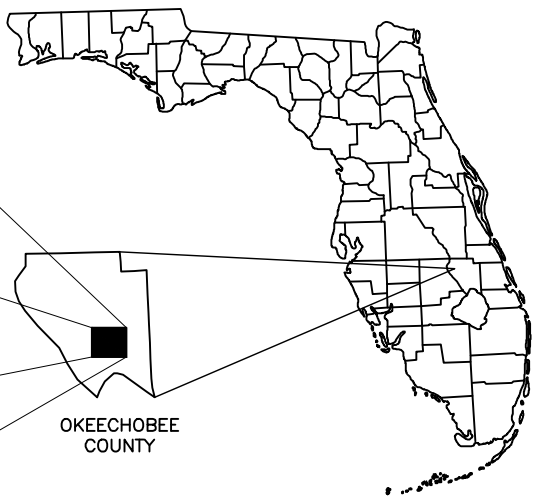
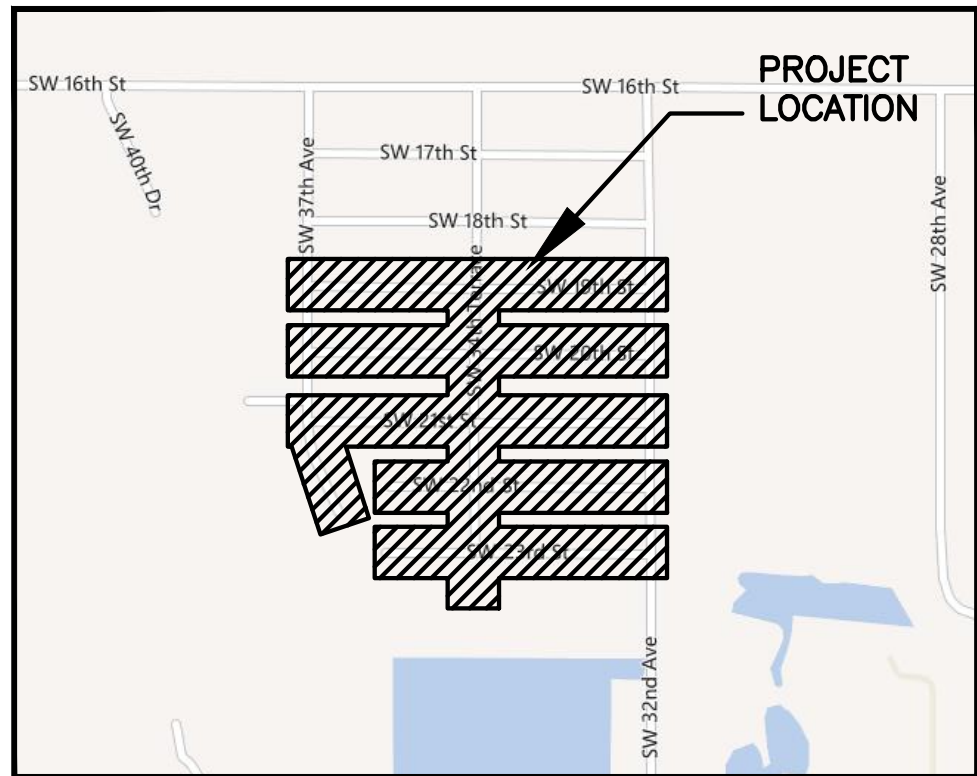


OAK PARK SUBDIVISION

DRAINAGE IMPROVEMENTS

LOCATION MAP



VICINITY MAP
SCALE: N.T.S.

BOARD OF COUNTY COMMISSIONERS

CHAIRMAN – DISTRICT 5	MARGARET GARRARD HELTON
1ST VICE CHAIRMAN – DISTRICT 1	RAY DOMER
2ND VICE CHAIRMAN – DISTRICT 4	JOEY HOOVER
DISTRICT 2	BRYANT H. CULPEPPER
INTERIM COUNTY ADMINISTRATOR	ROBBIE CHARTIER

PREPARED FOR:
OKEECHOBEE COUNTY



Know what's below.
Call before you dig.

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

CAS PROJECT No. 11-0903-001

FOR CONSTRUCTION



CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410 – BOCA RATON, FLORIDA 33434
(561) 314-4445 WWW.CRAIGASMITH.COM
CERTIFICATE OF AUTHORIZATION NUMBER: LB0003110



ORLANDO A. RUBIO, P.E. (CIVIL)
DATE _____
FLORIDA PROFESSIONAL ENGINEER NO. 48265

P:\Counties\Okeechobee\Board_of_County_Commissioners\11-0903-001-0ak-Park ENGINEERING\Plans\11-0903-G-O-LGND.dwg, 9/ 24/ 2015 7:04:59 AM, mmarenco, 1:2

GENERAL ABBREVIATIONS

ABRV	DESCRIPTION	ABRV	DESCRIPTION
AC	ASBESTOS CEMENT	MIN	MINIMUM
ALUM	ALUMINUM	MJ	MECHANICAL JOINT
ARV	AIR RELIEF VALVE	NPT	NATIONAL PIPE THREAD
BE	BURIED ELECTRIC	NTS	NOT TO SCALE
BFV	BUTTERFLY VALVE	NRTS	NO REVISIONS THIS SHEET
B/L	BASELINE	OC	ON CENTER
BSP	BACTERIOLOGICAL SAMPLE POINT BURIED	OE	OVERHEAD ELECTRIC
BT	BUREID TELEPHONE CABLE	OHW	OVERHEAD WIRE
CATV	CABLE TELEVISION	PC	POINT OF CURVATURE
CB	CATCH BASIN	PHDPE	PERFORATED HIGH DENSITY POLYETHYLENE
CIP	CAST IRON PIPE	PL	PROPERTY LINE
CL	CENTER LINE	PPD	POUNDS PER DAY
CONC	CONCRETE	PRB	POLLUTION RETARDANT BAFFLE
CV	CHECK VALVE	PROP	PROPOSED
DIA	DIAMETER	PSI	POUNDS PER SQUARE INCH
DIP	DUCTILE IRON PIPE	PV	PLUG VALVE
EP	EXISTING PAVEMENT EDGE	PVC	POLY VINYL CHLORIDE
ETBPA	EXIST TO BE PLUGGED AND ABANDONED	RCP	REINFORCED CONCRETE PIPE
ETBR	EXISTING TO BE REMOVED	R.E.	RIM ELEVATION
EXIST	EXISTING	RED	REDUCER
FDEP	FLORIDA DEPT. OF ENVIRONMENTAL PROTECTION	REQD	REQUIRED
FH	FIRE HYDRANT	RJ	RESTRAINED JOINT
FM	FORCEMAIN	RWM	RAW WATER MAIN
FPL	FLORIDA POWER & LIGHT	R/W	RIGHT-OF-WAY LINE
G.E.	GRATE ELEVATION	SAN	SANITARY SEWER PIPE
GV	GATE VALVE	SD	STORM DRAIN
HDPE	HIGH DENSITY POLYETHYLENE	TEL	TELEPHONE
I.E.	INVERT ELEVATION	TYP	TYPICAL
LAT	LATERAL	UR	UTILITY RISER
LF	LINEAR FEET	BE	BURIED ELECTRIC
MAX	MAXIMUM	VCP	VITRIFIED CLAY PIPE
MFGR	MANUFACTURER	WL	WATER LINE
MH	MANHOLE	WM	WATER METER

GENERAL SYMBOL LEGEND

SYM.	DESCRIPTION	SYM.	DESCRIPTION
CONTROL	 AERIAL TARGET	GAS / FUEL	 GM GAS METER
	 BENCH MARK		 GMH GAS MANHOLE
	 CONCRETE MONUMENT		 GSV GAS VALVE
	 IRON PIPE		 MONITORING WELL
	 IRON ROD		 VEP VAPOR EXTRACTION POINT
	 NAIL & DISC	WATER / IRRIGATION	 BACKFLOW PREVENTOR
	 TRAVERSE POINT		 B0 BLOW OFF
	 EMH ELECTRIC MANHOLE		 ARV AIR RELEASE VALVE
	 EMTR ELECTRIC MOTOR		 SP SAMPLE POINT
	 ELECTRICAL OUTLET		 FH FIRE HYDRANT
ELECTRICAL	 GROUND LIGHT		 WS WATER LINE SERVICE
	 EJB ELECTRIC JUNCTION BOX		 WM WATER METER
	 EM ELECTRIC METER		 WATER LINE REDUCER
	 GW GUY WIRE		 WV WATER VALVE
	 GP GUY POLE		 ICV IRRIGATION CONTROL VALVE
	 LP LIGHT POLE		 IM IRRIGATION METER
	 CPP CONCRETE POWER POLE	TREES	 SPR SPRINKLER
	 MPP METAL POWER POLE		 CT CITRUS TREE
	 WPP WOOD POWER POLE		 GT GENERIC TREE
	 CUP CONCRETE UTILITY POLE		 OT OAK TREE
	 MUP METAL UTILITY POLE		 PT PINE TREE
UTILITY POLES	 WUP WOOD UTILITY POLE		 PT2 PALM TREE
	 CO CLEAN OUT		 MANGROVE
	 SMH SANITARY MANHOLE		 BH BORING HOLE
	 SO STUB OUT		 BOLLARD
	 SNS SANITARY SERVICE	MISCELLANEOUS	 COLUMN
	 STP STAND PIPE		 MB MAIL BOX
	 SV SEWER VALVE		 FP FLAG POLE
	 CB CATCH BASIN		 HM HANDICAP MARKER
	 CI CURB INLET		 MH (U) MANHOLE (UNKNOWN)
SANITARY SEWER	 SDMh STORM DRAIN MANHOLE		 SD SATELLITE DISH
	 YD YARD DRAIN		 SIGN (1 POSTS)
	 TEL TELEPHONE RISER		 PM PARKING METER
	 TMH TELEPHONE MANHOLE		 POST
	 FIBO FIBER OPTIC CABLE MARKER		 UB UTILITY BOX
STORM	 CATV CATV RISER		 UR UTILITY RISER
TELE / TV			

STANDARD HATCH PATTERNS

SYM	DESCRIPTION	SYM	DESCRIPTION
	CONCRETE		STONE
	BRICK		

SHEET INDEX

NUMBER / SHEET		DESCRIPTION
00	G-00	COVER SHEET
01	G-01	CIVIL ABBREVIATIONS, INDEX & LEGEND SHEET
02	G-02	GENERAL NOTES & SPECIFICATIONS
03	G-03	KEY SHEET
04	G-04	DRAINAGE SYSTEM
05-27	C-01 TO C-23	PLAN AND PROFILE
28	C-24	CONTROL STRUCTURE & DOWNSTREAM DEFENDER DETAIL
29-33	C-25 TO C-29	STANDARD DETAILS

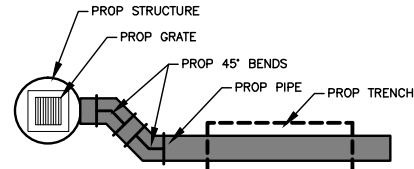
LINE WEIGHTS

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

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



PIPE LEGEND

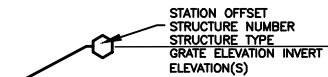


PIPE FITTINGS

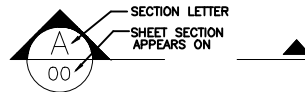
SYM	DESC	SYM	DESC
	11.25° BEND		45° BEND
	22.5° BEND		90° BEND
	TEE		WYE
	REDUCER		PLUG
	CAP		

NOTE: THE LEGEND SHOWN HEREON IS REPRESENTATIVE OF ALL GAS DRAFTING STANDARDS AND IS NOT PROJECT SPECIFIC.

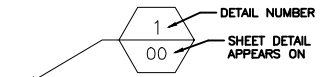
TAGS



STRUCTURE CALLOUT



SECTION SYMBOL



DETAIL SYMBOL

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
CIVIL ABBREVIATIONS, INDEX
& LEGEND SHEET

FILE NAME: 01-0903-G-01-LGND.dwg
LAST SAVED: 09/23/13 - 3:43pm

CAS PROJECT NUMBER
11-0903-001

SHEET
G-01

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GENERAL NOTES

1. THE LOCATION OF ALL EXISTING UTILITIES ON THE PLAN IS APPROXIMATE. THE CONTRACTOR SHALL LOCATE AND EXPOSE ALL EXISTING UTILITIES TO BE CONNECTED SUFFICIENTLY AHEAD OF CONSTRUCTION TO ALLOW REDESIGN BY THE ENGINEER IF SUCH UTILITIES ARE FOUND TO BE DIFFERENT THAN SHOWN ON THESE PLANS.
2. THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER IMPROVEMENTS SHOWN ON THESE PLANS AND ALL OTHER UTILITIES AND OTHER IMPROVEMENTS NOT SHOWN. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR REPAIRS OF UTILITIES AND OTHER IMPROVEMENTS DAMAGED DURING CONSTRUCTION AND SHALL MAINTAIN SUFFICIENT RETECTION TO ALL UTILITIES REQUIRED TO PROTECT THEM FROM DAMAGE AND TO PROTECT THE PUBLIC DURING CONSTRUCTION.
3. CONTRACTOR SHALL NOTIFY CRAIG A. SMITH & ASSOCIATES AT (561) 314-4445 AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
4. THE CONTRACTOR SHALL NOTIFY FLORIDA POWER & LIGHT COMPANY, SPRINT TELEPHONE CO., AND ANY OTHER UTILITY COMPANY WHICH MAY HAVE THEIR UTILITIES WITHIN THE CONSTRUCTION AREAS BEFORE BEGINNING CONSTRUCTION.
5. A PRE-CONSTRUCTION MEETING IS TO BE HELD BETWEEN THE OKEECHOBEE COUNTY, ENGINEER OF RECORD AND CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. PLANS AND SPECIFICATIONS REQUIRE THAT COMPACTED BACKFILL BE PLACED ALONG SIDE OF AND OVER ALL UTILITIES. THE ENGINEER MAY REQUIRE THAT COMPACTION TESTS BE TAKEN TO VERIFY BACKFILL COMPACTION. THE COSTS OF SUCH COMPACTION TESTS WILL BE BORNE BY THE CONTRACTOR.
7. ELEVATIONS SHOWN HEREIN ARE NGVD, 1929 DATUM.
8. THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND INSTALLATIONS OF EVERY KIND (INCLUDING SPRINKLERS) SHALL BE PLACED BENEATH THE PAVEMENT AREA AND ITS EDGE PRIOR TO THE CONSTRUCTION OF PAVEMENT. THE PAVEMENT SHALL NOT BE CUT WITHOUT PRIOR APPROVAL OF THE ENGINEER.
9. CONSTRUCTION INSPECTION WILL BE PROVIDED BY THE ENGINEER AND IS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS BEFORE BEGINNING CONSTRUCTION, AND AT LEAST 48 HOURS BEFORE REQUIRING INSPECTION ON EACH AND EVERY PHASE OF WORK.
10. CONSTRUCTION SURVEYING WILL BE PERFORMED BY THE SURVEYORS DESIGNATED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT THE SURVEYOR NOT LESS THAN 48 HOURS BEFORE THE SURVEYORS ARE NEEDED ON-SITE TO STAKEOUT ANY PHASE OF WORK. THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROTECTING ALL SURVEY STAKES AND MONUMENTS. REPLACEMENT COSTS OF ALL STAKES SHALL BE BORNE BY THE CONTRACTOR.
11. A MINIMUM THREE (3) SETS OF SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
12. ALL PAVING BASE INSTALLED WITHIN PLANTING AREAS SHALL BE REMOVED IN ITS ENTIRETY PRIOR TO PLACING PLANTER FILL AND/OR TOPSOIL.
13. THE EXISTING ELEVATIONS SHOWN ON THE GRADING PLAN INDICATES THE ELEVATION AT THE POINT DEPICTED ONLY, AND SHOULD NOT BE INTERPRETED AS INDICATING THE ELEVATIONS OF ANY OTHER POINT. THESE EXISTING ELEVATIONS ARE IN NO WAY AN INDICATOR OF SURFACE OR SUBSURFACE SOIL CONDITIONS.
14. SHOULD THE SITE BECOME EXCESSIVELY DRY, AND WIND AND SOIL EROSION BECOMES PREVALENT AND A NUISANCE TO THE COMMUNITY, THE CONTRACTOR SHALL WATER AND/OR SEED AND MULCH THE AREA, AND/OR PROVIDE FENCING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL MAKE EVERY EFFORT DURING CONSTRUCTION TO CONTROL WIND AND WATER EROSION OF THE SOIL ON THE SITE.
2. THE CONTRACTOR SHALL CONTROL EXCESSIVE RUNOFF FROM THE PROJECT DURING THE CLEARING AND GRUBBING OPERATION OF THE PROJECT.
3. TYPE I HAY BALES, SILT FENCE & FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED ON THE SITE TO PREVENT EROSION FROM STORM WATER WATER DISCHARGE AND TO PREVENT STORM WATER FROM ENTERING ONTO ADJACENT PROPERTIES. HAY BALES, SILT FENCE AND FLOATING TURBIDITY BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH FDOT INDEX 102 & 103. SILT FENCE SHALL BE PLACED AROUND THE PROJECT AS REQUIRED AND/OR SHOWN ON THE PLANS AND SHALL BE MAINTAINED THROUGHOUT THE ENTIRETY OF THE PROJECT.
4. SHOULD THE SITE BECOME EXCESSIVELY DRY, AND WIND AND SOIL EROSION BECOMES PREVALENT AND A NUISANCE TO THE COMMUNITY, THE CONTRACTOR SHALL WATER AND/OR SEED AND MULCH THE AREA, AND/OR PROVIDE FENCING AS NECESSARY AT NO ADDITIONAL COST TO THE OWNER.

SIGNING AND PAVEMENT MARKING NOTES

1. ALL PAVEMENT MARKINGS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE HIGH INTENSITY REFLECTORIZED THERMOPLASTIC.
2. ALL PAVEMENT MARKINGS ON-SITE SHALL BE PAINT IN ACCORDANCE WITH OKEECHOBEE COUNTY MINIMUM STANDARDS.
3. ALL PAVEMENT MARKINGS FOR PARKING STALLS SHALL BE FOUR INCH WHITE PAINT SPACED 9' FOOT CENTER TO CENTER AS IN ACCORDANCE WITH OKEECHOBEE COUNTY MINIMUM STANDARDS.
4. ALL R1-1 SIGNS SHALL HAVE HIGH INTENSITY SHEETING.

GENERAL NOTES FOR WATER AND SEWER

1. ALL APPLICABLE PERMITS MUST BE OBTAINED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. ALL APPLICABLE FEES AND CHARGES MUST BE PAID PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. THE LOCATION OF EXISTING UTILITIES AS SHOWN ON THE APPROVED PLANS HAVE NOT BEEN FIELD VERIFIED. ANY DISCREPANCY IN OR VARIATION FROM THE APPROVED PLANS IS TO BE BROUGHT TO THE ATTENTION OF THE AUTHORITY BY THE CONTRACTOR.
4. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES AND IMPROVEMENTS FROM DAMAGE, DISRUPTION OF SERVICE, OR DESTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING LOCATIONS OF ALL UTILITIES AND NOTIFICATION OF UTILITY COMPANIES 48 HOURS IN ADVANCE OF CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCHEDULING AND/OR PAYMENT FOR SUCH TESTS AS MAY BE DEEMED NECESSARY BY THE ENGINEER OF RECORD OR THE AUTHORITY ENGINEER, AND AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
7. ALL LABOR, MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE PLANS AND CONSTRUCTION SPECIFICATIONS. WHERE CONFLICTS OR OMISSIONS EXIST, THE OKEECHOBEE COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS SHALL DICTATE. SUBSTITUTIONS AND DEVIATIONS FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.
8. THE CONTRACTOR SHALL MAINTAIN A CURRENT APPROVED SET OF CONSTRUCTION PLANS ON-SITE. THE PLANS ARE TO BE MADE AVAILABLE TO THE AUTHORITY ENGINEER OR HIS DESIGNEE UPON REQUEST.
9. THE ENGINEER OF RECORD SHALL MAKE SUFFICIENT INSPECTIONS OF THE WORK TO ENABLE HIM TO CERTIFY THE INSTALLATION AS BEING IN CONFORMANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS.
10. IN ADDITION TO THE ENGINEER OF RECORD, THE OKEECHOBEE UTILITY AUTHORITY (OUA) WILL CARRY OUT INSPECTIONS OF THE WORK, WILL INFORM THE CONTRACTOR WHEN TO BACKFILL THE WORK AND WILL WITNESS PRESSURE, BACTERIOLOGICAL AND INFILTRATION/EXFILTRATION TESTS.
11. PRIOR TO ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL PROVIDE THOSE ITEMS AS SPECIFIED IN THE OUA MANUAL OF MINIMUM STANDARDS.
12. NO DEVIATION FROM APPROVED PLANS SHALL BE PERMITTED WITHOUT THE WRITTEN CONSENT OF OUA.
13. SHOP DRAWINGS FOR ALL MATERIAL/COMPONENTS INSTALLED SHALL BE SUBMITTED BY THE CONTRACTOR THROUGH THE ENGINEER OF RECORD TO THE COUNTY FOR REVIEW. THE CONTRACTOR AND ENGINEER SHALL REVIEW EACH SUBMITTAL PRIOR TO PASSING ON TO THE NEXT LEVEL. SHOP DRAWINGS SUBMITTALS SHALL BE GROUPED INTO CATEGORIES SUCH AS WATER, WASTWATER, PUMP STATION, ECT.
14. 4" MARKER BALLS (3M TYPE) SHALL BE USED AT ALL WATER MAIN & FORCE MAINS AT FITTINGS, CHANGE OF HORIZONTAL DIRECTION AND VALVES.
15. OUA WORKING HOURS FOR INSPECTIONS:
MONDAY – THURSDAY; 7:00AM – 5:30PM

GRADING AND DRAINAGE SPECIFICATIONS

1. ALL ORGANIC OR DELETERIOUS MATERIAL SHALL BE REMOVED FROM WITHIN 10 FEET OF ANY EDGE OF PAVEMENT OR BUILDING. ANY SUCH MATERIAL SHALL BE REPLACED BY APPROVED GRANULAR FILL WHICH SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
2. SUBGRADE TO BE COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 (UNLESS OTHERWISE NOTED).
3. SHELLROCK BASE COURSE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 911 OF FLORIDA D.O.T. STANDARD SPECIFICATIONS EXCEPT THAT THE MINIMUM PERCENTAGE OF CARBONATES OF CALCIUM AND MAGNESIUM SHALL BE 60%. SHELLROCK BASE MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF INTERIM FDOT SPECIFICATION 913-A.
4. ASPHALTIC CONCRETE COURSE TYPE S-1 SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 334-1 THROUGH 334-5, INCLUSIVE, OF FLORIDA D.O.T. STANDARD SPECIFICATIONS. ACSC TYPE S-1 SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 333-1 THROUGH 333-5, INCLUSIVE.
5. PRIME COAT AND TACK COAT FOR BASE COURSES SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS 300-1 THROUGH 300-7 OF FLORIDA D.O.T. STANDARD SPECIFICATIONS. PRIME COAT SHALL BE APPLIED AT A RATE OF 0.25 GALLONS PER SQUARE YARD AND TACK COAT AT A RATE OF 0.08 GALLONS PER SQUARE YARD UNLESS A VARIATION RATE IS APPROVED BY THE ENGINEER.
6. EMBANKMENT AND SUBGRADE SHALL BE TESTED EVERY 500 FEET IN ROADWAYS AND EVERY 2500 SQUARE FEET IN PARKING AREAS PER 12 INCH LIFT.
7. BASE COURSE SHALL BE TESTED EVERY 500 FEET OR LESS PER LIFT IN ROADWAYS AND EVERY 2500 SQUARE FEET IN PARKING AREAS. A MINIMUM OF THREE DENSITY TESTS SHALL BE MADE ON EACH DAY'S FINAL COMPACTION OPERATION ON EACH COURSE.
8. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
9. PRECAST CONCRETE MANHOLES AND CATCH BASINS SHALL MEET THE REQUIREMENTS OF A.S.T.M. SPECIFICATIONS, C-478 AND 64T.
10. CONCRETE FOR PRECAST MANHOLES AND CATCH BASINS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
11. REINFORCING STEEL FOR MANHOLES AND CATCH BASINS SHALL CONFORM TO A.S.T.M. SPECIFICATIONS A-615 AND A-305, LATEST REVISION.
12. ALL RE-BAR SPLICES IN CONCRETE STRUCTURES SHALL HAVE A MINIMUM LAP OF 24 BAR DIAMETER.
13. ALL JOINTS AND PENETRATIONS IN CONCRETE STRUCTURES SHALL BE FINISHED WATERTIGHT.
14. ALL SPACES AROUND PIPING ENTERING OR LEAVING MANHOLES AND CATCH BASINS SHALL BE COMPLETELY GROUTED USING 2:1 CEMENT MORTAR.
15. ALL HIGH DENSITY POLYETHYLENE PIPE (N12) SHALL CONFORM TO THE REQUIREMENT OF A.S.T.M. SPECIFICATIONS F687-85 AND AASHTO SPECIFICATIONS M294-881, CLASS C UNLESS OTHERWISE APPROVED BY THE ENGINEER.
16. PIPE SECTIONS SHALL BE JOINED BY INTEGRAL GASKET BELL AND SPIGOT PIPE OR CLEATTED COUPLING (ADS PRO LINK "S7" OR APPROVED EQUAL).
17. ALL LABOR, MATERIALS, AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS ADOPTED BY CONSTRUCTION SPECIFICATIONS. WHERE CONFLICTS OR OMISSIONS EXIST, THE OKEECHOBEE COUNTY STANDARDS SHALL DICTATE. SUBSTITUTIONS AND DEVIATIONS FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.
18. WHERE CONNECTIONS TO AN EXISTING DRAINAGE SYSTEM ARE PROPOSED, SAID EXISTING DRAINAGE STRUCTURES AND LINES SHALL BE CLEANED OF ALL SILT AND OTHER DEBRIS PRIOR TO CONNECTIONS BEING MADE, AND WHERE THE EXISTING DRAINAGE SYSTEM INCLUDES DITCHES, SAID DITCHES SHALL BE CLEARED AND REWORKED, AS NECESSARY, TO RESTORE THEM TO AN APPROVED DESIGN SECTION. SYSTEMS ARE TO BE CLEANED AND/OR GRADED TO THE POINT OF LEGAL POSITIVE OUTFALL.
19. ALL EMBANKMENT/SPREAD & FILL AREAS SHALL BE COMPACTED TO MIN. 95% OF AASHTO T-180, UNLESS NOTED OTHERWISE.

GENERAL WATER SYSTEM NOTES

1. FITTINGS 4" AND LARGER SHALL BE CAST IRON OR DUCTILE IRON, MECHANICAL JOINT, MEETING ANSI/AWWA C110/A21.10-87 SPECIFICATIONS. FITTINGS MUST BE EPOXY (24 MILS) LINED AND SEAL COATED PER ANSI/AWWA C-104/A21.4-5.
2. GATE VALVES 4" AND LARGER SHALL BE RESILIENT SEAT, NON- RISING STEM AND SHALL MEET ANSI/AWWA C-509-87 (LATEST REVISION) SPECIFICATION.
3. FIRE HYDRANTS SHALL BE INSTALLED WITH THE CENTER OF THE HOSE NOZZLE 18" ABOVE FINISHED GRADE.
4. PAVEMENT RESTORATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
5. ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING AND DISINFECTING MUST COMPLY WITH OKEECHOBEE COUNTY TECHNICAL SPECIFICATIONS.
6. ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT.
7. ALL PIPE, ETC. SHALL BE TESTED UNDER A CONSTANT PRESSURE OF 150 PSI FOR A MINIMUM TEST OF 2 HOURS AND SHALL NOT EXCEED THE LEAKAGE REQUIREMENTS AS PER ANSI/AWWA SPECIFICATIONS OF C600-87 LEAKAGE FORMULA:
- $Q = 133.200$
 $Q = \text{ALLOWABLE LEAKAGE IN GALLONS PER HOUR}$
 $S = \text{TOTAL LENGTH OF PIPE TESTED IN FEET}$
 $D = \text{DIAMETER OF THE PIPE TESTED IN INCHES}$
 $P = \text{AVERAGE TEST PRESSURE IN POUNDS PER SQUARE INCH.}$
8. THE MINIMUM DEPTH OF COVER OVER WATERMAIN SHALL BE 30", EXCEPT IN THE CASE OF PVC PIPE WHICH REQUIRES A MINIMUM DEPTH OF COVER OF 36".
9. DISINFECTION OF MAINS SHALL COMPLY WITH AWWA C651-92 STANDARD BACTERIOLOGICAL SAMPLING POINTS SHALL BE DESIGNATED ON THE ENGINEERING PLANS.
10. MARKER TAPE: MARKING TAPE (BLUE) SHALL BE INSTALLED WITH ALL NEW WATERMAINS CONTINUOUSLY FOR THE ENTIRE LENGTH OF THE LINE. THE TAPE SHALL BE METALLIZED AND SHALLBE IMPRINTED WITH THE CONTINUOUS MESSAGE "CAUTION – WATERMAIN BURIED BELOW". THE TAPE MUST CONFORM TO ALLEN SYSTEMS, INC. DETECTATAPE OR AN APPROVED EQUAL. MINIMUM WIDTH SHALL BE 4" AND MAXIMUM DEPTH OF BURIAL SHALL BE 18".
11. WATER MAINS 6" AND LARGER SHALL BE PVC SLIP AND GASKETED C900 DR18, AND SHALL BE DESIGNED FOR 180 PSI WORKING PRESSURE.
12. ALL SHOP DRAWINGS SHALL BE APPROVED BY OKEECHOBEE COUNTY THROUGH ENGINEER OF RECORD PRIOR TO CONSTRUCTION.
13. ALL FIRE HYDRANTS SHALL BE TRAFFIC BREAKAWAY CLOW AMERICAN DARLING OR MUELLER CENTURION TRAFFIC TYPE.

STANDARD SEPARATION STATEMENT
FOR WATER & SEWER CONFLICTS

1. SANITARY SEWERS, FORCEMAINS, SEWER LATERALS AND STORM SEWERS SHOULD ALWAYS CROSS UNDER WATER MAINS OR WATER SERVICES WHENEVER POSSIBLE. SANITARY SEWERS, FORCE MAINS, SEWER LATERALS AND STORM SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHENEVER POSSIBLE. WHERE SANITARY SEWERS, FORCEMAINS, SEWER LATERALS AND STORM SEWERS MUST CROSS A WATERMAIN WITH LESS THAN 18 INCHES VERTICAL DISTANCE, BOTH THE SEWER AND THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. (DIP IS NOT REQUIRED FOR STORM SEWERS). SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE ECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT THE CROSSING. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATERMAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING). WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE WITH LESS THAN 18" VERTICAL CLEARANCE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP (EXCEPT STORM SEWERS) AND THE NEW PIPE SHALL BE ARRANGED TO MEET THE CROSSING REQUIREMENTS ABOVE.
2. A MINIMUM 10-FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10-FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF DIP (EXCEPT STORM SEWERS) WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).
3. ALL DIP SHALL BE CLASS 50 OR HIGHER, DUCTILE IRON FITTINGS SHALL BE CLASS 350. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED.
4. MAXIMUM OBTAINABLE SEPARATION OF RECLAIMED WATER LINES AND DOMESTIC WATER LINES SHALL BE PRACTICED.A MINIMUM HORIZONTAL SEPARATION OF FIVE FEET (CENTER TO CENTER) OR THREE FEET (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND POTABLE WATER MAINS AND BETWEEN SEWAGE RECLAIMED WATER LINES AND COLLECTION LINES. A MINIMUM VERTICAL CLEARANCE OF 18 INCHES MUST BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND POTABLE WATER MAINS OR SEWAGE COLLECTION LINES AND SEWER LATERALS. AT CROSSINGS PROVISIONS OF F.A.C. RULE 17-604 AND 10 STATE STANDARDS APPLY.

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date:	09/25/12
Designed:	OAR
Drawn:	MRM
Checked:	OAR

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

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

7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:

OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS

GENERAL NOTES

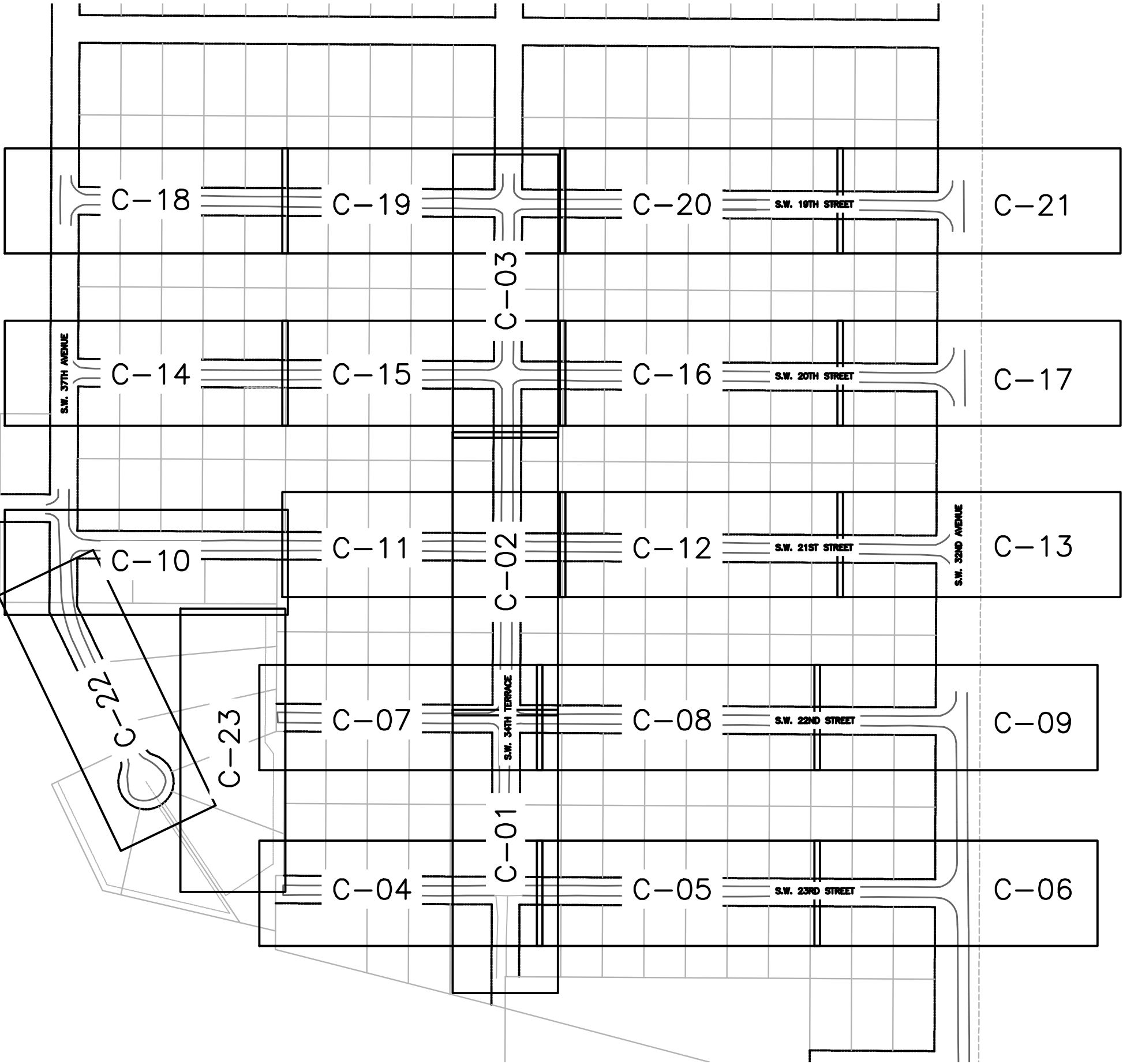
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LAST SAVED: 09/23/13 – 2:31pm

CAS PROJECT NUMBER
11-0903-001

SHEET

G-02

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FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

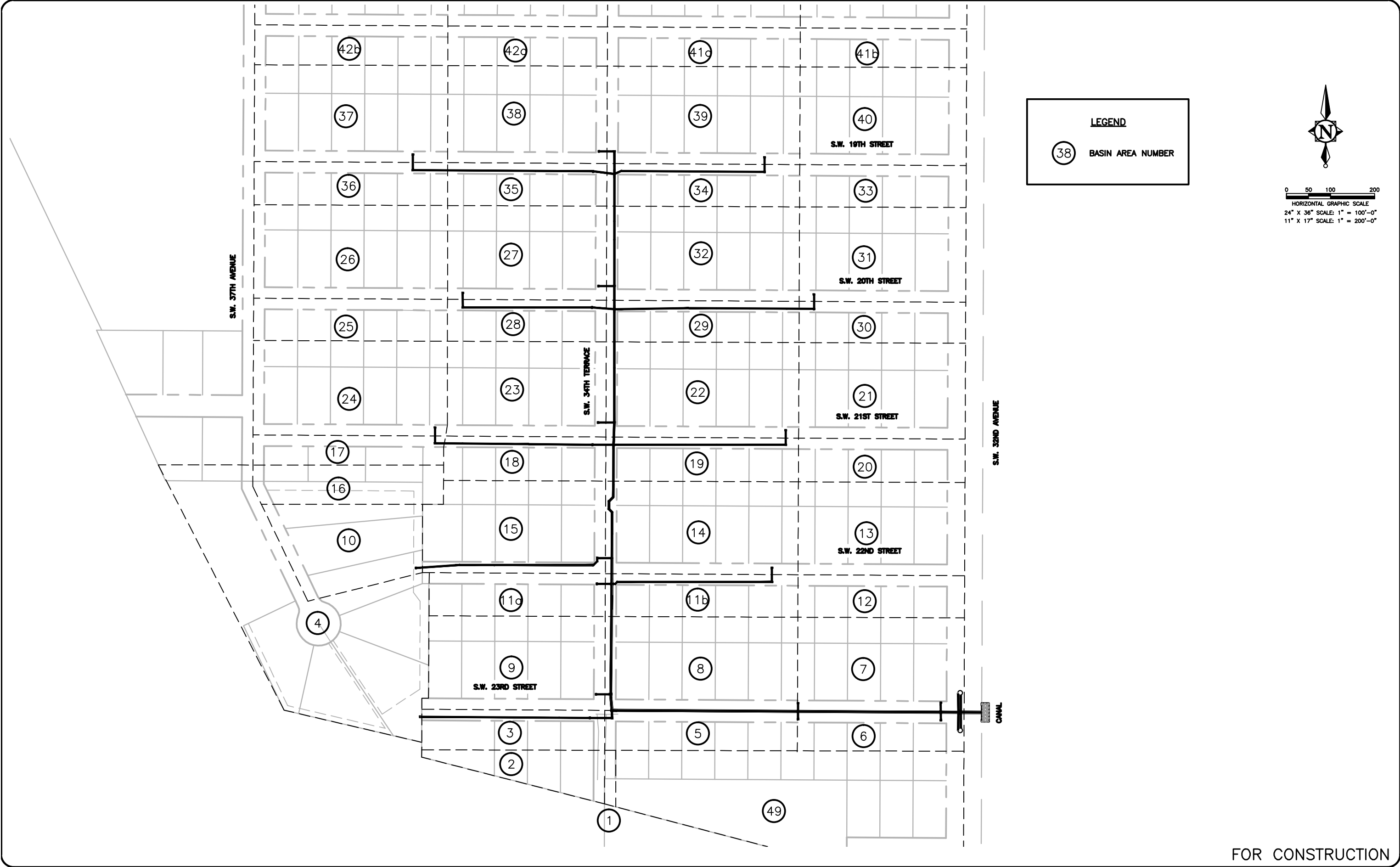
PREPARED FOR:
OKEECHOBEE COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
KEY SHEET
& SITE PLAN

FILE NAME: 03-0903-G-03-KEY.dwg
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11-0903-001

SHEET
G-03

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FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES

CONSULTING ENGINEERS-PLANNERS-SURVEYORS

CAS

7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

CAS

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
DRAINAGE
SYSTEM

FILE NAME: 04-0903-G-04-SYS.dwg
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SHEET
G-04

SEE SHEET C-04 FOR CONTINUATION

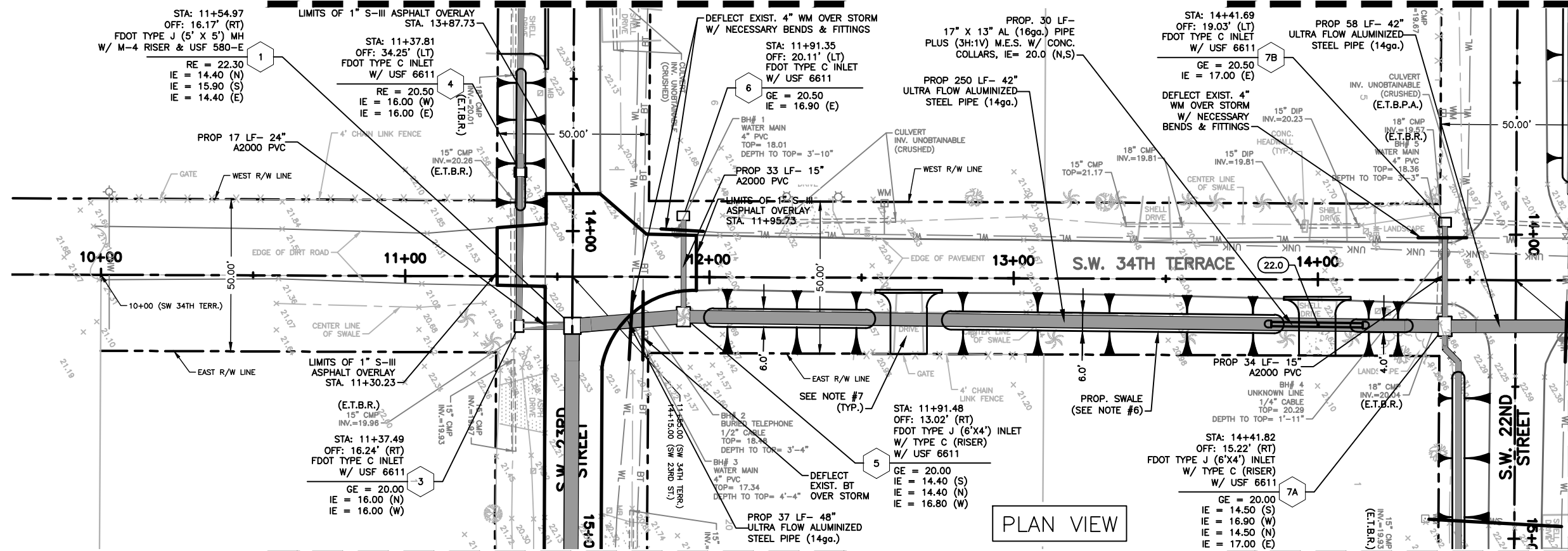
SEE SHEET C-07 FOR CONTINUATION



0 10 20 40
HORIZONTAL GRAPHIC SCALE
24" X 36" SCALE: 1" = 20'-0"
11" X 17" SCALE: 1" = 40'-0"

- NOTES:
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 2. CONTRACTOR WILL OBTAIN A WATER USE PERMIT FOR ANY CONSTRUCTION DEWATERING AS NECESSARY FROM ANY WATER MANAGEMENT DISTRICT.
 3. 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.
 4. ALL DRAINAGE STRUCTURES TO HAVE 18" SUMPS FROM LOWEST INVERT.
 5. ALL PVC PIPES ARE TO BE A2000 PVC.
 6. CONSTRUCT SWALE TO PROP WIDTH & ELEVATION
 7. FOR EXIST SHELL D/W PROP. THE GREATER OF 12' MIN ASPHALT (1.5"-S-III) D/W OR EXIST WIDTH W/ 5' RADII X 1' MIN SAW CUT TO MATCH EXIST PAVEMENT.

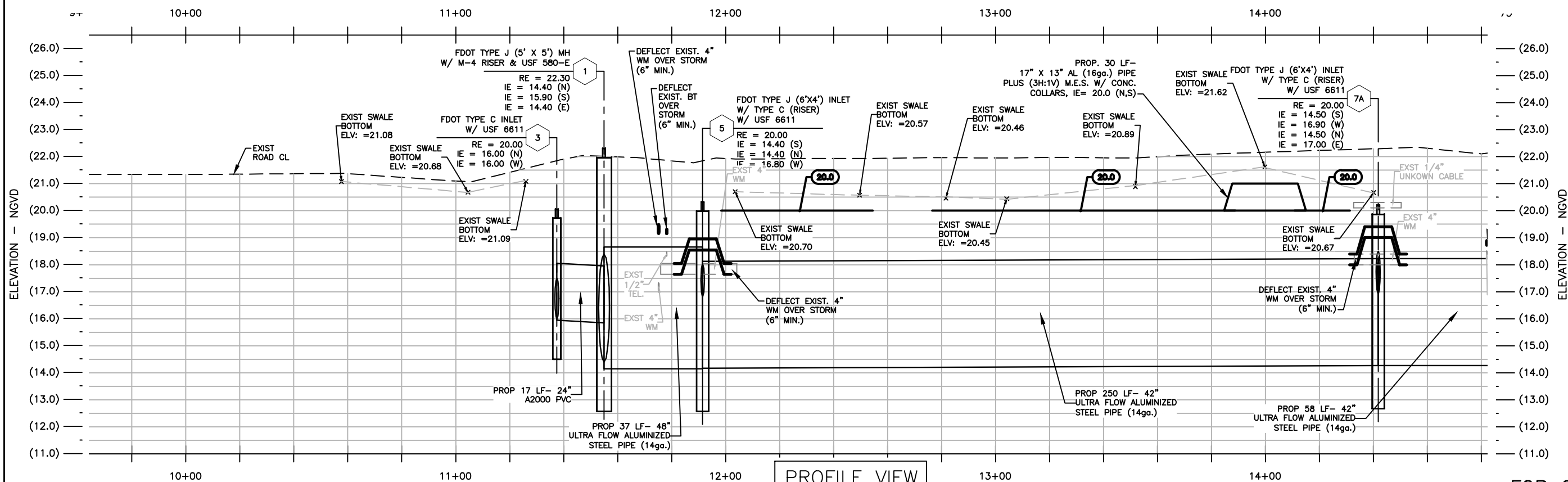
SEE SHEET C-02 FOR CONTINUATION



PLAN VIEW

SEE SHEET C-05 FOR CONTINUATION

SEE SHEET C-08 FOR CONTINUATION



PROFILE VIEW

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

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7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB00031110

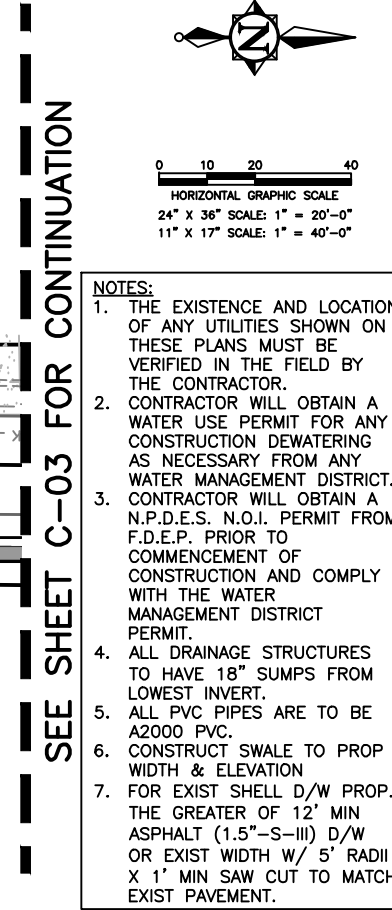
PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 34TH TERRACE
PLAN AND PROFILE

FILE NAME: 05-0903-C-01-PAP.dwg
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CAS PROJECT NUMBER
11-0903-001

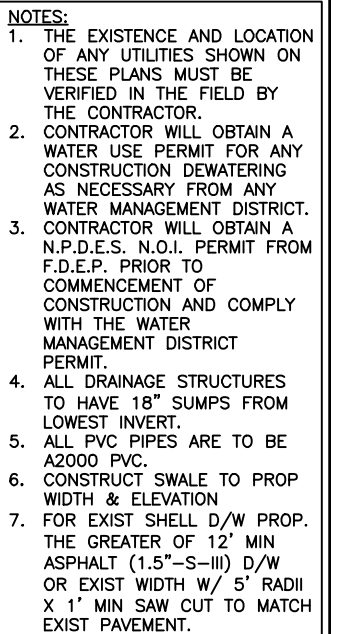
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SEE SHEET C-11 FOR CONTINUATION



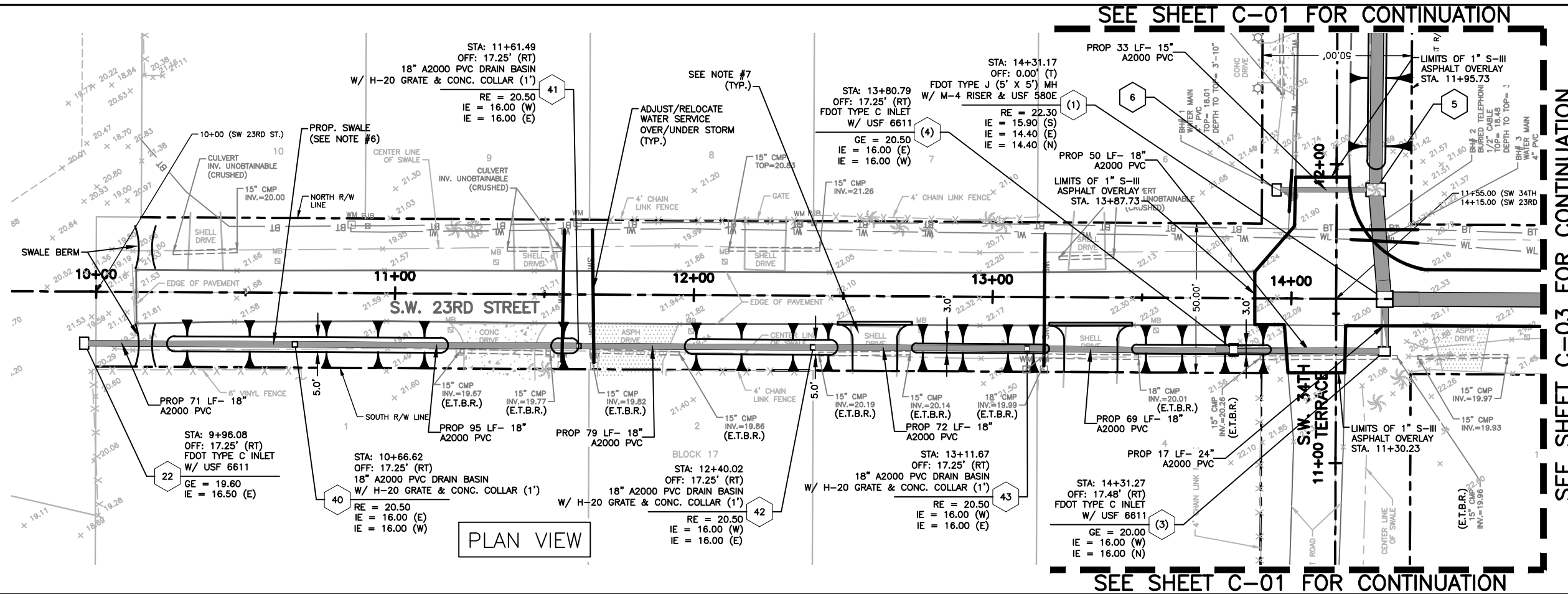
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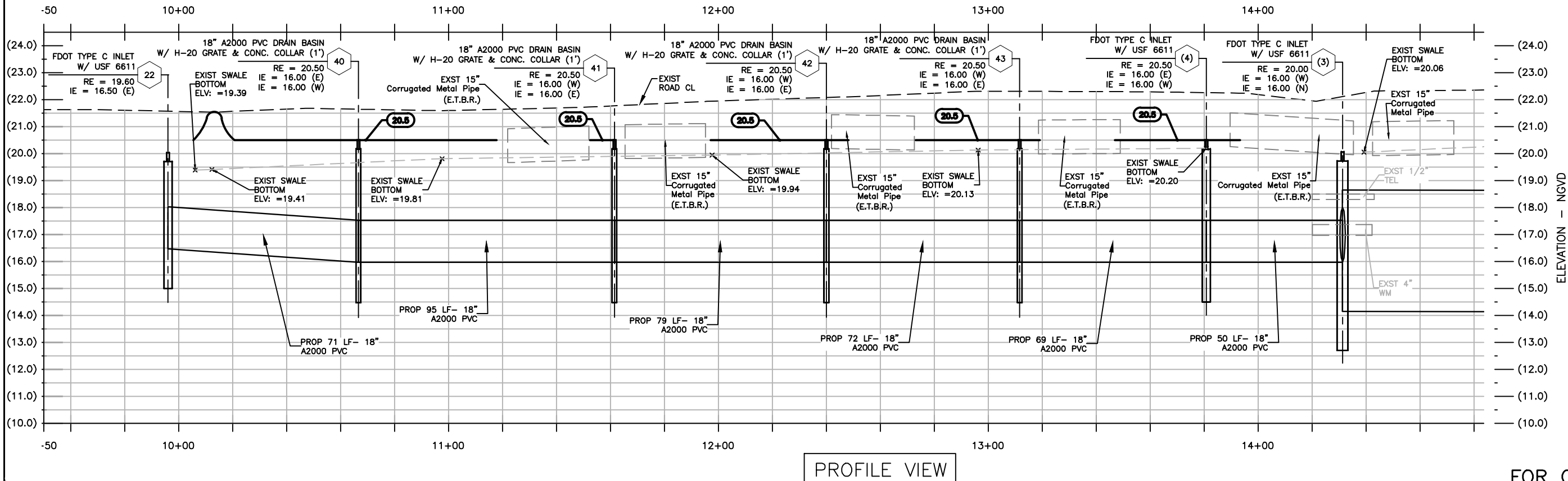


SHEET
C-03

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- NOTES:
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 2. CONTRACTOR WILL OBTAIN A WATER USE PERMIT FOR ANY CONSTRUCTION DEWATERING AS NECESSARY FROM ANY WATER MANAGEMENT DISTRICT.
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 6. CONSTRUCT SWALE TO PROP WIDTH & ELEVATION
 7. FOR EXIST SHELL D/W PROP. THE GREATER OF 12' MIN ASPHALT (1.5"-S-III) D/W OR EXIST WIDTH W/ 5' RADII X 1' MIN SAW CUT TO MATCH EXIST PAVEMENT.



FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB00031110

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

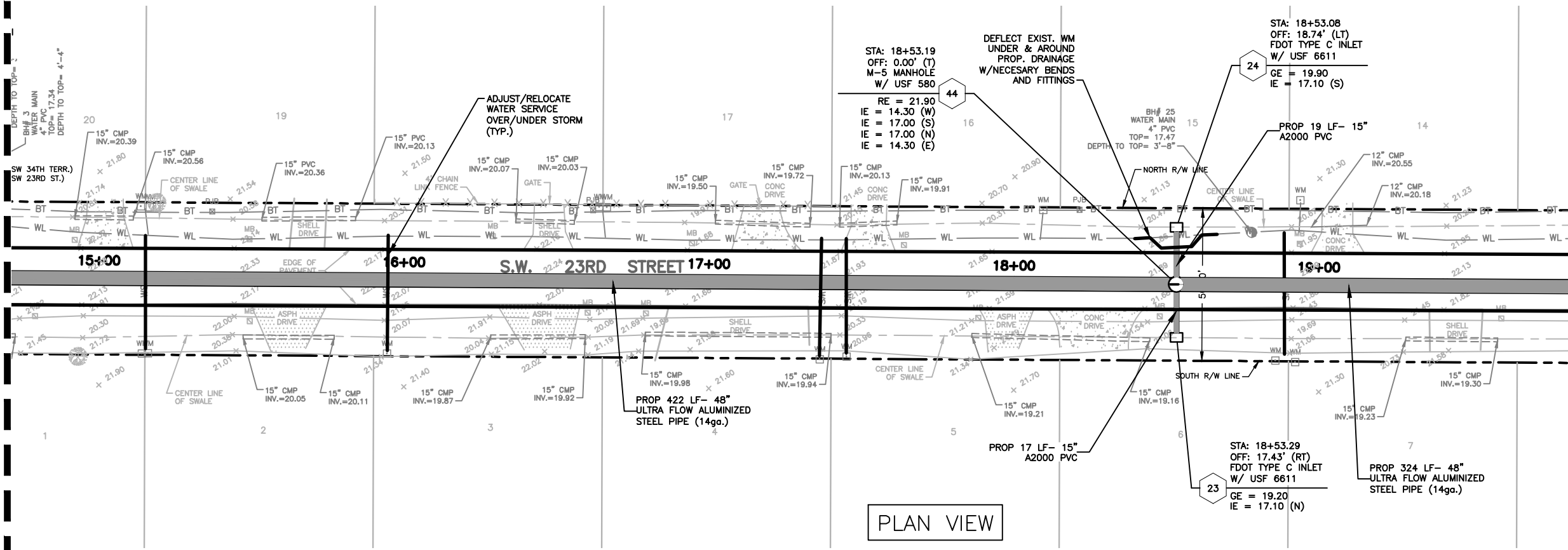
OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 23RD STREET
PLAN AND PROFILE

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SHEET
C-04

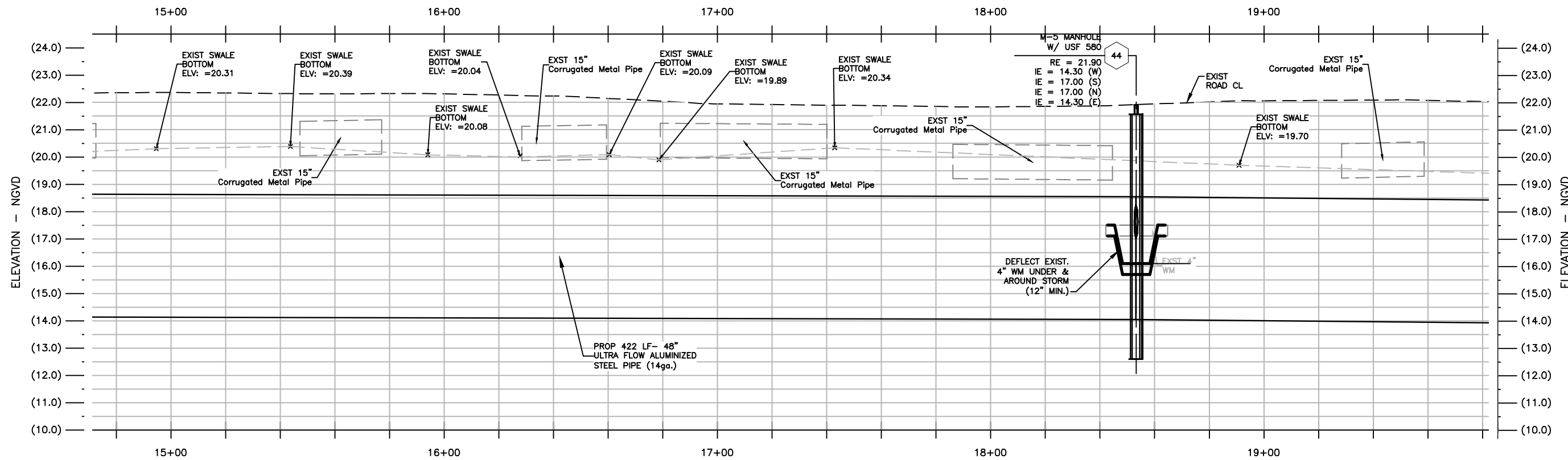
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SEE SHEET C-04 FOR CONTINUATION



SEE SHEET C-06 FOR CONTINUATION

- NOTES:
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PROFILE VIEW

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

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Drawn: MRM
Checked: OAR

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DATE: _____
FLORIDA PROFESSIONAL ENGINEER NO. 48265

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7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
OKEECHOBEE COUNTY
OKEECHOBEE, FLORIDA

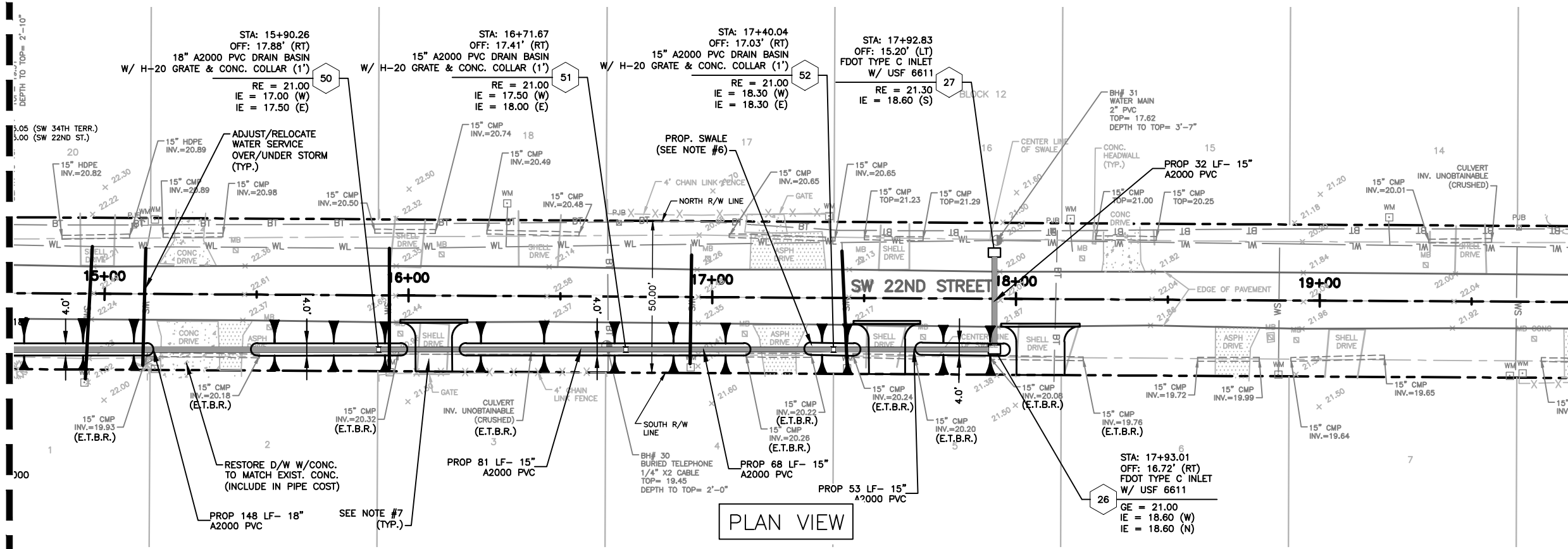
OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 23RD STREET
PLAN AND PROFILE

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CAS PROJECT NUMBER
11-0903-001

SHEET
C-05

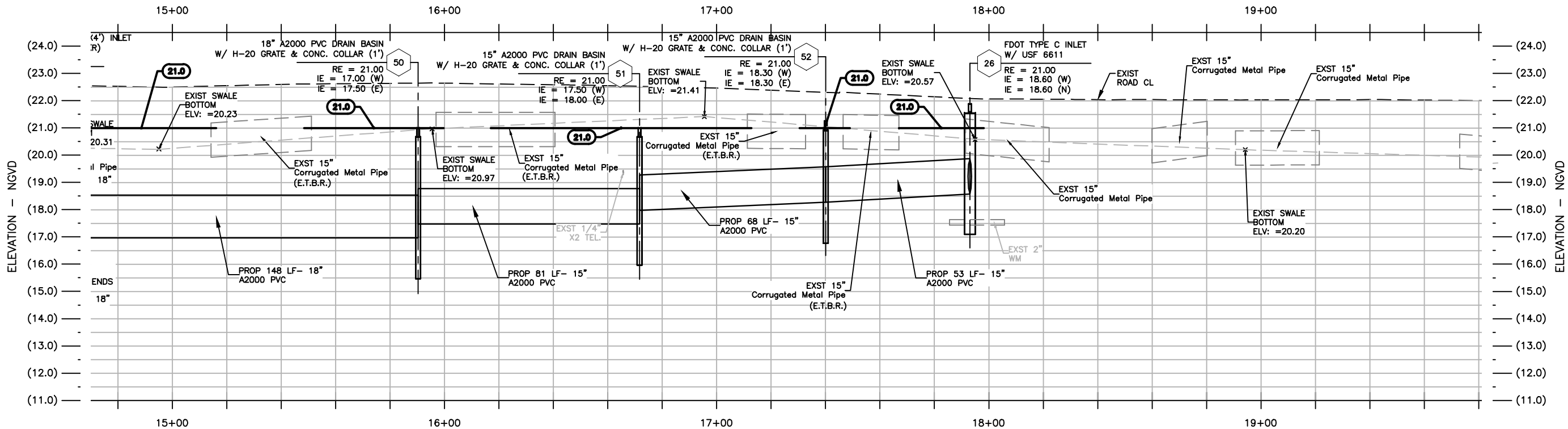
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SEE SHEET C-07 FOR CONTINUATION



SEE SHEET C-09 FOR CONTINUATION

- NOTES:
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PROFILE VIEW

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB00031110

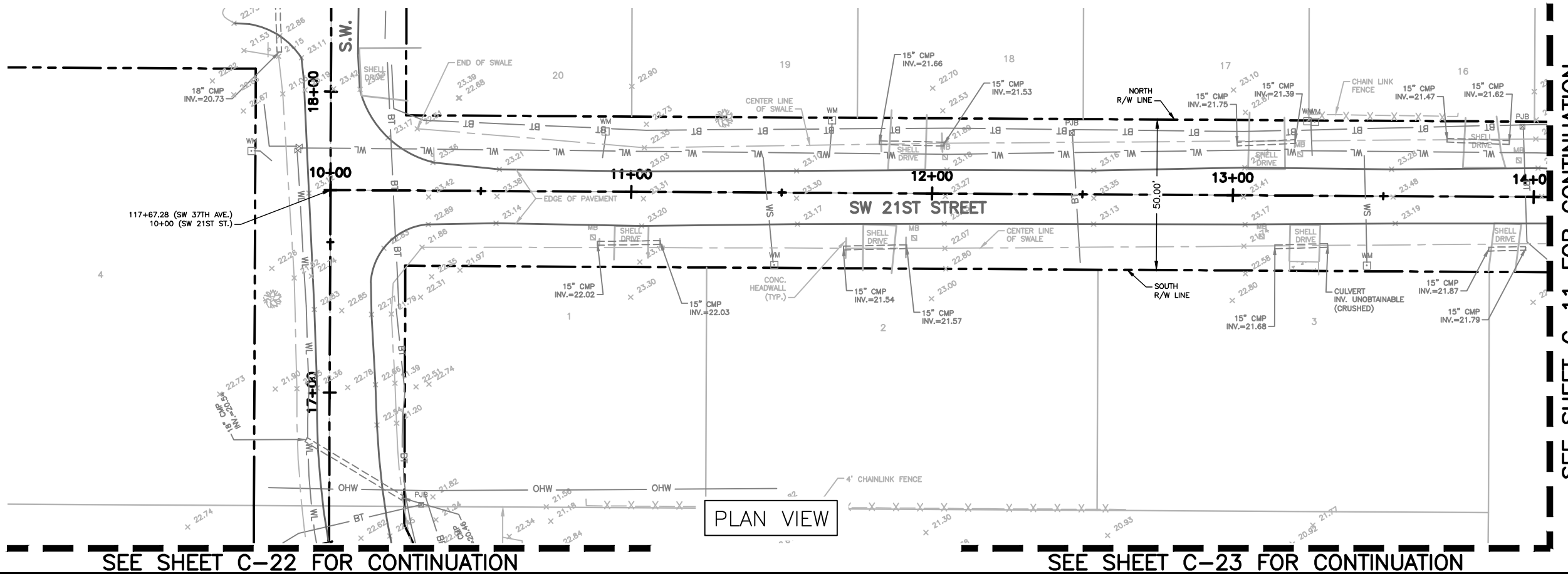
PREPARED FOR:
OKEECHOBEE COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 22ND STREET
PLAN AND PROFILE

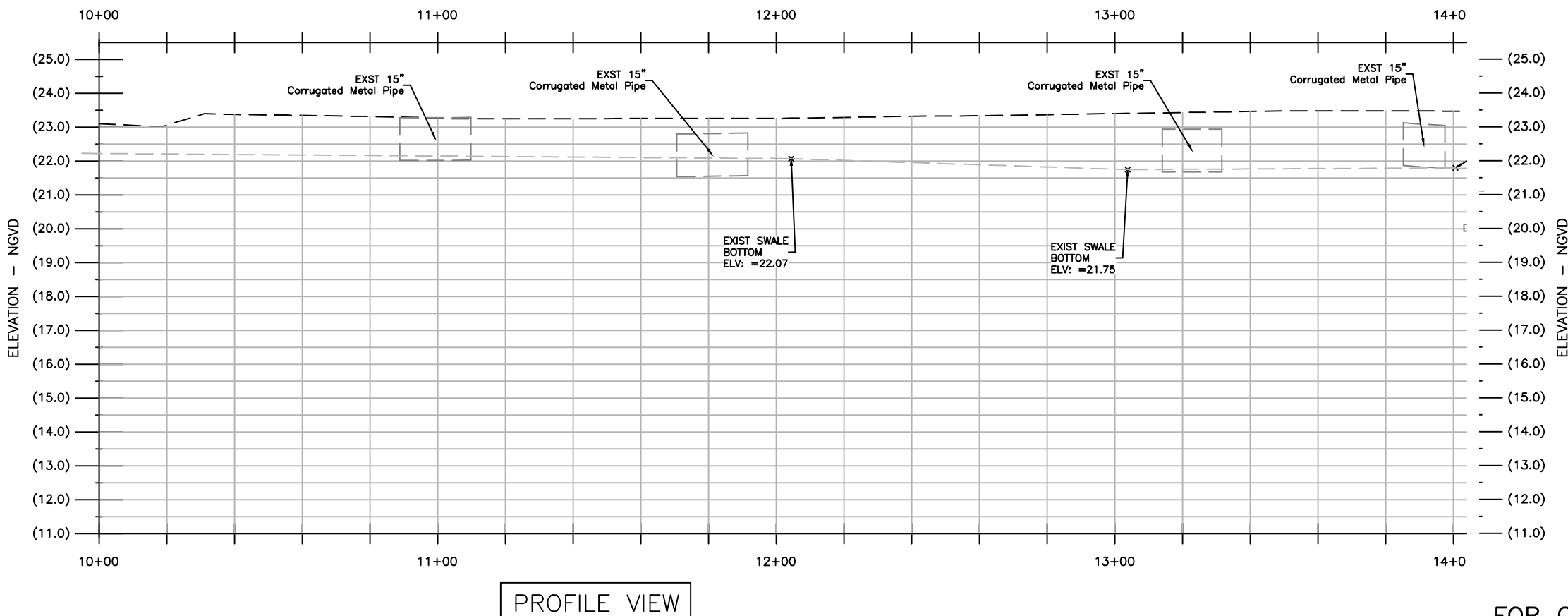
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CAS PROJECT NUMBER
11-0903-001

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- NOTES:
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NO IMPROVEMENTS
PROPOSED ON THIS
SHEET

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

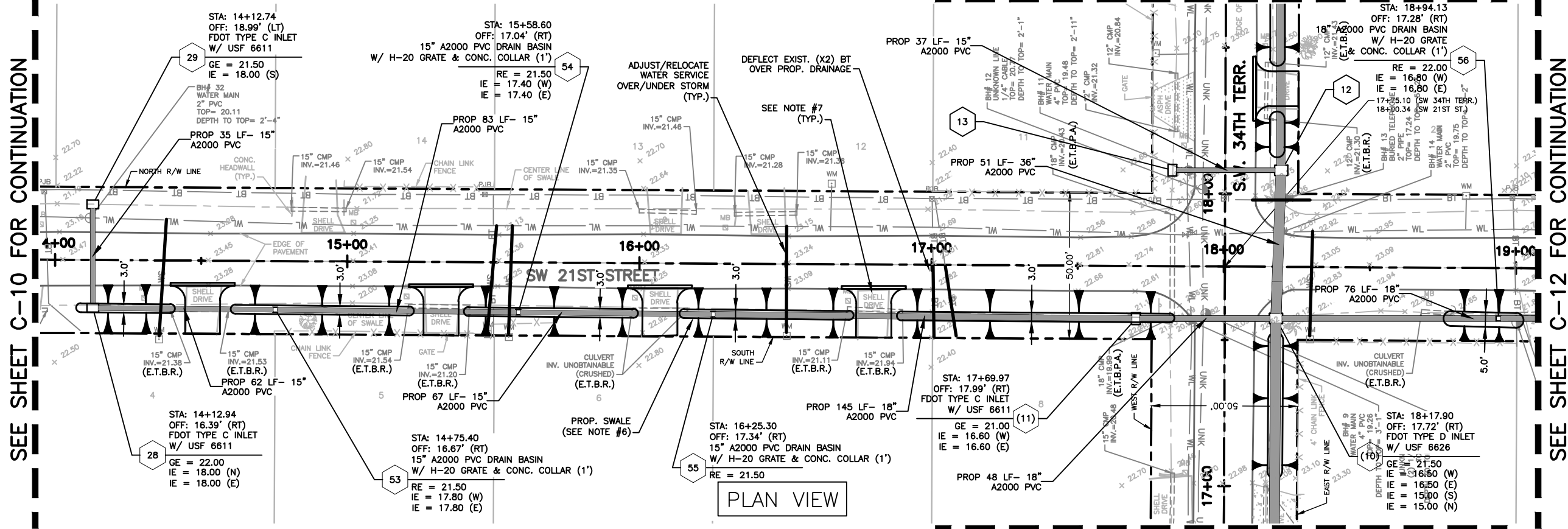
OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 21ST STREET
PLAN AND PROFILE

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SHEET
C-10

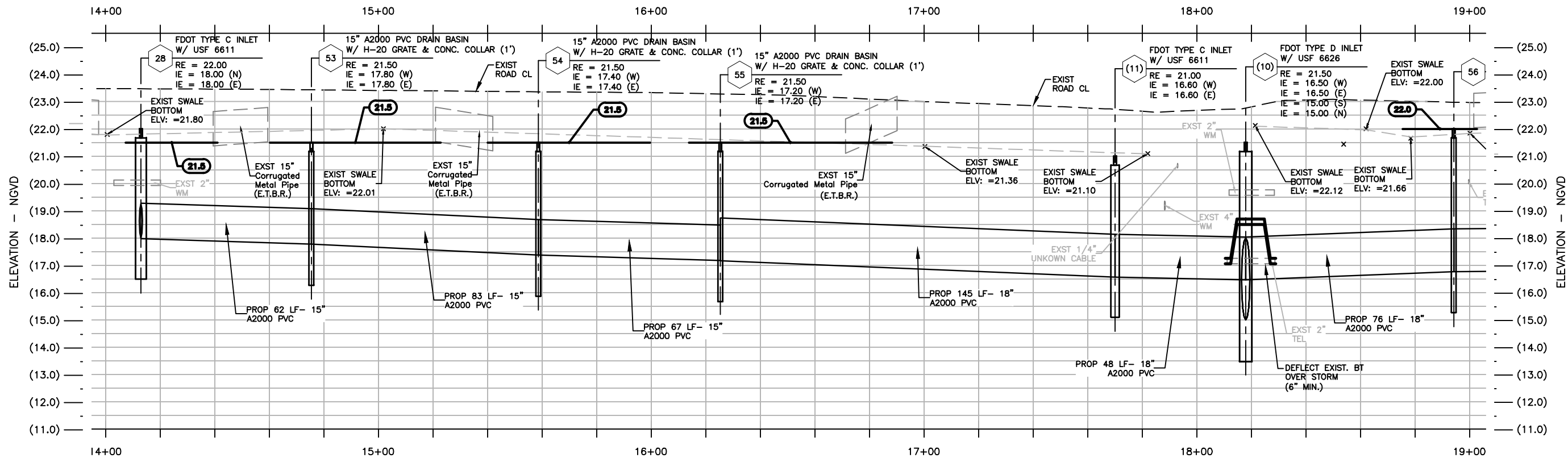
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SEE SHEET C-10 FOR CONTINUATION



- NOTES:
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SEE SHEET C-02 FOR CONTINUATION



PROFILE VIEW

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

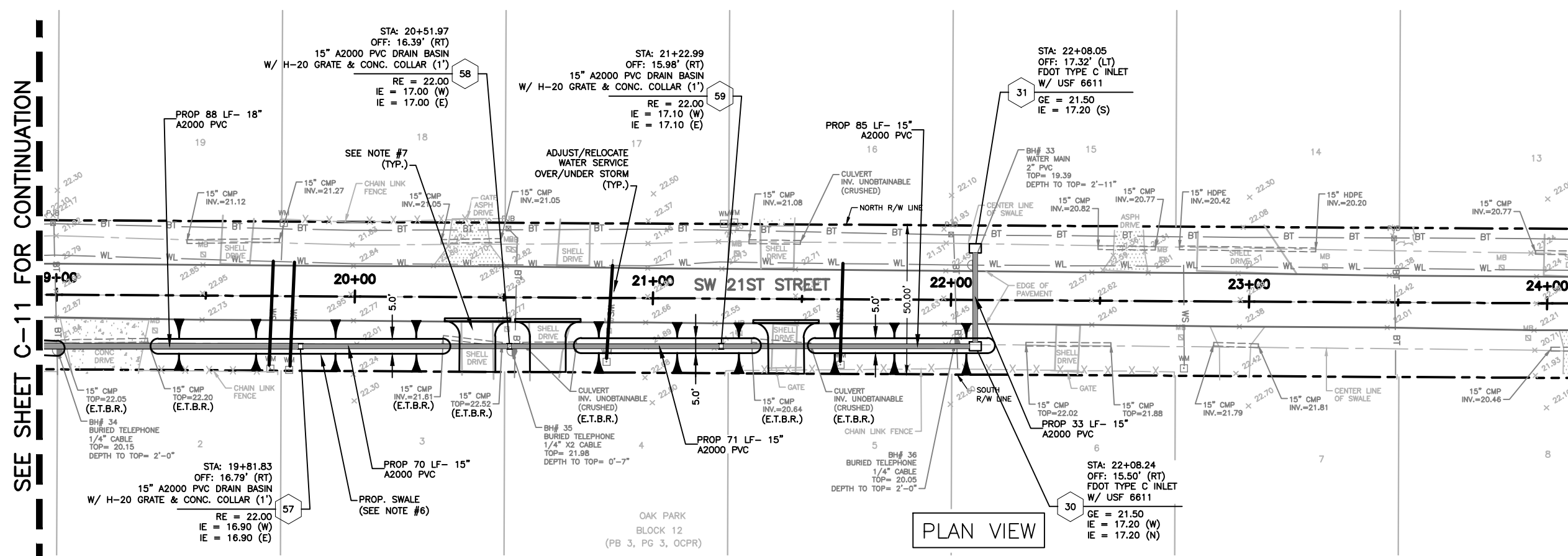
CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
OKEECHOBEE COUNTY
OKEECHOBEE, FLORIDA

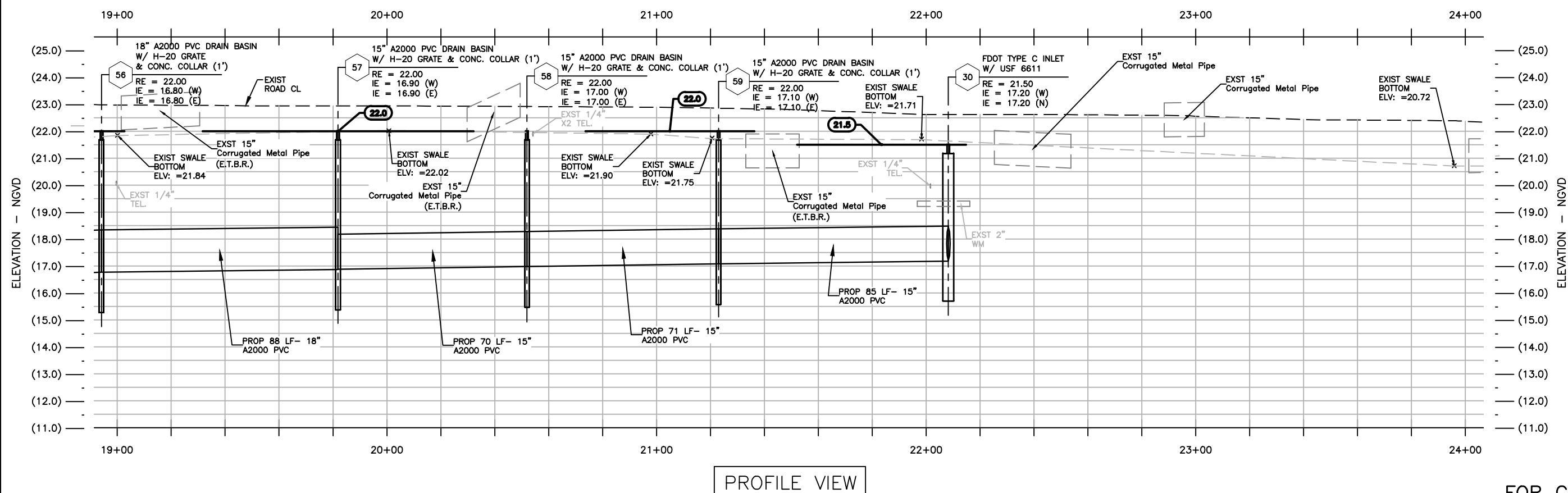
OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 21ST STREET
PLAN AND PROFILE

FILE NAME: 15-0903-C-11-PAP.dwg
LAST SAVED: 06/21/13 - 10:07am
CAS PROJECT NUMBER
11-0903-001

SHEET
C-11



- NOTES:**
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FOR CONSTRUCTION

		N.R.T.S.	
NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
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Checked: OAR

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

DATE _____

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

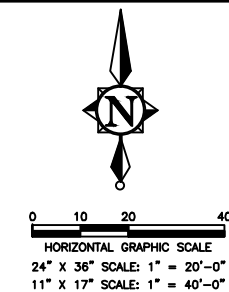
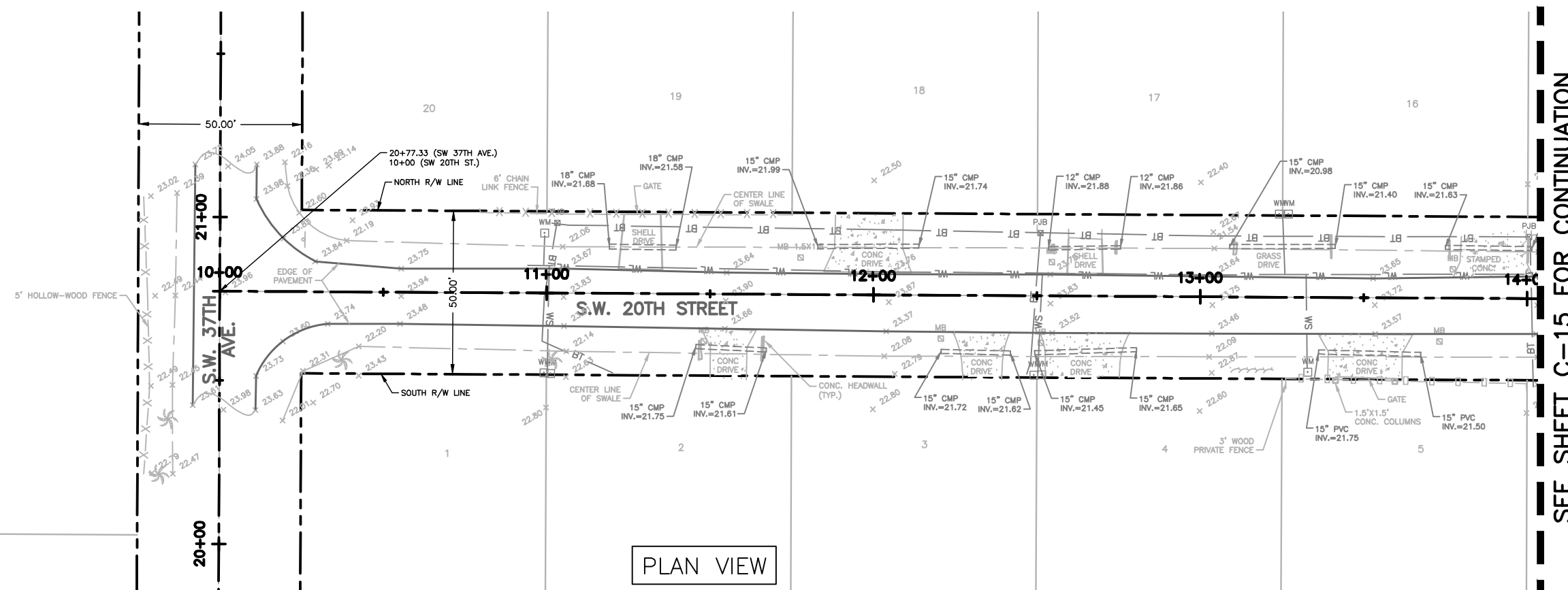
 7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110 

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

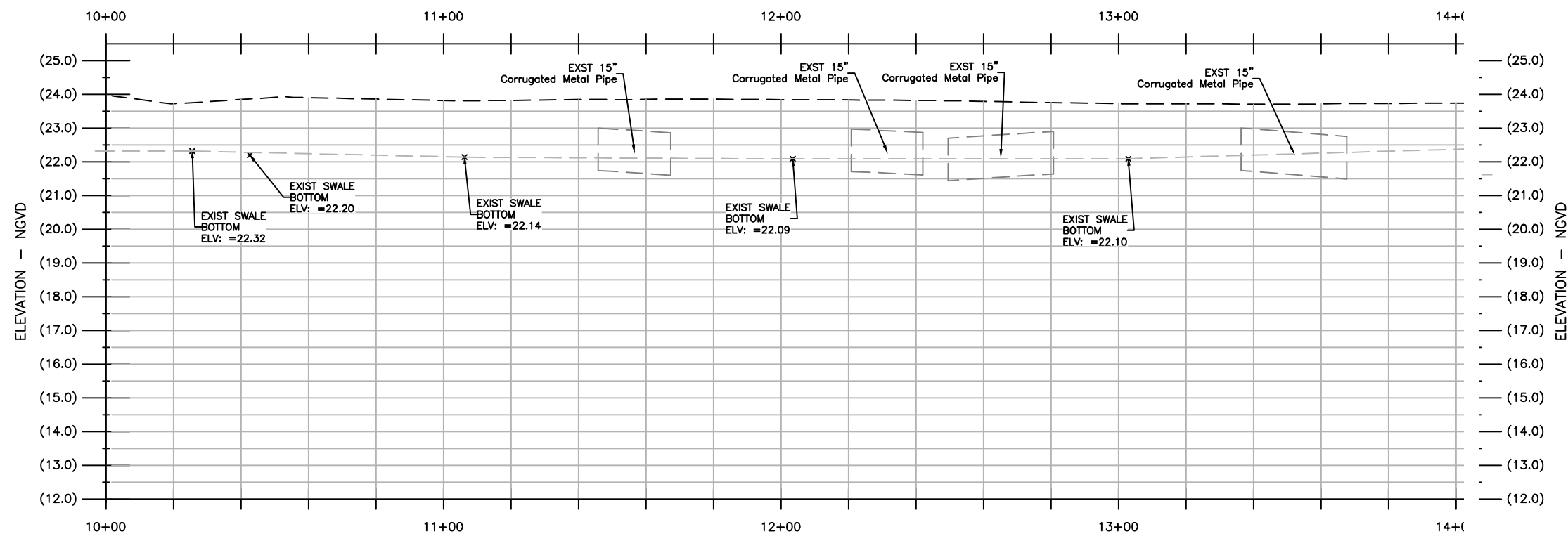
OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 21ST STREET
PLAN AND PROFILE

FILE NAME: 16-0903-C-12-PAP.dwg
LAST SAVED: 06/21/13 - 10:09am
CAS PROJECT NUMBER
11-0903-001

SHEET
C-12



- NOTES:**
1. THE EXISTENCE AND LOCATION OF ANY UTILITIES SHOWN ON THESE PLANS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
 2. CONTRACTOR WILL OBTAIN A WATER USE PERMIT FOR ANY CONSTRUCTION DEWATERING AS NECESSARY FROM ANY WATER MANAGEMENT DISTRICT.
 3. 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.
 4. ALL DRAINAGE STRUCTURES TO HAVE 18" SUMPS FROM LOWEST INVERT.
 5. ALL PVC PIPES ARE TO BE A2000 PVC.
 6. CONSTRUCT SWALE TO PROP WIDTH & ELEVATION
 7. FOR EXIST SHELL D/W PROP. THE GREATER OF 12' MIN ASPHALT (1.5"-S-III) D/W OR EXIST WIDTH W/ 5' RADII X 1' MIN SAW CUT TO MATCH EXIST PAVEMENT.



NO IMPROVEMENTS
PROPOSED ON THIS
SHEET

FOR CONSTRUCTION

		N.R.T.S.	
NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

DATE _____

FLORIDA PROFESSIONAL ENGINEER NO. 48265

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

 7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110 

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 20TH STREET
PLAN AND PROFILE

FILE NAME: 18-0903-C-14-PAP.dwg
LAST SAVED: 07/23/13 - 3:14pm
CAS PROJECT NUMBER
11-0903-001

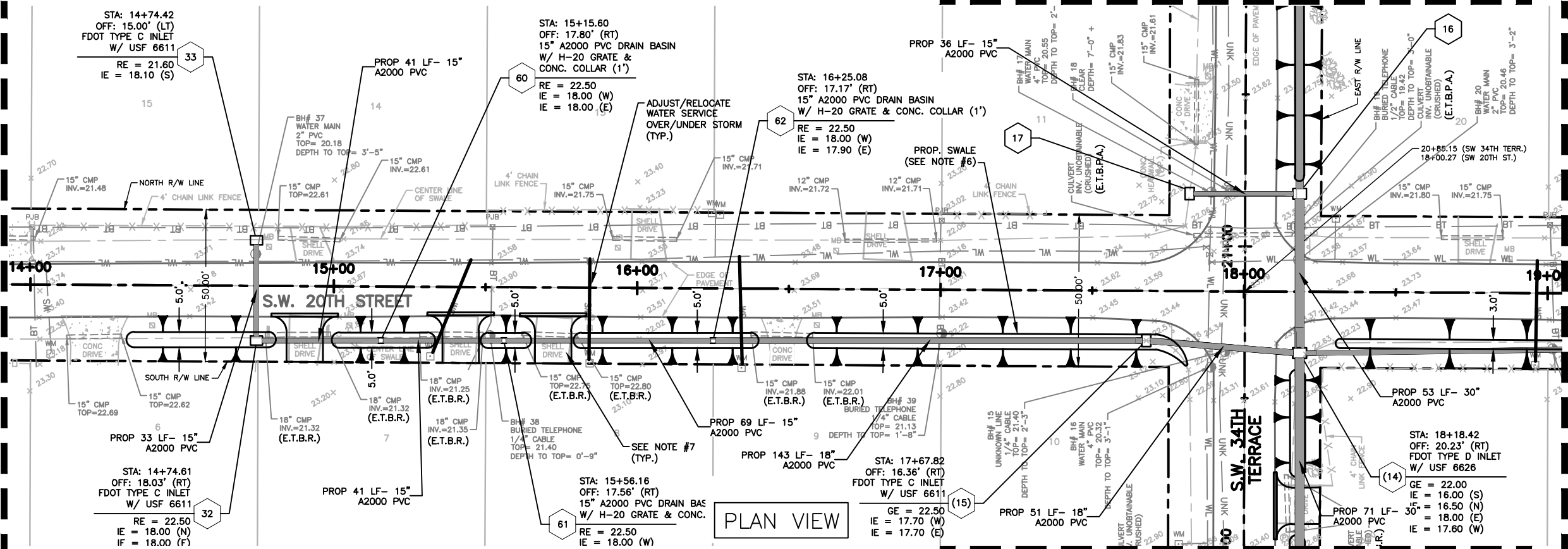
SHEET
C-14

P:\Counties\Okeechobee\Okeechobee Board of County Commissioners\11-0903-C-15-PAP.dwg, 8/11/2013 4:18:09 PM, caduser, 1:2

SEE SHEET C-14 FOR CONTINUATION

SEE SHEET C-03 FOR CONTINUATION

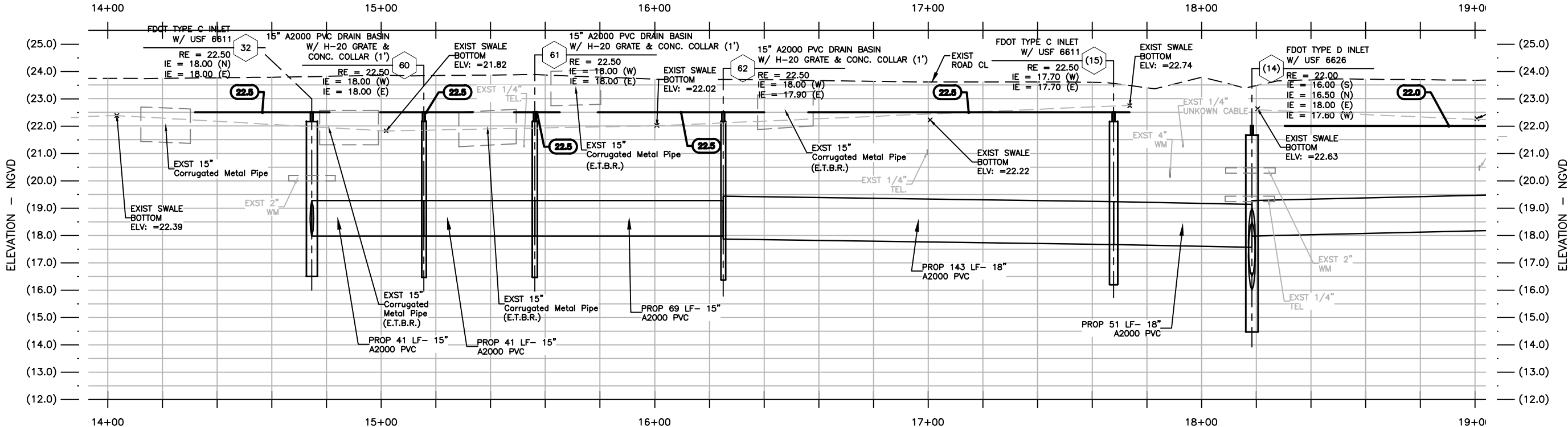
SEE SHEET C-16 FOR CONTINUATION



NOTES:

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SEE SHEET C-02 FOR CONTINUATION



PROFILE VIEW

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB00031110

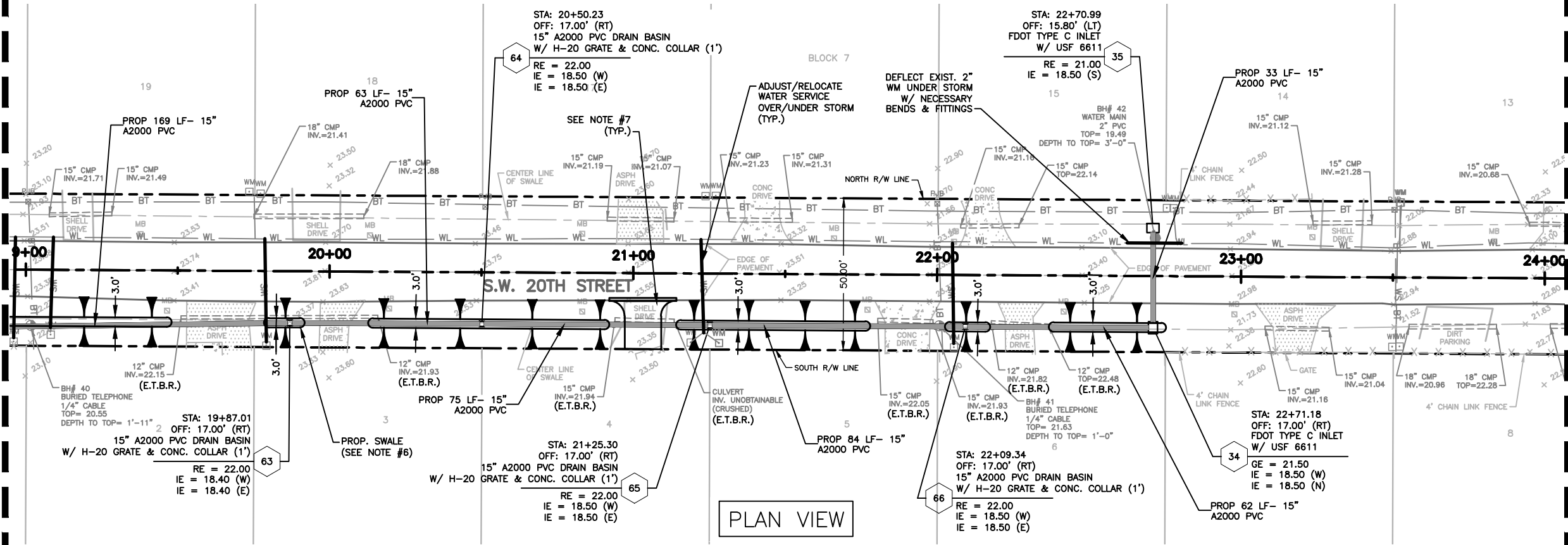
PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 20TH STREET
PLAN AND PROFILE

FILE NAME: 19-0903-C-15-PAP.dwg
LAST SAVED: 06/21/13 - 10:12am
CAS PROJECT NUMBER
11-0903-001

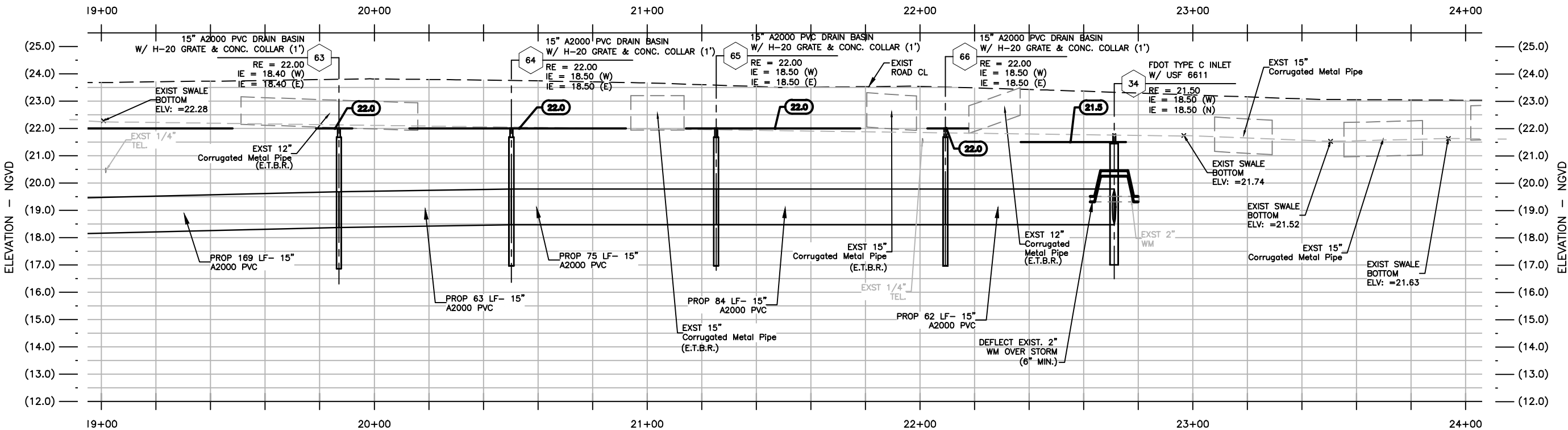
SHEET
C-15

SEE SHEET C-15 FOR CONTINUATION



SEE SHEET C-17 FOR CONTINUATION

- NOTES:
1. THE EXISTENCE AND LOCATION OF ANY UTILITIES SHOWN ON THESE PLANS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
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PROFILE VIEW

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

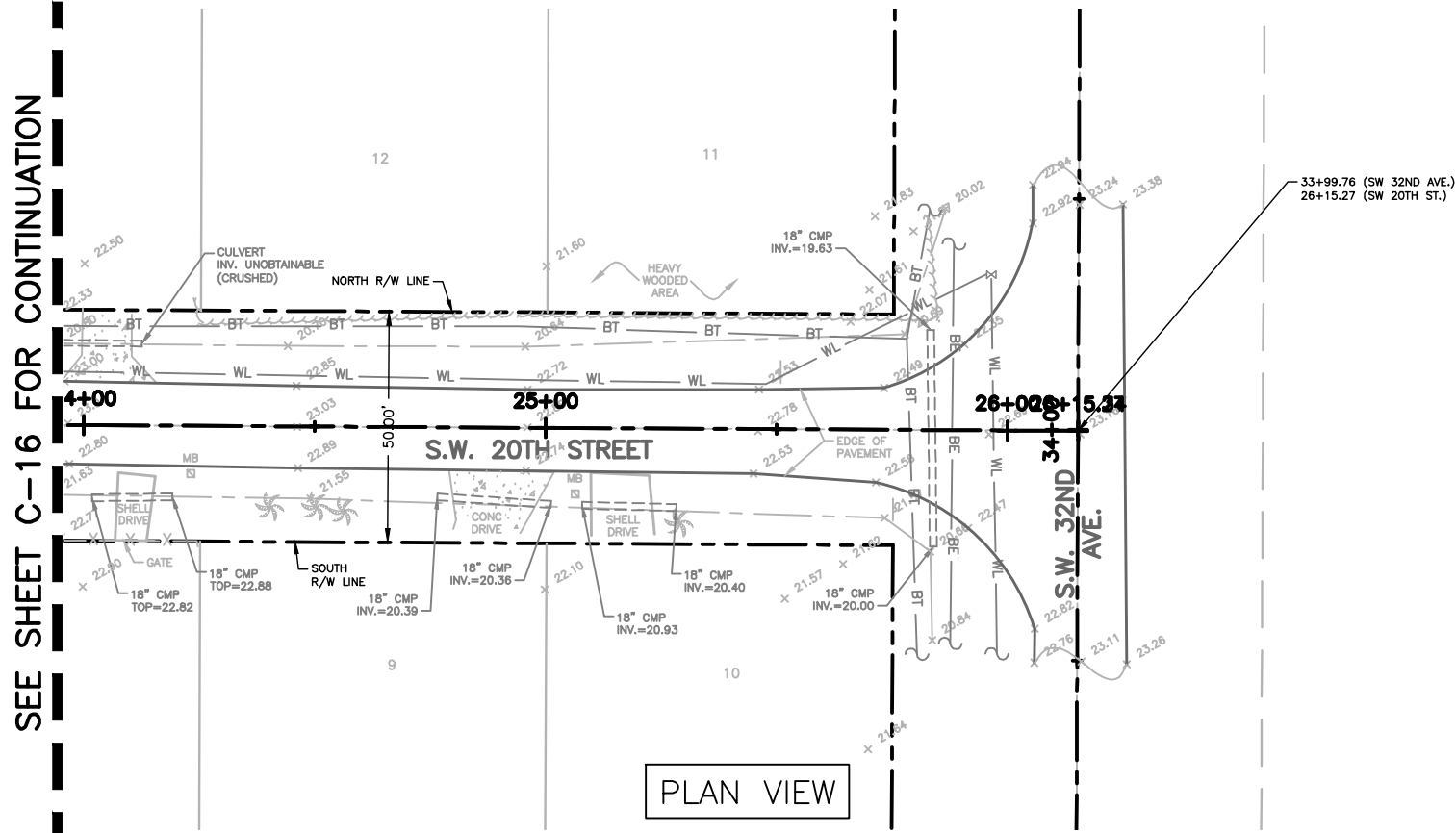
OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 20TH STREET
PLAN AND PROFILE

FILE NAME: 20-0903-C-16-PAP.dwg
LAST SAVED: 06/21/13 - 10:13am
CAS PROJECT NUMBER
11-0903-001

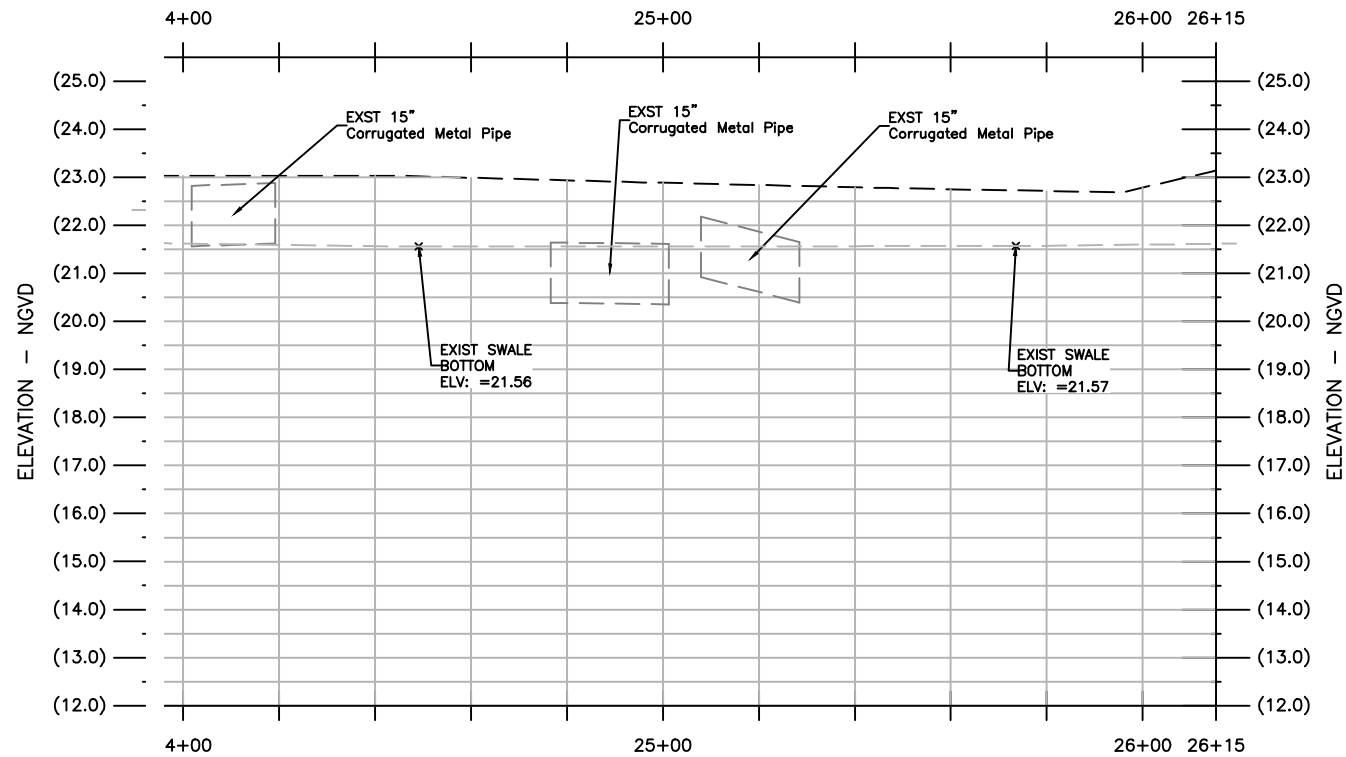
SHEET
C-16

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SEE SHEET C-16 FOR CONTINUATION



- NOTES:
1. THE EXISTENCE AND LOCATION OF ANY UTILITIES SHOWN ON THESE PLANS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
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NO IMPROVEMENTS
PROPOSED ON THIS
SHEET

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

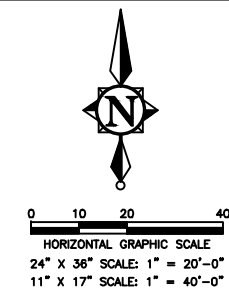
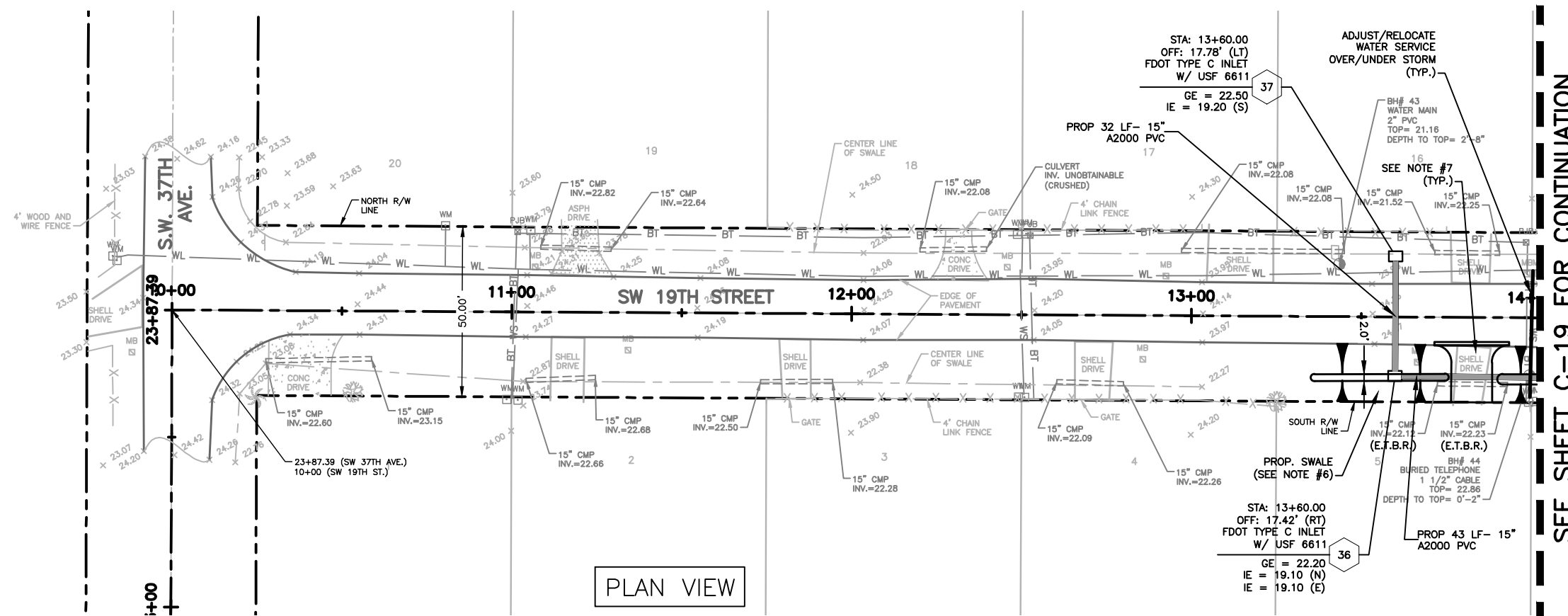
CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

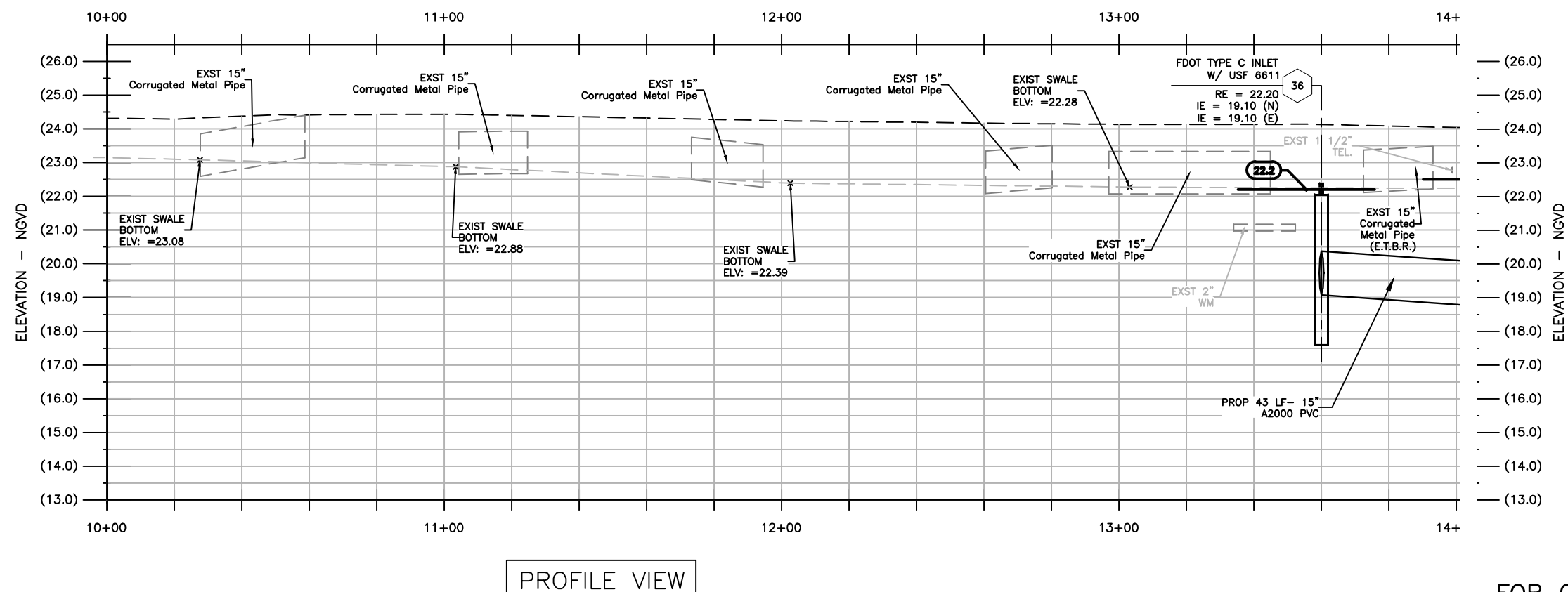
OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 20TH STREET
PLAN AND PROFILE

FILE NAME: 21-0903-C-17-PAP.dwg
LAST SAVED: 07/23/13 - 3:16pm
CAS PROJECT NUMBER
11-0903-001

SHEET
C-17



- NOTES:**
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FOR CONSTRUCTION

		N.R.T.S.	
NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

DATE _____

FLORIDA PROFESSIONAL ENGINEER NO. 48265

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

 7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110 

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 19TH STREET
PLAN AND PROFILE

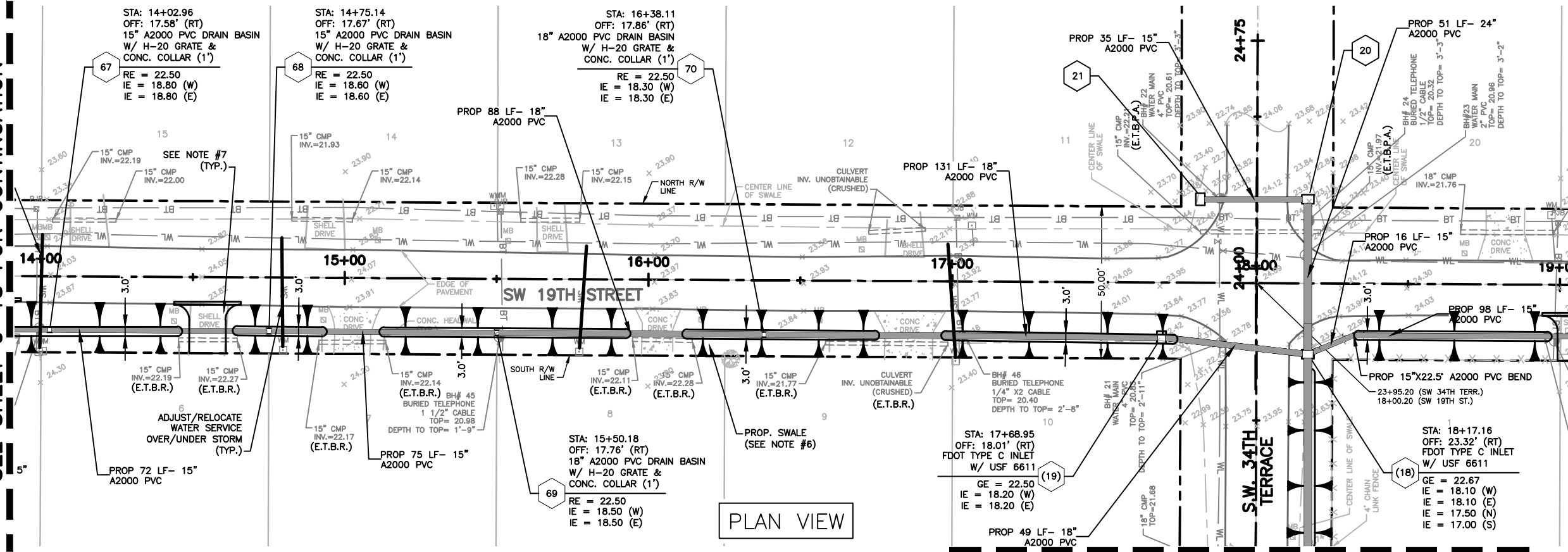
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LAST SAVED: 06/21/13 - 10:15am

CAS PROJECT NUMBER
11-0903-001

SHEET
C-18

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SEE SHEET C-18 FOR CONTINUATION

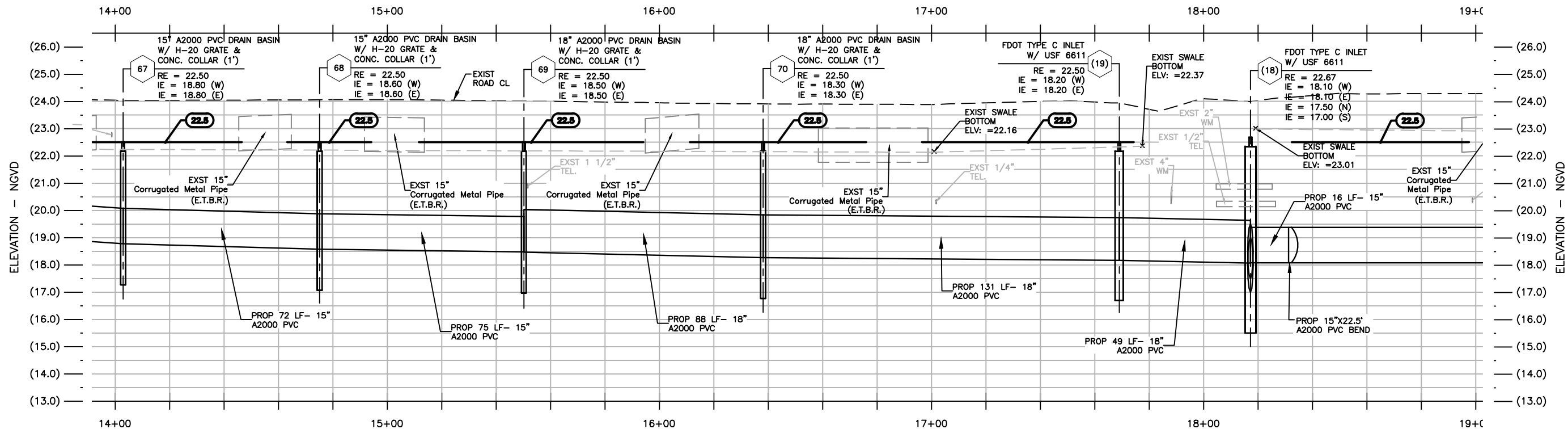
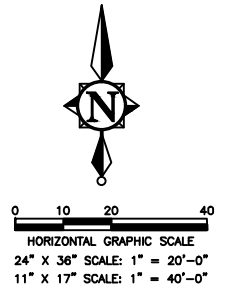


PLAN VIEW

SEE SHEET C-03 FOR CONTINUATION

SEE SHEET C-20 FOR CONTINUATION

- NOTES:
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PROFILE VIEW

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

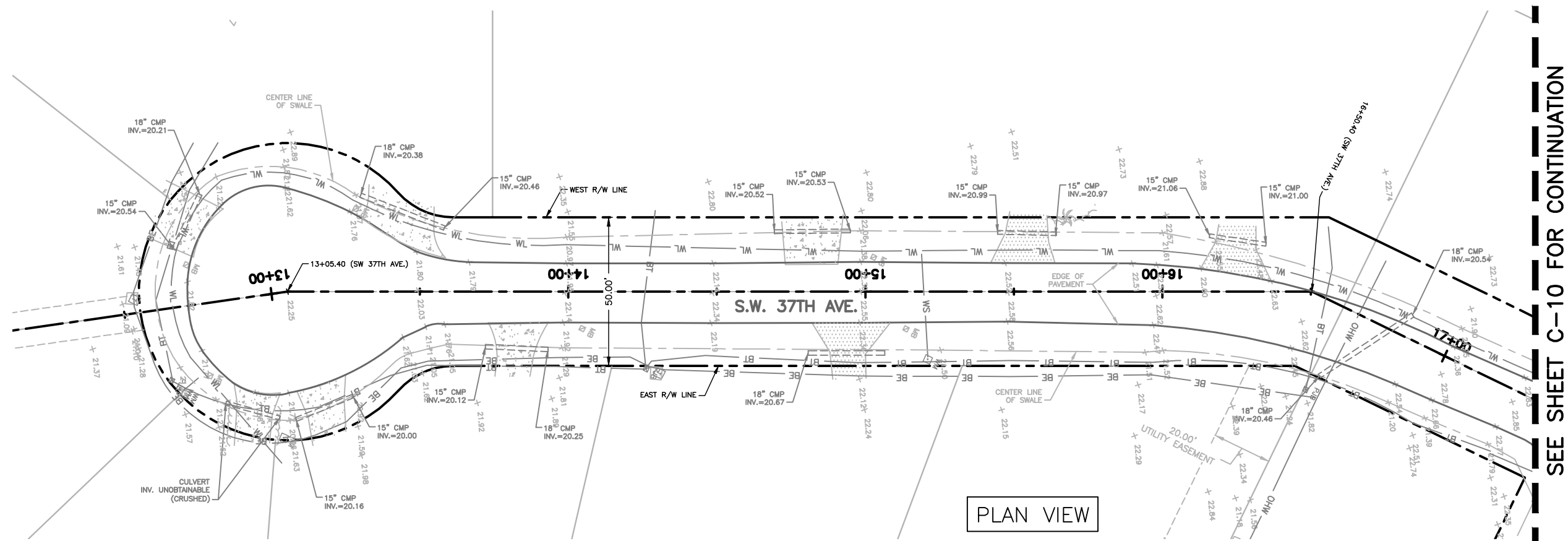
CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB00031110

PREPARED FOR:
OKEECHOBEE COUNTY
OKEECHOBEE, FLORIDA

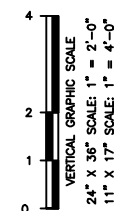
OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 19TH STREET
PLAN AND PROFILE

FILE NAME: 23-0903-C-19-PAP.dwg
LAST SAVED: 06/21/13 - 10:16am
CAS PROJECT NUMBER
11-0903-001

SHEET
C-19



- NOTES:**
1. THE EXISTENCE AND LOCATION OF ANY UTILITIES SHOWN ON THESE PLANS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
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NO IMPROVEMENTS
PROPOSED ON THIS
SHEET

PROFILE VIEW

FOR CONSTRUCTION

		N.R.T.S.	
NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

DATE _____

FLORIDA PROFESSIONAL ENGINEER NO. 48265

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

 7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110 

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
S.W. 37TH AVENUE
PLAN AND PROFILE

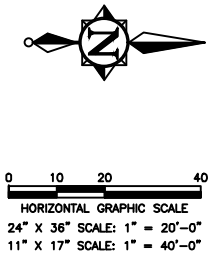
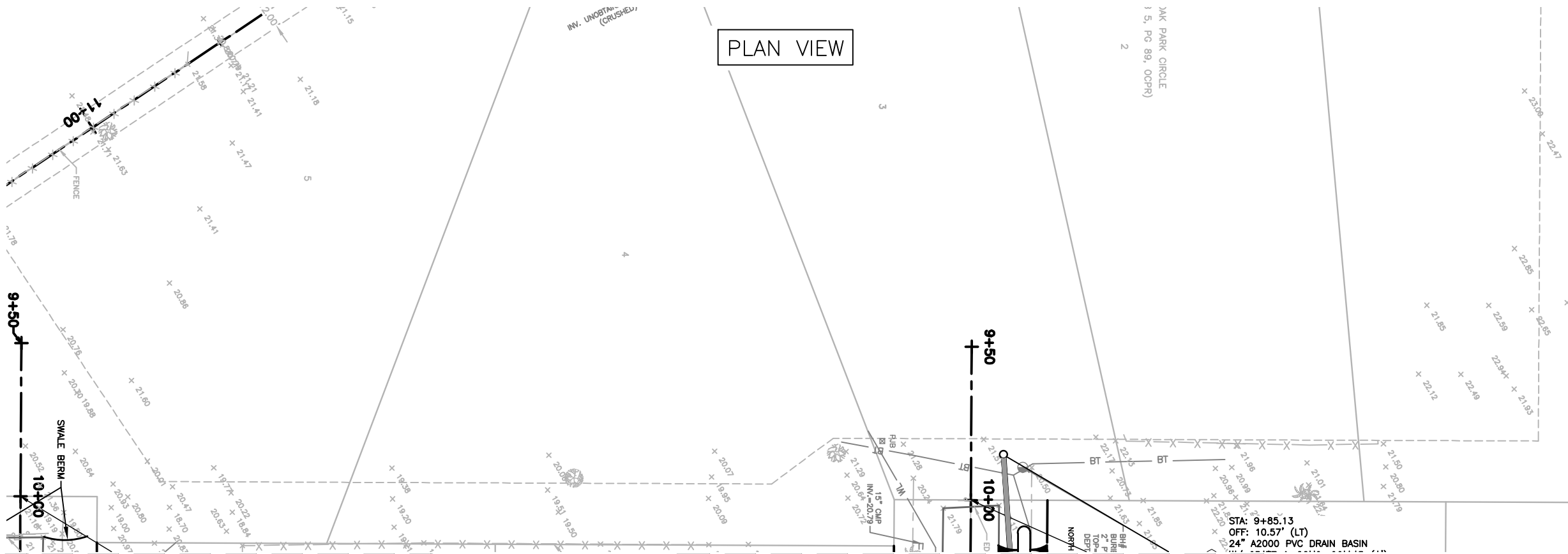
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LAST SAVED: 07/23/13 - 3:20pm

CAS PROJECT NUMBER
11-0903-001

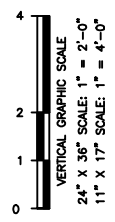
SHEET

C-22

P:\Counties\Okeechobee\Okeechobee_Board_of_County_Commissioners\11-0903-001-0ak-Park\ENGINEERING\Plans\27-0903-C-23-PAP.dwg, B1 / 2013 4:35:25 PM, cadduser, 1:2



- NOTES:
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NO IMPROVEMENTS
PROPOSED ON THIS
SHEET

PROFILE VIEW

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12

Designed: OAR

Drawn: MRM

Checked: OAR

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

DATE

FLORIDA PROFESSIONAL ENGINEER NO. 48265

CRAIG A. SMITH & ASSOCIATES

CONSULTING ENGINEERS-PLANNERS-SURVEYORS

7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:

**OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA**

**OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
UTILITY EASEMENT
PLAN AND PROFILE**

FILE NAME: 27-0903-C-23-PAP.dwg
LAST SAVED: 07/23/13 - 3:21pm

CAS PROJECT NUMBER
11-0903-001

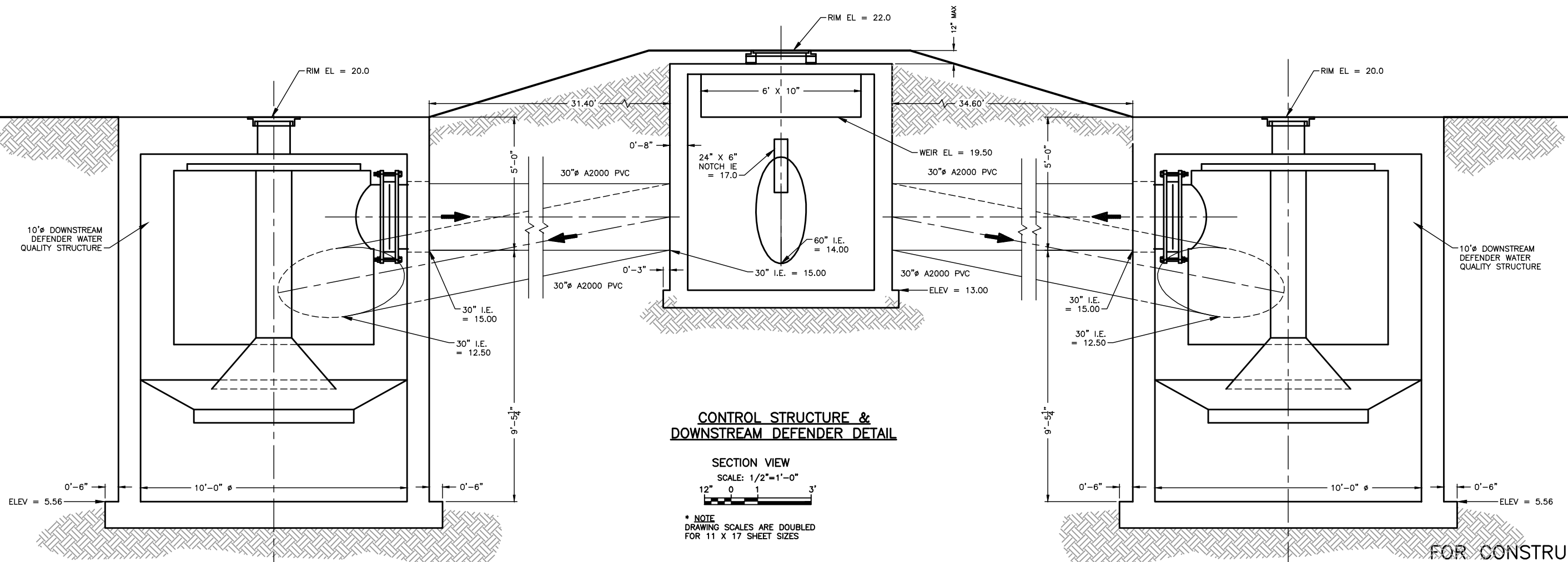
SHEET
C-23

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**DOWNSTREAM DEFENDER
DETAIL
PLAN VIEW**

**CONTROL STRUCTURE DETAIL
PLAN VIEW**

**DOWNSTREAM DEFENDER
DETAIL
PLAN VIEW**



NO.	DATE	REVISION	BY

Date:	09/25/12
Designed:	OAR
Drawn:	MRM
Checked:	OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

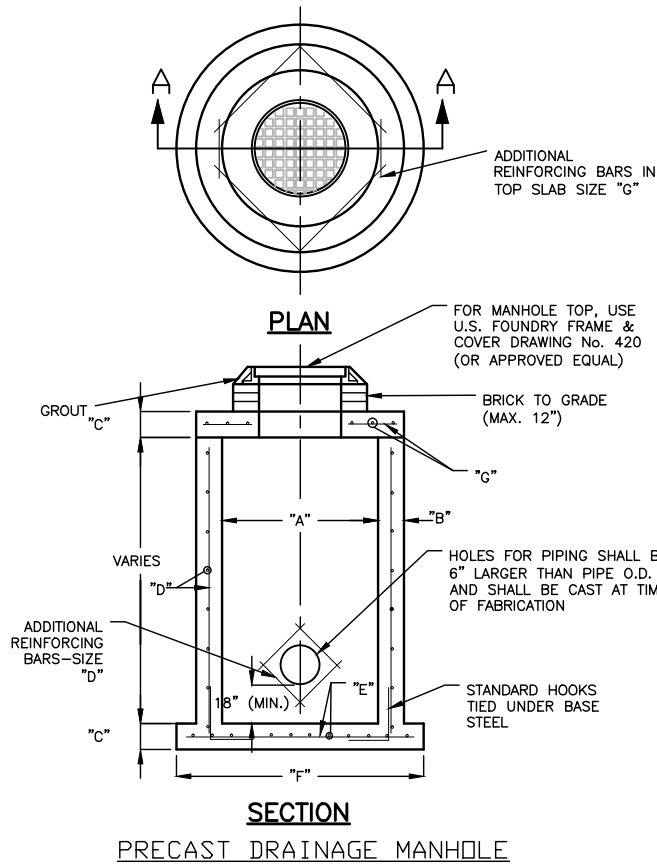
PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
DOWNSTREAM DEFENDER DETAIL

FILE NAME: 28-0903-C-24-DTLS.dwg
LAST SAVED: 08/02/13 - 7:41am
CAS PROJECT NUMBER
11-0903-001

SHEET
C-24

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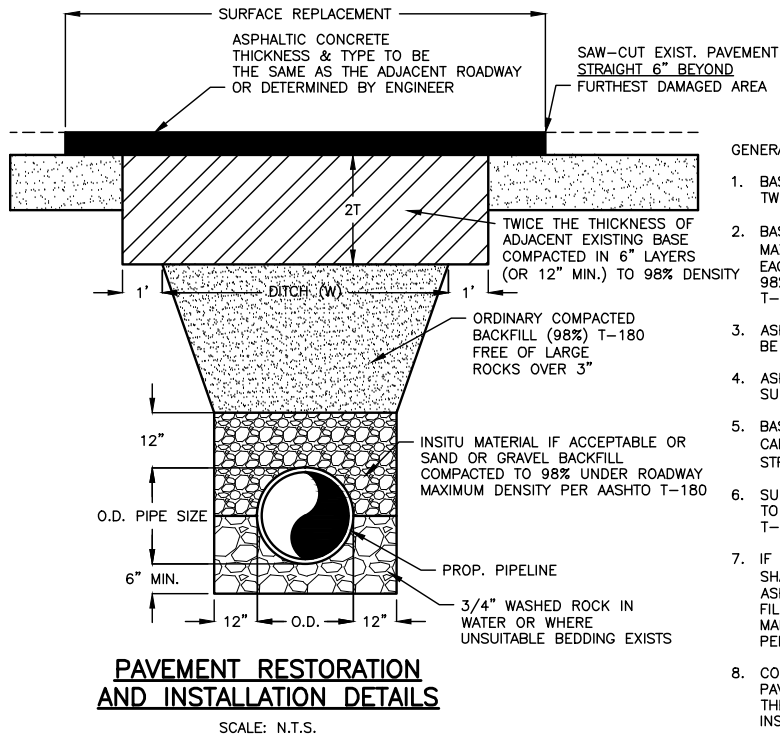
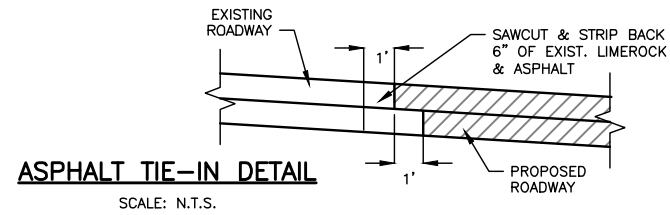


TYPE	"A"	"B"	"C"	"D"	"E"	"F"	"G"
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C-5 / M-5	5'-0"	8"	8"	#5 @ 12" C.C.E.W.	#5 @ 12" C.C.E.W.	7'-4"DIA	#5 @ 8" C.C.E.W.
C-6 / M-6	6'-0"	8"	10"	#5 @ 12" C.C.E.W.	#5 @ 6" C.C.E.W.	8'-4"DIA	#5 @ 6" C.C.E.W.
C-7 / M-7	7'-0"	8"	10"	#5 @ 12" C.C.E.W.	#5 @ 6"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

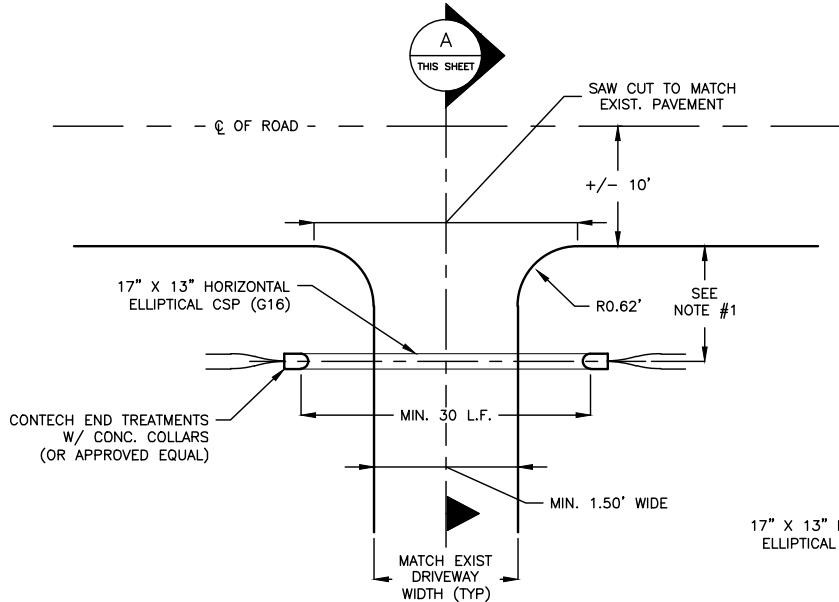
PRECAST DRAINAGE STRUCTURE

SCALE: N.T.S.



GENERAL NOTES:

1. BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL.
2. BASE MATERIAL SHALL BE PLACED IN 6" MAX. LAYERS (LOOSE MEASUREMENT) AND EACH LAYER THOROUGHLY COMPACTED TO 98% OF MAXIMUM DENSITY, PER AASHTO T-180.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. ASPHALT SHALL BE CONSISTENT WITH THE SURROUNDING EXISTING ASPHALT BY TYPE.
5. BASE MATERIAL SHALL HAVE A MIN. CARBONATE OF 70% (60% FOR LOCAL STREETS).
6. SUB GRADE MATERIAL SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY, PER AASHTO T-180.
7. IF THE DITCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 1" THICK ASPHALT CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM RAVELING, AND BE MAINTAINED UNTIL REPLACED WITH A PERMANENT PATCH.
8. COST OF ALL BACKFILL, BASE AND PAVEMENT RESTORATION TO BE INCLUDED IN THE LINEAR FOOT PRICE FOR PIPE BEING INSTALLED.



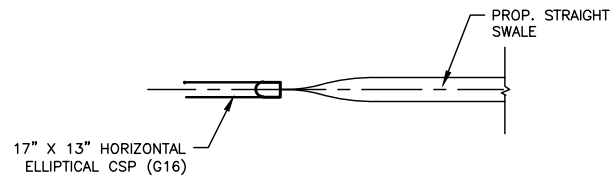
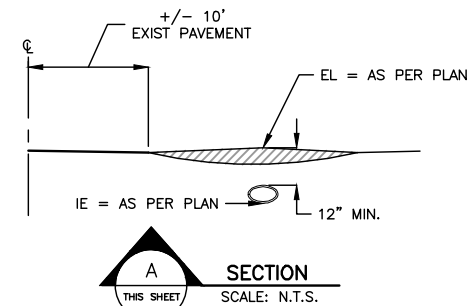
PLAN VIEW OF CULVERT CROSSING & DRIVEWAY ASPHALT APRON

SCALE: N.T.S.

- NOTES:
1. PLACE CULVERT IN LINE WITH CENTER OF SWALE.
 2. SUBGRADE FOR AFFECTED PORTION OF DRIVEWAY TO BE COMPACTED TO 98% IN MAXIMUM 12" LIFTS. 8" OF SHELLROCK TO BE PLACED DIRECTLY UNDER PAVEMENT (MIN LBR 100) TO ACHIEVE MIN 12" OF COVER. CONCRETE DRIVEWAYS TO BE REPLACED WITH LIKE AND KIND.
 3. ASPHALT DRIVEWAY TO BE 1.5" OF TYPE S-III ASPHALT.

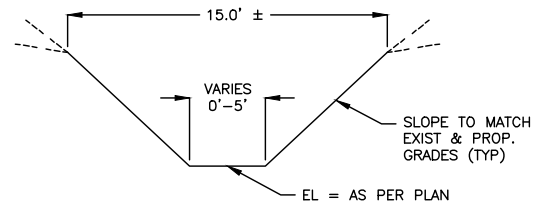
DRIVEWAY DETAIL

SCALE: N.T.S.



STRAIGHT SWALE

SCALE: N.T.S.



SWALE SECTION VIEW

SCALE: N.T.S.

- NOTES:
1. MIN DEPTH = 1'
 2. MAX DEPTH = 2'
 3. MIN SLOPE = 5:1 (H:V)
 4. MAX SLOPE = 3.75:1 (H:V)

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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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CERTIFICATE NO. LB0003110

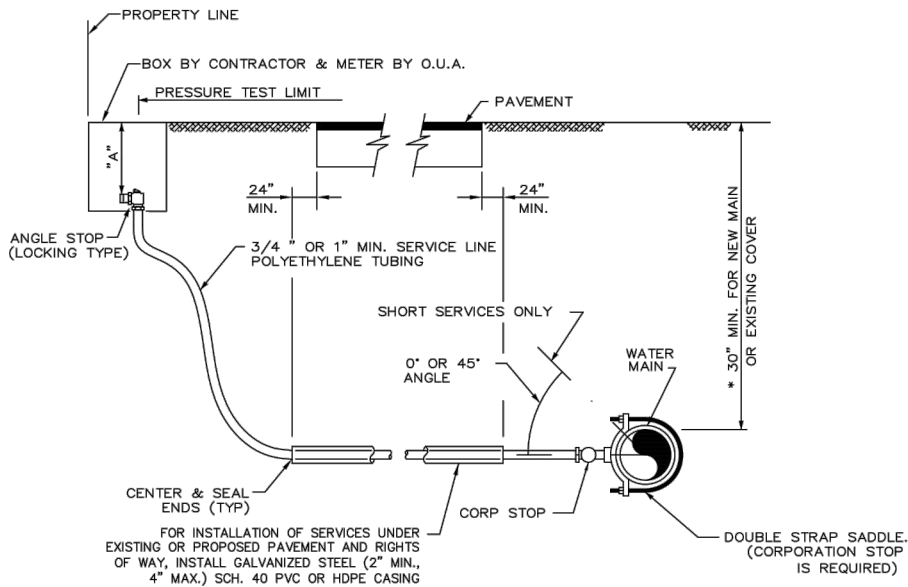
PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
STANDARD
DETAILS

FILE NAME: 29-0903-C-25-DTLS.dwg
LAST SAVED: 07/30/13 - 3:21pm
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11-0903-001

SHEET
C-25

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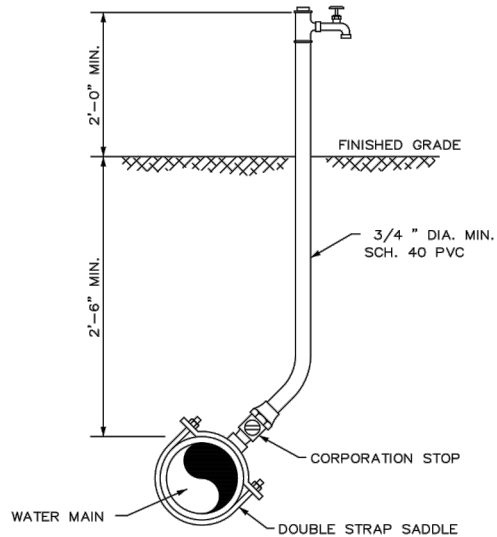


NOTES:

- SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" APART. TAPS SPACED BETWEEN 18" TO 48" SHALL BE OFFSET TO EACH SIDE OF THE MAIN, OR OFFSET 45'.
 - METER BOX SHALL BE SET TO CONFORM TO FINISHED GRADE ADJACENT TO PROPERTY LINE. METER BOX SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS. SERVICE LINES SHALL NOT BE PLACED UNDER DRIVEWAYS.
 - TUBING TO BE POLYETHYLENE.
 - ALL 5/8" & 1" METERS REQUIRE A 3/4" & 1" LOCKING ANGLE METER VALVE RESPECTIVELY.
 - AFTER METER INSTALLATION, INSTALL LINE VALVE IN CUSTOMER SERVICE LINE.
 - DIMENSION "A" = 7" (5/8" X 3/4" METER)
= 8" (1" METER)
= 12" (2" METER)
 - MAXIMUM SERVICE CONNECTION LENGTH IS 100'.
 - BOX TO BE PROVIDED BY CONTRACTOR; METER TO BE PROVIDED BY OUA.
- * 36" MIN. IN STATE ROAD R/W & UNDER ASPHALT

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	TYPICAL SERVICE CONNECTION (UNDERGROUND) FOR 5/8" x 3/4" OR 1" METER	PAGE No D1
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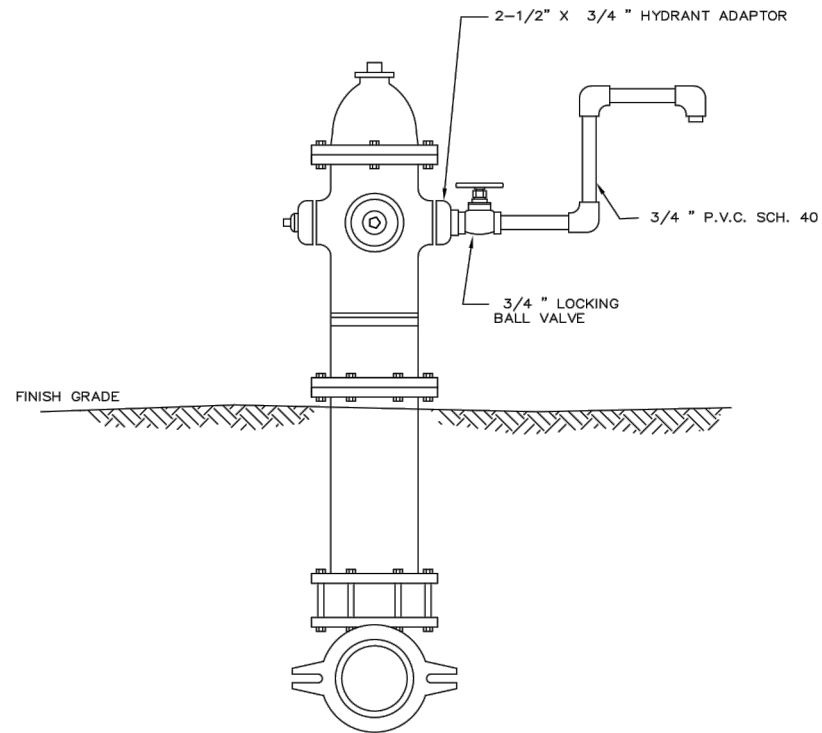


NOTES:

- SAMPLE POINT SHOULD BE ON A SERVICE LINE OR FIRE HYDRANT IF POSSIBLE.
- SAMPLE POINT TO BE REMOVED BY CONTRACTOR AFTER PROJECT IS ACCEPTED.

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	SAMPLING POINT (ON MAIN)	PAGE No D7
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OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	SAMPLING POINT (ON HYDRANT)	PAGE No D8
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FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
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Checked: OAR

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

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CERTIFICATE NO. LB0003110

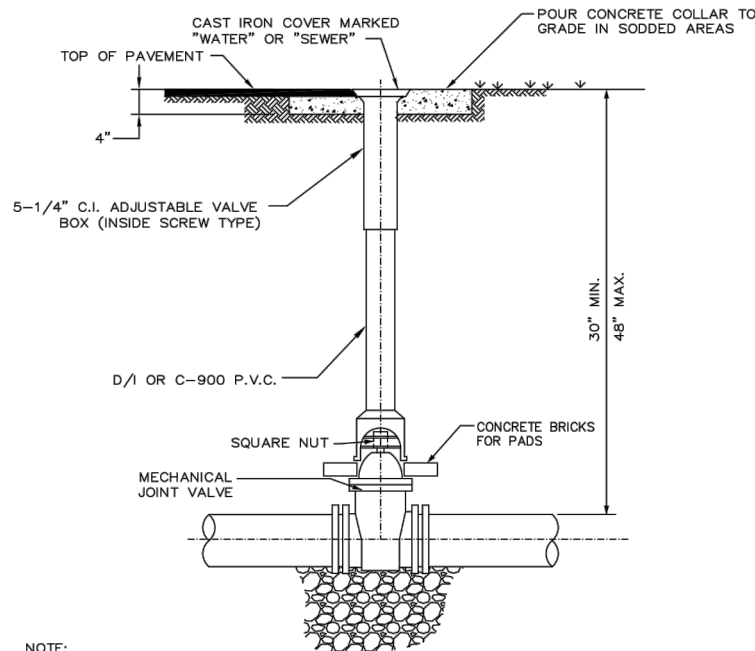
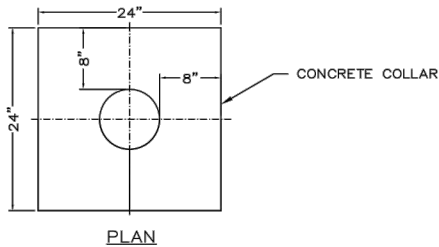
PREPARED FOR:
**OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA**

**OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
OUA STANDARD
DETAILS**

FILE NAME: 30-0903-C-26-DTL5.dwg
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CAS PROJECT NUMBER
11-0903-001

SHEET
C-26

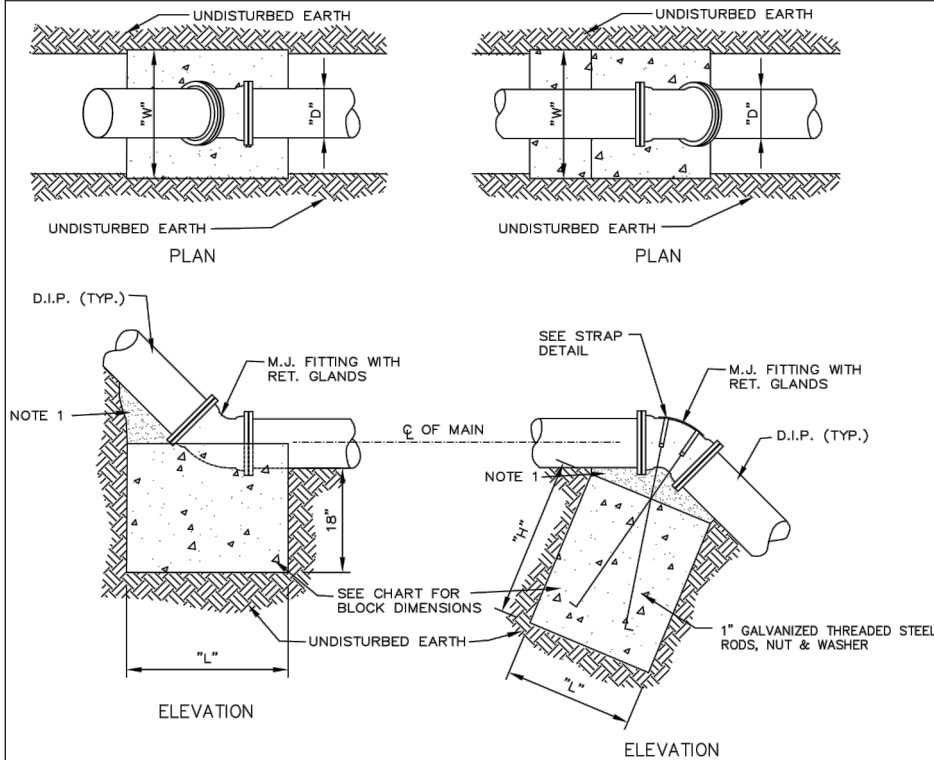
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NOTE:
VALVE NUT EXTENSION IS REQUIRED ON ALL VALVES WITH MORE THAN 36" OF COVER. EXTEND NUT TO WITHIN 18" OF VALVE BOX RIM. PROVIDE SOLID BRICK PAD FOR VALVE BOX TO SIT ON.

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	TYPICAL VALVE SETTING	PAGE No D12
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BLOCKING DETAIL
FOR
VERTICAL SAG
N.T.S.

BLOCKING DETAIL
FOR
VERTICAL CREST
N.T.S.

- NOTES:
1. ANY VOID BETWEEN MAIN AND GRAVITY BLOCK TO BE FILLED WITH GROUT BY CONTRACTOR
 2. FITTINGS SHALL BE WRAPPED WITH SUITABLE COVERING TO PREVENT ADHERENCE TO GRAVITY BLOCK.
 3. USE MEGALUGS ON ALL FITTINGS.

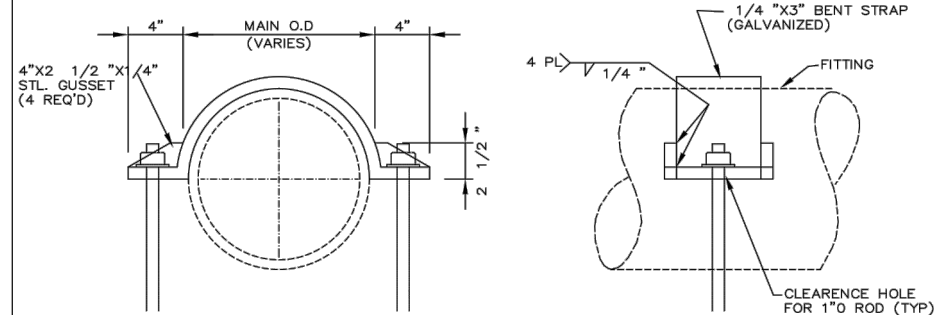
NOTE: THRUST BLOCKS ONLY ON EXISTING LINES AND WHEN PRE-APPROVED BY THE EXECUTIVE DIRECTOR

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	GRAVITY BLOCKS FOR PRESSURE PIPING	PAGE No D14
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PIPE DIA. "D"	VERTICAL CREST											
	DEGREE OF BEND											
	11 1/4°			22 1/2°			45°			90°		
	"W"	"L"	"H"	"W"	"L"	"H"	"W"	"L"	"H"	"W"	"L"	"H"
6"	36"	16"	18"	36"	24"	24"	48"	28"	30"	54"	36"	36"
8"	48"	20"	20"	48"	30"	24"	54"	36"	36"	60"	46"	48"
12"	54"	24"	30"	54"	36"	40"	66"	48"	48"	72"	60"	60"
24"	72"	48"	48"	76"	60"	66"	96"	72"	84"	—	—	—

PIPE DIA. "D"	VERTICAL SAG											
	DEGREE OF BEND											
	11 1/4°			22 1/2°			45°			90°		
	"W"	"L"	—	"W"	"L"	—	"W"	"L"	—	"W"	"L"	—
6"	6"	36"	—	6"	36"	—	18"	36"	—	24"	36"	—
8"	8"	36"	—	12"	36"	—	24"	36"	—	36"	36"	—
12"	18"	36"	—	30"	36"	—	42"	42"	—	54"	48"	—
16"	36"	36"	—	48"	48"	—	60"	60"	—	72"	72"	—
24"	48"	42"	—	60"	54"	—	78"	78"	—	96"	96"	—
36"	60"	54"	—	84"	78"	—	96"	96"	—	120"	120"	—



STRAP DETAIL

- NOTES:
1. GUSSETS REQ'D FOR 16"O AND LARGER MAINS.
 2. STRAPS WITH GUSSET TO BE GALVANIZED AFTER WELDING.

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	GRAVITY BLOCKS FOR PRESSURE PIPING	PAGE No D14A
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FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

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CERTIFICATE NO. LB0003110

PREPARED FOR:
**OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA**

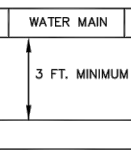
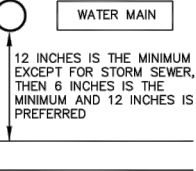
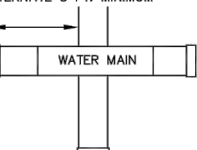
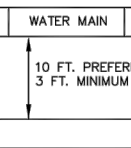
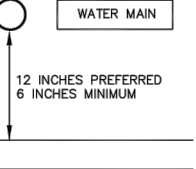
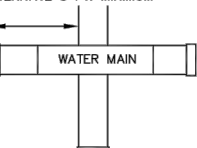
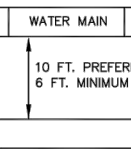
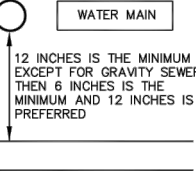
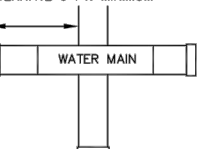
**OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
OUA STANDARD
DETAILS**

FILE NAME: 31-0903-C-27-DTLS.dwg
LAST SAVED: 07/23/13 - 3:34pm
CAS PROJECT NUMBER
11-0903-001

SHEET
C-27

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LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPES	HORIZONTAL SEPERATION	CROSSING (1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN, RECLAIM WATER (2)	 3 FT. MINIMUM	 12 INCHES IS THE MINIMUM EXCEPT FOR STORM SEWER, THEN 6 INCHES IS THE MINIMUM AND 12 INCHES IS PREFERRED	 ALTERNATE 3 FT. MINIMUM
VACUUM SANITARY SEWER	 10 FT. PREFERRED 3 FT. MINIMUM	 12 INCHES PREFERRED 6 INCHES MINIMUM	 ALTERNATE 3 FT. MINIMUM
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCEMAIN, RECLAIM WATER (4)	 10 FT. PREFERRED 6 FT. MINIMUM (3)	 12 INCHES IS THE MINIMUM EXCEPT FOR GRAVITY SEWER, THEN 6 INCHES IS THE MINIMUM AND 12 INCHES IS PREFERRED	 ALTERNATE 6 FT. MINIMUM
ON-SITE SEWAGE TREATMENT & DISPOSAL	10 FT. MINIMUM	---	---

FAC RULE 62-555.314 NOTES:

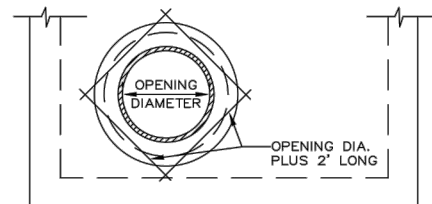
1. WATERMAIN TO CROSS OVER CONFLICT PIPES WHEREVER POSSIBLE, MAINTAINING 30 INCHES COVER AND 6 INCHES SEPARATION AS MINIMUMS. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MIN. SEPARATION IS 12 INCHES.
2. RECLAIMED WATER REGULATED UNDER PART III OF CHAPER 62-610, F.A.C.
3. 3 FT FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
4. RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

NOTES:

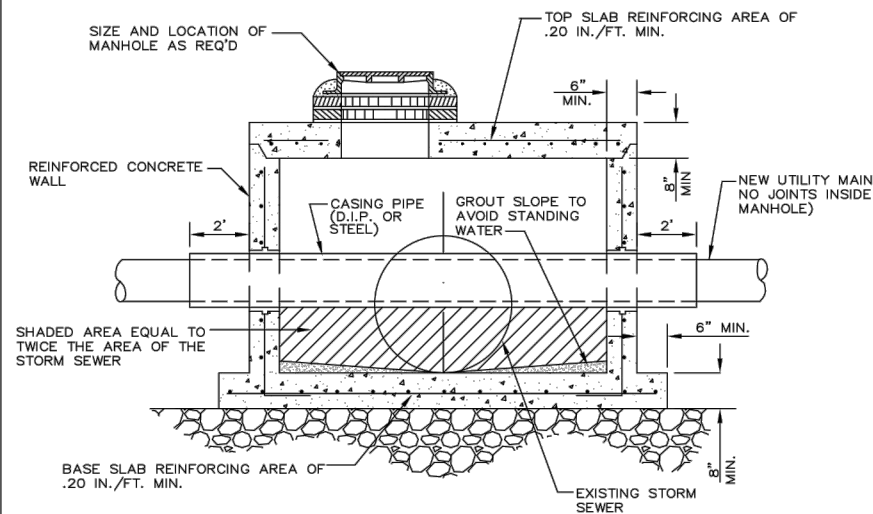
- A. THESE METHODS ARE TO BE USED WHEN INSUFFICIENT COVER EXISTS TO ALLOW PRESSURE PIPE TO CROSS ABOVE CONFLICT PIPE WITH 6 INCHES VERTICAL SEPARATION AND MAINTAIN 30 INCHES COVER TO FINISHED GRADE.
- B. FITTINGS SHALL BE RESTRAINED WITH MECHANICAL RESTRAINTS (MEGALUG). IN ACCORDANCE WITH OUA STANDARD DETAILS.
- C. THE DEFLECTION TYPE CROSSING IS PREFERRED.
- D. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION.
- E. MECHANICALLY RESTRAIN ALL FITTINGS, AS PER MANUFACTURERS RECOMMENDATION AND OUA STANDARD DETAILS.

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	WATER MAIN - SANITARY SEWER CONFLICT	PAGE No D16
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PARTIAL PLAN

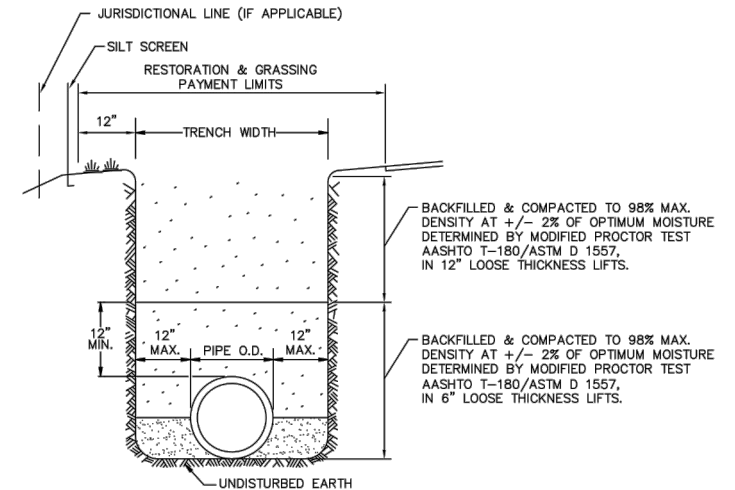


NOTES:

1. WHERE CONDITIONS PERMIT THE LOWEST POINT OF CONFLICT MAIN AT OR ABOVE CENTER LINE OF STORM SEWER.
2. CONFLICT MANHOLES WILL BE ALLOWED WHERE DESIGN PROBLEMS AND ECONOMICS PROVE THEM TO BE THE ONLY VIABLE SOLUTION AS APPROVED BY O.U.A.
3. CONFLICT MANHOLES WILL NOT BE ALLOWED FOR WATER MAINS CROSSING GRAVITY WASTEWATER SYSTEMS.
4. COAT INTERIOR & EXTERIOR WITH 2 COATS COAL TAR EPOXY, OR PRO-TECH COATING, 8 MIL. MIN. FRY FILM THICKNESS EACH COAT OR OUA APPROVED EQUAL.

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	CONFLICT MANHOLE	PAGE No D26A
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NOTES:

1. BACKFILL MATERIALS SHALL CONSIST OF CLEAN EARTH FILL COMPRISED OF SAND, SAND AND CLAY, GRAVEL, CRUSHED ROCK OR OTHER MATERIALS FROM GROUPS A-1, A-2 OR A-3, AASHTO CLASSIFICATION, FREE FROM ORGANIC MATTER AND VEGETATION, DEBRIS, LARGE CLODS OF EARTH OR STONES. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS, LARGE ROCKS AND ROOTS SHALL BE REMOVED AND DISPOSED BY THE CONTRACTOR.
2. THE PIPE SHALL BE FULLY SUPPORTED ALONG ENTIRE LENGTH.
3. THE PIPE TRENCH SHALL REMAIN DRY DURING PIPE LAYING OPERATIONS.
4. ALL TRENCH WORK SHALL CONFORM TO LATEST STANDARDS AS SET FORTH BY THE FLORIDA TRENCH SAFETY ACT AND OR OSHA.
5. FOUR INCH WIDE DETECTABLE TAPE SHALL BE PLACED APPROXIMATELY 12"-18" BELOW FINISHED GRADE AND DIRECTLY ABOVE ALL PRESSURE PIPING. TAPE, WORDING AND COLOR SHALL CONFORM TO CITY STANDARDS.
6. TRAFFIC LANE CLOSURES, MOT PLANS AND ROADWAY REPAIRS MATERIALS SHALL BE PER DIRECTION OF ROAD OWNER. CONTRACTOR TO INQUIRE WITH OWNER ABOUT REQUIREMENTS PRIOR TO BID.
7. 3M LOCATOR BALLS SHALL BE INSTALLED AT EACH FITTING IN THE PIPE LINE CHANGING DIRECTION AND AT EACH CONNECTION.
8. 3M LOCATORS TO BE PROVIDED BY DEVELOPER AS SPECIFIED BY O.U.A.

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION JANUARY-10	TYPICAL TRENCH DETAIL	PAGE No D13
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FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

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CERTIFICATE NO. LB0003110

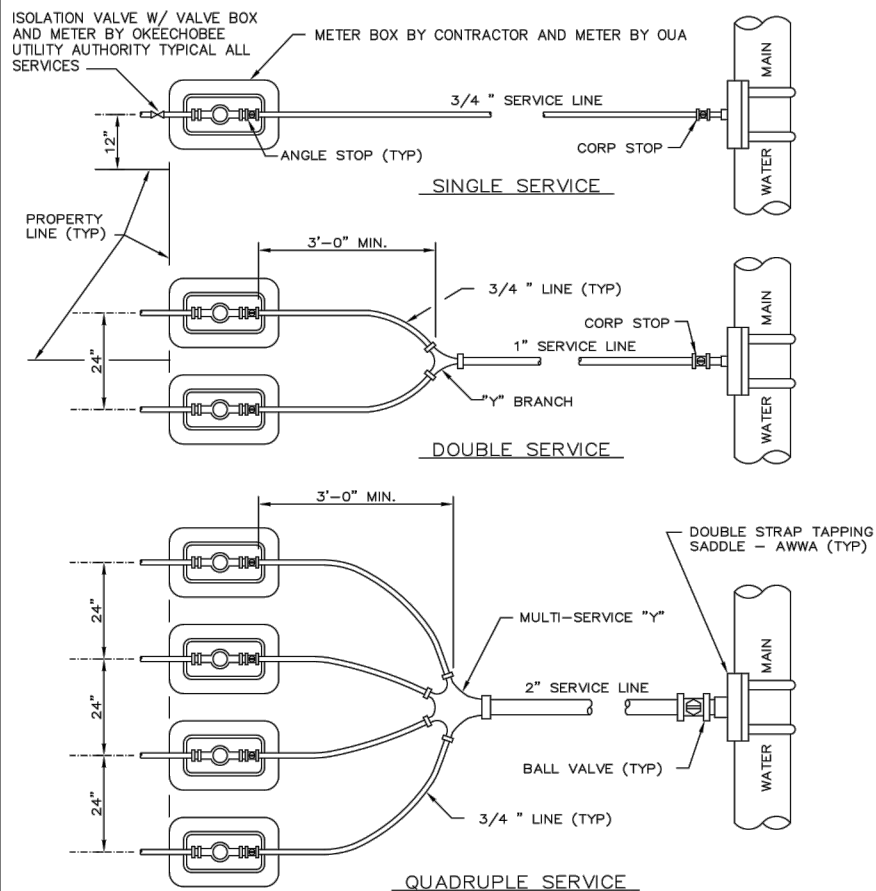
PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
OUA STANDARD
DETAILS

FILE NAME: 32-0903-C-28-DTLS.dwg
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11-0903-001

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NOTES:

- AUTHORIZED SERVICE LINE MATERIAL SHALL BE POLYETHYLENE TUBING.
- MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
- NO FITTINGS BETWEEN CORP. STOP & ANGLE VALVE OR CORP. STOP & "Y" BRANCH FOR MULTIMETER INSTALLATIONS.

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION	TYPICAL SERVICE FOR MULTIPLE SERVICES (TWO OR MORE)	PAGE No
JANUARY-10		D2

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

THRUST RESTRAINT CHART BASED UPON THE FOLLOWING:

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.

FITTINGS NOT SHOWN TO BE CALCULATED UTILIZING THE CRITERIA LISTED ABOVE AND SUBMITTED IN A SHOP DRAWING

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://rcp.ebaa.com>)

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

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION	WATER THRUST RESTRAINT	PAGE No
JANUARY-10		D50

MECHANICAL THRUST RESTRAINT CHART 2

MAIN RUN, in	BRANCH, in	TEE		LARGE SIZE	SMALL LARGE	REDUCER	
		PVC	DIP			PVC	DIP
4	4	1	1	6	4	33	21
6	4	1	1	8	4	60	38
6	6	1	1	8	6	35	22
8	4	1	1	10	4	81	51
8	6	1	1	10	6	61	39
8	8	7	5	10	8	33	21
10	6	1	1	12	4	101	64
10	8	1	1	12	6	85	54
10	10	21	14	12	8	62	39
12	6	1	1	16	4	138	87
12	8	1	1	16	6	126	79
12	12	36	24	16	8	109	68
16	6	1	1	16	12	63	40
16	8	1	1	18	4	154	97
16	16	65	43	18	6	144	91
18	6	1	1	18	8	129	81
18	8	1	1	20	4	171	107
18	18	79	52	20	6	161	101
20	6	1	1	20	8	148	93
20	8	1	1	20	12	113	71
20	20	92	61	24	4	201	127
24	6	1	1	24	6	194	122
24	8	1	1	24	8	183	115
24	24	118	78	24	12	154	97

THRUST RESTRAINT CHART BASED UPON THE FOLLOWING:

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.

FITTINGS NOT SHOWN TO BE CALCULATED UTILIZING THE CRITERIA LISTED ABOVE AND SUBMITTED IN A SHOP DRAWING

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://rcp.ebaa.com>)

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

OKEECHOBEE UTILITY AUTHORITY CONSTRUCTION STANDARDS & DETAILS

REVISION	WATER THRUST RESTRAINT	PAGE No
JANUARY-10		D51

FOR CONSTRUCTION

NO.	DATE	REVISION	BY

Date: 09/25/12
Designed: OAR
Drawn: MRM
Checked: OAR

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

CRAIG A. SMITH & ASSOCIATES
CONSULTING ENGINEERS-PLANNERS-SURVEYORS
7777 GLADES ROAD, SUITE 410
BOCA RATON, FLORIDA 33434
(561) 314-4445
CERTIFICATE NO. LB0003110

PREPARED FOR:
OKEECHOBEE
COUNTY
OKEECHOBEE, FLORIDA

OAK PARK SUBDIVISION
DRAINAGE IMPROVEMENTS
OUA STANDARD
DETAILS

FILE NAME: 33-0903-C-29-DTL5.dwg
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SHEET
C-29