

# **ADDENDUM NO. 1**

Issue Date:	July 20, 2022
Project Name:	IRC-2204: Dick Bird Park Pickleball Courts
Bid Number:	2022067
Bid Opening Date:	Tuesday, August 2, 2022 at 2:00 p.m.

This addendum is being released to provide the pre-bid meeting minutes and sign-in sheet, modify the bid documents, and answer bidder questions received to date.

The information and documents contained in this addendum are hereby incorporated in the invitation to bid. This addendum must be acknowledged where indicated on the bid form, or the bid will be declared non-responsive.

### **Modifications to Bid Documents:**

**Replace** Itemized Bid Schedule (section 00310-3), with the attached <u>Itemized Bid Schedule – Addendum</u> <u>1</u>.

**Replace Plan Sheet C-002, Erosion Control and Demolition Plan** with <u>Plan Sheet C-002, Erosion Control</u> <u>and Demolition Plan – Addendum 1</u>

**Replace** Division 2 – Technical Provisions, Section IRC-3 with **Division 2 – Technical Provisions, Section IRC-3 – Addendum 1** 

**Replace** Division 2 – Technical Provisions, Section IRC-9 with **Division 2 - Technical Provisions, Section IRC-**<u>9 – Addendum 1</u>

## **Questions and Answers:**

- Does the provided estimate of \$522,500.00 include the \$80,000 force account? The estimate for the project as noted in the Pre-bid Meeting Minutes is \$570,850.00, includes a \$80,000.00 force account.
- Plans do not show a specific location for a construction entrance. Where is the preferred location? The construction entrance is the entrance to the Park, which is located on 20<sup>th</sup> Ave. SW, and is approximately .28 miles north of 9<sup>th</sup> St. SW (Oslo Rd.).
- Will final quantities and payment be based on in place quantities?
   Unit price pay items will be paid based on number of units furnished and installed. Lump sum items will be paid based on construction progress up to 100% of the contract amount.

Page 1 of 3

4. Please clarify the location of the 6" x 8" edge curb shown in Figure 3 on C-008? Should this be a separate line item?

The edge curb will be installed around edges of the pickleball courts that are adjacent to grass. The curb is included with the sidewalk pay item (522-2) as it is 6-inches thick, and is installed in a similar manner to sidewalk (i.e. with form boards). No edge curb will be installed around the tennis courts.

- 5. Does the water from the water fountain drain on to the ground or is it being piped to a specific location for draining?
  - The water fountain will drain into the grass retention area adjacent to the fountain.
- 6. Can the water line being removed be isolated with existing valves?There are valves in the vicinity of the water line to allow it to be isolated for modification.
- What type of finish will the County require for the park benches, powder coat or galvanized?
   The bench is called out as Powder Coat Finish, and as shown in the Detail on Sheet C-005 of the plans. Final color will be provided prior to order.
- 8. Should the yard drain and clean outs be included under the 6" PVC drainage pipe? There is some 12" PVC pipe also. Include under this item? Installation of the 6-inch PVC drain pipe will include the pipe, fittings, clean-out, drainage structure (YD-1), and concrete apron. The Pay Item, IRC-9 will be changed from a unit price to a lump sum price in Addendum 1. The 12-inch discharge pipe connected to the outfall structure is HDPE (High Density Polyethylene) and is included in the structure installation as noted in the Technical Provisions Division 2, Section 425.
- Note 11 on plan sheet C-002, says to remove septic tank system and restore. Where is the septic tank located? What size is the tank?
   Note 11 on Plan Sheet C-002, Erosion Control and Demolition Plan, can be disregarded as there is no septic system on-site to be removed. The revised Plan Sheet C-002, Erosion Control and Demolition Plan is included in Addendum 1.
- Demo note says to remove unsuitable materials. Is there a geotechnical report for this site?
   A soils report from a previous project in the north section of the Park is provided in Addendum
   1. The report only provides a representative description of soils to a depth of 8-feet below grade, with no opinion on suitability for construction. It is the responsibility of the Contractor to demonstrate by testing that the soils used will meet the compaction requirements specified in the contract documents.
- 11. Note 3 on plan sheet C-002 says contractor to obtain demolition permits. What fees, if any, are associated with said permits?

Note 3 on Plan Sheet C-002, Erosion Control and Demolition Plan, can be disregarded as there is no demolition permit required. The revised Plan Sheet C-002, Erosion Control and Demolition Plan is included in Addendum 1.

#### Attachments:

Meeting Minutes of Pre-Bid Meeting held on July 14, 2022, including Sign-In sheet Revised Itemized Bid Schedule - Addendum 1 Revised Plan Sheet C-002, Erosion Control and Demolition Plan – Addendum 1 Revised Division 2 – Technical Provisions, Section IRC-3 – Addendum 1 Revised Division 2 – Technical Provisions, Section IRC-9 – Addendum 1 Soils Report -South County Park – Dated, February 13, 1998



# **Board of County Commissioners**

1801 27th Street Vero Beach, Florida 32960-3365 Telephone: (772) 567-8000 Fax: (772) 778-9391

## PRE-BID MEETING MINUTES JULY 14, 2022, 11:00 AM INDIAN RIVER COUNTY ADMINISTRATION BUILDING Room A1-303 Building A DICK BIRD PARK PICKLEBALL COURTS PROJECT NO. IRC-2204

The following meeting notes set forth our understanding of the discussions and decisions made at the subject meeting. If no objections, questions, additions, or comments are received within five (5) working days from issuance of the meeting notes, we will assume that our understandings are correct. The project will move forward according to the bid plans and specifications and the understandings herein.

Project Name:	Dick Bird Park Pickleball Courts
Project Location:	800 20 <sup>th</sup> Ave. SW, Vero Beach, FL 32960
Project Number:	IRC-2204
Bid Number:	2022067

#### **INTRODUCTIONS / SIGN IN SHEET:**

This meeting was recorded as part of the project records.

#### **PROJECT DESCRIPTION:**

The proposed project is located at South County (Dick Bird) Park and generally consists of the construction of 12 new pickleball courts and modification and resurfacing 2 existing tennis courts. The work includes, but is not limited to: site clearing, grading, site drainage, sidewalks, sodding, constructing asphalt pickleball court surface including base, subgrade, and acrylic playing surface, installation of net posts and foundations, net anchors, nets, fencing, gates, modification and resurfacing the existing tennis courts. Additional work includes installation of park benches, a chill water fountain with bottle filling station, including water supply piping and electric service connection, relocation of existing electric service, and installation of underground electric conduits and pull boxes for future court lighting.

#### **CONTRACT DETAILS**

Bid opening:	Tuesday, August 2, 2022 at 2:00 PM
Contract time:	120 days to substantial completion
	150 days to final completion
Estimate:	\$570,850.00 (includes a \$80,000.00 force account)
Liquidated Damages:	\$1,197.00 per day

#### **CONTACTS BIDDING PROCESS**

All communications concerning this bid shall be directed to Indian River County Purchasing Division at <u>purchasing@ircgov.com</u>.

 James Ennis, P.E., (Indian River County Assistant Public Works Director), clarified that a "Cone of Silence" is in effect, and that only the County Purchasing Dept. Staff can respond to bidder questions after today's meeting.

#### PROJECT CONSULTANTS:

Sara Battles (Green), PE, Kimley-Horn and Associates, Inc.

#### UTILITIES

Florida Power and Light, Co. - Electric Indian River County Utilities - Water

#### **PROJECT REQUIREMENTS:**

- Bidder must be registered with and use, at their sole expense, the Department of Homeland Security's E-Verify system (www.e-verify.gov) to confirm the employment eligibility of all newly hired employees, as required by Section 448.095, F.S. Owner, Contractor, and Subcontractors may not enter into a contract unless each party to the contract registers with and uses the E-Verify system. Contractor is responsible for obtaining proof of E-Verify registration for all Subcontractors. This requirement applies to any provider of services or goods.
- Pay applications will be submitted via e-Builder, the County's cloud based shared file platform.
  - James Ennis stated that the County will provide an in-house training session for the successful bidder in the use of the e-Builder software, and that use of the software does not require the Contractor to purchase a license.
- Invoicing shall be submitted on monthly basis and must include Consent of Surety, all applicable release of liens, and all other documents as noted in the Contract Documents.
- Any change orders, revisions, time extensions and weather days need to be submitted and approved by Indian River County. Weather letters will be issued by the County on a monthly basis.
- Summary of required Contractors bid forms can be found on the submittal's checklist (Section 00200, Instructions to Bidders, Article 15 Submittal of Bid).
  - James Ennis stated that bidders should pay close attention to the bid submittal checklist, and that the bid will be considered non-responsive if all the required documents on the checklist are not submitted.
  - Jennifer Hyde (Indian River County Purchasing Division) stated that this is a unit price bid, and that bidders will be disqualified if a unit price is not submitted on the bid form for each bid item.
- Contractor Qualifications: Bidders shall be a qualified General Contractor registered in the State of Florida. Bidders shall have a minimum of five-years of experience in the construction of similar projects of this size or larger. Bidders shall provide a list of three successfully completed projects similar in scope to this project within the State of Florida, along with a

valid contact name and phone number for the Owners of those projects, and the completion date for each project.

- Provide list of Sub-contractors per Bid Documents, Section 00458 List of Subcontractors.
  - Mark Winslow, P.E. (Indian River County Public Works, Engineering) requested that bidders provide the name of the Sports Court Builder to be used on the project in the list of subcontractors if the bidder is not a Sports Court Builder that holds a General Contractors license.

#### **OTHER ISSUES**

- Governing Standards and Specifications for this project will be FDOT Standard Specifications for Road and Bridge Construction dated January 2021, FDOT Standard Plans FY 2020-21, or as specified in the Contract Documents.
- All testing will be performed per FDOT specifications, or as specified in the Contract Documents.
- Pay Item IRC-3B, add net anchors for tennis courts.
  - Mark Winslow stated that Itemized Bid Schedule Pay Item IRC-3B will be revised to include net anchors, and will be included in the Addendum.
- Discussion of Scope and Contract Documents Division 2 Technical Provisions.
  - Mark Winslow discussed several of the bid items in Division 2, Technical Provisions that specify additional construction requirements for the item not shown on the plans, and further stated that bidders should carefully review Division 2 while preparing the bid.
  - James Ennis stated that the bid shall be based off the products that are specified in the bid documents, and that the County may consider use of alternate products of equal value after award of the bid.
- Permits required include IRC Building Permit, Electrical, and Plumbing.
  - Jennifer Hyde stated that Building permit fees should not be included in the bid, and that the County will reimburse the contractor for County Building permit fees.
- IRC work hours are Monday to Friday from 7:00 AM to 5:00 PM.
- Bidders to review contract documents and provide comments to Indian River Purchasing Department (purchasing@ircgov.com) as soon as possible. There will be an Addendum issued that will include the Pre-Bid Meeting Minutes.
  - Jennifer Hyde stated that no further bidder comments or questions will be addressed after **8:00 AM, Monday, July 25<sup>th</sup>, 2022.**

### DISCUSSION

- Beth Powell (Indian River County Parks Director) stated the Contractor will be working adjacent to an environmentally sensitive conservation area, and that the Park will be active and open during construction. There will be a silt fence with an 8-foot fire break separating the conservation area from the work area, and the silt fence must remain up and intact at all times. There are protected Scrub Jays and Gopher Tortoise in this area. Gopher Tortoise

signs will be provided to the Contractor to notify Park Staff if Tortoises are found within the construction site. Access to the Park maintenance building adjacent to the site must be maintained at all times.

- Beth Powell asked to discuss the court lighting installation. Mark Winslow stated that the lighting Contractor will install the light pole footers and poles, and that conduit and pull boxes for the light poles will be installed as part of this project. James Ennis stated the Contractor will need to coordinate with the Lighting Contractor for the footer and pole installation.

#### **QUESTIONS & ANSWERS**

- Q: Will the Itemized Bid Schedule be used for the schedule of values?
- A: The Itemized Bid Schedule will be the schedule of values. Unit price items will be paid per unit of the item furnished and installed, and lump sum items will be paid based on construction progress.
- Q: Is there is a soil boring report available?
- A: A soil boring report for an older park project is available, and will be provided in the Addendum.
- Q: What is the anticipated Notice to Proceed date?
- A: Construction could commence as early as the first week in September.
- Q: Was the project submitted to the Building Dept for permitting.
- A: Yes, and the permits should be ready to be issued prior to start of construction.

#### ATTACHED:

Sign-In Sheet

	SIGN INDIAN RIVER CO Building A DICK BIRD PARK PROJECT	UCTION MEETING -IN SHEET OUNTY PUBLIC WORKS A, Room A1-303 PICKLEBALL COURTS No. IRC-2204 22 at 11:00 AM	
NAME	COMPANY & ADDRESS	PHONE # / FAX # / CELL #	EMAIL ADDRESS
MARK WINSLOW	IRC - PW	(772) 226 - 1431	MWINSLOW @ FRCGOV.Com
Jennifer Hyde	Purchasing	772 226 - 1575	Purchasing circgo v. com
WAYNE MARSHA	CL WELCH TENNIS Cod	561 702 8881 675 813 641 7787	wmarsh@hotmail.co.
DICK HABESHIAN	4510 8th LN.	772-766-2818	MHABSHIAN
GARY Morton	THE Mar starts Glove Port st lucie	239-5608607	gayamasportograp.com
JONATHAN PAPP	NIDY SPORTS	401 205 3778	jpappenidycompany.com
DAMES W. ELLIS	IRC-PN	772 226 -1221	Jenniseiragou.com
Jill Williams	IRC Engineery	772 226-1350	
AJ Fasano	Kimley Horn & Associates, Inc.	772-794-4152	jWilliami Giregov. Co aj. Fasano@kimley-hum.co
Mike O'Neill	Barth Construction	772 633 1080	mike@barth construction.

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	INDIAN RIVE Buil DICK BIRD P PRC	NSTRUCTION MEETING SIGN-IN SHEET ER COUNTY PUBLIC WORKS ding A, Room A1-303 PARK PICKLEBALL COURTS DJECT No. IRC-2204 4, 2022 at 11:00 AM	
NAME	COMPANY & ADDRESS	PHONE # / FAX # / CELL #	EMAIL ADDRESS
Trey Huy	Jobean	321-723-3577	Trey@ Jobos inc.com papicosports@
AMY PAPPAS	Papico Construe 35 20 Sco Avarelle	trato 772-260-008	papicosports@
			Salew com
	*		

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# **ITEMIZED BID SCHEDULE**

## PROJECT NAME: DICK BIRD PARK PICKLE BALL COURTS \*ADDENDUM 1 7/20/22

PROJECT NO. IRC-2204

BID NO. 2022067

## BIDDER'S Name:

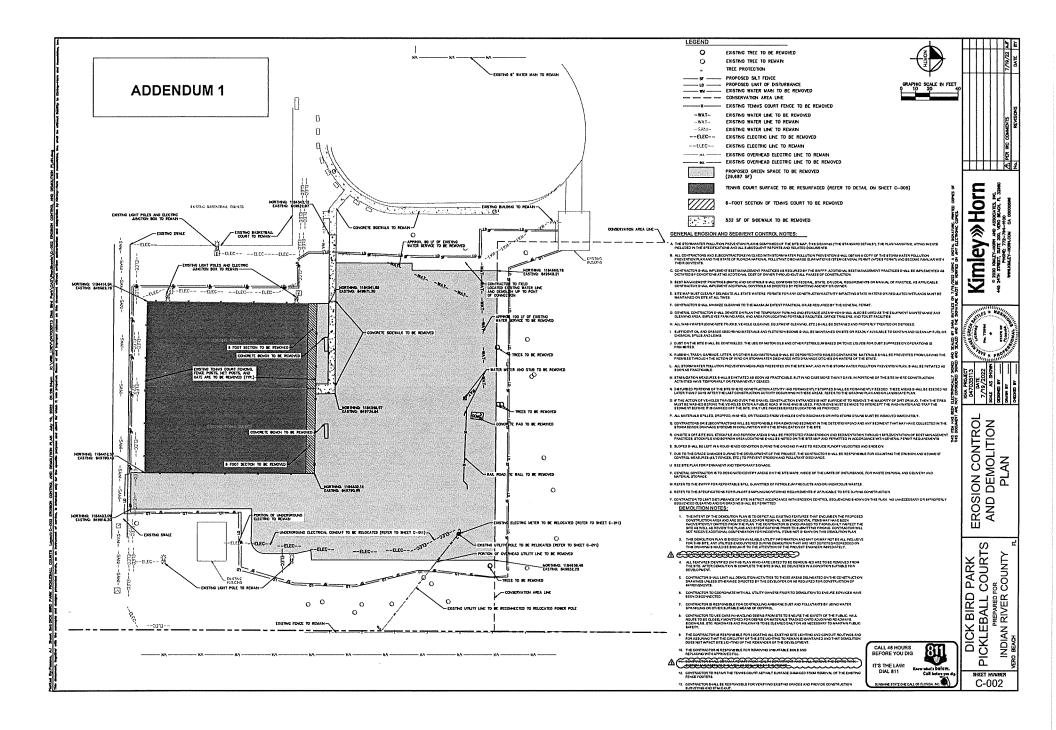
Item No.	Description	Unit	Quantity	Unit Price	Amount
101-1	MOBILIZATION/ DEMOBILIZATION	LS	1.00		
104-2	PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION	LS	1.00		
110-1-1	CLEARING & GRUBBING	AC	0.80		
120-1	REGULAR EXCAVATION	LS	1.00		
400-0-11	CONCRETE CLASS NS, GRAVITY WALL	СҮ	60.00		
425-1521	INLETS, DT BOT, TYPE C, <10'	EA	1.00		
522-2	CONCRETE SIDEWALK AND EDGE CURB (6" THICK) (FIBER REINFORCED)	SY	325.00		
550-10	FENCING, TYPE B, 4.0', W/ VINYL COATING, BLACK	LF	600.00		
550-10A	FENCING, TYPE B, 8.0', W/ VINYL COATING, BLACK	LF	1,020.00		
550-10B	FENCING, TYPE B, 10.0', W/ VINYL COATING, BLACK	LF	700.00		
550-60	FENCE GATE, TYPE B, SINGLE, 8.0', OPENING 4', W/ VINYL COATING, BLACK	EA	13.00		
550-60A	FENCE GATE, TYPE B, SINGLE, 8.0', OPENING 7', W/ VINYL COATING, BLACK	EA	2.00		
550-60B	FENCE GATE, TYPE B, SINGLE, 10.0', OPENING 4', W/ VINYL COATING, BLACK	EA	2.00		
570-1-1	PERFORMANCE TURF (SOD, BAHIA)	SY	2,200.00		
630-2-11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH (2-INCH)	LF	800.00		
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	6.00		
IRC-1	PICKLEBALL COURT ASPHALT PAVEMENT INCLUDES, ASPHALT, BASE, AND SUBGRADE (12 COURTS)	SY	2,800.00		
IRC-2A	PICKLEBALL COURT ACRYLIC PLAYING SURFACE (12 COURTS)	SY	2,800.00		
IRC-2B	TENNIS COURT RESURFACE (INCLUDES MODIFICATION & PREPARATION)	SY	1,520.00		
IRC-3A	PICKLEBALL NET POSTS, NET ANCHORS, AND NETS (F&I)	EA	12.00		
IRC-3B	REPLACE TENNIS COURT NET POSTS, NET ANCHORS, AND NETS (F&I)	EA	2.00		
IRC-4	PARK BENCHES	EA	8.00		
IRC-5	WATER FOUNTAIN	EA	1.00		
IRC-6	1" PVC WATER SERVICE	LS	1.00		
IRC-7	FOUNTAIN ELECTRIC SERVICE	LS	1.00		
IRC-8	TRENCH DRAIN W/FITTINGS	LF	92.00		
IRC-9	6" PVC DRAIN PIPE INCLUDING, FITTINGS, CLEANOUT, END STRUCTURE WITH APRON	LS	1.00		
IRC-10	RELOCATE EXISTING ELECTRIC SERVICE	LS	1.00		
999-1	ASBUILT SURVEYING AND RECORD DRAWING PREPARATION (BY REGISTERED SURVEYOR)	LS	1.00		
				SUB-TOTAL =	
				FORCE ACCOUNT =	\$80,000.00

LS=Lump Sum AC=Acre EA=Each CY=Cubic Yard SY=Square Yard LF=Linear Foot

## NOTE: IF THERE IS A DISCREPANCY BETWEEN THE PLANS (SUMMARY OF PAY ITEMS) AND THE ITEMIZED BID SCHEDULE, THE BID SCHEDULE WILL BE UTILIZED FOR BIDDING PURPOSES.

TOTAL PROJECT BID AMOUNT IN WORDS

00310-3 F:\Public Works\ENGINEERING DIVISION PROJECTS\2204 Dick Bird Park - Pickle Ball Court\1-Admin\Bids\Addendum\Addendum 1\ITEMIZED BID SCHEDULE - IRC-2204 Addendum 1



and USAPA guidelines and as shown on the plans. The area to be marked shall be taped and tape sealant applied to insure a crisp line. The line paint shall have a texture similar to the surrounding play surface. Application shall be made by brush or roller per manufactures specified spread rate.

#### 3.5 PROTECTION

\* ADDENDUM 1

- A. Erect temporary barriers to protect coatings during drying and curing.
- B. Contractor shall provide barriers to entry to prevent use of until acceptance by the Owner.
- 3.6 CLEAN UP
  - A. Remove all containers, surplus materials and debris. Dispose of materials in accordance with the local, state and federal regulations.
  - B. Leave site in a clean and orderly condition.

#### Items of Payment

Payment for the work specified in this item shall be made under:

Bid Item No. IRC-2A – PICKLEBALL COURT ACRYLIC PLAYING SURFACE (12 COURTS) – Per Square Yard Bid Item No. IRC-2B – TENNIS COURT RESURFACE (INCLUDES MODIFICATION & PREPARATION) – Per Square Yard

#### SECTION IRC-3 - NET POSTS, NET ANCHOR, AND NETS FOR PICKLEBALL AND TENNIS COURTS

- 1.0 PICKLEBALL AND TENNIS NET POSTS
  - A. Net posts shall be sold in pairs and be external wind with a removable crank handle.
  - B. Posts shall 2-7/8" round aluminum or galvanized steel, with steel lacing rods and black powder coating.
  - C. The net rope guide pulley shall be bronze or aluminum and shall be imbedded (flush) with the post cap.
  - D. Provide post manufactures PVC Net Post Sleeves.
  - E. Install net posts as shown in detail on the plans.
  - G. Contractor to verify existing tennis court net post size and length prior to ordering.

#### \*2.0 PICKLEBALL AND TENNIS NET ANCHOR

- A. Net anchor shall be 1-5/8 to 2-inch diameter, 10-gauge galvanized steel with stainless steel pin.
- B. Install net anchor as shown in detail on the plans.

#### 3.0 PICKLEBALL NET

- A. Net body shall be 3.0mm braided polyethylene rope in 1-3/4" knotted mesh.
- B. Net dimensions shall be 30"-32" height, 21'-7" to 21-9" length.
- C. Headband shall be white vinyl, folded and tucked, UV treated, with 4 rows of bonded thread interlocking stitching with built-in grommets.
- D. Sideband shall be 2.5" black vinyl with built-in brass grommets, sewn pocket, and fiberglass rods.
- E. Bottom band shall be 2.5" black vinyl with built-in brass grommets.
- F. The net cable shall be 27' (+/- 2") vinyl coated steel.
- G. The net shall include a center strap and double ended Stainless Steel snap.

#### 4.0 TENNIS NET

- A. Net body shall be 3.5mm braided polyethylene rope in 1-1/2"-1-3/4" square mesh and double braiding on top 6 rows.
- B. Net dimensions shall be 3'-6" height, 41'-6" length.
- C. Headband shall be 2.5" double layered, white vinyl, folded and tucked, treated with UV and mildew with bonded thread interlocking stitching with built-in grommets.
- D. Sideband shall be 2.5" black vinyl with built-in brass grommets, sewn pocket, and fiberglass rods.
- E. Bottom band shall be 2.5" black vinyl with built-in brass grommets.
- F. The net cable shall be 46', vinyl coated steel.
- G. The net shall include a center strap and double ended Stainless Steel snap.

#### 5.0 MANUFACTURES

- A. Acceptable net post and anchor manufactures shall be Har-Tru, Putterman, 10-S, or approved equal.
- B. Acceptable net manufactures shall be Har-Tru, Putterman, 10-S, or approved equal.

#### 6.0 SUBMITTALS

A. Submit net post, post sleeve, net anchor, and net manufactures product information.

#### Item of Payment

Payment for the work specified in this item shall be made under:

Bid Item No. IRC-3A – PICKLEBALL NET POSTS, NET ANCHORS, AND NETS (F&I) – Per Each \* Bid Item No. IRC-3B – REPLACE TENNIS COURT NET POSTS, NET ANCHORS, AND NETS (F&I) –

## ADDENDUM 1

Payment for the work specified in this item shall be made under:

Bid Item No. IRC-8 – TRENCH DRAIN SYSTEM W/FITTINGS - Per Linear Feet

#### SECTION IRC-9 - PVC DRAINAGE PIPE WITH END STRUCTURE

- 1. \* Furnish and install 6-inch PVC Drainage Pipe, fittings, cleanout with end structure and concrete apron as shown on the plans.
- 2. \* Provide all fittings and components required for a complete installation.

#### <u>Submittals</u>

- A. PVC pipe and fitting manufactures product information.
- B. Submit shop drawing for end structure.

#### Item of Payment

Payment for the work specified in this item shall be made under:

\* Bid Item No. IRC-9 – 6" PVC DRAINAGE PIPE INCLUDING, FITTINGS, CLEANOUT END STRUCTURE WITH APRON - Per Lump Sum

#### SECTION IRC-10 - RELOCATE EXISITNG ELECTRIC SERVICE

- 1. Relocate existing electric service from FP&L pole to existing building as shown on the plans.
- 2. Provide conduit, fittings, wire, pull boxes and other items for a complete installation.

#### Item of Payment

Payment for the work specified in this item shall be made under:

Bid Item No. IRC-10 – RELOCATE EXISTING ELECTRIC SERVICE - Per Lump Sum

#### SECTION 999 - RECORDS/AS-BUILTS

#### GENERAL

Maintain, prepare and provide the ENGINEER with record documents as specified below, except where otherwise specified or modified within the scope of work provided in the specific project contract documents. The Contractor and/or Developer shall be responsible for, and required to provide, Record Drawings as outlined in this section.

#### MAINTENANCE OF RECORD DOCUMENTS:

KELLER, SCHI.EICHER & MacWILLIAM ENGINEERING AND TESTING, INC. P.O. BOX 78-1377, SEBASTIAN, FL 32978-1377 SEBASTIAN (561) 589-0712

February 13, 1998

Roger Cain, P.E. Indian River County - Public Works 1840 25<sup>th</sup> Street Vero Beach, Florida 32960

Re: South County Park Indian River County, Florida KSM 98279

Dear Mr. Cain:

Enclosed are the permeability test results and soil profiles performed for the referenced project.

The Hydraulic Conductivity Tests were performed in the field by the 'Usual Open-Hole Test' method.

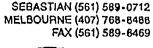
The hori: ontal permeability flow rates were determined by excavating a test pit adjacent to the soil profile and obtaining an undisturbed sample. We then performed a permeability test on the field samples in our laboratory.

These tests were performed to evaluate the drainage characteristics of the soils for these particular test locations.

The groundwater table was found at 44 inches below existing grade at location P-1, and at 48 inches below existing grade at location P-2. We estimate the normal wet season water table at these locations will be at approximately 18 inches below existing grade at location P-1 and 20 inches below existing grade at location P-2.

This estimate is based upon our interpretation of existing site conditions and a review of the USDA Soil Survey for Indian River County, Florida.

If you have any questions, please feel free to call my office. Respect





KELLER, SCHLEICHER & MacWILLIAM ENGINEERING AND TESTING, INC. P.O. BOX 78-1377 SEBASTIAN, FL 32978-1377

SEBASTIAN (561) 589-0712 MELBOURNE (407) 768-8488 FAX (561) 589-6469

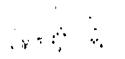
#### USUAL OPEN-HOLE TEST

DATE OF TEST: February 9, 1998 PROJECT NO. KSM 98279-1P CLIENT : Indian River County - Public Works

LOCATION : South County Park Indian River County, Florida P-1, See Attached Location Plan

STARTING VOLUME		10
ENDING VOLUME	=	3 ·
TOTAL VOLUME USED (gals.)	n	7
TOTAL ELAPSED TIME (mins.)	B	10

Average Flow Rate (gpm) = 0.7 Diameter of Test Hole = 4 inches Depth to Water Table = 44 inches Depth of Test = 4 feet K - HYDRAULIC CONDUCTIVITY (CFS/SQ.FT. - FT. HEAD) = 1.82 E-4



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# KSM

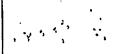
KELLER, SCHLEICHER & MacWILLIAM ENGINEERING AND TESTING, INC. P.O. BOX 78-1377 SEBASTIAN, FL 32978-1377

SEBASTIAN (561) 589-0712 MELBOURNE (407) 768-8488 FAX (561) 589-6469

Date February 9, 1998 :

South County Park Indian River County, Florida Location: B-1, See Attached Location Plan

Depth in Feet	Strata From-To	. Description of Soil
-0-	0" - 12"	Gray Sand, Fine
-1	*****************	
		Light Gray Sand, Fine
-2	18" - 24"	Dark Gray Sand, Fine
-2	24" - 30"	Dark Gray Sand, Fine w/Organics Light Grayish Brown Sand Fine
-3-	30" - 42"	Brown Sand
-4-	42" - 52"	Dark Gray Sand
-5-		Light Brown Sand
-6-		•
	76" - 96"	Gray Clayed Sand
-7-		
,		
-8	*******	
	Water Table : 44" be]	low existing surface
	Job #: KSM 98279-1B	



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LABORATORY PERMEABILITY - CONSTANT HEAD METHOD (ASTM 2434)

DATE OF TEST: February 9, 1998 PROJECT NO. KSM 98279-P2 CLIENT : Indian River County - Public Works

LOCATION : South County Park Indian River County, Florida Ph-2, See Attached Location Plan

SAMPLE DESCRIPTION Gray Sand, Fine EST. DEPTH @ SAMPLE LOCATION = 12 INCHES LENGTH OF SAMPLE ALONG PATH OF FLOW = 6 INCHES DIAMETER OF SAMPLE = 3 INCHES QUANTITY OF FLOW 310 MILLITERS = TIME INTERVAL OF TEST 10 MINUTES 23 DIFFERENCE IN HYDRAULIC HEAD ACROSS THE SAMPLE = 16 INCHES

THE RESULTS OBTAINED FROM OUR HORIZONTAL LABORATORY PERMEABILITY TEST, WHERE K IS THE COEFFICIENT OF PERMEABILITY = 12.1 FEET/DAY

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#### USUAL OPEN-HOLE TEST

DATE OF TEST: February 9, 1998

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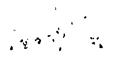
PROJECT NO. KSM 98279-1P

CLIENT : Indian River County - Public Works

LOCATION : South County Fark Indian River County, Florida P-2, See Attached Location Plan

STARTING VOLUME	H	10	
ENDING VOLUME	5	0	
TOTAL VOLUME USED (gals.)	2	10	
TOTAL ELAPSED TIME (mins.)		·11	

Average Flow Rate (gpm) = 0.91 Diameter of Test Hole = 4 inches Depth to Water Table = 48 inches Depth of Test = 4 feet K = HYDRAULIC CONDUCTIVITY (CFS/SQ.FT. - FT. HEAD) = 2.34 E-4



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Date : February 9, 1998

Location: South County Park Indian River County, Florida B-2, See Attached Location Plan

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Depth in Feet	Strata From-To	Description of Soil
-0-	0" - 6"	Dark Gray Sand, Fine
-1-	6" - 19"	Gray Sand, Fine
-2	19" - 24"	Dark Gray Sand, Fine
_	. 24" - 36"	Dark Brown Sand, Fine
-3	36" - 48"	Brown Sand
-4	48" - 54"	Light Brown Sand
-5-	54" - 78"	Brownish Gray Sand
-6-		
	78″ - 96″	Gray Clayed Sand
-7-		
-8		
	Water Table : 48" bel	low existing surface
	Job #: KSM 98279-2B	



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LABORATORY PERMEABILITY - CONSTANT HEAD METHOD (ASTM 2434)

DATE OF TEST: February 9, 1998 PROJECT NO. KSM 98279-2P

CLIENT : Indian River County - Public Works

LOCATION : South County Park Indian River County, Florida Ph-1, See Attached Location Plan

SAMPLE DESCRIPTION A Light Gray Sand, Fine DEPTH @ SAMPLE LOCATION = 14 INCHES LENGTH OF SAMPLE ALONG PATH OF FLOW = 6 INCHES DIAMETER OF SAMPLE = 3 INCHES QUANTITY OF FLOW 221 350 MILLITERS TIME INTERVAL OF TEST 10 MINUTES = DIFFERENCE IN HYDRAULIC HEAD ACROSS THE SAMPLE <u>---</u> 16 INCHES

THE RESULTS OBTAINED FROM OUR HORIZONTAL LABORATORY PERMEABILITY TEST, WHERE K IS THE COEFFICIENT OF PERMEABILITY = 13.6 FEET/DAY

