July 25, 2016

BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA

ADDENDUM NO. 4 / IFB NO. Y16-776-PH
INTERNATIONAL DRIVE POTABLE WATER BOOSTER PUMP STATION

BID OPENING DATE: ~~JULY 26,~~ August 2, 2016

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents. Additions are indicated by **underlining**, deletions are indicated by ~~strikethrough~~.

A. CLARIFICATIONS

1. **Q: Who is performing the field testing? Specification section 01001 1.12, 02250 say the County; however section 01450 say the contractor with the County only doing quality assurance.**

   A: Cost of material testing shall be in accordance with the requirements listed in Section 01001, 1.12, B. All other testing (equipment, leakage, etc.) shall be paid for by the Contractor and included in his bid. See revised Section 01450 attached hereto.

2. **Q: Please clarify what the county is requiring between section 01300 1.13 and 01380 in regards to contract photography and aerials. There are variances in type and quantity that need to be clarified.**

   A: Aerial photographs are to be provided as stated in Section 01300 1.13.

3. **Q: Specifications 02660 calls for 48" of cover on mains greater than 16", but the drawings call for 36" of cover on the 36" pipe. Please clarify the requirement for this project.**

   A**:** Bid project per the current design shown in the Construction Drawings.

4. **Q: The past two Orange County projects they switched from the HID Pro to the HID RPK40, which is more expensive. Please clarify.**

   A: Provide HID RPK40 in lieu of the specified HID Pro.

5. **Q: The HySecurity 30F (Slidedriver 222EX) is the designated operator. Its weight capacity is only 3,000 lbs. They are calling for a 4,000 lbs. capacity. The only operator that meets there specifications for weight & speed is the SlideDriver 50VF2/3. Please advise.**

   A**:** Provide the HySecurity operator model having a design weight capacity of 4,000 lbs.

6. **Q: The SlideDriver 222 EX does not come with UPS. It is an option. Is the owner hard wiring this operator, or do you want the UPS? HySecurity offers an optional AC Power Supply with HyInverter AC which provides UPS battery backup for 208/230VAC, single-phase AC gate operators. Please advise.**

   A**:** UPS is required as shown on Drawing E-05. Bid as originally designed and specified.

7. **Q: If the intent is to hard wire the operator, then the NEMA 4X box for the UPS should be eliminated, correct? Please advise.**

   A: Bid as originally designed and specified.

8. **Q: The water supply coming from the existing 36" pipe flowing into the pump building from the East appears to terminate inside the building with a blind flange. The water supply line from the Future Cypress Lake project coming into the pump building from the west does not appear to have a connection point or a termination point. Could the County clarify the intent of the supply line from the Future Cypress Lake Project as stubbed up and terminated for future use or connecting inside the building to the supply line coming from the east which would negate the need for the blind flange.**

   A: Revised sheet C103 attached in Addendum No. 3 shows the deletion of the 36" blind flange. The water supply line to the Future Cypress Lake Project is to terminate as shown on the Construction Drawings, and is intended to connect to a future pipeline from the Cypress Lake Project.

9. **Q: Both plans sheets C103 and C106 depict a 36" Butterfly Valve to be installed inside the building on the supply line. It's not typical for the County to use Butterfly Valves, so there are no specifications provided for this valve. Does the County have specifications they could provide?**

   A: The County has requested a single 36" Butterfly Valve inside the building on the 36" supply line due to space constraints. Please see the attached Specification Section 15112.

10. Q: In reference to Specification section 09900 – Painting and Coatings and Shop Primer. What is the intent of the Tnemec Series 1 Omnithane? It appears to be a northern spec primer. Tnemec 90-97 is widely used here in Florida. Will it be an approved shop primer to the Tnemec Series 1 Omnithane for use on Ductile Iron Pipe in Systems No 1, 3, 5, and 7.

A: Bid as originally specified.

11. Q: Is the County able to identify the valve manufacturer for the existing 36" gate valve that is to have an electric actuator installed on it?

A: Existing gate valve manufacturer is unknown and is to be determined by Contractor following award.

12. Q: Can you clarify the DIP flange bolt/nut/gasket materials. Are they 316SS, HD Galv, Carbon Steel? There may be a specification.

A: Please reference Specification Section 15062, paragraph 2.01, A.3.d in the Technical Specifications.

13. Q: Drawing C104 shows adding Electric Valve Actuators to 2 - 36" New Tap Valves and 1 - 36" Existing Gate Valve. Detail Drawing D110 shows a 4' x 4' concrete valve vault with the actuator mounted to the valve and inside the vault. Many years of experience has shown me that the vault will at some point flood with water and ruin the expensive actuator. Adding a sump pump helps, but eventually it will fail and then the vault will flood.

I would suggest that you add a floor stand and extension rod and put the electric actuator and floor stand on the top slab of the concrete valve vault. You would need a hole in the top slab for the extension and maybe reduce the 48" x 48" aluminum hatch cover as shown to a much smaller hatch cover.

A: Revise actuators to be installed above grade on top of concrete vaults. Provide torque tubes, extension rods, slab penetration, floor stand, and all other ancillary components necessary to accommodate above grade installation of the actuators. Increase concrete vault dimensions to accommodate extension rod through top slab of concrete vault. Hatch cover to be bid as originally depicted on Drawing D110. Provide six (6) additional bollards to protect the three actuators.

Contractor's bid shall include all costs associated with raising the actuator's above grade as described herein.

14. Q: If we obtain permission to burn grubbed material from the forestry service, will the Owner let us burn onsite?

A: On-site burning of grubbed materials is not allowed. Contractor to dispose of all grubbed materials per local, state and federal regulations.

15. Q: Would the Owner pay for a driveway apron on I-Drive at the entrance to the site?

A: Contractor shall bid project as currently designed.

16. Q: Could an allowance be added for crushed concrete for the access road upgrade and maintenance as directed by the owner?

A: The County will **not** add an allowance bid item associated with crushed concrete for the access road upgrade and maintenance. All costs associated with maintaining and regarding the site access roads during and following construction activities are to be included in the Contractor's bid. Refer to Section 01590, paragraph 1.10 for additional requirements.

17. Q: Will the Owner provide an anchor point to comply with fall protection requirements?

A: All safety-related items due to construction of the new facilities are the responsibility of the Contractor.

18. Q: On drawing C103 there is a valve in the supply line and a valve in the discharge line. These valves are marked as GV-1 and GV-11 (assume that means gate valve). The call out number is 18 for both valves. The table for the call out states that this is a 36" butterfly valve-flange. In section view on C105 item 6 and C106 item 12 these are called out as 36" gate valves-flanged. Are these valves gate valves or butterfly valves?

A: Two 36" flanged gate valves should be provided outside the building – one on the suction piping and one on the discharge piping. The labels have been corrected on the revised Drawing C103 attached to the previous Addendum No. 3. A single 36" butterfly valve should be provided on the suction piping between pumps 2 and 3 and is labeled correctly on Drawing C103.

19. Q: The second general structural note for concrete on drawing S1.0 states:

"All concrete shall be air-entrained with Class A 4000 PSI compressive strength at 28 days unless otherwise noted." **Specification 03300 paragraph 03300, 2.03 A 5 states:** ***"Minimum Compressive Strength at 28-days***

a. Class A, 4,000-psi: Water and wastewater structures inclusive of

tanks, ditches, pumping stations, tremie concrete and other structures in contact with process water.

b. Class B, 3,000-psi: Building structures, curb and gutters, slabs, walks, encasements, thrust blocks, and pipe supports, etc. not in contact with process water."

Since most of the structural concrete is a building structure or pipe supports, and not in contact with process water, Class B could fall under as otherwise noted. However, the structure is a water pumping station. So all bids are based on an equal basis please confirm the desired strength bids should be based on for the cast-in-place concrete for subject project.

A: All concrete shall be Class A, 4,000 psi.

20. Q: Please clarify the weir/concrete flume/fiberglass skimmer detail on C102. It appears that the flume should be 6' wide based on the skimmer dimensions and plan view not 18' as shown in the detail.

A: Concrete weir is to be 18" wide, not 18' wide. See revised Drawing C102.

21. Q: Do the junction boxes on E-05 require a UL certification, if so they can't be built as shown. Please advise as how to proceed.

A: UL Certification is required on all electrical materials. Bid as designed.

22. Q: Do we have access to International Drive Potable Water Supply Facility.

A: **Access to the International Drive Potable Water Supply Facility shall be through the tunnels under State Road 417 as granted in the attached agreement from 1992. Anything that is not allowed to go through the tunnels will access the site from the Hunters Creek access road. See attached agreement.**

B. PROJECT SPECIFICATIONS

1. Add Technical Specification 15112.

2. Delete Technical Specification 01450 and replace in its entirety with the attached technical Specification 01450.

3. Delete Technical Specification 11304 and replace in its entirety with the attached technical Specification 11304.

4. Delete Technical Specification 16150 and replace in its entirety with the attached technical Specification 16150.

C. PROJECT DRAWINGS

DRAWING C102
Amend: Modified Weir Section.

DRAWING E-09
Replace in its entirety.

D. ATTACHMENT: Access Easement with the Orlando Expressway Authority and Orange County.

E. ACKNOWLEDGEMENT OF ADDENDA

The Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of proposal.
All other terms, conditions and specifications remain the same.

Receipt acknowledged by:

_____ _____
Authorized Signature Date Signed

_____
Title

_____
Name of Firm

SECTION 01450

QUALITY CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES

Quality control, quality assurance

1.02 QUALITY CONTROL

A. Inspection and testing of any material or equipment is to comply with paragraph 1.12 of Section 01001 herien, and the additional requirements in this Section.

B. It is the Contractor's responsibility to perform all work to a degree and in a manner that satisfies and complies with the Project requirements. In order to fulfill this responsibility, the Contractor is required to have an approved Quality Control Program, including testing, as part of his Contract work in accordance with the Contract Documents and to submit details of his Program to the County for review and approval prior to commencing any construction operations. The submittal shall include detailed information on locations and number of all tests, etc., that will be necessary for the Contractor to make his own determination that the work is being performed in compliance with the Project requirements.

~~B. As part of the Contractor's Quality Control Program included as part of his work, the Contractor shall employ and pay for an independent, approved soils testing laboratory to perform testing services outlined in these Contract Documents.~~

~~C. The Contractor's Quality Control Program shall include, but not be limited to, the following in addition to the type and frequency of tests as required by the technical specifications:~~

~~1. Piping and structural excavation, bedding and backfill materials and density quality control testing.~~

~~2. Determination of compaction effort needed for compliance with the density requirements.~~

~~3. Portland cement concrete and asphalt paving quality control testing including design mix review, materials, field slump and air content, and field and lab cured strength samples and testing~~

~~D~~**C**. ~~In addition to Quality Control Testing,~~ The Contractor shall be responsible for required testing or approvals for any work (or any part thereof) if laws or regulations of any public body having jurisdiction specifically require testing, inspections or approval. The Contractor shall pay all costs in connection therewith and shall furnish the County the required certificates of inspection, testing or approval. The Contractor shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with County acceptance of a supplier of materials or equipment proposed to be

incorporated into the work.

~~E~~**D**. Any design or testing laboratory utilized by the Contractor shall be an independent laboratory acceptable to the County, approved in writing and complying with the latest edition of the "Recommended Requirements for Independent Laboratory Qualification", published by the American Council of Independent Laboratories.

~~F~~**E**. Testing laboratories, whether provided by the County or the Contractor, shall promptly notify the County and the Contractor of irregularities or deficiencies of work which are observed during performance of services. Laboratories shall submit two (2) copies of all reports directly to the County and two (2) copies to the Contractor.

1.03 QUALITY ASSURANCE

A. The County will employ an independent soils laboratory as part of County's Quality Assurance Program to verify that the work meets the requirements of the Contract Documents. The Contractor shall cooperate with the County and make the work and samples available for County testing at no additional cost. It is the sole responsibility of the Contractor to see that his work meets all provisions of the Contract Documents. If any test fail, Contractor shall be responsible for payment of all additional tests.

B. The Contractor shall cooperate with the soils laboratory personnel and provide access to the work to be tested. The Contractor shall notify the County's testing laboratory sufficiently in advance of operations to allow scheduling of tests. The Contractor shall furnish casual labor and facilities to obtain and handle samples at the site and to store and cure test samples as required.

1.04 TESTING OF MATERIALS

A. Unless otherwise specified, all materials shall be sampled and tested in accordance with the latest published standard methods of ASTM in effect at the time bids are received. If no ASTM Standards apply, applicable standard methods of the Federal Government or of other recognized agencies shall be used.

B. **Test of materials shall be performed by County's independent testing laboratory. County shall pay for materials testing, except for the conditions described in Section 01001, Part 1.12, B, 4.** ~~made by a representative of the Contractor, unless otherwise provided~~. Testing of equipment shall be the responsibility of the Contractor or an authorized manufacturer's representative. All test results shall be furnished to the County in writing. The Contractor shall provide facilities required to collect and forward samples. The Contractor shall furnish the required samples without charge.

C. The Contractor shall not make use of or incorporate in the work, the materials represented by the sample until tests have been made and the material found to be in accordance with the requirements of the Specifications.

D. Materials to be tested and the applicable test procedure shall be as outlined in the individual sections of these Specifications.

1.05 SOURCE AND QUALITY OF MATERIALS AND EQUIPMENT

A. The source of materials to be used shall be in accordance with the Contract Documents and as approved by the County before delivery. The approval of the source of any material shall continue as long as the material conforms to the Specifications.

B. All material not conforming to the requirements of the Specifications shall be considered as defective and shall be removed from the work. If in place, faulty materials shall be removed by the Contractor at his expense and replaced with acceptable material unless permitted otherwise by the OWNER. No defective materials which have been subsequently corrected shall be reused until approval has been given.

C. Upon failure of the Contractor to comply immediately with any order of the County to remove and replace defective material, the County shall have authority to remove and replace defective materials, and to deduct the cost of removal and replacement from any monies due or to become due to the Contractor. Failure to reject any defective materials or work at the time of installation shall in no way prevent later rejection when such defects are discovered, nor obligate the County to final acceptance.

1.06 CONSTRUCTION PROGRESS PHOTOGRAPHS

Contractor shall be responsible for taking construction progress photographs throughout the progress of the work. This may include but not be limited to photos for water line crossings of other utilities, valve installations, service connections fittings, etc. Copies of the photos shall be in digital format and be provided to the County RPR on a weekly basis.

1.07 ADDITIONAL TESTING

In addition to soils laboratory and materials testing, the Contractor shall perform other testing called for in the Contract Documents including but not limited to piping, pressure, leakage, infiltration and exfiltration, as appropriate.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

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SECTION 11304
SUMP PUMP

PART 1 - GENERAL

1.01 DESCRIPTION

The contractor shall provide labor, material, equipment, and incidentals required to provide the centrifugal sump pump as specified herein.

1.02 SUBMITTALS

A. Submit in accordance with Section 01300 Submittals

B. Manufacturer's Literature and Data:
   1. Manufacturer and model.
   2. Operating speed.
   3. Capacity.
   4. Characteristic performance curves.
   5. Efficiency.

C. Certified copies of all the factory and construction site test data sheets and reports.

D. Complete operating and maintenance manuals including wiring diagrams, technical data sheets and information for ordering replaceable parts:

PART 2 - PRODUCTS

2.01 SUMP PUMP

A. Centrifugal submersible pump and motor, designed for 140 degrees F maximum water service. Driver shall be electric motor. Support shall be rigid type. Provide perforated, suction strainer. System includes one pump. Pump shall be capable of continuous duty cycle, 25 gpm flow at 19 feet total head.

B. Pump housings may be cast iron, bronze, aluminum, plastic or stainless steel. Cast iron and aluminum housings for submersible pumps shall be epoxy coated.

C. Impeller: Brass, bronze or cast iron.

D. Shaft: Stainless steel or other approved corrosion-resisting metal.

E. Bearings: As required to hold shaft alignment, anti-friction type for thrust permanently lubricated.

F. Motor: Maximum 104 degrees F ambient temperature rise above the maximum fluid temperature being pumped. Motor shall be completely enclosed, oil-filled 120 V single phase conforming to NEMA 250 Type 6P. Size the motor capacity to operate pump without overloading the motor at any point on the pump curve. Motor shall be a minimum ½ horsepower.

G. The submersible pump shall be supplied with 25 feet of power cable, **120 volts with plug**. The power cord shall be sized for the rated full load amps of the pump in accordance with the National Electric Code. The power cable shall not enter the motor housing directly but will conduct electricity to the motor by means of a water tight compression fitting cord plate assembly, with molded pins to conduct electricity to eliminate the ability of water to enter internally through the cord, by means of a damaged or wicking cord.

~~G~~**H**. Automatic Control:

1. Provide high water level ON and low water level OFF float type switches.

I. Provide a check and ball valve in the pump discharge line.

PART 3 - EXECUTION

3.01 STARTUP AND TESTING

A. Make tests as recommended by product manufacturer and listed standards and under actual or simulated operating conditions and prove full compliance with design and specified requirements.

B. The tests shall include system capacity and all control functions.

C. When any defects are detected, correct defects and repeat test.

D. The County will observe startup and Contractor testing of selected equipment. Coordinate the startup and contractor testing schedules with the County. Provide a minimum of 7 days prior to notice.

END OF SECTION

SECTION 15112
BUTTERFLY VALVES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Furnish and install butterfly valves of the type and size and in the locations as shown on the Drawings and/or specified herein.

B. General Design
   1. Butterfly valves shall be fully operational and disc shall not interfere with adjacent piping/fittings.

1.02 SHOP DRAWINGS AND SUBMITTALS

A. Submittals shall be submitted to the County/Professional for review and acceptance prior to construction in accordance with the General Conditions and specifications Section 01300 "Submittals."
   1. Certified Shop Drawings showing details of construction, dimensions (including laying length), and weight.
   2. Descriptive literature, bulletins, and/or catalogs showing all valve parts and describing material of construction by material and specification, e.g., AISI.
   3. An affidavit of compliance signed by the actuator manufacturer shall be required stating the provisions of ANSI/AWWA C504 have been met.
   4. Valve coatings and linings, if any.
   5. A complete bill of materials for all equipment.
   6. See individual sections for additional requirements.

1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Shipping
   1. All parts shall be properly protected so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed.
   2. Factory assembled parts and components shall be dismantled for shipment unless permission is received in writing from the County/Professional.
   3. Finished surfaces of all exposed openings shall be protected by wooden blanks, strongly built, and securely bolted thereto.
   4. Finished iron or steel surfaces not painted shall be properly protected to prevent rust and corrosion.
   5. After hydrostatic or other tests, all entrapped water shall be drained prior to shipment and proper care shall be taken to protect parts from the entrance of water during shipment, storage, and handling.
   6. Each box or package shall be properly marked to show its net weight in addition to its contents.
   7.

B. Storage
   1. Store valves and accessories in an area on the construction site protected from weather, moisture, or possible damage.
   2. Do not store valves or accessories directly on the ground.

C. Handling
   1. Handle valves and accessories to prevent damage of any nature.
   2. Carefully inspect all materials for:
      a. Defects in workmanship and materials
      b. Removal of debris and foreign material in valve openings and seats
      c. Proper functioning of all operating mechanisms
      d. Tightness of all nuts and bolts

1.04 WARRANTY AND GUARANTEES

A. The manufacturer's warranty period shall be concurrent with the Contractor's for 1-year, unless otherwise specified, commencing at the time of final acceptance by the County.

B. The Contractor shall be responsible for obtaining certificates for equipment warranty for all equipment which lists for more than $500.00 (major equipment). The County reserves the right to request warranties for equipment not classified as "major". The Contractor shall still warrant equipment not considered to be "major" in the Contractor's 1-year warranty period even though certificates of warranty may not be required.

C. In the event that the equipment manufacturer or supplier is unwilling to provide a 1-year warranty commencing at the date of substantial completion, the Contractor shall obtain from the manufacturer a 2-year warranty commencing at the time of equipment delivery to the job site. This 2-year warranty from the manufacturer shall not relieve the Contractor of the 1-year warranty starting at the time of County acceptance of the equipment.

D. The County shall incur no labor or equipment cost during the guarantee period.

E. Guarantee shall cover all necessary labor, equipment, and replacement parts resulting from faulty or inadequate design, improper assembly or erection, defective workmanship and materials, leakage, breakage, or other failure of equipment or components furnished by the manufacturer.

PART 2 - PRODUCTS

2.01 GENERAL

A. Butterfly valves shall be one of the following manufacturer and model: Dezurik BAW, Mueller Lineseal III, or Pratt Groundhog®, or Clow Style #1450.

2.02 MATERIALS

A. Butterfly valves and operators shall conform to AWWA C504, latest version, and these Specifications.

B. Valves shall be Class 150, minimum working pressure of 150-psi (1.034 MPa).

C. The valve body shall be constructed of close grain cast iron per ASTM A126, Class B or equivalent material. All ferrous surfaces inside and outside shall have a fusion-bonded epoxy coating in accordance with AWWA C550. All retaining segments and adjusting services shall be of corrosion resistant material.

D. Valves shall have the manufacture's name and valve rating cast in the body.

E. Valve seats shall be ethylene propylene diene monomer (EPDM) and shall be field adjustable and replaceable without dismounting operator disc or shaft and without removing the valve from the line. All retaining segments and adjusting devices shall be of corrosion resistant material. Valve seats shall be designed to be leak-tight in both directions at differential pressures up to the rated pressure of the valve class.

F. Valve disc shall be designed to withstand full differential pressures across the closed valve disc without exceeding a stress level equivalent to 1/5th of the tensile strength of the material.

G. Valve shaft shall be turned, ground, and polished and shall be constructed of 18-8 stainless steel designed for both torsional and shearing stresses when the valve is operated under its greatest dynamic seating torque. Shaft shall be of either a one-piece unit extending full size through the valve disc and valve bearing or it may be of a stub shaft design.

H. Valve actuators shall be designed for input torques based on a 150-psi valve pressure and a 16-feet/second velocity with a maximum input of 80–feet/pound on 2-inch nuts and shall withstand 250-foot-pounds. Valve actuators shall conform to the requirements of AWWA C504.

I. All valve and actuators shall be installed, adjusted, and tested as an assembly by the valve manufacturer at the manufacturing plant. An affidavit of compliance signed by the actuator manufacturer shall be required stating the provisions of ANSI/AWWA C504 have been met. The rated torque capability of each actuator shall be sufficient to seat, unseat, and rigidly hold, in any intermediate position, the valve disc it controls.

J. All valves shall open left or counter-clockwise and a ground level position indicator and extension stem/shaft for the 2-inch nut shall be provided for buried valves.

K. All wetted materials shall be NSF 61 approved or shall meet NSF 61 requirements.

PART 3 - EXECUTION

3.01 PREPARATION

A. All valves shall be inspected upon delivery in the field to insure proper working order before installation. Valves shall be set and jointed to the pipe in the manner as set forth in the AWWA Standards for the type of connection ends furnished. All buried valves shall be connected using restrained joints. All valves and appurtenances shall be installed true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the County before installation.

3.02 INSTALLATION

A. Install valves and accessories in strict accordance with manufacturer's instruction and recommendations as shown on the Drawings and as directed by the County.

B. Carefully erect all valves and support them in their respective positions free from distortion and strain.

C. Bolt holes of flanged valves shall straddle the horizontal and vertical centerlines of the pipe run to which the valves are attached. Clean flanges by wire brushing before installing flanged valves. Clean flange bolts and nuts by wire brushing, lubricate threads with oil and graphite, and tighten nuts uniformly and progressively. Joints shall be watertight.

D. Support all valves connected to pumps and equipment and in piping systems that cannot support valves.

E. Repair any scratches, marks and other types of surface damage with original coating as supplied by the factory.

F. Valves shall be carefully inspected, opened wide, and then tightly closed and the nuts and bolts shall be tested for tightness. Special care shall be taken to prevent any foreign matter from becoming lodged in the valve seat. Any valve that does not operate correctly shall be removed and replaced.

3.03 INSPECTION AND TESTING

A. Check and adjust all valves and accessories for smooth operation.

B. Test valves for leakage at the same time that connecting pipelines are tested. See Section 02660 "Potable Water Distribution Piping" for pressure testing requirements. Protect or isolate any parts of valves, operators, or control and instrument systems whose pressure rating is less than the pressure tests.

END OF SECTION

SECTION 16150

MOTORS

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. Furnish and install the motors as hereinafter specified and as called for in other sections of these Specifications.

1.02 QUALIFICATIONS

A. Motor shall be sufficient size for the duty to be performed and shall not exceed their full-rated load when the driven equipment is operating at specified capacity. Unless otherwise noted, motors driving pumps shall not be overloaded at any head or discharge condition of the pump.

1.03 SUBMITTALS

A. The motor manufacturer shall submit to the Engineer certified dimension prints showing nameplate data and outline dimensions within three weeks of the date they receive the order.

B. Guarantee: All equipment furnished and installed under this Section shall be guaranteed against defects of workmanship, materials and improper installation for a period of one year from date of acceptance. All such equipment or parts proven defective, due to the above noted causes, shall be replaced in the machines by the Contractor at no expense to the County.

C. Provide equipment warranty in accordance with the County's requirements for Warranties and Bonds.

PART 2 – PRODUCTS

2.01 RATING

A. Unless otherwise noted, all motors shall be of the low voltage type. All motors 1/2 through 100 horsepower shall be rated 230/460 volt, 3 phase, 60 Hertz A.C.; motors 125 horsepower through 500 horsepower shall be rated 460 volt, 3-phase, 60 Hertz, and motors below 1/2 horsepower shall be rated 115/230 volt, 1 phase, 60 Hertz A.C.

2.02 THREE PHASE INDUCTION MOTORS

A. Motors 20 HP and larger shall have a 120-volt space heater for moisture control.

B. Unless specifically noted in other sections of these Specifications, all motors shall have a minimum as indicated in the table below. All motors shall be "premium efficiency" type.

TABLE 1

Motor HP	Min. Eff.	Max. dba	Motor HP	Min. Eff.	Max. dba
1-2	84.0%	74	25-30	92.0%	92
3-5	86.5%	79	40-50	93.0%	97
7.5-10	90.2%	84	60-75	94.0%	100
15-20	91.0%	89	100	94.1%	102

C. Motors operating with variable frequency drives shall state that they are suitable for their intended applications. Motor nameplate shall read "Inverter Duty Rated".

D. Motors larger than 100 Hp and operating with a VFD shall have imbedded a winding temperature switch.

E. Motors 300 Hp and larger shall have vibration protection.

2.03 CONSTRUCTION

A. General:

1. All dripproof and weather protected Type I motors shall have epoxy encapsulated windings. Totally enclosed motors shall not be encapsulated. Motors not readily available with encapsulated windings may be standard type. Motors exposed to the outside atmosphere shall be totally enclosed fan cooled (TEFC) unless otherwise specified.

2. Squirrel-cage rotors shall be made from high-grade steel laminations adequately fastened together and to the shaft, or shall be cast aluminum or bar-type construction with brazed end rings.

B. Low Voltage, Three Phase Motors:

1. Motors shall be of the squirrel-cage or wound rotor induction type as noted. Horizontal, vertical solid shaft, vertical hollow shaft, normal thrust and high thrust types shall be furnished as specified herein. All motors shall be built in accordance with current NEMA, IEEE, ANSI and AFBMA standards where applicable. Motors shall be of the type and quality described by these Specifications, fully capable of performing in

accordance with manufacturer's nameplate rating, and free from defective material and workmanship.

2. Motors shall have normal or high starting torque (as required), low starting current (not to exceed 600 percent full load current), and low slip.

3. Motors shall be totally enclosed fan-cooled construction with 1.15 service factor unless otherwise noted. Indoor motors shall be WPI unless otherwise noted.

4. Motors shall be suitable for operation in moist air with hydrogen sulfide gas present.

5. The output shaft shall be suitable for direct connection or belt drive as required.

6. Motors shall have a Class B nonhygroscopic insulation system. Class F insulation may be used but shall be limited to Class B temperature rise.

7. All motors shall have a final coating of chemical resistant corrosion and fungus protective epoxy fortified enamel finish sprayed over red primer over all interior and exterior surfaces. Stator bore and rotor of all motors shall be epoxy coated.

8. All fittings, bolts, nuts, and screws shall be 316 stainless steel. Bolts and nuts shall have hex heads.

9. All machine surfaces shall be coated with rust inhibiter for easy disassembly.

10. Conduit boxes shall be gasketed. Lead wires between motor frame and conduit box shall be gasketed.

11. Totally enclosed motors shall be provided with condensate drain hole and epoxy coated motor windings to protect against moisture.

12. Nameplates shall be stainless steel. Lifting lugs or "O" type bolts shall be supplied on all frames 254T and larger. Enclosures will have stainless steel screen and motors shall be protected for corrosion, fungus and insects.

13. Low voltage, three phase motors shall be manufactured by General Electric, U.S. Motors, Westinghouse or approved equal.

14. Fractional Horsepower:

    a. Fractional horsepower motors shall be rigid, welded-steel,

designed to maintain accurate alignment of motor components and provide adequate protection. End shields shall be reinforced, lightweight die-cast aluminum. Windings shall be of varnish-insulated wire with slot insulation of polyester film, baked-on bonding treatment to make the stator winding strongly resistant to heat, aging, moisture, electrical stresses and other hazards.

b. Motor shaft shall be made from high-grade, cold-rolled shaft steel with drive-shaft extensions carefully machined to standard NEMA dimensions for the particular drive connection.

c. For light to moderate loading, bearings shall be quiet all-angle sleeve type with large oil reservoir that prevents leakage and permits motor operation in any position.

d. For heavy loading, bearings shall be carefully selected precision ball bearings with extra quality, long-life grease, and large reservoir providing 10 years' normal operation without relubrication.

15. Integral Horsepower:

a. Motor frames and end shields shall be cast iron or heavy fabricated steel of such design and proportions as to hold all motor components rigidly in proper position and provide adequate protection for the type of enclosure employed.

b. Windings shall be adequately insulated and securely braced to resist failure due to electrical stresses and vibrations.

c. The shaft shall be made of high-grade machine steel or steel forging of size and design adequate to withstand the load stresses normally encountered in motors of the particular rating. Bearing journals shall be ground and polished.

d. Rotors shall be made from high-grade steel laminations adequately fastened together, and to the shaft. Rotor squirrel-cage windings may be cast-aluminum or bar-type construction with brazed end rings.

e. Motors shall be equipped with vacuum-degassed antifriction bearings made to AFBMA Standards, and be of ample capacity for the motor rating. The bearing housing shall be large enough to hold sufficient lubricant to minimize the need for frequent lubrication, but facilities shall be provided for adding new lubricant and draining out old lubricant without motor

disassembly. The bearing housing shall have long, tight, running fits or rotating seals to protect against the entrance of foreign matter into the bearings, or leakage of lubricant out of the bearing cavity.

f. Bearings of high thrust motors will be locked for momentary upthrust of 30% downthrust. All bearings shall have a minimum B10 life rating of 100,000 hours in accordance with AFBMA life and thrust values.

g. Vertical hollow-shaft motors will have nonreverse ratchets to prevent backspin.

C. Low Voltage, Single Phase Motors:

1. Single phase motors shall be split-phase and capacitor-start induction types rated for continuous horsepower at the rpm called for on the Drawings. Motors shall be rated 115/230 volts, 60 Hertz, single phase, open dripproof, or totally enclosed fan cooled as called for on the Drawings, with temperature rise in accordance with NEMA Standards for Class B insulation.

2. Totally enclosed fan cooled motors shall be designed for severe-duty.

3. Motors shall have corrosion and fungus protective finish on internal and external surfaces. All fittings shall have a corrosion protective plating.

4. Mechanical characteristics shall be the same as specified for polyphase fractional horsepower motors.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Motor Connections: All motors shall be connected to the conduit system by means of a short section 18-inch minimum of flexible conduit unless otherwise indicated. For all motor connections, the Contractor shall install a grounding conductor in the conduit and terminate at the motor control center with an approved grounding clamp.

3.02 TESTS AND CHECKS

A. The following tests shall be performed on all motors after installation but before putting motors into service.

1. The Contractor shall megger each motor winding before energizing the motor, and, if insulation resistance is found to be low, shall notify the

Engineer and shall not energize the motor. The following table gives minimum acceptable insulation resistance in megohms at various temperatures and for various voltages with readings being taken after one minute of megger test run.

TABLE 2

Degree Winding Temperature		**Voltage**			
^{o}F	**^{o}C**	**115V**	**230V**	**460V**	**4,160V**
37	3.9	60	108	210	1,700
50	10	32	60	120	1,000
68	20	13	26	50	460
86	30	5.6	11	21	195
104	45	2.4	4.5	8.8	84
122	50	1	2	3.7	35
140	60	.5	.85	1.6	15

2. The Contractor shall check all motors for correct clearances and alignment and for correct lubrication, and shall lubricate if required in accordance with manufacturer's instructions. The Contractor shall check direction of rotation of all motors and reverse connections if necessary.

B. The following tests shall apply to the ~~medium voltage~~ motors:

1. See Paragraph 2.03 B.2 for test requirements.

2. All motors shall be given the standard short commercial test prior to shipment. This shall consist of no load current, check current balance, winding resistance, air gap measurement, high potential tests, and bearing inspection. Six (6) copies of the certified short commercial test shall be mailed to the Engineer prior to shipment.

END OF SECTION

Curve Table			
Curve #	Length	Radius	Delta
C1	48.608	31.000	89.8389
C2	48.701	31.000	90.0111
C3	27.793	28.000	56.8731

Parcel Line Table		
Line #	Length	Direction
L2	112.62	S89° 58' 58.47"E
L1	169.06	N89° 58' 58.47"W
L3	18.66	S0° 00' 00.00"E
L4	101.27	S89° 57' 38.74"E
L5	50.95	S33° 05' 15.67"E
L7	50.95	S33° 05' 15.67"E
L6	36.55	N90° 00' 00.00"E

N

0 20 40

(IN FEET)
1 inch = 20 ft.

GRAPHIC SCALE IN FEET

SITE BENCHMARK #1
TOP OF PK NAIL & DISK
WITH "BM" LB #7143 SET IN
CONCRETE RETAINING WALL
ELEV = 89.88

STATE PLANE INFORMATION
N:1462424.1222
E:501709.9407

DUKE ENERGY TO RELOCATE EXISTING UTILITY POLE APPROXIMATELY 15 L.F. TO THE SOUTH, INCLUDING GUY WIRE TO ACCOMMODATE NEW DRIVEWAY. DUKE ENERGY TO RECONNECT EXISTING CENTER TAP

DEF TO FURNISH AND INSTALL RISER ON EXISTING UTILITY POLE

DEF FURNISHED AND INSTALLED PRIMARY CABLING. CONTRACTOR TO FURNISH AND INSTALL CONDUIT w/ PULLSTRING. SEE SINGLE LINE DIAGRAM FOR REQUIREMENTS

6" x 18" CONCRETE CURB WITH 3" REVEAL ALL AROUND

4" #57 STONE W/ GEO FABRIC WEED CONTROL UNDER STONE

TURNED DOWN RIBBON CURB

N = 1462402.33
E = 50192815

CONTRACTOR TO MAINTAIN EXISTING OOCEA GRAVEL ACCESS ROAD. (SEE SECTIONS, 01590 FOR INSTRUCTIONS)

GATE SYSTEM EQUIPMENT RACK

CARD READER

16' WIDE ROLLING GATE OPENING

PROPOSED TRANSFORMER PAD SEE DRAWING E-02

PROPOSED CONCRETE BOLLARDS (TYP. OF 4)

N = 1462337.96
E = 501928.15

N = 1462337.96
E = 501943.39

4 DEF PAD MOUNTED TRANSFORMER

3 DEF METER/METER CAN

CONCRETE PULLBOX

5' WIDE BERM

SODDING LIMITS
10' OUTSIDE FENCE

N = 1462258.98
E = 501994.85

PROPOSED EDGE OF DIRT ROAD

LIMIT OF SODDING

PROPOSED CONCRETE WEIR EL. 89.30

SPREADER SWALE

4' (TYP.)

FIBERGLASS SKIMMER

PROPOSED CONCRETE FLUME

PROVIDED 10' x 10' RIPRAP-SAND, CEMENT FOR EROSION PROTECTION

6" x 12" CONCRETE CURB WITH 3" REVEAL ALL AROUND

4" #57 STONE W/ GEO FABRIC WEED CONTROL UNDER STONE

BORING #AB-1

CONCRETE PIPE SUPPORT (TYP.)

PROPOSED BUILDING FINISHED FLOOR = 93.00

6" x 12" CONCRETE CURB WITH 3" REVEAL ALL AROUND

2" PVC SUMP PUMP DISCHARGE PIPE

HOLDING TANK

BORING #TB-1
ELEV = 86.20

M.E.S.

N = 1462282.73
E = 502170.02

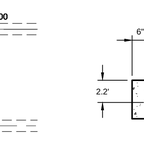
PROPOSED 8' CHAIN LINK FENCE WITH BARBED WIRE

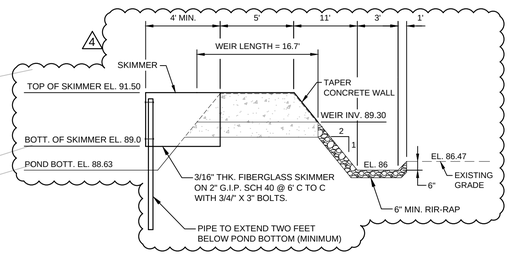
N = 482258.89
E = 502132.87

LIMIT OF SODDING

TREE #1065

TREE #1064



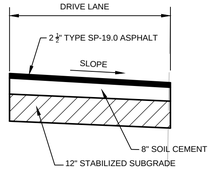


POND SECTION

WEIR SECTION

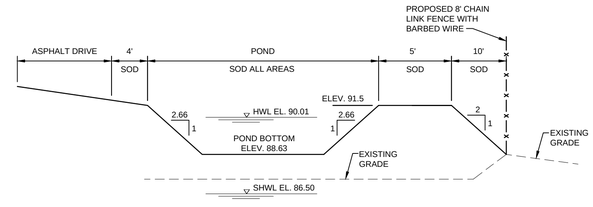
N.T.S.

A C102:C102



TYPICAL PAVEMENT SECTION

N.T.S.



TYPICAL POND SECTION

N.T.S.

B C102:C102

SITE BENCHMARK #2
YELLOW BENCH TIE IN
WEST SIDE OF WOOD
POWER POLE #0378666
ELEV = 90.13

BID SET

REV	DATE	DESCRIPTION
4	7/8/2016	ADDENDUM 4

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

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Lndscp. Lic. No. LC0000298

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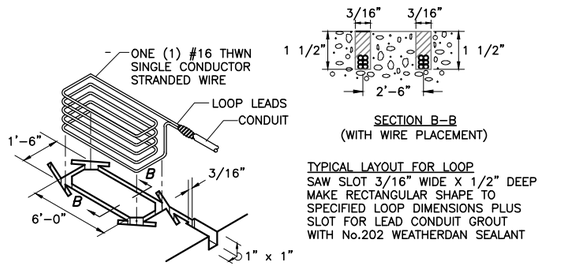
GRADING PLAN
INTERNATIONAL DRIVE POTABLE WATER BOOSTER PUMP STATION

ALLEN C. LANE
PROFESSIONAL ENGINEER
FLORIDA LICENSE #60144

OCU FILE NO.: 74251
DESIGNED BY: NAU
DRAWN BY: GCM
CHECKED BY: ACL
CADD FILE: Grading Plan.dwg

SCALE: 1" = 20'
DRAWING NO. : C102
SHEET: 8 OF 49



SECTION B–B
(WITH WIRE PLACEMENT)

TYPICAL LAYOUT FOR LOOP
SAW SLOT 3/16" WIDE X 1/2" DEEP MAKE RECTANGULAR SHAPE TO SPECIFIED LOOP DIMENSIONS PLUS SLOT FOR LEAD CONDUIT GROUT WITH No.202 WEATHERDAN SEALANT

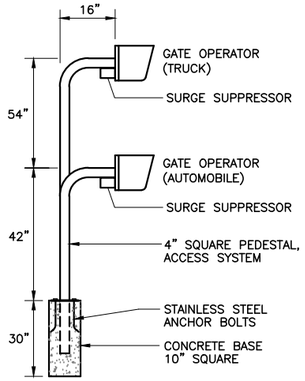
NOTES:
LOOP LEADS ARE LIMITED TO 100 FT.
LOOP TO HAVE 6 TURNS AS SHOWN.

CAUTION – CONTROL AND POWER RUNS TO BE 18" FROM DETECTOR LOOPS. LOOP LEADS TO HAVE (4) TWISTS PER FOOT.

LOOP LEADS MUST BE IN CONDUIT BETWEEN LOOP AND AMPLIFIER, THEY MUST NOT SHARE CONDUIT WITH OTHER WIRING OR LEADS FROM OTHER LOOPS.

6 E–09 DETECTOR LOOP DETAIL

N.T.S.



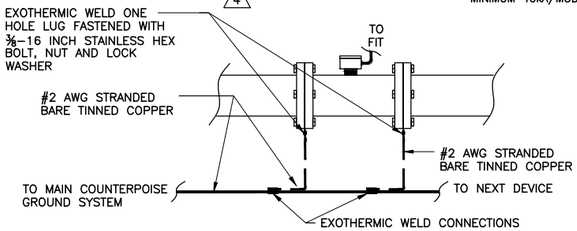
7 E–09 GATE OPERATOR PEDESTAL MOUNT DETAIL

N.T.S.

PANEL: L1 | **BUS:** 225 AMP RATED | **VOLT:** 120/208V–3φ–4W
LOCATION: ELECTRICAL ROOM | **MAINS:** 150A,3P | **REMARKS:** PROVIDE SPD (MIN. 40KA/MODE)
MOUNTING: SURFACE | **POLES:** 42 | **A.I.C. SYMM:** 10,000

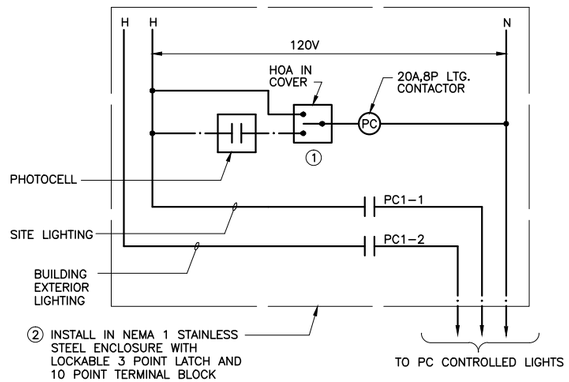
AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA A	BUS KVA B	BUS KVA C	BUS A B C	BUS KVA A	BUS KVA B	BUS KVA C	LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS
20	1	12	12	1"	MOTORIZED DOOR	0.20			1 – 2	0.72			PUMP ROOM RECEPT.	12	12	1"	1	20
20	1	10	10	1"	FIT		0.18		3 – 4		0.36		EXTERIOR RECEPTS.	12	12	1"	1	20
20	2	8	8	1"	GATE OPERATOR			0.88	5 – 6			0.36	PUMP ROOM RECEPT.	12	12	1"	1	20
–	–	–	–	–	–	0.88			7 – 8	0.72			STORAGE ROOM RECEPT.	12	12	1"	1	20
20	1	12	12	1"	ELEC. ROOM RECEPTS.		0.54		9 – 10		0.72		EXTERIOR RECEPT.	12	12	1"	1	20
20	1	12	12	1"	ELEC. ROOM RECEPTS.			0.54	11 – 12			0.72	STORAGE CLOSET/RESTROOM RECEPTS.	12	12	1"	1	20
20	1	12	12	1"	SHUNT TRIP	0.10			13 – 14	0.36			TELE. BACKBOARD RECEPT.	12	12	1"	1	20
20	1	10	10	1"	AIT		0.18		15 – 16		0.18		SUMP PUMP RECEPT.	10	10	1"	1	20
20	1	10	10	1"	PC1–1 SITE LIGHTING			1.35	17 – 18			0.77	PC–2 EXT. WALL MTD. LTG.	10	10	1"	1	20
20	1	–	–	–	SPARE	–			19 – 20	0.50			PUMP ROOM LIGHTING	12	12	1"	1	20
20	1	12	12	1"	STORAGE ROOM LIGHTING		0.25		21 – 22		0.50		PUMP ROOM LIGHTING	12	12	1"	1	20
20	1	12	12	1"	RESTROOM FAN/LTG.			0.18	23 – 24			0.10	STORAGE CLOSET LTG.	12	12	1"	1	20
20	1	–	–	–	SPARE	–			25 – 26	–			SPARE	–	–	–	1	20
20	1	10	10	1"	TANK MONITORING PANEL		0.36		27 – 28		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	29 – 30			0.10	CARD READER CONTROLLER	10	10	1"	1	20
20	1	–	–	–	SPARE	–			31 – 32	0.20			MCRC	10	10	1"	1	20
20	1	–	–	–	SPARE		–		33 – 34		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	35 – 36			–	SPACE	–	–	–	–	–
–	–	–	–	–	SPACE	–			37 – 38	0.10			SPD	–	–	–	3	30
–	–	–	–	–	SPACE		–		39 – 40		0.10		–	–	–	–	–	–
–	–	–	–	–	SPACE			–	41 – 42			0.10	–	–	–	–	–	–
TOTAL (PHASE):						1.18	1.51	2.95		2.60	1.86	2.15	**NOTES:**					
TOTAL KVA:									12.25				① LIGHTING PANEL ENCLOSURE SHALL BE STAINLESS STEEL.					
TOTAL AMPS:									34.00									
TOTAL DEMAND AMPS:									34.00									

4 MINIMUM 40kA/MODE → SPD



10 E–09 FLOW METER PIPE GROUNDING DETAIL

NOT TO SCALE



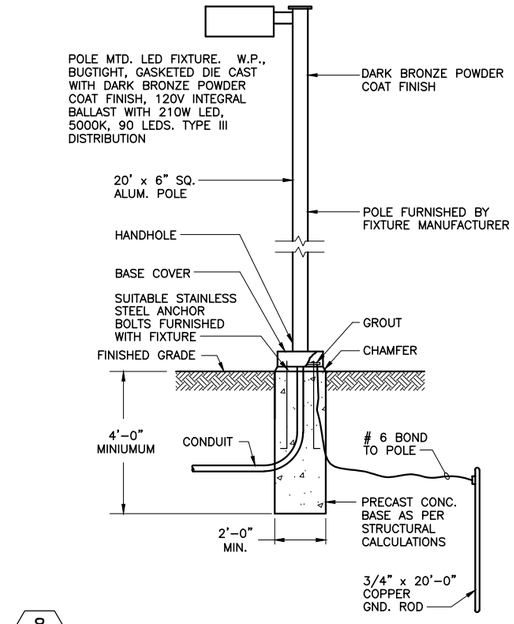
NOTES:

① HOA SWITCH SHALL BE INSTALLED THROUGH OUTER DOOR OF CONTACTOR PANEL.

② LIGHTING CONTACTOR PANEL TO BE BUILT TO U.L. 508 STANDARDS.

11 E–09 LIGHTING CONTACTOR PANEL PC1

N.T.S.

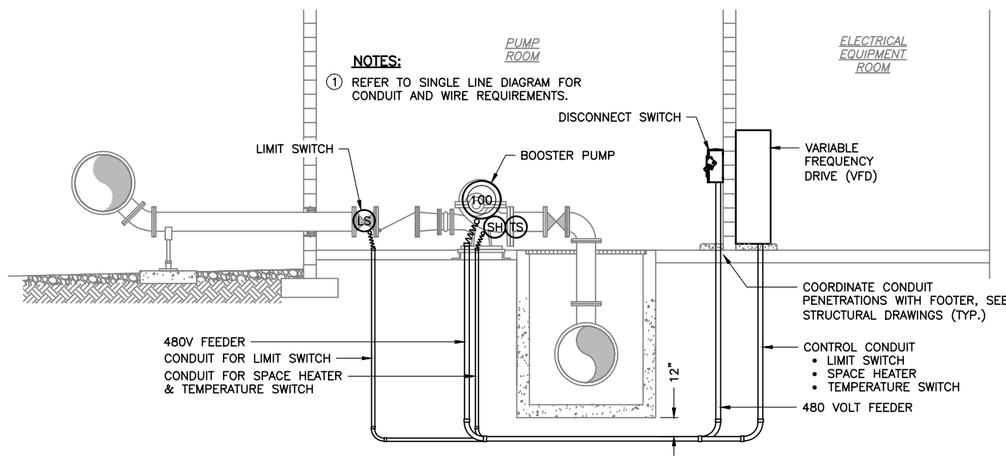


8 E–09 SITE LIGHTING POLE DETAIL

SCALE: N.T.S.

NOTES:

1. LIGHT SHALL BE FUSED IN–LINE WITH BUSS TRON IN–LINE WP. FUSEHOLDER WITH WEATHERPROOF BOOT CAP AND 10 AMP ONE TIME FUSE.
2. CONTRACTOR TO PROVIDE STRUCTURAL AND FOOTING DETAILED DRAWINGS AND WIND LOAD CALCULATIONS SIGNED AND SEALED BY A LICENSED STATE OF FLORIDA STRUCTURAL ENGINEER IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA BUILDING CODE.
3. DETAIL AS SHOWN IS NOT INTENDED AS AN INSTALLATION BUT RATHER A GUIDE. ACTUAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED BY THE STRUCTURAL CALCULATIONS, SEE NOTE 2.



9 E–09 PUMP ROOM/ELECTRICAL ROOM CONDUIT SECTION

SCALE: N.T.S.

ADDENDUM NO.3

EDA
Electrical Design Associates
6965 PIAZZA GRANDE AVE., STE. 412
ORLANDO, FLORIDA 32835
PHONE: (407) 745–5604
FAX: (407) 745–5603
C.O.A. No. 8079
LILLIAN M. REYES, P.E.
Florida P.E. No. 50780

REV	DATE	DESCRIPTION
4	07/12/16	ADDENDUM NO. 4

LINE IS 2 INCHES AT FULL SIZE (IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY GOVERNMENT FLORIDA

ORANGE COUNTY UTILITIES DEPARTMENT ENGINEERING DIVISION
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ELECTRICAL DETIALS

LILLIAN M. REYES
PROFESSIONAL ENGINEER
FLORIDA LICENSE #50780

OCU FILE NO.: 74251
DESIGNED BY: DD
DRAWN BY: RRM
CHECKED BY: LMR
CADD FILE: E-09 SCH

SCALE: AS NOTED:
DRAWING NO.: E-09
SHEET: 33 OF 49

PV#7

Please return this fully executed document to Anne Lee, Clerk's Office

ROVED BY THE BOARD OF COUNTY COMMISSIONERS AT THEIR MEETING
JAN 21 1992

AGREEMENT
BETWEEN
ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY
AND
ORANGE COUNTY, FLORIDA

THIS AGREEMENT is entered into this 28th day of January 1992 by and between the ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY ("OOCEA") and ORANGE COUNTY, Florida ("County"), a political subdivision of the State of Florida.

RECITALS

1. The OOCEA plans to construct a limited access toll road, referred to as the Eastern Beltway Southern Connector.

2. The alignment chosen by the OOCEA for that portion of the Eastern Beltway Southern Connector referred to as Contract 450 requires the OOCEA to acquire a certain parcel of property owned by the County.

3. The property which OOCEA is desirous of acquiring from the County is described in Exhibit "A" which is attached hereto and incorporated herein by reference. The property area is 2.726 acres.

4. The property is part of a larger parcel of land owned by the County and used as an integral part of the County's wastewater system as reclaimed water disposal facilities.

5. The construction of Contract 450 of the Eastern Beltway Southern Connector will adversely affect the County's reclaimed water facilities by reducing the treated wastewater disposal capacity by 15,000 gallons per day.

6. OOCEA's acquisition and road construction activities will require protection of an existing County 12-inch reclaimed water pipeline which transports reclaimed water to the County's rapid infiltration basins and relocation of the County's current access route to the County's reclaimed water facilities.

7. The OOCEA has offered the County a parcel of land with an area of 3.886 acres in exchange for the parcel described in Exhibit "A". The parcel of land offered by the OOCEA is described in Exhibit "B", which is attached hereto and incorporated herein by reference.

ACCORDINGLY, in consideration of the recitals, agreements and mutual covenants contained herein, the parties agree as follows:

SECTION 1. The above recitals are true and correct.

SECTION 2. A. The OOCEA shall pay for and be responsible for the design and construction of casing the County's twelve-inch (12") reclaimed water line affected by the construction of the Eastern Beltway Southern Connector pursuant to the plans as shown on Sheet 115 of the Plans of the Proposed Eastern Beltway, Project No. 75301-6445-450, (the "Plans") which Sheet 115 is attached hereto as Exhibit "C" and incorporated herein by reference. The OOCEA will also ensure that the County's twelve-inch (12") reclaimed water line remains in operation throughout the construction of the Eastern Beltway Southern Connector.

B. The proposed Southern Connector Extension of the Eastern Beltway to be constructed by the Turnpike Authority and the Florida Department of Transportation will necessitate additional casings for the County's twelve-inch (12") reclaimed water pipeline. In the event that the Turnpike Authority or the Florida Department of Transportation fails to pay all design and construction costs related to the additional casings, the OOCEA shall reimburse the County for all such design and construction costs within sixty (60) days of completion of construction of said casings. OOCEA agrees to indemnify and hold harmless the County from and against any and all costs and expenses related to the design and construction of said additional casings.

SECTION 3. A. The OOCEA shall pay for and be responsible for the design and construction of restoring the access to the County's facilities from the north as depicted on Sheet 116 of the Plans, which Sheet 116 is attached hereto as Exhibit "D" and incorporated herein by reference. Said access includes the structures required to be constructed under the proposed Eastern Beltway Southern Connector being constructed by the OOCEA.

B. The proposed Southern Connector Extension of the Eastern Beltway to be constructed by the Turnpike Authority and the Florida Department of Transportation will necessitate an additional casings to assure access along the

alignment shown on Exhibit "D". In the event that the Turnpike Authority or the Florida Department of Transportation fails to pay all design and construction costs related to this additional culvert, the OOCEA shall reimburse the County for all such design and construction costs within sixty (60) days of completion of construction of said culvert. OOCEA agrees to indemnify and hold harmless the County from and against any and all costs and expenses related to the design and construction of said additional culvert.

C. The OOCEA shall also provide the County all requisite access easements and permits to ensure permanent access to the County's facilities from the north.

SECTION 4. The following methodology will be implemented to evaluate the feasibility of the land exchange outlined in Recital 7 herein above:

A. Within ninety (90) days of the execution of this Agreement, the County shall review the appraisals of the two parcels described in Exhibits "A" and "B" to this Agreement which appraisals were performed at the request of the OOCEA. After review of such appraisals, if the County is dissatisfied with either of such appraisals, the County may request a second appraisal be performed for one or both parcels, at the expense of the OOCEA, by a licensed appraisal company satisfactory to the County.

B. Within ninety (90) days of the execution of this Agreement, the County shall have the following geotechnical evaluations performed at the site described in Exhibit "B" to this Agreement:

1. A Phase I Environmental Assessment of the site to determine evidence of toxic and hazardous wastes at the site; and

2. A preliminary evaluation of the irrigation capacity for the utilization of the site as a spray field for the disposal of the reclaimed water.

C. The cost of the engineering services required for items B1 and B2 above shall be paid by the OOCEA.

SECTION 5. A. The County shall agree to the land exchange outlined in Recital 7 herein above if all of the following conditions are met:

1. The monetary value of the parcel in Exhibit "B" is equal to or greater than the monetary value of the parcel in Exhibit "A".

2. The parcel in Exhibit "A" can be utilized for spray irrigation of reclaimed water with an average daily disposal capacity of 15,000 gallons per day.

3. The parcel in Exhibit "A" shows no evidence of toxic and hazardous wastes based on the Phase I Environmental Assessment.

B. If the land exchange occurs as described herein, OOCEA shall reimburse the County (within 60 days of receiving an invoice) for the cost of design and construction of facilities and equipment necessary for the County to dispose of 15,000 gallon per day, such cost not to exceed $30,000.00.

SECTION 6. If one or more of the conditions A, B or C outlined in Section 5 above cannot be met, then the County shall so notify the OOCEA within one hundred and twenty (120) days after signing this Agreement. At such time, the County shall suggest a cash purchase price for the parcel described in Exhibit "A" to OOCEA, and the OOCEA shall have ten (10) days to accept or reject such sale price as offered. If such price is accepted by OOCEA, OOCEA shall have sixty (60) days to submit full payment for the land to the County. OOCEA shall continue to be responsible for design and construction costs relating to the County's access rights and water line as set forth in Sections 2 and 3 of this Agreement. If such price is rejected by OOCEA, OOCEA shall have thirty (30) days in which to file condemnation proceedings against the County on such parcel.

SECTION 7. The County shall grant the OOCEA a Right-of-Entry, as described in Exhibit "E" hereto, to allow the OOCEA to enter upon the property described in Exhibit "A" for the purposes of commencing construction activities related to Contract 450 for the Eastern Beltway Southern Connector.

PV#7,

IN WITNESS WHEREOF, the parties have executed this Agreement on the dates indicated above.

ORANGE COUNTY, FLORIDA

BY: Vera M. Carter
~~County Chairman~~ Commissioner
FOR THE COUNTY CHAIRMAN
DATE: January 28, 1991

ATTEST: Martha O. Haynie, County Comptroller
As Clerk of the Board of County Commissioners

BY: Mary Jo Garrison
Deputy Clerk

ORLANDO-ORANGE COUNTY EXPRESSWAY AUTHORITY

BY: Robert A. Mandell, Chairman

DATE: January 28, 1992

ATTEST:

Susan Pirra

TITLE: Assistant Secretary

BY: Darleen Mazzillo

PV#7,

Parcel:
Project: Eastern Beltway Southern Connector

RIGHT OF ENTRY

For and in consideration of $10.00 and other valuable considerations, ORANGE COUNTY, FLORIDA, a political subdivision of the State of Florida, does hereby give, grant, bargain, and release to the ORLANDO/ORANGE COUNTY EXPRESSWAY AUTHORITY ("OOCEA"), a right of entry to enter upon the parcel of land being described as follows:

SEE ATTACHED "EXHIBIT 1"

for the purpose of initiating construction of a roadway thereon by the OOCEA, in conjunction with said construction of the Eastern Beltway Southern Connector.

THIS Right of Entry shall expire upon conveyance of subject property to the OOCEA for construction of said roadway.

IN WITNESS WHEREOF, the said Grantor has caused these presents to be signed in its name by ~~Linda W. Chapin, Chairman~~ Vera M. Carter, Commissioner, and its corporate seal to be affixed, attested by Faye Ott Gwendolyn Lasser dated this 22nd day of January, 1992.

Signed, sealed and delivered in the presence of:

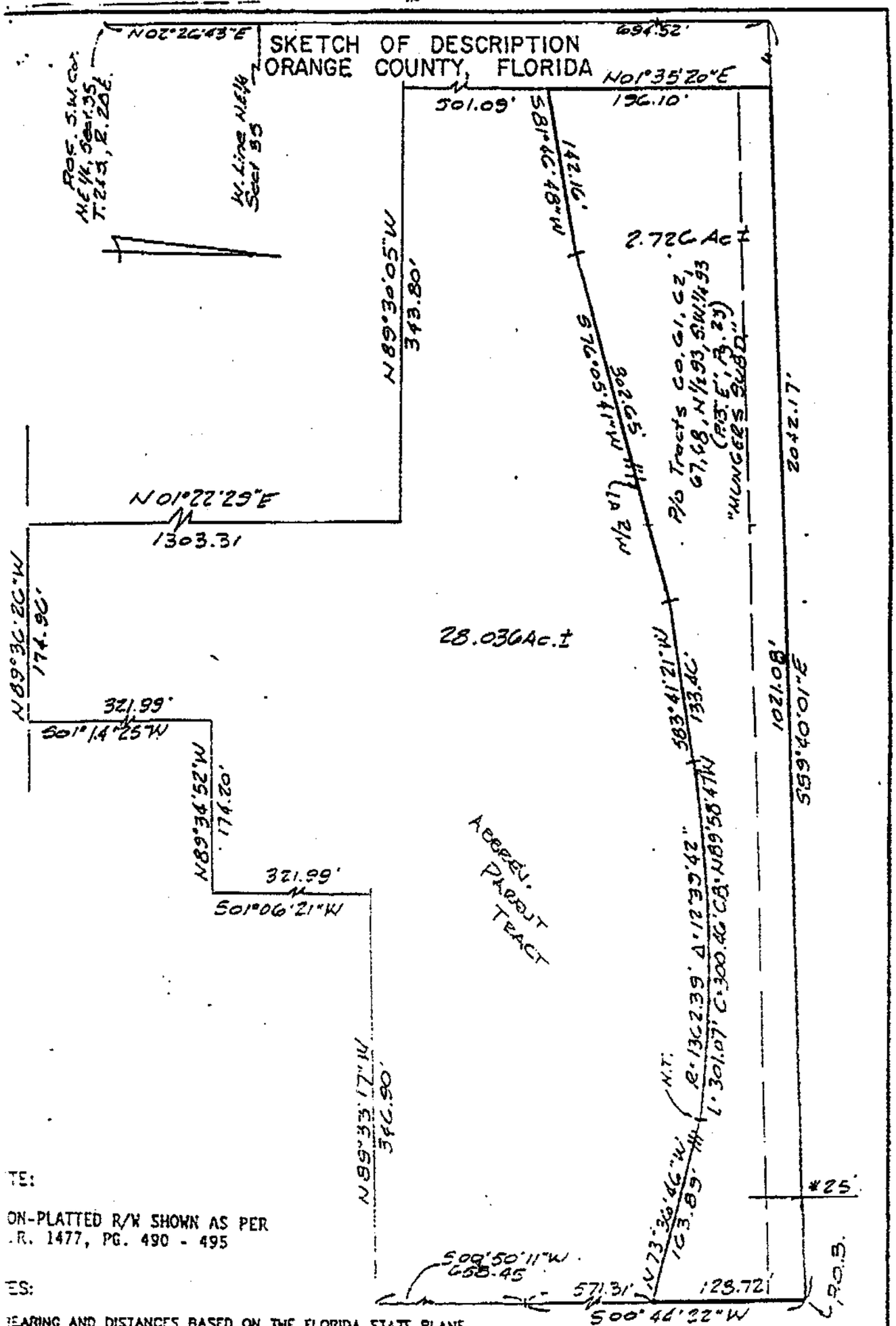
Faye Ott
Gwendolyn Lasser

ORANGE COUNTY, FLORIDA

BY: Vera M. Carter
~~Chairman~~ Commissioner
FOR THE COUNTY CHAIRMAN

ATTEST: Mary D. Garrison
Deputy Clerk

EXHIBIT "A"



TE:

ON-PLATTED R/W SHOWN AS PER
.R. 1477, PG. 490 - 495

ES:

EARING AND DISTANCES BASED ON THE FLORIDA STATE PLANE
OORDINATES SYSTEM - EAST ZONE MEAN SCALE FACTOR: 0.999967

UBJECT TO EASEMENTS AND RIGHTS OF WAY OF RECORD.

Rev. Feb 16, 1993

WNER: ORANGE COUNTY, FLORIDA

PAGE 1 OF 2

RCEL NO. 45-134 R/W MAP PAGE NO. 7

SKETCH OF DESCRIPTION
NOT A PLAT OF SURVEY

ORLANDO ORANGE COUNTY EXPRESSWAY AUTHORITY
1" = 100'
JAN. 2 19 9

I HEREBY CERTIFY THIS SKETCH MEETS THE MINIMUM TECHNICAL STANDARDS OF FLORIDA ADMINISTRATIVE CODE, RULE 21HH-6.

Greiner

PARCEL 45-134

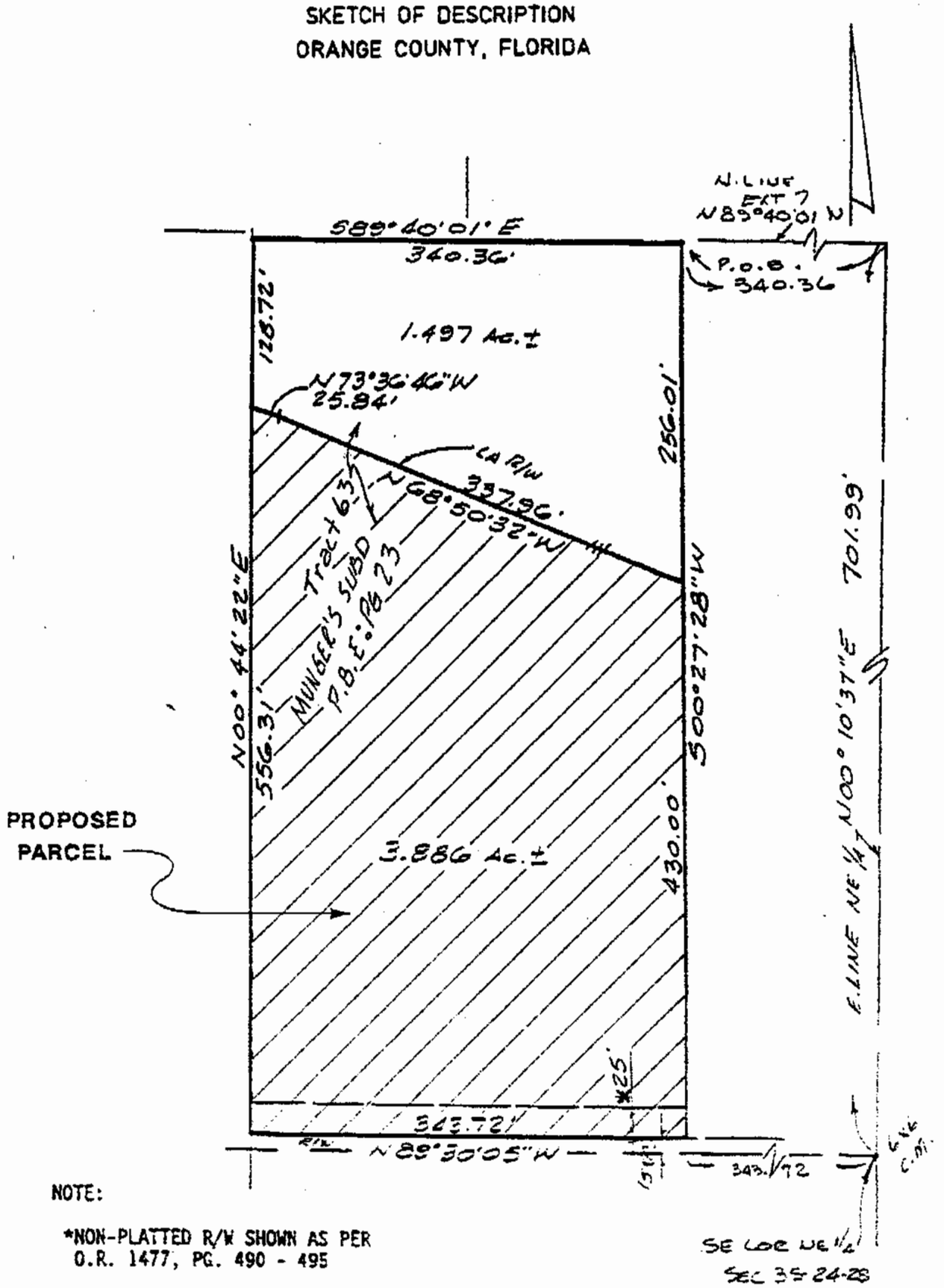
A portion of "Tract 60, Tract 61, Tract 62, Tract 67, Tract 68, the North 1/2 of Tract 93 and the Southwest 1/4 of Tract 93 of MUNGER'S SUBDIVISION in Section 35, Township 24 South, Range 28 East, as said Munger's Subdivision is recorded in Plat Book E, Page 23, Public Records of Orange County, Florida" being more particularly described as follows: commence at the Southwest corner of the Northeast 1/4 of said Section 35 and run thence North 02°26'43" East along the West line of said Northeast 1/4 a distance of 694.52 feet; thence run South 89°40'01" East a distance of 2,042.17 feet to the POINT OF BEGINNING, being the Northeast corner of said Tract 62; thence South 00°44'22" West along the East line of said Tract 62 for 128.72 feet; thence North 73°36'46" West for 163.89 feet to a point on a curve concave Southerly having radius of 1,362.39 feet, central angle of 12°39'42" and chord bearing of North 89°58'47" West; thence Westerly along the arc thereof for 301.07 feet; thence South 83°41'21" West for 133.46 feet; thence South 76°05'41" West for 302.65 feet; thence South 81°46'48" West for 142.16 feet to the West line of said Tract 60; thence North 01°35'20" East for 196.10 feet to the Northwest corner of said Tract 60; thence South 89°40'01" East for 1,021.08 feet to the POINT OF BEGINNING.

Containing 2.726 Acres, more or less.

Together with all rights of ingress, egress, light, air and view between the Grantor's remaining property and any facility constructed on the above described property.

EXHIBIT "B"

SKETCH OF DESCRIPTION
ORANGE COUNTY, FLORIDA



NOTE:

*NON-PLATTED R/W SHOWN AS PER O.R. 1477, PG. 490 - 495

NOTES:

1. BEARING AND DISTANCES BASED ON THE FLORIDA STATE PLANE COORDINATES SYSTEM - EAST ZONE MEAN SCALE FACTOR: 0.999967
2. SUBJECT TO EASEMENTS AND RIGHTS OF WAY OF RECORD.
3. OWNER: GEORGE A. DAVIS & BETTY A. BOGACHOFF

Feb. 18, 1991

PAGE 1 OF 2

SKETCH OF DESCRIPTION
NOT A PLAT OF SURVEY

PARCEL NO. 45-142 R/W MAP PAGE NO. 7

For: ORLANDO ORANGE COUNTY EXPRESSWAY AUTHORITY
Scale: 1" = 100'
Date: JAN. 21, 1991
Job No.: SECTION 45C
Drawn: G.F.F. Chkd.: J.M.J.

I HEREBY CERTIFY THIS SKETCH MEETS THE MINIMUM TECHNICAL STANDARDS OF FLORIDA ADMINISTRATIVE CODE, RULE 21HH-6.

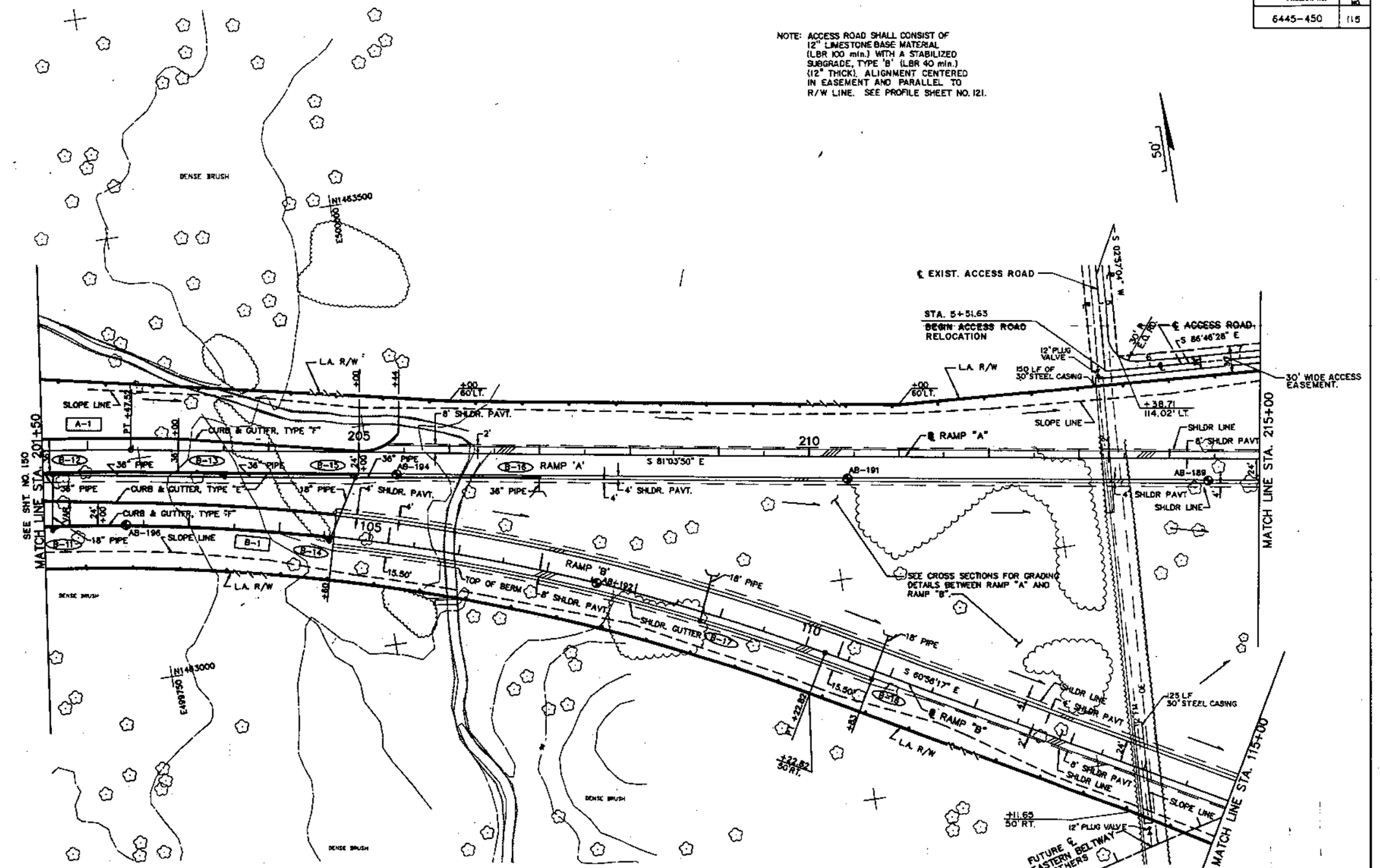
JAMES M. JONES
REG. LAND SURVEYOR NO. 3808
NOT VALID UNLESS SIGNED AND SEALED

Greiner
225 EAST ROBINSON STREET
SUITE 255
ORLANDO, FLORIDA 32801-1913
PHONE: (407) 422-0353

PROJECT. NO.	SHEET NO.
6445-450	115

EXHIBIT "C"

NOTE: ACCESS ROAD SHALL CONSIST OF 12" LIMESTONE BASE MATERIAL (LBR 100 min.) WITH A STABILIZED SUBGRADE, TYPE 'B' (LBR 40 min.) (12" THICK), ALIGNMENT CENTERED IN EASEMENT AND PARALLEL TO R/W LINE. SEE PROFILE SHEET NO. 121.



REVISIONS												
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	
7/30/91	SG,BS	ADDED 30' CASING										

	NAME	DATE		NAME	DATE
DESIGNED BY	SDW	6-90	DRAWN BY	RTM	6-90
CHECKED BY	RDM	6-90	CHECKED BY	SDW	6-90

SUPERVISED BY GREG T. SMITH, P.E.

Greiner

PLAN SHEET NO. 1

RAMPS "A"/"B"

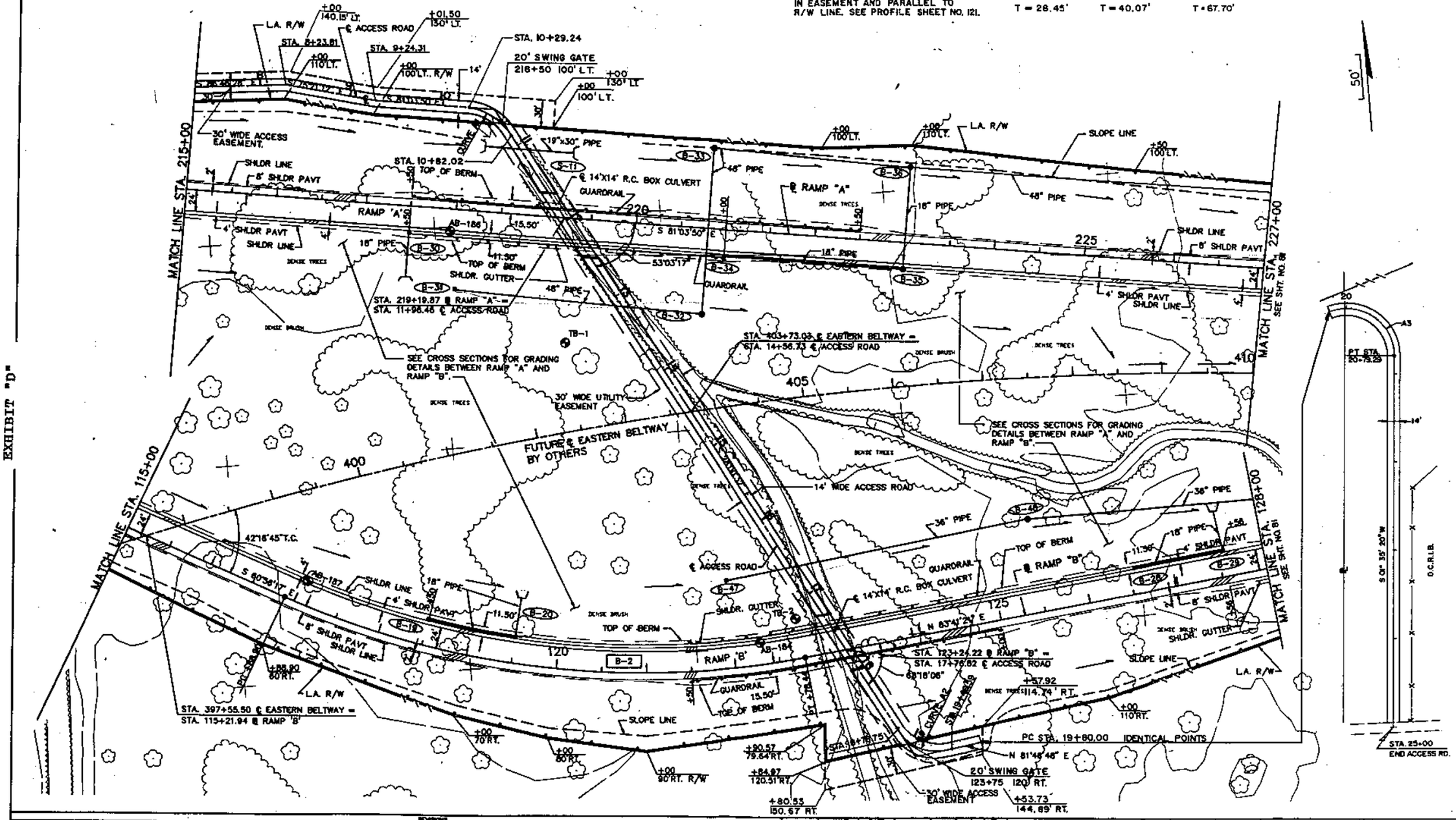
PROJECT. NO.	SHEET NO.
6445-450	116

NOTE: ACCESS ROAD SHALL CONSIST OF 12" LIMESTONE BASE MATERIAL (LBR 100 min.) WITH A STABILIZED SUBGRADE, TYPE "B" (LBR 40 min.) (12" THICK). ALIGNMENT CENTERED IN EASEMENT AND PARALLEL TO R/W LINE. SEE PROFILE SHEET NO. 121.

ACCESS ROAD CURVE DATA

A1	A2	A3
Δ = 53°03'18"	Δ = 70°12'40"	Δ = 99°48'32" RT
R = 57.00'	R = 57.00'	R = 57.00'
T = 28.45'	T = 40.07'	T = 67.70'

EXHIBIT "D"



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
8/16/91	B.I.	ADDEN. NO.1 ACCESS ROAD EXTENSION									

	NAME	DATE		NAME	DATE
DESIGNED BY	SDW	6-90	DRAWN BY	RTM	6-90
CHECKED BY	RDN	6-90	CHECKED BY	SDW	6-90

Greiner

PLAN SHEET NO. 2

RAMPS "A"/"B"