

PROJECT MANAGER **Wendy Block Sanford, City of Fairfax (703) 385-7889**
 SURVEYED BY **Rinker Design Assoc., P.C. (703) 368-7373 (2011)**
 DESIGNED BY **Adam D. Welschenbach, P.E., Rinker Design Assoc., P.C. (703) 368-7373**
 SUBSURFACE UTILITY PROVIDED BY **Accumack (2011)**

Proposed Waterline Adjustments

1. AT LEAST 2 WEEKS IN ADVANCE TO BEGINNING ANY WATER MAIN CONSTRUCTION, THE WATER MAIN INSTALLATION CONTRACTOR SHALL SUBMIT TO FAIRFAX WATER, FOR REVIEW AND APPROVAL THE FOLLOWING:

10. NOTIFICATION OF PENDING WATER MAIN PRESSURE TESTS, DISINFECTION AND/OR CONNECTIONS; THE DESIRE TO HAVE AN EXISTING WATER SYSTEM VALVE OPENED OR CLOSED; AN EMERGENCY; ETC. SHALL BE DIRECTED TO:

19. IF TEST PIT DATA OR FIELD CONDITIONS SHOW THERE IS A CONFLICT WITH AN EXISTING UTILITY OR THE WATER MAIN DESIGN HAS TO BE MODIFIED, SUBMIT THE TEST PIT DATA OR FIELD INFORMATION TO FAIRFAX WATER. FAIRFAX WATER WILL REVIEW AND MODIFY THE DRAWINGS AS REQUIRED.

A. EVIDENCE OF SATISFACTORY COMPLETION OF AT LEAST FIVE WATER MAIN INSTALLATION CONTRACTS SIMILAR IN QUANTITY AND COMPLEXITY, INCLUDING SUPERINTENDENT'S EXPERIENCE IN INSTALLING THE PIPE MATERIAL AND JOINT TYPES TO BE USED, PROJECT TITLES, PIPE DIAMETER AND LENGTH, LOCATIONS, REFERENCE CONTACTS, AND TELEPHONE NUMBERS. THE SUPERINTENDENT SHALL HAVE AT LEAST 5 YEARS EXPERIENCE IN THE INSTALLATION OF WATER MAINS, AND SHALL HAVE BEEN IN CHARGE OF INSTALLING AT LEAST 10,000 LINEAR FEET OF DUCTILE PIPE.

A. 8:00 AM TO 4:00 P.M. MONDAY THROUGH FRIDAY
 MR. JERRY SCOTT, P.E., CHIEF CONSTRUCTION ENGINEER
 8560 ARLINGTON BOULEVARD FAIRFAX, VA 22031
 TELEPHONE NO. (703) 289-6351
 CELL PHONE NO. (571) 722-2750

20. INSTALL EACH REPLACEMENT WATER MAIN UP TO BUT EXCLUDING THE CONNECTION(S) TO THE EXISTING WATER MAIN(S) TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. INSTALL TEMPORARY PLUGS OR CAPS, AND SUCCESSFULLY PRESSURE TEST AND DISINFECT THE WATER MAIN. LEAKAGE LOSS (L) AS MEASURED IN GALLONS/HOUR, SHALL 0.5 NOT EXCEED SDP) /148,000 FOR TWO HOURS WHERE "S" IS THE LENGTH IN FEET OF WATER MAIN TESTED, "D" IS THE NOMINAL INSIDE DIAMETER OF THE PIPE IN INCHES, AND "P" IS THE TEST PRESSURE OF 150 PSI OR 125% (PIPE LESS THAN 20") 150% (PIPE EQUAL TO OR GREATER THAN 20") OF THE MAXIMUM EXPECTED WORKING PRESSURE, WHICHEVER IS GREATER, AT THE HIGH POINT OF THE WATER MAIN UNLESS OTHERWISE SHOWN OR DIRECTED BY FAIRFAX WATER. PRESSURE TESTS SHALL BE LIMITED TO 2,500 FEET FOR ANY INDIVIDUAL TEST. NO ADDITIONAL PAYMENT FOR TEMPORARY BLOW OFFS OR AIR RELEASES.

B. DATA SHALL BE SUPPLIED TO SHOW THAT STAFFING SCHEDULED FOR THE PROJECT POSSESS THE REQUIRED EXPERIENCE. SUCH DATA SHALL CONSIST OF A HISTORY OF THE EMPLOYMENT EXPERIENCE OF THE JOB SUPERINTENDENT, WHO WILL BE IN CHARGE OF THE WATER MAIN INSTALLATION WORK ON THE CONSTRUCTION SITE, TOGETHER WITH A DESCRIPTION OF ANY PARTICULAR CERTIFICATIONS OR SPECIAL CREDENTIALS HE MAY POSSESS.

B. NIGHT, WEEKENDS AND HOLIDAYS
 DISPATCHER
 TELEPHONE NO. (703) 289-6395 OR (703) 289-6323

MARK A. GUNN
Lic. No. 038323
PROFESSIONAL ENGINEER

REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	-	0029151105 P101, P102, R201, C501	14

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Rinker Design Associates, P.C.
 Manassas, Virginia
 PROFESSIONAL ENGINEER

2. DURING THE CONSTRUCTION OF THE WATER MAIN, FAIRFAX WATER, UPON NOTICE TO THE CONTRACTOR, AND IN FAIRFAX WATER'S SOLE DISCRETION, WILL HAVE THE RIGHT TO DIRECT THE CONTRACTOR TO REMOVE ANY EMPLOYEE PERMANENTLY FROM THE SITE FOR ANY REASON. IN ADDITION, IF ANY OF THE CONTRACTOR'S PERSONNEL ARE NOT SATISFACTORY TO FAIRFAX WATER THE CONTRACTOR SHALL REPLACE SAME WITH SATISFACTORY PERSONNEL.

11. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY EXISTING WATER SYSTEM VALVES WITHOUT A FAIRFAX WATER INSPECTOR OVERSEEING THE WORK.

21. AT LEAST SEVEN WORKING DAYS PRIOR TO THE DATE THE CONTRACTOR ANTICIPATES INSTALLING THE CONNECTION(S) TO THE EXISTING WATER SYSTEM, THE CONTRACTOR SHALL MEET WITH A FAIRFAX WATER REPRESENTATIVE AND REVIEW HIS PROPOSED SCHEDULING AND CONSTRUCTION PROCEDURES FOR THE CONNECTION(S). SYSTEM DEMANDS AND OPERATING CONDITIONS AT THE TIME CONNECTIONS ARE SCHEDULED MAY REQUIRE A NIGHT (8:00 P.M. TO 6:00 A.M.) CONNECTION TIME. NO ADDITIONAL PAYMENT WILL BE MADE TO THE CONTRACTOR FOR WORK WHICH MUST BE PERFORMED AT NIGHT. APPROVAL OF THE CONTRACTOR'S CONNECTION(S) SCHEDULE AND CONSTRUCTION PROCEDURES BY FAIRFAX WATER DOES NOT RELIEVE THE CONTRACTOR OF HIS TOTAL RESPONSIBILITY TO SEE THAT THE CONNECTION IS SUCCESSFULLY COMPLETED WITHIN THE DESIGNATED TIME FRAME.

3. NOTICE OR COMMUNICATION TO THE SUPERINTENDENT SHALL BE EQUIVALENT TO NOTICE OR COMMUNICATION TO THE CONTRACTOR. THE SUPERINTENDENT SHALL FOLLOW WITHOUT DELAY ALL INSTRUCTIONS OF FAIRFAX WATER IN THE CONSTRUCTION AND COMPLETION OF THE WATER MAIN OR ANY WORK ASSOCIATED WITH OR IMPACTING FAIRFAX WATER INFRASTRUCTURE.

12. THE MAXIMUM WORKING PRESSURE OF THE EXISTING WATER SYSTEM IS APPROXIMATELY 100 PSI.

22. BASED ON THE APPROVED CONSTRUCTION SCHEDULE, FAIRFAX WATER WILL GIVE AT LEAST 48 HOURS WRITTEN NOTICE TO AFFECTED CUSTOMERS FOR WATER MAIN CONSTRUCTION THAT WILL REQUIRE THE INTERRUPTION OF WATER SERVICE TO THESE CUSTOMERS.

4. FAIRFAX WATER SHALL HAVE THE RIGHT TO SUSPEND ANY PART OF THE WATER MAIN INSTALLATION WHENEVER IN THEIR JUDGMENT, SUCH SUSPENSION IS REQUIRED IN THE BEST INTEREST OF FAIRFAX WATER; OR TO TAKE OVER, USE, OCCUPY, OR OPERATE ANY PART OF THE COMPLETED OR PARTLY COMPLETED WATER MAIN INSTALLATION IF, BEFORE THE FINAL ACCEPTANCE OF THE WATER MAIN INSTALLATION, FAIRFAX WATER DEEMS IT NECESSARY.

14. FAIRFAX WATER PUBLISHES AN "APPROVED PRODUCTS LIST" WHICH LISTS, BY CATEGORY, MANUFACTURER'S PRODUCTS APPROVED FOR USE IN FAIRFAX WATER'S SYSTEM. MANUFACTURER'S PRODUCTS COVERED BY THE CATEGORIES INCLUDED IN THIS DOCUMENT WHICH ARE NOT SPECIFICALLY LISTED ARE NOT APPROVED FOR USE. COPIES OF THIS DOCUMENT ARE AVAILABLE AT WWW.FAIRFAXWATER.ORG.

5. THE EXISTING UTILITIES, STRUCTURES, PROPERTY LINES, AND EASEMENTS SHOWN ARE BASED ON DATA AND CONSTRUCTION PLANS PROVIDED BY THE VIRGINIA DEPARTMENT OF TRANSPORTATION (THE DEPARTMENT, VDOT). THE WATER MAIN DESIGN HAS BEEN BASED ON THIS PROVIDED INFORMATION. THE CONTRACTOR SHALL VERIFY ALL INFORMATION TO HIS SATISFACTION AND SHALL DIG TEST PITS AS CALLED FOR IN THE CONSTRUCTION NOTES OR AS DEEMED NECESSARY BY THE ENGINEER.

15. ALL WATER MAIN INSTALLATION SHALL BE IN CONFORMANCE WITH FAIRFAX WATER'S STANDARD DETAILS INCLUDED HEREIN AND FOUND AT FAIRFAX WATER'S WEBSITE AT WWW.FAIRFAXWATER.ORG.

23. PRIOR TO THE COMMENCEMENT OF ANY CONNECTION WORK, THE FAIRFAX WATER INSPECTOR WILL CONFIRM THAT THE CONTRACTOR HAS ALL NECESSARY MATERIALS, TOOLS AND EQUIPMENT AT THE WORK SITE. PIPE, FITTINGS AND VALVES SHALL BE PREASSEMBLED AS MUCH AS POSSIBLE TO REDUCE THE TIME OF WATER SERVICE INTERRUPTION. WORK WILL NOT COMMENCE UNTIL THIS IS CONFIRMED. ALSO, THE GEOMETRY OF THE CONNECTION SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO STARTING THE CONNECTION.

6. THE CONTRACTOR IS RESPONSIBLE FOR ENFORCING THE REQUIREMENTS OF CHAPTER 6-B, FAIRFAX COUNTY CODE-EXCAVATION AND UTILITY LINE INSTALLATION. IN PARTICULAR, THE CONTRACTOR IS DIRECTED TO SECTION 10, DEMOLITION OR EXCAVATION-PRIOR NOTICE OF THE AFORESAID CODE. THE CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-257-7777 SUFFICIENTLY IN ADVANCE OF THE START OF CONSTRUCTION TO COMPLY WITH THIS REQUIREMENT.

16. FAIRFAX WATER WILL REVIEW AND APPROVE WATER MAIN LAYING SCHEDULES (FOR 24-INCH AND GREATER) AND WATER MAIN RELATED SHOP DRAWINGS FOR THIS PROJECT AS TRANSMITTED TO FAIRFAX WATER BY THE CONTRACTOR. SUBMITTALS TO FAIRFAX WATER SHALL CONSIST OF CATALOG CUTS, SUPPLIER CERTIFICATIONS AND ANY OTHER INFORMATION PERTINENT TO THE MATERIAL ITEM. ALL SUBMITTALS SHALL BE OF CLEAR AND READABLE QUALITY AND THE ITEM BEING SUBMITTED FOR REVIEW SHALL BE CLEARLY HIGHLIGHTED OR DEFINED SO THAT THE REVIEWER CAN READILY IDENTIFY IT. FAIRFAX WATER REQUIRES A MINIMUM OF FOUR (4) SETS OF SUBMITTALS FOR IN-HOUSE DISTRIBUTION. ADDITIONAL SETS OF SUBMITTALS TO BE RETURNED TO THE CONTRACTOR SHOULD BE PROVIDED AT THIS TIME. THE SUBMITTALS WILL BE PROVIDED TO FAIRFAX WATER WITH A TRANSMITTAL LETTER CLEARLY IDENTIFYING THE CONTENTS OF THE DOCUMENTS AND FAIRFAX WATER PROJECT NUMBER. SUBMITTALS SHALL BE REVIEWED AND RETURNED WITHIN TWENTY (20) WORKING DAYS OF THE DATE THE SUBMITTALS ARE RECEIVED BY FAIRFAX WATER. INFORMATION THAT IS MAILED OR DELIVERED BY COURIER SHOULD BE DIRECTED TO:

FAIRFAX WATER
 8560 ARLINGTON BOULEVARD
 FAIRFAX, VA 22031
 MR. JERRY SCOTT, P.E.
 CHIEF CONSTRUCTION ENGINEER

7. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AND UTILITY OWNER AT NO EXPENSE TO THE DEPARTMENT.

17. THE CONTRACTOR SHALL NOT BE RELEASED FROM THE PROJECT UNTIL THE WATER MAIN INSTALLATION WORK AND FINAL WATER MAIN INSPECTION ARE COMPLETED TO THE SATISFACTION OF FAIRFAX WATER. A FAIRFAX WATER REPRESENTATIVE SHALL PROVIDE WRITTEN APPROVAL VERIFYING THAT THE WATER MAIN INSTALLATION WORK IS COMPLETE.

24. THE CONTRACTOR SHALL WORK CONTINUOUSLY AND EXPEDITIOUSLY AROUND THE CLOCK USING MULTIPLE CREWS UNTIL THE CONNECTIONS ARE SUCCESSFULLY INSTALLED AND WATER SERVICE IS RESTORED. WHERE THE NEW WATER MAIN IS TO BE CONNECTED AT MORE THAN ONE POINT TO THE EXISTING WATER SYSTEM, CONNECTIONS SHALL PROCEED SIMULTANEOUSLY. ALL CONNECTION WORK MUST BE SUCCESSFULLY COMPLETED WITHIN TEN HOURS UNLESS NOTED DIFFERENTLY IN WRITING BY THE ENGINEER OR FAIRFAX WATER. THE CONTRACTOR SHALL COMMIT THE NECESSARY PERSONNEL AND EQUIPMENT REQUIRED TO PERFORM THE SIMULTANEOUS CONNECTIONS WITHIN THE ABOVE TIME CONSTRAINTS.

8. ALL PIPE ELEVATIONS SHOWN ARE TOP OF PIPE UNLESS OTHERWISE SPECIFIED ON THE PLAN.

25. ONLY NON-TOXIC LUBRICANTS RECOMMENDED BY THE PIPE MANUFACTURER AND APPROVED BY THE VIRGINIA DEPARTMENT OF HEALTH SHALL BE USED ON GASKETS. A SOAP SOLUTION WILL NOT BE ALLOWED.

9. THE CONTRACTOR IS REFERRED TO THE VDOT DRAWINGS AND STANDARDS FOR THE LATEST ROAD AND DRAINAGE DESIGN INFORMATION.

26. ANY WATER MAIN TO BE INSTALLED IN A FILL AREA SHALL HAVE THE FILL PLACED AND COMPACTED TO A MINIMUM OF 2 FEET ABOVE THE TOP OF THE PROPOSED PIPE PRIOR TO EXCAVATION FOR AND INSTALLATION OF THE PIPE.

27. FIELD APPLIED DIELECTRIC COATING OR PETROLATUM TAPE TO BE APPLIED TO:
 A. BURIED MECHANICAL JOINTS, BOLTS, NUTS, COUPLINGS, HARNESS TIE RODS, SADDLES, IRON AND STEEL ANCHORS, AND OTHER BURIED CONNECTING HARDWARE.
 B. PIPE EMBEDDED IN CONCRETE ANCHOR BLOCKS OR OTHERWISE IN CONTACT WITH CONCRETE, EXTENDING THROUGH CONCRETE AND ADJACENT 6 INCHES IN BOTH DIRECTIONS.
 C. SERVICE CLAMPS, NON-MOVING PARTS OF CORPORATION STOPS AND OTHER TRANSITION FITTINGS BETWEEN COPPER SERVICES AND DUCTILE IRON PIPE.

28. NO BLASTING SHALL OCCUR WITHIN 25 FEET OF EXISTING WATER MAINS. A MAXIMUM PARTICLE VELOCITY OF 11/2 INCHES PER SECOND AT THE CLOSEST POINT TO THE WATER MAIN FOR ANY BLASTING THAT OCCURS BEYOND THE 25 FEET LIMIT SHALL BE ADHERED TO.

29. ANY SOUND BARRIER CONSTRUCTION, INCLUDING FOOTINGS, WITHIN 15 FEET OF THE EXISTING OR PROPOSED WATER MAINS SHALL BE REVIEWED FOR APPROVAL BY FAIRFAX WATER.

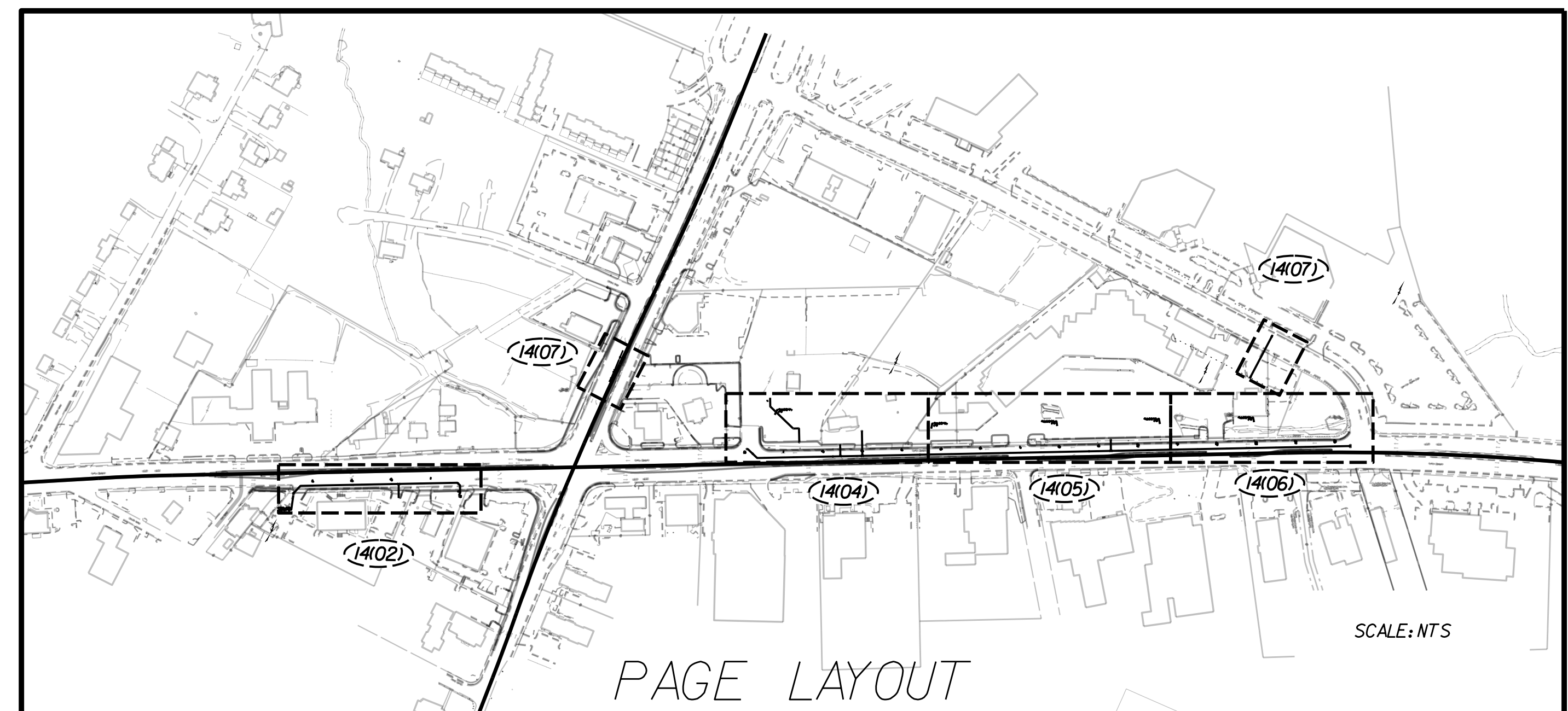
30. INSTALL IDENTIFICATION TAPE DURING BACKFILL OPERATIONS ONE FOOT ABOVE WATER MAIN PIPING FOR ALL RESTRAINED PIPE JOINTS.

31. WATER METERS WITHIN PROJECT LIMITS SHALL BE RELOCATED BY THE CONTRACTOR TO A LOCATION BEHIND THE PROPOSED CURB AND GUTTER. ALL WATER SERVICE RELOCATIONS AND RETAPS SHALL BE INSTALLED BY THE CONTRACTOR. ALL EXISTING SERVICES SHALL BE RECONNECTED BY THE CONTRACTOR AFTER ALL APPROVALS HAVE BEEN OBTAINED. WATER METER ASSEMBLIES SHALL INCLUDE ALL MATERIALS AS SHOWN IN FAIRFAX WATER'S STANDARD DETAILS.

32. PROPOSED WATER MAINS AND SERVICES MUST BE IN SERVICE BEFORE EXISTING WATER MAINS AND SERVICES ARE ABANDONED.

33. UPON COMPLETION OF PROJECT, INSPECTOR WILL CHECK THAT ALL METER BOXES ARE SET TO GRADE AND IN CORRECT LOCATIONS BEFORE THE CONTRACTOR MOVES OFF JOBSITE.

34. IN INSTANCES WHERE THE VDOT AND FAIRFAX WATER SPECIFICATIONS OVERLAP OR ADDRESS THE SAME ISSUES, THE MORE STRINGENT SPECIFICATIONS SHALL BE ADHERED TO.



PAGE LAYOUT

PROJECT	SHEET NO.
0029151105	14

Office Locations
 Manassas, VA
 Reston, VA
 Fairfax, VA
 Loudoun, VA

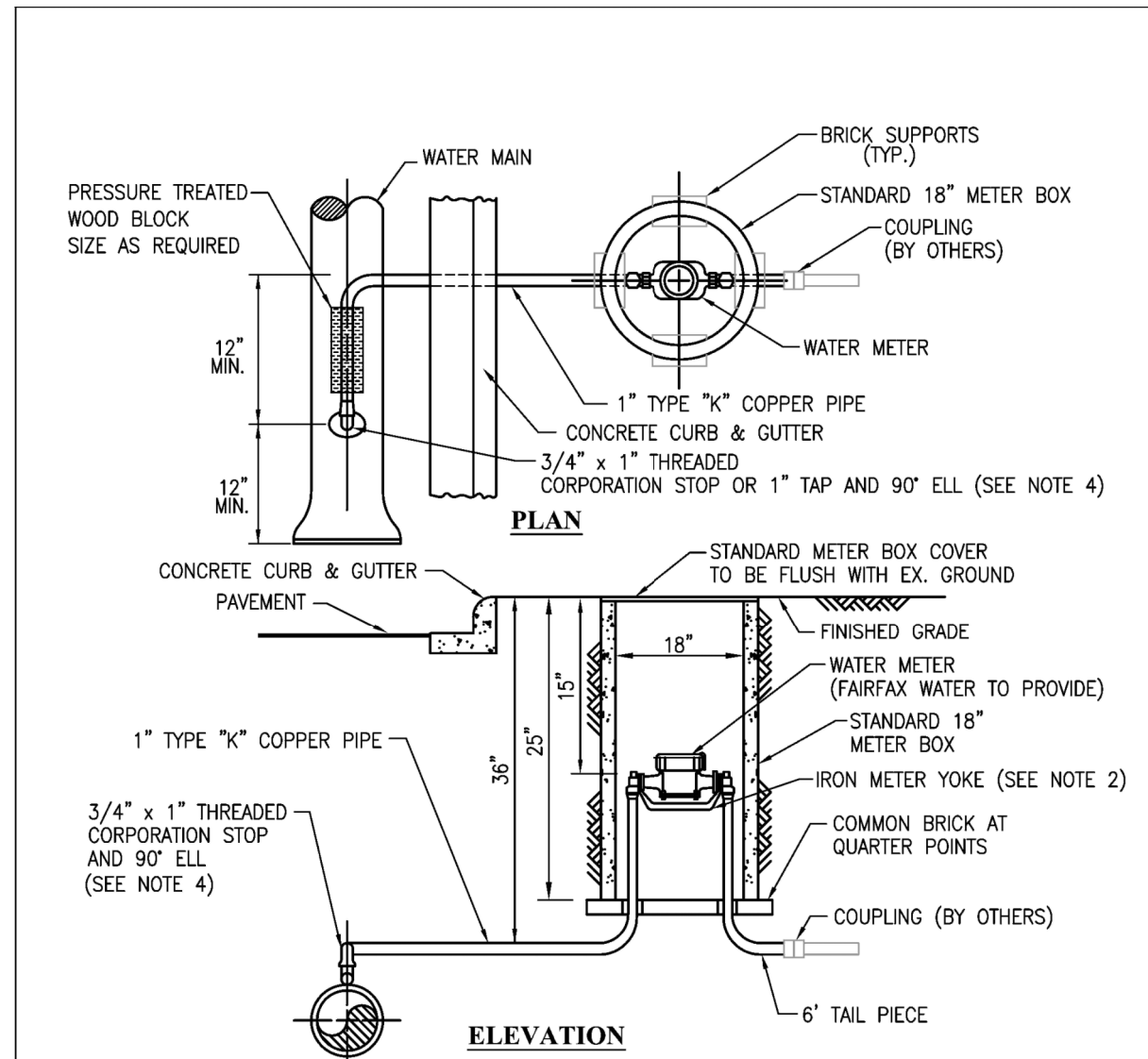
Design Associates, P.C.
 Civil Engineering
 Surveying
 Transportation - Environmental
 Right-of-Way Services

PROJECT MANAGER *Wendy Block Sanford, City of Fairfax (703) 385-7889*
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Proposed Waterline Details

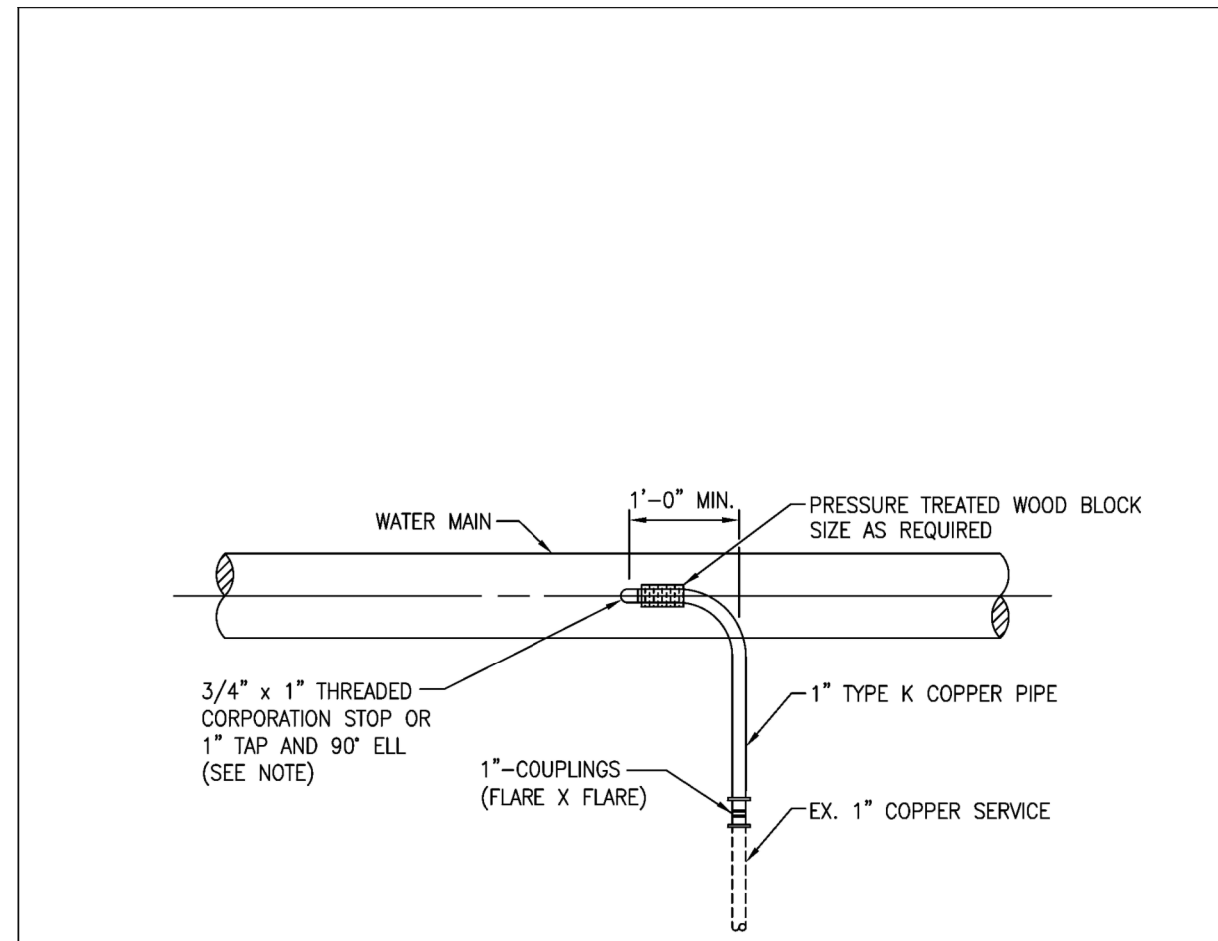
REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.			0029-151-105 P101, P102, R201, C501	14(1)

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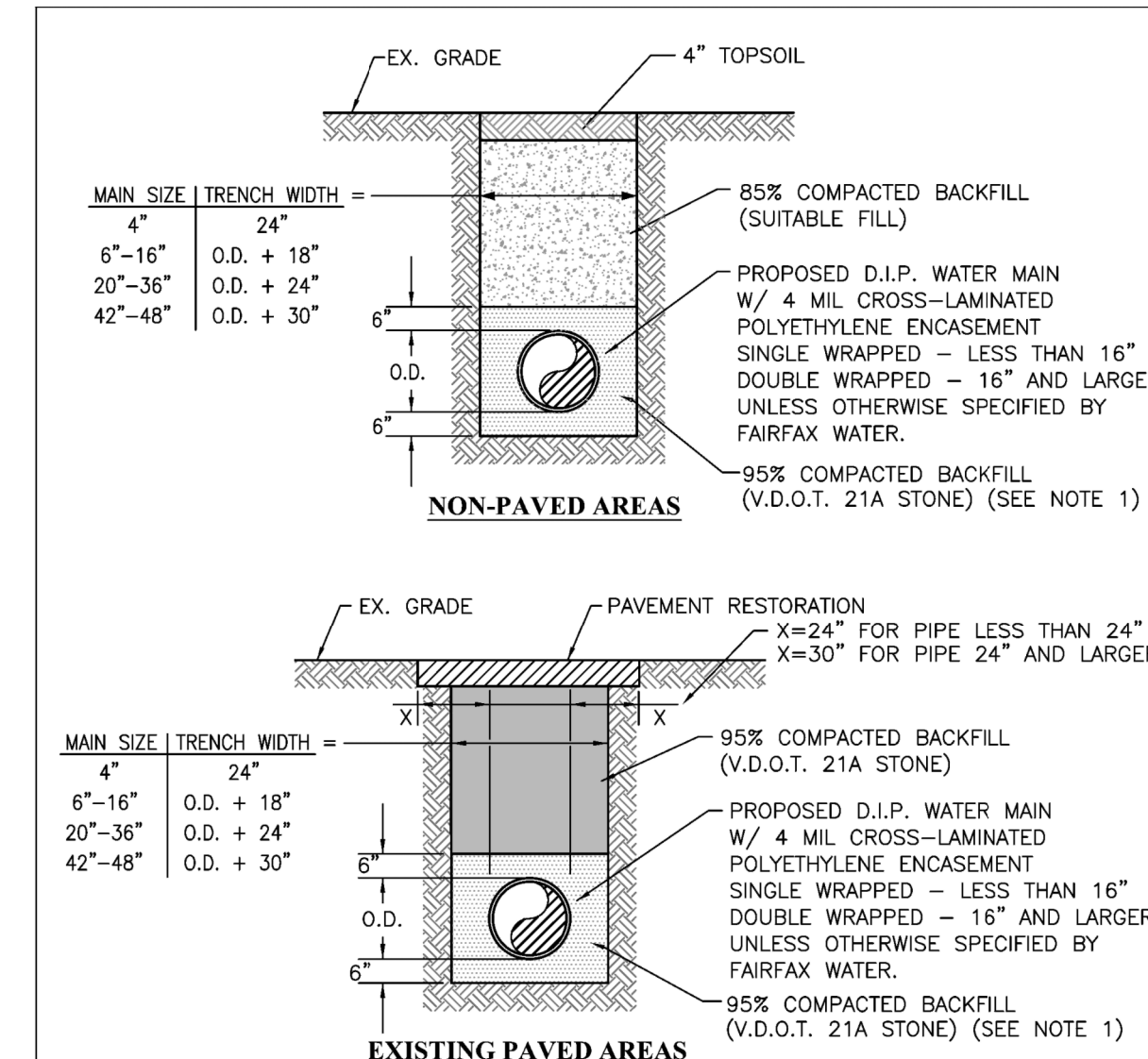
- NOTES:
- NO PLASTIC TUBING TO BE USED INSIDE METER BOX.
 - METER BOX, METER BOX COVER, AND METER YOKE TO BE FAIRFAX WATER STANDARD TYPE.
 - THREADED SERVICE CLAMP TO BE USED ON 3" AND 20" AND LARGER WATER MAINS.
 - COAT WITH PETROLATUM TAPE PER SECTION 13110 CATHODIC PROTECTION.
 - NO STRUCTURES, POLES, SIGN POSTS, TREES OR SHRUBS TO BE INSTALLED WITHIN FOUR FEET OF METER CROCK.

	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
	1" SERVICE CONNECTION WITH 5/8" OR 3/4" METER	DRAWING NO.: 1
DATE: 12/15		



- NOTE:
COAT WITH PETROLATUM TAPE PER SECTION 13110 CATHODIC PROTECTION

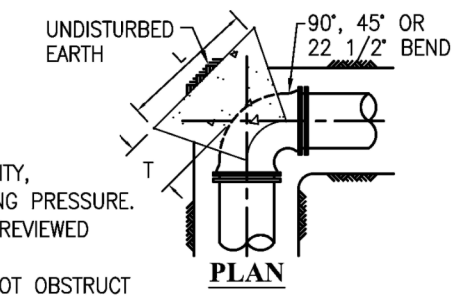
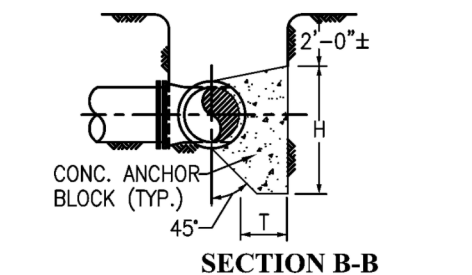
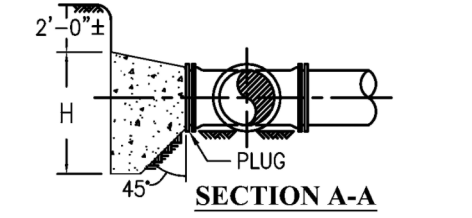
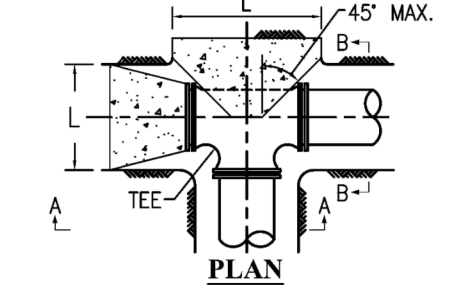
	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
	1" SERVICE RECONNECTION	DRAWING NO.: 3
DATE: 12/15		



- NOTES:
- V.D.O.T. NO. 57 STONE SHALL BE USED AT CREEK CROSSINGS OR IN AREAS WHERE TRENCH CONTAINS GROUND WATER.
 - ALL PAVEMENT RESTORATION AND COMPACTED BACKFILL WITHIN VDOT ROW SHALL ADHERE TO ALL APPLICABLE V.D.O.T. SPECIFICATIONS.
 - RESTRAINED JOINT PIPE SHALL BE IDENTIFIED WITH MARKING TAPE PLACED 2 FEET ABOVE PIPE.
 - ALL WATER MAIN INSTALLATION IN AREAS WITH PROPOSED PAVING SHALL ADHERE TO APPROVED DEVELOPMENT PLAN.

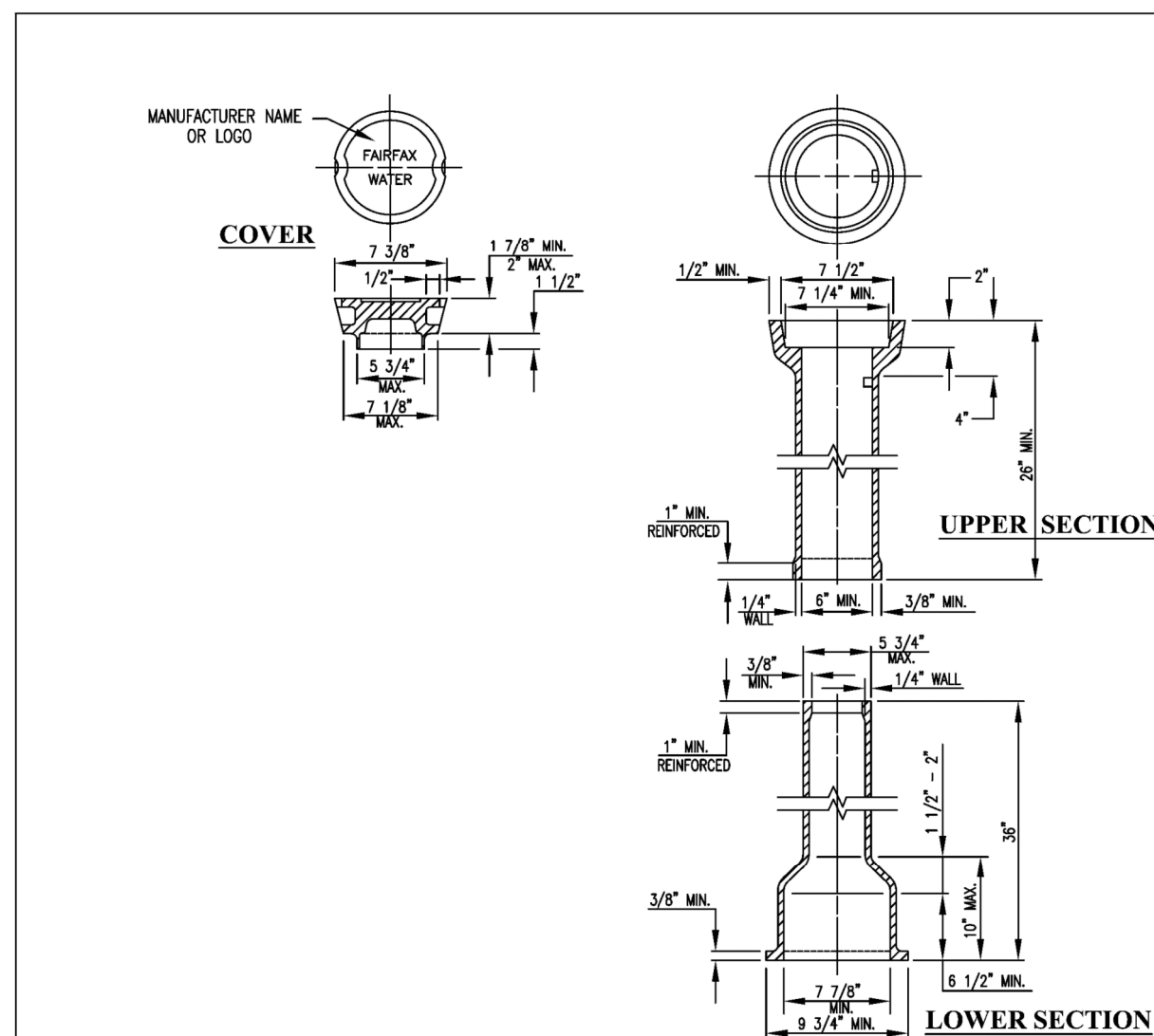
	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
	TRENCH - DUCTILE IRON PIPE	DRAWING NO.: 12
DATE: 12/15		

PIPE SIZE INCHES	DEGREE OF BEND (°)	(1) WORKING PRESSURE 175 PSI	
		H	T
6	90	3.0	2.0
	45	2.0	1.5
	22.5	1.5	1.0
8	90	4.0	2.5
	45	2.5	2.0
	22.5	2.0	1.5
12	90	5.5	4.0
	45	4.0	3.0
	22.5	3.0	2.0
16	90	7.5	5.0
	45	5.0	4.5
	11.25/22.5	4.0	3.0
20	90	9.5	6.0
	45	7.0	4.5
	11.25/22.5	5.5	3.0
24	90	13.0	6.5
	45	9.0	5.0
	11.25/22.5	6.0	4.0



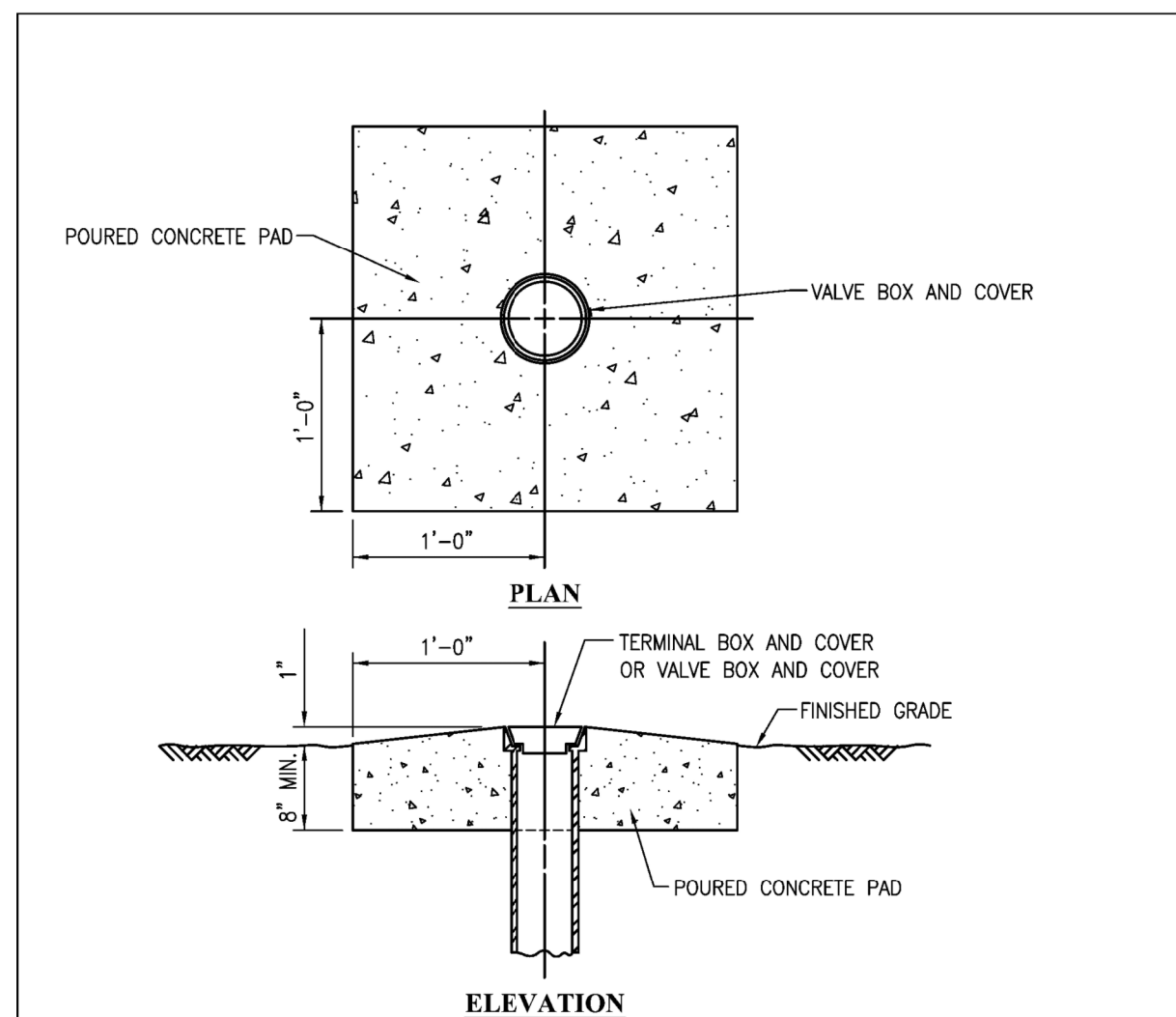
- NOTES:
- MINIMUM CONCRETE ANCHOR BLOCK DIMENSIONS IN FEET.
 - PROVIDE FORM WORK FOR ALL CONCRETE.
 - CONCRETE SHALL BE CLASS D 2000 PSI.
 - THE ABOVE TABLE IS BASED ON 2000 PSF SOIL BEARING CAPACITY, R=2PA SIN (°/2) AND FOR A TEST PRESSURE = 1.5 x WORKING PRESSURE, ON AN INDIVIDUAL BASIS BY FAIRFAX WATER.
 - ANCHOR BLOCK DESIGN FOR PIPE LARGER THAN 24" SHALL BE REVIEWED ON AN INDIVIDUAL BASIS BY FAIRFAX WATER.
 - WRAP FITTING WITH POLYETHYLENE SHEETING. CONCRETE MUST NOT OBSTRUCT ACCESS TO MECHANICAL JOINT ASSEMBLY.
 - CONCRETE ANCHOR BLOCK DIMENSIONS FOR TEES TO BE SAME AS FOR 90° BENDS.
 - HEIGHT OF CONCRETE ANCHOR BLOCK ABOVE PIPE CENTERLINE IS 1/3 THE H DIMENSION.
 - BLOCKING SHALL BACK TO UNDISTURBED EARTH.

	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
	CONCRETE THRUST ANCHORS	DRAWING NO.: 23
DATE: 12/15		



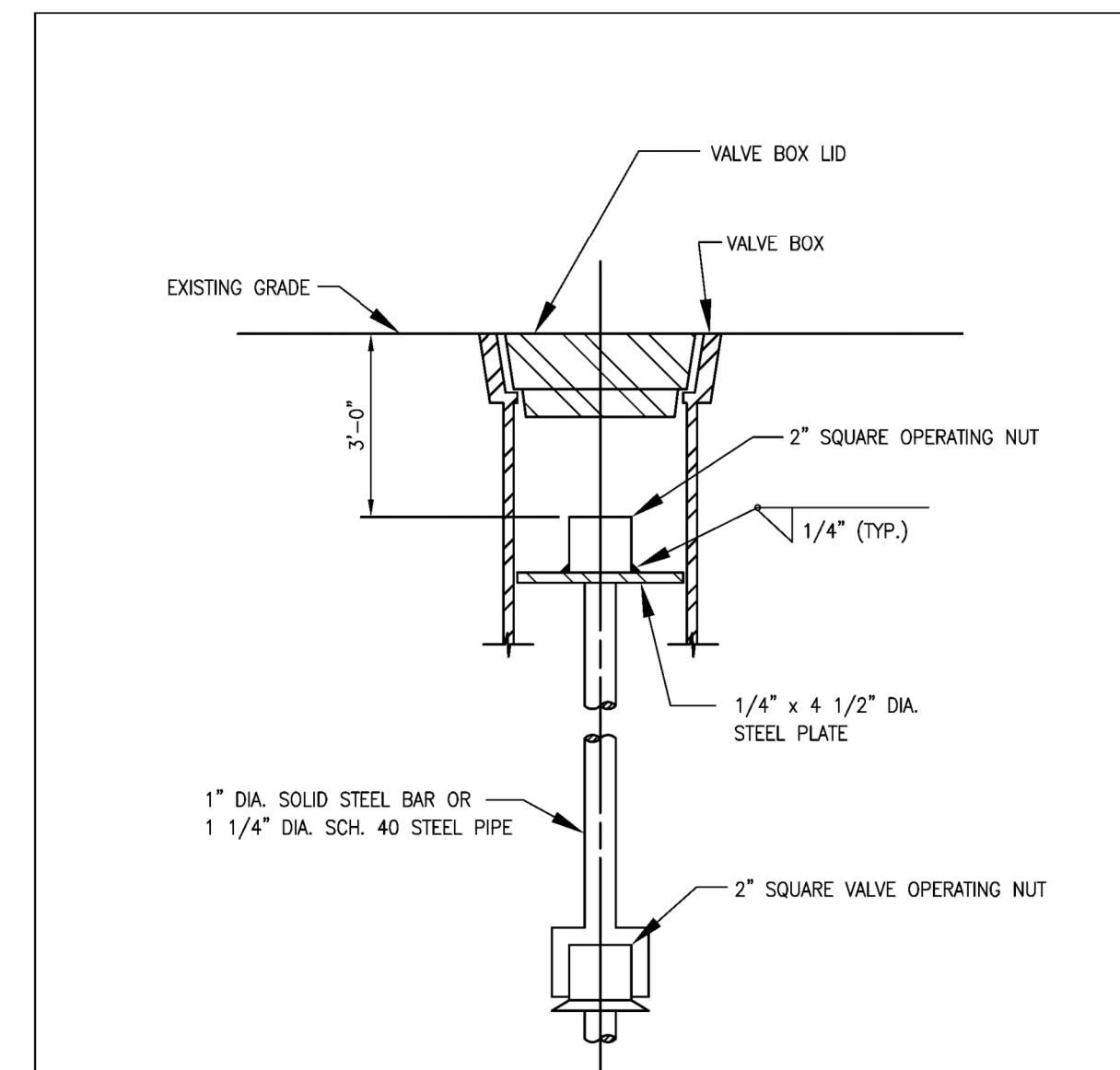
- NOTES:
- THE MANUFACTURER IDENTIFICATION AND COUNTRY OF ORIGIN (IF OTHER THAN U.S.) SHALL BE CAST INTO ALL PARTS.
 - GUARD POSTS ARE NOT TO BE INSTALLED AT VALVES UNLESS INDICATED ON DRAWINGS, OR AS SPECIFIED BY FAIRFAX WATER.
 - VALVE BOX MUST MEET SPECIFICATIONS CONTAINED IN FAIRFAX WATER'S APPROVED PRODUCTS LIST.
 - FOR VALVE BOXES DEEPER THAN SIX FEET, USE 5-INCH DIAMETER GRAY CAST IRON (SOIL) PIPE TO EXTEND STANDARD TOP AND BOTTOM SECTIONS.
 - STACKING OF VALVE BOX SECTIONS IS NOT ACCEPTABLE.

	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
	VALVE BOX	DRAWING NO.: 27
DATE: 12/15		



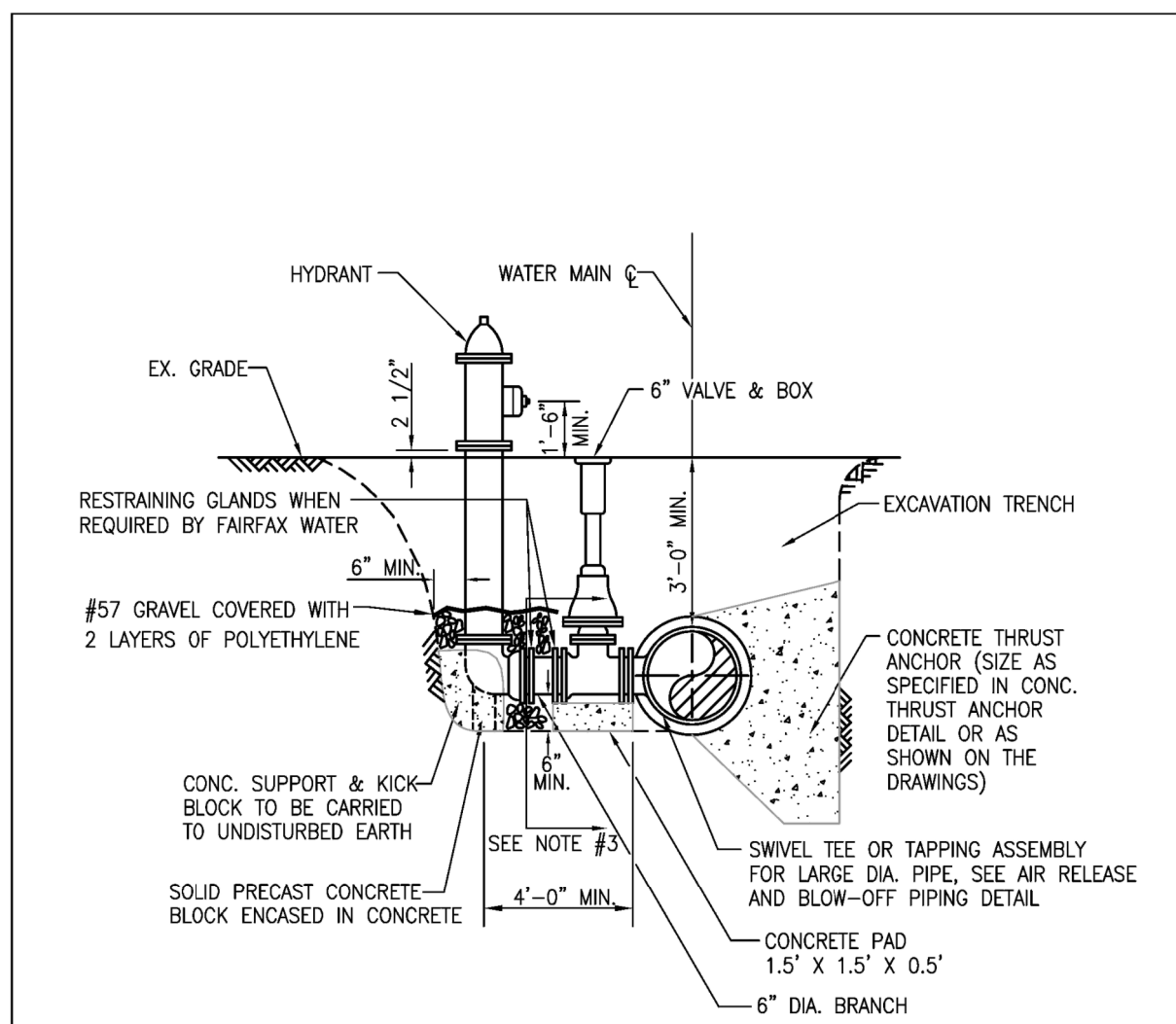
- NOTES:
- CONCRETE PADS FOR WATER MAIN VALVE AND TERMINAL BOX ARE TO BE INSTALLED USING REQUIREMENTS FOR CLASS "D" CONCRETE (2000 PSI).
 - PADS TO BE FORMED AND PROPERLY FINISHED.
 - VALVE BOX CONCRETE PAD TO BE INSTALLED ON ALL VALVES IN NON-PAVED AREAS OR AS DIRECTED BY FAIRFAX WATER.
 - GUARD POSTS ARE NOT TO BE INSTALLED AT VALVES UNLESS INDICATED ON DRAWINGS, OR AS SPECIFIED BY FAIRFAX WATER.

	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
	VALVE BOX CONCRETE PAD	DRAWING NO.: 28
DATE: 12/15		



- NOTES:
- FOR VALVE BOXES DEEPER THAN SIX FEET, USE 5-INCH DIAMETER GRAY CAST IRON (SOIL) PIPE TO EXTEND STANDARD TOP AND BOTTOM SECTIONS.
 - STACKING OF VALVE BOX SECTIONS IS NOT ACCEPTABLE.

	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
	VALVE STEM AND BOX EXTENSION	DRAWING NO.: 29
DATE: 12/15		

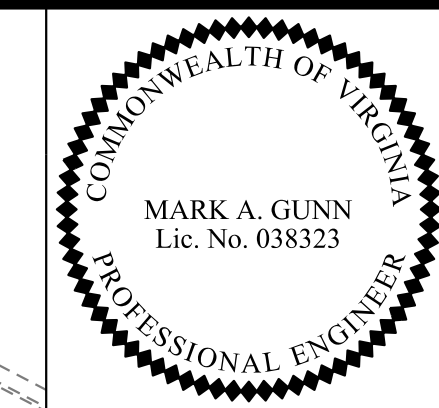


- NOTES:
- IF SWIVEL TEE IS NOT USED, VALVE MUST BE RESTRAINED TO TEE WITH RESTRAINING GLANDS BY CONTRACTOR.
 - HYDRANTS SHALL BE PAINTED AS FOLLOWS:
 - HYDRANT BARREL: SHERWIN-WILLIAMS SHER-CRYL HPA - SAFETY RED, GLOSS (#666R300)
 - TOPS AND CAPS: SHERWIN-WILLIAMS BOND PLEX WB ACRYLIC - ALUMINUM, GLOSS (#8715200)
 - WHERE INDICATED BY FAIRFAX WATER, THE TOP SHALL BE PAINTED IN THE SAFETY RED AND THE BARREL AND CAPS SHALL BE PAINTED ALUMINUM IN LEU OF THE ABOVE.
 - POLYETHYLENE ENCASEMENT TO BE INSTALLED UP TO 6-INCHES BELOW PROPOSED GRADE. ENCASEMENT SHALL BE INSTALLED SO AS NOT TO PREVENT DISCHARGE OF WATER THROUGH HYDRANT DRAIN HOLES.
 - FOR HYDRANT LOCATION IN REGARD TO FACE OF CURB, SEE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL.

	FAIRFAX WATER STANDARD DETAILS	SCALE: NOT TO SCALE
	STANDARD HYDRANT INSTALLATION	DRAWING NO.: 30
DATE: 12/15		

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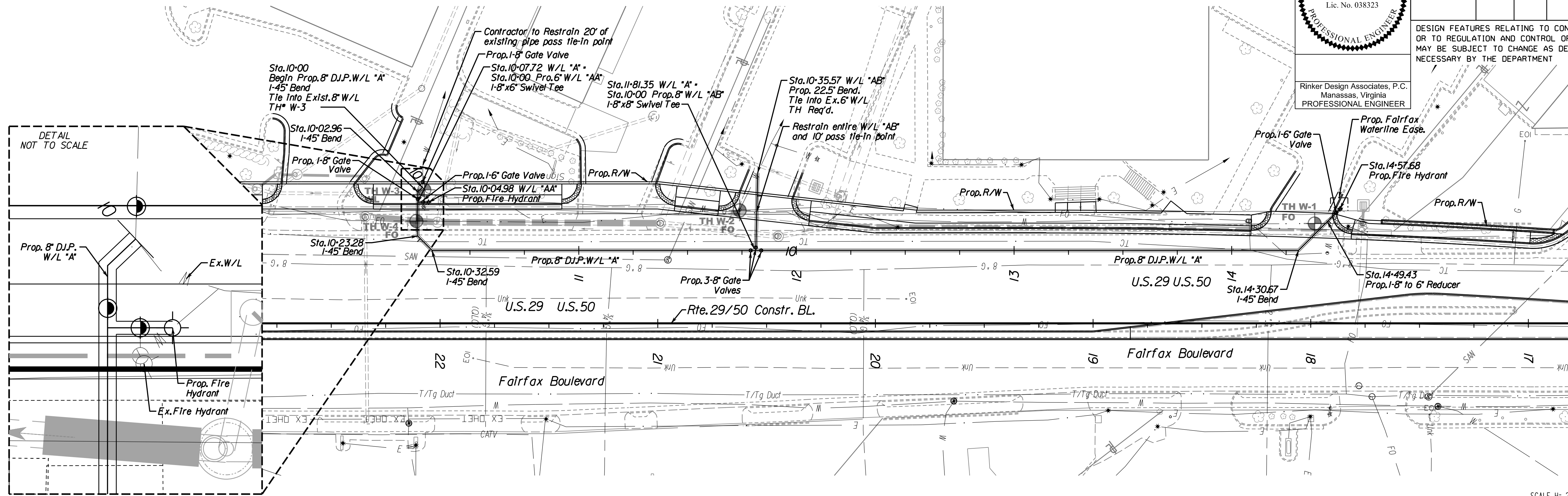
PROPOSED WATERLINE ADJUSTMENTS



REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.			0029-151-105 P101, P102, R201, C501	14(2)

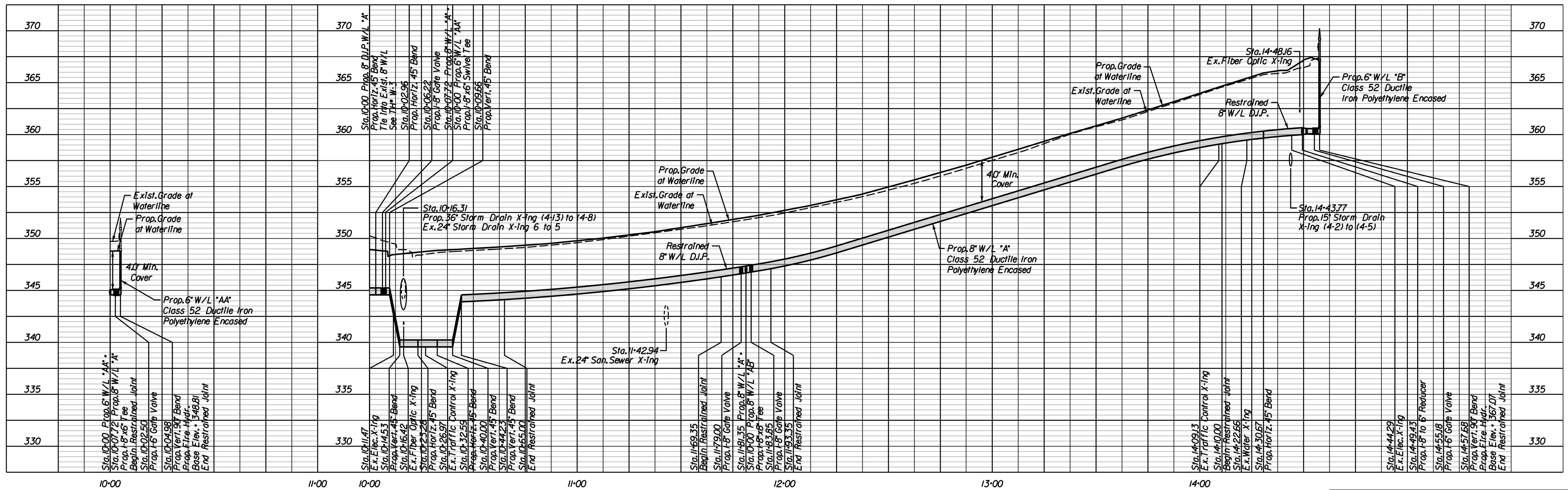
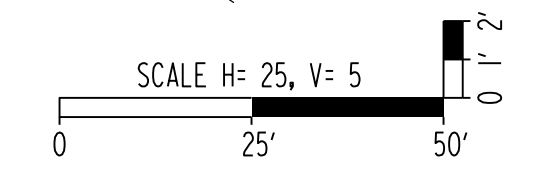
Rinker Design Associates, P.C.
Manassas, Virginia
PROFESSIONAL ENGINEER

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



HYDRANT CONN. @ STA. 10+07.72

WATERLINE "A"



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Civil Engineering, Transportation, Environmental
10079 Pines Road, Manassas, VA 20108
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Fax: (703) 368-7373
www.rinker.com

PROJECT MANAGER Wendy Block, Sanford, City of Fairfax, (703) 385-7889.
 SURVEYED BY Rinker Design Assoc. P.C., (703) 368-7373 (2011).
 DESIGNED BY Adam D. Welschenbach, P.E., Rinker Design Assoc. P.C., (703) 368-7373.
 SUBSURFACE UTILITY PROVIDED BY AccuMark (2011).-----

PROPOSED WATERLINE ADJUSTMENTS

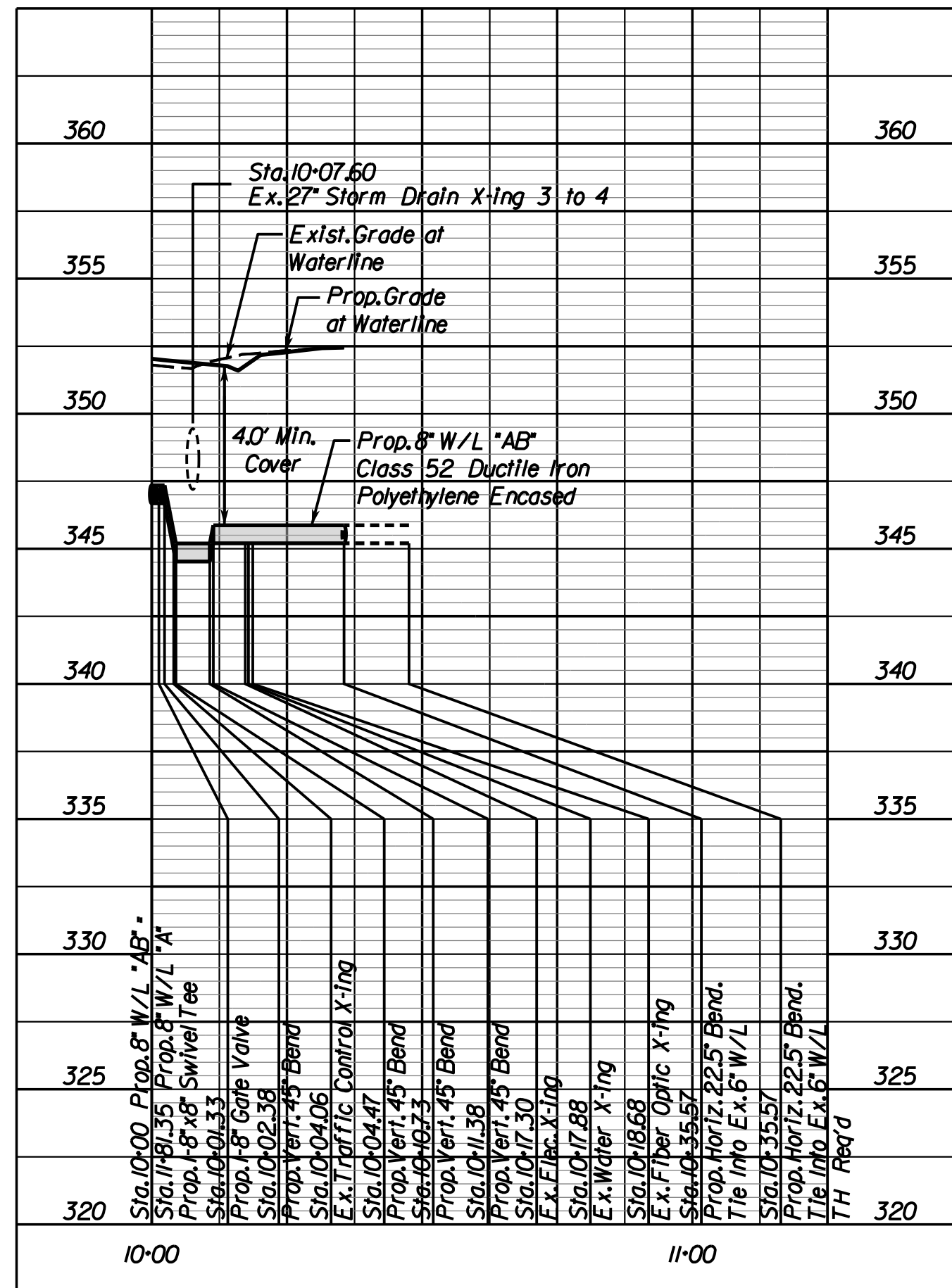


REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	14(3)

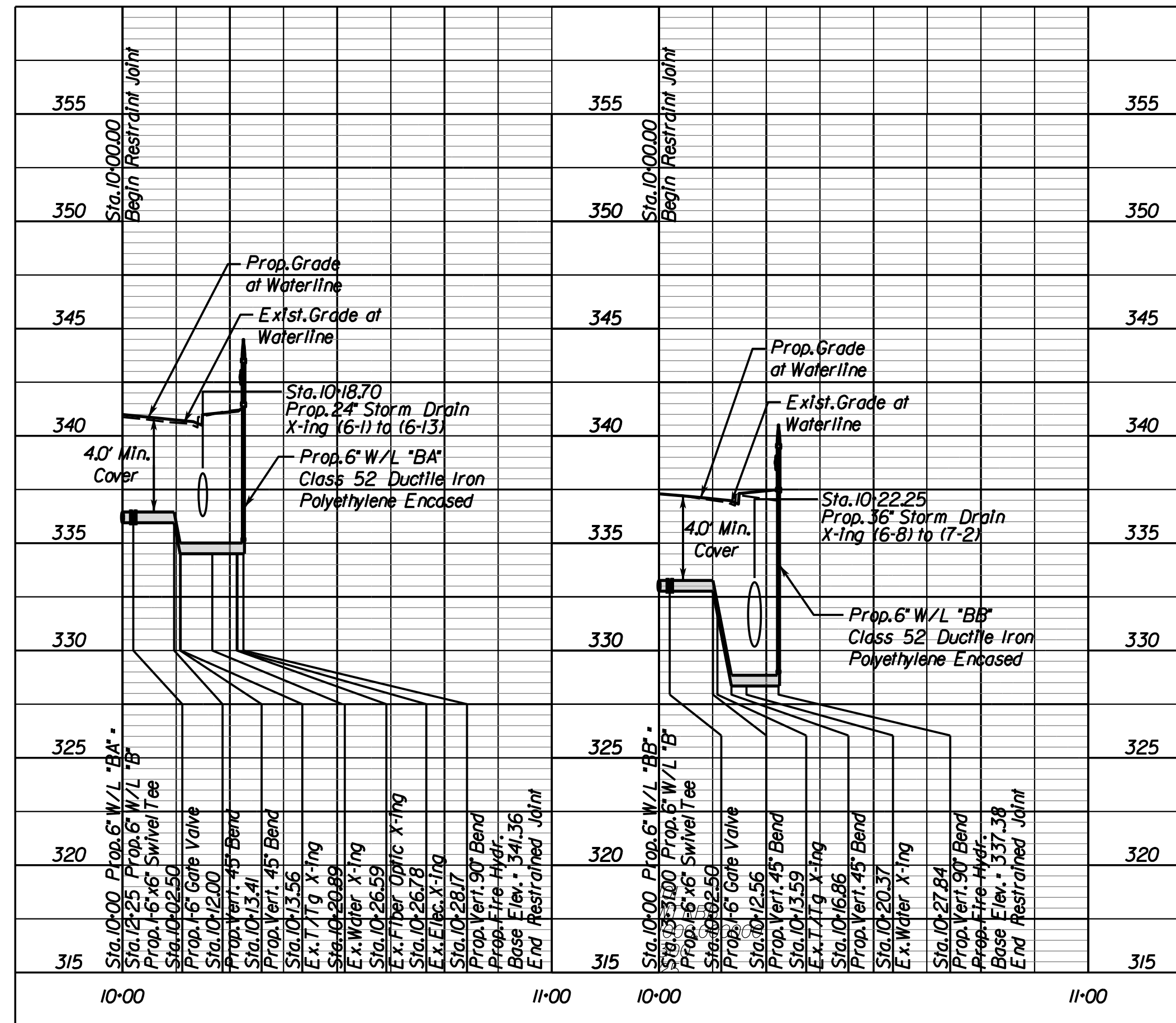
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Rinker Design Associates, P.C.
 Manassas, Virginia
 PROFESSIONAL ENGINEER

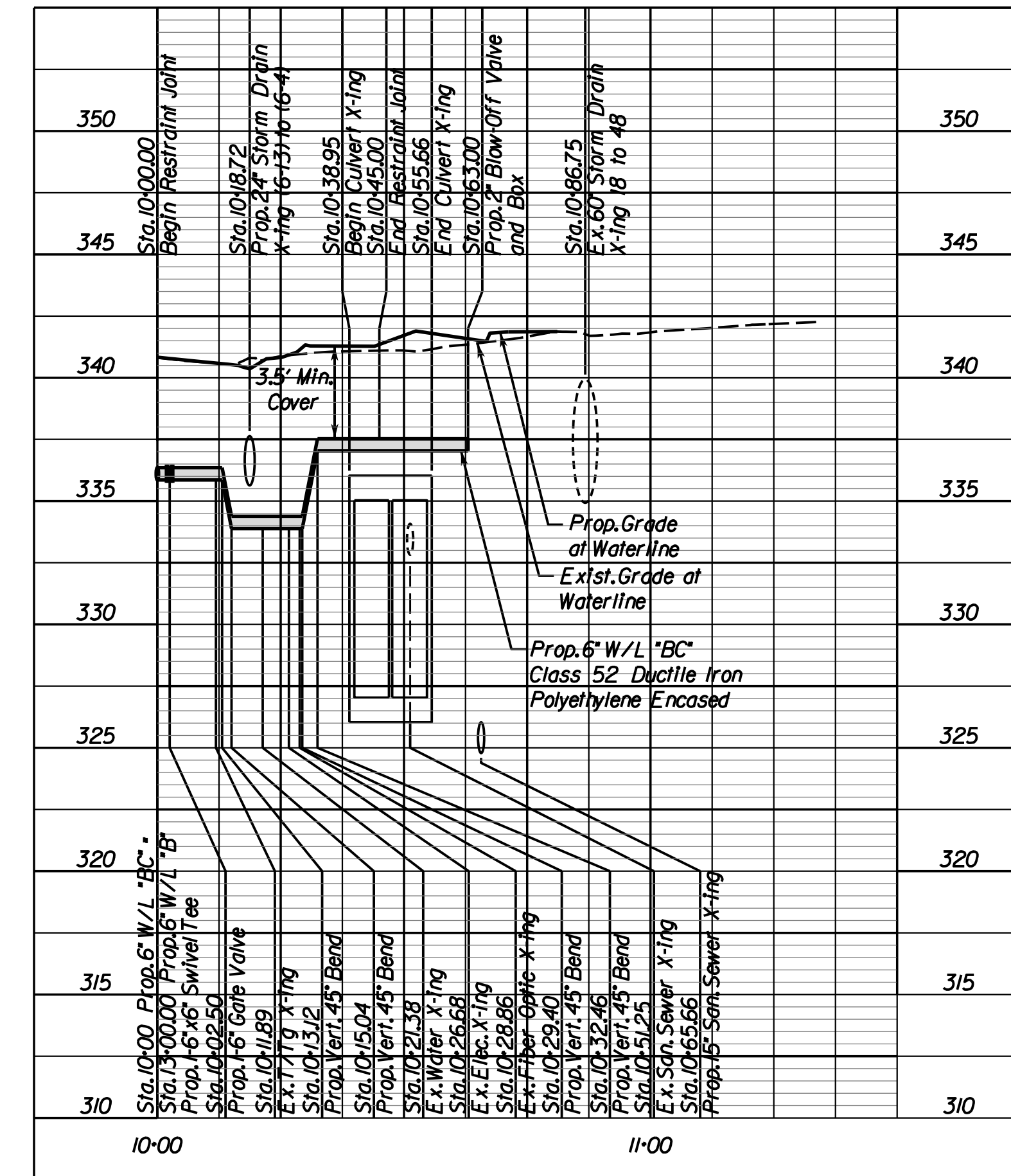
WATERLINE "AB"



WATERLINE "BA"



WATERLINE "BB"

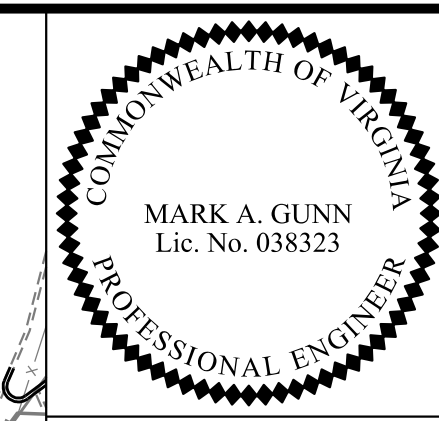


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DESIGNED BY *Adam D. Welschenbach, P.E., Rinker Design Assoc., P.C. (703) 368-7373*
SUBSURFACE UTILITY PROVIDED BY *Accumark (2011)*

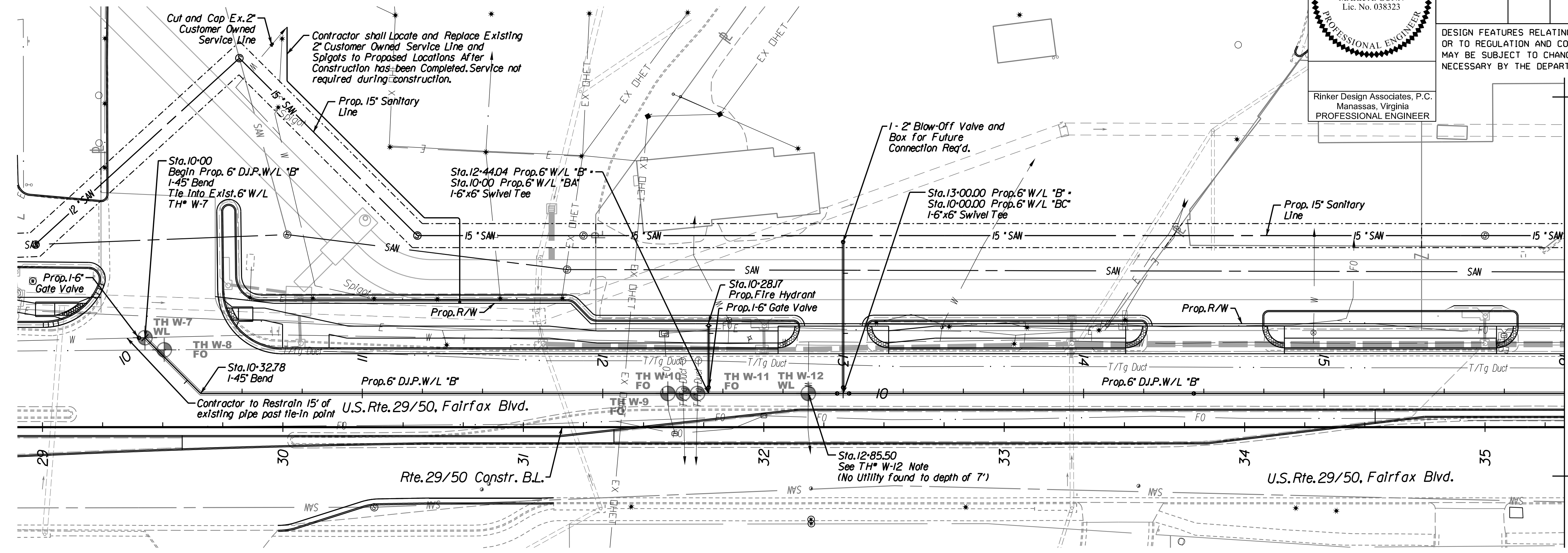
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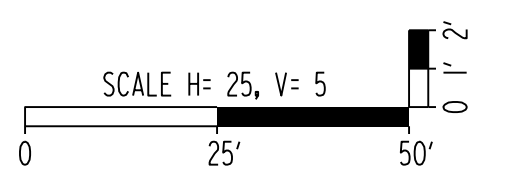
Rinker Design Associates, P.C.
Manassas, Virginia
PROFESSIONAL ENGINEER

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
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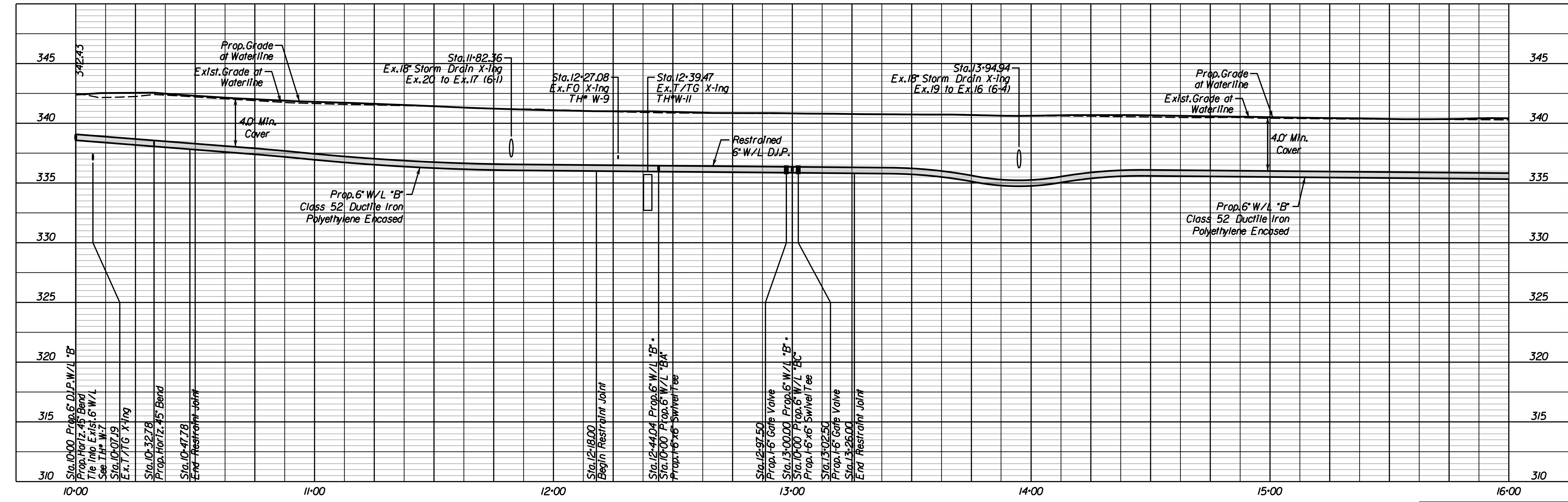
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



MATCHLINE STA. 16+00 SEE SHEET 14(5)



WATERLINE "B"

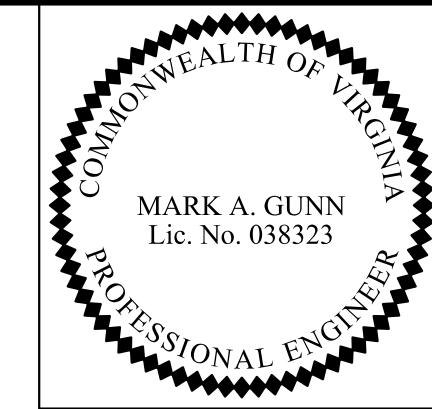


PROJECT	SHEET NO.
0029-151-105	14(4)

Office Locations
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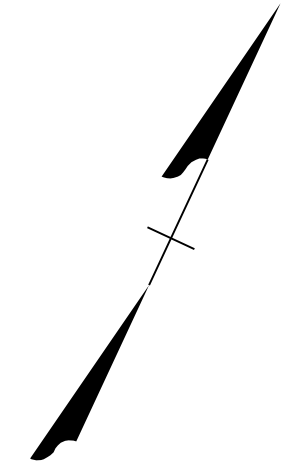
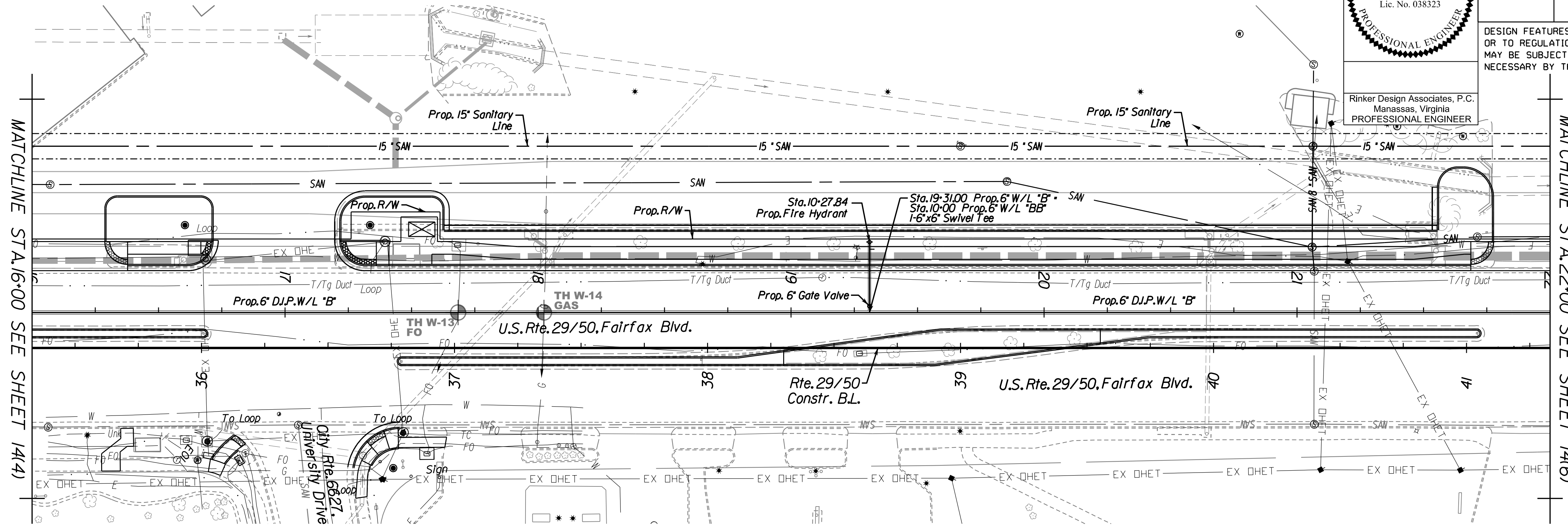
PROPOSED WATERLINE ADJUSTMENTS



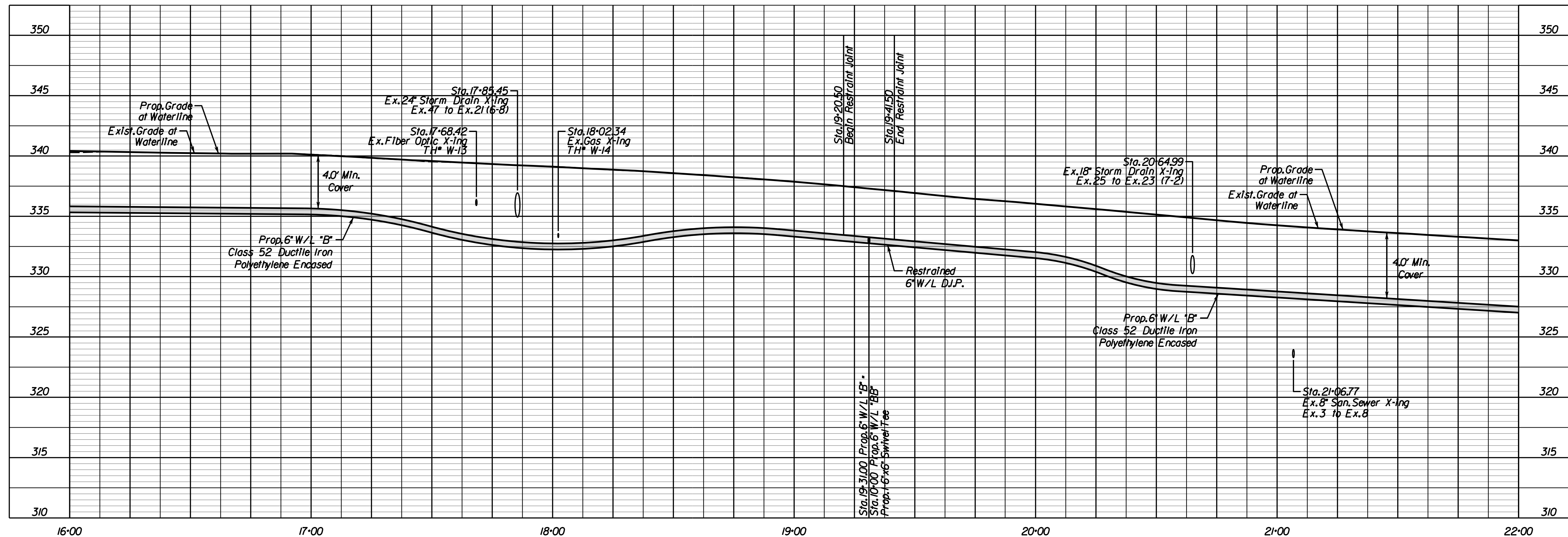
Rinker Design Associates, P.C.
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REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.			0029-151-105 P101, P102, R201, C501	14(5)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



WATERLINE "B"



PROJECT	SHEET NO.
0029-151-105	14(5)

PROJECT MANAGER *Wendy Block Sanford, City of Fairfax (703) 385-7889*
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 SUBSURFACE UTILITY PROVIDED BY *Accumack (2011)*

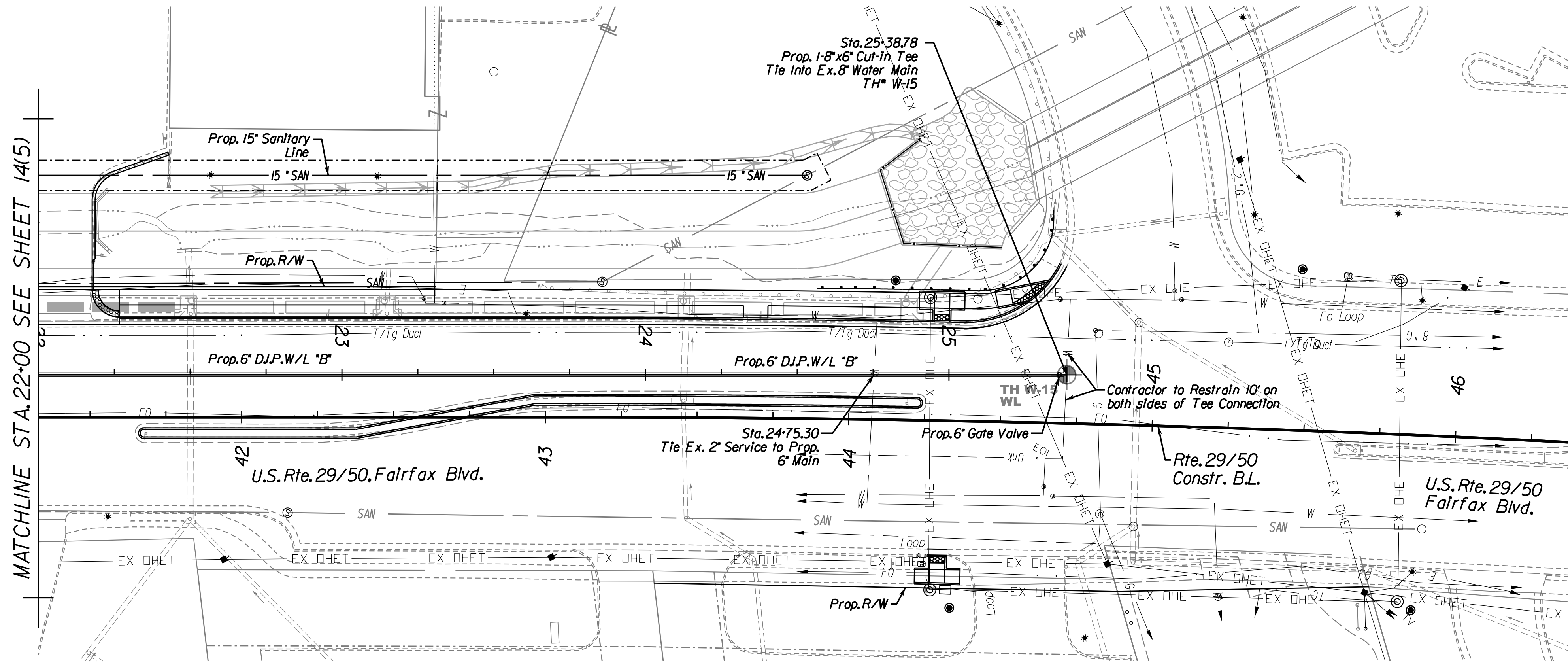
PROPOSED WATERLINE ADJUSTMENTS

COMMONWEALTH OF VIRGINIA
 MARK A. GUNN
 Lic. No. 038323
 PROFESSIONAL ENGINEER

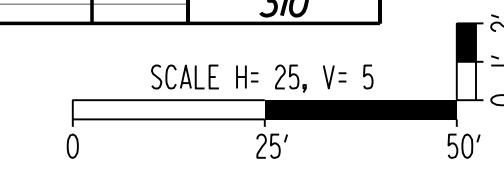
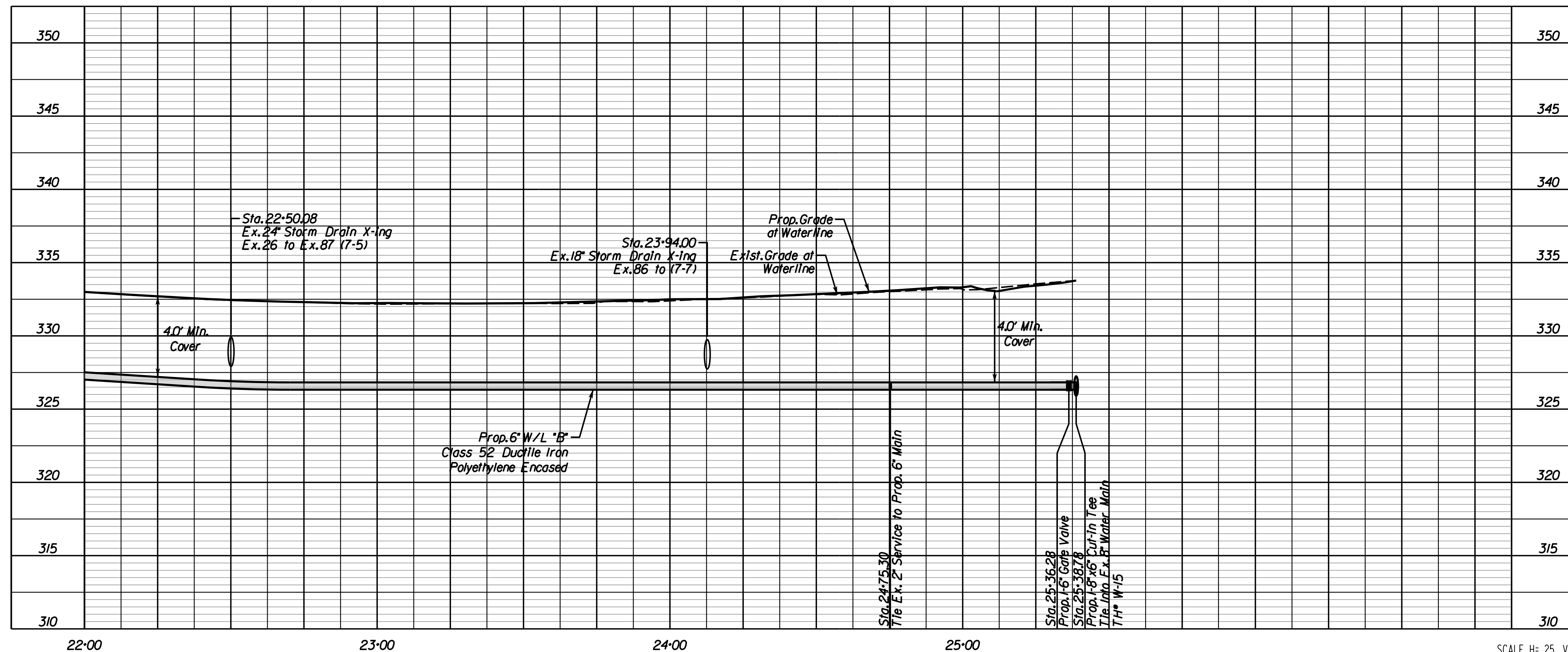
Rinker Design Associates, P.C.
 Manassas, Virginia
 PROFESSIONAL ENGINEER

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	1416

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



WATERLINE "B"

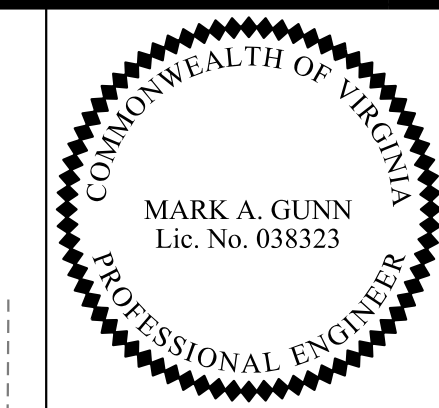


PROJECT	SHEET NO.
0029-151-105	1416

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 DESIGNED BY Adam D. Welschenbach, P.E., Rinker Design Assoc., P.C. (703) 368-7373
 SUBSURFACE UTILITY PROVIDED BY Accumark (2011)

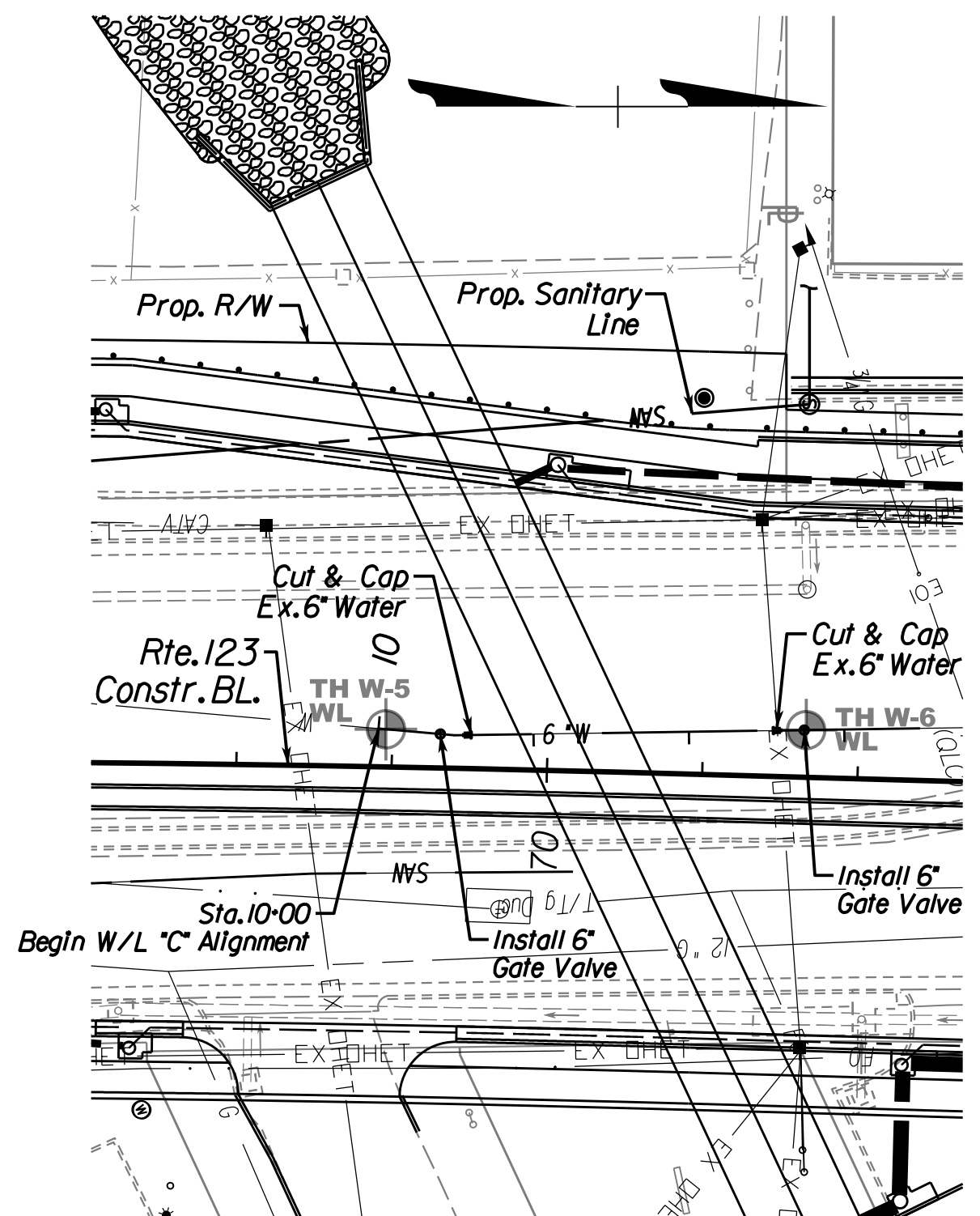
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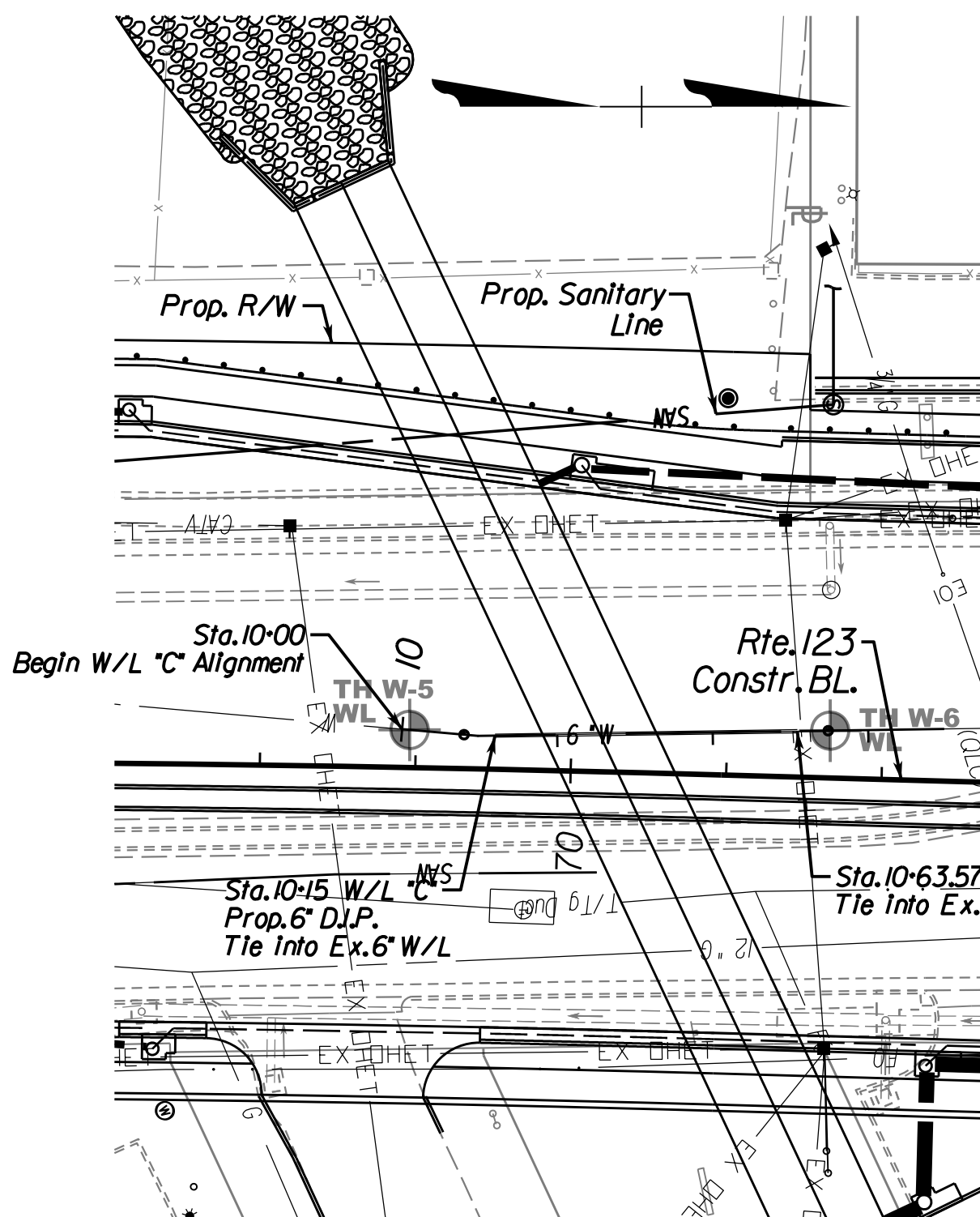
REVISED 10-28-2015	STATE VA.	ROUTE -	STATE PROJECT 0029-151-105 P101, P102, R201, C501	SHEET NO. 14(7)
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DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

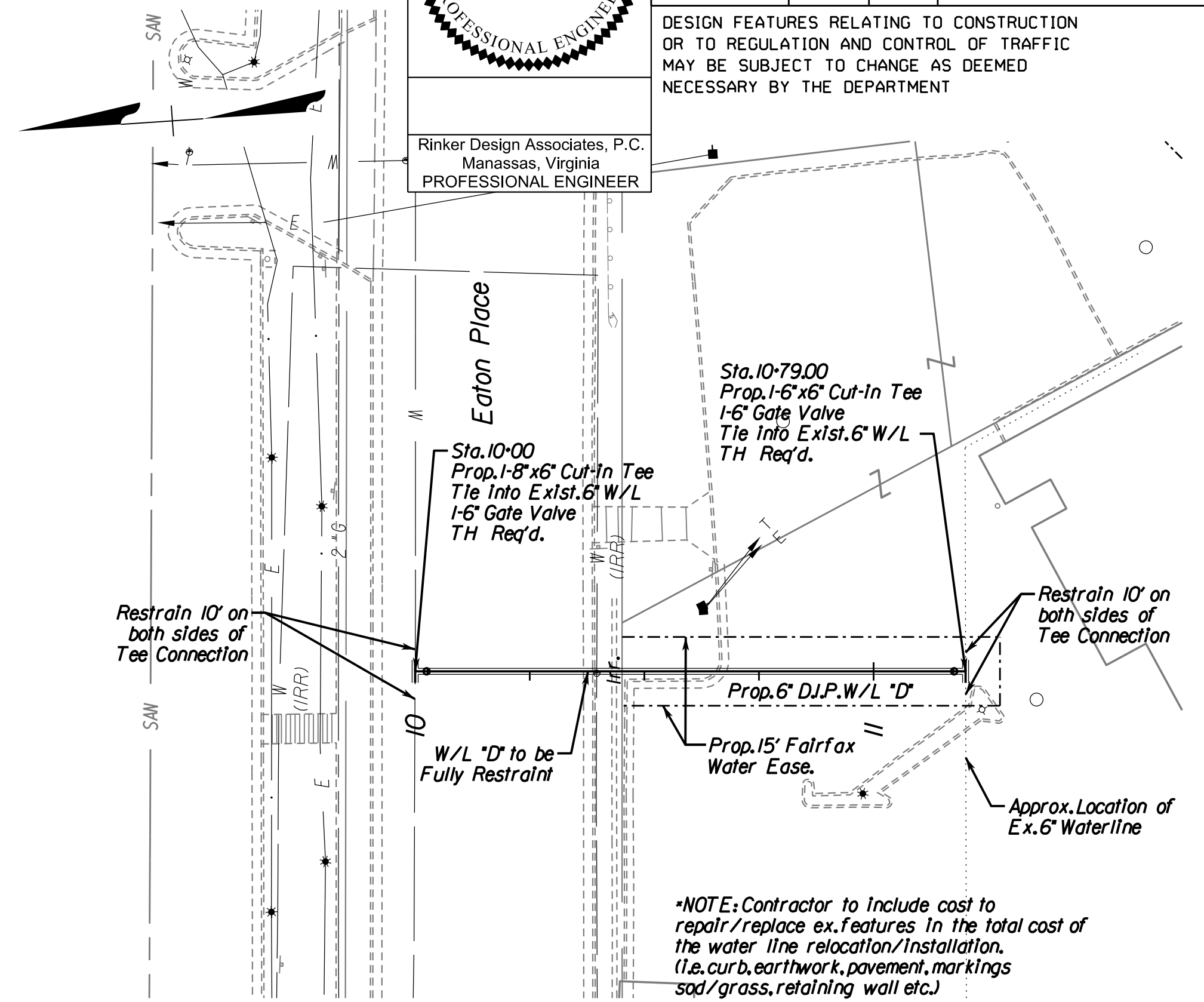
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WATERLINE "C"
Phase I



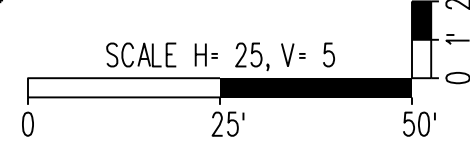
WATERLINE "C"
Phase II



WATERLINE "D"

Station	Prop. Grade at Waterline	Exist. Grade at Waterline	Station	Prop. Grade at Waterline	Exist. Grade at Waterline
345	Remove Ex. 6" W/L	Exist. Grade at Waterline	345	Prop. 6" W/L "C" Class 52 Ductile Iron Polyethylene Encased	Exist. Grade at Waterline
340			340		
335			335		
330			330		
325			325		
320			320		
315			315		
310	Sta. 10-10 Install 6' Gate Valve Sta. 10-15.00 Cut and Cap Ex. 6" D.I.P. W/L Begin Culvert X-100 Sta. 10-21.69 End Culvert X-100 Sta. 10-40.96 Cut and Cap Ex. 6" D.I.P. W/L Sta. 10-63.57 Install 6' Gate Valve		310	Sta. 10-15.00 Prop. 6" W/L "C" Tie Into Ex. 6" W/L Begin Culvert X-100 Sta. 10-21.69 End Culvert X-100 Sta. 10-40.96 Cut and Cap Ex. 6" D.I.P. W/L Sta. 10-63.57 Tie Into Ex. 6" W/L	
305			305		

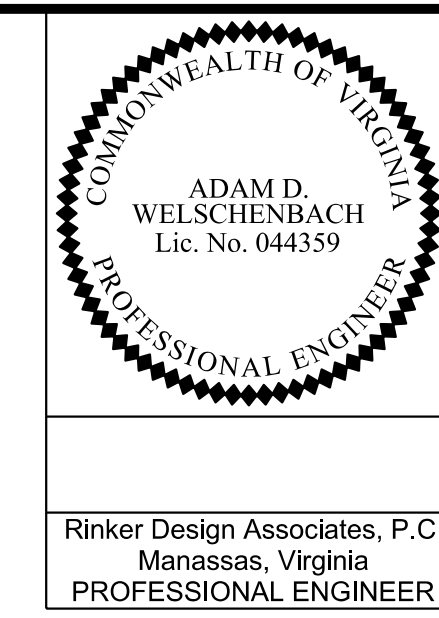
Station	Prop. Grade at Waterline	Exist. Grade at Waterline	Station	Prop. Grade at Waterline	Exist. Grade at Waterline
345			345		
340			340		
335			335		
330			330		
325			325		
320			320		
315			315		
310	Sta. 10-00 Prop. 1-8' x 6' Cut-In Tee Tie Into Ex. 6" W/L 1-6' Gate Valve TH Req'd. Sta. 10-02.50 Prop. 1-6' x 6' Gate Valve Sta. 10-35.00 Prop. Vert. 45' Bend Sta. 10-39.45 Prop. Vert. 45' Bend Sta. 10-39.62 Ex. Water X-100 (IAPP)		310	Sta. 10-15.00 Prop. 1-8' x 6' Cut-In Tee Tie Into Ex. 6" W/L 1-6' Gate Valve TH Req'd. Sta. 10-18.69 Prop. 1-6' x 6' Cut-In Tee Tie Into Ex. 6" W/L 1-6' Gate Valve TH Req'd.	
305			305		



Office Locations: Manassas, VA, Fairfax, VA, Herndon, VA, Reston, VA, Springfield, VA, Washington, DC
 Rinker Design Associates, P.C.
 Civil Engineering, Surveying, Environmental Engineering, Transportation Engineering, Right of Way Services

PROJECT MANAGER Wendy Block, Sanford, City of Fairfax, (703) 385-7889
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 DESIGNED BY Adam D. Welschenbach, P.E., Rinker Design Assoc., P.C. (703) 368-7373
 SUBSURFACE UTILITY PROVIDED BY Accu-track (2011)

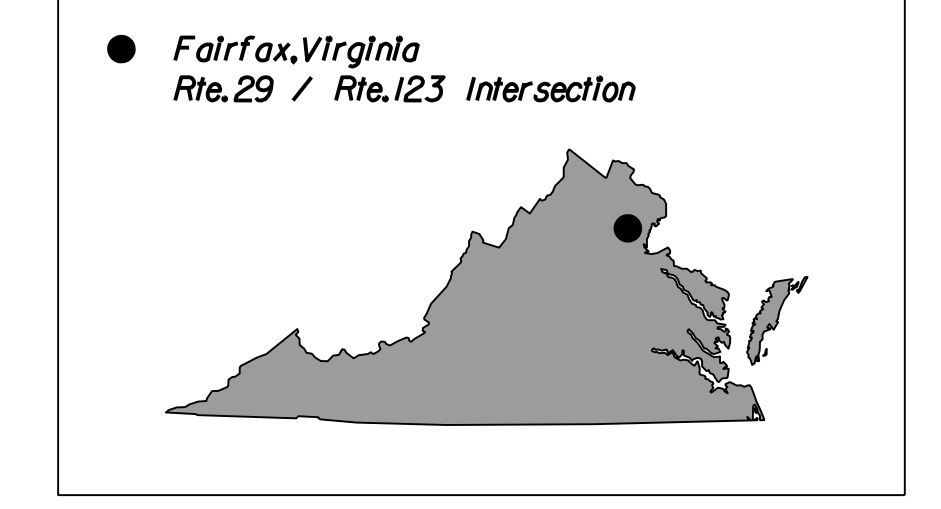
Fairfax Blvd. & Chain Bridge Rd. Lighting Plan Notes and Project Location Map



REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

PROJECT LOCATION

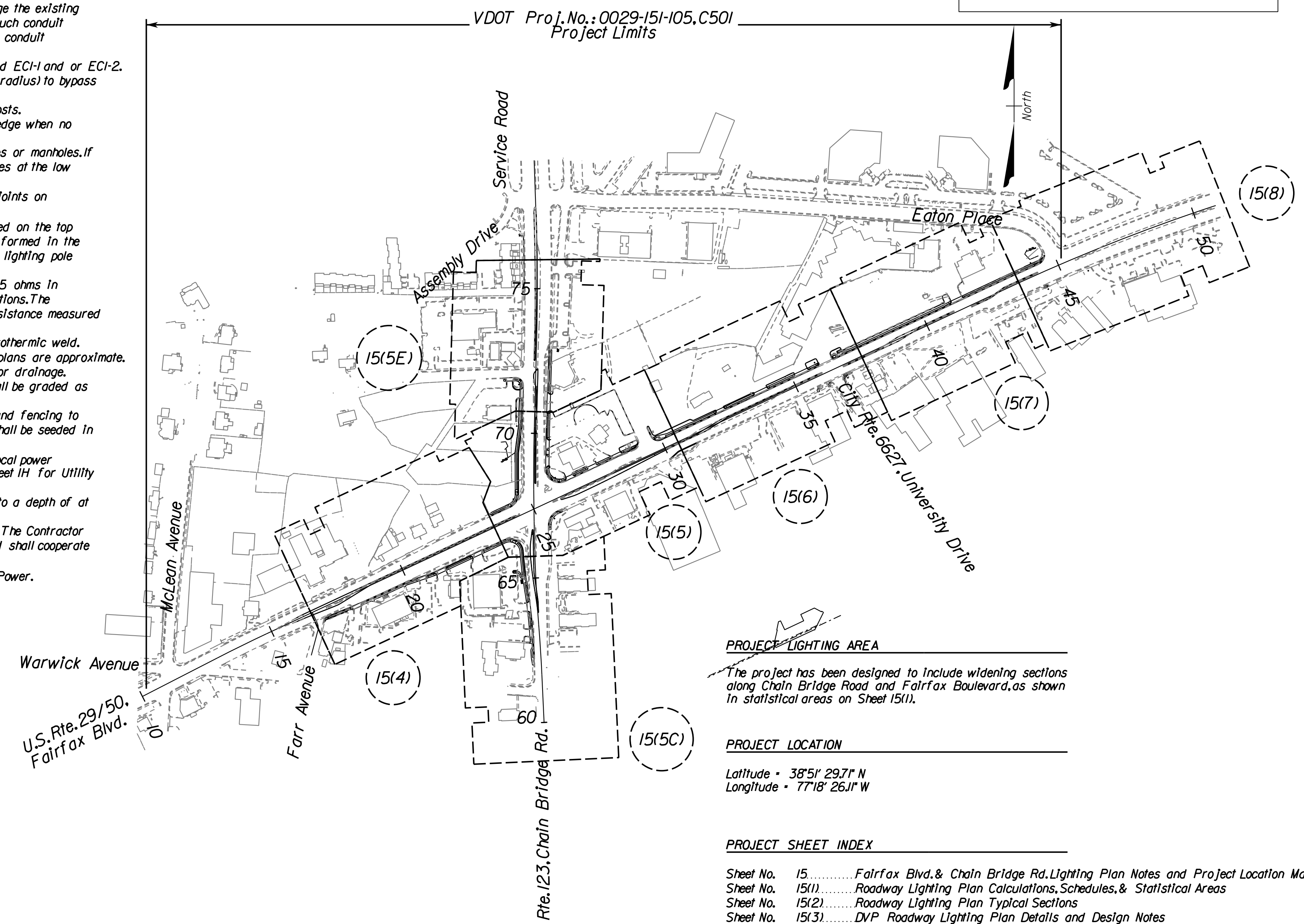


FAIRFAX CITY GENERAL LIGHTING NOTES

- The Contractor shall provide 3 sets of as-built drawings to the City of Fairfax within 30 days of completion of the project. The drawing may be copies of the original Traffic Lighting Plan with actual locations sketched in.
- Materials and operations shall comply with the latest revision of all applicable Codes and Standards.
- Materials and operations shall comply with the latest revision of the Codes and Standards ASTM A27, ASTM A36, ASTM A123, and ASTM A595.
- The Contractor shall observe NEC and NESC requirements for handling and storage of all electrical wiring, fixtures, etc.
- The Contractor shall keep the work area surface in a safe and satisfactory condition during the progress of the work.
- When traffic signals, loops, or their appurtenances are likely to be damaged or interfere as a result of the construction, coordinate temporary operation with the applicable agency having jurisdiction, and with VDOT or the Department of Public Works. Provide 48 hours notice prior to anticipated disturbance or interruption. If necessary, coordinate emergency traffic control with the City of Fairfax Police Department and VDOT.
- When cuts are made through any paved surface and the cuts extend through the pavement markings, the replaced pavement shall be marked to match the existing. It shall be the responsibility of the Contractor to notify MISS UTILITY at 1-800-552-7001, 48 hours prior to the start of any excavations or construction work. Call the City of Fairfax Public Utilities Department at 703-385-7991 for water/sewer service interruption. After hours, call 703-385-7924. See sheet 1H for other private utilities.
- Protect undisturbed lawns, shrubs, and trees and promptly repair damages caused by operation.
- The Contractor shall at all times so conduct his work as to insure the least possible inconvenience to the general public and the residents in the vicinity of the work. Fire hydrants on or adjacent to the work shall be kept accessible to fire fighting equipment at all times. Temporary provisions shall be made by the Contractor to insure the proper functioning of all gutters, sewer inlets, drainage ditches, and irrigation ditches, which shall not be obstructed except as approved by the Public Works Director.
- When working within and City or VDOT System road or highway, conform to the Manual on Uniform Traffic Control Devices, latest revision, as well as the VDOT Road and Bridge Specifications.
- Traffic Maintenance shall comply with the latest revision of the VDOT Standard Specification for Roads and Structures, Sections 512 and 701, as well as other applicable sections.
- The Contractor shall guarantee his work against defects due to poor workmanship or poor construction for a period of 12 months after completion and acceptance of his work.
- Conduit and fittings shall be of the size as shown on the plans.
- Unless otherwise specified by the Public Works Director, conduit shall be Schedule 40 PVC in appropriate areas, and Rigid Galvanized Steel under driveways, concrete structures, or roadways.
- All junction boxes shall be as specified in plans.
- A ground rod shall be installed next to each pole and at electrical service point.
- Grounding rods shall be 5/8" x 8' copper-clad steel, unless specified otherwise.
- The lengths of conduit shown on the plans are approximate lengths. The Contractor shall determine the exact lengths of conduit in the field.
- The conduit shall be installed in reasonably close conformity with the lines shown on the plans. Conduit runs may be changed to avoid obstructions with the approval of the Public Works Director.
- It shall be the Contractor's responsibility to locate all storm drains, water lines, sanitary sewers, and existing traffic signal equipment and to take all precautions to protect these facilities. The Contractor, at his expense, shall repair any damage caused by the Contractor's operation.
- The ends of all conduits, whether shop or field cut, shall be reamed to remove burrs and rough edges. Cuts shall be made square and true so that the ends will butt or come together for the full circumference thereof.
- Conduit shall enter the side(s) of the structure at the depth of the conduit run and shall extend a minimum of 2' and a maximum of 4' into the structure.
- All junction boxes shall be set on a 12" minimum depth bedding of washed gravel (VDOT #57 stone or approved equal).
- The top of all junction boxes shall be installed flush with the surrounding grade or pavement unless otherwise specified by the Public Works Director.
- The conduit entrance holes shall be patched such that debris and water cannot enter the structure.
- The grounding rod shall be driven into undisturbed earth. The ground wire shall be attached to the ground rod with a ground clamp.
- The ground wire shall be continuous and unspliced from the ground rod to the lighting pole if applicable.
- Ground wire shall be #8 AWG solid bare copper wire.
- The Contractor shall restore all areas disturbed by his operation to conditions equal to or better than existing conditions.
- Disposal: remove surplus materials, unsuitable soil, trash, and debris and legally dispose of off-site.

PROJECT GENERAL LIGHTING NOTES

- Contractor shall be responsible for installation of junction boxes, conduit, and all other items specified as contractor's responsibility on these plans.
- Light poles and luminaires will be provided by and installed by Dominion Virginia Power.
- Certain utilities within the vicinity of this Project area are shown on the plans. The utilities shown are not guaranteed to be completely or accurately located. The Contractor is responsible for locating all existing utilities and lighting systems before proceeding with the work.
- At locations where proposed conduit shall cross existing conduit, the Contractor shall hand-dig the trench and shall take adequate care not to damage the existing conduit or the contents thereof. These conditions shall apply at all such conduit crossings except those locations where proposed conduit will cross conduit designated to be abandoned.
- All pipe sleeve shall be installed in accordance with VDOT Standard ECI-1 and or ECI-2.
- Conduits shall be installed with large radius offsets (5' minimum radius) to bypass drainage inlets, manholes, and other obstructions.
- Conduits shall be installed a minimum of 2 ft. behind guardrail posts.
- Conduits shall be installed a minimum of 5 ft. clear of shoulder edge when no guardrail is installed, or as shown in the plans.
- All underground conduits shall be sloped to drain to junction boxes or manholes. If this cannot be accomplished, they shall be provided with drainage tees at the low points of conduit runs, at no additional cost.
- The Contractor shall provide expansion couplings at all expansion joints on structures or as designated by the Engineer.
- The location of the light pole foundation ground rod shall be marked on the top surface of the foundation by a recessed arrow and the initial "G" formed in the concrete. The ground rod shall typically be placed to the left of the lighting pole foundation as observed from the pole handhole.
- Ground rods shall not have a resistance to ground of more than 25 ohms in accordance with the requirements of Section 700 of the Specifications. The Contractor shall provide the Engineer with a report of electrical resistance measured between the ground rod and ground.
- Ground rods shall be connected to the ground wire utilizing an exothermic weld.
- Locations of existing junction boxes and manholes shown on the plans are approximate.
- All junction boxes and manholes shall be provided with a means for drainage.
- Areas around cabinets, junction boxes, and manholes on slopes shall be graded as approved by the Engineer.
- The Contractor shall be responsible to return all disturbed areas and fencing to their original state at the completion of all work. Disturbed areas shall be seeded in accordance with Section 603 of the Specifications.
- The Contractor shall coordinate with Dominion Virginia Power or local power company for all quantities for approval prior to installation. See sheet 1H for Utility contact information.
- Light pole foundations designated to be removed shall be removed to a depth of at least 2 ft. below finished grade if required.
- Separate contracts will be ongoing within the limits of the project. The Contractor shall not hinder the work being performed by other contractors and shall cooperate and coordinate the work of this project with the other contractors.
- Wiring for Project Lighting will be provided by Dominion Virginia Power.



PROJECT LIGHTING AREA

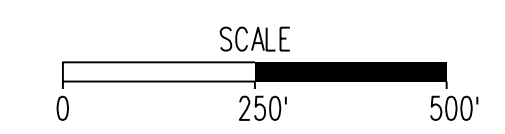
The project has been designed to include widening sections along Chain Bridge Road and Fairfax Boulevard, as shown in statistical areas on Sheet 15(1).

PROJECT LOCATION

Latitude • 38°51' 29.7" N
Longitude • 77°18' 26.1" W

PROJECT SHEET INDEX

Sheet No. 15	Fairfax Blvd. & Chain Bridge Rd. Lighting Plan Notes and Project Location Map
Sheet No. 15(1)	Roadway Lighting Plan Calculations, Schedules, & Statistical Areas
Sheet No. 15(2)	Roadway Lighting Plan Typical Sections
Sheet No. 15(3)	DVP Roadway Lighting Plan Details and Design Notes
Sheet No. 15(3A)	Roadway Lighting Plan Summary, Junction Box Detail, and AGI32 Photometric Data
Sheet No. 15(4)	Roadway Lighting Rte. 29 C.B.I., Sta. 16+50 to 23+50
Sheet No. 15(5)	Roadway Lighting Rte. 29 C.B.I., Sta. 23+50 to 30+50
Sheet No. 15(5C)	Roadway Lighting Rte. 123 C.B.I., Sta. 60+00 to 65+75
Sheet No. 15(5E)	Roadway Lighting Rte. 123 C.B.I., Sta. 70+75 to 76+00
Sheet No. 15(6)	Roadway Lighting Rte. 29 C.B.I., Sta. 30+50 to 37+50
Sheet No. 15(7)	Roadway Lighting Rte. 29 C.B.I., Sta. 37+50 to 43+50
Sheet No. 15(8)	Roadway Lighting Rte. 29 C.B.I., Sta. 43+50 to 50+81.48

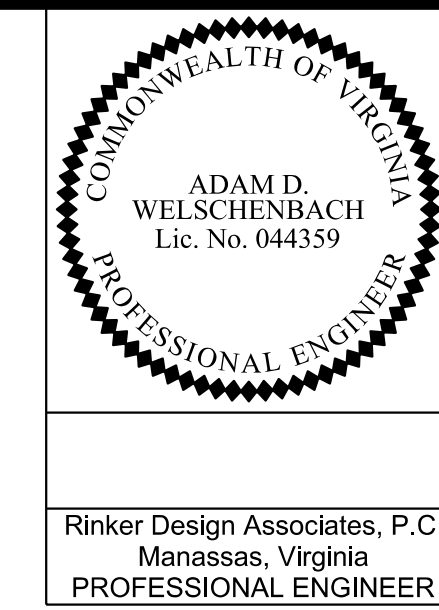


PROJECT	SHEET NO.
0029-151-105	15

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 SUBSURFACE UTILITY PROVIDED BY *Accumack (2011)*

Roadway Lighting Plan Calculations, Schedules, & Statistical Areas



REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15(11)

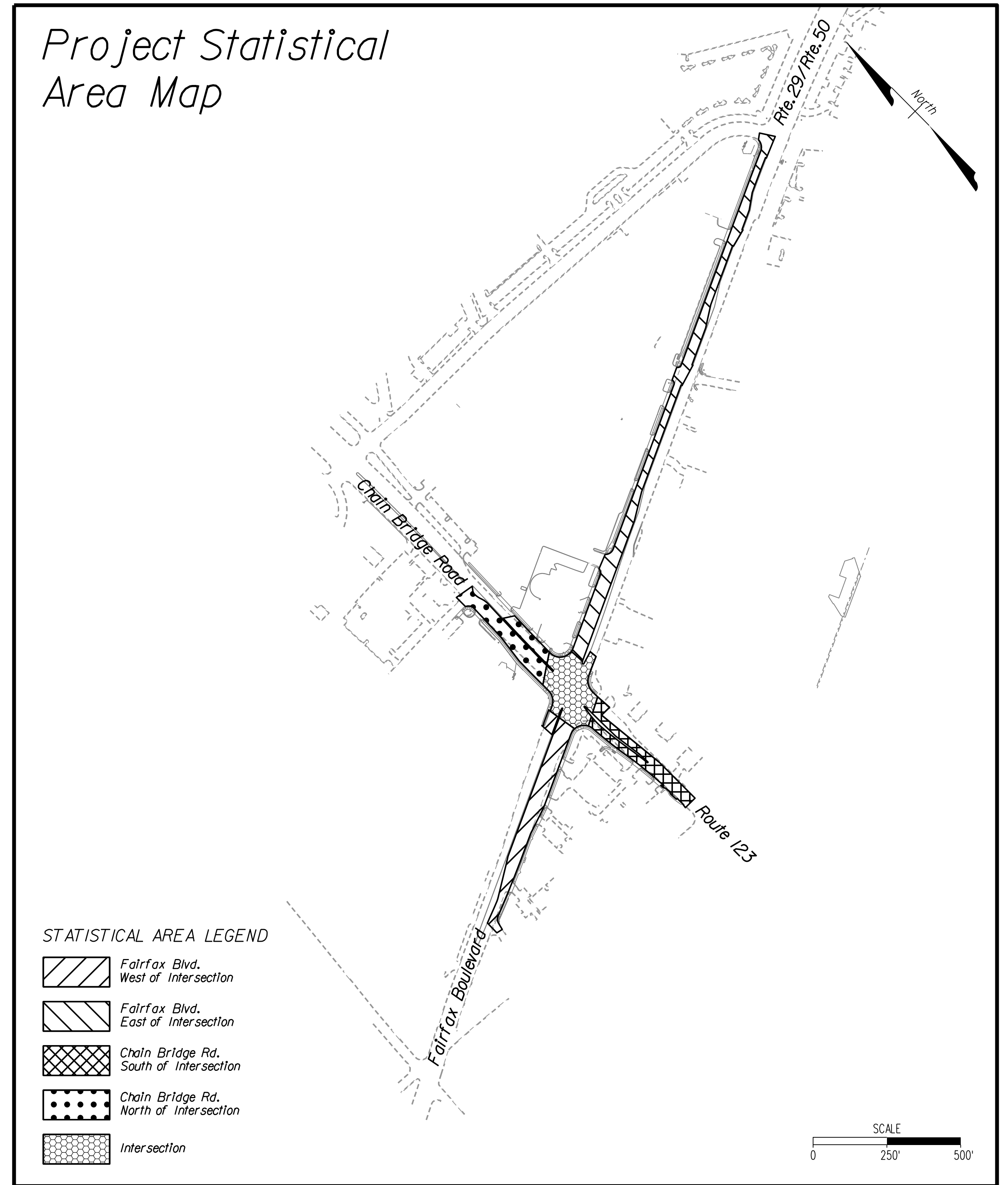
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Rinker Design Associates, P.C.
Manassas, Virginia
PROFESSIONAL ENGINEER

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27	150-0-14	11822432.334	6997962.715	14	0	0
28	150-0-14	11822739.073	6997987.662	14	0	0
29	150-0-14	11822826.835	6998027.22	14	0	0
30	150-0-14	11822537.631	6998020.927	14	0	0
32	150-0-14	11822436.8	6998037.604	14	0	0
33	150-0-14	11822911.329	6998061.531	14	0	0
34	150-0-14	11822538.019	6998081.976	14	0	0
35	150-0-14	11822985.89	6998089.671	14	0	0
36	150-0-14	11823051.888	6998127.035	14	0	0
37	150-0-14	11822447.395	6998121.408	14	0	0
39	150-0-14	11823118.164	6998159.036	14	0	0
40	150-0-14	11823210.645	6998195.673	14	0	0
41	150-0-14	11822438.668	6998197.232	14	0	0
43	150-0-14	11823304.256	6998239.536	14	0	0
44	150-0-14	11822426.225	6998270.451	14	0	0
45	150-0-14	11823387.732	6998278.515	14	0	0
47	150-0-14	11823460.267	6998312.428	14	0	0
48	150-0-14	11823535.516	6998355.92	14	0	0
50	150-0-14	11823616.806	6998382.74	14	0	0
51	150-0-14	11823694.576	6998419.171	14	0	0
52	150-0-14	11823768.51	6998453.533	14	0	0
53	150-0-14	11823852.391	6998492.615	14	0	0
54	150-0-14	11823927.749	6998527.671	14	0	0
55	150-0-14	11824008.22	6998565.175	14	0	0
56	150-0-14	11824087.194	6998601.916	14	0	0
57	150-0-14	11824164.242	6998637.701	14	0	0
58	150-0-14	11824238.992	6998673.258	14	0	0

Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	Lum.Watts	Total Watts
53	150-0-14	SINGLE	16,000	0.767	DVP No. ANE48SXX55	150	7,950

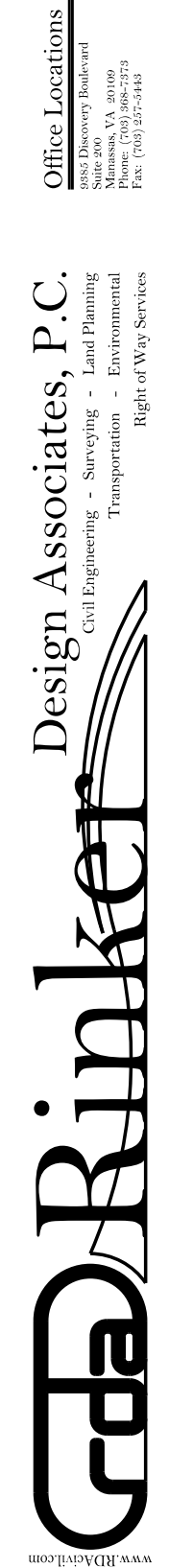
Label	CalcType	Units	Avg	Max	Min	Avg/Min	* Pts	Description
Project Calculations	Illuminance	Fc	0.52	1.5	0.2	2.60	1782	Overall Project
Intersection	Illuminance	Fc	0.47	1.5	0.2	2.35	282	Intersection of Fairfax Blvd. with Chain Bridge Rd.
Rte.123 North	Illuminance	Fc	0.53	1.5	0.2	2.65	279	Chain Bridge Rd., North of Intersection
Rte.123 South	Illuminance	Fc	0.53	1.4	0.2	2.65	253	Chain Bridge Rd., South of Intersection
Rte.29 East	Illuminance	Fc	0.52	1.4	0.2	2.60	624	Fairfax Blvd., East of Intersection
Rte.29 West	Illuminance	Fc	0.52	1.4	0.2	2.60	345	Fairfax Blvd., West of Intersection



Lighting Design Plan Notes

- The proposed Phase, Control Center, and Circuit calculations have been provided by Dominion Virginia Power (DVP).
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PROJECT	SHEET NO.
0029-151-105	15(11)



PROJECT MANAGER *Wendy Block Sanford, City of Fairfax (703) 385-7889*
 SURVEYED BY *Rinker Design Assoc., P.C. (703) 368-7373 (2011)*
 DESIGNED BY *Adam D. Welschenbach, P.E., Rinker Design Assoc., P.C. (703) 368-7373*
 SUBSURFACE UTILITY PROVIDED BY *Accumark (2011)*

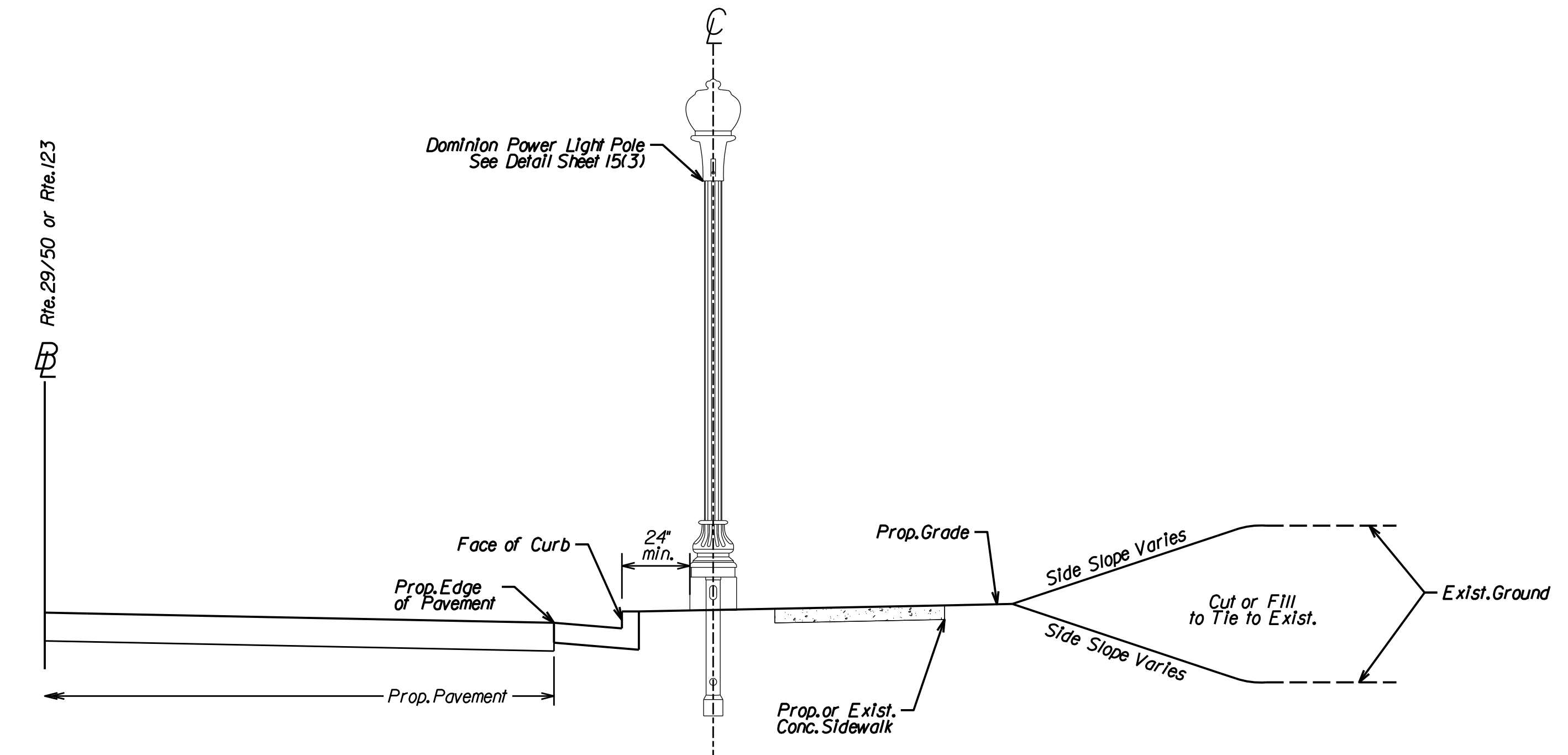
COMMONWEALTH OF VIRGINIA
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 Manassas, Virginia
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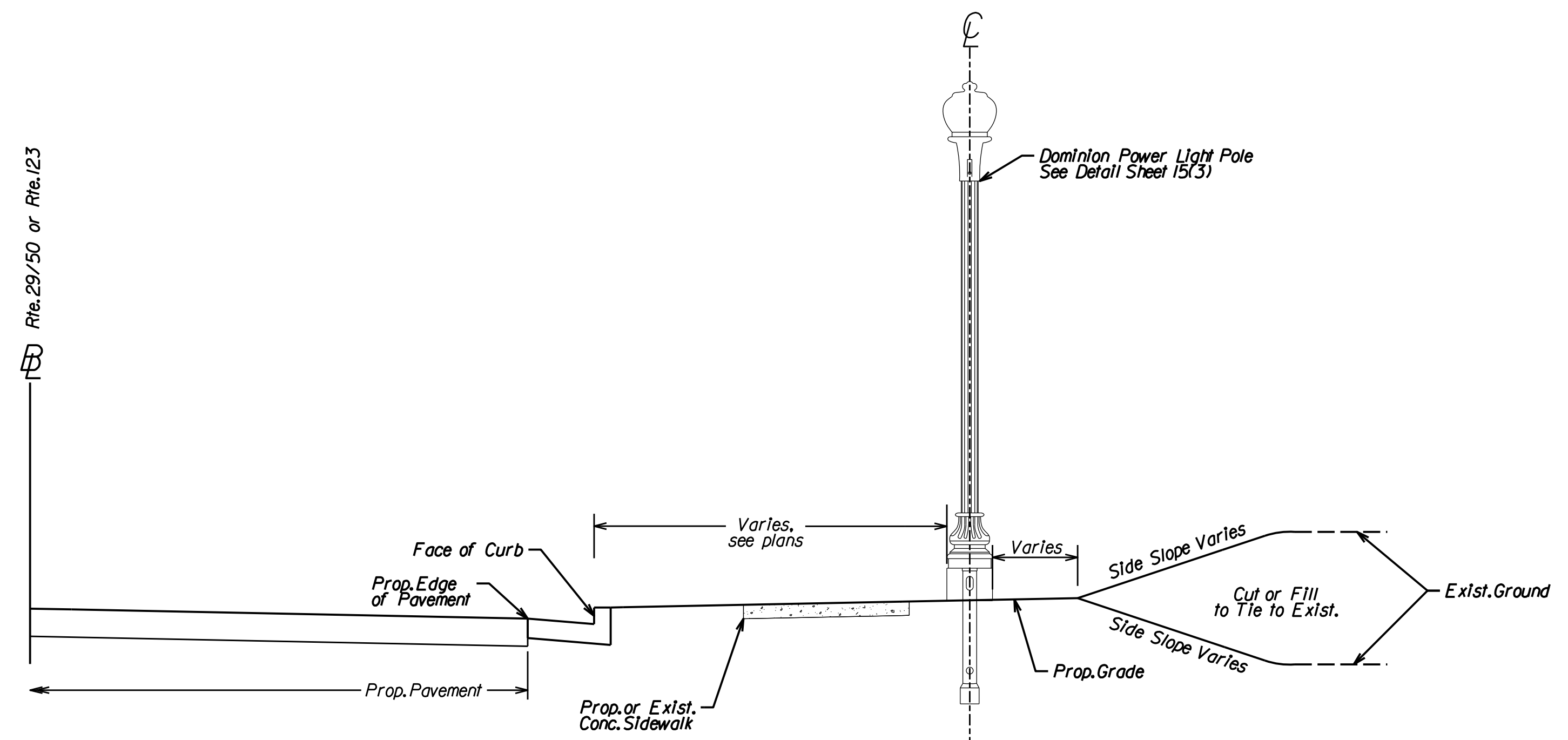
REVISED	STATE	ROUTE	PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15(2)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Roadway Lighting Plan Typical Sections



Lighting Typical, Installation in Buffer
(Not to Scale)

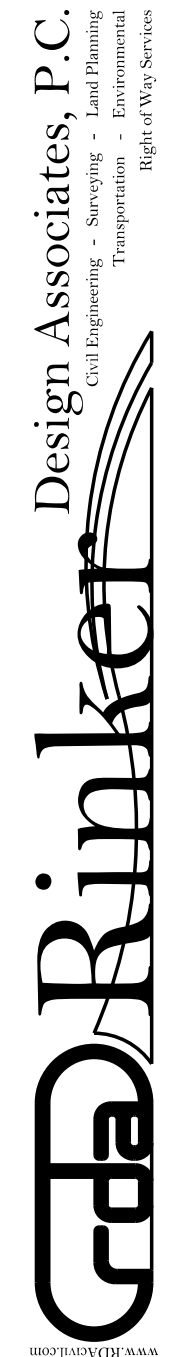


Lighting Typical, Installation behind Sidewalk
(Not to Scale)

Lighting Design Plan Notes

1. The proposed Phase, Control Center, and Circuit calculations have been provided by Dominion Virginia Power (DVP).
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	PROJECT	SHEET NO.
	0029-151-105	15(2)



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 SUBSURFACE UTILITY PROVIDED BY Accumack (2011)

DVP Roadway Lighting Plan

Details and Design Notes

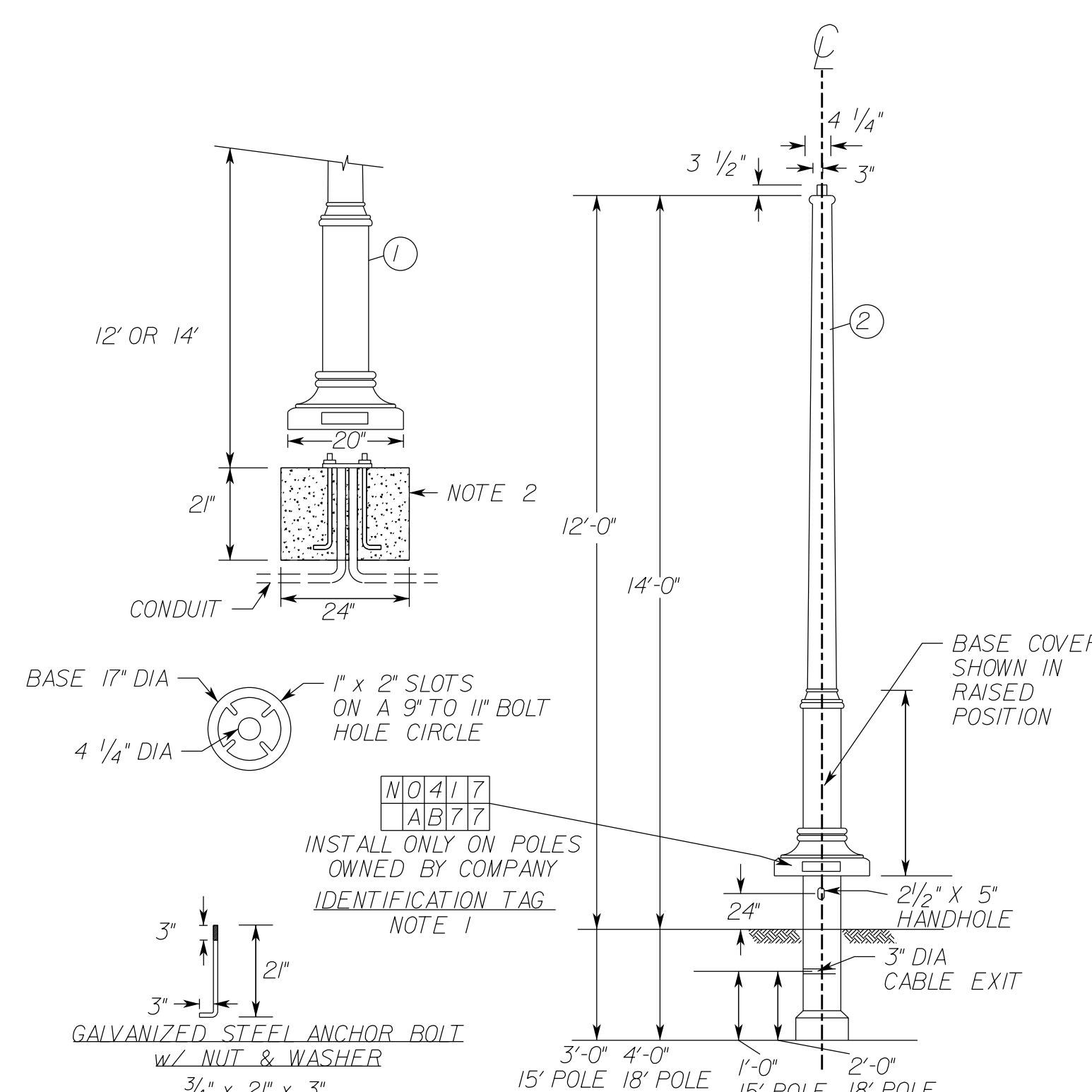
ADAM D. WELSCHENBACH
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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15(3)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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 Civil Engineers
 Manassas, VA 20108
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 Fax: (703) 368-7373
 www.rinker.com



NOTE 1: POLE SHALL BE IDENTIFIED BY APPLYING ADHESIVE DIRECTLY TO THE POLE SURFACE ONCE THE AREA IS CLEANED WITH A DEGREASER

NOTE 2: POLE FOUNDATION AND CONDUIT FURNISHED BY CUSTOMER. BOLTS ARE PROVIDED AND INSTALLED BY CUSTOMER. ANCHOR BOLTS ARE 3/4" x 2" x 3"

DVP SMOOTH DECORATIVE POLE-PLD030 DETAIL

(Not to Scale)

Acom

The Acom style luminaire is frequently used in urban areas, parks, and pedestrian lighting applications where greater vertical illumination and upright is desired.

- Decorative cast aluminum base pod available with a matte black or dark green paint finish.
- Milky white stipled acrylic globe with a Type V distribution.
- High pressure sodium lamping in 70, 100, and 150 watts.
- Decorative composite pole available for additional monthly charge.

Luminaires:

Lamp Type	Nominal Lamp Watts	Nominal/Mean Lamp Lumens	Finish Color	Initial Lamp Lumens	Input Wattage	Recommended Mounting Height	Percent Delight	WMIS CU	Luminaire Stock #
HPS	70	5,000	Matte Black	6,500	82	10 to 12 ft.	43.8 %	LAC8SV	66384400
HPS	100	8,000	Matte Black	9,500	120	12 ft.	43.8 %	LAC8SV	66384500
HPS	150	14,000	Matte Black	16,000	202	14 ft.	43.8 %	LAC14SV	66384600
HPS	70	5,000	Dark Green	6,500	82	12 ft.	43.8 %	LAC8SVGN	42075990
HPS	100	8,000	Dark Green	9,500	120	12 ft.	43.8 %	LAC8SVGN	42075991
HPS	150	14,000	Dark Green	16,000	202	14 ft.	43.8 %	LAC14SVGN	42075992

Poles Available:

- Smooth Round Tapered Black Composite - Standard
- Smooth Round Tapered Concrete - Standard
- Decorative Round Tapered Composite - Premium
- Decorative Round Tapered Fluted Composite - Premium

SEE SHEET 15(3A) FOR DVP AG32 LUMINAIRE INFORMATION

Many localities have restrictions on light distribution and placement of outdoor lighting equipment. Consult with your local government before selecting outdoor lighting equipment.

DVP ACORN LUMINAIRE SPECIFICATION

(Not to Scale)

Dominion

Pole - Decorative Round Tapered Fluted Composite

Fluted round tapered poles constructed of heavy duty fiberglass reinforced pigmented polyester plastic resin with a decorative base for pole top luminaires.

- Poles available directly embedded or base mounted for use with underground supply conductors only.
- Single pole top luminaire only.
- Available for use with:
 - Decorative Colonial Luminaire
 - Acom Luminaire
 - Carlyle Acom Luminaire
 - Decorative Acom Luminaire
- Anchor base poles require customer provided pole foundation and anchor bolts.

Pole Specifications:

Total Length (Feet)	Base Diameter (Inches)	Base Height (Inches)	Pole Top Diameter (Inches)	Embed Depth (Feet)	Luminaire Mounting Height (Feet)	Tenon Size	Finish Color	WMIS CU Assembly	Pole Only Stock #
13	16.5	20.0	5.0	3.0	10.0	3.0" O.D. X 3.5"	Black (RAL 9005)	FFF13	50498900
15	16.5	20.0	5.0	3.0	12.0	3.0" O.D. X 3.5"	Black (RAL 9005)	FFF15	50499000
15	16.5	20.0	5.0	3.0	12.0	3.0" O.D. X 3.5"	Dark Green (RAL 9005)	FFF15GN	42062744
18	16.5	20.0	5.0	4.0	14.0	3.0" O.D. X 3.5"	Black (RAL 9005)	FFF18	50499200
18	16.5	20.0	5.0	4.0	14.0	3.0" O.D. X 3.5"	Dark Green (RAL 9005)	FFF18GN	42062745
10	16.5	20.0	5.4	A.B.	10.0	3.0" O.D. X 3.5"	Black (RAL 9005)	FFF10AB	50497900
12	16.5	20.0	5.4	A.B.	12.0	3.0" O.D. X 3.5"	Black (RAL 9005)	FFF12AB	50498100
12	16.5	20.0	5.4	A.B.	12.0	3.0" O.D. X 3.5"	Dark Green (RAL 9005)	FFF12ABGN	42062746
14	16.5	20.0	5.4	A.B.	14.0	3.0" O.D. X 3.5"	Black (RAL 9005)	FFF14AB	50498300
14	16.5	20.0	5.4	A.B.	14.0	3.0" O.D. X 3.5"	Dark Green (RAL 9005)	FFF14ABGN	42062757

Diagram showing base dimensions: 11.000" square base with 7.000" diameter hole and 10.000" diameter base circle. Includes notes for 1/2" thick 1/2" cast steel anchor bolts and 3/4" diameter anchor bolts with 1/2" flanges.

Many localities have restrictions on light distribution and placement of outdoor lighting equipment. Consult with your local government before selecting outdoor lighting equipment.

DVP ACORN POLE SPECIFICATION

(Not to Scale)

Lighting Design Plan Notes

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PROJECT	SHEET NO.
0029-151-105	15(3)

PROJECT MANAGER Wendy Block Sanford, City of Fairfax (703) 385-7889
 SURVEYED BY Rinker Design Assoc., P.C. (703) 368-7373 (2011)
 DESIGNED BY Adam D. Welschenbach, P.E., Rinker Design Assoc., P.C. (703) 368-7373
 SUBSURFACE UTILITY PROVIDED BY Accumark (2011)

Roadway Lighting Plan Summary, Junction Box Detail, and AGI-32 Photometric Data

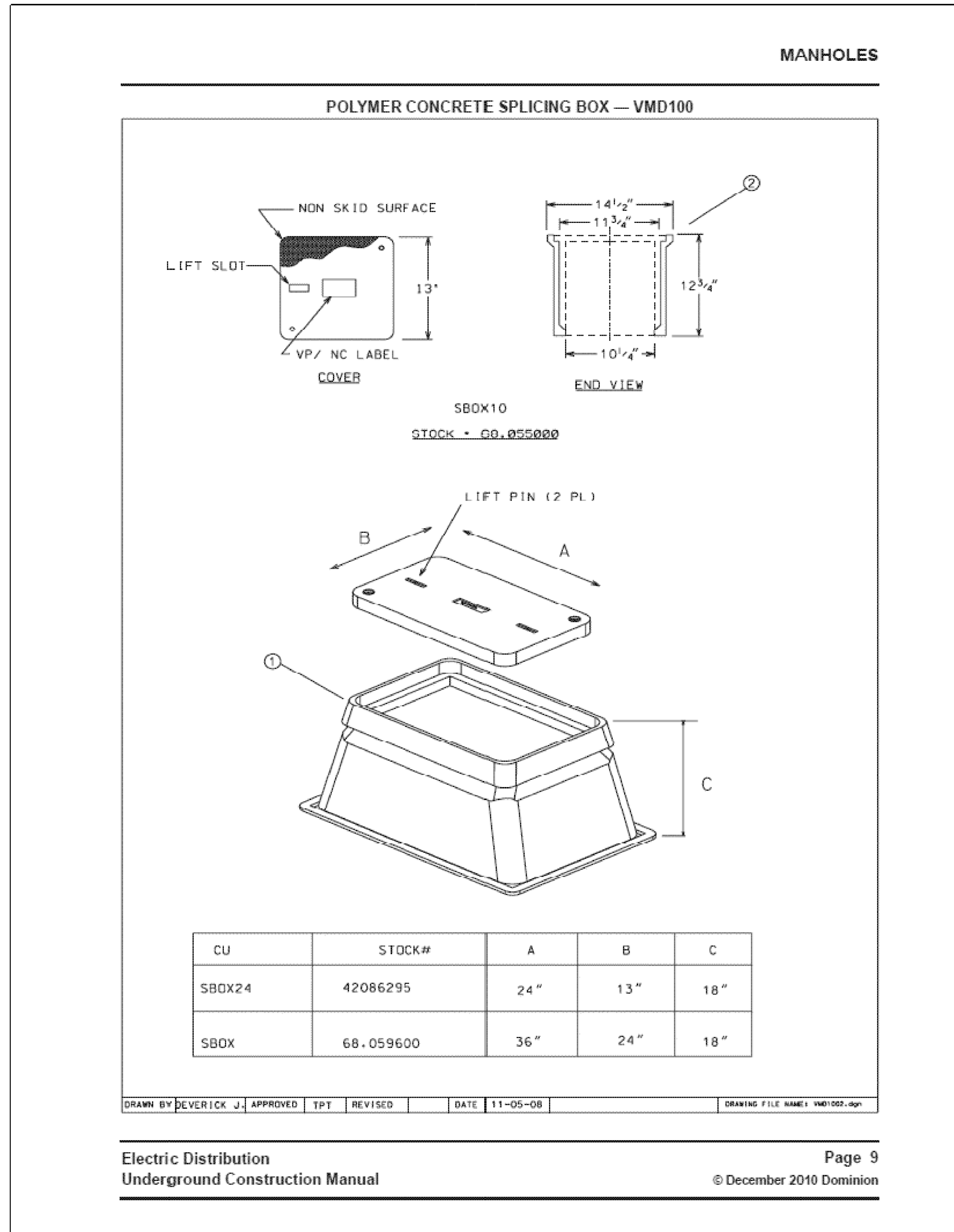
ADAM D. WELSCHENBACH
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Manassas, Virginia
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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15(3A)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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DRAWN BY DEVERICK J. APPROVED TPT. REVISED DATE 11-05-08 DRAWING FILE NAME: VMD1002.dgn

Electric Distribution
Underground Construction Manual
Page 9
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DVP CONCRETE SPLICING BOX SPECIFICATION

(Not to Scale)

PROJECT SECTION NUMBER	SUMMARY NOTES	ESTIMATED LIGHTING SUMMARY					REMARKS
		PROP. DVP SBOX24	2" CONDUIT	TRENCH EXCAVATION ECH	JACK AND BORE	LIGHT POLE FOUNDATION	
UNIT	EA	LF	LF	LF	EA		
C501	15(4) thru 15(8)	55	4,143	4,143	313	53	See sheet 15 for installation responsibilities.
TOTAL		55	4,143	4,143	313	53	

- * All lighting-associated junction boxes, excluding signal junction boxes, shall be stamped "Dominion Virginia Power."
- ** Conduit shall include all other items required as identified in note 16 of City of Fairfax General Lighting Notes on Sheet 15, and other similar notes shown.

AGI-32 Photometric Report for Prop. 150W Luminaire (ANE15SXX55)

Photometric Report (Type C)

Filename: Acorn 150HPS.IES
 [TEST] 765684
 [ISURDATE] 6/90
 [MANUFACT] COVER LIGHTING
 [LUMCAT] ANE15SXX55
 [LUMINAIRES] 150W HPS TYPE V POST TOP ACORN
 [LAMP] 150W HPS CL E-23.5
 Maximum Candela = 1493 at 0 H 80 V

Classification:
 Road Classification: Type V, Long, Non-Cutoff (deprecated)
 Upward Waste Light Ratio: 0.50
 Luminaire Efficacy Rating (LER): 88
 Indoor Classification: General Diffuse
 BUG Rating: B3-US-05

Polar Curves:
 Vertical Plane Through:
 1) 0 - 180 Horizontal
 Horizontal Plane Through:
 2) 90 Vertical

Photometric Report (Type C)

Filename: Acorn 150HPS.IES
 [TEST] 765684
 [ISURDATE] 6/90
 [MANUFACT] COVER LIGHTING
 [LUMCAT] ANE15SXX55
 [LUMINAIRES] 150W HPS TYPE V POST TOP ACORN
 [LAMP] 150W HPS CL E-23.5
 Maximum Candela = 1493 at 0 H 80 V

Classification:
 Road Classification: Type V, Long, Non-Cutoff (deprecated)
 Upward Waste Light Ratio: 0.50
 Luminaire Efficacy Rating (LER): 88
 Indoor Classification: General Diffuse
 BUG Rating: B3-US-05

LCS Summary:

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	97.2	0.6	0.7
FM (30-60)	1147.6	7.2	8.2
FN (60-80)	1435.3	9.0	10.3
FYS (80-90)	805.1	5.0	5.8
BL (0-30)	97.2	0.6	0.7
BM (30-60)	1147.6	7.2	8.2
BN (60-80)	1435.3	9.0	10.3
BYS (80-90)	805.1	5.0	5.8
UL (90-180)	1576.1	9.9	11.3
UL (100-180)	5418.2	33.9	38.8
Total	13964.7	87.4	100.0

BUG Rating B3-US-05

Lighting Design Plan Notes

- The proposed Phase, Control Center, and Circuit calculations have been provided by Dominion Virginia Power (DVP).
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PROJECT	SHEET NO.
0029-151-105	15(3A)

PROJECT MANAGER Wendy Block Sanford, City of Fairfax (703) 385-7889
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DESIGNED BY Adam D. Welschenbach, P.E., Rinker Design Assoc., P.C. (703) 368-7373
SUBSURFACE UTILITY PROVIDED BY AccuMark (2011)

Roadway Lighting Plan

COMMONWEALTH OF VIRGINIA
ADAM D. WELSCHENBACH
Lic. No. 044359
PROFESSIONAL ENGINEER

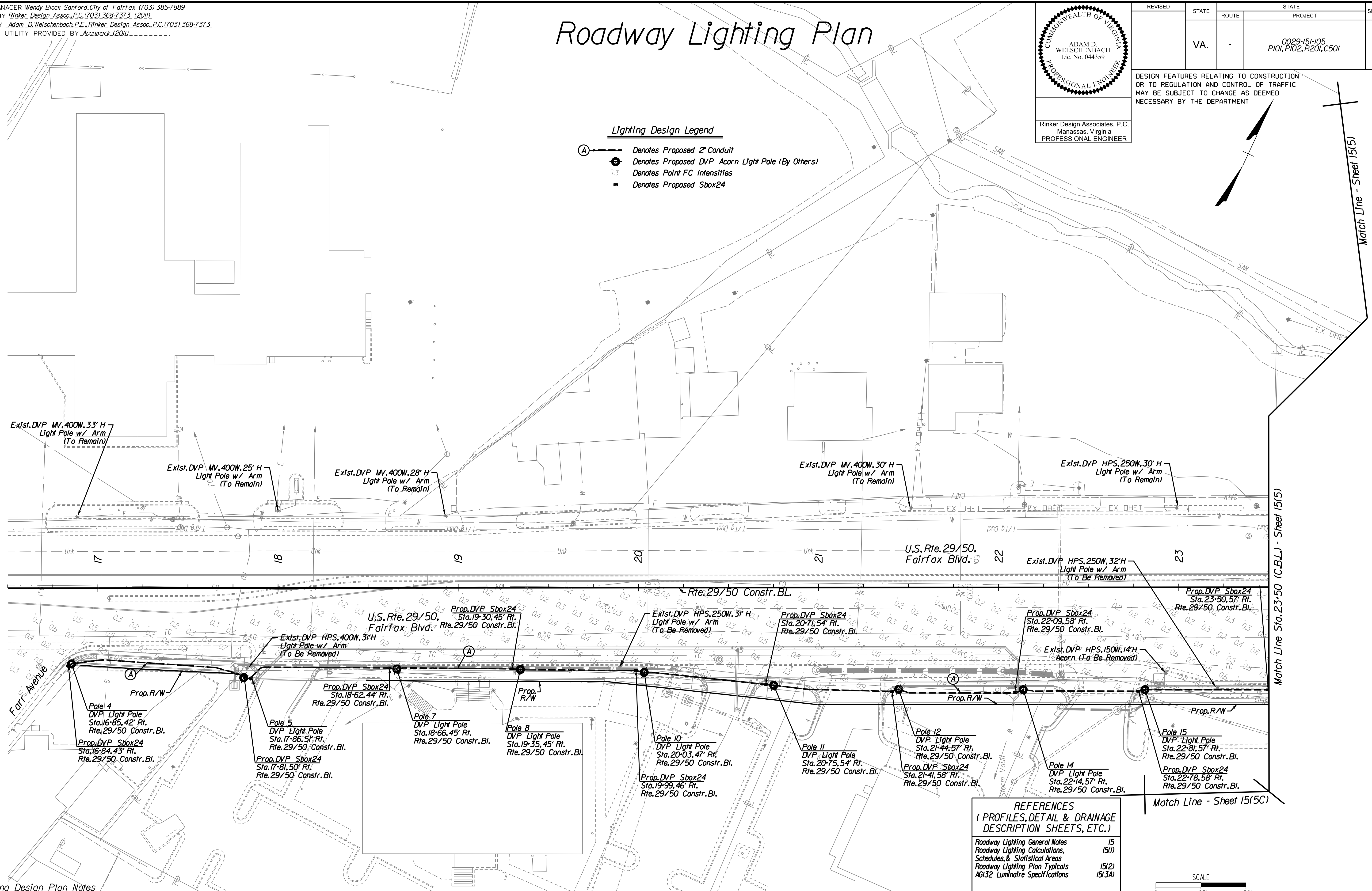
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Manassas, Virginia
PROFESSIONAL ENGINEER

REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	-		0029-151-105 P101, P102, R201, C501	15(4)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Lighting Design Legend

- (A) --- Denotes Proposed 2" Conduit
- ⊕ Denotes Proposed DVP Acorn Light Pole (By Others)
- 1.3 Denotes Point FC Intensities
- Denotes Proposed Sbox24

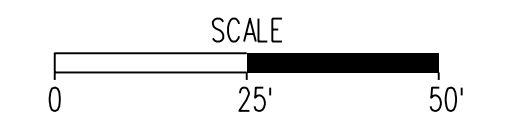


Lighting Design Plan Notes

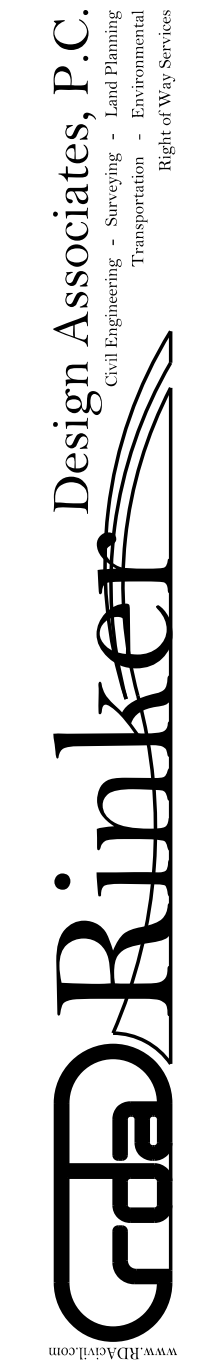
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REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Roadway Lighting General Notes	15
Roadway Lighting Calculations, Schedules, & Statistical Areas	15(1)
Roadway Lighting Plan Typicals	15(2)
AG132 Luminaire Specifications	15(3A)

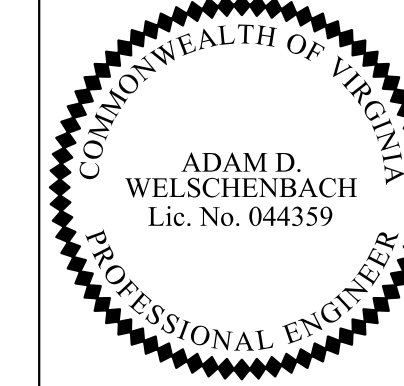


PROJECT	SHEET NO.
0029-151-105	15(4)



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SUBSURFACE UTILITY PROVIDED BY Acumatic (2011)

Roadway Lighting Plan

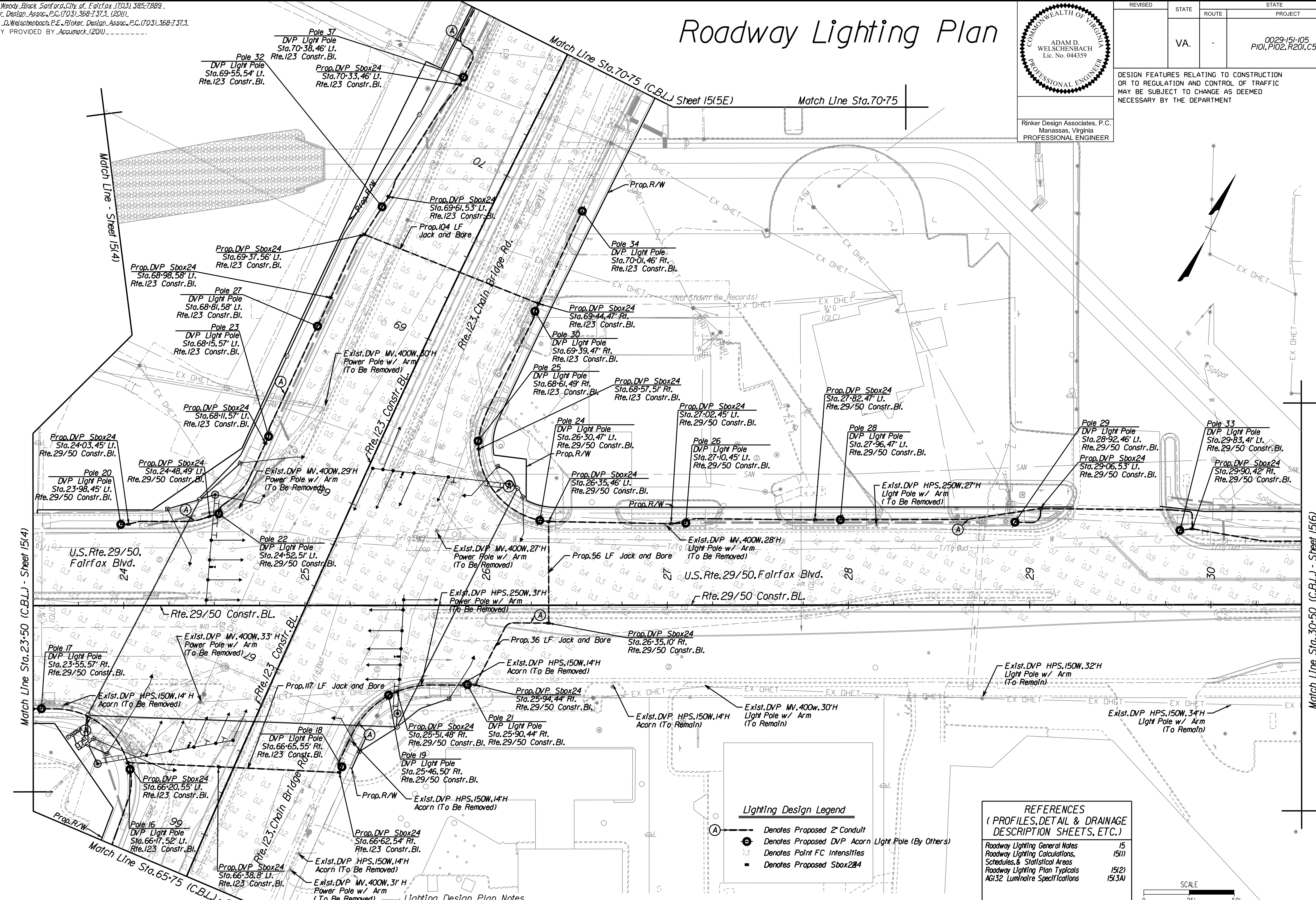


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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15(5)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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Match Line Sta. 23-50 (C.B.L.) - Sheet 15(4)

Lighting Design Plan Notes

Lighting Design Legend

- Denotes Proposed 2" Conduit
- ⊙ Denotes Proposed DVP Acorn Light Pole (By Others)
- ⊙ Denotes Point FC IntensiTles
- Denotes Proposed Sbox224

REFERENCES
(PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Roadway Lighting General Notes	15
Roadway Lighting Calculations, Schedules, & Statistical Areas	15(1)
Roadway Lighting Plan Typical	15(2)
AGI32 Luminaire Specifications	15(3A)

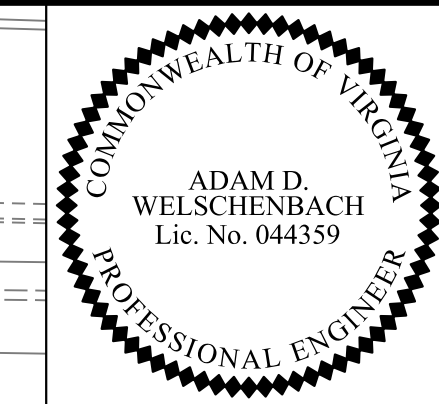


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PROJECT	SHEET NO.
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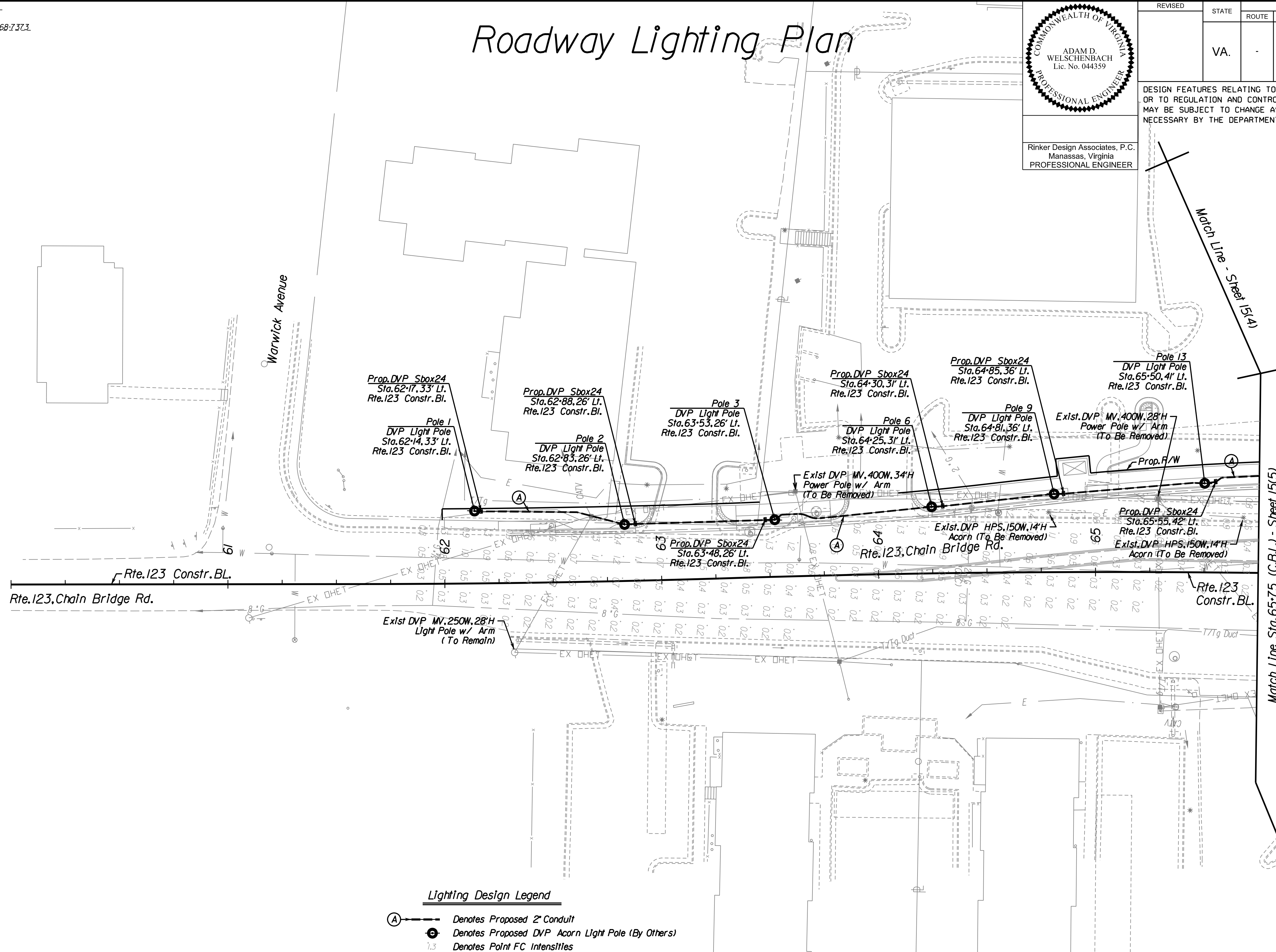
Roadway Lighting Plan



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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	1515C1

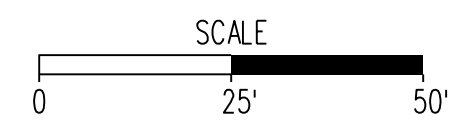
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- Lighting Design Legend**
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 - Denotes Proposed Sbox24

REFERENCES
 (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Roadway Lighting General Notes	15
Roadway Lighting Calculations, Schedules, & Statistical Areas	15(1)
Roadway Lighting Plan Typical	15(2)
AGI32 Luminaire Specifications	15(3A)



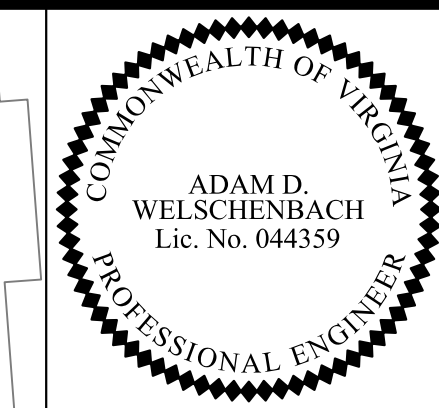
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PROJECT	SHEET NO.
0029-151-105	1515C1

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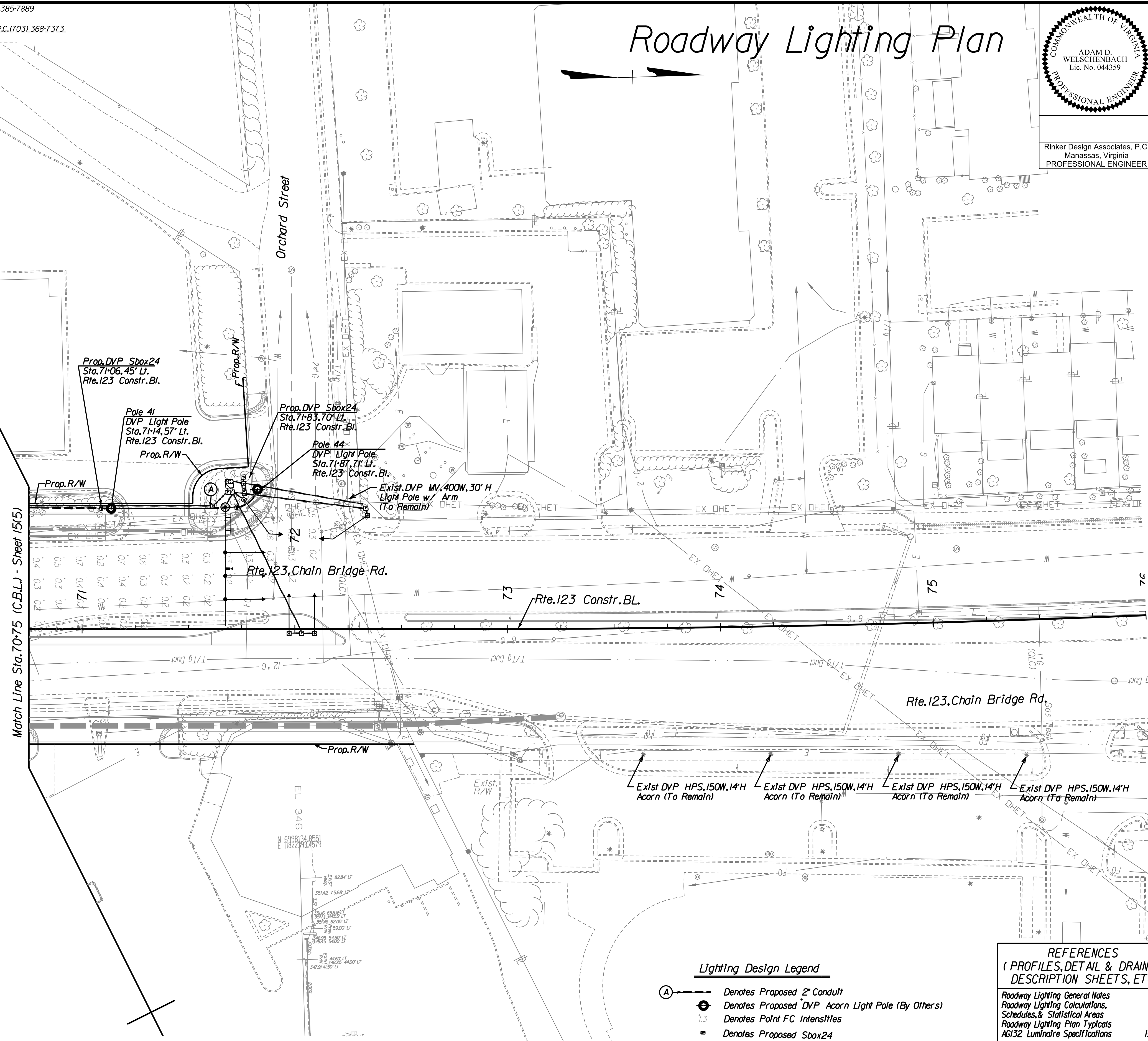
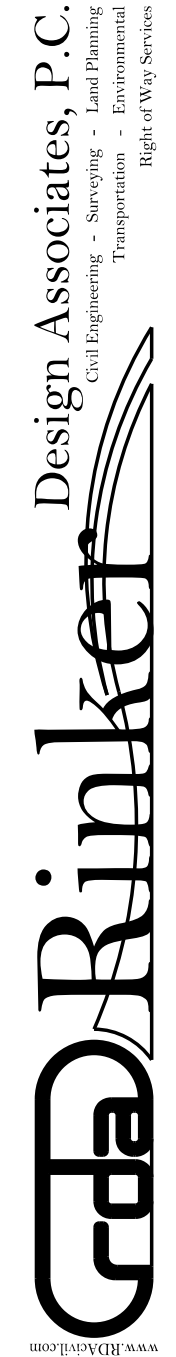
Roadway Lighting Plan



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 PROFESSIONAL ENGINEER

REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15(5E)

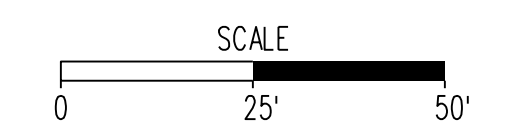
DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



- Lighting Design Legend**
- Ⓐ --- Denotes Proposed 2" Conduit
 - ⊙ Denotes Proposed DVP Acorn Light Pole (By Others)
 - 1.3 Denotes Point FC Intensities
 - Denotes Proposed Sbox24

REFERENCES
 (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Roadway Lighting General Notes	15
Roadway Lighting Calculations, Schedules, & Staffing Areas	15(1)
Roadway Lighting Plan Typical	15(2)
AG132 Luminaire Specifications	15(3A)



Lighting Design Plan Notes

- The proposed Phase, Control Center, and Circuit calculations have been provided by Dominion Virginia Power (DVP).
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PROJECT	SHEET NO.
0029-151-105	15(5E)

PROJECT MANAGER Wendy Block Sanford, City of Fairfax (703) 385-7889
SURVEYED BY Rinker Design Assoc., P.C. (703) 368-7373 (2011)
DESIGNED BY Adam D. Welschenbach, P.E., Rinker Design Assoc., P.C. (703) 368-7373
SUBSURFACE UTILITY PROVIDED BY Accu-track (2011)

Roadway Lighting Plan

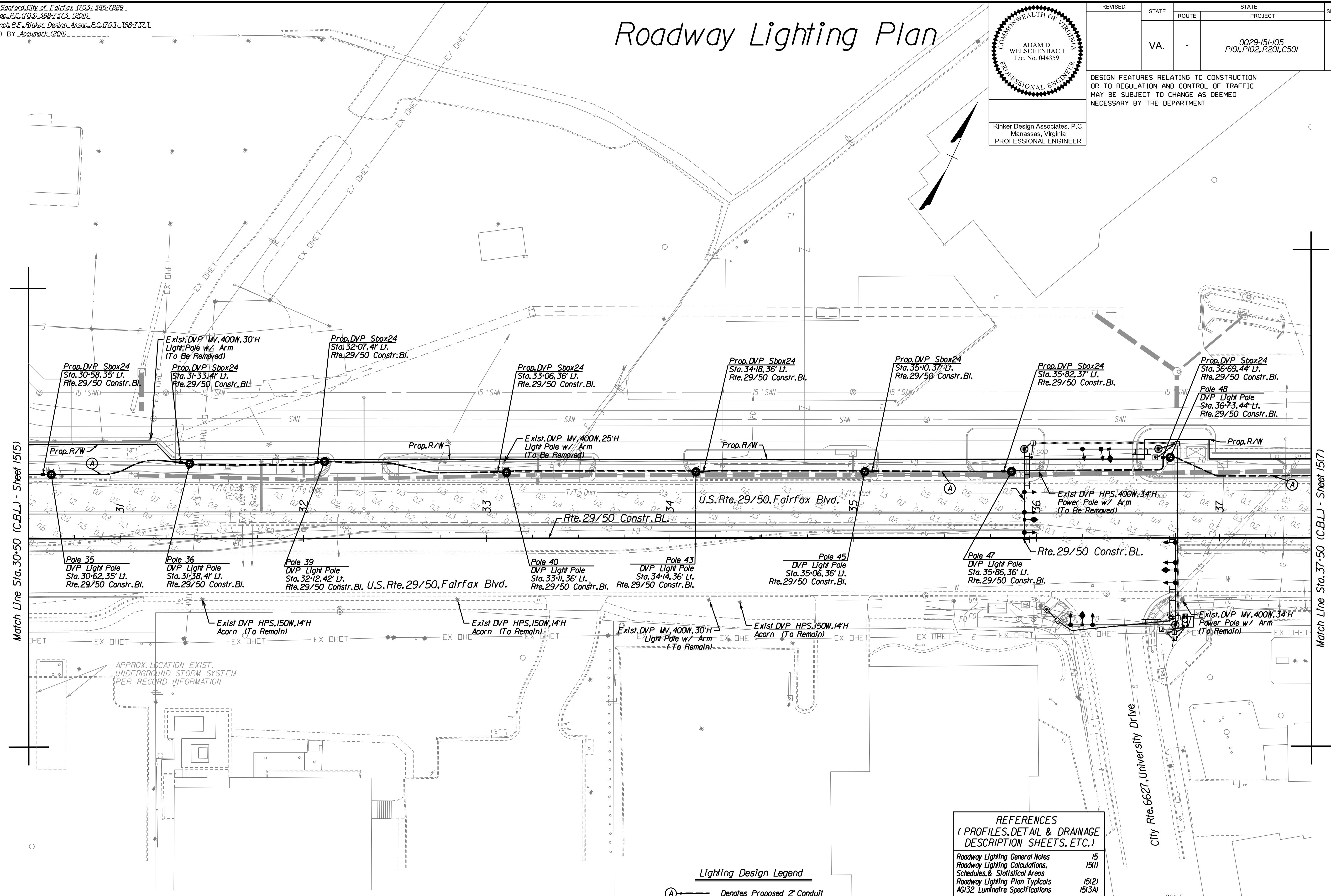
COMMONWEALTH OF VIRGINIA
ADAM D. WELSCHENBACH
 Lic. No. 044359
 PROFESSIONAL ENGINEER

Rinker Design Associates, P.C.
 Manassas, Virginia
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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15(6)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Rinker Design Associates, P.C.
 Civil Engineers
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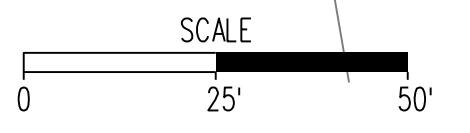
Lighting Design Plan Notes

- The proposed Phase, Control Center, and Circuit calculations have been provided by Dominion Virginia Power (DVP).
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REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Roadway Lighting General Notes	15
Roadway Lighting Calculations, Schedules, & Statistical Areas	15(1)
Roadway Lighting Plan Typical	15(2)
AG132 Luminaire Specifications	15(3A)



PROJECT	SHEET NO.
0029-151-105	15(6)

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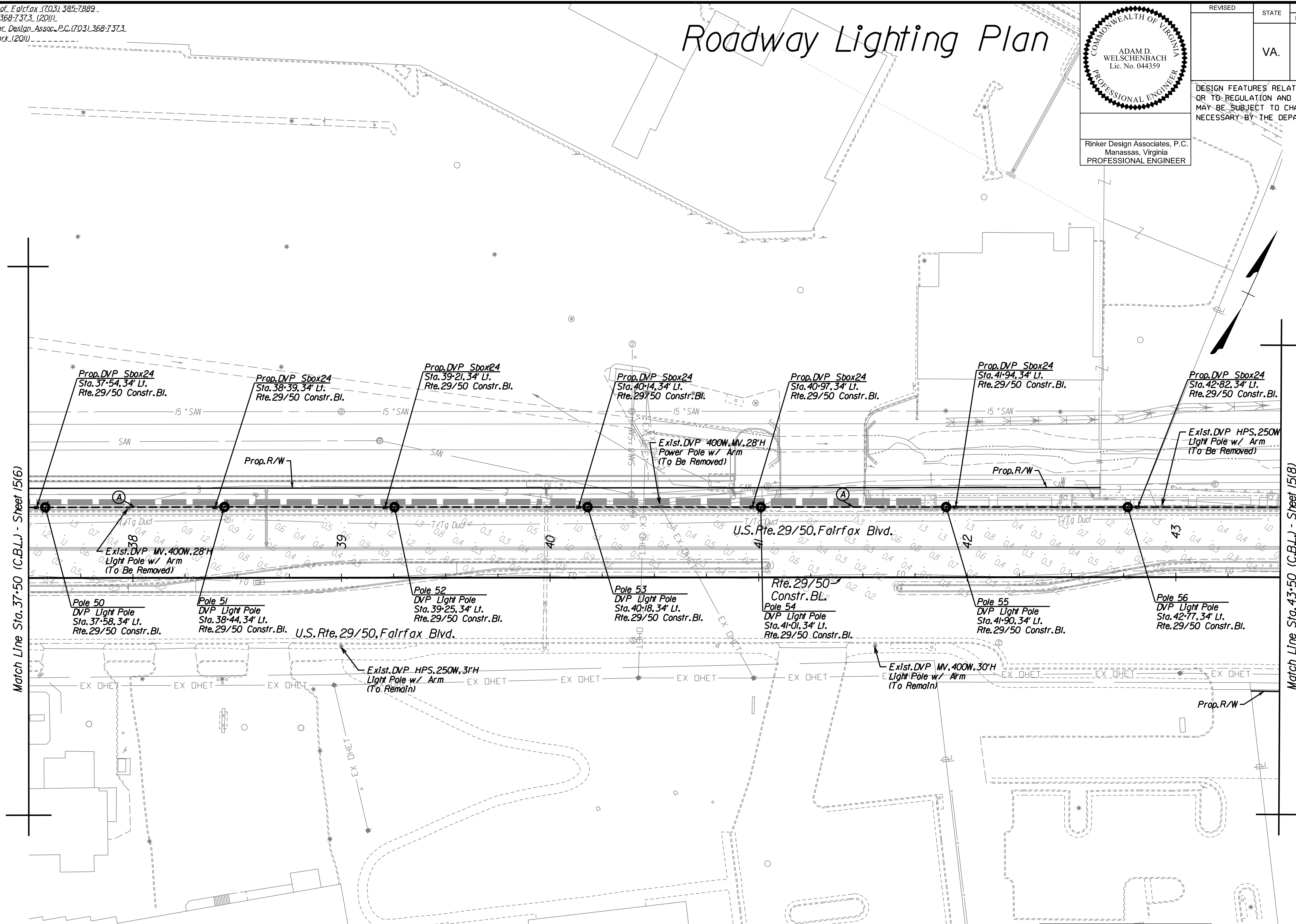
Roadway Lighting Plan

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REVISED	STATE	ROUTE	STATE PROJECT	SHEET NO.
	VA.	-	0029-151-105 P101, P102, R201, C501	15(7)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT



Lighting Design Plan Notes

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- #### Lighting Design Legend
- ⊖ Denotes Proposed 2" Conduit
 - ⊙ Denotes Proposed DVP Acorn Light Pole (By)
 - ⊙ Denotes Point FC Intensities
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REFERENCES (PROFILES, DETAIL & DRAINAGE DESCRIPTION SHEETS, ETC.)

Roadway Lighting General Notes	15
Roadway Lighting Calculations, Schedules, & Statistical Areas	15(1)
Roadway Lighting Plan Typical	15(2)
AGI32 Luminaire Specifications	15(3A)



PROJECT	SHEET NO.
0029-151-105	15(7)

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SUBSURFACE UTILITY PROVIDED BY AccuTrack (2011)

Roadway Lighting Plan

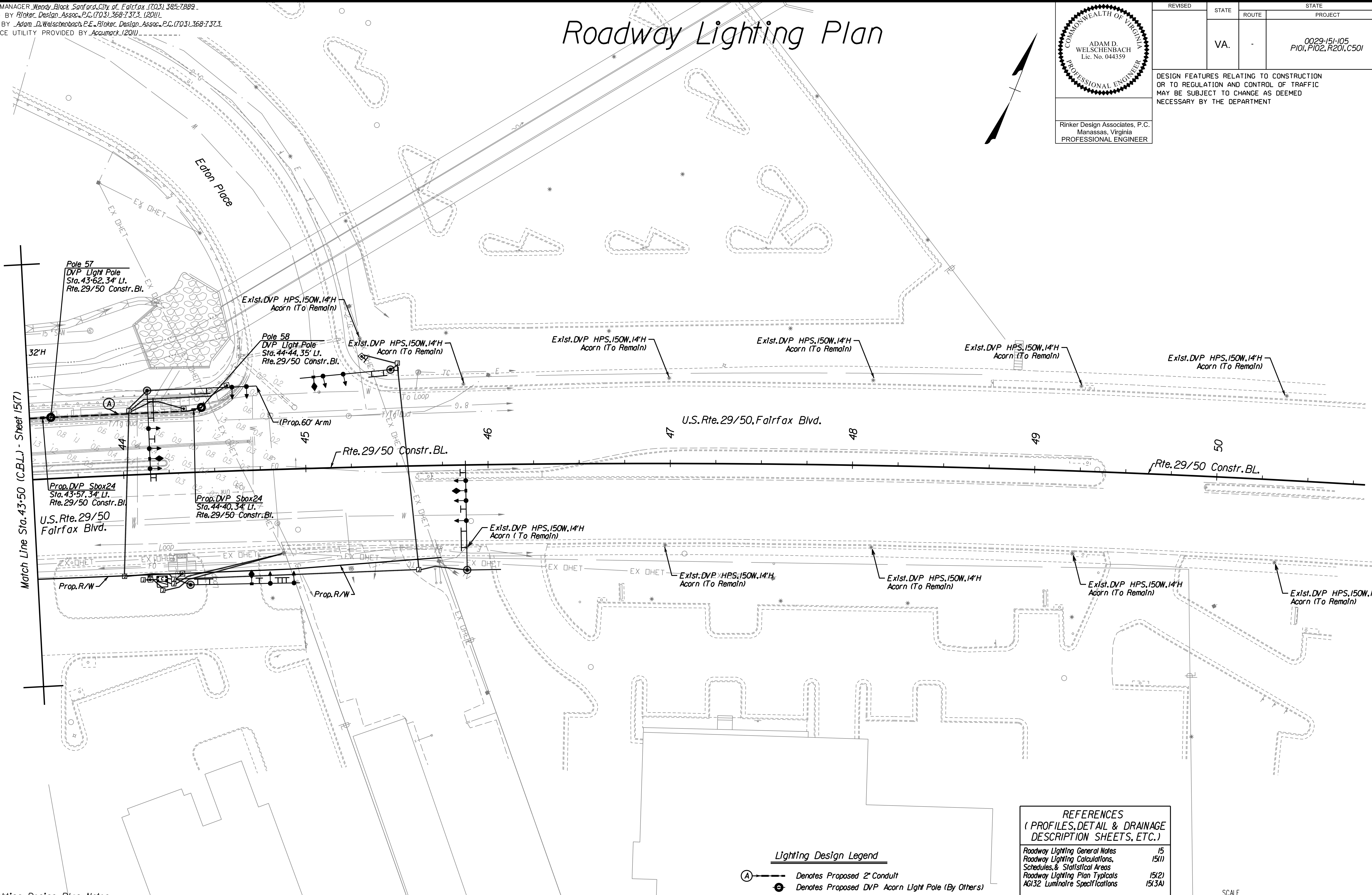
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REVISED	STATE	ROUTE	STATE	PROJECT	SHEET NO.
	VA.	-		0029-151-105 P101, P102, R201, C501	15(8)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

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Lighting Design Plan Notes

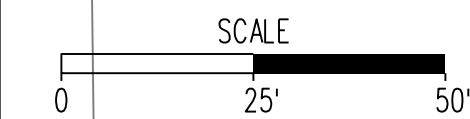
- The proposed Phase, Control, Central, and Circuit calculations have been provided by Dominion Virginia Power (DVP).
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- ### Lighting Design Legend
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PROJECT	SHEET NO.
0029-151-105	15(8)