

CONSTRUCTION DRAWINGS FOR

**FORCE MAIN R/R
WEST AREA PACKAGE 1 IMPROVEMENTS**

DISTRICT 1

OCTOBER 2017



CAPITAL PROJECT No. 1539-02

PROJECT SEQUENCE No. 87406

ORANGE COUNTY MAYOR

TERESA JACOBS

BOARD OF COUNTY COMMISSIONERS

DISTRICT 1: COMMISSIONER BETSY VANDERLEY

DISTRICT 2: COMMISSIONER BRYAN NELSON

DISTRICT 3: COMMISSIONER PETE CLARKE

DISTRICT 4: COMMISSIONER JENNIFER THOMPSON

DISTRICT 5: COMMISSIONER EMILY BONILLA

DISTRICT 6: COMMISSIONER VICTORIA P. SIPLIN

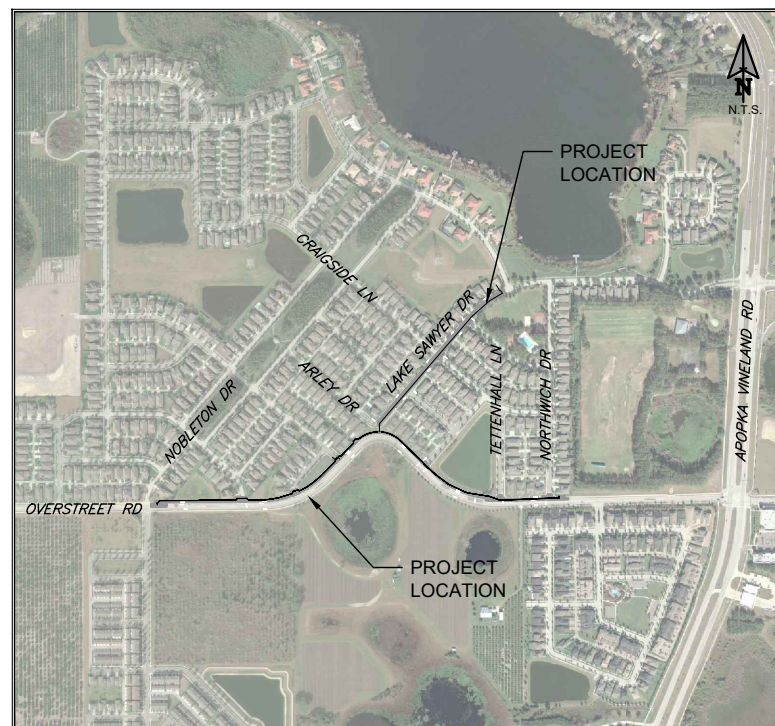
COUNTY ADMINISTRATOR: AJIT LALCHANDANI

UTILITIES DIRECTOR: RAYMOND E. HANSON, P.E.

ORANGE COUNTY UTILITIES

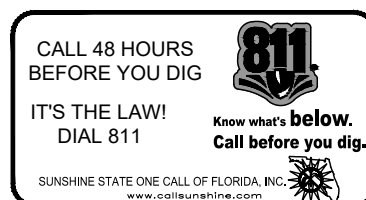
9150 CURRY FORD ROAD

ORLANDO, FLORIDA 32825



VICINITY MAP
N.T.S.

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA. DIMENSION INFORMATION SHOULD NOT BE OBTAINED BY SCALING THE PLANS.



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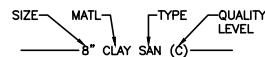
LEGEND

- RIGHT OF WAY LINE
- LOT LINE
- EASEMENT LINE
- X ----- EXISTING FENCE
- BTV---BTV---BTV--- EXISTING CABLE TV
- BFO---BFO---BFO--- EXISTING FIBER OPTIC CABLE
- BE---BE---BE--- EXISTING BURIED ELECTRIC
- FM---FM---FM--- EXISTING FORCE MAIN
- G---G---G--- EXISTING GAS
- IRR---IRR---IRR--- EXISTING IRRIGATION
- OHU---OHU---OHU--- EXISTING OVER HEAD UTILITY
- RWM---RWM---RWM--- EXISTING RECLAIMED WATER MAIN
- SAN---SAN---SAN--- EXISTING SANITARY SEWER
- BT---BT---BT--- EXISTING BURRIED TELEPHONE
- W---W---W--- EXISTING WATER MAIN

- REMOVE AND REPLACE EXISTING CONCRETE SURFACE
- MILL AND RESURFACE ASPHALT PAVEMENT
- REMOVE AND REPLACE EXISTING ASPHALT SURFACE

- X EXISTING PIPE TO BE REMOVED
- /// EXISTING PIPE TO BE ABANDONED IN PLACE (GROUT FILLED)
- II TAPPING SLEEVE AND VALVE
- II TEE
- II LINE STOP ASSEMBLY
- II VALVE (TYP)
- II SLEEVE
- II HDPE / DI ADAPTER
- II CAP
- II REDUCER
- II AIR RELEASE VALVE ASSEMBLY
- II FIRE HYDRANT ASSEMBLY
- II TREE - MAGNOLIA
- II TREE - MAPLE
- II TREE - CRAPE MYRTLE
- II TREE - OAK
- II TREE - OAK
- II LIGHT POLE
- II POWER POLE
- II MAIL BOX (TYP)
- II TEST HOLE (TH-1)

UTILITY PIPE DESIGNATION



NOTE: THIS DRAWING WAS PREPARED IN CONFORMANCE WITH ASCE STANDARD CE/ASCE 38-02 "AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA"

CI/ASCE 3802 SUBSURFACE UTILITY QUALITY LEVEL INDEX

- QUALITY LEVEL A (QA): UTILITY INFORMATION WHICH HAS BEEN VISUALLY VERIFIED, SURVEY LOCATED (BOTH HORIZONTALLY AND VERTICALLY) AND ACCURATELY REDUCED ONTO THE DRAWINGS. THIS IS TYPICALLY SHOWN AS A HV VERIFICATION EXCAVATION HOLE.
- QUALITY LEVEL B (QLB): UTILITY INFORMATION DERIVED BY MARKING THE APPROXIMATE SURFACE HORIZONTAL LOCATION OF UTILITY USING ELECTRONIC METHODS BY THE UTILITY OWNER. MARKINGS BY UTILITY OWNERS ARE ASSUMED TO BE LOCATED BY ELECTRONIC METHODS AND SEPARATE LOCATES WILL NOT BE PERFORMED BY THE ENGINEER. MARKING IS SUBSEQUENTLY FIELD SURVEY LOCATED AND ACCURATELY REDUCED ONTO THE DRAWINGS.
- QUALITY LEVEL C (QLC): UTILITY INFORMATION OBTAINED AS BELOW FOR QUALITY LEVEL D, PLOTTED TO CORRELATE WITH SURFACE UTILITY FEATURES WHICH HAVE BEEN FIELD VERIFIED, SURVEY LOCATED AND ACCURATELY REDUCED ONTO THE DRAWINGS. INCLUDED IN THIS CATEGORY ARE AERIAL UTILITY INFORMATION AND UTILITY DEPICTIONS, WHICH IN THE PROFESSIONAL OPINION OF THE SUBSURFACE UTILITY ENGINEER, REPRESENT THE MOST PROBABLE APPROXIMATE HORIZONTAL LOCATION, TYPE AND / OR EXISTENCE OF A UTILITY.
- QUALITY LEVEL D (QLD): UTILITY INFORMATION PLOTTED ON THE DRAWING BASED SOLELY ON RECORD INFORMATION, INDIVIDUAL RECOLLECTIONS OR THE EXISTENCE OF UTILITY SERVICE. IT SHALL BE NOTED THAT ALL INFORMATION SHOWN (OTHER THAN AT TEST HOLE LOCATIONS, SEE QLA ABOVE) WITH REFERENCE TO A UTILITIES SIZE, CAPACITY, MATERIAL COMPOSITION, CONDITION OR SERVICE STATUS SHALL BE CONSIDERED OLD EVEN THOUGH THE UTILITY MAY BE PLOTTED AND LABELED QLC OR QLB.

REF:NNNNN REFERENCE MADE TO AN APPLICABLE SECTION(S) OF THE TECHNICAL SPECIFICATIONS FOR THIS PROJECT.

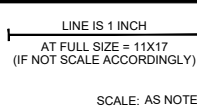
ABBREVIATIONS

AC ASBESTOS CEMENT, AIR CONDITIONER	MATL MATERIAL
ADPT ADAPTER	MCC MOTOR CONTROL CENTER
ALT ALTERNATE	MES MITERED END SECTION
ALUM ALUMINUM	MFR MANUFACTURER
APPROX APPROXIMATELY	MGD MILLION GALLONS PER DAY
ARV AIR RELEASE VALVE ASSEMBLY	MH MANHOLE
ASPH ASPHALT	MIN MINIMUM
ASSEM ASSEMBLY	MJ MECHANICAL JOINT
AUX AUXILIARY	MOD MODIFIED
B BEND	MOT MAINTENANCE OF TRAFFIC
BFO BURIED FIBER OPTIC	MTD MOUNTED
BFP BACKFLOW PREVENTER	MTG MOUNTING
BFV BUTTERFLY VALVE	NG NATURAL GROUND
BL BASE LINE	NIC NOT IN CONTRACT
BLDG BUILDING	NO NUMBER
BM BENCHMARK	NOM NOMINAL
BO BLOW OFF	NPT NATIONAL PIPE THREAD
BOT BOTTOM	NPW NON-POTABLE WATER
BRKT BRACKET	NSP NON-SLIP PAD
BV BALL VALVE	NTS NOT TO SCALE
CB CATCH BASIN	OCU ORANGE COUNTY UTILITIES
C/C CENTER LINE TO CENTER LINE	OD OUTSIDE DIAMETER
CFS CUBIC FEET PER SECOND	OHU OVERHEAD UTILITY
C&G CURB AND GUTTER	O/E OR EQUAL
CIP CAST IRON PIPE	O/O OUTSIDE TO OUTSIDE
CIS CUT IN SLEEVE	OPER OPERATOR
CL CENTER LINE	OPNG OPENING
CLF CHAIN LINK FENCE	OUC ORLANDO UTILITIES COMMISSION
CM CONCRETE MONUMENT	PAVT PAVEMENT
CMP CORRUGATED METAL PIPE	PB PULL BOX
CO CLEAN OUT	PE PLAIN END
CONC CONCRETE	PG PAGE
CONN CONNECT	PI POINT OF INTERSECTION
CONST CONSTRUCT	PH PHASE
CONT CONTINUATION	PL PROPERTY LINE
CORP CORPORATION	PLS PROFESSIONAL LAND SURVEYOR
CPLG COUPLING	POLY POLYETHYLENE
CULV CULVERT	PP POWER POLE
CV CHECK VALVE	PROP PROPOSED
CY CUBIC YARD	PS PUMP STATION
DBI DITCH BOTTOM INVERT	PSI POUNDS PER SQUARE INCH
DBL DOUBLE	PSM PROFESSIONAL SURVEYOR & MAPPER
DEFL DEFLECTION	PUE PERMANENT UTILITY EASEMENT
DHW DESIGN HIGH WATER	PV PLUG VALVE
DIA DIAMETER	PVC POLYVINYL CHLORIDE PIPE
DIM DIMENSION	QTY QUANTITY
DIP DUCTILE IRON PIPE	RAD PT RADIUS POINT
DWLS DOWELS	R RADIUS
DWG DRAWING	RJ RESTRAINED JOINT
DWY DRIVEWAY	R/R RAIL ROAD
ELEC ELECTRIC	RCP REINFORCED CONCRETE PIPE
EA EACH	RED REDUCER
EFF EFFLUENT	REINF REINFORCED
ELEV ELEVATION	REQ REQUIRED
EMB EMBED OR EMBEDDED	RESTR RESTRAINED
E/P EDGE OF PAVEMENT	RPZ REDUCED PRESSURE ZONE
ESMT EASEMENT	RT RIGHT
EW EACH WAY	RW RECLAIMED WATER
EXIST EXISTING	R/W RIGHT OF WAY
EXP JT EXPANSION JOINT	SAN SANITARY SEWER
FD FLOOR DRAIN	SB SOIL BORING
FDEP FLORIDA DEPT OF ENVIRON PROTECTION	SCH SCHEDULE
FDOT FLORIDA DEPT OF TRANSPORTATION	SD STORM DRAIN
FA FLANGED ADAPTER	SECT SECTION
FF FINISH FLOOR	SF SQUARE FEET
FCA FLANGED COUPLING ADAPTER	SHT SHEET
FHA FIRE HYDRANT ASSEMBLY	SLV SLEEVE
FIG FIGURE	SPECS SPECIFICATIONS
FLG FLANGE	SQ SQUARE
FL FLOW LINE	SS STAINLESS STEEL
FM FORCE MAIN	STA STATION
FT FEET	STD STANDARD
FTG FOOTING	STL STEEL
GA GAUGE	SY SQUARE YARDS
GAL GALLON	SYS SYSTEM
GALV GALVANIZED	T&B TOP AND BOTTOM
GEN GENERATOR	TBM TEMPORARY BENCHMARK
GRD GROUND	TCE TEMPORARY CONSTRUCTION EASEMENT
GSP GALVANIZED STEEL PIPE	TEL TELEPHONE
GM GAS MAIN	TEMP TEMPORARY
GPM GALLONS PER MINUTE	THD THREADED
GV GATE VALVE	THK THICK
HB HOSE BIBB	TOB TOP OF BANK
HDWL HEADWALL	TOS TOP OF SLAB
HFCA HARNESSSED FLANGE COUPLING ADAPTER	TOW TOP OF WALL
HT HEIGHT	TS&V TAPPING SLEEVE AND VALVE
HP HORSE POWER	TYP TYPICAL
HORIZ HORIZONTAL	UG UNDERGROUND
HWL HIGH WATER LEVEL	VAC VOLTAGE ALTERNATING CURRENT
IE INVERT ELEVATION	VCP VITRIFIED CLAY PIPE
ID INSIDE DIAMETER	VDC VOLTAGE DIRECT CURRENT
IN INCHES	VERT VERTICAL
INV INVERT	VVH VERIFIED VERTICALLY & HORIZONTALLY
IP IRON PIPE	W/ WITH
IR IRON ROD	w/o WITH OUT
JB JUNCTION BOX	WL WATER LEVEL
JUNC JUNCTION	WM WATER MAIN
LAT LATERAL	W/M WATER METER
LF LINEAR FEET	WP WALL PIPE
LS LIFT STATION	WRF WATER RECLAMATION FACILITY
LT LEFT	WS WATER SERVICE
LWL LOW WATER LEVEL	WS WATER SURFACE
MAX MAXIMUM	WWF WELDED WIRE FABRIC

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No.	REVISIONS	BY	DATE
BID SET		CKM	10-09-2017



ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825



FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

INDEX OF DRAWINGS, TEST HOLE DATA, LEGEND AND ABBREVIATIONS

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09	DRAWING No. G-101
FLORIDA REGISTRATION No. 58685	PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 2 OF 33

ALL WORK AND REQUIREMENTS FROM THE NOTES IN THIS PAGE SHALL BE A REQUIREMENT OF THE CONTRACT AND EXECUTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO ORANGE COUNTY.

OCU STANDARD GENERAL NOTES

1. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS AND RECLAIMED WATER MAINS. MAIN LOCATIONS SHOWN ON PLANS MAY NOT BE EXACT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.
2. SHOULD A PIPE EMERGENCY OCCUR, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OCU DISPATCH OPERATOR (407-836-2777) AND THE OCU INSPECTOR.
3. THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION DIVISION AT LEAST SEVEN DAYS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION PROJECT BY CALLING (407) 254-9798.
4. THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION DIVISION AT LEAST 48 HOURS PRIOR TO ANY UTILITIES CONSTRUCTION BY CALLING (407) 254-9798.
5. THE MATERIALS, PRODUCTS, AND CONSTRUCTION OF ALL UTILITIES CONNECTING TO THE OCU SYSTEM SHALL BE IN CONFORMANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL.
6. ALL OCU MAINS AND FACILITIES WITHIN THE LIMITS OF THE PROJECT SHALL BE SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.
7. THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, SHALL IMMEDIATELY REPAIR ALL DAMAGES TO OCU MAINS AND FACILITIES. IF THE REPAIR IS NOT MADE IN A TIMELY MANNER, AS DETERMINED BY OCU, OCU MAY PERFORM REQUIRED REPAIRS AND CLEANUP. THE CONTRACTOR WILL BE CHARGED FOR ALL EXPENSES ASSOCIATED WITH THE REPAIR.
8. THE CONTRACTOR SHALL ADJUST ALL EXISTING OCU MAINS AND FACILITIES IN CONFLICT WITH NEW GRADE, NEW OR ALTERED ROADWAYS, SIDEWALKS, DRIVEWAYS, OR STORM WATER IMPROVEMENTS. OCU FACILITIES TO BE ADJUSTED INCLUDE, BUT ARE NOT LIMITED TO PIPELINES, PUMP STATIONS, VALVE BOXES, AIR RELEASE VALVES, FIRE HYDRANTS, MANHOLE COVERS, AND METERS.
9. ONLY OCU SHALL OPERATE OCU WATER, WASTEWATER, AND RECLAIMED WATER VALVES. THE CONTRACTOR SHALL COORDINATE VALVE OPERATION WITH THE OCU INSPECTOR. FOR OPERATION OF MAINS NOT OWNED BY OCU, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE APPROPRIATE UTILITY REPRESENTATIVE.
10. CONSTRUCTION ACTIVITIES SHALL NOT CAUSE INTERRUPTIONS IN WATER, WASTEWATER, OR RECLAIMED WATER SERVICE. THE CONTRACTOR SHALL COORDINATE PRE-APPROVED INTERRUPTIONS OF SERVICE WITH THE OCU INSPECTOR 7 WORKING DAYS IN ADVANCE.
11. THE CONTRACTOR SHALL PROVIDE FOR BYPASSING AND/OR HAULING WASTEWATER DURING APPROVED INTERRUPTIONS OF WASTEWATER FLOWS AND CONNECTIONS. THE CONTRACTOR SHALL SUBMIT A BYPASS PLAN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER TO OCU DEVELOPMENT ENGINEERING FOR APPROVAL PRIOR TO IMPLEMENTATION BY CONTRACTOR.
12. ALL VALVES INSTALLED AS PART OF THIS CONSTRUCTION PROJECT SHALL REMAIN CLOSED DURING CONSTRUCTION. KEEP VALVES ON ALL WET TAPS CLOSED UNTIL CLEARED BY FDEP. DO NOT CONNECT NEWLY CONSTRUCTED WATER MAINS TO ANY EXISTING WATER MAINS UNLESS CLEARED BY FDEP AND OCU.
13. THE CONTRACTOR SHALL PROVIDE A JUMPER ASSEMBLY WITH A BACKFLOW PREVENTER FOR MAKING TEMPORARY CONNECTIONS TO AN EXISTING POTABLE WATER SOURCE IN ORDER TO CHLORINATE AND FLUSH NEW WATER MAINS WITH POTABLE WATER. ANY TEMPORARY POTABLE WATER CONNECTIONS TO RECLAIMED WATER OR FORCEMAIN SHALL ALSO BE EQUIPPED WITH A BACKFLOW PREVENTER.
14. FOR PVC PIPE THAT WILL BE OWNED AND MAINTAINED BY OCU, NO PIPE BENDING IS ALLOWED. THE MAXIMUM ALLOWABLE TOLERANCE FOR JOINT DEFLECTION IS 0.75 DEGREES (3-INCHES PER JOINT PER 20 FT STICK OF PIPE.) ALIGNMENT CHANGE SHALL BE MADE ONLY WITH SLEEVES AND FITTINGS.
15. FOR NON-PVC PIPE THAT WILL BE OWNED AND MAINTAINED BY OCU, LONG RADIUS CURVES, EITHER HORIZONTAL OR VERTICAL, MAY BE INSTALLED WITH STANDARD PIPE BY DEFLECTIONS AT THE JOINTS. MAXIMUM DEFLECTIONS AT PIPE JOINTS, FITTINGS AND LAYING RADIUS FOR THE VARIOUS PIPE LENGTHS SHALL NOT EXCEED 75 PERCENT OF THE PIPE MANUFACTURER'S RECOMMENDATION.

PROJECT GENERAL NOTES

1. ALL UTILITIES FACILITIES CONSTRUCTION CONNECTING TO THE ORANGE COUNTY PUBLIC UTILITIES SYSTEM SHALL CONFORM TO THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL, AND BE ONE OF THE APPROVED PRODUCTS LISTED IN APPENDIX 'D' OF THE MANUAL.
2. COORDINATION AND COMMUNICATIONS WITH ORANGE COUNTY STAFF SHALL BE MADE THROUGH THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION INSPECTOR.
3. ORANGE COUNTY UTILITIES DEPARTMENT TELEPHONE NUMBERS:
 407-836-2777 ORANGE COUNTY UTILITIES DISPATCH
 407-254-9798 ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION
 407-254-9680 ORANGE COUNTY UTILITIES WATER RECLAMATION DIVISION
 407-254-9850 ORANGE COUNTY UTILITIES WATER DIVISION
 407-254-9900 ORANGE COUNTY UTILITIES ENGINEERING DIVISION
4. SUPPORT AND PROTECT ALL EXISTING UTILITIES. CONTRACTOR SHALL CONTACT UTILITY OWNERS FOR LOCATION OF ALL EXISTING FACILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS AND FOR PROVIDING TEMPORARY SUPPORT FOR THE UTILITY POLES, ANCHOR GUYS, AND ALL OTHER UTILITIES DURING CONSTRUCTION.
5. IMMEDIATELY AT ONSET OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES CRITICAL TO COMPLETING THE PROJECT (INCLUDING WATER, SEWER, RECLAIMED WATER, POWER, TELEPHONE, GAS, FIBER OPTIC AND CABLE TV) AND SHALL EVALUATE POTENTIAL CONFLICTS IN A WRITTEN REPORT. ANY CONFLICTS SHALL BE REPORTED TO ENGINEER/OWNER IMMEDIATELY UPON DISCOVERY AND DETAILED IN THE REPORT.
6. CONTRACTOR SHALL COORDINATE WITH ALL OTHER UTILITY OWNERS FOR RESOLUTION OF CONFLICTS. CONTRACTOR SHALL HAVE 48 HOURS TO DETERMINE THE RESOLUTION OF ANY UNKNOWN OR UNFORESEEN CONFLICTS. COSTS INCURRED SHALL BE BORNE BY THE UTILITY OWNER AND/OR CONTRACTOR AND NO CLAIMS MAY BE MADE AGAINST ORANGE COUNTY OR THE ENGINEER FOR THESE CONFLICTS. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR THE PERIOD OF TIME TO RESOLVE ANY CONFLICTS.
7. USE EXTREME CAUTION WHEN EXCAVATING OR CONNECTING TO ASBESTOS CEMENT PIPE. THE CONTRACTOR WILL BE REQUIRED TO SUPPLY TRUCKS CAPABLE OF PUMPING OUT THE PUMP STATION UPSTREAM FROM BREAKS OR CONNECTION POINT. WHEN CONNECTING TO ASBESTOS CEMENT WATER MAIN OR FORCE MAIN THE CONTRACTOR IS REQUIRED TO REPLACE ANY DAMAGED LENGTHS OF PIPE. THE AMOUNT OF REPLACED PIPE WILL BE DETERMINED BY THE ORANGE COUNTY UTILITIES INSPECTOR.
8. ALL EXISTING AND NEW OCU WATER AND SEWER VALVES, VALVE BOXES, AND MANHOLES SHALL BE PROTECTED AND ADJUSTED TO FINISHED GRADE AS SHOWN ON THE DRAWINGS. VALVE AND VALVE BOXES SHALL REMAIN ACCESSIBLE AT ALL TIMES. ANY VALVES THAT MIGHT BE COVERED DURING CONSTRUCTION SHALL BE MARKED WITH A MARKER (GREEN FOR SEWER, BLUE FOR WATER, AND PURPLE FOR RECLAIMED WATER MAIN), A MINIMUM OF FOUR (4) FEET ABOVE GRADE. ALL VALVES UNDER CONSTRUCTION ARE TO REMAIN CLOSED DURING CONSTRUCTION.
9. ALL PVC WATER AND SEWER MAIN AND RECLAIMED WATER MAIN SHALL CONFORM TO AWWA C900, DR 18, OR C905, DR 25. ALL DUCTILE IRON WATER MAIN PIPE SHALL CONFORM TO ANSI/AWWA A21.51/C151. ALL PVC PRESSURE PIPE SHALL USE DUCTILE IRON FITTINGS.
10. ALL PROPOSED DUCTILE IRON MECHANICAL JOINT FITTINGS, PIPES, OR PIPE RESTRAINTS WITHIN FORTY (40) FEET OF EXISTING GAS MAINS SHALL BE POLYETHYLENE ENCASED.
11. ALL BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DRY DENSITY AS MEASURED BY AASHTO T-180 METHOD 'D' TEST (MODIFIED PROCTOR) IN OPEN AREAS AND TO NOT LESS THAN 98% MAXIMUM DRY DENSITY AS MEASURED BY AASHTO T-180 METHOD 'D' TEST (MODIFIED PROCTOR) UNDER ASPHALT OR CONCRETE PAVEMENT AND WITHIN 3-FT OF PAVEMENT. ALL SOIL TESTING TO BE CONDUCTED BY THE COUNTY. THE CONTRACTOR SHALL PROVIDE ALL REASONABLE ASSISTANCE DURING SOIL TESTING.
12. PIPE LENGTHS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL LENGTHS ARE TO BE DETERMINED DURING CONSTRUCTION.
13. ALL NORTHING AND EASTING COORDINATES ARE BASED ON THE STATE PLANE COORDINATE SYSTEM. STATIONING IS FOR REFERENCE ONLY.

14. MAINTAIN EMERGENCY VEHICLE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF TRAFFIC INCLUDING FURNISHING ALL NECESSARY LABOR, MATERIALS, AND EQUIPMENT TO MAINTAIN VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH AND ADJACENT TO THE PROJECT AREA. THESE MEASURES AND ACTIONS SHALL BE TAKEN TO SAFELY MAINTAIN THE ACCESSIBILITY OF PUBLIC AND CONSTRUCTION TRAFFIC BY PREVENTING POTENTIAL CONSTRUCTION HAZARDS.
16. IN AREAS WHERE CONSTRUCTION ACTIVITIES RESTRICT NORMAL ACCESS TO PROPERTIES, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALTERNATE ACCESS ROUTES WHICH ARE SUBJECT TO APPROVAL BY THE ENGINEER, AS PART OF THE M.O.T. PLAN.
17. LOCAL RESIDENTIAL ACCESS SHALL BE MAINTAINED AT ALL TIMES. PROVIDE WRITTEN NOTIFICATION TO RESIDENTS SEVEN (7) DAYS PRIOR TO IMPLEMENTING ANY ROADWAY OR DRIVEWAY CLOSURE.
18. ALL EXCAVATIONS SHALL BE BACK FILLED AT THE END OF EACH WORK DAY.
19. ALL PIPES SHALL BE RESTRAINED IN ACCORDANCE WITH THE RESTRAINT TABLES SHOWN ON THE DETAIL SHEETS. IN ADDITION, ALL FITTINGS SHALL BE MECHANICAL JOINT RESTRAINED. NO THRUST BLOCKS SHALL BE PERMITTED. RESTRAIN EXISTING PIPE WHERE REQUIRED IN ACCORDANCE WITH THE RESTRAINT TABLES AND THRUST COLLAR DETAIL.
20. PIPE SIZES SHOWN ON PLANS ARE NOMINAL DIAMETER.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DE-WATERING REQUIRED DURING CONSTRUCTION AND TO OBTAIN AND PAY FOR ALL PERMITS REQUIRED FOR THE TEMPORARY DE-WATERING.
22. REPLACEMENT WATER SERVICE CONNECTIONS SHALL INCLUDE THE REPLACEMENT OF THE EXISTING WATER METER BOXES WHICH ARE TO BE PROVIDED BY ORANGE COUNTY UTILITIES AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH COUNTY FOR THE SPECIFIC INSTALLATION LOCATION OF METER BOXES. FOR REROUTING WATER SERVICE ON PRIVATE PROPERTY THE CONTRACTOR SHALL RELOCATE EXISTING METERS TO NEW METER BOXES WHERE INDICATED ON THE DRAWINGS.
23. THE CONTRACTOR SHALL INSTALL LONG WATER SERVICE CONNECTION PIPING UNDER PAVEMENT USING TRENCHLESS CONSTRUCTION METHODS. WATER SERVICE CONNECTIONS CROSSING UNDER ANY PART OR ALL OF ROADS SHALL BE INSTALLED IN A PVC CASING PIPE.
24. WHERE SHOWN ON THE PLANS, LINE STOPS WILL BE USED TO ISOLATE PORTIONS OF THE EXISTING MAINS. THE ORANGE COUNTY INSPECTOR SHALL BE NOTIFIED 5 DAYS IN ADVANCE OF LINE STOP INSTALLATION.
25. ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE BY THE CONTRACTOR ONLY AFTER THE PROPOSED CONNECTION PROCEDURE AND WORK SCHEDULE HAVE BEEN REVIEWED AND ACCEPTED BY THE OWNER. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE OWNER A MINIMUM OF SEVEN (7) WORKING DAYS PRIOR TO SCHEDULING ANY CONNECTIONS. THE REQUEST SHALL REFERENCE THE PROFESSIONAL LAND SURVEYOR CERTIFIED COMPLETED AS-BUILT RECORD DRAWINGS PREVIOUSLY SUBMITTED AND SHALL OUTLINE THE FOLLOWING:
 - A. POINTS OF CONNECTION, FITTINGS TO BE USED, METHODS OF FLUSHING AND DISINFECTION AND VERIFICATION OF RESTRAINT ON EXISTING PIPE.
 - B. ESTIMATED CONSTRUCTION TIME FOR THE CONNECTIONS.
 THE OWNER SHALL REVIEW THE SUBMITTAL WITHIN FIVE (5) WORKING DAYS AFTER RECEIVING IT AND INFORM THE CONTRACTOR REGARDING APPROVAL OR DENIAL OF THE REQUEST. IF THE OWNER REJECTS THE REQUEST, THE CONTRACTOR SHALL RESUBMIT THE REQUEST MODIFYING IT IN A MANNER ACCEPTABLE TO THE OWNER. ALL CONNECTIONS SHALL ONLY BE MADE ON THE AGREED UPON DATE AND TIME. SHOULD THE CONTRACTOR NOT INITIATE AND COMPLETE THE CONNECTION WORK IN THE AGREED UPON MANNER, HE SHALL BE REQUIRED TO RESCHEDULE THE CONNECTION BY FOLLOWING THE PROCEDURE OUTLINED ABOVE. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES IN THE SYSTEM. MAINS SHALL NOT BE PLACED IN SERVICE UNTIL CLEARANCE IS RECEIVED FROM FDEP. AS-BUILT DRAWINGS MUST BE COMPLETED AND SUBMITTED PRIOR TO WATER MAIN CHLORINATION.
26. ALL EXISTING VALVES, VALVE BOXES, ARV'S AND VAULTS, AND FIRE HYDRANTS LOCATED ON PIPE DESIGNATED TO BE ABANDONED (OR RETIRED IN PLACE) SHALL BE REMOVED AND DISPOSED OF OR SALVAGED IN ACCORDANCE WITH THE SPECIFICATIONS.
27. PROTECT EXISTING IMPROVEMENTS TO THE MAXIMUM EXTENT POSSIBLE. RESTORE ALL EXISTING IMPROVEMENTS AND DISTURBED AREAS TO ORIGINAL CONDITION. PAVEMENT TO BE RESTORED IN ACCORDANCE WITH THE PAVEMENT RESTORATION DETAILS SHOWN ON THE CONSTRUCTION DETAIL SHEETS. ALL DAMAGED MAILBOXES, IRRIGATION SYSTEMS, SOD, LANDSCAPING, FENCING, SIDEWALK, ROADWAY PAVEMENT AND OTHER IMPROVEMENTS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.

No.	REVISIONS	BY	DATE
BID SET		CKM	10-09-2017

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ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825



FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

GENERAL NOTES

DESIGN ENGINEER
 CYNTHIA K. MALONE, P.E.
 FLORIDA REGISTRATION No.
 58685

PROJECT No.: 2014-28-09
 PROJECT DATE: OCT 2017
 DESIGNED BY: CKM
 DRAWN BY: JAB
 CHECKED BY: JPJ
 DRAWING FILE: SEE MARGIN


DRAWING No.
G-102
 SHEET
 3 OF 33

PROJECT GENERAL NOTES (CONTINUED)

- 28. FOR ALL COUNTY ROADS TO BE OPEN CUT, THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC (MOT) PLAN CONFORMING TO ORANGE COUNTY RIGHT-OF-WAY UTILIZATION REGULATIONS TO ORANGE COUNTY PUBLIC WORKS A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO ANY WORK WITHIN COUNTY RIGHT-OF-WAY. A COPY OF THIS PLAN SHALL ALSO BE SUBMITTED TO THE ENGINEER AND UTILITY COUNTY INSPECTOR. NOTIFY THE COUNTY ENGINEER 48 HOURS PRIOR TO ANY OPEN CUT OF ROADWAYS WITHIN THE COUNTY RIGHT-OF-WAY. TWO WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. MAINTAIN A SET OF COUNTY APPROVED CONSTRUCTION PLANS AND MOT PLANS AT THE CONSTRUCTION SITE AT ALL TIMES WHEN WORKING WITHIN THE COUNTY RIGHT-OF-WAY.
- 29. BENCHMARK LOCATIONS AND ELEVATIONS ARE SHOWN IN THE PLANS AS REPRESENTED BY THE SURVEYOR AT THE TIME OF SURVEY. CONTRACTOR SHALL VERIFY ITS CORRECTNESS AT THE TIME OF CONSTRUCTION AND INSTALL HIS OWN TEMPORARY BENCHMARKS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OCU UTILITIES INSPECTOR.
- 30. NO VALVE BOXES, METERS, PORTIONS OF MANHOLES, OR OTHER APPURTENANCES OF ANY KIND RELATING TO ANY UNDERGROUND UTILITIES SHALL BE LOCATED IN ANY PORTION OF A CURB-AND-GUTTER SECTION. CONTRACTOR SHALL ADVISE ENGINEER IMMEDIATELY UPON DISCOVERY OF A POTENTIAL CONFLICT.
- 31. WHERE REQUIRED, AT NO ADDITIONAL COST TO THE COUNTY, THE CONTRACTOR SHALL USE TEMPORARY SHEETING OR TRENCH BOXES TO MINIMIZE THE SIZE OF EXCAVATIONS AND PROTECT EXISTING ROADWAYS, UTILITIES AND OTHER FACILITIES OR AS NEEDED TO REMAIN WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTOR TO COMPLY WITH OSHA TRENCH SAFETY REQUIREMENTS AT ALL TIMES.
- 32. ALL EXISTING MAINS SHALL REMAIN IN SERVICE UNTIL THE PROPOSED MAIN(S) ARE ACCEPTED FOR SERVICE AND ALL SERVICES ARE TRANSFERRED TO THE MAIN(S).
- 33. CONTRACTOR SHALL APPLY FOR AND SECURE ALL NECESSARY PERMITS FROM STATE, COUNTY, AND LOCAL MUNICIPALITIES. PERMITS SHALL INCLUDE, BUT NOT BE LIMITED TO, RIGHT OF WAY USE, CONSTRUCTION, BUSINESS LICENSE, AND DEWATERING.
- 34. THE DISPOSAL OF ANY EXCESS EARTH WORK MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 35. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SALVAGE AND/OR DISPOSAL OF ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE SPECIFICATIONS AND AS DIRECTED BY THE ORANGE COUNTY UTILITIES INSPECTOR.
- 36. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN CONSTRUCTION AND ARE THE MINIMUM REQUIRED. CONTRACTOR SHALL FURNISH ADDITIONAL CONTROLS AS NEEDED AT NO ADDITIONAL COST. MATERIALS FROM WORK ON THIS PROJECT SHALL BE CONTAINED AND NOT ALLOWED TO COLLECT ON ANY OFF PERIMETER AREAS OR IN WATERWAYS. SILK SCREENS, HAY BALES, AND TURBIDITY BARRIERS MUST REMAIN IN PLACE AND IN GOOD CONDITION AT ALL LOCATIONS IN PLANS OR AS REQUIRED UNTIL THE CONTRACT IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION IS ESTABLISHED. MEASURES SHOWN ON THE PLANS ARE MINIMUM REQUIRED, AND THE CONTRACTOR SHALL ENSURE THAT THERE IS NO DIRECT OR INDIRECT DISCHARGE OF CONSTRUCTION MATERIALS IN TURBID WATERS TO OFF SITE AREAS OR WATERWAYS.

No.	REVISIONS	BY	DATE
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ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825



BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
 1250 E. Hillcrest Street, Orlando, FL, 32803
 TEL: (407) 849-8888 FAX: (407) 849-3800
 ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

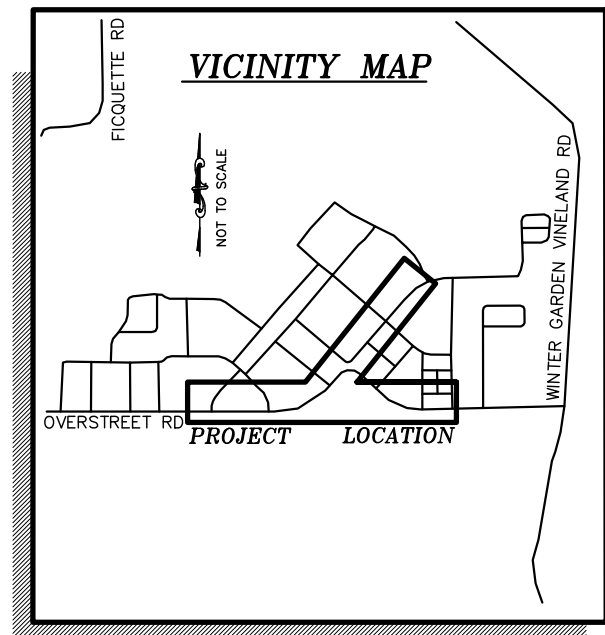
GENERAL NOTES

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB	DRAWING No. G-103
FLORIDA REGISTRATION No. 58685	CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 4 OF 33



TOPOGRAPHIC SURVEY OF LAKE SAWYER DRIVE AND OVERSTREET ROAD

LYING IN SECTIONS 24 AND 25,
TOWNSHIP 23 SOUTH, RANGE 27 EAST



GENERAL NOTES

- THE PURPOSE OF SURVEY IS TO ESTABLISH THE EXISTING RIGHT OF WAY LINES OF LAKE SAWYER DRIVE FROM LIFT STATION TRACT 1-Q AT THE INTERSECTION OF HAWKSTONE DRIVE AND SOUTHWEST ALONG LAKE SAWYER DRIVE FOR A DISTANCE OF APPROXIMATELY 1,200 FEET AND OVERSTREET ROAD FROM THE INTERSECTION OF NORTHWICH DRIVE, WEST FOR APPROXIMATELY 3,000 FEET TO THE INTERSECTION OF BENTONSHIRE AVENUE BY ESTABLISHING OR RE-ESTABLISHING CORNERS, MONUMENTS AND BOUNDARY LINES, AND TO ESTABLISH THE HORIZONTAL AND VERTICAL SPATIAL RELATIONSHIP OF THE NATURAL OR MANMADE FEATURES LYING WITHIN THE DEFINED LIMITS NOTED ABOVE AND TEN FEET OUTSIDE THE EXISTING RIGHT OF WAY WHERE ACCESSIBLE.
- BEARINGS AND COORDINATES SHOWN HEREON ARE RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983/2011 ADJUSTMENT (NAD83/2011), ZONE 901, FLORIDA EAST, WITH THE BASELINE OF SURVEY OVERSTREET ROAD BETWEEN STATION 10+00.00 AND POINT OF INTERSECTION STATION 17+13.00 HAVING A BEARING OF NORTH 89°19'56" EAST.
- ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED FROM THE FOLLOWING ORANGE COUNTY BENCHMARKS:

S1291034

FOUND "SQUARE" CUT ON SOUTH SIDE CONCRETE DROP INLET, CENTERLINE MEDIAN OF STATE ROAD 535, 620± FEET SOUTH OF OVERSTREET ROAD. SECOND DROP INLET SOUTH PUBLISHED ELEVATION = 114.937 FEET (NAVD88)

C1399002

FOUND 3 1/2" ALUMINUM ORANGE COUNTY PUBLIC WORKS DISK IN TOP OF CURB INLET ON THE NORTH SIDE OF LAKE SAWYER DRIVE 837± FEET WEST OF WINTER GARDEN VINELAND ROAD. ACROSS FROM ADDRESS 12466 AND 12472. PUBLISHED ELEVATION = 113.773 FEET (NAVD88)

- ALL RECORDING REFERENCES ON THIS SURVEY SHALL REFER TO THE PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA, UNLESS OTHERWISE NOTED.
- UNLESS IT BEARS THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER, THIS DRAWING, SKETCH, PLAT, OR MAP IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.
- THE SURVEYOR HAS NOT ABSTRACTED THE LANDS SHOWN HEREON FOR EASEMENTS AND/OR RIGHT OF WAY RECORDS. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT.
- OVERSTREET ROAD IS A 60 FOOT WIDE RIGHT OF WAY PER DEED BOOK 414, PAGE 369 AS RECORDED IN THE PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA.
- BORINGS SHOWN HEREON WERE DESIGNATED BY ANTILLIAN ENGINEERING ASSOCIATES, INC. AND FIELD LOCATED BY THIS FIRM.

LEGEND

- | | | |
|-------------------|---|-------------------------|
| ⊙ = CLEANOUT | ☒ = NON POTABLE WATER VALVE COVER | ○ = MONITORING WELL |
| ⊗ = HEDGE | ☒ = NON POTABLE WATER VALVE | ○ = OAK TREE |
| ⊘ = SHRUB | ☒ = CABLE TELEVISION SERVICE BOX | ◇ = POWER POLE |
| ⊙ = FIREHYDRANT | ☒ = PALM TREE | ◇ = SEWER VALVE |
| ⊙ = GAS VALVE | ☒ = UNKNOWN TREE UNLESS OTHERWISE SPECIFIED | ◇ = SINGLE SUPPORT SIGN |
| ⊙ = GUY ANCHOR | ☒ = PINE TREE | ⊙ = WATER METER |
| ⊙ = LIGHT POLE | ☒ = MAILBOX | ⊙ = WATER VALVE |
| ⊙ = TRANSFORMER | ☒ = END NOT FOUND/NOT LOCATED | ☒ = WIRE PULL BOX |
| ☒ = POST-AS NOTED | | ☒ = TELEPHONE PEDESTAL |
| | | ×117.5 = SPOT ELEVATION |
| | — DE — = OVERHEAD ELECTRIC | |

ABBREVIATIONS

- | | |
|-------------------------|--|
| ⊙ = BASELINE | N&D = NAIL & DISK |
| BC = BACK OF CURB | NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988 |
| BWF = BARBED WIRE FENCE | N = NORTHING |
| (C) = CALCULATED | N/A = NOT APPLICABLE |
| CB = CHORD BEARING | NO. = NUMBER |
| CD = CHORD DISTANCE | NSP = NON SLIP PAD |
| CLF = CHAIN LINK FENCE | (P) = PLAT |
| CM = CONCRETE MONUMENT | PC = POINT OF CURVATURE |
| CONC = CONCRETE | PI = POINT OF INTERSECTION |
| (D) = DEED | PT = POINT OF TANGENCY |
| Δ = DELTA | PK = PARKER-KALON |
| E = EASTING | PVC = POLYVINYL CHLORIDE |
| EL = ELEVATION | R = RADIUS |
| EP = EDEGE OF PAVEMENT | RCP = REINFORCED CONCRETE PIPE |
| FNC = FENCE | RGE. = RANGE |
| FND = FOUND | RT = RIGHT |
| ID = IDENTIFICATION | R/W = RIGHT OF WAY |
| INV = INVERT | SB = STOP BAR |
| IR = IRON ROD | SEC. = SECTION |
| IRC = IRON ROD & CAP | STA = STATION |
| LSA = LANDSCAPE AREA | SWK = SIDEWALK |
| L = LENGTH | TWP. = TOWNSHIP |
| LL = LANELINE | U.E. = UTILITY EASEMENT |
| LT = LEFT | UM = UTILITY MARKER |
| | W/ = WITH |

PREPARED FOR:

BARNES, FERLAND AND ASSOCIATES, INC.
ORANGE COUNTY ENGINEERING
PUBLIC WORKS ROADS AND DRAINAGE
DIVISION

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT A SURVEY OF THE PROPERTY SHOWN HEREON WAS MADE UNDER MY SUPERVISION AND THAT THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS, CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES AND THAT THE SKETCH HEREON IS A TRUE AND ACCURATE REPRESENTATION THEREOF TO THE BEST OF MY KNOWLEDGE AND BELIEF. SUBJECT TO NOTES AND NOTATIONS SHOWN

THIS DAY OF . 20

H. Paul deVivero, Professional Land Surveyor No. 4990
Land Surveyor Business License No. 6556
VALID ONLY WITH SIGNATURE AND EMBOSSED SEAL

SHEET INDEX	
SHEET	CONTENTS
1	COVER
2-10	DETAIL SHEETS

GEODATA CONSULTANTS, INC.
SURVEYING & MAPPING
1349 SOUTH INTERNATIONAL PARKWAY
SUITE 2401
LAKE MARY, FLORIDA 32746
VOICE: (407) 732-6965 FAX: (407) 878-0841

DRAWN BY: AJH	CHECKED BY: RJH/JMS
DATE OF FIELD SURVEY: APRIL 21, 2017	
FIELD BOOK 16-09, PAGES 15-61	
SEC. 24 & 25, TWP. 23 SOUTH, RGE. 27 EAST	
ORANGE COUNTY, FLORIDA	

No.	REVISIONS	BY	DATE

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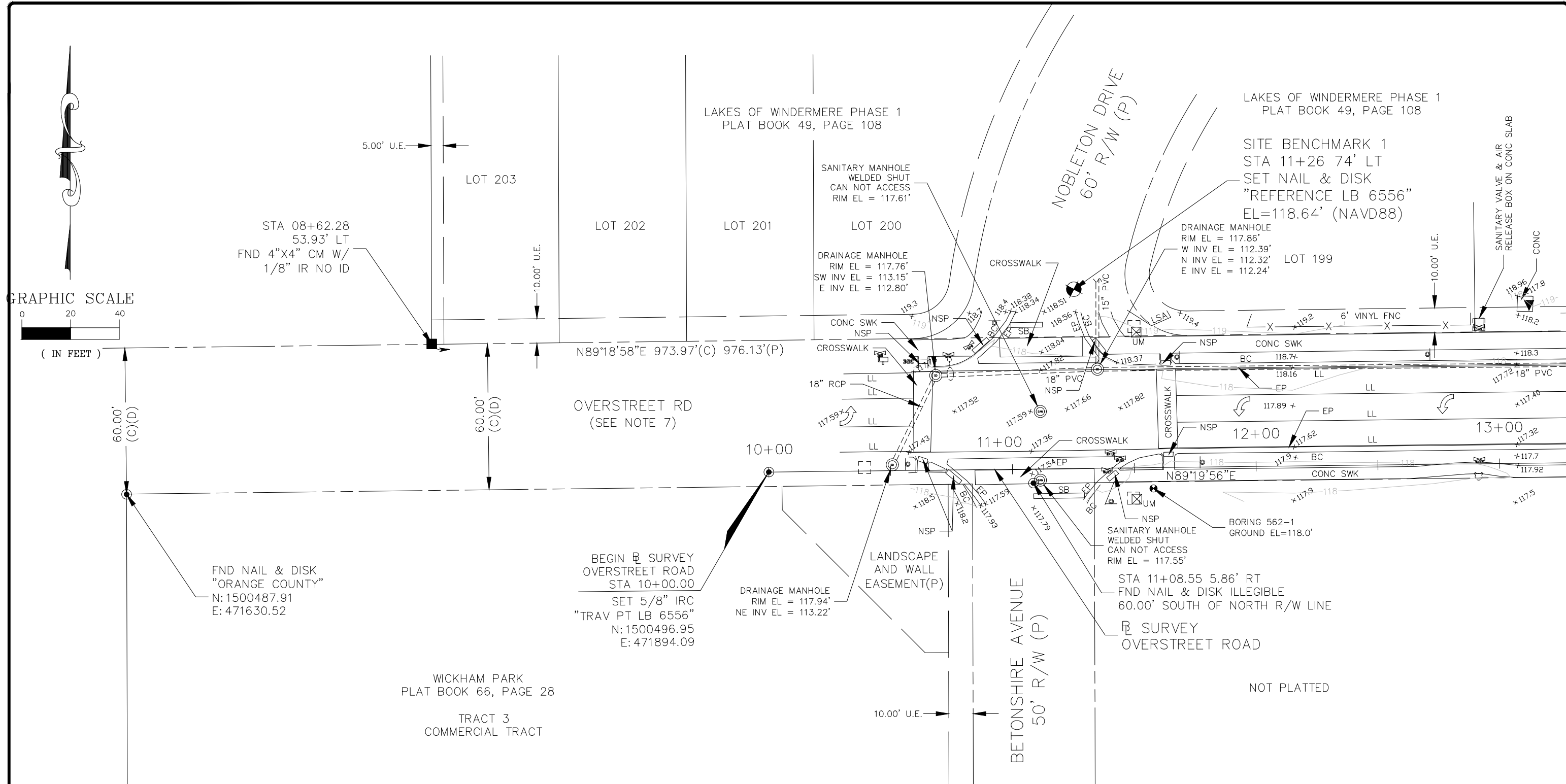


ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL, 32803
P.L.C. 09042500-0000
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
SURVEY CONTROL

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09	DRAWING No. V-01
FLORIDA REGISTRATION No. 58685	PROJECT DATE: OCT 2017	SHEET OF 33
	DESIGNED BY: CKM	
	DRAWN BY: JAB	
	CHECKED BY: JPJ	
	DRAWING FILE: SEE MARGIN	



<p>GEODATA CONSULTANTS, INC. SURVEYING & MAPPING 1349 SOUTH INTERNATIONAL PARKWAY SUITE 2401 LAKE MARY, FLORIDA 32746 VOICE: (407) 732-6965 FAX: (407) 878-0841</p>	DRAWN BY: AJH CHECKED BY: RJH/JMS
	DATE OF FIELD SURVEY: APRIL 21, 2017
	FIELD BOOK 16-09, PAGES 15-61
	SEC. 24 & 25, TWP. 23 SOUTH, RGE. 27 EAST ORANGE COUNTY, FLORIDA
DESIGN ENGINEER CYNTHIA K. MALONE, P.E. FLORIDA REGISTRATION No. 58885	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPU DRAWING FILE: SEE MARGIN
FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS SURVEY CONTROL	DRAWING No. V-02 SHEET 6 OF 33

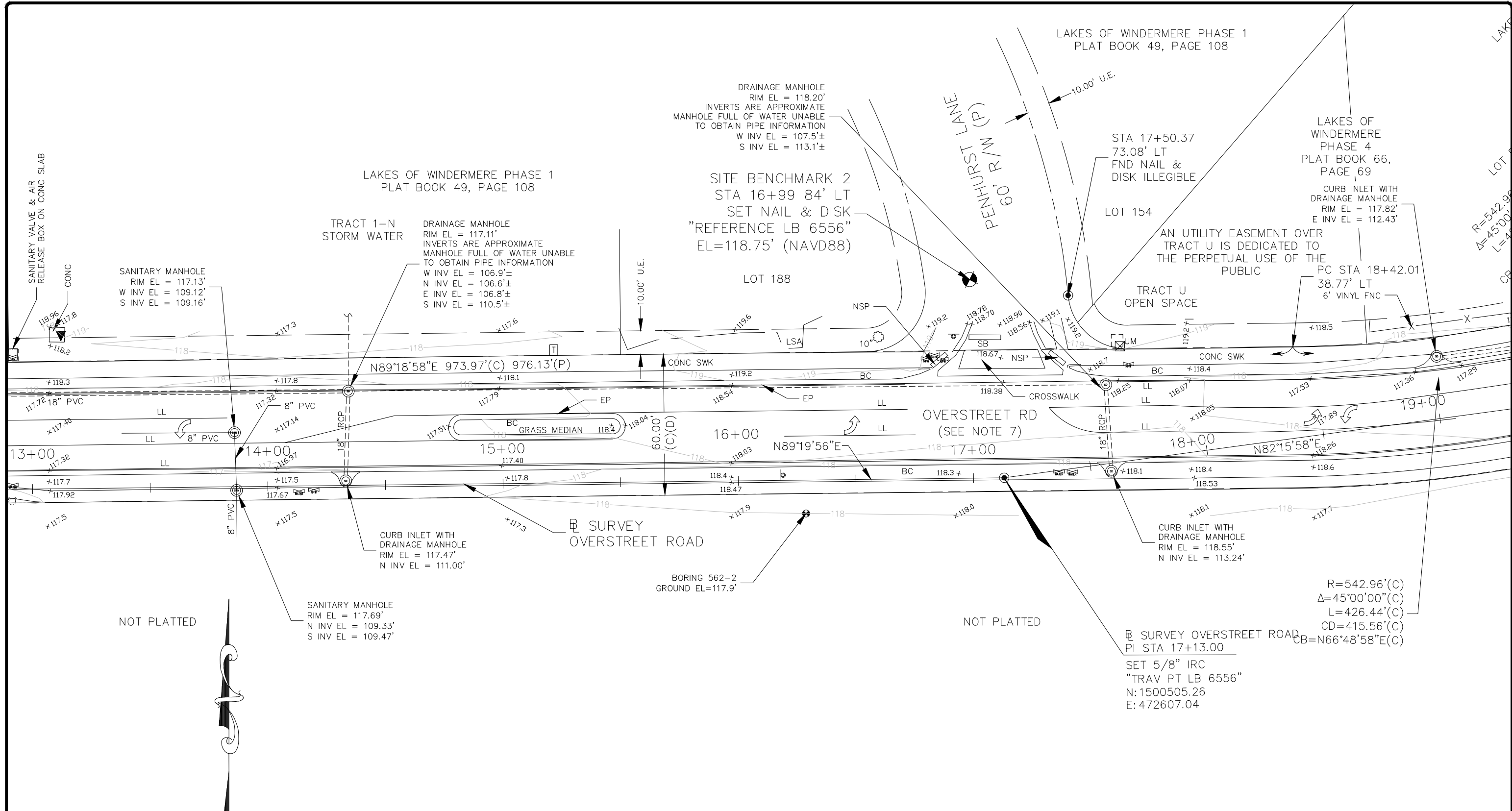
No.	REVISIONS	BY	DATE
1	BID SET	CKM	10-09-2017

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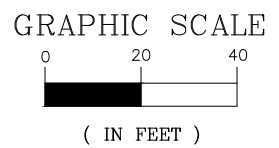
ORANGE COUNTY UTILITIES
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BFA Environmental Consultants
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 1230 E. Hillcrest Street, Orlando, FL, 32803
 PHONE: 407-999-0000 FAX: 407-999-0002
ENGINEERING BUSINESS No. 6899



NOT PLATTED

NOT PLATTED



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	<p>DATE OF FIELD SURVEY: APRIL 21, 2017</p>
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FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
SURVEY CONTROL

<p>DESIGN ENGINEER CYNTHIA K. MALONE, P.E.</p>	<p>PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN</p>	<p>DRAWING No. V-03 SHEET 7 OF 33</p>
<p>FLORIDA REGISTRATION No. 58685</p>	<p>FLORIDA REGISTRATION No. 58685</p>	<p>OCTOBER 2017 - BID SET</p>

LAKES OF WINDERMERE PHASE 4
PLAT BOOK 66, PAGE 69

LAKES OF WINDERMERE PHASE 4
PLAT BOOK 66, PAGE 68

SITE BENCHMARK 4
STA 24+09 67' LT
SET NAIL & DISK
"REFERENCE LB 6556"
EL=117.75' (NAVD88)

SITE BENCHMARK 3
STA 20+90 73' LT
SET NAIL & DISK
"REFERENCE LB 6556"
EL=117.57' (NAVD88)

LOT 544
R=542.96'(C)(P)
Δ=45°00'00"(C)(P)
L=426.44'(C)(P)
CD=415.56'(C)
CB=N66°48'58"E(C)

LIFFORD AVENUE
50' R/W (P)

STA 24+27.17 10.35' LT
FND NAIL & DISK
"PCP LB 1221"
ONLINE

STA 20+90.67 46.57' RT
FND NAIL & DISK "PCP LB 3556"
ONLINE
DRAINAGE MANHOLE
RIM EL = 117.71'
SE INV EL = 112.19'
N INV EL = 112.21'

AN UTILITY EASEMENT OVER TRACT T IS DEDICATED TO THE PERPETUAL USE OF THE PUBLIC

DRAINAGE MANHOLE
RIM EL = 118.49'
NW INV EL = 110.67'
SE INV EL = 110.08'

TRACT T
OPEN SPACE

PT STA 22+96.03
7.37' LT

CURB INLET WITH DRAINAGE MANHOLE
RIM EL = 117.68'
SW INV EL = 110.68'
NE INV EL = 110.45'

TRAV PT LB 6556"
N:1500799.93
E:473196.28

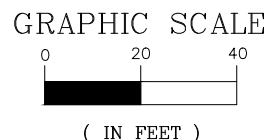
DRAINAGE MANHOLE
RIM EL = 117.75'
SW INV EL = 111.89'
NW INV EL = 111.98'
NE INV EL = 111.41'

TRAV PT LB 6556"
N:1500552.08
E:472951.81

HOLDENBURY LANE
50' R/W (P)

NOT PLATTED

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DRAWN BY: AJH CHECKED BY: RJH/JMS
DATE OF FIELD SURVEY: APRIL 21, 2017
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9150 CURRY FORD ROAD
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FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
SURVEY CONTROL

DESIGN ENGINEER
CYNTHIA K. MALONE, P.E.
PROJECT No.: 2014-28-09
PROJECT DATE: OCT 2017
DESIGNED BY: CKM
DRAWN BY: JAB
CHECKED BY: JPJ
FLORIDA REGISTRATION No. 58885
DRAWING FILE: SEE MARGIN

DRAWING No.
V-04
SHEET
8 OF 33

COR1: FND 5/8" IRC
"LB 3556"
STA 27+18.38 1.16' RT

COR2: FND 5/8" IRC
ILLEGIBLE
STA 27+32.10 19.41' LT
ON R/W LINE

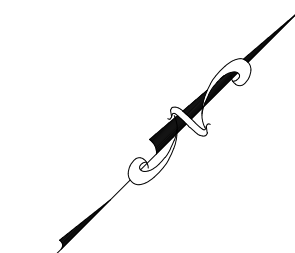
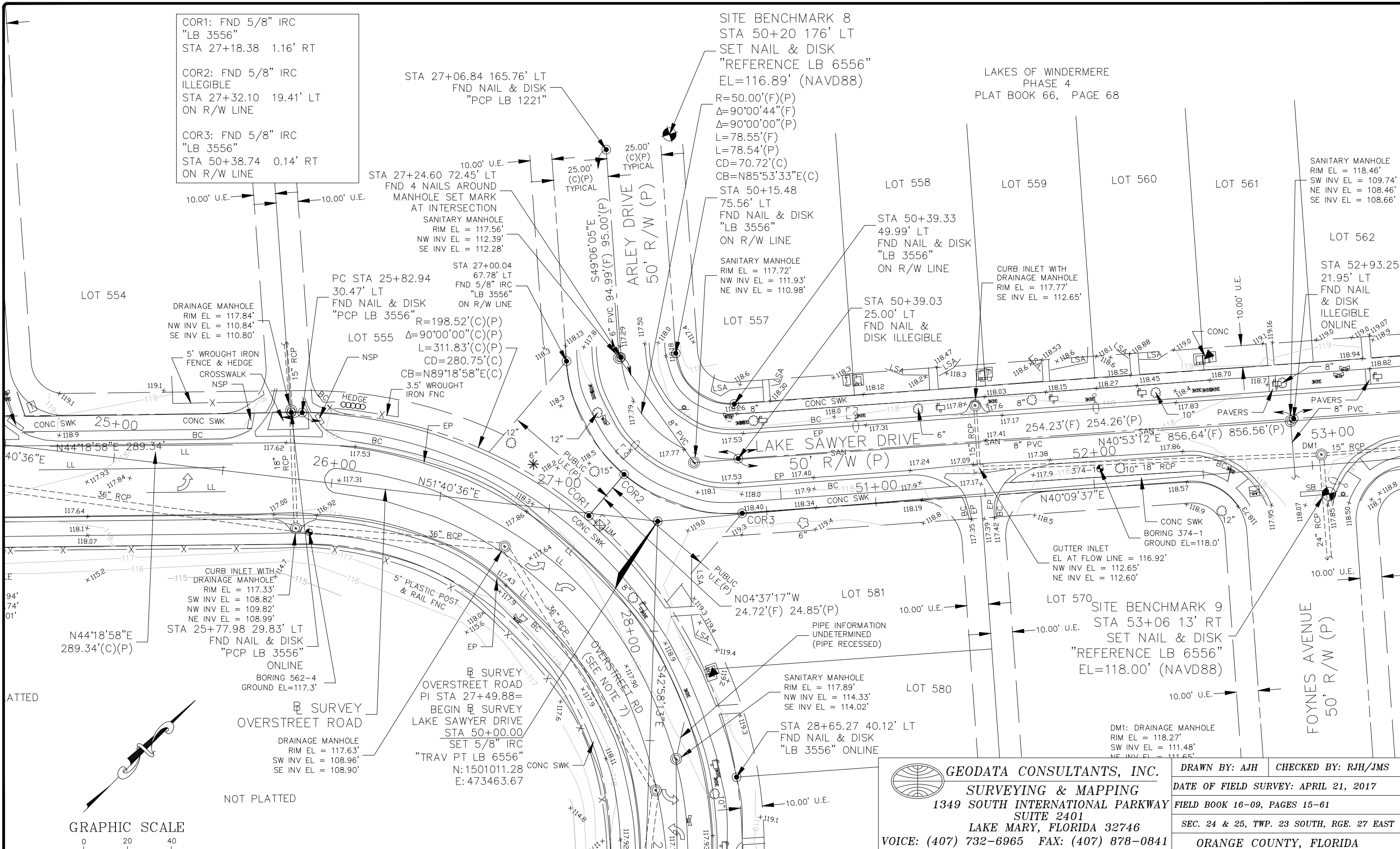
COR3: FND 5/8" IRC
"LB 3556"
STA 50+38.74 0.14' RT
ON R/W LINE

LAKES OF WINDERMERE
PHASE 4
PLAT BOOK 66, PAGE 68

STA 27+06.84 165.76' LT
FND NAIL & DISK
"PCP LB 1221"

STA 50+20 176' LT
SET NAIL & DISK
"REFERENCE LB 6556"
EL=116.89' (NAVD88)

R=50.00'(F)(P)
Δ=90°00'44"(F)
Δ=90°00'00"(P)
L=78.55'(F)
L=78.54'(P)
CD=70.72'(C)
CB=N85°53'33"E(C)



NOT PLATTED

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FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

SURVEY CONTROL

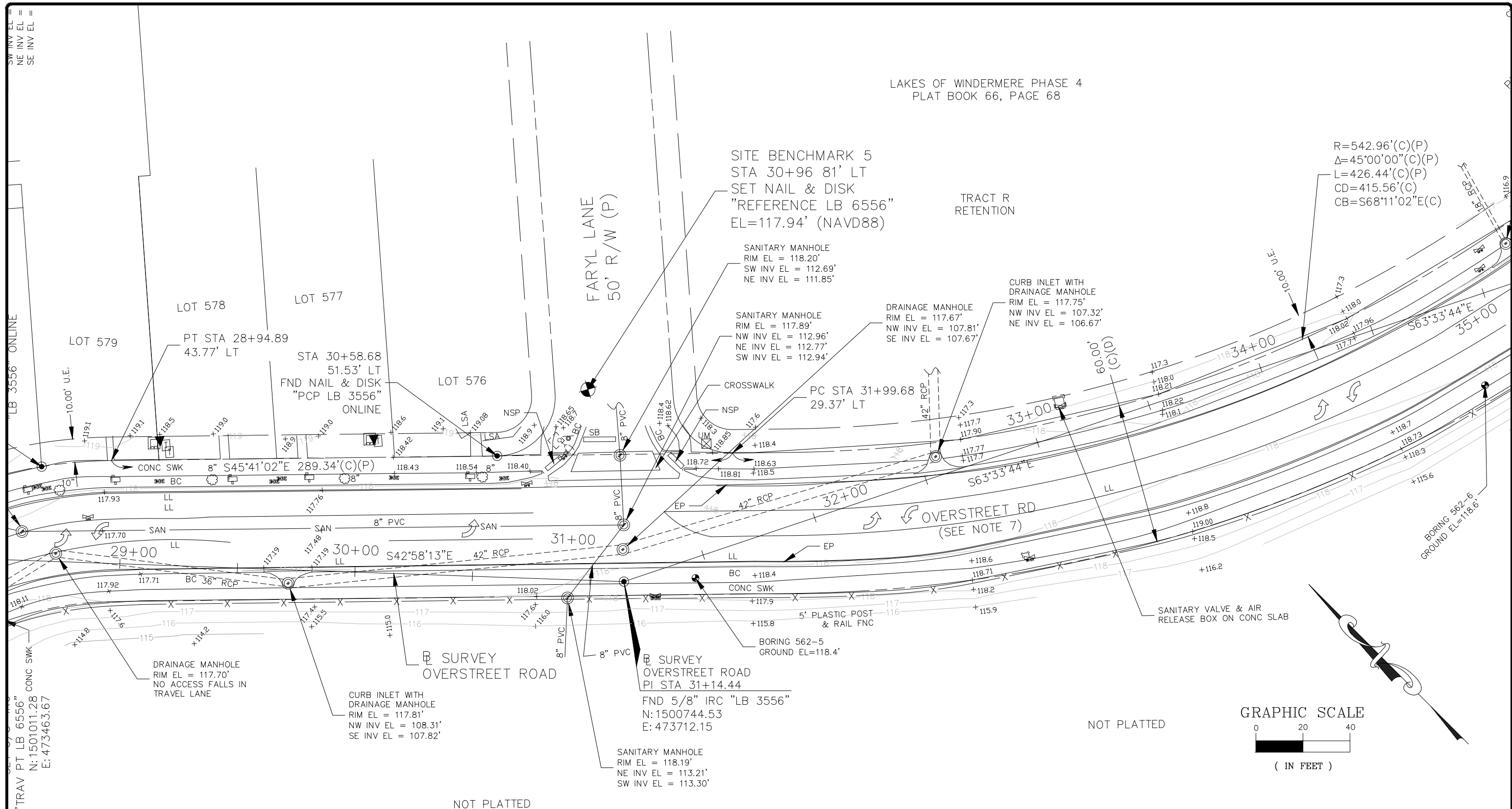
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FLORIDA REGISTRATION No. 58885

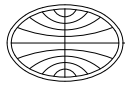
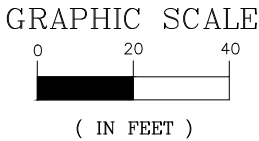
DRAWING No.
V-05
SHEET
9 OF 33

LAKES OF WINDERMERE PHASE 4
PLAT BOOK 66, PAGE 68



NOT PLATTED

NOT PLATTED



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1349 SOUTH INTERNATIONAL PARKWAY
SUITE 2401
LAKE MARY, FLORIDA 32746
VOICE: (407) 732-6965 FAX: (407) 878-0841

DRAWN BY: AJH	CHECKED BY: RJH/JMS
DATE OF FIELD SURVEY: APRIL 21, 2017	
FIELD BOOK 16-09, PAGES 15-61	
SEC. 24 & 25, TWP. 23 SOUTH, RGE. 27 EAST	
ORANGE COUNTY, FLORIDA	

No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

SCALE: AS NOTED



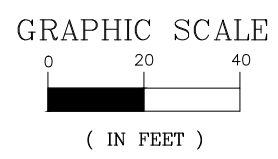
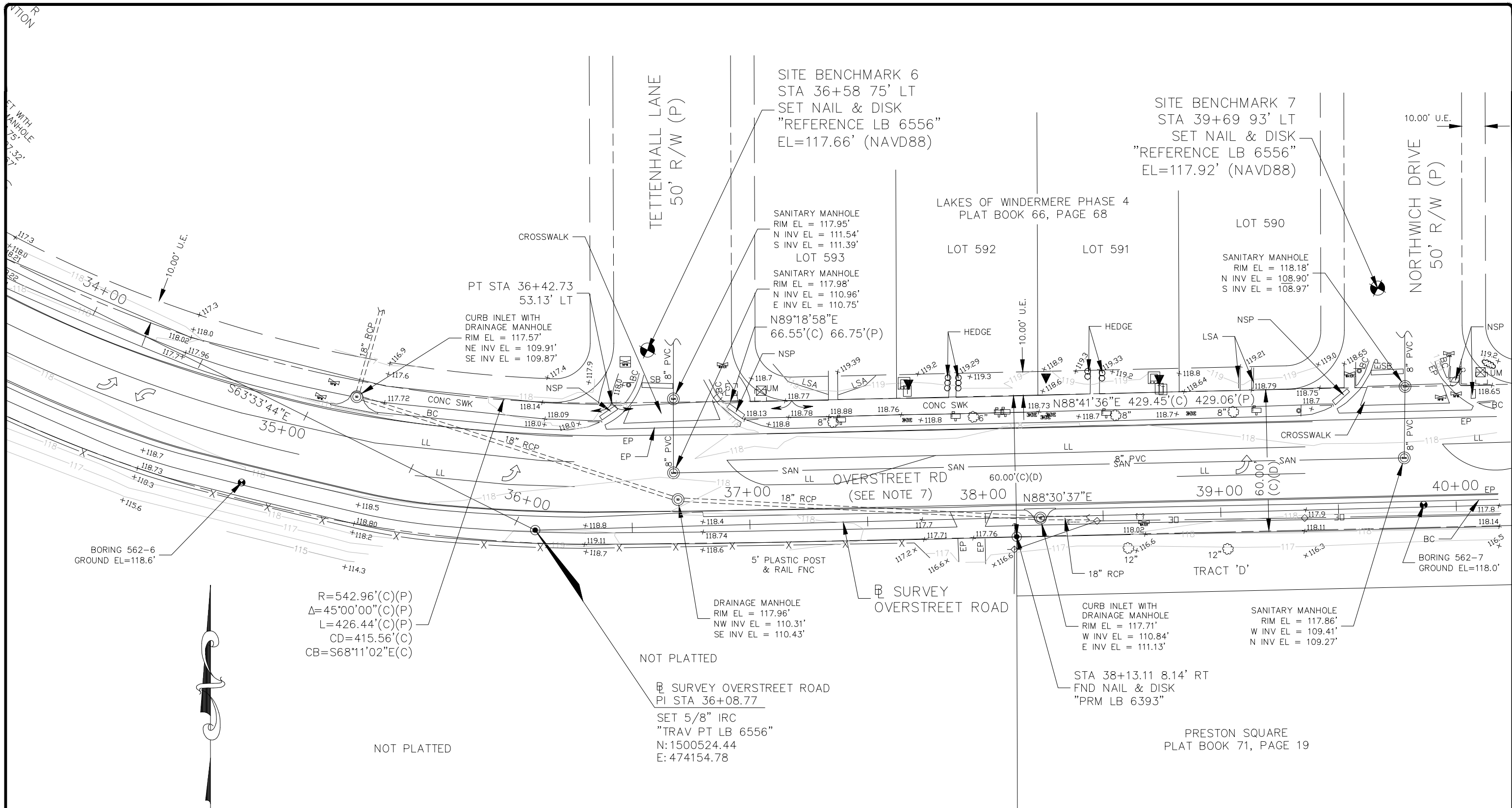
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL, 32803
TEL: 407.595.5000 FAX: 407.595.1222
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

SURVEY CONTROL

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	DRAWING No. V-06 SHEET 10 OF 33
--	---	---



$R=542.96'(C)(P)$
 $\Delta=45^{\circ}00'00''(C)(P)$
 $L=426.44'(C)(P)$
 $CD=415.56'(C)$
 $CB=S68^{\circ}11'02''E(C)$

NOT PLATTED

NOT PLATTED
 SURVEY OVERSTREET ROAD
 PI STA 36+08.77
 SET 5/8" IRC
 "TRAV PT LB 6556"
 N: 1500524.44
 E: 474154.78

GEODATA CONSULTANTS, INC.
 SURVEYING & MAPPING
 1349 SOUTH INTERNATIONAL PARKWAY
 SUITE 2401
 LAKE MARY, FLORIDA 32746
 VOICE: (407) 732-6965 FAX: (407) 878-0841

DRAWN BY: AJH CHECKED BY: RJH/JMS
 DATE OF FIELD SURVEY: APRIL 21, 2017
 FIELD BOOK 16-09, PAGES 15-61
 SEC. 24 & 25, TWP. 23 SOUTH, RGE. 27 EAST
 ORANGE COUNTY, FLORIDA

No	REVISIONS	BY	DATE
BID SET		CKM	10-09-2017

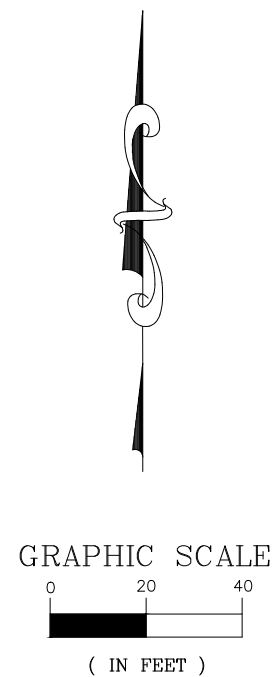
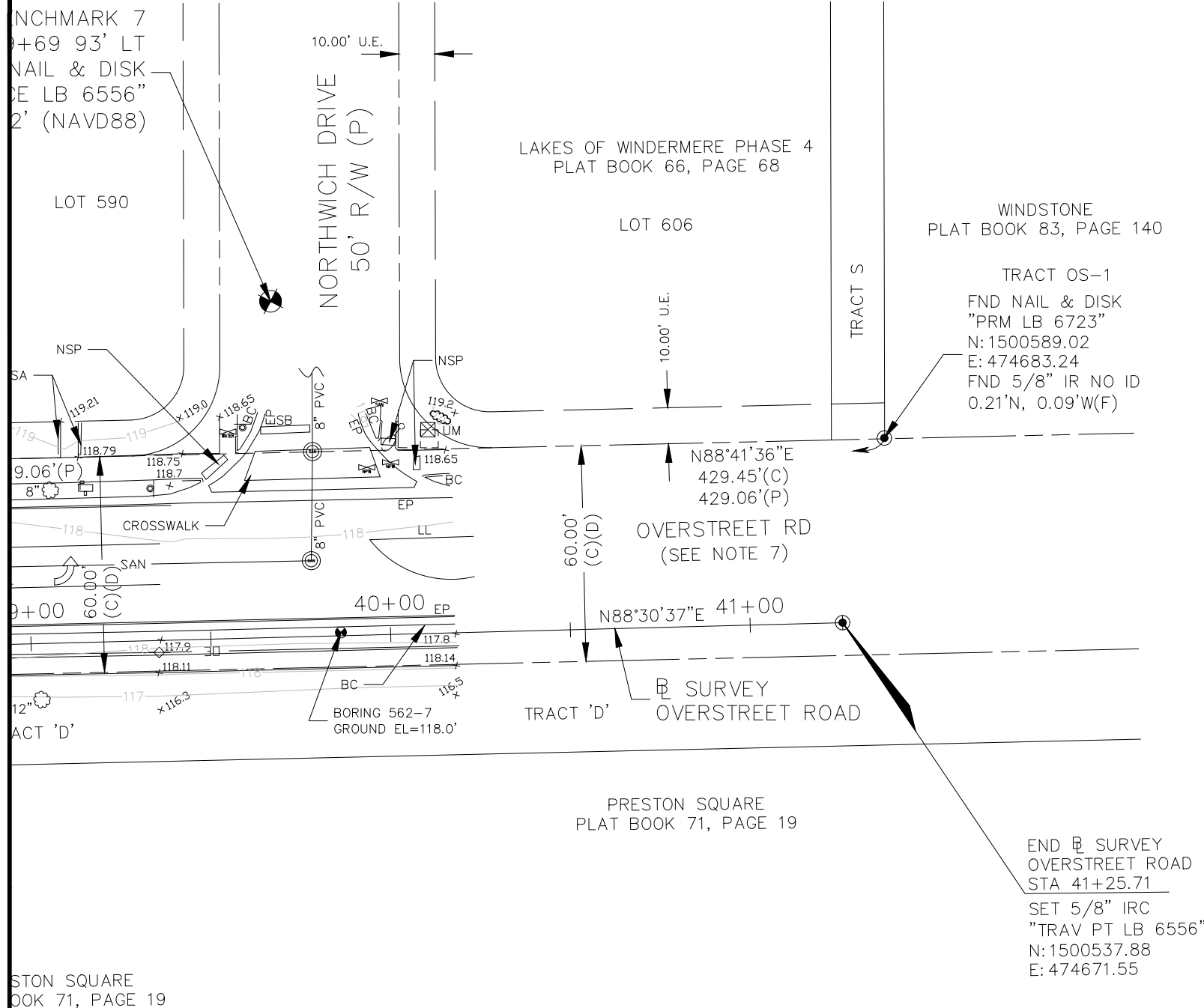
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 (IF NOT SCALE ACCORDINGLY)
 SCALE: AS NOTED

ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825

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 1230 E. Hillcrest Street, Orlando, FL, 32803
 407-839-8888
ENGINEERING BUSINESS No. 6899

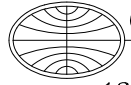
FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
 SURVEY CONTROL

DESIGN ENGINEER
 CYNTHIA K. MALONE, P.E.
 PROJECT No.: 2014-28-09
 PROJECT DATE: OCT 2017
 DESIGNED BY: CKM
 DRAWN BY: JAB
 CHECKED BY: JPJ
 DRAWING FILE: SEE MARGIN
 DRAWING No.
V-07
 SHEET
 11 OF 33



PRESTON SQUARE
PLAT BOOK 71, PAGE 19

END SURVEY
OVERSTREET ROAD
STA 41+25.71
SET 5/8" IRC
"TRAV PT LB 6556"
N: 1500537.88
E: 474671.55

 GEODATA CONSULTANTS, INC. SURVEYING & MAPPING 1349 SOUTH INTERNATIONAL PARKWAY SUITE 2401 LAKE MARY, FLORIDA 32746 VOICE: (407) 732-6965 FAX: (407) 878-0841	DRAWN BY: AJH CHECKED BY: RJH/JMS
	DATE OF FIELD SURVEY: APRIL 21, 2017 FIELD BOOK 16-09, PAGES 15-61
	SEC. 24 & 25, TWP. 23 SOUTH, RGE. 27 EAST ORANGE COUNTY, FLORIDA
	DESIGN ENGINEER CYNTHIA K. MALONE, P.E. PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN
FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS SURVEY CONTROL	DRAWING No. V-08 SHEET 12 OF 33

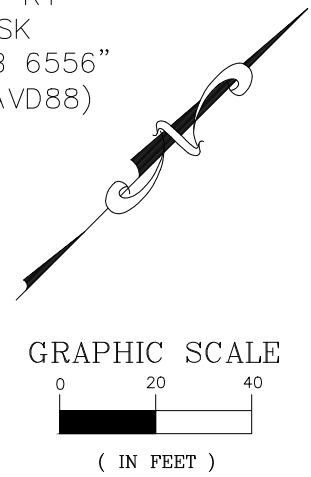
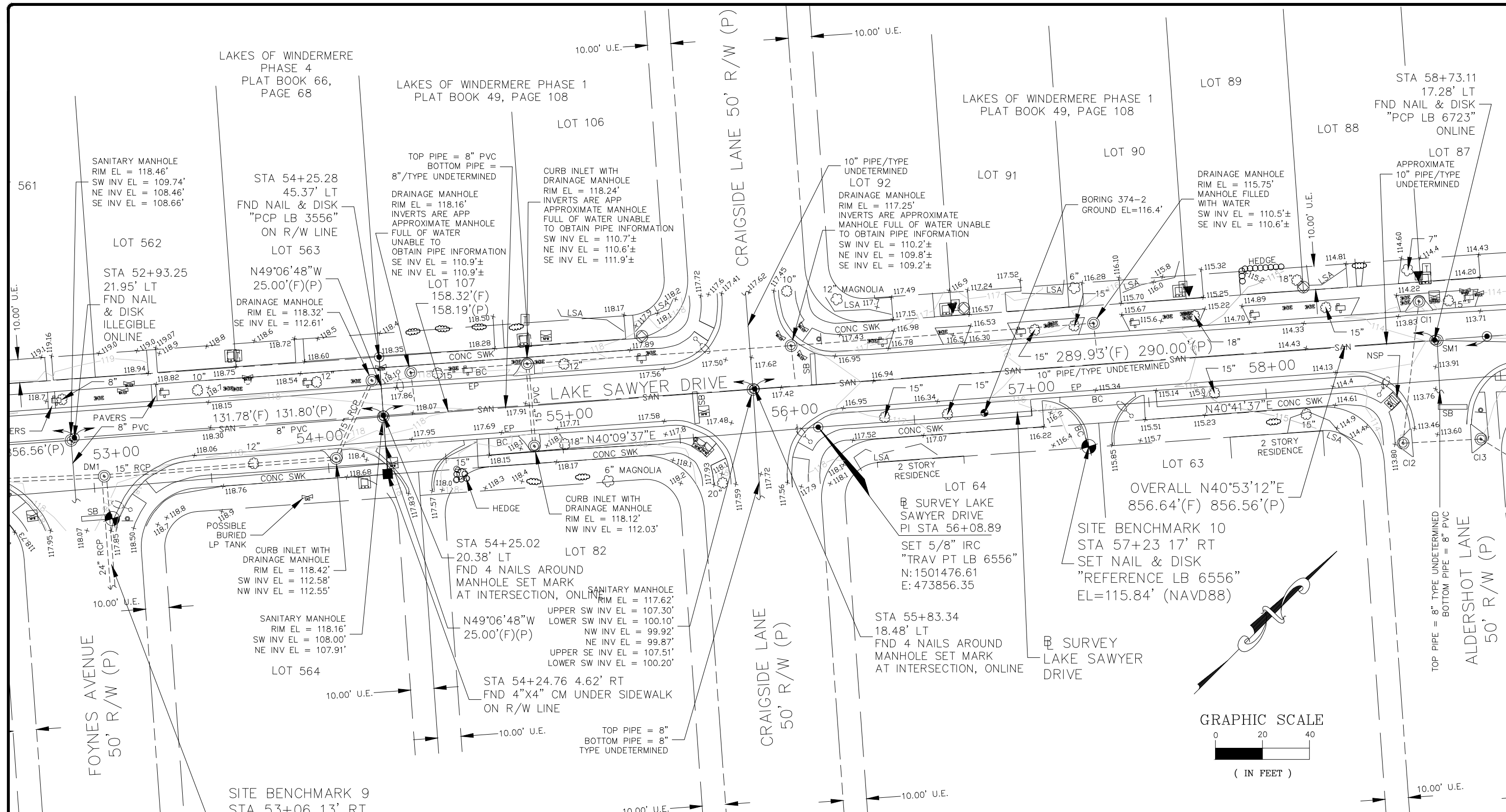
No.	REVISIONS	BY	DATE

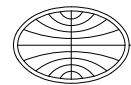
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(IF NOT SCALE ACCORDINGLY)
SCALE: AS NOTED

ORANGE COUNTY

ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Burnes, Furland and Associates, Inc.
 1230 E. Hillcrest Street, Orlando, FL, 32813
 TEL: 407-925-2222 FAX: 407-925-1222
ENGINEERING BUSINESS No. 6899



 GEODATA CONSULTANTS, INC. SURVEYING & MAPPING 1349 SOUTH INTERNATIONAL PARKWAY SUITE 2401 LAKE MARY, FLORIDA 32746 VOICE: (407) 732-6965 FAX: (407) 878-0841	DRAWN BY: AJH CHECKED BY: RJH/JMS
	DATE OF FIELD SURVEY: APRIL 21, 2017 FIELD BOOK 16-09, PAGES 15-61
	SEC. 24 & 25, TWP. 23 SOUTH, RGE. 27 EAST ORANGE COUNTY, FLORIDA
	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN

No.	REVISIONS	BY	DATE

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SCALE: AS NOTED

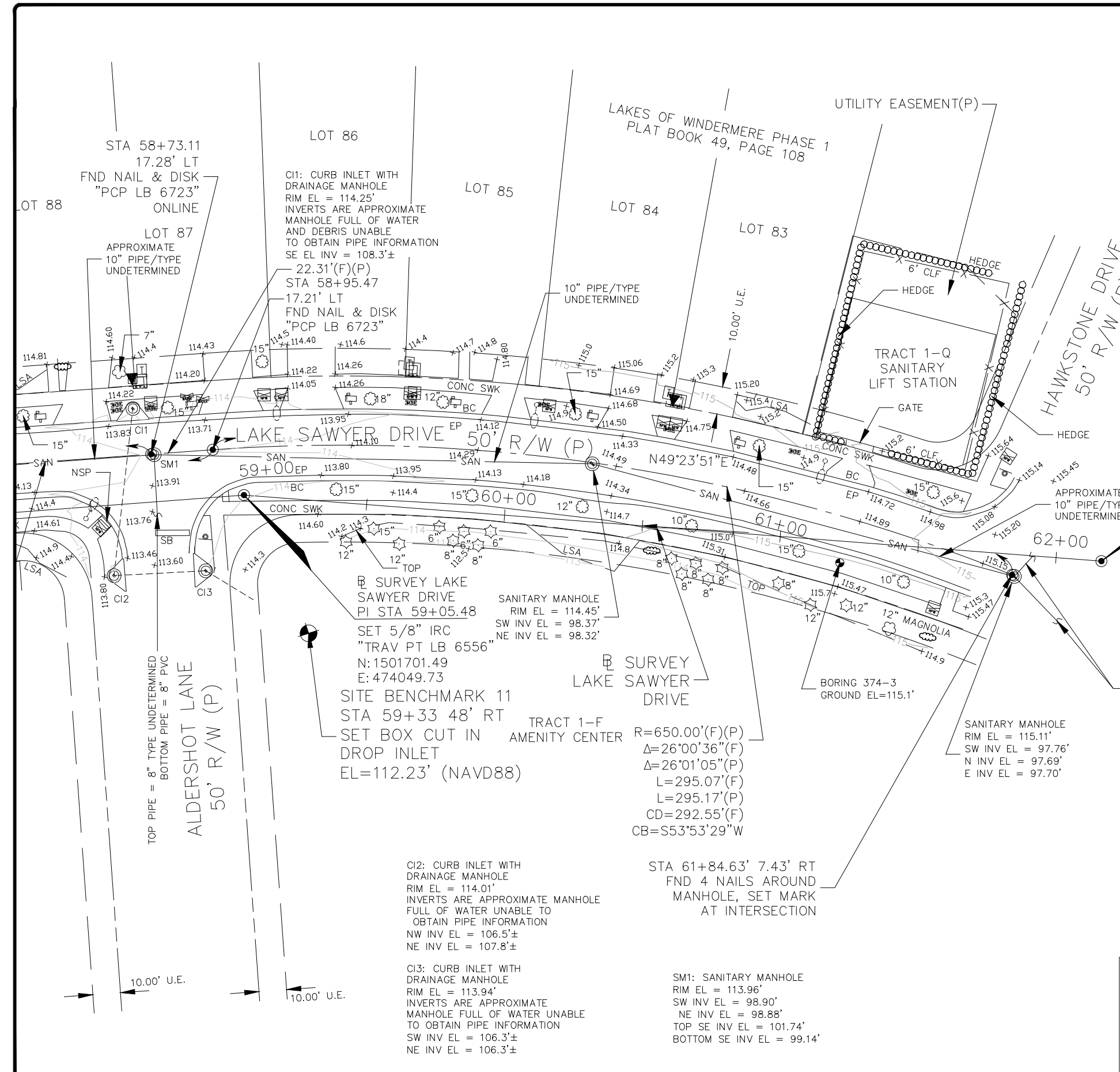
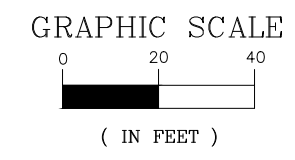
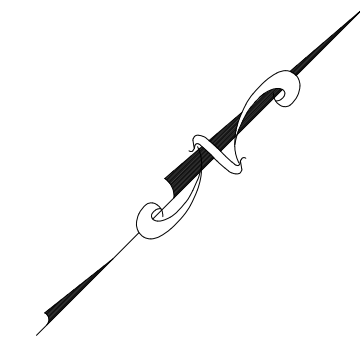
ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825

BFA Environmental Consultants
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 1230 E. Hillcrest Street, Orlando, FL 32803
 (407) 850-1234
 ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

SURVEY CONTROL

DESIGN ENGINEER CYNTHIA K. MALONE, P.E. FLORIDA REGISTRATION No. 58685	DRAWING No. V-09 SHEET 13 OF 33
---	---



END @ SURVEY LAKE SAWYER DRIVE
 STA 62+16.44
 SET 5/8" IRC
 "TRAV PT LB 6556"
 N: 1501903.87
 E: 474285.83

TOP SURVEY LAKE SAWYER DRIVE
 PI STA 59+05.48
 SET 5/8" IRC
 "TRAV PT LB 6556"
 N: 1501701.49
 E: 474049.73
 SITE BENCHMARK 11
 STA 59+33 48' RT
 SET BOX CUT IN TRACT 1-F AMENITY CENTER
 DROP INLET
 EL=112.23' (NAVD88)

R=650.00'(F)(P)
 $\Delta=26^{\circ}00'36''$ (F)
 $\Delta=26^{\circ}01'05''$ (P)
 L=295.07'(F)
 L=295.17'(P)
 CD=292.55'(F)
 CB=S53°53'29"W

C12: CURB INLET WITH DRAINAGE MANHOLE
 RIM EL = 114.01'
 INVERTS ARE APPROXIMATE MANHOLE FULL OF WATER UNABLE TO OBTAIN PIPE INFORMATION
 NW INV EL = 106.5'±
 NE INV EL = 107.8'±

C13: CURB INLET WITH DRAINAGE MANHOLE
 RIM EL = 113.94'
 INVERTS ARE APPROXIMATE MANHOLE FULL OF WATER UNABLE TO OBTAIN PIPE INFORMATION
 SW INV EL = 106.3'±
 NE INV EL = 106.3'±

SM1: SANITARY MANHOLE
 RIM EL = 113.96'
 SW INV EL = 98.90'
 NE INV EL = 98.88'
 TOP SE INV EL = 101.74'
 BOTTOM SE INV EL = 99.14'

GEODATA CONSULTANTS, INC.
SURVEYING & MAPPING
 1349 SOUTH INTERNATIONAL PARKWAY
 SUITE 2401
 LAKE MARY, FLORIDA 32746
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DRAWN BY: AJH	CHECKED BY: RJH/JMS
DATE OF FIELD SURVEY: APRIL 21, 2017	
FIELD BOOK 16-09, PAGES 15-61	
SEC. 24 & 25, TWP. 23 SOUTH, RGE. 27 EAST	
ORANGE COUNTY, FLORIDA	

No.	REVISIONS	BY	DATE

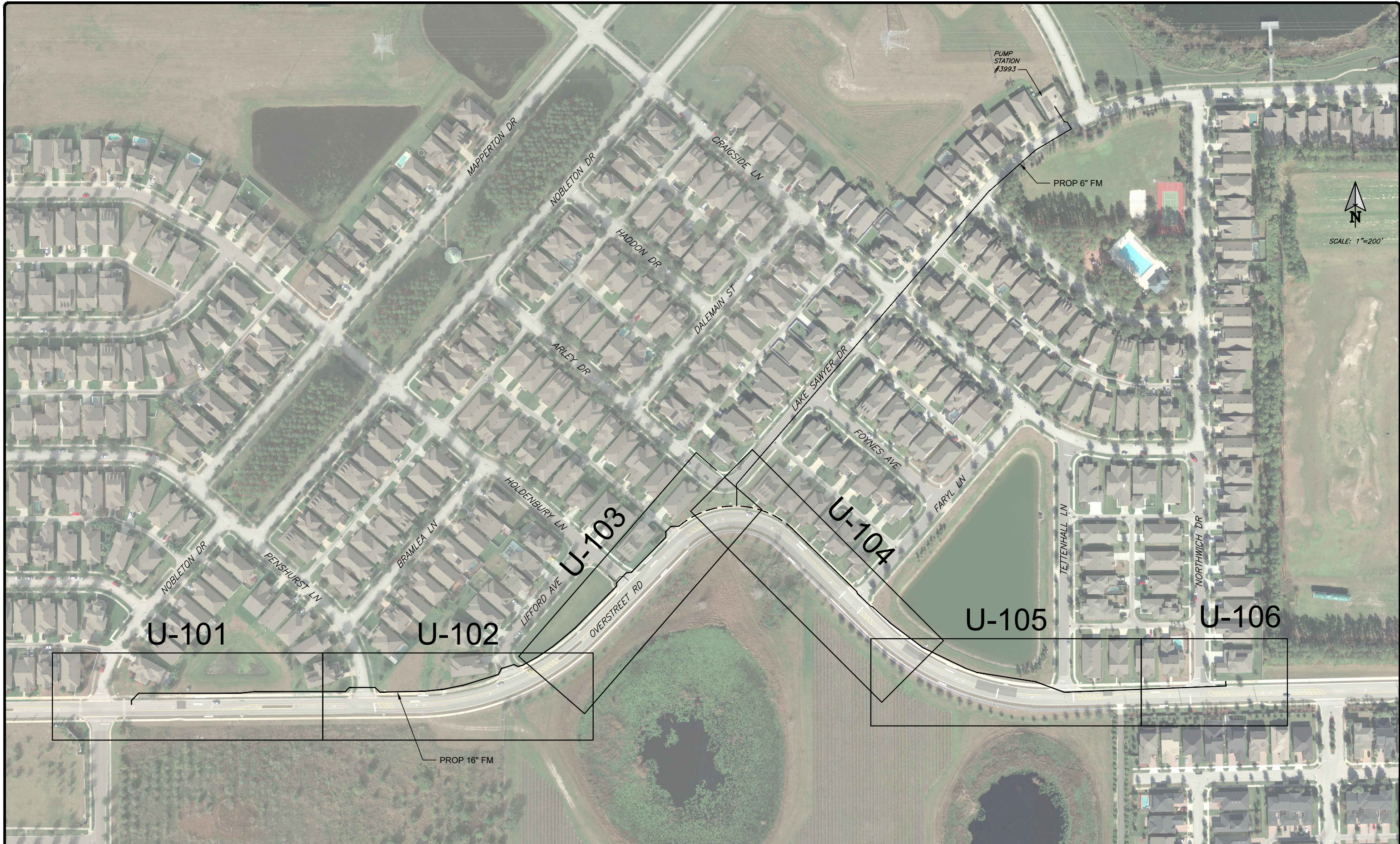
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 AT FULL SIZE = 11X17
 (IF NOT SCALE ACCORDINGLY)
 SCALE: AS NOTED

ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825

BFA Environmental Consultants
 Barnes, Ferland and Associates, Inc.
 1230 E. Hillcrest Street, Orlando, FL, 32809
 PH: 407.921.1234 FAX: 407.921.1234
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
SURVEY CONTROL

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	DRAWING No. V-10 SHEET 14 OF 33
FLORIDA REGISTRATION No. 58685		



SCALE: 1"=200'

No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

SCALE: AS NOTED

ORANGE COUNTY GOVERNMENT

ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Bernes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL, 32803
P.L.L.C. ENGINEERING BUSINESS No. 6899

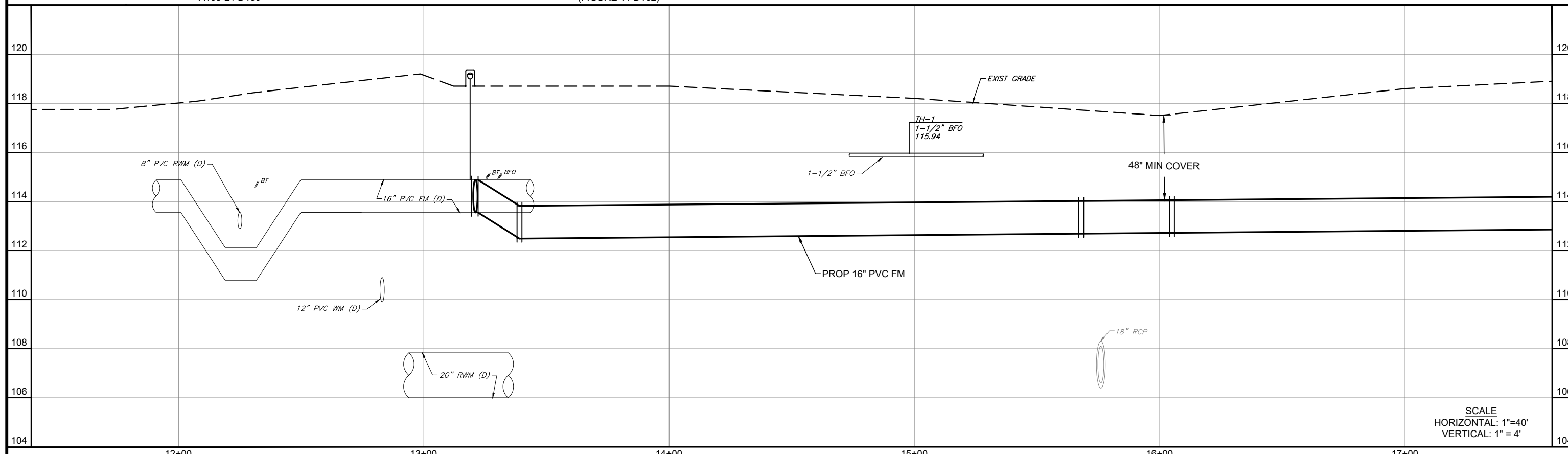
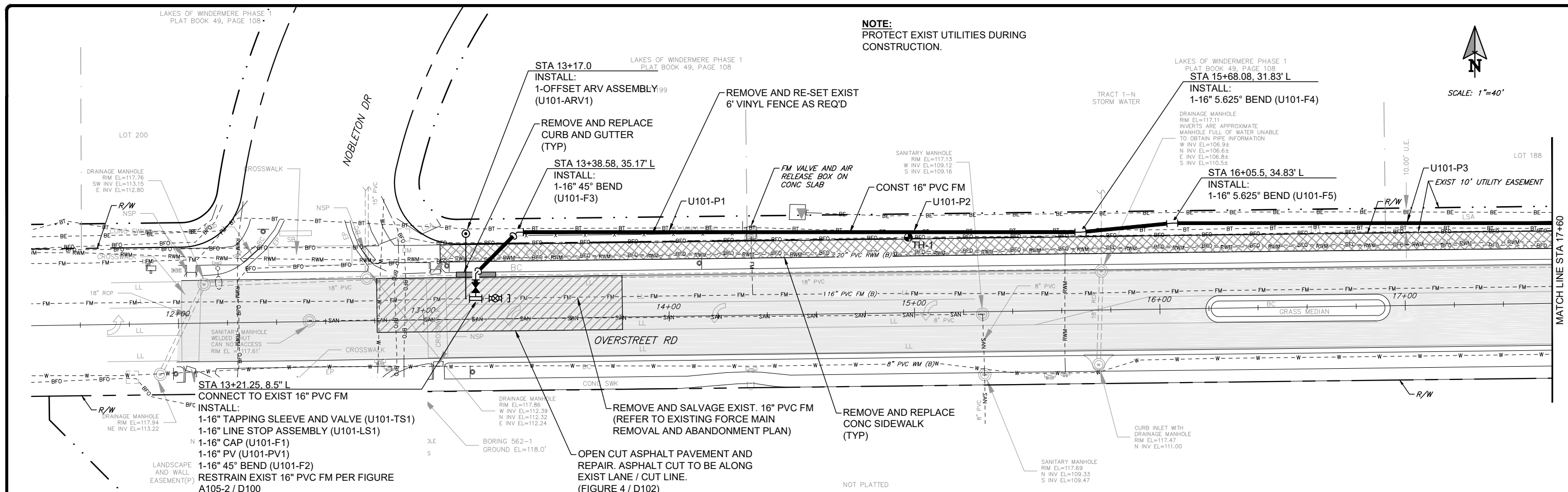
FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

**OVERSTREET ROAD ALIGNMENT
KEY MAP**

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09	DRAWING No. U-100
FLORIDA REGISTRATION No. 58685	PROJECT DATE: OCT 2017	SHEET 15 OF 33
CHECKED BY: JPJ	DESIGNED BY: CKM	DRAWN BY: JAB
DRAWING FILE: SEE MARGIN		



NOTE:
PROTECT EXIST UTILITIES DURING
CONSTRUCTION.



No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

SCALE: AS NOTED

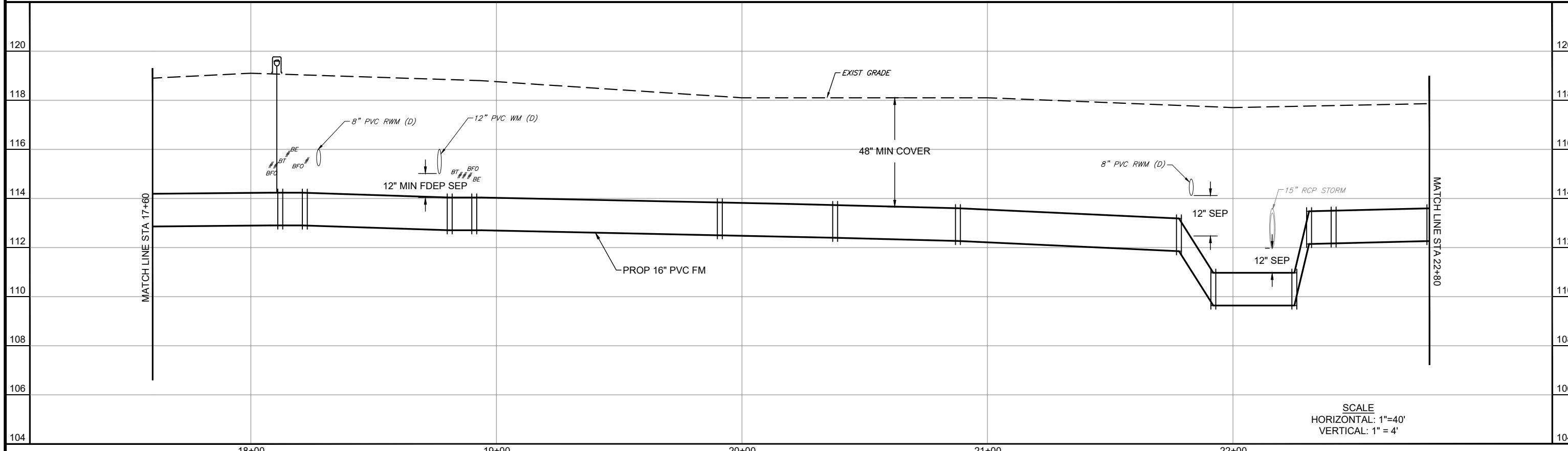
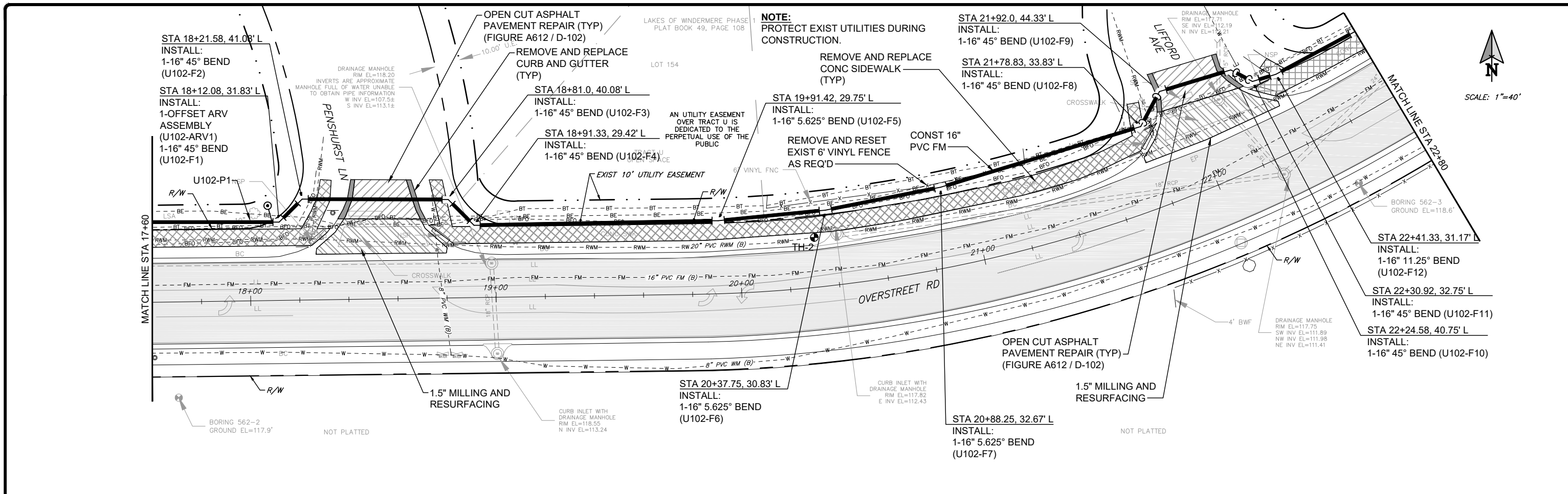
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL 32803
TEL: (407) 255-0000
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

OVERSTREET ROAD PLAN AND PROFILE
STA 11+40 TO STA 17+60

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-101
FLORIDA REGISTRATION No. 58685	DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 16 OF 33



No.	REVISIONS	BY	DATE

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AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

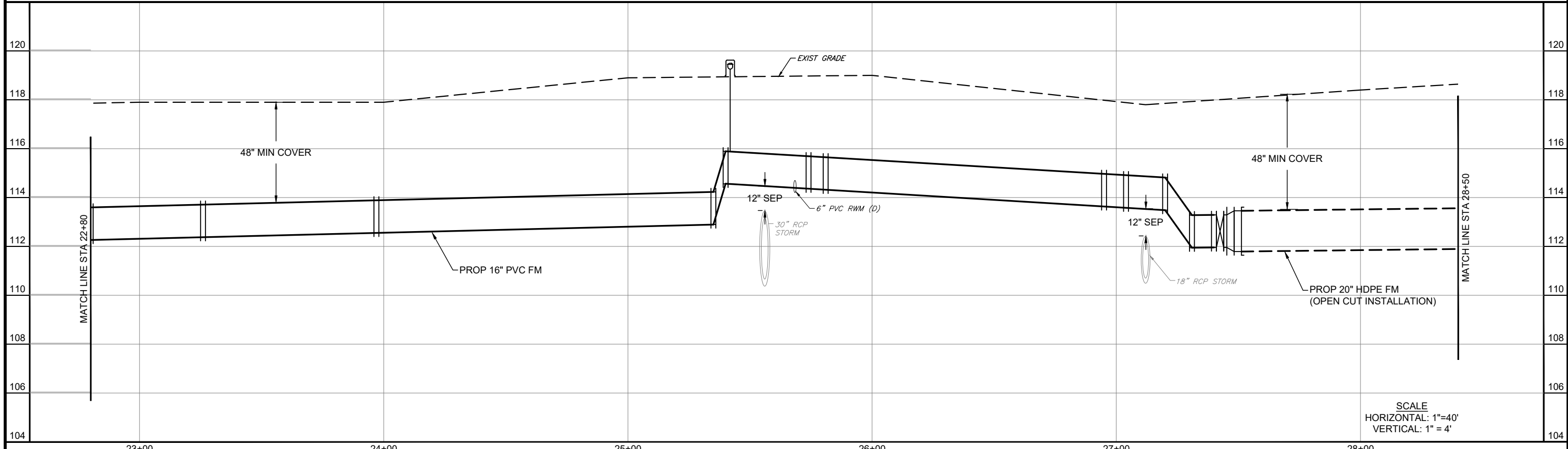
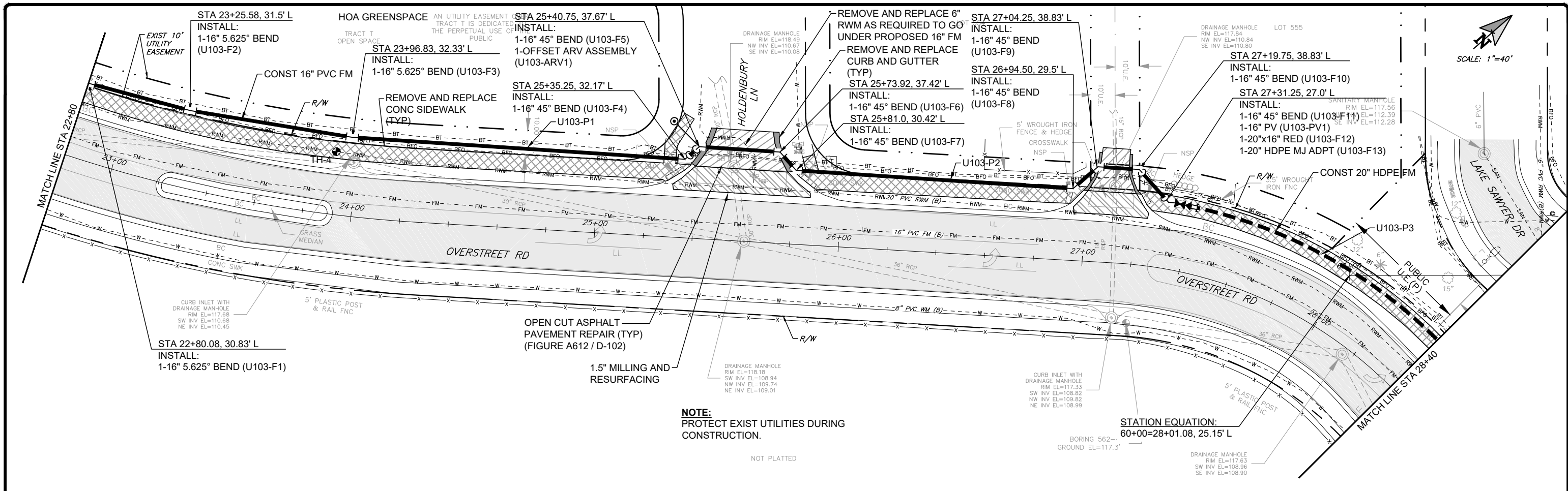
SCALE: AS NOTED

ORANGE COUNTY
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL 32803
TEL: (407) 255-2000
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
OVERSTREET ROAD PLAN AND PROFILE
STA 17+60 TO STA 22+80

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-102
FLORIDA REGISTRATION No. 58685	DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 17 OF 33



No.	REVISIONS	BY	DATE
1	BID SET	CKM	10-09-2017

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

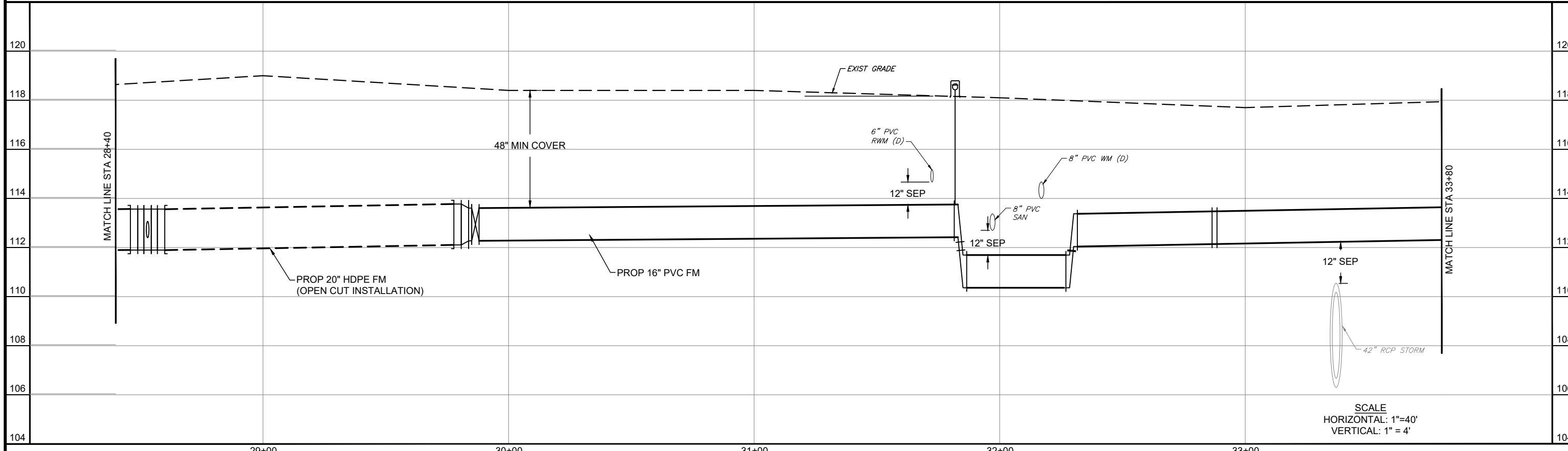
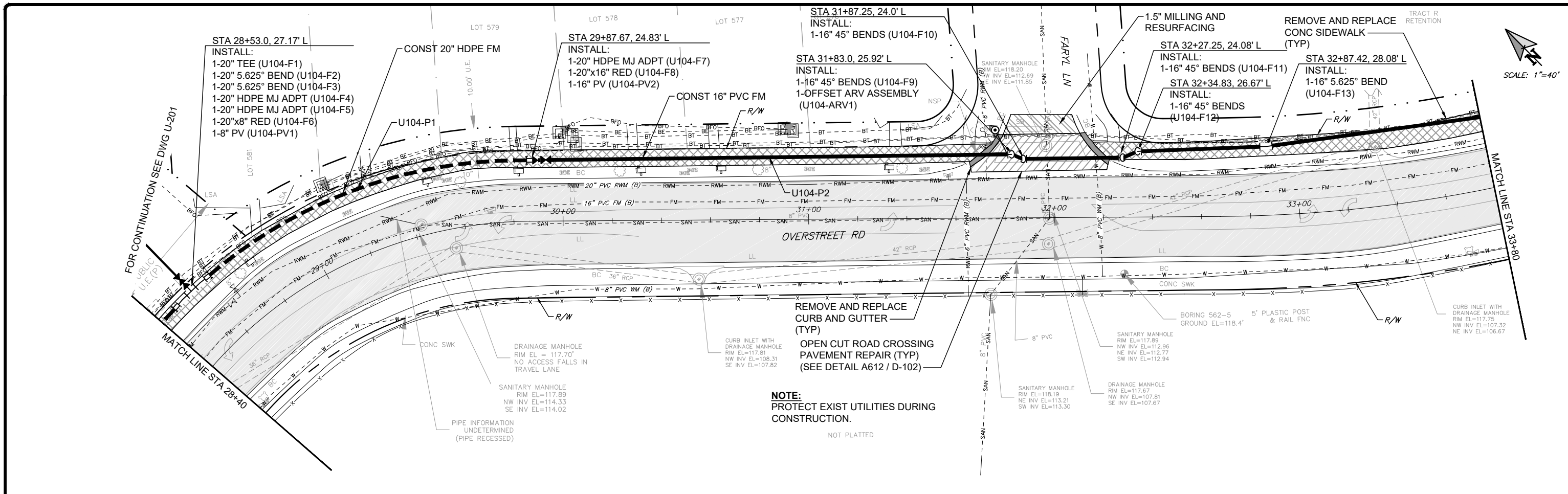
SCALE: AS NOTED

ORANGE COUNTY
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL 32803
P.L.L.C. (ORANGE COUNTY)
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
OVERSTREET ROAD PLAN AND PROFILE
STA 22+80 TO STA 28+40

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-103
FLORIDA REGISTRATION No. 58685	DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 18 OF 33



No.	REVISIONS	BY	DATE

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(IF NOT SCALE ACCORDINGLY)

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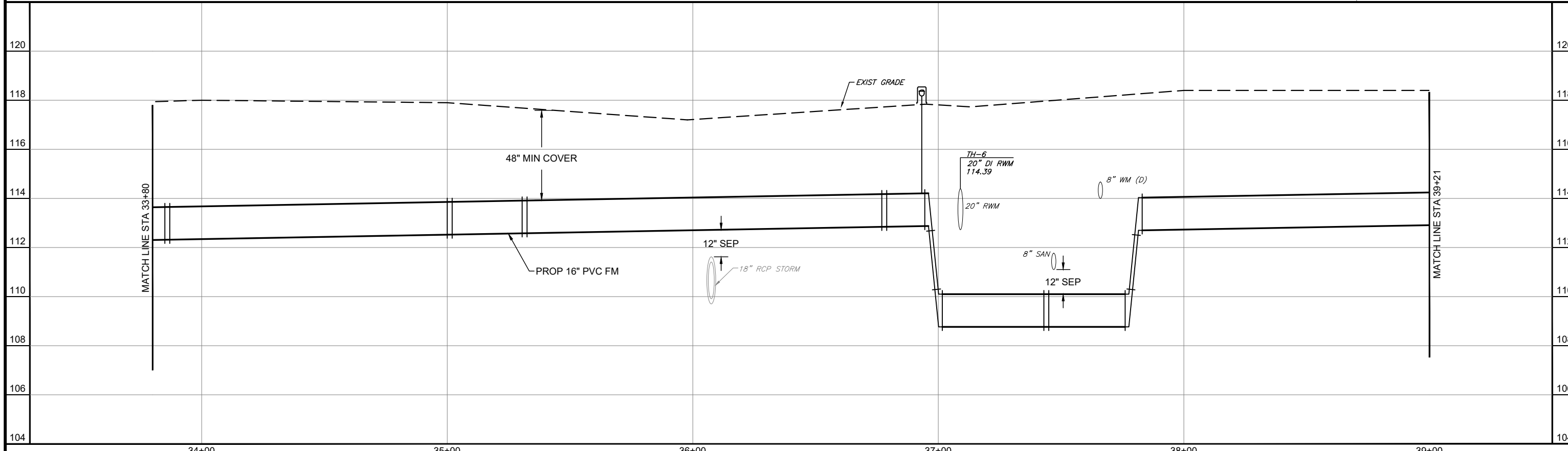
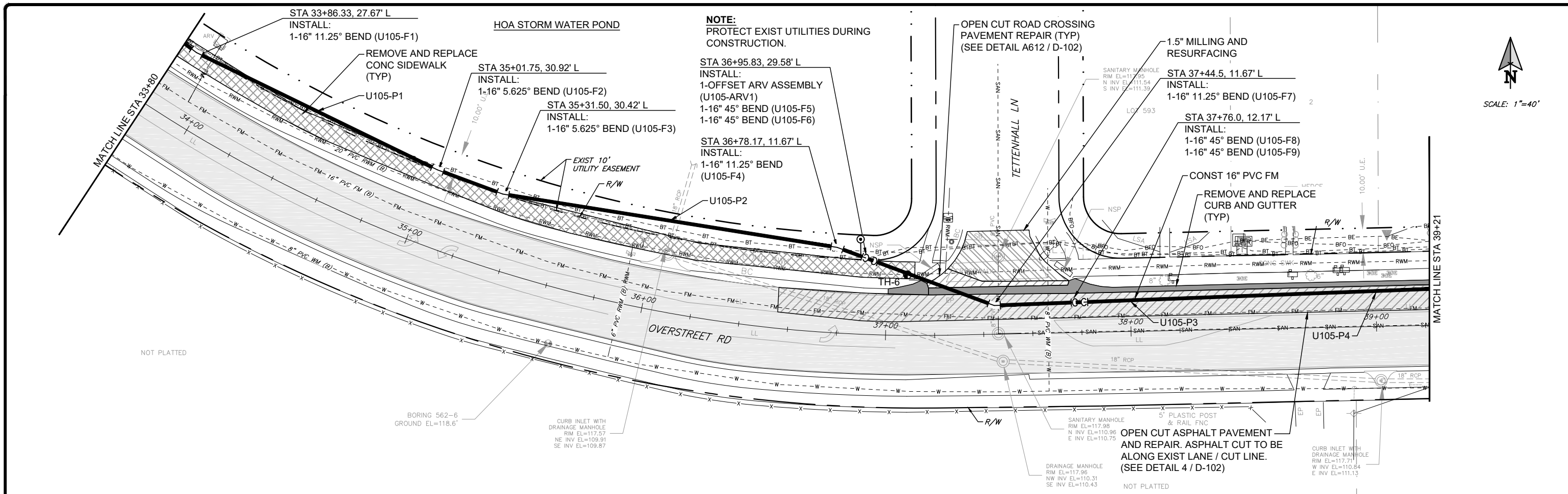
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL 32803
TEL: (407) 255-3000 FAX: (407) 255-3000
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

OVERSTREET ROAD PLAN AND PROFILE
STA 28+40 TO STA 33+80

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-104
FLORIDA REGISTRATION No. 58685	DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 19 OF 33



No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

SCALE: AS NOTED

ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

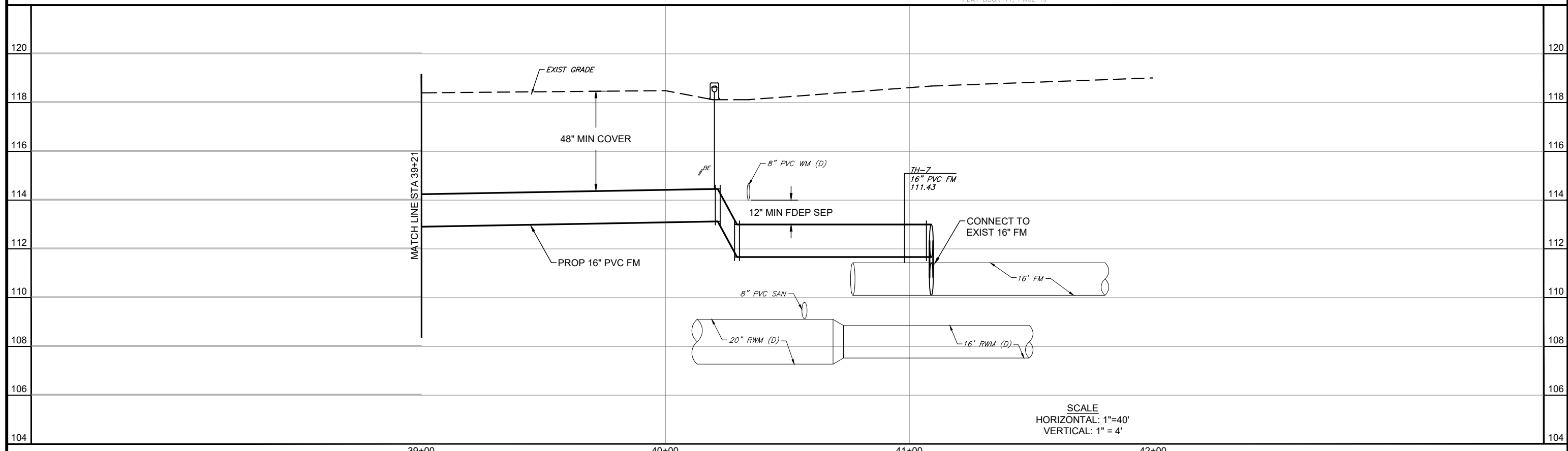
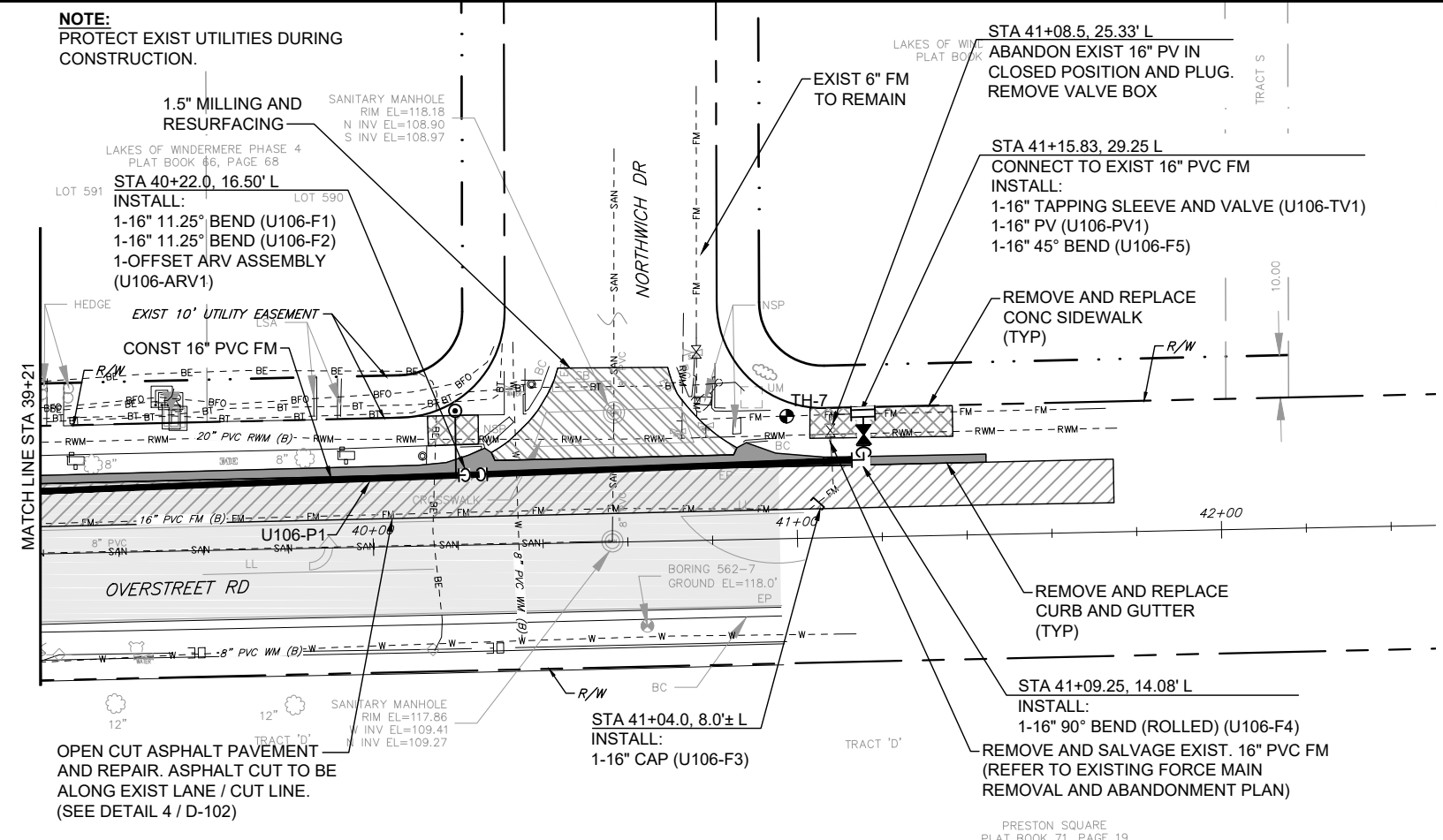
BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL, 32803
TEL: (407) 246-0000 FAX: (407) 246-0001
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

OVERSTREET ROAD PLAN AND PROFILE
STA 33+80 TO STA 39+21

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09	DRAWING No. U-105
FLORIDA REGISTRATION No. 58685	PROJECT DATE: OCT 2017	DESIGNED BY: CKM
	DRAWN BY: JAB	CHECKED BY: JPJ
	DRAWING FILE: SEE MARGIN	20 SHEET OF 33

NOTE:
PROTECT EXIST UTILITIES DURING CONSTRUCTION.



SCALE
HORIZONTAL: 1"=40'
VERTICAL: 1"=4'

No.	REVISIONS	BY	DATE

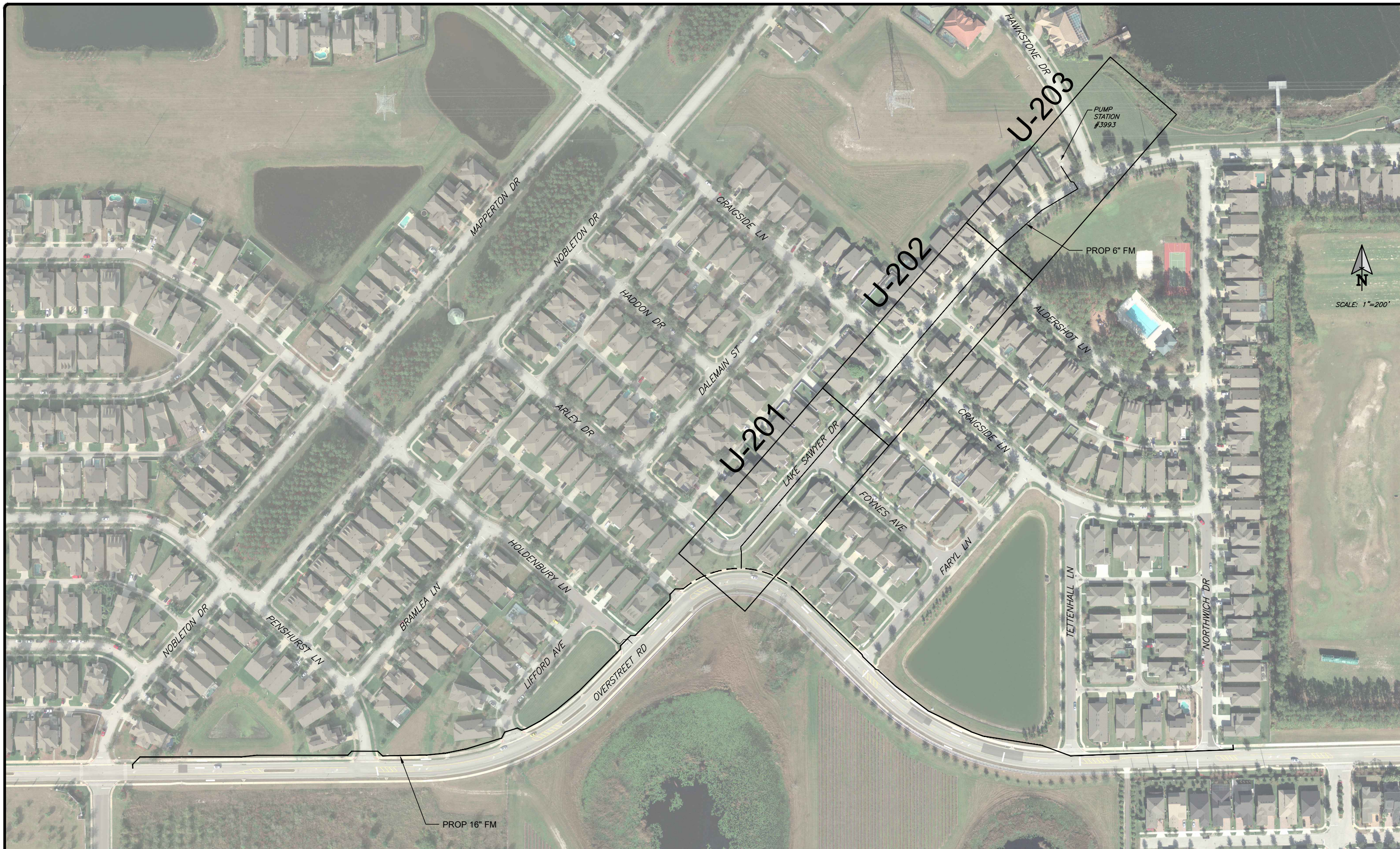
LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)
SCALE: AS NOTED

ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

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1250 E. Hillcrest Street, Orlando, FL, 32803
TEL: (407) 253-0000
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FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
OVERSTREET ROAD PLAN AND PROFILE
STA 39+21 TO STA 42+00

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017 DESIGNED BY: CKM DRAWN BY: JAB	DRAWING No. U-106
FLORIDA REGISTRATION No. 58685	CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 21 OF 33



SCALE: 1"=200'

No.	REVISIONS	BY	DATE
BID SET		CKM	10-09-2017

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)
SCALE: AS NOTED

ORANGE COUNTY GOVERNMENT

ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

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1250 E. Hillcrest Street, Orlando, FL 32803
TEL: 407-933-3333
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

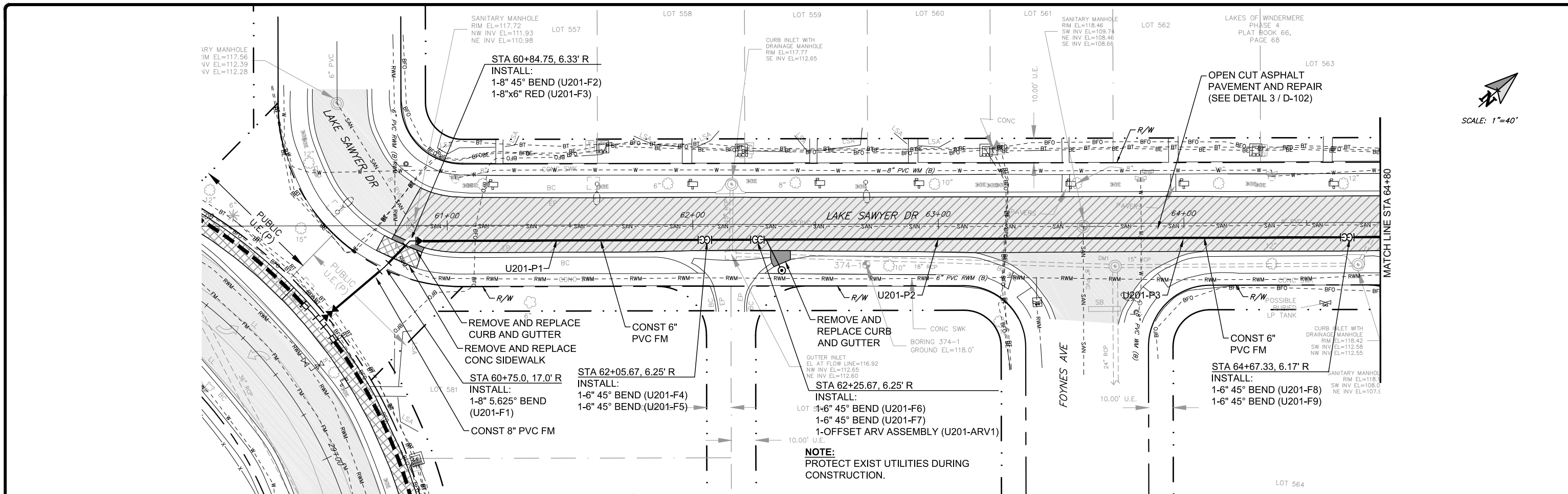
LAKE SAWYER DRIVE ALIGNMENT KEY MAP

DESIGN ENGINEER
CYNTHIA K. MALONE, P.E.

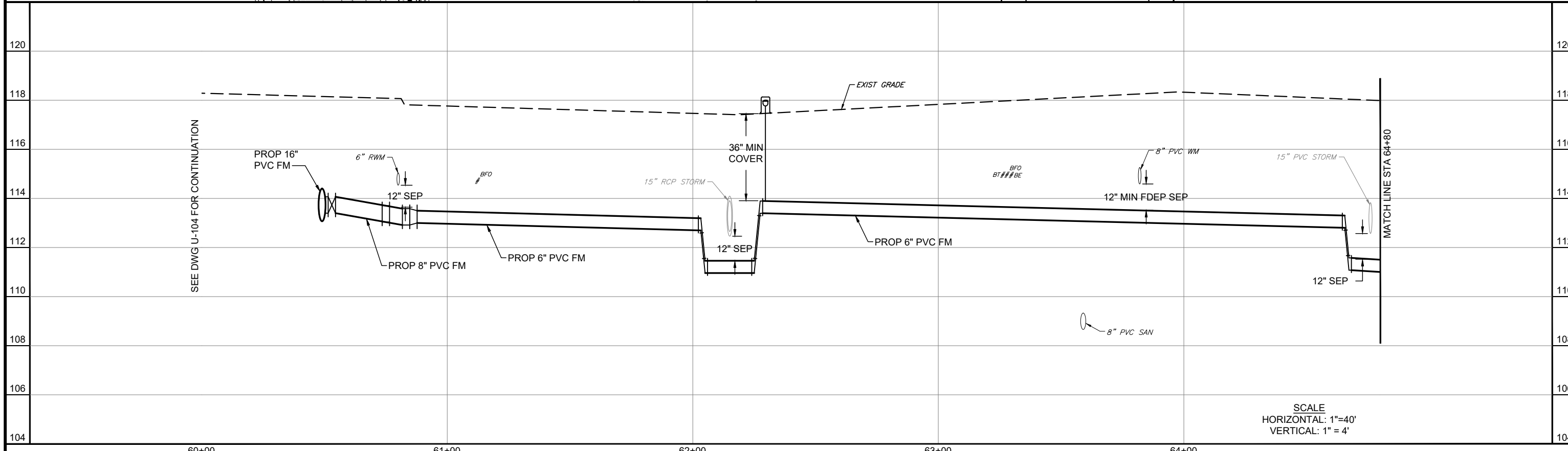
PROJECT No.: 2014-28-09
PROJECT DATE: OCT 2017
DESIGNED BY: CKM
DRAWN BY: JAB
CHECKED BY: JPJ
DRAWING FILE: SEE MARGIN

FLORIDA REGISTRATION No.
58685

DRAWING No.
U-200
SHEET
22 OF 33



SCALE: 1"=40'



No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

SCALE: AS NOTED

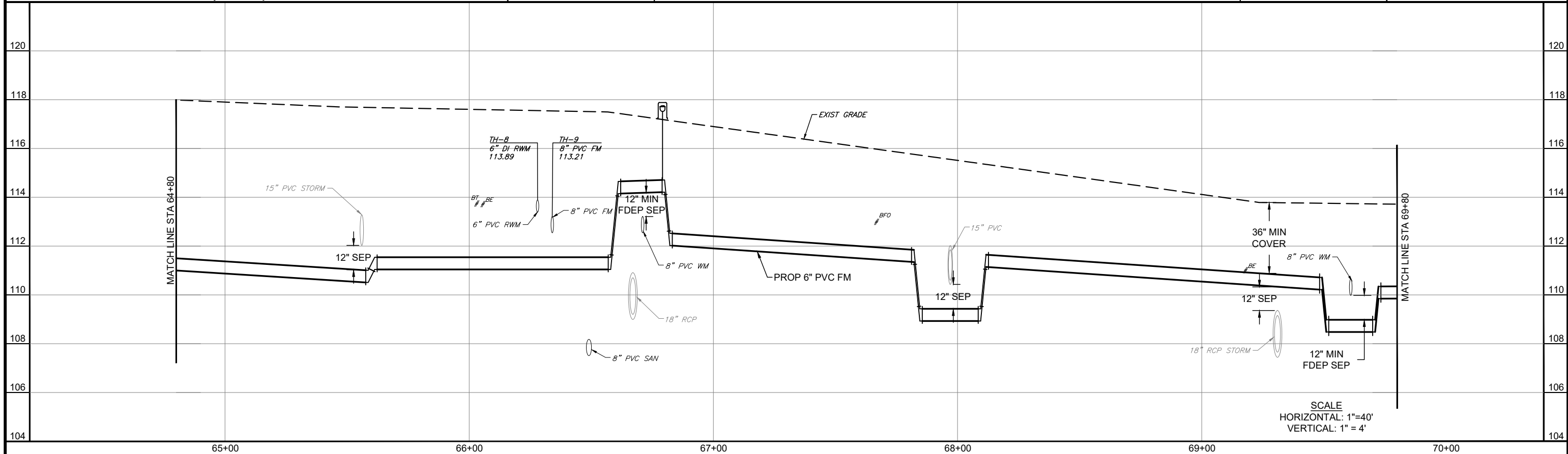
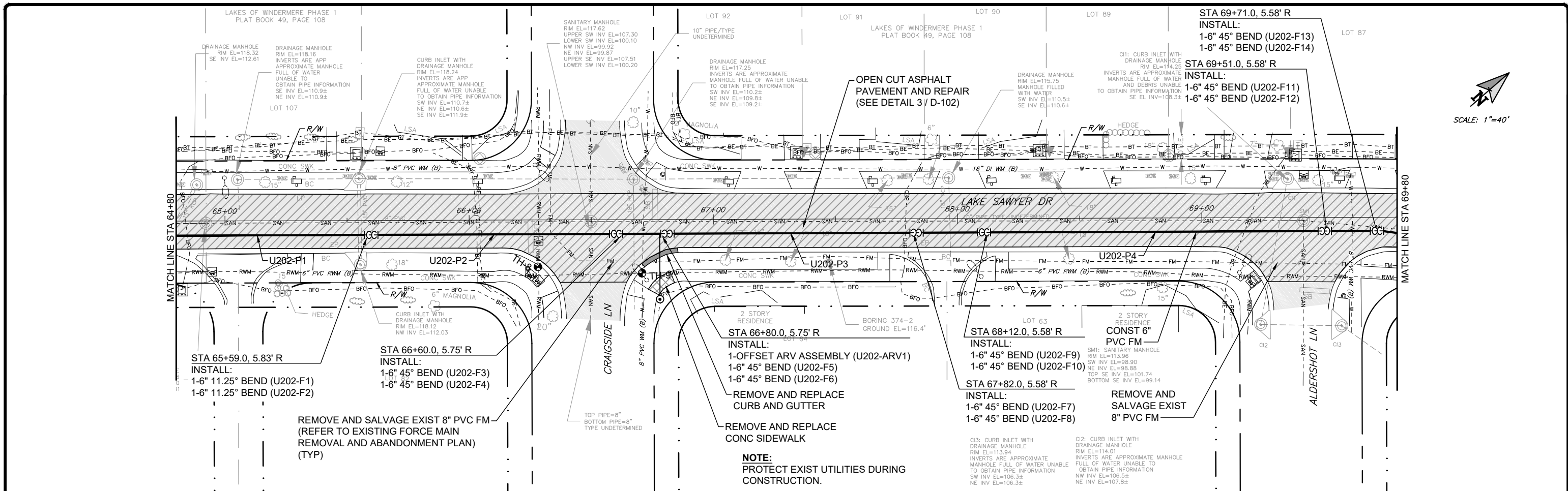
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL 32803
TEL: (407) 255-0000
ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

LAKE SAWYER DRIVE PLAN AND PROFILE
STA 60+00 TO STA 64+80

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-201
FLORIDA REGISTRATION No. 58685	DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 23 OF 33



No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

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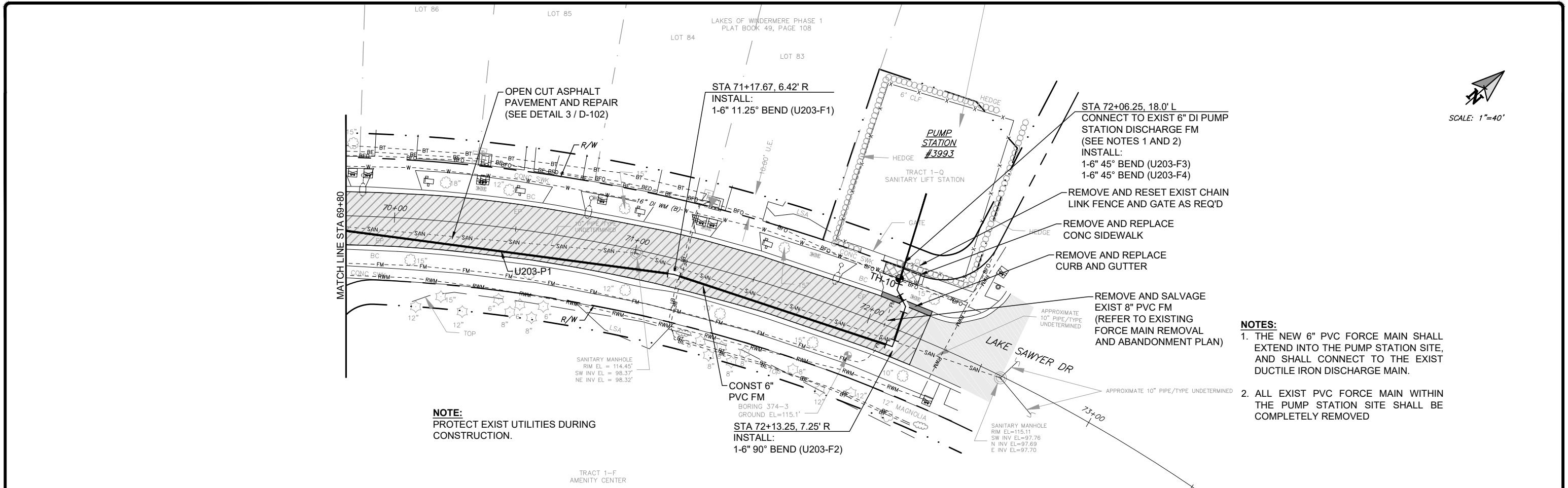
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1250 E. Hillcrest Street, Orlando, FL 32803
FLORIDA REGISTRATION NO. 12000
ENGINEERING BUSINESS No. 6899

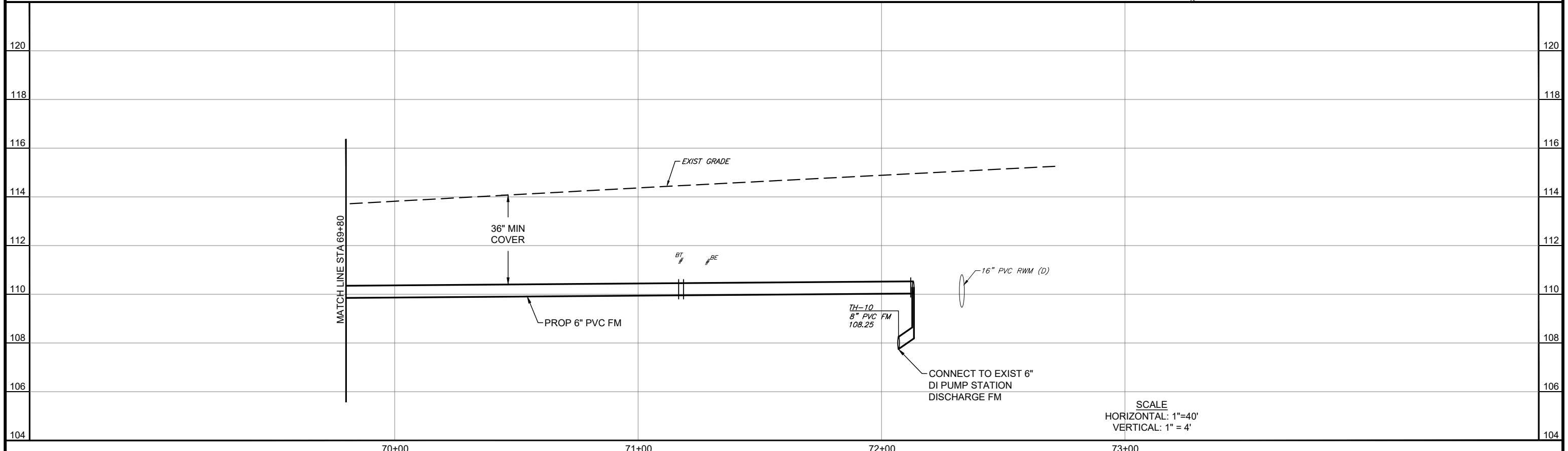
FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

LAKE SAWYER DRIVE PLAN AND PROFILE
STA 64+80 TO STA 69+80

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-202
FLORIDA REGISTRATION No. 58685	DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 24 OF 33



- NOTES:**
1. THE NEW 6" PVC FORCE MAIN SHALL EXTEND INTO THE PUMP STATION SITE, AND SHALL CONNECT TO THE EXIST DUCTILE IRON DISCHARGE MAIN.
 2. ALL EXIST PVC FORCE MAIN WITHIN THE PUMP STATION SITE SHALL BE COMPLETELY REMOVED



<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>No.</th> <th>REVISIONS</th> <th>BY</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	No.	REVISIONS	BY	DATE													<p>LINE IS 1 INCH AT FULL SIZE = 11X17 (IF NOT SCALE ACCORDINGLY)</p> <p>SCALE: AS NOTED</p>	<p>ORANGE COUNTY UTILITIES 9150 CURRY FORD ROAD ORLANDO, FLORIDA 32825</p>	<p>BFA Environmental Consultants Barnes, Ferland and Associates, Inc. 1250 E. Hillcrest Street, Orlando, FL, 32803 TEL: (407) 246-5000 ENGINEERING BUSINESS No. 6899</p>	<p>FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS</p> <p>LAKE SAWYER DRIVE PLAN AND PROFILE STA 69+80 TO STA 73+00</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>DESIGN ENGINEER CYNTHIA K. MALONE, P.E.</td> <td>PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017</td> <td>DRAWING No. U-203</td> </tr> <tr> <td>FLORIDA REGISTRATION No. 58685</td> <td>DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN</td> <td>SHEET 25 OF 33</td> </tr> </table>	DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-203	FLORIDA REGISTRATION No. 58685	DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 25 OF 33
No.	REVISIONS	BY	DATE																								
DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-203																									
FLORIDA REGISTRATION No. 58685	DESIGNED BY: CKM DRAWN BY: JAB CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 25 OF 33																									

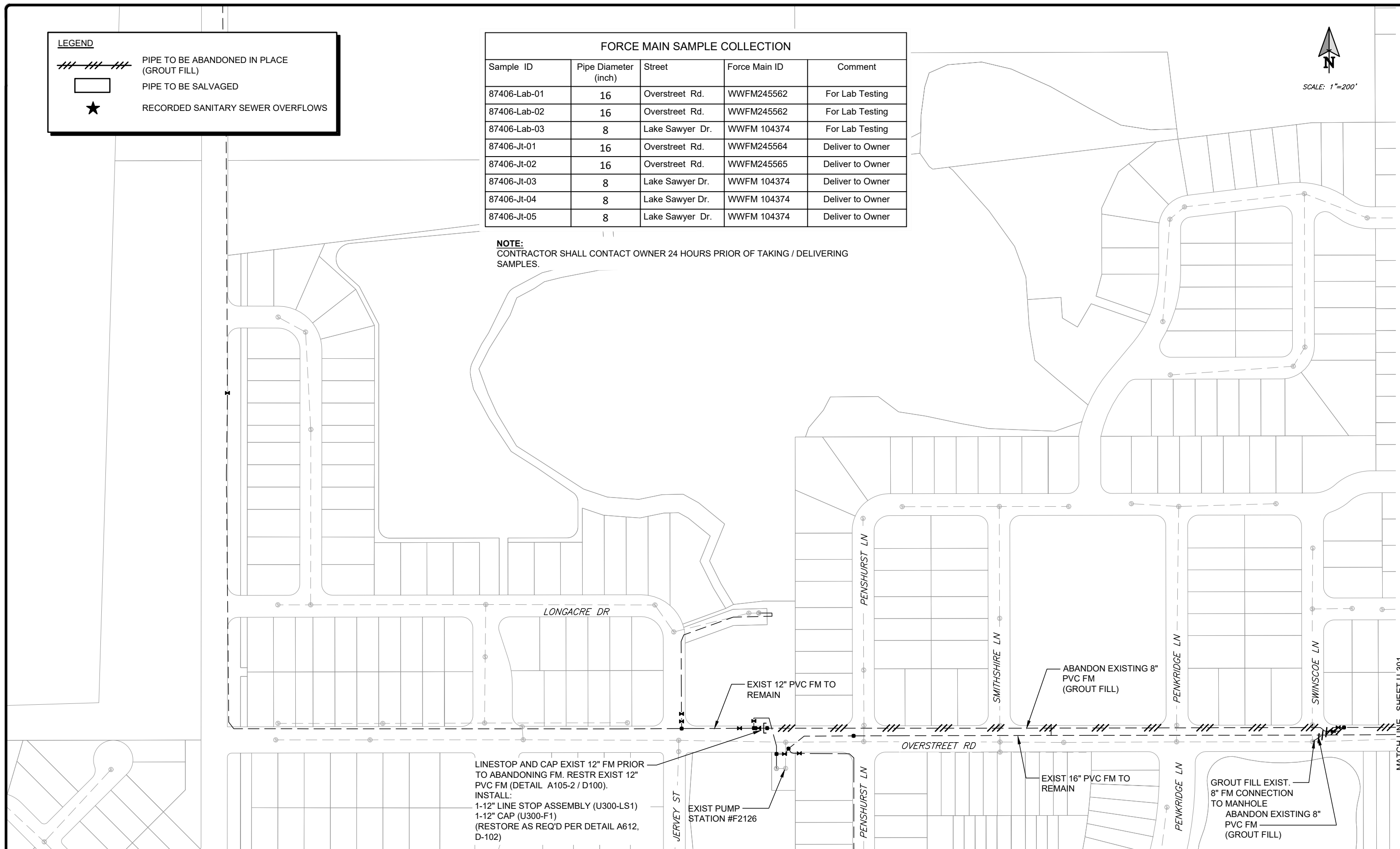
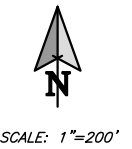
LEGEND

- /// /// /// PIPE TO BE ABANDONED IN PLACE (GROUT FILL)
- PIPE TO BE SALVAGED
- ★ RECORDED SANITARY SEWER OVERFLOWS

FORCE MAIN SAMPLE COLLECTION

Sample ID	Pipe Diameter (inch)	Street	Force Main ID	Comment
87406-Lab-01	16	Overstreet Rd.	WWFM245562	For Lab Testing
87406-Lab-02	16	Overstreet Rd.	WWFM245562	For Lab Testing
87406-Lab-03	8	Lake Sawyer Dr.	WWFM 104374	For Lab Testing
87406-Jt-01	16	Overstreet Rd.	WWFM245564	Deliver to Owner
87406-Jt-02	16	Overstreet Rd.	WWFM245565	Deliver to Owner
87406-Jt-03	8	Lake Sawyer Dr.	WWFM 104374	Deliver to Owner
87406-Jt-04	8	Lake Sawyer Dr.	WWFM 104374	Deliver to Owner
87406-Jt-05	8	Lake Sawyer Dr.	WWFM 104374	Deliver to Owner

NOTE:
CONTRACTOR SHALL CONTACT OWNER 24 HOURS PRIOR OF TAKING / DELIVERING SAMPLES.



LINESTOP AND CAP EXIST 12" FM PRIOR TO ABANDONING FM. RESTR EXIST 12" PVC FM (DETAIL A105-2 / D100).
INSTALL:
1-12" LINE STOP ASSEMBLY (U300-LS1)
1-12" CAP (U300-F1)
(RESTORE AS REQ'D PER DETAIL A612, D-102)

EXIST PUMP STATION #F2126

ABANDON EXISTING 8" PVC FM (GROUT FILL)

EXIST 16" PVC FM TO REMAIN

GROUT FILL EXIST. 8" FM CONNECTION TO MANHOLE ABANDON EXISTING 8" PVC FM (GROUT FILL)

No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)
SCALE: AS NOTED

ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
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1250 E. Hillcrest Street, Orlando, FL, 32803
TEL: (407) 243-3333
ENGINEERING BUSINESS No. 6899

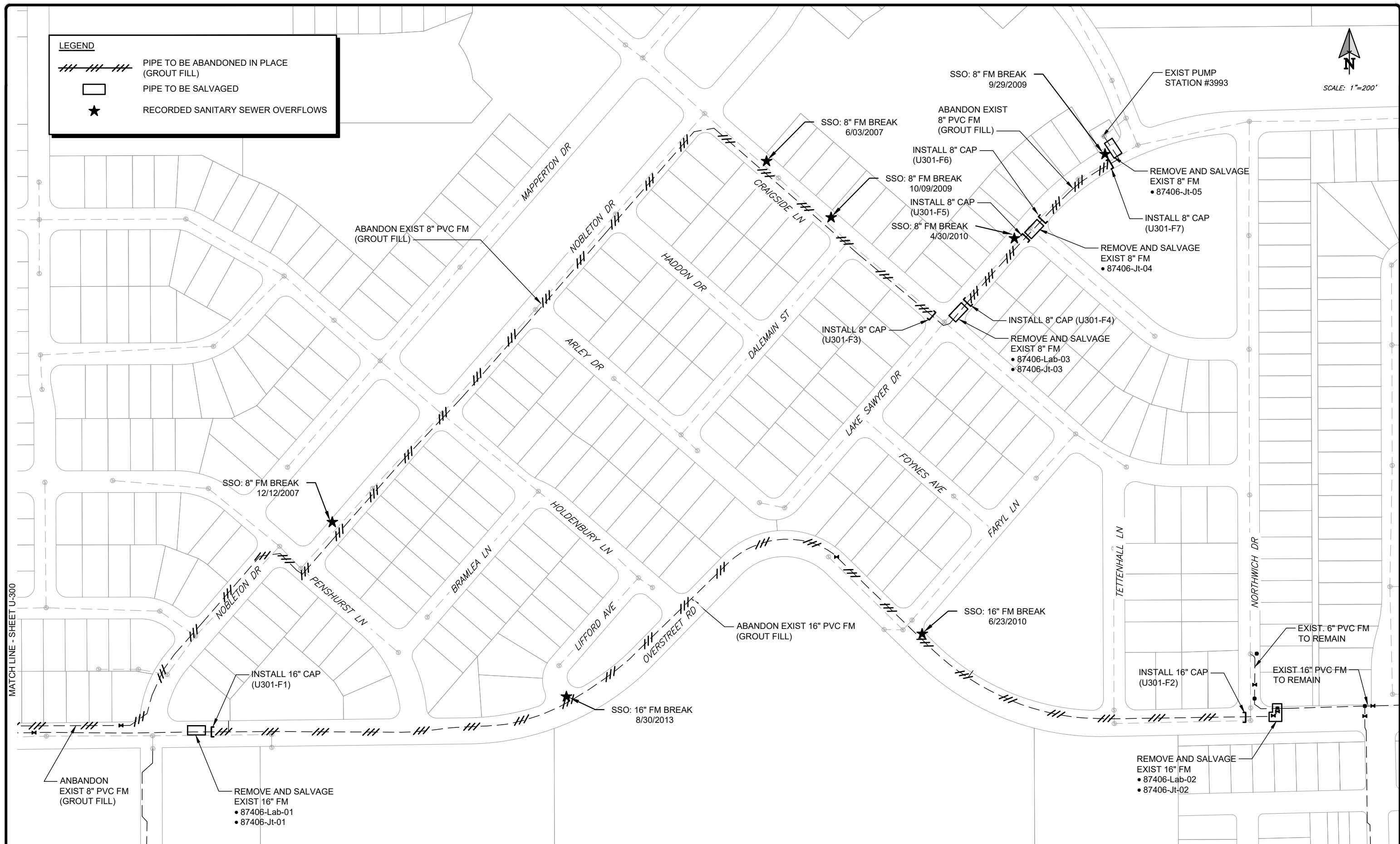
FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
EXISTING FORCE MAIN REMOVAL AND ABANDONMENT PLAN

DESIGN ENGINEER CYNTHIA K. MALONE, P.E.	PROJECT No.: 2014-28-09 PROJECT DATE: OCT 2017	DRAWING No. U-300
FLORIDA REGISTRATION No. 58685	DESIGNED BY: CKM DRAWN BY: JPJ CHECKED BY: JPJ DRAWING FILE: SEE MARGIN	SHEET 26 OF 33

LEGEND

- /// /// /// PIPE TO BE ABANDONED IN PLACE (GROUT FILL)
- PIPE TO BE SALVAGED
- ★ RECORDED SANITARY SEWER OVERFLOWS

SCALE: 1"=200'



No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
(IF NOT SCALE ACCORDINGLY)

SCALE: AS NOTED

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9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

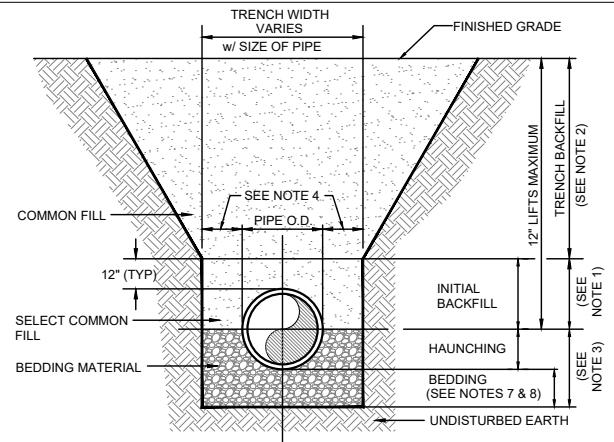
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ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

EXISTING FORCE MAIN REMOVAL AND ABANDONMENT PLAN

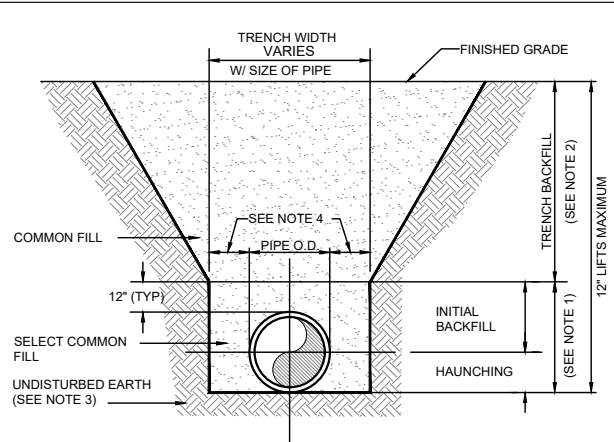
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FLORIDA REGISTRATION No. 58885	PROJECT DATE: OCT 2017	U-301
	DESIGNED BY: CKM	SHEET 27 OF 33
	DRAWN BY: JPJ	
	CHECKED BY: JPJ	
	DRAWING FILE: SEE MARGIN	

DATE: July 2014 **BEDDING AND TRENCHING - TYPE A** **FIGURE A101**



- NOTES:
- INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 - TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 - TYPE A BEDDING MATERIAL SHALL CONFORM TO FDOT NO. 57 AGGREGATE.
 - 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
 - WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
 - ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
 - BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER UP TO 12" AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
 - DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. UTILITIES SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION.
 - FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RW UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

DATE: July 2014 **BEDDING AND TRENCHING - TYPE B** **FIGURE A102**



- NOTES:
- INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 - TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 - PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE A BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
 - 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
 - WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
 - ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
 - FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

DATE: July 2014 **SEPARATION REQUIREMENTS FOR WATER, WASTEWATER AND RECLAIMED WATER MAINS** **FIGURE A116**

PROPOSED UTILITY	HORIZONTAL & VERTICAL SEPARATION REQUIREMENTS							
	POTABLE WATER		RECLAIMED WATER		WASTEWATER (GRAVITY & FM)		STORM SEWER	
	HORIZ	VERT	HORIZ	VERT	HORIZ	VERT	HORIZ	VERT
POTABLE WATER	3' NOTE 1	12"	3' NOTE 1 & 3	12" NOTE 3	6' NOTE 3	12" NOTE 3	3' NOTE 1 & 3	12"/18" NOTE 2 & 3
RECLAIMED WATER	3' NOTE 1 & 3	12" NOTE 3	3' NOTE 1	12"	3' NOTE 1	12"	3' NOTE 1	12"/18" NOTE 2
WASTEWATER (GRAVITY AND FM)	6' NOTE 3	12" NOTE 3	3' NOTE 1	12"	3' NOTE 1	12"	3' NOTE 1	12"/18" NOTE 2
RIGHT OF WAY	3' NOTE 1	N/A	3' NOTE 1	N/A	3' NOTE 1	N/A	N/A	N/A

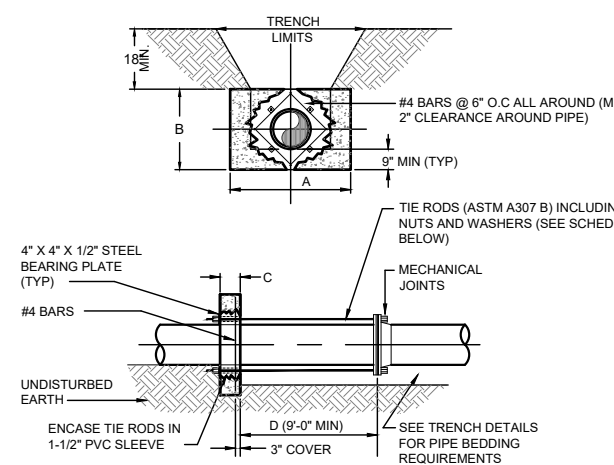
- NOTES:
- THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. THREE FEET OF HORIZONTAL SEPARATION IS THE MINIMUM FOR PIPES WITH THREE FEET OF COVER. FOR PIPES INSTALLED AT GREATER DEPTHS, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
 - THE 18-INCH SEPARATION REQUIREMENT APPLIES WHEN THE STORM PIPE CROSSES ABOVE THE OCU MAIN, AND WHEN THE STORM PIPE HAS A DIAMETER EQUAL TO OR GREATER THAN 24 INCHES. OTHERWISE, THE REQUIRED SEPARATION IS 12 INCHES.
 - THIS SEPARATION REQUIREMENT COMPLIES WITH MINIMUM FDEP SEPARATION REQUIREMENTS OUTLINED IN 62-555.314, FAC. VARIANCES FROM THE FDEP REQUIREMENTS MUST COMPLY WITH 62-555.314(5), FAC AND MUST BE APPROVED INDIVIDUALLY BY BOTH FDEP AND OCU.
 - DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
 - NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURE.

DATE: July 2014 **RESTRAINED PIPE TABLE WASTEWATER FORCE MAINS** **FIGURE A104-2**

TYPE	MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)									
	PVC PIPE SIZE									
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"
90° BEND	18	24	31	38	43	55	65	75	88	100
45° BEND	8	10	13	15	18	23	26	31	38	43
22-1/2° BEND	4	5	6	8	9	11	13	15	18	20
11-1/4° BEND	2	3	4	5	6	8	9	10	11	13
PLUG OR BRANCH OF TEE	38	50	65	79	90	117	139	163	194	223
VALVE	19	25	32	40	45	59	70	82	98	112
REDUCER	VARIES BY SIZE; TO BE DETERMINED BY THE DESIGN ENGINEER.									

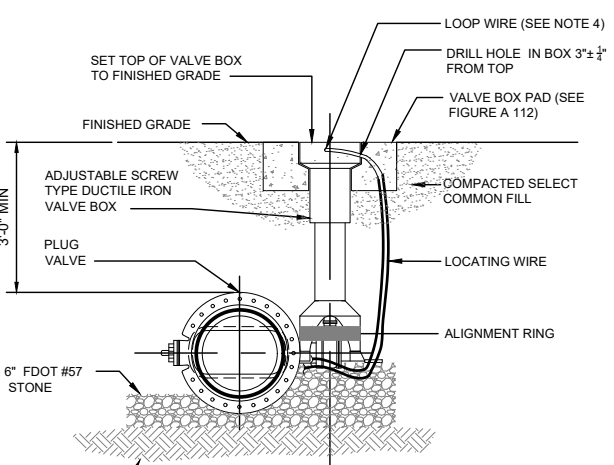
- NOTES:
- FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
 - INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.
 - WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE LONGEST RESTRAINT DISTANCE.
 - ALL INLINE VALVES SHALL BE RESTRAINED.
 - WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.
 - LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE ASSUMPTIONS SHOWN BELOW:
- WORKING PRESSURE: 100 PSI
 SOIL DESIGNATION: SM (SAND SILT)
 LAYING CONDITIONS: 3
 DEPTH OF COVER: 3 FT
 SAFETY FACTOR: 1.5
 CONVERSION FACTOR FOR PVC PIPE: 1.25
- THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC PARAMETERS, SUCH AS SOIL DESIGNATIONS AND LAYING CONDITIONS.

DATE: July 2014 **THRUST COLLAR (100 PSI) WASTEWATER FORCE MAINS** **FIGURE A105-2**



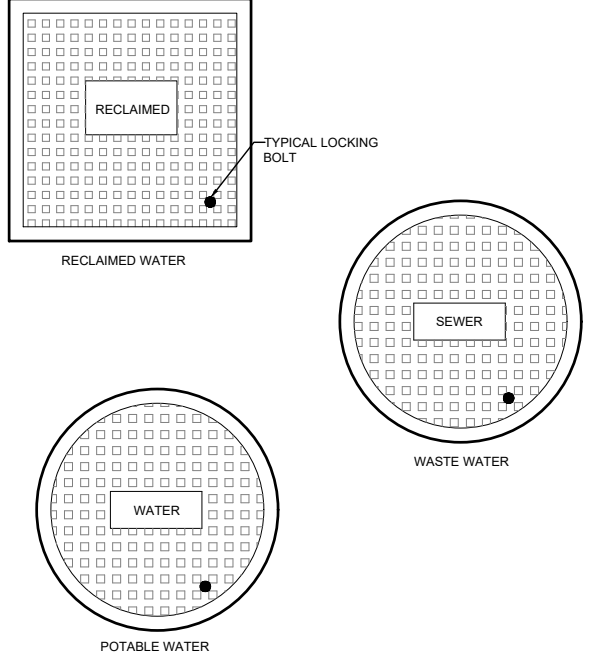
- NOTES:
- ADDITIONAL REINFORCEMENTS SHALL BE AS SPECIFIED BY THE ENGINEER.
 - MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE SHALL BE 3000 PSI.
 - BEDDING, BACKFILL, AND COMPACTION SHALL BE AS SPECIFIED ELSEWHERE IN THE STANDARD DRAWINGS.
 - ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACKFILL.
 - NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL AND THE THRUST COLLAR.
 - DESIGN PRESSURE: 100 PSI.
 - REQUIRED FOR LINE STOPS.
- | PIPE SIZE (INCHES) | DIMENSIONS (FT.) | | | | TIE RODS REQ'D | |
|--------------------|------------------|-----|-----|-----|----------------|-----|
| | A | B | C | D | DIA. | NO. |
| 6 | 2.0 | 2.0 | 1.0 | 3/4 | 3/4 | 2 |
| 8 | 2.5 | 2.5 | 1.0 | 3/4 | 3/4 | 2 |
| 10 | 3.0 | 2.5 | 1.0 | 3/4 | 3/4 | 4 |
| 12 | 4.0 | 3.0 | 1.0 | 3/4 | 3/4 | 4 |
| 16 | 5.5 | 3.5 | 1.5 | 3/4 | 3/4 | 4 |
| 20 | 7.5 | 4.0 | 1.5 | 3/4 | 3/4 | 4 |
| 24 | 8.5 | 5.0 | 1.5 | 3/4 | 3/4 | 6 |
- NOTE: THRUST COLLAR AREAS TO BE COMPUTED ON BASIS OF 2000 LBS/SF SOIL RESTRAINT BEARING.

DATE: July 2014 **PLUG VALVE AND BOX WASTEWATER** **FIGURE A109**



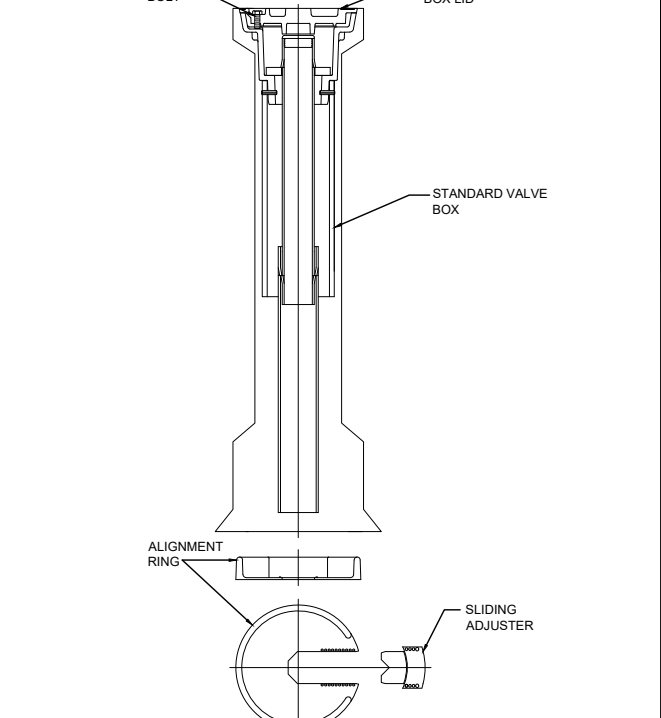
- NOTES:
- PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
 - THE VALVE ACTUATING NUT SHALL BE EXTENDED TO BE WITHIN 3" OF FINISHED GRADE.
 - PROVIDE A PLASTIC DEBRIS SHIELD / ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
 - LOCATING WIRE SHALL BE CONTINUOUS WITH NO SPLICES AND SHALL EXTEND 12" ABOVE TOP OF COLLAR. WIRE SHALL BE COLOR CODED TO MATCH THE UTILITY INSTALLED.
 - FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO ALLOW FOR FUTURE BOX ADJUSTMENTS.
 - REFER TO FIGURE A111 FOR INSTALLATIONS AT A DEPTH OF 6' OR GREATER.

DATE: July 2014 **TYPICAL VALVE BOX COVER** **FIGURE A110**



- NOTE:
- LOCKING LIDS ARE REQUIRED ON ALL VALVE BOXES.

DATE: July 2014 **SEALED VALVE BOX, ADJUSTABLE** **FIGURE A111**



- NOTES:
- FOR ALL MAINS 6' DEEP OR GREATER.
 - FOR MAINS 16" IN DIAMETER OR GREATER REGARDLESS OF DEPTH.

No.	REVISIONS	BY	DATE
BID SET		CKM	10-09-2017

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 (IF NOT SCALE ACCORDINGLY)
 SCALE: AS NOTED

ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825

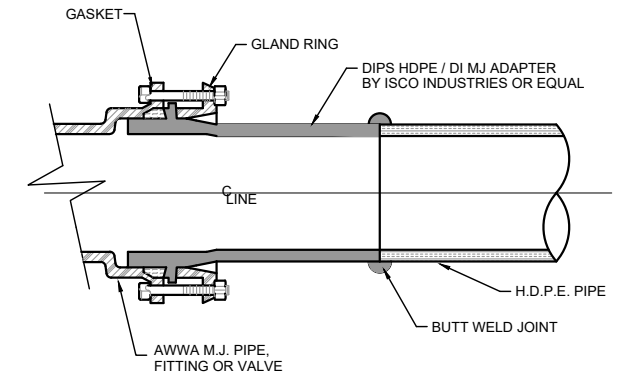
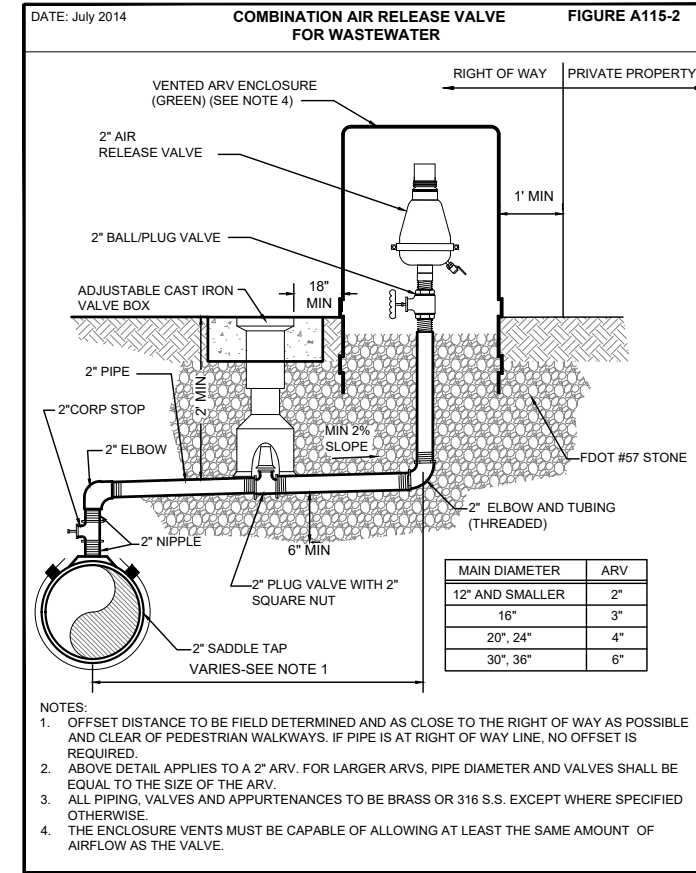
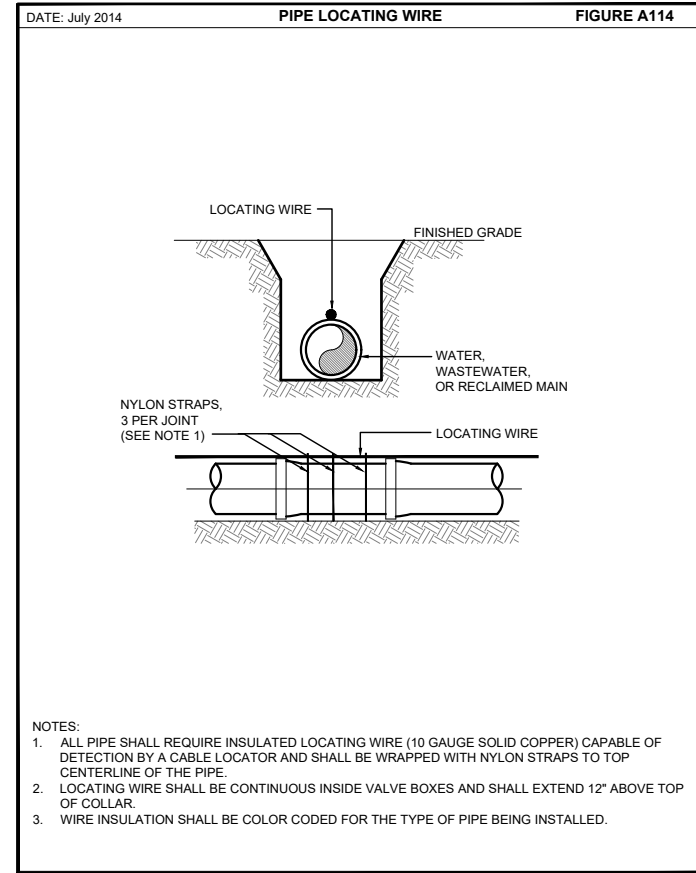
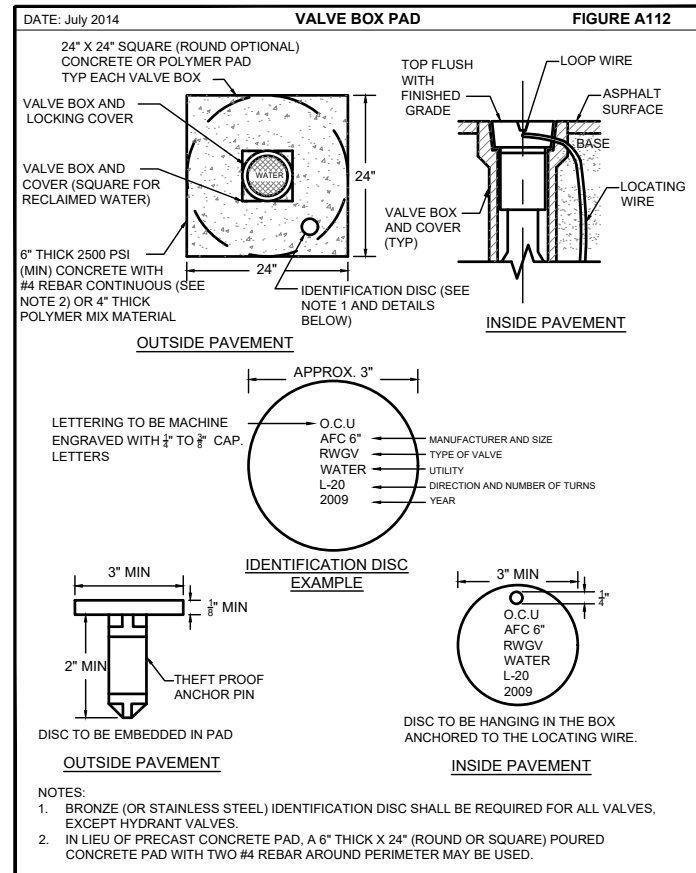
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 1250 E. Hillcrest Street, Orlando, FL, 32803
 ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
CONSTRUCTION DETAILS

DESIGN ENGINEER
 CYNTHIA K. MALONE, P.E.
 FLORIDA REGISTRATION No.
 58685

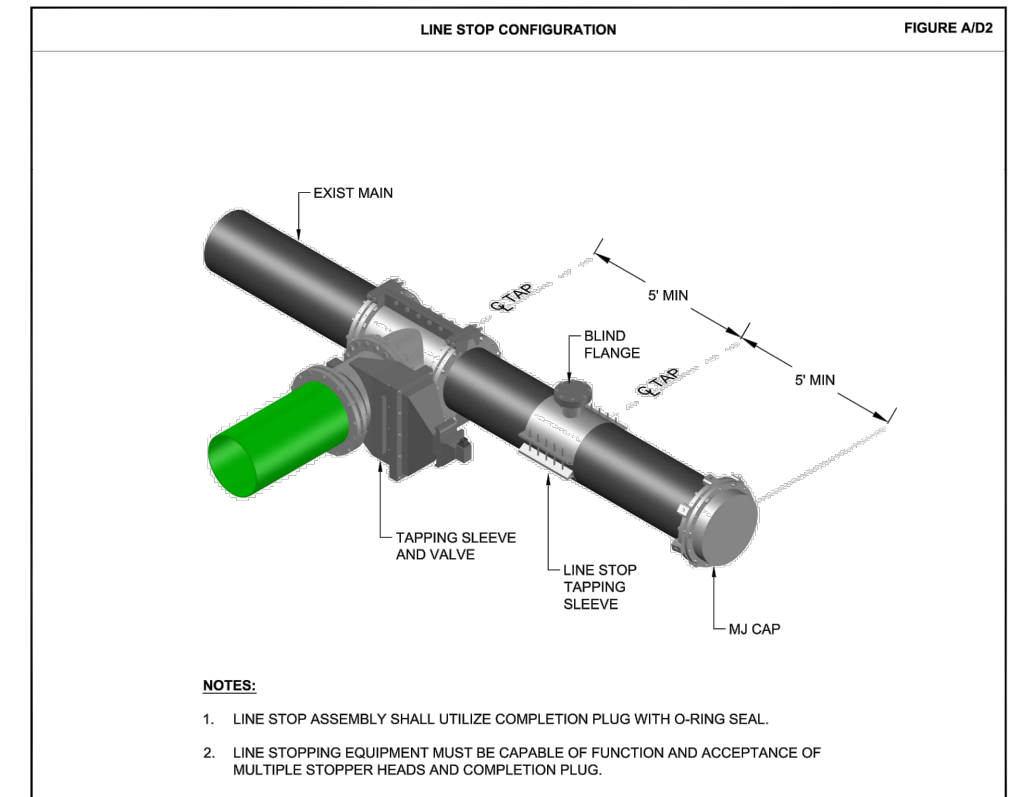
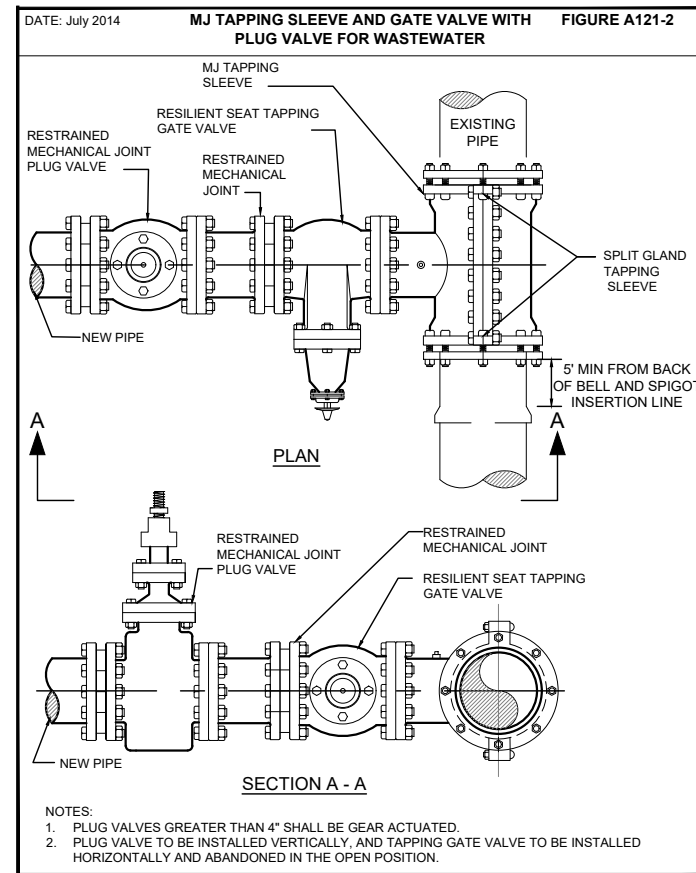
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 CHECKED BY: JPJ
 DRAWING FILE: SEE MARGIN

DRAWING No.
D-100
 SHEET
 28 OF 33



- NOTES:
- A RESTRAINED MJ ADAPTER SHALL BE REQUIRED AT LOCATIONS WHERE POLYETHYLENE PIPE IS CONNECTED TO DUCTILE IRON PIPE, FITTINGS OR VALVES.
 - WHERE POLYETHYLENE PIPE CONNECTS TO BUTTERFLY VALVES, THE M.J. ADAPTER SHALL BE DESIGNED TO ALLOW THE BUTTERFLY VALVE TO OPEN AND CLOSE WITHOUT INTERFERENCE FROM THE INSIDE WALL OF THE POLYETHYLENE PIPE.

HDPE MECHANICAL JOINT ADAPTER
N.T.S.



No.	REVISIONS	BY	DATE

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FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

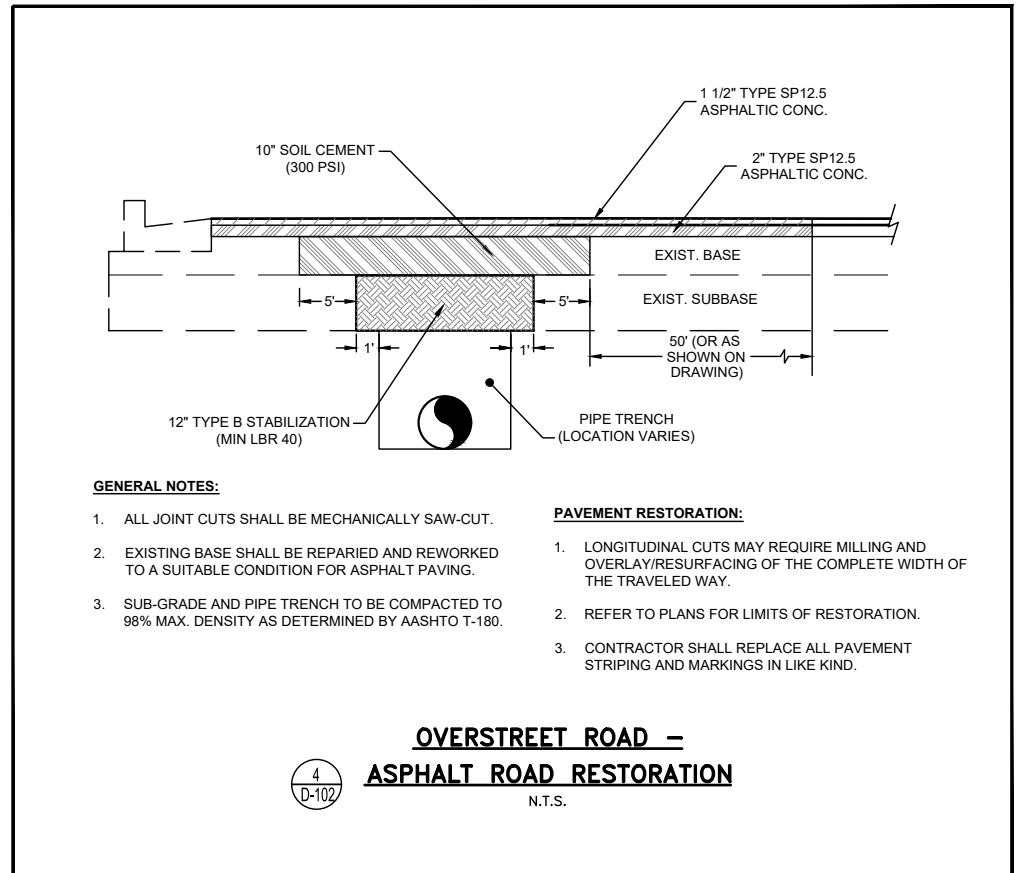
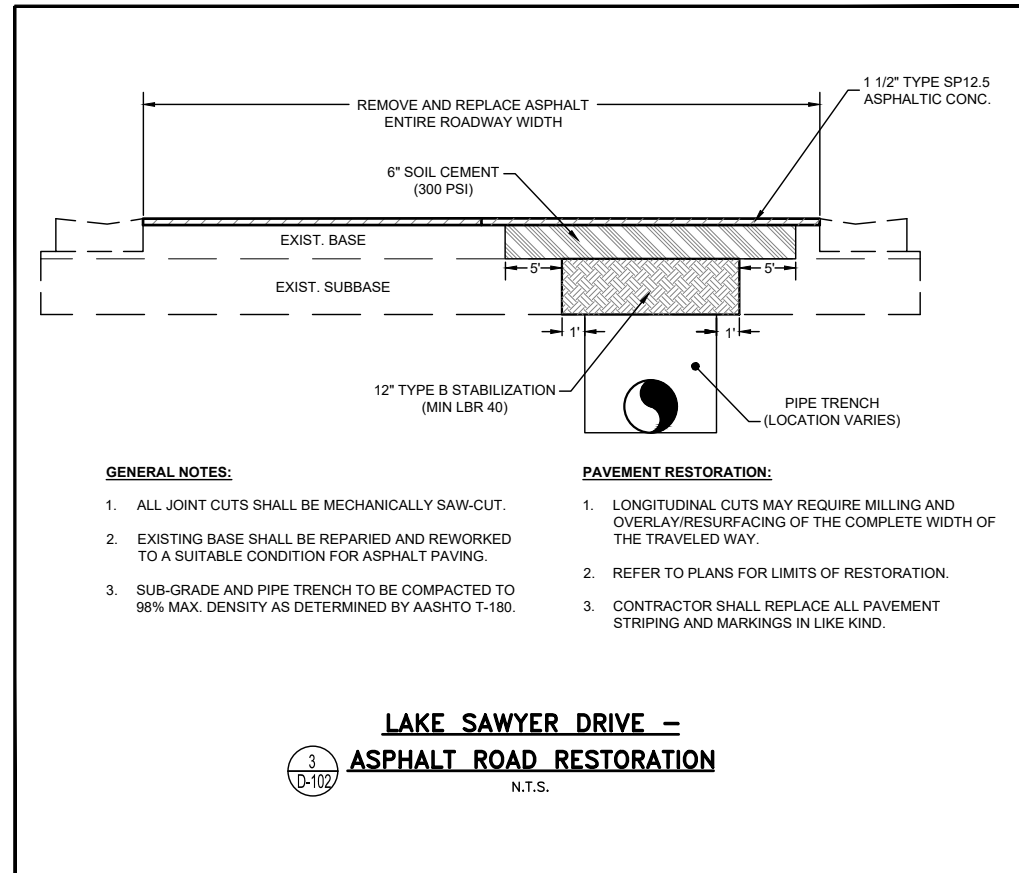
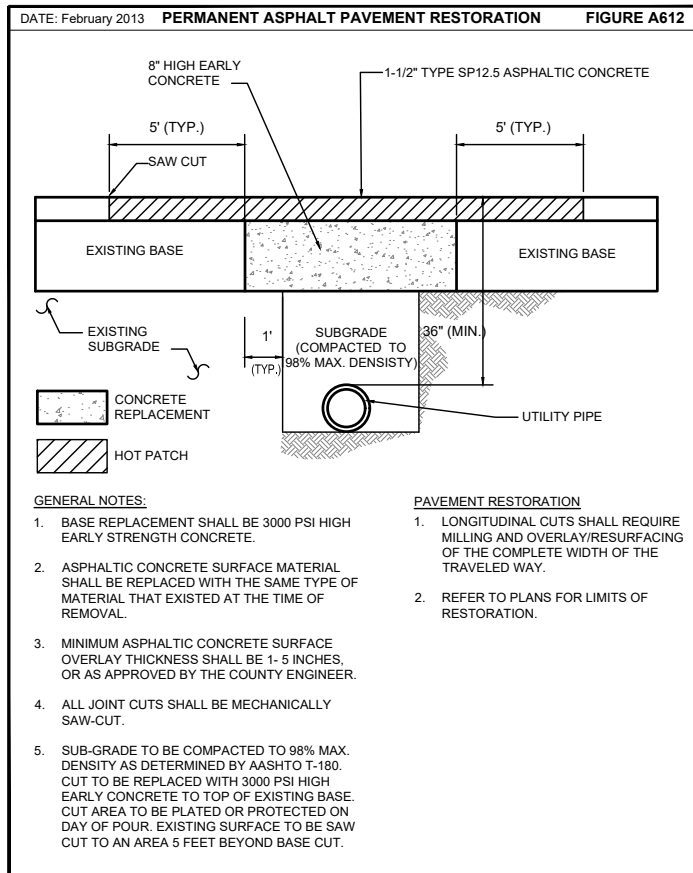
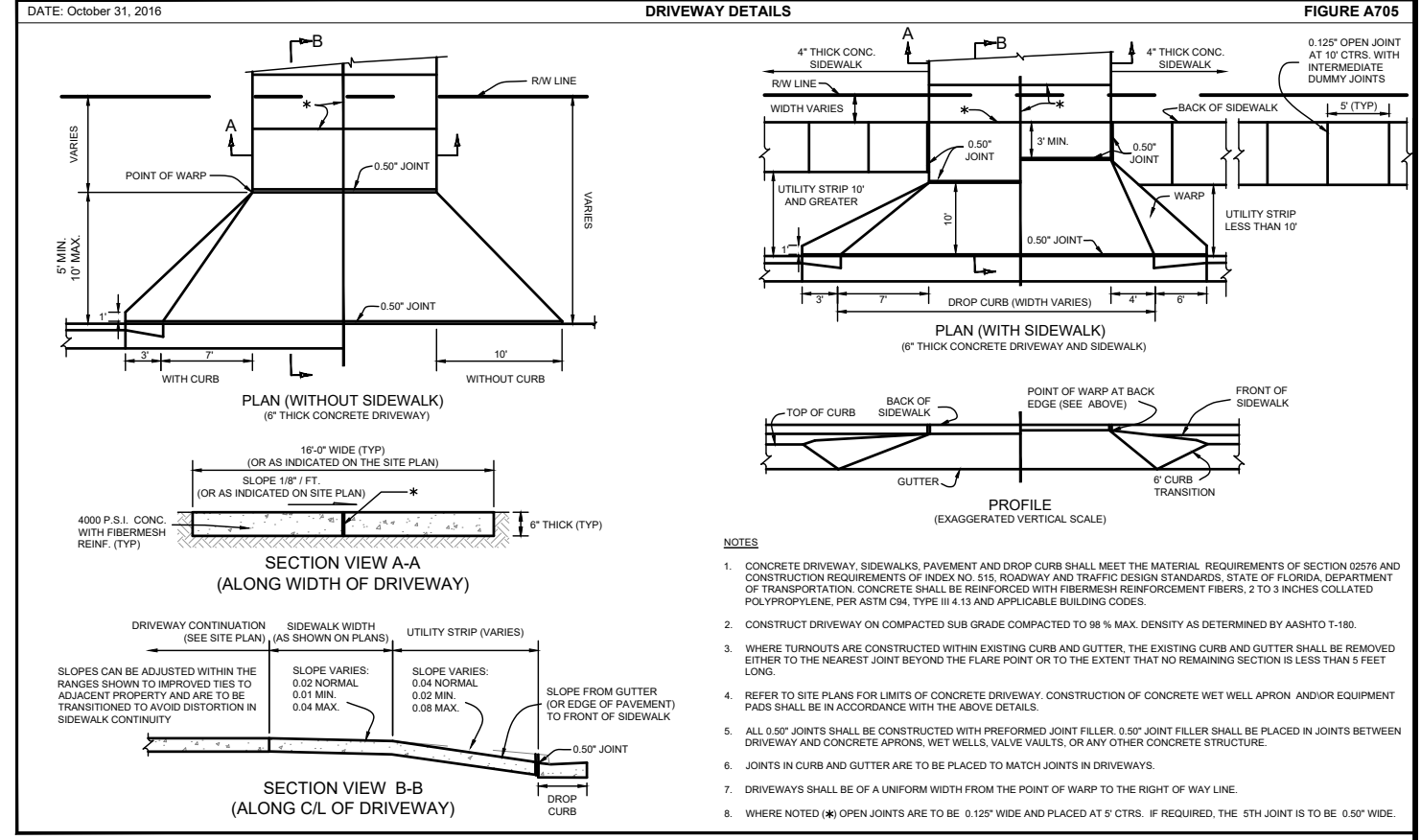
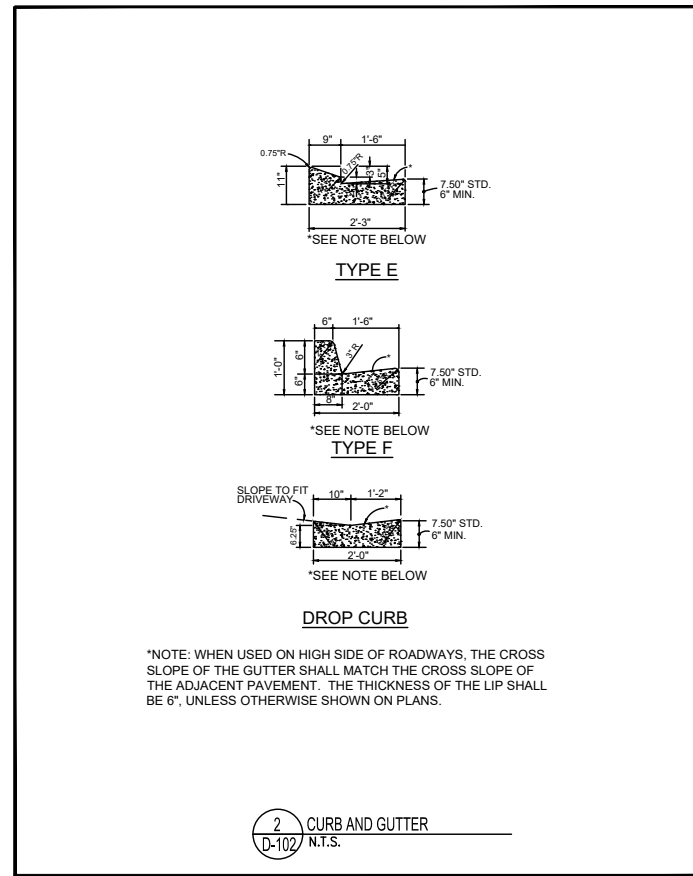
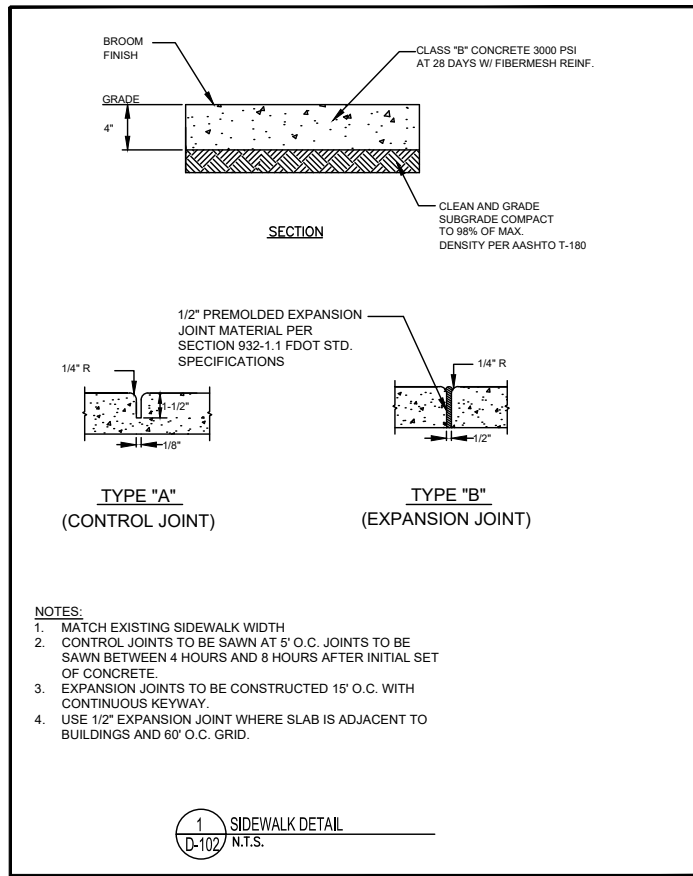
CONSTRUCTION DETAILS

DESIGN ENGINEER
CYNTHIA K. MALONE, P.E.

PROJECT No.: 2014-28-09
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DESIGNED BY: CKM
DRAWN BY: JAB
CHECKED BY: JPJ
DRAWING FILE: SEE MARGIN

FLORIDA REGISTRATION No. 58685

DRAWING No. D-101
SHEET 29 OF 33



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FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

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DRAWING No.
D-102

SHEET
30 OF 33

FITTING							
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	MAIN TYPE	FITTING TYPE	COMMENTS
U101-F1	U-101				FORCE MAIN	16" CAP	
U101-F2	U-101				FORCE MAIN	16" 45° BEND	
U101-F3	U-101				FORCE MAIN	16" 45° BEND	
U101-F4	U-101				FORCE MAIN	16" 5.625° BEND	
U101-F5	U-101				FORCE MAIN	16" 5.625° BEND	
U102-F1	U-102				FORCE MAIN	16" 45° BEND	
U102-F2	U-102				FORCE MAIN	16" 45° BEND	
U102-F3	U-102				FORCE MAIN	16" 45° BEND	
U102-F4	U-102				FORCE MAIN	16" 45° BEND	
U102-F5	U-102				FORCE MAIN	16" 5.625° BEND	
U102-F6	U-102				FORCE MAIN	16" 5.625° BEND	
U102-F7	U-102				FORCE MAIN	16" 5.625° BEND	
U102-F8	U-102				FORCE MAIN	16" 45° BEND	
U102-F9	U-102				FORCE MAIN	16" 45° BEND	
U102-F10	U-102				FORCE MAIN	16" 45° BEND	
U102-F11	U-102				FORCE MAIN	16" 45° BEND	
U102-F12	U-102				FORCE MAIN	16" 11.25° BEND	
U103-F1	U-103				FORCE MAIN	16" 5.625° BEND	
U103-F2	U-103				FORCE MAIN	16" 5.625° BEND	
U103-F3	U-103				FORCE MAIN	16" 5.625° BEND	
U103-F4	U-103				FORCE MAIN	16" 45° BEND	
U103-F5	U-103				FORCE MAIN	16" 45° BEND	
U103-F6	U-103				FORCE MAIN	16" 45° BEND	
U103-F7	U-103				FORCE MAIN	16" 45° BEND	
U103-F8	U-103				FORCE MAIN	16" 45° BEND	
U103-F9	U-103				FORCE MAIN	16" 45° BEND	
U103-F10	U-103				FORCE MAIN	16" 45° BEND	
U103-F11	U-103				FORCE MAIN	16" 45° BEND	
U103-F12	U-103				FORCE MAIN	20"x16" RED	
U103-F13	U-103				FORCE MAIN	20" HDPE / DI ADPT	
U104-F1	U-104				FORCE MAIN	20" TEE	
U104-F2	U-104				FORCE MAIN	20" 5.625° BEND	
U104-F3	U-104				FORCE MAIN	20" 5.625° BEND	
U104-F4	U-104				FORCE MAIN	20" HDPE / DI ADPT	
U104-F5	U-104				FORCE MAIN	20" HDPE / DI ADPT	
U104-F6	U-104				FORCE MAIN	20"x8" RED	
U104-F7	U-104				FORCE MAIN	20" HDPE / DI ADPT	
U104-F8	U-104				FORCE MAIN	20"x16" RED	
U104-F9	U-104				FORCE MAIN	16" 45° BEND	
U104-F10	U-104				FORCE MAIN	16" 45° BEND	
U104-F11	U-104				FORCE MAIN	16" 45° BEND	
U104-F12	U-104				FORCE MAIN	16" 45° BEND	
U104-F13	U-104				FORCE MAIN	16" 5.625° BEND	
U105-F1	U-105				FORCE MAIN	16" 11.25° BEND	
U105-F2	U-105				FORCE MAIN	16" 5.625° BEND	
U105-F3	U-105				FORCE MAIN	16" 5.625° BEND	
U105-F4	U-105				FORCE MAIN	16" 11.25° BEND	
U105-F5	U-105				FORCE MAIN	16" 45° BEND	
U105-F6	U-105				FORCE MAIN	16" 45° BEND	
U105-F7	U-105				FORCE MAIN	16" 11.25° BEND	
U105-F8	U-105				FORCE MAIN	16" 45° BEND	
U105-F9	U-105				FORCE MAIN	16" 45° BEND	
U106-F1	U-106				FORCE MAIN	16" 11.25° BEND	
U106-F2	U-106				FORCE MAIN	16" 11.25° BEND	
U106-F3	U-106				FORCE MAIN	16" CAP	
U106-F4	U-106				FORCE MAIN	16" 90° BEND	
U106-F5	U-106				FORCE MAIN	16" 45° BEND	
U300-F1	U-300				FORCE MAIN	12" CAP	
U301-F1	U-301				FORCE MAIN	16" CAP	
U301-F2	U-301				FORCE MAIN	16" CAP	

No.	REVISIONS	BY	DATE
BID SET		CKM	10-09-2017

LINE IS 1 INCH
 AT FULL SIZE = 11X17
 (IF NOT SCALE ACCORDINGLY)

SCALE: AS NOTED

ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Bornes, Fariasi and Associates, Inc.
 1250 E. Hillcrest Street, Orlando, FL, 32803
 TEL: (407) 303-3000
 ENGINEERING BUSINESS No. 6899

FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS

**OVERSTREET RD ASBUILT
 COORDINATE ATTRIBUTE TABLES**

DESIGN ENGINEER
 CYNTHIA K. MALONE, P.E.

FLORIDA REGISTRATION No.
 58685

PROJECT No.: 2014-28-09
 PROJECT DATE: OCT 2017
 DESIGNED BY: CKM
 DRAWN BY: JAB
 CHECKED BY: JPJ
 DRAWING FILE: SEE MARGIN

DRAWING No.
X-100

SHEET
 31 OF 33

VALVE															
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	VALVE TYPE	MAIN TYPE	VALVE SIZE	VALVE MFR	VALVE MODEL #	# OF TURNS TO CLOSE	GEAR ACTUATOR	GEAR RATIO	SIDE ACTUATOR	ACTUATOR MFR	COMMENTS
U101-ARV1	U-101				AIR RELEASE	FORCE MAIN	3"								
U101-TS1	U-101				TAPPING SLEEVE	FORCE MAIN	16"								
U101-LS1	U-101				LINE STOP ASSEMBLY	FORCE MAIN	16"								
U101-PV1	U-101				PLUG VALVE	FORCE MAIN	16"								
U102-ARV1	U-102				AIR RELEASE	FORCE MAIN	3"								
U103-ARV1	U-103				AIR RELEASE	FORCE MAIN	3"								
U103-PV1	U-103				PLUG VALVE	FORCE MAIN	16"								
U104-PV1	U-104				PLUG VALVE	FORCE MAIN	8"								
U104-PV2	U-104				PLUG VALVE	FORCE MAIN	16"								
U104-ARV1	U-104				AIR RELEASE	FORCE MAIN	3"								
U105-ARV1	U-105				PLUG VALVE	FORCE MAIN	16"								
U106-ARV1	U-106				AIR RELEASE	FORCE MAIN	3"								
U106-TV1	U-106				TAPPING SLEEVE	FORCE MAIN	16"								
U106-PV1	U-106				PLUG VALVE	FORCE MAIN	16"								
U300-LS1	U-300				LINE STOP ASSEMBLY	FORCE MAIN	12"								

PIPE											
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	MAIN TYPE	TYPE OF SHOT	CONSTRUCTION METHOD	MATERIAL	PRESSURE CLASS	MANUFACTURER	COMMENTS
U101-P1	U-101				16" FORCE MAIN						
U101-P2	U-101				16" FORCE MAIN						
U101-P3	U-101				16" FORCE MAIN						
U102-P1	U-102				16" FORCE MAIN						
U103-P1	U-103				16" FORCE MAIN						
U103-P2	U-103				16" FORCE MAIN						
U103-P3	U-103				16" FORCE MAIN						
U104-P1	U-104				16" FORCE MAIN						
U104-P2	U-104				16" FORCE MAIN						
U105-P1	U-105				16" FORCE MAIN						
U105-P2	U-105				16" FORCE MAIN						
U105-P3	U-105				16" FORCE MAIN						
U105-P4	U-105				16" FORCE MAIN						
U106-P1	U-106				16" FORCE MAIN						

No.	REVISIONS	BY	DATE

LINE IS 1 INCH
AT FULL SIZE = 11X17
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ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825



FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
OVERSTREET RD ASBUILT
COORDINATE ATTRIBUTE TABLES

DESIGN ENGINEER
CYNTHIA K. MALONE, P.E.
FLORIDA REGISTRATION No.
58685

PROJECT No.: 2014-28-09
PROJECT DATE: OCT 2017
DESIGNED BY: CKM
DRAWN BY: JAB
CHECKED BY: JPJ
DRAWING FILE: SEE MARGIN

DRAWING No.
X-101
SHEET
32 OF 33

VALVE															
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	VALVE TYPE	MAIN TYPE	VALVE SIZE	VALVE MFR	VALVE MODEL #	# OF TURNS TO CLOSE	GEAR ACTUATOR	GEAR RATIO	SIDE ACTUATOR	ACTUATOR MFR	COMMENTS
U201-ARV1	U-201				AIR RELEASE	FORCE MAIN	2"								
U202-ARV1	U-202				AIR RELEASE	FORCE MAIN	2"								

PIPE											
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	MAIN TYPE	TYPE OF SHOT	CONSTRUCTION METHOD	MATERIAL	PRESSURE CLASS	MANUFACTURER	COMMENTS
U201-P1	U-201				6" FORCE MAIN						
U201-P2	U-201				6" FORCE MAIN						
U201-P3	U-201				6" FORCE MAIN						
U202-P1	U-202				6" FORCE MAIN						
U202-P2	U-202				6" FORCE MAIN						
U202-P3	U-202				6" FORCE MAIN						
U202-P4	U-202				6" FORCE MAIN						
U203-P1	U-203				6" FORCE MAIN						

FITTING							
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	MAIN TYPE	FITTING TYPE	COMMENTS
U201-F1	U-201				FORCE MAIN	8" 5.625" BEND	
U201-F2	U-201				FORCE MAIN	8" 45" BEND	
U201-F3	U-201				FORCE MAIN	8"x6" RED	
U201-F4	U-201				FORCE MAIN	6" 45" BEND	
U201-F5	U-201				FORCE MAIN	6" 45" BEND	
U201-F6	U-201				FORCE MAIN	6" 45" BEND	
U201-F7	U-201				FORCE MAIN	6" 45" BEND	
U201-F8	U-201				FORCE MAIN	6" 45" BEND	
U201-F9	U-201				FORCE MAIN	6" 45" BEND	
U202-F1	U-202				FORCE MAIN	6" 11.25" BEND	
U202-F2	U-202				FORCE MAIN	6" 11.25" BEND	
U202-F3	U-202				FORCE MAIN	6" 45" BEND	
U202-F4	U-202				FORCE MAIN	6" 45" BEND	
U202-F5	U-202				FORCE MAIN	6" 45" BEND	
U202-F6	U-202				FORCE MAIN	6" 45" BEND	
U202-F7	U-202				FORCE MAIN	6" 45" BEND	
U202-F8	U-202				FORCE MAIN	6" 45" BEND	
U202-F9	U-202				FORCE MAIN	6" 45" BEND	
U202-F10	U-202				FORCE MAIN	6" 45" BEND	
U202-F11	U-202				FORCE MAIN	6" 45" BEND	
U202-F12	U-202				FORCE MAIN	6" 45" BEND	
U202-F13	U-202				FORCE MAIN	6" 45" BEND	
U202-F14	U-202				FORCE MAIN	6" 45" BEND	
U203-F1	U-203				FORCE MAIN	6" 11.25" BEND	
U203-F2	U-203				FORCE MAIN	6" 90" BEND	
U203-F3	U-203				FORCE MAIN	6" 45" BEND	
U203-F4	U-203				FORCE MAIN	6" 45" BEND	
U301-F3	U-301				FORCE MAIN	8" CAP	
U301-F4	U-301				FORCE MAIN	8" CAP	
U301-F5	U-301				FORCE MAIN	8" CAP	
U301-F6	U-301				FORCE MAIN	8" CAP	
U301-F7	U-301				FORCE MAIN	8" CAP	

No.	REVISIONS	BY	DATE
BID SET		CKM	10-09-2017

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ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825



FORCE MAIN R/R WEST AREA PACKAGE 1 IMPROVEMENTS
**LAKE SAWYER RD ASBUILT
COORDINATE ATTRIBUTE TABLES**

DESIGN ENGINEER
CYNTHIA K. MALONE, P.E.
FLORIDA REGISTRATION No.
58685

PROJECT No.: 2014-28-09
PROJECT DATE: OCT 2017
DESIGNED BY: CKM
DRAWN BY: JAB
CHECKED BY: JPJ
DRAWING FILE: SEE MARGIN

DRAWING No.
X-200
SHEET
33 OF 33