

CONSTRUCTION DRAWINGS FOR

BALI HAI MOBILE HOME PARK UTILITY IMPROVEMENTS

DISTRICT 4

OCTOBER 2013

CAPITAL PROJECT No. 1500-06WW/1553-11W

PROJECT SEQUENCE No. 58188

ORANGE COUNTY MAYOR

TERESA JACOBS

BOARD OF COUNTY COMMISSIONERS

DISTRICT 1: COMMISSIONER S. SCOTT BOYD

DISTRICT 2: COMMISSIONER FRED BRUMMER

DISTRICT 3: COMMISSIONER PETE CLARKE

DISTRICT 4: COMMISSIONER JENNIFER THOMPSON

DISTRICT 5: COMMISSIONER TED EDWARDS

DISTRICT 6: COMMISSIONER TIFFANY MOORE RUSSELL

COUNTY ADMINISTRATOR: AJIT LALCHANDANI

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

ORANGE COUNTY UTILITIES

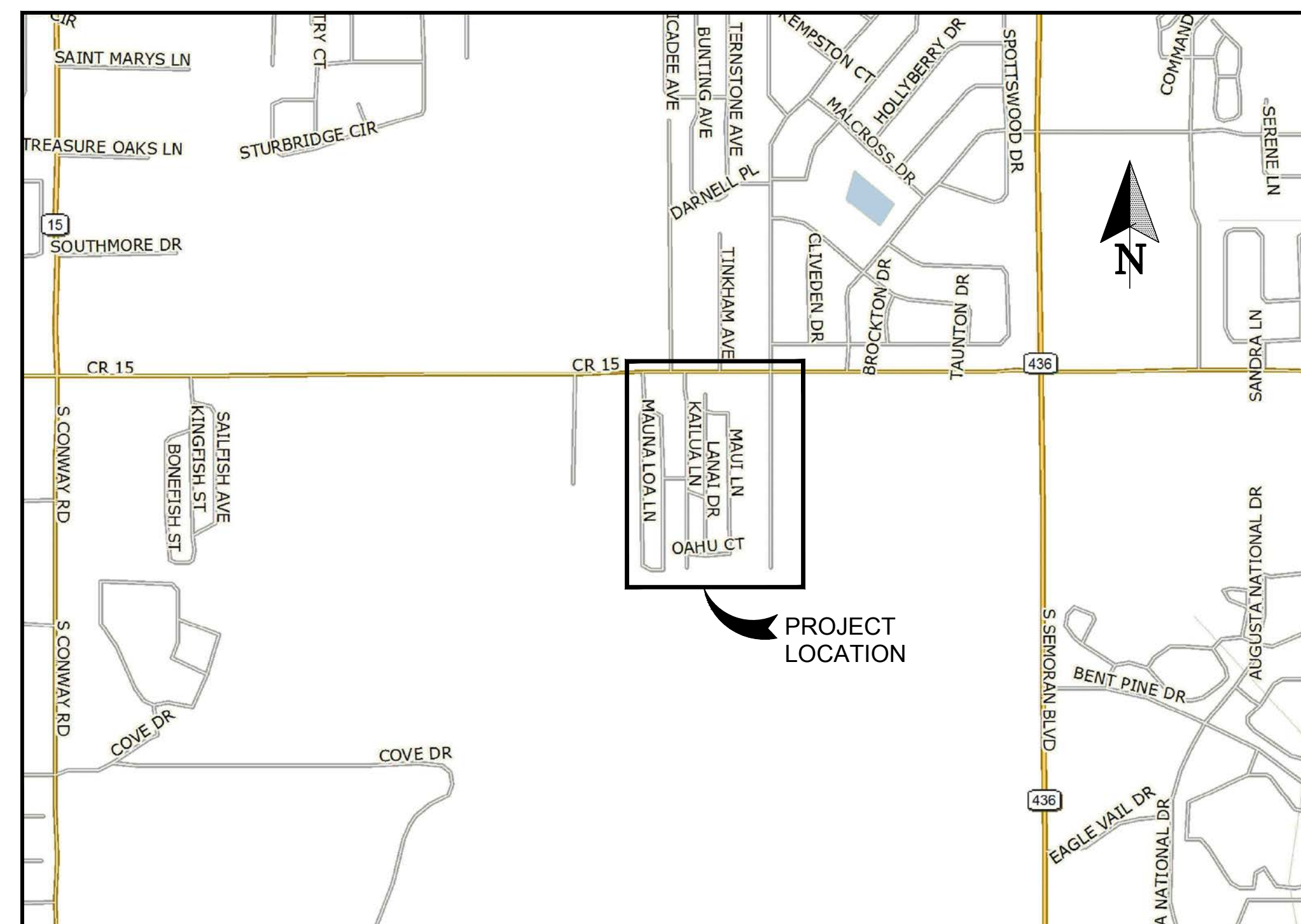
9150 CURRY FORD ROAD

ORLANDO, FLORIDA 32825

ENGINEER OF RECORD:

Daniel L. Allen

FLORIDA LICENSE No.:
37891



LOCATION MAP
N.T.S.

PARCEL ID: 21-23-30-0000-00-015

PS ADDRESS: 5301 LANAI DRIVE

ZONING: R-T TYPE 6

PREPARED BY:

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1230 E. Hillcrest Street, Orlando, FL, 32803
PH: (407) 896-8608 FAX: (407) 896-1822
ENGINEERING BUSINESS No. 6899

OCTOBER 2013 - BID SET

GENERAL 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 TO ORANGE COUNTY.

- 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.
- THE UTILITIES IMPROVEMENTS AND ADJUSTMENT SHOWN ON THESE DRAWINGS ARE INTENDED TO MAINTAIN THE INTEGRITY OF THE ORANGE COUNTY WATER, WASTEWATER, AND RECLAIMED WATER SYSTEMS. THE DRAWINGS DO NOT INCLUDE WORK PERFORMED ON, OR FOR UTILITY SYSTEMS OWNED BY OTHERS, UNLESS STATED OTHERWISE ON THE DRAWINGS.
- COORDINATION AND COMMUNICATIONS WITH ORANGE COUNTY STAFF SHALL BE MADE THROUGH THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION INSPECTOR.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ORANGE COUNTY UTILITIES DISPATCH (EMERGENCY ONLY) IN THE EVENT OF UTILITY MAIN BREAK OR DAMAGE AT 407-836-2777.
- 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.
- WATER, WASTEWATER AND RECLAIMED WATER 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.
- 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
- 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.
- 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.
- 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.
- ALL MAIN REPAIRS TO BE COMPLETED IMMEDIATELY BY THE CONTRACTOR, AT THE CONTRACTOR'S COST. IF THE MAIN IS NOT REPAIRED IN A TIMELY MANNER, AS DETERMINED BY THE ENGINEER, ORANGE COUNTY UTILITIES PERSONNEL MAY REPAIR MAIN AND THE CONTRACTOR WILL BE BACK CHARGED FOR REPAIRS.
- 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.
- 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.
- SEE DETAIL SHEET FOR SEPARATION REQUIREMENTS BETWEEN WATER MAINS, SEWER MAINS AND OTHER PIPELINES AND MAINS. NO CONCRETE ENCASEMENT OF PIPES WILL BE PERMITTED.
- PVC PIPE 4-INCH TO 12-INCH SHALL CONFORM TO THE REQUIREMENTS OF AWWA STANDARD C900, DR18. PVC PIPE 16-INCH TO 30-INCH SHALL CONFORM TO THE REQUIREMENTS OF AWWA STANDARD C905, DR18. 36-INCH PVC PIPE SHALL CONFORM TO AWWA C905, DR21. ALL PVC PRESSURE PIPE SHALL USE DUCTILE IRON FITTINGS. ALL DUCTILE IRON WATER MAIN SHALL CONFORM TO ANSI/AWWA A25.1/C151. ALL MATERIAL FOR USE IN POTABLE WATER SYSTEMS SHALL BE LISTED AS MEETING NSF-61.
- ALL PIPE, PIPE FITTINGS AND APPURTENANCES INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320 (21) (B) 3, F.A.C., USING BLUE AS A PREDOMINANT COLOR FOR WATER; GREEN FOR WASTEWATER; PURPLE FOR RECLAIMED WATER.
- ALL PROPOSED DUCTILE IRON MECHANICAL JOINT FITTINGS, PIPES, OR PIPE RESTRAINTS WITHIN FORTY (40) FEET OF EXISTING GAS MAINS SHALL BE POLYETHYLENE ENCASED.
- 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.
- PIPE LENGTHS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL LENGTHS ARE TO BE DETERMINED DURING CONSTRUCTION.
- ALL NORTHING AND EASTING COORDINATES ARE BASED ON THE STATE PLAIN COORDINATE SYSTEM. STATIONING IS FOR REFERENCE ONLY.
- ALL STATIONS AND OFFSET REFER TO BASELINE OF STATIONING.
- MAINTAIN EMERGENCY VEHICLE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES.
- 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.
- 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.
- ALL EXCAVATIONS SHALL BE BACK FILLED AT THE END OF EACH WORK DAY. ALL FINAL BACK FILL SHALL BE COMPACTED TO 98% OF MAXIMUM MODIFIED PROCTOR.
- ALL MAINS SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS. A MINIMUM COVER OF 30-INCHES SHALL BE MAINTAINED ON ALL MAINS, WHERE IT IS NOT OTHERWISE SPECIFIED ON PLANS OR DIRECTED BY THE ENGINEER.
- 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.

- COMPLETE ALL CONSTRUCTION WITHIN RIGHT OF WAY LIMITS AND EASEMENT LIMITS, UNLESS OTHERWISE NOTED.
- 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.
- INSTALL AIR RELEASE VALVES (ARV) AT ALL HIGH POINTS IN THE SYSTEM WHERE AIR CAN ACCUMULATE. AIR RELEASE VALVES AND APPURTENANCES SHALL BE COLOR CODED BLUE FOR WATER, GREEN FOR SEWER, AND PURPLE FOR RECLAIMED. STATIONING FOR AIR RELEASE VALVES IS APPROXIMATE. CONTRACTOR SHALL INSTALL AIR RELEASE VALVES AT HIGH POINTS ON MAIN. COORDINATE WITH THE ORANGE COUNTY UTILITIES INSPECTOR.
- WHERE SHOWN ON THE PLANS, LINE STOPS WILL BE USED TO ISOLATE PORTIONS OF THE EXISTING MAINS. THE ORANGE COUNTY INSPECTOR SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF LINE STOP INSTALLATION.
- 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:
 - POINTS OF CONNECTION, FITTINGS TO BE USED, METHODS OF FLUSHING AND DISINFECTION AND VERIFICATION OF RESTRAINT ON EXISTING PIPE.
 - 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.

KEEP VALVES ON ALL WET TAPS CLOSED UNTIL CLEARED BY FDEP. DO NOT CONNECT ANY PROPOSED WATER MAIN TO ANY EXISTING WATER MAIN UNLESS CLEARED BY FDEP. AS-BUILT DRAWINGS MUST BE COMPLETED AND SUBMITTED PRIOR TO WATER MAIN CHLORINATION.

- 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, FENCING, SIDEWALK, ROADWAY PAVEMENT AND OTHER IMPROVEMENTS SHALL BE RESTORED TO ORIGINAL CONDITION.
- 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 INSPECTOR. NOTIFY THE COUNTY ENGINEER 48 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.
- 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.
- 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.
- 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.
- CONTRACTOR TO PROVIDE DETAILED AS-BUILT DRAWINGS OF ALL UTILITIES UNCOVERED IN TRENCHES. THE AS-BUILT SHALL RECORD LOCATION, SIZE, TYPE, ELEVATION AND OWNER OF ALL UTILITY FACILITIES UNCOVERED.
- 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).
- 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.
- FOR PVC PIPE NO HORIZONTAL/VERTICAL PIPE DEFLECTION WILL BE ALLOWED. CONTRACTOR SHALL USE FITTINGS TO OBTAIN THE REQUIRED CLEARANCES. ON DUCTILE IRON PIPE CONTRACTOR SHALL NOT EXCEED 75% OF THE MANUFACTURERS RECOMMENDATION FOR PIPE DEFLECTION. OTHERWISE USE FITTINGS TO OBTAIN REQUIRED CLEARANCES. ALL FITTINGS SHALL BE ADDED TO THE COORDINATE ASSET ATTRIBUTE TABLE.
- UTILITY MAIN MARKERS ARE REQUIRED WHEN UTILITY MAIN IS LOCATED OVER 30 FEET FROM EDGE OF PAVEMENT OR IN AN EASEMENT NOT ADJACENT TO THE RIGHT OF WAY.
- SALVAGE AND/OR DISPOSAL OF ALL EXISTING EQUIPMENT SHALL BE AT THE DIRECTION OF THE ORANGE COUNTY UTILITIES INSPECTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL OF ALL STRUCTURES, PIPE, CONDUIT, WIRE, FITTINGS, PANELS, ETC. THAT ARE DEMOLISHED, DISASSEMBLED, OR REMOVED.
- EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN CONSTRUCTION AND ARE THE MINIMUM REQUIRED. CONTRACTOR TO FURNISH ADDITIONAL CONTROLS AS NEEDED AT NO ADDITIONAL COST. MATERIALS FROM WORK ON THIS PROJECTS SHALL BE CONTAINED AND NOT ALLOWED TO COLLECT ON ANY OFF PERIMETER AREAS OR IN WATERWAYS. SILT 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 HAS BEEN ESTABLISHED. MEASURES SHOWN ARE THE MINIMUM REQUIRED, AND THE CONTRACTOR WILL ENSURE THAT THERE IS NO DIRECT OR INDIRECT DISCHARGE OF CONSTRUCTION MATERIALS IN TURBID WATERS TO OFF SITE AREAS OR WATERWAYS.
- RESTORE DISTURBED AREAS WITH SOD MATCHING EXISTING TYPE. RESTORE DISTURBED EXISTING TREES, SHRUBS AND OTHER LANDSCAPE MATERIALS TO EXISTING OR BETTER CONDITION. RESTORE ALL LANDSCAPE IRRIGATION SYSTEMS.

POWER AND WATER SUPPLY NOTES

- THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY PROVIDER FOR POWER AND WATER SERVICE, AND SHALL INCLUDE IN HIS BID ALL PROVIDER CHARGES FOR MATERIALS, LABOR, ONE-TIME NONRECURRING CONSTRUCTION COST AND OTHER COST, INCLUDING WATER METER, ASSESSED BY THE PROVIDER, WHETHER OR NOT INDICATED ON THE DRAWINGS, OR SPECIFIED.
- THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE POWER SUPPLY AND THE WATER SYSTEM RELOCATION AND INSTALLATION WITH THE SUPPLIER.
- THE POWER PROVIDER SHALL MAKE ALL SECONDARY TERMINATIONS AT POWER TRANSFORMERS.
 - POWER SUPPLIER: PROGRESS ENERGY
- THE CONTRACTOR SHALL PERFORM THE REQUIRED RELOCATIONS TO THE EXISTING WATER SYSTEM AT THE PUMP STATION.
- WATER SUPPLIER: ORANGE COUNTY UTILITIES DEPARTMENT

SPILL NOTES

EMERGENCY WASTEWATER SPILL, WATER MAIN, RECLAIMED WATER MAIN BREAKER PROCEDURES
 DAMAGE NOTIFICATION:

- THE ORANGE COUNTY UTILITY DISPATCH OPERATOR (407-836-2777) SHALL BE NOTIFIED IMMEDIATELY IN THE EVENT OF A WATER, FORCE MAIN, GRAVITY SEWER, OR RECLAIMED WATER MAIN BREAK OR DAMAGE.

IMMEDIATE REPAIR:

- ALL DAMAGE TO ORANGE COUNTY'S MAIN SHALL BE REPAIRED IMMEDIATELY WITHOUT DELAY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. IF THE REPAIR IS NOT MADE IN A TIMELY AND APPROVED MANNER, AS DETERMINED BY THE ORANGE COUNTY UTILITIES INSPECTOR, ORANGE COUNTY MAY PERFORM THE REPAIRS AND THE CONTRACTOR WILL BE CHARGED FOR THE REPAIRS.

BY-PASS NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ADEQUATE BY-PASS PUMPING TO MAINTAIN WASTEWATER SERVICE TO ALL CUSTOMERS.
- CONTRACTOR SHALL SUBMIT A WRITTEN BY-PASS PLAN FOR APPROVAL AND ACCEPTANCE PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS AND PROVISIONS AS SPECIFIED IN SECTION 01516 OF THE CONTRACT DOCUMENTS.
- OPERATION OF ORANGE COUNTY PUMP STATIONS** THE CONTRACTOR SHALL COORDINATE ALL PUMP STATION OPERATIONS AND SHUT DOWN CONTROL WITH THE ORANGE COUNTY ORANGE COUNTY UTILITIES INSPECTOR.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY BY-PASS PUMPING AS NEEDED FOR EACH PUMP STATION AND/OR MANHOLE TO BE REHABILITATED AND/OR REPLACED PRIOR TO THE START OF ANY WORK. BOTH THE PRIMARY AND THE BACKUP BY-PASS PUMPING SYSTEMS SHALL BE OF ADEQUATE CAPACITIES AND SIZES TO HANDLE THE FLOW AND SHALL MAINTAIN A CONTINUOUS SERVICE DURING THE ENTIRE CONSTRUCTION PROCESS UNTIL THE NEW OR REHABILITATED PUMP STATION OR MANHOLE HAS BEEN ACCEPTED BY THE COUNTY. THE BY-PASS PUMPING SYSTEMS SHALL BE APPROVED AND ACCEPTED BY THE COUNTY PRIOR TO INSTALLATION. THE CONTRACTOR SHALL NOT MAINTAIN MORE THAN TWO (2) PUMP STATION BY-PASS OPERATIONS AT THE SAME TIME DURING THE CONSTRUCTION PROCESS.
- THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL BY THE COUNTY. A COMPREHENSIVE WRITTEN PROCEDURE THAT DESCRIBES THE INTENDED CONSTRUCTION SEQUENCE FOR MAINTAINING AND TRANSFERRING SERVICE FROM THE EXISTING PUMP STATION TO THE NEW PUMP STATION. ITEMS TO ADDRESS SHALL INCLUDE THE FOLLOWING AS A MINIMUM:

- LOCATION AND METHOD OF BY-PASS PUMPING
- PUMP STATION STARTUP AND DRAW-DOWN PROCEDURES
- TIE-IN OF THE NEW PUMP STATION
- DISMANTLING OF EQUIPMENT AND CONVERSION OR REMOVAL OF OLD WET WELL

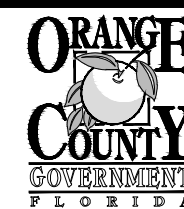
THIS PROCEDURE SHALL BE SUBMITTED WITH THE PROJECT SCHEDULE.

SURVEY NOTES

- GAS LINE SHOWN HEREON IS APPROXIMATE AND WAS GENERATED BY CONNECTING GAS VALVES PER PLANS PROVIDED BY TECO PEOPLES GAS SERVICE LOCATED AT 600 WEST ROBINSON ST. ORLANDO, FL 32801; TELEPHONE: 407-420-6650 AND BY LIMITED FIELD MARKINGS.
- WATER LINE SHOWN HEREON IS APPROXIMATE AND WAS GENERATED BY CONNECTING WATER METERS AND/OR WATER VALVES BASED ON A FIELD MEETING WITH ORANGE COUNTY UTILITIES, WATER DIVISION AND BY LIMITED FIELD MARKINGS.
- FEATURES LOCATED BETWEEN THE TRAILERS SUCH AS PORCHES, AND WALKWAYS THAT WOULD NOT INFLUENCE THE LOCATION OF THE PROPOSED UTILITY IMPROVEMENTS WERE NOT LOCATED.
- A BLANKET UTILITY EASEMENT FOR ORANGE COUNTY EXISTS OVER THE APPROXIMATE EAST ONE HALF OF THE WEST 332 FEET PER OFFICIAL RECORDS BOOK 2679, PAGES 1264 THROUGH 1266 OF THE PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA.
- A BLANKET UTILITY EASEMENT FOR ORANGE COUNTY EXISTS OVER THE EAST 1/4 OF THE WEST 1/2 OF THE NORTHWEST 1/4 OF THE NORTHEAST 1/4, LESS THE NORTH 294 FEET THEREOF AND THE EAST 2/3 OF THE WEST 3/8 OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 21, TOWNSHIP 23 SOUTH, RANGE 30 EAST, ORANGE COUNTY, FLORIDA PER OFFICIAL RECORDS BOOK 2679, PAGES 1264 THROUGH 1266 OF THE PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA.
- PROPERTY LINES SHOWN HEREON ARE BASED ON OFFICIAL RECORDS BOOK 6242, PAGES 706 THROUGH 713 AND OFFICIAL RECORDS BOOK 9428, PAGES 2228 THROUGH 2230 OF THE PUBLIC RECORDS OF ORANGE COUNTY, FLORIDA. THE RIGHT OF WAY OF HOFFNER AVENUE IS BASED ON FLORIDA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY MAP, FINANCIAL PROJECT NO. 239266-4, SECTION 75080, STATE ROAD NO. 15. A BOUNDARY SURVEY WAS NOT COMPLETED AS PART OF THIS SURVEY.
- SOME OF THE EXISTING SANITARY MANHOLES WERE NOT FOUND OR FALL UNDER EXISTING TRAILERS. SANITARY SEWER LINES CONNECTED TO NEAREST FOUND SANITARY MANHOLES WHEN POSSIBLE.

No.	REVISIONS	BY	DATE
	BID SET	DLA	10-24-13

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



ORANGE COUNTY UTILITIES
 9150 CURRY FORD ROAD
 ORLANDO, FLORIDA 32825

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BAI HAI MHP UTILITY IMPROVEMENTS

GENERAL NOTES

DESIGN ENGINEER
 DANIEL L. ALLEN, P.E.

FLORIDA REGISTRATION No.
 37891

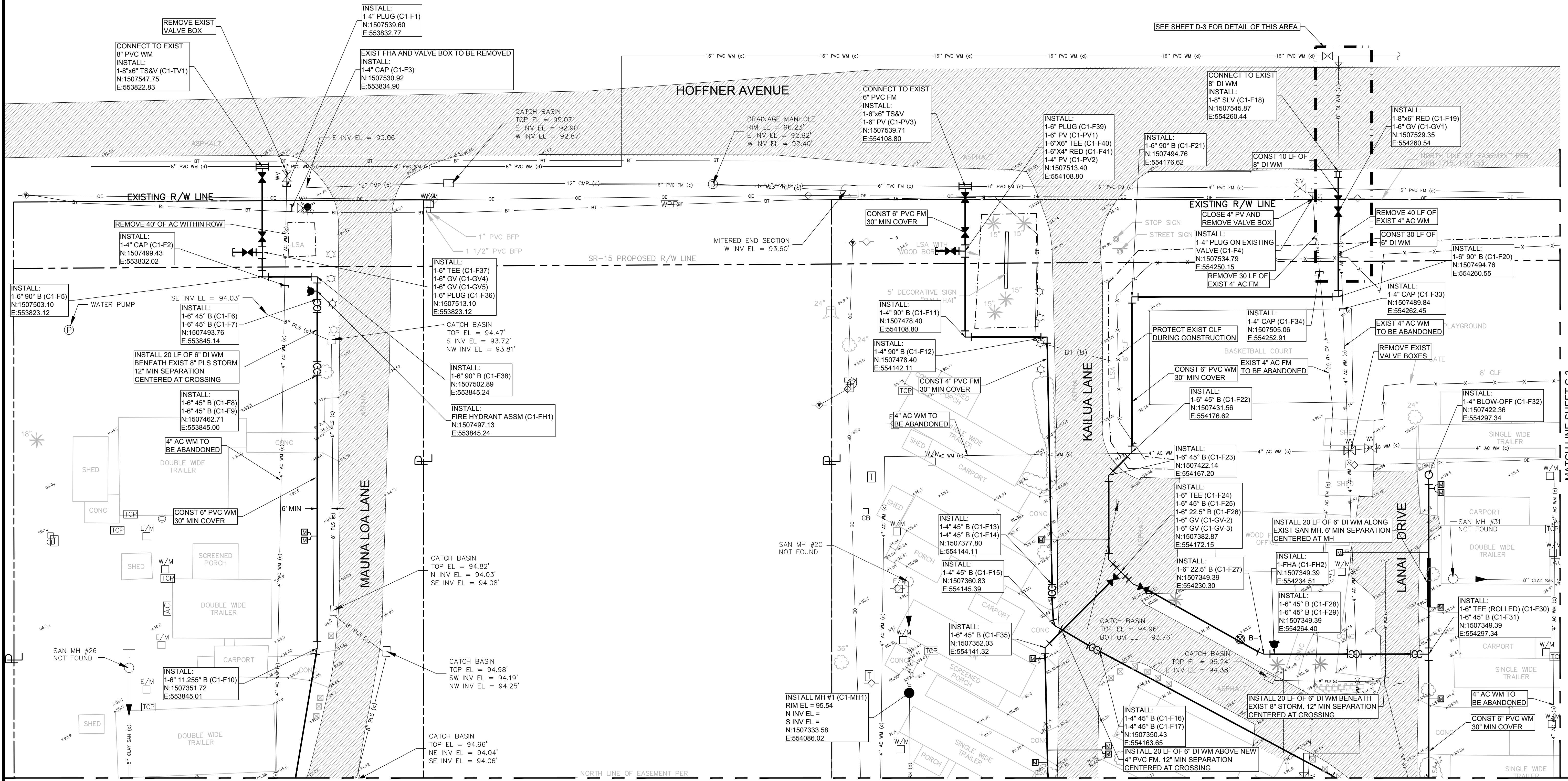
PROJECT No.: 2011-11.04

PROJECT DATE: OCT 2013
 DESIGNED BY: EG
 DRAWN BY: BAJAB
 CHECKED BY: DLA
 DRAWING FILE: SEE MARGIN

DRAWING No.

G-3
 3 SHEET
 OF 29

- NOTES:**
- FOR DRIVEWAY AND SIDEWALK RESTORATION LIMITS REFER TO DRIVEWAY RESTORATION DETAILS AND SIDEWALK REPAIR DETAIL ON SHEET D-6.
 - GRAVITY SEWER TO REMAIN EXCEPT AS SHOWN.



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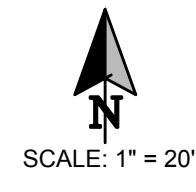
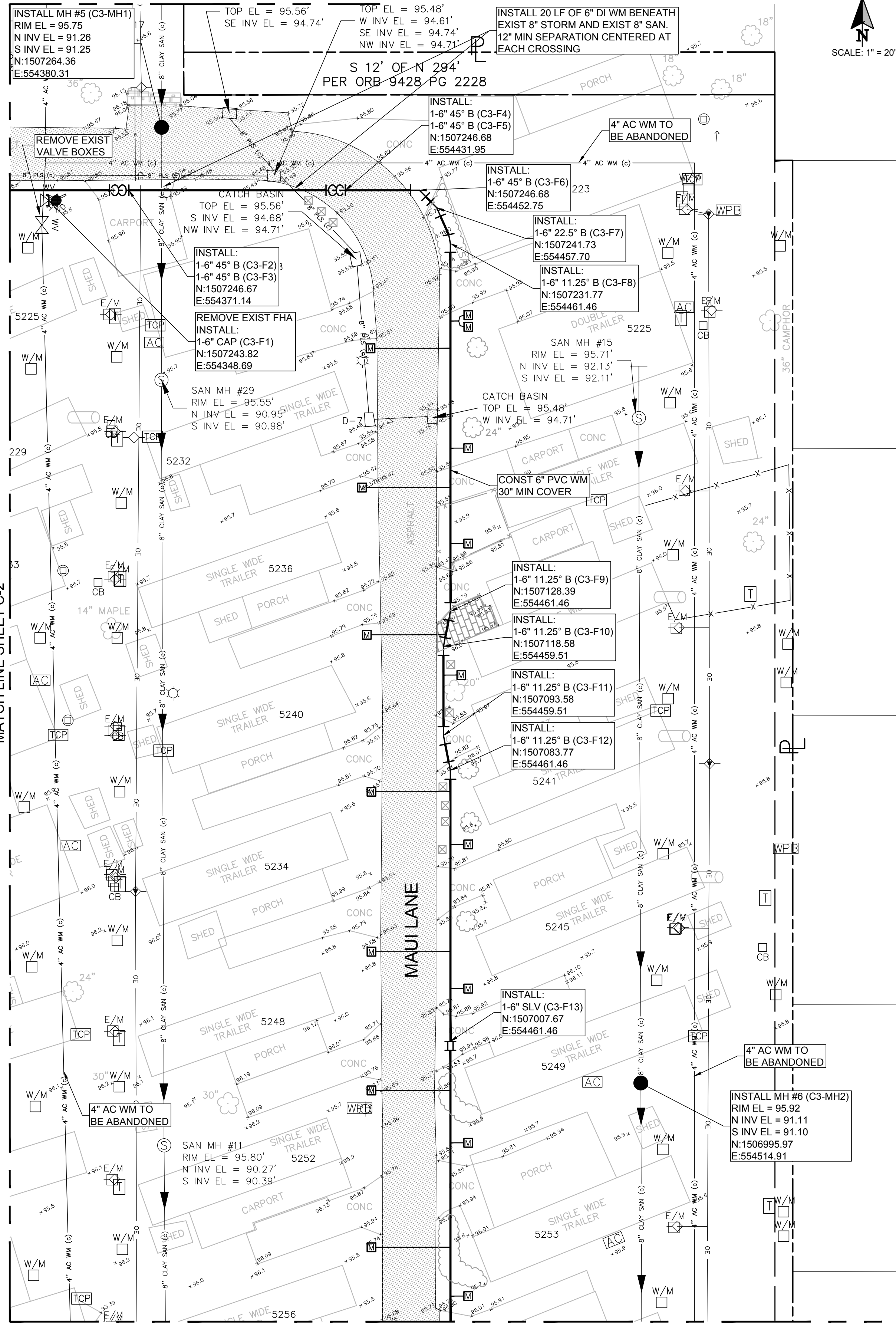
BALI HAI MHP PLAN

DESIGN ENGINEER
DANIEL L. ALLEN, P.E.
FLORIDA REGISTRATION No. 37891

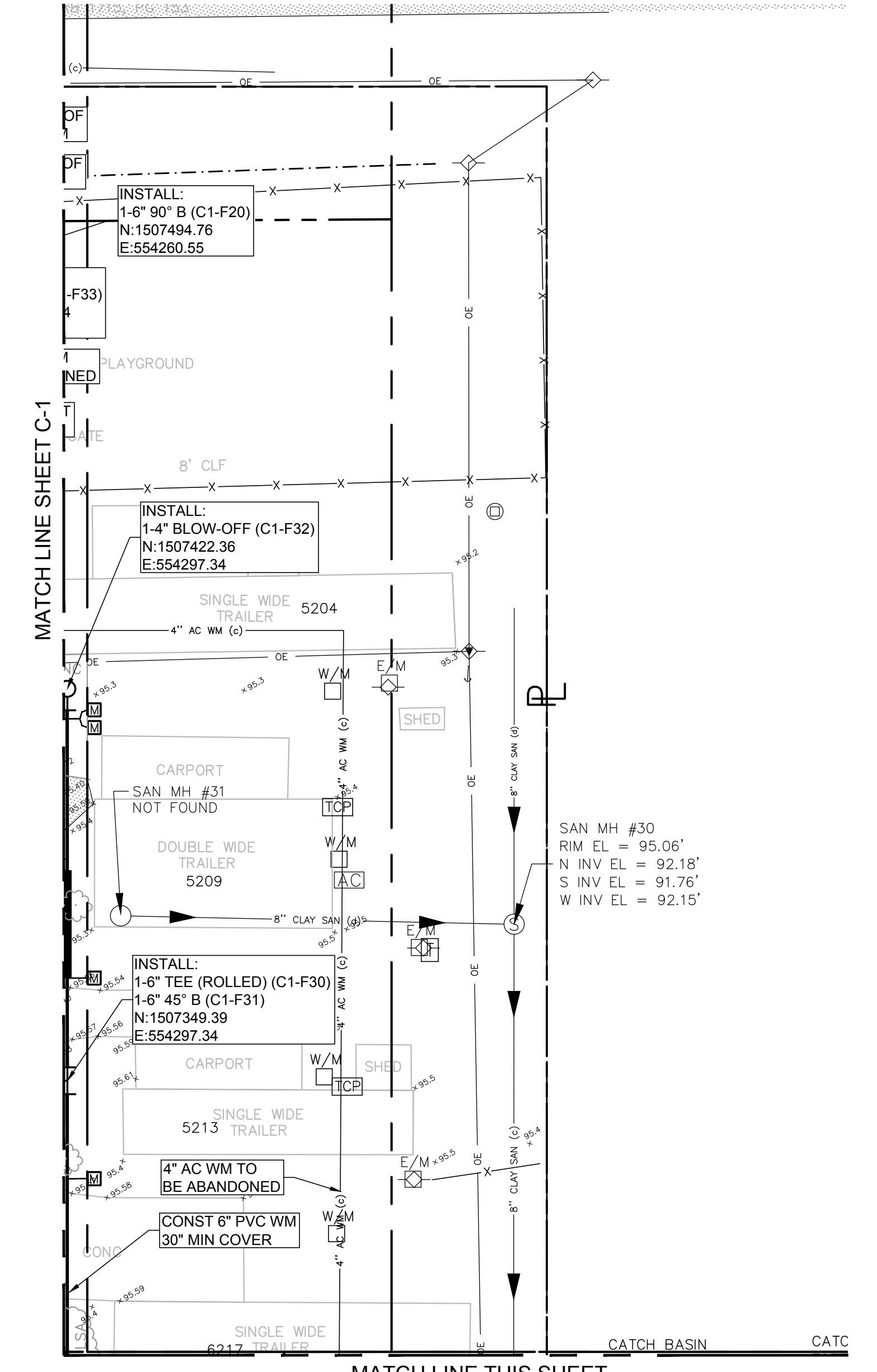
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DRAWING No.
C-1
SHEET 6 OF 29
OCTOBER 2013 - BID SET

MATCH LINE THIS SHEET



- NOTES:**
- FOR DRIVEWAY AND SIDEWALK RESTORATION LIMITS REFER TO DRIVEWAY RESTORATION DETAILS AND SIDEWALK REPAIR DETAIL ON SHEET D-6.
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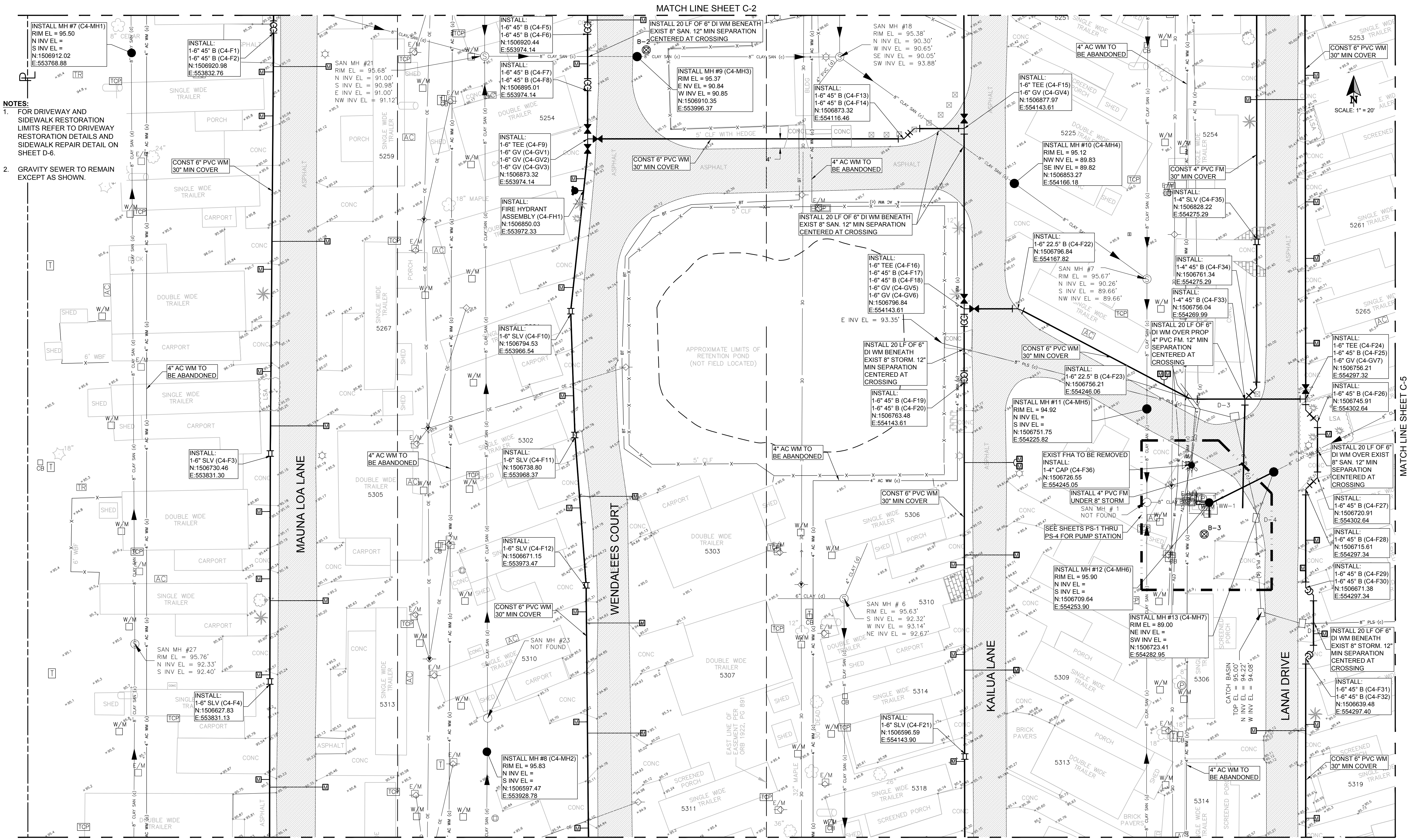
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

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ENGINEERING BUSINESS No. 6899

BALI HAI MHP UTILITY IMPROVEMENTS

BALI HAI MHP PLAN

DESIGN ENGINEER DANIEL L. ALLEN, P.E.	PROJECT No.: 2011-11.04 PROJECT DATE: OCT 2013 DESIGNED BY: EG	DRAWING No. C-3
FLORIDA REGISTRATION No. 37891	DRAWN BY: BAJAB CHECKED BY: DLA DRAWING FILE: SEE MARGIN	8 SHEET OF 29



- NOTES:**
- FOR DRIVEWAY AND SIDEWALK RESTORATION LIMITS REFER TO DRIVEWAY RESTORATION DETAILS AND SIDEWALK REPAIR DETAIL ON SHEET D-6.
 - GRAVITY SEWER TO REMAIN EXCEPT AS SHOWN.

No.	REVISIONS	BY	DATE
BID SET		DLA	10-24-13

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

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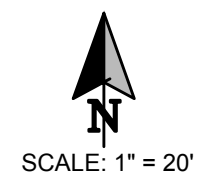
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ORLANDO, FLORIDA 32825

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PH: (407) 895-8628 FAX: (407) 895-1822
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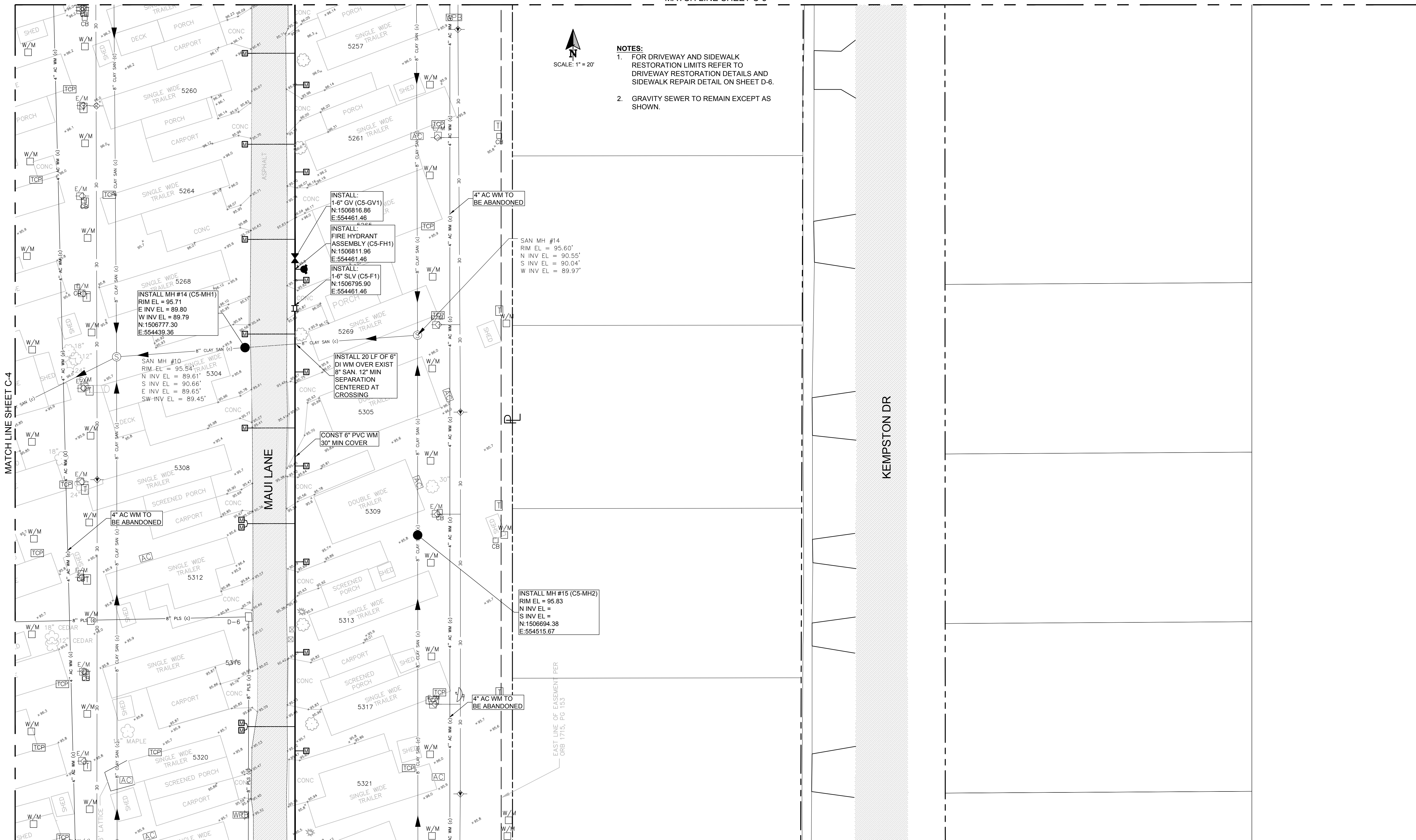
BALI HAI MHP UTILITY IMPROVEMENTS

BALI HAI MHP PLAN

DESIGN ENGINEER DANIEL L. ALLEN, P.E.	PROJECT No.: 2011-11.04	DRAWING No.
FLORIDA REGISTRATION No. 37891	PROJECT DATE: OCT 2013	C-4
	DESIGNED BY: EG	SHEET
	DRAWN BY: BAUJAB	9 OF 29
	CHECKED BY: DLA	
	DRAWING FILE: SEE MARGIN	



- NOTES:**
- FOR DRIVEWAY AND SIDEWALK RESTORATION LIMITS REFER TO DRIVEWAY RESTORATION DETAILS AND SIDEWALK REPAIR DETAIL ON SHEET D-6.
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No.	REVISIONS	BY	DATE
BID SET		DLA	10-24-13

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ORANGE COUNTY
GOVERNMENT

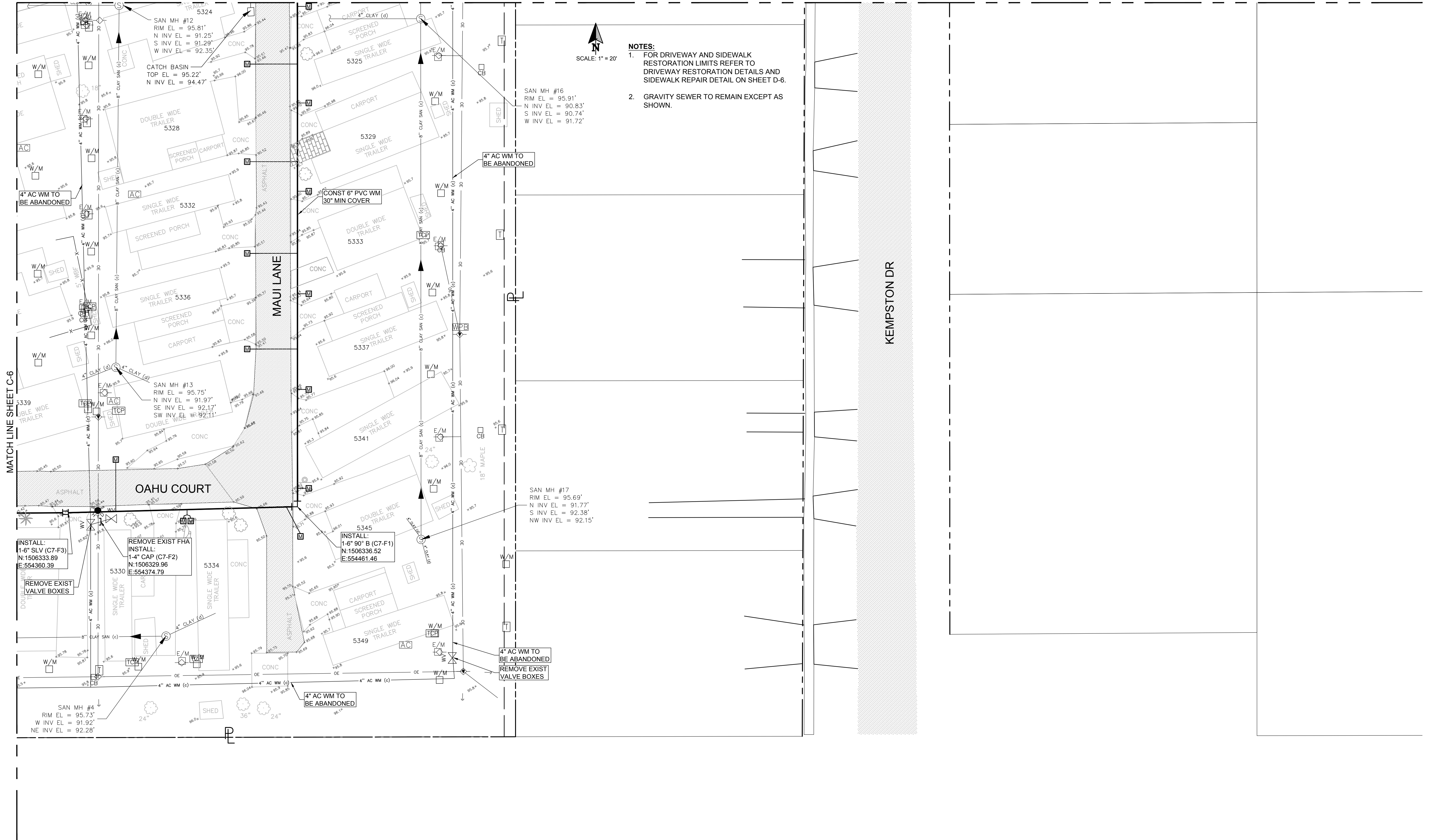
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9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

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1230 E. Hillcrest Street, Orlando, FL 32803
PH: (407) 895-8608 FAX: (407) 895-1882
ENGINEERING BUSINESS No. 6899

BALI HAI MHP UTILITY IMPROVEMENTS

BALI HAI MHP PLAN

DESIGN ENGINEER DANIEL L. ALLEN, P.E.	PROJECT No.: 2011-11.04	DRAWING No. C-5
FLORIDA REGISTRATION No. 37891	PROJECT DATE: OCT 2013 DESIGNED BY: EG DRAWN BY: BAJAB CHECKED BY: DLA DRAWING FILE: SEE MARGIN	10 SHEET OF 29



No.	REVISIONS	BY	DATE
BID SET		DLA	10-24-13

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9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

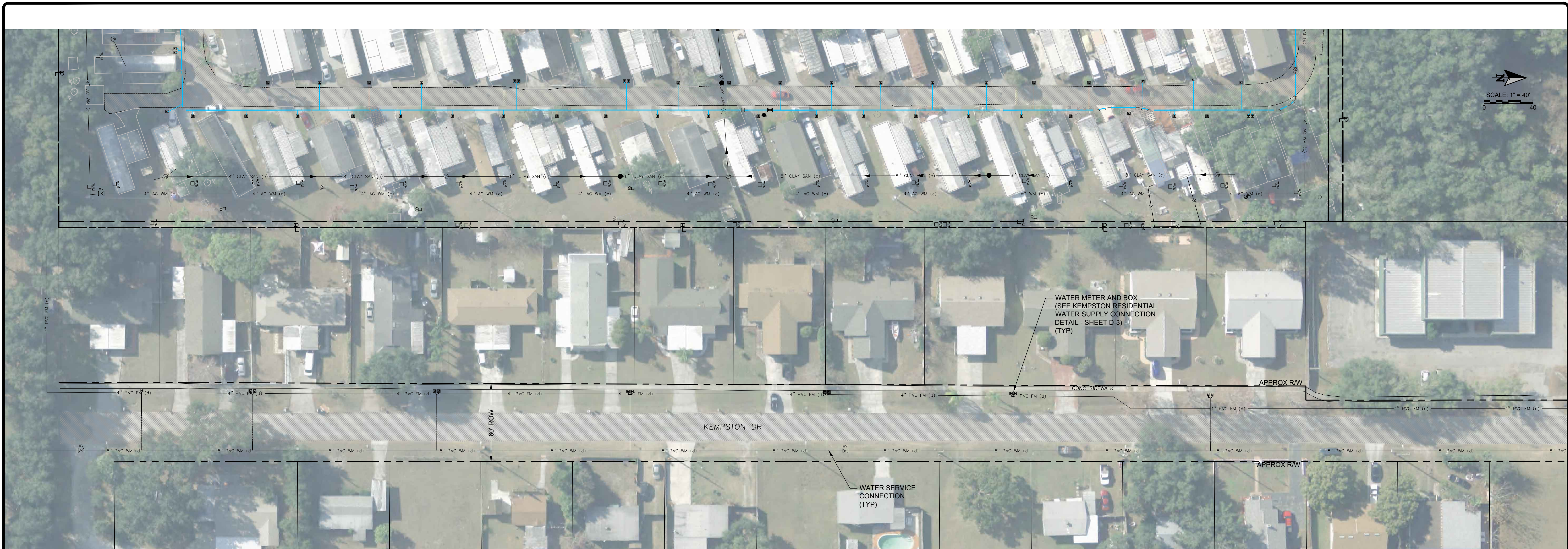
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PH: (407) 895-8608 FAX: (407) 895-1822
ENGINEERING BUSINESS No. 6899

BALI HAI MHP UTILITY IMPROVEMENTS
BALI HAI MHP PLAN

DESIGN ENGINEER
DANIEL L. ALLEN, P.E.
FLORIDA REGISTRATION No. 37891

PROJECT No.: 2011-11.04
PROJECT DATE: OCT 2013
DESIGNED BY: EG
DRAWN BY: BAJAB
CHECKED BY: DLA
DRAWING FILE: SEE MARGIN

DRAWING No. **C-7**
SHEET 12 OF 29



NOTE:
 FOR DRIVEWAY AND SIDEWALK RESTORATION LIMITS
 REFER TO DRIVEWAY RESTORATION DETAILS AND
 SIDEWALK REPAIR DETAIL ON SHEET D-6.

No.	REVISIONS	BY	DATE
BID SET		DLA	10-24-13

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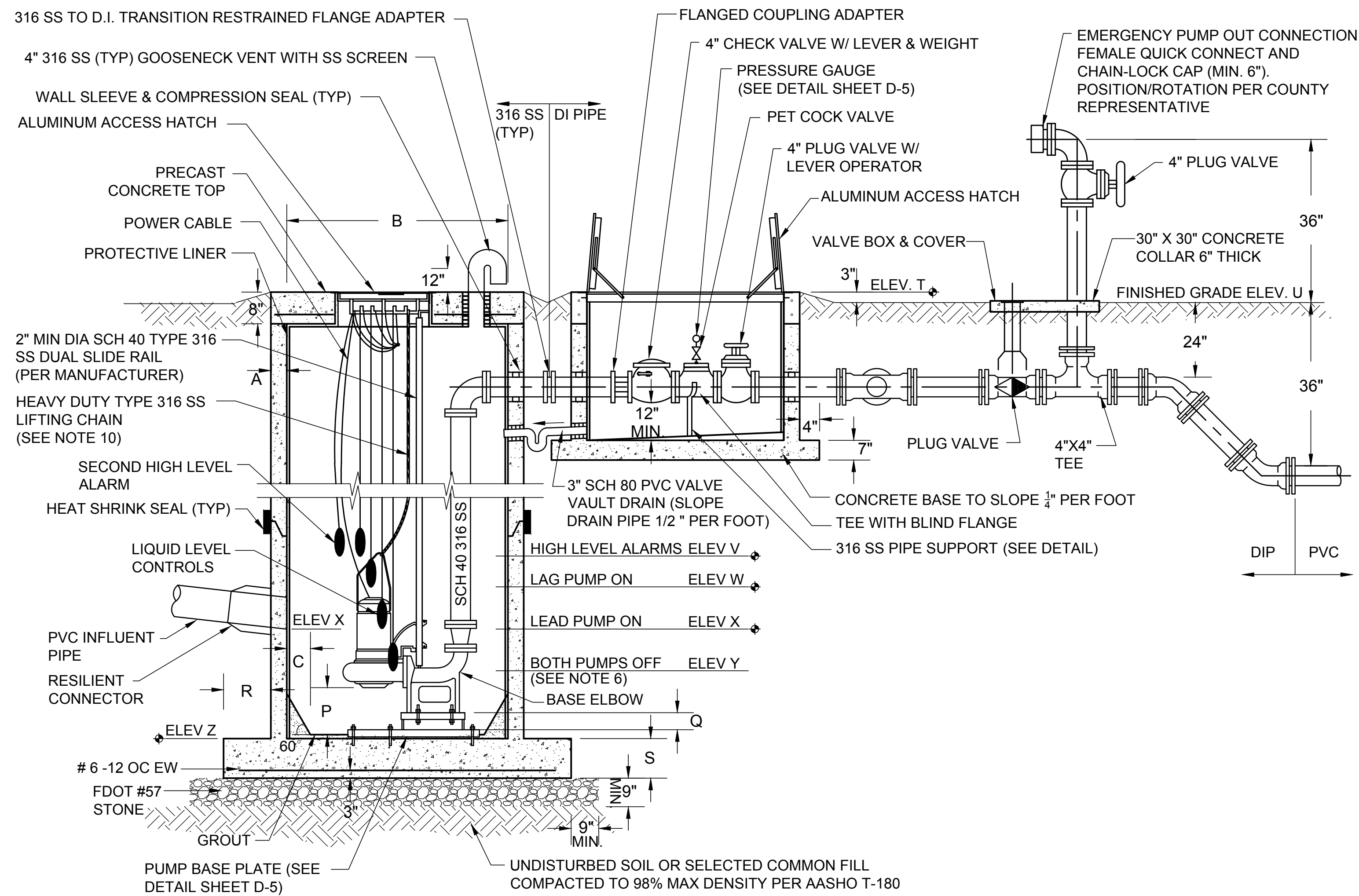
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BALI HAI MHP UTILITY IMPROVEMENTS

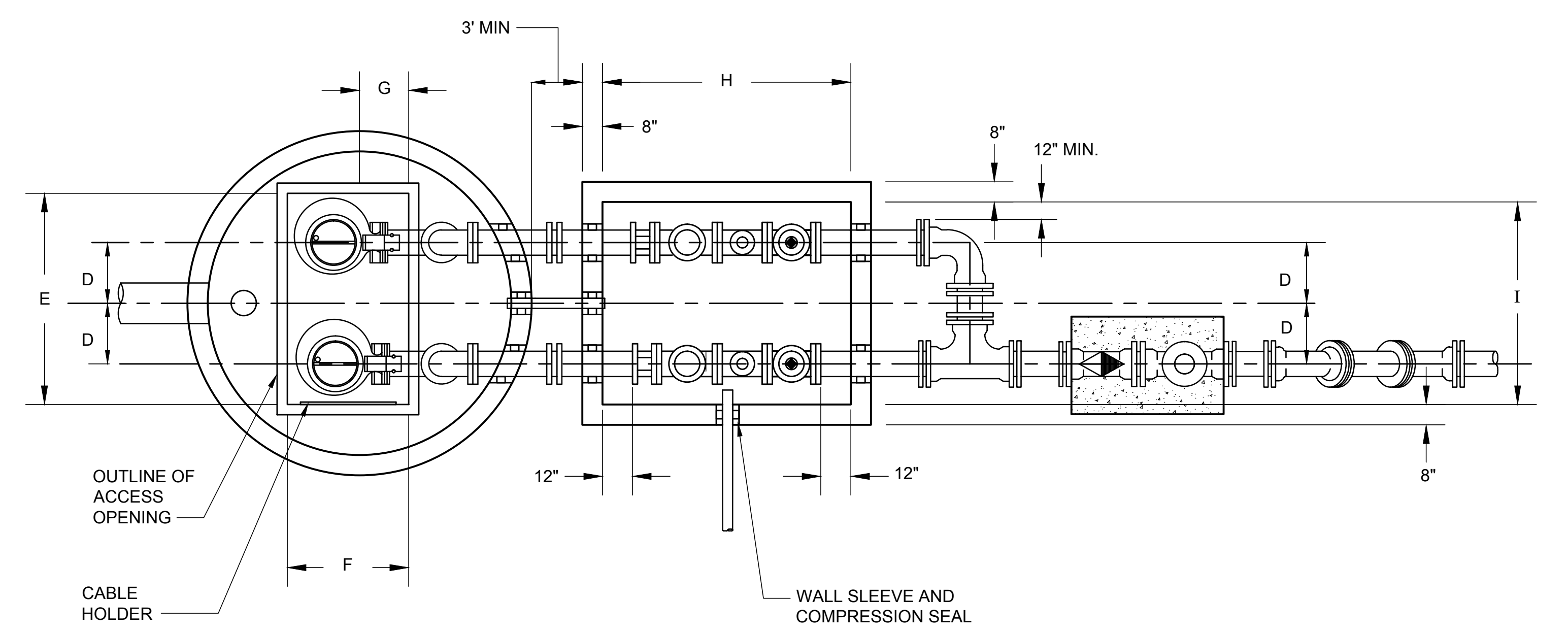
KEMPSTON DR
WATER SERVICE RELOCATIONS

DESIGN ENGINEER DANIEL L. ALLEN, P.E.	PROJECT No.: 2011-11.04	DRAWING No.
FLORIDA REGISTRATION No. 37891	PROJECT DATE: OCT 2013	C-8
	DESIGNED BY: EG	SHEET
	DRAWN BY: BAJAB	13 OF 29
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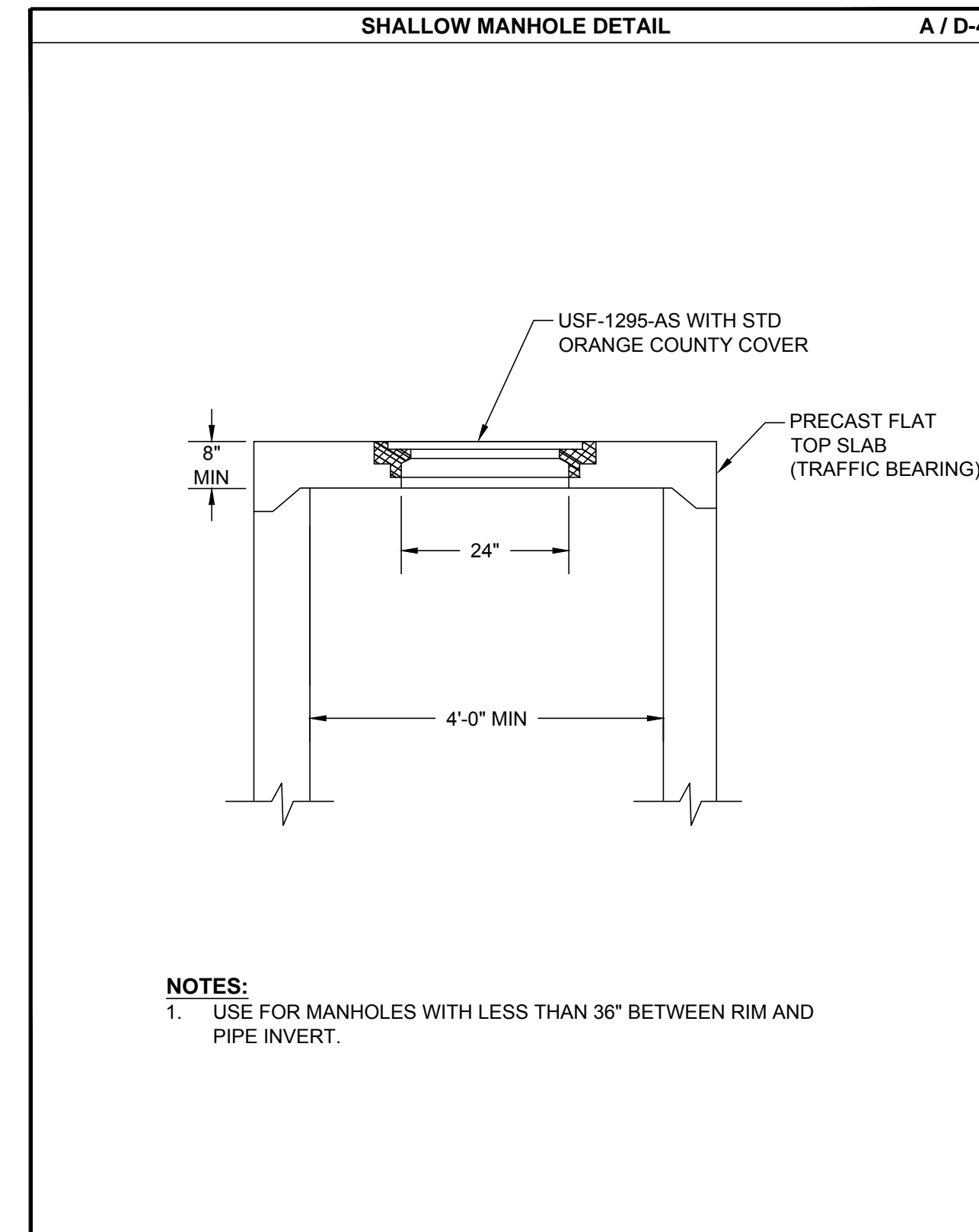
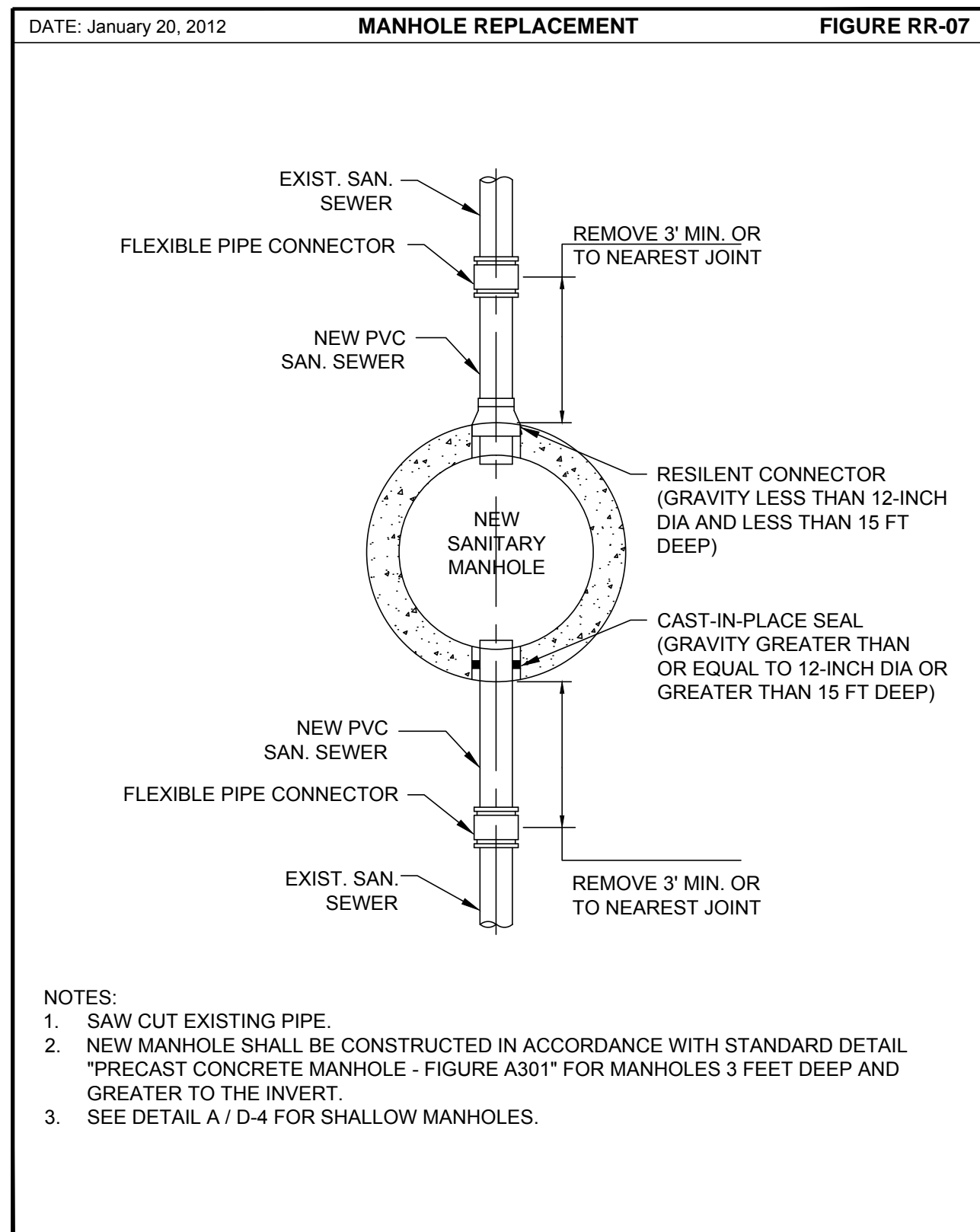
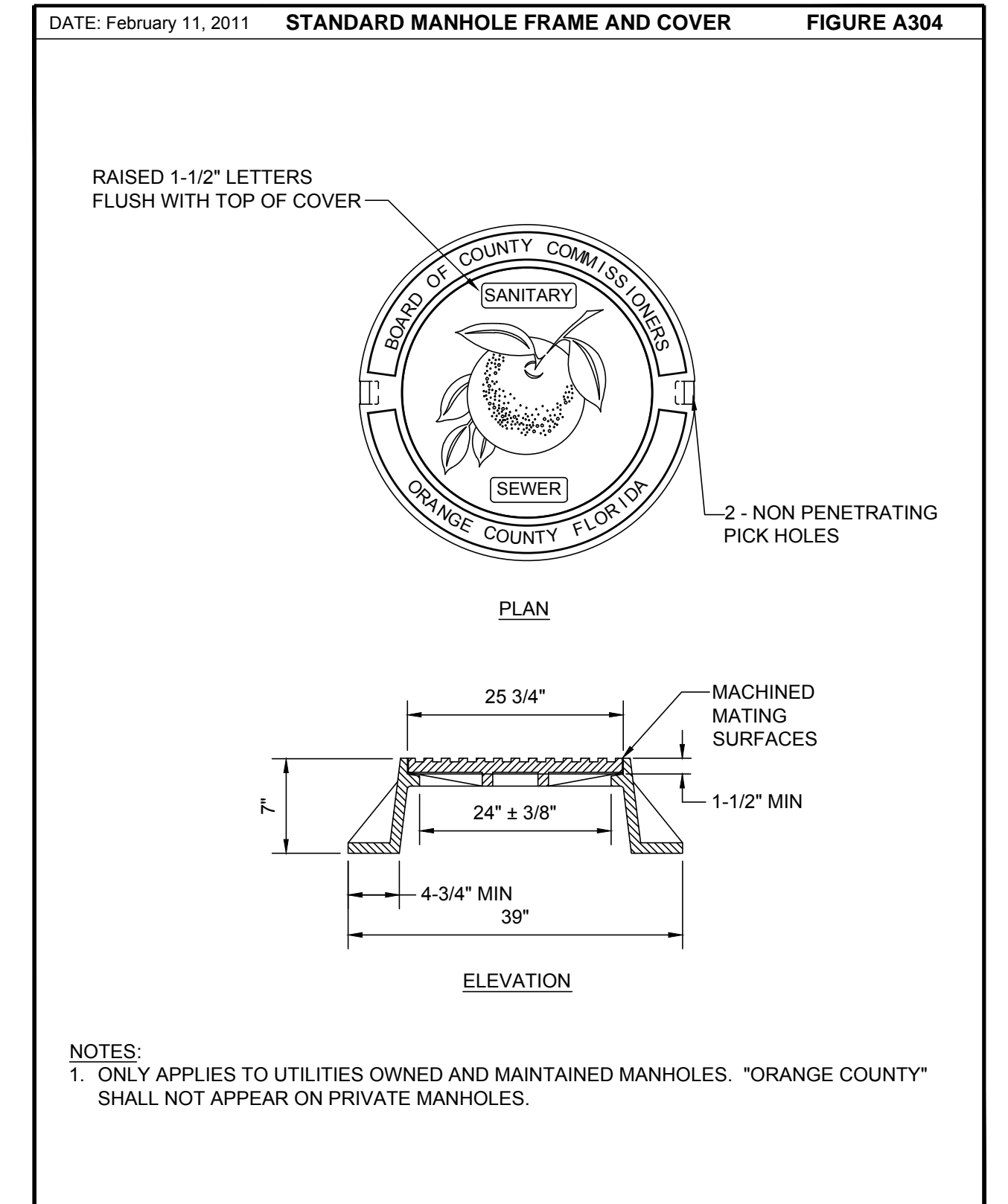
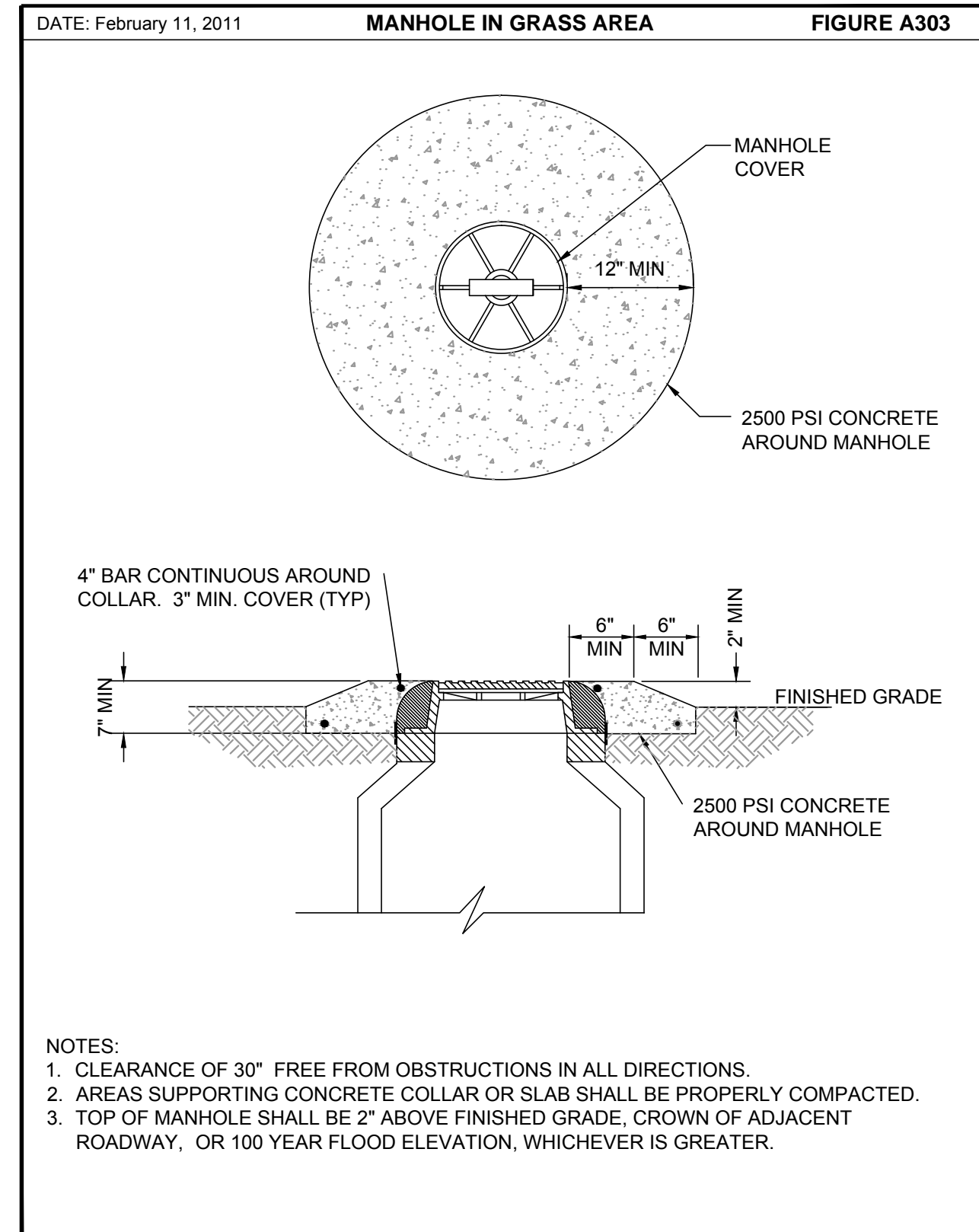
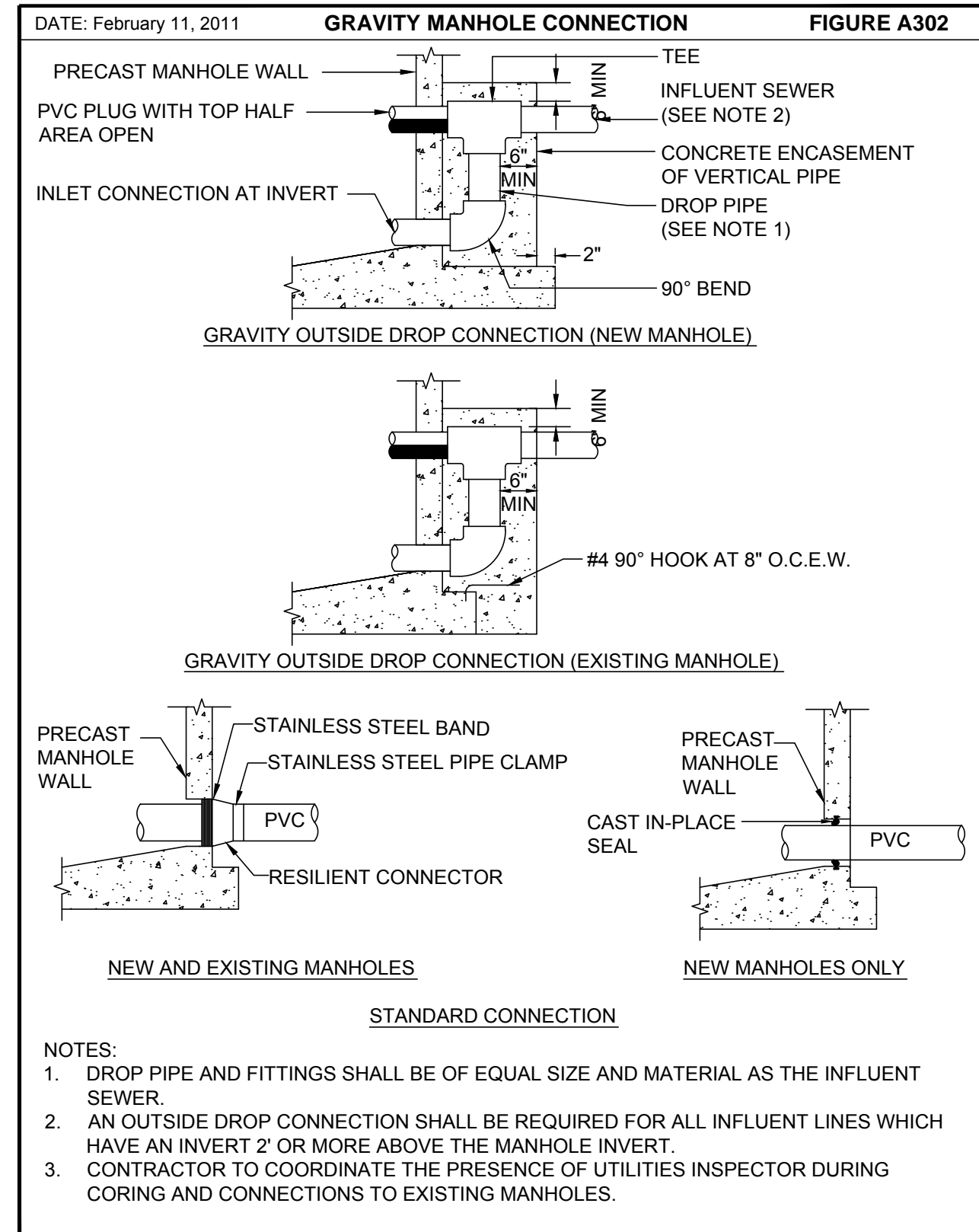
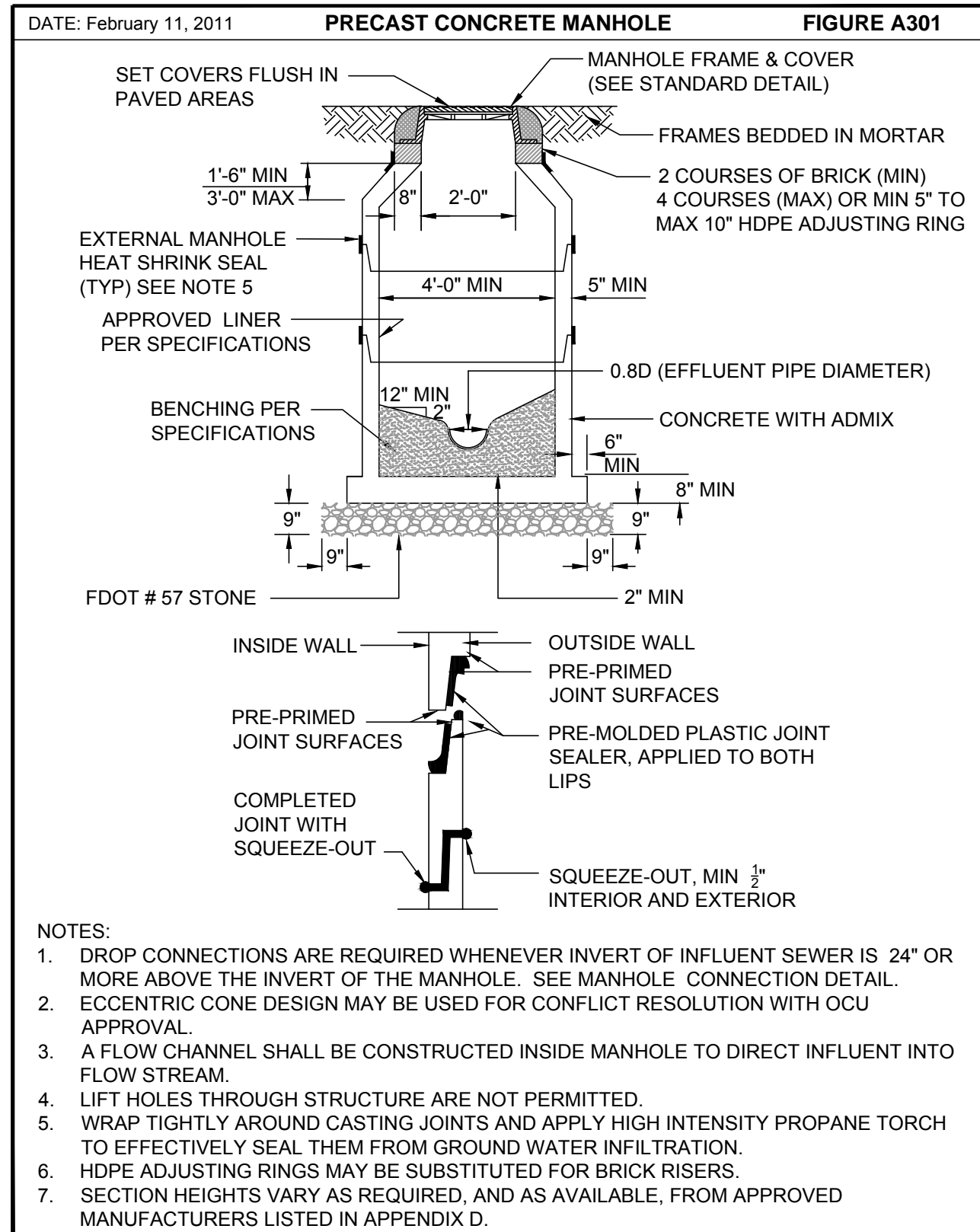


GENERAL NOTES:

- GRAVITY PIPES ENTERING WET WELL SHALL BE MADE WATERTIGHT WITH AN APPROVED RESILIENT CONNECTOR LISTED IN APPENDIX D.
- ALL LOCATIONS WHERE PRESSURE PIPES PENETRATE THE WET WELL SHALL BE MADE WATERTIGHT WITH A WALL SLEEVE AND COMPRESSION SEAL. WALL SLEEVE AND COMPRESSION SEALS SHALL BE COMPATIBLE WITH THE LINER.
- THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
- WET WELL AND VALVE VAULT COVERS SHALL BE ALUMINUM WITH 316 STAINLESS STEEL HARDWARE WITH RECESSED LOCK BRACKET. WET WELL COVER SHALL HAVE "CONFINED SPACE" ETCHED OR WELDED INTO COVER.
- ALL HARDWARE IN WET WELL SHALL BE 316 STAINLESS STEEL. ALL FLANGED PIPE, VALVES AND APPURTENANCES SHALL HAVE 316 S.S. HARDWARE.
- PUMP OFF ELEVATION TO BE PER MANUFACTURER'S MINIMUM SUBMERGENCE.
- PIPE JOINTS IN THE WET WELL AND THE VALVE VAULT SHALL BE FLANGED. PIPE JOINTS FROM THE VALVE VAULT TO THE EXISTING FORCE MAIN SHALL BE RESTRAINED MECHANICAL JOINTS.
- CHECK VALVE ARMS SHALL BE LOCATED WITH THE SAME ORIENTATION (i.e. ALL ARMS ON THE LEFT SIDE OF VALVE).
- REFER TO APPENDIX D FOR ADMIX, COATINGS AND LININGS.
- EACH PUMP SHALL BE FITTED WITH 6 FEET (6'-0") OF TYPE 316 SS, 3/4" CHAIN ATTACHED TO THE LIFTING MECHANISM AND AIRCRAFT RATED 1/4" SS CABLE PROVIDED BETWEEN THE CABLE HOLDER AND THE CHAIN.
- ALL ABOVE GROUND PIPING SHALL BE COATED.

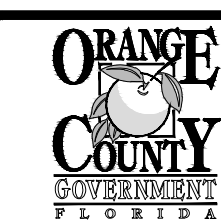


BALI HAI MHP P. S. # 3082						
MANUFACTURER: FLYGT MODEL: CP3102.181MT IMP: 181 DIA: 181 mm. SPEED: 1745 RPM DISCHARGE SIZE: 4 IN.	VOLTAGE: - 230V PHASE: 3 RATED POWER: 5 HP IMPELLER THROUGHLET: 2.9 IN CURVE NUMBER: 63-3102.181	MANUFACTURER: ABS MODEL: XFP 100E CB1.4PE 3516 IMP: CB1 DIA: 8.46" SPEED: 1170 RPM DISCHARGE SIZE: 4 IN.	VOLTAGE: 230 V PHASE: 3 RATED POWER: 5 HP IMPELLER THROUGHLET: 3 IN. CURVE NUMBER: XFP 100E CB1	DESIGN CONDITIONS: 134 GPM AT 58 FEET TDH MAXIMUM HEAD CONDITION: 50 GPM AT 38 FEET TDH MINIMUM HEAD CONDITION: 550 GPM AT 12 FEET TDH SHUT-OFF HEAD: 42 FEET TDH	DESIGN CONDITIONS: 146 GPM AT 27.6 FEET TDH MAXIMUM HEAD CONDITION: 80 GPM AT 30 FEET TDH MINIMUM HEAD CONDITION: 560 GPM AT 11 FEET TDH SHUT-OFF HEAD: 36 FEET TDH	
DESCRIPTION	SYMBOL	DIMENSION	ELEVATION	DIMENSION	ELEVATION	DESIGN A & B SPECIFICATIONS NOTES:
THICKNESS OF WALL	A	8" (MIN)		8" (MIN)		1. PER PUMP MANUFACTURER'S REQUIREMENTS. 2. DIMENSION P AND ELEVATIONS Y AND Z MUST MEET BOTH FLYGT AND ABS REQUIREMENTS.
DIAMETER OF WET WELL	B	6" (MIN)		6" (MIN)		
WIDTH OF BOTTOM FILLET	C	SEE NOTE 1		SEE NOTE 1		
C/L OF WET WELL TO C/L OF PIPES	D	SEE NOTE 1		SEE NOTE 1		
LENGTH OF PUMP ACCESS OPENING	E	SEE NOTE 1		SEE NOTE 1		
WIDTH OF PUMP ACCESS OPENING	F	SEE NOTE 1		SEE NOTE 1		
CENTER OF WET WELL TO EDGE OF HATCH	G	SEE NOTE 1		SEE NOTE 1		
VALVE BOX HATCH OPENING	H	5'-9"		5'-9"		
VALVE BOX HATCH OPENING	I	4'-7"		4'-7"		
LIP WIDTH OF WET WELL BASE	R	18"		18"		
THICKNESS OF WET WELL BASE	S	12"		12"		
TOP OF WET WELL	T	-	96.02	-	96.02	
INFLUENT PIPE INVERT	U	-	95.77	-	95.77	
HIGH LEVEL ALARMS	V	-	89.07	-	89.07	
LAG PUMP ON	W	-	88.57	-	88.57	
LEAD PUMP ON	X	-	85.67	-	85.67	
PUMPS OFF (TOP OF PUMP VOLUTE)	Y	-	82.52	-	82.95	
BOTTOM OF PUMP TO FLOOR OF WET WELL	P	3.35"	-	4.6"	-	
STEP HEIGHT (IF REQUIRED)	Q	1.3"	-	N/A	-	
FLOOR OF WET WELL	Z	-	81.67	-	81.67	



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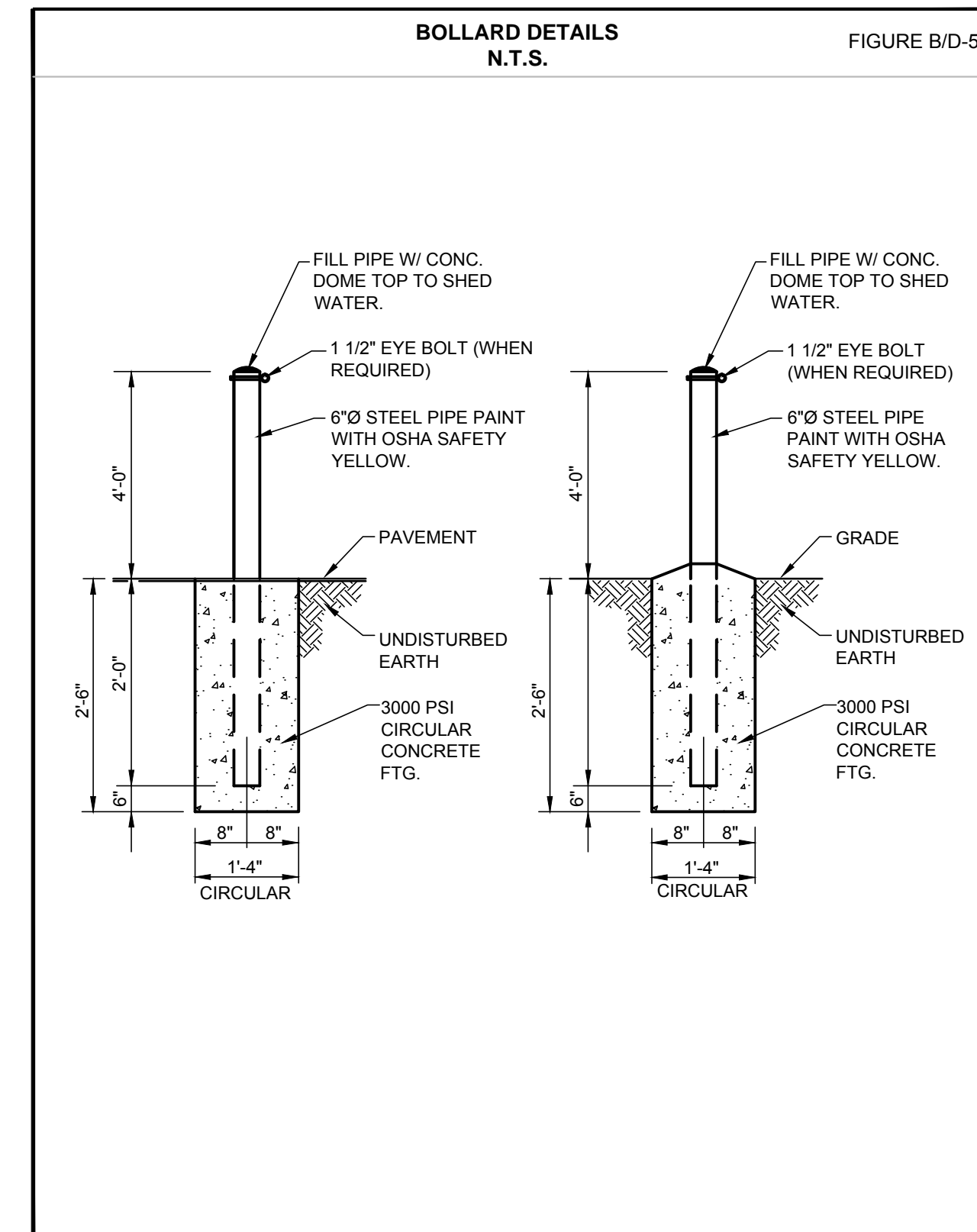
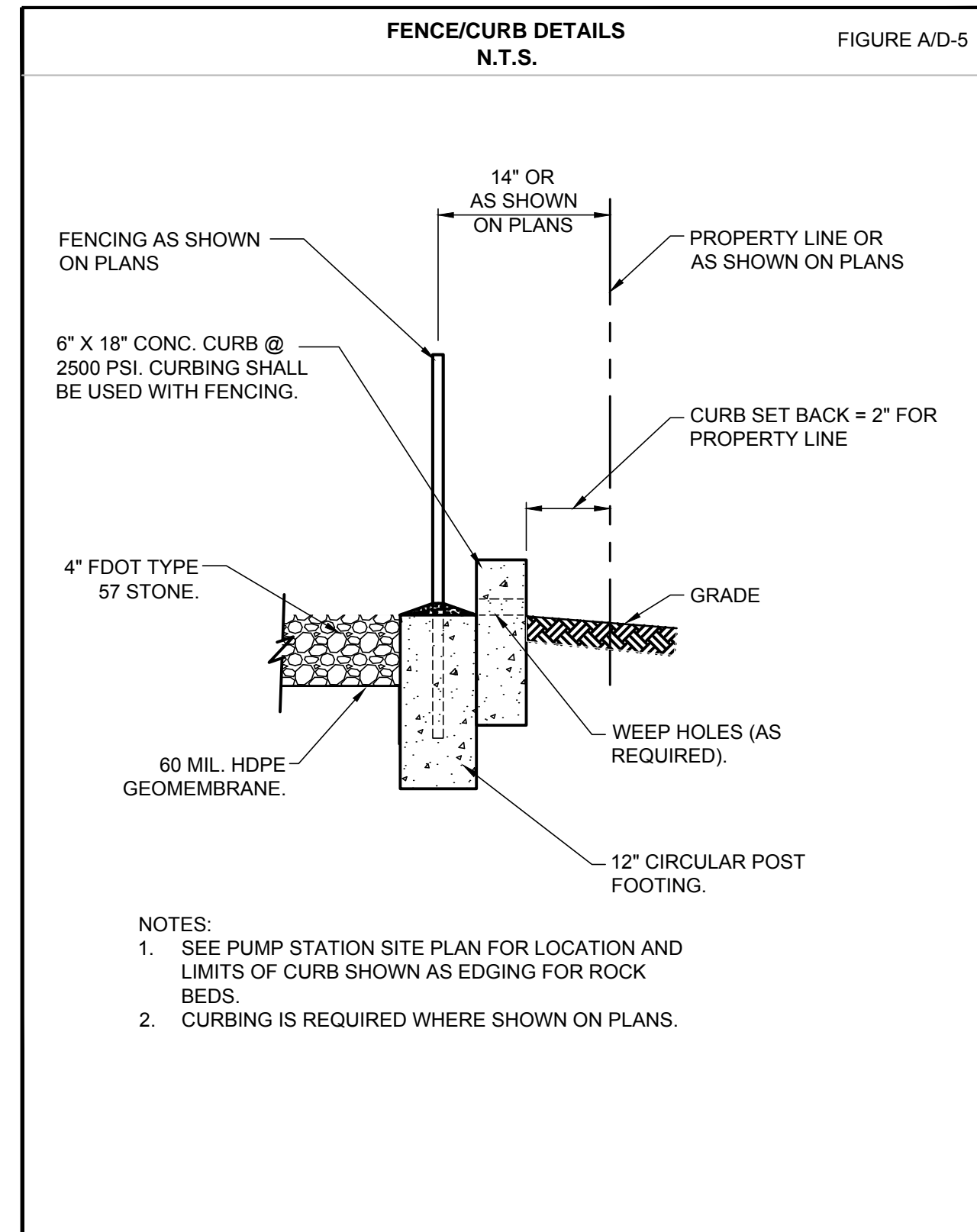
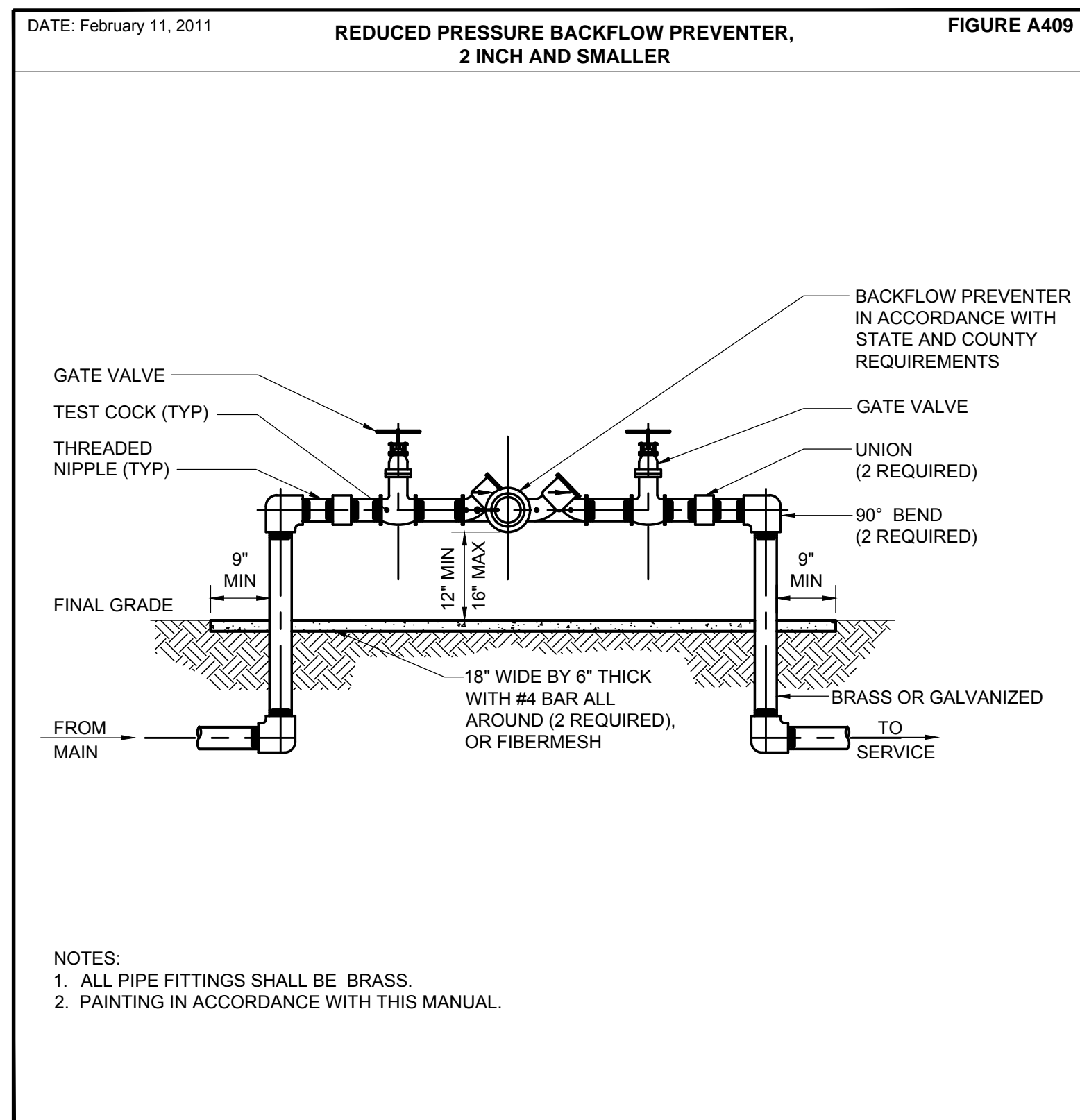
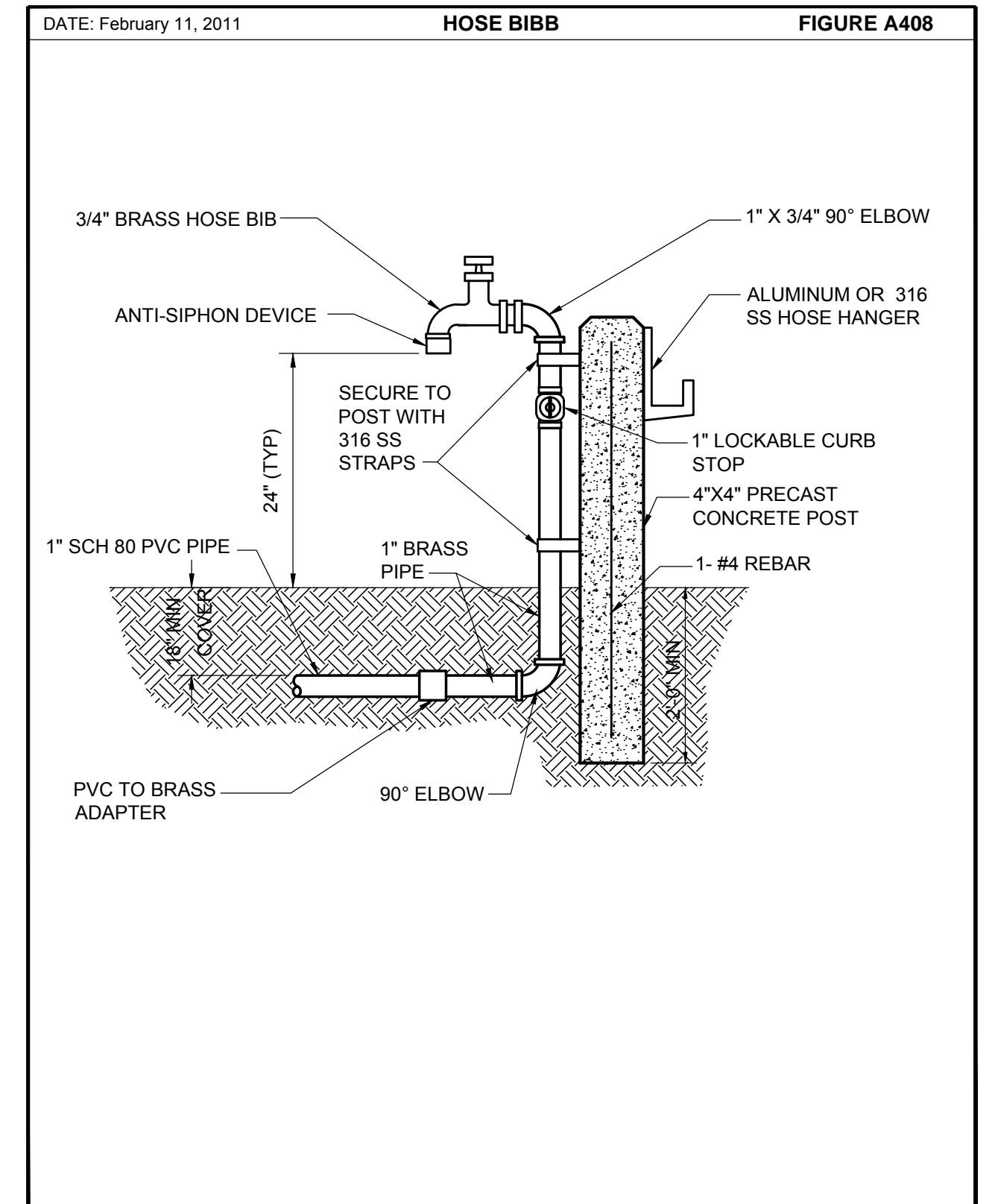
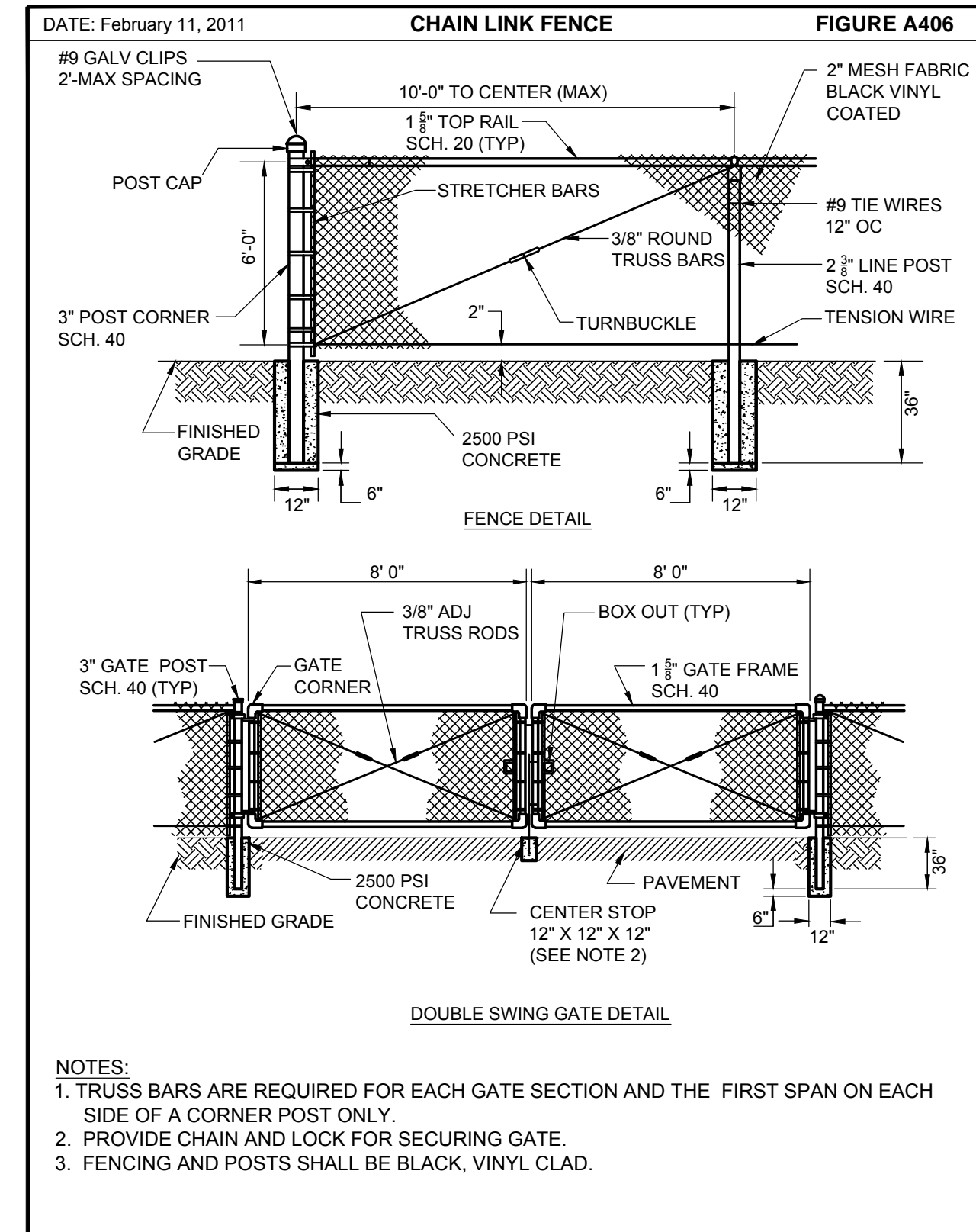
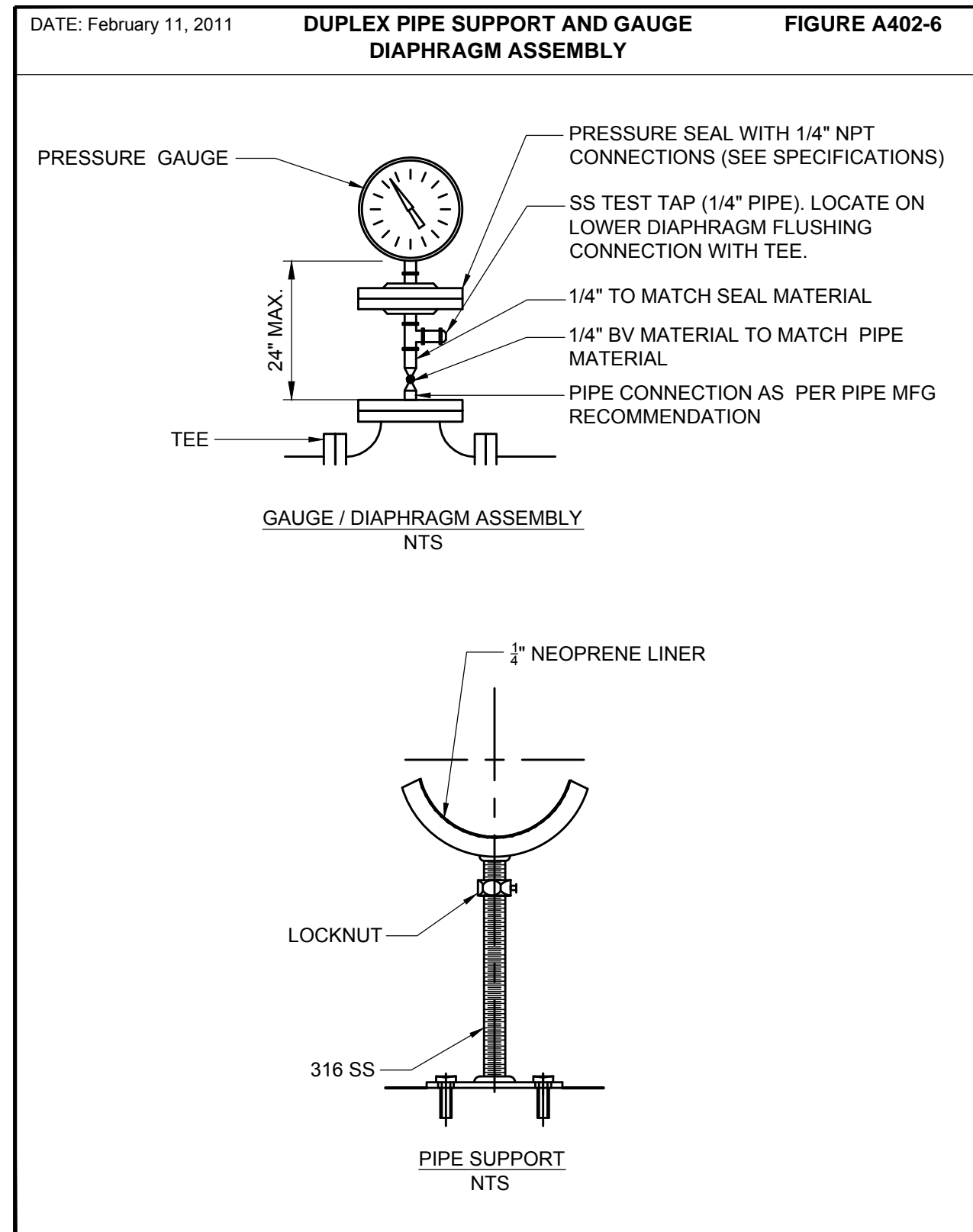
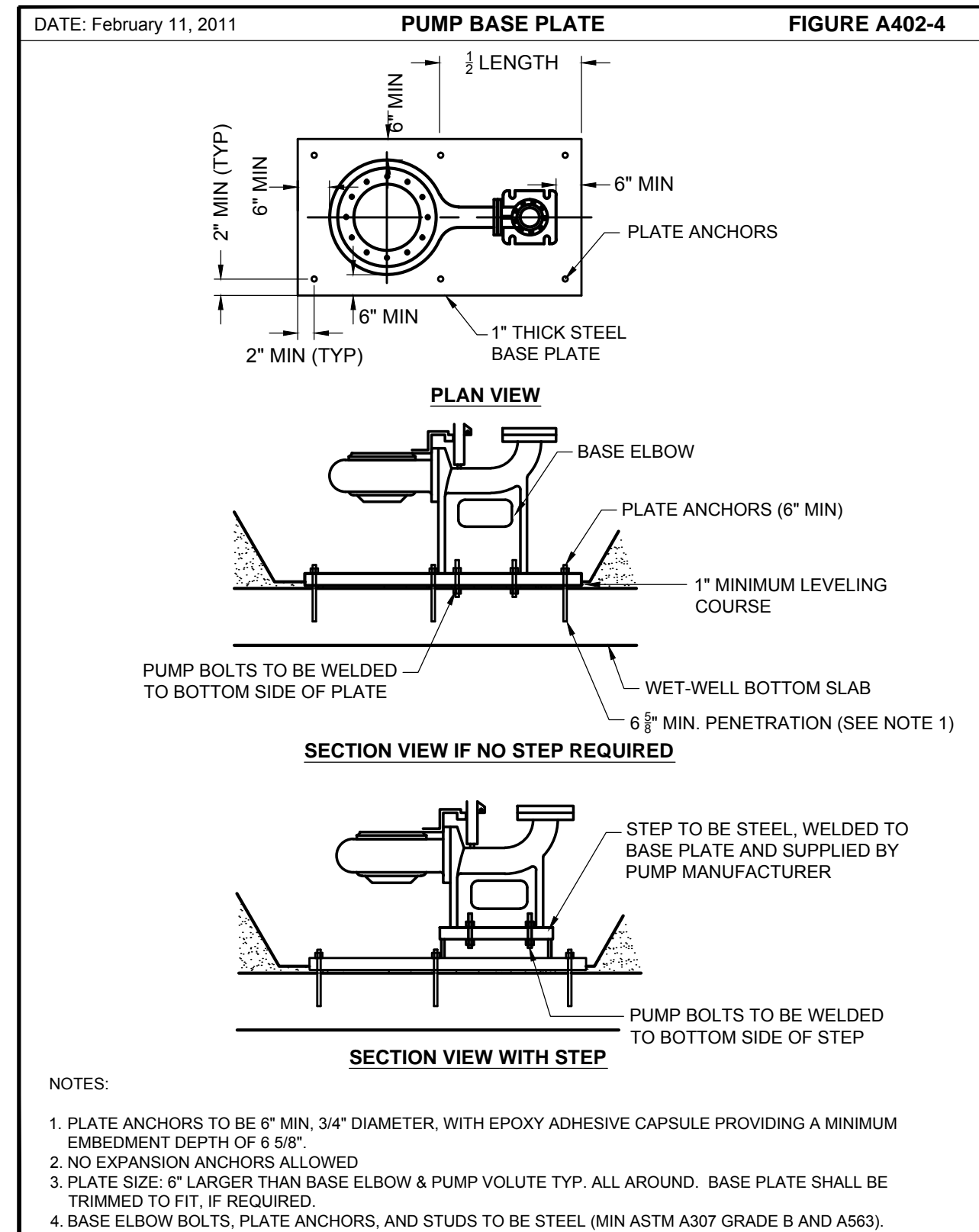
BALI HAI MHP UTILITY IMPROVEMENTS

DETAILS

DESIGN ENGINEER
DANIEL L. ALLEN, P.E.
FLORIDA REGISTRATION No. 37891

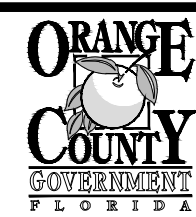
PROJECT No.: 2011-11.04
PROJECT DATE: OCT 2013
DESIGNED BY: EG
DRAWN BY: BAJAB
CHECKED BY: DLA
DRAWING FILE: SEE MARGIN

DRAWING No.
D-4
SHEET 21 OF 29



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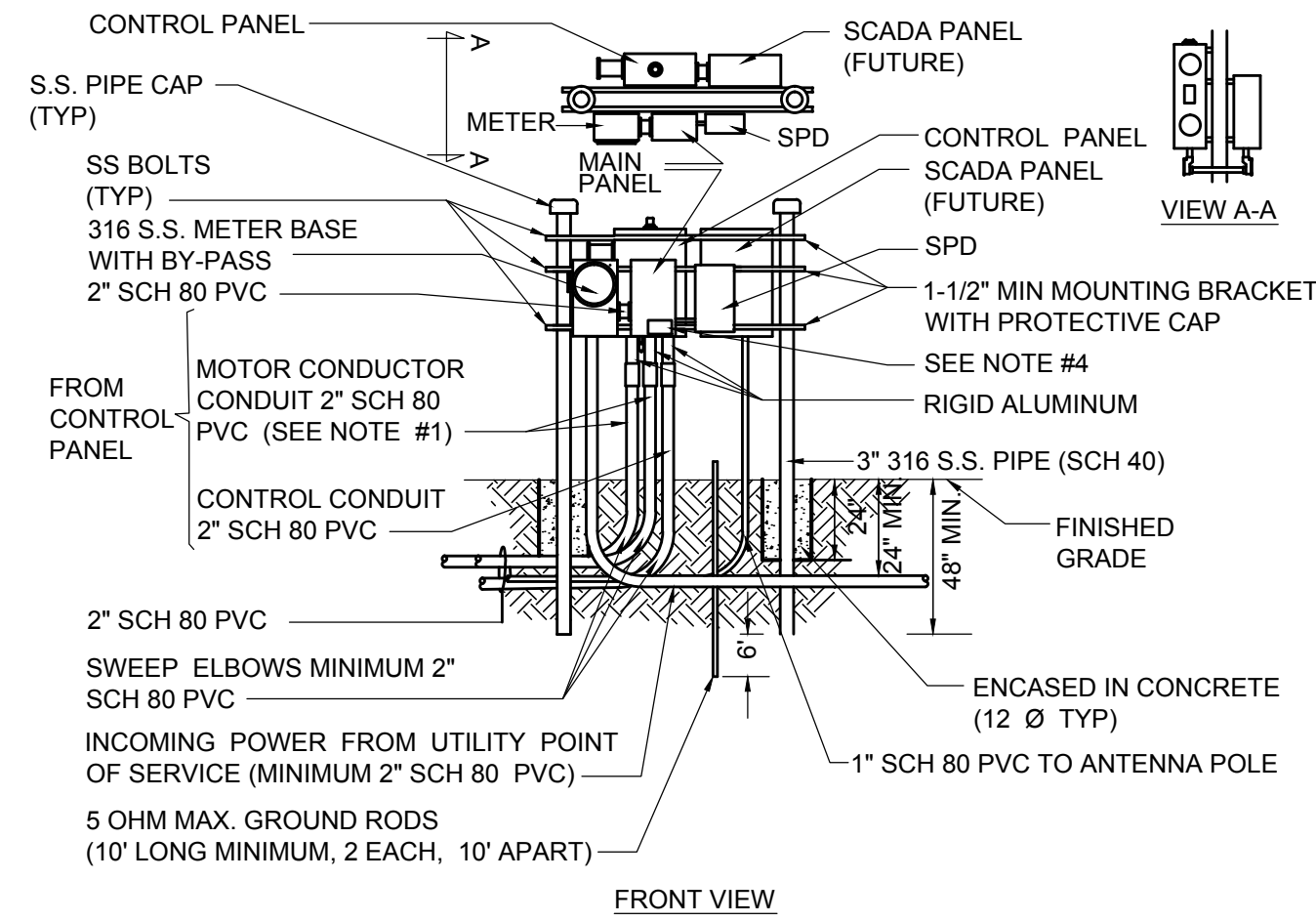
BALI HAI MHP UTILITY IMPROVEMENTS

DETAILS

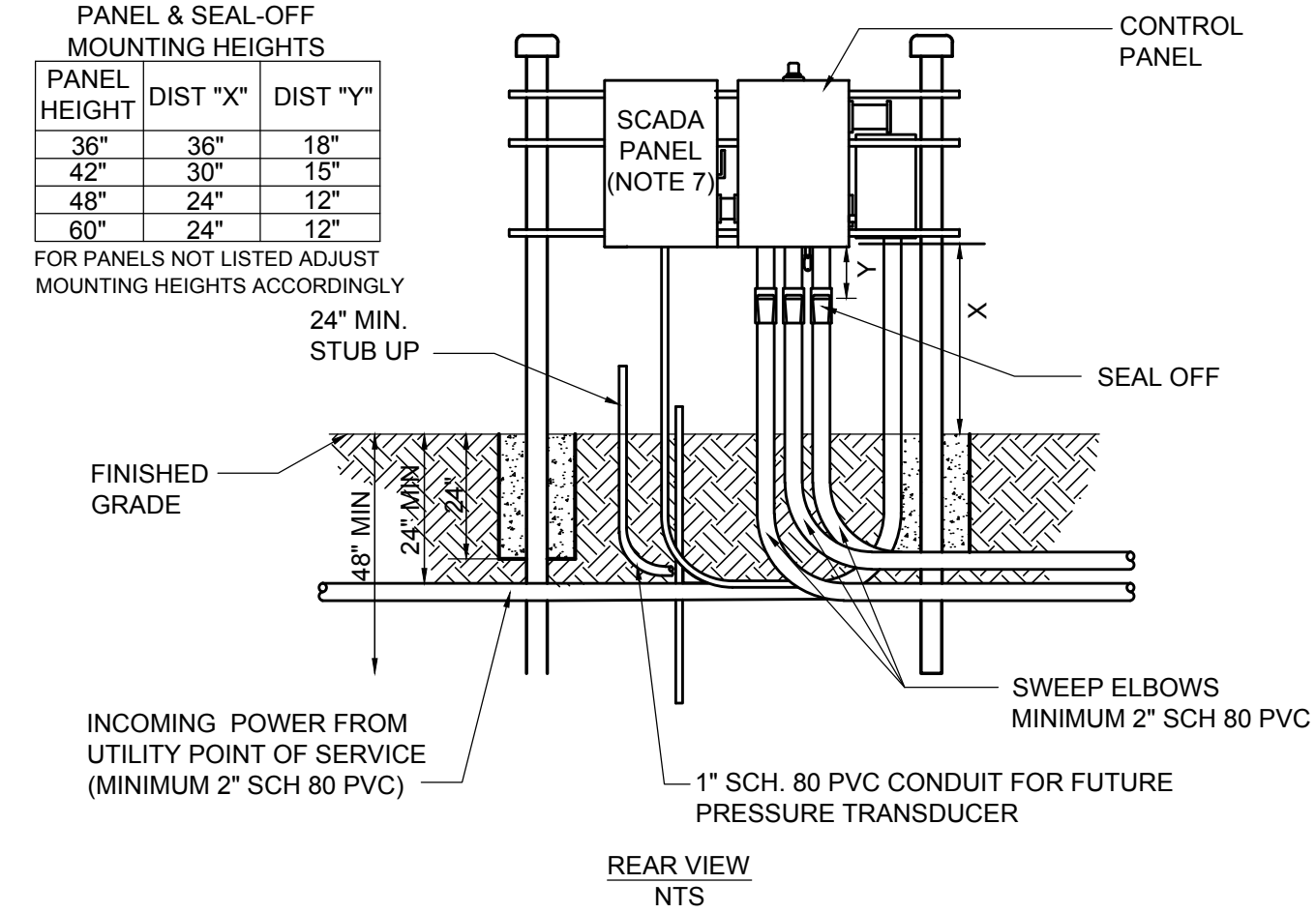
DESIGN ENGINEER
 DANIEL L. ALLEN, P.E.
 FLORIDA REGISTRATION No. 37891

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D-5
 SHEET 22 OF 29

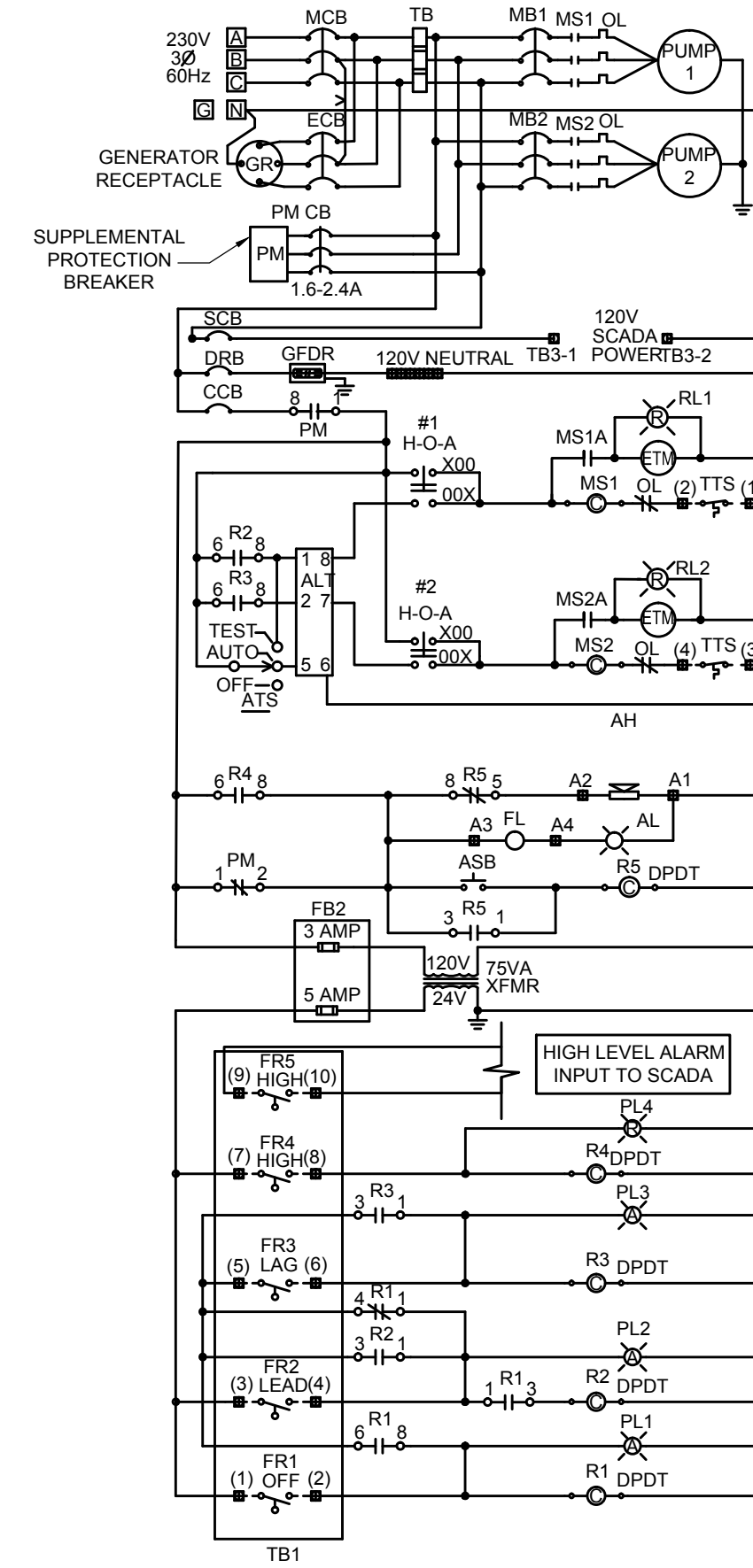


**PUMP STATION CONTROL PANEL (240V)
FRONT & PLAN VIEW**

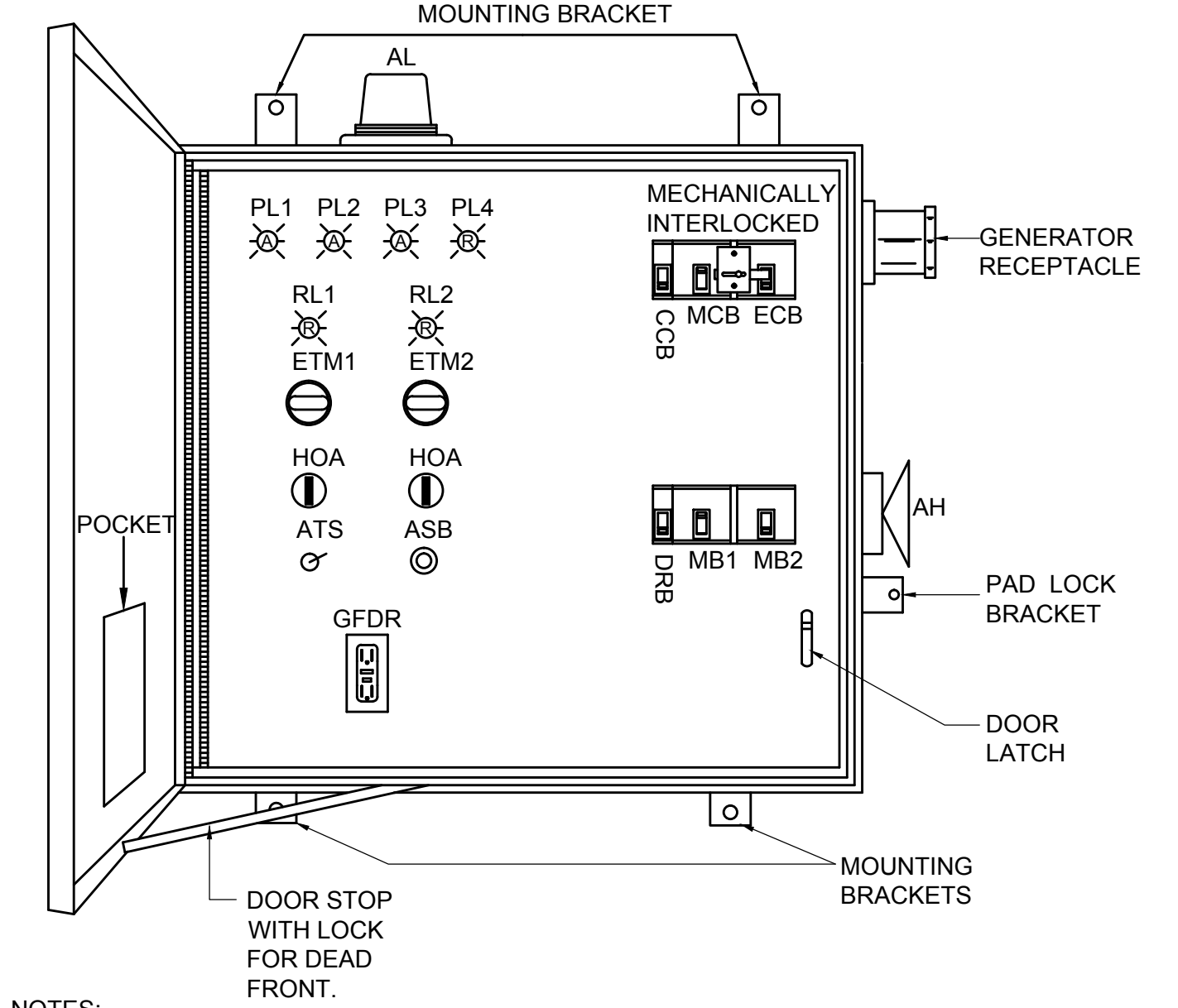


**PUMP STATION CONTROL PANEL (240V)
REAR VIEW**

- PANEL INSTALLATION NOTES:**
1. PUMP MOTOR CONDUIT SHALL BE SIZE TO ACCOMMODATE 40% CONDUIT FILL. MINIMUM CONDUIT SIZE TO BE 2\"/>
 - 2. POWER SUPPLY SHALL BE UNDERGROUND ON THE LIFT STATION SITE AND SHALL BE 3-PHASE, FROM A 3-PHASE SOURCE ONLY. 100 AMP SERVICE MINIMUM.
 - 3. AN ELECTRICAL GROUNDING SYSTEM SHALL BE INSTALLED AS PER THE NATIONAL ELECTRICAL CODE, LOCAL CODES AND ORDINANCES. AN UNDERGROUND PERIMETER CABLE GROUNDING SYSTEM SHALL BE INSTALLED WITH CONNECTIONS TO AT LEAST WET WELL COVER, VALVE VAULT COVER, CONTROL PANELS, GENERATOR, UTILITY COMPANY TRANSFORMER, MANUAL DISCONNECT SWITCH AND METAL FENCE. REFER TO GROUNDING DETAILS.
 - 4. THE STATION NAME, UTILITIES I.D. NUMBER AND ADDRESS SHALL BE AFFIXED TO THE FRONT OF THE METER CABINET.
 - 5. ALL MOUNTING HARDWARE & BRACKETS AND ELECTRICAL ENCLOSURES SHALL BE 316 STAINLESS STEEL.
 - 6. ON A 4-WIRE, DELTA SYSTEM, THE HIGH-LEG SHALL BE IDENTIFIED WITH ORANGE COLOR TAPE AT ALL CONNECTION POINTS AND SHALL BE LOCATED ON THE \"B\" PHASE AT THE LINE SIDE OF THE MAIN DISCONNECT.
 - 7. THE SCADA PANEL IS TO SHOWN FOR INFORMATION ONLY AND WILL BE INSTALLED IN THE FUTURE (BY OTHERS).

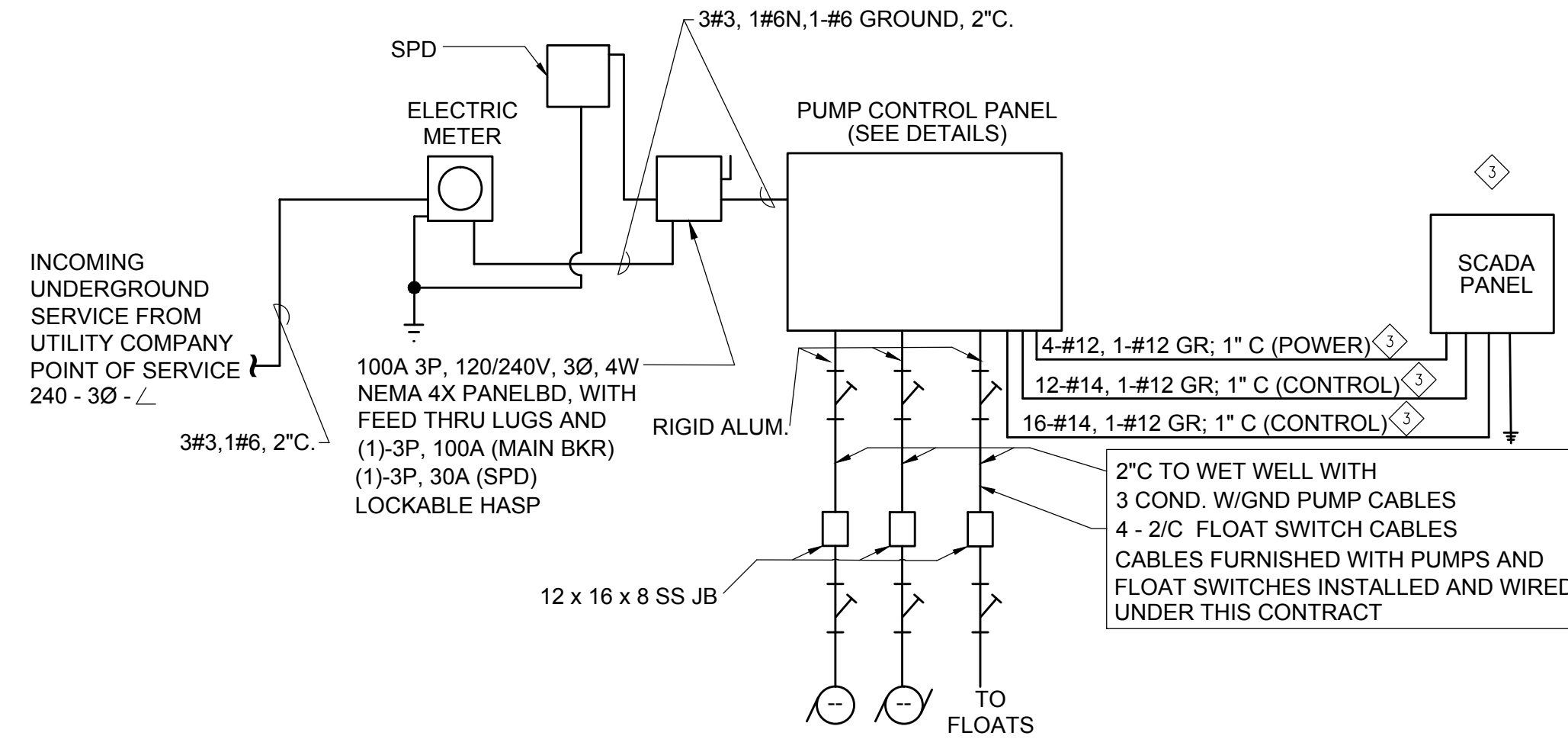


DUPLIX PUMP CONTROL SCHEMATIC (240V)



**DUPLIX CONTROL PANEL ENCLOSURE
DEAD FRONT LAYOUT**

- NOTES:**
1. DEADFRONT LAYOUT NEMA TYPE 3R SS ENCLOSURE W/CONTINUOUS HINGE. ALL HARDWARE TYPE 316 SS TYPICAL. ACTUAL LAYOUT MAY VARY WITH HORSEPOWER.
 2. THIS CONTROL PANEL, INCLUDING THE GENERATOR RECEPTACLE, COMPLIES WITH THE STANDARD LIST OF COMPONENTS REQUIRED BY UTILITIES.
 3. ALL CONTROL WIRE TO BE #14 AWG MINIMUM.
 4. CONTROL PANEL SHALL BE UL LISTED AND LABELED.
 5. 30 SPARE TERMINALS (TB2).
 6. PHASE MONITOR CIRCUIT BREAKER TO BE SIEMENS P/N: MSP10G, OR SQ-D P/N: MG24532.



ELECTRICAL ONE-LINE DIAGRAM

BAHI HAI Electrical Load Calculations			
Available Voltage 120/240V - 3 Phase, 4W, Solid Ground			
Maximum Available Fault Current = 4600 Amperes at Transformer Secondary			
Load	Phase A Amps	Phase B Amps	Phase C Amps
Pump #1-5.0 HP	15	15	15
Pump #2-5.0 HP	15	15	15
Misc. Controls (At 240 Volts)	1	1	
25% Largest Motor	4	4	4
Total	35	35	34
NEC Service Size = 100 Amperes			

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ORANGE COUNTY UTILITIES
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ORLANDO, FLORIDA 32825



BALI HAI MHP UTILITY IMPROVEMENTS
**PUMP STATION # 3082
DETAILS**



DESIGN ENGINEER
WILLARD HOANSHELT P.E.
FLORIDA REGISTRATION No.
42593

PROJECT No.: 2011-11.04
PROJECT DATE: OCT 2013
DESIGNED BY: WCH
DRAWN BY: DJK
CHECKED BY: WCH
DRAWING FILE: SEE MARGIN

DRAWING No.
E-2
SHEET
14 OF 29

HYDRANT							
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	MANUFACTURER	MODEL #	COMMENTS
C1-FH1	C-1						
C1-FH2	C-1						
C4-FH1	C-4						
C5-FH1	C-5						
C6-FH1	C-6						
C6-FH2	C-6						

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
C1-TV1	C-1				TAPPING VALVE	WATER MAIN	8"x6"								
C1-GV1	C-1				GATE VALVE	WATER MAIN	6"								
C1-GV2	C-1				GATE VALVE	WATER MAIN	6"								
C1-GV3	C-1				GATE VALVE	WATER MAIN	6"								
C1-GV4	C-1				GATE VALVE	WATER MAIN	6"								
C1-GV5	C-1				GATE VALVE	WATER MAIN	6"								
C1-PV1	C-1				PLUG VALVE	FORCE MAIN	6"								
C1-PV2	C-1				PLUG VALVE	FORCE MAIN	4"								
C1-PV3	C-1				PLUG VALVE	FORCE MAIN	6"								
C2-GV1	C-2				GATE VALVE	WATER MAIN	6"								
C2-GV2	C-2				GATE VALVE	WATER MAIN	6"								
C2-GV3	C-2				GATE VALVE	WATER MAIN	6"								
C2-GV4	C-2				GATE VALVE	WATER MAIN	6"								
C4-GV1	C-4				GATE VALVE	WATER MAIN	6"								
C4-GV2	C-4				GATE VALVE	WATER MAIN	6"								
C4-GV3	C-4				GATE VALVE	WATER MAIN	6"								
C4-GV4	C-4				GATE VALVE	WATER MAIN	6"								
C4-GV5	C-4				GATE VALVE	WATER MAIN	6"								
C4-GV6	C-4				GATE VALVE	WATER MAIN	6"								
C4-GV7	C-4				GATE VALVE	WATER MAIN	6"								
C5-GV1	C-5				GATE VALVE	WATER MAIN	6"								
C6-GV1	C-6				GATE VALVE	WATER MAIN	6"								
C6-GV2	C-6				GATE VALVE	WATER MAIN	6"								
C6-GV3	C-6				GATE VALVE	WATER MAIN	6"								
C6-GV4	C-6				GATE VALVE	WATER MAIN	6"								

MANHOLE														
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	RIM ELEVATION	INVERT ELV N	INVERT ELV NE	INVERT ELV E	INVERT ELV SE	INVERT ELV S	INVERT ELV SW	INVERT ELV W	INVERT ELV NW	MANUFACTURER	COMMENTS
C1-MH1	C-1													
C2-MH1	C-2													
C2-MH2	C-2													
C2-MH3	C-2													
C3-MH1	C-3													
C3-MH2	C-3													
C4-MH1	C-4													
C4-MH2	C-4													
C4-MH3	C-4													
C4-MH4	C-4													
C4-MH5	C-4													
C4-MH6	C-4													
C4-MH7	C-4													
C5-MH1	C-5													
C5-MH2	C-5													
C6-MH1	C-6													
C6-MH2	C-6													
C6-MH3	C-6													
C6-MH4	C-6													

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FLORIDA

ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

BFA Environmental Consultants
Barnes, Ferland and Associates, Inc.
1230 E. Hillcrest Street, Orlando, FL 32803
PH: (407) 896-9608 FAX: (407) 896-1822
ENGINEERING BUSINESS No. 6899

BALI HAI MHP UTILITY IMPROVEMENTS
COORDINATE ASSET TABLE

DESIGN ENGINEER
DANIEL L. ALLEN, P.E.
FLORIDA REGISTRATION No.
37891

PROJECT No.: 2011-11.04
PROJECT DATE: OCT 2013
DESIGNED BY: EG
DRAWN BY: BA/JAB
CHECKED BY: DLA
DRAWING FILE: SEE MARGIN

DRAWING No.
CA-1
SHEET
27 OF 29

FITTING							
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	MAIN TYPE	FITTING TYPE	COMMENTS
C1-F1	C-1				WATER MAIN	4" PLUG	
C1-F2	C-1				WATER MAIN	4" CAP	
C1-F3	C-1				WATER MAIN	4" CAP	
C1-F4	C-1				WATER MAIN	4" PLUG	
C1-F5	C-1				WATER MAIN	6" 90° B	
C1-F6	C-1				WATER MAIN	6" 45° B	
C1-F7	C-1				WATER MAIN	6" 45° B	
C1-F8	C-1				WATER MAIN	6" 45° B	
C1-F9	C-1				WATER MAIN	6" 45° B	
C1-F10	C-1				WATER MAIN	6" 11.25° B	
C1-F11	C-1				FORCE MAIN	4" 90° B	
C1-F12	C-1				FORCE MAIN	4" 90° B	
C1-F13	C-1				FORCE MAIN	4" 45° B	
C1-F14	C-1				FORCE MAIN	4" 45° B	
C1-F15	C-1				FORCE MAIN	4" 45° B	
C1-F16	C-1				FORCE MAIN	4" 45° B	
C1-F17	C-1				FORCE MAIN	4" 45° B	
C1-F18	C-1				WATER MAIN	8" SLV	
C1-F19	C-1				WATER MAIN	8"x6" RED	
C1-F20	C-1				WATER MAIN	6" 90° B	
C1-F21	C-1				WATER MAIN	6" 90° B	
C1-F22	C-1				WATER MAIN	6" 45° B	
C1-F23	C-1				WATER MAIN	6" 45° B	
C1-F24	C-1				WATER MAIN	6" TEE	
C1-F25	C-1				WATER MAIN	6" 45° B	
C1-F26	C-1				WATER MAIN	6" 22.5° B	
C1-F27	C-1				WATER MAIN	6" 22.5° B	
C1-F28	C-1				WATER MAIN	6" 45° B	
C1-F29	C-1				WATER MAIN	6" 45° B	
C1-F30	C-1				WATER MAIN	6" TEE	
C1-F31	C-1				WATER MAIN	6" 45° B	
C1-F32	C-1				WATER MAIN	BLOW OFF	
C1-F33	C-1				WATER MAIN	4" CAP	
C1-F34	C-1				WATER MAIN	4" CAP	
C1-F35	C-1				WATER MAIN	6" 45° B	
C1-F36	C-1				WATER MAIN	6" PLUG	
C1-F37	C-1				WATER MAIN	6" TEE	
C1-F38	C-1				WATER MAIN	6" 90° B	
C1-F39	C-1				FORCE MAIN	6" PLUG	
C1-F40	C-1				FORCE MAIN	6" TEE	
C1-F41	C-1				FORCE MAIN	6" RED	
C2-F1	C-2				WATER MAIN	6" TEE	
C2-F2	C-2				WATER MAIN	11.25° B	
C2-F3	C-2				WATER MAIN	6" SLV	
C2-F4	C-2				WATER MAIN	6" 45° B	
C2-F5	C-2				WATER MAIN	6" 45° B	
C2-F6	C-2				WATER MAIN	6" 11.25° B	
C2-F7	C-2				WATER MAIN	6" 22.5° B	
C2-F8	C-2				WATER MAIN	6" 45° B	
C2-F9	C-2				WATER MAIN	6" 45° B	
C2-F10	C-2				WATER MAIN	6" SLV	
C2-F11	C-2				WATER MAIN	6" SLV	
C2-F12	C-2				WATER MAIN	6" SLV	
C2-F13	C-2				FORCE MAIN	4" 11.25° B	
C2-F14	C-2				FORCE MAIN	4" 11.25° B	
C2-F15	C-2				FORCE MAIN	4" SLV	
C2-F16	C-2				WATER MAIN	6" 45° B	
C2-F17	C-2				WATER MAIN	6" 45° B	
C2-F18	C-2				WATER MAIN	6" 45° B	
C2-F19	C-2				WATER MAIN	6" 45° B	
C2-F20	C-2				WATER MAIN	6" TEE	
C2-F21	C-2				WATER MAIN	6" SLV	
C3-F1	C-3				WATER MAIN	6" CAP	
C3-F2	C-3				WATER MAIN	6" 45° B	
C3-F3	C-3				WATER MAIN	6" 45° B	
C3-F4	C-3				WATER MAIN	6" 45° B	
C3-F5	C-3				WATER MAIN	6" 45° B	
C3-F6	C-3				WATER MAIN	6" 45° B	
C3-F7	C-3				WATER MAIN	6" 22.5° B	
C3-F8	C-3				WATER MAIN	6" 11.25° B	
C3-F9	C-3				WATER MAIN	6" 11.25° B	
C3-F10	C-3				WATER MAIN	6" 11.25° B	
C3-F11	C-3				WATER MAIN	6" 11.25° B	
C3-F12	C-3				WATER MAIN	6" 11.25° B	
C3-F13	C-3				WATER MAIN	6" SLV	

FITTING							
ID NUMBER	PLAN SHEET #	EASTING	NORTHING	ELEVATION	MAIN TYPE	FITTING TYPE	COMMENTS
C4-F1	C-4				WATER MAIN	6" 45° B	
C4-F2	C-4				WATER MAIN	6" 45° B	
C4-F3	C-4				WATER MAIN	6" SLV	
C4-F4	C-4				WATER MAIN	6" SLV	
C4-F5	C-4				WATER MAIN	6" 45° B	
C4-F6	C-4				WATER MAIN	6" 45° B	
C4-F7	C-4				WATER MAIN	6" 45° B	
C4-F8	C-4				WATER MAIN	6" 45° B	
C4-F9	C-4				WATER MAIN	6" TEE	
C4-F10	C-4				WATER MAIN	6" SLV	
C4-F11	C-4				WATER MAIN	6" SLV	
C4-F12	C-4				WATER MAIN	6" SLV	
C4-F13	C-4				WATER MAIN	6" 45° B	
C4-F14	C-4				WATER MAIN	6" 45° B	
C4-F15	C-4				WATER MAIN	6" TEE	
C4-F16	C-4				WATER MAIN	6" TEE	
C4-F17	C-4				WATER MAIN	6" 45° B	
C4-F18	C-4				WATER MAIN	6" 45° B	
C4-F19	C-4				WATER MAIN	6" 45° B	
C4-F20	C-4				WATER MAIN	6" 45° B	
C4-F21	C-4				WATER MAIN	6" SLV	
C4-F22	C-4				WATER MAIN	6" 22.5° B	
C4-F23	C-4				WATER MAIN	22.5° B	
C4-F24	C-4				WATER MAIN	6" TEE	
C4-F25	C-4				WATER MAIN	6" 45° B	
C4-F26	C-4				WATER MAIN	6" 45° B	
C4-F27	C-4				WATER MAIN	6" 45° B	
C4-F28	C-4				WATER MAIN	6" 45° B	
C4-F29	C-4				WATER MAIN	6" 45° B	
C4-F30	C-4				WATER MAIN	6" 45° B	
C4-F31	C-4				WATER MAIN	6" 45° B	
C4-F32	C-4				WATER MAIN	6" 45° B	
C4-F33	C-4				FORCE MAIN	4" 45° B	
C4-F34	C-4				FORCE MAIN	4" 45° B	
C4-F35	C-4				FORCE MAIN	4" SLV	
C5-F1	C-5				WATER MAIN	6" SLV	
C6-F1	C-6				WATER MAIN	6" SLV	
C6-F2	C-6				WATER MAIN	6" 90° B	
C6-F3	C-6				WATER MAIN	6" 45° B	
C6-F4	C-6				WATER MAIN	6" 45° B	
C6-F5	C-6				WATER MAIN	6" 45° B	
C6-F6	C-6				WATER MAIN	6" 45° B	
C6-F7	C-6				WATER MAIN	4" CAP	
C6-F8	C-6				WATER MAIN	6" 45° B	
C6-F9	C-6				WATER MAIN	6" 45° B	
C6-F10	C-6				WATER MAIN	6" SLV	
C6-F11	C-6				WATER MAIN	6" SLV	
C6-F12	C-6				WATER MAIN	6" SLV	
C6-F13	C-6				WATER MAIN	6" 90° B	
C6-F14	C-6				WATER MAIN	6" SLV	
C6-F15	C-6				WATER MAIN	6" TEE	
C6-F16	C-6				WATER MAIN	6" SLV	
C6-F17	C-6				WATER MAIN	6" 22.5° B	
C6-F18	C-6				WATER MAIN	6" 45° B	
C6-F19	C-6				WATER MAIN	6" 22.5° B	
C7-F1	C-7				WATER MAIN	6" 90° B	
C7-F2	C-7				WATER MAIN	4" CAP	
C7-F3	C-7				WATER MAIN	6" SLV	

No.	REVISIONS	BY	DATE
	BID SET	DLA	10-24-13

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

SCALE: AS NOTED

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GOVERNMENT
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