

**CONSTRUCTION DOCUMENTS
FOR THE
WESTWOOD BOULEVARD 24-INCH WATER MAIN
ORANGE COUNTY, FLORIDA
(FROM CENTRAL FLORIDA PARKWAY TO
INTERNATIONAL DRIVE)**

**ORANGE COUNTY UTILITIES
ENGINEERING DIVISION**
9150 CURRY FORD ROAD, 2ND FLOOR
ORLANDO, FLORIDA 32825 PHONE: 407-254-9900

**PREPARED FOR:
ORANGE COUNTY UTILITIES DEPARTMENT
ORANGE COUNTY, FLORIDA**

INDEX OF DRAWINGS

BOARD OF COUNTY COMMISSIONERS

**TERESA JACOBS
COUNTY MAYOR**

**S. SCOTT BOYD
District 1**

**JENNIFER THOMPSON
District 4**

**FRED BRUMMER
District 2**

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District 5**

**PETE CLARKE
District 3**

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District 6**

**AJIT LALCHANDANI
County Administrator**

**RAYMOND E. HANSON, PE
Director Orange County Utilities Department**



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**ORANGE COUNTY CONTRACT NO. Y11-902B
SEQUENCE NO. 55545
OCUD PROJECT NO. 4420-034-1508-29-6340(WATER)
REISS Project No. 110011**



REISS ENGINEERING, INC.
CONSULTING ENGINEERS

CERTIFICATE OF AUTHORIZATION No. 8181
1016 SPRING VILLAS PT.
WINTER SPRINGS, FLORIDA 32708
TEL: (407) 679-5358
FAX: (407) 679-5003

CURTIS I. KUNIHIRO, P.E.
FL REGISTRATION NUMBER: 33688

Parent Sheet Set:110011-WESTWOOD_Rev/Plot by:ROBERT L. LUPPO Rev. on:4/21/2014 8:39 AM Individual File Path:R:\PROJECTS\110011-OCU WESTWOOD_BLDG_WA\DESIGN\DRAWINGS\FINAL\DESIGN\01_C01.DWG

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 TO ORANGE COUNTY.

1. ALL UTILITIES FACILITIES CONSTRUCTION CONNECTING TO THE ORANGE COUNTY UTILITIES SYSTEM SHALL CONFORM TO THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL, AND BE ONE OF THE APPROVED PRODUCTS LISTED IN APPENDIX 'D' OF THE MANUAL.
2. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ORANGE COUNTY UTILITIES DISPATCH (EMERGENCY ONLY) IN THE EVENT OF UTILITY MAIN BREAK OR DAMAGE AT (407) 836-2777.
3. 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 THE MAIN AND THE CONTRACTOR WILL BE CHARGED FOR REPAIRS.
4. COORDINATION AND COMMUNICATIONS WITH ORANGE COUNTY STAFF SHALL BE MADE THROUGH THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION INSPECTOR. CONTACT THE OCU DISPATCH DURING EMERGENCIES.
5. THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS 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.
6. ORANGE COUNTY UTILITIES DEPARTMENT TELEPHONE NUMBERS:
ORANGE COUNTY UTILITIES DISPATCH 407-836-2777
ORANGE COUNTY CONSTRUCTION DIVISION 407-254-9798
ORANGE COUNTY UTILITIES ENGINEERING DIVISION 407-254-9900
FIELD SERVICES CENTER 407-836-6818
7. ONLY ORANGE COUNTY UTILITIES (OCU) PERSONNEL SHALL OPERATE WATER, WASTEWATER AND RECLAIMED WATER VALVES, PUMP STATIONS OR OTHER UTILITY INFRASTRUCTURE. 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. ALL VALVES BEING INSTALLED ARE TO REMAIN CLOSED DURING CONSTRUCTION.
8. 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. WHERE STORM DRAINAGE PIPING OR STRUCTURES ARE DAMAGED, THE CONTRACTOR SHALL REPAIR OR REPLACE AT NO ADDITIONAL COST TO THE OWNER.
9. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS, AND RECLAIMED WATER MAIN. WATER MAINS, FORCE MAINS, GRAVITY MAIN, AND RECLAIMED WATER MAIN LOCATIONS SHOWN ON THE PLANS ARE NOT EXACT OR GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.
10. LOCATIONS OF EXISTING UTILITIES AS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTENCE AND LOCATION OF ALL ABOVEGROUND AND UNDERGROUND UTILITIES. CONTRACTOR SHALL CONTACT UTILITY OWNERS, INCLUDING FIBER OPTICS COMPANIES, AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION AND A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION. EXTREME CAUTION SHALL BE EXERCISED IN AREAS OF FIBER OPTICS, GAS MAINS AND ELECTRICAL CABLES AND CONDUITS.
11. 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, 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.
12. 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.
13. SUPPORT & 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 BE RESPONSIBLE FOR PROVIDING TEMPORARY SUPPORT FOR UTILITY POLES AND ALL OTHER UTILITIES DURING CONSTRUCTION.
14. THE UTILITIES IMPROVEMENTS AND ADJUSTMENTS 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.
15. FLUSHING, HYDROSTATIC TESTING AND DISINFECTING OF WATER MAINS SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH AWWA SPECIFICATIONS C-600, C-651 AND APPLICABLE SECTIONS OF THE ORANGE COUNTY STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL. 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 INSPECTOR AT LEAST SEVEN (7) DAYS PRIOR TO START THIS WORK.
16. NEW WATER MAIN IS TO BE IN SERVICE BEFORE EXISTING WATER MAIN CAN BE REMOVED AND IN SOME LENGTHS ABANDONED.
17. ALL EXISTING AND NEW OCU WATER AND SEWER VALVES, VALVE BOXES, AND MANHOLES SHALL BE PROTECTED AND ADJUSTED TO FINISHED GRADE WHETHER SHOWN OR NOT. 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 BELOW GRADE. ALL VALVES UNDER CONSTRUCTION ARE TO REMAIN CLOSED DURING CONSTRUCTION. CONTRACTOR RESPONSIBLE TO COORDINATE WITH APPROPRIATE UTILITY REPRESENTATIVE.
18. SEE DETAIL SHEET FOR SEPARATION REQUIREMENTS BETWEEN WATER MAINS, SEWER MAINS AND OTHER PIPELINES AND MAINS. NO CONCRETE ENCASEMENT OF PIPES WILL BE PERMITTED.
19. ALL WATER AND FORCE MAIN AND RECLAIMED WATER MAINS 12-INCHES IN DIAMETER OR LESS SHALL BE PVC AND CONFORM TO AWWA C900, DR 18. ALL WATER MAIN PIPE AND RECLAIMED WATER MAIN PIPE GREATER THAN 12-INCHES IN DIAMETER SHALL BE DUCTILE IRON AND CONFORM TO ANS/AWWA A21.51/C151. ALL PVC PRESSURE PIPE SHALL USE DUCTILE IRON FITTINGS. FITTINGS FOR SERVICES SHALL BE BRASS.

20. 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, FAS, USING BLUE AS A PREDOMINANT COLOR FOR WATER; GREEN FOR WASTEWATER; PURPLE FOR RECLAIMED WATER.
21. 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 EXISTING OR PROPOSED ASPHALT OR CONCRETE PAVEMENT AND WITHIN 3-FT OF EXISTING OR PROPOSED PAVEMENT. ALL SOIL TESTING TO BE CONDUCTED BY THE COUNTY. THE CONTRACTOR SHALL PROVIDE ALL REASONABLE ASSISTANCE DURING SOIL TESTING.
22. PIPE LENGTHS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL LENGTHS ARE TO BE DETERMINED DURING CONSTRUCTION.
23. ALL STATIONS AND OFFSETS REFER TO BASELINE OF STATIONING.
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. FOR PVC PIPE, NO HORIZONTAL/ VERTICAL PIPE OR JOINT DEFLECTION SHALL BE ALLOWED. CONTRACTOR SHALL USE FITTINGS TO OBTAIN REQUIRED CLEARANCES. ON DUCTILE IRON PIPE, CONTRACTOR SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDATION FOR PIPE DEFLECTION. OTHERWISE USE FITTINGS TO OBTAIN REQUIRED CLEARANCES.
25. ALL DUCTILE IRON AND PVC PIPE JOINTS SHALL BE FULLY RESTRAINED. IN ADDITION, ALL FITTINGS SHALL BE MECHANICAL JOINT RESTRAINTS. NO THRUST BLOCKS SHALL BE PERMITTED.
26. 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 ANY NEWLY CONSTRUCTED WATER MAIN TO ANY EXISTING WATER MAIN UNLESS CLEARED BY FDEP AND OCU.
27. 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 CONNECTION. 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 DISINFECTIO AND VERIFICATION OF RESTRAINT ON EXISTING PIPE.
 - B. ESTIMATED CONSTRUCTION TIME FOR THE CONNECTIONS.
28. THE OWNER SHALL REVIEW THE SUBMITTAL AND INFORM THE CONTRACTOR REGARDING APPROVAL OR DENIAL OF THE REQUEST. IF THE OWNER REJECTS THE REQUEST, THE CONTRACTOR SHALL RESUBMIT THE REQUEST MODIFYING IT IN A MANNER ACCEPTABLE TO THE OWNER. ALL CONNECTIONS SHALL ONLY BE MADE ON THE AGREED UPON DATE AND TIME. SHOULD THE CONTRACTOR NOT INITIATE AND COMPLETE THE CONNECTION WORK IN THE AGREED UPON MANNER, HE SHALL BE REQUIRED TO RESCHEDULE THE CONNECTION BY FOLLOWING THE PROCEDURE OUTLINED ABOVE. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES IN THE SYSTEM. MAINS SHALL NOT BE PLACED IN SERVICE UNTIL CLEARANCE IS RECEIVED FROM FDEP. AS-BUILT DRAWINGS MUST BE COMPLETED AND SUBMITTED PRIOR TO WATER MAIN CHLORINATION.
29. PROTECT EXISTING IMPROVEMENTS TO THE MAXIMUM EXTENT POSSIBLE. RESTORE ALL EXISTING FACILITIES 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 SIDEWALK, ROADWAY PAVEMENT AND OTHER IMPROVEMENTS SHALL BE RESTORED TO ORIGINAL CONDITION.
30. 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 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 TRAFFIC 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.
31. 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 WATER. STATIONING FOR AIR RELEASE VALVES IS APPROXIMATE. CONTRACTOR TO INSTALL AIR RELEASE VALVES AT HIGH POINTS IN MAIN.
32. WATER, SEWER, AND RECLAIMED WATER 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.
33. BENCHMARK LOCATIONS AND ELEVATION ARE SHOWN IN THE PLANS AS REPRESENTED BY 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.
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. OR AS NEEDED TO REMAIN WITHIN THE LIMITS OF CONSTRUCTION. 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-BUILT SHALL RECORD LOCATION, SIZE, TYPE, ELEVATION AND OWNER OF ALL UTILITY FACILITIES UNCOVERED. COORDINATE ASSET TABLES SHALL BE COMPLETED AND REVISED TO MATCH AS-BUILT ASSETS.
37. WATER PIPE SHALL BE STAMPED BY THE NATIONAL SANITATION FOUNDATION (NSF) FOR POTABLE WATER USE.
38. CONTRACTOR SHALL APPLY FOR AND SECURE ALL NECESSARY PERMITS FROM STATE, COUNTY, AND LOCAL MUNICIPALITIES. PERMITS SHALL INCLUDE, BUT NOT BE LIMITED TO, BUSINESS LICENSE AND DEWATERING.
39. CONTRACTOR SHALL REPAIR, RESET OR REPLACE, AT THE CONTRACTOR'S EXPENSE, ALL TREES, SHRUBS AND LANDSCAPING THAT ARE REMOVED OR DAMAGED DURING CONSTRUCTION. REFER TO SECTION 01001.

40. THE CONTRACTOR SHALL ADJUST ALL EXISTING OCU MAINS AND FACILITIES IN CONFLICT WITH NEW GRADE, NEW OR ALTERED ROADWAYS, SIDEWALKS, DRIVEWAYS, OR STORM WATER IMPROVEMENTS. OCU FACILITIES TO BE ADJUSTED INCLUDE, BUT ARE NOT LIMITED TO PIPELINES, PUMP STATIONS, VALVE BOXES, AIR RELEASE VALVES, FIRE HYDRANTS, MANHOLE COVERS, AND METERS.
41. CONSTRUCTION ACTIVITIES SHALL NOT CAUSE INTERRUPTIONS IN WATER, WASTEWATER, OR RECLAIMED WATER SERVICE. THE CONTRACTOR SHALL COORDINATE PRE-APPROVED INTERRUPTIONS OF SERVICE WITH THE OCU INSPECTOR 7 WORKING DAYS IN ADVANCE.
42. THE CONTRACTOR SHALL PROVIDE FOR BYPASSING AND/OR HAULING WASTEWATER DURING APPROVED INTERRUPTIONS OF WASTEWATER FLOWS AND CONNECTIONS. THE CONTRACTOR SHALL SUBMIT A BYPASS PLAN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER TO OCU DEVELOPMENT ENGINEERING FOR APPROVAL PRIOR TO IMPLEMENTATION BY CONTRACTOR.
43. THE CONTRACTOR SHALL PROVIDE A JUMPER ASSEMBLY WITH A BACKFLOW PREVENTER FOR MAKING TEMPORARY CONNECTIONS TO AN EXISTING POTABLE WATER SOURCE IN ORDER TO CHLORINATE AND FLUSH NEW WATER MAINS WITH POTABLE WATER. ANY TEMPORARY POTABLE WATER CONNECTIONS TO RECLAIMED WATER OR FORCEMAIN SHALL ALSO BE EQUIPPED WITH A BACKFLOW PREVENTER.
44. 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

SURVEYOR'S NOTES:

1. SURVEY PROVIDED BY BUCHHEIT AND ASSOCIATES, INC.
2. COORDINATE SYSTEM AND NORTH ROTATION SHOWN HEREON ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM (NAD 83/90).
3. ELEVATIONS SHOWN HEREON ARE BASED ON NAVD 88 AS DERIVED FROM ORANGE COUNTY BENCHMARKS S-138-3014, ELEVATION 89.616 AND S-138-3015, ELEVATION 91.774.
4. FIELD WORK FOR THIS SURVEY WAS PERFORMED BETWEEN OCTOBER 12, 2012 AND JANUARY 21, 2013.
5. UTILITY LOCATIONS SHOWN HEREON ARE LIMITED TO FIELD OBSERVATIONS OF ABOVE GROUND INSTALLATIONS AND THOSE FACILITIES THAT COULD BE ACCESSED FOR OBSERVATION BY FIELD CREW AS WELL AS UNDERGROUND UTILITY LINES DESIGNATED BY SUBCONSULTANT. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR ANY ADDITIONAL UNDERGROUND FACILITIES WHICH MAY EXIST BUT ARE NOT DEPICTED ON THIS DRAWING.
6. NO ATTEMPT WAS MADE TO ABSTRACT THE PROJECT AREA FOR EASEMENTS OF RECORD.
7. THE DRAWING WAS PREPARED IN CONFORMANCE WITH THE ASCE STANDARD CE/ASCE 38-02 AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA

VVH TABLE

DRAWING	TH NO.	STATION	OFFSET	DESCRIPTION	DIAMETER	GROUND ELEV	TOP ELEV
C01	TH#1	3+48.86	0.16'R	WATER	12.5"	114.03'	107.13'
C01	TH#2	4+41.38	2.10'R	WATER	1"	113.90'	109.50'
				WATER	12.5"		108.80'
C02	TH#3	6+18.98	3.66'L	FOC	4"	112.66'	111.56'
				WATER	8.5"		105.81'
C02	TH#4	10+44.61	3.72'R	WATER	8.5"	114.35'	111.95'
C03	TH#5	11+83.48	3.63'L	COMM	.25"	113.38'	110.88'
				WATER	12.5"		109.28'
C03	TH#6	13+75.46	0.98'R	COMM	1.5"	113.94'	111.24'
				COMM	.25"		111.19'
C04	TH#7	20+32.13	4.49'L	CONTROL WIRES	--	115.92'	114.67'
				WATER	12.5"		111.12'
C04	TH#8	21+46.97	2.43'L	COMM (FOC)	.5"	116.00'	112.50'
C03	TH#9	16+04.63	8.77'L	COMM	1.5"	114.44'	112.14'
				COMM	2"		112.14'
C03	TH#10	16+04.56	4.20'L	WATER	12.5"	114.33'	108.93'
C04	TH#11	22+31.63	11.90'R	ELEC (2)	4"	114.85'	111.50'
				CABLE (3)	2"		111.15'
C08	TH#12	43+08.17	1.50'L	IRR	2"	92.15'	91.25'
				TRAFFIC	2.5"		89.60'
C10	TH#13	53+26.93	1.13'L	FOC	2.5"	90.16'	88.86'
C10	TH#14	55+31.98	2.54'L	WATER	10.5"	90.93'	85.88'
C10	TH#15	57+42.79	1.34'L	FOC	2"	91.58'	89.18'
C10	TH#16	57+46.93	1.45'R	FOC	2"	91.66'	87.86'
C11	TH#17	58+16.43	2.23'R	BE	2"	91.67'	87.82'
C11	TH#18	61+05.33	0.67'R	FOC	2.5"	90.77'	88.37'
C11	TH#19	61+64.01	2.73'R	TRAFFIC	2.5"	90.94'	88.34'
				COMM	--		86.19'
				COMM	--		84.34'
C11	TH#20	62+54.04	2.45'L	STORM	36"	91.40'	88.75'
C11	TH#21	62+92.43	0.07'L	TRAFFIC	2.5"	91.08'	89.23'
C01	B#1	1+30.81	15.19'R				112.99'
C01	B#2	3+31.11	0.44'L				113.59'
C02	B#3	6+21.86	13.61'R				113.24'
C02	B#4	7+07.32	23.84'R				113.46'
C02	B#5	10+79.60	6.17'L				114.07'
C03	B#6	14+57.61	1.12'R				113.68'
C04	B#7	18+36.85	3.05'R				115.12'
C04	B#8	19+98.13	6.58'L				115.44'
C04	B#9	22+37.35	3.47'L				116.25'
C05	B#10	24+59.78*	7.68'L	* PROJECTED			116.47'
C05	B#11	28+26.02	10.48'R				114.19'
C06	B#12	31+03.95	5.33'L				111.36'
C06	B#13	34+28.39	7.66'L				106.35'
C07	B#14	39+41.94	8.86'L				98.84'
C08	B#15	41+80.78	16.22'L				93.92'
C08	B#16	43+94.21	0.27'L				91.81'
C08	B#17	45+97.09	7.82'L				91.62'
C09	B#18	48+42.37	6.27'L				91.71'
C09	B#19	51+58.90*	17.90'R	* PROJECTED			89.94'
C10	B#20	55+66.65	0.68'R				90.62'
C11	B#21	58+37.83	1.26'R				90.95'
C11	B#22	61+32.49	1.64'R				90.63'

UTILITIES	COMPANY	PHONE
POWER	DUKE ENERGY (PROGRESS ENERGY)	407-938-6670
WATER/SEWER	ORANGE COUNTY UTILITIES ENGINEERING DIVISION	407-254-9900
PHONE	BRIGHT HOUSE	407-532-8509
		407-532-8520
	CENTURY LINK	407-815-5344
		407-557-6766
	MCI	972-729-6016
	SMART CITY TELECOM	407-828-6648
	TW TELECOM	407-215-6895
FIBER OPTIC	COMCAST COMMUNICATIONS	407-312-5944
	LEVEL 3 COMMUNICATIONS	720-888-2061
GAS	TECO PEOPLES GAS-ORLANDO	407-420-6609
DOT EQUIPMENT TRAFFIC SIGNALS	TRAFFIC CONTROL DEVICES	407-869-5300
	SUNSHINE ONE CALL SERVICE	1-800-432-4770
	ORANGE COUNTY UTILITIES DISPATCH (EMERGENCY ONLY)	407-836-2777
	FIELD SERVICES CENTER	407-836-6818



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
Curtis L. Kunihiro, P.E.
Florida P.E. No. 33688
Reiss Engineering, Inc.
Certificate of Authorization No. 8181
1016 Spring Villas Pt.
Winter Springs, FL 32708

Designed CTB
Drawn CTB
Checked RLI
Reviewed MDP
Approved CTB

 Date 4/21/14

ORANGE COUNTY UTILITIES
WESTWOOD BOULEVARD 24-INCH WATER MAIN

GENERAL

GENERAL CONSTRUCTION NOTES

PROJECT NO.: 110011

SCALE: NOTED REVISION: 0

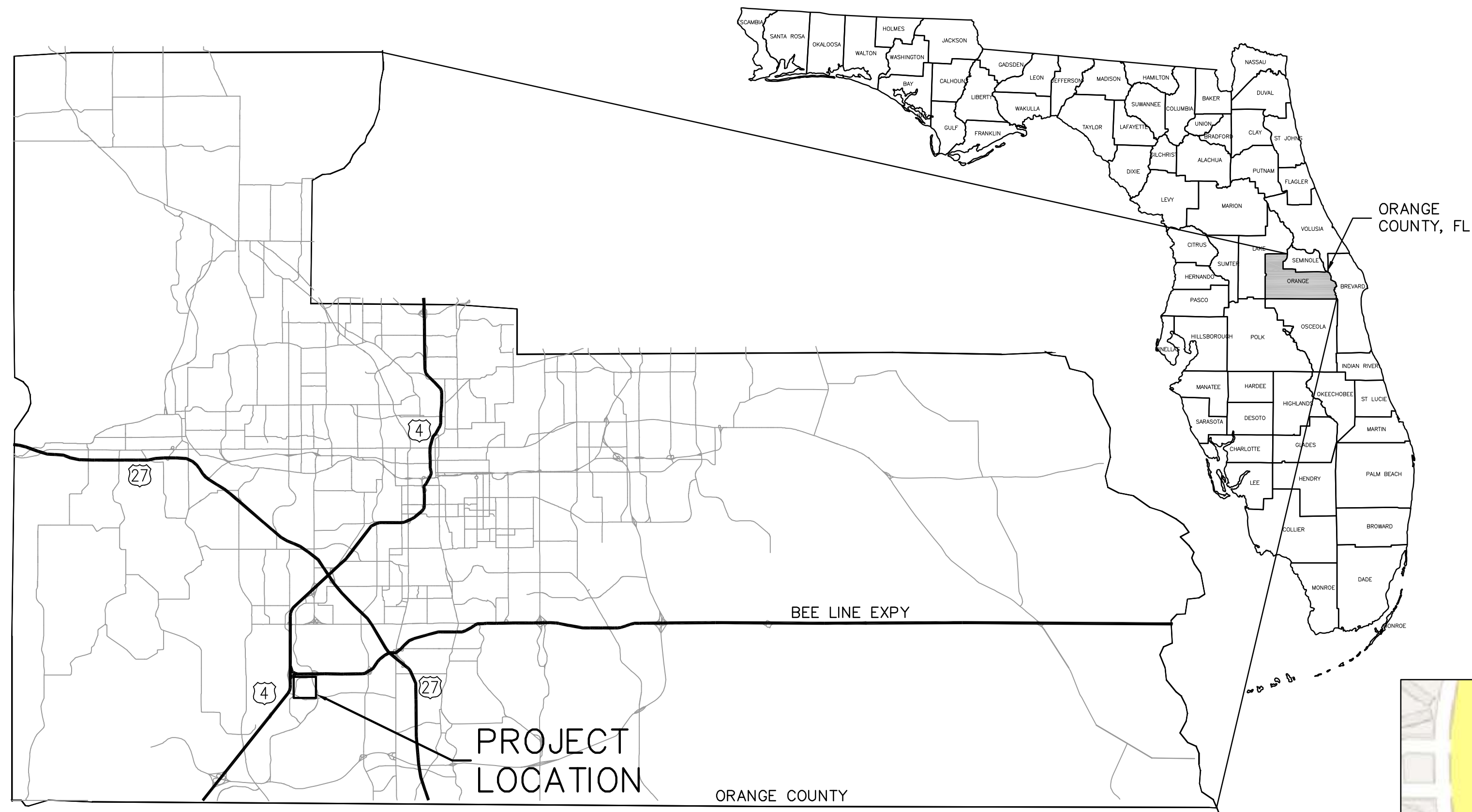
DRAWING NO. G02 SHEET NO.: 02 OF 25



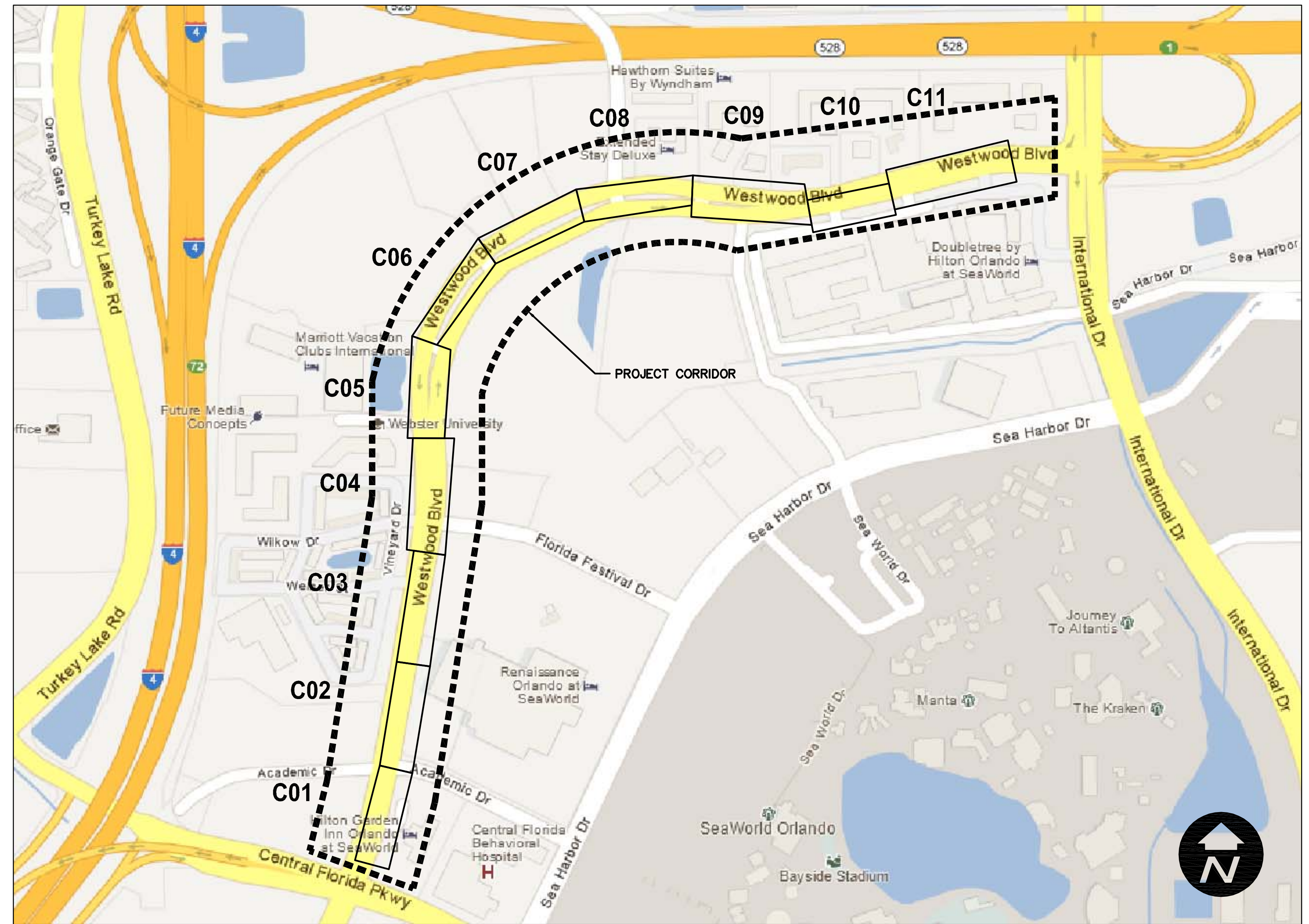
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT
WINTER SPRINGS, FL 32708
(407) 679-5358

Parent Sheet: 110011_WESTWOOD Rev: 04/21/2014 9:00 AM Individual File: V:\PROJECTS\110011-OCU WESTWOOD BLVD_W\DESIGN\DRAWINGS\FINAL\DESIGN\02_G02.DWG

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LOCATION MAP



PROJECT LOCATION/KEY MAP



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

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 Reiss Engineering, Inc.
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 Winter Springs, FL 32708

Designed_CIK
 Drawn_CTB
 Checked_RLL
 Reviewed_MDP
 Approved_CIK
 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN

GENERAL
 LOCATION MAP & KEY MAP

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. G03	SHEET NO.: 03 OF 25





1. FIRE HYDRANTS (FH6, FH7, FH8, FH9, AND FH10) ARE LOCATED IN AREAS THAT CONTAIN EXISTING UTILITIES THAT WERE NOT FLAGGED DURING DESIGN. PERFORM DUE DILIGENCE IN LOCATING EXISTING UTILITIES AS SPECIFIED OR NOTED ELSEWHERE.
2. AFTER UTILITIES ARE MARKED AND PRIOR TO EXCAVATING FOR PIPELINE AND HYDRANT INSTALLATION, HAND DIG TO EXPOSE AND PROTECT EXISTING UTILITIES.
3. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
4. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION.
5. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST.
6. PROTECT EXISTING TREES.

Parent: Sheet: Set: 110011_WESTWOOD_Rev/Plot by: ROBERT L. LUPO Rev on: 11/25/2013 5:25 PM Individual File Path: \\PROJECTS\110011-OCU_WESTWOOD_BLD_W\DESIGN_DRAWINGS\FINALDESIGN\04_G04.DWG



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 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN

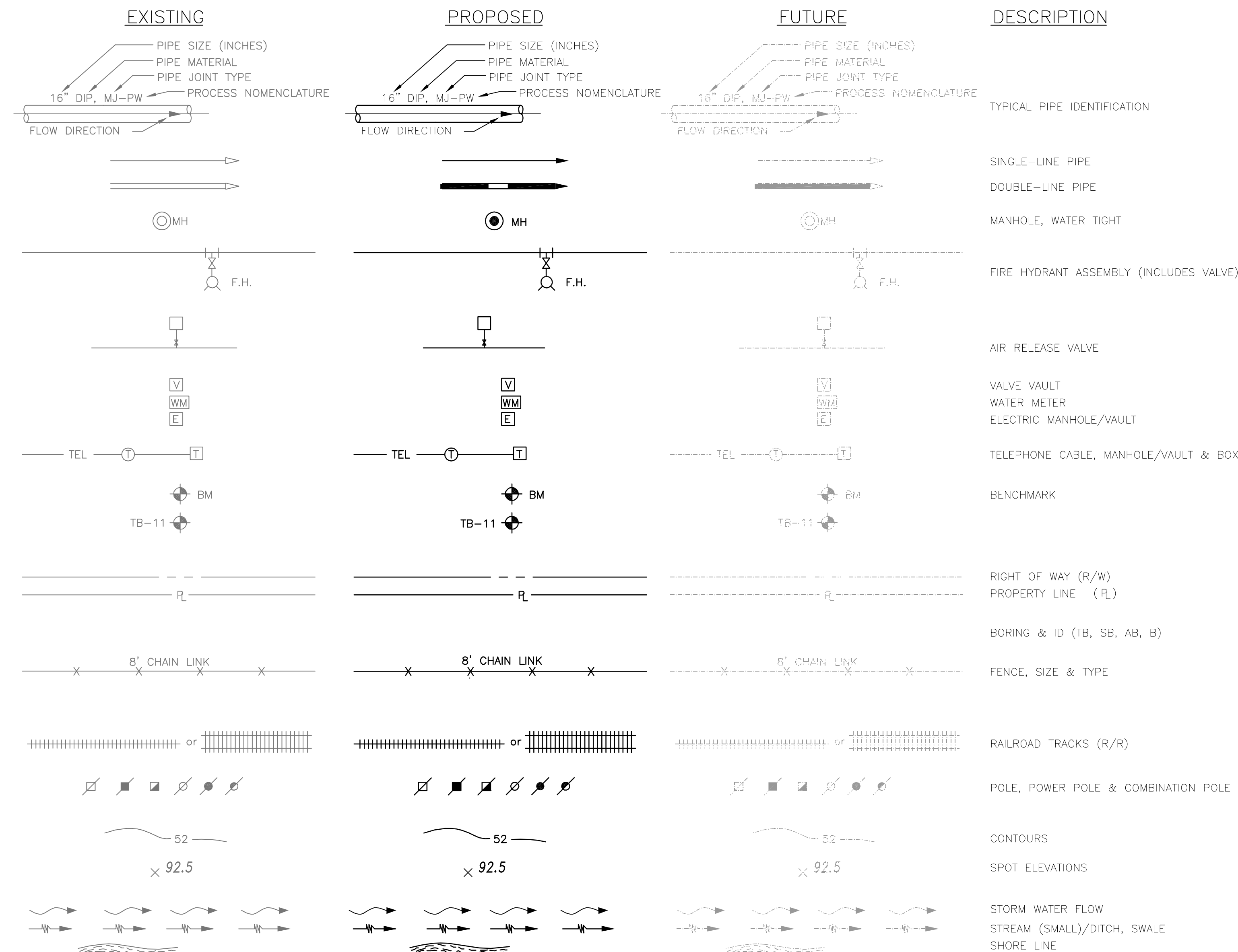
GENERAL

PROPOSED FIRE HYDRANT KEY MAP

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. G04	SHEET NO.: 04 OF 25

REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358

SYMBOLS, STRUCTURES & FEATURES



DESCRIPTION

TYPICAL PIPE IDENTIFICATION

SINGLE-LINE PIPE

DOUBLE-LINE PIPE

MANHOLE, WATER TIGHT

FIRE HYDRANT ASSEMBLY (INCLUDES VALVE)

AIR RELEASE VALVE

VALVE VAULT

WATER METER

ELECTRIC MANHOLE/VAULT

TELEPHONE CABLE, MANHOLE/VAULT & BOX

BENCHMARK

RIGHT OF WAY (R/W)

PROPERTY LINE (PL)

BORING & ID (TB, SB, AB, B)

FENCE, SIZE & TYPE

RAILROAD TRACKS (R/R)

POLE, POWER POLE & COMBINATION POLE

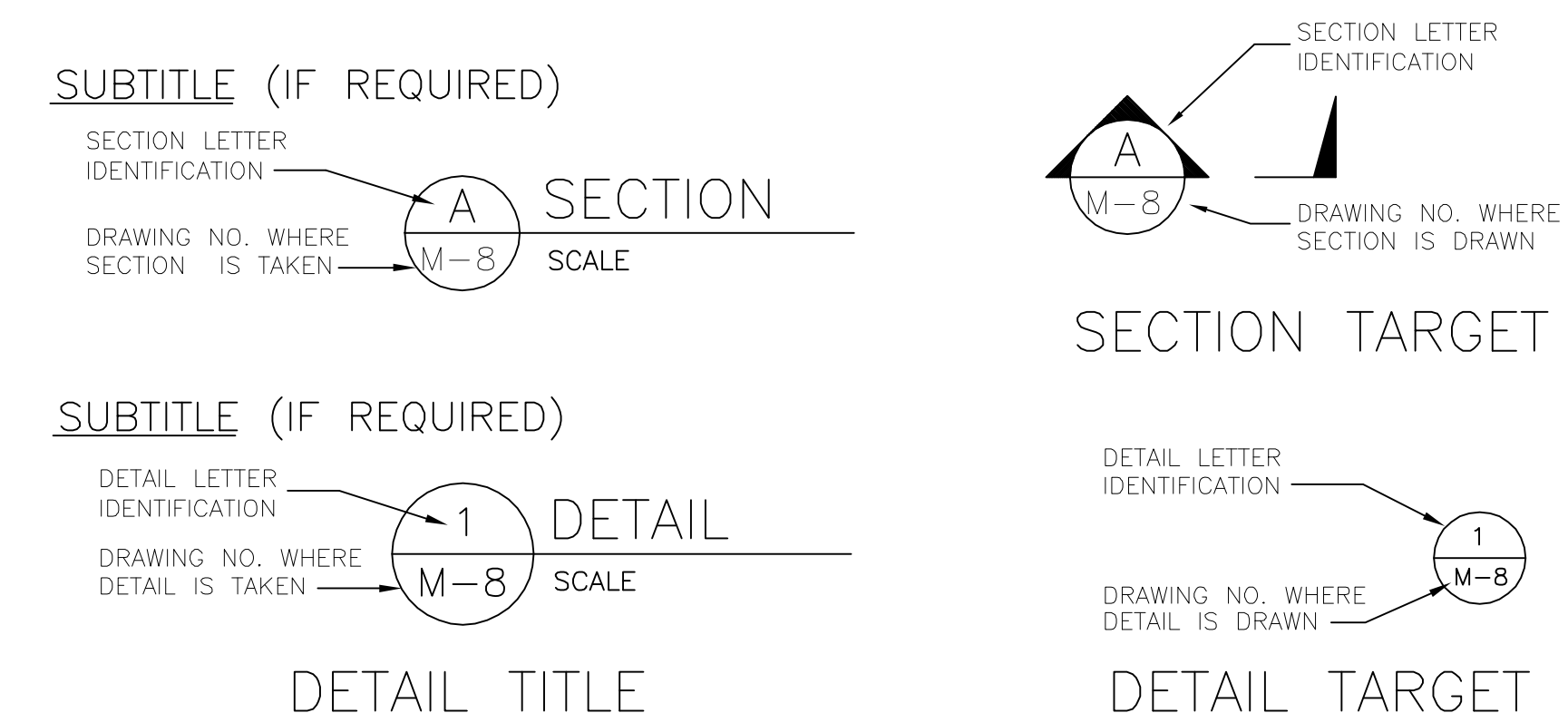
CONTOURS

SPOT ELEVATIONS

STORM WATER FLOW

STREAM (SMALL)/DITCH, SWALE

SHORE LINE



STANDARD LINETYPES

SOLID, BLACK	PROPOSED FEATURES (ABOVE GROUND)
HIDDEN, BLACK	PROPOSED FEATURES (BELOW GROUND)
SOLID, GRAY	EXISTING FEATURES (ABOVE GROUND)
HIDDEN, GRAY	EXISTING FEATURES (BELOW GROUND)
DASHDOT2, GRAY	FUTURE FEATURES

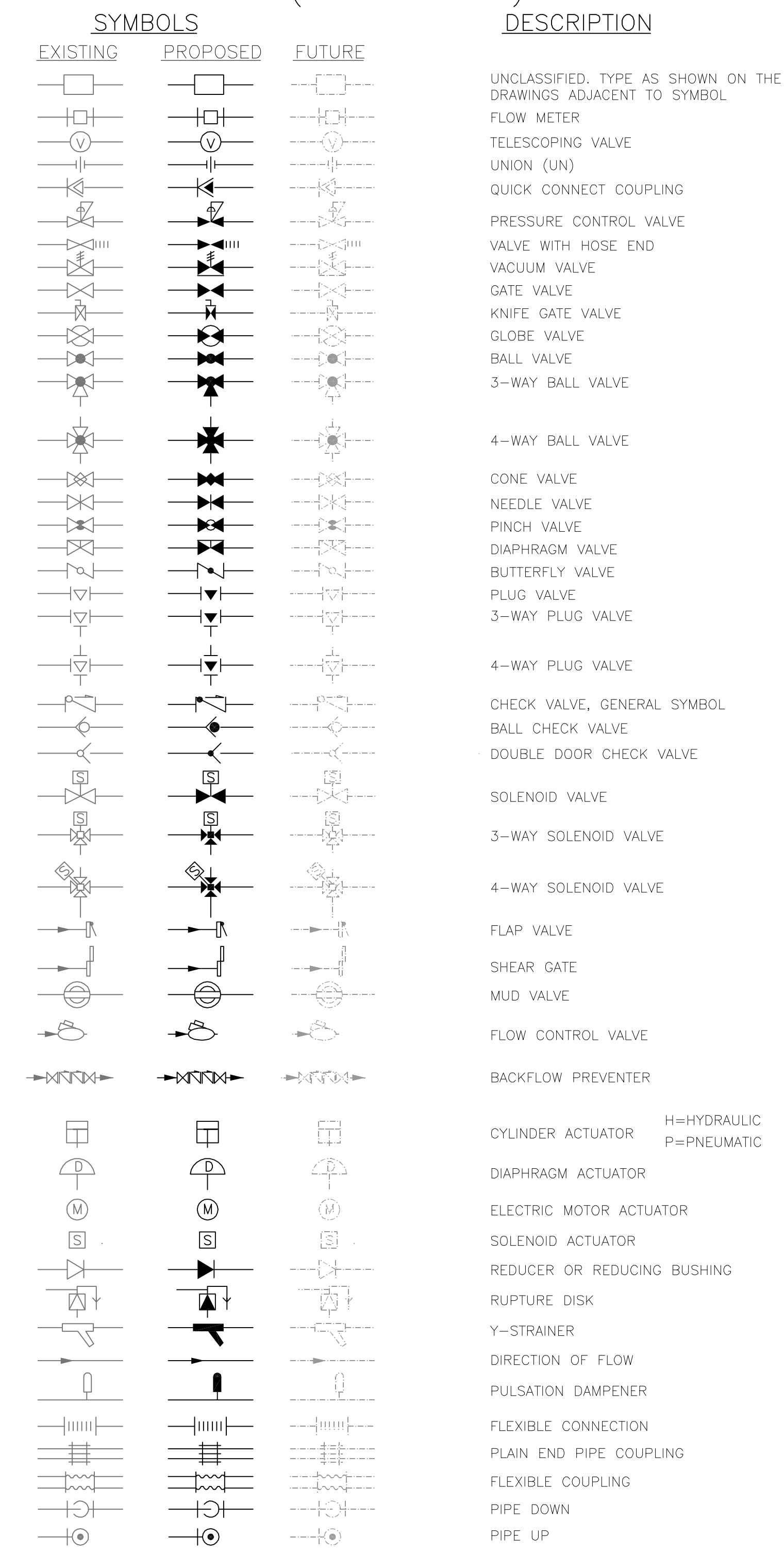
NOTE:
THIS GENERAL LEGEND IS FOR GENERAL REFERENCE. NOT ALL ABBREVIATIONS, SYMBOLS, PROCESSES, MATERIALS, OR FITTINGS ARE NECESSARILY USED IN THIS DESIGN.

INDIVIDUAL DISCIPLINE STANDARD LEGENDS MAY SUPERCEDE THIS GENERAL LEGEND.

ABBREVIATIONS

GENERAL	SYMBOLS	PIPE / JOINTS	SYMBOLS
ADJUSTABLE	ADJ.	BLACK IRON PIPE	BIP
ANGLE	∠	BLACK STEEL PIPE	BSP
ANGLE OF DEFLECTION	APPROX.	BUTT WELD	BW
APPROXIMATE	APPROX.	CAST IRON	CI
BACKFLOW PREVENTER	BFP	CAST IRON PIPE	CIP
BENCH MARK	BM	CAST IRON SOIL PIPE	CISP
BETWEEN	BTWN.	CONCRETE PRESSURE PIPE	CPP
BOTTOM OF SLAB	B.O.S.	COPPER PIPE	COP
BUILDING	BLDG.	CORRUGATED METAL PIPE	CMP
CAPACITY	CAP.	CHLORINATED POLYVINYL CHLORIDE	CPVC
CENTER LINE	CL	DUCTILE IRON PIPE	DI
CENTER TO CENTER	C.C.	DUCTILE IRON EXPANSION	EXP
CLEANOUT	C.O.	FLANGE	FLG
CONCRETE	CONC.	GALVANIZED STEEL PIPE	GS
CONDITION	COND.	HIGH-DENSITY POLYETHYLENE	HDPE
CONTINUATION	CONT.	JOINT	JT
CONNECTION	CONN.	MECHANICAL JOINT	MJ
CONSTRUCT	CONSTR.	METAL REINFORCED PLASTIC PIPE	MRPP
CONTRACTOR	CONTR.	POLYETHYLENE PIPE	PE
CUBIC FOOT	CU. FT.	POLYVINYLCHLORIDE	PVC
CUBIC INCH	CU. IN.	POLYVINYLCHLORIDE (DOUBLE CONTAINED)	PVC-D
CUBIC YARD	CU. YD.	PUSH-ON JOINT	PJ
DEGREE	DEG.	REINFORCED CONCRETE PIPE	RCP
DIAMETER	DIA.	RESTRAINED JOINT	RJ
DIAGONAL	DIAG.	RESTRAINED MECHANICAL JOINT	RMJ
DIM.	DIM.	SCHEDULE	SCH
DISCHARGE	DISC.	STAINLESS STEEL	S.STL
DRAWING	DWG.	STEEL PIPE	STL
EACH	E.A.	TIED JOINT	TJ
EACH WAY	E.W.	VITRIFIED CLAY PIPE	VCP
EACH FACE	E.F.	WALL SLEEVE	WS
ELEVATION	EL., ELEV.	WALL PIPE (WITH WATER STOP)	WP
EQUIP.	EQUIP.		
EXISTING	EXIST.		
FINISH	FIN.	VALVES, FITTINGS, ETC.	
FINISH FLOOR	F.F.	ACTUATED BUTTERFLY VALVE	ABFV
FIRE PROTECTION	FP	AIR CUSHION CHECK VALVE	ACCV
FLEXIBLE	FLEX.	AIR RELEASE VALVE	ARV
FLOOR DRAIN	F.D.	BALL CHECK VALVE	BACV
GAUGE	GA.	BALL VALVE	BV
GRADE	GR.	BLIND FLANGE	BF
HIGH	H.	BUTTERFLY VALVE	BFV
HIGH POINT	H.P.T.	BURIED GEAR OPERATOR	BGO
HIGH WATER LEVEL	H.W.L.	CHECK VALVE, SWING/GLOBE	CV
HORIZONTAL	HORIZ.	ELBOW	ELL
HORIZONTAL DIRECTIONAL DRILL	HDD	ELECTRIC VALVE ACTUATOR	EVA
HORSEPOWER	H.P.	ELEVATED GEAR OPERATOR	EGO
INSIDE DIAMETER	I.D.	EXPANSION JOINT	EJ
INTERMEDIATE	INT.	FIRE HYDRANT	FH
LINEAR FOOT	L.F.	FITTING	FTG
LONG	LG., L.	FLANGE	FLG
LOW WATER LEVEL	L.W.L.	FLANGED ADAPTOR	FA
LOW POINT	L.P.T.	FLEXIBLE COUPLING	FC
MANHOLE	MH	GATE VALVE	GV
MANUFACTURER	MFR.	HARNESSED FLANGED COUPLING ADAPTER	HFCA
MATERIAL	MTL.	HYDRAULIC VALVE ACTUATOR	HVA
MAXIMUM	MAX.	KNIFE GATE VALVE	KGV
MECHANICAL	MECH.	MECHANICAL JOINT	MJ
MINIMUM	MIN.	ORIFICE PLATE	O.P.
MOUNTED	MTD.	PLASTIC BALL VALVE	PBAV
NOMINAL	NOM.	PLUG VALVE	PV
NOT IN CONTRACT	N.I.C.	REDUCER	RED
NOT TO SCALE	N.T.S.	RESTRAINED MECHANICAL JOINT	RMJ
NUMBER	NO., #	SILENT CHECK VALVE	SCV
ON CENTERS	O.C.	SOLENOID VALVE	SV
OPERATOR	OPER.	VALVE BOX	VB
OPTION	OPT.		
OPPOSITE	OPP.	PROCESS NOMENCLATURE	
OPENING	OPNG.	LIQUID & GAS PROCESS	
OR EQUAL	O/E	AIR PIPE	AIR
OUTSIDE DIAMETER	O.D.	AMMONIA GAS	AG
PLATE	PL.	AMMONIA SOLUTION	AS
POINT	PT.	CHLORINE GAS	CG
POUND	LB.	CHLORINE SOLUTION	CS
PRESSURE	PRES.	CONCENTRATE WATER	CONC
PROPOSED	PROP.	DISINFECTED WATER	DW
RADIUS	RAD., R.	EFFLUENT	EFF
RADIUS OF CURVATURE	ROC	FILTER EFFLUENT	FE
REQUIRED	REQ'D.	FINISHED WATER	FW
RIGHT OF WAY	R/W, R.O.W.	FORCE MAIN	FM
ROOM	RM.	INFILUENT	INF
REVOLUTIONS PER MINUTE	R.P.M.	INFLUENT RECYCLE	IR
SECTION	SEC.	MICROFILTRATION	MF
SHEET	SH., SHT.	MIXED LIQUOR	ML
SIDEWALK	SDWK.	NON-POTABLE WATER	NPW
SIMILAR	SIM.	PERMEATE	PERM
SOIL BORING	SB., B, AB	POTABLE WATER	PW
SPECIFICATIONS	SPECS.	RAW SEWAGE	RS
SQUARE	SO.	RAW WATER	RAW
SQUARE FOOT	SO. FT.	RECIRCULATION PUMP	RP
SQUARE INCH	SO. IN.	RECLAIMED WATER/RECLAIMED WATER MAIN	RW/RWM
SQUARE YARD	SO. YD.	RETURN ACTIVATED SLUDGE	RAS
STANDARD	STD.	RETURN EFFLUENT WATER	REW
STANDARD DIMENSION RATIO	S.D.R.	REUSE EFFLUENT WATER	REEW
STATION	STA.	RO REJECT	REJ
SYMMETRICAL	SYMM.	SECONDARY EFFLUENT	SE
TAPPING SLEEVE	TS	WASTE ACTIVATED SLUDGE	WAS
TAPPING VALVE	TV	WATER MAIN	WM
TEMPORARY	TEMP.	STORMWATER	
TEST BORING	TB	DRAIN/SANITARY SEWER	D
TEST HOLE	TH	STORM DRAIN	SD
THICK	THK.	STORMWATER/STORMWATER FORCEMAIN	SW/SWFM
THREADED	THD.	POWER & FUEL	
TOP OF CONCRETE	T.O.C.	ELECTRIC CABLE/DUCT BANK	E
TOP OF SLAB	T.O.S.	FUEL LINE	FL
TYPICAL	TYP.	NATURAL GAS LINE	GAS
UNLESS NOTED OTHERWISE	U.N.O.	COMMUNICATION	
ULTRAVIOLET	UV	FIBER OPTIC	FO, FOC
VERTICAL	VERT.	TELEVISION CABLE	TV
VENT	VT.	EQUIPMENT	
VENT THROUGH ROOF	V.T.R.	HIGH SERVICE PUMP	HSP
WASTE ACTIVATED SLUDGE	W.A.S.	CHLORINATOR	CHL
WATER LEVEL	W.L.	AMMUNATOR	AMM
WEATHERPROOF	WPF.	FLUORINATOR	FL
WIDE	W.	CHLORINE BOOSTER PUMP	CBP
WITH	W/		

VALVES, PIPES & FITTINGS (SINGLE-LINE)



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
Curtis L. Kunihiro, P.E.
Florida P.E. No. 33688
Reiss Engineering, Inc.
Certificate of Authorization No. 8181
1016 Spring Villas Pt.
Winter Springs, FL 32708

Designed Clk
Drawn CTB
Checked RLL
Reviewed MDP
Approved Clk

DATE 4/21/14

ORANGE COUNTY UTILITIES
WESTWOOD BOULEVARD 24-INCH WATER MAIN

GENERAL

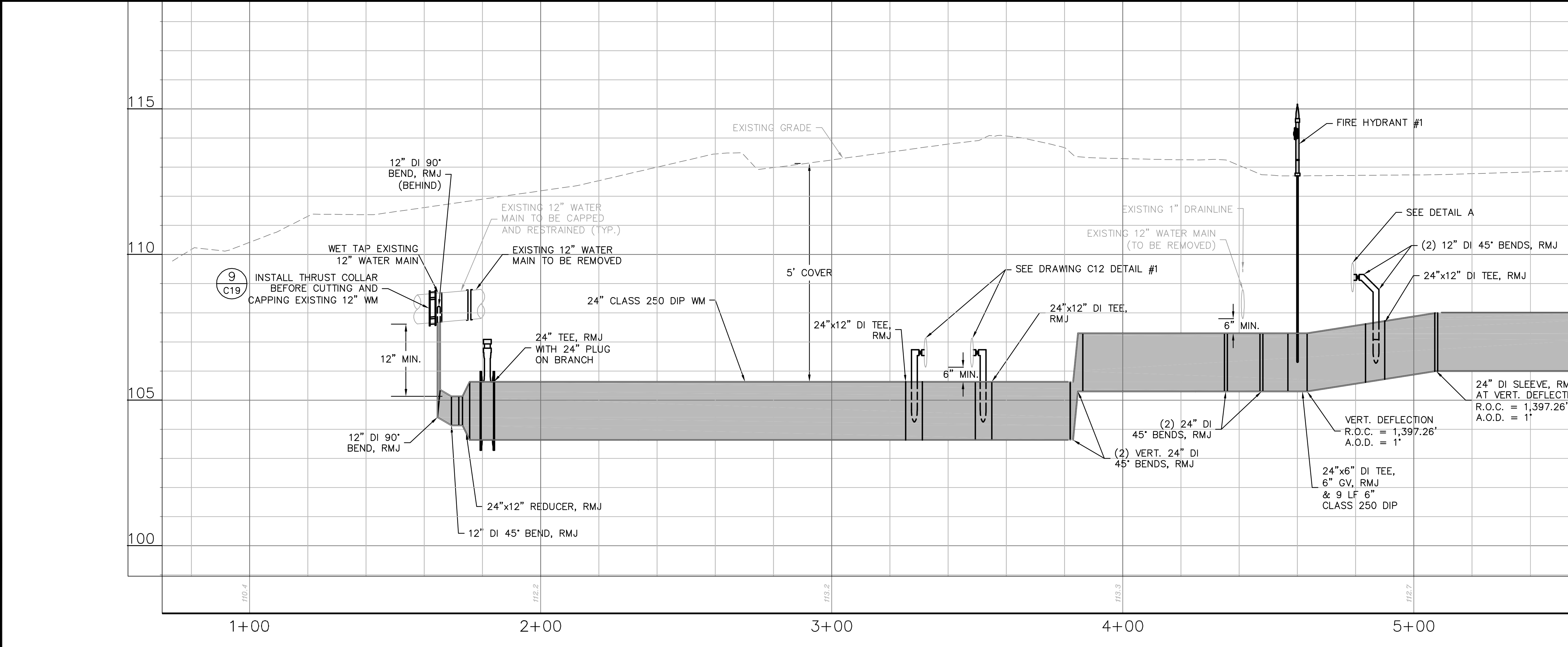
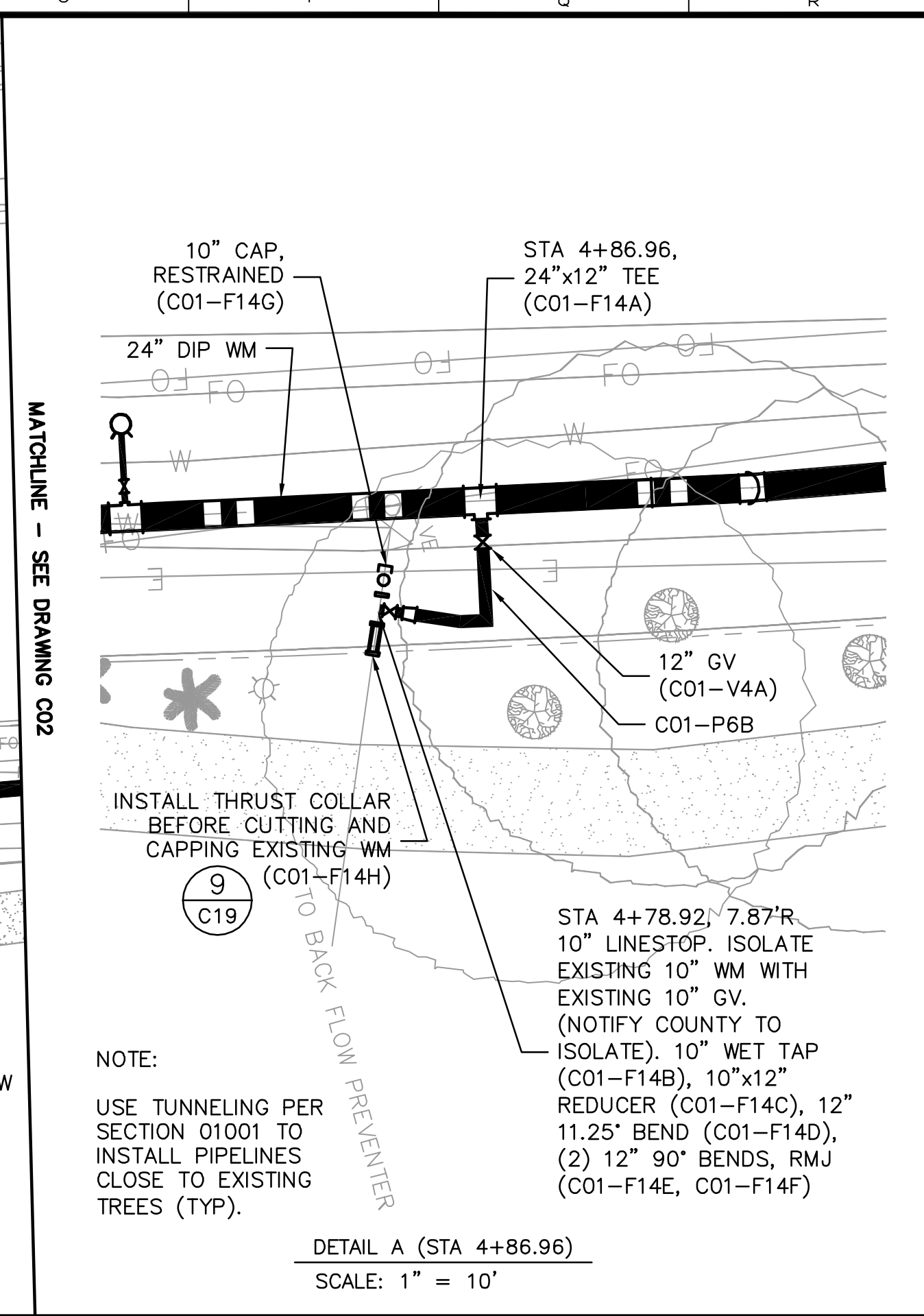
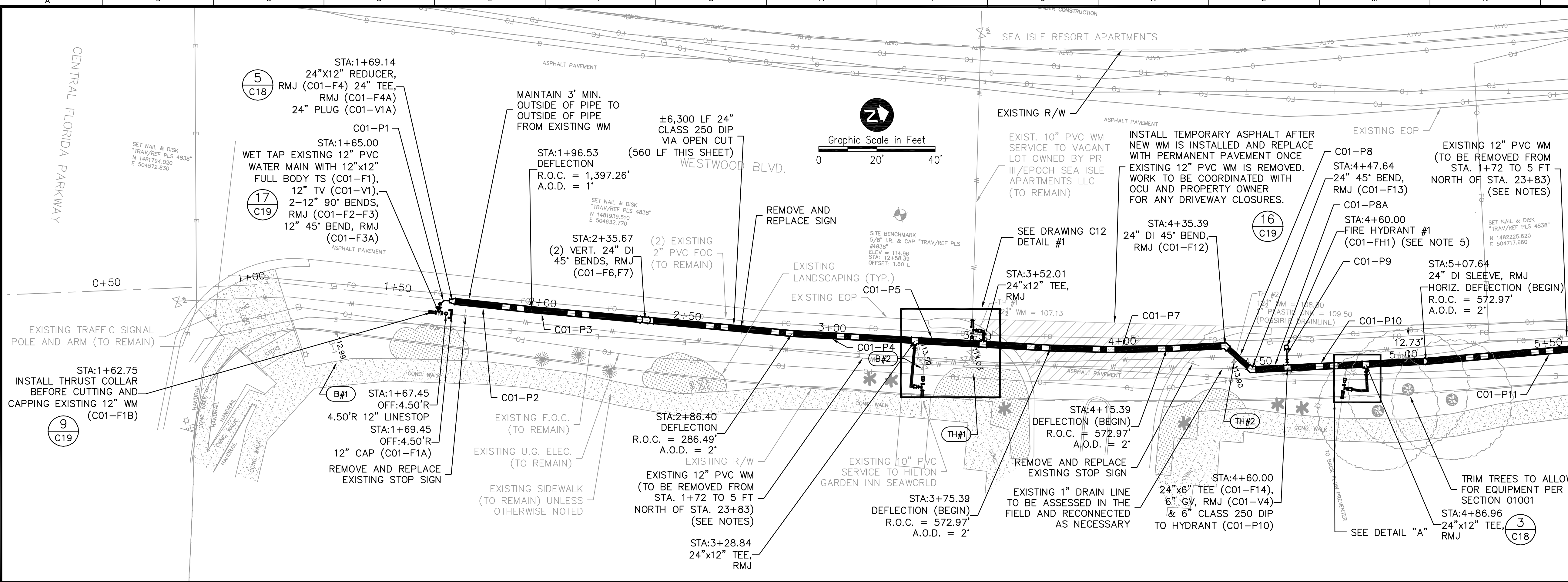
STANDARD LEGEND

PROJECT NO.:	110011
SCALE:	NOTED
REVISION:	0
DRAWING NO.:	G05
SHEET NO.:	05 OF 25



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- NOTES:
1. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
 2. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION AND REPAIR ALL EXISTING IRRIGATION AS NECESSARY.
 3. PROTECT EXISTING 12" PVC WATER MAIN DURING CONSTRUCTION OF 24" DIP WATER MAIN AND PRIOR TO REMOVAL OF THE EXISTING 12" MAIN DRAINAGE SWALE TO BE RESTORED TO EXISTING DITCH BOTTOM INLET FROM STA. 4+50 TO STA. 5+60.
 4. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST.
 5. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 6. REMOVE ALL TREES MARKED WITH X.
 7. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.
 8. REMOVAL OF EXISTING 12" PVC WATER MAIN SHALL INCLUDE REMOVAL OF EXISTING VALVE BOXES
 9. FLUSH THE WATER MAIN IN ACCORDANCE WITH SPECIFICATIONS AND DETAIL 15, DRAWING C19 FROM THE 24" TEE NEAR STATION 1+65 TO THE OTHER END OF THE WATER MAIN.



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

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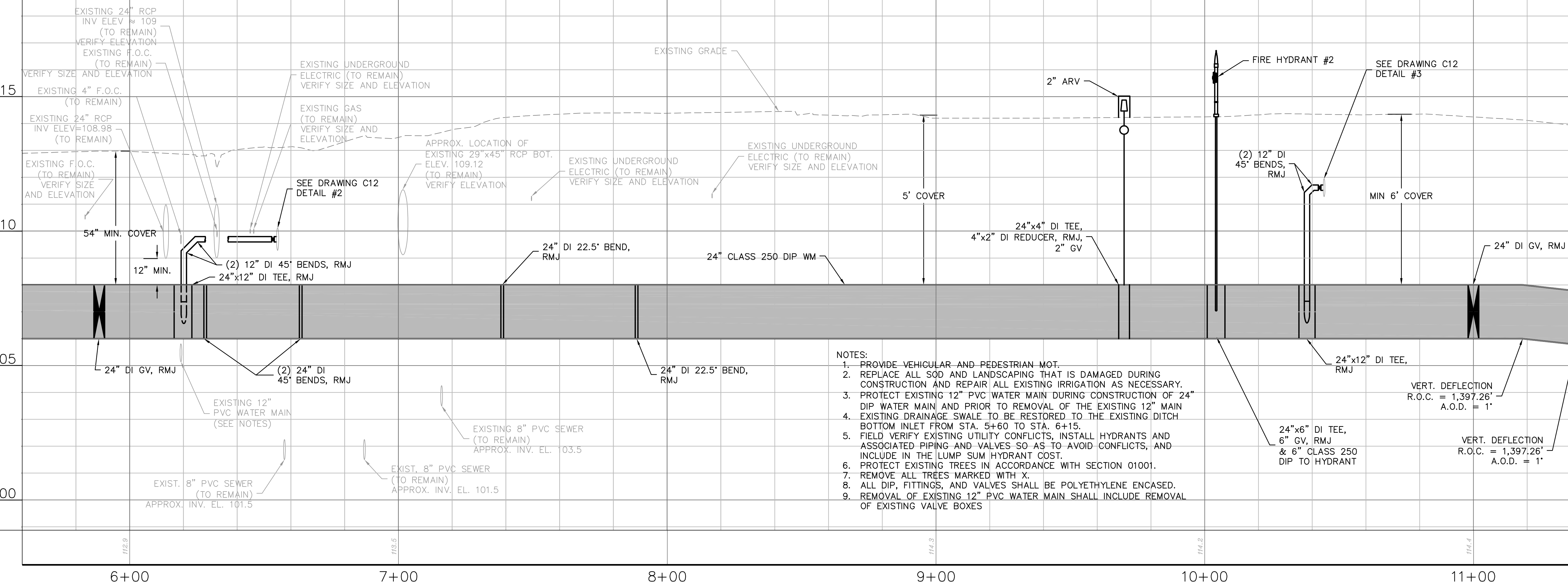
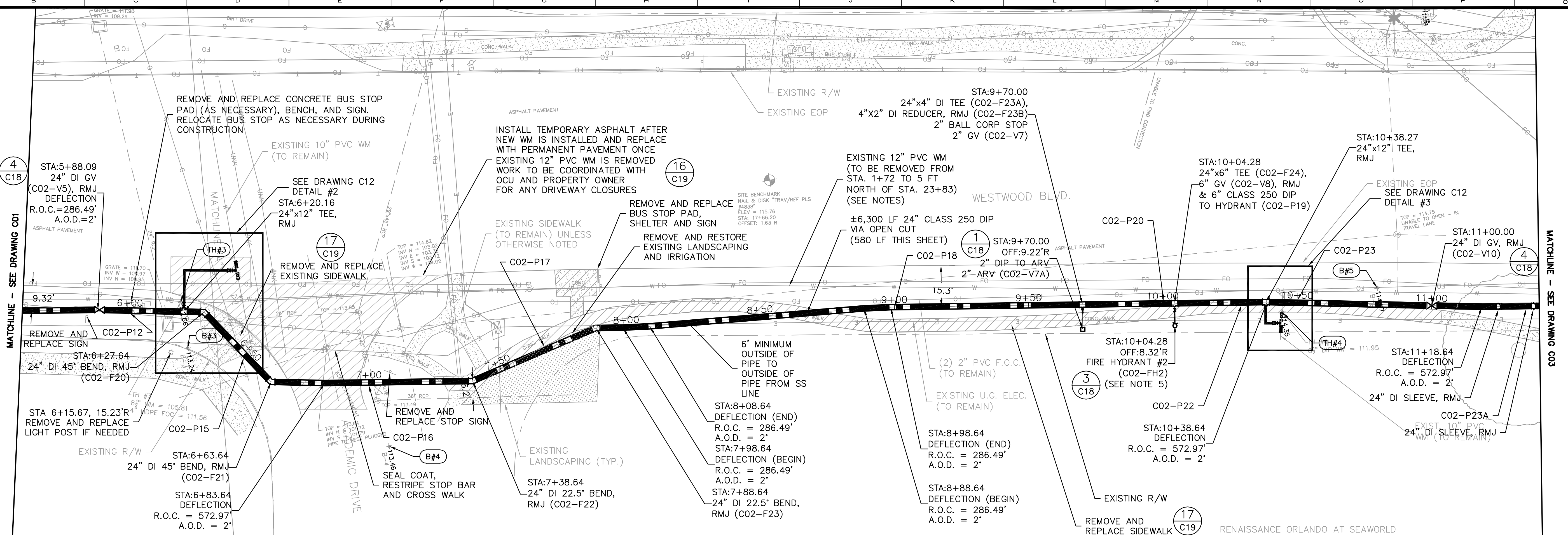
Designed Clk
 Drawn CTB
 Checked RL
 Reviewed MDP
 Approved Clk
 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 0+00 TO STA. 5+60

PROJECT NO.:	110011
SCALE:	NOTED
DRAWING NO.:	C01
REVISION:	0
SHEET NO.:	06 OF 25



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 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358



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 4. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST.
 5. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 6. REMOVE ALL TREES MARKED WITH X.
 7. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.
 8. REMOVAL OF EXISTING 12" PVC WATER MAIN SHALL INCLUDE REMOVAL OF EXISTING VALVE BOXES



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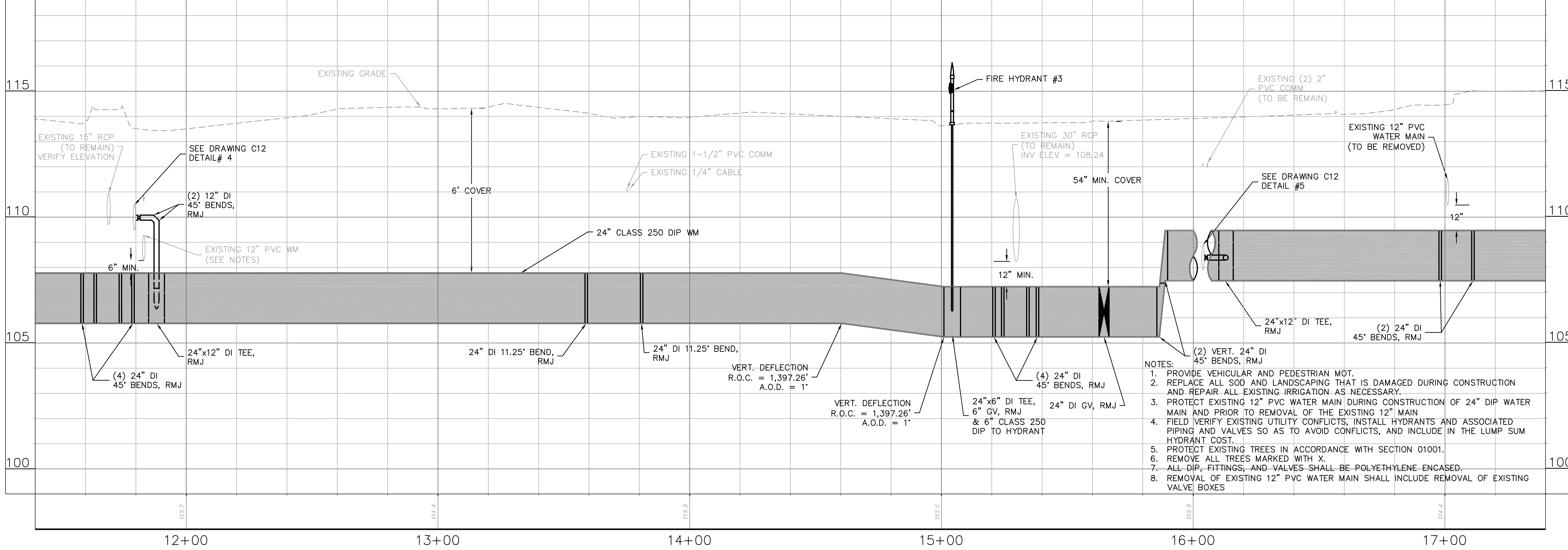
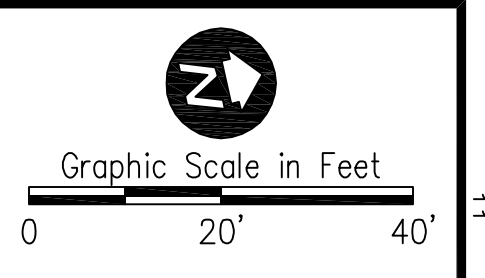
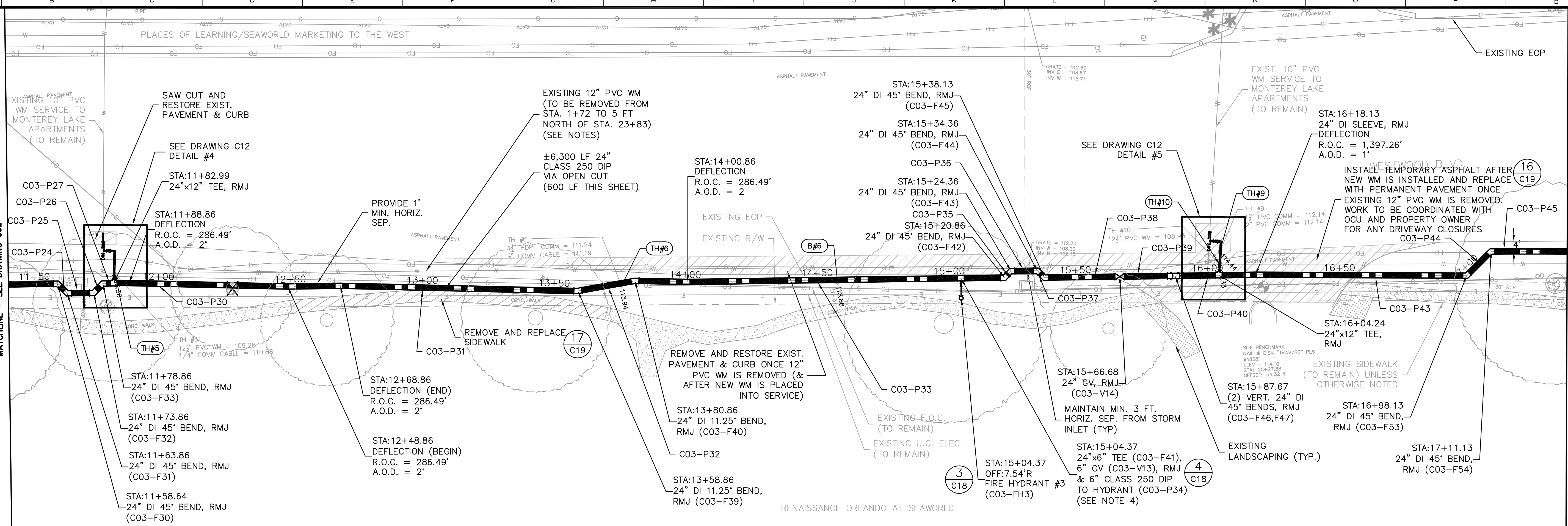
ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 5+60 TO STA. 11+40

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C02	SHEET NO.: 07 OF 25



Parent Sheet: Set: 110011_WESTWOOD Rev/Plot by: ROBERT L. LUPO Individual File Path: \\PROJ\CTS\110011-OCU WESTWOOD BLVD\DESIGN DRAWINGS\FINAL\DESIGN\07_C02.DWG

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- NOTES:
1. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
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 4. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST.
 5. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 6. REMOVE ALL TREES MARKED WITH X.
 7. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.
 8. REMOVAL OF EXISTING 12" PVC WATER MAIN SHALL INCLUDE REMOVAL OF EXISTING VALVE BOXES



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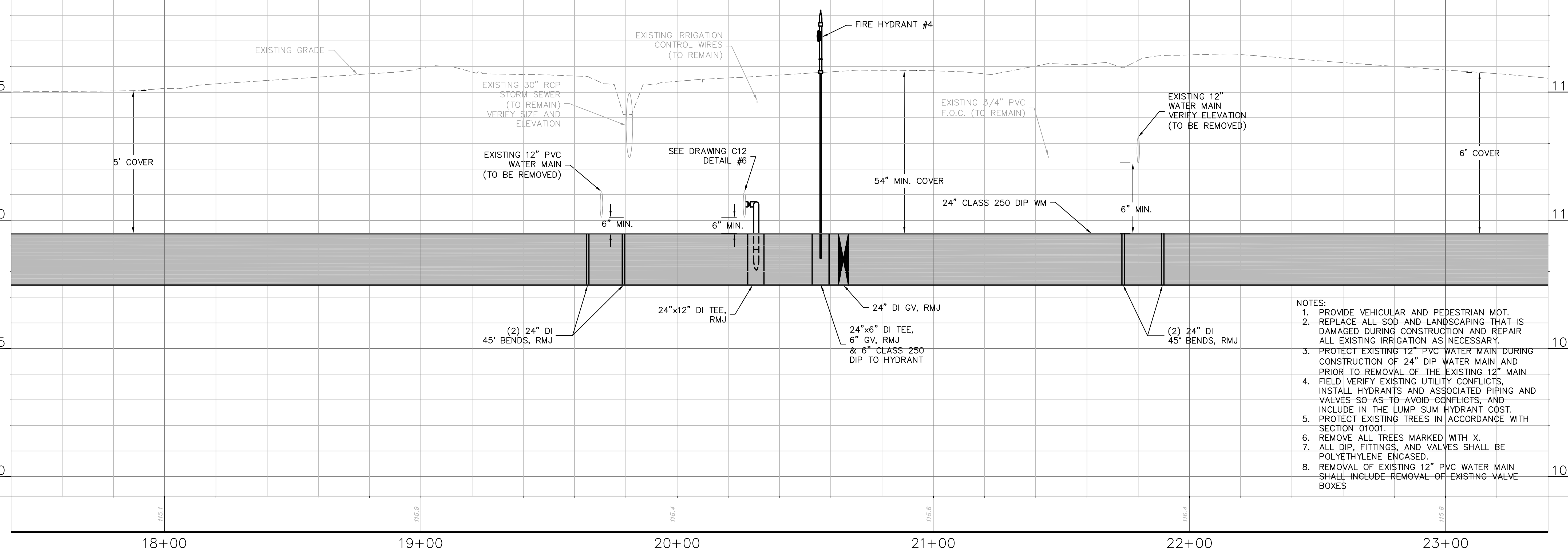
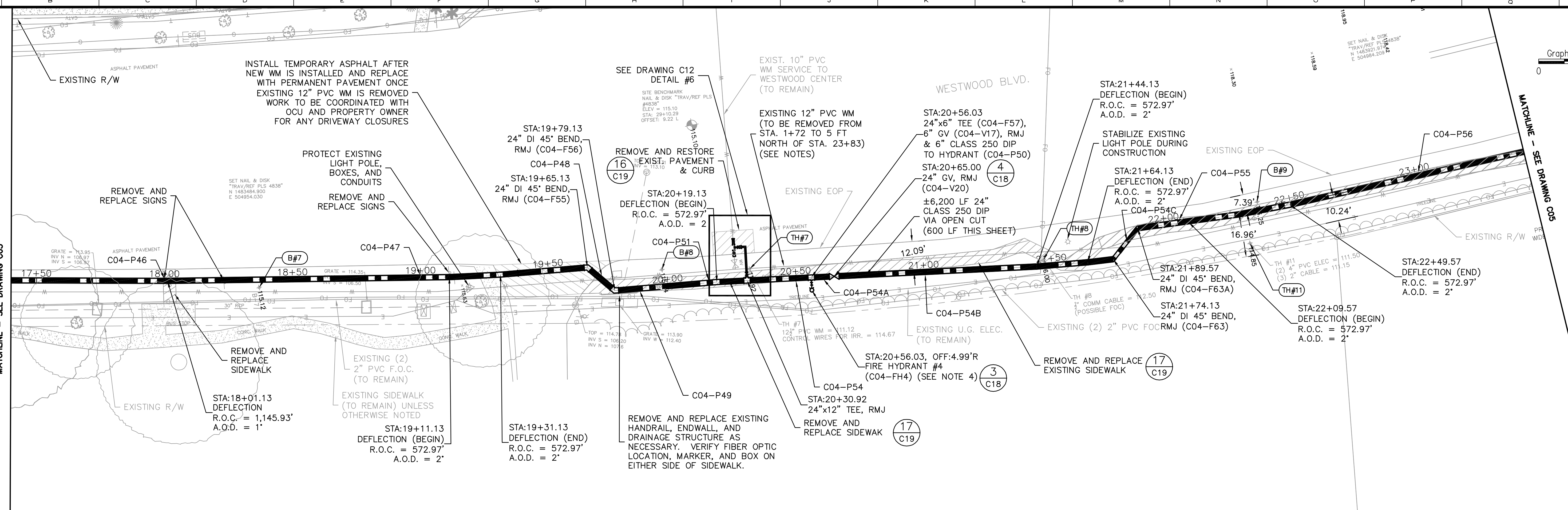
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 Drawn CTB
 Checked RL
 Reviewed MDP
 Approved CTB
 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 11+40 TO STA. 17+40

PROJECT NO.:	110011
SCALE:	NOTED
DRAWING NO.:	C03
REVISION:	0
SHEET NO.:	08 OF 25



Parent: Set: 110011_WESTWOOD - Rev/Plot by: ROBERT L. LUPO - Rev on: 3/21/2014 3:14 PM - Individual File Path: R:\PROJECTS\110011-OCU WESTWOOD BLVD WM\DESIGN DRAWINGS\FINALDESIGN\09_C04.DWG



- NOTES:**
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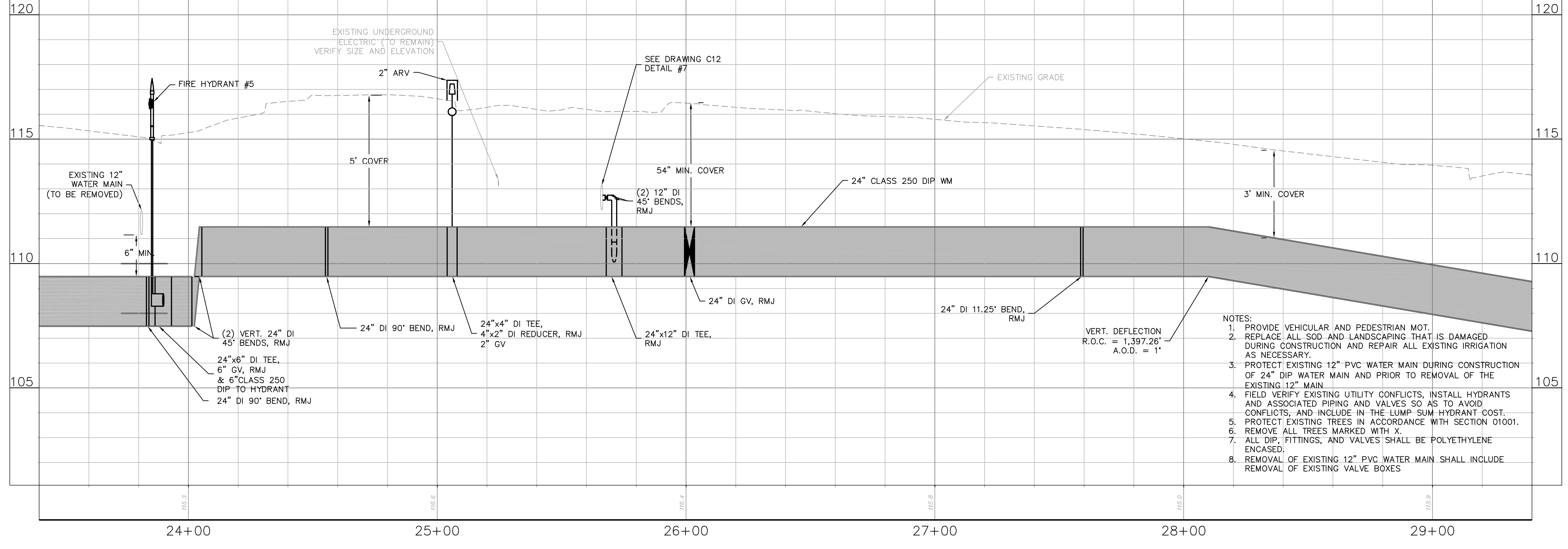
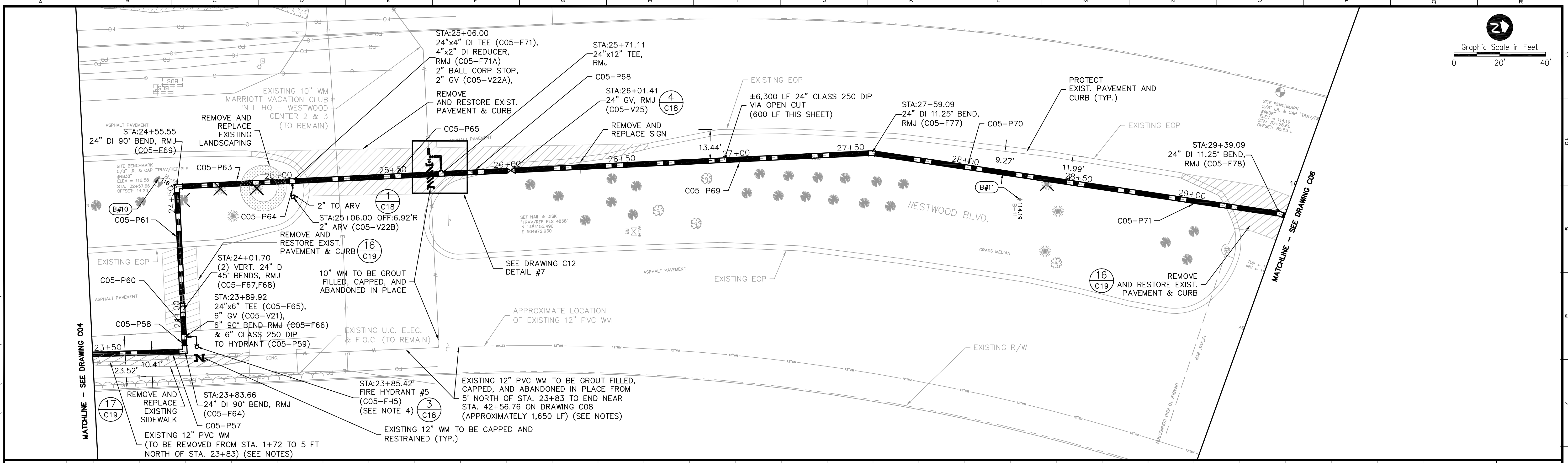
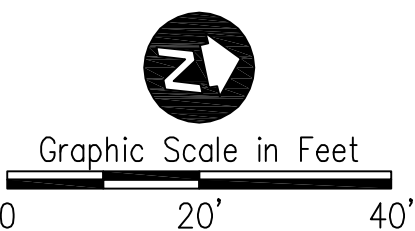
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Drawn CTB
Checked RLL
Reviewed MDP
Approved CTB
 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 17+40 TO STA. 23+40

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C04	SHEET NO.: 09 OF 25



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358



- NOTES:
1. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
 2. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION AND REPAIR ALL EXISTING IRRIGATION AS NECESSARY.
 3. PROTECT EXISTING 12" PVC WATER MAIN DURING CONSTRUCTION OF 24" DIP WATER MAIN AND PRIOR TO REMOVAL OF THE EXISTING 12" MAIN.
 4. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST.
 5. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 6. REMOVE ALL TREES MARKED WITH X.
 7. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.
 8. REMOVAL OF EXISTING 12" PVC WATER MAIN SHALL INCLUDE REMOVAL OF EXISTING VALVE BOXES



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

Designed Clk
 Drawn CTB
 Checked RLL
 Reviewed MDP
 Approved Clk
 Date 4/21/14

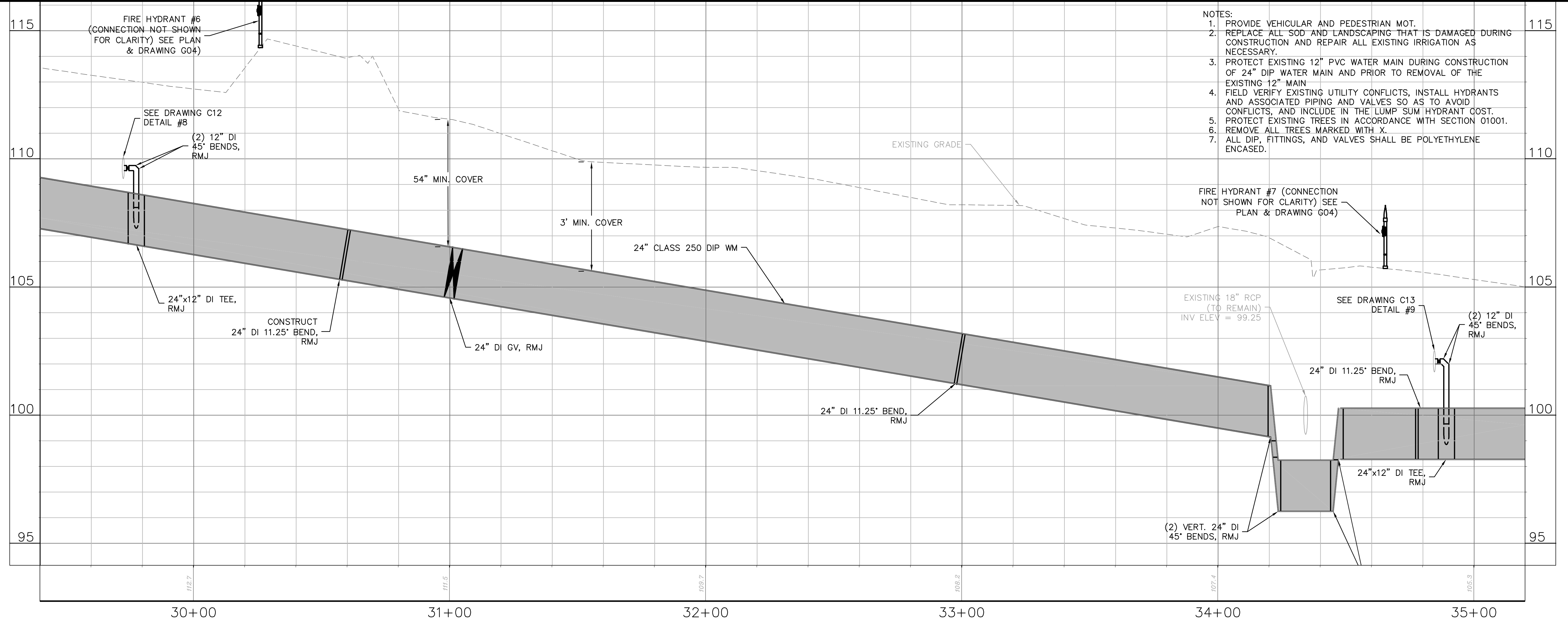
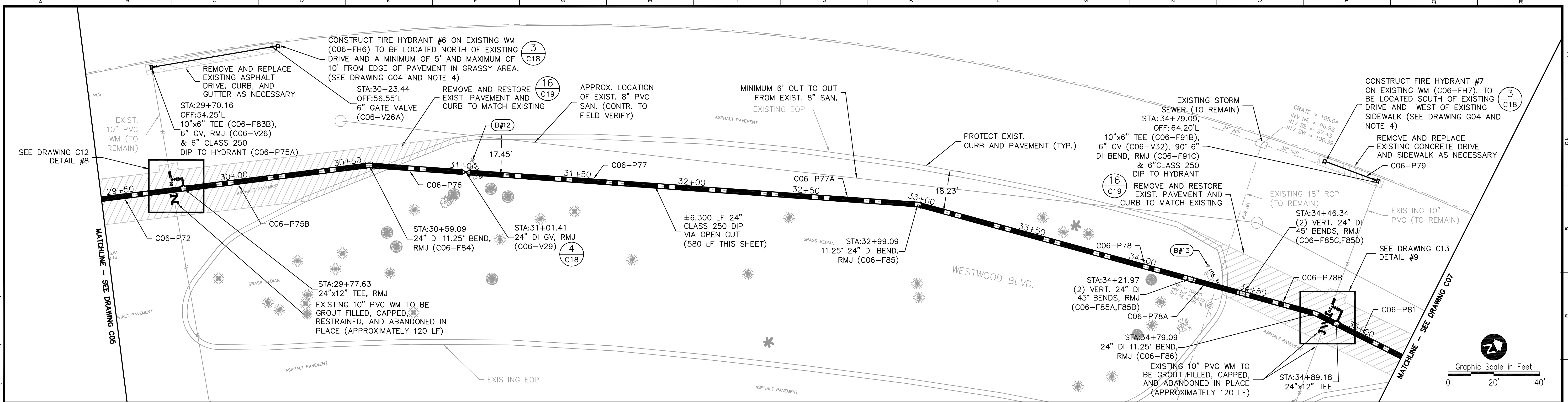
ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 23+40 TO STA. 29+40

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C05	SHEET NO.: 10 OF 25



Parent: Set: 110011_WESTWOOD - Rev/Plot by: ROBERT L. LUPO - Rev on: 3/21/2014 3:15 PM - Individual File Path: \\PROJ\CTS\110011-OCU_WESTWOOD_BLD\DESIGN_DRAWINGS\FINAL\DESIGN\10_C05.DWG

Parent: Set: 110011_WESTWOOD Rev/Plot by: ROBERT L. LUPO Rev on: 3/21/2014 3:17 PM Individual File Path: \\PROJECTS\110011-OCU WESTWOOD BLVD\DESIGN DRAWINGS\FINALDESIGN\11_C06.DWG



- NOTES:
1. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
 2. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION AND REPAIR ALL EXISTING IRRIGATION AS NECESSARY.
 3. PROTECT EXISTING 12" PVC WATER MAIN DURING CONSTRUCTION OF 24" DIP WATER MAIN AND PRIOR TO REMOVAL OF THE EXISTING 12" MAIN
 4. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 5. REMOVE ALL TREES MARKED WITH X.
 6. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

Designed_CIK
 Drawn_CTB
 Checked_RLL
 Reviewed_MDP
 Approved_CIK
 Date 4/21/14

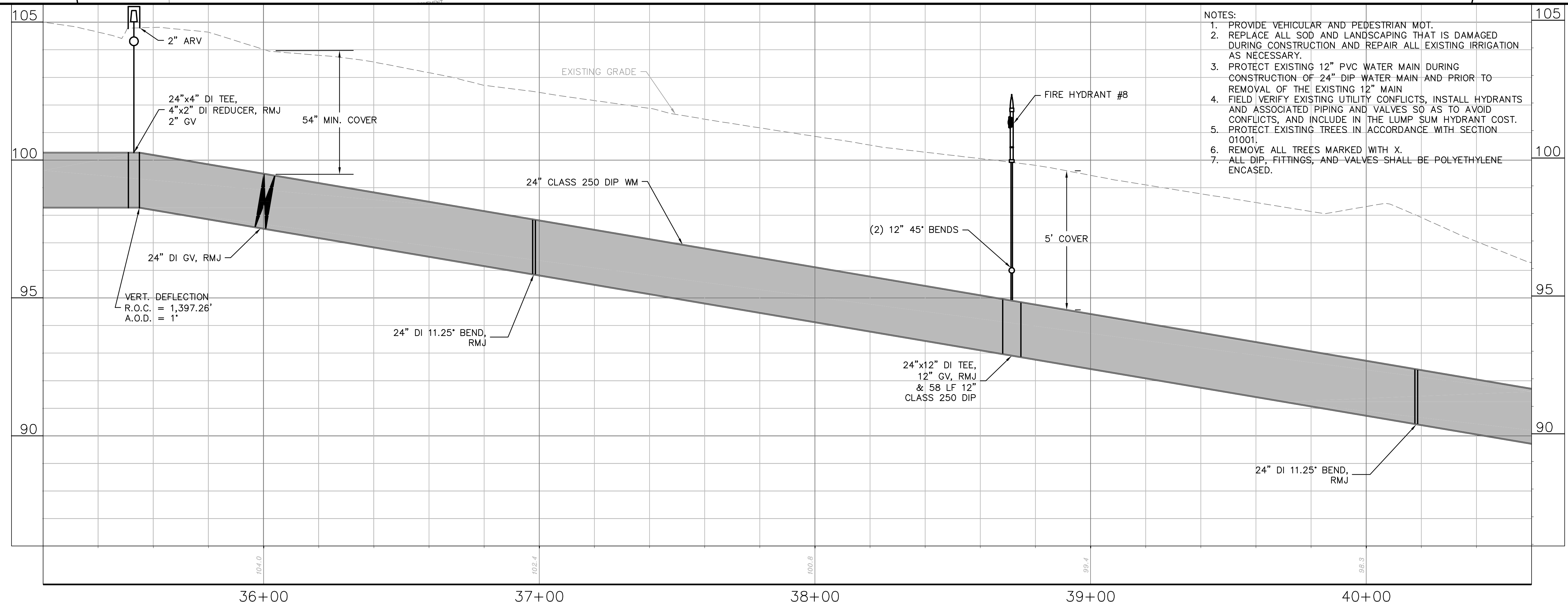
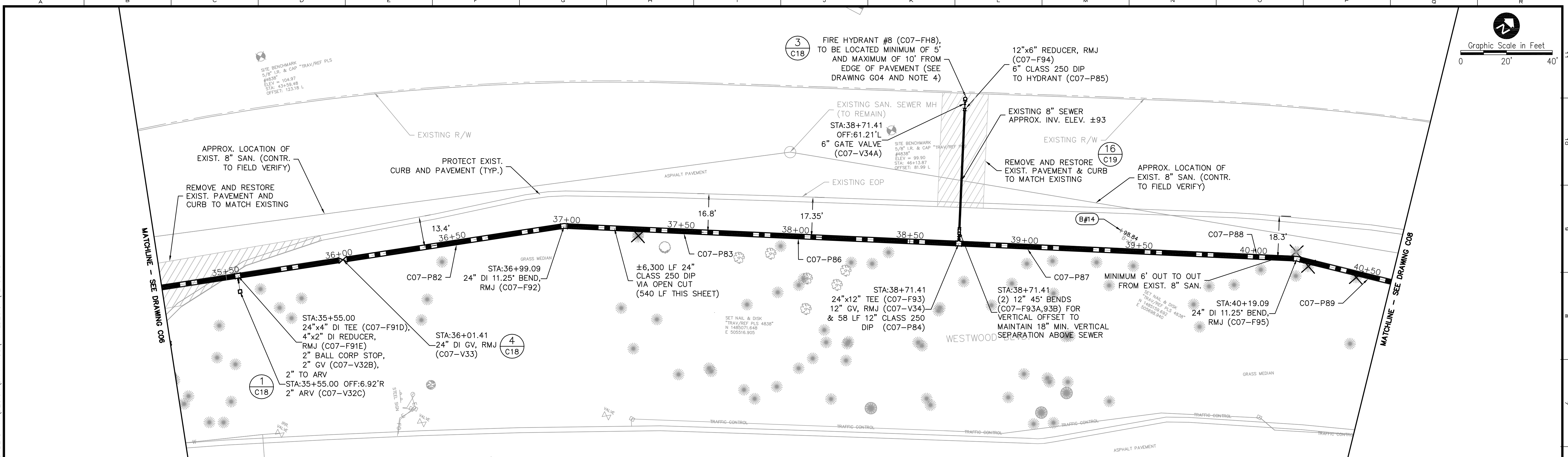
ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 29+40 TO STA. 35+20

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C06	SHEET NO.: 11 OF 25



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358

Parent: Set: 110011_WESTWOOD_Rev/Plot by: ROBERT L. LUPO Rev on: 3/21/2014 3:23 PM Individual File Path: \\PROJ\CTS\110011-OCU WESTWOOD BLD\DESIGN DRAWINGS\FINAL\DESIGN\12_C07.DWG



- NOTES:
1. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
 2. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION AND REPAIR ALL EXISTING IRRIGATION AS NECESSARY.
 3. PROTECT EXISTING 12" PVC WATER MAIN DURING CONSTRUCTION OF 24" DIP WATER MAIN AND PRIOR TO REMOVAL OF THE EXISTING 12" MAIN
 4. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST.
 5. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 6. REMOVE ALL TREES MARKED WITH X.
 7. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

Designed CTB
 Drawn CTB
 Checked RLL
 Reviewed MDP
 Approved CTB
 Date 4/21/14

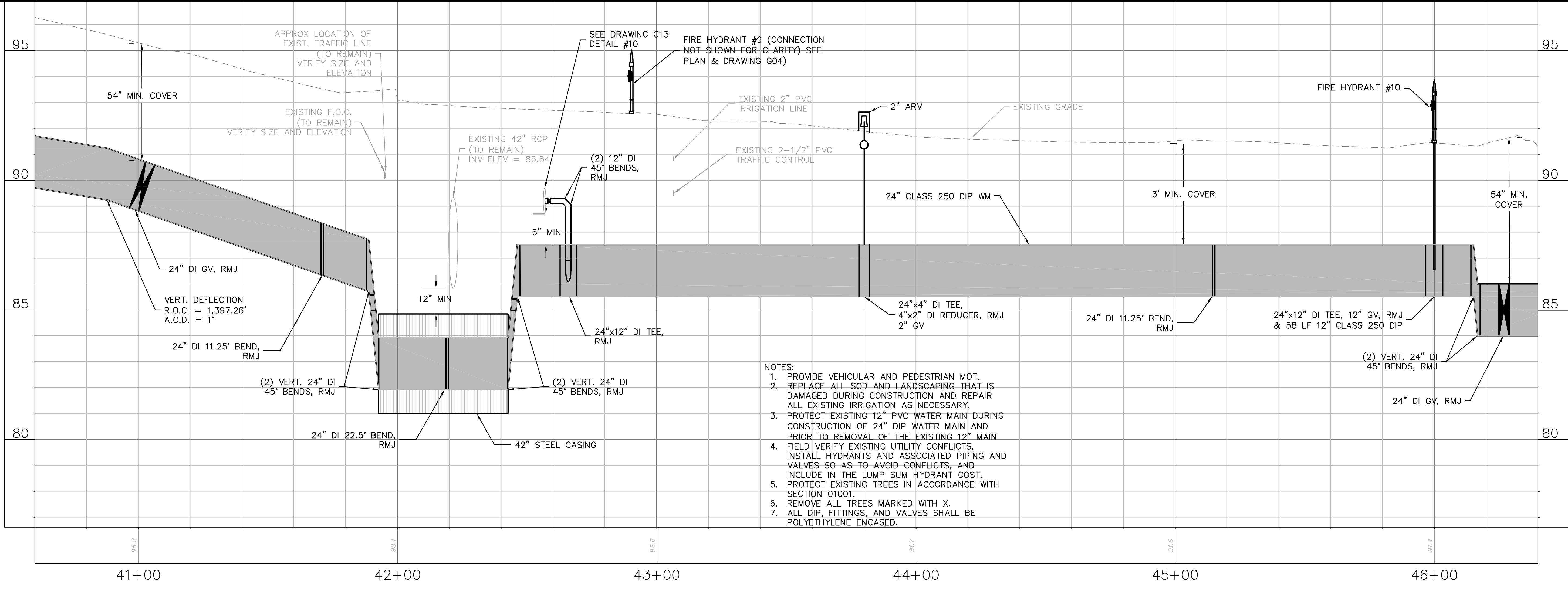
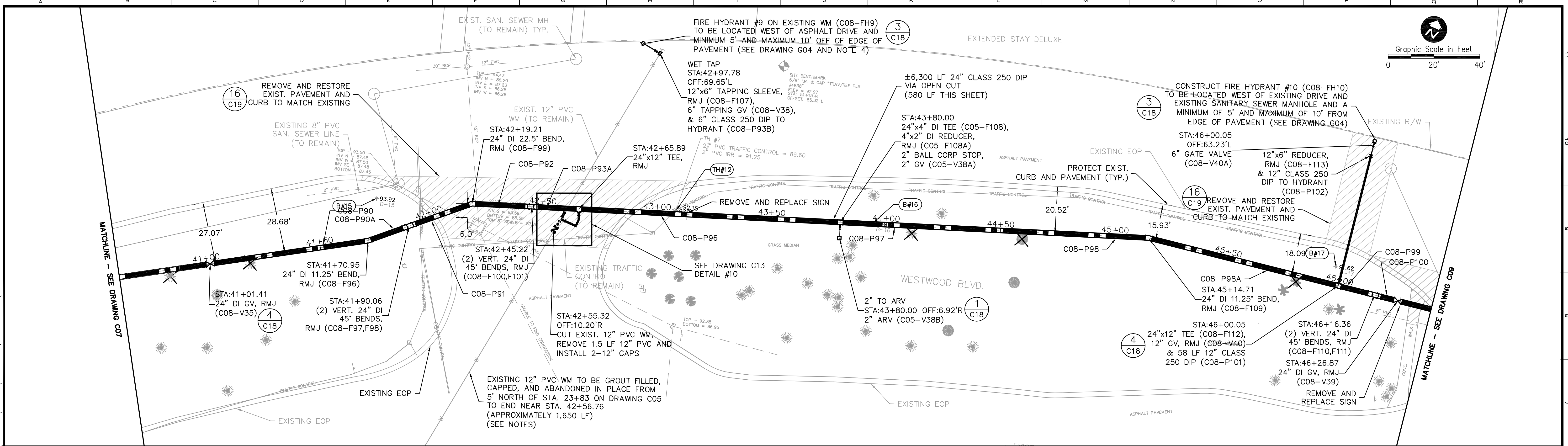
ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 35+20 TO STA. 40+60

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C07	SHEET NO.: 12 OF 25



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358

Parent: Set: 110011_WESTWOOD - Rev/Plot by: ROBERT L. LUPO - Rev on: 3/21/2014 3:29 PM - Individual File Path: \\PROJECTS\110011-OCU WESTWOOD BLVD WM\DESIGN DRAWINGS\FINAL\DESIGN\13_C08.DWG



- NOTES:
1. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
 2. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION AND REPAIR ALL EXISTING IRRIGATION AS NECESSARY.
 3. PROTECT EXISTING 12" PVC WATER MAIN DURING CONSTRUCTION OF 24" DIP WATER MAIN AND PRIOR TO REMOVAL OF THE EXISTING 12" MAIN.
 4. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST.
 5. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 6. REMOVE ALL TREES MARKED WITH X.
 7. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

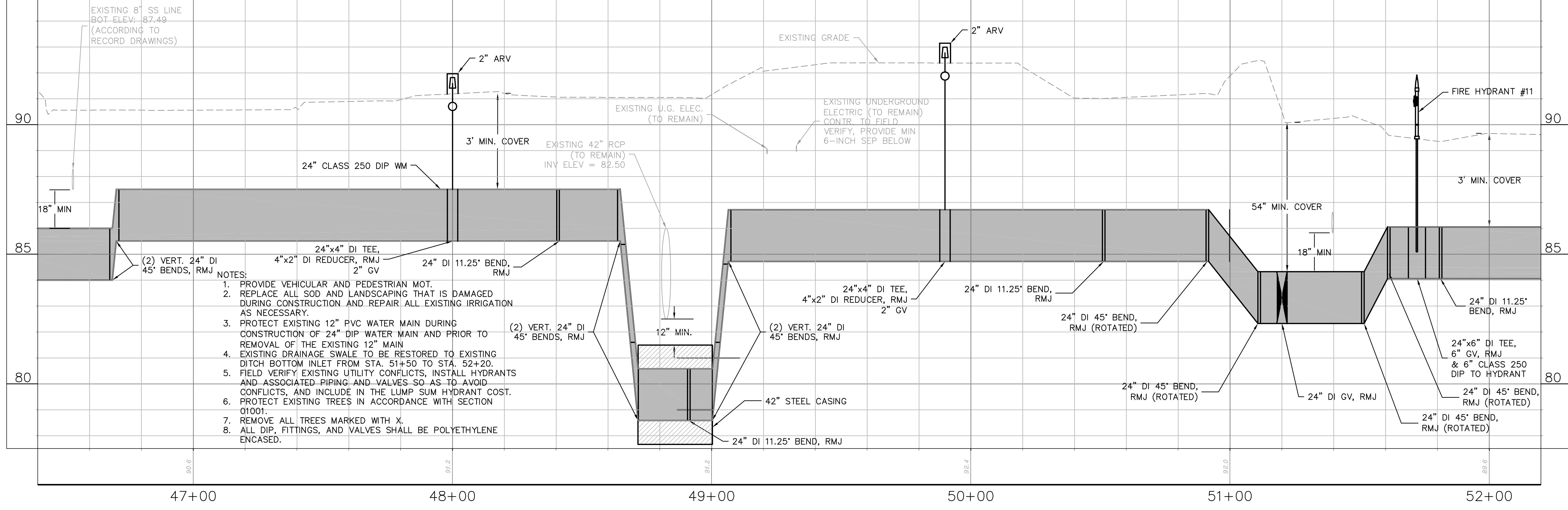
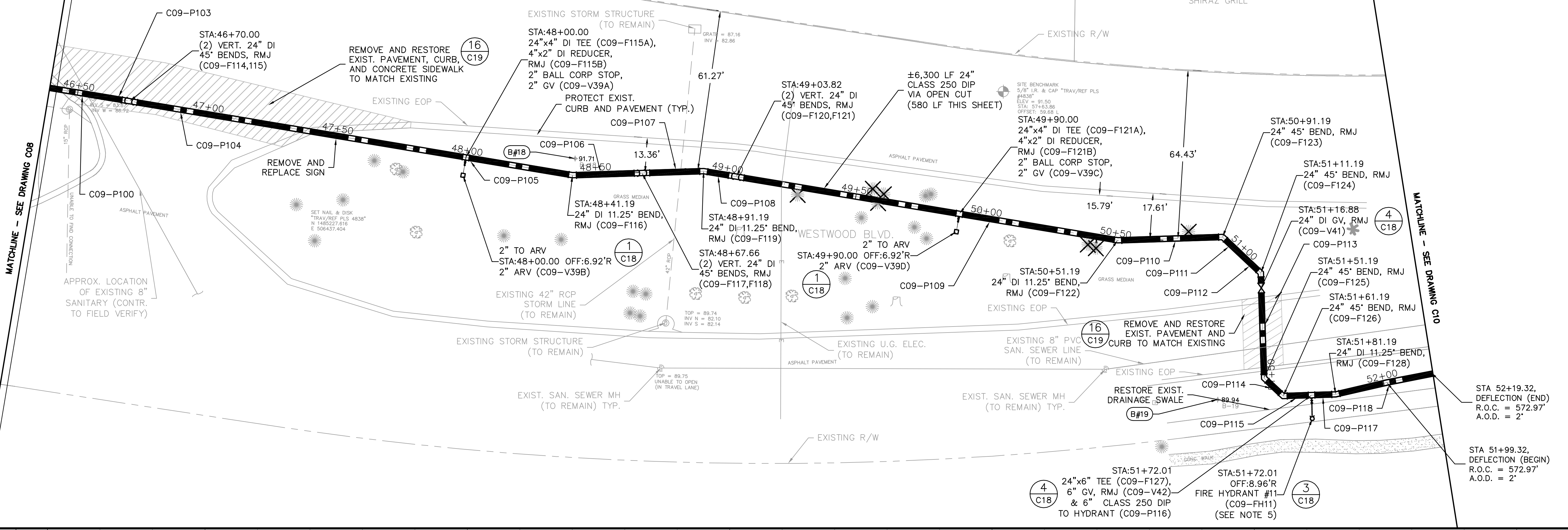
Designed Clk
 Drawn CTB
 Checked RLL
 Reviewed MDP
 Approved Clk
 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 STA. 40+60 TO STA. 46+40

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C08	SHEET NO.: 13 OF 25



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358



- NOTES:
1. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
 2. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION AND REPAIR ALL EXISTING IRRIGATION AS NECESSARY.
 3. PROTECT EXISTING 12" PVC WATER MAIN DURING CONSTRUCTION OF 24" DIP WATER MAIN AND PRIOR TO REMOVAL OF THE EXISTING 12" MAIN
 4. EXISTING DRAINAGE SWALE TO BE RESTORED TO EXISTING DITCH BOTTOM INLET FROM STA. 51+50 TO STA. 52+20.
 5. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 7. REMOVE ALL TREES MARKED WITH X.
 8. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
Curtis I. Kunihiro, P.E.
Florida P.E. No. 33688
Reiss Engineering, Inc.
Certificate of Authorization No. 8181
1016 Spring Villas Pt.
Winter Springs, FL 32708

Designed Clk
Drawn CTB
Checked RLL
Reviewed MDP
Approved Clk
Date 4/21/14

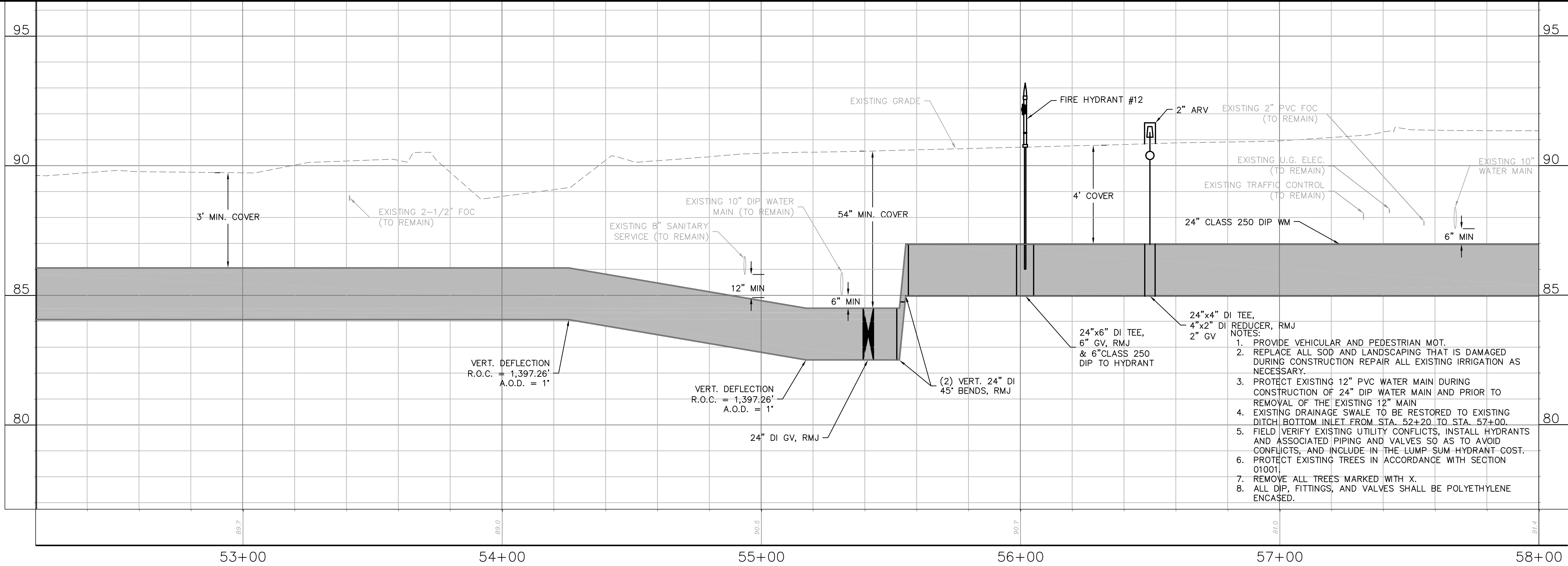
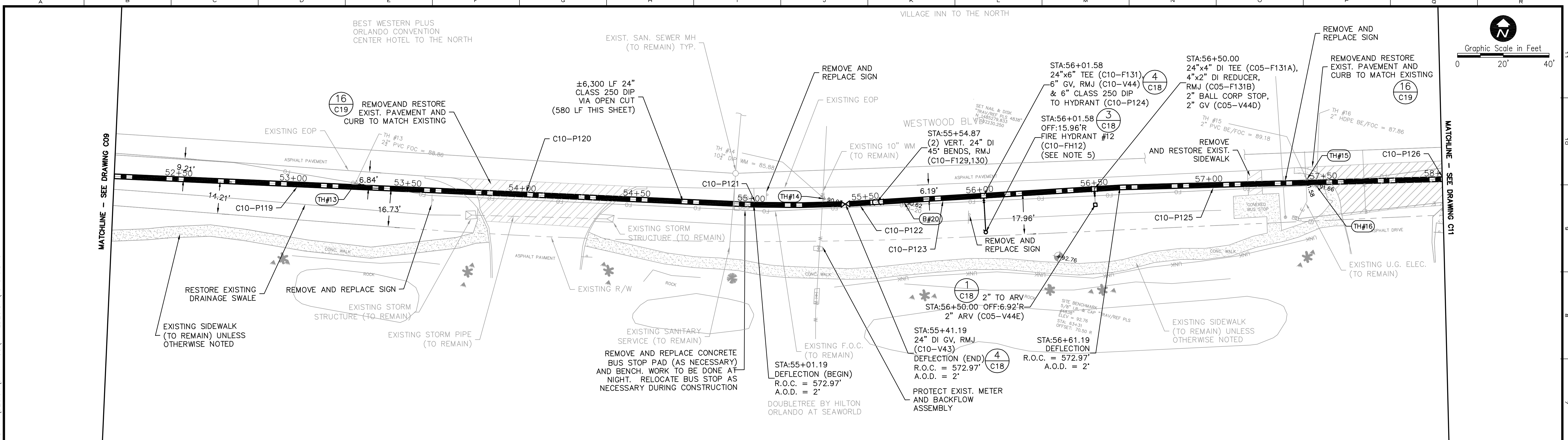
ORANGE COUNTY UTILITIES
WESTWOOD BOULEVARD 24-INCH WATER MAIN
CIVIL
STA. 46+40 TO STA. 52+20

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C09	SHEET NO.: 14 OF 25



Parent: Set: 110011_WESTWOOD - Rev/Plot by: ROBERT L. LUPO - Rev on: 3/21/2014 3:32 PM - Individual File Path: \\PROJECTS\110011-OCU WESTWOOD BLVD WM\DESIGN DRAWINGS\FINAL\DESIGN\14_C09.DWG

Parent: Set: 110011_WESTWOOD - Rev/Plot by: ROBERT L. LUPO - Rev on: 3/21/2014 3:37 PM - Individual File Path: R:\PROJECTS\110011-OCU WESTWOOD BLVD\DESIGN DRAWINGS\FINAL\DESIGN\15 C10.DWG



- NOTES:**
1. PROVIDE VEHICULAR AND PEDESTRIAN MOT.
 2. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION REPAIR ALL EXISTING IRRIGATION AS NECESSARY.
 3. PROTECT EXISTING 12" PVC WATER MAIN DURING CONSTRUCTION OF 24" DIP WATER MAIN AND PRIOR TO REMOVAL OF THE EXISTING 12" MAIN
 4. EXISTING DRAINAGE SWALE TO BE RESTORED TO EXISTING DITCH BOTTOM INLET FROM STA. 52+20 TO STA. 57+00.
 5. FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST.
 6. PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001
 7. REMOVE ALL TREES MARKED WITH X.
 8. ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

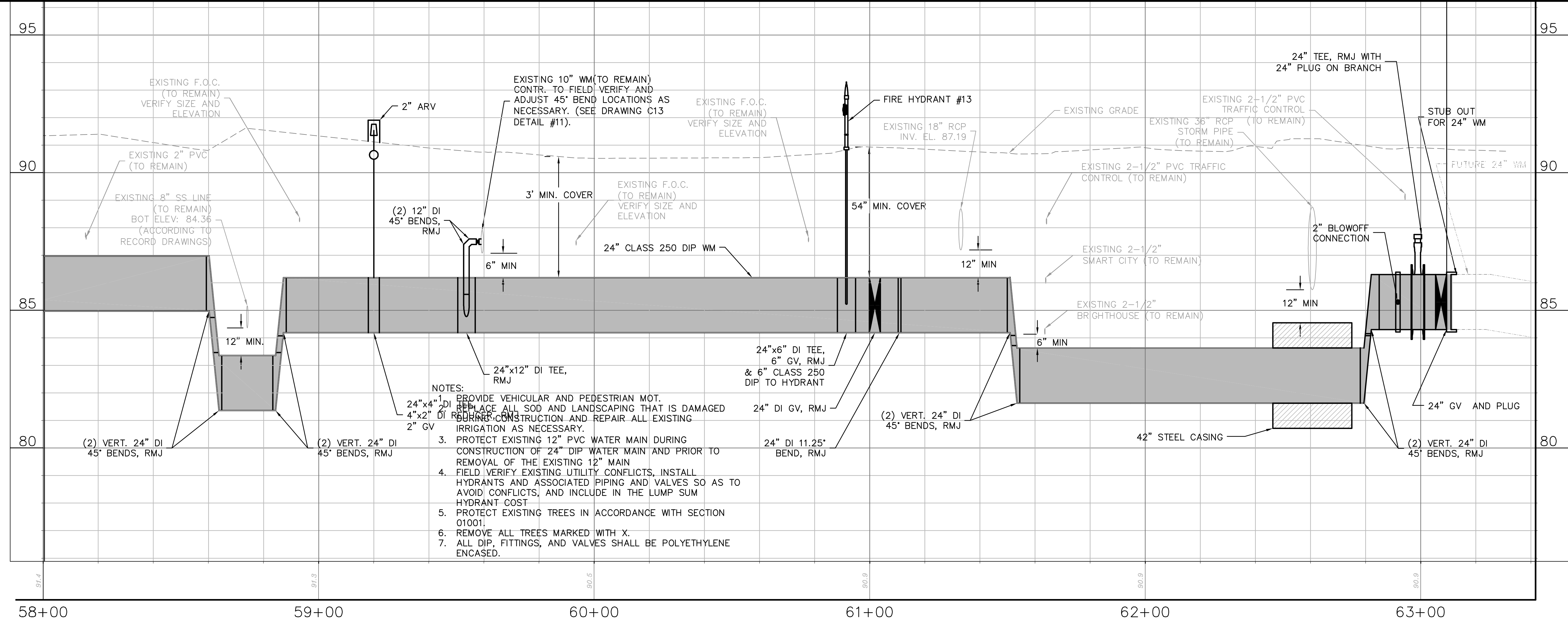
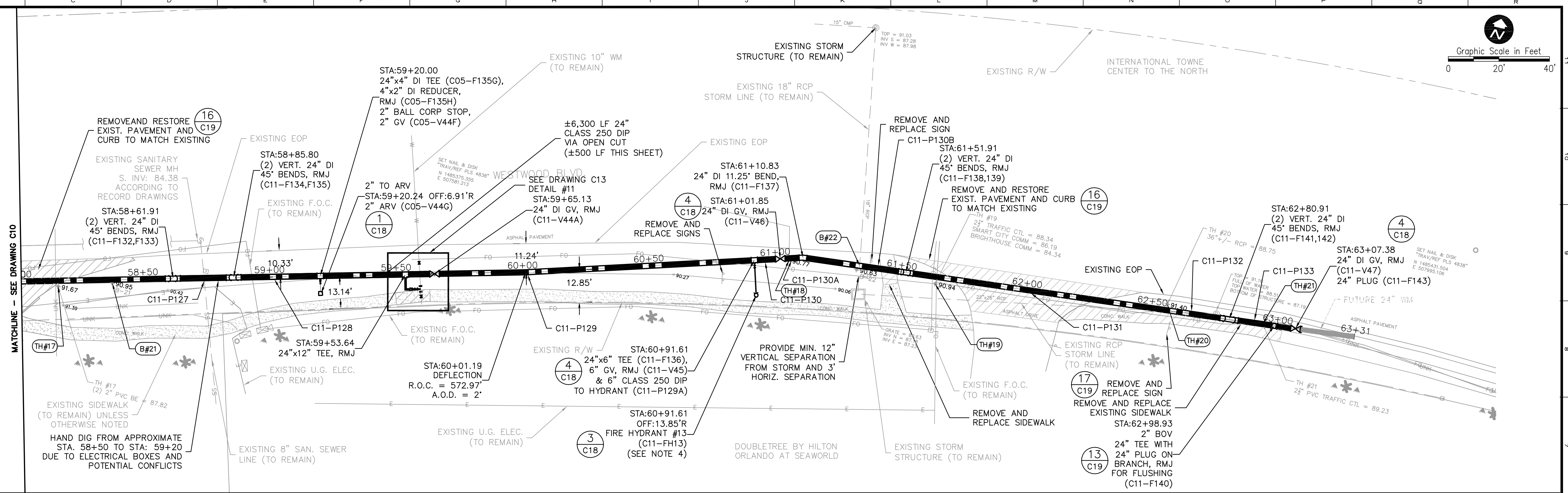
Designed Ck _____
Drawn CTB
Checked RLL
Reviewed MDP
Approved Ck _____
 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 52+20 TO STA. 58+00

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C10	SHEET NO.: 15 OF 25



Parent: Set: 110011_WESTWOOD - Rev/Plot by: ROBERT L. LUPO - Rev on: 3/21/2014 3:39 PM - Individual File Path: \\PROJECTS\110011-OCU WESTWOOD BLDV WM\DESIGN\DRAWINGS\FINAL\DESIGN\16 C11.DWG



- NOTES:**
- PROVIDE VEHICULAR AND PEDESTRIAN MOT. REPLACE ALL SOD AND LANDSCAPING THAT IS DAMAGED DURING CONSTRUCTION AND REPAIR ALL EXISTING IRRIGATION AS NECESSARY.
 - PROTECT EXISTING 12" PVC WATER MAIN DURING CONSTRUCTION OF 24" DIP WATER MAIN AND PRIOR TO REMOVAL OF THE EXISTING 12" MAIN
 - FIELD VERIFY EXISTING UTILITY CONFLICTS, INSTALL HYDRANTS AND ASSOCIATED PIPING AND VALVES SO AS TO AVOID CONFLICTS, AND INCLUDE IN THE LUMP SUM HYDRANT COST
 - PROTECT EXISTING TREES IN ACCORDANCE WITH SECTION 01001.
 - REMOVE ALL TREES MARKED WITH X.
 - ALL DIP, FITTINGS, AND VALVES SHALL BE POLYETHYLENE ENCASED.



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

Designed CTB
Drawn CTB
Checked RL
Reviewed MDP
Approved CTB
 Date 4/21/14

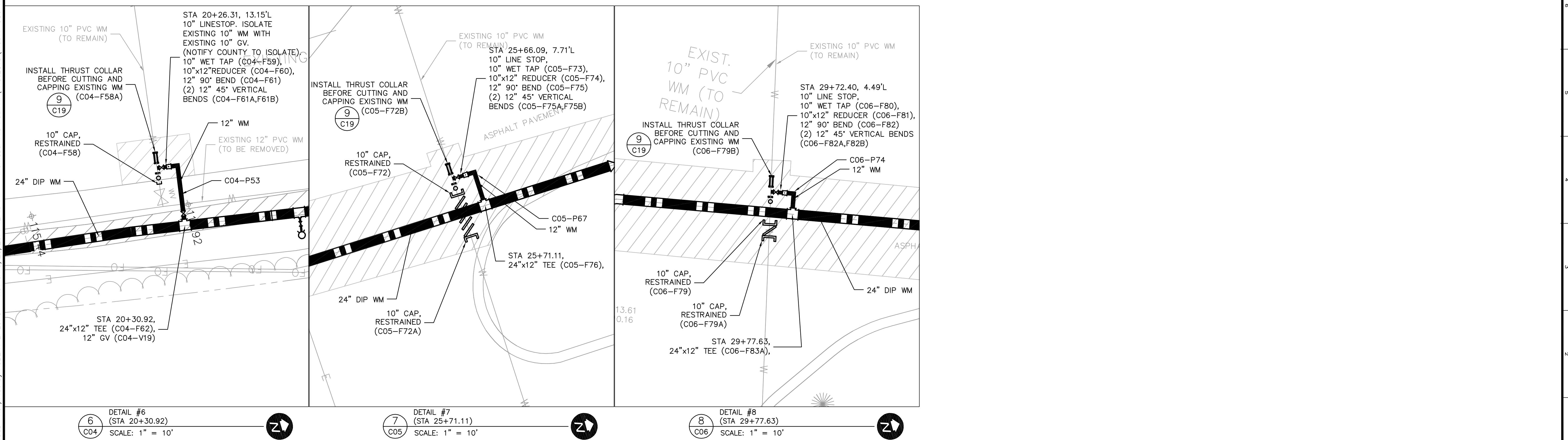
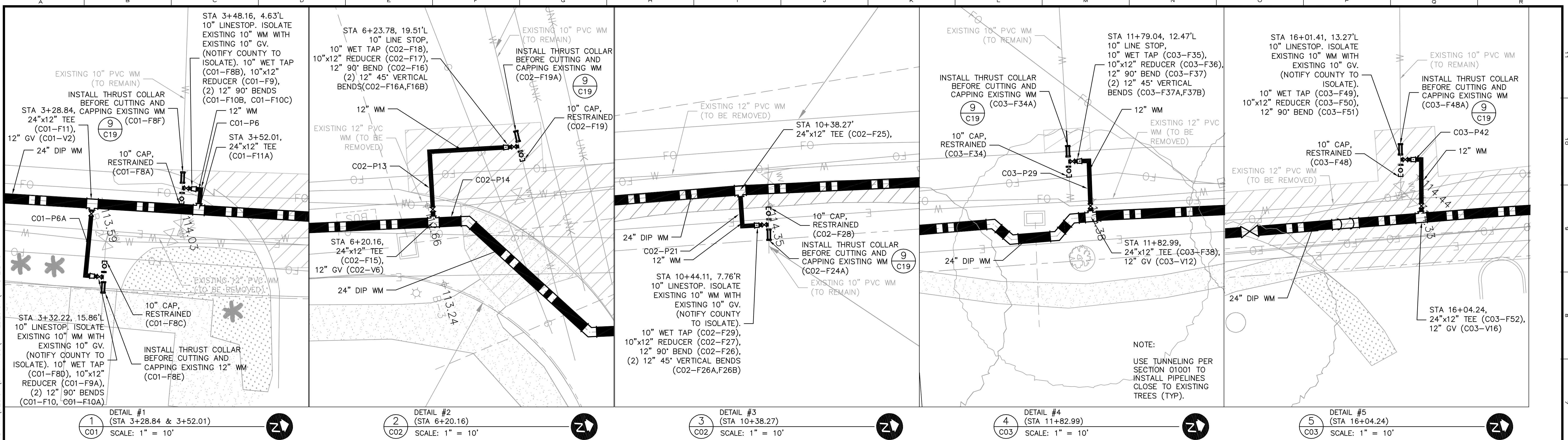
ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 STA. 58+00 TO STA. 63+40

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C11	SHEET NO.: 16 OF 25



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358

Parent: Set: 110011_WESTWOOD - Rev/Plot: by: ROBERT L. LUPO - Rev on: 3/28/2014 12:10 PM - Individual File Path: R:\PROJECTS\110011-OCU WESTWOOD BLVD WM\DESIGN_DRAWINGS\FINAL\DESIGN\17_C12.DWG



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
Curtis I. Kunihiro, P.E.
Florida P.E. No. 33688
Reiss Engineering, Inc.
Certificate of Authorization No. 8181
1016 Spring Villas Pt.
Winter Springs, FL 32708

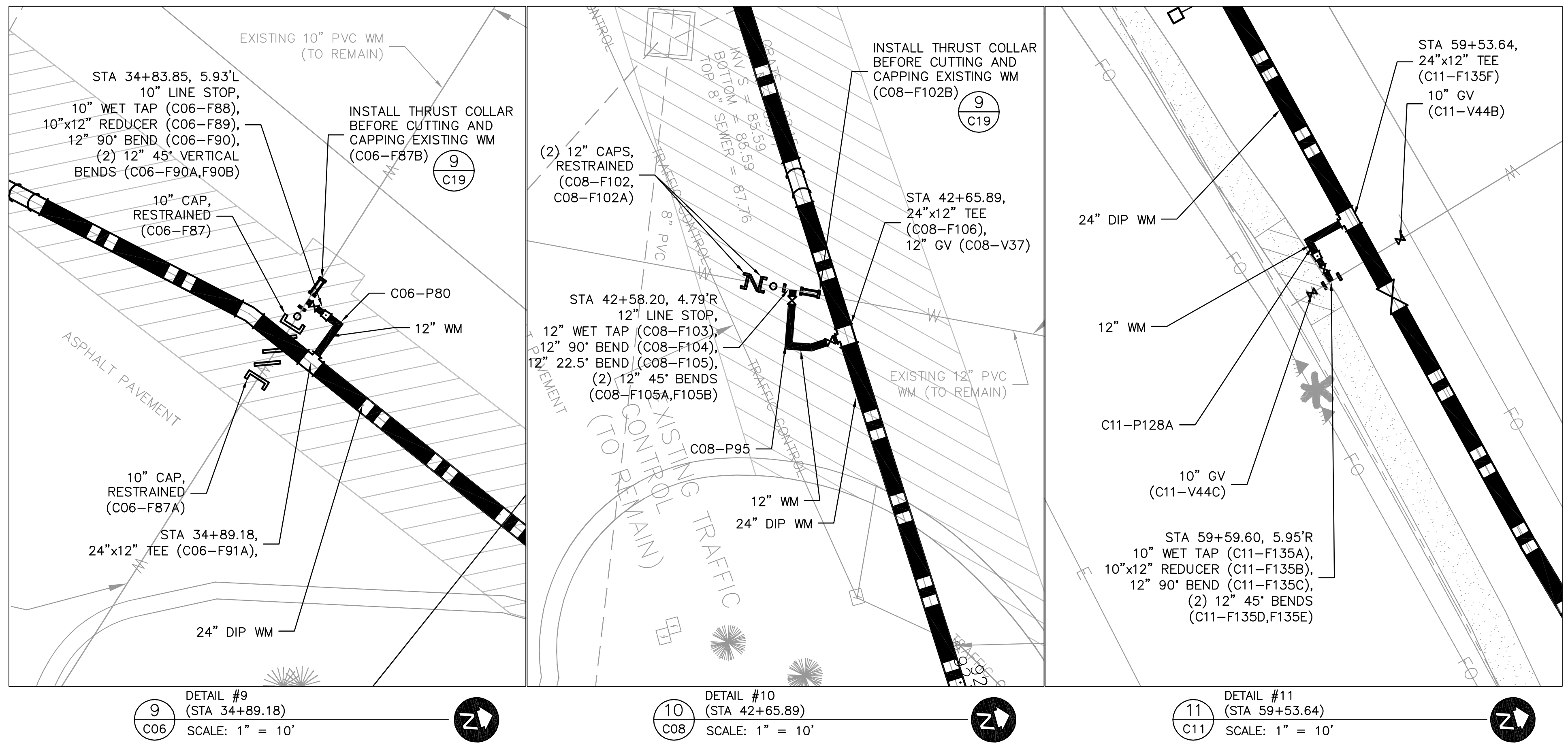
Designed CLK
Drawn CTB
Checked RLL
Reviewed MDP
Approved CLK
Date 4/21/14

ORANGE COUNTY UTILITIES
WESTWOOD BOULEVARD 24-INCH WATER MAIN
CIVIL
WATER SERVICE RECONNECTION DETAILS

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C12	SHEET NO.: 17 OF 25



Parent Sheet: Set: 110011_WESTWOOD Rev/Plot by: ROBERT L. LUPO Rev on: 3/25/2014 9:23 AM Individual File Path: \\PROJETS\110011-OCU WESTWOOD BLD WM\DESIGN_DRAWINGS\FINALDESIGN\18_C13.DWG



DETAIL #9
 9 (STA 34+89.18)
 C06 SCALE: 1" = 10'

DETAIL #10
 10 (STA 42+65.89)
 C08 SCALE: 1" = 10'

DETAIL #11
 11 (STA 59+53.64)
 C11 SCALE: 1" = 10'



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

Designed_CIK
 Drawn_CTB
 Checked_RLL
 Reviewed_MDP
 Approved_CIK
 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 WATER SERVICE RECONNECTION DETAILS

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C13	SHEET NO.: 18 OF 25



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358

Parent Sheet: Set: 110011_WESTWOOD Rev/Plot by: ROBERT L. LUPO Rev. on: 3/21/2014 2:41 PM Individual File Path: R:\PROJECTS\110011-OCU WESTWOOD BLDG WM\DESIGN\DRAWINGS\FINALDESIGN\19_C14.DWG

FITTING							
ID Number	Drawing #	Easting	Northing	Elevation	Main Type	Fitting Type	Comments
C01-F1	C01				Water Main	Tapping Sleeve	12" PW
C01-F1A	C01				Water Main	Cap	12" PW
C01-F1B	C01				Water Main	Thrust Collar	12" PW
C01-F2	C01				Water Main	90° Bend	12" PW
C01-F3	C01				Water Main	90° Bend	12" PW
C01-F3A	C01				Water Main	45° Bend	12" PW
C01-F4	C01				Water Main	Reducer	24"x12" PW
C01-F4A	C01				Water Main	Tee	24" PW
C01-F6	C01				Water Main	45° Bend	24" PW
C01-F7	C01				Water Main	45° Bend	24" PW
C01-F8A	C01/C12				Water Main	Cap	10" PW
C01-F8B	C01/C12				Water Main	Wet Tap	10" PW
C01-F8C	C01/C12				Water Main	Cap	10" PW
C01-F8D	C01/C12				Water Main	Wet Tap	10" PW
C01-F8E	C01/C12				Water Main	Thrust Collar	10" PW
C01-F8F	C01/C12				Water Main	Thrust Collar	10" PW
C01-F9	C01/C12				Water Main	Reducer	12"x10" PW
C01-F9A	C01/C12				Water Main	Reducer	12"x10" PW
C01-F10	C01/C12				Water Main	90° Bend	12" PW
C01-F10A	C01/C12				Water Main	90° Bend	12" PW
C01-F10B	C01/C12				Water Main	90° Bend	12" PW
C01-F10C	C01/C12				Water Main	90° Bend	12" PW
C01-F11	C01/C12				Water Main	Tee	24"x12" PW
C01-F11A	C01/C12				Water Main	Tee	24"x12" PW
C01-F12	C01				Water Main	45° Bend	24" PW
C01-F13	C01				Water Main	45° Bend	24" PW
C01-F14	C01				Water Main	Tee	24"x6" PW
C01-F14A	C01				Water Main	Tee	24"x12" FP
C01-F14B	C01				Water Main	Wet Tap	10" PW
C01-F14C	C01				Water Main	Reducer	12"x10" PW
C01-F14D	C01				Water Main	11.25° Bend	12" PW
C01-F14E	C01				Water Main	90° Bend	12" PW
C01-F14F	C01				Water Main	90° Bend	12" PW
C01-F14G	C01				Water Main	Cap	10" PW
C01-F14H	C01				Water Main	Thrust Collar	10" PW
C02-F15	C02/C12				Water Main	Tee	24"x12" PW
C02-F16	C02/C12				Water Main	90° Bend	12" PW
C02-F16A	C02/C12				Water Main	45° Bend	12" PW
C02-F16B	C02/C12				Water Main	45° Bend	12" PW
C02-F17	C02/C12				Water Main	Reducer	12"x10" PW
C02-F18	C02/C12				Water Main	Wet Tap	10" PW
C02-F19	C02/C12				Water Main	Cap	10" PW
C02-F19A	C02/C12				Water Main	Thrust Collar	10" PW
C02-F20	C02				Water Main	45° Bend	24" PW
C02-F21	C02				Water Main	45° Bend	24" PW
C02-F22	C02				Water Main	22.5° Bend	24" PW
C02-F23	C02				Water Main	22.5° Bend	24" PW
C02-F23A	C02				Water Main	Tee	24"x4" PW
C02-F23B	C02				Water Main	Reducer	4"x2" PW
C02-F24	C02				Water Main	Tee	24"x6" FP
C02-F24A	C02/C12				Water Main	Thrust Collar	10" PW
C02-F25	C02/C12				Water Main	Tee	24"x12" PW
C02-F26	C02/C12				Water Main	90° Bend	12" PW
C02-F26A	C02/C12				Water Main	45° Bend	12" PW
C02-F26B	C02/C12				Water Main	45° Bend	12" PW
C02-F27	C02/C12				Water Main	Reducer	12"x10" PW
C02-F28	C02/C12				Water Main	Cap	10" PW
C02-F29	C02/C12				Water Main	Wet Tap	10" PW
C03-F30	C03				Water Main	45° Bend	24" PW
C03-F31	C03				Water Main	45° Bend	24" PW
C03-F32	C03				Water Main	45° Bend	24" PW
C03-F33	C03				Water Main	45° Bend	24" PW
C03-F34	C03/C12				Water Main	Cap	10" PW

FITTING							
ID Number	Drawing #	Easting	Northing	Elevation	Main Type	Fitting Type	Comments
C03-F34A	C03/C12				Water Main	Thrust Collar	10" PW
C03-F35	C03/C12				Water Main	Wet Tap	10" PW
C03-F36	C03/C12				Water Main	Reducer	12"x10" PW
C03-F37	C03/C12				Water Main	90° Bend	12" PW
C03-F37A	C03/C12				Water Main	45° Bend	12" Bend
C03-F37B	C03/C12				Water Main	45° Bend	12" Bend
C03-F38	C03/C12				Water Main	Tee	24"x12" PW
C03-F39	C03				Water Main	11.25° Bend	24" PW
C03-F40	C03				Water Main	11.25° Bend	24" PW
C03-F41	C03				Water Main	Tee	24"x6" FP
C03-F42	C03				Water Main	45° Bend	24" PW
C03-F43	C03				Water Main	45° Bend	24" PW
C03-F44	C03				Water Main	45° Bend	24" PW
C03-F45	C03				Water Main	45° Bend	24" PW
C03-F46	C03				Water Main	45° Bend	24" PW
C03-F47	C03				Water Main	45° Bend	24" PW
C03-F48	C03/C12				Water Main	Cap	10" PW
C03-F48A	C03/C12				Water Main	Thrust Collar	10" PW
C03-F49	C03/C12				Water Main	Wet Tap	10" PW
C03-F50	C03/C12				Water Main	Reducer	12"x10" PW
C03-F51	C03/C12				Water Main	90° Bend	12" PW
C03-F52	C03/C12				Water Main	Tee	24"x12" PW
C03-F53	C03				Water Main	45° Bend	24" PW
C03-F54	C03				Water Main	45° Bend	24" PW
C04-F55	C04				Water Main	45° Bend	24" PW
C04-F56	C04				Water Main	45° Bend	24" PW
C04-F57	C04				Water Main	Tee	24"x6" FP
C04-F58	C04/C12				Water Main	Cap	10" PW
C04-F58A	C04/C12				Water Main	Thrust Collar	10" PW
C04-F59	C04/C12				Water Main	Wet Tap	10" PW
C04-F60	C04/C12				Water Main	Reducer	12"x10" PW
C04-F61	C04/C12				Water Main	90° Bend	12" PW
C04-F61A	C04/C12				Water Main	45° Bend	12" PW
C04-F61B	C04/C12				Water Main	45° Bend	12" PW
C04-F62	C04/C12				Water Main	Tee	24"x12" PW
C04-F63	C04				Water Main	45° Bend	24" PW
C04-F63A	C04				Water Main	45° Bend	24" PW
C05-F64	C05				Water Main	90° Bend	24" PW
C05-F65	C05				Water Main	Tee	24"x6" FP
C05-F66	C05				Water Main	90° Bend	6" PW
C05-F67	C05				Water Main	45° Bend	24" PW
C05-F68	C05				Water Main	45° Bend	24" PW
C05-F69	C05				Water Main	90° Bend	24" PW
C05-F71	C05				Water Main	Tee	24"x4" PW
C05-F71A	C05				Water Main	Reducer	4"x2" PW
C05-F72	C05/C12				Water Main	Cap	10" PW
C05-F72A	C05/C12				Water Main	Cap	10" PW
C05-F72B	C05/C12				Water Main	Thrust Collar	10" PW
C05-F73	C05/C12				Water Main	Wet Tap	10" PW
C05-F74	C05/C12				Water Main	Reducer	12"x10" PW
C05-F75	C05/C12				Water Main	90° Bend	12" PW
C05-F75A	C05/C12				Water Main	45° Bend	12" PW
C05-F75B	C05/C12				Water Main	45° Bend	12" PW
C05-F76	C05/C12				Water Main	Tee	24"x12" PW
C05-F77	C05				Water Main	11.25° Bend	24" PW
C05-F78	C05				Water Main	11.25° Bend	24" PW
C06-F79	C06/C12				Water Main	Cap	10" PW
C06-F79A	C06/C12				Water Main	Cap	10" PW
C06-F79B	C06/C12				Water Main	Thrust Collar	10" PW
C06-F80	C06/C12				Water Main	Wet Tap	10" PW
C06-F81	C06/C12				Water Main	Reducer	12"x10" PW
C06-F82	C06/C12				Water Main	90° Bend	12" PW
C06-F82A	C06/C12				Water Main	45° Bend	12" PW

FITTING							
ID Number	Drawing #	Easting	Northing	Elevation	Main Type	Fitting Type	Comments
C06-F82B	C06/C12				Water Main	45° Bend	12" PW
C06-F83A	C06/C12				Water Main	Tee	24"x12" PW
C06-F83B	C06				Water Main	Tee	10"x6" FP
C06-F84	C06				Water Main	11.25° Bend	24" PW
C06-F85	C06				Water Main	11.25° Bend	24" PW
C06-F85A	C06				Water Main	45° Bend	24" PW
C06-F85B	C06				Water Main	45° Bend	24" PW
C06-F85C	C06				Water Main	45° Bend	24" PW
C06-F85D	C06				Water Main	45° Bend	24" PW
C06-F86	C06				Water Main	11.25° Bend	24" PW
C06-F87	C06/C12				Water Main	Cap	10" PW
C06-F87A	C06/C12				Water Main	Cap	10" PW
C06-F87B	C06/C12				Water Main	Thrust Collar	10" PW
C06-F88	C06/C12				Water Main	Wet Tap	10" PW
C06-F89	C06/C12				Water Main	Reducer	12"x10" PW
C06-F90	C06/C12				Water Main	90° Bend	12" PW
C06-F90A	C06/C12				Water Main	45° Bend	12" PW
C06-F90B	C06/C12				Water Main	45° Bend	12" PW
C06-F91A	C06/C12				Water Main	Tee	24"x12" PW
C06-F91B	C06				Water Main	Tee	10"x6" PW
C06-F91C	C06				Water Main	90° Bend	6" FP
C06-F91D	C07				Water Main	Tee	24"x4" PW
C06-F91E	C07				Water Main	Reducer	4"x2" PW
C07-F92	C07				Water Main	11.25° Bend	24" PW
C07-F93	C07				Water Main	Tee	24"x12" PW
C07-F93A	C07				Water Main	45° Bend	12" PW
C07-F93B	C07				Water Main	45° Bend	12" PW
C07-F94	C07				Water Main	Reducer	12"x6" FP
C07-F95	C07				Water Main	11.25° Bend	24" PW
C08-F96	C08				Water Main	11.25° Bend	24" PW
C08-F97	C08				Water Main	45° Bend	24" PW
C08-F98	C08				Water Main	45° Bend	24" PW
C08-F99	C08				Water Main	22.5° Bend	24" PW
C08-F100	C08				Water Main	45° Bend	24" PW
C08-F101	C08				Water Main	45° Bend	24" PW
C08-F102	C08/C12				Water Main	Cap	12" PW
C08-F102A	C08/C12				Water Main	Cap	12" PW
C08-F102B	C08/C12				Water Main	Thrust Collar	12" PW
C08-F103	C08/C12				Water Main	Wet Tap	12" PW
C08-F104	C08/C12				Water Main	90° Bend	12" PW
C08-F105	C08/C12				Water Main	22.5° Bend	12" PW
C08-F105A	C08/C12				Water Main	45° Bend	12" PW
C08-F105B	C08/C12				Water Main	45° Bend	12" PW
C08-F106	C08/C12				Water Main	Tee	24"x12" PW
C08-F107	C08				Water Main	Tapping Sleeve	12"x6" FP
C08-F109	C08				Water Main	11.25° Bend	24" PW
C08-F110	C08				Water Main	45° Bend	24" PW
C08-F111	C08				Water Main	45° Bend	24" PW
C08-F112	C08				Water Main	Tee	24"x12" FP
C08-F113	C08				Water Main	Reducer	12"x6" FP
C09-F114	C09				Water Main	45° Bend	24" PW
C09-F115	C09				Water Main	45° Bend	24" PW
C06-F115A	C09				Water Main	Tee	24"x4" PW
C06-F115B	C09				Water Main	Reducer	4"x2" PW
C09-F116	C09				Water Main	11.25° Bend	24" PW
C09-F117	C09				Water Main	45° Bend	24" PW
C09-F118	C09				Water Main	45° Bend	24" PW
C09-F119	C09				Water Main	11.25° Bend	24" PW
C09-F120	C09				Water Main	45° Bend	24" PW
C09-F121	C09				Water Main	45° Bend	24" PW
C06-F121A	C09				Water Main	Tee	24"x4" PW
C06-F121B	C09				Water Main	Reducer	4"x2" PW
C09-F122	C09				Water Main	11.25° Bend	24" PW



0	4/21/14	ISSUED FOR BID	CTB
REV	DATE	DESCRIPTION	BY

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

Designed: CLK
 Drawn: CTB
 Checked: RLL
 Reviewed: MDP
 Approved: CLK
 Date: 4/21/14

Parent: Sheet: Set: 110011_WESTWOOD_Rev/Plot by: ROBERT L. LUPO Rev on: 3/21/2014 2:41 PM Individual File Path: R:\PROJECTS\110011-OCU WESTWOOD BLVD\DESIGN_DRAWINGS\FINALDESIGN\20 C15.DWG

FITTING							
ID Number	Drawing #	Easting	Northing	Elevation	Main Type	Fitting Type	Comments
C09-F123	C09				Water Main	45' Bend	24" PW
C09-F124	C09				Water Main	45' Bend	24" PW
C09-F125	C09				Water Main	45' Bend	24" PW
C09-F126	C09				Water Main	45' Bend	24" PW
C09-F127	C09				Water Main	Tee	24"x6" FP
C09-F128	C09				Water Main	11.25' Bend	24" PW
C10-F129	C10				Water Main	45' Bend	24" PW
C10-F130	C10				Water Main	45' Bend	24" PW
C10-F131	C10				Water Main	Tee	24"x6" FP
C06-F131A	C10				Water Main	Tee	24"x4" PW
C06-F131B	C10				Water Main	Reducer	4"x2" PW
C11-F132	C11				Water Main	45' Bend	24" PW
C11-F133	C11				Water Main	45' Bend	24" PW
C11-F134	C11				Water Main	45' Bend	24" PW
C11-F135	C11				Water Main	45' Bend	24" PW
C11-F135A	C11/C13				Water Main	Wet Tap	10" PW
C11-F135B	C11/C13				Water Main	Wet Tap	12"x10" PW
C11-F135C	C11/C13				Water Main	90' Bend	12" PW
C11-F135D	C11/C13				Water Main	45' Bend	12" PW
C11-F135E	C11/C13				Water Main	45' Bend	10" PW
C11-F135F	C11/C13				Water Main	Tee	24"x12" PW
C11-135G	C11				Water Main	Tee	24"x4" PW
C11-135H	C11				Water Main	Reducer	4"x2" PW
C11-F136	C11				Water Main	Tee	24"x6" FP
C11-F137	C11				Water Main	11.25' Bend	24" PW
C11-F138	C11				Water Main	45' Bend	24" PW
C11-F139	C11				Water Main	45' Bend	24" PW
C11-F140	C11				Water Main	Tee	24" PW
C11-F141	C11				Water Main	45' Bend	24" PW
C11-F142	C11				Water Main	45' Bend	24" PW

VALVE								
ID Number	Drawing #	Easting	Northing	Elevation	Valve Type	Main Type	Valve Size	Comments
C01-V1	C01				Tapping Valve	Water Main	12	
C01-V1A	C01				Plug	Water Main	24	
C01-V2	C01/C12				Gate	Water Main	12	
C01-V4	C01				Gate	Fire	6	to FH1
C01-V4A	C01				Gate	Water Main	12	
C02-V5	C02				Gate	Water Main	24	
C02-V6	C02/C12				Gate	Water Main	12	
C02-V7	C02				Gate	Water Main	2	
C02-V7A	C02				Air Release	Water Main	2	
C02-V8	C02				Gate	Fire	6	to FH2
C02-V10A	C02				Gate	Water Main	24	
C03-V12	C03/C12				Gate	Water Main	12	
C03-V13	C03				Gate	Fire	6	to FH3
C03-V14	C03				Gate	Water Main	24	
C03-V16	C03/C12				Gate	Water Main	12	
C04-V17	C04				Gate	Fire	6	to FH4
C04-V19	C04/C12				Gate	Water Main	12	
C04-V20	C04				Gate	Water Main	24	
C05-V21	C05				Gate	Fire	6	to FH5
C05-V22A	C05				Gate	Water Main	2	
C05-V22B	C05				Air Release	Water Main	2	
C05-V25	C05				Gate	Water Main	24	
C06-V26	C06				Gate	Fire	6	to FH6
C06-V26A	C06				Gate	Fire	6	to FH6
C06-V29	C06				Gate	Water Main	24	
C06-V32	C06				Gate	Fire	6	to FH7
C07-V32B	C02				Gate	Water Main	2	
C07-V32C	C02				Air Release	Water Main	2	

VALVE								
ID Number	Drawing #	Easting	Northing	Elevation	Valve Type	Main Type	Valve Size	Comments
C07-V33	C07				Gate	Water Main	24	
C07-V34	C07				Gate	Fire	12	to FH8
C06-V34A	C07				Gate	Fire	6	to FH8
C08-V35	C08				Gate	Water Main	24	
C08-V37	C08/C13				Gate	Water Main	12	
C08-V38	C08				Tapping Valve	Fire	6	to FH9
C08-V39	C08				Gate	Water Main	24	
C09-V39A	C08				Gate	Water Main	2	
C09-V39B	C08				Air Release	Water Main	2	
C09-V39C	C08				Gate	Water Main	2	
C09-V39D	C08				Air Release	Water Main	2	
C08-V40	C08				Gate	Fire	12	to FH10
C08-V40A	C08				Gate	Fire	6	to FH10
C09-V41	C09				Gate	Water Main	24	
C09-V42	C09				Gate	Fire	6	to FH11
C10-V43	C10				Gate	Water Main	24	
C10-V44	C10				Gate	Fire	6	to FH12
C11-44A	C11				Gate	Water Main	24	
C11-44B	C11/C13				Gate	Water Main	10	
C11-44C	C11/C13				Gate	Water Main	10	
C10-V44D	C10				Gate	Water Main	2	
C10-V44E	C10				Air Release	Water Main	2	
C11-V44F	C11				Gate	Water Main	2	
C10-V44G	C11				Air Release	Water Main	2	
C11-V45	C11				Gate	Fire	6	to FH13
C11-V46	C11				Gate	Water Main	24	
C11-V47	C11				Gate	Water Main	24	



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

Issue Certification
 Curtis I. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

Designed_CIK
 Drawn_CTB
 Checked_RLL
 Reviewed_MDP
 Approved_CIK
 Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN

CIVIL

COORDINATE ASSET TABLE

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C15	SHEET NO.: 20 OF 25



REISS ENGINEERING, INC.
 1016 SPRING VILLAS PT
 WINTER SPRINGS, FL 32708
 (407) 679-5358

Parent Sheet Set: 11001_WESTWOOD - Rev/Plot by: ROBERT L. LUPO
 Rev on: 3/21/2014 2:41 PM
 Individual File Path: R:\PROJECTS\11001-OCU WESTWOOD BLVD\DESIGN\DRAWINGS\FINAL\DESIGN_V21_C16.DWG

PIPE												PIPE											
ID Number	Drawing #	Easting	Northing	Elevation	Main Type	Type of Shot	Construction Method	Material	Pressure Class	Manufacturer	Comments	ID Number	Drawing #	Easting	Northing	Elevation	Main Type	Type of Shot	Construction Method	Material	Pressure Class	Manufacturer	Comments
C01-P1	C01				Water Main	Shot on Pipe		DI				C04-P54B	C04				Water Main	Shot on Pipe		DI			
C01-P2	C01				Water Main	Shot on Pipe		DI				C04-P54C	C04				Water Main	Shot on Pipe		DI			
C01-P3	C01				Water Main	Shot on Pipe		DI				C04-P55	C04				Water Main	Shot on Pipe		DI			
C01-P4	C01				Water Main	Shot on Pipe		DI				C04-P56	C04				Water Main	Shot on Pipe		DI			
C01-P5	C01/C12				Water Main	Shot on Pipe		DI				C05-P57	C05				Water Main	Shot on Pipe		DI			
C01-P6	C01/C12				Water Main	Shot on Pipe		DI				C05-P58	C05				Water Main	Shot on Pipe		DI			
C01-P6A	C01/C12				Water Main	Shot on Pipe		DI				C05-P59	C05				Water Main	Shot on Pipe		DI			
C01-P6B	C01				Water Main	Shot on Pipe		DI				C05-P60	C05				Water Main	Shot on Pipe		DI			
C01-P7	C01				Water Main	Shot on Pipe		DI				C05-P61	C05				Water Main	Shot on Pipe		DI			
C01-P8	C01				Water Main	Shot on Pipe		DI				C05-P65	C05				Water Main	Shot on Pipe		DI			
C01-P8A	C01				Water Main	Shot on Pipe		DI				C05-P67	C05/C12				Water Main	Shot on Pipe		DI			
C01-P9	C01				Water Main	Shot on Pipe		DI				C05-P68	C05				Water Main	Shot on Pipe		DI			
C01-P10	C01				Water Main	Shot on Pipe		DI				C05-P69	C05				Water Main	Shot on Pipe		DI			
C01-P11	C01				Water Main	Shot on Pipe		DI				C05-P70	C05				Water Main	Shot on Pipe		DI			
C02-P12	C02				Water Main	Shot on Pipe		DI				C05-P71	C05				Water Main	Shot on Pipe		DI			
C02-P13	C02/C12				Water Main	Shot on Pipe		DI				C06-P72	C06				Water Main	Shot on Pipe		DI			
C02-P14	C02/C12				Water Main	Shot on Pipe		DI				C06-P74	C06/C12				Water Main	Shot on Pipe		DI			
C02-P15	C02				Water Main	Shot on Pipe		DI				C06-P75A	C06				Water Main	Shot on Pipe		DI			
C02-P16	C02				Water Main	Shot on Pipe		DI				C06-P75B	C06				Water Main	Shot on Pipe		DI			
C02-P17	C02				Water Main	Shot on Pipe		DI				C06-P76	C06				Water Main	Shot on Pipe		DI			
C02-P18	C02				Water Main	Shot on Pipe		DI				C06-P77	C06				Water Main	Shot on Pipe		DI			
C02-P19	C02				Water Main	Shot on Pipe		DI				C06-P77A	C06				Water Main	Shot on Pipe		DI			
C02-P20	C02				Water Main	Shot on Pipe		DI				C06-P78	C06				Water Main	Shot on Pipe		DI			
C02-P21	C02/C12				Water Main	Shot on Pipe		DI				C06-P78A	C06				Water Main	Shot on Pipe		DI			
C02-P22	C02				Water Main	Shot on Pipe		DI				C06-P78B	C06				Water Main	Shot on Pipe		DI			
C02-P22A	C02				Water Main	Shot on Pipe		DI				C06-P79	C06				Water Main	Shot on Pipe		DI			
C02-P23	C02				Water Main	Shot on Pipe		DI				C06-P80	C06/C12				Water Main	Shot on Pipe		DI			
C03-P24	C03				Water Main	Shot on Pipe		DI				C06-P81	C06				Water Main	Shot on Pipe		DI			
C03-P25	C03				Water Main	Shot on Pipe		DI				C07-P82	C07				Water Main	Shot on Pipe		DI			
C03-P26	C03				Water Main	Shot on Pipe		DI				C07-P83	C07				Water Main	Shot on Pipe		DI			
C03-P27	C03				Water Main	Shot on Pipe		DI				C07-P84	C07				Water Main	Shot on Pipe		DI			
C03-P29	C03/C12				Water Main	Shot on Pipe		DI				C07-P85	C07				Water Main	Shot on Pipe		DI			
C03-P30	C03				Water Main	Shot on Pipe		DI				C07-P86	C07				Water Main	Shot on Pipe		DI			
C03-P31	C03				Water Main	Shot on Pipe		DI				C07-P87	C07				Water Main	Shot on Pipe		DI			
C03-P32	C03				Water Main	Shot on Pipe		DI				C07-P88	C07				Water Main	Shot on Pipe		DI			
C03-P33	C03				Water Main	Shot on Pipe		DI				C07-P89	C07				Water Main	Shot on Pipe		DI			
C03-P34	C03				Water Main	Shot on Pipe		DI				C08-P90	C08				Water Main	Shot on Pipe		DI			
C03-P35	C03				Water Main	Shot on Pipe		DI				C08-P90A	C08				Water Main	Shot on Pipe		DI			
C03-P36	C03				Water Main	Shot on Pipe		DI				C08-P91	C08				Water Main	Shot on Pipe		DI			
C03-P37	C03				Water Main	Shot on Pipe		DI				C08-P92	C08				Water Main	Shot on Pipe		DI			
C03-P38	C03				Water Main	Shot on Pipe		DI				C08-P93A	C08				Water Main	Shot on Pipe		DI			
C03-P39	C03				Water Main	Shot on Pipe		DI				C08-P93B	C08				Water Main	Shot on Pipe		DI			
C03-P40	C03				Water Main	Shot on Pipe		DI				C08-P95	C08/C12				Water Main	Shot on Pipe		DI			
C03-P42	C03/C12				Water Main	Shot on Pipe		DI				C08-P96	C08				Water Main	Shot on Pipe		DI			
C03-P43	C03				Water Main	Shot on Pipe		DI				C08-P97	C08				Water Main	Shot on Pipe		DI			
C03-P44	C03				Water Main	Shot on Pipe		DI				C08-P98	C08				Water Main	Shot on Pipe		DI			
C03-P45	C03				Water Main	Shot on Pipe		DI				C08-P98A	C08				Water Main	Shot on Pipe		DI			
C04-P46	C04				Water Main	Shot on Pipe		DI				C08-P99	C08				Water Main	Shot on Pipe		DI			
C04-P47	C04				Water Main	Shot on Pipe		DI				C08-P100	C09				Water Main	Shot on Pipe		DI			
C04-P48	C04				Water Main	Shot on Pipe		DI				C08-P101	C09				Water Main	Shot on Pipe		DI			
C04-P49	C04				Water Main	Shot on Pipe		DI				C08-P102	C09				Water Main	Shot on Pipe		DI			
C04-P50	C04				Water Main	Shot on Pipe		DI				C09-P103	C09				Water Main	Shot on Pipe		DI			
C04-P51	C04				Water Main	Shot on Pipe		DI				C09-P104	C09				Water Main	Shot on Pipe		DI			
C04-P53	C04/C12				Water Main	Shot on Pipe		DI				C09-P105	C09				Water Main	Shot on Pipe		DI			
C04-P54	C04				Water Main	Shot on Pipe		DI				C09-P106	C09				Water Main	Shot on Pipe		DI			
C04-P54A	C04				Water Main	Shot on Pipe		DI				C09-P107	C09				Water Main	Shot on Pipe		DI			



0	4/21/14	ISSUED FOR BID	CTB
REV	DATE	DESCRIPTION	BY

Issue Certification
 Curtis L. Kunihiro, P.E.
 Florida P.E. No. 33688
 Reiss Engineering, Inc.
 Certificate of Authorization No. 8181
 1016 Spring Villas Pt.
 Winter Springs, FL 32708

Designed_CIK _____
 Drawn_CTB _____
 Checked_RLL _____
 Reviewed_MDP _____
 Approved_CIK _____

LINE IS 1" AT FULL SIZE

Date 4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN

CIVIL

COORDINATE ASSET TABLE

PROJECT NO.:
 110011

SCALE:
 NOTED

DRAWING NO.
 C16

REVISION:
 0

SHEET NO.:
 21 OF 25



Parent Sheet Set: 110011_WESTWOOD_Rev/Plot by: ROBERT L. LUPO Rev on: 3/21/2014 2:36 PM Individual File Path: \\PROJETS\110011-OCU WESTWOOD BLDG\DESIGN\DRAWINGS\FINAL\DESIGN\22_C17.DWG

PIPE											
ID Number	Drawing #	Easting	Northing	Elevation	Main Type	Type of Shot	Construction Method	Material	Pressure Class	Manufacturer	Comments
C09-P108	C09				Water Main	Shot on Pipe		DI			
C09-P109	C09				Water Main	Shot on Pipe		DI			
C09-P110	C09				Water Main	Shot on Pipe		DI			
C09-P111	C09				Water Main	Shot on Pipe		DI			
C09-P112	C09				Water Main	Shot on Pipe		DI			
C09-P113	C09				Water Main	Shot on Pipe		DI			
C09-P114	C09				Water Main	Shot on Pipe		DI			
C09-P115	C09				Water Main	Shot on Pipe		DI			
C09-P116	C09				Water Main	Shot on Pipe		DI			
C09-P117	C09				Water Main	Shot on Pipe		DI			
C09-P118	C09				Water Main	Shot on Pipe		DI			
C10-P119	C10				Water Main	Shot on Pipe		DI			
C10-P120	C10				Water Main	Shot on Pipe		DI			
C10-P121	C10				Water Main	Shot on Pipe		DI			
C10-P122	C10				Water Main	Shot on Pipe		DI			
C10-P123	C10				Water Main	Shot on Pipe		DI			
C10-P124	C10				Water Main	Shot on Pipe		DI			
C10-P125	C10				Water Main	Shot on Pipe		DI			
C10-P126	C10				Water Main	Shot on Pipe		DI			
C11-P127	C11				Water Main	Shot on Pipe		DI			
C11-P128	C11				Water Main	Shot on Pipe		DI			
C11-P128A	C11				Water Main	Shot on Pipe		DI			
C11-P129	C11				Water Main	Shot on Pipe		DI			
C11-P129A	C11				Water Main	Shot on Pipe		DI			
C11-P130	C11				Water Main	Shot on Pipe		DI			
C11-P130A	C11				Water Main	Shot on Pipe		DI			
C11-P130B	C11				Water Main	Shot on Pipe		DI			
C11-P131	C11				Water Main	Shot on Pipe		DI			
C11-P132	C11				Water Main	Shot on Pipe		DI			
C11-P133	C11				Water Main	Shot on Pipe		DI			

HYDRANT							
ID Number	Drawing #	Easting	Northing	Elevation	Manufacturer	Model #	Comments
C01-FH1	C01						Fire Hydrant Assembly Detail #4 Sheet C16
C02-FH2	C02						Fire Hydrant Assembly Detail #4 Sheet C16
C03-FH3	C03						Fire Hydrant Assembly Detail #4 Sheet C16
C04-FH4	C04						Fire Hydrant Assembly Detail #4 Sheet C16
C05-FH5	C05						Fire Hydrant Assembly Detail #4 Sheet C16
C06-FH6	C06						Fire Hydrant Assembly Detail #4 Sheet C16
C06-FH7	C06						Fire Hydrant Assembly Detail #4 Sheet C16
C07-FH8	C07						Fire Hydrant Assembly Detail #4 Sheet C16
C08-FH9	C08						Fire Hydrant Assembly Detail #4 Sheet C16
C08-FH10	C08						Fire Hydrant Assembly Detail #4 Sheet C16
C09-FH11	C09						Fire Hydrant Assembly Detail #4 Sheet C16
C10-FH12	C10						Fire Hydrant Assembly Detail #4 Sheet C16
C11-FH13	C11						Fire Hydrant Assembly Detail #4 Sheet C16



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 Approved_CIK
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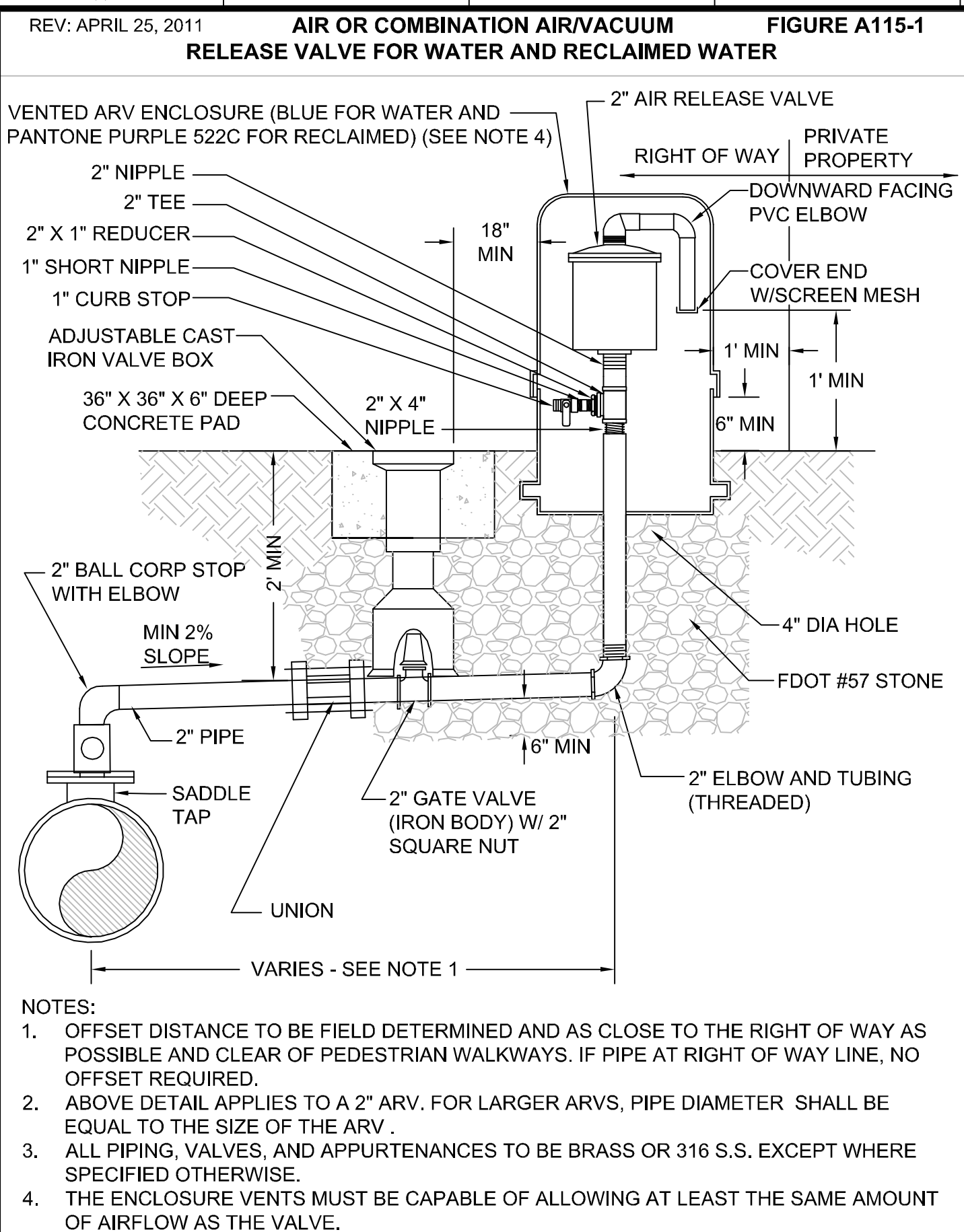
ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN

CIVIL

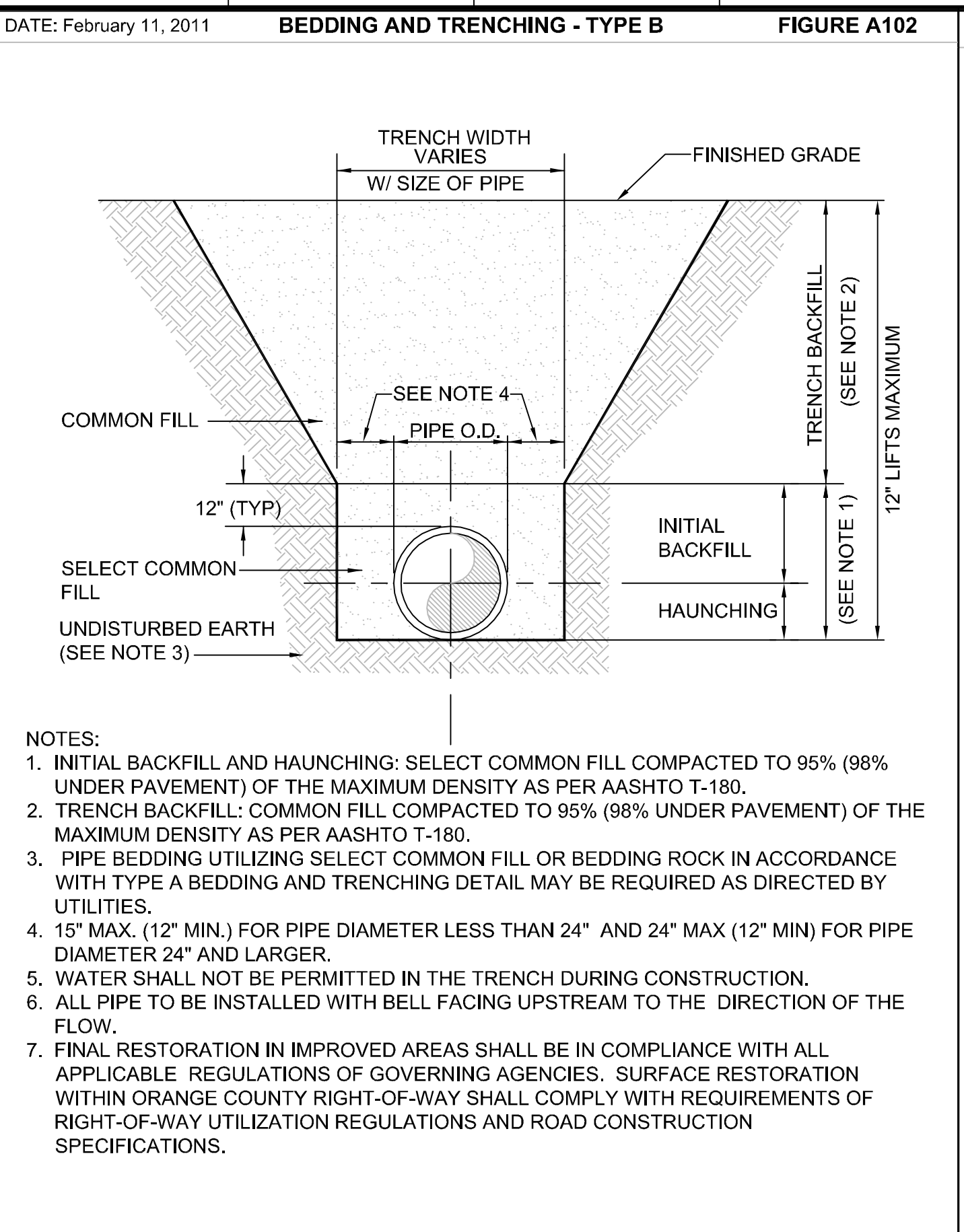
COORDINATE ASSET TABLE

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C17	SHEET NO.: 22 OF 25

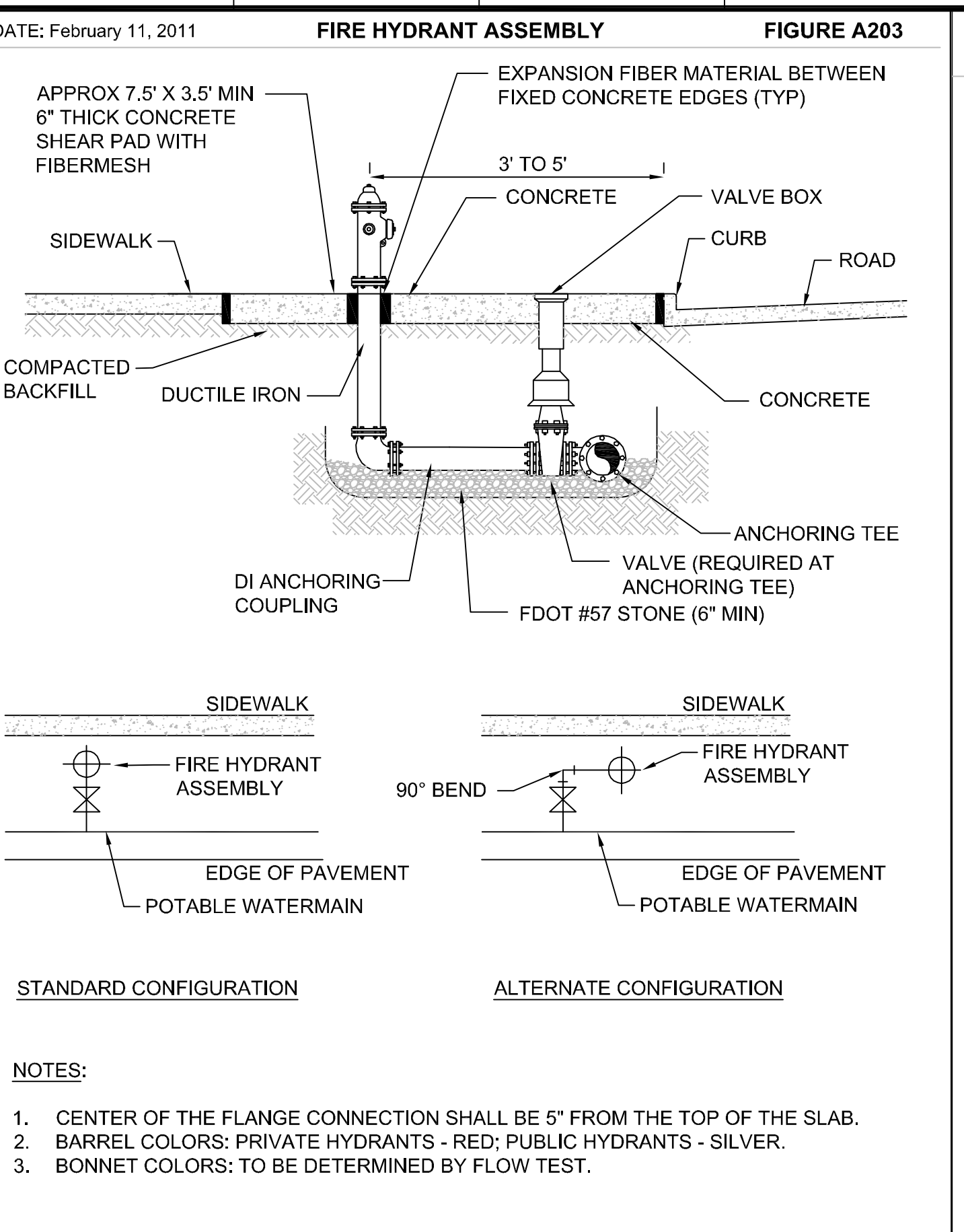




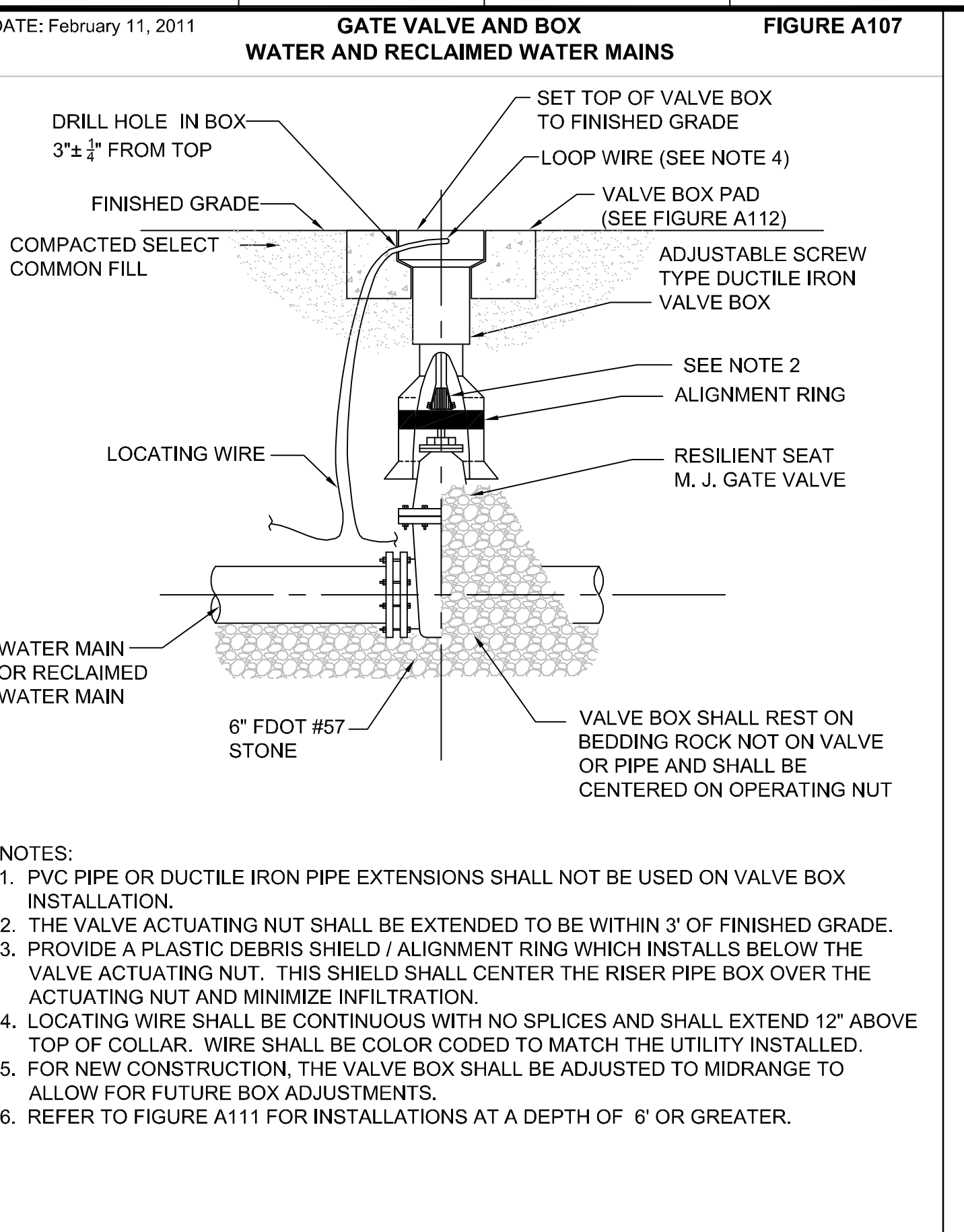
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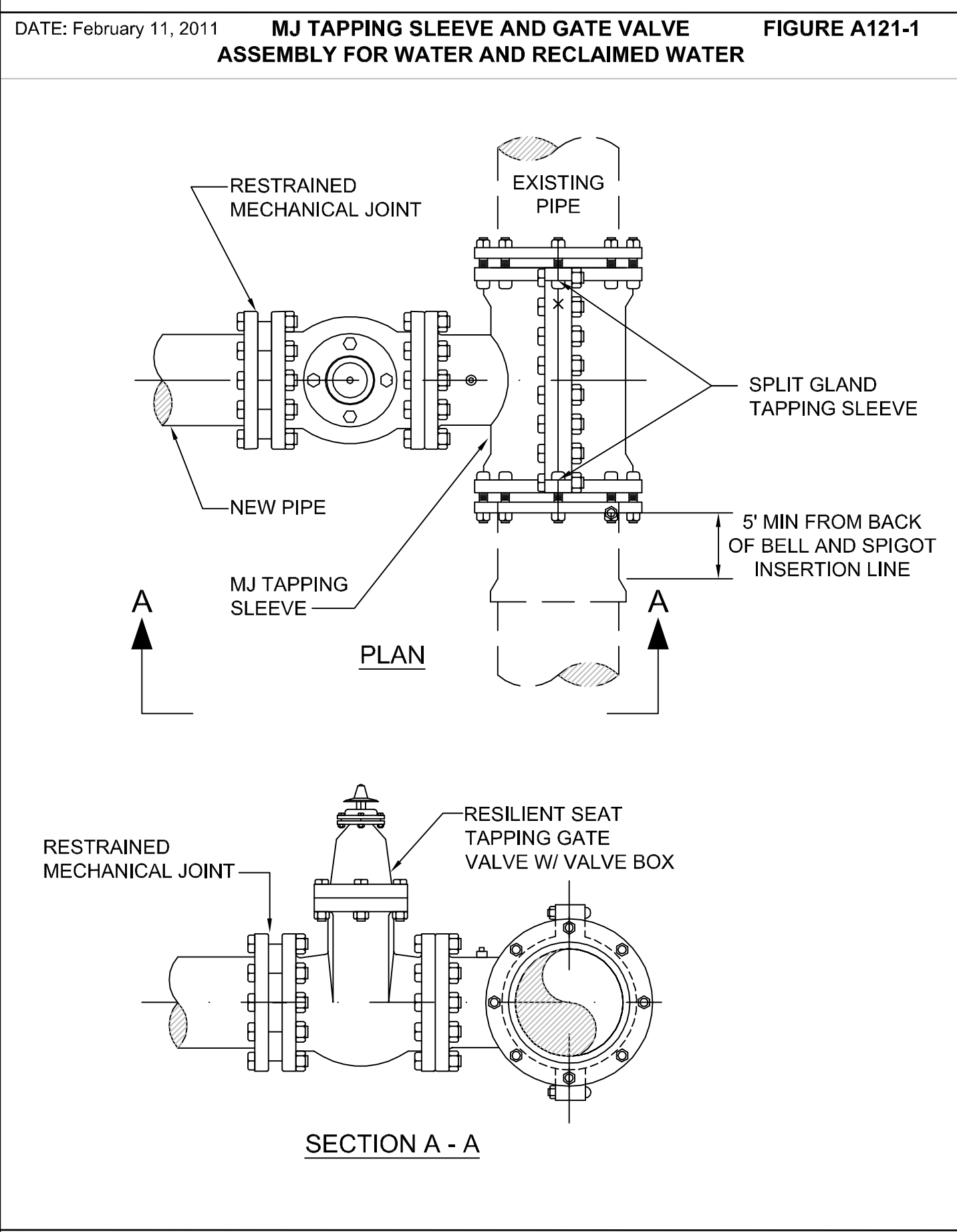
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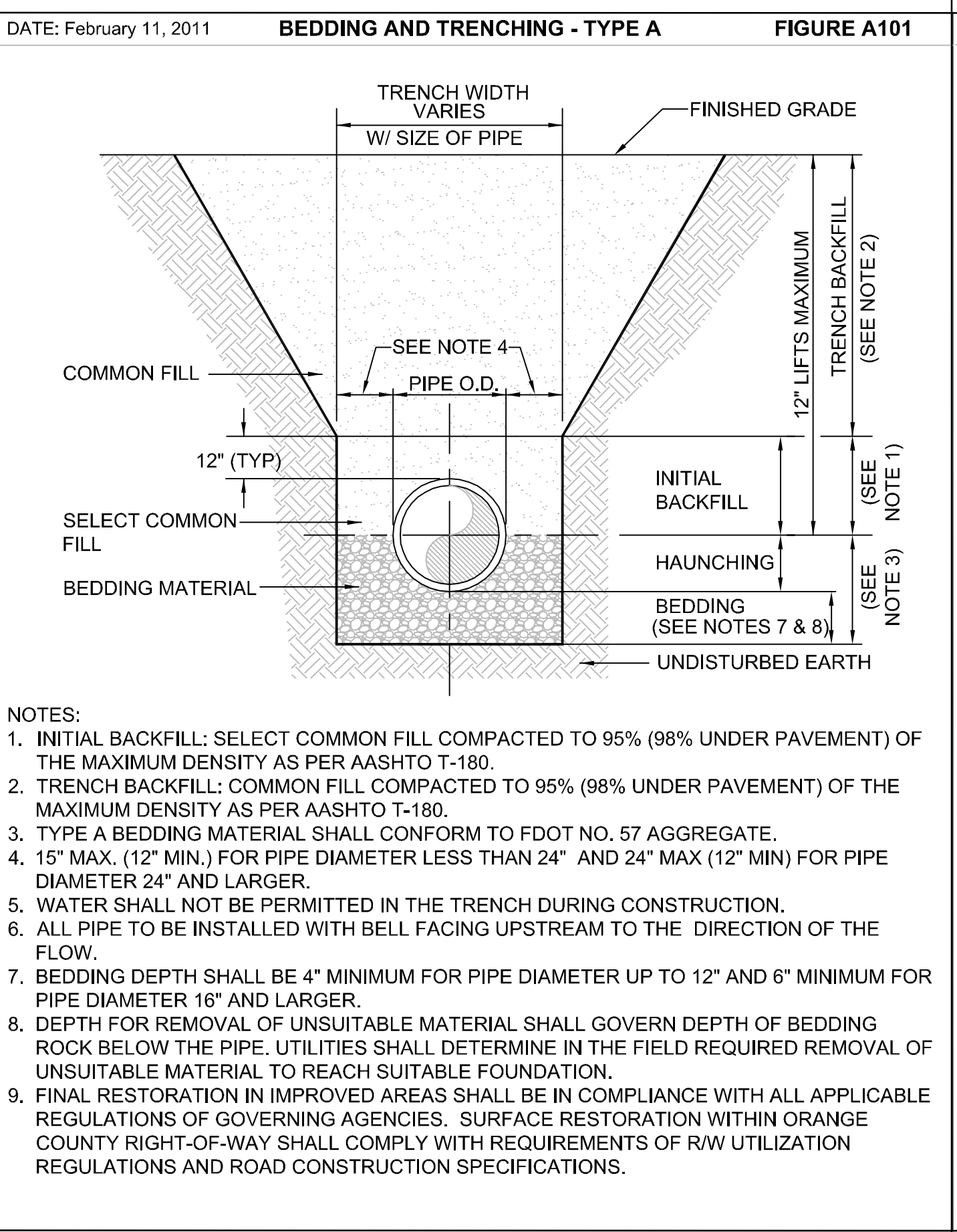
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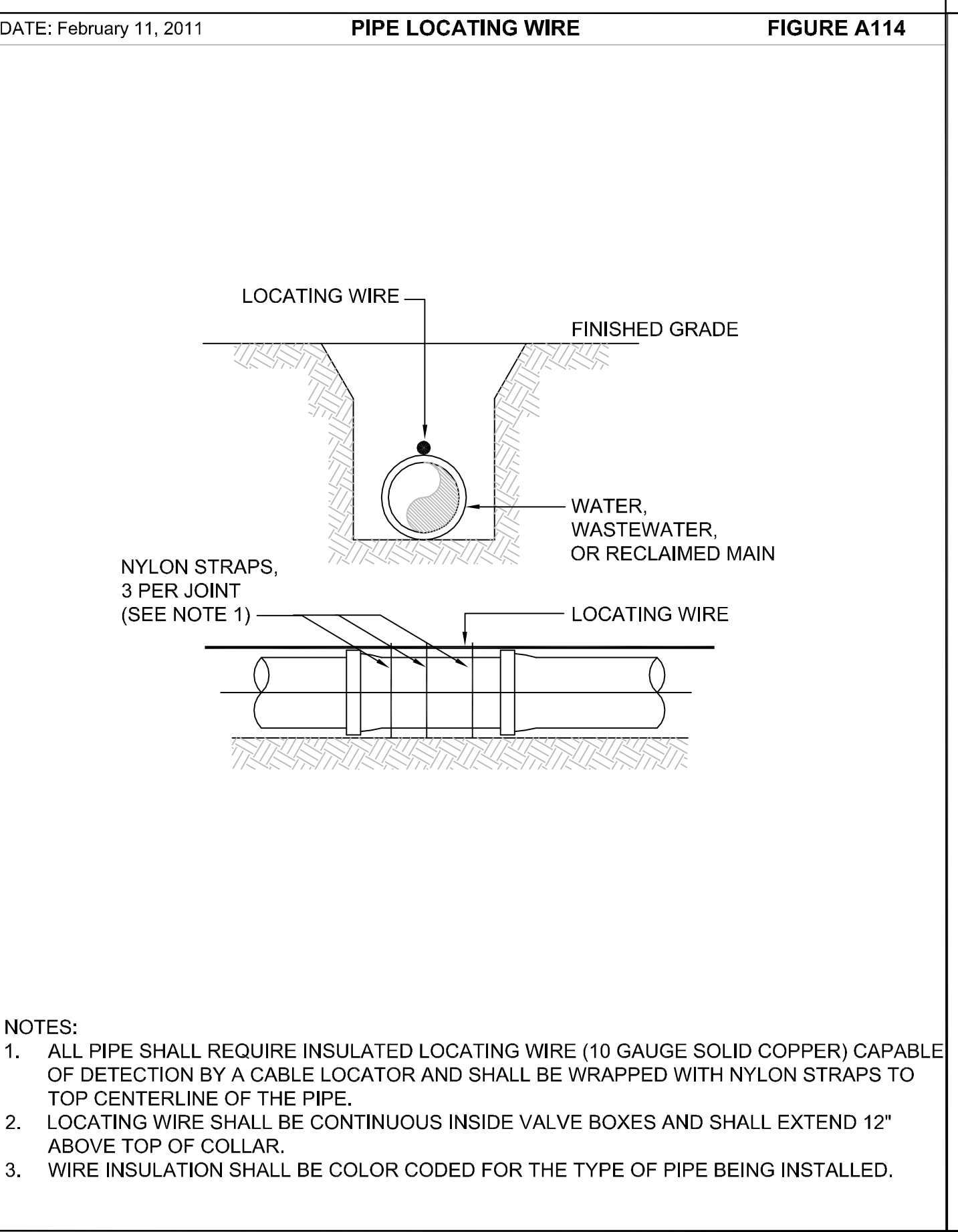
4 DETAIL
SCALE: N.T.S.



5 DETAIL
SCALE: N.T.S.



6 DETAIL
SCALE: N.T.S.



7 DETAIL
SCALE: N.T.S.

Figure A104-1: RESTRAINED PIPE TABLE WATER AND RECLAIMED WATER MAINS

TYPE	MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)									
	PIPE SIZE									
	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.

8 DETAIL
SCALE: N.T.S.



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0	4/21/14	ISSUED FOR BID	CTB

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Florida P.E. No. 33688
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1016 Spring Villas Pt.
Winter Springs, FL 32708

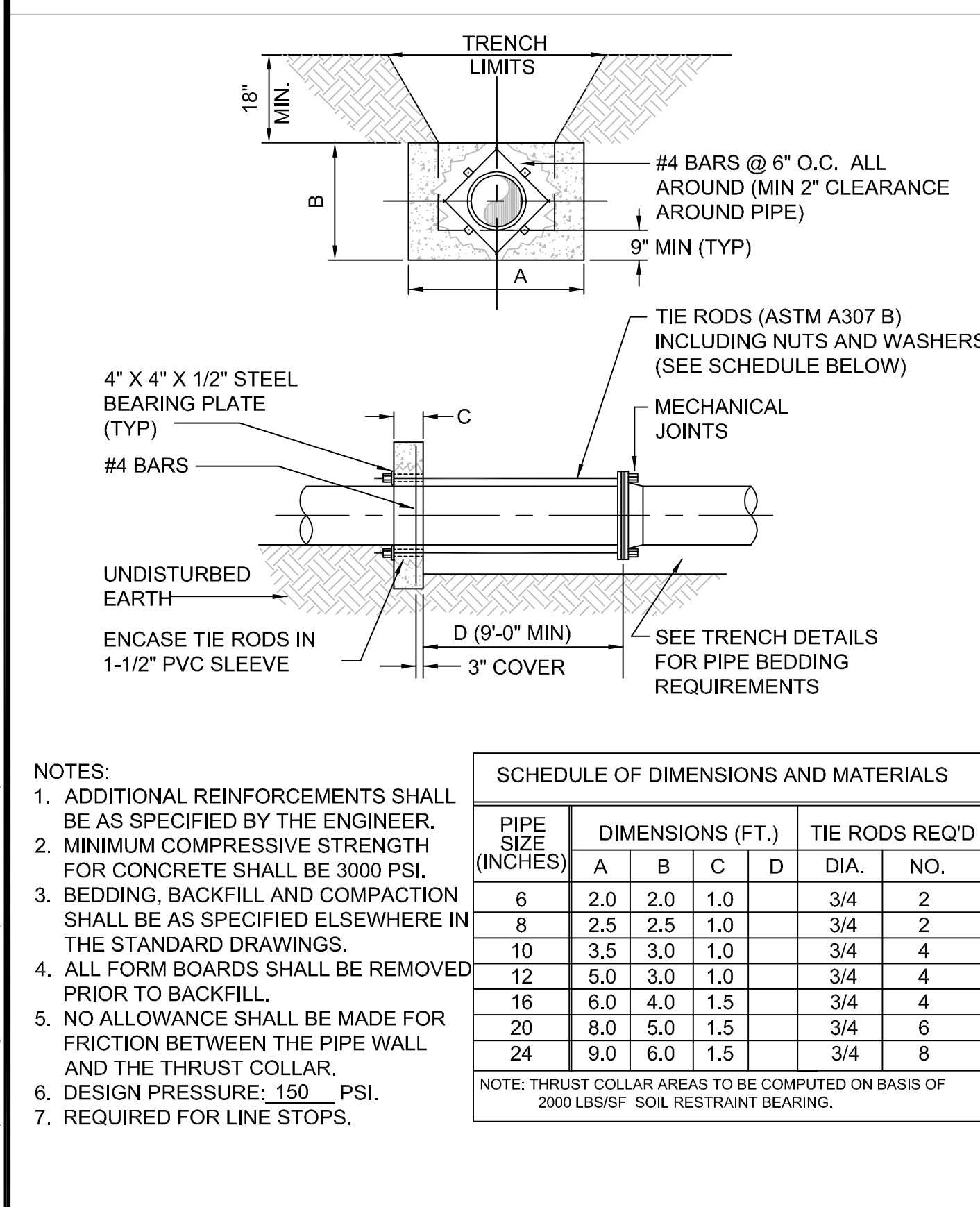
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ORANGE COUNTY UTILITIES
WESTWOOD BOULEVARD 24-INCH WATER MAIN
CIVIL
UTILITY DETAILS

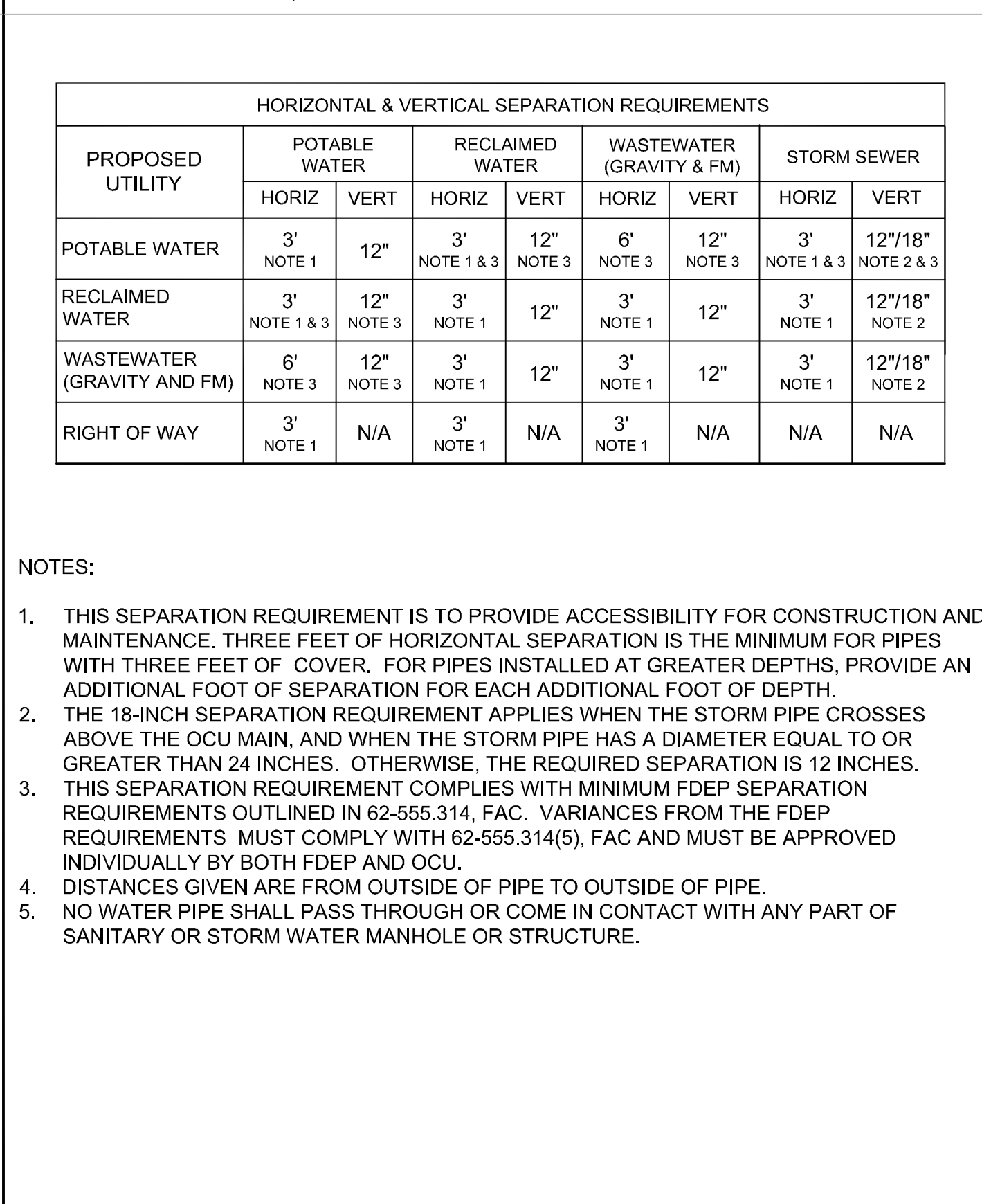
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SCALE:	NOTED
REVISION:	0
DRAWING NO.:	C18
SHEET NO.:	23 OF 25



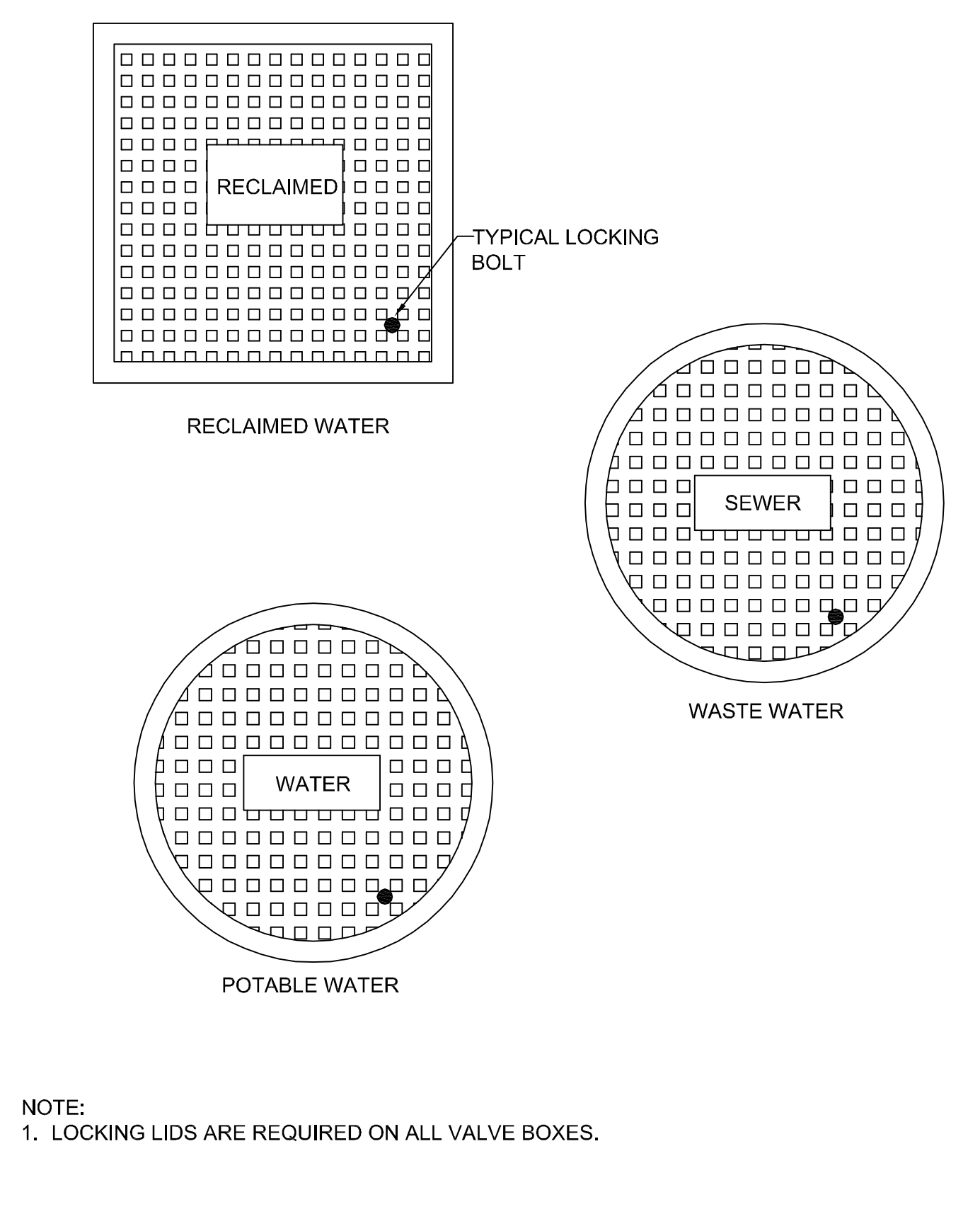
REISS ENGINEERING, INC.
1016 SPRING VILLAS PT
WINTER SPRINGS, FL 32708
(407) 679-5358



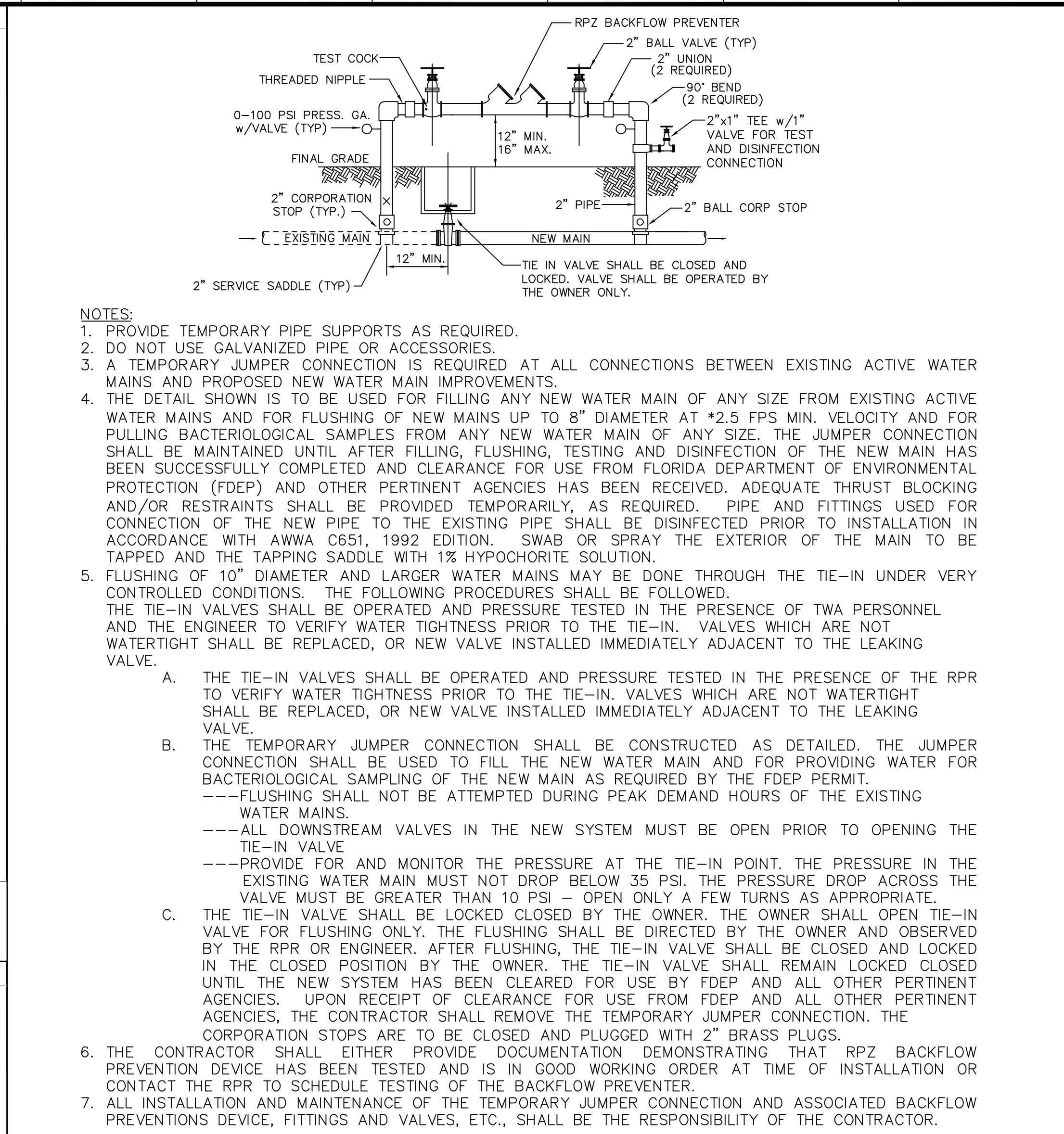
9 DETAIL SCALE: 1" = 1'-0"



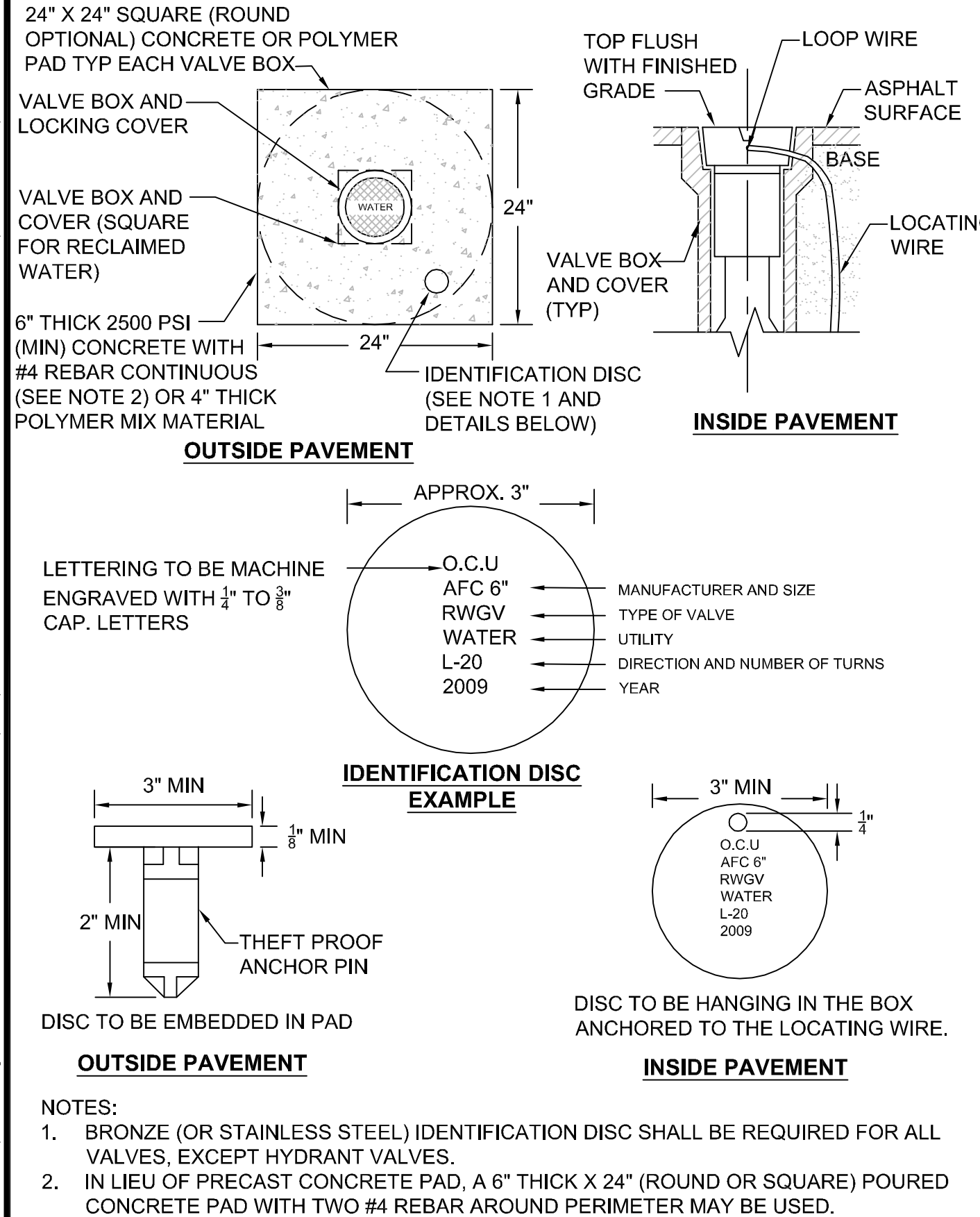
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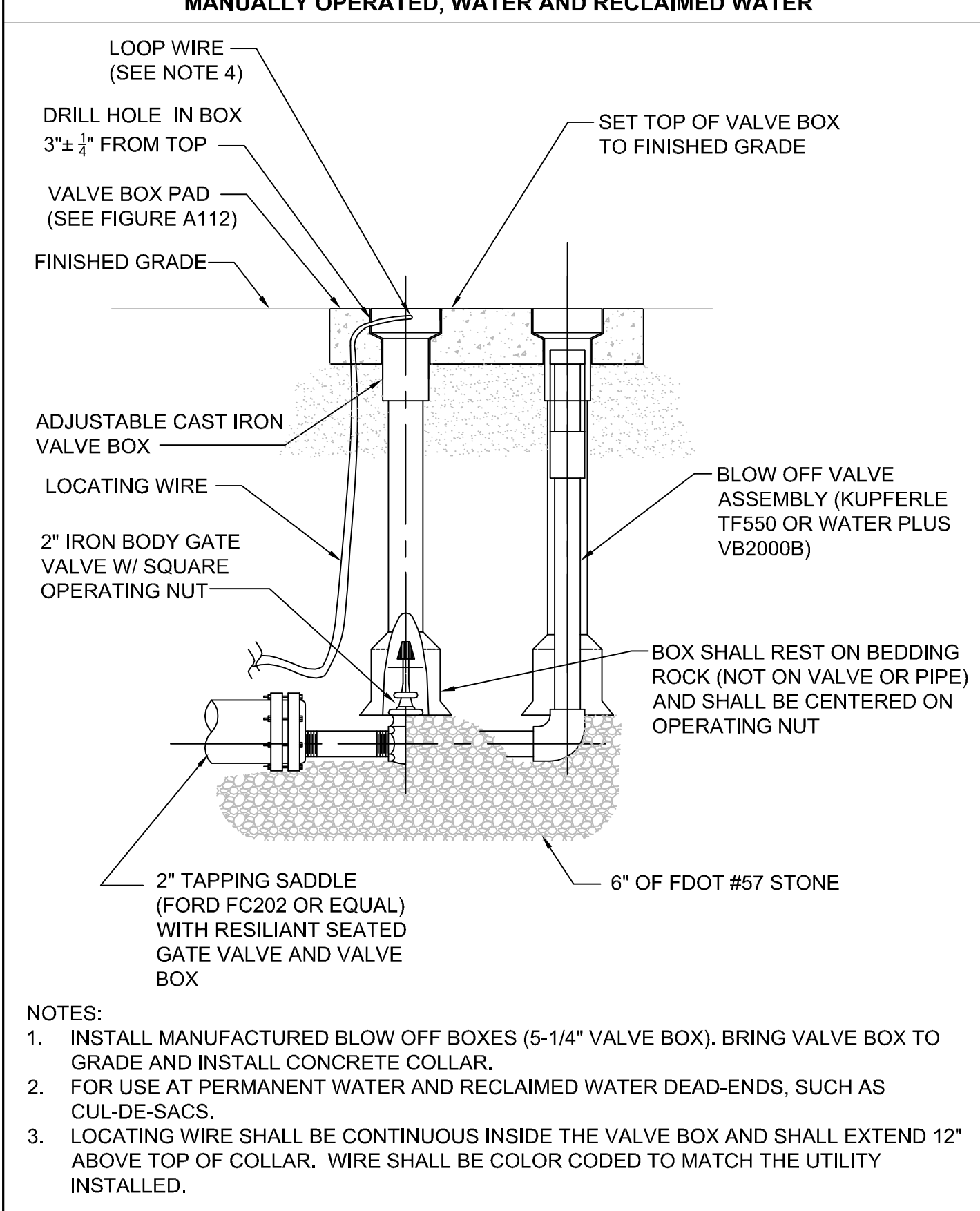
11 DETAIL SCALE: N.T.S.



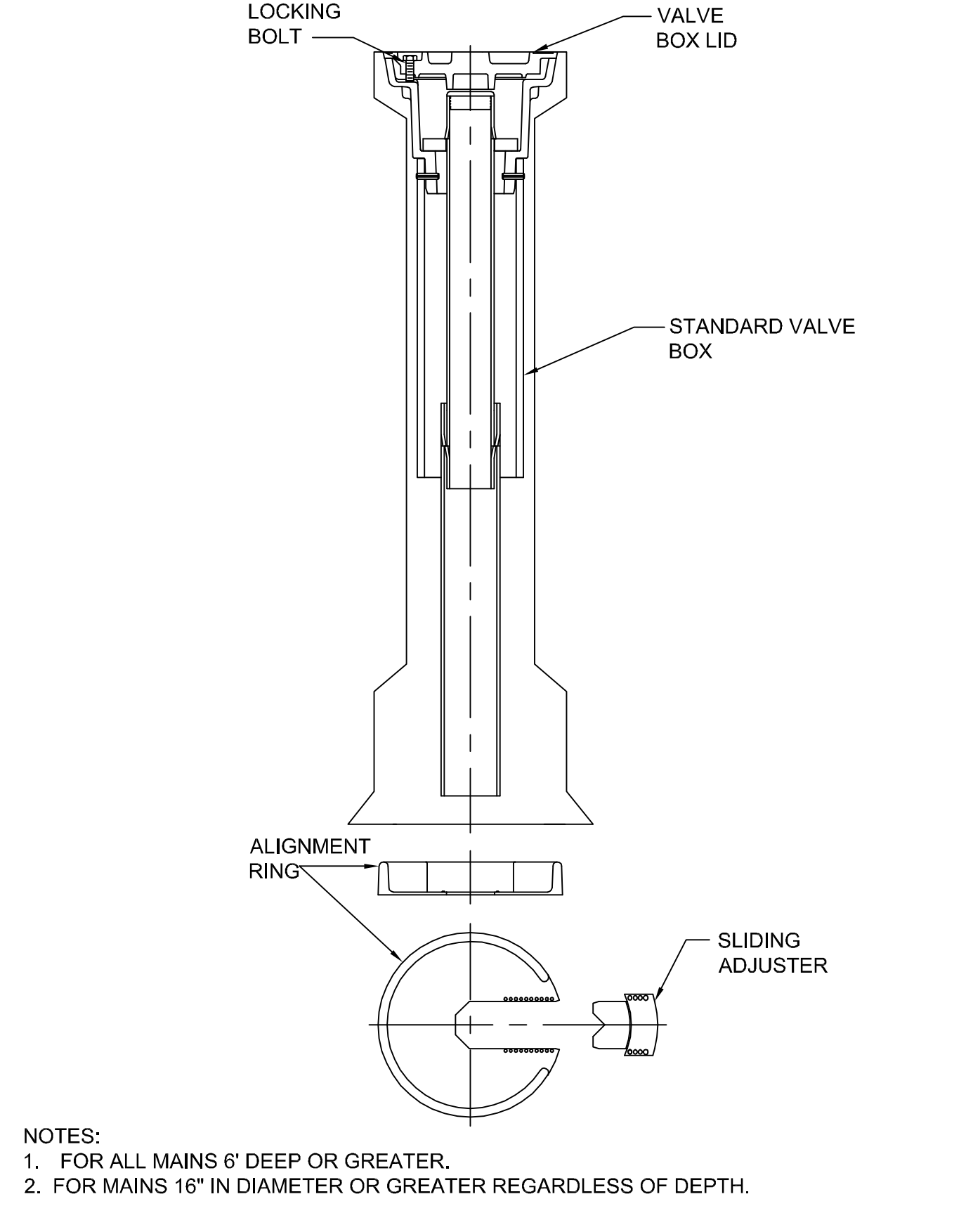
15 TEMPORARY JUMPER CONNECTION SCALE: N.T.S.



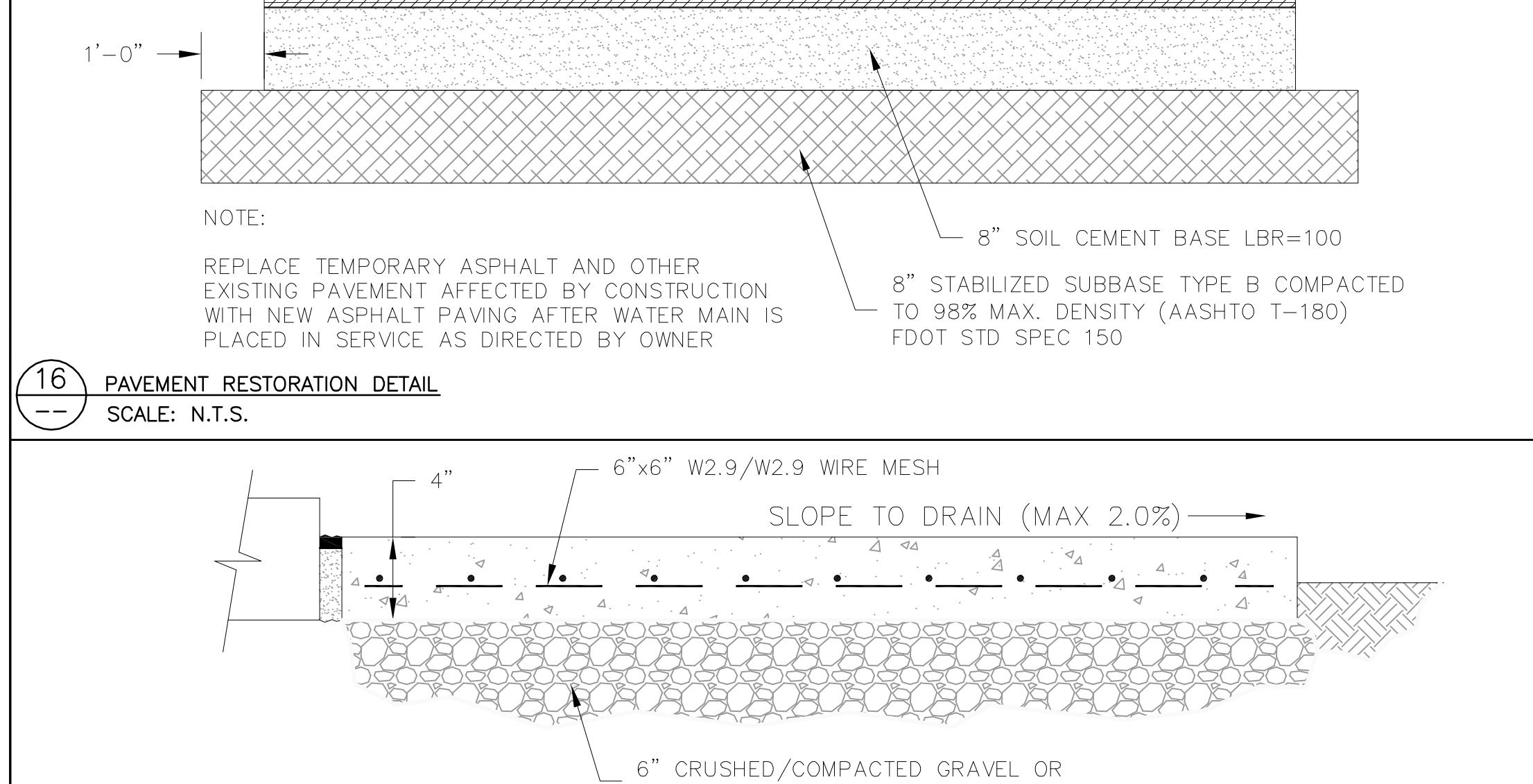
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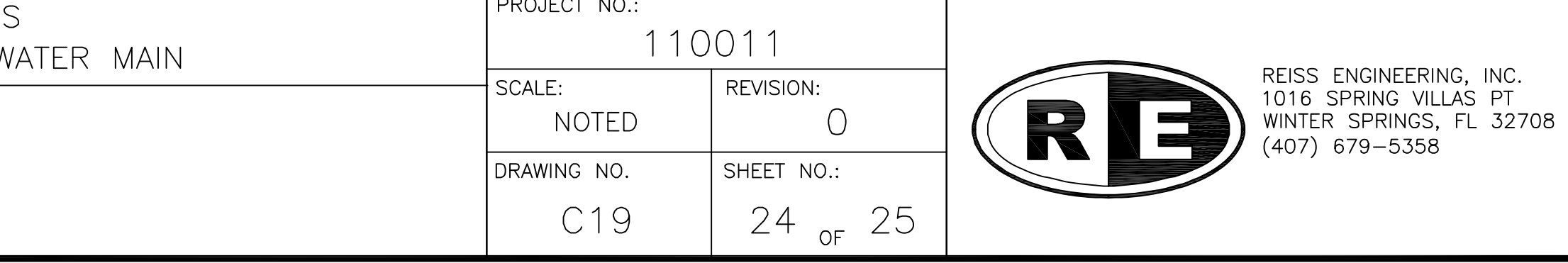
13 DETAIL SCALE: N.T.S.



14 DETAIL SCALE: N.T.S.



16 PAVEMENT RESTORATION DETAIL SCALE: N.T.S.



17 SIDEWALK DETAIL SCALE: N.T.S.



REV	DATE	DESCRIPTION	BY
0	4/21/14	ISSUED FOR BID	CTB

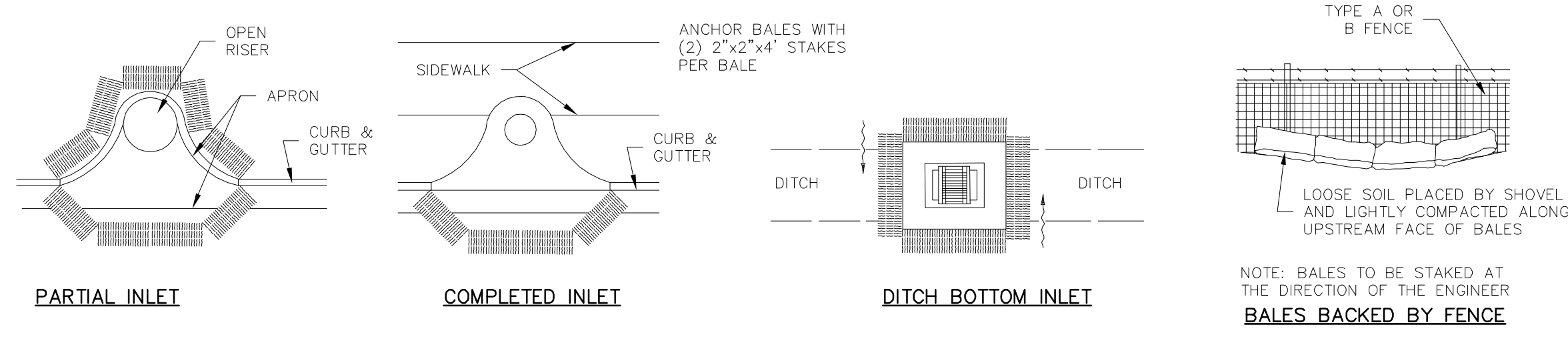
Issue Certification	Curtis I. Kunihiro, P.E. Florida P.E. No. 33688 Reiss Engineering, Inc. Certificate of Authorization No. 8181 1016 Spring Villas Pt. Winter Springs, FL 32708
Designed	CTB
Drawn	CTB
Checked	RLL
Reviewed	MDP
Approved	CTB
Date	4/21/14

ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 UTILITY DETAILS

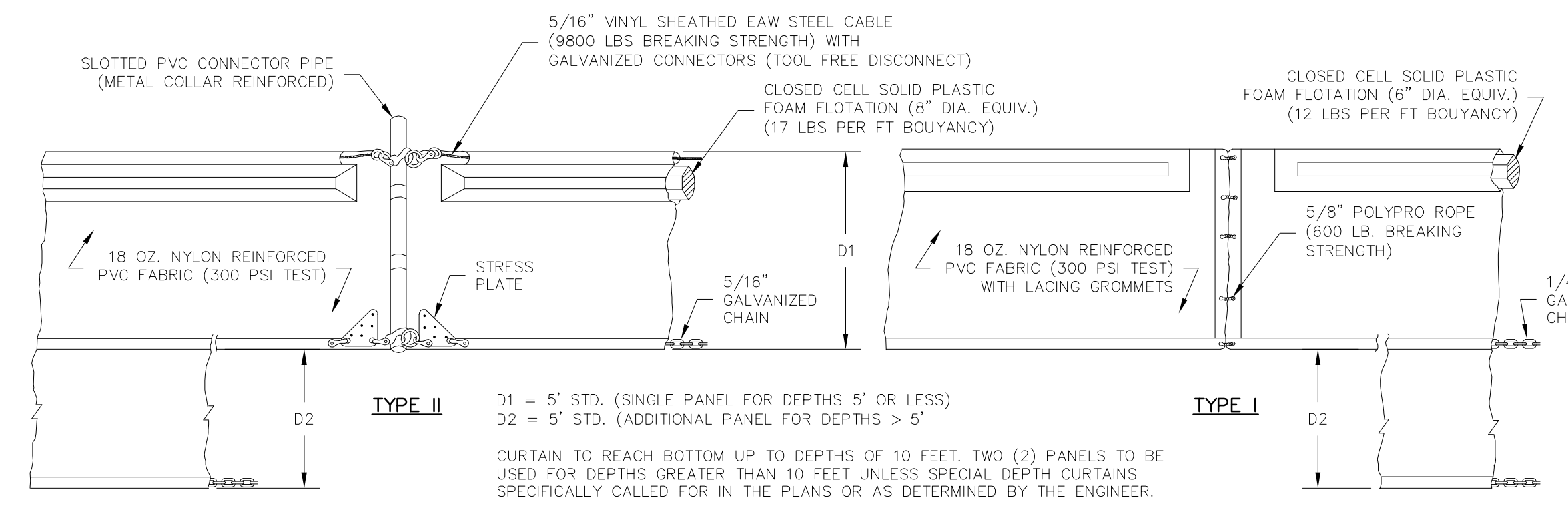
PROJECT NO.:	110011	
SCALE:	NOTED	REVISION: 0
DRAWING NO.:	C19	SHEET NO.: 24 OF 25



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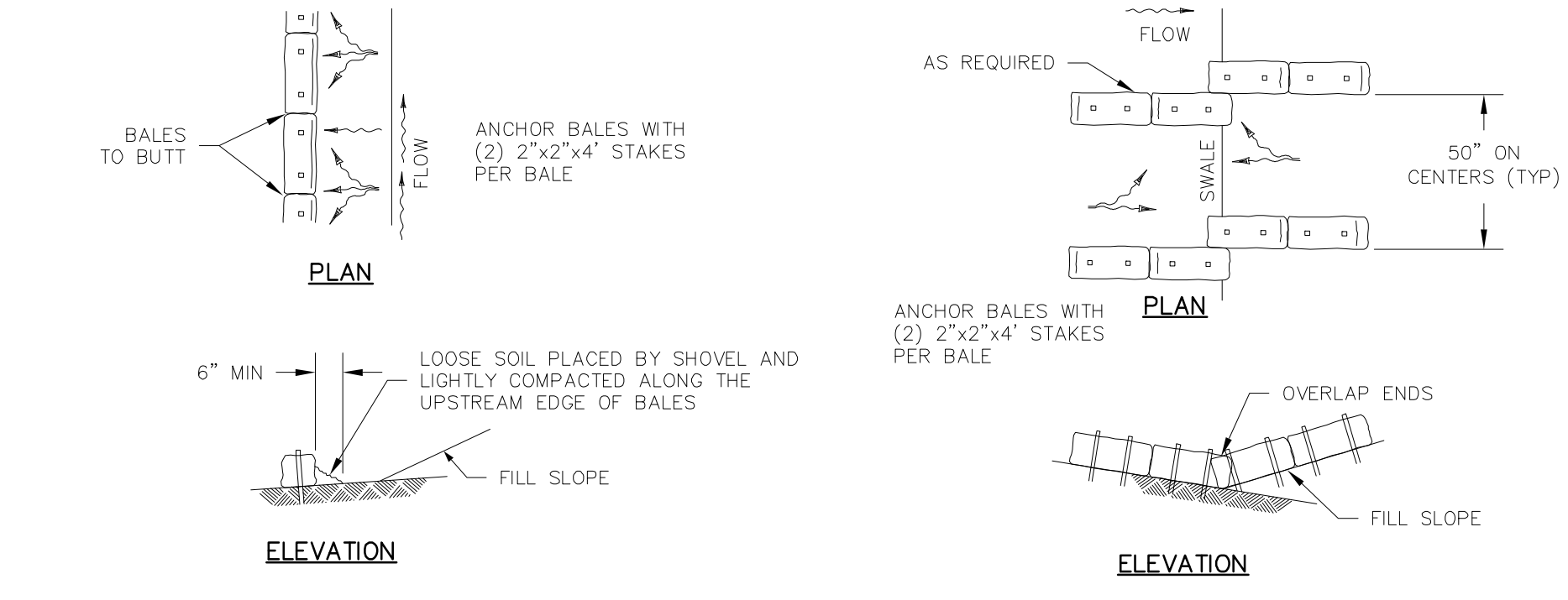
NOTE: BALES TO BE STAKED AT THE DIRECTION OF THE ENGINEER
BALES BACKED BY FENCE



D1 = 5' STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS)
 D2 = 5' STD. (ADDITIONAL PANEL FOR DEPTHS > 5')

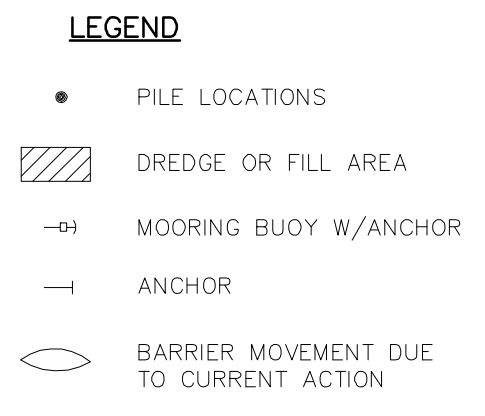
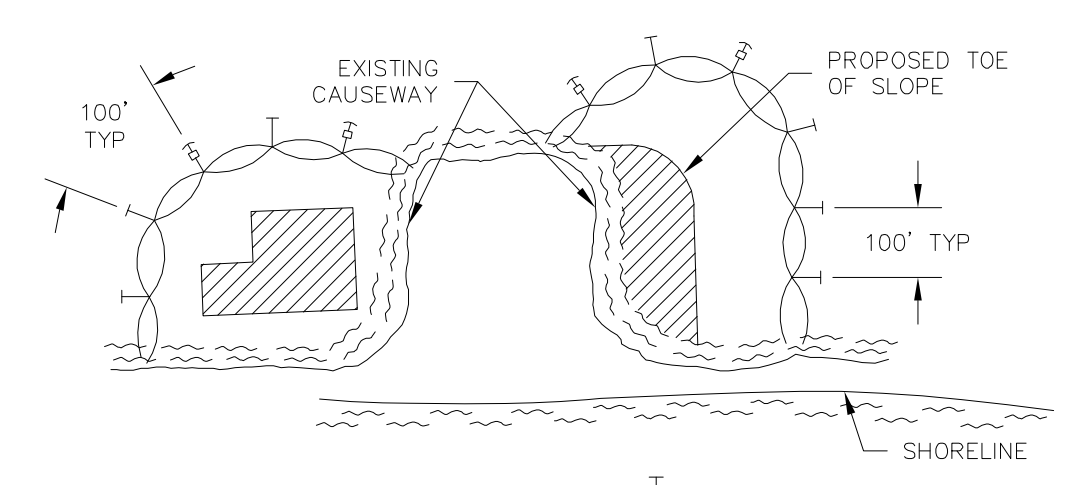
CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET. TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTE:
 COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.



TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES AWAY FROM THE TOE OF SLOPE

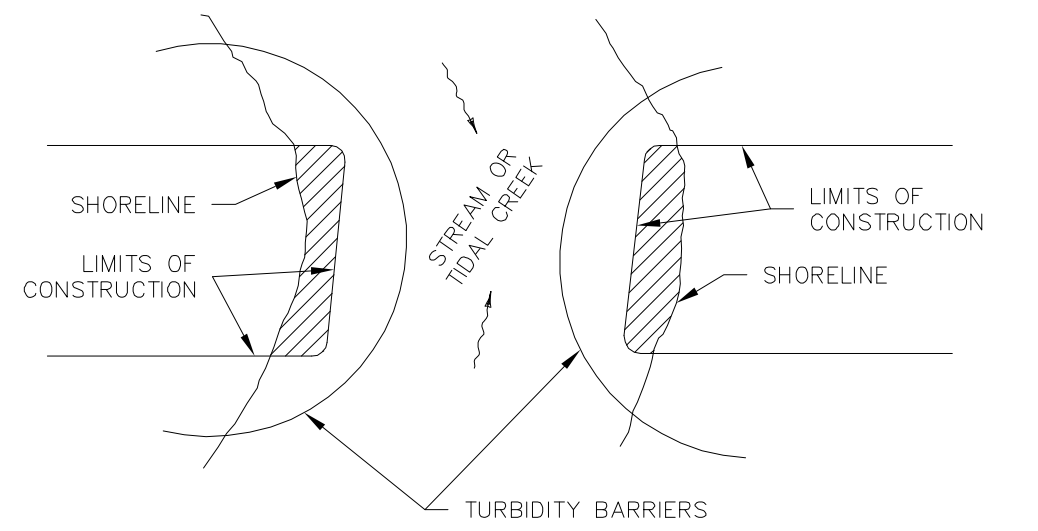
TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES TOWARD THE TOE OF SLOPE



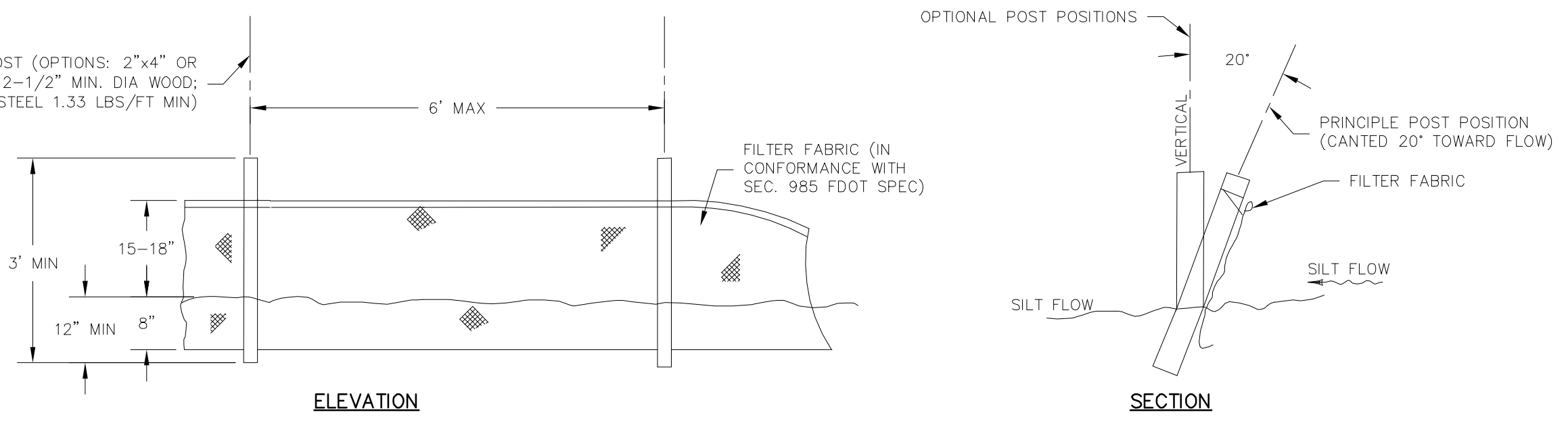
- NOTES:
- TURBIDITY BARRIERS ARE TO BE USED IN ALL PERMANENT BODIES OF WATER REGARDLESS OF WATER DEPTH.
 - NUMBER AND SPACING OF ANCHORS DEPENDENT ON CURRENT VELOCITIES.
 - DEPLOYMENT OF BARRIER AROUND PILE LOCATIONS MAY VARY TO ACCOMMODATE CONSTRUCTION OPERATIONS.
 - NAVIGATION MAY REQUIRE SEGMENTING BARRIER DURING CONSTRUCTION OPERATIONS.
 - FOR ADDITIONAL INFORMATION SEE SECTION 104 OF THE STANDARD SPECIFICATIONS.

TURBIDITY BARRIER APPLICATIONS

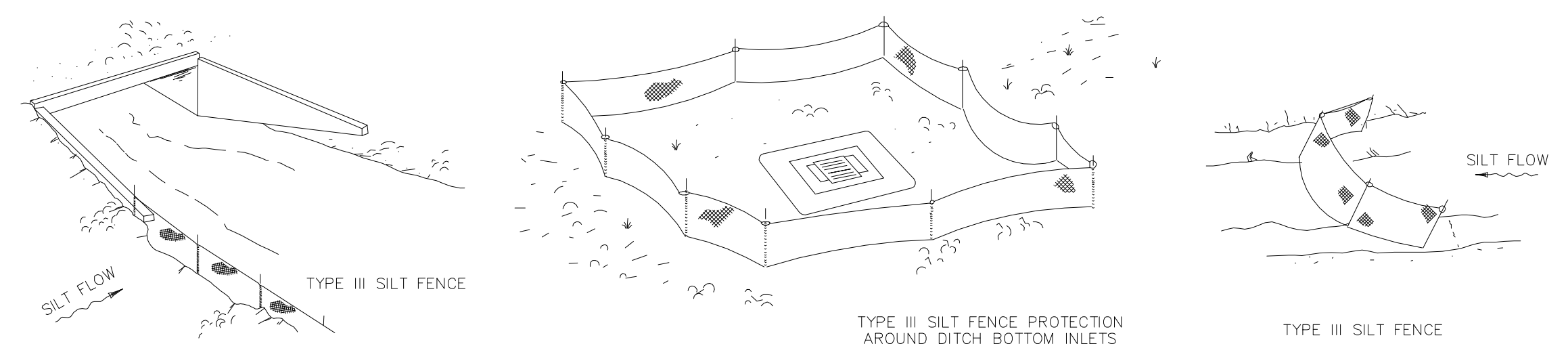
- GENERAL NOTES:
- TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR FLOATING TURBIDITY BARRIER, LF.
 - STAKED TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED TURBIDITY BARRIER, LF.



NOTE:
 TURBIDITY BARRIERS FOR FLOWING STREAMS AND TIDAL CREEKS MAY BE EITHER FLOATING, OR STAKED TYPES OR ANY COMBINATIONS OF TYPES THAT WILL SUIT SITE CONDITIONS AND MEET EROSION CONTROL AND WATER QUALITY REQUIREMENTS. THE BARRIER TYPE(S) WILL BE AT THE CONTRACTOR'S OPTION UNLESS OTHERWISE SPECIFIED IN THE PLANS. HOWEVER PAYMENT WILL BE UNDER THE PAY ITEM(S) ESTABLISHED IN THE PLANS FOR FLOATING TURBIDITY BARRIER AND/OR STAKED TURBIDITY BARRIER. POSTS IN STAKED TURBIDITY BARRIERS TO BE INSTALLED IN VERTICAL POSITION UNLESS OTHERWISE DIRECTED BY ENGINEER.



NOTE: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF)



DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.



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ORANGE COUNTY UTILITIES
 WESTWOOD BOULEVARD 24-INCH WATER MAIN
 CIVIL
 EROSION CONTROL DETAILS

PROJECT NO.: 110011	
SCALE: NOTED	REVISION: 0
DRAWING NO. C20	SHEET NO.: 25 OF 25

