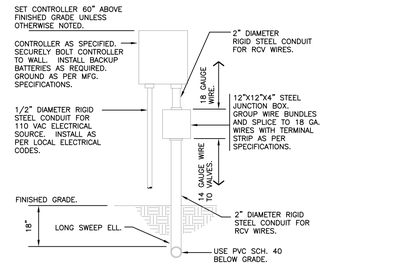
6 ELECTRIC REMOTE CONTROL VALVE

1 1/2" = 1'-0" 32 8406.13-01



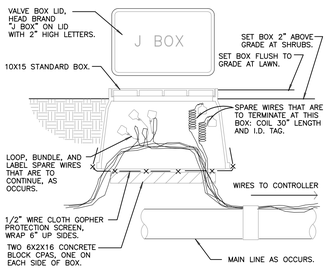
7 BRASS ISOLATION VALVE

1 1/2" = 1'-0" 32 8406.33-01



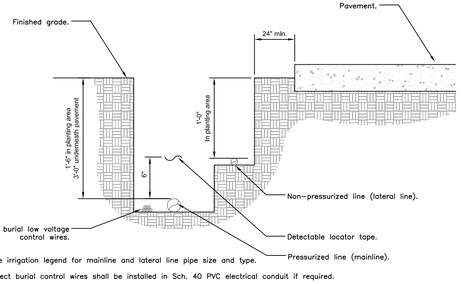
8 WALL MOUNT CONTROLLER

1" = 1'-0" 32 8409.13-02



10 WIRE BUNDLE JUNCTION BOX

1 1/2" = 1'-0" 32 8409.79-01



NOTES:
1- See irrigation legend for mainline and lateral line pipe size and type.

2- Direct burial control wires shall be installed in Sch. 40 PVC electrical conduit if required.

3- 2-wire irrigation wire shall be installed in Sch. 40 PVC electrical conduit.

4- Detectable locator tape shall be located six inches (6") above the entire mainline run.

11 IRRIGATION TRENCHING

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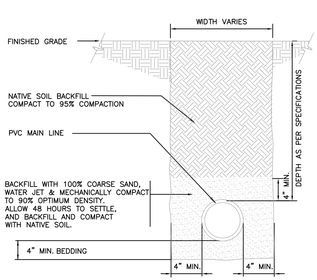
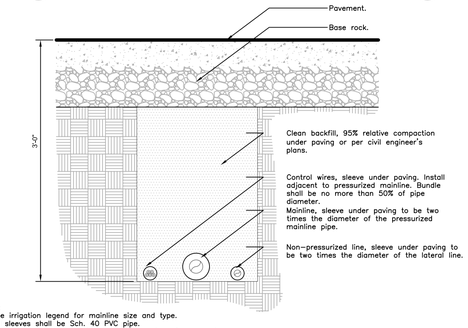
1 1/2" = 1'-0" FX-IR-FX-AUXEQ-08



12 MAINLINE WITH SAND BEDDING

1 1/2" = 1'-0" FX-IR-FX-AUXEQ-13



Notes:
1- See irrigation legend for mainline size and type.
2- All sleeves shall be Sch. 40 PVC pipe.
3- All sleeves shall extend 12" beyond the edge of pavement.
4- End of sleeves shall be located with a wooden stake or PVC pipe. Locators shall run continuously from the end of the sleeve to finished grade.

13 PIPE BENEATH PAVEMENT

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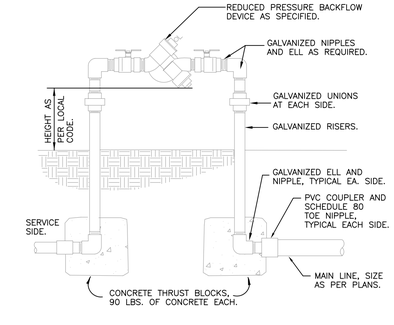
1 1/2" = 1'-0" FX-IR-FX-AUXEQ-05



14 REDUCED PRESSURE BACKFLOW DEVICE

1" = 1'-0" 32 8409.43-01

AAL
Architectural Alliance Landscape
613 SW 4th Ave., Fort Lauderdale, FL 33315 LC26000237
TEL: 954-764-8858 EMAIL: hjohnson@archaltnet

REGISTERED LANDSCAPE ARCHITECT HEATH JOHNSON LA0000857 STATE OF FLORIDA

DRC Comments 1-17-17

Revision Dates

DRC SUBMITTAL SET

MARGATE RETAIL

3101 NORTH STATE ROAD 7
MARGATE, FLORIDA

Sheet Description
IRRIGATION DETAILS

Release Date
4-25-16

Project Number
1624

Drawing Number
IR-2

Sheet 2 of 3

WIRING

Irrigation control wire shall be thermoplastic solid copper, single conductor, low voltage irrigation controller wire; suitable for direct burial and continuous operation at rated voltages.

Tape and bundle control wires every 10' and run alongside the mainline. At all turns in direction make a 2' coil of wire. At all valve boxes coil wire around a 3/4" piece of PVC pipe to make a coil using 30 linear inches of wire. Make electrical connections with 3MDBY/R connectors.

Number all wires, using an electrical book of numbers, according to the plans. Number wires in all valve boxes, junction boxes and at the controller.

Wire sized, numbered and colored as follows:
- #14 white for common
- #14 spare black common
- #14 individual color coded hot wire
- #14 spare yellow hot wire

Spare wires
Leaving each controller, run four spare wires in both directions (eight spare wires total). Install as 1 common spare (2 total) and 3 hot wires (6 total). Loop these wires into each RCV along their path and terminate in the last valve box controlled by the wires respective controller. The loop into each valve box shall extend up into the valve box a minimum of 8" and be readily accessible by opening the valve box lid. These wires must be all numbered and color coded as required in these plans.

Controller and Pump station Control Panel grounding – Contractor to utilize 4"X8'X5/8" copper grounding plates, 5/8"X10' copper clad grounding rods, 'One Strike' CAD wells at all connection points, #6 insulated copper wire, and earth contact material. Install these and other required components as outlined in the detail. Contractor to verify that the earth to ground resistance does not exceed 10 ohms. Contractor shall provide a written certification, on a licensed electrical contractors letter head, showing the date of the test, controller/pump location, and test results. Each controller/pump shall be so grounded and tested. Each component must have its own separate grounding grid, unless they are sitting side by side, in which case up to two controllers can share a common grounding grid.

LAYOUT

Lay out irrigation system mainlines and lateral lines. Make the necessary adjustments as required to take into account all site obstructions and limitations prior to excavating trenches.

Stake all sprinkler head locations. Adjust location and make the necessary modifications to nozzle types, etc. required to ensure 100% head to head coverage. Refer to the Edge of Pavement Detail on the Irrigation Detail Sheet.

Spray heads shall be installed 4" from sidewalks or curbed roadways and 12" from uncurbed roadways and building foundations. Rotors shall be installed 4" from sidewalks or curbed roadways, 12" from building foundations, and 36" from uncurbed roadways.

Shrub heads shall be installed on 3/4" Sch 40 PVC risers. The risers shall be set at a minimum of 18" off sidewalks, roadway curbing, building foundations, and/or any other hardscaped areas. Shrub heads shall be installed to a standard height of 4" below maintained height of plants and shall be installed a minimum of 6" within planted masses to be less visible and offer protection. Paint all shrub risers with flat black or forest green paint, unless irrigation system will utilize reuse water; in this case the risers shall be purple PVC and shall not be painted.

Locate valves prior to excavation. Ensure that their location provides for easy access and that there is no interference with physical structures, plants, trees, poles, etc. Valve boxes must be placed a minimum of 12" and a maximum of 15" from the edge of pavement, curbs, etc. and the top of the box must be 2" above finish grade. No valve boxes shall be installed in turf areas without approval by the irrigation designer – only in shrub beds. Never install in sport field areas.

VALVES

Sequence all valves so that the farthest valve from the P.O.C. operates first and the closest to the P.O.C. operates last. The closest valve to the P.O.C. should be the last valve in the programmed sequence.

Adjust the flow control on each RCV to ensure shut off in 10 seconds after deactivation by the irrigation controller.

Using an electric branding iron, brand the valve I.D. letter/number on the lid of each valve box. This brand must be 2"–3" tall and easily legible.

EQUIPMENT

All pop–up heads and shrub risers shall be pressure compensating. All pop–up heads shall be mounted on flex–type swing joints. All rotors shall be installed with PVC triple swing joints unless otherwise detailed.

All sprinkler equipment, not otherwise detailed or specified on these plans, shall be installed as per manufacturer's recommendations and specifications, and according to local and state laws.

TRENCHING

Excavate straight and vertical trenches with smooth, flat or sloping bottoms. Trench width and depth should be sufficient to allow for the proper vertical and horizontal separation between piping as shown in the pipe installation detail on the detail sheet.

Protect existing landscaped areas. Remove and replant any damaged plant material upon job completion. The replacement material shall be of the same genus and species, and of the same size as the material it is replacing. The final determination as to what needs to be replaced and the acceptability of the replacement material shall be solely up to the owner or owner's representative.

INSTALLATION

Solvent Weld Pipe: Cut all pipe square and deburr. Clean pipe and fittings of foreign material; then apply a small amount of primer while ensuring that any excess is wiped off immediately. Primer should not puddle or drip from pipe or fittings. Next apply a thin coat of PVC cement; first apply a thin layer to the pipe, next a thin layer inside the fitting, and finally another very thin layer on the pipe. Insert the pipe into the fitting. Insure that the pipe is inserted to the bottom of the fitting, then turn the pipe a 1/4 turn and hold for 10 seconds. Make sure that the pipe doesn't recede from the fitting. If the pipe isn't at the bottom of the fitting upon completion, the glue joint is unacceptable and must be discarded.

Pipes must cure a minimum of 30 minutes prior to handling and placing into trenches. A longer curing time may be required; refer to the manufacturer's specifications. The pipe must cure a minimum of 24 hours prior to filling with water.

BACK FILL

The Back fill 6" below, 6" above, and around all piping shall be of clean sand and anything beyond that in the trench can be of native material but nothing larger than 2" in diameter. All piping and excavations shall be backfilled and compacted to a density of 95% modified Proctor, or greater.

Main line pipe depth measured to the top of pipe shall be:
24" minimum for 3/4"–2 1/2" PVC with a 30" minimum at vehicular crossings;
30" minimum for 3" & 4" PVC with a 36" minimum at vehicular crossings.

Lateral line depths measured to top of pipe shall be:
18" minimum for 3/4"–3" PVC with a 30" minimum at vehicular crossings;
24" minimum for 4" PVC and above with a 30" minimum at vehicular crossings.

Contractor shall backfill all piping, both mainline and laterals, prior to performing any pressure tests. The pipe shall be backfilled with the exception of 2' on each side of every joint (bell fittings, 90's, tees, 45's, etc.). These joints shall not be backfilled until all piping has satisfactorily passed its appropriate pressure test as outlined below.

FLUSHING

Prior to the placement of valves, flush all mainlines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Prior to the placement of heads, flush all lateral lines for a minimum of 10 minutes or until lines are completely clean of debris, whichever is longer.

Use screens in heads and adjust heads for proper coverage avoiding excess water on walls, walks and paving.

TESTING

Soil: At a minimum of 2 locations on the site, soil tests for infiltration and texture shall be performed according to the USDA Soil Quality Test Kit Guide. The tests shall be documented in a USDA Soil Worksheet. (All of the above is available at http://soils.usda.gov/sqi/assessment/ test_kit.html) The completed worksheet shall be submitted to the owners representative for review/approval. Do not proceed without written direction from the owner/owner's representative.

Schedule testing with Owner's Representative a minimum of three (3) days in advance of testing.

Mainline: Remove all remote control valves and cap using a threaded cap on SCH 80 nipple. Hose bibs and gate valves shall not be tested against during a pressure test unless authorized by written permission from the owner. Fill mainline with water and pressurize the system to 125 PSI. Monitor the system pressure at two gauge locations; the gauge locations must be at opposite ends of the mainline. With the same respective pressures, monitor the gauges for two hours. There can be no loss in pressure at either gauge for solvent–welded pipe.

If these parameters are exceeded, locate the problem; repair it; wait 24 hours and retry the test. This procedure must be followed until the mainline passes the test.

Lateral Lines: The lateral lines must be fully filled to operational pressure and visually checked for leaks. Any leaks detected must be repaired.

Operational Testing –Once the mainline and lateral lines have passed their respective tests, and the system is completely operational, a coverage test and demonstration of the system is required. The irrigation contractor must demonstrate to the owner, or his/her representative, that proper coverage is obtained and the system works automatically from the controller. This demonstration requires each zone to be turned on, in the proper sequence as shown on the plans, from the controller. Each zone will be inspected for proper coverage and function. The determination of proper coverage and function is at the sole discretion of the owner or owner's representative.

Upon completion of the operational test, run each zone until water begins to puddle or run off. This will allow you to determine the number of irrigation start times necessary to meet the weekly evapotranspiration requirements of the planting material in each zone. In fine sandy soils, it is possible no puddling will occur. If this is experienced, then theoretical calculations for run times will be required for controller programming.

SUBMITTALS

Pre–Construction: Deliver five (5) copies of submittals to Owner's Representative within ten (10) working days from date of Notice to Proceed. Furnish information in 3–ring binder with table of contents and index sheet. Index sections for different components and label with specification section number and name of component. Furnish submittals for components on material list. Indicate which items are being supplied on catalog cut sheets when multiple items are shown on one sheet. Incomplete submittals will be returned without review. In lieu of hardcopies, an electronic package in PDF format can be submitted.

After project completion:
As a condition of final acceptance, the irrigation contractor shall provide the owner with:

1. Irrigations As–builts – shall be provided utilizing a sub–foot Global Navigation Satellite System (GNSS) to accurately locate all mainlines, sleeves, remote control valves, gate valves, independent wire runs, wire splice boxes, controllers, high voltage supply sources/conduit path, control mechanisms, sensors, wells and water source connections in Florida East State Plane, NAD 83, and CORS 96 format. The data collected shall be in POINT format and include an ID for each data point with Manufacturer, Type, Size, and Depth. All mainline and independent runs of wire shall be located every 30' for straight runs and at every change of direction. Sleeves will be located at end points and every 20' of length. All underground items shall include depth in inch format. These POINTS once collected shall be imported into an AutoCAD DWG geo–referenced base file to be labeled accordingly. The completed AS–Built shall be a Geo–Referenced DWF file and delivered to the owner on a compact disk (CD).
2. Controller charts – Upon completion of "as–built" prepare controller charts; one per controller. Indicate on each chart the area controlled by a remote control valve (using a different color for each zone). This chart shall be reduced to a size that will fit inside of the controller door. The reduction shall be hermetically sealed inside two 2mi pieces of clear plastic.
3. Grounding Certification – Provide ground certification results for each controller and pump panel grounding grid installed. This must be on a licensed electrician letter head indicating location tested (using IR plan symbols), date, time, test method, and testing results.

INSPECTIONS AND COORDINATION MEETINGS REQUIRED – Contractor is required to schedule, perform, and attend the following, and demonstrate to the owner and/or owners representative to their satisfaction, as follows:

1. Pre–construction meeting – Designer and contractor to review entire install process and schedule with owner/general contractor.
2. Mainline installation inspection(s) – all mainline must be inspected for proper pipe, fittings, depth of coverage, backfill. and installation method
3. Mainline pressure test – All mainline shall be pressure tested according to this design's requirements
4. Flow Meter calibration – All flow meters must be calibrated, provide certified calibration report for all flow meters.
5. USDA Soil Quality Tests for infiltration/texture
6. Coverage and operational test
7. Final inspection
8. Punch list inspection

FINAL ACCEPTANCE

Final acceptance of the irrigation system will be given after the following documents and conditions have been completed and approved. Final payment will not be released until these conditions are satisfied.

1. All above inspections are completed, documented, and approved by owner.
2. Completion and acceptance of 'as–built' drawings.
3. Acceptance of required controller charts and placement inside of controllers.
4. All other submittals have be made to the satisfaction of the owner.

GUARANTEE: The irrigation system shall be guaranteed for a minimum of one calendar year from the time of final acceptance.

MINIMUM RECOMMENDED
IRRIGATION MAINTENANCE PROCEDURES

1. Every irrigation zone should be checked monthly and written reports generated describing the date(s) each zone was inspected, problems identified, date problems repaired, and a list of materials used in the repair. At minimum, these inspections should include the following tasks:

A. Turn on each zone from the controller to verify automatic operation.

B. Check schedules to ensure they are appropriate for the season, plant and soil type, and irrigation method. Consult an I.A. certified auditor for methods used in determining proper irrigation scheduling requirements.

C. Check remote control valve to ensure proper operation.

D. Check setting on pressure regulator to verify proper setting, if present.

E. Check flow control and adjust as needed; ensure valve closure within 10–15 seconds after deactivation by controller.

F. Check for leaks – mainline, lateral lines, valves, heads, etc.

G. Check all heads as follows:

1. Proper set height (top of sprinkler is 1" below mow height)
2. Verify head pop–up height – 6" in turf, 12" in ground cover, and pop–up on riser in shrub beds.
3. Check wiper seal for leaks – if leaking, clean head and re–inspect.
4. If still leaking, replace head with the appropriate head with pressure regulator and built–in check valve.
5. All nozzles checked for proper pattern, clogging, leaks, correct make & model, etc. – replace as needed
6. Check for proper alignment – perfectly vertical; coverage area is correct; minimize over spray onto hardscapes.
7. Riser height raised/lowered to accommodate plant growth patterns and ensure proper coverage.
8. Verify the pop–up riser retracts after operation. If not, repair/replace as needed.

H. Check controller/C.C.U. grounds for resistance (10 ohms or less) once per year. Submit written reports.

I. Check rain shut–off device monthly to ensure it functions properly.

J. Inspect all filters monthly and clean/repair/replace as needed.

K. Inspect backflow devices by utilizing a properly licensed backflow inspector. This should be done annually, at minimum.

L. Inspect all valve boxes to ensure they are in good condition, lids are in place and locked.

M. Check pump stations for proper operation, pressures, filtration, settings, etc. – refer to pump station operations manual.

N. Check and clean intake screens on all suction lines quarterly, at minimum. Clean and/or repair, as needed.

O. Winterize, if applicable, as weather in your area dictates. Follow manufacturer recommendations and blow out all lines and equipment using compressed air. Perform seasonal startup of system as per manufacturer recommendations.

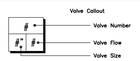
P. Conduct additional inspections, maintenance tasks, etc. that are particular for your site.

Soil Moisture Sensor

1. Place all soil moisture sensor wiring in 1" SCH 40 PVC conduit
2. Soil moisture sensor should be placed in the middle of a spray or drip area as per manufacturer's recommendations.
3. Controller shall be set to the Florida Automated Weather Network's urban scheduler settings using the SMS as a moisture cut off device (like a rain switch) per manufacturer directions.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
EST LCS RCS CST SST	RAIN BIRD 1812-SAM-PRS 15 STRIP SERIES SHRUB SPRAY 12.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	2	30
EST LCS RCS CST SST	RAIN BIRD 1806-SAM-PRS 15 STRIP SERIES SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	8	30
O H F	RAIN BIRD 1806-SAM-PRS 5 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	7	30
Q T H F	RAIN BIRD 1806-SAM-PRS 8 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	17	30
Q T H TQ F	RAIN BIRD 1806-SAM-PRS 10 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	15	30
Q T H TQ F	RAIN BIRD 1806-SAM-PRS 12 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	12	30
4V 6V 12V	RAIN BIRD 1806-SAM-PRS ADJ SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	18	30
08HE-VAN 10HE-VAN 12HE-VAN 15HE-VAN	RAIN BIRD 1806-SAM-PRS ADJ SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET ON FIXED RISER. WITH SEAL-A-MATIC CHECK VALVE, AND PRESSURE REGULATING DEVICE.	52	30
M O M	HUNTER MP1000 PROS-06-PRS40-CV TURF ROTATOR, 6" (15.24 CM) POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY. M=MAROON ADJ ARC 90 TO 210, L=LIGHT BLUE 210 TO 270 ARC, O=OLIVE 360 ARC.	3	40
M O M	HUNTER MP2000 PROS-06-PRS40-CV TURF ROTATOR, 6" (15.24 CM) POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY. K=BLACK ADJ ARC 90-210, G=GREEN ADJ ARC 210-270, R=RED 360 ARC.	7	40
ADJ. 360	HUNTER MP800SR PROS-06-PRS40-CV TURF ROTATOR, 4.0" POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY. ADJ=ORANGE AND GRAY (ARC 90-210), 360=LIME GREEN AND GRAY (ARC 360)	12	40
LST RST SST	HUNTER MP STRIP PROS-06-PRS40-CV TURF ROTATOR, 6" (15.24 CM) POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI (2.76 BAR), MP ROTATOR NOZZLE ON PRS40 BODY. LST=IVORY LEFT STRIP, SST=BROWN SIDE STRIP, RST=COPPER RIGHT STRIP.	24	40
CST O H F	RAIN BIRD 1806-SAM-5 SERIES STREAM W/ PCS STREAM BUBBLER 6.0" POPUP WITH CHECK VALVE, PRESSURE COMPENSATING SCREEN ON FIXED RISER.	42	30
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	
	RAIN BIRD PEB 1", 1-1/2", 2" PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.	4	
BF	FEBCO 765 2" PRESSURE VACUUM BREAKER, BRASS WITH BALL VALVE SOV. INSTALL 12" (305MM) ABOVE HIGHEST DOWNSTREAM OUTLET AND THE HIGHEST POINT IN THE DOWNSTREAM PIPING.	1	
C	RAIN BIRD ESP8LXME-LXMM 8 STATION CAPABLE COMMERCIAL CONTROLLER. MOUNTED ON A POWDER-COATED METAL CABINET WITHOUT FLOW SENSING.	1	
RS	RAIN BIRD RSD-BEX RAIN SENSOR, WITH METAL LATCHING BRACKET, EXTENSION WIRE.	1	
M	WATER METER 2"	1	
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21 PVC CLASS 200 IRRIGATION PIPE. ONLY LATERAL TRANSITION PIPE SIZES 1 1/4" AND ABOVE ARE INDICATED ON THE PLAN, WITH ALL OTHERS BEING 1" IN SIZE.	3,283 L.F.	
	IRRIGATION MAINLINE: PVC SCHEDULE 40 PVC SCHEDULE 40 IRRIGATION PIPE.	492.7 L.F.	
	PIPE SLEEVE: PVC SCHEDULE 40	330.6 L.F.	



AAL
Architectural Alliance Landscape
623 SW 4th Ave., Fort Lauderdale, FL 33315 LC26000237
TEL: 954-764-8858 EMAIL: hjohnson@archaltnet

REGISTERED LANDSCAPE ARCHITECT HUGH JOHNSON LA0000855 STATE OF FLORIDA

DRC Comments 1-17-17

Revision Dates

DRC SUBMITTAL SET

MARGATE RETAIL

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Sheet Description
IRRIGATION NOTES

Release Date
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Project Number
1624

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IR-3

Sheet 3 of 3