

CONSTRUCTION PLANS FOR: BERRY DEASE ROAD WATER MAIN EXTENSION AND FORCE MAIN REPLACEMENT PROJECT

BOARD OF COUNTY COMMISSIONERS

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DIRECTOR ORANGE COUNTY UTILITIES DEPARTMENT

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.

*ORANGE COUNTY UTILITIES DEPARTMENT
ENGINEERING DIVISION
ORANGE COUNTY, FLORIDA*

PREPARED BY:

CPH, INC.
1117 East Robinson Street, Orlando, FL 32801
Phone: 407.425.0452 Fax: 407.648.1036
Certificate of Authorization No. 3215

COUNTY SEQUENCE NUMBER: 80806ORANGE
COUNTY CAPITAL NUMBER: FM: 1539-0043
WM: 1450-60

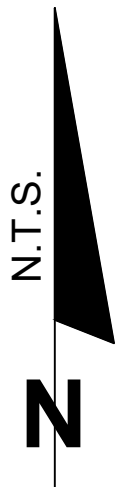
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VICINITY MAP

DRAWING INDEX

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UTILITY CONTACTS		
UTILITIES	COMPANY	TELEPHONE
WATER	ORANGE COUNTY UTILITIES DEPARTMENT	(407) 254-9680
SANITARY SEWER	ORANGE COUNTY UTILITIES DEPARTMENT	(407) 254-9680
RECLAIMED WATER	ORANGE COUNTY UTILITIES DEPARTMENT	(407) 254-9680
ELECTRIC	DUKE ENERGY	(407) 359-4404
TELEPHONE	CENTURY LINK	(407) 830-3279
CABLE - TV	SPECTRUM	(407) 532-8509
GAS	TECO (PEOPLE GAS)	(407) 532-8509
SUNSHINE 811 (SSOCOF, INC)		(800) 432-4770 OR 811
OCU CONSTRUCTION DIVISION		(407) 254-9798
OCU ENGINEERING DIVISION		(407) 254-9900
OCU CONSTRUCTION DIVISION'S INSPECTOR		(407) 254-9798
OCU DISPATCH OPERATOR		(407) 836-2777
NOTE: THIS LISTING IS PROVIDED AS AN AID. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY AND ARRANGE FOR FIELD LOCATION OF ALL FACILITIES THAT WILL BE ENCOUNTERED DURING CONSTRUCTION.		

LEGEND	
	OPEN CUT AND RESTORE ROADWAY
	REMOVE AND REPLACE EXISTING STABILIZED DIRT DRIVEWAY
	REMOVE AND REPLACE EXISTING CONCRETE DRIVEWAY
	EXISTING OCU WATER MAIN TO REMAIN
	PROPOSED OCU WATER MAIN
	EXISTING OCU GRAVITY MAIN TO REMAIN
	EXISTING OCU FORCE MAIN TO REMAIN
	PROPOSED OCU FORCE MAIN
	EXISTING OCU FORCE MAIN TO BE REMOVED
	EXISTING STORM SEWER
	RIGHT OF WAY LINE

Abbreviation Legend:

(A)	- ACTUAL	MES	- MITERED END SECTION
A/C	- AIR CONDITIONER	MH	- MANHOLE
ACSM	- AMERICAN CONGRESS ON SURVEYING & MAPPING	MLP	- METAL LIGHT POLE
ADA	- AMERICANS WITH DISABILITIES ACT	MPH	- MILES PER HOUR
ALTA	- AMERICAN LAND TITLE ASSOCIATION	MPP	- METAL POWER POLE
APPROX	- APPROXIMATE	N/A	- NOT APPLICABLE
ARV	- AIR RELEASE VALVE	NAVD	- NORTH AMERICAN VERTICAL DATUM
AVE	- AVENUE	NAD	- NORTH AMERICAN DATUM
AVG	- AVERAGE	NG	- NATURAL GROUND
(BB)	- BEARING BASIS	NGS	- NATIONAL GEODETTIC SURVEY
BFP	- BACK FLOW PREVENTER	NGVD	- NATIONAL GEODETTIC VERTICAL DATUM
BLK	- BLOCK	N & D	- NAIL AND DISK
BLDG	- BUILDING	NO.	- NUMBER
BLVD	- BOULEVARD	NR	- NON-RADIAL
BM	- BENCH MARK	NSPS	- NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS
BOC	- BACK OF CURB	NT	- NON-TANGENT
BOW	- BACK OF WALK	NTS	- NOT TO SCALE
BSL	- BUILDING SETBACK LINE	OD	- OUTSIDE DIAMETER
BWF	- BARBED WIRE FENCE	ORB	- OFFICIAL RECORDS BOOK
C-X	- DENOTES SHEET NUMBERING FOR ENGINEERING PLANS	OR	- OFFICIAL RECORDS
(C)	- CALCULATED	OUL	- OVERHEAD UTILITY LINES
C	- CHORD	OTL	- OVERHEAD TRAFFIC LINES
CATV	- CABLE TELEVISION RISER	(P)	- PLAT
CB	- CHORD BEARING	PB	- PLAT BOOK
CBS	- CONCRETE BLOCK STRUCTURE	PC	- POINT OF CURVATURE
C.C.R.	- CERTIFIED CORNER RECORD	PCC	- POINT OF COMPOUND CURVATURE
C&G	- CURB & GUTTER	PCP	- PERMANENT CONTROL POINT
CI	- CATCH INLET	PFF	- PROPOSED FINISHED FLOOR
C/L	- CENTERLINE	PG	- PAGE
CLF	- CHAIN LINK FENCE	PGS	- PAGES
CM	- CONCRETE MONUMENT	PI	- POINT OF INTERSECTION
CMP	- CORRUGATED METAL PIPE	PK	- PARKER KAYLON
CO	- CLEANOUT	POB	- POINT OF BEGINNING
CONC	- CONCRETE	POC	- POINT OF COMMENCEMENT
COR	- CORNER	POL	- POINT ON LINE
CRPP	- CORRUGATED PLASTIC PIPE	PP	- POWER POLE
CUE	- COUNTRY UTILITY EASEMENT	PRC	- POINT OF REVERSE CURVATURE
CWS	- CROSSWALK SIGNAL	PRM	- PERMANENT REFERENCE MONUMENT
Δ	- DELTA	PSM	- PROFESSIONAL SURVEYOR & MAPPER
(D)	- DESCRIPTION	PT	- POINT OF TANGENCY
DB	- DEED BOOK	PVC	- POLYVINYL CHLORIDE PIPE
DBH	- DIAMETER AT BREAST HEIGHT IN INCHES	PVMT	- PAVEMENT
DE	- DRAINAGE EASEMENT	R31E	- RANGE 31 EAST
DEPT	- DEPARTMENT	R	- RADIUS
DIP	- DUCTILE IRON PIPE	RAD	- RADIAL
DR	- DRIVE	RCP	- REINFORCED CONCRETE PIPE
D/U	- DRAINAGE AND UTILITY EASEMENT	REC	- RECOVERED
(E)	- ENGINEERING PLAN	REV	- REVISION
EJB	- ELECTRIC JUNCTION BOX	RP	- RADIUS POINT
EL	- UNDERGROUND ELECTRICAL LINES	R/W	- RIGHT-OF-WAY
ELEC	- ELECTRIC	RLS	- REGISTERED LAND SURVEYOR
ELEV	- ELEVATION	RP	- RADIUS POINT
ELLIP	- ELLIPTICAL	RWL	- UNDERGROUND RECLAIM WATER LINE
EOI	- END OF INFORMATION	RWM	- RECLAIMED WATER METER
EOP	- EDGE OF PAVEMENT	SE	- SPECIAL EASEMENT
FB	- FIELD BOOK	SEC 31	- SECTION 31
FDOT	- FLORIDA DEPARTMENT OF TRANSPORTATION	SMH	- SANITARY SEWER MANHOLE
FF	- FINISH FLOOR	(SP)	- STATE PLANE
FGI	- FLAT GRATE INLET	SQ	- SQUARE
FGLP	- FIBERGLASS LIGHT POLE	SQ FT	- SQUARE FEET
FHYD	- FIRE HYDRANT	ST	- STREET
FM	- FORCE MAIN	STMH	- STORM DRAINAGE MANHOLE
FND	- FOUND	S/W	- SIDEWALK
FP&L	- FLORIDA POWER AND LIGHT	TB	- TANGENT BEARING
FS	- FLORIDA STATUTES	T22S	- TOWNSHIP 22 SOUTH
(G)	- GRID (STATE PLANE)	TELE	- TELEPHONE
GL	- UNDERGROUND GAS LINES	TL	- OVERHEAD TRAFFIC SIGNAL LINES
GOV'T	- GOVERNMENT	TOB	- TOP OF BANK
GPR	- GROUND PENETRATING RADAR	TOE	- TOE OF SLOPE
GTMH	- GREASE TRAP MANHOLE	TR	- TELEPHONE RISER
HDPE	- HIGH DENSITY POLYETHYLENE PIPE	TRANS	- TRANSFORMER
HWF	- HOG WIRE FENCE	TSB	- TRAFFIC SIGNAL BOX
ID	- IDENTIFICATION	TSSP	- TRAFFIC SIGNAL SUPPORT POLE
ICV	- IRRIGATION CONTROL VALVE	TVL	- UNDERGROUND CABLE TV LINES
INFO	- INFORMATION	(TYP)	- TYPICAL
INV	- INVERT	UE	- UTILITY EASEMENT
IP	- IRON PIPE	UNK	- UNKNOWN
IP&C	- IRON PIPE & CAP	UTL	- UNDERGROUND TELEPHONE LINES
IR	- IRON ROD	W/	- WITH
IR&C	- IRON REBAR & CAP	WL	- UNDERGROUND WATER LINE
IRR	- IRRIGATION	WLP	- WOOD LIGHT POLE
L	- ARC LENGTH	WM	- WATER METER
LB#	- LICENSED BUSINESS NUMBER	WP	- WORK PROGRAM
LP	- LIGHT POLE	WPF	- WOOD POST FENCE
(M)	- MEASURED	WPP	- WOOD POWER POLE
MB	- MAP BOOK	WV	- WATER VALVE
MBX	- MAILBOX		

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REV	DATE	DESCRIPTION	 ORANGE COUNTY UTILITIES DEPARTMENT ENGINEERING DIVISION 19150 CURRY FORD ROAD ORLANDO, FL. 32825	 A Full Service A & E Firm Architects M/E/P Engineers Planners Environmental Surveyors Landscape Architects Traffic/Transportation www.cphcorp.com 1117 East Robinson Street ~ Orlando, FL 32801 ~ Phone: 407.425.0452	Licenses: Eng. C.O.A. No. 3215 Survey L.B. No. 7143 Arch. Lic. No. AA2600926 Lndscp. Lic. No. LC0000298	LOCATION MAP, DRAWING INDEX & LEGEND BERRY DEASE ROAD WATER MAIN EXTENSION AND FORCE MAIN REPLACEMENT PROJECT	DAVID E. MAHLER PROFESSIONAL ENGINEER FLORIDA LICENSE #50041	OCU FILE NO.: 85506	SCALE: AS SHOWN
								DESIGNED BY: DEM	DRAWING NO. : G-200
								DRAWN BY: GNP	
								CHECKED BY: DEM	
								CADD FILE: O28509 Cover	SHEET: 2 OF 21

GENERAL CONSTRUCTION NOTES

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.

- THE UTILITIES IMPROVEMENTS AND ADJUSTMENTS SHOWN ON THESE DRAWINGS ARE INTENDED TO MAINTAIN THE INTEGRITY OF THE ORANGE COUNTY WATER AND WASTEWATER SYSTEMS. THE DRAWINGS DO NOT INCLUDE WORK PERFORMED ON, OR FOR UTILITY SYSTEMS OWNED BY OTHERS, UNLESS STATED OTHERWISE ON THE DRAWINGS.
2. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS AND RECLAIMED WATER MAINS. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. RECORD DRAWING INFORMATION FROM ORANGE COUNTY, GPR INVESTIGATIONS AND FIELD LOCATES. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTENCE AND LOCATION OF ALL ABOVEGROUND AND UNDERGROUND UTILITIES. CONTRACTOR SHALL CONTACT UTILITY OWNERS AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION AND A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION. ORANGE COUNTY SHALL BE NOTIFIED IN WRITING IMMEDIATELY IF ANY DISCREPANCIES ARE IDENTIFIED OR IF CONFLICTS EXIST.
3. THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION SHALL BE NOTIFIED AT LEAST SEVEN (7) DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY, OR PRIOR TO ANY ACTIVITY REQUIRING THE PRESENCE OF OR AN ACTION BY UTILITIES STAFF SUCH AS SCHEDULING VALVE OPERATION, PRESSURE TESTING, PIPE CONNECTION, PUMP STATION OPERATIONS OR SHUTDOWNS, ETC.
4. WATER, WASTEWATER AND REUSE VALVES, PUMP STATIONS OR OTHER UTILITY INFRASTRUCTURE ARE TO BE OPERATED ONLY BY ORANGE COUNTY UTILITIES PERSONNEL. ALL VALVES BEING INSTALLED ARE TO REMAIN CLOSED DURING CONSTRUCTION.
5. ALL EXISTING WATER MAIN, FORCE MAINS, GRAVITY PIPES AND OTHER UTILITY FACILITIES WITHIN THE LIMITS OF THE PROJECT SHALL BE SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.
6. THE ORANGE COUNTY WATER DIVISION (407-254-9850) AND THE ORANGE COUNTY WATER RECLAMATION DIVISION (407-254-9680) SHALL BE NOTIFIED AT LEAST SEVEN (7) DAYS IN ADVANCE TO SCHEDULE MAIN TIE-INS AND VALVE OPERATIONS.
7. WATER, WASTEWATER AND REUSE VALVES ARE TO BE OPERATED BY ORANGE COUNTY UTILITIES STAFF COORDINATED BY OCU RPR (407-254-9798). ALL VALVES BEING INSTALLED ARE TO REMAIN CLOSED DURING CONSTRUCTION.
8. FOR OPERATION OF ORANGE COUNTY PUMP STATIONS THE CONTRACTOR SHALL COORDINATE ALL PUMP STATION OPERATION AND SHUT DOWN WITH AN ORANGE COUNTY UTILITIES RPR (407-254-9798).
9. FLUSHING, HYDROSTATIC TESTING AND DISINFECTING OF WATER MAINS SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH AWWA SPECIFICATIONS C-600, C-651 AND THE PROJECT SPECIFICATIONS. FITTINGS AND MINOR REPLACEMENT SEGMENTS REQUIRED TO MAKE CONNECTIONS TO EXISTING WATER LINES SHALL BE THOROUGHLY DISINFECTED BY SWABBING THE ENTIRE INTERIOR WITH A MINIMUM 5% CHLORINE SOLUTION PRIOR TO INSTALLATION. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT, MATERIALS, AND MANPOWER TO ACCOMPLISH THESE OPERATIONS. AUTHORIZED ORANGE COUNTY UTILITIES PERSONNEL SHALL BE PRESENT DURING THE TEST. COORDINATE WITH ORANGE COUNTY UTILITIES RPR AT LEAST SEVEN (7) DAYS PRIOR TO START THIS WORK.
10. ALL EXISTING WATER MAINS AND FORCE MAINS SHALL REMAIN IN SERVICE UNTIL THE PROPOSED WATER MAINS OR FORCE MAINS ARE ACCEPTED FOR SERVICE AND ALL SERVICES ARE TRANSFERRED TO THE NEW MAINS. THE CONTRACTOR SHALL COORDINATE WITH THE WATER AND WASTEWATER DEPARTMENT AT LEAST FIVE (5) WORKING DAYS IN ADVANCE FOR ALL THE TIE-INS REQUIRING SHUT DOWN OF EXISTING MAINS. IN GENERAL, ALL SUCH SHUTDOWNS SHALL BE LIMITED TO THE HOURS BETWEEN NINE (9) A.M. AND THREE (3) P.M., MONDAY TO FRIDAY.
11. 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 AND BLUE FOR WATER), A MINIMUM OF FOUR (4) FEET ABOVE GRADE. ALL VALVES UNDER CONSTRUCTION ARE TO REMAIN CLOSED DURING CONSTRUCTION.
12. THE CONTRACTOR SHALL PROTECT EXISTING SERVICE CONNECTIONS DURING CONSTRUCTION AND SHALL COORDINATE THE RELOCATION OF SERVICES WITH THE ORANGE COUNTY RESIDENT PROJECT REPRESENTATIVE. THE CONTRACTOR WILL RELOCATE EXISTING SERVICES AS NECESSARY AND AS DIRECTED BY ORANGE COUNTY PERSONNEL.
13. SEE DETAIL SHEET FOR SEPARATION REQUIREMENTS BETWEEN WATER MAINS, SEWER MAINS AND OTHER PIPELINES AND MAINS. NO CONCRETE ENCASEMENT OF PIPES WILL BE PERMITTED.
14. WHEN USING SCALED DATA CONSIDER THAT THESE PLANS MAY HAVE ALTERED IN SIZE DURING REPRODUCTION.
15. WHEN OBTAINING DATA AND INFORMATION FROM THE PLANS, FIGURES SHALL BE USED IN REFERENCE TO SCALED DIMENSIONS AND LARGER SCALE DRAWINGS IN PREFERENCE TO SMALLER SCALE DRAWINGS.
16. DEWATER AS NECESSARY TO PREVENT WATER FROM ENTERING THE TRENCH DURING EXCAVATION AND PIPE INSTALLATION. PIPE SHALL NOT BE LAID IN WATER. ALL EXCAVATIONS SHALL BE BACKFILLED AT THE END OF EACH WORKDAY AND PIPE OPENINGS SHALL BE SEALED WITH WATERTIGHT MJ. PLUGS, PLYWOOD OR FILTER FABRIC IS NOT ACCEPTABLE.
17. ALL EXISTING FIRE HYDRANTS THAT ARE REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR. THE OWNER RESERVES THE RIGHT TO SALVAGE. NEW FIRE HYDRANTS SHALL BE LOCATED AS SHOWN ON THE PLANS AND COORDINATED WITH THE OWNER'S REPRESENTATIVE. HYDRANTS NOT IN SERVICE SHALL BE COVERED OR MARKED TO SHOW THEY ARE OUT OF SERVICE. HYDRANTS SHALL BE CONSTRUCTED FACING THE ROAD AND ADJUSTED TO FINAL ROAD GRADES.
18. PIPE LENGTHS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL LENGTHS ARE TO BE DETERMINED DURING CONSTRUCTION.
19. ALL STATIONS AND OFFSETS REFER TO BASELINE OF STATIONING.
20. MAINTAIN EMERGENCY VEHICLE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES.
21. ALL FITTINGS ON EXISTING MAINS ARE ASSUMED TO HAVE THRUST BLOCKS. CONTRACTOR SHALL USE CAUTION WHEN WORKING IN THESE AREAS.
22. LOCAL RESIDENTIAL AND COMMERCIAL BUSINESS ACCESS SHALL BE MAINTAINED AT ALL TIMES. PROVIDE WRITTEN NOTIFICATION TO RESIDENTS/PROPERTY OWNERS SEVEN (7) DAYS PRIOR TO IMPLEMENTING ANY ROADWAY OR DRIVEWAY CLOSURE.
23. 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 ARE NOT EXACT OR GUARANTEED. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS. CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL NECESSARY SUPPORTS AND RESTRAINTS ON EXISTING LINES TO ALLOW FOR NEW CONSTRUCTION.
24. ALL MAINS SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS. A MINIMUM COVER OF 36 INCHES SHALL BE MAINTAINED ON ALL MAINS, WHERE IT IS NOT OTHERWISE SPECIFIED ON PLANS OR DIRECTED BY THE ENGINEER. ALL DIRECTION CHANGES IN THE PIPE BOTH HORIZONTAL AND VERTICAL SHALL BE BY THE USE OF FITTINGS UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.

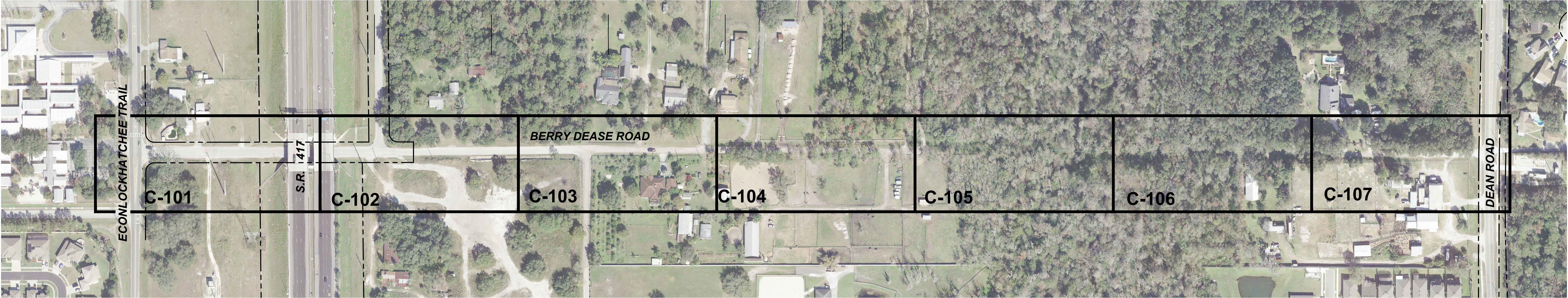
25. ALL PIPE SHALL BE RESTRAINED IN ACCORDANCE WITH THE RESTRAINT TABLES SHOWN ON THE DETAIL SHEETS. IN ADDITION, ALL FITTINGS SHALL BE MECHANICAL JOINT RESTRAINED. NO THRUST BLOCKS SHALL BE PERMITTED WITHOUT WRITTEN PERMISSION OF ORANGE COUNTY UTILITIES. RESTRAIN EXISTING PIPE WHERE REQUIRED IN ACCORDANCE WITH THE RESTRAINT TABLES.
 26. PIPE SIZES SHOWN ON PLANS ARE MINIMUM INSIDE DIAMETER.
 27. WHERE MINIMUM SEPARATION BETWEEN UTILITIES OR STORM SEWERS IS REQUIRED, THE DISTANCE IS MEASURED FROM THE OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE.
 28. RESTORE ALL EXISTING IMPROVEMENTS AND DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER. PAVEMENT TO BE RESTORED IN ACCORDANCE WITH THE PAVEMENT RESTORATION DETAILS SHOWN ON THE CONSTRUCTION DETAIL SHEETS.
 29. 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 FIVE (5) 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.
30. PROTECT EXISTING IMPROVEMENTS TO THE MAXIMUM EXTENT POSSIBLE. ALL DAMAGED SIDEWALK, ROADWAY PAVEMENT AND OTHER IMPROVEMENTS SHALL BE RESTORED TO ORIGINAL CONDITION.
 31. ALL COUNTY ROADS TO BE OPEN CUT SHALL BE APPROVED BY ORANGE COUNTY PUBLIC WORKS PRIOR TO OPEN-CUTS. 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 RPR. NOTIFY THE COUNTY PUBLIC WORKS DEPARTMENT AND UTILITY DEPARTMENT RPR 24 HOURS PRIOR TO ANY OPEN CUT OF ROADWAYS OR JACK AND BORE OPERATIONS 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.
 32. WATER AND SEWER LINE MARKERS SHALL BE PLACED EVERY 1,000 FT AND AT ALL VALVE AND DIRECTIONAL CHANGES. SEE VALVE AND PIPING MARKING DETAILS. NO MARKERS ARE REQUIRED AT VALVES ADJACENT TO FIRE HYDRANTS, OR IN RESIDENTIAL SUBDIVISIONS.
 33. 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, POWER, TELEPHONE, GAS, 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.
 34. 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.
 35. 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. CONTRACTOR TO COMPLY WITH OSHA TRENCH SAFETY REQUIREMENTS AT ALL TIMES.
 36. CONTRACTOR TO PROVIDE DETAILED AS-BUILT DRAWINGS OF ALL UTILITIES UNCOVERED IN TRENCHES. THE AS-BUILTS SHALL RECORD LOCATION, SIZE, TYPE, ELEVATION AND OWNER OF ALL UTILITY FACILITIES UNCOVERED. THIS INFORMATION SHALL BE ADDED TO THE ASSET TABLES.
 37. CONTRACTOR WILL NEED TO INSTALL NEW FORCE MAIN AND WATER MAIN PRIOR TO REMOVAL OF EXISTING WATER AND WASTEWATER SYSTEMS. REMOVE OLD FORCE MAIN TO INSTALL NEW WATER MAIN ON AERIAL CROSSING.
 38. ALL NEW VALVES BEING INSTALLED SHALL REMAIN CLOSED DURING CONSTRUCTION. KEEP VALVES ON ALL WET TAPS CLOSED UNTIL CLEARED BY FDEP.
 39. MAKE TEMPORARY CONNECTIONS TO AN EXISTING POTABLE WATER SOURCE; FLUSH OUT NEW WATER MAIN WITH POTABLE WATER (USE "JUMPER" ASSEMBLY WITH BACKFLOW PREVENTER TO MAKE TEMPORARY CONNECTIONS TO AN EXISTING WATER SOURCE.)
 40. IN ALL LOCATIONS FOR CONNECTIONS TO EXISTING PRESSURIZED MAINS, CONTRACTOR SHALL BE REQUIRED TO RESTRAIN THE EXISTING MAINS IN ACCORDANCE WITH THE RESTRAINT TABLE.
 41. IN ALL LOCATIONS WHERE NEW UTILITY LINES ARE BEING INSTALLED IN EXISTING ROAD, CONTRACTOR WILL BE REQUIRED TO OPEN CUT AND RESTORE ROAD.
 42. FOR ALL NEW WATER SERVICE LINE REPLACEMENTS, CONTRACTOR SHALL REPLACE THE SERVICE LINE FROM THE ACTIVE MAIN ALL OF THE WAY TO THE METER SHUTOFF VALVE.
 43. NEW MANHOLE TOPS HAVE BEEN ESTIMATED ON THEIR RELATION TO THE ROADWAY PGL AND THE OFFSET FROM THIS ALIGNMENT. CONTRACTOR IS RESPONSIBLE FOR SETTING FINAL TOP ELEVATION BASED UPON THE FINAL ROADWAY CONSTRUCTION GRADE.
 44. FOR ALL PRESSURIZED UTILITY LINES THAT ARE TO REMAIN IN SERVICE IN THE AREAS OF DEMUCKING; THE CONTRACTOR SHALL BE REQUIRED TO INSTALL MECHANICAL RESTRAINTS ON ALL JOINTS. THE CONTRACTOR SHALL ALSO PROVIDE ALL REQUIRED SUPPORT AND PROTECTION OF THE UTILITY LINES TO MAINTAIN SERVICE TO ALL CUSTOMERS ON THESE SYSTEMS.
 45. CONTRACTOR SHALL BE REQUIRED TO AS-BUILT ALL EXISTING WATER AND SANITARY FACILITIES THAT ARE REMAINING AND LOCATED WITHIN THE ROADWAY PROJECT LIMITS IN THE RIGHT OF WAY.

OCU 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 RPR.
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. 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.
9. 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 RPR 7 WORKING DAYS IN ADVANCE.
10. 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 FOR APPROVAL PRIOR TO IMPLEMENTATION BY CONTRACTOR.
11. 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.
12. FOR PVC PIPE THAT WILL BE OWNED AND MAINTAINED BY OCU, NO PIPE BENDING IS ALLOWED. ALIGNMENT CHANGE SHALL BE MADE ONLY WITH SLEEVES AND FITTINGS.
13. 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.
14. CONTRACTOR WILL NEED TO PROTECT WETLANDS DURING ALL CONSTRUCTION.

BID SET

REV	DATE	DESCRIPTION	 <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 10px;">  AT FULL SIZE (IF NOT SCALE ACCORDINGLY) </div> <div style="text-align: center;">  ORANGE COUNTY <i>UTILITIES DEPARTMENT</i> ENGINEERING DIVISION </div> </div> 9150 CURRY FORD ROAD ORLANDO, FL. 32825	<div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 10px;"> A Full Service A & E Firm </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Architects M/E/P Engineers Planners Environmental Surveyors Landscape Architects Traffic/Transportation </div> <div style="width: 45%;"> Licenses: Eng. C.O.A. No. 3215 Survey L.B. No. 7143 Arch. Lic. No. AA2600926 Lndscsp. Lic. No. LC0000298 </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> www.cphcorp.com </div> <div style="width: 45%;"> 1117 East Robinson Street ~ Orlando, FL 32801 ~ Phone: 407.425.0452 </div> </div>	<div style="text-align: center;"> GENERAL NOTES BERRY DEASE ROAD WATER MAIN EXTENSION AND FORCE MAIN REPLACEMENT PROJECT </div>	OCU FILE NO.: 85506 DESIGNED BY: DEM DRAWN BY: GNP	<div style="text-align: center;"> DAVID E. MAHLER PROFESSIONAL ENGINEER FLORIDA LICENSE #50041 </div> CADD FILE: 028509 Cover	SCALE: AS SHOWN DRAWING NO. : <div style="font-size: 2em; font-weight: bold; text-align: center;">G-300</div> SHEET: 3 OF 21



BID SET

REV	DATE	DESCRIPTION	<div>LINE IS 2 INCHES AT FULL SIZE (IF NOT SCALE ACCORDINGLY)</div>	<div>ORANGE COUNTY GOVERNMENT FLORIDA</div>	<div>ORANGE COUNTY UTILITIES DEPARTMENT ENGINEERING DIVISION 9150 CURRY FORD ROAD ORLANDO, FL. 32825</div>	<div>cph www.cphcorp.com</div>	<div>A Full Service A & E Firm Architects M/E/P Engineers Planners Environmental Surveyors Landscape Architects Traffic/Transportation Landscape Lic. No. LC0000298</div>	<div>Licenses: Eng. C.O.A. No. 3215 Survey L.B. No. 7143 Arch. Lic. No. AA2600926 Landscape Lic. No. LC0000298</div>	<div>KEY SHEET BERRY DEASE ROAD WATER MAIN EXTENSION AND FORCE MAIN REPLACEMENT PROJECT</div>	<div>DAVID E. MAHLER PROFESSIONAL ENGINEER FLORIDA LICENSE #50041</div>	OCU FILE NO.: 85506	SCALE: AS SHOWN
											DESIGNED BY: DEM	DRAWING NO. :
											DRAWN BY: GNP	G-400
											CHECKED BY: DEM	SHEET: 4 OF 21
											CADD FILE: O28509 Cover	

Bid Item	Reference ID	Description	Unit	Quantity	Sheet C-101	Sheet C-102	Sheet C-103	Sheet C-104	Sheet C-105	Sheet C-106	Sheet C-107
1	10.110.110	Mobilization, Demobilization, Bonds, and Permits (not to exceed 5% of the total of all bid items except bid items under section 10.1 General)	LS	1							
2	10.120.110	Preconstruction Audio-Video Documentation	LS	1							
3	10.130.110	Indemnification	LS	1							
4	10.140.110	Project Record Drawings	LS	1							
5	10.150.110	Maintenance of Traffic	LS	1							
6	11.110.110	Erosion and Sediment Control	LS	1							
7	11.110.110	Silt Fence	LS	1							
8	11.120.110	Clearing and Grubbing	LS	1							
9	11.210.110	Concrete Base	SY	567		356	211				
10	11.241.110	Open Cut and Restore Asphalt Road	SY	586		356	211				19
11	11.245.110	Open Cut and Restore Stabilized Dirt Road	SY	1438			380	863	60	83	52
12	11.250.110	Remove and Replace Concrete Driveway	SY	37							37
13	11.270.110	Remove and Replace Storm Crossing Drain Pipe and MES	LF	92				48	44		
14	11.330.110	Removal and Replacement of Concrete Pile Caps	EA	5					5		
15	11.530.110	Remove and Dispose of Existing 24" DIP FM	LF	1917				272	580	580	485
16	11.530.111	Cut and Remove 42" DIP WM	LF	40	10	30					
17	12.110.114	Furnish and Install 16" DIP WM with Fittings	LF	3033		341	580	580	444	580	508
18	12.110.114.001	Furnish and Install 16" Flanged Long Span DIP WM	LF	160					160		
19	12.110.115	Furnish and Install 6" DIP WM	LF	20		20					
20	12.130.115	Furnish and Install 24" PVC FM with Fittings	LF	1320				277	175	400	468
21	12.210.111	Furnish and Install 6" Gate Valve	EA	1		1					
22	12.210.115	Furnish and Install 16" Gate Valve	EA	4		1		1	2		
23	12.220.116	Furnish and Install 6" Plug Valve	EA	2					1	1	
24	12.220.117	Furnish and Install 24" Plug Valve	EA	4				1	1	1	1
25	12.230.118	Furnish and Install 42" Butterfly Valve	EA	2	1	1					
26	12.310.117	Furnish and Install 20"x16" Tapping Sleeve and Valve	EA	1							1
27	12.310.118	Furnish and Install 24" Tapping Sleeve & Valve	EA	1				1			
28	12.510.115	Furnish and Install 16" Line Stop	EA	1	1						
29	12.510.116	Furnish and Install 24" Line Stop and Cap	EA	2				1			1
30	12.520.110	Furnish and Install 2" Air Release Valve	EA	1					1		
31	12.530.110	Furnish and Install 4" Offset Air Release Valve	EA	3				1	1	1	
32	12.540.110	Furnish and Install New Fire Hydrant Assembly	EA	2		1					1
33	12.580.110	Furnish and Install 42" Plug	EA	1		1					
34	12.630.115	Furnish and Install 30" HDPE FM Directional Drill	LF	585					405	180	

REV	DATE	DESCRIPTION

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



ORANGE COUNTY
UTILITIES DEPARTMENT
ENGINEERING DIVISION
9150 CURRY FORD ROAD ORLANDO, FL. 32825



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Lndscp. Lic. No. LC0000298

SUMMARY OF PAY ITEMS
BERRY DEASE ROAD
WATER MAIN EXTENSION AND
FORCE MAIN REPLACEMENT PROJECT

DAVID E. MAHLER
PROFESSIONAL ENGINEER
FLORIDA LICENSE #50041

OCU FILE NO.: 85506
DESIGNED BY: DEM
DRAWN BY: GNP
CHECKED BY: DEM
CADD FILE: O28509 Cover

SCALE: AS SHOWN

DRAWING NO. :

G-500

SHEET: 5 OF 20

BID SET

BOUNDARY & TOPOGRAPHIC SURVEY
FOR
ORANGE COUNTY UTILITIES
AT
BERRY DEASE ROAD
LYING IN

SECTIONS 31 & 32-TOWNSHIP 22 SOUTH-RANGE 31 EAST
SECTIONS 5 & 6-TOWNSHIP 23 SOUTH-RANGE 31 EAST
ORANGE COUNTY, FLORIDA

Surveyed Area:

A PORTION OF BERRY DEASE ROAD BEGINNING AT STATE ROAD 417 AND
RUNNING EAST TO S DEAN ROAD.

Survey Notes:

- "SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."
- "ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES."
- THE SITE BENCHMARKS FOR THIS TOPOGRAPHIC SURVEY ARE DISPLAYED ON THE RESPECTIVE SURVEY FILE. THESE BENCHMARKS ARE BASED ON A CLOSED VERTICAL CONTROL LOOP HAVING AN ACTUAL ERROR OF CLOSURE OF 0.01' WHICH MEETS THE ALLOWABLE CLOSURE OF 0.052'. THIS FIELDWORK WAS PERFORMED USING A TOPCON LEVEL MODEL #DL101-C AND REFERENCES THE FOLLOWING PUBLISHED BENCHMARKS AS ESTABLISHED BY THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88) AND SAID ELEVATIONS ARE BASED ON VERTICAL CONTROL BENCHMARKS SUPPLIED BY ORANGE COUNTY SURVEY DEPARTMENT AS FOLLOWS:

- DESIGNATION # **A1490015**,
ELEVATION = 82.811 FEET (NAVD '88)
- DESIGNATION # **L1149065**,
ELEVATION = 77.840 FEET (NAVD '88)

SITE BENCHMARKS ARE AS SHOWN ON SHEETS 2 THROUGH 4 OF 4.

- THIS SURVEY IS NOT VALID WITHOUT SHEETS 1 THROUGH 4 OF 4.
- THE LAST DAY FIELD WORK WAS PERFORMED WAS (DATE); ALL BOUNDARY CORNERS WERE RECOVERED OR SET AS NOTED HEREON.
- THE "AREA DESCRIPTION" HEREON WAS PREPARED BY THE SURVEYOR PER THE CLIENT'S REQUEST.
- BEARINGS SHOWN HEREON ARE RELATIVE TO _____
- HAVING CONSULTED THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 120179-0290-F REVISED DATE SEPTEMBER 25, 2009, THE SUBJECT PROPERTY APPEARS TO LIE IN ZONE X, WHICH ARE AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN AND LIES IN ZONE AE, WHICH ARE SPECIAL FLOOD HAZARD AREAS INUNADATED BY 100 YEAR FLOOD WITH BASE FLOOD ELEVATIONS DEPICTED AS 68.9 FEET (NAVD '88). THIS DETERMINATION WAS BASED ON GEOSPATIAL DATA DOWNLOADED FROM WWW.FEMA.GOV. THIS DETERMINATION WAS BASED ON A GRAPHIC INTERPOLATION OF SAID MAP AND NOT ON ACTUAL FIELD MEASUREMENTS.

- THE APPARENT USE OF THE LAND, AS CLASSIFIED BY THE STANDARDS OF PRACTICE SET FORTH IN RULE CHAPTER 5J-17 OF THE FLORIDA ADMINISTRATIVE CODE, PURSUANT TO FS 472.027, FLORIDA ADMINISTRATIVE CODE ESTABLISHES THAT THE MINIMUM RELATIVE ACCURACY FOR THIS TYPE OF BOUNDARY SURVEY MEET THE HORIZONTAL CONTROL ACCURACY OF 1"/10,000 FEET FOR A HIGH RISK SURVEY. THE MEASUREMENTS AND CALCULATIONS OF THE CLOSED GEOMETRIC FIGURES WERE FOUND TO MEET THIS ACCURACY REQUIREMENT. THE EQUIPMENT USED TO VERIFY THE HORIZONTAL CONTROL ON THE SUBJECT SURVEY WAS A TOPCON GPS HIPER II.

- HORIZONTAL WELL-IDENTIFIED FEATURES IN THIS SURVEY AND MAP HAVE BEEN MEASURED TO AN ESTIMATED HORIZONTAL POSITIONAL ACCURACY OF 0.05 (FT). THE EQUIPMENT USED TO LOCATE THE FEATURES WAS A LEICA SCANSTATION P30, TOPCON PS-103A ROBOTIC TOTAL STATION AND TOPCON GPS HIPER II.
- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OR OPINION OF TITLE. NO INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHTS-OF-WAY, AND/OR OWNERSHIP WERE FURNISHED TO THIS SURVEYOR EXCEPT AS NOTED.

- FENCES EXISTING ON, OVER OR ADJACENT TO SUBJECT PROPERTY, ARE DISPLAYED HEREON; OWNERSHIP WHETHER SINGULAR OR JOINT WAS NOT DETERMINED BY THIS SURVEY.

- VERTICAL FEATURE ACCURACY: "ELEVATIONS OF WELL-IDENTIFIED FEATURES CONTAINED IN THIS SURVEY AND MAP HAVE BEEN MEASURED TO AN ESTIMATED VERTICAL POSITIONAL ACCURACY OF 0.01 (FT)."

- THE UNDERGROUND UTILITIES LABELED FM AND UW DISPLAYED ON SHEET 4 OF 4 ARE A RESULT OF THE FIELD LOCATION OF THE FLAGS AND PAINT MARKINGS ESTABLISHED BY VARIOUS UTILITY COMPANY REPRESENTATIVES.

- STATE PLANE INFORMATION SHOWN HEREON IS BASED ON THE NORTH AMERICAN DATUM OF 1983 (1990) USING CONTROL POINTS FROM THE NGS DATA SHEETS PUBLISHED AT WWW.LABINS.ORG AND ARE AS FOLLOWS:

- DESIGNATION # GIS 0132 RH HAM JONES, PID #AK7130 = N 1,523,378.55 FEET, E 543,185.33 FEET
- DESIGNATION # GIS 0206 KIRBY GREEN, PID #AK7287 = N 1,507,529.28 FEET, E 585,747.84 FEET

THE EQUIPMENT USED TO TRANSFER THE STATE PLANE INFORMATION FROM THE ABOVE REFERENCED CONTROL POINTS TO THE SUBJECT SURVEY WAS A TOPCON GPS HIPER II.

- THE DISPLAYED LIMITS OF WETLANDS ARE BASED UPON THE FIELD LOCATION OF FLAGS OR STAKES SET BY CPH ENGINEERING ENVIRONMENTAL DEPARTMENT AND LOCATED BY THE SURVEYOR ON OCTOBER 10, 2015.

- DIMENSIONS ARE SHOWN RELATIVE TO UNITED STATES STANDARD FEET AND DECIMALS THEREOF, UNLESS THE OBJECT SHOWN IS COMMONLY IDENTIFIED IN INCHES, I.E. TREE DIAMETER, PIPE DIAMETER, ETC. TREES DEPICTED ARE COMMON NAMES AND MEASURED AND LABELED AS DIAMETER AT BREAST HEIGHT IN INCHES.

- THE UNDERGROUND UTILITIES DEPICTED BY PIPE LINETYPES ARE APPROXIMATE IN NATURE BASED UPON AN INSPECTION OF THE MANHOLE, GRATE, ETC. OF EACH FACILITY. EXISTING PIPES WERE NOT LAMPED OR REMOTELY VIEWED FOR OBSTRUCTIONS OR CONNECTIVITY.

Index of Sheets

V-101 COVER SHEET
V-102 TOPOGRAPHIC SURVEY
V-103 TOPOGRAPHIC SURVEY
V-104 TOPOGRAPHIC SURVEY

NOTE:
THIS SURVEY IS NOT VALID WITHOUT SHEETS 6 THROUGH 9 OF 20

Surveyor's Certification:

I hereby certify that the attached "Boundary & Topographic Survey" of the hereon-described property is true and correct to the best of my knowledge, information and belief as surveyed in the field on September XX, 2015. I further certify that this "Boundary & Topographic Survey" meets the standards of practice set forth in Rule Chapter 5J-17 of the Florida Administrative Code, pursuant to FS 472.027.

For the Firm By: _____
Thomas J. Galloway, PSM
Professional Surveyor and Mapper
Florida Registration No. 6549

OCU FILE NO.: 85506

APPROVED BY: T.J.G.

DRAWN BY: R.D.B.

CHECKED BY: R.L.R.

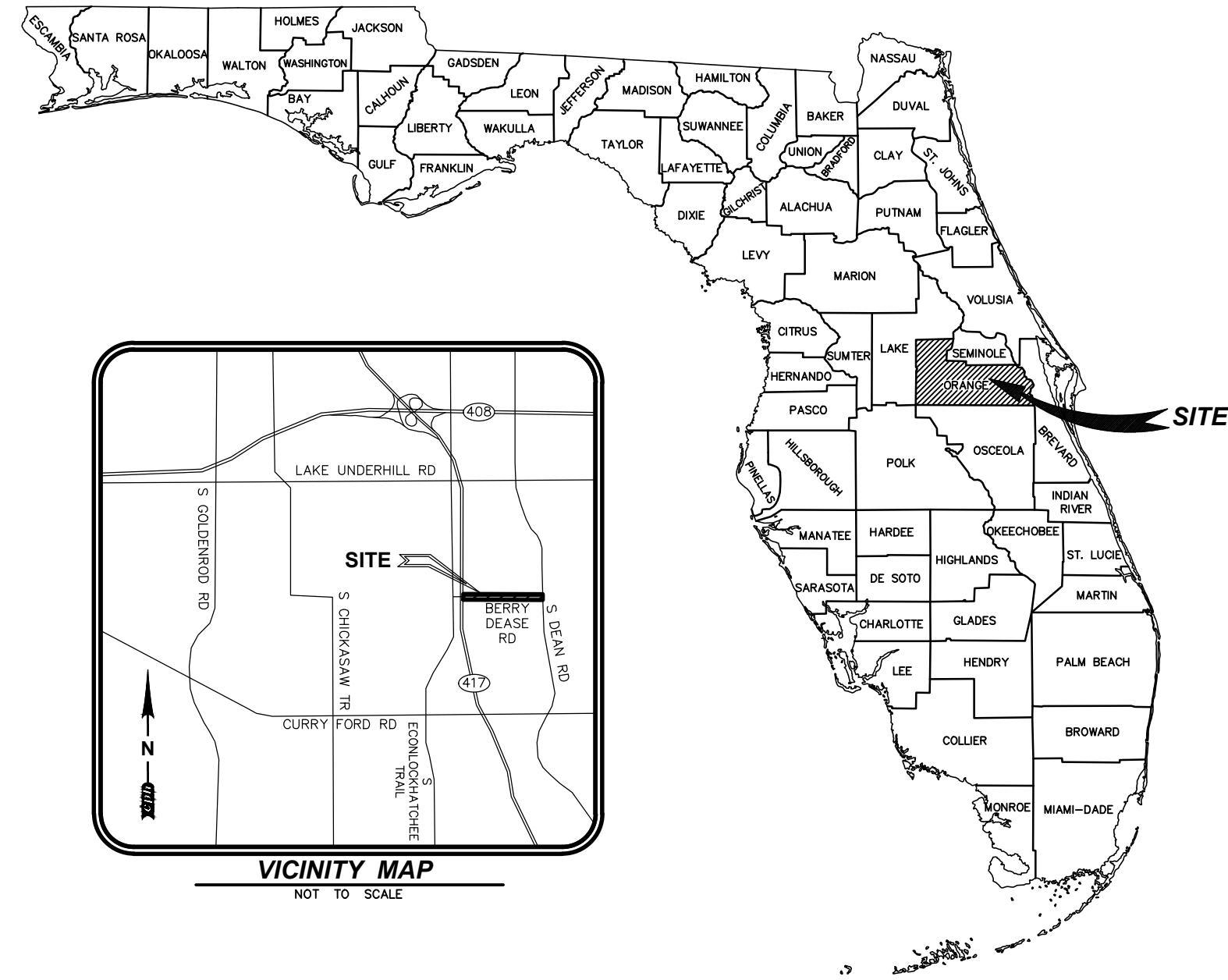
CADD FILE: C28509.dwg

SCALE: N/A

DRAWING NO. :

V-101

SHEET: 6 OF 20



Abbreviation Legend:

(A)	- ACTUAL	MES	- MITERED END SECTION
A/C	- AIR CONDITIONER	MH	- MANHOLE
ACSM	- AMERICAN CONGRESS ON SURVEYING & MAPPING	MLP	- METAL LIGHT POLE
ADA	- AMERICANS WITH DISABILITIES ACT	MPH	- MILES PER HOUR
ALTA	- AMERICAN LAND TITLE ASSOCIATION	MPP	- METAL POWER POLE
APPROX	- APPROXIMATE	N/A	- NOT APPLICABLE
ARV	- AIR RELEASE VALVE	NAVD	- NORTH AMERICAN VERTICAL DATUM
AVE	- AVENUE	NAD	- NORTH AMERICAN DATUM
AVG	- AVERAGE	NC	- NATURAL GROUND
(BB)	- BEARING BASIS	NGS	- NATIONAL GEODETIC SURVEY
BFP	- BACK FLOW PREVENTER	NGVD	- NATIONAL GEODETIC VERTICAL DATUM
BLK	- BLOCK	N & D	- NAIL AND DISK
BLDG	- BUILDING	NO.	- NUMBER
BLVD	- BOULEVARD	NR	- NON-RADIAL
BM	- BENCH MARK	NSPS	- NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS
BOC	- BACK OF CURB	NT	- NON-TANGENT
BOW	- BACK OF WALK	NTS	- NOT TO SCALE
BSL	- BUILDING SETBACK LINE	OD	- OUTSIDE DIAMETER
BWF	- BARBED WIRE FENCE	ORB	- OFFICIAL RECORDS BOOK
C-X	- DENOTES SHEET NUMBERING FOR ENGINEERING PLANS	OR	- OFFICIAL RECORDS
(C)	- CALCULATED	OUL	- OVERHEAD UTILITY LINES
CB	- CHORD	OTL	- OVERHEAD TRAFFIC LINES
CATV	- CABLE TELEVISION RISER	(P)	- PLAT
CB	- CHORD BEARING	PB	- PLAT BOOK
CBS	- CONCRETE BLOCK STRUCTURE	PC	- POINT OF CURVATURE
C.C.R.	- CERTIFIED CORNER RECORD	PC	- POINT OF COMPOUND CURVATURE
C&G	- CURB & GUTTER	PCP	- PERMANENT CONTROL POINT
CI	- CATCH INLET	PFF	- PROPOSED FINISHED FLOOR
C/L	- CENTERLINE	PG	- PAGE
CLF	- CHAIN LINK FENCE	PGS	- PAGES
CM	- CONCRETE MONUMENT	PI	- POINT OF INTERSECTION
CMP	- CORRUGATED METAL PIPE	PK	- PARKER KAYLON
CO	- CLEANOUT	POB	- POINT OF BEGINNING
CONC	- CONCRETE	POC	- POINT OF COMMENCEMENT
COR	- CORNER	POL	- POINT ON LINE
CRPP	- CORRUGATED PLASTIC PIPE	PP	- POWER POLE
CUE	- COUNTY UTILITY EASEMENT	PRC	- POINT OF REVERSE CURVATURE
CWS	- CROSSWALK SIGNAL	PRM	- PERMANENT REFERENCE MONUMENT
Δ	- DELTA	PSM	- PROFESSIONAL SURVEYOR & MAPPER
(D)	- DESCRIPTION	PT	- POINT OF TANGENCY
DB	- DEED BOOK	PVC	- POLYVINYL CHLORIDE PIPE
DBH	- DIAMETER AT BREAST HEIGHT IN INCHES	PVMT	- PAVEMENT
DE	- DRAINAGE EASEMENT	R31E	- RANGE 31 EAST
DEPT	- DEPARTMENT	R	- RADIUS
DIP	- DUCTILE IRON PIPE	RAD	- RADIAL
DR	- DRIVE	RCP	- REINFORCED CONCRETE PIPE
D/U	- DRAINAGE AND UTILITY EASEMENT	REC	- RECOVERED
(E)	- ENGINEERING PLAN	REV	- REVISION
EJB	- ELECTRIC JUNCTION BOX	RP	- RADIUS POINT
EL	- UNDERGROUND ELECTRICAL LINES	R/W	- RIGHT-OF-WAY
ELEC	- ELECTRIC	RLS	- REGISTERED LAND SURVEYOR
ELEV	- ELEVATION	RP	- RADIUS POINT
ELLIP	- ELLIPTICAL	RWL	- RECLAIMED WATER LINE
EOL	- END OF INFORMATION	RWM	- RECLAIMED WATER METER
EOP	- EDGE OF PAVEMENT	SEC	- SPECIAL EASEMENT
FB	- FIELD BOOK	SEC 31	- SECTION 31
FDOT	- FLORIDA DEPARTMENT OF TRANSPORTATION	SMH	- SANITARY SEWER MANHOLE
FF	- FINISH FLOOR	(SP)	- STATE PLANE
FGI	- FLAT GRATE INLET	SQ	- SQUARE
FGLP	- FIBERGLASS LIGHT POLE	SQ FT	- SQUARE FEET
FHYD	- FIRE HYDRANT	ST	- STREET
FM	- FORCE MAIN	STMH	- STORM DRAINAGE MANHOLE
FND	- FOUND	S/W	- SIDEWALK
FP&L	- FLORIDA POWER AND LIGHT	TB	- TANGENT BEARING
FS	- FLORIDA STATUTES	T22S	- TOWNSHIP 22 SOUTH
(G)	- GRID (STATE PLANE)	TELE	- TELEPHONE
GL	- UNDERGROUND GAS LINES	TL	- OVERHEAD TRAFFIC SIGNAL LINES
GOV'T	- GOVERNMENT	TOB	- TOP OF BANK
GPR	- GROUND PENETRATING RADAR	TOE	- TOE OF SLOPE
GTMH	- GREASE TRAP MANHOLE	TR	- TELEPHONE RISER
HDP	- HIGH DENSITY POLYETHYLENE PIPE	TRANS	- TRANSFORMER
HWF	- HIGH WIRE FENCE	TSB	- TRAFFIC SIGNAL BOX
ID	- IDENTIFICATION	TSSP	- TRAFFIC SIGNAL SUPPORT POLE
ICV	- IRRIGATION CONTROL VALVE	TVL	- UNDERGROUND CABLE TV LINES
INFO	- INFORMATION	(TYP)	- TYPICAL
INV	- INVERT	UE	- UTILITY EASEMENT
IP	- IRON PIPE	UNK	- UNKNOWN
IP&C	- IRON PIPE & CAP	UTL	- UNDERGROUND TELEPHONE LINES
IR	- IRON ROD	W	- WITH
IR&C	- IRON REBAR & CAP	WL	- UNDERGROUND WATER LINE
IRR	- IRRIGATION	WLP	- WOOD LIGHT POLE
L	- ARC LENGTH	WM	- WATER METER
LB#	- LICENSED BUSINESS NUMBER	WP	- WORK PROGRAM
LP	- LIGHT POLE	WPF	- WOOD POST FENCE
(M)	- MEASURED	WPP	- WOOD POWER POLE
MB	- MAP BOOK	WV	- WATER VALVE
MBX	- MAILBOX		

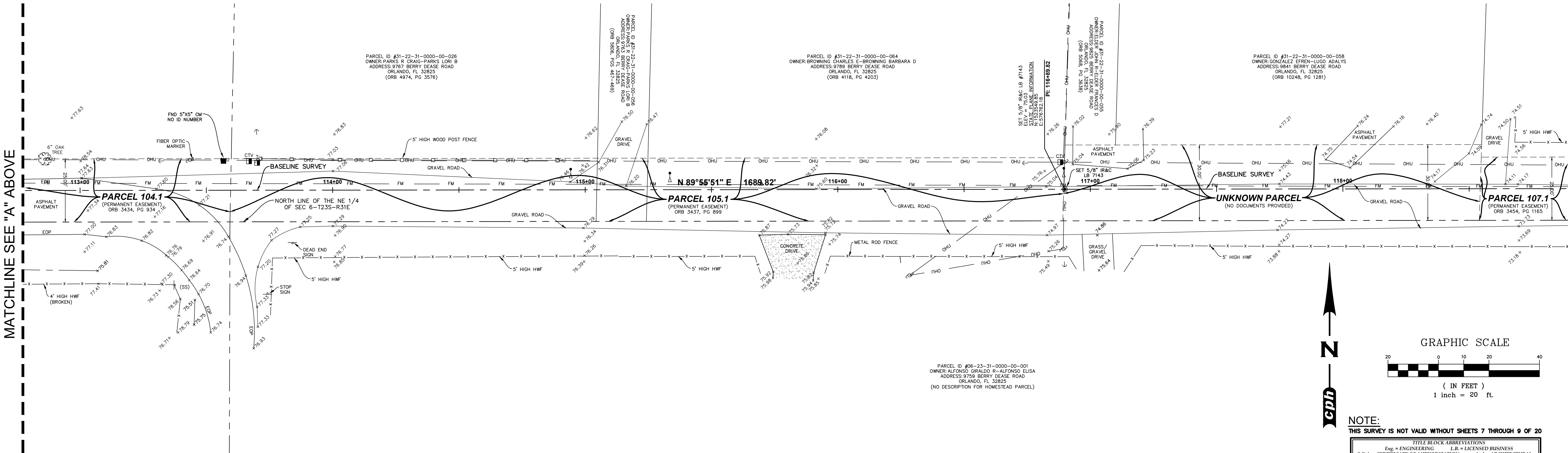
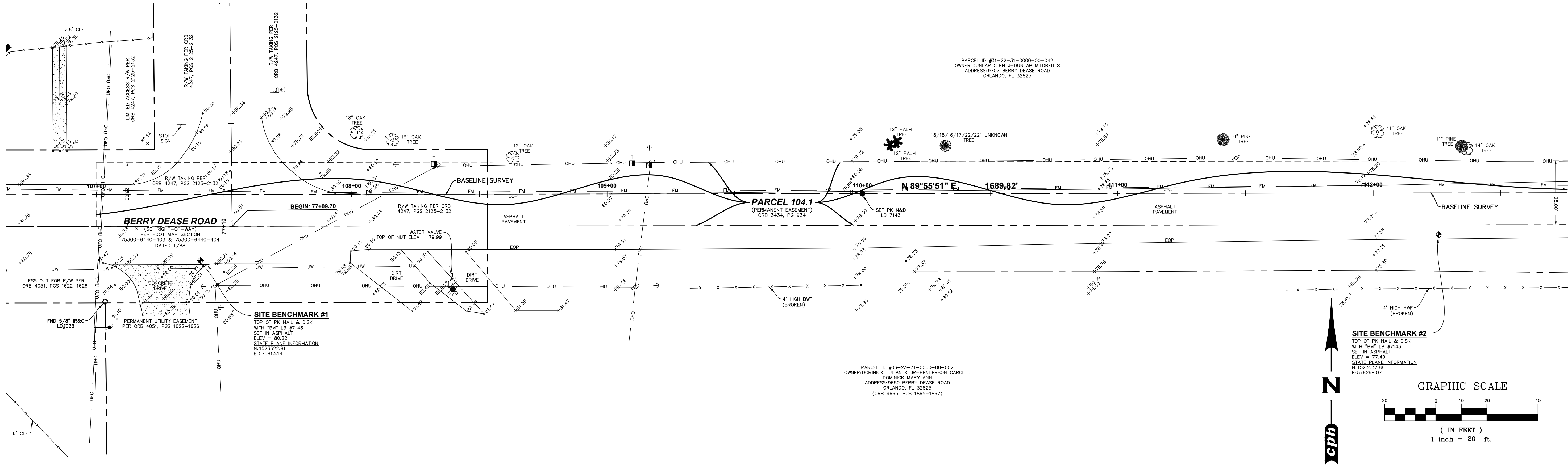
Line Legend:

---	1---	= 1 FOOT CONTOURS
---	5---	= 5 FOOT CONTOURS
---	---	= ADJOINER PROPERTY LINES
---	x---	= BARBED WIRE FENCE
---	---	= BROKEN LINE
---	---	= BURIED CABLE
---	---	= BURIED CABLE TELEVISION
---	---	= BURIED ELECTRIC
---	---	= BURIED FIBER OPTICS
---	---	= BURIED GAS
---	---	= BURIED RECLAIMED WATER LINE
---	---	= BURIED SANITARY LINES
---	---	= BURIED SANITARY SEWER FORCE MAIN LINE
---	---	= BURIED TRAFFIC CONTROL
---	---	= BURIED TELEPHONE LINE
---	---	= BURIED WATER LINES
---	---	= CENTER LINE R/W
---	---	= CHAIN LINK FENCE
---	---	= EASEMENT LINES (EXISTING)
---	---	= EASEMENT LINES (PROPOSED)
---	---	= EDGE OF WATER LINES
---	---	= EXISTING DRAINAGE PIPES
---	---	= EXISTING DRAINAGE PIPES (OUTFALL NOT LOCATED)
---	---	= FIRE WATER MAIN LINES
---	---	= HOT WATER SUPPLY LINES
---	---	= IRRIGATION LINES
---	---	= OVERHEAD TRAFFIC LINES
---	---	= OVERHEAD UTILITY LINES
---	---	= RAILROAD TRACKS
---	---	= RIGHT-OF-WAY LINES
---	---	= SECTION LINES
---	---	= TOP OF BANK LINES
---	---	= TOE OF SLOPE LINES
---	---	= TREE LINES
---	---	= TRAVERSE LINES
---	---	= UNKNOWN BURIED LINES
---	---	= VINYL FENCE
---	---	= WOOD POST FENCE
---	---	= WOOD POWER POLE
---	---	= WATER VALVE

Symbol Legend:

ARV	- AIR RELEASE VALVE	2	- PARKING SPACES (2)
ARV	- BORING HOLE LOCATION	3	- REVISION NUMBER (3)
ARV	- BRICK PAVERS	4	- RECLAIMED WATER METER
ARV	- CABLE TV RISER	5	- RECLAIMED WATER VALVE
ARV	- CENTRAL ANGLE	6	- ROOF DRAIN
ARV	- CONCRETE	7	- SANITARY SEWER MANHOLE
ARV	- CLEAN OUT	8	- SANITARY SEWER VALVE
ARV	- CONCRETE MITERED END SECTION	9	- SCHEDULE B ITEM NUMBER (8)
ARV	- CONCRETE RIP RAP	10	- GROUND LIGHT
ARV	- CONCRETE UTILITY POLE	11	- SECTION CORNER
ARV	- COUNTY ROAD SYMBOL	12	- 4" X 4" CM LB #7143
ARV	- DUAL SUPPORT SIGN	13	- 5/8" IR&C LB #7143
ARV	- ELECTRICAL MANHOLE	14	- SIGN
ARV	- ELECTRICAL JUNCTION BOX	15	- SITE BENCH MARK
ARV	- ELECTRIC OUTLET	16	- STORM SEWER MANHOLE
ARV	- BURIED TELEPHONE LINE	17	- STRIPING (DIRECTIONAL)
ARV	- FIRE HYDRANT	18	- TELEPHONE CABLE RISER
ARV	- FLOOD LIGHT	19	- TELEPHONE MANHOLE
ARV	- FOUND CONCRETE MONUMENT (AS NOTED)	20	- TELEPHONE JUNCTION BOX
ARV	- FOUND IRON PIPE (AS NOTED)	21	- TEST HOLE
ARV	- FOUND IRON REBAR (AS NOTED)	22	- TRAFFIC SIGNAL BOX
ARV	- FOUND/SET NAIL (AS NOTED)	23	- TRAFFIC SIGNAL SUPPORT POLE
ARV	- GARBAGE CAN	24	- WATER METER
ARV	- GAS VALVE	25	- WATER SERVICE
ARV	- GOPHER TORTOISE HOLE	26	- WATER SPIGOT
ARV	- GRATE INLET	27	- WATER SPRINKLER
ARV	- GREASE TRAP MANHOLE	28	- WATER VALVE
ARV	- GUY ANCHOR	29	- WELL
ARV	- HANDICAP PARKING SPACE	30	- WETLAND FLAG
ARV	- INTERSTATE SYMBOL	31	- WOOD UTILITY POLE
ARV	- IRRIGATION CONTROL VALVE	32	- UNKNOWN MANHOLE
ARV	- CONCRETE LIGHT POLE	33	- CONCRETE PAVERS
ARV	- LIGHT POLE	34	- DETECTABLE WARNING AREA
ARV	- LIGHT POLE (DUAL)	35	- CONCRETE LIGHT POLE (DUAL)
ARV	- LIGHT POLE (TRIPLE)	36	- CONCRETE LIGHT POLE (TRIPLE)
ARV	- LIGHT POLE (QUAD)	37	- CONCRETE LIGHT POLE (QUAD)
ARV	- MAILBOX	38	- UNKNOWN RISER
ARV	- MONITOR WELLS	39	- VENT (AS NOTED)
ARV	- NAIL & DISC (AS NOTED)	40	- WIRE HEIGHTS (SEE CHART)
ARV	- PULL BOX (AS NOTED)	41	- CROSSWALK SIGNAL POLE

TOPOGRAPHIC SURVEY



REV	DATE	DESCRIPTION

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



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ENGINEERING DIVISION
9150 CURRY FORD ROAD ORLANDO, FL. 32825



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Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

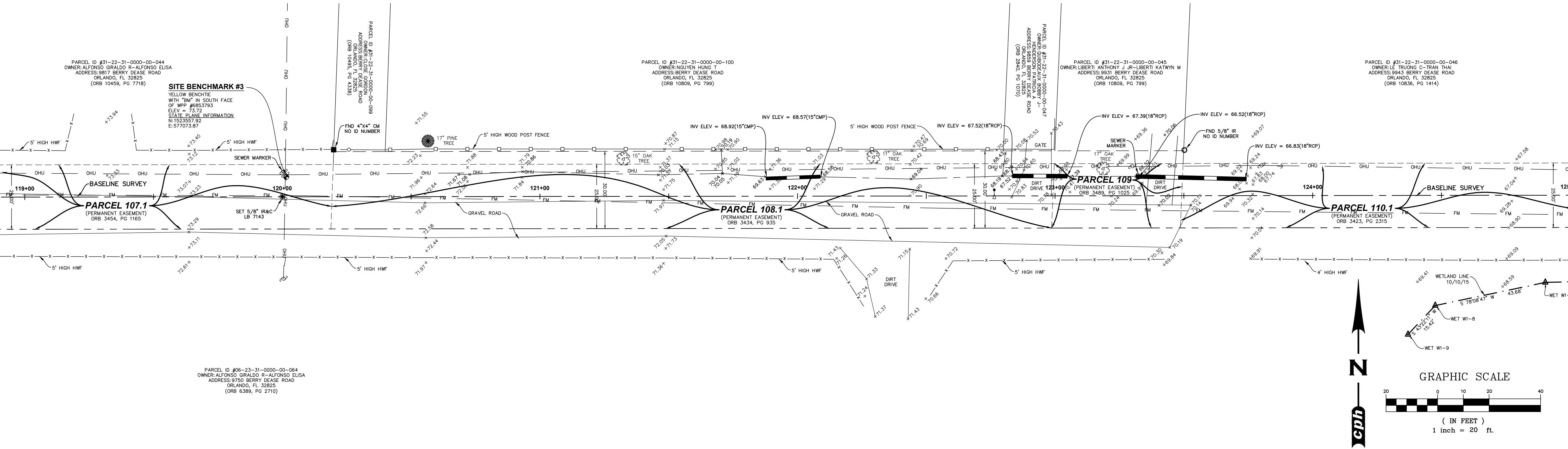
TOPOGRAPHIC SURVEY

Survey Prepared By:
CPH, Inc.
500 West Fulton St.
Sanford, FL 32771
Ph: 407.322.6841
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

OCU FILE NO.: 85506
APPROVED BY: T.J.G.
DRAWN BY: R.D.B.
CHECKED BY: R.L.R.
CADD FILE: O28509.dwg

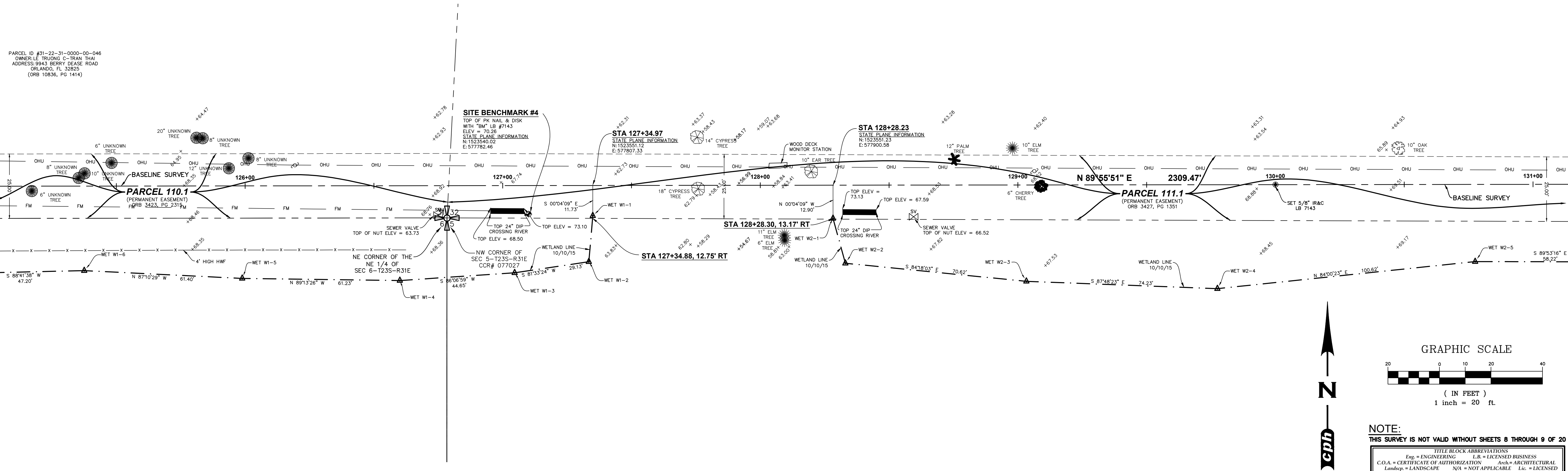
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DRAWING NO.:
V-102
SHEET: 7 OF 20

MATCHLINE SEE "B" SEE SHEET 2 OF 4



MATCHLINE SEE "C" BELOW

MATCHLINE SEE "C" ABOVE



MATCHLINE "D" SEE SHEET 4 OF 4

REV	DATE	DESCRIPTION

LINE IS 2 INCHES
AT FULL SIZE
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OCU FILE NO.: 85506
APPROVED BY: T.J.G.
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CHECKED BY: R.L.R.
CADD FILE: O28509.dwg

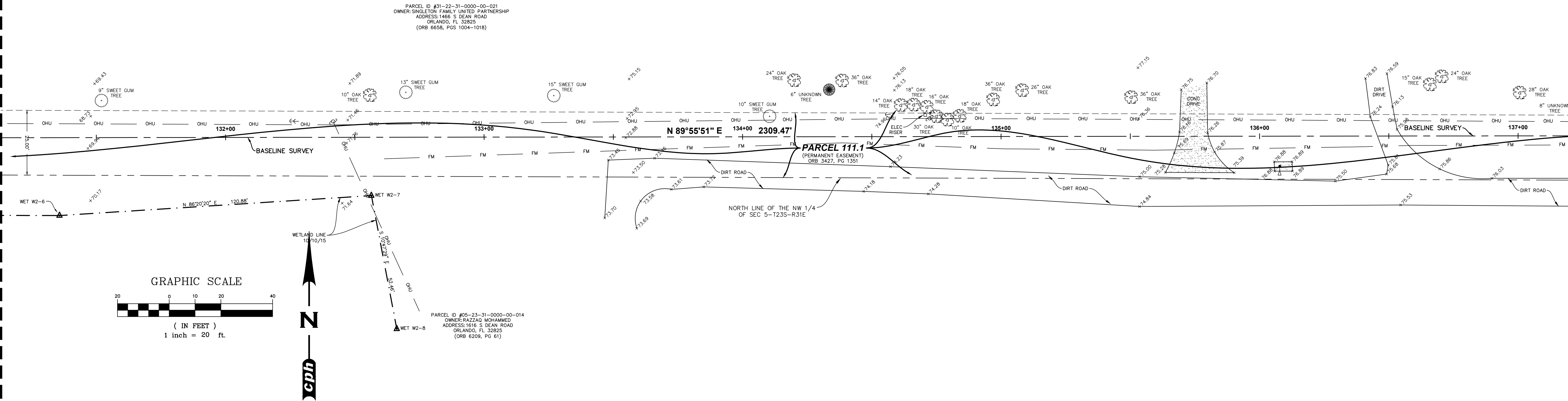
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V-103
SHEET: 8 OF 20

NOTE:
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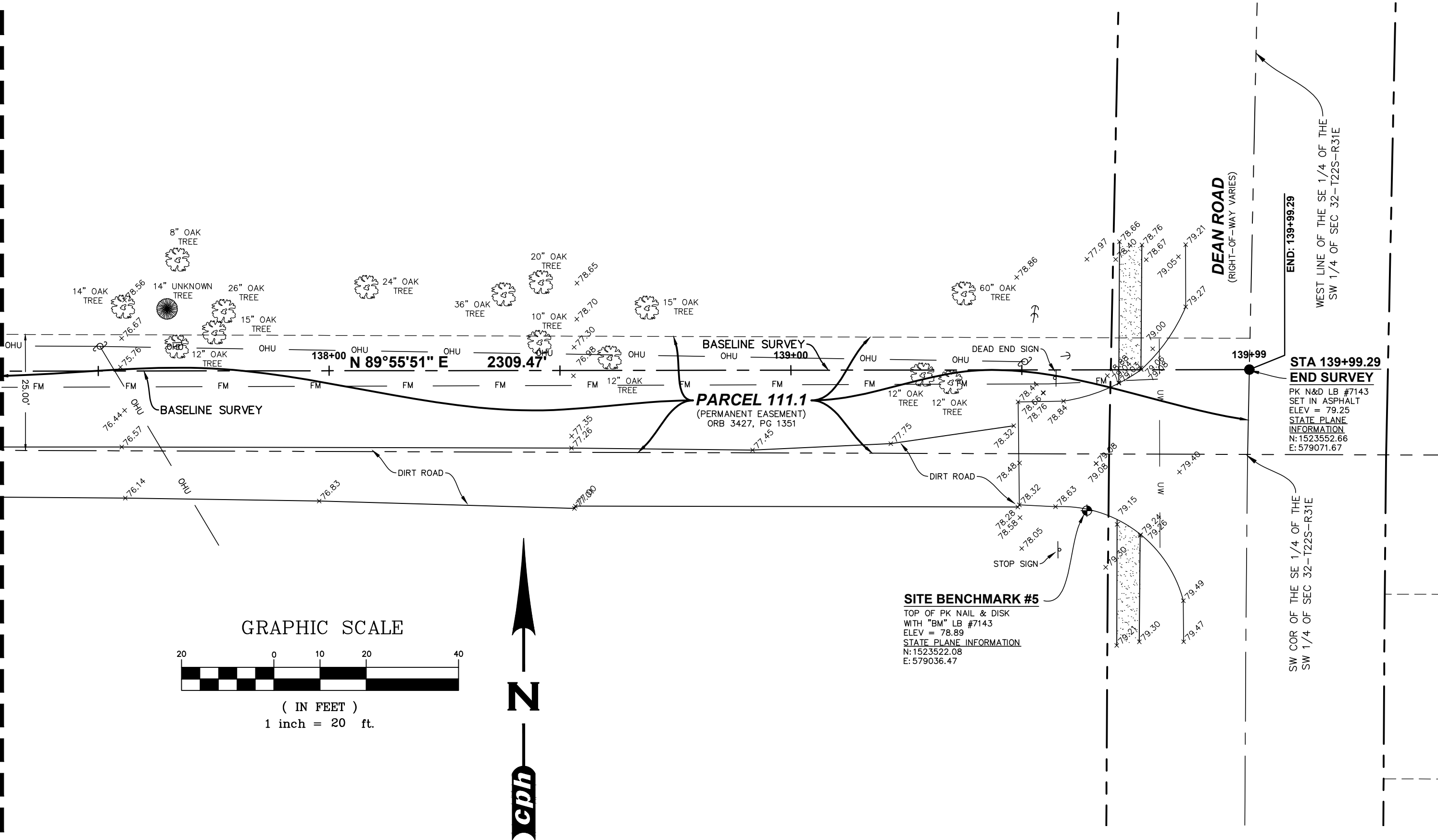
TITLE BLOCK ABBREVIATIONS
Eng = ENGINEERING L.B. = LICENSED BUSINESS
C.O.A. = CERTIFICATE OF AUTHORIZATION Arch = ARCHITECTURAL
Lndscp = LANDSCAPE N/A = NOT APPLICABLE Lic = LICENSED
No. = NUMBER P.O. = POST OFFICE S = COPYRIGHT

MATCHLINE SEE "D" SEE SHEET 3 OF 4

MATCHLINE SEE "E" BELOW



MATCHLINE SEE "E" ABOVE



NOTE:
THIS SURVEY IS NOT VALID WITHOUT SHEETS 9 THROUGH 9 OF 20

TITLE BLOCK ABBREVIATIONS
Eng = ENGINEERING L.R. = LICENSED BUSINESS
C.O.A. = CERTIFICATE OF AUTHORIZATION Arch = ARCHITECTURAL
Landscape = LANDSCAPE N/A = NOT APPLICABLE Lic = LICENSED
No. = NUMBER P.O. = POST OFFICE S = COPYRIGHT

REV	DATE	DESCRIPTION

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ORANGE COUNTY
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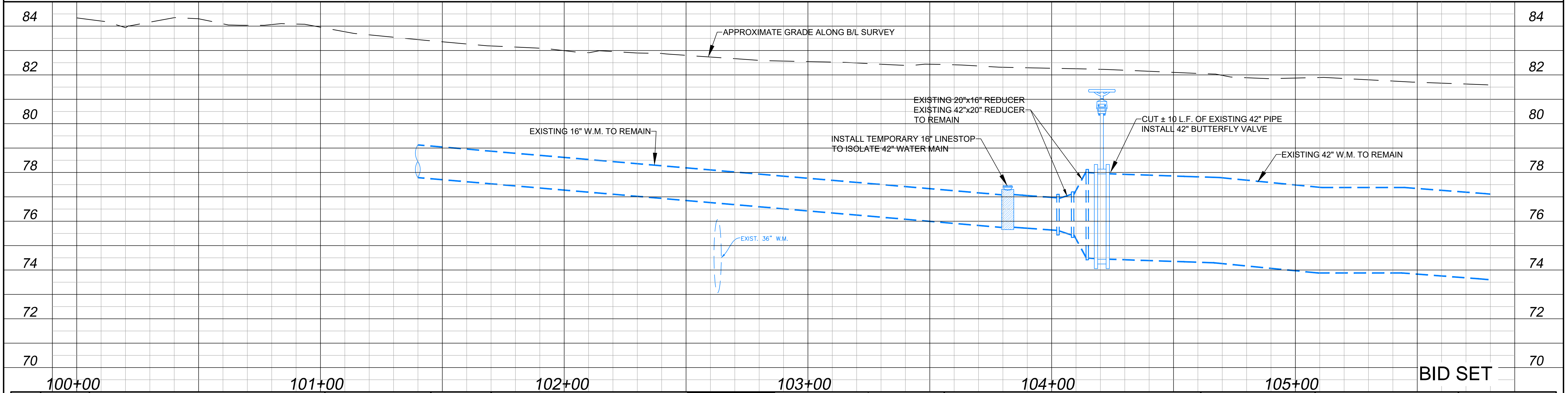
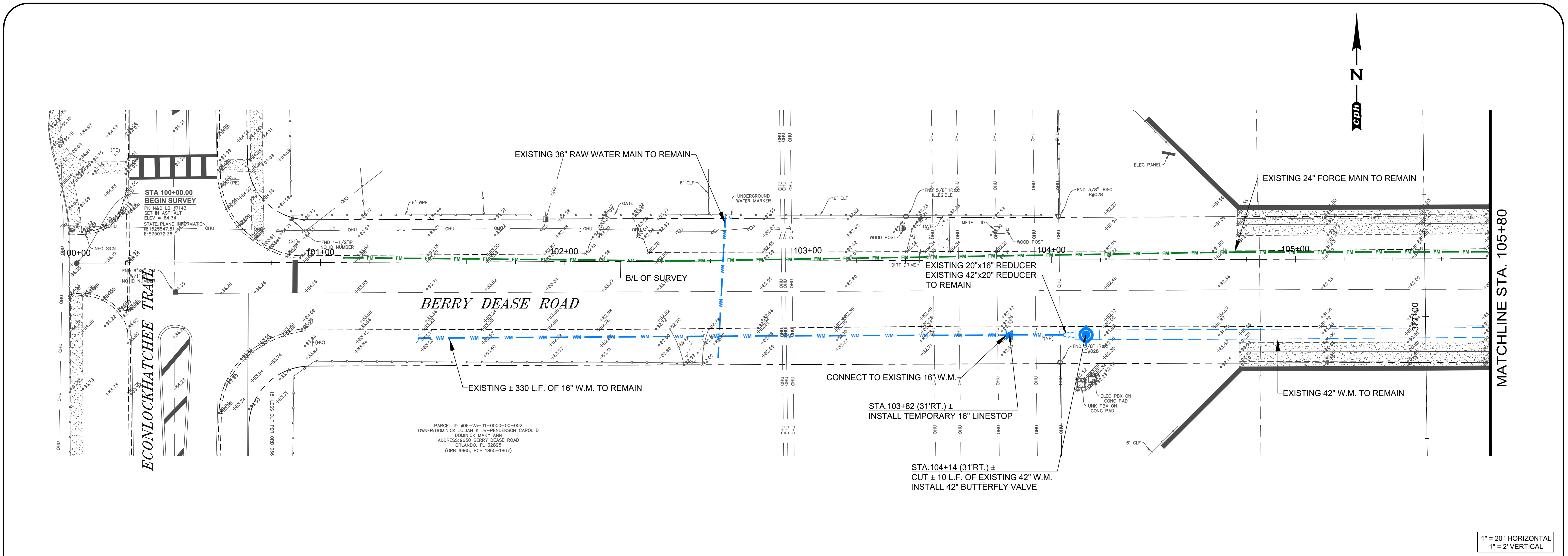
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Landscape Lic. No. LC0000298

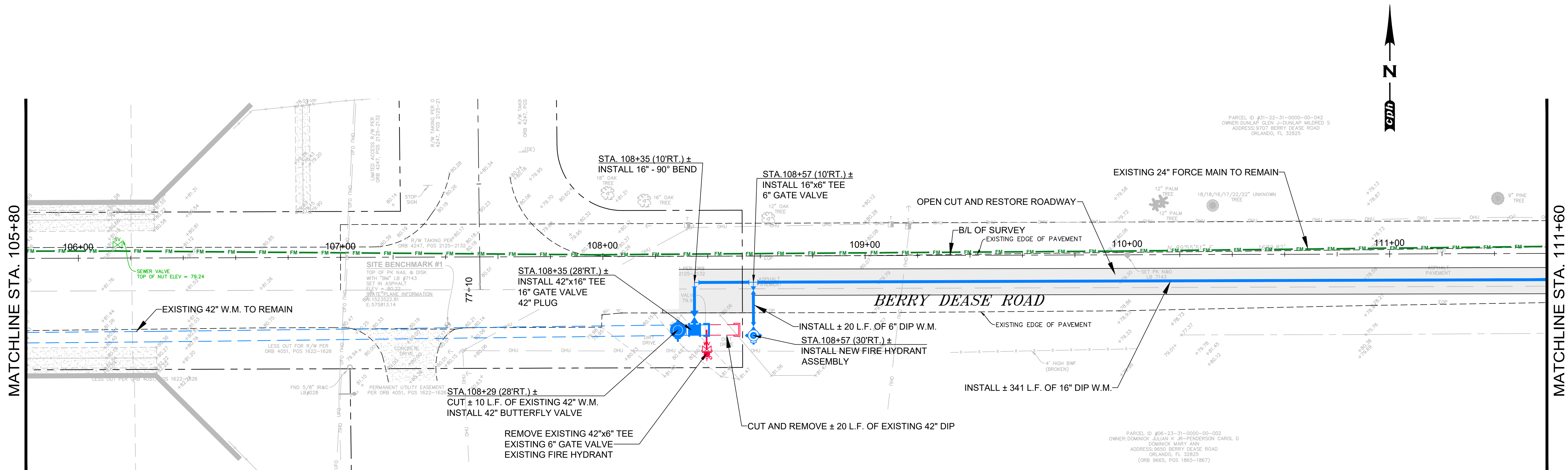
TOPOGRAPHIC SURVEY

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500 West Fulton St.
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OCU FILE NO.: 85506
APPROVED BY: T.J.G.
DRAWN BY: R.D.B.
CHECKED BY: R.L.R.
CADD FILE: O28509.dwg

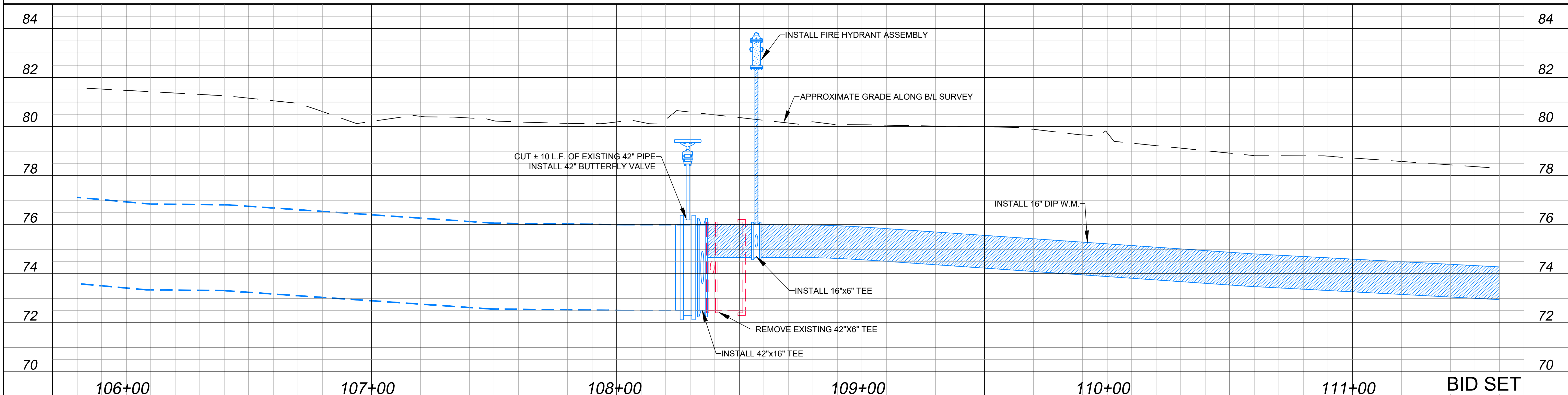
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DRAWING NO.:
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SHEET: 9 OF 20





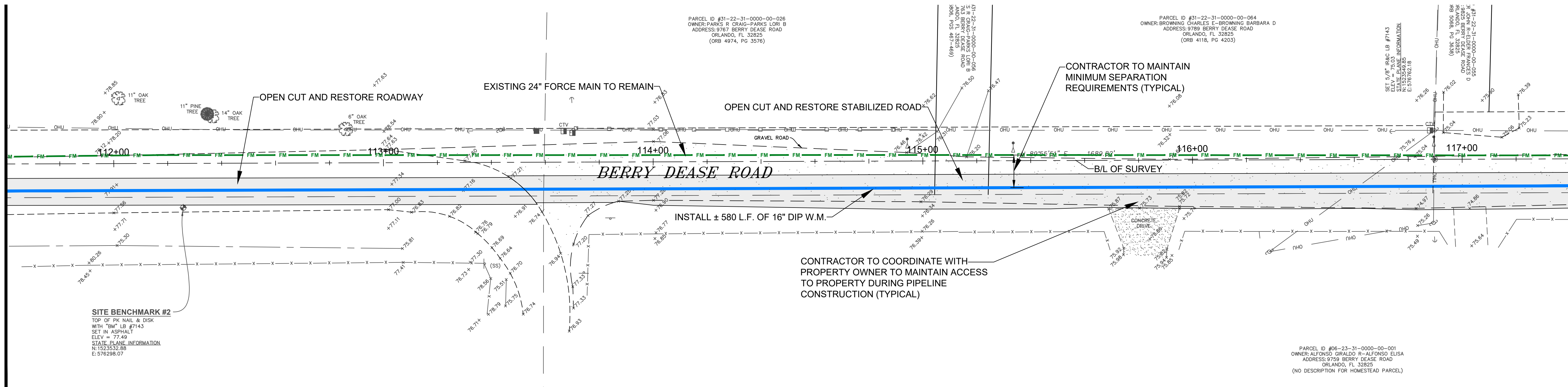
- NOTE:
- EXISTING FIRE HYDRANT TO BE PROVIDED TO COUNTY OPERATIONS DIVISION UPON REMOVAL.

1" = 20' HORIZONTAL
1" = 2' VERTICAL



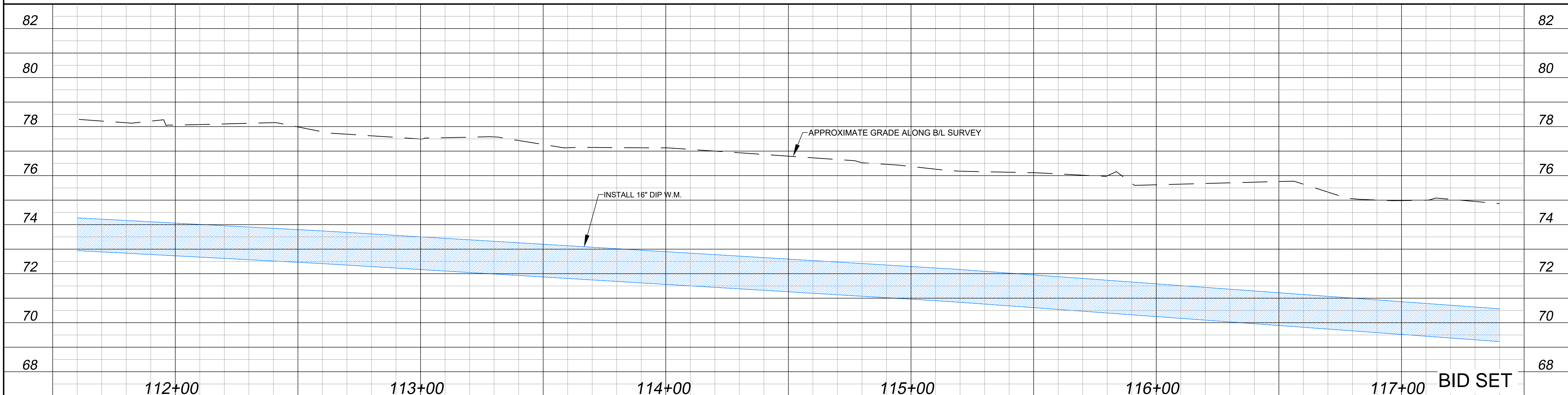
REV	DATE	DESCRIPTION	ORANGE COUNTY UTILITIES DEPARTMENT ENGINEERING DIVISION		cph		A Full Service A & E Firm		PLAN AND PROFILE (STA. 105+80 ~ STA. 111+60) BERRY DEASE ROAD WATER MAIN EXTENSION AND FORCE MAIN REPLACEMENT PROJECT		DAVID E. MAHLER PROFESSIONAL ENGINEER FLORIDA LICENSE #50041		OCU FILE NO.: 85506 DESIGNED BY: DEM DRAWN BY: GNP CHECKED BY: DEM CADD FILE: O28509 Plan & Profiles.dwg		SCALE: AS SHOWN DRAWING NO.: C-102 SHEET: 11 OF 21	
			9150 CURRY FORD ROAD ORLANDO, FL. 32825		1117 East Robinson Street ~ Orlando, FL 32801 ~ Phone: 407.425.0452		Licenses: Eng. C.O.A. No. 3215 Survey L.B. No. 7143 Arch. Lic. No. AA2600926 Landscape Lic. No. LC0000298									

MATCHLINE STA. 111+60



MATCHLINE STA. 117+40

1" = 20' HORIZONTAL
1" = 2' VERTICAL



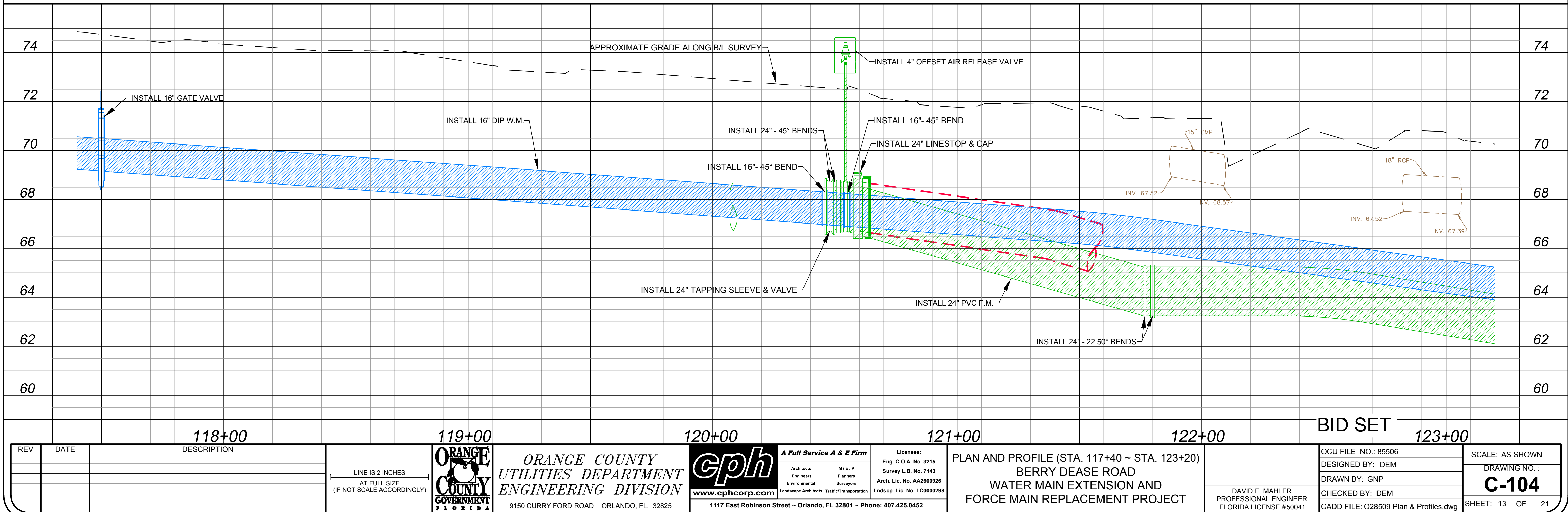
REV	DATE	DESCRIPTION	ORANGE COUNTY GOVERNMENT FLORIDA		ORANGE COUNTY UTILITIES DEPARTMENT ENGINEERING DIVISION 9150 CURRY FORD ROAD ORLANDO, FL. 32825		cph www.cphcorp.com A Full Service A & E Firm Architects M/E/P Engineers Planners Environmental Surveyors Landscape Architects Traffic/Transportation		Licenses: Eng. C.O.A. No. 3215 Survey L.B. No. 7143 Arch. Lic. No. AA2600926 Lndscp. Lic. No. LC0000298	PLAN AND PROFILE (STA. 111+60 ~ STA. 117+40) BERRY DEASE ROAD WATER MAIN EXTENSION AND FORCE MAIN REPLACEMENT PROJECT		DAVID E. MAHLER PROFESSIONAL ENGINEER FLORIDA LICENSE #50041		OCU FILE NO.: 85506 DESIGNED BY: DEM DRAWN BY: GNP CHECKED BY: DEM CADD FILE: O28509 Plan & Profiles.dwg		SCALE: AS SHOWN DRAWING NO.: C-103 SHEET: 12 OF 21	
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MATCHLINE STA. 117+40

MATCHLINE STA. 123+20



1" = 20' HORIZONTAL
1" = 2' VERTICAL



REV	DATE	DESCRIPTION

LINE IS 2 INCHES
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ORANGE COUNTY UTILITIES DEPARTMENT ENGINEERING DIVISION
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Landscape Lic. No. LC0000298

PLAN AND PROFILE (STA. 117+40 ~ STA. 123+20)
BERRY DEASE ROAD
WATER MAIN EXTENSION AND
FORCE MAIN REPLACEMENT PROJECT

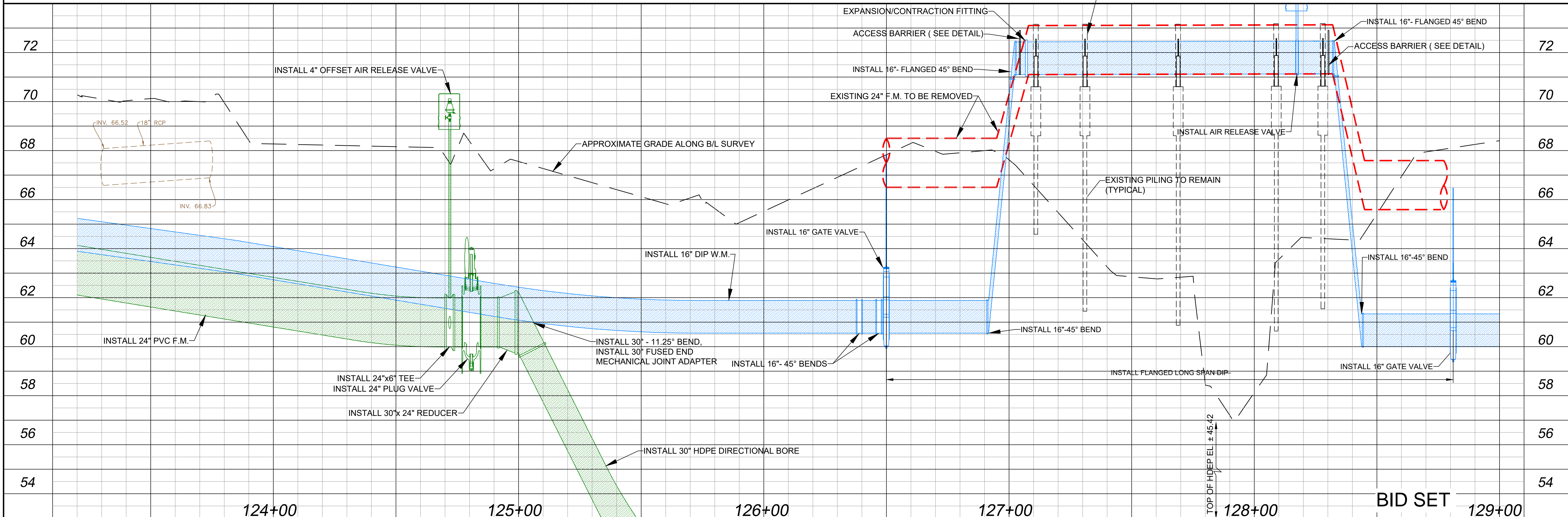
DAVID E. MAHLER
PROFESSIONAL ENGINEER
FLORIDA LICENSE #50041

OCU FILE NO.: 85506
DESIGNED BY: DEM
DRAWN BY: GNP
CHECKED BY: DEM
CADD FILE: O28509 Plan & Profiles.dwg

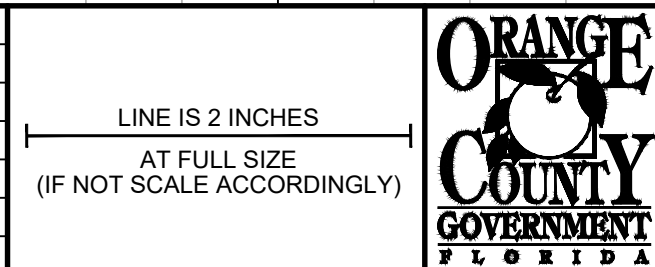
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DRAWING NO.: **C-104**
SHEET: 13 OF 21

MATCHLINE STA. 123+20

MATCHLINE STA. 129+00



REV	DATE	DESCRIPTION



ORANGE COUNTY
UTILITIES DEPARTMENT
ENGINEERING DIVISION
9150 CURRY FORD ROAD ORLANDO, FL. 32825



Licenses:
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Survey L.B. No. 7143
Arch. Lic. No. AA2600926
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PLAN AND PROFILE (STA. 123+20 ~ STA. 129+00)
BERRY DEASE ROAD
WATER MAIN EXTENSION AND
FORCE MAIN REPLACEMENT PROJECT

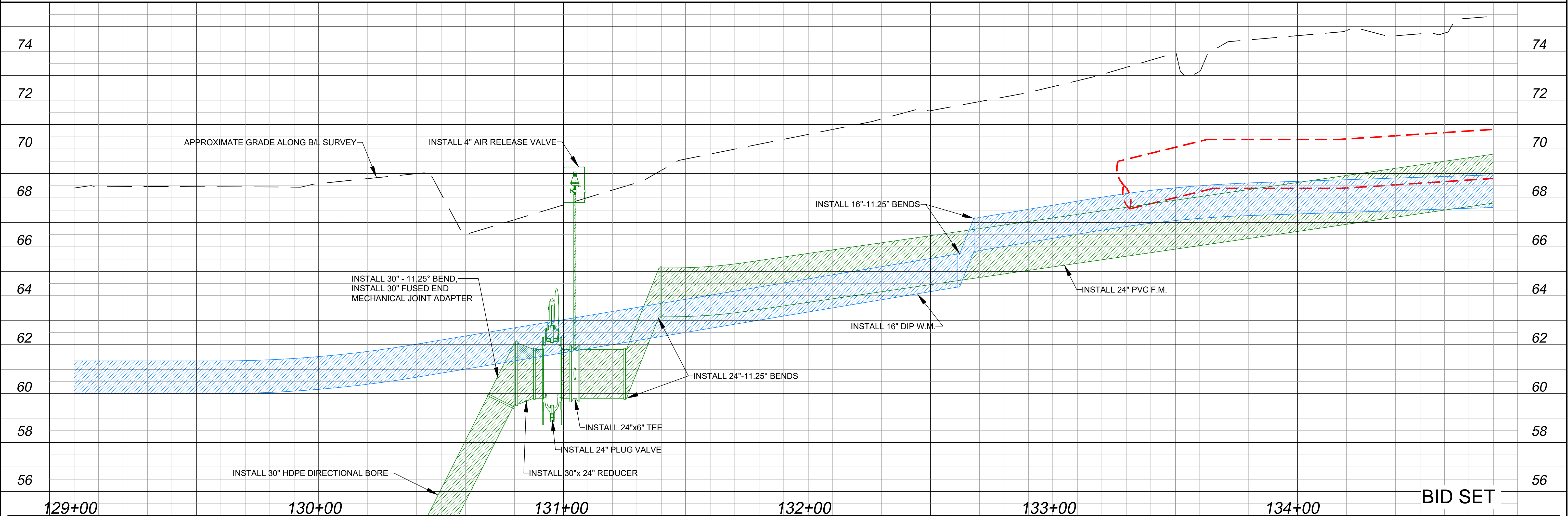
DAVID E. MAHLER
PROFESSIONAL ENGINEER
FLORIDA LICENSE #50041

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SCALE: AS SHOWN
DRAWING NO.:
C-105
SHEET: 14 OF 21

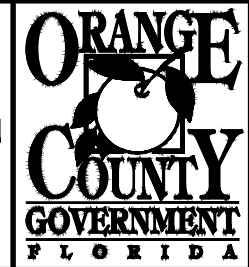
MATCHLINE STA. 129+00

MATCHLINE STA. 134+80



REV	DATE	DESCRIPTION

LINE IS 2 INCHES
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(IF NOT SCALE ACCORDINGLY)



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Environmental Surveyors
Landscape Architects Traffic/Transportation
Landscape Lic. No. LC0000298

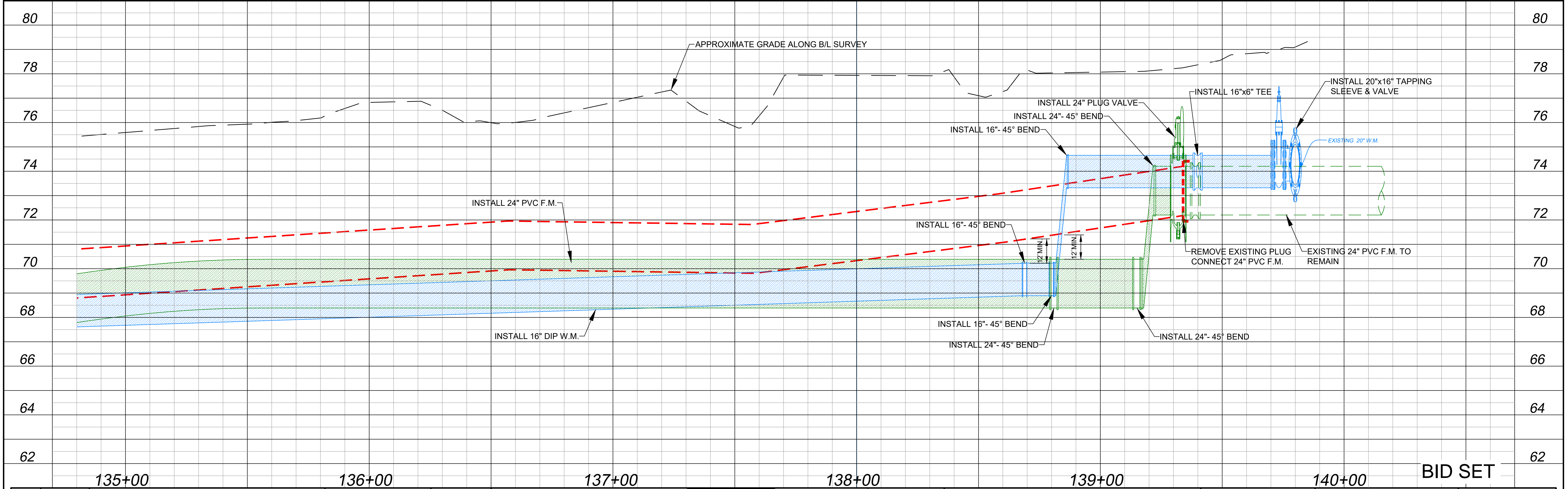
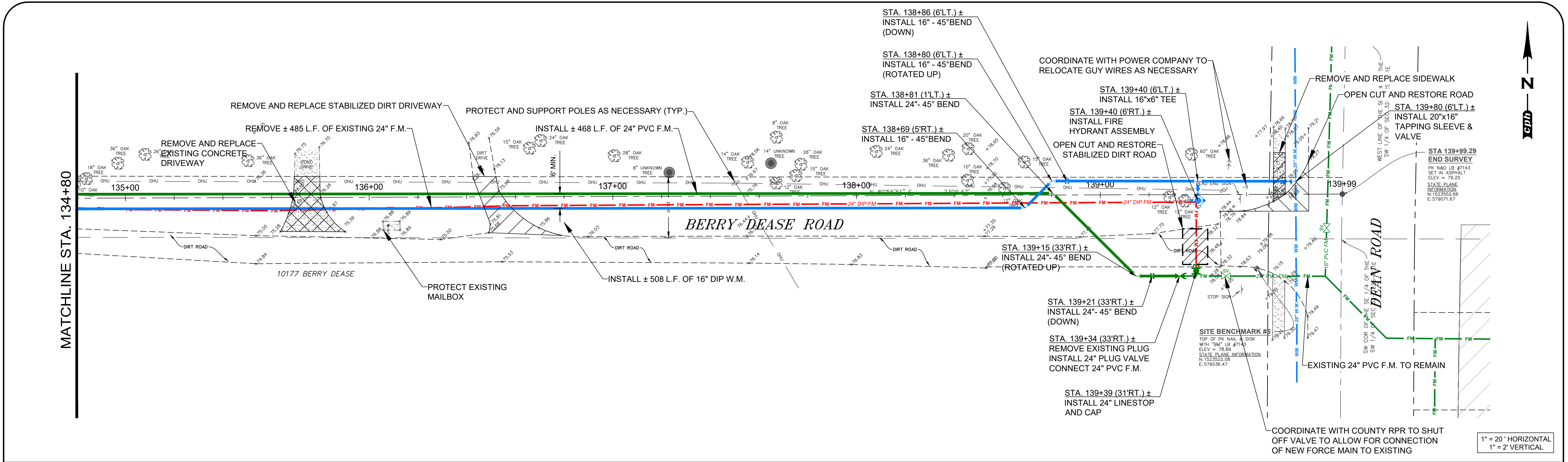
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Landscape Lic. No. LC0000298

**PLAN AND PROFILE (STA. 129+00 ~ STA. 134+80)
BERRY DEASE ROAD
WATER MAIN EXTENSION AND
FORCE MAIN REPLACEMENT PROJECT**

DAVID E. MAHLER
PROFESSIONAL ENGINEER
FLORIDA LICENSE #50041

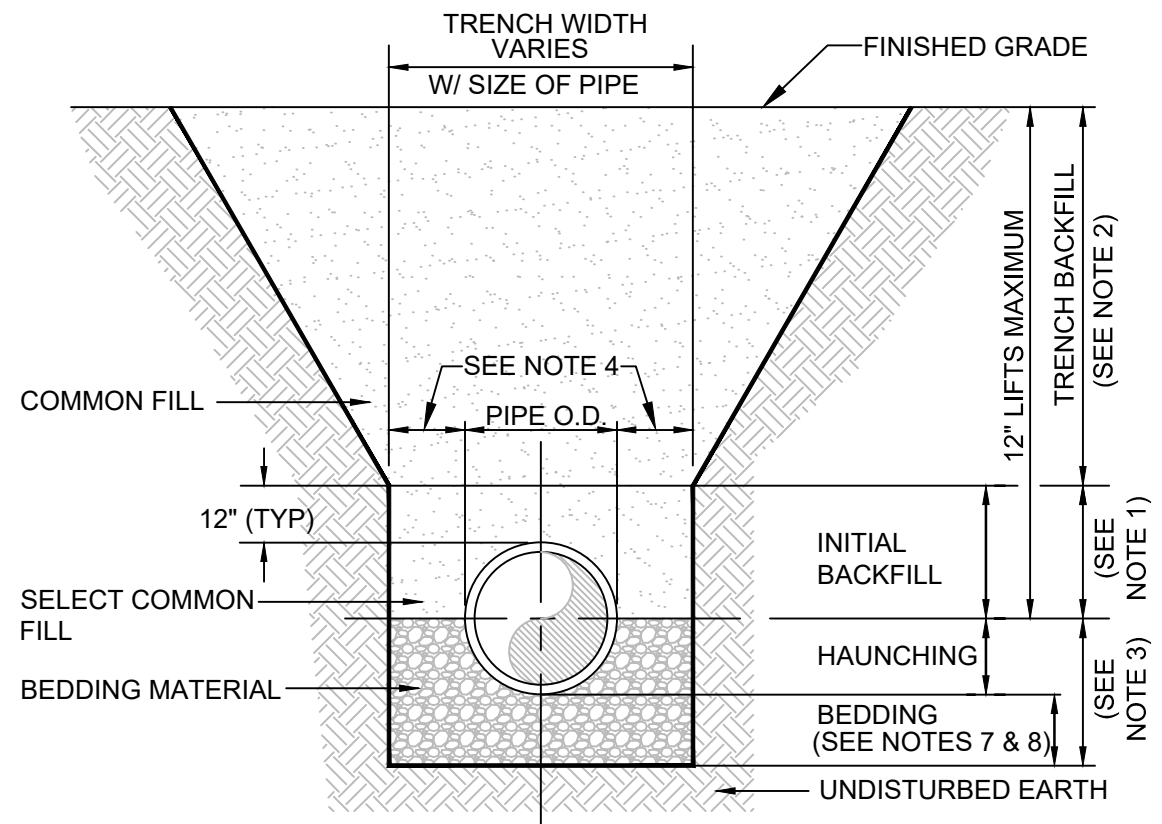
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DRAWN BY: GNP
CHECKED BY: DEM
CADD FILE: O28509 Plan & Profiles.dwg

SCALE: AS SHOWN
DRAWING NO.:
C-106
SHEET: 15 OF 21



APPENDIX A STANDARD DRAWINGS GENERAL

DATE: February 11, 2011 BEDDING AND TRENCHING - TYPE A FIGURE A101

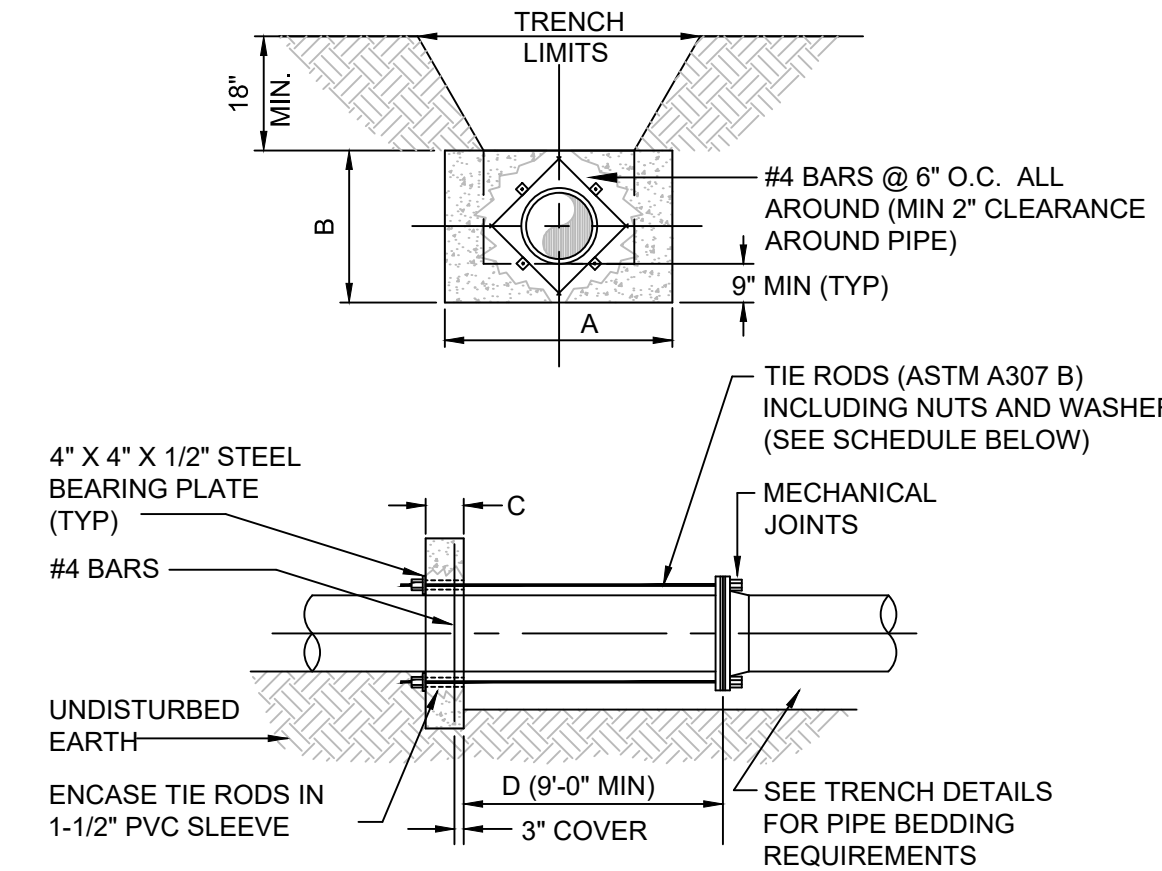


NOTES:

1. INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. TYPE A BEDDING MATERIAL SHALL CONFORM TO FDOT NO. 57 AGGREGATE.
4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER UP TO 12" AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
8. 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.
9. 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 R/W UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

APPENDIX A STANDARD DRAWINGS GENERAL

DATE: February 11, 2011 THRUST COLLAR (150 psi) WATER AND RECLAIMED WATER MAINS FIGURE A105-1



NOTES:

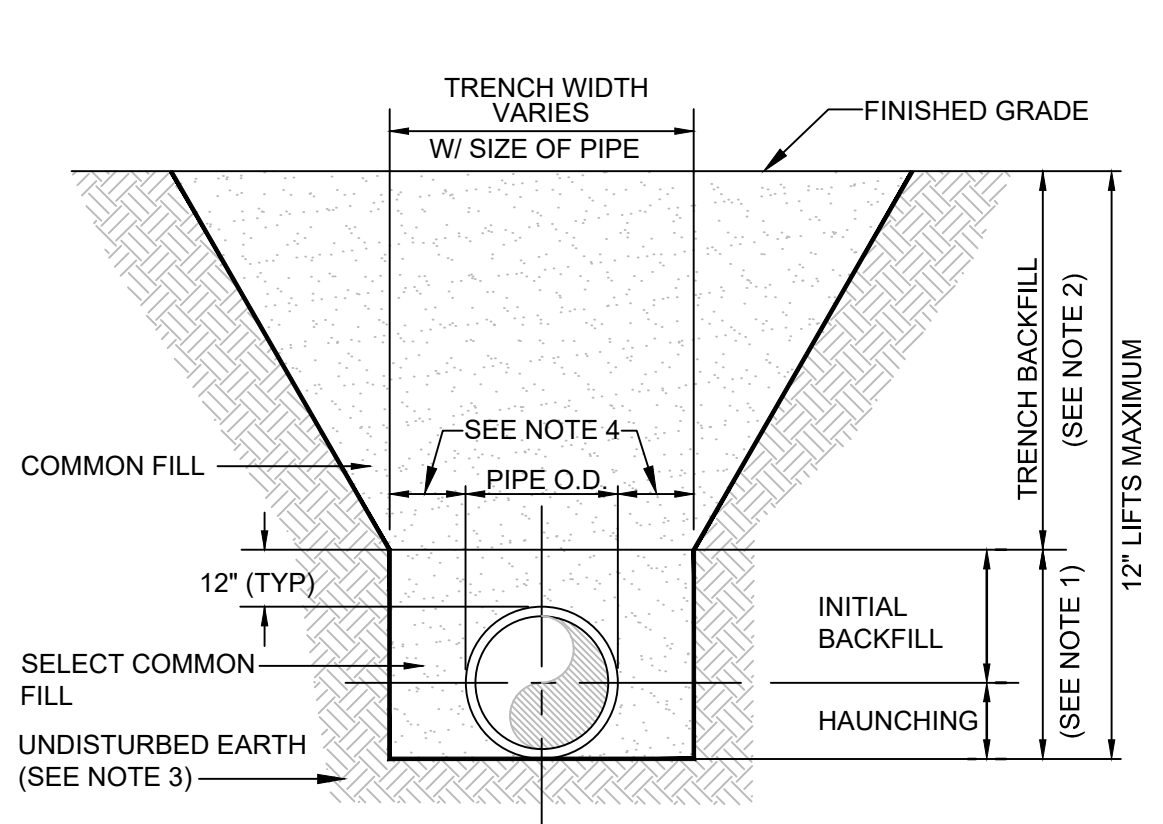
1. ADDITIONAL REINFORCEMENTS SHALL BE AS SPECIFIED BY THE ENGINEER.
2. MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE SHALL BE 3000 PSI.
3. BEDDING, BACKFILL, AND COMPACTION SHALL BE AS SPECIFIED ELSEWHERE IN THE STANDARD DRAWINGS.
4. ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACKFILL.
5. NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL AND THE THRUST COLLAR.
6. DESIGN PRESSURE: 150 . PSI.
7. REQUIRED FOR LINE STOPS.

SCHEDULE OF DIMENSIONS AND MATERIALS						
PIPE SIZE (INCHES)	DIMENSIONS (FT.)				TIE RODS REQ'D	
	A	B	C	D	DIA.	NO.
6	2.0	2.0	1.0		3/4	2
8	2.5	2.5	1.0		3/4	2
10	3.5	3.0	1.0		3/4	4
12	5.0	3.0	1.0		3/4	4
16	6.0	4.0	1.5		3/4	4
20	8.0	5.0	1.5		3/4	6
24	9.0	6.0	1.5		3/4	8

NOTE: THRUST COLLAR AREAS TO BE COMPUTED ON BASIS OF 2000 LBS/SF SOIL RESTRAINT BEARING.

APPENDIX A STANDARD DRAWINGS GENERAL

DATE: February 11, 2011 BEDDING AND TRENCHING - TYPE B FIGURE A102

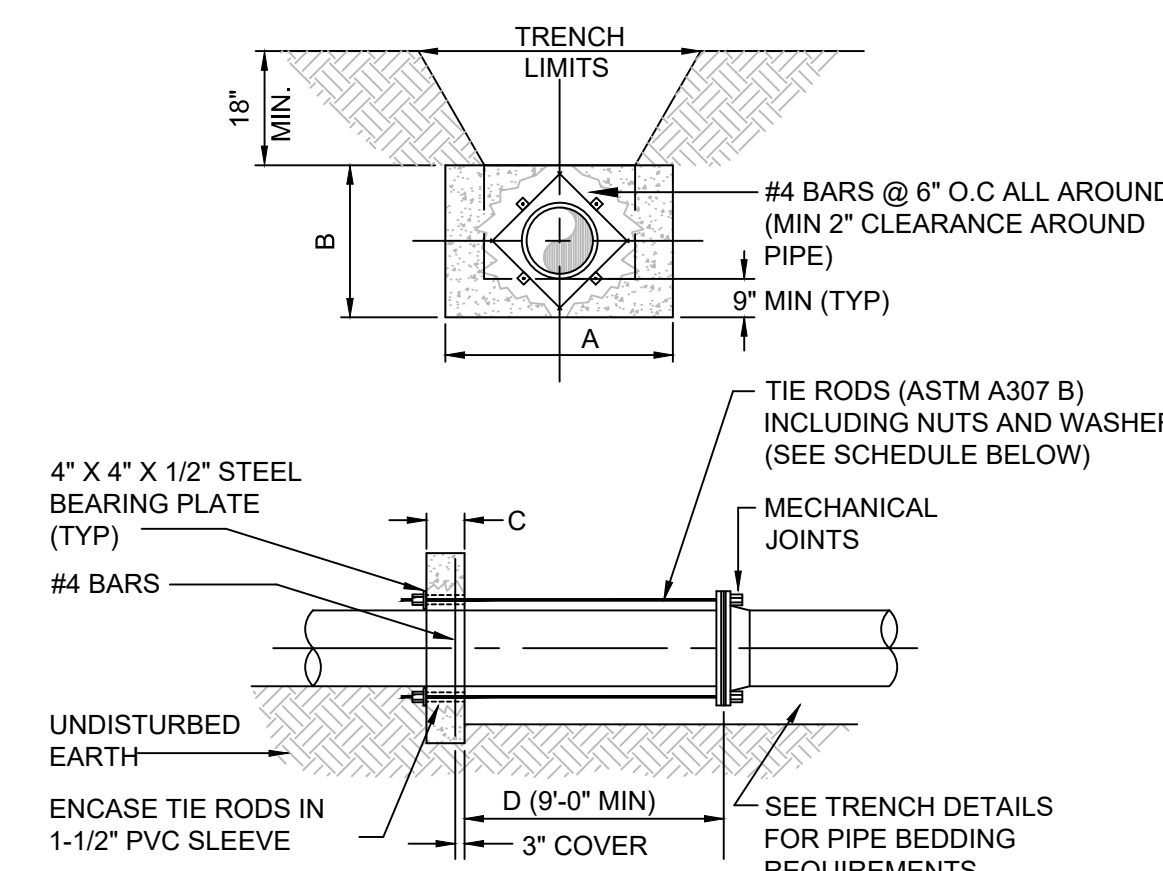


NOTES:

1. INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. 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.
4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. 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.

APPENDIX A STANDARD DRAWINGS GENERAL

DATE: February 11, 2011 THRUST COLLAR (100 psi) WASTEWATER FORCE MAINS FIGURE A105-2



NOTES:

1. ADDITIONAL REINFORCEMENTS SHALL BE AS SPECIFIED BY THE ENGINEER.
2. MINIMUM COMPRESSIVE STRENGTH FOR CONCRETE SHALL BE 3000 PSI.
3. BEDDING, BACKFILL, AND COMPACTION SHALL BE AS SPECIFIED ELSEWHERE IN THE STANDARD DRAWINGS.
4. ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACKFILL.
5. NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL AND THE THRUST COLLAR.
6. DESIGN PRESSURE: 100 . PSI.
7. REQUIRED FOR LINE STOPS.

SCHEDULE OF DIMENSIONS AND MATERIALS						
PIPE SIZE (INCHES)	DIMENSIONS (FT.)				TIE RODS REQ'D	
	A	B	C	D	DIA.	NO.
6	2.0	2.0	1.0		3/4	2
8	2.5	2.5	1.0		3/4	2
10	3.0	2.5	1.0		3/4	4
12	4.0	3.0	1.0		3/4	4
16	5.5	3.5	1.5		3/4	4
20	7.5	4.0	1.5		3/4	4
24	8.5	5.0	1.5		3/4	6

NOTE: THRUST COLLAR AREAS TO BE COMPUTED ON BASIS OF 2000 LBS/SF SOIL RESTRAINT BEARING.

APPENDIX A STANDARD DRAWINGS GENERAL

DATE: February 11, 2011 RESTRAINED PIPE TABLE WASTEWATER FORCE MAINS FIGURE A104-2

MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)											
TYPE	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	204	223	
VALVE	20	25	32	40	45	59	70	82	98	112	
REDUCER	VARIES BY SIZE; TO BE DETERMINED BY THE DESIGN ENGINEER.										

NOTES:

1. FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE LONGEST RESTRAINT DISTANCE.
4. ALL INLINE VALVES SHALL BE RESTRAINED.
5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.
6. 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.

APPENDIX A STANDARD DRAWINGS GENERAL

DATE: February 11, 2011 RESTRAINED PIPE TABLE WATER AND RECLAIMED WATER MAINS FIGURE A104-1

MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)															
TYPE	PIPE SIZE														
	PVC					DIP									
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"					
90° BEND	25	36	46	55	64	65	77	89	105	120					
45° BEND	10	15	19	23	26	27	32	37	44	50					
22-1/2° BEND	5	8	9	11	13	13	15	18	21	24					
11-1/4° BEND	3	4	5	6	8	7	8	9	10	12					
PLUG OR BRANCH OF TEE	53	74	97	117	135	138	166	194	231	265					
VALVE	27	38	49	59	68	69	83	97	116	133					
REDUCER	VARIES BY SIZE; TO BE DETERMINED BY THE DESIGN ENGINEER.														

NOTES:

1. FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE LONGEST RESTRAINT DISTANCE.
4. ALL INLINE VALVES SHALL BE RESTRAINED.
5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.
6. 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: 150 PSI

SOIL DESIGNATION: SM (SAND SILT)

LAYING CONDITIONS: 3

DEPTH OF COVER: 3 FT

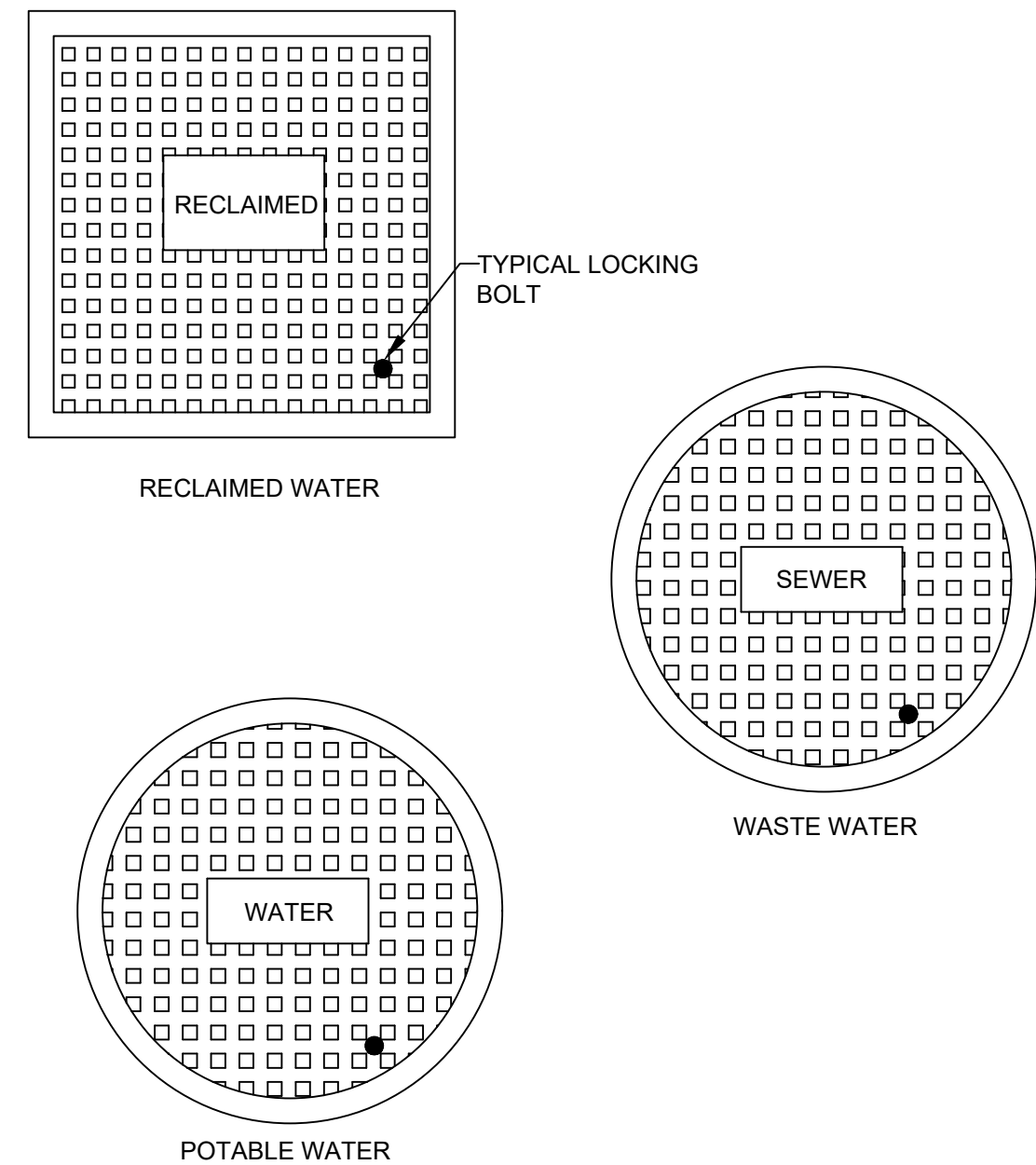
SAFETY FACTOR: 1.5

CONVERSION FACTOR FOR PVC PIPE: 1.25

THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC SOIL DESIGNATIONS, LAYING CONDITIONS, PIPE MATERIAL, ETC. FOR DIP ENCASED IN POLYETHYLENE, INCREASE THE GIVEN VALUE BY A FACTOR OF 1.25.

APPENDIX A STANDARD DRAWINGS GENERAL

DATE: February 11, 2011 TYPICAL VALVE BOX COVER FIGURE A110



NOTE:

1. LOCKING LIDS ARE REQUIRED ON ALL VALVE BOXES.

BID SET

REV	DATE	DESCRIPTION

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



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Landscape Lic. No. LC0000298

CONSTRUCTION DETAILS
BERRY DEASE ROAD
WATER MAIN EXTENSION AND
FORCE MAIN REPLACEMENT PROJECT

OCU FILE NO.: 85506
DESIGNED BY: DEM
DRAWN BY: GNP
CHECKED BY: DEM
CADD FILE: O28509 Cover

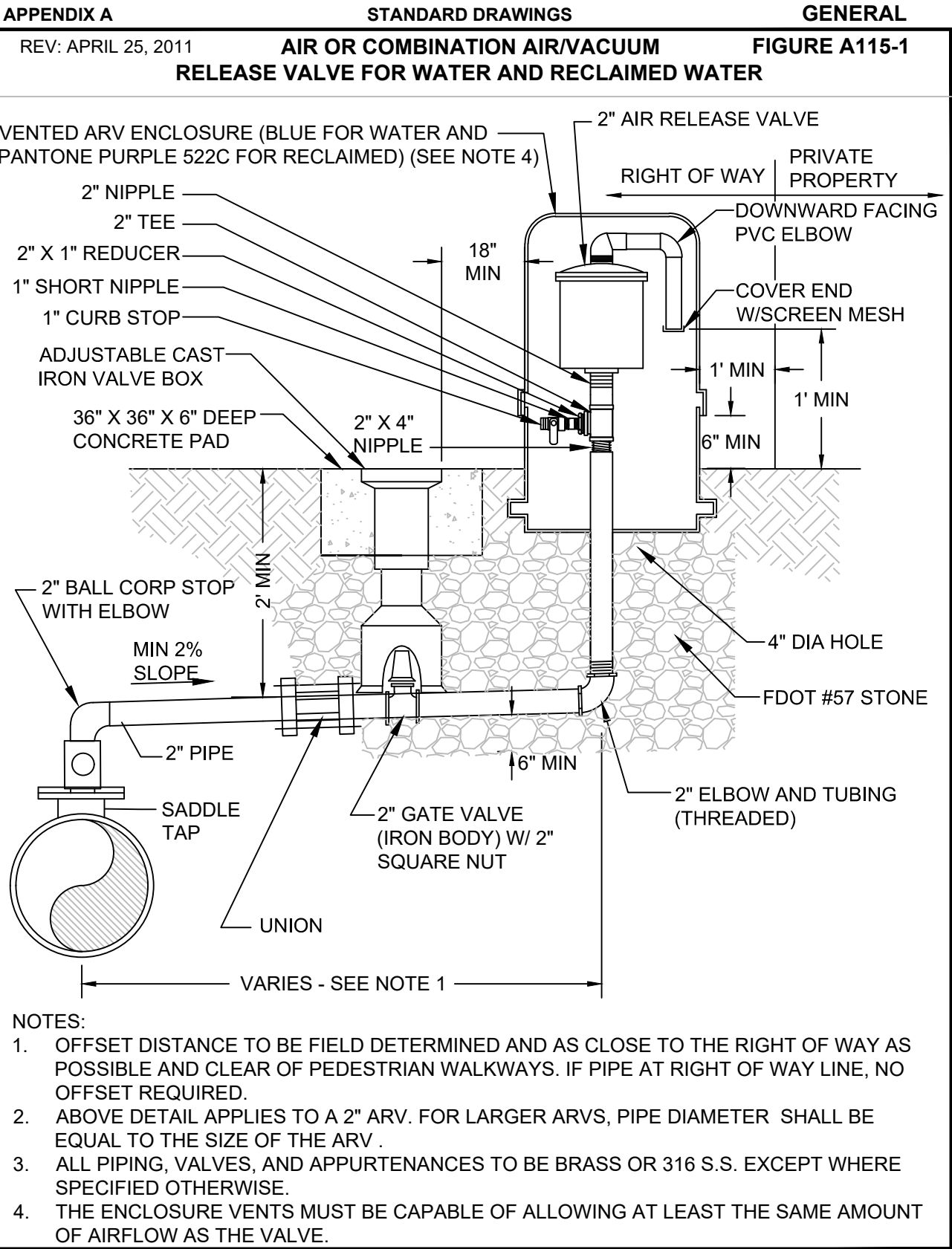
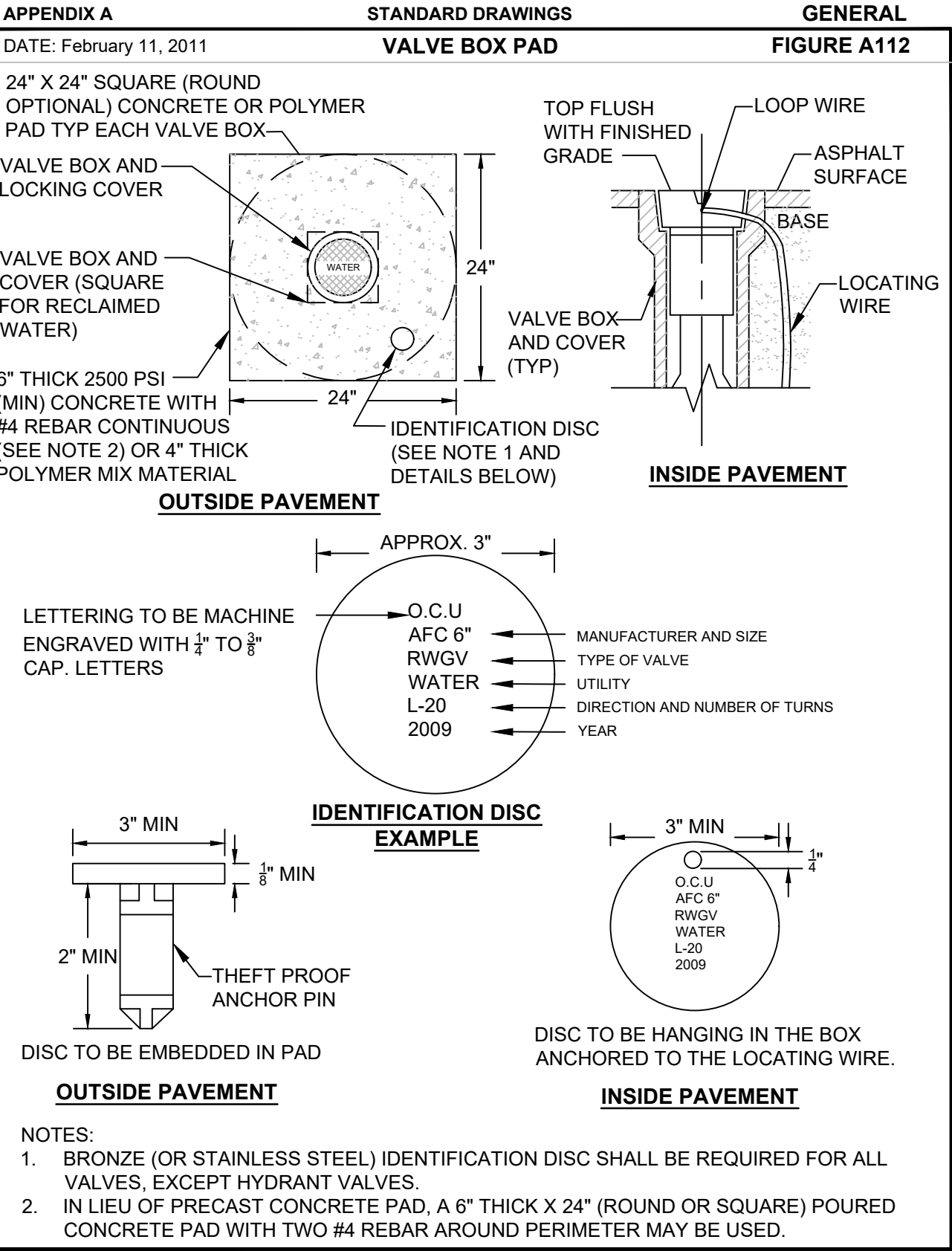
DAVID E. MAHLER
PROFESSIONAL ENGINEER
FLORIDA LICENSE #50041

SCALE: N.T.S.

DRAWING NO.:

D-100

SHEET: 17 OF 21



REV	DATE	DESCRIPTION

LINE IS 2 INCHES
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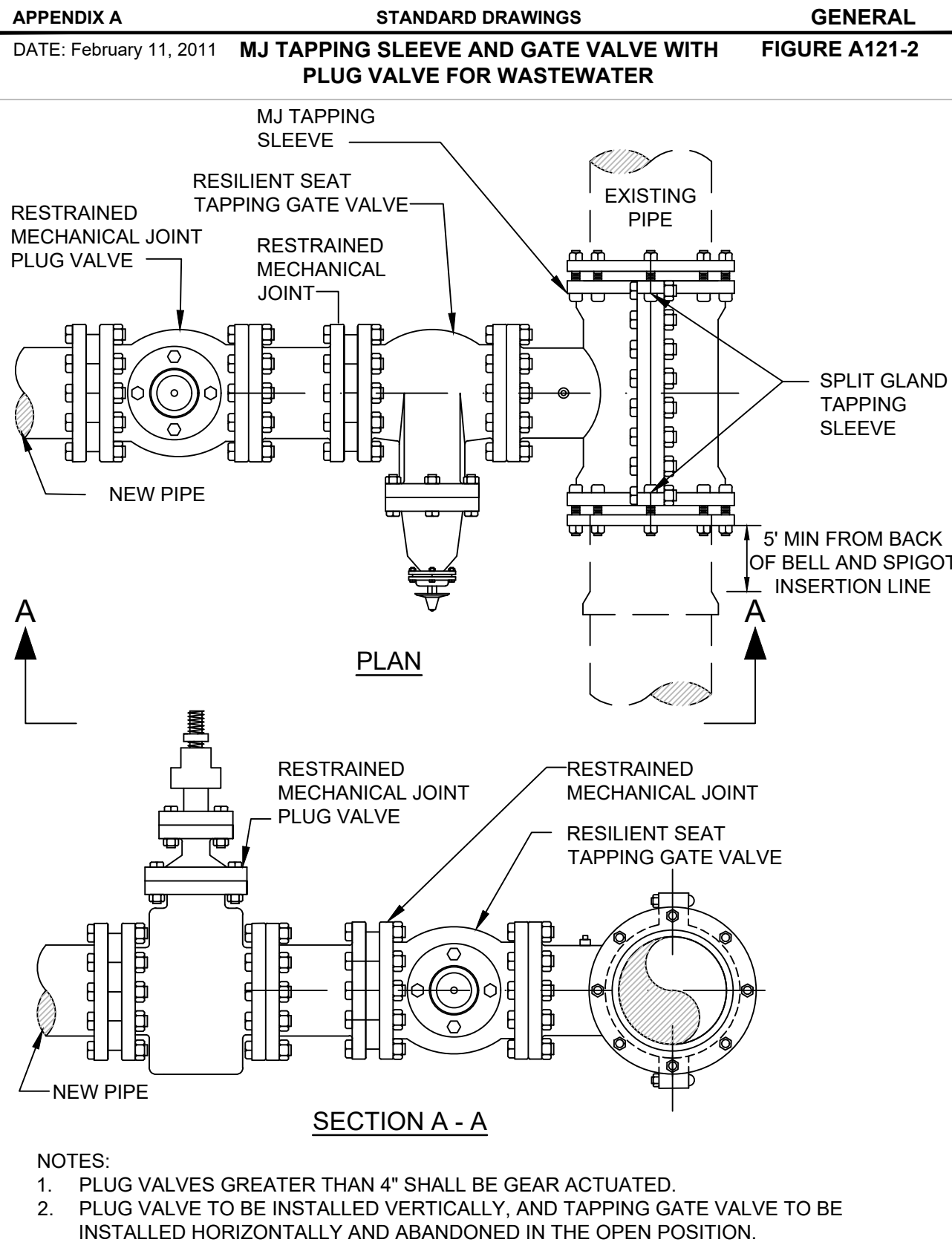
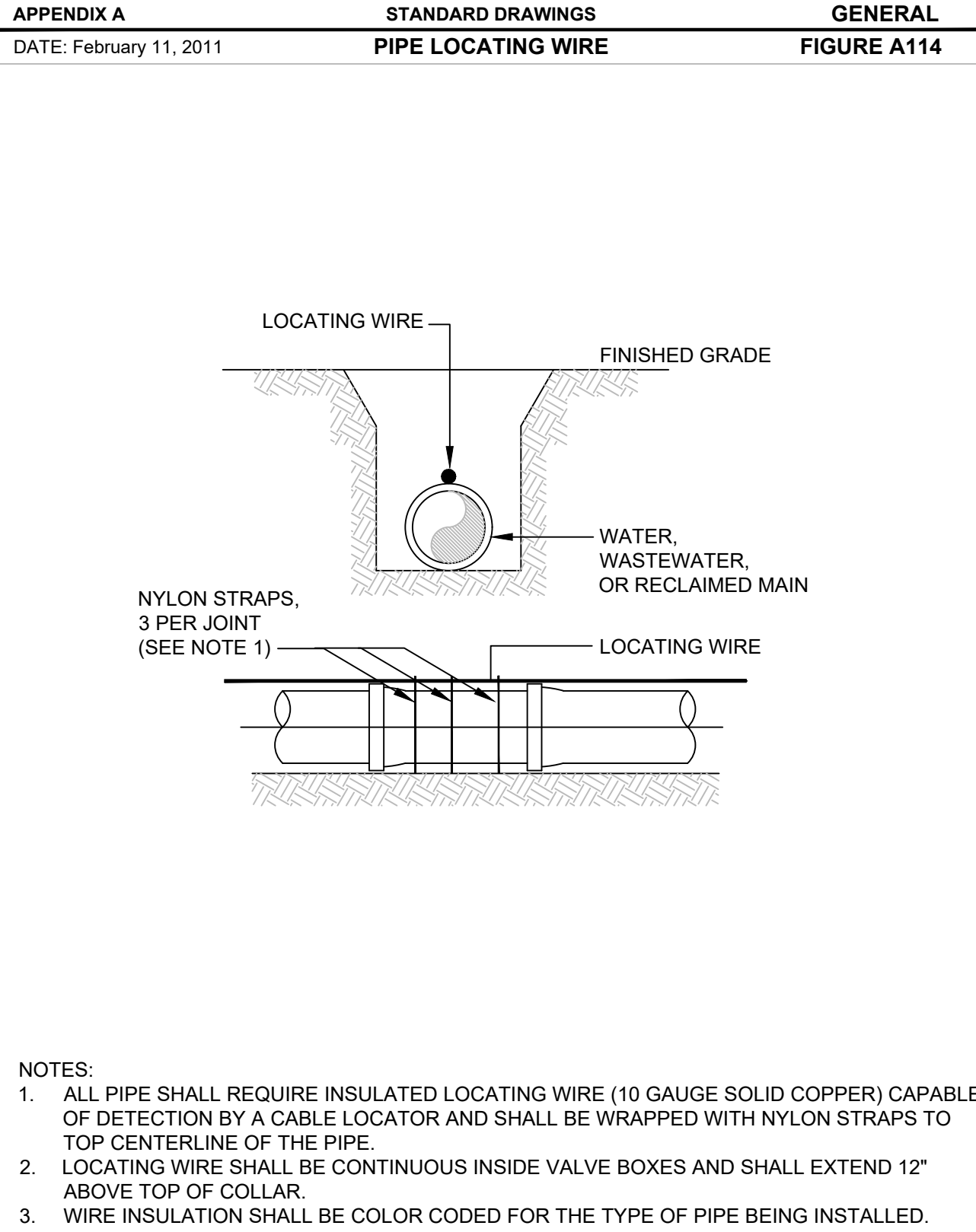
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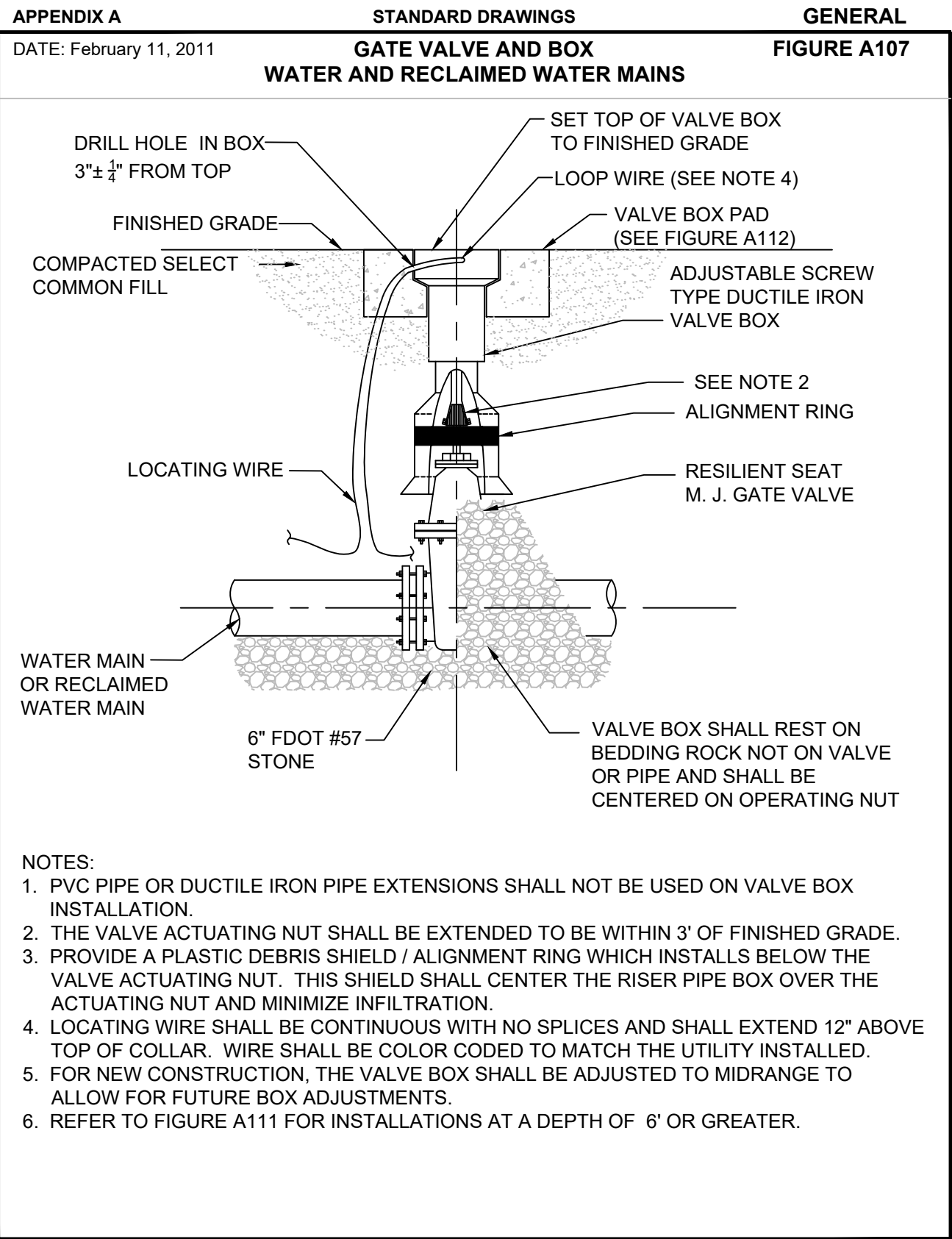
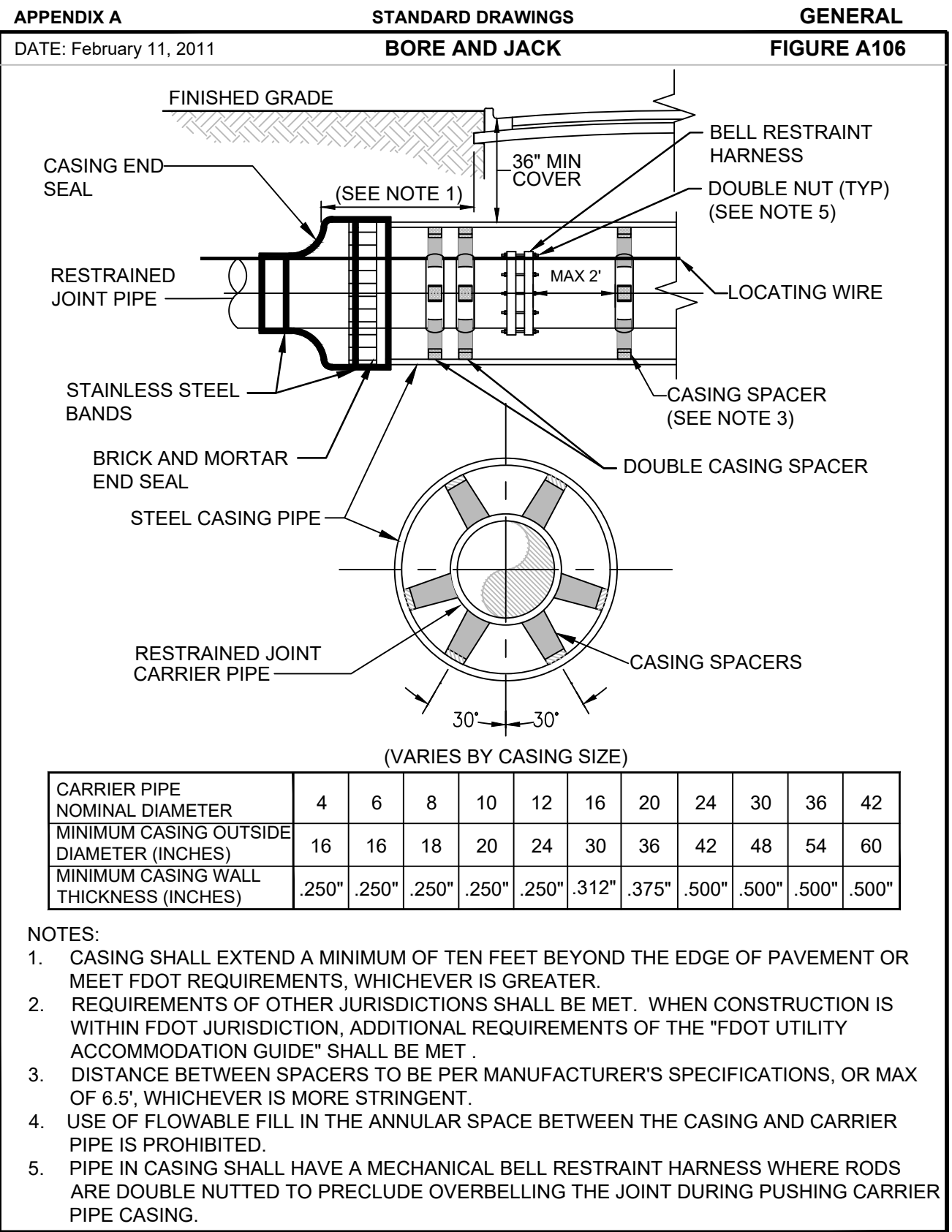
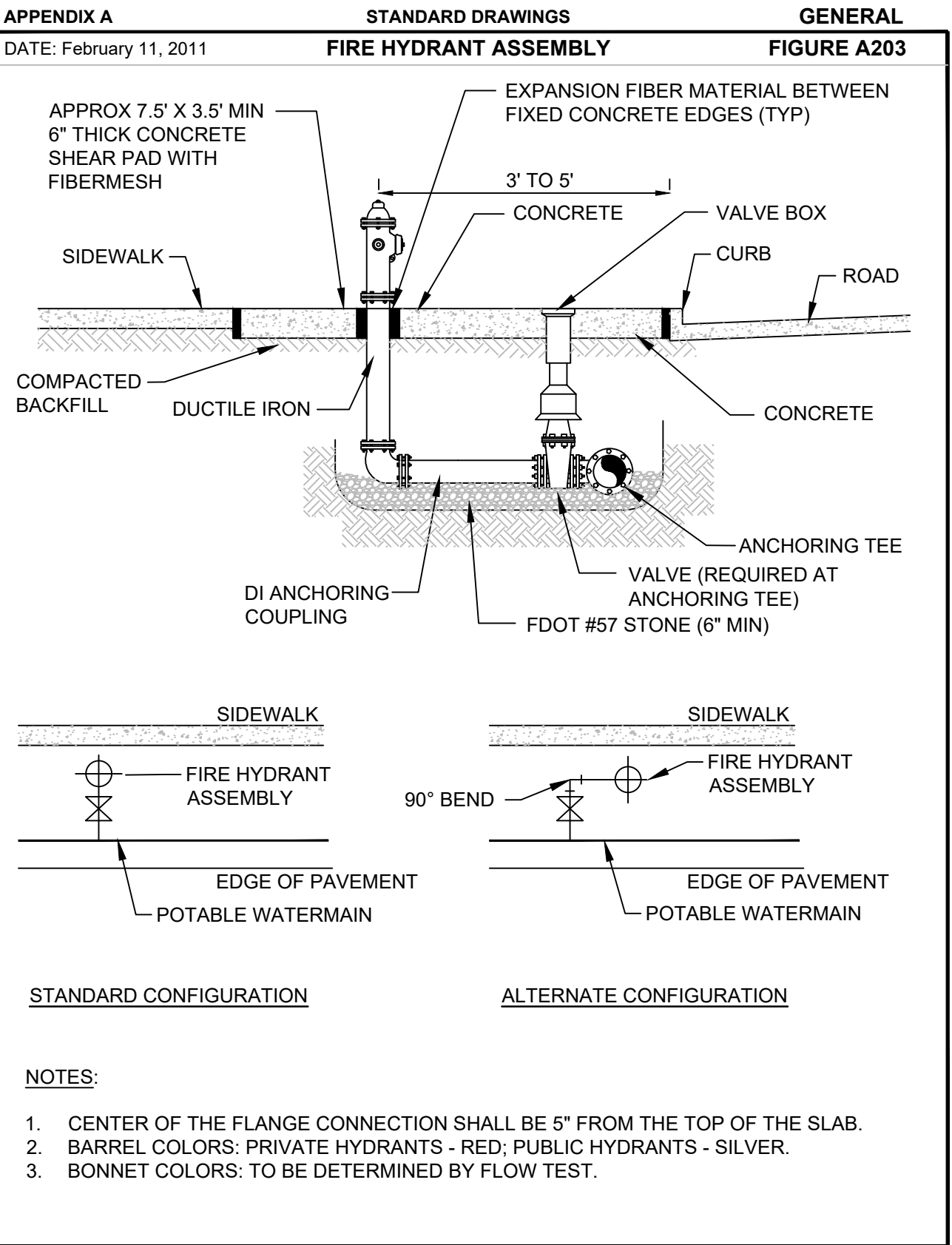
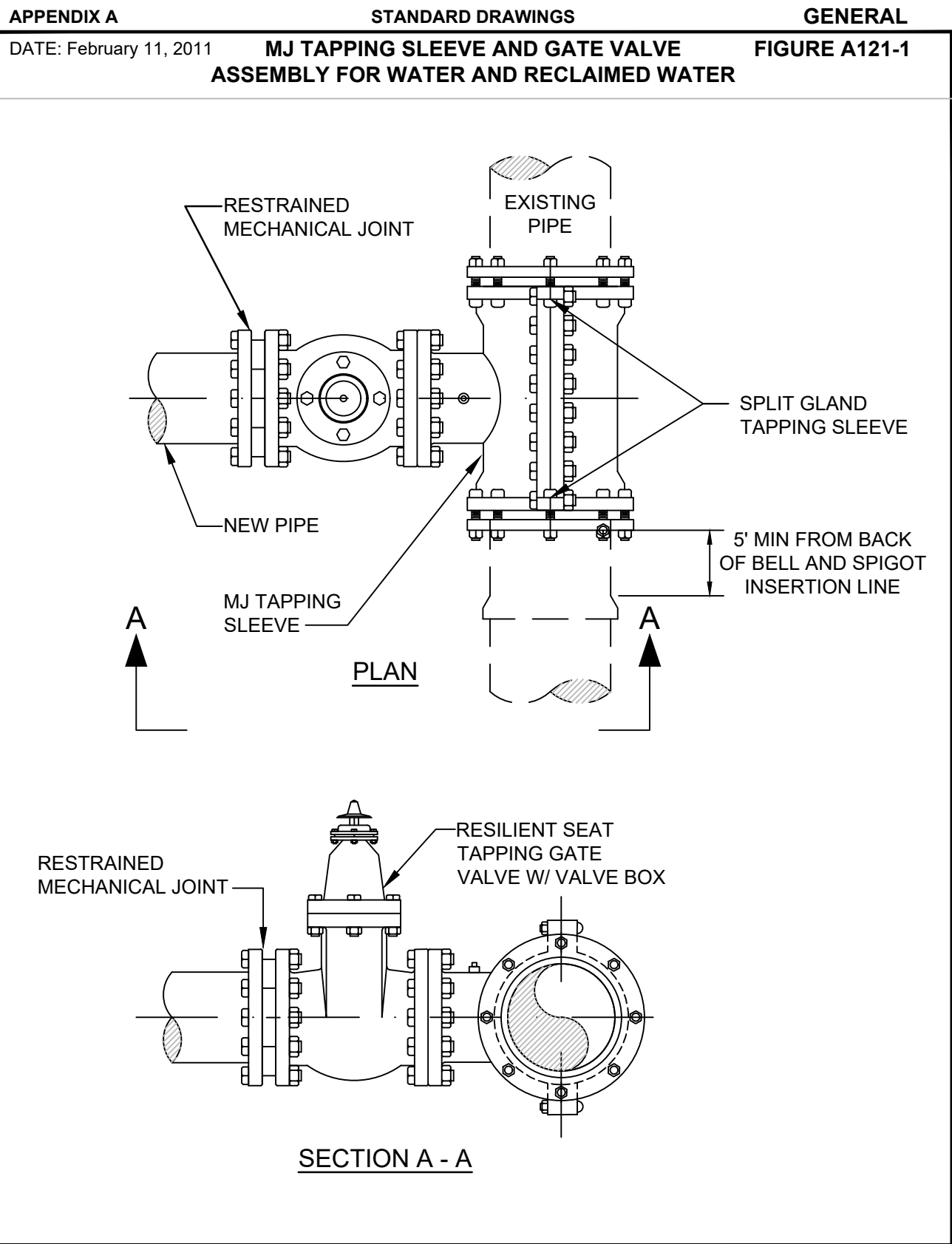
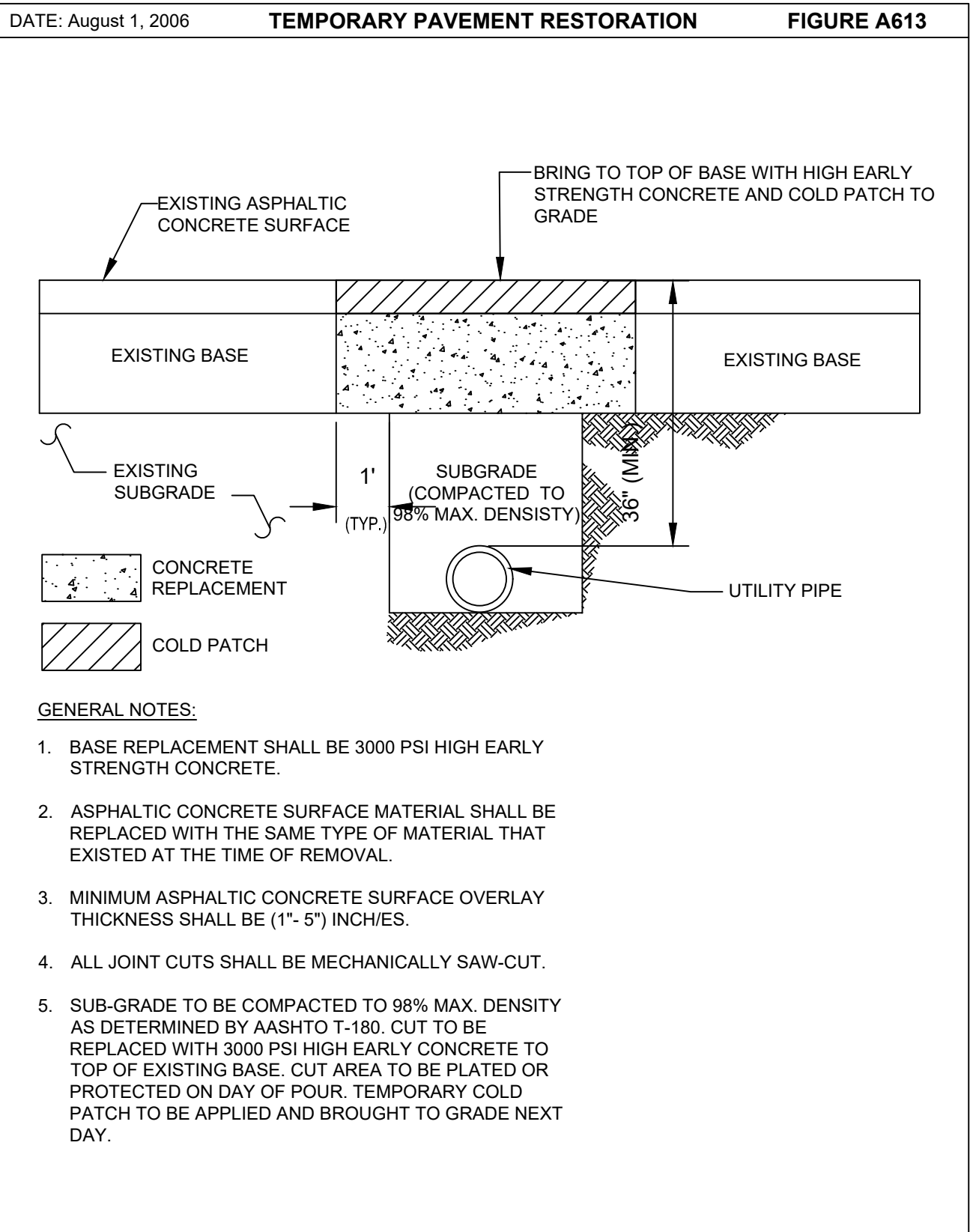
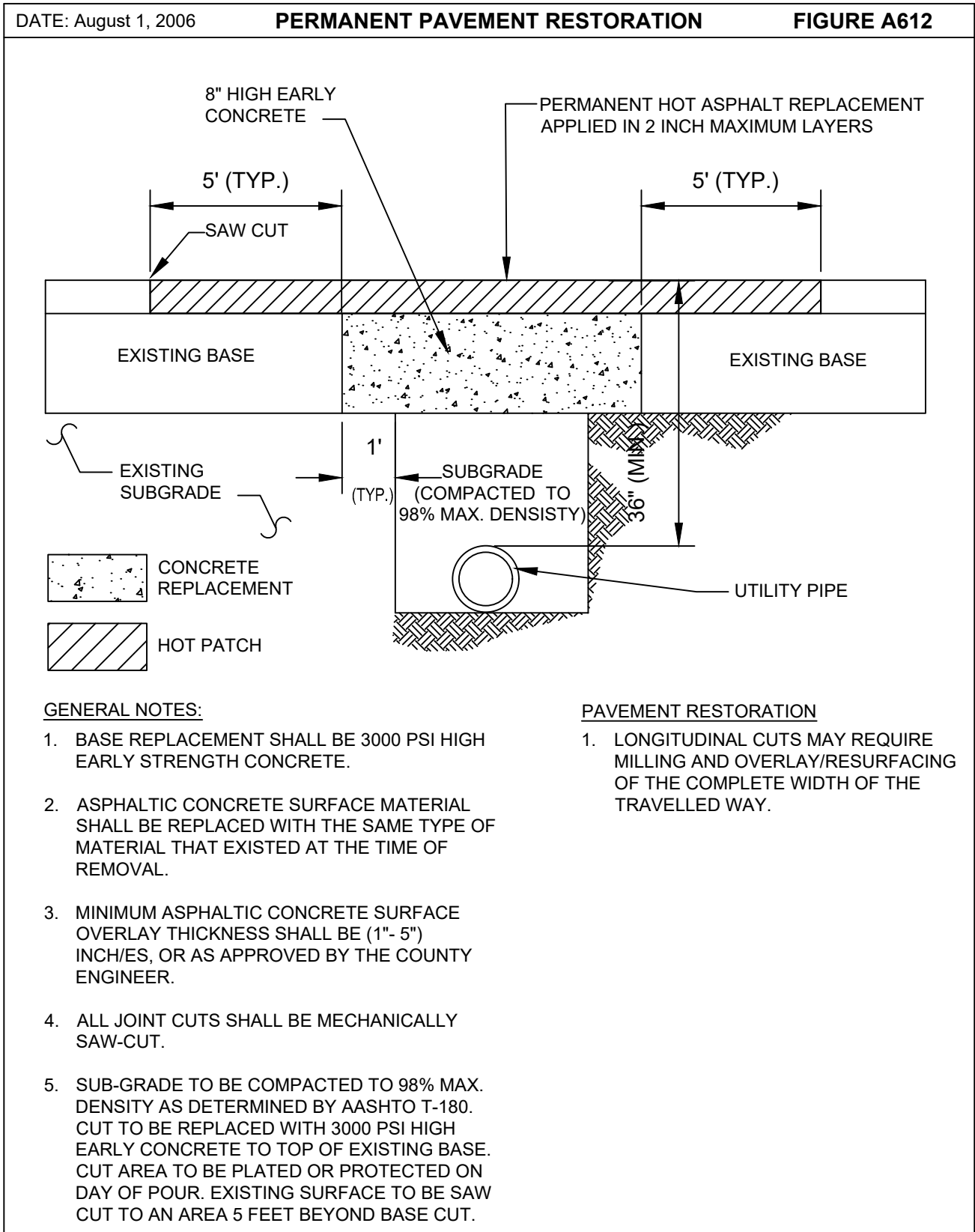
CONSTRUCTION DETAILS
BERRY DEASE ROAD
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BID SET

OCU FILE NO.: 85506
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CADD FILE: O28509 Cover

SCALE: N.T.S.
DRAWING NO.:
D-110
SHEET: 18 OF 21



BID SET

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE (IF NOT SCALE ACCORDINGLY)
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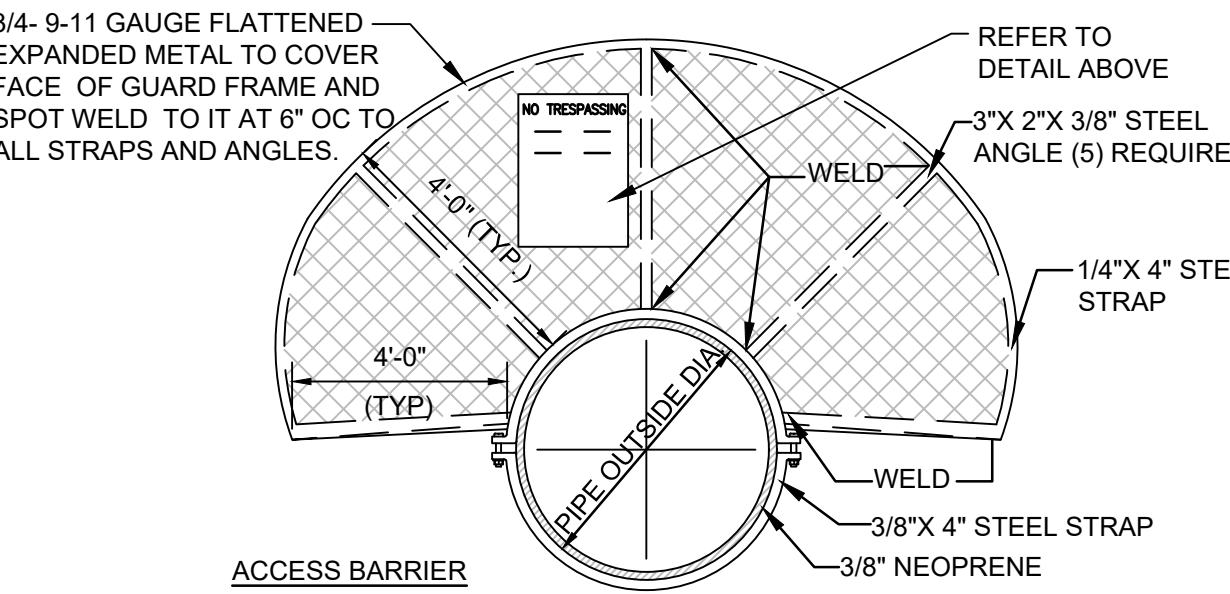
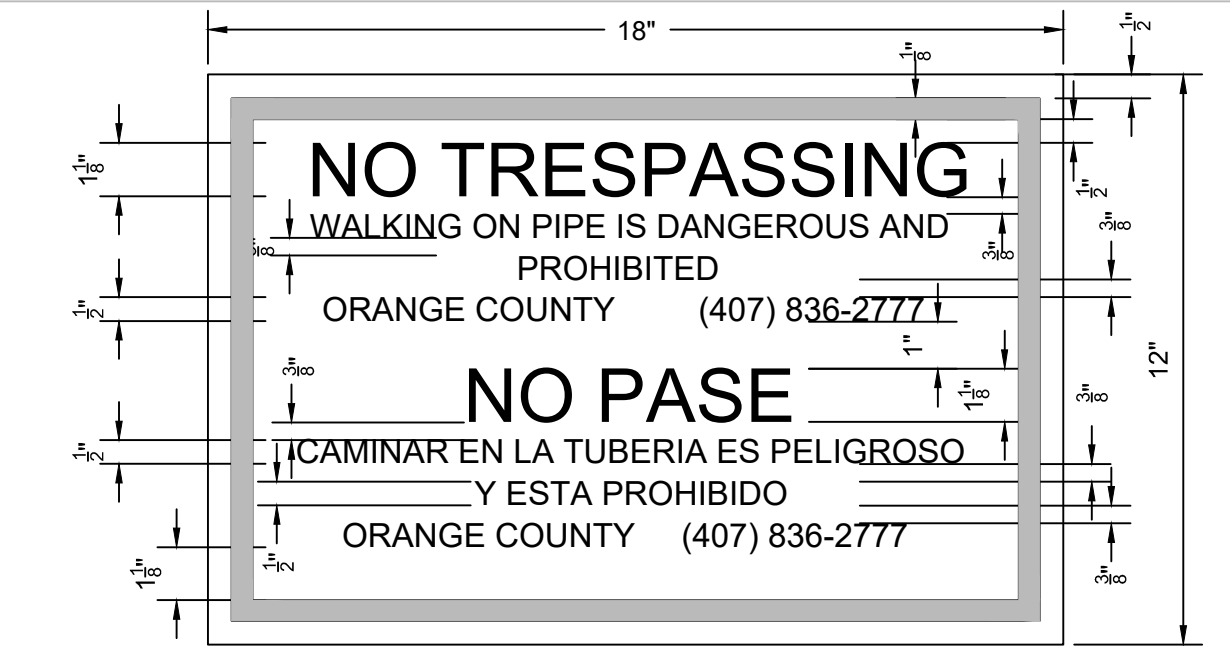
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Arch. Lic. No. AA2600926
Landscape Lic. No. LC0000298

CONSTRUCTION DETAILS
BERRY DEASE ROAD
WATER MAIN EXTENSION AND
FORCE MAIN REPLACEMENT PROJECT

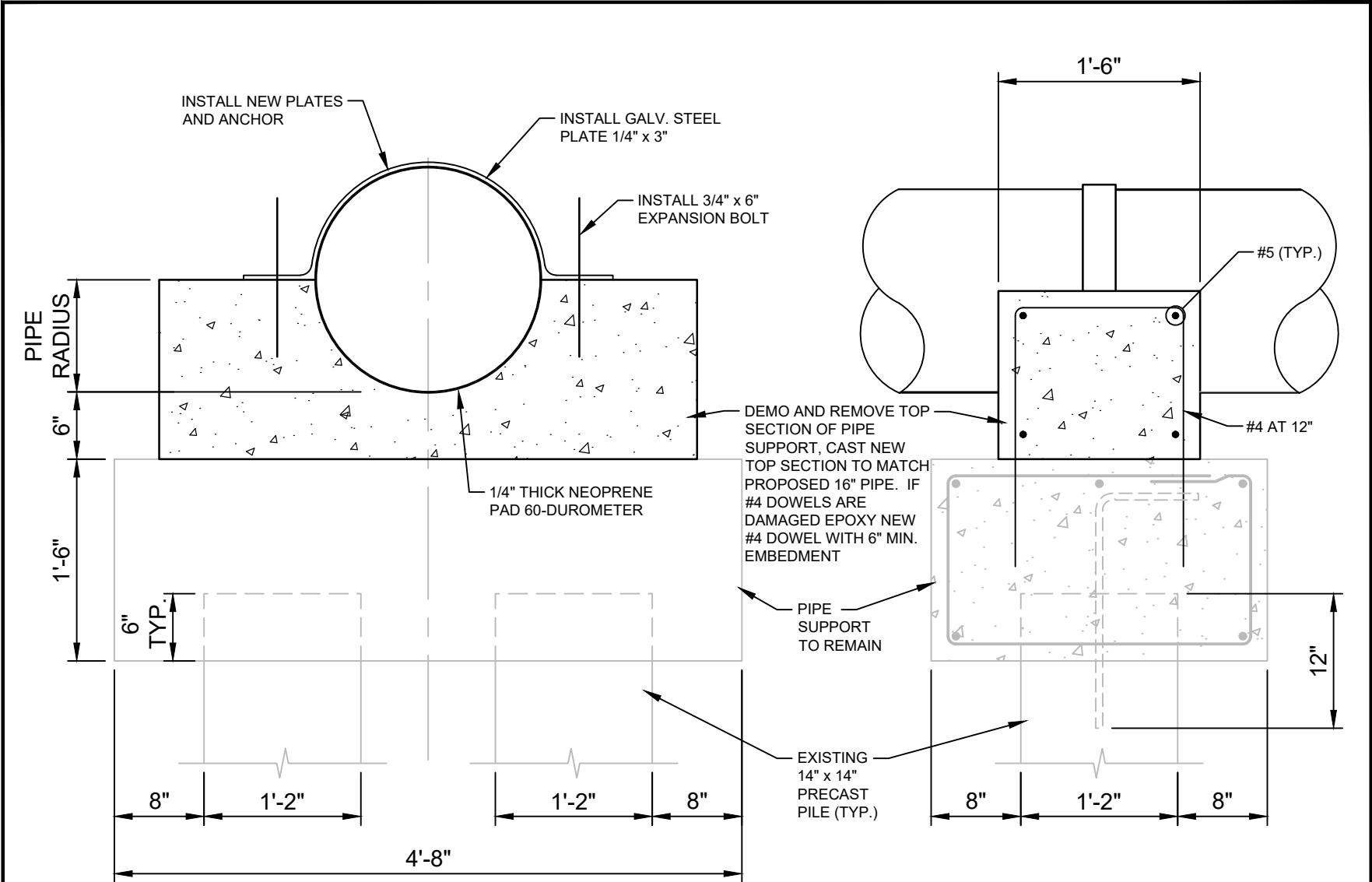
DAVID E. MAHLER
PROFESSIONAL ENGINEER
FLORIDA LICENSE #50041

OCU FILE NO.: 85506
DESIGNED BY: DEM
DRAWN BY: GNP
CHECKED BY: DEM
CADD FILE: O28509 Cover

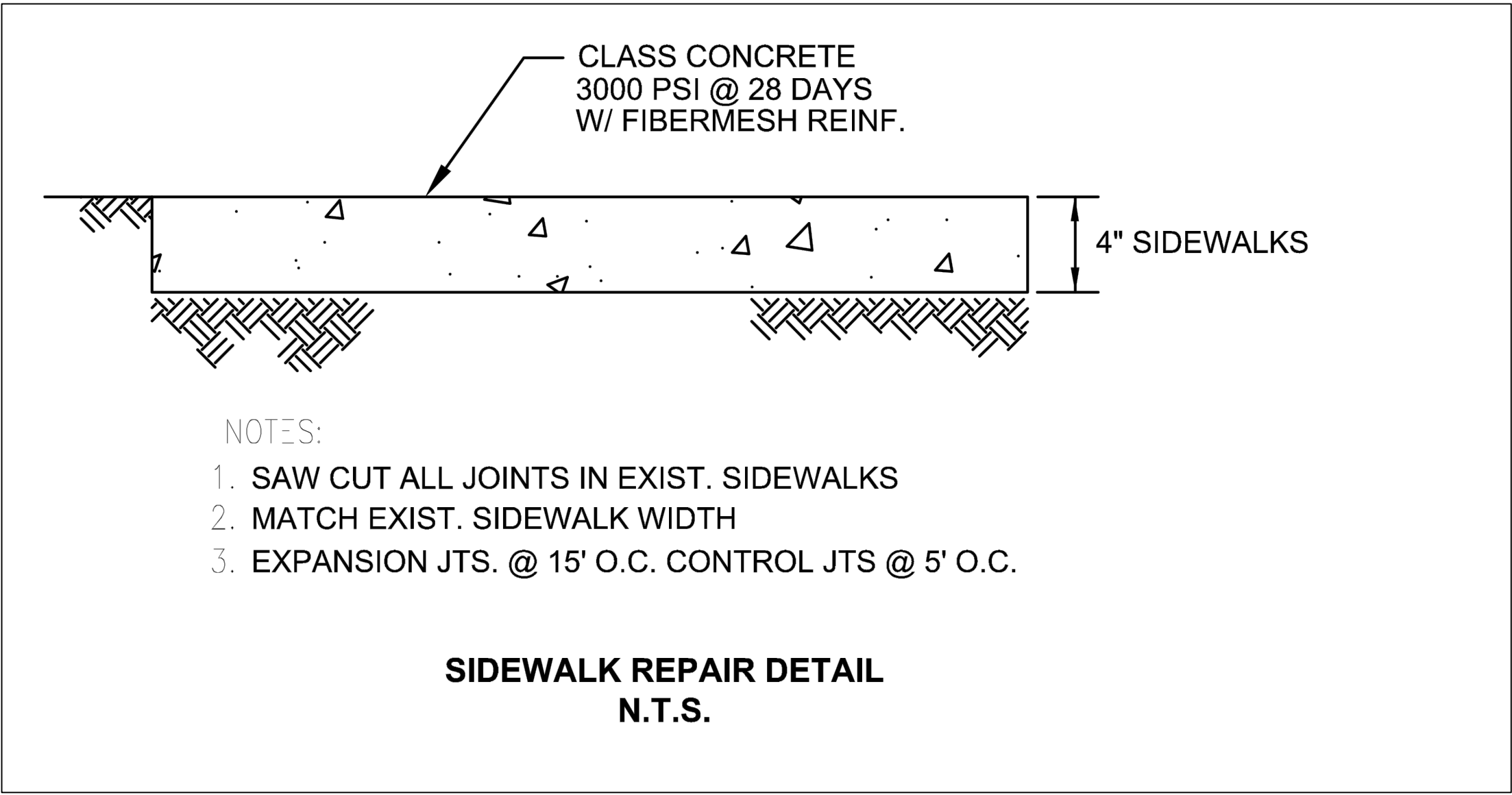
SCALE: N.T.S.
DRAWING NO.:
D-120
SHEET: 19 OF 21



- NOTES:
1. ACCESS BARRIER TO BE INSTALLED AT BOTH ENDS OF AERIAL CROSSING TO PREVENT PUBLIC ACCESS TO PIPE.
 2. ENTIRE ACCESS BARRIER TO BE DIPPED GALVANIZED AFTER FABRICATION, PAINTING IS NOT PERMITTED.
 3. CENTER ACCESS BARRIER ANGLES ON 4\" STEEL STRAP.
 4. REFER TO ENGINEERS APPROVED DESIGN FOR AERIAL CROSSING CONSTRUCTION DETAILS.



PIPE SUPPORT DETAIL



- NOTES:
1. SAW CUT ALL JOINTS IN EXIST. SIDEWALKS
 2. MATCH EXIST. SIDEWALK WIDTH
 3. EXPANSION JTS. @ 15' O.C. CONTROL JTS @ 5' O.C.

SIDEWALK REPAIR DETAIL
N.T.S.

BID SET

REV	DATE	DESCRIPTION

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



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Lndscp. Lic. No. LC0000298

CONSTRUCTION DETAILS
BERRY DEASE ROAD
WATER MAIN EXTENSION AND
FORCE MAIN REPLACEMENT PROJECT

DAVID E. MAHLER
PROFESSIONAL ENGINEER
FLORIDA LICENSE #50041

OCU FILE NO.: 85506
DESIGNED BY: DEM
DRAWN BY: GNP
CHECKED BY: DEM
CADD FILE: O28509 Cover

SCALE: N.T.S.
DRAWING NO.:
D-130
SHEET: 20 OF 21

FITTINGS							
ID Number	Plan Sheet #	Easting	Northing	Elevation	Main Type	Fitting Type	Comments
WM-1							
FM-1							

HYDRANTS							
ID Number	Plan Sheet #	Easting	Northing	Elevation	Manufacturer	Model #	Comments
FH-1							

PIPES											
ID Number	Plan Sheet #	Easting	Northing	Elevation	Main Type	Type of Shot	Construction Method	Material	Pressure Class	Manufacturer	Comments
WM-1											
FM-1											

VALVES								
ID Number	Plan Sheet #	Easting	Northing	Elevation	Valve Type	Main Type	Size	Comments
TSV-1								
PV-1								
GV-1								
ARV-1								

BID SET