

# CONSTRUCTION PLANS FOR WEST SECOND AVENUE ROADWAY AND DRAINAGE IMPROVEMENTS

PROJECT NO. : 2023-02

TOWN OF WINDERMERE  
WINDERMERE, FLORIDA

### SOURCE OF BENCHMARK DATUM

ORANGE COUNTY ENGINEERING DEPARTMENT BENCHMARK  
BENCHMARK R-260-007  
PUBLISHED ELEVATION: 119.526' (NGVD 1929)

ORANGE COUNTY ENGINEERING DEPARTMENT BENCHMARK  
BENCHMARK R-260-005  
PUBLISHED ELEVATION: 106.701' (NGVD 1929)



VICINITY MAP  
1"=500'

**GOVERNING STANDARDS AND SPECIFICATIONS :**  
FLORIDA DEPARTMENT OF TRANSPORTATION  
DESIGN STANDARDS FOR DESIGN, CONSTRUCTION,  
MAINTENANCE AND UTILITY OPERATIONS  
ON THE STATE HIGHWAY SYSTEM, DATED  
AND  
STANDARD SPECIFICATIONS FOR ROAD AND  
BRIDGE CONSTRUCTION, LATEST EDITION  
AS AMENDED BY CONTRACT DOCUMENTS.

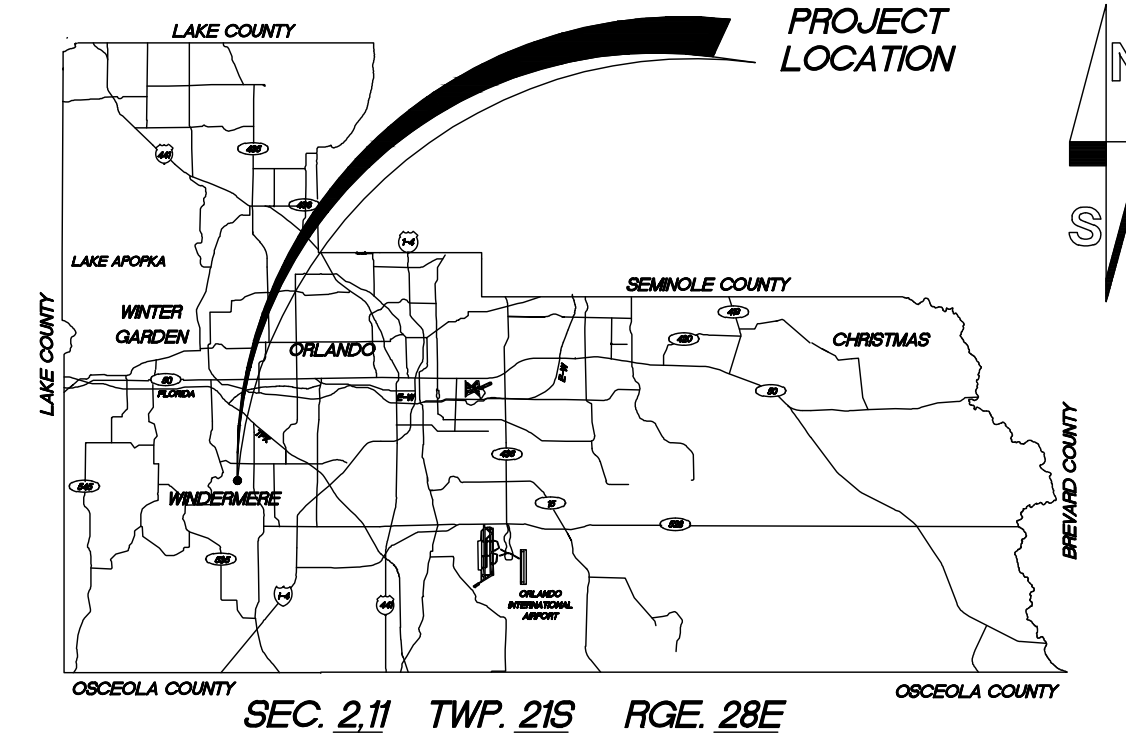
### NOTE

PLANS WERE PREPARED ACCORDING TO AVAILABLE INFORMATION TO ADEQUATELY ADDRESS CONDITIONS AS THEY EXISTED AT THE TIME OF PLANS PREPARATION. NEEDS, CONDITIONS AND OWNERSHIP OF PROPERTIES MAY HAVE CHANGED SINCE PROJECT DESIGN. THE TOWN'S REPRESENTATIVE WILL ADDRESS CHANGES AND NEEDS WITH THE PROPERTY OWNER OR THEIR REPRESENTATIVES. CONTRACTOR SHALL WORK WITH THE TOWN'S REPRESENTATIVE IN ADDRESSING AND MEETING NEEDS AND CONDITIONS THAT MAY HAVE CHANGED SINCE PLANS PREPARATION.

### CERTIFICATION TO PLANS

I HEREBY CERTIFY THAT THE DESIGN FOR THIS PROJECT AND THE ATTACHED CONSTRUCTION PLANS COMPLY WITH THE REQUIREMENTS OF SECTION 336.045 OF THE FLORIDA STATUTES AND ARE IN SUBSTANTIAL CONFORMANCE WITH THE STANDARDS CONTAINED IN THE EDITION OF THE 'MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS' IN EFFECT ON THIS DATE AS ADOPTED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION PURSUANT TO SUBSECTION 336.045(1) OF THE FLORIDA STATUTES.

DATE: 11/2023 ENGINEER: MICHAEL B. GALURA P.E. REG. NO.: 41728



LOCATION MAP

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### UTILITIES ENCOUNTERED

POWER: DUKE ENERGY 1-800-700-8744  
PHONE: CENTURY LINK 407-814-5393  
WATER: UTILITIES INC. OF FLORIDA 407-869-1919  
SEWER: NONE  
GAS: LAKE APOPKA NATURAL GAS DISTRICT 407-656-2734  
CATV: BRIGHT HOUSE NETWORK 407-532-8509

PREPARED BY:

**MGEC** MICHAEL GALURA  
ENGINEERING  
CONSULTANTS, LLC  
3222 Corrine Drive, Suite H 407/493-9983  
Orlando, Florida 32803 <http://www.mgaluraengineeringconsult.com>  
CERTIFICATE OF AUTHORIZATION NO. 29032

### BID SET PLANS

PLAN DATE: NOVEMBER 2023

PROJECT LENGTH:	FEET	MILES
ROADWAY:	4,356	0.825
BRIDGES:	0	0
TOTAL LENGTH:	4,356	0.825

MAYOR JIM O'BRIEN

TOWN MAYOR

### TOWN COUNCIL

TONY DAVIT  
LOREN "ANDY" WILLIAMS  
MOLLY ROSE  
MANDY DAVID  
TOM STROUP  
ROBERT SMITH  
TONYA ELLIOTT-MOORE

COUNCIL MEMBER  
COUNCIL MEMBER  
COUNCIL MEMBER  
COUNCIL MEMBER  
COUNCIL MEMBER  
TOWN MANAGER  
PUBLIC WORKS DIRECTOR

REVISIONS DATE BY

DESIGNED BY: MBG DATE: 11/2023  
DRAWN BY: CADD DATE: 11/2023  
CHECKED BY: MBG DATE: 11/2023  
APPROVED BY: MBG DATE: 11/2023  
PROJECT NO: TOW-052.01.000

SHEET 1  
OF 86





THIS ITEM HAS BEEN DIGITALLY  
SIGNED AND SEALED BY

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE  
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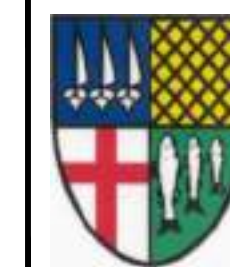
MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
3222 CORRINE DRIVE, SUITE H  
ORLANDO, FL 32803  
CERTIFICATE OF AUTHORIZATION: 29032  
MICHAEL B. GALURA, P.E., NO. 41728

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE  
FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

SHEET NO.	SHEET DESCRIPTION
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2	SIGNATURE SHEET
3	GENERAL NOTES
4	SUMMARY OF PAY ITEMS AND NOTES
5-6	TYPICAL SECTIONS
7-8	DRAINAGE BASIN MAP
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79	STANDARD DETAILS - INDEX NO. 425-010
80	STANDARD DETAILS - INDEX NO. 425-020
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83	STANDARD DETAILS - INDEX NO. 425-041
84	STANDARD DETAILS - INDEX NO. 443-001
85	STANDARD DETAILS - INDEX NO. 520-001
86	PAVEMENT MARKING FOR SPEED HUMP

REV.	DATE	DESCRIPTION	APP'D BY	OTHERS	SIGN OFF	DATE	FIELD:
					CLIENT		PEC SURVEYING AND MAPPING, LLC
					PM/CM BC		DRAWN BY: CADD
					PM/CM DM		DESIGNED BY: MBG
					PM		CHECKED BY: MBG
					CM		DATE: NOVEMBER 2023

**MGEC** MICHAEL GALURA  
ENGINEERING  
CONSULTANTS, LLC  
3222 Corrine Drive, Suite H  
Orlando, Florida 32803 407/493-9983  
CERTIFICATE OF AUTHORIZATION NO. 29032



**TOWN OF WINDERMERE**  
PUBLIC WORKS DEPARTMENT  
614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000  
FILE NAME: SEE LEFT MARGIN  
ARCHIVE DISC:  
SCALE: NONE

SIGNATURE SHEET



**DEFINITION:**  
WHEN USED IN THESE GENERAL NOTES, THE WORD "OWNER" SHALL HAVE THE INDICATED MEANING:

**TOWN OF WINDERMERE  
PUBLIC WORKS DEPARTMENT**

## GENERAL NOTES

- 1 B.M. DATUM IS BASED ON N.C.V.D. 1929 (ORANGE COUNTY ENGINEERING DEPT. DATUM)
- 2 GRADES SHOWN ARE FINISHED GRADES
- 3 UTILITIES ARE TO BE ADJUSTED BY OTHERS OR AS DIRECTED BY THE ENGINEER.
- 4 UTILITIES ENCOUNTERED:  
  - DUKE ENERGY  
3300 EXCHANGE PLACE  
LAKE MARY, FLORIDA 32746  
PHONE NO.: (407) 942-9202
  - SPECTRUM BUSINESS  
844 MAGUIRE ROAD  
OCOCEE, FLORIDA 34761  
PHONE NO.: (407) 656-1162
  - CENTURY LINK  
33 N. MAIN STREET  
WINTER GARDEN, FLORIDA 34787  
PHONE NO.: (407) 814-5393  
FAX NO.: (407) 814-5320
  - UTILITIES, INC. OF FLORIDA  
200 WEATHERSFIELD AVENUE  
ALTIMONTE SPRINGS, FLORIDA 32714  
PHONE NO.: (407) 869-1919 (SCOTTY HALLS, EXT. 227)  
FAX NO.: (407) 869-6961
  - LAKE APOPKA NATURAL GAS DISTRICT  
1320 SOUTH VINELAND ROAD  
WINTER GARDEN, FLORIDA 34777-1275  
PHONE NO. (407) 656-2734, EXT. 116  
FAX NO.: (407) 877-3893
  - ORANGE COUNTY UTILITIES DIVISION  
9150 CURRY FORD ROAD  
ORLANDO, FLORIDA 32825  
PHONE NO. (407) 254-9900
- 5 ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH AND CONFORM TO THE MOST STRINGENT REQUIREMENT OF THE PROJECT SPECIFICATION, THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (FDOT), AND SUPPLEMENTS THERETO, AND THE TOWN OF WINDERMERE SPECIFICATIONS.
- 6 SUBSURFACE INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT; THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS. GOVERNING CONSTRUCTION OF THE PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INQUIRE OF THE ENGINEER IF ADDITIONAL INFORMATION IS AVAILABLE, TO MAKE ARRANGEMENTS TO REVIEW SAME PRIOR TO BIDDING, AND TO MAKE HIS OWN DETERMINATION AS TO ALL SUBSURFACE CONDITIONS.
- 7 ALL PERSONAL PROPERTY, EXCEPT MAILBOXES, WITHIN THE RIGHT-OF-WAY NOT RELOCATED BY THE PROPERTY OWNER SHALL BE REMOVED BY THE CONTRACTOR AS NECESSARY TO CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE PLANS.
- 8 THE RELOCATION OF MAILBOXES SHALL BE COORDINATED BETWEEN THE CONTRACTOR AND THE PROPERTY OWNERS AND SHALL BE APPROVED BY THE POST MASTER, IN ACCORDANCE WITH FDOT INDEX NO. 110-200. THIS ITEM SHALL BE PAID FOR UNDER THE UNIT PRICE FOR "MAILBOX (FURNISH & INSTALL), EA.", IF APPLICABLE.
- 9 THE DISPOSAL OF EXCESS EARTHWORK MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL UNDESIRABLE MATERIAL. ALL EXCESS MATERIAL IS THE PROPERTY OF THE CONTRACTOR.
- 10 ALL EXISTING TREES WITHIN THE RIGHT-OF-WAY ARE TO REMAIN UNLESS OTHERWISE DIRECTED. IF REQUIRED TO BE REMOVED, THE ITEM SHALL BE FOR PAID UNDER "MOBILIZATION/ DEMOBILIZATION" OR OTHER PAY ITEMS AS DESIGNATED IN THE CONTRACT DOCUMENTS.
- 11 SOD ALL DISTURBED AREAS UNLESS OTHERWISE DIRECTED. SOD SHALL MATCH EXISTING TYPE SOD UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- 12 SOD ALL SLOPES 3:1 OR STEEPER.
- 13 SAWCUT CONCRETE DRIVEWAYS AS REQUIRED FOR CONSTRUCTION.
- 14 ALL PAVEMENT OFFSETS SHOWN ARE TO PROPOSED CENTERLINE OR BASELINE OF CONSTRUCTION. ALL RADII AND DIMENSIONS ARE TO PROPOSED EDGE OF PAVEMENT.
- 15 FOR STABILIZATION AT TURNOUTS AND DRIVEWAY CONNECTIONS SEE STANDARD FDOT INDEX No. 330-001 AND TYPICAL SECTIONS FOR DEPTH AND LBR.
- 16 DRIVEWAY LOCATIONS AND WIDTHS SHOWN ARE APPROXIMATE AND MAY BE ADJUSTED AS NECESSARY, OR AS DIRECTED BY THE OWNER/ENGINEER.
- 17 THE CONTRACTOR SHALL PERFORM HIS WORK IN ACCORDANCE WITH REQUIREMENTS OF THE VARIOUS PERMITS INCLUDED IN THE PROJECT MANUAL. ENVIRONMENTAL CONTROLS SHALL BE USED AT LOCATIONS DESIGNATED IN THE PLANS AND/OR DESIGNATED BY THE ENGINEER.
- 18 THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON AVAILABLE RECORDS AND SURVEYS BUT IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO AND IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WITH THE UTILITY OWNER. PRIOR TO ORDERING DRAINAGE STRUCTURES, THE CONTRACTOR SHALL DETERMINE IF DRAINAGE/UTILITY CONFLICTS EXIST. INFORMATION ON CONFLICTS IS TO BE SUBMITTED TO THE ENGINEER AS SOON AS POSSIBLE AFTER DISCOVERY FOR RESOLUTION.
- 19 THE CONTRACTOR SHALL NOTIFY ALL GAS UTILITY COMPANIES A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO EXCAVATION AS REQUIRED BY CHAPTER 77-153 OF THE FLORIDA STATUTES.
- 20 ALL DRAINAGE PIPES SHALL BE REINFORCED CONCRETE PIPE, CLASS III, UNLESS OTHERWISE DIRECTED BY THE OWNER/ENGINEER.
- 21 MEASUREMENT OF DRAINAGE PIPE FOR PAYMENT SHALL BE DETERMINED FROM ACTUAL LENGTHS INSTALLED.
- 22 ALL MANHOLE COVERS SHALL BE IDENTIFIED AS "STORM", AS APPROPRIATE.
- 23 ALL INLET/MANHOLE - PIPE JOINTS SHALL BE FILLED WITH NON-SHRINK GROUT, COVERED WITH AN ASPHALTIC MASTIC COATING, AND WRAPPED WITH A FILTER FABRIC MATERIAL PER SECTION 430-7.31.7 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).
- 24 ALL CURB INLETS, DITCH BOTTOM INLETS, AND MANHOLES SHALL HAVE TRAFFIC BEARING FRAMES AND COVERS OR GRATES MEETING HS-20 LOADING REQUIREMENTS. ALL INLET GRATES SHALL BE STEEL RETICULINE TYPE UNLESS OTHERWISE NOTED.
- 25 CHANGES OF PIPE INVERTS NOT EXCEEDING PLUS OR MINUS ONE (1) FOOT WILL NOT BE CONSIDERED AS A BASIS FOR ADDITIONAL COMPENSATION FOR THE PERTINENT PIPE BID ITEM OR FOR MODIFICATION OF PRECAST STRUCTURES.
- 26 PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE TOWN OF WINDERMERE PUBLIC WORKS DEPARTMENT A SET OF FIELD NOTES VERIFYING THE BENCHMARK ELEVATIONS AND THE REFERENCE POINT TIES SHOWN ON THE TITLE SHEET AND PLAN AND PROFILE SHEETS, AND/OR A SET OF FIELD NOTES FOR ALL ADDITIONAL BENCHMARK AND REFERENCE POINT TIES PROPOSED TO BE USED IN CONSTRUCTING THE PROJECT WITH THEIR LOCATION, DESCRIPTION AND ELEVATION, BASED ON ORANGE COUNTY DATUM. ALL SUBMITTALS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA.
- 27 TRAFFIC SIGNS - THE CONTRACTOR SHALL REMOVE, PROTECT AND RELOCATE, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- 28 IF NECESSARY, FLOWABLE FILL SHALL BE USED AT ALL CROSSINGS WHERE A PROPOSED STORM SEWER PIPE CROSSES OVER OR UNDER AN EXISTING SANITARY SEWER PIPE WITH TWO (2) FEET OR LESS VERTICAL CLEARANCE AND WHERE MECHANICAL OR HAND COMPACTION IS DIFFICULT TO ACHIEVE OR IS NOT FEASIBLE. THE COST FOR THE USE OF FLOWABLE FILL TO OBTAIN NECESSARY COMPACTION BETWEEN THE EXISTING SANITARY SEWER PIPE AND THE STORM SEWER PIPE SHALL BE PAID FOR IN THE UNIT COST FOR ITEM "FURNISH & INSTALL CONCRETE STORM SEWER," "FURNISH & INSTALL ELLIPTICAL CONCRETE STORM SEWER."
- 29 IF NECESSARY, THE CONTRACTOR SHALL REPLACE A SEGMENT OF THE EXISTING SANITARY SEWER PIPE AT CROSSINGS WITH STORM SEWER PIPES EQUIVALENT TO THE WIDTH OF THE STORM SEWER PIPE TRENCH. THE REPLACEMENT SEWER PIPE SHALL BE OF THE SAME SIZE PVC PIPE (OR 18" OR EQUIVALENT) AND SHALL BE PAID FOR IN THE UNIT COST FOR "FURNISH & INSTALL CONCRETE STORM SEWER" OR "FURNISH & INSTALL ELLIPTICAL CONCRETE STORM SEWER", UNLESS NOTED AND QUANTIFIED.
- 30 WATER AND SEWER SERVICE SHALL BE MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION AT NO ADDITIONAL CONTRACT COST.
- 31 PIPE SLOPES DEPICTED ON THE PLAN AND PROFILE SHEETS ARE MEASURED FROM CENTERLINE OF STRUCTURE TO CENTERLINE OF STRUCTURE, WITH EXCEPTION TO THE POLLUTION CONTROL DEVICE UNITS, WHICH ARE MEASURED FROM THE INSIDE WALL OF THE STRUCTURE.
- 32 DRAINAGE STRUCTURE STATIONS AND OFFSETS ARE REFERENCED FROM THE CENTERLINE/BASELINE OF CONSTRUCTION TO THE CENTER OF THE STRUCTURE.
- 33 THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE, REMOVAL OR MODIFICATION OF ANY IRRIGATION SYSTEMS. THE CONTRACTOR SHALL REPLACE ALL DAMAGED, REMOVED OR MODIFIED IRRIGATION SYSTEMS AT NO ADDITIONAL COST.
- 34 ALL SIDEWALKS SHALL MEET THE AMERICAN DISABILITIES ACT (ADA) STANDARDS.

## EARTHWORK

- EW-1** THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTAINENCE OF SLOPES AND EMBANKMENTS. THE CONTRACTOR SHALL REPAIR OR REMEDY DAMAGE TO SUCH IF CAUSED BY EROSION, CONTRACTOR ACTIVITIES OR LACK OF MAINTENANCE UNTIL THE PROJECT IS ACCEPTED BY THE OWNER.
- EW-2** THE CONTRACTOR SHALL EXAMINE THE SITE, REVIEW THE PLANS, AND INDEPENDENTLY DETERMINE THE VOLUME OF EXCAVATION, FILL AND/OR BACKFILL REQUIRED TO PERFORM THE WORK.
- EW-3** ALL FILL PLACED WITHIN PROPOSED ROAD RIGHT-OF-WAYS SHALL BE COMPACTED AS FOLLOWS:
- \* ROADWAY SHOULDERS (OUTSIDE PAVEMENT) 95% MAXIMUM DENSITY, AASHTO T-180.
  - \* ROADWAY AREAS (UNDER PAVEMENT) 98% MAXIMUM DENSITY, AASHTO T-180.
- EW-4** IN ALL AREAS WHICH REQUIRE FILL MATERIAL, THE CONTRACTOR WILL STRIP OR OTHERWISE REMOVE ALL VEGETATION AND OTHER DELETERIOUS MATERIAL BEFORE EMBANKMENT IS STARTED. IMMEDIATELY PRIOR TO THE PLACING OF FILL MATERIALS, THE ENTIRE AREA UPON WHICH FILL IS TO BE PLACED WILL BE SCARIFIED IN A DIRECTION APPROXIMATELY PARALLEL TO THE AXIS OF FILL, UNLESS DIRECTED OTHERWISE BY THE GEOTECHNICAL ENGINEER.

- EW-5** UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER AND PRIOR TO THE PLACEMENT OF FILL, THE AREA TO BE FILLED WILL BE PROOF ROLLED. ANY AREA SHOWING SIGNS OF PUMPING, WEAVING OR OTHER FORMS OF INSTABILITY SHALL BE SELECTIVELY REMOVED AND REPLACED WITH COMPACTED SELECT FILL.

## GEOMETRY & SURVEY

- GS-1** ALL PAVEMENT DIMENSIONS SHOWN ARE TO THE EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
- GS-2** ALL INLET AND MANHOLE OFFSET DISTANCES SHOWN ARE MEASURED TO THE CENTERLINE OF THE STRUCTURE UNLESS OTHERWISE NOTED.
- GS-3** PUBLIC LAND CORNERS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED OR DISTURBED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE PROJECT ENGINEER, WITHOUT DELAY, BY TELEPHONE. THE CONTRACTOR SHALL PROVIDE WRITTEN FOLLOW UP CONFIRMATION WITHIN FORTY-EIGHT (48) HOURS OF TELEPHONE NOTIFICATION.
- GS-4** ALL (P.R.M.'s) IRONS AND MONUMENTS SHOWN ON PLANS, OR FOUND, SHALL BE PRESERVED. THOSE SHOWN IN PROPOSED PAVEMENT SHALL BE PROTECTED WITH A CAST IRON VALVE BOX.
- GS-5** ANY U.S.C. AND G.S. MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND BOTH SHALL NOTIFY:
- STATE GEODETIC ADVISOR  
SUITE 309  
3900 COMMONWEALTH BOULEVARD  
TALLAHASSEE, FL  
(904) 488-2427

## GEOTECHNICAL & TESTING

- GT-1** THE CONTRACTOR SHALL ENSURE THAT PROPER SOIL DENSITIES ARE ACHIEVED FOR THE PLACEMENT OF ALL STRUCTURES, OR COMPACTED EARTH. SOIL TESTING SHALL BE PROVIDED BY THE OWNER. THE CONTRACTOR SHALL COORDINATE WITH THE OWNERS CONSULTANT FOR SCHEDULING ALL TESTING PRIOR TO CONSTRUCTION WORK. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE FOR TESTING WORK IN ADVANCE OF CONSTRUCTION.
- GT-2** ALL SOIL STRIPPINGS, DELETERIOUS AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED BY THE OWNER OR SPECIFIED ELSEWHERE IN THE PLANS FOR SELECT DISPOSAL. IN NO CASE WILL BURIAL OF DISPOSABLE MATERIAL BE ALLOWED.

## REGULATORY & PERMITTING

- RP-1** THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS ARE IN HAND BEFORE PROCEEDING WITH THE CONSTRUCTION WORK. THE CONTRACTOR SHALL SATISFY AND ADHERE TO ALL APPLICABLE REQUIREMENTS OR SPECIAL CONDITIONS STATED WITHIN SAID PERMITS REGARDING THE CONSTRUCTION WORK OR MAINTENANCE OF IMPROVEMENTS PRIOR TO ACCEPTANCE BY THE OWNER.
- RP-2** THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL INSPECTION CRITERIA AND SCHEDULES, AND FOR SIGNING FOR SAID INSPECTIONS.

## REGULATORY & PERMITTING (CONTINUED)

- RP-3** THE CONTRACTOR SHALL CONFORM AND ADHERE TO THE POLICIES ESTABLISHED BY THE OWNER (TOWN OF WINDERMERE) FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE PROPERTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE AND INJURY TO PROPERTY OF ANY CHARACTER, DURING THE PROSECUTION OF THE WORK, RESULTING FROM ANY ACT, OMISSION, NEGLECT, OR MISCONDUCT IN HIS MANNER OR METHOD OF EXECUTING THE WORK, OR AT ANY TIME DUE TO DEFECTIVE WORK OR MATERIALS.
- RP-4** THE CONTRACTOR SHALL COMPLY WITH ALL LEGAL LOAD RESTRICTIONS WHEN HAULING MATERIALS OR EQUIPMENT BEYOND THE LIMITS OF THE WORK. A SPECIAL PERMIT WILL NOT RELIEVE THE CONTRACTOR FROM ANY LIABILITY FOR DAMAGE OR INJURY WHICH MAY RESULT FROM MOVING EQUIPMENT OR MATERIAL.
- RP-5** BEFORE COMMENCING WORK ON PRIVATE LANDS, WHERE SHOWN, THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM THE OWNER (TOWN OF WINDERMERE) TO THERESO OCCUPY FOR THE SOLE PURPOSE OF PROSECUTING THE WORK. THE CONTRACTOR SHALL USE ALL DUE CAUTION AND CARE TO PROTECT THE PROPERTY AT ALL TIMES AND IN ALL MANNER FROM HIS WORK AND TO LIMIT HIS ACTIVITIES AS NECESSARY TO PERFORM THE WORK AS DESCRIBED BY THE CONTRACT DOCUMENTS. IF THE WORK IS INCOMPLETE AT THE END OF THE WORK DAY, HE SHALL SECURE THE WORK AREA AND MATERIALS TO PROVIDE FOR THE SAFETY OF ALL PERSONS, KNOWN OR UNKNOWN. SAFETY SHALL BE FIRST CONSIDERATION AND THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- RP-6** ABSOLUTELY NO WORK WILL BE ALLOWED WITHIN ANY CONSERVATION AREA, BUFFER AREA, MITIGATION AREA, OR DESIGNATED WETLAND AREA UNLESS SO SPECIFICALLY DESCRIBED BY THE PLANS AND GRANTED BY REASON OF PERMIT FROM THE GOVERNMENT ENTITY HAVING JURISDICTION OVER SAID AREA.
- RP-7** STORMWATER POLLUTION PREVENTION PLAN  
IF THE TOTAL AREA TO BE CLEARED IS EQUAL TO, OR EXCEEDS ONE (1) ACRE, THEN THE CONTRACTOR WILL BE RESPONSIBLE FOR PREPARING A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH EPA'S NPDES REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING A NOTICE OF INTENT (NOI) TO THE FDEP FORTY-EIGHT (48) HOURS PRIOR TO COMMENCING CONSTRUCTION. THE COST FOR THIS WILL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR "MOBILIZATION/DEMOBILIZATION, LS."

## UTILITY LOCATIONS

- UL-1** THE LOCATION OF ALL EXISTING UTILITY SERVICES, FACILITIES, AND STRUCTURAL FEATURES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST AVAILABLE INFORMATION AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE OWNER AND HIS REPRESENTATIVE DO NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF THE LOCATION INFORMATION PROVIDED. ANY INACCURACY OR OMISSION IN SUCH INFORMATION SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PROTECT SUCH EXISTING FEATURES FROM DAMAGE OR UNSCHEDULED INTERRUPTION OF SERVICES. SHOULD A DISCREPANCY ARISE BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS, WHICH WOULD APPRECIABLY AFFECT THE EXECUTION OF THESE PLANS, THE CONTRACTOR WILL HALT CONSTRUCTION AND NOTIFY THE OWNER IMMEDIATELY.
- UL-2** THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND FOR NOTIFYING THE VARIOUS UTILITY COMPANIES TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, DISRUPTION OF SERVICE, OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. UTILITIES WHICH INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY COMPANY AND THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY COMPANY DURING RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE BY THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT.
- UL-3** THE CONTRACTOR SHALL LOCATE AND VERIFY THE DEPTHS AND LOCATIONS OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF WORK, PRIOR TO ORDERING ANY STRUCTURES.
- UL-4** PRIOR TO EXCAVATING IN THE VICINITY OF A GAS PIPELINE THE CONTRACTOR SHALL NOTIFY THE GAS UTILITY OWNER IN ACCORDANCE WITH THE REQUIREMENTS OF FLORIDA STATUTES, PROTECTION OF UNDERGROUND PIPELINES, F.S. 553.851, CH. 77-143.
- UL-5** THE CONTRACTOR SHALL USE THE SERVICES OF SUNSHINE-ONE CALL UTILITY LOCATOR A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK. (SUNSHINE-ONE CALL 1 (800) 432-4770)

## MAINTENANCE OF TRAFFIC

- MT-1** MAINTENANCE OF TRAFFIC: ACCESS FOR LOCAL TRAFFIC WITH DESTINATIONS WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED. IF DURING CONSTRUCTION ACCESS FOR LOCAL TRAFFIC IS CHANGED, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER A MINIMUM OF THREE (3) WORKING DAYS IN ADVANCE. IF DURING CONSTRUCTION ROAD CLOSURES ARE REQUIRED, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER A MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE.
- MT-2** PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN ALL BARRICADES, WARNING SIGNS, AND MARKINGS FOR HAZARDS AND THE CONTROL OF TRAFFIC, IN REASONABLE CONFORMITY WITH THE U.S. DEPARTMENT OF TRANSPORTATION MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, OR AS DIRECTED BY THE OWNER (TOWN OF WINDERMERE), SUCH AS TO EFFECTIVELY PREVENT ACCIDENTS IN ALL PLACES WHERE THE WORK CAUSES OBSTRUCTION TO THE NORMAL TRAFFIC OR CONSTITUTES IN ANY WAY A HAZARD TO THE PUBLIC.

## STORM WATER (DRAINAGE)

- SW-1** ALL MANHOLES, INLETS, AND JUNCTION BOX STRUCTURES SHALL BE PRECAST AND IN ACCORDANCE WITH ASTM C-478 UNLESS OTHERWISE SPECIFIED.
- SW-2** ALL MANHOLES, INLETS, AND JUNCTION BOX STRUCTURES SHALL HAVE TRAFFIC BEARING FRAMES AND COVERS, OR GRATES MEETING HS-20 LOADING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED WITHIN THE PLANS.
- SW-3** ALL REINFORCED CONCRETE PIPE SHALL BE OF THE CLASS AND BEDDING SPECIFIED BY THE F.D.O.T., STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION (F.D.O.T. SECTION 430).
- SW-4** ALL PIPE JOINT CONNECTIONS SHALL BE WRAPPED WITH A FILTER FABRIC MATERIAL IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS (F.D.O.T. INDEX NO. 430-001).
- SW-5** ALL EXISTING AND INSTALLED STORM SEWER LINES AND INLETS SHALL BE CLEANED OF DEBRIS AND ERODED MATERIALS AT THE LAST STAGE OF CONSTRUCTION, THE COST OF WHICH SHALL BE INCIDENTAL TO THE PROJECT CONSTRUCTION. BEFORE COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ENGINEER ALL EXISTING DRAINAGE PROBLEMS OR DRAINAGE PROBLEMS THAT WILL BE CREATED BY THIS OPERATION.

## MISCELLANEOUS NOTES

- MN-1** ALL WORK AND MATERIALS FURNISHED SHALL BE IN REASONABLE CONFORMITY WITH THE LINES, GRADES, PROFILES, CROSS-SECTIONS, DIMENSIONS, MATERIAL REQUIREMENTS, AND TESTING REQUIREMENTS SPECIFIED IN THE CONTRACT, PLANS OR SPECIFICATIONS.
- MN-2** THE CONTRACTOR SHALL NOT EXCAVATE, REMOVE, OR OTHERWISE DISTURB ANY MATERIAL, STRUCTURE, OR PART OF A STRUCTURE WHICH IS LOCATED OUTSIDE THE LINES, GRADES, OR CONSTRUCTION LIMITS ESTABLISHED FOR THIS PROJECT, EXCEPT WHERE SUCH EXCAVATION, REMOVAL, OR DISTURBANCE IS PROVIDED FOR IN THE CONTRACT, PLANS, OR SPECIFICATIONS.
- MN-3** THE CONTRACTOR SHALL EXAMINE THE SITE FOR ALL CONDITIONS WHICH MAY AFFECT HIS WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCOVERY, LOCATION AND IDENTIFICATION OF EXISTING UTILITIES, DRAINAGE SYSTEMS OR PHYSICAL STRUCTURES WITHIN THE LIMITS OF WORK. THE OWNER, HIS ENGINEER, AND ENGINEER'S CONSULTANT ASSUME NO RESPONSIBILITY FOR SUBSURFACE CONDITIONS OR FOR THE CONTRACTOR'S FAILURE TO IDENTIFY, LOCATE, AND PROTECT EXISTING FACILITIES ABOVE AND BELOW THE GROUND.
- MN-4** THE CONTRACTOR SHALL REMOVE ALL WASTE MATERIAL FROM THE SITE AND DISPOSE OF IT IN AN APPROVED MANNER. BURNING ON SITE WILL NOT BE ALLOWED.
- MN-5** THE CONTRACTOR SHALL CLEARLY MARK LIMITS OF WORK PRIOR TO CLEARING TO PROTECT ADJACENT AREAS FROM CONSTRUCTION ACTIVITIES.
- MN-6** AS-BUILT DRAWINGS SHALL BE KEPT BY THE CONTRACTOR AND SUBMITTED TO THE OWNER (TOWN OF WINDERMERE) UPON PROJECT COMPLETION, PRIOR TO FINAL CERTIFICATION OF SUBSTANTIAL COMPLETION BY THE ENGINEER. THESE AS-BUILT DRAWINGS SHALL COMPLY WITH THE FLORIDA ADMINISTRATIVE CODE (F.A.C.) FOR SURVEYORS.
- MN-7** THE CONTRACTOR SHALL PROVIDE ALL SHEETING, SHORING, AND BRACING REQUIRED TO PROTECT ADJACENT STRUCTURES AND UTILITIES, OR TO MINIMIZE TRENCH WIDTH AS REQUIRED. SHEETING AND SHORING TO BE DESIGNED BY A STATE OF FLORIDA REGISTERED PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR.
- MN-8** ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THIS WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE CONDITION EXISTING PRIOR TO COMMENCING CONSTRUCTION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. COST TO BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION TO BE ALLOWED.
- MN-9** APPARENT ERRORS, DISCREPANCIES OR OMISSIONS ON THE DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION BEFORE BIDDING. NO EXTRA PAYMENT WILL BE ALLOWED FOR ANY WORK REQUIRED DUE TO MISUNDERSTANDING OF JOB OR SITE CONDITIONS AFFECTING THE WORK DESCRIBED IN THE SPECIFICATIONS OR SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL NOT TAKE ADVANTAGE OF ANY APPARENT ERROR OR OMISSION IN THE DRAWINGS OR SPECIFICATIONS, AND THE ENGINEER SHALL BE PERMITTED TO MAKE CORRECTIONS AND INTERPRETATIONS AS MAY BE DEEMED NECESSARY FOR FULFILLMENT OF THE INTENT OF THE CONTRACT DOCUMENTS. THE TENDERING OF A PROPOSAL WILL ACKNOWLEDGE ACCEPTANCE OF THESE CONDITIONS BY THE BIDDER.
- MN-10** AT THE END OF EACH WORK DAY THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE CONSTRUCTION AREA FOR PUBLIC SAFETY.

## UTILITY CONTACTS

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Always call 811 two full business days before you dig



REV.	DATE	DESCRIPTION	APP'D BY	OTHERS	DATE

**MGEC** MICHAEL GALURA  
ENGINEERING  
CONSULTANTS, LLC

3222 Corrine Drive, Suite H  
Orlando, Florida 32803 407/493-9983

CERTIFICATE OF AUTHORIZATION NO. 29032



**TOWN OF WINDERMERE**  
PUBLIC WORKS DEPARTMENT  
614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. <b>TOW-052.01.000</b>	<b>GENERAL NOTES</b>
FILE NAME: <b>SEE LEFT MARGIN</b>	
ARCHIVE DISC:	
SCALE: <b>NONE</b>	
DRWG.	SHEET <b>3</b> OF <b>86</b>



**SUMMARY OF PAY ITEMS**

**PAY ITEM NOTES**

NO.	PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY TOTAL	
				PLAN	FINAL
<b>ROADWAY AND DRAINAGE IMPROVEMENTS PAY ITEMS</b>					
1.	101-1	MOBILIZATION AND DEMOBILIZATION	LS	1	
2.	101-2	SURVEY, CONSTRUCTION LAYOUT AND CERTIFIED AS-BUILT	LS	1	
3.	102-1	MAINTENANCE OF TRAFFIC	LS	1	
4.	104-14	PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION	LS	1	
5.	110-1-1	CLEARING AND GRUBBING	LS	1	
6.	110-7-1	MAILBOX, F&I, SINGLE	EA	46	
7.	120-9	EXCAVATION, EMBANKMENT AND GRADING	LS	1	
8.	160-4	TYPE B STABILIZATION (12") (MIN LBR 40)	SY	12,646	
9.	205-704	GRADED CRUSHED CONCRETE AGGREGATE BASE COURSE (8")	SY	12,646	
10.	327-70-6	MILLING EXISTING ASPHALT PAVEMENT, 1-1/2" AVG DEPTH	SY	1,440	
11.	334-1-13	TYPE SP 9.5 ASPHALT CONCRETE FRICTION COURSE (1-1/2") (165 LB PER SY) (TRAFFIC LEVEL C)	TN	817	
12.	400-15	CONCRETE, CLASS NS, MISCELLANEOUS	CY	10	
13.	425-1-351	INLETS CURB, TYPE P-5, <10'	EA	14	
14.	425-1-451	INLETS CURB, TYPE J-5, <10'	EA	1	
15.	425-1-521	INLETS, DITCH BOTTOM, TYPE C, <10'	EA	11	
16.	425-1-541	INLETS, DITCH BOTTOM, TYPE D, <10'	EA	1	
17.	425-1-549	INLETS, DITCH BOTTOM, TYPE D, MODIFY	EA	1	
18.	425-1-711	INLETS, GUTTER TYPE V, <10'	EA	12	
19.	425-2-4	MANHOLE, P-7, <10'	EA	2	
20.	430-175-118	PIPE CULVERT, CONCRETE, CLASS III, ROUND, 18"	LF	893	
21.	430-175-124	PIPE CULVERT, CONCRETE, CLASS III, ROUND, 24"	LF	47	
22.	430-94-1	DESILT PIPE (0 TO 24")	LF	1,766	
23.	432-4	STORM SEWER VIDEO	LS	1	
24.	443-70-4	FRENCH DRAIN (24" SLOTTED RCP) (COMPLETE)	LF	873	
25.	520-1-7	CONCRETE CURB AND GUTTER, TYPE E	LF	123	
26.	520-1-10	CONCRETE CURB AND GUTTER, TYPE F	LF	126	
27.	520-1-13	CONCRETE CURB AND GUTTER, TYPE DROP	LF	6,888	
28.	520-2-4	CONCRETE CURB, TYPE D	LF	44	
29.	520-2-6	CONCRETE CURB (12"x12" RIBBON CURB)	LF	916	
30.	520-3	VALLEY GUTTER, CONCRETE	LF	391	
31.	522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	64	
32.	522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6" THICK	SY	1,044	
33.	522-3	BRICK PAVER DRIVEWAY	SY	232	
34.	522-4	CURB, RAMP, ADA, 6" THICK CONCRETE	SY	16	
35.	522-6	SPEED HUMP (COMPLETE WITH THERMOPLASTIC MARKINGS)	EA	7	
36.	527-2	DETECTABLE WARNINGS	SF	66	
37.	570-1-2	PERFORMANCE TURF (SOD) (MATCH EXISTING)	SY	8,265	
38.	580-9-11	REMOVE EXISTING TREE, INCLUDING STUMP, 8"-24" DIAMETER	EA	4	
39.	700-1-11	SINGLE POST SIGN, F&I GROUND MOUNT, UP TO 12 SF	AS	22	
40.	700-1-50	SINGLE POST SIGN, RELOCATE	AS	5	
41.	706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	EA	5	
42.	711-11-123	THERMOPLASTIC, STANDARD WHITE, SOLID, 12"	LF	49	
43.	711-11-125	THERMOPLASTIC, STANDARD WHITE, SOLID, 24"	LF	148	
<b>OCU WATER MAIN IMPROVEMENTS PAY ITEMS</b>					
44.	1050-11-221	F&I WATER MAIN, 4" RESTRAINED JOINT, COMPLETE INCLUDING FITTING	LF	440	
45.	1050-16-423	F&I WATER MAIN, 8" DUCTILE IREON, COMPLETE INCLUDING FITTINGS	LF	2,341	
46.	1050-16-221	REMOVE AND DISPOSE OF EXISTING 4" WATER MAIN	LF	368	
47.	1050-16-222	REMOVE AND DISPOSE OF EXISTING 6" WATER MAIN	LF	1,859	
48.	1050-16-223	REMOVE AND DISPOSE OF EXISTING 8" WATER MAIN	LF	466	
49.	1051-4	REPLACE 1" WATER SERVICE LATERAL, SHORT SIDE	EA	22	
50.	1051-5	REPLACE 1" WATER SERVICE LATERAL, LONG SIDE	EA	19	
51.	1080-24-104	F&I GATE VALVE ASSEMBLY, 4" COMPLETE	EA	2	
52.	1080-24-106	F&I GATE VALVE ASSEMBLY, 6" COMPLETE	EA	3	
53.	1080-24-108	F&I GATE VALVE ASSEMBLY, 8" COMPLETE	EA	38	
54.	1080-25-104	F&I 4" BLOWOFF ASSEMBLY, COMPLETE (PERMANENT)	EA	1	
55.	1080-25-108	F&I 8" BLOWOFF ASSEMBLY, COMPLETE (TEMPORARY)	EA	9	
56.	1080-25-600	BLOWOFF ASSEMBLY, REMOVE	EA	1	
57.	1080-26-108	F&I AIR RELEASE VALVE ASSEMBLY, 8" COMPLETE	EA	3	
58.	1080-27-104	UTILITY FIXTURE - LINE STOP ASSEMBLY, FURNISH AND INSTALL, 4"	EA	1	
59.	1080-27-106	UTILITY FIXTURE - LINE STOP ASSEMBLY, FURNISH AND INSTALL, 6"	EA	2	
60.	1080-27-108	UTILITY FIXTURE - LINE STOP ASSEMBLY, FURNISH AND INSTALL, 8"	EA	10	
61.	1080-28-104	CUT-IN CONNECTION TO EXISTING 4" WM	EA	1	
62.	1080-28-108	CUT-IN CONNECTION TO EXISTING 8" WM	EA	10	
63.	1644-116-08	F&I FIRE HYDRANT ASSEMBLY, COMPLETE WITH 6" GATE VALVE AND BOX	AS	3	
64.	1644-900	FIRE HYDRANT, REMOVE EXISTING FIRE HYDRANT	AS	3	

101-1 THIS PAY ITEM INCLUDES THE COST OF ALL LABOR AND ITEMS FOR MOBILIZATION AND DEMOBILIZATION AS WELL AS DEWATERING. THIS INCLUDES BUT IS NOT LIMITED TO OPERATIONS NECESSARY FOR THE MOVEMENT OF PERSONNEL, EQUIPMENT, SUPPLIES AND INCIDENTALS TO THE PROJECT AND FOR THE ESTABLISHMENT OF SAFETY EQUIPMENT, TO MAINTAIN A DRY WORK ZONE, SANITARY AND OTHER FACILITIES NECESSARY TO COMPLETE THE WORK. THIS INCLUDES THE COST OF SUBMITTAL OF A DEWATERING PLAN AND SHEETING AND SHORING PLAN TO THE ENGINEER AND THE TOWN OF WINDERMERE FOR REVIEW. THESE PLANS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA. THE DEWATERING AND SHEETING AND SHORING PLAN SUBMITTALS MUST INCLUDE THE DETERMINATION OF THE ZONE OF INFLUENCE AND DEMONSTRATE NO ADVERSE IMPACTS TO ADJACENT PROPERTIES. THE DEWATERING PLAN SHALL ALSO COMPLY WITH CHAPTER 40C-2, F.A.C. AND THE SFWMD REGULATIONS FOR CONSUMPTIVE USE PERMITS (CUP) AND COMPLIANCE FORMS (IF APPLICABLE). CONTRACTOR SHALL ALSO PROVIDE A PRE-CONSTRUCTION VIDEO AND PROOF OF WRITTEN NOTIFICATION OF THE RESIDENTS THAT COULD POTENTIALLY BE IMPACTED BY THE TEMPORARY SHEETING AND SHORING AND THE COST SHALL BE INCLUDED IN THIS PAY ITEM.

102-1 INCLUDES ALL ITEMS OF MAINTENANCE OF TRAFFIC INCLUDING BUT NOT LIMITED TO THE DESIGN OF THE REVISIONS TO THE MAINTENANCE OF TRAFFIC PLAN BY THE CONTRACTOR AND APPROVAL OF THE REVISED PLANS BY THE TOWN OF WINDERMERE. ALSO INCLUDES ALL TEMPORARY AND PERMANENT STRIPING, REMOVAL OF EXISTING AND TEMPORARY STRIPING BY HYDRO BLASTING, SIGNING, FLAGGERS, ETC., REQUIRED TO MAINTAIN TRAFFIC DURING CONSTRUCTION IN ACCORDANCE WITH THE MUTCD (LATEST EDITION) AND THE FDOT ROADWAY AND DESIGN STANDARDS (LATEST EDITION). IN ADDITION, THIS PAY ITEM SHALL INCLUDE COORDINATION WITH ACCOMMODATING VEHICULAR AND PEDESTRIAN INGRESS AND EGRESS TRAFFIC FOR THE RESIDENTS ALONG WEST SECOND AVENUE. ATTENTION IS DIRECTED TO THE 102-600 SERIES INDEX NUMBERS (GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES). ANY REVISIONS TO THE MAINTENANCE OF TRAFFIC PLAN TO BE PREPARED BY THE CONTRACTOR OR HIS/HER DESIGNEE SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA. PAY ITEM ALSO INCLUDES ALL COORDINATION NEEDED TO ACCOMMODATE ALL CONSTRUCTION ACTIVITY IN THE PROJECT VICINITY. CONTRACTOR SHALL ANTICIPATE SOME MODIFICATIONS TO THE M.O.T. THAT MAY BE NEEDED AS PART OF THE COORDINATION ALONG THE PROJECT VICINITY. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

104-14 THIS PAY ITEM INCLUDES THE COST OF ALL LABOR AND ITEMS REQUIRED FOR THE EROSION CONTROL INCLUDING BUT NOT BE LIMITED TO SYNTHETIC BALES, TURBIDITY BARRIERS, SILT FENCES, CURB INLET SEDIMENT BARRIERS AND TEMPORARY GRASSING AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER. IT SHOULD BE NOTED THAT THIS PAY ITEM IS NOT IN THE FDOT MASTER PAY ITEM LIST (LATEST EDITION).

110-1-1 INCLUDES BUT IS NOT LIMITED TO THE COST FOR THE REMOVAL AND DISPOSAL OF CONCRETE CURBS; DRIVEWAYS; STRUCTURES; PIPES; LANDSCAPE WALLS; BRICK WALLS; VARIOUS TYPES OF FENCES; ASPHALT AND BRICK PAVEMENT; ROADWAY BASE REMOVAL; INCIDENTAL EXCAVATION AND GRADING; TREES AND SHRUBS; AND THE DISPOSAL OF ALL TREE AND SHRUB DEBRIS AS REQUIRED TO CONSTRUCT THE PROJECT. THIS PAY ITEM ALSO INCLUDES THE COST FOR THE SAW CUTTING OF EXISTING PAVEMENT AND CONCRETE. IN ADDITION, THIS PAY ITEM INCLUDES THE REMOVAL AND DISPOSAL OF EXISTING PAVEMENT, EXISTING CURB AND GUTTER AND EXISTING CONCRETE SIDEWALK WITHIN THE LIMITS OF CONSTRUCTION.

425- THIS PAY ITEM INCLUDES THE FURNISHING OF ALL MATERIALS AND LABOR TO COMPLETE THE WORK SHOWN IN THE PLANS, INCLUDING ALL EXCAVATION, ALL BACKFILLING AROUND THE STRUCTURES, THE REMOVAL AND DISPOSAL OF SURPLUS MATERIALS, AND THE FURNISHING AND PLACING OF ALL GRATINGS, FRAMES, COVERS, SPECIALTY APPURTENANCES, AND ANY OTHER NECESSARY FITTINGS FOR THE DRAINAGE STRUCTURES. ALL INLET GRATES SHALL BE STEEL GRATES (RETCULINE) PER INDEX NO. 425-041 AND 425-052 FDOT STANDARD PLANS (CURRENT FY). THE COST OF SUMP BOTTOM AND WEEP HOLE ARE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE INLET OR MANHOLE.

430-175- THIS PAY ITEM INCLUDES THE FURNISHING OF ALL MATERIALS AND LABOR TO COMPLETE THE WORK AS SHOWN IN THE PLANS, INCLUDING ALL EXCAVATION (EXCEPT THE VOLUME INCLUDED IN THE MEASUREMENT DESIGNATED TO BE PAID FOR UNDER THE ITEMS FOR GRADING WORK); ALL BACKFILLING MATERIAL AND COMPACTION; DISPOSAL OF SURPLUS MATERIAL; JOINT MATERIAL AND ALL JOINT WRAPPING WITH FILTER FABRIC. IT SHOULD BE NOTED THAT THE SPECIFIC PAY ITEMS FOR "PIPE CULVERT, CONCRETE, CLASS III, ROUND/HORIZONTAL ELLIPTICAL" IS NOT IN THE FDOT MASTER PAY ITEM LIST (LATEST EDITION).

443-70-4 THE CONTRACT UNIT PRICE FOR FRENCH DRAINS, LF, SHALL INCLUDE THE COST OF THE SLOTTED PIE, NON-SLOTTED PIPE, PIPE FITTING, COARSE AGGREGATE AND FILTER FABRIC, IN PLACE, AND THE COST FOR TRENCH EXCAVATION, BACKFILL AND COMPACTION. THE UNIT PRICE SHALL ALSO INCLUDE THE COST FOR THE DISPOSAL OF SURPLUS EXCAVATED MATERIAL AND THE COST OF RESTORATION OF ANY PAVEMENT REMOVED OR DAMAGED BY THE CONSTRUCTION OF THE FRENCH DRAIN, BUT SHALL NOT INCLUDE PAYMENTS FOR ITEM PAID FOR ELSEWHERE IN THIS CONTRACT.

FRENCH DRAINS WITH A SIGNIFICANTLY DIFFERENT CROSS-SECTION SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICES FOR SEPARATE ITEMS AS FOLLOWS:

- SLOTTED OR PERFORATED PIPE CULVERT, LF. UNIT PRICE SHALL INCLUDE THE COST FOR PIPE PLUGS AND FITTINGS IN PLACE.
- BALLAST ROCK (FRENCH DRAIN AGGREGATE), CY. UNIT PRICE SHALL INCLUDE THE COST FOR COARSE AGGREGATE, IN PLACE, AND COST FOR TRENCH EXCAVATION, BACKFILL AND COMPACTION. THE UNIT PRICE SHALL ALSO INCLUDE THE COST FOR THE DISPOSAL OF SURPLUS EXCAVATED MATERIALS AND THE COST FOR THE RESTORATION OF ANY PAVEMENT REMOVED OR DAMAGED BY THE CONSTRUCTION OF THE FRENCH DRAIN SYSTEM, BUT SHALL NOT INCLUDE PAYMENT FOR ITEMS PAID FOR ELSEWHERE.
- PLASTIC FILTER FABRIC (SUBSURFACE), SY. UNIT PRICE SHALL BE FOR THE COST OF INSTALLATION OF THE FILTER FABRIC, IN PLACE. QUANTITY SHALL BE DETERMINED BY PLAN NEAT DIMENSIONS OF THE FILTER FABRIC.

FOR SUPPLEMENTAL DETAILS, SEE FDOT INDEX NO. 443-001 (LATEST STANDARD PLANS FY)

520-2-4 THIS PAY ITEM INCLUDES THE FURNISHING OF ALL MATERIALS AND LABOR TO COMPLETE THE WORK AS SHOWN IN THE PLANS, INCLUDING ALL EXCAVATION; ALL BACKFILLING MATERIAL AND COMPACTION. NOT AN FDOT PAY ITEM.

520-2-6 THIS PAY ITEM INCLUDES THE FURNISHING OF ALL MATERIALS AND LABOR TO COMPLETE THE WORK AS SHOWN IN THE PLANS, INCLUDING ALL EXCAVATION, PLACING AND REMOVAL OF FORMS, AND FINISHING AND TEXTURING OF THE RIBBON CURB. NOT AN FDOT PAY ITEM.

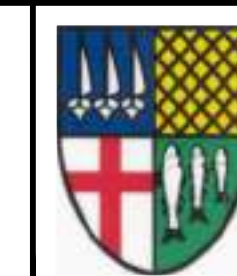
570-1-2 THE UNIT PRICE (SY) FOR PERFORMANCE TURF SHALL INCLUDE ALL WORK AND MATERIALS FOR THE APPLICATION OF SOD, FERTILIZER, MOWING AND WATERING REQUIRED TO MAINTAIN THE SODDED AREAS UNTIL FINAL ACCEPTANCE OF THE PROJECT BY THE TOWN OF WINDERMERE.

522-4 INCLUDES DETECTABLE WARNING SURFACES. NOT AN FDOT PAY ITEM.

REFER TO SHEET 62 FOR ORANGE COUNTY UTILITIES PAY ITEM NOTES (PAY ITEMS 1050- TO 1644-).

REV.	DATE	DESCRIPTION	APP'D BY	SIGN OFF	DATE	FIELD: PEC SURVEYING AND MAPPING, LLC
				CLIENT		DRAWN BY: CADD
				PM/CM BC		DESIGNED BY: MBG
				PM/CM DM		CHECKED BY: MBG
				PM		DATE: NOVEMBER 2023
				CM		
				OTHERS		

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
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 Orlando, Florida 32803 407/493-9983  
 CERTIFICATE OF AUTHORIZATION NO. 29032



**TOWN OF WINDERMERE**  
 PUBLIC WORKS DEPARTMENT  
 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
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**SUMMARY OF QUANTITIES**



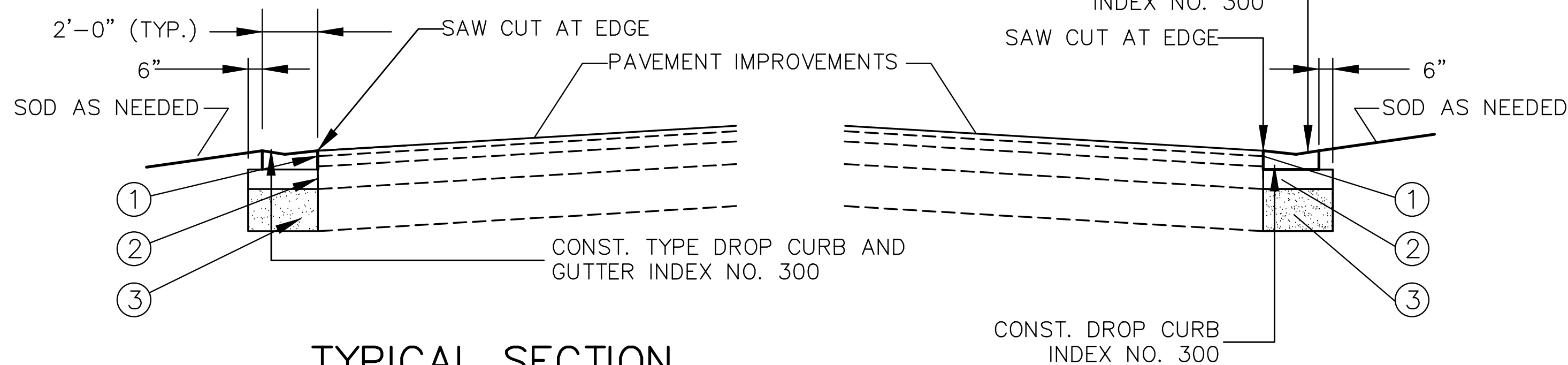
BASE THICKNESS AND OPTION CODES										
BASE GROUP	STRUCTURAL RANGE	BASE GROUP PAY ITEM NUMBER	BASE OPTIONS							
			LIMEROCK LBR 100	CEMENTED COQUINA LBR 100	SHELL ROCK LBR 100	BANK RUN SHELL LBR 100	GRADED AGGREGATE BASE LBR 100	TYPE B-12.5	TYPE B-12.5 & 4" GRANULAR SUBBASE, LBR 100*	RAP BASE
			STRUCTURAL NUMBER (PER. IN.)							
			(.18)	(.18)	(.18)	(.18)	(.15)	(.30)	(.30&.15)	(NA)
1	.65-.75	701	4"	4"	4"	4"	4.5"	4"		5"
2	.80-.90	702	5"	5"	5"	5"	5.5"	4"		
3	.95-1.05	703	5.5"	5.5"	5.5"	5.5"	6.5"	4"		
4	1.05-1.15	704	6"	6"	6"	6"	7.5"	4"		
5	1.25-1.35	705	7"	7"	7"	7"	8.5"	4.5"		
6	1.35-1.50	706	8"	8"	8"	8"	9"	5"		
7	1.50-1.65	707	8.5"	8.5"	8.5"	8.5"	10"	5.5"		
8	1.65-1.75	708	9.5"	9.5"	9.5"	9.5"	11"	5.5"		
9	1.75-1.85	709	10"	10"	10"	10"	12"	6"	4"	
10	1.90-2.00	710	11"	11"	11"	11"	13"	6.5"	4.5"	
11	2.05-2.15	711	12"	12"	12"	12"	14"	7"	5"	
12	2.20-2.30	712	12.5"	12.5"	12.5"	12.5"	12.5"	7.5"	5.5"	
13	2.35-2.45	713	13.5"	13.5"	13.5"	13.5"		8"	6"	
14	2.45-2.55	714	14"	14"	14"	14"		8.5"	6.5"	
15	2.60-2.70	715						9"	7"	

- \* FOR GRANULAR SUBBASE, THE CONSTRUCTION OF BOTH THE SUBBASE AND TYPE B-12.5 WILL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR OPTIONAL BASE. GRANULAR SUBBASES INCLUDE LIMEROCK, CEMENTED COQUINA, SHELL ROCK, BANK RUN SHELL AND GRADED AGGREGATE BASE AT LBR 100. THE BASE THICKNESS SHOWN IS TYPE B-12.5. ALL SUBBASE THICKNESSES ARE 4".
- † TO BE USED FOR WIDENING ONLY, THREE FEET OR LESS.
- △ BASED ON MINIMUM PRACTICAL THICKNESSES.
- RESTRICTED TO NON-LIMITED ACCESS SHOULDER BASE CONSTRUCTION.

REF: FDOT SPECIFICATION 285 - OPTIONAL BASE COURSE

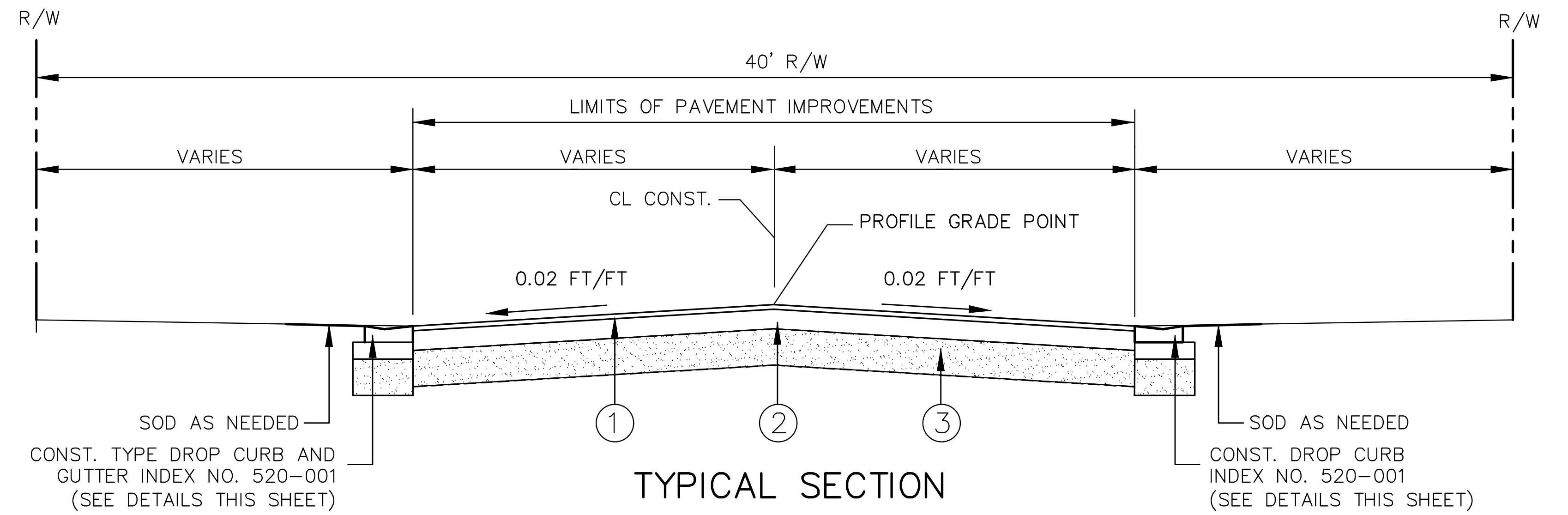
**GENERAL NOTES**

- ON NEW CONSTRUCTION AND COMPLETE RECONSTRUCTION PROJECTS WHERE AN ENTIRELY NEW BASE IS TO BE BUILT, THE DESIGN ENGINEER MAY SPECIFY JUST THE BASE GROUP AND ANY OF THE UNRESTRICTED GENERAL USE OPTIONAL BASES SHOWN IN THAT BASE GROUP MAY BE USED. NOTE, HOWEVER, THAT SOME THICK GRANULAR BASES ARE LIMITED TO WIDENING WHICH PREVENTS THEIR GENERAL USE.
- WHERE BASE OPTIONS ARE SPECIFIED IN THE PLANS, ONLY THOSE OPTIONS MAY BE BID AND USED.
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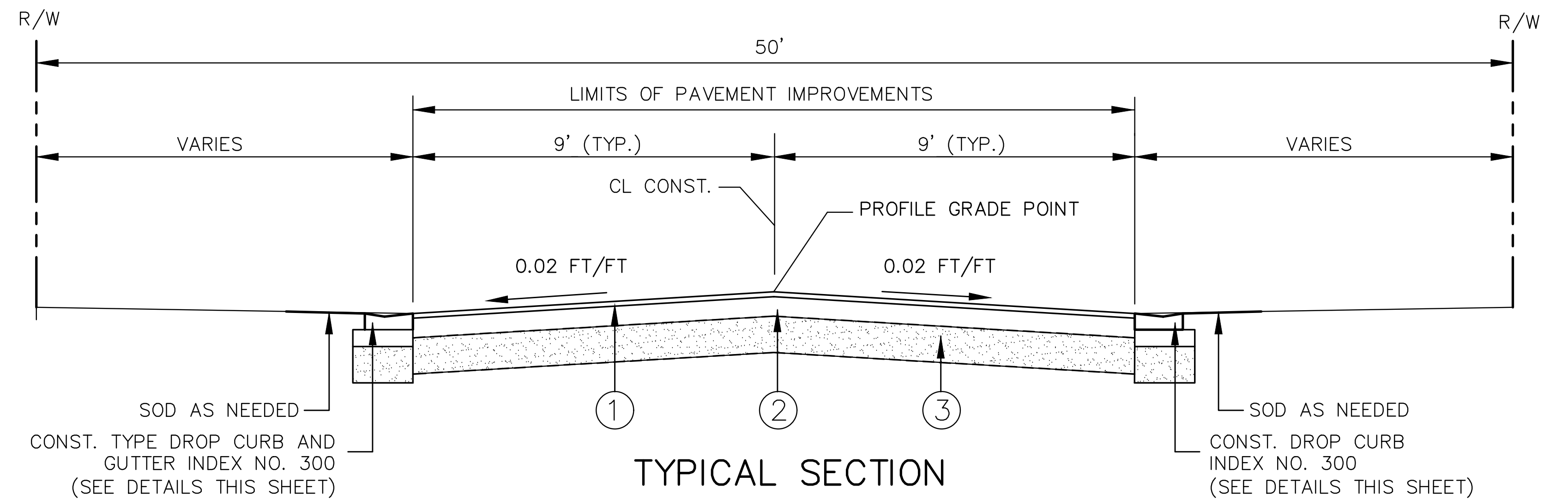
**TYPICAL SECTION CURB AND GUTTER CONSTRUCTION**  
N.T.S.

- ASPHALT PAVEMENT  
1-1/2" TYPE 9.5 SP (SUPERPAVE) ASPHALTIC CONCRETE (165 LB/SY)  
TRAFFIC CONDITION C
- BASE:  
OPTIONAL BASE GROUP 6 (INDEX NO. 514)  
OPTIONAL BASE GROUP PERMITTED = TYPE B 12.5
- SUB BASE:  
12" SUB BASE COMPACTED TO 98% DENSITY BASED ON AASHTO T-180  
MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.



**TYPICAL SECTION**  
STA. 3+68.13 TO STA. 6+41.90  
STA. 8+60.74 TO STA. 13+35.98  
**WEST SECOND AVENUE**  
N.T.S.

- ASPHALT PAVEMENT  
1-1/2" TYPE SP (SUPERPAVE) 9.5 ASPHALTIC CONCRETE (165 LB/SY)  
TRAFFIC CONDITION C
- BASE:  
OPTIONAL BASE GROUP 6 (INDEX NO. 514)  
OPTIONAL BASE GROUP PERMITTED = TYPE B 12.5
- SUB BASE:  
12" SUB BASE COMPACTED TO 98% DENSITY BASED ON AASHTO T-180  
MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.



**TYPICAL SECTION**  
STA. 13+35.98 TO STA. 24+86.90  
**WEST SECOND AVENUE**  
N.T.S.

- ASPHALT PAVEMENT  
1-1/2" TYPE 9.5 SP (SUPERPAVE) ASPHALTIC CONCRETE (165 LB/SY)  
TRAFFIC CONDITION C
- BASE:  
OPTIONAL BASE GROUP 6 (INDEX NO. 514)  
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- SUB BASE:  
12" SUB BASE COMPACTED TO 98% DENSITY BASED ON AASHTO T-180  
MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.

REV.	DATE	DESCRIPTION	APP'D BY	SIGN OFF	DATE	FIELD:
				CLIENT		PEC SURVEYING AND MAPPING, LLC
				PM/CM BC		DRAWN BY: CADD
				PM/CM DM		DESIGNED BY: MBG
				PM		CHECKED BY: MBG
				CM		DATE: NOVEMBER 2023
				OTHERS		

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
3222 Corrine Drive, Suite H  
Orlando, Florida 32803  
CERTIFICATE OF AUTHORIZATION NO. 29032  
407/493-9983



**TOWN OF WINDERMERE**  
PUBLIC WORKS DEPARTMENT  
614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: N.T.S.

TYPICAL SECTIONS  
WEST SECOND AVENUE

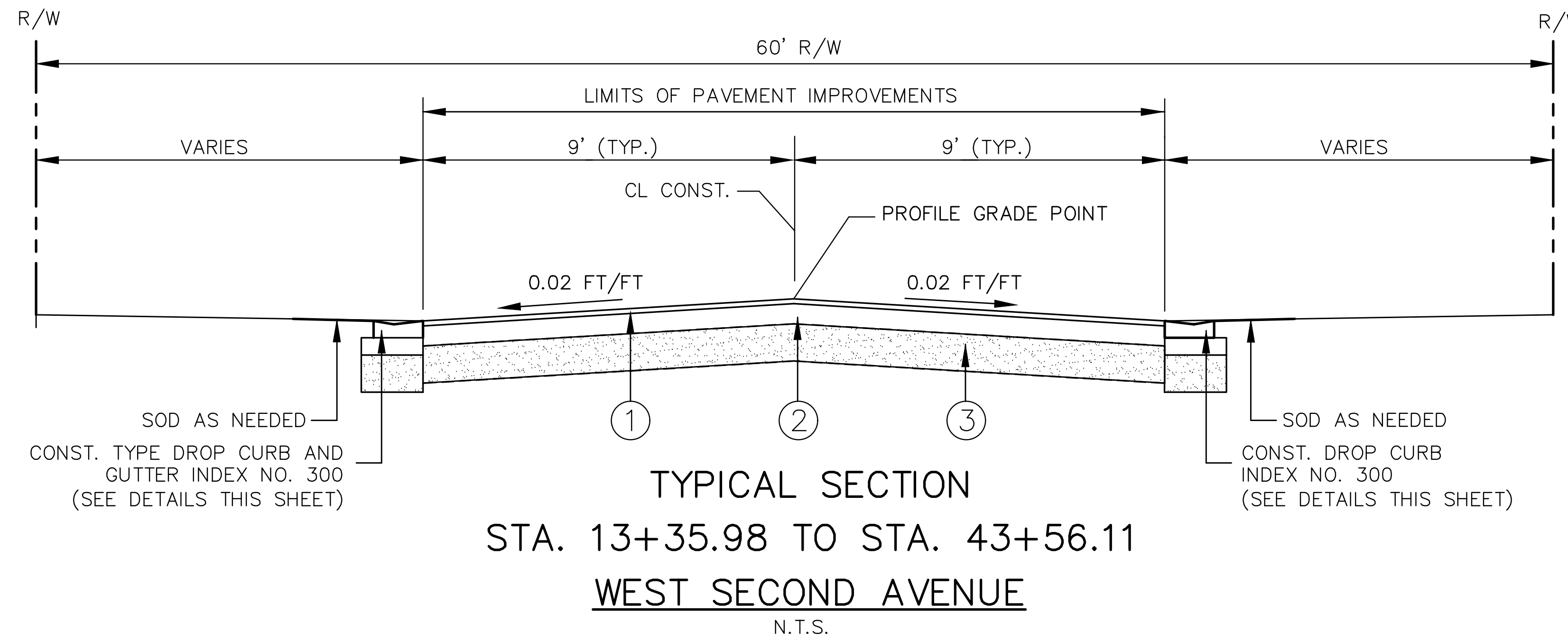


BASE THICKNESS AND OPTION CODES										
BASE GROUP	STRUCTURAL RANGE	BASE GROUP PAY ITEM NUMBER	BASE OPTIONS							
			LIMEROCK LBR 100	CEMENTED COQUINA LBR 100	SHELL ROCK LBR 100	BANK RUN SHELL LBR 100	GRADED AGGREGATE BASE LBR 100	TYPE B-12.5	TYPE B-12.5 & 4" GRANULAR SUBBASE LBR 100*	RAP BASE
			STRUCTURAL NUMBER (PER. IN.)							
			(.18)	(.18)	(.18)	(.18)	(.15)	(.30)	(.30&.15)	(NA)
1	.65-.75	701	4"	4"	4"	4"	4 1/2"	4"		5"
2	.80-.90	702	5"	5"	5"	5"	5 1/2"	4"		
3	.95-1.05	703	5 1/2"	5 1/2"	5 1/2"	5 1/2"	6 1/2"	4"		
4	1.05-1.15	704	6"	6"	6"	6"	7 1/2"	4"		
5	1.25-1.35	705	7"	7"	7"	7"	8 1/2"	4 1/2"		
6	1.35-1.50	706	8"	8"	8"	8"	9"	5"		
7	1.50-1.65	707	8 1/2"	8 1/2"	8 1/2"	8 1/2"	10"	5 1/2"		
8	1.65-1.75	708	9 1/2"	9 1/2"	9 1/2"	9 1/2"	11"	5 1/2"		
9	1.75-1.85	709	10"	10"	10"	10"	12"	6"	4"	
10	1.90-2.00	710	11"	11"	11"	11"	13"	6 1/2"	4 1/2"	
11	2.05-2.15	711	12"	12"	12"	12"	14"	7"	5"	
12	2.20-2.30	712	12 1/2"	12 1/2"	12 1/2"	12 1/2"	7 1/2"	5 1/2"		
13	2.35-2.45	713	13 1/2"	13 1/2"	13 1/2"	13 1/2"	8"	6"		
14	2.45-2.55	714	14"	14"	14"	14"	8 1/2"	6 1/2"		
15	2.60-2.70	715					9"	7"		

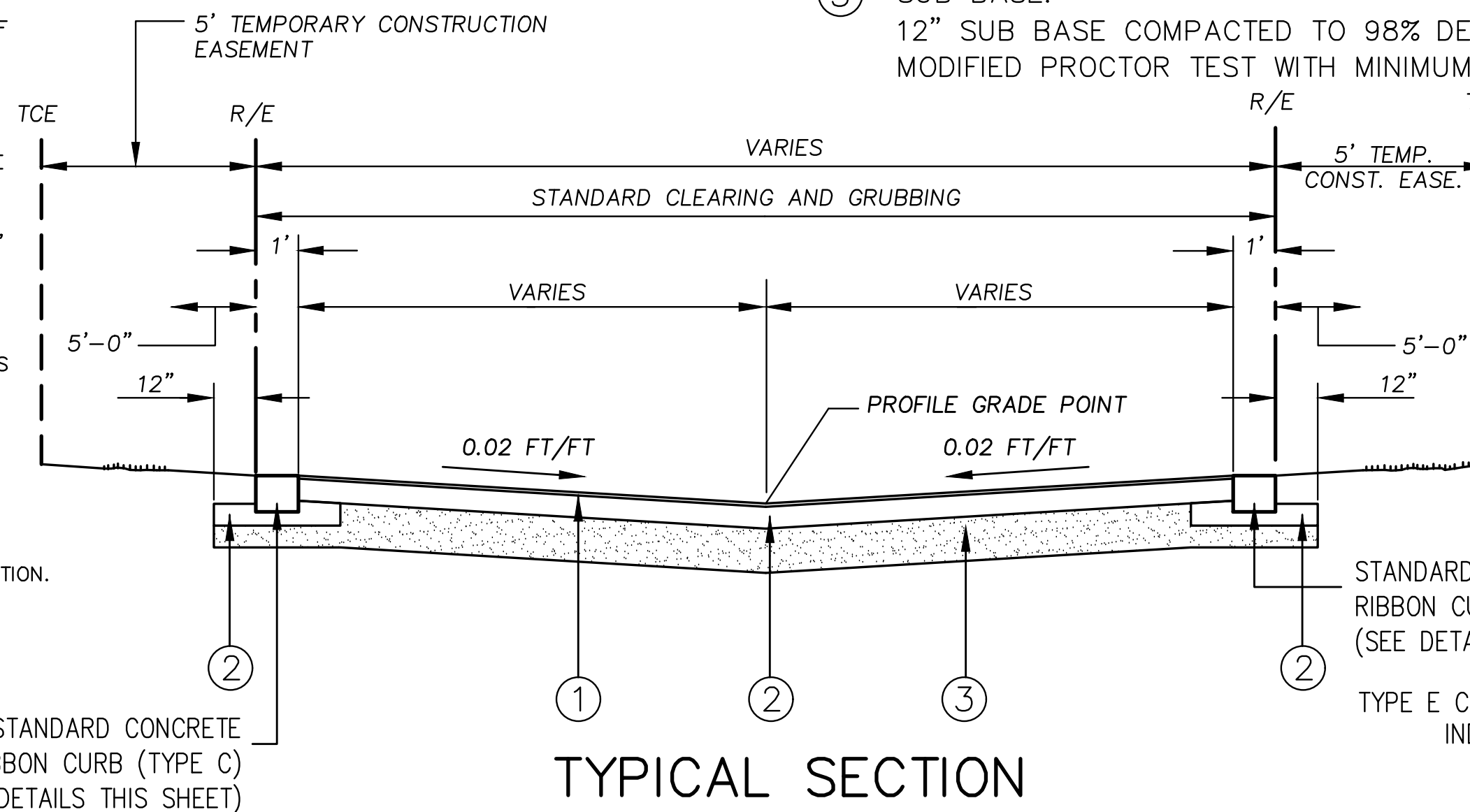
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**GENERAL NOTES**

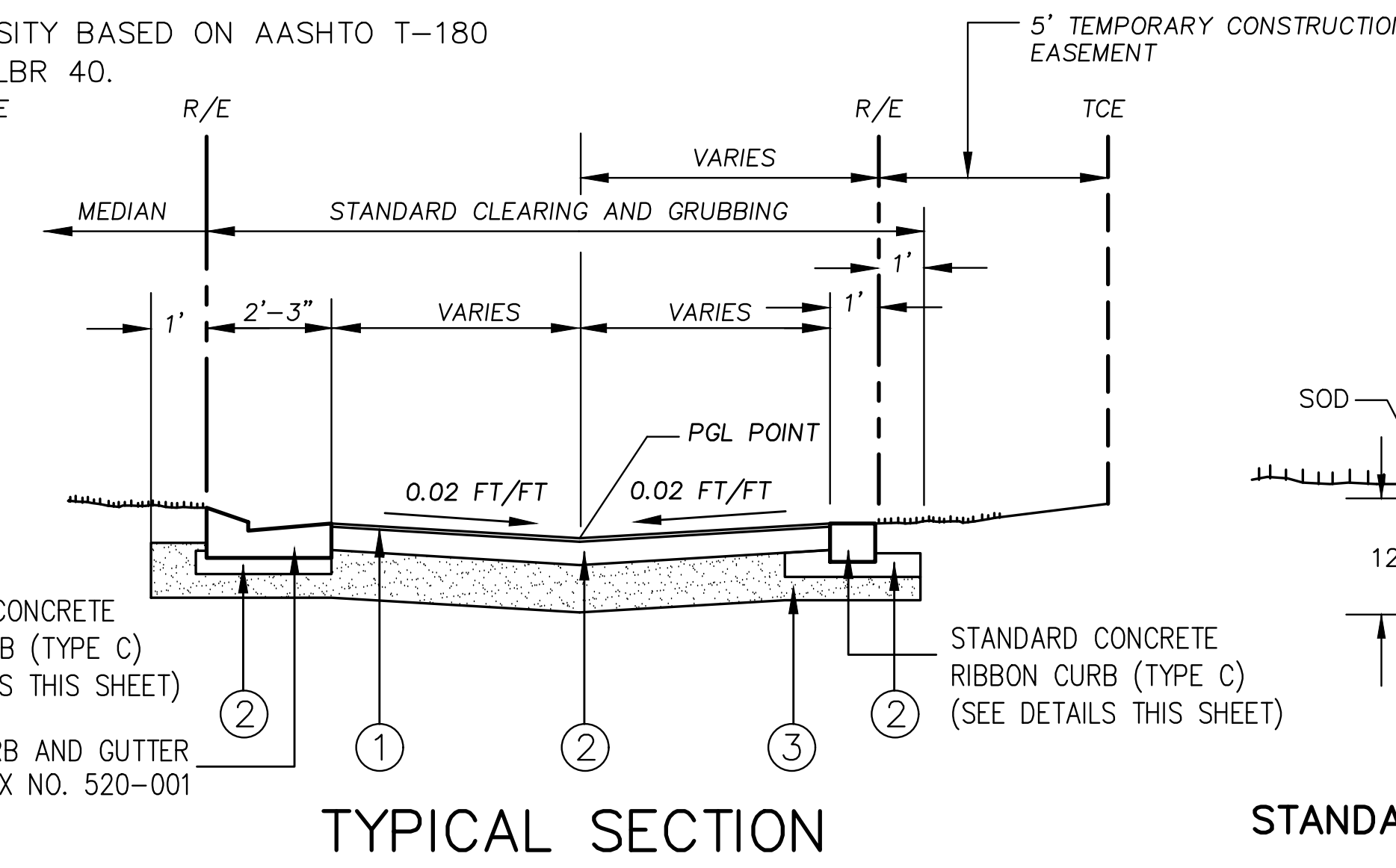
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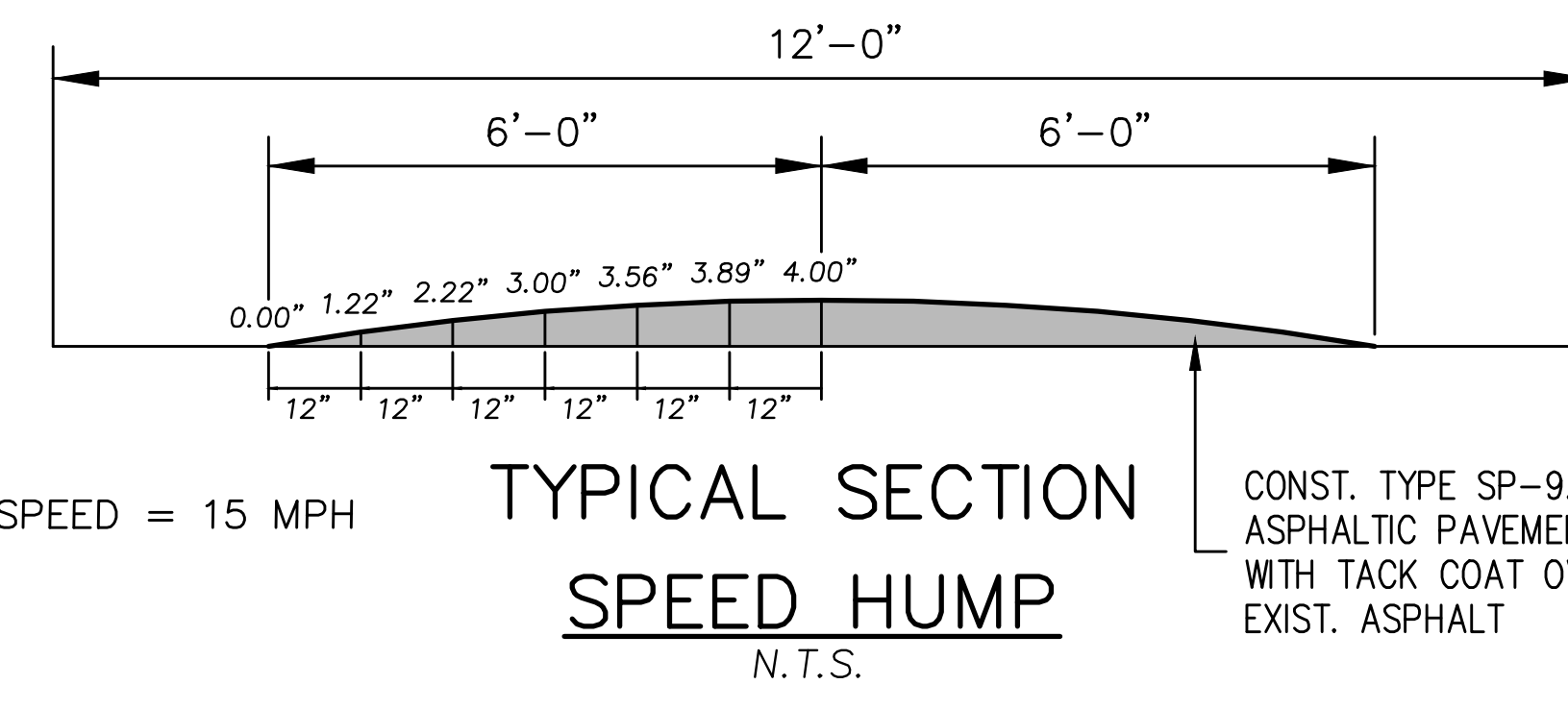
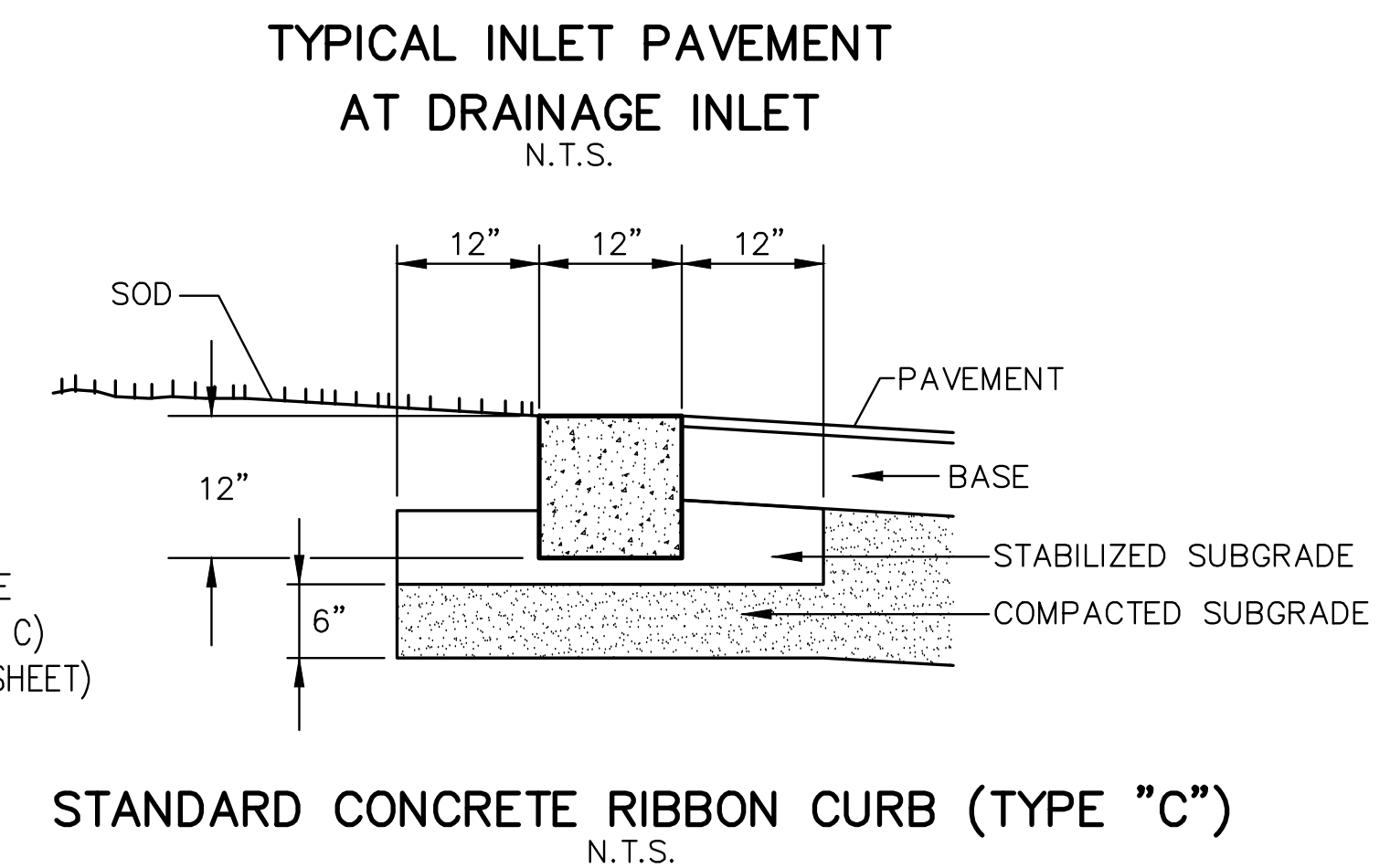
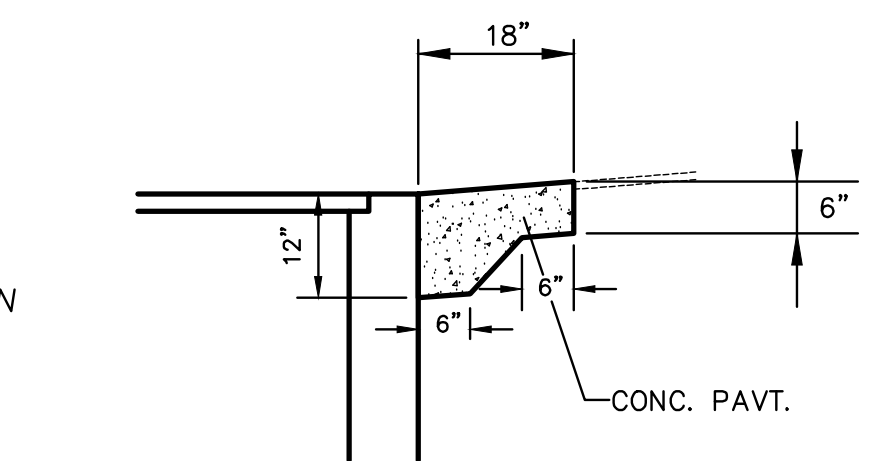
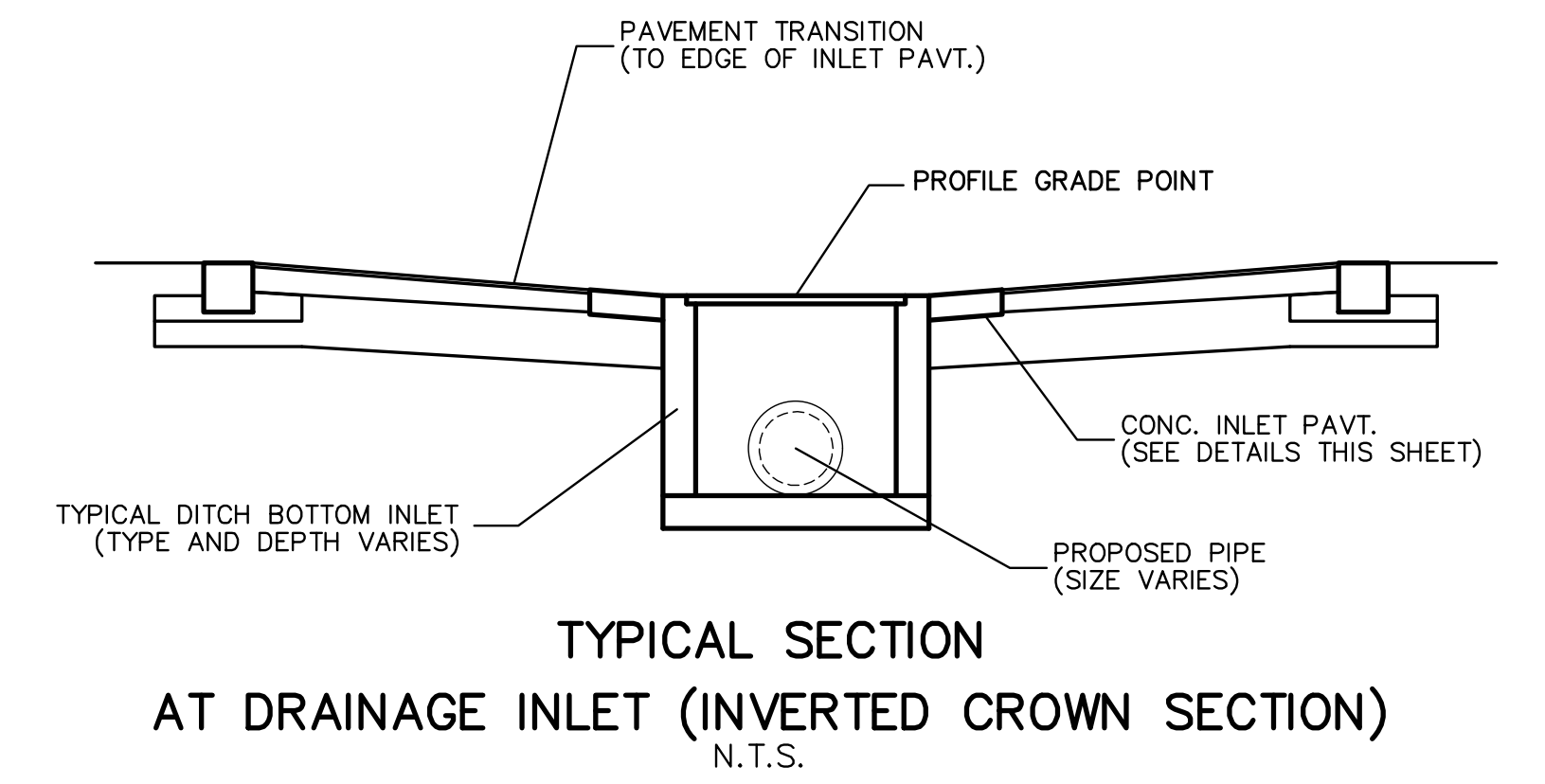
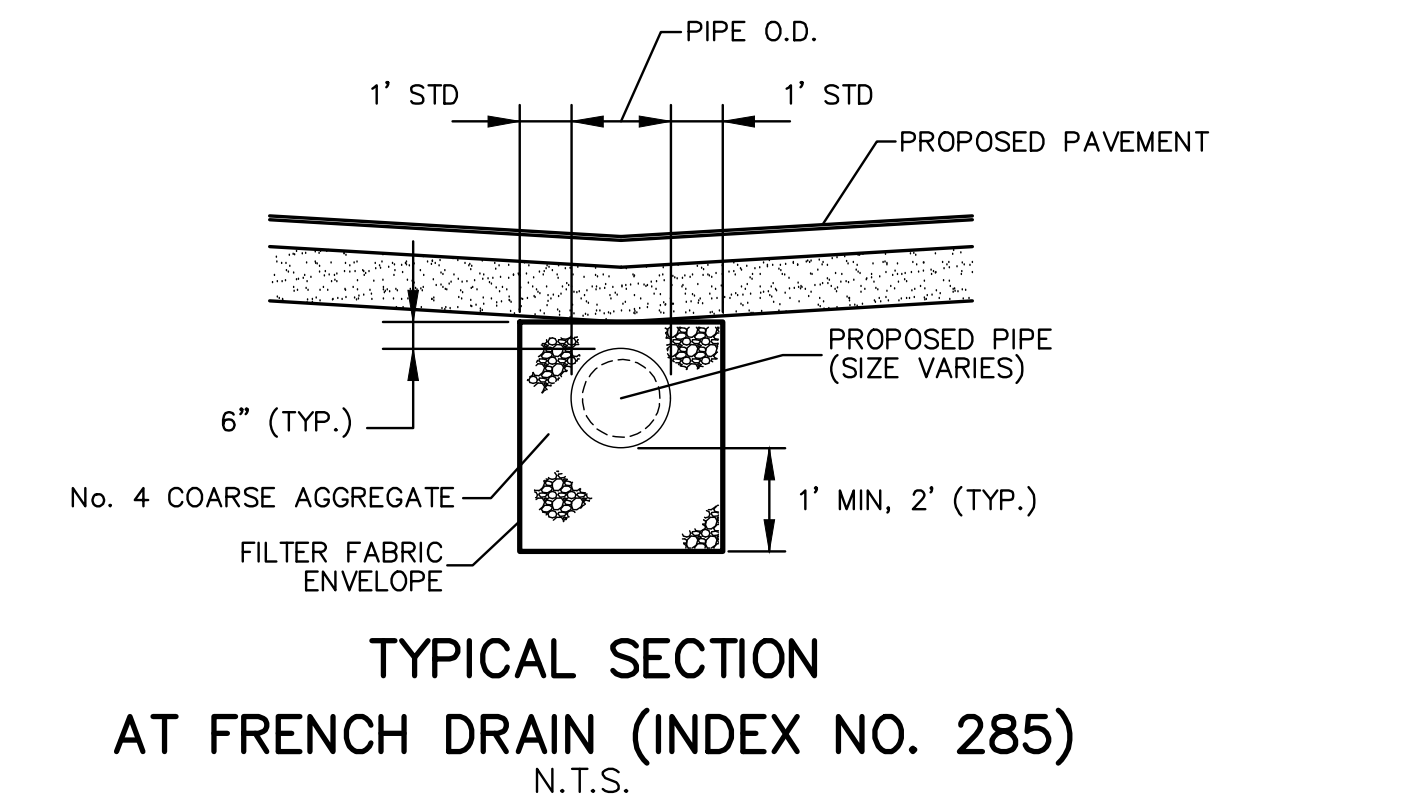
- ASPHALT PAVEMENT  
1-1/2" TYPE 9.5 SP (SUPERPAVE) ASPHALTIC CONCRETE (165 LB/SY)  
TRAFFIC CONDITION C
- BASE:  
OPTIONAL BASE GROUP 6 (INDEX NO. 514)  
OPTIONAL BASE GROUP PERMITTED = TYPE B 12.5
- SUB BASE:  
12" SUB BASE COMPACTED TO 98% DENSITY BASED ON AASHTO T-180  
MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.



- ASPHALT PAVEMENT:  
1-1/2" TYPE 9.5 SP (SUPERPAVE) ASPHALTIC CONCRETE (165 LB/SY)(TRAFFIC LEVEL B)
- BASE:  
OPTIONAL BASE GROUP 06 (INDEX NO. 514)  
OPTIONAL BASE GROUP PERMITTED = TYPE B 12.5
- SUB BASE:  
12" SUB BASE COMPACTED TO 98% DENSITY BASED ON AASHTO T-180  
MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.



- ASPHALT PAVEMENT:  
1-1/2" TYPE 9.5 SP (SUPERPAVE) ASPHALTIC CONCRETE (165 LB/SY)(TRAFFIC LEVEL B)
- BASE:  
OPTIONAL BASE GROUP 06 (INDEX NO. 514)  
OPTIONAL BASE GROUP PERMITTED = TYPE B 12.5
- SUB BASE:  
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MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.



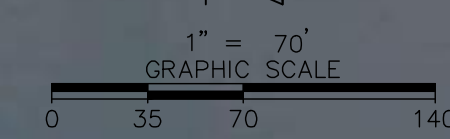


WAUSEON BAY  
W.E.  
99.5



BASIN ID	DRAINAGE AREA, AC.
BS-1	0.14 AC.
BS-2	0.16 AC.
BS-3	0.07 AC.
BS-4	0.01 AC.
BS-5	0.20 AC.
BS-6	0.51 AC.
BS-7	0.10 AC.
BS-8	0.20 AC.
BS-9	0.17 AC.
BS-10	0.17 AC.
BS-11	0.16 AC.
BS-12	0.47 AC.
BS-13	OMITTED
BS-14	0.22 AC.
BS-15	0.18 AC.
BS-16	0.61 AC.
BS-17	0.34 AC.
BS-18	0.01 AC.
BS-19	0.01 AC.
BS-20	0.28 AC.
BS-21	0.04 AC.
BS-22	1.27 AC.
BS-23	0.40 AC.
BEXS-100	0.42 AC.
BEXS-101	0.11 AC.
<b>TOTAL</b>	<b>6.25 AC.</b>

BASIN ID	DRAINAGE AREA, AC.
EBS-100	0.40 AC.
EBS-101	0.06 AC.
EBS-102	0.76 AC.
EBS-103	0.05 AC.
EBS-104	0.03 AC.
EBS-105	0.35 AC.
EBS-200	0.03 AC.
EBS-201	0.09 AC.
EBS-202	0.02 AC.
<b>TOTAL</b>	<b>1.79 AC.</b>



REV.	DATE	DESCRIPTION	APP'D BY

SIGN OFF	DATE	FIELD:
CLIENT		PEC SURVEYING AND MAPPING, LLC
PM/CM BC		DRAWN BY: CADD
PM/CM DM		DESIGNED BY: MBG
PM		CHECKED BY: MBG
CM		DATE: NOVEMBER 2023
OTHERS		

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
 3222 Corrine Drive, Suite H  
 Orlando, Florida 32803 407/493-9983  
 CERTIFICATE OF AUTHORIZATION NO. 29032

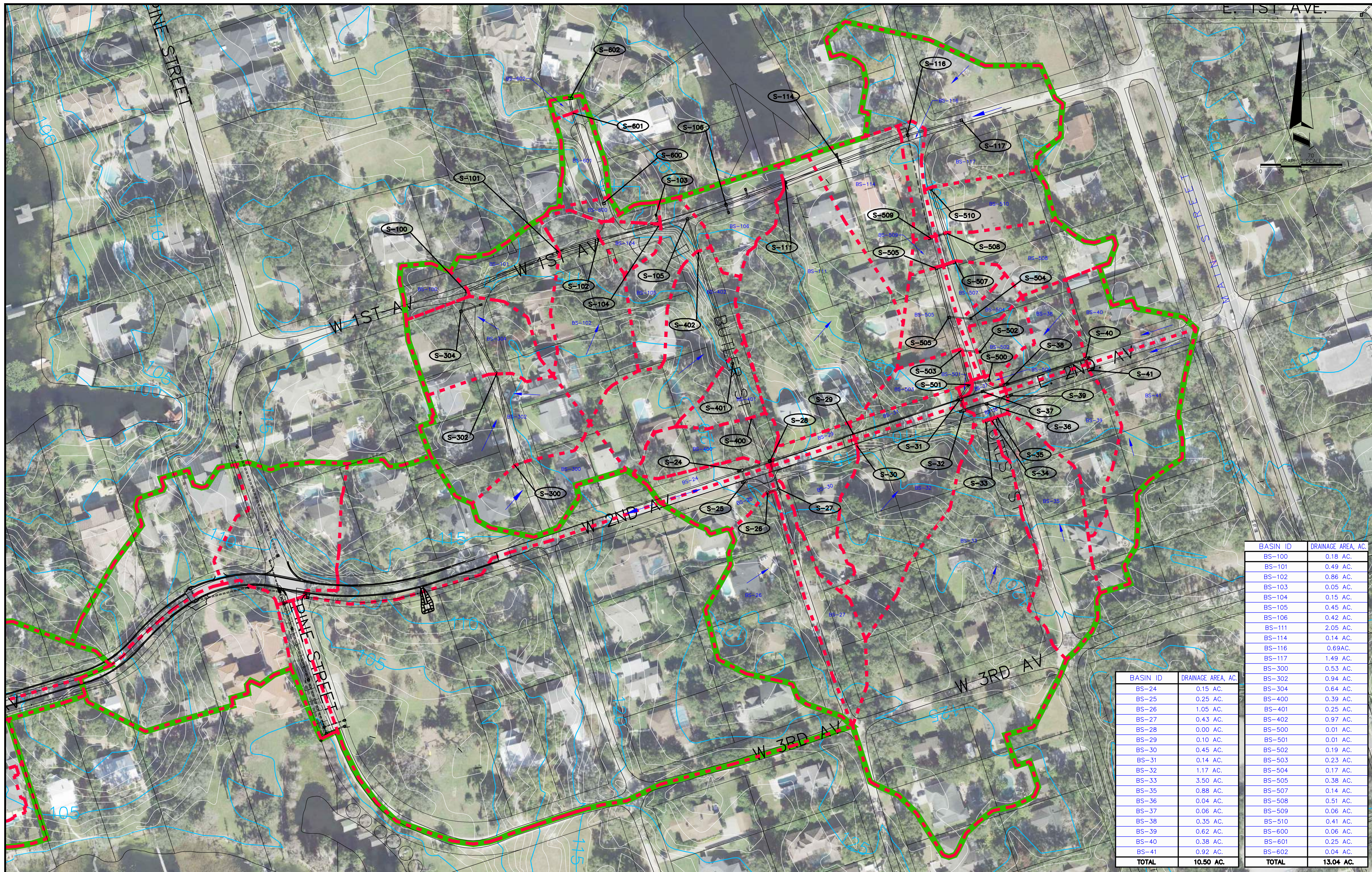
**TOWN OF WINDERMERE**  
 PUBLIC WORKS DEPARTMENT  
 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: 1"=70'

**DRAINAGE BASIN MAP**

DRWG. SHEET 7 OF 86





BASIN ID	DRAINAGE AREA, AC.
BS-100	0.18 AC.
BS-101	0.49 AC.
BS-102	0.86 AC.
BS-103	0.05 AC.
BS-104	0.15 AC.
BS-105	0.45 AC.
BS-106	0.42 AC.
BS-111	2.05 AC.
BS-114	0.14 AC.
BS-116	0.69 AC.
BS-117	1.49 AC.
BS-300	0.53 AC.
BS-302	0.94 AC.
BS-304	0.64 AC.
BS-400	0.39 AC.
BS-401	0.25 AC.
BS-402	0.97 AC.
BS-500	0.01 AC.
BS-501	0.01 AC.
BS-502	0.19 AC.
BS-503	0.23 AC.
BS-504	0.17 AC.
BS-505	0.38 AC.
BS-507	0.14 AC.
BS-508	0.51 AC.
BS-509	0.06 AC.
BS-510	0.41 AC.
BS-600	0.06 AC.
BS-601	0.25 AC.
BS-602	0.04 AC.
<b>TOTAL</b>	<b>10.50 AC.</b>

BASIN ID	DRAINAGE AREA, AC.
BS-24	0.15 AC.
BS-25	0.25 AC.
BS-26	1.05 AC.
BS-27	0.43 AC.
BS-28	0.00 AC.
BS-29	0.10 AC.
BS-30	0.45 AC.
BS-31	0.14 AC.
BS-32	1.17 AC.
BS-33	3.50 AC.
BS-35	0.88 AC.
BS-36	0.04 AC.
BS-37	0.06 AC.
BS-38	0.35 AC.
BS-39	0.62 AC.
BS-40	0.38 AC.
BS-41	0.92 AC.
<b>TOTAL</b>	<b>13.04 AC.</b>

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		CHECKED BY: MBG
		DATE: NOVEMBER 2023

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
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JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: 1"=70'

**DRAINAGE BASIN MAP**

DRWG. SHEET 8 OF 86





- LEGEND**
- SIGN
  - MAIL BOX
  - 12" ○ CAMPHOR TREE WITH SIZE
  - 12" ○ OAK TREE WITH SIZE
  - 12" ○ PINE TREE WITH SIZE
  - ELECTRIC BOX
  - POWER POLE
  - LIGHT POLE
  - 12" ○ PALM TREE WITH SIZE
  - 12" ○ BAY TREE WITH SIZE
  - LIGHT POLE
  - WATER METER
  - 12" ○ MAGNOLIA TREE WITH SIZE
  - TELEPHONE BOX
  - 12" ○ CYPRESS TREE WITH SIZE
  - 12" ○ MAPLE TREE WITH SIZE
  - 12" ○ UNKNOWN TREE TYPE WITH SIZE
  - GUY ANCHOR
  - GAS METER
  - FIRE HYDRANT
  - WATER VALVE COVER
  - 12" ○ TREE
  - IRRIGATION CONTROL BOX
  - MYRTLE TREE WITH SIZE
  - UNDERGROUND TELEPHONE LINE
  - UNDERGROUND WATER LINE
  - UNDERGROUND ELECTRIC LINES
  - OVERHEAD UTILITY LINES
  - UNDERGROUND GAS LINE
  - UNDERGROUND DRAINAGE PIPE
  - HORIZONTAL AND VERTICAL CONTROL POINT
  - HORIZONTAL AND VERTICAL CONTROL POINT
- N 1514307.3724  
E 483077.8823

REV.	DATE	DESCRIPTION	APP'D BY	SIGN OFF	DATE	FIELD:
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JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=20'

<b>TOPOGRAPHIC SURVEY</b>
<b>W. SECOND AVENUE</b>
DRWG. SHEET 9 OF 86





LEGEND

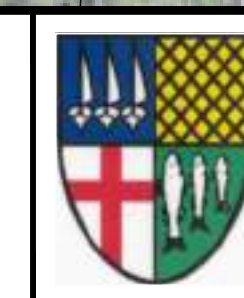
- MAIL BOX
- 12" CAMPHOR TREE WITH SIZE
- 12" OAK TREE WITH SIZE
- 12" PINE TREE WITH SIZE
- ELECTRIC BOX
- POWER POLE
- LIGHT POLE
- 12" PALM TREE WITH SIZE
- 12" BAY TREE WITH SIZE
- LIGHT POLE
- WATER METER
- 12" MAGNOLIA TREE WITH SIZE
- TELEPHONE BOX
- 12" CYPRESS TREE WITH SIZE
- 12" MAPLE TREE WITH SIZE
- 12" UNKNOWN TREE TYPE WITH SIZE
- GUY ANCHOR
- GAS METER
- FIRE HYDRANT
- WATERVALVE COVER
- TREE
- IRRIGATION CONTROL BOX
- 12" MYRTLE TREE WITH SIZE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND WATER LINE
- UNDERGROUND ELECTRIC LINES
- OVERHEAD UTILITY LINES
- UNDERGROUND GAS LINE
- UNDERGROUND DRAINAGE PIPE
- HORIZONTAL AND VERTICAL CONTROL POINT
- HORIZONTAL AND VERTICAL CONTROL POINT



REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

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 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=80'

**TOPOGRAPHIC SURVEY**  
**W. SECOND AVENUE**  
 DRWG. SHEET 10 OF 86





REV.	DATE	DESCRIPTION	APP'D BY

SIGN OFF	DATE
CLIENT	
PM/CM BC	
PM/CM DM	
PM	
CM	
OTHERS	

**FIELD:** PEC SURVEYING AND MAPPING, LLC  
**DRAWN BY:** CADD  
**DESIGNED BY:** MBG  
**CHECKED BY:** MBG  
**DATE:** NOVEMBER 2023

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 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=20'

**TOPOGRAPHIC SURVEY**  
**W. SECOND AVENUE**

DRWG. SHEET 11 OF 86





REV.	DATE	DESCRIPTION	APP'D BY

SIGN OFF	DATE	FIELD:
		PEC SURVEYING AND MAPPING, LLC
		DRAWN BY: CADD
		DESIGNED BY: MBG
		CHECKED BY: MBG
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JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=20'

**TOPOGRAPHIC SURVEY**  
**W. SECOND AVENUE**

DRWG. SHEET 12 OF 86





LEGEND

- SIGN
- MAIL BOX
- 12" CAMPHOR TREE WITH SIZE
- 12" OAK TREE WITH SIZE
- 12" PINE TREE WITH SIZE
- ELECTRIC BOX
- POWER POLE
- LIGHT POLE
- 12" PALM TREE WITH SIZE
- 12" BAY TREE WITH SIZE
- LIGHT POLE
- WATER METER
- 12" MAGNOLIA TREE WITH SIZE
- TELEPHONE BOX
- 12" CYPRESS TREE WITH SIZE
- 12" MAPLE TREE WITH SIZE
- 12" UNKNOWN TREE TYPE WITH SIZE
- GUY ANCHOR
- GAS METER
- FIRE HYDRANT
- WATERVALVE COVER
- 12" TREE
- IRRIGATION CONTROL BOX
- 12" MYRTLE TREE WITH SIZE
- UNDERGROUND TELEPHONE LINE
- UNDERGROUND WATER LINE
- UNDERGROUND ELECTRIC LINES
- OVERHEAD UTILITY LINES
- UNDERGROUND GAS LINE
- UNDERGROUND DRAINAGE PIPE
- HORIZONTAL AND VERTICAL CONTROL POINT
- N 1514307.3224  
E 483077.8823  
○ HORIZONTAL AND VERTICAL CONTROL POINT

REPLAT OF WINDERMERE  
(P.B. "G", PG. 36-39)  
BLOCK E

PLAT OF WINDERMERE  
(P.B. "G", PG. 36-37)

$R = 440.00'$   
 $\Delta = 25^{\circ}54'35''$   
 $L = 198.97'$   
 $C = 197.28'$   
 $CB = 107^{\circ}53'22''$



REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

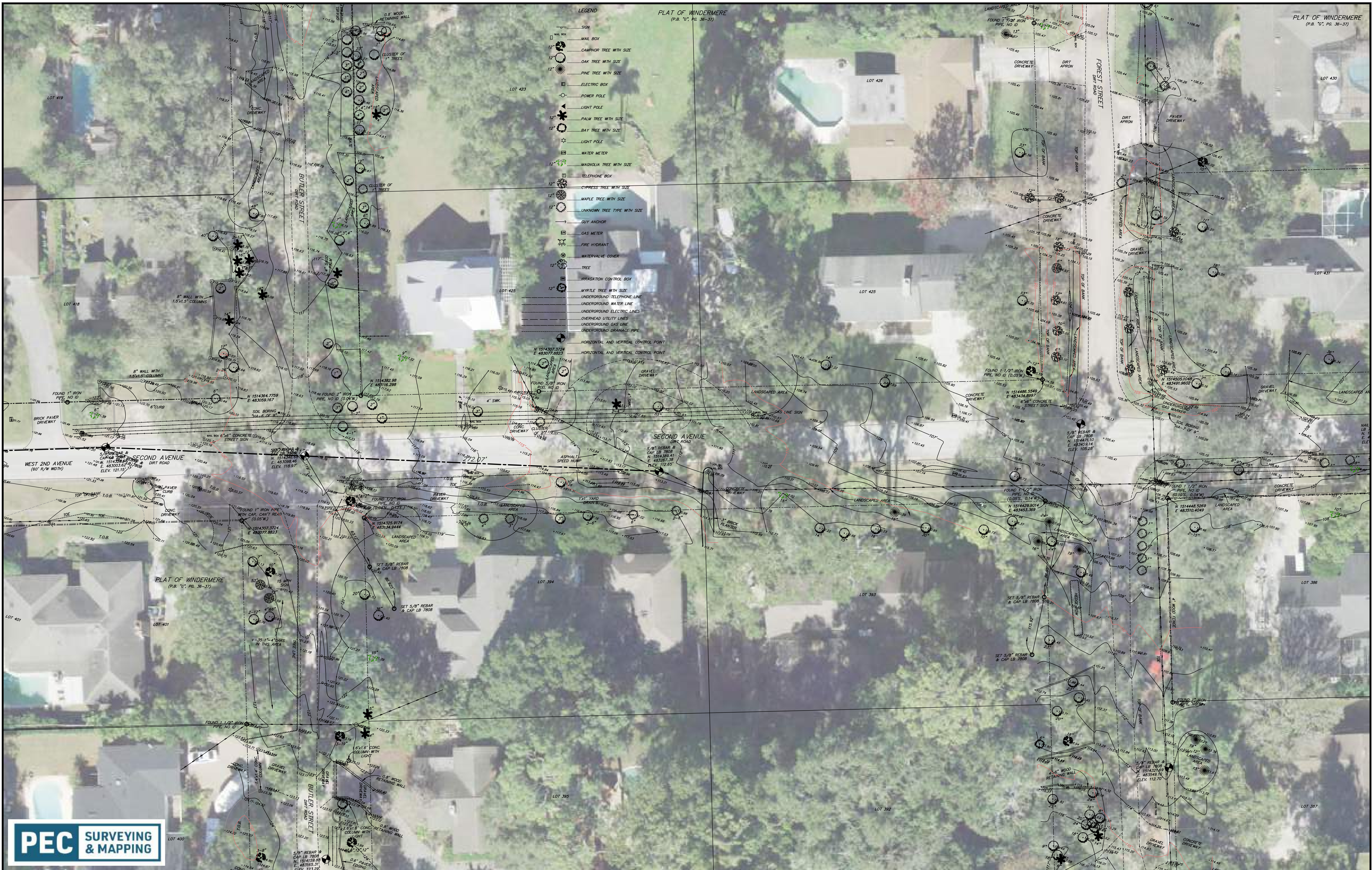
**MGEC** MICHAEL GALURA  
ENGINEERING  
CONSULTANTS, LLC  
3222 Corrine Drive, Suite H  
Orlando, Florida 32803  
407/493-9983  
CERTIFICATE OF AUTHORIZATION NO. 29032

**TOWN OF WINDERMERE**  
PUBLIC WORKS DEPARTMENT  
614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=20'

<b>TOPOGRAPHIC SURVEY</b> W. SECOND AVENUE
DRWG. SHEET 13 OF 86

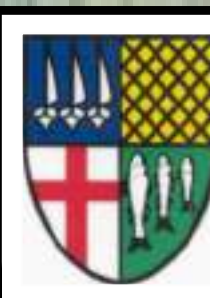




REV.	DATE	DESCRIPTION	APP'D BY

SIGN OFF	DATE	FIELD:
		PEC SURVEYING AND MAPPING, LLC
		DRAWN BY: CADD
		DESIGNED BY: MBG
		CHECKED BY: MBG
		DATE: NOVEMBER 2023

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
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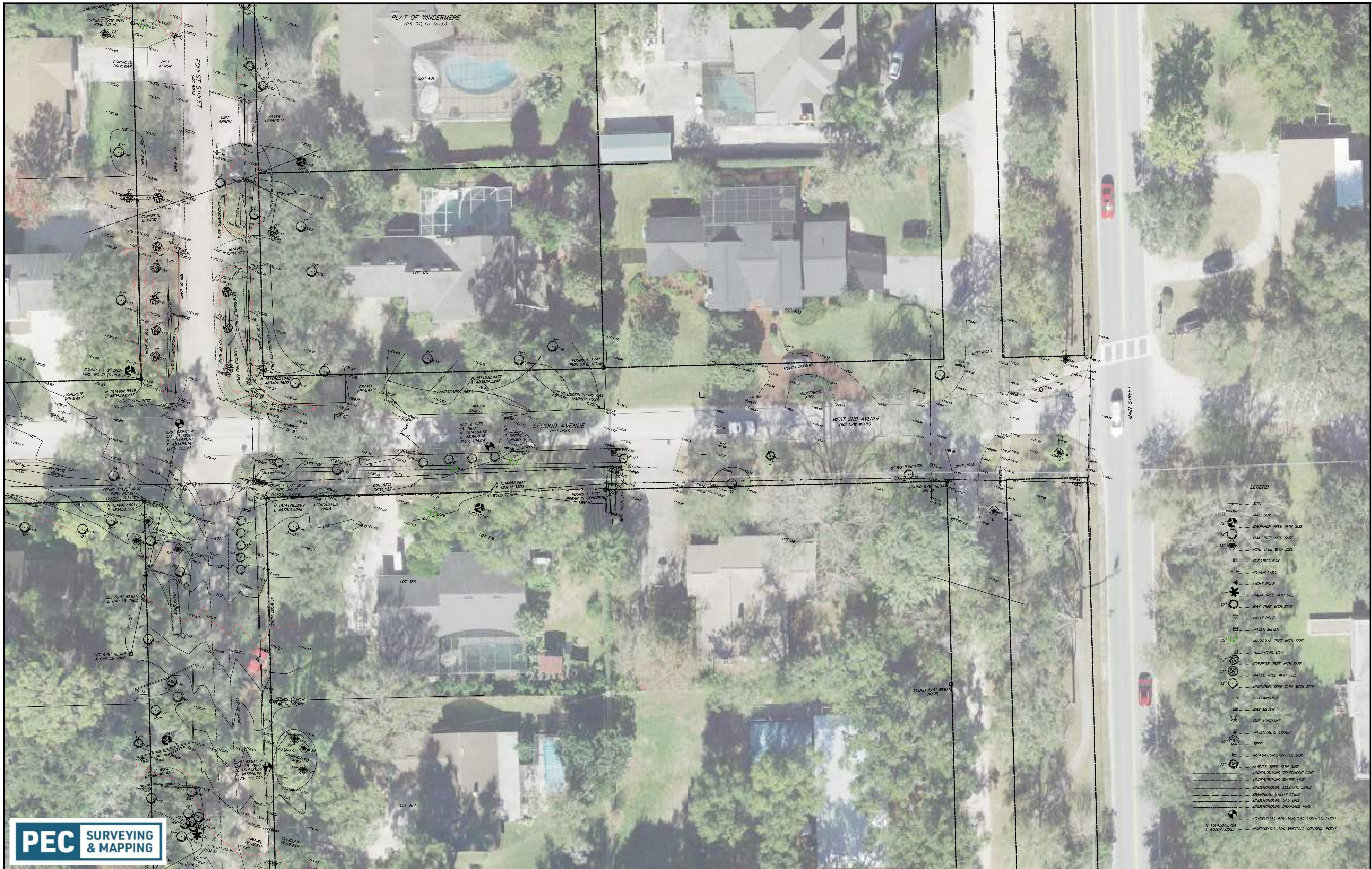


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 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
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<b>TOPOGRAPHIC SURVEY</b>	<b>W. SECOND AVENUE</b>
DRWG.	SHEET 14 OF 86





- LEGEND**
- ..... SIGN
  - ..... MAIL BOX
  - ..... CAMPHOR TREE WITH SIZE
  - ..... OAK TREE WITH SIZE
  - ..... PINE TREE WITH SIZE
  - ..... ELECTRIC BOX
  - ..... POWER POLE
  - ..... LIGHT POLE
  - ..... PALM TREE WITH SIZE
  - ..... BAY TREE WITH SIZE
  - ..... LIGHT POLE
  - ..... WATER METER
  - ..... MAGNOLIA TREE WITH SIZE
  - ..... TELEPHONE BOX
  - ..... CYPRESS TREE WITH SIZE
  - ..... MAPLE TREE WITH SIZE
  - ..... UNKNOWN TREE TYPE WITH SIZE
  - ..... GUY ANCHOR
  - ..... GAS METER
  - ..... FIRE HYDRANT
  - ..... WATERVALVE COVER
  - ..... TREE
  - ..... IRRIGATION CONTROL BOX
  - ..... MYRTLE TREE WITH SIZE
  - ..... UNDERGROUND TELEPHONE LINE
  - ..... UNDERGROUND WATER LINE
  - ..... UNDERGROUND ELECTRIC LINES
  - ..... OVERHEAD UTILITY LINES
  - ..... UNDERGROUND GAS LINE
  - ..... UNDERGROUND DRAINAGE PIPE
  - ..... HORIZONTAL AND VERTICAL CONTROL POINT
  - N 1514309.3724  
E 483077.8823 ..... HORIZONTAL AND VERTICAL CONTROL POINT

REV.	DATE	DESCRIPTION	APP'D BY

SIGN OFF	DATE	FIELD:
CLIENT		PEC SURVEYING AND MAPPING, LLC
PM/CM BC		DRAWN BY: CADD
PM/CM DM		DESIGNED BY: MBG
PM		CHECKED BY: MBG
CM		DATE: NOVEMBER 2023
OTHERS		

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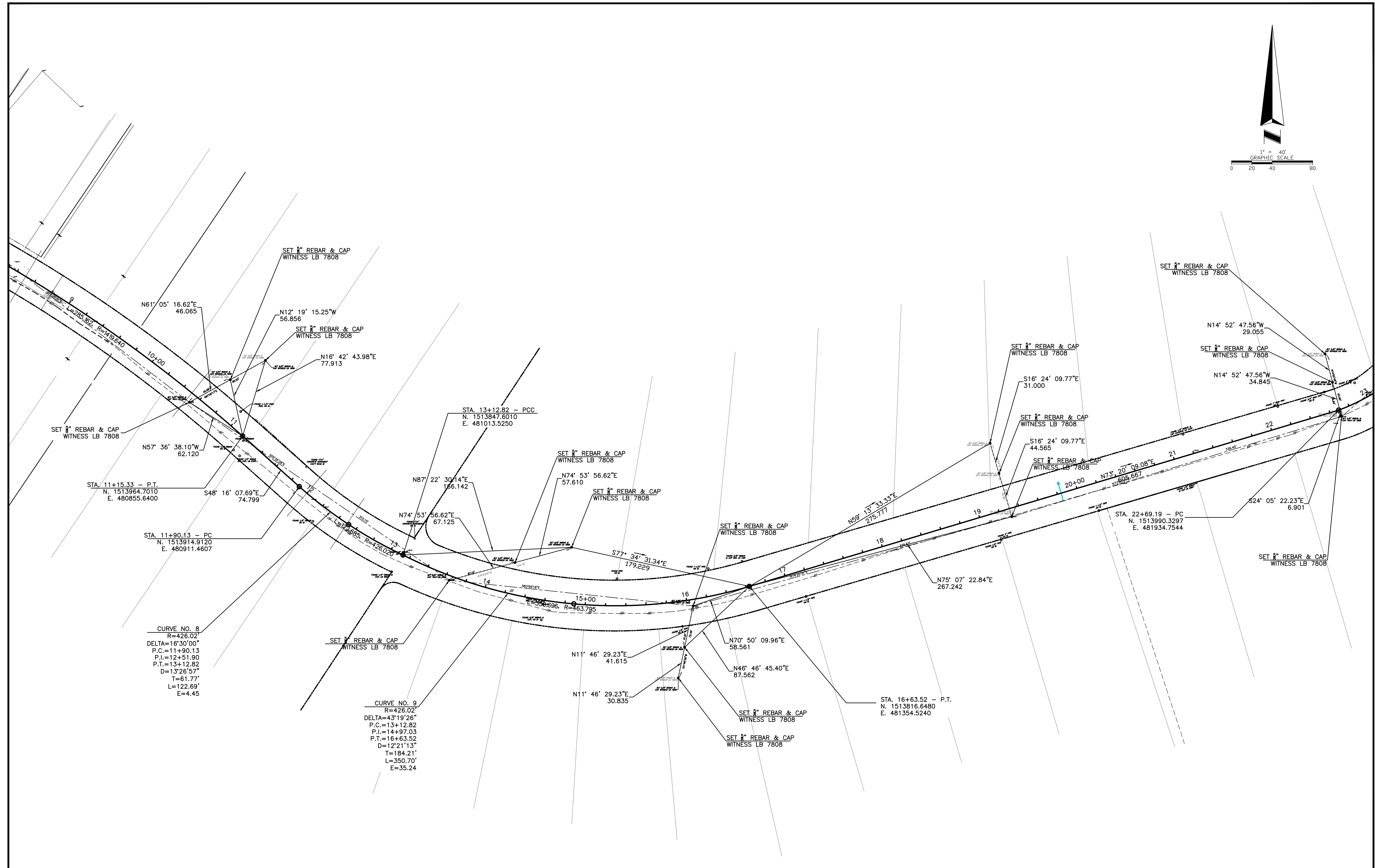
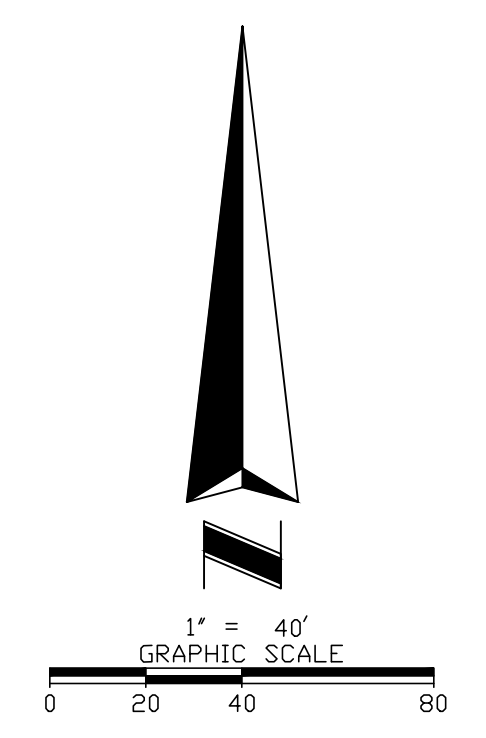
**TOPOGRAPHIC SURVEY**  
**W. SECOND AVENUE**

DRWG. SHEET 15 OF 86









CURVE NO. 8  
 R=426.02'  
 DELTA=16°30'00"  
 P.C.=11+90.13  
 P.L.=12+51.90  
 P.T.=13+12.82  
 D=13°26'57"  
 T=61.77'  
 L=122.69'  
 E=4.45'

CURVE NO. 9  
 R=426.02'  
 DELTA=43°19'26"  
 P.C.=13+12.82  
 P.L.=14+97.03  
 P.T.=16+63.52  
 D=12°21'13"  
 T=184.21'  
 L=350.70'  
 E=35.24'

REV.	DATE	DESCRIPTION	APP'D BY	SIGN OFF	DATE	FIELD:
				CLIENT		PEC SURVEYING AND MAPPING, LLC
				PM/CM BC		
				PM/CM DM		DRAWN BY: CADD
				PM		DESIGNED BY: MBG
				CM		CHECKED BY: MBG
				OTHERS		DATE: NOVEMBER 2023

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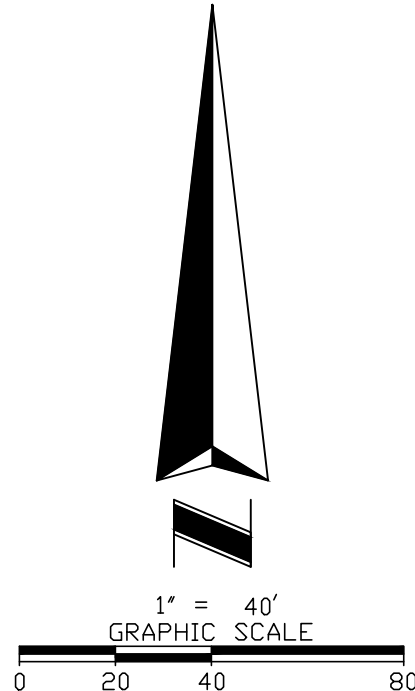
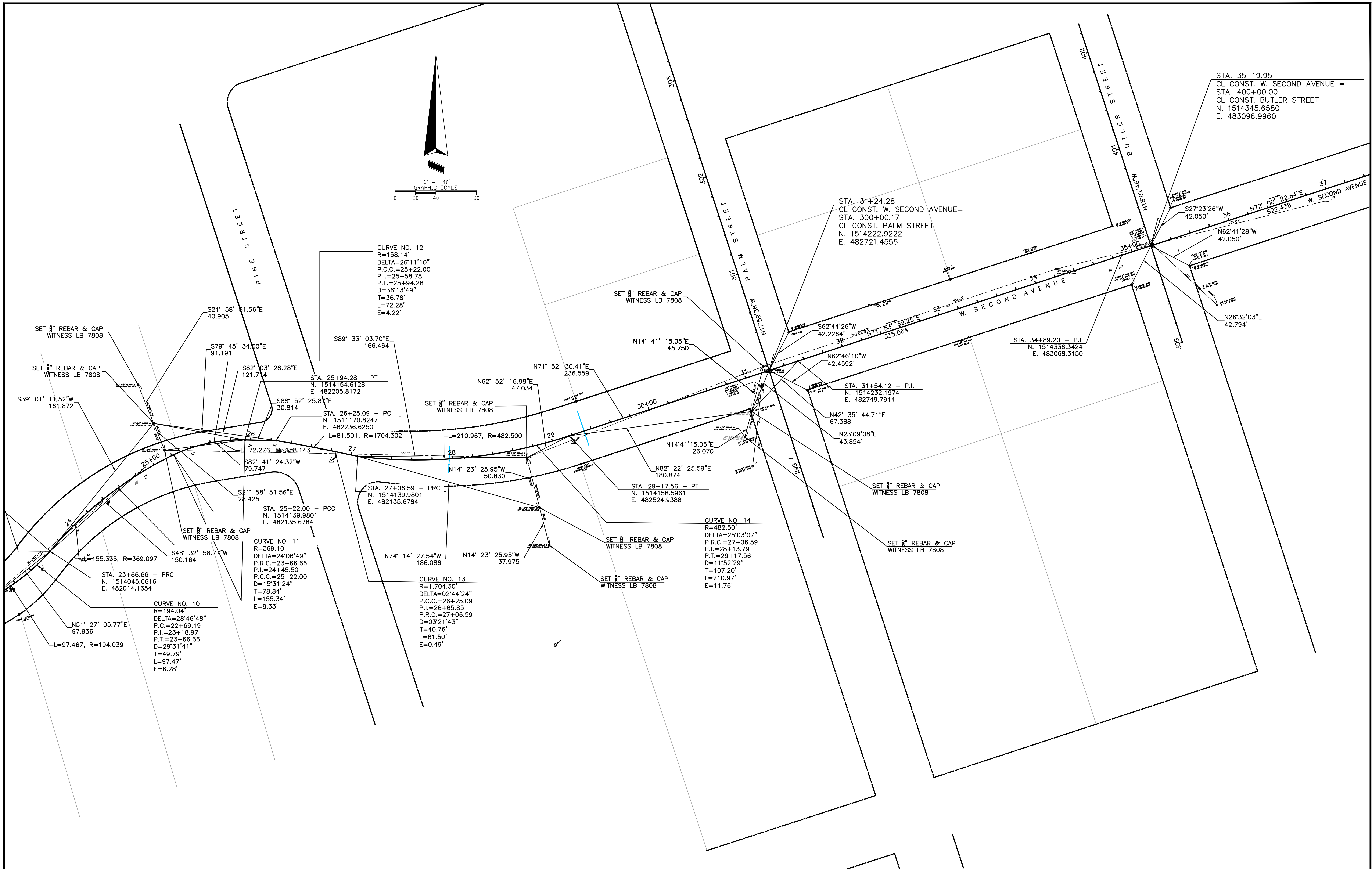
**TOWN OF WINDERMERE**  
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 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=40'

**SURVEY CONTROL**  
**W. SECOND AVENUE**

DRWG. SHEET 17 OF 86





STA. 35+19.95  
 CL CONST. W. SECOND AVENUE =  
 STA. 400+00.00  
 CL CONST. BUTLER STREET  
 N. 1514345.6580  
 E. 483096.9960

STA. 31+24.28  
 CL CONST. W. SECOND AVENUE=  
 STA. 300+00.17  
 CL CONST. PALM STREET  
 N. 1514222.9222  
 E. 482721.4555

STA. 34+89.20 - P.I.  
 N. 1514336.3424  
 E. 483068.3150

STA. 31+54.12 - P.I.  
 N. 1514232.1974  
 E. 482749.7914

STA. 29+17.56 - PT  
 N. 1514158.5961  
 E. 482524.9388

STA. 27+06.59 - PRC  
 N. 1514139.9801  
 E. 482135.6784

STA. 25+22.00 - PCC  
 N. 1514139.9801  
 E. 482135.6784

STA. 26+25.09 - PC  
 N. 1511170.8247  
 E. 482236.6250

STA. 25+94.28 - PT  
 N. 1514154.6128  
 E. 482205.8172

STA. 23+66.66 - PRC  
 N. 1514045.0616  
 E. 482014.1654

S39° 01' 11.52"W  
 161.872

SET 3/4" REBAR & CAP  
 WITNESS LB 7808

SET 3/4" REBAR & CAP  
 WITNESS LB 7808

CURVE NO. 10  
 R=194.04'  
 DELTA=28°46'48"  
 P.C.=22+69.19  
 P.I.=23+18.97  
 P.T.=23+66.66  
 D=29°31'41"  
 T=49.79'  
 L=97.47'  
 E=6.28'

CURVE NO. 11  
 R=369.10'  
 DELTA=24°06'49"  
 P.R.C.=23+66.66  
 P.I.=24+45.50  
 P.C.C.=25+22.00  
 D=15°31'24"  
 T=78.84'  
 L=155.34'  
 E=8.33'

CURVE NO. 13  
 R=1,704.30'  
 DELTA=02°44'24"  
 P.C.C.=26+25.09  
 P.I.=26+65.85  
 P.R.C.=27+06.59  
 D=03°21'43"  
 T=40.76'  
 L=81.50'  
 E=0.49'

CURVE NO. 14  
 R=482.50'  
 DELTA=25°03'07"  
 P.R.C.=27+06.59  
 P.I.=28+13.79  
 P.T.=29+17.56  
 D=11°52'29"  
 T=107.20'  
 L=210.97'  
 E=11.76'

CURVE NO. 12  
 R=158.14'  
 DELTA=26°11'10"  
 P.C.C.=25+22.00  
 P.I.=25+58.78  
 P.T.=25+94.28  
 D=36°13'49"  
 T=36.78'  
 L=72.28'  
 E=4.22'

REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

SIGN OFF	DATE	FIELD:
		PEC SURVEYING AND MAPPING, LLC
		DRAWN BY: CADD
		DESIGNED BY: MBG
		CHECKED BY: MBG
		DATE: NOVEMBER 2023

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
 3222 Corrine Drive, Suite H  
 Orlando, Florida 32803 407/493-9983  
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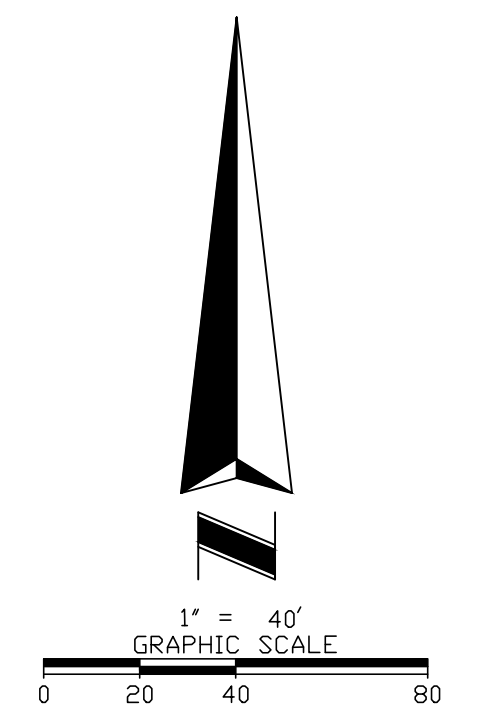
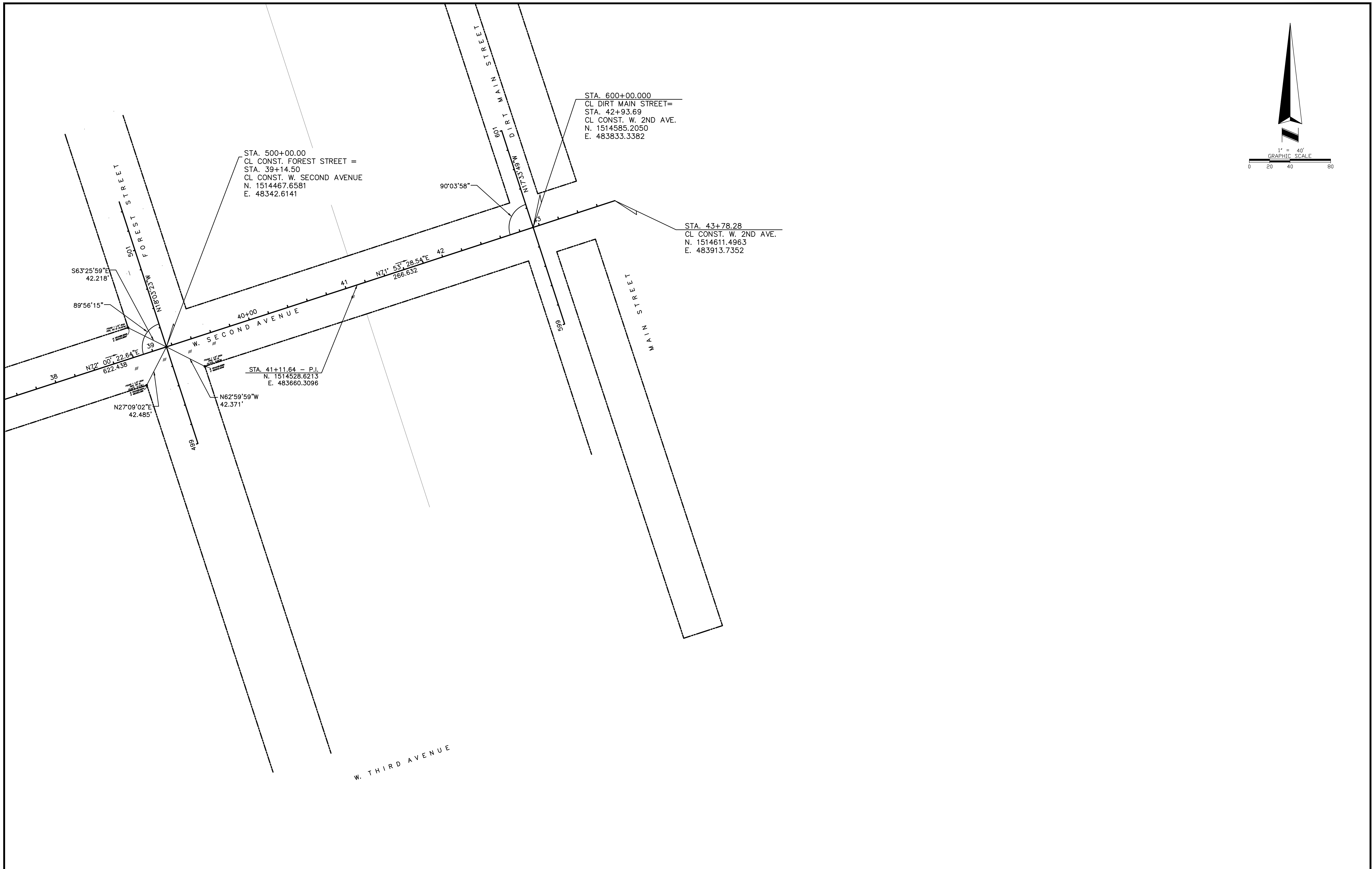
**TOWN OF WINDERMERE**  
 PUBLIC WORKS DEPARTMENT  
 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ.= 1"=40'

**SURVEY CONTROL**  
**W. SECOND AVENUE**

DRWG.	SHEET 18 OF 86
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REV.	DATE	DESCRIPTION	APP'D BY

SIGN OFF	DATE
CLIENT	
PM/CM BC	
PM/CM DM	
PM	
CM	
OTHERS	

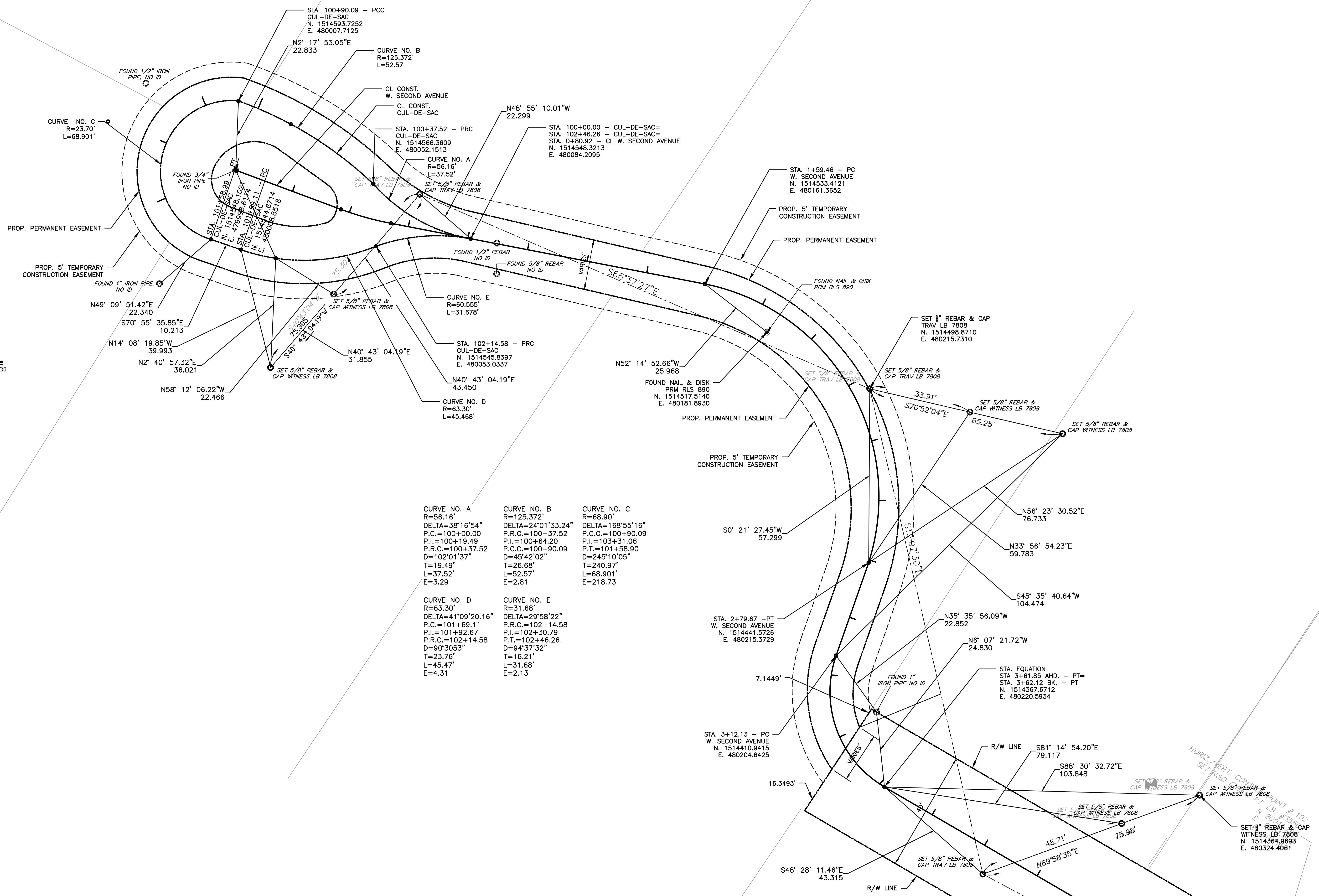
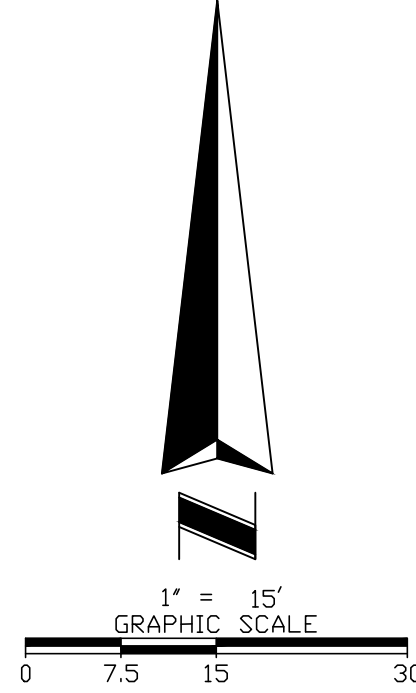
FIELD: PEC SURVEYING AND MAPPING, LLC  
 DRAWN BY: CADD  
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 ARCHIVE DISC:  
 SCALE: HORIZ. = 1"=40'

**SURVEY CONTROL**  
**W. SECOND AVENUE**  
 DRWG. SHEET 19 OF 86





<b>CURVE NO. A</b> R=56.16' DELTA=38°16'54" P.C.=100+00.00 P.I.=100+19.49 P.R.C.=100+37.52 D=102°01'37" T=19.49' L=37.52' E=3.29'	<b>CURVE NO. B</b> R=125.372' DELTA=24°01'33.24" P.C.=100+37.52 P.I.=100+64.20 P.R.C.=100+90.09 D=45°42'02" T=26.68' L=52.57' E=2.81'	<b>CURVE NO. C</b> R=68.90' DELTA=168°55'16" P.C.=100+90.09 P.I.=103+31.06 P.R.C.=101+58.90 D=245°10'05" T=240.97' L=68.901' E=218.73'
<b>CURVE NO. D</b> R=63.30' DELTA=41°09'20.16" P.C.=101+69.11 P.I.=101+92.67 P.R.C.=102+14.58 D=90°30'53" T=23.76' L=45.47' E=4.31'	<b>CURVE NO. E</b> R=31.68' DELTA=29°58'22" P.C.=102+14.58 P.I.=102+30.79 P.R.C.=102+46.26 D=94°37'32" T=16.21' L=31.68' E=2.13'	

REV.	DATE	DESCRIPTION	APP'D BY	OTHERS	SIGN OFF	DATE	FIELD:
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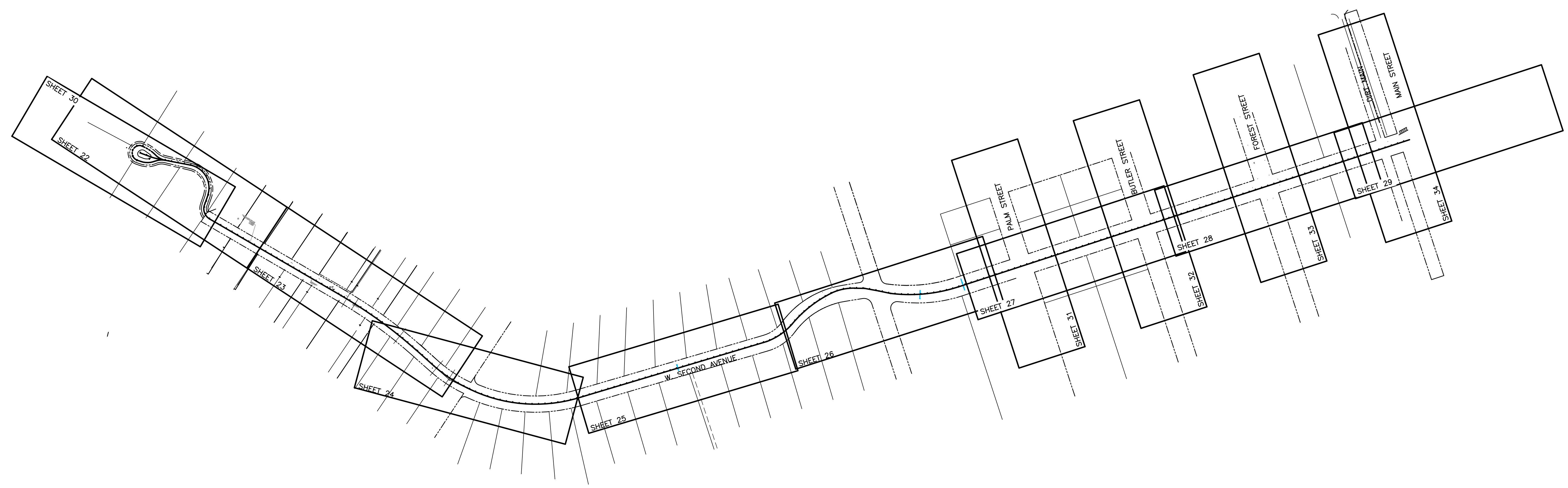
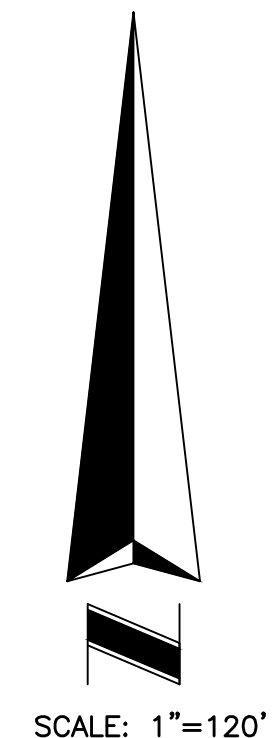
**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
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**TOWN OF WINDERMERE**  
 PUBLIC WORKS DEPARTMENT  
 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: AS NOTED

**SURVEY CONTROL**  
**CUL-DE-SAC**  
 DRWG. SHEET 20 OF 86





REV.	DATE	DESCRIPTION	APP'D BY	SIGN OFF	DATE	FIELD:
				CLIENT		PEC SURVEYING AND MAPPING, LLC
				PM/CM BC		DRAWN BY: CADD
				PM/CM DM		DESIGNED BY: MBG
				PM		CHECKED BY: MBG
				CM		DATE: NOVEMBER 2023
				OTHERS		

**MGEC** MICHAEL GALURA  
ENGINEERING  
CONSULTANTS, LLC

3222 Corrine Drive, Suite H  
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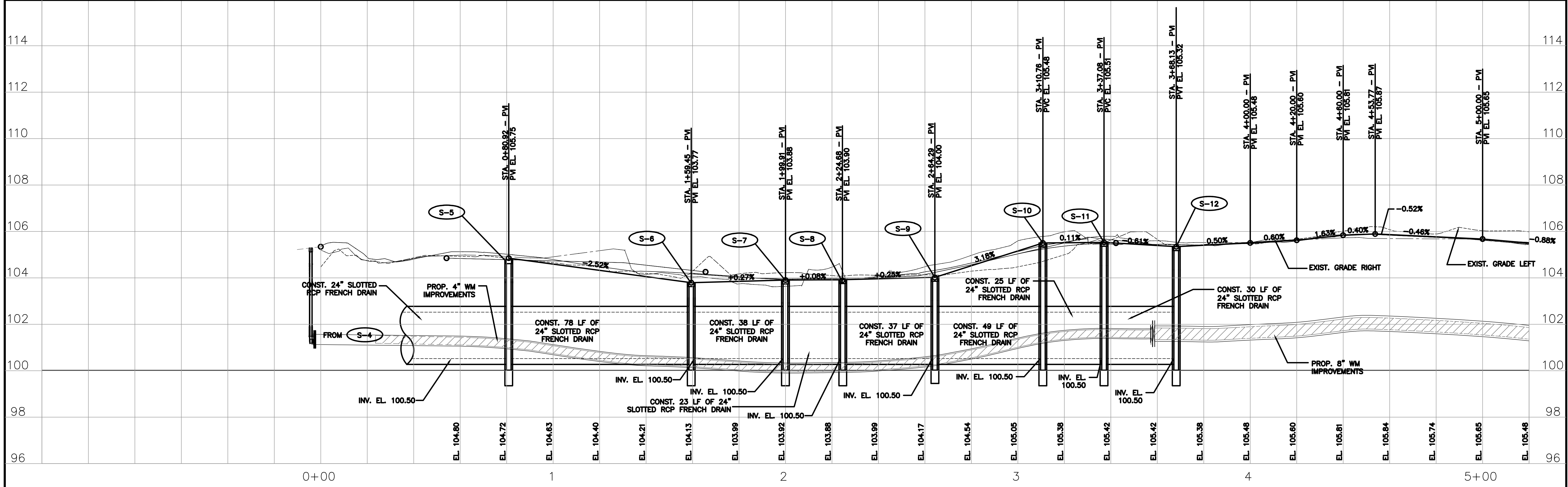
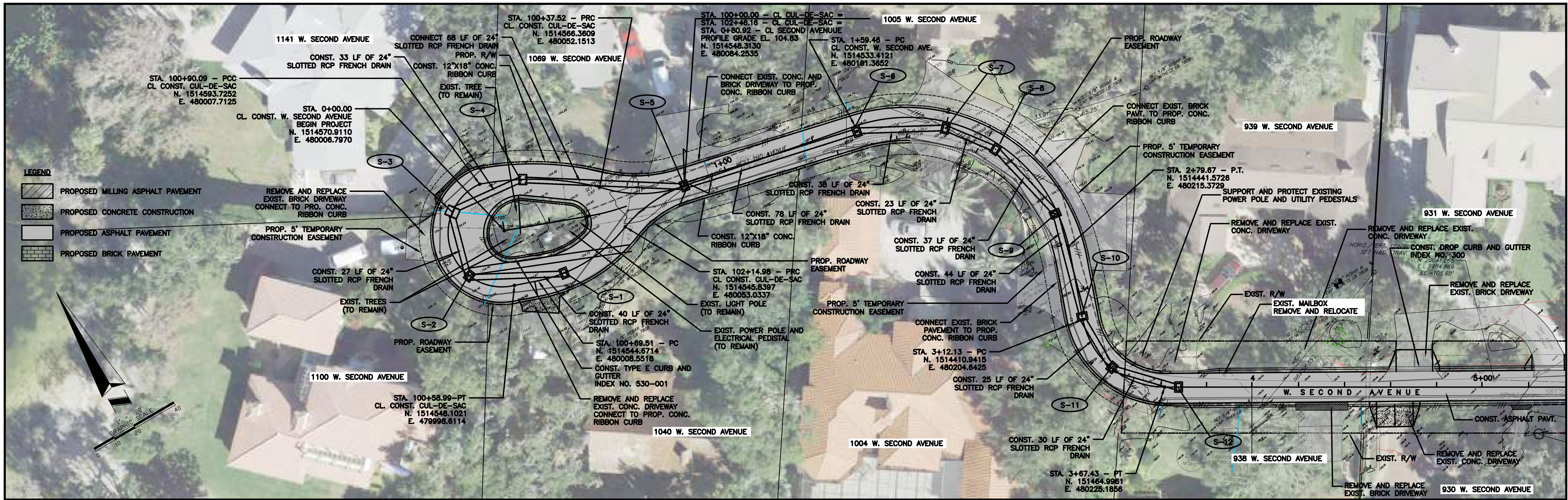
**TOWN OF WINDERMERE**  
PUBLIC WORKS DEPARTMENT  
614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: AS NOTED

**PROJECT LAYOUT**

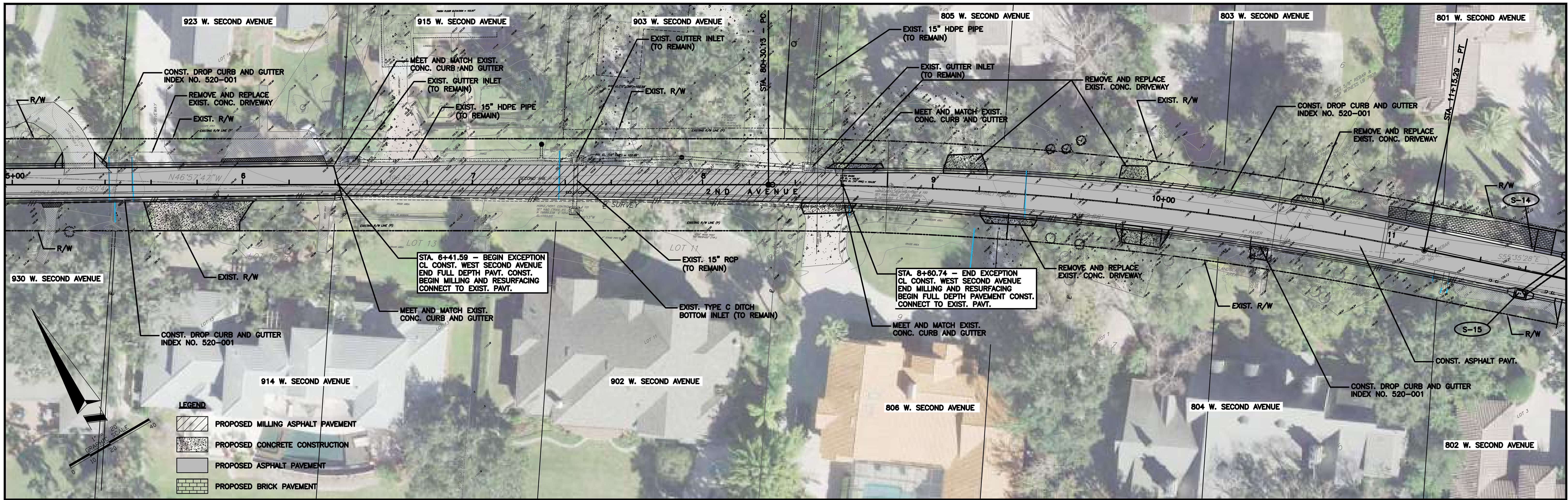
DRWG. SHEET 21 OF 86





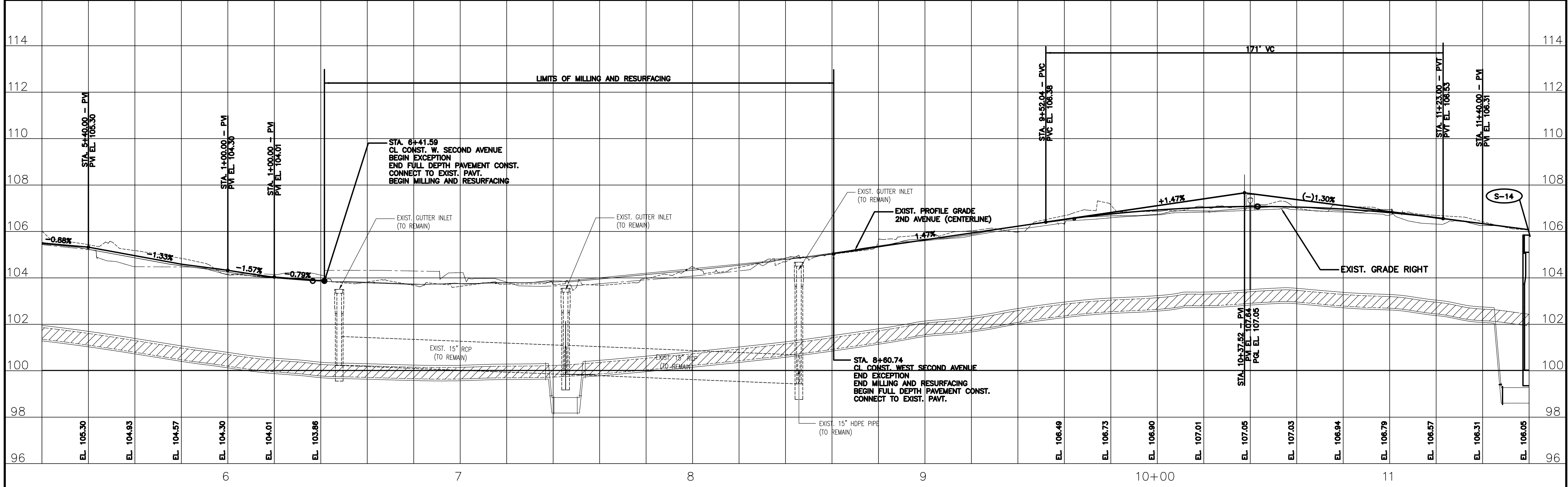
REV.	DATE	DESCRIPTION	APP'D BY	OTHERS	SIGN OFF	DATE	FIELD: PEC SURVEYING AND MAPPING, LLC	<b>MICHAEL GALURA ENGINEERING CONSULTANTS, LLC</b> 3222 Corrine Drive, Suite H Orlando, Florida 32803 CERTIFICATE OF AUTHORIZATION NO. 29032	<b>TOWN OF WINDERMERE</b> PUBLIC WORKS DEPARTMENT 614 MAIN STREET, WINDERMERE, FLORIDA 34786	JOB No. TOW-052.01.000 FILE NAME: SEE LEFT MARGIN ARCHIVE DISC:	<b>PLAN AND PROFILE</b> <b>W. SECOND AVENUE</b> SCALE: HORIZ. = 1"=20' VERT. = 1"=2' DRWG. SHEET 22 OF 86
							DRAWN BY: CADD DESIGNED BY: MBG CHECKED BY: MBG DATE: NOVEMBER 2023			407/493-9983	





**LEGEND**

- PROPOSED MILLING ASPHALT PAVEMENT
- PROPOSED CONCRETE CONSTRUCTION
- PROPOSED ASPHALT PAVEMENT
- PROPOSED BRICK PAVEMENT



REV.	DATE	DESCRIPTION	APP'D BY

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407/493-9983

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 SCALE: HORIZ. = 1"=20'  
 VERT. = 1"=2'

**PLAN AND PROFILE  
 W. SECOND AVENUE**

DRWG. SHEET 23 OF 86

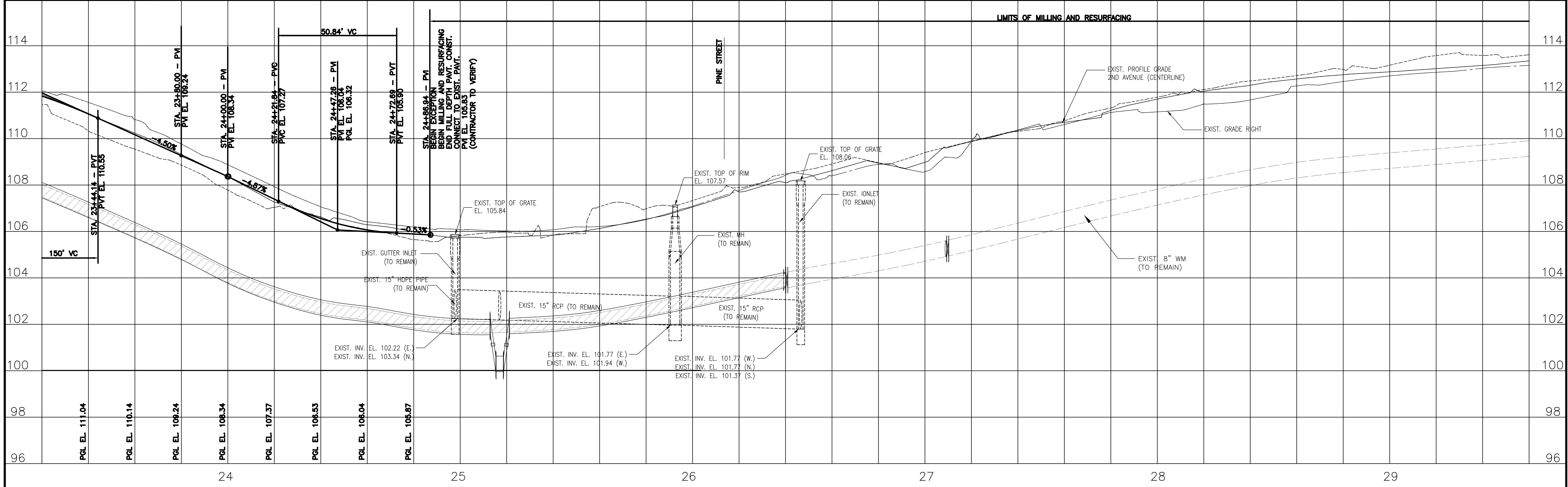
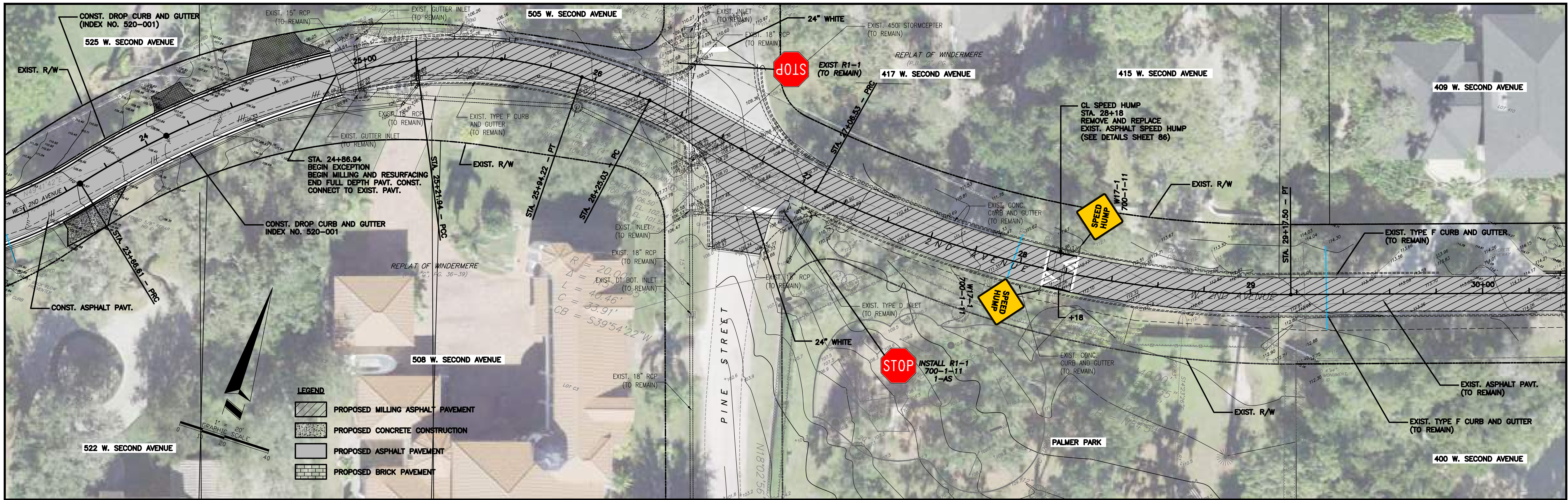












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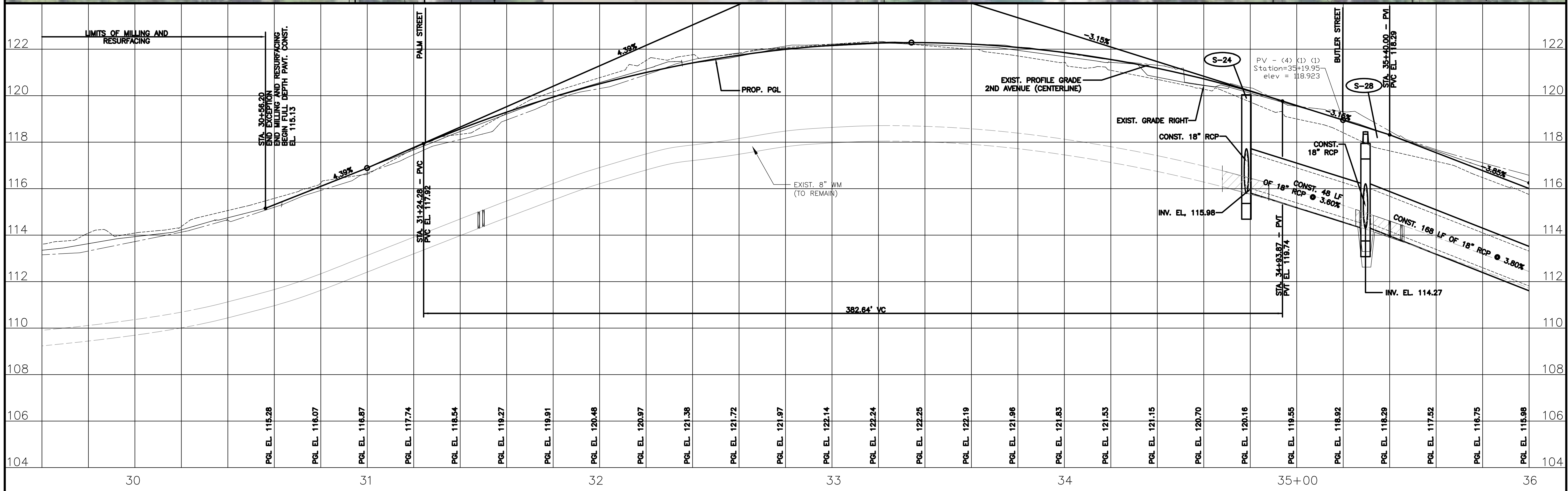
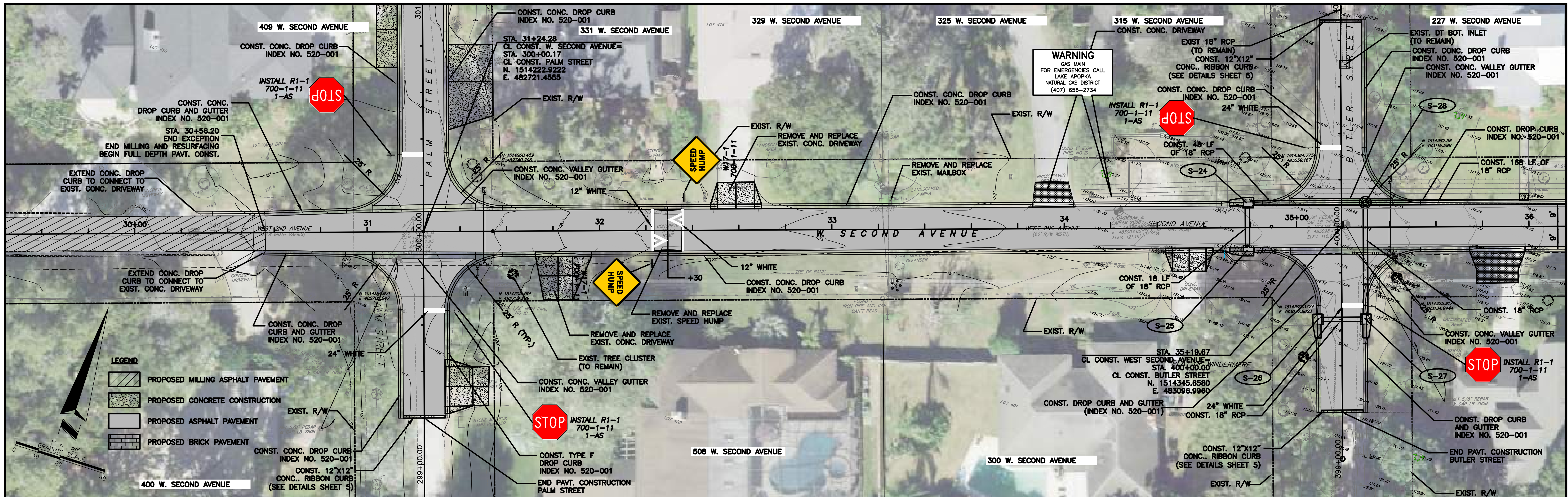
**TOWN OF WINDERMERE**  
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JOB No. TOW-052.01.000  
FILE NAME: SEE LEFT MARGIN  
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SCALE: HORIZ. = 1"=20'  
VERT. = 1"=2'

**PLAN AND PROFILE  
W. SECOND AVENUE**

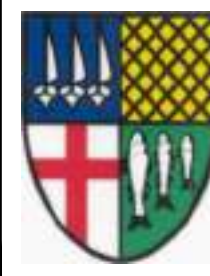
DRWG.
SHEET 26 OF 86





REV.	DATE	DESCRIPTION	APP'D BY	OTHERS	SIGN OFF	DATE	FIELD:	CLIENT:	DESIGNED BY:	CHECKED BY:	DATE:	PROJECT:	SCALE:	SHEET:	TOTAL SHEETS:
							PEC SURVEYING AND MAPPING, LLC	TOWN OF WINDERMERE	MBG	MBG	NOVEMBER 2023	3222 Corrine Drive, Suite H, Orlando, Florida 32803	HORIZ. = 1"=20' VERT. = 1"=2'	27	86

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 VERT. = 1"=2'

**PLAN AND PROFILE**  
**W. SECOND AVENUE**

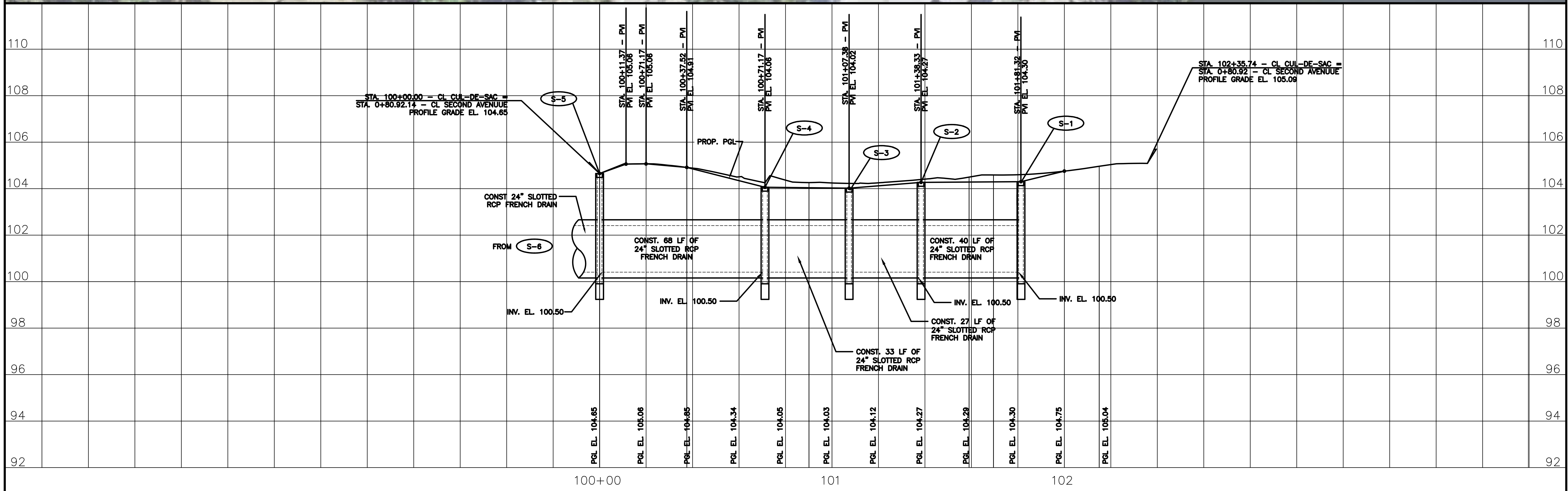
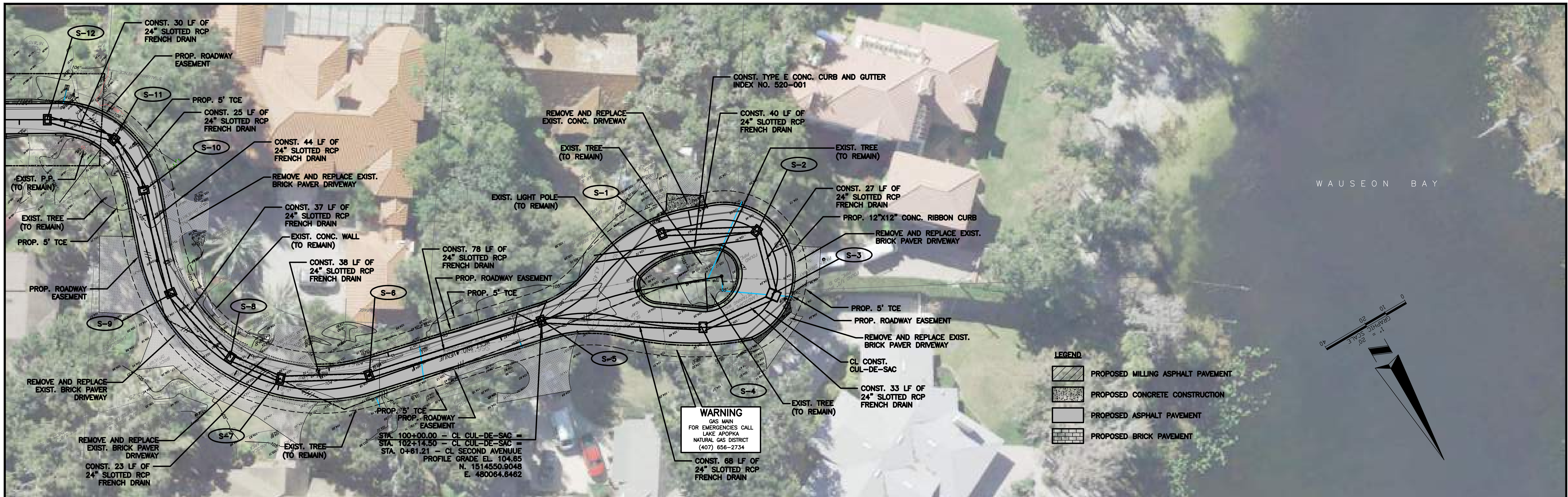






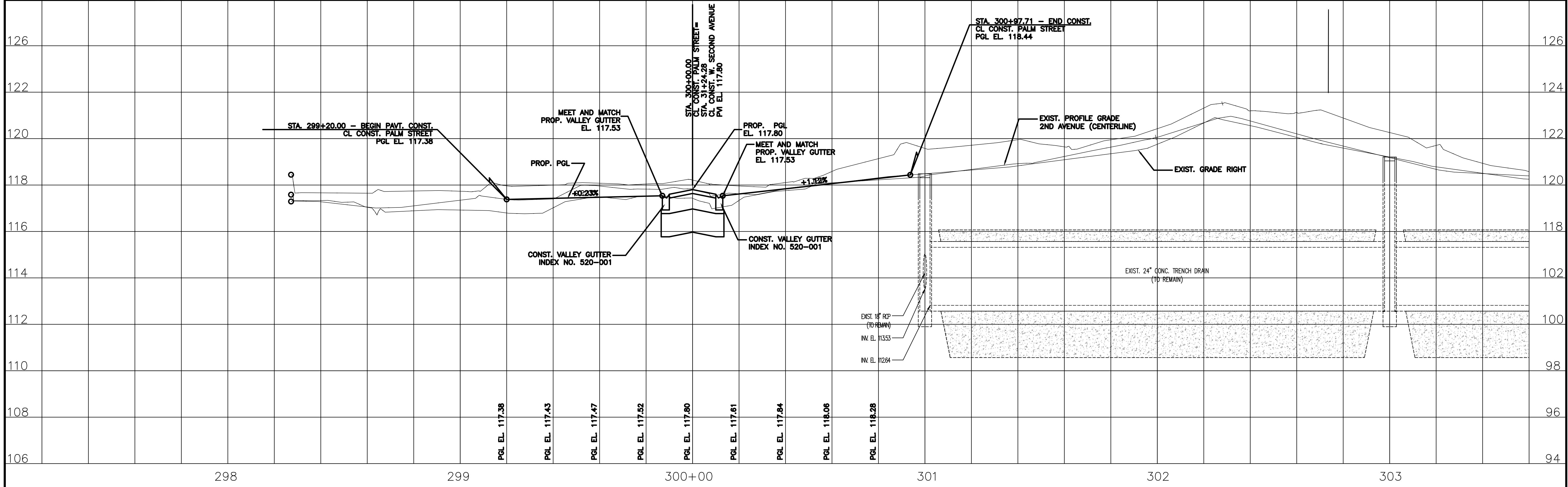
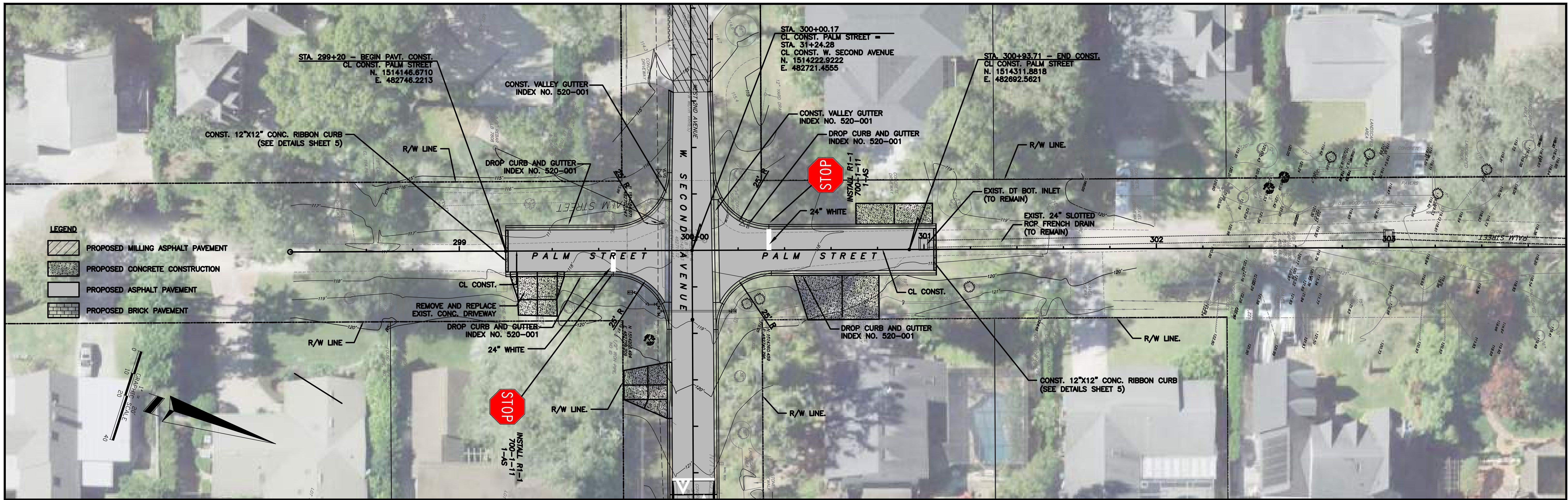






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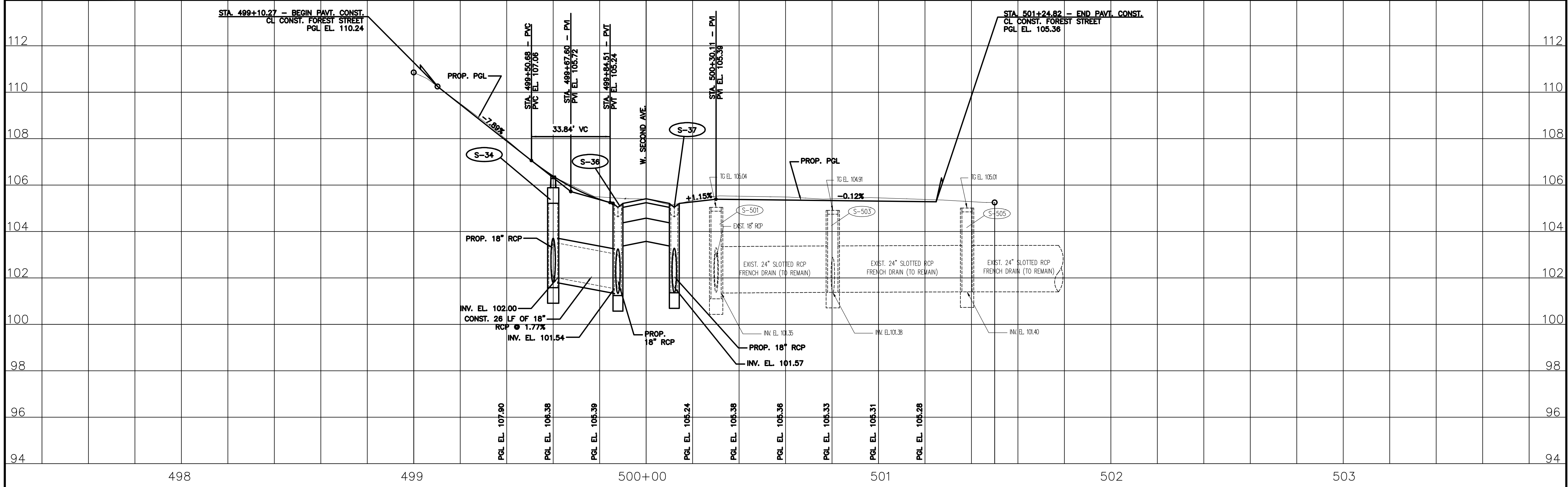
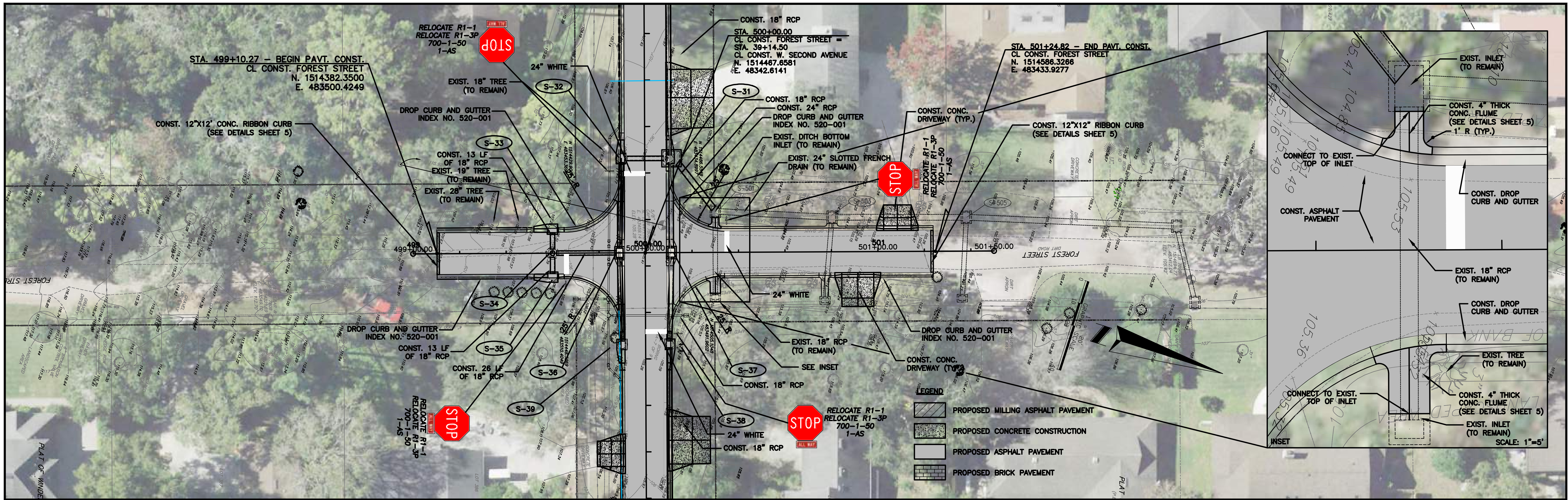


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					CLIENT		PEC SURVEYING AND MAPPING, LLC			SHEET 31 OF 86	
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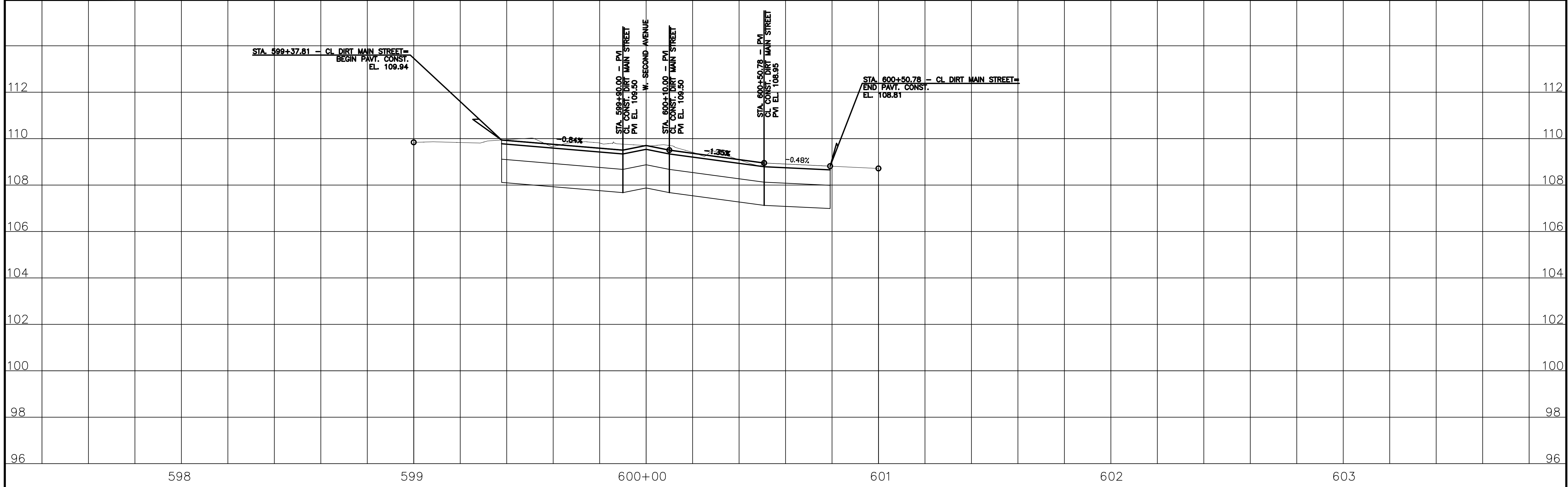
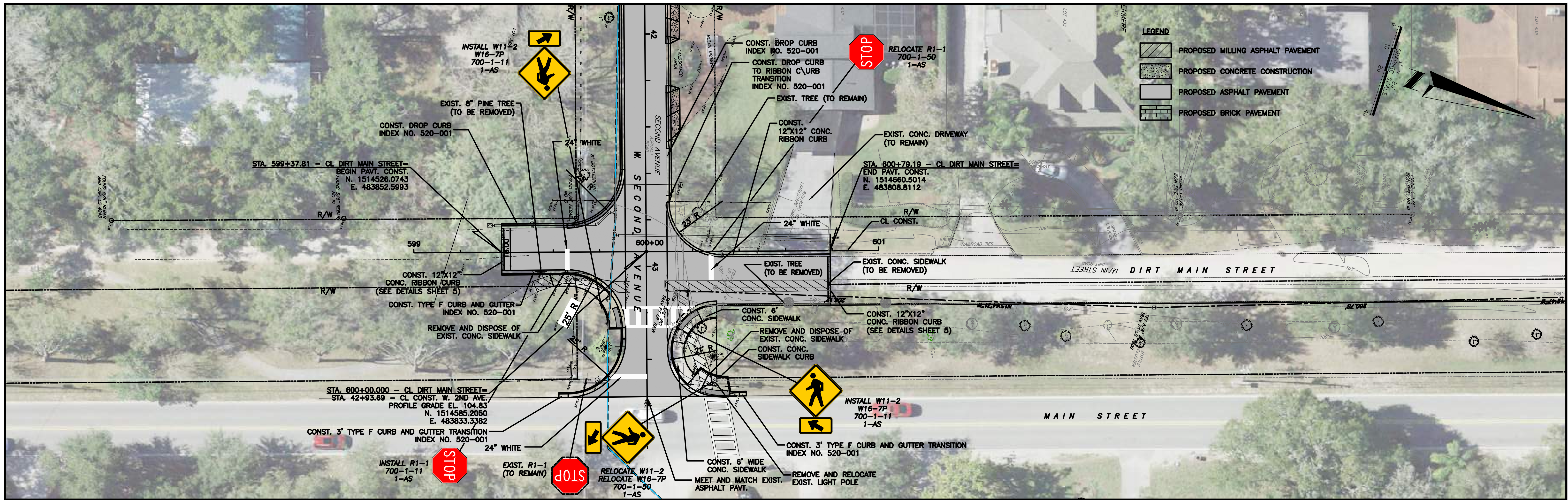






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SIGN OFF: _____ DATE: _____ CLIENT: _____ PM/CM BC: _____ PM/CM DM: _____ PM: _____ CM: _____ APP'D BY: _____ OTHERS: _____		FIELD: PEC SURVEYING AND MAPPING, LLC DRAWN BY: CADD DESIGNED BY: MBG CHECKED BY: MBG DATE: NOVEMBER 2023		<b>MGEC</b> MICHAEL GALURA ENGINEERING CONSULTANTS, LLC 3222 Corrine Drive, Suite H Orlando, Florida 32803 CERTIFICATE OF AUTHORIZATION NO. 29032 407/493-9983		 <b>TOWN OF WINDERMERE</b> PUBLIC WORKS DEPARTMENT 614 MAIN STREET, WINDERMERE, FLORIDA 34786		JOB No. TOW-052.01.000 FILE NAME: SEE LEFT MARGIN ARCHIVE DISC: SCALE: HORIZ. = 1"=20' VERT. = 1"=2'		<b>PLAN AND PROFILE</b> <b>DIRT MAIN</b> DRWG. SHEET 34 OF 86	
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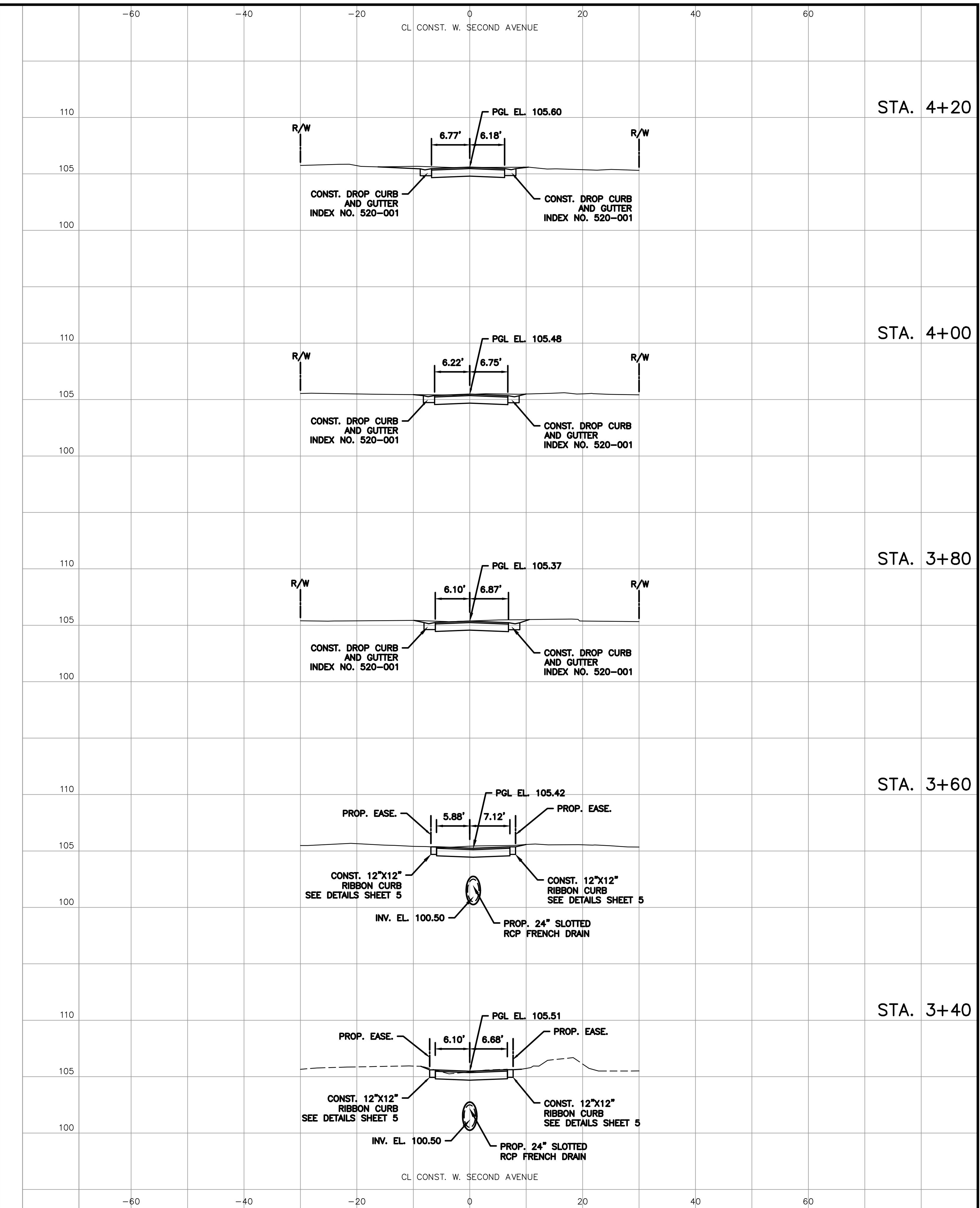
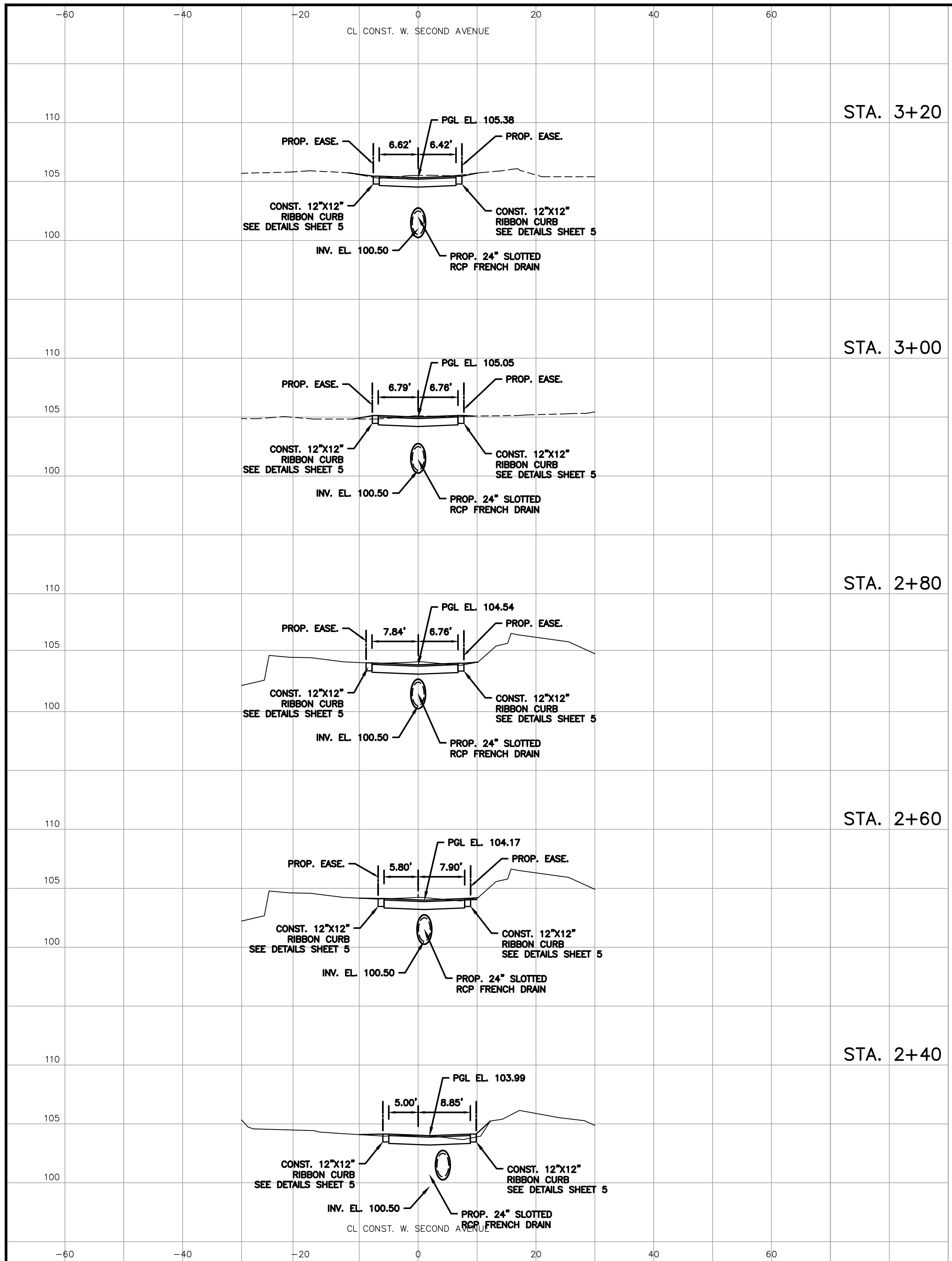








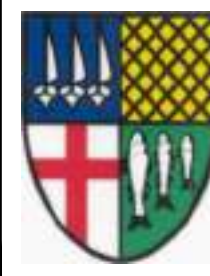




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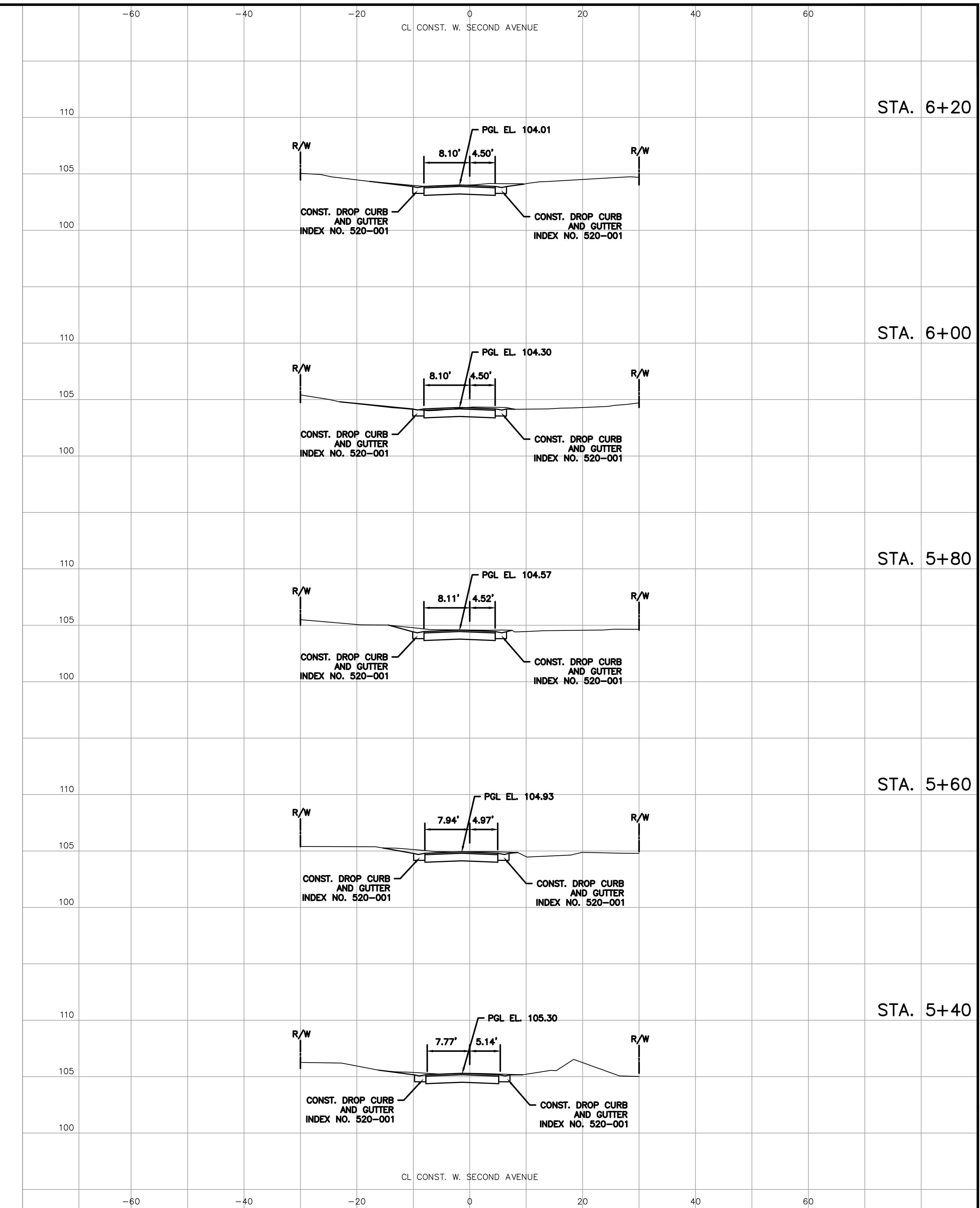
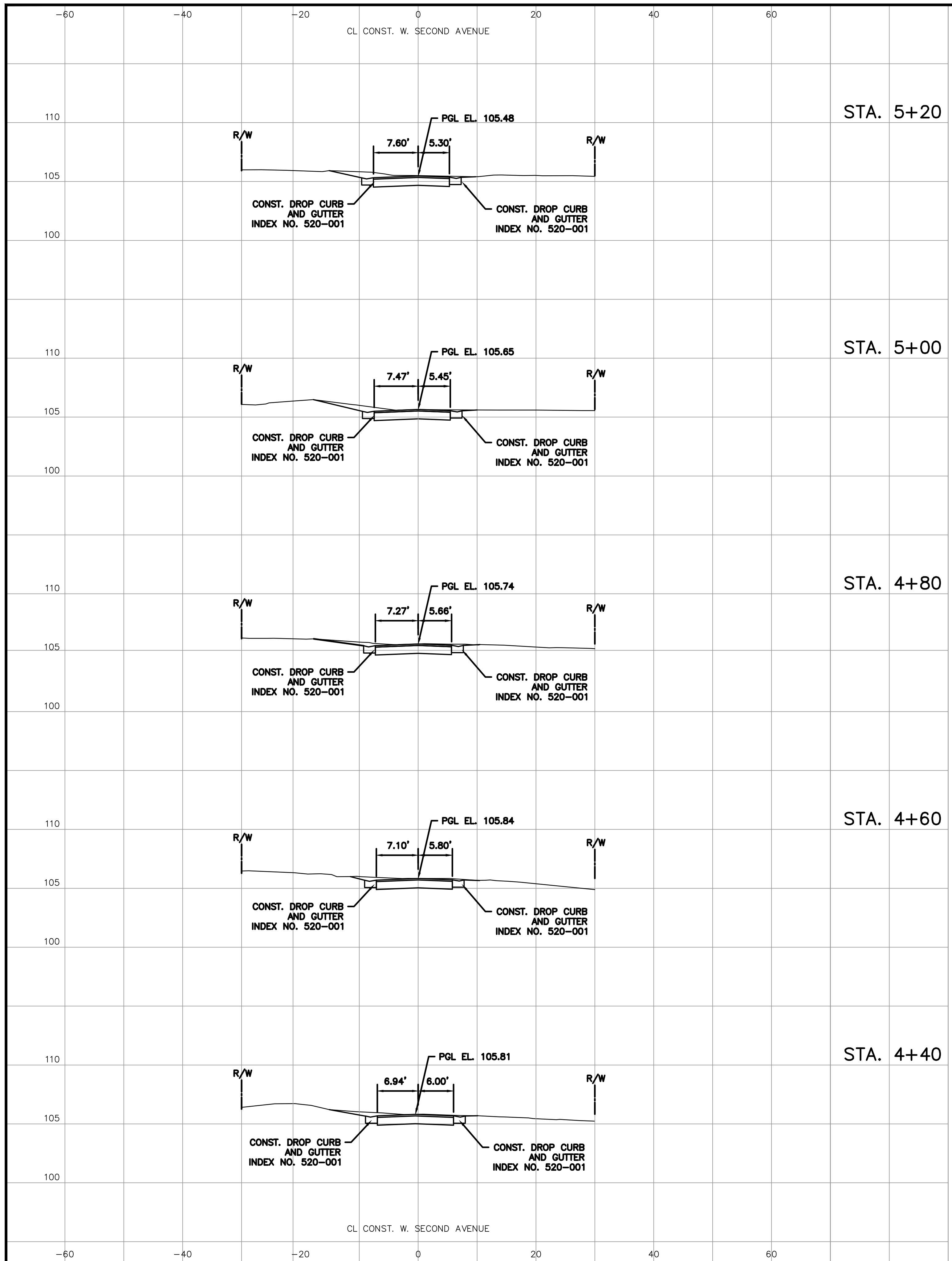


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**CROSS-SECTIONS  
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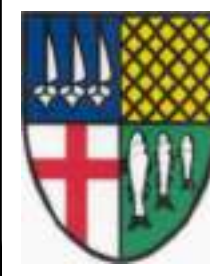




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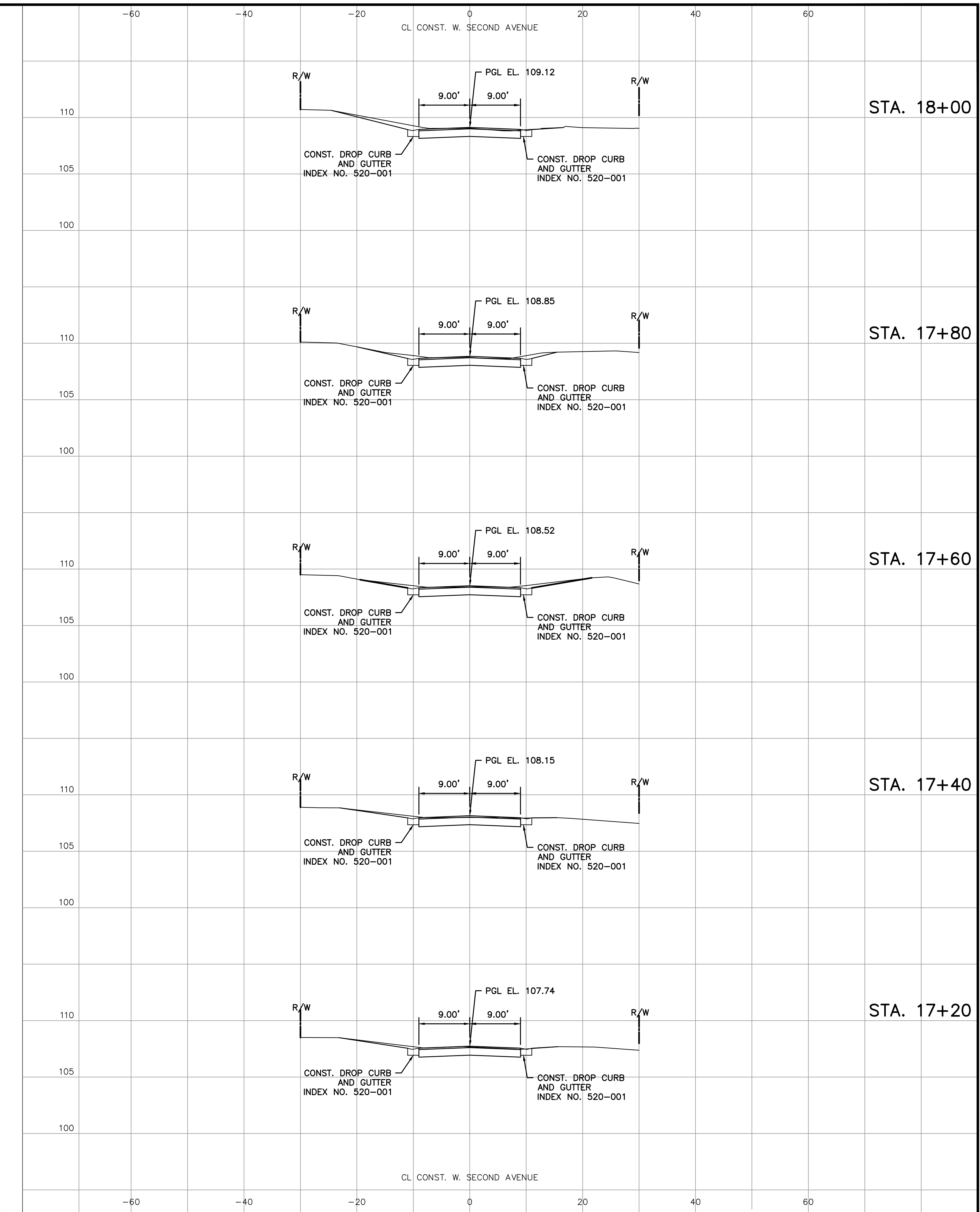
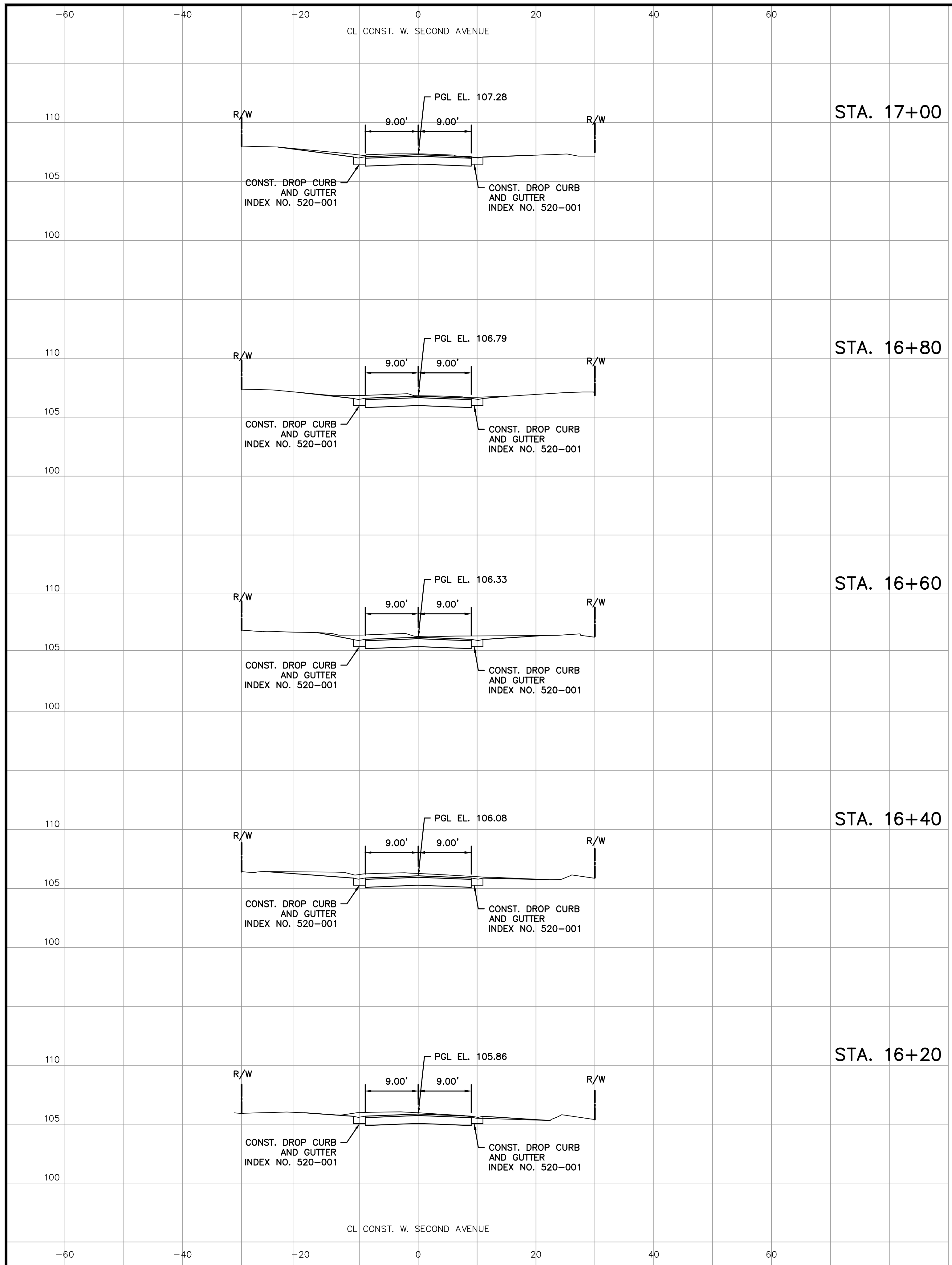








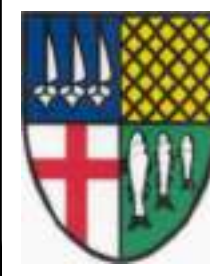




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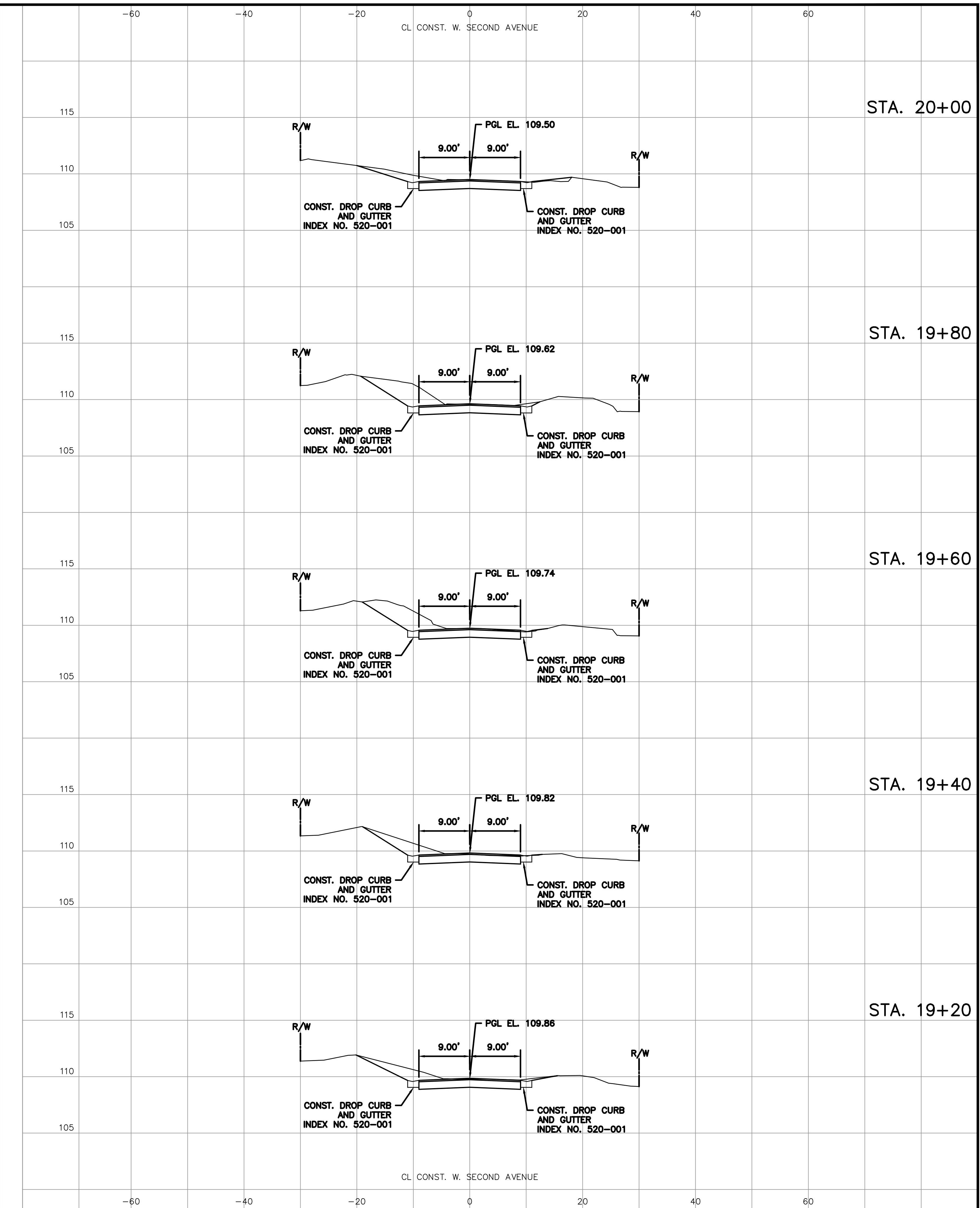
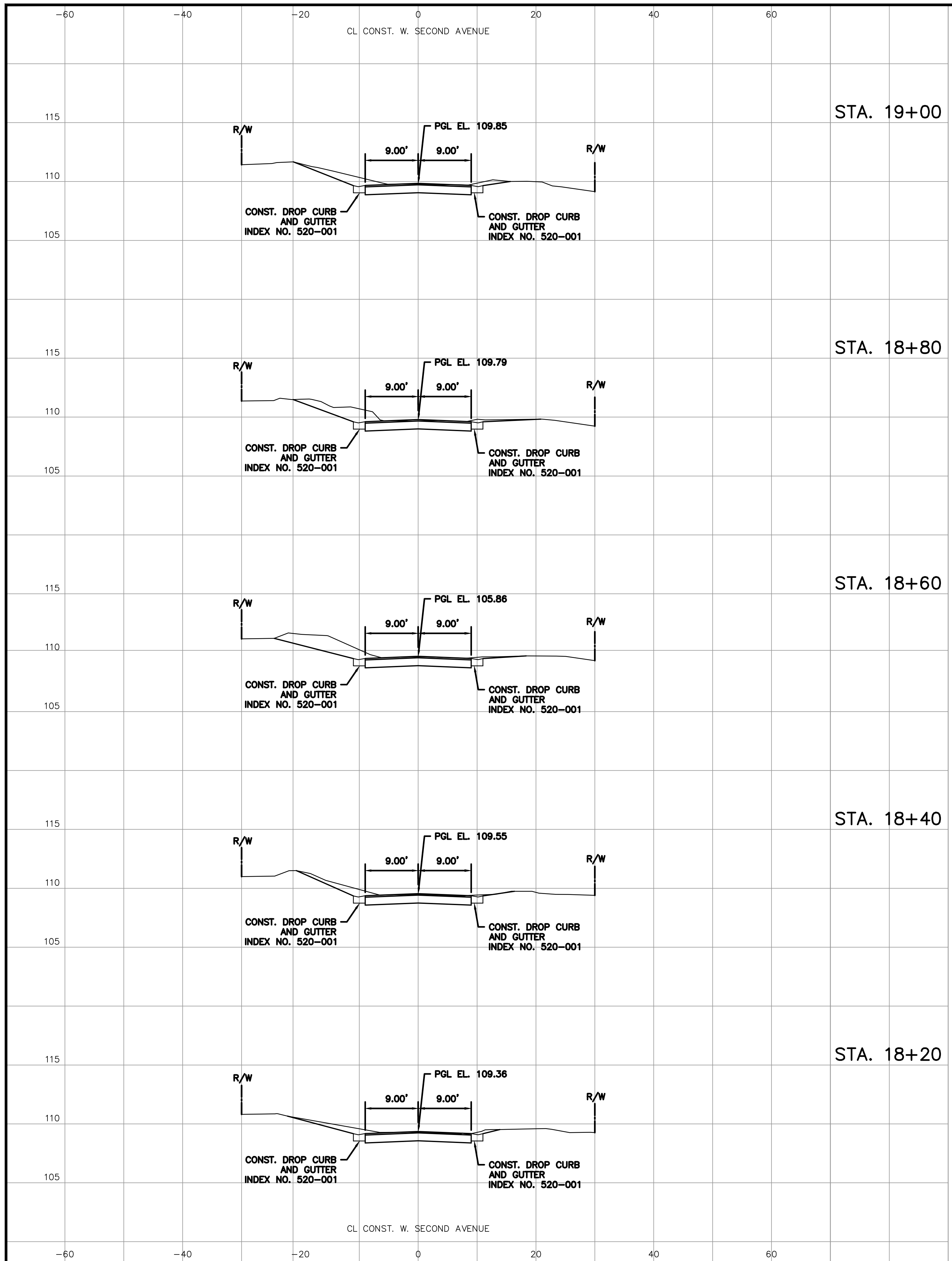
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**CROSS-SECTIONS  
 W. SECOND AVENUE**

DRWG. SHEET 43 OF 86





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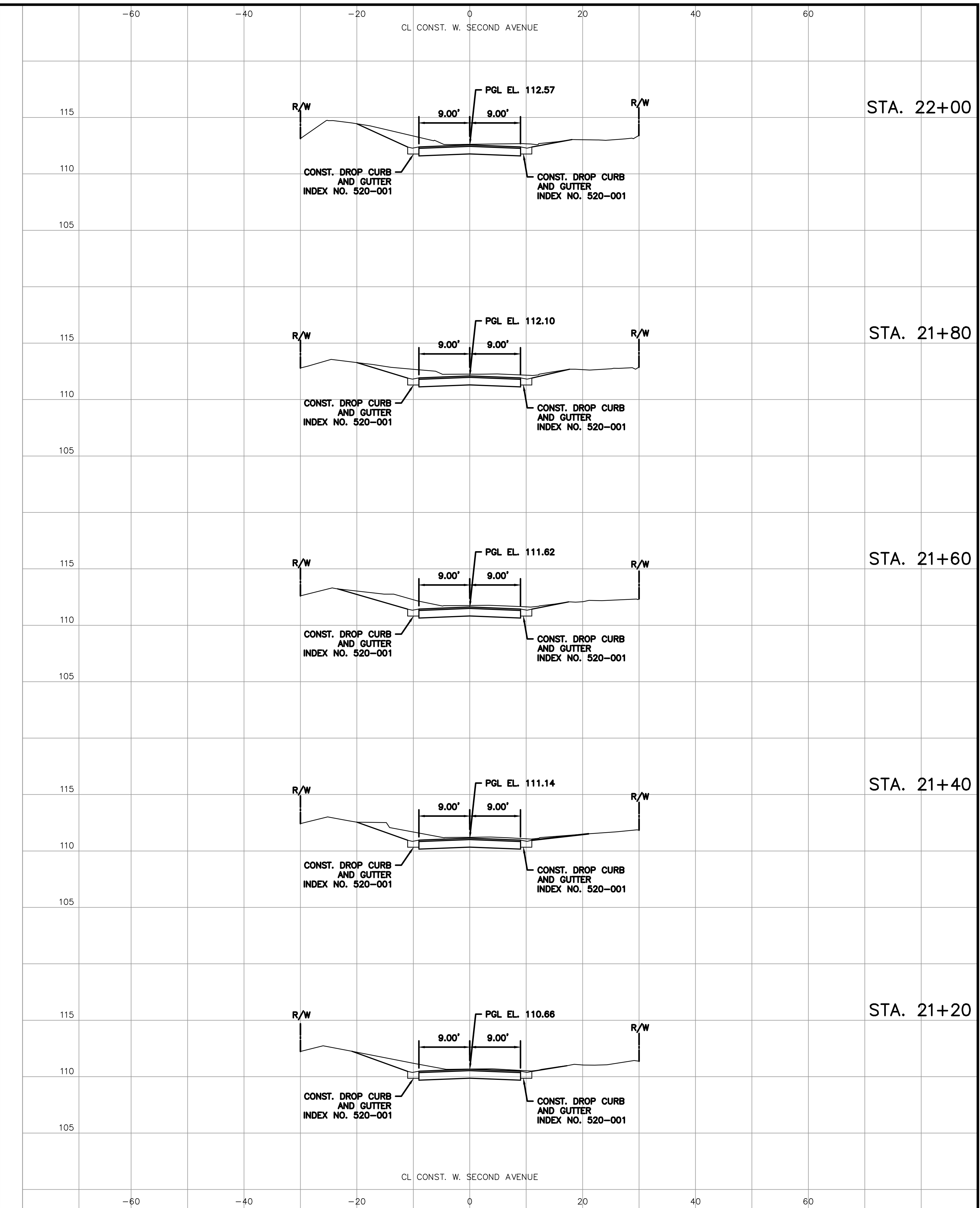
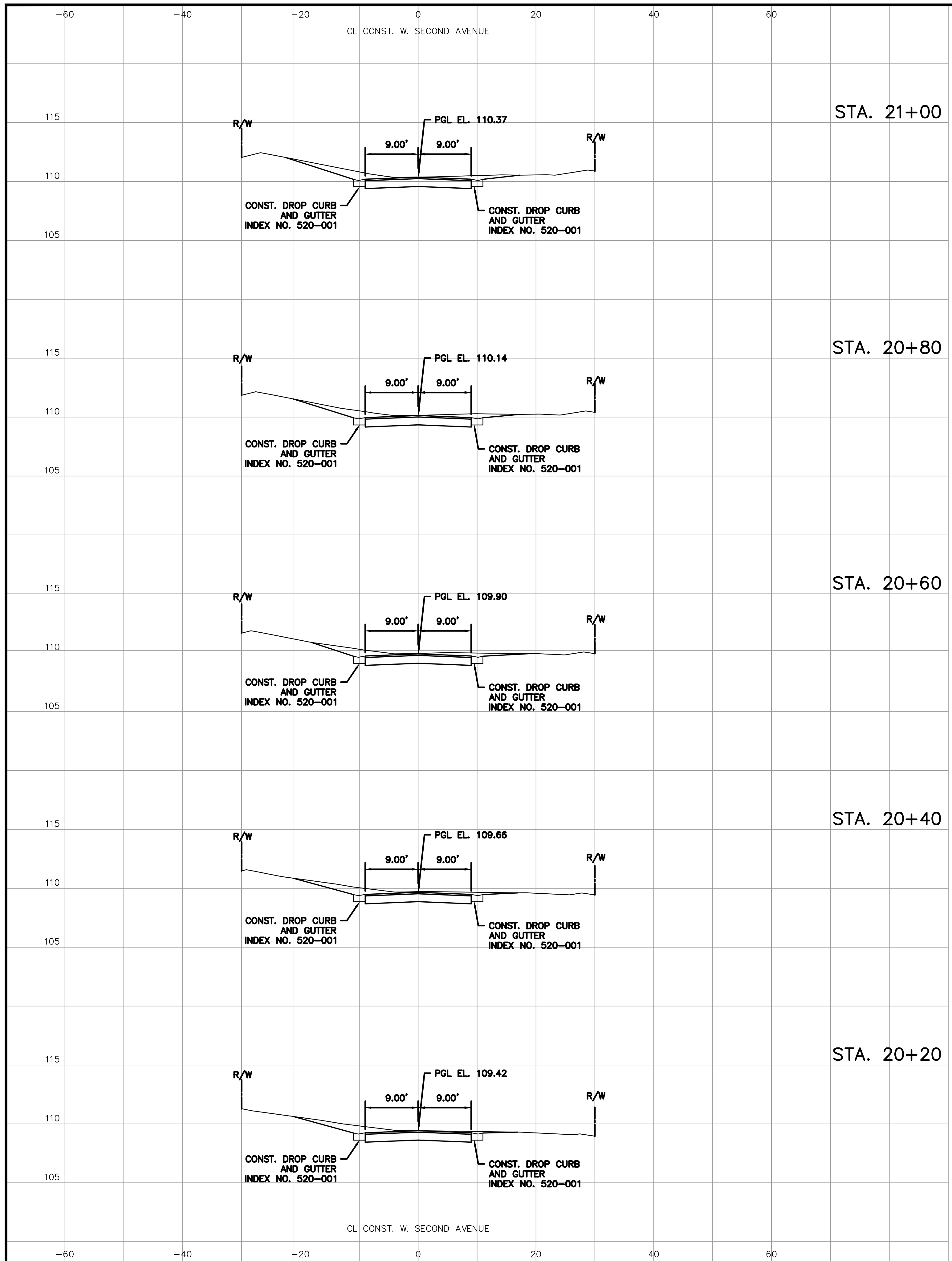
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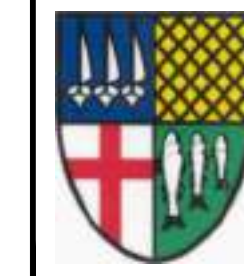




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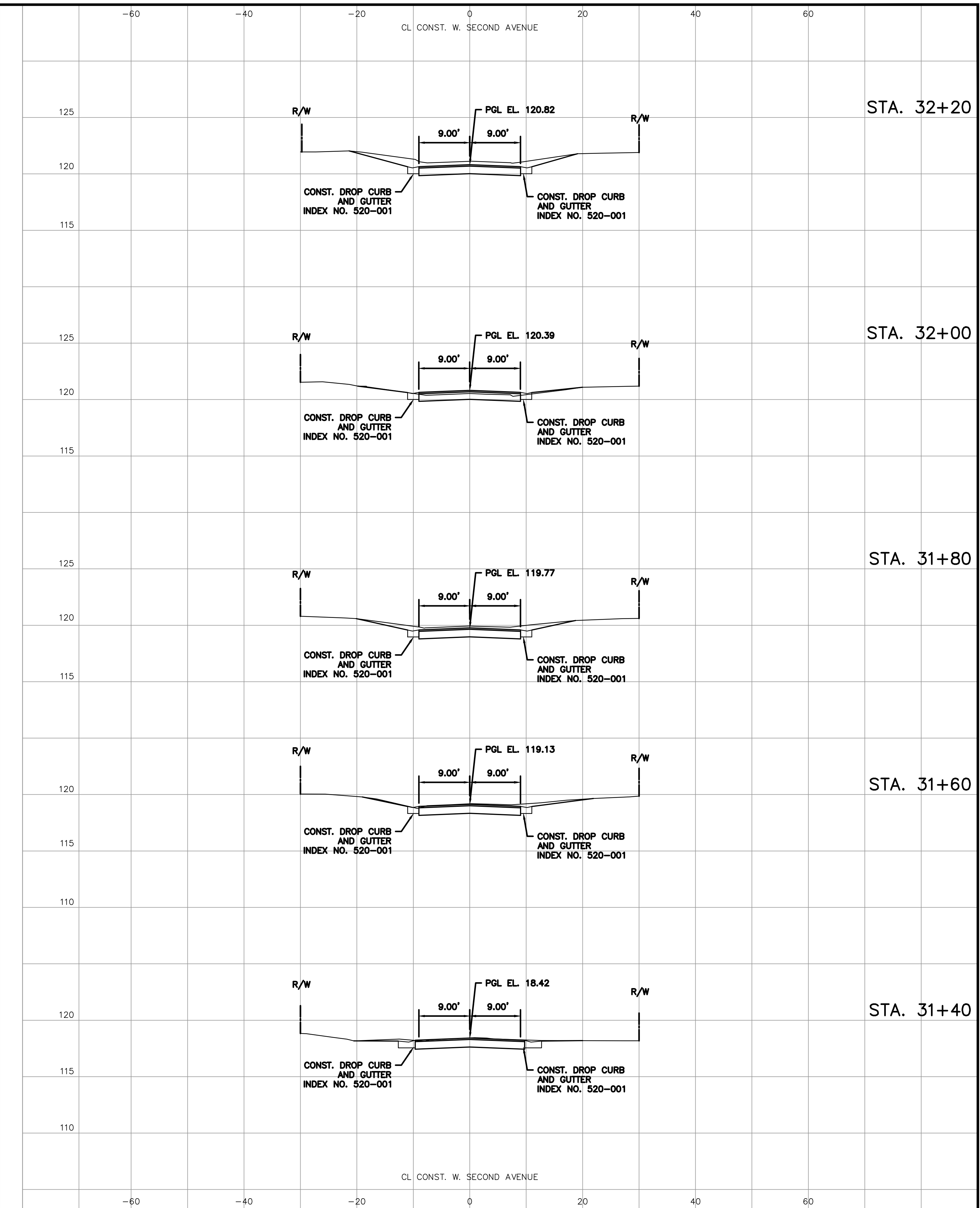
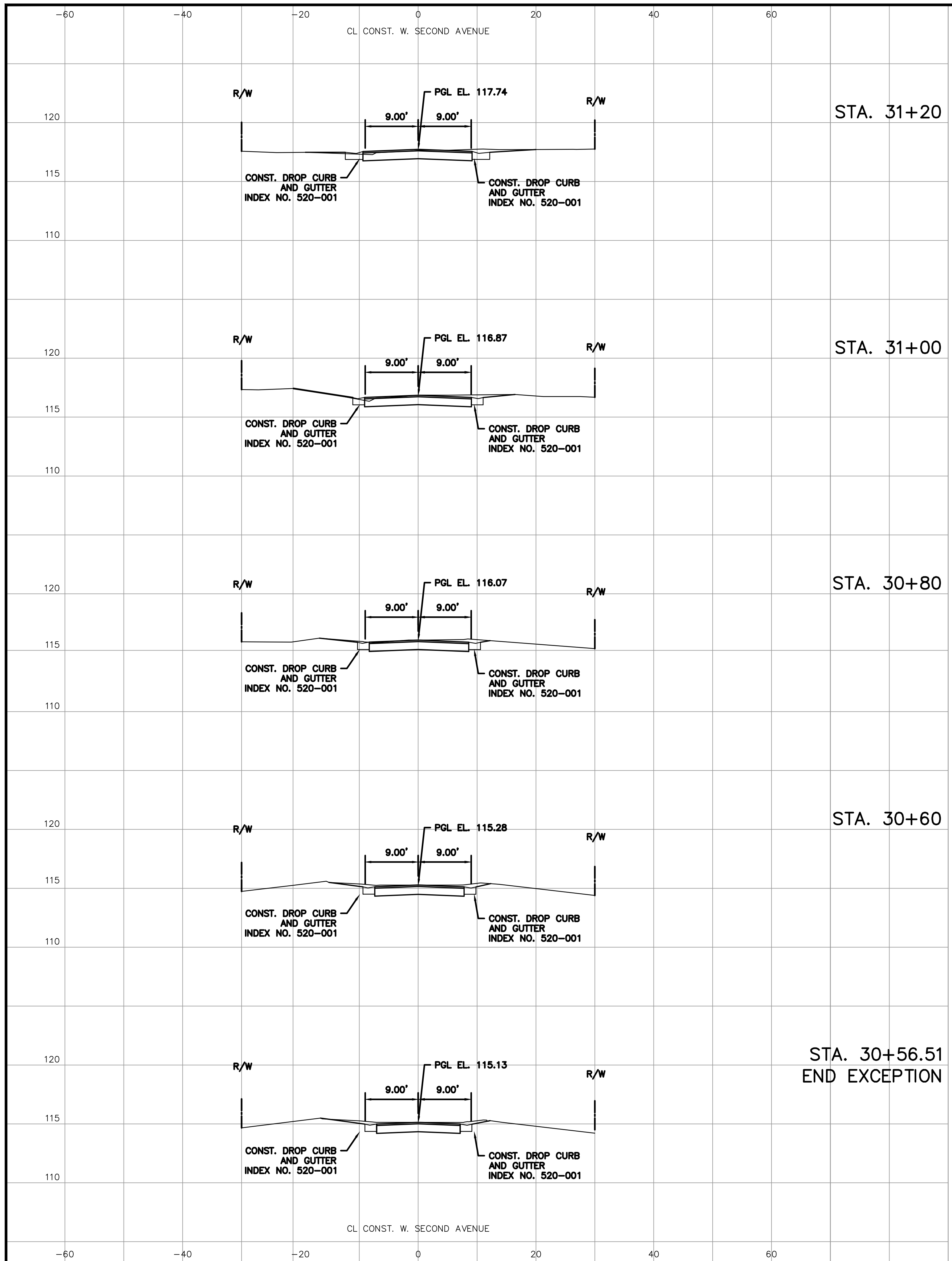








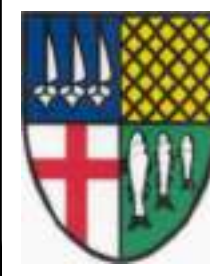




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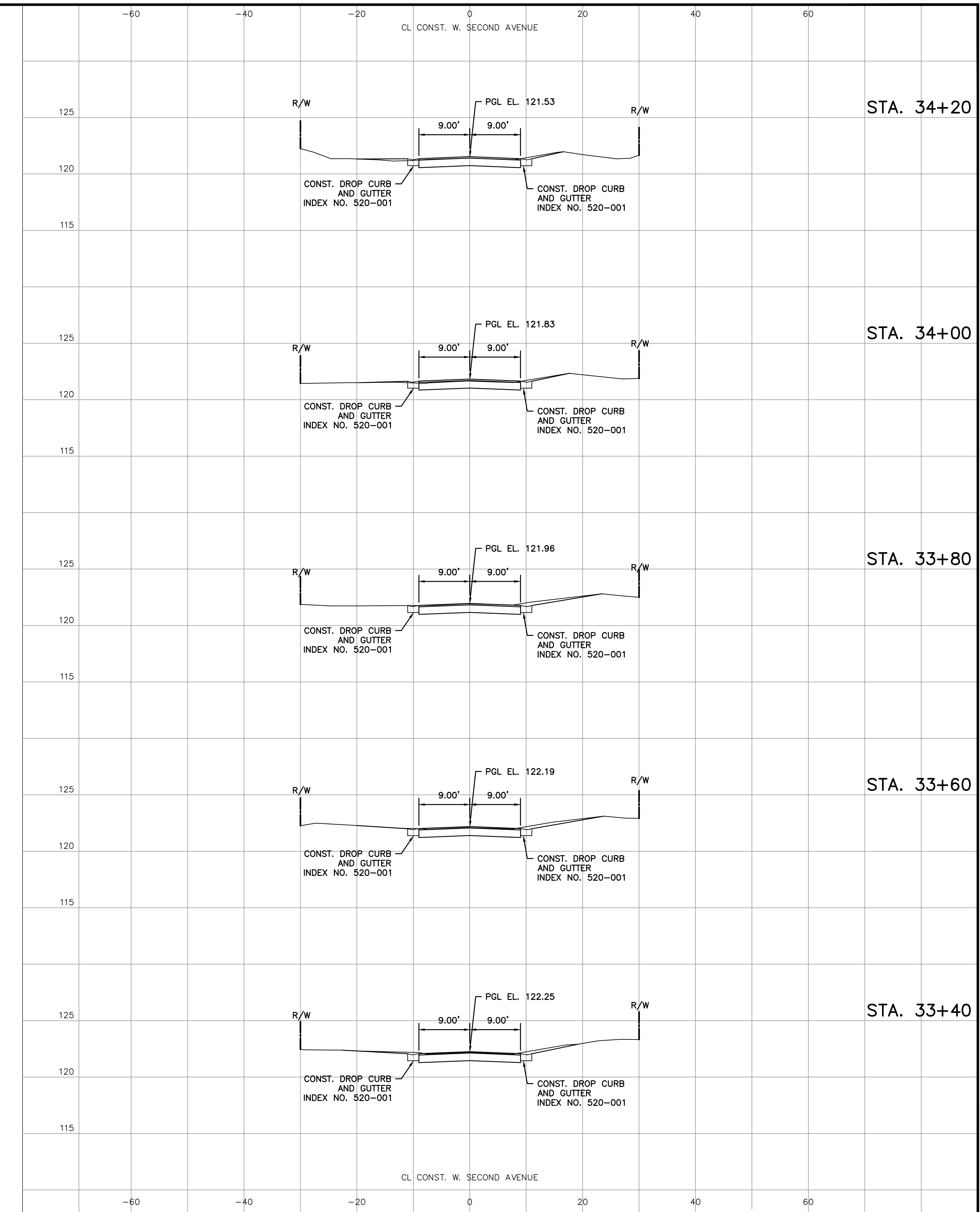
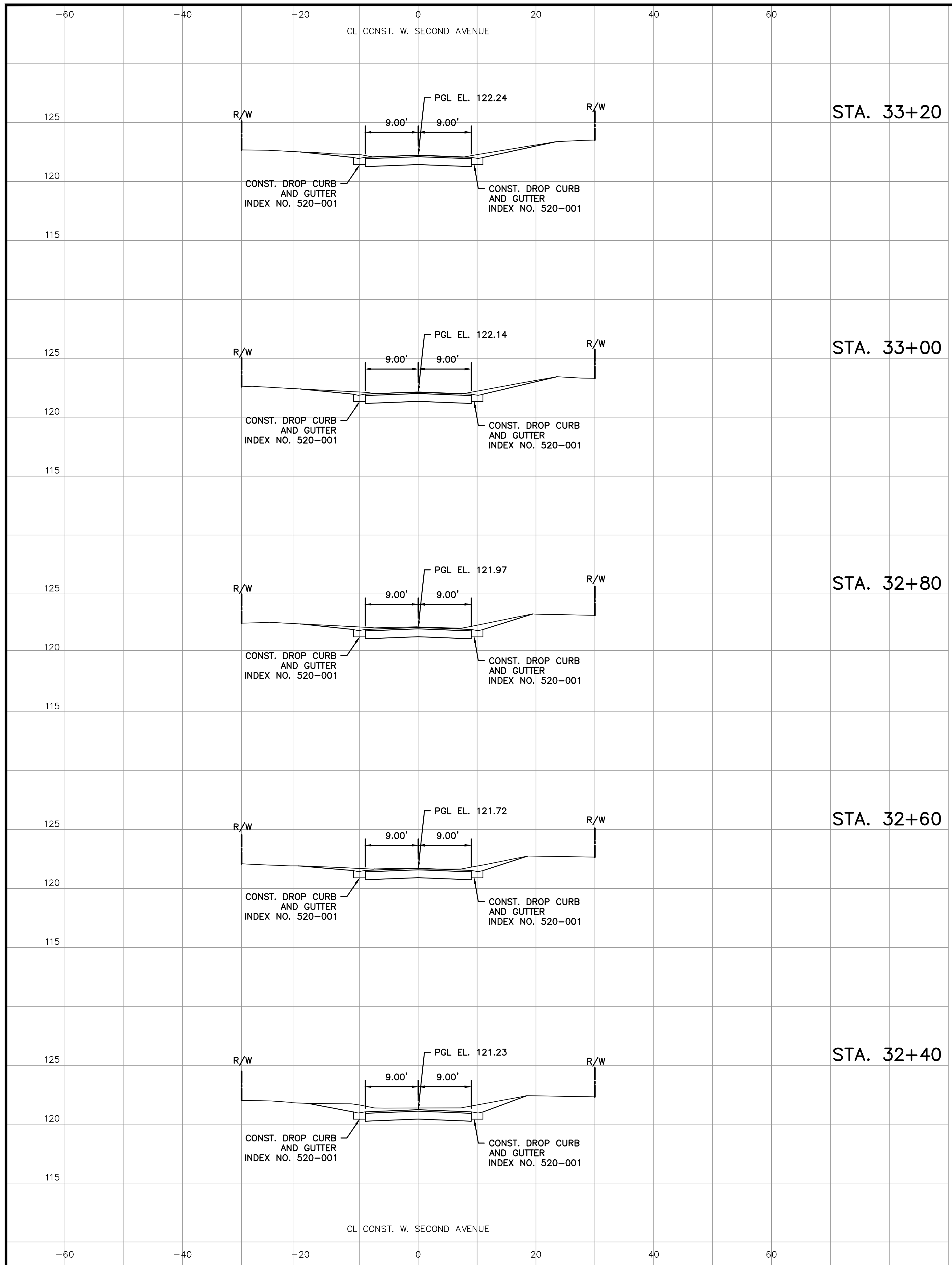
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DRWG. SHEET 48 OF 86





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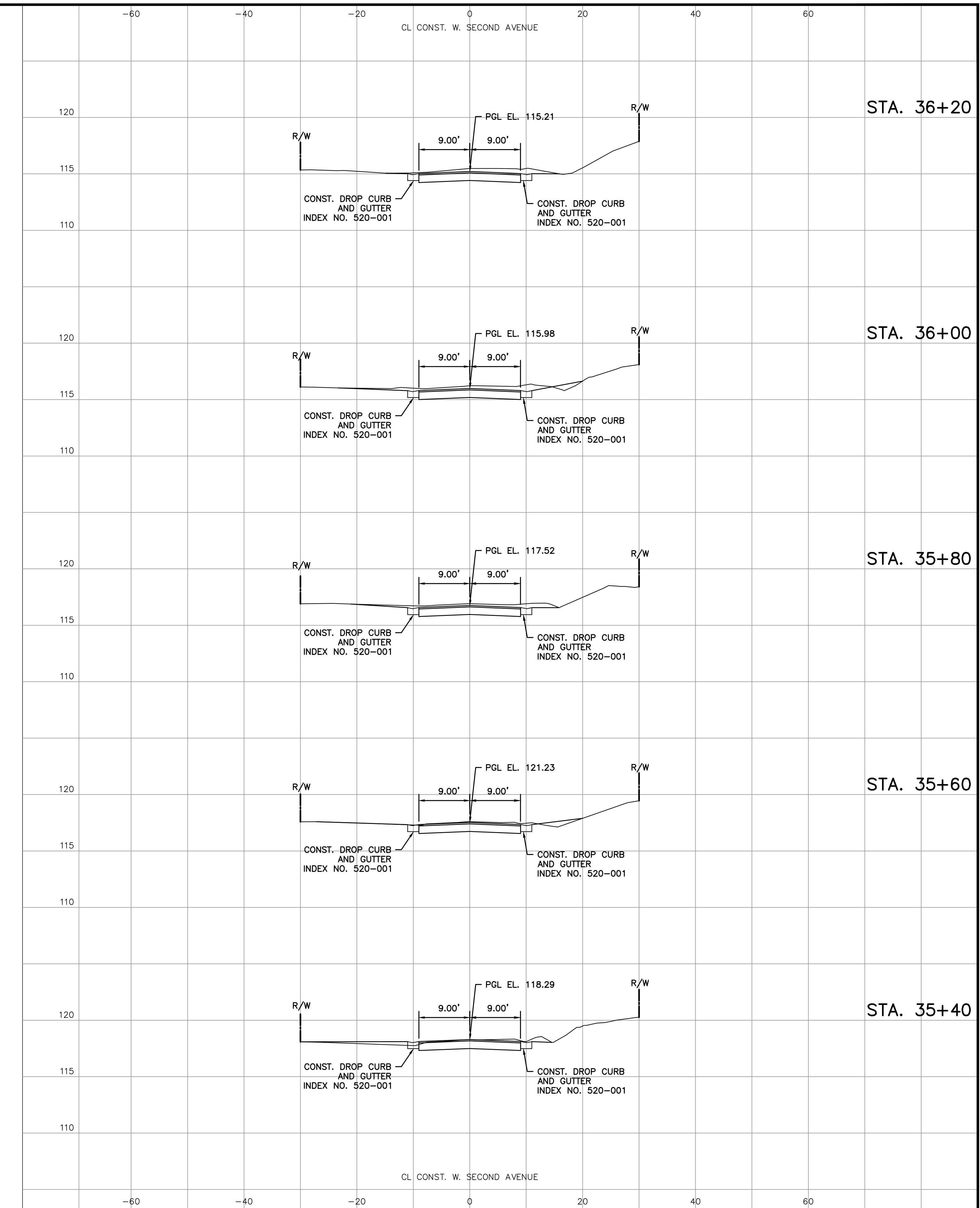
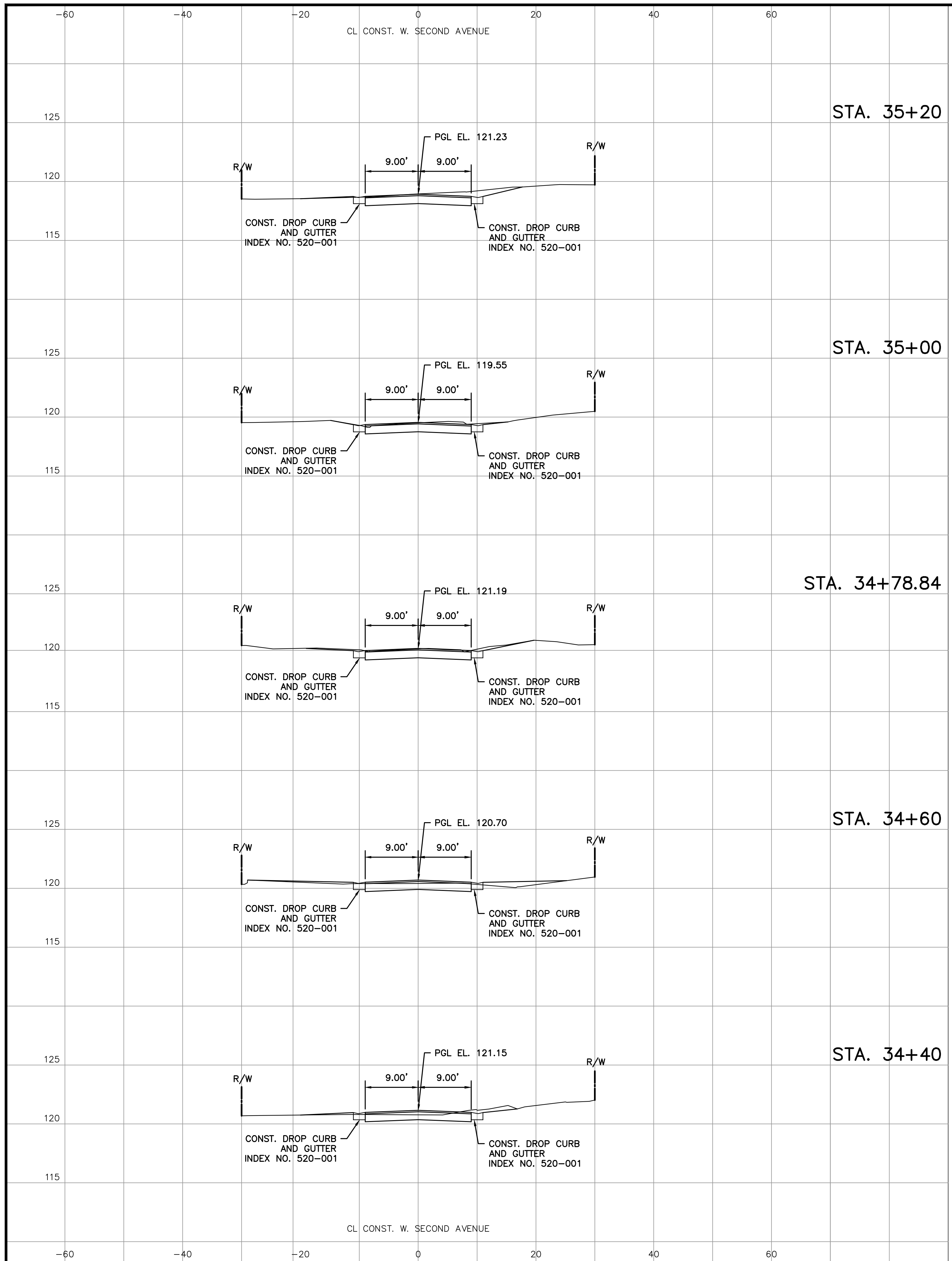
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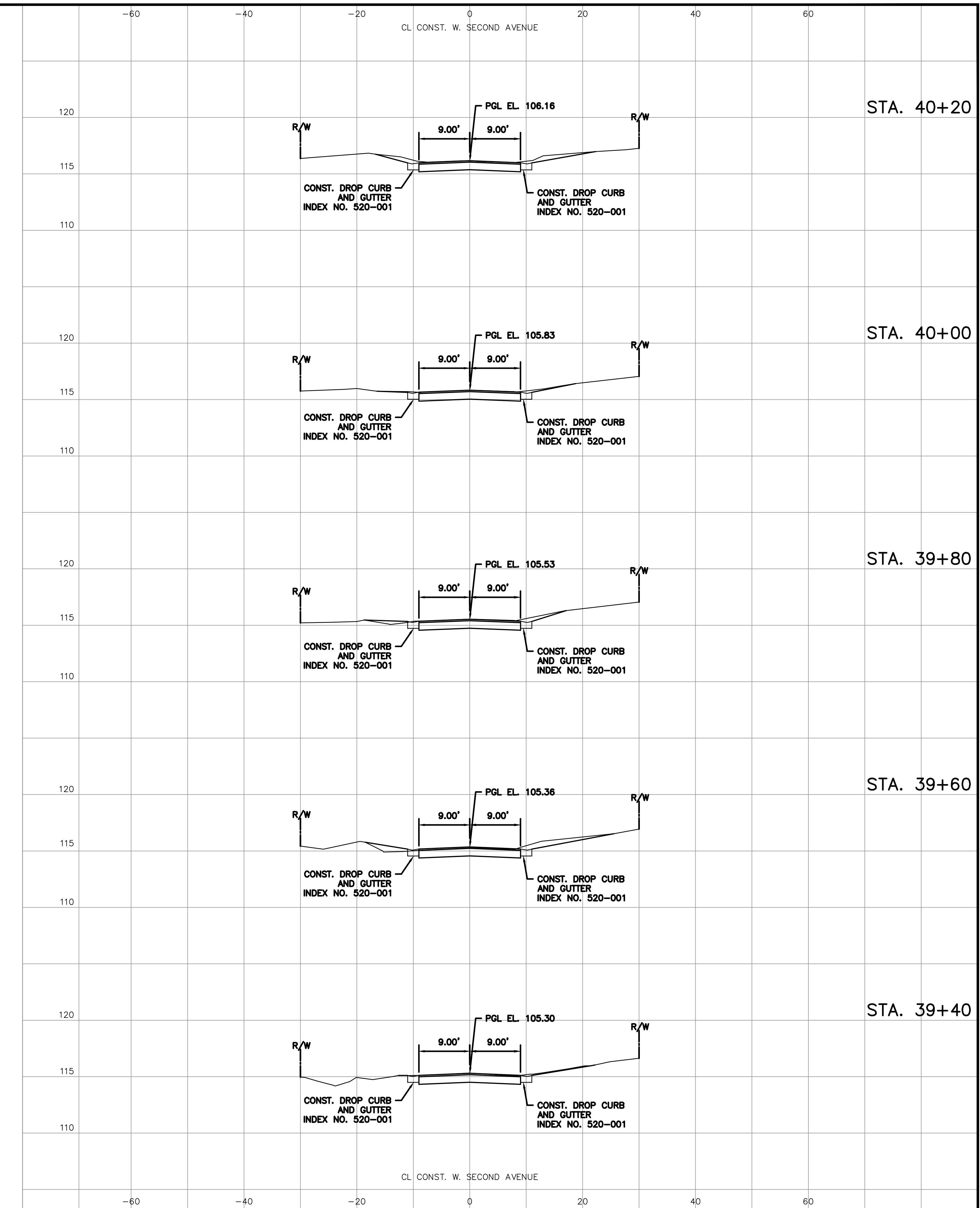
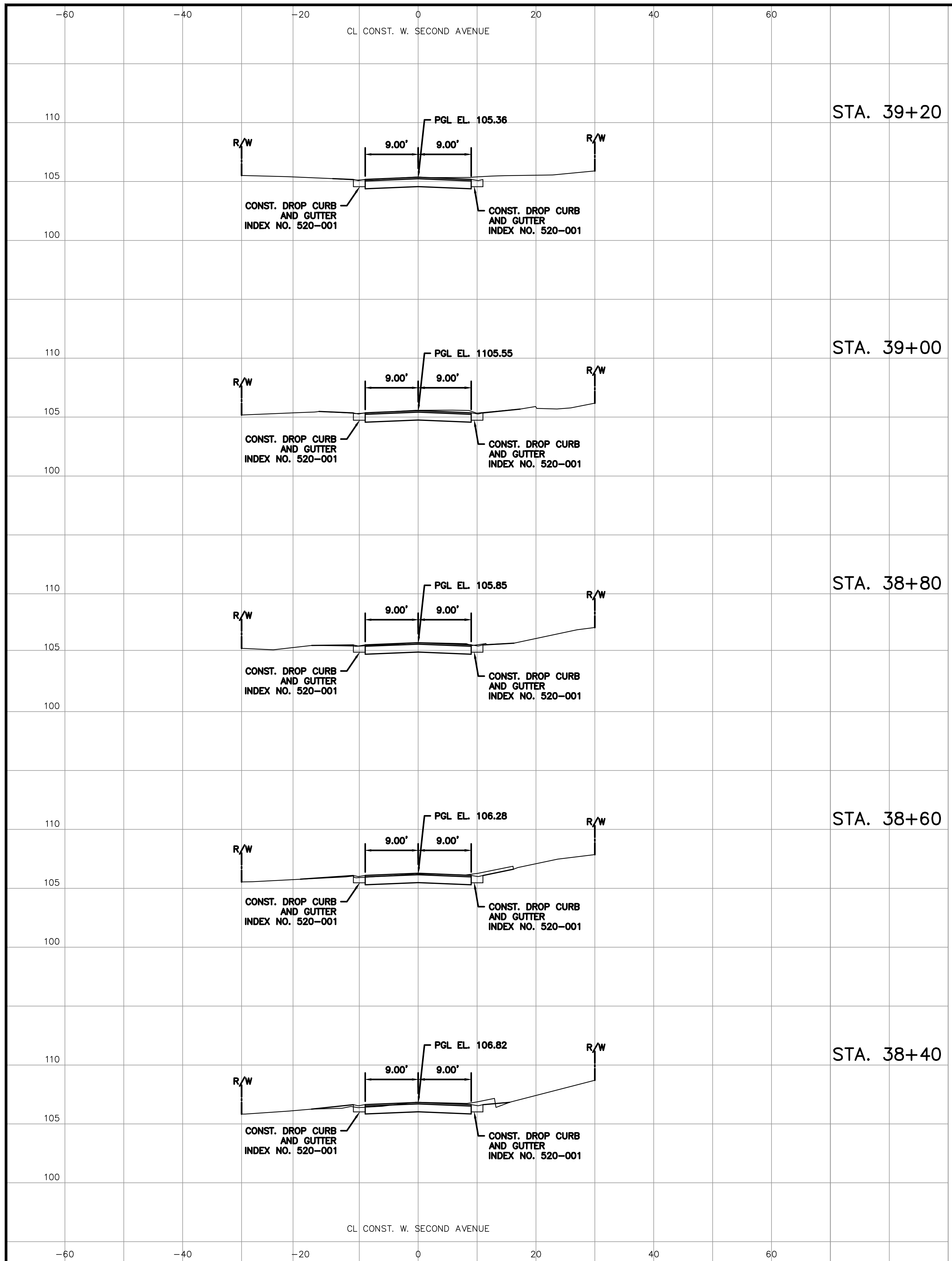
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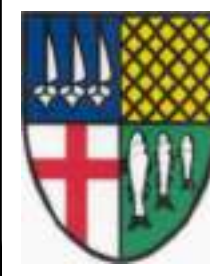




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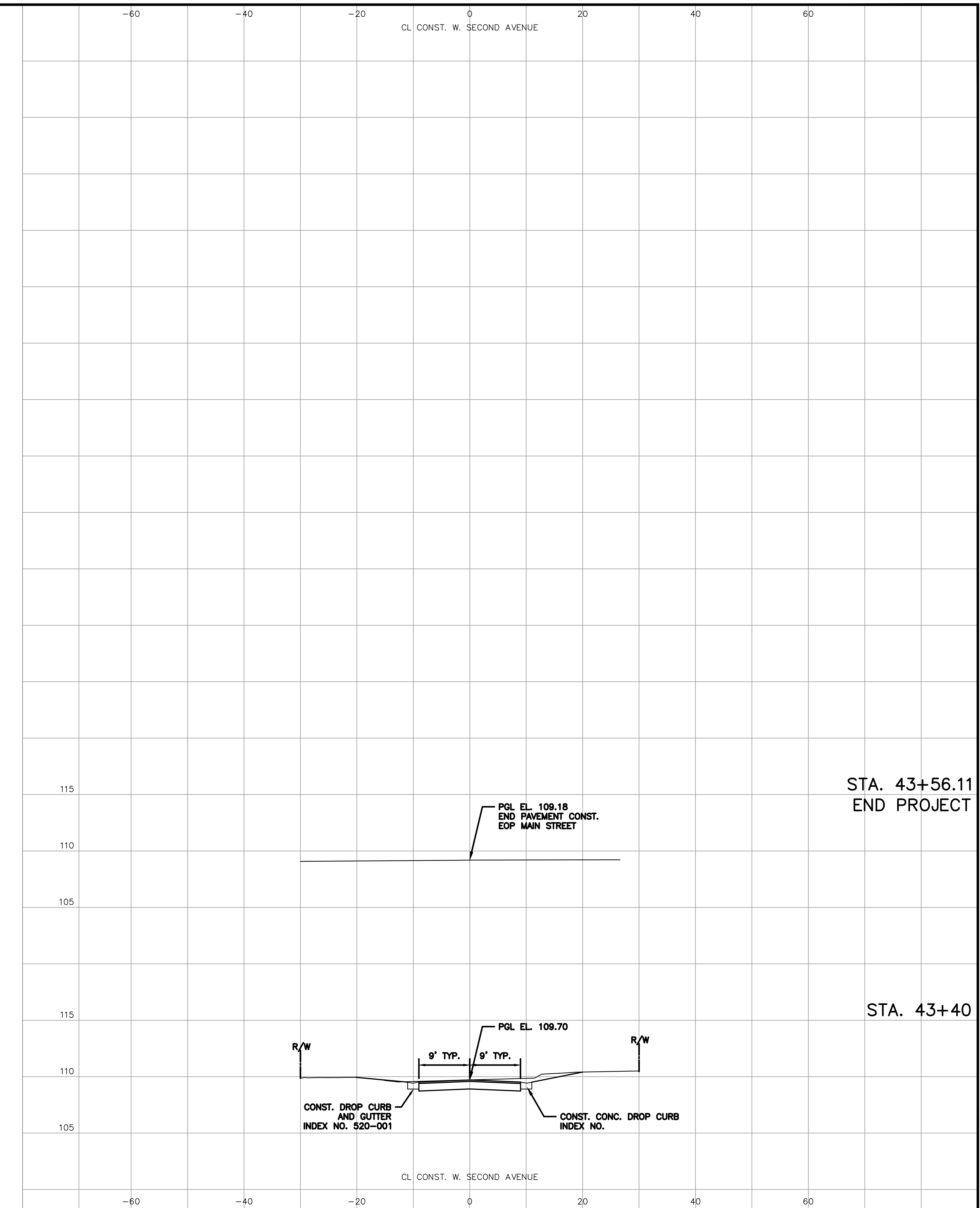
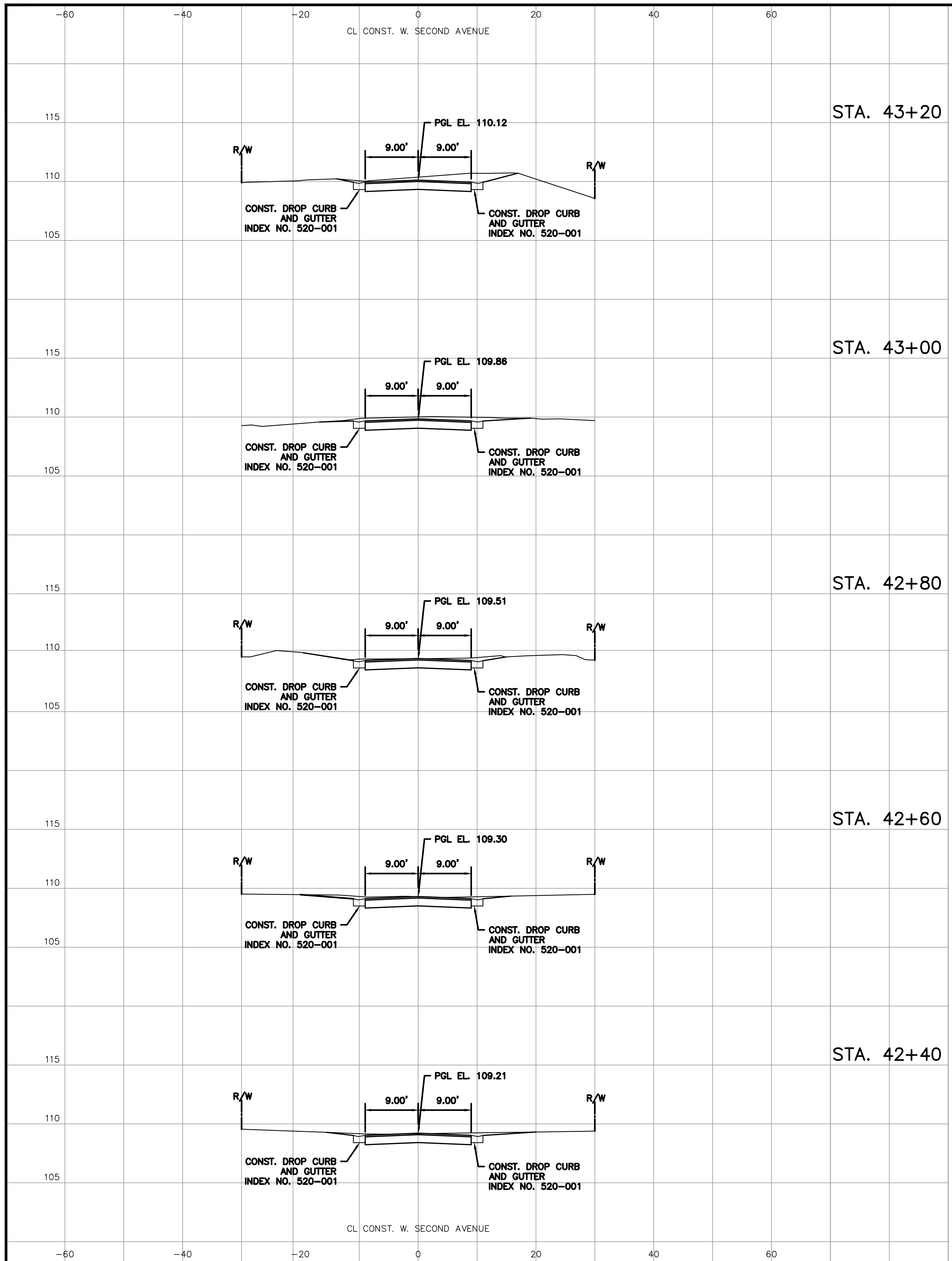
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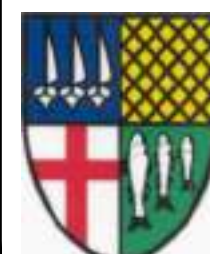




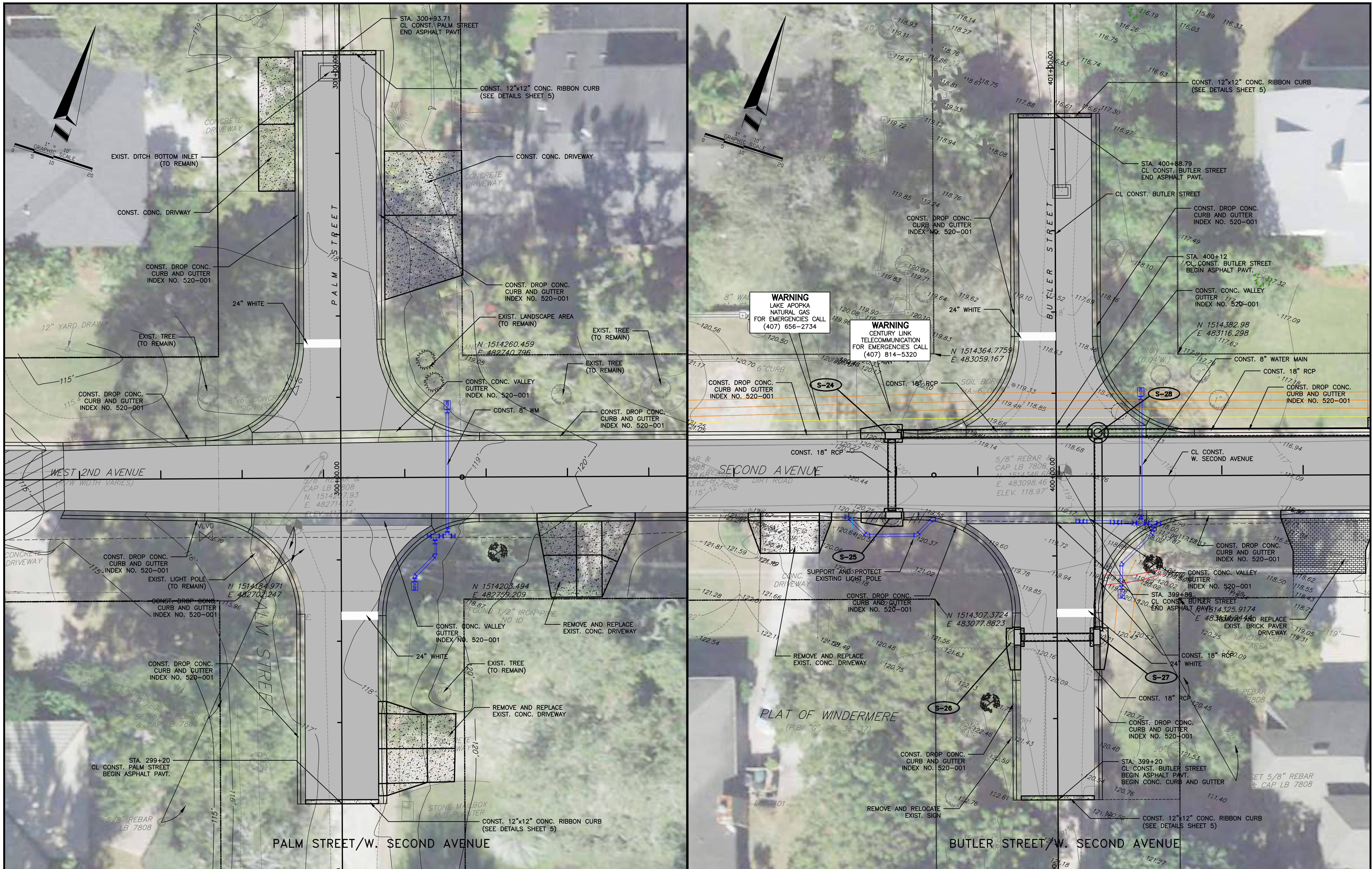




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		DESIGNED BY: MBG
		CHECKED BY: MBG
		DATE: NOVEMBER 2023

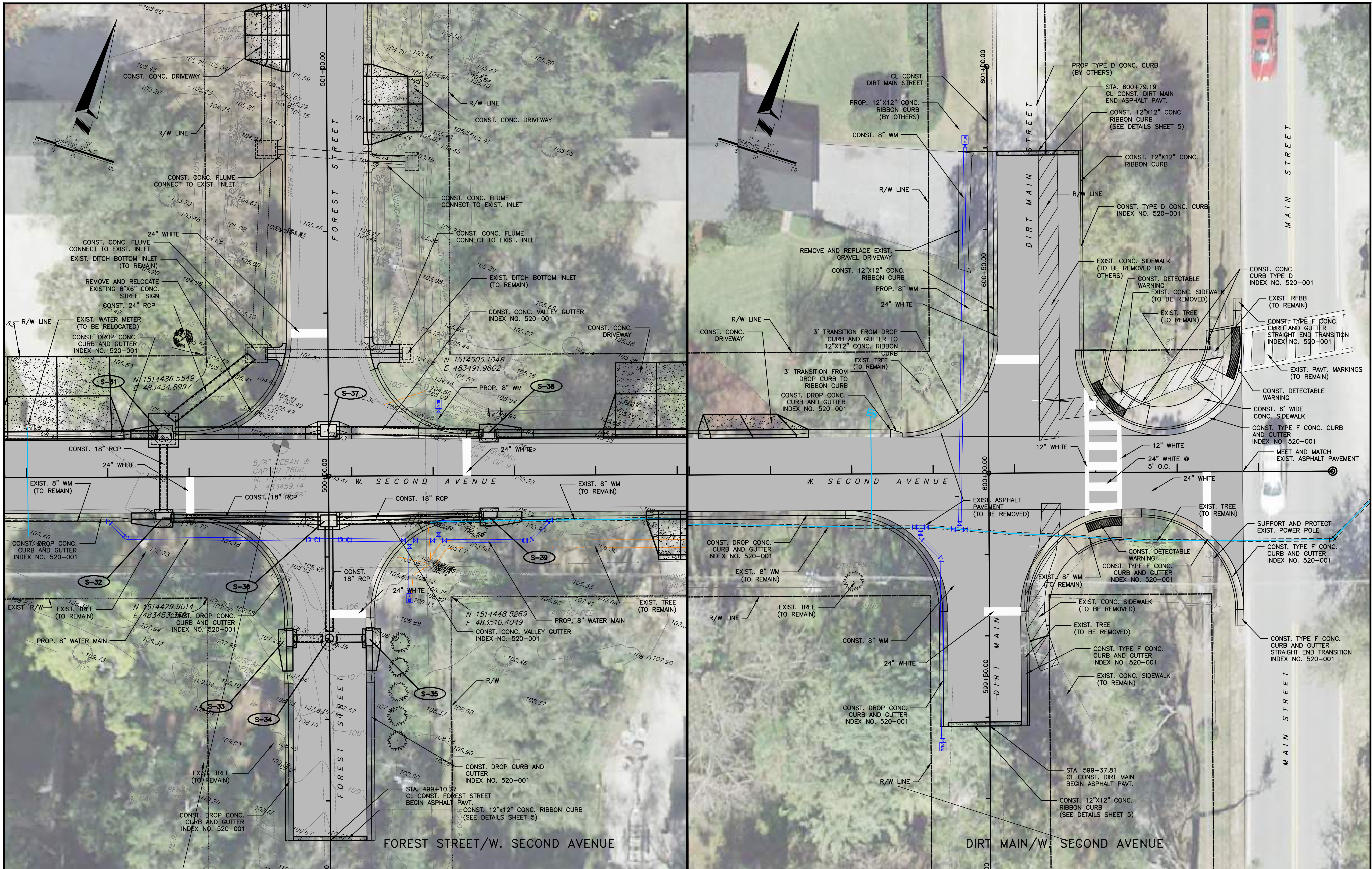
**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
 3222 Corrine Drive, Suite H  
 Orlando, Florida 32803 407/493-9983  
 CERTIFICATE OF AUTHORIZATION NO. 29032

**TOWN OF WINDERMERE**  
 PUBLIC WORKS DEPARTMENT  
 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=10'

**INTERSECTION DETAILS**  
**W. SECOND AVENUE**  
 DRWG. SHEET 55 OF 86





REV.	DATE	DESCRIPTION	APP'D BY

SIGN OFF	DATE	FIELD:
CLIENT		PEC SURVEYING AND MAPPING, LLC
PM/CM BC		DRAWN BY: CADD
PM/CM DM		DESIGNED BY: MBG
PM		CHECKED BY: MBG
CM		DATE: NOVEMBER 2023
OTHERS		

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
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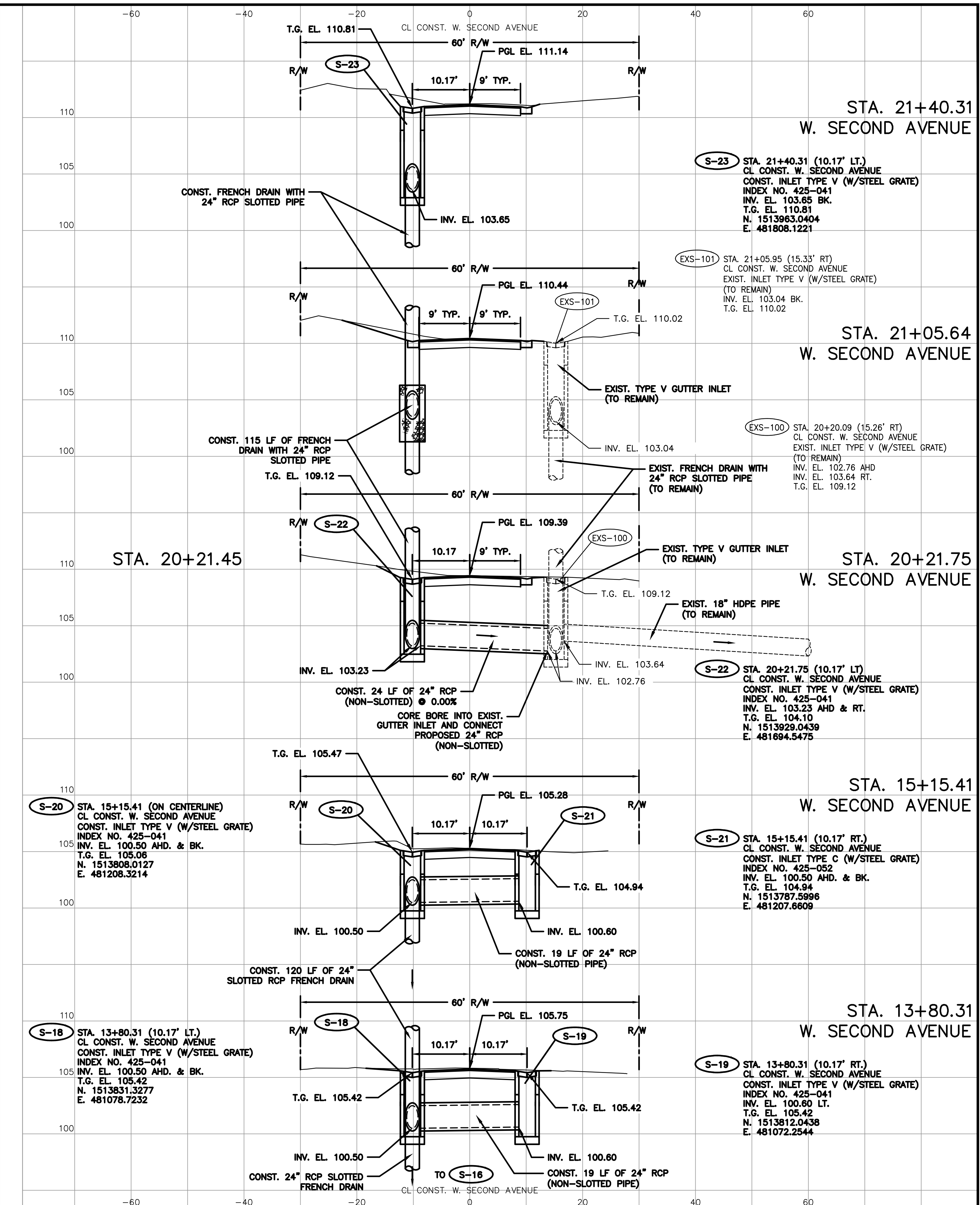
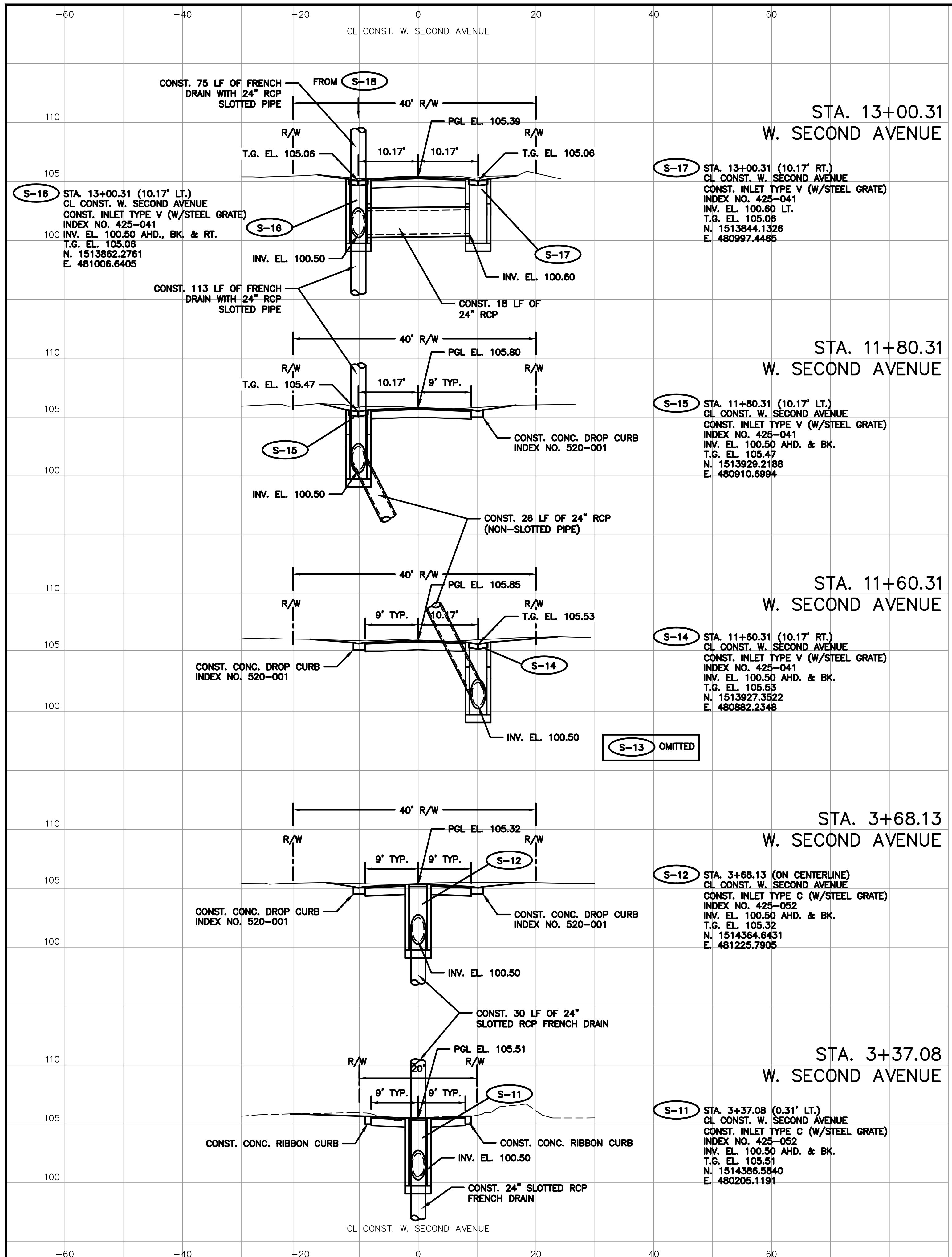
**INTERSECTION DETAILS**  
**W. SECOND AVENUE**

DRWG. SHEET 56 OF 86









REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

**MGEC** MICHAEL GALURA  
ENGINEERING  
CONSULTANTS, LLC

3222 Corrine Drive, Suite H  
Orlando, Florida 32803  
CERTIFICATE OF AUTHORIZATION NO. 29032

407/493-9983

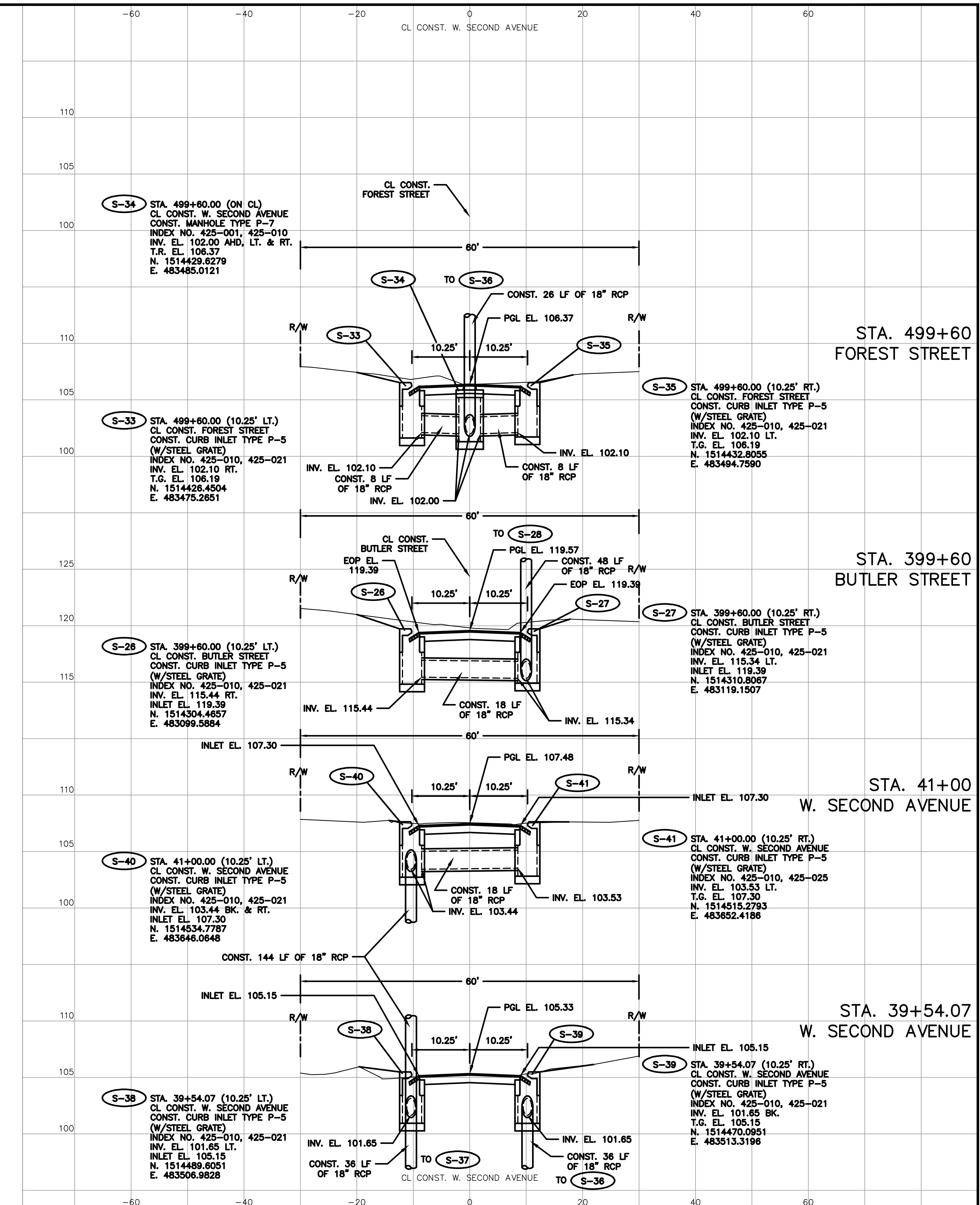
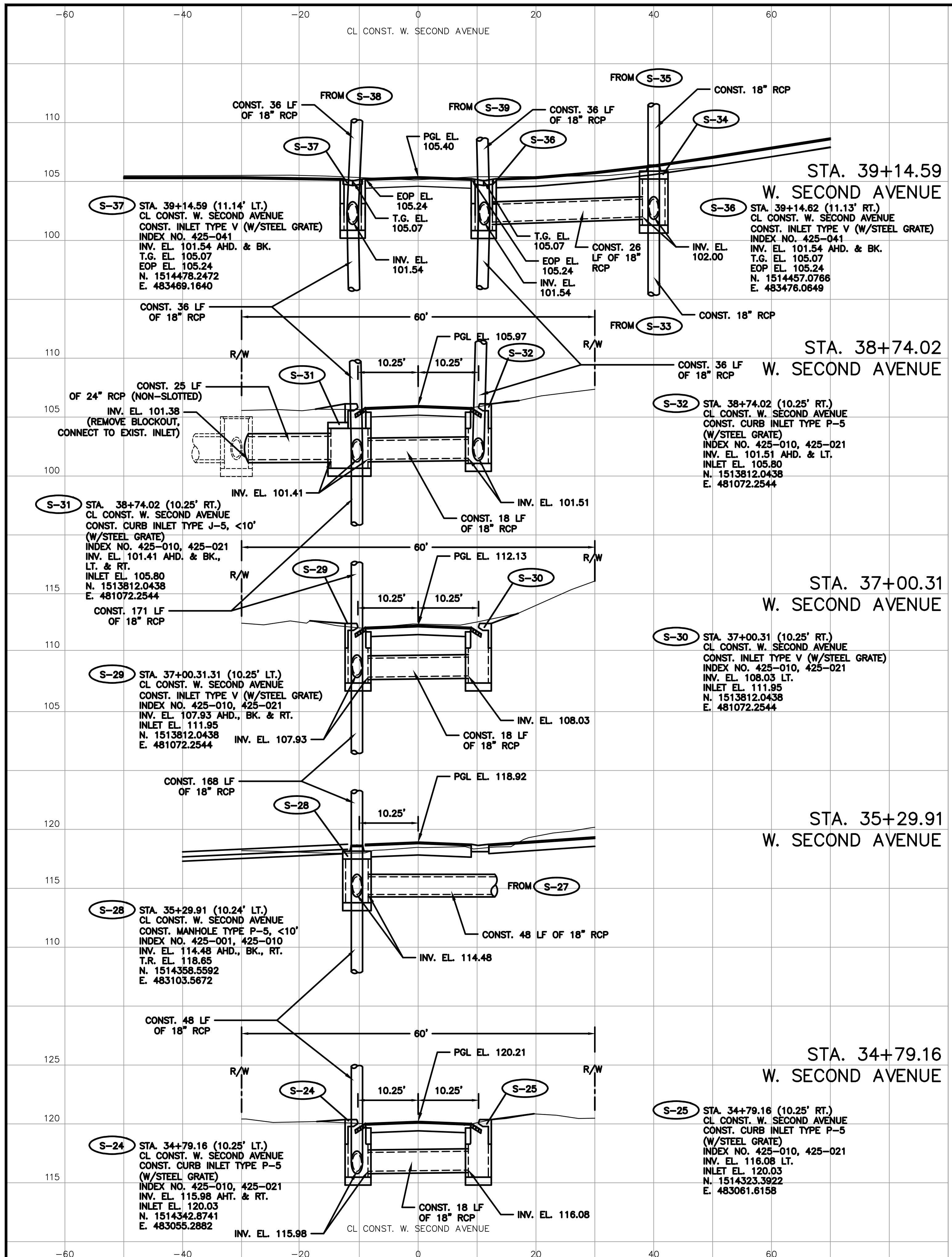
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JOB No. TOW-052.01.000  
FILE NAME: SEE LEFT MARGIN  
ARCHIVE DISC:  
SCALE: HORIZ. = 1"=10'  
VERT. = 1"=5'

**DRAINAGE  
CROSS-SECTIONS  
W. SECOND AVENUE**

DRWG. SHEET 58 OF 86





REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

SIGN OFF	DATE	FIELD:
CLIENT	PEC SURVEYING AND MAPPING, LLC	
PM/CM BC		
PM/CM DM		
PM		
CM		
CHECKED BY: MBG		
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VERT. = 1"=5'

**DRAINAGE CROSS-SECTIONS  
W. SECOND AVENUE**

DRWG. SHEET 59 OF 86



**ORANGE COUNTY UTILITIES DEPARTMENT  
ENGINEERING DIVISION  
9150 CURRY FORD ROAD  
ORLANDO, FLORIDA 32825  
(407) 254-9900**

**WEST SECOND AVENUE  
WATER MAIN IMPROVEMENTS  
MAIN STREET TO CUL-DE-SAC  
WINDERMERE, FLORIDA  
PROJECT NO. 22-1-152**

**MARCH 2023**

**JERRY L. DEMINGS  
ORANGE COUNTY MAYOR**

**NICOLE H. WILSON  
COMMISSIONER, DISTRICT 1**

**CHRISTINE MOORE  
COMMISSIONER DISTRICT 2**

**MAYRA URIBE  
COMMISSIONER DISTRICT 3**



**MARIBEL GOMEZ CORDERO  
COMMISSIONER, DISTRICT 4**

**EMILY BONILLA  
COMMISSIONER, DISTRICT 5**

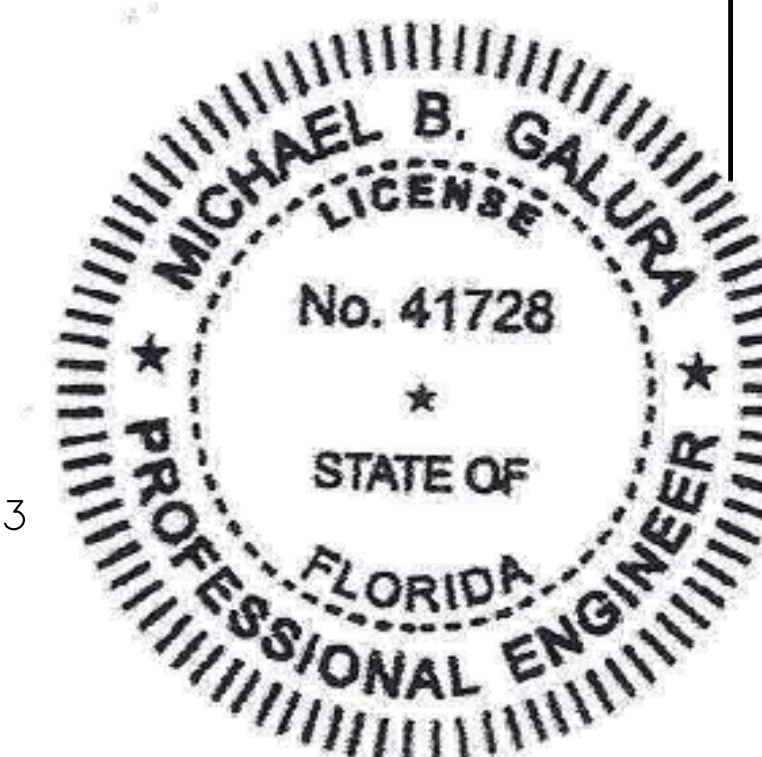
**VICTORIA P. SIPLIN  
COMMISSIONER DISTRICT 6**

**County Administrator: Byron W. Brooks, A.I.C.P.  
Director of Orange County Utilities Department: Ed Torres, M.S., P.E., Leed AP**

**PREPARED BY:**

**MGEC** MICHAEL GALURA  
ENGINEERING  
CONSULTANTS, LLC

3222 Corrine Drive, Suite H  
Orlando, Florida 32803 407/493-9983  
CERTIFICATE OF AUTHORIZATION NO. 29032



APPROVED 09/07/2023

*Alex Castro*

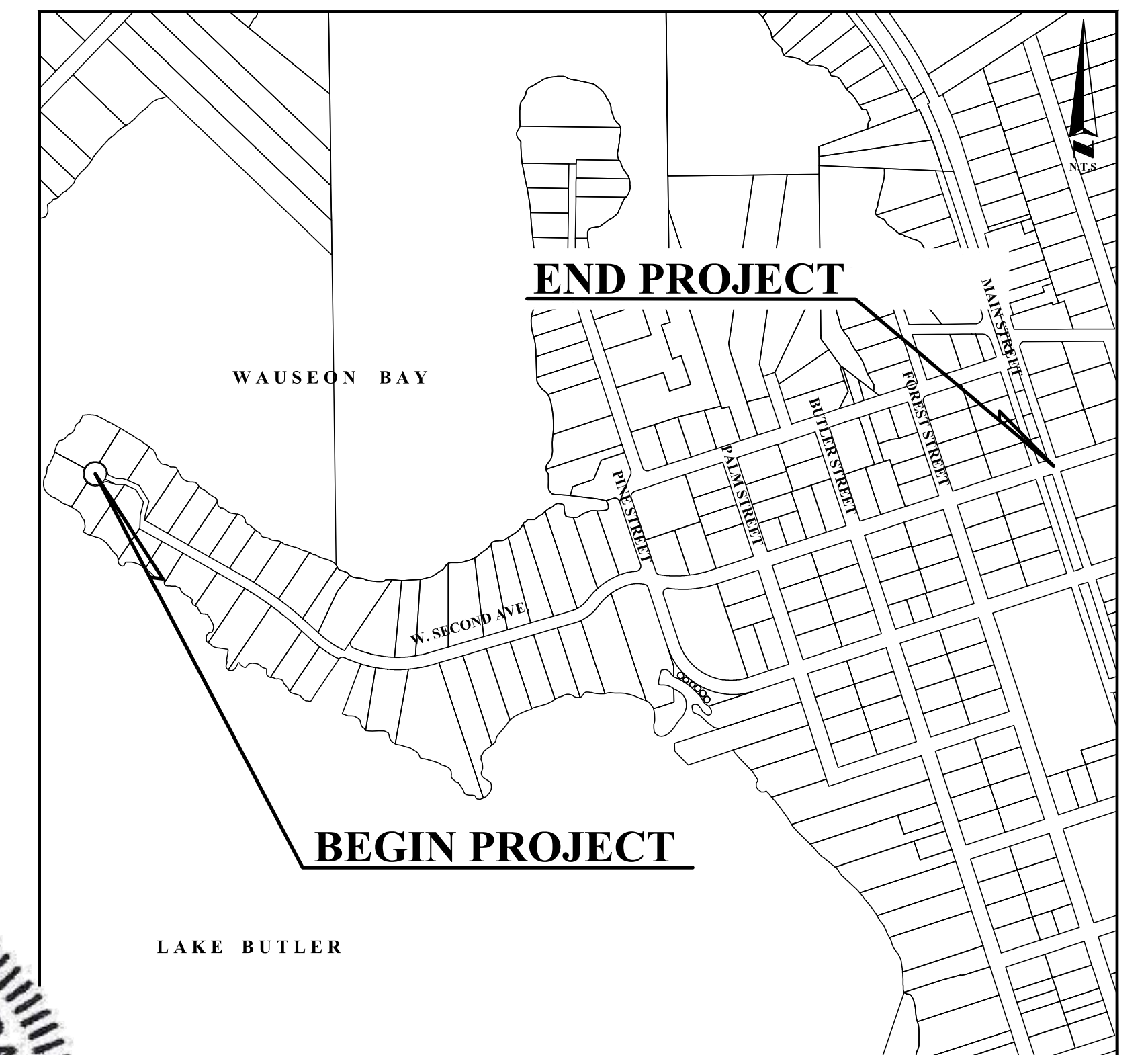
Alexander Castro, P.E.

FOR THE MANAGER,  
ENGINEERING DIVISION  
ORANGE COUNTY UTILITIES DEPARTMENT

THIS APPROVAL IS SUBJECT TO EXISTING REQUIREMENTS  
OF ORANGE COUNTY UTILITIES DIVISION STANDARDS  
AND SPECIFICATIONS.

**PLANS EXPIRE**  
09/07/2024

**LOCATION MAP Scale: 1"=150'**



**INDEX OF DRAWINGS**

SHEET NO.	DESCRIPTION
60	OCU COVER SHEET
61	OCU GENERAL NOTES
62	OCU SUMMARY OF PAY ITEMS
63	OCU PROJECT LAYOUT
64-71	WATER MAIN PLAN AND PROFILE - W. SECOND AVENUE
72	AS-BUILT COORDINATE ATTRIBUTE ASSET TABLES
73-76	STANDARD DETAILS

**OWNER: TOWN OF WINDERMERE  
CONTACT: ROBERT SMITH, TOWN MANAGER  
E-MAIL: [rsmith@town.windermere.fl.us](mailto:rsmith@town.windermere.fl.us)  
PHONE NO.: (407) 876-2563**

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

Digitally signed by Michael B. Galura  
DN: cn=US, e=michgal@ocul.com, o=Michael Galura  
Engineering Consultants, cn=Michael B. Galura  
Location: Orlando, FL  
Reason: I am the author of this document  
Contact Info: (407) 493-9983  
Date: 2023.04.21 11:44:03-04'00'

Michael B. Galura

**100% PLANS  
MARCH 2023**



**GENERAL NOTES**

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

- ALL UTILITIES FACILITIES CONSTRUCTION CONNECTING TO THE ORANGE COUNTY PUBLIC UTILITIES SYSTEM SHALL CONFORM TO THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL, AND BE ONE OF THE APPROVED PRODUCTS LISTED IN APPENDIX 'D' OF THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATION MANUAL (LATEST EDITION).
- THE UTILITIES IMPROVEMENTS AND ADJUSTMENT SHOWN ON THESE DRAWINGS ARE INTENDED TO MAINTAIN THE INTEGRITY OF THE ORANGE COUNTY WATER, WASTEWATER, AND RECLAIMED WATER SYSTEMS. THE DRAWINGS DO NOT INCLUDE WORK PERFORMED ON, OR FOR UTILITY SYSTEMS OWNED BY OTHERS, UNLESS STATED OTHERWISE ON THE DRAWINGS.
- COORDINATION AND COMMUNICATIONS WITH ORANGE COUNTY STAFF SHALL BE MADE THROUGH THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION INSPECTOR.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ORANGE COUNTY UTILITIES DISPATCH (EMERGENCY ONLY) IN THE EVENT OF UTILITY MAIN BREAK OR DAMAGE AT 407-836-2777.
- THE ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION SHALL BE NOTIFIED AT LEAST SEVEN (7) DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY, OR PRIOR TO ANY ACTIVITY REQUIRING THE PRESENCE OF OR AN ACTION BY UTILITIES STAFF SUCH AS SCHEDULING VALVE OPERATION, PRESSURE TESTING, PIPE CONNECTION, PUMP STATION OPERATIONS OR SHUTDOWNS, ETC.
- WATER, WASTEWATER AND RECLAIMED WATER VALVES, PUMP STATIONS OR OTHER UTILITY INFRASTRUCTURE ARE TO BE OPERATED ONLY BY ORANGE COUNTY UTILITIES PERSONNEL. ALL VALVES BEING INSTALLED ARE TO REMAIN CLOSED DURING CONSTRUCTION.
- ORANGE COUNTY UTILITIES DEPARTMENT TELEPHONE NUMBERS:  
407-836-2777 ORANGE COUNTY UTILITIES DISPATCH  
407-254-9798 ORANGE COUNTY UTILITIES CONSTRUCTION DIVISION  
407-254-9680 ORANGE COUNTY UTILITIES WATER RECLAMATION DIVISION  
407-254-9850 ORANGE COUNTY UTILITIES WATER DIVISION  
407-254-9900 ORANGE COUNTY UTILITIES ENGINEERING DIVISION
- SUPPORT AND PROTECT ALL EXISTING UTILITIES. CONTRACTOR SHALL CONTACT UTILITY OWNERS FOR LOCATION OF ALL EXISTING FACILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS AND FOR PROVIDING TEMPORARY SUPPORT FOR THE UTILITY POLES, ANCHOR GUYS, AND ALL OTHER UTILITIES DURING CONSTRUCTION.
- IMMEDIATELY AT ONSET OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES CRITICAL TO COMPLETING THE PROJECT (INCLUDING WATER, SEWER, RECLAIMED WATER, POWER, TELEPHONE, GAS, FIBER OPTIC AND CABLE TV) AND SHALL EVALUATE POTENTIAL CONFLICTS IN A WRITTEN REPORT. ANY CONFLICTS SHALL BE REPORTED TO ENGINEER/OWNER IMMEDIATELY UPON DISCOVERY AND DETAILED IN THE REPORT.
- CONTRACTOR SHALL COORDINATE WITH ALL OTHER UTILITY OWNERS FOR RESOLUTION OF CONFLICTS. CONTRACTOR SHALL HAVE 48 HOURS TO DETERMINE THE RESOLUTION OF ANY UNKNOWN OR UNFORESEEN CONFLICTS. COSTS INCURRED SHALL BE BORNE BY THE UTILITY OWNER AND/OR CONTRACTOR AND NO CLAIMS MAY BE MADE AGAINST ORANGE COUNTY OR THE ENGINEER FOR THESE CONFLICTS. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR THE PERIOD OF TIME TO RESOLVE ANY CONFLICTS.
- ALL MAIN REPAIRS TO BE COMPLETED IMMEDIATELY BY THE CONTRACTOR, AT THE CONTRACTOR'S COST. IF THE MAIN IS NOT REPAIRED IN A TIMELY MANNER, AS DETERMINED BY THE OCU INSPECTOR, ORANGE COUNTY UTILITIES PERSONNEL MAY REPAIR MAIN AND THE CONTRACTOR WILL BE BACK CHARGED FOR REPAIRS.
- USE EXTREME CAUTION WHEN EXCAVATING OR CONNECTING TO ASBESTOS CEMENT PIPE. THE CONTRACTOR WILL BE REQUIRED TO SUPPLY TRUCKS CAPABLE OF PUMPING OUT THE PUMP STATION UPSTREAM FROM BREAKS OR CONNECTION POINT. WHEN CONNECTING TO ASBESTOS CEMENT WATER MAIN OR FORCE MAIN THE CONTRACTOR IS REQUIRED TO REPLACE ANY DAMAGED LENGTHS OF PIPE. THE AMOUNT OF REPLACED PIPE WILL BE DETERMINED BY THE ORANGE COUNTY UTILITIES INSPECTOR.
- ALL EXISTING AND NEW OCU WATER AND SEWER VALVES, VALVE BOXES, AND MANHOLES SHALL BE PROTECTED AND ADJUSTED TO FINISHED GRADE AS SHOWN ON THE DRAWINGS. VALVE AND VALVE BOXES SHALL REMAIN ACCESSIBLE AT ALL TIMES. ANY VALVES THAT MIGHT BE COVERED DURING CONSTRUCTION SHALL BE MARKED WITH A MARKER (GREEN FOR SEWER, BLUE FOR WATER, AND PURPLE FOR RECLAIMED WATER MAIN). A MINIMUM OF FOUR (4) FEET ABOVE GRADE. ALL VALVES UNDER CONSTRUCTION ARE TO REMAIN CLOSED DURING CONSTRUCTION.
- ALL PVC WATER AND SEWER MAIN AND RECLAIMED WATER MAIN SHALL CONFORM TO AWWA C900, DR 18, OR C905, DR 25. ALL DUCTILE IRON WATER MAIN PIPE SHALL CONFORM TO ANSI/AWWA A21.51/C151. ALL PVC PRESSURE PIPE SHALL USE DUCTILE IRON FITTINGS.
- ALL PROPOSED DUCTILE IRON MECHANICAL JOINT FITTINGS, PIPES, OR PIPE RESTRAINTS WITHIN FORTY (40) FEET OF EXISTING GAS MAINS SHALL BE POLYETHYLENE ENCASED.
- ALL BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DRY DENSITY AS MEASURED BY AASHTO T-180 METHOD 'D' TEST (MODIFIED PROCTOR) IN OPEN AREAS AND TO NOT LESS THAN 98% MAXIMUM DRY DENSITY AS MEASURED BY AASHTO T-180 METHOD 'D' TEST (MODIFIED PROCTOR) UNDER ASPHALT OR CONCRETE PAVEMENT AND WITHIN 3-FT OF PAVEMENT. ALL SOIL TESTING TO BE CONDUCTED BY THE COUNTY. THE CONTRACTOR SHALL PROVIDE ALL REASONABLE ASSISTANCE DURING SOIL TESTING.
- PIPE LENGTHS SHOWN ON PLANS ARE APPROXIMATE. ACTUAL LENGTHS ARE TO BE DETERMINED DURING CONSTRUCTION.
- ALL NORTHING AND EASTING COORDINATES ARE BASED ON THE STATE PLANE COORDINATE SYSTEM. STATIONING IS FOR REFERENCE ONLY.
- MAINTAIN EMERGENCY VEHICLE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES.
- IN AREAS WHERE CONSTRUCTION ACTIVITIES RESTRICT NORMAL ACCESS TO PROPERTIES, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALTERNATE ACCESS ROUTES WHICH ARE SUBJECT TO APPROVAL BY THE ENGINEER, AS PART OF THE M.O.T. PLAN.
- LOCAL RESIDENTIAL ACCESS SHALL BE MAINTAINED AT ALL TIMES. PROVIDE WRITTEN NOTIFICATION TO RESIDENTS SEVEN (7) DAYS PRIOR TO IMPLEMENTING ANY ROADWAY OR DRIVEWAY CLOSURE.
- ALL EXCAVATIONS SHALL BE BACK FILLED AT THE END OF EACH WORK DAY.
- ALL PIPES SHALL BE RESTRAINED IN ACCORDANCE WITH THE RESTRAINT TABLES SHOWN ON THE DETAIL SHEETS. IN ADDITION, ALL FITTINGS SHALL BE MECHANICAL JOINT RESTRAINED. NO THRUST BLOCKS SHALL BE PERMITTED. RESTRAIN EXISTING PIPE WHERE REQUIRED IN ACCORDANCE WITH THE RESTRAINT TABLES AND THRUST COLLAR DETAIL.
- PIPE SIZES SHOWN ON PLANS ARE NOMINAL DIAMETER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DE-WATERING REQUIRED DURING CONSTRUCTION AND TO

OBTAIN AND PAY FOR ALL PERMITS REQUIRED FOR THE TEMPORARY DE-WATERING.

- REPLACEMENT WATER SERVICE CONNECTIONS SHALL INCLUDE THE REPLACEMENT OF THE EXISTING WATER METER BOXES WHICH ARE TO BE PROVIDED BY ORANGE COUNTY UTILITIES AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH COUNTY FOR THE SPECIFIC INSTALLATION LOCATION OF METER BOXES. FOR REROUTING WATER SERVICE ON PRIVATE PROPERTY THE CONTRACTOR SHALL RELOCATE EXISTING METERS TO NEW METER BOXES WHERE INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL LONG WATER SERVICE CONNECTION PIPING UNDER PAVEMENT USING TRENCHLESS CONSTRUCTION METHODS. WATER SERVICE CONNECTIONS CROSSING UNDER ANY PART OR ALL OF ROADS SHALL BE INSTALLED IN A PVC CASING PIPE.
- WHERE SHOWN ON THE PLANS, LINE STOPS WILL BE USED TO ISOLATE PORTIONS OF THE EXISTING MAINS. THE ORANGE COUNTY INSPECTOR SHALL BE NOTIFIED 72 HOURS IN ADVANCE OF LINE STOP INSTALLATION.
- ALL CONNECTIONS TO EXISTING MAINS SHALL BE MADE BY THE CONTRACTOR ONLY AFTER THE PROPOSED CONNECTION PROCEDURE AND WORK SCHEDULE HAVE BEEN REVIEWED AND ACCEPTED BY THE OWNER. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO THE OWNER A MINIMUM OF SEVEN (7) WORKING DAYS PRIOR TO SCHEDULING ANY CONNECTIONS. THE REQUEST SHALL REFERENCE THE PROFESSIONAL LAND SURVEYOR CERTIFIED COMPLETED AS-BUILT RECORD DRAWINGS PREVIOUSLY SUBMITTED AND SHALL OUTLINE THE FOLLOWING:
  - POINTS OF CONNECTION, FITTINGS TO BE USED, METHODS OF FLUSHING AND DISINFECTION AND VERIFICATION OF RESTRAINT ON EXISTING PIPE.
  - ESTIMATED CONSTRUCTION TIME FOR THE CONNECTIONS.

THE OWNER SHALL REVIEW THE SUBMITTAL WITHIN FIVE (5) WORKING DAYS AFTER RECEIVING IT AND INFORM THE CONTRACTOR REGARDING APPROVAL OR DENIAL OF THE REQUEST. IF THE OWNER REJECTS THE REQUEST, THE CONTRACTOR SHALL RESUBMIT THE REQUEST MODIFYING IT IN A MANNER ACCEPTABLE TO THE OWNER. ALL CONNECTIONS SHALL ONLY BE MADE ON THE AGREED UPON DATE AND TIME. SHOULD THE CONTRACTOR NOT INITIATE AND COMPLETE THE CONNECTION WORK IN THE AGREED UPON MANNER, HE SHALL BE REQUIRED TO RESCHEDULE THE CONNECTION BY FOLLOWING THE PROCEDURE OUTLINED ABOVE.

THE CONTRACTOR SHALL NOT OPERATE ANY VALVES IN THE SYSTEM.

MAINS SHALL NOT BE PLACED IN SERVICE UNTIL CLEARANCE IS RECEIVED FROM FDEP. DO NOT CONNECT ANY PROPOSED WATER MAIN TO ANY EXISTING WATER MAIN UNLESS CLEARED BY FDEP. AS-BUILT DRAWINGS MUST BE COMPLETED AND SUBMITTED PRIOR TO WATER MAIN CHLORINATION.
- ALL EXISTING VALVES, VALVE BOXES, ARV'S AND VAULTS, AND FIRE HYDRANTS LOCATED ON PIPE DESIGNATED TO BE ABANDONED (OR RETIRED IN PLACE) SHALL BE REMOVED AND DISPOSED OF OR SALVAGED IN ACCORDANCE WITH THE SPECIFICATIONS.
- PROTECT EXISTING IMPROVEMENTS TO THE MAXIMUM EXTENT POSSIBLE. RESTORE ALL EXISTING IMPROVEMENTS AND DISTURBED AREAS TO ORIGINAL CONDITION. PAVEMENT TO BE RESTORED IN ACCORDANCE WITH THE PAVEMENT RESTORATION DETAILS SHOWN ON THE CONSTRUCTION DETAIL SHEETS. ALL DAMAGED MAILBOXES, IRRIGATION SYSTEMS, SOD, LANDSCAPING, FENCING, SIDEWALK, ROADWAY PAVEMENT AND OTHER IMPROVEMENTS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.
- FOR ALL COUNTY ROADS TO BE OPEN CUT, THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC (MOT) PLAN CONFORMING TO ORANGE COUNTY RIGHT-OF-WAY UTILIZATION REGULATIONS TO ORANGE COUNTY PUBLIC WORKS A MINIMUM OF FOURTEEN (14) DAYS PRIOR TO ANY WORK WITHIN COUNTY RIGHT-OF-WAY. A COPY OF THIS PLAN SHALL ALSO BE SUBMITTED TO THE ENGINEER AND UTILITY COUNTY INSPECTOR. NOTIFY THE COUNTY ENGINEER 48 HOURS PRIOR TO ANY OPEN CUT OF ROADWAYS WITHIN THE COUNTY RIGHT-OF-WAY. TWO WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES DURING THE COURSE OF CONSTRUCTION. MAINTAIN A SET OF COUNTY APPROVED CONSTRUCTION PLANS AND MOT PLANS AT THE CONSTRUCTION SITE AT ALL TIMES WHEN WORKING WITHIN THE COUNTY RIGHT-OF-WAY.
- BENCHMARK LOCATIONS AND ELEVATIONS ARE SHOWN IN THE PLANS AS REPRESENTED BY THE SURVEYOR AT THE TIME OF SURVEY. CONTRACTOR SHALL VERIFY ITS CORRECTNESS AT THE TIME OF CONSTRUCTION AND INSTALL HIS OWN TEMPORARY BENCHMARKS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OCU UTILITIES INSPECTOR.
- NO VALVE BOXES, METERS, PORTIONS OF MANHOLES, OR OTHER APPURTENANCES OF ANY KIND RELATING TO ANY UNDERGROUND UTILITIES SHALL BE LOCATED IN ANY PORTION OF A CURB-AND-GUTTER SECTION. CONTRACTOR SHALL ADVISE ENGINEER IMMEDIATELY UPON DISCOVERY OF A POTENTIAL CONFLICT.
- WHERE REQUIRED, AT NO ADDITIONAL COST TO THE COUNTY, THE CONTRACTOR SHALL USE TEMPORARY SHEETING OR TRENCH BOXES TO MINIMIZE THE SIZE OF EXCAVATIONS AND PROTECT EXISTING ROADWAYS, UTILITIES AND OTHER FACILITIES OR AS NEEDED TO REMAIN WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTOR TO COMPLY WITH OSHA TRENCH SAFETY REQUIREMENTS AT ALL TIMES.
- ALL EXISTING MAINS SHALL REMAIN IN SERVICE UNTIL THE PROPOSED MAIN(S) ARE ACCEPTED FOR SERVICE AND ALL SERVICES ARE TRANSFERRED TO THE MAIN(S).
- CONTRACTOR SHALL APPLY FOR AND SECURE ALL NECESSARY PERMITS FROM STATE, COUNTY, AND LOCAL MUNICIPALITIES. PERMITS SHALL INCLUDE, BUT NOT BE LIMITED TO, RIGHT OF WAY USE, CONSTRUCTION, BUSINESS LICENSE, AND DEWATERING.
- FOR PVC PIPE, NO HORIZONTAL/VERTICAL PIPE DEFLECTION WILL BE ALLOWED. CONTRACTOR SHALL USE FITTINGS TO OBTAIN THE REQUIRED CLEARANCES. ON DUCTILE IRON PIPE, CONTRACTOR SHALL NOT EXCEED 75% OF THE MANUFACTURES RECOMMENDATION FOR PIPE DEFLECTION. OTHERWISE USE FITTINGS TO OBTAIN REQUIRED CLEARANCES. ALL FITTINGS SHALL BE ADDED TO THE COORDINATE ASSET ATTRIBUTE TABLE.
- THE DISPOSAL OF ANY EXCESS EARTH WORK MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SALVAGE AND/OR DISPOSAL OF ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE SPECIFICATIONS AND AS DIRECTED BY THE ORANGE COUNTY UTILITIES INSPECTOR.
- EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN CONSTRUCTION AND ARE THE MINIMUM REQUIRED. CONTRACTOR SHALL FURNISH ADDITIONAL CONTROLS AS NEEDED AT NO ADDITIONAL COST. MATERIALS FROM WORK ON THIS PROJECT SHALL BE CONTAINED AND NOT ALLOWED TO COLLECT ON ANY OFF PERIMETER AREAS OR IN WATERWAYS. SILK SCREENS, HAY BALES, AND TURBIDITY BARRIERS MUST REMAIN IN PLACE AND IN GOOD CONDITION AT ALL LOCATIONS IN PLANS OR AS REQUIRED UNTIL THE CONTRACT IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION IS ESTABLISHED. MEASURES SHOWN ON THE PLANS ARE MINIMUM REQUIRED, AND THE CONTRACTOR SHALL ENSURE THAT THERE IS NO DIRECT OR INDIRECT DISCHARGE OF CONSTRUCTION MATERIALS IN TURBID WATERS TO OFF SITE AREAS OR WATERWAYS.
- THE PROJECT SHALL BE CONSTRUCTED SEQUENTIALLY IN THREE GENERAL CONSTRUCTION PHASES AS DETAILED ON SHEET G-4 AND AS EXPLAINED IN SPECIFICATION SECTION 01010 - SUMMARY OF WORK.
- REFER TO OUC'S GENERAL NOTES, FIGURE GN, APPENDIX A, OF THE OCU STANDARDS AND SPECIFICATIONS MANUAL (2021) FOR SUPPLEMENTAL GENERAL NOTES (SEE THIS SHEET).

**SPILL NOTES**

- THE CONTRACTOR SHALL PROVIDE TANKERS AND SIGNED DOCUMENTS ACKNOWLEDGING THE UNDERSTANDING OF THE ORANGE COUNTY UTILITY **"EMERGENCY WASTEWATER SPILL AND WATER MAIN BREAK PROCEDURES"**, IN THE PRE-CONSTRUCTION PACKET FOR THE MEETING.
  - THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ON-SITE DURING THE LIFE OF THE PROJECT, A WEATHER PROOF ENCLOSURE CONTAINING A READILY ACCESSIBLE LIST OF EMERGENCY CONTACTS AND PHONE NUMBERS.
- EMERGENCY WASTEWATER SPILL, WATER MAIN, RECLAIMED WATER MAIN BREAKER PROCEDURES DAMAGE NOTIFICATION:
- THE ORANGE COUNTY UTILITY DISPATCH OPERATOR (407-836-2777) SHALL BE NOTIFIED IMMEDIATELY IN THE EVENT OF A FORCE MAIN, GRAVITY SEWER, OR RECLAIMED WATER MAIN BREAK OR DAMAGE.
- IMMEDIATE REPAIR:
- ALL DAMAGE TO ORANGE COUNTY'S MAIN SHALL BE REPAIRED IMMEDIATELY WITHOUT DELAY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. IF THE REPAIR IS NOT MADE IN A TIMELY AND APPROVED MANNER, AS DETERMINED BY THE ORANGE COUNTY UTILITIES INSPECTOR, ORANGE COUNTY MAY PERFORM THE REPAIRS AND THE CONTRACTOR WILL BE CHARGED FOR THE REPAIRS.

APPENDIX A	STANDARD DRAWINGS
<b>OCU GENERAL NOTES</b>	
<ol style="list-style-type: none"> <li>THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF INCLUDING, BUT NOT LIMITED TO: WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS, RECLAIMED WATER MAINS, ELECTRIC, GAS, CABLE TV, TELECOMMUNICATIONS, STORM WATER, FIBER OPTIC AND OTHER UNDERGROUND FACILITIES. MAIN LOCATIONS SHOWN ON PLANS MAY NOT BE EXACT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.</li> <li>SHOULD A PIPE EMERGENCY OCCUR, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OCU DISPATCH OPERATOR (407-836-2777) AND THE OCU INSPECTOR.</li> <li>THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION INSPECTION SECTION, FIELD SERVICES DIVISION AT LEAST 10 CALENDAR DAYS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION PROJECT BY CALLING (407) 254-9798.</li> <li>THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION INSPECTOR IN ACCORDANCE WITH TABLE 4110-1 "UTILITIES" SCHEDULE OF NOTIFICATIONS IN THIS MANUAL.</li> <li>THE MATERIALS, PRODUCTS, AND CONSTRUCTION OF ALL UTILITIES CONNECTING TO THE OCU SYSTEM SHALL BE IN CONFORMANCE WITH THE STANDARDS, CONSTRUCTION SPECIFICATIONS, AND APPENDIX D IN THIS MANUAL.</li> <li>ALL EXISTING UTILITIES INCLUDING BUT NOT LIMITED TO: WATER MAINS, FORCE MAINS, RECLAIMED WATER MAIN, SANITARY GRAVITY PIPES, STORM WATER PIPES, ELECTRIC, TELEPHONE, GAS, POLES AND STAYS, CABLE TV AND OTHER UTILITY FACILITIES WITHIN THE LIMITS OF THE PROJECT WILL BE SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.</li> <li>THE CONTRACTOR SHALL ADJUST ALL EXISTING OCU MAINS AND FACILITIES IN CONFLICT WITH NEW GRADE, NEW OR ALTERED ROADWAYS, SIDEWALKS, DRIVEWAYS, CURBS, 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. ALL ADJUSTMENTS SHALL BE MADE TO CURRENT STANDARDS.</li> <li>ONLY OCU PERSONNEL SHALL OPERATE EXISTING OCU WATER, WASTEWATER, AND RECLAIMED WATER VALVES. THE CONTRACTOR IS RESPONSIBLE FOR OPERATING ANY NEWLY INSTALLED VALVE THAT HAS NOT BEEN CLEARED FOR USAGE BY FDEP AND OCU. 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.</li> <li>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 AND WRITTEN NOTICE SHALL BE GIVEN TO AFFECTED CUSTOMERS AT LEAST 4 WORKING DAYS IN ADVANCE.</li> <li>THE CONTRACTOR SHALL PROVIDE FOR BYPASSING AND / OR HAULING OF WASTEWATER DURING APPROVED INTERRUPTIONS OF WASTEWATER FLOWS AND CONNECTIONS. THE CONTRACTOR SHALL SUBMIT A BYPASS OR HAUL PLAN, REVIEWED AND APPROVED BY A PROFESSIONAL ENGINEER TO OCU DEVELOPMENT ENGINEERING AND TO THE INSPECTOR FOR APPROVAL PRIOR TO IMPLEMENTATION BY CONTRACTOR.</li> <li>ALL VALVES INSTALLED AS PART OF THIS CONSTRUCTION PROJECT SHALL REMAIN CLOSED DURING CONSTRUCTION. KEEP VALVES ON ALL WET TAPS CLOSED UNTIL CLEARED BY FDEP. DO NOT CONNECT NEWLY CONSTRUCTED WATER MAINS TO ANY EXISTING WATER MAINS UNLESS CLEARED BY FDEP AND OCU.</li> <li>THE CONTRACTOR SHALL PROVIDE A JUMPER ASSEMBLY WITH AN APPROVED 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 FORCE MAIN SHALL ALSO BE EQUIPPED WITH AN APPROVED BACKFLOW PREVENTER.</li> <li>FOR PVC PIPE, NO JOINT DEFLECTION OR PIPE BENDING IS ALLOWED. ALIGNMENT CHANGE SHALL BE MADE ONLY WITH FITTINGS.</li> <li>FOR DIP PIPE, 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.</li> <li>FOR APPROVED PVC OR HDPE PIPE USED IN A HORIZONTAL DIRECTIONAL DRILL INSTALLATION, THE CURVATURE AND/OR DEFLECTION SHALL NOT EXCEED THE PARAMETERS ESTABLISHED IN THIS MANUAL.</li> <li>ALL DAMAGE TO ORANGE COUNTY INFRASTRUCTURE, PIPELINES, AND ASSETS SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE WITH AN APPROVED METHOD BY THE COUNTY. IF THE REPAIR IS NOT PERFORMED IN A TIMELY MANNER, AS DETERMINED BY THE ORANGE COUNTY UTILITY INSPECTOR, ORANGE COUNTY MAY PERFORM REPAIRS AND THE CONTRACTOR WILL BE CHARGED FOR ALL EXPENSES ASSOCIATED WITH THE REPAIR.</li> <li>THE CONTRACTOR SHALL BE LIABLE FOR ANY AND ALL SANITARY SEWER OVERFLOWS (SSO) ASSOCIATED WITH THE WORK, REGARDLESS OF FAULT. THE CONTRACTOR WILL BE ASSESSED PENALTIES FOR ANY AND EACH SSO AS SPECIFIED IN SECTION 3110, GENERAL CONSTRUCTION REQUIREMENTS.</li> </ol>	
<b>ORANGE COUNTY UTILITIES STANDARDS &amp; CONSTRUCTION SPECIFICATIONS MANUAL</b>	<b>FIGURE GN</b> 10/10/2021

APPROVED 09/07/2023  
*Alex Castro*  
Alexander Castro, P.E.

FOR THE MANAGER,  
ENGINEERING DIVISION  
ORANGE COUNTY UTILITIES DEPARTMENT  
THIS APPROVAL IS SUBJECT TO EXISTING REQUIREMENTS OF ORANGE COUNTY UTILITIES DIVISION STANDARDS AND SPECIFICATIONS.

REV.	DATE	DESCRIPTION	APP'D BY	SIGN OFF	DATE
				CLIENT	
				PM/CM BC	
				PM/CM DM	
				PM	
				CM	
				OTHERS	

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
3222 Corrine Drive, Suite H  
Orlando, Florida 32803 407/493-9983  
CERTIFICATE OF AUTHORIZATION NO. 29032



**ORANGE COUNTY UTILITIES DEPARTMENT**  
9150 CURRY FORD ROAD  
ORLANDO, FLORIDA 32825  
(407) 254-9900

JOB No. TOW-052.01.000	<b>GENERAL NOTES</b>
FILE NAME: SEE LEFT MARGIN	
ARCHIVE DISC:	
SCALE: NONE	DRWG. SHEET 61 OF 86



SUMMARY OF OCU PAY ITEMS

PAY ITEM NO.	DESCRIPTION	UNIT	QUANTITY TOTAL	
			PLAN	FINAL
1050-11-221	F&I WATER MAIN, 4" RESTRAINED JOINT, COMPLETE INCLUDING FITTINGS	LF	440	
1050-11-423	F&I WATER MAIN, 8" DUCTILE IRON, COMPLETE INCLUDING FITTINGS	LF	2,341	
1050-16-221	REMOVE AND DISPOSE OF EXISTING 4" WATER MAIN	LF	368	
1050-16-222	REMOVE AND DISPOSE OF EXISTING 6" WATER MAIN	LF	1,859	
1050-16-223	REMOVE AND DISPOSE OF EXISTING 8" WATER MAIN	LF	466	
1051-4	REPLACE 1" WATER SERVICE LATERAL, SHORT SIDE	EA	22	
1051-5	REPLACE 1" WATER SERVICE LATERAL, LONG SIDE	EA	19	
1080-24-104	F&I GATE VALVE ASSEMBLY, 4", COMPLETE	EA	2	
1080-24-106	F&I GATE VALVE ASSEMBLY, 6", COMPLETE	EA	3	
1080-24-108	F&I GATE VALVE ASSEMBLY, 8", COMPLETE	EA	38	
1080-25-104	F&I 4" BLOWOFF ASSEMBLY, COMPLETE (PERMANENT)	EA	1	
1080-25-108	F&I 8" BLOWOFF ASSEMBLY, COMPLETE (TEMPORARY)	EA	9	
1080-25-600	BLOWOFF ASSEMBLY, REMOVE	EA	1	
1080-26-108	F&I AIR RELEASE VALVE ASSEMBLY, 8", COMPLETE	EA	3	
1080-27-104	UTILITY FIXTURE, LINE STOP ASSEMBLY, FURNISH AND INSTALL, 4"	EA	1	
1080-27-106	UTILITY FIXTURE, LINE STOP ASSEMBLY, FURNISH AND INSTALL, 6"	EA	2	
1080-27-108	UTILITY FIXTURE, LINE STOP ASSEMBLY, FURNISH AND INSTALL, 8"	EA	10	
1080-28-104	CUT-IN CONNECTION TO EXISTING WM, 4"	EA	1	
1080-28-108	CUT-IN CONNECTION TO EXISTING WM, 8"	EA	10	
1644-116-08	FIRE HYDRANT ASSEMBLY, STANDARD, F&I, 6"	EA	3	
1644-900	FIRE HYDRANT, REMOVE	EA	3	

OCU PAY ITEM NOTES

- 1050-11-221 4" DUCTILE IRON WATER MAINS SHALL BE ACCORDING TO THE ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION). IN ADDITION, THIS PAY ITEM INCLUDES ALL DUCTILE IRON PIPE FITTING REQUIRED PER PLAN INCLUDING BENDS, TEES, CROSSES, REDUCERS, SLEEVES, CAPS PLUGS AND OFFSETS. THE COST FOR DISINFECTION AND SAMPLING SHALL BE INCLUDED IN THE COST FOR THIS PAY ITEM.
- 1050-11-423 8" PIPE USED IN THE OCU WATER DISTRIBUTION SYSTEM SHALL BE ACCORDING TO THE ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION). THIS PAY ITEM INCLUDES ALL DUCTILE IRON PIPE FITTING REQUIRED PER PLAN INCLUDING BENDS, TEES, CROSSES, REDUCERS, SLEEVES, CAPS PLUGS, BLIND FLANGES AND OFFSETS. THE COST FOR DISINFECTION AND SAMPLING SHALL BE INCLUDED IN THE COST FOR THIS PAY ITEM.
- 1050-16- THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS TO CUT AND REMOVE THE PIPELINE AND APPURTENANCES SUCH AS VALVES, FITTINGS, AND OTHER MATERIALS AND REMOVE VALVE BOXES AS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE CUTTING AND PLUGGING OF ABANDONED PIPE SHALL INCLUDE BUT MAY NOT BE LIMITED TO: 1) EXCAVATION OF THE WORK PIT; 2) REMOVAL OF PIPE OR APPURTENANCES TO ALLOW THE INSTALLATION OF CAPS OR PLUGS ON OPEN ENDS OF THE ABANDONED PIPE; 3) FURNISHING AND INSTALLING GROUT TO PLUG ANY ABANDONED OPEN END OF PIPE; 4) FURNISHING AND INSTALLING A CAP OR PLUG AND ADEQUATE RESTRAINT TO WITHSTAND A WORKING PRESSURE OF 150 PSI ON ALL IN-SERVICE OPEN ENDS OF PIPE; 5) BACKFILLING AND COMPACTING THE WORK PIT; 6) PROVISION OF LINE STOPS (AS NEEDED); AND 7) CLEANING UP AND RESTORING THE DISTURBED AREAS, INCLUDING THE RE-GRADING OF THE TERRAIN. ALL WORK SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION).
- 1051-4/-5 THIS PAY ITEM INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT FOR THE INSTALLATION OF NEW 1" SHORT AND LONG WATER METER SERVICES, BOTH WITH AND WITHOUT IRRIGATION METERS. SHORT WATER METER SERVICE IS DEFINED AS A SERVICE LINE WITH WATER METER AND BOX INSTALLED ON THE SAME SIDE OF THE ROAD AS THE MAIN. LONG WATER METER SERVICE IS DEFINED AS A SERVICE LINE WITH A WATER METER AND BOX INSTALLED ON THE OPPOSITE SIDE OF THE ROAD AS THE MAIN AND SHALL BE FURNISHED BY OCU. WATER METER SERVICE INSTALLATION SHALL INCLUDE BUT NOT BE LIMITED TO: 1) ALL NECESSARY EXCAVATIONS; 2) MAKING THE APPROPRIATE SIZE TAP; 3) BORE AND JACK OR PUSH-PULL PIPE OR TUBING UNDER DRIVEWAYS, SIDEWALKS AN OTHER PAVED AREAS THAT ARE TO REMAIN UNDISTURBED AND WHEN APPLICABLE AND APPROVED BY THE ENGINEER; 4) FURNISHING AND INSTALLING THE APPROPRIATE SIZE AND TYPE OF CORPORATION STOP, COPPER TUBING AND REQUIRED SERVICE FITTINGS, CURB COCK, METER BOX AND METER COUPLING PER THE OCU TECHNICAL SPECIFICATIONS; 5) INSTALLATION OF THE APPROPRIATELY SIZED WATER METER; 6) BACKFILLING AND COMPACTING OF ALL EXCAVATIONS. THE COST FOR THE CONTRACTOR TO INSTALL AND REPLACE THE TEMPORARY 1" POLY SERVICE LINES TO MAINTAIN EXISTING SERVICE SHALL BE INCLUDED IN THE COST FOR THE NEW 1" COPPER SERVICES. ALL WORK SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION).
- 1080-11-205 THIS PAY ITEM INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT FOR THE INSTALLATION OF GATE VALVES, WET TAPS AND BLOW-OFF INSTALLATION AND SHALL INCLUDE BUT NOT BE LIMITED TO: 1) ALL NECESSARY EXCAVATIONS; 2) MAINTAINING THE EXCAVATION, WHICH SHALL INCLUDE DEWATERING, BRACING AND SHEETING (IF REQUIRED); 3) MAKING ALL NECESSARY TAPS, WHICH ARE REQUIRED TO AFFECT THE TIE-IN CONDITION; 4) FURNISHING AND INSTALLING ALL NECESSARY MATERIAL REQUIRED TO CONSTRUCT THE TIE-IN CONNECTIONS; AND 5) BACKFILLING AND COMPACTING OF ALL EXCAVATIONS AND RESTORING THE DISTURBED AREAS. ALL VALVES AND TAPS SHALL MEET THE MOST CURRENT ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION).
- 1080-27- THIS PAY ITEM INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT FOR THE INSTALLATION OF LINE STOPS AND SHALL MEET THE MOST CURRENT ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION).
- 1080-28- THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS TO CUT AND CONNECT THE NEW PIPELINE TO THE EXISTING PIPELINE AS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE CUTTING AND REMOVAL AND DISPOSAL OF THE EXISTING PIPE SHALL BE PAID FOR IN OTHER ITEMS OF THIS DOCUMENT. THE PIPE REMOVAL SHALL INCLUDE BUT NOT BE LIMITED TO: 1) ALL NECESSARY EXCAVATIONS; 2) REMOVAL OF PIPE TO ALLOW INSTALLATION OF CONNECTION; 3) BACKFILLING AND COMPACTING THE WORK PIT; AND 4) CLEANING UP AND RESTORING THE JOB SITE, INCLUDING ANY RE-GRADING OF THE ADJACENT TERRAIN. ALL WORK SHALL BE IN ACCORDANCE WITH THE ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION).
- 1644-116-08 THIS PAY ITEM SHALL PROVIDE ALL LABOR, EQUIPMENT AND MATERIALS TO INSTALL A NEW FIRE HYDRANT ASSEMBLY AS DESIGNATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. ALL WORK SHALL BE IN ACCORDANCE WITH ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION).
- 1644-900 THIS PAY ITEM INCLUDES ALL LABOR, EQUIPMENT AND MATERIALS TO CUT AND REMOVE PIPELINE AND APPURTENANCES SUCH AS VALVES, FITTING AND OTHER MATERIALS. THE REMOVAL OF THE ABANDONED PIPE SHALL INCLUDE BUT NOT BE LIMITED TO: 1) EXCAVATION OF THE WORK PIT; 2) REMOVING OF PIPE AND/OR APPURTENANCES TO ALLOW INSTALLATION OF CAPS AND PLUGS ON OPEN ENDS OF ABANDONED PIPE; 3) FURNISHING AND INSTALLING GROUT TO PLUG ANY ABANDONED OPEN END OF PIPE (IF NEEDED); 4) FURNISHING AND INSTALLING A CAP OR PLUG AND ADEQUATE RESTRAINT TO WITHSTAND A WORKING PRESSURE OF 150 PSI, ON ALL IN-SERVICE OPEN ENDS OF PIPE; 5) BACKFILLING AND COMPACTING THE WORK PIT; 6) AND CLEANING UP AND RESTORING THE JOB SITE, WHICH SHALL INCLUDE THE RE-GRADING OF THE DISTURBED AREAS.

REFERENCE: ORANGE COUNTY UTILITIES (OCU) STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (LATEST EDITION).

APPROVED 09/07/2023

*Alex Castro*  
Alexander Castro, P.E.

FOR THE MANAGER,  
ENGINEERING DIVISION  
ORANGE COUNTY UTILITIES DEPARTMENT

THIS APPROVAL IS SUBJECT TO EXISTING REQUIREMENTS  
OF ORANGE COUNTY UTILITIES DIVISION STANDARDS  
AND SPECIFICATIONS.

REV.	DATE	DESCRIPTION	APP'D BY	SIGN OFF	DATE	FIELD:
				CLIENT		PEC SURVEYING AND MAPPING, LLC
				PM/CM BC		DRAWN BY: CADD
				PM/CM DM		DESIGNED BY: MBG
				PM		CHECKED BY: MBG
				CM		DATE: MARCH 2023
				OTHERS		

**MGEC** MICHAEL GALURA  
ENGINEERING  
CONSULTANTS, LLC  
3222 Corrine Drive, Suite H  
Orlando, Florida 32803 407/493-9983  
CERTIFICATE OF AUTHORIZATION NO. 29032

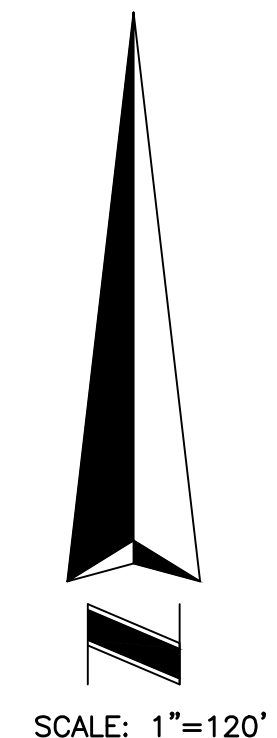


**ORANGE COUNTY**  
UTILITIES DEPARTMENT  
9150 CURRY FORD ROAD  
ORLANDO, FLORIDA 32825  
(407) 254-9900

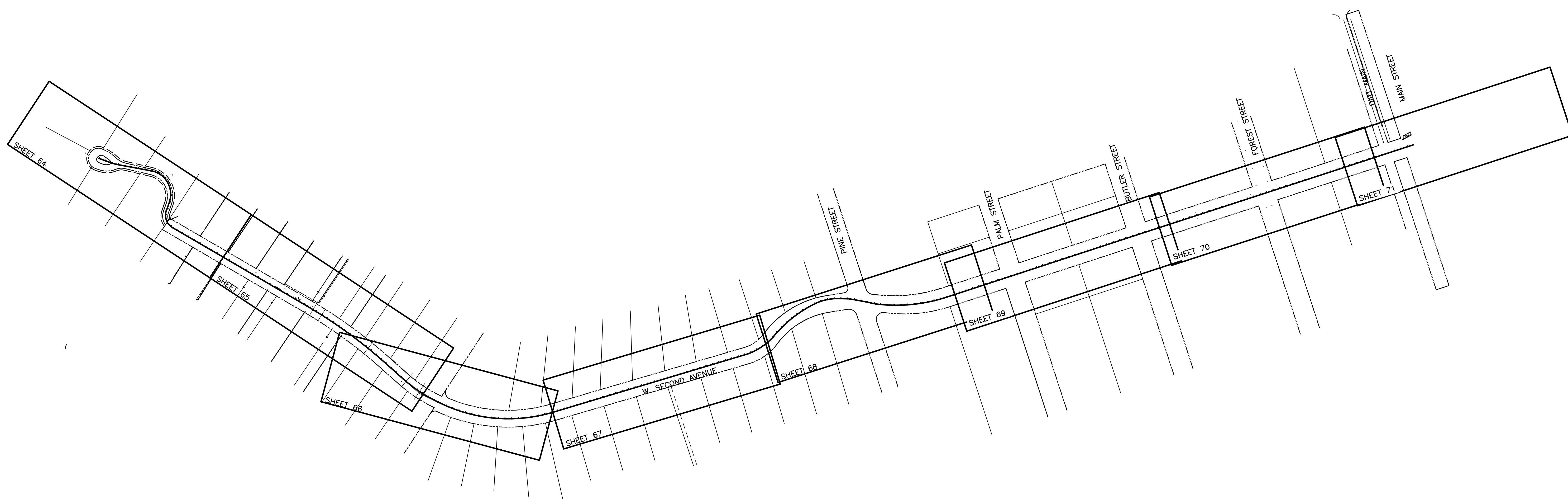
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SCALE: NONE

SUMMARY OF PAY ITEMS  
OCU WATER UTILITIES





SCALE: 1"=120'



APPROVED 09/07/2023  
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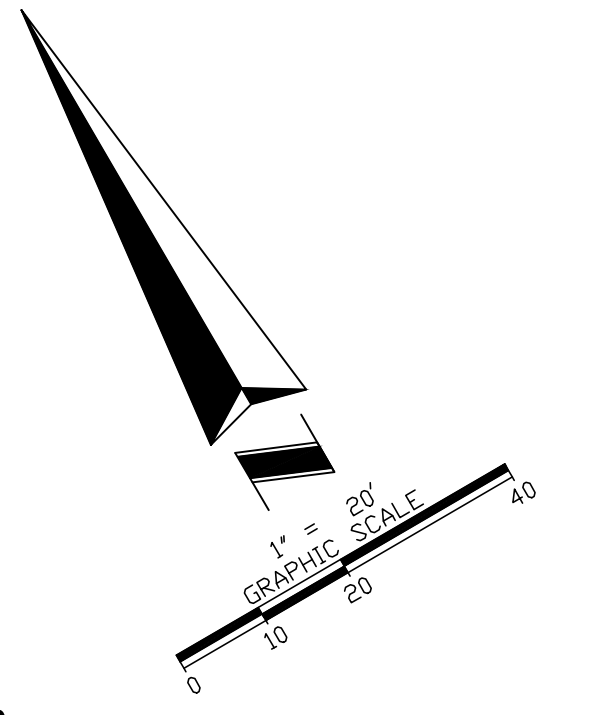
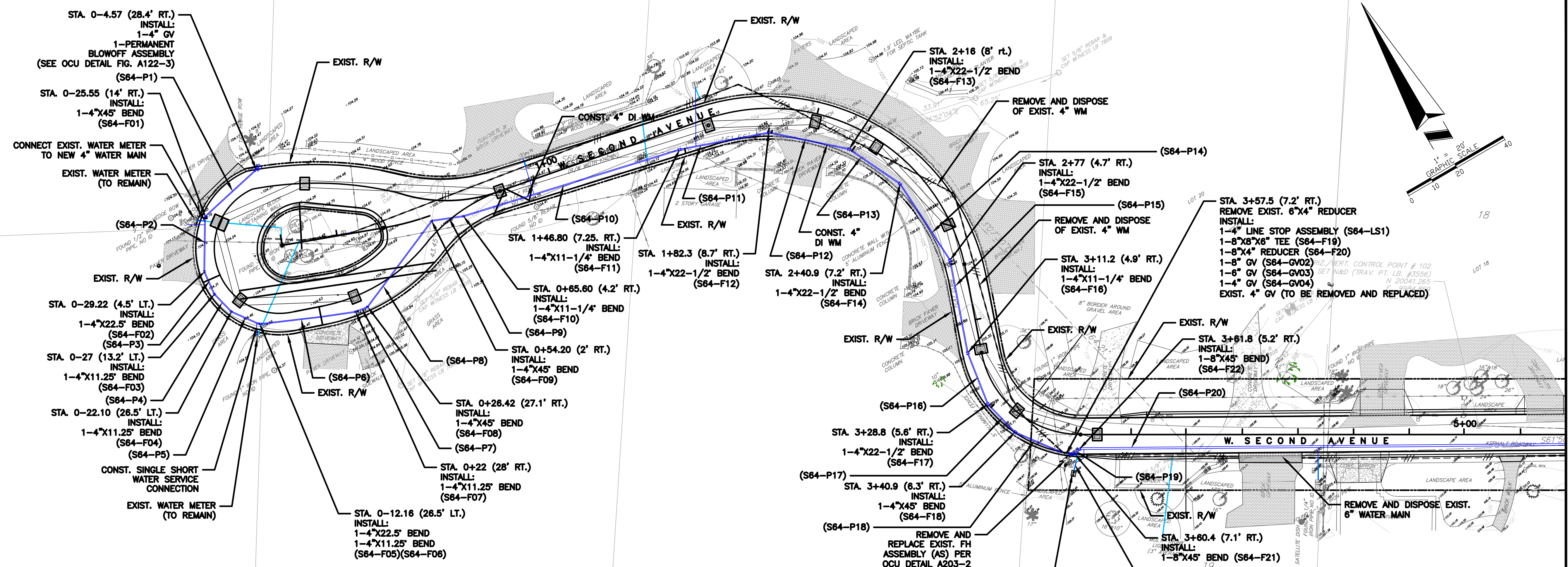
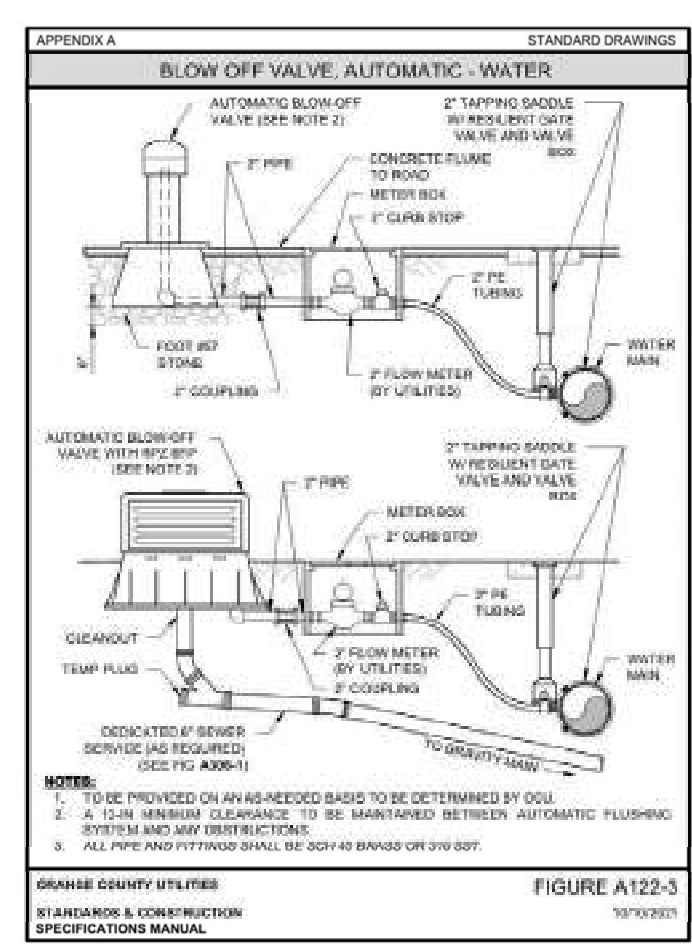
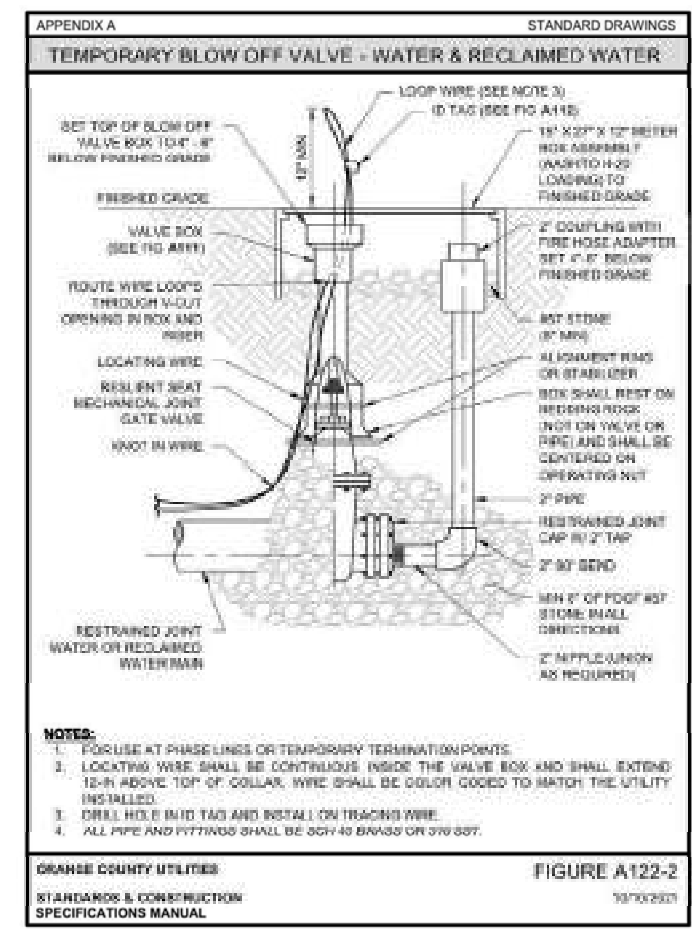
**ORANGE COUNTY**  
 UTILITIES DEPARTMENT  
 9150 CURRY FORD ROAD  
 ORLANDO, FLORIDA 32825  
 (407) 254-9900

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=40'

**UTILITY PLAN  
 PROJECT LAYOUT**

DRWG. SHEET 63 OF 86





**NOTE:**

ALL UTILITIES (INCLUDING PUMP STATIONS, IF APPLICABLE), LOCATED OUTSIDE PUBLIC RIGHTS-OF-WAYS AND PUBLIC EASEMENTS SHALL BE PRIVATELY OWNED AND MAINTAINED. MAINTAIN A MINIMUM OF 3- FEET OF COVER OVER ALL PROPOSED WATER, WASTEWATER AND RECLAIMED WATER LINES. PLEASE REFER TO THE FOLLOWING SECTIONS FROM THE 2021 ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (2021):

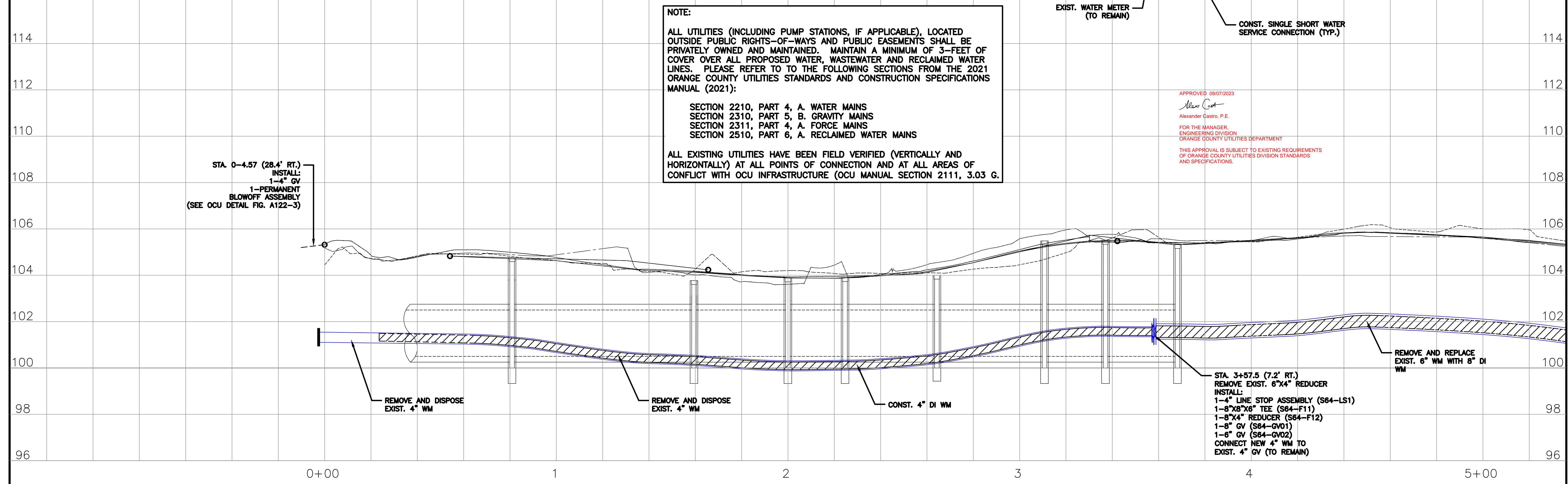
SECTION 2210, PART 4, A. WATER MAINS  
 SECTION 2310, PART 5, B. GRAVITY MAINS  
 SECTION 2311, PART 4, A. FORCE MAINS  
 SECTION 2510, PART 6, A. RECLAIMED WATER MAINS

ALL EXISTING UTILITIES HAVE BEEN FIELD VERIFIED (VERTICALLY AND HORIZONTALLY) AT ALL POINTS OF CONNECTION AND AT ALL AREAS OF CONFLICT WITH OCU INFRASTRUCTURE (OCU MANUAL SECTION 2111, 3.03 G.

APPROVED 09/07/2023

*Alexander Castro*  
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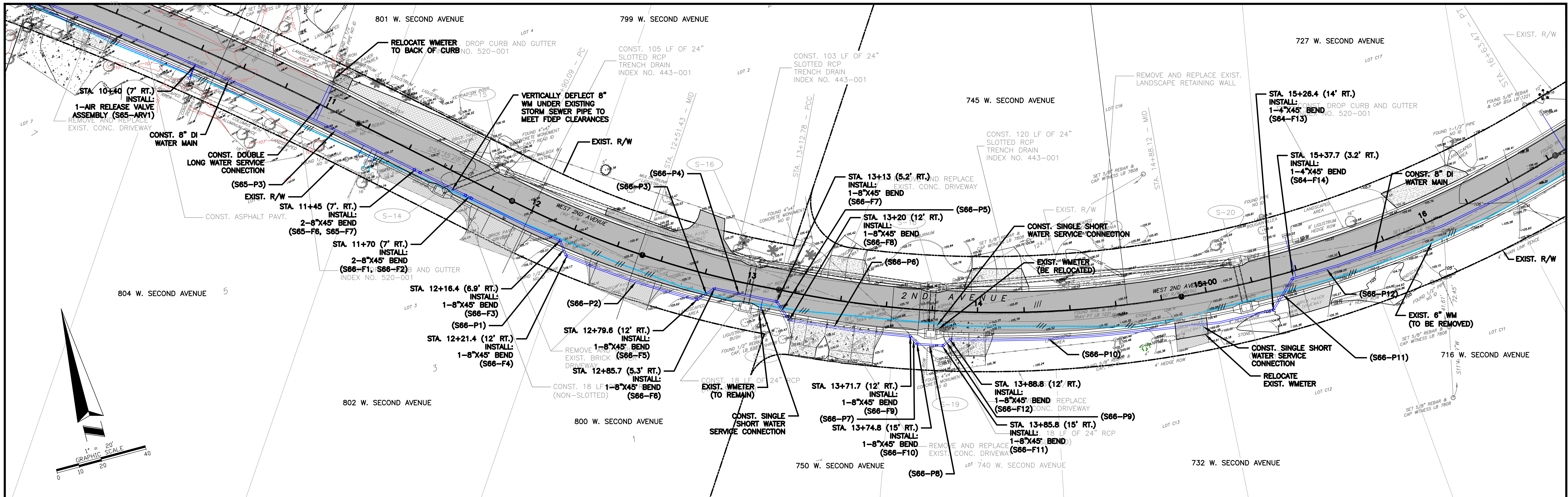


REV.	DATE	DESCRIPTION	APP'D BY	OTHERS	SIGN OFF	DATE	FIELD: PEC SURVEYING AND MAPPING, LLC	 <b>MGECE</b> MICHAEL GALURA ENGINEERING CONSULTANTS, LLC 3222 Corrine Drive, Suite H Orlando, Florida 32803 CERTIFICATE OF AUTHORIZATION NO. 29032	 <b>ORANGE COUNTY</b> UTILITIES DEPARTMENT 9150 CURRY FORD ROAD ORLANDO, FLORIDA 32825 (407) 254-9900	JOB No. TOW-052.01.000	<b>WATER MAIN          PLAN AND PROFILE          W. SECOND AVENUE</b>
							FILE NAME: SEE LEFT MARGIN				
							ARCHIVE DISC:				
							SCALE: HORIZ. = 1"=20'				
							DATE: MARCH 2023	407/493-9983		DRWG.	SHEET 64 OF 86



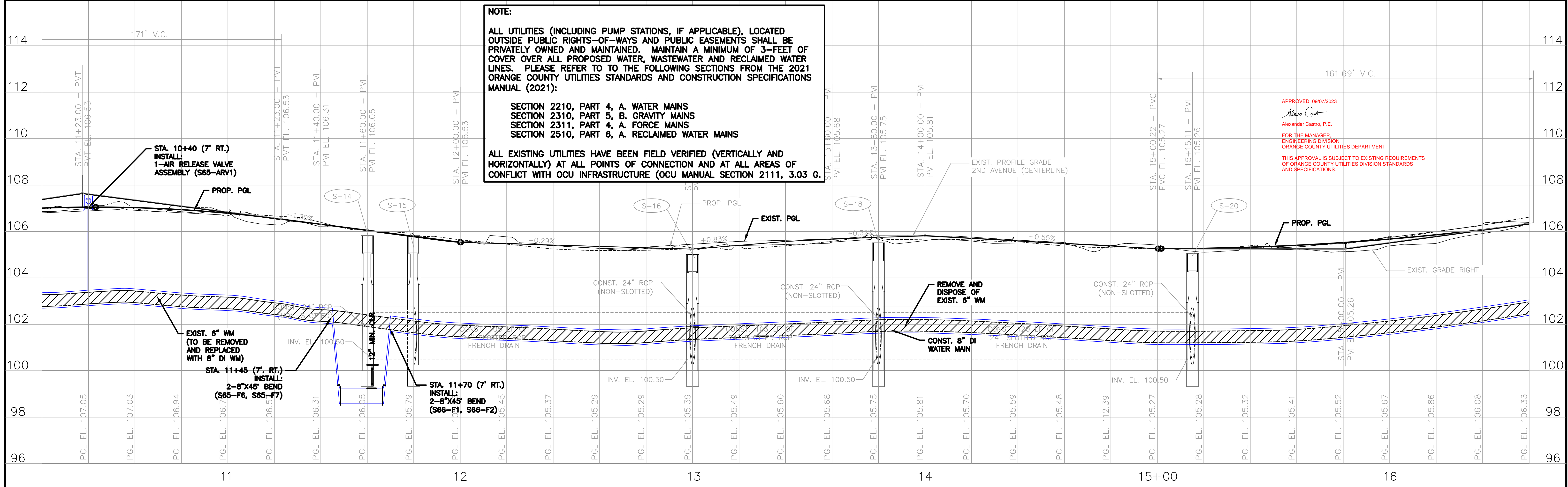






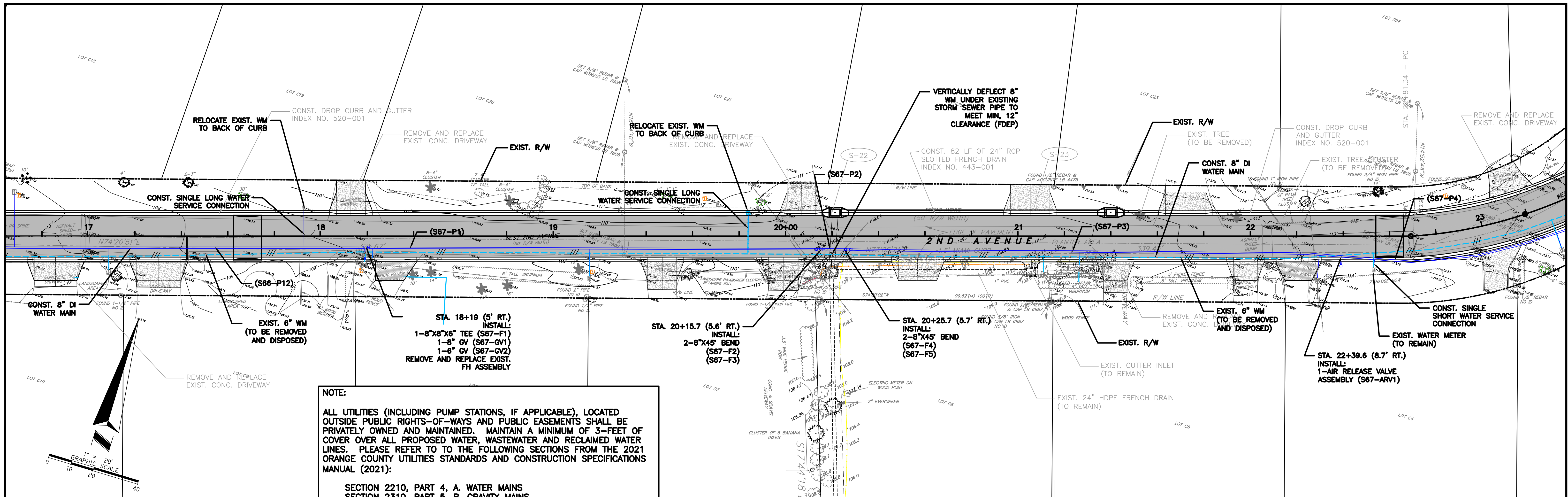
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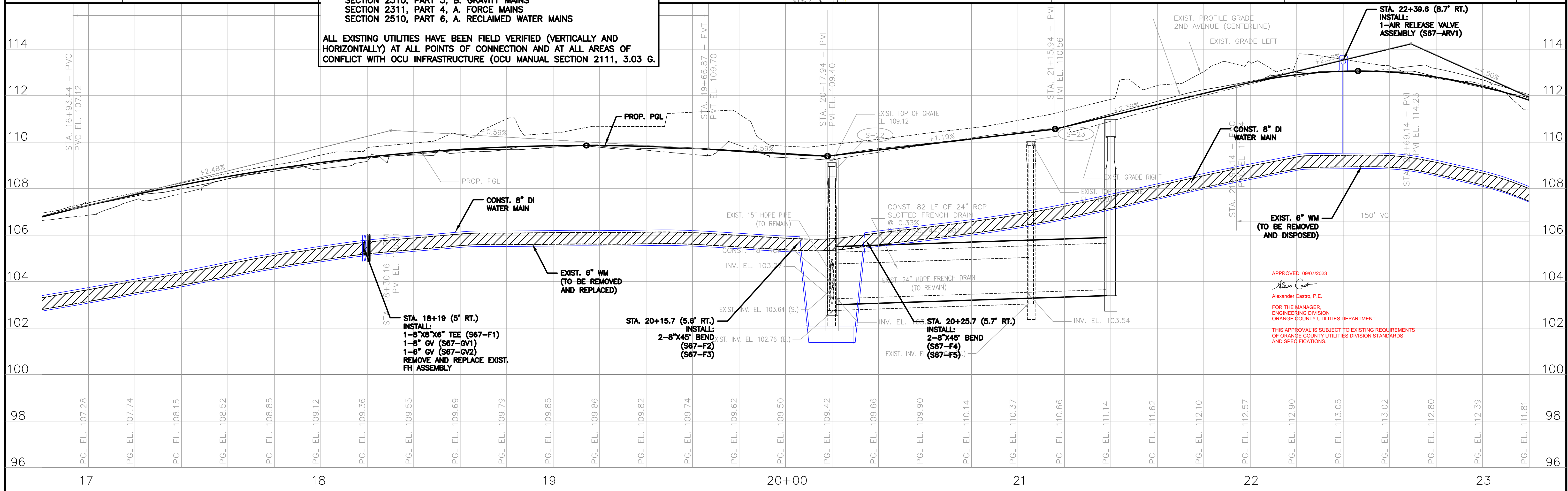


<b>MGEC</b> MICHAEL GALURA ENGINEERING CONSULTANTS, LLC 3222 Corrine Drive, Suite H Orlando, Florida 32803 CERTIFICATE OF AUTHORIZATION NO. 29032		<b>ORANGE COUNTY</b> UTILITIES DEPARTMENT 9150 CURRY FORD ROAD ORLANDO, FLORIDA 32825 (407) 254-9900		JOB No. TOW-052.01.000 FILE NAME: SEE LEFT MARGIN ARCHIVE DISC: SCALE: HORIZ. = 1"=20' VERT. = 1"=2'	<b>WATER MAIN          PLAN AND PROFILE          W. SECOND AVENUE</b> DRWG. SHEET 66 OF 86
SIGN OFF CLIENT PM/CM BC PM/CM DM PM CM APP'D BY	DATE FIELD: PEC SURVEYING AND MAPPING, LLC DRAWN BY: CADD DESIGNED BY: MBG CHECKED BY: MBG DATE: MARCH 2023	DATE FIELD: PEC SURVEYING AND MAPPING, LLC DRAWN BY: CADD DESIGNED BY: MBG CHECKED BY: MBG DATE: MARCH 2023	DATE FIELD: PEC SURVEYING AND MAPPING, LLC DRAWN BY: CADD DESIGNED BY: MBG CHECKED BY: MBG DATE: MARCH 2023	DATE FIELD: PEC SURVEYING AND MAPPING, LLC DRAWN BY: CADD DESIGNED BY: MBG CHECKED BY: MBG DATE: MARCH 2023	DATE FIELD: PEC SURVEYING AND MAPPING, LLC DRAWN BY: CADD DESIGNED BY: MBG CHECKED BY: MBG DATE: MARCH 2023





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 SECTION 2311, PART 4, A. FORCE MAINS  
 SECTION 2510, PART 6, A. RECLAIMED WATER MAINS  
 ALL EXISTING UTILITIES HAVE BEEN FIELD VERIFIED (VERTICALLY AND HORIZONTALLY) AT ALL POINTS OF CONNECTION AND AT ALL AREAS OF CONFLICT WITH OCU INFRASTRUCTURE (OCU MANUAL SECTION 2111, 3.03 G.



APPROVED 09/07/2023  
 Alexander Castro, P.E.  
 FOR THE MANAGER,  
 ENGINEERING DIVISION  
 ORANGE COUNTY UTILITIES DEPARTMENT  
 THIS APPROVAL IS SUBJECT TO EXISTING REQUIREMENTS  
 OF ORANGE COUNTY UTILITIES DIVISION STANDARDS  
 AND SPECIFICATIONS.

REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

SIGN OFF	DATE	FIELD:
CLIENT		PEC SURVEYING AND MAPPING, LLC
PM/CM BC		DRAWN BY: CADD
PM/CM DM		DESIGNED BY: MBG
PM		CHECKED BY: MBG
CM		DATE: MARCH 2023

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
 3222 Corrine Drive, Suite H  
 Orlando, Florida 32803  
 CERTIFICATE OF AUTHORIZATION NO. 29032  
 407/493-9983

**TOWN OF WINDERMERE**  
 PUBLIC WORKS DEPARTMENT  
 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000  
 FILE NAME: SEE LEFT MARGIN  
 ARCHIVE DISC:  
 SCALE: HORIZ. = 1"=20'  
 VERT. = 1"=2'

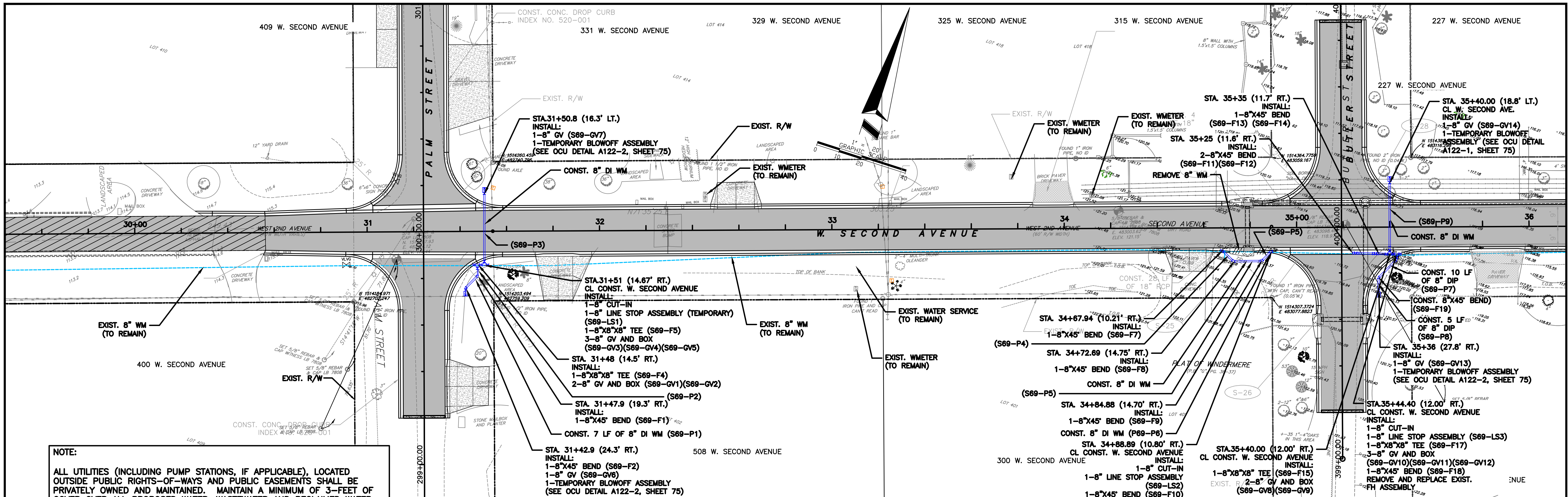
**PLAN AND PROFILE  
 W. SECOND AVENUE**

DRWG. SHEET 67 OF 86







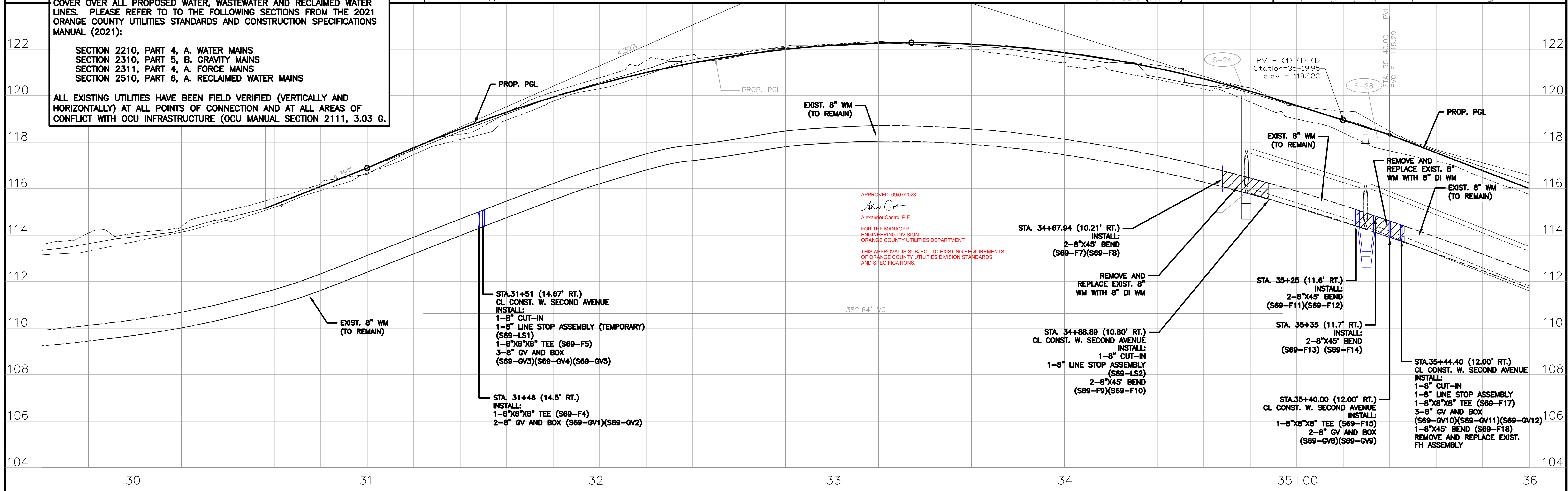


**NOTE:**

ALL UTILITIES (INCLUDING PUMP STATIONS, IF APPLICABLE), LOCATED OUTSIDE PUBLIC RIGHTS-OF-WAYS AND PUBLIC EASEMENTS SHALL BE PRIVATELY OWNED AND MAINTAINED. MAINTAIN A MINIMUM OF 3- FEET OF COVER OVER ALL PROPOSED WATER, WASTEWATER AND RECLAIMED WATER LINES. PLEASE REFER TO THE FOLLOWING SECTIONS FROM THE 2021 ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL (2021):

SECTION 2210, PART 4, A. WATER MAINS  
 SECTION 2310, PART 5, B. GRAVITY MAINS  
 SECTION 2311, PART 4, A. FORCE MAINS  
 SECTION 2510, PART 6, A. RECLAIMED WATER MAINS

ALL EXISTING UTILITIES HAVE BEEN FIELD VERIFIED (VERTICALLY AND HORIZONTALLY) AT ALL POINTS OF CONNECTION AND AT ALL AREAS OF CONFLICT WITH OCU INFRASTRUCTURE (OCU MANUAL SECTION 2111, 3.03 G.



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REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

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CLIENT		PEC SURVEYING AND MAPPING, LLC
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PM/CM DM		DESIGNED BY: MBG
PM		CHECKED BY: MBG
CM		DATE: MARCH 2023

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407/493-9983

**ORANGE COUNTY**  
 UTILITIES DEPARTMENT  
 9150 CURRY FORD ROAD  
 ORLANDO, FLORIDA 32825  
 (407) 254-9900

JOB No. TOW-052.01.000  
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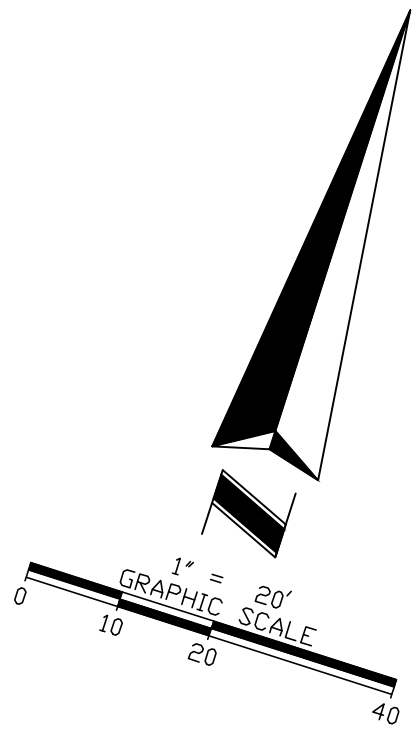
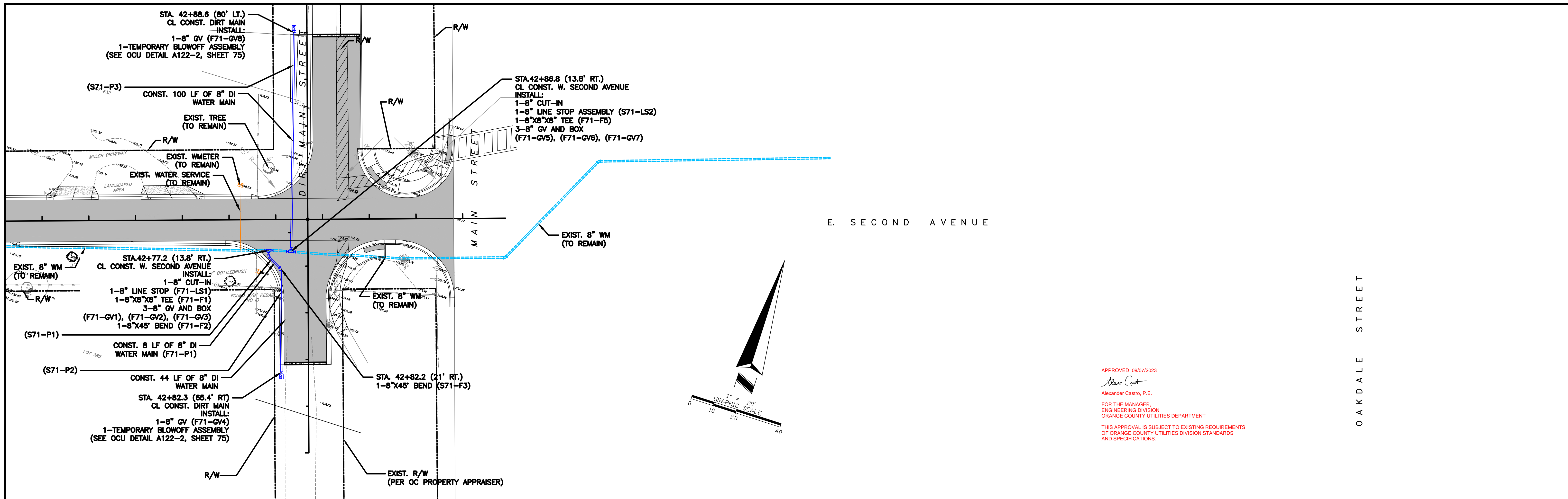
**WATER MAIN  
 PLAN AND PROFILE  
 W. SECOND AVENUE**

DRWG. SHEET 69 OF 86

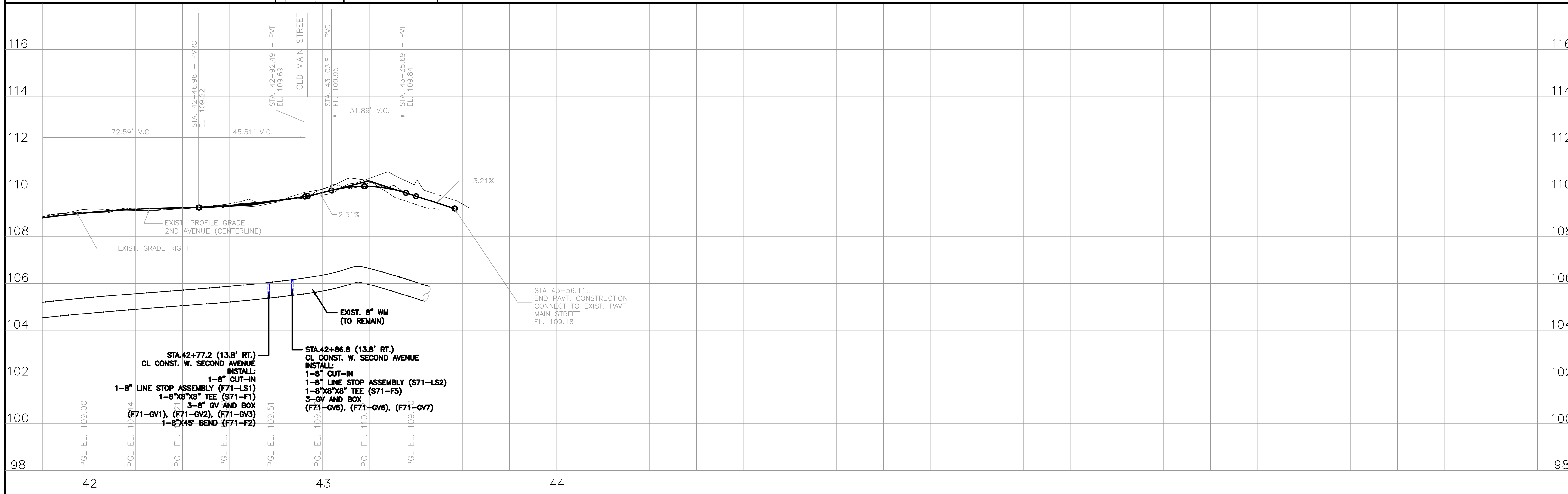








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 AND SPECIFICATIONS.



REV.	DATE	DESCRIPTION	APP'D BY	SIGN OFF	DATE	FIELD:
96				CLIENT		PEC SURVEYING AND MAPPING, LLC
				PM/CM BC		
				PM/CM DM		DRAWN BY: CADD
				PM		DESIGNED BY: MBG
				CM		CHECKED BY: MBG
				OTHERS		DATE: MARCH 2023

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 3222 Corrine Drive, Suite H  
 Orlando, Florida 32803 407/493-9983  
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**TOWN OF WINDERMERE**  
 PUBLIC WORKS DEPARTMENT  
 614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No. TOW-052.01.000
FILE NAME: SEE LEFT MARGIN
ARCHIVE DISC:
SCALE: HORIZ. = 1"=20' VERT. = 1"=2'

**WATER MAIN  
 PLAN AND PROFILE  
 W. SECOND AVENUE**

DRWG. SHEET 71 OF 86



VALVES WORKSHEET

ID NUMBER	SHEET NO.	NORTHING	EASTING	ELEVATION	VALVE TYPE	VALVE MFR	VALVE MODEL	#TURNS TO CLOSE	MAIN TYPE	GEAR ACTUATOR	GEAR RATIO	SIDE ACTUATOR	ACTUATOR MFR
S64-GV1	64				4" GATE VALVE								
S64-GV2	64				8" GATE VALVE				WATER MAIN				
S64-GV3	64				6" GATE VALVE								
S64-GV4	64				4" GATE VALVE				WATER MAIN				
S64-LS1	64				4" LINE STOP				WATER MAIN				
S65-GV1	65				8" GATE VALVE				WATER MAIN				
S65-GV2	65				6" GATE VALVE				WATER MAIN				
S65-LS1	65				6" LINE STOP				WATER MAIN				
S65-ARV1	65				8" AIR RELEASE				WATER MAIN				
S67-GV1	67				8" GATE VALVE				WATER MAIN				
S67-GV2	67				6" GATE VALVE				WATER MAIN				
S67-ARV1	67				8" AIR RELEASE				WATER MAIN				
S68-LS1	68				8" LINE STOP				WATER MAIN				
S68-LS2	68				8" LINE STOP				WATER MAIN				
S68-GV1	68				8" GATE VALVE				WATER MAIN				
S68-GV2	68				8" GATE VALVE				WATER MAIN				
S68-GV3	68				8" GATE VALVE				WATER MAIN				
S68-GV4	68				8" GATE VALVE				WATER MAIN				
S69-GV1	69				8" GATE VALVE				WATER MAIN				
S69-GV2	69				8" GATE VALVE				WATER MAIN				
S69-GV3	69				8" GATE VALVE				WATER MAIN				
S69-GV4	69				8" GATE VALVE				WATER MAIN				
S69-GV5	69				8" GATE VALVE				WATER MAIN				
S69-GV6	69				8" GATE VALVE				WATER MAIN				
S69-GV7	69				8" GATE VALVE				WATER MAIN				
S69-GV8	69				8" GATE VALVE				WATER MAIN				
S69-GV9	69				8" GATE VALVE				WATER MAIN				
S69-GV10	69				8" GATE VALVE				WATER MAIN				
S69-GV11	69				8" GATE VALVE				WATER MAIN				
S69-GV12	69				8" GATE VALVE				WATER MAIN				
S69-GV13	69				8" GATE VALVE				WATER MAIN				
S69-GV14	69				8" GATE VALVE				WATER MAIN				
S69-LS1	69				8" LINE STOP				WATER MAIN				
S69-LS2	69				8" LINE STOP				WATER MAIN				
S69-LS3	69				8" LINE STOP				WATER MAIN				
S70-GV1	70				8" GATE VALVE				WATER MAIN				
S70-GV2	70				8" GATE VALVE				WATER MAIN				
S70-GV3	70				8" GATE VALVE				WATER MAIN				
S70-GV4	70				8" GATE VALVE				WATER MAIN				
S70-GV5	70				8" GATE VALVE				WATER MAIN				
S70-GV6	70				8" GATE VALVE				WATER MAIN				
S70-GV7	70				8" GATE VALVE				WATER MAIN				
S70-GV8	70				8" GATE VALVE				WATER MAIN				
S70-GV9	70				8" GATE VALVE				WATER MAIN				
S70-LS1	70				8" LINE STOP				WATER MAIN				
S70-LS2	70				8" LINE STOP				WATER MAIN				
S70-LS3	70				8" LINE STOP				WATER MAIN				
S71-GV1	71				8" GATE VALVE				WATER MAIN				
S71-GV2	71				8" GATE VALVE				WATER MAIN				
S71-GV3	71				8" GATE VALVE				WATER MAIN				
S71-GV4	71				8" GATE VALVE				WATER MAIN				
S71-GV5	71				8" GATE VALVE				WATER MAIN				
S71-GV6	71				8" GATE VALVE				WATER MAIN				
S71-GV7	71				8" GATE VALVE				WATER MAIN				
S71-GV8	71				8" GATE VALVE				WATER MAIN				
S71-LS1	71				8" LINE STOP				WATER MAIN				
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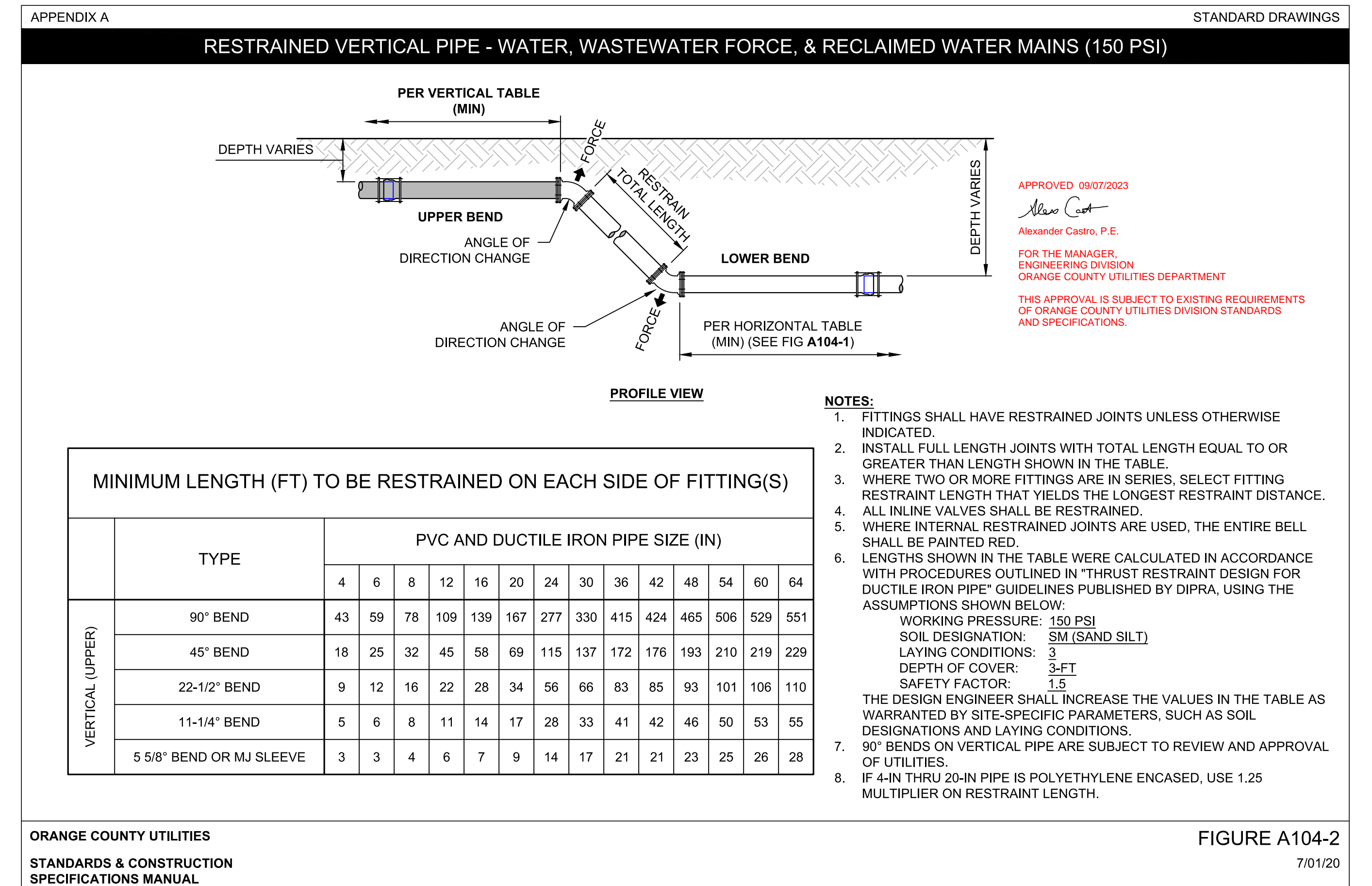
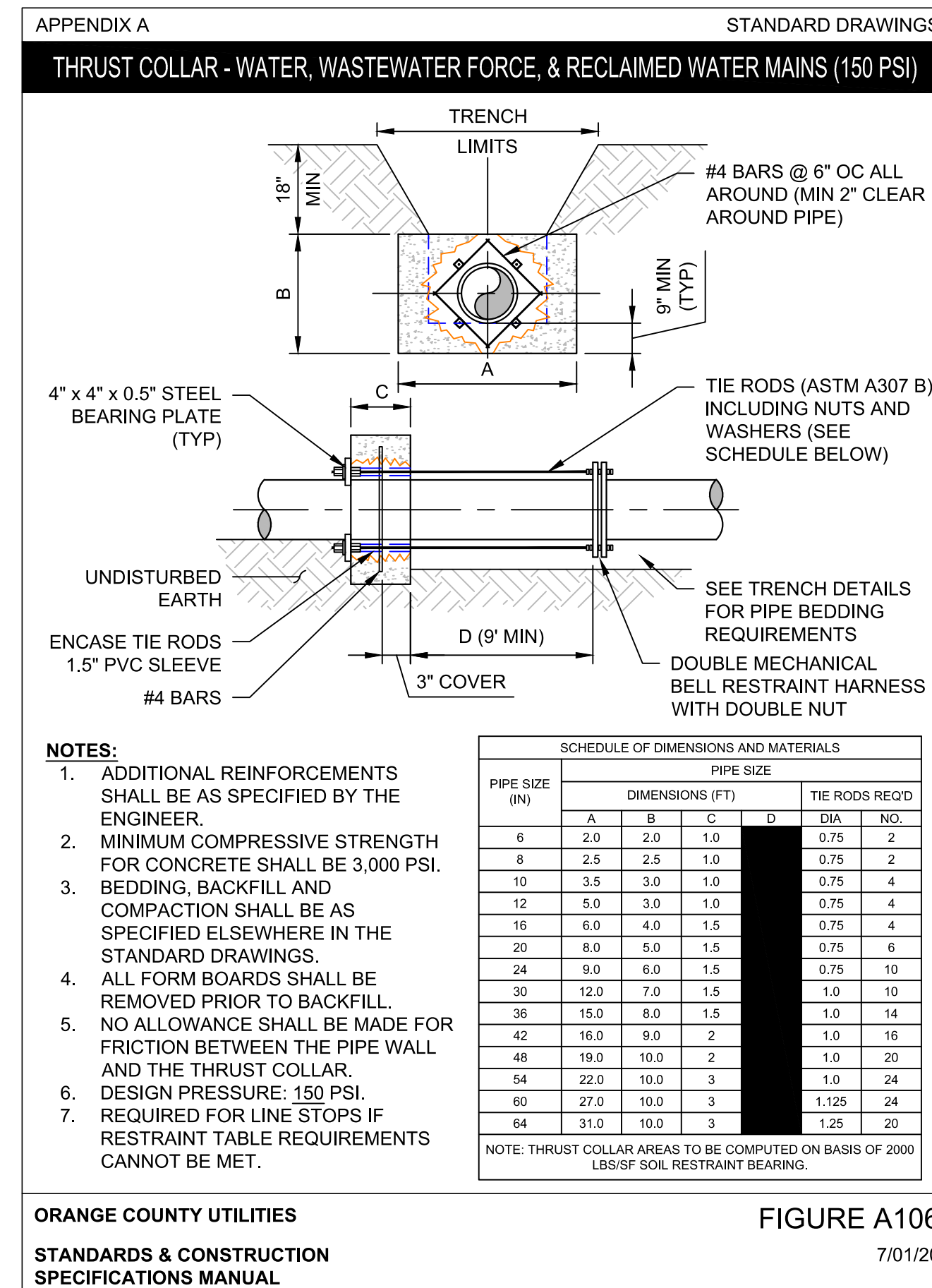
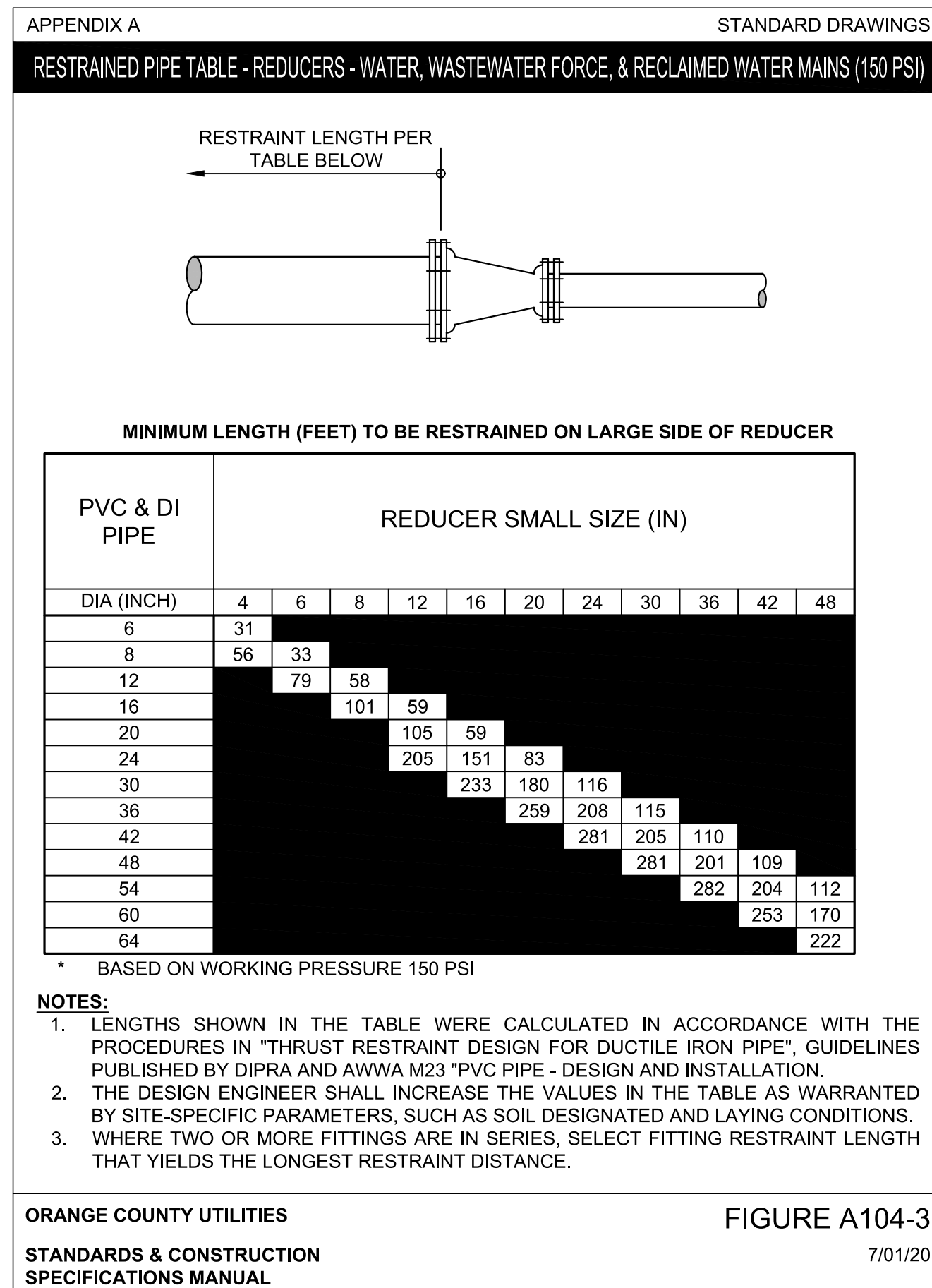
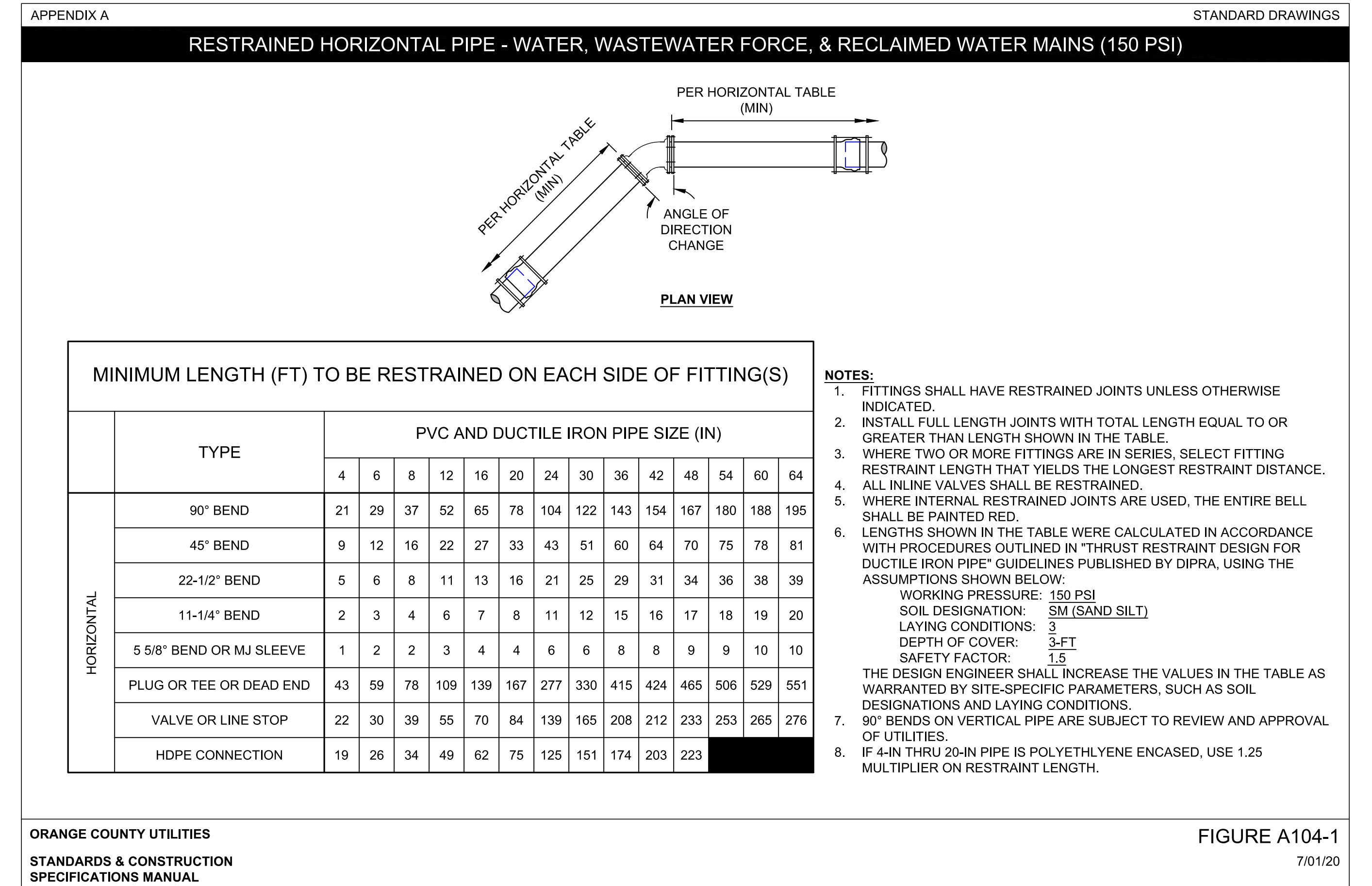
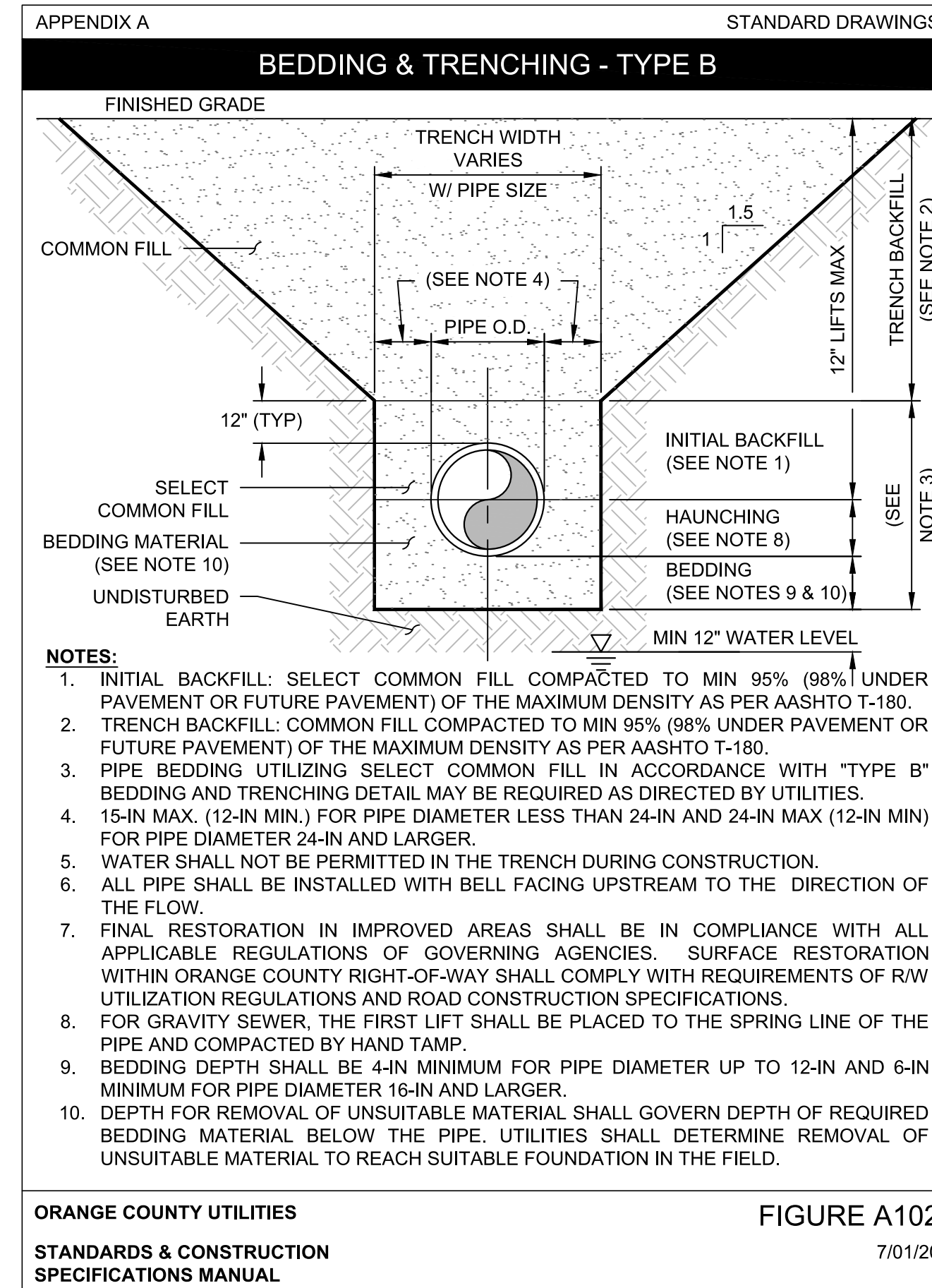
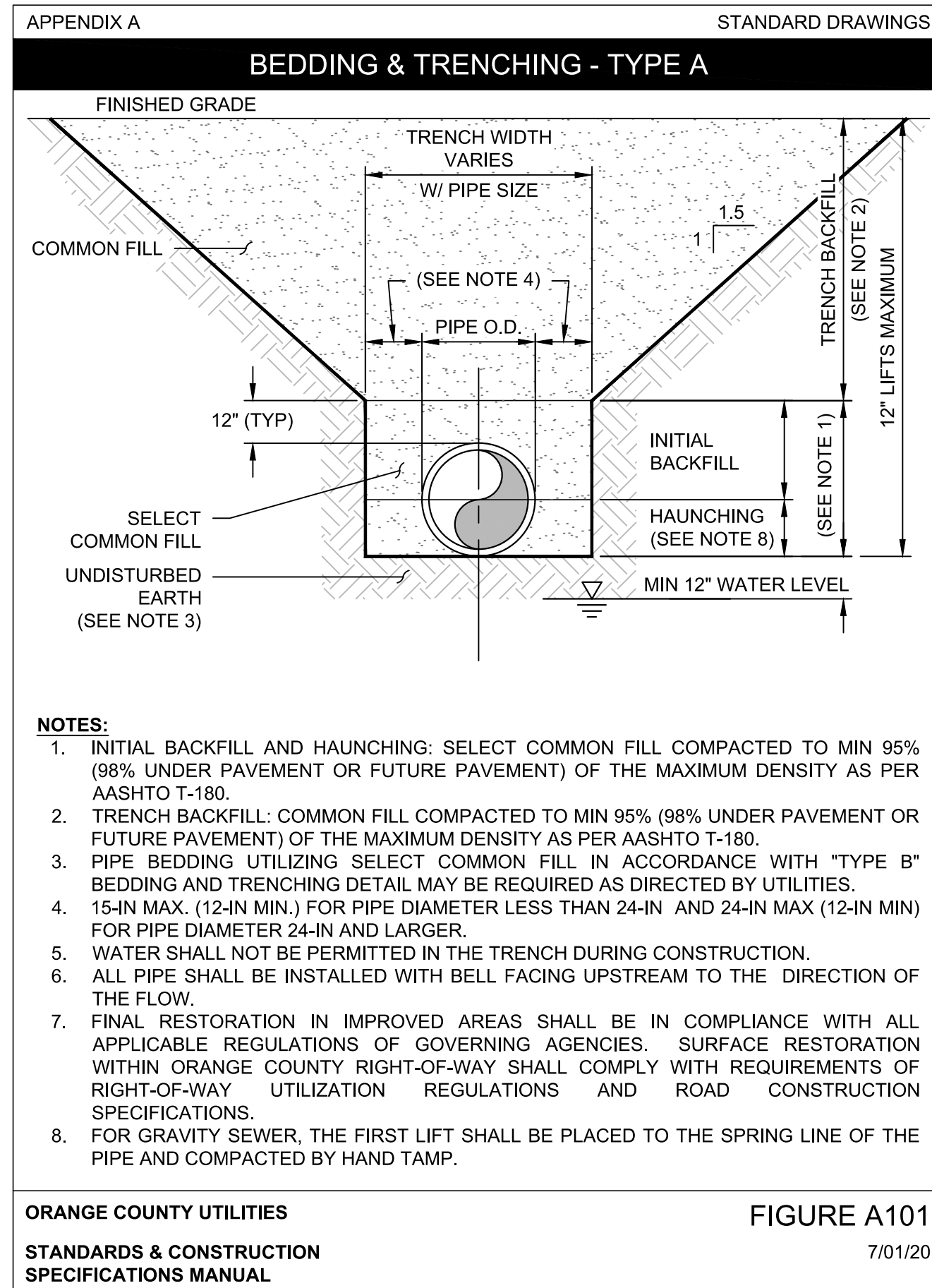
PIPES WORKSHEET

ID NUMBER	SHEET NO.	NORTHING	EASTING	ELEVATION	MAIN TYPE	TYPE OF SHOT	CONST. METHOD	MATERIAL TYPE	PRESSURE CLASS	MANUFACTURER	COMMENTS
S64-P1	64				4" WATER MAIN	TOP OF PIPE					
S64-P2	64				4" WATER MAIN	TOP OF PIPE					
S64-P3	64				4" WATER MAIN	TOP OF PIPE					
S64-P4	64				4" WATER MAIN	TOP OF PIPE					
S64-P5	64				4" WATER MAIN	TOP OF PIPE					
S64-P6	64				4" WATER MAIN	TOP OF PIPE					
S64-P7	64				4" WATER MAIN	TOP OF PIPE					
S64-P8	64				4" WATER MAIN	TOP OF PIPE					
S64-P9	64				4" WATER MAIN	TOP OF PIPE					
S64-P10	64				4" WATER MAIN	TOP OF PIPE					
S64-P11	64				4" WATER MAIN	TOP OF PIPE					
S64-P12	64				4" WATER MAIN	TOP OF PIPE					
S64-P13	64				4" WATER MAIN	TOP OF PIPE					
S64-P14	64				4" WATER MAIN	TOP OF PIPE					
S64-P15	64				4" WATER MAIN	TOP OF PIPE					
S64-P16	64				4" WATER MAIN	TOP OF PIPE					
S64-P17	64				4" WATER MAIN	TOP OF PIPE					
S64-P18	64				4" WATER MAIN	TOP OF PIPE					
S64-P19	64				8" WATER MAIN	TOP OF PIPE					
S64-P20	64				8" WATER MAIN	TOP OF PIPE					
S65-P1	65				8" WATER MAIN	TOP OF PIPE					
S65-P2	65				8" WATER MAIN	TOP OF PIPE					
S65-P3	65				8" WATER MAIN	TOP OF PIPE					
S66-P1	66				8" WATER MAIN	TOP OF PIPE					
S66-P2	66				8" WATER MAIN	TOP OF PIPE					
S66-P3	66				8" WATER MAIN	TOP OF PIPE					
S66-P4	66				8" WATER MAIN	TOP OF PIPE					
S66-P5	66				8" WATER MAIN	TOP OF PIPE					
S66-P6	66				8" WATER MAIN	TOP OF PIPE					
S66-P7	66				8" WATER MAIN	TOP OF PIPE					
S66-P8	66				8" WATER MAIN	TOP OF PIPE					
S66-P9	66				8" WATER MAIN	TOP OF PIPE					
S66-P10	66				8" WATER MAIN	TOP OF PIPE					
S66-P11	66				8" WATER MAIN	TOP OF PIPE					
S66-P12	66				8" WATER MAIN	TOP OF PIPE					
S67-P1	67				8" WATER MAIN	TOP OF PIPE					
S67-P2	67				8" WATER MAIN	TOP OF PIPE					
S67-P3	67				8" WATER MAIN	TOP OF PIPE					
S67-P4	67				8" WATER MAIN	TOP OF PIPE					
S68-P1	68				8" WATER MAIN	TOP OF PIPE					
S68-P2	68				8" WATER MAIN	TOP OF PIPE					
S68-P3	68				8" WATER MAIN	TOP OF PIPE					
S68-P4	68				8" WATER MAIN	TOP OF PIPE					
S68-P5	68				8" WATER MAIN	TOP OF PIPE					
S68-P6	68				8" WATER MAIN	TOP OF PIPE					
S68-P7	68				8" WATER MAIN	TOP OF PIPE					
S68-P8	68				8" WATER MAIN	TOP OF PIPE					
S68-P9	68				8" WATER MAIN	TOP OF PIPE					
S68-P10	68				8" WATER MAIN	TOP OF PIPE					
S68-P11	68				8" WATER MAIN	TOP OF PIPE					
S68-P12	68				8" WATER MAIN	TOP OF PIPE					
S69-P1	69				8" WATER MAIN	TOP OF PIPE					
S69-P2	69				8" WATER MAIN	TOP OF PIPE					
S69-P3	69				8" WATER MAIN	TOP OF PIPE					
S69-P4	69				8" WATER MAIN	TOP OF PIPE					
S69-P5	69				8" WATER MAIN	TOP OF PIPE					
S69-P6	69				8" WATER MAIN	TOP OF PIPE					
S69-P7	69				8" WATER MAIN	TOP OF PIPE					
S69-P8	69				8" WATER MAIN	TOP OF PIPE					
S69-P9	69				8" WATER MAIN	TOP OF PIPE					
S70-P1	70				8" WATER MAIN	TOP OF PIPE					
S70-P2	70				8" WATER MAIN	TOP OF PIPE					
S70-P3	70				8" WATER MAIN	TOP OF PIPE					
S70-P4	70				8" WATER MAIN	TOP OF PIPE					
S70-P5	70				8" WATER MAIN	TOP OF PIPE					
S71-P1	71				8" WATER MAIN	TOP OF PIPE					
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S71-P3	71				8" WATER MAIN	TOP OF PIPE					

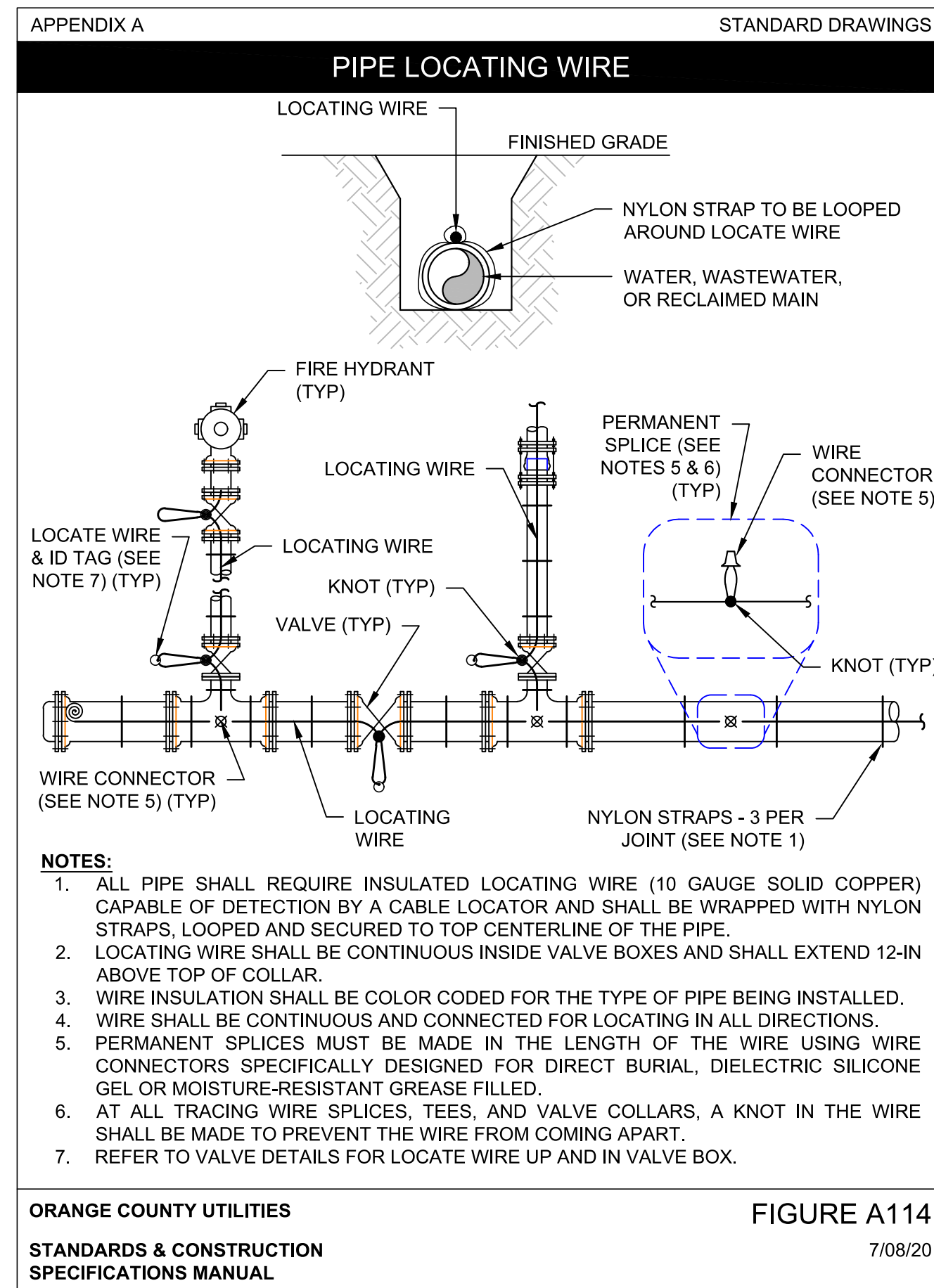
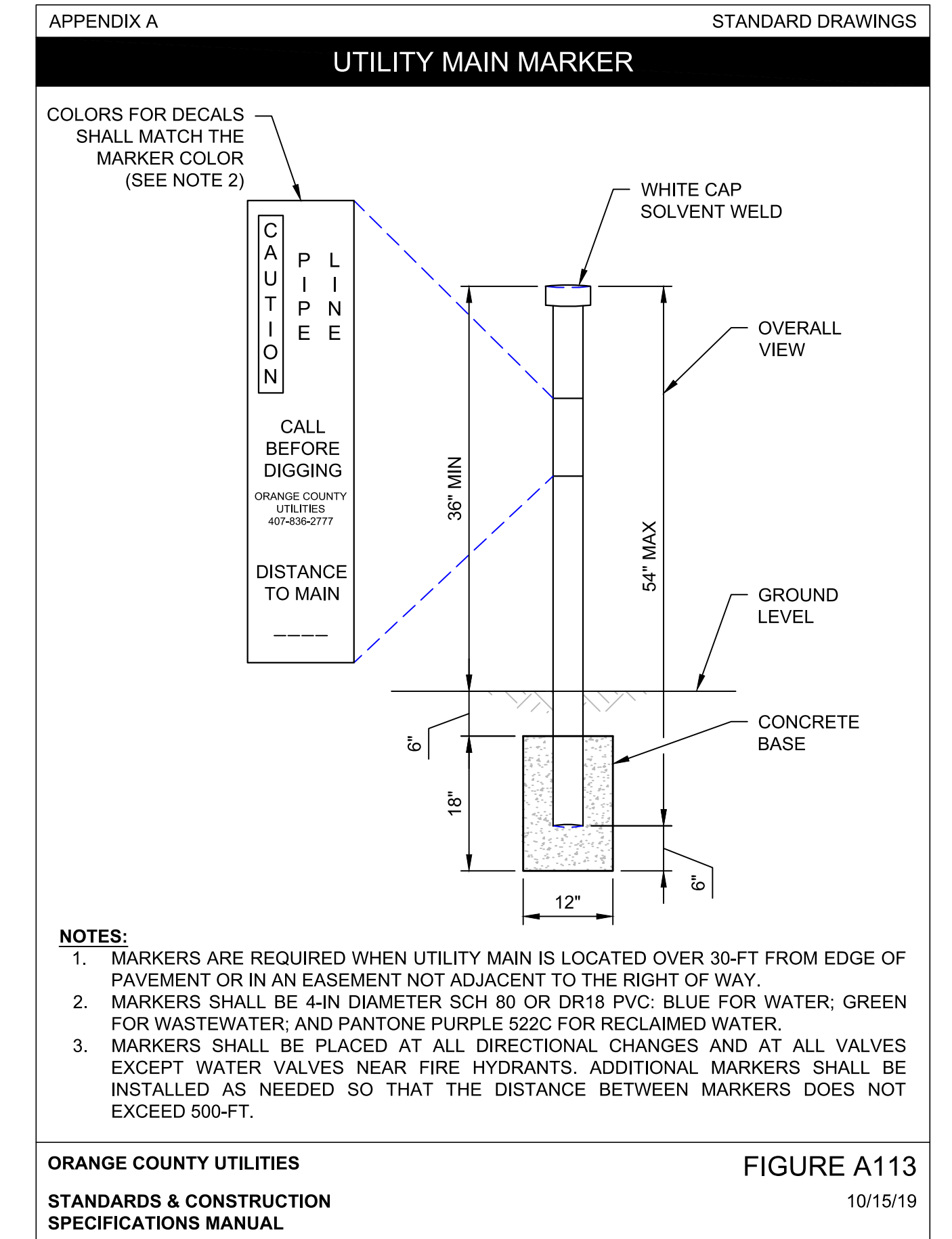
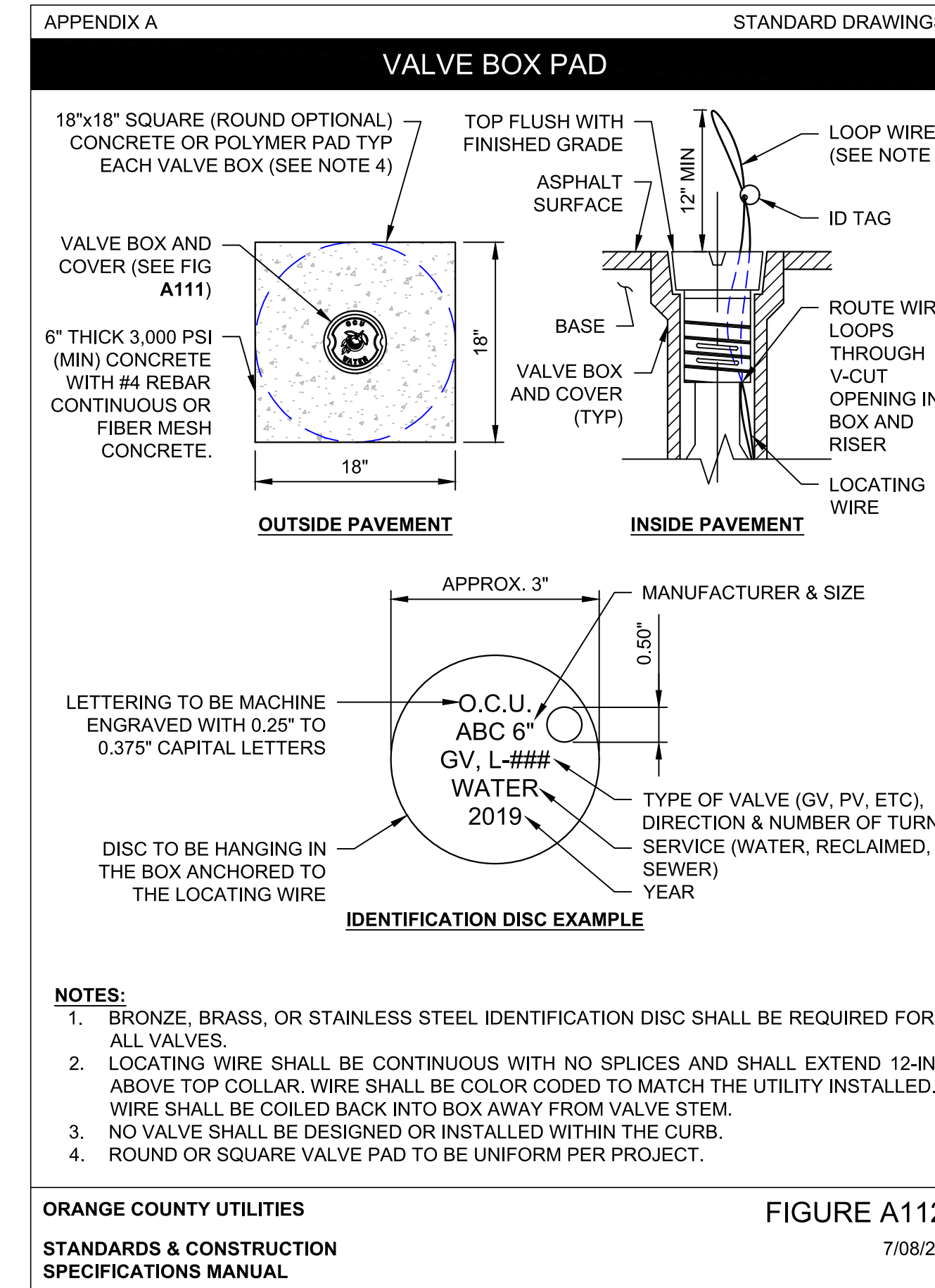
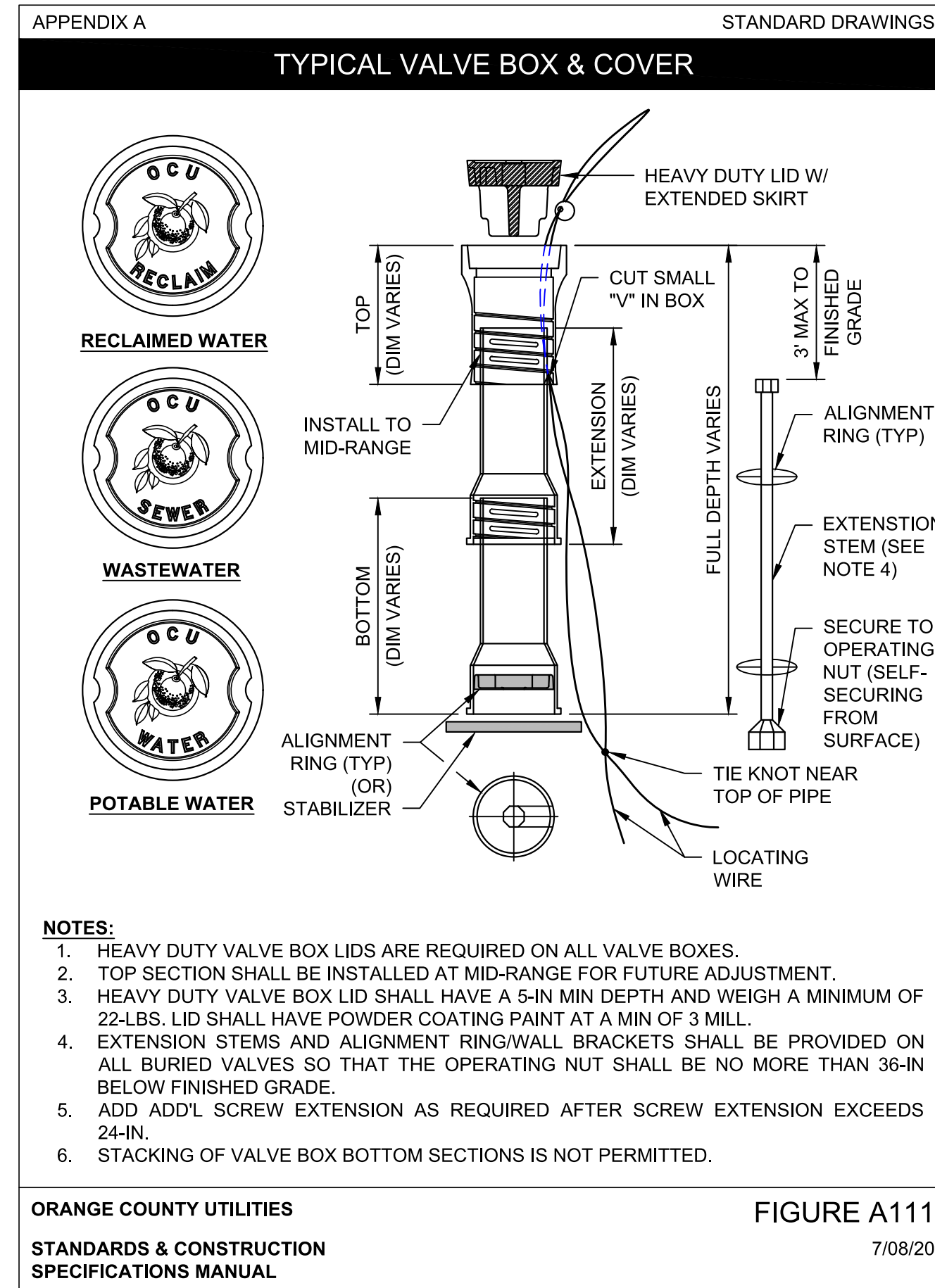
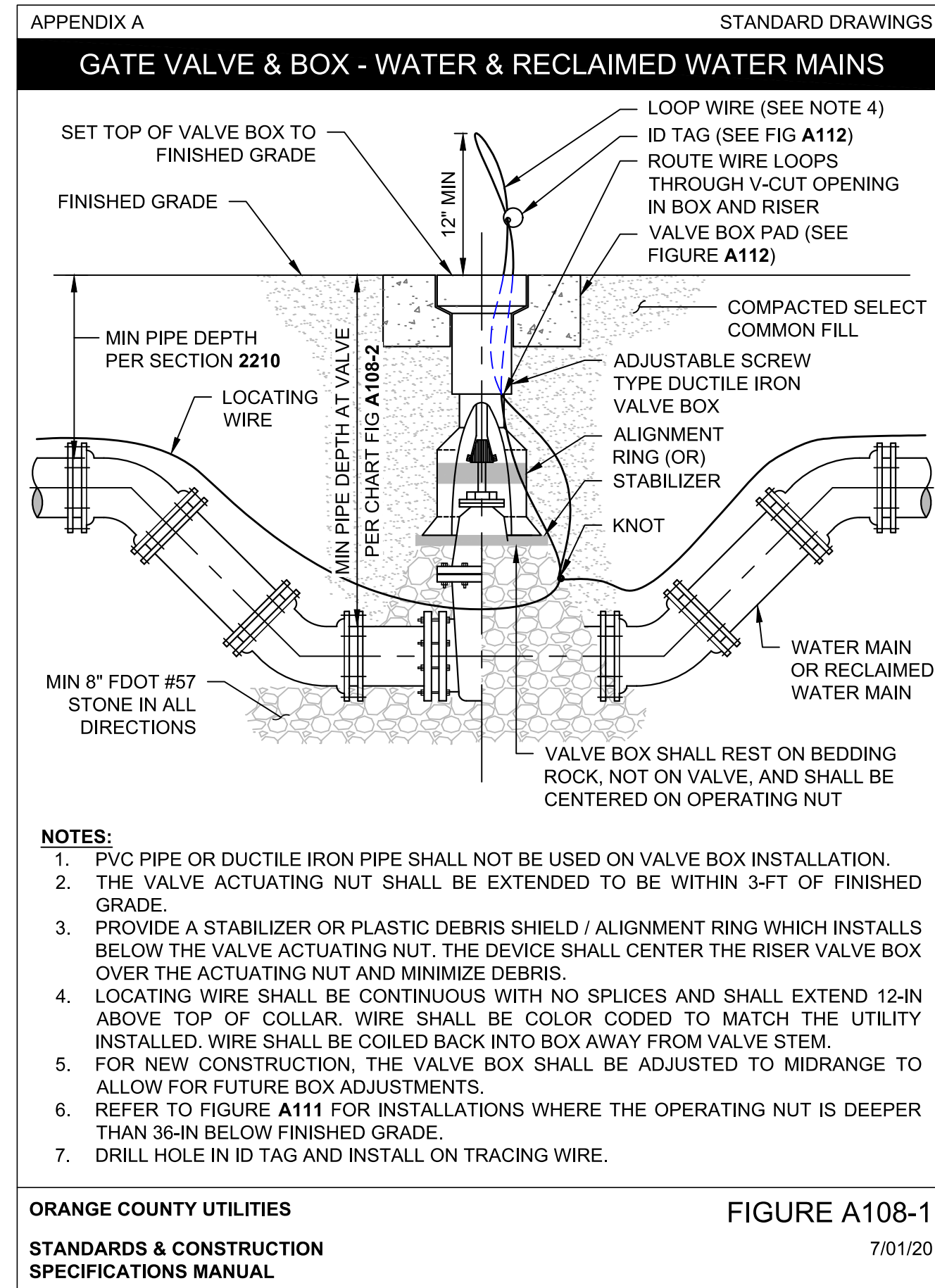
FITTING WORKSHEET

ID NUMBER	SHEET NO.	NORTHING	EASTING	ELEVATION	MAIN TYPE	FITTING TYPE	COMMENTS
S64-F1	64				WATER MAIN	4"x4.5" BEND	
S64-F2	64				WATER MAIN	4"x22.5" BEND	
S64-F3	64				WATER MAIN	4"x11.25" BEND	
S64-F4	64				WATER MAIN	4"x11.25" BEND	
S64-F5	64				WATER MAIN	4"x22.5" BEND	
S64-F6	64				WATER MAIN	4"x11.25" BEND	
S64-F7	64				WATER MAIN	4"x11.25" BEND	
S64-F8	64				WATER MAIN	4"x4.5" BEND	
S64-F9	64				WATER MAIN	4"x4.5" BEND	
S64-F10	64				WATER MAIN	4"x11.25" BEND	
S64-F11	64				WATER MAIN	4"x11.25" BEND	
S64-F12	64				WATER MAIN	4"x11.25" BEND	
S64-F13	64				WATER MAIN	4"x22.5" BEND	
S64-F14	64				WATER MAIN	4"x22.5" BEND	
S64-F15	64				WATER MAIN	4"x22.5" BEND	
S64-F16	64				WATER MAIN	4"x11.25" BEND	
S64-F17	64				WATER MAIN	4"x22.5" BEND	
S64-F18	64				WATER MAIN	4"x4.5" BEND	
S64-F19	64				WATER MAIN	8"x8" TEE	
S64-F20	64				WATER MAIN	8"x4" REDUCER	
S64-F21	64				WATER MAIN	8"x4.5" BEND	
S64-F22	64				WATER MAIN	8"x4.5" BEND	
S65-F1	65				WATER MAIN	8"x4.5" BEND	
S65-F2	65				WATER MAIN	8"x4.5" BEND	
S65-F3	65				WATER MAIN	8"x4.5" BEND	
S65-F4	65				WATER MAIN	8"x4.5" BEND	
S65-F5	65				WATER MAIN	8"x8" TEE	
S65-F6	65				WATER MAIN	8"x4.5" BEND	
S65-F7	65				WATER MAIN	8"x4.5" BEND	
S65-F8	65				WATER MAIN	8"x4.5" BEND	
S65-F9	65				WATER MAIN	8"x4.5" BEND	
S65-F10	65				WATER MAIN	8"x4.5" BEND	
S65-F11	65				WATER MAIN	8"x4.5" BEND	
S65-F12	65				WATER MAIN	8"x4.5" BEND	
S65-F13	65				WATER MAIN	8"x4.5" BEND	
S65-F14	65				WATER MAIN	8"x4.5" BEND	
S65-F15	65				WATER MAIN	8"x4.5" BEND	
S65-F16	65				WATER MAIN	8"x4.5" BEND	
S65-F17	65				WATER MAIN	8"x4.5" BEND	
S65-F18	65				WATER MAIN	8"x4.5" BEND	
S65-F19	65				WATER MAIN	8"x4.5" BEND	
S6							









APPENDIX A STANDARD DRAWINGS

### HORIZONTAL PIPELINE SEPARATION REQUIREMENTS

**HORIZONTAL SEPARATION REQUIREMENTS (NOTES 1 & 2)**

PROPOSED UTILITY	POTABLE WATER (NOTE 3)		RECLAIMED WATER MAIN		WASTEWATER FORCEMAIN		SANITARY SEWER	STORM SEWER	STRUCTURAL FOUNDATION, WALLS, ETC.
	4"-12"	16"-UP	4"-12"	16"-UP	4"-12"	16"-UP	ALL SIZES	ALL SIZES	ALL SIZES
POTABLE WATER (NOTE 3)	3'	5'	3'	5'	6'	6'	6'	3'	10'
RECLAIMED WATER MAIN	3'	5'	3'	5'	3'	5'	3'	3'	10'
WASTEWATER FORCEMAIN	6'	6'	3'	5'	3'	5'	3'	3'	10'
SANITARY SEWER	6'	6'	3'	5'	3'	5'	3'	5'	VARIES PER DEPTH

**NOTES:**

- DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
- THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. FOR PIPES INSTALLED AT GREATER DEPTHS THAN THE MINIMUM OCU DESIGN STANDARDS, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
- THIS SEPARATION REQUIREMENT COMPLIES WITH THE MINIMUM FDEP SEPARATION REQUIREMENTS OUTLINED IN 62-555.314, FAC. VARIANCES FROM THE FDEP REQUIREMENTS MUST COMPLY WITH 62-555.314(6), FAC AND MUST BE APPROVED INDIVIDUALLY BY BOTH FDEP AND UTILITIES PRIOR TO INSTALLATION.
- NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURE.
- PRESSURE MAINS 16-IN TO 24-IN MAY HAVE 10-FT SEPARATION FROM STRUCTURAL FOUNDATION, WALLS, ETC IF NEW MAINS ARE RESTRAINED FOR THE ENTIRE LENGTH. REFERENCE FIGURE A116-2 FOR VERTICAL PIPELINE SEPARATION REQUIREMENTS.
- UTILITY EASEMENT MAY BE REQUIRED.

ORANGE COUNTY UTILITIES STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL **FIGURE A116-1** 7/08/20

APPENDIX A STANDARD DRAWINGS

### VERTICAL PIPELINE SEPARATION REQUIREMENTS

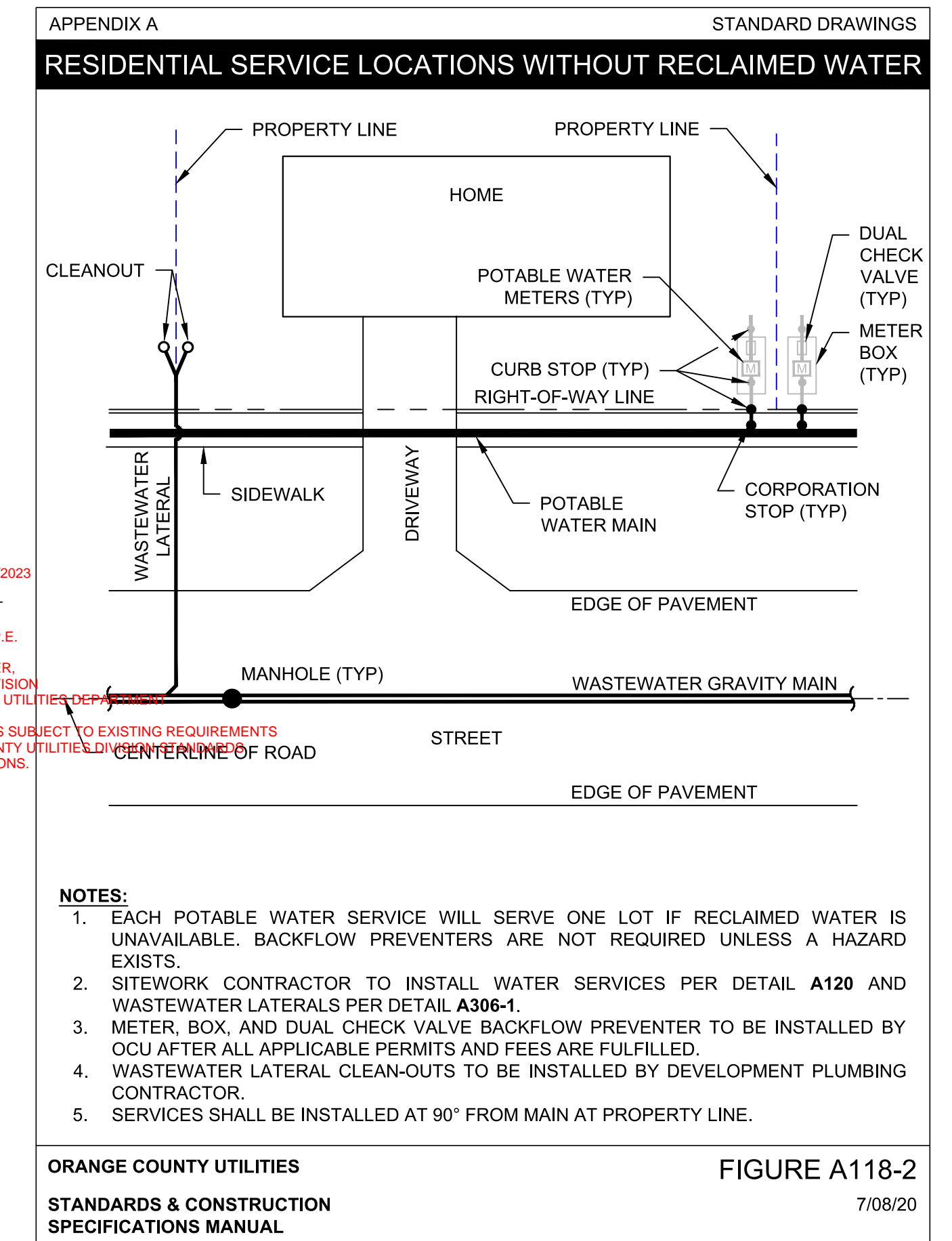
**VERTICAL SEPARATION REQUIREMENTS (NOTES 1 & 2)**

PROPOSED UTILITY	POTABLE WATER (NOTE 4)	RECLAIMED WATER MAIN	WASTEWATER FORCEMAIN	SANITARY SEWER	STORM SEWER (NOTE 3)
POTABLE WATER (NOTE 4)	12"	12"	12" / 18"	12" / 18"	12" / 18"
RECLAIMED WATER MAIN	12"	12"	12"	12"	12" / 18"
WASTEWATER FORCEMAIN	12"	12"	12"	12"	12" / 18"
SANITARY SEWER	12" / 18"	12"	12"	12"	12" / 18"

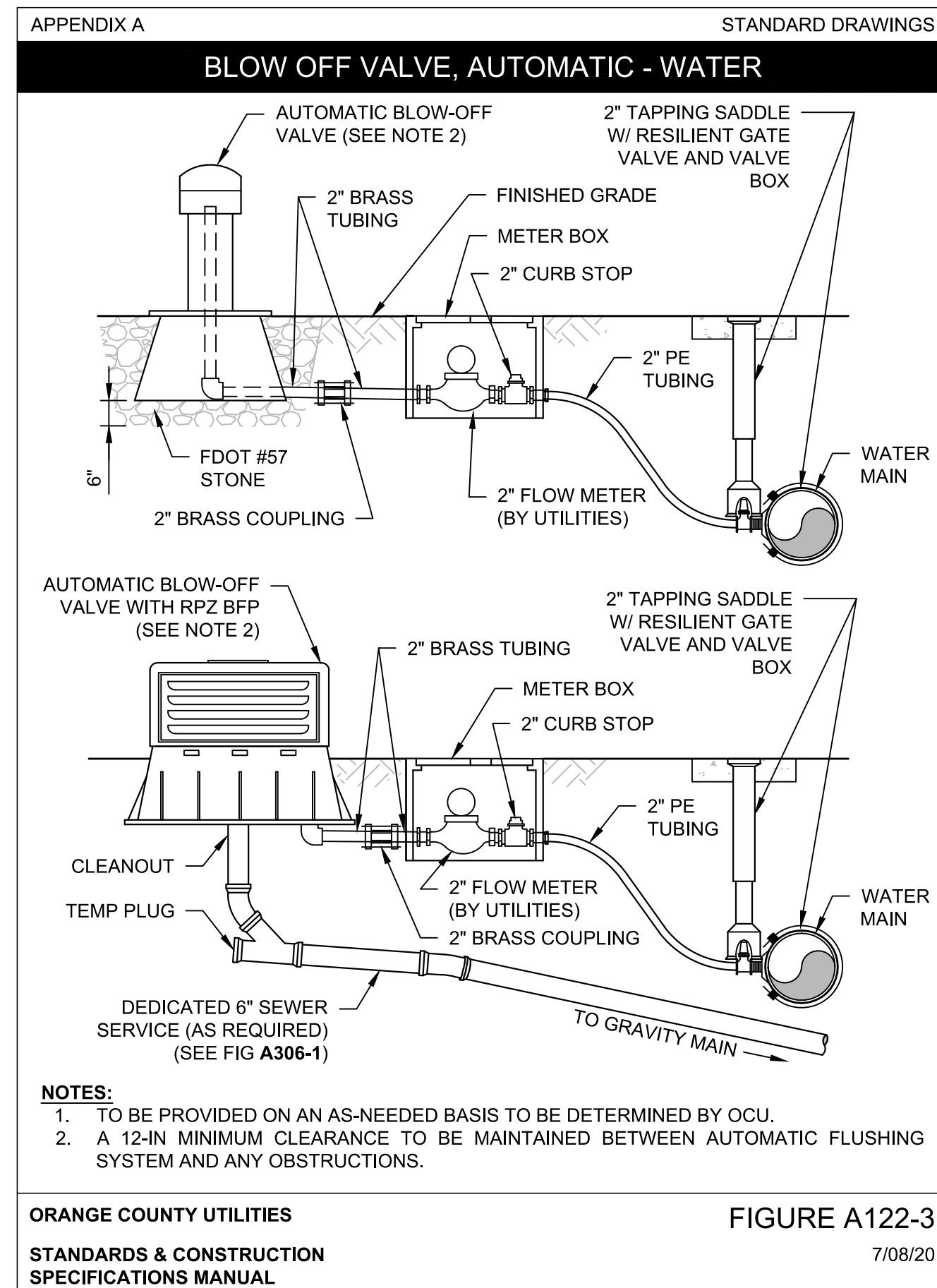
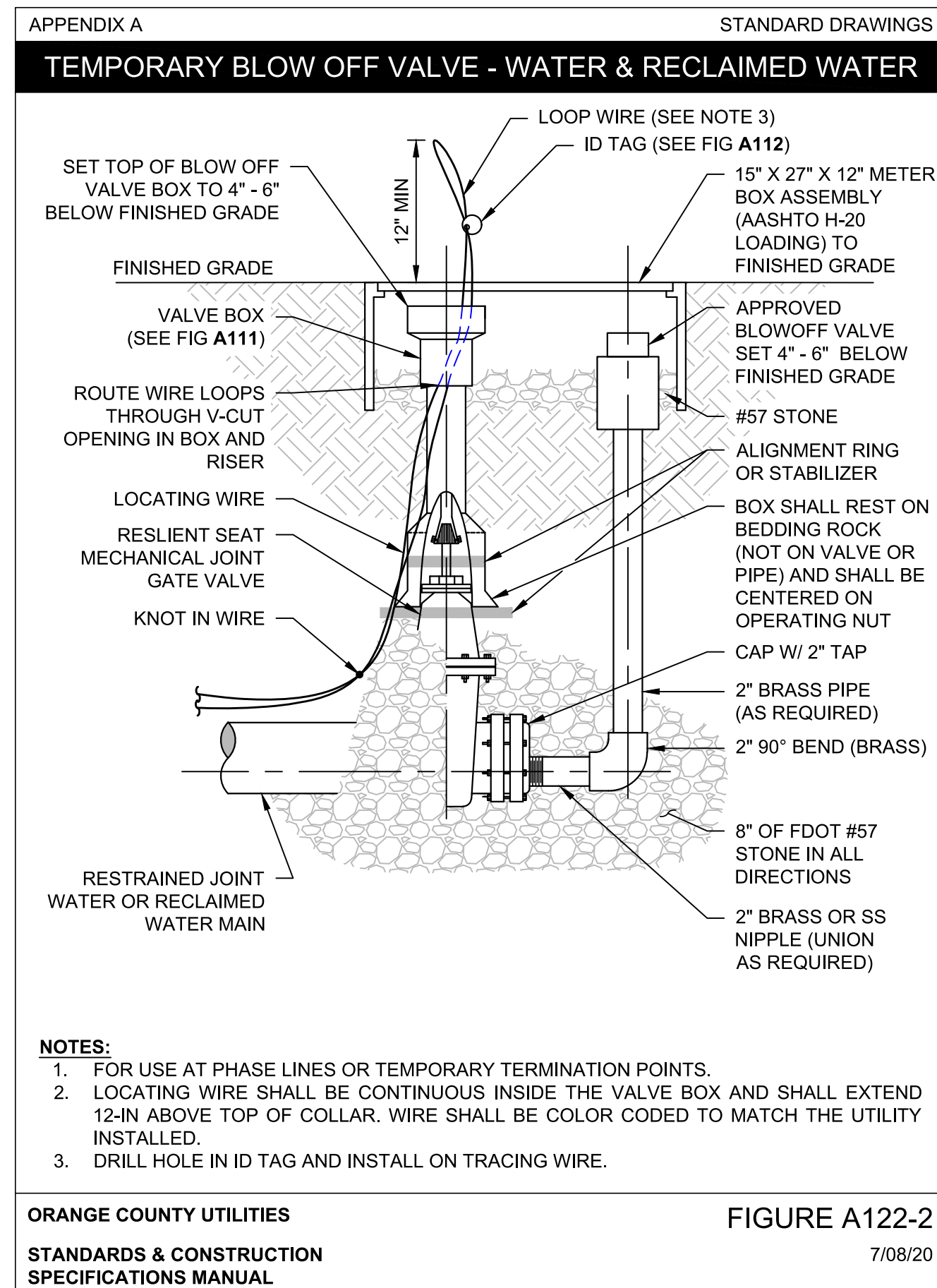
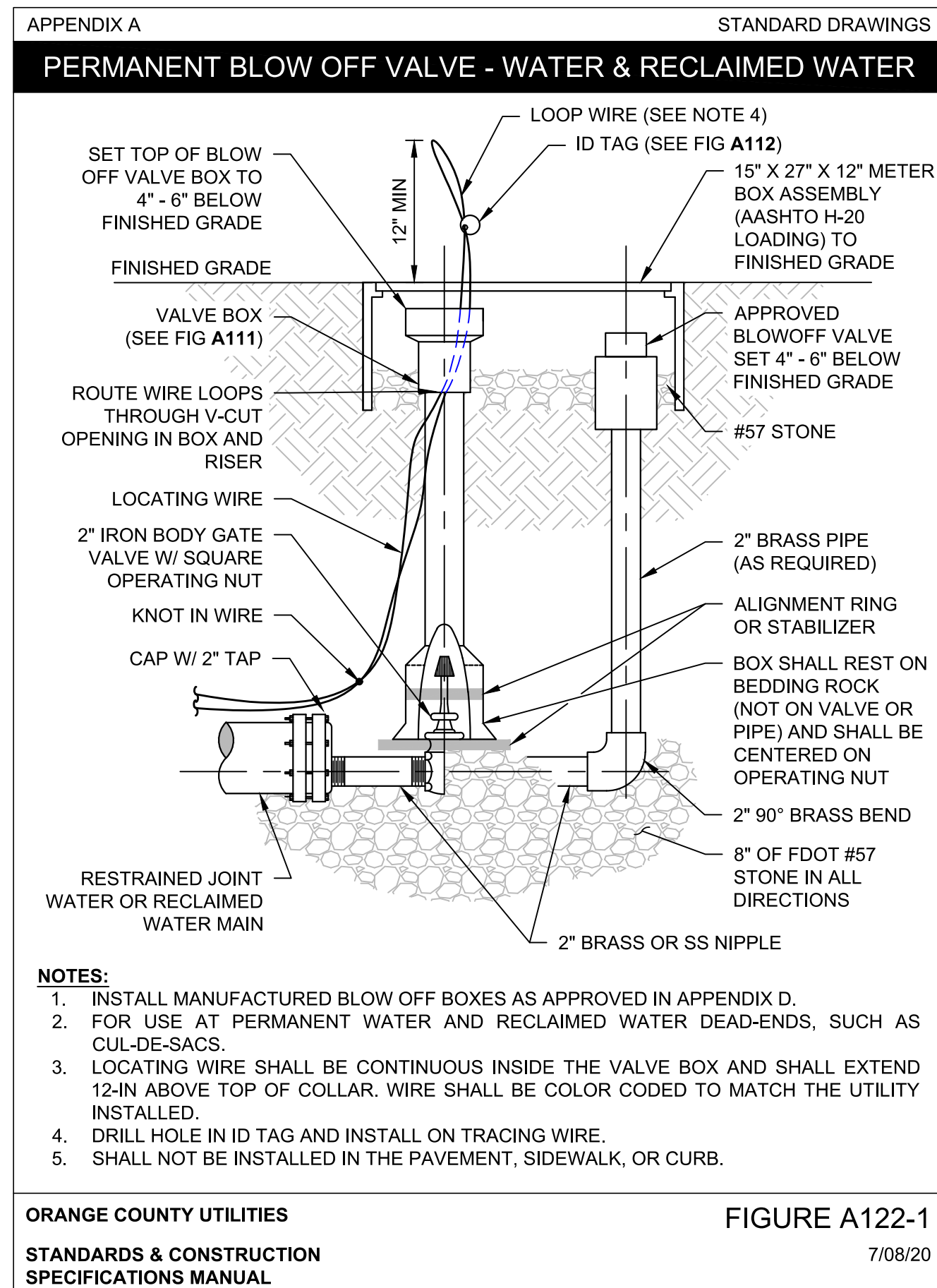
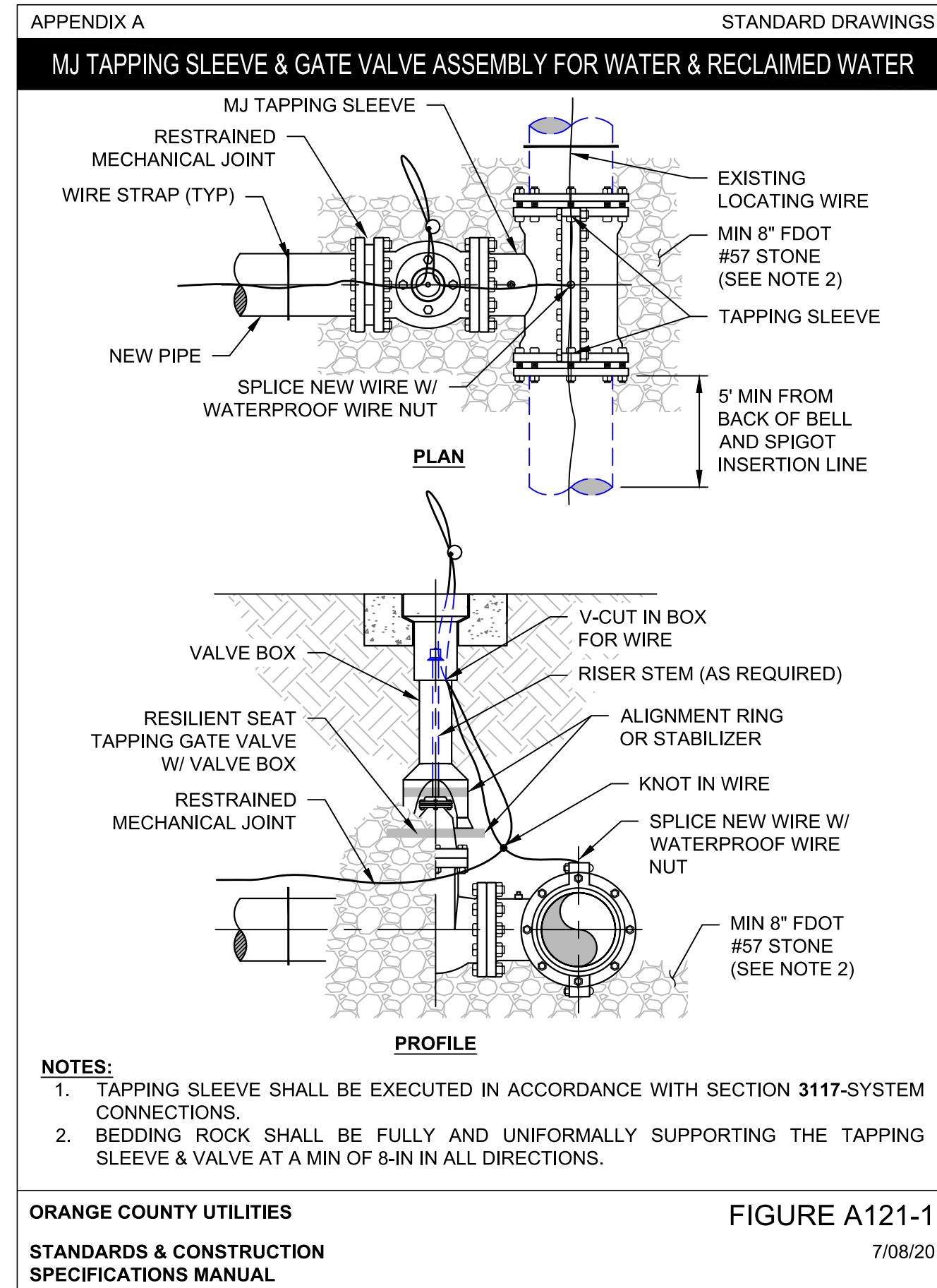
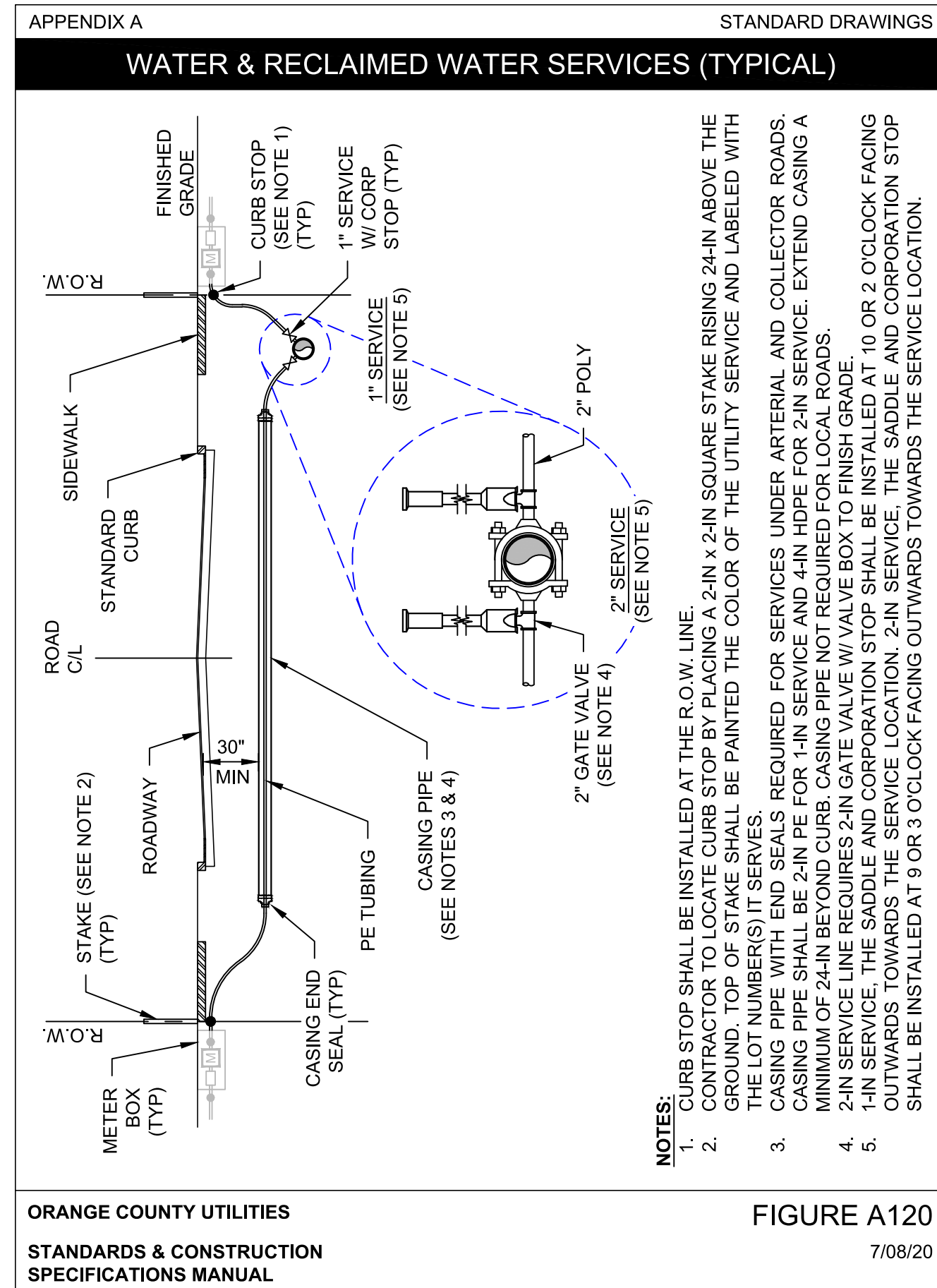
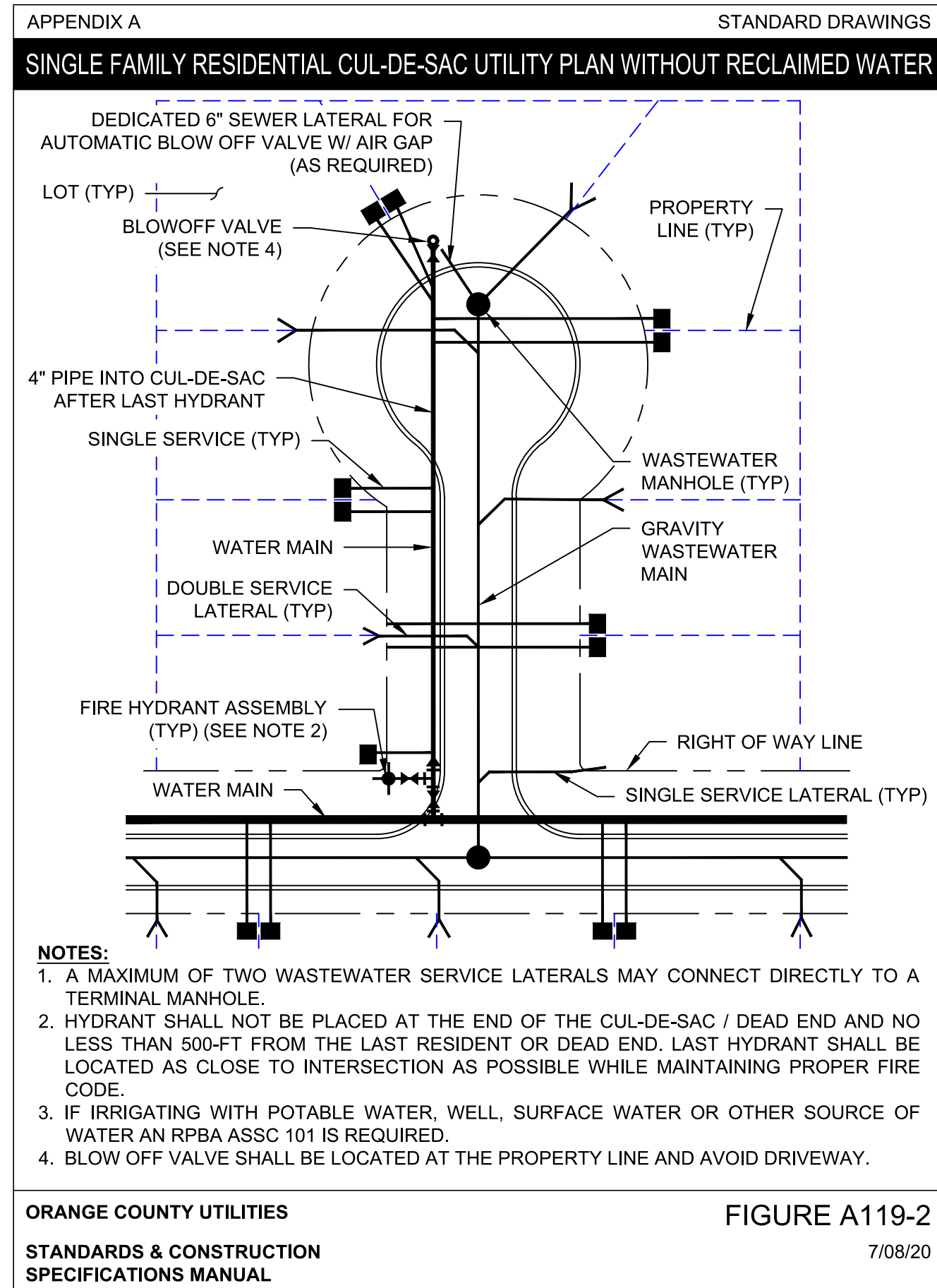
**NOTES:**

- DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
- THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE.
- THE 18-IN SEPARATION REQUIREMENT APPLIES WHEN THE STORM PIPE OR SANITARY SEWER CROSSES ABOVE THE UTILITY MAIN, AND WHEN THE STORM PIPE HAS A DIAMETER EQUAL TO OR GREATER THAN 24-IN. OTHERWISE, THE REQUIRED SEPARATION IS 12-IN.
- THIS SEPARATION REQUIREMENT COMPLIES WITH THE MINIMUM FDEP SEPARATION REQUIREMENTS OUTLINED IN 62-555.314, FAC AND MUST BE APPROVED INDIVIDUALLY BY BOTH FDEP AND UTILITIES.
- NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF SANITARY OR STORM WATER MANHOLE OR STRUCTURE.
- REFERENCE FIGURE A116-1 FOR HORIZONTAL PIPELINE SEPARATION REQUIREMENTS.

ORANGE COUNTY UTILITIES STANDARDS & CONSTRUCTION SPECIFICATIONS MANUAL **FIGURE A116-2** 7/08/20







APPROVED 09/07/2023  
Alexander Castro, P.E.  
FOR THE MANAGER,  
ENGINEERING DIVISION  
ORANGE COUNTY UTILITIES DEPARTMENT  
THIS APPROVAL IS SUBJECT TO EXISTING REQUIREMENTS  
OF ORANGE COUNTY UTILITIES DIVISION STANDARDS  
AND SPECIFICATIONS.

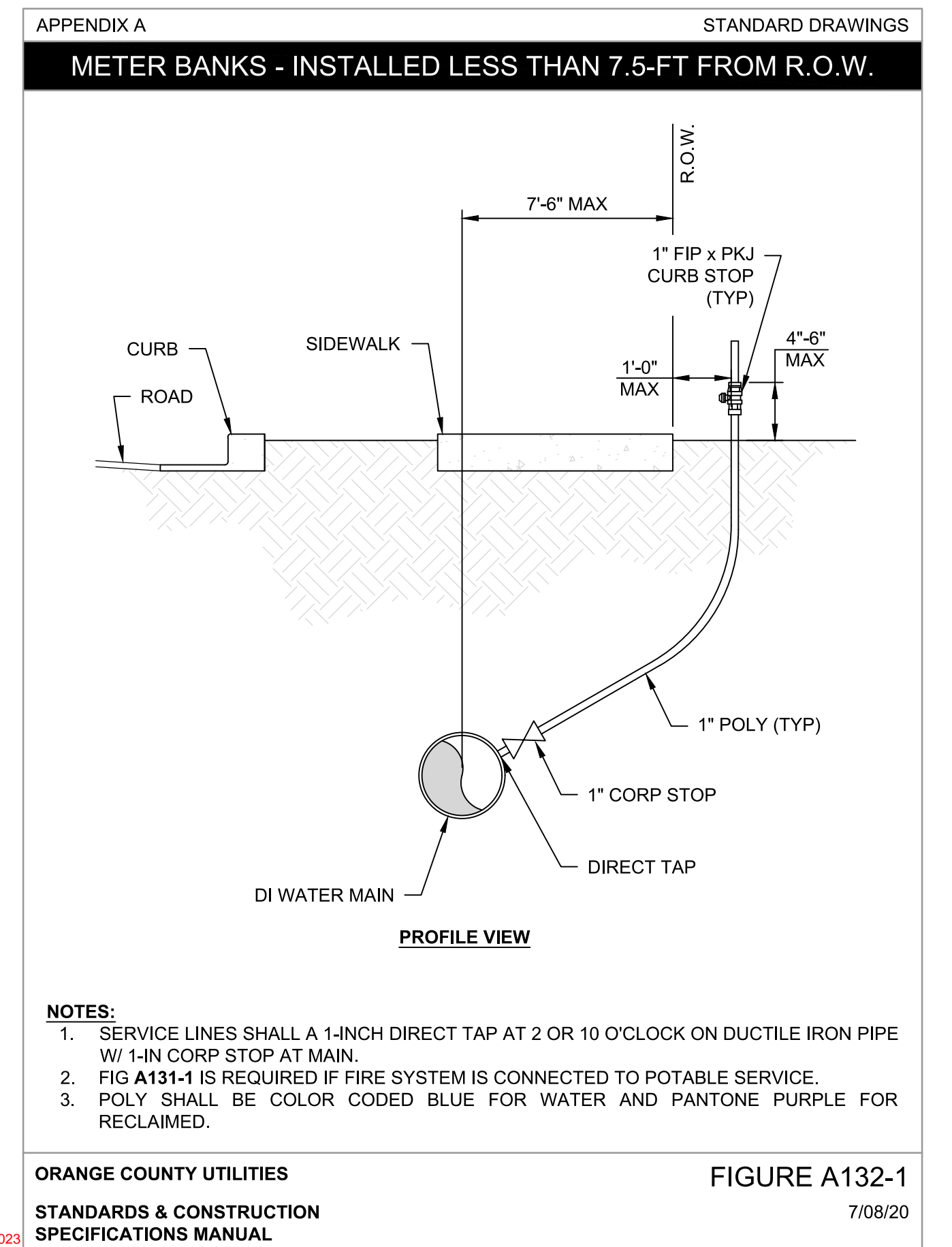
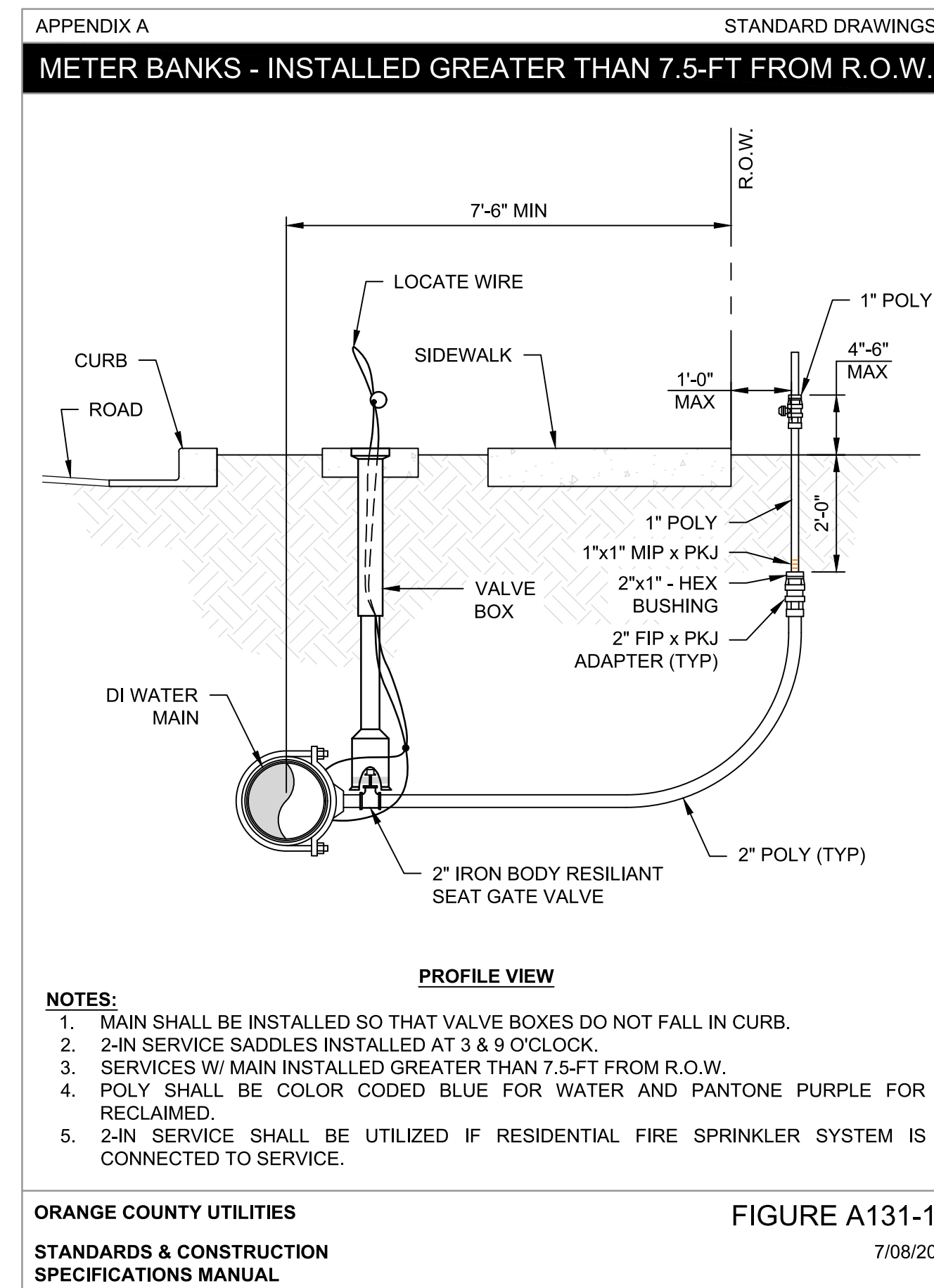
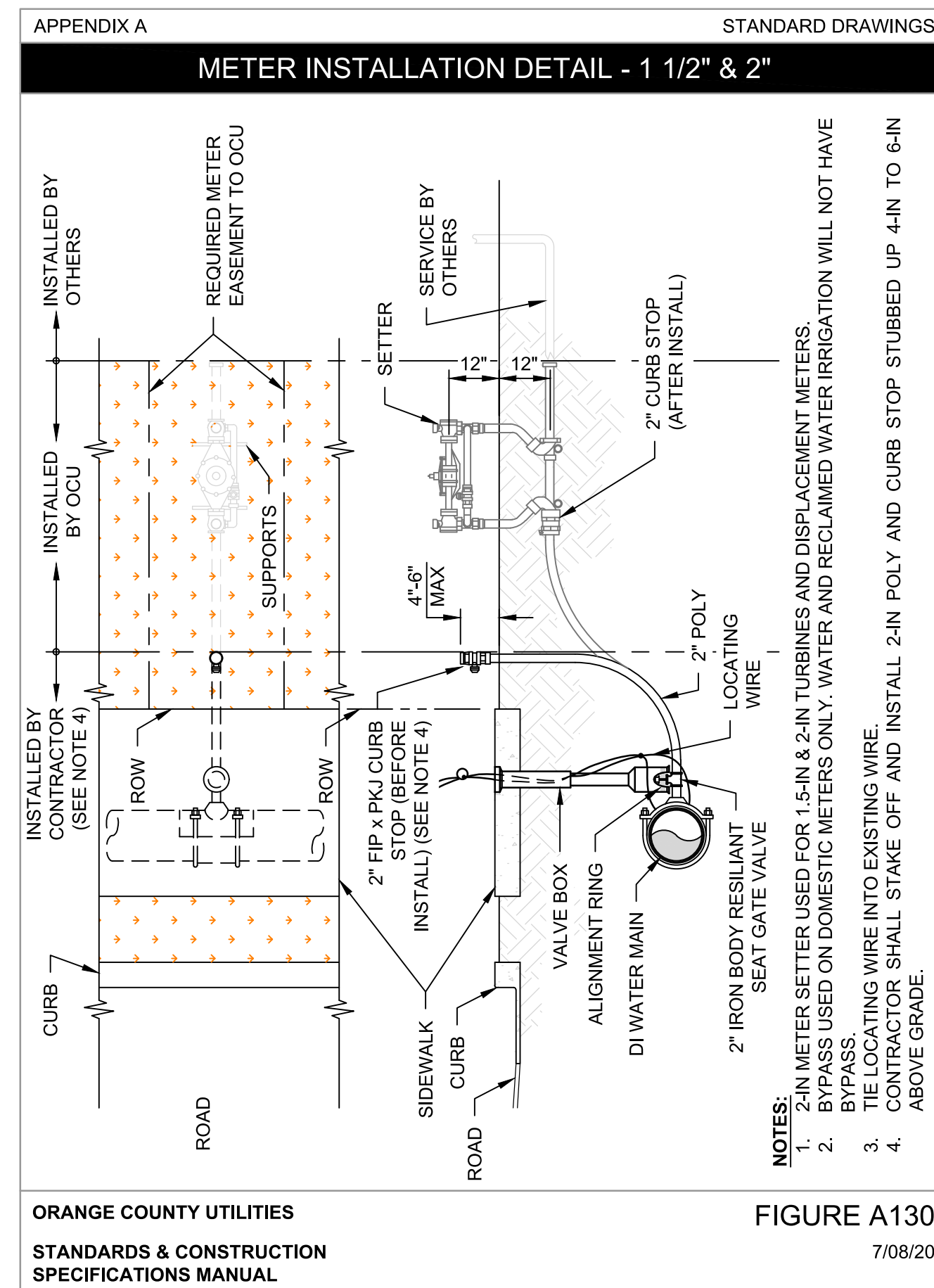
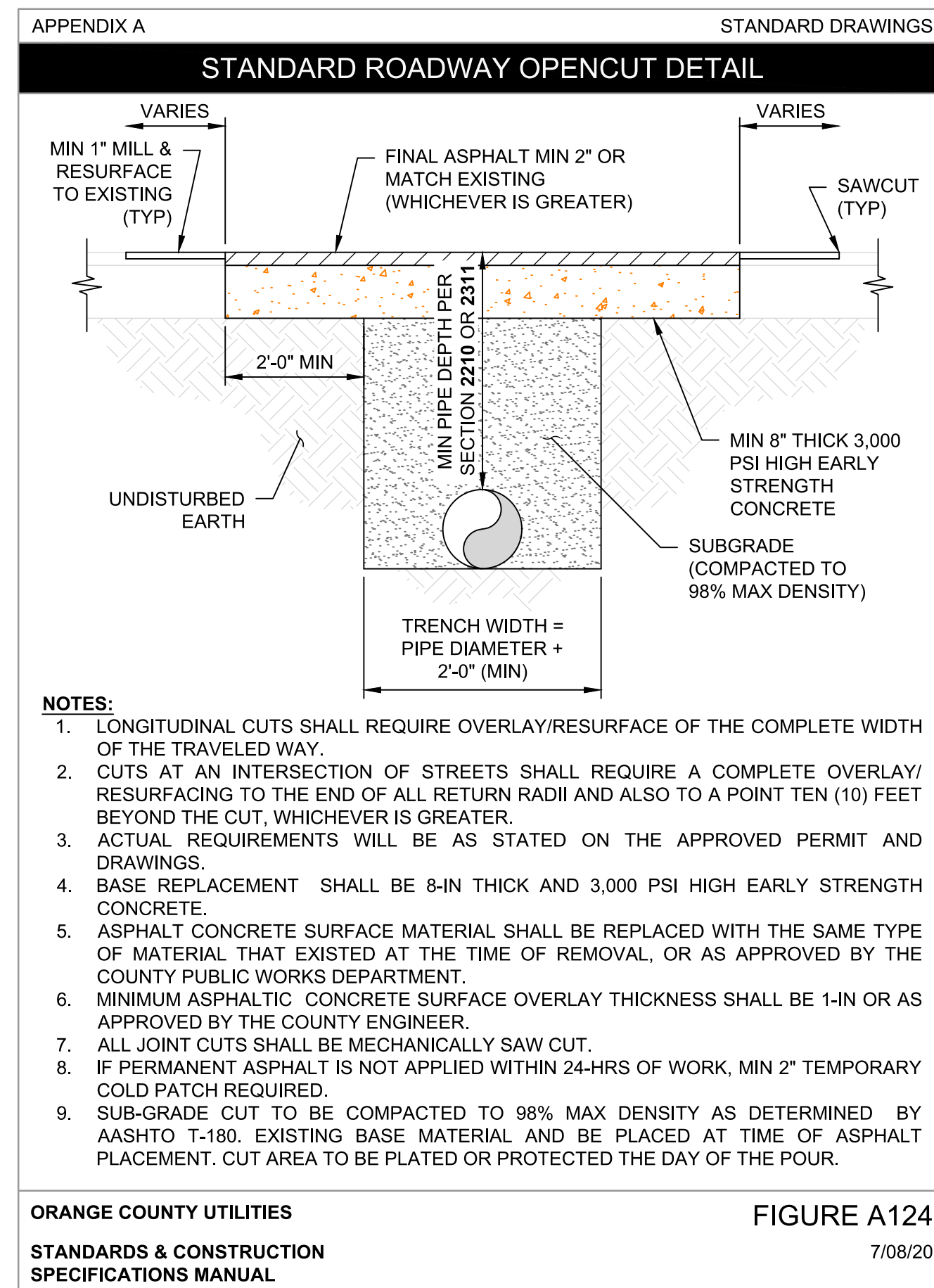
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						PEC SURVEYING AND MAPPING, LLC
						DRAWN BY: CADD
						DESIGNED BY: MBG
						CHECKED BY: MBG
						DATE: MARCH 2023

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC  
3222 Corrine Drive, Suite H  
Orlando, Florida 32803  
CERTIFICATE OF AUTHORIZATION NO. 29032  
407/493-9983

**ORANGE COUNTY** UTILITIES DEPARTMENT  
9150 CURRY FORD ROAD  
ORLANDO, FLORIDA 32825  
(407) 254-9900

JOB No. TOW-052.01.000	STANDARD DETAILS
FILE NAME: SEE LEFT MARGIN	
ARCHIVE DISC:	
SCALE: NONE	DRWG. SHEET 75 OF 86



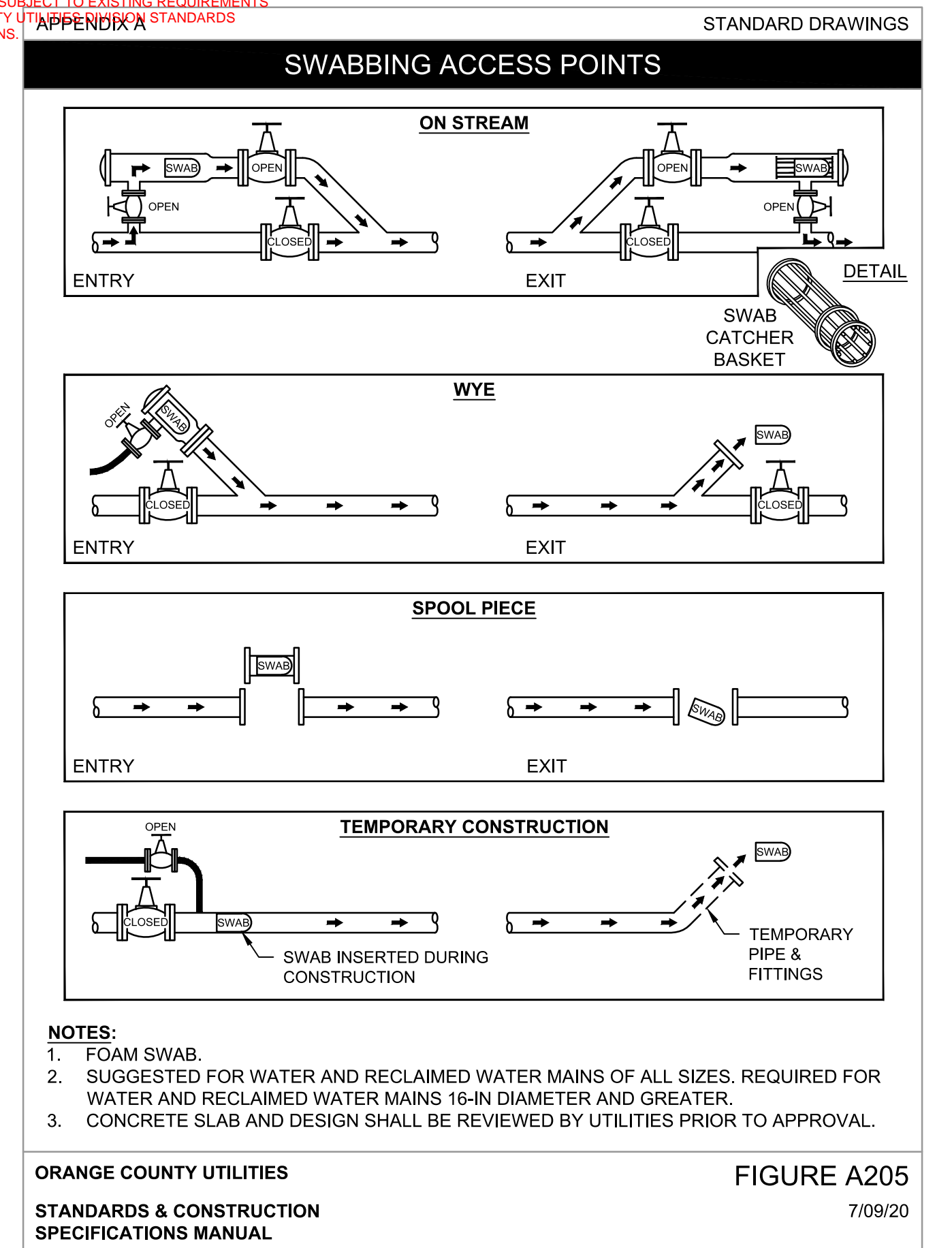
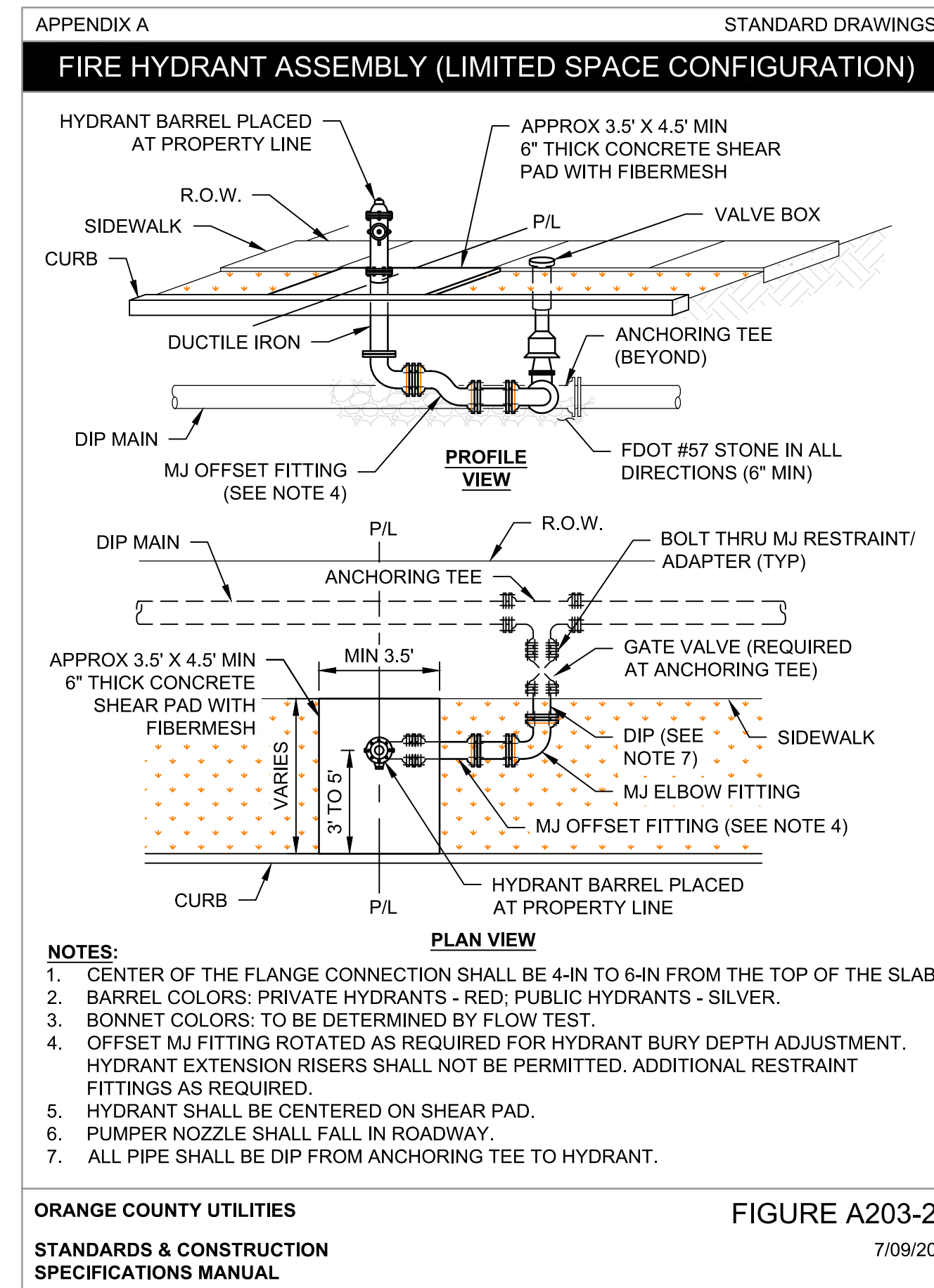
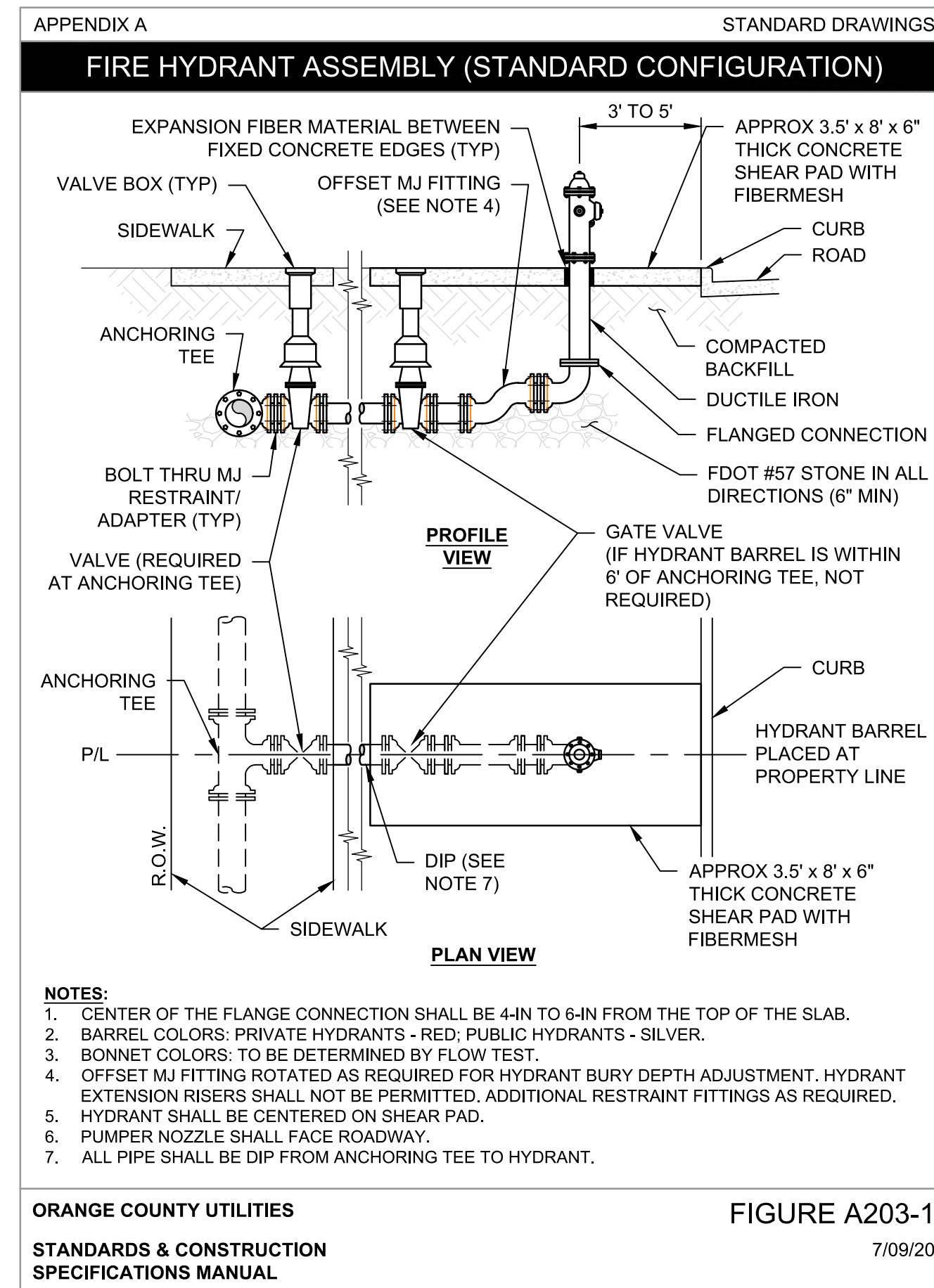
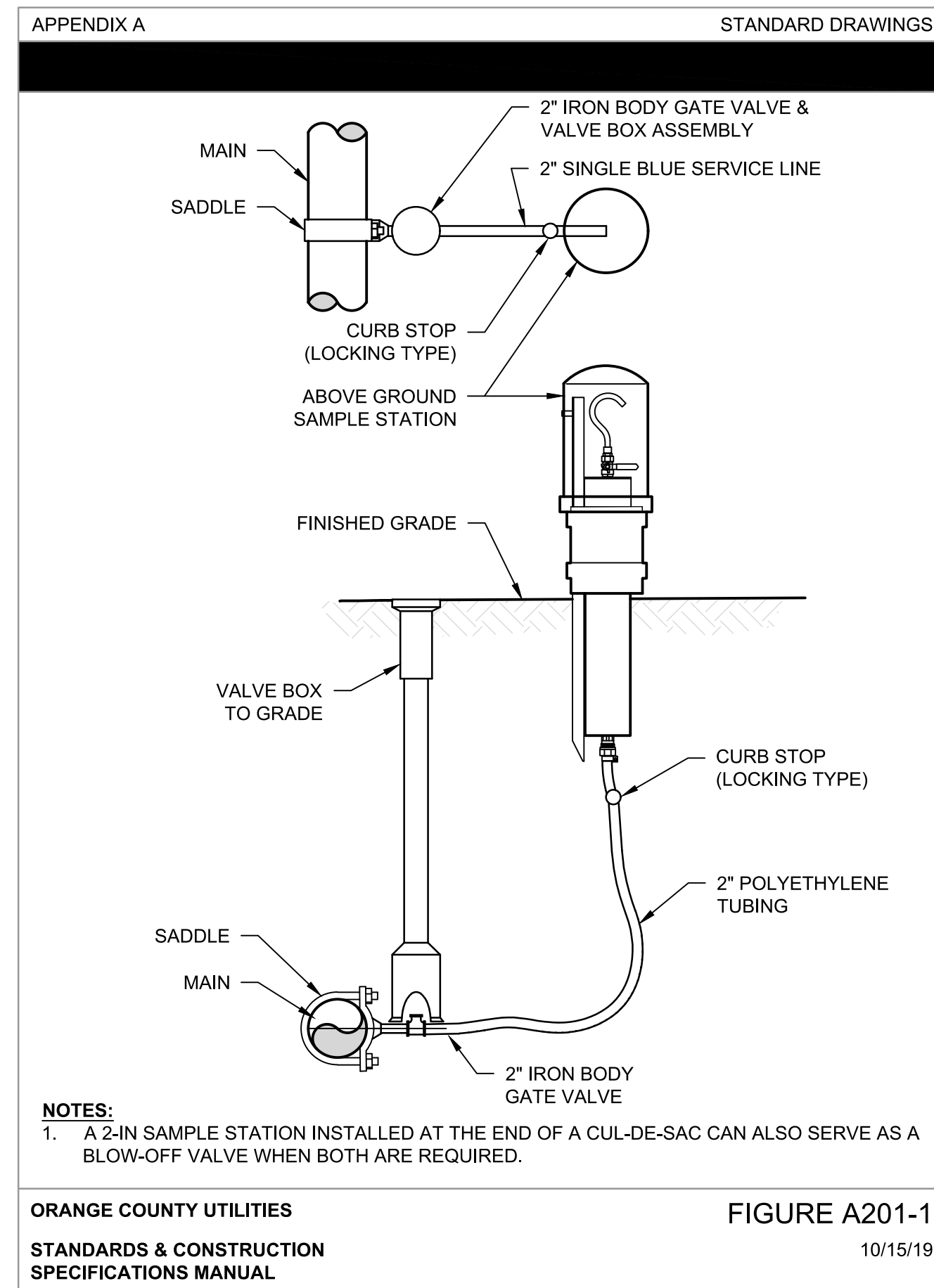


APPROVED 09/07/2023

Alexander Castro, P.E.

FOR THE MANAGER, ENGINEERING DIVISION, ORANGE COUNTY UTILITIES DEPARTMENT

THIS APPROVAL IS SUBJECT TO EXISTING REQUIREMENTS OF ORANGE COUNTY UTILITIES STANDARDS AND SPECIFICATIONS.



REV.	DATE	DESCRIPTION	APP'D BY	OTHERS	DATE	FIELD:
						PEC SURVEYING AND MAPPING, LLC
						DRAWN BY: CADD
						DESIGNED BY: MBG
						CHECKED BY: MBG
						DATE: MARCH 2023

**MGEC** MICHAEL GALURA ENGINEERING CONSULTANTS, LLC

3222 Corrine Drive, Suite H  
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9150 CURRY FORD ROAD  
ORLANDO, FLORIDA 32825  
(407) 254-9900

JOB No. TOW-052.01.000

FILE NAME: SEE LEFT MARGIN

ARCHIVE DISC:

SCALE: NONE

**STANDARD DETAILS**

DRWG. SHEET 76 OF 86





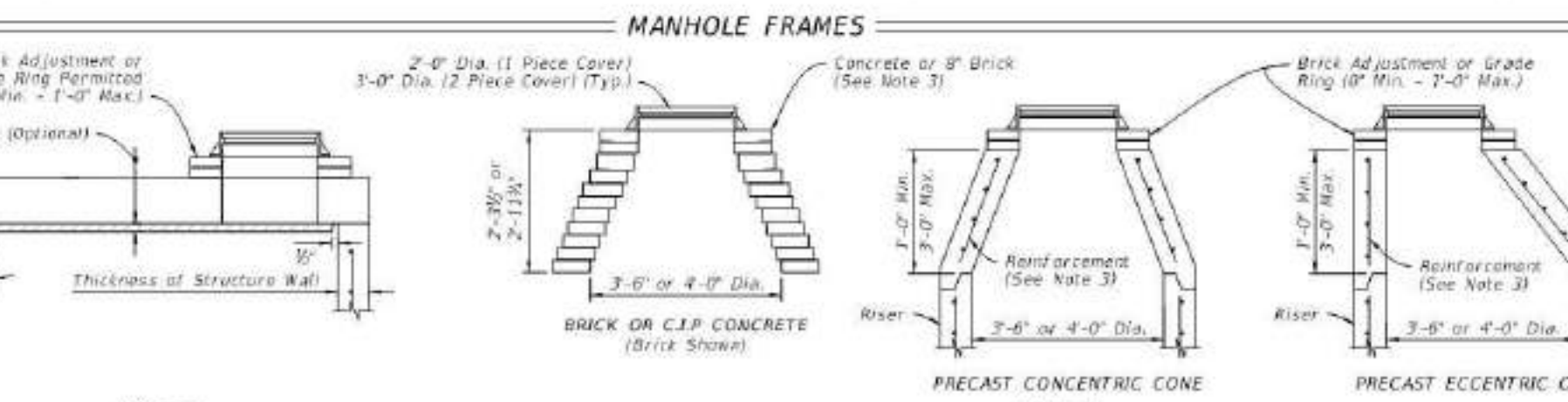
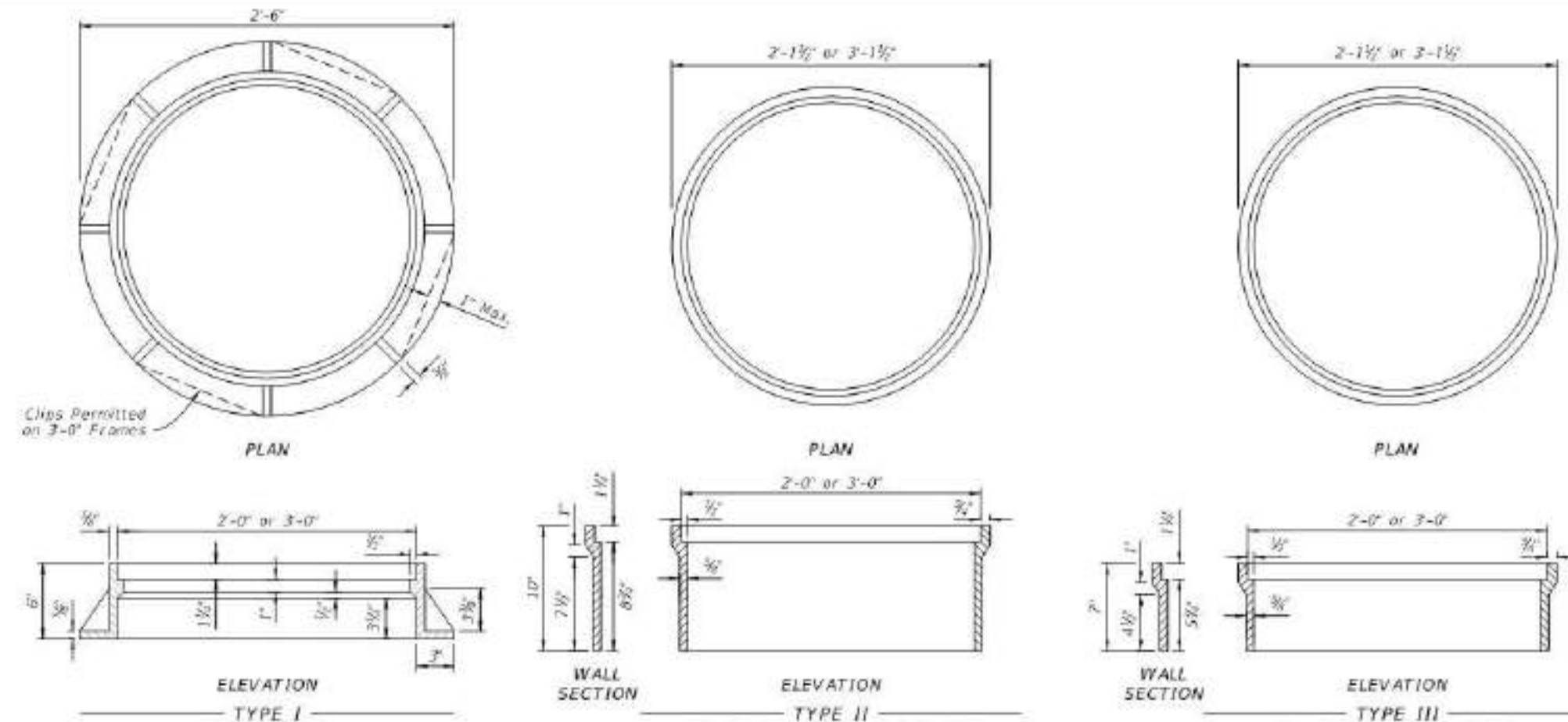






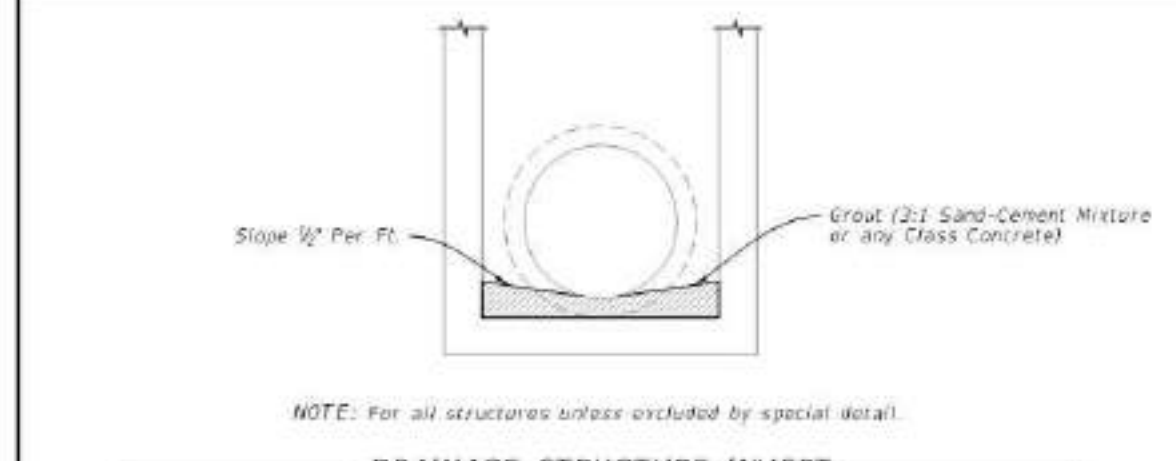
Frame Type	2'-0" OPENING		3'-0" OPENING	
	Frame	2-Piece Cover	Frame	2-Piece Cover
I	155	200	190	220
II	145	190	180	210
III	90	130	120	160

NOTE:  
Frame Type I in Table 1 includes Adjustable Frames.

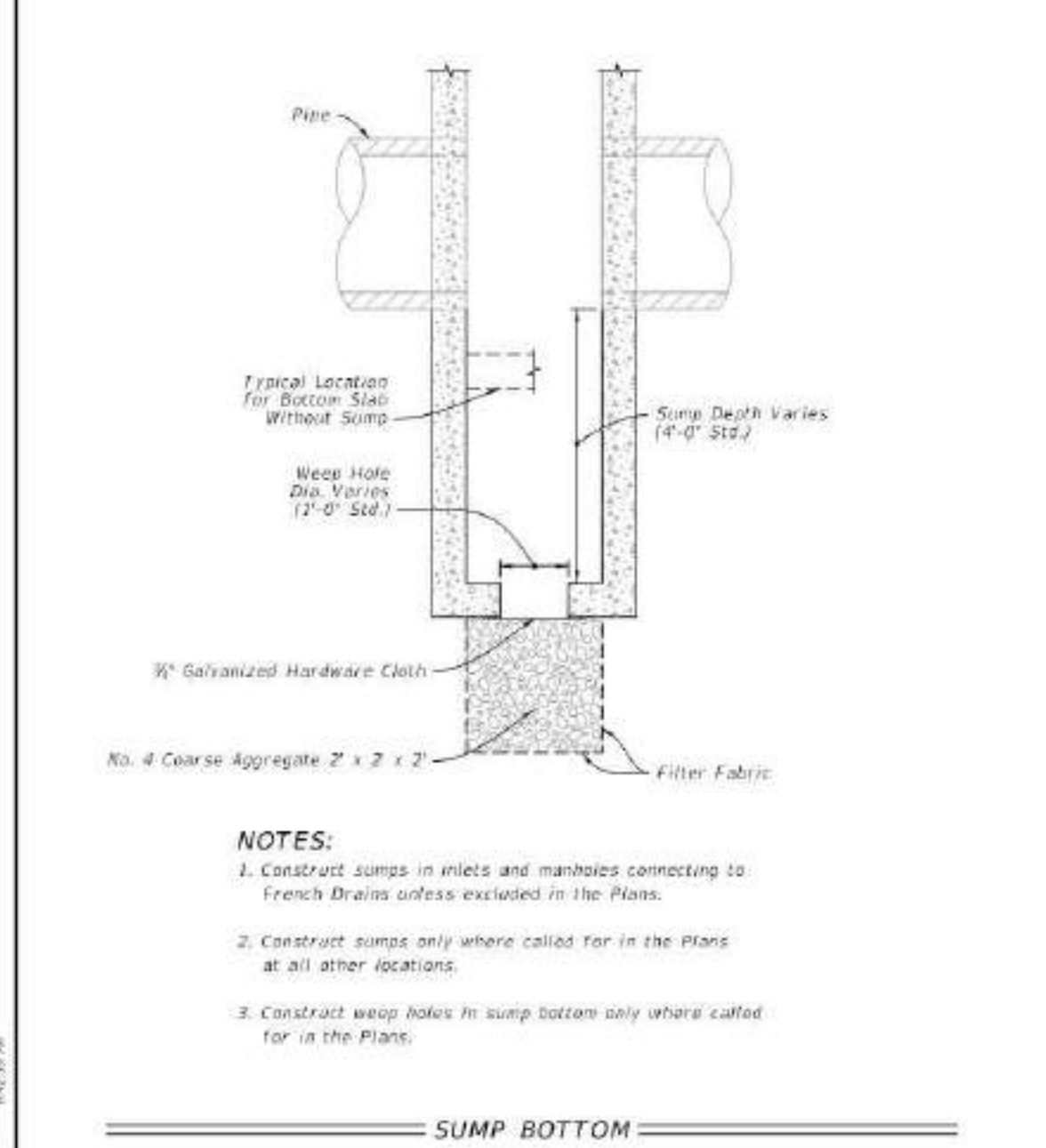


NOTES:  
1. Use Class II concrete for Manhole top Type 7 slabs.  
2. Manhole top Type 7 slabs may be of cast-in-place or precast construction. The optional key is for precast tops and in lieu of dowels. Only frame and slab openings when top is used over a junction box.  
3. Manhole top Type 8 may be of cast-in-place, precast concrete construction, or brick construction. For concrete construction, use the same concrete and steel reinforcement as the supporting wall unit. An eccentric cone may be used.  
4. Use construction joint options, as shown on Sheet 6 to secure manhole top to structure.  
5. Frames may be adjusted to a maximum 12" height with brick or precast ASTM C478 grade rings.  
6. Manhole top Type 8 may be substituted for a Type 7, if the minimum dimensions are not reduced.  
7. Manhole top Type 7 may be substituted for Type 8, if the minimum thickness (h) above pipe opening cannot be maintained with Type 8.

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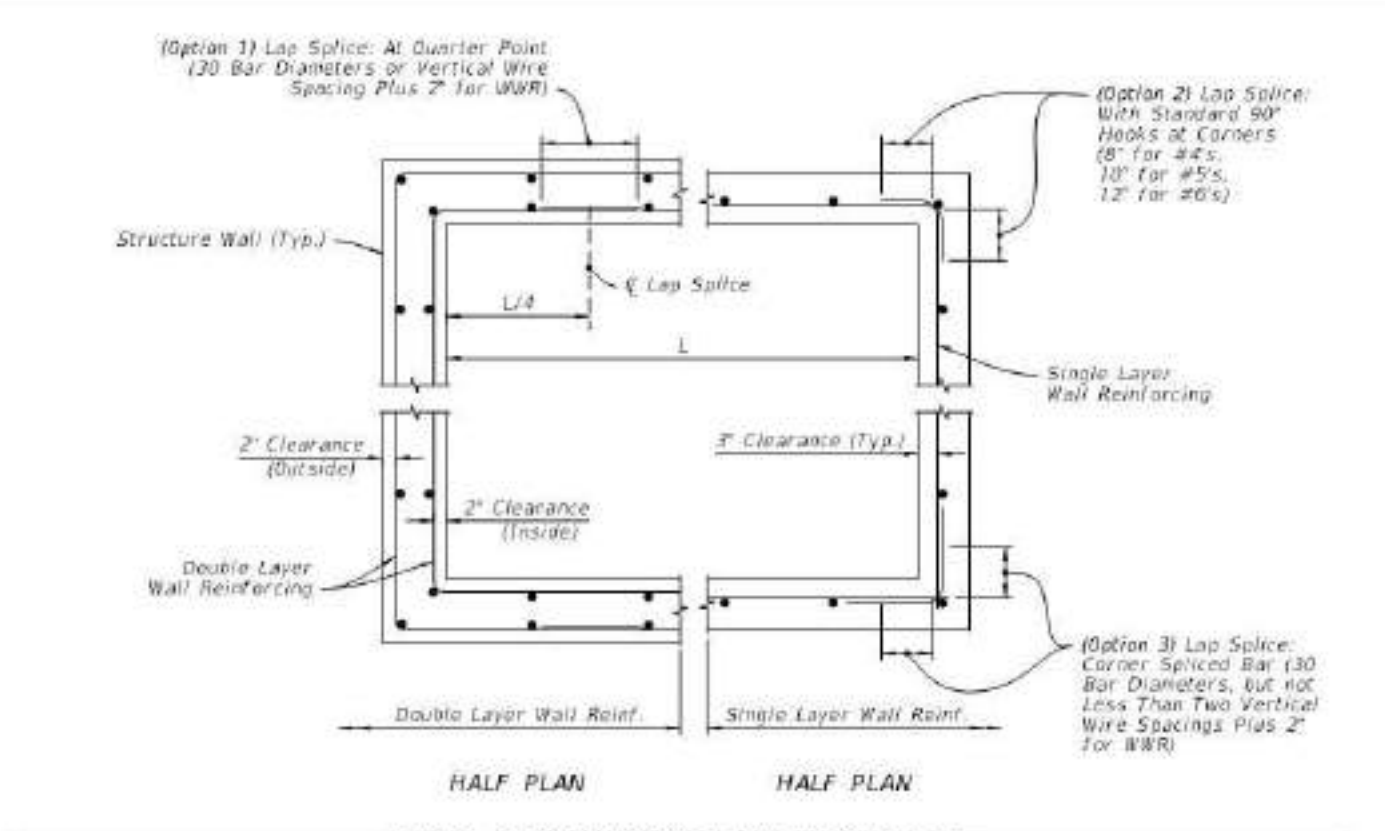


NOTE: For all structures unless excluded by special detail.

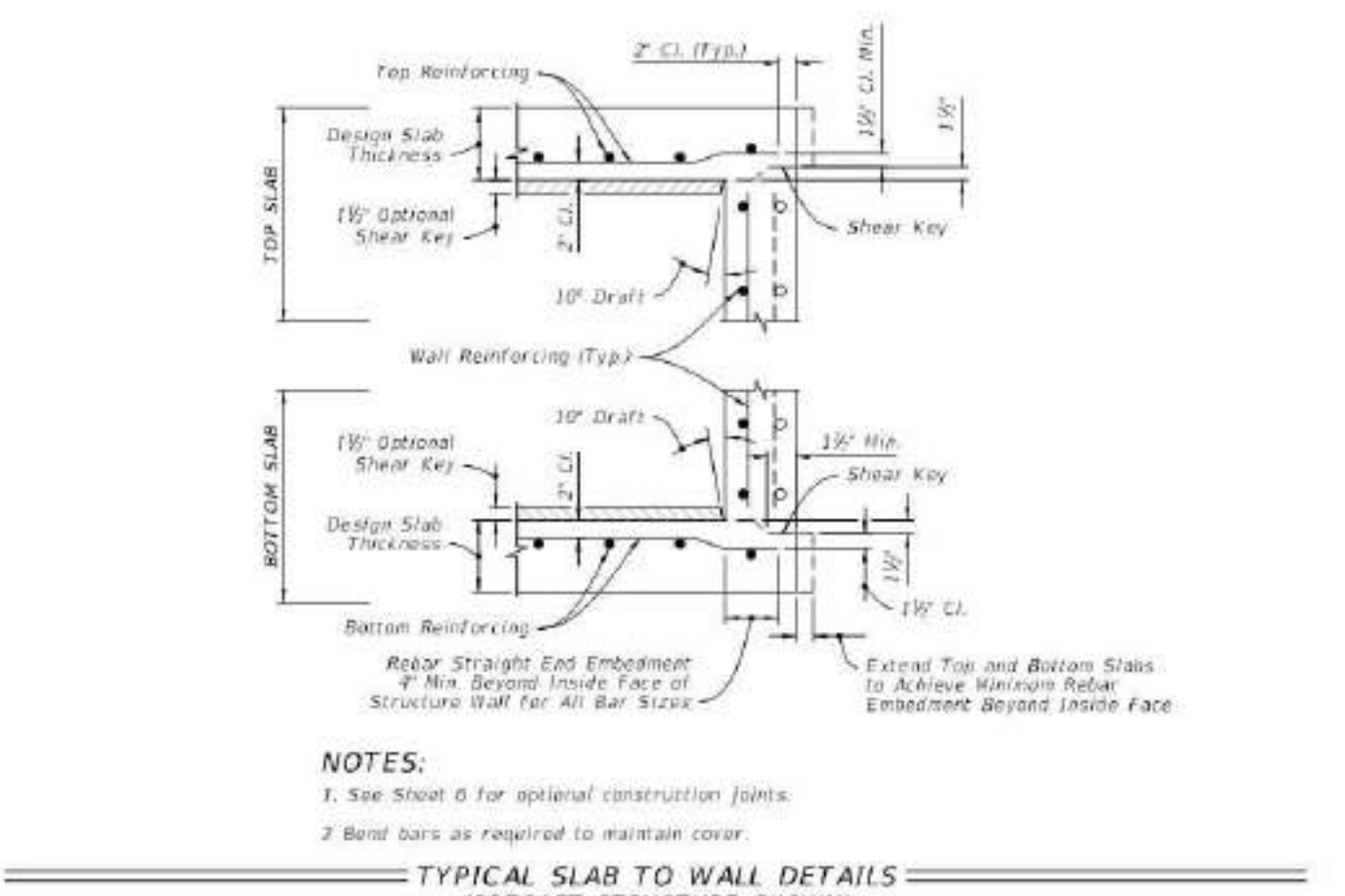


NOTES:  
1. Construct sumps in inlets and manholes connecting to French Drains unless excluded in the Plans.  
2. Construct sumps only where called for in the Plans at all other locations.  
3. Construct weep holes in sump bottom only where called for in the Plans.

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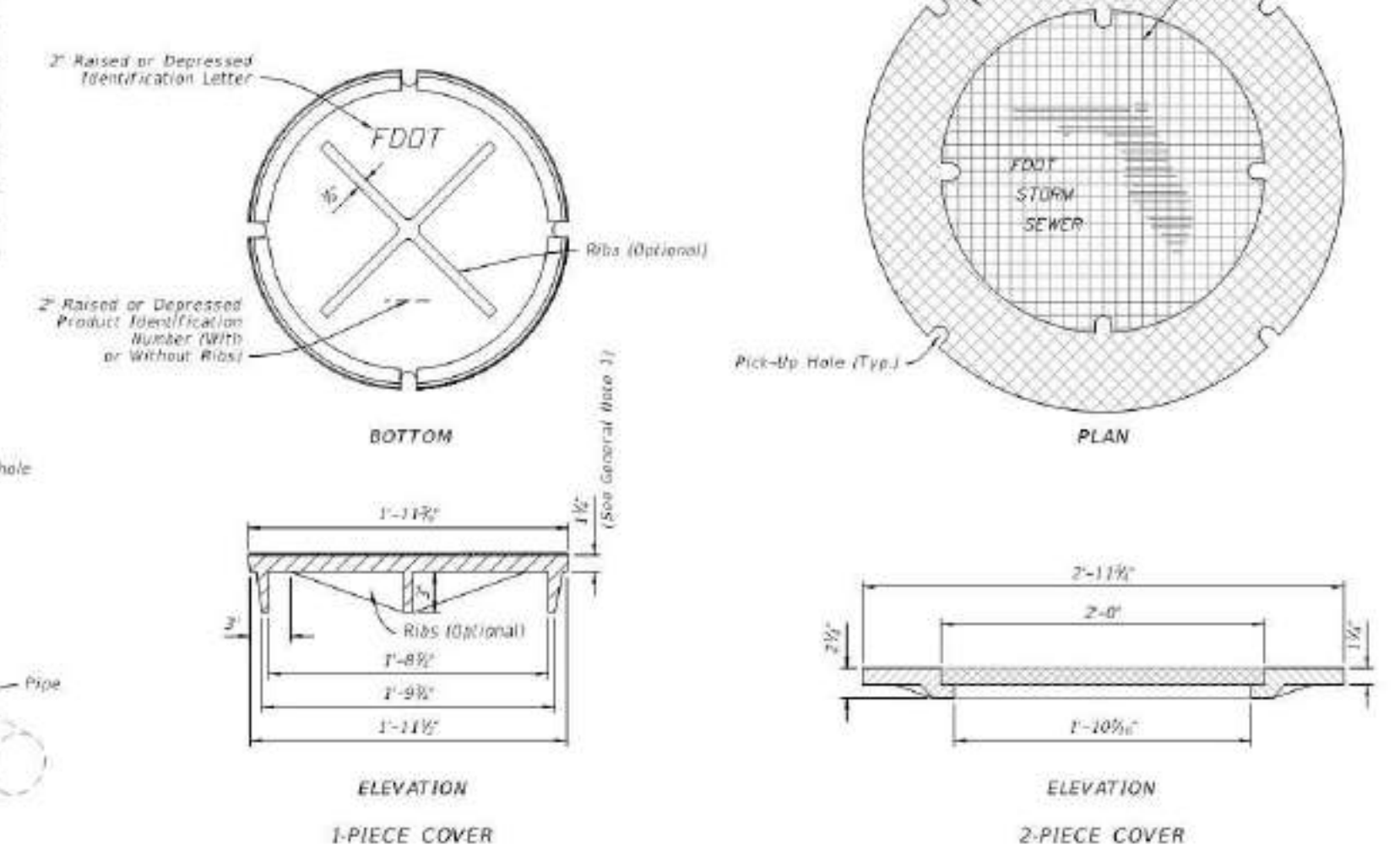
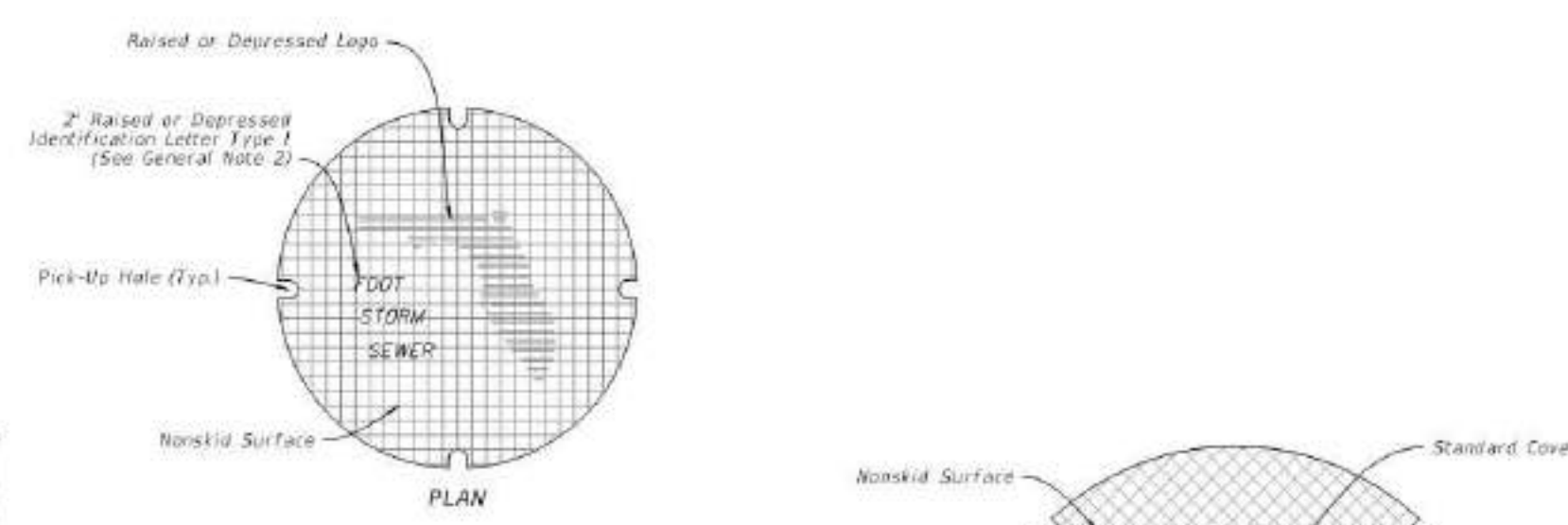
NOTES:  
1. See Sheet 6 for optional construction joints.  
2. Bent bars as required to maintain cover.



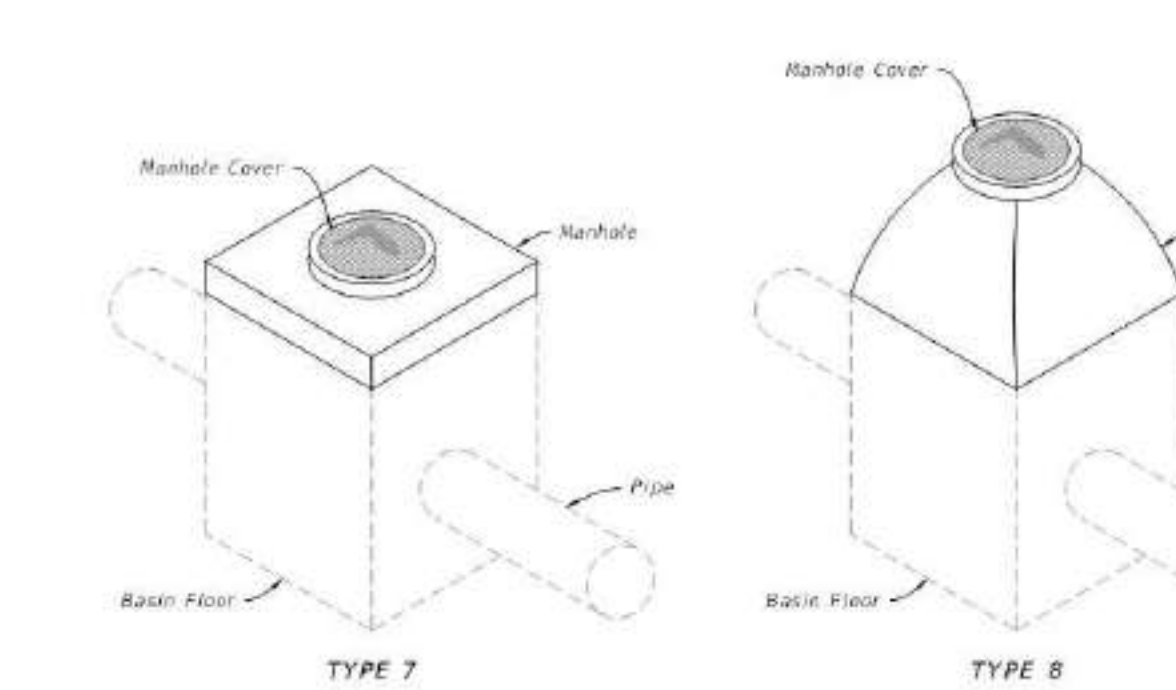
NOTES:  
1. See Sheet 6 for optional construction joints.  
2. Bent bars as required to maintain cover.

LAST REVISION 11/01/20	DESCRIPTION REVISION	FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 4 of 8
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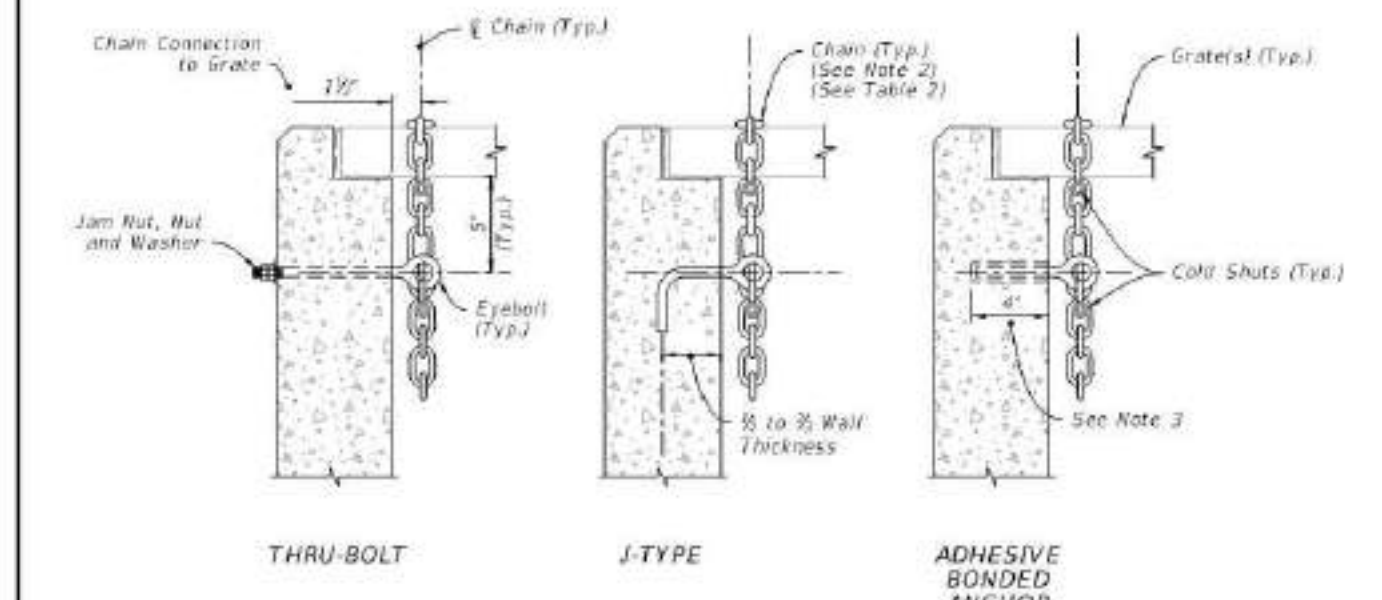
GENERAL NOTES:  
1. Use a 1-piece cover, unless the 2-piece cover is called for in the Plans, except at inlets and manholes with sump bottoms. Use the 2-piece cover when the sump depth exceeds 2', unless otherwise noted.  
2. Include "Adjustable" on the cover for Type I manhole adjustable frames.  
3. For square or rectangular precast drainage structures, use either deformed or smooth WWR meeting the requirements of Specification 833. WWR must be continuous around the box and lapped in accordance with Option 1 or 3 as shown in the Wall Reinforcing Splice Details.  
4. Lap splice horizontal steel in the walls of rectangular structures in accordance with Option 1, 2 or 3 as shown in the Wall Reinforcing Splice Details.  
5. Welding of splices and laps is permitted. Use AASHTO M259 requirements and restrictions on welds.  
6. Bend straight end embedment of peripheral reinforcement may be used in lieu of #3 standard hooks for top and bottom slabs, except when hooks are specifically called for in the Plans.  
7. Precast opening for pipe must be the pipe OD plus 8" (+2" tolerance). Use starter to seal the pipe into the opening of curb and inlet. Shrinkage will not cause leakage into or out of the structure. Dry-pack mortar may be used to seal openings less than 2 1/2" wide.



Sheet	Description
1	General Notes, Contents, Manhole Top Overview, and Manhole Covers
2	Manhole Frames and Manhole Tops
3	Inlet Locking Grates, Subgrade and Base Temporary Drains, and Pipe to Structure Filter Fabric Wrap
4	Drainage Structure Invert, Sump Bottom, Wall Reinforcing Splice Details, and Typical Slab to Wall Details
5	Precast Option and Equivalent Reinforcement Substitution
6	Construction Joints and Minimum Box Riser Segment Dimensions
7	Sloped Pipe in Rectangular Structures
8	Miscellaneous Pipe Connection Details



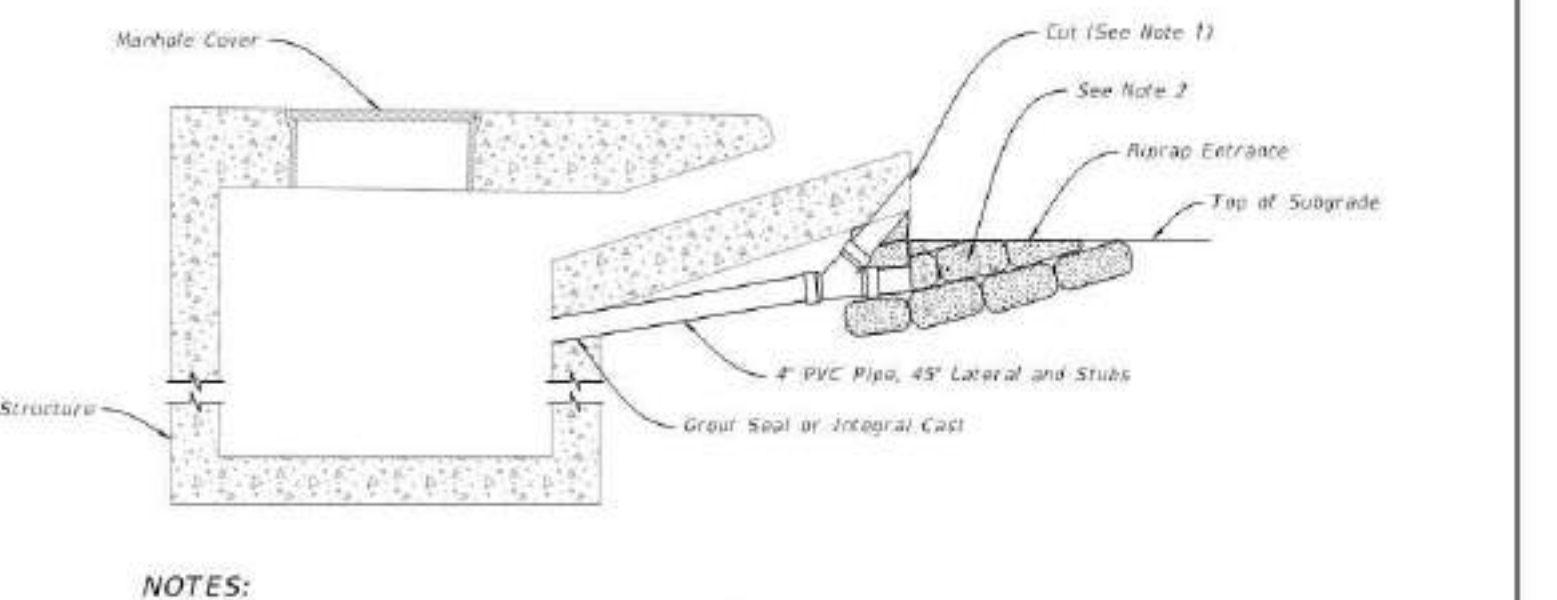
LAST REVISION 11/01/20	DESCRIPTION REVISION	FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 1 of 8
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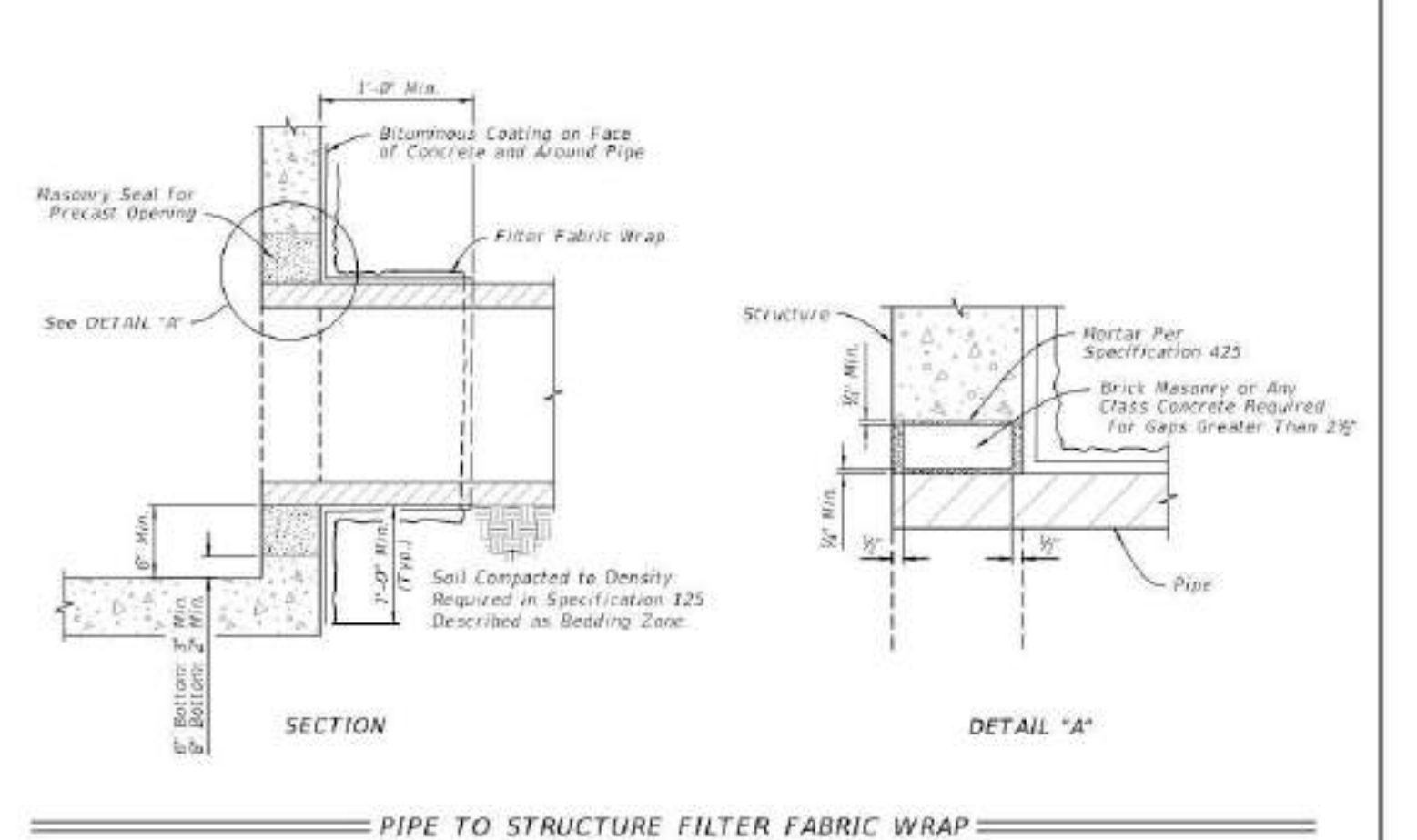
NOTES:  
1. Install either a 1/2" x 1" Diameter Threaded Straight (Thru-Bolt), a J-Type, or an adhesive bonded Anchor Eye-bolt.  
2. Install a 1/2" Chain and 1/2" Cold Shuts. When chaining two grates together provide adequate loop for easy handling.  
3. Install adhesive bonded anchor details with a minimum of 4" embedment, and in accordance with Specification 416.

Index Number	Inlet Type	Eye-Bolts	Length of Chain	Handling & Remarks
425-030	I	1	4'-0"	Slide & Spin
425-031	2	2	2 @ 4'-0"	Slide & Spin
425-032	N/A	1	2'-0"	Slide or Slide & Spin
425-033	S	1	4'-0"	Slide & Spin
425-034	V	1	4'-0"	Slide & Spin
425-035	A	1	3'-0"	Slide
425-036	B	1	3'-0"	Slide & Spin
425-037	C	1	2'-0"	Slide & Spin
425-038	D	1	2'-0"	Slide & Spin
425-039	E	2	2 @ 2'-0"	Slide & Spin
425-040	H	2	2 @ 2'-0"	File Cut, Grate and Slide & Spin Simple Free Grate
425-041	F	1	1 or 2 @ 2'-0"	File or Slide & Spin
425-042	G	1	6'-0"	Slide
425-043	J	1	4'-0"	Lifting Loop

LAST REVISION 11/01/20	DESCRIPTION REVISION	FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 3 of 8
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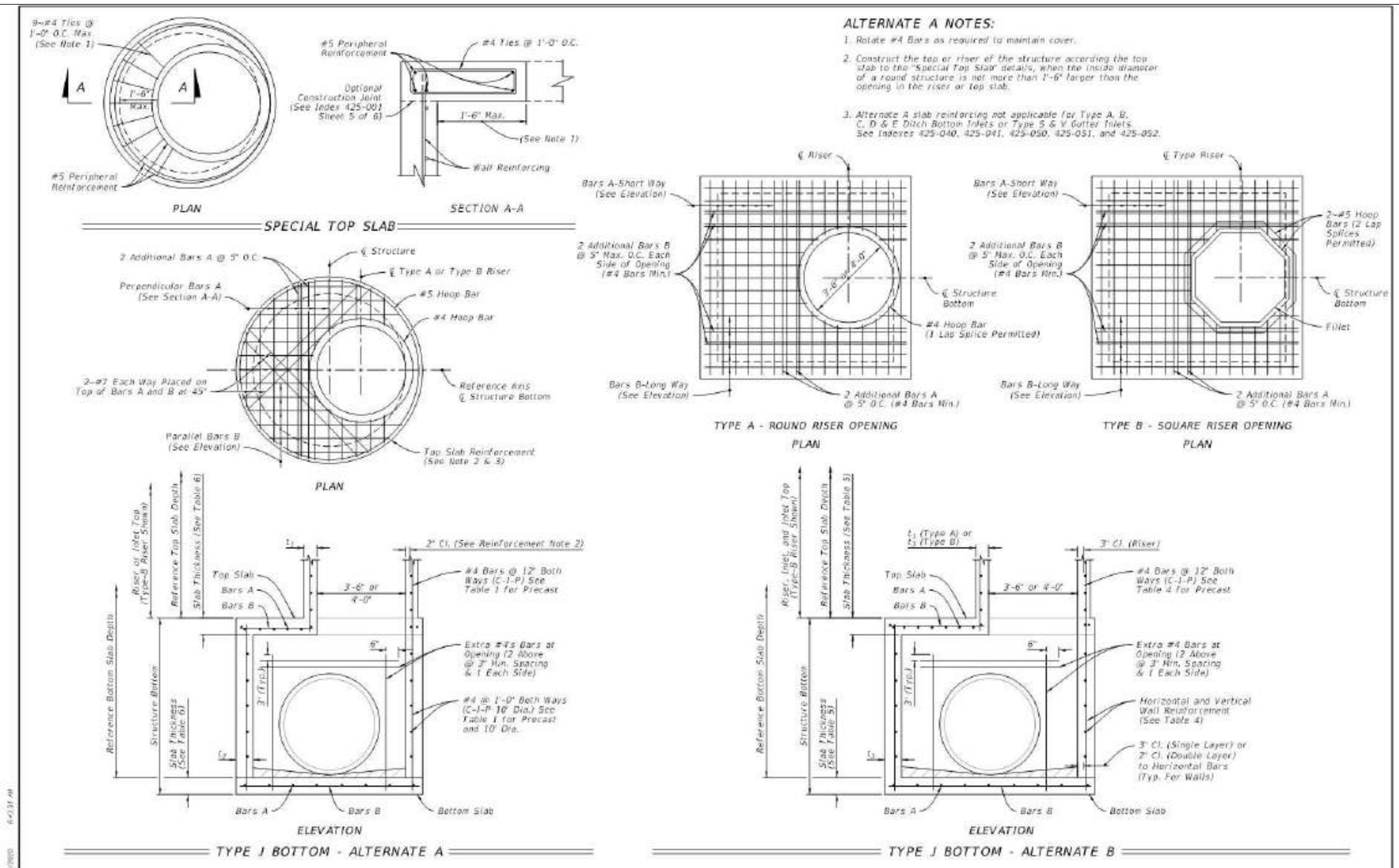


NOTES:  
1. Bevel cut upper stub to match forming for apron face. Capping or plugging of upper stub is not required. Remove friable base material at stub opening to permit covering of opening with structural course material.  
2. Remove riprap, cement PVC cap on lower stub, and place compacted fill in entrance prior to placing base material.



LAST REVISION 11/01/20	DESCRIPTION REVISION	FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 3 of 8
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**ALTERNATE A NOTES:**

- Rotate #4 Bars as required to maintain cover.
- Construct the top or riser of the structure according to the top plan to the "Special Top Slab" details, when the inside diameter of a round structure is not more than 7'-0" larger than the opening in the riser or top slab.
- Alternate A slab reinforcing not applicable for Type A, B, C, D & E Ditch Bottom Tanks or Type S & V Gutter Inlets. See Indexes 425-040, 425-041, 425-050, 425-051, and 425-052.

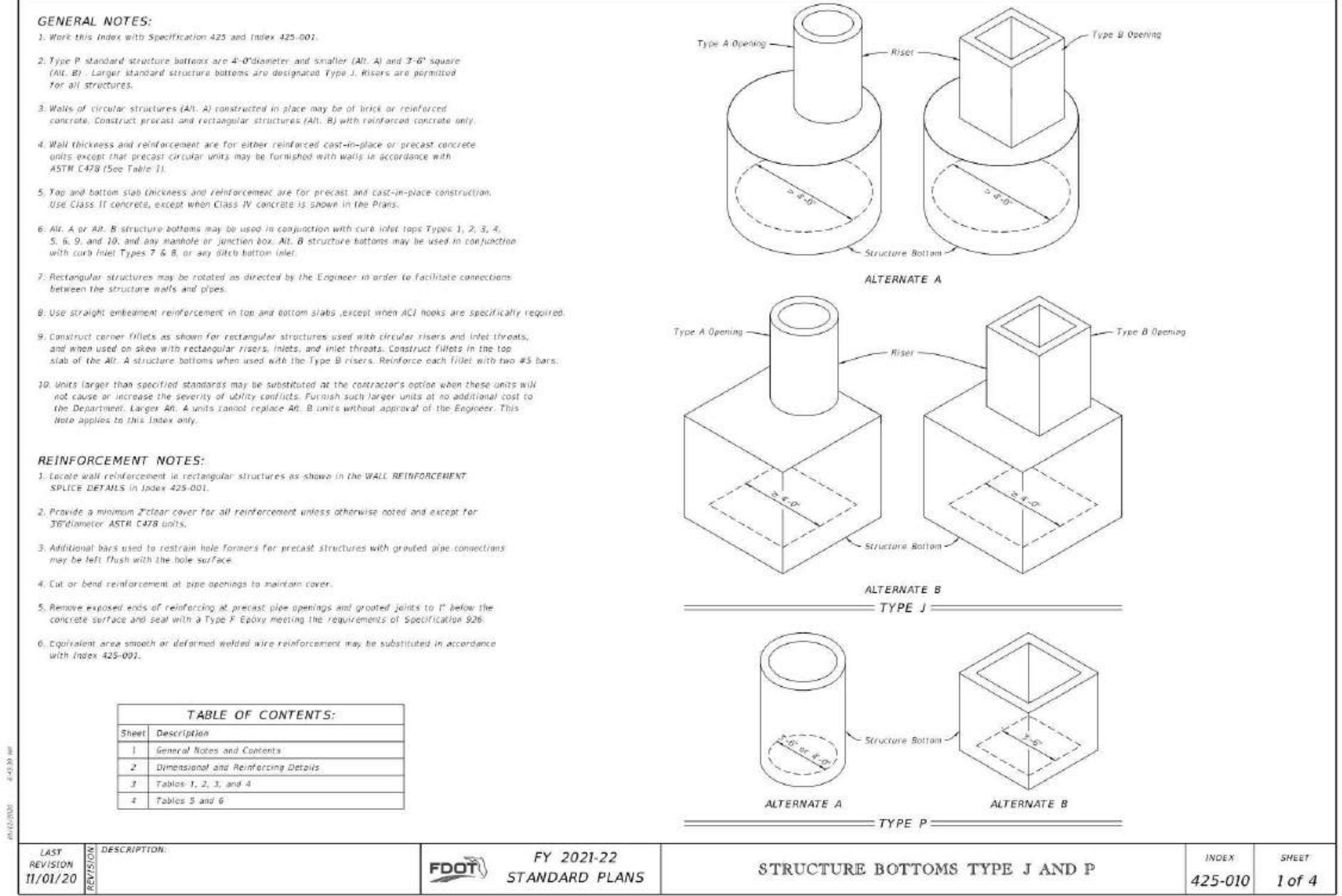
LAST REVISION 11/01/20	DESCRIPTION: STRUCTURE BOTTOMS TYPE J AND P	FY 2021-22 STANDARD PLANS	INDEX 425-010	SHEET 2 of 4
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TABLE 5 - SLAB DESIGNS - SQUARE AND RECTANGULAR STRUCTURES (ALL SLABS 8" THICK EXCEPT AS NOTED - REINFORCING PARALLEL TO SHORT WAY AND LONG WAY)											
SHORT-WAY			LONG-WAY			SHORT-WAY			LONG-WAY		
SLAB DEPTH	SCHEDULE (Bars A)	SLAB DEPTH	SCHEDULE (Bars B)	SLAB DEPTH	SCHEDULE (Bars A)	SLAB DEPTH	SCHEDULE (Bars B)	SLAB DEPTH	SCHEDULE (Bars A)	SLAB DEPTH	SCHEDULE (Bars B)
SIZE: 8' x 8'											
10.5 < 8	B10	10.5 < 8	B10	10.5 < 10	C3.5	10.5 < 8	D7	10.5 < 8	D7	10.5 < 8	D4.5
8 < 12	B5.5	8 < 12	B5.5	8 < 12	C3.5	8 < 12	D7	8 < 12	F5	8 < 12	F5
12 < 31	C6.5	12 < 31	C6.5	12 < 31	E3	12 < 31	F3	12 < 31	F3	12 < 31	F3.5
31-40	D7	31-40	D7	31-40	F3	31-40	F3	31-40	F3	31-40	F3.5
SIZE: 8' x 7'											
10.5 < 8	B5.5	10.5 < 8	B10	10.5 < 8	C6.5	10.5 < 8	D7	10.5 < 8	D7	10.5 < 8	D7
8 < 12	C6.5	8 < 12	C6.5	8 < 12	C3.5	8 < 12	D7	8 < 12	F5	8 < 12	F3
12 < 31	D7	12 < 31	D7	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5
31-40	E3	31-40	E3	31-40	F3	31-40	F3	31-40	F3	31-40	F3.5
SIZE: 8' x 9'											
10.5 < 8	B5.5	10.5 < 8	B10	10.5 < 8	C6.5	10.5 < 8	D7	10.5 < 8	D7	10.5 < 8	D7
8 < 12	C6.5	8 < 12	C6.5	8 < 12	C3.5	8 < 12	D7	8 < 12	F5	8 < 12	F3
12 < 31	D7	12 < 31	D7	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5
31-40	E3	31-40	E3	31-40	F3	31-40	F3	31-40	F3	31-40	F3.5
SIZE: 9' x 9'											
10.5 < 8	B5.5	10.5 < 8	B10	10.5 < 8	C6.5	10.5 < 8	D7	10.5 < 8	D7	10.5 < 8	D7
8 < 12	C6.5	8 < 12	C6.5	8 < 12	C3.5	8 < 12	D7	8 < 12	F5	8 < 12	F3
12 < 31	D7	12 < 31	D7	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5
31-40	E3	31-40	E3	31-40	F3	31-40	F3	31-40	F3	31-40	F3.5
SIZE: 10' x 10'											
10.5 < 8	B5.5	10.5 < 8	B10	10.5 < 8	C6.5	10.5 < 8	D7	10.5 < 8	D7	10.5 < 8	D7
8 < 12	C6.5	8 < 12	C6.5	8 < 12	C3.5	8 < 12	D7	8 < 12	F5	8 < 12	F3
12 < 31	D7	12 < 31	D7	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5
31-40	E3	31-40	E3	31-40	F3	31-40	F3	31-40	F3	31-40	F3.5
SIZE: 12' x 12'											
10.5 < 8	B5.5	10.5 < 8	B10	10.5 < 8	C6.5	10.5 < 8	D7	10.5 < 8	D7	10.5 < 8	D7
8 < 12	C6.5	8 < 12	C6.5	8 < 12	C3.5	8 < 12	D7	8 < 12	F5	8 < 12	F3
12 < 31	D7	12 < 31	D7	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5	12 < 31	D4.5
31-40	E3	31-40	E3	31-40	F3	31-40	F3	31-40	F3	31-40	F3.5

**SLAB AND WALL DESIGN TABLE NOTES**

- Size is the inside dimension(s) of a structure.
- Slab reinforcement is appropriate for top, intermediate, and bottom slabs.
- Bottom Slabs for precast 3'-6" x 3'-6" rectangular structures at 15' depth or less, may be 8" thick.
- Slab depth is measured from finished grade to top of slab.
- Reinforcing schedules with larger areas of steel may be substituted for schedules with smaller bar or wire spacing, except that Schedule B10 may not be substituted for Schedule AB. See Index 425-001 for alternate bar spacing adjustments when larger areas of reinforcing are substituted.

LAST REVISION 11/01/20	DESCRIPTION: STRUCTURE BOTTOMS TYPE J AND P	FY 2021-22 STANDARD PLANS	INDEX 425-010	SHEET 4 of 4
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**GENERAL NOTES:**

- Work this index with Specification 425 and Index 425-001.
- Type P standard structure bottoms are 4'-0" diameter and smaller (All: A) and 3'-6" square (All: B). Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
- Walls of circular structures (All: A) constructed in place may be of brick or reinforced concrete. Construct precast and rectangular structures (All: B) with reinforced concrete only.
- Wall thickness and reinforcement are for either reinforced cast-in-place or precast concrete units except that precast circular units may be furnished with walls in accordance with ASTM C478 (See Table 1).
- Top and bottom slab thickness and reinforcement are for precast and cast-in-place construction. Use Class II concrete, except when Class IV concrete is shown in the Plans.
- All: A or All: B structure bottoms may be used in conjunction with curb inlet tops Type 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box. All: B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any slick-bottom inlet.
- Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and pipes.
- Use straight on-beam reinforcement in top and bottom slabs, except when ACI hooks are specifically required.
- Construct corner fillets as shown for rectangular structures used with circular risers and inlet throats, and when used on silex with rectangular risers, inlets, and inlet throats. Construct fillets in the top slab of the All: A structure bottoms when used with the Type B risers. Reinforce each fillet with two #3 Bars.
- Units larger than specified standards may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Furnish such larger units at no additional cost to the Department. Larger All: A units cannot replace All: B units without approval of the Engineer. This note applies to this index only.

**REINFORCEMENT NOTES:**

- Locate wall reinforcement in rectangular structures as shown in the WALL REINFORCEMENT SPLICE DETAILS in Index 425-001.
- Provide a minimum 2" clear cover for all reinforcement unless otherwise noted and except for 30-diameter ASTM C478 units.
- Additional bars used to restrain hole formers for precast structures with grouted pipe connectors may be left flush with the hole surface.
- Cut or bend reinforcement at pipe openings to maintain cover.
- Remove exposed ends of reinforcing at precast pipe openings and grout joints to 1" below the concrete surface and seal with a Type F Epoxy meeting the requirements of Specification 926.
- Equivalent area smooth or deformed welded wire reinforcement may be substituted in accordance with Index 425-001.

TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Dimensional and Reinforcing Details
3	Tables 1, 2, 3, and 4
4	Tables 5 and 6

LAST REVISION 11/01/20	DESCRIPTION: STRUCTURE BOTTOMS TYPE J AND P	FY 2021-22 STANDARD PLANS	INDEX 425-010	SHEET 1 of 4
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TABLE 1 - ALTERNATE A - STRUCTURES											
TYPE	STRUCTURE/RISER DIAMETER (ft)	CAST-IN-PLACE CONCRETE				PRECAST ITEMS					
		RISER BOTTOM (ft)	RISER TOP (ft)	CLASS II CONCRETE	ASTM C478	RISER BOTTOM (ft)	RISER TOP (ft)	CLASS II CONCRETE	ASTM C478		
P	3'-0"	0	0	0.20	6	0	0	0.20	4**	0.10S	
P	4'-0"	0	0	0.20	6	0	0	0.20	5**	0.120	
P	5'-0"	0	0	0.20	6	0	0	0.20	6**	0.150	
J	6'-0"	0	0	0.20	6	0	0	0.20	6	0.180	
J	7'-0"	0	0	0.20	6	0	0	0.20	7	0.210	
J	8'-0"	0	0	0.20	6	0	0	0.20	8	0.240	
J	10'-0"	0	0	0.20**	6	0	0	0.20**	10	0.300	
J	12'-0"	0	0	0.20**	6	0	0	0.20**	12	0.360	

ft and in - Wall Thickness.  
 A: Vertical and horizontal areas of reinforcement.  
 \*\*Provide 0.20 sq. in./ft. at each face, 12" max. bar spacing.  
 \*Modified minimum wall thickness.  
 \*\*\*Min. total circumferential reinforcement for continuous steel hoops:  
 A2 = 0.40 sq. in. for riser section height equal or less than 2'-0" (2 hoop min).  
 A3 = 0.60 sq. in. for riser section height more than 2'-0" up to 4'-0" (3 hoop min).  
 Areas of reinforcing for precast items are based on Grade 60 reinforcing.  
 No reduction in the area of reinforcement is allowed for welded wire fabric in Table 1.  
 Area of vertical reinforcing may be reduced in accordance with ASTM C478.

TABLE 2 - ALTERNATE B SQUARE AND RECTANGULAR STRUCTURES											
TYPE	WALL LENGTH (ft)	MAX. DEPTH (ft)	WALL THICKNESS (in.)								
			C-I-P (Min.)	R-Riser (Min.)							
P	3'-6"	40	8	8							
J	4'-0"	40	8	8							
J	5'-0"	22	8	8							
J	6'-0"	15	8	8							
J	8'-0" to 10'-0"	40	8	8							
J	10'-0"	28	8	8							
J	10'-0" to 12'-0"	40	10	10							
J	12'-0"	35	10	10							
J	20'-0"	30	10	10							

See Table 4 for Reinforcing Schedule.

TABLE 3 - REINFORCING SCHEDULE											
SCHEDULE	GRADE 60 AREA (sq. ft)	MAXIMUM SPACING									
		W/W EQUV. AREA (sq. ft)	W/W KSI (in.)								
A12	0.20	12	8								
A6	0.20	6	5								
B10	0.24	10	8								
B5.5	0.24	5	4								
C6.5	0.37	6	6								
C3.5	0.37	3	2.5								
D7	0.53	7	6								
D4.5	0.53	4	3								
F5	0.73	3	4								
E3	0.73	3	3								
F3	1.06	3	4								
F3.5	1.06	3	3								
G5	1.45	3	4								
G3.5	1.45	3	3								
H4	1.75	4	3								

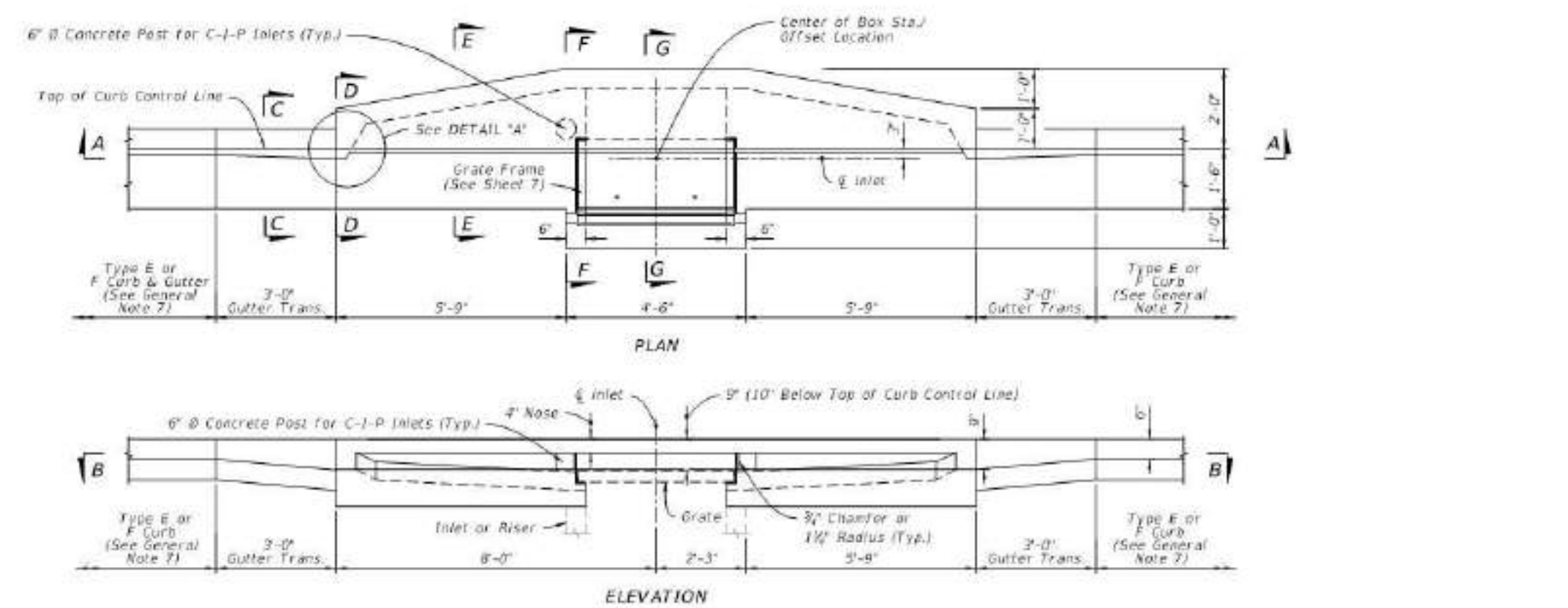
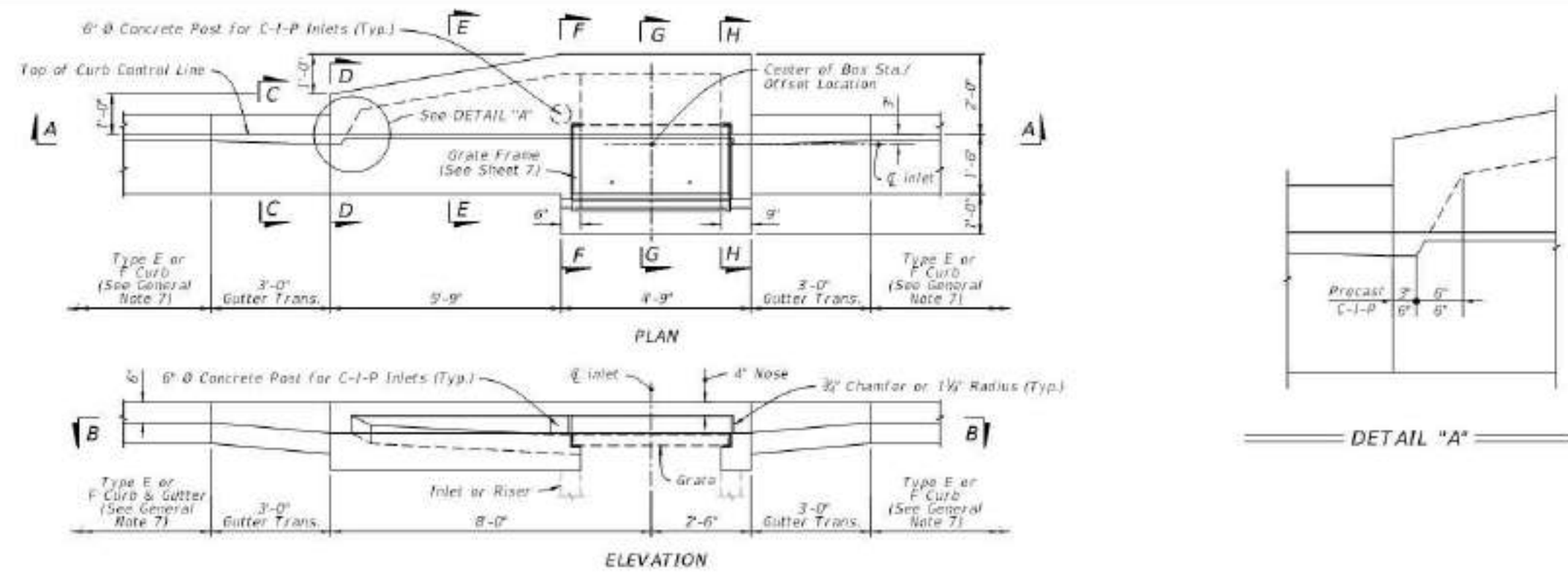
TABLE 4 - WALL DESIGNS - RECTANGULAR STRUCTURES											
WALL DEPTH	SCHEDULE	HORIZONTAL REINFORCING		WALL THICKNESS	VERTICAL REINFORCING	HORIZONTAL REINFORCING		WALL THICKNESS			
		WALL DEPTH	SCHEDULE			WALL DEPTH	SCHEDULE				
11'-17' - 40'	A12	SIZE: 3'-0" & RISER		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 10'	B10			10'-0" < 10'	B10				
		10'-0" < 10'	B5.5			10'-0" < 10'	B5.5				
20'-40'	A12	SIZE: 4'-0"		8"	Inside/Outside	SIZE: 12'-0"		8"			
		11'-17' < 14'	B10			11'-17' < 10'	C6.5				
		14'-23'	C6.5			10'-0" < 17'	D7				
11'-17' - 40'	A12	SIZE: 5'-0"		8"	Inside/Outside	SIZE: 12'-0" (Precast Only)		8"			
		11'-17' < 6'	B10			11'-17' < 10'	C6.5				
		6'-0" < 10'	B5.5			10'-0" < 17'	D7				
20'-40'	A12	SIZE: 5'-0"		8"	Inside/Outside	SIZE: 12'-0" (Precast Only)		8"			
		11'-17' < 6'	B10			11'-17' < 10'	C6.5				
		6'-0" < 10'	B5.5			10'-0" < 17'	D7				
11'-17' - 40'	A12	SIZE: 7'-0"		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 9'	C3.5			11'-17' < 13'	D7				
		9'-0" < 12'	C3.5			10'-0" < 17'	D4.5				
20'-40'	A12	SIZE: 7'-0"		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 9'	C3.5			11'-17' < 13'	D7				
		9'-0" < 12'	C3.5			10'-0" < 17'	D4.5				
11'-17' - 40'	A12	SIZE: 8'-0"		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 9'	C3.5			11'-17' < 13'	D7				
		9'-0" < 12'	C3.5			10'-0" < 17'	D4.5				
20'-40'	A12	SIZE: 8'-0"		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 9'	C3.5			11'-17' < 13'	D7				
		9'-0" < 12'	C3.5			10'-0" < 17'	D4.5				
11'-17' - 40'	A12	SIZE: 9'-0"		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 9'	C6.5			11'-17' < 13'	D7				
		9'-0" < 12'	C6.5			10'-0" < 17'	D4.5				
20'-40'	A12	SIZE: 9'-0"		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 9'	C6.5			11'-17' < 13'	D7				
		9'-0" < 12'	C6.5			10'-0" < 17'	D4.5				
11'-17' - 40'	A12	SIZE: 10'-0"		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 9'	C6.5			11'-17' < 13'	D7				
		9'-0" < 12'	C6.5			10'-0" < 17'	D4.5				
20'-40'	A12	SIZE: 10'-0"		8"	Inside/Outside	SIZE: 10'-0" (Precast Only)		8"			
		11'-17' < 9'	C6.5			11'-17' < 13'	D7				
		9'-0" < 12'	C6.5			10'-0" < 17'	D4.5				

LAST REVISION 11/01/20	DESCRIPTION: STRUCTURE BOTTOMS TYPE J AND P	FY 2021-22 STANDARD PLANS	INDEX 425-010	SHEET 3 of 4
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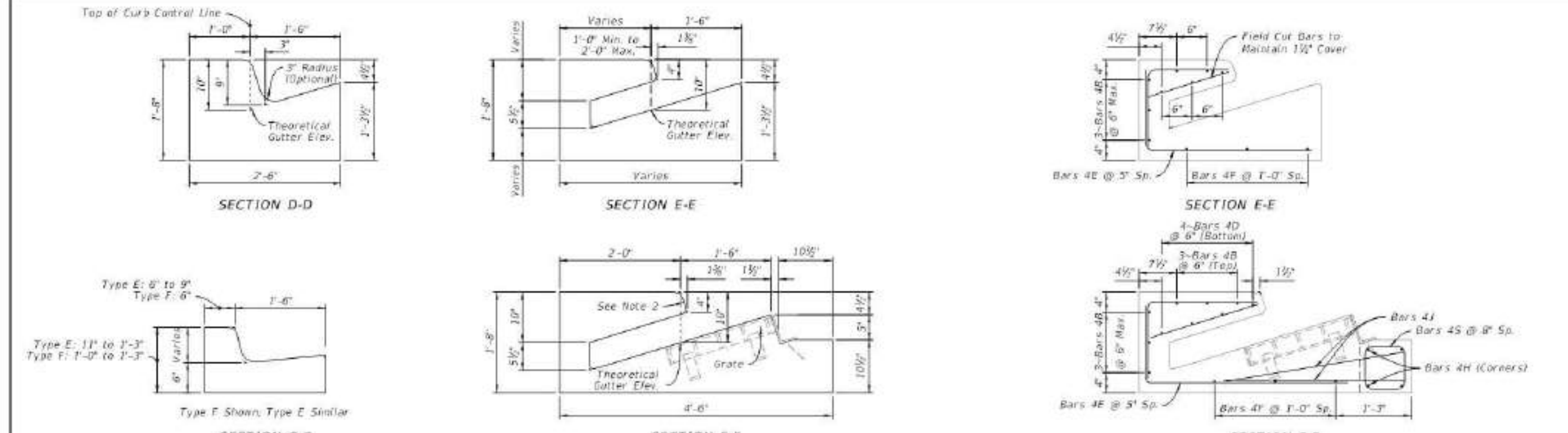
<b>MGE</b> MICHAEL GALURA ENGINEERING CONSULTANTS, LLC 3222 Corrine Drive, Suite H Orlando, Florida 32803 CERTIFICATE OF AUTHORIZATION NO. 29032	<b>TOWN OF WINDERMERE</b> PUBLIC WORKS DEPARTMENT 614 MAIN STREET, WINDERMERE, FLORIDA 34786	JOB No. TOW-052.01.000 FILE NAME: SEE LEFT MARGIN ARCHIVE DISC: SCALE: AS NOTED	<b>STANDARD DETAILS</b> INDEX NO. 425-010 SHEET 80 OF 86
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TYPE 5 AND 6 DIMENSIONAL DETAILS

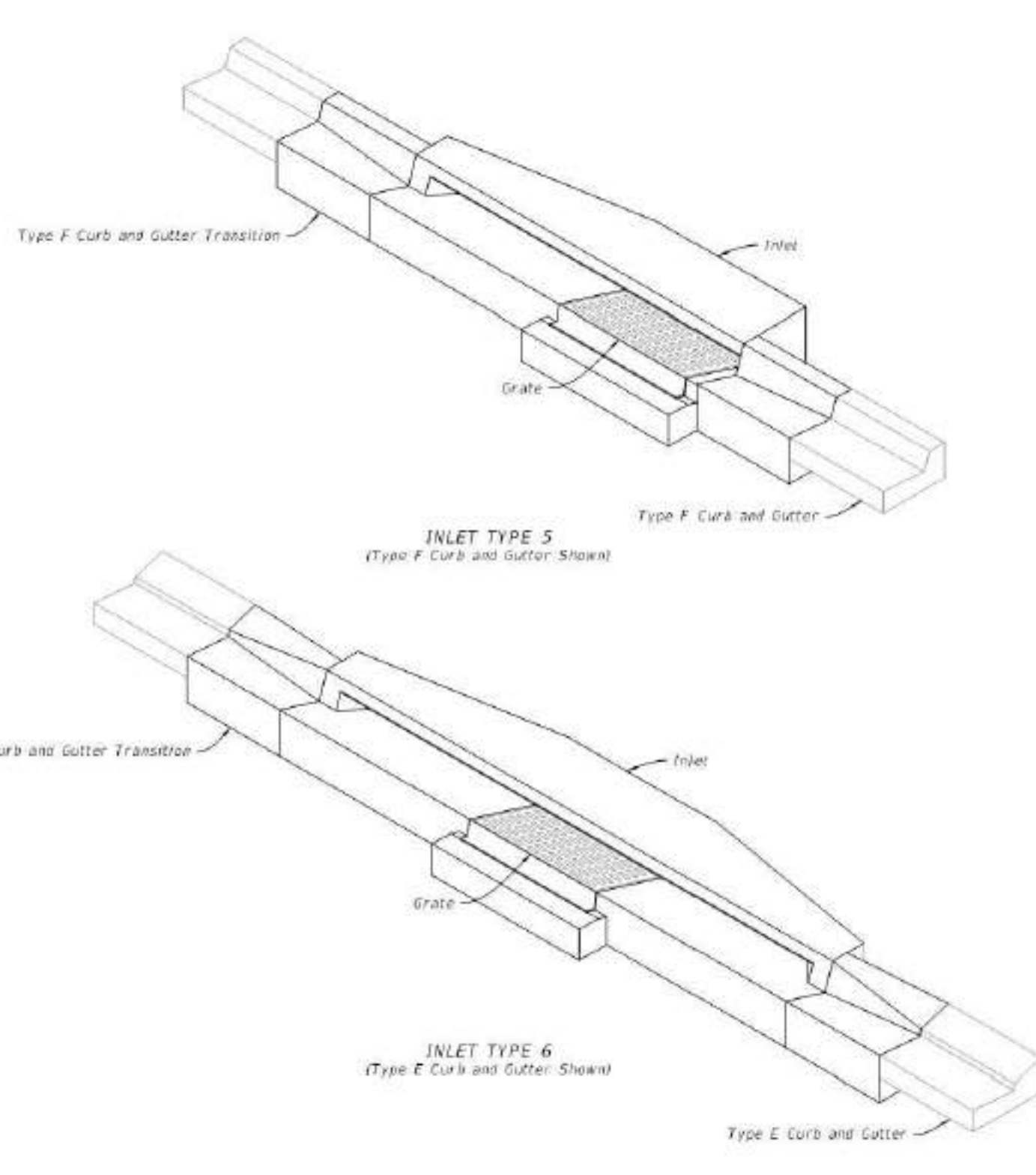
LAST REVISION 11/01/20	DESCRIPTION	FDOT FY 2021-22 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 2 of 7
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NOTES:  
1. For location of Sections D-D thru H-H see Sheet 2.  
2. Match slope of adjacent curb with 2" top radius and 3" bottom chamfer of 1 1/2" radius.  
3. See Plans for bottom and riser type.

LAST REVISION 11/01/20	DESCRIPTION	FDOT FY 2021-22 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 4 of 7
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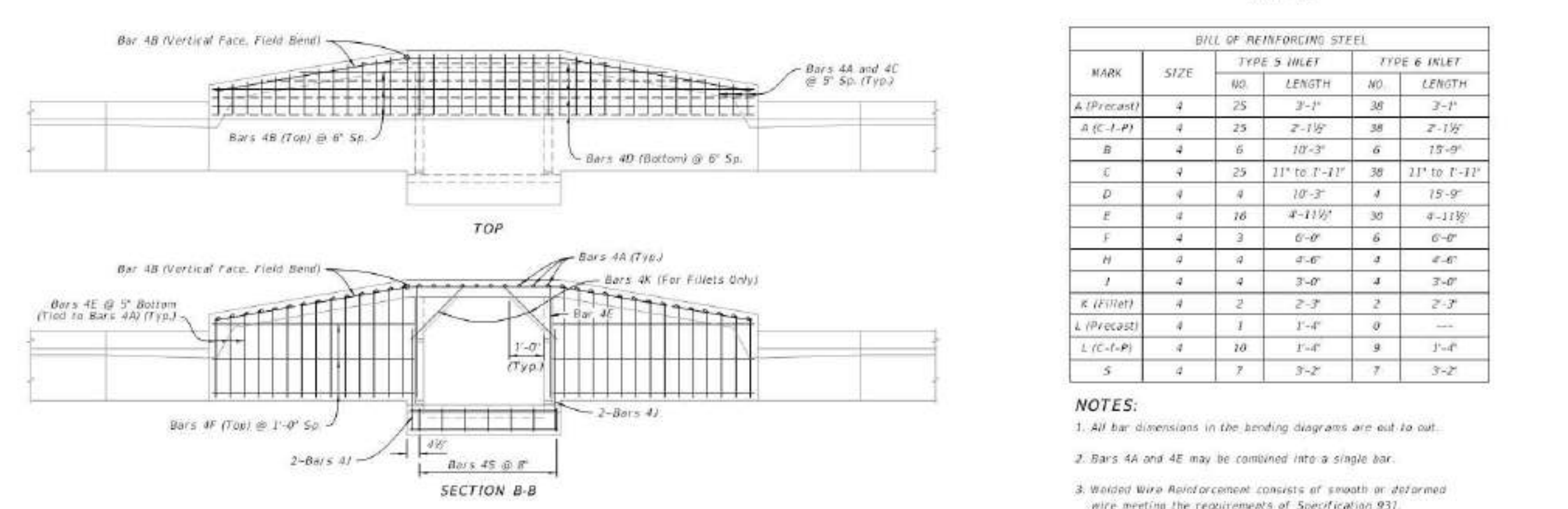
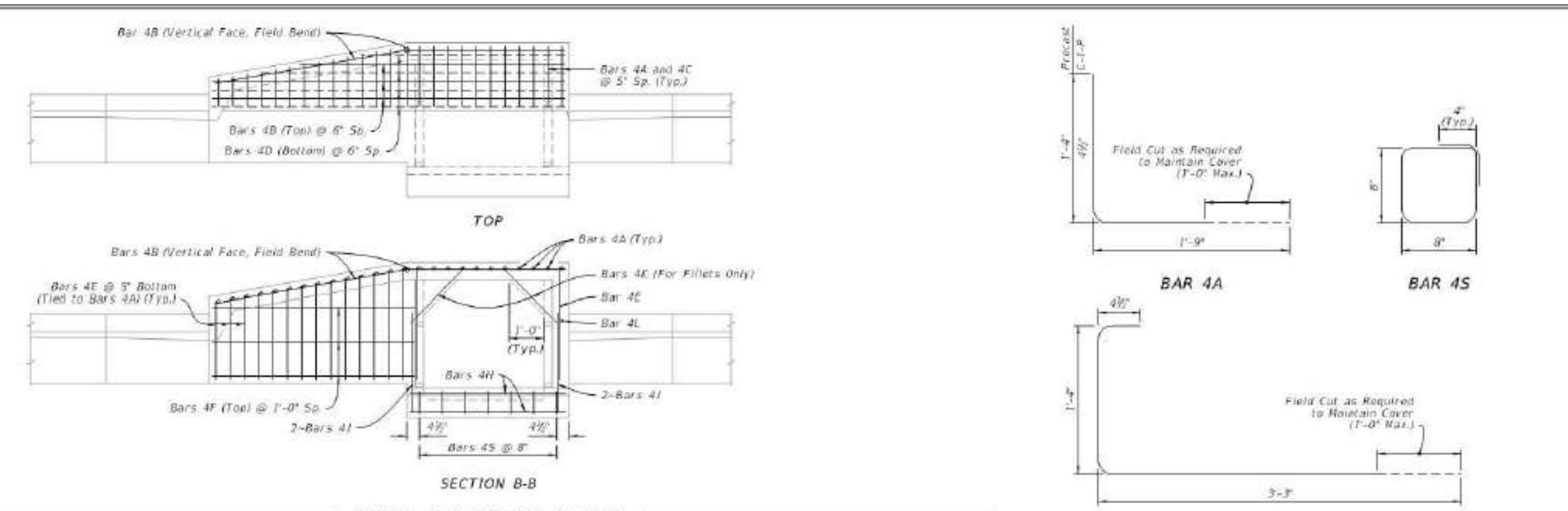
- GENERAL NOTES:**
- Work this index with Index 425-001 and Index 425-010.
  - Confirm the finished grade and slope of the inlet tops with the finished cross slope and grade of the proposed sidewalk and/or border.
  - For inlets constructed on a curve, refer to the plans to determine the radius. Bend steel when necessary.
  - Use Grade 60 reinforcing bars with 1 1/2" minimum cover unless otherwise shown. See Sheet 6 for equivalent area welded wire reinforcement details.
  - Inlet tops may be either cast-in-place or precast concrete. Confirm precast units to the dimensions shown or in accordance with approved shop drawings.
  - Corner fillets are required at inlet opening for precast units or C-I-P units used in conjunction with circular inlet bottoms or skewed rectangular inlet boxes. Finish top of fillets flush with drain throat bottom and match slope.
  - For Type F curb and gutter, transition the shape of the curb over the gutter transition length to match the face of the inlet (Type F).
  - Meet the requirements of ASTM A36/A36M with steel used for frames and grates.
  - Use either cast iron grates or steel grates.



**TABLE OF CONTENTS:**

Sheet	Description
1	General Notes and Contents
2	Type 5 and 6 Dimensional Details
3	Type 5 and 6 Reinforcing and Bar Bending Details
4	Precast Dimensional and Reinforcing Details
5	Cast-in-Place Dimensional and Reinforcing Details
6	Alternate Welded Wire Reinforcing (WWR) Details
7	Grate, Anchor, and Grading Details

LAST REVISION 11/01/20	DESCRIPTION	FDOT FY 2021-22 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 1 of 7
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**BILL OF REINFORCING STEEL**

MARK	SIZE	TYPE 5 INLET		TYPE 6 INLET	
		NO.	LENGTH	NO.	LENGTH
A (Precast)	4	25	3'-1"	38	2'-1"
A (C-I-P)	4	25	2'-1 1/2"	38	2'-1 1/2"
B	4	6	10'-3"	6	15'-0"
C	4	25	11" to 7'-11"	38	11" to 7'-11"
D	4	4	10'-3"	4	15'-0"
E	4	18	4'-11 1/2"	30	4'-11 1/2"
F	4	2	6'-0"	6	6'-0"
H	4	4	6'-0"	4	4'-6"
J	4	4	3'-0"	4	3'-0"
K (Filler)	4	2	2'-3"	2	2'-3"
L (Precast)	4	1	1'-4"	0	---
L (C-I-P)	4	10	1'-4"	9	1'-4"
S	4	7	3'-2"	7	3'-2"

**NOTES:**  
1. All bar dimensions in the bending diagrams are in feet.  
2. Bars 4A and 4E may be combined into a single bar.  
3. Welded Wire Reinforcement consists of smooth or deformed wire meeting the requirements of Specification 931.

LAST REVISION 11/01/20	DESCRIPTION	FDOT FY 2021-22 STANDARD PLANS	CURB INLET TOP TYPES 5 AND 6	INDEX 425-021	SHEET 3 of 7
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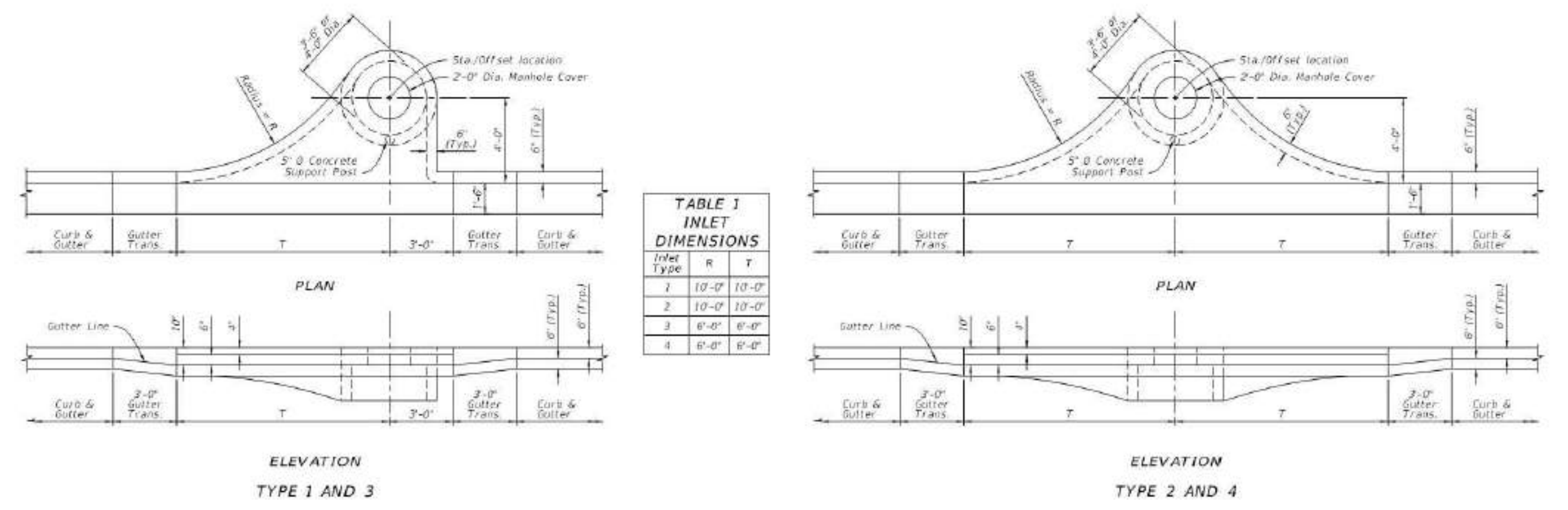
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407/493-9983

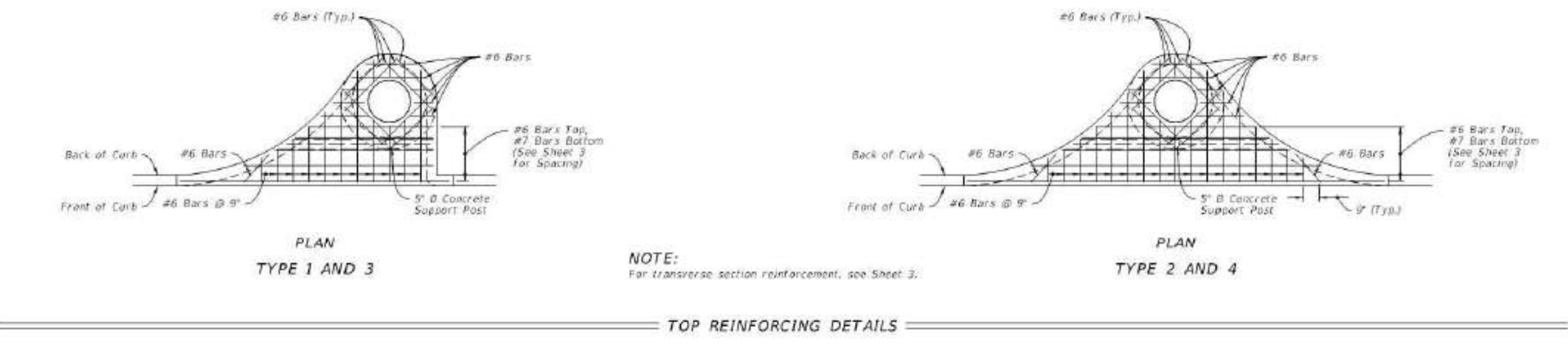
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TOP DIMENSIONAL DETAILS



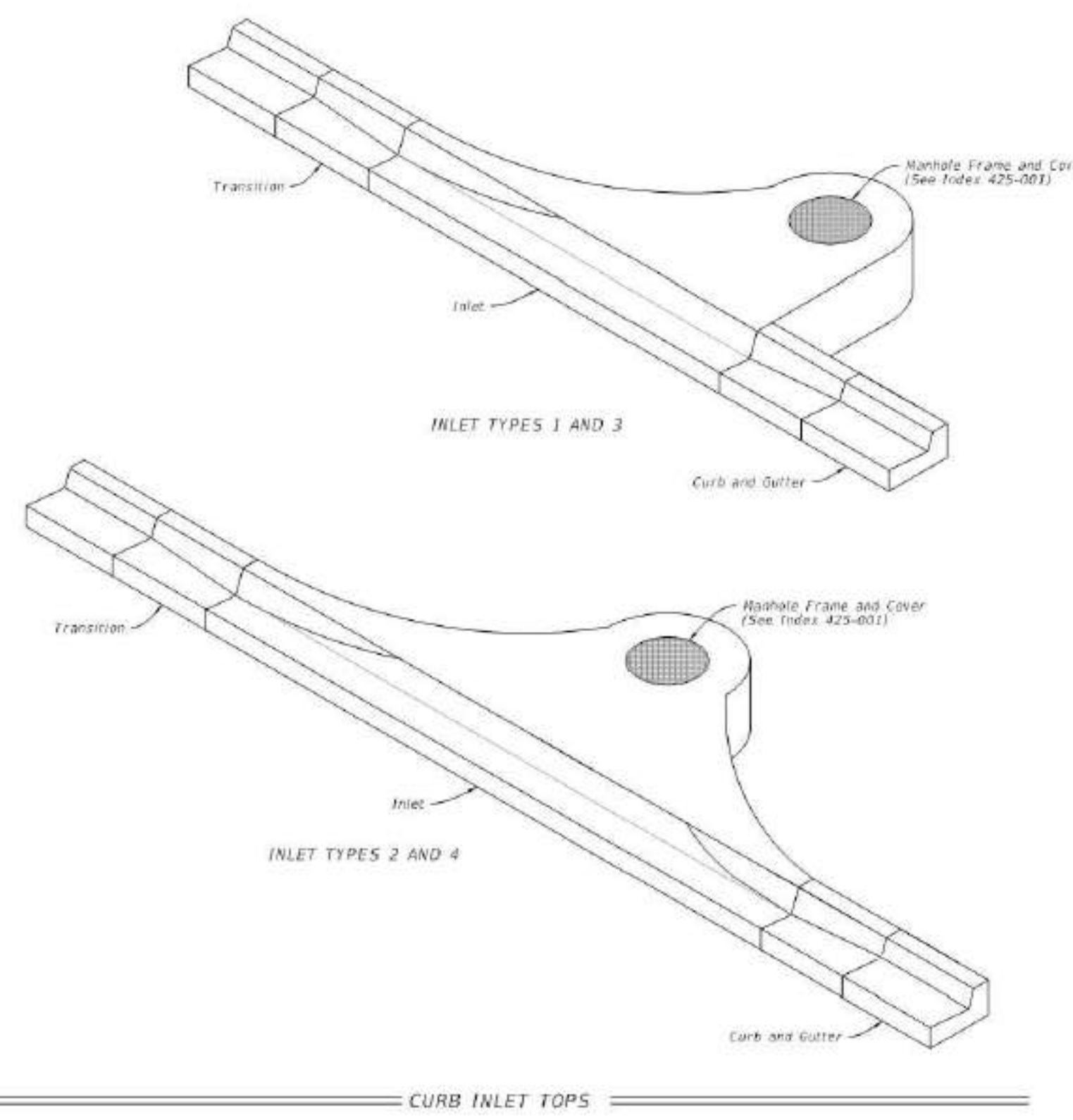
TOP REINFORCING DETAILS

TOP DIMENSIONAL AND TOP REINFORCING DETAILS

LAST REVISION 11/01/20	DESCRIPTION	FDOT FY 2021-22 STANDARD PLANS	INDEX 425-020	SHEET 2 of 3
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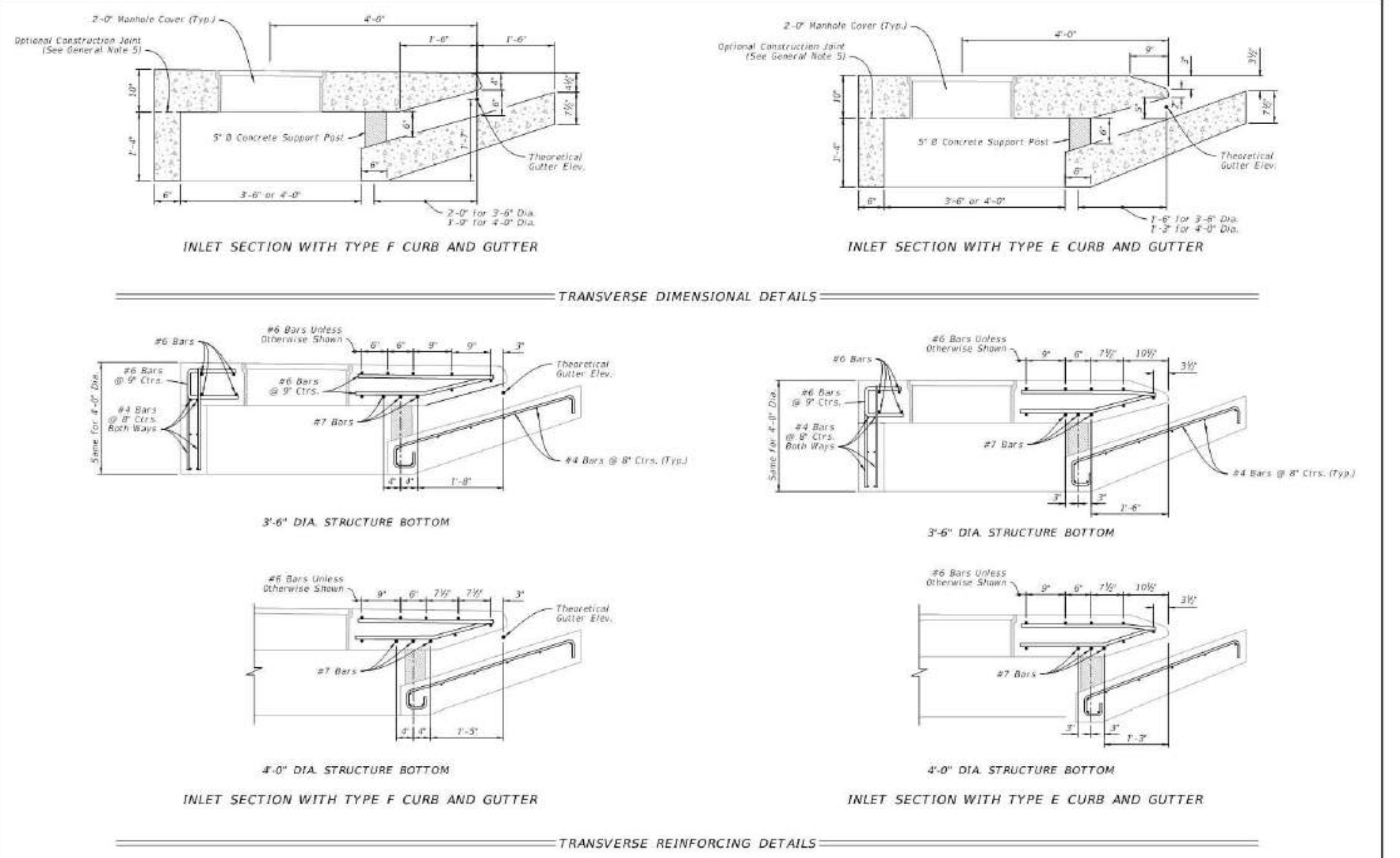
- GENERAL NOTES:**
- Work this index with Index 425-001 and Index 425-010.
  - Confirm finished grade and slope of the Inlet Taps to the finished cross slope and grade of the adjacent sidewalk and/or border.
  - Provide 10% minimum cover for steel in the Inlet Top.
  - Construction of Inlet Taps are either precast or cast-in-place.
  - For precast units, the rear wall and apron may be precast as a separate piece from the top slab. Provide a minimum of 7 - #4 dowels, otherwise install in accordance with Index 425-001 "OPTIONAL CONSTRUCTION JOINTS".
  - These inlets are designed for use with standard curb and gutter Type E and Type F.
  - Use only round concrete support posts.



CURB INLET TOPS

Sheet	Description
1	General Notes and Contents
2	Top Dimensional and Reinforcing Details
3	Transverse Dimensional and Reinforcing Details

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TRANSVERSE DIMENSIONAL AND REINFORCING DETAILS

LAST REVISION 11/01/20	DESCRIPTION	FDOT FY 2021-22 STANDARD PLANS	INDEX 425-020	SHEET 3 of 3
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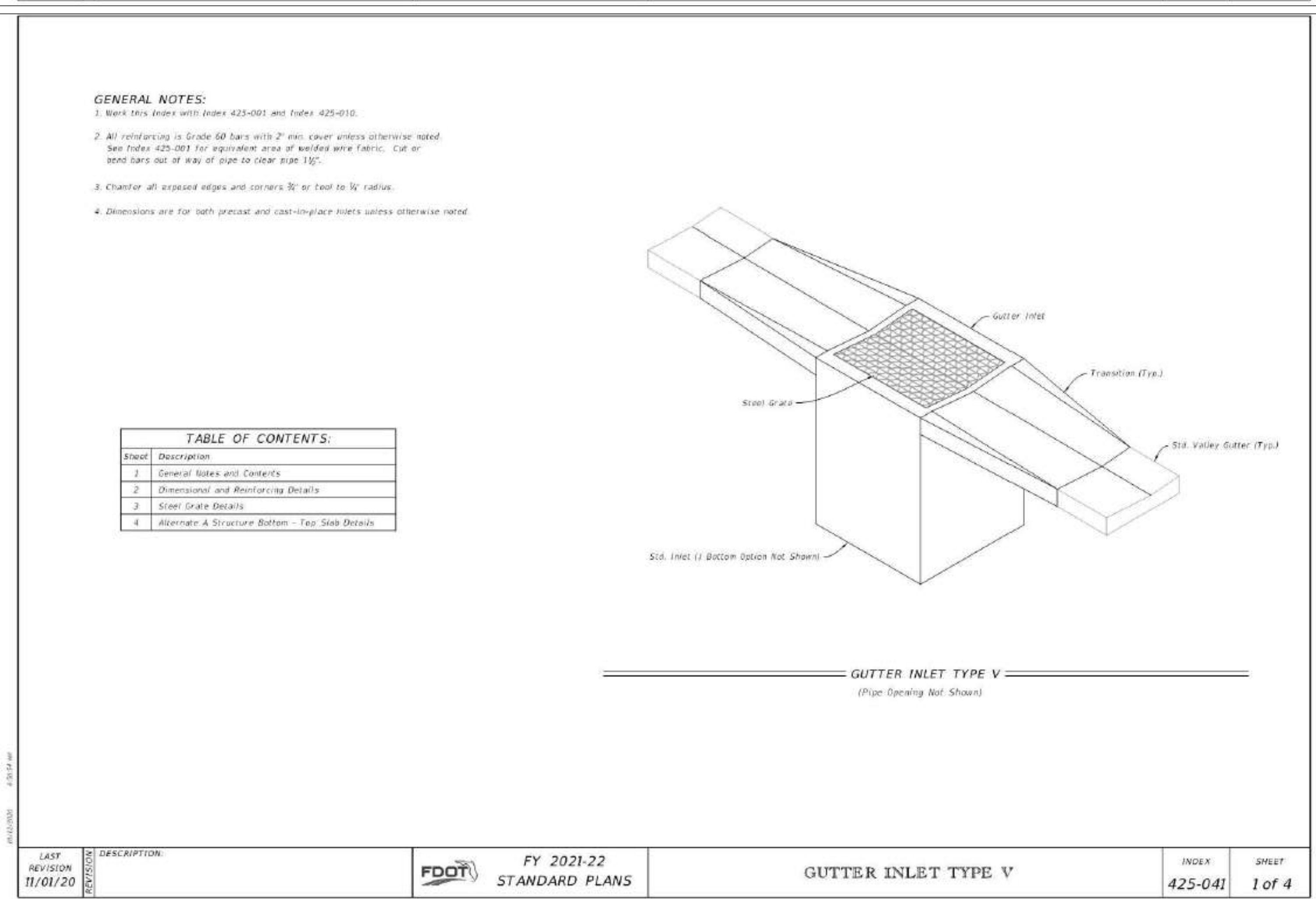
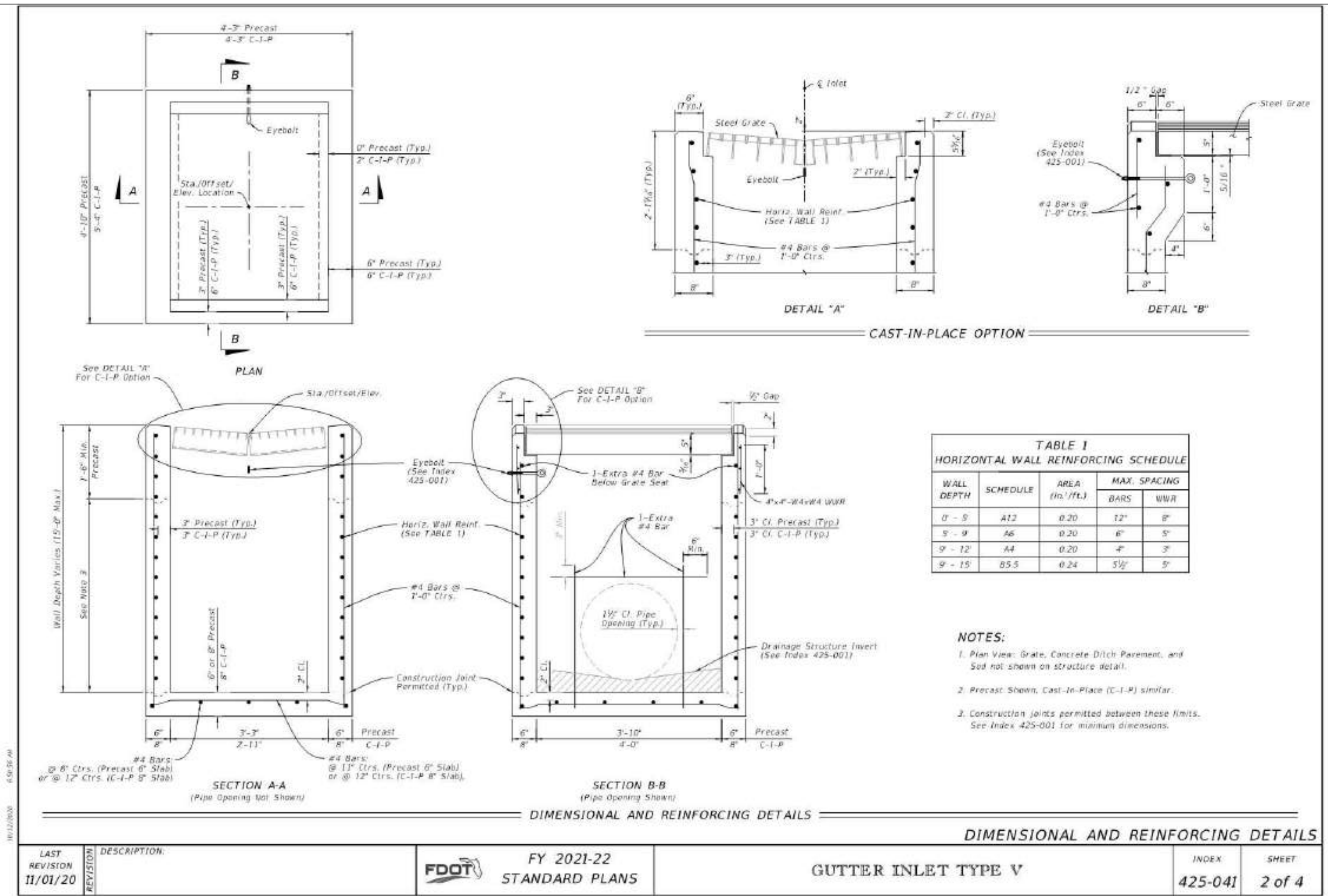
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						DESIGNED BY: R.MBG	
						CHECKED BY: G.MRG	

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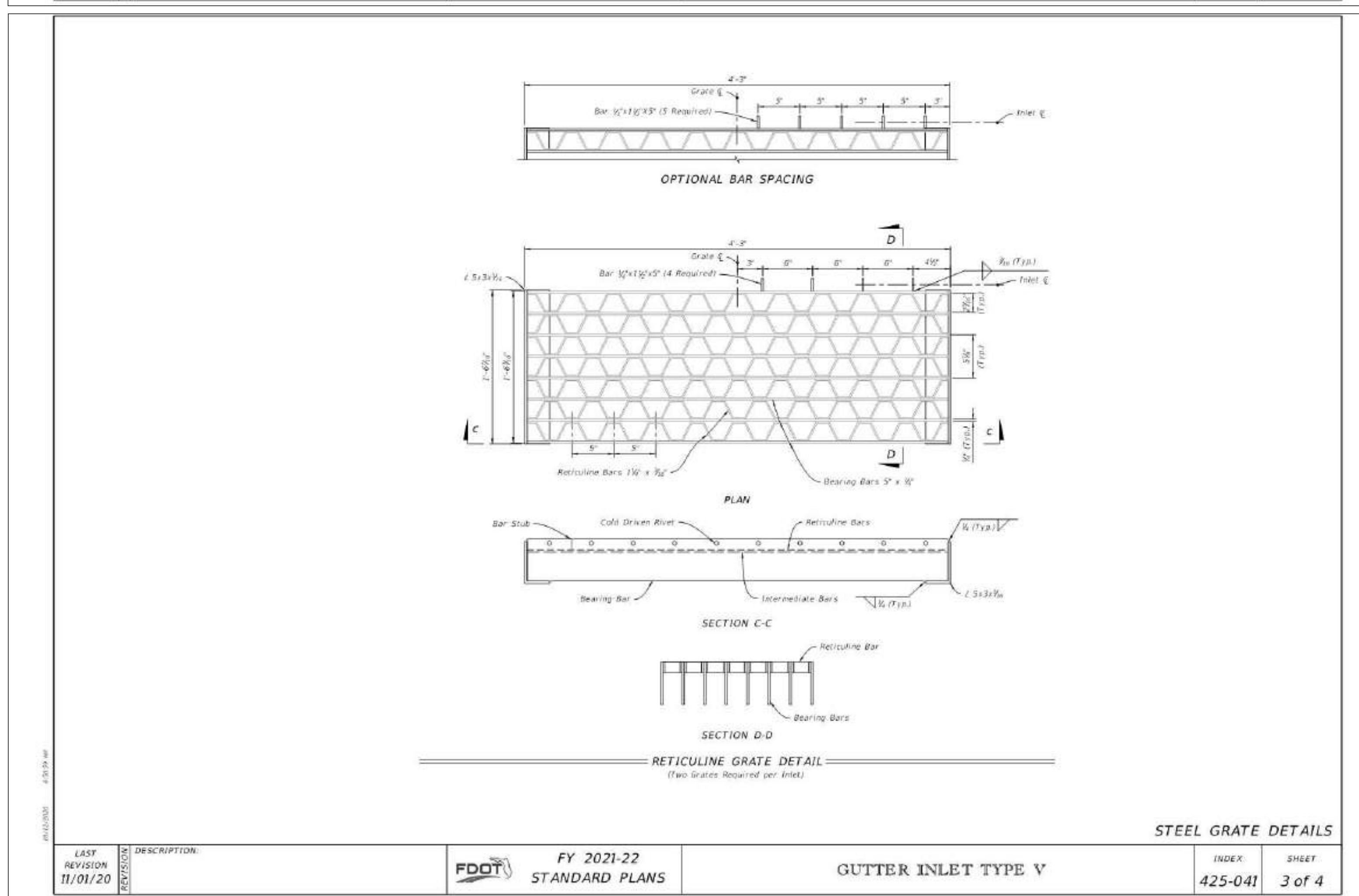
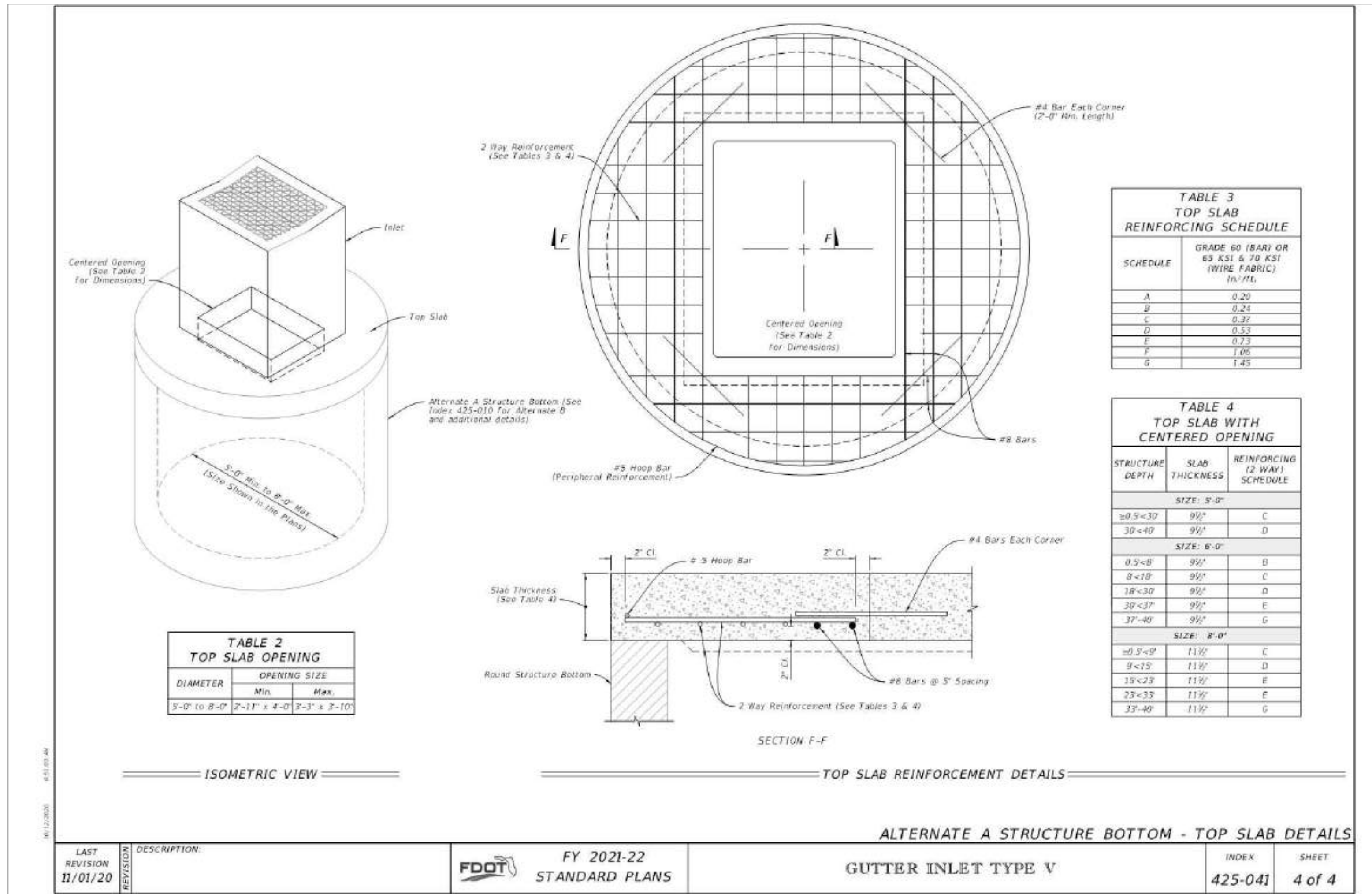
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LAST REVISION 11/01/20	DESCRIPTION	FDOT	FY 2021-22 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 2 of 4
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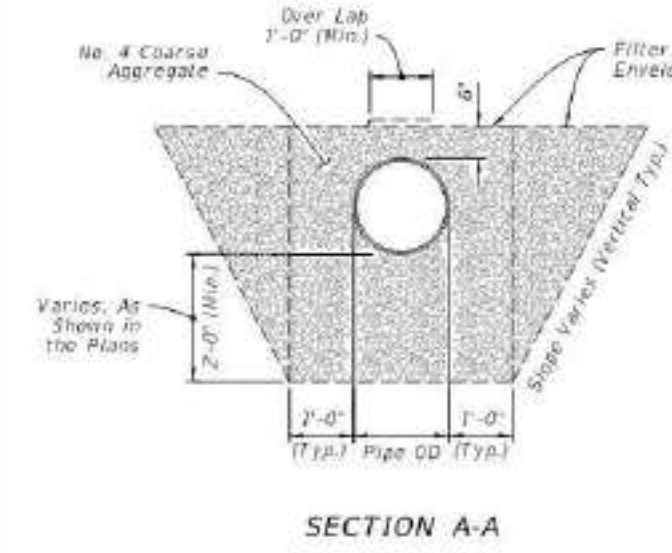
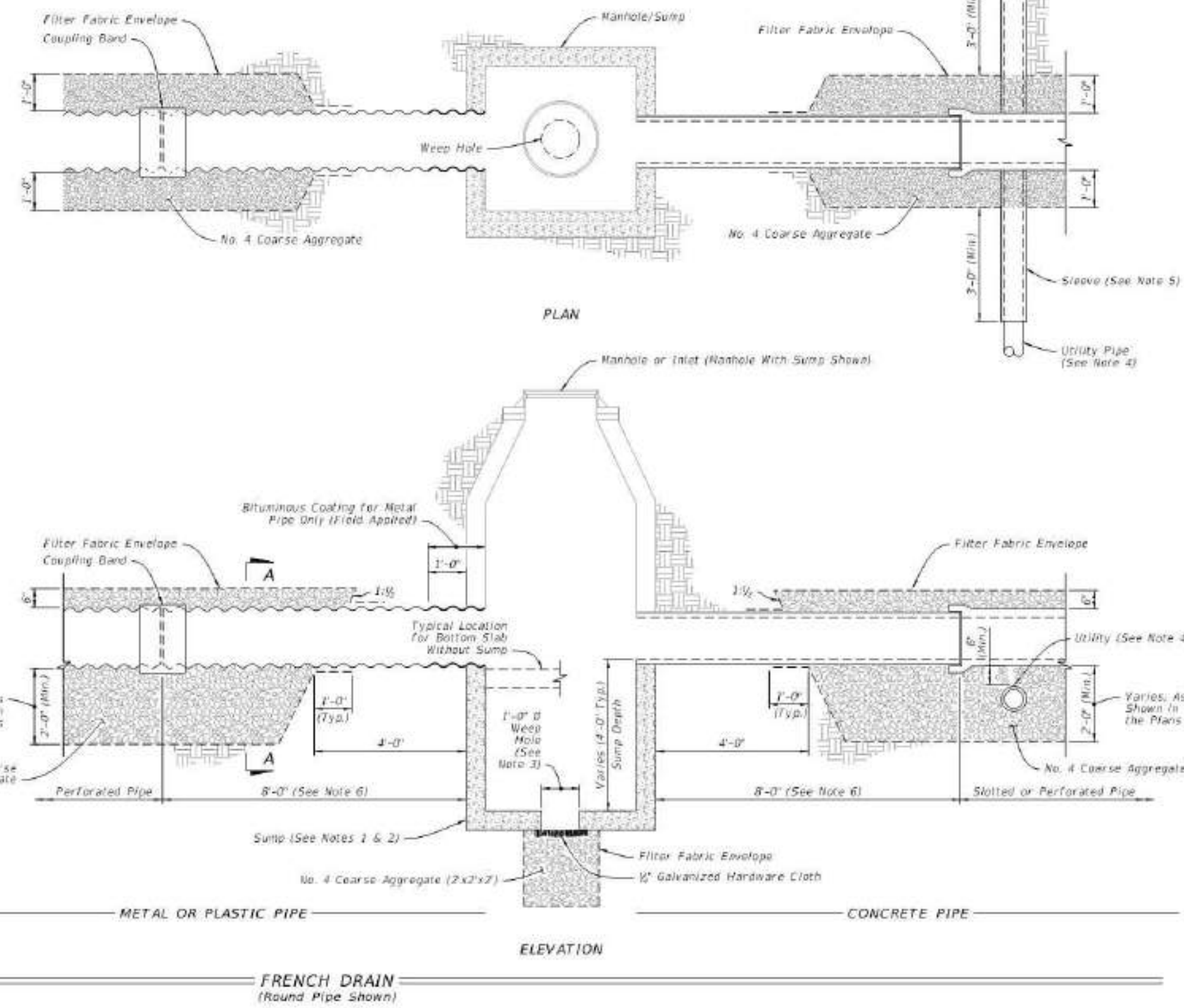


LAST REVISION 11/01/20	DESCRIPTION	FDOT	FY 2021-22 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 3 of 4
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**NOTES:**

1. Construct sumps unless excluded in the Plans.
2. For additional sump bottom information see Index 425-001.
3. Construct weep holes only where called for in the Plans.
4. Only cast and ductile iron sanitary sewer or cast iron, ductile and steel water mains will be allowed to pass directly through french drain (without sleeves).
5. Use only steel, cast or ductile iron sleeves.
6. No slots or perforations.



LAST REVISION 11/01/19	DESCRIPTION	FY 2020-21 STANDARD PLANS	FRENCH DRAIN	INDEX 443-001	SHEET 2 of 3
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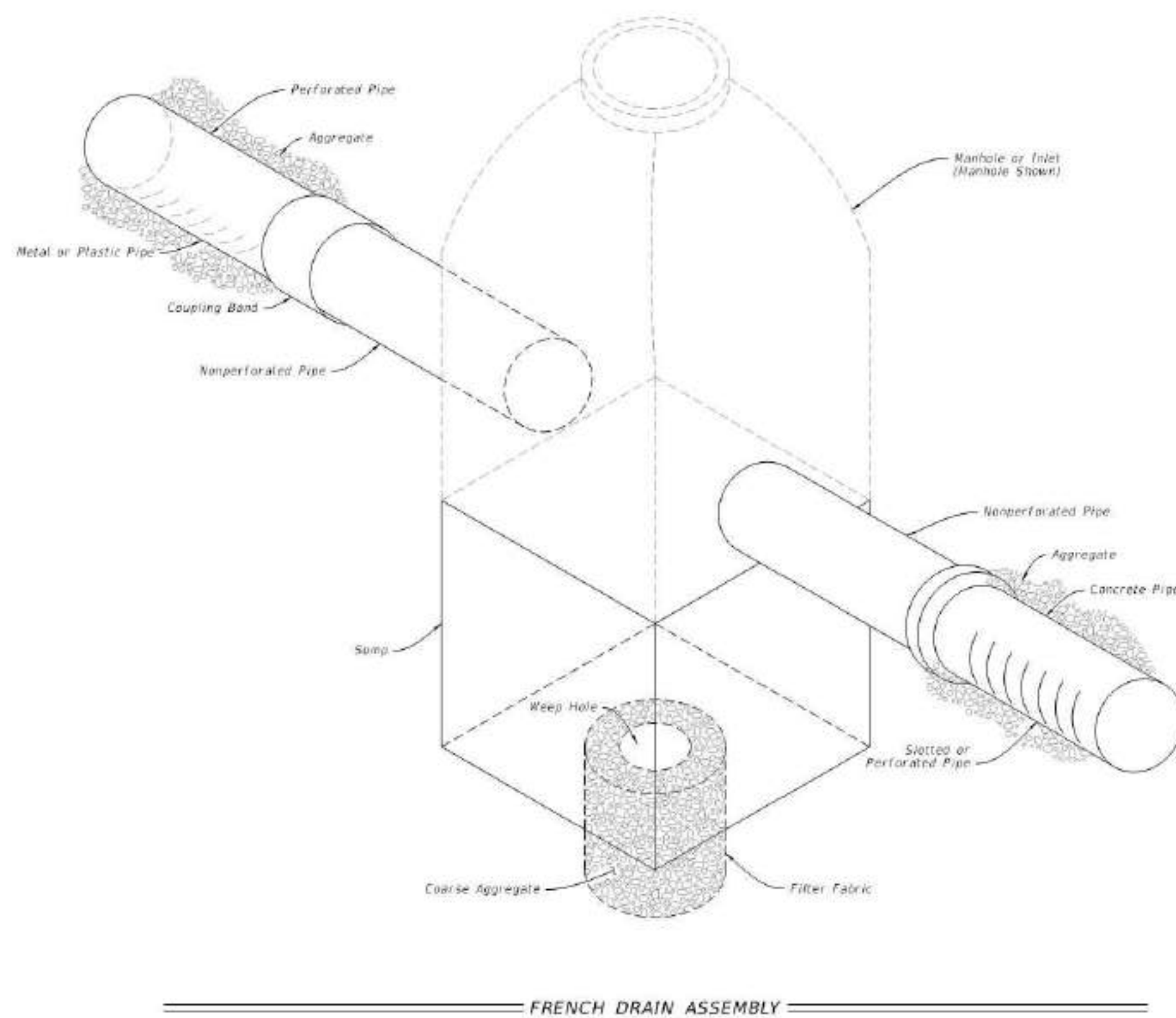
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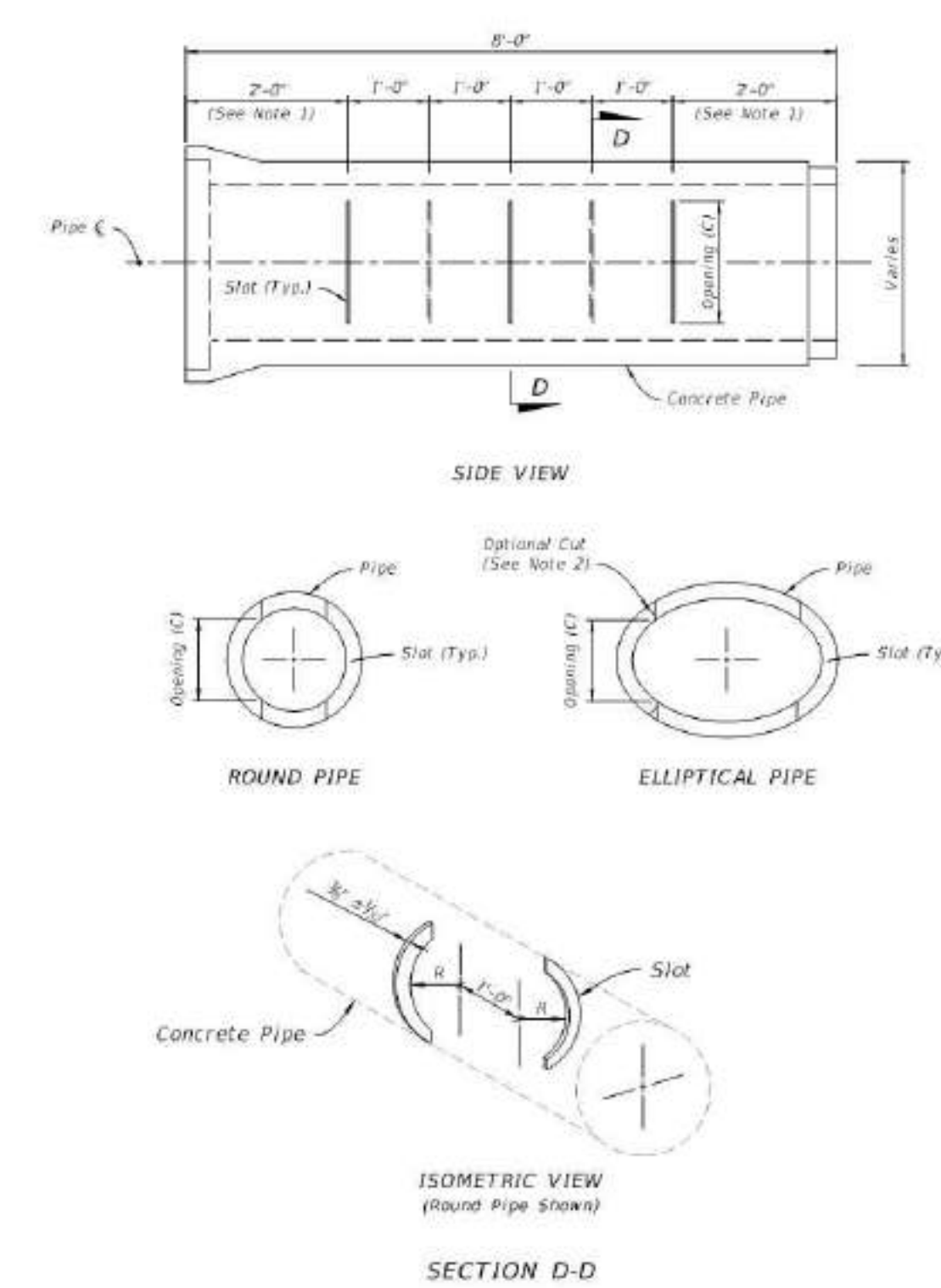
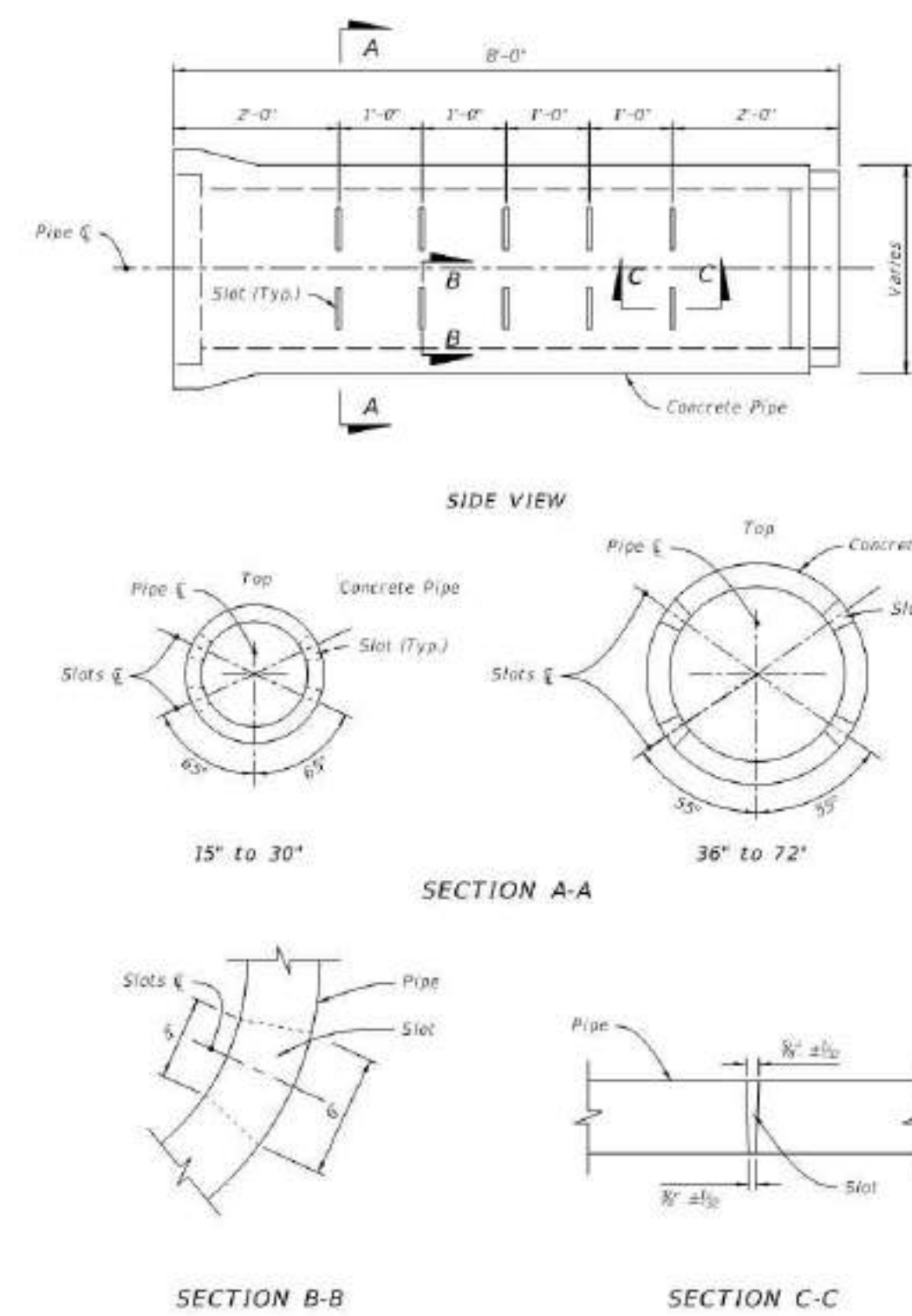
1. Place concrete pipe with the slots positioned as shown.
2. Alignment joints are standard (gaskets not required). Reconfiguration of metal pipe units not required.
3. Install Type D-3 Filter Fabric in accordance with Specification 985. Lap all filter fabric joints a minimum of one (1) foot.
4. Construct the standard cross section unless other sectional described or detailed in the plans.
5. See Index 430-001 for supplemental details.
6. Take the necessary precautions to prevent contamination of the trench with sand, silt and foreign materials.

**TABLE OF CONTENTS:**

Sheet	Description
1	General Notes and Contents
2	French Drain System
3	Concrete Slotted Pipe Options



LAST REVISION 11/01/19	DESCRIPTION	FY 2020-21 STANDARD PLANS	FRENCH DRAIN	INDEX 443-001	SHEET 1 of 3
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- NOTES:**
1. 2'-0" for 8'-0" joints of pipe; 2'-4" for 12'-0" joints of pipe.
  2. A curved cut is acceptable provided the center dimension is maintained.

ROUND PIPE		
Pipe Size	Slot Cut Opening (C)	
	Min.	Max.
12"	12"	14"
18"	12"	14"
24"	16"	18"
30"	16"	18"
28"	22"	24"
42"	22"	24"
48"	22"	24"
54"	24"	26"
60"	24"	26"
66"	24"	26"
72"	24"	26"

ELLIPTICAL PIPE		
Pipe Size	Slot Cut Opening (C)	
	Min.	Max.
14"x23"	10"	12"
19"x30"	14"	16"
24"x38"	14"	16"
29"x49"	20"	22"
34"x53"	20"	22"
38"x60"	20"	22"

LAST REVISION 11/01/19	DESCRIPTION	FY 2020-21 STANDARD PLANS	FRENCH DRAIN	INDEX 443-001	SHEET 3 of 3
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 407/493-9983  
 DATE: NOVEMBER 2023

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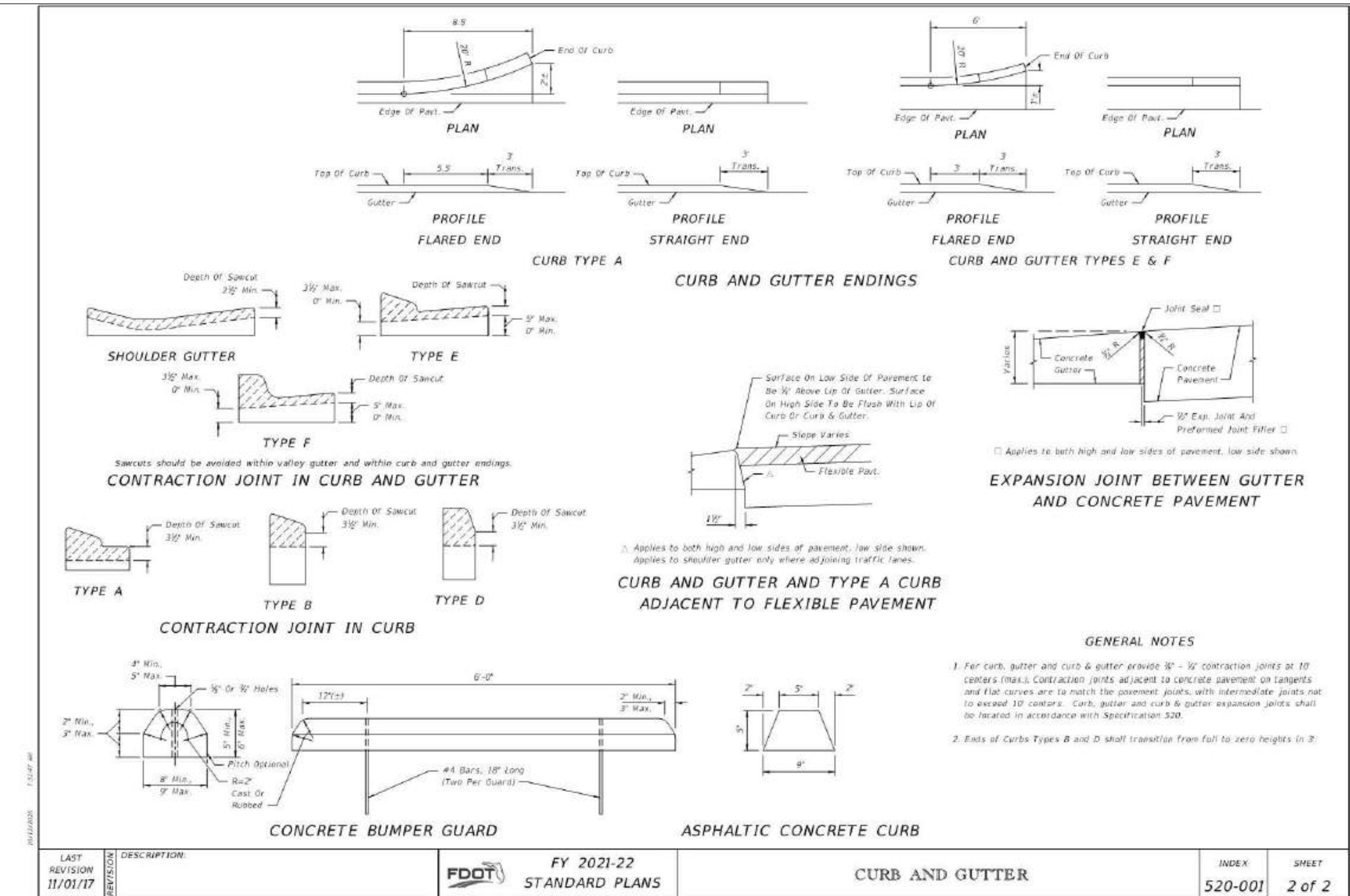
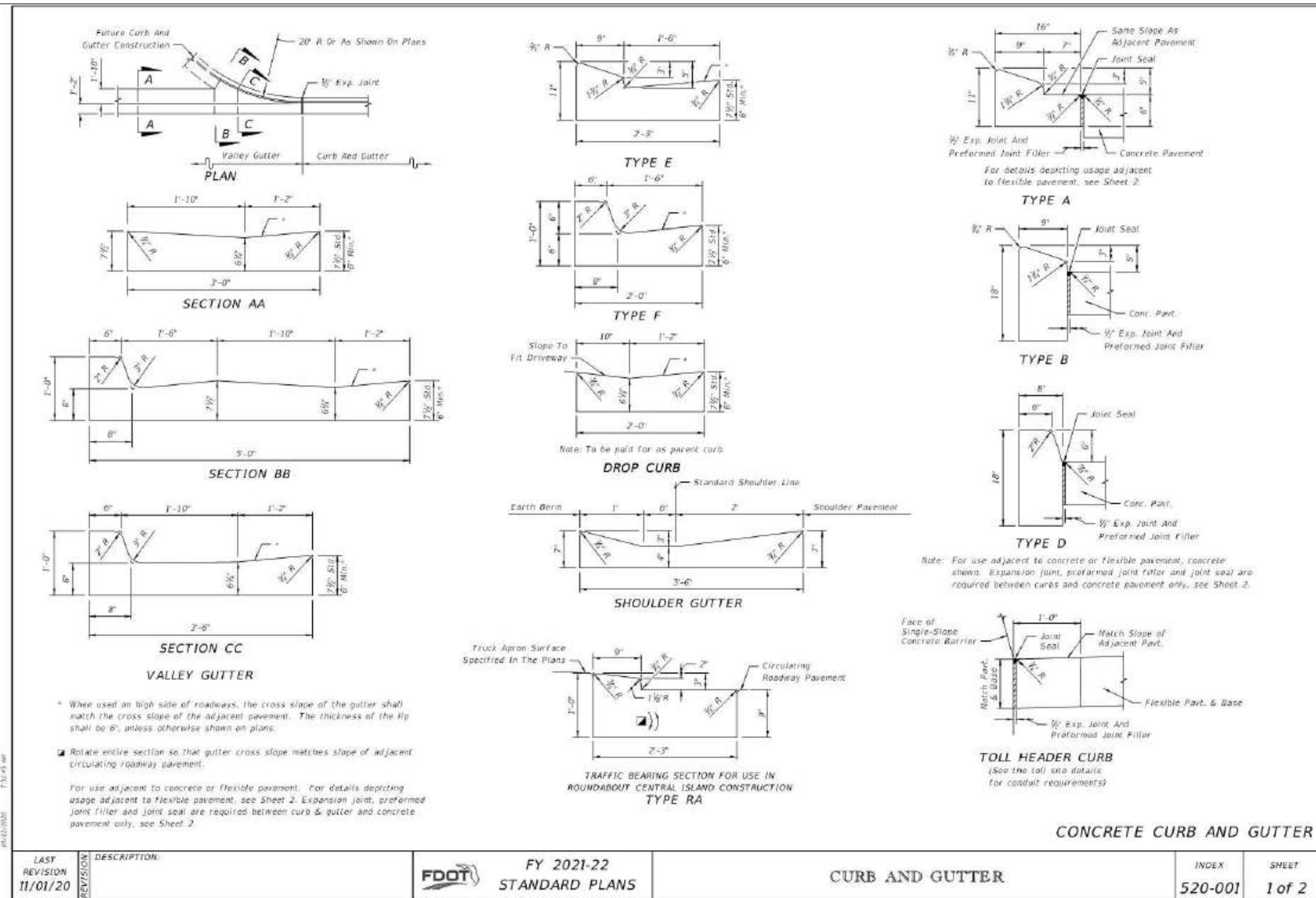
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 INDEX NO. 443-001

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CM		DATE: NOVEMBER 2023

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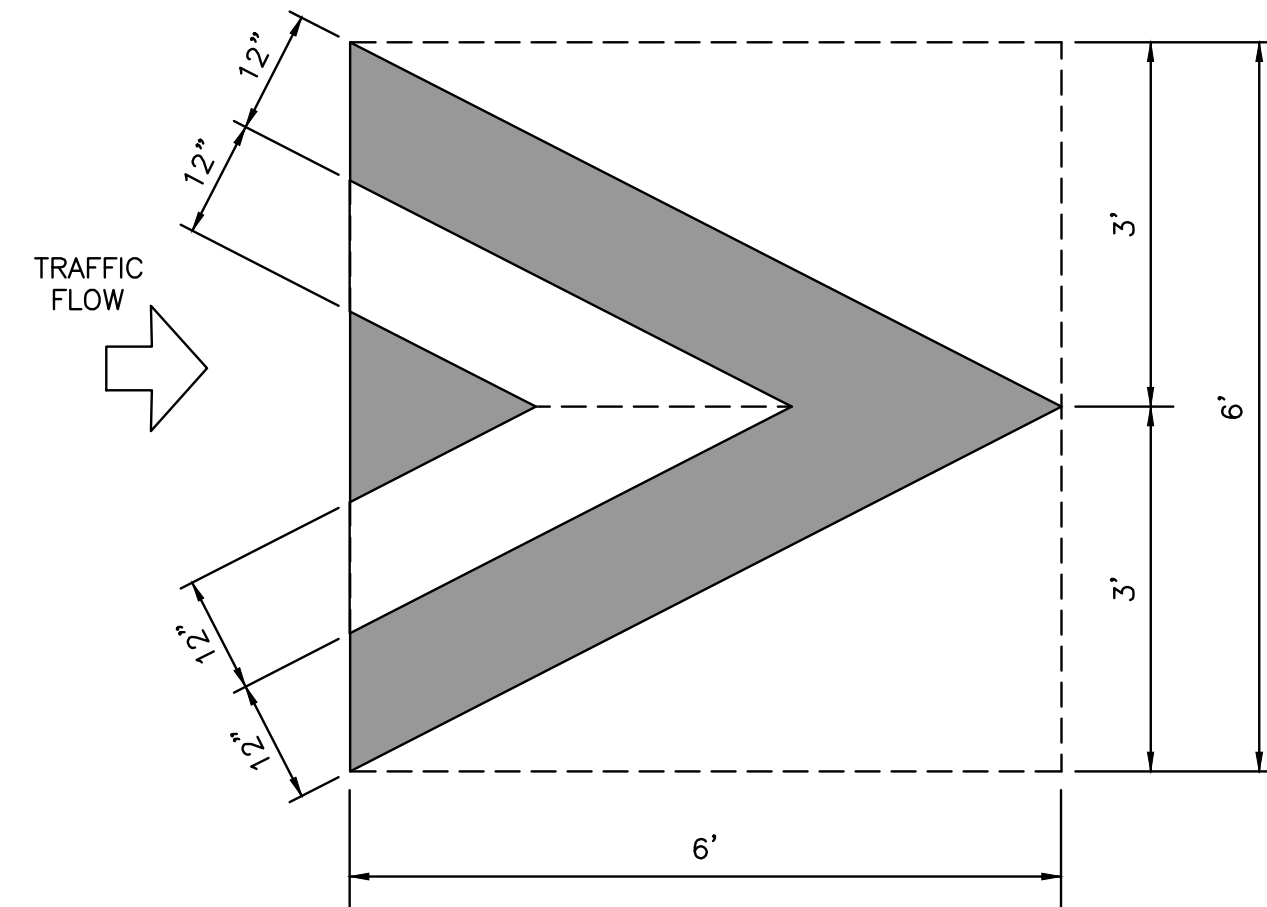
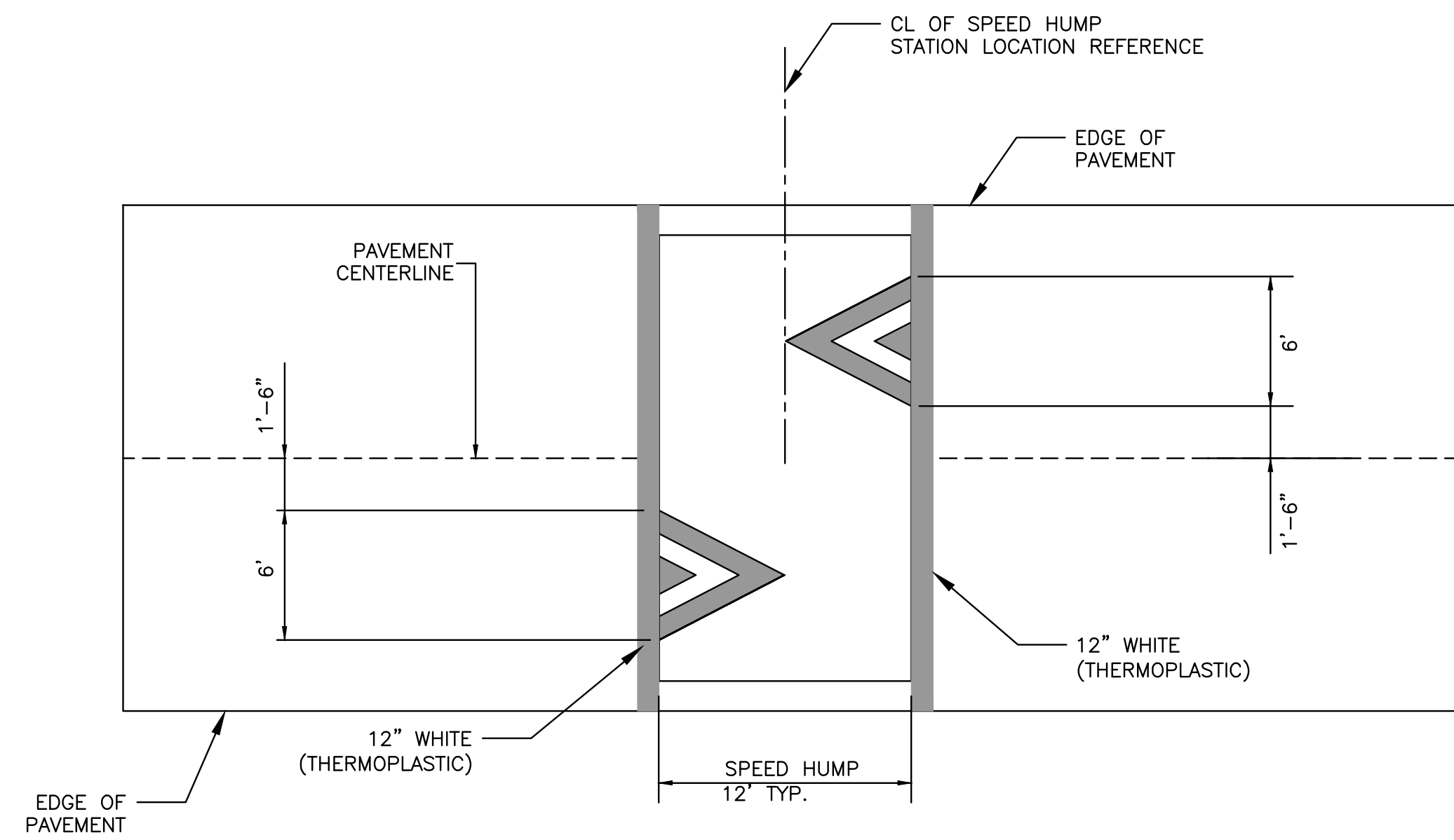
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 INDEX NO. 520-001

DRWG. SHEET 85 OF 86



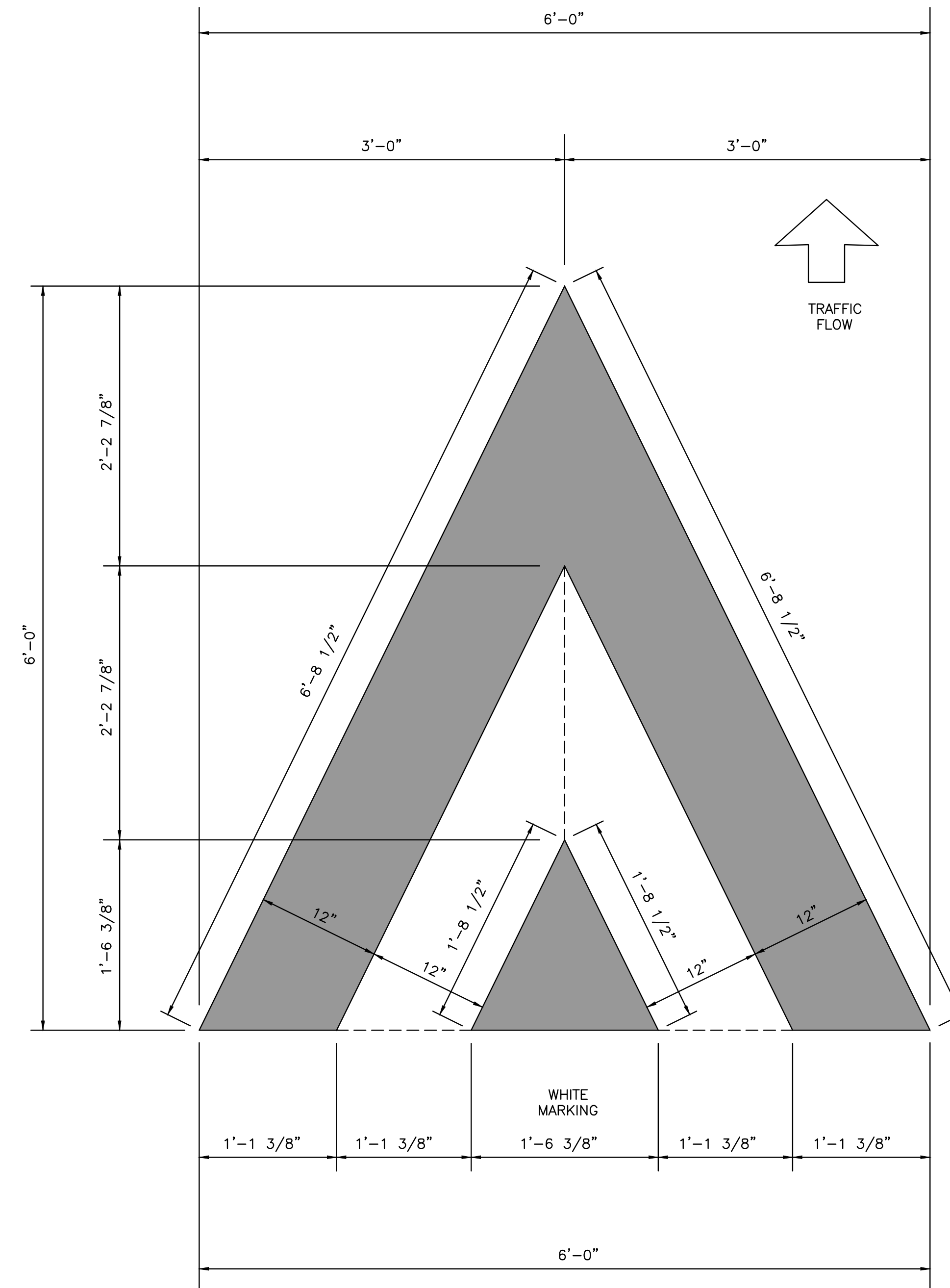
GENERAL NOTES

1. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD LATEST EDITION AND REVISIONS) AND THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN STANDARDS THE THE FLORIDA GREEN BOOK (LATEST EDITIONS AND REVISIONS).
2. CONTRACTOR SHALL PROVIDE A MAINTENANCE OF TRAFFIC PLAN THAT IS DESIGNED, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF FLORIDA, FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK. THE PLAN SHALL BE PREPARED IN ACCORDANCE WITH THE MUTCD AND FDOT TRAFFIC DESIGN STANDARDS (LATEST EDITION AND REVISIONS).
3. LOCAL RESIDENTIAL ACCESS SHALL BE MAINTAINED AT ALL TIMES. CONTRACTOR SHALL PROVIDE A WRITTEN NOTIFICATION TO THE RESIDENTS AFFECTED BY CONSTRUCTION ONE (1) WEEK IN ADVANCE OF THE START OF ANY PHASE OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE COPIES OF THE NOTIFICATION TO THE TOWN FOR REVIEW AND APPROVAL PRIOR TO DISTRIBUTION.
4. THE TOWN OF WINDERMERE RESERVES THE RIGHT TO REQUIRE ADDITIONAL DEVICES AND/OR CHANGES TO THE TRAFFIC CONTROL PLAN BASED ON CHANGING TRAFFIC CONDITIONS.
5. ANY CHANGES MADE TO THE TRAFFIC CONTROL PLAN SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER AND APPROVED BY THE TOWN PRIOR TO IMPLEMENTATION.



NOTE 1:  
PERMANENT PAVEMENT MARKINGS SHALL BE ALKYD THERMOPLASTIC WITH GLASS BEADS OR REFLECTIVE HEAT TRANSFER TAPE. CONTRACTOR SHALL SUBMIT SPECIFICATIONS TO THE TOWN FOR APPROVAL PRIOR TO INSTALLATION.

NOTE 2:  
IF PERMANENT PAVEMENT MARKINGS ARE NOT INSTALLED PRIOR TO MOUNDED ASPHALT BEING OPEN TO TRAFFIC, THEN THE CONTRACTOR SHALL PROVIDE TEMPORARY 6\"/>



REV.	DATE	DESCRIPTION	APP'D BY	OTHERS	SIGN OFF	DATE	FIELD:
					CLIENT		
					PM/CM BC		
					PM/CM DM		
					PM		
					CM		
					OTHERS		

**MGEC** MICHAEL GALURA  
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3222 Corrine Drive, Suite H  
Orlando, Florida 32803 407/493-9983  
CERTIFICATE OF AUTHORIZATION NO. 29032

**TOWN OF WINDERMERE**  
PUBLIC WORKS DEPARTMENT  
614 MAIN STREET, WINDERMERE, FLORIDA 34786

JOB No.	
FILE NAME:	
ARCHIVE DISC:	
SCALE: NONE	

**PAVEMENT MARKING FOR  
SPEED HUMP**

DRWG. SHEET 86 OF 86