

BOGGY CREEK IMPROVEMENT DISTRICT BOARD OF SUPERVISORS' MEETING MINUTES

FIRST ORDER OF BUSINESS

The Board of Supervisors' Meeting for the Boggy Creek Improvement District was called to order on Tuesday, April 16, 2019 at 3:30 p.m. at 6900 Tavistock Lakes Blvd., Suite 200, Orlando, FL 32827. Members listed below constituted a quorum.

Richard Levey
Damon Ventura
Thad Czapka
Heather Isaacs

Chair
Vice-Chair
Assistant Secretary
Assistant Secretary

Also, attending:

Jennifer Walden
Lynne Mullins
Tucker Mackie
Jeff Newton
Larry Kaufmann
Scott Thacker
Troy Davidson
Stephen Flint

PFM
PFM
Hopping Green & Sams
Donald W. McIntosh Associates
Construction Supervisor
Construction Committee
Construction Committee
Tavistock

SECOND ORDER OF BUSINESS

Public Comment Period

Dr. Levey called for any public comments on any agenda items.

THIRD ORDER OF BUSINESS

Consideration of Minutes of the March 19, 2019 Board of Supervisors' Meeting

Board Members reviewed the minutes from the March 19, 2019 Board of Supervisors' Meeting.

On Motion by Ms. Isaacs, second by Mr. Czapka, with all in favor, the Board of Supervisors for the Boggy Creek Improvement District approved the Minutes of the March 19, 2019 Board of Supervisors' Meeting.

FOURTH ORDER OF BUSINESS

Discussion of Fiscal Year 2020 Budget

Ms. Walden explained that the Board will not be approving the preliminary budget until next month.

Dr. Levey stated that there is a big anticipated increase in landscape maintenance and material and asked if the District is waiting on contractor responses. Ms. Walden responded that is correct and the District will have those in a few weeks.

Ms. Isaacs asked if the Supervisor fees are going to increase. Ms. Walden stated that the Supervisor fees are based on four individuals. It was increased last year because two of the seats switched to residents. The Board discussed that it will need to increase.

There is no action necessary from the Board.

FIFTH ORDER OF BUSINESS

Ratification of Master Lighting Installation Upgrade and Service Agreement- Nemours Parkway Phase 7

Mr. Kaufmann explained that this came before the Board last month and staff needed to insert correct bill of materials. It was inserted and this is now the final document which is included in the agenda.

On Motion by Ms. Isaacs, second by Mr. Ventura, with all in favor, the Board of Supervisors for the Boggy Creek Improvement District Ratified Master Lighting Installation Upgrade and Service Agreement- Nemours Parkway Phase 7

SIXTH ORDER OF BUSINESS

Ratification of Requisition Nos. 2018-71 – 77 Approved in March 2019 in an amount totaling \$1,080,806.80

Board Members reviewed Requisition Nos. 2018-71 – 77 approved in March 2019 in an amount totaling \$1,080,806.80.

Dr. Levey noted that these have already been approved and paid and just need to be ratified by the Board.

On Motion by Mr. Ventura, second by Ms. Isaacs, with all in favor, the Board of Supervisors for the Boggy Creek Improvement District ratified Requisition Nos. 2018-71 – 77 approved in March 2019 in an amount totaling \$1,080,806.80.

SEVENTH ORDER OF BUSINESS

Ratification of Operation and Maintenance Expenditures

**Paid in March 2019 in the
amount totaling \$76,214.42**

Board Members reviewed the Operation & Maintenance expenditures paid in March 2019 in the amount totaling \$76,214.42.

Ms. Walden noted that these have already been approved and paid and just need to be ratified by the Board.

On Motion by Mr. Ventura, second by Ms. Isaacs, with all in favor, the Board of Supervisors for the Boggy Creek Improvement District ratified the Operation and Maintenance expenditures paid in March 2019 in the amount totaling \$76,214.42.

EIGHTH ORDER OF BUSINESS

Recommendation of Work Authorizations/Proposed Services

Mr. Kaufmann had no work authorizations for this Board.

NINTH ORDER OF BUSINESS

Review of District's Financial Position and Budget to Actual YTD

Ms. Walden explained that the District has total expenses of \$327,500.00 vs. a budget of \$406,500.00. So, the District is currently under budget through March, no action is required by the Board.

TENTH ORDER OF BUSINESS

Staff Reports

District Counsel -

No Report

District Manager -

Ms. Walden noted that the next meeting is scheduled for Tuesday May 21, 2019.

District Engineer -

Mr. Newton distributed the Construction Status Memorandum (Minutes Exhibit A). Nemours West and Lift Station 10 is paved, striped, and barricaded off. The only thing that the Construction Committee is waiting on to start up the lift station is the meter.

There is a Change Order related to the irrigation controller and getting the electric to it. There are two options, with the first being hardwired electric

and the second being solar electric. The Developer has not made a final decision which way they would like to go from an aesthetic standpoint. He requested to change the recommended motion listed in the memo to authorize the change order amount not to exceed \$23,301.90 and authorize the District Engineer to execute that change order upon the decision of which option to pursue.

Mr. Newton explained that for Tavistock Lakes Boulevard and Veteran's Way intersection improvements they are still waiting on contractor as-builts to close that out.

Nemours Parkway Phase 7 curb and base are down and they should be paving next month. There are several curb ramps and crosswalks that were constructed with the first segment of Nemours Parkway but were not physically connected to the sidewalk/trail system because of the way the construction was phased. He recommends that the curb ramps on the north side of Nemours parkway be connected to the existing sidewalk/trail. He also recommends that the curb ramps on the south side should be connected to one another with temporary sidewalk segments. The Board discussed options with Mr. Newton. Ms. Isaacs is concerned with the District paying for something that may have been missed during the initial design, construction and certification by the District Engineer. Mr. Newton stated that he does not need a vote but he was looking for Board feedback and direction. Ms. Isaacs stated that she wants cost information on making the connections.

Mr. Newton stated that the only outstanding item is the requested motion on the change order.

Mr. Ventura asked if the District has other solar panels. Ms. Isaacs asked what the height would be. The District currently has no solar panels. District Staff responded that the pole will be 15 feet high. Dr. Levey asked what the O&M savings are on energy. The savings are almost nothing.

On Motion by Ms. Isaacs, second by Mr. Ventura, with all in favor, the Board of Supervisors for the Boggy Creek Improvement District approved and authorized the District Engineer to execute the Change Order of not to exceed \$23,301.90 and strongly encourage the District and Developer to go with the solar panel option as Lake Nona is supposed to be a progressive sustainable community.

Construction Supervisor -

Mr. Kaufmann stated that District Staff held a meeting about the Interchange to discuss an irrigation issue that has been before the Board for a couple years now. The past intent was to provide irrigation line replacement in order to help prevent a future irrigation line break that may cause damage to the roadway through the interchange. The District went through the design process to replace some of the pipe and in the meantime hired an Irrigation Specialist that advised the District that the line replacement was not necessary. Instead, the recommendation of the Irrigation Specialist was to install some additional air relief valves and flow control valves in lieu of replacing the PVC piping with ductile iron piping. The District does not have final pricing yet but he will bring it to the Board's attention at the next Board's meeting.

Irrigation Specialist-

No Report

ELEVENTH ORDER OF BUSINESS

**Supervisor and Audience
Comments & Adjournment**

There were no Supervisor requests or audience comments. Dr. Levey requested a motion to adjourn.

On Motion by Mr. Ventura, second by Ms. Isaacs, with all in favor, the March 19, 2019 Meeting of the Board of Supervisors for the Boggy Creek Improvement District was adjourned.


Secretary/Assistant Secretary


Chair/Vice Chair

Boggy Creek Improvement District
FY 2020 Proposed O&M Budget

EXHIBIT A

	Actuals Through 03/31/2019	Anticipated 04/2019 - 09/2019	Anticipated FY 2019 Totals	FY 2019 Adopted Budget	FY 2020 Proposed Budget
<u>Revenues</u>					
Off-Roll Assessments	\$ 595,495.38	\$ 217,399.39	\$ 812,894.77	\$ 812,894.77	\$ 929,572.34
Other Income & Other Financing Sources	367.61	-	367.61	-	-
Net Revenues	\$ 595,862.99	\$ 217,399.39	\$ 813,262.38	\$ 812,894.77	\$ 929,572.34
<u>General & Administrative Expenses</u>					
Legislative					
Supervisor Fees	\$ 2,400.00	\$ 2,400.00	\$ 4,800.00	\$ 4,800.00	\$ 4,800.00
Financial & Administrative					
Public Officials' Liability Insurance	3,250.00	-	3,250.00	3,575.00	3,500.00
Trustee Services	1,571.35	-	1,571.35	2,000.00	2,700.00
Management	18,750.00	18,750.00	37,500.00	37,500.00	37,500.00
Engineering	3,535.50	6,464.50	10,000.00	10,000.00	10,000.00
Dissemination Agent	1,250.00	3,750.00	5,000.00	5,000.00	5,000.00
District Counsel	7,412.51	22,587.49	30,000.00	30,000.00	30,000.00
Assessment Administration	7,500.00	-	7,500.00	7,500.00	7,500.00
Reamortization Schedules	-	-	-	-	250.00
Audit	5,923.00	-	5,923.00	3,900.00	6,500.00
Arbitrage Calculation	-	1,200.00	1,200.00	1,200.00	1,200.00
Travel and Per Diem	55.94	444.06	500.00	500.00	350.00
Telephone	35.31	214.69	250.00	250.00	350.00
Postage & Shipping	96.50	203.50	300.00	300.00	500.00
Copies	622.50	1,877.50	2,500.00	2,500.00	2,500.00
Legal Advertising	3,017.72	3,017.72	6,035.44	3,000.00	6,000.00
Bank Fees	-	-	-	50.00	-
Miscellaneous	1,671.60	1,671.60	3,343.20	1,000.00	3,000.00
Property Taxes	339.11	-	339.11	-	500.00
Web Site Maintenance	630.00	630.00	1,260.00	1,250.00	1,500.00
Holiday Decorations	802.00	-	802.00	-	1,000.00
Dues, Licenses, and Fees	175.00	-	175.00	175.00	175.00
Total General & Administrative Expenses	\$ 59,038.04	\$ 63,211.06	\$ 122,249.10	\$ 114,500.00	\$ 124,825.00

Boggy Creek Improvement District
FY 2020 Proposed O&M Budget

	Actuals Through 03/31/2019	Anticipated 04/2019 - 09/2019	Anticipated-FY 2019 Totals	FY 2019 Adopted Budget	FY 2020 Proposed Budget
<u>Field Operations Expenses</u>					
Electric Utility Services					
Electric	\$ 986.58	\$ 1,013.42	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00
Entry Lighting	-	500.00	500.00	500.00	500.00
Water-Sewer Combination Services					
Water Reclaimed	14,910.80	20,089.20	35,000.00	35,000.00	45,000.00
Other Physical Environment					
General Insurance	3,687.00	-	3,687.00	4,050.00	4,050.00
Property & Casualty	3,322.00	-	3,322.00	100.00	3,500.00
Other Insurance	-	-	-	500.00	500.00
Irrigation	13,115.80	16,884.20	30,000.00	30,000.00	-
Irrigation Repairs	-	-	-	-	50,000.00
Landscaping Maintenance & Material	107,748.00	107,748.00	215,496.00	215,496.00	300,000.00
Other Landscape Maintenance	-	-	-	-	-
Landscape Improvements	1,950.00	1,950.00	3,900.00	47,504.00	55,000.00
Tree Trimming	48,658.25	48,658.25	97,316.50	40,000.00	40,000.00
Hurricane Cleanup	-	11,030.13	11,030.13	20,000.00	20,000.00
Contingency	1,550.00	28,450.00	30,000.00	30,000.00	22,698.10
Interchange Maintenance Expenses					
IME - Aquatics Maintenance	1,628.23	1,816.77	3,445.00	3,445.00	3,445.00
IME - Irrigation Repair	847.26	31,652.74	32,500.00	32,500.00	9,750.00
IME - Landscaping	41,170.97	41,170.97	82,341.94	79,673.10	84,987.50
IME - Lighting	1,654.60	18,345.40	20,000.00	20,000.00	20,000.00
IME - Miscellaneous	1,378.32	1,378.32	2,756.64	-	1,499.88
IME - Water Reclaimed	426.52	2,823.48	3,250.00	3,250.00	3,000.00
Road & Street Facilities					
Entry and Wall Maintenance	1,050.00	8,950.00	10,000.00	10,000.00	10,000.00
Streetlights	24,697.86	57,302.14	82,000.00	82,000.00	86,390.20
Parks & Recreation					
Personnel Leasing Agreement	-	-	-	20,000.00	20,000.00
Reserves					
Infrastructure Capital Reserve	-	20,166.67	20,166.67	20,166.67	20,166.67
Interchange Maintenance Reserve	-	2,360.00	2,360.00	2,360.00	2,360.00
Total Field Operations Expenses	\$ 268,782.19	\$ 422,289.69	\$ 691,071.88	\$ 698,544.77	\$ 804,847.34
Total Expenses	\$ 327,820.23	\$ 485,500.75	\$ 813,320.98	\$ 813,044.77	\$ 929,672.34
Income (Loss) from Operations	\$ 268,042.76	\$ (268,101.36)	\$ (58.60)	\$ (150.00)	\$ (100.00)
<u>Other Income (Expense)</u>					
Interest Income	\$ 29.30	\$ 29.30	\$ 58.60	\$ 150.00	\$ 100.00
Total Other Income (Expense)	\$ 29.30	\$ 29.30	\$ 58.60	\$ 150.00	\$ 100.00
Net Income (Loss)	\$ 268,072.06	\$ (268,072.06)	\$ -	\$ -	\$ -



**DONALD W. MCINTOSH
ASSOCIATES, INC.**

MEMORANDUM

EXHIBIT B

DATE: April 16, 2019

TO: Boggy Creek Improvement District
Board of Supervisors

FROM: Donald W. McIntosh Associates, Inc.
District Engineer

RE: Construction Contract Status

Dear Board Members,

Please accept this correspondence as a current summary of our construction contract status. Listed below by project is a brief summary of recent contract activity. Copies of the latest Change Order logs are attached.

CIVIL ENGINEERS

LAND PLANNERS

SURVEYORS

Lake Nona Nemours Parkway West and Lift Station No. 10 – Jon M. Hall Company

Construction Status: Paving of the roadway and asphalt trail have been completed. Lift station concrete pads have been installed and fencing around the station has been completed. The generator and fuel tank have been installed and connected in preparation for startup testing with the City. Contractor anticipates substantial completion by the end of April 2019, pending OUC electric power start up schedule. OUC is currently scheduled to install the electric meter to the lift station by the middle of this week.

Change Order (C.O.) Status: Change Order No. 16 for additional sod and electrical service to the irrigation controller in the additive amount of either:

- Option 1: Hardwired electrical service – \$23,301.90 and add 60 days
- Option 2: Solar Panel Assembly – \$13,764.90 and add 10 days

Recommended Motion: Approve and authorize the District Engineer to execute Change Order No. 16 in a not-to-exceed amount (cost and time) based on the option selected by the Board.

Lake Nona Boulevard Intersection Modifications: Tavistock Lakes Boulevard and Veterans Way – Jon M. Hall Company

Construction Status: This project is in close-out, with the engineer's certification of completion pending receipt of City ESM compliant as-builts.

Change Order (C.O.) Status: None at this time.

Recommended Motion: None at this time.

2200 Park Ave. North

Winter Park, FL

32789-2355

Fax 407-644-8318

407-644-4068

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Memorandum

*Re: Boggy Creek Improvement District
Construction Contract Status*

April 16, 2019

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Nemours Parkway Phase 7 – Jr. Davis Construction, Inc.

Construction Status: Installation of underground storm and sanitary sewer systems and pressure utilities (i.e., potable and reclaimed water systems) have been completed and pressure testing is in process. Contractor has completed installation of curb and gutter and lime rock base. Application of prime coat is ongoing, and the first lift of asphalt is scheduled to be placed on May 13, 2019.

There are existing curb ramps and cross walks that were constructed with the initial phase of Nemours Parkway, west of Barish Avenue, that are not currently connected to the sidewalk/trail system (see attached aerial photograph). Direction from the Board concerning these ramps is requested.

Change Order (C.O.) Status: None at this time.

Recommended Motion: None at this time.

Should there be any questions, please advise.

Thank you.

End of memorandum.

c: Larry Kaufmann
Scott Thacker
Troy Davidson
Rene Schneider
Lance Jackson
James C. Nugent
Tarek Fahmy



LAKE NONA SOUTH
Boggy Creek Improvement District
Nemours Parkway West and Lift Station No. 10
Jon M. Hall Company
Change Order Log

C.O. #	Date	Description of Revision	Additional Days	Amount	Status	New Contract Amount Original Contract Date 1/5/18	To Board	Approval Date	Notes
						\$9,231,392.00			
<u>1</u> (RCO 1)	2/20/2018	Change Order per revised plans 12/18/17 - 1/4/18, and add 15 days	15	\$14,124.25	Approved	\$9,245,516.25	2/20/2018	2/20/2018	
<u>2</u> (RCO 2)	2/23/2018	Add Turn Lane Modifications at Tavistock Blvd and at Veterans Way	15	\$132,054.00	Approved	\$9,377,570.25	2/20/2018	2/20/2018	
<u>3</u> (RCO 5)	3/22/2018	Direct Owner Purchase Materials - Mack \$172,274.38, Ferguson \$854,545.14, Rinker \$279,532.54	0	(\$1,306,352.06)	Approved	\$8,071,218.19	4/17/2018	4/17/2018	
<u>4</u> (RCO 3)	2/20/2018	Change order Per Plan Revision dated 2/19/18. (For City requested changes to access road and precast materials.)	10	\$132,157.52	Approved	\$8,203,375.71	6/19/2018	6/19/2018	
<u>5</u> (RCO 7)	5/4/2018	Change Subcontractor for Telecom Conduit (telecom conduit to be funded by developer)	0	(\$103,532.32)	Approved	\$8,099,843.39	6/19/2018	6/19/2018	
<u>6</u> (RCO 4)	4/3/2018	Off-site road modifications per City plan review comments.	15	\$75,421.10	Approved	\$8,175,264.49	6/19/2018	6/19/2018	
7 (RCO 6)	5/4/2018	Utility stub-outs requested by the Town Center engineer.	5	\$27,142.20	Approved	\$8,202,406.69	7/17/2018	7/17/2018	
8 (RCO 8)	6/8/2018 revised on 7/31/18	Addition of median to Nemours West and associated changes.	55	\$263,540.66	Approved	\$8,465,947.35	8/23/2018	8/23/2018	
9 (RCO 11)	8/14/2018	Landscape / Irrigation revised irrigation fittings	0	\$20,126.64	Approved	\$8,486,073.99	8/23/2018	8/23/2018	
10 (RCO 12)	8/15/2018	Forcemain Wet Relocation	3	\$10,187.40	Approved	\$8,496,261.39	8/23/2018	8/23/2018	
11 (RCO 10)	7/17/2018	Landscape / Irrigation revised Landscape plans	20	\$25,717.62	Approved	\$8,521,979.01	10/16/2018	10/16/2018	
12 (RCO 13)	8/24/2018	Add paving per revision #6, Add water per RFI #26, Add sleeving per Owners request.	2	\$6,262.80	Approved	\$8,528,241.81	10/16/2018	10/16/2018	
13 (RCO 16)	10/16/2018	Earthwork - Soil Fracturing	10	\$14,141.28	Approved	\$8,542,383.09	10/16/2018	10/16/2018	
14 (email)	11/9/2018	Add Stop Bar	0	\$1,600.00	Approved	\$8,543,983.09	11/19/2018	11/19/2018	

LAKE NONA SOUTH
Boggy Creek Improvement District
Nemours Parkway West and Lift Station No. 10
Jon M. Hall Company
Change Order Log

C.O. #	Date	Description of Revision	Additional Days	Amount	Status	New Contract Amount Original Contract Date 1/5/18	To Board	Approval Date	Notes
15 (RCO 19)	2/21/2019	Install HC Ramps at lift station drive per RFI #38	2	\$3,570.00	Pending	\$8,547,553.09	3/19/2019	3/19/2019	
16 (RCO 20)	4/11/2019	Option 1: Hardwired electrical service – \$23,301.90 and add 60 days or Option 2: Solar Panel Assembly – \$13,764.90 and add 10 days			Pending		4/16/2019		



PROPOSAL DATE: 4/11/2019

RCO# 20 Rev 1

PROJECT: Lake Nona Nemours Pkwy West & Lift Station 10

OWNER: BCID

C/O:
Donald W. McIntosh Inc
2200 Park Ave North
Winter Park, FL 32789-2355

ATTN: Jeff Newton, P.E.
EMAIL: jnewton@dwma.com
PHONE 407-644-4068

ITEM	CODE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
01		Landscape - Electrical Service at Lift Station - Option 1				

1.01	11.150	Additional Landscape Sod	1	LS	\$ 2,145.00	\$ 2,145.00
1.02	13.200	Electrical Sub (Option 1)	1	LS	\$ 20,700.00	\$ 20,700.00

SUBTOTAL	\$ 22,845.00
Bond Rate Added 2%	\$ 456.90
TOTAL	\$ 23,301.90

01		Landscape - Electrical Service at Lift Station - Option 2				
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1.01	11.150	Additional Landscape Sod	1	LS	\$ 2,145.00	\$ 2,145.00
1.03	13.200	Solar Panel Assembly (Option 2)	1	LS	\$ 11,350.00	\$ 11,350.00

SUBTOTAL	\$ 13,495.00
Bond Rate Added 2%	\$ 269.90
TOTAL	\$ 13,764.90

This Contract Change Order will change the **Duration** of this Project By:

See below
Notes Days

QUALIFICATIONS:

- 1) pricing above established from Punch List Walk items on 03/15/19
- 2) Electrical Sub price includes Permit, GFI WP Receptacle, wiring for irrigation controller, underground feeder to existing OUC 480 volt transformer and panel, meter and switchgear. If option 1 is chosen we need to add 60 days to contract.
- 3) If option 2 is chosen then we need to add 10 Days to contract

Please see below, for the running total of the Change Orders for this Project to date.



PROPOSAL DATE: 4/11/2019

RCO# 20 Rev 1

PROJECT: Lake Nona Nemours Pkwy West & Lift Station 10

OWNER: BCID

C/O:
Donald W. McIntosh Inc
2200 Park Ave North
Winter Park, FL 32789-2355

ATTN: Jeff Newton, P.E.
EMAIL: jnewton@dwma.com
PHONE 407-644-4068

Sincerely,

Proposal Accepted By:

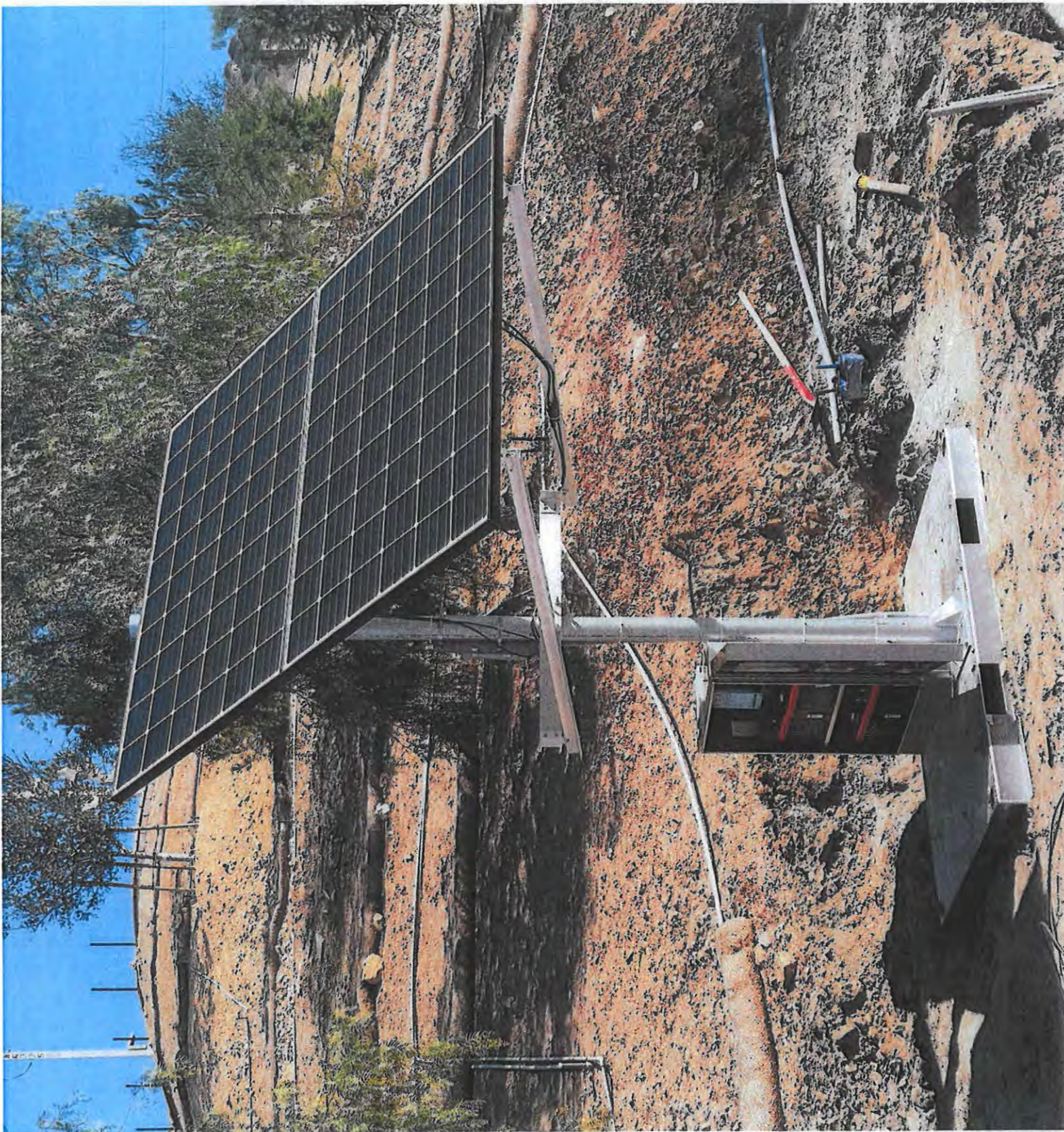
OWNER: BCID

Phillip Hartmann, Project Manager
Jon M. Hall Company
1920 Boothe Circle, Suite 230
Longwood, FL 32750
Phone 407 215-0410
Fax 407 215-0411
www.jonmhallcompany.com
PHartmann@jonmhallcompany.com

Date	Authorized Signature	Printed Name
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I/We as authorized representative of the owner accept this proposal and qualifications therein and direct Jon M Hall Company to proceed with the work. Client shall pay all attorneys fees associated with collection of any unpaid balances.
Client shall pay interest in the amount of 18% per annum on overdue balance. Payment Terms: Net 10 days from the date of the invoice.

Original Contract Sum	\$ 9,231,392.00
Prior Approved Change Order 1	\$ 14,124.25
Prior Approved Change Order 2	\$ 132,054.00
Prior Approved Change Order 3	\$ (1,306,352.06)
Prior Approved Change Order 4	\$ 132,157.52
Prior Approved Change Order 5	\$ (103,532.32)
Prior Approved Change Order 6	\$ 75,421.10
Prior Approved Change Order 7	\$ 27,142.20
Prior Approved Change Order 8	\$ 263,540.66
Prior Approved Change Order 9	\$ 20,126.64
Prior Approved Change Order 10	\$ 10,187.40
Prior Approved Change Order 11	\$ 25,717.62
Prior Approved Change Order 12	\$ 6,262.80
Prior Approved Change Order 13	\$ 14,141.28
Prior Approved Change Order 14	\$ 1,600.00
Prior Approved Change Order 15	\$ 3,570.00
Contract will be changed by this Change Order in the Amount of	\$ 23,301.90
New Contract Sum	\$ 8,570,854.99



GT Solar

Assemblies

Solar Technology

Green Tech Solar Assemblies harness the sun's energy to provide continuous 110VAC power for a variety of irrigation, lighting, communication and pump controls. These environmentally friendly assemblies consist of a solar array and pole mounting bracket, with pre-wired batteries, charge controller and inverter assembled into your choice of stainless steel pad-lockable enclosures. Our solar energy solutions are designed to provide a reliable, permanent, long-term source of power for many applications, located both on and off the grid.



*Solar Powered
Irrigation Controllers*



800-427-0779

www.greentech.siteone.com

Hyundai Solar Module | MG-Series |

• Mono-crystalline Type

HiS-S250MG | HiS-S255MG | HiS-S260MG

Premium

Mechanical Characteristics

Dimensions	983 mm (38.7") (W) × 1645 mm (64.76") (L) × 35 mm (1.38") (H)
Weight	Approx. 19.0 kg (41.9 lbs)
Solar cells	60 cells in series (6 × 10 matrix)
Output cables	4 mm ² (12AWG) cables with polarized weatherproof connectors, IEC certified (UL listed), Length 1.0 m (39.4")
Junction box	IP65, weatherproof, IEC certified (UL listed)
Bypass diodes	3 bypass diodes to prevent power decrease by partial shade
Construction	Front : High transmission low-iron tempered glass, 3.2 mm (0.126") Encapsulant : EVA Back Sheet : Weatherproof film
Frame	Clear anodized aluminum alloy type 6063

High Quality

- IEC 61215 (Ed.2) and IEC 61730 by TÜV Rheinland
- UL listed (UL 1703), Class C Fire Rating
- Output power tolerance +3/-0%
- ISO 9001:2000 and ISO 14001:2004 Certified
- Advanced Mechanical Test (5,400 Pa) Passed (IEC)
- Mechanical Load Test (40 lbs/ft²) Passed (UL)
- Ammonia Corrosion Resistance Test Passed
- IEC 61701 (Salt Mist Corrosion Test) Passed

Limited Warranty

- 10 years for product defect
- 10 years for 90% of warranted min. power
- 25 years for 80% of warranted min. power

Fast and Inexpensive Mounting

- Delivered ready for connection
- Pre-confectioned cables
- IEC (UL) certified and weatherproof connectors
- Integrated bypass diodes

※ Important Notice on Warranty

The warranties apply only to the PV modules with Hyundai Heavy Industries Co., Ltd.'s logo (shown below) and product serial number on it.



• Qualified, IEC 61215
• Safety tested, IEC 61730
• Periodic inspection



Electrical Characteristics

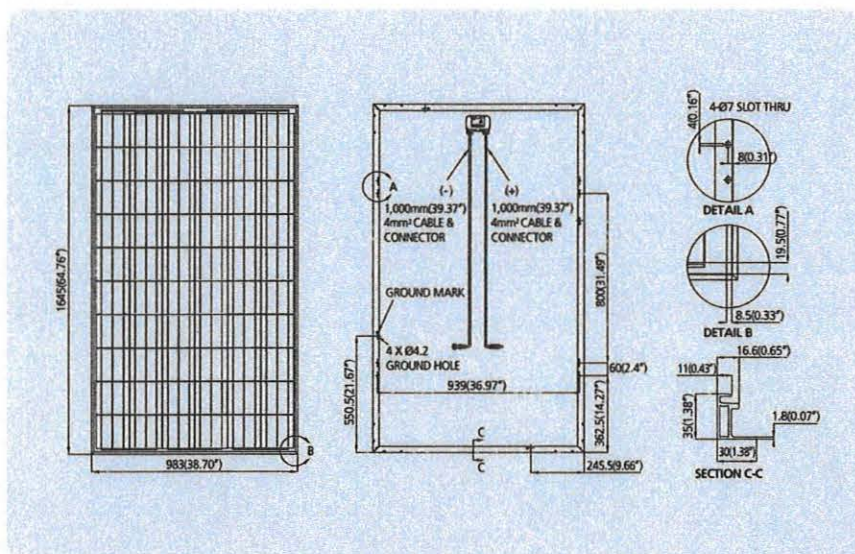
I Mono-crystalline Type I

		HIS-S□□□MG		
		250	255	260
Nominal output (Pmpp)	W	250	255	260
Voltage at Pmax (Vmpp)	V	30.5	30.8	31.0
Current at Pmax (Impp)	A	8.2	8.3	8.4
Open circuit voltage (Voc)	V	37.5	37.7	37.8
Short circuit current (Isc)	A	8.7	8.8	8.9
Output tolerance	%	+3/-0		
No. of cells & connections	pcs	60 in series		
Cell type	-	6" Mono-crystalline silicon		
Module efficiency	%	15.5	15.8	16.1
Temperature coefficient of Pmpp	%/K	-0.45	-0.45	-0.45
Temperature coefficient of Voc	%/K	-0.33	-0.33	-0.33
Temperature coefficient of Isc	%/K	0.032	0.032	0.032

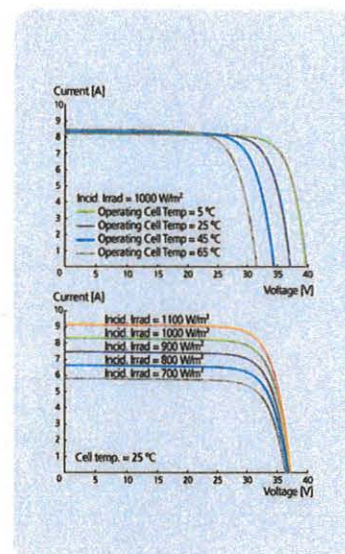
※ All data at STC (Standard Test Conditions). Above data may be changed without prior notice.

I Module Diagram I

(unit : mm, Inch)



I I-V Curves I



I Installation Safety Guide I

Only qualified personnel should install or perform maintenance.
Be aware of dangerous high DC voltage.
Do not damage or scratch the rear surface of the module.
Do not handle or install modules when they are wet.

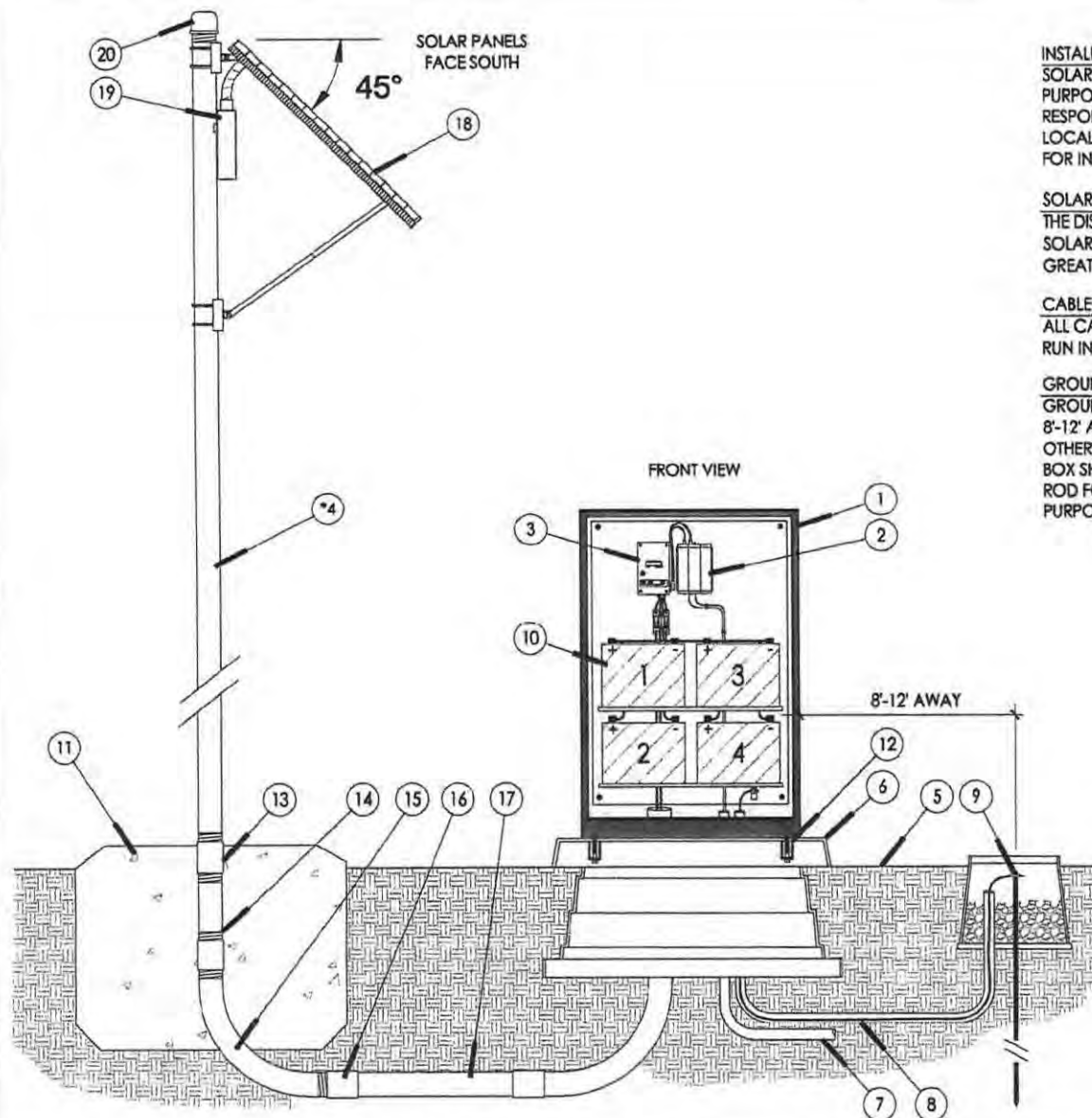
For product or purchasing inquiries contact:

www.ecodirect.com

ecodirect
CLEAN ENERGY SOLUTIONS

Nominal Operating Cell Temperature	46 °C ± 2
Operating Temperature	-40 - 85 °C
Maximum System Voltage	DC 1,000 V (IEC) DC 600 V (UL)
Maximum Reverse Current	15 A

HYUNDAI
HEAVY INDUSTRIES CO.,LTD.



INSTALLATION NOTE:
SOLAR DETAIL IS TO BE USED FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL LOCAL CONSTRUCTION AND SAFETY CODES FOR INSTALLATION OF THE SOLAR PANEL.

SOLAR PANEL LOCATION NOTE:
THE DISTANCE FROM SOLAR PANEL POLE TO SOLAR ASSEMBLY ENCLOSURE SHALL BE NO GREATER THAN 12'.

CABLE AND WIRE NOTE:
ALL CABLES AND ELECTRICAL WIRES MUST BE RUN IN CONDUIT.

GROUNDING NOTE:
GROUND ROD SHALL BE LOCATED BETWEEN 8'-12' AWAY FROM ENCLOSURE UNLESS OTHERWISE SPECIFIED. A 10" ROUND VALVE BOX SHALL BE INSTALLED OVER THE GROUND ROD FOR LOCATION AND MAINTENANCE PURPOSES.

- 1 24" STRONGBOX STAINLESS STEEL NEMA 3R RAINPROOF ENCLOSURE AND SOLAR ASSEMBLY BY JDGT.
- 2 POWER INVERTER.
- 3 CHARGE CONTROLLER.
- 4 *1 TO 2 PANELS, INSTALL 15' x 3" GALVANIZED POLE. *3 TO 4 PANELS, INSTALL 15' x 4" GALVANIZED POLE.
- 5 FINISHED GRADE.
- 6 ENCLOSURE MOUNTING PAD (EMP) STRONGBOX QUICK-PAD. FILL WITH 3/4" CRUSHED ROCK.
- 7 1-1/2" ELECTRICAL CONDUIT AND SWEEP ELL FOR 120 VAC POWER LINE TO CONTROLLER.
- 8 1-1/2" PVC CONDUIT AND SWEEP ELL WITH #6 GROUND WIRE TO EXTERNAL GROUND ROD LOCATION.
- 9 UL LISTED 5/8" x 8' GROUND ROD WITH #6 GROUND WIRE AND CLAMP INSTALLED INSIDE 10" ROUND VALVE BOX.
- 10 BATTERIES FOR POWER STORAGE. NUMBER OF BATTERIES BASED ON POWER REQUIREMENT.
- 11 3' x 3' x 3' CONCRETE FOOTING FOR GALVANIZED POLE WITH SOLAR PANELS.
- 12 STRONG BOX QUICK PAD ANCHOR BOLTS.
- 13 GALVANIZED COUPLING. SIZE PER POLE DIAMETER.
- 14 GALVANIZED PIPE AND FITTINGS AS NECESSARY. SIZE PER POLE DIAMETER.
- 15 GALVANIZED SWEEP ELL. SET IN CONCRETE FOOTING. SIZE PER POLE DIAMETER.
- 16 PVC FEMALE ADAPTER OR REDUCING BUSHING TO CONVERT FROM GALVANIZED TO 3" PVC CONDUIT.
- 17 3" PVC CONDUIT FOR SOLAR POWER CABLES.
- 18 MOUNT SOLAR PANEL ON GALVANIZED POLE WITH BRACKET PROVIDED BY JDGT. POLE NOT INCLUDED.
- 19 COMBINER BOX WITH CIRCUIT BREAKERS ATTACHED TO POLE FOR SOLAR WIRING.
- 20 GALVANIZED END CAP. SIZE PER POLE DIAMETER.

24"W x 36"H, STRONGBOX: SB-24SS OR SB-24DSS
FRONT ENTRY WITH QUICKPAD: EMP-24 OR EMP-24D

3 SOLAR ASSEMBLY - 500 SERIES







KRISTEN M. SWEATLAND, PLA
FL REG. LA6667090



 J. 19304

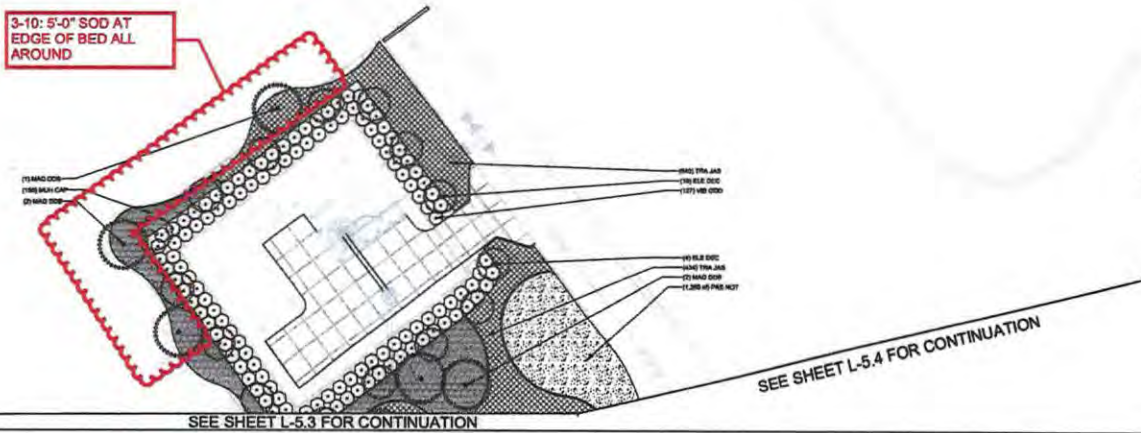
DATE: _____

LAKE NONA TOWN CENTER
LOOP ROAD
CITY OF ORLANDO, FLORIDA
LANDSCAPE PLAN

DESIGNED BY: 08.29.2017 rev. 01 --
 DRAWN BY: RESPONSE TO COMMENTS -- CYCLE 1
 CHECKED BY: 09.14.2017 rev. 02 --
 SCALE: RESPONSE TO COMMENTS -- CYCLE 2
 PROJECT # 8117011 08.12.2018 CHANGE ORDER
 SHEET 4-5.10

PLANT LEGEND		
	CODE	COMMON NAME
ELE DEC		Japanese Elderberry Tree
WAG DBR		Southern Magnolia
QUM RTY		Shower Scent Live Oak
SHrub TREES		
	CODE	COMMON NAME
LAV NET		Wisteria Tree Padlin
SHrub		
	CODE	COMMON NAME
STB RPTG		Red CF Parasole
VIB QOD		Sweet Viburnum
SHrub ARB		
	CODE	COMMON NAME
ELE STD		Sweet Viburnum
MUC CAP		Pink Myrtle
HOX PFB		Shrub Philadelphus
ZAM PDM		Ceanothus
SHrub CLIMBER		
	CODE	COMMON NAME
TRA JAB		Convolvulus Jasmine
SHrub		
	CODE	COMMON NAME
PAC MCT		Boxwood (Non-invasive)
RTS REC		R. Argentea

LIGHT LEGEND:
 OUC SINGLE COBRA STREET LIGHT TO MATCH EXISTING STREET LIGHTS ON NEMOURS PARKWAY, (INSTALL BY OUC)
 OUC DOUBLE COBRA STREET LIGHT TO MATCH EXISTING STREET LIGHTS ON NEMOURS PARKWAY, (INSTALL BY OUC)



NOT FOR CONSTRUCTION

LAKE NONA SOUTH
Boggy Creek Improvement District
Lake Nona Blvd. Traffic Signal Modification at Tavistock Lakes Blvd and Veterans Way Roadway
Change Order Log
Jon M. Hall Company

C.O. #	Date	Description of Revision	Additional Days	Amount	Status	New Contract Amount Original Contract Date	To Board	Approval Date	Notes

**LAKE NONA SOUTH
Greenway Improvement District
Nemours Parkway Phase 7
Change Order Log
Jr. Davis**

C.O. #	Date	Description of Revision	Additional Days	Amount	Status	New Contract Amount Original Contract Date	To Board	Approval Date	Notes
						\$6,312,276.78			
1	2/8/2019	Contract adjustment for revision to include scope of work for addendums/plans issued after bid date.		\$ 161,445.97	Approved	\$ 6,473,722.75	2/19/2019	2/19/2019	