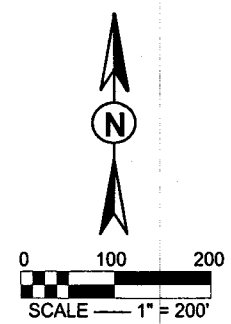



- B-1 ● Previous Ardaman & Associates (A&A) boring
- AB-1 ✱ Previous Soil & Material Engineers, Inc. (S&ME) boring
- AB-1 ◊ GPA/A&A auger boring for this exploration
- TH-1 ◻ A&A SPT boring for this exploration
- HAB-1 ○ A&A supplemental hand auger boring
- Property Line



BORING LOCATIONS

 Ardaman & Associates, Inc. Geotechnical, Environmental and Materials Consultants		
ORANGE COUNTY UTILITIES SOLID WASTE DIVISION FORMER GOOD HOMES ROAD LANDFILL SUBSURFACE SOIL/WASTE EXPLORATION ORANGE COUNTY, FLORIDA		
DRAWN BY: PAK	CHECKED BY:	DATE: 10/02/2001
FILE NO.: 99-6690A	APPROVED BY:	FIGURE: 1

REVISED 12/13/2001

WHITE ROAD

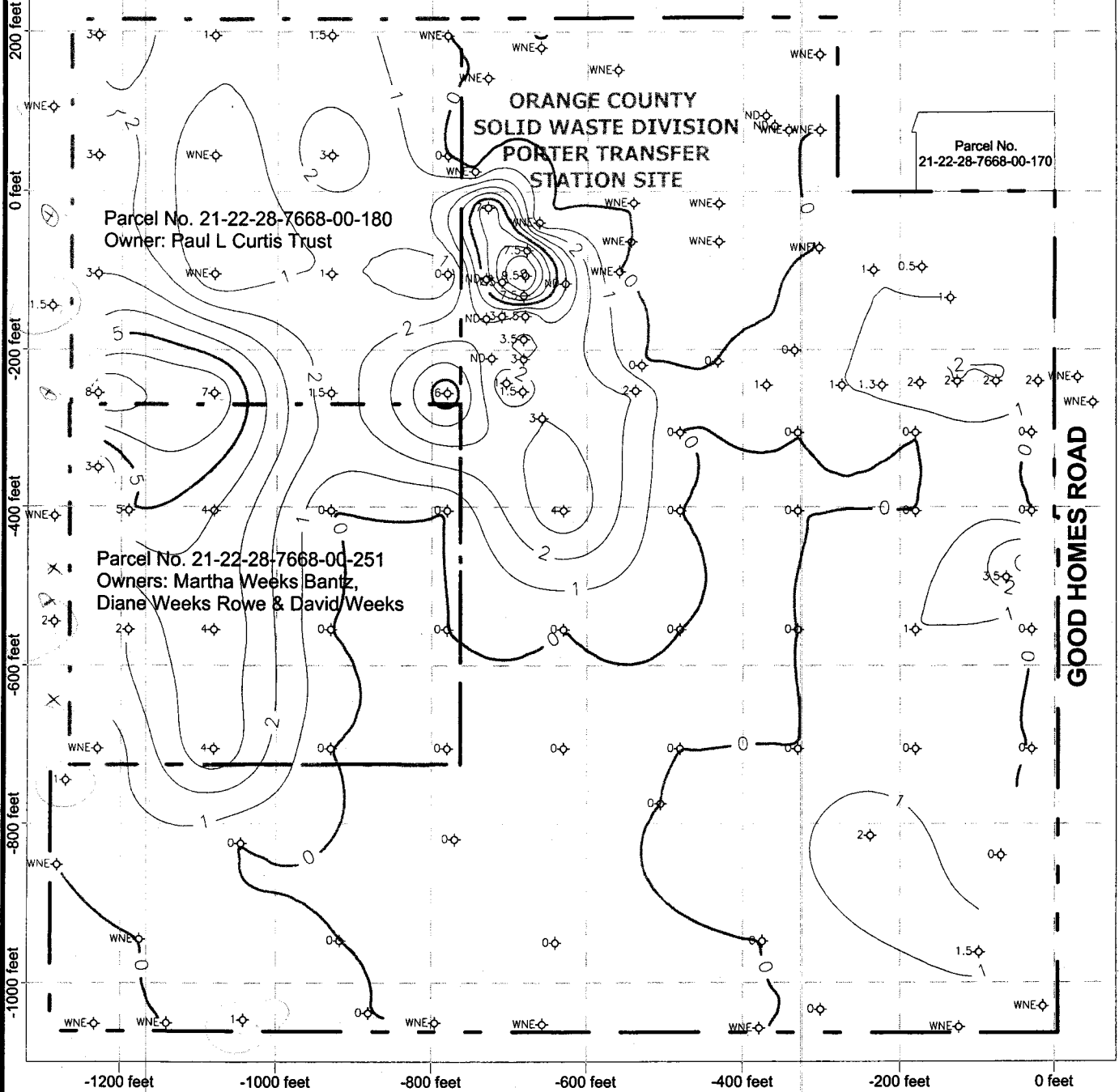
**ORANGE COUNTY
SOLID WASTE DIVISION
PORTER TRANSFER
STATION SITE**

Parcel No.
21-22-28-7668-00-170

Parcel No. 21-22-28-7668-00-180
Owner: Paul L Curtis Trust

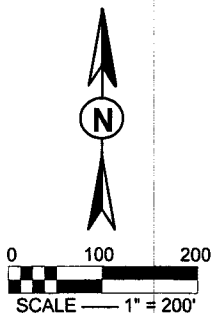
Parcel No. 21-22-28-7668-00-251
Owners: Martha Weeks Bantz,
Diane Weeks Rowe & David Weeks


GOOD HOMES ROAD



- ◇ Boring locations
- WNE Waste Not Encountered
- ND No Data

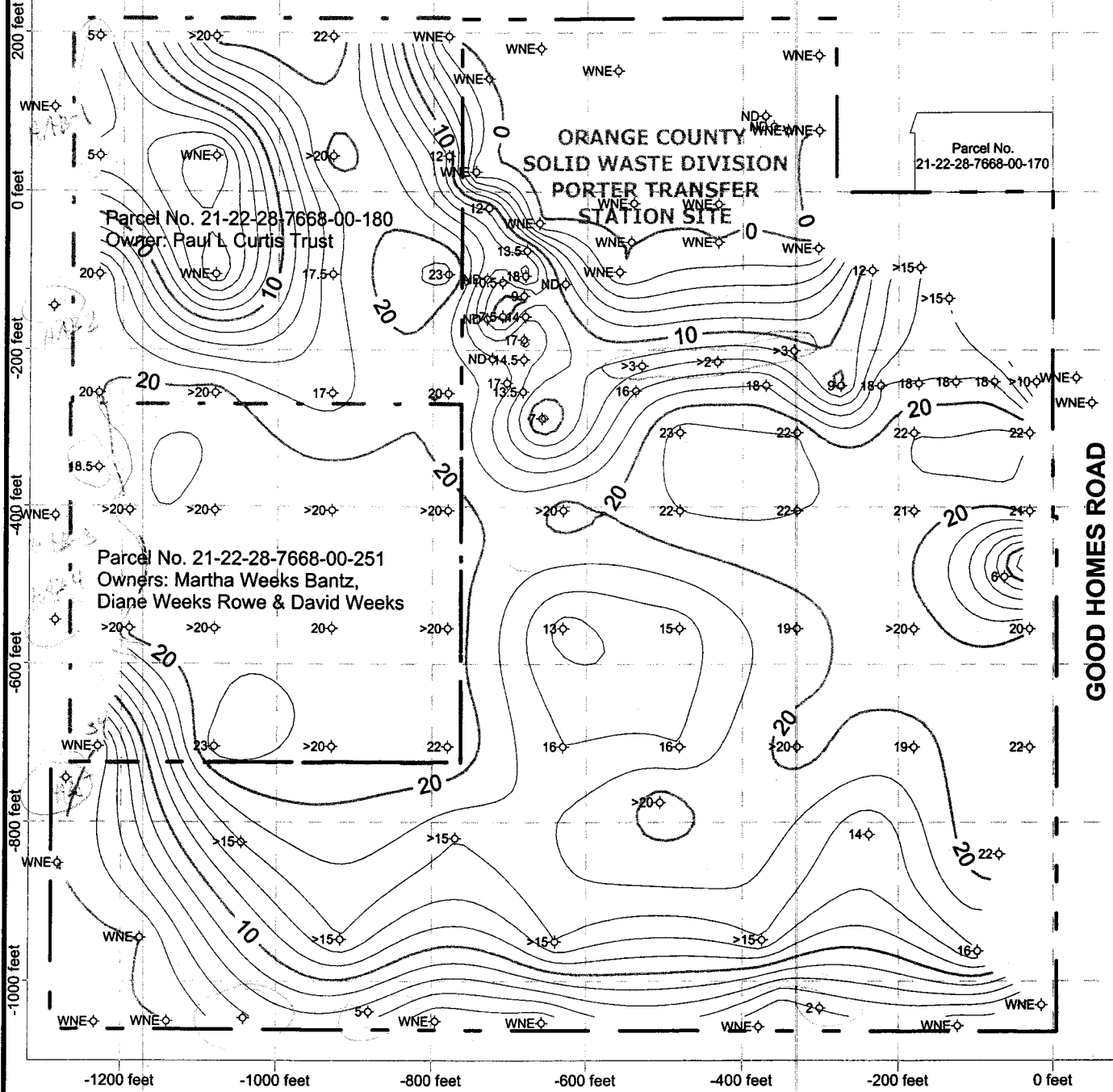
**DEPTH TO TOP OF WASTE,
FEET BELOW LAND SURFACE**



 Ardaman & Associates, Inc. Geotechnical, Environmental and Materials Consultants		
ORANGE COUNTY UTILITIES SOLID WASTE DIVISION FORMER GOOD HOMES ROAD LANDFILL SUBSURFACE SOIL/WASTE EXPLORATION ORANGE COUNTY, FLORIDA		
DRAWN BY: PAK	CHECKED BY:	DATE: 10/02/2001
FILE NO.: 99-6690A	APPROVED BY:	FIGURE: 2

REVISED 12/13/2001

WHITE ROAD



Parcel No. 21-22-28-7668-00-180
Owner: Paul L. Curtis Trust

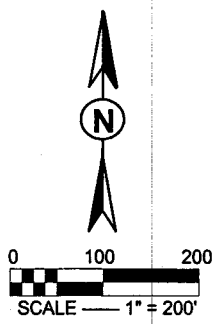
Parcel No. 21-22-28-7668-00-251
Owners: Martha Weeks Bantz,
Diane Weeks Rowe & David Weeks

Parcel No.
21-22-28-7668-00-170

**ORANGE COUNTY
SOLID WASTE DIVISION
PORTER TRANSFER
STATION SITE**


GOOD HOMES ROAD

◇ Boring locations
WNE Waste Not Encountered

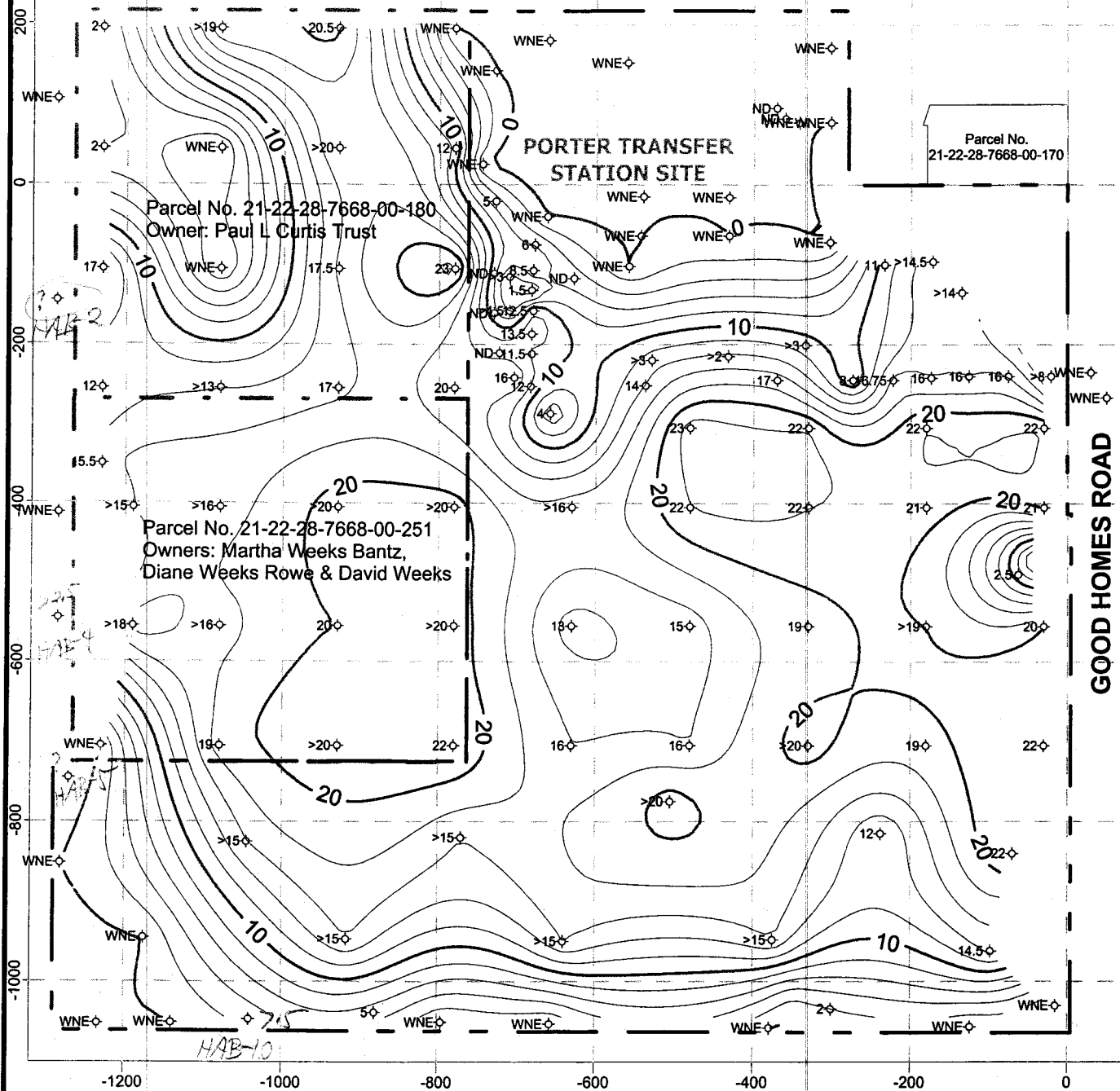


**DEPTH TO BOTTOM OF WASTE,
FEET BELOW LAND SURFACE**

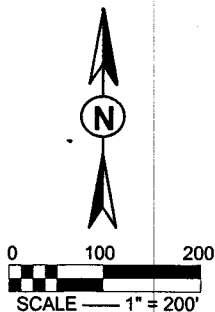
REVISED 12/13/2001

 Ardaman & Associates, Inc. Geotechnical, Environmental and Materials Consultants		
ORANGE COUNTY UTILITIES SOLID WASTE DIVISION FORMER GOOD HOMES ROAD LANDFILL SUBSURFACE SOIL/WASTE EXPLORATION ORANGE COUNTY, FLORIDA		
DRAWN BY: PAK	CHECKED BY:	DATE: 10/02/2001
FILE NO.: 99-6690A	APPROVED BY:	FIGURE: 3


WHITE ROAD



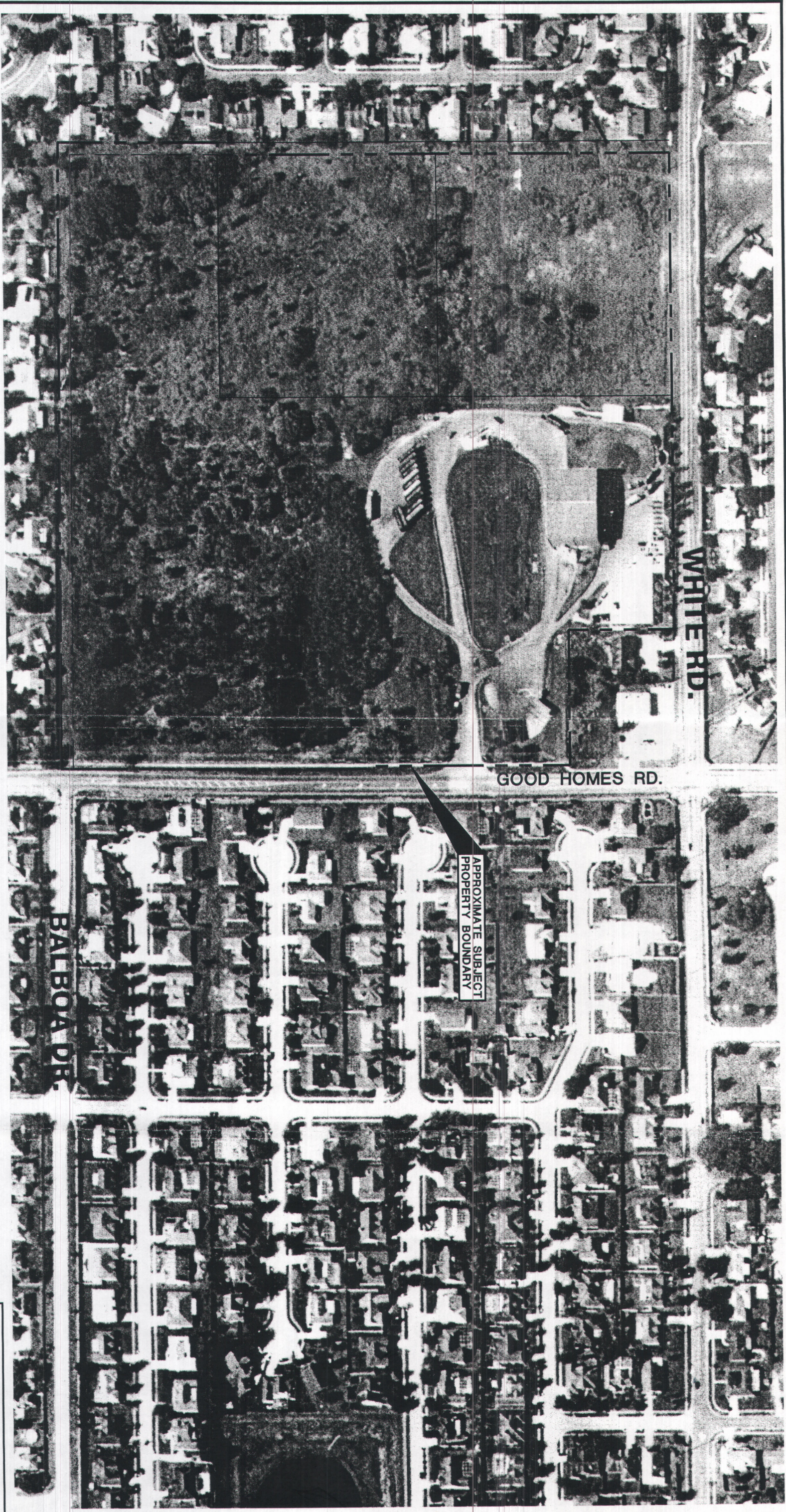
- ◇ Thickness of waste (feet) at boring location
- WNE Waste Not Encountered
- ND No Data



THICKNESS OF WASTE

 Ardaman & Associates, Inc. Geotechnical, Environmental and Materials Consultants		
ORANGE COUNTY UTILITIES SOLID WASTE DIVISION FORMER GOOD HOMES ROAD LANDFILL SUBSURFACE SOIL/WASTE EXPLORATION ORANGE COUNTY, FLORIDA		
DRAWN BY: PAK	CHECKED BY:	DATE: 10/02/2001
FILE NO.: 99-6690A	APPROVED BY:	FIGURE: 4

REVISED 12/13/2001



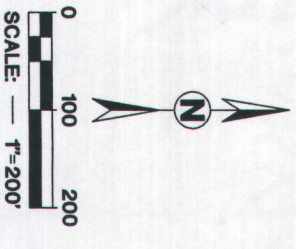
WHITE RD.

GOOD HOMES RD.


BALBOA DR.

APPROXIMATE SUBJECT PROPERTY BOUNDARY

OBTAINED FROM FIRST AMERICAN REAL ESTATE SOLUTIONS: ORANGE COUNTY, FLORIDA
PHOTO DATE: DECEMBER 1999

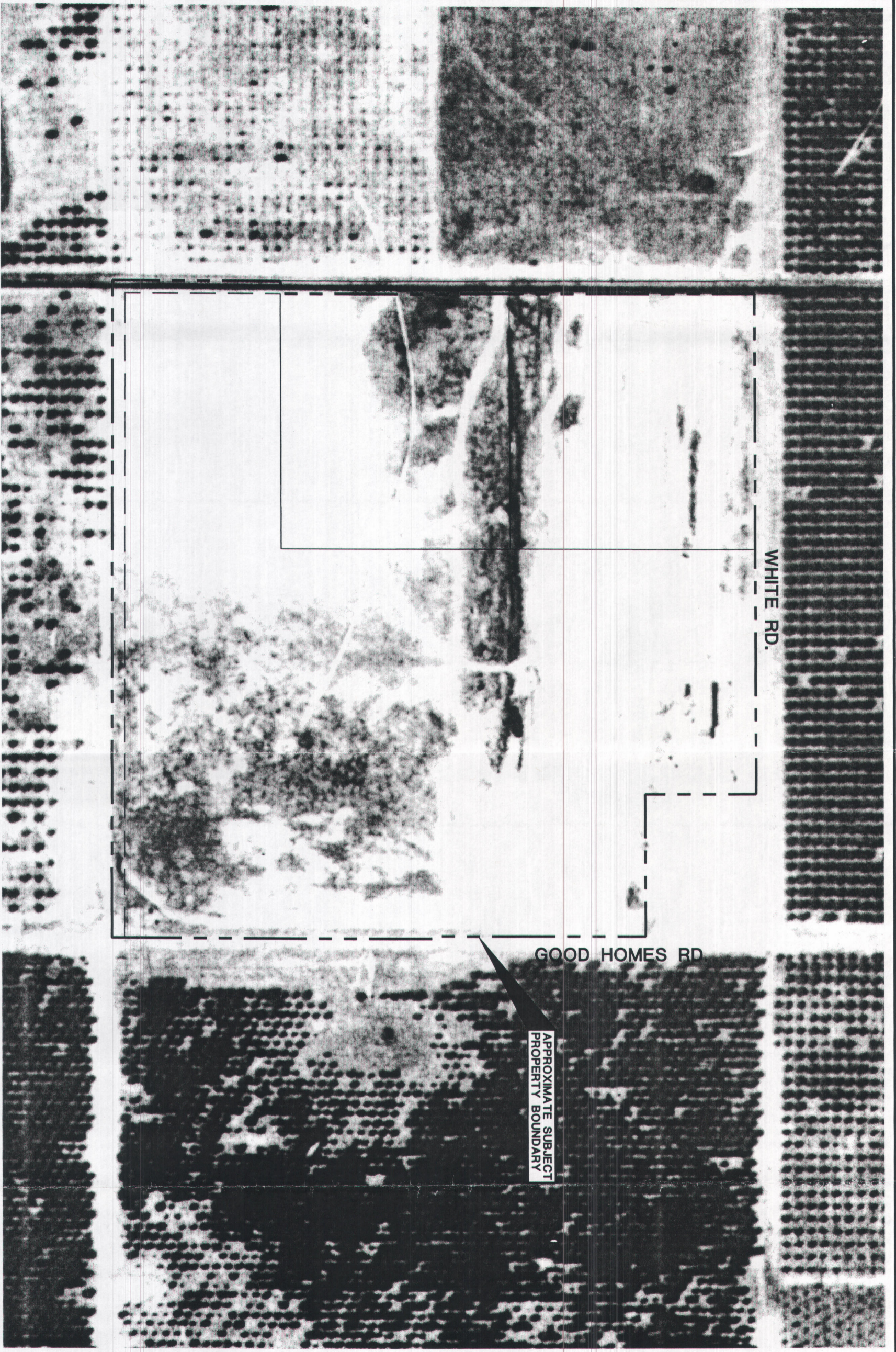


DECEMBER 1999
AERIAL PHOTOGRAPH
OF SUBJECT SITE

**Ardaman & Associates, Inc.**
Geotechnical, Environmental and
Materials Consultants

ORANGE COUNTY UTILITIES
SOLID WASTE DIVISION
FORMER GOOD HOMES ROAD LANDFILL
SUBSURFACE SOIL/WASTE EXPLORATION
ORANGE COUNTY, FLORIDA

DRAWN BY: CD CHECKED BY: DATE: 12/05/01
FILE NO: 99-6690A APPROVED BY: FIGURE: 5

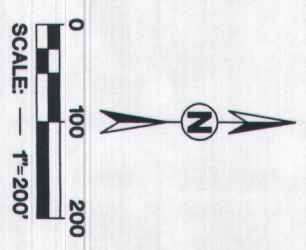


WHITE RD.

GOOD HOMES RD

APPROXIMATE SUBJECT PROPERTY BOUNDARY

OBTAINED FROM AERIAL PHOTOGRAPH: ORANGE COUNTY, FLORIDA
PHOTO DATE: NOVEMBER 1971

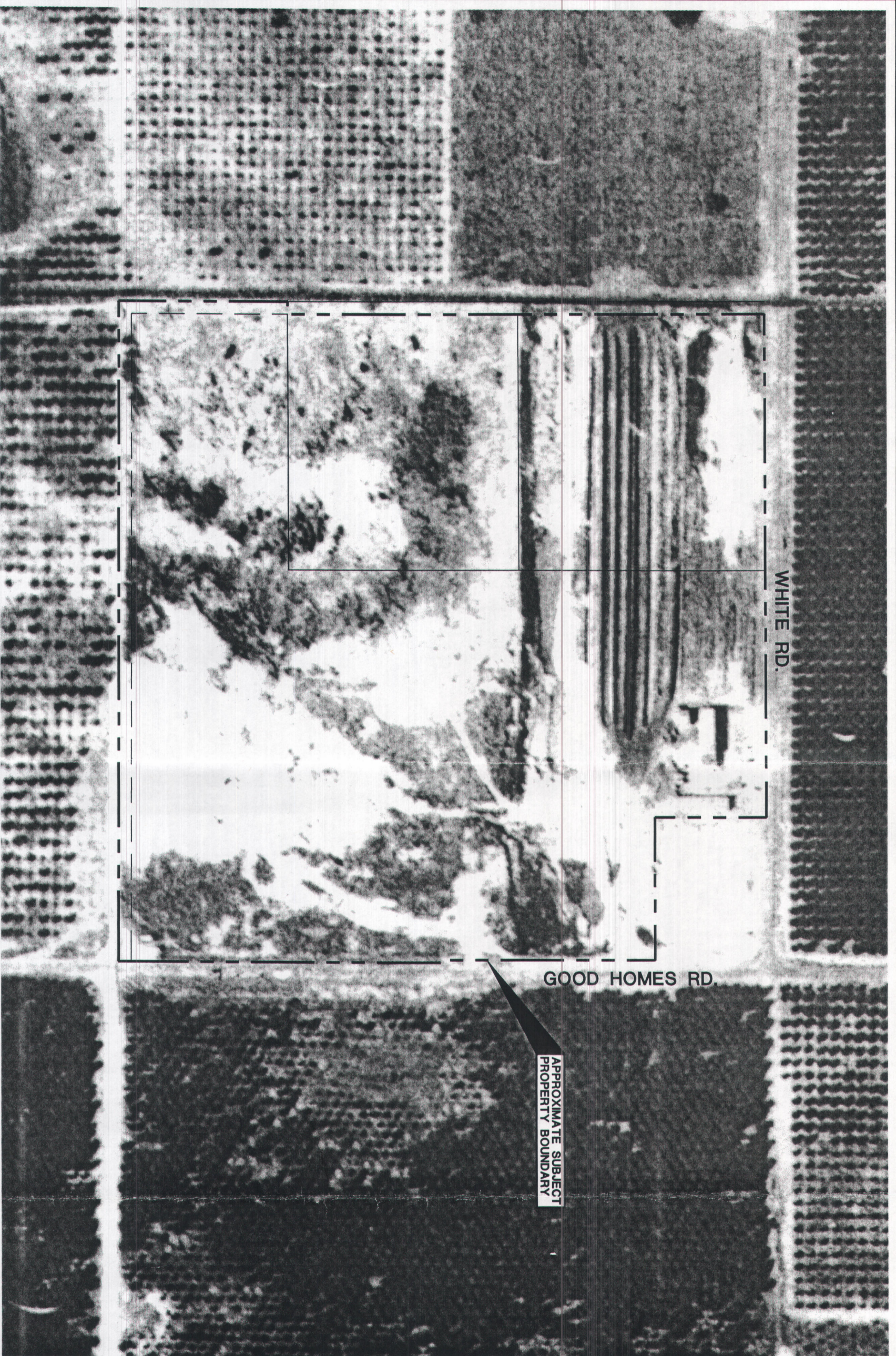


NOVEMBER 1971
AERIAL PHOTOGRAPH
OF SUBJECT SITE

Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

ORANGE COUNTY UTILITIES
SOLID WASTE DIVISION
FORMER GOOD HOMES ROAD LANDFILL
SUBSURFACE SOIL/WASTE EXPLORATION
ORANGE COUNTY, FLORIDA

DRAWN BY: CD	CHECKED BY:	DATE: 12/05/01
FILE NO. 99-6690A	APPROVED BY:	FIGURE: 6

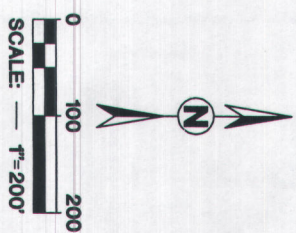


WHITE RD.

GOOD HOMES RD.

APPROXIMATE SUBJECT
PROPERTY BOUNDARY

OBTAINED FROM AERIAL PHOTOGRAPH: ORANGE COUNTY, FLORIDA
PHOTO DATE: NOVEMBER 1967

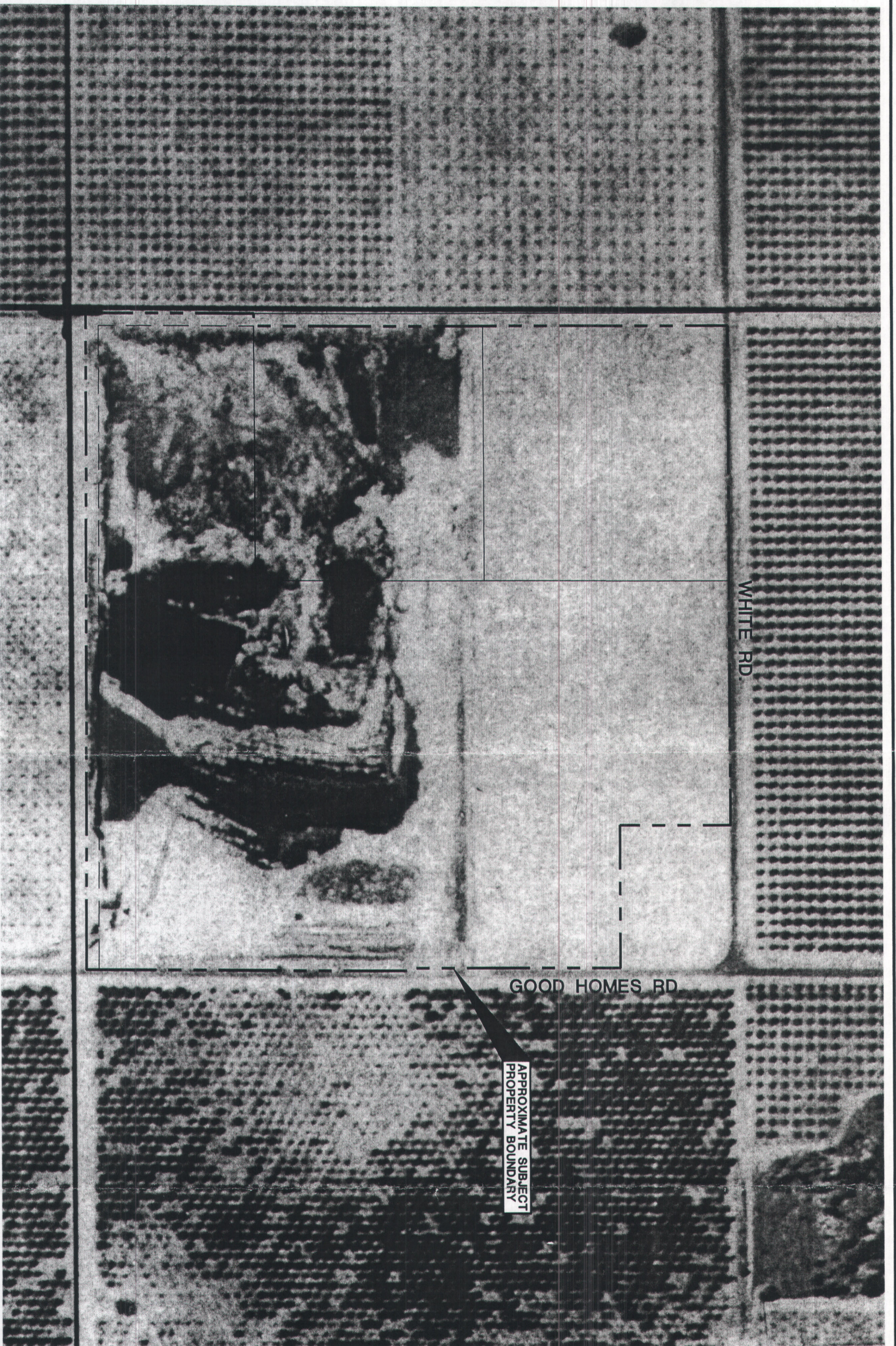


**NOVEMBER 1967
AERIAL PHOTOGRAPH
OF SUBJECT SITE**

Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

ORANGE COUNTY UTILITIES
SOLID WASTE DIVISION
FORMER GOOD HOMES ROAD LANDFILL
SUBSURFACE SOIL/WASTE EXPLORATION
ORANGE COUNTY, FLORIDA

FILE NO.	APPROVED BY:	FIGURE:
99-6690A	CD	7
DRAWN BY:	CHECKED BY:	DATE:
CD	CD	12/06/01



WHITE RD.

GOOD HOMES RD

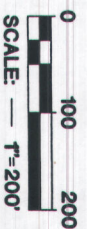
APPROXIMATE SUBJECT PROPERTY BOUNDARY

OBTAINED FROM AERIAL PHOTOGRAPH: ORANGE COUNTY, FLORIDA
PHOTO DATE: JANUARY 1958

**JANUARY 1958
AERIAL PHOTOGRAPH
OF SUBJECT SITE**

Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

**ORANGE COUNTY UTILITIES
SOLID WASTE DIVISION
FORMER GOOD HOMES ROAD LANDFILL
SUBSURFACE SOIL/WASTE EXPLORATION
ORANGE COUNTY, FLORIDA**



FILE NO. 99-6690A	DRAWN BY: CD	CHECKED BY:	DATE: 12/05/01	FIGURE: 8
	APPROVED BY:			



August 31, 2017

Shane R. Fischer, P.E.
Project Director
SCS Engineers
4041 Park Oaks Blvd., Suite 100
Tampa, FL. 33610

Re: Geotechnical Exploration Report
Porter Transfer Station Improvements
BME Project No. 17-109

Dear Mr. Fisher:

Blue Marlin Engineering (BME) submits this Report in fulfillment of the scope of services described in our proposal number BME P16-052 and dated June 14, 2016. You verbally authorized us to proceed with our work on this project. This Report describes our understanding of the project and presents our evaluations.

EXECUTIVE SUMMARY

For this Report, the conditions at this site were explored using two standard penetration test (SPT) borings and nine cone penetrometer test (CPT) borings. The following generalized subsurface conditions were encountered:

Layer 1: A 6-foot thick layer of Fill Soils*

Layer 2: A 6-foot thick layer of Trash/Debris

Layer 3: A 16-foot thick layer of slightly silty Sand (SP-SM)

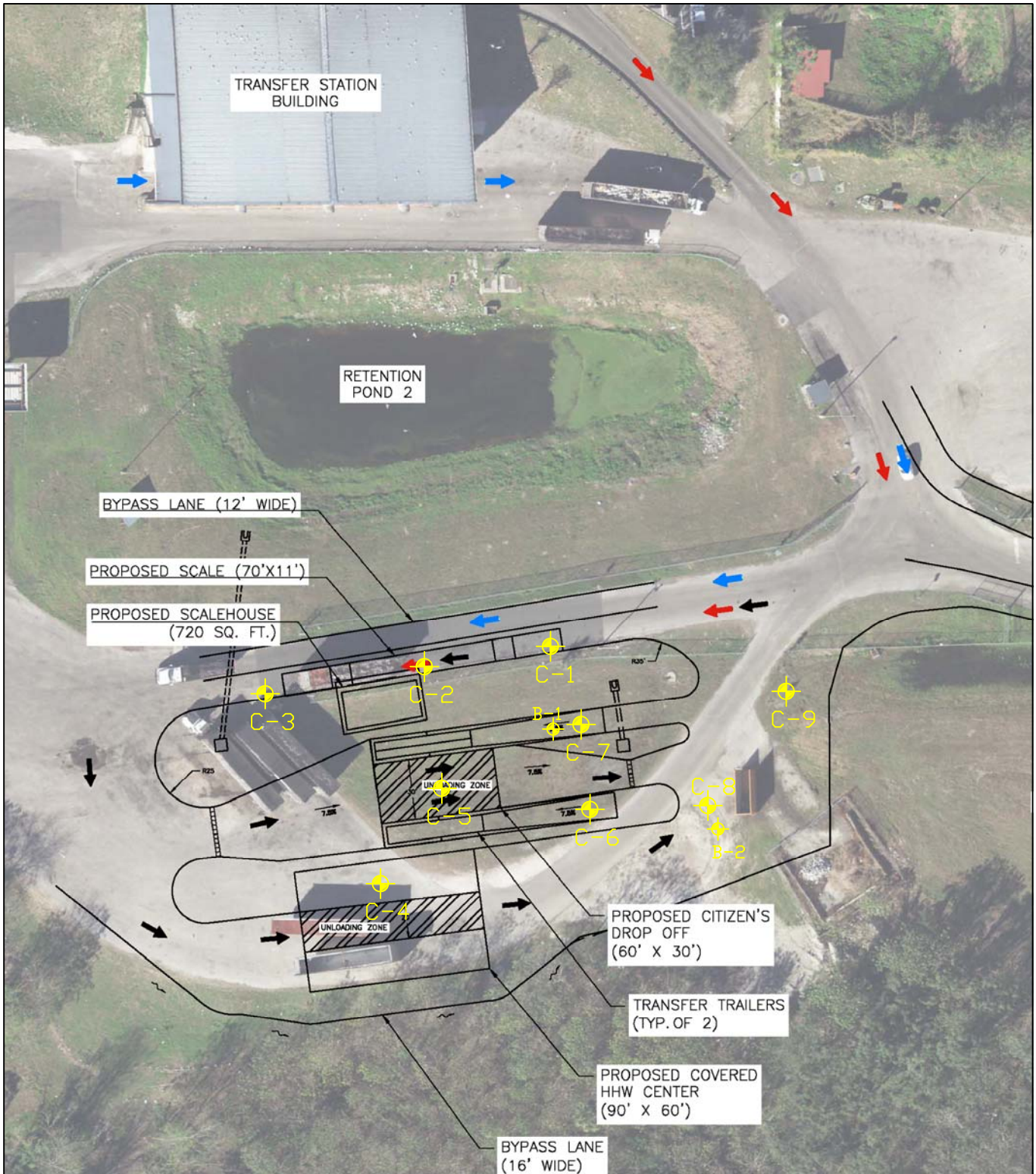
Layer 4: A 22-foot thick layer of silty, silty to clayey Sand (SM, SM-SC)

**Fill Soils consisted of fine to slightly silty Sand (SP, SP-SM) with some gravel*

Following the recommendations provided in this Report, it appears that the proposed development is viable at this site. The engineering evaluations performed for this project indicate the following:

www.BlueMarlinEngineering.com

Blue Marlin Engineering, LLC * 102 Drennen Road, Suite B-10 * Orlando, FL 32806
Phone: 407-217-4464 * Fax: (321) 710-2483



Legend

- ⊕ - SPT Boring
- B-1
- ⊕ - CPT Boring
- CPT

Notes:

1. Test locations are shown as approximate.
2. Test location symbols are not to scale.
3. Drawing not to scale.



Geotechnical
Engineering &
Construction Materials
Testing

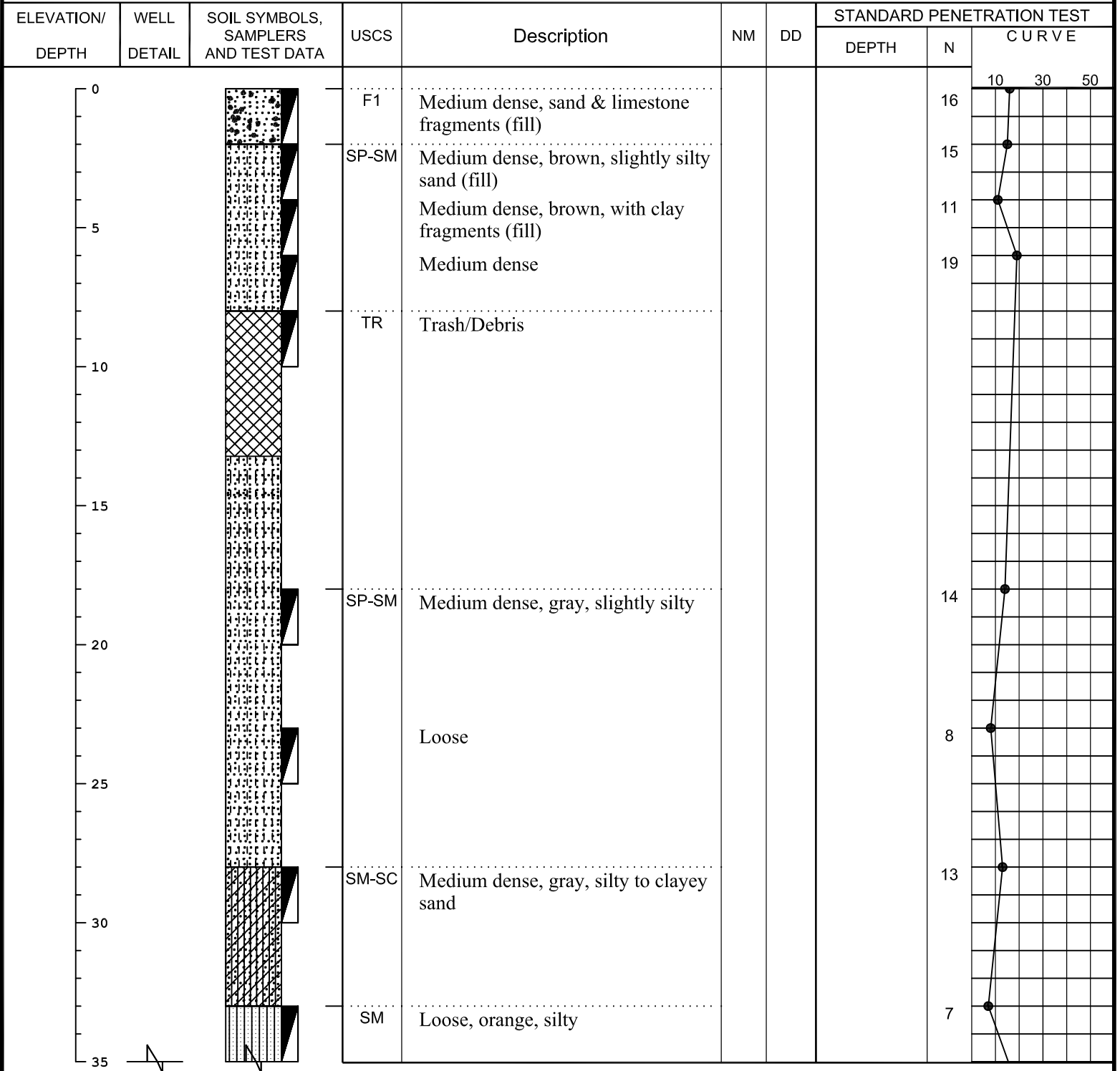
DWG TITLE: <i>Test Location Plan</i>		DWN BY: <i>ACJ</i>	
PROJ NAME: <i>Porter Transfer Station</i>		CKD BY: <i>OFJ</i>	
<i>1326 Good Homes Rd, Orlando, FL 32818</i>			
PROJ. NO: <i>17-109</i>	DATE: <i>8/20/17</i>	DWG NO: <i>2</i>	APD BY <i>---</i>

DRILL HOLE LOG

BORING NO.: B-1

PROJECT: Porter Transfer Station Improvements
 CLIENT: SCS Engineers
 LOCATION: Refer to Test Location
 DRILLER: RD
 DRILL RIG: BR 2500
 DEPTH TO WATER> INITIAL ∇ :

PROJECT NO.: J17-109
 DATE: 8-21-17
 LOGGED BY: BM



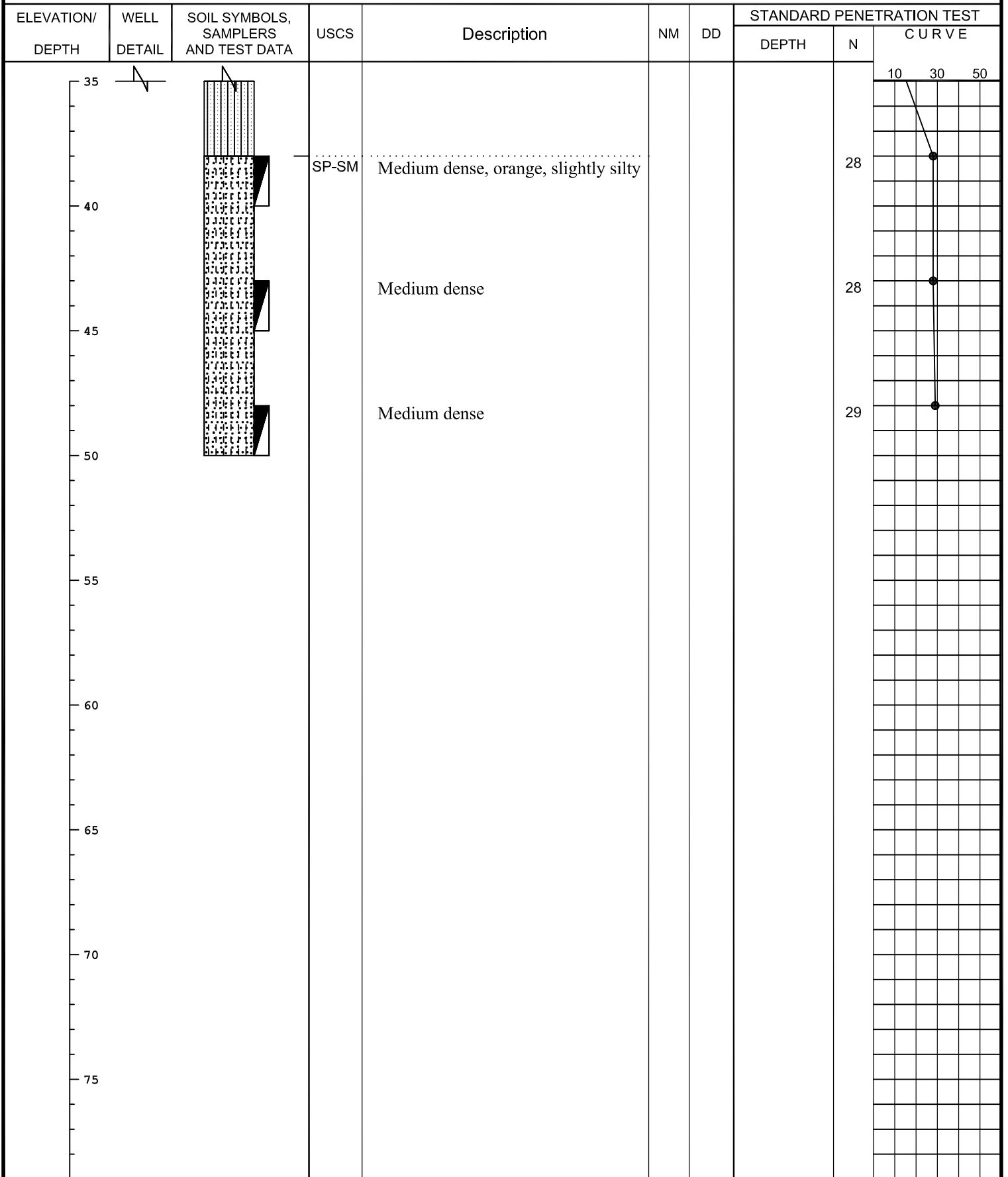
This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-1

PROJECT: Porter Transfer Station Improvements

PROJECT NO.: J17-109

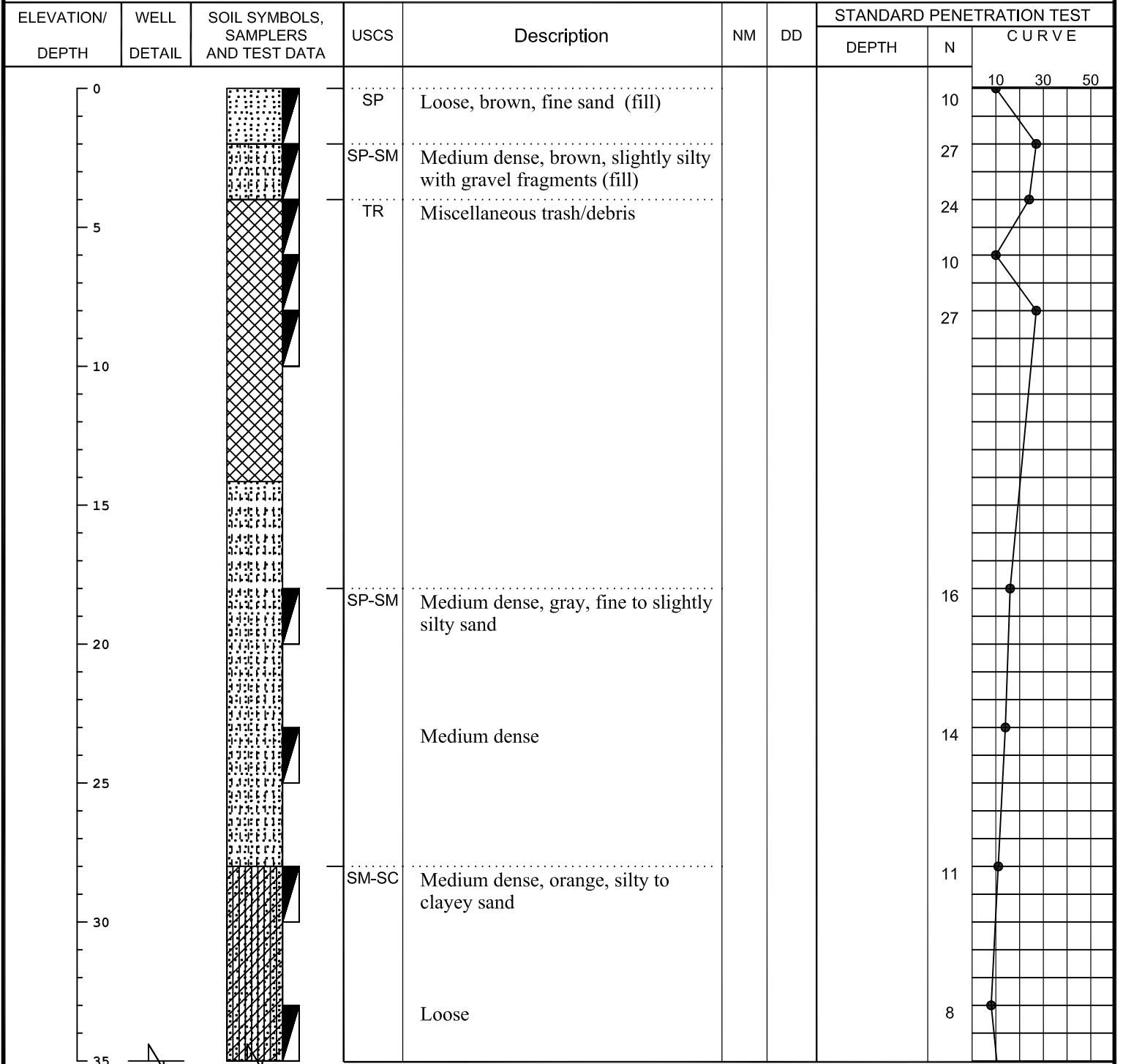


DRILL HOLE LOG

BORING NO.: B-2

PROJECT: Porter Transfer Station Improvements
 CLIENT: SCS Engineers
 LOCATION: Refer to Test Location
 DRILLER: RD
 DRILL RIG:
 DEPTH TO WATER > INITIAL ∇ :

PROJECT NO.: J17-109
 DATE: 8-21-17
 LOGGED BY: BM



This information pertains only to this boring and should not be interpreted as being indicative of the site.

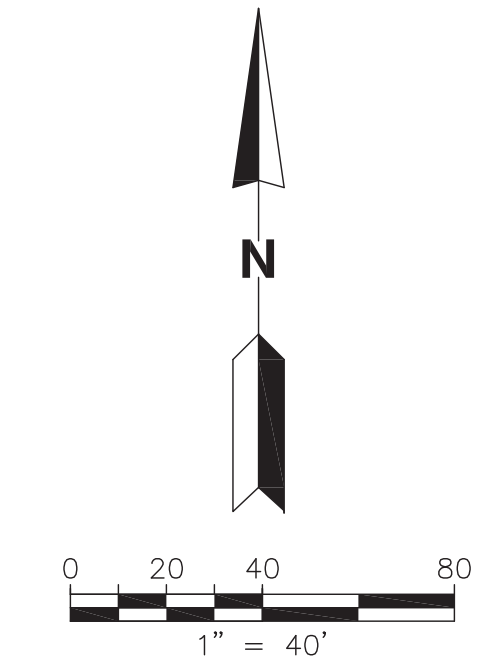
ATTACHMENT 3

DRAWING C-4

G:\PROJECT\Orange\09216054.01 - Porter TS\Item 3 - Site Improvements\Const Drawings\05401\TOPO.dwg Apr 29, 2018 - 4:32pm Layout Name: EXISTING CONDITIONS TOPOGRAPH By: 4157.dmb



This item has been electronically signed and sealed by David M. Beben, PE on April 29, 2018 using a SHA-1 authentication code. Printed copies of this document are not considered signed and sealed and the SHA-1 authentication code must be verified on any electronic copies.



NOTES:

1. TOPOGRAPHIC SURVEY PERFORMED BY APEX ENGINEERING, INC. P.O. BOX 568891, ORLANDO, FLORIDA 32856. DATE OF SURVEY: MARCH 23, 2017. UNLESS IT BEARS THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER, THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.
2. LANDS SHOWN HEREON WERE NOT ABSTRACTED BY THE SURVEYOR FOR RIGHT OF WAYS AND/OR EASEMENTS OF RECORD OR OWNERSHIP.
3. NO UNDERGROUND UTILITIES OR STRUCTURES WERE LOCATED UNLESS OTHERWISE SHOWN.
4. THE HORIZONTAL DATUM IS RELATIVE TO NORTH AMERICAN DATUM, NAD 1983, 2007 ADJUSTED, STATE PLANE COORDINATE SYSTEM, EAST ZONE.
5. VERTICAL DATUM IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) UTILIZING ORANGE COUNTY BENCH MARK # L1057014 AND L1057018.
6. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS AND SERVE AS NOTICE TO THE CONTRACTOR THAT UNDERGROUND UTILITIES EXIST. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY WHEN CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS ARE DISCOVERED.
7. THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THERE MAY BE SOME AREAS OF POSSIBLE UTILITY CONFLICTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES ON THIS PROJECT. THE CONTRACTOR SHALL REPAIR ALL DAMAGE TO EXISTING UTILITIES AT NO ADDITIONAL COST TO THE OWNER.
8. THE OWNER AND THE CONTRACTOR WILL COORDINATE ON THE FINAL BOUNDARIES OF THE CONTRACTOR'S CONSTRUCTION LAYDOWN/STAGING AREA AND CONTRACTOR'S ACCESS FROM THE STAGING AREA TO GOOD HOMES ROAD AT THE PRE-CONSTRUCTION MEETING. THE CONSTRUCTION LAYDOWN/STAGING AREA AND THE CONTRACTOR'S ACCESS ROAD TO THE MAIN ROAD SHALL BE GRADED TO EXISTING GRADES, SEEDED AND MULCHED AS REQUIRED UPON COMPLETION OF THE PROJECT PER THE SPECIFICATIONS.
9. QUANTITY AND LOCATION OF SILT FENCE MAY VARY DUE TO CONSTRUCTION SEQUENCE. CONTRACTOR SHALL HAVE EROSION AND SEDIMENTATION CONTROLS IN PLACE DURING ALL CONSTRUCTION ACTIVITIES TO THE SATISFACTION OF THE ENGINEER.

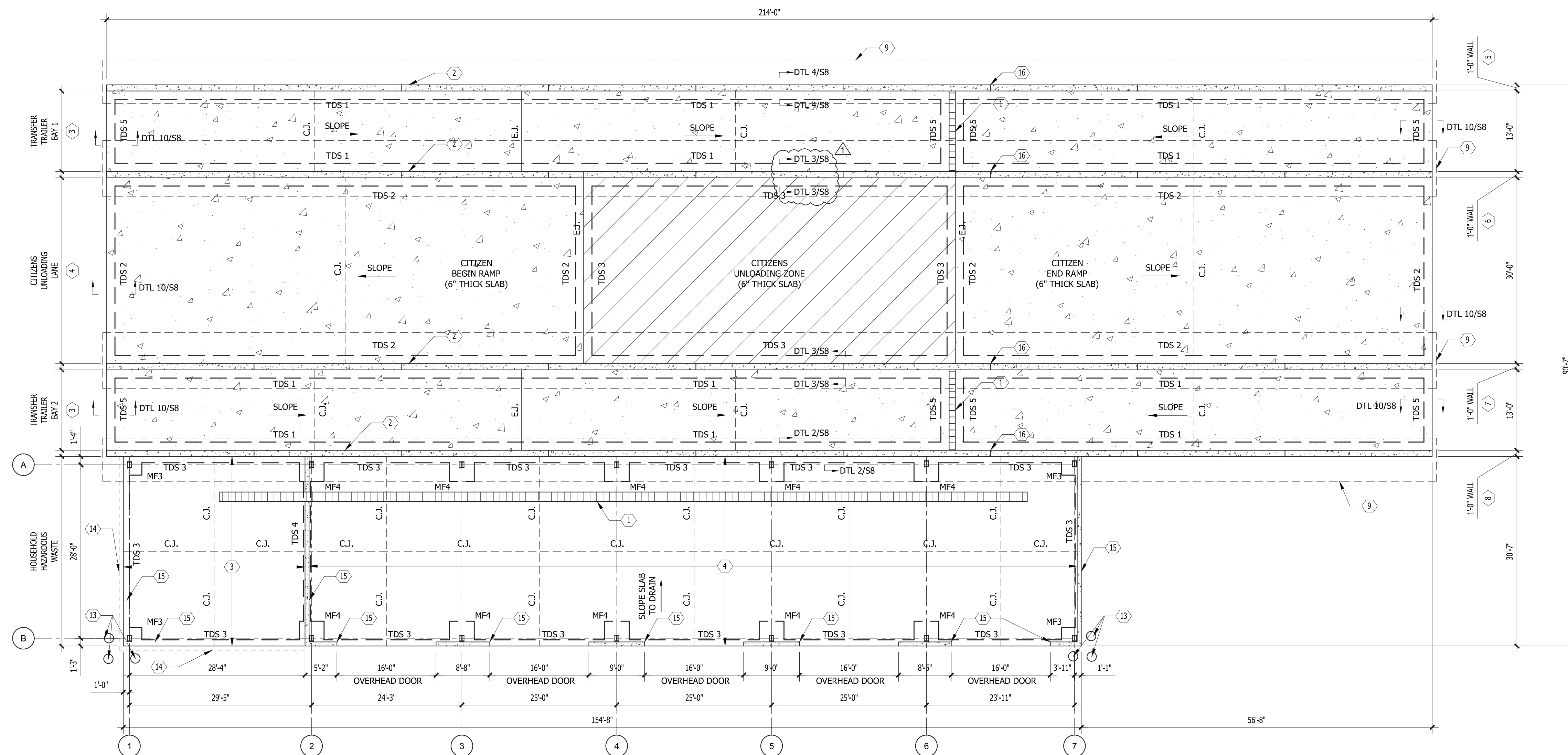
LEGEND	
	APPROXIMATE PROPERTY BOUNDARY
	CONTOURS - EXISTING
	DRAINAGE PIPE - EXISTING
	CHAIN LINK FENCE
	FENCE - WOOD
	GUARDRAIL
	LAYDOWN/STAGING AREA
	APPROXIMATE LIMITS OF CONSTRUCTION
	ASPHALT - EXISTING
	CONCRETE - EXISTING
	APPROXIMATE CPT LOCATION
	APPROXIMATE SPT LOCATION
	SURVEY CONTROL POINT

David Beben <small>Digitally signed by David Beben DN: cn=US, sr=CA, 1=Long Beach, o=Stearns, Conrad, and Schmidt Consulting Engineers, Inc., cn=David Beben, email=dbeben@scsengineers.com Date: 2018.04.29 16:41:32 -0400</small> DAVID M. BEBEN, PE LICENSE NO. 73005	
CHK. BY: DB	DESCRIPTION #1
DATE: 4/2018	BID ADDENDUM #1
REV: A	
REV: B	
REV: C	
REV: D	
EXISTING CONDITIONS PORTER TRANSFER STATION SITE IMPROVEMENTS	
ORANGE COUNTY SOLID WASTE DIVISION ORLANDO, FLORIDA	
SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS 5850 SOUTH SEMORAN BLVD, ORLANDO, FLORIDA 32822 PH (407) 204-3231 FAX NO. (813) 623-6757 FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892 <small>PROJ. NO. 09216054.01 DWN. BY: KKC O/A BY: SAF/CAR DATE: 04/2018 GNS. BY: SRF APP. BY: SRF</small>	
CADD FILE: 05401TOPO	
DATE: MARCH 2018	
SCALE: AS SHOWN	
DRAWING NO. 4	
SHEET 4 of 34	

ISSUED FOR BID
DATE: 3/20/18

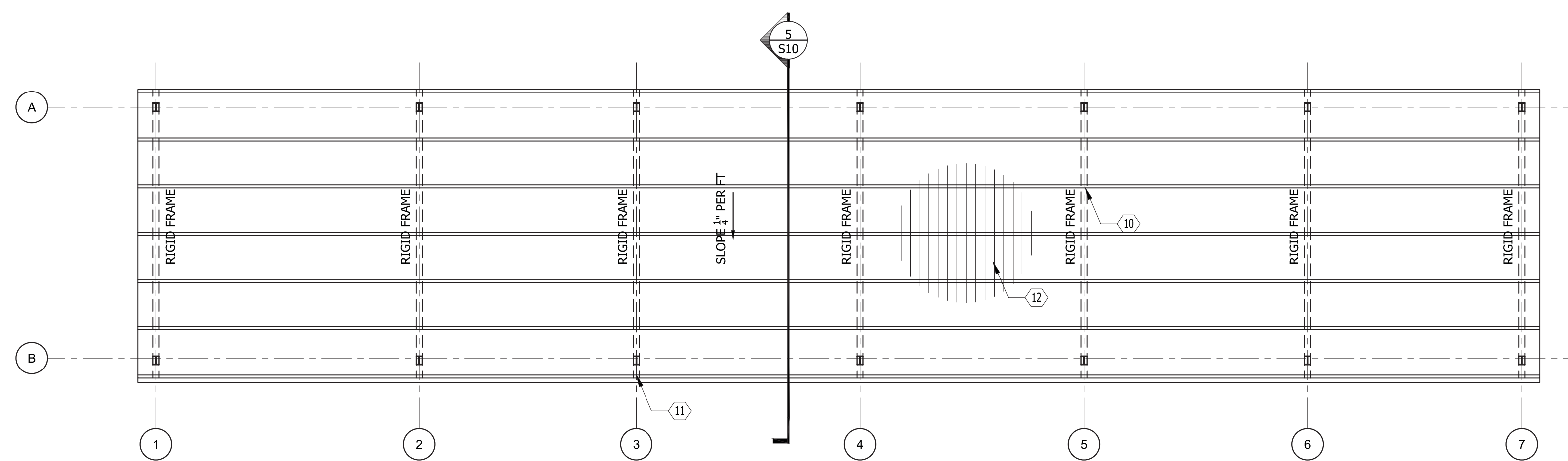
ATTACHMENT 4
DRAWING S-05

P:\Premier\2017\Blue_Martin\Porter\Struct\Drop Off AREA Vind-9.dwg Apr 27, 2018 - 12:38pm Layout Name: S5 - CITIZEN DROP OFF & NEW HHW FOUNDATIONSLAB PLAN By: PremierStructural 1



NEW HHW AND CITIZEN DROP-OFF FOUNDATION/SLAB PLAN

SCALE: 3/32" = 1'-0"



NEW HHW ROOF FRAMING PLAN

SCALE: 3/32" = 1'-0"

MARK	SIZE (L x W x D)	BTM REINF.	TOP REINF.	REMARKS
TDS1	CONT. x 2'-0" x 16"	(3) #5 CONT.	(1) #5 CONT.	---
TDS2	CONT. x 2'-0" x 16"	(3) #5 CONT.	(1) #5 CONT.	---
TDS3	CONT. x 1'-0" x 16"	(2) #5 CONT.	(1) #5 CONT.	---
TDS4	CONT. x 1'-4" x 12"	(3) #5 CONT.	---	---
MF3	3'-0" x 3'-0" x 36"	(3) - #5	(3) - #5	EACH WAY
MF4	4'-0" x 4'-0" x 36"	(4) - #5	(4) - #5	EACH WAY

Khari Rodriguez

Z

Digitally signed by Khari Rodriguez
 DN: serialNumber=36hx83kxpbri8c6npqx8lglk6, c=US, st=Florida, l=Maitland, o=Khari A. Rodriguez, P.E., cn=Khari Rodriguez
 Date: 2018.04.27 00:52:31 -04'00'



FL CERTIFICATE OF AUTHORIZATION #29116
 235 S. MAITLAND AVE
 SUITE 108-A
 MAITLAND FL 32751
 PH: 407-227-7416
 WWW.PREMIER-STRUCTURAL.COM

Khari Rodriguez State of Florida, Professional Engineer,
 License No. 60239.

This item has been digitally signed and sealed by Khari Rodriguez, PE on 4-27-2018 using Digital Signature.

Print copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies.

MARK	SIZE (L x W x D)	BTM REINF.	TOP REINF.	REMARKS
TDS1	CONT. x24"x16"	(3) #5 CONT.	(1) #5 CONT.	---
TDS2	CONT. x12"x12"MIN	(2) #5 CONT.	(1) #5 CONT.	---
TDS3	CONT. x12"x12"MIN	(2) #5 CONT.	(1) #5 CONT.	---
TDS4	CONT. x 12" x 12"	(2) - #5	---	CENTERED ON CURB
TDS5	CONT. x12"x16"	(2) #5 CONT.	(1) #5 CONT.	---
MF3	3'-0" x 3'-0" x 36"MIN	(3) - #5	---	EACH WAY
MF4	4'-0" x 4'-0" x 36"MIN	(4) - #5	---	EACH WAY

- CITIZEN DROP-OFF AND HHW BLDG. PLAN NOTES:
- INDICATES EXTENTS OF CITIZEN UNLOADING ZONE. REFERENCE PROPOSED SITE PLAN FOR LOCATION, LAYOUT, ELEVATION AND DIMENSIONS.
 - PROVIDE 1'-6" HIGH BATTER CURB THROUGHOUT THE LENGTH OF TRANSFER TRAILER BAYS 1 AND 2 (BOTH SIDES OF EACH BAY). REFERENCE RETAINING WALL DETAILS FOR BATTER CURB REINFORCEMENT. BATTER CURBS ARE NOT SHOWN ON PLAN (FOR CLARITY).
 - SLAB SLOPES ARE SHOWN POINTING TOWARDS DIRECTION OF LOWER ELEVATION. REFERENCE SHEET 7 FOR SLOPE PERCENTAGES AND SPOT ELEVATIONS.
 - "TDS" INDICATES TURN DOWN SLAB EDGE. REFERENCE DETAILS FOR SLAB EDGE DIMENSIONS AND REINFORCEMENT.
 - UNLESS NOTED OTHERWISE THE TOP OF ALL SHALLOW FOUNDATIONS SHALL BE -2'-0" BELOW ADJACENT GRADE ELEVATION.
 - PROVIDE GEOGRID PER SECTION 2070 BELOW ALL RETAINING WALL AND BUILDING SPREAD FOOTINGS. CONTRACTOR SHALL OVER EXCAVATE BOTTOM OF SPREAD FOOTINGS IN ORDER TO INSTALL GEOGRID AND FDOT #57 STONE AS PER THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. REFERENCE PROJECT GEOTECHNICAL REPORT FOR ADDITIONAL GEOGRID REQUIREMENTS INCLUDING BUT NOT LIMITED TO GEOGRID EXTENSIONS BEYOND SPREAD FOOTING AREAS AND MINIMUM LAP GEOGRID REQUIREMENTS.
 - REFERENCE PROJECT GEOTECHNICAL REPORT FOR PROJECT SUBGRADE PREPARATION REQUIREMENTS BENEATH CONCRETE PAVEMENTS AND BUILDING SLABS ON GRADE.
 - PROVIDE MODEL 3100 COMMERCIAL TYPE CHAIN OPERATED OVERHEAD DOORS BY ROLL UP DOORS DIRECT OR EQUIVALENT MANUFACTURER. PROVIDE SPEED BUMP AT OVER DOOR LOCATIONS PER DETAIL 1 ON SHEET S9.
 - PROVIDE WATERSTOP RX BY CETCO OR EQUIVALENT PRODUCT FOR HHW SECONDARY POURS I.E. BETWEEN SLAB TO CURBS AND SLAB TO SPEED BUMPS.

- KEY NOTES
- PROVIDE NEW TRENCH DRAINS REFERENCE SHEET 6 FOR LOCATION AND TYPE.
 - 1'-0" CAST IN PLACE CONCRETE RETAINING WALLS REF: SHEETS 7 AND S8 FOR TOP OF WALL ELEVATIONS.
 - PROVIDE 8" THICK SLAB REINFORCED W/ #5 BARS @ 12" O.C. TOP AND BOTTOM EACH WAY. PROVIDE TURNED DOWN SLAB EDGE AT PERIMETERS. TOP OF SLAB ELEVATION = 117.90
 - PROVIDE 8" THICK SLAB REINFORCED W/ #5 BARS @ 12" O.C. TOP AND BOTTOM EACH WAY. TOP OF SLAB ELEVATION = 117.90
 - RETAINING WALL "A" REF: DETAIL 4 ON SHEET S8.
 - RETAINING WALL "B" REF: DETAIL 3 ON SHEET S8.
 - RETAINING WALL "C" REF: DETAIL 2 ON SHEET S8.
 - RETAINING WALL FOOTING BELOW. REFERENCE DETAILS ON SHEET S8 FOR SIZE AND REINFORCEMENT.
 - ROOF PURLINS BY PRE-ENGINEERED METAL BUILDING MANUFACTURER.
 - PROVIDE GUTTER ALONG ROOF EDGE AND DOWNSPOUTS AT EACH COLUMN LOCATION.
 - PROVIDE STANDING SEAM METAL ROOF PANELS BY PRE-ENGINEERED METAL BUILDING MANUFACTURER.
 - PROVIDE 6" DIA. CONCRETE FILLED PIPE BOLLARDS AS SHOWN. SEE TYP. PIPE BOLLARD DETAIL 4 ON SHEET 13.
 - PROVIDE CHAIN LINK FENCE W/ 10FT SWING GATES. REFERENCE SHEETS 6 AND 16.
 - PROVIDE 8" WIDE x 6" TALL CONTAINMENT CURB PER DETAILS 2 AND 3 ON SHEET S9.
 - PROVIDE CONSTRUCTION/CONTRACT JOINTS PER DETAILS ON SHEET S9.

CLIENT	ORANGE COUNTY SOLID WASTE DIVISION ORLANDO, FLORIDA
PROJECT TITLE	PORTER TRANSFER STATION SITE IMPROVEMENTS
SHEET TITLE	CITIZEN DROP OFF / NEW HHW FOUNDATION, SLAB AND ROOF PLANS
CHK. BY	KAR
DATE	4/2018
REV	1
DESCRIPTION	REVISED IN RESPONSE TO BID ADDENDA 1
APP. BY	KAR
DATE	MARCH 2018
SCALE	AS SHOWN
DRAWING NO.	S-05
SHEET	23 of 34

ISSUED FOR BIDDING

ATTACHMENT 5
SECTION 260553

SECTION 10880

SCALE, UNATTENDED TERMINAL, TRAFFIC LIGHT, AND TRAFFIC ARM

PART 1 – GENERAL

1.01 GENERAL

- A. Furnish and install one steel deck motor truck scale and associated electronic controls, a traffic arm, a traffic stop and go light, and an unattended terminal.
- B. Scale shall be a new, unused Mettler-Toledo, Inc. Model VTS 231, or approved equal.
- C. The scale shall have a nominal clear and unobstructed weighing surface of not less than 70 feet inches long and 11 feet wide. The scale shall have a profile not to exceed 14.5” from the top of the scale to the top of the foundation slab or pier of the load cell bearing points.
- D. The scale shall be fully electronic in design and shall not incorporate any mechanical weighing elements, check rods, or check stays.
- E. The scale shall be designed to perform as a single weighing platform and shall be of flat-top design.
- F. The scale shall have a gross weighing capacity of 100 tons.
- G. The scale shall be designed to accept vehicles that generate up to 80,000 pounds per dual tandem axle.
- H. The scale shall have a Concentrated Load Capacity (CLC) of 100,000 pounds.
- I. The scale shall be designed to perform as a single weighing platform and shall be of flat-top design. Side rail support beams are not acceptable.
- J. The scale shall be designed to accept an average daily traffic volume of up to 250 vehicles per day, 365 days per year, for 20 years, assuming that 100% of the vehicles are fully loaded with the equivalent of 80,000 lbs. on their dual tandem axle.
- K. The scale shall be calibrated to a minimum of 120,000 pounds by 20-pound increments and not to exceed 200,000 pounds. System configurations with increments greater than 20-pound increments will not be accepted; therefore scales with gross capacities in excess of 200,000 pounds will not be acceptable in order for the scale to meet NTEP Legal For Trade regulatory requirements.

- L. The junction boxes, load cells, load cell mounting hardware, cover bolts, and fasteners shall be constructed of stainless steel. The cables shall be stainless steel sheathed.
- M. The scale shall meet the requirements set forth by the current edition of the National Institute of Standards and Technology Handbook 44 (NIST HB-44). The scale manufacturer shall provide a Certificate of Conformance (NTEP Certification) to these standards upon request.
- N. The design and manufacture of the scale weighbridge, load cells, digital instrument, printer, and associated accessories shall be of one manufacturer to maximize compatibility and availability of components. Also, the manufacturer shall have a quality system that has been registered to the standards of ISO 9001.
- O. The load cells and load cell mounting hardware shall be constructed of stainless steel. The cables shall be stainless steel sheathed. Load cells which are not stainless steel and hermetically sealed shall not be acceptable because of their inability to prevent moisture from entering the load cell and causing a premature failure.
- P. The scale shall be a Mettler-Toledo, Inc. Model VTS 231 or approved equal.

1.02 SCALE FOUNDATION REQUIREMENTS

- A. The foundation shall meet all local requirements and the minimum specifications as stated in this section.
- B. The foundation shall extend the full length and width of the scale platform.
- C. The foundation must be higher than surrounding grade to promote drainage away from the scale.
- D. The foundation shall be poured and constructed of concrete as specified on the Plans.
- E. The foundation shall be reinforced in all load-bearing areas.
- F. The foundation shall be constructed to provide positive drainage away from its center.
- G. Ensure the scale abuts the concrete approaches at each end so that the top of the scale is flush (the maximum vertical differential between any of the scale elements shall be 1/16". The maximum elevation difference between the entry scale module and the exit scale module shall be 1/16" with the approaches and the centerline of all three elements (scale modules, entry & exit approaches) are aligned.

1.03 WEIGHBRIDGE SPECIFICATIONS

- A. The scale weighbridge shall be constructed of three prefabricated scale modules each with a nominal surface dimension of 11' wide by 23'-4" long.
- B. The scale weighbridge shall be capable of weighing trucks that have dual-tandem axle weights (4 feet minimum between dual axles and at least 10 feet from next axle) of up to 80,000 pounds, and shall have a Concentrated Load Capacity (CLC) of 100,000 pounds.
- C. All welding shall be completed in accordance with the American Welding Society (AWS) D1.1 Structural Welding Code.
- D. All welding shall be performed by welding operators who have been certified to the AWS D1.1 Structural Welding Code.
- E. All welding shall be performed in position 1F to ensure maximum weld integrity.
- F. Longitudinal weighbridge members shall be welded continuously, using a high-penetration, submerged arc welding process. The use of intermittent, or stitch welds on longitudinal members or deck tread plate is unacceptable.
- G. The weighbridge shall be designed to allow access to load cell cables, base plates, and all foundation anchor bolts from the top of the scale platform.
- H. The weighbridge and load cell mounting assemblies shall be designed to allow installation or replacement of a load cell with only one additional inch of clearance required between the top of the foundation and the bottom of the weighbridge on pit-less installations.
- I. There shall be no bolted connections between the load cell and weighbridge assemblies.
- J. The load cell assembly shall be designed so that when you are at the scale weighbridge with a lifting jack, the load cell can be replaced in less than 5 minutes
- K. There shall be no field welding required for the installation of the scale.

1.04 SURFACE PREPARATION AND FINISH

- A. The weighbridge shall be shot blasted to a minimum SSPC-A-SP6 specification prior to painting.
- B. All enclosed chambers created by joining two steel members must be hermetically sealed to eliminate internal corrosion.

- C. All exterior surfaces of the scale shall have a two-part epoxy finish of Carboline 15LO or equal, providing a total Dry Film Thickness of 5-7 mils.
- D. The finish shall be force cured in order to reduce risk of contamination and insure durability of the surface.

1.05 LOAD CELL SPECIFICATIONS

- A. Each load cell shall have a minimum capacity of 50 metric tons (110,000 pounds) with 300% ultimate overload rating.
- B. All Load cells shall be certified by NTEP and meet the specifications as set forth by NIST HB-44 for Class IIII devices. The manufacturer shall provide a Certificate of Conformance to these standards upon request.
- C. All load cells shall be certified to meet the specifications set forth by the International Organization of Legal Metrology (OIML) in document R60 for C3 load cells, which requires 60% tighter accuracy tolerances than NIST HB-44 for Class IIII devices. The manufacturer shall provide a Certificate of Conformance to these standards upon request.
- D. Load cells shall be digital with an integral microprocessor and analog-to-digital conversion function located within the load cell housing.
- E. Load cells shall output only converted digital information without load correction for load position to the scale instrument. Analog output of signals from the load cell is not acceptable due to susceptibility of signal interference.
- F. The load cell assembly shall be constructed so as to perform as a rocker pin and shall have no positive fixed mechanical connectors, such as bolts or links that are required in mounting the load cell to the weighbridge or foundation base plates.
- G. The load cell shall not require check rods, flexures or chain links for stabilization, as each of these items are sources of ongoing maintenance requirements.
- H. The load cell shall not require a junction box to communicate between the load cell and scale instrument. No other devices shall be permitted between the load cell and the digital weight display. Junction boxes, summing boards, gathering boards and gathering boxes, Totalizers, external analog to digital converter boxes and sectional controller boxes will not be accepted because of their significant and inherent maintenance issues.
- I. The load cell shall be of stainless steel construction and hermetically sealed with a minimum NEMA 6P / IP68 (submersible) and IP69K rating.
- J. The load cell shall contain integral Transient Voltage Surge Suppressors (TVSS) for all input and communication lines. Each TVSS shall contain self-resetting

thermal breakers to protect the load cell components from voltage and current surges.

- K. The load cell shall come equipped with a neoprene rubber boot to keep debris from contaminating the lower bearing surface.
- L. The load cell shall have a positive-lock quick connector integral to its housing for connecting and disconnecting the load cell interface cable at the load cell. The connector shall be of glass-to-metal, pin-type construction to maintain a hermetic seal.
- M. System shall be so designed as to permit a load cell cable to be replaced without either splicing the load cell cable or replacing the load cell, either of which will contribute to eventual system failure and unnecessary service costs System shall be so designed as to permit the replacing the load cell cable without requiring that the scale must be recalibrated, further reducing service/maintenance costs.
- N. The load cell shall have the following specifications:
- O. Vmin: 5.0 pounds maximum
- P. Hysteresis: $\pm 0.025\%$ of full scale
- Q. Non-Linearity: $\pm 0.015\%$ of full scale
- R. Creep (30 minutes): $\pm 0.017\%$ of applied load
- S. Temperature range: $-10^{\circ}\text{C} + 40^{\circ}\text{C}$
- T. The load cell interface cable shall be stainless steel sheathed for environmental and rodent protection. Neoprene covered load cell cable shall not be permitted.
- U. Load cell cables which are hard wired directly to the load cell are not acceptable due to the failure rates associated with moisture wicking into the load cell from aged cables or damaged cables, and due to the unnecessary expense associated with replacing entire load cells when only a cable has been damaged.
- V. The load cell shall have a minimum ~~5~~10-year warranty against defects in materials and workmanship and failure from lightning or surge voltages. The warranty shall cover all costs associated with replacement parts, travel, mileage, on-site labor and recalibration after repair, the full cost of which shall be supported solely by the manufacturer and not in part by any other 3rd party.
- W. Load cells shall be Mettler-Toledo, Inc. POWERCELL® PDX® load cell or approved equal.

1.06 SCALE INSTRUMENT

- A. The scale instrument shall be designed for use in vehicle scale weighing applications. It shall be capable of performing basic weighing operations including but not limited to:
1. Inbound/outbound two-weighment operations with traffic light, gate or loop control.
 2. Single weighment operations where vehicle tare weights are known either through preset tares which are stored in the scale instrument memory or manually entered tare values which are entered through the keyboard.
 3. Transient vehicle weighing operations where the transaction is to be completed but the record will not be added to memory accumulators or totals.
- B. The instrument shall, as a minimum, utilize an active TFT 320x240 pixel color backlit display with graphic capability to present the transactional information along with weight to the operator. During normal weighing operations the display will incorporate the following elements:
1. Weight (25mm high characters)
 2. Time and Date
 3. Center of Zero
 4. Mode of Operation (Gross or Net)
 5. Weighing Unit (lb or kg)
- C. The scale instrument shall have the following keyboard operations:
1. 0-9 Numeric Keys
 2. . (Decimal Point)
 3. Clear
 4. Tare
 5. Zero
 6. Print
 7. Nine Application-Specific Assignable Soft Keys with icons for easy operator use to identify TempID and VehID, etc.

8. Five Scale-Function Soft Keys
 9. Screen Navigation Keys for Up, Down, Left, and Right Commands
 10. Enter
- D. The operator shall be capable of entering alphanumeric characters through the terminal without the need for an external keyboard. However, the scale instrument shall, as an accessory, be capable of being interfaced to a standard USB-style computer keyboard without modifications to the scale instrument hardware or software for the purpose of entering alphanumeric information, as well as emulation of application and scale instrument soft-key functionality, if required.
- E. The scale instrument shall have the following operational parameters:
1. Capable of communicating with up to 6 pairs of digital load cell assemblies standard, with an additional 6 pairs with an installed 24VDC power supply.
 2. Ability to digitally average the weight information sent from the load cells and updating the instrument's weight display 15 times per second.
 3. Capable of being programmed for sign-corrected net weighing so that all net weights are positive.
 4. Have a transaction counter to automatically assign sequence numbers to transactions.
 5. Have automatic zero capture on power-up selectable to capture zero at 2% or 10% of the full-scale capacity.
 6. Have adjustable digital filtering.
 7. Have adjustable automatic zero maintenance selectable for 0.5, 1, or 3 displayed increments.
 8. Have push-button zero selectable for 2% or 20% of full-scale capacity.
 9. Tare, Zero, and Print functions shall be inhibited while the weight display is changing. Motion detection shall be selectable for 0.5, 1.0, 2.0, or 3.0 increments.
 10. Only receives digital information from the load cell assemblies. There shall be no analog-to-digital conversion function in the scale instrument.
 11. Capable of providing load correction for load position.

- F. The scale instrument shall have the following service characteristics:
1. Set-up and navigation through all phases of set-up, calibration, and testing shall be intuitive through a decision-tree format.
 2. Capable of performing calibration, span, zero, and shift adjustment through software calculations that require no in-scale adjustment.
 3. Entry of information shall be accomplished through the instrument's keyboard only.
 4. Capable of assigning each load cell with its own unique identification number and displaying the weight reading of each individual load cell through the instrument without disconnecting any of the load cells from the system.
 5. Ability to display digital raw counts for the attached digital load cells with their values being updated on a real-time basis. The scale instrument shall also be capable of displaying the raw count values of multiple digital load cells on the graphical display.
 6. Ability to identify and to immediately display an error condition associated with an individual load cell in the event of a failure or out-of-tolerance condition. The displayed message shall identify the failed load cell and the cause of the failure to avoid an invalid weighment on the scale.
 7. Ability to monitor and display health of load cell network and to compare the current network status to the values captured during calibration. This is a requirement to reduce downtime and provide information to the user so that the user can proactively use the information to determine the most convenient time to address maintenance issues, while avoiding downtime at the most inopportune time.
 8. Load cell health information shall include individual load cell temperature, supply voltage at load cell, signal voltages, maximum loading. These data are vital in reducing downtime and troubleshooting time and cost.
 9. Ability to monitor the gas concentration sensors in each load cell and identify which load cell may be breached or physically damaged so that unscheduled downtime can be eliminated.
 10. Ability to access system status data through an Ethernet connection using a web server residing on the instrument for remote diagnostics

11. Ability to access system memory through an Ethernet connection using a shared data server. This allows tighter integration with customer operations.
- G. The scale instrument shall be NTEP certified and meet or exceed the specifications set forth by NIST HB-44 for Class II, III, and IIIIL Devices. The manufacturer upon request shall provide a Certificate of Conformance to these standards.
- H. The scale instrument shall be housed in a metal enclosure that is suitable for desk or wall mounting.
- I. The scale instrument shall have flexible storage capability with a minimum of 256 Mbytes of flexible memory in which to store pertinent vehicle, transactional, and commodity information. The scale instrument shall be capable of storing the weight information automatically or enabling the operator to assign a memory location to the weight manually. The scale instrument will run SQL or equivalent database application to enable possible integration into higher level databases.
- J. The scale instrument shall have subtotal and total weight accumulators.
- K. The operator shall be able to enter up to 12 digits of alphanumeric ID through the instrument keyboard.
- L. The scale instrument shall have gross/net weight switching.
- M. The scale instrument shall be capable of being programmed and calibrated in pounds or kilograms.
- N. The scale instrument shall have the following data communications capabilities:
 1. One com port RS232
 2. One com port RS232, RS422, or RS485
 3. One TCP/IP 10 Base-T and 100 Base-T Ethernet
 4. One Web server
 5. One Shared Data server
 6. One USB host port
- O. The scale instrument shall output the following information:
 1. Gross, Tare, and Net Weight
 2. ID

3. Transaction Counter
 4. Time and Date
 5. Variable Application-Specific Information
 6. Standard Reports Generated by the Scale Instrument
- P. The scale instrument shall be UL/cUL listed.
- Q. Scale instrument shall have the ability to connect with external PC software to allow configuration, data backup and restore, security unlock capabilities, FTP access to log files so as to significantly reduce service cost and downtime during any repair and maintenance of the scale.
- R. The scale instrument shall be a Mettler-Toledo, Inc. Model IND780 or equivalent.

1.07 JUNCTION BOXES AND CABLES

- A. Junction boxes shall not be permitted in the scale, attached to the exterior of the scale, or remotely mounted from the scale. Sectional controllers with encapsulated PCBs shall not be permitted due to the failure rates associated with PCBs that have wired connections made within enclosures which are not hermetically sealed.
- B. Load cell cables and scale instrument cables shall be stainless steel sheathed for environmental and rodent protection.
- C. In order to minimize maintenance issues, only a single cable shall be used to transmit data or weight signals between the weighbridge and the digital weight display.

1.08 LIGHTNING PROTECTION SPECIFICATIONS

- A. A comprehensive lightning protection system shall be provided with the scale.
- B. The system shall not require complicated wiring or devices to provide this protection.
- C. Major scale components including load cells and scale instrument shall be included in the lightning protection system.
- D. Grounding of all scale components including load cells, scale instrument, and accessories shall be to one common point. Systems with multiple ground points are not acceptable.
- E. An AC line surge protector shall conveniently plug into a common electrical outlet and have a receptacle.

- F. Each AC line surge protector required shall have one isolated, grounding, hospital-grade duplex receptacle, and an internal 15-amp circuit breaker.
- G. Verification of the lightning protection system's performance shall be available in writing from a third-party verification laboratory upon request. Proposals submitted without confirming the availability of 3rd party confirmation that the load cells, cables and instrument as a system have been able to withstand the equivalent of a lightning strike with 80,000 amperes will be rejected.
- H. The lightning protection system shall be a Mettler-Toledo, Inc. StrikeShield Lightning Protection System or equivalent.

1.09 SCALE GUARANTEE REQUIREMENTS

- A. The scale manufacturer shall warrant the scale assembly including all load cells, weighbridge structure, scale instrument and associated cables from failures due to a defect in manufacturing, workmanship, lightning, or surge voltages.
- B. The guarantee will warrant the product for a period of 10 years from date of installation or 122 months from date of shipment to the Buyer, whichever occurs first. The Contractor shall promptly correct any such defect appearing within the warranty period.
- C. The warranty shall support 100% coverage of repair parts, labor, travel time, and mileage from the closest service location, or at the manufacturer's sole discretion, replacement of the product under warranty. The full cost of warranty as specified herein shall be supported solely by the manufacturer and not in part by any other 3rd party or service provider.

1.10 UNATTENDED TERMINAL

- A. The unattended terminal shall be a standalone vehicle weight system that integrates with the Project's scale and weighing software system. It shall be connected to the Internet via Ethernet and wireless. The terminal shall have the same customer capacity as the Project scale. The terminal shall have include an RFID reader (installed at the Owner's preferred location), include a 65 QWERTY keyboard, stainless steel display, and print receipts to customers. The unattended terminal shall be a Mettler-Toledo, Inc. IND9US (compatible with Udrive 780 software) or approved equivalent.

1.11 TRAFFIC ARM AND TRAFFIC LIGHT

- A. The traffic arm shall be a high-traffic barrier that is controlled by the scalehouse operator. The 12-foot wide traffic arm shall be rated for 6,000 cycles per day with an opening time of 2.5 seconds, and operated via a remote control. The traffic arm shall have battery backup for 900 cycles when the power is down. The traffic arm

shall be break-away and constructed with corrosion resistant aluminum alloy with yellow/black stripes.

- B. The traffic light shall be a red and green traffic light with housing dimensions of 13.5" high x 13" wide, and 7" deep. The traffic light shall be aluminum with a powder coat finish or 10% fiberglass reinforced polycarbonate with colored resins integral to housing.

PART 2 - PRODUCTS

2.01 SCALE

- A. Five calendar days after the Pre-Construction Meeting, the Contractor shall provide the following new products and all ancillary and necessary components to provide a complete integrated and operable system, whether or not they are specifically mentioned in the plans or specifications:
 - 1. Mettler-Toledo, Inc. Model VTS 231 Truck Scale and update.
 - 2. Load cell(s) and related components.
 - 3. Control systems including wiring, conduit, control panels, interfaces, etc.
 - ~~4. Concrete for the scale module decks.~~
 - ~~5.4.~~ Bumper plates, adjusting mechanisms, leveling devices, bearing plates, anchor bolts, mounting bases for all load bearing components.
 - ~~6.5.~~ Pored-in-place reinforced concrete foundation for the scale.
 - ~~7.6.~~ Reinforced concrete approach slabs.
 - ~~8.7.~~ An Operations and Maintenance Manual (in a 3-ring binder) for the specific scale furnished.
 - ~~9.8.~~ Guarantee specified in Section 1.09.
- B. The Contractor shall provide written confirmation of empirical testing data to validate the design of the weighbridge through actual life-cycle testing. During the testing process the weighbridge must see a minimum of 1 million cycles, with at least 80,000 lbs. of test load, applied on the 8 contact points of a standard truck's dual tandem axle tires. This documentation must be provided with the proposal submittal. Failure to provide this information will result in the bid being considered non-responsive.
- C. Following installation and start-up, all manufactured written certificates of warranty and guarantees shall be supplied by the Contractor.

2.02 UNATTENDED SCALE TERMINAL

- A. Fourteen days prior to installation, Contractor shall provide the following:
 - 1. Manufacturer and model
 - 2. Control systems including wiring, conduit, control, interfaces, etc.
 - 3. The Operations and Maintenance Manual for the terminal and software.
 - 4. Concrete foundation slab shop drawings.

2.03 TRAFFIC ARM

- A. Fourteen days prior to installation, Contractor shall provide the following:
 - 1. Product Data: Equipment list, system description, electrical wiring diagrams for installation, and manufacturer's data sheets on each product to be used, including:
 - a. Preparation instructions and recommendations.
 - b. Storage and handling requirements and recommendations.
 - c. Installation methods.
 - 2. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, edge conditions, and accessories.
 - a. Operation, installation, and maintenance manuals including wiring diagrams.
 - b. Risers, layouts, and special wiring diagrams showing any changes to standard drawings.
 - c. Concrete foundation slab shop drawings.

2.04 TRAFFIC LIGHT

- A. Fourteen days prior to installation, Contractor shall provide the following:
 - 1. Manufacturer and model of the traffic light.
 - 2. Control systems including wiring, conduit, control, interfaces, etc.
 - 3. The Operations and Maintenance Manual.
 - 4. Concrete foundation slab shop drawings.

PART 3 – EXECUTION

- A. The Contractor shall provide all materials, equipment and ancillary devices, whether or not shown on the plans or called out in these specifications, that are

needed to provide a complete, functioning scale system, including integration with the existing scale system operations, software, and controls, the mounting of all load cells, control conduits and wiring, control boxes, control panels, instrument displays and operator terminals whether inside or outside the scalehouse office.

- B. Contractor shall provide a start-up technician, certified by the scale manufacturer, to the site to lead the start-up and testing demonstration for the scale system.
- C. The technician shall be available for four hours on-site (not including any travel time to and from site).
- D. The technician shall instruct the Owner on the operation, trouble-shooting, calibration, maintenance and shut-down of the scale system.
- E. The start-up test of the scale system shall include the following activities led by the technician:
 - 1. Power up and calibrate the scale and demonstrate it performs all functions and is measuring accurately the weight of a stationary test vehicle of at least 80,000 pounds.
 - 2. The start-up test shall also demonstrate that the existing scale system, software and controls continues to function properly and is fully integrated with the addition of the new scale function and system.
 - 3. Simulate all alarm conditions of the scale system in order to demonstrate alarm controls are functioning properly.
- F. The Contractor shall provide all materials, equipment and ancillary devices, whether or not shown on the plans or called out in these specifications that are needed to provide a complete, functioning unattended terminal payment system, traffic arm and traffic light.

- END OF SECTION -

ATTACHMENT 6
SECTION 13128

SECTION 13128

SCALE HOUSE METAL CANOPY

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work in this section includes the construction and installation of the metal canopy, including the vertical support columns in the scale area, and connection to the concrete footings.
- B. The basic layout and overall dimensions of the canopy provided on the Plan are for the Contractor's information and use in preparing the final installation drawings.
- C. The Contractor shall be responsible for preparing the actual construction and installation plans and submitting them to the Engineer for the Owner's approval.
- D. The Contractor shall use a canopy manufacturer, or other qualified entities, to prepare the installation and erection plans, shop drawings, and to inspect the canopy as it is erected on site.

1.02 TYPE OF CONSTRUCTION

- A. The key features that should be included for the scale canopy include:
 - All structural steel is hot-dipped galvanized.
 - Tubular columns.
 - Exposed roof construction consisting of basic beam and purlin constructed of rolled steel shapes.
 - Corrugated metal roof and wall panels.
 - Corrugated metal fascia.

1.03 APPLICABLE CODES AND STANDARDS

- A. The canopy shall be installed in accordance with the applicable building code, national standards, and local requirements for Orange County Florida. These shall include, but not be limited to the following:
 - 1. Orange County Building Department
 - 2. The Florida Building Code
 - 3. The American Institute of Steel Construction (AISC)
 - 4. American Society for Testing Materials (ASTM)

5. American National Standards Institute (ANSI)
6. American Welding Society (AWS)

PART 2 - SUBMITTALS

2.01 PLANS & SHOP DRAWINGS

The Contractor Shall Provide a Complete Set of Shop Drawings for the Canopy that will include at a Minimum:

- Size, Orientation, and Designation of all Structural Steel.
- All Permanent Bracing Required.
- Details of the Roof Joint Construction.
- All Structural Connections Including Number and Size of Connectors.
- All Points Where Field Welding Will Occur.
- Connections to Footings.
- Overall Dimensions of the Canopy, Including Clear Height, Length and Width.
- All paint and primer materials to be used in construction

PART 3 - MATERIALS

3.01 STRUCTURAL STEEL

- A. All material and work shall conform to the latest AISC Specifications for Design, Fabrication, and Erection of Structural Steel for Buildings.
- B. Wide flange I beam: Shall conform to ASTM, A572 GR.50, $F_y = 50$ ksi. Other rolled sections shall conform to ASTM A36, $F_y = 36$ ksi.
- C. Square and rectangular tubing: Shall conform to ASTM A500, Grade B, $F_y = 46$ ksi.
- D. Plate Steel – shall conform to ASTM A36, $F_y = 36$ ksi.
- E. All structural steel shall be cleaned of all foreign substances prior to receiving a factory-applied hot-dipped galvanized coating.

3.02 CONNECTIONS AND ANCHORAGE

- A. ASTM A36 structural steel connection plates with a minimum yield stress of 36,000 psi.

- B. Domestic ASTM A325 high strength bolts shall be used. All ASTM A325 bolts shall be installed per the RSCS Specification for structural joints using A325 or A490 bolts, 11/13/85, contained in part 5 of the AISC Manual of Steel Construction, Allowable Stress Design, 9th Edition.
- C. Flange and purlin bracing were required.
- D. All framing connection bolting shall be completed with a washer for the bolt and a washer for the nut.
- E. ASTM A572 grade 50 threaded round stock with a minimum yield stress of 50,000 psi.
- F. 1” diameter base plate anchorage rod with a 90 degree, 6” minimum, bent leg shall be used.
- G. Threaded projection above footing shall be 7”.
- H. Double nuts and washers for each bolt shall be provided, one set to be used for plumbing and leveling.
- I. Templates for setting anchor bolts shall be provided.
- J. Templates shall be removed before setting column on foundation.

3.03 SHEET METAL ROOFING

- A. ASTM A653 with minimum yield stress of 40,000 psi having a 660 galvanized surface.
- B. 1 ½” corrugated steel panels.
- C. Panels are fastened to the purlin beams with #12 stainless steel screws.
- D. All fasteners shall be stainless steel.
- E. Provide neoprene washers.
- F. The assembled roof system shall be leak-tight.
- G. Contractor shall provide Engineer one sample of the roof panel, minimum 12-inch x 12-inch incorporating the joint seam and fastening system.

3.04 FASCIA

- A. Panel face 24 gauge hot dipped galvanized steel with baked enamel finish.
- B. No exposed fasteners on exterior face.

- C. Cone material 2” - #1 expanded virgin polystyrene.
- D. Backing 24 gauge galvanized steel.

3.05 ACCESSORIES

- A. Gutters: to meet the following requirements:
 - 1. Straight sections to be ASTM A653 with a minimum yield stress of 40,000 psi having a G60 galvanized surface, inside and outside.
 - 2. Provide appropriate width and depth gutter section to adequately handle the maximum rainfall flow without overtopping. Slope as required so that all gutters have positive draining capability. Straight sections are 20 gage steel minimum.
 - 3. All assembled gutters shall be leak-tight.
 - 4. Manufacturer must be capable of providing seamless gutter profiles up to 40 feet in length.
- B. Downspouts: to meet the following requirements:
 - 1. Provide appropriate sizing to adequately manage the maximum rainfall flow without backup. Minimum 20 gage steel with galvanized finish.
 - 2. All assembled downspouts shall be leak-tight.
- C. Lighting

The canopy shall be furnished with four lights, two over the in-bound scale and the other two over the out-bound scale as shown on the Plans.

The lights shall be manufactured by Hubbell, Model No. PVL-070H-128L, or approved equal. See Section 265600, “Exterior”.

3.06 STEEL FRAMING

- A. All structural steel, framing steel, columns, tubes, base plates, anchor bolts, connecting bolts, washers, nuts, connecting steel, plates, and miscellaneous shapes and pieces used in the construction of the canopy shall have a factory-applied hot-dipped galvanized coating.
- B. Galvanized coating shall conform to the following standard
 - 1. Structural steel (plate, wide-flange beams, angles, channels, pipe, tubing) are galvanized to ASTM A 123/A 123M.

2. Fasteners and small parts that fit into a centrifuging basket are galvanized to ASTM A 153/A 153M.

3.07 LIGHTNING PROTECTION SYSTEM

- A. Provide a lightning protection and grounding system in accordance with Drawings. System shall meet Sections 260526 “Grounding and Bonding for Electrical Systems” and 264113 “Lightning Protection for Structures” as a minimum.

PART 4 - INSTALLATION

4.01 TOUCHUP

- A. Contractor shall repair any galvanized surface coating damaged by erection, welding, or by accident, in accordance with ASTM A780.

PART 5 - ACCEPTANCE

5.01 WARRANTY

- A. Sheet Metal & Roof Panels - Provide 20-year material warranty on galvanized coating for structural steel, roof panels, fascia, gutters and downspouts, and structural steel and fasteners.

5.02 QUALITY CONTROL

The completed canopy system shall meet the following requirements as to levelness and plumbness:

- A. Deviation from plumb, level and alignment: 1 in 500, maximum.
- B. Displacement of columns: 3/8 inch maximum of centerline.
- C. Contractor shall make any adjustment, re-assemble or repair necessary to the canopy so that the canopy meets these requirements at no extra cost to COUNTY.

END OF SECTION