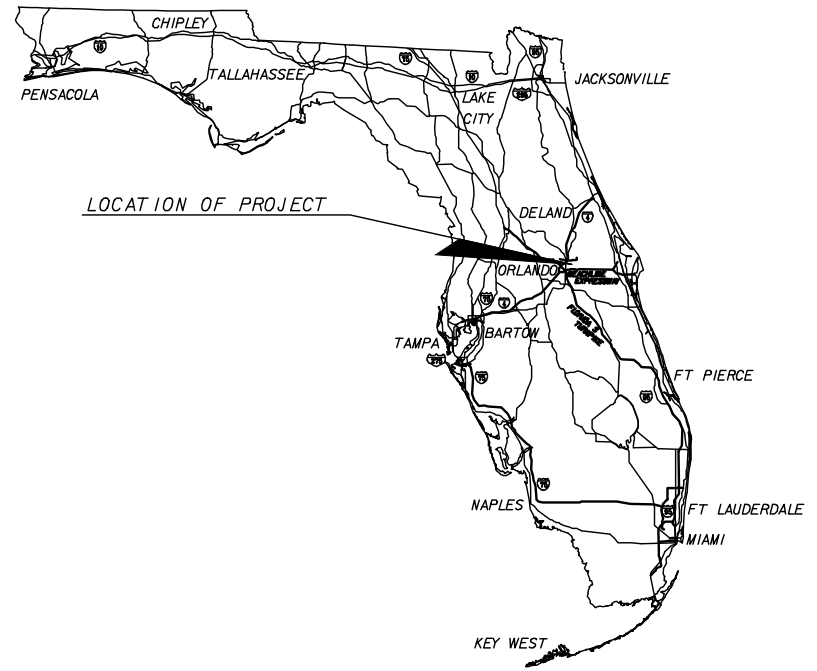


ORANGE COUNTY UTILITIES CONSTRUCTION PLANS FOR WETHERBEE ROAD UTILITY RELOCATION PROJECT ORANGE COUNTY, FLORIDA (BALCOMBE ROAD TO ORANGE AVENUE)



INDEX OF UTILITY PLANS

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TERESA JACOBS
Mayor

BOARD OF COUNTY COMMISSIONERS

S. SCOTT BOYD
District 1

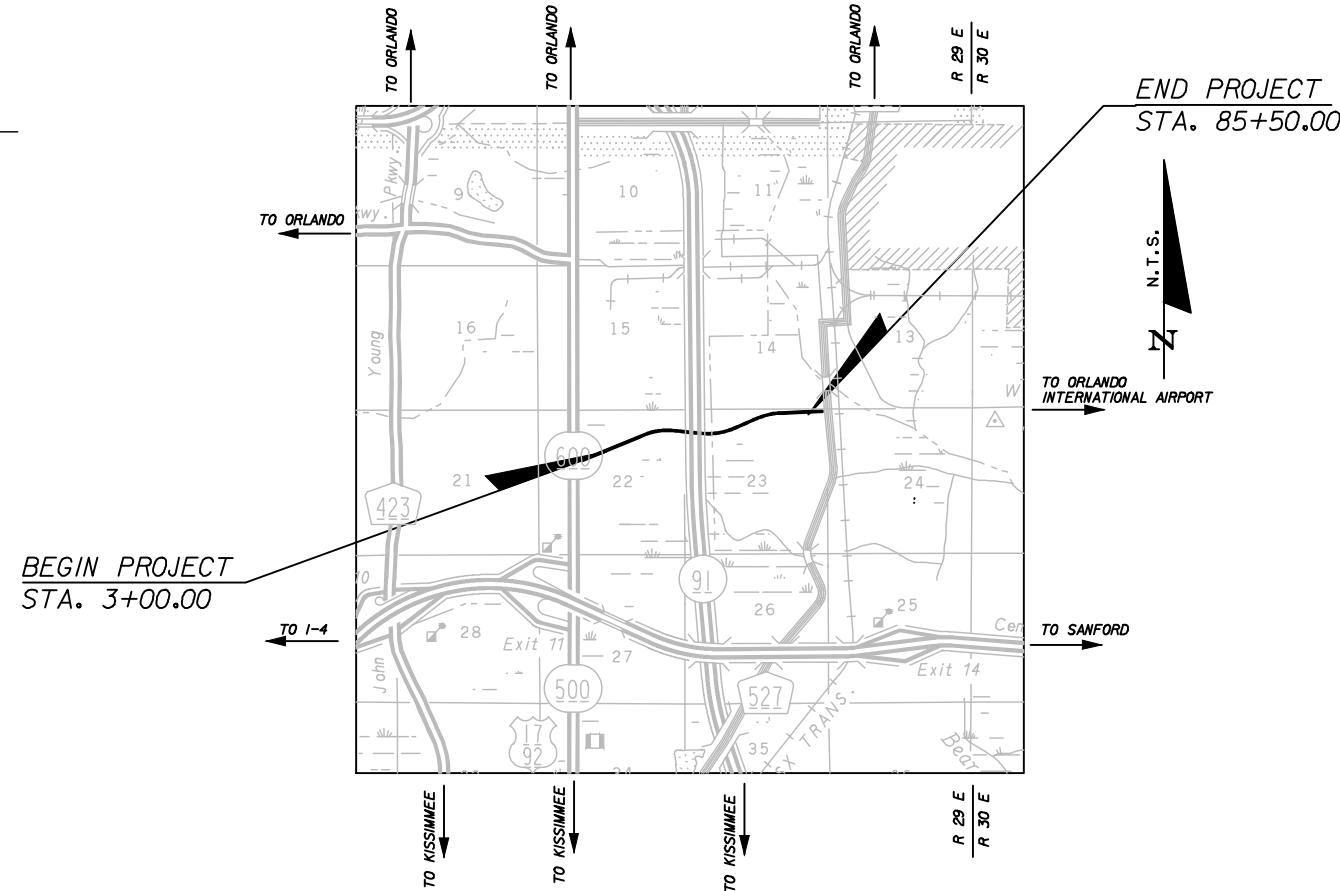
JENNIFER THOMPSON
District 4

FRED BRUMMER
District 2

TED EDWARDS
District 5

PETE CLARKE
District 3

TIFFANY MOORE RUSSELL
District 6



VICINITY MAP

GOVERNING STANDARDS AND SPECIFICATIONS:

FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS LATEST EDITION, AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION, AS AMENDED BY CONTRACT DOCUMENTS.

ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATION MANUAL.

PLANS PREPARED BY:

cph	A Full Service A & E Firm	
	Architects Engineers Environmental Landscape Architects	M/E/P Planners Surveyors Traffic/Transportation
www.cphcorp.com		
1117 E. Robinson, St. Orlando, FL 32801 Ph: 407.425.0452		
Licenses: Eng. C.O.A. No. 3215 Arch. Lic. No. AA2600926 Survey L.B. No. 7143 Landscp. Lic. No. LC0000298		

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

OCU SEQUENCE No. 57766
WASTEWATER ORG No. 1504-31

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

UTILITY PLANS
ENGINEER OF RECORD: DAVID E. MAHLER, P.E.

P.E. NO. 50041

SHEET NO.

BID SET

1

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 COORDINATION AND COMMUNICATIONS WITH ORANGE COUNTY STAFF SHALL BE MADE THROUGH THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION INSPECTOR. CONTACT THE OCU DISPATCH DURING EMERGENCIES.
- 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.
- ORANGE COUNTY UTILITIES DEPARTMENT TELEPHONE NUMBERS :
 ORANGE COUNTY UTILITIES DISPATCH 407-836-2777
 ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION 407-254-9798
 ORANGE COUNTY UTILITIES WATER RECLAMATION DIVISION 407-254-9680
 ORANGE COUNTY UTILITIES WATER DIVISION 407-254-9850
 ORANGE COUNTY UTILITIES ENGINEERING DIVISION 407-254-9900
- THE CONTRACTOR SHALL PROVIDE FOR ALL BY-PASSING AND/OR HAULING OF WASTEWATER DURING ALL INTERRUPTIONS OF FLOWS AND/OR CONNECTIONS TO THE EXISTING WASTEWATER SYSTEM.
- WATER, WASTEWATER AND RECLAIMED WATER VALVES, PUMP STATIONS OR OTHER UTILITY INFRASTRUCTURE ARE TO OPERATED ONLY BY ORANGE COUNTY UTILITIES PERSONNEL. ALL VALVES BEING INSTALLED ARE TO REMAIN CLOSED DURING CONSTRUCTION
- ALL EXISTING WATER MAINS, FORCE MAINS, GRAVITY PIPES AND OTHER UTILITY FACILITIES WITHIN THE LIMITS OF THE PROJECT WILL BE SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF WATER MAINS, WASTEWATER FORCE MAINS, AND GRAVITY MAINS AND RECLAIMED WATER MAINS. WATER MAINS, FORCE MAINS, GRAVITY MAINS AND RECLAIMED WATER MAIN LOCATIONS SHOWN ON THE PLANS ARE NOT EXACT OR GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.
- LOCATIONS OF EXISTING UTILITIES AS SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY THE EXISTENCE AND LOCATION OF ALL ABOVEGROUND AND UNDERGROUND UTILITIES AND DETERMINE THE STATUS OF SAID UTILITY, PRIOR TO ANY DEMOLITION OR CONNECTION OF PROPOSED 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.
- 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.
- 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.
- USE EXTREME CAUTION WHEN EXCAVATING OR CONNECTING TO ASBESTOS CEMENT PIPE. THE CONTRACTOR MAY BE REQUIRED TO SUPPLY TRUCKS CAPABLE OF PUMPING OUT THE PUMP STATION UPSTREAM FROM BREAKS OR CONNECTING 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 ASBESTOS CEMENT PIPE TO BE TAKEN OUT OF SERVICE WILL BE REMOVED UNLESS OTHER WISE NOTED ON PLANS. ASBESTOS CEMENT PIPE WILL BE REMOVED AND DISPOSED OF ACCORDING TO STATE AND FEDERAL ORDINANCES AND REGULATIONS.
- ALL UTILITIES CONSTRUCTION CONNECTING TO THE ORANGE COUNTY UTILITIES SYSTEM SHALL CONFORM TO THE CURRENT ORANGE COUNTY MANUAL OF STANDARDS AND SPECIFICATIONS FOR WASTEWATER AND WATER MAIN CONSTRUCTION UNLESS OTHERWISE NOTED. ALL MATERIALS USED IN CONSTRUCTION SHALL BE ON THE APPROVED "APPENDIX D" LIST FROM THE CURRENT STANDARDS MANUAL MENTIONED PREVIOUSLY.
- 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 BE RESPONSIBLE FOR PROVIDING TEMPORARY SUPPORT FOR UTILITY POLES AND ALL OTHER UTILITIES DURING CONSTRUCTION.
- THE UTILITY IMPROVEMENTS AND ADJUSTMENTS SHOWN ON THESE DRAWINGS ARE INTENDED TO MAINTAIN THE INTEGRITY OF THE ORANGE COUNTY WATER, WASTEWATER AND RECLAIM WATER SYSTEMS. THE DRAWINGS DO NOT INCLUDE WORK PERFORMED ON OR FOR UTILITY SYSTEMS OWNED BY OTHERS, UNLESS STATED OTHERWISE ON THE DRAWINGS.
- 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 CURRENT ORANGE COUNTY STANDARDS AND SPECIFICATIONS MANUAL. FITTINGS AND MINOR REPLACEMENT SEGMENTS ARE 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. DIVISION PERSONNEL SHALL BE PRESENT DURING THE TEST. COORDINATE WITH THE ORANGE COUNTY INSPECTOR AT LEAST SEVEN (7) DAYS PRIOR TO START OF THIS WORK.
- ALL EXISTING OCU VALVE BOXES, LOCATED ON EXISTING WATER MAIN TO REMAIN, SHALL BE REPLACED WITH ADJUSTABLE SEALED VALVE BOX AS SHOWN N THE STANDARD DETAILS. ALL NEW AND EXISTING VALVES AND VALVE BOXES SHALL BE PROTECTED AND ADJUSTED TO FINISH GRADE AS SHOWN ON THE DRAWINGS. VALVE AND VALVE BOXES SHALL REMAIN ACCESSIBLE AT ALL TIMES.

- THE CONTRACTOR SHALL PROTECT EXISTING WATER METERS AND SERVICE CONNECTIONS DURING CONSTRUCTION AND SHALL COORDINATE THE RELOCATION OF WATER SERVICE METERS WITH THE MAINTENANCE PERSONNEL OF THE ORANGE COUNTY WATER DEPARTMENT. THE CONTRACTOR WILL RELOCATE WATER METERS AS NECESSARY AND AS DIRECTED BY ORANGE COUNTY PERSONNEL.
- ALL PVC WATER MAIN, SEWER AND RECLAIMED WATER MAIN PIPE SHALL CONFORM TO AWWA C900, DR 18 OR C905. ALL DUCTILE IRON WATER MAIN AND RECLAIM WATER MAIN SHALL CONFORM TO ANSII/WWA A21.51/C151. ALL PVC PRESSURE PIPES SHALL USE DUCTILE IRON FITTINGS. FITTINGS FOR ALL SERVICES SHALL BE BRASS.
- 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 PREDOMINANT COLOR WATER; GREEN FOR WASTEWATER; AND PURPLE FOR RECLAIMED WATER.
- ALL BACKFILL SHOWN ON PLANS TO BE COMPACTED TO NOT LESS THAN 95% OF 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 THE SOIL TESTING.
- PIPE LENGTHS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL LENGTHS ARE TO BE DETERMINED DURING CONSTRUCTION.
- ALL STATIONS AND OFFSETS REFER TO BASELINE OF STATIONING.
- MAINTAIN EMERGENCY VEHICLE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES.
- ALL MAINS SHALL BE CONSTRUCTED AS SHOWN ON PLANS. A MINIMUM COVER OF 36 INCHES SHALL BE MAINTAINED ON ALL MAINS, WHERE IT IS NOT OTHERWISE SPECIFIED ON PLANS OR DIRECTED BY ENGINEER. FOR DUCTILE IRON PIPE, ALL DIRECTION CHANGES IN THE PIPE BOTH HORIZONTAL AND VERTICAL SHALL BE BY JOINT DEFLECTION UNLESS OTHERWISE NOTED OR DIRECTED BY ENGINEER. JOINT DEFLECTION SHALL NOT EXCEED 75% OF THE MANUFACTURER'S RECOMMENDED DEFLECTION. NO DEFLECTION OR BENDING OF ANY KIND SHALL BE PERMITTED FOR PVC PIPE.
- ALL PIPES SHALL BE RESTRAINED IN ACCORDANCE WITH THE RESTRAINT TABLES SHOWN ON 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 TABLE.
- PIPE SIZES SHOWN ON PLANS ARE MINIMUM INSIDE DIAMETER.
- 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.
- ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE BY THE CONTRACTOR ONLY AFTER THE PROPOSED CONNECTION PROCEDURE AND WORK SCHEDULE HAVE BEEN REVIEWED AND ACCEPTED BY THE OWNER. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE OWNER A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO SCHEDULING ANY CONNECTIONS. THE REQUEST SHALL REFERENCE THE PROFESSIONAL LAND SURVEYOR CERTIFIED COMPLETED AS-BUILT RECORD DRAWINGS PREVIOUSLY SUBMITTED AND SHALL OUTLINE THE FOLLOWING:
 A. POINTS OF CONNECTION, FITTINGS TO BE USED, METHODS OF FLUSHING AND DISINFECTION AND VERIFICATION OF RESTRAINT ON EXISTING PIPE.
 B. ESTIMATED CONSTRUCTION TIME FOR THE CONNECTIONS.


 THE OWNER SHALL REVIEW THE SUBMITTAL WITHIN FIVE (5) WORKING DAYS AFTER RECEIVING IT AND INFORM THE CONTRACTOR REGARDING APPROVAL OR DENIAL OF THE REQUEST. IF THE OWNER REJECTS THE REQUEST, THE CONTRACTOR SHALL RESUBMIT THE REQUEST MODIFYING IT IN A MANNER ACCEPTABLE TO THE OWNER. ALL CONNECTIONS SHALL ONLY BE MADE ON THE AGREED UPON DATE AND TIME. SHOULD THE CONTRACTOR NOT INITIATE AND COMPLETE THE CONNECTION WORK IN THE AGREED UPON MANNER, HE SHALL BE REQUIRED TO RESCHEDULE THE CONNECTION BY FOLLOWING THE PROCEDURE OUTLINED ABOVE. 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.
- NO VALVE BOXES, METERS, PORTIONS OF MANHOLES OR OTHER APPURTENCES OF ANY KIND SHALL BE LOCATED IN ANY PORTION OF A CURB-AND-GUTTER SECTION. CONTRACTOR SHALL ADVISE ENGINEER IMMEDIATELY UPON DISCOVERY OF A POTENTIAL CONFLICT.
- CONTRACTOR SHALL 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 WATER MAINS SHALL REMAIN IN SERVICE UNTIL THE PROPOSED MAINS ARE ACCEPTED FOR SERVICE AND ALL SERVICES ARE TRANSFERRED TO THE NEW WATER MAIN.
- ALL PROPOSED DUCTILE IRON PIPES SHALL BE WRAPPED WITH 8 MIL POLYETHYLENE.
- WORK ON THE UTILITIES OCCURS IN AND AROUND LANDSCAPED AREAS. CONTRACTOR SHALL REMOVE AND REPLACE ALL LANDSCAPING AS NEEDED FOR UTILITY WORK.

ORANGE COUNTY UTILITIES CONTRACTOR PROCEDURE TO CONNECT NEW WATER MAIN TO EXISTING WATER MAIN:

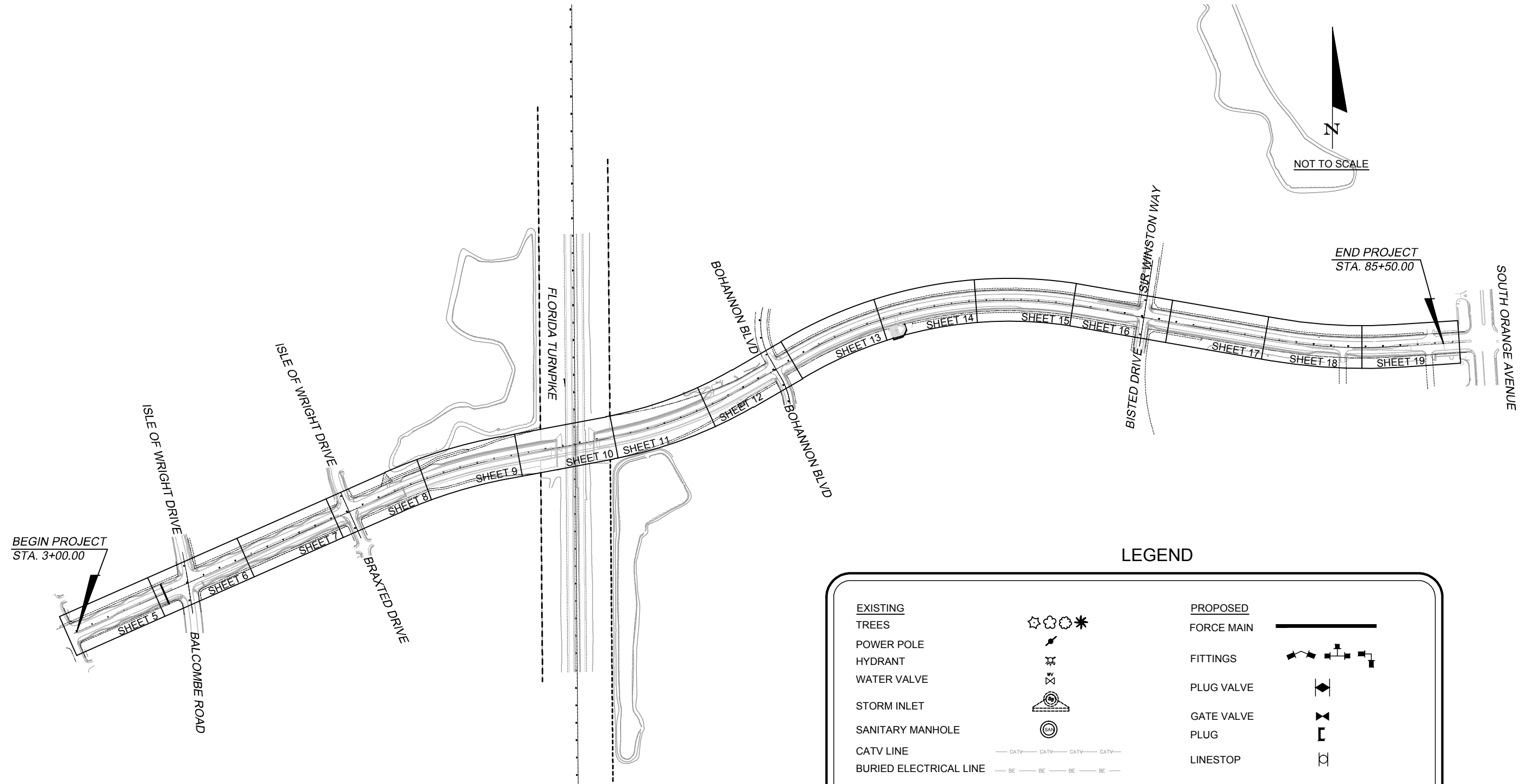
ALL WORK TO BE COMPLETED BY CONTRACTOR UNLESS OTHERWISE NOTED.

- THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION (407-254-9798) 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 VALVE OPERATION, PRESSURE TESTING, PIPE CONNECTION, PUMP STATION OPERATION OR SHUTDOWN, ETC.
- INSTALL NEW WATER MAIN.
- MAKE TEMPORARY CONNECTIONS TO AN EXISTING POTABLE WATER SOURCE; FLUSH OUT NEW WATER MAIN WITH POTABLE WATER (USE "JUMPER" ASSEMBLY WITH BACKFLOW PREVENTER).
- FILL NEW WATER MAIN WITH POTABLE WATER AND PRESSURE TEST AT 150 PSI FOR 2 HOURS.
- AS-BUILTS MUST BE COMPLETED AND SUBMITTED TO OCU INSPECTOR PRIOR TO WATER MAIN CHLORINATION.
- CHLORINATE WATER MAIN (50 MG/L). LET STAND FOR 24 HOURS; VERIFY THAT CHLORINE RESIDUAL IS STILL 25 MG/L.
- FLUSH HIGHLY CHLORINATED WATER OUT OF NEW WATER MAIN AND FILL WITH POTABLE WATER AGAIN. CONTRACTOR TO MAINTAIN ADEQUATE CONTROLS AND DIVERSION DEVICES, CHECK DAMS, HOLDING PONDS, DITCH BLOCKS, ETC. TO AVOID DIRECTLY DISCHARGING CHLORINATED WATER TO ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS OR WATER BODIES.
- TAKE SAMPLES FOR BACTERIOLOGICAL TEST (TAKE SAMPLES ON TWO CONSECUTIVE DAYS).
- AFTER ANALYSIS AND ACCEPTABLE RESULTS, SUBMIT TO ORANGE COUNTY UTILITIES INSPECTOR WATER MAIN AND "CLEARANCE" PACKAGE INCLUDING BACTERIOLOGICAL TEST RESULTS AS REQUIRED BY FDEP PERMIT.
- WAIT FOR PERMISSION FROM FDEP TO RELEASE NEW WATER MAIN FOR USE.
- ONCE THE RELEASE IS RECEIVED, ORANGE COUNTY WATER DEPARTMENT NOTIFIES IN WRITING (FLYERS ON DOOR) ALL PEOPLE SERVICED BY THE EXISTING WATER MAIN THAT SERVICE WILL BE INTERRUPTED (24 HOURS PRIOR TO INTERRUPTION) FOR CONNECTION TO THE NEW WATER MAIN. CHLORINE RESIDUAL IS ONCE AGAIN VERIFIED.
- ALL CONNECTIONS AND TAPS ON EXISTING MAINS SHALL MAINTAIN PRESSURE ON EXISTING MAIN (WET TAP). IF PRESSURE CANNOT BE MAINTAINED AND WITH PRIOR APPROVAL OF ORANGE COUNTY UTILITIES INSPECTOR, THE PROCEDURE OUTLINED BELOW IN THE NOTES 13-21 SHALL BE FOLLOWED. OTHERWISE SKIP THEM AND CONTINUE AT 22.
- AFTER DEPARTMENT CLOSES UPSTREAM AND DOWNSTREAM VALVES INCLUDING LINE STOPS VALVES TO ISOLATE PORTION OF EXISTING WATER MAIN AFFECTED.
- THE EXISTING PIPE WILL BE FULLY EXCAVATED AND THE EXCAVATION DEWATERED SO THAT NO SOIL OR WATER IS WITHIN TWELVE INCHES OF THE BOTTOM OF THE WATER MAIN AT THE TIE-IN SITE PRIOR TO INITIATING THE WORK.
- THE PIPE SHALL BE BRUSHED CLEAN AND THE PIPE AND EXCAVATION TREATED WITH HYDROCHLORIDE TO ASSIST WITH CONTAMINATION PREVENTION. (AWWA C651 STDS.)
- A SECTION IS CUT FROM THE EXISTING WATER MAIN. WATER DRAINING FROM THE EXISTING MAIN IS DIVERTED AND PUMPED SO THAT NO BACKFLOW OCCURS.
- A FITTING OR PIPE SECTION IS INSTALLED (TYPICALLY NEED SLEEVE, PIPE SPOOL AND FILLER PIECE ARE NEEDED); PIPE AND FITTINGS ARE MECHANICALLY RESTRAINED; PRIOR TO INSTALLATION ALL FITTINGS ARE SWABBED WITH CHLORINATED WATER. THE WATER LEVEL IN THE TRENCH IS BELOW THE TRENCH BOTTOM. NO EXTERNAL WATER IS ALLOWED TO ENTER THE PIPE.
- FITTING (S) OR TEE (USUALLY WITH VALVE) IS CONNECTED TO THE NEW WATER MAIN BY MEANS OF FITTINGS NECESSARY.
- VALVES ON EXISTING WATER MAIN ARE OPENED BY THE WATER DEPARTMENT AND WATER FLOWS FROM EXISTING WATER MAIN TO NEW WATER MAIN. A VISUAL INSPECTION OF THE CONNECTION IS MADE PRIOR TO BACKFILLING THE EXCAVATION TO INSURE THERE ARE NO LEAKS.
- THE CONNECTION PROCESS IS REPEATED ON BOTH ENDS OF THE NEW WATER MAIN.
- IF THE EXISTING WATER MAIN IS TO REMAIN IN SERVICE, IT IS TO BE FLUSHED WITH POTABLE WATER UNTIL NORMAL SYSTEM CHLORINE RESIDUAL IS OBTAINED. THE EXISTING WATER MAIN WILL NOT BE CHLORINATED IF IT IS TO BE ABANDONED OR REMOVED.
- COUNTY TAKES WATER SAMPLES FOR TWO CONSECUTIVE DAYS AND HAS THEM ANALYZED FOR CHLOROFORM COUNT TO INSURE WATER MEETS STANDARDS.
- IF CUSTOMERS ARE SERVED FROM EXISTING POTABLE MAINS THAT ARE DEPRESSURIZED DURING INSTALLATION OF NEW MAINS OR IF ANY OF THE BACTERIOLOGICAL SAMPLES ARE POSITIVE, THE AREA WILL BE ISOLATED, SLUG CHLORINATION APPLIED AND THE BOIL WATER NOTICES DISTRIBUTED TO THE CUSTOMERS IN THE AFFECTED AREA. THE MAIN WILL BE BLOWN OFF AGAIN AND SAMPLES RETAKEN. THIS PROCESS WILL BE REPEATED UNTIL PASSING SAMPLES ARE ACHIEVED.

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REVISIONS <table border="1"> <thead> <tr> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> <th>DRAWN BY:</th> <th>NAMES</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>GNP</td> <td></td> <td>7/11</td> </tr> <tr> <td></td> <td></td> <td></td> <td>ACL</td> <td></td> <td>7/11</td> </tr> <tr> <td></td> <td></td> <td></td> <td>ACL</td> <td></td> <td>7/11</td> </tr> <tr> <td></td> <td></td> <td></td> <td>DEM</td> <td></td> <td>7/11</td> </tr> <tr> <td></td> <td></td> <td></td> <td>DAVID E. MAHLER, P.E.</td> <td></td> <td></td> </tr> </tbody> </table>		DATE	BY	DESCRIPTION	DRAWN BY:	NAMES	DATE				GNP		7/11				ACL		7/11				ACL		7/11				DEM		7/11				DAVID E. MAHLER, P.E.			 <p>A Full Service A & E Firm</p> <p>Architects M / E / P Engineers Planners Environmental Surveyors Landscape Architects Traffic/Transportation</p> <p>www.cphcorp.com</p>	Offices In: • Florida • Puerto Rico • Connecticut • Maryland • Texas	<p>ORANGE COUNTY</p> <table border="1"> <thead> <tr> <th>ROAD NO.</th> <th>COUNTY</th> <th>FINANCIAL PROJECT ID</th> </tr> </thead> <tbody> <tr> <td></td> <td>ORANGE</td> <td></td> </tr> </tbody> </table>			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		ORANGE		Plan Prepared By: CPH, Inc. 1117 E. Robinson St. - Orlando, FL 32801 Ph: 407.425.0452 Licenses: Eng. C.O.A. No. 3215 Survey L.B. No. 7143 Arch. Lic. No. AA2600926 Lndsc. Lic. No. LC0000298	SHEET TITLE: <p style="text-align: center;">GENERAL NOTES</p>	PROJECT TITLE: <p style="text-align: center;">WETHERBEE ROAD UTILITY RELOCATION PROJECT</p>	SHEET NO. <p style="text-align: center;">2</p>
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LEGEND

EXISTING		PROPOSED	
TREES		FORCE MAIN	
POWER POLE		FITTINGS	
HYDRANT		PLUG VALVE	
WATER VALVE		GATE VALVE	
STORM INLET		PLUG	
SANITARY MANHOLE		LINESTOP	
CATV LINE		INSTALL PIPE OVER UTILITY LINE	
BURIED ELECTRICAL LINE		INSTALL PIPE UNDER UTILITY LINE	
WATER MAIN		UTILITY LINE TO BE REMOVED	
GRAVITY MAIN			
FORCE MAIN			
RIGHT OF WAY LINE			
EASEMENT LINE			
L.A. R/W LINE			

REVISIONS		NAMES	DATE
DATE	BY	DESCRIPTION	
		DRAWN BY: GNP	7/11
		CHECKED BY: ACL	7/11
		DESIGNED BY: ACL	7/11
		CHECKED BY: DEM	7/11
		APPROVED BY: DAVID E. MAHLER, P.E.	



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ORANGE COUNTY		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	ORANGE	

Plan Prepared By:
CPH, Inc.
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 Ph: 407.425.0452
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 Eng. C.O.A. No. 3215
 Survey L.B. No. 7143
 Arch. Lic. No. AA2600926
 Lndscp. Lic. No. LC0000298

SHEET TITLE:	PROJECT LAYOUT AND LEGEND	
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT	
SHEET NO.	3	

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ITEM No.	DESCRIPTION	UNIT	QTY	Sheet 5	Sheet 6	Sheet 7	Sheet 8	Sheet 9	Sheet 10	Sheet 11	Sheet 12	Sheet 13	Sheet 14	Sheet 15	Sheet 16	Sheet 17	Sheet 18	Sheet 19	Sheet 20 - 23
1	Mobilization, Demobilization & Bonds	LS	1																
2	Preconstruction Video	LS	1																
3	Utility Maintenance of Traffic	LS	1																
4	Utility System Dewatering (Contaminated Groundwater Monitoring, Reporting, Treatment & Disposal)	Day	6																
5	Record Drawings	LS	1																
	Force Main																		
6	Furnish & Install 10" PVC Force Main	LF	153				62					81	10						
7	Furnish & Install 16" PVC Force Main	LF	298	198	100														
8	Furnish & Install 10" Plug Valve	EA	2									1	1						
9	Furnish & Install 10" Tapping Sleeve & Valve	EA	2									1	1						
10	Furnish & Install 10" Line Stop	EA	2									1	1						
11	Furnish & Install 16" Plug Valve	EA	2	1	1														
12	Furnish & Install 16" Tapping Sleeve & Valve	EA	2	1	1														
13	Furnish & Install 16" Line Stop	EA	2	1	1														
14	Adjust Existing ARV Top to Final Grade	EA	1								1								
15	Adjust Valve Box to Final Grade	EA	1				1												
	Sanitary Sewer																		
17	Adjust Existing Manhole Top to Final Grade	EA	24	1	2	2	2				3	1	2	1	4	1	2	3	
18	Furnish & Install New 6' Diameter Sanitary Manhole	EA	1																1
19	Line Existing Manhole	EA	1				1												
20	Furnish & Install 18" Gravity Main	LF	26																26
	Demolition																		
21	Removal of 12" & Under PVC, DI and Clay Pipes	LF	141				67					69	5						
22	Removal of PVC, DI and Clay Pipes Greater than 12"	LF	305	190	89														26
23	Remove Existing ARV	EA	1				1												
	Pump Station																		
24	Pump Station Rehabilitation	LS	1																1

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		DRAWN BY: GNP	7/11
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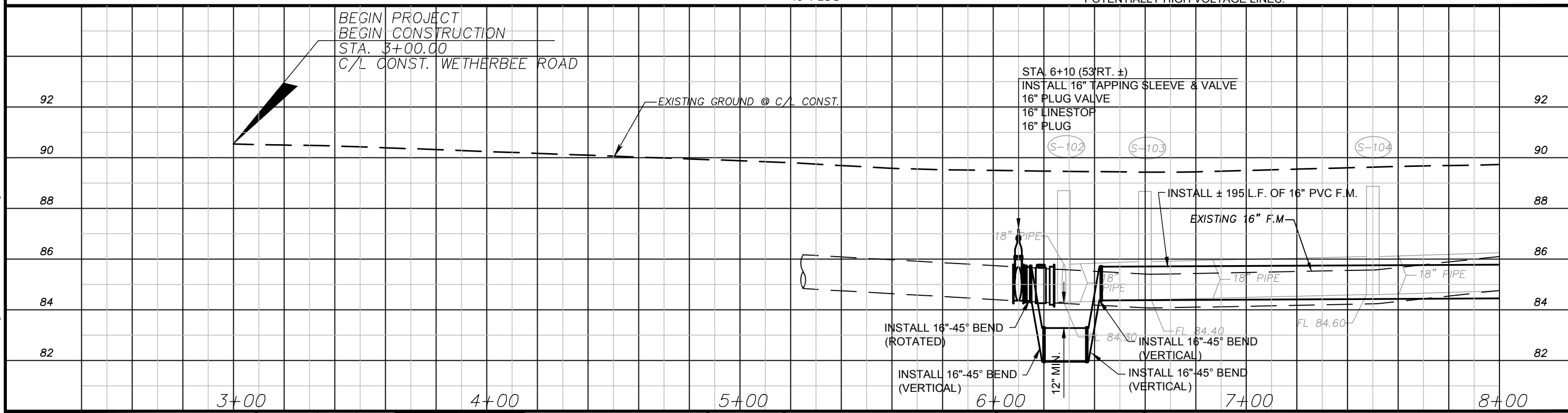
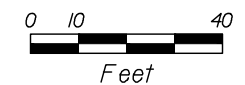
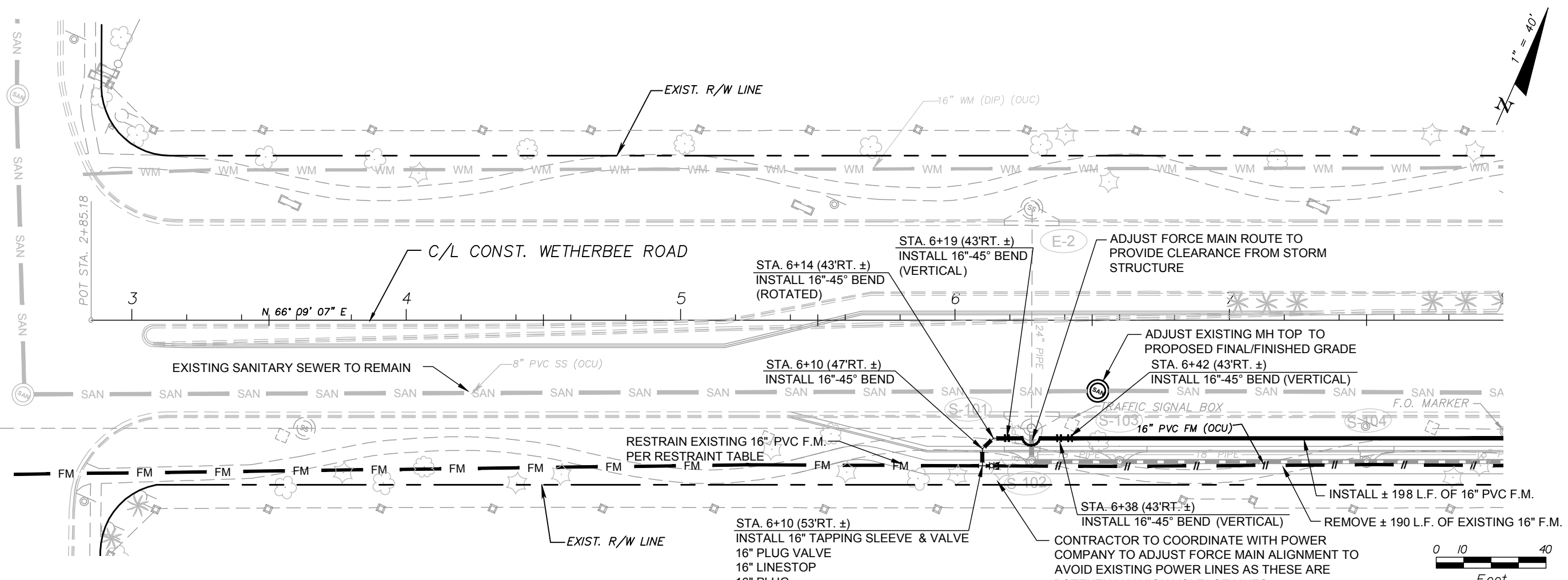
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Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

SHEET TITLE:	SUMMARY OF PAY ITEMS	
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT	
SHEET NO.:	4	



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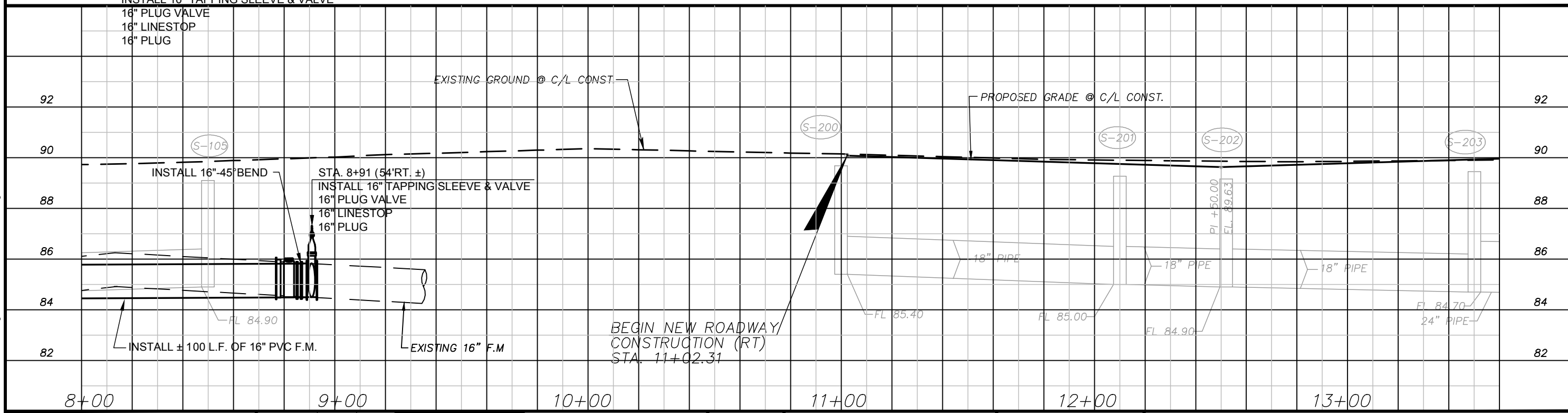
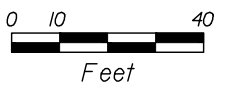
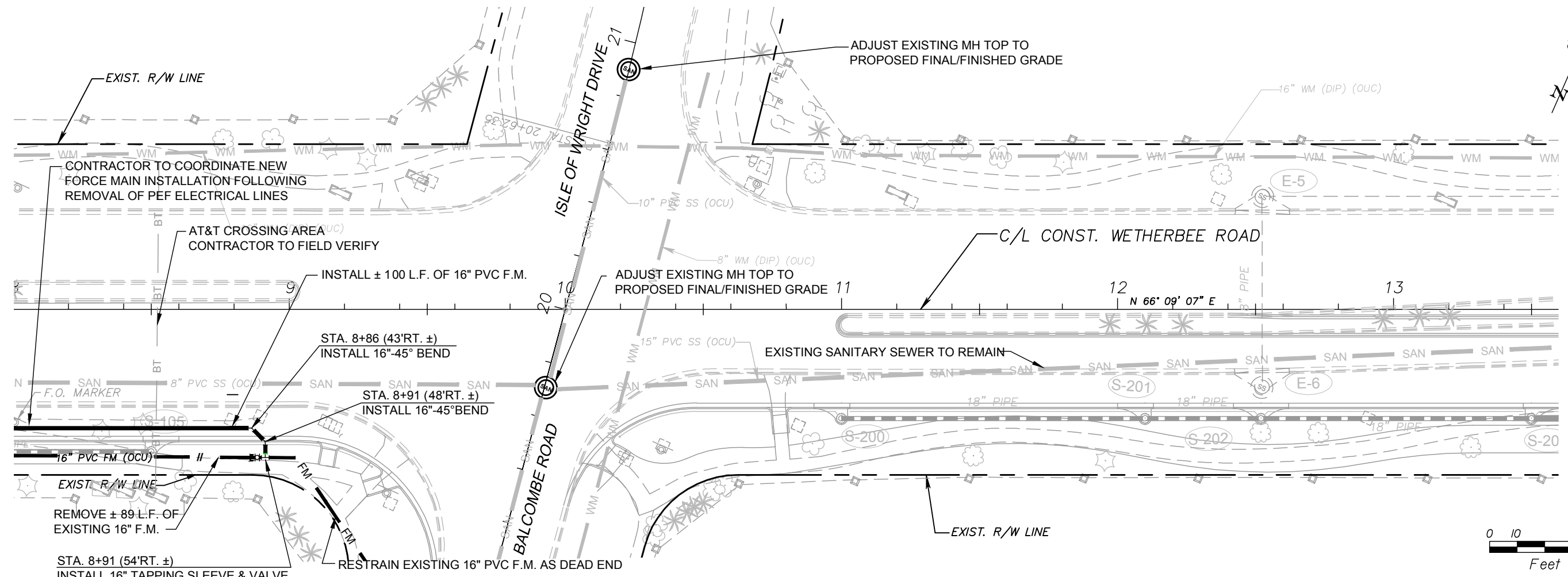
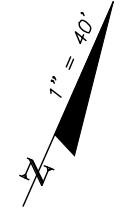
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SHEET TITLE:	PLAN AND PROFILE STA. 3+00 TO STA. 8+00	SHEET NO.	5
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT		

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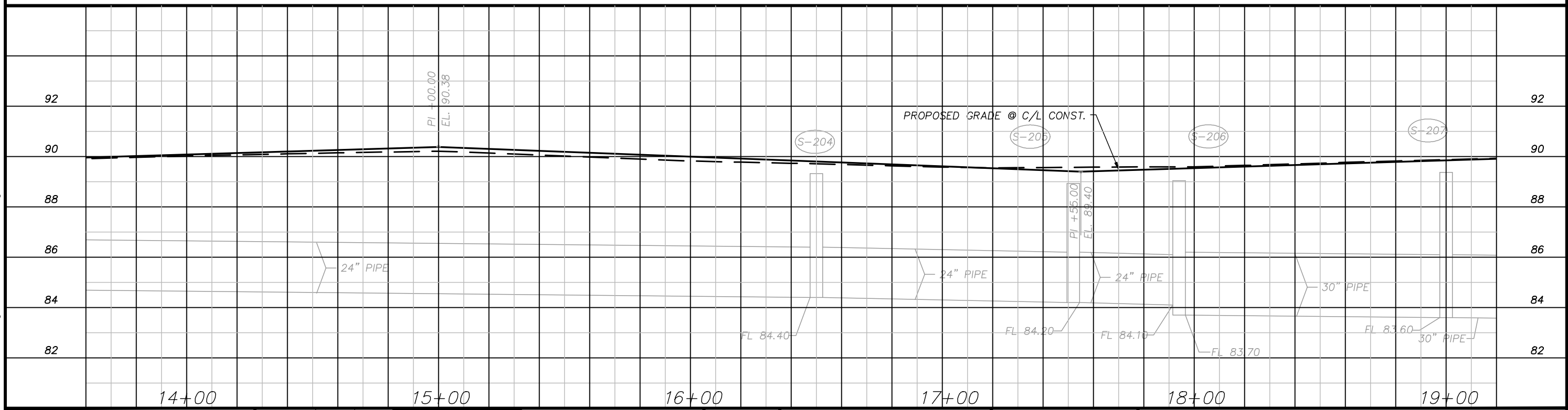
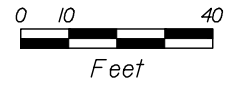
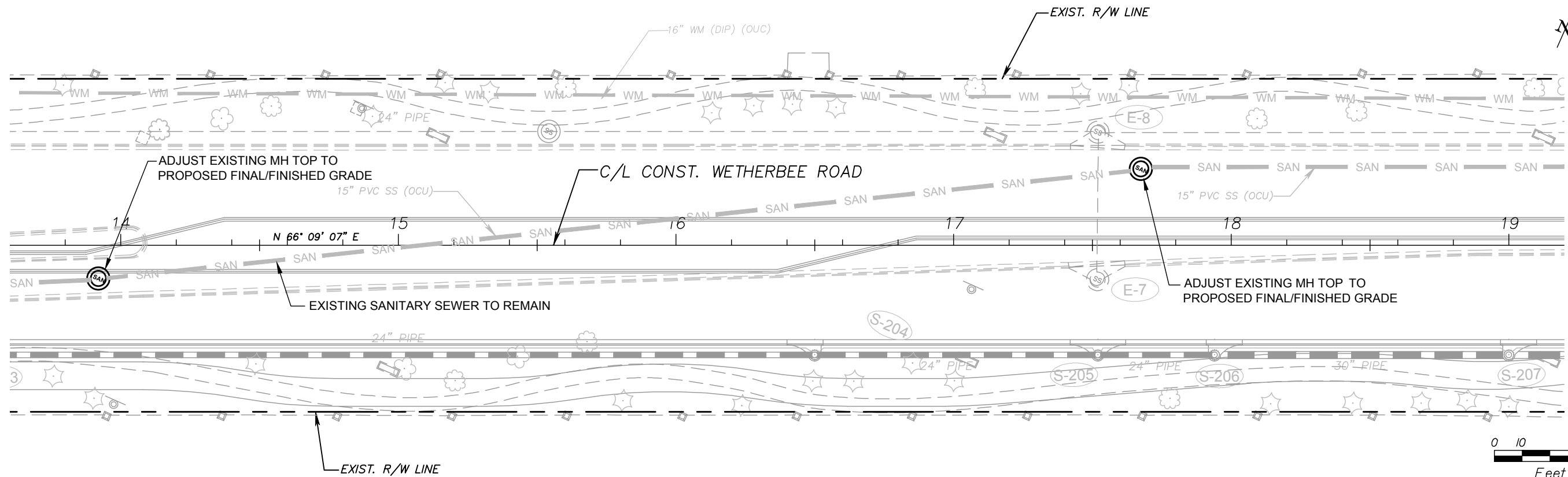
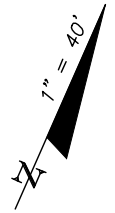
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SHEET TITLE:	PLAN AND PROFILE STA. 8+00 TO STA. 13+60	SHEET NO.	6
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT		



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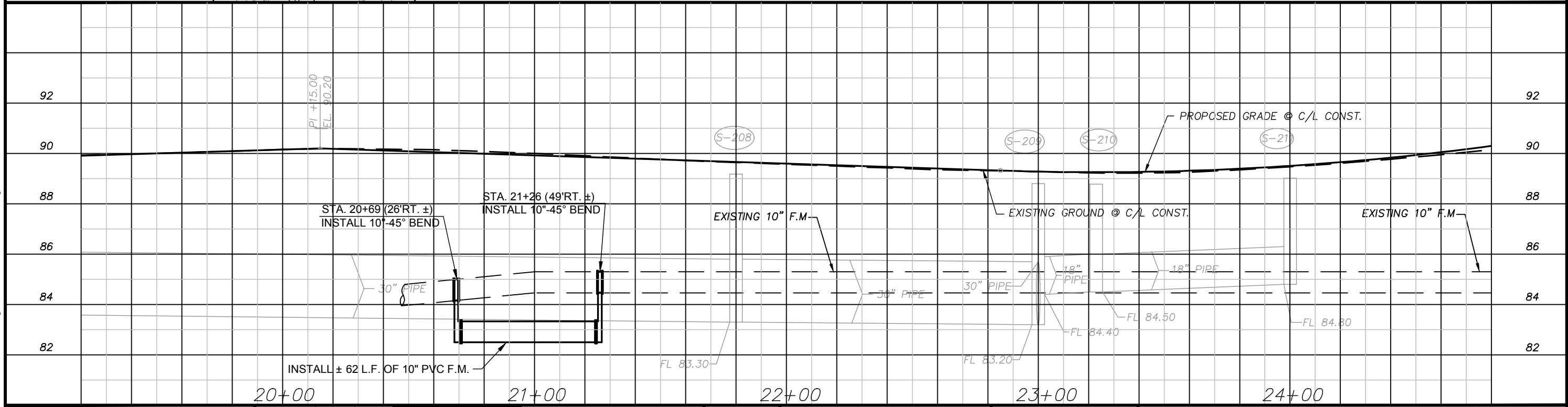
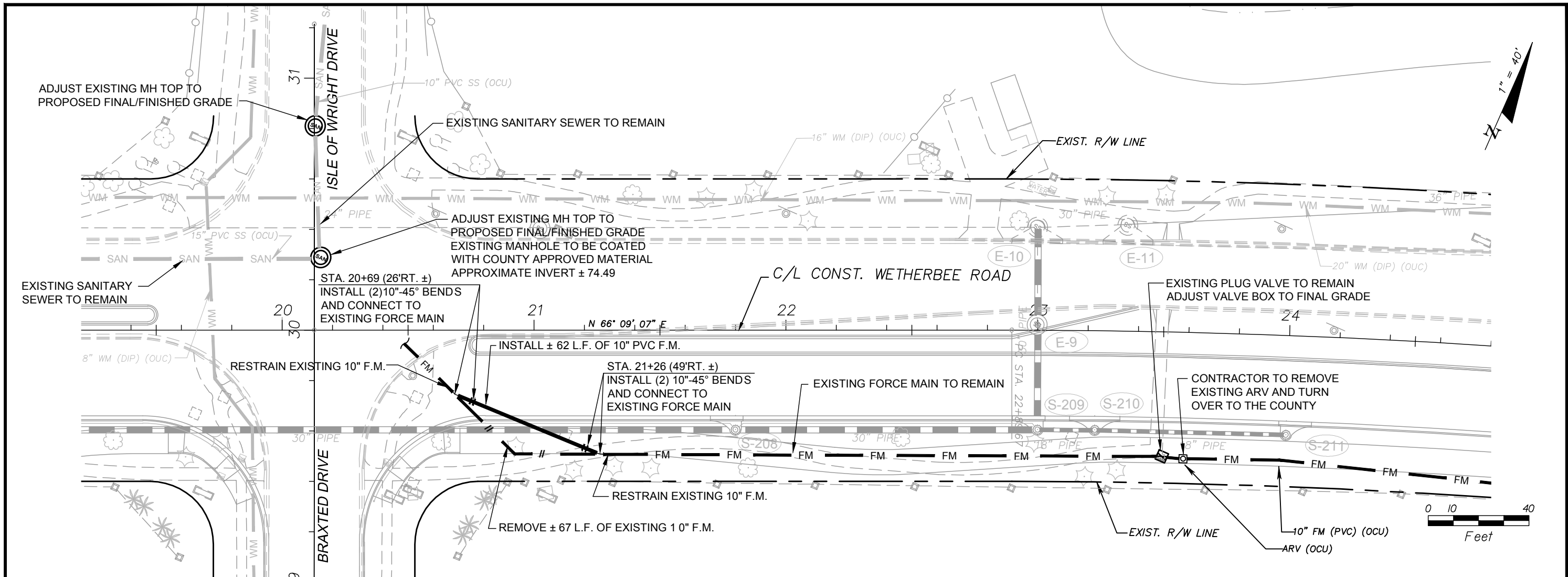
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SHEET TITLE: PLAN AND PROFILE STA. 13+60 TO STA. 19+20		SHEET NO. 7
PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT		

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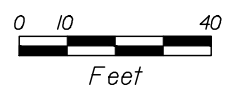
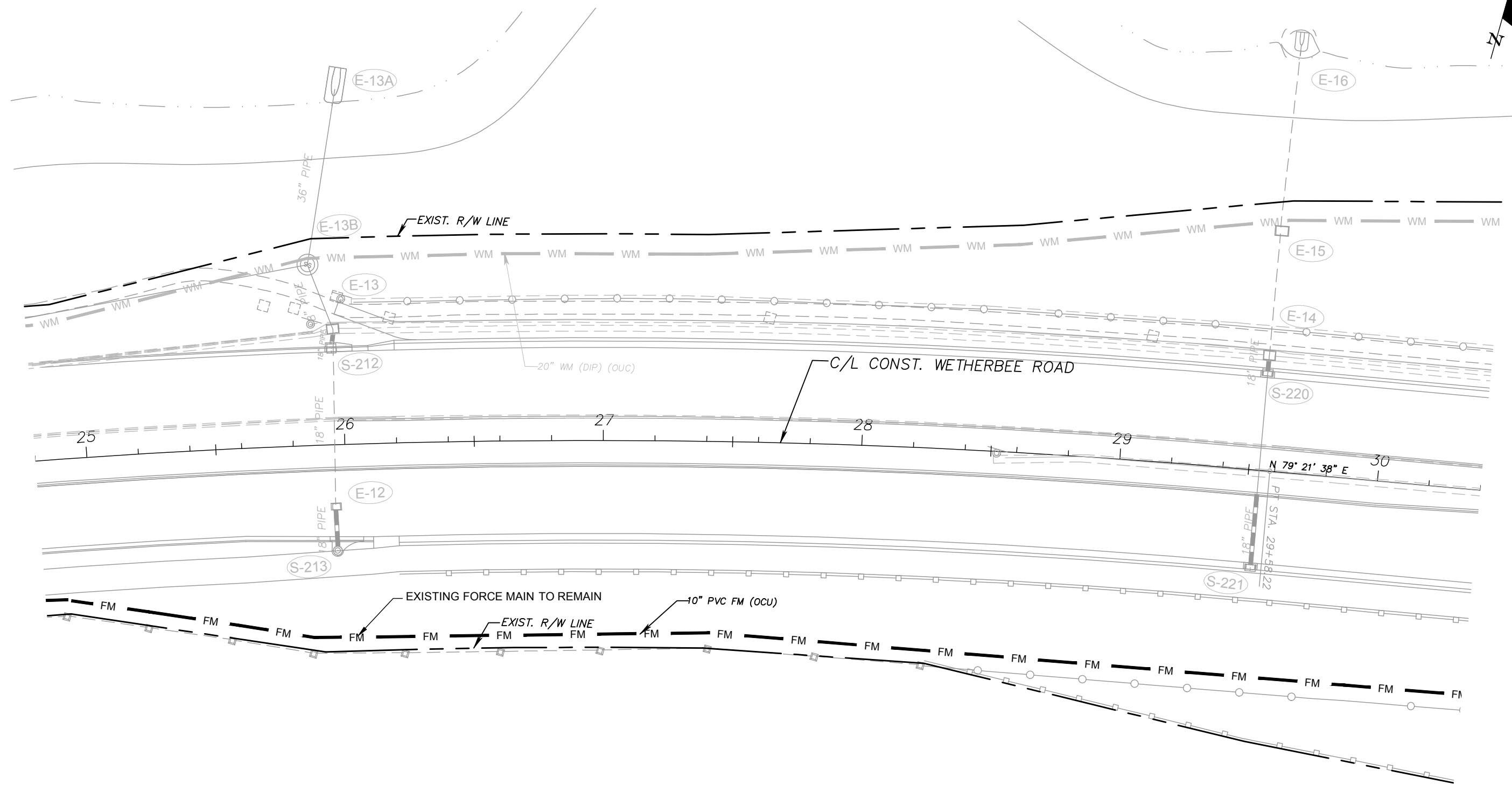
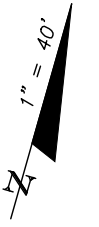
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Environmental	Surveyors
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SHEET TITLE:	PLAN AND PROFILE STA. 19+20 TO STA. 24+80	SHEET NO.	8
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT		



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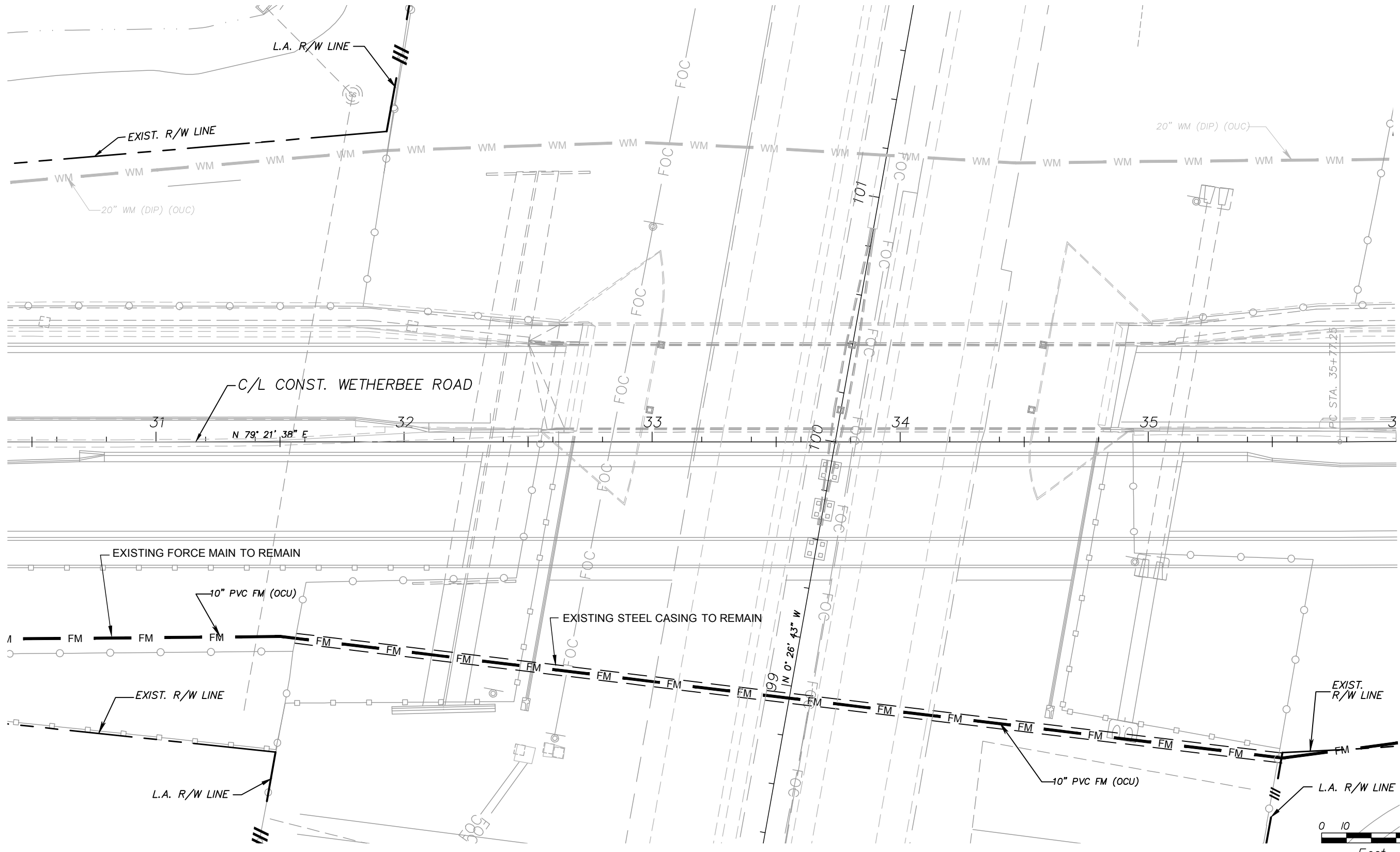
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SHEET TITLE:	PLAN STA. 24+80 TO STA. 30+40	SHEET NO.
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT	9



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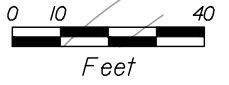
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Environmental	Surveyors
Landscape Architects	Traffic/Transportation

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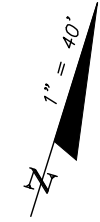
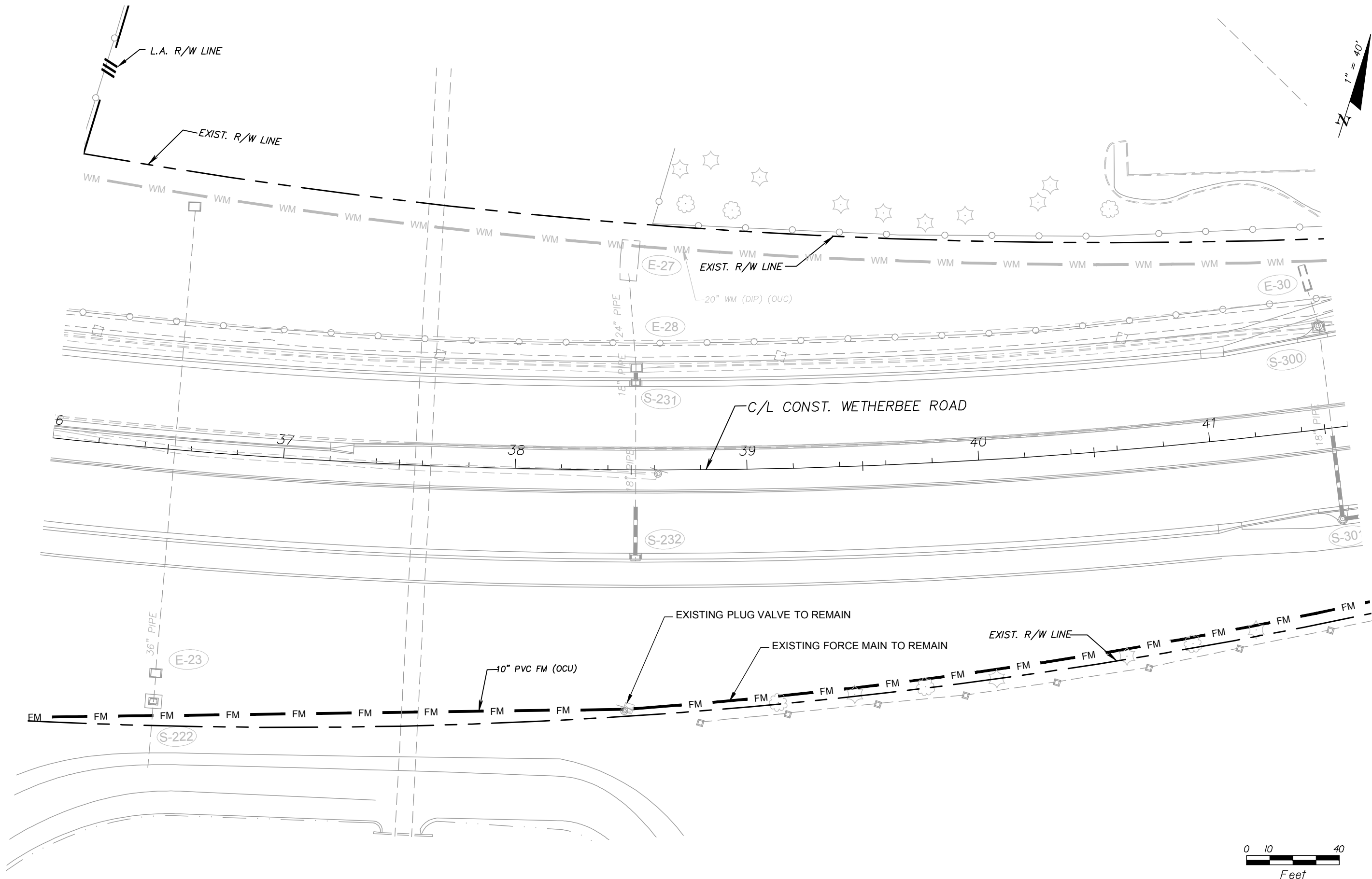
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SHEET TITLE:	PLAN STA. 30+40 TO STA. 36+00	SHEET NO.	10
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT		



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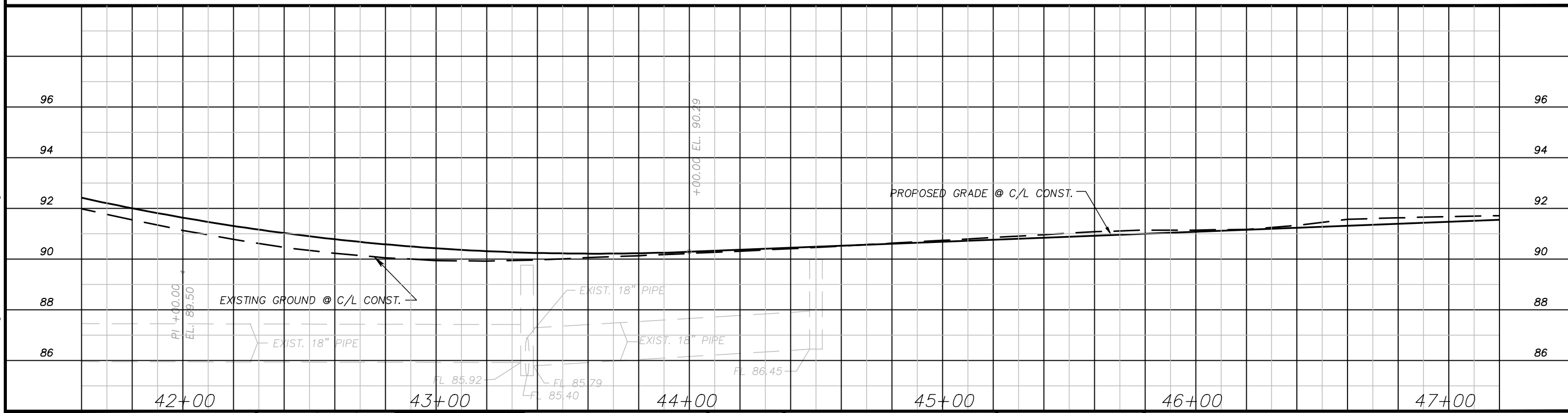
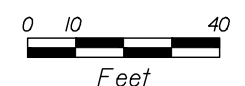
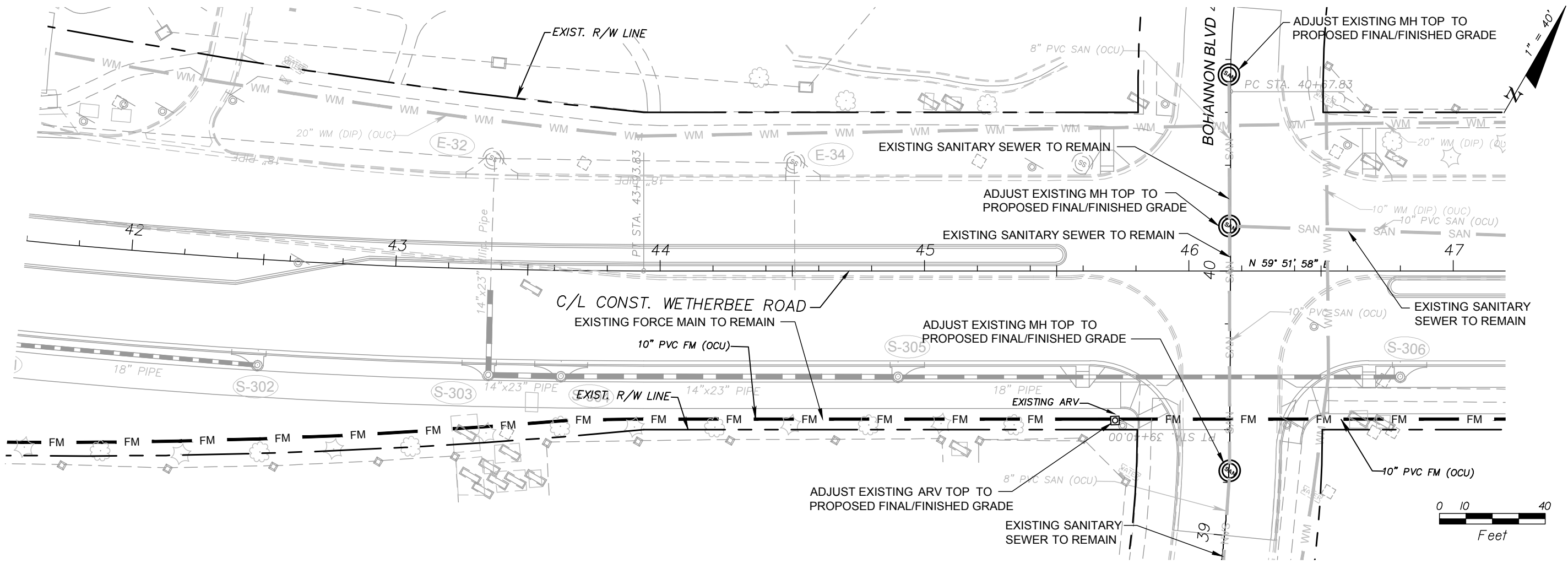
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SHEET TITLE:	PLAN STA. 36+00 TO STA. 41+60		SHEET NO.
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT		11



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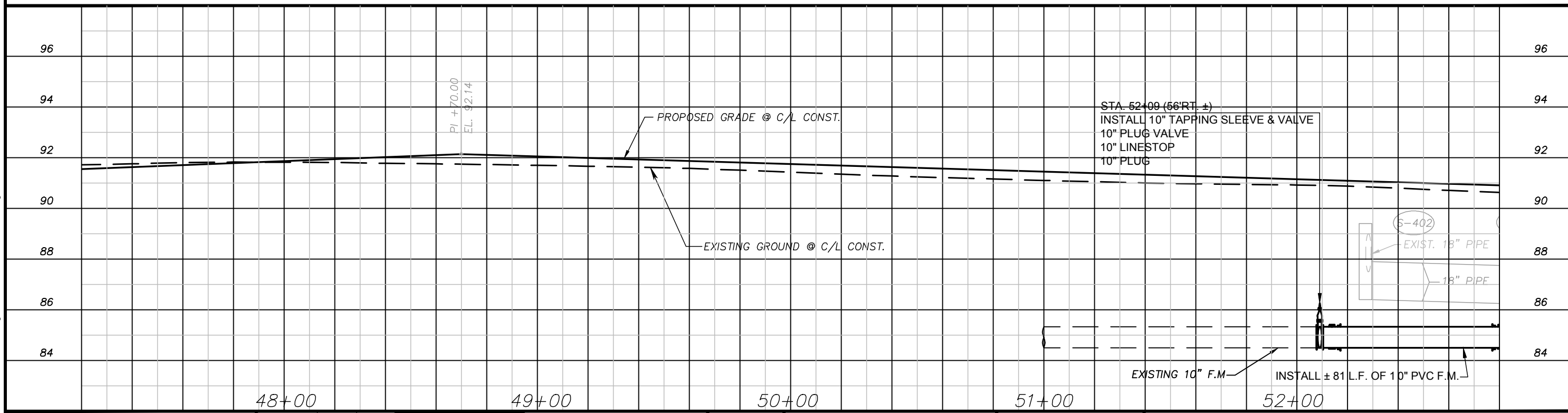
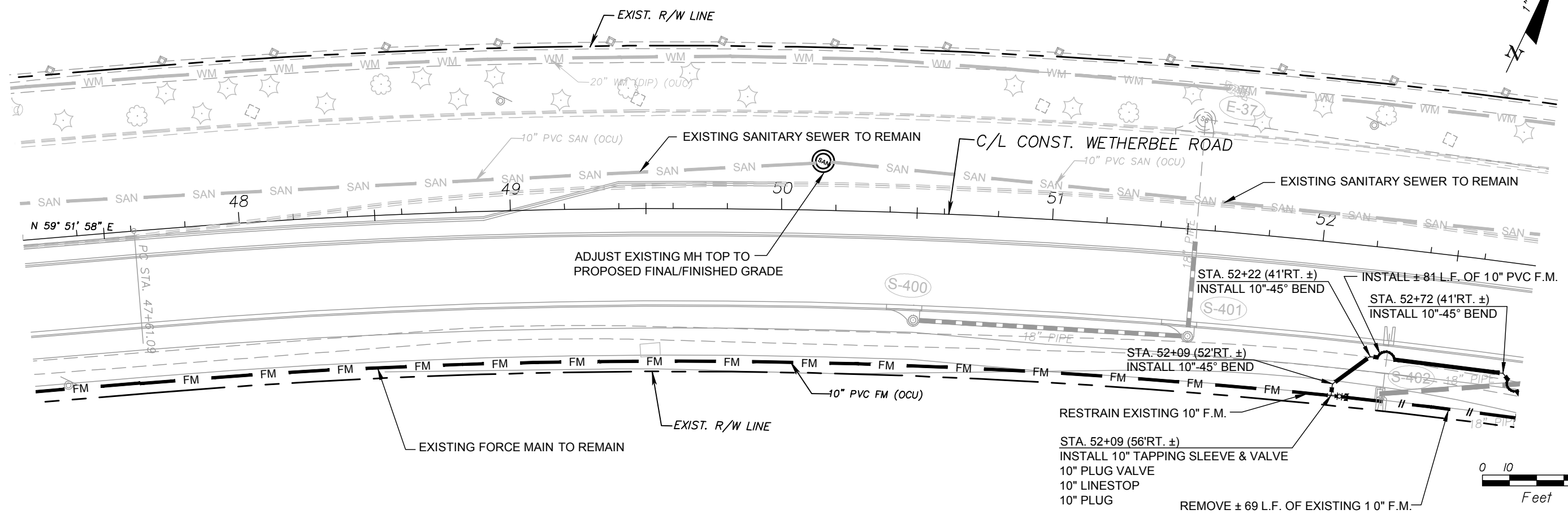
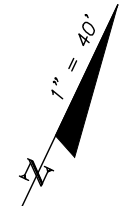
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SHEET TITLE:	PLAN AND PROFILE STA. 41+60 TO STA. 47+20	SHEET NO.	12
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT		



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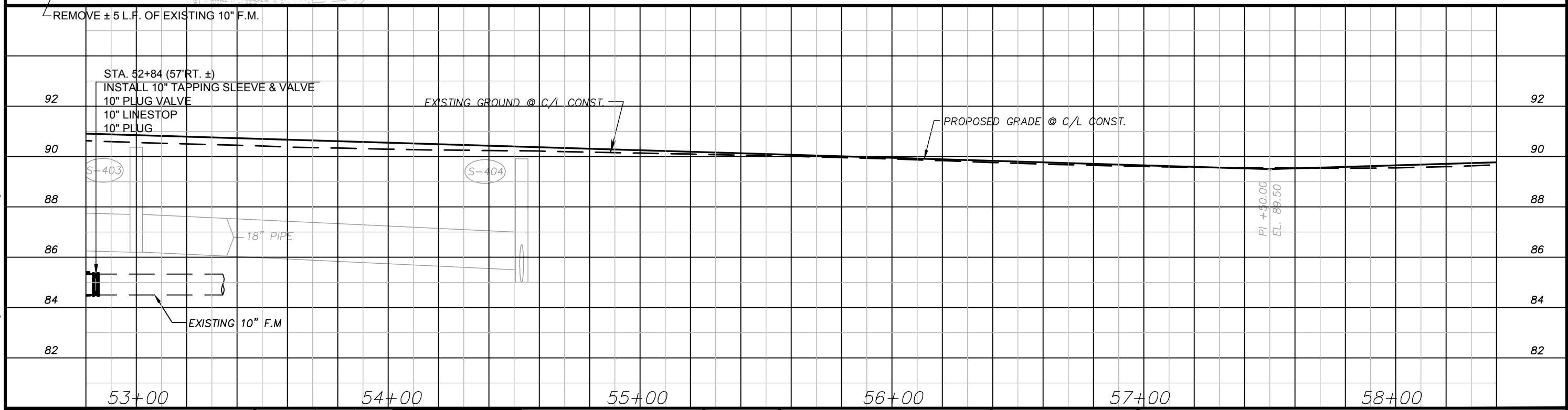
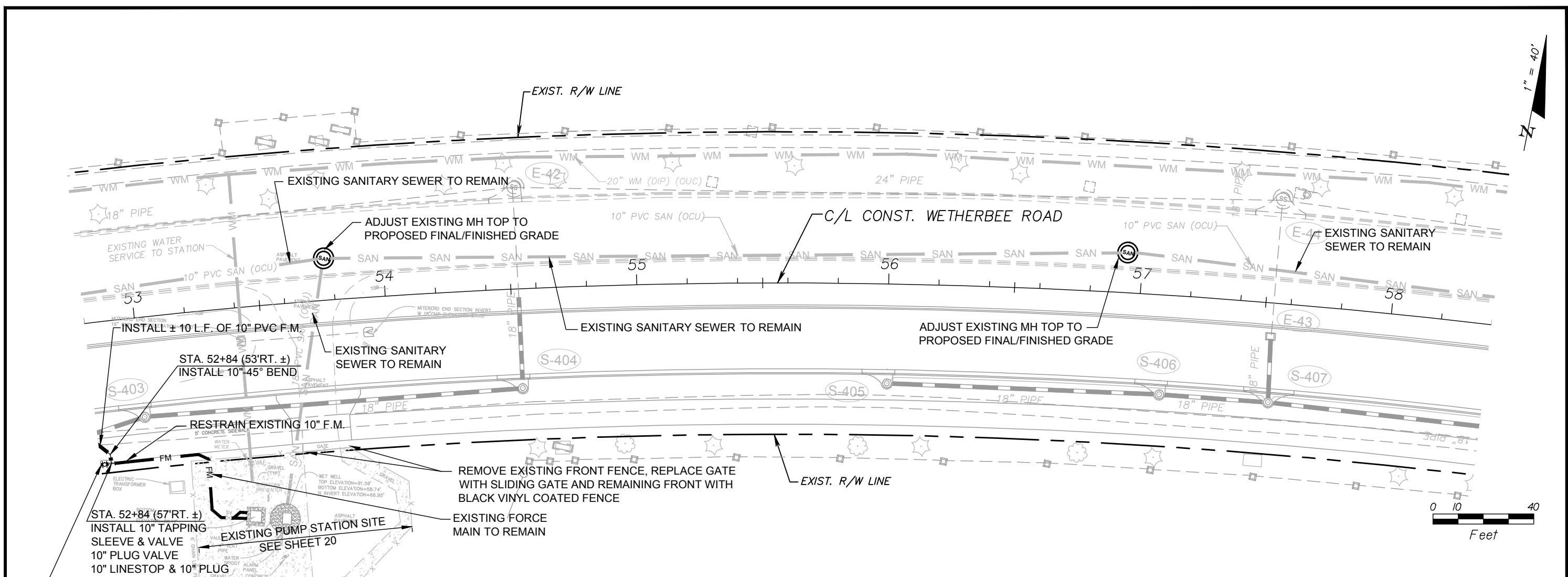
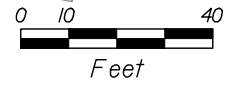
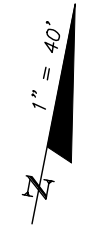
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SHEET TITLE: PLAN AND PROFILE STA. 47+20 TO STA. 52+80	PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT	SHEET NO. 13



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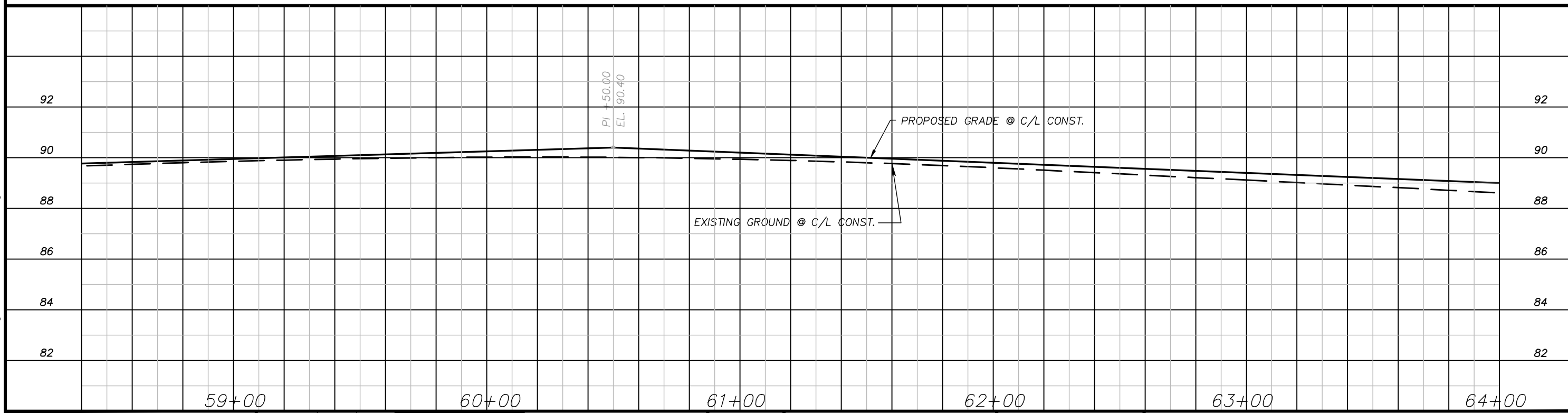
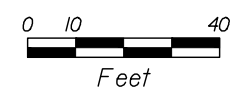
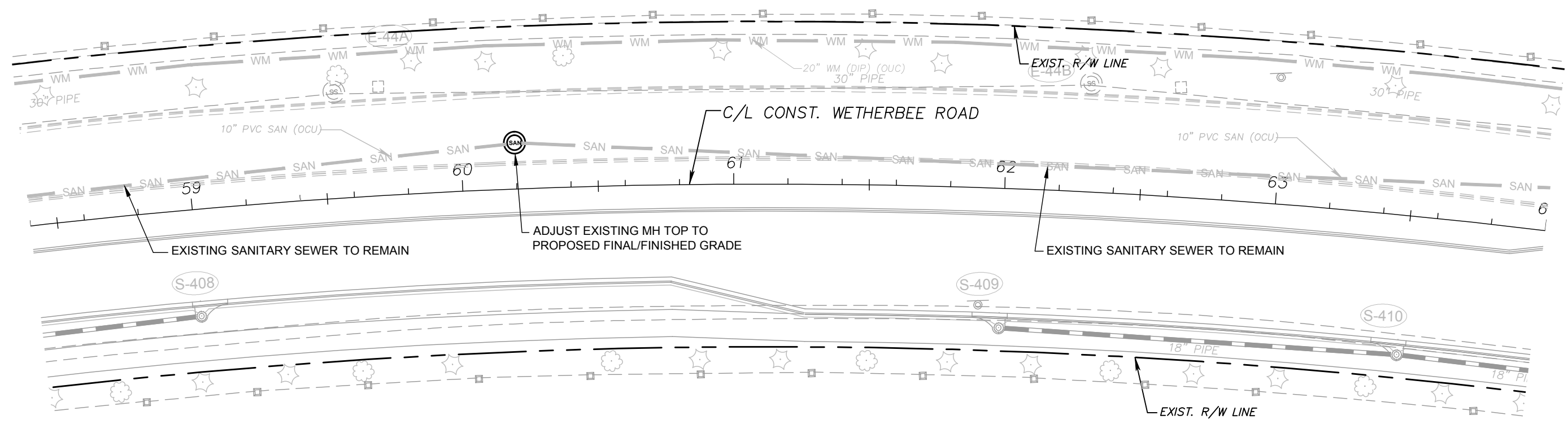
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SHEET TITLE: PLAN AND PROFILE STA. 52+82 TO STA. 58+40	PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT	SHEET NO. 14



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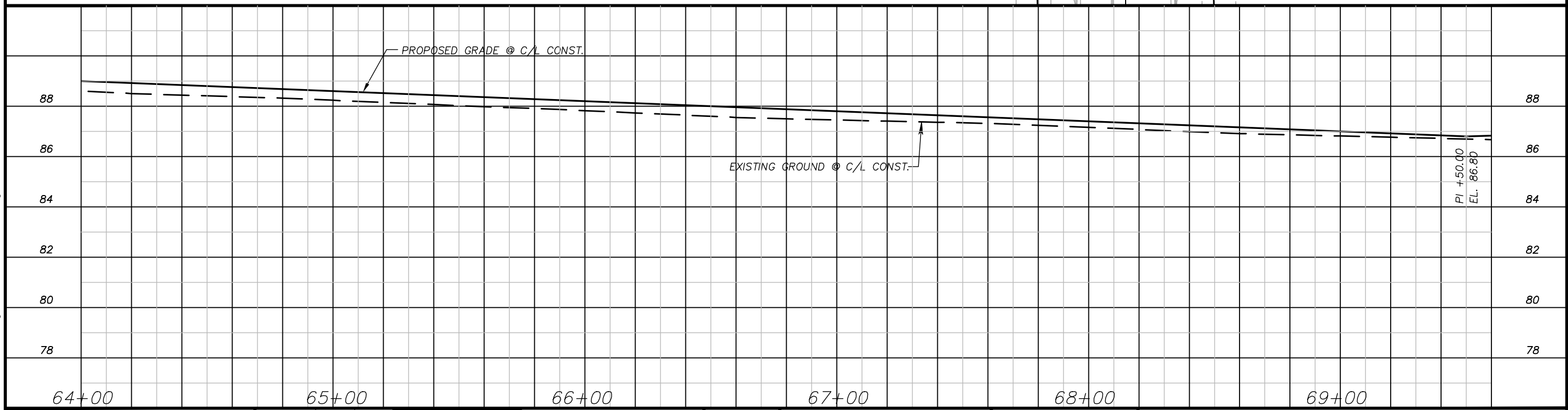
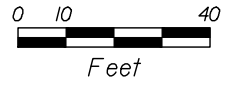
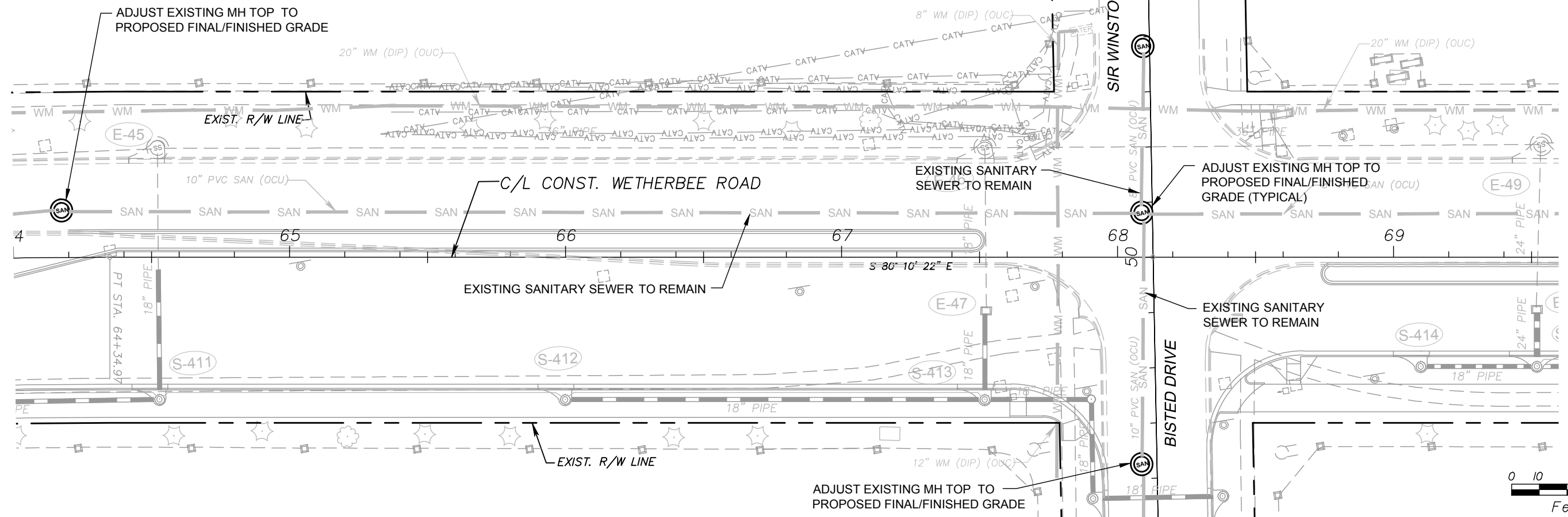
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SHEET TITLE:	PLAN AND PROFILE STA. 58+40 TO STA. 64+00	SHEET NO.	15
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT		



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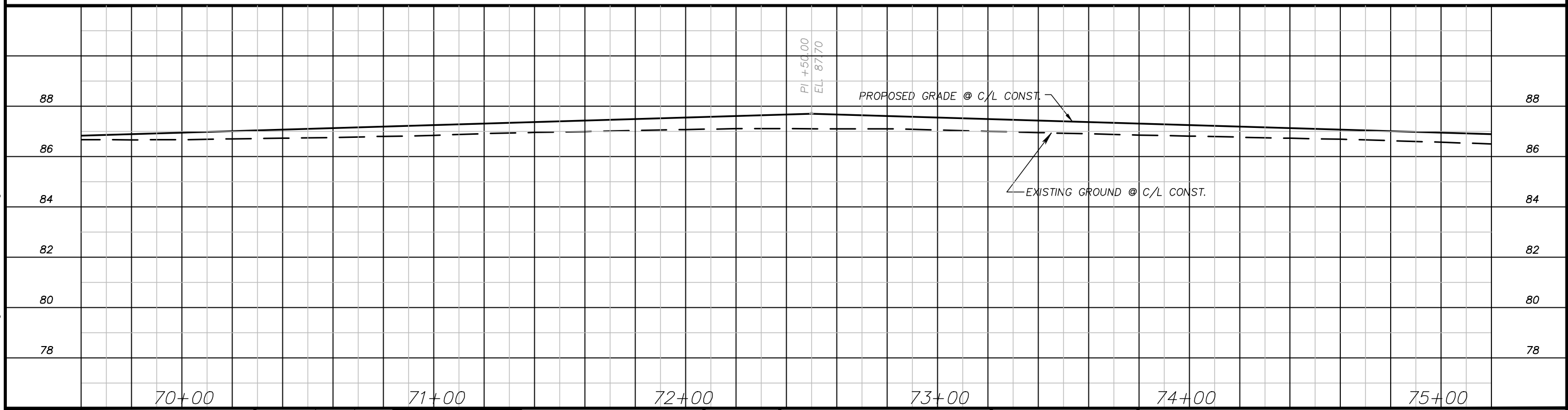
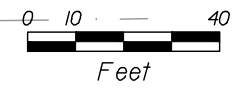
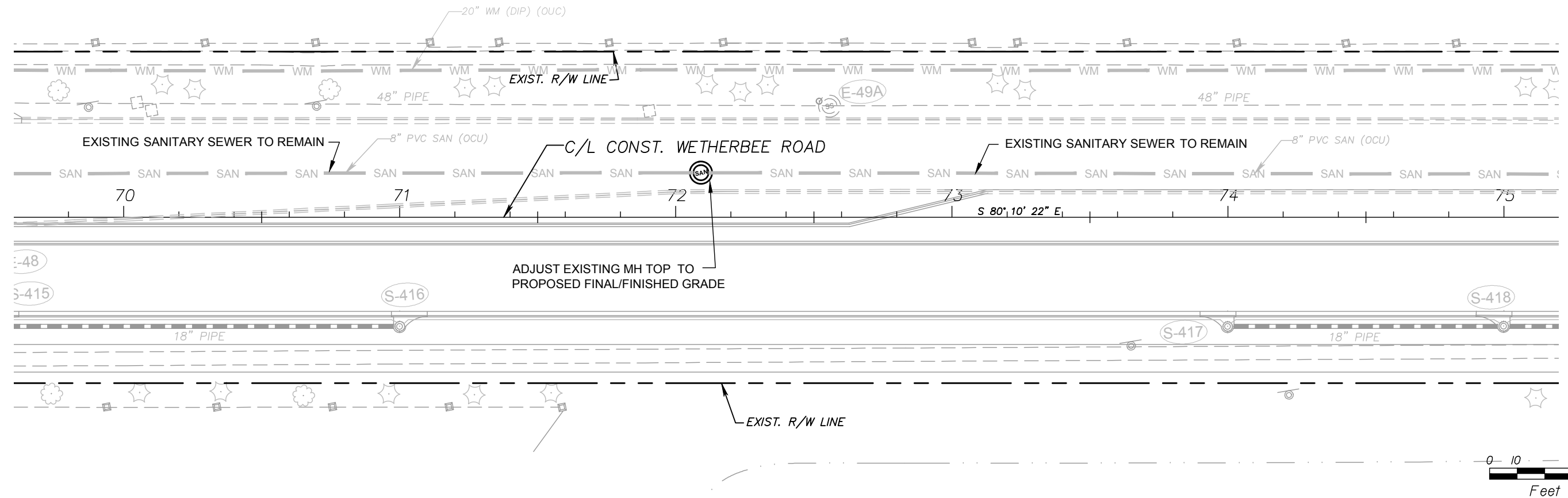
Architects	M / E / P
Engineers	Planners
Environmental	Surveyors
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SHEET TITLE:	PLAN AND PROFILE STA. 64+00 TO STA. 69+60	SHEET NO.	16
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT		



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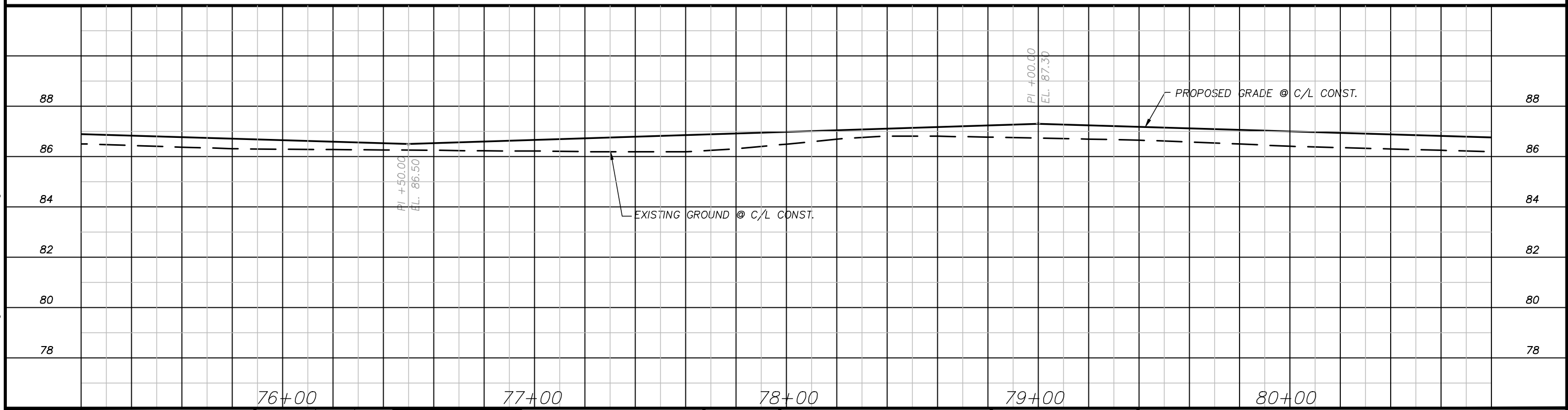
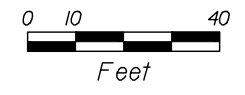
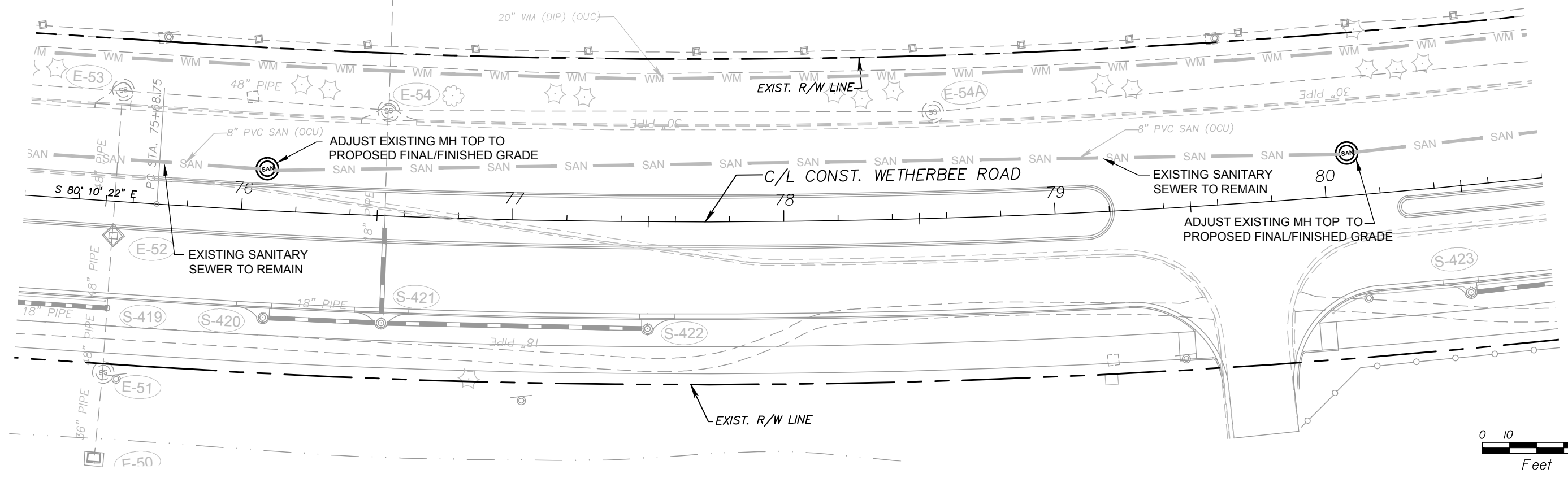
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 Licenses:
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 Survey L.B. No. 7143
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 Lndscp. Lic. No. LC0000298

SHEET TITLE: PLAN AND PROFILE STA. 69+60 TO STA. 75+20		SHEET NO. 17
PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT		



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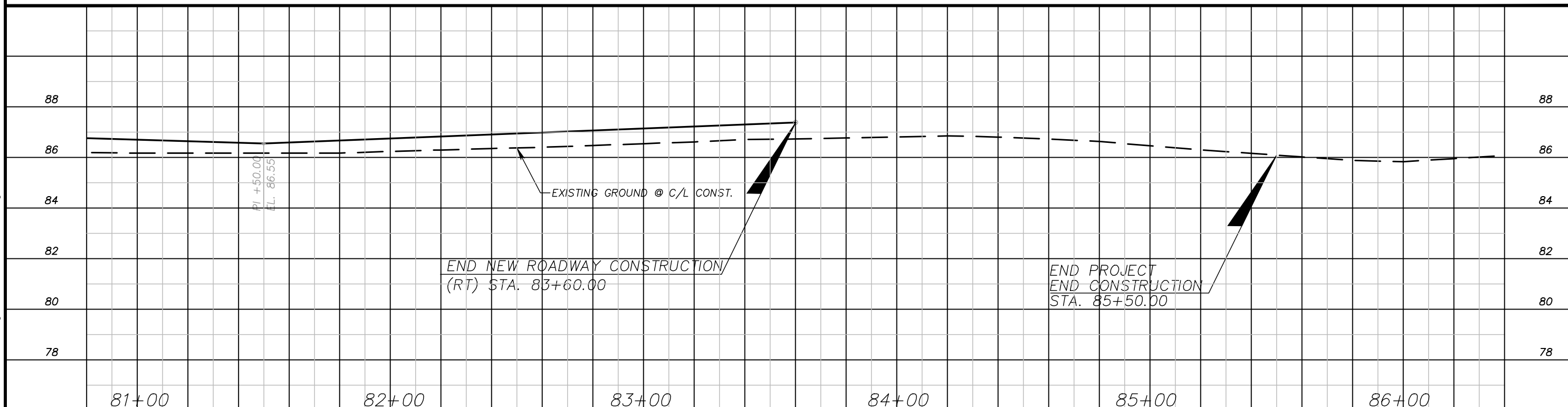
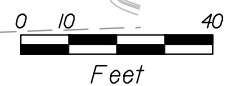
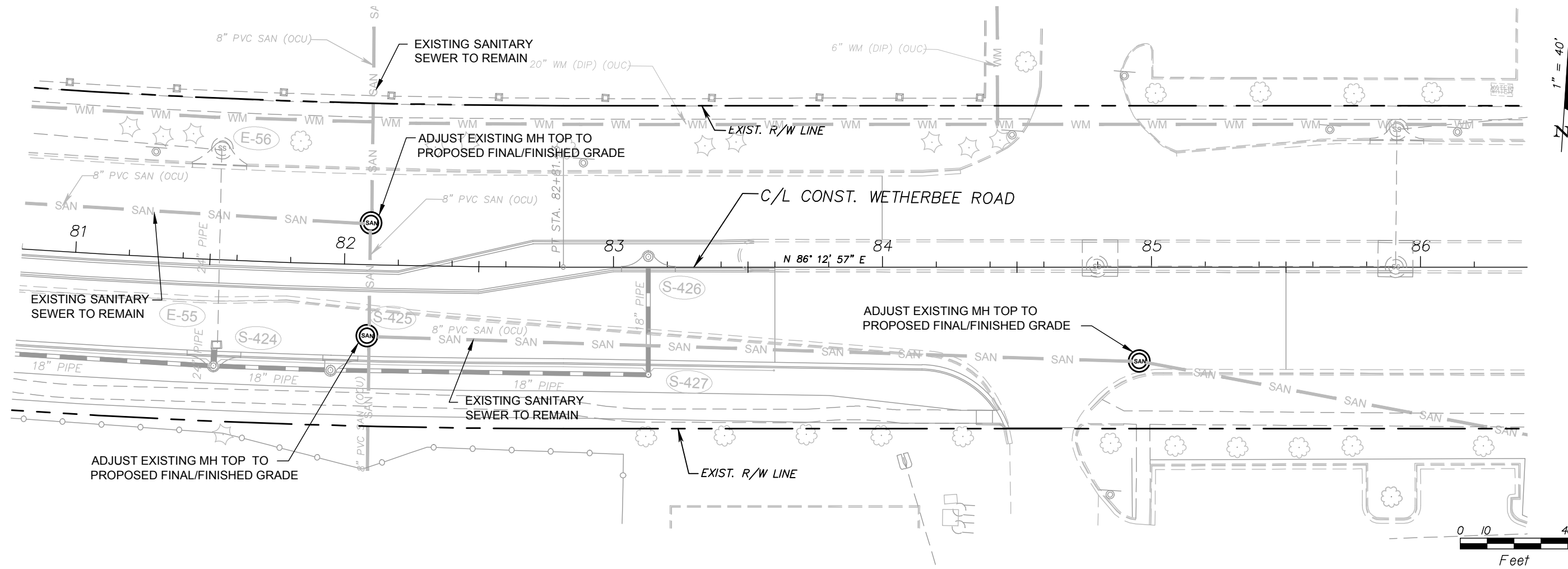
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SHEET TITLE: PLAN AND PROFILE STA. 75+20 TO STA. 80+80	PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT	SHEET NO. 18



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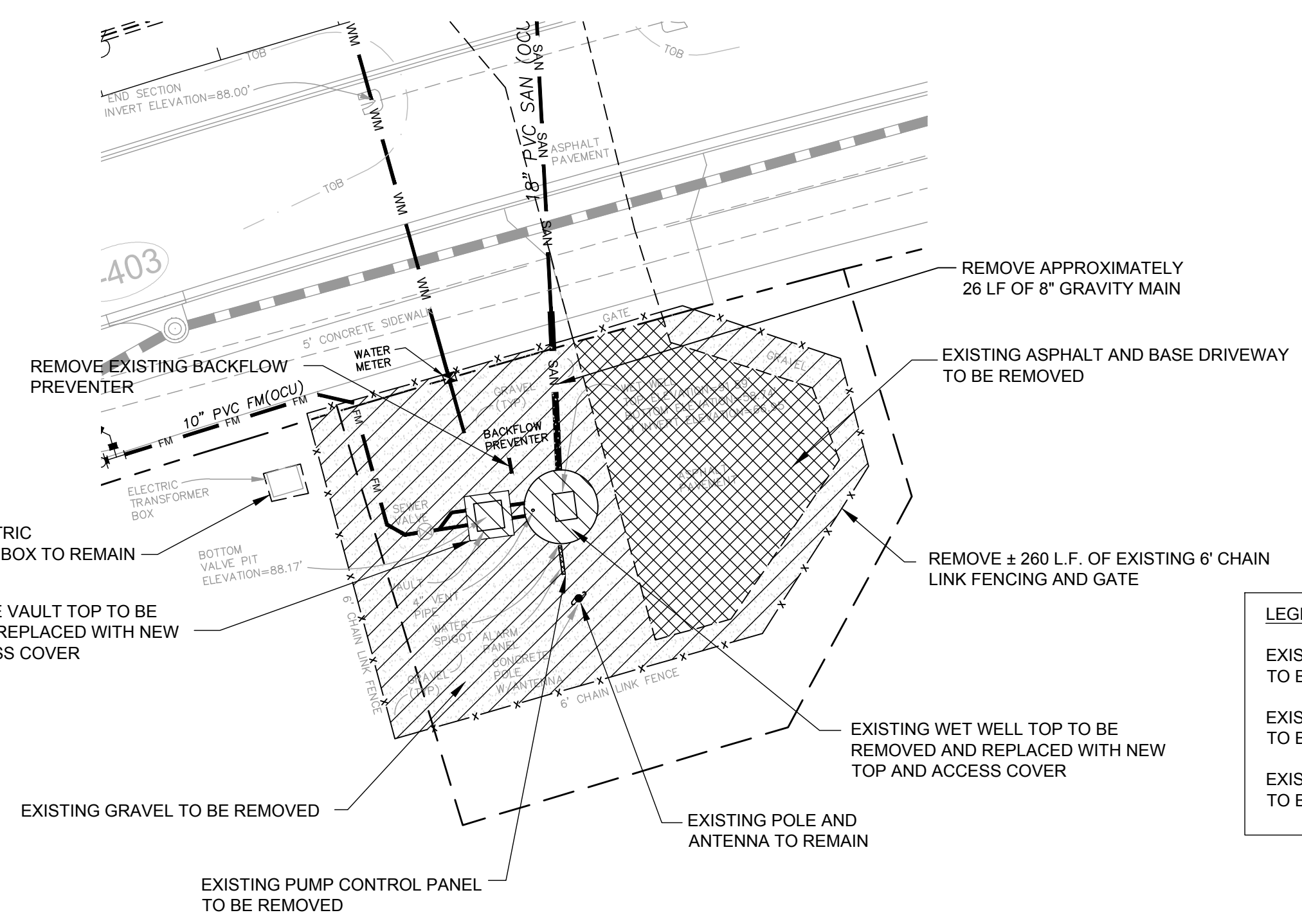
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SHEET TITLE: PLAN AND PROFILE STA. 80+80 TO STA. 86+40		SHEET NO. 19
PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT		



SCALE: 1"=20'



LEGEND	
EXISTING GRAVEL TO BE REMOVED	
EXISTING ASPHALT TO BE REMOVED	
EXISTING TOP TO BE REMOVED	

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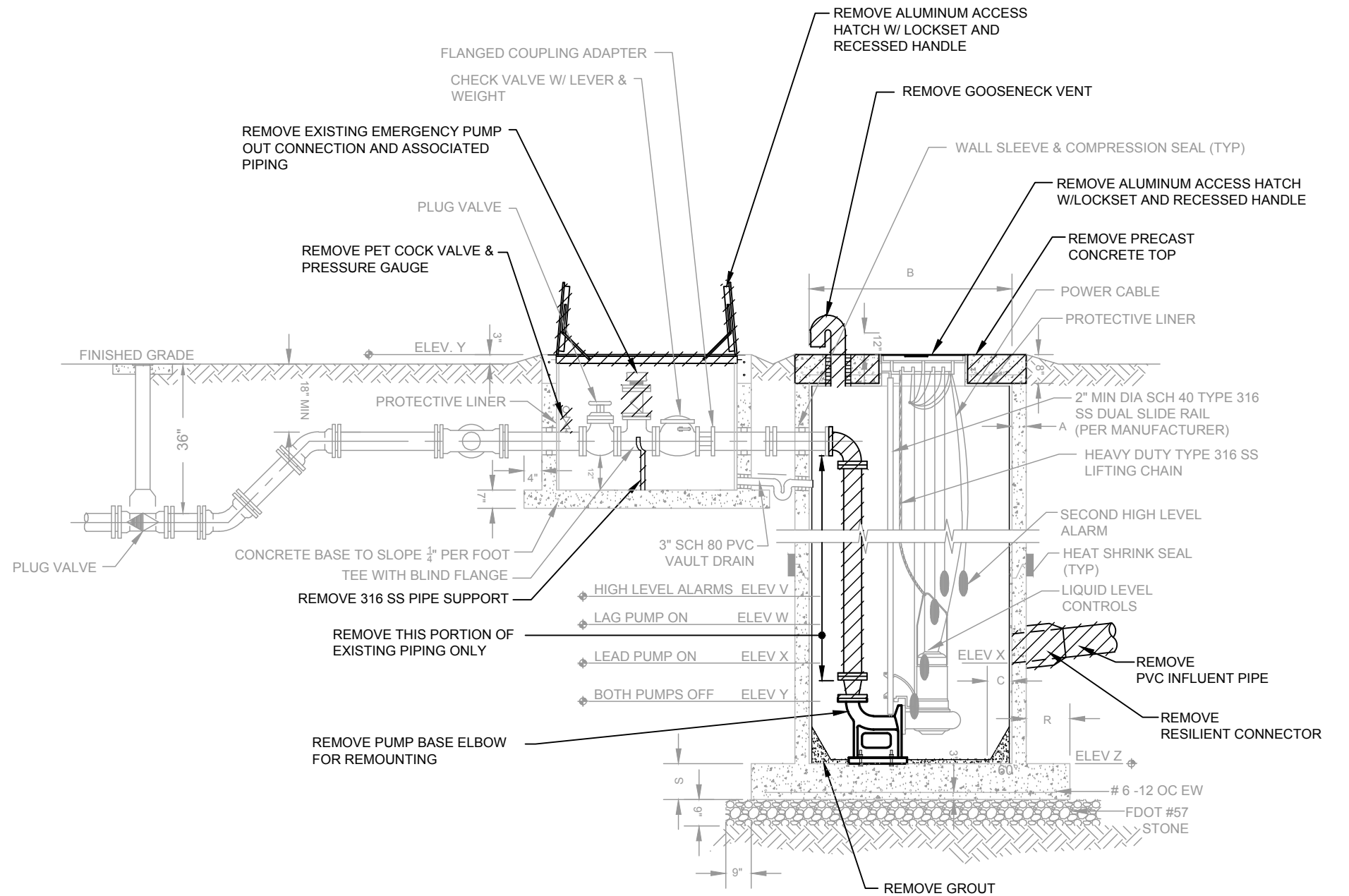
SHEET TITLE: PUMP STATION DEMOLITION PLAN		SHEET NO. 20
PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT		

Drawing name: J:\028325\DWG\Bid Drawings\028325-Pump Station Plans.dwg Jun 26, 2013

LIFT STATION DATA

PUMPING STATIONS	DIMENSIONS	ELEV. AT CONST.	ELEV. AT AS BUILT
DIM "A"	8" MIN.		
DIM "B"	10'-0" MIN.		
DIM "C"	9"		
DIM "D"	*		
DIM "E"	*		
DIM "F"	*		
DIM "G"	*		
DIM "H"	6'-0" MIN.		
DIM "J"			
DIM "K"	4'-8" MIN.		
ELEV. "T"		-64.25-	59.58
ELEV. "U"		62.75	-
ELEV. "V"		67.45	-
ELEV. "W"		68.50	-
ELEV. "X"		69.00	-
ELEV. "Y"		-92.00-	92.30
ELEV. "Z"		-69.22-	67.84

* PER PUMP MANUFACTURER'S REQUIREMENTS



EMERGENCY POWER RECEPTACLE

230 V - 100 AMP SERVICE - JRE - 4100 - PYLE - NATIONAL
 230 V - 200 AMP SERVICE - AR - 2042 - CROUSE - HINDS
 277/480 V - 200 AMP SERVICE - AR - 2042 - CROUSE - HINDS

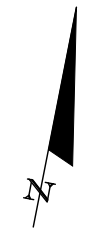
LEGEND

TO BE REMOVED



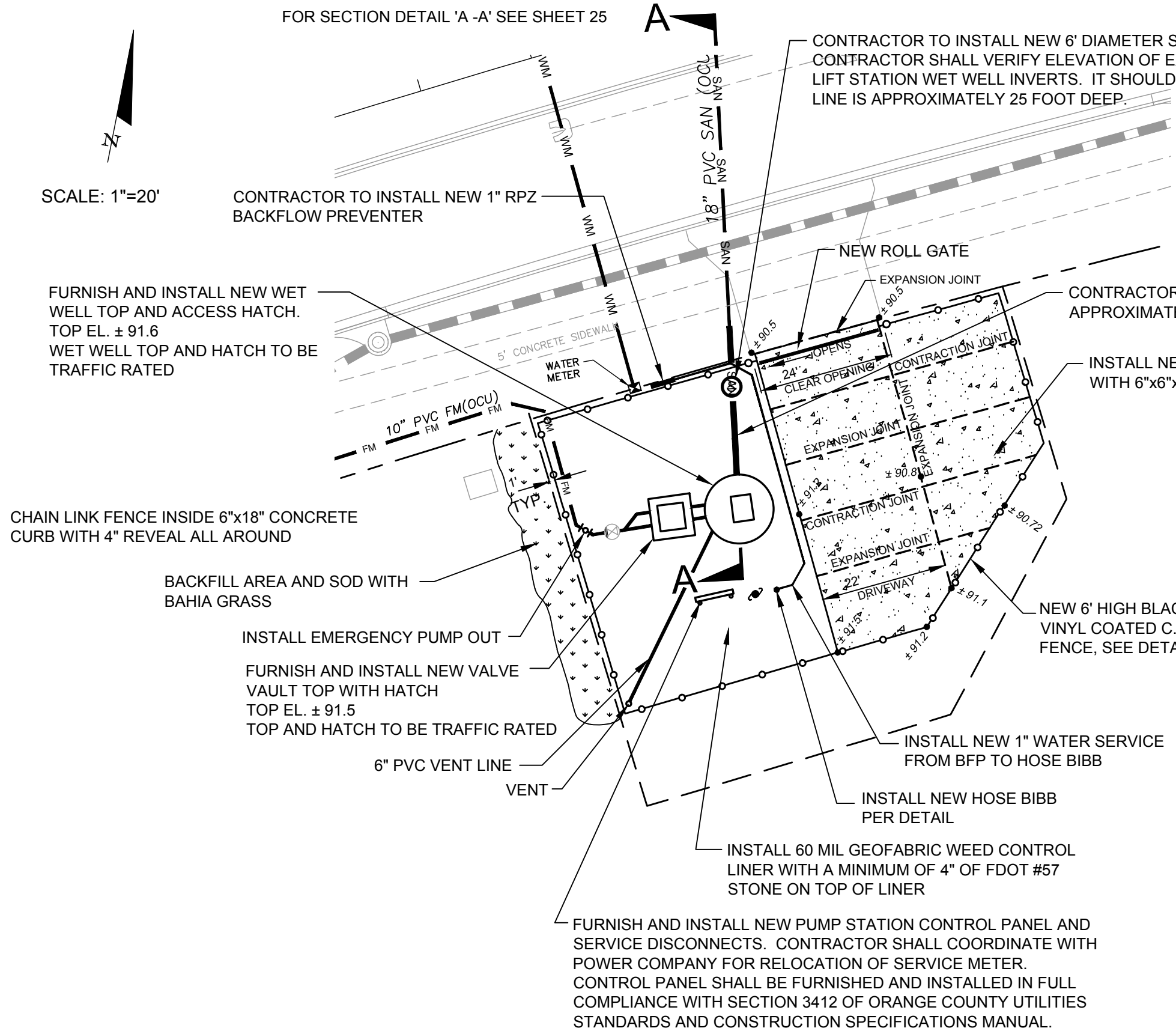
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DATE	BY	DESCRIPTION	DRAWN BY:			G.N.P.	7/11		1117 E. Robinson St. - Orlando, FL 32801 Ph: 407.425.0452	
			CHECKED BY:			ACL	7/11		Licenses: Eng. C.O.A. No. 3215 Survey L.B. No. 7143	
			DESIGNED BY:			ACL	7/11		Arch. Lic. No. AA2600926 Lndscp. Lic. No. LC0000298	
			CHECKED BY:	DEM	7/11	ROAD NO. COUNTY FINANCIAL PROJECT ID ORANGE		PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT		
			APPROVED BY:	DAVID E. MAHLER, P.E.	7/11	www.cphcorp.com			SHEET NO. 21	

FOR SECTION DETAIL 'A' SEE SHEET 25



SCALE: 1"=20'

LEGEND	
FDOT # 57 STONE	
300 PSI CONCRETE	
BAHIA GRASS	



NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING AND CERTIFYING BFP FOLLOWING INSTALLATION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR FLOW BY-PASS OPERATION TO ALLOW FOR INSTALLATION OF NEW MANHOLE AND REHABILITATION OF THE PUMP STATION. PLEASE REFER TO SPECIFICATIONS FOR REQUIREMENTS OF BY PASS SYSTEM.
3. USE OF A DOGHOUSE STYLE MANHOLE WILL NOT BE ALLOWED FOR NEW MANHOLE.
4. CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING THE MOTOR LEADS AND THE FLOATS AND ANY OTHER CABLES DUE TO THE CONTROL PANEL RELOCATION.
5. CONTRACTOR SHALL COORDINATE WITH OCU SCADA DEPARTMENT FOR RELOCATION OS SCADA EQUIPMENT. COUNTY WILL DISCONNECT AND MOVE THE SCADA PANEL. CONTRACTOR SHALL PROVIDE ROOM ON THE NEW EQUIPMENT RACK FOR THE SCADA PANEL. CONTACT DON PECK AT 407-836-6711.
6. EXISTING SANITARY MANHOLE DEPTH IS ± 20'. TOP ELEVATION ± 91.08 AND INVERT ELEVATION ± 68.23.
7. CONTRACTOR SHALL INSTALL THE GENERATOR RECEPTACLE ON THE EAST SIDE OF THE CONTROL PANEL.
8. CONTRACTOR SHALL CORE EXISTING WET WELL AND INSTALL 8" PVC VENT LINE TO CORNER OF PROPERTY AS SHOWN.

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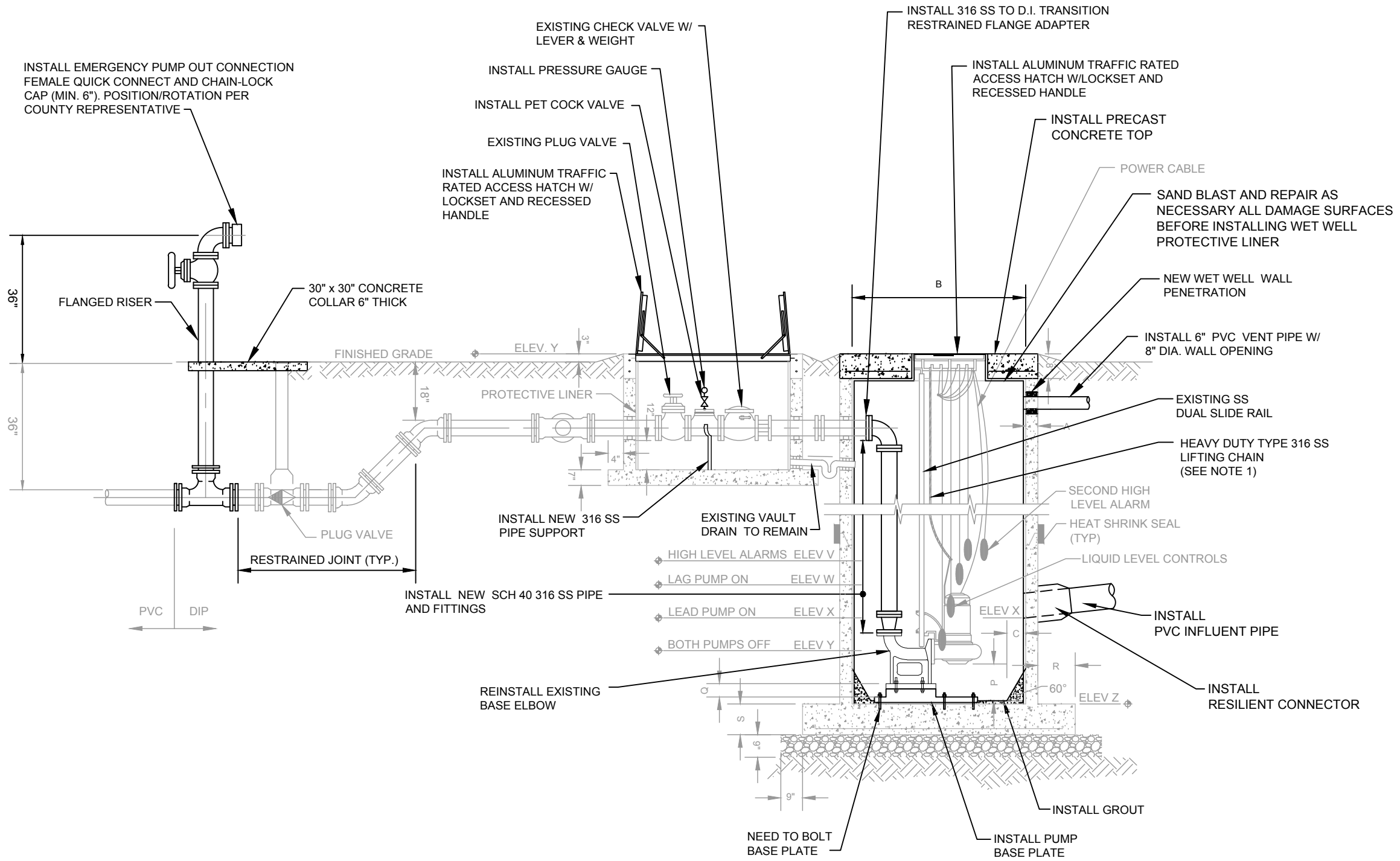
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SHEET TITLE: PUMP STATION NEW CONSTRUCTION PLAN	PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT	SHEET NO. 22

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- NOTES:**
1. 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.
 2. WALL SLEEVE AND COMPRESSION SEALS SHALL BE COMPATIBLE WITH LINER.
 3. INSTALLED TO PROVIDE DRY CONTACT FOR SCADA.
 4. ALL FLANGES: PIPE, VALVES AND APPURTENANCES SHALL HAVE 316 S.S. HARDWARE.

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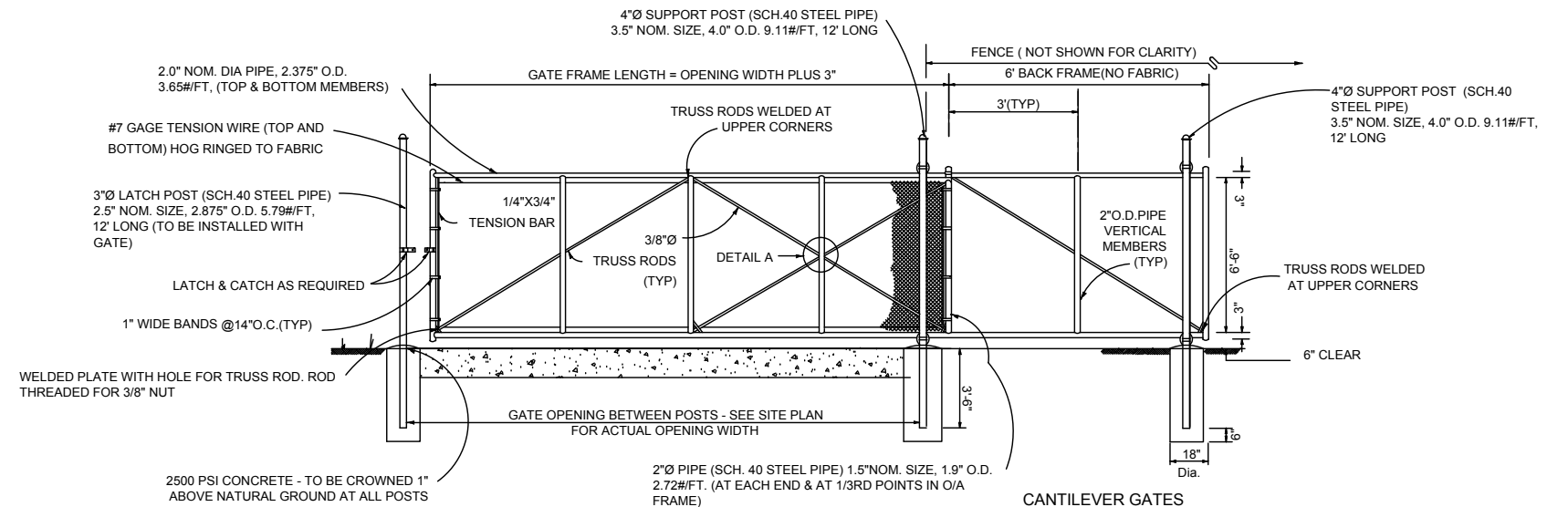
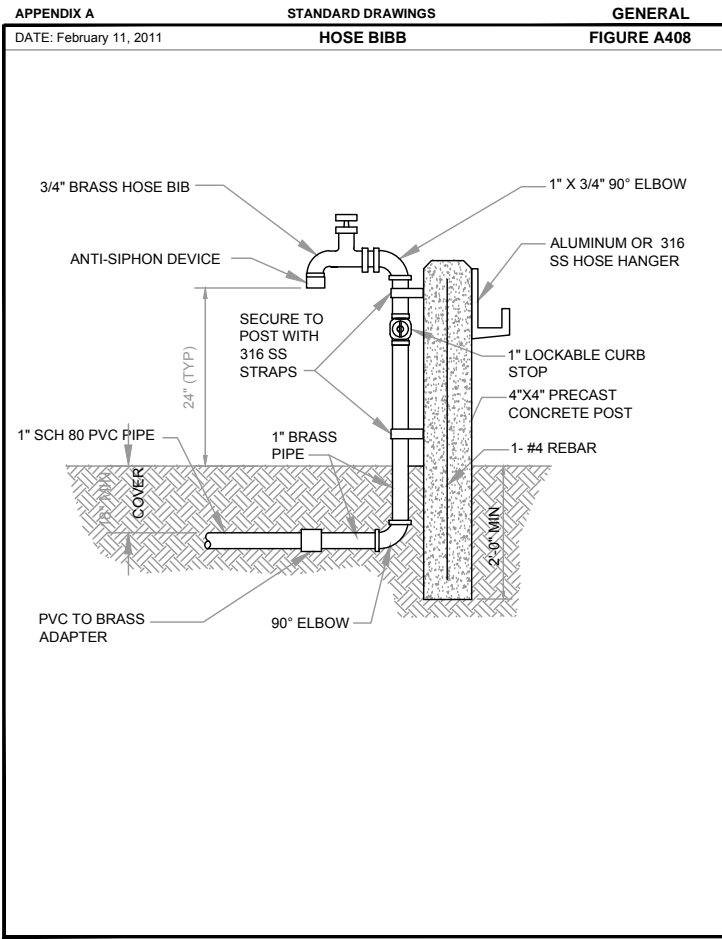
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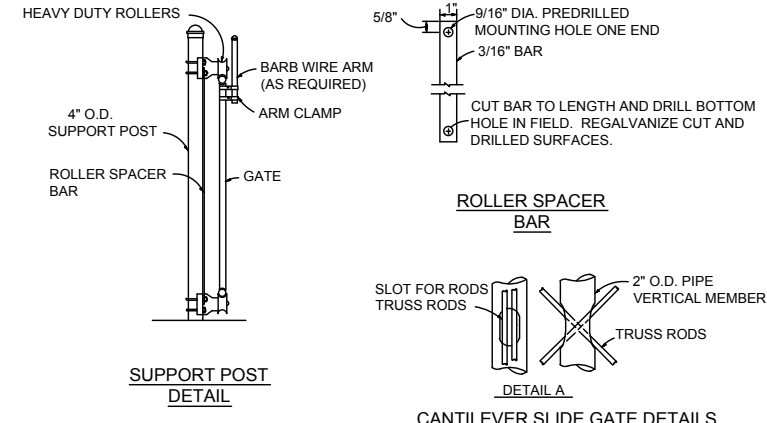
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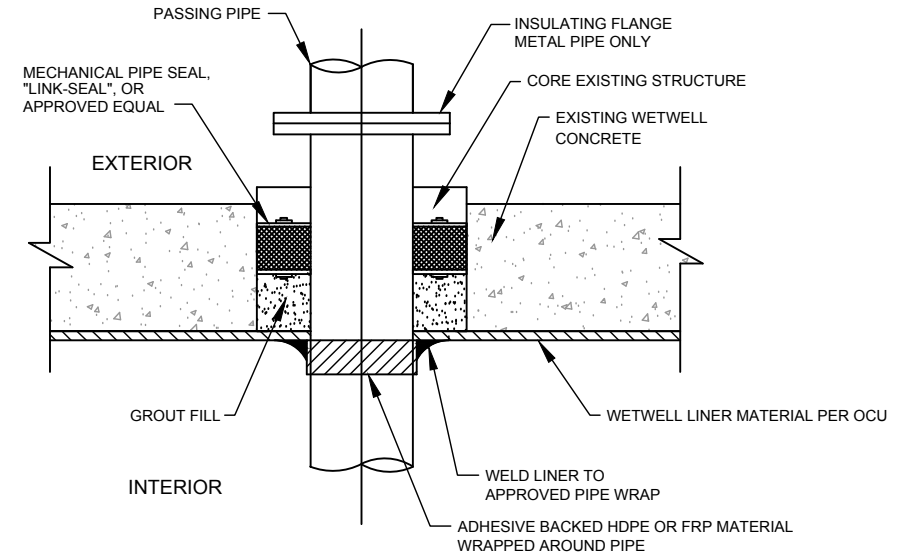
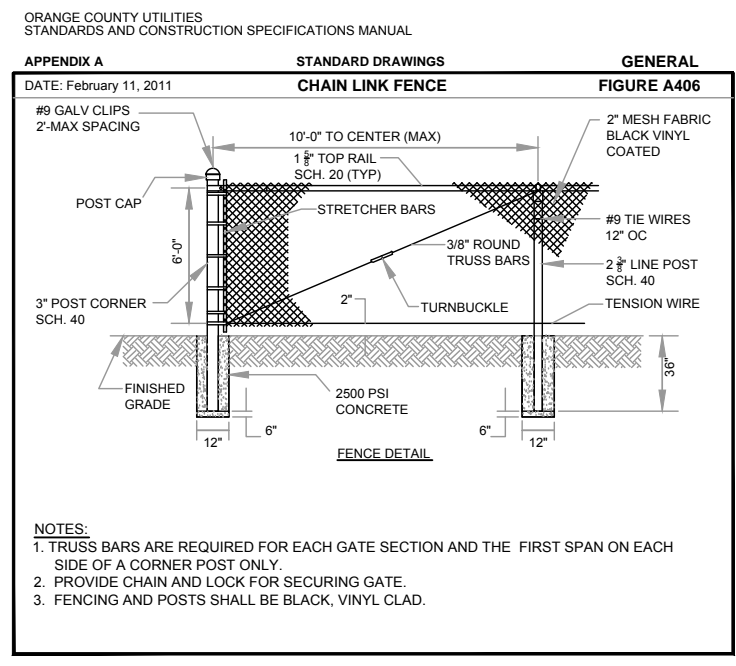
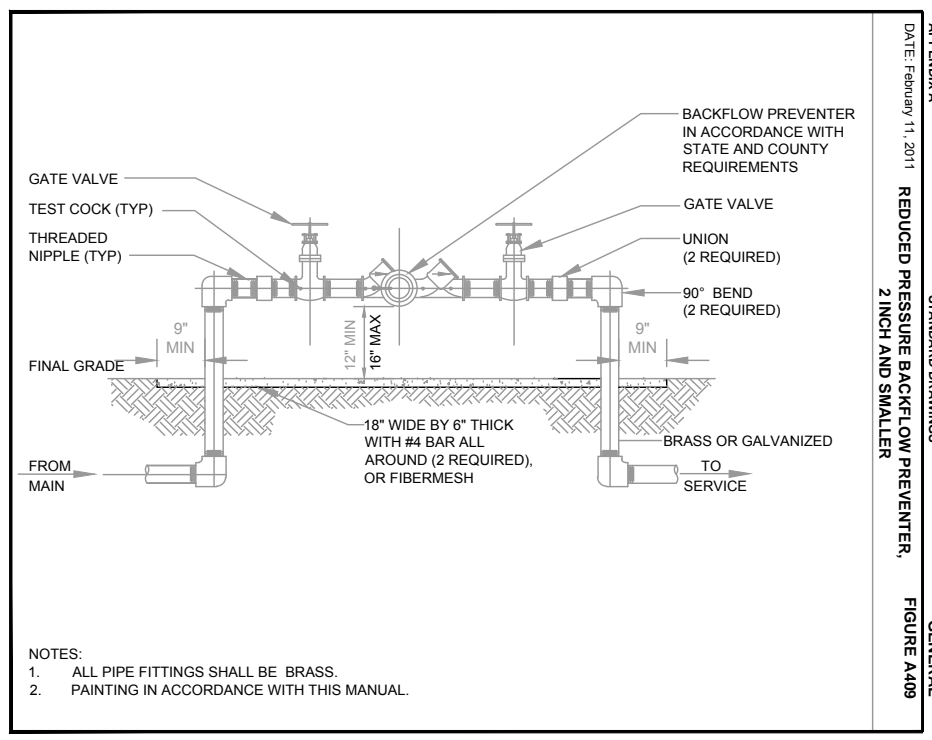
SHEET TITLE:	PUMP STATION NEW CONSTRUCTION SECTION	
PROJECT TITLE:	WETHERBEE ROAD UTILITY RELOCATION PROJECT	
SHEET NO.	23	



- CANTILEVER GATES
GENERAL NOTES**
1. THE CONTRACTOR MAY SUBSTITUTE ANY EQUIVALENT CANTILEVER SLIDE GATE APPROVED BY THE ENGINEER. EXTRUDED, ROLLED OR FORMED COMPONENTS THAT PROVIDE EQUAL STRENGTH AND STABILITY MAY BE USED IN LIEU OF THE PIPE COMPONENTS SHOWN; AND, INTERNAL ROLLERS MAY BE USED IN LIEU OF THE EXTERNAL ROLLER UNITS SHOWN. GATE COMPONENTS SHALL MEET OR EXCEED THE MATERIAL REQUIREMENTS SPECIFIED ON INDEX NO. 452, FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS (CURRENT ISSUE).
 2. STEEL GATE FRAME SHALL BE FABRICATED PRIOR TO GALVANIZING, EXCEPT THAT TRUSS RODS AND TRUSS ROD PLATES MAY BE FABRICATED FOLLOWING FRAME GALVANIZING PROVIDED SURFACES DAMAGED DURING WELDING ARE GALVANIZED IN ACCORDANCE WITH SECTION 24 OF AASHTO M36.
 3. THE GATE SHALL BE EQUIPPED WITH AN ELECTRIC GATE OPERATOR CAPABLE OF OPENING AND/OR CLOSING OPERATIONS BY BOTH MANUALLY OR REMOTE CONTROL, SUCH AS A DOORKING VEHICULAR SLIDE GATE OPERATOR, MODEL 9150, OR ACCEPTABLE EQUAL, AND SHALL INCLUDE TWO PORTABLE ACTIVATION UNITS.



- FENCING MATERIALS NOTES**
1. ALL FENCING FABRIC SHALL BE UV-STABLE BLACK VINYL COATED CHAIN LINK AND SHALL HAVE A 15 YEAR MANUFACTURER'S WARRANTY. IT SHALL MEET THE REQUIREMENTS OF ASTM STANDARDS F688 CLASS 1, WITH 9-GAGE CORE WIRE.
 2. ALL POSTS, RAILS, AND FITTINGS SHALL BE COATED WITH UV-STABLE BLACK VINYL.
 3. ONE 3' LENGTH OF STAINLESS STEEL CHAIN SHALL BE PROVIDED FOR EACH GATE INSTALLED (COUNTY TO PROVIDE LOCK).
 4. ALL FABRIC SHALL HAVE KNUCKLED TOP & BOTTOM SELVAGES.



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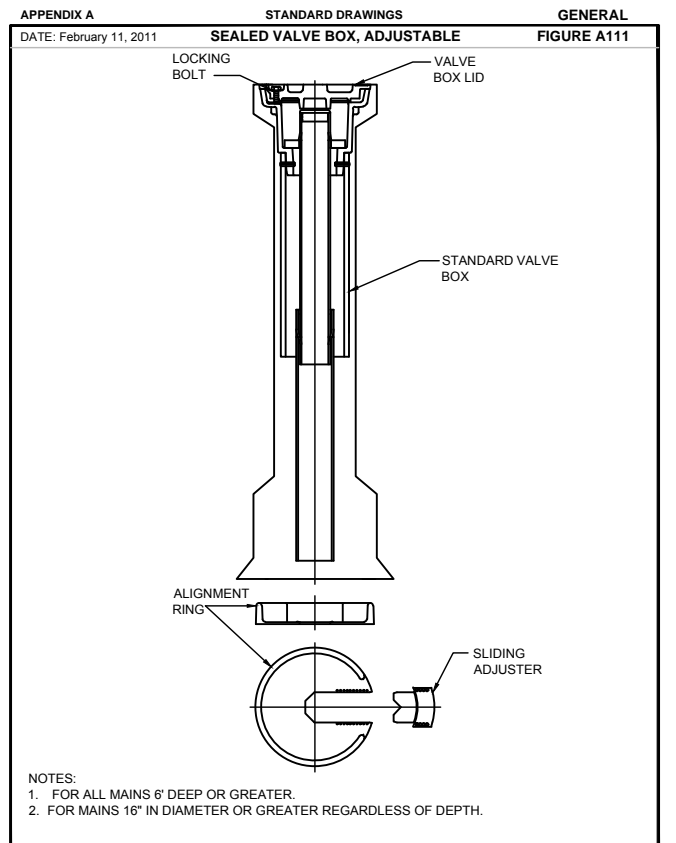
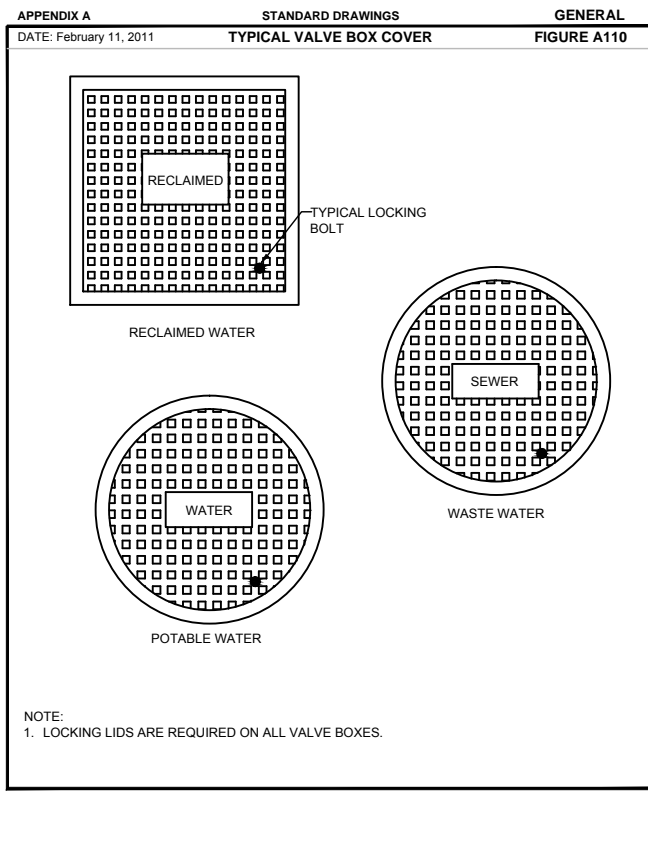
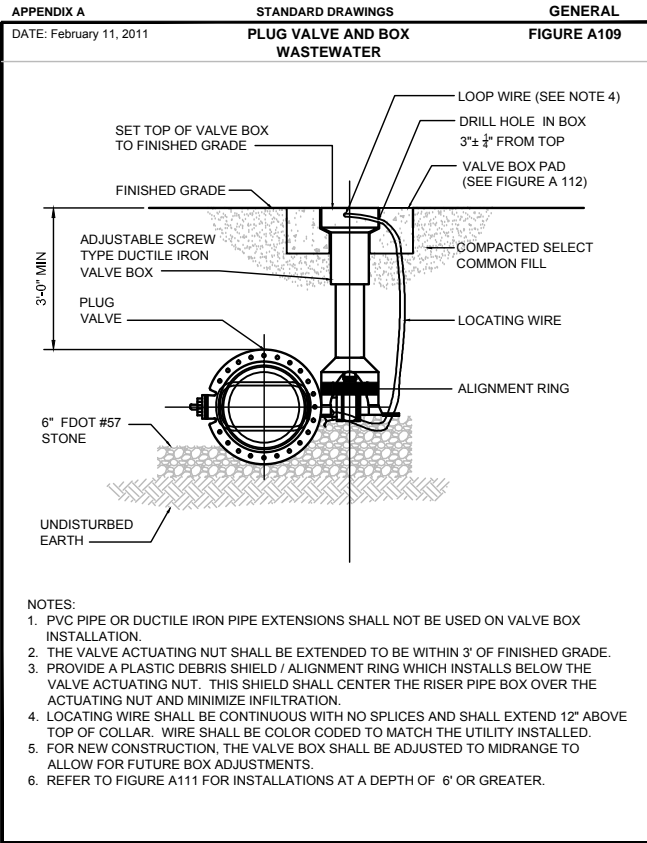
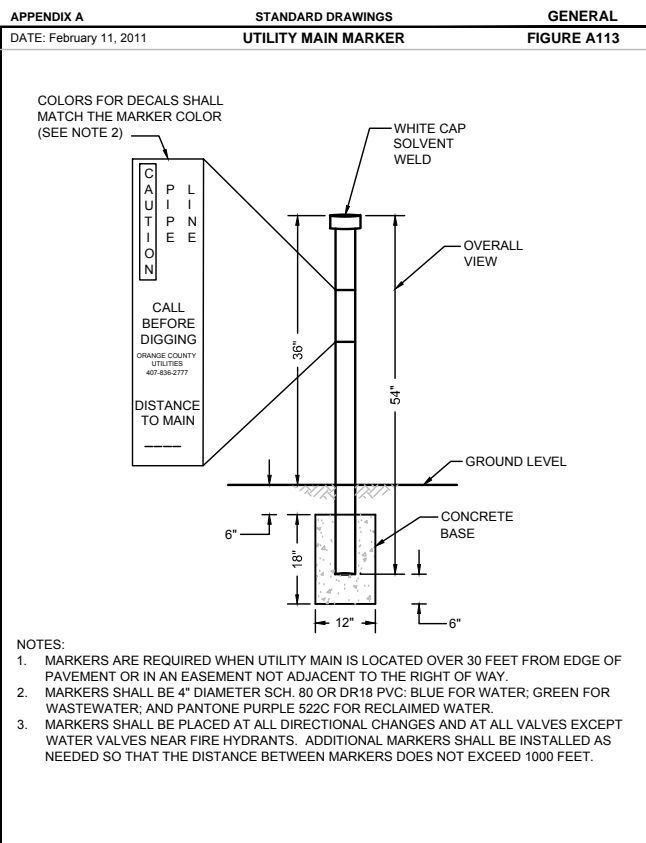
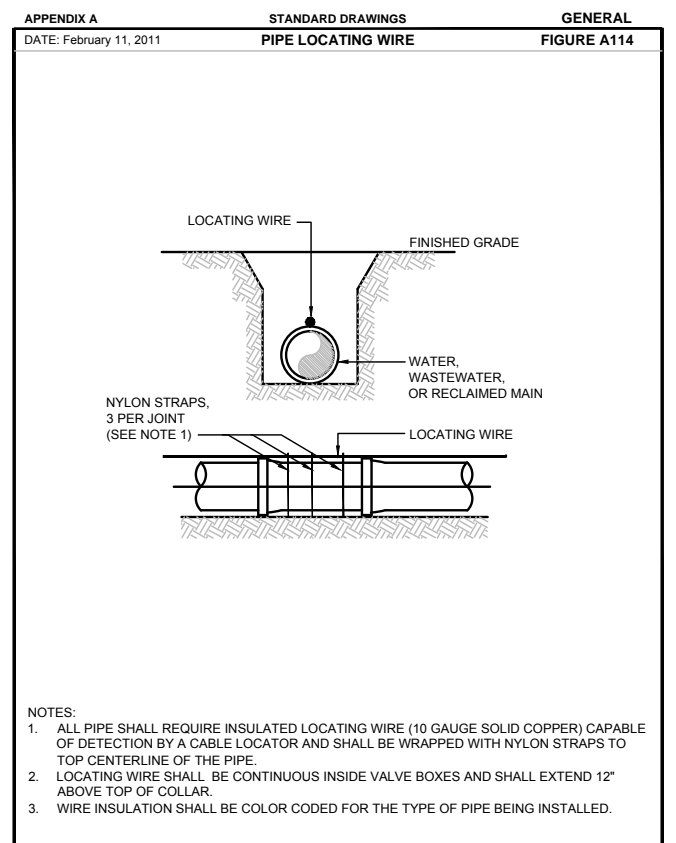
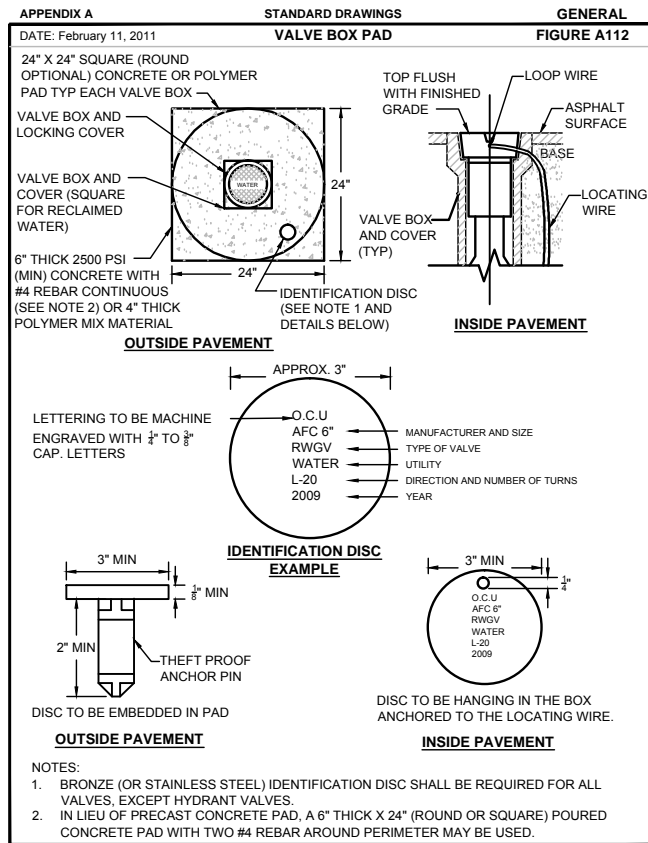
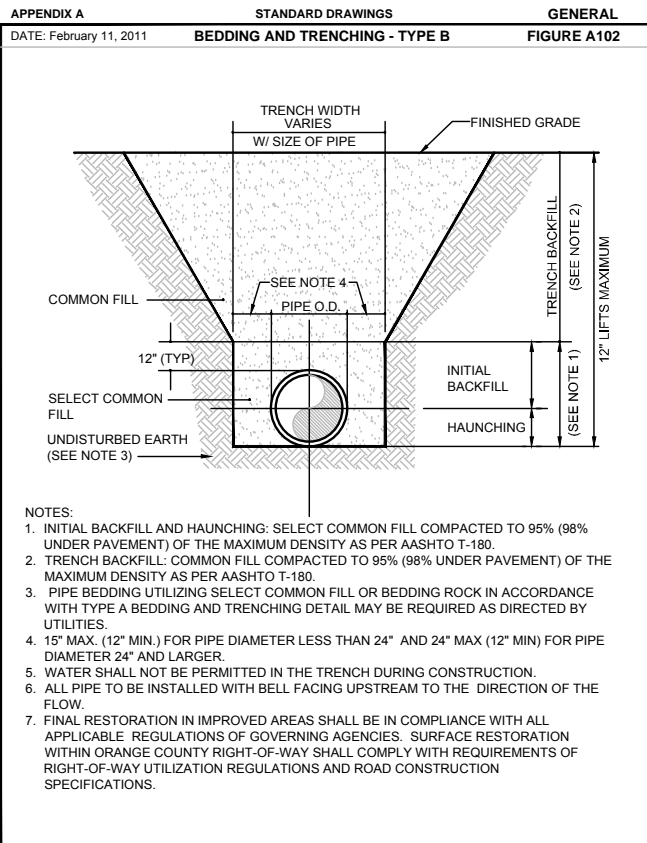
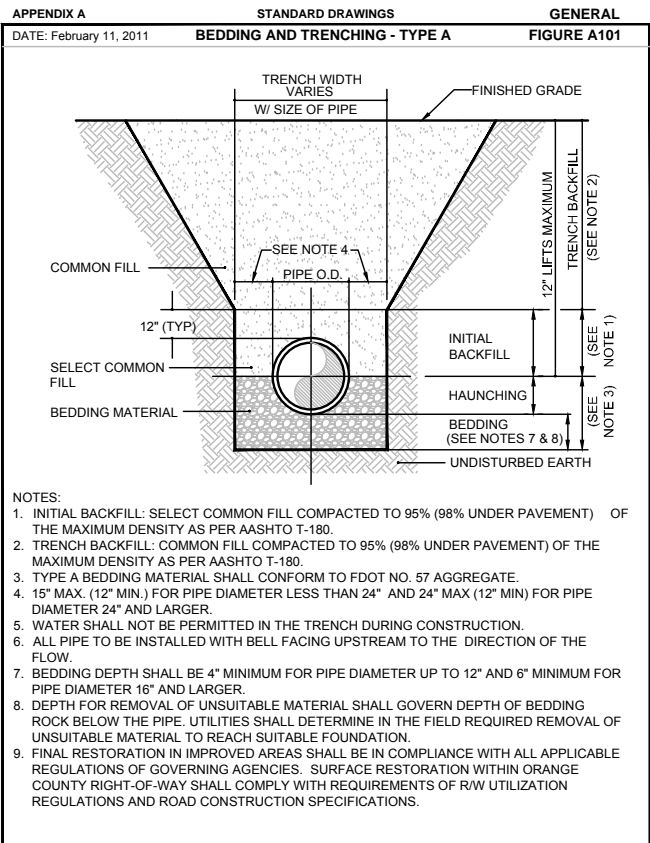
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SHEET NO.			



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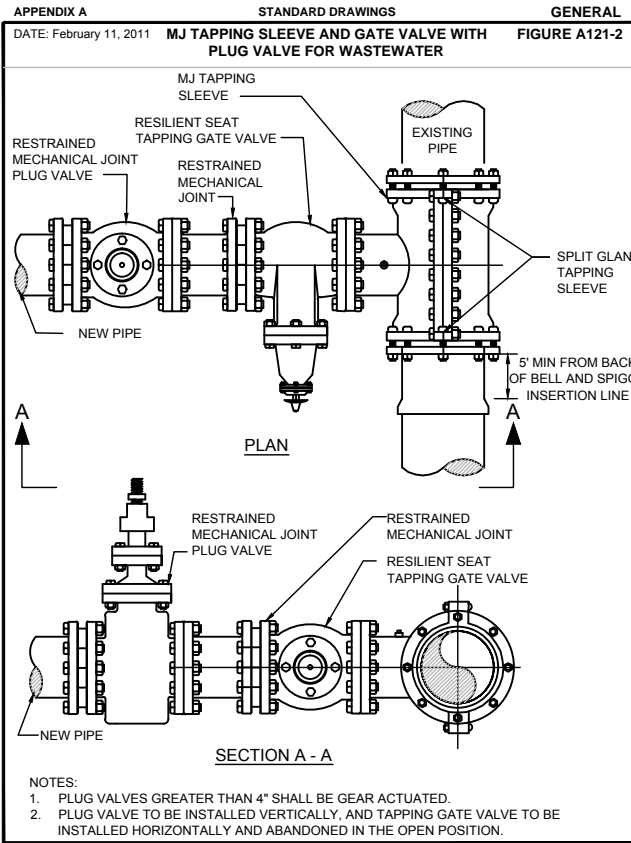
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CONSTRUCTION DETAILS

WETHERBEE ROAD
UTILITY RELOCATION PROJECT

SHEET NO. 25

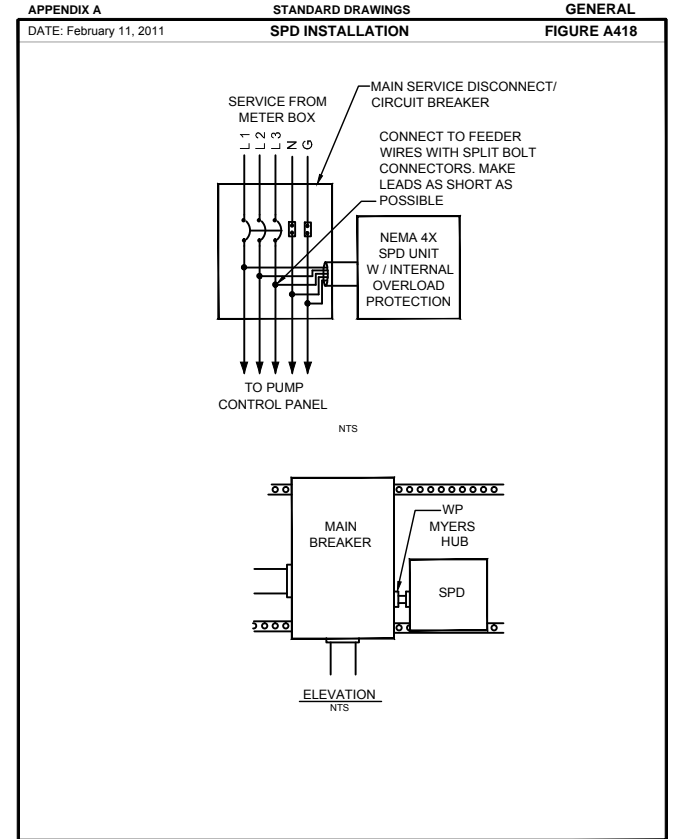
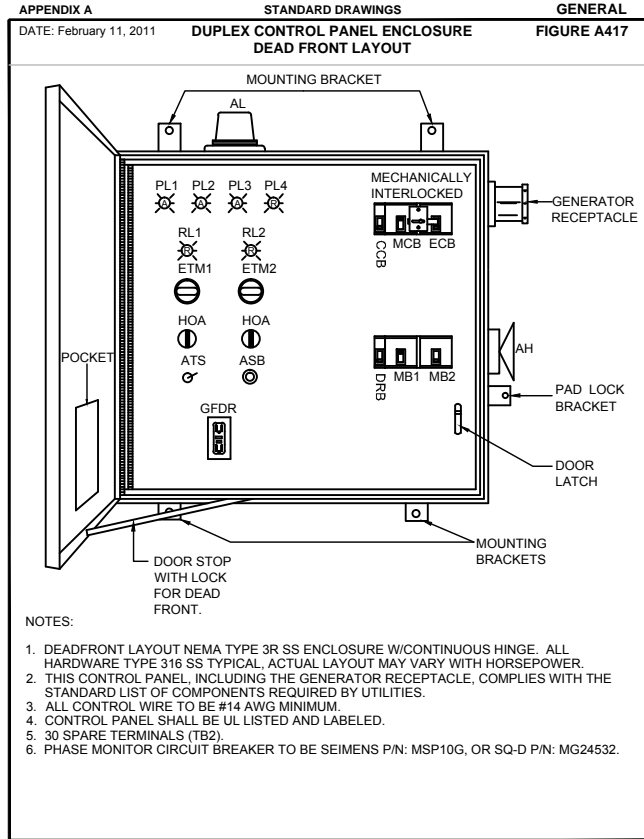
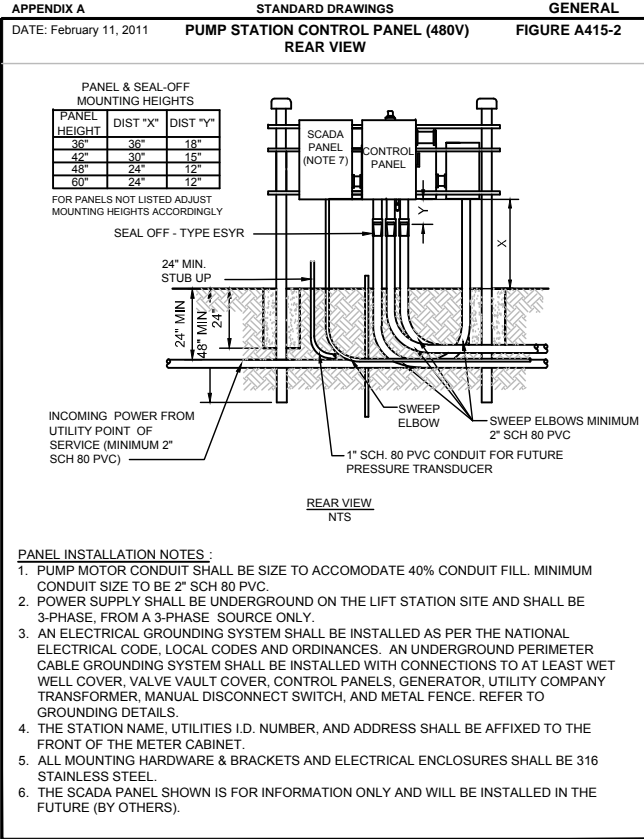
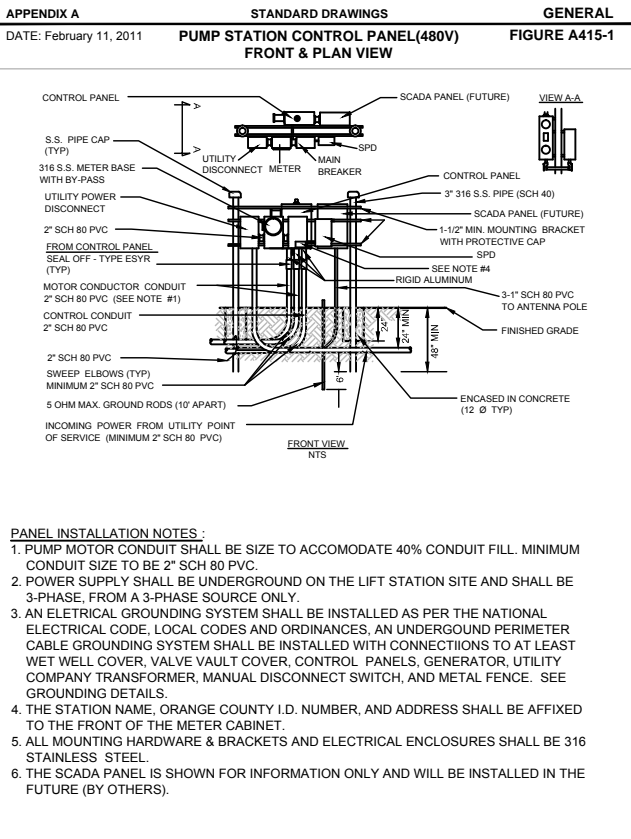
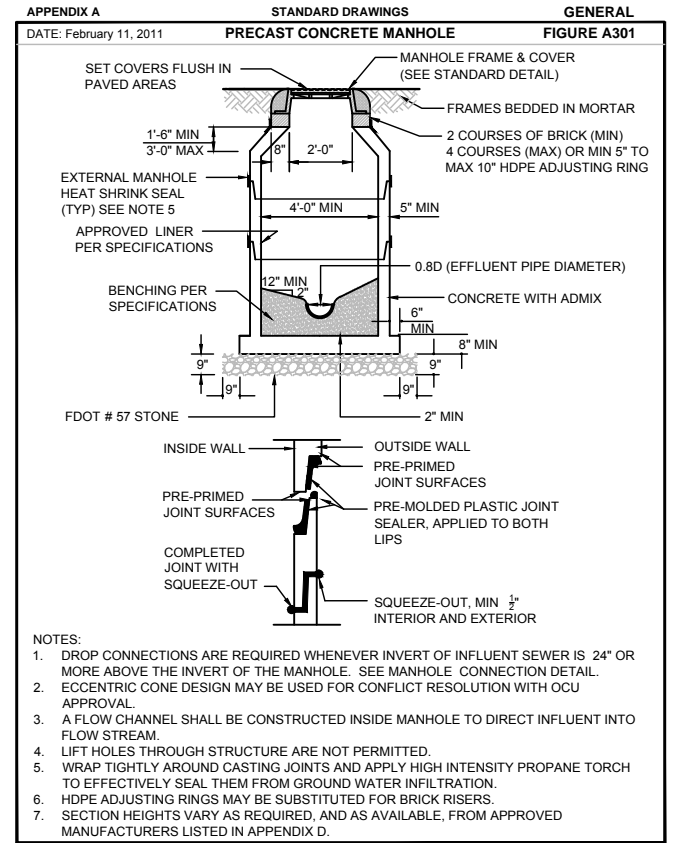
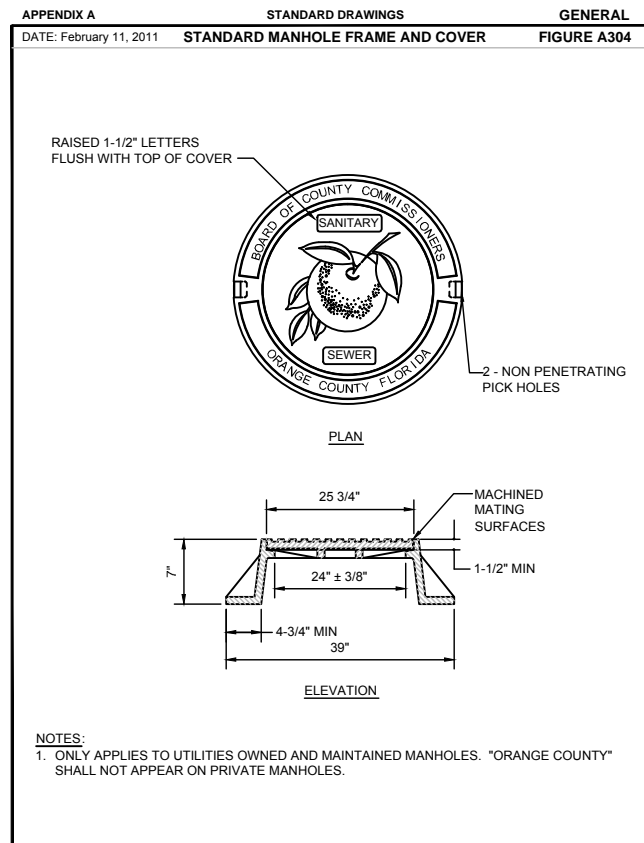


APPENDIX A STANDARD DRAWINGS GENERAL
DATE: February 11, 2011 RESTRAINED PIPE TABLE WASTEWATER FORCE MAINS FIGURE A104-2

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

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

THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC PARAMETERS, SUCH AS SOIL DESIGNATIONS AND LAYING CONDITIONS.



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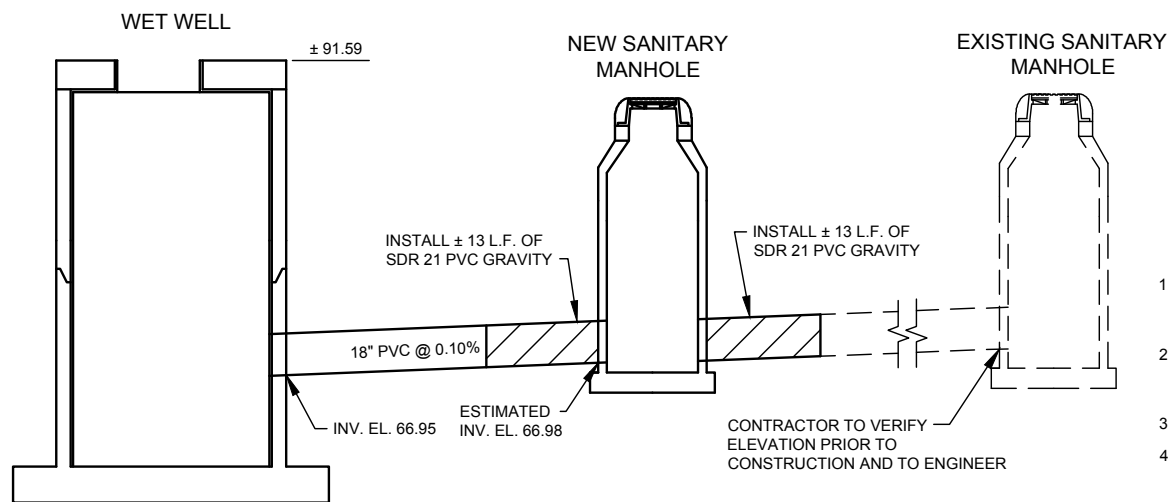
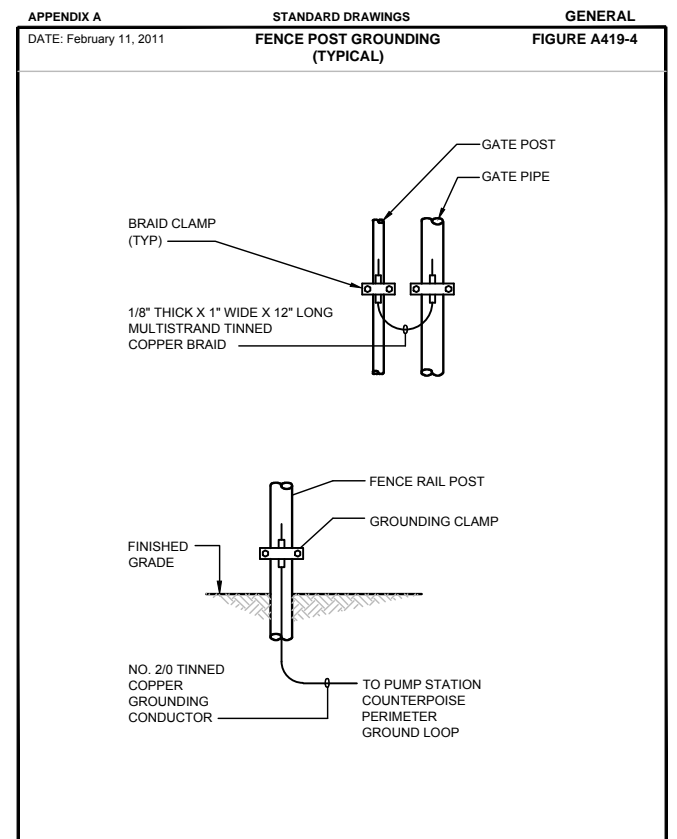
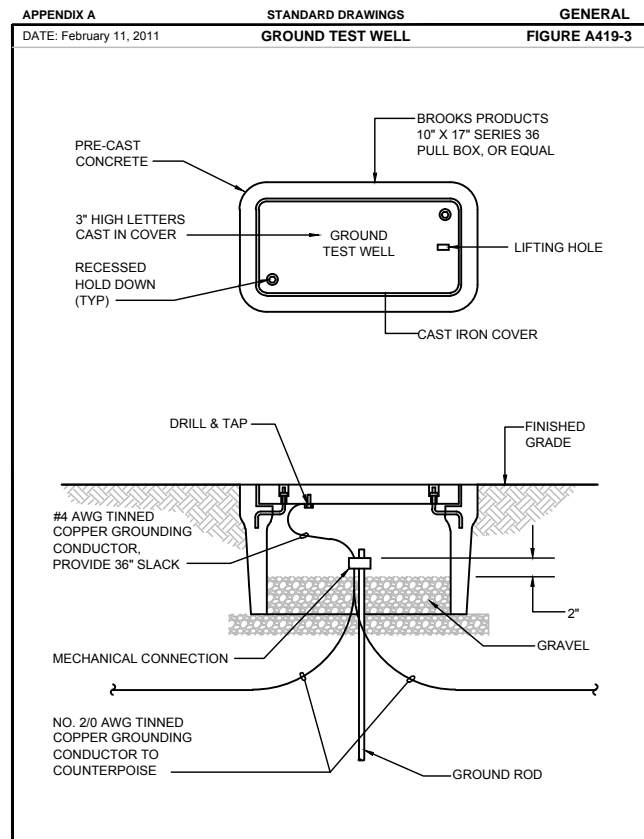
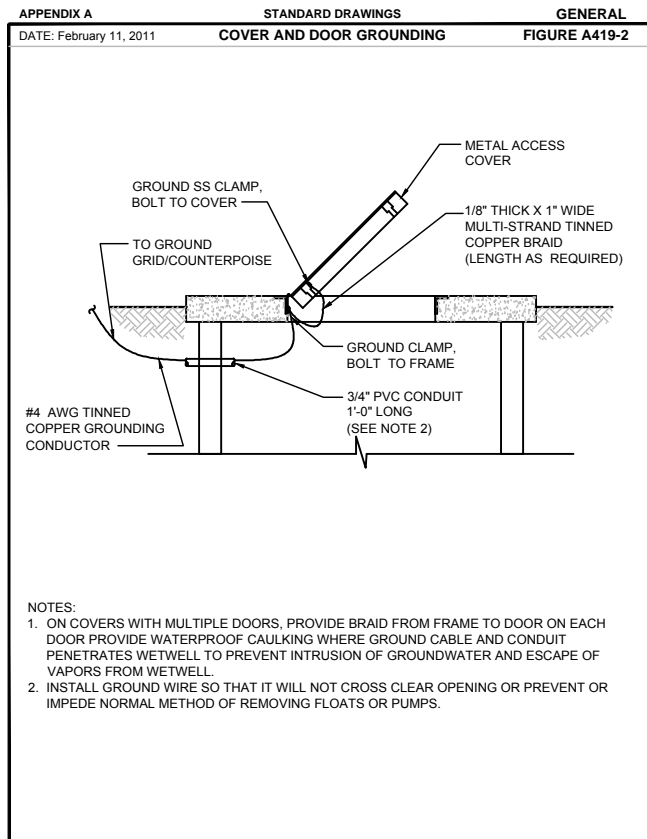
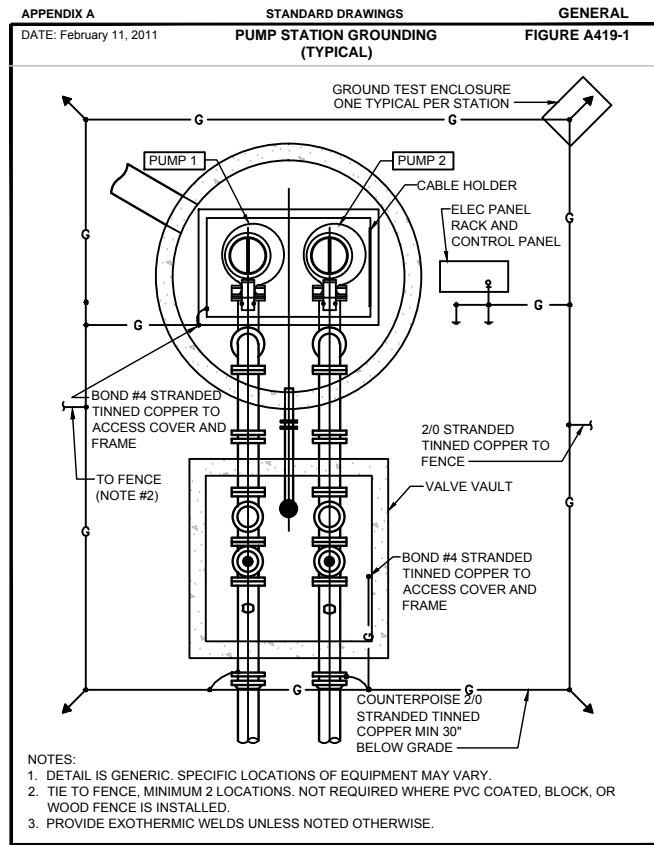
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
	ORANGE	

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Lndscp. Lic. No. LC0000298

SHEET TITLE: CONSTRUCTION DETAILS

PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT

SHEET NO. 26



NOTES:
CONTRACTOR TO VERIFY EXISTING INVERTS IN WET WELL AND EXISTING MANHOLE. PROVIDE TO ENGINEER FOR CONFIRMATION OF NEW MANHOLE INVERTS. INVERTS SHOWN ARE BASED ON CALCULATED VALUE.

CONTRACTOR TO INSTALL A MINIMUM OF ONE JOINT (± 13 L.F.) OF 18" PVC EACH SIDE OF NEW MANHOLE

SECTION DETAIL 'A - A'
N.T.S.

PROPOSED UTILITY	MINIMUM HORIZONTAL AND VERTICAL SEPARATION REQUIREMENTS									
	POTABLE WATER		RECLAIMED WATER*		SANITARY SEWER FORCE MAIN		SANITARY SEWER GRAVITY MAIN		STORM SEWER	
	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL
POTABLE WATER	-	--	3'	12"	6'	12"	6' **	6" ABOVE 12" BELOW	3'	6"
RECLAIMED WATER	3'	12"	-	-	3'	12"	3'	12"	--	-
SANITARY SEWER FORCE MAIN	6'	12"	3'	12"	-	-	-	-	--	-
SANITARY SEWER GRAVITY MAIN	6' **	6" ABOVE 12" BELOW	3'	12"	-	-	-	-	--	-
FIRE HYDRANTS W/ UNDERGROUND DRAINS	-	--	3'	-	6'	-	6'	-	3'	-

- THE TABLE REPRESENTS THE MINIMUM SEPARATION REQUIREMENTS AS DESCRIBED IN F.D.E.P. RULES PER THE FLORIDA ADMINISTRATION CODE (F.A.C.). THESE SEPARATION REQUIREMENTS SHALL APPLY BETWEEN NEWLY PROPOSED UTILITY LINES AND EXISTING OR PROPOSED UTILITY LINES.
- FOR THE PURPOSE OF THIS TABLE RECLAIMED WATER SHALL MEAN UNRESTRICTED PUBLIC ACCESS REUSE WATER AS DEFINED BY F.A.C. 62-610. OTHER TYPES OF RECLAIMED WATER ARE CONSIDERED RAW SEWAGE AND SEPARATION LISTED FOR SANITARY SEWER SHALL APPLY.
- ALL SEPARATION DISTANCES ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
- THE MINIMUM HORIZONTAL SEPARATION BETWEEN POTABLE WATER AND GRAVITY SANITARY SEWER MAY BE REDUCED TO 3 FEET IF THE BOTTOM OF THE WATER MAIN IS LOCATED AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SEWER.
- AT UTILITY CROSSINGS ONE FULL LENGTH OF WATER MAIN SHALL BE CENTERED ABOVE OR BELOW THE OTHER UTILITY PIPELINE MAXIMIZING THE SEPARATION OF PIPELINE JOINTS. ALTERNATIVELY, WATER MAIN JOINTS MUST BE:
 - AT LEAST 3' FROM ALL JOINTS IN VACUUM SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR UNRESTRICTED PUBLIC ACCESS RECLAIMED WATER.
 - AT LEAST 6' FROM ALL JOINTS IN GRAVITY OR PRESSURE SANITARY SEWERS, WASTEWATER FORCE MAINS, AND ALL OTHER TYPES OF RECLAIMED WATER.
- NO WATER PIPE SHALL PASS THROUGH OR BE CONSTRUCTED TOUCHING ANY PART OF A SANITARY OR STORM WATER MANHOLE OR STRUCTURE.
- NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS MUST BE AT LEAST 10 FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065 (2), F.S., AND RULE 64E-6.002, F.A.C.
- WHERE IT IS NOT POSSIBLE TO MEET THE SEPARATION REQUIREMENTS, THE FOLLOWING ALTERNATIVE CONSTRUCTION VARIANCES ARE ACCEPTABLE ONLY WITH THE EXPRESSED WRITTEN CONSENT OF THE ENGINEER AND FDEP.
 - WHERE A WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE AND/OR WHERE A WATER MAIN CROSSING HAS LESS THAN THE MINIMUM REQUIRED DISTANCE BETWEEN JOINTS:
 - USE OF PRESSURE RATED PIPE CONFORMING TO AWWA STANDARDS, FOR A GRAVITY OR VACUUM TYPE PIE LINE.
 - USE OF WELDED, FUSED OR OTHERWISE RESTRAINED JOINTS FOR EITHER PIPE.
 - USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST 4" THICK FOR EITHER PIPE.
 - WHERE A WATER MAIN IS BEING LAID LESS THAN 3 FEET HORIZONTALLY FROM ANOTHER PIPE LINE AND/OR WHERE A WATER MAIN IS BEING LAID WITH LESS THAN THE REQUIRED MINIMUM VERTICAL SEPARATION:
 - USE OF PIPE OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (AT LEAST EQUAL TO 0.25" THICK D.I.P.), OR CONCRETE ENCASE- MENT AT LEAST 4" THICK FOR THE WATER MAIN AND THE OTHER PIPE LINE IF THE OTHER PIPE LINE CONVEYS WASTEWATER OR RECLAIMED WATER.

MINIMUM HORIZONTAL AND VERTICAL SEPARATION REQUIREMENTS

Drawing name: J:\028325\DWG\Bid Drawings\028325-Cover - notes - const details.dwg Jun 26, 2013

REVISIONS		DATE	BY	DESCRIPTION
DATE	BY			

DATE	BY	NAMES	DATE
		DRAWN BY: GNP	7/11
		CHECKED BY: ACL	7/11
		DESIGNED BY: ACL	7/11
		CHECKED BY: DEM	7/11
		APPROVED BY: DAVID E. MAHLER, P.E.	

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SHEET TITLE: **CONSTRUCTION DETAILS**

PROJECT TITLE: **WETHERBEE ROAD UTILITY RELOCATION PROJECT**

SHEET NO. **27**

Drawing name: J:\028325\DWG\Bid Drawings\028325-Cover - notes - const details.dwg Jun 26, 2013

UNIQUE ID NO.	ASSET TYPE	COUNTY FEATURE NUMBER	STATION	OFFSET	NORTHING	EASTING	ELEV.	SIZE
	TAPPING SLEEVE		6+10	53'RT				16"
	VALVE		6+10	53'RT				16"
	LINE STOP		6+10	53'RT				16"
	PLUG		6+10	53'RT				16"
	45° BEND		6+10	47'RT				16"
	45° BEND		6+14	43'RT				16"
	45° BEND		8+86	43'RT				16"
	45° BEND		8+91	48'RT				16"
	TAPPING SLEEVE		8+91	54'RT				16"
	VALVE		8+91	54'RT				16"
	LINE STOP		8+91	54'RT				16"
	PLUG		8+91	54'RT				16"
	45° BEND		20+69	26'RT				10"
	45° BEND		21+26	49'RT				10"
	TAPPING SLEEVE		52+09	56'RT				10"
	VALVE		52+09	56'RT				10"
	LINE STOP		52+09	56'RT				10"
	PLUG		52+09	56'RT				10"
	45° BEND		52+09	52'RT				10"
	45° BEND		52+22	41'RT				10"
	45° BEND		52+72	41'RT				10"
	45° BEND		52+84	53'RT				10"
	TAPPING SLEEVE		52+84	57'RT				10"
	VALVE		52+84	57'RT				10"
	LINE STOP		52+84	57'RT				10"
	PLUG		52+84	57'RT				10"

REVISIONS		DATE	DESCRIPTION
DATE	BY		

NAMES	DATE
DRAWN BY: GNP	7/11
CHECKED BY: ACL	7/11
DESIGNED BY: ACL	7/11
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SHEET TITLE:	SHEET NO.
ASSET TABLE	
PROJECT TITLE: WETHERBEE ROAD UTILITY RELOCATION PROJECT	28