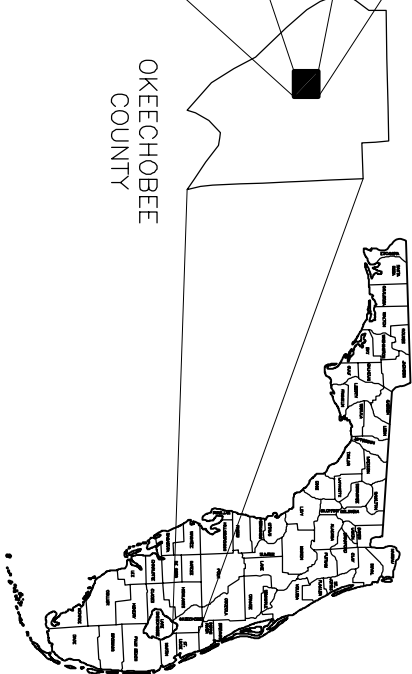
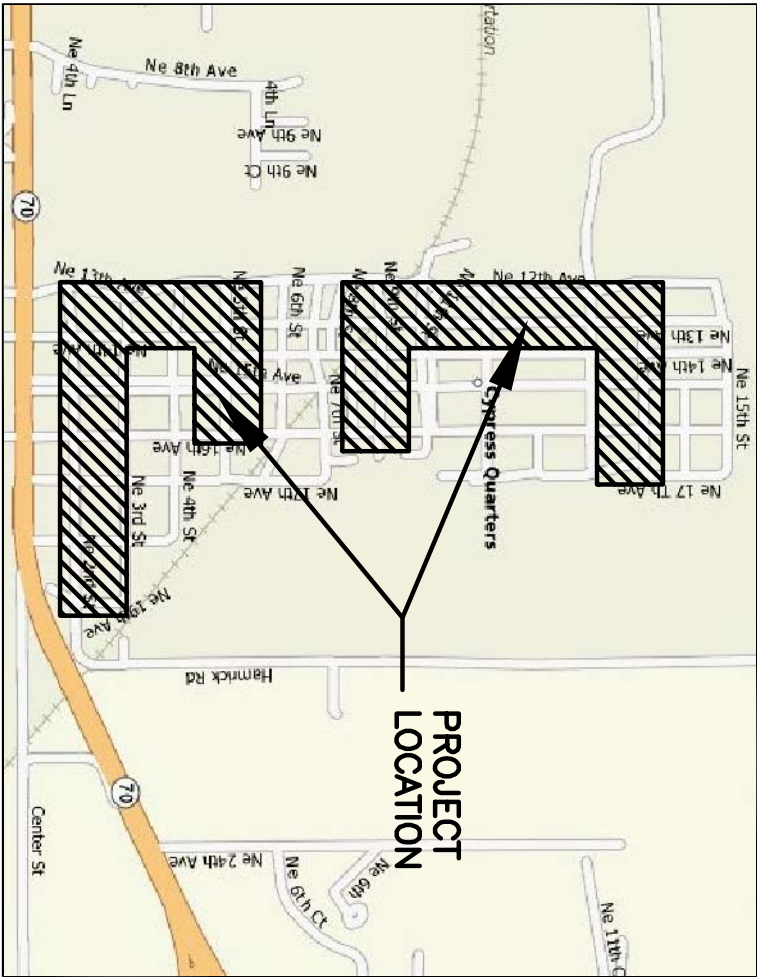


OKEECHOBEE COUNTY CDBG

DOUGLAS PARK DRAINAGE IMPROVEMENTS (PHASE II)

LOCATION MAP



VICINITY MAP
SCALE: N.T.S.

BOARD OF CITY COMMISSIONERS

CHAIRMAN – DISTRICT 3	CLIF BETTS, JR.
1ST VICE CHAIRMAN – DISTRICT 1	RAY DOMER
2ND VICE CHAIRMAN – DISTRICT 5	ELVIE POSEY
DISTRICT 2	NOEL CHANDLER
DISTRICT 4	MARVIN WHERRELL
COUNTY ADMINISTRATOR	ROBBIE L. CHARTIER

FILE NAME: 00-0903- G-00 -CVR.dwg

PREPARED FOR:

OKEECHOBEE COUNTY

PROJECT No. 00-0903-441

CALL SUNSHINE STATE
ONE-CALL CENTER 48 HOURS
BEFORE EXCAVATION
1-800-432-4770

PRELIMINARY



CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
11101 SOUTH CROWN WAY, SUITE 1 – WELLINGTON, FLORIDA. 33414
(561) 791-9280 E-Mail:casassoc@craigasmith.com
Certificate Number: LB0003110



GENERAL ABBREVIATIONS

ABRV	DESCRIPTION	ABRV	DESCRIPTION
ACP	ASBESTOS CEMENT PIPE	MS	METAL SIGN
ALUM	ALUMINUM	NPT	NATIONAL PIPE THREAD
ARV	AIR RELIEF VALVE	N.R.T.S.	NO REVISIONS THIS SHEET
BE	BURIED ELECTRIC	NTS	NOT TO SCALE
B/L	BASELINE	OC	ON CENTER
BSP	BACTERIOLOGICAL SAMPLE POINT BURIED	OE	OVERHEAD ELECTRIC
BT	TELEPHONE CABLE	OHW	OVERHEAD WIRE
CATV	CABLE TELEVISION	PHDPE	PERFORATED HIGH DENSITY POLYETHYLENE
CB	CATCH BASIN	PI	POINT OF INTERSECTION
CIP	CAST IRON PIPE	PPD	POUNDS PER DAY
℄	CENTER LINE	PP	POWER POLE
COL	COLUMN	PRB	POLLUTION RETARDANT BAFFLE
CONC	CONCRETE	PROP	PROPOSED
CV	CHECK VALVE	PSI	POUNDS PER SQUARE INCH
DIA	DIAMETER	PV	PLUG VALVE
DIP	DUCTILE IRON PIPE	PVC	POLY VINYL CHLORIDE
ELEV	ELEVATION	RCP	REINFORCED CONCRETE PIPE
EDW	EDGE OF WATER	RE	RIM ELEVATION
EP	EDGE OF PAVEMENT	RED	REDUCER
E/P	EXISTING PAVEMENT	REDD	REQUIRED
EXIST	EXISTING	RU	RESTRAINED JOINT
FH	FIRE HYDRANT	RWM	RAW WATER MAIN
FM	FORCEMAIN	R/W	RIGHT-OF-WAY LINE
FPL	FLORIDA POWER & LIGHT	SAN	SANITARY SEWER PIPE
GE	GRATE ELEVATION	SS	STORM SEWER
GV	GATE VALVE	TEL	TELEPHONE
HDPE	HIGH DENSITY POLYETHYLENE	TOB	TOP OF BANK
INV	INVERT ELEVATION	TOE	TOE OF SLOPE
LAT	LATERAL	TYP	TYPICAL
LF	LINEAR FEET	UB	UTILITY BOX
LP	LIGHT POLE	UGE	UNDERGROUND ELECTRIC
MAX	MAXIMUM	USF	UNITED STATES FOUNDRY
MFR	MANUFACTURER	VCP	VITRIFIED CLAY PIPE
MH	MANHOLE	WM	WATER MAIN
MIN	MINIMUM	WPP	WOOD POWER POLE

GENERAL SYMBOL LEGEND

ABRV. SYM.	DESCRIPTION	ABRV. SYM.	DESCRIPTION
PR	RISER	ICV	IRRIGATION CONTROL VALVE
CATV	CATV BOX	MH	MANHOLE (UNKNOWN)
BTM	BURIED TELEPHONE MARKER	TP	TRAVERSE POINT
CO	CLEAN OUT	HCAP	HANDICAP MARKER (PAVEMENT)
CM	CONCRETE MONUMENT	TLP	GUY POLE
GA	GUY ANCHOR	GLUP	SIGN (2 POSTS)
TBM	TEMPORARY BENCH MARK	SGN	SIGN (1 POSTS)
EM	ELECTRIC METER	BFP	BACKFLOW PREVENTOR
TEL	TELEPHONE PEDASTEL	WP	WOOD POST
BO	BLOW OFF	CLP	CONCRETE LIGHT POLE
GRLT	GROUND LIGHT	PM	PARKING METER
SMH	SANITARY MANHOLE	FMB	FEDERAL MAIL BOX
FH	FIRE HYDRANT	BOL	BOLLARD
LP	LIGHT POLE	BH	BORING HOLE
PZ	PIEZOMETER	STP	STAND PIPE
CMD	CONCRETE MONUMENT & DISC	GM	GAS METER
CPP	CONCRETE POWER POLE	BM	BENCH MARK
T	TRANSFORMER	UTP	UTILITY POLE
X CUT	X CUT	IP	IRON PIPE
CI	CURB INLET	GV	GAS VALVE
STMH	STORM MANHOLE	WPP	WOOD POWER POLE
WV	WATER VALVE	EJB	ELECTRIC JUNCTION BOX
COL	COLUMN	GM	GAS MANHOLE
MES	METERED END SECTION	ARV	AIR RELEASE VALVE
MP	METAL POST	GP	GAS PORTABLE
TRS	PK NAIL & DISC	POLE	POLE
PKD	CATCH BASIN	SV	SEWER VALVE
CB	METAL PIPE	ALP	ALUMINUM LIGHT POLE
MPIPE	WEIR	TMH	TELEPHONE MANHOLE
WEIR	SATELLITE DISH	IR	IRON ROD
SATD	WATER LINE SERVICE	SO	STUB OUT
WLS	GAS MARKER (BURIED)	PMB	PRIVATE MAIL BOX
GASM	NAIL & DISC	AT	AERIAL TARGET
ND	IRON ROD & CAP	FP	FLAG POLE
IRC	SPRINKLER		BACTERIOLOGICAL SAMPLE POINT
SP	FLAT GRATE INLET		EXIST TREE
FGI	WATER METER		EXISTING GRADE
WM	ELECTRIC MANHOLE		PROPOSED GRADE
EMH			

GENERAL ABBREVIATIONS

ABRV	DESCRIPTION	ABRV	DESCRIPTION
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MAX	MAXIMUM	USF	UNITED STATES FOUNDRY
MFR	MANUFACTURER	VCP	VITRIFIED CLAY PIPE
MH	MANHOLE	WM	WATER MAIN
MIN	MINIMUM	WPP	WOOD POWER POLE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING OVERHEAD ELECTRIC		EXISTING WATER MAIN
	EXISTING UNDERGROUND ELECTRIC		EXISTING WATER SERVICE WITH METER EXISTING
	EXISTING OVERHEAD TELEPHONE		EXISTING TEE, GATE VALVE, AND FIRE HYDRANT
	EXISTING BURIED TELEPHONE		RIGHT OF WAY
	EXISTING CABLE TELEVISION		BASE LINE
	BURIED TRAFFIC CONTROL		EASEMENT LINE
	EXISTING OVERHEAD UTILITY		CURB & GUTTER
	EXISTING GAS MAIN		PROPOSED PIPE LENGTH, SIZE, AND TYPE OF
	EXISTING STORM SEWER		WIRE FENCE
	EXISTING SANITARY SEWER		CHAIN LINK
	EXISTING FORCE MAIN		BARB WIRE
	EXISTING STORM OR SEWER MANHOLE		WOOD FENCE
	EXISTING IRRIGATION		

GENERAL SYMBOL LEGEND

SHEET INDEX	
NUMBER / SHEET	DESCRIPTION
00	COVER SHEET
01	ABBREVIATIONS, INDEX & LEGEND SHEET
02	KEY SHEET
03-07	C-01 TO C-05 N.E. 2ND STREET
08-09	C-06 TO C-07 N.E. 14TH AVENUE
10-12	C-08 TO C-10 N.E. 5TH STREET
13-14	C-11 TO C-12 N.E. 9TH STREET
15-17	C-13 TO C-15 N.E. 13TH STREET
18	C-16 STANDARD DRAINAGE DETAILS

EXISTING

FUTURE

PROPOSED

NOTE: FOR GRAPHICAL CLARIFICATION ON PLANS CONTAINING BACKGROUND AERIAL PHOTOS EXISTING ITEMS ARE SHOWN HOLLOW WHERE AS PROPOSED ARE SHOWN SOLID.

EXISTING

PROPOSED

LINE WEIGHTS

SHADED SOLID LINES & TEXT DENOTE EXISTING EQUIPMENT, STRUCTURES AND WORK.

NON-SHADED DASHED LINES & TEXT DENOTE FUTURE EQUIPMENT, STRUCTURES AND WORK.

NON-SHADED, BOLD, SOLID LINES & TEXT DENOTE PROPOSED EQUIPMENT, STRUCTURES AND WORK.

SHEET INDEX

NUMBER / SHEET	DESCRIPTION
00	COVER SHEET
01	ABBREVIATIONS, INDEX & LEGEND SHEET
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03-07	C-01 TO C-05 N.E. 2ND STREET
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LINE WEIGHTS

EXISTING

FUTURE

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NOTE: FOR GRAPHICAL CLARIFICATION ON PLANS CONTAINING BACKGROUND AERIAL PHOTOS EXISTING ITEMS ARE SHOWN HOLLOW WHERE AS PROPOSED ARE SHOWN SOLID.

EXISTING

PROPOSED



CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 WEST HAWK ROAD
POWERS, FLORIDA 32069
(904) 782-8222
CERTIFICATE NO. LB. 3110

PREPARED FOR:
OKEECHOBEE COUNTY

DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS
ABBREVIATIONS, INDEX
AND LEGEND SHEET

FILE NAME: 01-0903- 6-01 -LAND.dwg
LAST SAVED: 03/07/08 - 3:19pm
SCALE
AS SHOWN

SHEET
G-01
OF
18
Total Sheets

NO.	DATE	REVISION	BY		

Date:	01/02/08
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Drawn:	MM
Checked:	OAR

APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

**CRAIG A. SMITH & ASSOCIATES**
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POMEROY, FLORIDA 33069
(954) 782-8222
CERTIFICATE NO. LB. 3110



PREPARED FOR:
OKEECHOBEE COUNTY

**DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS**

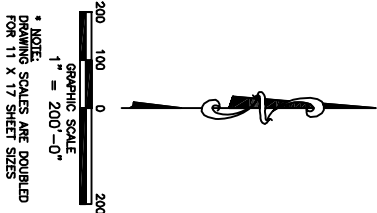
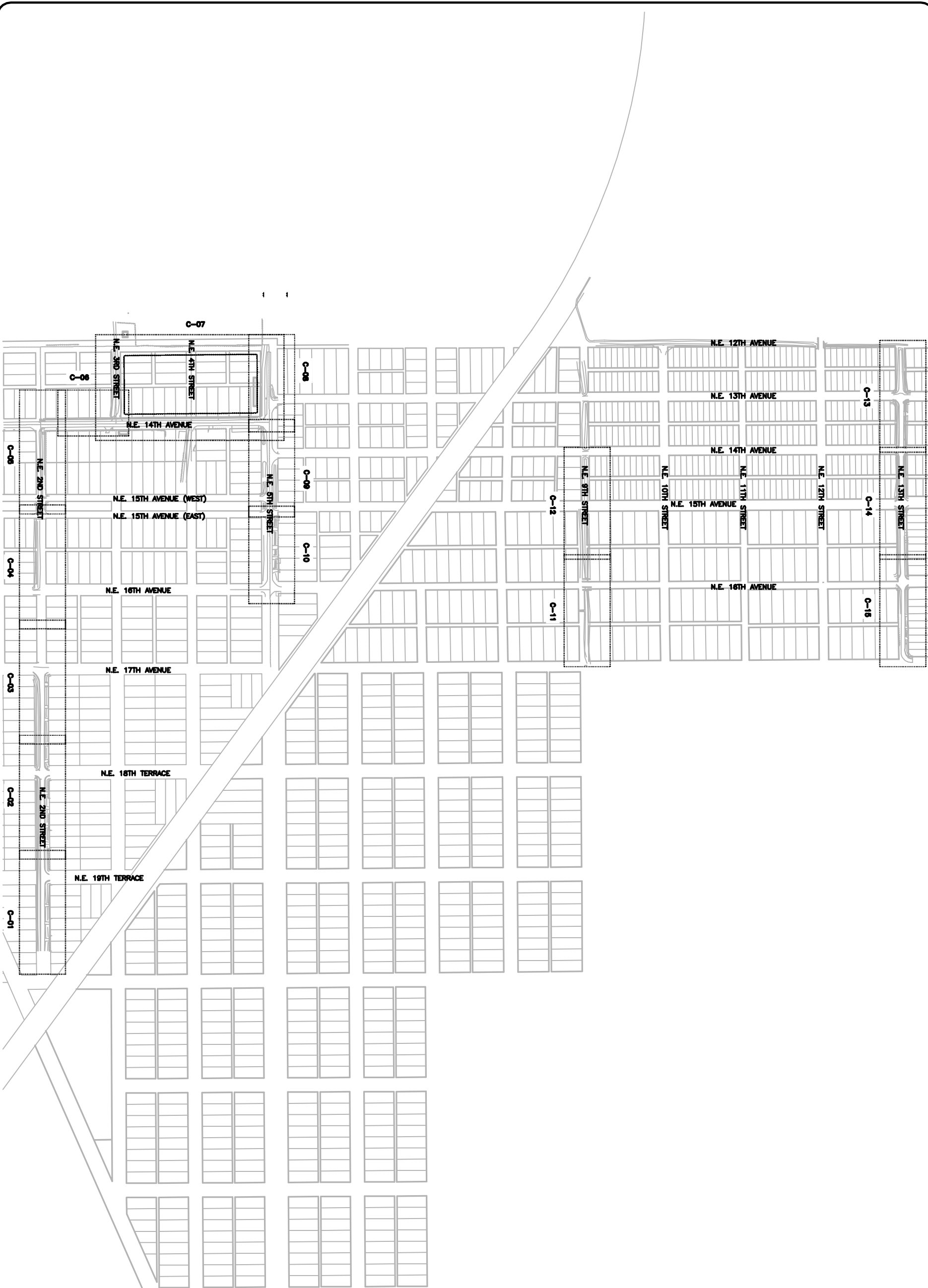
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Date:	01/02/08
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APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

CRAIG A. SMITH & ASSOCIATES

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1000 WEST HAWK ROAD
SUITE 200
FORT MYERS, FLORIDA 33909
(941) 782-8222
CERTIFICATE NO. LB 3110

PREPARED FOR:

OKEECHOBEE COUNTY

DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS

N.E. 2ND STREET

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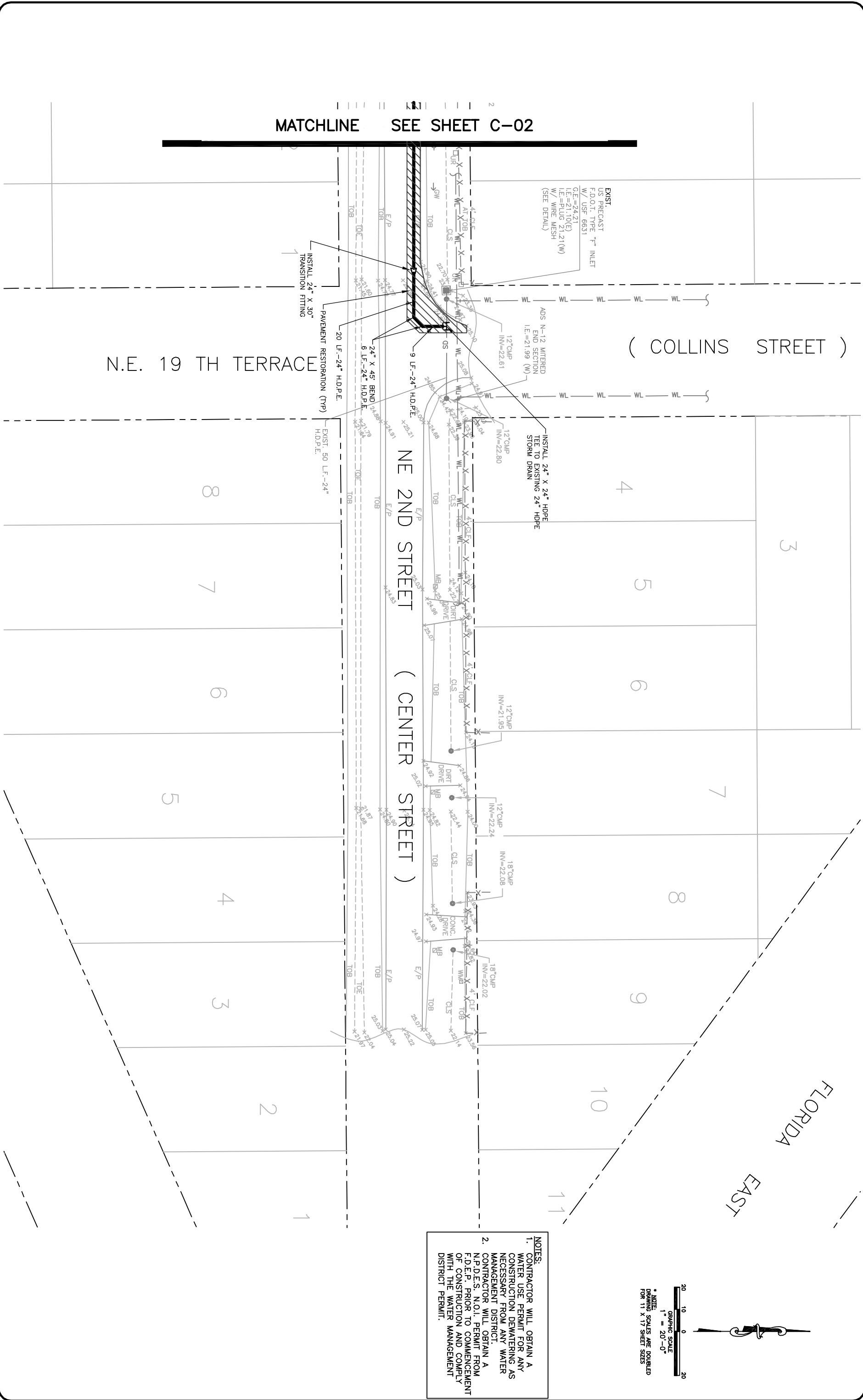
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AS SHOWN

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00-0903

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C-01

OF
18

Total Sheets



- NOTES:
- CONTRACTOR WILL OBTAIN A WATER USE PERMIT FOR ANY CONSTRUCTION Dewatering AS NECESSARY FROM ANY WATER MANAGEMENT DISTRICT.
 - CONTRACTOR WILL OBTAIN A N.P.D.E.S. N.O.I. PERMIT FROM N.P.D.E.P. PRIOR TO COMMENCEMENT OF CONSTRUCTION AND COMPLY WITH THE WATER MANAGEMENT DISTRICT PERMIT.

20 10 0 20

GRAPHIC SCALE

1" = 20'-0"

* NOTE: SCALES ARE DOUBLED FOR 11 X 17 SHEET SIZES

NO.	DATE	REVISION	BY

Date:	01/02/08
Design:	AC
Drawn:	MM
Checked:	QAR

APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

**CRAIG A. SMITH & ASSOCIATES**
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1000 WEST HAWG ROAD
POWERSBORO, MISSISSIPPI 39069
(601) 782-8222
CERTIFICATE NO. LB. 3110

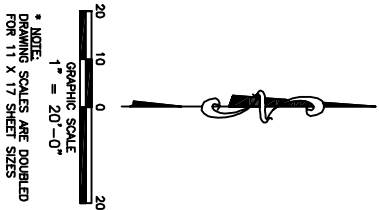
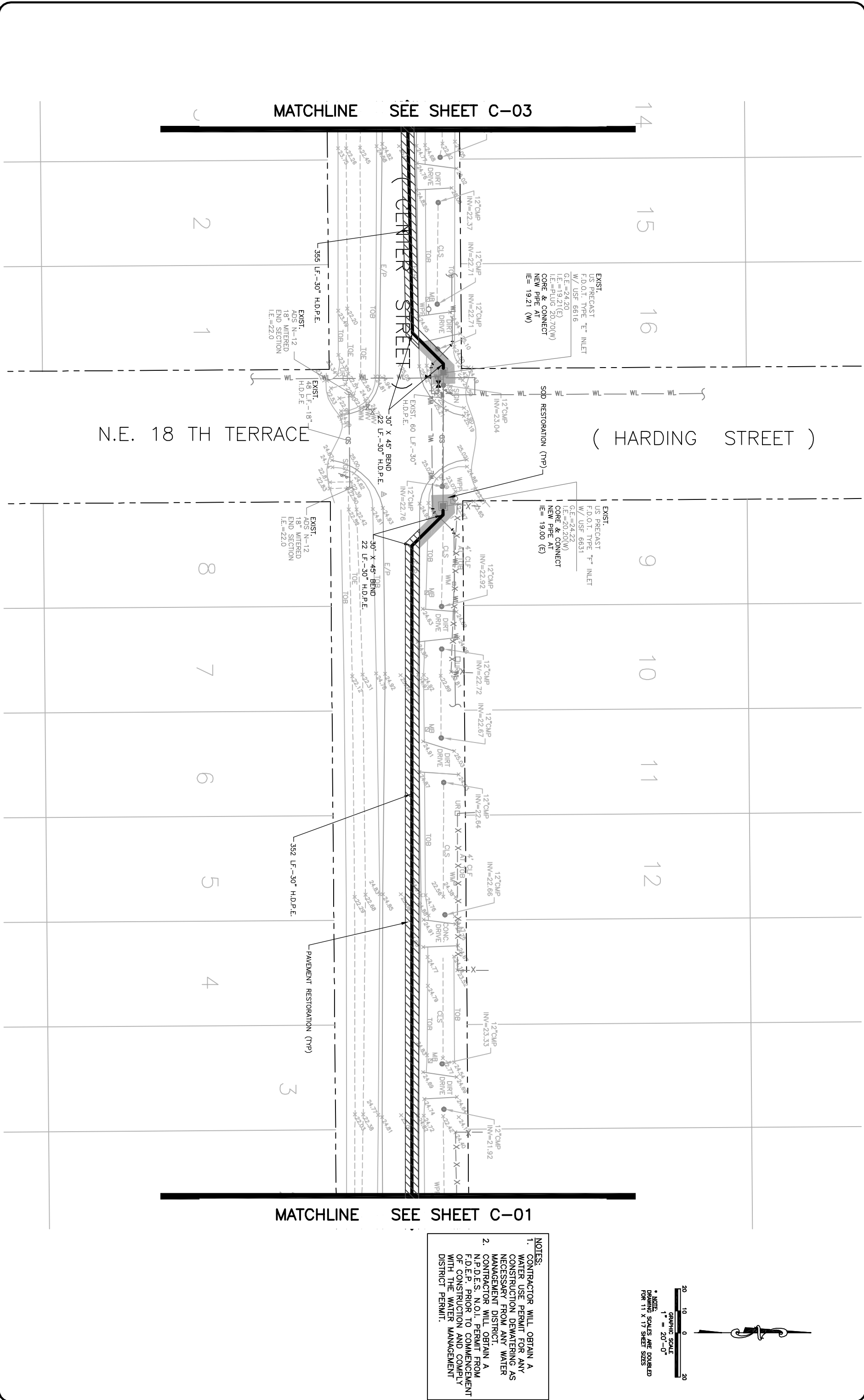


PREPARED FOR:
OKEECHOBEE COUNTY

**DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS**
N.E. 2ND STREET

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LAST SAVED: 03/07/08 - 4:30pm
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PROJECT
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C-02
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18
Total Sheets



- NOTES:
1. CONTRACTOR WILL OBTAIN A WATER USE PERMIT FOR ANY CONSTRUCTION DEWATERING AS NECESSARY FROM ANY WATER MANAGEMENT DISTRICT.

2. CONTRACTOR WILL OBTAIN A N.P.D.E.S. N.O.I. PERMIT FROM F.D.E.P. PRIOR TO COMMENCEMENT OF CONSTRUCTION AND COMPLY WITH THE WATER MANAGEMENT DISTRICT PERMIT.

NO.	DATE	REVISION	BY

Date:	01/02/08
Design:	AC
Drawn:	MM
Checked:	QAR

APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

**CRAIG A. SMITH & ASSOCIATES**
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1000 WEST HAWK ROAD
POWERSBORO, MISSISSIPPI 39069
(601) 782-8222
CERTIFICATE NO. LB-3110

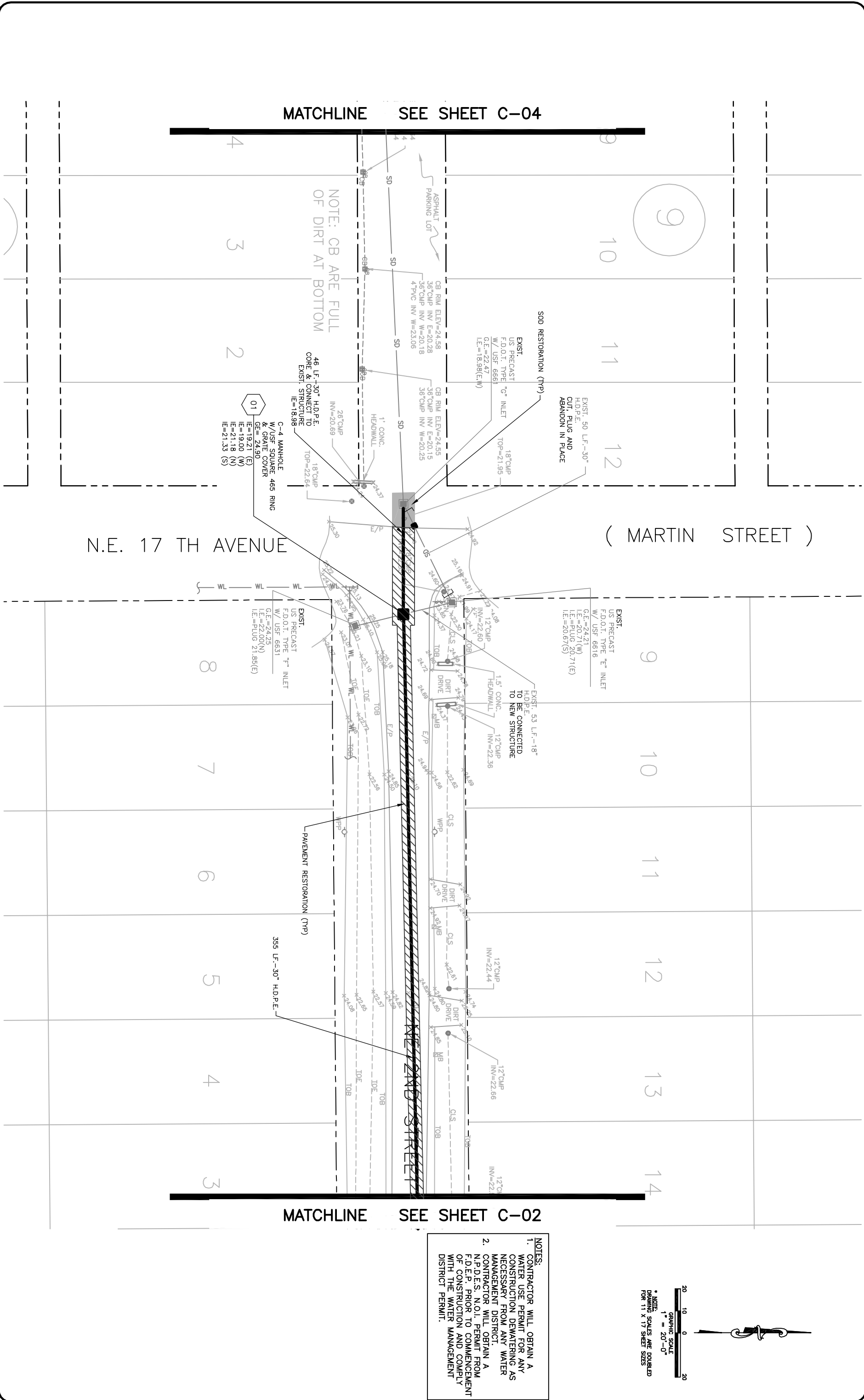


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OKEECHOBEE COUNTY

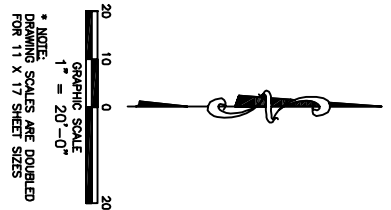
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DRAINAGE IMPROVEMENTS**
N.E. 2ND STREET

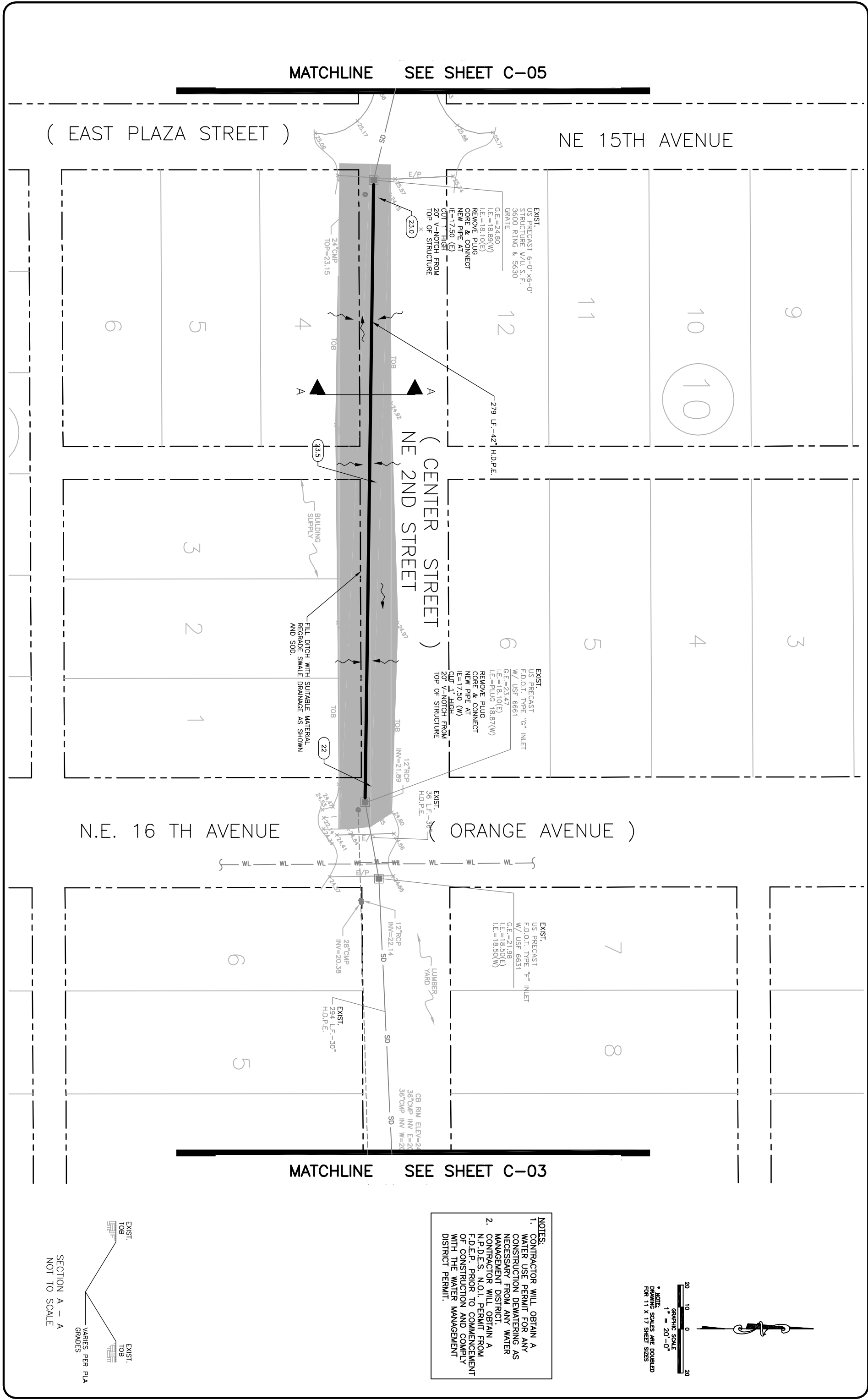
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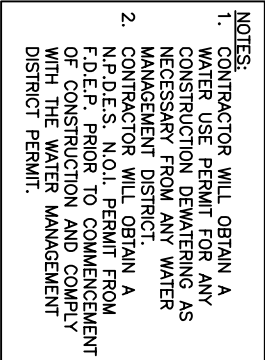


- NOTES:
- CONTRACTOR WILL OBTAIN A WATER USE PERMIT FOR ANY CONSTRUCTION DEMATERING AS NECESSARY FROM ANY WATER MANAGEMENT DISTRICT.
 - CONTRACTOR WILL OBTAIN A N.P.D.E.S. N.O.I. PERMIT FROM F.D.E.P. PRIOR TO COMMENCEMENT OF CONSTRUCTION AND COMPLY WITH THE WATER MANAGEMENT DISTRICT PERMIT.





MATCHLINE SEE SHEET C-04



SHEET
C-05
OF
18
Total Sheets

Date: 01/02/08
Designed: AC
Drawn: MM
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APPROVED BY: ORLANDO A. RUBIO, P.E.

DATE _____ 48265

FLORIDA PROFESSIONAL ENGINEER NO.

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS

CS

1000 WEST MANA ROAD
POMERANCE BEACH, FLORIDA 33069
(954) 782-8222
CERTIFICATE NO. TB 3110

CS

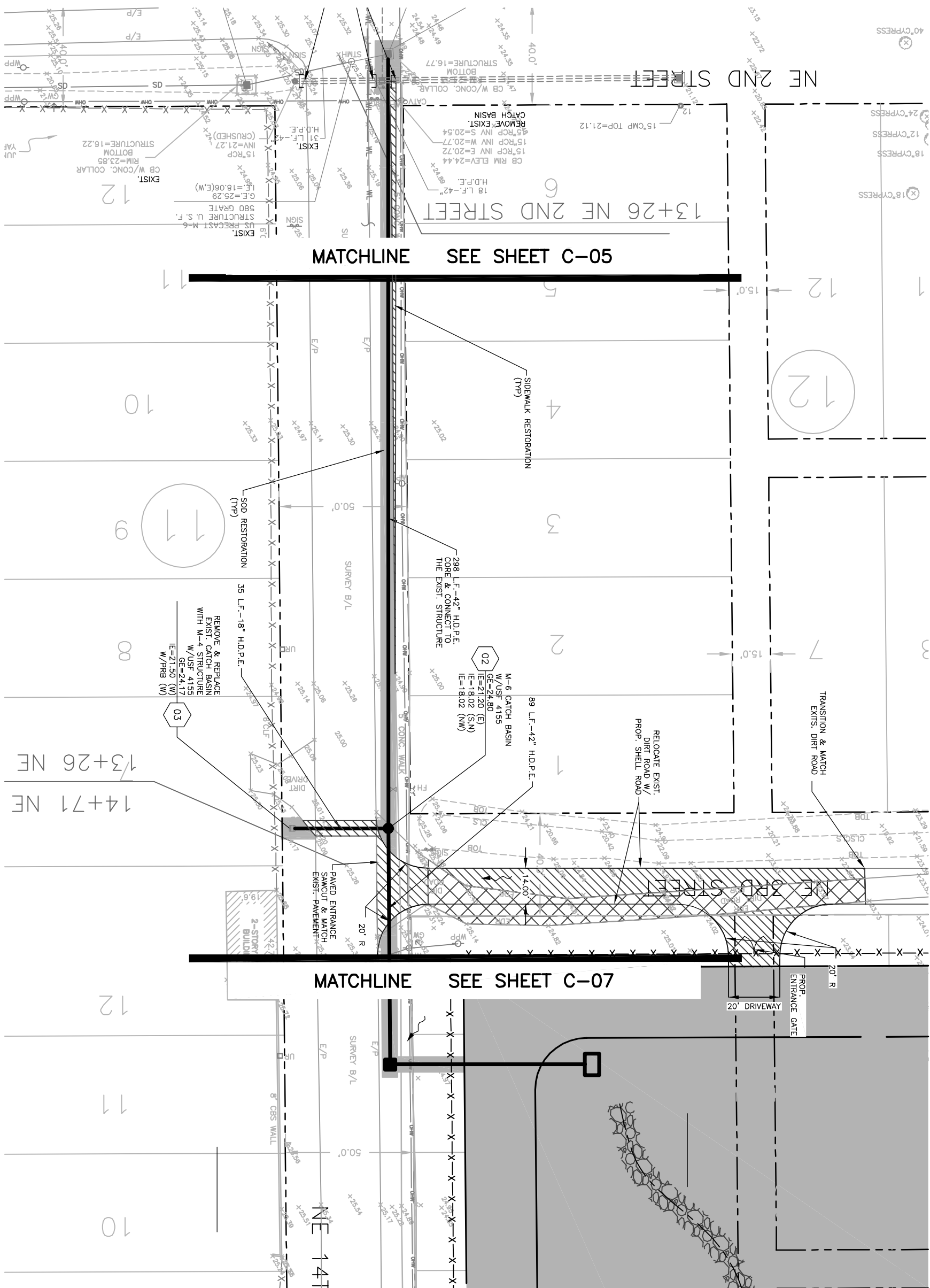
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OKEECHOBEE COUNTY

DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS
N.E. 14TH AVENUE

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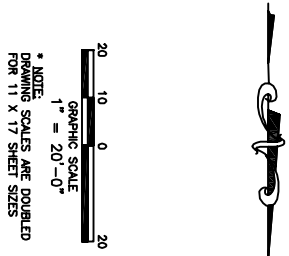
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AS SHOWN	00-0903

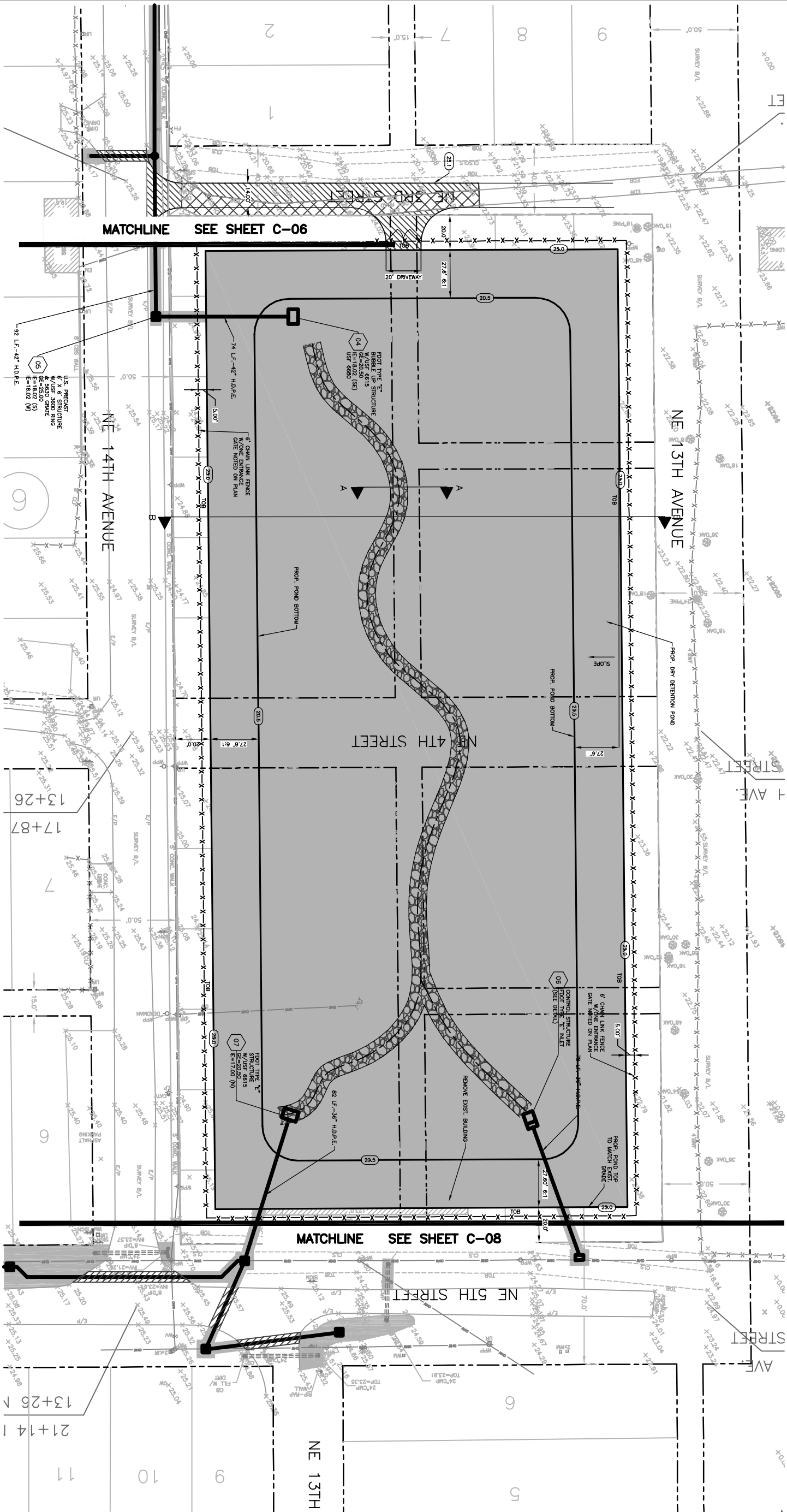
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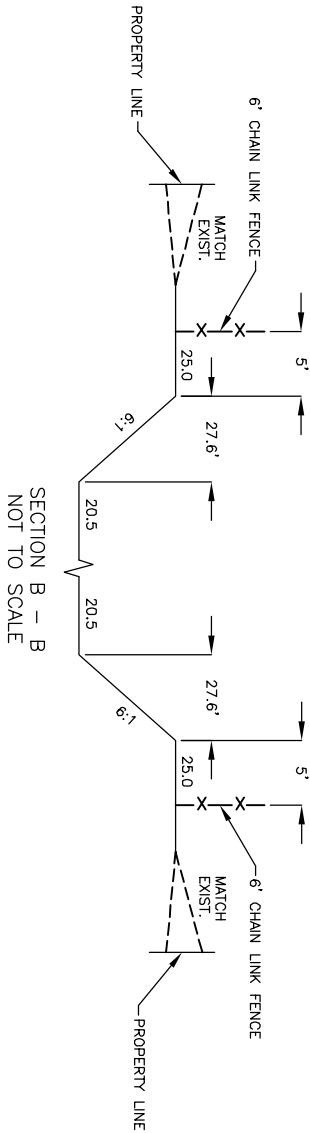
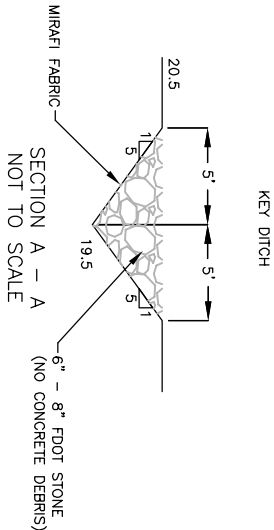
NOTES:

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- NOTES:**
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 2. CONTRACTOR WILL OBTAIN A N.P.D.E.S. NO.I. PERMIT FROM F.D.E.P. PRIOR TO COMMENCEMENT OF CONSTRUCTION AND COMPLY WITH THE WATER MANAGEMENT DISTRICT PERMIT.



NO.	DATE	REVISION	BY

Date:	01/02/08
Designed:	AC
Drawn:	MM
Checked:	QAR

APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 WEST HAWK ROAD
POWERSO, FL 33069
(954) 782-8222
CERTIFICATE NO. LB. 3110

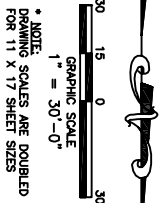
PREPARED FOR:
OKEECHOBEE COUNTY

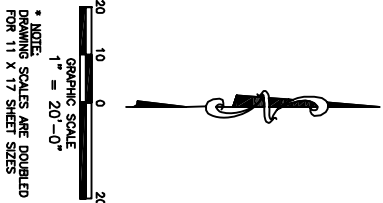
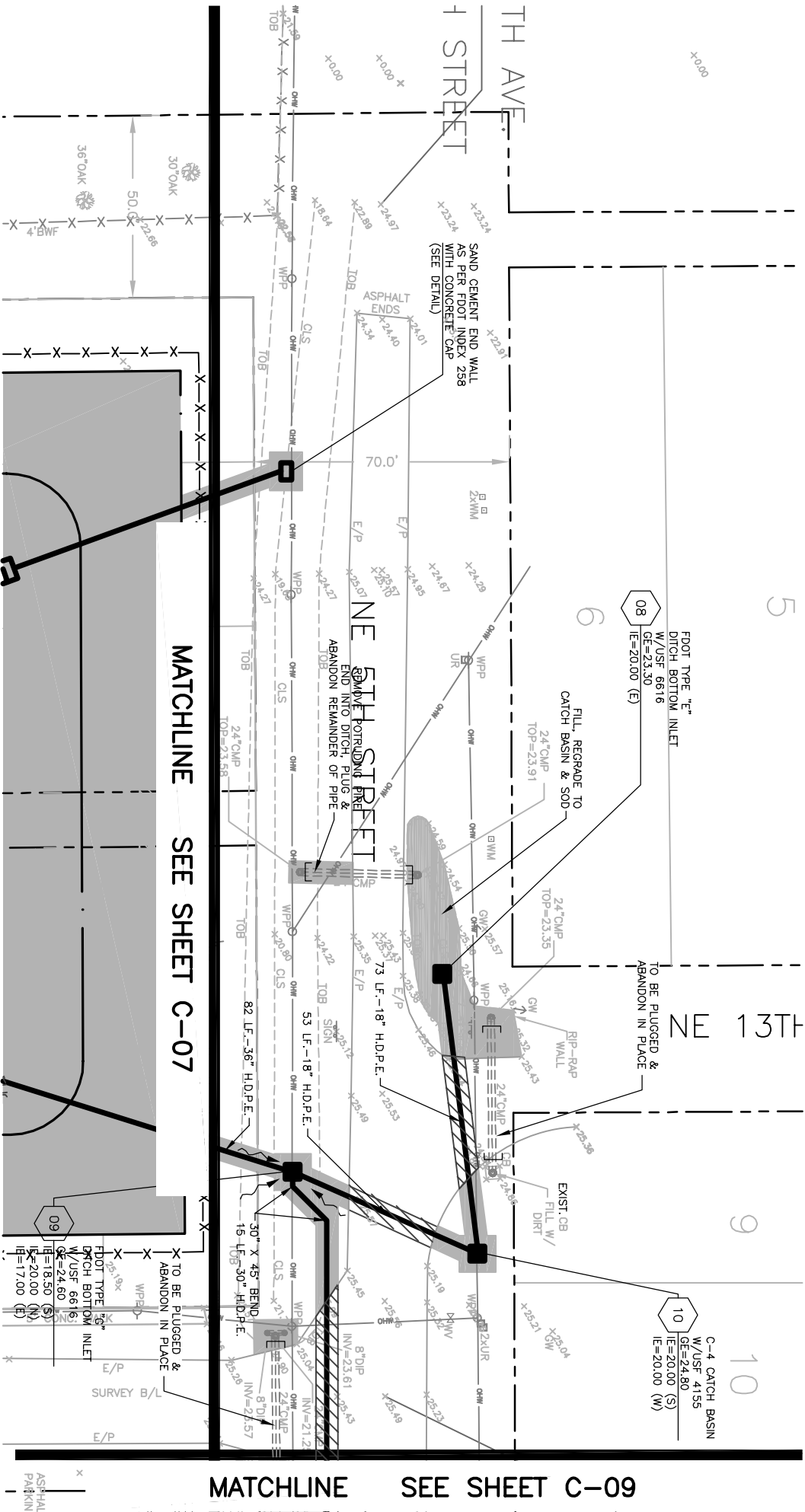
**DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS**
N.E. 14TH AVENUE

FILE NAME: 08-0903-C-07-PAP.dwg
LAST SAVED: 03/07/08 - 4:34pm
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Total Sheets





- NOTES:
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NO.	DATE	REVISION	BY

Date:	01/02/08
Designed:	AC
Drawn:	MM
Checked:	OAR

APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

**CRAIG A. SMITH & ASSOCIATES**
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 WEST MAING ROAD
PO BOX 900
DELAWARE, FLORIDA 33069
(954) 782-8222
CERTIFICATE NO. LB. 3110



PREPARED FOR:
OKEECHOBEE COUNTY

**DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS**
N.E. 5TH STREET

FILE NAME: 10-0903-C-08-PAP.dwg
LAST SAVED: 03/07/08 - 4:35pm
SCALE
AS SHOWN

PROJECT
00-0903

SHEET

C-08

OF

18

Total Sheets

NO.	DATE	REVISION	BY

Date: 01/02/08	Designed: AC
Drawn: MM	Checked: OAR

APPROVED BY: ORLANDO A. RUBIO, P.E.	DATE
FLORIDA PROFESSIONAL ENGINEER NO. 48265	

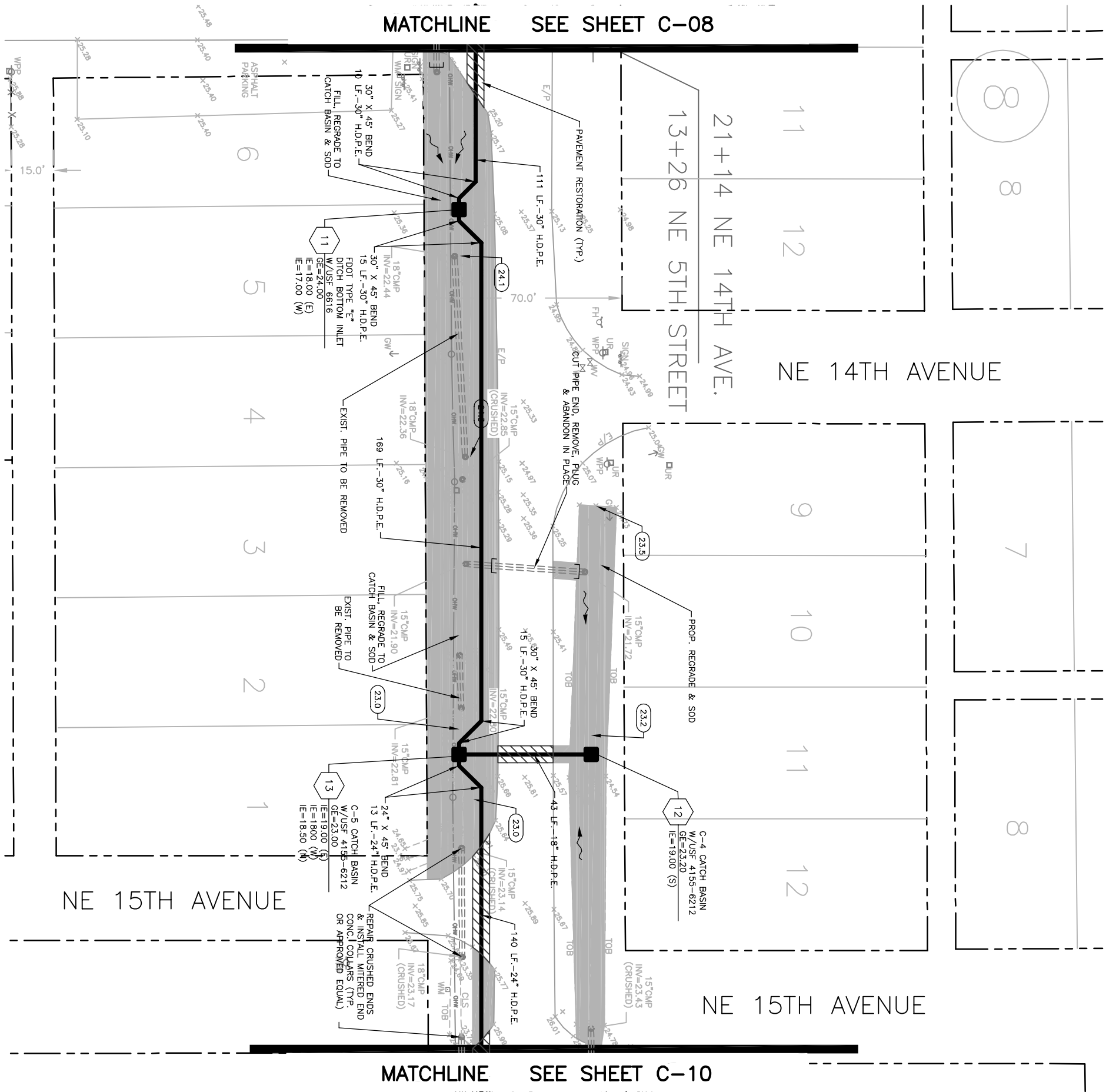
CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 WEST HAWK ROAD
POWERSBORO, MISSISSIPPI 39069
(601) 782-8222
CERTIFICATE NO. LB. 3110

PREPARED FOR:
OKEECHOBEE COUNTY

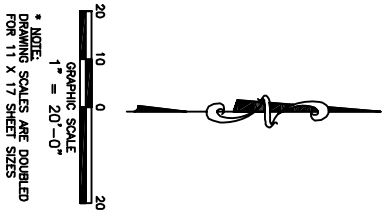
DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS
N.E. 5TH STREET

FILE NAME: 11-0903-C-09-PAP.dwg	PROJECT
LAST SAVED: 03/07/08 - 4:36pm	00-0903

SHEET C-09	OF 18
Total Sheets	



- NOTES:
1. CONTRACTOR WILL OBTAIN A WATER USE PERMIT FOR ANY CONSTRUCTION DEWATERING AS NECESSARY FROM ANY WATER MANAGEMENT DISTRICT.
 2. CONTRACTOR WILL OBTAIN A N.P.D.E.S. N.O.I. PERMIT FROM F.D.E.P. PRIOR TO COMMENCEMENT OF CONSTRUCTION AND COMPLY WITH THE WATER MANAGEMENT DISTRICT PERMIT.



NO.	DATE	REVISION	BY

Date:	01/02/08
Designed:	AC
Drawn:	MM
Checked:	OAR

APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

CRAIG A. SMITH & ASSOCIATES

CONSULTING ENGINEERS-PLANNERS-SURVEYORS

1000 WEST MAIN ROAD
POMEROY, FLORIDA 33069
(954) 782-8222
CERTIFICATE NO. LB. 3110

PREPARED FOR:

OKEECHOBEE COUNTY

DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS

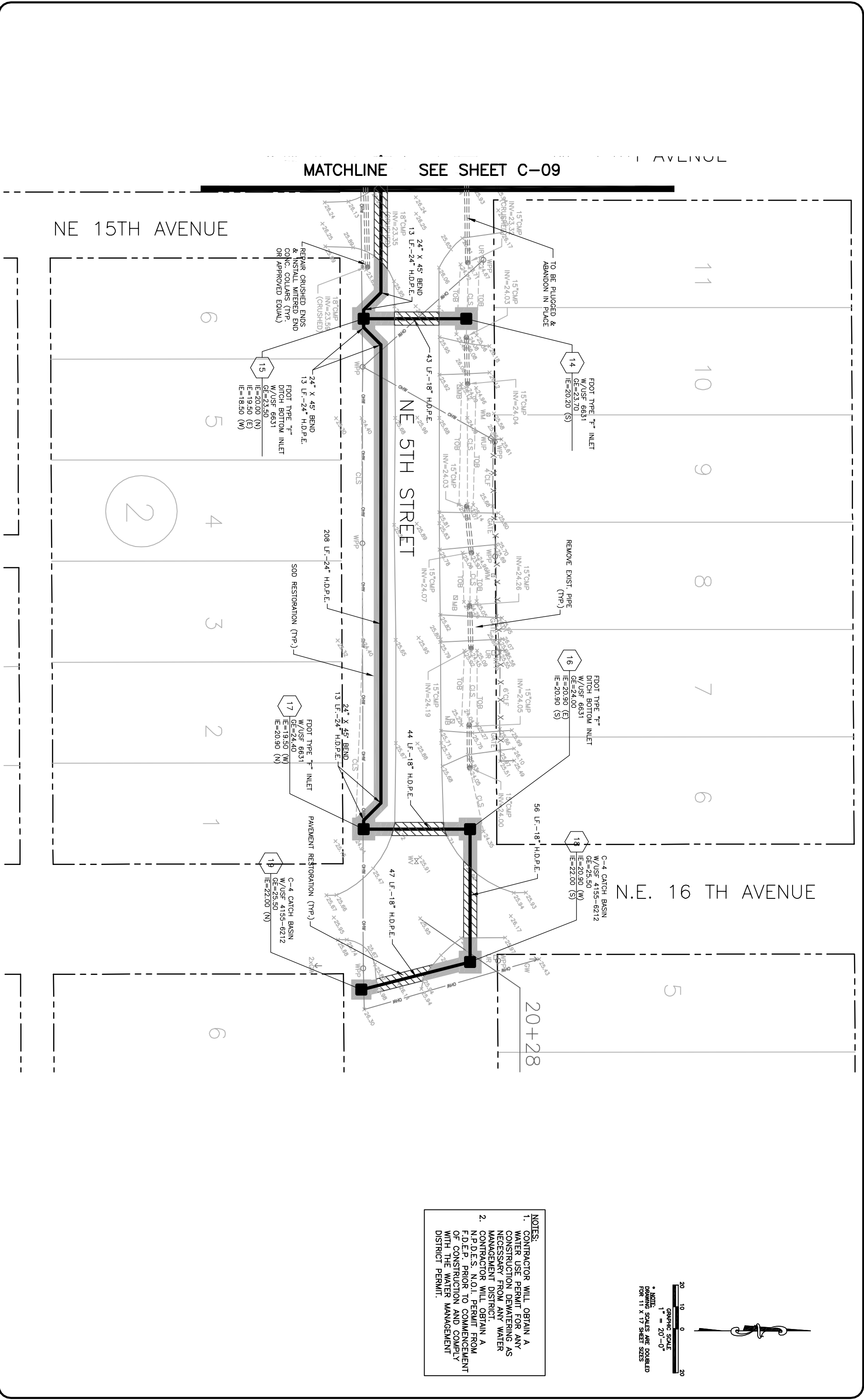
N.E. 5TH STREET

FILE NAME: 12-0903-C-10-PAP.dwg
LAST SAVED: 03/07/08 - 4:36pm

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OF
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Total Sheets



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APPROVED BY: ORLANDO A. RUBIO, P.E.

DATE: _____ 48265

FLORIDA PROFESSIONAL ENGINEER NO.

CRAIG A. SMITH & ASSOCIATES
 CONSULTING ENGINEERS-PLANNERS-SURVEYORS

1000 WEST MENA ROAD
 POMPANO BEACH, FLORIDA 33069
 PHONE: 954-781-0522
 CERTIFICATE NO. 1A-3110

PREPARED FOR:
OKEECHOBEE COUNTY

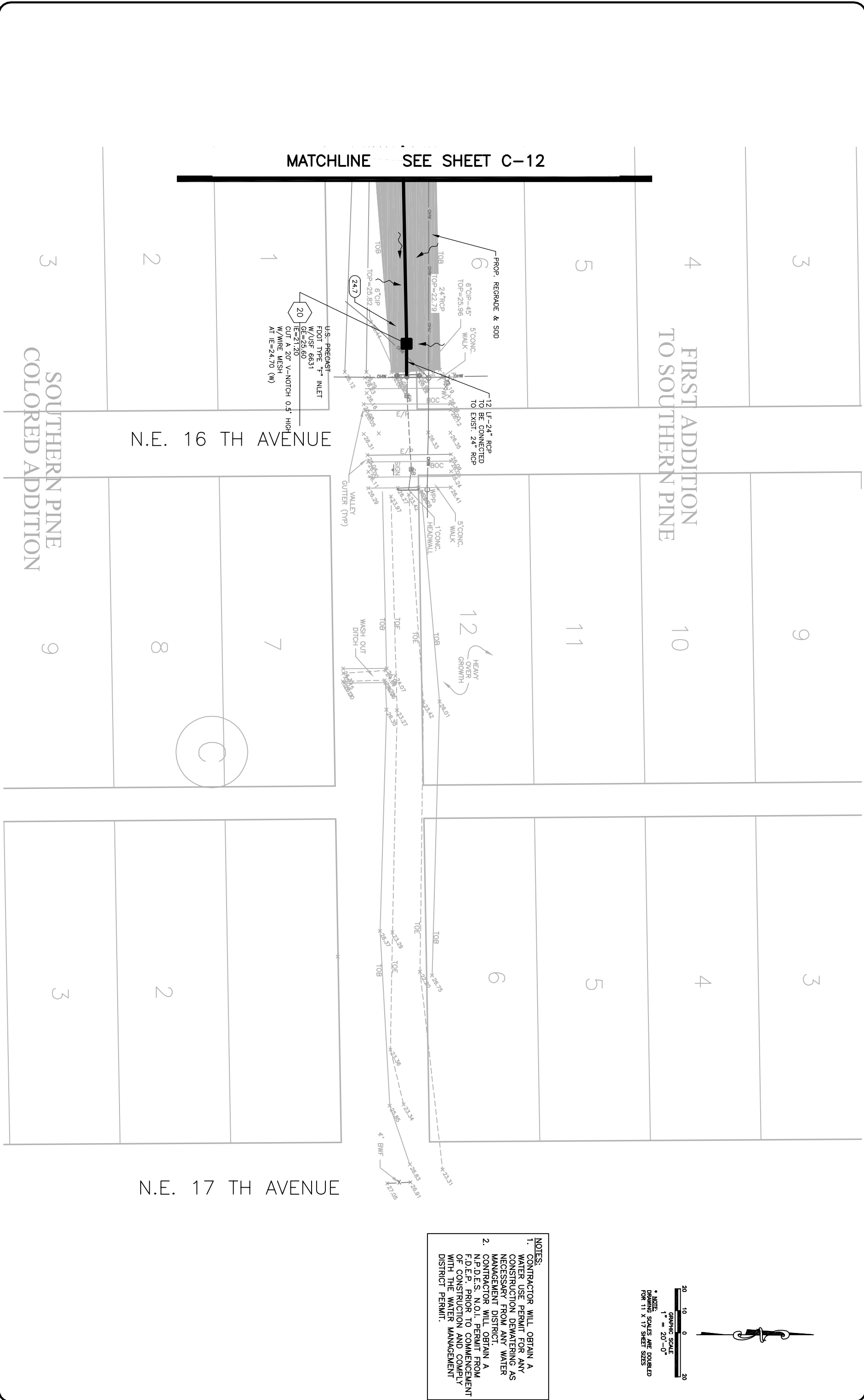
DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS
N.E. 9TH STREET

FILE NAME: 13-0903-C-11-PAP.dwg
LAST SAVED: 03/07/08 - 4:37pm

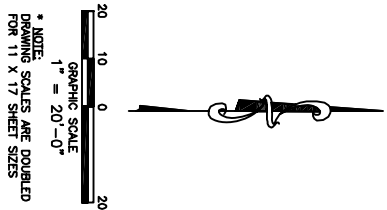
SCALE
AS SHOWN

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OF
18
Total Sheets



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Designed:	AC
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FLORIDA PROFESSIONAL ENGINEER NO.	48265

**CRAIG A. SMITH & ASSOCIATES**
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1000 WEST HAWK ROAD
POMEROY BEACH, FLORIDA 33069
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CERTIFICATE NO. LB. 3110

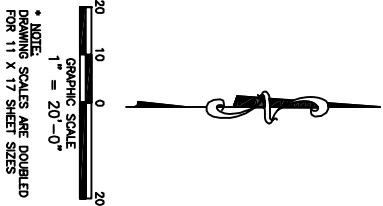


PREPARED FOR:	OKEECHOBEE COUNTY
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DOUGLAS PARK (PHASE II) DRAINAGE IMPROVEMENTS N.E. 9TH STREET

FILE NAME: 14-0903-C-12-PAP.dwg LAST SAVED: 03/07/08 - 4:38pm	SCALE AS SHOWN	PROJECT 00-0903
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SHEET C-12 OF 18 Total Sheets



- NOTES:
1. CONTRACTOR WILL OBTAIN A WATER USE PERMIT FOR ANY CONSTRUCTION DEMATERING AS NECESSARY FROM ANY WATER MANAGEMENT DISTRICT.
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NO.	DATE	REVISION	BY

Date:	01/02/08
Designed:	AC
Drawn:	MM
Checked:	QAR

APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

CRAIG A. SMITH & ASSOCIATES

CONSULTING ENGINEERS-PLANNERS-SURVEYORS

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POWERSIDE BEACH, FLORIDA 33069
(954) 782-8222
CERTIFICATE NO. LB. 3110

PREPARED FOR:

OKEECHOBEE COUNTY

DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS

N.E. 13TH STREET

FILE NAME: 15-0903-C-13-PAP.dwg
LAST SAVED: 03/07/08 - 4:39pm

SCALE

AS SHOWN

PROJECT

00-0903

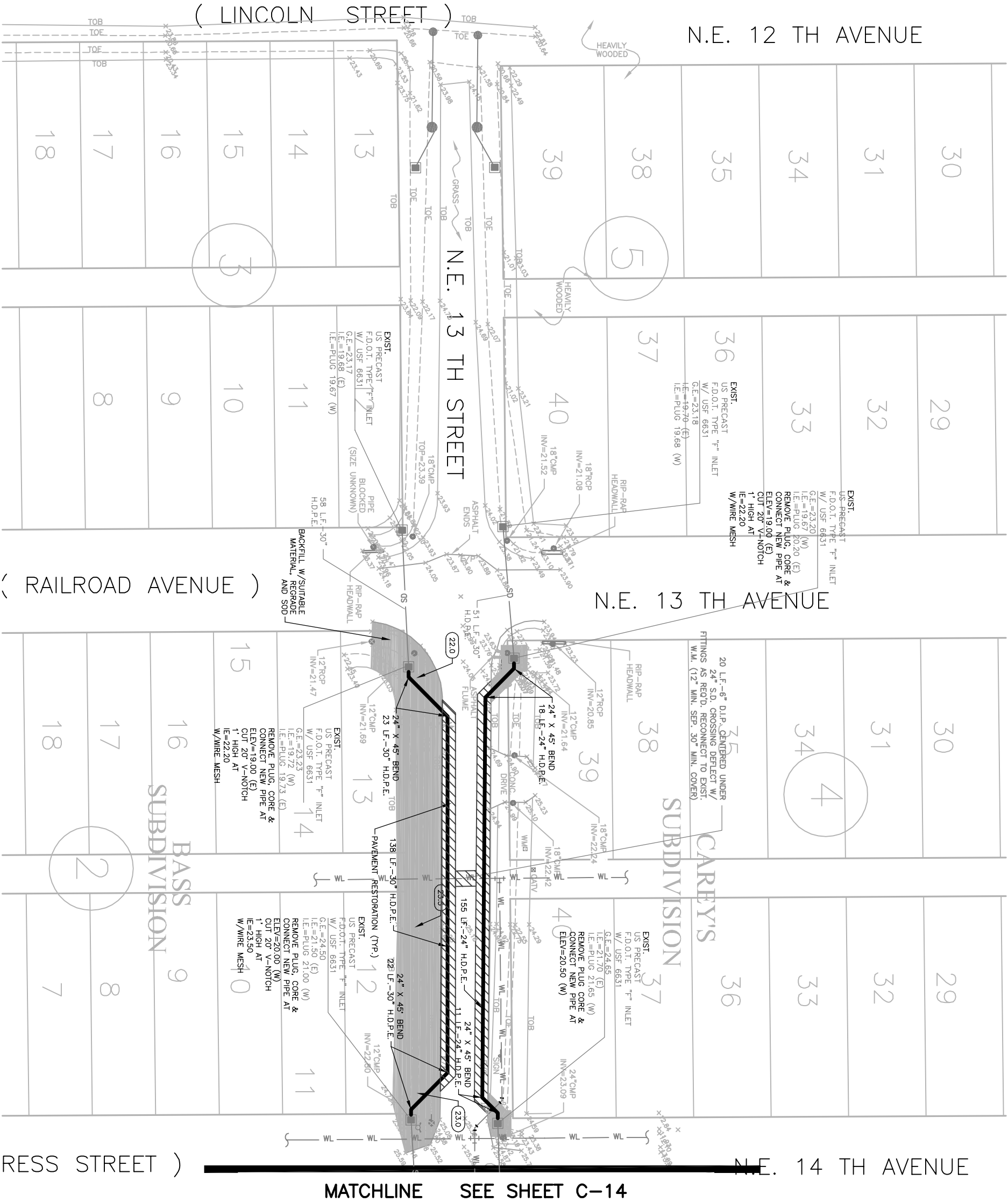
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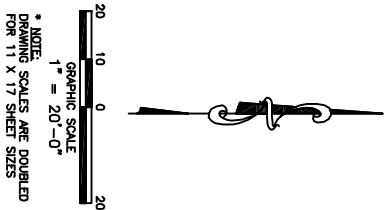
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18

Total Sheets



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Checked:	QAR

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(954) 782-8222
CERTIFICATE NO. LB. 3110

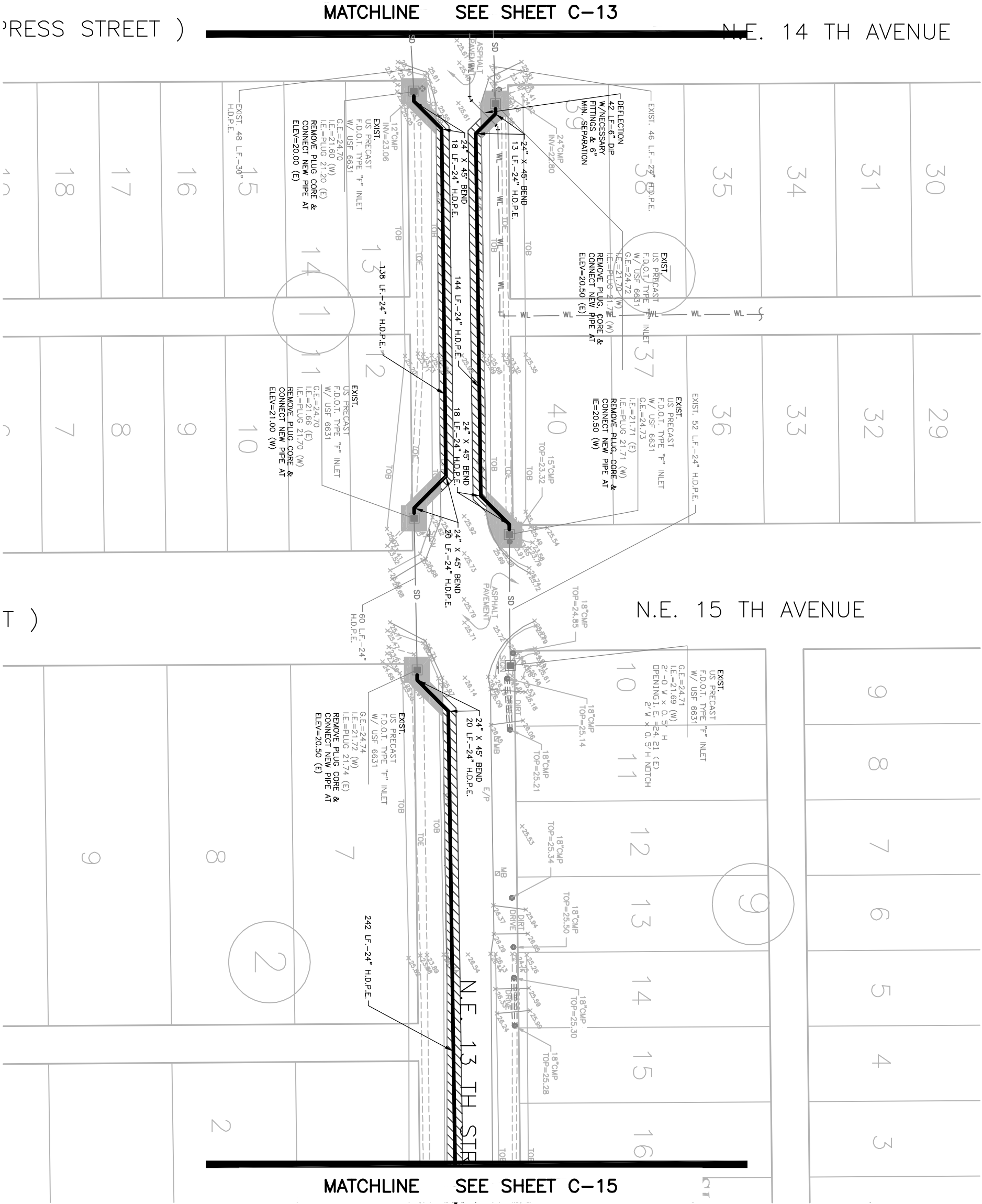


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OKEECHOBEE COUNTY

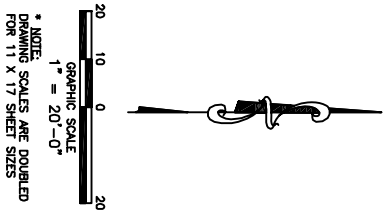
**DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS**
N.E. 13TH STREET

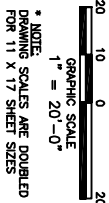
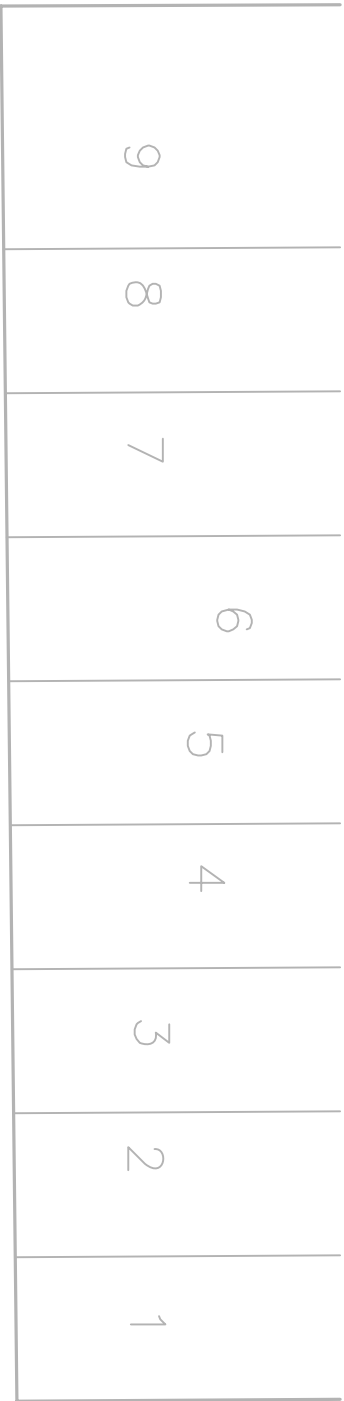
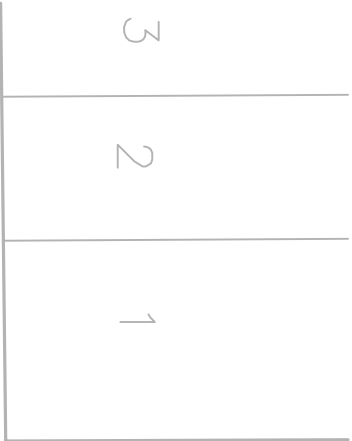
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PROJECT	00-0903

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OF	18
Total Sheets	

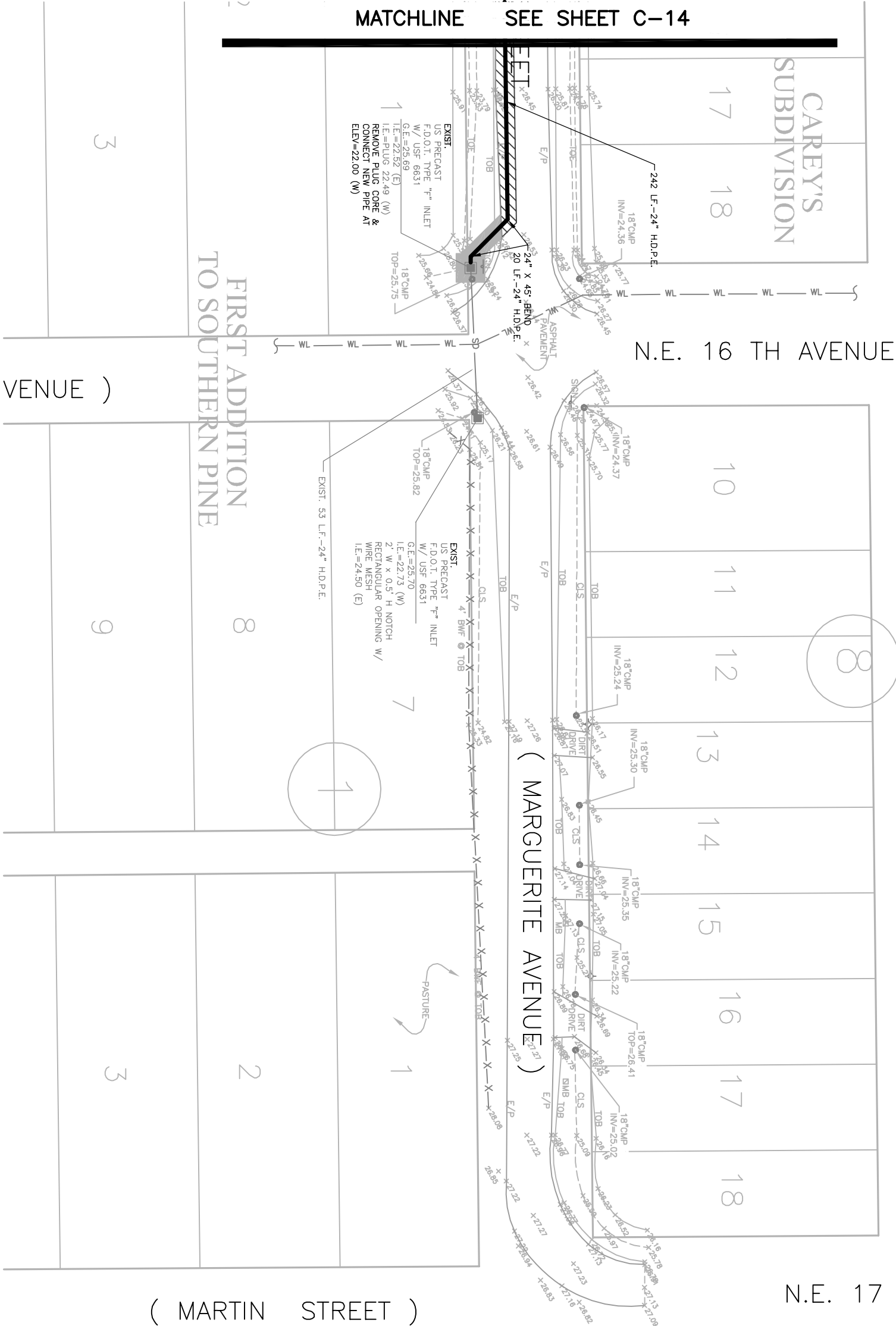


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FLORIDA PROFESSIONAL ENGINEER NO.	48265

**CRAIG A. SMITH & ASSOCIATES**
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1000 WEST HAWK ROAD
POWERSO, FL 32079
(904) 782-8222
CERTIFICATE NO. LB. 3110

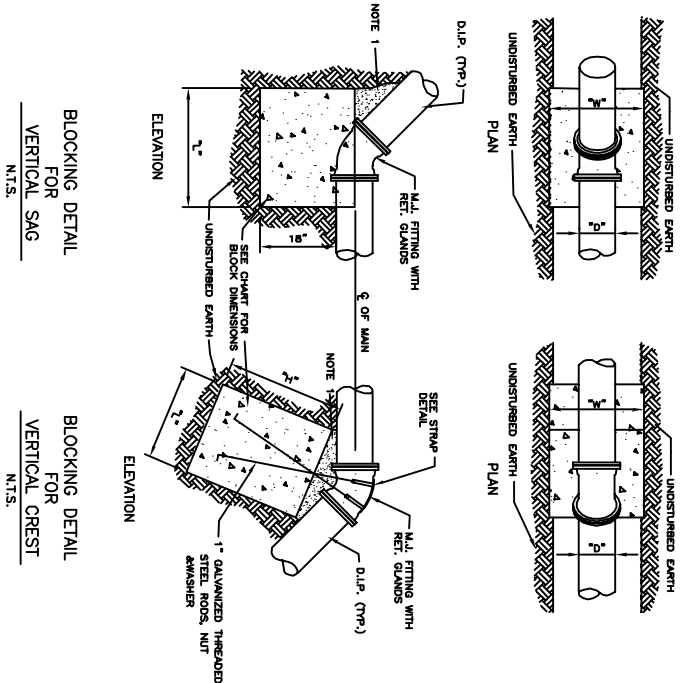


PREPARED FOR:
OKEECHOBEE COUNTY

**DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS**
N.E. 13TH STREET

FILE NAME:	17-0903-C-15-PAP.dwg
LAST SAVED:	03/07/08 - 4:40pm
SCALE	AS SHOWN
PROJECT	00-0903

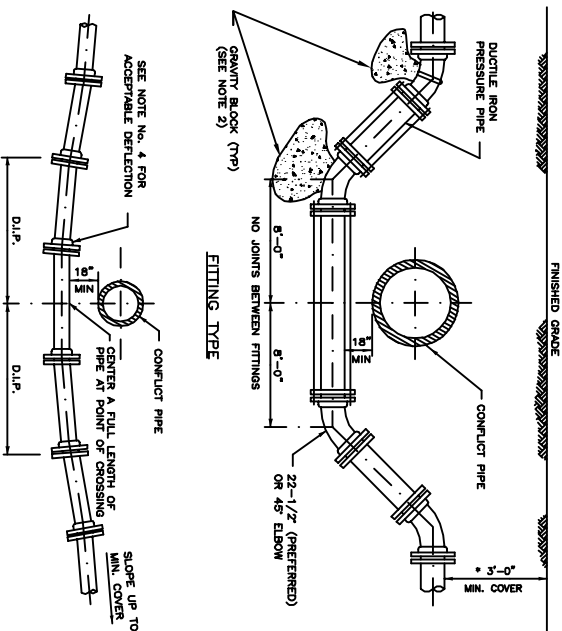
SCALE: N.T.S.



- NOTES:
1. VOID BETWEEN MAN AND GRAVITY BLOCK TO BE FILLED WITH GROUT BY CONTRACTOR
 2. ANY NON-SPECIFIED MATERIALS TO BE COVERED WITH SUITABLE COVERING TO PREVENT ADHERENCE TO GRAVITY BLOCK.
 3. USE MEGALUGS ON ALL FITTINGS.

BLOCKING DETAIL FOR VERTICAL SAG

SCALE: N.T.S.

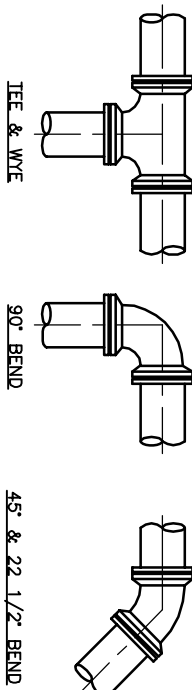


DEFLECTION TYPE

- NOTES:
1. THESE METHODS ARE TO BE USED WHEN INSUFFICIENT COVER EXISTS TO ALLOW PRESSURE PIPE TO CROSS ABOVE CONFLICT PIPE WITH 6" VERTICAL SEPARATION AND MAINTAIN 30" COVER TO FINISHED GRADE.
 2. FITTINGS SHALL BE RESTRAINED WITH MECHANICAL RESTRAINTS (MEGALUG) AND GRAVITY BLOCKS.
 3. THE DEFLECTION TYPE CROSSING IS PREFERRED.
 4. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION.
 5. MECHANICALLY RESTRAIN ALL FITTINGS, AS PER MANUFACTURERS RECOMMENDATION.
 - 36" MIN IN STATE ROAD R/W AND UNDER ASPHALT

PRESSURE PIPE CONFLICT DETAIL

SCALE: N.T.S.

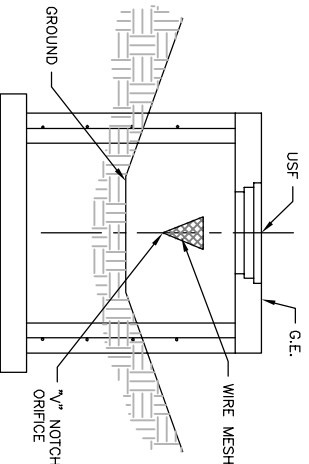


RESTRAINED PIPE LENGTH (LINEAL FEET)						
PIPE SIZE	TEE & WYE	90°BEND	45°BEND	22 1/2°BEND	11 1/4°BEND	
6"	27	27	16	9	5	
8"	34	34	20	11	6	
10"	41	41	24	14	7	
12"	48	48	28	16	8	
14"	55	55	32	18	10	
16"	62	62	35	20	11	
18"	69	69	39	22	12	
20"	75	75	42	24	13	
24"	87	87	49	27	14	
30"	104	104	57	31	17	
36"	120	120	65	35	19	
42"	134	134	72	39	21	
48"	147	147	79	42	22	
54"	160	160	85	45	24	

NOTE:

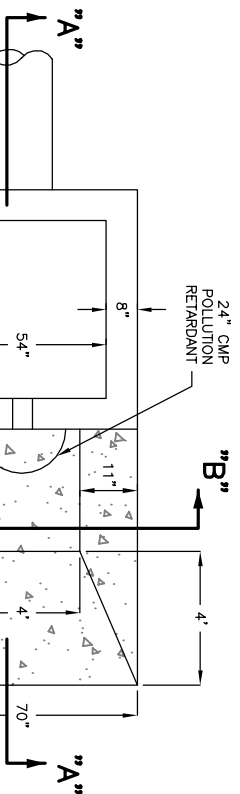
THE FIGURES IN THIS TABLE ARE BASED ON 150 PSI TEST PRESSURE WITH 2.5 FEET OF COVER AND 2000 POUNDS PER SQUARE FOOT SOIL BEARING AGAINST UNDISTURBED TRENCH. A 20% SAFETY FACTOR HAS BEEN ADDED.

RESTRAINED JOINT DETAIL

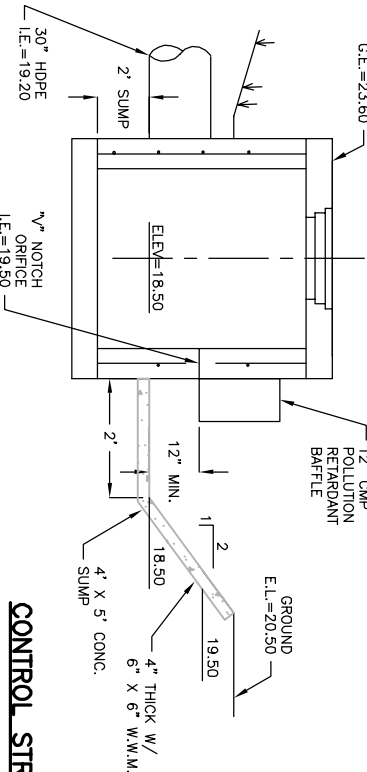


TYP CB W/ V-NOTCH

SCALE: N.T.S.



PLAN VIEW

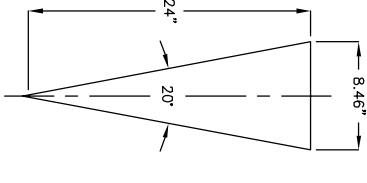


SECTION "A"

CONTROL STRUCTURE DETAIL

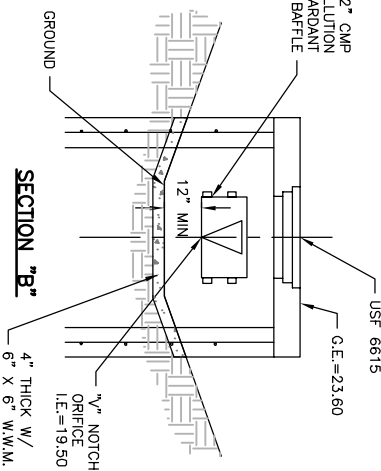
TYPE "E" INLET FDOT W/6615 GRADE

SCALE: N.T.S.



ORIFICE BLEEDER

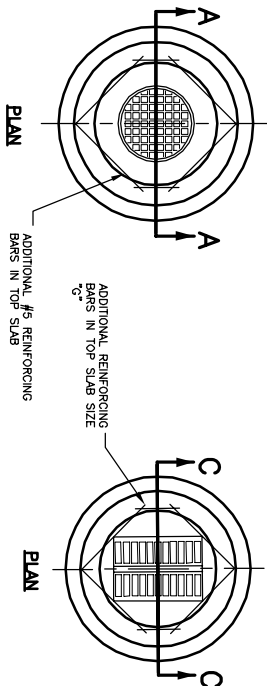
- NOTES:
1. TOP OF "A" NOTCH ORIFICE TO BE BELOW TOP SLAB OF STRUCTURES.
 2. ALL STRUCTURES LOCATED WITHIN SWALE AREA TO INCLUDE "A" NOTCH ORIFICE IN SIDE WALL.



SECTION "B"

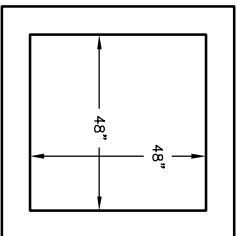
TYPE	"A"	"B"	"C"	"D"	"E"	"F"	"G"
C-4 / M-4	4'-0"	8"	8"	#4 @ 12" C.C.E.W.	#4 @ 12" C.C.E.W.	6'-4" DIA	#4 @ 6" C.C.E.W.
C-5 / M-5	5'-0"	8"	8"	#5 @ 12" C.C.E.W.	#5 @ 12" C.C.E.W.	7'-4" DIA	#5 @ 8" C.C.E.W.
C-6 / M-6	6'-0"	8"	10"	#5 @ 12" C.C.E.W.	#5 @ 6" C.C.E.W.	8'-4" DIA	#5 @ 6" C.C.E.W.
C-7 / M-7	7'-0"	8"	10"	#5 @ 12" C.C.E.W.	#5 @ 6" C.C.E.W.	9'-4" DIA	#5 @ 6" C.C.E.W.
C-8 / M-8	8'-0"	10"	10"	2-W/M/W/#4 @ 12" C.C. VERT.	#5 @ 6" C.C.E.W.	10'-8" DIA	#5 @ 6" C.C.E.W.

NOTE = C FOR SQUARE CATCH BASIN, M FOR ROUND MANHOLE



FOR CATCH BASIN TOP, USE U.S. FOUNDRY FRAME & COVER DRAWING No. 420 (OR APPROVED EQUAL).

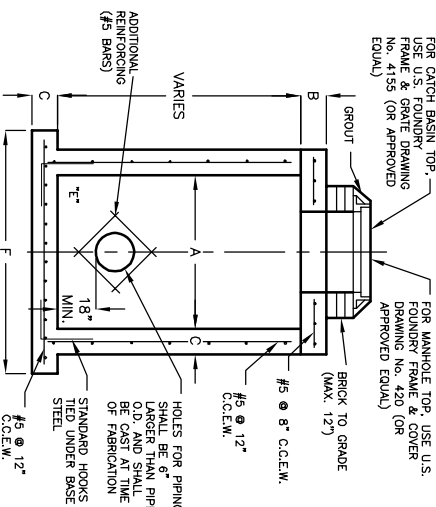
#4 BARS @ 12" C.C.E.W. (TYP.)



NOTE: ALL CONCRETE TO BE 3000 PSI

PRECAST C-4 CATCH BASIN/MANHOLE

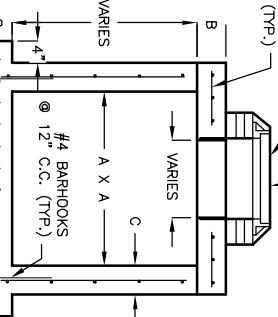
SCALE: N.T.S.



SECTION A-A

M-5 PRECAST DRAINAGE MANHOLE / CATCH BASIN

SCALE: N.T.S.



#4 BARS @ 12" C.C. (TYP.)

PRECAST C-4 CATCH BASIN/MANHOLE

SCALE: N.T.S.

NO.	DATE	REVISION	BY

Date:	01/02/08
Designed:	AC
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APPROVED BY:	ORLANDO A. RUBIO, P.E.
DATE	
FLORIDA PROFESSIONAL ENGINEER NO.	48265

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
1000 WEST HAVEN ROAD
POMEROY BEACH, FLORIDA 33069
(954) 782-8222
CERTIFICATE NO. LB. 3110

PREPARED FOR:
OKEECHOBEE COUNTY

**DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS
STANDARD DRAINAGE
DETAIL**

SCALE
AS SHOWN

PROJECT
00-0903

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OF 18
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100 WEST HAUKE ROAD
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CERTIFICATE NO. LB. 3110



PREPARED FOR:
OKEECHOBEE COUNTY

**DOUGLAS PARK (PHASE II)
DRAINAGE IMPROVEMENTS
STANDARD DRAINAGE
DETAIL**

FILE NAME:	19-0903-C-17-DTL5.dwg
LAST SAVED:	03/07/08 - 3:29pm
SCALE	AS SHOWN
PROJECT	00-0903

19-0903-C-17-DTL5

- GENERAL NOTES:
- STRAIGHT SAND-CEMENT ENDWALLS ARE INTENDED FOR USE OUTSIDE THE CLEAR ZONE.

STRAIGHT SAND-CEMENT
ENDWALL DETAIL

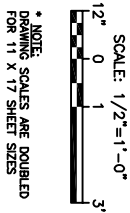
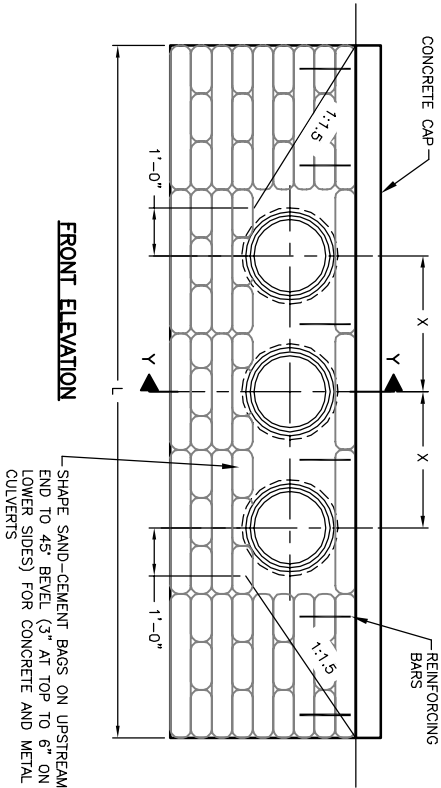
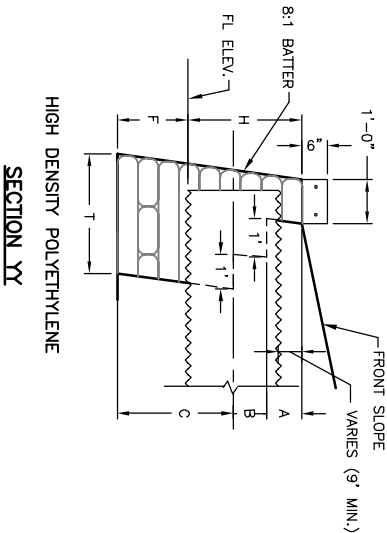


TABLE OF DIMENSIONS AND QUANTITIES FOR ONE ENDWALL																			
SIZE OF PIPE	H	T	A	B	C	F	X	1 PIPE CULVERT		2 PIPE CULVERT		3 PIPE CULVERT		4 PIPE CULVERT		RIPRAP CY			
								CP	CMP	CP	CMP	CP	CMP	CP	CMP				
18"	2'-3"	1'-0"	4'-0"	0'-0"	0'-0"	1'-9"	2'-10"	8'-9"	1.2	1.2	11'-7"	1.5	1.6	14'-5"	1.8	1.9	17'-3"	2.1	2.3
24"	2'-9"	2'-0"	2'-0"	2'-6"	0'-0"	1'-9"	3'-5"	10'-3"	2.4	2.5	13'-8"	3.0	3.2	17'-1"	3.7	4.0	20'-6"	4.3	4.7
30"	3'-4"	2'-0"	2'-0"	3'-2"	0'-0"	1'-10"	4'-3"	12'-0"	3.3	3.4	16'-3"	4.2	4.5	20'-6"	5.1	5.5	24'-9"	6.0	6.5
36"	3'-10"	2'-0"	2'-0"	3'-8"	0'-0"	1'-10"	5'-1"	13'-6"	4.0	4.2	18'-7"	5.2	5.7	23'-8"	6.3	6.9	28'-9"	7.4	8.2
42"	4'-5"	3'-0"	2'-0"	2'-0"	2'-4"	1'-11"	6'-0"	15'-3"	6.4	6.7	21'-3"	8.3	8.9	27'-3"	10.2	11.2	33'-3"	12.3	13.4
48"	4'-11"	3'-0"	2'-0"	2'-0"	2'-10"	1'-11"	6'-9"	16'-9"	7.7	8.1	23'-6"	10.0	10.8	30'-3"	12.3	13.5	37'-0"	14.5	16.2
54"	5'-6"	3'-0"	2'-0"	2'-0"	3'-6"	2'-0"	7'-8"	18'-6"	9.5	10.1	28'-2"	12.4	13.5	33'-10"	15.3	17.0	41'-6"	18.2	20.4
60"	6'-0"	3'-0"	2'-0"	2'-0"	4'-0"	2'-0"	8'-6"	20'-0"	11.0	11.7	28'-6"	14.4	15.8	37'-0"	17.8	19.8	45'-6"	21.1	23.8
66"	6'-7"	3'-0"	2'-0"	2'-0"	4'-8"	2'-1"	9'-3"	21'-9"	13.2	14.1	31'-0"	17.2	18.9	40'-3"	21.2	23.7	49'-6"	26.1	28.5
72"	7'-1"	3'-0"	2'-0"	2'-0"	5'-2"	2'-1"	10'-0"	23'-3"	15.0	16.0	33'-3"	19.4	21.4	43'-3"	23.9	26.8	53'-3"	28.3	32.3
78"	7'-8"	3'-0"	2'-0"	2'-0"	5'-10"	2'-2"	10'-9"	25'-0"	17.5	18.7	35'-9"	22.6	25.0	46'-6"	27.8	31.3	57'-3"	32.9	37.6
84"	8'-2"	3'-0"	2'-0"	2'-0"	6'-4"	2'-2"	11'-8"	26'-6"	19.5	20.9	38'-2"	25.3	28.1	49'-10"	31.1	35.2	61'-6"	36.9	42.4

- NOTE:
- FOR CONCRETE AND CORRUGATED METAL PIPES, CONCRETE PIPE SHOWN
 - THE TOP ROW OF RIPRAP BAGS SHALL BE SECURED BY PINNING, USING #4 REINFORCING BARS 18 INCHES IN LENGTH, AS FOLLOWS:
 - THE END BAGS SHALL BE SECURED USING TWO BARS PER BAG, ONE VERTICAL AND ONE DIAGONAL AS SHOWN.
 - THE NEXT TO LAST BAG ON EACH END SHALL BE SECURED WITH TWO BARS VERTICALLY.
 - BAGS LOCATED OVER THE PIPE SHALL BE SECURED BY A BARS WHICH IS DRIVEN DIAGONALLY EXCEPT THAT FOR CONCRETE PIPE TWO BARS SHALL BE USED FOR SINGLE BAGS ABOVE THE PIPE
 - INTERMEDIATE BAGS SHALL BE SECURED WITH A SINGLE BAR.
- BARs SHALL BE DRIVEN TO ONE INCH BELOW THE SURFACE OF THE BAG. THE COST OF FURNISHING AND INSTALLING THE BARS SHALL BE INCLUDED IN THE COST OF THE RIPRAP.



MECHANICAL THRUST RESTRAINT CHART 1											
PIPE SIZE, in	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		DEADEND/VALVE		
	PVC	DIP	PVC	DIP	PVC	DIP	PVC	DIP	PVC	DIP	
4	21	16	9	7	5	4	2	2	45	29	
6	28	23	12	10	6	5	3	3	63	40	
8	37	29	16	12	8	6	4	3	83	53	
10	44	35	18	15	9	7	5	4	99	63	
12	51	41	21	17	11	8	5	4	116	74	
14	57	46	24	19	12	10	6	5	132	83	
16	64	51	27	21	13	11	7	5	149	94	
18	70	56	29	24	14	12	7	6	164	104	
20	76	61	32	26	16	13	8	6	179	113	
24	87	70	36	29	18	14	9	7	208	131	

PVC/DI	PIPE MATERIAL, AS NOTED
SP	SOIL TYPE (designer to confirm)
1.5	SAFETY FACTOR (minimum)
3	TRENCH TYPE (designer to confirm)
2.5	DEPTH OF BURY, ft (designer to confirm)
150	TEST PRESSURE, psi (minimum)

THE MINIMUM LENGTH OF PIPE OUT OF ANY VALVE OR FITTING SHOULD BE 20 LF.

VALUES SHOWN IN CHART INDICATE LENGTH (LF) OF PIPE TO BE RESTRAINED ON EITHER SIDE OF ITEM LISTED

NOTE 1: ANY CONDITION OTHER THAN THOSE LISTED ABOVE (INCLUDING POLY-WRAPPED DIP) SHALL REQUIRE REVISION OF THE TABLE IN ACCORDANCE WITH EBAA IRON, INC., RESTRAINT LENGTH CALCULATOR (V. 5.4).
(<http://www.ebaa.com/engineering.htm> or <http://rep.ebaa.com>)

NOTE 2: THE REVERSED CHARTS SHALL BE SUBMITTED TO QUA AS A SHOP DRAWING SUBMITTAL.

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MAIN RUN, in	BRANCH, in	TEE	
		PVC	DIP
4	4	1	1
6	4	1	1
6	6	1	1
8	4	1	1
8	6	1	1
8	8	7	5
10	6	1	1
10	8	1	1
10	10	21	14
12	6	1	1
12	8	1	1
12	12	36	24
16	6	1	1
16	8	1	1
16	16	65	43
18	6	1	1
18	8	1	1
18	18	79	52
20	6	1	1
20	8	1	1
20	20	92	61
24	6	1	1
24	8	1	1
24	24	118	78

LARGE SIZE	SMALL LARGE	REDUCER	
		PVC	DIP
6	4	33	21
8	4	60	38
8	6	35	22
10	4	81	51
10	6	61	39
10	8	33	21
12	4	101	64
12	6	85	54
12	8	62	39
16	4	138	87
16	6	126	79
16	8	109	68
16	12	63	40
18	4	154	97
18	6	144	91
18	8	129	81
20	4	171	107
20	6	161	101
20	8	148	93
20	12	113	71
24	4	201	127
24	6	194	122
24	8	183	115
24	12	154	97

PVC/DIP	PIPE MATERIAL, AS NOTED
SP	SOIL TYPE (designer to confirm)
1.5	SAFETY FACTOR (minimum)
3	TRENCH TYPE (designer to confirm)
2.5	DEPTH OF BURY, ft (designer to confirm)
150	TEST PRESSURE, psi (minimum)

THE MINIMUM LENGTH OF PIPE OUT OF ANY VALVE OR FITTING SHOULD BE 20 LF.

VALUES SHOWN IN CHART INDICATE LENGTH (LF) OF PIPE TO BE RESTRAINED ON EITHER SIDE OF ITEM LISTED

NOTE 1: ANY CONDITION OTHER THAN THOSE LISTED ABOVE (INCLUDING POLY-WRAPPED DIF) SHALL REQUIRE REVISION OF THE TABLE IN ACCORDANCE WITH EBBA IRON, INC., RESTRAINT LENGTH CALCULATOR (V. 5.4).
(<http://www.ebba.com/engineering.htm> or <http://rcp.ebba.com>)

NOTE 2: THE REVISED CHARTS SHALL BE SUBMITTED TO OUA AS A SHOP DRAWING SUBMITTAL.

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