

WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING



HALFWAY BOULEVARD EXTENDED

PROJECT NO. 10-273

CONTRACT NO. RD-HB-273-10

STATE CONTRACT NO. WA067ZM1

FEDERAL FAP NO. APL-3(804)E

APPROVED FOR CONSTRUCTION
Scott Hobbs 2/12/24
SCOTT HOBBS, P.E.
DIRECTOR OF ENGINEERING
FOR WASHINGTON COUNTY, MD

THE STORMWATER MANAGEMENT PLAN SHOWN HEREON IS APPROVED.
Scott Hobbs 2/12/24
SCOTT HOBBS, P.E.
DIRECTOR OF ENGINEERING
FOR WASHINGTON COUNTY, MD

WASHINGTON COUNTY SOIL CONSERVATION DISTRICT
SOIL EROSION AND SEDIMENT CONTROL PLAN APPROVAL
BY: *Mark J. Shea*
DATE: 2/22/2024
(PLAN IS VALID FOR TWO YEARS FROM DATE OF APPROVAL.)

I / WE CERTIFY ALL / ANY PARTIES RESPONSIBLE FOR CLEARING, GRADING, CONSTRUCTION, AND / OR
DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND RESPONSIBLE PERSONNEL INVOLVED IN THE
CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE
ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SOIL EROSION AND SEDIMENT.

APPROVED FOR CONSTRUCTION.
Scott Hobbs 2/12/24
SCOTT HOBBS, P.E.
DIRECTOR OF ENGINEERING
FOR WASHINGTON COUNTY, MD

ENGINEER / ARCHITECT DESIGN CERTIFICATION
I HEREBY CERTIFY THIS PLAN FOR SOIL EROSION AND SEDIMENT CONTROL HAS BEEN
DESIGNED IN ACCORDANCE WITH LOCAL ORDINANCES, COMAR 26.17.01.07, AND MARYLAND
STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
Ramona J. Mohn 39252 2.12.24
SIGNATURE REGISTRATION NUMBER DATE

SEAL:

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR
APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE
STATE OF MARYLAND.
LICENSE No. 39252 EXPIRATION DATE: 6.21.24

AASHTO DESIGN CRITERIA
THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE
2011 PUBLICATION OF AASHTO'S "A POLICY ON GEOMETRIC
DESIGN OF HIGHWAYS AND STREETS."

STANDARD SPECIFICATIONS BOOK,
BOOK OF STANDARDS AND MUTCD
ALL WORK ON THIS PROJECT SHALL CONFORM TO:
THE MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY
ADMINISTRATIONS SPECIFICATIONS ENTITLED STANDARD SPECIFICATIONS FOR
CONSTRUCTION AND MATERIALS MOST CURRENT VERSION THEREOF OR ADDITIONS
THERE TO; THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK;
THE ADMINISTRATIONS BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL
STRUCTURES AND THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
(MUTCD)

RIGHT OF WAY
RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR
ASSISTANCE IN INTERPRETING THE PLANS. THEY ARE NOT OFFICIAL. FOR OFFICIAL
FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF
WAY PLATS.

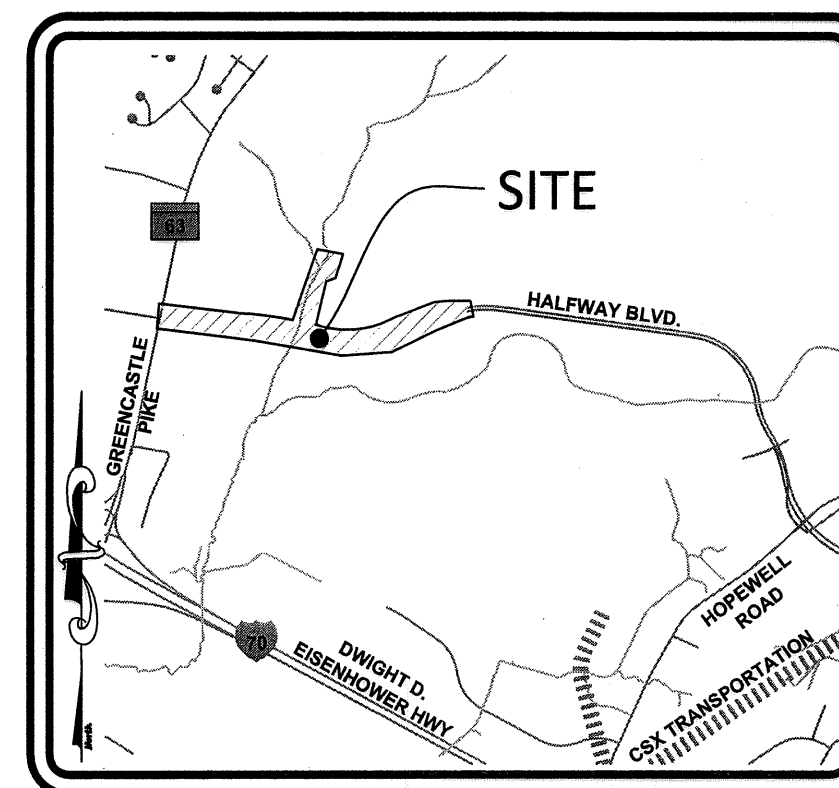
UTILITIES
THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND
GUIDANCE ONLY. NO GUARANTEE IS MADE OF THE ACCURACY OF SAID LOCATIONS.

ADA COMPLIANCE
THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES FOR THE ELDERLY
AND HANDICAPPED IN COMPLIANCE WITH THE STATE AND FEDERAL LEGISLATION.

FLOODPLAIN / WETLANDS
THE PROJECT CONTAINS A FLOODPLAIN AS DESIGNATED BY FEMA OR AS DEFINED
BY THE WASHINGTON COUNTY STORMWATER MANAGEMENT, GRADING, SOIL
EROSION AND SEDIMENT CONTROL ORDINANCE WITHIN THE PROJECT LIMITS.
THERE WERE NO WETLANDS FOUND WITHIN THE LIMIT OF DISTURBANCE FOR THE
PROJECT.

THE PROJECT AREA DOES NOT CONTAIN STEEP SLOPES OR HIGHLY ERODIBLE
SOILS PER THE NRCS WEB SOIL SURVEY.

OWNER/DEVELOPER:
BOARD OF COUNTY COMMISSIONERS FOR
WASHINGTON COUNTY,
AGENT: SCOTT HOBBS, P.E.
DIRECTOR OF ENGINEERING
747 NORTHERN AVENUE
HAGERSTOWN, MARYLAND 21742
PHONE: 240-313-2460
FAX: 240-313-2401



PROJECT VICINITY MAP
SCALE: 1" = 2,000'
LENGTH OF PROJECT: 0.65 MILES

JOHN F. BARR, PRESIDENT
JEFFREY A. CLINE, VICE PRESIDENT
DEREK HARVEY
WAYNE K. KEEFER
RANDALL E. WAGNER

MICHELLE GORDON, COUNTY ADMINISTRATOR
SCOTT HOBBS, P.E., DIRECTOR OF ENGINEERING

DESIGN DESIGNATION - HALFWAY BOULEVARD EXTENDED		
Control	2020	2040
Average Daily Traffic	5,000	9100
Design Hourly Volume	600	1000
Directional Distribution	50/50	50/50
% Trucks - ADT	10	27
% Trucks - DHV	10	27
Design Speed	40 M.P.H.	
Functional Classification	MINOR ARTERIAL	
Control Access	LIMITED	
Intensity of Development	COMMERCIAL / INDUSTRIAL	
Terrain	ROLLING	
Anticipated Posted Speed	35 M.P.H.	

ESD PRACTICES (CHAPTER 5 - STRUCTURE & NON-STRUCTURAL)

TYPE	No.	DA (ACRES) (To Structures)	IMPERVIOUS DA (ACRES) (To Structures)	WQv (ac-ft)	ESDv (ac-ft)	PE Addressed (ln)
Bioswale	1*	2.554	0.2500	0.0299	0.0299	1.00
Bioswale	1A	1.078	0.4332	0.0365	0.0722	1.95
Bioswale	2	0.0858	0.0194	0.0018	0.0049	2.70
Bioswale	3	0.9739	0.5357	0.0442	0.1113	2.52
Bioswale	4	0.3712	0.2821	0.0227	0.0458	2.02
Bioswale	5	0.2460	0.1928	0.0155	0.0232	1.50
Bioswale	6	0.4827	0.3193	0.0260	0.0614	2.36
Bioswale	7	0.1077	0.0277	0.0025	0.0068	2.70
Bioswale	8	0.9642	0.6251	0.0509	0.1374	2.70
Bioswale	9	0.5034	0.3605	0.0291	0.0722	2.48
Bioswale	10	0.8431	0.5378	0.0438	0.1126	2.57
Bioswale	11	0.8825	0.4521	0.0376	0.1015	2.70
Bioswale	12	0.3506	0.2785	0.0223	0.0353	1.58
Bioswale	13	0.8435	0.5267	0.0430	0.0824	1.91
Bioswale	14	0.0981	0.0282	0.0025	0.0068	2.70
Bioswale	15	0.9724	0.5961	0.0488	0.1229	2.52
Bioswale	15A	0.5698	0.3620	0.0295	0.0754	2.55
Bioswale	16	1.2934	0.6589	0.0548	0.1239	2.26

CONSTRUCTION TYPE (CIRCLE ONE) NEW REDEVELOPMENT RESTORATION

* SHA SWM FACILITY NO. 211411

DISTURBED AREA QUANTITY

THE TOTAL AREA TO BE DISTURBED SHOWN ON THESE PLANS HAS BEEN DETERMINED
TO BE APPROXIMATELY 13.37 ACRES AND THE TOTAL AMOUNT OF EXCAVATION
AND FILL SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE APPROXIMATELY
44,000 CU. YDS. OF EXCAVATION AND APPROXIMATELY 40,100 CU. YDS. OF FILL.

INDEX OF SHEET(S):

- 1 TITLE SHEET
- 2 LEGEND AND GENERAL NOTES
- 3 GEOMETRIC PLAN
- 4 TYPICAL SECTION
- 5 STANDARD ROADWAY CONSTRUCTION DETAILS
- 6-12 PLAN AND PROFILES
- 13-15 GRADING PLANS
- 16-18 CURB GEOMETRY ELEVATIONS
- 19-27 STORMWATER MANAGEMENT PLANS AND PROFILES
- 28-33 STORM DRAIN DETAILS, SCHEDULES AND PROFILES
- 34-39 BOTTOMLESS ARCH DETAILS
- 40-44 WATER AND SEWER PLANS, PROFILES, AND DETAILS
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- 56-60 PAVEMENT MARKING & SIGNAGE PLANS
- 61-64 SOIL BORING LOGS
- 65-66 SHA CROSS SECTIONS
- 67-79 CROSS SECTIONS HALFWAY BLVD. EXTENDED

SHA INDEX OF SHEET(S):

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- 6 PLAN AND PROFILE
- 13 GRADING PLAN
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- 53-55 MAINTENANCE OF TRAFFIC PLANS
- 56-58 PAVEMENT MARKING & SIGNAGE PLANS
- 65-66 SHA CROSS SECTIONS

GENERAL NOTES

- ALL WORK ON THIS PROJECT SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS, THE MOST CURRENT VERSION OF THE MDOT SHA STANDARD SPECIFICATIONS, AND SUPPLEMENTAL SPECIFICATIONS.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE LATEST SET OF THE PLANS, SPECIFICATIONS, SPECIAL PROVISIONS AND ANY REFERENCED MDSHA STANDARDS AS OF NOTICE TO PROCEED.
- HORIZONTAL CONTROL ; THE COORDINATES FOR THIS PROJECT HAVE BEEN ESTABLISHED BY GPS BASED ON NGS CONTROL AND HAVE BEEN ADJUSTED TO THE MARYLAND STATE PLANE SYSTEM, NAD 83. THE CONTROL WAS BASED OFF OF COUNTY MONUMENT PEAK. THE LOCATION OF THIS POINT IS SHOWN ON THE VICINITY MAP ON THE COVER SHEET.
- VERTICAL CONTROL: THE LOCATION AND ELEVATION OF BENCH MARKS ARE SHOWN ON THE PLANS. ALL ELEVATIONS ARE IN U.S. FEET AND HAVE BEEN ESTABLISHED FROM NGS BENCHMARK COUNTY MONUMENT PEAK, ELEV. 681.12 (NAVD 88).
- ALL INVERT ELEVATIONS ARE APPROXIMATE. INVERT ELEVATIONS OF INLETS AND PIPES MAY BE MODIFIED, AS DIRECTED BY THE ENGINEER, TO MEET CONDITIONS ENCOUNTERED DURING INSTALLATION OF DRAINAGE STRUCTURES. ALL PIPES SHALL BE CONSTRUCTED ON UNIFORM GRADE BETWEEN INVERT ELEVATIONS AS NOTED ON THE PLANS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- THE LOCATION AND LENGTH OF PIPES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE ORDERING.
- THE CONTRACTOR SHALL GRADE FOR POSITIVE DRAINAGE AT ALL ROADWAY INTERSECTIONS, ENTRANCES, PARKING LOTS, AND YARDS IN CONFORMANCE WITH THE PROPOSED DRAINAGE PATTERNS SHOWN ON THE PLANS.
- UTILITIES: THE LOCATIONS OF UNDERGROUND AND AERIAL UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT TO BE CONSIDERED COMPLETE OR ACCURATE. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS PRIOR TO STATING ANY WORK SHOWN ON THESE DRAWINGS. THE CONTRACTOR MUST PROTECT, IN PLACE, ALL ACTIVE UNDERGROUND UTILITIES UNLESS OTHERWISE NOTED ON THE PLANS.
- REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONSTRUCTION NEGLIGENCE OR METHOD OF OPERATION SHALL BE MADE AT NO ADDITIONAL COST TO THE COUNTY OR PROPERTY OWNER.
- THE CONTRACTOR SHALL PROTECT AND NOT INTERRUPT EXISTING UTILITY SERVICES DURING CONSTRUCTION, UNLESS AUTHORIZED BY THE ENGINEER. THE CONTRACTOR SHALL SUPPORT EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION AND THIS SHALL BE INCIDENTAL TO THE PERTINENT PAY ITEMS. THE LOCATION OF THE UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC THROUGHOUT THE ENTIRE PERIOD OF CONSTRUCTION BY PROVIDING A REASONABLY SMOOTH AND EVEN SURFACE SATISFACTORY FOR THE USE OF PUBLIC TRAFFIC, AND TO PROVIDE ACCESS TO ALL PUBLIC ROADS AND RESIDENTIAL AND COMMERCIAL ENTRANCES AT ALL TIMES.
- THE CONTRACTOR MUST NOT OCCUPY ANY NON-PERMITTED WETLANDS AREAS.
- ALL LAYOUT DIMENSIONS SHOWN ARE TO THE FACE OF CURB.
- THE CONTRACTOR SHALL MAKE, CHECK, AND BE RESPONSIBLE FOR ALL MEASUREMENTS AND DIMENSIONS NECESSARY FOR THE PROPER CONSTRUCTION OF ALL WORK.
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF THE ELECTRIC POWER AND TELEPHONE SERVICE CONNECTIONS NECESSARY FOR FIELD OFFICES AND PROJECT OPERATIONS WITH POTOMAC EDISON COMPANY AND VERIZON TELEPHONE COMPANY. ALL COSTS, MATERIALS, AND INSTALLATION OF SERVICE CONNECTIONS SHALL BE PAID FOR BY THE CONTRACTOR.
- ALL ASPHALT PAVEMENT UTILITY CUTS SHALL BE PERFORMED AND REPAIRED IN ACCORDANCE WITH WASHINGTON COUNTY STANDARD.
- ASPHALT PAVEMENT TO BE REMOVED THAT ADJOINS ASPHALT TO REMAIN, SHALL BE SAWCUT.
- DEFINITION OF TERMS:
 - PROPOSED RIGHT-OF-WAY:
DENOTES LAND BELONGING TO THE COUNTY WHICH IS USED FOR THE PURPOSE OF THE ROAD AND SUPPORTING STRUCTURES.
 - PERPETUAL EASEMENT:
PORTIONS OF PRIVATE PROPERTY UPON WHICH THE COUNTY PROPOSES TO ACQUIRE THAT WILL CONTAIN UTILITIES AND DRAINAGE PATHS.
 - REVERTIBLE EASEMENT:
PORTIONS OF PRIVATE PROPERTY UPON WHICH THE COUNTY HAS ACQUIRED THE TEMPORARY RIGHT TO CONSTRUCT SUPPORTING SLOPES AND STRUCTURES FOR THE ROAD.
 - TEMPORARY CONSTRUCTION EASEMENT:
PORTIONS OF PRIVATE PROPERTY UPON WHICH THE COUNTY HAS ACQUIRED THE TEMPORARY RIGHT TO USE AND GRADE DURING THE PERIOD OF CONSTRUCTION.
- CONTRACTOR SHALL NOSE DOWN LAST FOUR (4) FEET OF PROPOSED CURB AND GUTTER ON MD 63 AND WHEN NOT TYING INTO EXISTING CURB AND GUTTER.
- CLEARING AND GRUBBING SHALL OCCUR 25' MINIMUM OUTSIDE OF THE PLATTED RIGHT OF WAY.
- ALL EXCESS MATERIAL TO BE STOCKPILED AND STABILIZED ACCORDING TO THE INCREMENTAL STABILIZATION TECHNIQUES OUTLINED IN NOTE 6 IN THE SOIL EROSION, SEDIMENT CONTROL AND SEEDING NOTES.
- *** CONTRACTOR SHALL PRIORITIZE CONSTRUCTION OF THE ROADWAY (TO BASE PAVEMENT) EAST OF THE PROPOSED BOTTOMLESS ARCH CULVERTS PRIOR TO COMPLETION OF THE REMAINING ROADWAY AND BOTTOMLESS ARCH CULVERTS. THE PURPOSE IS TO ALLOW THE NORTHEAST ADJOINING PARCEL ACCESS TO ITS ENTRANCES ONTO THE ROADWAY. SAID PARCEL HAS TEMPORARY ACCESS FROM THE EXISTING PORTION OF HALFWAY BOULEVARD WHICH WILL END WHEN THE ROADWAY IS OPEN TO THE PUBLIC..

SYMBOL LEGEND

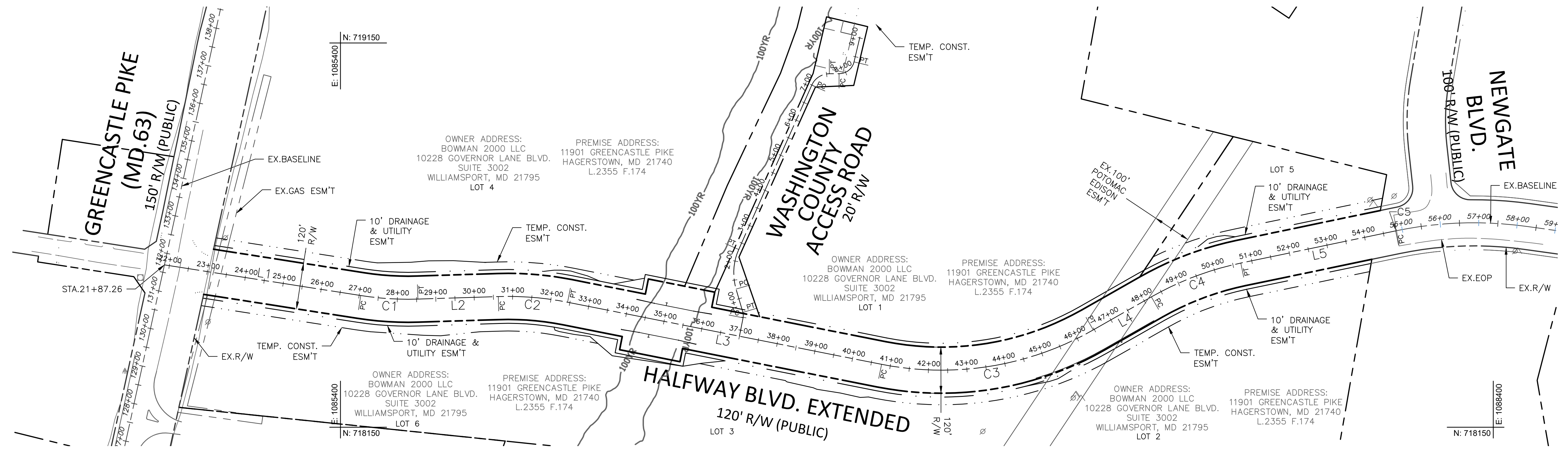
EXISTING	PROPOSED	
		PROPERTY LINE, CORNER
		RIGHT-OF-WAY LINE
		DRAINAGE EASEMENT
		CENTERLINE
		CONTOURS
		PROFILE GRADE LINE
		TREE LINE
		EDGE OF PAVEMENT
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		FENCE LINE
		WATER LINE
		SANITARY SEWER LINE, STUB
		GAS LINE
		FORCE MAIN
		STORM DRAIN
		WATER VALVE
		FIRE HYDRANT, METER
		OVERHEAD ELECTRIC LINE
		TRAFFIC BARRIER
		SANITARY SEWER MANHOLE
		STORM DRAIN INLET
		UTILITY POLE
		HANDICAP PARKING
		POLE LIGHT
		ROAD SIGN
		SPOT ELEVATION
		INLET NUMBERING
		END SECTION NUMBERING
		MANHOLE NUMBERING
		SOIL BORING LOCATION
		DIRECTIONAL FLOW ARROW

LIST OF STANDARDS

- MD 378.03 STANDARD SINGLE OR DOUBLE OPENING TYPE K INLET OPEN-END GRATE NON-TRAFFIC AREAS
- MD 550.01 SQUARE FOOT AREAS OF PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS AND NUMBERS
- MD 605.10 TRAFFIC BARRIER W-BEAM ONE-SIDED DOWNSTREAM END TREATMENT (TYPE K)
- MD 605.13 TRAFFIC BARRIER W-BEAM RADIUS ANCHORAGE (TYPE L)
- MD 620.02 STANDARD TYPES A & B CONCRETE CURB AND COMBINATION CONCRETE CURB & GUTTER
- MD 620.03 DEPRESSED CURB FOR COMBINATION CURB AND GUTTER AND DEPRESSED CURB FOR SIDEWALK RAMPS
- MD 640.01 STANDARD CURB OPENING DETAIL CURB SECTION
- MD 655.12 SIDEWALK RAMPS PARALLEL
- MD 655.40 DETECTABLE WARNING SURFACES
- MD 802.04 BREAKWAY TUBULAR STEEL SIGN SUPPORTS

NOTE: ADDITIONAL STANDARDS MAY BE REQUIRED THAT ARE NOT LISTED ABOVE

DESIGNED BY: KDU/GCA	DRAWN BY: KDU/GCA	CHECKED BY: PJM	DATE: JAN 2024
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING Washington County Administrative Annex Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401			
HALFWAY BOULEVARD EXTENDED LEGEND AND NOTES			
SCALE N.T.S			
SHEET NO. 2			
PROJECT NO. 10-273			
SHA: WA067ZM1 FAP: APL-3(804)E			

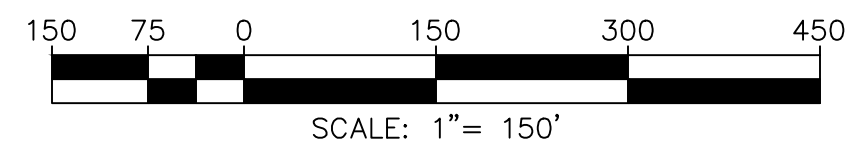


LINE TABLE

NUMBER	ALIGNMENT NAME	LENGTH	DIRECTION	START STA.	START NORTHING	START EASTING	END STA.	END NORTHING	END EASTING
L1	HALFWAY BLVD. EXTENDED	516.89	S81°07'09"E	21+87.26	718572.53	1084942.03	27+04.15	718572.53	1085452.73
L2	HALFWAY BLVD. EXTENDED	209.37	N88°11'43"E	28+53.35	718483.53	1085601.43	30+62.72	718483.53	1085810.69
L3	HALFWAY BLVD. EXTENDED	832.90	S78°48'51"E	32+44.10	718475.33	1085991.08	40+77.00	718475.33	1086808.15
L4	HALFWAY BLVD. EXTENDED	174.24	N60°21'59"E	46+46.95	718403.19	1087358.91	48+21.18	718403.19	1087510.35
L5	HALFWAY BLVD. EXTENDED	411.58	N78°14'41"E	50+70.81	718577.20	1087742.93	54+82.39	718577.20	1088145.88

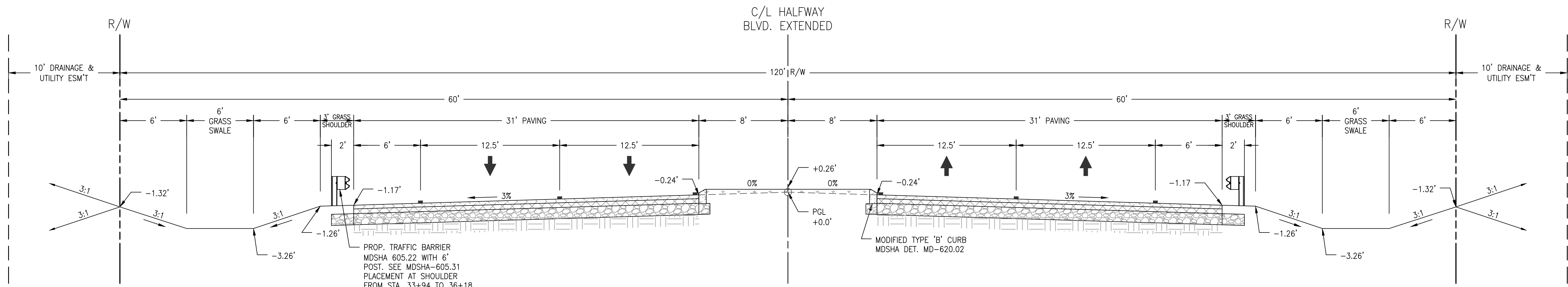
CURVE DATA TABLE

CURVE #	ALIGNMENT NAME	PC STA.	PC NORTHING	PC EASTING	PT STA.	PT NORTHING	PT EASTING	PI STA.	PI NORTHING	PI EASTING
C1	HALFWAY BLVD. EXTENDED	27+04.15	718492.7269	1085452.7251	28+53.35	718483.5327	1085601.4252	27+78.97	718481.1764	1085526.6453
C2	HALFWAY BLVD. EXTENDED	30+62.72	718490.1263	1085810.6916	32+44.10	718475.3258	1085991.0787	31+53.80	718492.9947	1085901.7276
C3	HALFWAY BLVD. EXTENDED	40+77.00	718313.7510	1086808.1546	46+46.95	718403.1890	1087358.9078	43+74.67	718256.0055	1087100.1706
C4	HALFWAY BLVD. EXTENDED	48+21.18	718489.3401	1087510.3547	50+70.81	718577.1968	1087742.9296	49+47.02	718551.5600	1087619.7324
C5	HALFWAY BLVD. EXTENDED	54+82.39	718661.0495	1088145.8804	54+84.94	718661.5645	1088148.3711	54+83.67	718661.3070	1088147.1258



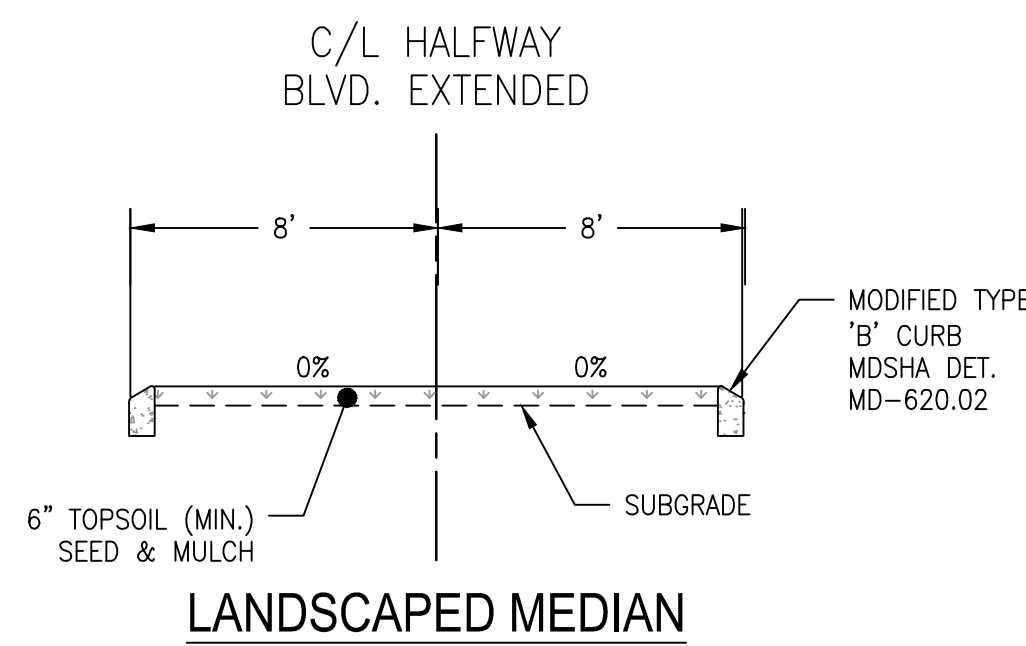
DESIGNED BY: KDUUGA	DRAWN BY: KDUUGA	CHECKED BY: PLM	DATE: JAN 2024	
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING				Washington County Administrative Annex, Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401
HALFWAY BOULEVARD EXTENDED GEOMETRIC PLAN				SCALE 1" = 150' SHEET NO. 3 PROJECT NO. 10-273 SHA: WA067ZM1 FAP: APL-3(804)E

FILE PATH: C:\USERS\PMOH\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\03 - TS10-273 TS-01.DWG PLOT DATE: 3/1/2024 1:53 PM

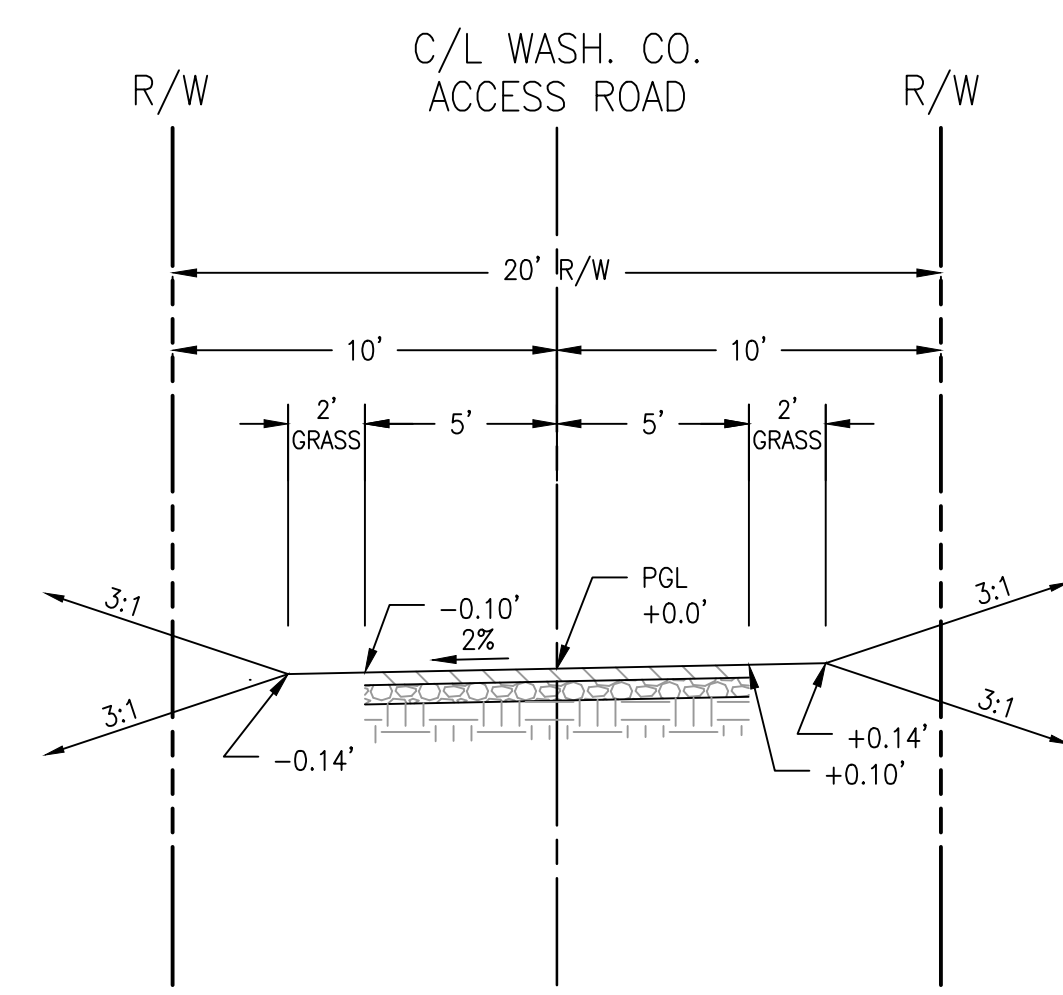


TYPICAL SECTION - 120' R/W
STA. 23+00 TO STA. 55+00

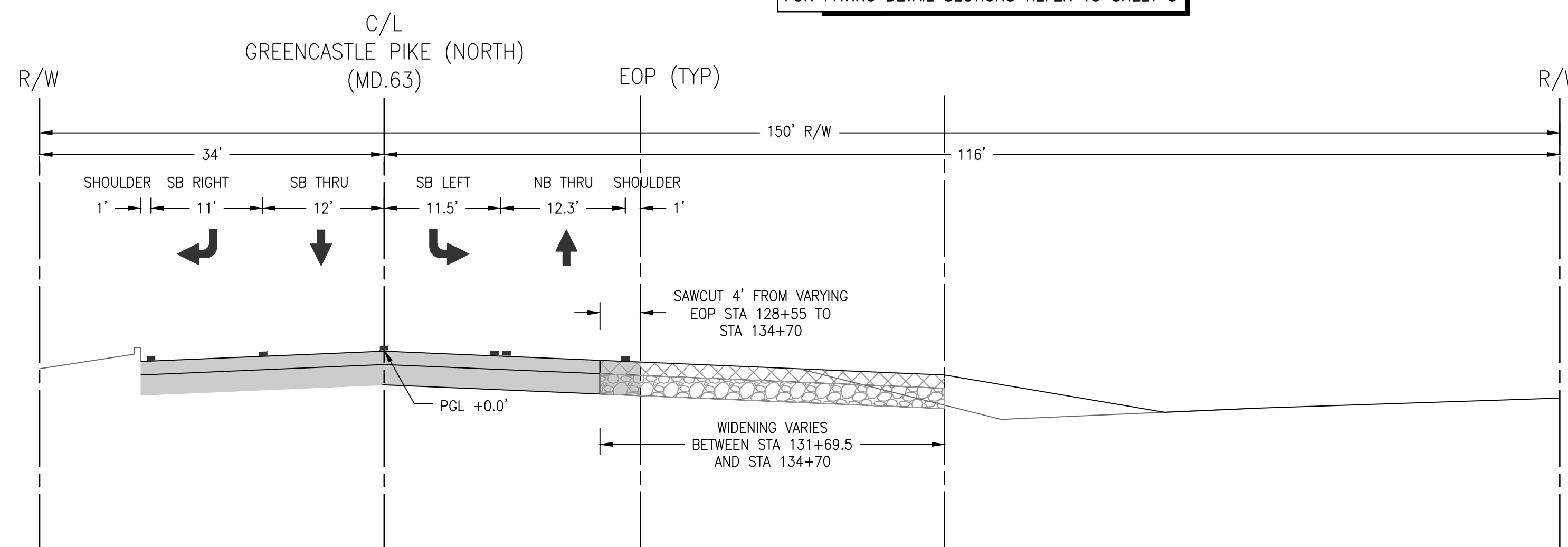
NOTE:
FOR PAVING DETAIL SECTIONS REFER TO SHEET 5



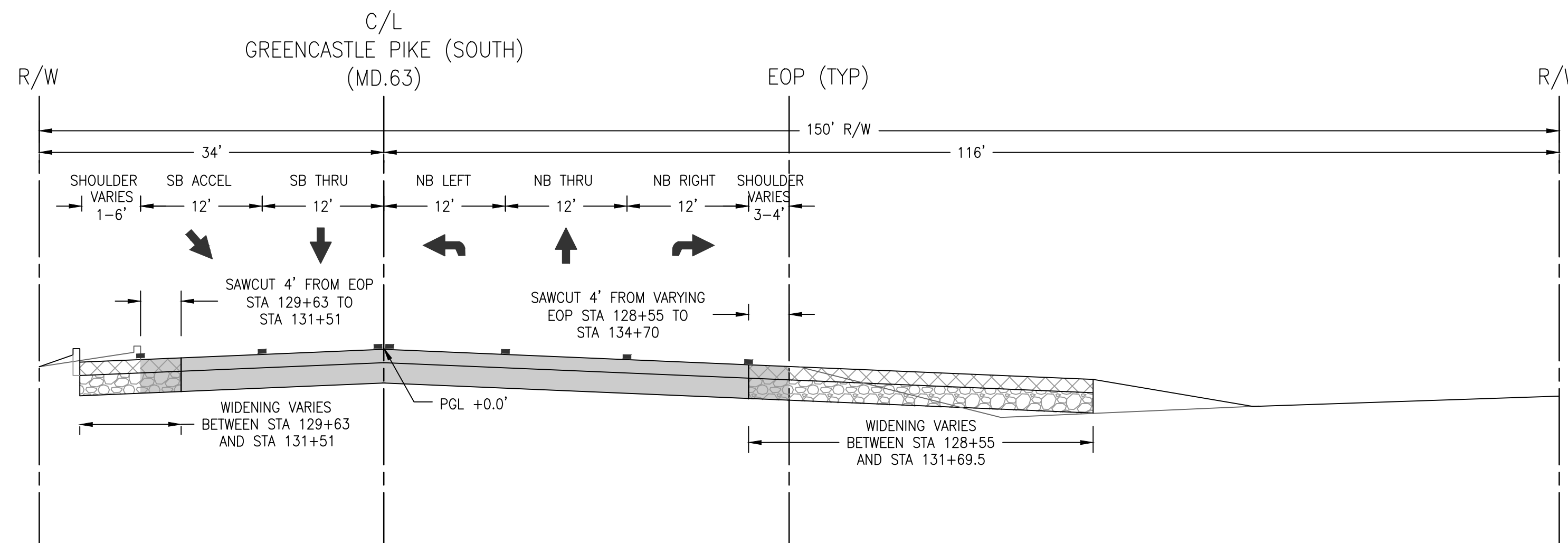
LANDSCAPED MEDIAN



WASHINGTON COUNTY ACCESS ROAD
TYPICAL SECTION - 20' R/W
STA. 0+00 TO STA. 8+85



TYPICAL SECTION - 150' R/W
STA. 131+69.5 TO STA. 134+70
1" = 10'



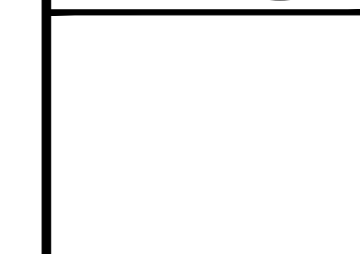
TYPICAL SECTION - 150' R/W
STA. 128+55 TO STA. 131+69.5
1" = 10'

NO.	REVISION DESCRIPTION

DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:
KDUUGA	KDUUGA	PJAM	JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-312-2460 Fax: 240-313-2401



**HALFWAY BOULEVARD
EXTENDED**

TYPICAL SECTIONS

SCALE 1" = 5'
SHEET NO. 4
PROJECT NO. 10-273
SHA: WA067ZM1 FAP: APL-3(804)E

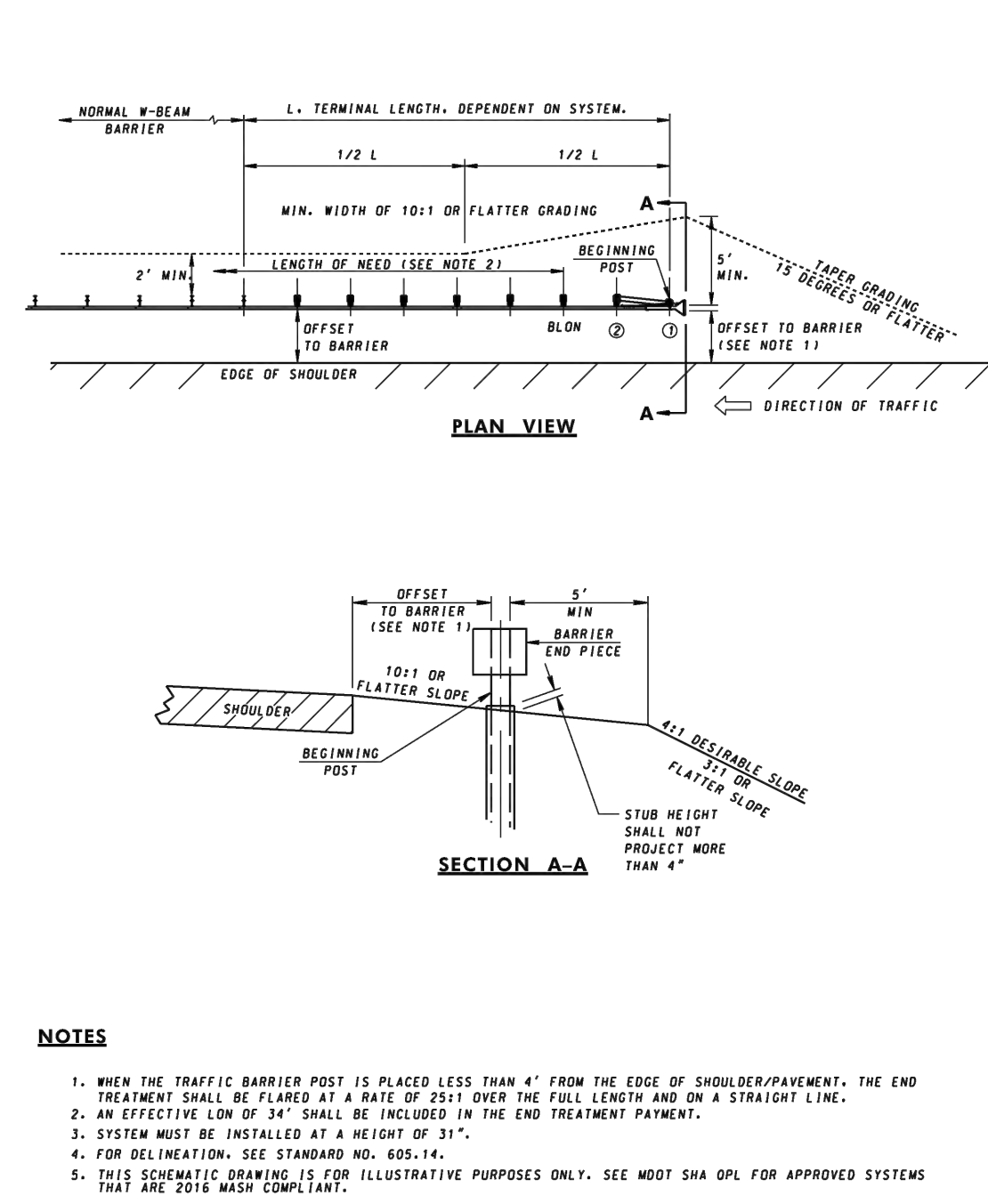
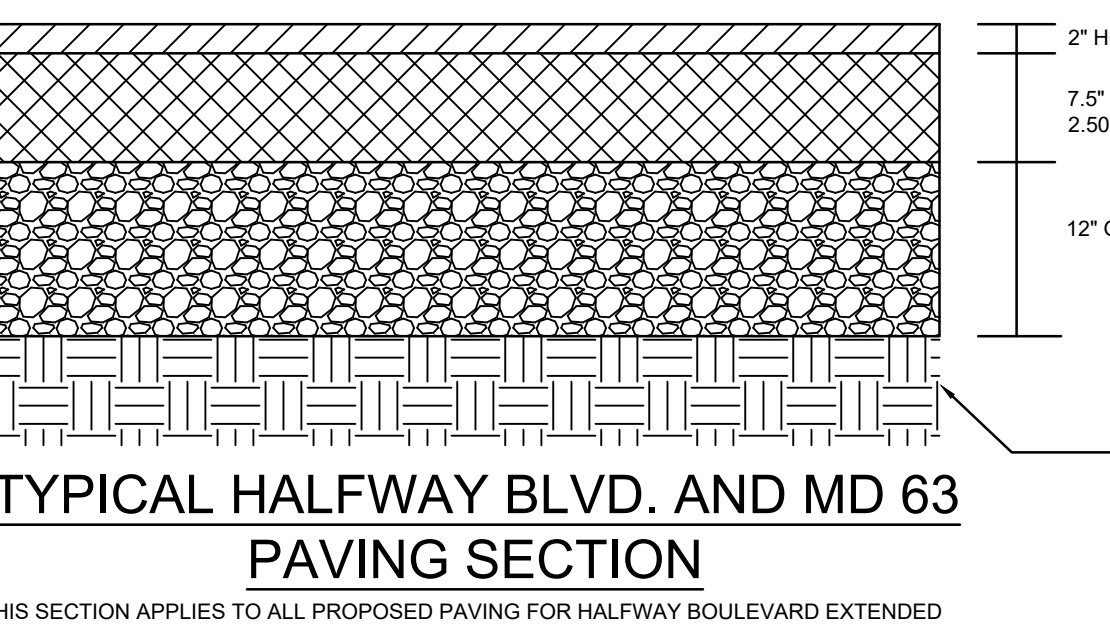
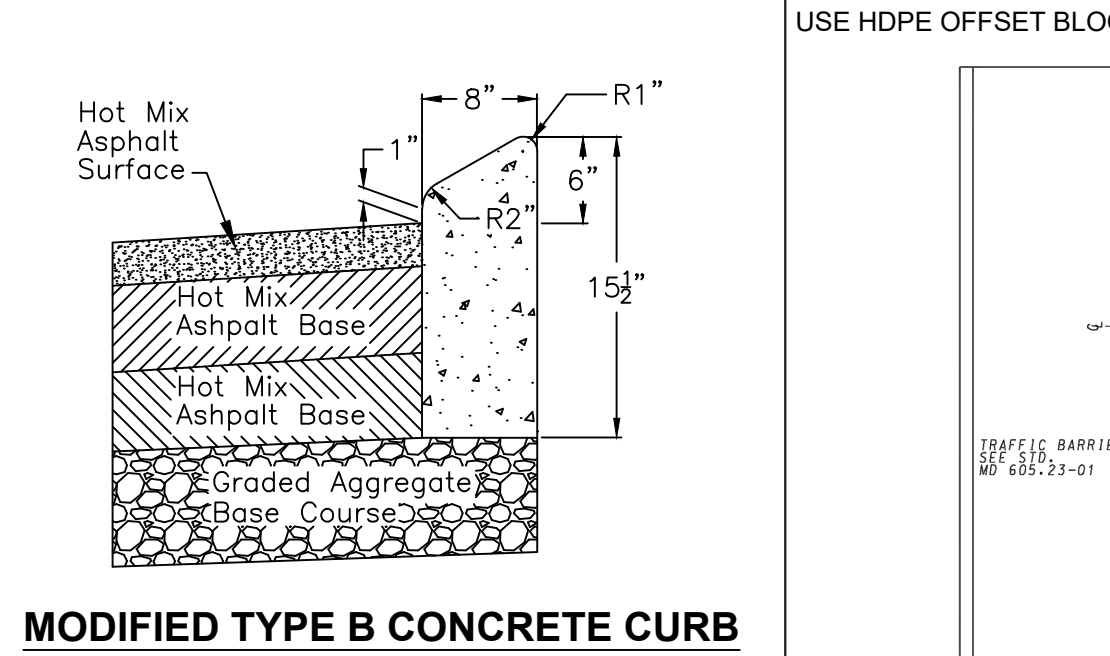


Table with 2 columns: SPECIFICATION (606), CATEGORY CODE ITEMS, and APPROVED (Director: Office of Highway Development).

MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES TRAFFIC BARRIER W-BEAM ONE-SIDED END TREATMENT (TYPE C) STANDARD NO. MD 605.03

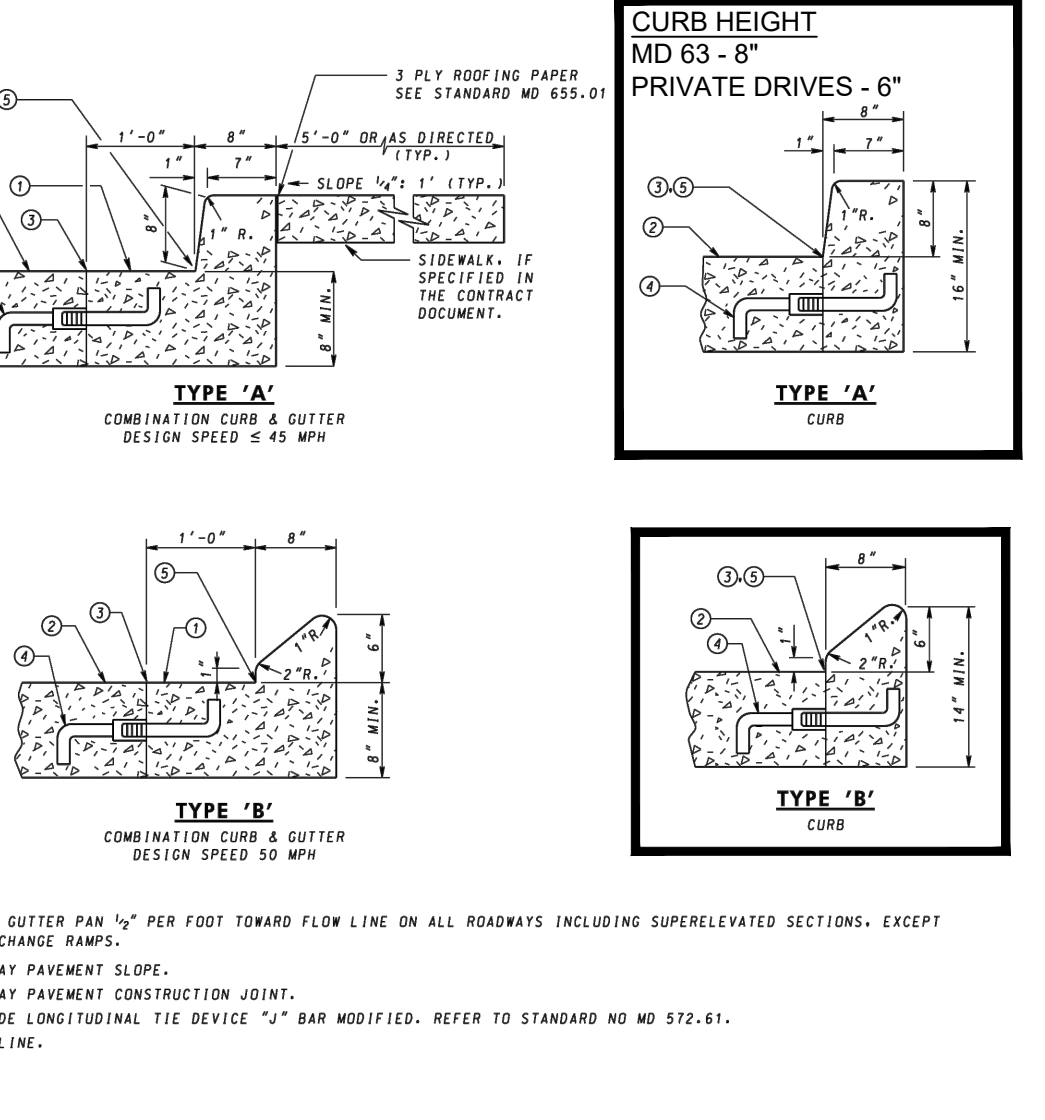


TYPICAL HALFWAY BLVD. AND MD 63 PAVING SECTION (THIS SECTION APPLIES TO ALL PROPOSED PAVING FOR HALFWAY BOULEVARD EXTENDED AND MD 63)



- NOTES: 1. W-BEAM RAIL IS FURNISHED SHOP CURVED... 2. W-BEAM RAIL SECTIONS SHALL BE 12'-6" OR 25'-0" LENGTHS UNLESS SPECIFIED OTHERWISE.

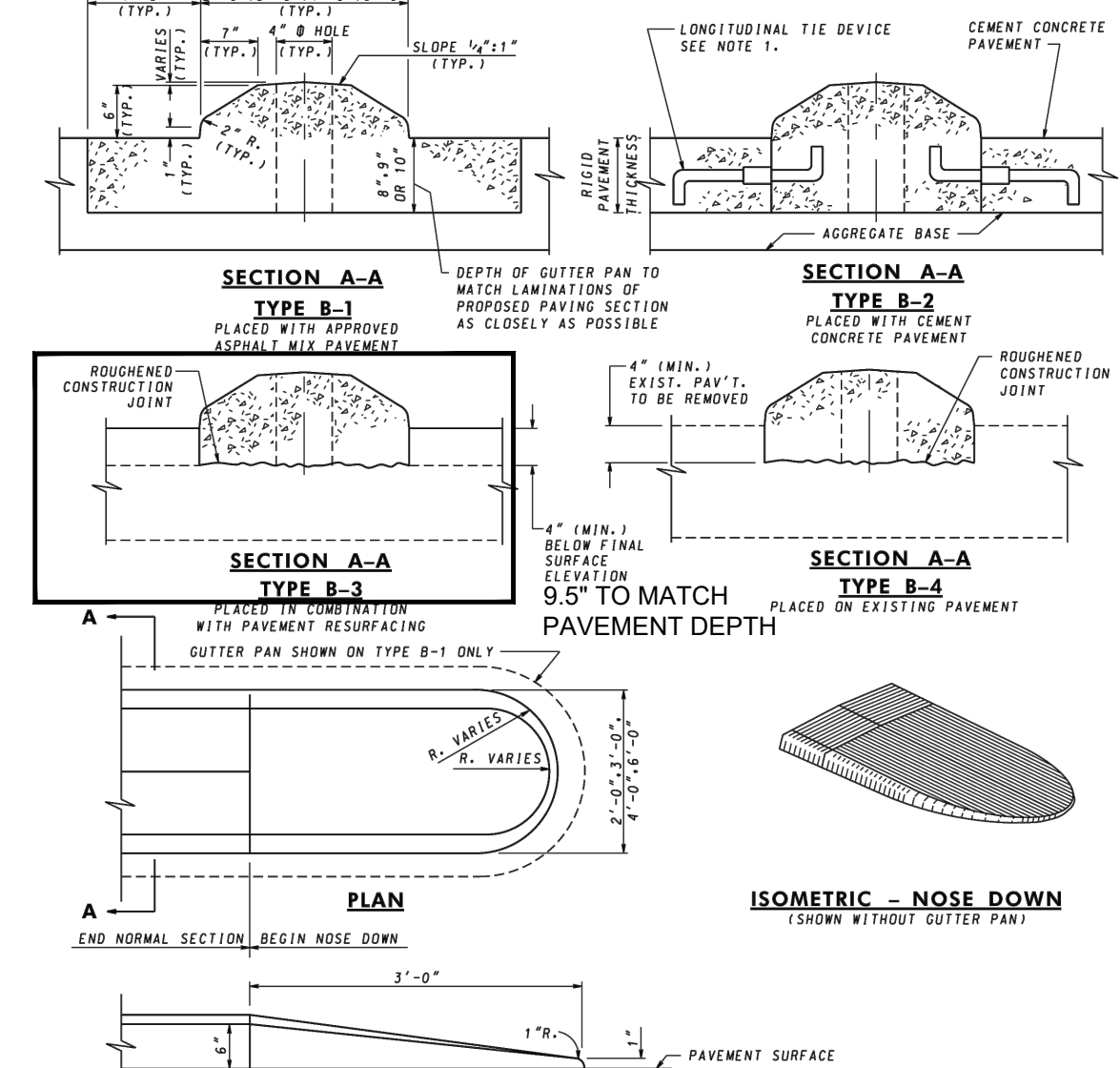
Table with 2 columns: SPECIFICATION (605), CATEGORY CODE ITEMS, and APPROVED (Director: Office of Highway Development).



- NOTES: A. RIGID PAVEMENT ROADWAY ADJACENT TO COMBINATION CURB AND GUTTER... B. MAXIMUM JOINT SPACING FOR CONCRETE CURB AND COMBINATION CURB... C. TYPE A OR B COMBINATION CURB AND GUTTER... D. TYPE A OR B CURB SHALL BE USED FOR THE REPLACEMENT OF LIKE KIND OF CURB ONLY.

Table with 2 columns: SPECIFICATION (602), CATEGORY CODE ITEMS, and APPROVED (Director: Office of Highway Development).

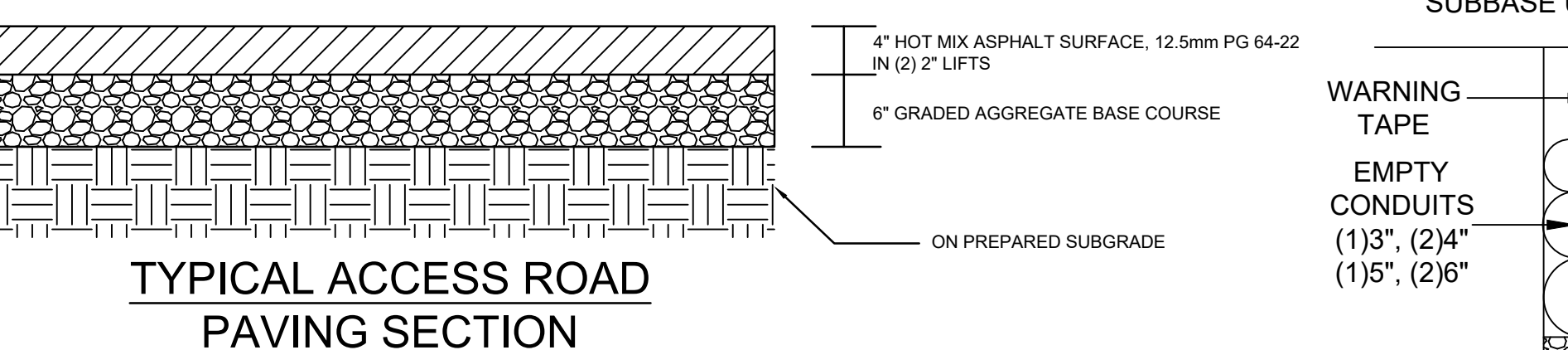
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD TYPES A & B CONCRETE CURB AND COMBINATION CONCRETE CURB & GUTTER STANDARD NO. MD 620.02



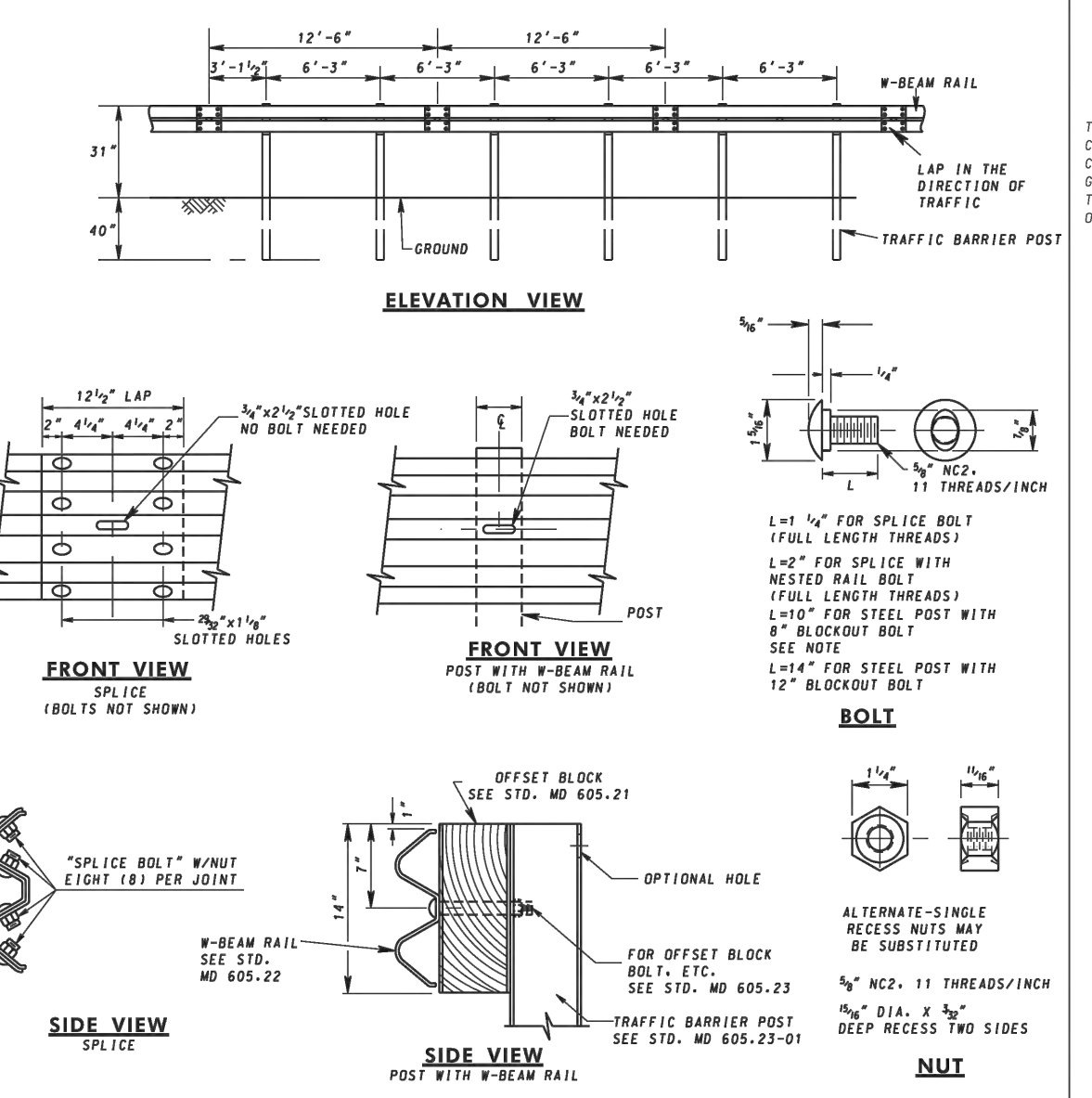
- NOTES: 1. UNLESS OTHERWISE SPECIFIED, LONGITUDINAL TIE BAR DEVICE... 2. JOINT SPACING WILL BE A MAXIMUM OF 10'-0" APART... 3. ALL 4" x 8" HOLES IN MEDIAN FOR SIGNS...

Table with 2 columns: SPECIFICATION (604), CATEGORY CODE ITEMS, and APPROVED (Director: Office of Highway Development).

MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD MONOLITHIC CONCRETE MEDIAN TYPE 'B' STANDARD NO. MD 645.02



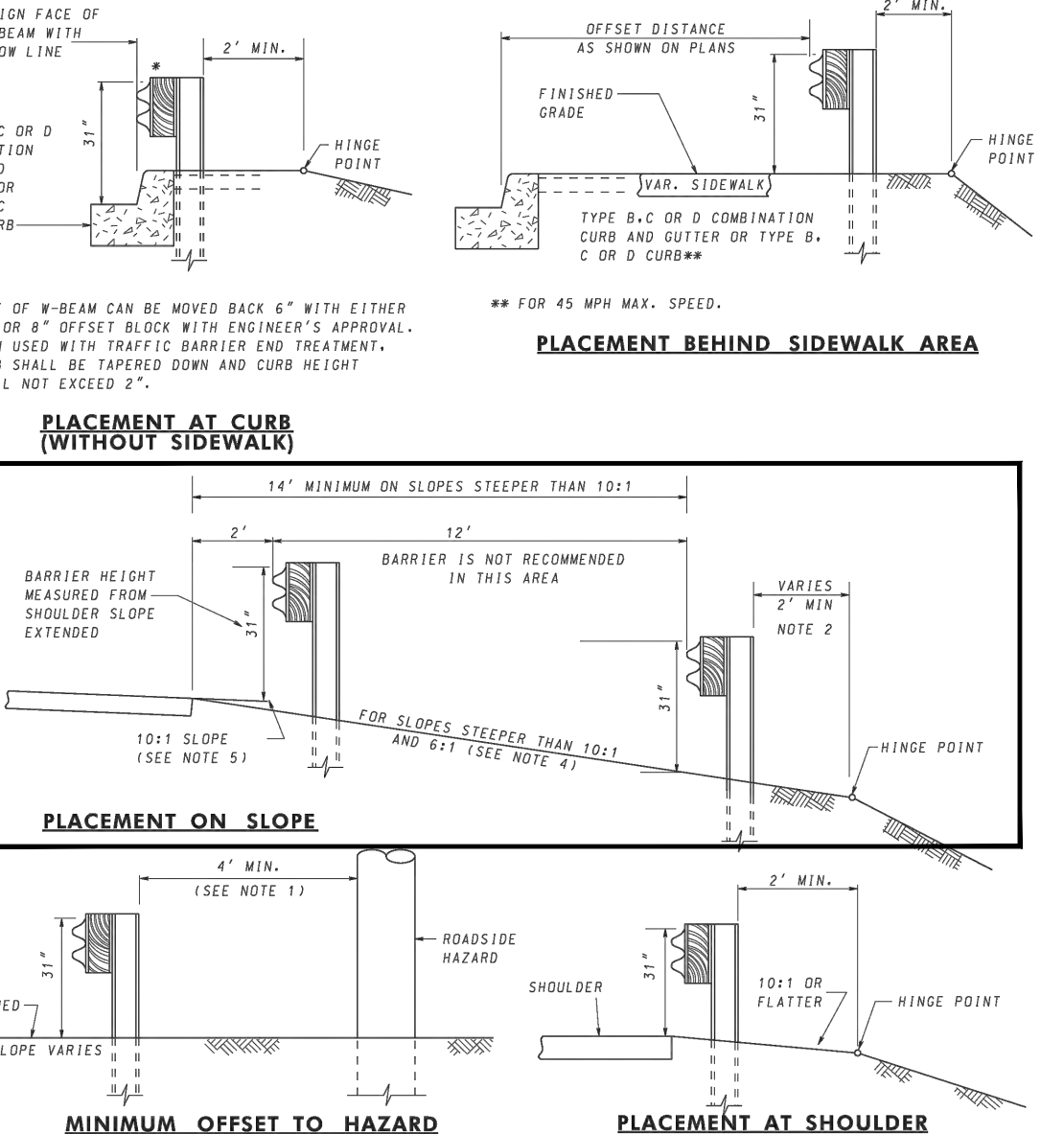
TYPICAL ACCESS ROAD PAVING SECTION (THIS SECTION APPLIES TO PROPOSED PAVING FOR WASHINGTON COUNTY ACCESS ROAD)



- NOTES: 1. FOR COMPOSITE OFFSET BLOCKS SEE NOTE 3 ON STD. MD 605.21... 2. WITH ENGINEER'S APPROVAL, ONE POST CAN BE OMITTED WITHOUT OTHER CHANGES...

Table with 2 columns: SPECIFICATION (605), CATEGORY CODE ITEMS, and APPROVED (Director: Office of Highway Development).

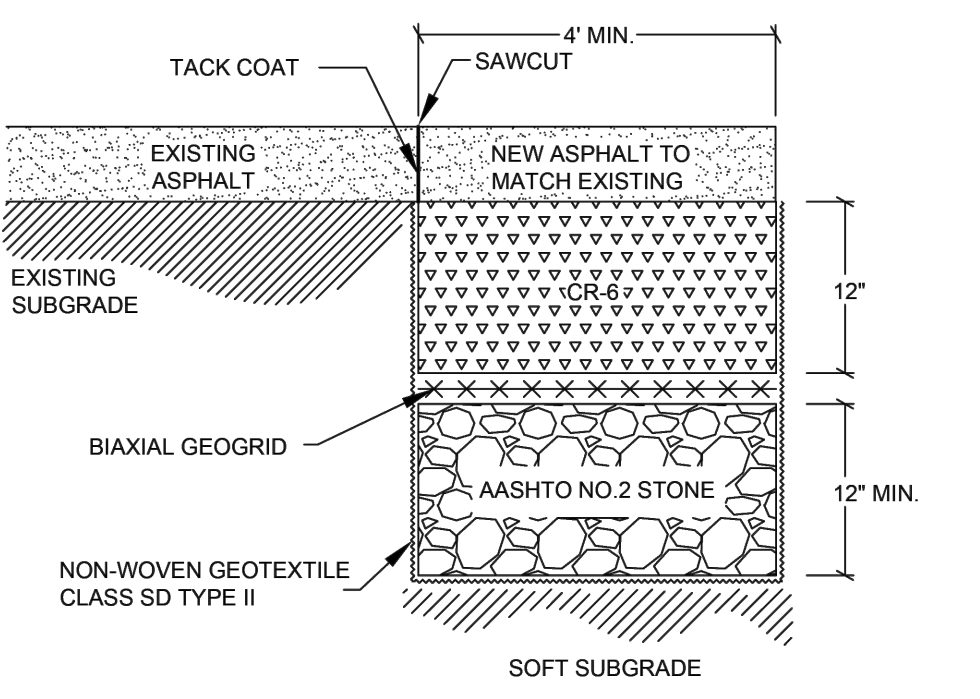
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES TRAFFIC BARRIER W-BEAM, W-BEAM SPLICES AND OFFSET BLOCK STANDARD NO. MD 605.23



- NOTES: 1. THE MINIMUM OFFSET DIMENSION SHOWN CAN BE REDUCED BY STIFFENING THE TRAFFIC BARRIER SYSTEM... 2. 6'-0" LONG POSTS ARE TO BE USED WHEN THE DISTANCE FROM THE BACK OF THE W BEAM POST TO THE HINGE POINT IS LESS THAN 2'...

Table with 2 columns: SPECIFICATION (605), CATEGORY CODE ITEMS, and APPROVED (Director: Office of Highway Development).

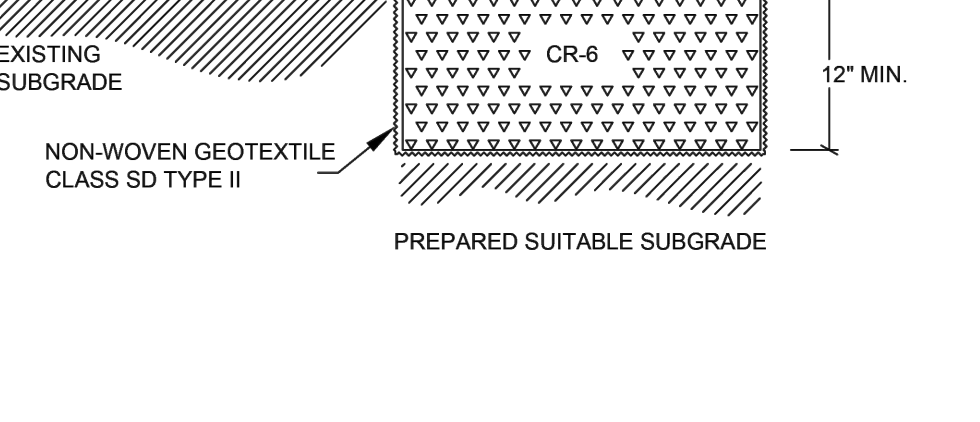
MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES TRAFFIC BARRIER W-BEAM PLACEMENT DETAILS STANDARD NO. MD 605.31



- NOTES: 1. ACTUAL PLAN DIMENSIONS SHALL BE AS MARKED IN THE FIELD... 2. SUBGRADE SHALL BE INSPECTED AND APPROVED BY ENGINEER PRIOR TO PLACEMENT OF AASHTO NO. 2 STONE... 3. CARE SHALL BE TAKEN WHEN PLACING STONE ON GEOTEXTILE TO NOT DAMAGE THE FABRIC...

Table with 2 columns: DIVISION OF PUBLIC WORKS WASHINGTON COUNTY, MARYLAND ENGINEERING & CONSTRUCTION, and REVISIONS.

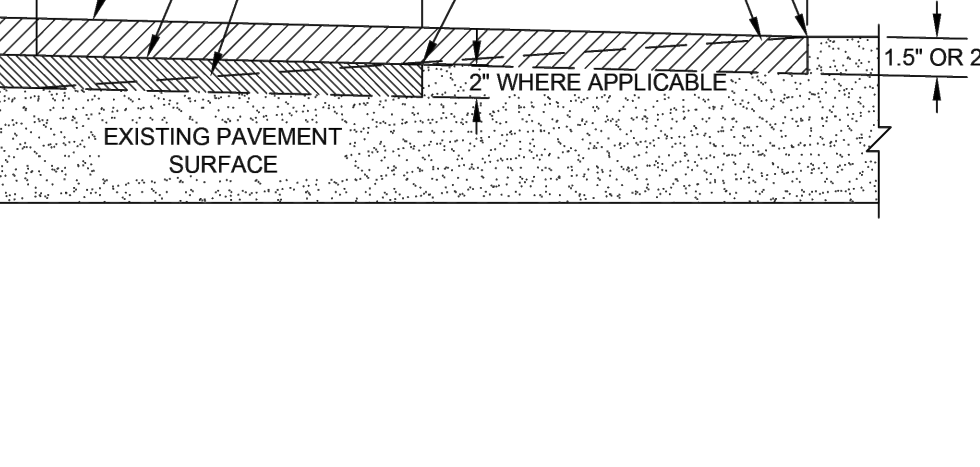
STABILIZATION DETAIL, TYPE-2 STD. PLATE NO. 502



- NOTES: 1. ACTUAL PLAN DIMENSIONS SHALL BE AS MARKED IN THE FIELD... 2. SUBGRADE SHALL BE INSPECTED AND APPROVED BY ENGINEER PRIOR TO PLACEMENT OF CR-6... 3. CARE SHALL BE TAKEN WHEN PLACING STONE ON GEOTEXTILE TO NOT DAMAGE THE FABRIC...

Table with 2 columns: DIVISION OF PUBLIC WORKS WASHINGTON COUNTY, MARYLAND ENGINEERING & CONSTRUCTION, and REVISIONS.

STABILIZATION DETAIL, TYPE-1 STD. PLATE NO. 501



- NOTES: 1. THE MINIMUM OFFSET DIMENSION SHOWN CAN BE REDUCED BY STIFFENING THE TRAFFIC BARRIER SYSTEM... 2. 6'-0" LONG POSTS ARE TO BE USED WHEN THE DISTANCE FROM THE BACK OF THE W BEAM POST TO THE HINGE POINT IS LESS THAN 2'...

Table with 2 columns: DIVISION OF PUBLIC WORKS WASHINGTON COUNTY, MARYLAND ENGINEERING & CONSTRUCTION, and REVISIONS.

ROADWAY TIE-IN DETAIL STD. PLATE NO. 503

Vertical sidebar containing project information: WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING, Washington County Administrative Annex Building, 747 Northern Ave., Hagerstown, MD 21742, Phone: 240-315-2460, Fax: 240-315-2401, SHEET NO. 5, PROJECT NO. 10-273, SHA: WA0672M1, FAP: APL-3(804)E

FILE PATH: C:\USERS\PMOH\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\04 - PP\10-273 PP-01.DWG PLOT DATE: 3/1/2024 1:14 PM

STANDARD MONOLITHIC CONCRETE 4' WIDE MEDIAN TYPE "B" MD-SHA STANDARD 645.02		
STATION	LOCATION	LF
Sta.23+00.00 To Sta.25+12.50	CENTER	212.5

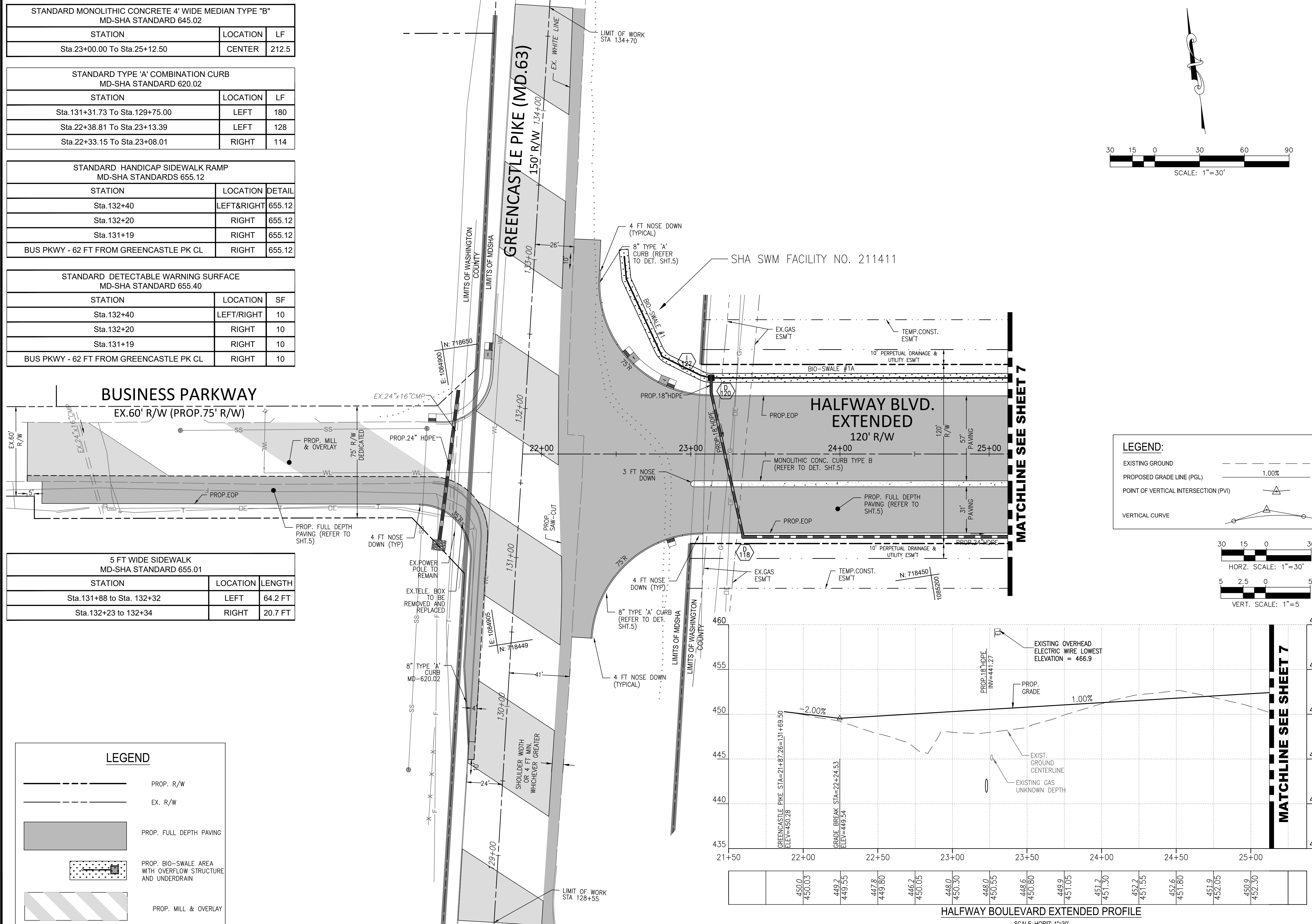
STANDARD TYPE 'A' COMBINATION CURB MD-SHA STANDARD 620.02		
STATION	LOCATION	LF
Sta.131+31.73 To Sta.129+75.00	LEFT	180
Sta.22+38.81 To Sta.23+13.39	LEFT	128
Sta.22+33.15 To Sta.23+08.01	RIGHT	114

STANDARD HANDICAP SIDEWALK RAMP MD-SHA STANDARDS 655.12		
STATION	LOCATION	DETAIL
Sta.132+40	LEFT&RIGHT	655.12
Sta.132+20	RIGHT	655.12
Sta.131+19	RIGHT	655.12
BUS PKWY - 62 FT FROM GREENCASTLE PK CL	RIGHT	655.12

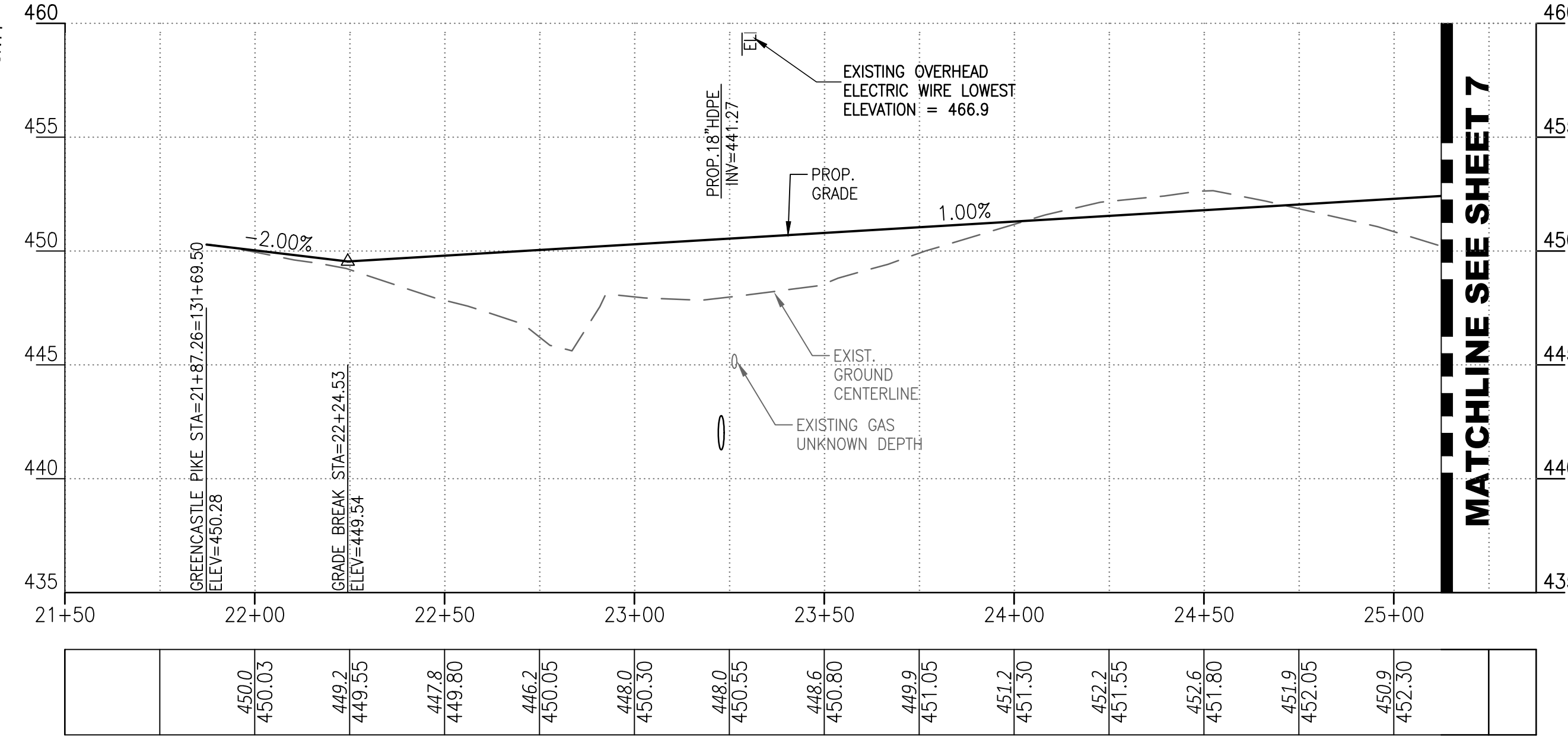
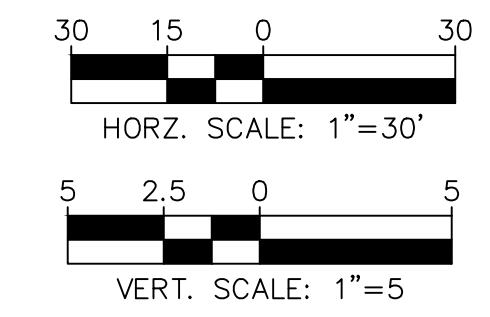
STANDARD DETECTABLE WARNING SURFACE MD-SHA STANDARD 655.40		
STATION	LOCATION	SF
Sta.132+40	LEFT/RIGHT	10
Sta.132+20	RIGHT	10
Sta.131+19	RIGHT	10
BUS PKWY - 62 FT FROM GREENCASTLE PK CL	RIGHT	10

5 FT WIDE SIDEWALK MD-SHA STANDARD 655.01		
STATION	LOCATION	LENGTH
Sta.131+88 to Sta. 132+32	LEFT	64.2 FT
Sta.132+23 to 132+34	RIGHT	20.7 FT

LEGEND	
	PROP. R/W
	EX. R/W
	PROP. FULL DEPTH PAVING
	PROP. BIO-SWALE AREA WITH OVERFLOW STRUCTURE AND UNDERDRAIN
	PROP. MILL & OVERLAY



LEGEND:	
	EXISTING GROUND
	PROPOSED GRADE LINE (PGL)
	POINT OF VERTICAL INTERSECTION (PVI)
	VERTICAL CURVE

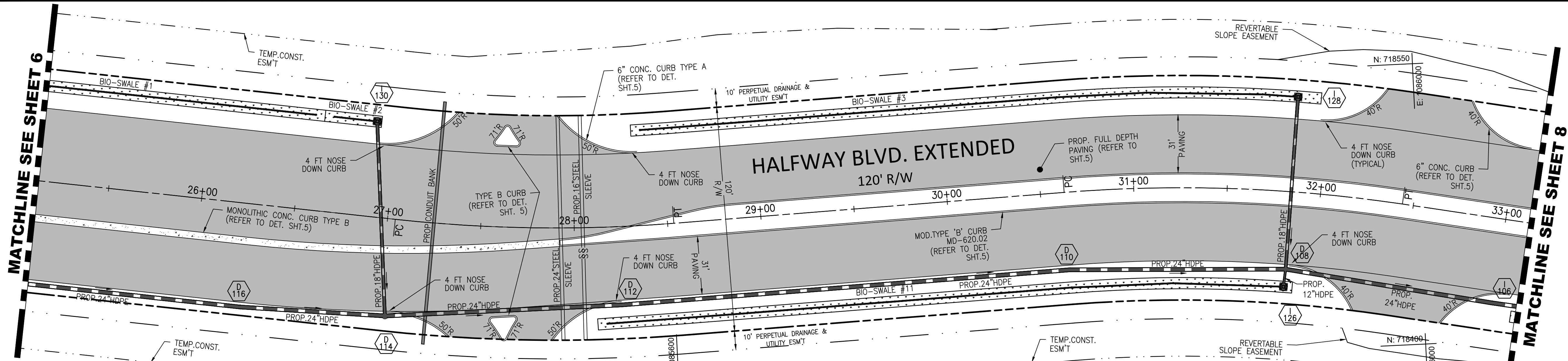


HALFWAY BOULEVARD EXTENDED PROFILE

SCALE: HORIZ: 1"=30'
VERT: 1"=5'

DESIGNED BY: KDUJGA	DRAWN BY: KDUJGA	CHECKED BY: PLM	DATE: JAN 2024
NO.	REVISION DESCRIPTION	BY	DATE
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING			
Washington County Administrative Annex Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401			
HALFWAY BOULEVARD EXTENDED ROADWAY PLAN AND PROFILE STA. 21+87.26 TO STA. 25+12.50			
SCALE	1" = 30'		
SHEET NO.	6		
PROJECT NO.	10-273		
SHA:	WA067ZM1		
FAP:	APL-3(804)E		

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\04 - PP10-273 PP-01.DWG PLOT DATE: 2/16/2024 3:28 PM

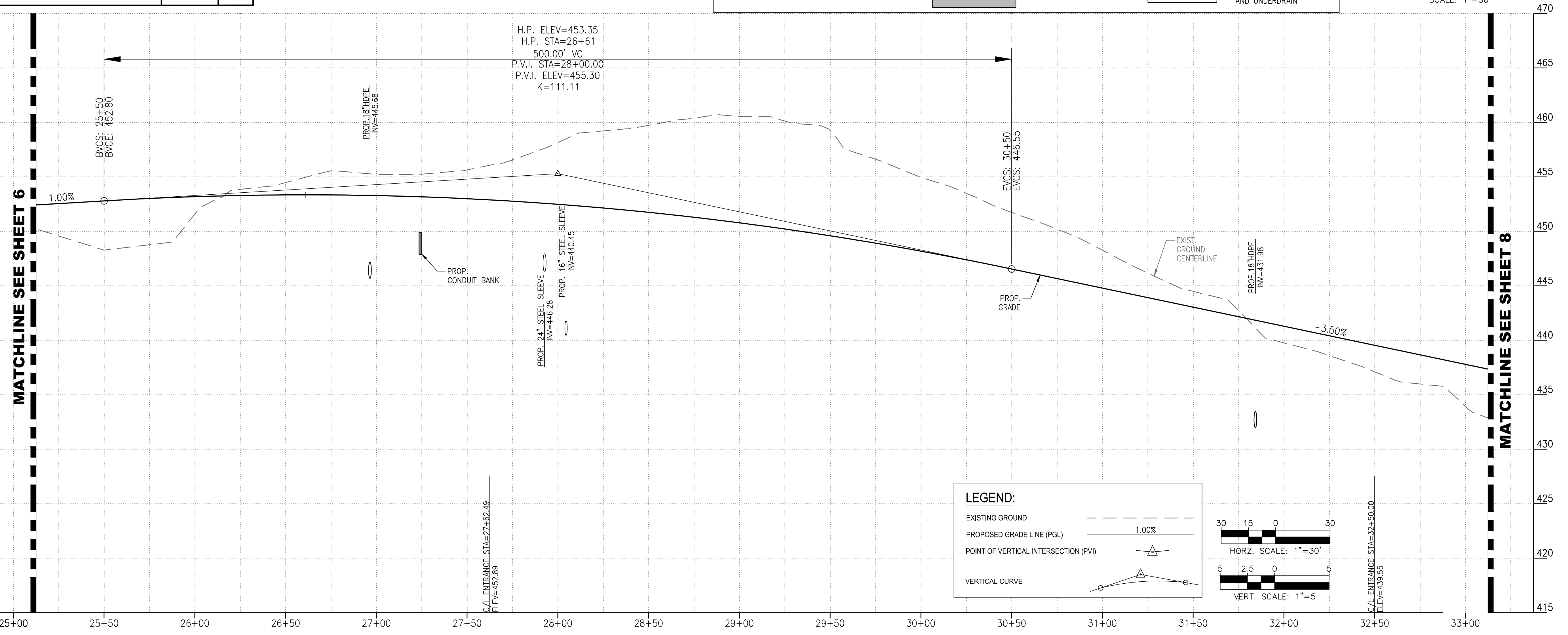
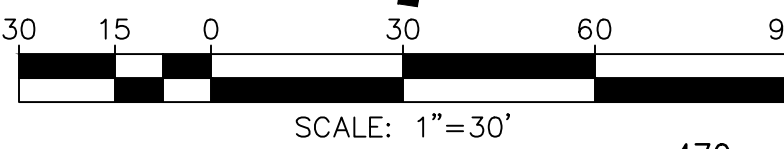


STANDARD MONOLITHIC CONCRETE 4' WIDE MEDIAN TYPE "B" MD-SHA STANDARD 645.02		
STATION	LOCATION	LF
Sta. 25+12.50 To Sta. 27+92.25	CENTER	280

ALL PRIVATE DRIVEWAY ENTRANCES SHALL USE 6" TYPE A CURB. TRAFFIC ISLANDS SHALL BE TYPE B CURB.

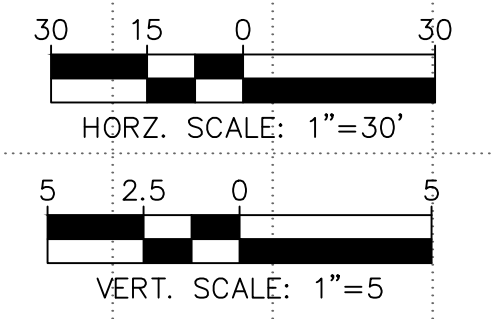
LEGEND

- PROP. R/W
- PROP. FULL DEPTH PAVING
- PROP. BIO-SWALE AREA WITH OVERFLOW STRUCTURE AND UNDERDRAIN



LEGEND:

- EXISTING GROUND
- PROPOSED GRADE LINE (PGL)
- POINT OF VERTICAL INTERSECTION (PVI)
- VERTICAL CURVE



449.6	452.55	448.3	452.80	448.8	453.02	451.6	453.18	453.9	453.29	454.5	453.35	455.6	453.34	455.2	453.28	455.2	453.17	455.6	453.00	456.6	452.77	458.1	452.48	459.2	452.14	459.7	451.75	460.4	451.29	460.5	450.78	460.1	450.22	459.3	449.60	456.6	448.92	455.0	448.18	453.5	447.39	451.7	446.55	450.2	445.67	448.3	444.80	446.2	443.92	444.5	443.05	442.7	442.17	439.8	441.30	438.6	440.42	437.1	439.55	436.0	438.67	433.9	437.80
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HALFWAY BOULEVARD EXTENDED PROFILE
SCALE: HORIZ: 1"=30'
VERT: 1"=5'

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUJGA
DRAWN BY: KDUJGA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

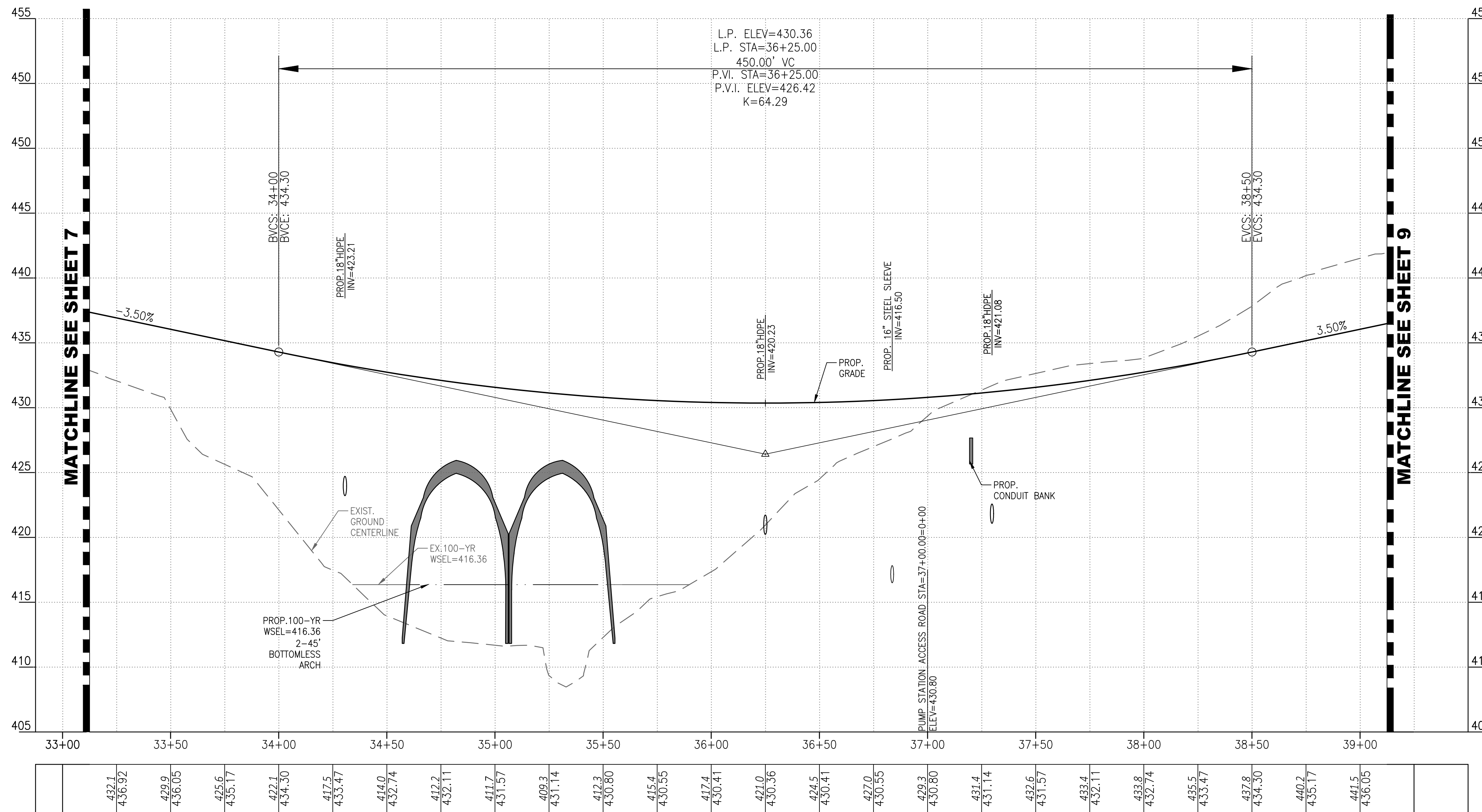
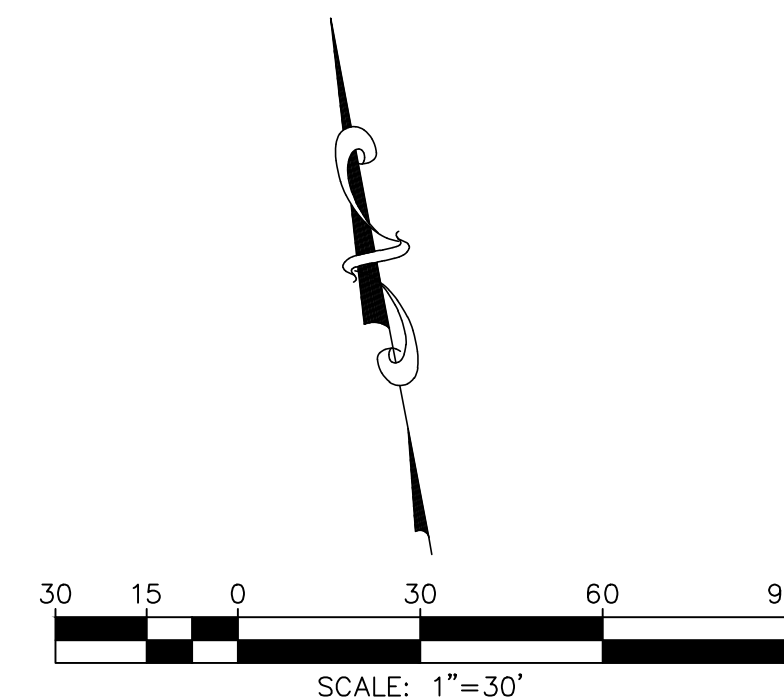
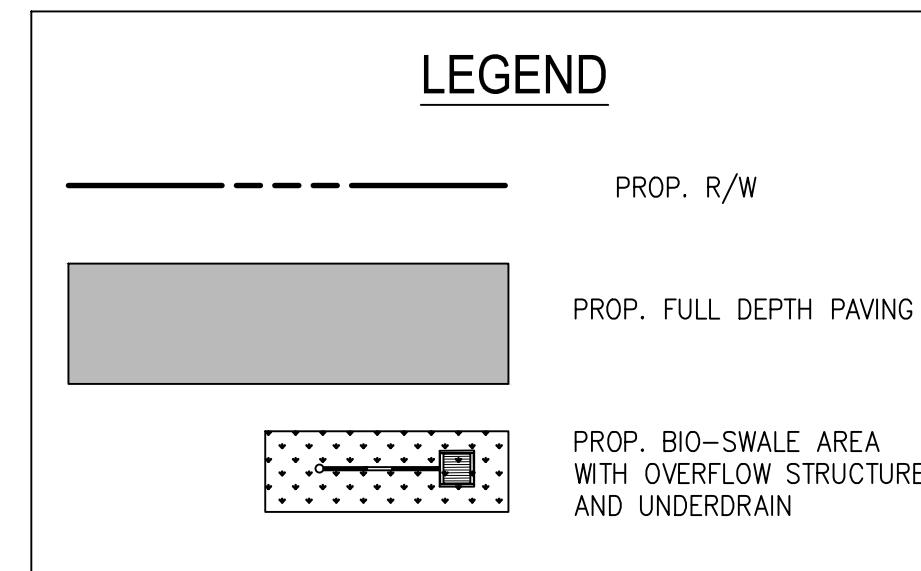
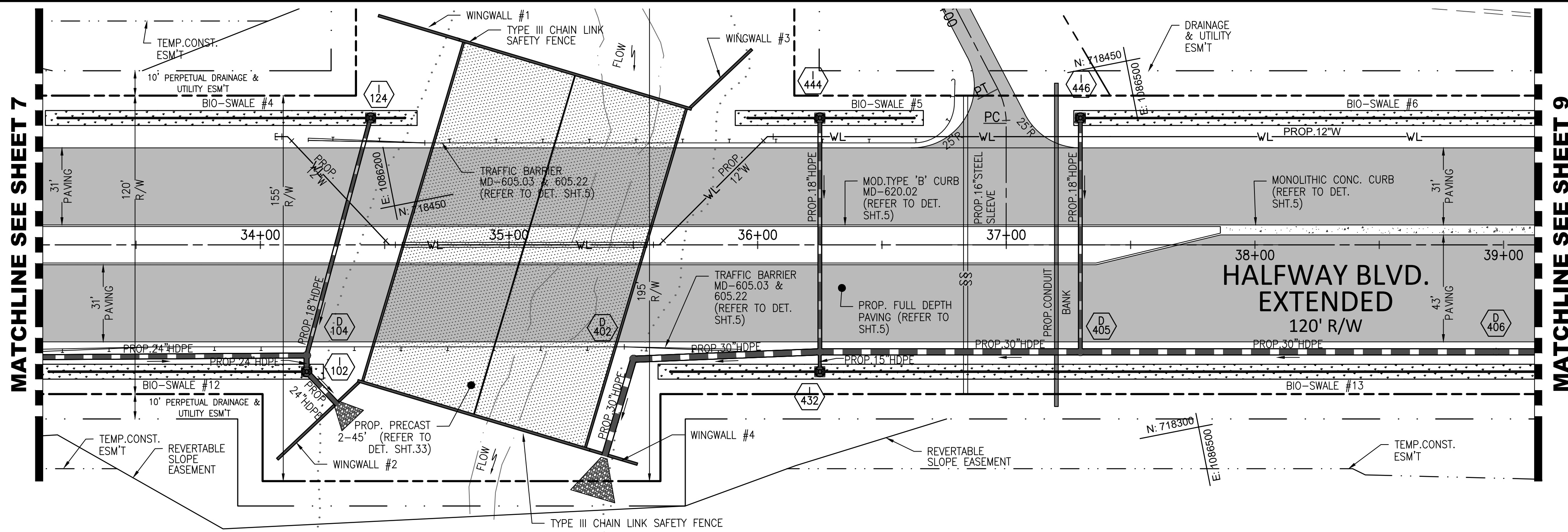
Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-313-2401

HALFWAY BOULEVARD
EXTENDED
ROADWAY PLAN AND PROFILE
STA. 25+12.50 TO STA. 33+12.50

SCALE
1" = 30'

SHEET NO.
7

PROJECT NO.
10-273
SHA: WA067ZM1
FAP: APL-3(804)E



HALFWAY BOULEVARD EXTENDED PROFILE

SCALE: HORIZ. 1"=30'
VERT. 1"=5'

STANDARD MONOLITHIC CONCRETE 4' WIDE MEDIAN TYPE "B" MD-SHA STANDARD 645.02		
STATION	LOCATION	LF
Sta.37+86.10 To Sta.39+12.50	CENTER	127

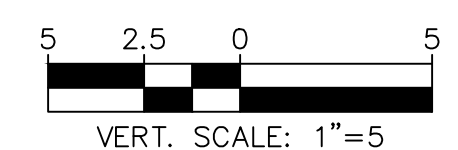
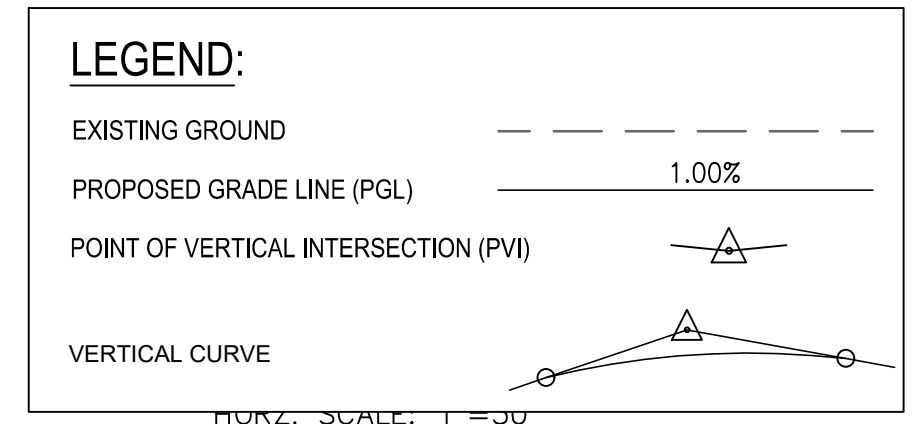
TRAFFIC BARRIER TYPE C END TREATMENT MD-SHA STANDARD 605.03		
STATION	LOCATION	EA
Sta.34+19 To Sta.34+66	LEFT	1
Sta.33+11 To Sta.33+58	RIGHT	1
Sta.35+46 To Sta.35+93	RIGHT	1

TRAFFIC BARRIER MD-SHA STANDARD 605.22		
STATION	LOCATION	LF
Sta.34+66 To Sta.36+63	LEFT	105
Sta.33+58 To Sta.35+46	RIGHT	104

TYPE III CHAIN LINK SAFETY FENCE MD-SHA STANDARD SUP-FR(FN)-302		
STATION	LOCATION	LF
Sta.34+47 To Sta.35+98	LEFT	164
Sta.34+07 To Sta.35+51	RIGHT	161

TRAFFIC BARRIER TYPE K END TREATMENT MD-SHA STANDARD 605.10		
STATION	LOCATION	EA
Sta.36+79 To Sta.36+79	LEFT	1

TRAFFIC BARRIER TYPE L RADIUS ANCHORAGE MD-SHA STANDARD 605.13		
STATION	LOCATION	EA
Sta.36+63 To Sta.36+79	LEFT	1



WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-313-2401

DESIGNED BY: KDUUGA
DRAWN BY: KDUUGA
CHECKED BY: PJM
DATE: JAN 2024

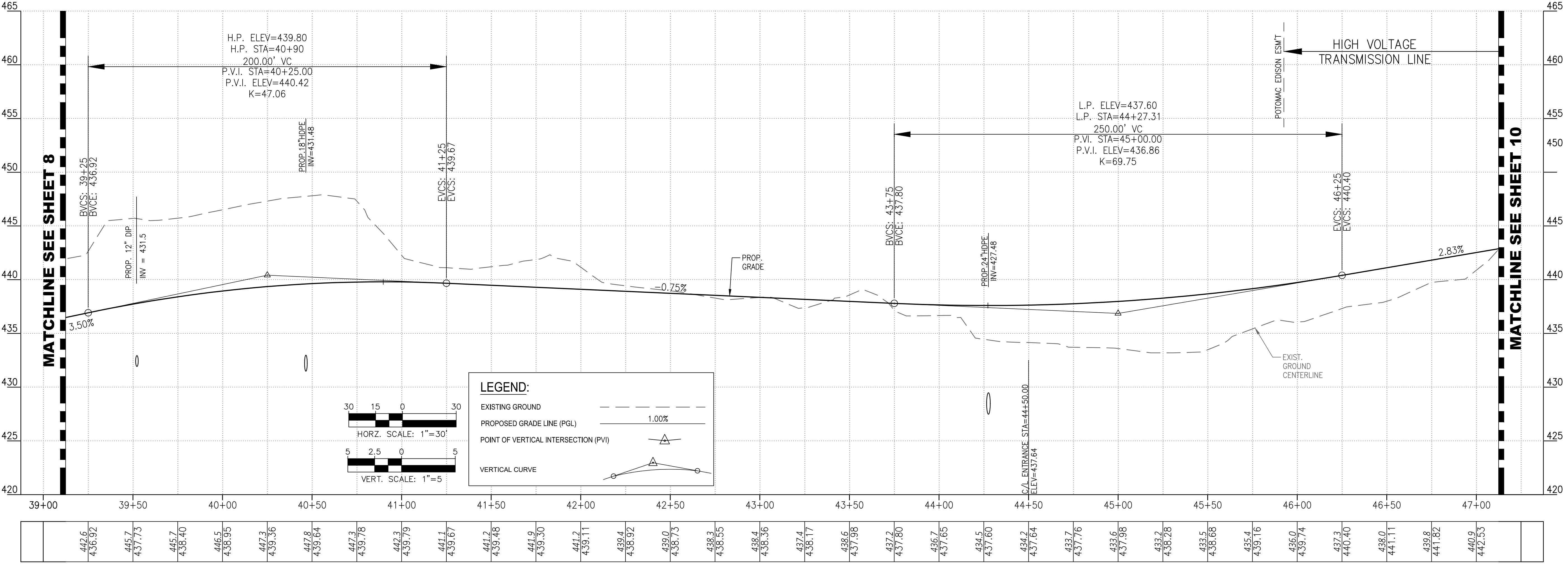
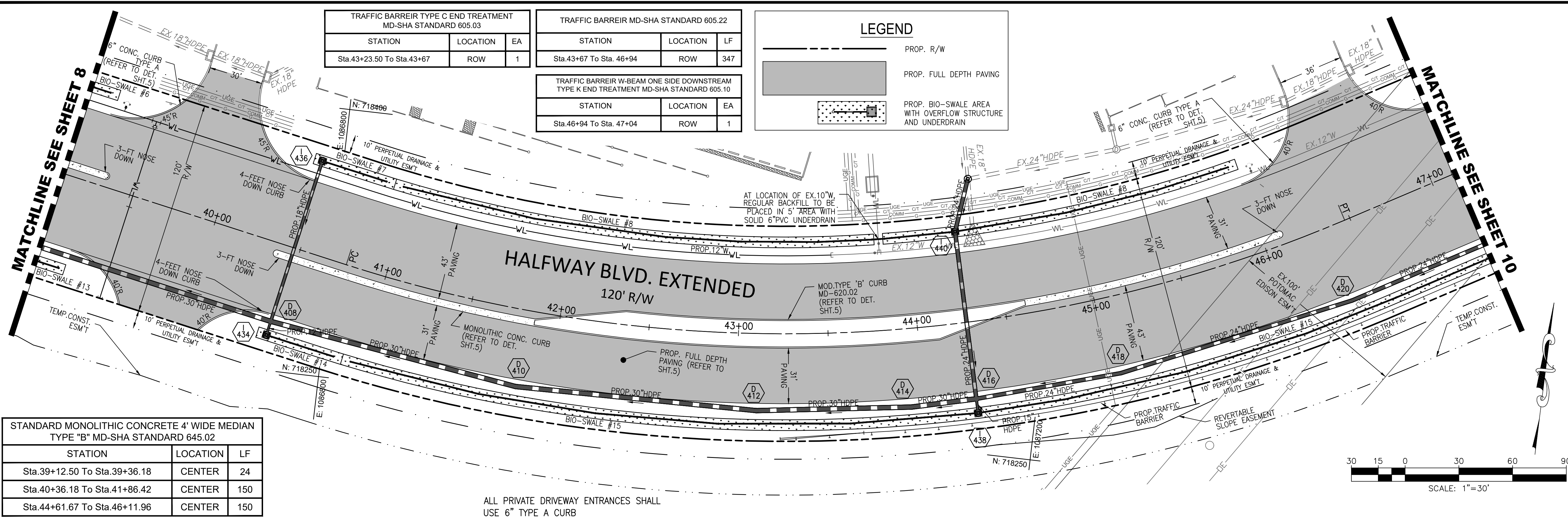
NO. _____ REVISION DESCRIPTION _____ BY _____ DATE _____

SCALE 1" = 30'

SHEET NO. 8

PROJECT NO. 10-273
SHA: WA067ZM1
FAP: APL-3(804)E

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\04 - PP10-273 PP-01.DWG PLOT DATE: 2/26/2024 3:10 PM



HALFWAY BOULEVARD EXTENDED PROFILE

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUJGA
DRAWN BY: KDUJGA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-313-2401

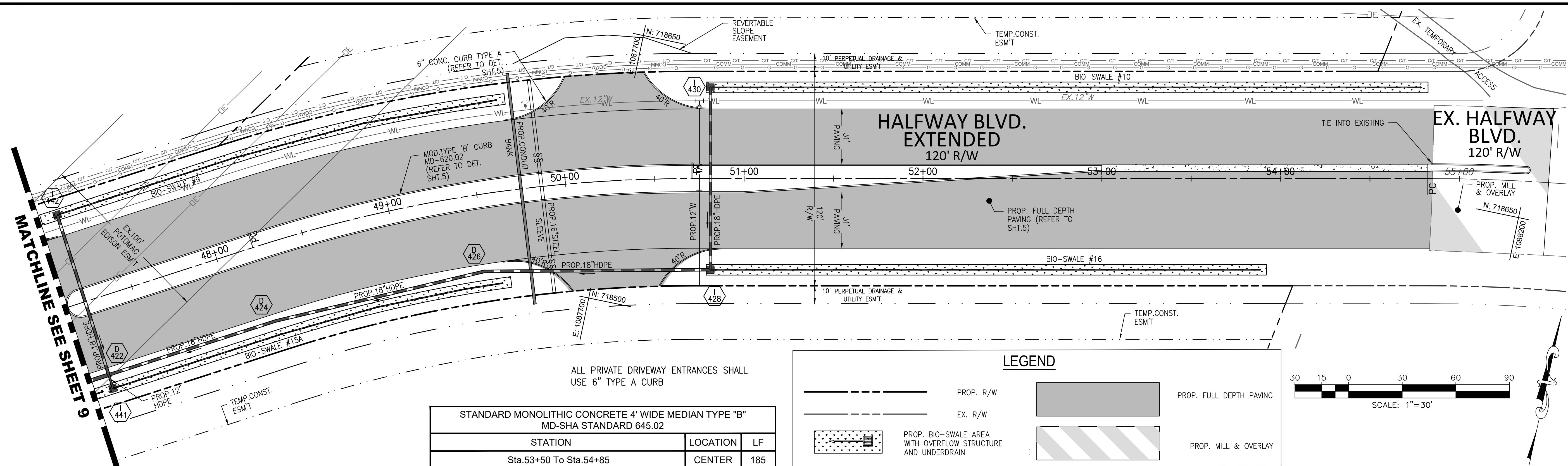
HALFWAY BOULEVARD EXTENDED
ROADWAY PLAN AND PROFILE
STA. 39+12.50 TO STA. 47+12.50

SCALE: 1" = 30'

SHEET NO. 9

PROJECT NO. 10-273
SHA: WA067ZM1
FAP: APL-3(804)E

FILE PATH: C:\USERS\PMOH\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\04 - PP10-273 PP-01.DWG PLOT DATE: 31/10/2024 2:07 PM

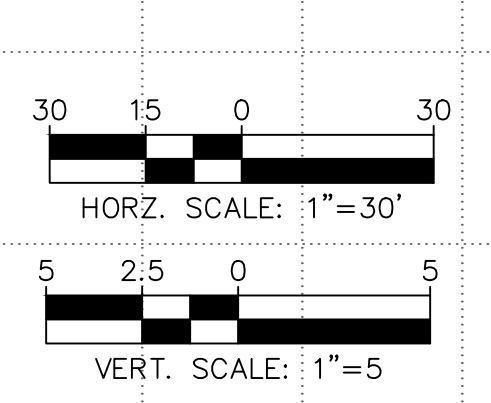
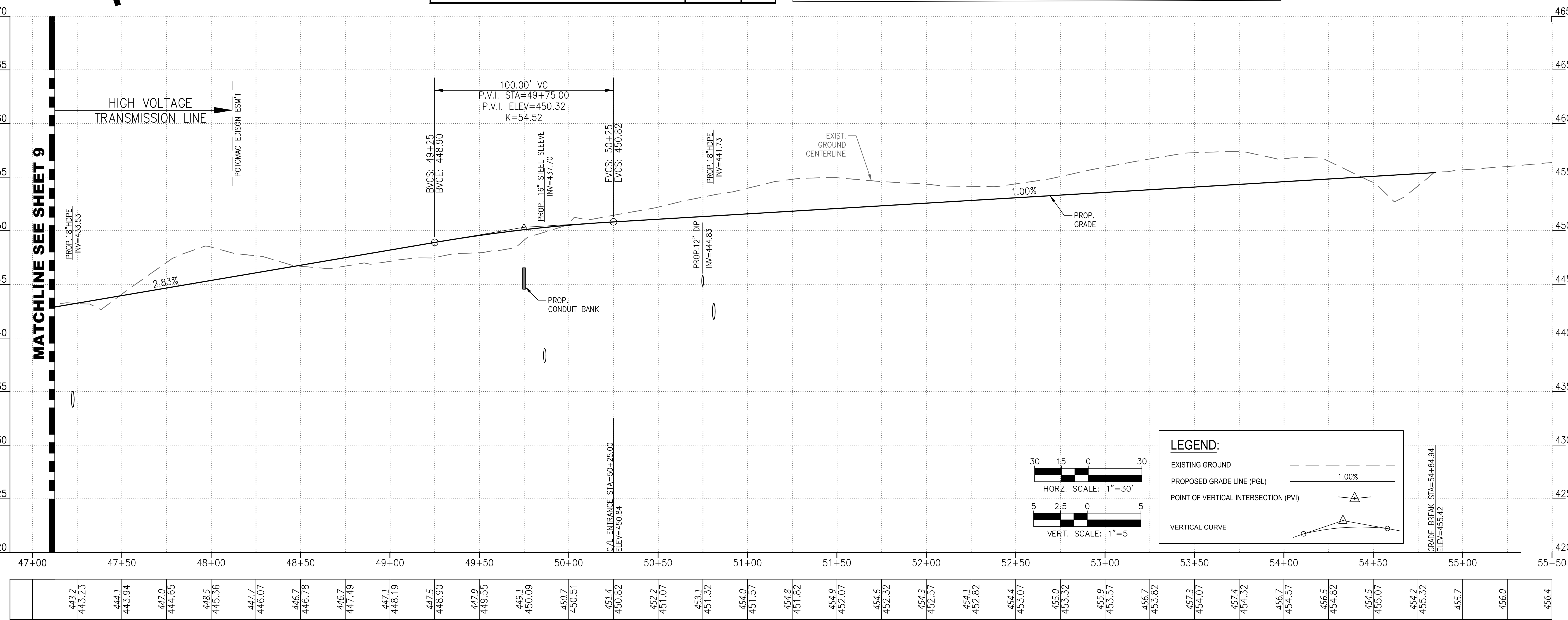
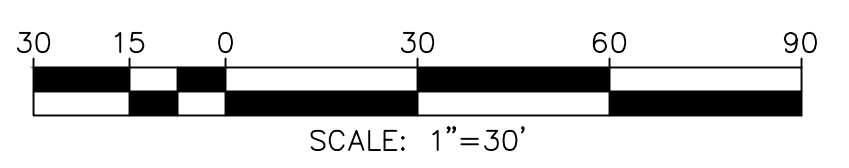


ALL PRIVATE DRIVEWAY ENTRANCES SHALL USE 6" TYPE A CURB

STANDARD MONOLITHIC CONCRETE 4' WIDE MEDIAN TYPE "B" MD-SHA STANDARD 645.02		
STATION	LOCATION	LF
Sta.53+50 To Sta.54+85	CENTER	185

LEGEND

- PROP. R/W
- EX. R/W
- [Pattern] PROP. FULL DEPTH PAVING
- [Pattern] PROP. MILL & OVERLAY
- [Pattern] PROP. BIO-SWALE AREA WITH OVERFLOW STRUCTURE AND UNDERDRAIN



LEGEND:

- EXISTING GROUND
- PROPOSED GRADE LINE (PGL)
- △ POINT OF VERTICAL INTERSECTION (PVI)
- VERTICAL CURVE

HALFWAY BOULEVARD EXTENDED PROFILE

SCALE: HORIZ: 1"=30'
VERT: 1"=5'

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
DRAWN BY: KDUUGA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

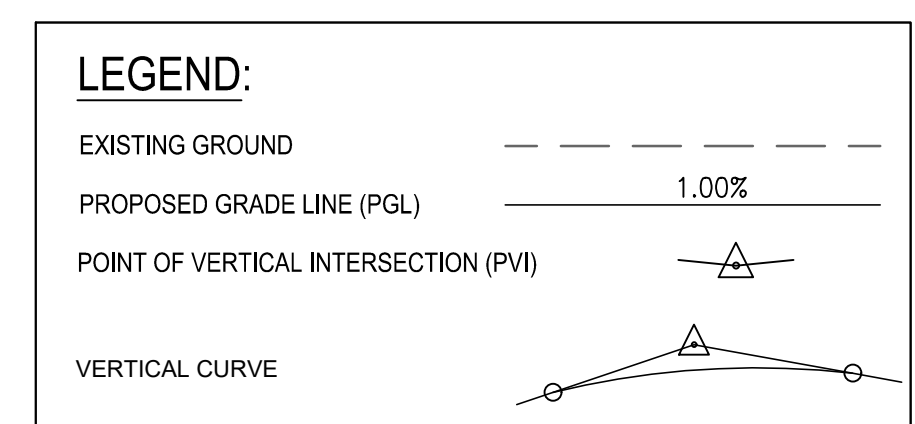
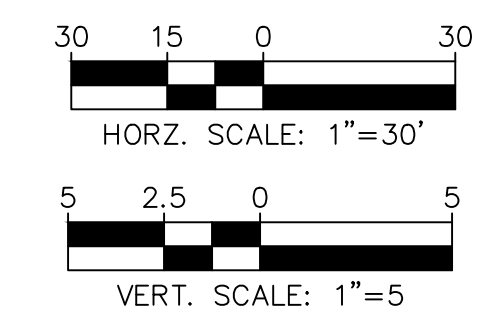
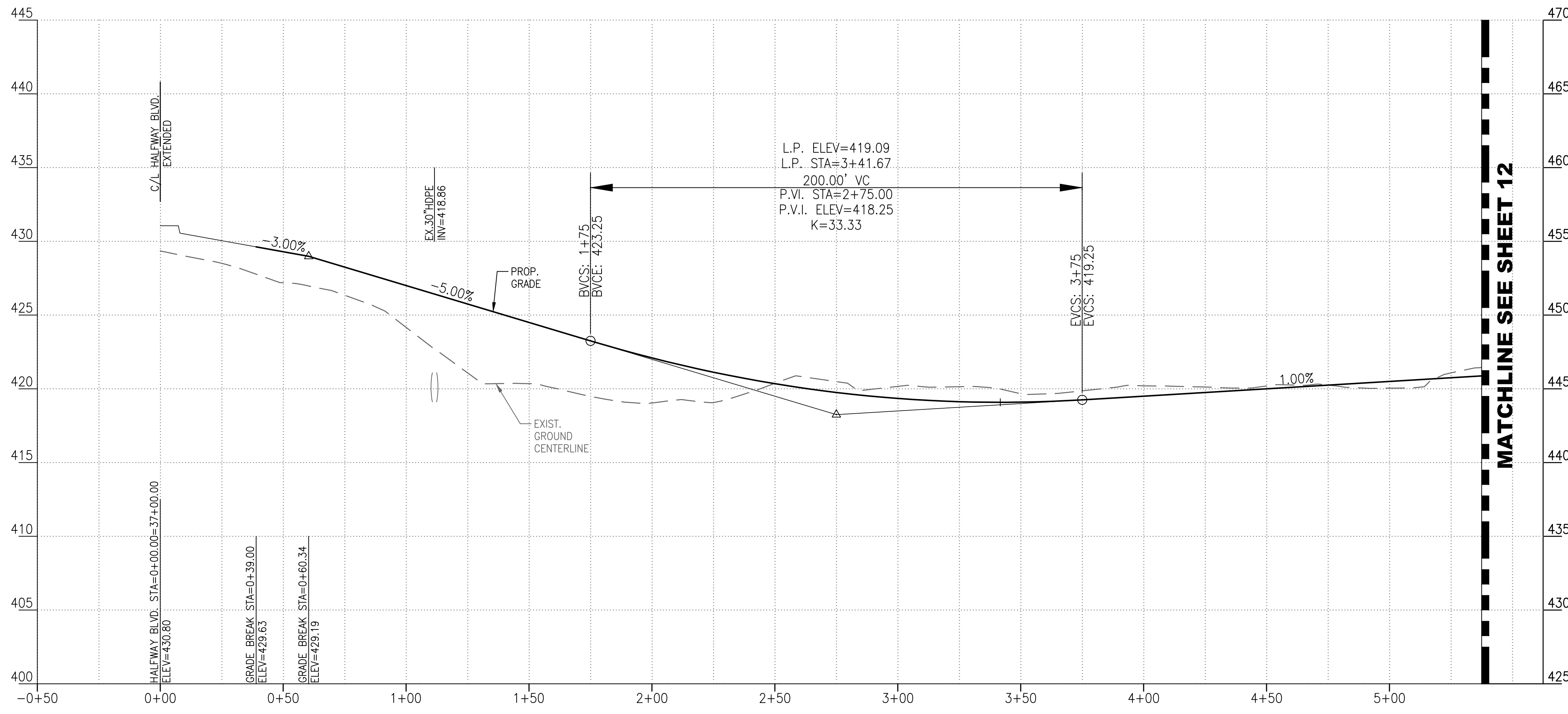
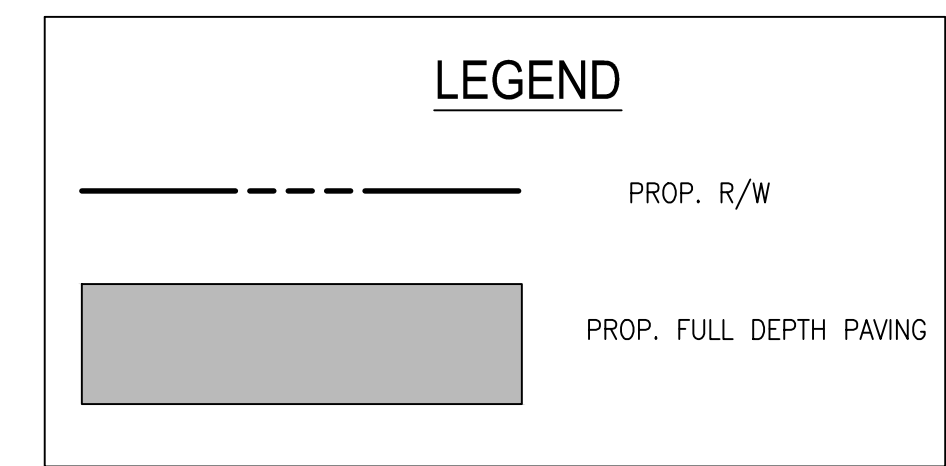
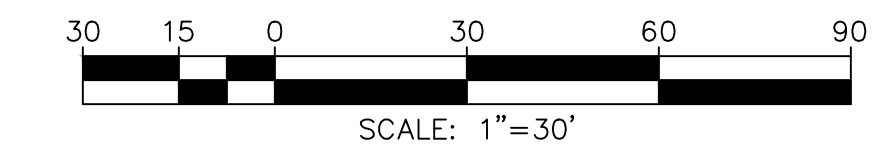
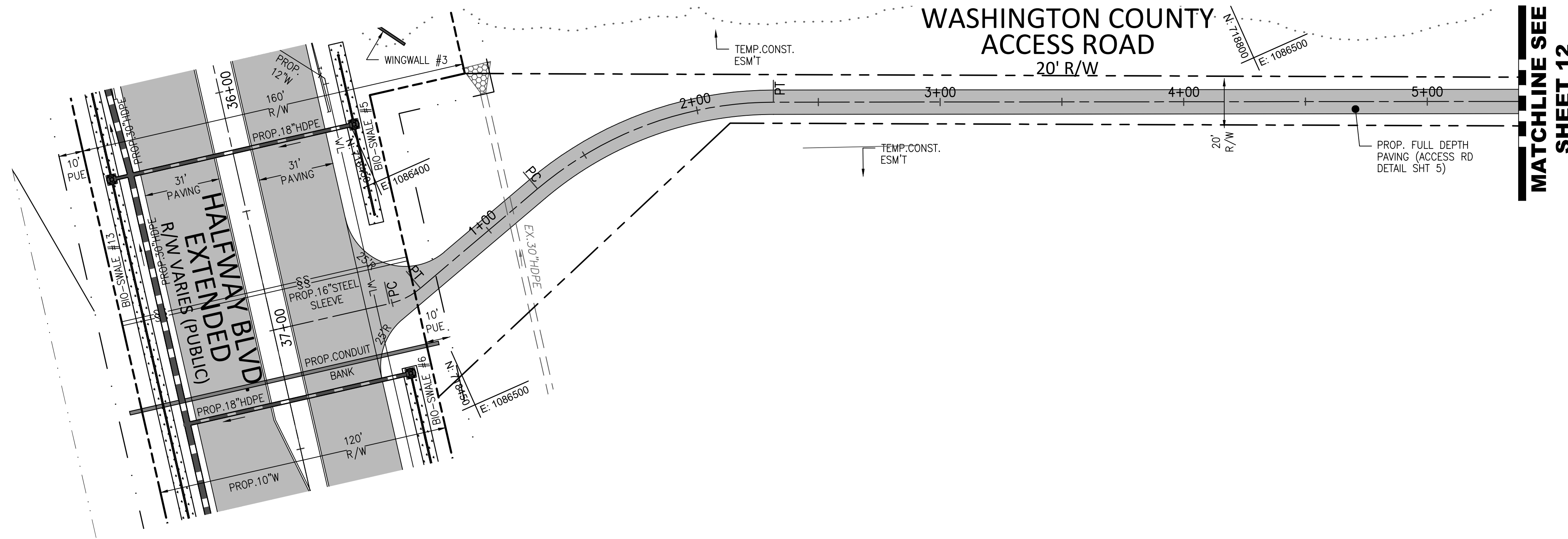
SCALE: 1" = 30'

SHEET NO. 10

PROJECT NO. 10-273
SHA: WA067ZM1
FAP: APL-3(804)E

MATCHLINE SEE SHEET 9

MATCHLINE SEE SHEET 9



429.3	428.5	427.2	426.3	424.2	421.1	420.3	419.5	419.0	419.1	420.4	420.5	420.2	420.1	420.2	420.3	420.0	420.0	421.1
429.3	428.5	429.30	428.25	427.00	425.75	424.50	423.25	422.10	421.13	420.35	419.75	419.55	419.13	419.10	419.25	419.50	419.75	420.75

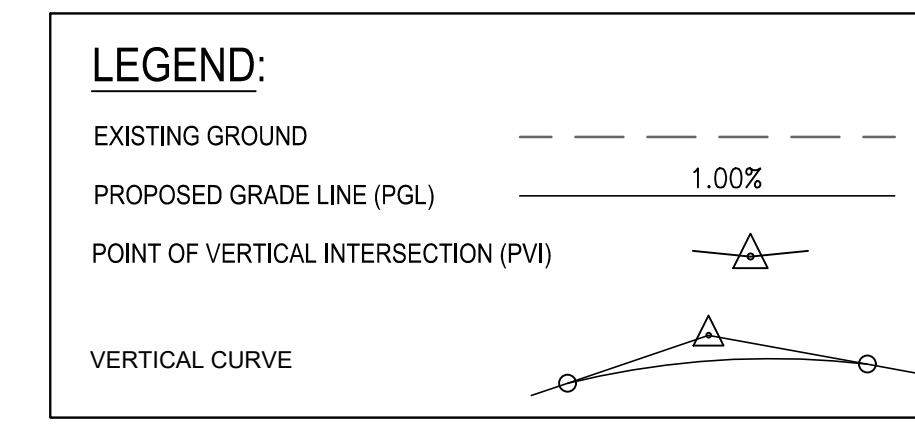
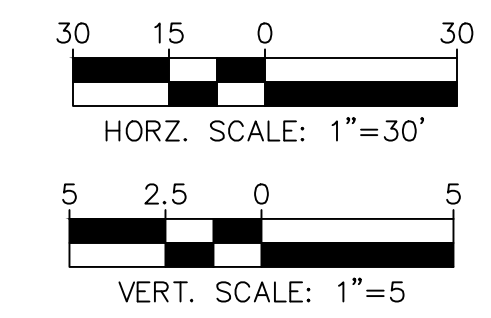
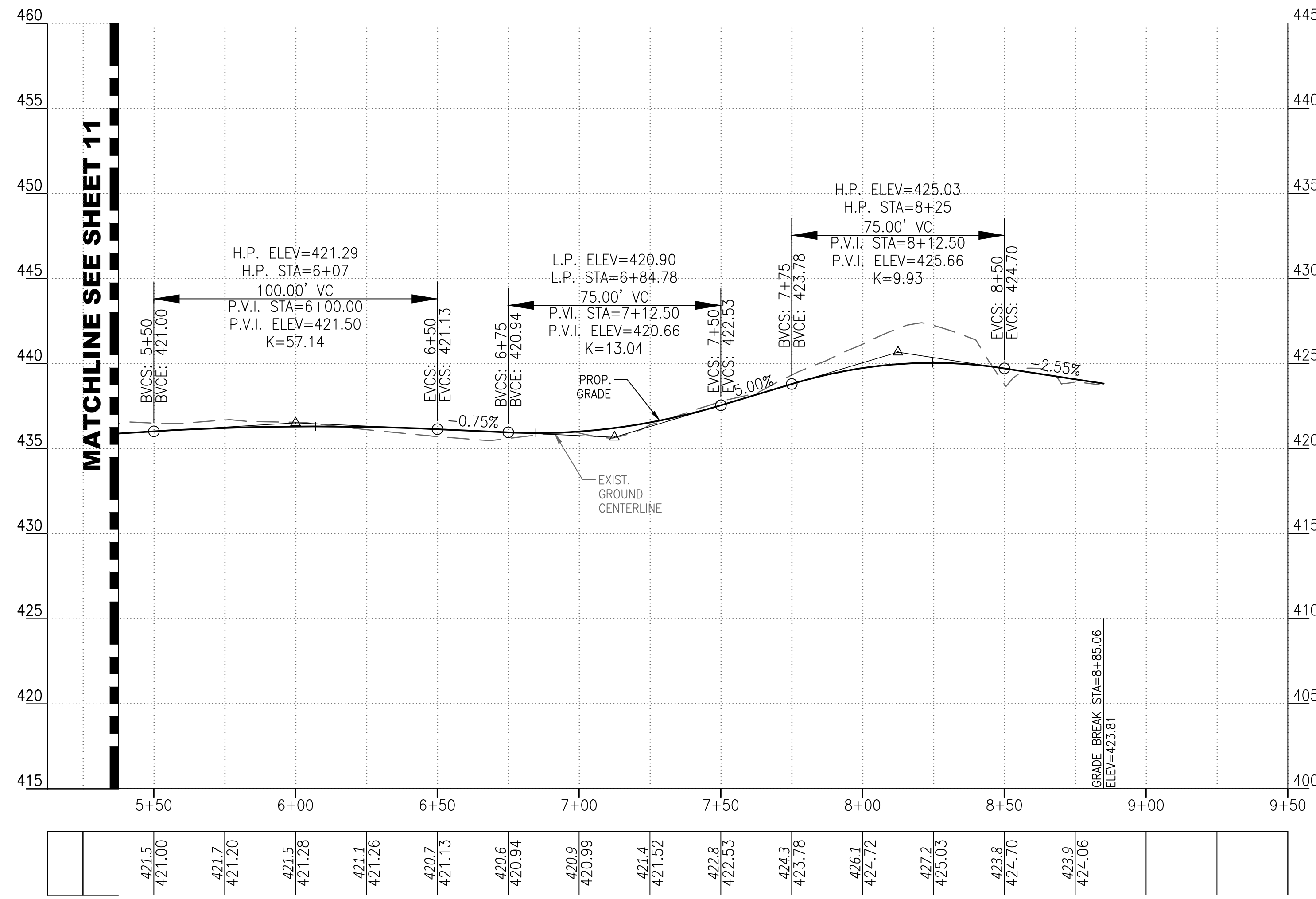
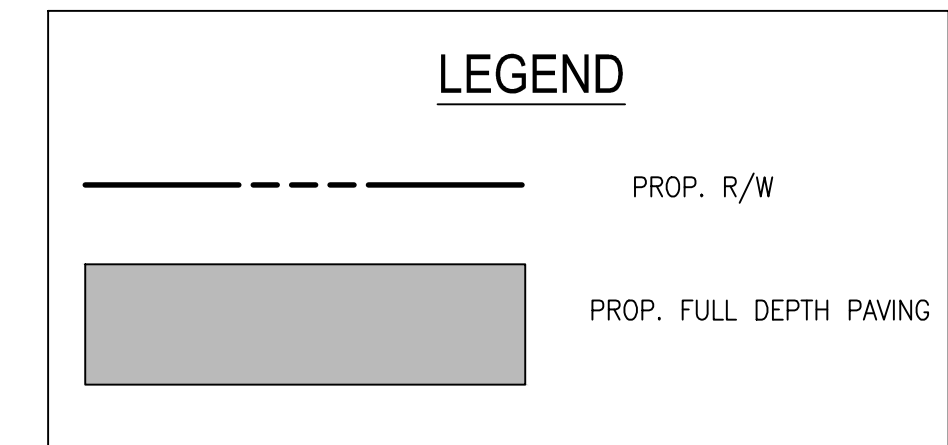
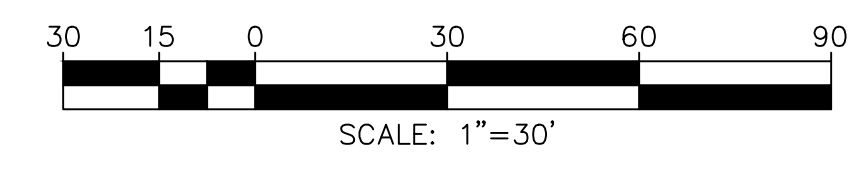
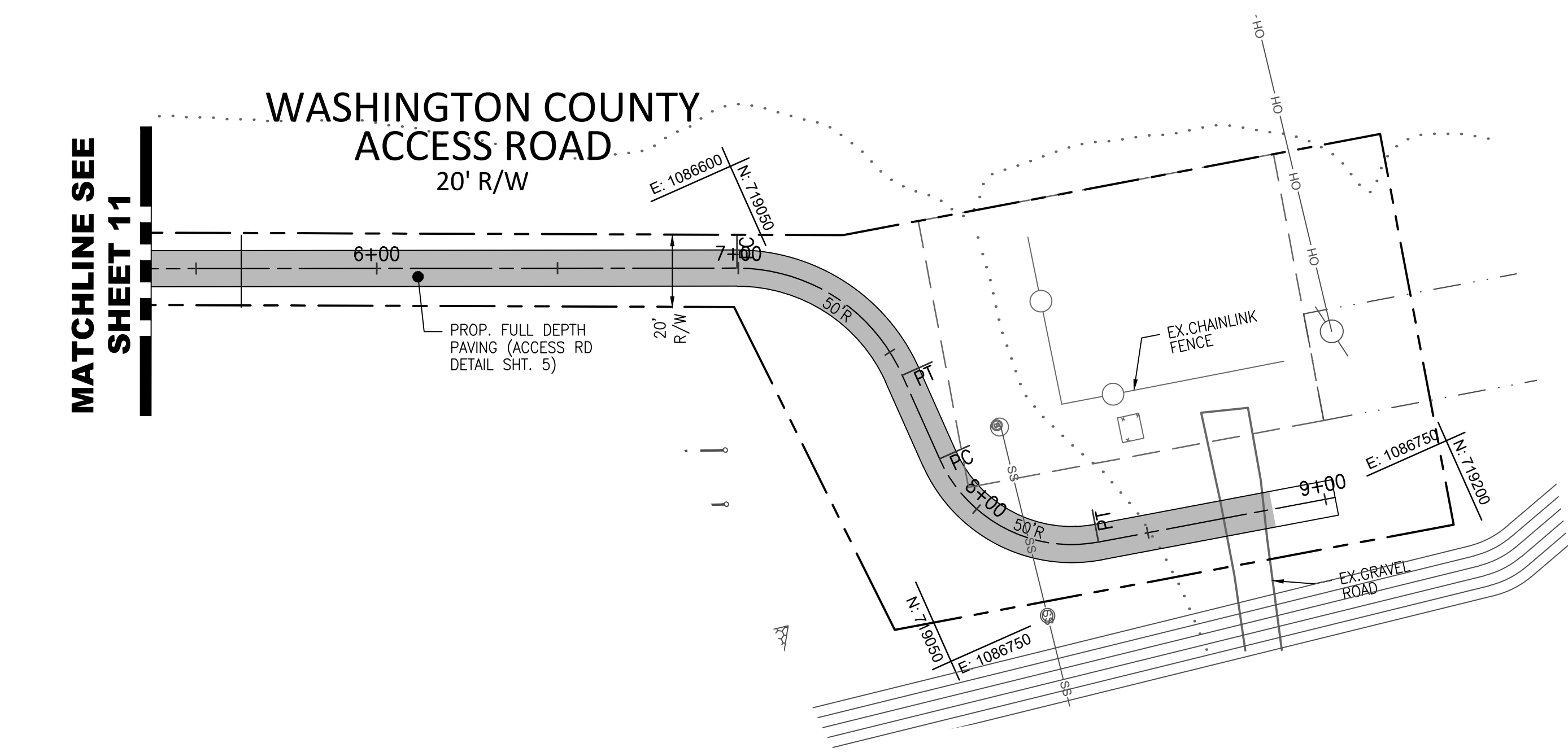
WASHINGTON COUNTY ACCESS ROAD PROFILE
SCALE: HORIZ: 1"=30'
VERT: 1"=5'

DESIGNED BY:	KDUUGA	NO.	
DRAWN BY:	KDUUGA	REVISION DESCRIPTION	
CHECKED BY:	PLM	BY	
DATE:	JAN 2024		

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING
 Washington County Administrative Annex Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-315-2460 Fax: 240-315-2401

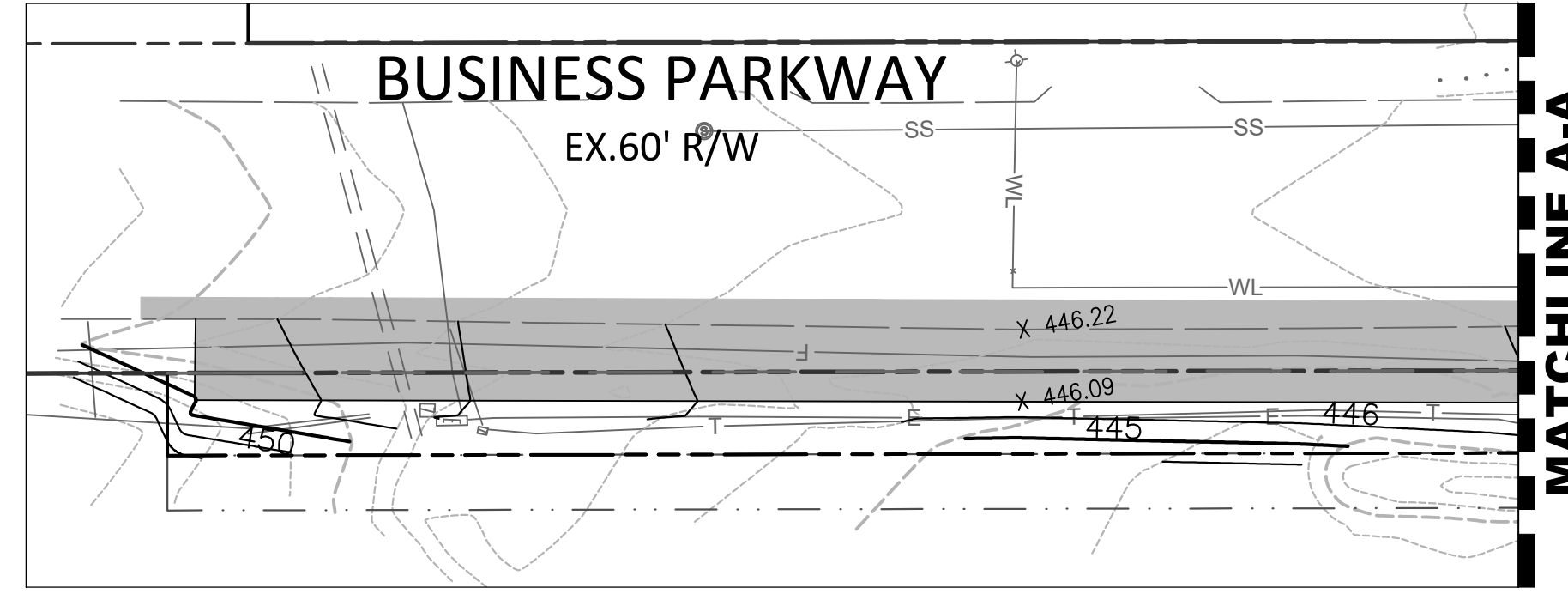
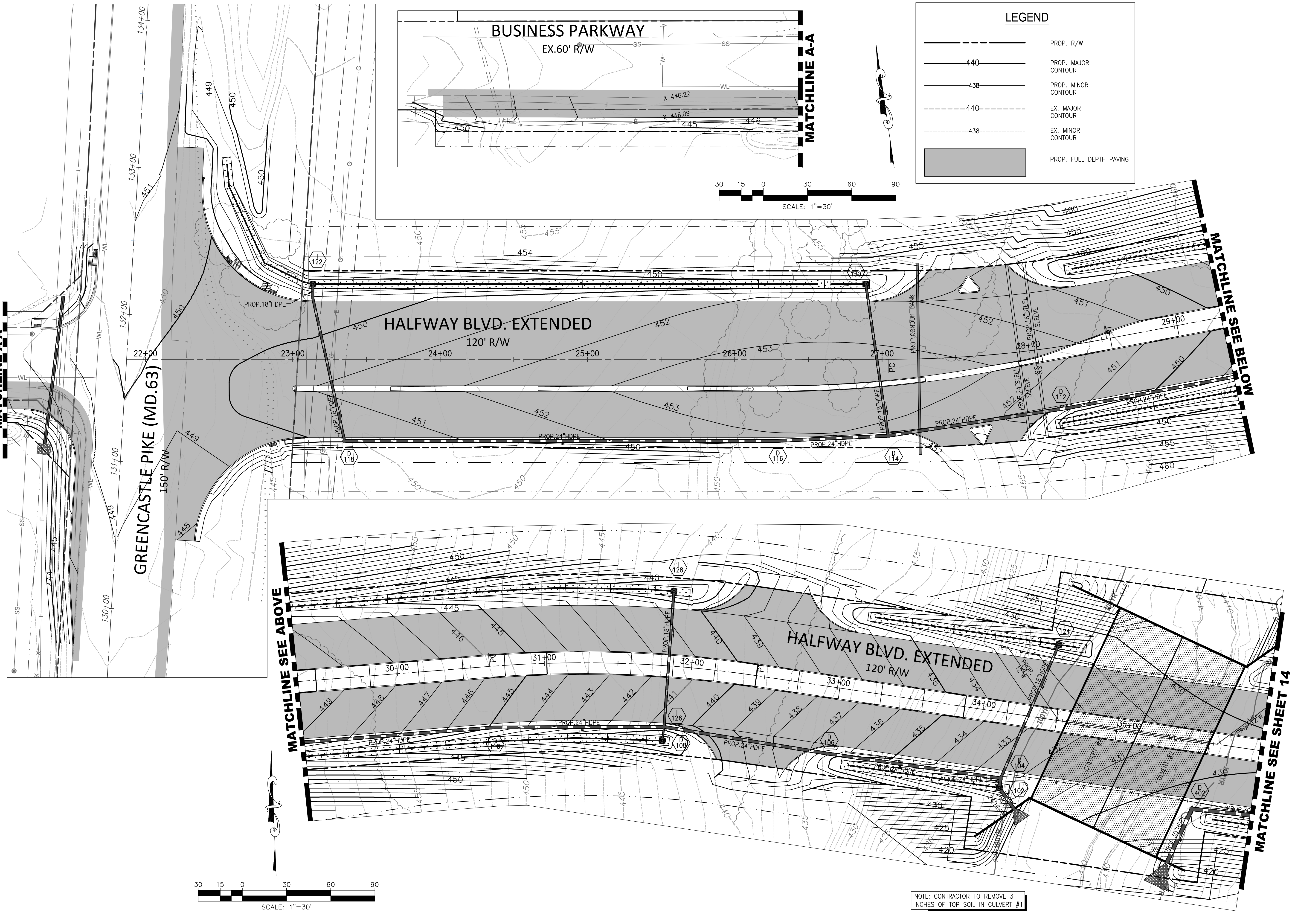
HALFWAY BOULEVARD EXTENDED
ROADWAY PLAN AND PROFILE
STA. 0+00.00 TO STA. 5+37.50

SCALE: 1" = 30'
 SHEET NO. 11
 PROJECT NO. 10-273
 SHA: WA067ZM1
 FAP: APL-3(804)E

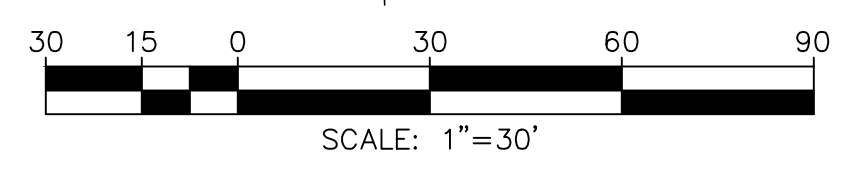
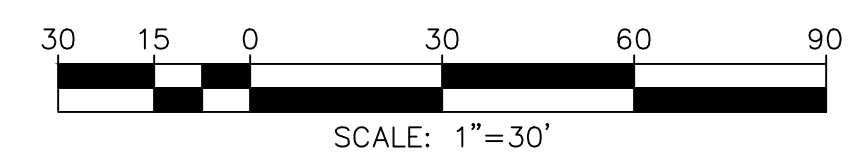


DESIGNED BY: KDUUGA	DRAWN BY: KDUUGA	CHECKED BY: PLM	DATE: JAN 2024
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING			
Washington County Administrative Annex Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401			
HALFWAY BOULEVARD EXTENDED ROADWAY PLAN AND PROFILE STA. 5+37.50 TO STA. 8+85.06			
SCALE 1" = 30'			
SHEET NO. 12			
PROJECT NO. 10-273			
SHA: WA067ZM1 FAP: APL-3(804)E			
NO.	REVISION DESCRIPTION	BY	DATE

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LEGEND	
	PROP. R/W
	PROP. MAJOR CONTOUR
	PROP. MINOR CONTOUR
	EX. MAJOR CONTOUR
	EX. MINOR CONTOUR
	PROP. FULL DEPTH PAVING



NOTE: CONTRACTOR TO REMOVE 3 INCHES OF TOP SOIL IN CULVERT #1

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
 DRAWN BY: KDUUGA
 CHECKED BY: PLM
 DATE: JAN 2024

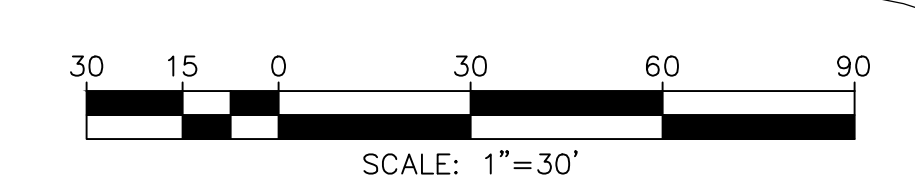
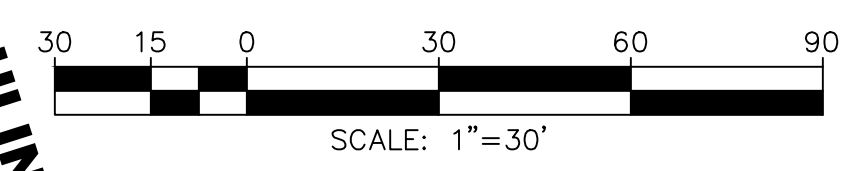
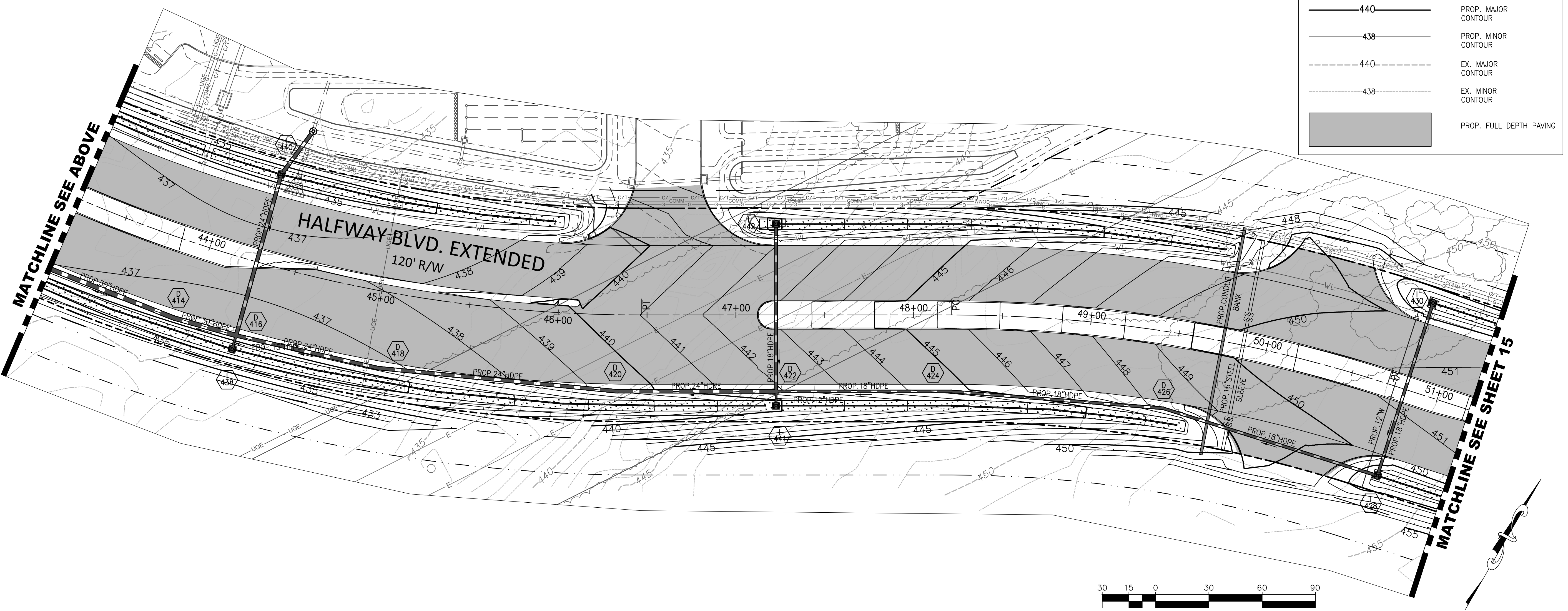
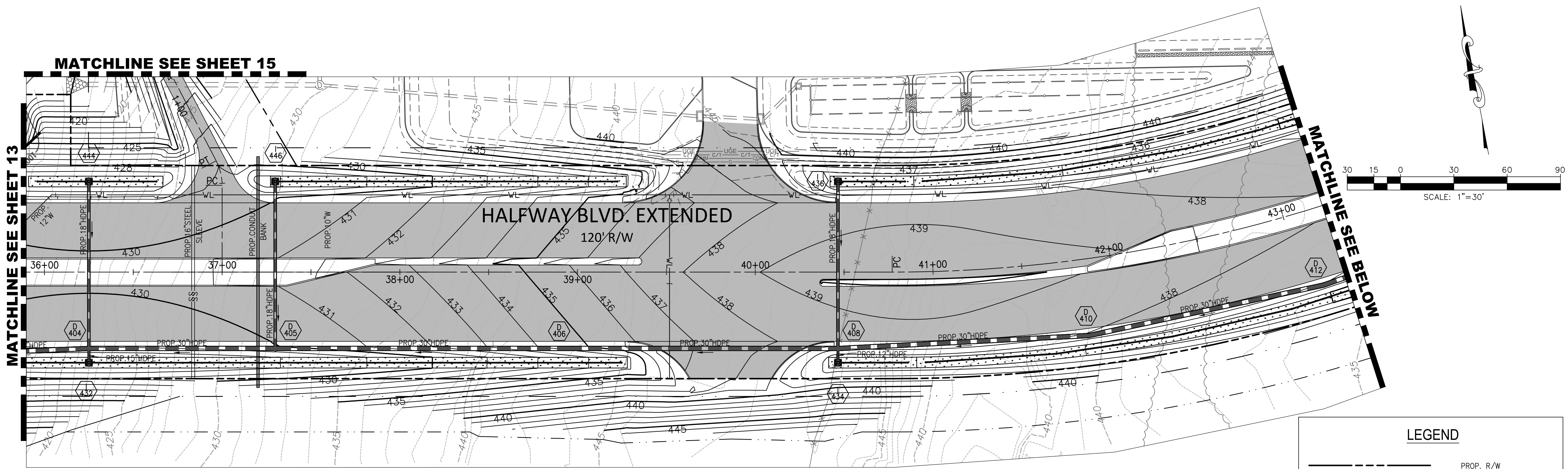
WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

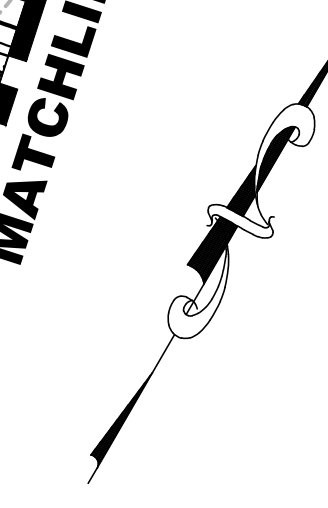
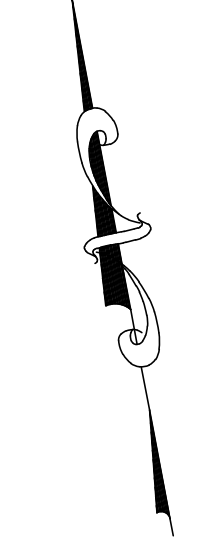
HALFWAY BOULEVARD
 EXTENDED
 GRADING PLAN

SCALE	1" = 30'
SHEET NO.	13
PROJECT NO.	10-273
SHA: WA067ZM1	FAP: APL-3(804)E

FILE PATH: C:\USERS\PMOH\WASHINGTON COUNTY COMMISSIONS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\05 - GR\10-273 GR-01.DWG PLOT DATE: 3/1/2024 1:05 PM



LEGEND	
	PROP. R/W
	PROP. MAJOR CONTOUR
	PROP. MINOR CONTOUR
	EX. MAJOR CONTOUR
	EX. MINOR CONTOUR
	PROP. FULL DEPTH PAVING



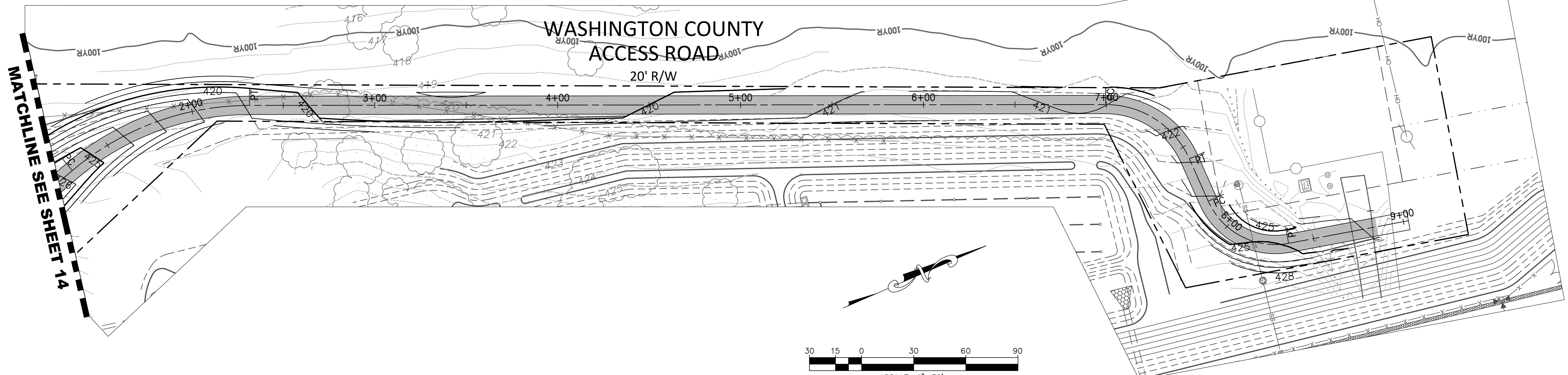
MATCHLINE SEE SHEET 13

MATCHLINE SEE BELOW

MATCHLINE SEE ABOVE

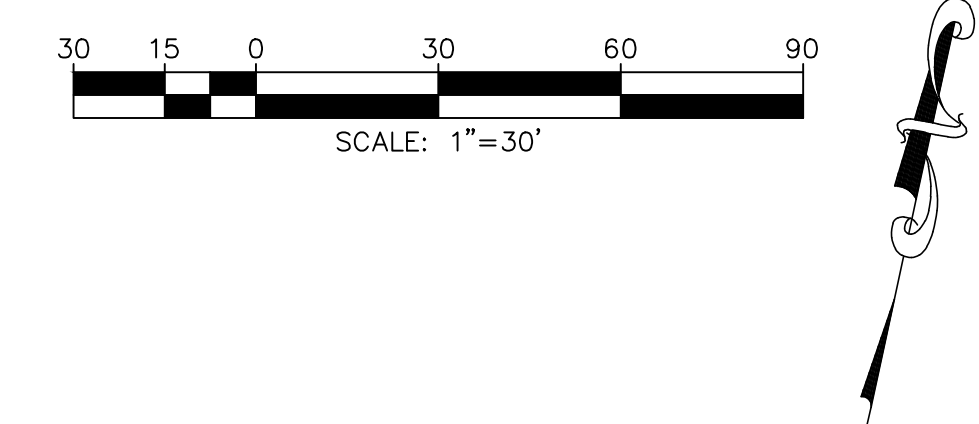
MATCHLINE SEE SHEET 15

DESIGNED BY: KDJUGA	DRAWN BY: KDJUGA	CHECKED BY: PLM	DATE: JAN 2024
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING Washington County Administrative Annex Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-315-2460 Fax: 240-315-2401			
HALFWAY BOULEVARD EXTENDED GRADING PLAN			
SCALE	1" = 30'		
SHEET NO.	14		
PROJECT NO.	10-273		
SHA:	WA067ZM1		
FAP:	APL-3(804)E		
NO.	REVISION DESCRIPTION	BY	DATE



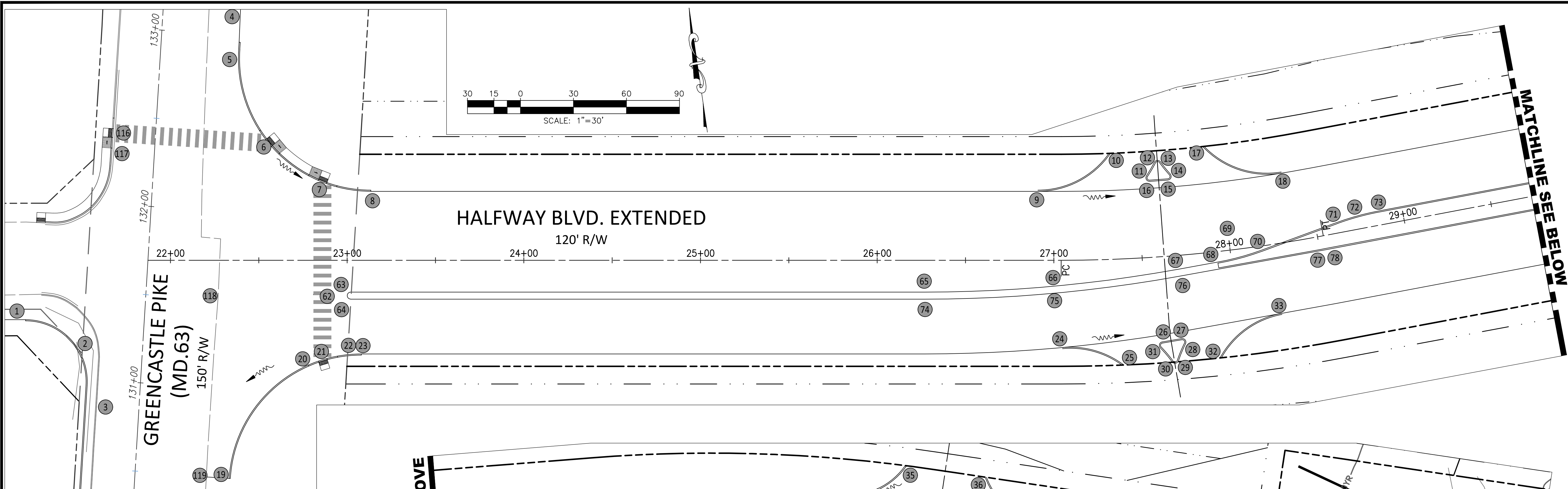
LEGEND

	PROP. R/W
	PROP. MAJOR CONTOUR
	PROP. MINOR CONTOUR
	EX. MAJOR CONTOUR
	EX. MINOR CONTOUR
	PROP. FULL DEPTH PAVING

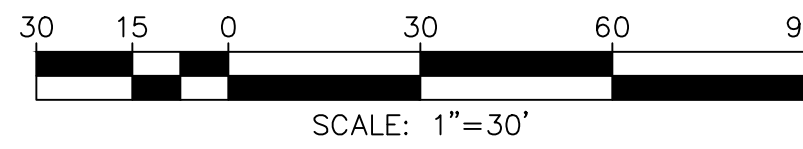


DESIGNED BY: KDUUGA	DRAWN BY: KDUUGCA	CHECKED BY: PLJM	DATE: JAN 2024	
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING				Washington County Administrative Annex, Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401
HALFWAY BOULEVARD EXTENDED GRADING PLAN				SCALE 1" = 30' SHEET NO. 15 PROJECT NO. 10-273 SHA: WA06ZM1 FAP: APL-3(804)E

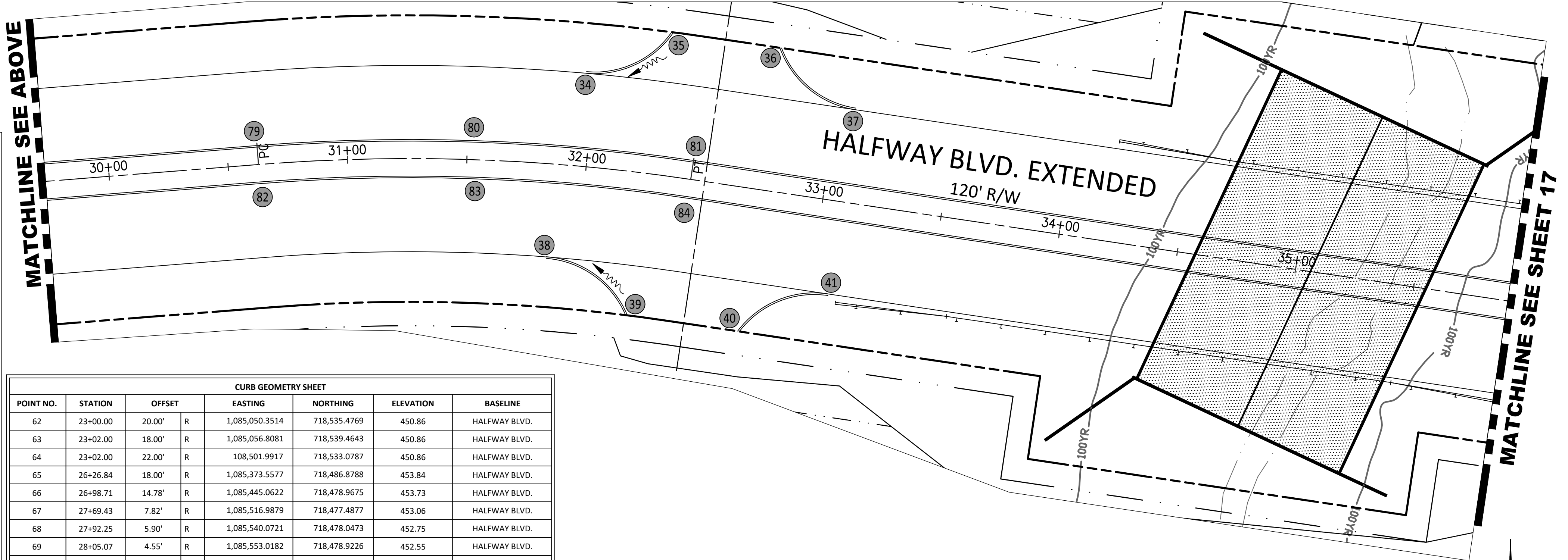
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ALL ELEVATIONS ARE FROM THE BOTTOM OF FACE OF CURB
 MAXIMUM CROSS SLOPE < 2%
 AND MAXIMUM LONGITUDINAL SLOPE < 5% WITHIN CROSSWALK



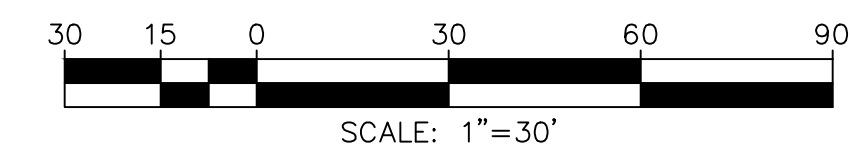
CURB GEOMETRY SHEET						
POINT NO.	STATION	OFFSET	EASTING	NORTHING	ELEVATION	BASELINE
1	131+31.46	71.68'	L	1,084,863.8305	718,550.7133	GREENCASTLE PIKE
2	131+18.82	37.69'	L	1,084,894.3226	718,531.0964	GREENCASTLE PIKE
3	130+85.23	24.06'	L	1,084,900.4509	718,495.3607	GREENCASTLE PIKE
4	133+14.17	41.79'	R	1,085,013.7500	718,704.9200	450.38 GREENCASTLE PIKE
5	132+91.87	44.04'	R	1,085,011.1796	718,682.6568	450.32 GREENCASTLE PIKE
6	22+55.37	66.05'	L	1,085,019.52	718,627.27	449.83 HALFWAY BLVD.
7	22+79.41	47.13'	L	1,085,046.12	718,600.68	449.56 HALFWAY BLVD.
8	23+13.38	39.00'	L	1,085,072.6563	718,591.5880	449.26 HALFWAY BLVD.
9	26+90.92	39.00'	L	1,085,445.6732	718,533.3020	452.14 HALFWAY BLVD.
10	27+34.29	60.00'	L	1,085,489.6049	718,548.2236	452.59 HALFWAY BLVD.
11	27+55.36	46.22'	L	1,085,507.7370	718,532.4743	451.97 HALFWAY BLVD.
12	27+60.70	53.57'	L	1,085,513.3681	718,539.3534	452.04 HALFWAY BLVD.
13	27+64.37	53.57'	L	1,085,516.7779	718,539.0762	451.99 HALFWAY BLVD.
14	27+69.73	46.22'	L	1,085,521.2300	718,531.3683	451.79 HALFWAY BLVD.
15	27+68.05	43.00'	L	1,085,519.4114	718,528.2713	451.74 HALFWAY BLVD.
16	27+57.04	43.00'	L	1,085,509.0282	718,529.1247	451.87 HALFWAY BLVD.
17	27+90.81	60.00'	L	1,085,541.6954	718,543.9422	451.87 HALFWAY BLVD.
18	28+35.73	39.00'	L	1,085,583.4403	718,522.1700	450.81 HALFWAY BLVD.
19	22+33.15	123.44'	R	1,084,968.3100	718,443.4800	447.71 GREENCASTLE PIKE
20	22+78.05	59.24'	R	1,085,022.5900	718,499.9800	449.56 HALFWAY BLVD.
21	22+86.11	56.27'	R	1,085,031.01	718,501.67	449.68 HALFWAY BLVD.
22	23+02.00	53.24'	R	1,085,047.17	718,502.21	449.89 HALFWAY BLVD.
23	23+08.01	53.00'	R	1,085,053.1500	718,501.5200	449.97 HALFWAY BLVD.
24	27+04.72	49.37'	R	1,085,445.7030	718,443.8558	452.78 HALFWAY BLVD.
25	27+37.10	60.00'	R	1,085,478.5631	718,428.6998	452.81 HALFWAY BLVD.
26	27+58.13	48.12'	R	1,085,502.0865	718,438.2642	452.35 HALFWAY BLVD.
27	27+68.67	47.08'	R	1,085,513.3041	718,438.3997	452.29 HALFWAY BLVD.
28	27+70.45	50.11'	R	1,085,514.9657	718,435.2328	452.34 HALFWAY BLVD.
29	27+65.92	59.56'	R	1,085,509.4351	718,426.1790	452.54 HALFWAY BLVD.
30	27+62.62	59.84'	R	1,085,505.8732	718,426.1832	452.57 HALFWAY BLVD.
31	27+56.87	51.41'	R	1,085,500.4676	718,435.1049	452.45 HALFWAY BLVD.
32	27+87.87	60.00'	R	1,085,532.9457	718,424.2258	452.25 HALFWAY BLVD.
33	28+23.57	39.37'	R	1,085,571.4219	718,443.7835	451.22 HALFWAY BLVD.
34	31+96.66	39.00'	L	1,085,949.5692	718,521.7855	440.24 HALFWAY BLVD.
35	32+29.05	60.00'	L	1,085,986.8080	718,537.1769	440.56 HALFWAY BLVD.
36	32+72.80	60.00'	L	1,086,030.8688	718,528.6192	437.79 HALFWAY BLVD.
37	33+08.00	39.00'	L	1,086,061.3258	718,501.1898	436.35 HALFWAY BLVD.
38	31+86.24	39.00'	R	1,085,929.1763	718,445.7833	440.61 HALFWAY BLVD.
39	32+24.80	60.00'	R	1,085,961.8775	718,419.7186	440.19 HALFWAY BLVD.
40	32+72.80	60.00'	R	1,086,007.5899	718,410.8989	437.76 HALFWAY BLVD.
41	33+08.00	39.00'	R	1,086,046.1945	718,424.6715	436.35 HALFWAY BLVD.



CURB GEOMETRY SHEET						
POINT NO.	STATION	OFFSET	EASTING	NORTHING	ELEVATION	BASELINE
62	23+00.00	20.00'	R	1,085,050.3514	718,535.4769	450.86 HALFWAY BLVD.
63	23+02.00	18.00'	R	1,085,056.8081	718,539.4643	450.86 HALFWAY BLVD.
64	23+02.00	22.00'	R	1,085,019.917	718,533.0787	450.86 HALFWAY BLVD.
65	26+26.84	18.00'	R	1,085,373.5577	718,486.8788	453.84 HALFWAY BLVD.
66	26+98.71	14.78'	R	1,085,445.0622	718,478.9675	453.73 HALFWAY BLVD.
67	27+69.43	7.82'	R	1,085,516.9879	718,477.4877	453.06 HALFWAY BLVD.
68	27+92.25	5.90'	R	1,085,540.0721	718,478.0473	452.75 HALFWAY BLVD.
69	28+05.07	4.55'	R	1,085,553.0182	718,478.9226	452.55 HALFWAY BLVD.
70	28+17.79	2.29'	R	1,085,565.8403	718,480.9134	452.31 HALFWAY BLVD.
71	28+62.17	5.94'	L	1,085,610.0458	718,489.7501	451.35 HALFWAY BLVD.
72	28+74.50	7.48'	L	1,085,622.3268	718,491.6798	451.08 HALFWAY BLVD.
73	28+86.92	8.00'	L	1,085,634.7254	718,492.5859	450.82 HALFWAY BLVD.
74	26+26.84	22.00'	R	1,085,372.9401	718,482.9268	453.84 HALFWAY BLVD.
75	26+98.96	18.77'	R	1,085,444.6994	718,474.9827	453.73 HALFWAY BLVD.
76	27+69.62	11.82'	R	1,085,516.8814	718,473.4840	453.06 HALFWAY BLVD.
77	28+49.99	8.00'	R	1,085,598.2867	718,475.4369	451.53 HALFWAY BLVD.
78	28+53.35	8.00'	R	1,085,601.6772	718,475.5366	451.46 HALFWAY BLVD.
79	30+62.72	8.00'	L	1,085,810.4396	718,498.1223	445.86 HALFWAY BLVD.
80	31+53.41	8.00'	L	1,085,901.9592	718,495.8171	442.69 HALFWAY BLVD.
81	32+44.10	8.00'	L	1,085,992.6306	718,483.1738	439.51 HALFWAY BLVD.
82	30+62.72	8.00'	R	1,085,810.9435	718,482.1303	445.86 HALFWAY BLVD.
83	31+53.41	8.00'	R	1,085,900.6508	718,479.8706	442.69 HALFWAY BLVD.
84	32+44.10	8.00'	R	1,085,989.5267	718,467.4778	439.51 HALFWAY BLVD.

CURB GEOMETRY SHEET						
POINT NO.	STATION	OFFSET	EASTING	NORTHING	ELEVATION	BASELINE
116	132+40.03	23.66'	L	1,084,933.96	718,646.50	450.15 GREENCASTLE PIKE
117	132+31.14	23.45'	L	1,084,932.26	718,637.77	450.11 GREENCASTLE PIKE

CURB GEOMETRY SHEET						
POINT NO.	STATION	OFFSET	EASTING	NORTHING	ELEVATION	BASELINE
118	22+23.27	20.00'	R	1,084,974.52	718,547.21	449.32 HALFWAY BLVD
119	22+16.80	122.44'	R	1,084,952.31	718,446.99	448.11 HALFWAY BLVD



DESIGNED BY:	KDUUGA	NO.	
DRAWN BY:	KDUUGA	REVISION DESCRIPTION	
CHECKED BY:	PLM	BY	
DATE:	JAN 2024		

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-315-2460 Fax: 240-315-2401

WASHINGTON COUNTY
 DIVISION OF ENGINEERING

HALFWAY BOULEVARD
 EXTENDED

CURB GEOMETRY ELEVATIONS

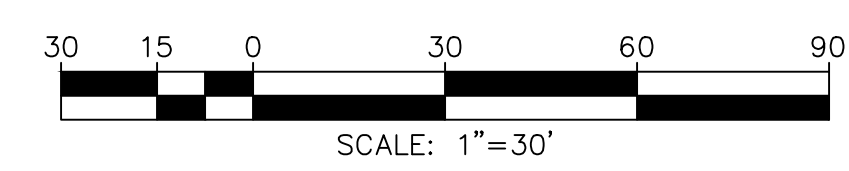
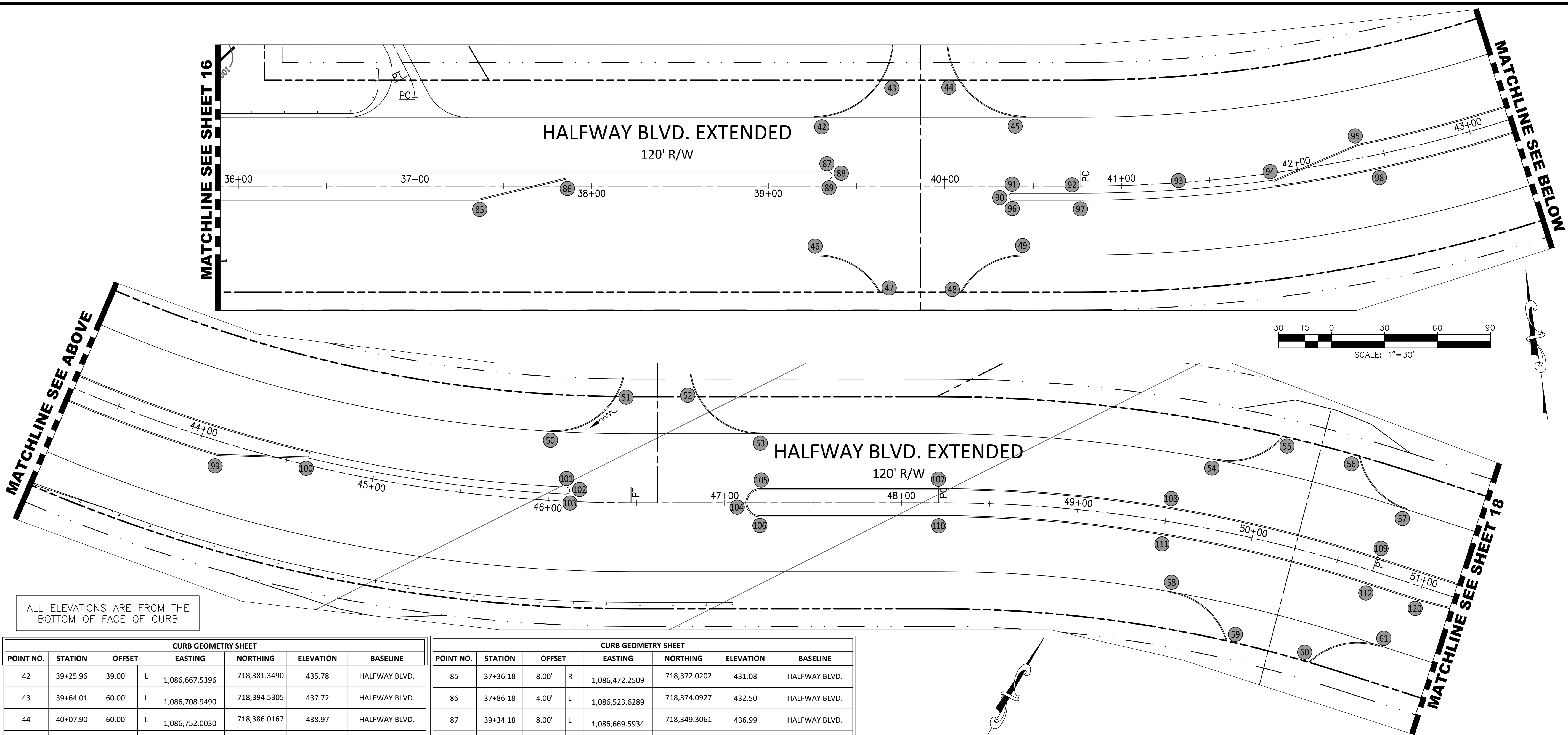
SCALE
 1" = 30'

SHEET NO.
 16

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E

FILE PATH: C:\USERS\PMOH\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION06 - CE110-273 CE-01.DWG PLOT DATE: 3/5/2024 11:34 AM

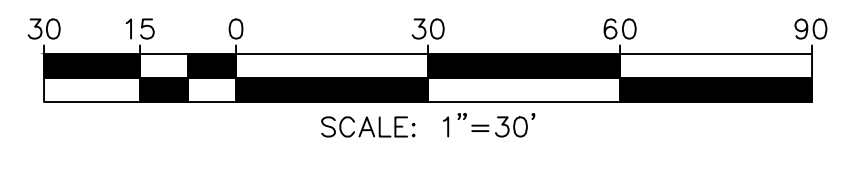


ALL ELEVATIONS ARE FROM THE BOTTOM OF FACE OF CURB

CURB GEOMETRY SHEET							
POINT NO.	STATION	OFFSET		EASTING	NORTHING	ELEVATION	BASELINE
42	39+25.96	39.00'	L	1,086,667.5396	718,381.3490	435.78	HALFWAY BLVD.
43	39+64.01	60.00'	L	1,086,708.9490	718,394.5305	437.72	HALFWAY BLVD.
44	40+07.90	60.00'	L	1,086,752.0030	718,386.0167	438.97	HALFWAY BLVD.
45	40+45.96	39.00'	L	1,086,785.2670	718,358.0322	438.43	HALFWAY BLVD.
46	39+28.18	39.00'	R	1,086,654.5898	718,304.3629	435.86	HALFWAY BLVD.
47	39+63.38	60.00'	R	1,086,685.0467	718,276.9334	437.17	HALFWAY BLVD.
48	40+08.98	60.00'	R	1,086,729.7816	718,268.0872	438.61	HALFWAY BLVD.
49	40+44.18	39.00'	R	1,086,768.3862	718,281.8599	438.41	HALFWAY BLVD.
50	45+99.22	39.00'	L	1,087,299.5179	718,415.8309	438.55	HALFWAY BLVD.
51	46+37.78	60.00'	L	1,087,321.8445	718,451.1899	440.45	HALFWAY BLVD.
52	46+84.76	60.00'	L	1,087,362.1090	718,474.0386	442.39	HALFWAY BLVD.
53	47+19.96	39.00'	L	1,087,403.0880	718,473.1896	441.92	HALFWAY BLVD.
54	49+72.17	39.00'	L	1,087,635.2577	718,588.1200	448.84	HALFWAY BLVD.
55	50+04.56	60.00'	L	1,087,661.6594	718,618.5597	449.79	HALFWAY BLVD.
56	50+45.45	60.00'	L	1,087,704.1029	718,629.9610	450.48	HALFWAY BLVD.
57	50+78.51	39.00'	L	1,087,742.5226	718,616.9476	450.19	HALFWAY BLVD.
58	49+59.46	39.00'	R	1,087,649.0100	718,510.2858	448.60	HALFWAY BLVD.
59	49+99.13	60.00'	R	1,087,690.9272	718,502.0575	449.68	HALFWAY BLVD.
60	50+50.74	60.00'	R	1,087,737.0248	718,514.4448	450.57	HALFWAY BLVD.
61	50+87.57	39.00'	R	1,087,767.2824	718,542.4291	450.28	HALFWAY BLVD.

CURB GEOMETRY SHEET							
POINT NO.	STATION	OFFSET		EASTING	NORTHING	ELEVATION	BASELINE
85	37+36.18	8.00'	R	1,086,472.2509	718,372.0202	431.08	HALFWAY BLVD.
86	37+86.18	4.00'	L	1,086,523.6289	718,374.0927	432.50	HALFWAY BLVD.
87	39+34.18	8.00'	L	1,086,669.5934	718,349.3061	436.99	HALFWAY BLVD.
88	39+36.18	6.00'	L	1,086,671.1674	718,346.9561	437.24	HALFWAY BLVD.
89	39+34.18	4.00'	L	1,086,668.8174	718,345.3820	437.35	HALFWAY BLVD.
90	40+36.18	6.00'	R	1,086,766.9398	718,315.7849	439.46	HALFWAY BLVD.
91	40+38.18	8.00'	R	1,086,768.5139	718,313.4349	439.28	HALFWAY BLVD.
92	40+77.00	4.00'	R	1,086,807.3786	718,309.8270	439.91	HALFWAY BLVD.
93	41+31.67	4.00'	R	1,086,861.5944	718,301.0185	439.74	HALFWAY BLVD.
94	41+86.33	4.00'	R	1,086,916.2850	718,295.9322	439.33	HALFWAY BLVD.
95	42+36.34	8.00'	L	1,086,966.4690	718,306.5602	438.60	HALFWAY BLVD.
96	40+38.18	8.00'	R	1,086,768.5139	718,313.4349	439.28	HALFWAY BLVD.
97	40+77.00	8.00'	R	1,086,806.6018	718,305.9031	439.55	HALFWAY BLVD.
98	42+44.36	8.00'	R	1,086,974.6376	718,290.6325	438.53	HALFWAY BLVD.
99	44+11.73	8.00'	R	1,087,142.1811	718,310.5927	437.38	HALFWAY BLVD.
100	44+61.74	4.00'	L	1,087,187.6739	718,334.8158	437.80	HALFWAY BLVD.
101	46+09.94	8.00'	L	1,087,322.6964	718,392.7659	439.75	HALFWAY BLVD.
102	46+11.96	6.00'	L	1,087,325.3879	718,391.8987	440.22	HALFWAY BLVD.
103	46+09.95	4.00'	L	1,087,324.5194	718,389.2077	440.11	HALFWAY BLVD.
104	47+11.96	.00'	-	1,087,415.4180	718,435.3350	442.87	HALFWAY BLVD.

CURB GEOMETRY SHEET							
POINT NO.	STATION	OFFSET		EASTING	NORTHING	ELEVATION	BASELINE
105	47+19.96	8.00'	L	1,087,418.4160	718,446.2442	442.85	HALFWAY BLVD.
106	47+19.96	8.00'	R	1,087,426.3272	718,432.3369	442.85	HALFWAY BLVD.
107	48+21.18	8.00'	L	1,087,506.3991	718,496.2937	445.72	HALFWAY BLVD.
108	49+46.00	8.00'	L	1,087,620.3813	718,549.8422	449.22	HALFWAY BLVD.
109	50+70.81	8.00'	L	1,087,741.2998	718,585.0291	451.04	HALFWAY BLVD.
110	48+21.18	8.00'	R	1,087,514.3103	718,482.3864	445.72	HALFWAY BLVD.
111	49+46.00	8.00'	R	1,087,626.0355	718,534.8745	449.22	HALFWAY BLVD.
112	50+70.81	8.00'	R	1,087,744.5595	718,569.3646	442.69	HALFWAY BLVD.
120	51+00.00	8.00'	R	1,087,773.1358	718,575.3108	451.33	HALFWAY BLVD.



DESIGNED BY:	KDUJGA	DATE:	JAN 2024
DRAWN BY:	KDUJGA	CHECKED BY:	PJM
NO.		REVISION DESCRIPTION	
BY			
DATE			

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

SCALE
1" = 30'

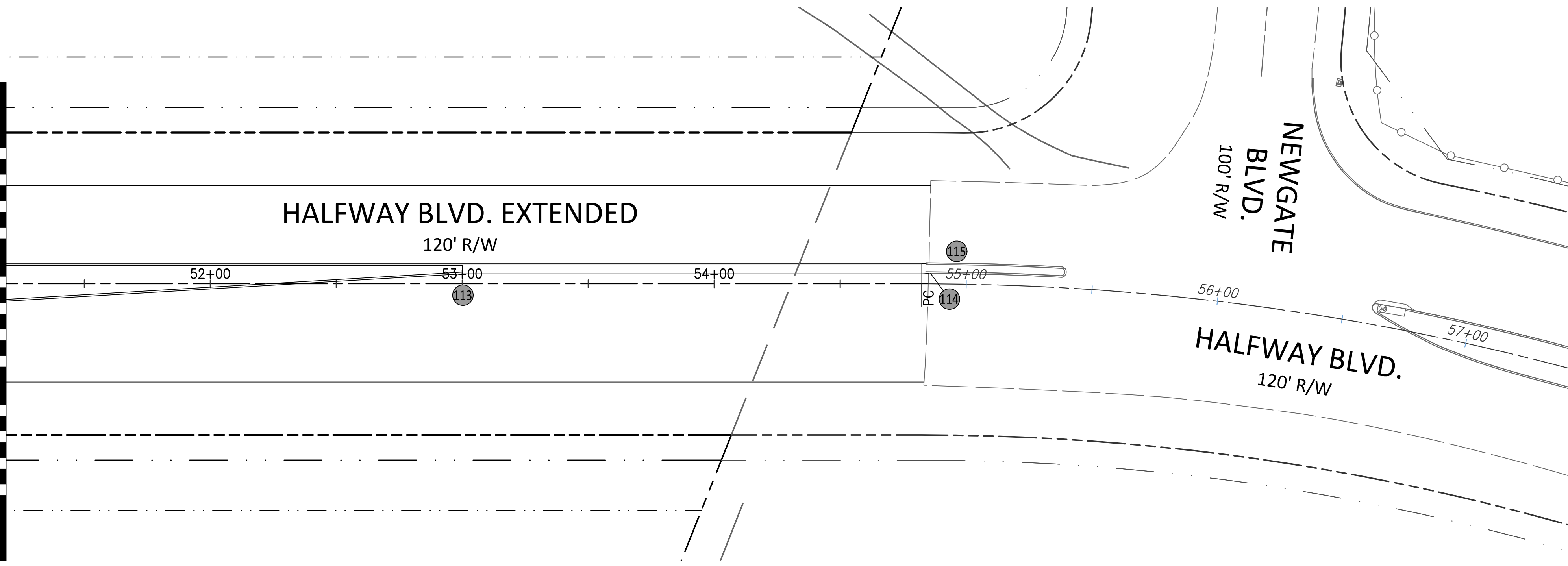
SHEET NO.
17

PROJECT NO.
10-273

SHA: WA06ZM1
FAP: APL-3(804)E

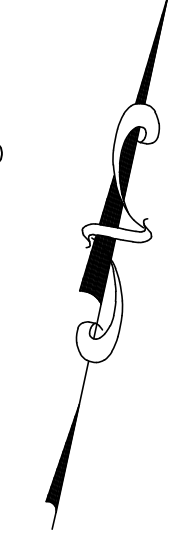
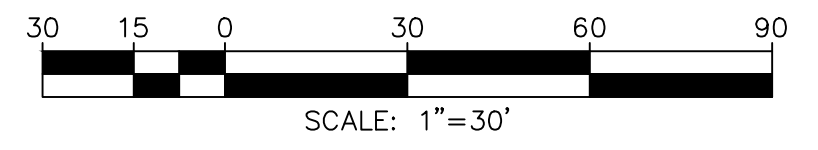
HALFWAY BOULEVARD EXTENDED
CURB GEOMETRY ELEVATIONS

MATCHLINE SEE SHEET 17



ALL ELEVATIONS ARE FROM THE
BOTTOM OF FACE OF CURB

CURB GEOMETRY SHEET							
POINT NO.	STATION	OFFSET		EASTING	NORTHING	ELEVATION	BASELINE
113	53+00.00	4.00'	L	1,087,966.4971	718,627.8026	453.69	HALFWAY BLVD.
114	54+85.87	4.13'	L	1,088,148.4588	718,665.8022	455.53	HALFWAY BLVD.
115	54+94.84	8.28'	L	1,088,156.4895	718,671.6363	455.69	HALFWAY BLVD.



DESIGNED BY:	NO.	REVISION DESCRIPTION	BY	DATE
KDU/GCA				
DRAWN BY:				
KDU/GCA				
CHECKED BY:				
PJM				
DATE:				
JAN 2024				

WASHINGTON COUNTY, MARYLAND
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HALFWAY BOULEVARD
EXTENDED

CURB GEOMETRY ELEVATIONS

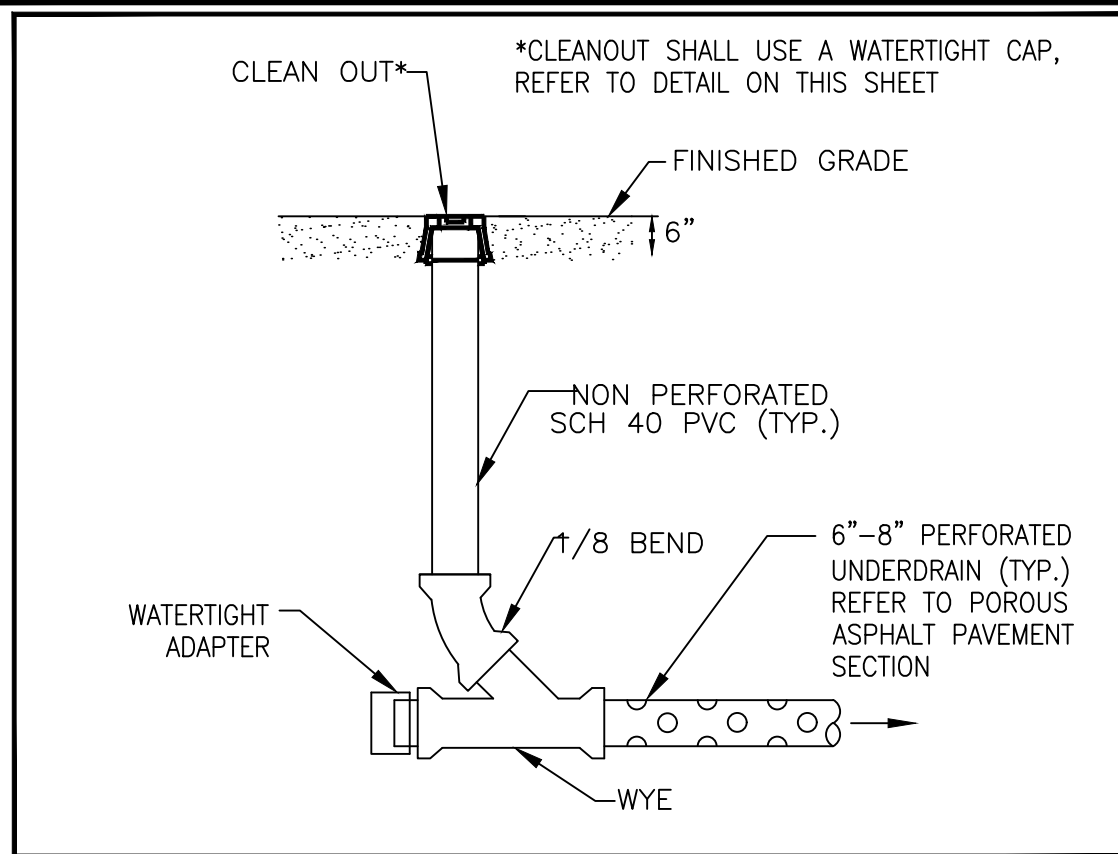
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SHEET NO.
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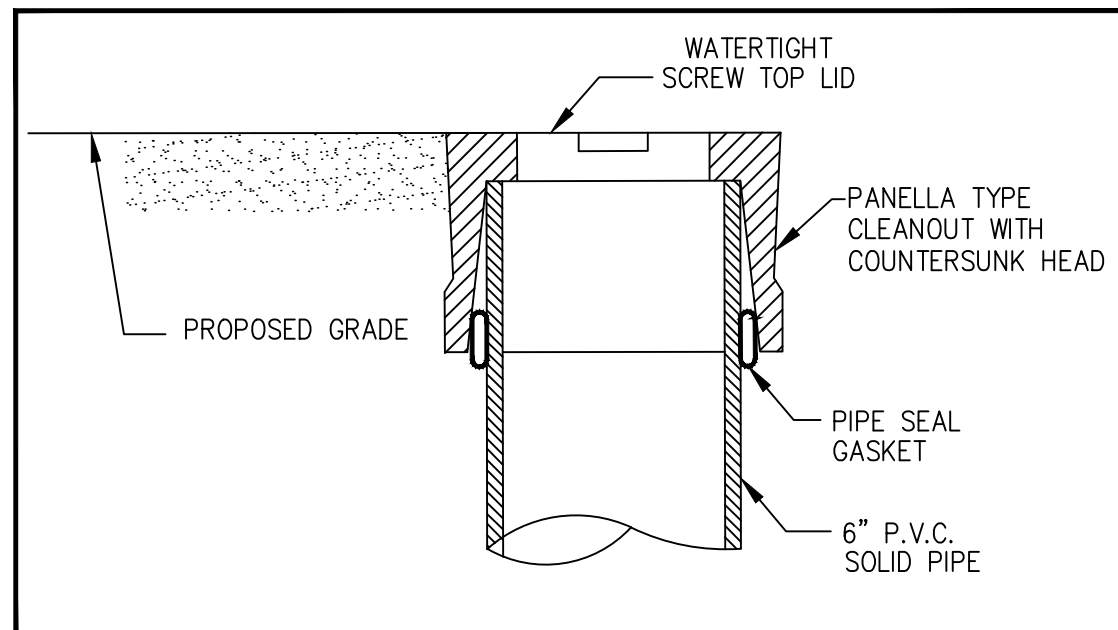
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10-273

SHA: WA067ZM1
FAP: APL-3(804)E

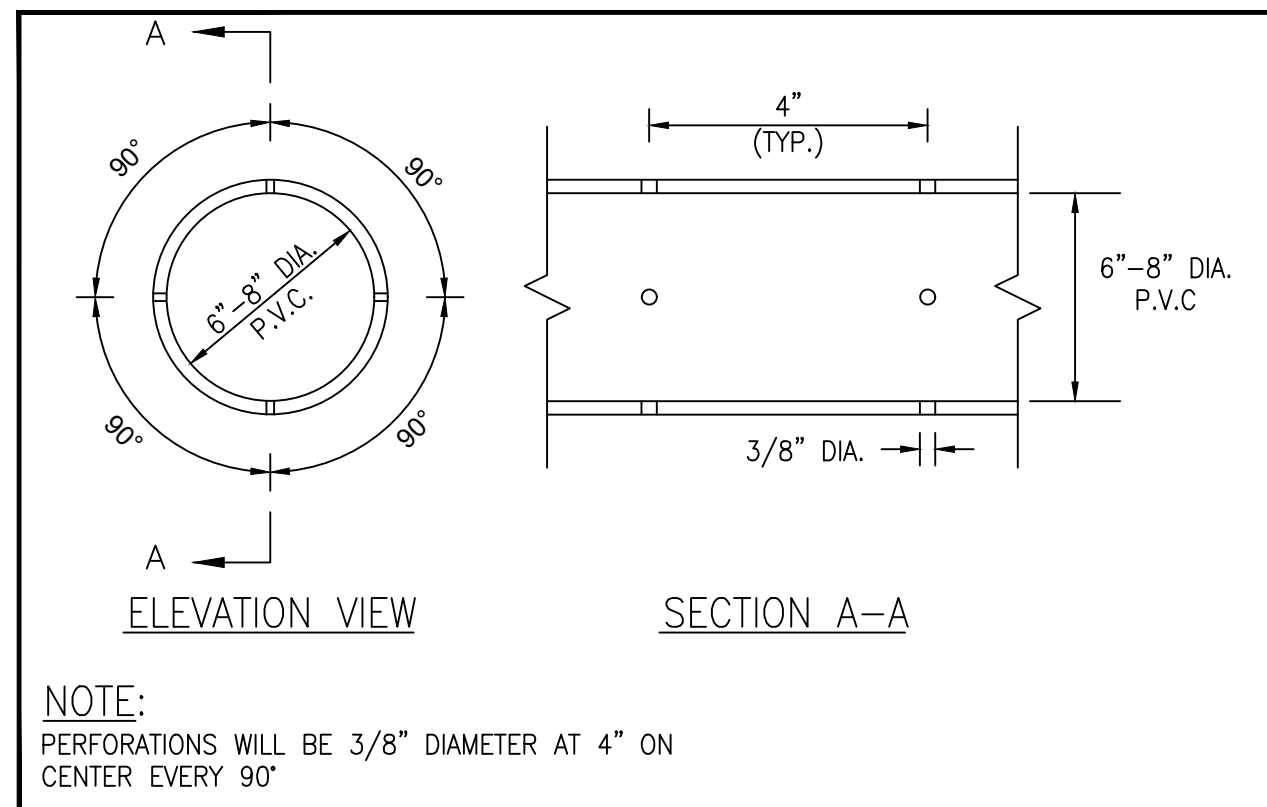
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CLEANOUT NOT TO SCALE

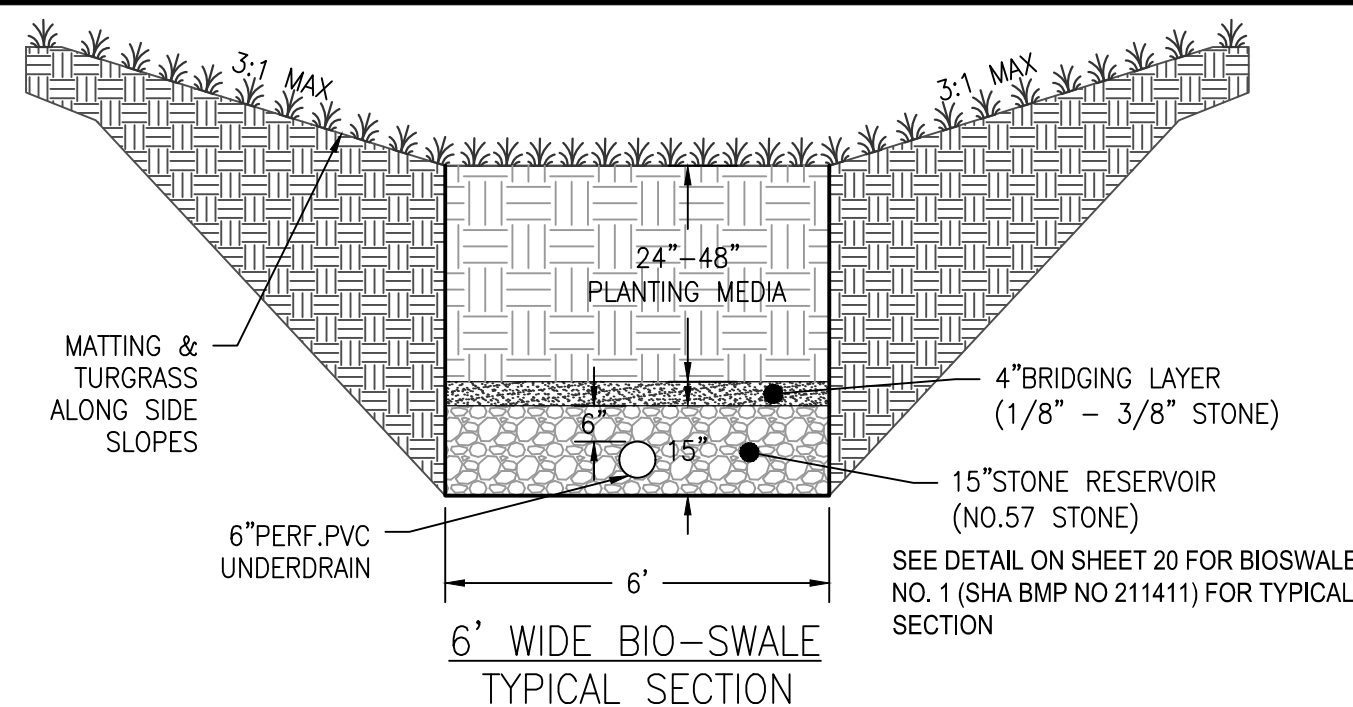


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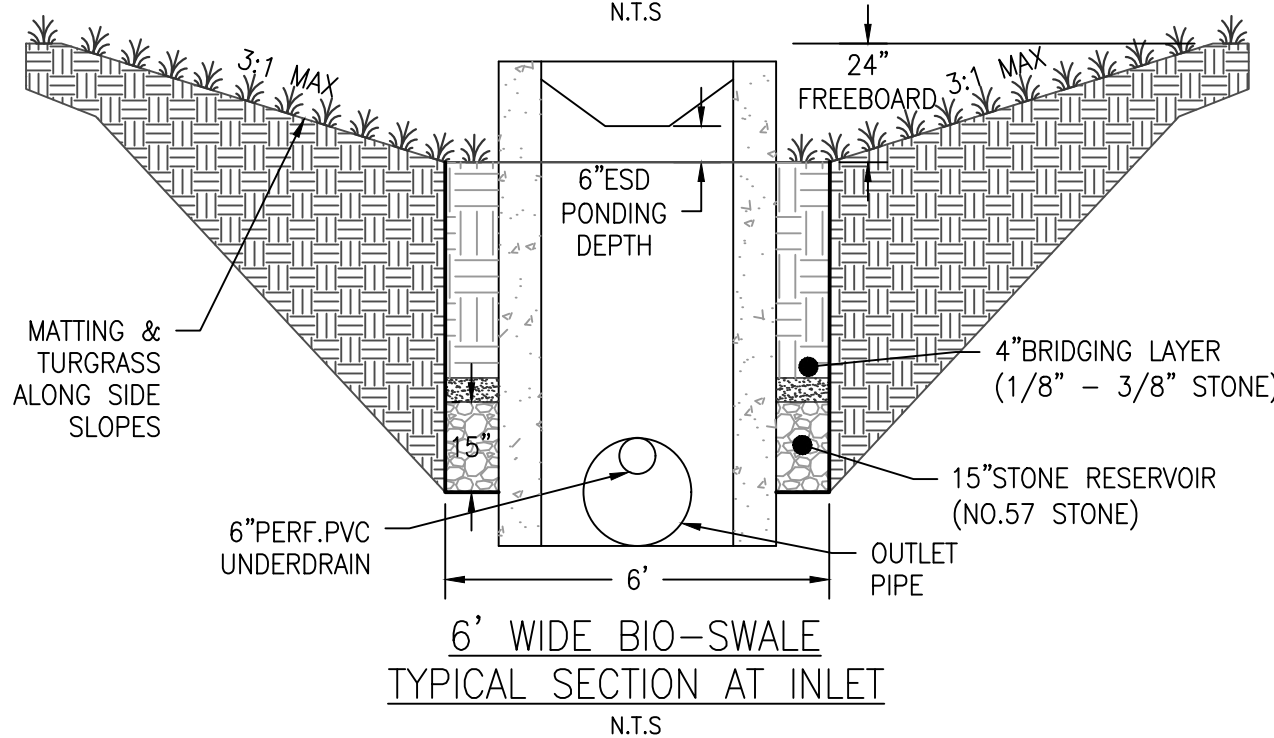


P.V.C. PERFORATION DETAIL NOT TO SCALE

OPERATION AND MAINTENANCE PLAN BIO-SWALES table with columns for Inspection Item, Inspection Requirements, and Remedial Action.



6' WIDE BIO-SWALE TYPICAL SECTION N.T.S.



6' WIDE BIO-SWALE TYPICAL SECTION AT INLET N.T.S.

PLANTING MEDIA DEPTH table showing BIOSWALE NO. and DEPTH (FT) for various bio-swale types.

*SHA SWM FACILITY NO. 211411

SPECIFICATIONS FOR BIO-SWALES

ALL CONSTRUCTION SHALL BE PER 2000 MARYLAND STORMWATER DESIGN MANUAL

- 1. MATERIAL SPECIFICATIONS
2. PLANTING SOIL
3. COMPACTION
4. PLANT MATERIAL
5. PEA GRAVEL BRIDGE LAYER
6. GRAVEL (UNDERDRAINS)
7. UNDERDRAINS
8. MISCELLANEOUS

STORMWATER MANAGEMENT FACILITIES CONSTRUCTION INSPECTION REQUIREMENTS

- 1. THE DEVELOPER/CONTRACTOR SHALL NOTIFY THE DIVISION OF PUBLIC WORKS (DPW) AT LEAST FIVE (5) DAYS BEFORE COMMENCING ANY WORK...
2. REGULAR INSPECTIONS SHALL BE MADE AND DOCUMENTED FOR EACH STRUCTURAL ESD PLANNING TECHNIQUE...
3. ALL NON-STRUCTURAL PRACTICES SHALL BE INSPECTED, AT A MINIMUM, UPON COMPLETION OF FINAL GRADING...
4. INSPECTIONS SHALL BE CONDUCTED BY DPW, THE MDE (AS APPLICABLE), AND BY THE VERIFYING PROFESSIONAL...
5. WRITTEN INSPECTION REPORTS ARE REQUIRED AND SHALL BE SUBMITTED IN A MANNER CONSISTENT WITH THE PUBLIC WORKS AGREEMENT AND THIS ARTICLE...
6. FAILURE TO COMPLY WITH THESE INSPECTION REQUIREMENTS AND/OR OBTAIN APPROVAL FROM THE VERIFYING PROFESSIONAL...
7. THE DEVELOPER, DPW, THE MDE, VERIFYING PROFESSIONAL, AND ON-SITE PERSONNEL SHALL BE NOTIFIED IN WRITING...
8. DPW MAY REQUIRE ADJUSTMENTS TO ADDRESS ITEMS OVERLOOKED OR INAPPROPRIATELY ADDRESSED BY THE PLANS...
9. THE COUNTY MAY REQUIRE A REVISION TO THE APPROVED CONSTRUCTION DRAWINGS OR SITE PLANS BE SUBMITTED AND APPROVED BY THE DPW, THE DIVISION OF PLANNING AND COMMUNITY DEVELOPMENT...
10. NO WORK SHALL PROCEED BEYOND THE CONSTRUCTION STAGES SPECIFIED IN ATTACHED CHECKLISTS AND THE WASHINGTON COUNTY SWM, GRADING, SOIL EROSION AND SEDIMENT CONTROL ORDINANCE UNTIL DPW AND THE VERIFYING PROFESSIONAL INSPECT AND APPROVE THE WORK PREVIOUSLY COMPLETED...

BIORETENTION MAINTENANCE NOTES:

- 1. BIORETENTION AREAS SHALL BE INSPECTED AT A MINIMUM, BI-ANNUALLY.
2. OWNER SHALL REMOVE SILT/SEDIMENT IF THE ACCUMULATION OF SEDIMENT EXCEEDS ONE INCH WITHIN THE BIORETENTION AREA.
3. THE TOP FEW INCHES OF FILTER MEDIA SHALL BE REMOVED AND REPLACED WHEN WATER PONDS FOR MORE THAN 48 HOURS.
4. TRASH AND DEBRIS SHALL BE REMOVED AS NECESSARY.
5. MULCH SHALL BE REPLACED ON AN ANNUAL BASIS.
6. PLANT MATERIAL SHALL BE INSPECTED YEARLY AND DEAD AND/OR DISEASED VEGETATION SHALL BE REPLACED, AS NECESSARY. WATERING MAY BE REQUIRED DURING PROLONGED DRY SPELLS.

NOTES:

- 1. DEVELOPER/CONTRACTOR MUST CONTACT THE CERTIFYING ENGINEER AND THE COUNTY AT LEAST 5 DAYS PRIOR TO THE START OF CONSTRUCTION OF THE STORMWATER MANAGEMENT SYSTEM TO SCHEDULE AND COORDINATE INSPECTION TIME TABLES.
2. IF ROCK IS ENCOUNTERED, UNDERCUT 18" S.W.M. FACILITY AND BACKFILL WITH CL TYPE SOIL.
3. ALL PIPE JOINTS SHALL BE WATERTIGHT. (HDPE PIPE JOINTS SHALL MEET THE 10.8 PSI WATER-TIGHT REQUIREMENTS OF ASTM D3212.)
4. ALL PROPOSED STORM DRAIN PIPES MUST BE PLACED ON 95% COMPACTED FILL ACCORDING TO AASHTO T180A STANDARDS.
5. ALL UNDERDRAIN PIPING MUST HAVE MINIMUM OF 0.5% SLOPE.
6. THE CONTRACTOR IS TO CONTACT MISS UTILITY A MINIMUM OF 2 DAYS PRIOR TO ANY DIGGING ON THE SITE. (1-800-257-7777)

NOTICE OF REQUIRED STORMWATER MANAGEMENT INSPECTIONS BIO-SWALES FACILITIES

The following inspections are required to be performed by the Qualified Professional for the construction of any Bio-Swale Facility. Additional inspections may be needed based on professional engineering judgment. Each inspection is required at the start of each stage.

Inspection schedule table with columns for Inspection Item, BS #1 through BS #16, and Certifying Engineer/County Inspector.

The Qualified Professional may request the presence of a County Construction Standards Inspector at least 24 hours in advance by calling 240-313-2400.

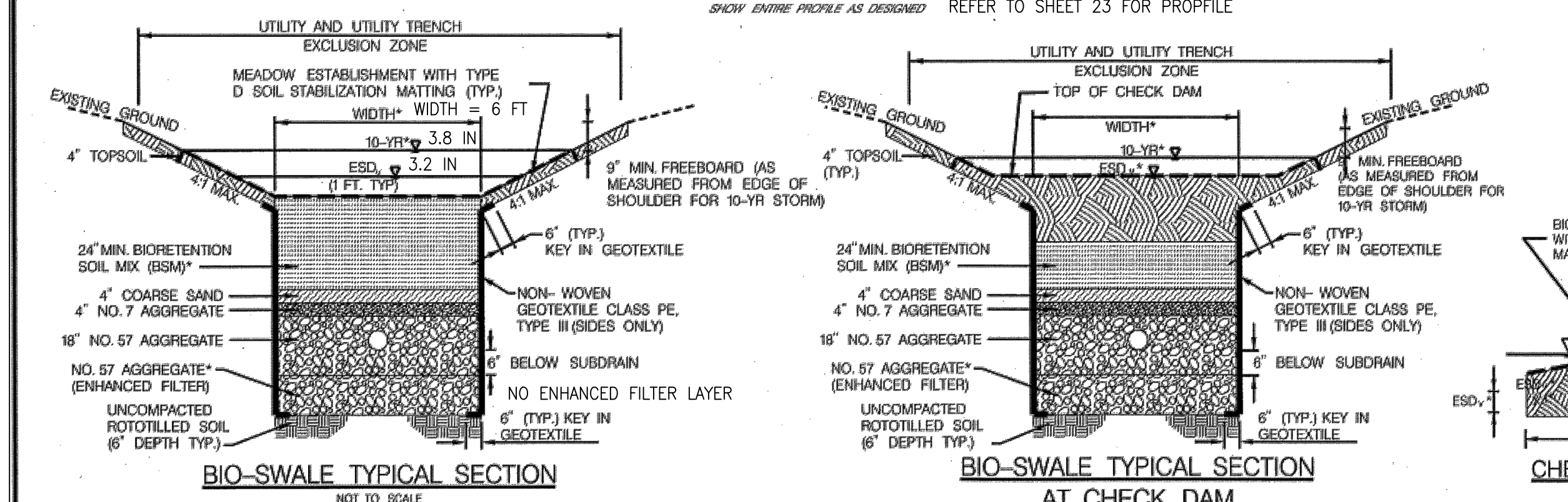
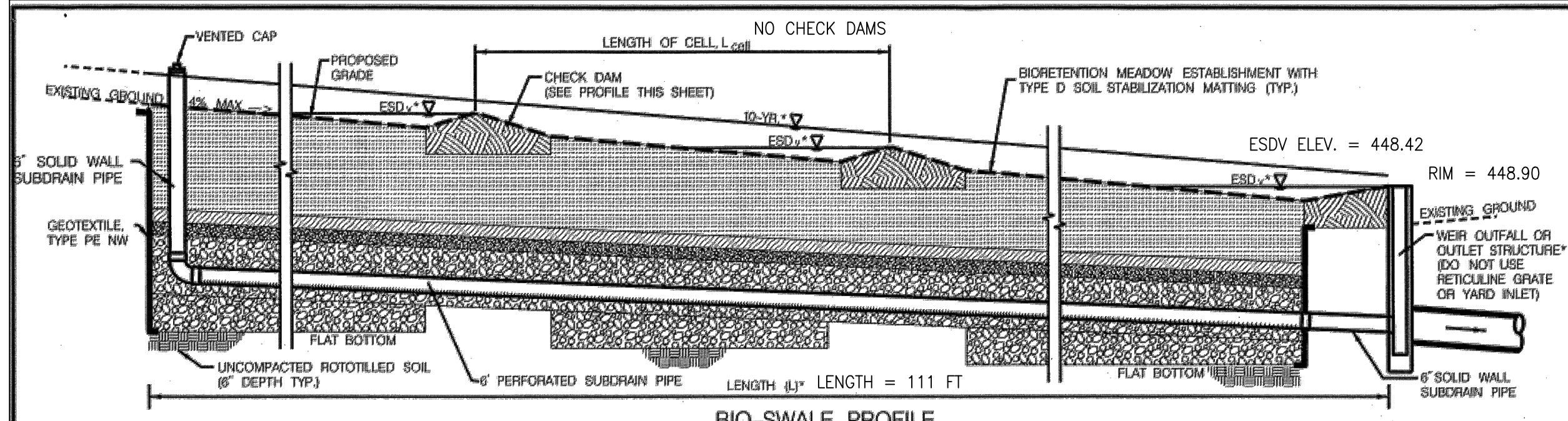
*SHA SWM FACILITY NO. 211411

Washington County, Maryland Division of Engineering. Project information including drawing name, date, and contact details for the Stormwater Management Building.

Halfway Boulevard Extended Stormwater Management Details. Project title and drawing details.

Scale N.T.S., Sheet No. 19, Project No. 10-273. Drawing identification and project number.

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\07 - SW-10-273 SW-01.DWG PLOT DATE: 2/19/2024 4:00 PM



- NOTES:**
- REFER TO SECTION 310 FOR MORE INFORMATION.
 - INCLUDE SWM FACILITY NUMBER ON SWM SHEETS.
 - DESIGN SWALES TO CONVEY 10-YR FLOW AT NON-EROSIVE VELOCITIES (<5 FPS).
 - BYOND CLEAR ZONE, MAX ESDV DEPTH 12\"/>

SHA DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
HIGHWAY HYDRAULICS DIVISION

**(M-8) BIO-SWALE WITH OPTIONAL CHECK DAMS
POORLY DRAINING SOILS**

DESIGN GUIDANCE DRAWING REVISED: 03/10/16

**SWM FACILITY AS-BUILT CERTIFICATION DATA TABLE
FOR M-8 BIO-SWALES**
MAY ONLY BE CERTIFIED BY THE AS-BUILT ENGINEER (ABE) PER COMAR 26.17.02.10.

SWM FACILITY NUMBER	MDE/PRD NUMBER	SHA CONTRACT NUMBER
211411		

ACTIVITY	SUPPORTING DOCUMENTATION AND INFORMATION (SUBMIT ALL OF THE FOLLOWING WITH SWM FACILITY AS-BUILT CERTIFICATION PACKAGE)	DATE(S) OF INSPECTION
PRIOR TO SWM FACILITY EXCAVATION, OBSERVED ESC MEASURES ARE INSTALLED AROUND THE FACILITY OR CONFIRMED SURROUNDING AREA IS STABILIZED	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS	
OBSERVED EXCAVATION OF SWM FACILITY	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS	
OBSERVED INSTALLATION OF GEOTEXTILE AND VERIFIED INSTALLATION PERFORMED AS SPECIFIED	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS	
OBSERVED INSTALLATION OF NO. 57 AGGREGATE BEDDING FOR SUB-DRAIN	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> NOT APPLICABLE	
OBSERVED INSTALLATION OF SUB-DRAIN, VERIFIED MATERIAL, AND HAS SLOTTED PERFORATIONS	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> NOT APPLICABLE PIPE MATERIAL: <input type="checkbox"/> PPWP <input type="checkbox"/> CPP-S	
OBSERVED INSTALLATION OF NO. 57 AGGREGATE AROUND AND ABOVE SUB-DRAIN	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> NOT APPLICABLE	
OBSERVED INSTALLATION OF NO. 7 AGGREGATE	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> NOT APPLICABLE	
OBSERVED INSTALLATION OF COARSE SAND	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> NOT APPLICABLE	
OBSERVED INSTALLATION OF BIORETENTION SOIL MIX (BSM) AND VERIFIED MATERIAL IS APPROVED	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> SHA OMT SOIL TEST REPORT FOR BSM	
OBSERVED INSTALLATION OF CHECK DAMS	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS	
OBSERVED INSTALLATION OF RELEASE STRUCTURE	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS RELEASE STRUCTURE: <input type="checkbox"/> INLET <input type="checkbox"/> WEIR <input type="checkbox"/> CHECK DAM <input type="checkbox"/> OUTFALL <input type="checkbox"/> OTHER (WRITE IN): _____	
OBSERVED FINAL GRADING OF SWM FACILITY	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS	
OBSERVED INSTALLATION OF MEADOW AND OTHER VEGETATIVE SEED WITH SOIL STABILIZATION MATTING, INCLUDING PLUGS, IN THE SWM FACILITY	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> AS-BUILT LANDSCAPE PLANS	
OBSERVED ESTABLISHED VEGETATION ONE YEAR FOLLOWING INITIAL INSTALLATION IN SWM FACILITY AND OBSERVED REPLACEMENT OF FAILED VEGETATION.	<input type="checkbox"/> INSPECTION REPORT <input type="checkbox"/> PHOTOGRAPHS <input type="checkbox"/> SHA LPD LANDSCAPE ACCEPTANCE LETTER	

FEATURE	DESIGN	AS-BUILT	DIFFERENCE
BOTTOM WIDTH (FT) - MAY NOT BE LESS THAN 2 FT OR EXCEED 8 FT	6 FT		
TOTAL LENGTH (FT)	111 FT		
MAXIMUM CHANNEL SLOPE (FT/FT) - MAY NOT EXCEED 4%	0.0066 TO 0.022		
LEFT SIDE SLOPE (H:V) - MAY NOT BE STEEPER THAN 3:1	3:1		
RIGHT SIDE SLOPE (H:V) - MAY NOT BE STEEPER THAN 3:1	3:1		
TOTAL THICKNESS OF NO. 57 AGGREGATE (IN.) - MAY NOT BE LESS THAN 18 IN.	18		
THICKNESS OF NO. 7 AGGREGATE (IN.) - MAY NOT BE LESS THAN 4 IN.	4		
THICKNESS OF COARSE SAND (IN.) - MAY NOT BE LESS THAN 4 IN.	4		
THICKNESS OF BSM (IN.) - MAY NOT BE LESS THAN 24 IN.	32 IN		
SUB-DRAIN PIPE DIAMETER (IN.) - MAY NOT DIFFER FROM VALUE SPECIFIED	6		
SUB-DRAIN OUTLET INVERT ELEVATION (FT)	442.80 FT		
NUMBER OF CHECK DAMS	0		
DISTANCE BETWEEN CHECK DAMS (FT)	N/A		
CHECK DAM HEIGHT (FT)	N/A		
TOP OF SWALE ELEVATION (FT)	450.20 TO 450.00 SEE PROFILE SH 23		

**ONLY COMPLETE THE PORTION BELOW WHEN TOLERANCES ARE NOT MET.
ALSO PROVIDE COMPUTATIONS AND SWM REPORT REVISIONS.**

FEATURE	DESIGN	AS-BUILT	DIFFERENCE
ESDV WATER SURFACE ELEVATION (FT)	448.38 TO 448.42 SEE PROFILE SH 23		
ESDV FLOW DEPTH (IN.)	3.2 IN		
1-YR FLOW VELOCITY (FT/S) - MUST BE NON-EROSIVE	1.81 FT/S		
10-YR WATER SURFACE ELEVATION (FT)	448.45 TO 448.66 SEE PROFILE SH 23		
10-YR FLOW DEPTH (IN.)	3.8 IN		
10-YR FLOW VELOCITY (FT/S) - MUST BE NON-EROSIVE	1.99 FT/S		
10-YR FREEBOARD (IN.) - MAY NOT BE LESS THAN 9 IN. - MEASURED VERTICALLY FROM 10-YR WATER SURFACE ELEVATION TO PAVEMENT EDGE/SHOULDER	16 TO 21 IN		

ALL CONSTRUCTION WITHIN MD SHA RIGHT OF WAY SHALL COMPLY WITH MD SHA MATERIAL AND CONSTRUCTION SPECIFICATIONS.

SHA SWM FACILITY NO. 211411

STORMWATER MANAGEMENT AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT FACILITY (FACILITIES) SHOWN ON THE PLANS AND INDIVIDUALLY IDENTIFIED BELOW HAS (HAVE) BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS INCLUDED UNDER THE STATE HIGHWAY ADMINISTRATION PLAN REVIEW DIVISION APPROVAL NUMBER _____ - PR - _____ EXCEPT AS NOTED IN GREEN ON THE "AS-BUILT" DRAWINGS. FURTHERMORE, THE GREEN-NOTED EXCEPTIONS DO NOT ADVERSELY AFFECT THE DESIGN AND/OR THE INTENDED PERFORMANCE OF THE FACILITY (FACILITIES).

EACH SWM FACILITY IS IDENTIFIED INDIVIDUALLY BY A UNIQUE SWM FACILITY NUMBER


Name (Printed) _____ Signature _____

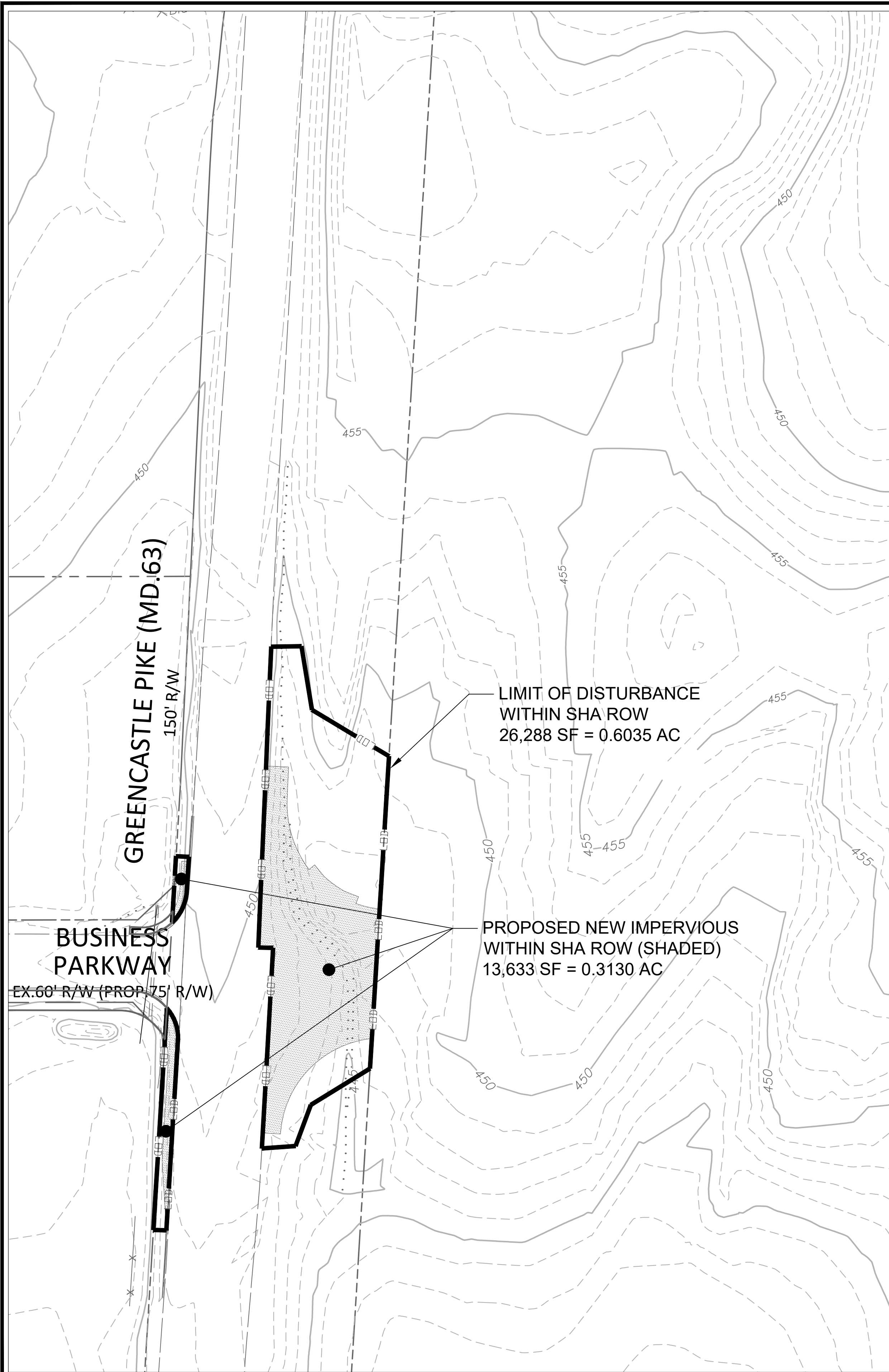
Maryland Registration Number _____ Date _____

PROFESSIONAL CERTIFICATION. "I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. _____, EXPIRATION DATE _____."

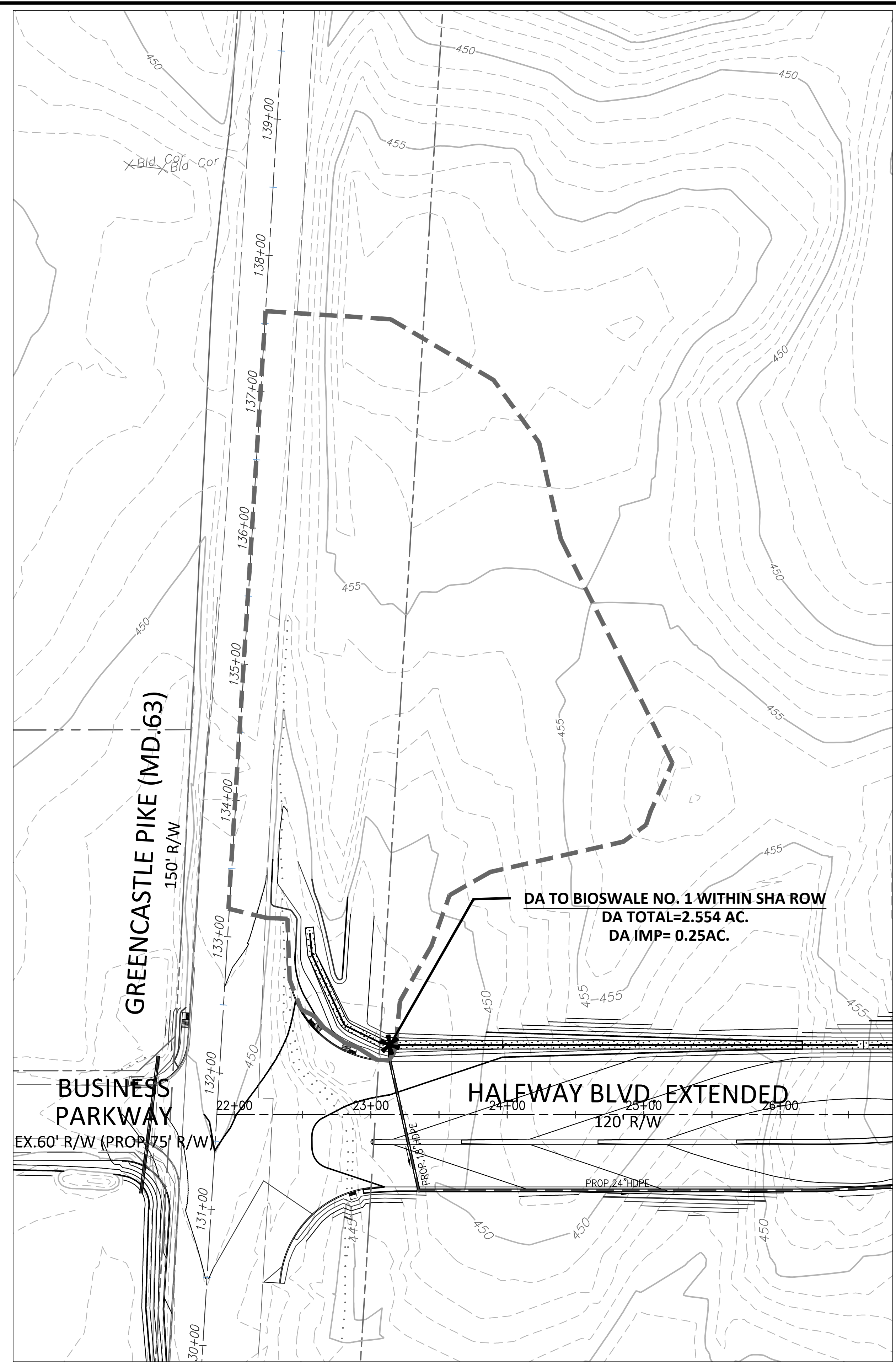
"CERTIFY" MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED ON SUFFICIENT AND APPROPRIATE ONSITE INSPECTIONS AND MATERIAL TESTS CONDUCTED DURING CONSTRUCTION.

NOTE: AS-BUILT CHECKLISTS CONTAINED IN THE CONTRACT DRAWINGS SHALL BE COMPLETED BY THE AS-BUILT INSPECTOR AND SUBMITTED TO THE SHA ALONG WITH THIS CERTIFICATION.

DATE					
BY					
REVISION DESCRIPTION					
NO					
DESIGNED BY:	KOUJCA	DRAWN BY:	KOUJCA	CHECKED BY:	PLM
				DATE:	JAN 2024
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING					
Washington County Administrative Annex Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401					
					
HALFWAY BOULEVARD EXTENDED STORMWATER MANAGEMENT DETAILS SHA					
SCALE N.T.S					
SHEET NO. 20					
PROJECT NO. 10-273					
SHA: WA067ZM1 FAP: APL-3(804)E					




LIMIT OF DISTURBANCE WITHIN SHA RIGHT-OF-WAY



DRAINAGE AREA TO BIOSWALE WITHIN SHA ROW

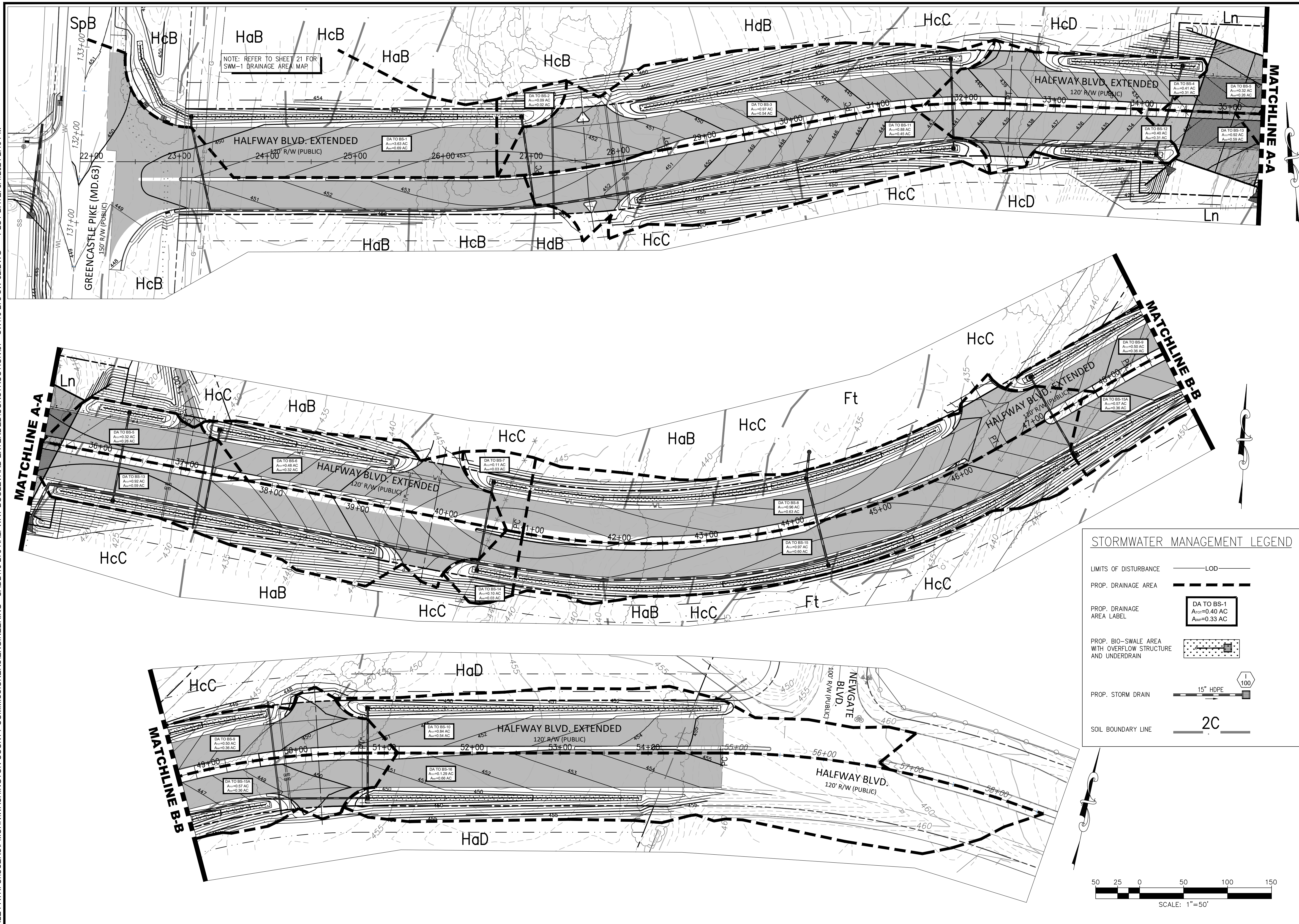
DESIGNED BY: KDU/GA	NO.	REVISION DESCRIPTION	BY	DATE
DRAWN BY: KDU/GCA				
CHECKED BY: PJM				
DATE: JAN 2024				

WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING	
Washington County Administrative Annex, Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401	

HALFWAY BOULEVARD EXTENDED EXISTING DRAINAGE AREA MAP
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SCALE 1" = 50'
SHEET NO. 21
PROJECT NO. 10-273 SHA: WA06ZM1 FAP: APL-3(804)E

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DESIGNED BY: KDUJGA
 DRAWN BY: KDUJGA
 CHECKED BY: PJM
 DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

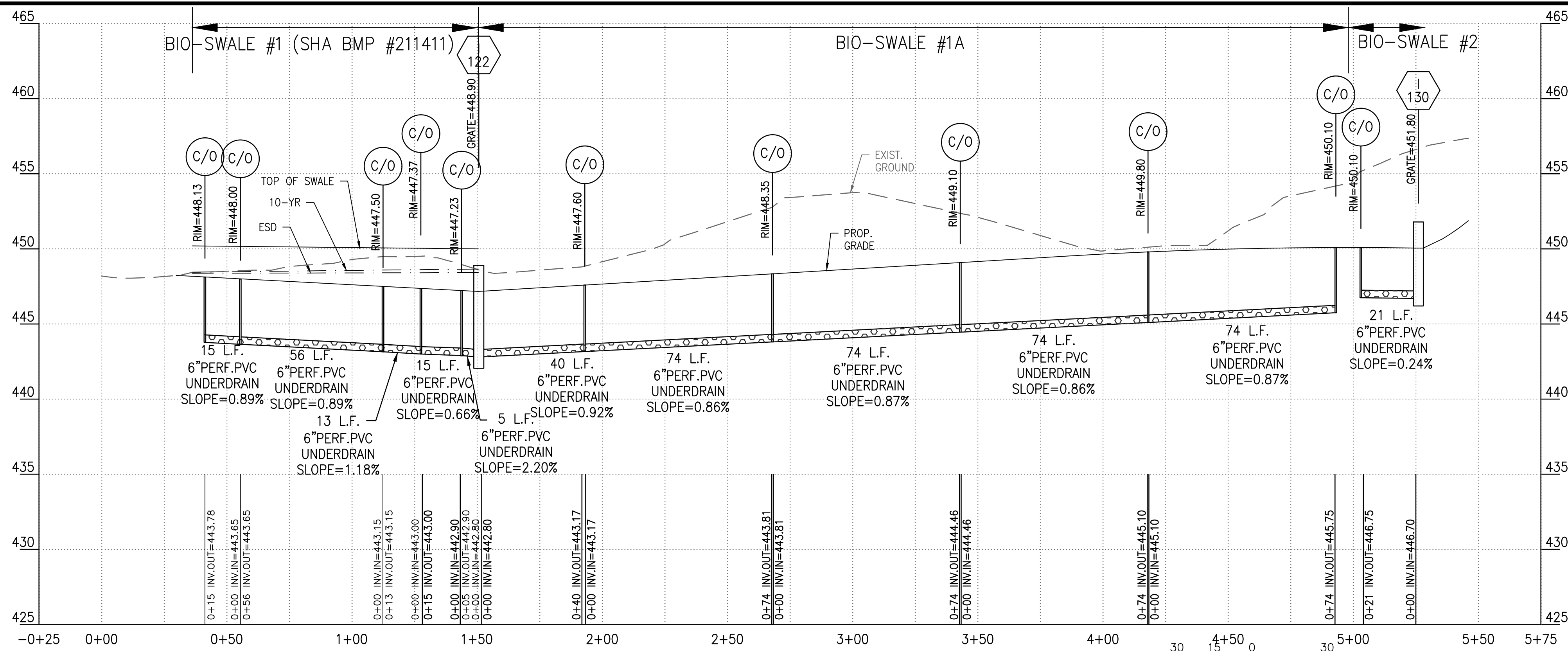
Washington County Administrative Annex, Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

HALFWAY BOULEVARD EXTENDED OVERALL STORMWATER MANAGEMENT PLAN

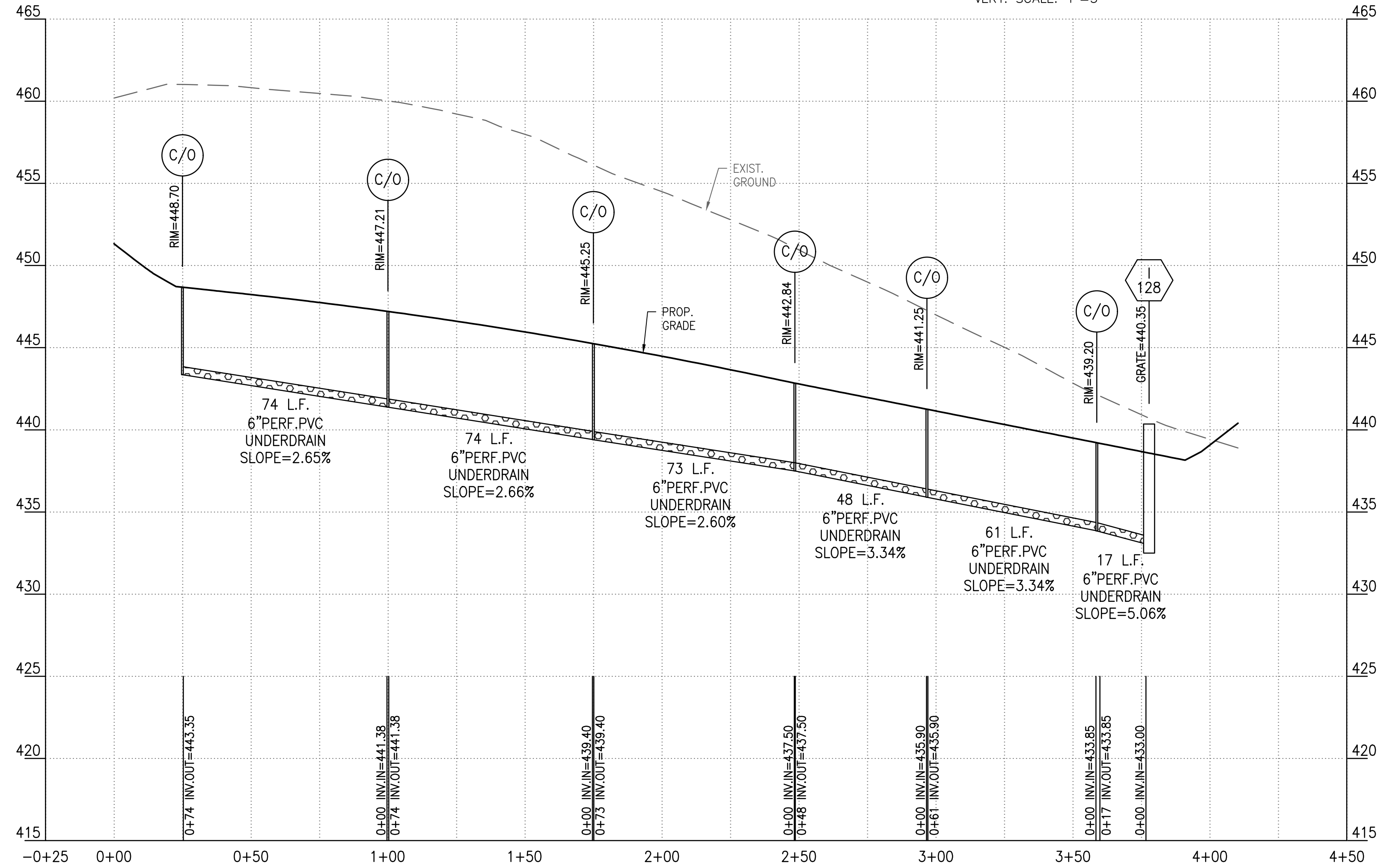
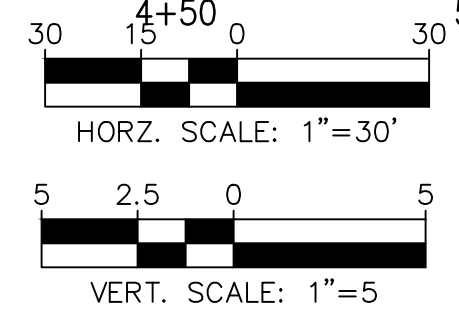
SCALE 1" = 50'

SHEET NO. 22

PROJECT NO. 10-273
 SHA: WA067ZM1
 FAP: APL-3(804)E



BIOSWALE 1 & BIOSWALE 2 & BIOSWALE 1A
BIOSWALE NO. 1 (SHA SWM FACILITY NO. 211411)



BIOSWALE-3

GENERAL NOTES

- ALL PROPOSED STORM DRAIN PIPES AND STRUCTURES MUST BE PLACED ON 95% COMPACTED FILL ACCORDING TO AASHTO T1180A STANDARDS.
- FOR STATIONING OF INLET STRUCTURES, PLEASE REFER TO STRUCTURE SCHEDULE ON SHEET 29 OF 75.

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUJGA
DRAWN BY: KDUJGA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

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747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

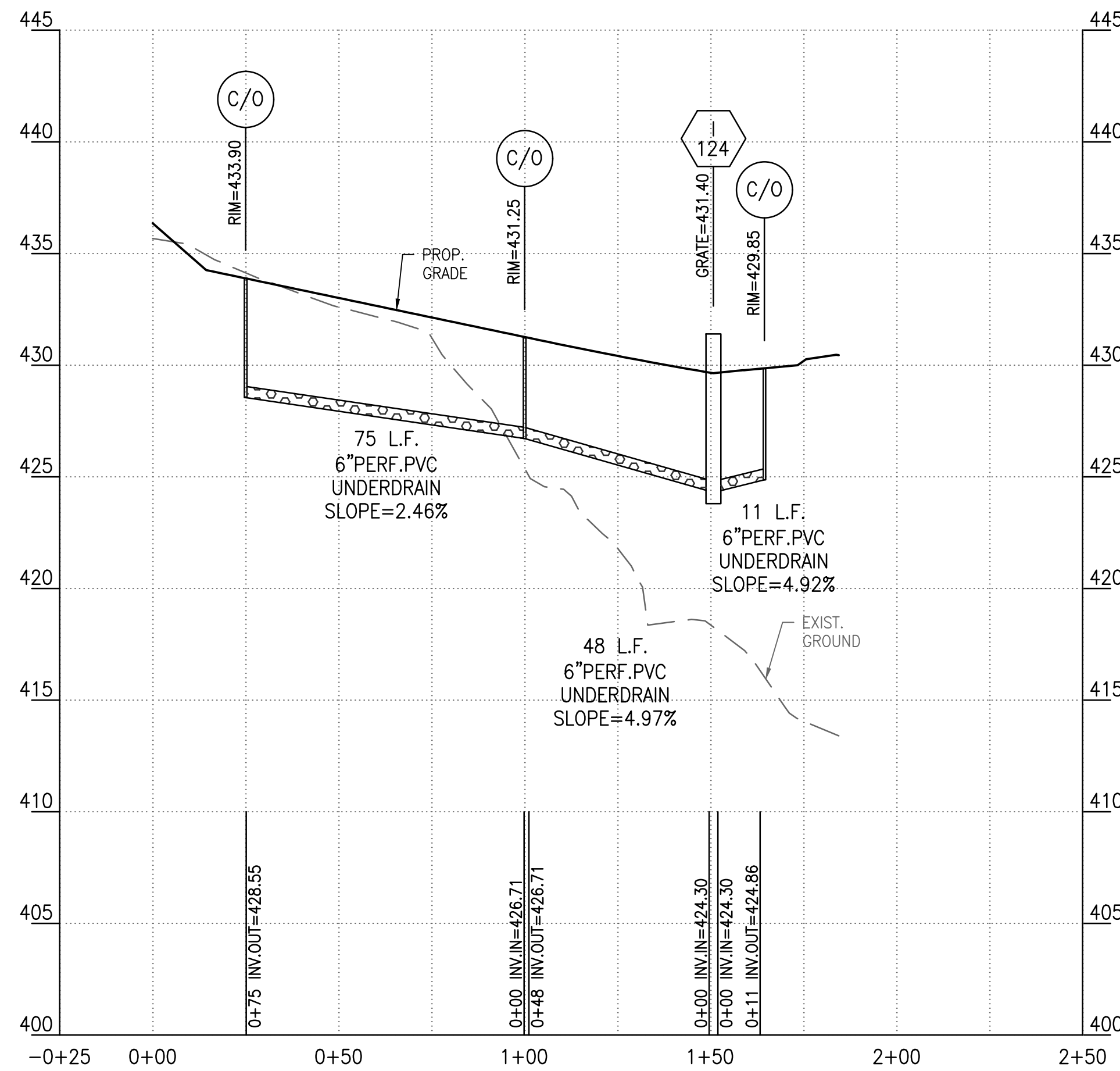
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SHEET NO. 23

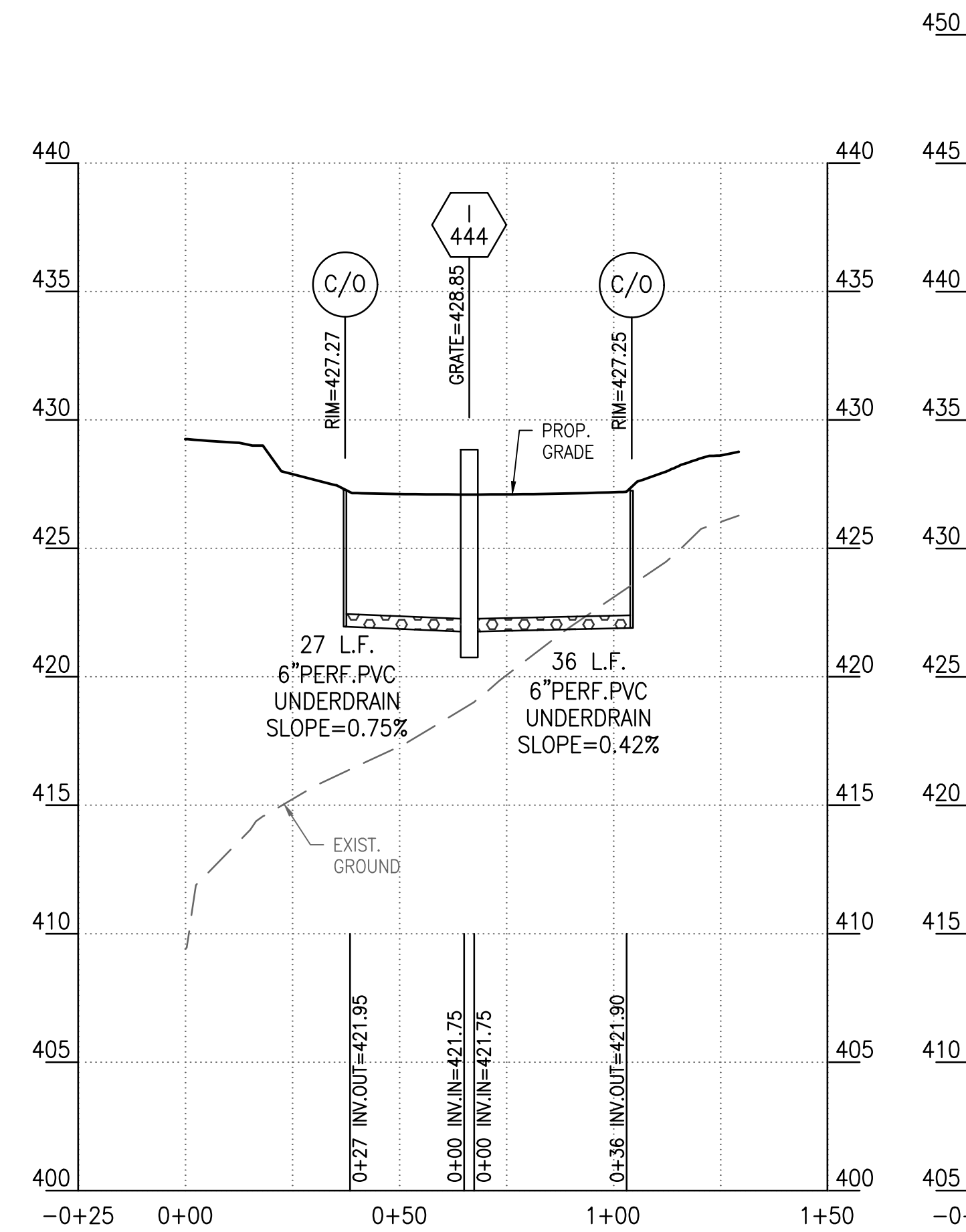
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FAP: APL-3(804)E

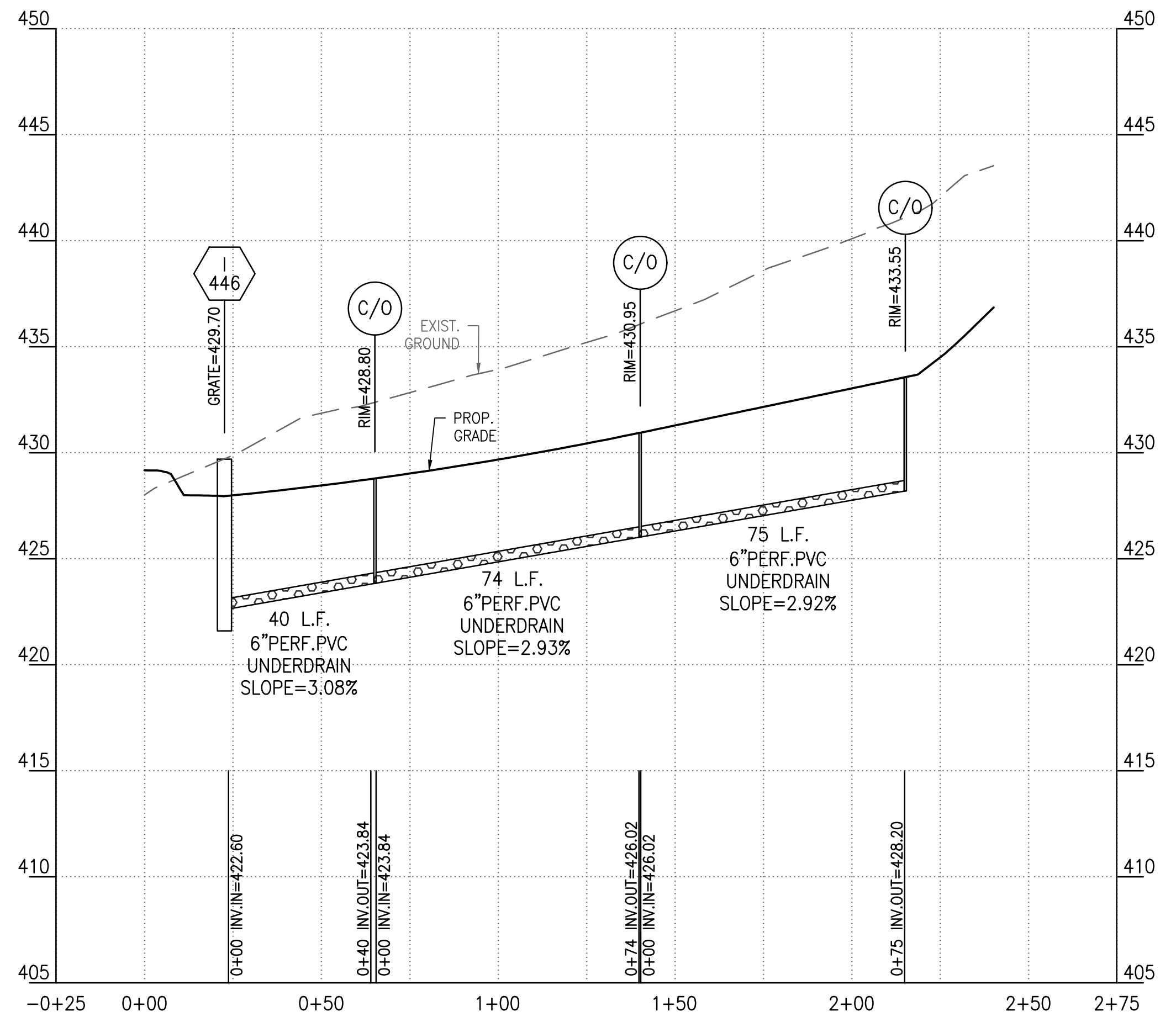
HALFWAY BOULEVARD EXTENDED STORMWATER MANAGEMENT PROFILES



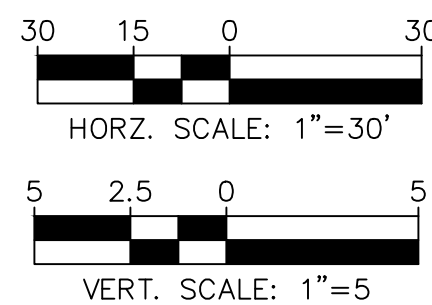
BIOSWALE-4



BIOSWALE-5

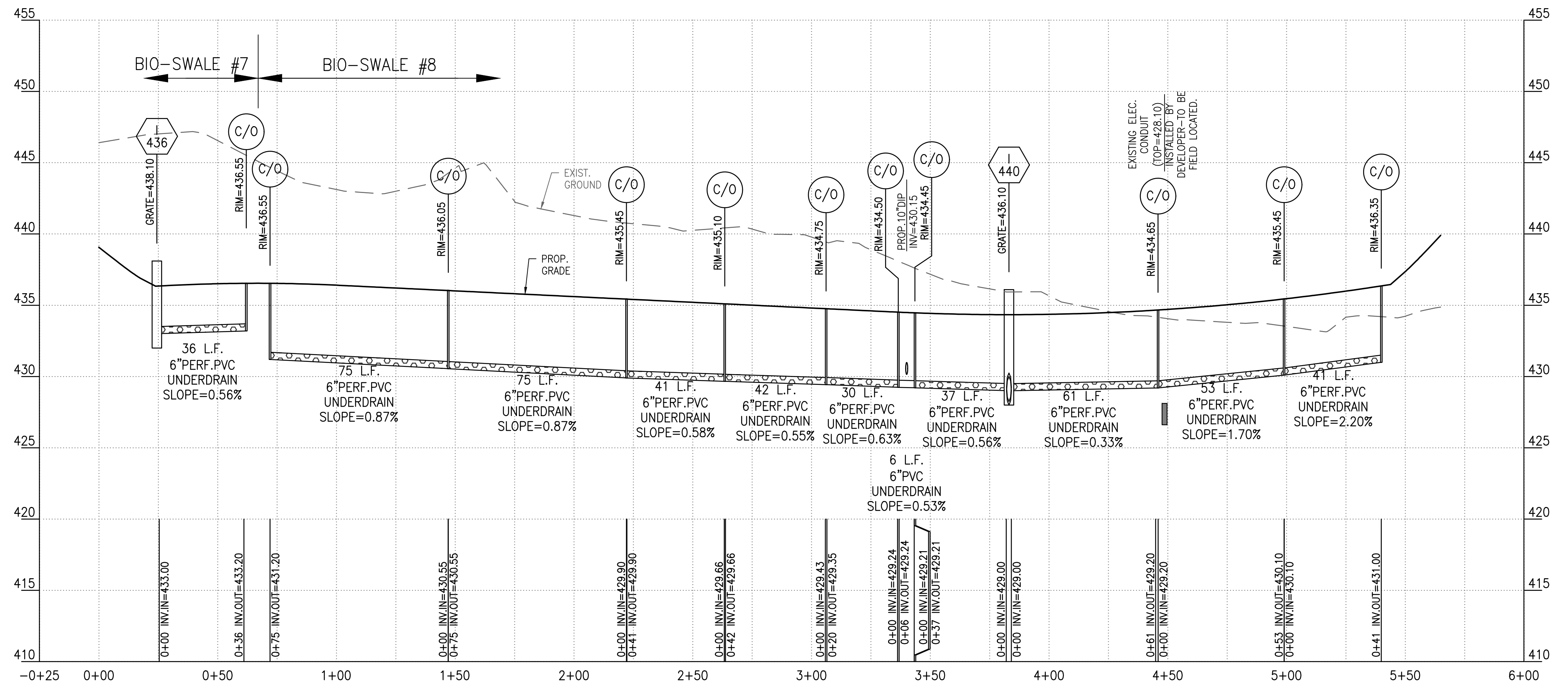


BIOSWALE-6



GENERAL NOTES

- ALL PROPOSED STORM DRAIN PIPES AND STRUCTURES MUST BE PLACED ON 95% COMPACTED FILL ACCORDING TO AASHTO T180A STANDARDS.
- FOR STATIONING OF INLET STRUCTURES, PLEASE REFER TO STRUCTURE SCHEDULE ON SHEET 29 OF 75.



BIOSWALE-7 & BIOSWALE-8

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUJGA
DRAWN BY: KDUJGA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

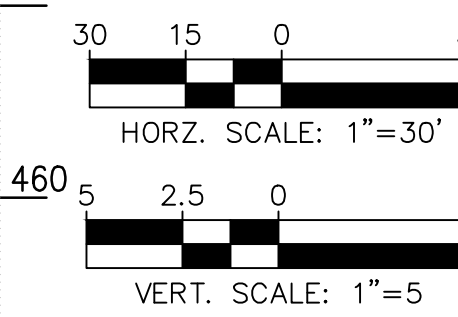
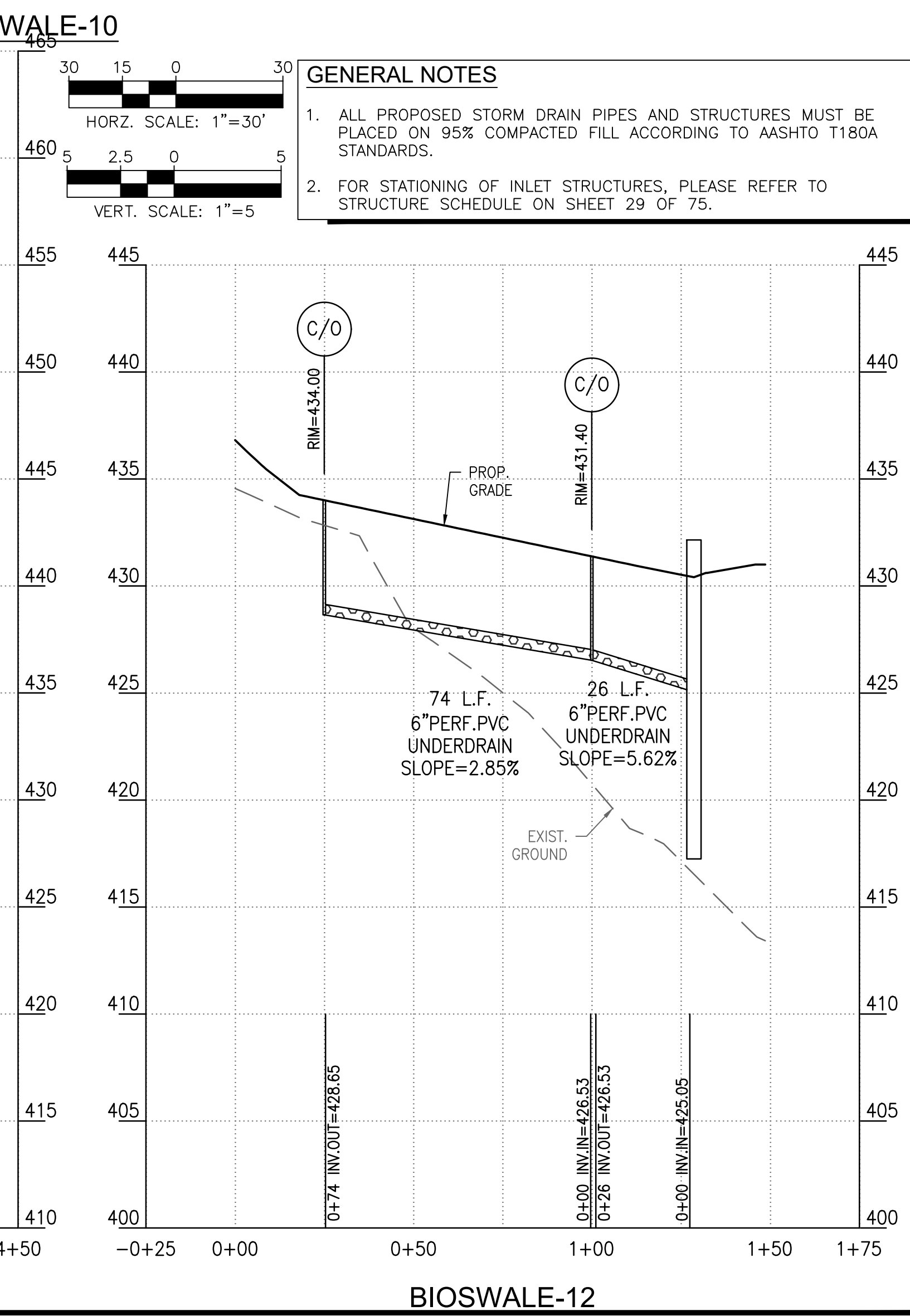
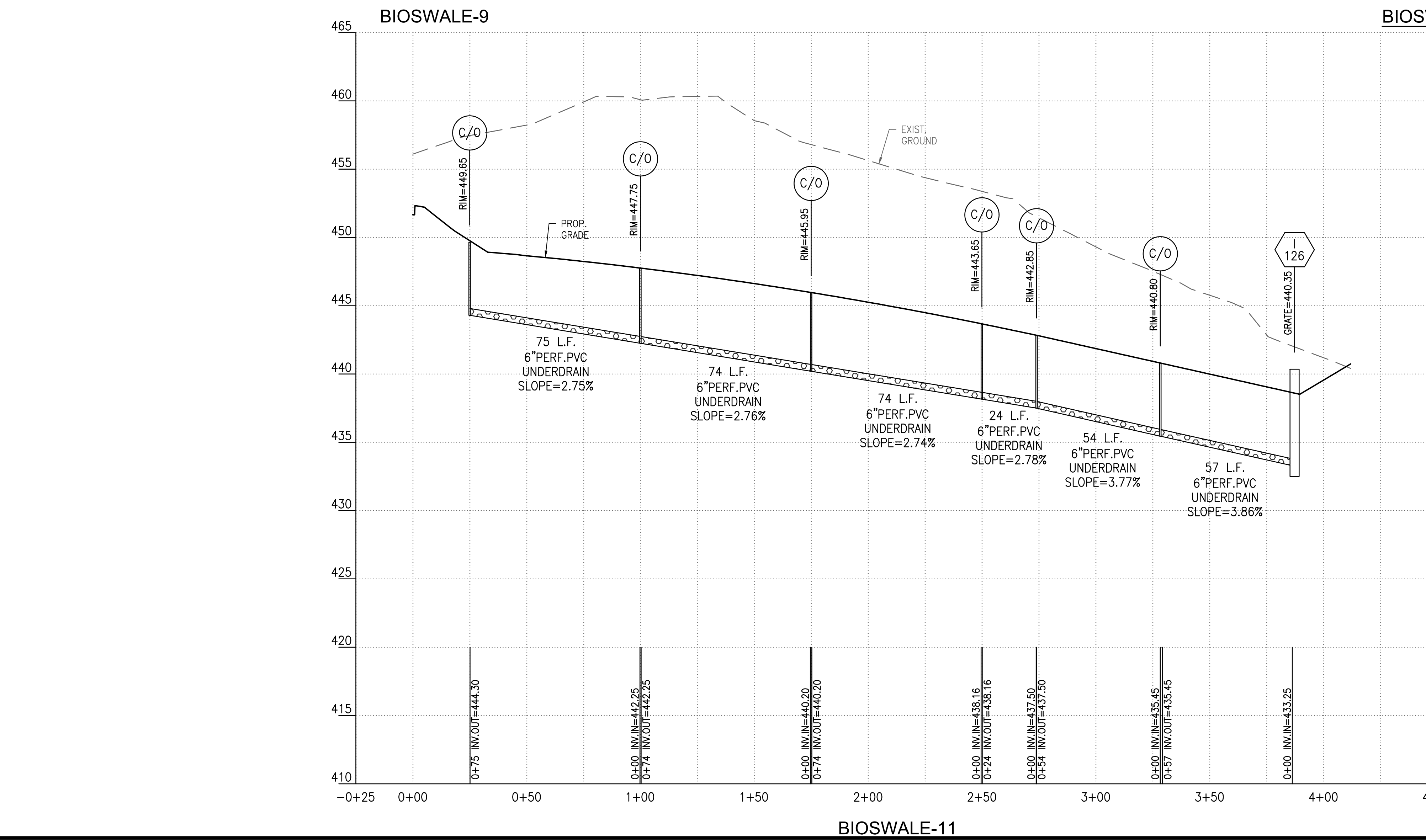
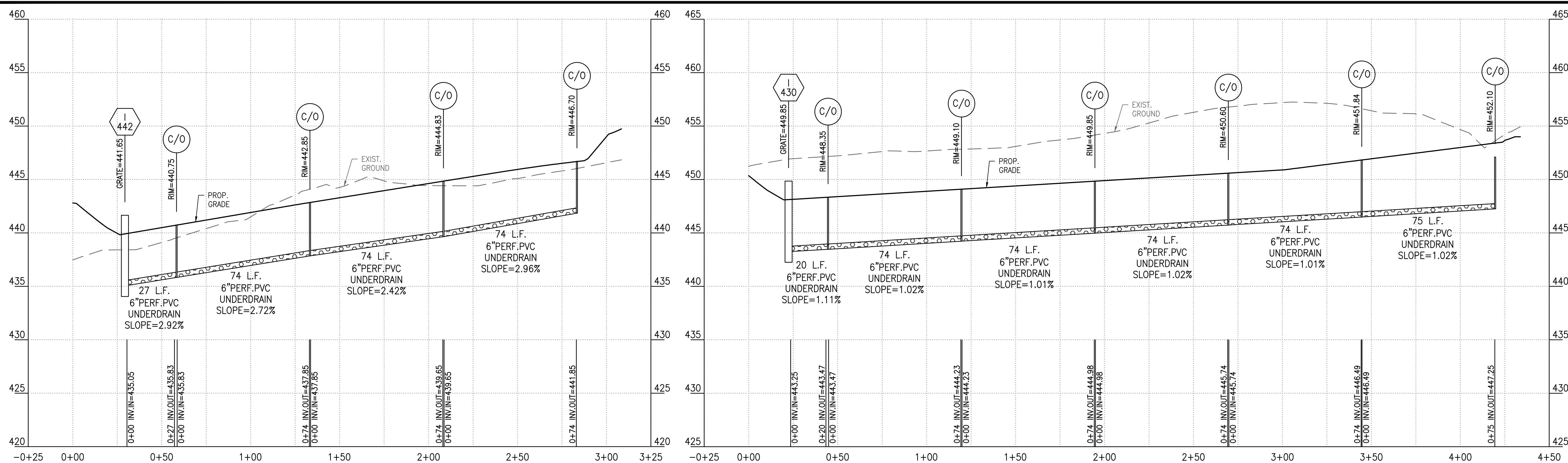
SCALE
AS SHOWN

SHEET NO.
24

PROJECT NO.
10-273

SHA: WA067ZM1
FAP: APL-3(804)E

HALFWAY BOULEVARD
EXTENDED
STORMWATER
MANAGEMENT PROFILES



- GENERAL NOTES**
- ALL PROPOSED STORM DRAIN PIPES AND STRUCTURES MUST BE PLACED ON 95% COMPACTED FILL ACCORDING TO AASHTO T180A STANDARDS.
 - FOR STATIONING OF INLET STRUCTURES, PLEASE REFER TO STRUCTURE SCHEDULE ON SHEET 29 OF 75.

DATE	
BY	
REVISION DESCRIPTION	
NO	
DESIGNED BY:	KDUUGA
DRAWN BY:	KDUUGA
CHECKED BY:	PJM
DATE:	JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

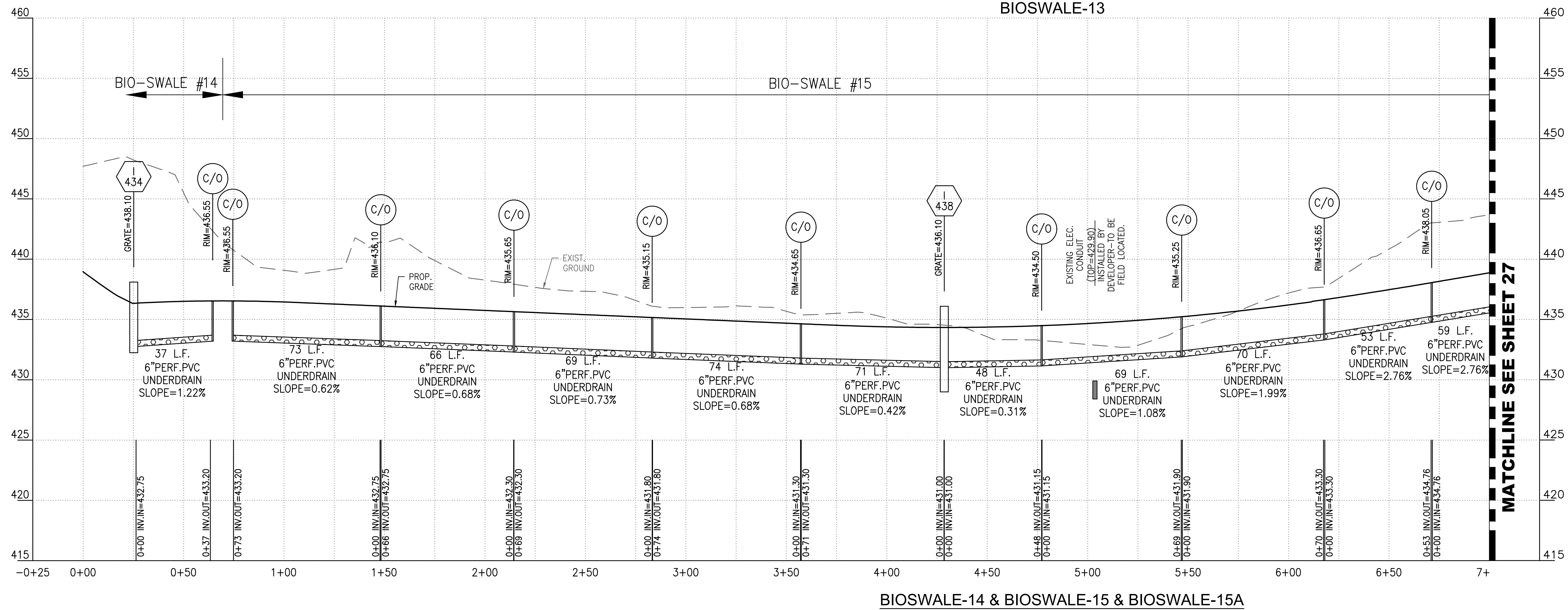
**HALFWAY BOULEVARD
EXTENDED
STORMWATER
MANAGEMENT PROFILES**

SCALE
AS SHOWN

SHEET NO.
25

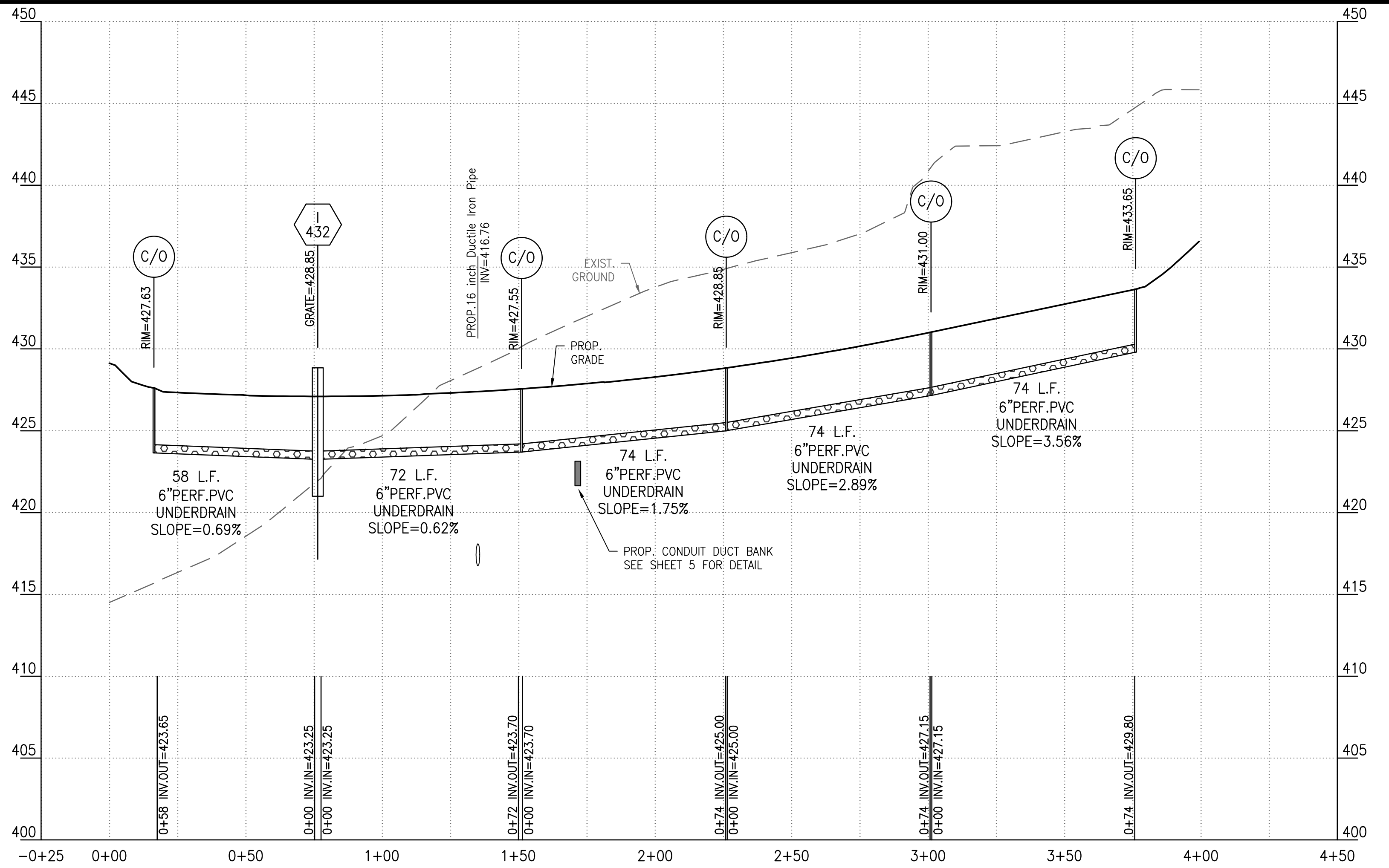
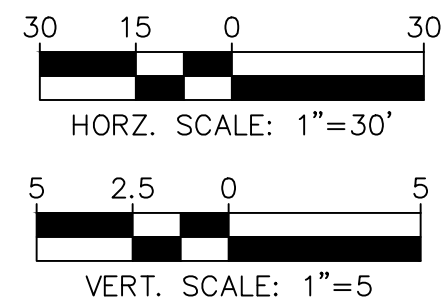
PROJECT NO.
10-273

SHA: WA067ZM1
FAP: APL-3(804)E



GENERAL NOTES

1. ALL PROPOSED STORM DRAIN PIPES AND STRUCTURES MUST BE PLACED ON 95% COMPACTED FILL ACCORDING TO AASHTO T180A STANDARDS.
2. FOR STATIONING OF INLET STRUCTURES, PLEASE REFER TO STRUCTURE SCHEDULE ON SHEET 29 OF 75.



DESIGNED BY:	KDUUGA
DRAWN BY:	KDUUGA
CHECKED BY:	PJM
DATE:	JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-315-2401

**HALFWAY BOULEVARD
EXTENDED
STORMWATER
MANAGEMENT PROFILES**

SCALE
AS SHOWN

SHEET NO.
26

PROJECT NO.
10-273

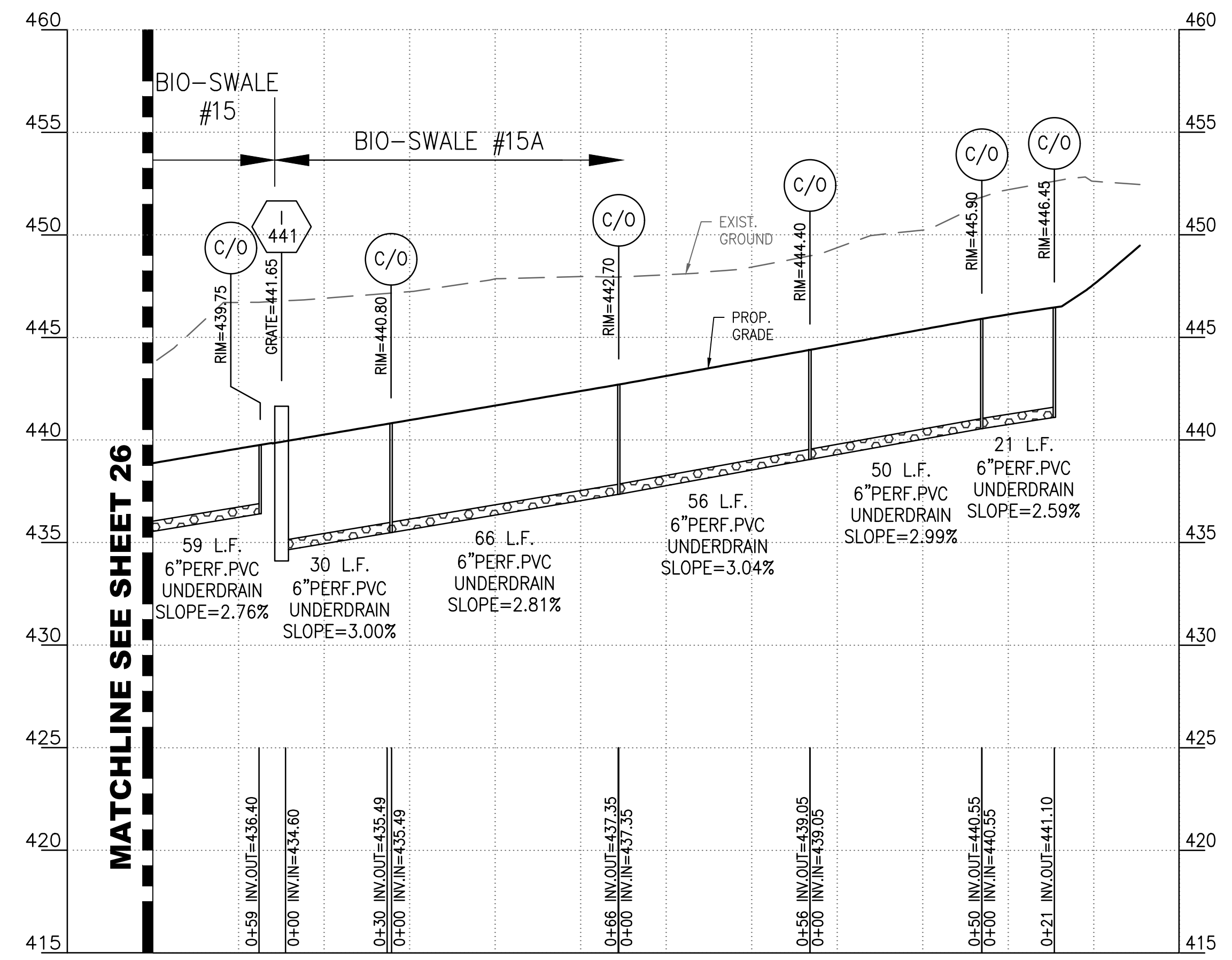
SHA: WA067ZM1
FAP: APL-3(804)E

STORMWATER MANAGEMENT PIPE SCHEDULE				
PIPE SIZE	TYPE	CLASS	LENGTH (FT)	REMARKS
6"	PVC	SCHEDULE 40	4448	PERFORATED
6"	PVC	SCHEDULE 40	396	NON-PERFORATED, C/O STR.
TOTAL			4844	

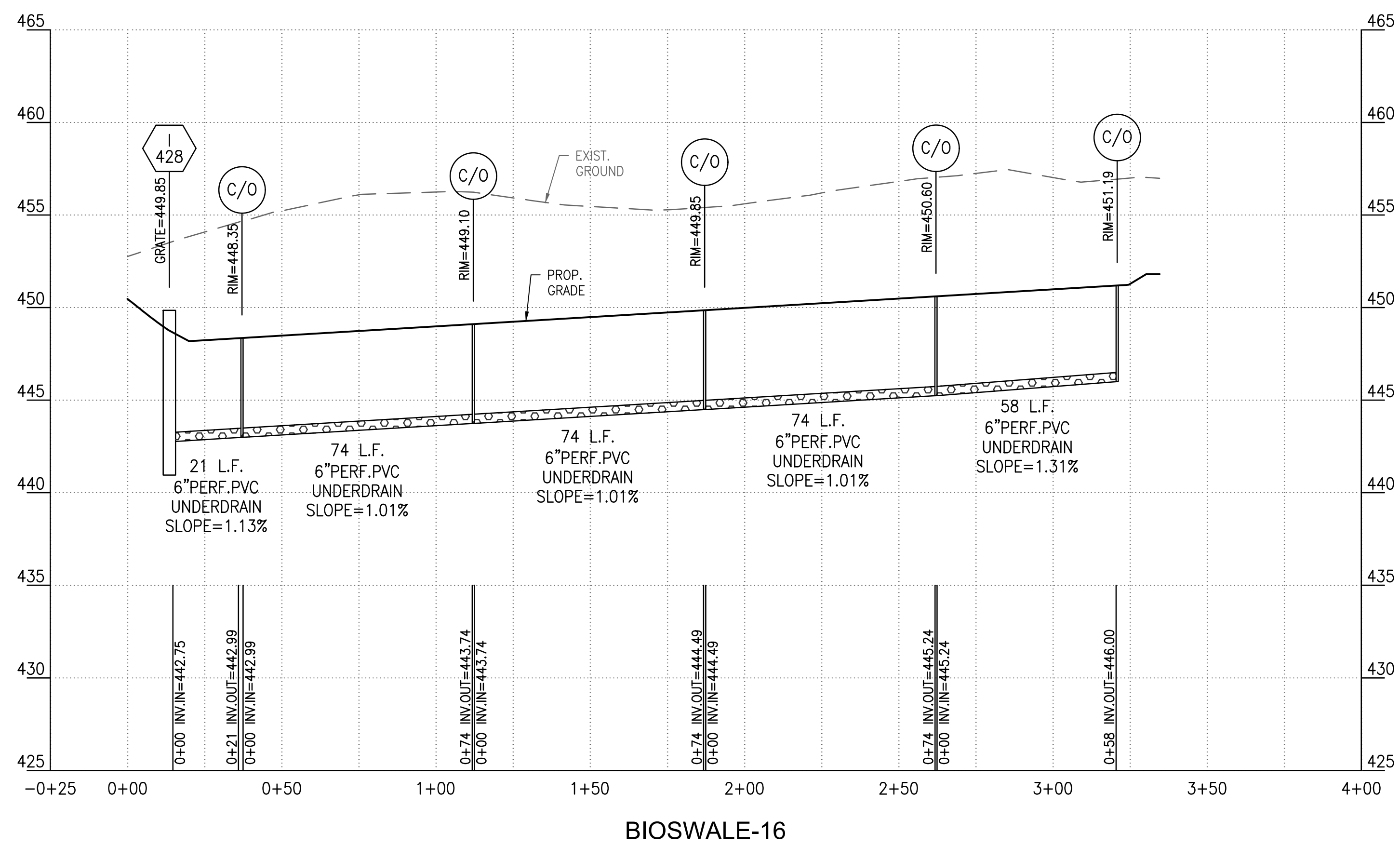
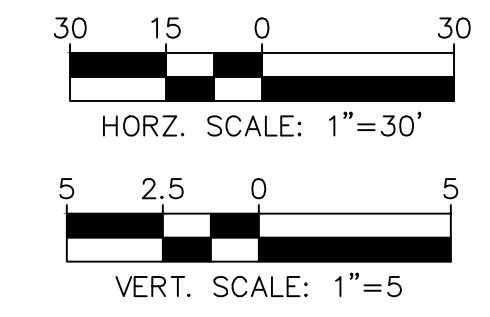
BIO-SWALE STATION TABLE				
SWALE NO.	HALFWAY BLVD START STA.	HALFWAY BLVD END STA.	LENGTH (FT)	LEFT/RIGHT OF CENTERLINE
1*	22+54.96	23+07.27	111	LEFT
1A	23+07.27	26+61.00	349	LEFT
2	26+61.00	26+91.46	30	LEFT
3	28+32.88	31+95.99	369	LEFT
4	33+13.58	34+63.05	149	LEFT
5	35+91.01	36+66.66	76	LEFT
6	37+27.16	39+27.36	200	LEFT
7	40+42.09	40+90.00	48	LEFT
8	40+90.00	46+00.41	477	LEFT
9	47+13.27	49+72.06	268	LEFT
10	50+78.76	54+82.47	402	LEFT
11	28+11.40	31+88.76	372	RIGHT
12	33+10.00	34+25.37	115	RIGHT
13	35+59.96	39+27.96	368	RIGHT
14	40+41.29	40+90.00	49	RIGHT
15	40+90.00	47+16.37	665	RIGHT
15A	47+16.37	49+62.51	233	RIGHT
16	50+78.81	53+92.33	313	RIGHT

* BIOSWALE NO. 1 (SHA SWM FACILITY NO. 1)
STA 22+54.96 TO 23+07.27, L=111 FT

- GENERAL NOTES**
- ALL PROPOSED STORM DRAIN PIPES AND STRUCTURES MUST BE PLACED ON 95% COMPACTED FILL ACCORDING TO AASHTO T180A STANDARDS.
 - FOR STATIONING OF INLET STRUCTURES, PLEASE REFER TO STRUCTURE SCHEDULE ON SHEET 29.



-14 & BIOSWALE-15 & BIOS



BIOSWALE-16

DESIGNED BY:	KDU/GCA	NO.	REVISION DESCRIPTION	DATE
DRAWN BY:	KDU/GCA	BY		
CHECKED BY:	PJM			
DATE:	JAN 2024			

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

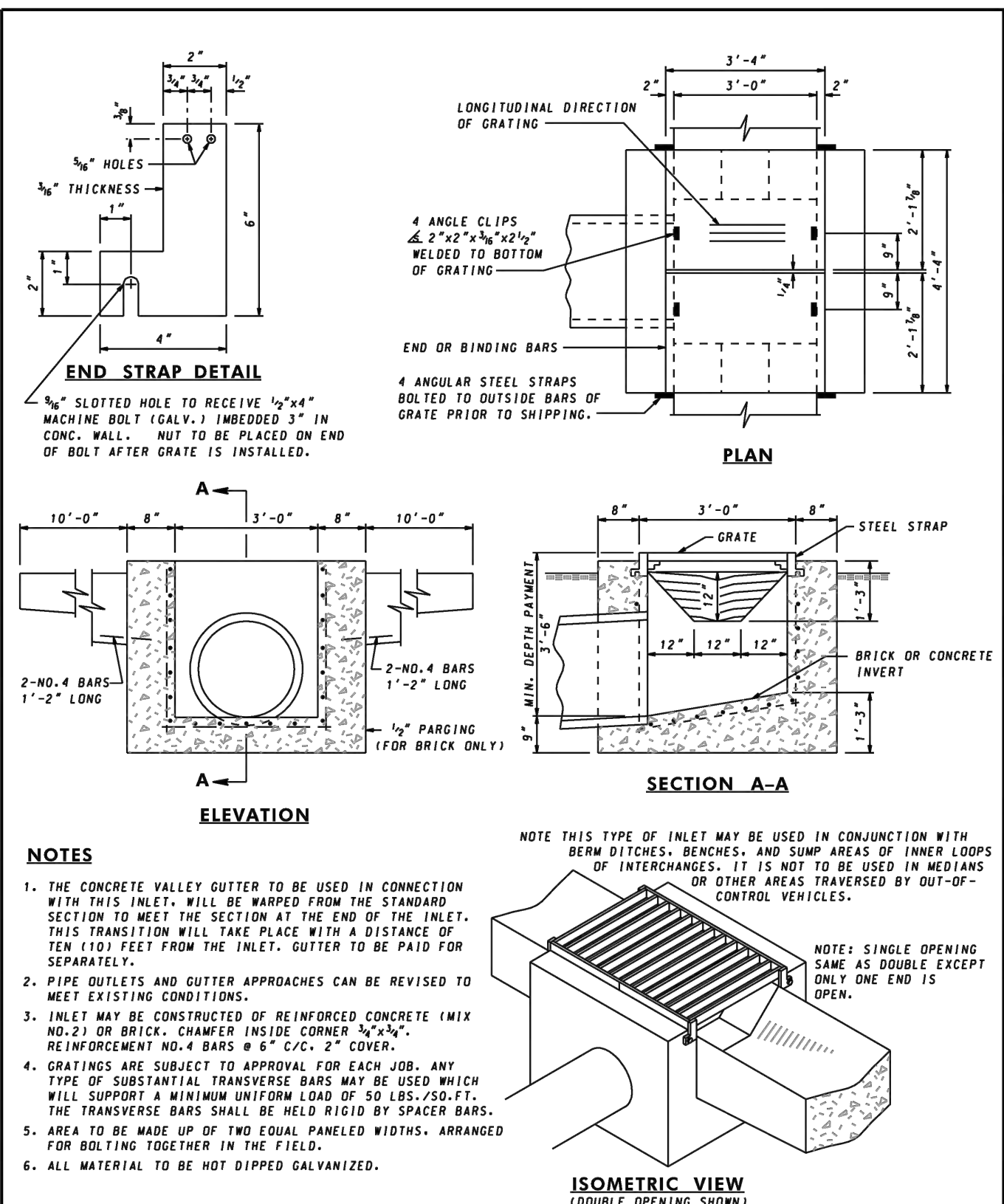
SCALE AS SHOWN

SHEET NO. 27

PROJECT NO. 10-273
SHA: WA067ZM1
FAP: APL-3(804)E

HALFWAY BOULEVARD EXTENDED
STORMWATER MANAGEMENT
PROFILES & PIPE SCHEDULE

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION08 - SD\10-273 SD-01.DWG PLOT DATE: 1/8/2024 12:20 PM



NOTES

- THE CONCRETE VALLEY CUTTER TO BE USED IN CONNECTION WITH THIS INLET, WILL BE OBTAINED FROM THE STANDARD SECTION TO MEET THE SECTION AT THE END OF THE INLET. THIS TRANSITION WILL TAKE PLACE WITH A DISTANCE OF TEN (10) FEET FROM THE INLET. CUTTER TO BE PAID FOR SEPARATELY.
- PIPE OUTLETS AND GUTTER APPROACHES CAN BE REVISED TO MEET EXISTING CONDITIONS.
- INLET MAY BE CONSTRUCTED OF REINFORCED CONCRETE (MIX NO. 2) OR BRICK, CHAMFER INSIDE CORNER $\frac{1}{8} \times \frac{1}{8}$. REINFORCEMENT NO. 4 BARS @ 6" C x 2' COVER.
- GRATINGS ARE SUBJECT TO APPROVAL FOR EACH JOB. ANY TYPE OF SUBSTANTIAL TRANSVERSE BARS MAY BE USED WHICH WILL SUPPORT A MINIMUM UNIFORM LOAD OF 50 LBS./SF. THE TRANSVERSE BARS SHALL BE HELD RIGID BY SPACER BARS.
- AREA TO BE MADE UP OF TWO EQUAL PANELED WIDTHS, ARRANGED FOR DRIVING TOGETHER IN THE FIELD.
- ALL MATERIAL TO BE HOT DIPPED GALVANIZED.

**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD SINGLE OR DOUBLE OPENING
TYPE K INLET OPEN-END GRATE
NON-TRAFFIC AREAS
STANDARD NO. MD 378.03**

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	25" (635mm)
8" (200mm)	28" (711mm)
10" (250mm)	34" (864mm)
12" (300mm)	37" (940mm)
15" (375mm)	44" (1118mm)
18" (450mm)	48" (1219mm)
24" (600mm)	57" (1442mm)
30" (750mm)	64" (1629mm)
36" (900mm)	72" (1829mm)
42" (1050mm)	80" (2032mm)
48" (1200mm)	90" (2286mm)
60" (1500mm)	110" (2794mm)

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION (HEAVY TRUCK CONSTRUCTION (7.5T AXLE LOAD))	
	12" (300mm)	48" (1219mm)
4" (100mm)	12" (305mm)	24" (610mm)
6" (150mm)	15" (381mm)	30" (762mm)
8" (200mm)	18" (457mm)	36" (914mm)
10" (250mm)	21" (533mm)	42" (1067mm)
12" (300mm)	24" (610mm)	48" (1219mm)
15" (375mm)	28" (711mm)	57" (1442mm)
18" (450mm)	32" (813mm)	66" (1676mm)
24" (600mm)	38" (965mm)	78" (1981mm)
30" (750mm)	44" (1118mm)	90" (2286mm)
36" (900mm)	50" (1270mm)	102" (2591mm)
42" (1050mm)	56" (1423mm)	114" (2900mm)
48" (1200mm)	62" (1575mm)	126" (3205mm)
60" (1500mm)	74" (1879mm)	150" (3810mm)

MAXIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	CLASS I			CLASS II			CLASS III		
	COMPACTED	DUMPED	95%	90%	95%	90%	95%	90%	95%
4"	37	18	25	18	18	18	18	18	18
6"	44	20	29	20	21	21	21	21	21
8"	52	23	33	24	25	25	25	25	25
10"	61	26	38	28	30	30	30	30	30
12"	71	30	44	33	35	35	35	35	35
15"	82	35	51	39	41	41	41	41	41
18"	94	41	59	45	48	48	48	48	48
24"	111	50	71	54	57	57	57	57	57
30"	129	59	83	63	67	67	67	67	67
36"	148	68	96	73	77	77	77	77	77
42"	167	78	109	83	88	88	88	88	88
48"	187	88	122	93	99	99	99	99	99
60"	227	106	147	111	118	118	118	118	118

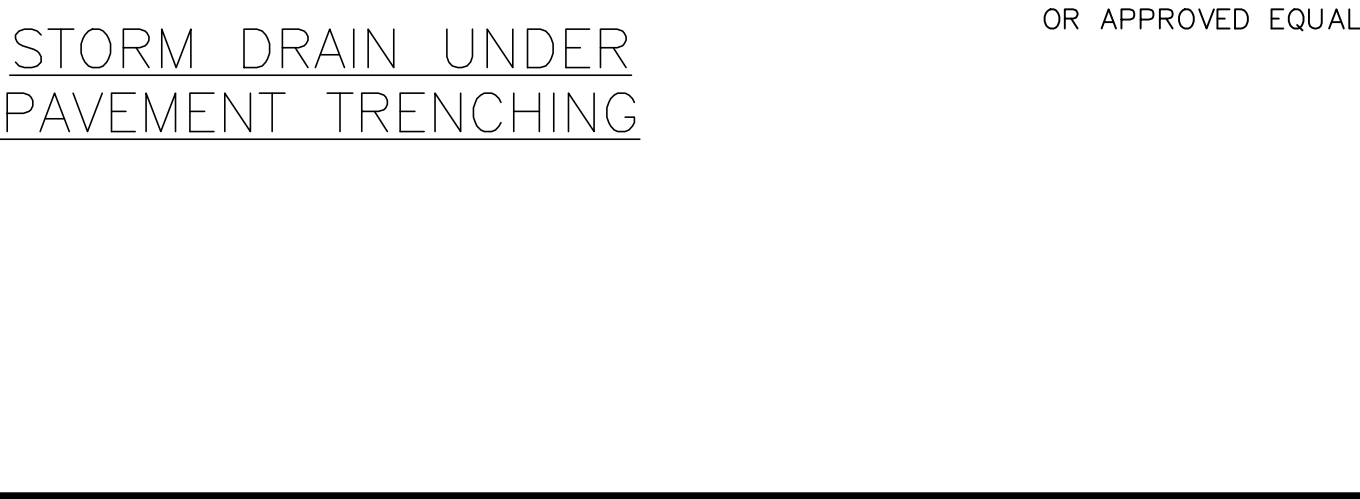
NOTES:

- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS, LATEST EDITION."
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER UNLESS OTHERWISE NOTED BY THE ENGINEER. MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4" - 24" (100mm - 600mm), 6" (150mm) FOR 30" - 60" (750mm - 1500mm).
- INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING TO THE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
- MINIMUM COVER:** MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL.

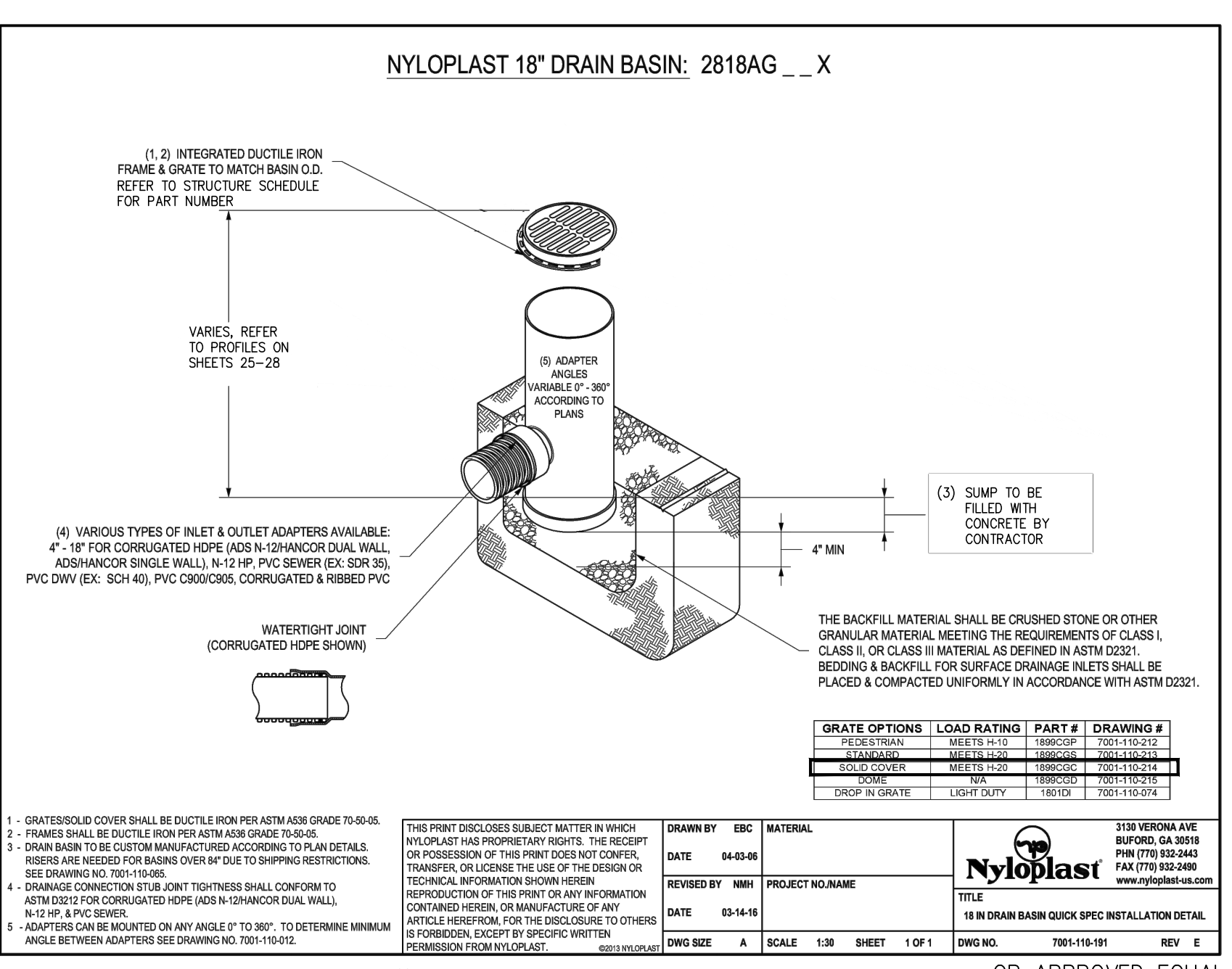
FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12. LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE.
UNIT WEIGHT OF SOIL (γ_{soil}) = 120 PCF

REV.	DESCRIPTION	DATE	BY	CHKD
1	INITIAL BACKFILL	04/22/20	MMDDYY	CHKO
2	TRENCH INSTALLATION (N-12 PER AASHTO)	02/16/24		

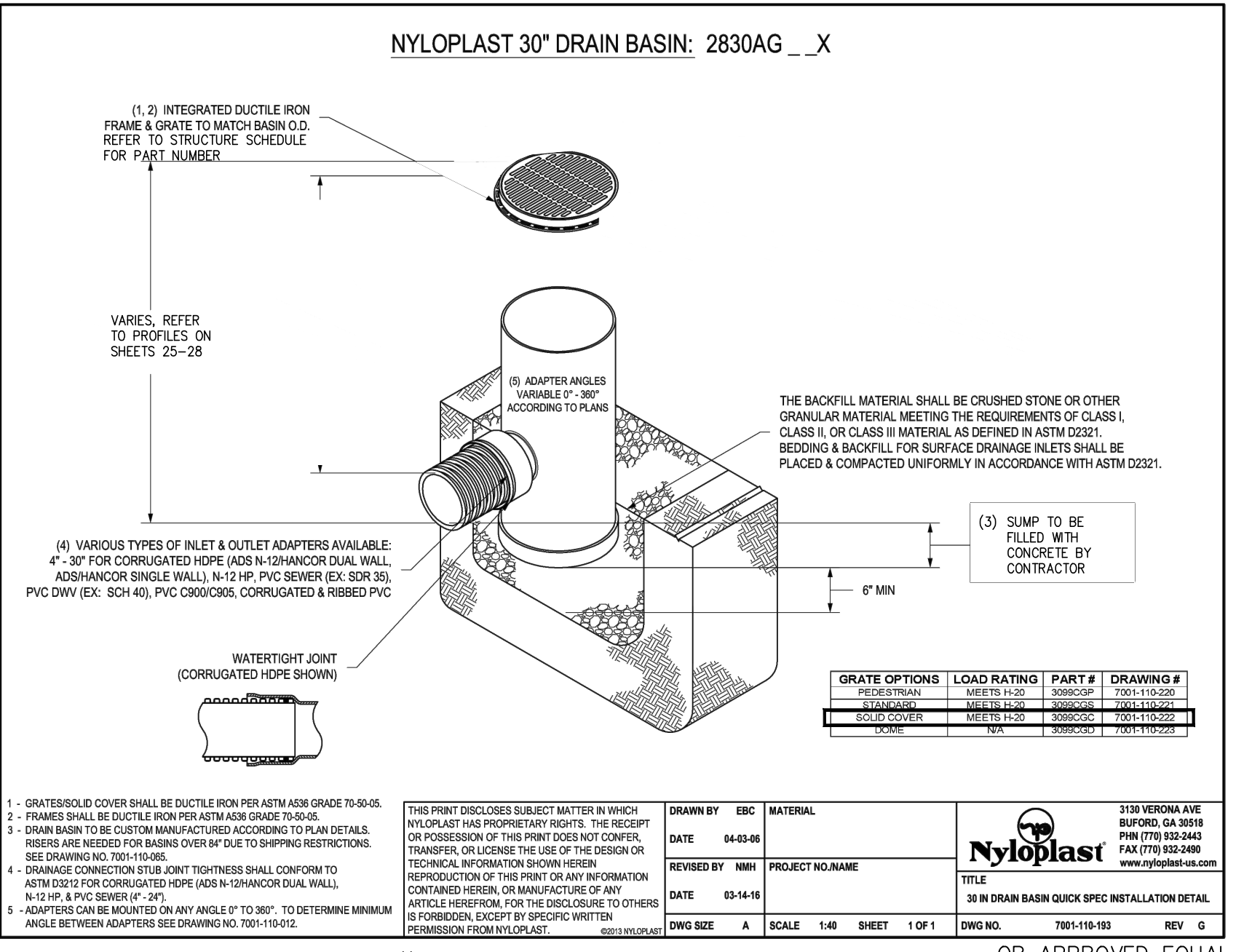
DRAWING NUMBER: STD-101



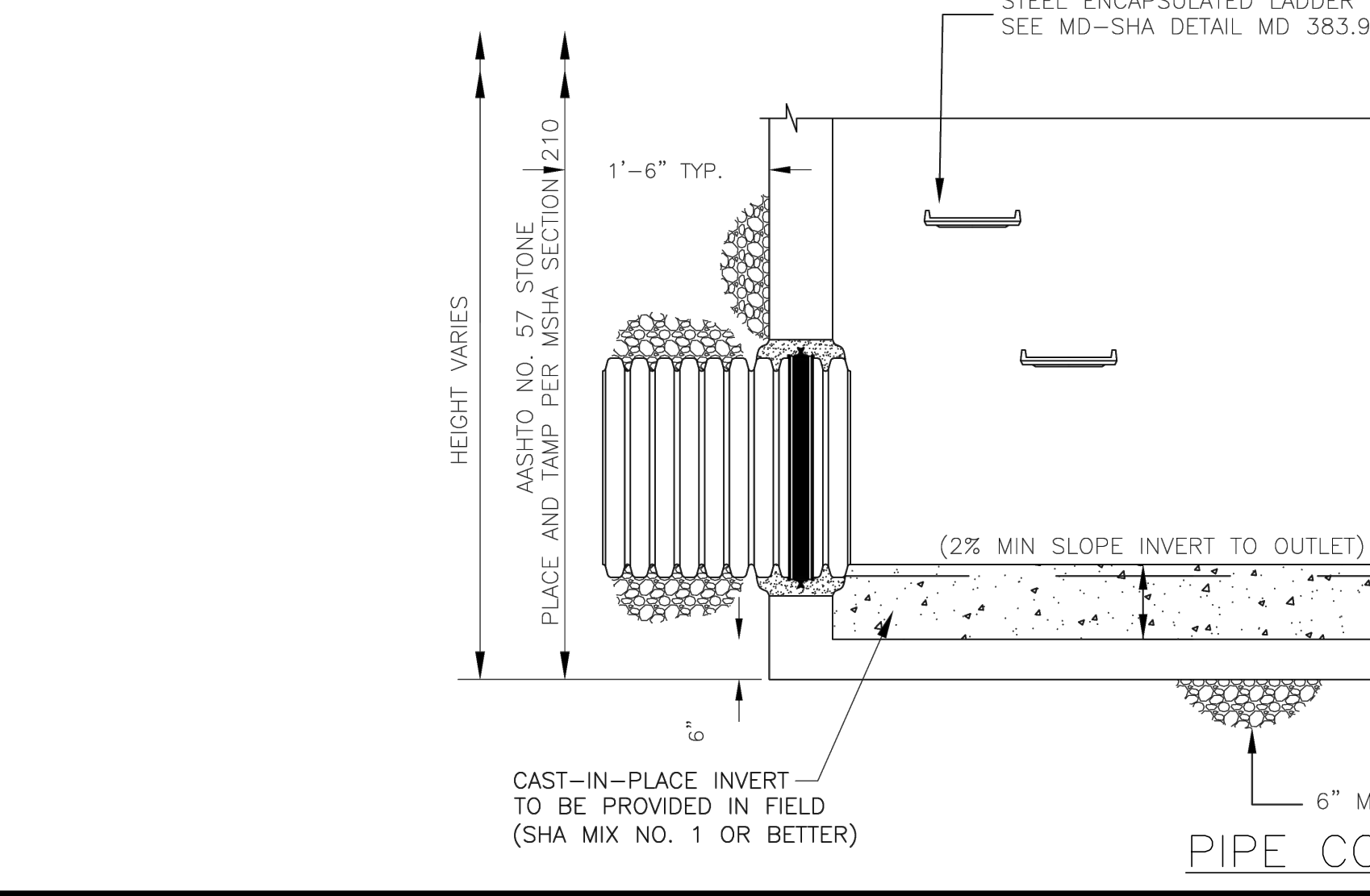
STORM DRAIN UNDER PAVEMENT TRENCHING OR APPROVED EQUAL



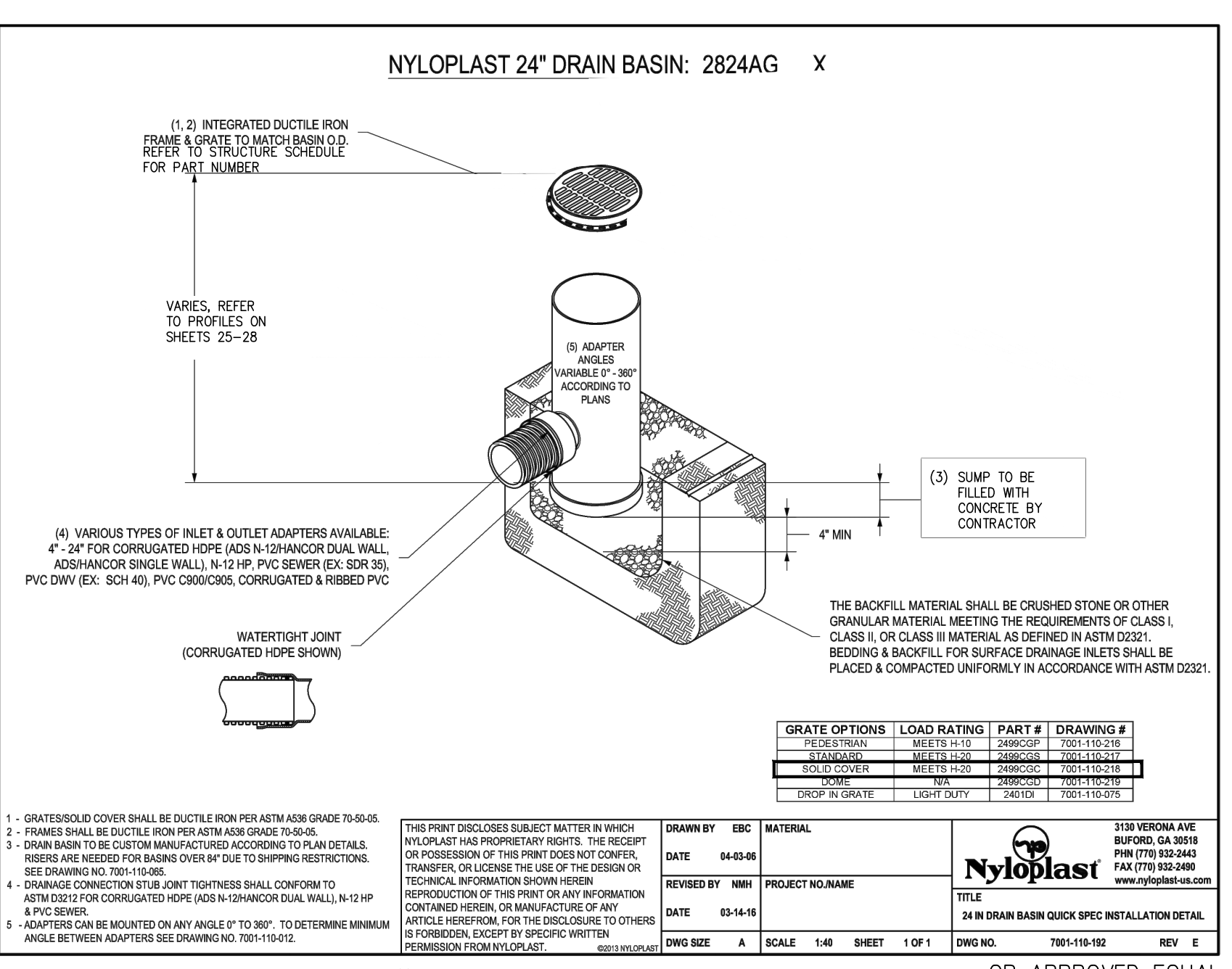
18" RISER STRUCTURE OR APPROVED EQUAL



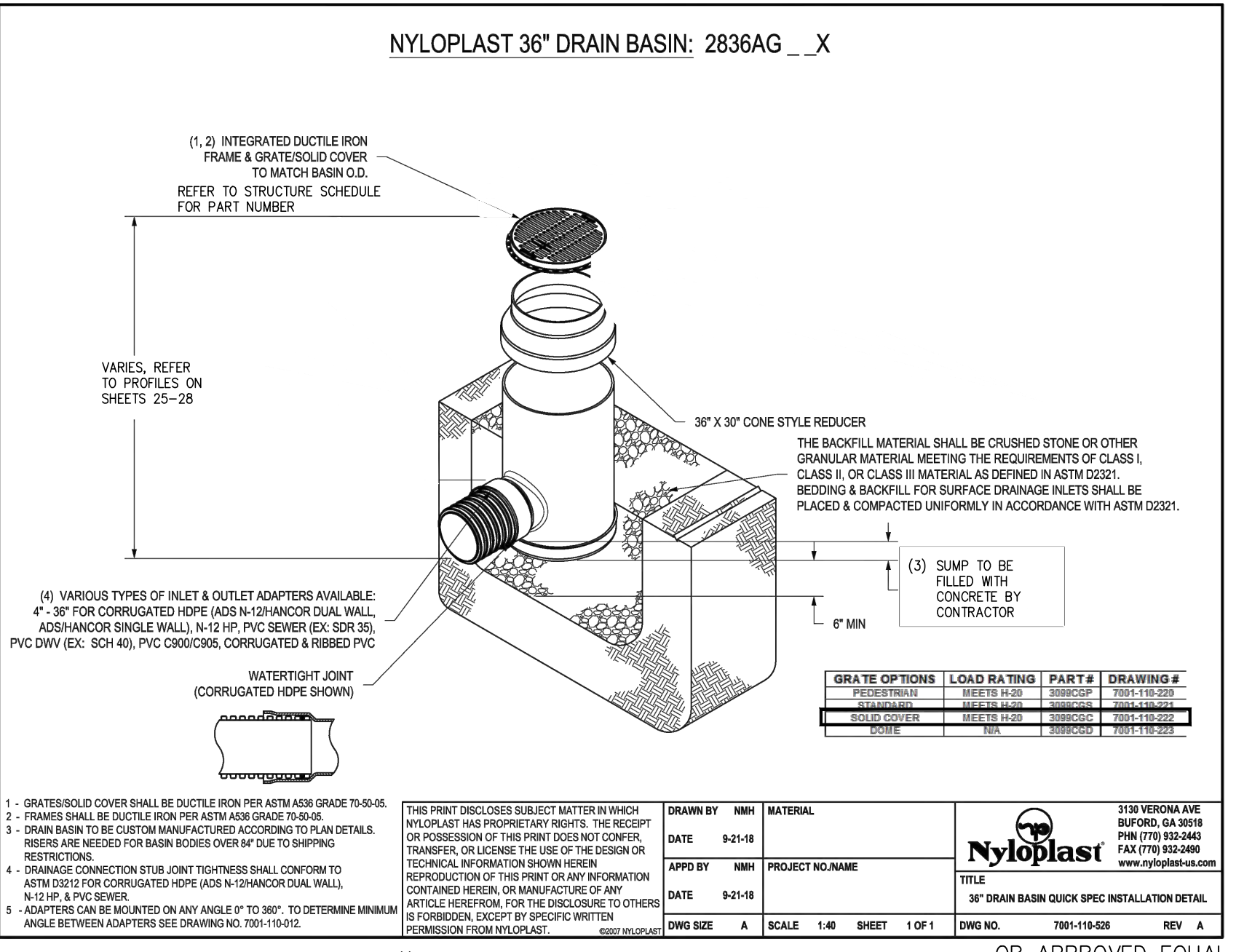
30" RISER STRUCTURE OR APPROVED EQUAL



PIPE CONNECTION TO INLET



24" RISER STRUCTURE OR APPROVED EQUAL



36" RISER STRUCTURE OR APPROVED EQUAL

**WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING**

DESIGNED BY: KJUGCA
DRAWN BY: KJUGCA
CHECKED BY: PJM
DATE: JAN 2024

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-315-2401

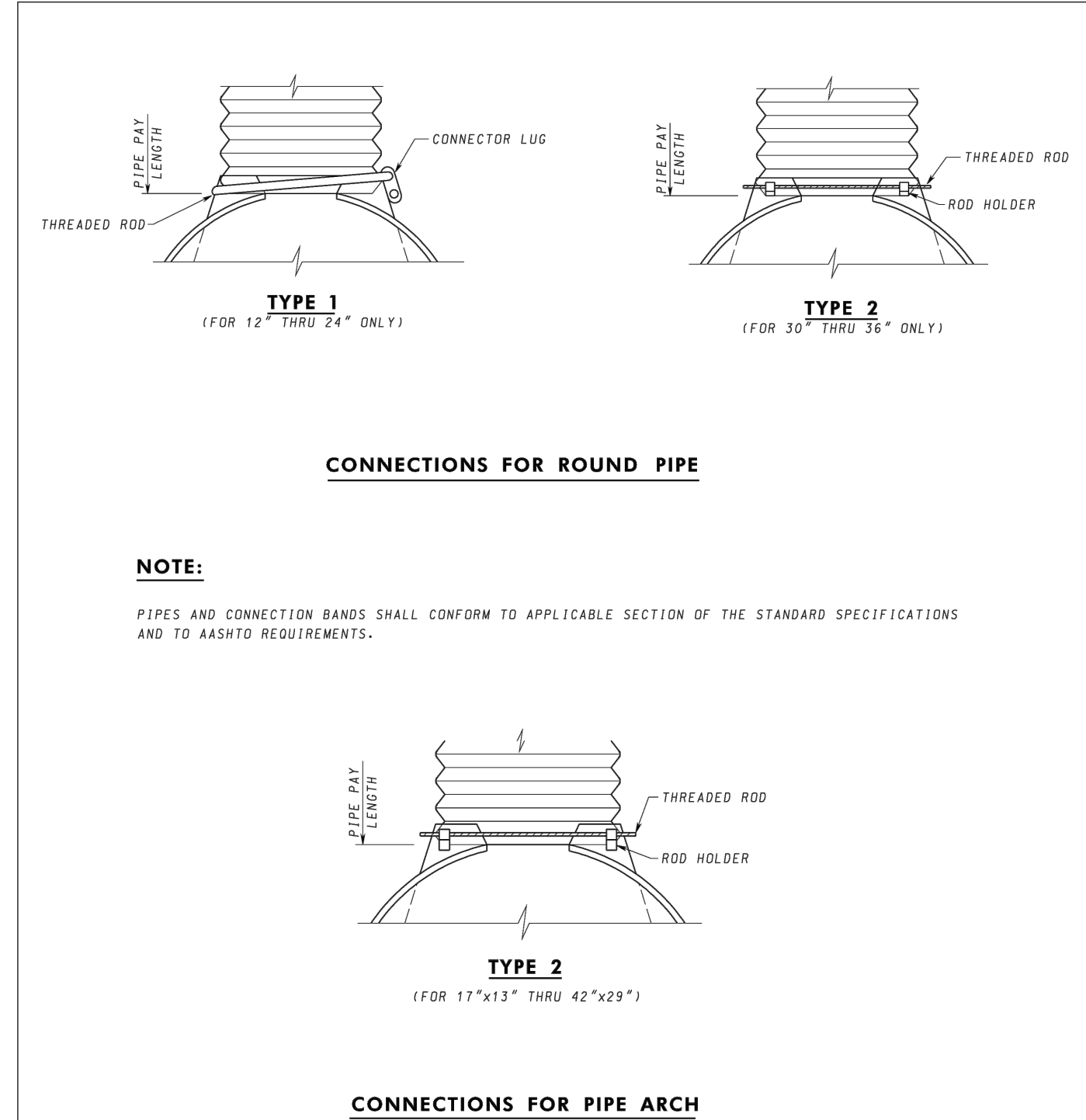
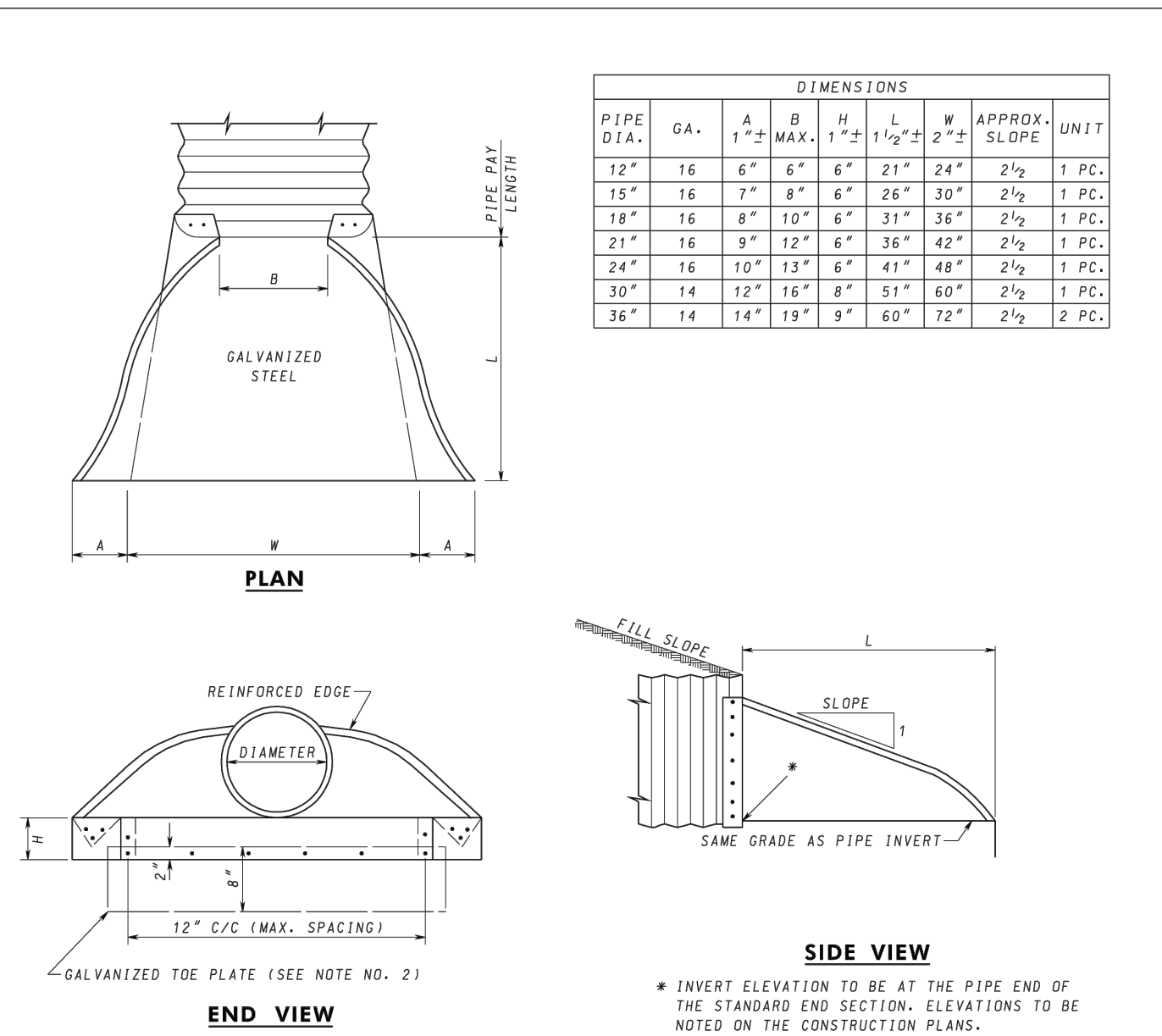
**HALFWAY BOULEVARD
EXTENDED
STORM DRAIN
STRUCTURE DETAILS**

NO	REVISION DESCRIPTION	BY	DATE

SCALE: N.T.S.
SHEET NO.: 28
PROJECT NO.: 10-273
SHA: WA067ZM1
FAP: APL-3(804)E

STRUCTURE SCHEDULE											
STRUCTURE NUMBER	STANDARD	STRUCTURE TYPE	ADS BASE DIAMETER	PIPE SIZE		INVERT ELEVATION	TOP ELEVATION	STATIONING		REMARKS	
				IN/OUT	IN			OUT			
I 102	MD 378.04	Type K Inlet	---	6"	424.20	432.15	34+18.63	51.00' R		Single Opening Inlet	
				24"	422.40						422.05
D 104	ADS 2830AG30X	Drain Basin	30"	18"	422.70	432.45	34+18.62	41.50' R		Solid Cover	
				24"	428.65						422.45
D 106	ADS 2824AG24X	Drain Basin	24"	24"	430.10	436.37	33+99.39	45.23' R		Solid Cover	
D 108	ADS 2830AG30X	Drain Basin	30"	12"	432.40	440.60	31+84.33	41.53' R		Solid Cover	
				18"	431.55						
				24"	434.90						431.05
D 110	ADS 2824AG24X	Drain Basin	24"	24"	435.75	444.85	30+62.72	41.50' R		Solid Cover	
D 112	ADS 2824AG24X	Drain Basin	24"	24"	437.20	451.60	28+32.22	41.88' R		Solid Cover	
D 114	ADS 2836AG36X	Drain Basin	36"	18"	445.15	452.70	27+04.13	51.94' R		Solid Cover	
				24"	438.10						437.85
D 116	ADS 2824AG24X	Drain Basin	24"	24"	438.75	452.65	26+26.84	55.50' R		Solid Cover	
D 118	ADS 2830AG30X	Drain Basin	30"	18"	440.70	450.00	23+35.19	55.50' R		Solid Cover	
				24"							440.20
D 120	ADS 2818AG18X	Drain Basin	18"	18"	441.95	449.20	23+13.61	41.49' L		Solid Cover	
				18"							441.70
I 122	MD 378.04	Type K Inlet	---	6"	442.80	448.90	23+13.61	51.00' L		Double Opening Inlet	
				18"							442.05
I 124	MD 378.04	Type K Inlet	---	6"	424.30	431.40	34+44.36	51.00' L		Single Opening Inlet	
				18"							423.80
I 126	MD 378.04	Type K Inlet	---	6"	433.25	440.35	31+83.80	50.96' R		Single Opening Inlet	
				12"							432.50
I 128	MD 378.04	Type K Inlet	---	6"	432.50	440.35	31+84.29	50.79' L		Single Opening Inlet	
				18"							433.00
I 130	MD 378.04	Type K Inlet	---	6"	446.70	451.80	26+88.97	51.00' L		Single Opening Inlet	
				18"							446.20

STRUCTURE SCHEDULE											
STRUCTURE NUMBER	STANDARD	STRUCTURE TYPE	ADS BASE DIAMETER	PIPE SIZE		INVERT ELEVATION	TOP ELEVATION	STATIONING		REMARKS	
				IN/OUT	IN			OUT			
D 402	ADS 2830AG30X	Drain Basin	30"	30"	418.40	418.40	429.35	35+51.02	43.00' R	Solid Cover	
D 404	ADS 2836AG36X	Drain Basin	36"	15"	420.90	428.75	36+25.00	43.00' R		Solid Cover	
				18"	419.80						
				30"	419.10						418.80
D 405	ADS 2836AG36X	Drain Basin	36"	18"	420.65	429.65	37+29.810	43.00' R		Solid Cover	
				30"	419.90						419.65
D 406	ADS 2830AG30X	Drain Basin	30"	30"	422.30	422.05	434.35	38+97.00	43.00' R	Solid Cover	
D 408	ADS 2824AG24X	Drain Basin	24"	12"	432.20	438.50	40+46.54	43.00' R		Solid Cover	
				18"	431.05						
				30"	423.30						423.05
D 410	ADS 2830AG30X	Drain Basin	30"	30"	424.25	424.00	437.65	41+82.44	43.00' R	Solid Cover	
D 412	ADS 2830AG30X	Drain Basin	30"	30"	425.15	424.90	436.70	43+10.63	43.00' R	Solid Cover	
D 414	ADS 2830AG30X	Drain Basin	30"	30"	425.85	425.60	435.85	43+93.01	43.79' R	Solid Cover	
D 416	ADS 2824AG24X	Drain Basin	24"	15"	428.95	436.00	44+27.63	43.00' R		Solid Cover	
				18"	427.05						
				24"	430.75						
				30"							426.05
D 418	ADS 2824AG24X	Drain Basin	24"	24"	431.45	431.20	436.45	45+05.51	43.00' R	Solid Cover	
D 420	ADS 2824AG24X	Drain Basin	24"	24"	432.40	432.15	439.10	46+33.70	43.00' R	Solid Cover	
D 422	ADS 2824AG24X	Drain Basin	24"	12"	436.00	441.60	47+22.62	43.00' R		Solid Cover	
				18"	433.10						
				18"	437.00						
				24"							432.85
D 424	ADS 2818AG18X	Drain Basin	18"	18"	438.25	438.00	444.35	48+21.18	43.00' R	Solid Cover	
D 426	ADS 2818AG18X	Drain Basin	18"	18"	439.70	439.45	447.90	49+47.64	43.00' R	Solid Cover	
I 428	MD 378.03	Type K Inlet	---	6"	442.75	449.85	50+81.17	51.00' R		Single Opening Inlet	
				18"	441.20						440.95
I 430	MD 378.03	Type K Inlet	---	6"	443.25	449.85	50+81.17	51.00' L		Single Opening Inlet	
				18"							442.25
I 432	MD 378.03	Type K Inlet	---	6"	421.75	428.85	36+25.00	51.00' R		Single Opening Inlet	
				15"							421.00
I 434	MD 378.03	Type K Inlet	---	6"	432.75	438.10	40+46.54	51.00' R		Single Opening Inlet	
				12"							432.25
I 436	MD 378.03	Type K Inlet	---	6"	433.00	438.10	40+46.54	51.00' L		Single Opening Inlet	
				18"							432.00
I 438	MD 378.03	Type K Inlet	---	6"	433.00	438.10	44+27.63	51.00' R		Double Opening Inlet	
				18"							432.00
I 440	MD 378.03	Type K Inlet	---	6"	429.00	436.10	44+27.63	51.00' L		Double Opening Inlet	
				18"							428.00
I 441	MD 378.03	Type K Inlet	---	6"	434.60	441.70	47+22.62	51.00' R		Single Opening Inlet	
				12"							434.10
I 442	MD 378.03	Type K Inlet	---	6"	435.05	441.65	47+22.62	51.00' L		Single Opening Inlet	
				18"							434.05
I 444	MD 378.03	Type K Inlet	---	6"	421.75	428.85	36+25.00	51.00' L		Double Opening Inlet	
				18"							420.75
I 446	MD 378.03	Type K Inlet	---	6"	422.60	429.70	37+29.81	51.00' L		Single Opening Inlet	
				18"							421.60



SPECIFICATION 303	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD METAL END SECTION ROUND METAL PIPE STANDARD NO. MD 370.01
APPROVED	<i>Kel G. McCall</i> DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	
APPROVAL	SHA REVISIONS APPROVAL - FEDERAL HIGHWAY ADMINISTRATION	
REVISIONS	SHA REVISIONS	

SPECIFICATION	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD CONNECTIONS METAL END SECTIONS STANDARD NO. MD 370.11
APPROVED	<i>Kel G. McCall</i> DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT	
APPROVAL	SHA REVISIONS APPROVAL - FEDERAL HIGHWAY ADMINISTRATION	
REVISIONS	SHA REVISIONS	

PIPE SCHEDULE				
PIPE SIZE	TYPE	CLASS	LENGTH (FT)	REMARKS
12 "	HDPE		16	
15 "	HDPE		12	
18 "	HDPE		1191	
24 "	HDPE		1522	
30 "	HDPE		913	
TOTAL			3654	

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

DESIGNED BY: KDUJGA
DRAWN BY: KDUJGA
CHECKED BY: PJM
DATE: JAN 2024

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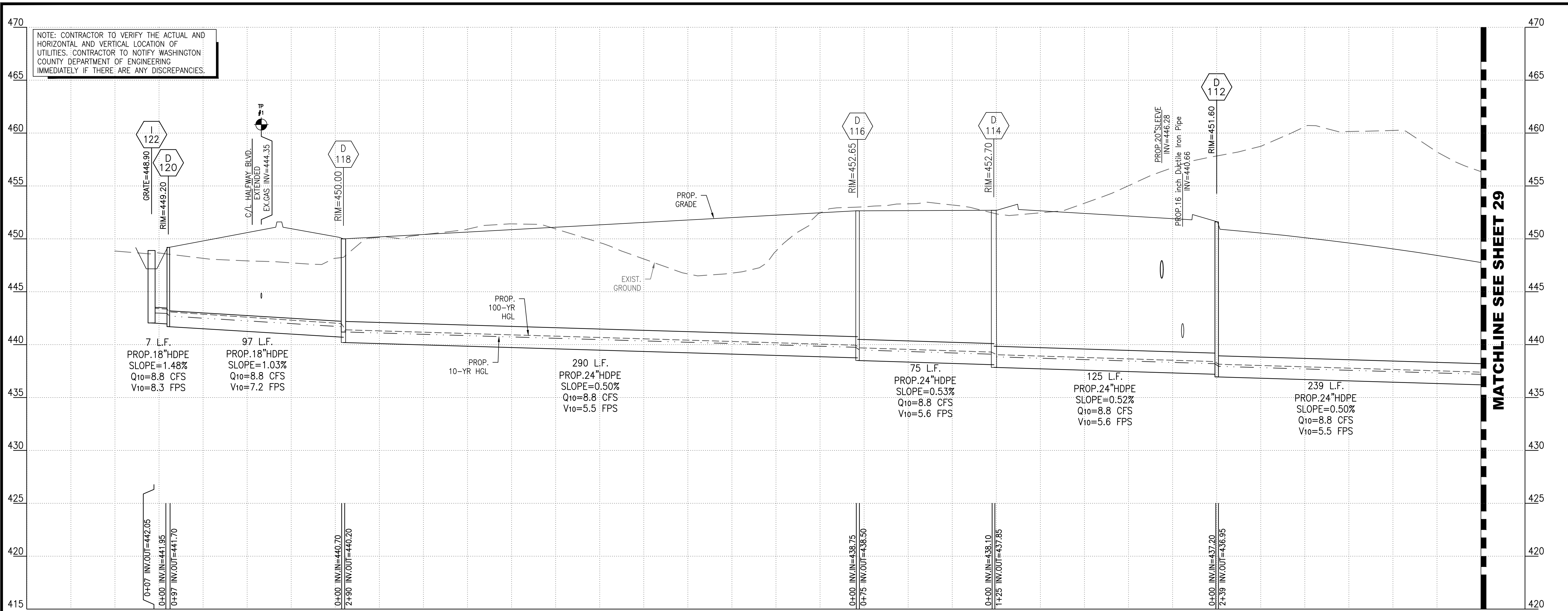
HALFWAY BOULEVARD
EXTENDED
STORM DRAIN PIPE AND
STRUCTURE SCHEDULES

SCALE
N.T.S.

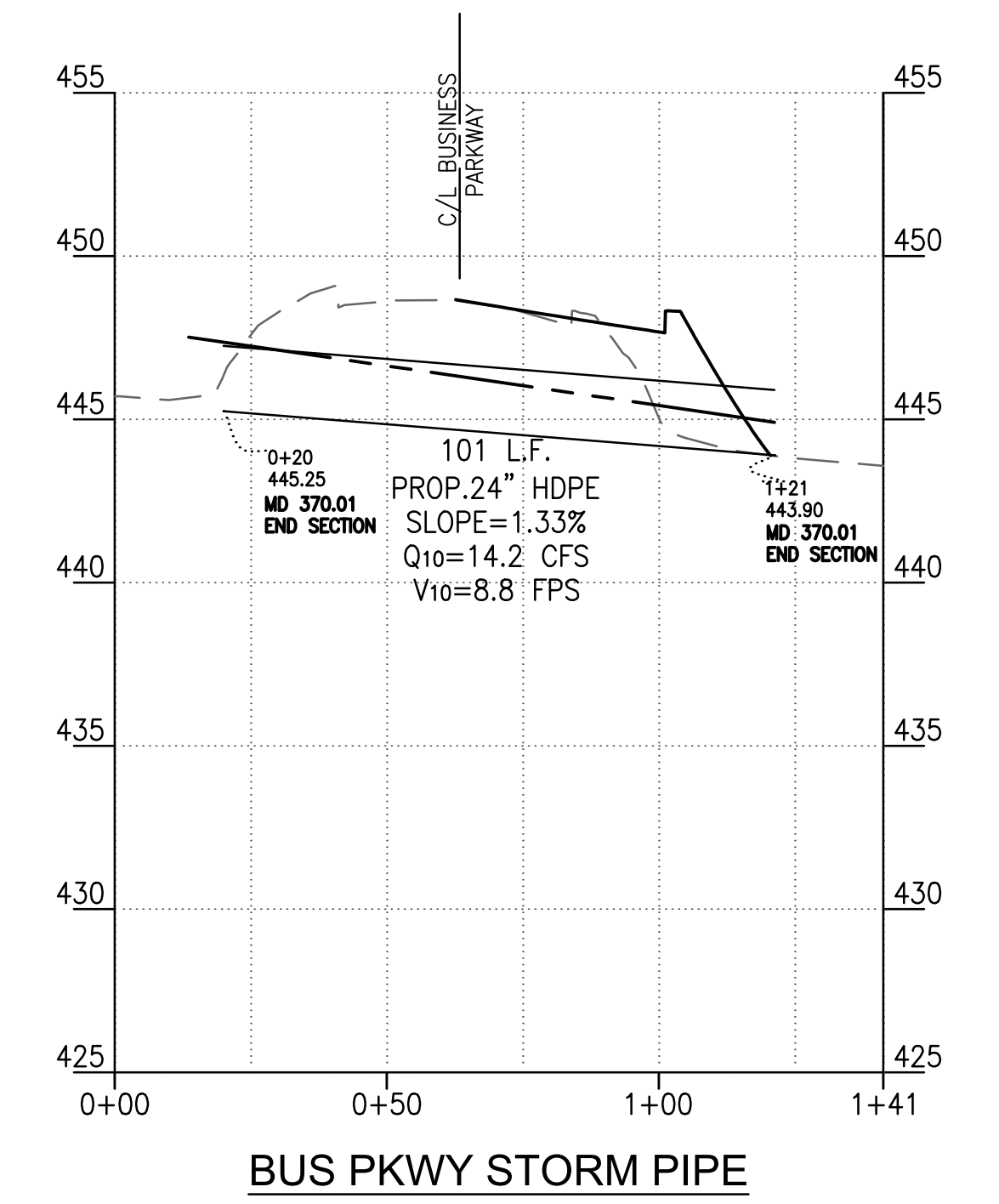
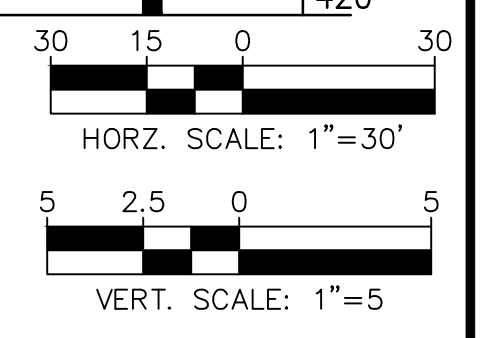
SHEET NO.
29

PROJECT NO.
10-273
SHA: WA067ZM1
FAP: APL-3(804)E

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122-100



DESIGNED BY:	KDUUGA
DRAWN BY:	KDUUGA
CHECKED BY:	PJM
DATE:	JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

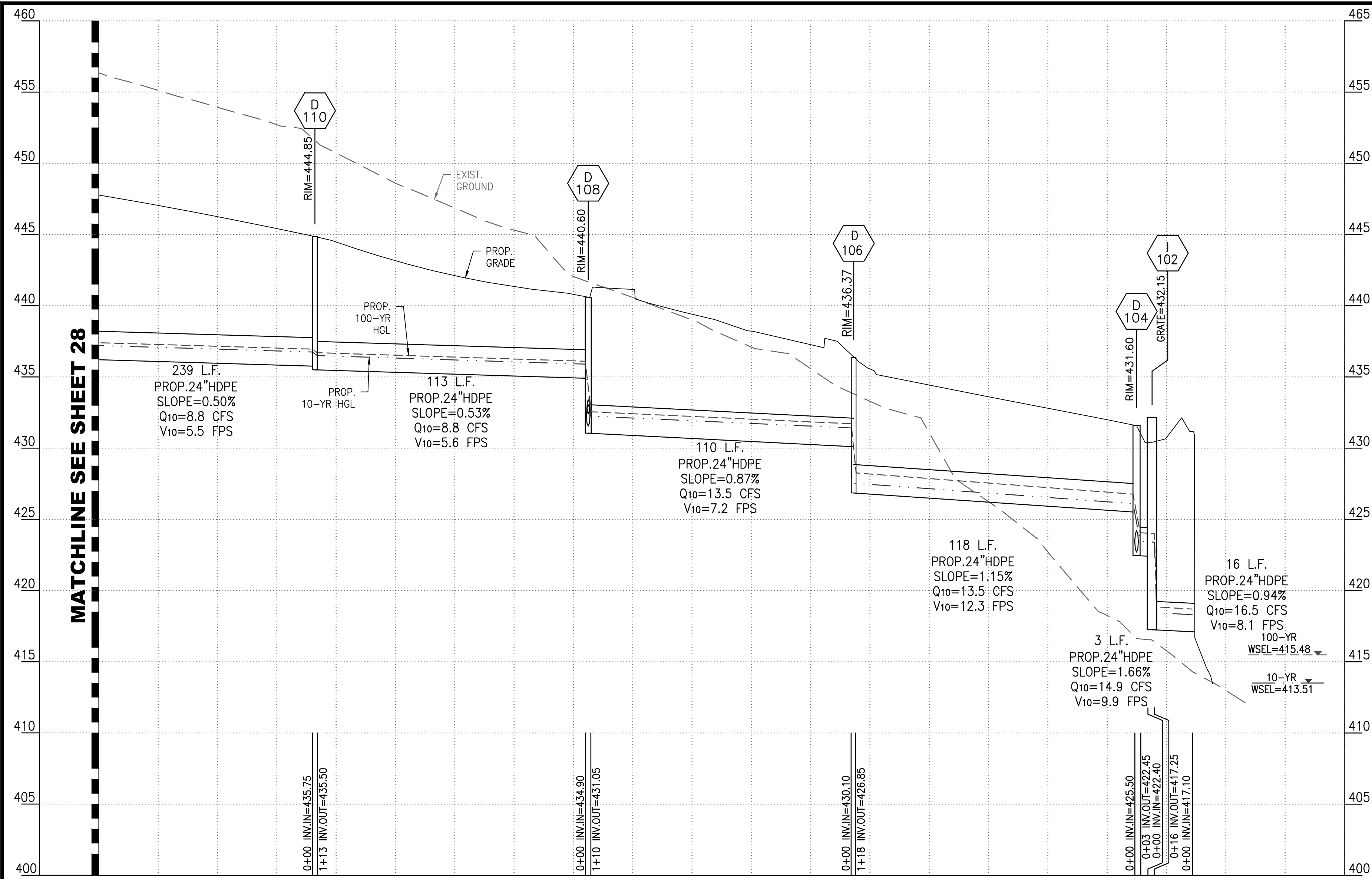
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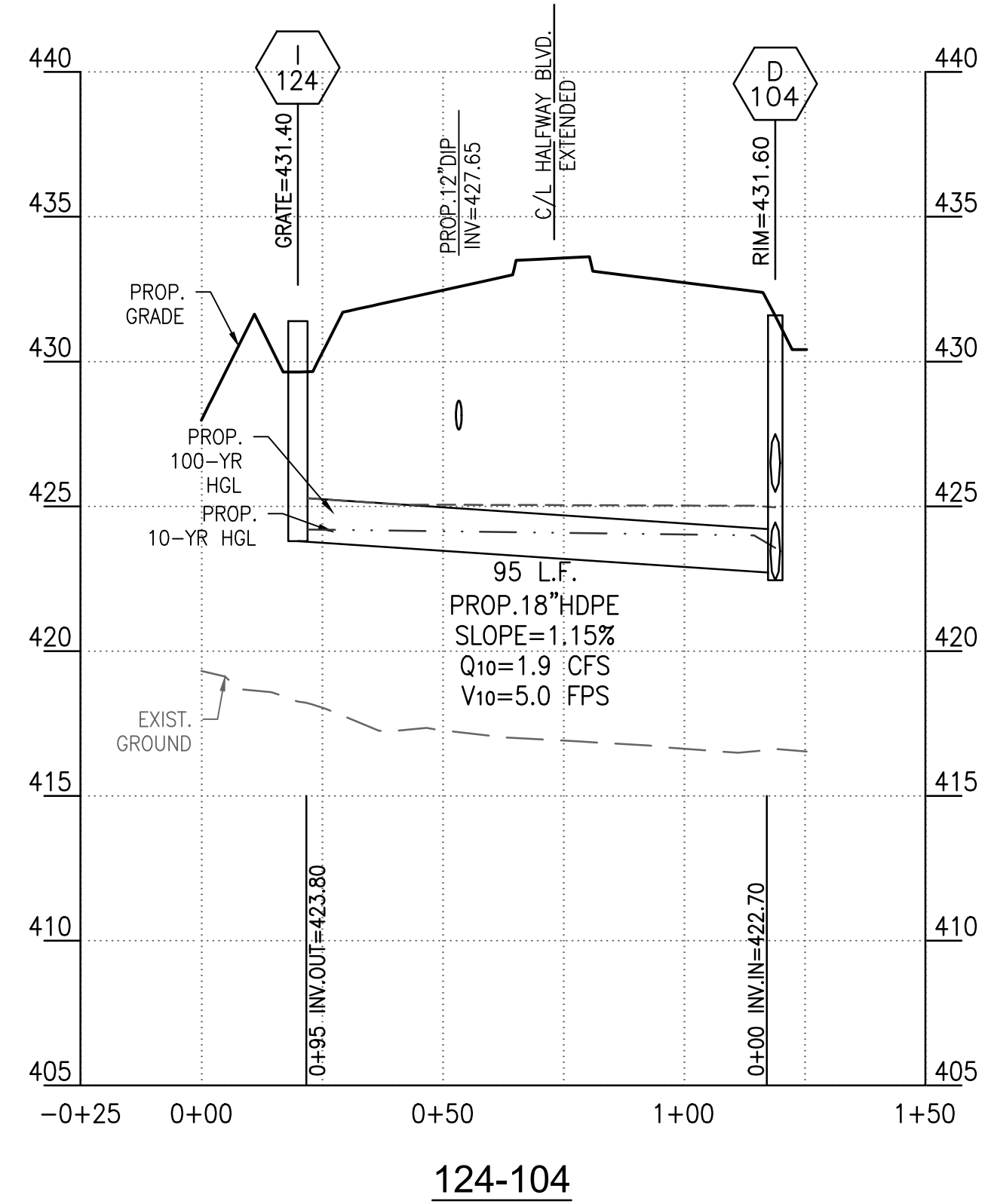
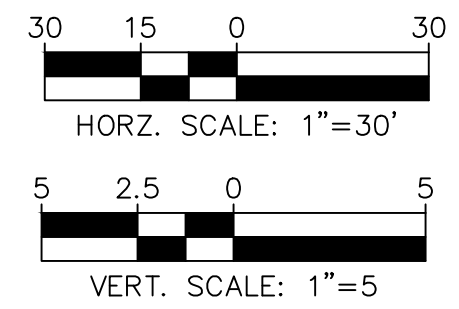
PROJECT NO. 10-273

SHA: WA067ZM1
FAP: APL-3(804)E

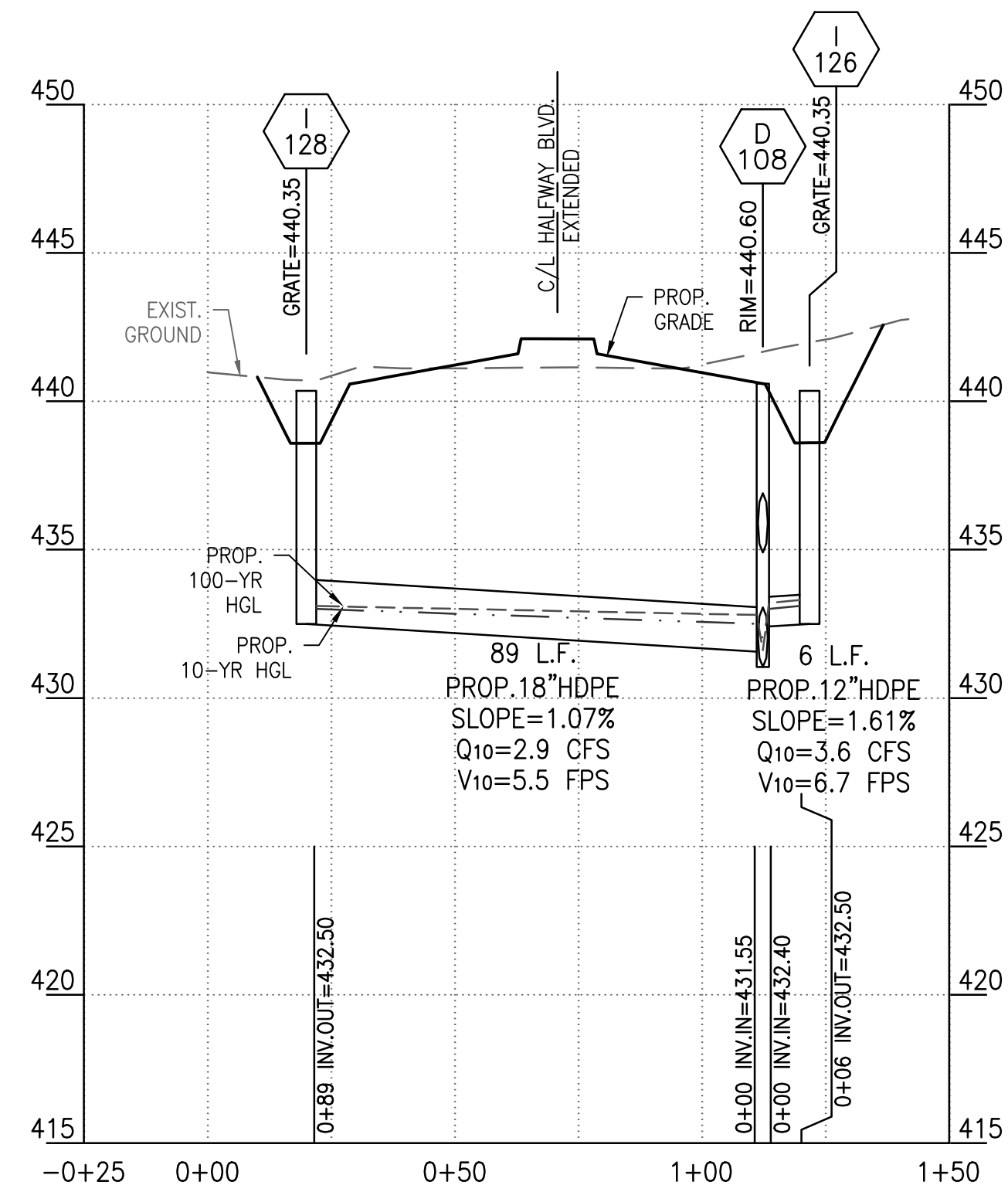
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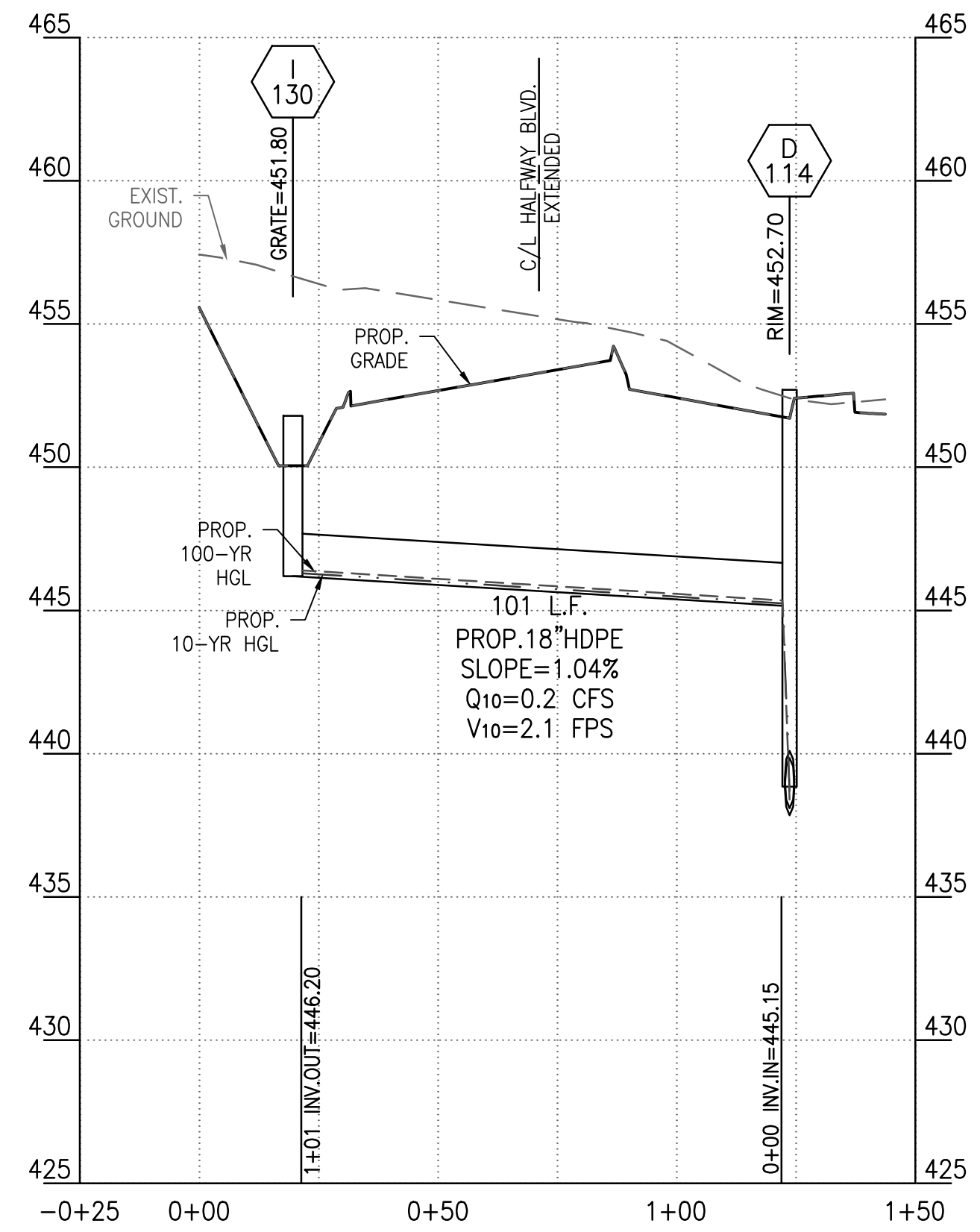
122-100



124-104



128-126



130-114

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUJGA
 DRAWN BY: KDUJGA
 CHECKED BY: PJM
 DATE: JAN 2024



WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

HALFWAY BOULEVARD EXTENDED
STORM DRAIN PROFILES

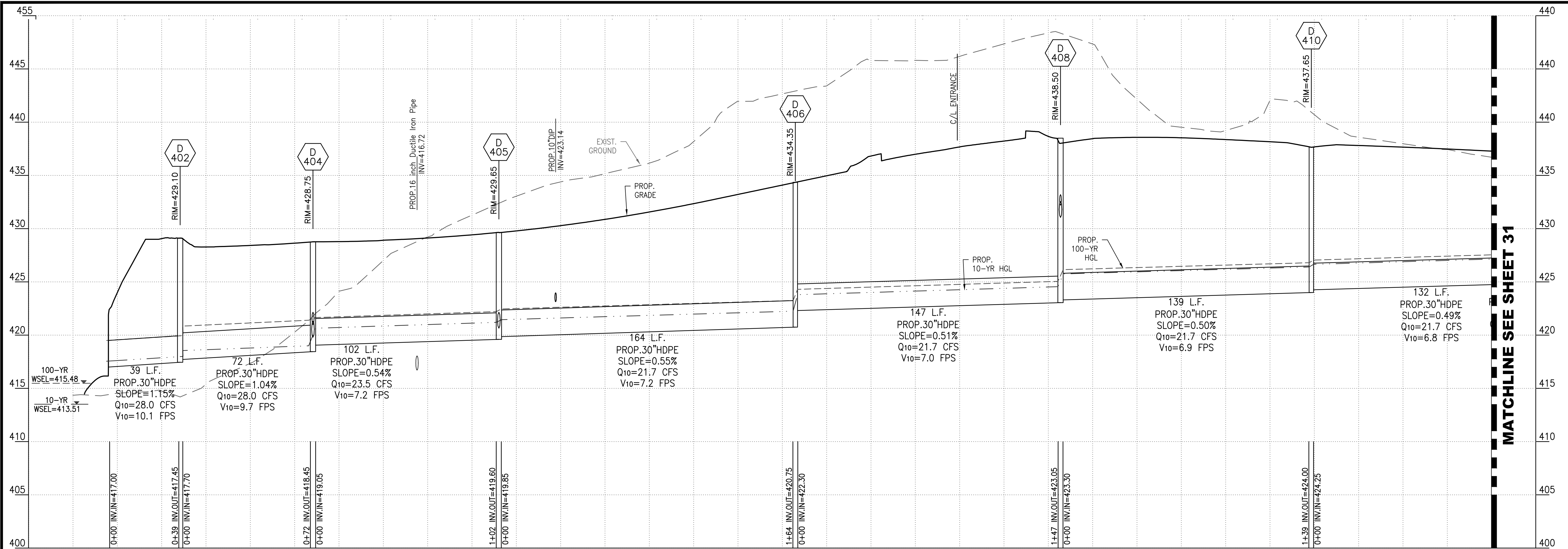
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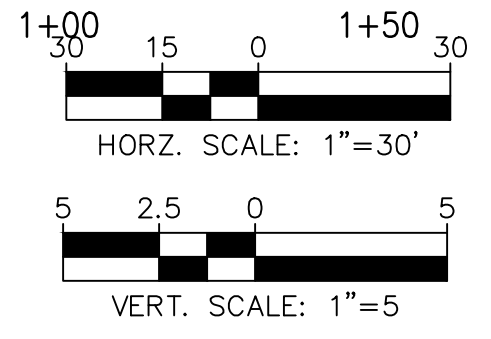
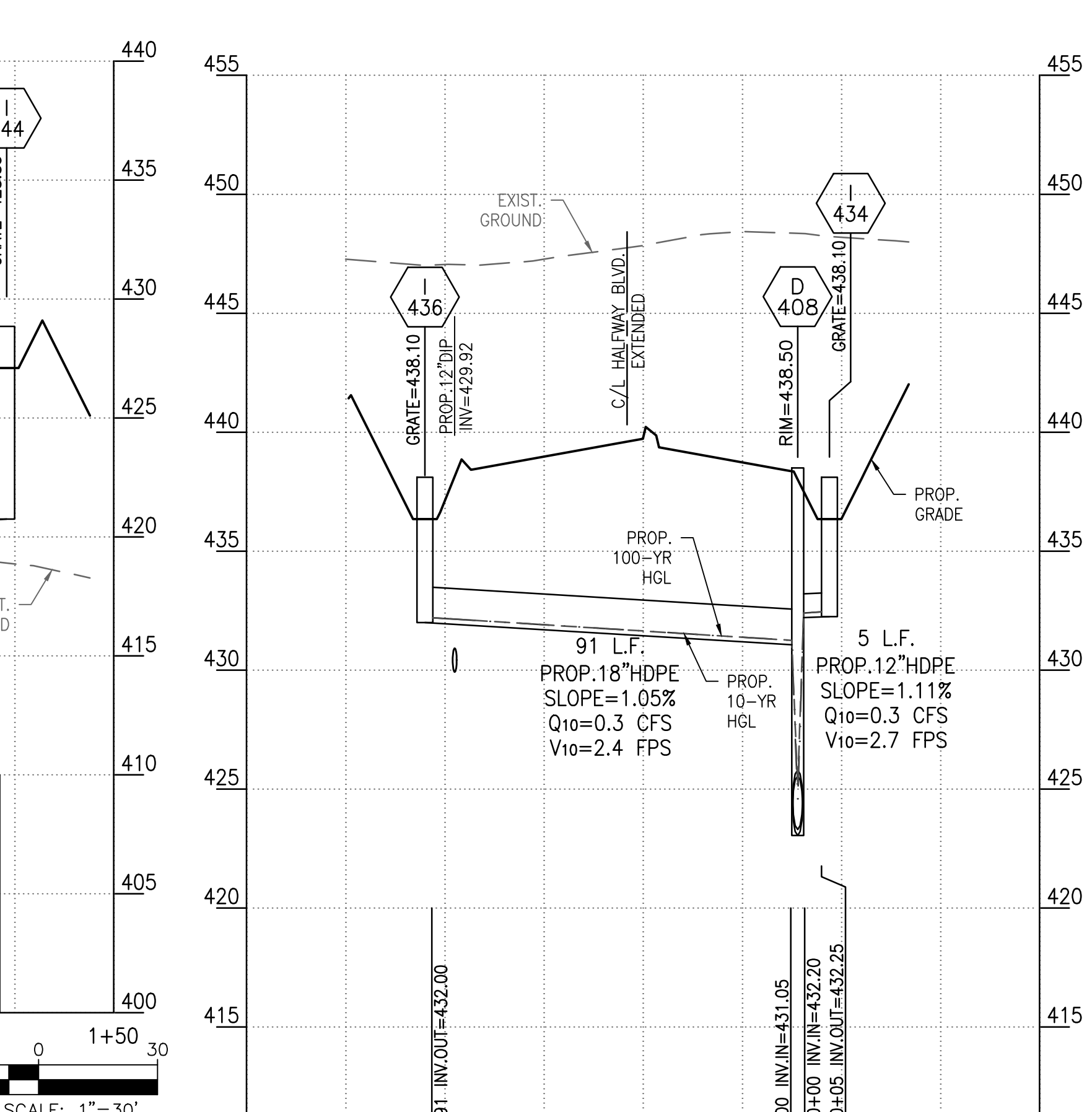
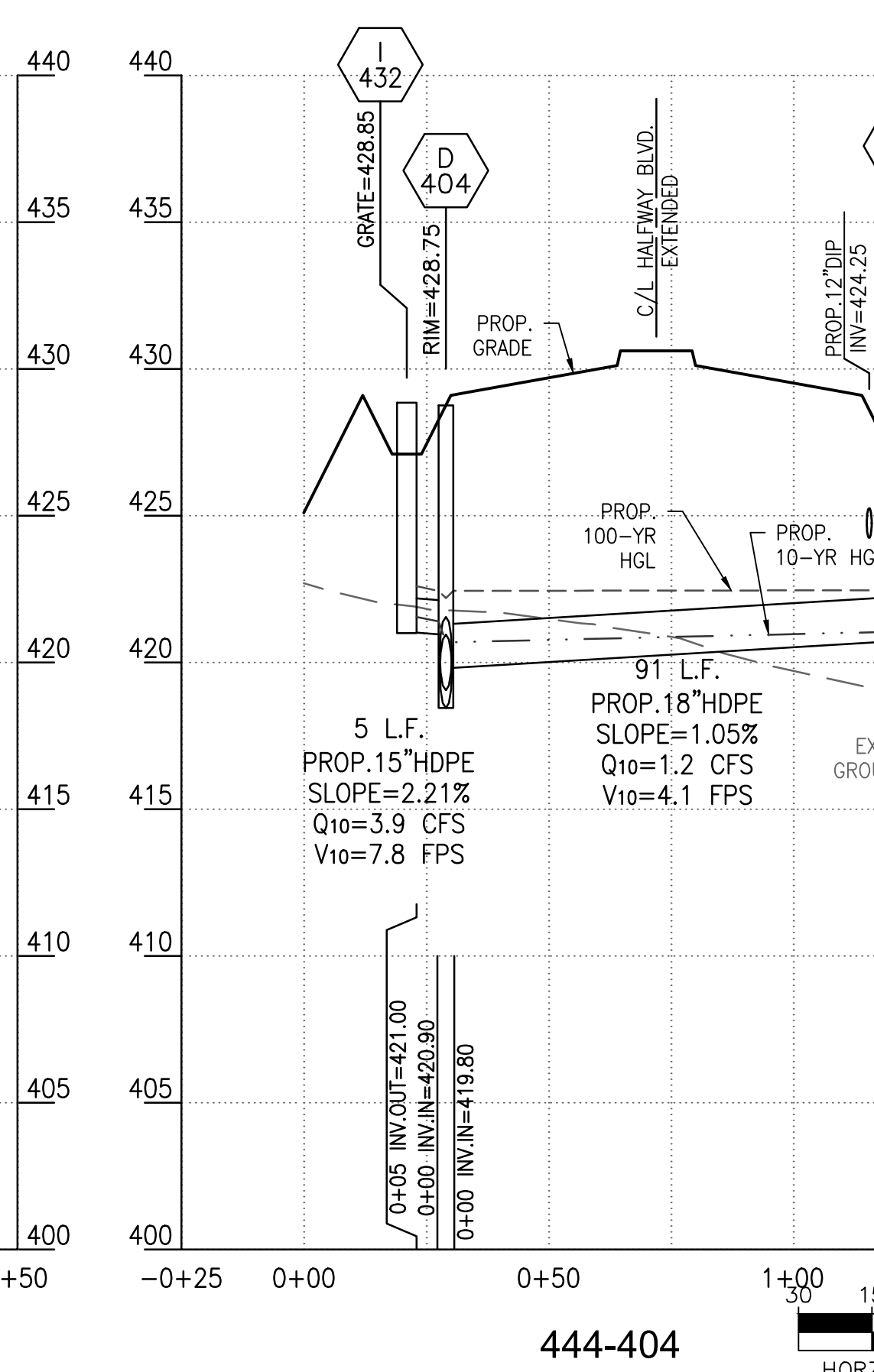
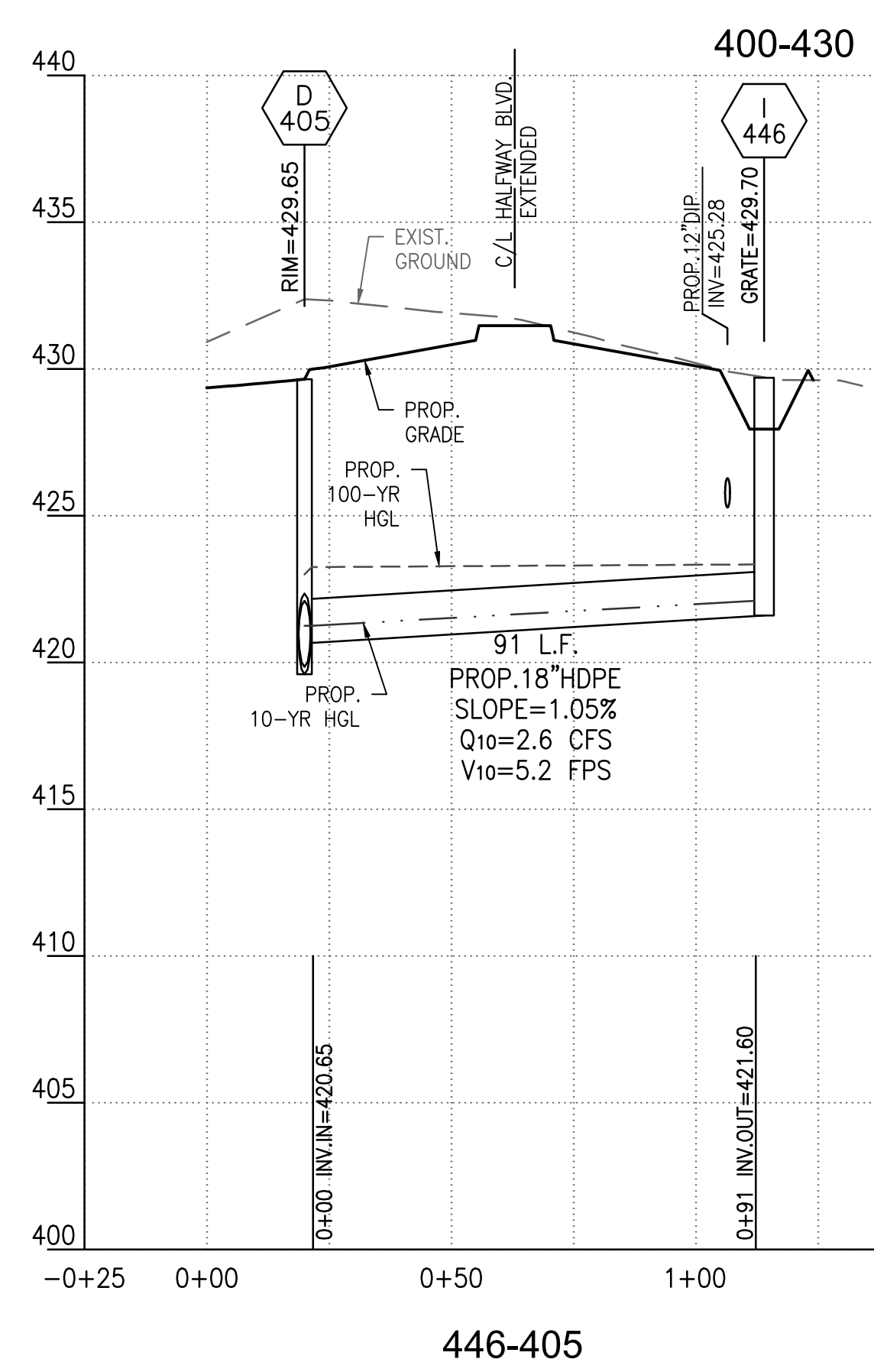
PROJECT NO. 10-273

SHA: WA06ZM1
 FAP: APL-3(804)E

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MATCHLINE SEE SHEET 31



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUJGA
DRAWN BY: KDUJGA
CHECKED BY: PJM
DATE: JAN 2024

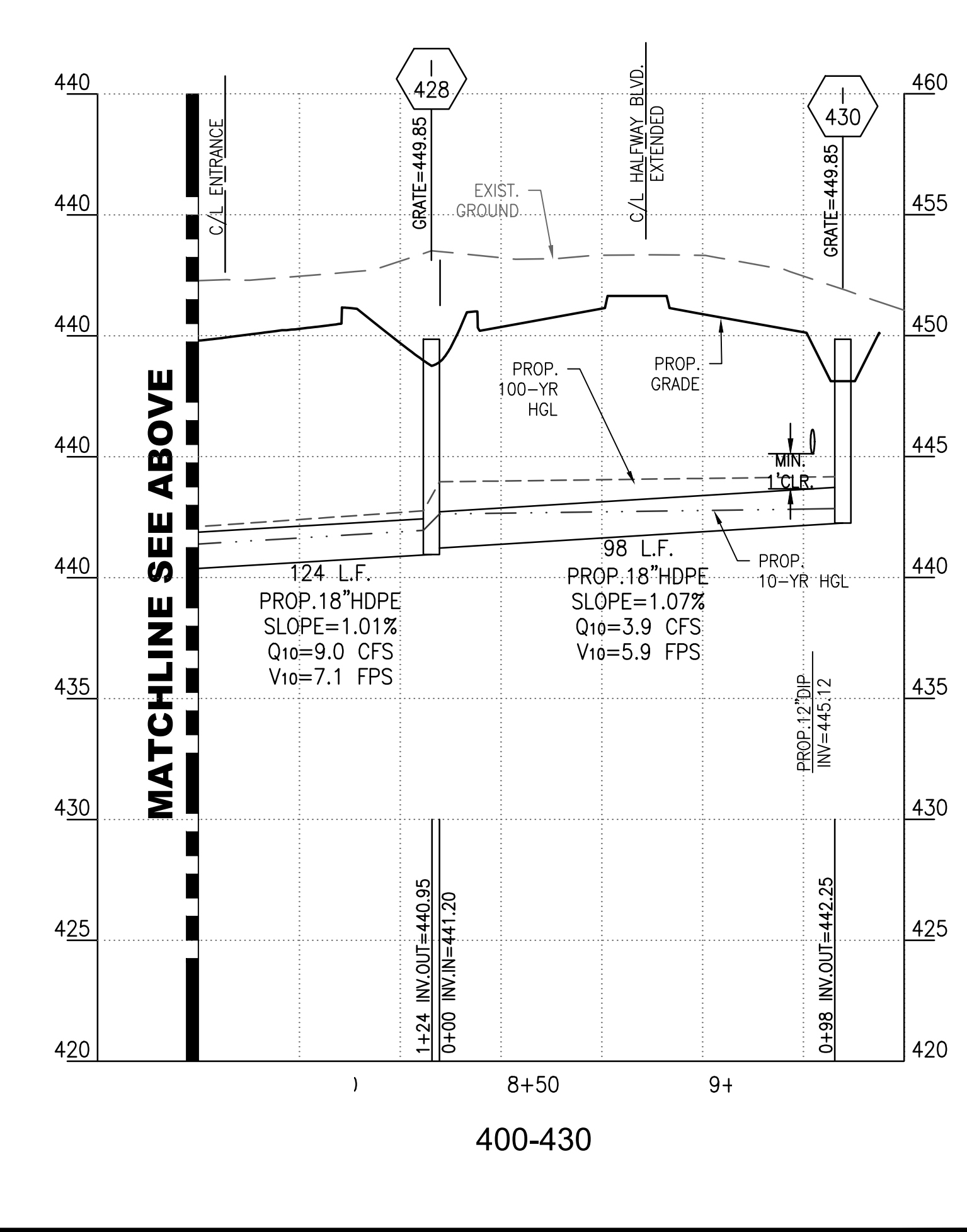
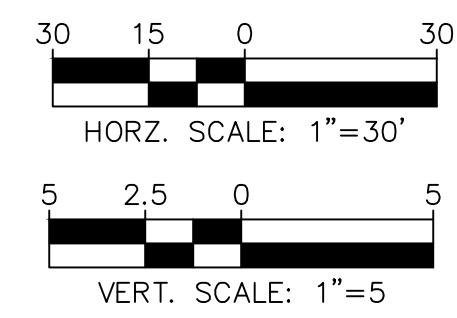
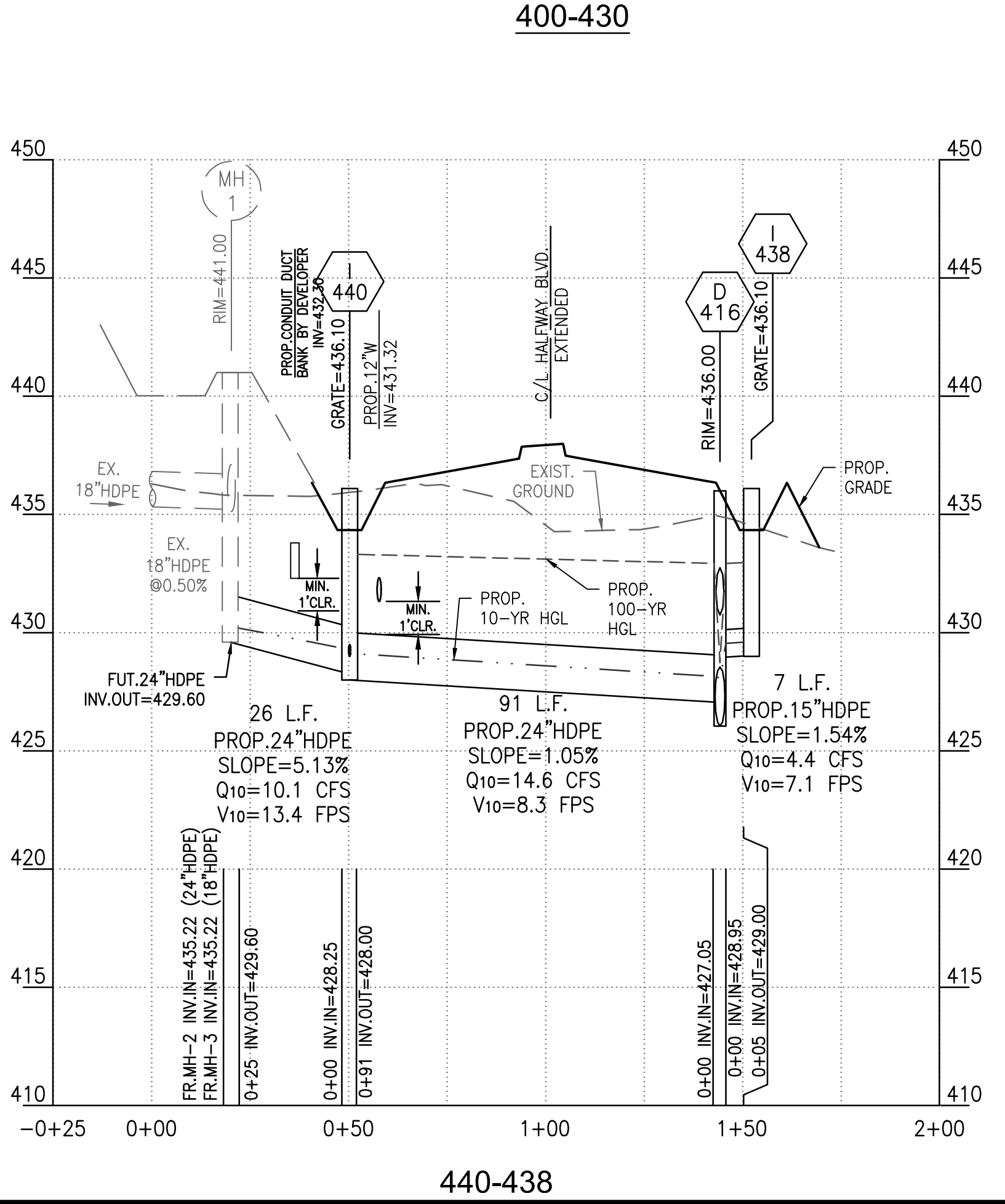
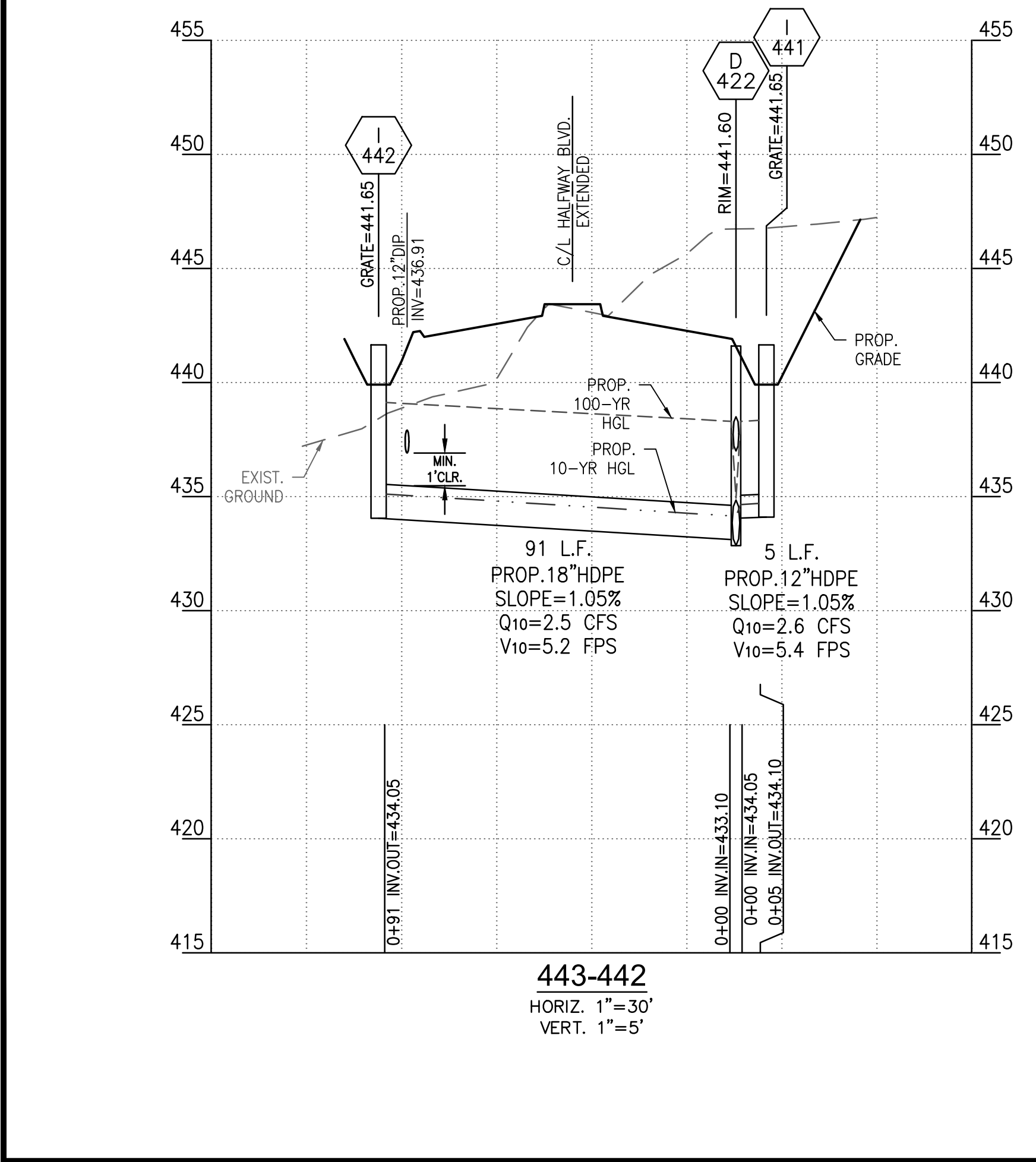
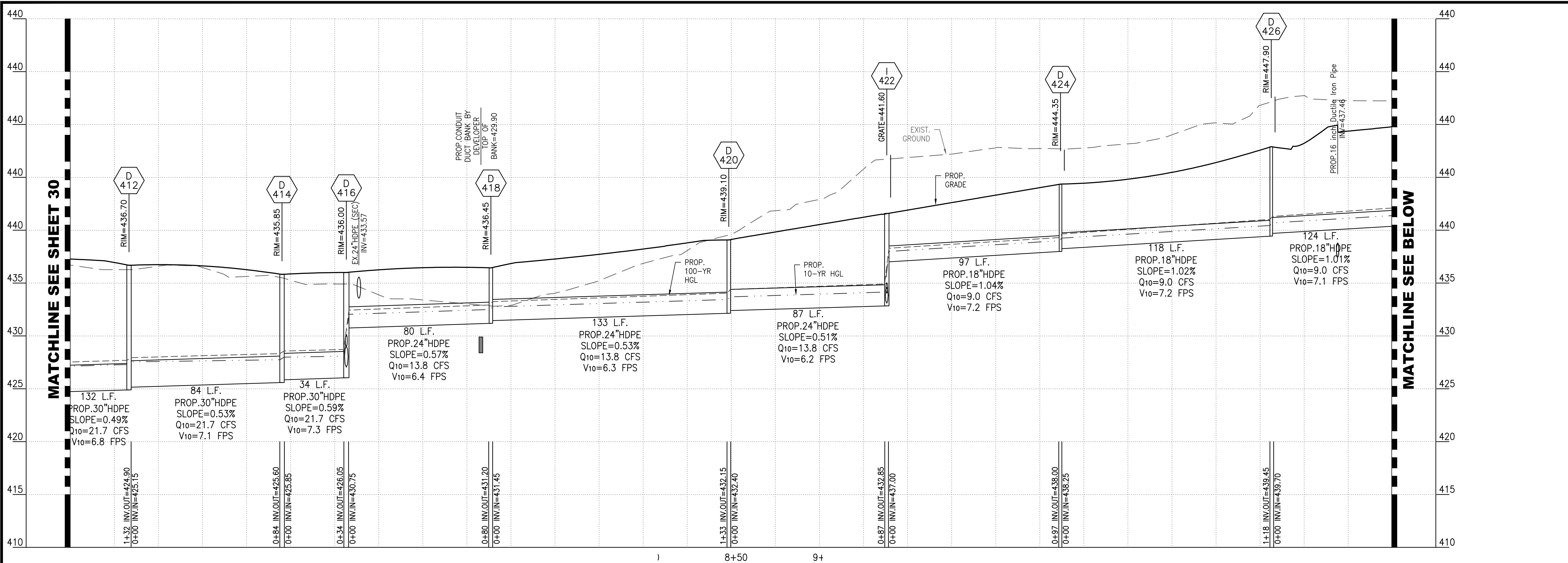
WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

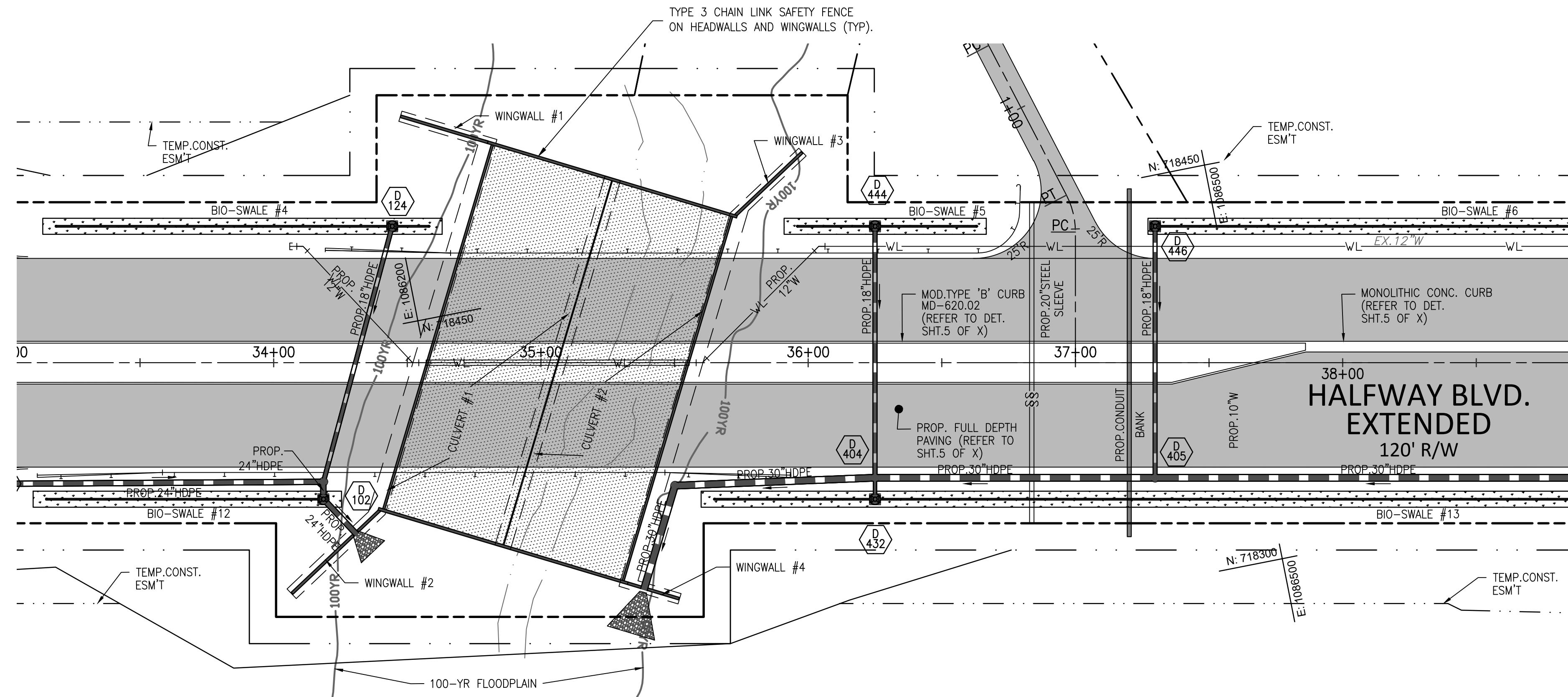
**HALFWAY BOULEVARD
EXTENDED
STORM DRAIN PROFILES**

SCALE AS SHOWN
SHEET NO. 32
PROJECT NO. 10-273
SHA: WA067ZM1 FAP: APL-3(804)E

436-434

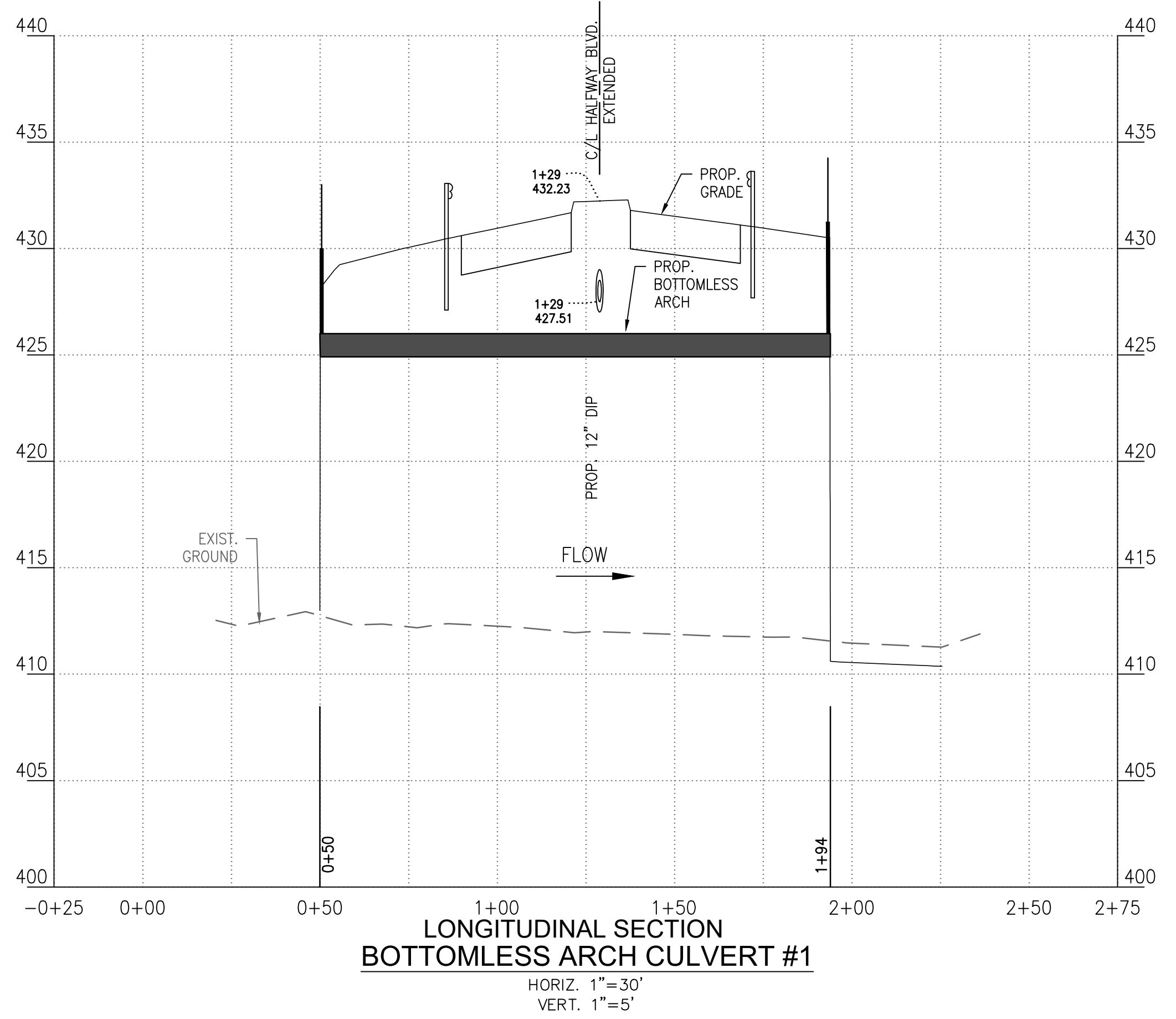
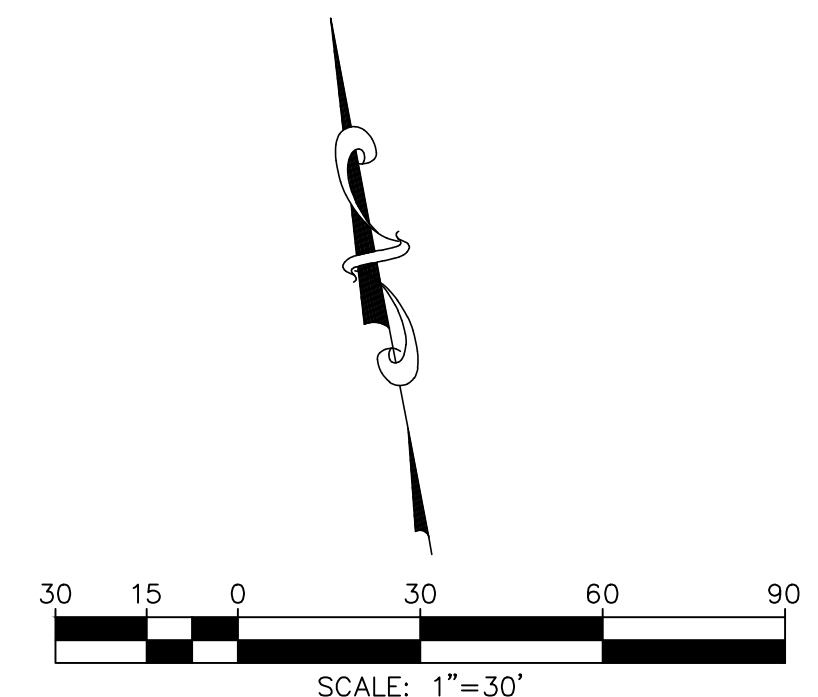


DESIGNED BY: KDUJGA	DRAWN BY: KDUJGA	CHECKED BY: PLM	DATE: JAN 2024
NO.	REVISION DESCRIPTION	BY	DATE
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING Washington County Administrative Annex, Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401			
HALFWAY BOULEVARD EXTENDED STORM DRAIN PROFILES			
SCALE AS SHOWN			
SHEET NO. 33			
PROJECT NO. 10-273			
SHA: WA067ZM1 FAP: APL-3(804)E			

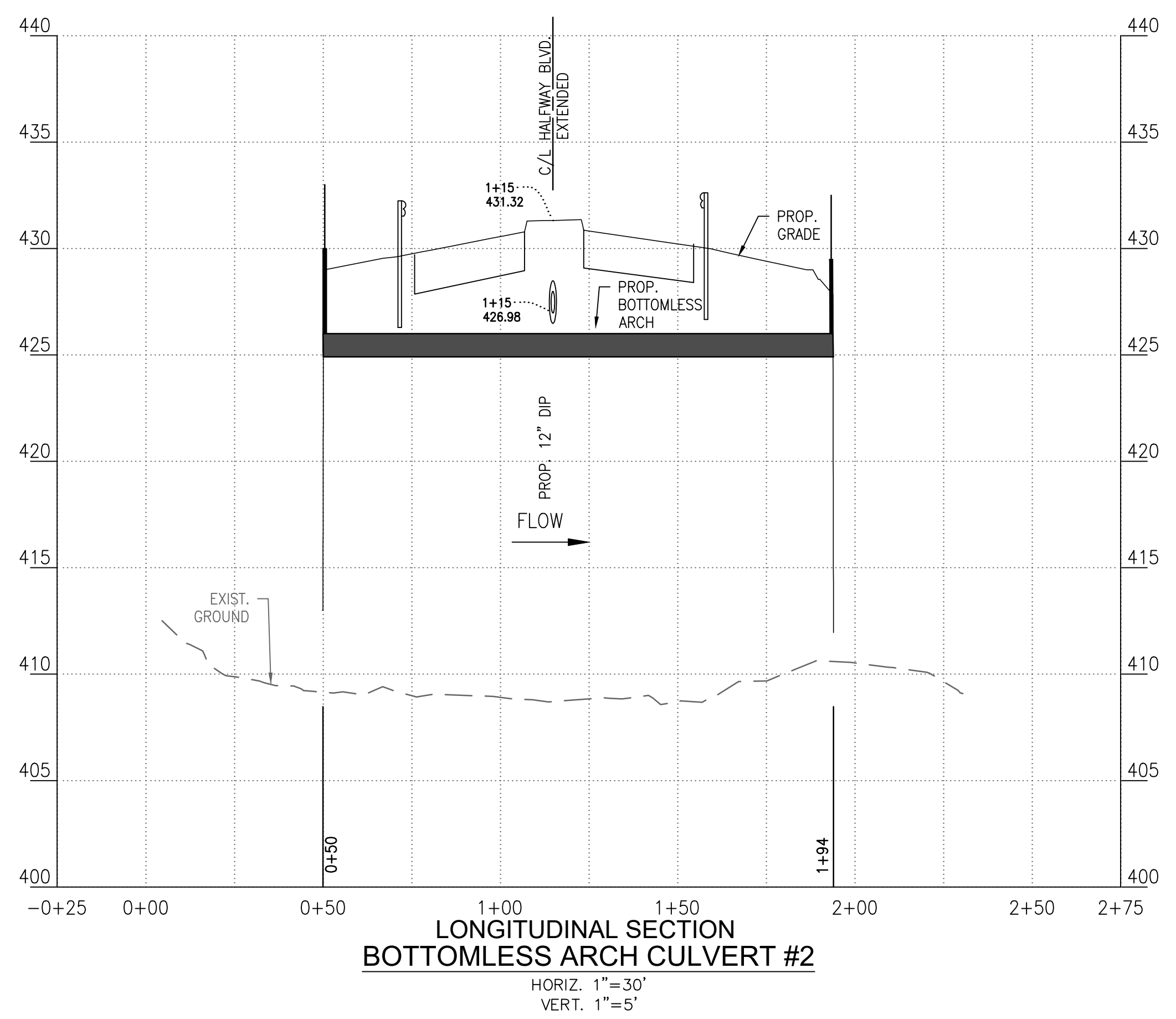


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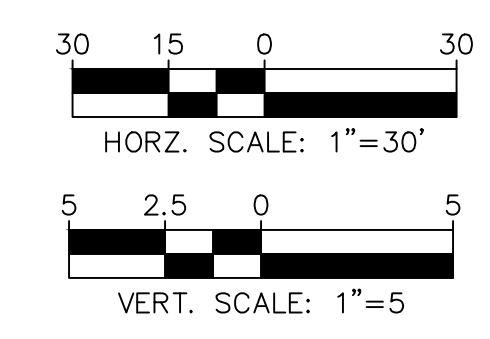
- PROP. R/W
- PROP. FULL DEPTH PAVING
- ▨ PROP. BIO-SWALE AREA WITH OVERFLOW STRUCTURE AND UNDERDRAIN



**LONGITUDINAL SECTION
BOTTOMLESS ARCH CULVERT #1**
HORIZ. 1"=30'
VERT. 1"=5'



**LONGITUDINAL SECTION
BOTTOMLESS ARCH CULVERT #2**
HORIZ. 1"=30'
VERT. 1"=5'



NO.	REVISION DESCRIPTION	BY	DATE

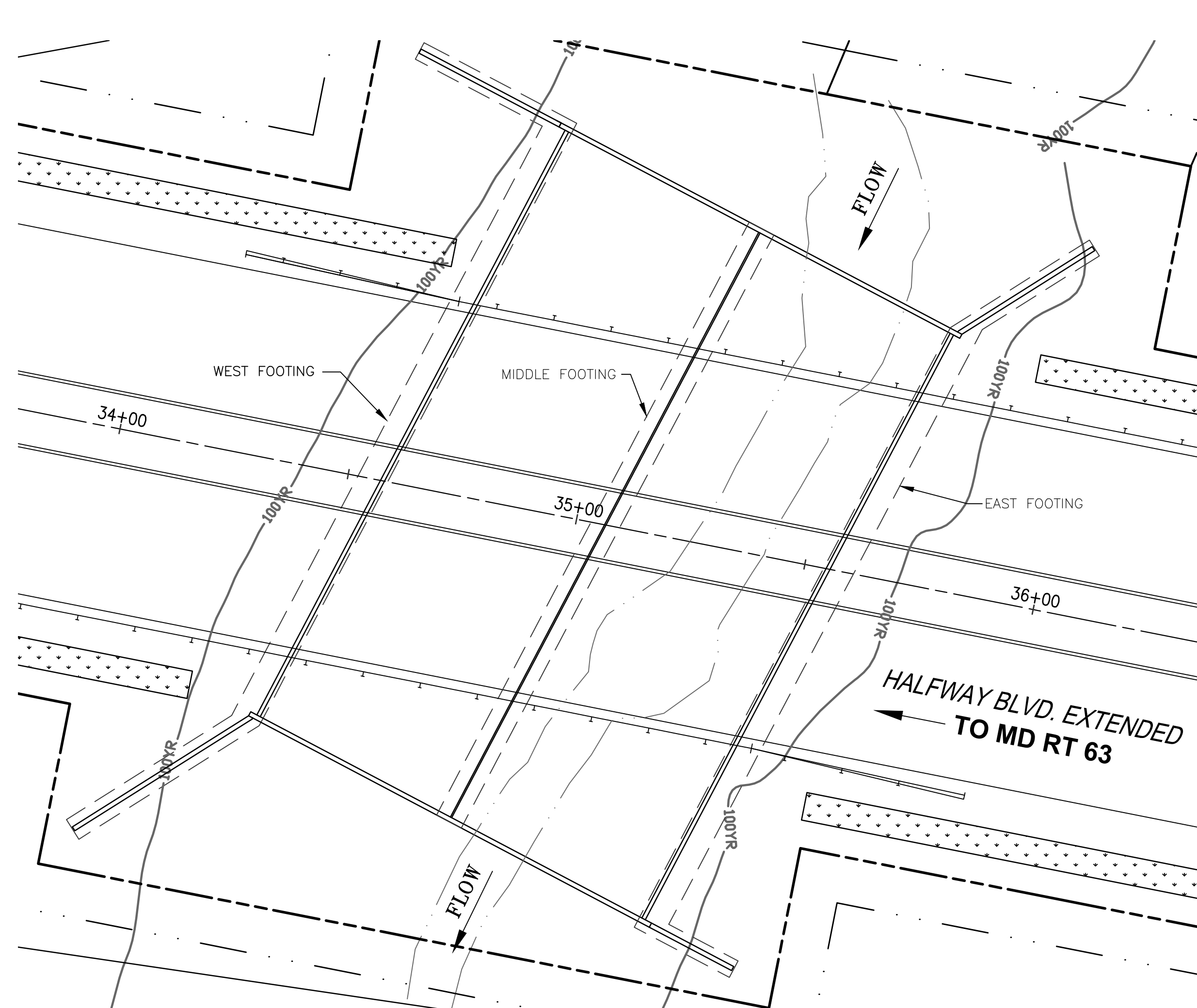
DESIGNED BY:	KDUJGA
DRAWN BY:	KDUJGA
CHECKED BY:	PLM
DATE:	JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

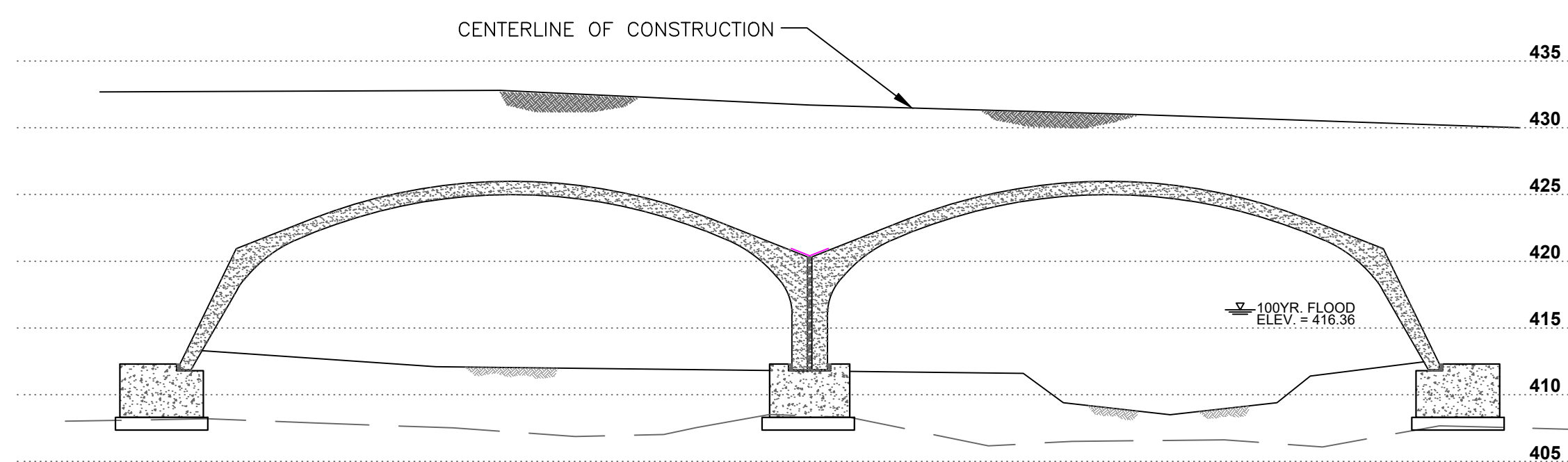
Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

**HALFWAY BOULEVARD
EXTENDED
BOTTOMLESS ARCH
PLAN AND PROFILES**

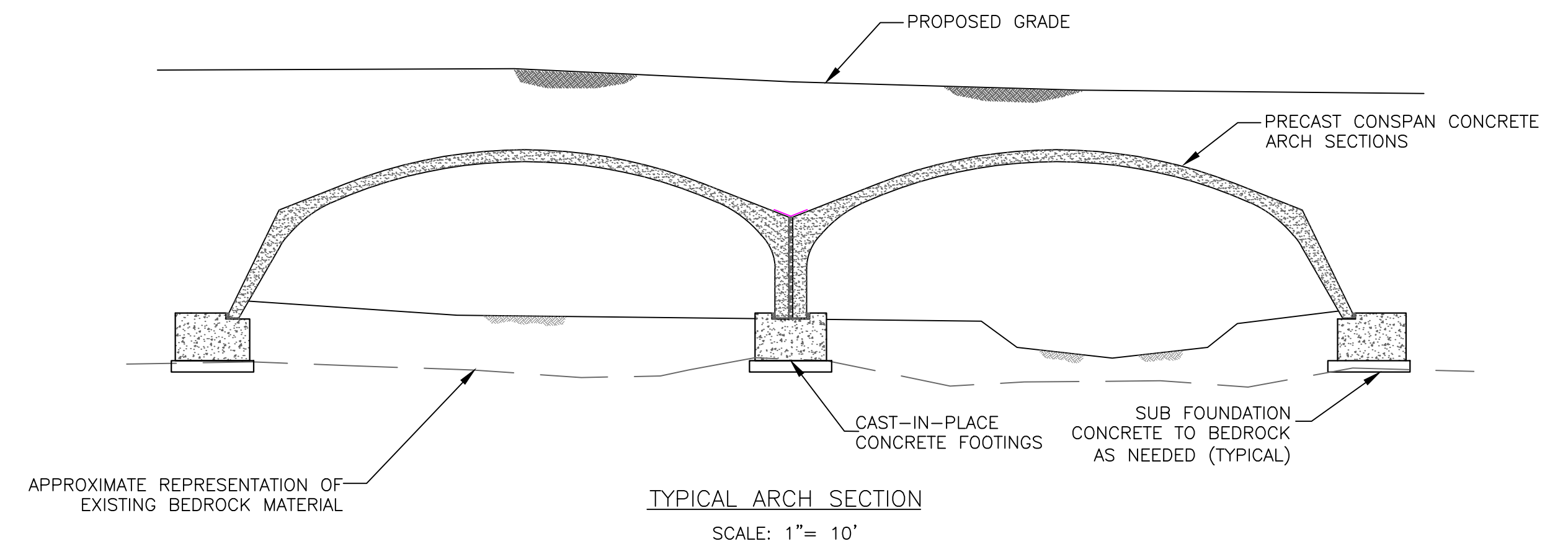
SCALE	AS SHOWN
SHEET NO.	34
PROJECT NO.	10-273
SHA: WA067ZM1	FAP: APL-3(804)E



PLAN
SCALE: 1" = 10'



ELEVATION - LOOKING UPSTREAM
SCALE: 1" = 10'



TYPICAL ARCH SECTION
SCALE: 1" = 10'

NOTES:

- DESIGN SPECIFICATIONS: AASHTO LOAD AND RESISTANCE FACTOR DESIGN (LRFD) BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, DATED 2020, INCLUDING INTERIM SPECIFICATIONS.
- DESIGN/LOADING: STRUCTURAL DESIGN OF PRECAST CONCRETE ARCH SHALL MEET OR EXCEED AASHTO HL-93 LOADING.
LOAD RATING CALCULATIONS SHALL VERIFY THE STRUCTURE DOES NOT REQUIRE A WEIGHT RESTRICTION POSTING FOR MARYLAND LEGAL LOAD TYPES (H-15, HS-20, TYPE 3 & TYPE 4, TYPE 3S2). ALL CALCULATIONS INCLUDING THE STRUCTURAL DESIGN AND LOAD RATING CALCULATIONS SHALL BE SIGNED AND STAMPED BY A MARYLAND LICENSED PROFESSIONAL ENGINEER, AND SUBMITTED TO THE WASHINGTON COUNTY ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE MANUFACTURE OF THE STRUCTURE.
- PRECAST CONCRETE: ALL CONCRETE FOR THE PRECAST ARCH CULVERT UNITS SHALL BE 5,000 PSI MIN. AT 28 DAYS.
CULVERT UNITS, WINGWALLS, WINGWALL ANCHORS AND HEADWALLS SHALL BE DESIGNED/SEALED BY A MARYLAND LICENSED PROFESSIONAL ENGINEER. ALL PRECAST STRUCTURE UNITS SHALL BE PLANT-PRECAST AND INSTALLED COMPLETE IN-PLACE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. PROVIDE CONNECTION BETWEEN PRECAST WINGWALL AND CULVERT UNITS. WINGWALL ANCHORS NOT SHOWN FOR CLARITY.
ARCH CULVERT SLAB THICKNESSES, WALL DIMENSIONS, AND REINFORCING DESIGNED TO MEET LOADING REQUIREMENTS MAY VARY FROM THOSE FOUND IN ASTM AND AASHTO SPECIFICATIONS.
REFER TO ASTM C1433/AASHTO M259 AND AASHTO M273 (FORMERLY ASTM C789/AASHTO M259 FOR CULVERTS WITH FILL HEIGHTS OF 2 FEET OR GREATER AND ASTM C850/AASHTO M273 FOR CULVERTS WITH FILL HEIGHTS OF LESS THAN 2 FEET).
ALL CONCRETE EDGES SHALL BE CHAMFERED 3/4" x 3/4".
LIFTING EYES/HOLES SHALL BE PROVIDED IN EACH SECTION FOR HANDLING. THEY SHALL BE FILLED AS DIRECTED BY THE MANUFACTURER AFTER THE BOX SECTIONS ARE IN PLACE.
AN APPROVED BUTYL RUBBER, FLEXIBLE FOAM, OR BITUMINOUS MASTIC FROM THE MANUFACTURER SHALL BE PROVIDED IN EACH JOINT TO PROVIDE A WATERTIGHT SEAL.
ALL SIDES OF THE ARCH CULVERT SHALL BE DAMPPROOFED WITH AN APPROVED ASPHALT BASED PAINT/PRIMER.
ALL ARCH SECTIONS SHALL BE MARKED AS FOLLOWS IN ACCORDANCE WITH AASHTO M273 BY INDENTATION OR WATERPROOF PAINT: 1.) SECTION RISE, SPAN AND SPECIFICATION DESIGNATION, 2.) DATE OF MANUFACTURE, 3.) NAME OR TRADEMARK OF MANUFACTURER, 4.) PLANT IDENTIFICATION, 5.) MARKED BY INDENTATION ON INSIDE OR OUTSIDE SO THAT THE LOCATION OF THE TOP WILL BE EVIDENT IMMEDIATELY AFTER THE FORMS ARE STRIPPED.
THE MANUFACTURER/ENGINEER SHALL SUBMIT SHOP DRAWINGS OF THE ARCH CULVERT TO THE WASHINGTON COUNTY ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE MANUFACTURE OF THE STRUCTURE.
- FOUNDATION DESIGN: ALL FOOTINGS HAVE BEEN DESIGNED FOR AN ASSUMED ALLOWABLE BEARING PRESSURE OF 12,000 PSF WHICH SHALL BE VERIFIED DURING CONSTRUCTION BY AN INDEPENDENT LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER RETAINED AND PAID FOR BY THE CONTRACTOR. SHOULD THE ACTUAL ALLOWABLE BEARING PRESSURE AT TOP OF ROCK ELEVATIONS BE FOUND TO BE LESS THAN ASSUMED, THE WIDTH OR DEPTH OF FOOTINGS SHALL BE ADJUSTED AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER. ANY ADDITIONAL REQUIRED REDESIGN OF THE FOOTINGS SHALL BE BY A MARYLAND LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE WASHINGTON COUNTY ENGINEERING DEPARTMENT FOR APPROVAL.
- CAST-IN-PLACE CONCRETE: FOOTINGS SHALL BE SHA MIX NO. 6 (4,500 PSI MIN.)
ALL EXPOSED CORNERS OF CONCRETE SHALL BE CHAMFERED WITH 3/4" x 3/4" MILLED CHAMFER STRIPS.
DAMPPROOFING SHALL BE APPLIED TO ALL CONCRETE SURFACES COMING IN CONTACT WITH BACKFILL. WATERPROOFING MEMBRANE SHALL BE 2-PLY AND 16" MIN. WIDTH CENTERED ON THE CONSTRUCTION JOINTS.
CONCRETE FOOTINGS SHALL BE SPLICED IN ACCORDANCE WITH THE LAP BAR CHART AND ALL JOINTS SHALL BE WATERPROOFED PER ENGINEERS APPROVAL.
- REINFORCING STEEL: REINFORCING STEEL FOR THE PRECAST ARCH CULVERT SHALL BE WELDED WIRE FABRIC (WWF) WITH DEFORMED WIRES PER AASHTO M221 AND M225 (MIN. FY=65,000 PSI) OR DEFORMED REBAR CONFORMING TO ASTM A615, GRADE 60 (MIN. FY=60,000 PSI). SPLICES SHALL BE LAPPED ACCORDING TO AASHTO REQUIREMENTS OR BAR LAP CHARTS.
ALL REINFORCING STEEL IN THE IN THE PRECAST HEADWALLS SHALL BE EPOXY COATED.
REINFORCING STEEL FOR PRECAST HEADWALLS AND WINGWALLS SHALL CONFORM TO ASTM 615, GRADE 60. SPLICES NOT SHOWN SHALL BE LAPPED ACCORDING TO AASHTO REQUIREMENTS OR BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2 INCHES, UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM OF ALL FOOTINGS, WHICH SHALL HAVE 3 INCH MINIMUM COVER.
FOR TIES AND STIRRUPS: STANDARD ACI BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL ACI BENDING TOLERANCES.

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY:	KDUJGA
DRAWN BY:	KDUJGA
CHECKED BY:	PLM
DATE:	JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-315-2401

**HALFWAY BOULEVARD
EXTENDED
BOTTOMLESS ARCH
PLAN & ELEVATION**

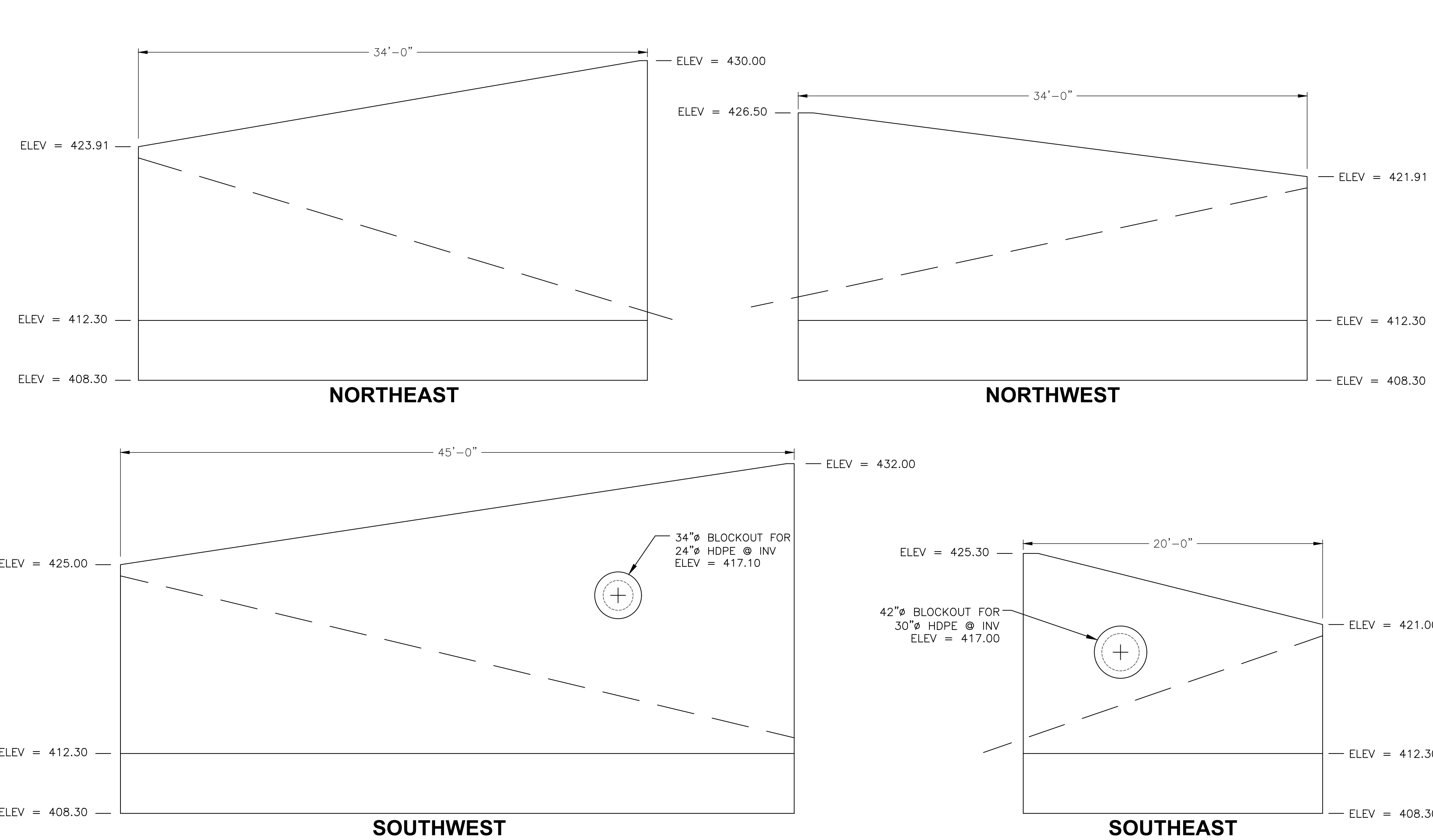
SCALE
AS SHOWN

SHEET NO.
35

PROJECT NO.
10-273

SHA: WA067ZM1
FAP: APL-3(804)E

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\09 - DEV\10-273 BA-02.DWG PLOT DATE: 1/8/2024 2:50 PM



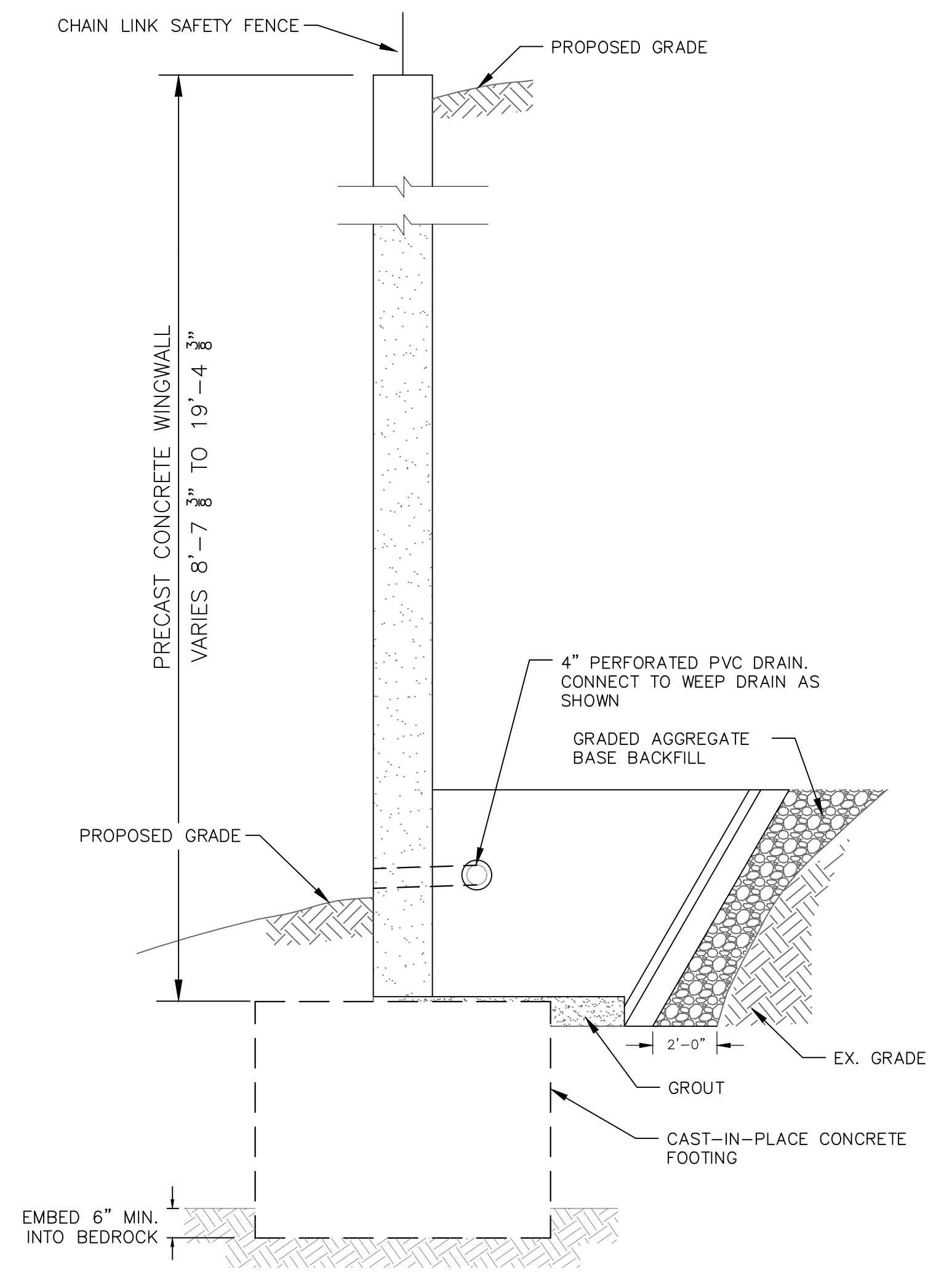
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NORTHWEST

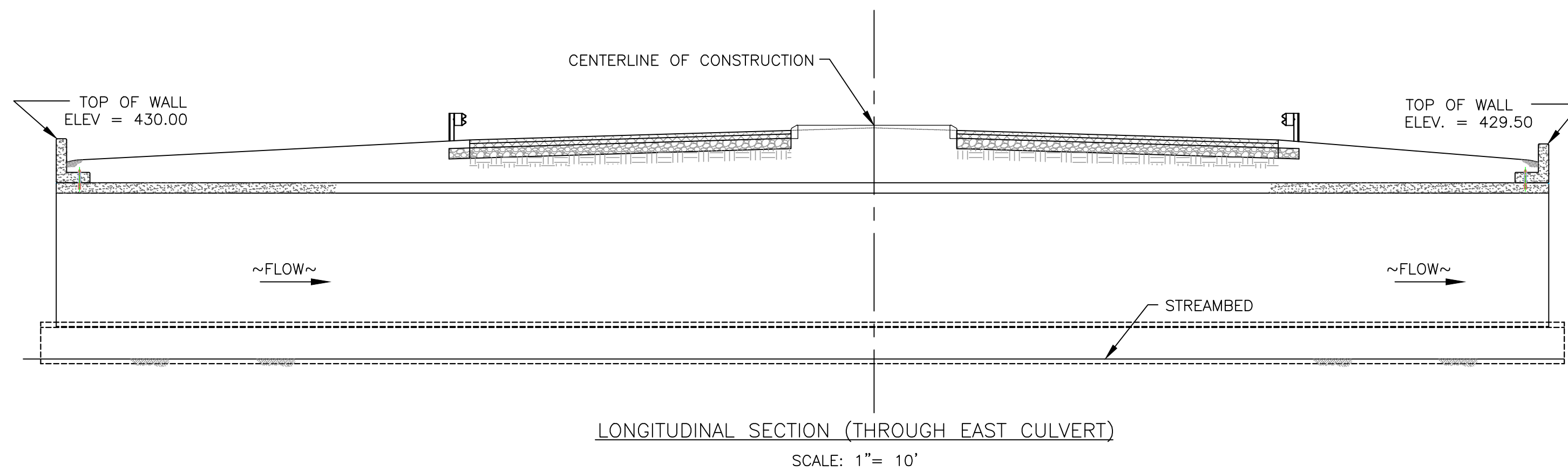
SOUTHWEST

SOUTHEAST

WINGWALL DETAILS
SCALE: 1" = 5'

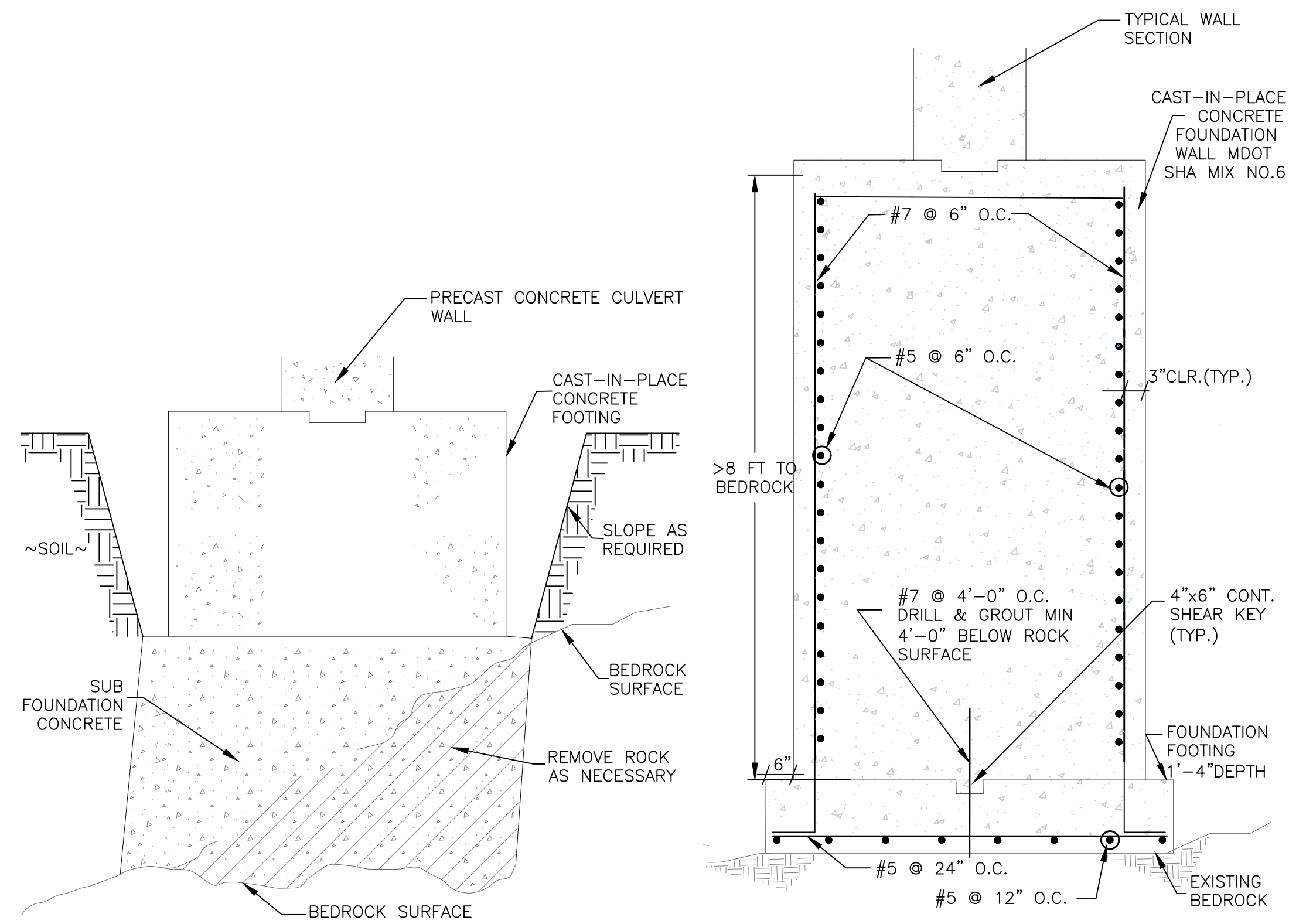


TYPICAL WINGWALL SECTION
SCALE: 1/2" = 1'



LONGITUDINAL SECTION (THROUGH EAST CULVERT)
SCALE: 1" = 10'

- NOTES:
1. UNDERCUT SOILS BELOW FOOTINGS TO THE BEDROCK SURFACE.
 2. WHERE ROCK SURFACE IS STEEPER THAN 2H:1V, REMOVE ROCK AS NECESSARY TO ACHIEVE LEVEL BEARING SURFACE.
 3. REMOVE LOOSE, FRACTURED, BLASTED ROCK, AND SOIL BELOW THE FOOTING.
 4. DRILL 5-FOOT DEEP PROBE HOLES AT 10-FOOT HORIZONTAL SPACING ALONG THE FOOTING ALIGNMENT.
 5. SUBGRADE AND PROBE HOLES SHOULD BE TESTED AND APPROVED BY AN INDEPENDENT LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER RETAINED AND PAID FOR BY THE CONTRACTOR.
 6. BACKFILL FOOTING UNDERCUT WITH MDOT SHA MIX NO. 1 CONCRETE.
 7. CONSTRUCT CONCRETE FOUNDATION WALL IF SOUND BEDROCK IS DETERMINED TO BE GREATER THAN 8 FEET BELOW THE TOP OF THE CONCRETE FOOTING.



TYPICAL DETAIL - UNDERCUT TO BEDROCK
SCALE: 1/2" = 1'

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
DRAWN BY: KDUUGA
CHECKED BY: PLJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

**HALFWAY BOULEVARD
EXTENDED
BOTTOMLESS ARCH
SECTIONS & DETAILS**

SCALE AS SHOWN

SHEET NO. 36

PROJECT NO. 10-273

SHA: WA067ZM1
FAP: APL-3(804)E

NOTES
GENERAL NOTES:

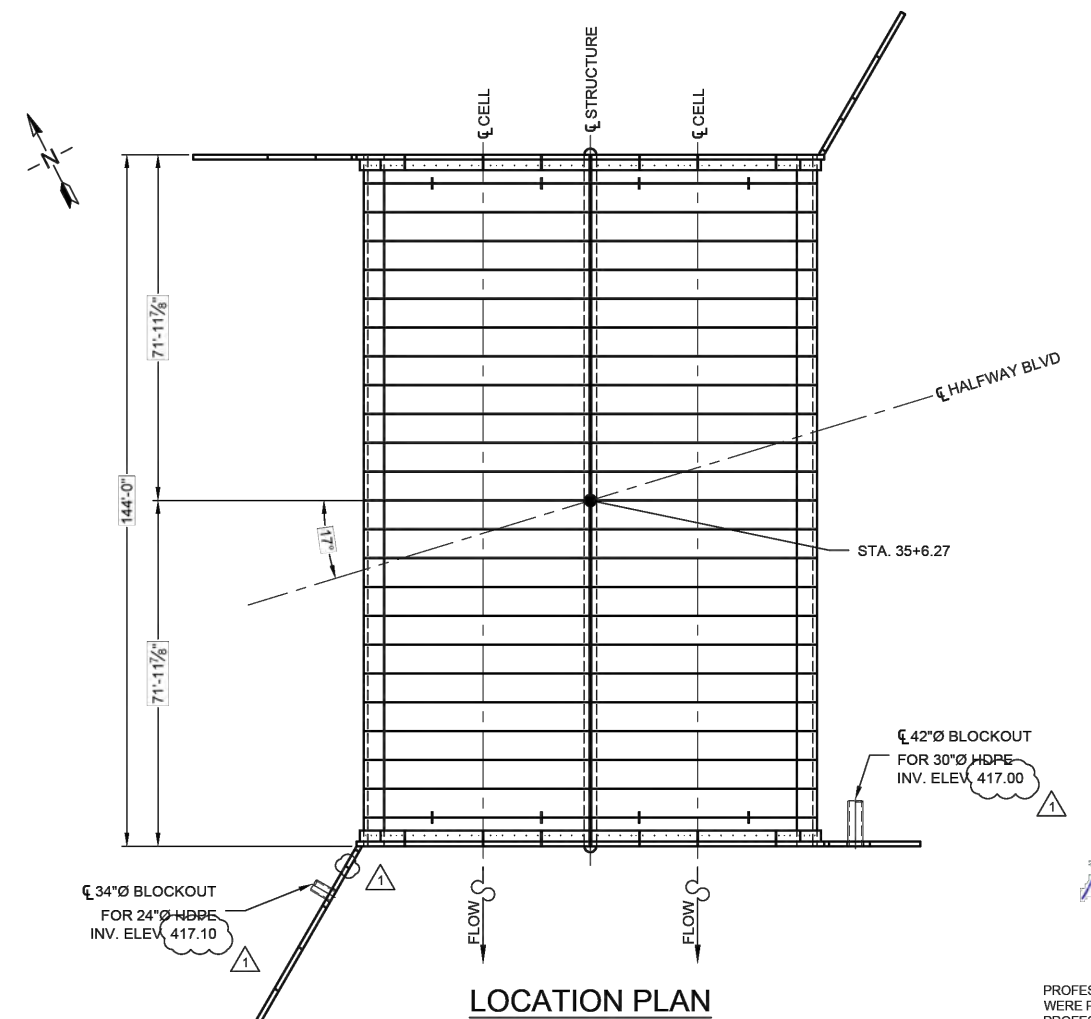
- THIS BRIDGE HAS BEEN DESIGNED FOR GENERAL SITE CONDITIONS. THE PROJECT ENGINEER SHALL BE RESPONSIBLE FOR THE STRUCTURE'S SUITABILITY TO THE EXISTING SITE CONDITIONS AND FOR THE HYDRAULIC EVALUATION - INCLUDING SCOUR AND CONTRACTION OF SOIL CONDITIONS.
- PRIOR TO CONSTRUCTION, CONTRACTOR MUST VERIFY ALL ELEVATIONS SHOWN THROUGH THE ENGINEER.
- ONLY CONTECH ENGINEERED SOLUTIONS LLC, THE CONSPAN APPROVED PRECASTER IN MARYLAND, MAY PROVIDE THE STRUCTURE DESIGNED IN ACCORDANCE WITH THESE PLANS.
- THE USE OF ANOTHER PRECAST STRUCTURE WITH THE DESIGN ASSUMPTIONS USED FOR THE CONSPAN STRUCTURE MAY LEAD TO SERIOUS DESIGN ERRORS. USE OF ANY OTHER PRECAST STRUCTURE WITH THESE DESIGN AND DRAWINGS Voids ANY CERTIFICATION OF THIS DESIGN AND WARRANTY. CONTECH ENGINEERED SOLUTIONS LLC ADMITS NO LIABILITY FOR DESIGN OF ANY ALTERNATE OR SIMILAR TYPE STRUCTURES.
- ALTERNATE STRUCTURES MAY BE CONSIDERED, PROVIDED THAT DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND, EMPLOYED BY THE PRECAST CONCRETE BRIDGE SUPPLIER, ARE SUBMITTED TO THE ENGINEER 2 WEEKS PRIOR TO THE BID DATE FOR REVIEW AND APPROVAL.
- ALTERNATE STRUCTURES MAY BE CONSIDERED, PROVIDED THAT THE ALTERNATE DESIGN DOES NOT REDUCE THE HYDRAULIC OPENINGS OF THE STRUCTURE AS SHOWN ON THE DRAWINGS. AT A MINIMUM THE ALTERNATE STRUCTURE MUST PROVIDE THE SAME OR LARGER SPAN AND RISE AS THE STRUCTURE SHOWN ON THE DRAWINGS.
- THE PRECAST ARCH SUPPLIER MUST ATTEND THE PRE-BID MEETING, IF ONE IS HELD.
- SUPPLIER OF PROPOSED ALTERNATES TO A CONSPAN BRIDGE SYSTEM MUST SUBMIT AT LEAST TWO (2) INDEPENDENTLY VERIFIED FULL SCALE LOAD TESTS THAT CONFIRM THE PROPOSED DESIGN METHODOLOGY OF THE THREE SIDED ARCH STRUCTURE(S). THE PROPOSED ALTERNATE, UPON SATISFACTORY CONFIRMATION OF DESIGN METHODOLOGY, MAY BE CONSIDERED AN ACCEPTABLE ALTERNATE.
- PROPOSED ALTERNATE STRUCTURES MAY BE CONSIDERED, PROVIDED THAT THE PRECAST CONCRETE BRIDGE STRUCTURES ARE PROVIDED BY A SUPPLIER THAT HAS A MINIMUM OF TWO (2) REGISTERED PROFESSIONAL ENGINEERS ON STAFF THAT ARE DEDICATED TO THE DESIGN OF THESE TYPES OF STRUCTURES. SUPPLIER MUST PROVIDE THESE NAMES, P.E. LICENSE NUMBERS AND DATES OF HIRE AT TIME OF ALTERNATE SUBMITTAL.
- LOAD RATING CALCULATIONS SHALL VERIFY THE STRUCTURE DOES NOT REQUIRE A WEIGHT RESTRICTION POSTING FOR MARYLAND LEGAL LOAD TYPES (H-15, HS-20, TYPE 3 & TYPE 4, TYPE 3S). ALL CALCULATIONS INCLUDING THE STRUCTURAL DESIGN AND LOAD RATING CALCULATIONS SHALL BE SUBMITTED TO THE WASHINGTON COUNTY ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE MANUFACTURE OF THE STRUCTURE.

DESIGN DATA
DESIGN LOADING:
BRIDGE LIMITS: HL-93
HEADWALLS: EARTH PRESSURE ONLY
WINDWALLS: EARTH PRESSURE ONLY
DESIGN FILL HEIGHT: 2'-0" MIN. TO 8'-0" MAX.
FORM USE OF CURB TO TOP OF PAVEMENT
DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020.
FACTORED BEARING RESISTANCE: 12000 PSF
FOUNDATION EXCAVATION AND SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FOR THIS PROJECT PREPARED BY TRAD ENGINEERING, INC. DATED: 12/17/2021. WE UPDATED LRFD FACTORED BEARING RESISTANCE PER SMALL DATED 8/30/22.

MATERIALS
PRECAST UNITS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH CONSPAN® SPECIFICATIONS. CONCRETE FOR FOOTINGS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI. REINFORCING STEEL FOR FOOTINGS SHALL CONFORM TO ASTM A615 OR A898-GRADE 60.

MARK	DATE	REVISION DESCRIPTION	BY
3	02/26/22	NO CHANGES ON THIS SHEET	JFM
2	01/30/22	FOUNDATION DIMENSIONS	JFM
1	01/26/22	NO CHANGES ON THIS SHEET	JFM

HALFWAY BOULEVARD EXTENSION WASHINGTON COUNTY, MARYLAND

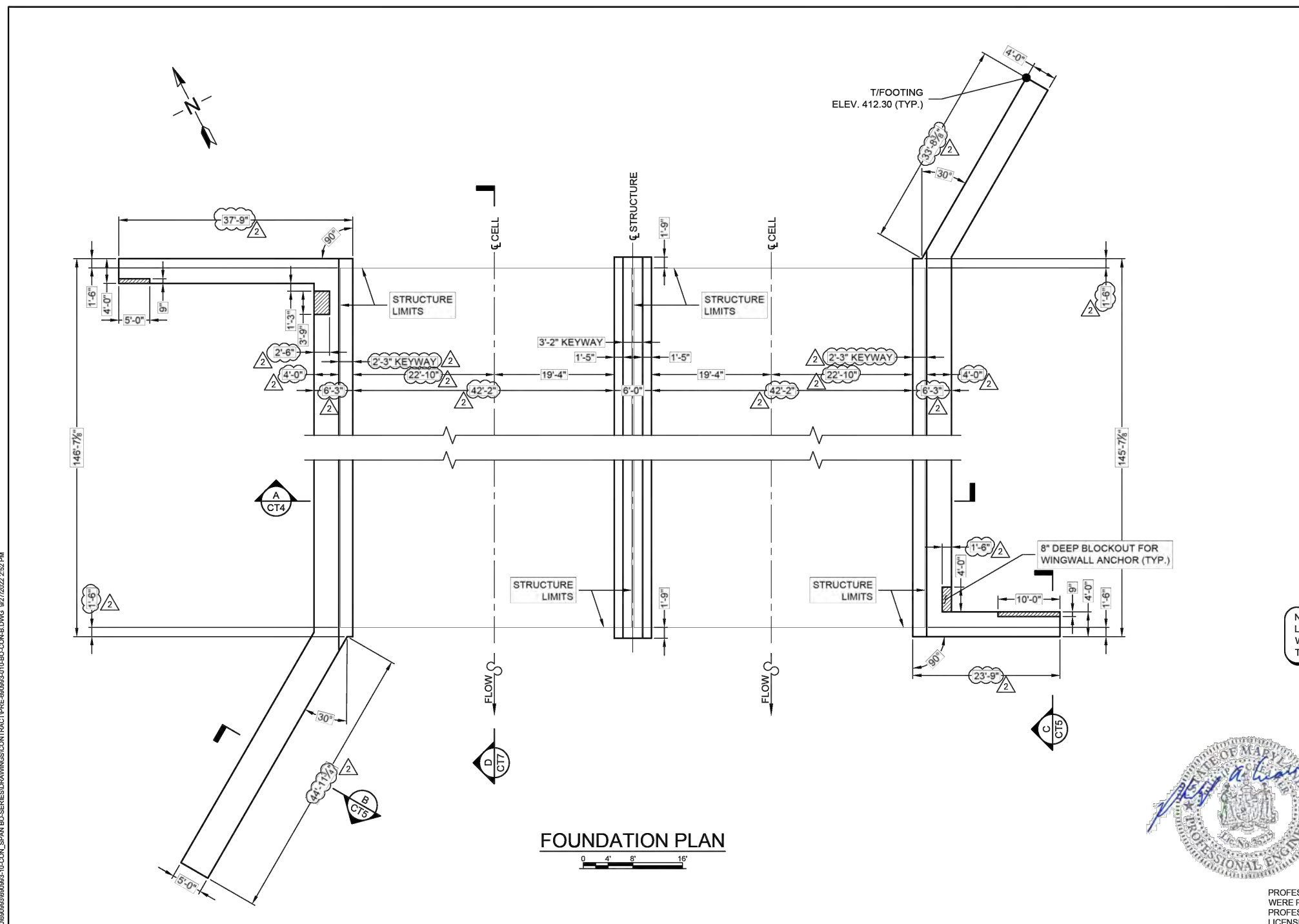


Digitally signed by Philip Creamer
Date: 2022.09.29 10:53:26 -04'00'
BRIDGE No. 4803

PROJECT NO.	REQ. NO.	DATE
890993	010	01/20/22

DESIGNED BY	DRAWN BY	CHK. BY	APP. BY
JFM	JCH	JCH	JFM

CONTRACT NO.	CONTRACT DESCRIPTION
CEJ	PAC

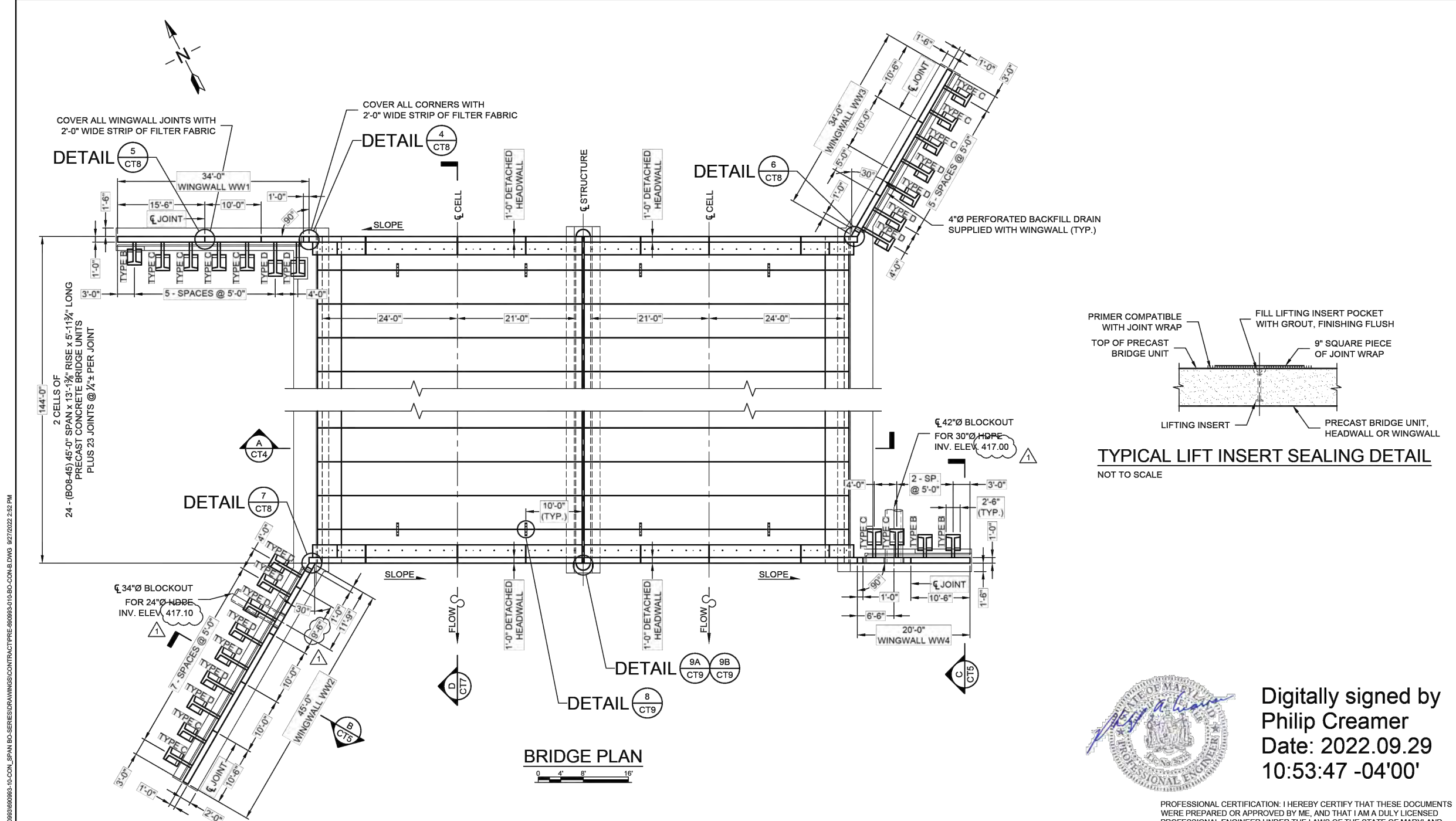


Digitally signed by Philip Creamer
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PROJECT NO.	REQ. NO.	DATE
890993	010	01/20/22

DESIGNED BY	DRAWN BY	CHK. BY	APP. BY
JFM	JCH	JCH	JFM

CONTRACT NO.	CONTRACT DESCRIPTION
CEJ	PAC

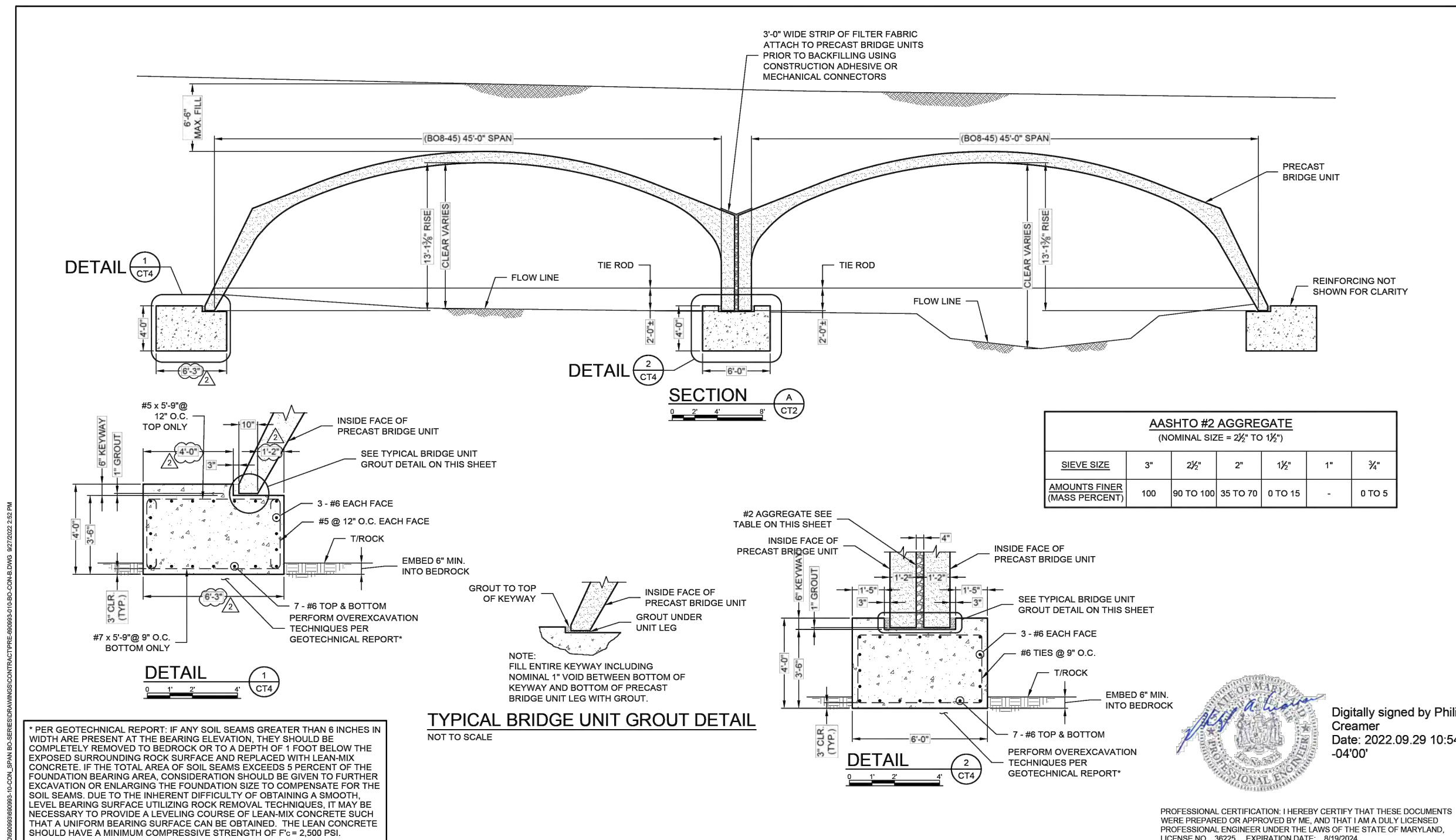


Digitally signed by Philip Creamer
Date: 2022.09.29 10:53:47 -04'00'

PROJECT NO.	REQ. NO.	DATE
890993	010	01/20/22

DESIGNED BY	DRAWN BY	CHK. BY	APP. BY
JFM	JCH	JCH	JFM

CONTRACT NO.	CONTRACT DESCRIPTION
CEJ	PAC



Digitally signed by Philip Creamer
Date: 2022.09.29 10:54:11 -04'00'

PROJECT NO.	REQ. NO.	DATE
890993	010	01/20/22

DESIGNED BY	DRAWN BY	CHK. BY	APP. BY
JFM	JCH	JCH	JFM

CONTRACT NO.	CONTRACT DESCRIPTION
CEJ	PAC

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
DRAWN BY: KDUUGA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

SCALE AS SHOWN

SHEET NO. 37
PROJECT NO. 10-273
SHA: WA06ZM1
FAP: APL-3(804)E

TYPICAL WINGWALL GROUT DETAIL
NOT TO SCALE

ALL PROPRIETARY ITEMS CAN BE SUBSTITUTED WITH APPROVED EQUALS

Digitally signed by Philip Creamer
Date: 2022.09.29 10:54:25 -04'00'

MARK	DATE	REVISION DESCRIPTION	BY
3	9/29/2022	NO CHANGES ON THIS SHEET	JFM
2	9/13/2022	NO CHANGES ON THIS SHEET	JMF
1	9/10/2022	NO CHANGES ON THIS SHEET	JMF

PROJECT NO. 690993, DATE: 6/1/2022, DRAWN BY: JCH, CHECKED BY: PAC, SHEET NO. CT5 OF CT11

NORTH END ELEVATION
SOUTH END ELEVATION

ALL PROPRIETARY ITEMS CAN BE SUBSTITUTED WITH APPROVED EQUALS

Digitally signed by Philip Creamer
Date: 2022.09.29 10:54:38 -04'00'

MARK	DATE	REVISION DESCRIPTION	BY
3	9/29/2022	NO CHANGES ON THIS SHEET	JFM
2	9/13/2022	FOUNDAION DIMENSIONS	JMF
1	9/10/2022	REVISED PIPE INVERT ELEVATION	JMF

PROJECT NO. 690993, DATE: 6/1/2022, DRAWN BY: JCH, CHECKED BY: PAC, SHEET NO. CT6 OF CT11

TYPICAL JOINT SEAL DETAIL
NOT TO SCALE

ALL PROPRIETARY ITEMS CAN BE SUBSTITUTED WITH APPROVED EQUALS

Digitally signed by Philip Creamer
Date: 2022.09.29 10:55:58 -04'00'

MARK	DATE	REVISION DESCRIPTION	BY
3	9/29/2022	NO CHANGES ON THIS SHEET	JFM
2	9/13/2022	NO CHANGES ON THIS SHEET	JMF
1	9/10/2022	REVISED PIPE INVERT ELEVATION	JMF

PROJECT NO. 690993, DATE: 6/1/2022, DRAWN BY: JCH, CHECKED BY: PAC, SHEET NO. CT7 OF CT11

BOTTOMLESS ARCH DETAILS

ALL PROPRIETARY ITEMS CAN BE SUBSTITUTED WITH APPROVED EQUALS

Digitally signed by Philip Creamer
Date: 2022.09.29 10:56:17 -04'00'

MARK	DATE	REVISION DESCRIPTION	BY
3	9/29/2022	NO CHANGES ON THIS SHEET	JFM
2	9/13/2022	NO CHANGES ON THIS SHEET	JMF
1	9/10/2022	NO CHANGES ON THIS SHEET	JMF

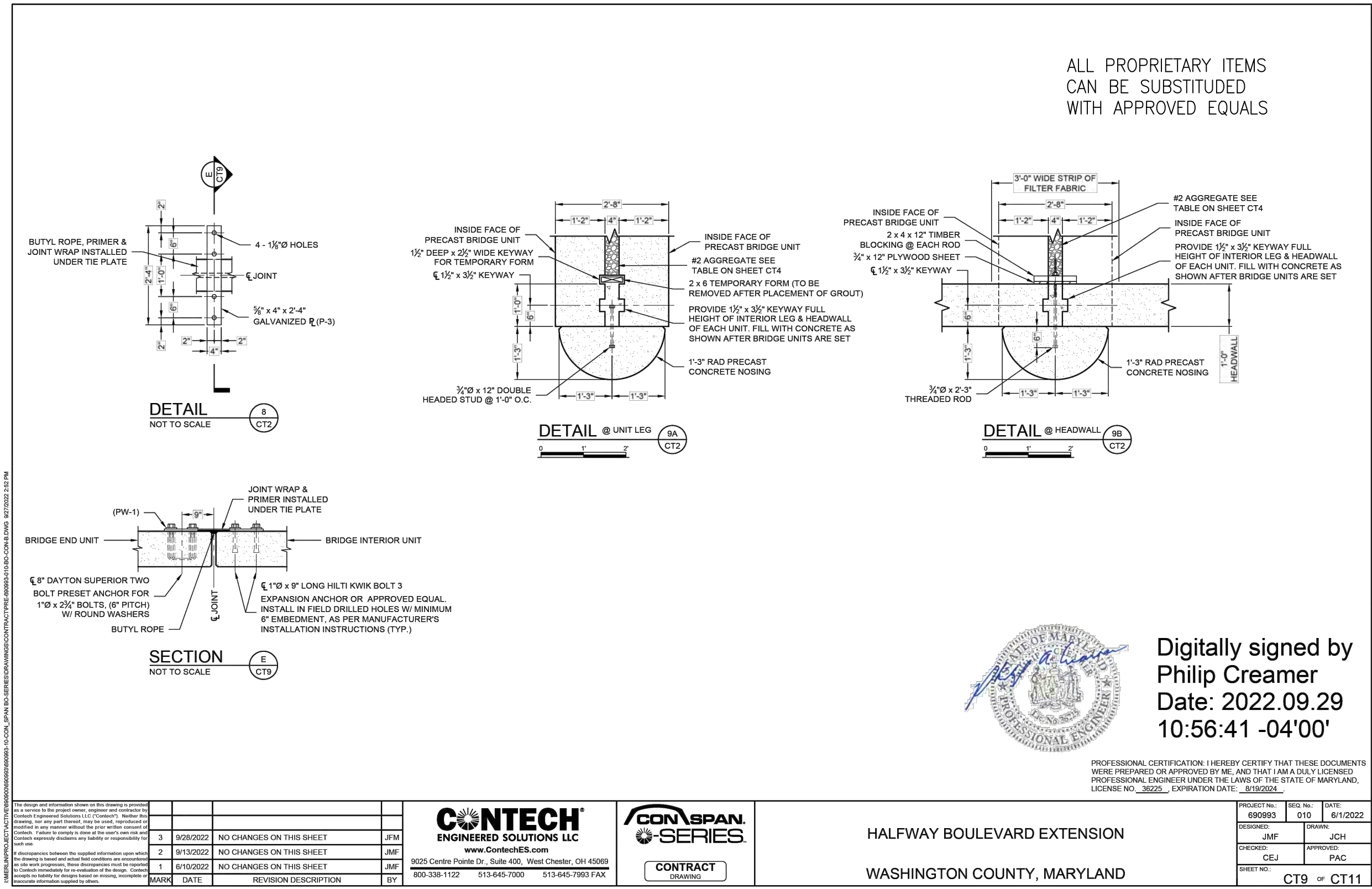
PROJECT NO. 690993, DATE: 6/1/2022, DRAWN BY: JCH, CHECKED BY: PAC, SHEET NO. CT8 OF CT11

Table with 3 columns: NO, REVISION DESCRIPTION, DATE. Contains revision history entries.

DESIGNED BY: KDUJICA
DRAWN BY: KDUJICA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING
Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

ALL PROPRIETARY ITEMS CAN BE SUBSTITUTED WITH APPROVED EQUALS



Digitally signed by Philip Creamer
Date: 2022.09.29 10:56:41 -04'00'

HALFWAY BOULEVARD EXTENSION
WASHINGTON COUNTY, MARYLAND
CT9 or CT11
OR APPROVED EQUAL

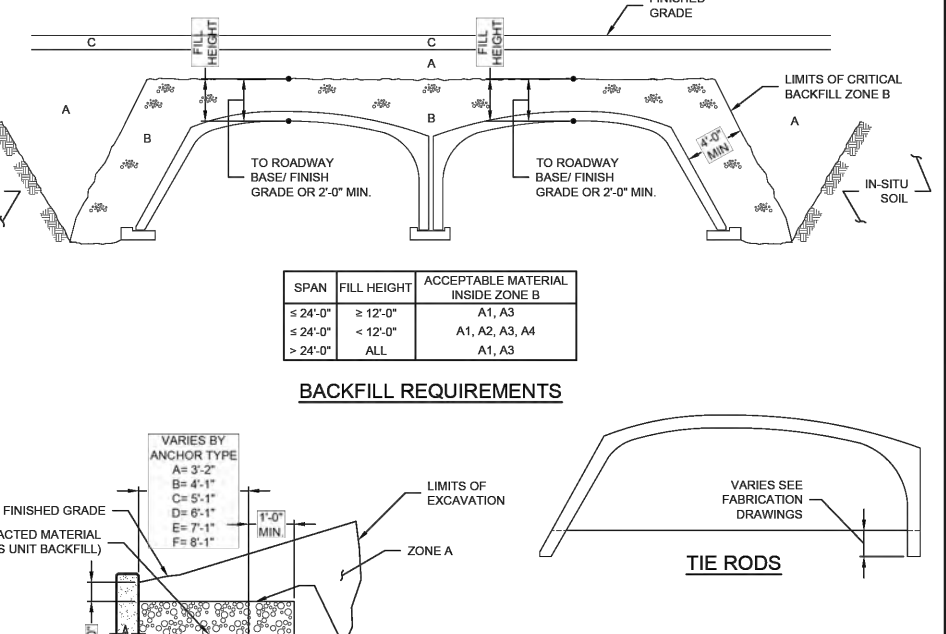
SPECIFICATIONS FOR MANUFACTURE AND INSTALLATION OF CON/SPAN® O-SERIES BRIDGE SYSTEMS

1. DESCRIPTION: THIS WORK SHALL CONSIST OF FURNISHING AND INSTALLING CONCRETE BRIDGE SYSTEMS IN ACCORDANCE WITH THESE SPECIFICATIONS AND AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER. THE BRIDGE SYSTEMS SHALL BE DESIGNED TO SUPPORT THE MOST STRINGENT REQUIREMENTS SET FORTH IN THE SPECIFICATIONS AND AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER. THE BRIDGE SYSTEMS SHALL BE MANUFACTURED BY CONTECH CONSPAN O-SERIES BRIDGE SYSTEMS MANUFACTURING COMPANY, INC. (CONTECH CONSPAN) IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER. THE BRIDGE SYSTEMS SHALL BE MANUFACTURED BY CONTECH CONSPAN O-SERIES BRIDGE SYSTEMS MANUFACTURING COMPANY, INC. (CONTECH CONSPAN) IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER. THE BRIDGE SYSTEMS SHALL BE MANUFACTURED BY CONTECH CONSPAN O-SERIES BRIDGE SYSTEMS MANUFACTURING COMPANY, INC. (CONTECH CONSPAN) IN ACCORDANCE WITH THE SPECIFICATIONS AND AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER.

SPECIFICATIONS FOR MANUFACTURE AND INSTALLATION OF CON/SPAN® O-SERIES BRIDGE SYSTEMS (CONT'D)

11. MATERIALS: ALL MATERIALS SHALL BE CLEARLY MARKED BY WATERPROOF PENCIL OR INK ON THE INSIDE OF THE VERTICAL LEG OF THE BRIDGE UNIT. THE BRIDGE UNITS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER. THE BRIDGE UNITS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER. THE BRIDGE UNITS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER. THE BRIDGE UNITS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER. THE BRIDGE UNITS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS ESTABLISHED BY THE ENGINEER.

Table with columns: TYPICAL MATERIALS, ASBESTO, PERCENT FILLER, QUANTITY OF BACKFILL, and DESCRIPTION. Lists materials like GW, GP, SP, etc.



Digitally signed by Philip Creamer
Date: 2022.09.29 10:57:58 -04'00'

ALL PROPRIETARY ITEMS CAN BE SUBSTITUTED WITH APPROVED EQUALS

CONTECH CONSPAN O-SERIES
www.contechconspan.com

CONTECH CONSPAN O-SERIES
www.contechconspan.com

Digitally signed by Philip Creamer
Date: 2022.09.29 10:57:28 -04'00'

HALFWAY BOULEVARD EXTENSION
WASHINGTON COUNTY, MARYLAND
CT10 or CT11
OR APPROVED EQUAL

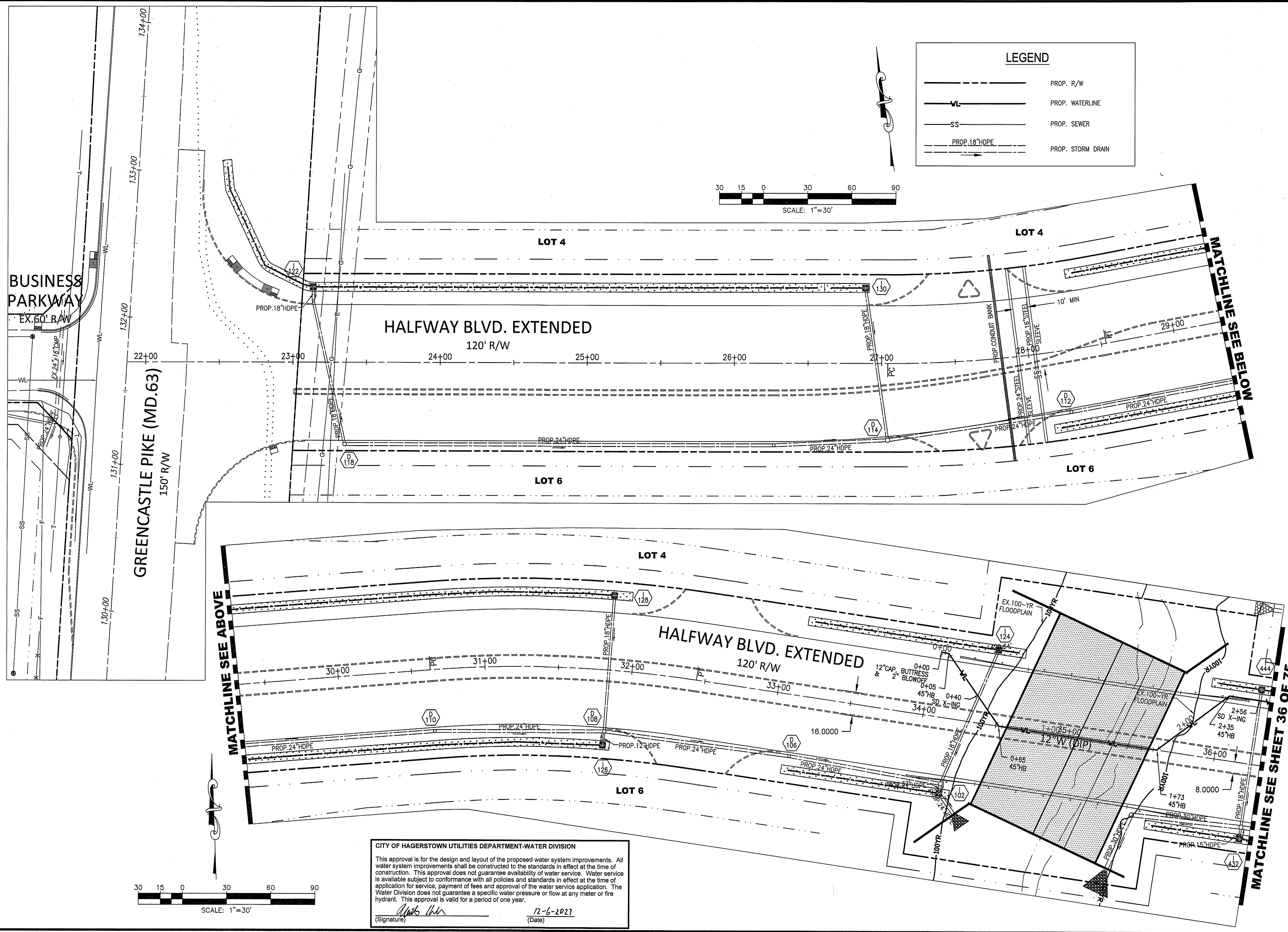
CONTECH CONSPAN O-SERIES
www.contechconspan.com

CONTECH CONSPAN O-SERIES
www.contechconspan.com

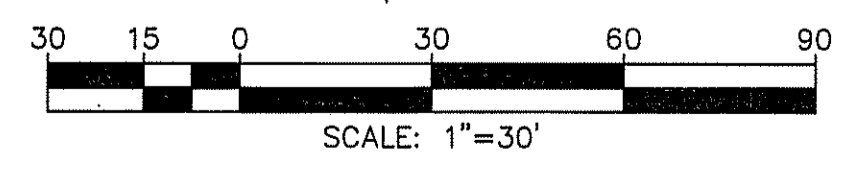
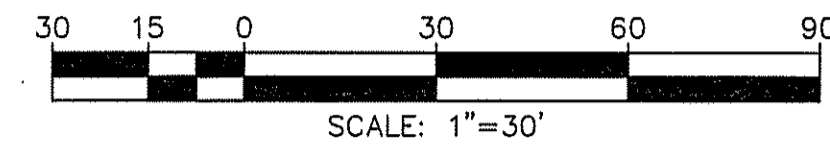
HALFWAY BOULEVARD EXTENSION
WASHINGTON COUNTY, MARYLAND
CT11 or CT11
OR APPROVED EQUAL

SCALE AS SHOWN
SHEET NO. 39
PROJECT NO. 10-273
SHA: WA0672M1
FAP: APL-3(804)E

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\10 - W&S\10-273 WAS-01.DWG PLOT DATE: 11/29/2023 2:12 PM



LEGEND	
	PROP. R/W
	PROP. WATERLINE
	PROP. SEWER



CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION

This approval is for the design and layout of the proposed water system improvements. All water system improvements shall be constructed to the standards in effect at the time of construction. This approval does not guarantee availability of water service. Water service is available subject to conformance with all policies and standards in effect at the time of application for service, payment of fees and approval of the water service application. The Water Division does not guarantee a specific water pressure or flow at any meter or fire hydrant. This approval is valid for a period of one year.

[Signature]
(Signature)

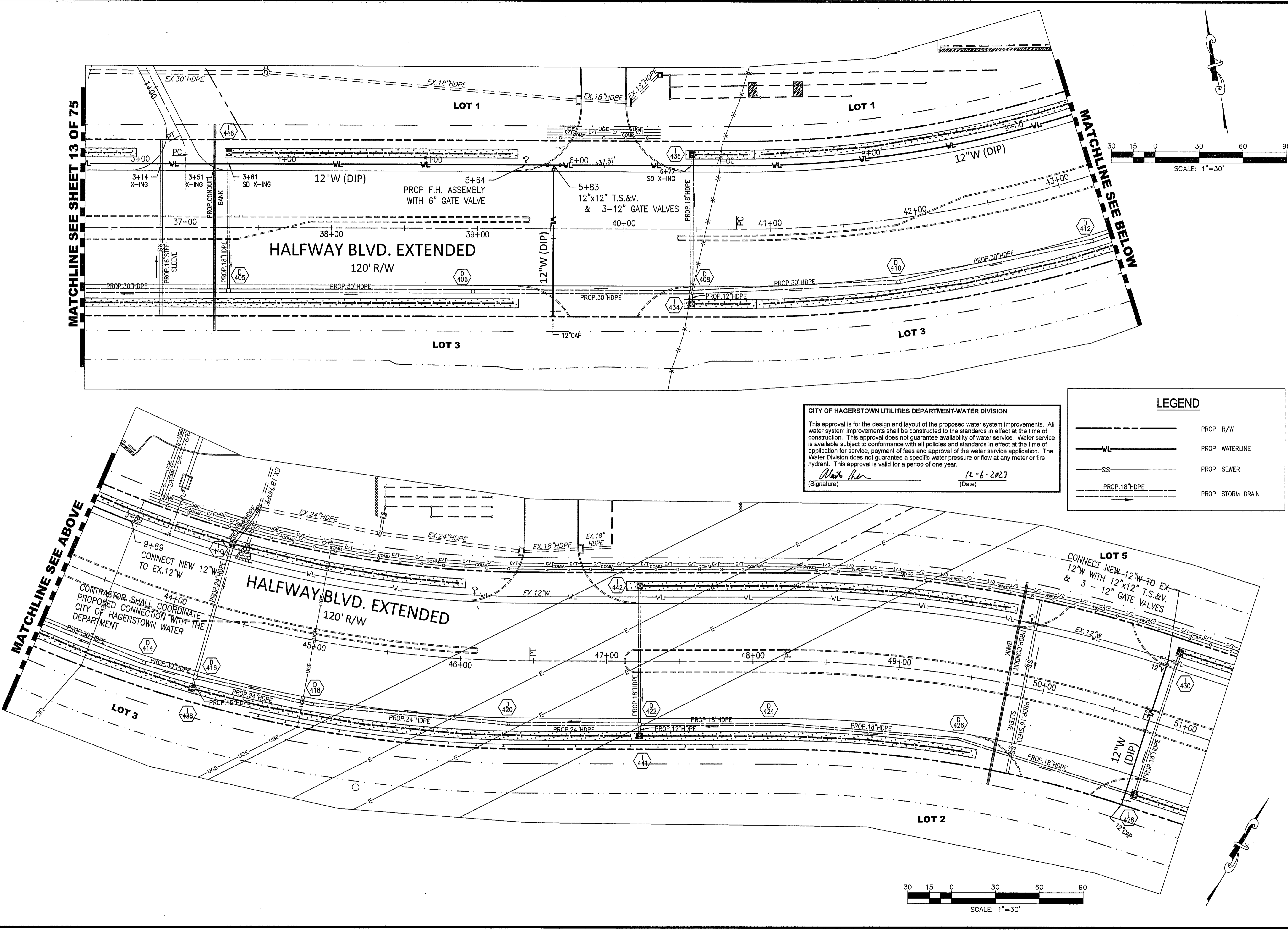
12-6-2023
(Date)

REVISION DESCRIPTION		BY	DATE
NO.			
DESIGNED BY:	KOUJKA		
DRAWN BY:	KOUJKA		
CHECKED BY:	PJM		
DATE:	NOV 2023		

WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING
Washington County Administrative Annex, Building 7 Phone: 240-313-2480 Fax: 240-313-2401

HALFWAY BOULEVARD EXTENDED PROPOSED WATER AND SEWER PLAN
SCALE 1" = 30'
SHEET NO. 40
PROJECT NO. 10-273
SHA: WA067ZM1 FAP: APL-3(804)E

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\10 - W&S\10-273 WAS-01.DWG PLOT DATE: 11/16/2023 10:57 AM



CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION

This approval is for the design and layout of the proposed water system improvements. All water system improvements shall be constructed to the standards in effect at the time of construction. This approval does not guarantee availability of water service. Water service is available subject to conformance with all policies and standards in effect at the time of application for service, payment of fees and approval of the water service application. The Water Division does not guarantee a specific water pressure or flow at any meter or fire hydrant. This approval is valid for a period of one year.

[Signature] 12-6-2023
 (Signature) (Date)

LEGEND

	PROP. R/W
	PROP. WATERLINE
	PROP. SEWER
	PROP. STORM DRAIN

DESIGNED BY: KOUJICA	NOV 2023
DRAWN BY: KOUJICA	
CHECKED BY: PJM	
DATE:	NOV 2023

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
 177 Newberry Road, Hagerstown, MD 21742
 Phone: 240-315-2460 Fax: 240-315-2461

**HALFWAY BOULEVARD
 EXTENDED
 PROPOSED WATER
 AND SEWER PLAN**

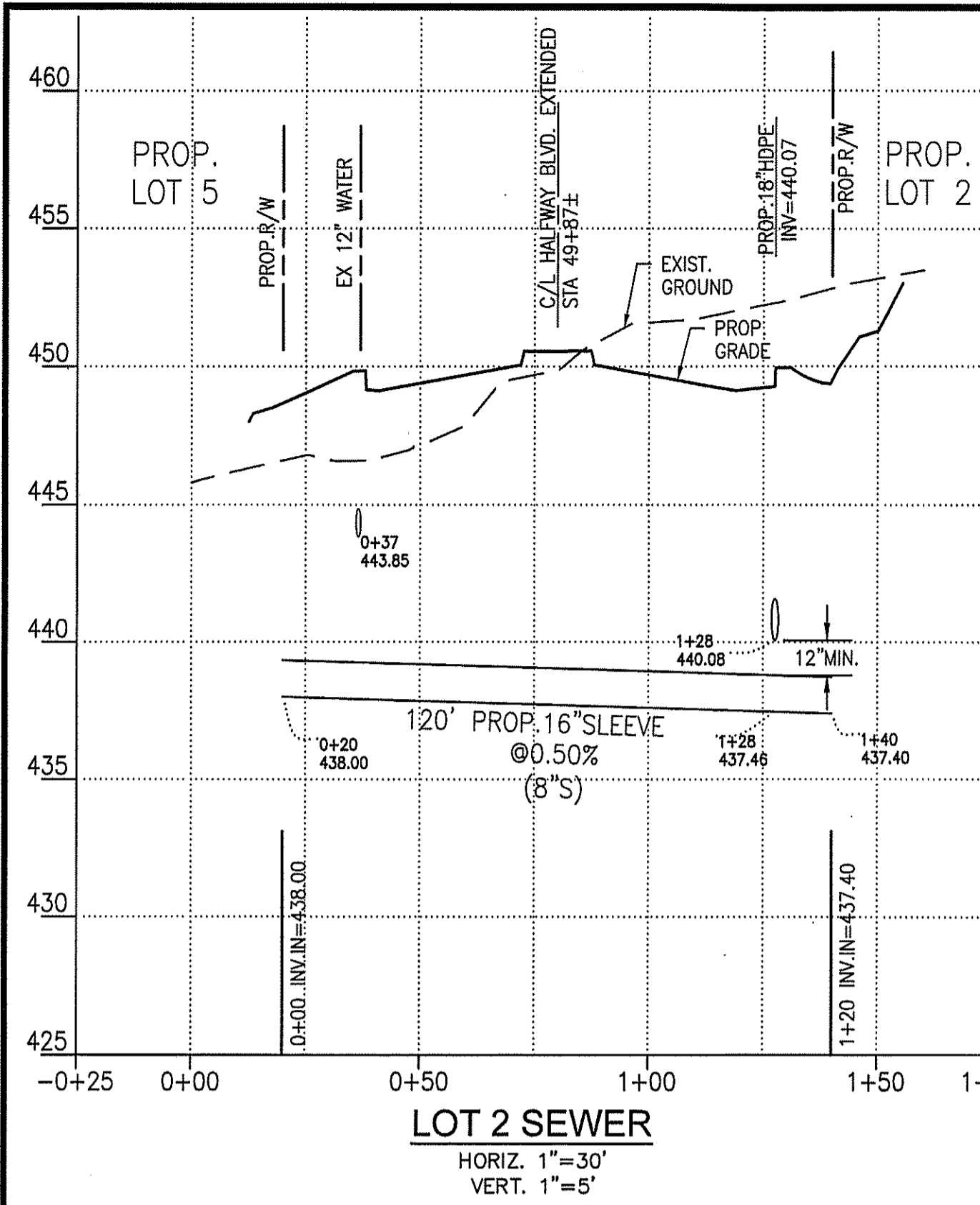
SCALE
 1" = 30'

SHEET NO.
 41

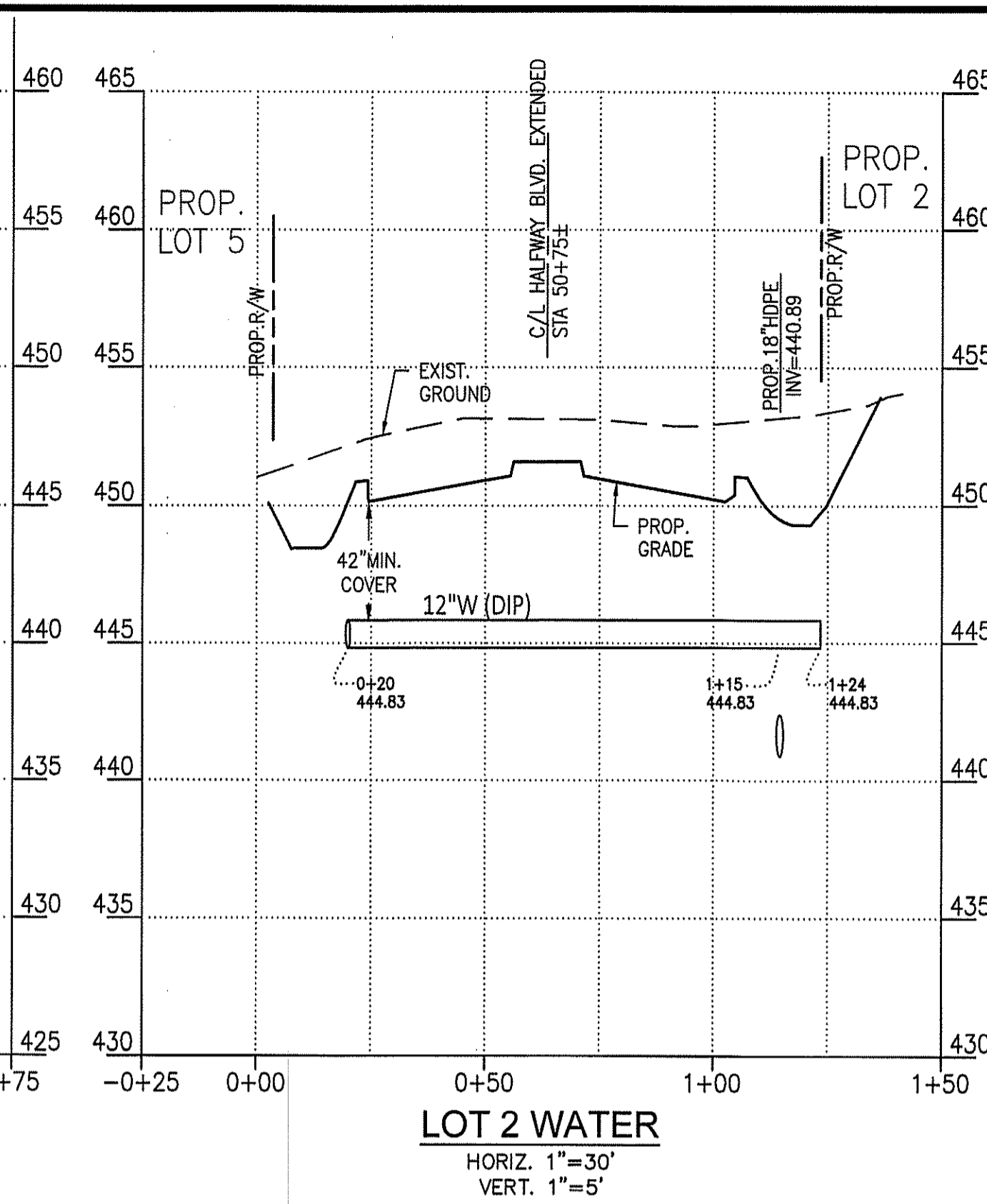
PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(B04)E

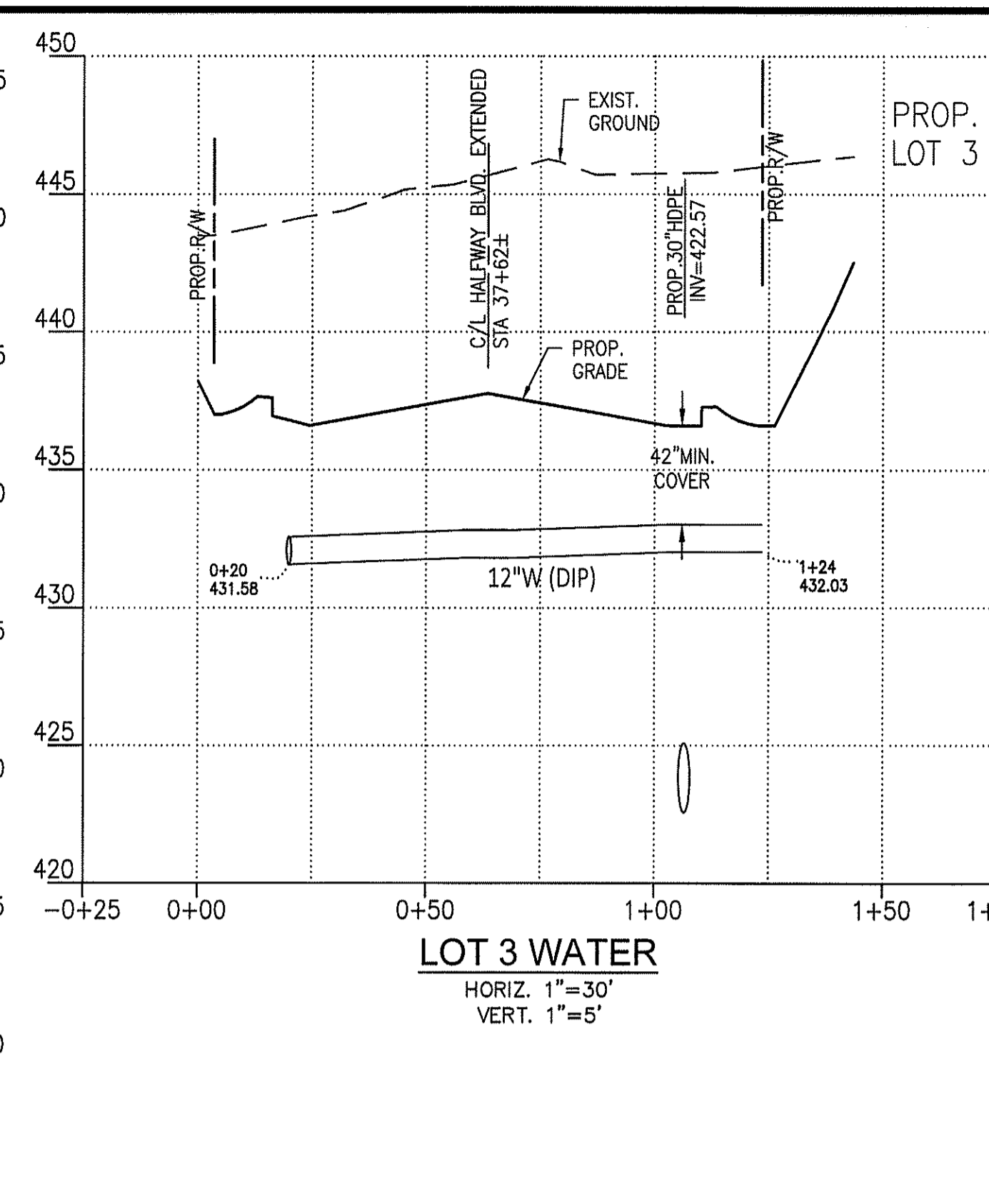
FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\10 - W&S\10-273 WAS-01.DWG PLOT DATE: 11/16/2023 10:52 AM



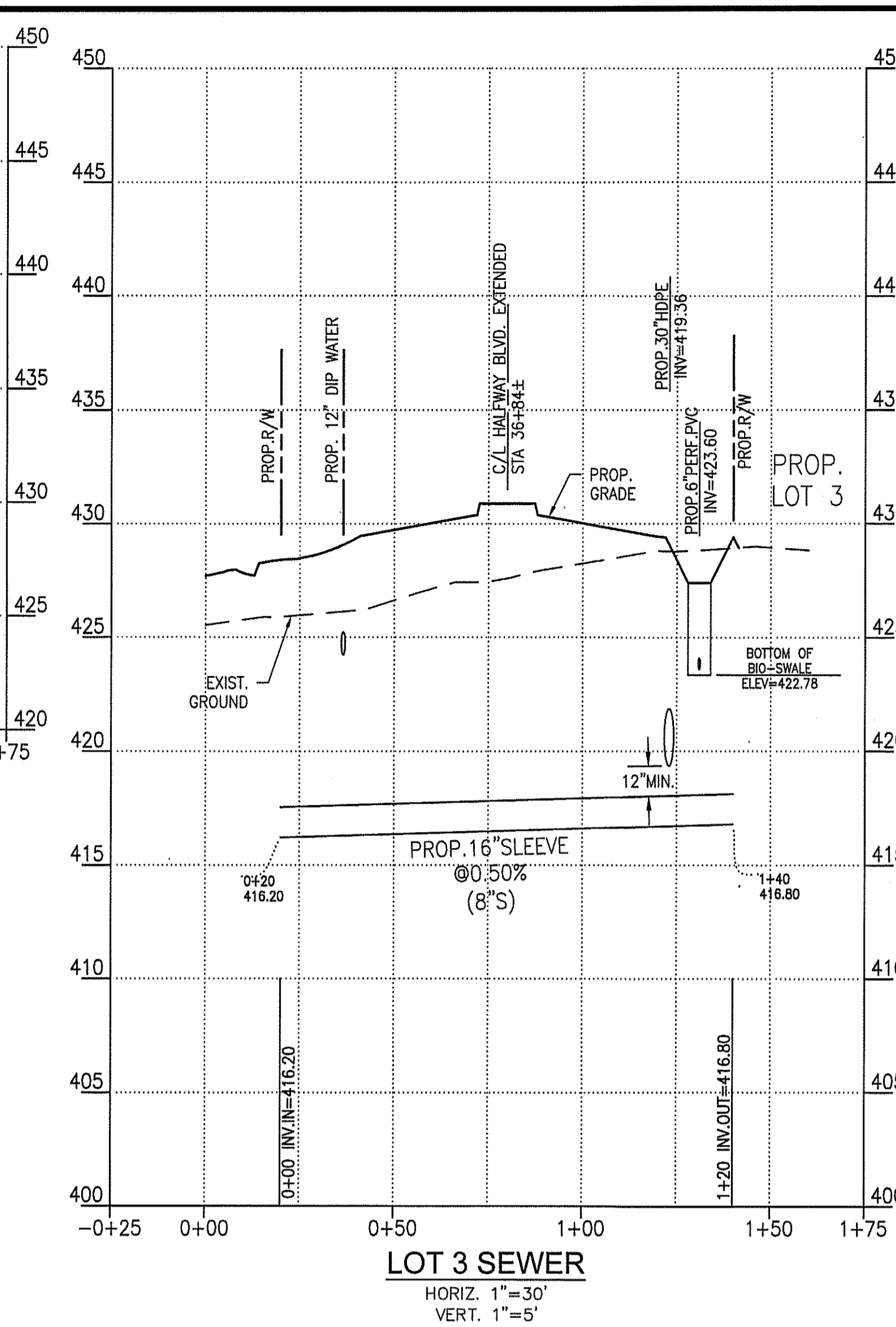
LOT 2 SEWER
HORIZ. 1" = 30'
VERT. 1" = 5'



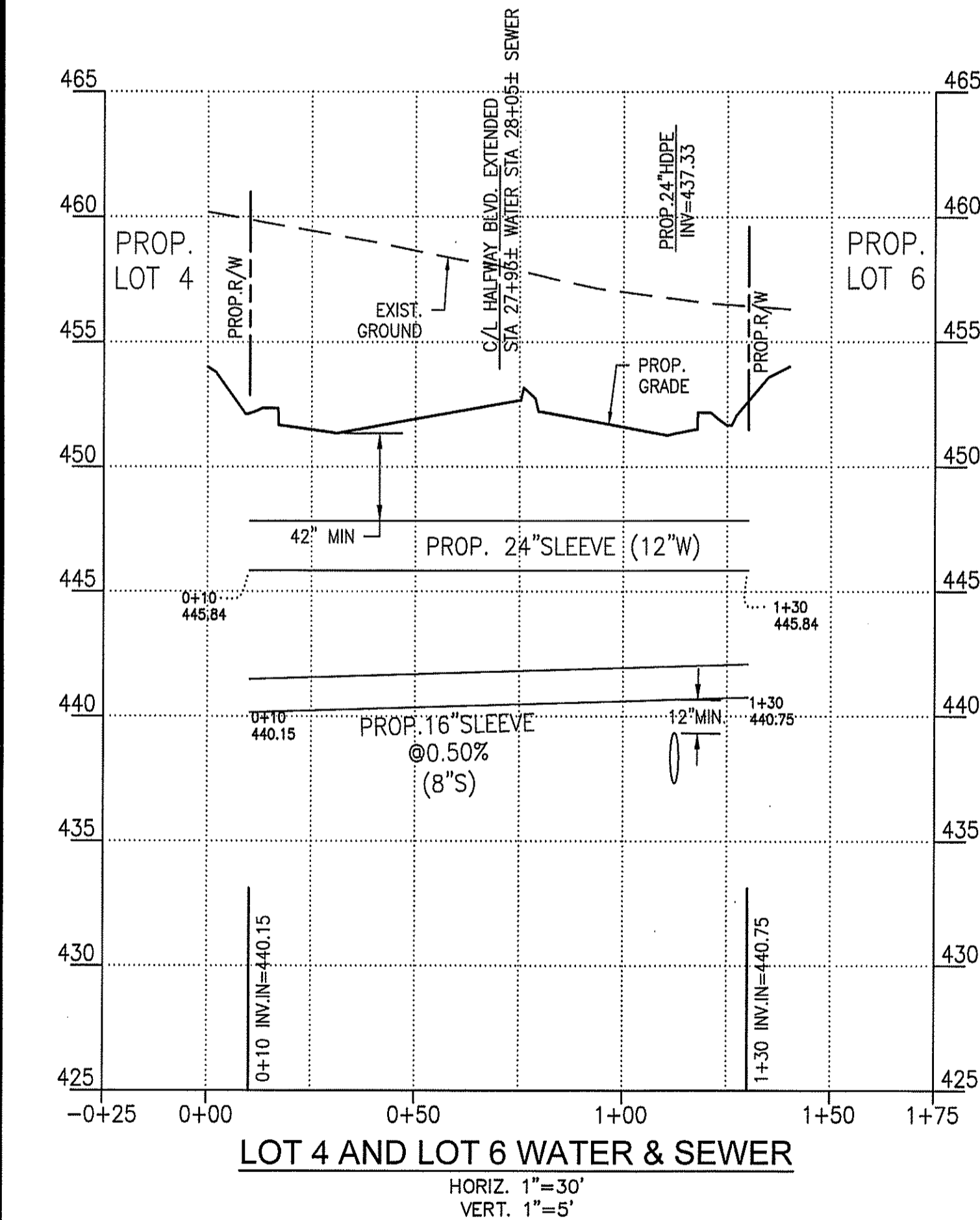
LOT 2 WATER
HORIZ. 1" = 30'
VERT. 1" = 5'



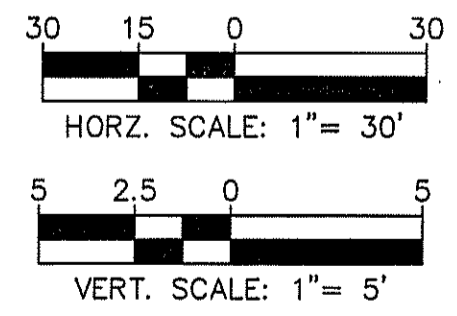
LOT 3 WATER
HORIZ. 1" = 30'
VERT. 1" = 5'



LOT 3 SEWER
HORIZ. 1" = 30'
VERT. 1" = 5'



LOT 4 AND LOT 6 WATER & SEWER
HORIZ. 1" = 30'
VERT. 1" = 5'



CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION
This approval is for the design and layout of the proposed water system improvements. All water system improvements shall be constructed to the standards in effect at the time of construction. This approval does not guarantee availability of water service. Water service is available subject to conformance with all policies and standards in effect at the time of application for service, payment of fees and approval of the water service application. The Water Division does not guarantee a specific water pressure or flow at any meter or fire hydrant. This approval is valid for a period of one year.
[Signature]
(Date) 12-6-2023

NO.	REVISION DESCRIPTION	DATE
DESIGNED BY:	KDUGGA	
DRAWN BY:	KDUGGA	
CHECKED BY:	P.M.	
DATE:	NOV 2023	

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

**HALFWAY BOULEVARD
EXTENDED
PROPOSED WATER AND
SEWER PROFILES**

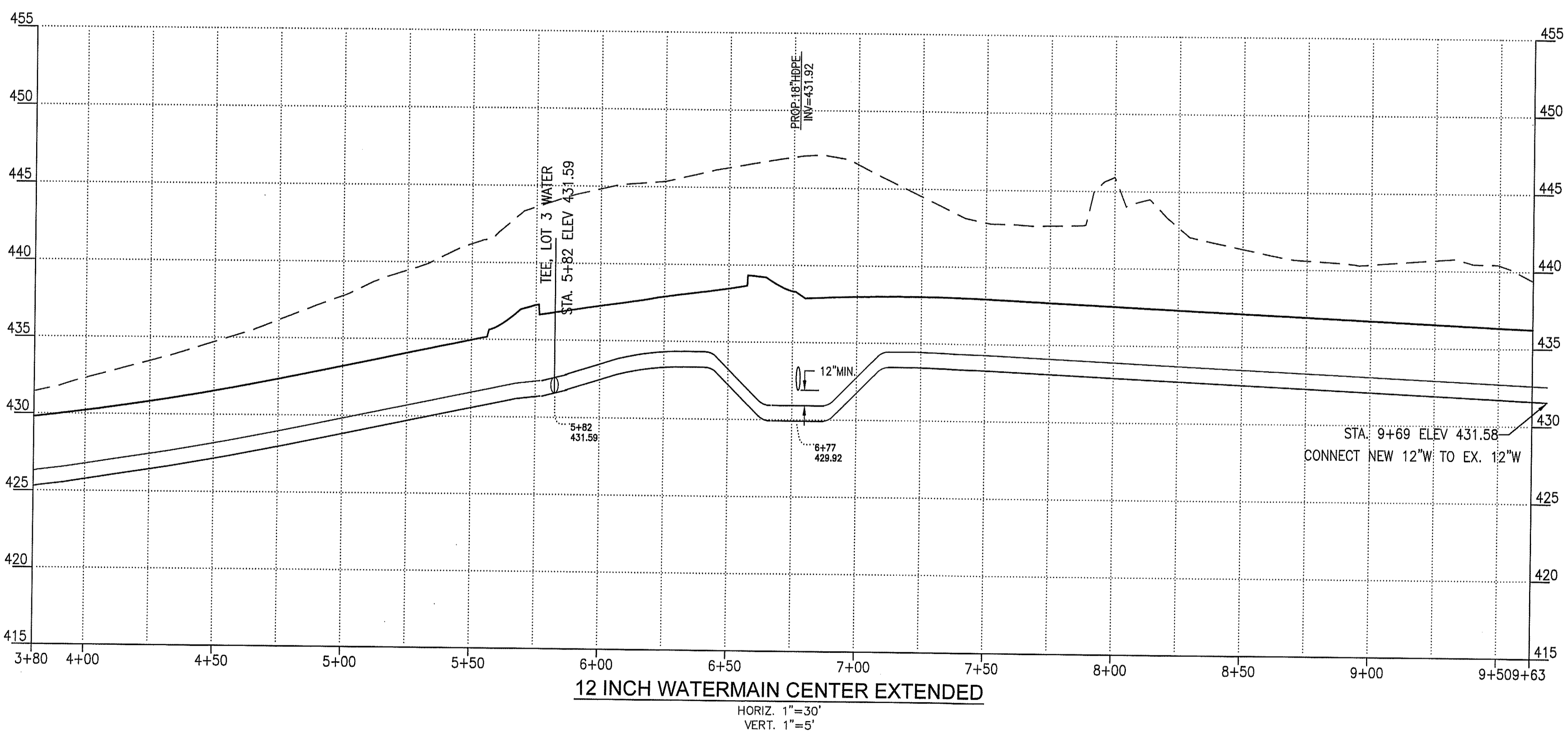
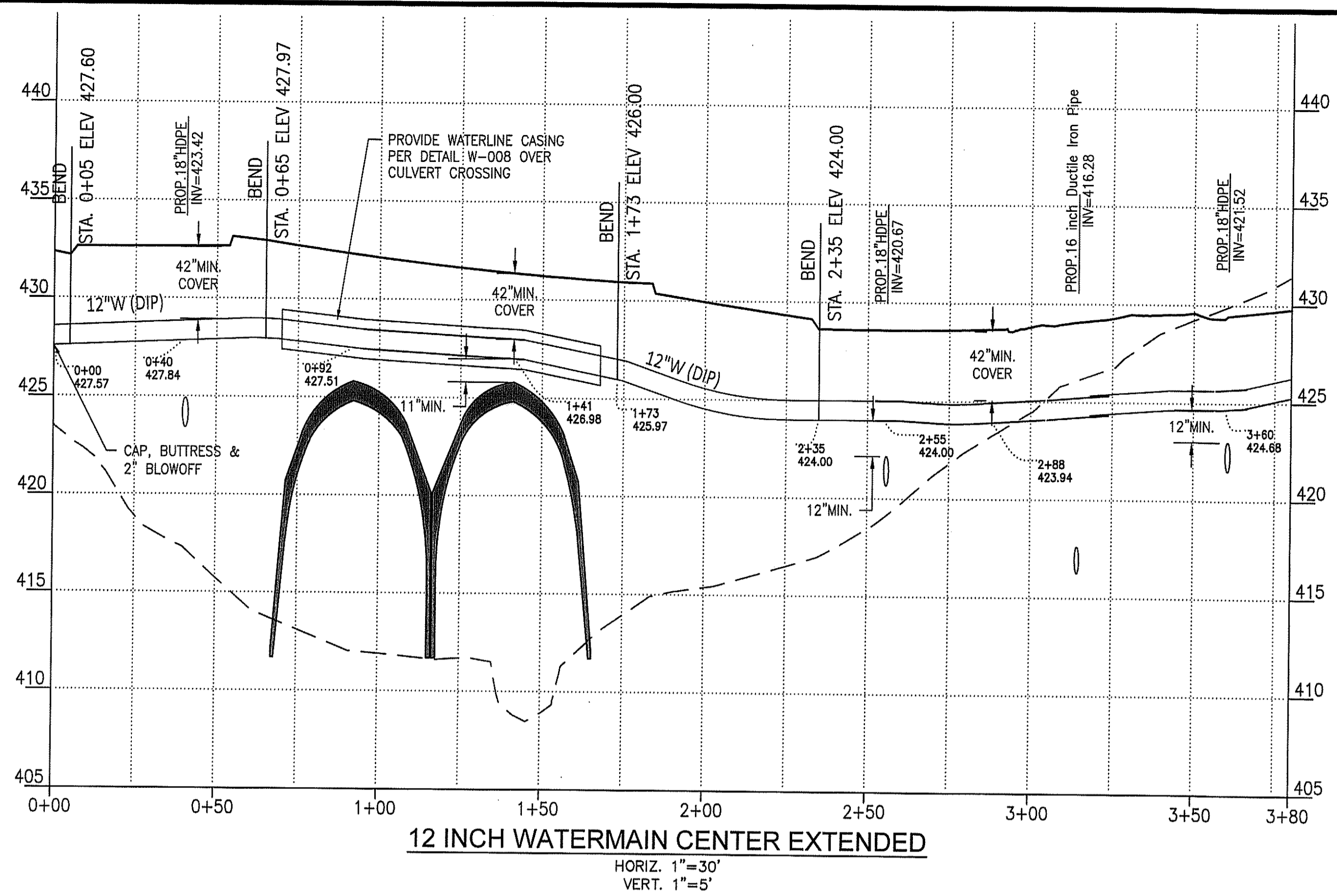
SCALE
HORZ. 1" = 30'
VERT. 1" = 5'

SHEET NO. 42

PROJECT NO. 10-273

SHA: WA067ZM1
FAP: APL-3(804)E

FILE PATH: C:\USERS\GABOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\10 - W&S\10-273 WAS-01.DWG PLOT DATE: 11/16/2023 10:47 AM



END SEAL INSTALLATION

SECTION A-A

LOCATION OF INSULATORS

NOMINAL DIAMETERS	
MAIN	CASING- INSIDE DIAMETER
4"	8"
6"	10"
8"	12"
10"	16"
12"	18"
14"	20"
16"	22"
18"	24"
20"	28"
24"	32"

NOTES:
 1. CASING SHALL CONFORM TO AWWA C202. WALL THICKNESS ON SIZES THRU 10" SHALL BE 1/4", OTHERS SHALL BE 3/8".
 2. DUCTILE IRON CARRIER PIPE SHALL BE COATED IN ACCORDANCE WITH AWWA C-104.
 3. SEE MANUFACTURERS SPECIFICATIONS FOR THE USE OF FIELD LOC'S.
 4. USE OF MECHANICAL JOINT PIPE AS DIRECTED BY CITY OF HAGERSTOWN WATER/SEWER DIVISION INSPECTOR.

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION

ISSUE DATE: MARCH 2009

REVISIONS

CASING FOR MAIN UNDER HIGHWAY

Plate W-008

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUJCA

DRAWN BY: KDUJCA

CHECKED BY: PJM

DATE: NOV 2023

WASHINGTON COUNTY, MARYLAND

DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
 7 Neilson Ave., Hagerstown, MD 21742
 Phone: 240-315-2668 Fax: 240-315-2461

HALFWAY BOULEVARD EXTENDED

PROPOSED WATER AND SEWER PROFILES AND DETAILS

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION

This approval is for the design and layout of the proposed water system improvements. All water system improvements shall be constructed to the standards in effect at the time of construction. This approval does not guarantee availability of water service. Water service is available subject to conformance with all policies and standards in effect at the time of application for service, payment of fees and approval of the water service application. The Water Division does not guarantee a specific water pressure or flow at any meter or fire hydrant. This approval is valid for a period of one year.

(Signature)

SCALE

HORIZ. 1" = 30'

VERT. 1" = 5'

SHEET NO.

43

PROJECT NO.

10-273

SHA: WA087ZM1

FAP: APL-3(804)E

HORIZ. SCALE: 1" = 30'

VERT. SCALE: 1" = 5'

NOTE:

- BACKFILL TO BE COMPACTED IN 8" LAYERS TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE ASHTO-T-99 STANDARD PROCTOR.
- MAINTAIN MINIMUM OF 3"-6" COVER TO TOP OF PIPE UNLESS NOTED ON PLANS OR DIRECTED BY ENGINEER.
- SEE THE CITY, COUNTY OR STATE STANDARD REQUIREMENTS FOR BACKFILL.

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION ISSUE DATE: MARCH 2009
 ROADWAY, SHOULDER AND PAVED PARKING AREA TRENCH, EXCAVATION AND BACKFILL
Plate W-001

NOTE:

- BACKFILL TO BE COMPACTED IN 8" LAYERS TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE ASHTO-T-99 STANDARD PROCTOR.
- MAINTAIN MINIMUM OF 3"-6" COVER TO TOP OF PIPE UNLESS NOTED ON PLANS OR DIRECTED BY ENGINEER.
- SEE THE CITY, COUNTY OR STATE STANDARD REQUIREMENTS FOR BACKFILL.

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION ISSUE DATE: MARCH 2009
 GRASSED AREA REPAIR
Plate W-002

SIZE IN INCHES	LAYING LENGTH	"A" OUTSIDE DIAMETER	"B" DEPTH OF SOCKET	"C" BELL OUTSIDE DIAMETER	"D" BELL INSIDE DIAMETER
4	20'-1"	4.80	3.31	7.00	4.81
6	20'-1"	6.80	3.38	8.13	7.01
8	20'-1"	8.05	3.75	11.50	8.16
10	20'-1"	11.10	3.75	13.83	11.21
12	20'-1"	13.20	3.75	15.75	13.31
14	20'-0 1/2"	15.30	4.50	18.00	15.44
18	20'-0 1/2"	17.40	4.50	20.00	17.54
18	20'-0 1/2"	18.50	4.50	23.94	18.64
20	20'-0"	21.60	4.75	25.88	21.74
24	20'-0"	25.80	4.75	29.94	25.94
30	20'-0"	32.00	6.00	35.75	32.17
36	20'-0"	38.30	6.00	42.25	38.47
42	20'-0 1/2"	44.50	5.25	48.00	44.67
48	20'-0 1/2"	50.50	5.25	54.66	50.97
54	20'-0 1/2"	57.10	5.25	61.44	57.27

SIZE IN INCHES	NORMAL LAYING LENGTH FEET	OFFSET PER LENGTH IN INCHES	DEFLECTED IN ANGLE
4	20	0.21	0°-3"
6	20	0.21	0°-5"
8	20	0.21	0°-5"
10	20	0.21	0°-5"
12	20	0.21	0°-5"
14	20	0.17	0°-4"
16	20	0.17	0°-4"
18	20	0.12	0°-3"
20	20	0.12	0°-3"
24	20	0.12	0°-3"
30	20	0.12	0°-3"
36	20	0.12	0°-3"
42	20	0.08	0°-2"
48	20	0.08	0°-2"
54	20	0.09	0°-1 1/2"

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION ISSUE DATE: MARCH 2009
 DUCTILE IRON TYTON JOINT PIPE AND PIPE DEFLECTION DETAILS
Plate W-003

NOTE: FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

NOTE: FULL PIECE OF PIPE OUT OF THE BEND EACH DIRECTION SHALL BE RESTRAINED.

NOTE: NORMAL PRACTICE IS A CONCRETE BUTTRESS AT THE END OF THE MAIN WITH 2" BLOWOFF.

GENERAL NOTE: L=FULL LENGTH OF PIPE (MINIMUM 20 FEET)

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION ISSUE DATE: MARCH 2009
 STANDARD RESTRAINT TEE, DEAD END AND BEND
Plate W-009

NOTE:

- ALL PIPE MUST BE RESTRAINED FROM MAIN TO FIRE HYDRANT TO ELIMINATE CONCRETE BUTTRESS.
- COVER FITTING WITH POLYETHYLENE WRAP 5 MIL OR GREATER.

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION ISSUE DATE: MARCH 2009
 FIRE HYDRANT SETTING
Plate W-005

D	H	I	J	K
4"	0'-9"	0'-6"	0'-9"	0'-5"
6"	0'-9"	0'-8"	0'-9"	0'-6"
8"	0'-9"	0'-10"	1'-0"	0'-8"
10"	0'-10"	1'-0"	1'-3"	0'-8"
12"	1'-0"	1'-3"	1'-5"	0'-8"
16"	1'-2"	1'-8"	1'-10"	0'-10"
20"	1'-4"	2'-1"	2'-3"	1'-2"
24"	1'-6"	2'-6"	2'-8"	1'-4"
30"	1'-9"	3'-1"	3'-4"	1'-6"
36"	2'-0"	3'-9"	3'-11"	1'-10"

NOTE:

- ALL CONCRETE TO BE 2,500 P.S.I.
- CARRY CONCRETE TO UNDISTURBED EARTH.
- ALL DIMENSIONS SHOWN ARE MINIMUM.
- NO CONCRETE SHALL COVER FITTING HARDWARE.
- COVER FITTING WITH POLYETHYLENE WRAP 5 MIL OR GREATER.

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION ISSUE DATE: MARCH 2009
 BUTTRESS FOR MECHANICAL JOINT TEES
Plate W-010

NOTE:

- ALL CONCRETE TO BE 2,500 P.S.I.
- CARRY CONCRETE TO UNDISTURBED EARTH.
- ALL DIMENSIONS SHOWN ARE MINIMUM.
- NO CONCRETE SHALL COVER FITTING HARDWARE.
- COVER FITTING WITH POLYETHYLENE WRAP 5 MIL OR GREATER.

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION ISSUE DATE: MARCH 2009
 BUTTRESS FOR HORIZONTAL MECHANICAL JOINT BENDS LESS THAN 90°
Plate W-011

NOTE:

- ALL CONCRETE TO BE 2,500 P.S.I.
- CARRY CONCRETE TO UNDISTURBED EARTH.
- ALL DIMENSIONS SHOWN ARE MINIMUM.
- NO CONCRETE SHALL COVER FITTING HARDWARE.
- COVER FITTING WITH POLYETHYLENE WRAP 5 MIL OR GREATER.

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION ISSUE DATE: MARCH 2009
 ANCHORAGES FOR MECHANICAL JOINT BENDS
Plate W-012

CITY OF HAGERSTOWN UTILITIES DEPARTMENT-WATER DIVISION

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(Signature) *[Handwritten Signature]* (Date) 12-6-2023

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

DESIGNED BY: RDUGA
 DRAWN BY: KDUGCA
 CHECKED BY: PJA
 DATE: NOV 2023

SCALE
 1" = 30'

SHEET NO.
 44

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E

HALFWAY BOULEVARD EXTENDED PROPOSED WATER AND SEWER DETAILS

SOIL EROSION, SEDIMENT CONTROL & SEEDING NOTES

- ALL SOIL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND THE PROVISIONS OF THE APPROVED PLAN.
- ALL GRADING AND STABILIZATION SHALL COMPLY WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", "SECTION B - GRADING AND STABILIZATION" AND THE PROVISIONS OF THE APPROVED PLAN.
- ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES (BMP'S) ARE TO BE CONSTRUCTED AND/OR INSTALLED PRIOR TO OR AT THE INITIATION OF GRADING IN ACCORDANCE WITH "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", AND THE APPROVED PLAN.
- A GRADING UNIT IS THE MAXIMUM CONTIGUOUS AREA ALLOWED TO BE GRADED AT A GIVEN TIME AND IS LIMITED TO 20 ACRES. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY AND/OR THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT (APPROVAL AUTHORITY). UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- FOR INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, TEMPORARY OR PERMANENT STABILIZATION MUST BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 7 DAY STABILIZATION REQUIREMENT, AS WELL AS, STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION (AS APPLICABLE).
- ALL CONSTRUCTED CHANNELS AND SWALES SHALL HAVE SPECIFIED TREATMENT INSTALLED TO THE DESIGN FLOW DEPTH COMPLETED DOWNSTREAM TO UPSTREAM AS CONSTRUCTION PROGRESSES. AN INSTALLATION DETAIL SHALL BE SHOWN ON THE PLANS.
- ALL STORM DRAIN AND SANITARY SEWER LINES NOT IN PAVED AREAS ARE TO BE MULCHED AND SEEDED WITHIN 3 DAYS OF INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
- ELECTRIC POWER, TELEPHONE, AND GAS LINES ARE TO BE COMPACTED, SEEDED, AND MULCHED WITHIN 3 DAYS AFTER INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
- NO SLOPE SHALL BE GREATER THAN 2:1.
- AS REQUIRED BY SECTION B, OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, "ADEQUATE VEGETATIVE STABILIZATION", IS DEFINED AS 95 PERCENT GROUND COVER. THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT REQUIRES THE PROJECT ADHERE TO THIS FOR SCHEDULING OF THE FINAL SITE CLOSEOUT REVIEW, AND/OR RELEASE OF THE SITE FOR SOIL EROSION AND SEDIMENT CONTROL.

FOR SITES 1.0 ACRE OR MORE, THE FOLLOWING ARE REQUIRED:

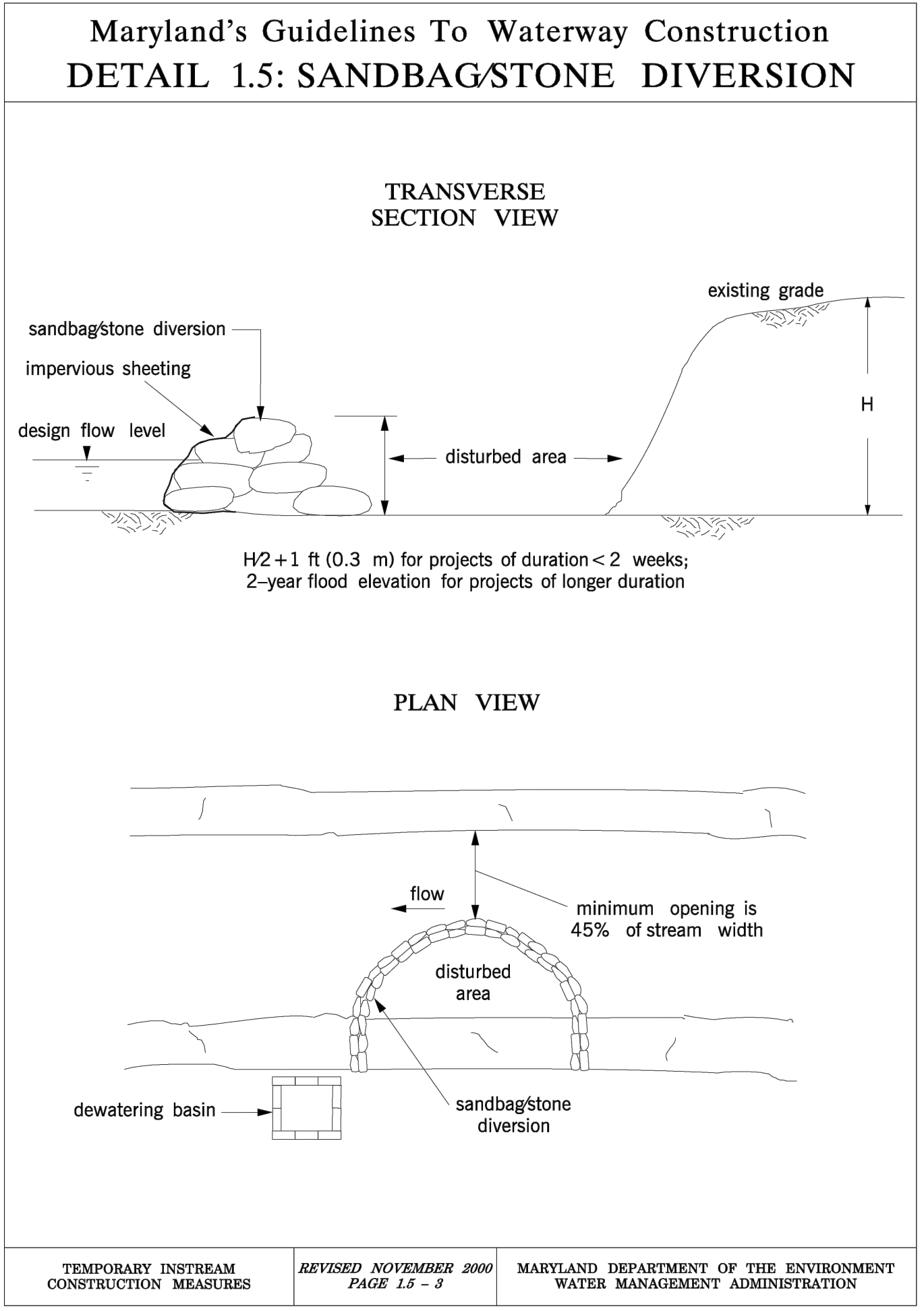
- MARYLAND DEPARTMENT OF THE ENVIRONMENT, GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH A CONSTRUCTION ACTIVITY, NPDES PERMIT NUMBER MDR10, STATE DISCHARGE PERMIT NUMBER 09GP, OR AN INDIVIDUAL PERMIT.
- THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (GENERAL/INDIVIDUAL PERMIT - NOTICE OF INTENT - NOI) APPLICATION AND PERMIT SHALL BE POSTED AND/OR AVAILABLE ON-SITE AT ALL TIMES.
- DURING CONSTRUCTION, ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES (BMP'S) SHALL BE INSPECTED AND RECORDED ON THE "STANDARD INSPECTION FORM", "GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY" PER THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (GENERAL/INDIVIDUAL PERMIT - NOTICE OF INTENT - NOI).
- FOLLOWING CONSTRUCTION AND RELEASE OF THE SIGHT FOR SOIL EROSION AND SEDIMENT CONTROL BY THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT, I.E., ALL PORTIONS OF A SITE HAVE BEEN PERMANENTLY STABILIZED, AND ALL STORMWATER DISCHARGES FROM CONSTRUCTION SITES THAT ARE AUTHORIZED BY THE PERMIT ARE ELIMINATED, THE AUTHORIZED PERMITTEE SHALL SUBMIT THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, GENERAL/INDIVIDUAL PERMIT - NOTICE OF TERMINATION-NOT.

SEQUENCE OF CONSTRUCTION

- PRIOR TO CLEARING OF ANY TREES, GRADING, OR INSTALLING SEDIMENT CONTROL MEASURES, A PRE-CONSTRUCTION MEETING MUST BE CONDUCTED ON SITE WITH THE WASHINGTON COUNTY DIVISION OF ENGINEERING AT (240) 313-2460 AND THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT (WCSD) (301) 797-6821. CONTACT WCSD AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO THE START OF CONSTRUCTION TO REQUEST A PRE-CONSTRUCTION MEETING WHICH MUST OCCUR PRIOR TO COMMENCING ANY WORK.
 - THE LIMITS OF DISTURBANCE (LOD) MUST BE FIELD MARKED PRIOR TO CLEARING AND GRUBING, INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION OR OTHER LAND DISTURBING ACTIVITIES.
 - CONTRACTOR TO CONTACT MISS UTILITY AT (800) 257-7777 48 HOURS PRIOR TO START OF CONSTRUCTION.
 - CONTRACTOR TO TEST PIT UTILITIES PRIOR TO CONSTRUCTION AND PROVIDE DATA TO WASHINGTON COUNTY ENGINEER.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCES AT STATIONS 22+25 AND 54+85 AND INSTALL PERIMETER CONTROL MEASURES IN ACCORDANCE WITH PERMITTED PLANS.
 - CLEAR AND GRUB THE AREA.
- WHERE FEASIBLE, THE CONSTRUCTION SHALL BE PHASED TO PRIORITIZE WORK EAST OF THE PROPOSED BOTTOMLESS ARCH CULVERTS TO PROVIDE ACCESS TO THE PARCEL DIRECTLY NORTH OF THE ROADWAY AND TO THE WASHINGTON COUNTY PUMP STATION.
- IMPLEMENT SANDBAG DIVERSION DETAIL MGWC 1.5 AND BEGIN DEWATERING OF THE CONSTRUCTION AREA WITH SUMP PIT DETAIL F-2 AND FILTER BAG DETAIL F-4 ONLY IN THE AREA WHERE CENTER FOOTER CONSTRUCTION IS IN CLOSE PROXIMITY AND LIKELY TO DESTABILIZE THE STREAM BANK. (THE TRIBUTARY TO CONOCOCHIEGUE CREEK IS A USE IV WATERWAY WITH IN-STREAM RESTRICTIONS FROM MARCH 1 THROUGH MAY 31 INCLUSIVE, IN ANY YEAR).
 - BEGIN EXCAVATION FOR THE BOTTOMLESS ARCH CULVERT FOOTERS. UNDERCUT SOILS BELOW FOOTINGS TO THE BEDROCK SURFACE, DRILL PROBE HOLES, BACKFILL WITH APPROPRIATE CONCRETE MIX PER STRUCTURE SPECIFICATIONS.
 - BEGIN CONSTRUCTION OF BOTTOMLESS ARCH CULVERTS, PER MANUFACTURERS CONSTRUCTION REQUIREMENTS.
 - BEGIN GRADING HALFWAY BOULEVARD EXTENDED FROM THE STREAM CROSSING APPROXIMATELY STA. 35+50 TO STA. 55+00.
 - STORM DRAIN INSTALLATION SHALL BE INSTALLED FROM DOWNSTREAM TO UPSTREAM, BEGINNING WITH CONNECTION AT THE WINGWALLS. IF WINGWALL IS NOT CONSTRUCTED, PROVIDE A STABILIZED TEMPORARY OUTFALL FROM D402 TO THE STREAM BANK.
 - CONSTRUCT WATERLINE, UTILITY AND CONDUIT CROSSINGS.
 - BEGIN ROADWAY CONSTRUCTION WORK ON HALFWAY BOULEVARD EXTENDED, PLACE GRADED AGGREGATE BASE COURSE.
 - INSTALL DRAINAGE STRUCTURES WITH INLET PROTECTION, SET CURBS AND MEDIANS.
 - INSTALL FULL DEPTH ASPHALT PATCH ON EXISTING HALFWAY BOULEVARD EXTENDED.
 - INSTALL ASPHALT BASE COURSE ON HALFWAY BOULEVARD EXTENDED AND ALLOW HITACHI ACCESS TO THE ROADWAY AS NEEDED.
 - BEGIN GRADING HALFWAY BOULEVARD EXTENDED WEST OF THE STREAM CROSSING (APPROXIMATELY STA. 22+50 TO STA. 35+00).
 - CONSTRUCT STORM DRAIN FROM DOWNSTREAM TO UPSTREAM, INSTALL INLET PROTECTION WITH STORM DRAIN INSTALLATION. CONSTRUCT REMAINING UTILITY AND CONDUIT CROSSINGS.
 - FINE GRADE AND INSTALL GRADED AGGREGATE BASE COURSE ON HALFWAY BOULEVARD EXTENDED.
 - PRIOR TO INSTALLING WATER QUALITY STRUCTURES, AND ONCE THE SITE DRAINING TO THE BIO-SWALE AREA IS STABILIZED, THE CONTRACTOR SHALL CONTACT THE WCSD AT 301-797-6821 FOR PERMISSION TO INSTALL BIO-SWALE MATERIALS, MAKING SURE TO CONTACT WASHINGTON COUNTY ENGINEERING 240-313-2460 FOR INSPECTIONS.
 - INSTALL BIO-SWALES AND ASSOCIATED LANDSCAPING ONCE AREA TO THEM IS STABILIZED AND APPROVAL OBTAINED.
 - BEGIN ROADWAY WIDENING WORK ON MD63 AND BUSINESS PARKWAY WITH MDOT SHA APPROVED TRAFFIC CONTROL PLAN. PLACE GRADED AGGREGATE BASE.
 - TRENCH OR BORE FOR SIGNAL CONDUIT INSTALLATION. INSTALL SIGNAL FOUNDATIONS AND CONCRETE CURB AND SIDEWALK. INSTALLATION.
 - INSTALL ASPHALT BASE COURSE ON BUSINESS PARKWAY, MD63 AND REMAINDER OF HALFWAY BOULEVARD.
 - INSTALL SIGNAL POLES AND MAST ARMS. INSTALL AND BAG ALL MAST ARM SIGNALS AND SIGNS.
 - STABILIZE ALL UNPAVED AREAS. SEED AND MULCH TO ESTABLISH PERMANENT VEGETATIVE STABILIZATION. PLEASE REFER TO THE "PERMANENT SEEDING" NOTES AND DETAIL WITHIN THIS PLAN SET.
 - INSTALL ALL SURFACE COURSE AND STRIPING.
 - NOTIFY THE WCSD AND WASHINGTON COUNTY ENGINEERING AT LEAST FIVE (5) DAYS PRIOR TO THE REMOVAL OF ANY SEDIMENT CONTROL FEATURES TO SCHEDULE A FINAL CLOSEOUT REVIEW MEETING.
 - APPROVAL FROM THE WCSD IS NEEDED BEFORE THE REMOVAL OF SEDIMENT AND EROSION CONTROL MEASURES.

STANDARD SEDIMENT AND EROSION CONTROL NOTES

- A PRE-CONSTRUCTION MEETING, INTERIM (WATER QUALITY) INSPECTION, AND A FINAL SITE CLOSE OUT REVIEW ARE REQUIRED FOR ALL PROJECTS WITH SOIL DISTURBANCES GREATER THAN 15,000 SQUARE FEET OR 500 CUBIC YARDS OF CUT OR FILL. CONTACT THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT AT 301-797-6821 TO SCHEDULE THE REQUIRED MEETING OR INSPECTION.
- ALL SOIL EROSION/SEDIMENT CONTROL MEASURES, GRADING, STABILIZATION AND SOIL EROSION AND SEDIMENT CONTROL PRACTICES (BMP'S) SHALL COMPLY WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AND THE PROVISIONS OF THE APPROVED PLAN.
- FOR INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, TEMPORARY OR PERMANENT STABILIZATION MUST BE COMPLETED WITHIN:
 - THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
- STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE SEVEN (7) DAY STABILIZATION REQUIREMENT, AS WELL AS, STANDARD B-4-1 INCREMENTAL STABILIZATION, STANDARD B-4-4 TEMPORARY STABILIZATION, AND B.5 LAND GRADING (AS APPLICABLE).
- ALL STORM DRAIN AND SANITARY SEWER LINES NOT IN PAVED AREAS ARE TO BE MULCHED AND SEEDED WITHIN THREE (3) DAYS OF INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
- ELECTRIC POWER, TELEPHONE, AND GAS LINES ARE TO BE COMPACTED, SEEDED, AND MULCHED WITHIN THREE (3) DAYS AFTER INITIAL BACKFILL UNLESS OTHERWISE SPECIFIED ON PLANS.
- NO SLOPE SHALL BE GREATER THAN 2:1.
- AS REQUIRED BY SECTION B, OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, "ADEQUATE VEGETATIVE STABILIZATION", IS DEFINED AS 95 PERCENT GROUND COVER. THE WASHINGTON COUNTY SOIL CONSERVATION DISTRICT REQUIRES THE PROJECT ADHERE TO THIS FOR RELEASE OF THE SITE FOR SOIL EROSION AND SEDIMENT CONTROL.
- TEMPORARY SEEDING SHALL BE IN COMPLIANCE WITH SECTION B-4-4, STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION, OF THE 2011 MARYLAND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.
- PERMANENT SEEDING SHALL BE IN COMPLIANCE WITH SECTION B-4-5, STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION, OF THE 2011 MARYLAND STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL.
- ANY SPOIL AND/OR BORROW MUST COME FROM OR GO TO A SITE HAVING A CURRENT AND APPROVED SOIL EROSION AND SEDIMENT CONTROL PERMIT.



STANDARD UTILITY NOTES

- CONTRACTOR TO ONLY OPEN UP LENGTH OF TRENCH THAT CAN BE CONSTRUCTED AND BACKFILLED IN ONE WORKING DAY IN PAVED AREAS.
- CONTRACTOR TO PLACE EXCAVATED MATERIALS IN A DUMP TRUCK AND HAULED TO AN APPROVED LOCATION TO WASTED MATERIALS TO PAVED AREAS.
- CONTRACTOR TO BACKFILL TRENCH WITH APPROVED MATERIALS AND STABILIZE DISTURBED AREAS THE SAME WORKING DAY.
- IN AREAS WHERE THE CONSTRUCTION TAKES TO PLACE OUTSIDE OF THE EXISTING ROADBED, CONTRACTOR TO INSTALL SILT FENCE ALONG THE DOWNHILL SIDE OF THE TRENCH BEFORE BEGINNING CONSTRUCTION AND PLACE EXCAVATED MATERIAL FROM THE TRENCH ON THE UPHILL SIDE.
- IF DEWATERING OF THE TRENCH IS REQUIRED, CONTRACTOR TO PUMP WATER TO A FILTER BAG TO DEWATER.
- CONTRACTOR TO SWEEP STREETS OF ANY DEBRIS OR SEDIMENTS CAUSED BY CONSTRUCTION OPERATIONS AND DISPOSE OF AT AN APPROVED LOCATION.
- CONTRACTOR TO STABILIZE ALL DISTURBED AREAS WITH SEED & MULCH OR APPROPRIATE STREET REPAIR.

TEMPORARY SEEDING SUMMARY						
HARDINESS ZONE (FIGURE B.3): 6a & 6b						
SEED MIXTURE (TABLE B.1)						
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
1	Barley	96	Zone 6a: Mar 15-May 31/Aug 1-Sept 30 Zone 6b: Mar 1-May 15/Aug 1-Oct 15	1"	436 lb/ac. (10 lb/1000 s.f.)	2 tons/ac. (90 lb/1000 s.f.)

PERMANENT SEEDING SUMMARY								
HARDINESS ZONE (FIGURE B.3): 6a & 6b								
SEED MIXTURE (TABLE B.1)								
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTH	FERTILIZER RATE (10-20-20)			LIME RATE
					N	P205	K20	
6	Tall Fescue	40	Zone 6a: Mar 15-May 31/Aug 1-Sept 30	1/4"-1/2"	45 lb/ac. (1 lb/1000 s.f.)	90 lb/ac. (2 lb/1000 s.f.)	90 lb/ac. (2 lb/1000 s.f.)	2 tons/ac. (90 lb/1000 s.f.)
	Perennial Ryegrass	25						
	White Clover	5	Zone 6b: Mar 1-May 15/Aug 1-Oct 15					

DESIGNED BY: KDU/GCA	DRAWN BY: KDU/GCA	CHECKED BY: PJM	DATE: JAN 2024
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING			
Washington County Administrative Annex, Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401			
HALFWAY BOULEVARD EXTENDED EROSION & SEDIMENT CONTROL NOTES			
SCALE NONE			
SHEET NO. 45			
PROJECT NO. 10-273			
SHA: WA067ZM1 FAP: APL-3(804)E			

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\11 - ES\10-273 ENJ-01.DWG PLOT DATE: 1/8/2024 2:56 PM

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: FB

CONSTRUCTION SPECIFICATIONS

- TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
- PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG.
- CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
- REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
- USE NONWOVEN GEOTEXTILE WITH DOUBLE STITCHED SEAMS USING HIGH STRENGTH THREAD. SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:

GRAB TENSILE	250 LB	ASTM D-4632
PUNCTURE	150 LB	ASTM D-4833
FLOW RATE	70 GAL/MIN/FT ²	ASTM D-4491
PERMITTIVITY (SEC ⁻¹)	1.2 SEC ⁻¹	ASTM D-4491
UV RESISTANCE	70% STRENGTH @ 500 HOURS	ASTM D-4355
APPARENT OPENING SIZE (AOS)	0.15-0.18 MM	ASTM D-4751
SEAM STRENGTH	90%	ASTM D-4632

8. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

DETAIL B-4-6-B TEMPORARY SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL: TSSMS - * lb/ft² (* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

DETAIL B-4-6-C PERMANENT SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL: PSSMC - * lb/ft² (* INCLUDE SHEAR STRESS)

CONSTRUCTION SPECIFICATIONS

- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
- USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
- PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
- UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE NEXT DOWNSLOPE MAT.
- KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE

CONSTRUCTION SPECIFICATIONS

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (+30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

DETAIL F-2 SUMP PIT

STANDARD SYMBOL: SP

CONSTRUCTION SPECIFICATIONS

- USE 12 INCH OR LARGER DIAMETER CORRUGATED METAL, HDPE, OR PVC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER. BOTTOM OF PIPE MUST BE PAPPED WITH WATER-TIGHT SEAL.
- WRAP PIPE WITH 3/8 INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
- EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
- SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
- BACKFILL PIT AROUND THE PIPE WITH 3/4 TO 1 1/2 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
- DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
- A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

DETAIL D-4-1-A ROCK OUTLET PROTECTION I

STANDARD SYMBOL: ROPI

CONSTRUCTION SPECIFICATIONS

- RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
- PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (3/4 TO 1 1/2 INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
- CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPILLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
- WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
- CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND DISLOGGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

DETAIL D-4-1-B ROCK OUTLET PROTECTION II

STANDARD SYMBOL: ROPII

CONSTRUCTION SPECIFICATIONS

- RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
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- WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
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MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

DETAIL D-4-1-C ROCK OUTLET PROTECTION III

STANDARD SYMBOL: ROPIII

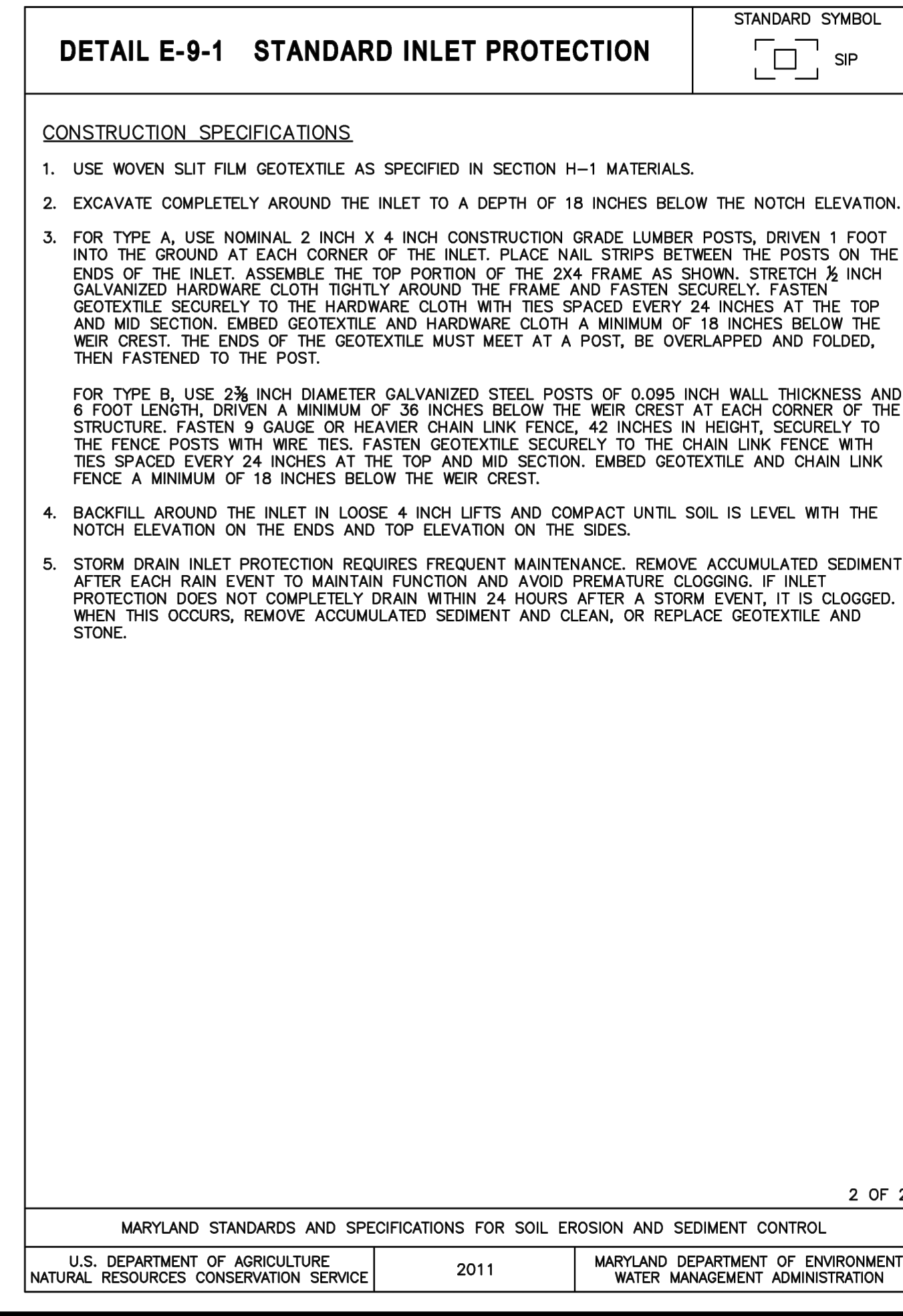
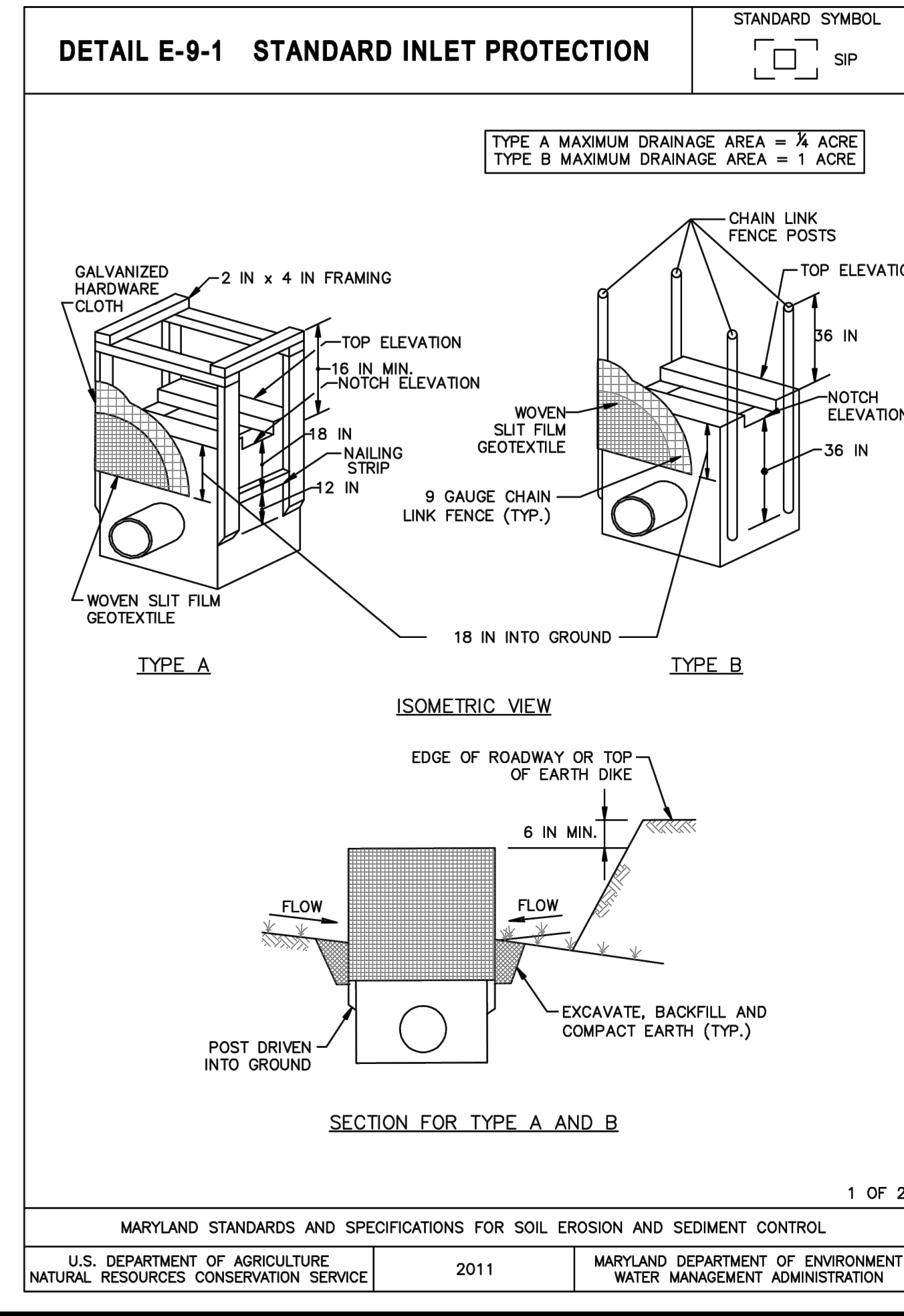
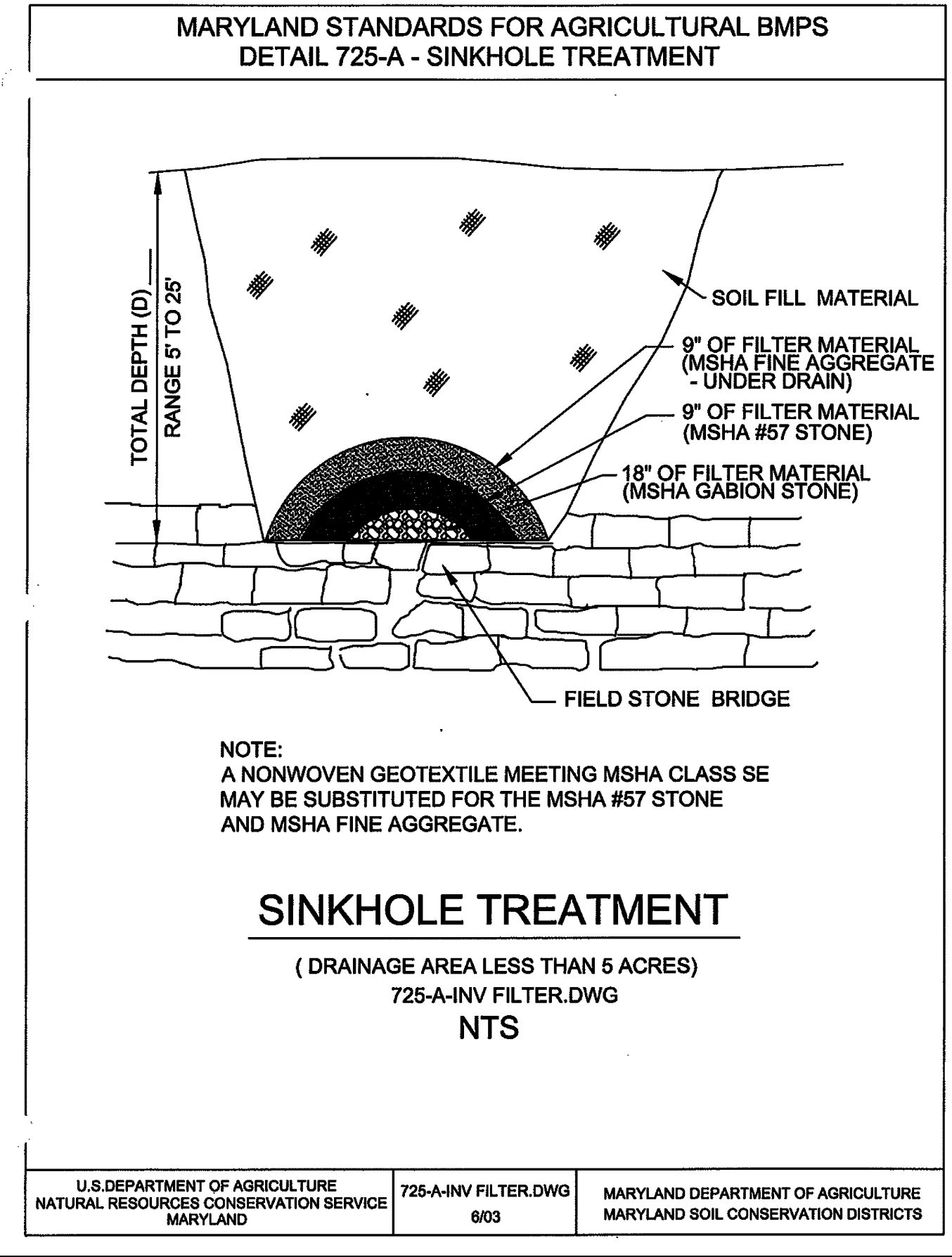
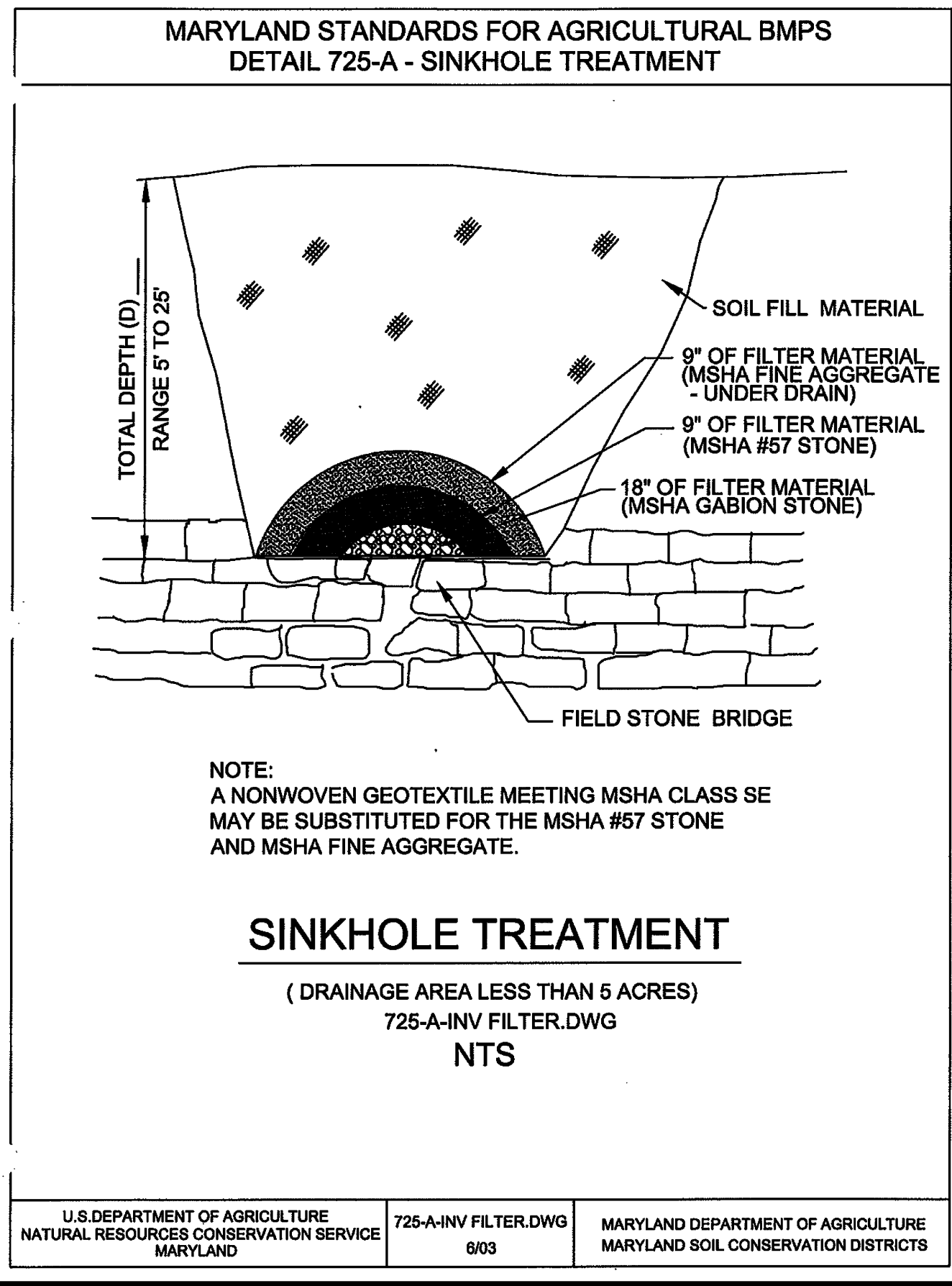
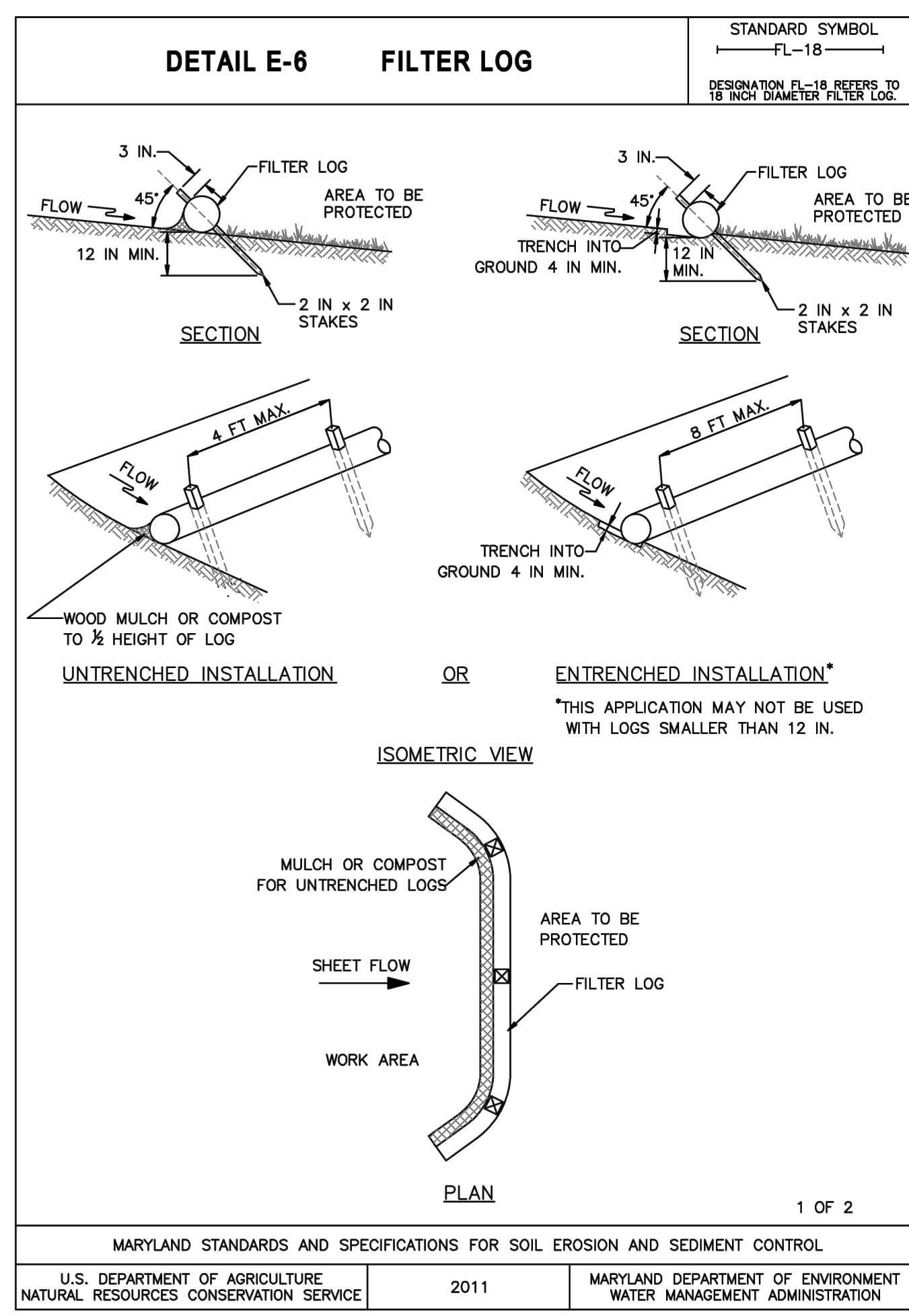
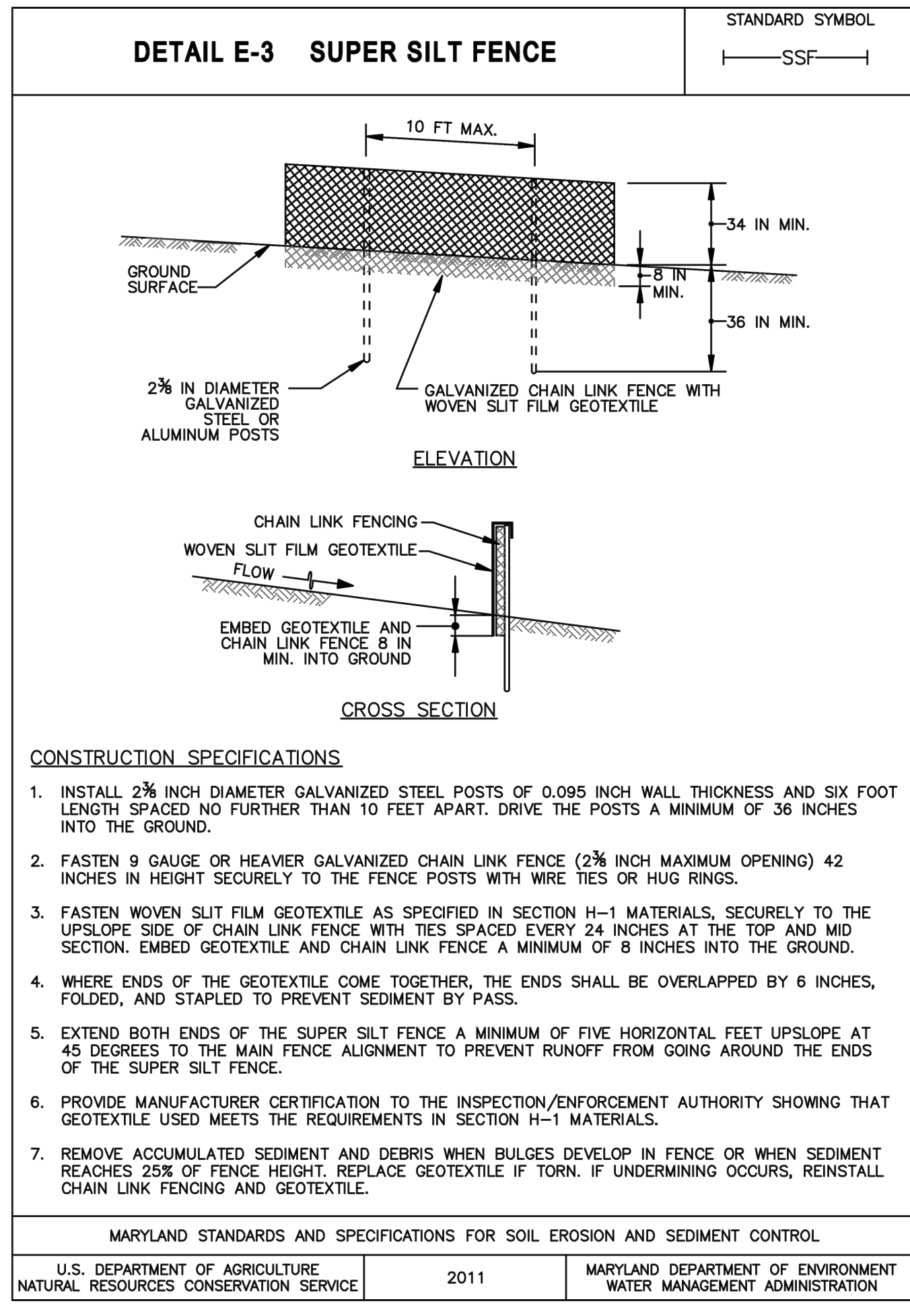
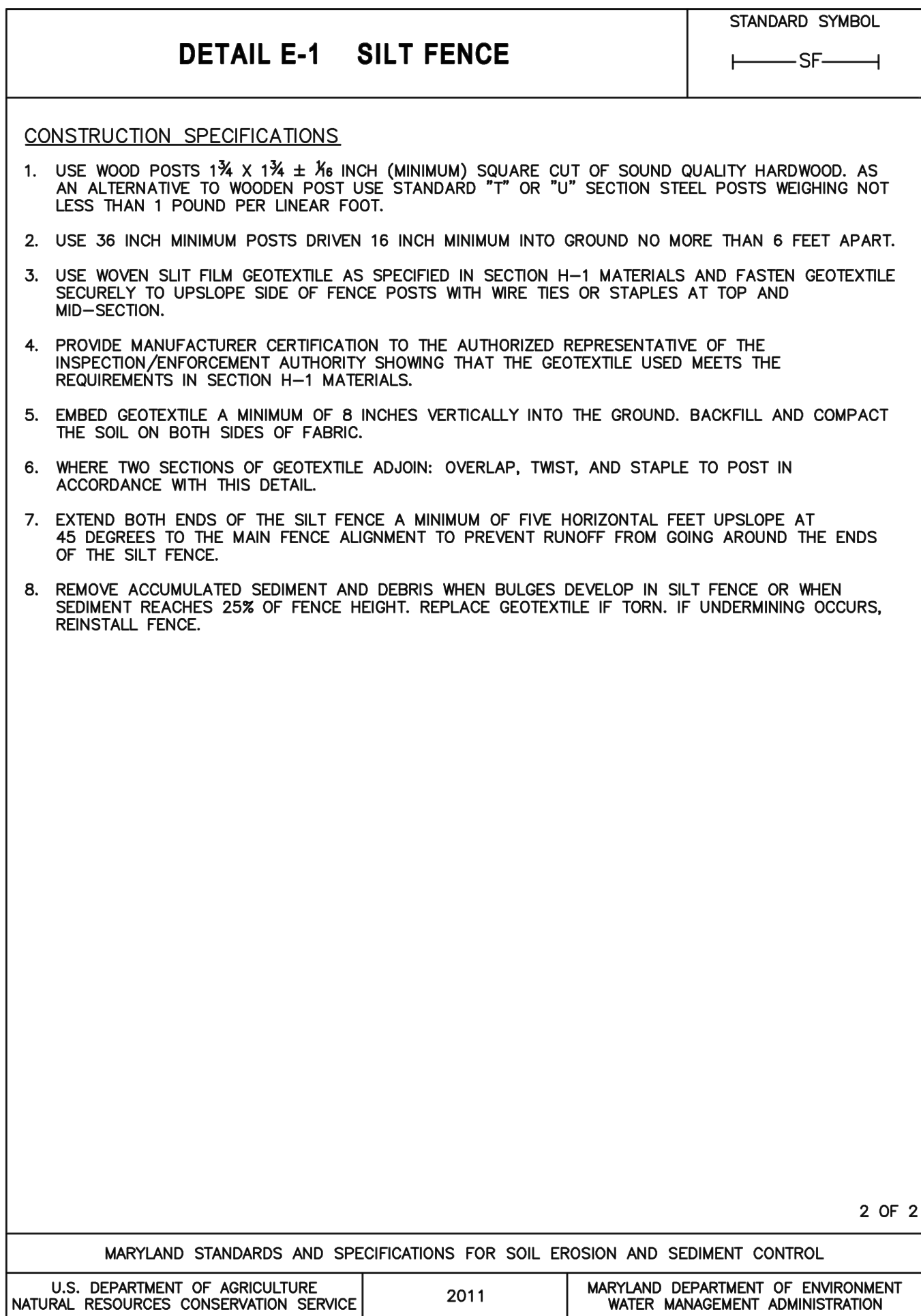
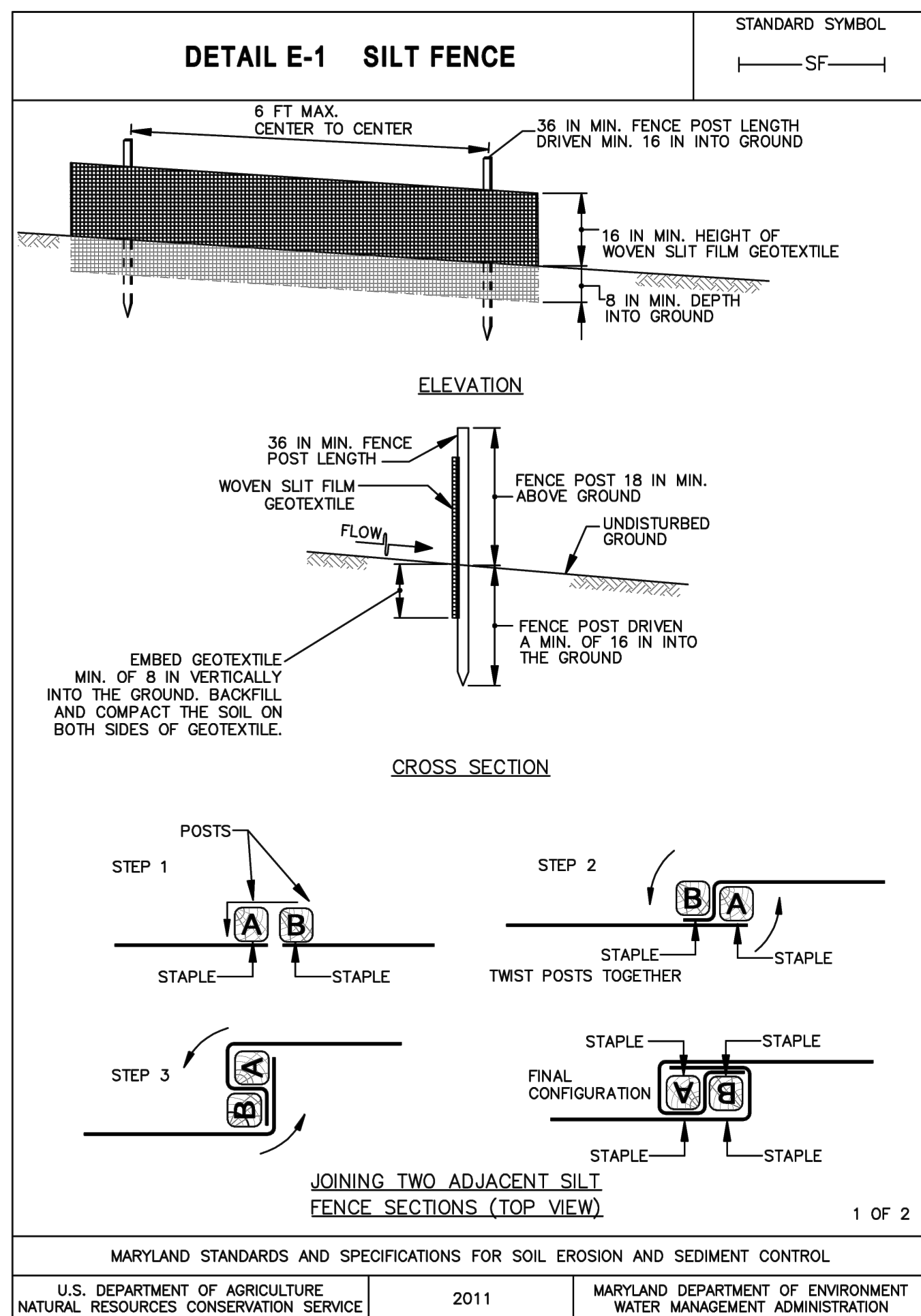
CONSTRUCTION SPECIFICATIONS

- RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
- USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
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- CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
- MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RIPRAP DISLOGGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

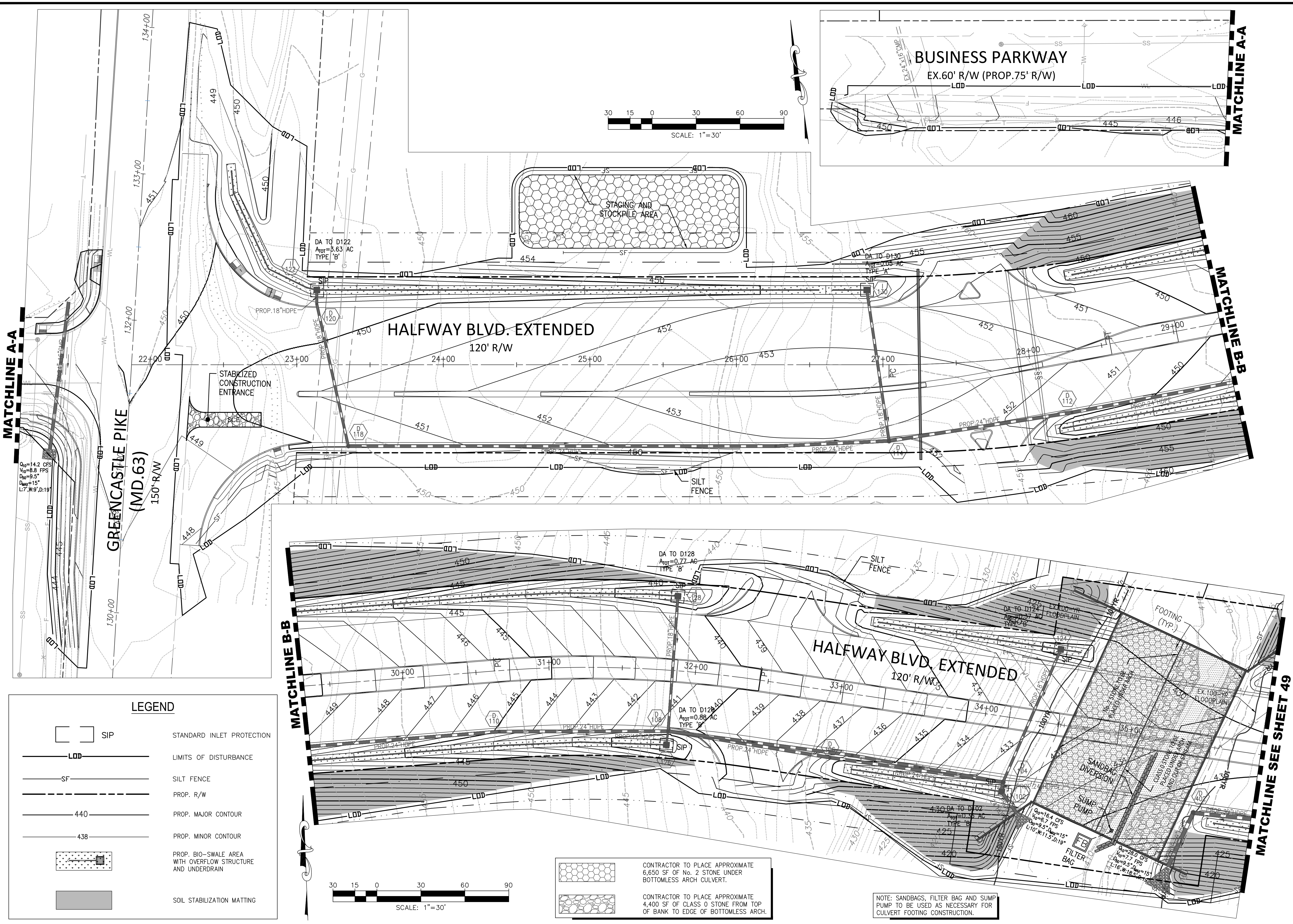
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL			
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION	

WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING			
DESIGNED BY: KDUJGA	DRAWN BY: KDUJGA	CHECKED BY: PJM	DATE: JAN 2024
NO.	REVISION DESCRIPTION	BY	DATE
WASHINGTON COUNTY ADMINISTRATIVE ANNEX BUILDING 747 NORTHERN AVE., HAGERSTOWN, MD 21742 PHONE: 240-315-2460 FAX: 240-315-2401			
HALFWAY BOULEVARD EXTENDED EROSION & SEDIMENT CONTROL DETAILS			
SCALE: NONE			
SHEET NO. 46			
PROJECT NO. 10-273 SHA: WA06ZTM1 FAP: APL-3(804)E			

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\11 - ES\10-273 EN-01.DWG PLOT DATE: 1/8/2024 2:57 PM



DATE	
BY	
REVISION DESCRIPTION	
NO	
DESIGNED BY:	KDUUGA
DRAWN BY:	KDUUGA
CHECKED BY:	PLM
DATE:	JAN 2024
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING	
Washington County Administrative Annex, Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-315-2460 Fax: 240-315-2401	
HALFWAY BOULEVARD EXTENDED EROSION & SEDIMENT CONTROL DETAILS	
SCALE	NONE
SHEET NO.	47
PROJECT NO.	10-273
SHA: WA06ZM1 FAP: APL-3(804)E	



MATCHLINE A-A

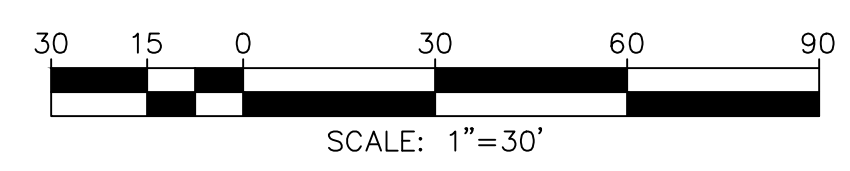
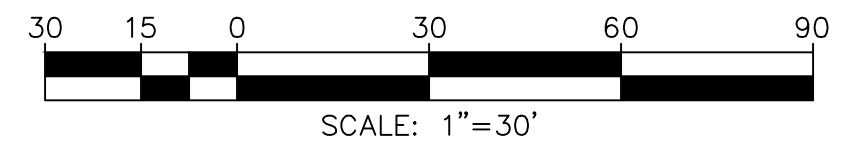
MATCHLINE A-A

MATCHLINE B-B

MATCHLINE SEE SHEET 49

LEGEND

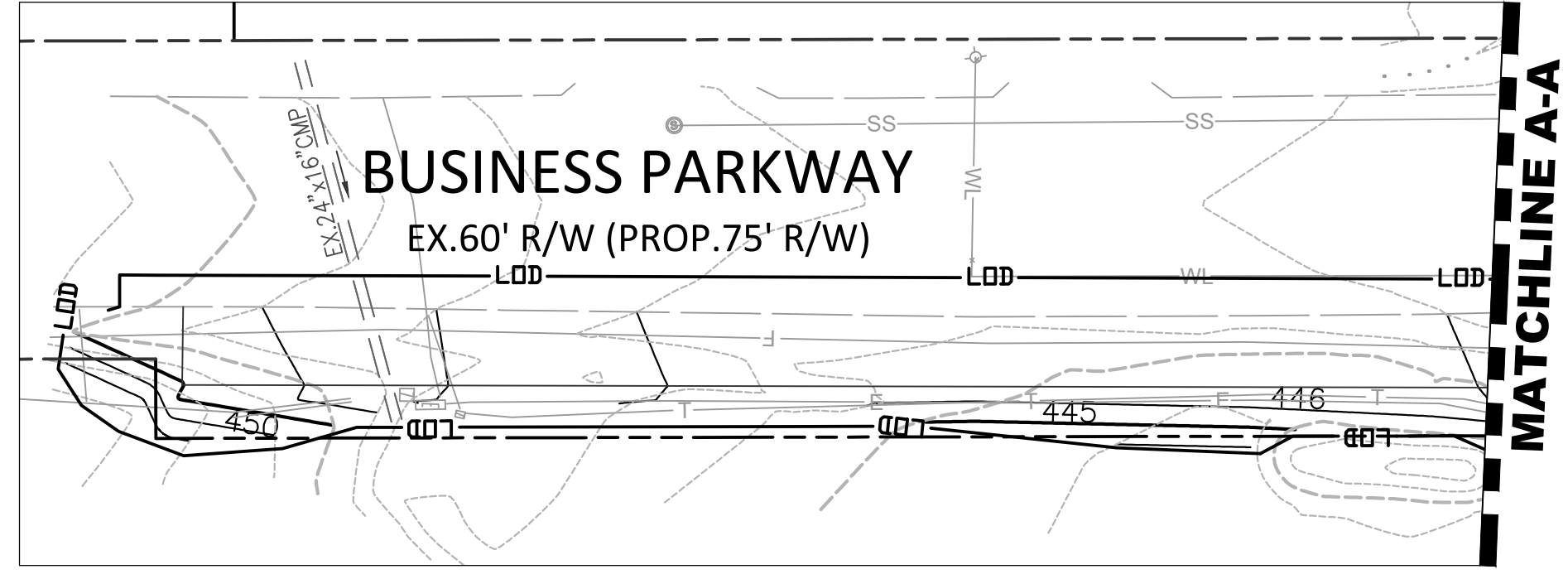
	SIP	STANDARD INLET PROTECTION
	LOD	LIMITS OF DISTURBANCE
	SF	SILT FENCE
		PROP. R/W
	440	PROP. MAJOR CONTOUR
	438	PROP. MINOR CONTOUR
		PROP. BIO-SWALE AREA WITH OVERFLOW STRUCTURE AND UNDERDRAIN
		SOIL STABILIZATION MATTING



CONTRACTOR TO PLACE APPROXIMATE 6,650 SF OF No. 2 STONE UNDER BOTTOMLESS ARCH CULVERT.

CONTRACTOR TO PLACE APPROXIMATE 4,400 SF OF CLASS 0 STONE FROM TOP OF BANK TO EDGE OF BOTTOMLESS ARCH.

NOTE: SANDBAGS, FILTER BAG AND SUMP PUMP TO BE USED AS NECESSARY FOR CULVERT FOOTING CONSTRUCTION.



BUSINESS PARKWAY
EX. 60' R/W (PROP. 75' R/W)

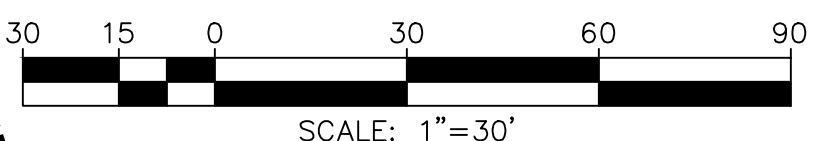
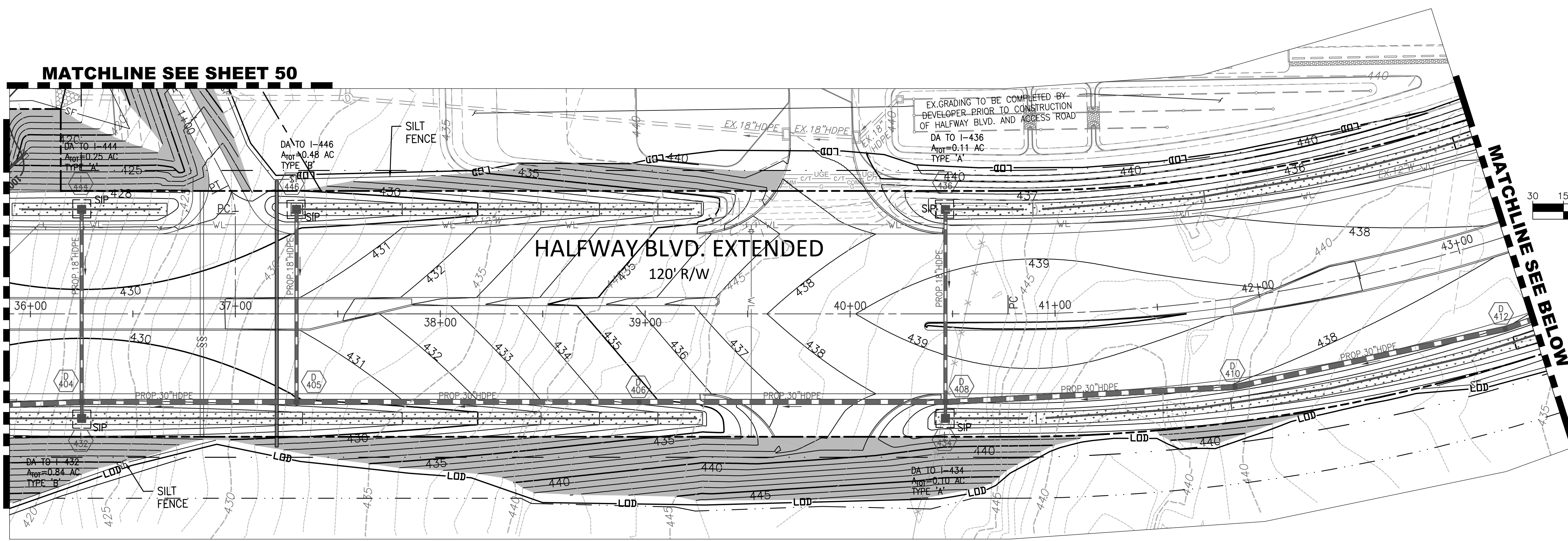
NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY:	KDUJGA	DRAWN BY:	KDUJGA	CHECKED BY:	PLM	DATE:	JAN 2024
WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING Washington County Administrative Annex Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-313-2460 Fax: 240-313-2401							

HALFWAY BOULEVARD EXTENDED EROSION & SEDIMENT CONTROL PLAN	SCALE 1" = 30' SHEET NO. 48 PROJECT NO. 10-273 SHA: WA067ZM1 FAP: APL-3(804)E
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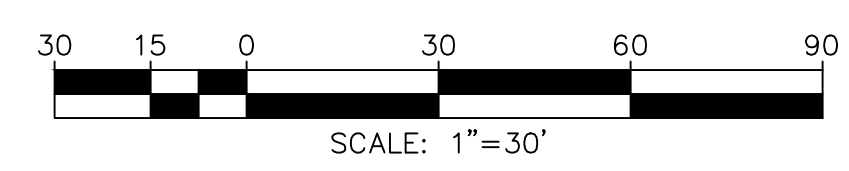
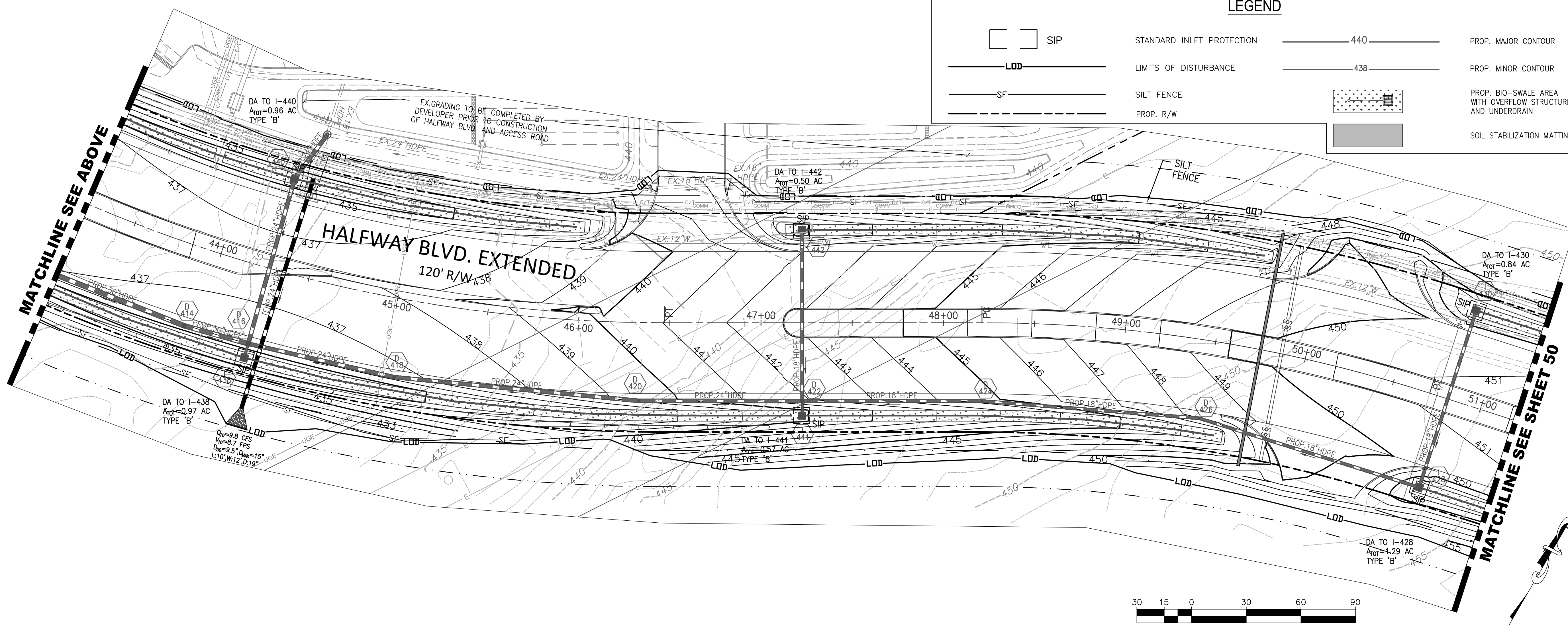
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MATCHLINE SEE SHEET 48



MATCHLINE SEE BELOW

LEGEND				
	SIP	STANDARD INLET PROTECTION		PROP. MAJOR CONTOUR
	LOD	LIMITS OF DISTURBANCE		PROP. MINOR CONTOUR
	SF	SILT FENCE		PROP. BIO-SWALE AREA WITH OVERFLOW STRUCTURE AND UNDERDRAIN
	PROP. R/W			SOIL STABILIZATION MATTING



MATCHLINE SEE ABOVE

MATCHLINE SEE SHEET 50

DESIGNED BY:	KDUUGA	REVISION DESCRIPTION:	
DRAWN BY:	KDUUGA	NO.	
CHECKED BY:	PLM	BY:	
DATE:	JAN 2024		

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2400 Fax: 240-313-2401

**HALFWAY BOULEVARD
EXTENDED
EROSION & SEDIMENT
CONTROL PLAN**

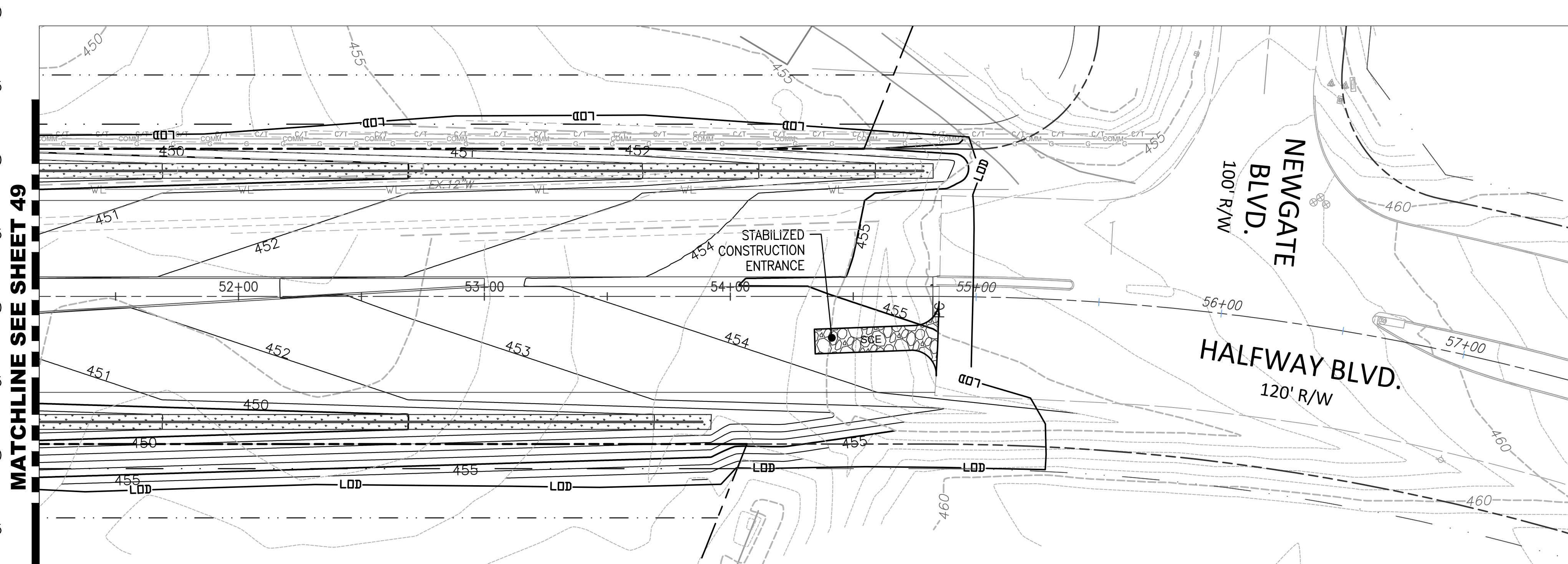
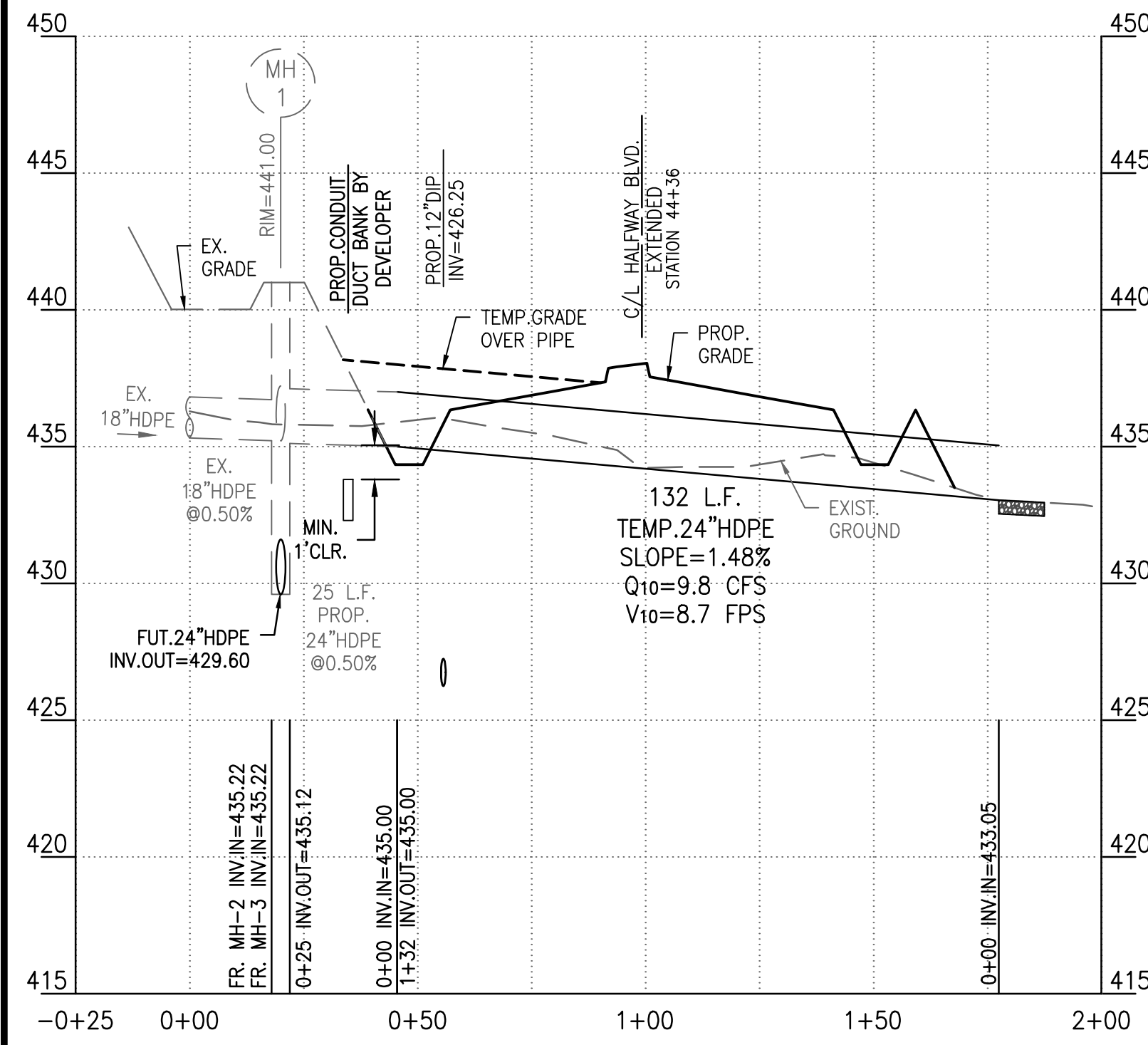
SCALE
1" = 30'

SHEET NO.
49

PROJECT NO.
10-273

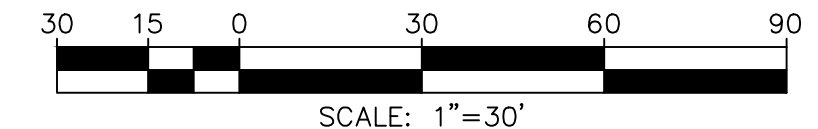
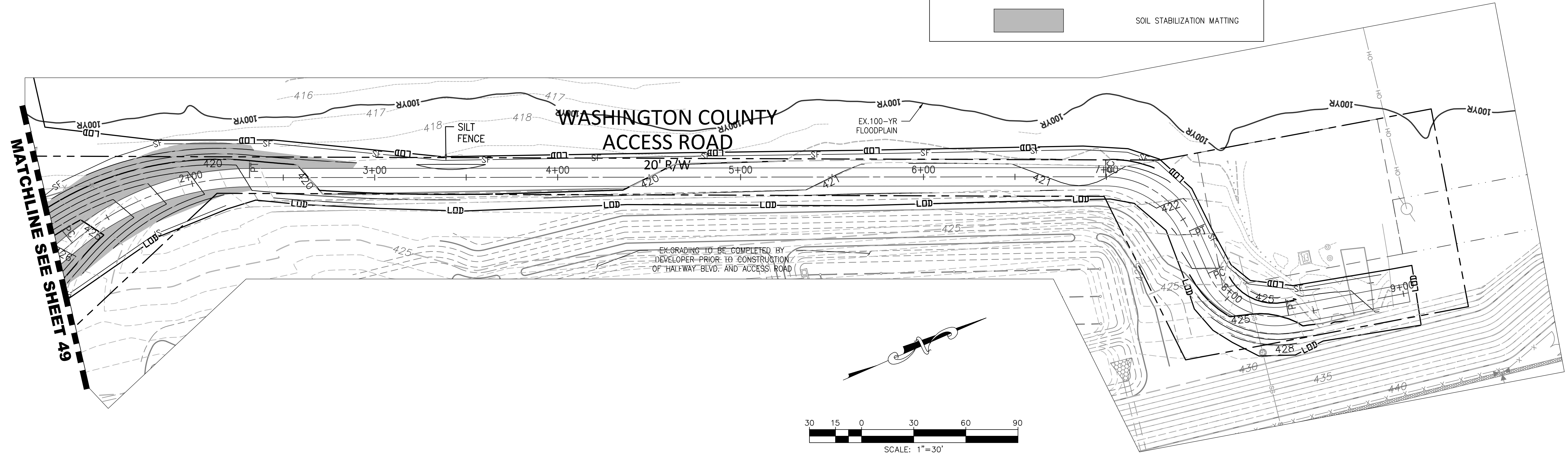
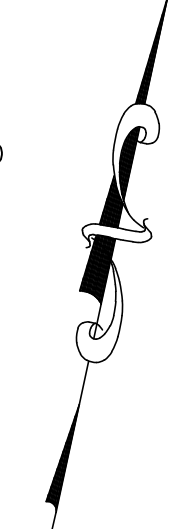
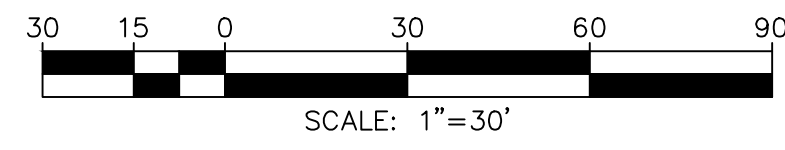
SHA: WA067ZM1
FAP: APL-3(804)E

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LEGEND

- SIP STANDARD INLET PROTECTION
- LDD LIMITS OF DISTURBANCE
- SF SILT FENCE
- 440 PROP. MAJOR CONTOUR
- 438 PROP. MINOR CONTOUR
- PROP. BIO-SWALE AREA WITH OVERFLOW STRUCTURE AND UNDERDRAIN
- SOIL STABILIZATION MATTING



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY:	KDUUGA
DRAWN BY:	KDUUGA
CHECKED BY:	PJAM
DATE:	JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

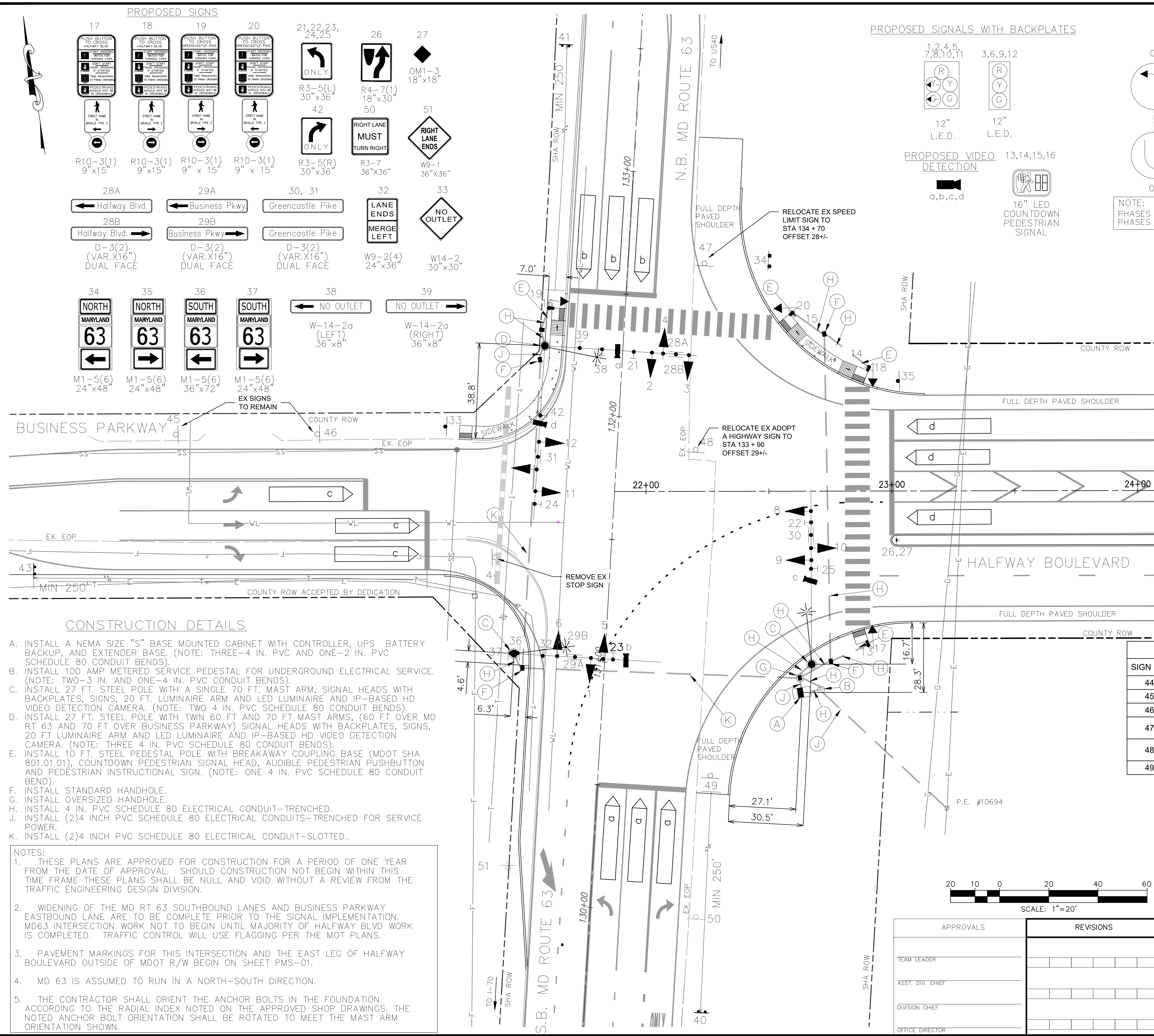
**HALFWAY BOULEVARD
EXTENDED
EROSION & SEDIMENT
CONTROL PLAN AND PROFILE**

SCALE
1" = 30'

SHEET NO.
50

PROJECT NO.
10-273

SHA: WA067ZM1
FAP: APL-3(804)E



PROPOSED SIGNS

17 R10-3(1) 9"x15" PUSH BUTTON TO CROSS
18 R10-3(1) 9"x15" PUSH BUTTON TO CROSS
19 R10-3(1) 9" x 15" PUSH BUTTON TO CROSS
20 R10-3(1) 9" x 15" PUSH BUTTON TO CROSS
21, 22, 23, 24, 25 ONLY R3-5(L) 30"x36"
26 R4-7(1) 18"x30" ONLY
27 OM1-3 18"x18" ONLY
42 ONLY R3-5(R) 30"x36"
28A Halfway Blvd. D-3(2) (VAR.X16") DUAL FACE
28B Halfway Blvd. D-3(2) (VAR.X16") DUAL FACE
29A Business Pkwy. D-3(2) (VAR.X16") DUAL FACE
29B Business Pkwy. D-3(2) (VAR.X16") DUAL FACE
30, 31 Greencastle Pike D-3(2) (VAR.X16") DUAL FACE
32 LANE ENDS MUST TURN RIGHT W9-2(4) 24"x36"
33 NO OUTLET W14-2 30"x30"
34 NORTH MARYLAND 63 M1-5(6) 24"x48"
35 NORTH MARYLAND 63 M1-5(6) 24"x48"
36 SOUTH MARYLAND 63 M1-5(6) 36"x72"
37 SOUTH MARYLAND 63 M1-5(6) 24"x48"
38 NO OUTLET W-14-2a (LEFT) 36"x8"
39 NO OUTLET W-14-2a (RIGHT) 36"x8"
EX SIGNS TO REMAIN

PROPOSED SIGNALS WITH BACKPLATES

1, 2, 4, 5, 7, 8, 10, 11 12" L.E.D.
3, 6, 9, 12 12" L.E.D.
PROPOSED VIDEO DETECTION a, b, c, d
13, 14, 15, 16 16" LED COUNTDOWN PEDESTRIAN SIGNAL

NEMA PHASING

01, 02, 03, 04, 05, 06, 07, 08
FLASHING OPERATION
NOTE: PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.

TEMPORARY SIGN

40, 41, 43
NEW
W16-14(1) 30"x30"
W3-3 48"x48"

GEOMETRIC LEGEND

EXISTING
EDGE OF PAVEMENT

UTILITY LEGEND

E ELECTRIC CABLES
A AERIAL CABLES
T TELEPHONE CABLES
F FIBER-OPTIC
W WATER LINE
S SEWER LINE
G GAS LINE

EXISTING SIGNS

SIGN NO.	SIGN TYPE	PROPOSED
44	R1-1 STOP SIGN	TO BE REMOVED
45	W14-2 NO OUTLET	TO REMAIN
46	R2-1 SPEED LIMIT	TO REMAIN
47	R2-1 SPEED LIMIT	TO BE RELOCATED TO STA 134+70 OFFSET 28'
48	ADOPT A HIGHWAY	TO BE RELOCATED TO STA 133+90 OFFSET 29'
49	W9-1 LANE ENDS	TO BE REMOVED

- CONSTRUCTION DETAILS**
- INSTALL A NEMA SIZE "S" BASE MOUNTED CABINET WITH CONTROLLER, UPS, BATTERY BACKUP, AND EXTENDER BASE. (NOTE: THREE-4 IN. PVC AND ONE-2 IN. PVC SCHEDULE 80 CONDUIT BENDS).
 - INSTALL 100 AMP METERED SERVICE PEDESTAL FOR UNDERGROUND ELECTRICAL SERVICE. (NOTE: TWO-3 IN. AND ONE-4 IN. PVC CONDUIT BENDS).
 - INSTALL 27 FT. STEEL POLE WITH A SINGLE 70 FT. MAST ARM, SIGNAL HEADS WITH BACKPLATES, SIGNS, 20 FT. LUMINAIRE ARM AND LED LUMINAIRE AND IP-BASED HD VIDEO DETECTION CAMERA. (NOTE: TWO 4 IN. PVC SCHEDULE 80 CONDUIT BENDS).
 - INSTALL 27 FT. STEEL POLE WITH TWIN 60 FT AND 70 FT MAST ARMS, (60 FT OVER MD RT 63 AND 70 FT OVER BUSINESS PARKWAY) SIGNAL HEADS WITH BACKPLATES, SIGNS, 20 FT LUMINAIRE ARM AND LED LUMINAIRE AND IP-BASED HD VIDEO DETECTION CAMERA. (NOTE: THREE 4 IN. PVC SCHEDULE 80 CONDUIT BENDS).
 - INSTALL 10 FT. STEEL PEDESTAL POLE WITH BREAKAWAY COUPLING BASE (MDOT SHA 801.01.01), COUNTDOWN PEDESTRIAN SIGNAL HEAD, AUDIBLE PEDESTRIAN PUSHBUTTON AND PEDESTRIAN INSTRUCTIONAL SIGN. (NOTE: ONE 4 IN. PVC SCHEDULE 80 CONDUIT BEND).
 - INSTALL STANDARD HANDHOLE.
 - INSTALL OVERSIZED HANDHOLE.
 - INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT-TRENCHED.
 - INSTALL (2)4 INCH PVC SCHEDULE 80 ELECTRICAL CONDUITS-TRENCHED FOR SERVICE POWER.
 - INSTALL (2)4 INCH PVC SCHEDULE 80 ELECTRICAL CONDUIT-SLOTTED.
- NOTES:**
- THESE PLANS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL. SHOULD CONSTRUCTION NOT BEGIN WITHIN THIS TIME FRAME THESE PLANS SHALL BE NULL AND VOID WITHOUT A REVIEW FROM THE TRAFFIC ENGINEERING DESIGN DIVISION.
 - WIDENING OF THE MD RT 63 SOUTHBOUND LANES AND BUSINESS PARKWAY EASTBOUND LANE ARE TO BE COMPLETE PRIOR TO THE SIGNAL IMPLEMENTATION. MD63 INTERSECTION WORK NOT TO BEGIN UNTIL MAJORITY OF HALFWAY BLVD WORK IS COMPLETED. TRAFFIC CONTROL WILL USE FLAGGING PER THE MOT PLANS.
 - PAVEMENT MARKINGS FOR THIS INTERSECTION AND THE EAST LEG OF HALFWAY BOULEVARD OUTSIDE OF MDOT R/W BEGIN ON SHEET PMS-01.
 - MD 63 IS ASSUMED TO RUN IN A NORTH-SOUTH DIRECTION.
 - THE CONTRACTOR SHALL ORIENT THE ANCHOR BOLTS IN THE FOUNDATION ACCORDING TO THE RADIAL INDEX NOTED ON THE APPROVED SHOP DRAWINGS. THE NOTED ANCHOR BOLT ORIENTATION SHALL BE ROTATED TO MEET THE MAST ARM ORIENTATION SHOWN.

GENERAL NOTES LOCATED ON GI SHEET (SG-02)
GEOMETRIC AND UTILITY LEGENDS LOCATED ON GN SHEET (SN-03)



OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HAGERSTOWN, MD

**MD 63 (GREENCASTLE PIKE) AT
HALFWAY BOULEVARD /
BUSINESS PARKWAY**

APPROVALS

TEAM LEADER
ASST. DIV. CHIEF
DIVISION CHIEF
OFFICE DIRECTOR

REVISIONS

TRAFFIC SIGNAL PLAN

SCALE 1" = 20'. ADVERTISED DATE APRIL 2024 CONTRACT NO. WA0672M1

DESIGNED BY P.J.M. COUNTY WASHINGTON
DRAWN BY P.J.M. LOGMILE 10.68
CHECKED BY P.J.M./G.C.A. TMS NO. P732
MDE/PRD. TOD NO. N/A

TS NO. DRAWING SG-01 OF 02 SHEET NO. OF

**WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING**

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-315-2401

**HALFWAY BOULEVARD
EXTENDED
TRAFFIC SIGNAL PLAN**

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDU/GA
DRAWN BY: KDU/GCA
CHECKED BY: P.J.M.
DATE: APR 2024

SCALE 1" = 20'
SHEET NO. 51
PROJECT NO. 10-273
SHA: WA0672M1
FAP: APL-3(804)E

FILE PATH: C:\USERS\PMOH\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\12- UTIL\10-273 SG-02.DWG PLOT DATE: 4/10/2024 1:13 PM

PROJECT DESCRIPTION

GENERAL
 THIS PROJECT INVOLVES THE EXTENSION OF HALFWAY BOULEVARD AS THE FOURTH LEG TO THE EXISTING STOP-CONTROLLED TEE INTERSECTION OF BUSINESS PARKWAY AND MD ROUTE 63 IN WASHINGTON COUNTY. THE ADDITION OF THE FOURTH LEG WARRANTS THE SIGNALIZATION OF THE INTERSECTION. MD 63 IS CONSIDERED TO RUN IN A NORTH/SOUTH DIRECTION.

INTERSECTION OPERATION
 A SYSTEM CONTROLLER WILL BE HOUSED IN A BASE MOUNTED 'S' CABINET WITH EXTENSION BASE AND CONCRETE PAD IN FRONT AND REAR.

THE INTERSECTION WILL OPERATE IN A FULLY ACTUATED MODE USING 8 NEMA PHASES WITH EXCLUSIVE/PERMISSIVE LEFT TURNS FOR ALL APPROACHES. PEDESTRIAN MOVEMENTS WILL BE ALLOWED AT THE HALFWAY BOULEVARD LEG AND THE NORTH LEG FOR MD ROUTE 63.

CONTACT LIST

THE CONTACT PERSONS FOR THIS PROJECT ARE AS FOLLOWS:

- MS. LINDA ZERBEE, DISTRICT ENGINEER – TRAFFIC
PHONE: (301) 729-8444
- MR. DEVIN MILLER, AREA ENGINEER – CONSTRUCTION
PHONE: (301) 729-8415
- MR. GEORGE WALKER, ASSISTANT DISTRICT ENGINEER – MAINTENANCE
PHONE: (301) 729-8457
- MR. EDWIN YOUNG, UTILITY ENGINEER
PHONE: (301) 729-8439
- VACANT, CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7630
- MR. ANTOINE YATES, ASST. DIVISION CHIEF, TRAFFIC OPERATIONS DIVISION
PHONE: (410) 787-7631
- MR. MIKE BASSO, CHIEF, SIGNAL OPERATIONS
PHONE: (410)-787-7652

THE POWER COMPANY REPRESENTATIVE IS:
 POTOMAC EDISON POWER COMPANY
 WO # 741884884

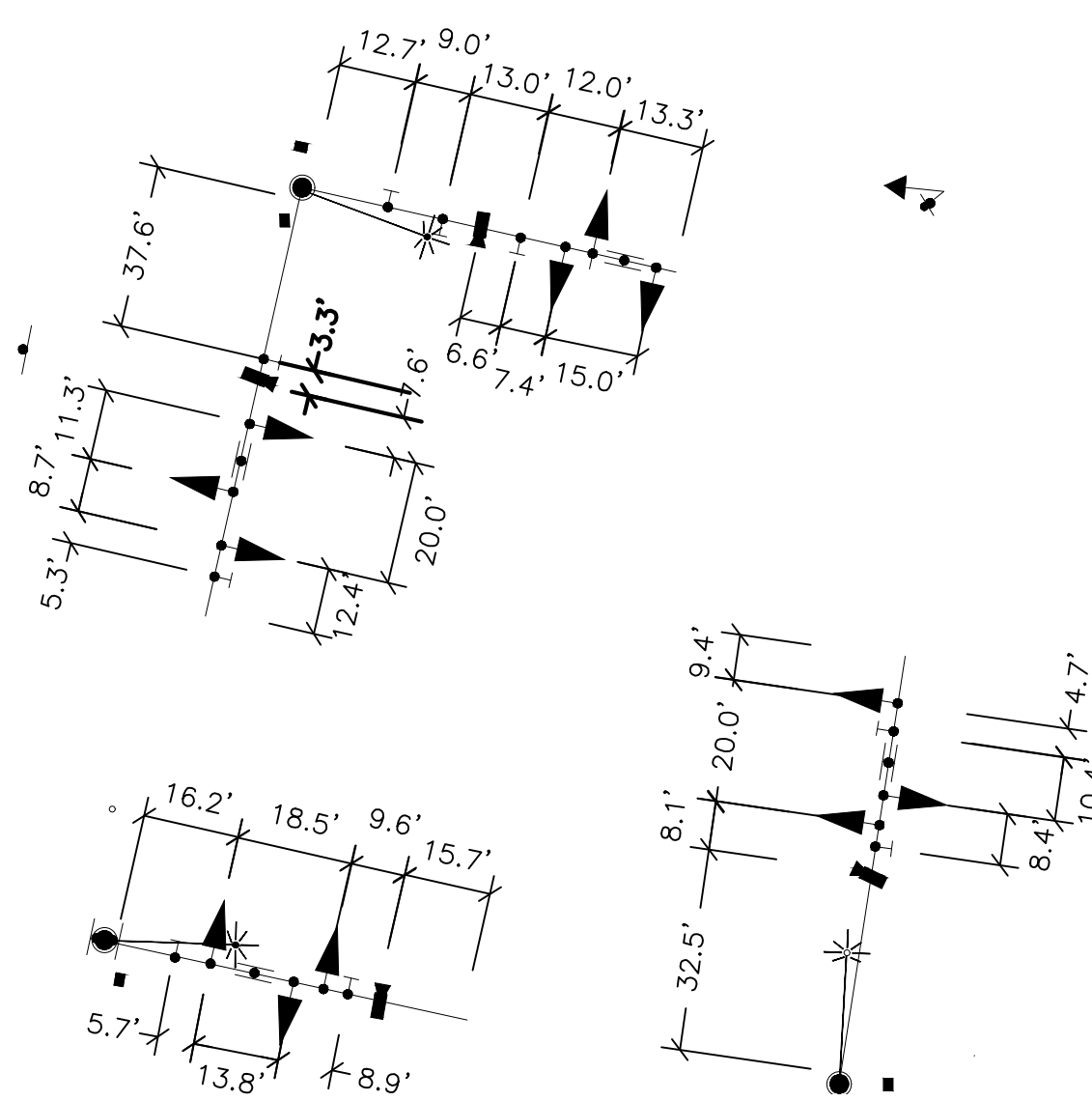
SPECIAL NOTES

- THE CONTROLLER CABINET SHALL MEET SHA STANDARDS AND BE DELIVERED TO THE SHA SIGNAL SHOP. ALL INTERNAL CABINET WIRING SHALL BE PERFORMED BY THE SHA SIGNAL SHOP. CONTRACTOR SHALL CONTACT MIKE BASSO 72 HOURS PRIOR TO CONSTRUCTION.
 - APS WILL FUNCTION AS FOLLOWS:
 FOR MD 63 (GREENCASTLE PIKE)
 A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON MESSAGE WILL BE "WAIT TO CROSS, WAIT."
 B. WHEN WALK PHASE BEGINS, THE AUDIBLE SOUND WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.
- FOR HALFWAY BOULEVARD
 A. WHEN PEDESTRIAN LOCATES AND PRESSES PUSHBUTTON FOR AN EXTENDED TIME, THE PUSHBUTTON MESSAGE WILL BE "WAIT TO CROSS, WAIT."
 B. WHEN WALK PHASE BEGINS, THE AUDIBLE SOUND WILL BE A RAPID TICK, WHICH WILL LAST FOR THE DURATION OF THE WALK PHASE.

GENERAL NOTES

- VIDEO CAMERA LOCATION/ALIGNING SHALL BE COORDINATED WITH THE SHA ENGINEER.
- THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS PRIOR TO INSTALLATION.
- PAVEMENT MARKINGS DETAILED ARE PROPOSED AND ARE TO BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH MD-SHA STANDARDS. ALL OTHER PAVEMENT MARKINGS ARE TO BE CONSIDERED AS EXISTING.
- GEOMETRICS SHALL BE CONFIRMED PRIOR TO THE INSTALLATION OF SIGNAL EQUIPMENT.
- ALL UNDERGROUND AND OVERHEAD UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC AND ARE NOT TO BE CONSIDERED COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION SO THAT ALL UTILITIES MAY BE LOCATED IN THE FIELD. IF THE CONTRACTOR PERCEIVES THAT A CONFLICT BETWEEN THE UTILITIES AND THE TRAFFIC SIGNAL EQUIPMENT WILL OCCUR, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE PROJECT ENGINEER IMMEDIATELY.
- PUSHBUTTONS ARE TO BE LOCATED SO THAT THEY CAN BE ACTIVATED BY A PERSON IN A WHEELCHAIR REACHING LESS THAN 18 IN. FROM A 60 IN. LEVEL LANDING AREA WITH A CROSS SLOPE LESS THAN OR EQUAL TO 2%.
- THE 10 FT. SEPARATION BETWEEN PUSHBUTTONS IS TO BE MEASURED FROM FACE OF PUSHBUTTON TO FACE OF PUSHBUTTON, NOT CENTER TO CENTER OF POLE.
- PUSHBUTTON ARROWS ARE TO BE PARALLEL TO THE CROSSING FOR WHICH THEY ARE INTENDED.
- THE LOCATION OF ACCESSIBLE PEDESTRIAN SIGNAL PUSHBUTTONS MUST MEET LOCATION REQUIREMENTS OF MUTCD SEC. 4E.08; 4E.10; FIG 4E-3; FIG 4E-4 AND NCHRP PUBLICATION "ACCESSIBLE PEDESTRIAN SIGNALS: GUIDE TO BEST PRACTICE". IF NOT MET, THE CONTRACTOR IS TO STOP WORK ON PUSHBUTTON LOCATIONS UNTIL A DESIGN WAIVER IS OBTAINED, APPROVED BY THE DIRECTOR, OFFICE OF TRAFFIC AND SAFETY.
- ALL UNUSED CABLE SHALL BE REMOVED.
- SIGNAL ACTIVATION SHALL BE SCHEDULED THROUGH THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION, OFFICE OF TRAFFIC SAFETY, TRAFFIC OPERATIONS DIVISION.

MAST ARM DIMENSION DIAGRAM
 N.T.S.

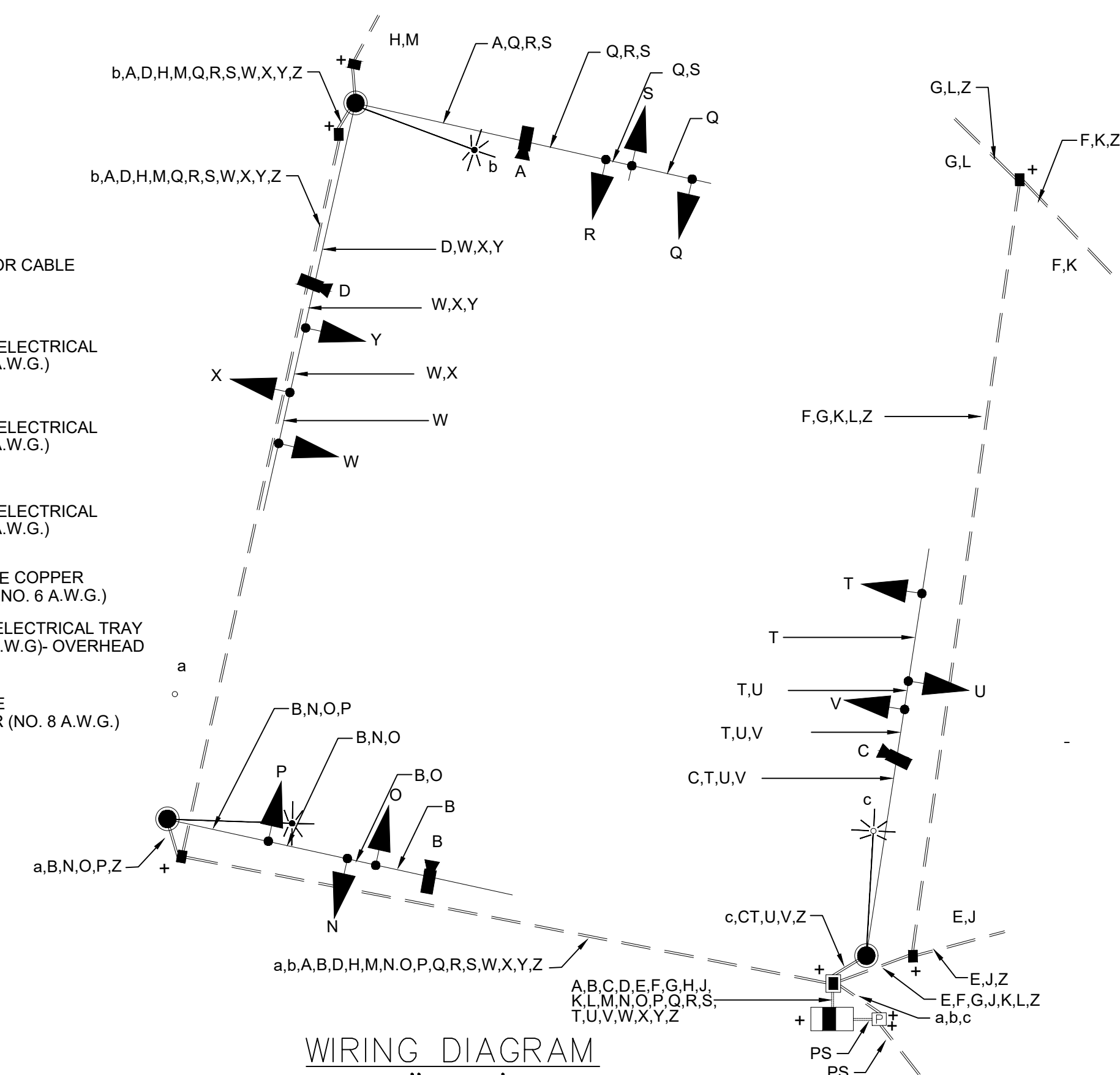


EQUIPMENT LIST

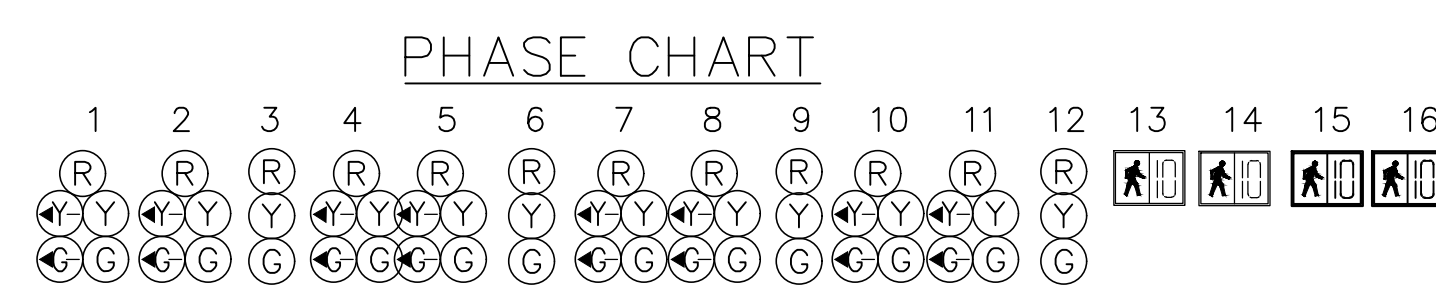
- A. EQUIPMENT TO BE SUPPLIED BY THE MARYLAND STATE HIGHWAY ADMINISTRATION. NONE.
- B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR.

CATEGORY	QUANTITY	UNITS	DESCRIPTION
	801004	18	CY CONCRETE FOR SIGNAL FOUNDATION
	802501	1600	LF NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
	816001	4	EA VIDEO DETECTOR CAMERA (VISION)
	816005	925	LF VIDEO DETECTOR CABLE.
	818004	4	EA 10 FT. STEEL PEDESTAL POLE WITH BREAKAWAY COUPLING BASE
	865210	4	EA AUDIBLE PEDESTRIAN PUSHBUTTON ASSEMBLY
	860284	4	EA 12 IN. 3-SECTION LED SIGNAL HEAD (R,Y,G)-MAST W/BACKPLATE
	860284	8	EA 12 IN. 5-SECTION LED SIGNAL HEAD (DOG HOUSE)-MAST W/BACKPLATE
	860285	4	EA 16 IN. 1-SECTION, 1-WAY LED (COUNTDOWN) PEDESTRIAN SIGNAL HEAD-PEDESTAL POLE
	801605	4	EA 9 IN. X 15 IN. R10-3(1) REGULATORY SIGN – POLE MOUNT
	801605	5	EA 30 IN. X 36 IN. R3-5 (L) REGULATORY SIGN – MAST ARM
	801605	1	EA 30 IN. X 36 IN. R3-5 (R) REGULATORY SIGN – MAST ARM
	801605	1	EA 18 IN. X 30 IN. R4-7(1) REGULATORY SIGN – POST
	801605	1	EA 18 IN. X 18 IN. OM1-3 OBJECT MARKER – POST
	801605	4	EA DUAL FACED 16 IN. X VARIABLE D-3(2) SIGN – MAST ARM
	801605	1	EA 24 IN. X 36 IN. W902(4) WARNING SIGN – MAST ARM
	801605	1	EA 30 IN. X 30 IN. W14-2 WARNING SIGN – POST MOUNT
	801605	2	EA 36 IN. X 72 IN. M1-5(6) SIGN – POST AND POLE MOUNT
	801605	2	EA 24 IN. X 48 IN. M1-5(6) SIGN – POST AND POLE MOUNT
	801605	1	EA 36 IN. X 8 IN. W-14-2a (L) WARNING SIGN – MAST ARM
	801605	1	LF 36 IN. X 8 IN. W-14-2a (R) WARNING SIGN – MAST ARM
	861105	600	LF 2-CONDUCTOR CABLE (NO. 14 AWG)
	810019	550	LF 3-CONDUCTOR CABLE TRAY (NO. 12 AWG)
	861107	600	LF 5-CONDUCTOR CABLE (NO. 14 AWG)
	861108	2900	EA 7-CONDUCTOR CABLE (NO. 14 AWG)
	816110	1	EA TYPE "S" BASE MOUNTED CABINET WITH CONTROLLER, UPS BATTERY BACKUP, AND EXTENDER BASE
	807202	1	EA 100 AMP METERED SERVICE PEDESTAL
	837001	9	EA 3/4 IN. X 10 FT GROUNDING ROD WITH 6 GAUGE SOLID COPPER WIRE TO THE HANDHOLD FRAME
	811001	5	EA STANDARD HANDHOLE
	811001	1	LF OVERSIZED HANDHOLE
	805140	250	LF 4 IN PVC SCHEDULE 80 ELECTRICAL CONDUIT – TRENCHED
	805140	80	LF TWO 4 IN PVC SCHEDULE 80 ELECTRICAL CONDUITS – TRENCHED
	805155	240	EA TWO 4 IN PVC SCHEDULE 80 ELECTRICAL CONDUITS – SLOTTED
	866204	2	EA 27 FT STEEL POLE WITH 70 FT MAST ARM
	866205	1	EA 27 FT STEEL POLE WITH TWIN 60 FT & 70 FT MAST ARMS
	808110	3	20 FT LUMINAIRE BRACKET ARM AND LED LUMINAIRE

- KEY**
- A VIDEO DETECTOR CABLE
 - B
 - C
 - D
 - E 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
 - F
 - G
 - H
 - J 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
 - K
 - L
 - M
 - O
 - P
 - R
 - S
 - U
 - V
 - X
 - Y
 - Z
 - 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
 - N
 - Q
 - T
 - W
 - STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
 - a 3 CONDUCTOR ELECTRICAL TRAY CABLE (NO. 12 A.W.G.) OVERHEAD
 - b
 - c STREET LIGHT
 - PS POWER SOURCE 3-1 CONDUCTOR (NO. 8 A.W.G.)



WIRING DIAGRAM
 1" = 20'



PHASE 1 AND 5	1 AND 5 CHANGE	PHASE 1 AND 5 CAN CHANGE TO PHASE 1 AND 6, 2 AND 5, OR 2 AND 6	PHASE 2 AND 6	PED CLEARANCE	2 AND 6 CHANGE	PHASE 3 AND 7	3 AND 7 CHANGE	PHASE 3 AND 7 CAN CHANGE TO PHASE 3 AND 8, 4 AND 7, OR 4 AND 8	PHASE 4 AND 8	PED CLEARANCE	4 AND 8 CHANGE	FLASHING OPERATION
G/R G/R R G/R G/R R R R R R R R DW DW DW DW	G/R G/R R G/R G/R R R R R R R R DW DW DW DW		G G G G G G R R R R R R WK WK DW DW	G G G G G G R R R R R R FLDW FLDW DW DW	Y Y Y Y Y Y R R R R R R DW DW DW DW	R R R R R R G/R G/R R G/R G/R R DW DW DW DW	R R R R R R G/R G/R R G/R G/R R DW DW DW DW		R R R R R R G G G G G G DW DW WK WK	R R R R R R G G G G G G DW DW FLDW FLDW	R R R R R R R R R Y Y R DW DW DW DW	FL/Y FL/Y FL/Y FL/Y FL/Y FL/Y FL/R FL/R FL/R FL/R FL/R FL/R DARK DARK DARK DARK

SHA No. WA067ZM1
 FAP No. APL-3(804)E

OFFICE OF TRAFFIC & SAFETY
 TRAFFIC ENGINEERING DESIGN DIVISION

MDOT
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION

MD 63 (GREENCASTLE PIKE) AT
 HALFWAY BOULEVARD /
 BUSINESS PARKWAY

HAGERSTOWN, MD

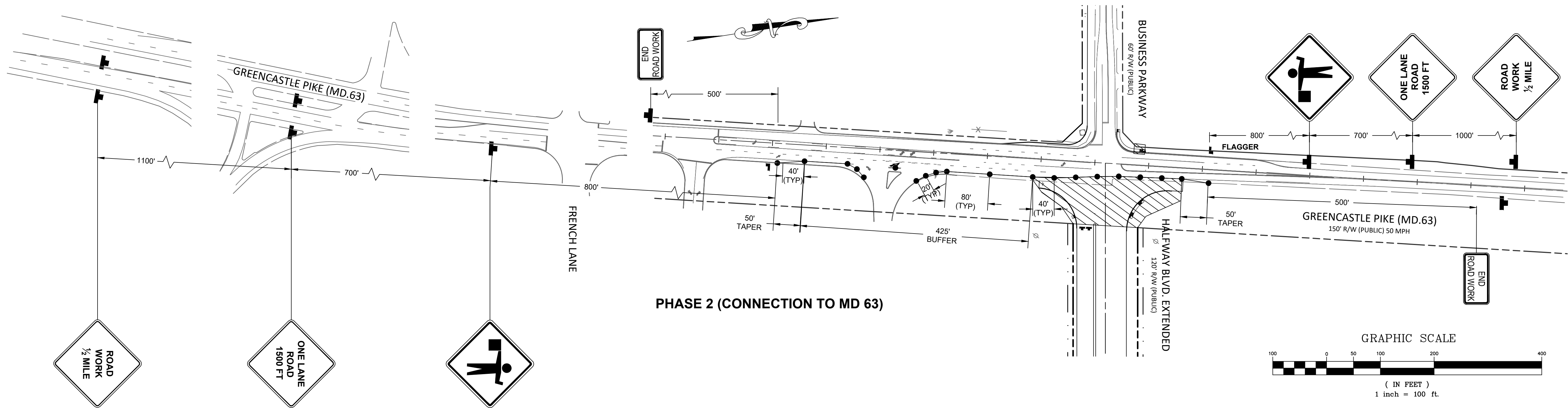
ACCESS PERMIT NUMBER 19APM0003XX
 IF CONSTRUCTION HAS NOT STARTED WITHIN ONE YEAR OF APPROVAL CONTRACTOR SHALL NOT START UNTIL PLANS ARE RE-APPROVED.

APPROVALS	REVISIONS	GENERAL INFORMATION PLAN	
TEAM LEADER		SCALE 1" = 20' ADVERTISED DATE APR 2024 CONTRACT NO. WA067ZM1	SCALE N.T.S'
ASST. DIV. CHIEF		DESIGNED BY P J M COUNTY WASHINGTON	SHEET NO. 52
DIVISION CHIEF		DRAWN BY P J M LOGMILE 10.68	PROJECT NO. 10-273
OFFICE DIRECTOR		CHECKED BY P J M / G C A TMS NO. P732	SHA: WA067ZM1 FAP: APL-3(804)E
		MDE/PRD TOD NO. N / A	
		TS NO. DRAWING SG-02 OF 02 SHEET NO. OF	

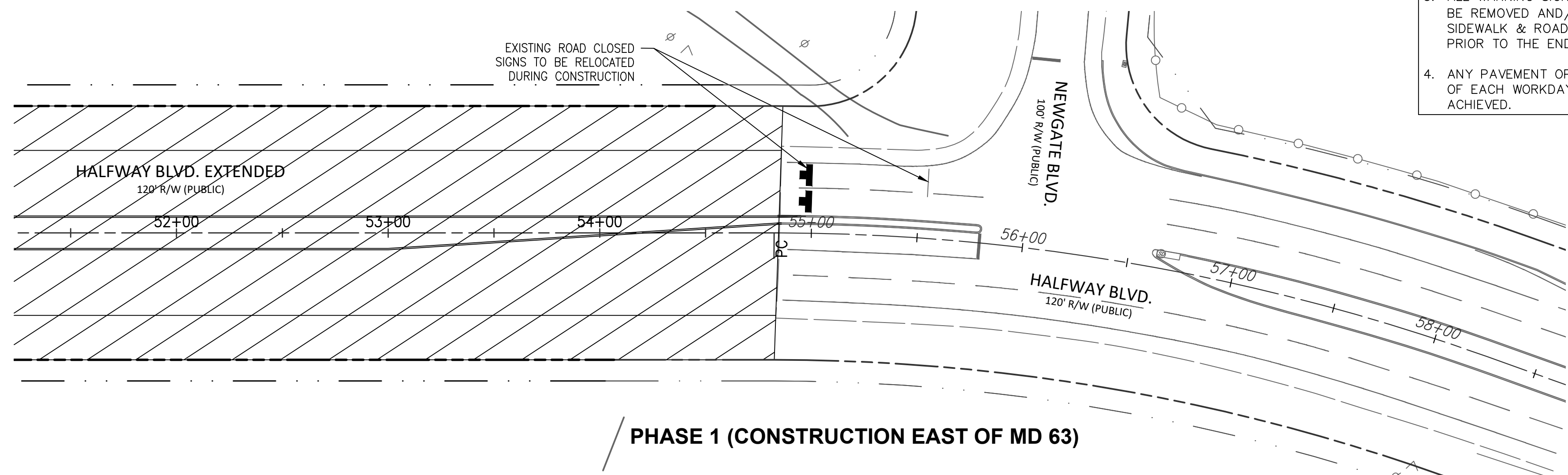
WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

HALFWAY BOULEVARD EXTENDED TRAFFIC SIGNAL PLAN

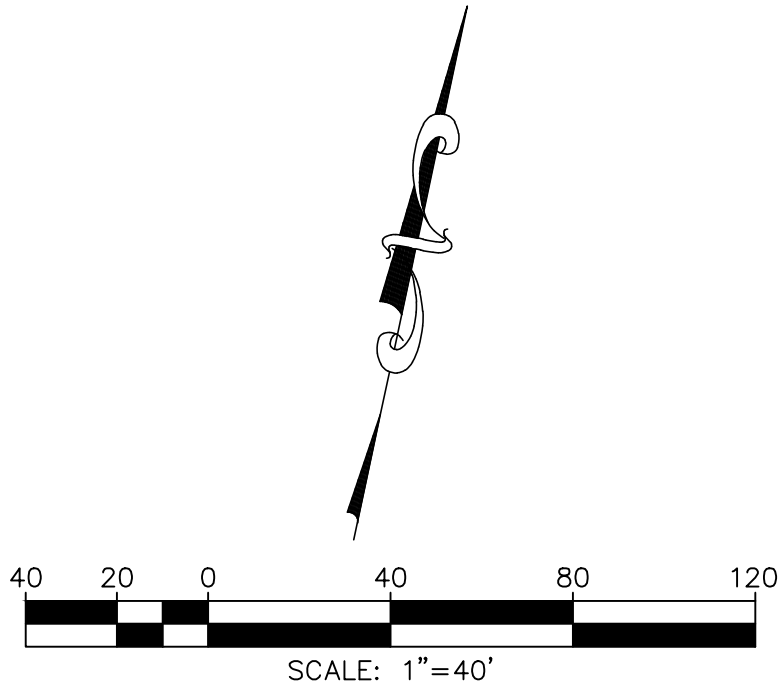
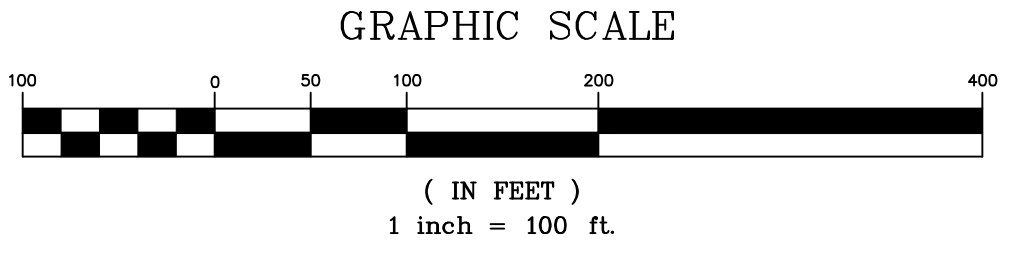


PHASE 2 (CONNECTION TO MD 63)



PHASE 1 (CONSTRUCTION EAST OF MD 63)

- SEQUENCE OF CONSTRUCTION**
MD-104.02-01
1. PLACE ALL SIGNS AND CHANNELIZING DEVICES AS SHOWN ON PLAN.
 2. CONSTRUCT ROAD IMPROVEMENTS ALONG GREENCASTLE PIKE (MD-63) PER DESIGN PLANS.
 3. ALL WARNING SIGNS NOT APPLICABLE TO THE ACTUAL SITUATION SHALL BE REMOVED AND/OR COVERED DURING THE NON APPLICABLE PERIODS. SIDEWALK & ROADWAY SHALL BE OPENED TO ITS FULL CROSS-SECTION PRIOR TO THE END OF EACH WORKING DAY.
 4. ANY PAVEMENT OPENING SHALL BE REPAIRED WITH PATCH AT THE END OF EACH WORKDAY IF FULL PAVEMENT RESTORATION CANNOT BE ACHIEVED.



LEGEND

- — — — — PROP. R/W
- ⊕ SIGN
- TRAFFIC DRUMS
- ▨ WORK AREA

- NOTES:**
1. ALL EQUIPMENT AND/OR MATERIAL SHALL BE MOVED OFF THE ROADWAY AT THE END OF EACH DAY.
 2. THE CONTRACTOR SHALL REMOVE, RESET OR COVER ANY EXISTING SIGN THAT IS NO LONGER APPLICABLE OR MIGHT CAUSE CONFUSION TO THE MOTORIST, AS DIRECTED BY THE ENGINEER.
 3. ALL CONSTRUCTION SIGNS SHALL BE ORANGE WITH BLACK LETTERING, PER MUTCD.

DESIGNED BY:	KDUUGA	NO.	
DRAWN BY:	KDUUGA	REVISION DESCRIPTION	
CHECKED BY:	PLM	BY	
DATE:	JAN 2024	DATE	

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

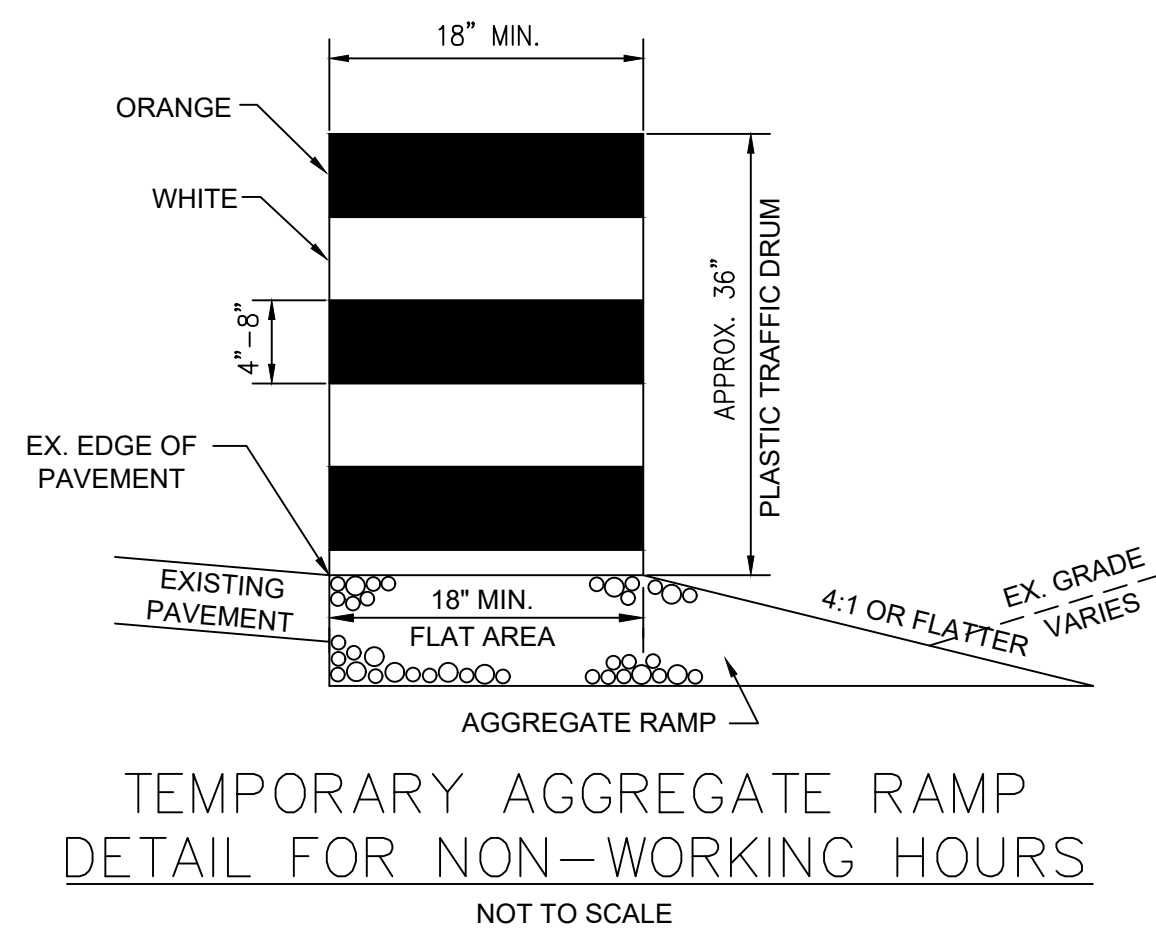
**HALFWAY BOULEVARD
EXTENDED
MAINTENANCE OF
TRAFFIC PLAN**

SCALE
AS SHOWN

SHEET NO.
53

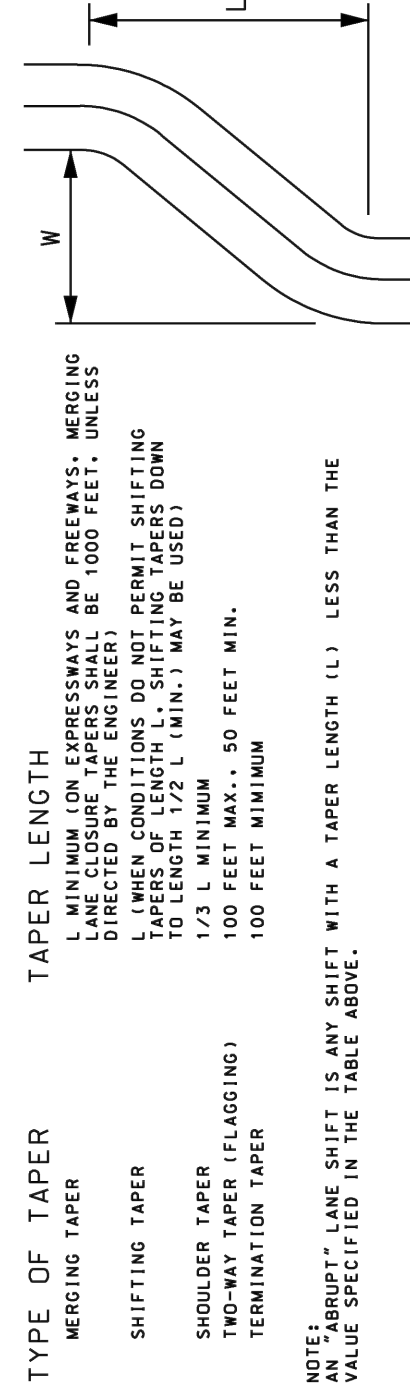
PROJECT NO.
10-273

SHA: WA067ZM1
FAP: APL-3(804)E



**TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION
TAPER LENGTH CRITERIA TABLE**

SPEED (S) IN MPH	WIDTH OF OFFSET (W) IN FEET											
	1	2	3	4	5	6	7	8	9	10	11	12
25	11	21	32	42	53	63	73	84	94	105	115	125
30	15	30	45	60	75	90	105	120	135	150	165	180
35	21	41	62	82	103	123	143	164	184	205	225	245
40	27	54	80	107	134	160	187	214	240	267	294	320
45	45	90	135	180	225	270	315	360	405	450	495	540
50	50	100	150	200	250	300	350	400	450	500	550	600
55	55	110	165	220	275	330	385	440	495	550	605	660
60	60	120	180	240	300	360	420	480	540	600	660	720
65	65	130	195	260	325	390	455	520	585	650	715	780
70	70	140	210	280	350	420	490	560	630	700	770	840



SPECIFICATION: CATEGORY CODE ITEMS

APPROVED: [Signature]

DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL - SHA REVISIONS: 8-20-03, 8-23-03, 6-8-04, 8-11-10, 8-11-10

APPROVAL - FEDERAL HIGHWAY ADMINISTRATION: 8-23-03, 7-29-10, 7-29-10

**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION**
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TAPER LENGTH CRITERIA TABLE

STANDARD NO. MD 104.01-80

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

NOTES:
1. MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES:
TAPER CHANNELIZATION - SHALL BE EQUAL IN FEET TO THE POSTED SPEED LIMIT FOR POSTED SPEEDS EOL/LESS THAN 40 MPH AND 40 FEET FOR POSTED SPEEDS GREATER THAN 40 MPH.
TANGENT CHANNELIZATION - SHALL BE EQUAL IN FEET TO TWICE THE POSTED SPEED LIMIT IN THE BUFFER AND EQUAL IN FEET TO THE POSTED SPEED ADJACENT TO THE WORK AREA FOR POSTED SPEEDS EOL/LESS THAN 40 MPH. SPACING SHALL BE 80 FEET IN THE BUFFER AND 40 FEET ADJACENT TO THE WORK AREA FOR POSTED SPEEDS GREATER THAN 40 MPH.

2. THE MINIMUM BUFFER LENGTH (BL) SHALL BE AS FOLLOWS:

TYPICAL BUFFER LENGTH	
PREVAILING SPEED (MPH)	LENGTH (FEET)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

REFER TO LATEST PART VI OF THE MUTCD FOR ADDITIONAL SPEEDS/BUFFER LENGTHS AND ADJUSTMENTS TO BUFFER LENGTH DUE TO THE EFFECT OF GRADE ON STOPPING AND VARIATION FOR TRUCKS.

3. REFER TO STANDARD NO. MD 104.01-80 (TAPER LENGTH CRITERIA TABLE) FOR MINIMUM TAPER LENGTHS.

SPECIFICATION: CATEGORY CODE ITEMS

APPROVED: [Signature]

DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

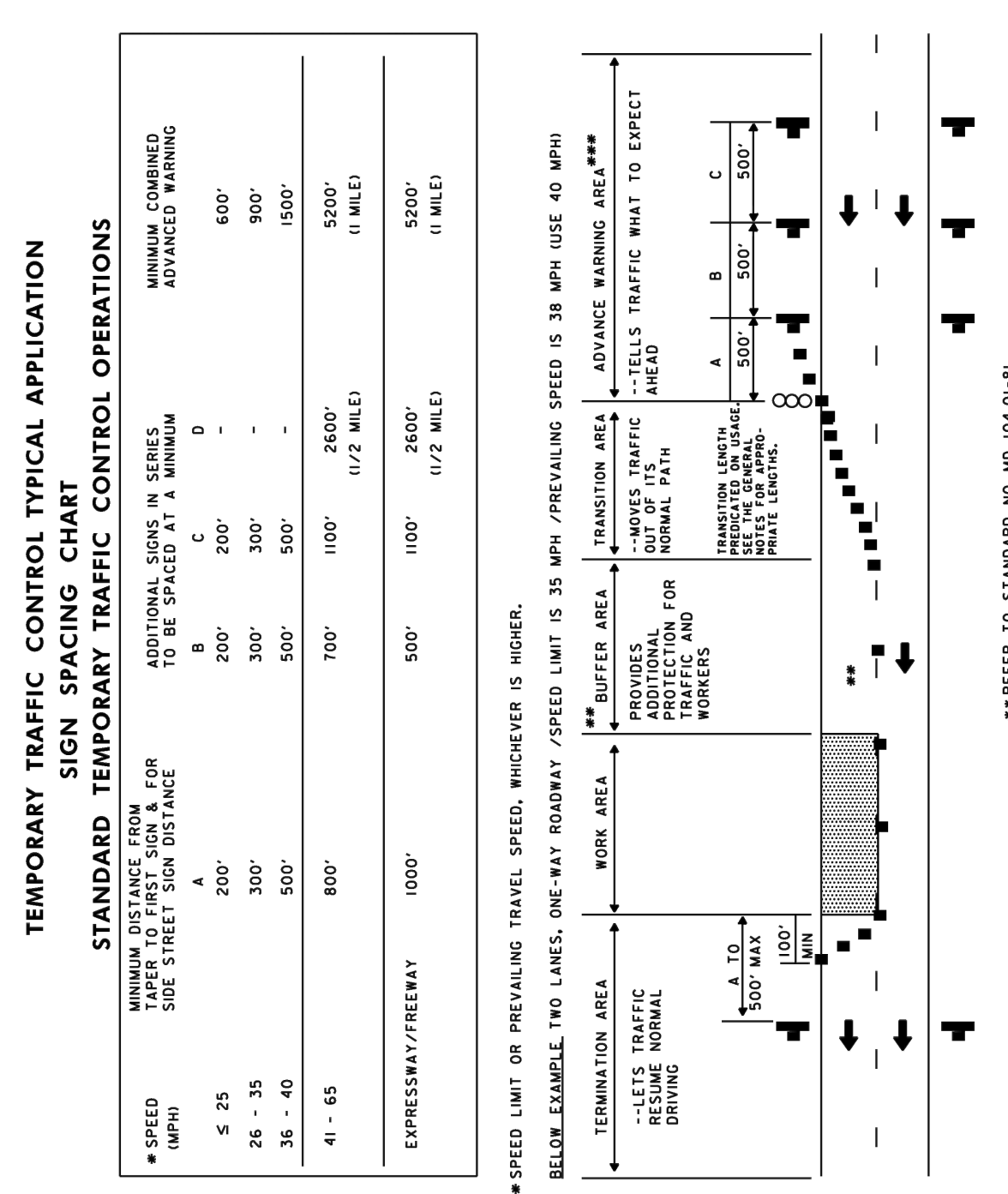
APPROVAL - SHA REVISIONS: 8-20-03, 8-23-03, 6-8-04, 8-11-10, 8-11-10

APPROVAL - FEDERAL HIGHWAY ADMINISTRATION: 8-23-03, 7-29-10, 7-29-10

**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION**
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

TYPICAL APPLICATION NOTES

STANDARD NO. MD 104.01-81



SPECIFICATION: CATEGORY CODE ITEMS

APPROVED: [Signature]

DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

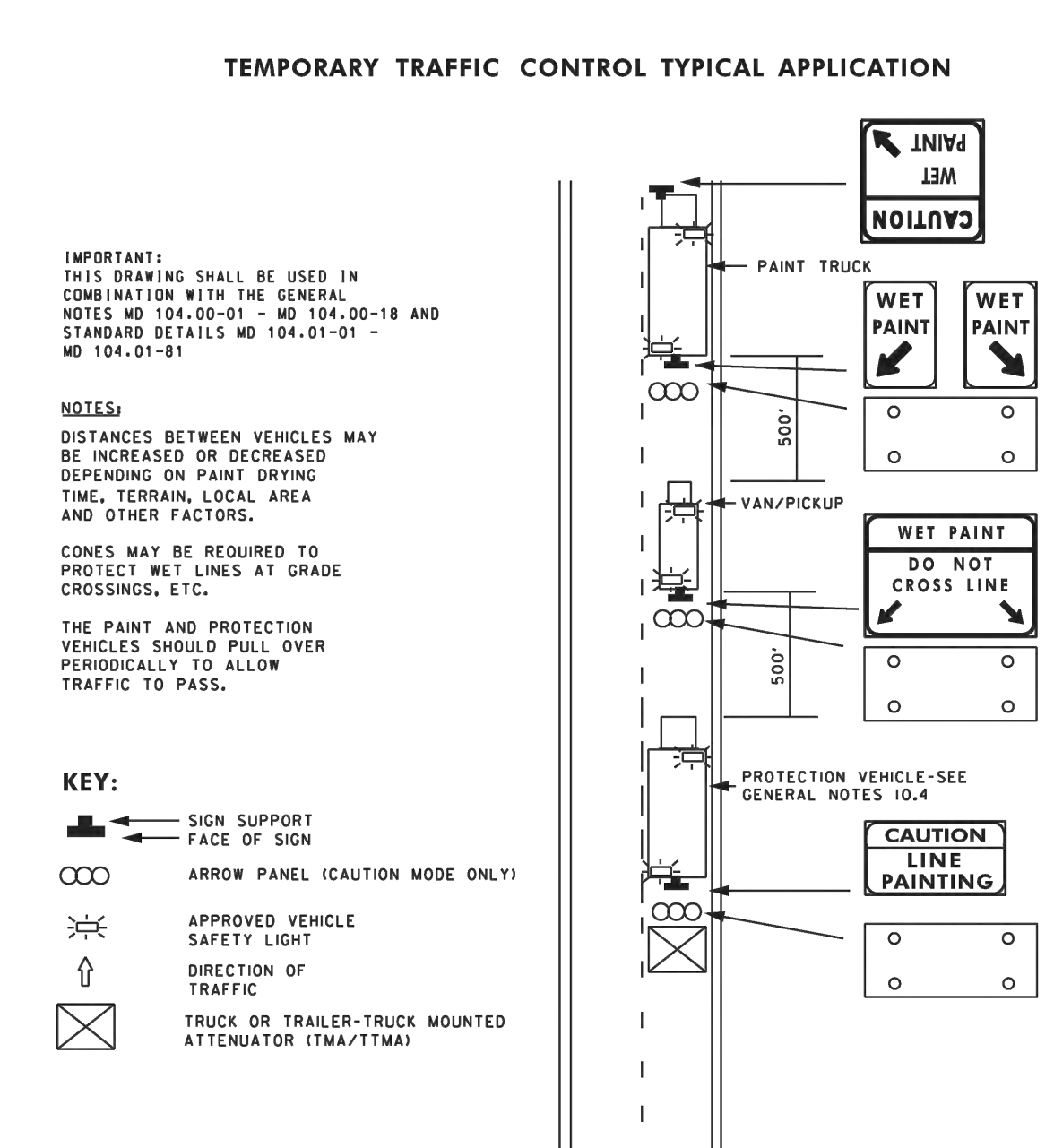
APPROVAL - SHA REVISIONS: 8-20-03, 8-23-03, 8-11-10, 8-11-10

APPROVAL - FEDERAL HIGHWAY ADMINISTRATION: 8-23-03, 7-29-10, 7-29-10

**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION**
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SIGN SPACING CHART

STANDARD NO. MD 104.01-02



SPECIFICATION: CATEGORY CODE ITEMS

APPROVED: [Signature]

DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL - SHA REVISIONS: 8-20-03, 8-23-03, 8-11-10, 8-11-10

APPROVAL - FEDERAL HIGHWAY ADMINISTRATION: 8-23-03, 7-29-10, 7-29-10

**Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION**
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

MOBILE MARKING OPERATION/2-LANE, 2-WAY ALL SPEEDS

STANDARD NO. MD 104.02-18

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-315-2401

DESIGNED BY: KDUUGA
DRAWN BY: KDUUGA
CHECKED BY: PJM
DATE: JAN 2024

NO. _____ REVISION DESCRIPTION _____ BY _____ DATE _____

SCALE: N.T.S.

SHEET NO. _____

PROJECT NO. 10-273

SHA: WA06ZM1
FAP: APL-3(804)E

SQUARE FOOT AREAS OF SYMBOLS AND ARROWS		
SYMBOL	DESCRIPTION	AREA (SQ. FT.)
	THROUGH LANE-USE	12.5
	TURN LANE-USE (LEFT OR RIGHT)	15.5
	TURN AND THROUGH LANE-USE (LEFT OR RIGHT)	25.5
	LEFT AND RIGHT TURN LANE-USE	27.0
	ALL DIRECTIONS LANE-USE	38.5
	LANE-REDUCTION (LEFT OR RIGHT)	42.0
	FREEWAY, EXPRESSWAY AND RAMP ARROW	24.4
	WRONG WAY ARROW	23.8
	HOV LANE	13.5
	ACCESSIBILITY SYMBOL (BLUE BACKGROUND)	11.5
	40"x40" (STANDARD)	16.0
	48"x48" (SPECIAL)	64.7 (TOTAL)
	RAILROAD-CROSSING (9" 16" HIGH)	3.6 (EACH)
	"X" (20" HIGH)	57.5
	YIELD AHEAD TRIANGLE	43.0
	POSTED SPEED LIMIT 45 MPH OR GREATER	34.0
	POSTED SPEED LIMIT LESS THAN 45 MPH	0.75
	POSTED SPEED LIMIT 45 MPH OR GREATER SHARK'S TEETH	3.0
	BIKE LANE DETECTOR (2' x 43')	1.0
	SHARED LANE (40" x 112')	9.0
	BIKE LANE ARROW (24" x 72')	5.0
	BIKE LANE (STANDARD) (40" x 72')	5.0
	BIKE LANE (ALTERNATE NOT FOR USE ON STATE ROADWAYS) (40" x 72')	6.0

SQUARE FOOT AREAS OF LEGENDS		
LEGEND	SIZE/DESCRIPTION	AREA (SQ. FT.)
AHEAD	8" HIGH	29.0
LANE LEFT	8" HIGH (STANDARD)	22.3
LANE RIGHT	8" HIGH	18.2
ONLY	8" HIGH	20.8
PEDESTRIAN	8" HIGH	17.3
RIGHT	8" HIGH	24.5
SCHOOL	8" HIGH (STANDARD)	32.3
SLOW	8" HIGH	22.8
STOP	8" HIGH	20.8
TURN	8" HIGH	22.8
WARNING	8" HIGH	20.3
YIELD	8" HIGH	22.3

SQUARE FOOT AREAS OF NUMBERS		
NUMBER	SIZE	AREA (SQ. FT.)
1	12" x 18"	0.75
2	12" x 18"	0.75
3	12" x 18"	0.75
4	12" x 18"	0.75
5	12" x 18"	0.75
6	12" x 18"	0.75
7	12" x 18"	0.75
8	12" x 18"	0.75
9	12" x 18"	0.75
0	12" x 18"	0.75
SMALL (6 FT.)	1.5, 3.3, 3.3, 2.9, 3.5, 3.5, 2.2, 3.8, 3.5, 3.4	
LARGE (18 FT.)	2.6, 5.8, 5.8, 5.1, 6.1, 6.2, 3.8, 6.7, 6.2, 6.0	

SQUARE FOOT AREAS OF LETTERS		
LETTER	SIZE	AREA (SQ. FT.)
A	12" x 18"	0.75
B	12" x 18"	0.75
C	12" x 18"	0.75
D	12" x 18"	0.75
E	12" x 18"	0.75
F	12" x 18"	0.75
G	12" x 18"	0.75
H	12" x 18"	0.75
I	12" x 18"	0.75
J	12" x 18"	0.75
K	12" x 18"	0.75
L	12" x 18"	0.75
M	12" x 18"	0.75
N	12" x 18"	0.75
O	12" x 18"	0.75
P	12" x 18"	0.75
Q	12" x 18"	0.75
R	12" x 18"	0.75
S	12" x 18"	0.75
T	12" x 18"	0.75
U	12" x 18"	0.75
V	12" x 18"	0.75
W	12" x 18"	0.75
X	12" x 18"	0.75
Y	12" x 18"	0.75
Z	12" x 18"	0.75
SMALL (6 FT.)	3.1, 4.0, 2.7, 3.4, 3.3, 2.6, 3.3, 3.4, 1.5, 2.1, 3.1	
LARGE (18 FT.)	5.5, 7.1, 4.8, 6.1, 5.9, 4.7, 5.8, 6.0, 2.6, 3.7, 5.7	

NOTE: REFER TO THE MOST RECENT VERSION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE FHWA STANDARD HIGHWAY SIGNS MANUAL FOR DIMENSIONS OF ALL PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS, AND NUMBERS.

APPROVED:

DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL - SHA REVISIONS: APPROVAL - FEDERAL HIGHWAY ADMINISTRATION

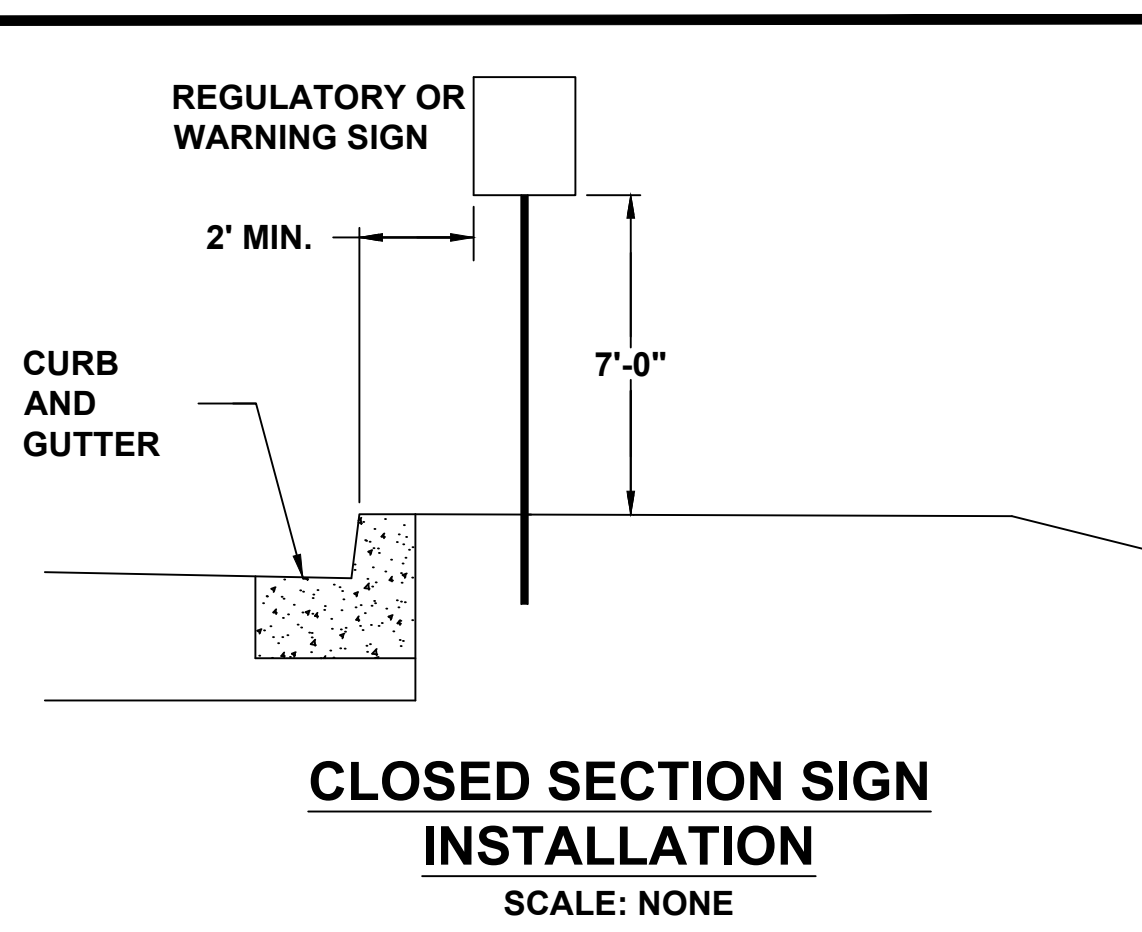
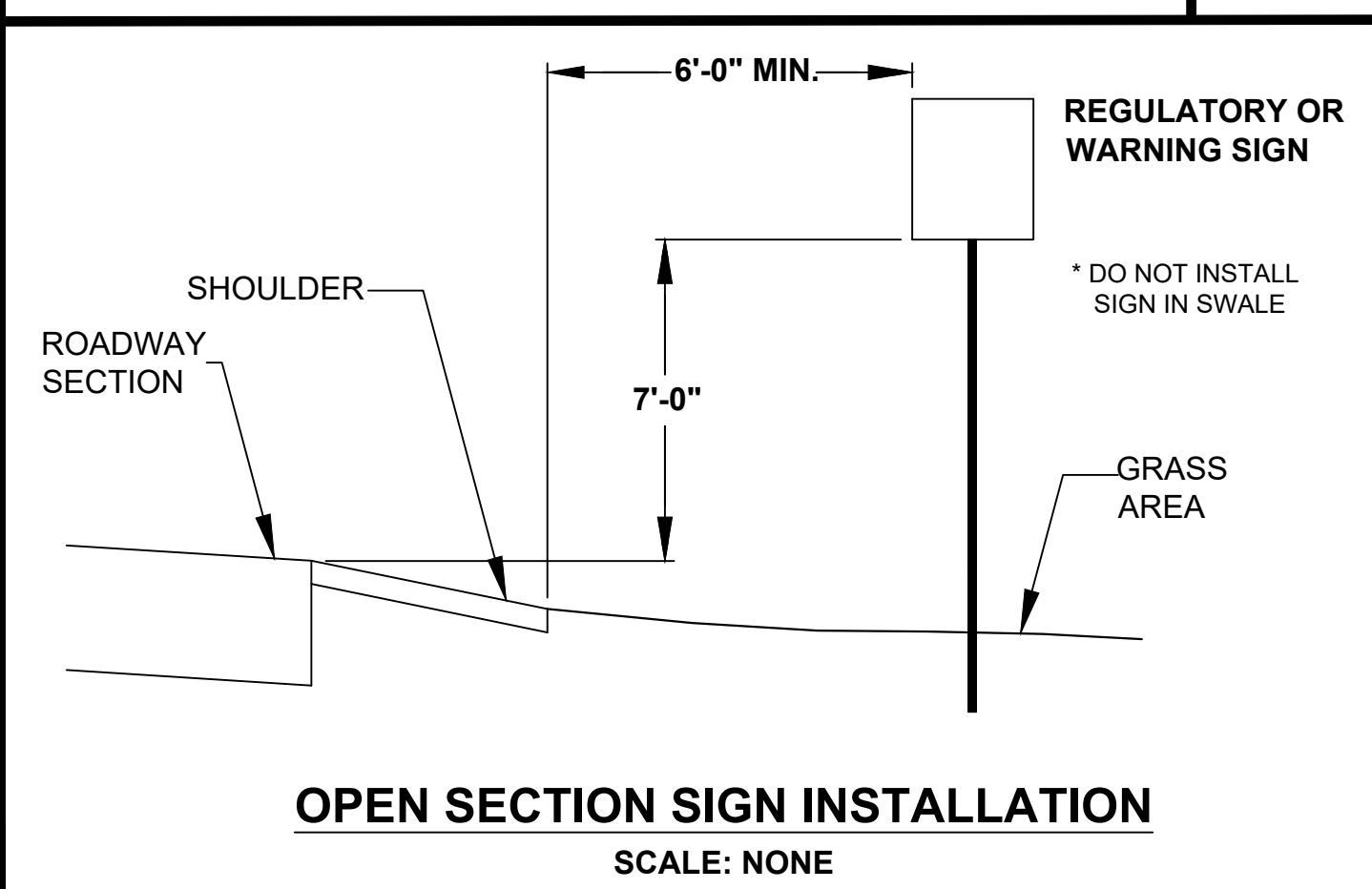
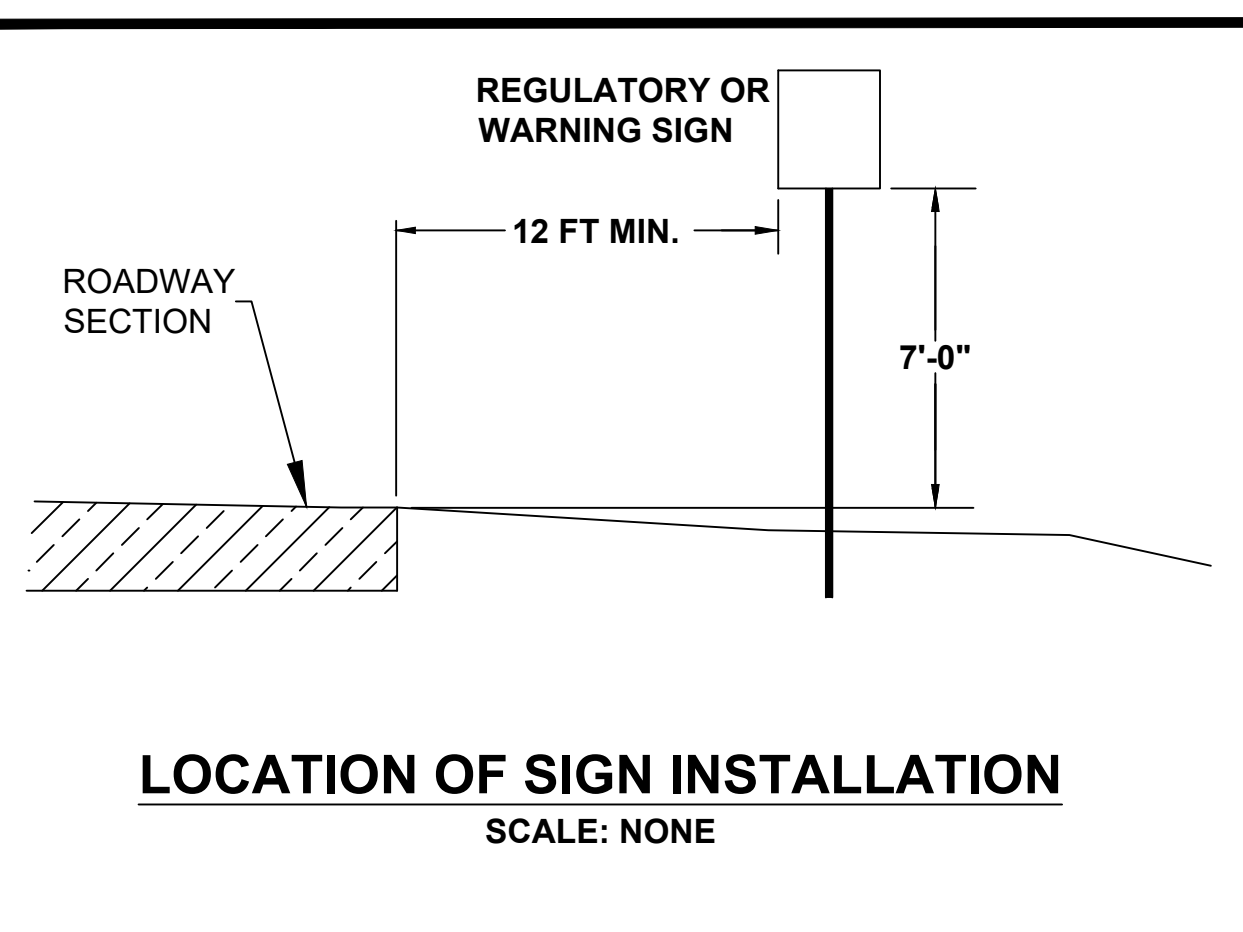
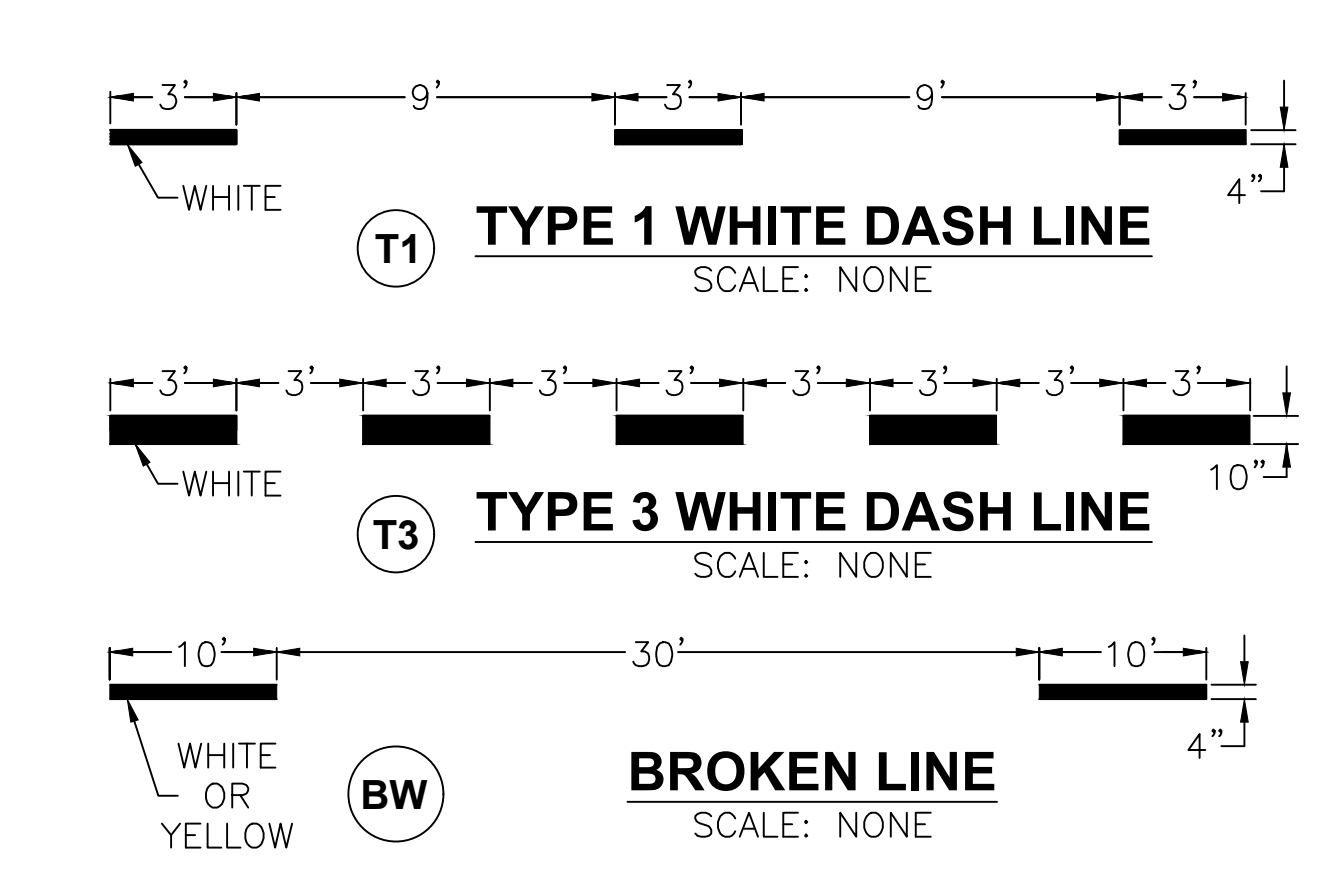
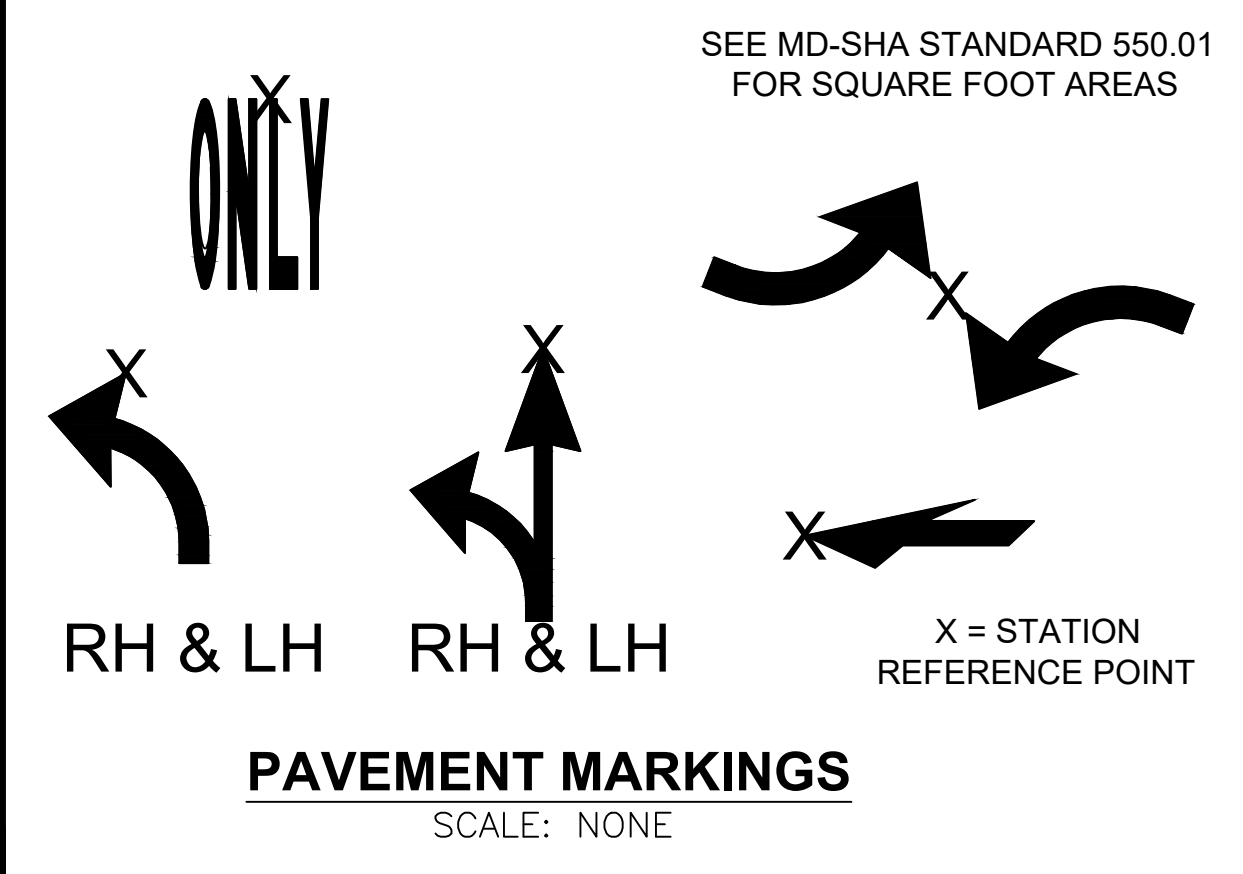
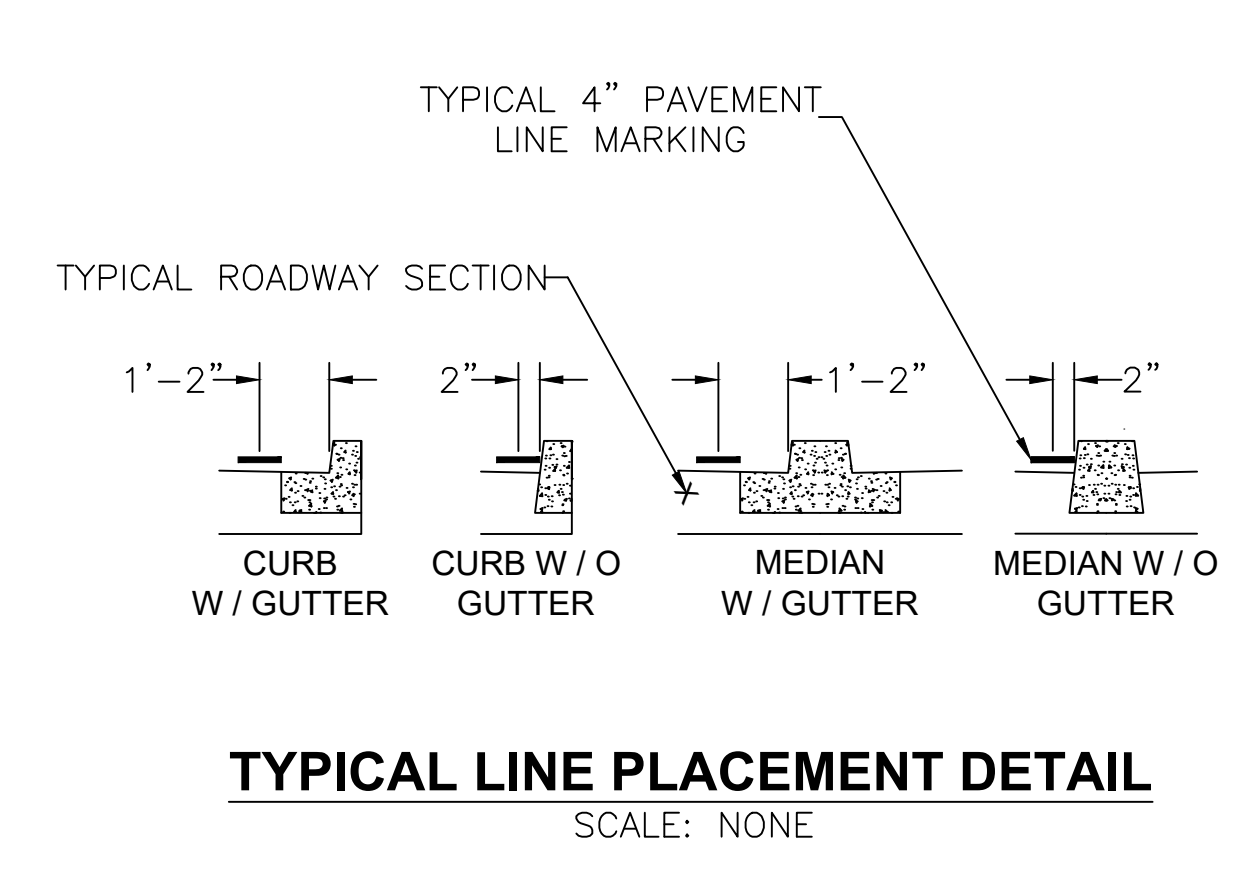
APPROVAL - 5-21-14 REVISIONS: APPROVAL - 5-20-14

SHA State Highway Administration

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

SQUARE FOOT AREAS OF PAVEMENT MARKING LETTERS, SYMBOLS, ARROWS AND NUMBERS

STANDARD NO. MD 550.01



LEGEND

EXISTING SIGN TO REMAIN

EXISTING SIGN TO BE REMOVED

PROPOSED SIGN

T1 TYPE 1 WHITE DASH LINE (SEE DETAIL ON THIS SHEET)

T2 TYPE 2 WHITE DASH LINE (SEE DETAIL ON THIS SHEET)

T3 TYPE 3 WHITE DASH LINE (SEE DETAIL ON THIS SHEET)

Y 4" SINGLE YELLOW LINE

YD 4" SINGLE YELLOW DASH LINE

DY 4" DOUBLE YELLOW LINE

W 4" SINGLE WHITE LINE

YG 10" SINGLE YELLOW GORE LINE

S 24" STOP BAR

CW PEDESTRIAN CROSS WALK (SEE DETAIL ON THIS SHEET)

WORD PAVEMENT MARKING

LEFT TURN LANE - USE ARROW

RIGHT TURN LANE - USE ARROW

LEFT - TURN AND THROUGH LANE - USE ARROW

RIGHT - TURN AND THROUGH LANE - USE ARROW

LANE - REDUCTION ARROW

TWO - WAY LEFT TURN - USE ARROW

EXISTING ONE POST SIGN

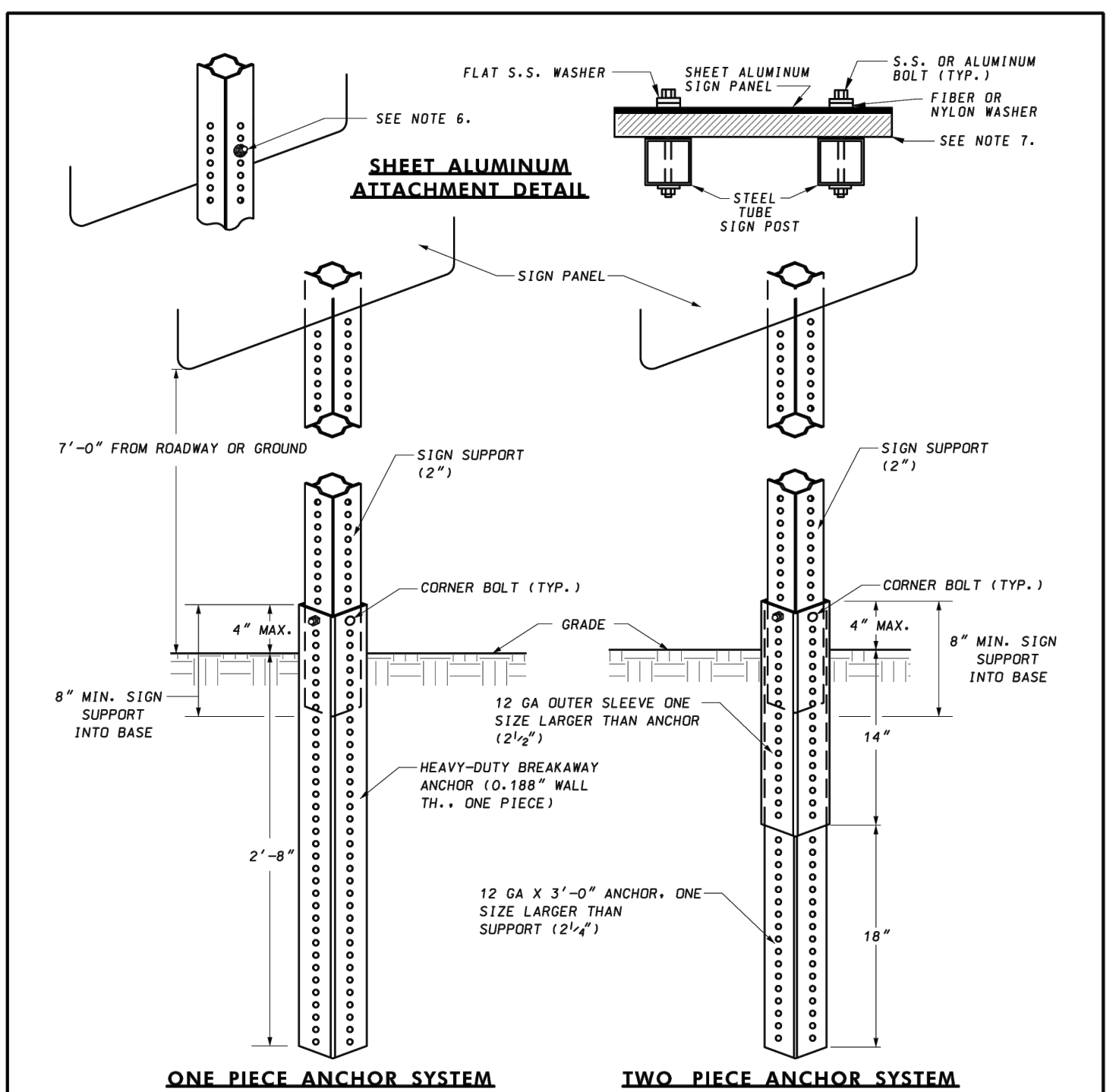
EXISTING TWO POST SIGN

PROPOSED ONE POST SIGN

PROPOSED TWO POST SIGN

B SHARED LANE PAVEMENT MARKINGS

BB BIKE BOX MARKINGS



NOTES:

- INSTALLATION SHALL BE PERFORMED PER MANUFACTURER'S RECOMMENDATIONS.
- CORNER BOLTS AND HARDWARE SHALL BE AS APPROVED BY AASHTO AND PER MANUFACTURER'S RECOMMENDATIONS.
- THE INSTALLATION SHALL MEET THE LATEST AASHTO BREAKAWAY REQUIREMENTS.
- SPLICES SHALL NOT BE USED TO EXTEND THE HEIGHT OF A SIGN POST.
- ONLY 2" SIGN SUPPORTS SHALL BE USED. SIGN POSTS GREATER THAN OR LESS THAN 2" ARE NOT PERMITTED.
- FOR SHEET ALUMINUM ATTACHMENT, ALL BOLTS SHALL BE 3/8" F593 (18-8 TYPE 303-304) STAINLESS STEEL OR ANODIZED ALUMINUM HEX HEAD BOLT WITH WASHERS AND NUTS SPACED AT 12" MAXIMUM.
- ALL SHEET ALUMINUM SIGNS 5" WIDE AND LARGER SHALL BE BRACED WITH TWO HORIZONTAL 2"x4" TREATED WOOD OR EQUAL, ATTACHED TO THE SUPPORTS. THE BOLT LENGTHS SHALL BE COORDINATED.

APPROVED:

DIRECTOR - OFFICE OF TRAFFIC AND SAFETY

APPROVAL - SHA REVISIONS: APPROVAL - FEDERAL HIGHWAY ADMINISTRATION

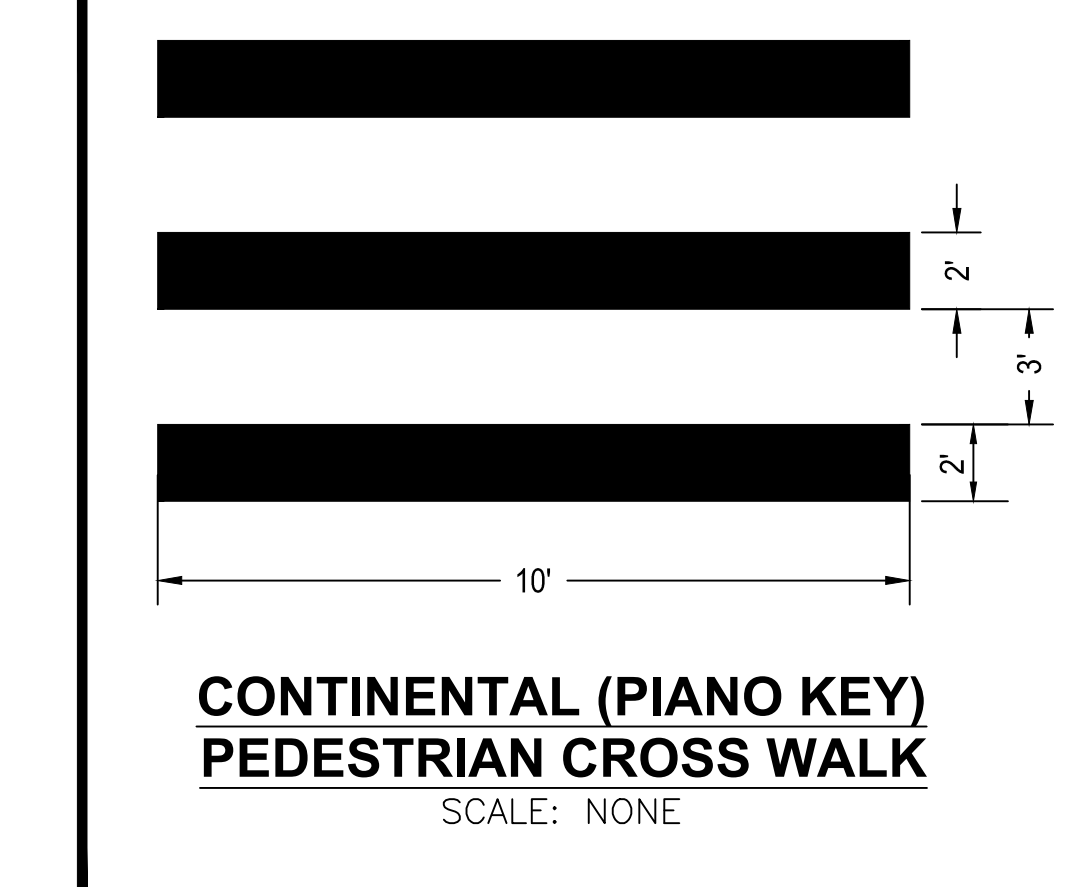
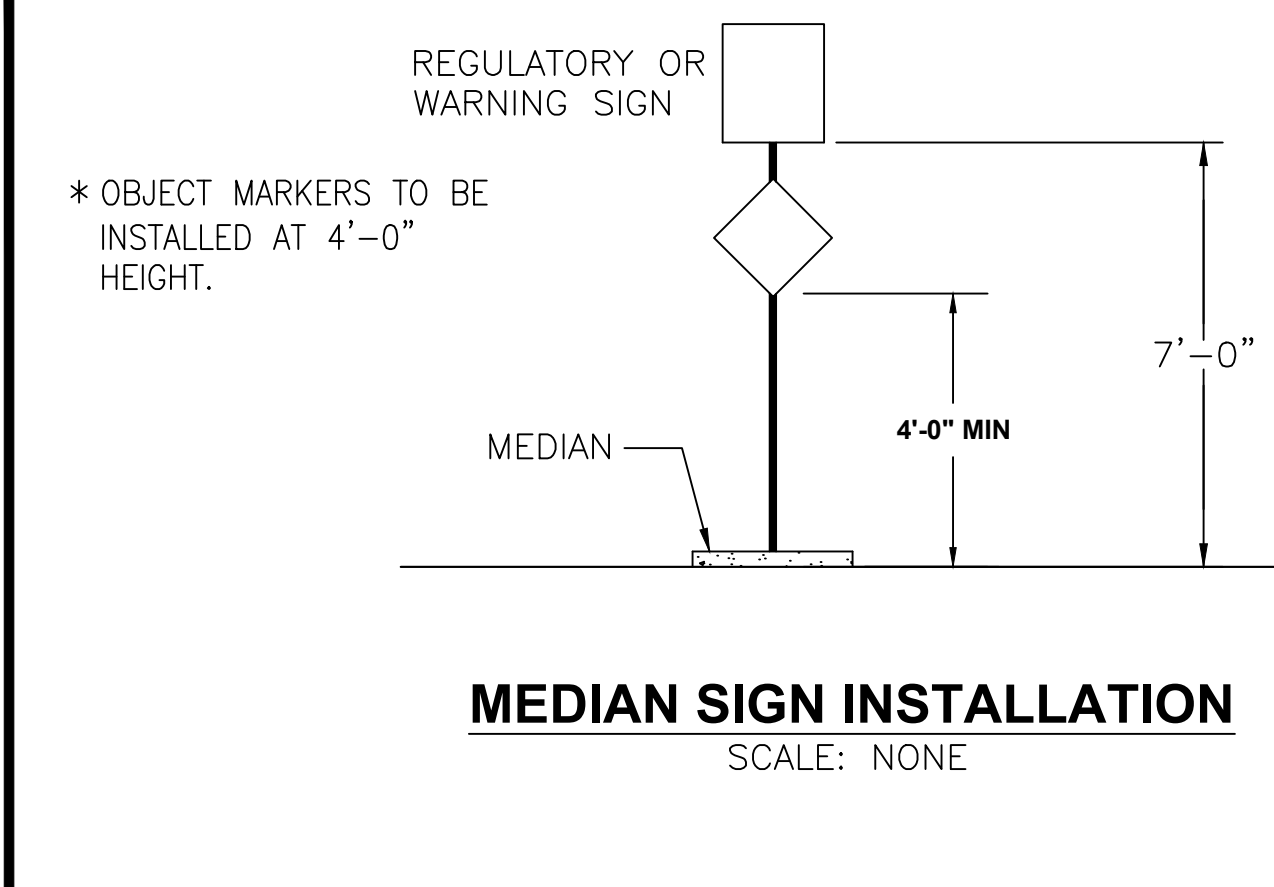
APPROVAL - 5-17-07 REVISIONS: APPROVAL - 5-2-07

SHA State Highway Administration

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

BREAKAWAY TUBULAR STEEL SIGN SUPPORTS

STANDARD NO. MD 802.04



OFFICE OF TRAFFIC & SAFETY TRAFFIC ENGINEERING DESIGN DIVISION

MD 63 (GREENCASTLE PIKE) AT BUSINESS PARKWAY AND HALFWAY BOULEVARD EXTENDED

HAGERSTOWN, MD

GENERAL NOTES AND PROPOSALS

SCALE: N.T.S. ADVERTISED DATE: APR 2024 CONTRACT NO. _____

DESIGNED BY: PJM COUNTY: WASHINGTON

DRAWN BY: PJM LOGMILE: _____

CHECKED BY: PJM/GCA TMS NO.: _____

MDE/PRD TOD NO.: _____

APPROVALS: _____ REVISIONS: _____

TEAM LEADER: _____

ASST. DIV. CHIEF: _____

DIVISION CHIEF: _____

OFFICE DIRECTOR: _____

TS NO. _____ DRAWING SN-2.1 OF 03 SHEET NO. _____ OF _____

SCALE N.T.S.

SHEET NO. 57

PROJECT NO. 10-273

SHA: WA067ZM1 FAP: APL-3(804)E

WASHINGTON COUNTY, MARYLAND DIVISION OF ENGINEERING

Washington County Administrative Annex Building 747 Northern Ave., Hagerstown, MD 21742 Phone: 240-315-2460 Fax: 240-315-2401

DESIGNED BY: KDU/GCA DRAWN BY: KDU/GCA CHECKED BY: PJM DATE: APR 2024

NO. _____ REVISION DESCRIPTION: _____

DATE: _____

HALFWAY BOULEVARD EXTENDED PAVEMENT MARKING & SIGNAGE NOTES

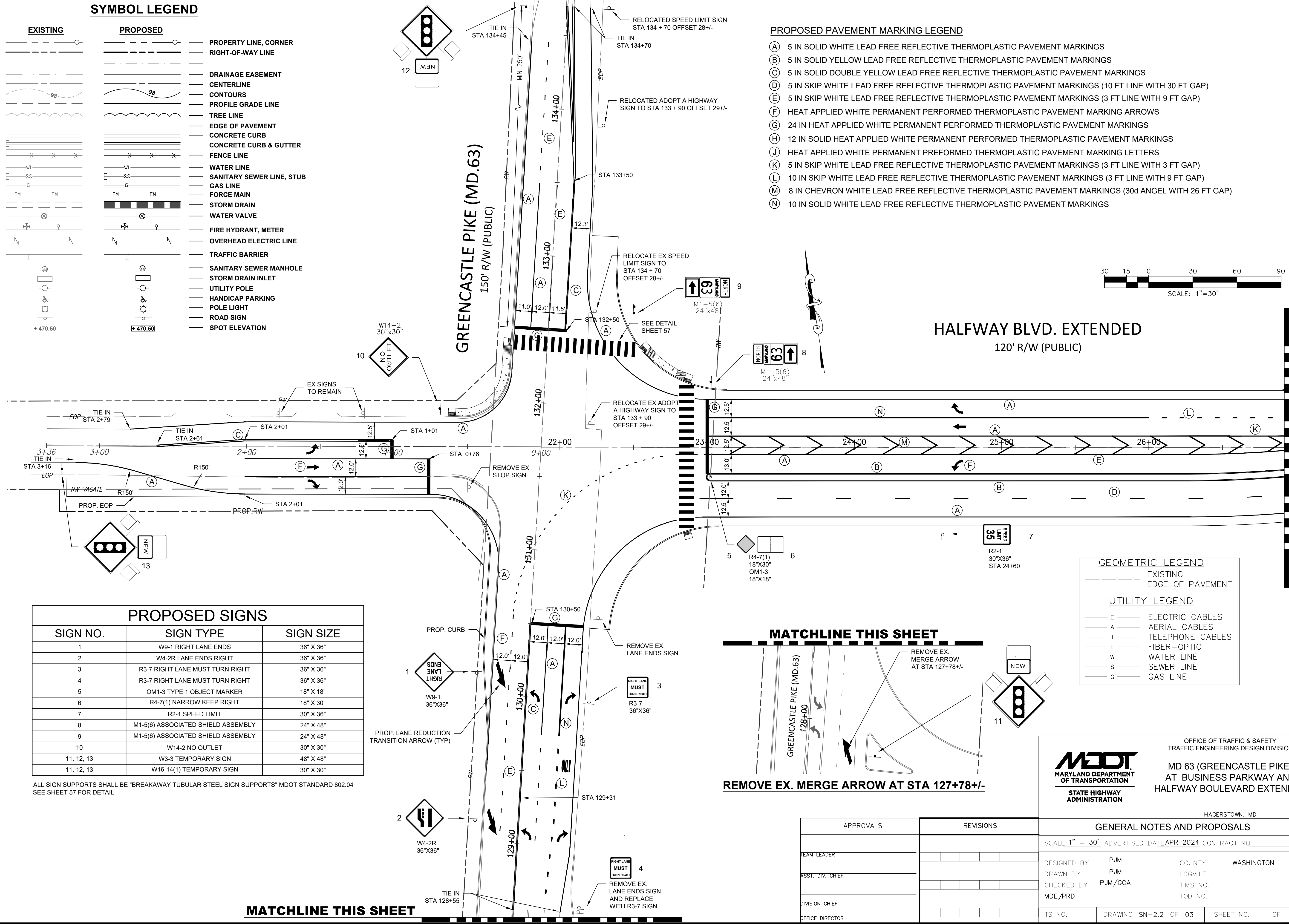
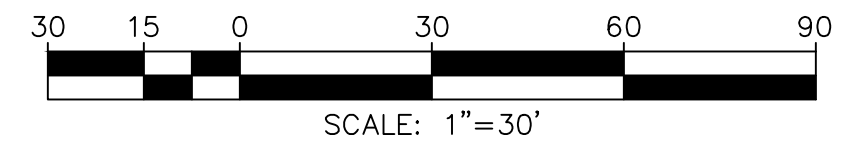
FILE PATH: C:\USERS\PMOH\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\14 - PMS110-273 SN-01.DWG PLOT DATE: 4/10/2024 1:20 PM

SYMBOL LEGEND

EXISTING	PROPOSED	
		PROPERTY LINE, CORNER RIGHT-OF-WAY LINE
		DRAINAGE EASEMENT
		CENTERLINE
		CONTOURS
		PROFILE GRADE LINE
		TREE LINE
		EDGE OF PAVEMENT
		CONCRETE CURB
		CONCRETE CURB & GUTTER
		FENCE LINE
		WATER LINE
		SANITARY SEWER LINE, STUB
		GAS LINE
		FORCE MAIN
		STORM DRAIN
		WATER VALVE
		FIRE HYDRANT, METER
		OVERHEAD ELECTRIC LINE
		TRAFFIC BARRIER
		SANITARY SEWER MANHOLE
		STORM DRAIN INLET
		UTILITY POLE
		HANDICAP PARKING
		POLE LIGHT
		ROAD SIGN
		SPOT ELEVATION

PROPOSED PAVEMENT MARKING LEGEND

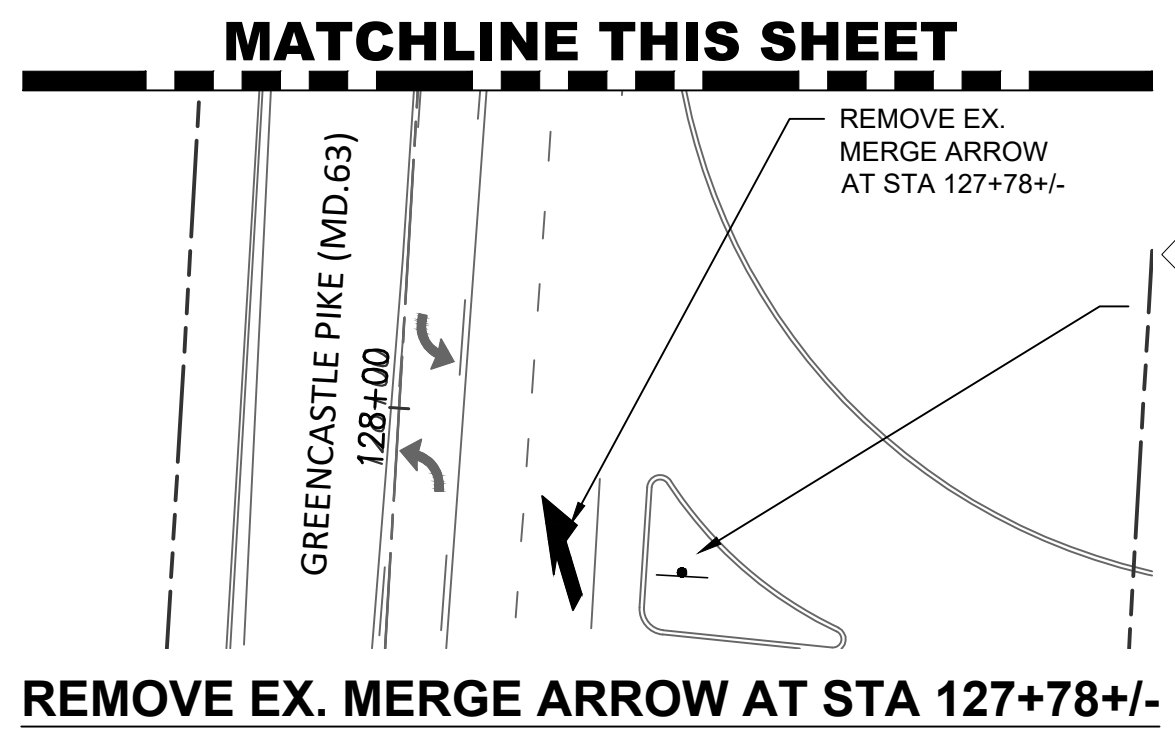
- (A) 5 IN SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (B) 5 IN SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (C) 5 IN SOLID DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (D) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (10 FT LINE WITH 30 FT GAP)
- (E) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (3 FT LINE WITH 9 FT GAP)
- (F) HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKING ARROWS
- (G) 24 IN HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKINGS
- (H) 12 IN SOLID HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKINGS
- (J) HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LETTERS
- (K) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (3 FT LINE WITH 3 FT GAP)
- (L) 10 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (3 FT LINE WITH 9 FT GAP)
- (M) 8 IN CHEVRON WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (30d ANGEL WITH 26 FT GAP)
- (N) 10 IN SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS



PROPOSED SIGNS		
SIGN NO.	SIGN TYPE	SIGN SIZE
1	W9-1 RIGHT LANE ENDS	36" X 36"
2	W4-2R LANE ENDS RIGHT	36" X 36"
3	R3-7 RIGHT LANE MUST TURN RIGHT	36" X 36"
4	R3-7 RIGHT LANE MUST TURN RIGHT	36" X 36"
5	OM1-3 TYPE 1 OBJECT MARKER	18" X 18"
6	R4-7(1) NARROW KEEP RIGHT	18" X 30"
7	R2-1 SPEED LIMIT	30" X 36"
8	M1-5(6) ASSOCIATED SHIELD ASSEMBLY	24" X 48"
9	M1-5(6) ASSOCIATED SHIELD ASSEMBLY	24" X 48"
10	W14-2 NO OUTLET	30" X 30"
11, 12, 13	W3-3 TEMPORARY SIGN	48" X 48"
11, 12, 13	W16-14(1) TEMPORARY SIGN	30" X 30"

ALL SIGN SUPPORTS SHALL BE "BREAKAWAY TUBULAR STEEL SIGN SUPPORTS" MDOT STANDARD 802.04 SEE SHEET 57 FOR DETAIL

GEOMETRIC LEGEND	
	EXISTING EDGE OF PAVEMENT
UTILITY LEGEND	
	E ELECTRIC CABLES
	A AERIAL CABLES
	T TELEPHONE CABLES
	F FIBER-OPTIC
	W WATER LINE
	S SEWER LINE
	G GAS LINE



OFFICE OF TRAFFIC & SAFETY
TRAFFIC ENGINEERING DESIGN DIVISION

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HAGERSTOWN, MD

MD 63 (GREENCASTLE PIKE)
AT BUSINESS PARKWAY AND
HALFWAY BOULEVARD EXTENDED

APPROVALS	REVISIONS
TEAM LEADER	
ASST. DIV. CHIEF	
DIVISION CHIEF	
OFFICE DIRECTOR	

GENERAL NOTES AND PROPOSALS	
SCALE 1" = 30' ADVERTISED DATE APR 2024 CONTRACT NO.	
DESIGNED BY PJM COUNTY WASHINGTON	
DRAWN BY PJM LOGMILE	
CHECKED BY PJM/GCA TMS NO.	
MDE/PRD TOD NO.	
TS NO.	DRAWING SN-2.2 OF 03 SHEET NO. OF

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-315-2460 Fax: 240-315-2401

DESIGNED BY: KDU/GA
DRAWN BY: KDU/GCA
CHECKED BY: PJM
DATE: APR 2024

NO. BY REVISION DESCRIPTION

DATE

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

HALFWAY BOULEVARD EXTENDED
PAVEMENT MARKING & SIGNAGE PLAN

WASHINGTON COUNTY ADMINISTRATIVE ANNEX, BUILDING
747 NORTHERN AVE., HAGERSTOWN, MD 21742
PHONE: 240-315-2460 FAX: 240-315-2401

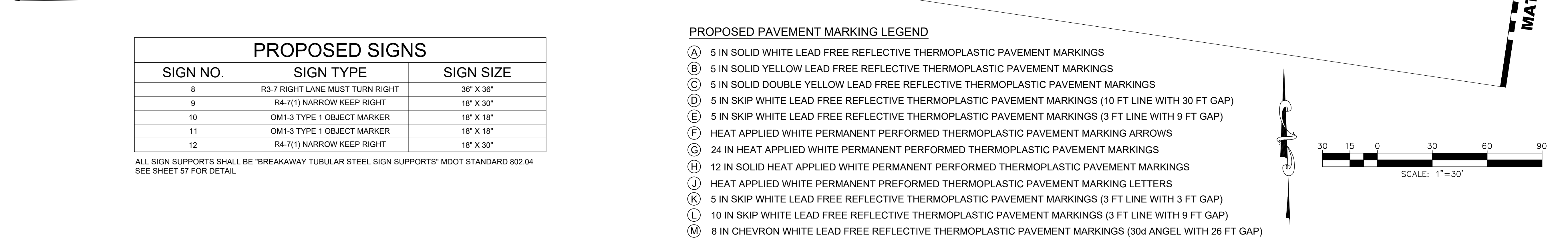
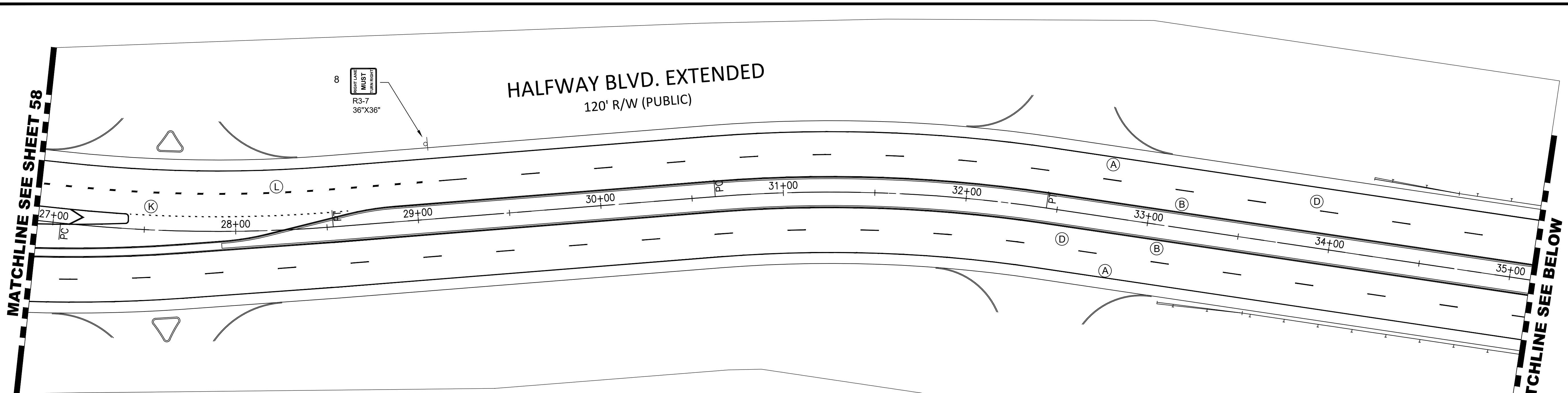
SCALE 1" = 30'

SHEET NO.

PROJECT NO. 10-273

SHA: WA06ZM1
FAP: APL-3(804)E

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\14 - PMS110-273 SN-01.DWG PLOT DATE: 4/4/2024 9:19 AM

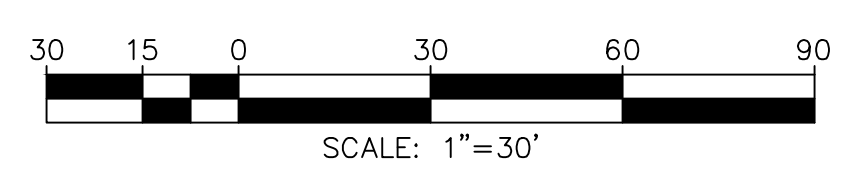
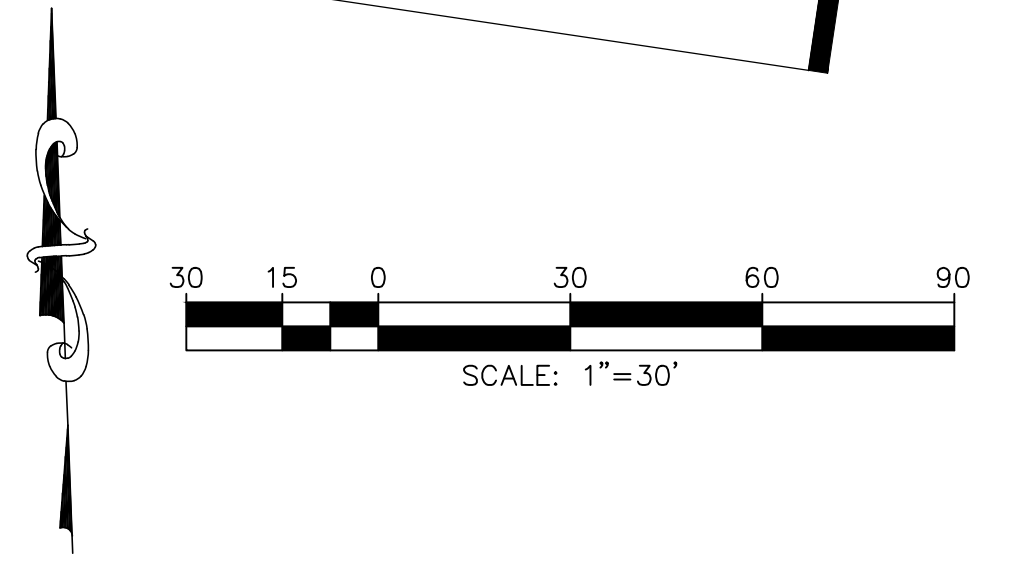


PROPOSED SIGNS		
SIGN NO.	SIGN TYPE	SIGN SIZE
8	R3-7 RIGHT LANE MUST TURN RIGHT	36" X 36"
9	R4-7(1) NARROW KEEP RIGHT	18" X 30"
10	OM1-3 TYPE 1 OBJECT MARKER	18" X 18"
11	OM1-3 TYPE 1 OBJECT MARKER	18" X 18"
12	R4-7(1) NARROW KEEP RIGHT	18" X 30"

ALL SIGN SUPPORTS SHALL BE "BREAKAWAY TUBULAR STEEL SIGN SUPPORTS" MDOT STANDARD 802.04
SEE SHEET 57 FOR DETAIL

PROPOSED PAVEMENT MARKING LEGEND

- (A) 5 IN SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (B) 5 IN SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (C) 5 IN SOLID DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (D) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (10 FT LINE WITH 30 FT GAP)
- (E) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (3 FT LINE WITH 9 FT GAP)
- (F) HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKING ARROWS
- (G) 24 IN HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKINGS
- (H) 12 IN SOLID HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKINGS
- (J) HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LETTERS
- (K) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (3 FT LINE WITH 3 FT GAP)
- (L) 10 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (3 FT LINE WITH 9 FT GAP)
- (M) 8 IN CHEVRON WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (30d ANGEL WITH 26 FT GAP)



MATCHLINE SEE SHEET 58

MATCHLINE SEE BELOW

MATCHLINE SEE ABOVE

MATCHLINE SEE SHEET 60

NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
 DRAWN BY: KDUUGA
 CHECKED BY: PJM
 DATE: APR 2024

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

**HALFWAY BOULEVARD
 EXTENDED
 PAVEMENT MARKING
 & SIGNAGE PLAN**

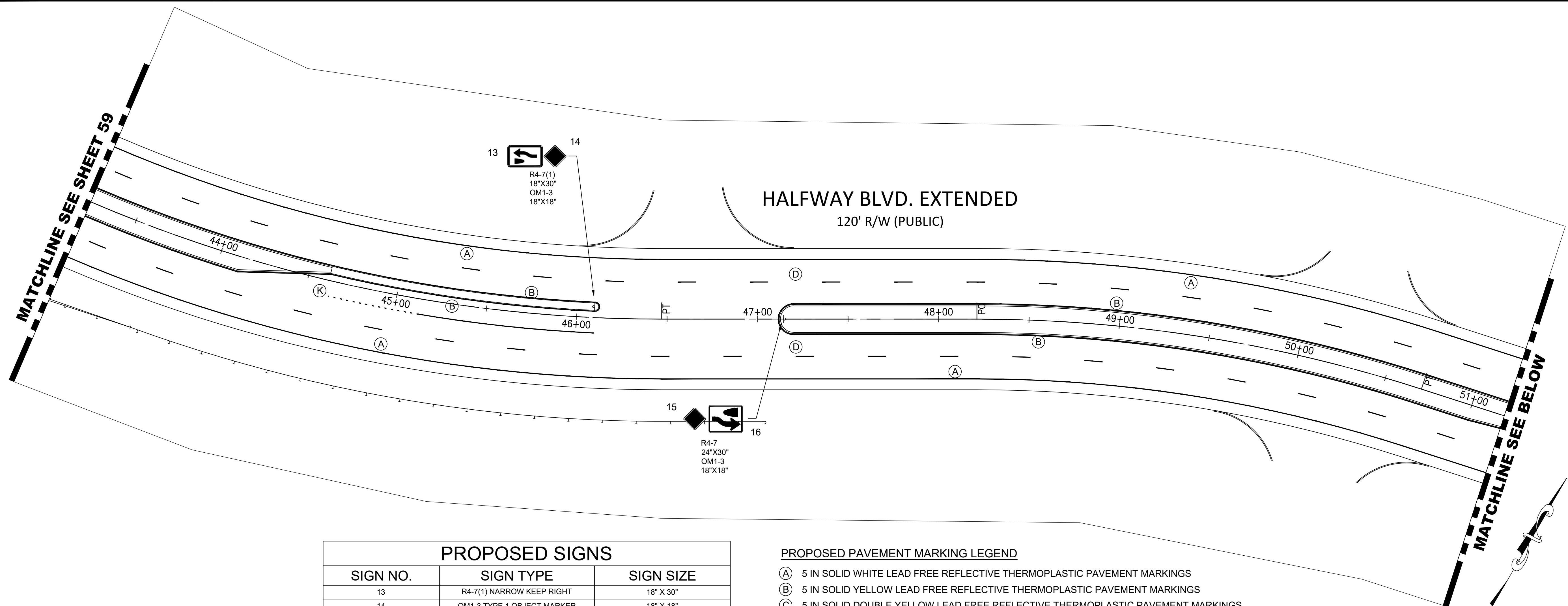
SCALE
 1" = 30'

SHEET NO.
 ..

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E

FILE PATH: C:\USERS\GABBOTT\WASHINGTON COUNTY COMMISSIONERS\ENGINEERING - CADD\10-273 HALFWAY BOULEVARD EXTENDED\CONSTRUCTION\14 - PMS\10-273 SN-01.DWG PLOT DATE: 4/4/2024 9:23 AM

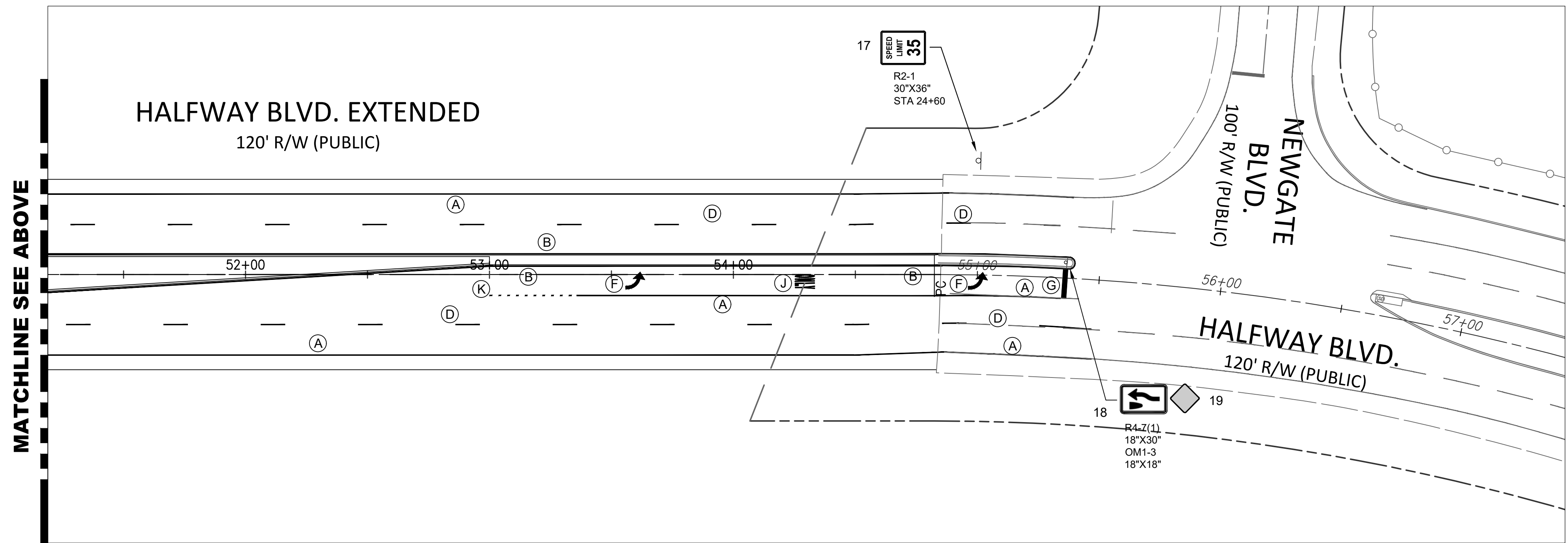


PROPOSED SIGNS		
SIGN NO.	SIGN TYPE	SIGN SIZE
13	R4-7(1) NARROW KEEP RIGHT	18" X 30"
14	OM1-3 TYPE 1 OBJECT MARKER	18" X 18"
15	OM1-3 TYPE 1 OBJECT MARKER	18" X 18"
16	RR4-7 KEEP RIGHT	24" X 30"
17	R2-1 SPEED LIMIT	30" X 36"
18	R4-7(1) NARROW KEEP RIGHT	18" X 30"
19	OM1-3 TYPE 1 OBJECT MARKER	18" X 18"

ALL SIGN SUPPORTS SHALL BE "BREAKAWAY TUBULAR STEEL SIGN SUPPORTS" MDOT STANDARD 802.04 SEE SHEET 57 FOR DETAIL

PROPOSED PAVEMENT MARKING LEGEND

- (A) 5 IN SOLID WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (B) 5 IN SOLID YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (C) 5 IN SOLID DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS
- (D) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (10 FT LINE WITH 30 FT GAP)
- (E) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (3 FT LINE WITH 9 FT GAP)
- (F) HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKING ARROWS
- (G) 24 IN HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKINGS
- (H) 12 IN SOLID HEAT APPLIED WHITE PERMANENT PERFORMED THERMOPLASTIC PAVEMENT MARKINGS
- (J) HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LETTERS
- (K) 5 IN SKIP WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS (3 FT LINE WITH 3 FT GAP)

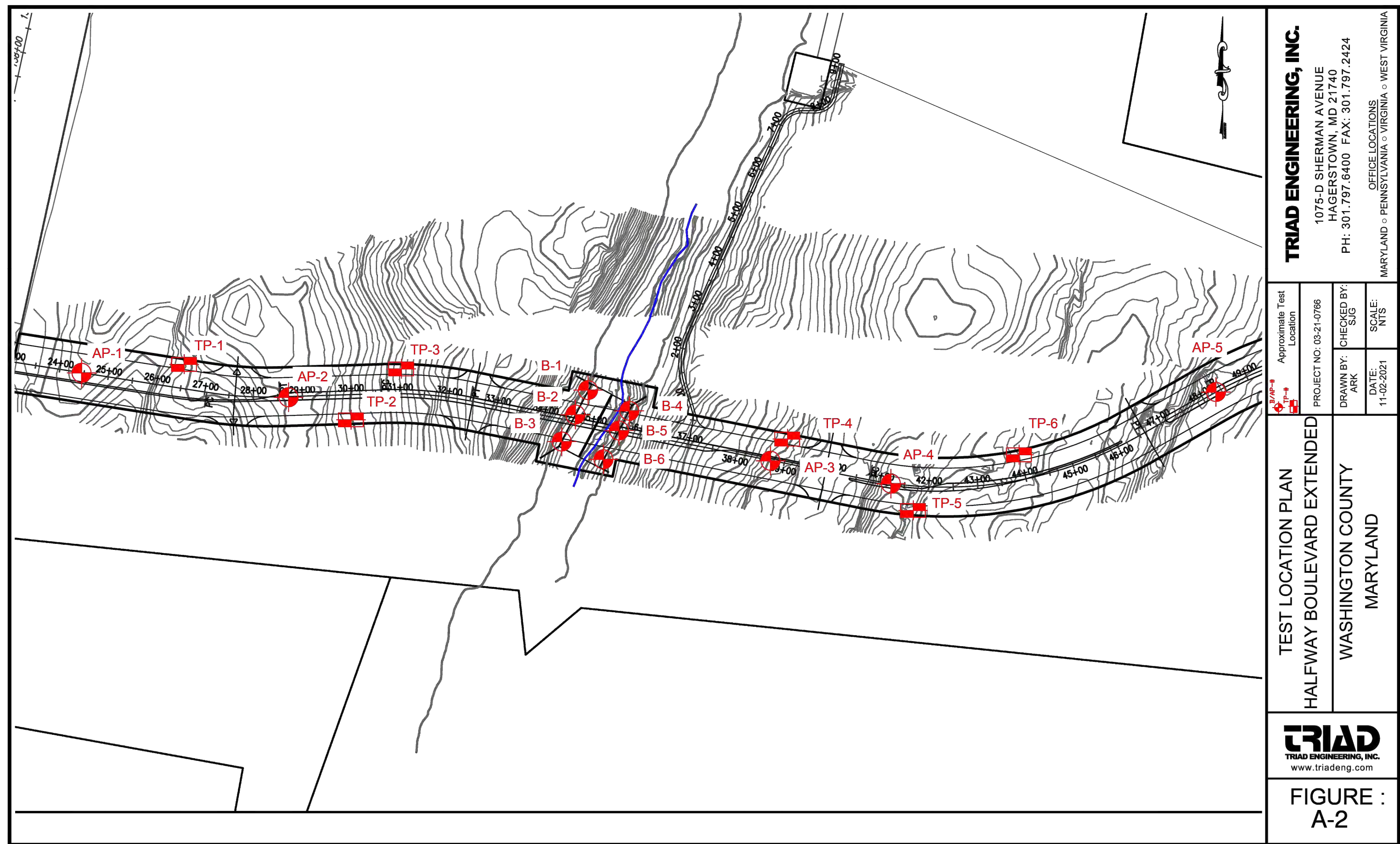


DESIGNED BY:	KDUUGA	NO.		REVISION DESCRIPTION	BY	DATE
DRAWN BY:	KDUUGA					
CHECKED BY:	PLM					
DATE:	APR 2024					

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING
 Washington County Administrative Annex, Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

**HALFWAY BOULEVARD
 EXTENDED
 PAVEMENT MARKING
 & SIGNAGE PLAN**

SCALE
 1" = 30'
 SHEET NO.
 60
 PROJECT NO.
 10-273
 SHA: WA067ZM1
 FAP: APL-3(804)E



TRIAD ENGINEERING, INC.
 1075-D SHERMAN AVENUE
 HAGERSTOWN, MARYLAND 21742
 PH: 301.797.6400 FAX: 301.797.2424
 OFFICE LOCATIONS
 MARYLAND • PENNSYLVANIA • VIRGINIA • WEST VIRGINIA

TEST LOCATION PLAN
 HALFWAY BOULEVARD EXTENDED
 WASHINGTON COUNTY
 MARYLAND

TRIAD
 TRIAD ENGINEERING, INC.
 www.triadeng.com

FIGURE : A-2

Approximate Test Location	PROJECT NO. 03-31-0786	DRAWN BY: ARK	CHECKED BY: S.J.G	SCALE: N.T.S
DATE: 11-02-2021				

DESIGNED BY: KDUJGA	NO.	REVISION DESCRIPTION	DATE
DRAWN BY: KDUJGA			
CHECKED BY: P.J.M			
DATE: NOV 2023			

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex, Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

HALFWAY BOULEVARD EXTENDED SOIL BORING LOGS

SCALE
 N.T.S

SHEET NO.
 61

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E

FIELD EXPLORATION

The subsurface conditions at the site were explored by drilling 6 test borings with Standard Penetration Testing (SPT) and performing NQ sized rock coring and excavating 11 test pits. The borings were drilled utilizing a drill rig equipped with hollow stem augers. The test pits were excavated utilizing a mid-sized excavator. The field exploration was supervised by a geotechnical engineer from our office.

SPT and sampling was performed in accordance with ASTM D 1586. The SPT's were performed to depths indicated on the attached boring logs using a split barrel sampler with an outside diameter of two (2) inches and an inside diameter of one and three-eighths (1-3/8) inches. The split barrel sampler was driven eighteen (18) inches with a hammer weighing approximately 140 pounds and falling thirty (30) inches. The number of blows required to drive the split barrel sampler at six (6) inch increments was recorded on the boring logs. The method utilized to classify the soils is defined in Figure 1. The method utilized to classify the rock is defined in Figure 2.

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KEY TO IDENTIFICATION OF SOIL AND WEATHERED ROCK SAMPLES

The material descriptions on the logs indicate the visual identification of the soil and rock recovered from the exploration and are based on the following criteria. Major soil components are designated by capital letters and minor components are described by terms indicating the percentage by weight of each component. Standard Penetration Testing (SPT) and sampling was conducted in accordance with ASTM D1586. N-values in blows per foot are used to describe the relative density of coarse-grained soils or the consistency of fine-grained soils.

The MAJOR components constitute more than 50% of the sample and have the following size designation.		The MINOR components have the following percentage designation.	
COMPONENT	PARTICLE SIZE	ADJECTIVE	PERCENTAGE
Boulders	12 inches plus	and	35 - 50
Cobbles	3 to 12 inches		
Gravel.....coarse	3/4 to 3 inches	some	20 - 35
-fine	#4 to 3/8 inches		
Sand.....coarse	#10 to #4	little	10 - 20
-medium	#40 to #10		
-fine	#200 to #40	trace	0 - 10
Silt or Clay	Minus #200 (fine-grained soil)		

Relative Density - Coarse-grained Soils		Consistency - Fine-grained Soils	
Term	N-Value	Term	N-Value
Very Loose	• 4	Very Soft	• 2
Loose	5 to 10	Soft	3 to 4
Medium Dense	11 to 30	Medium Stiff	5 to 8
Dense	31 to 50	Stiff	9 to 16
Very Dense	>50	Very Stiff	>16

Soil Plasticity	Plasticity Index (PI)	Rock Hardness	
None	Nonplastic	Term	N-Value
Low	1 to 5	Very Weathered	• 50/.5
Medium	5 to 20	Weathered	50/.4
High	20 to 40	Soft	50/.3
Very High	over 40	Medium hard	50/.2 to 50/.1

Moisture Description		Hard	Auger Refusal
Dry - Dusty, dry to touch			
Slightly Moist - damp			
Moist - no visible free water			
Wet - visible free water, saturated			

FIGURE NO. 1

TRIAD
 TRIAD ENGINEERING, INC.

TRIAD ENGINEERING, INC.

KEY TO IDENTIFICATION OF HARD ROCK SAMPLES

The material descriptions on the logs indicate the visual identification of the rock recovered from the NQ/NX coring operations and are based on the following criteria. Core recovery is the ratio of the length of core recovered in each run to the total length of the core run in percent. Rock Quality Designation (RQD) is the ratio of the sum of the lengths of rock core pieces 4 inches or longer divided by the length of the core run in percent.

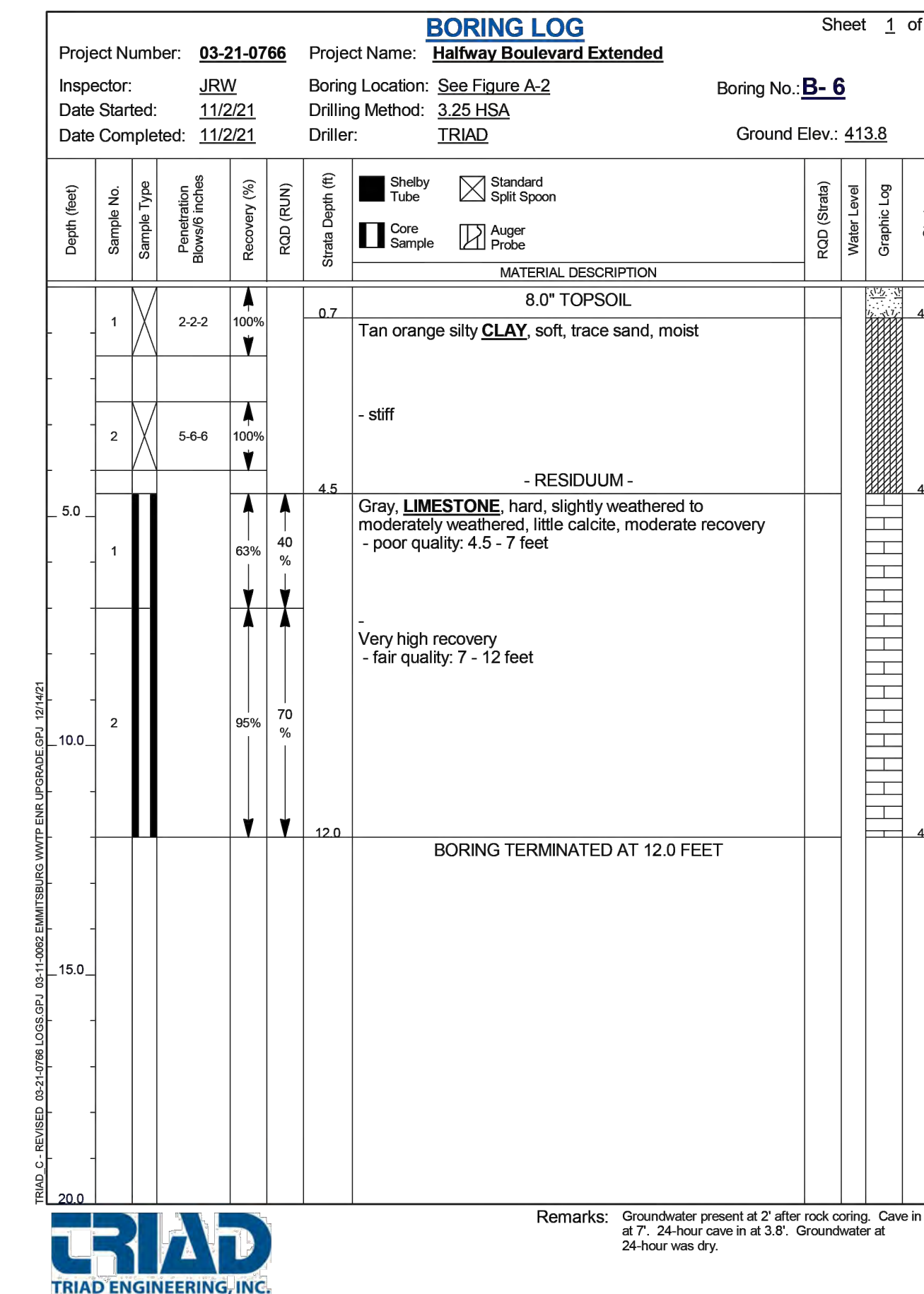
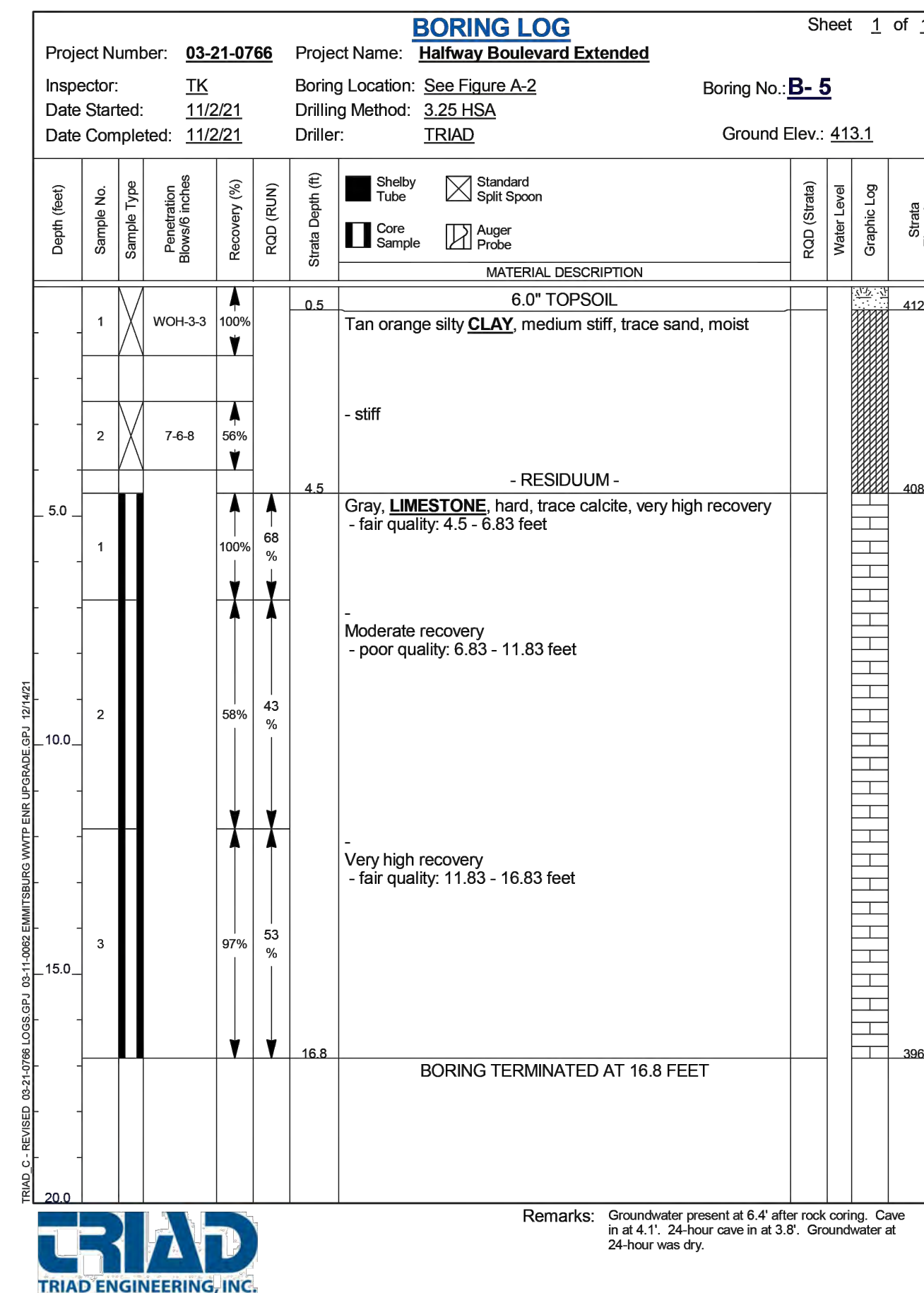
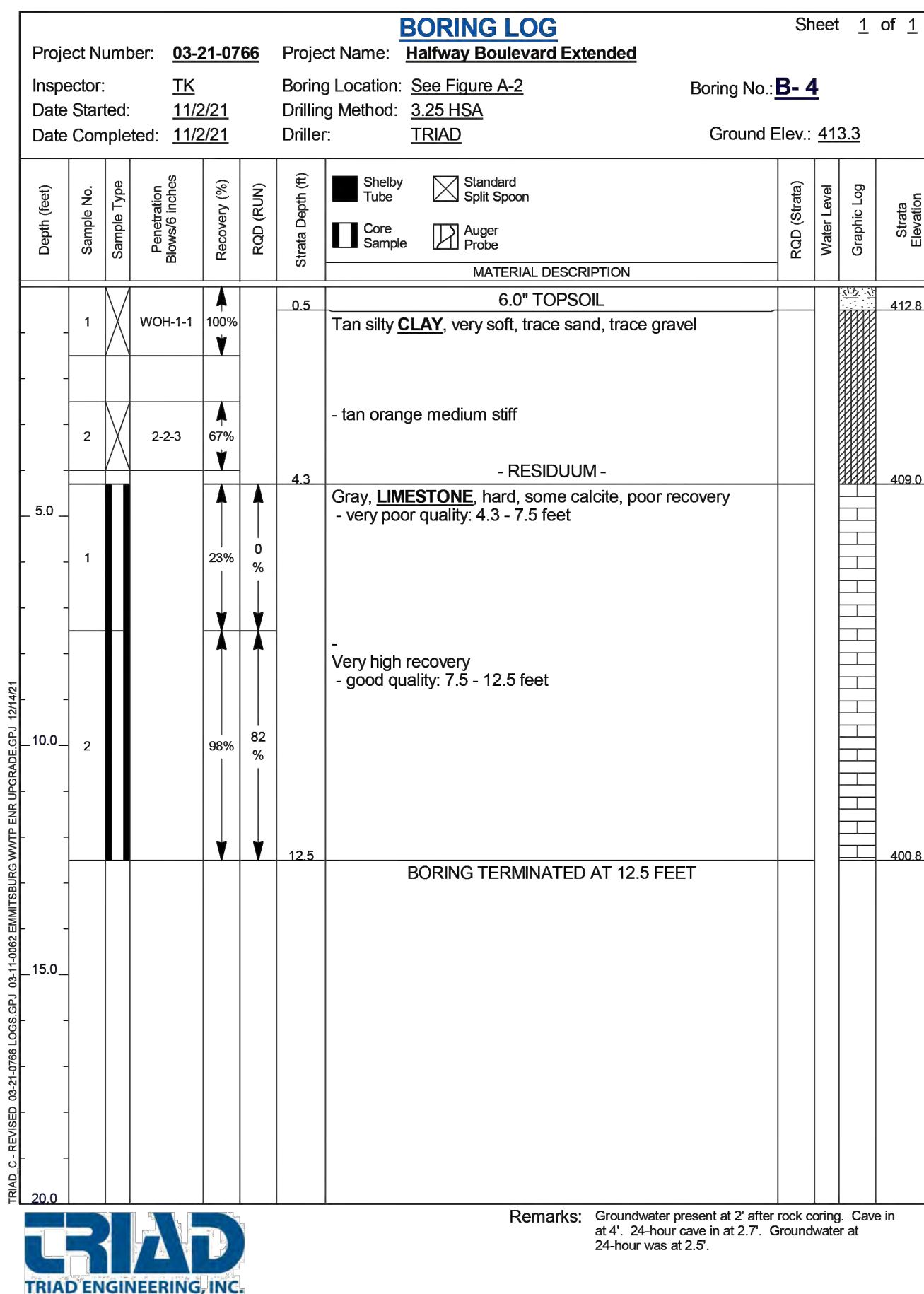
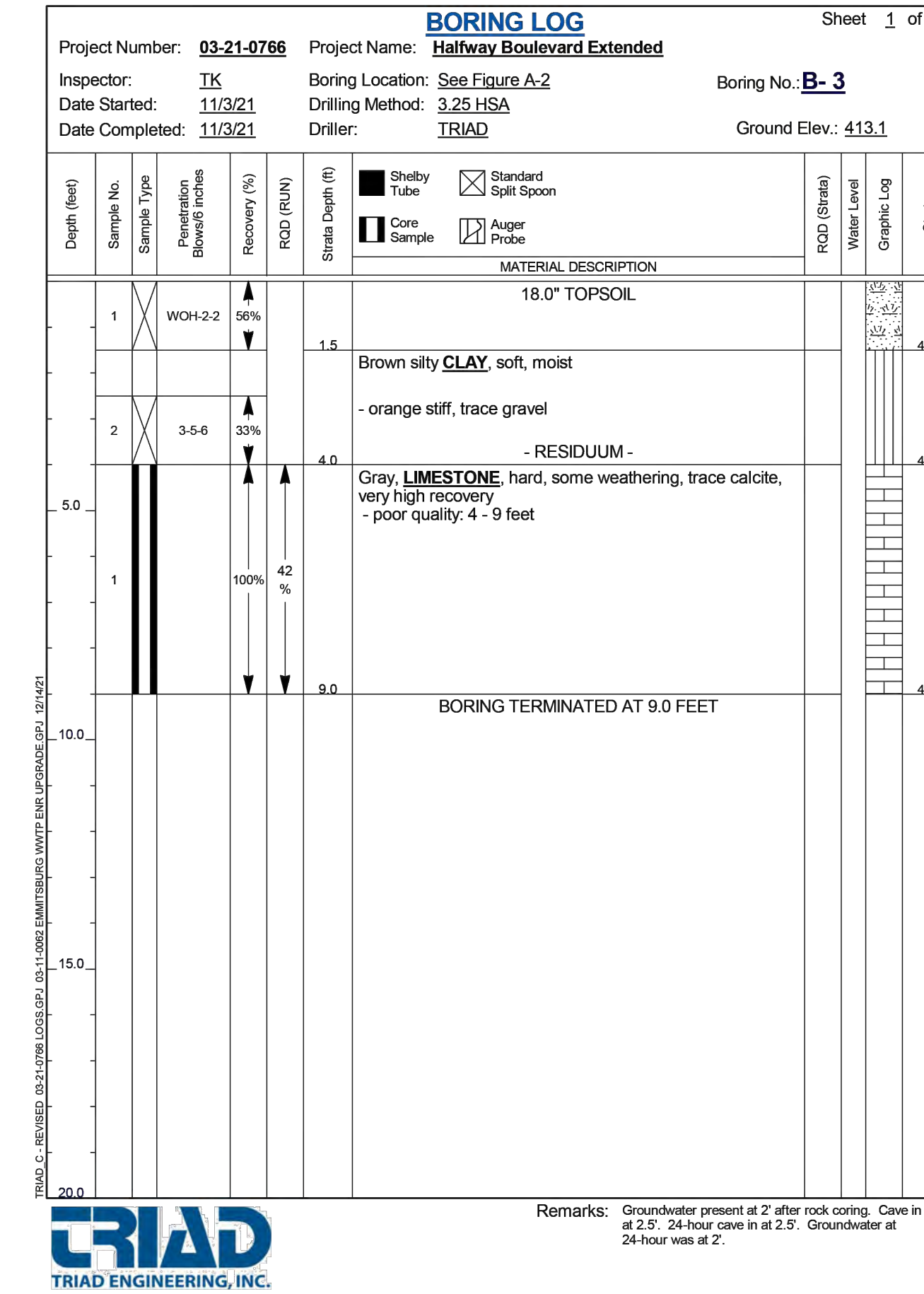
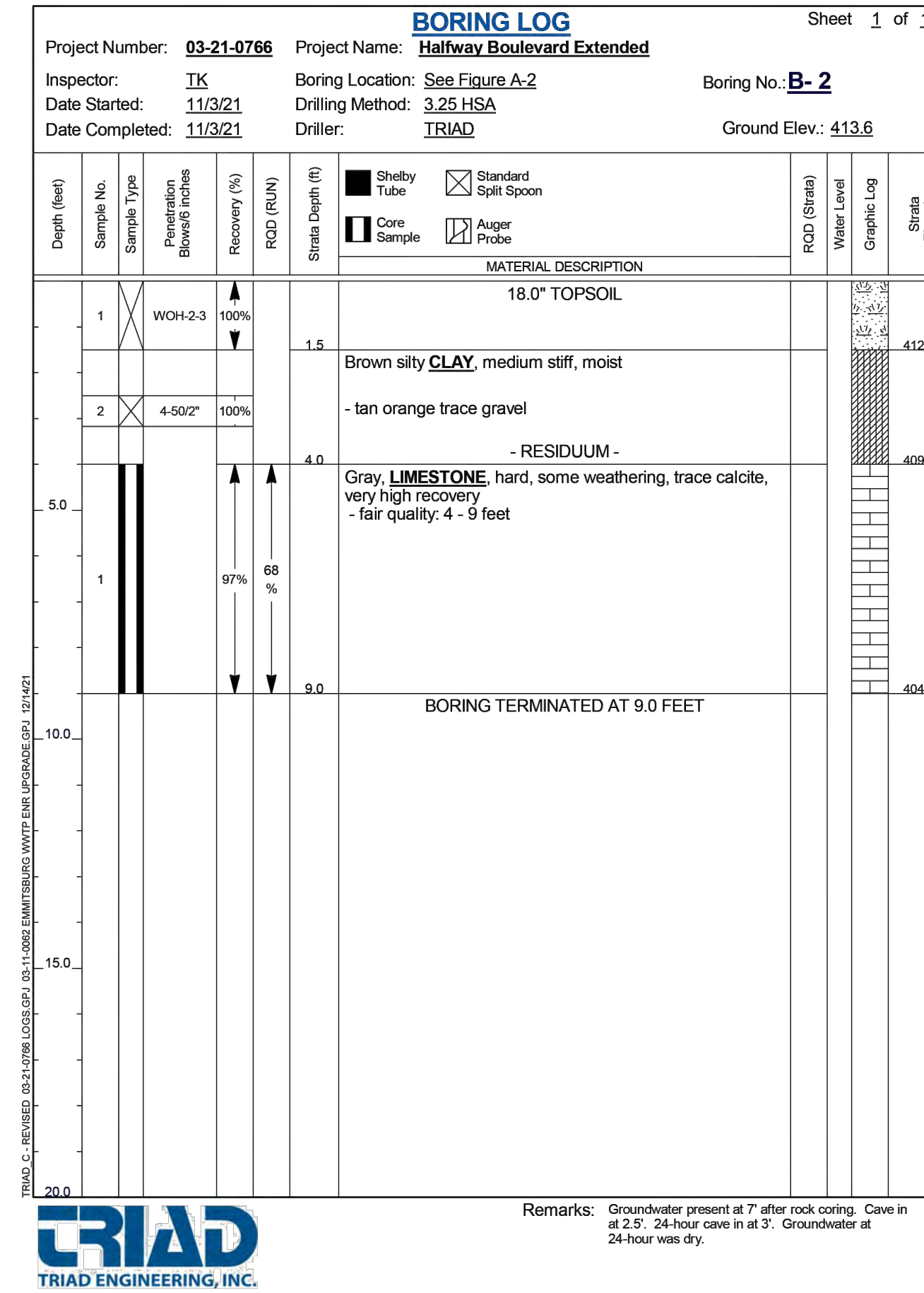
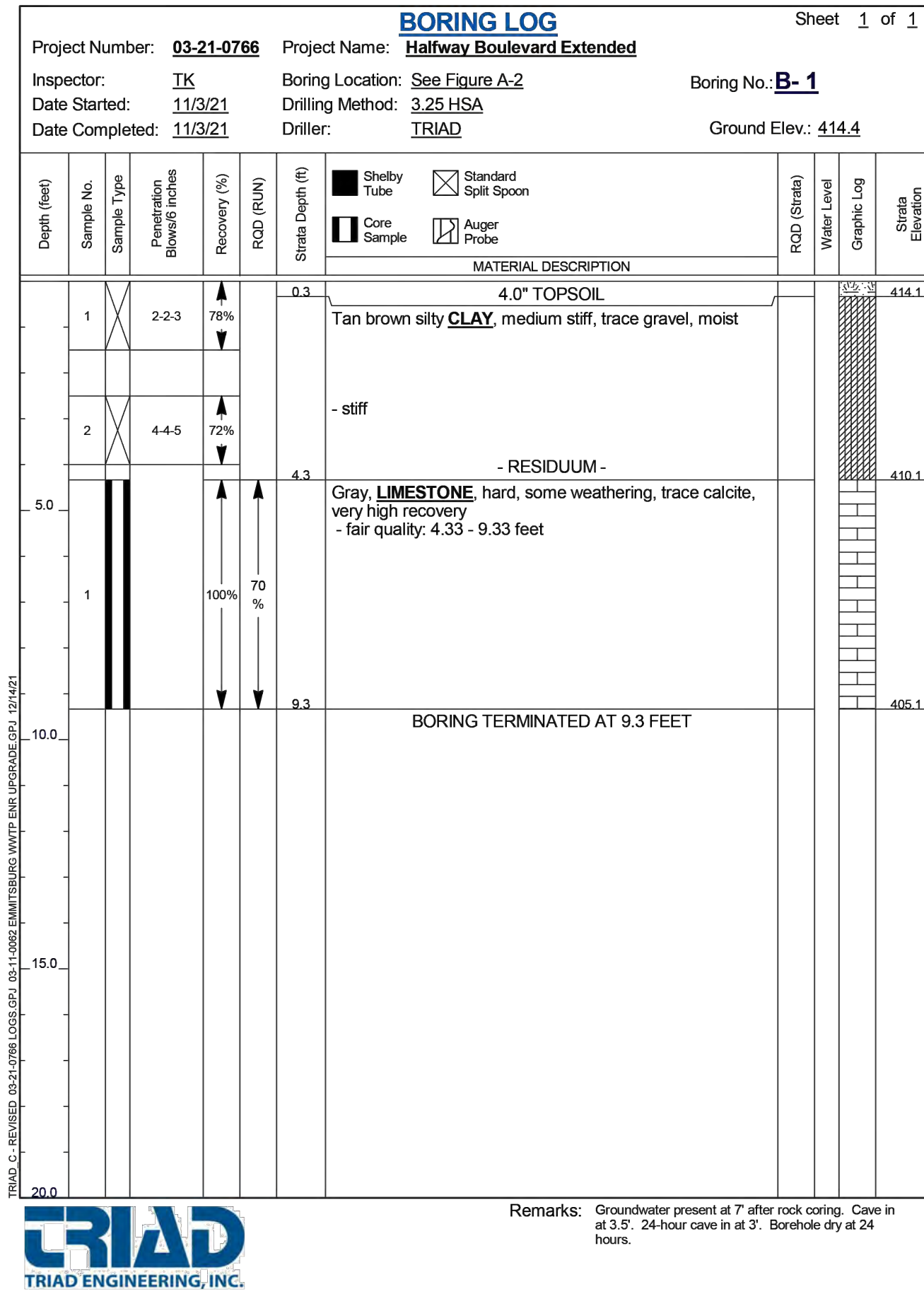
Relative Degree of Rock Hardness	
Term	Defining Characteristics
Very Soft	Can be indented by thumb or crushed under pressure of finger and/or thumb
Soft	Can be scratched by fingernail, peeled by pocket knife or crushed with pressed hammer
Medium Hard	Cannot be scraped or peeled with knife but can be scratched, breaks easily with hammer blow
Hard	Breaks under one or two strong hammer blows or scratched with knife with difficulty
Very Hard	Breaks under several strong hammer blows with very resistant sharp edges

Rock Adjectives	
Seam	Thin layer (12 inches or less)
Interbedded	Thin or very thin alternating seams of bedrock occurring in equal amounts
Some	Significant amount of accessory material (15 to 40 percent)
Few	Insignificant amount of accessory material (0 to 15 percent)

Rock Quality Designation (RQD)		Recovery	
Term	Percent	Term	Percent
Very Poor	• 25	Poor	• 25
Poor	26 to 50	Low	26 to 50
Fair	51 to 75	Moderate	51 to 75
Good	76 to 90	High	76 to 90
Excellent	>90	Very High	>90

Rock Structure			
Degree of Fracturing		Thickness of Bedding	
Term	Spacing	Term	Spacing
Intensely fractured or very broken	2 in.	Thinly bedded	<4 in.
Highly fractured or broken	2 in. to 8 in.	Medium bedded	4 in. to 1 ft.
Moderately fractured or blocky	8 in. to 2 ft.	Thickly bedded	1 ft. to 3 ft.
Slightly Fractured	2 ft. to 6 ft.	Massive	>3 ft.

Dip of Bed or Fracturing		FIGURE NO. 2	
Term	Dip	TRIAD TRIAD ENGINEERING, INC.	
Flat	0° to 20°		
Dipping	20° to 45°		
Steeply Dipping	45° to 90°		



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DRAWN BY:	KDUUGA
CHECKED BY:	PJAM
DATE:	NOV 2023

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

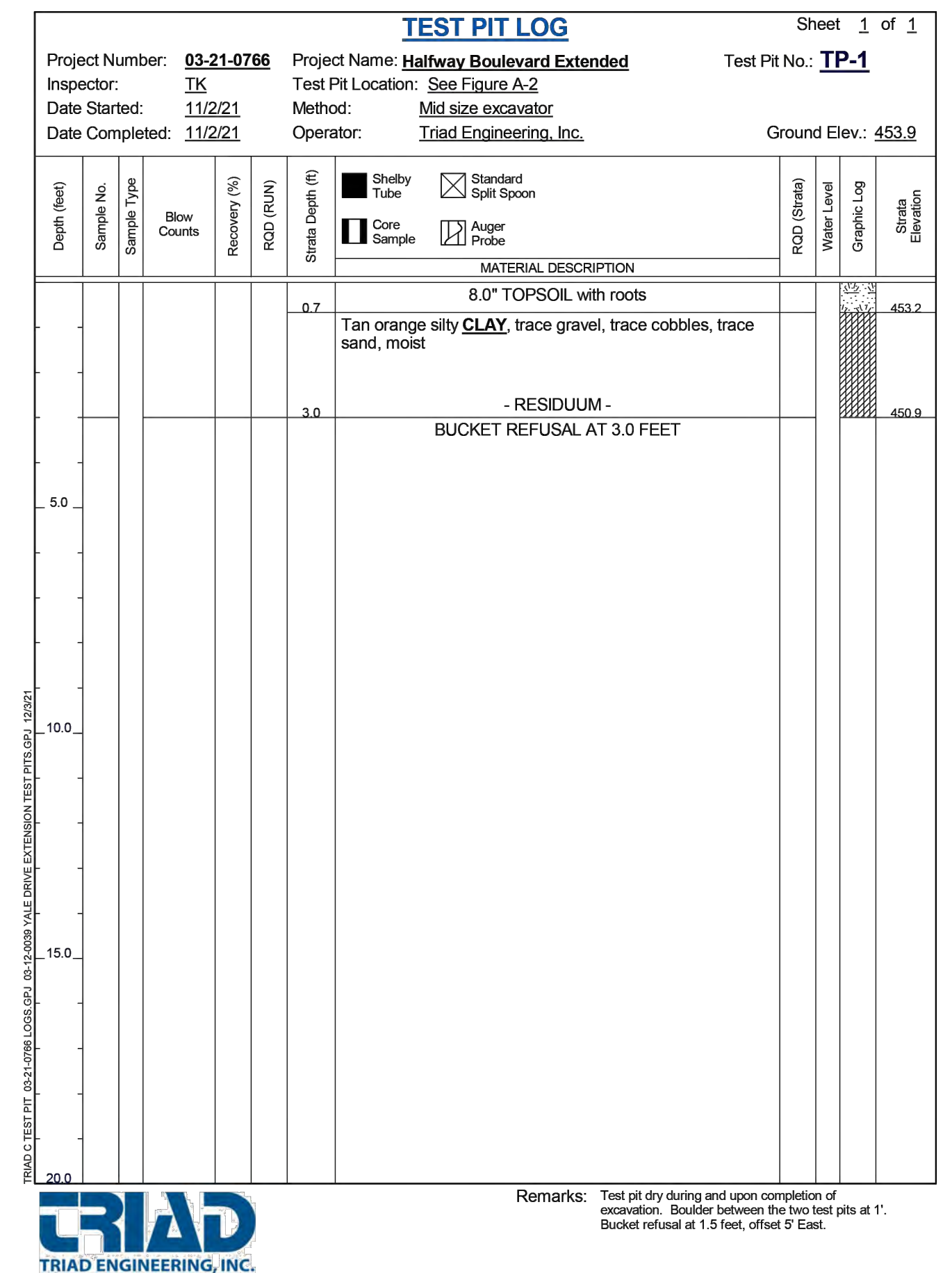
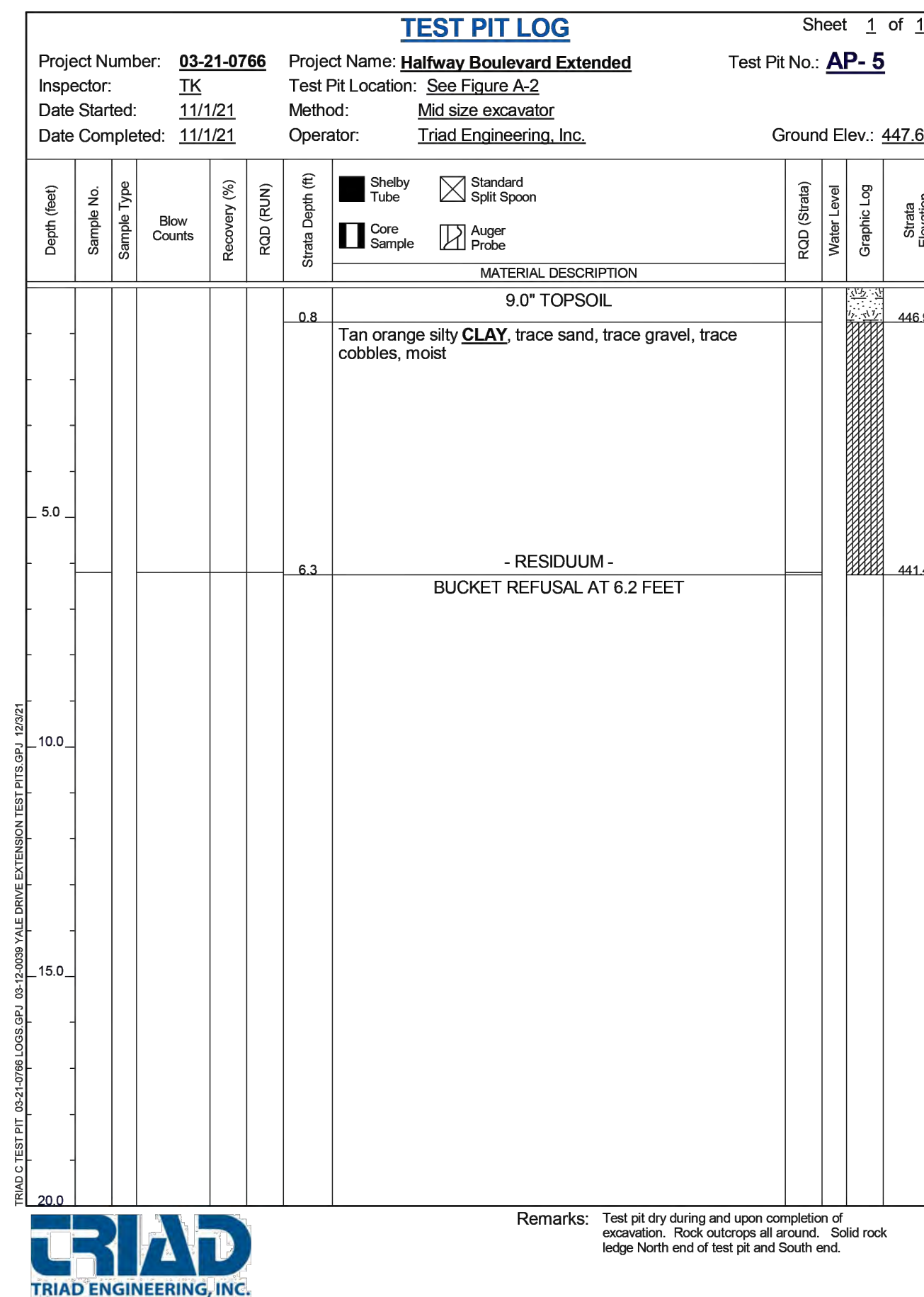
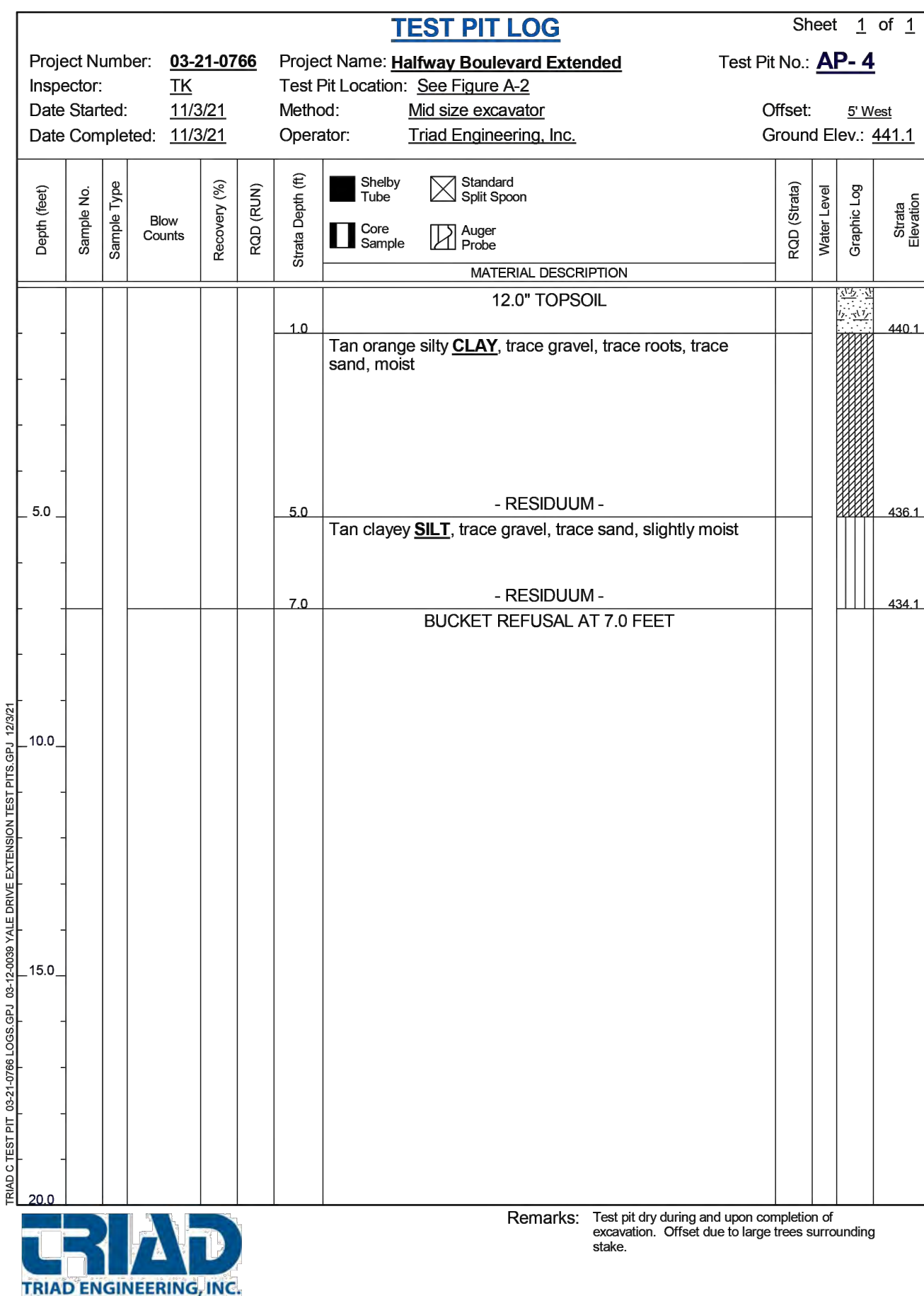
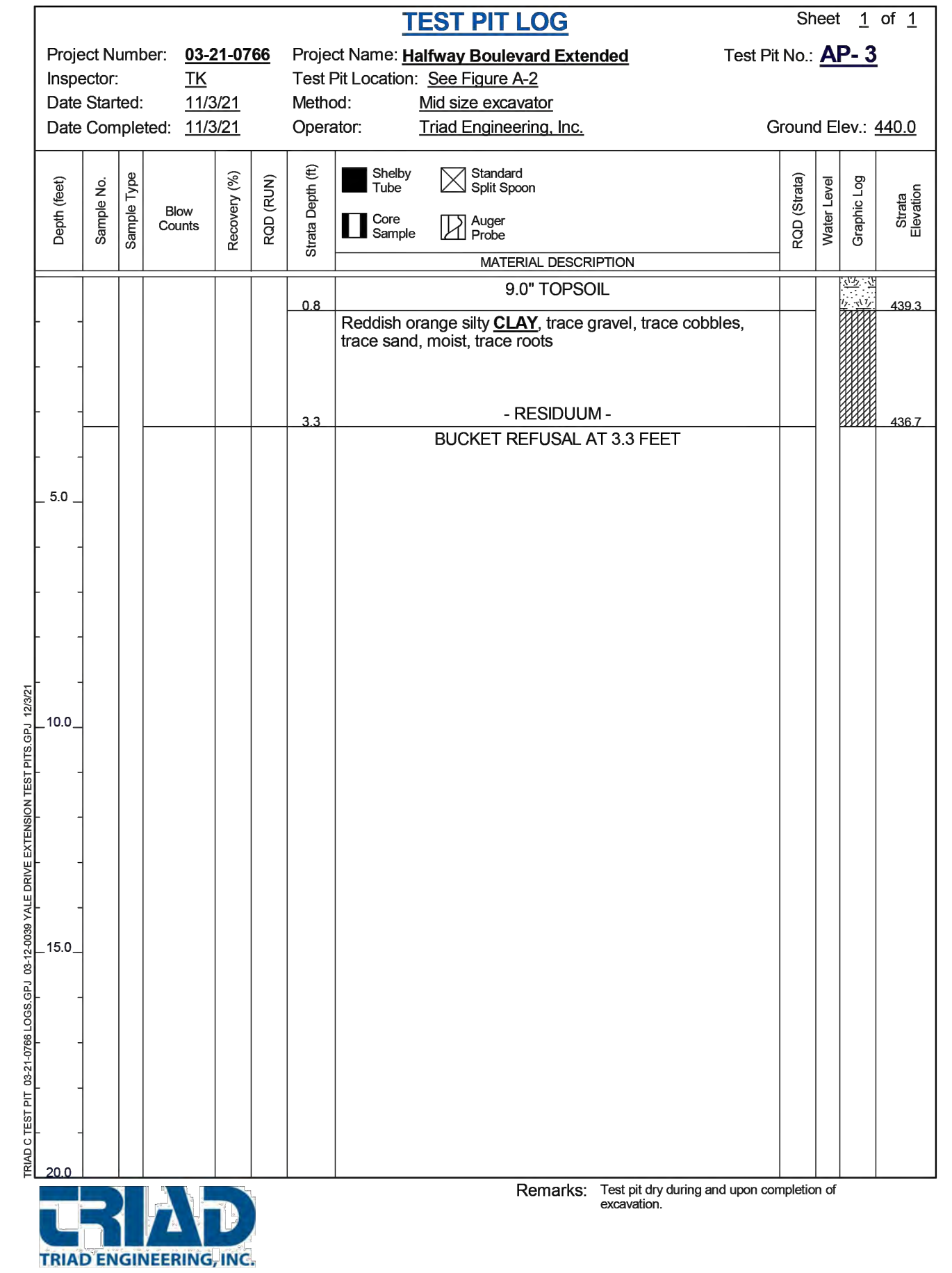
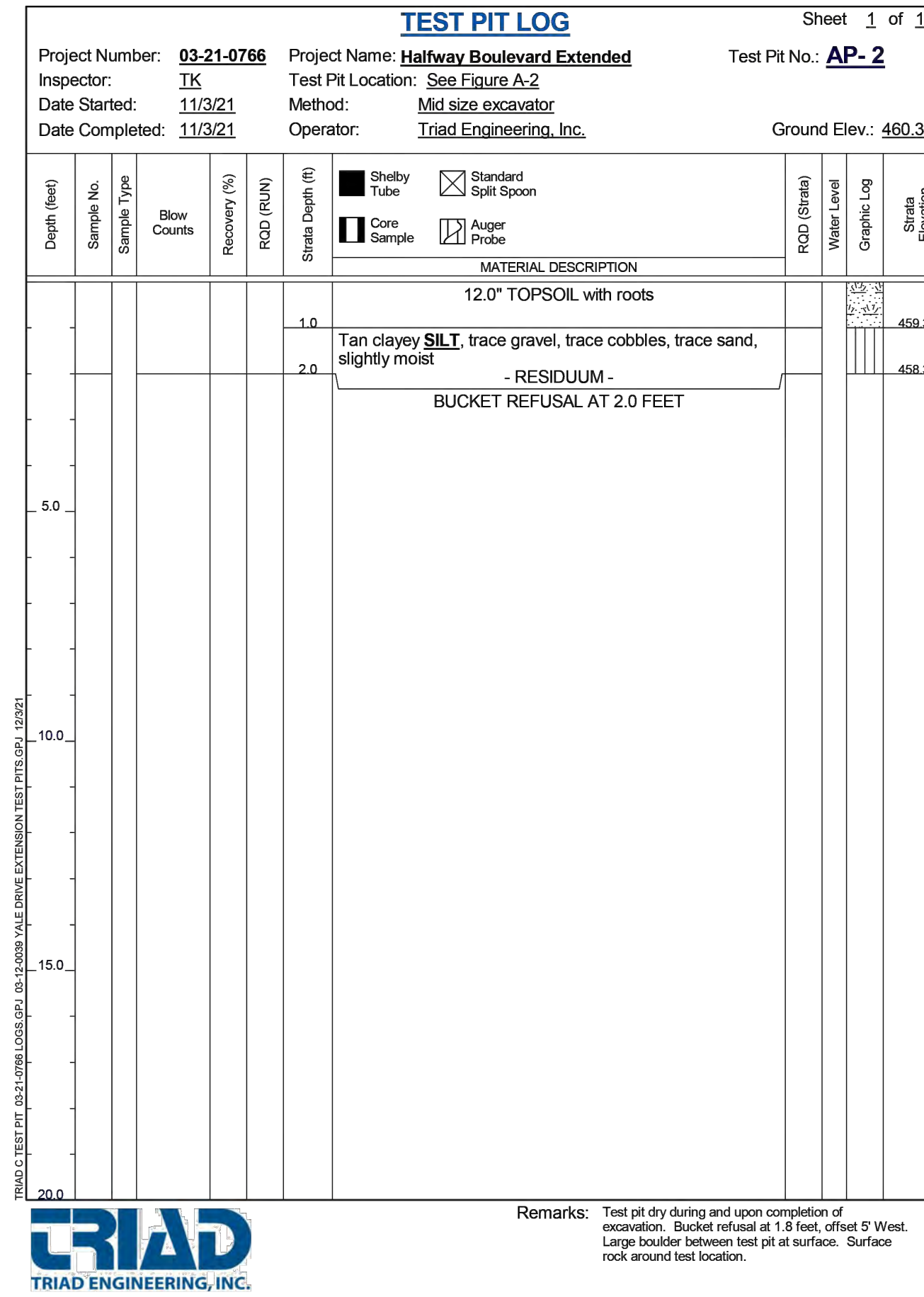
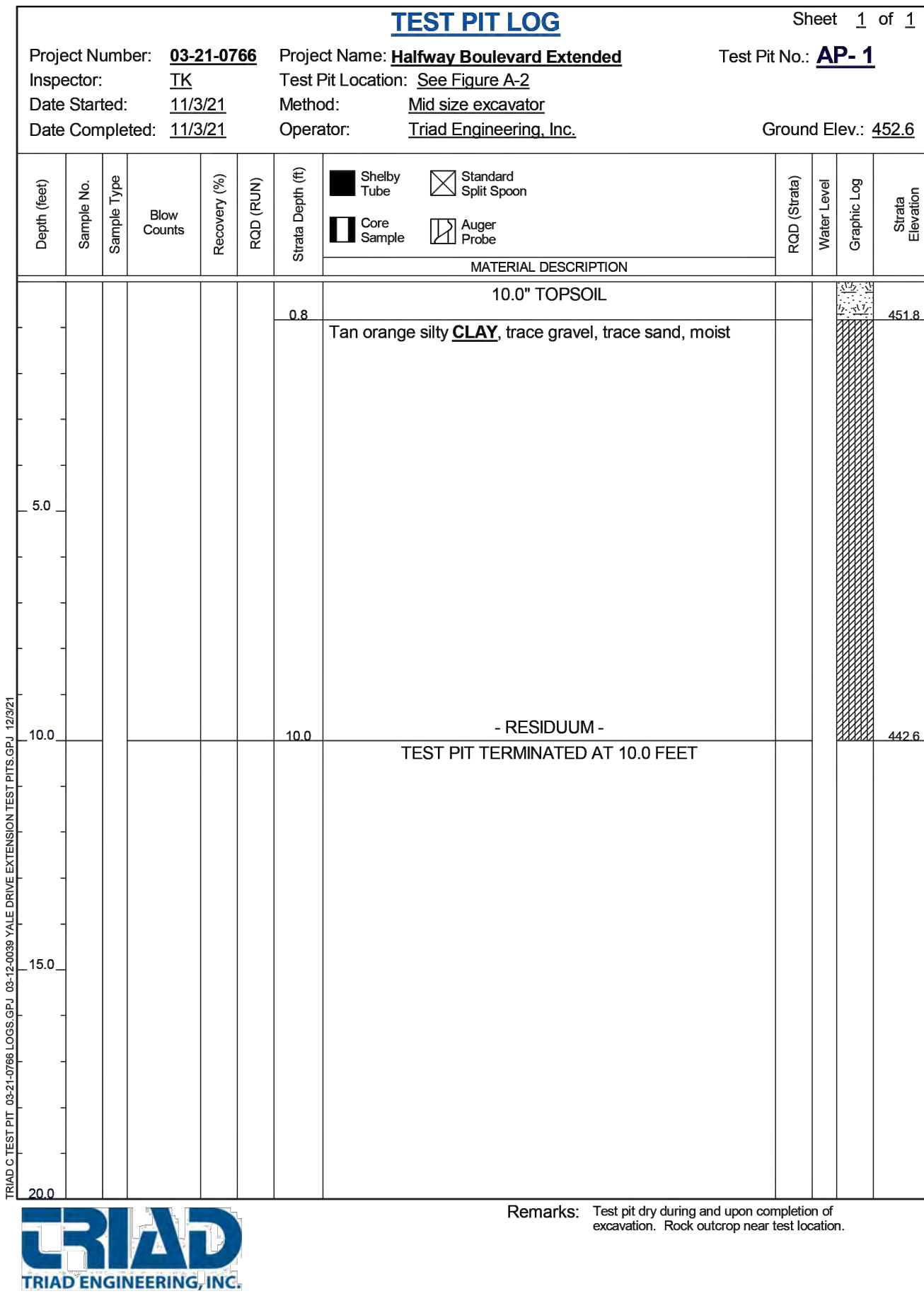
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SCALE
 N.T.S.

SHEET NO.
 62

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E



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CHECKED BY:	PJM
DATE:	NOV 2023

WASHINGTON COUNTY, MARYLAND
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HALFWAY BOULEVARD
 EXTENDED

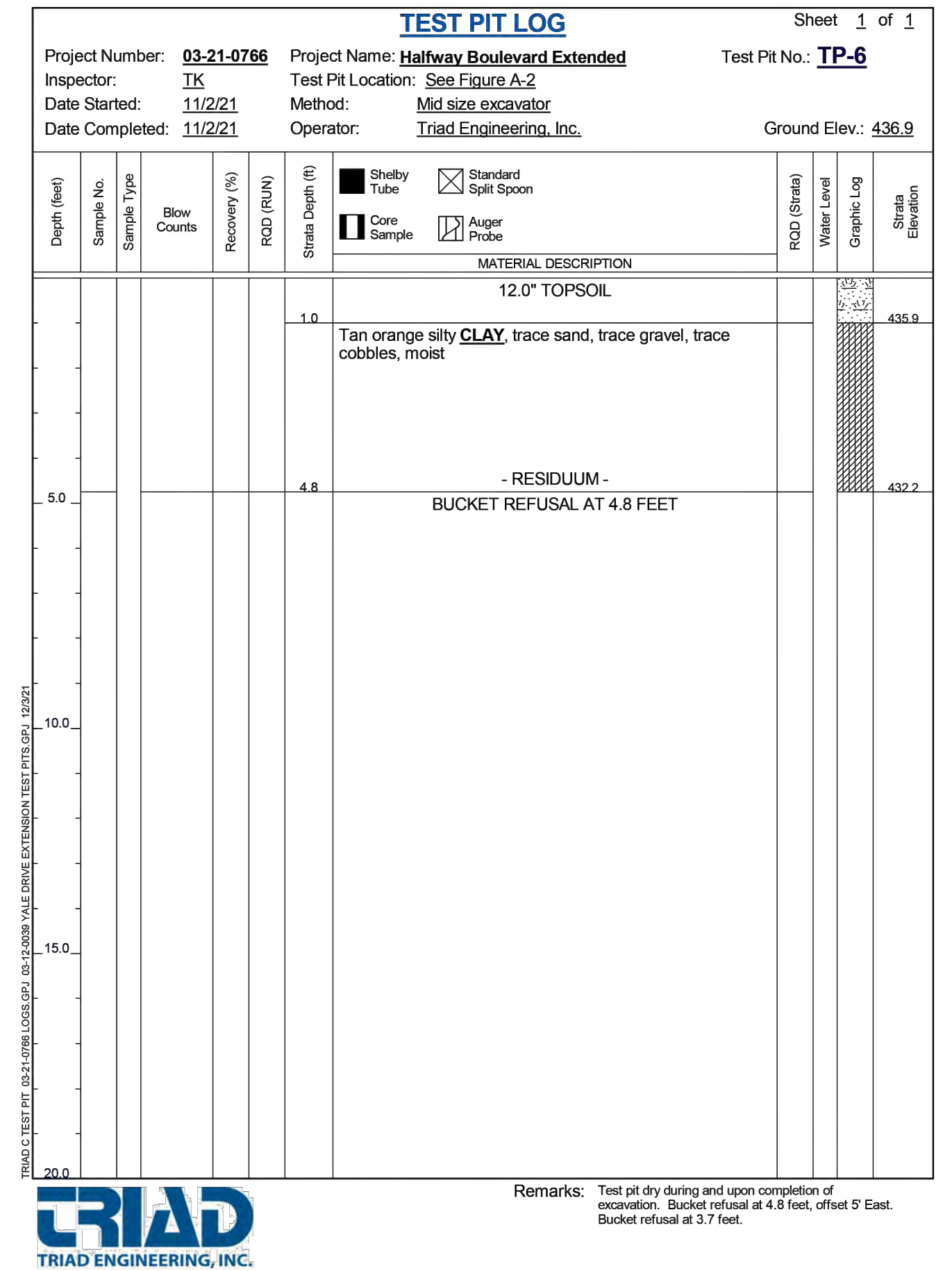
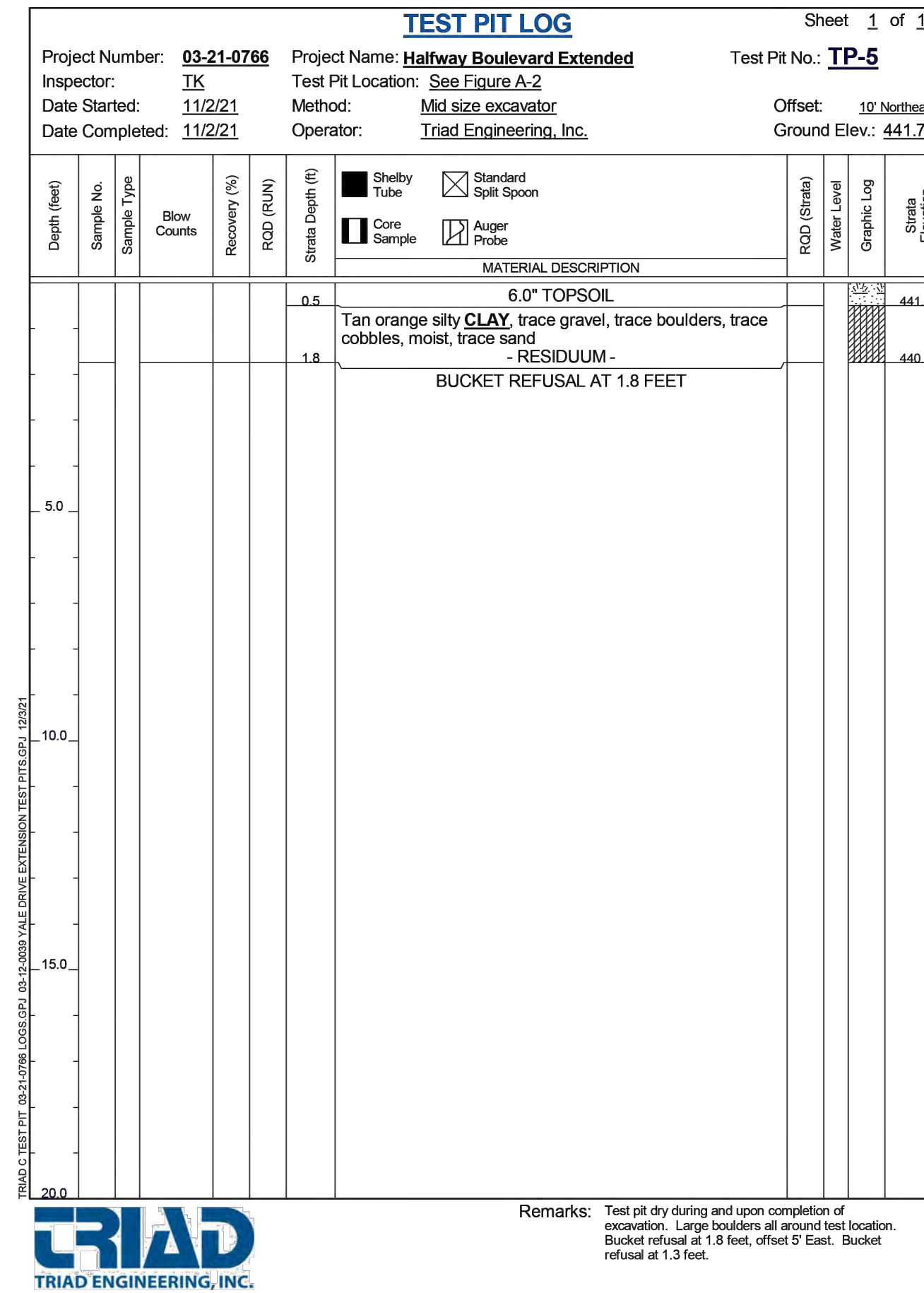
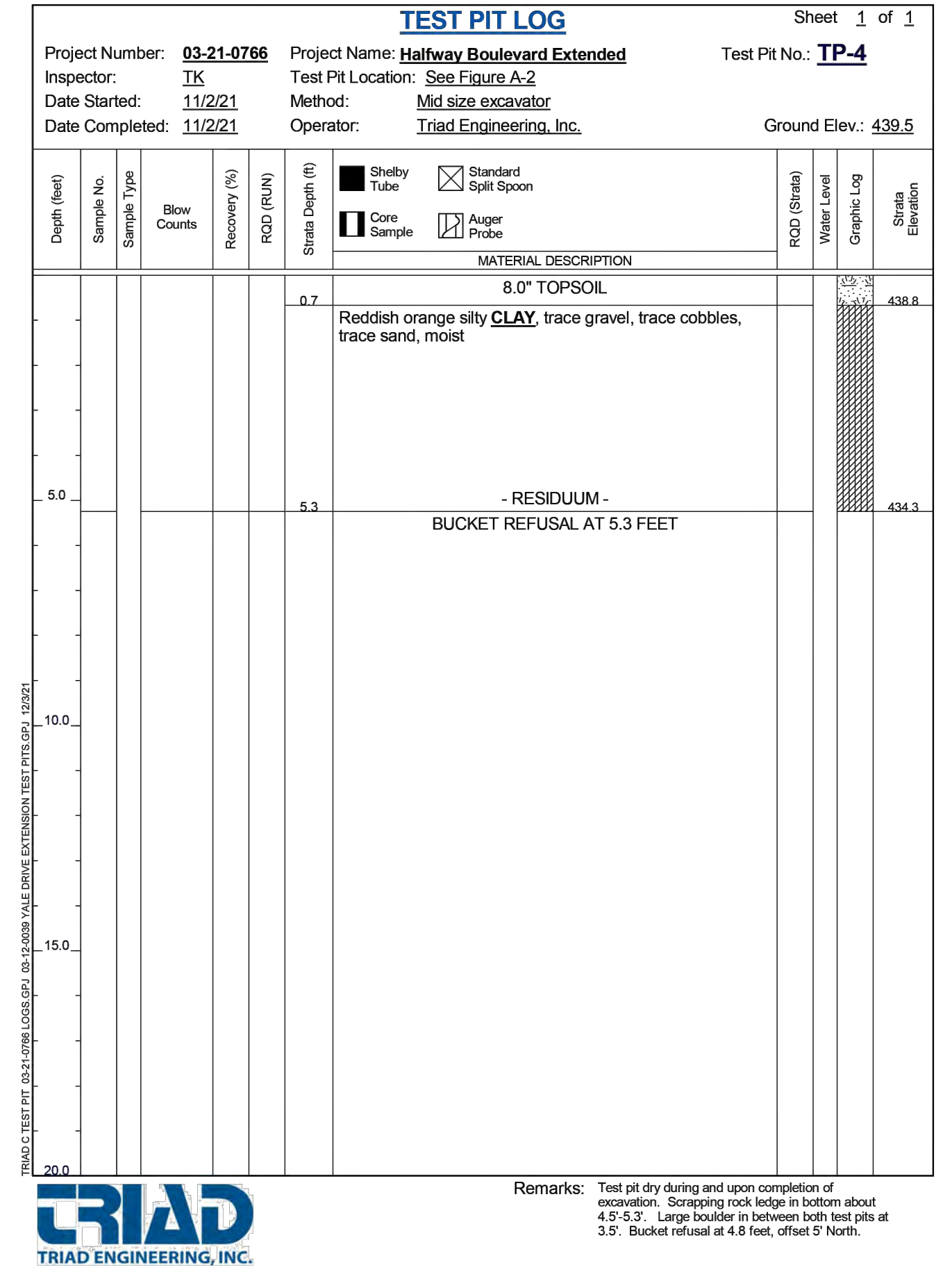
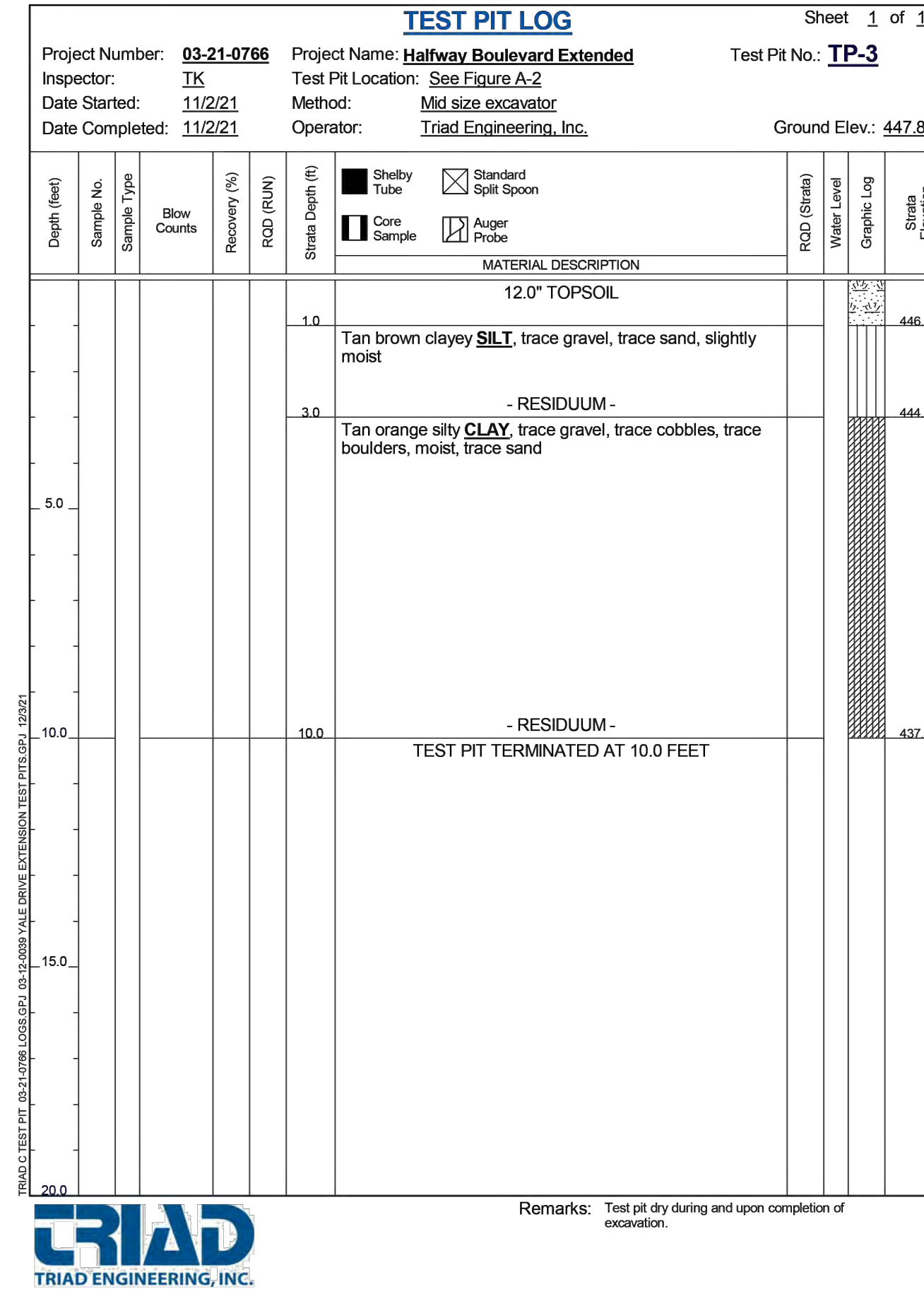
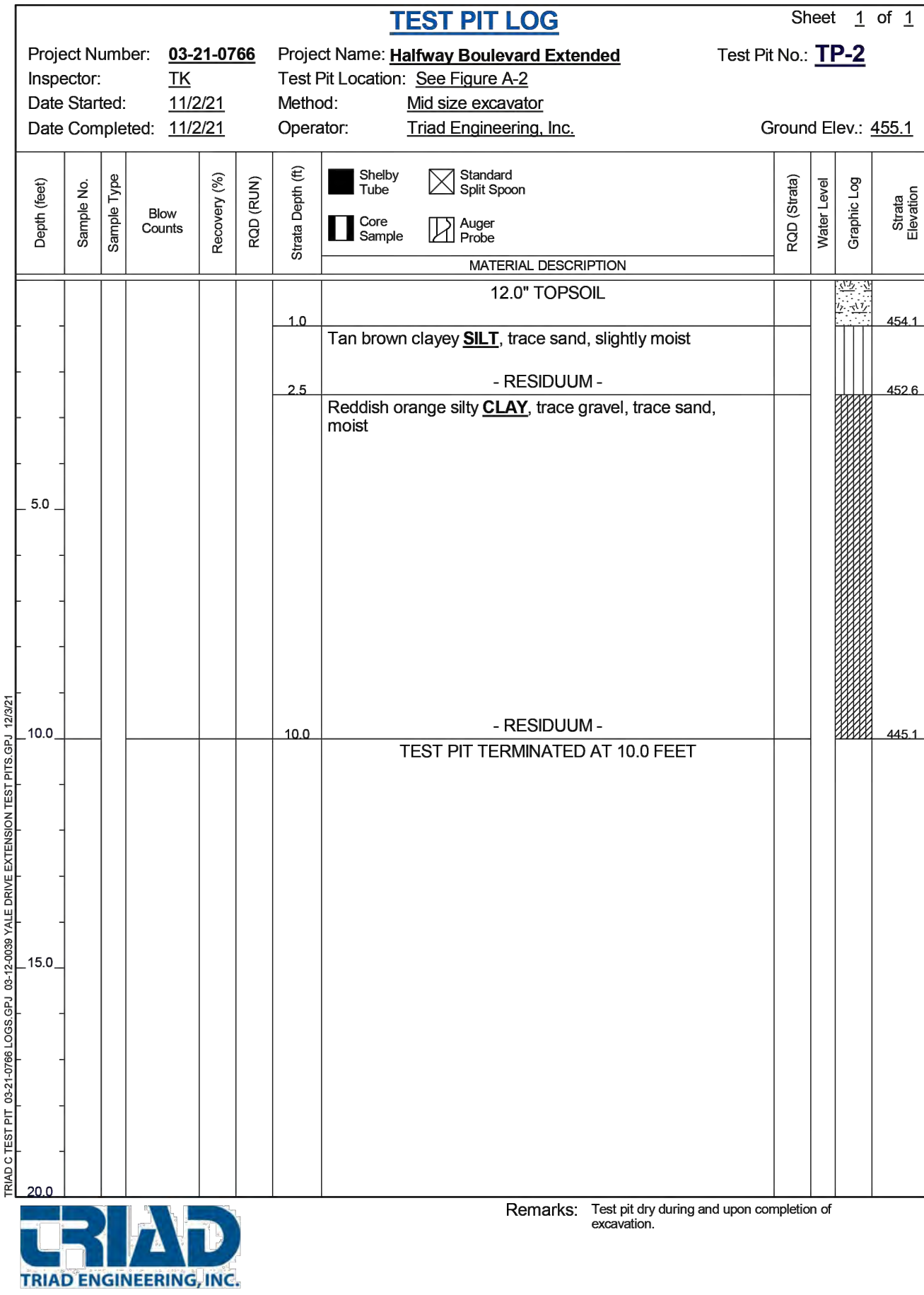
SOIL BORING LOGS

SCALE
 N.T.S

SHEET NO.
 63

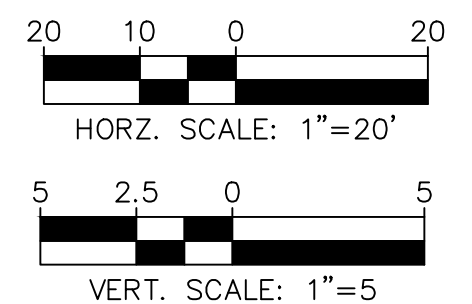
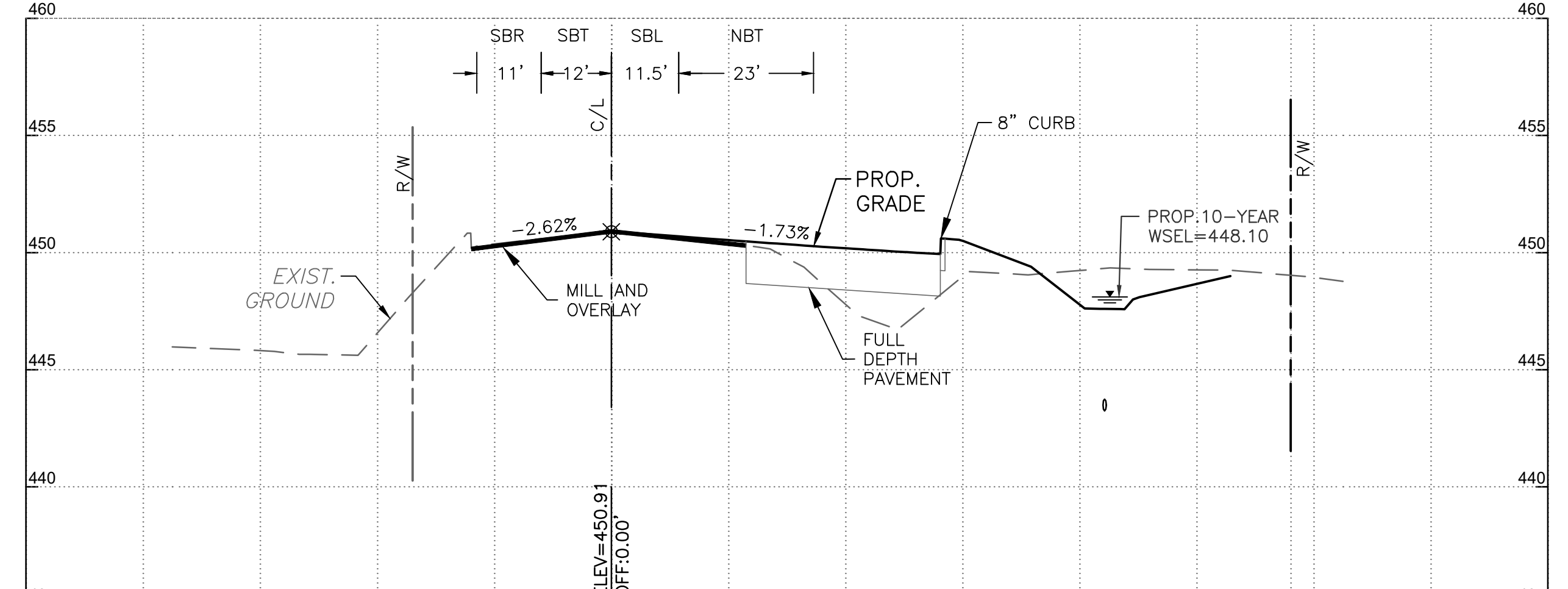
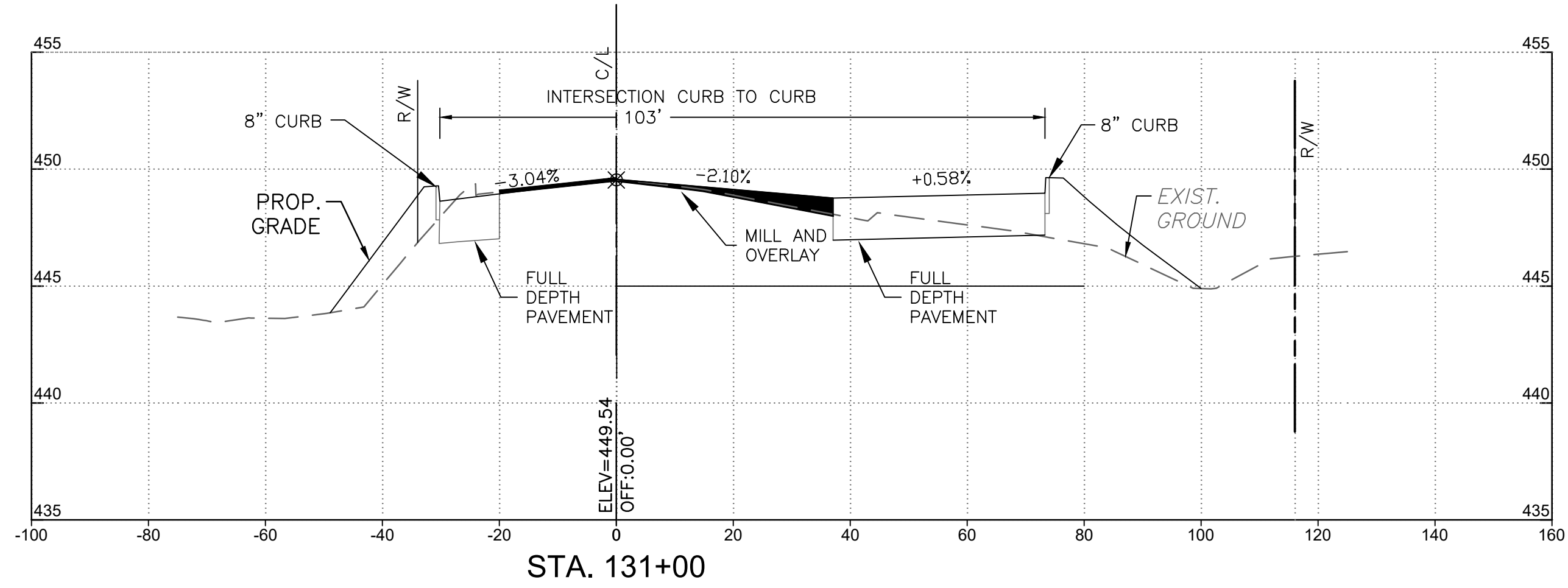
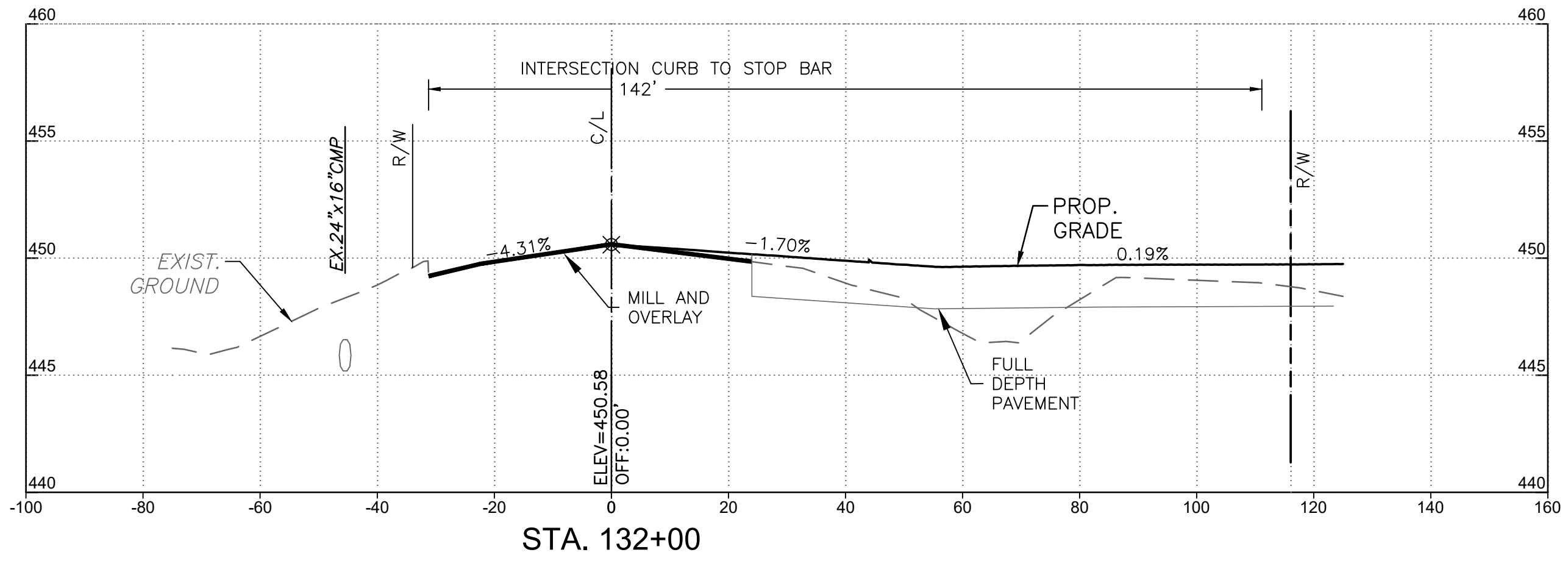
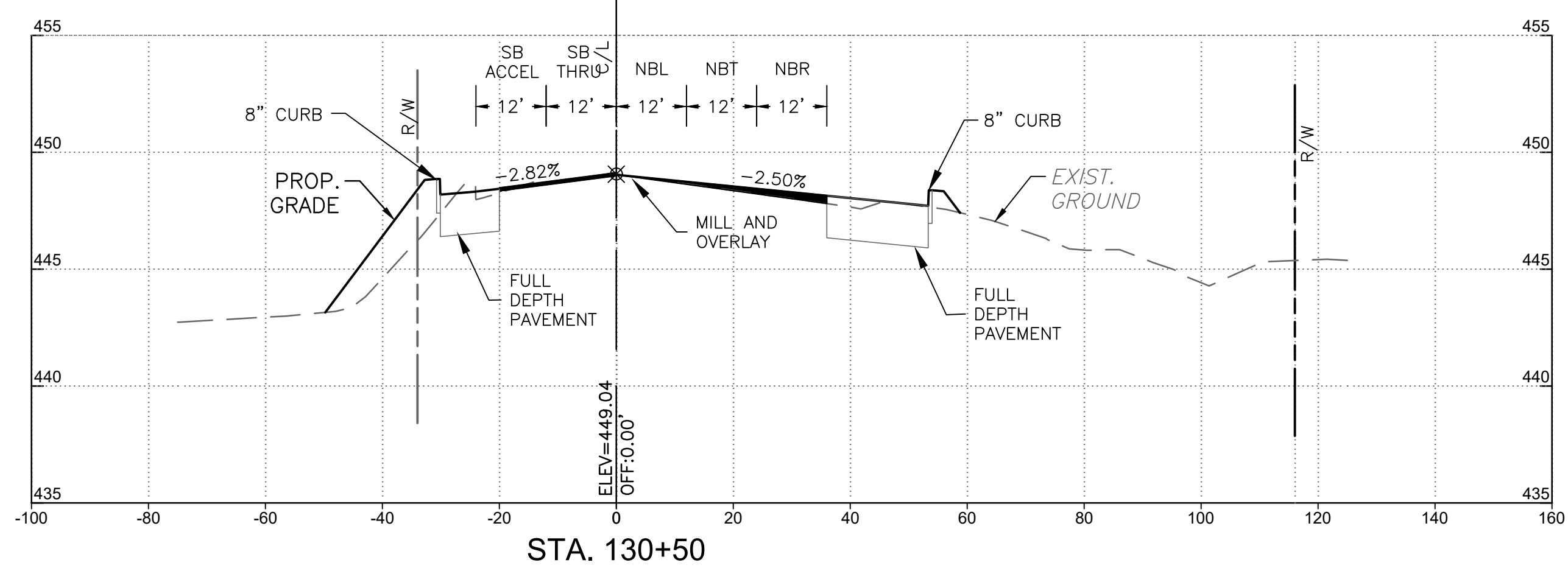
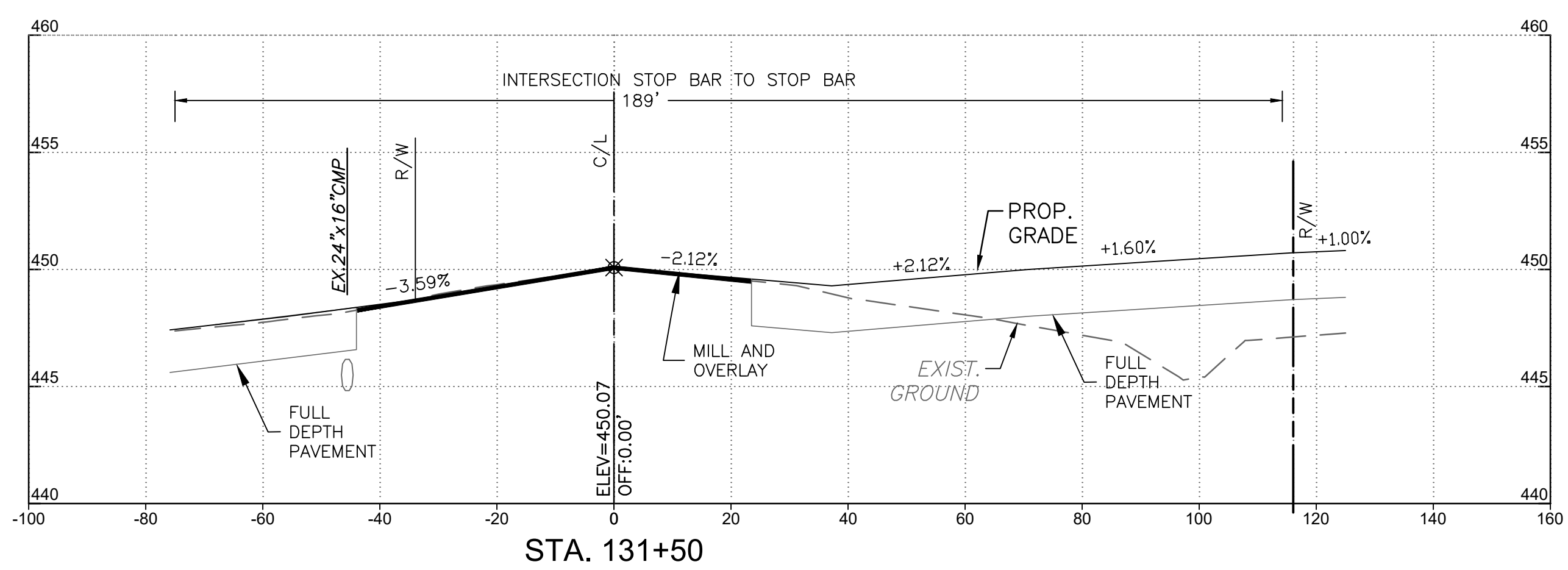
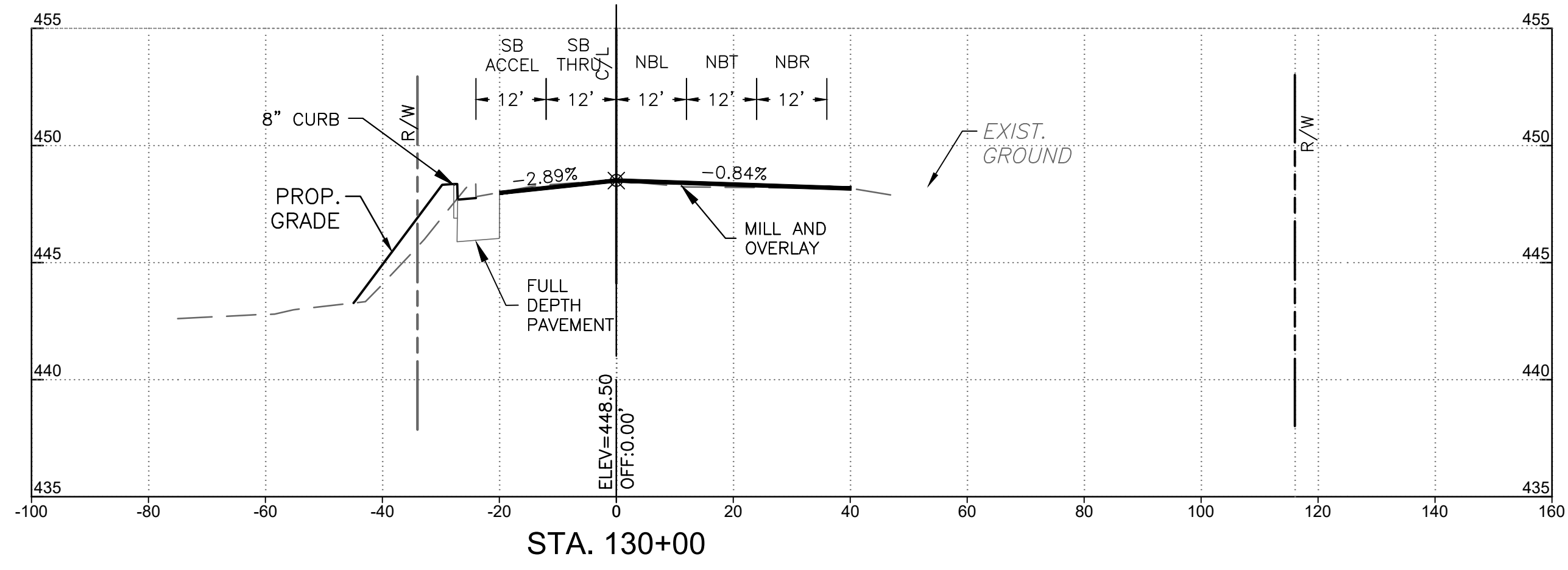
PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E



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HALFWAY BOULEVARD EXTENDED				SOIL BORING LOGS			
SCALE N.T.S							
SHEET NO. 64							
PROJECT NO. 10-273							
SHA: WA067ZM1							
FAP: APL-3(804)E							

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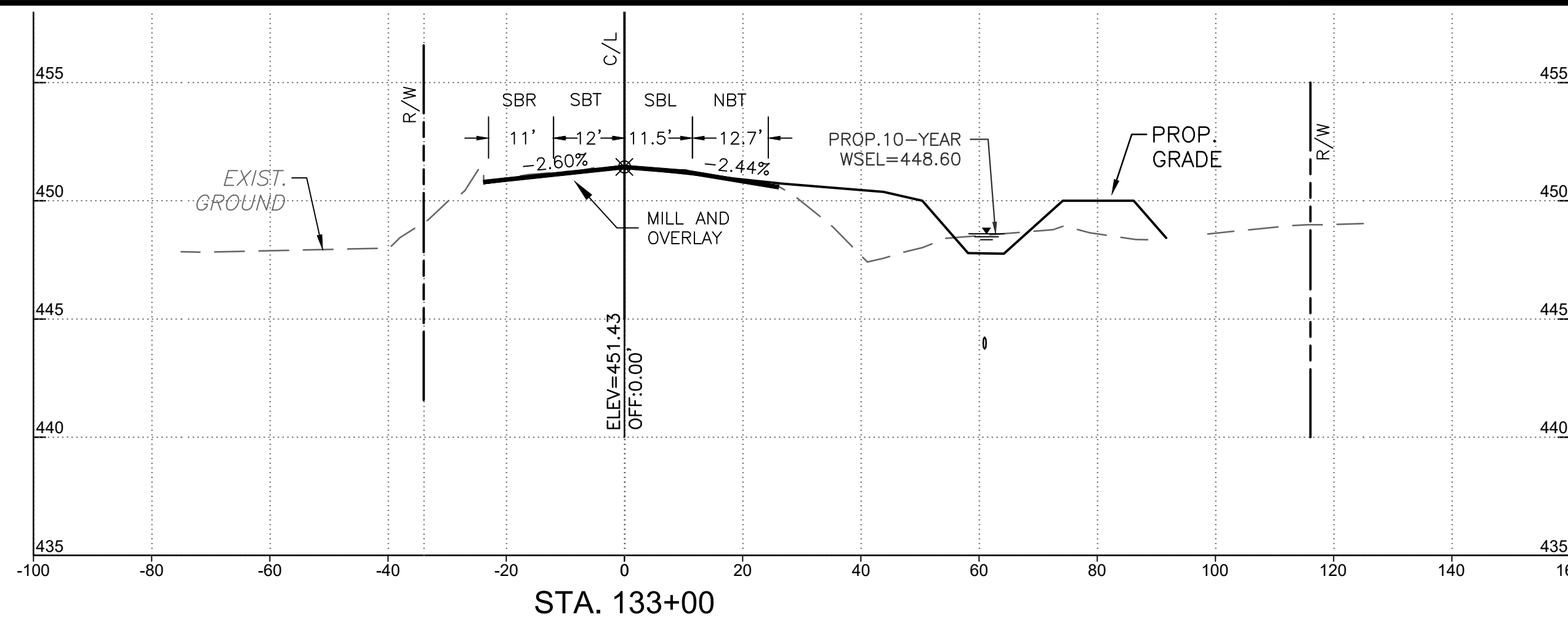
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EXTENDED
MD 63 CROSS SECTIONS
STA. 131+00 TO 132+50**

SCALE
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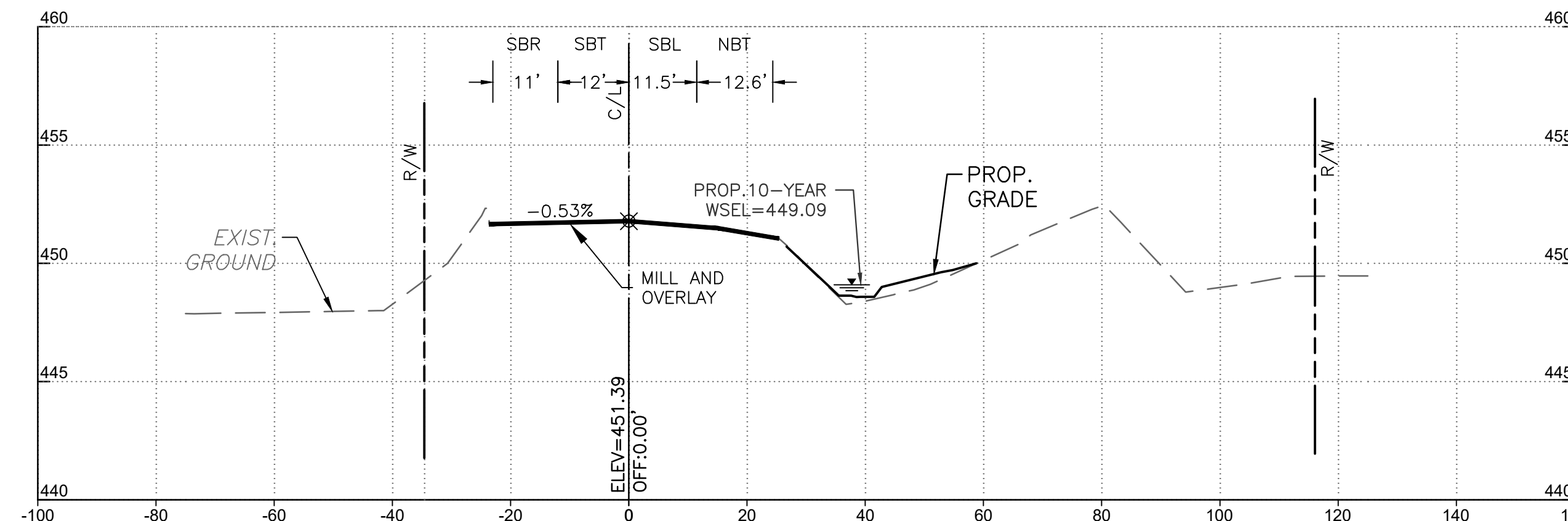
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PROJECT NO.
10-273

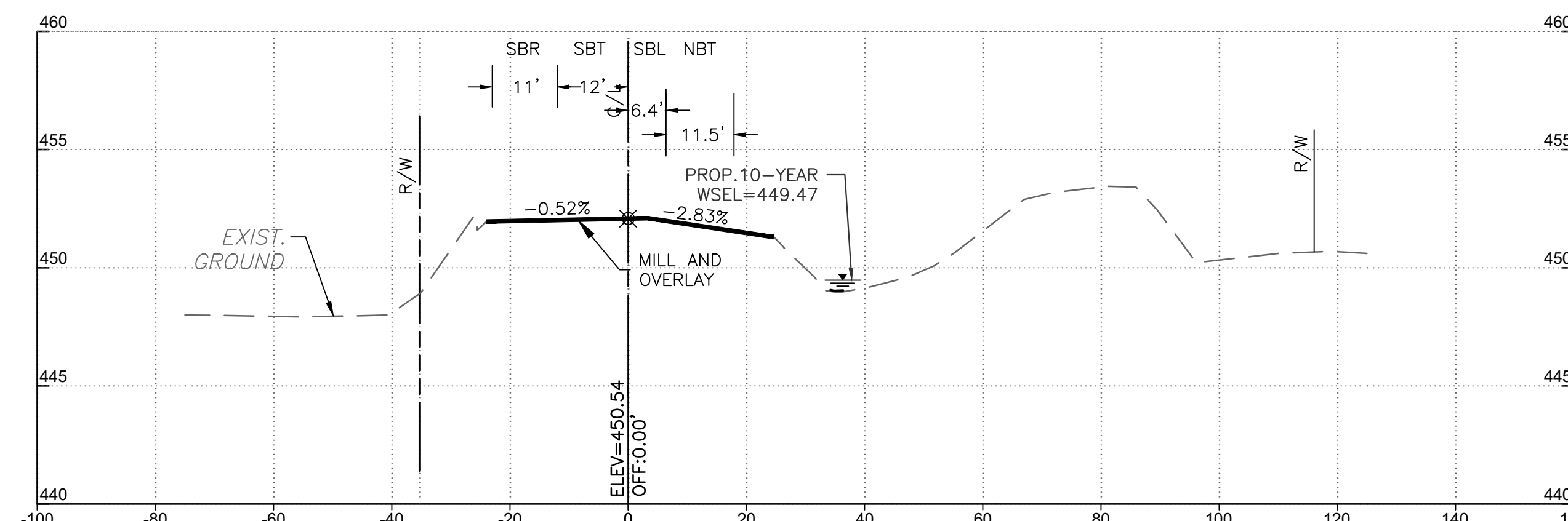
SHA: WA067ZM1
FAP: APL-3(804)E



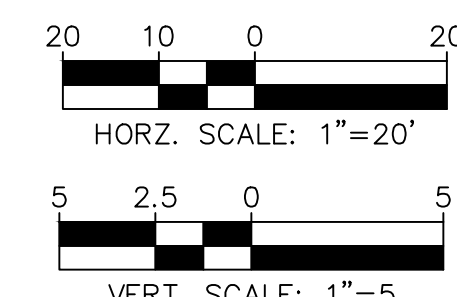
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STA. 133+50



STA. 134+00



NO.	REVISION DESCRIPTION	BY	DATE

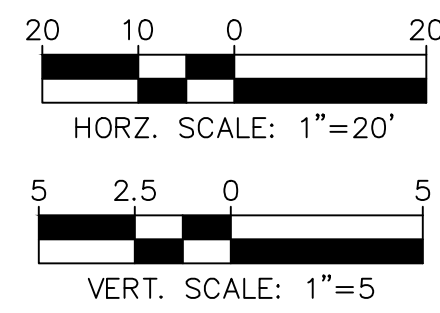
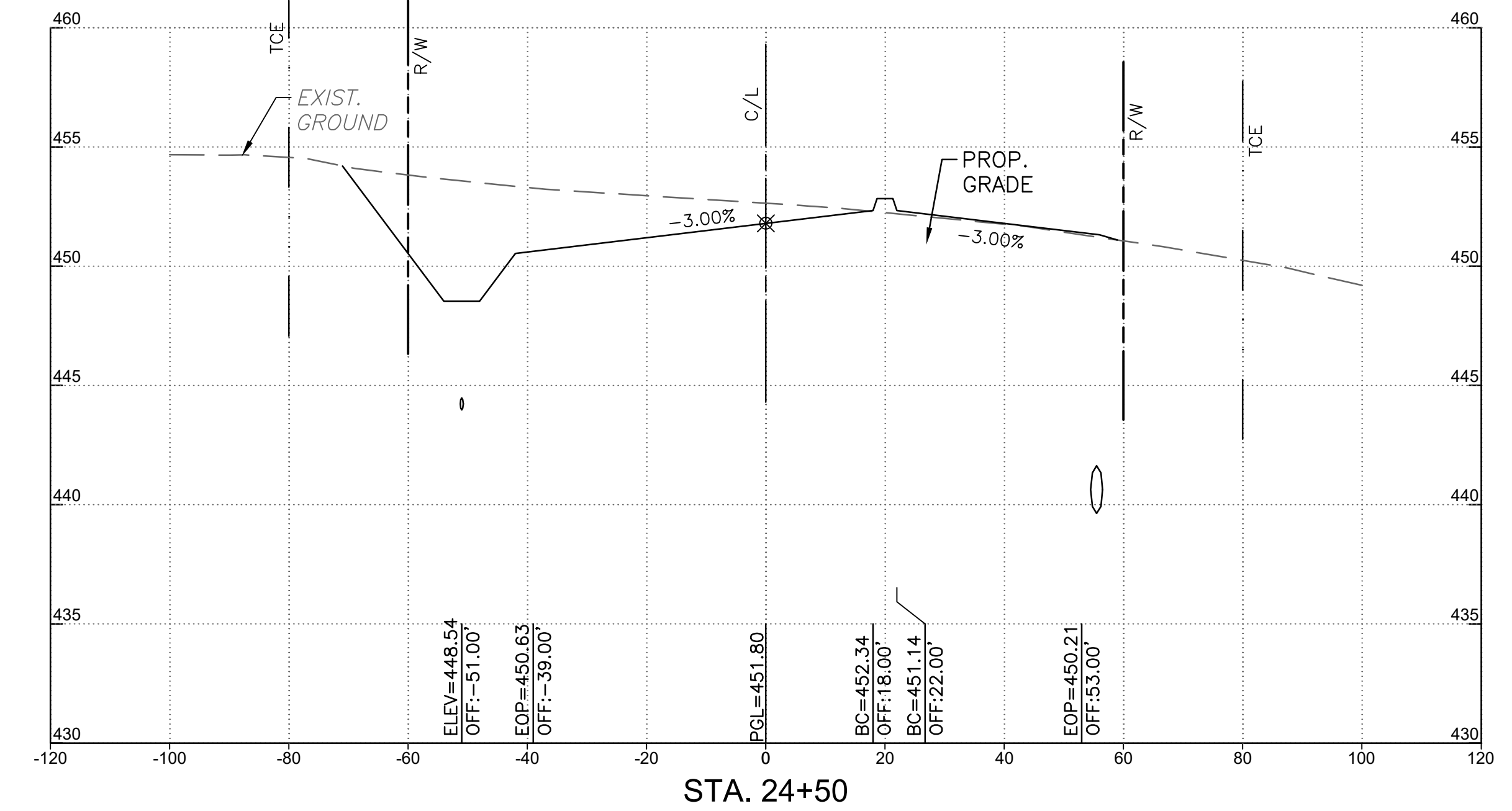
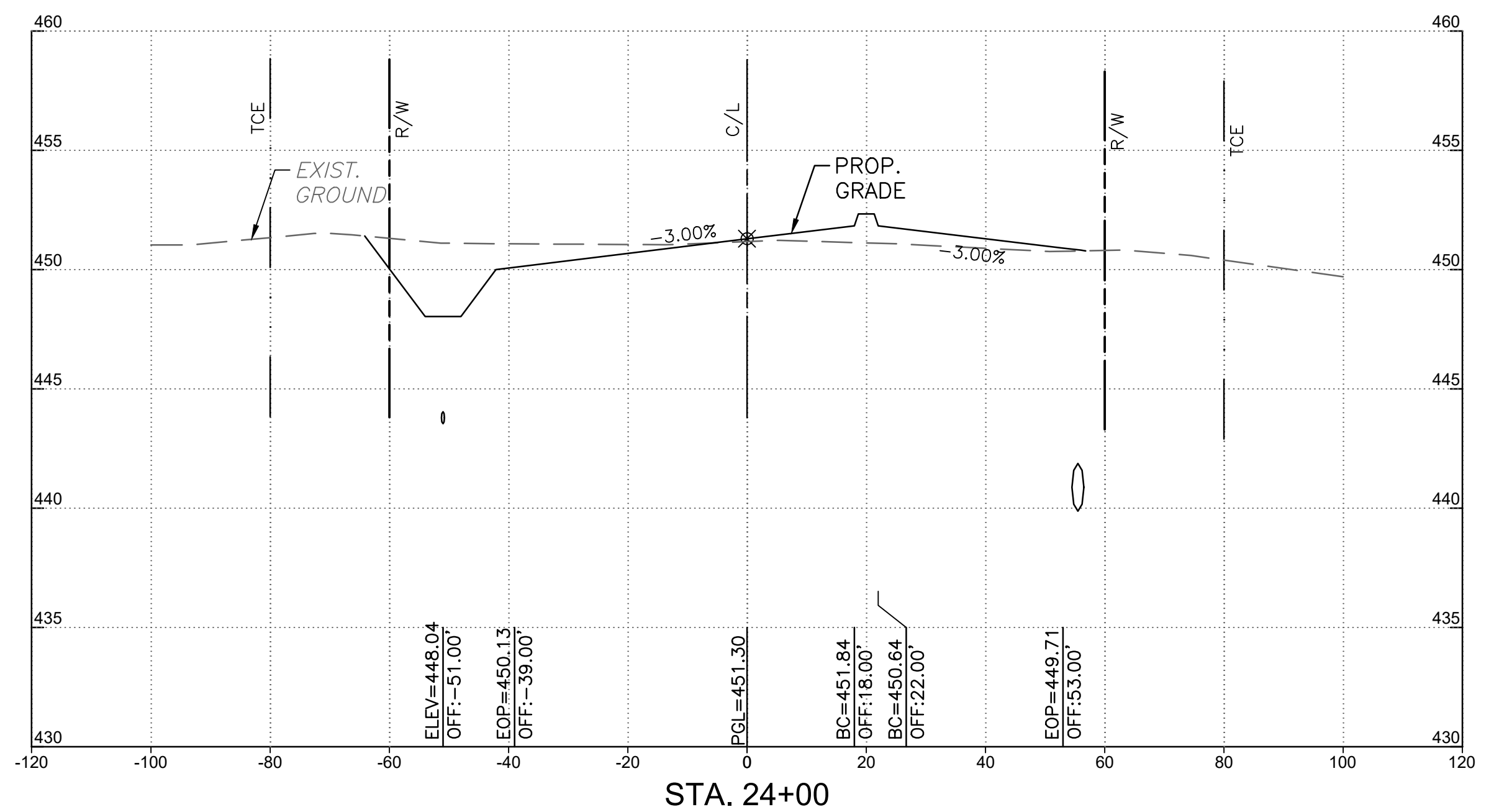
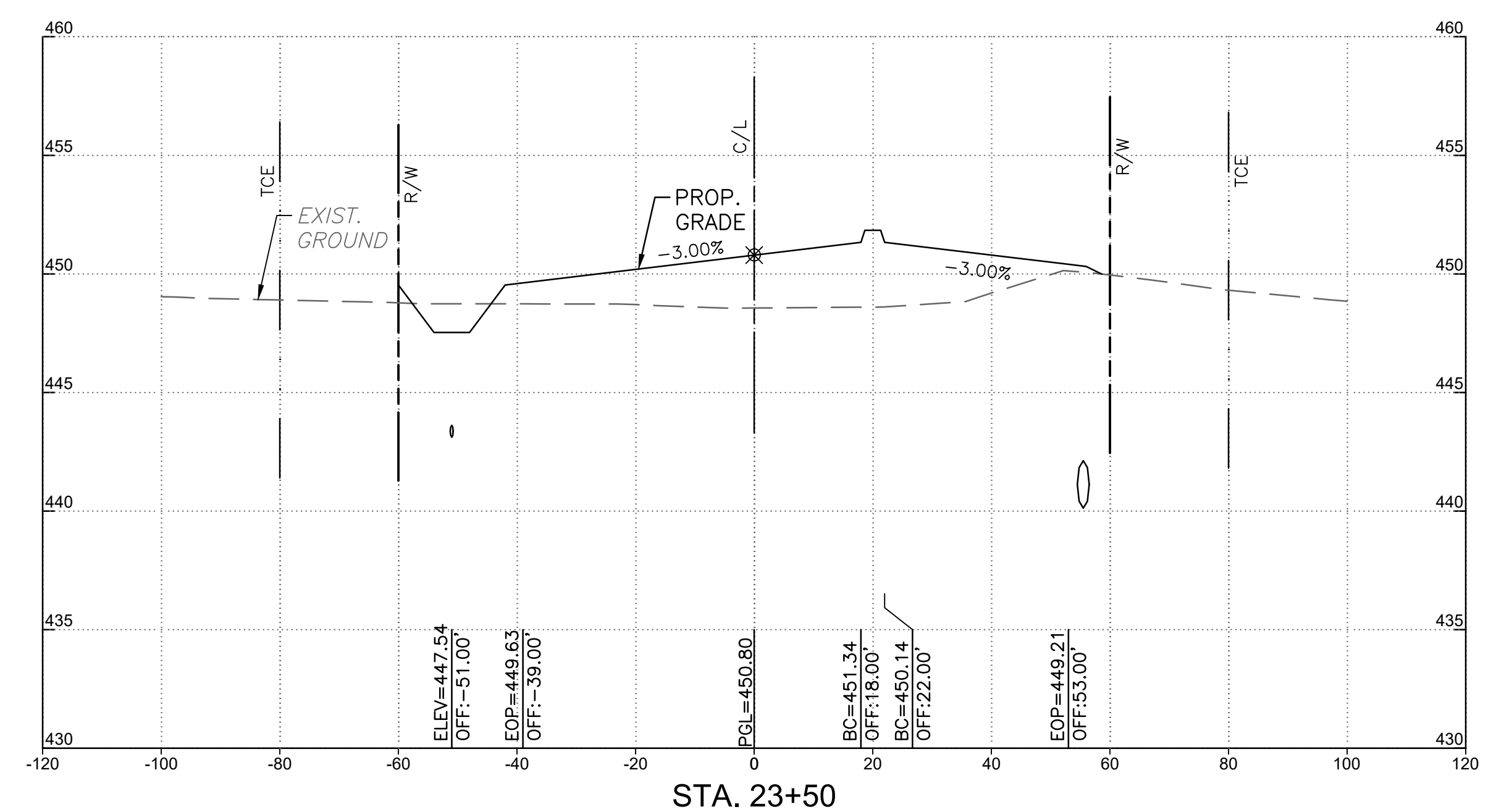
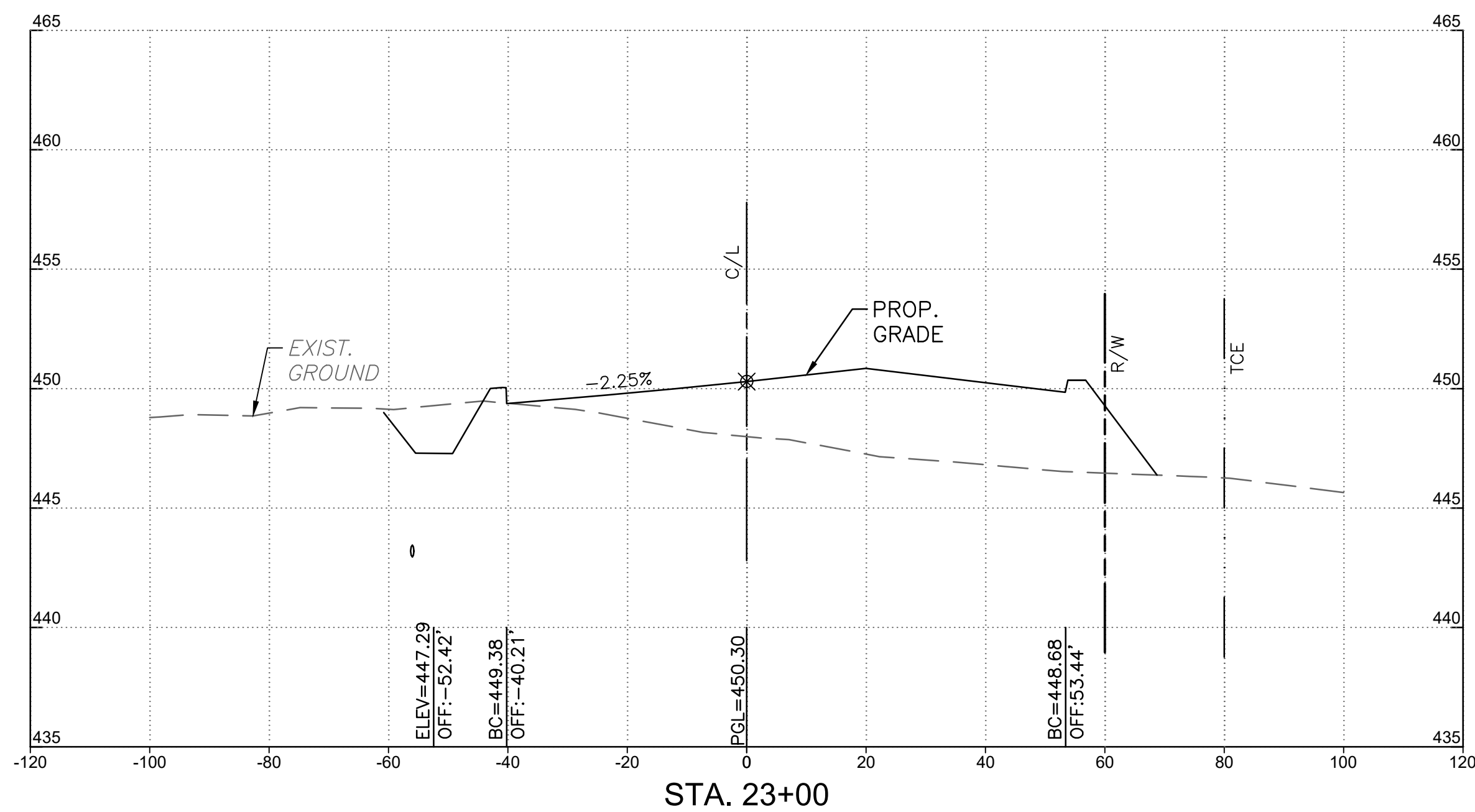
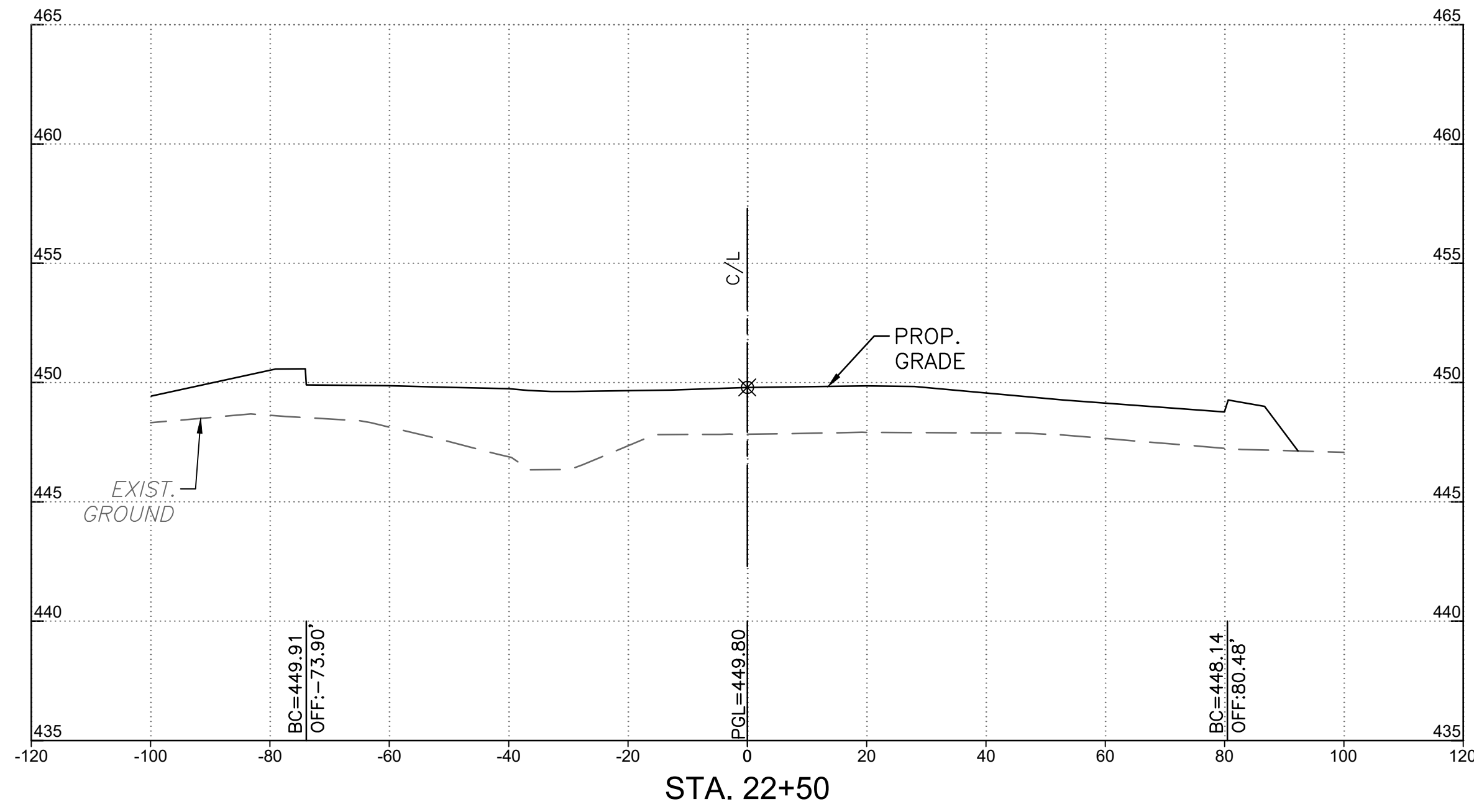
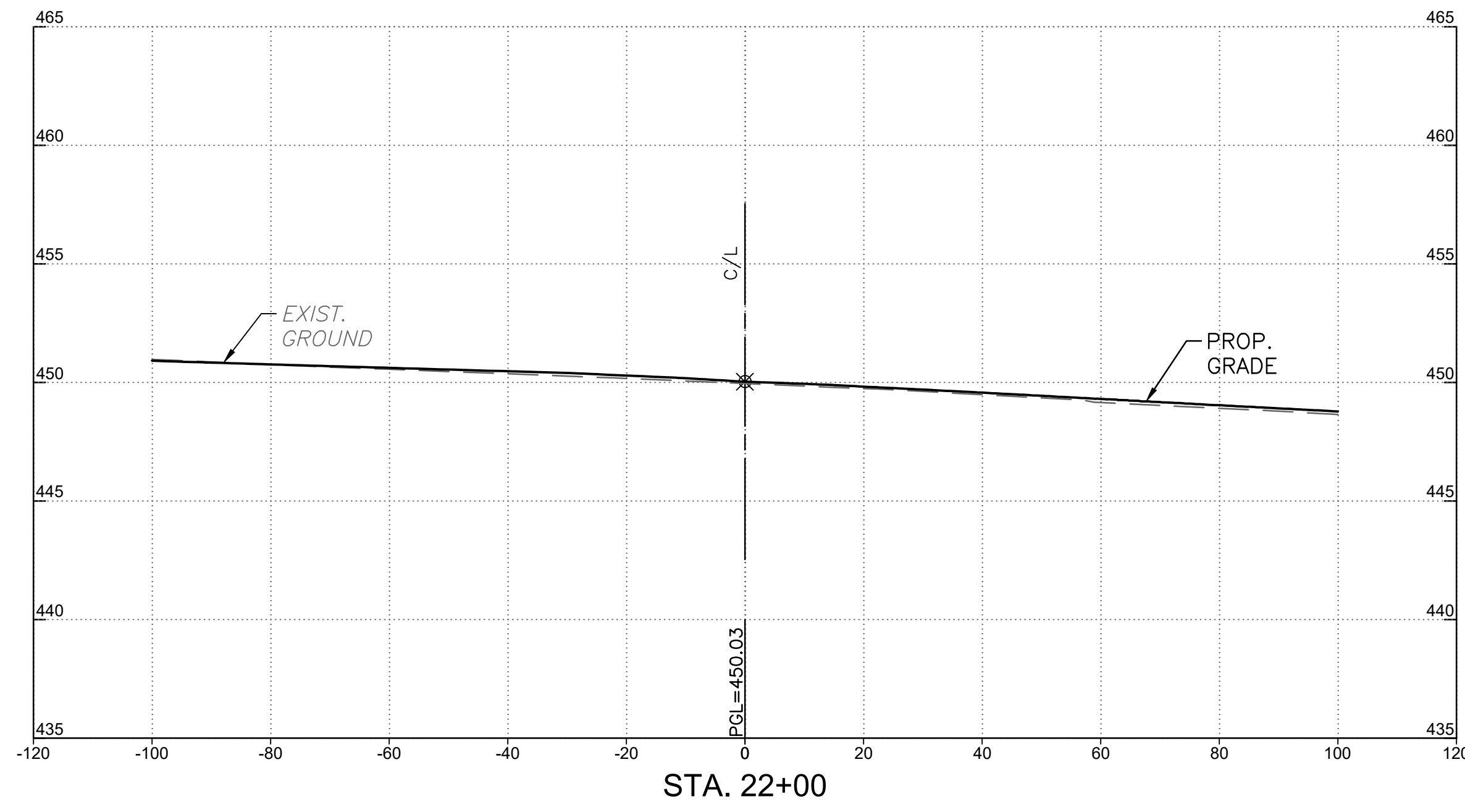
DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:
KDUUGA	KDUUGA	PJM	JAN 2024

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DIVISION OF ENGINEERING

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HALFWAY BOULEVARD EXTENDED MD 63 CROSS SECTIONS STA. 133+00 TO 134+00

SCALE H: 1" = 20' V: 1" = 5'
SHEET NO. 66
PROJECT NO. 10-273
SHA: WA06ZM1 FAP: APL-3(804)E



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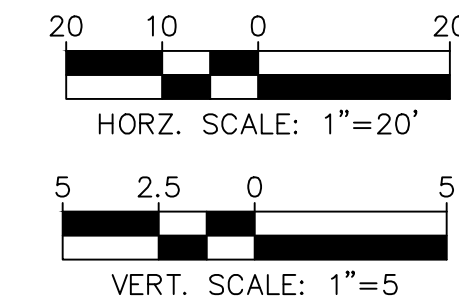
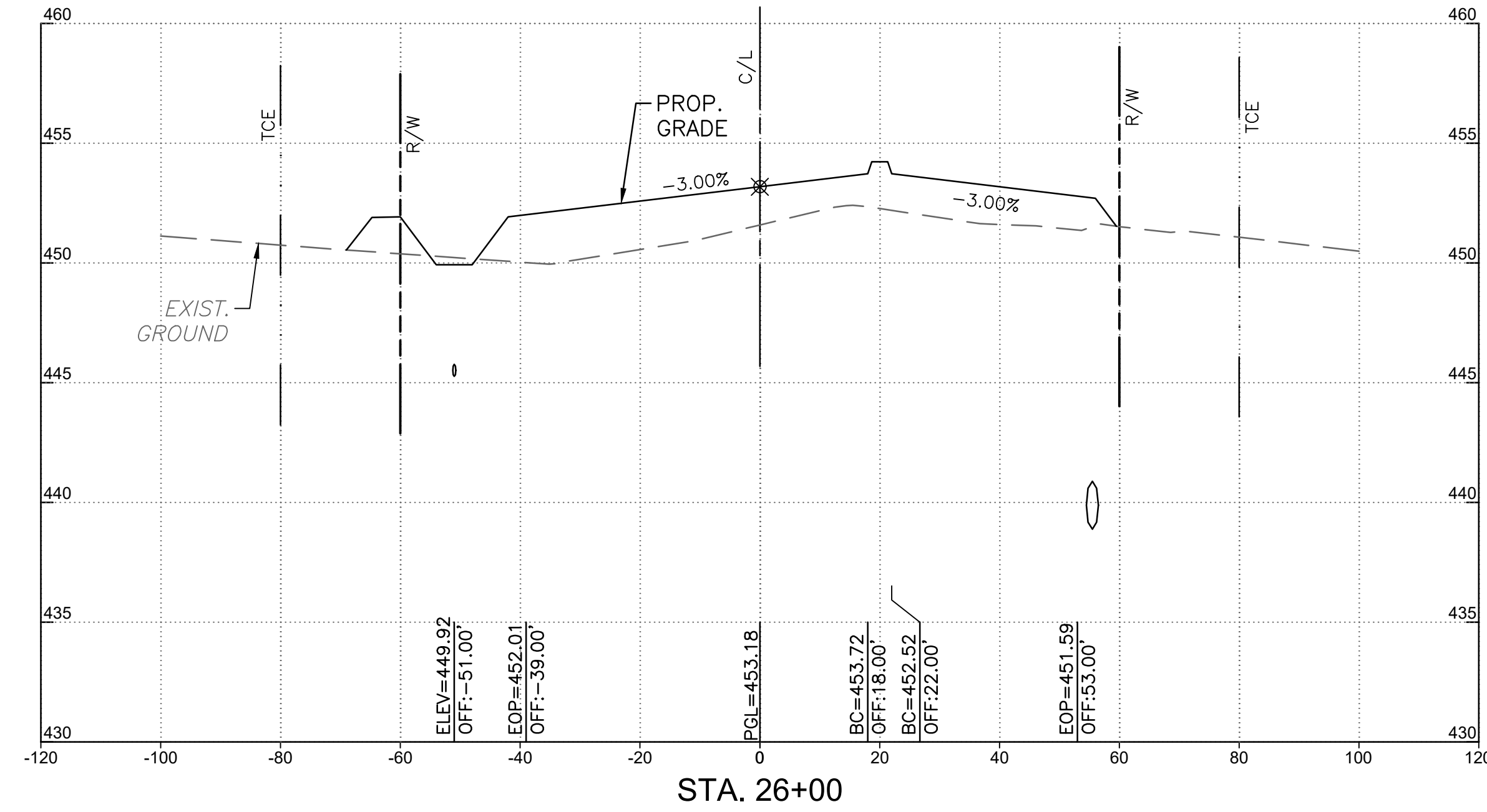
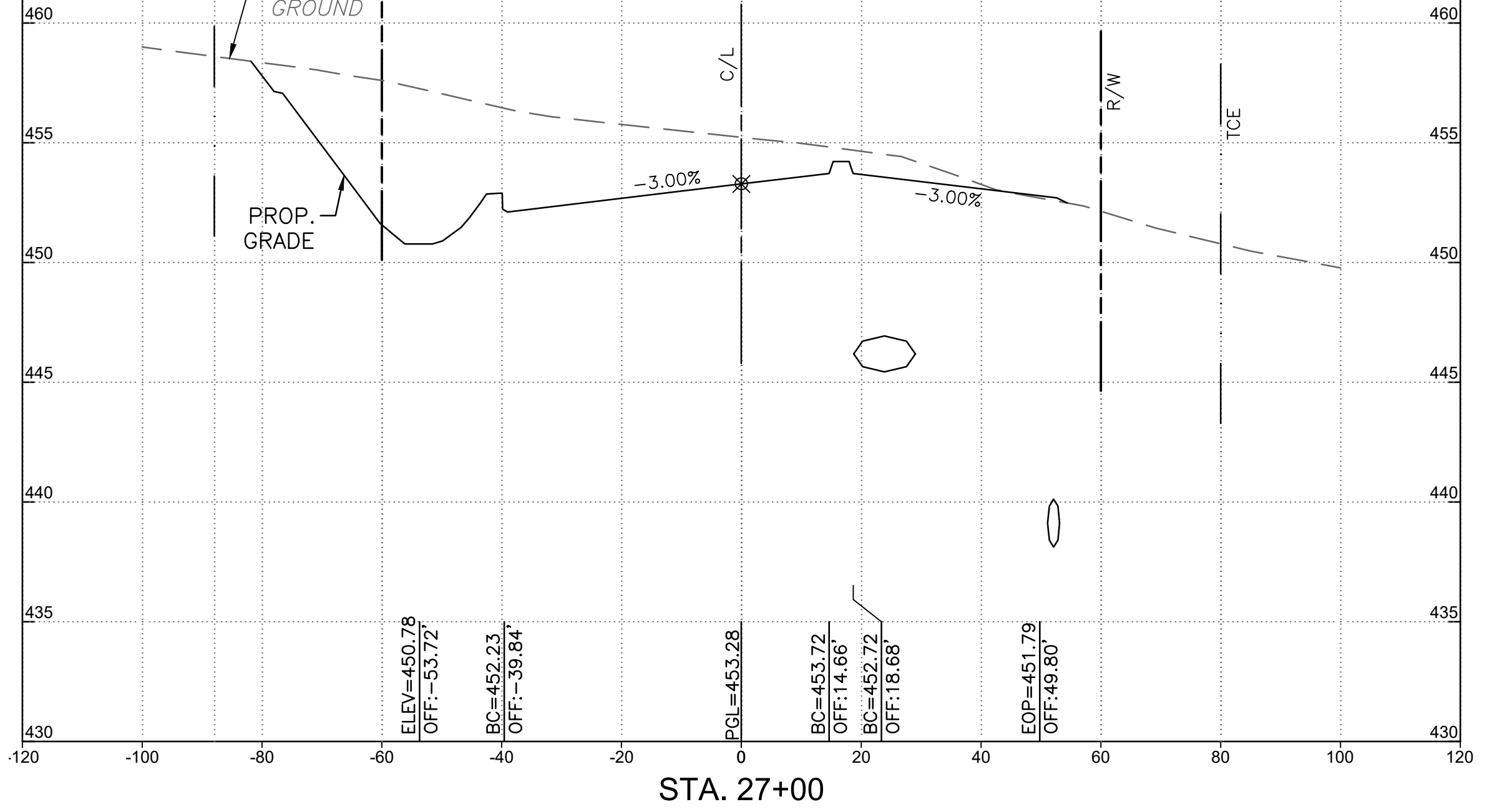
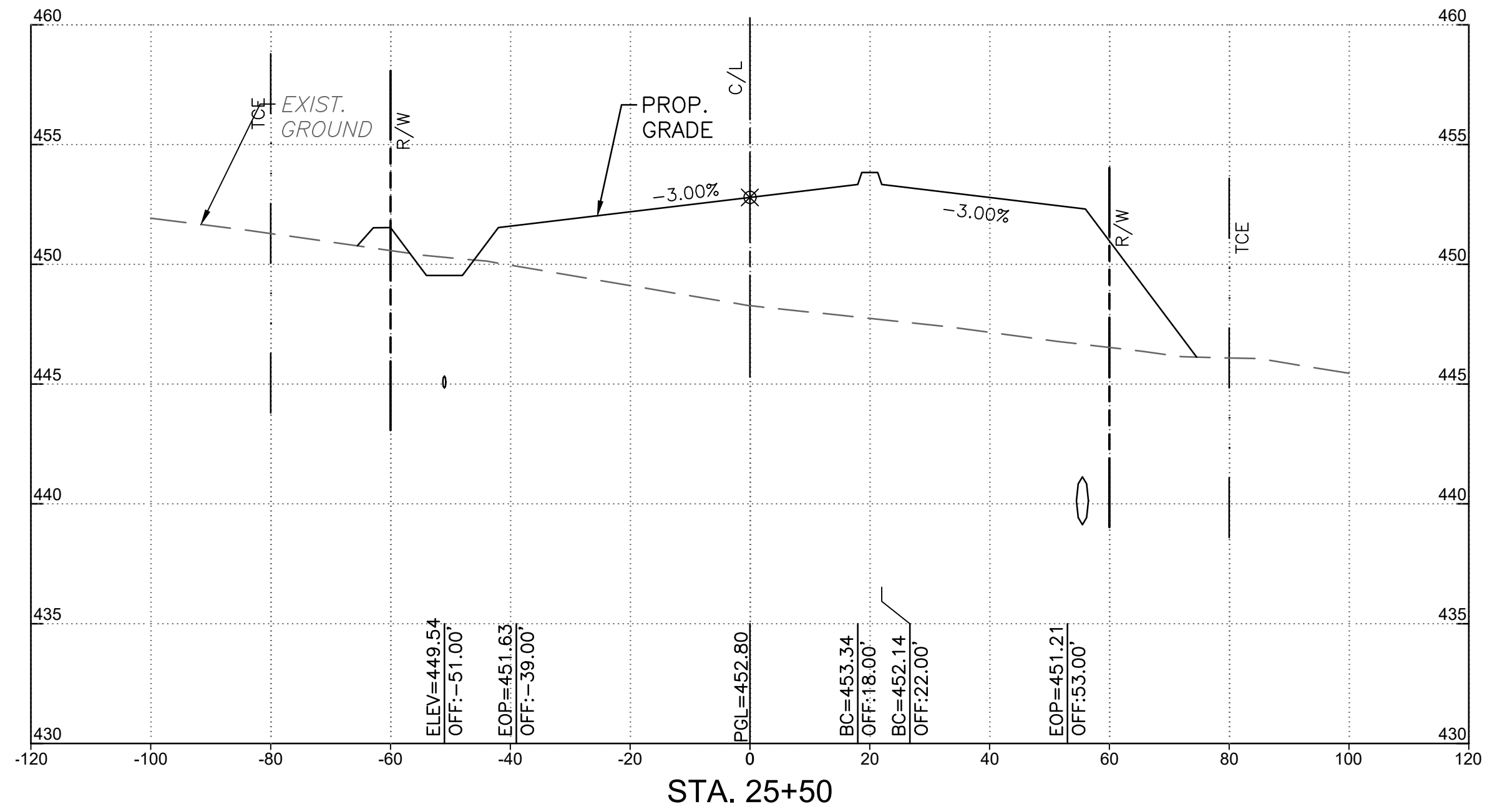
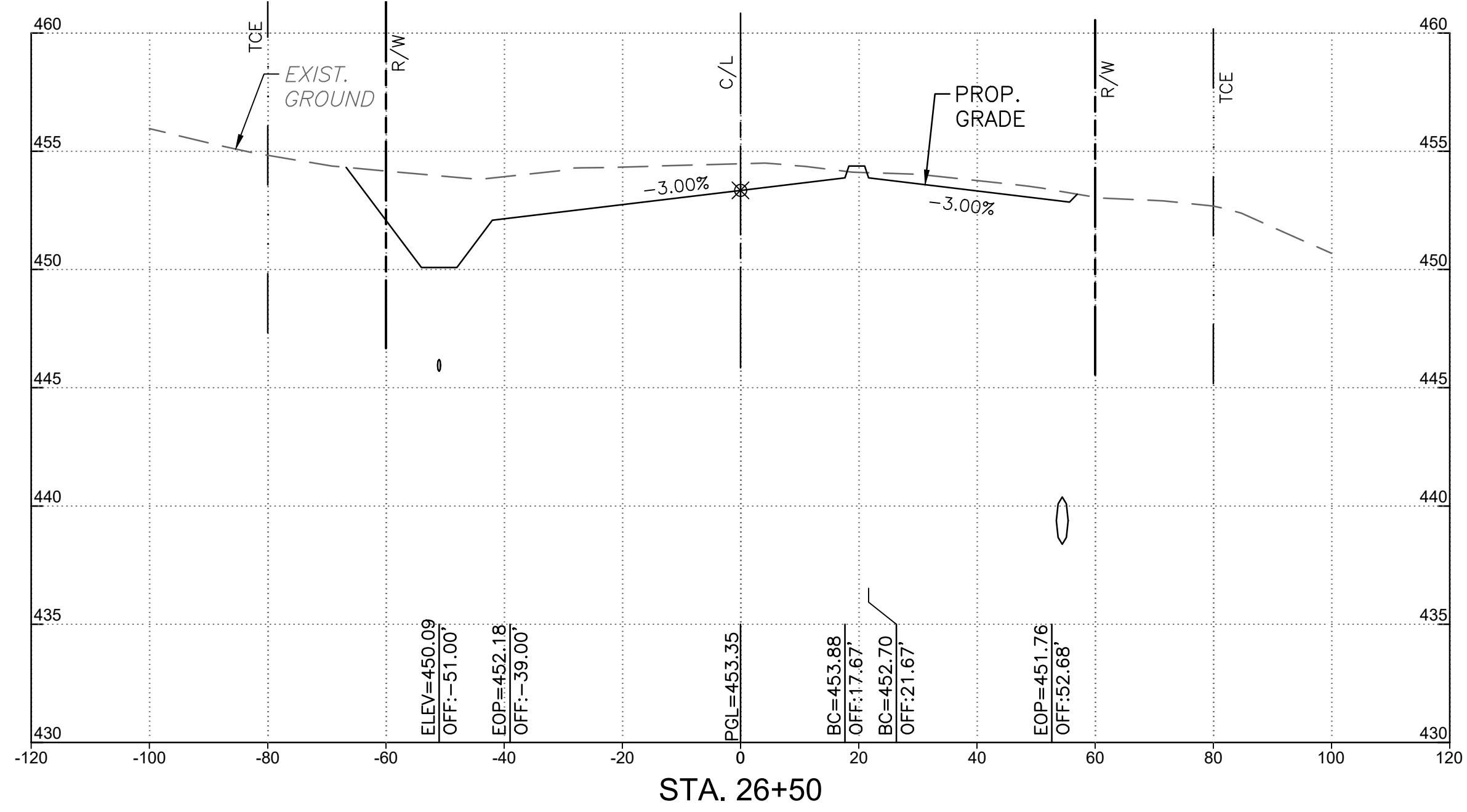
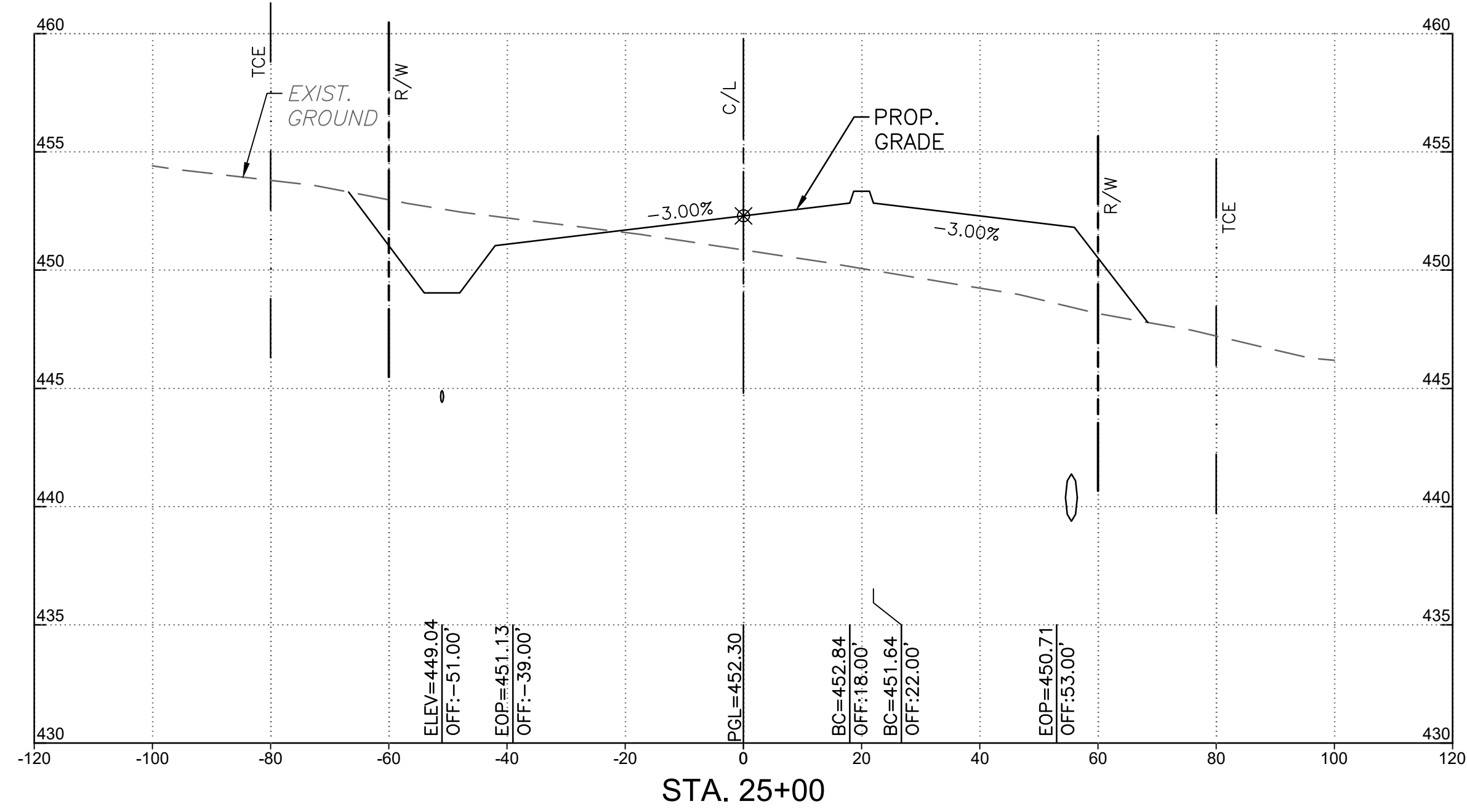
**HALFWAY BOULEVARD
 EXTENDED
 CROSS SECTIONS
 STA. 22+00 TO 24+50**

SCALE
 H:1" = 20' V:1" = 5'

SHEET NO.
 67

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E



DESIGNED BY:	KDUUGA
DRAWN BY:	KDUUGA
CHECKED BY:	PJM
DATE:	JAN 2024

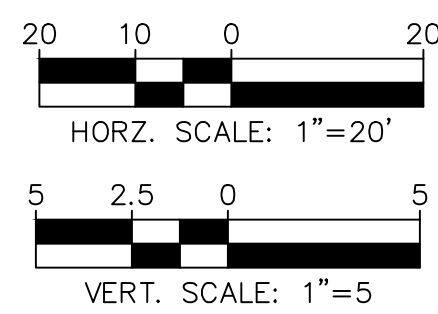
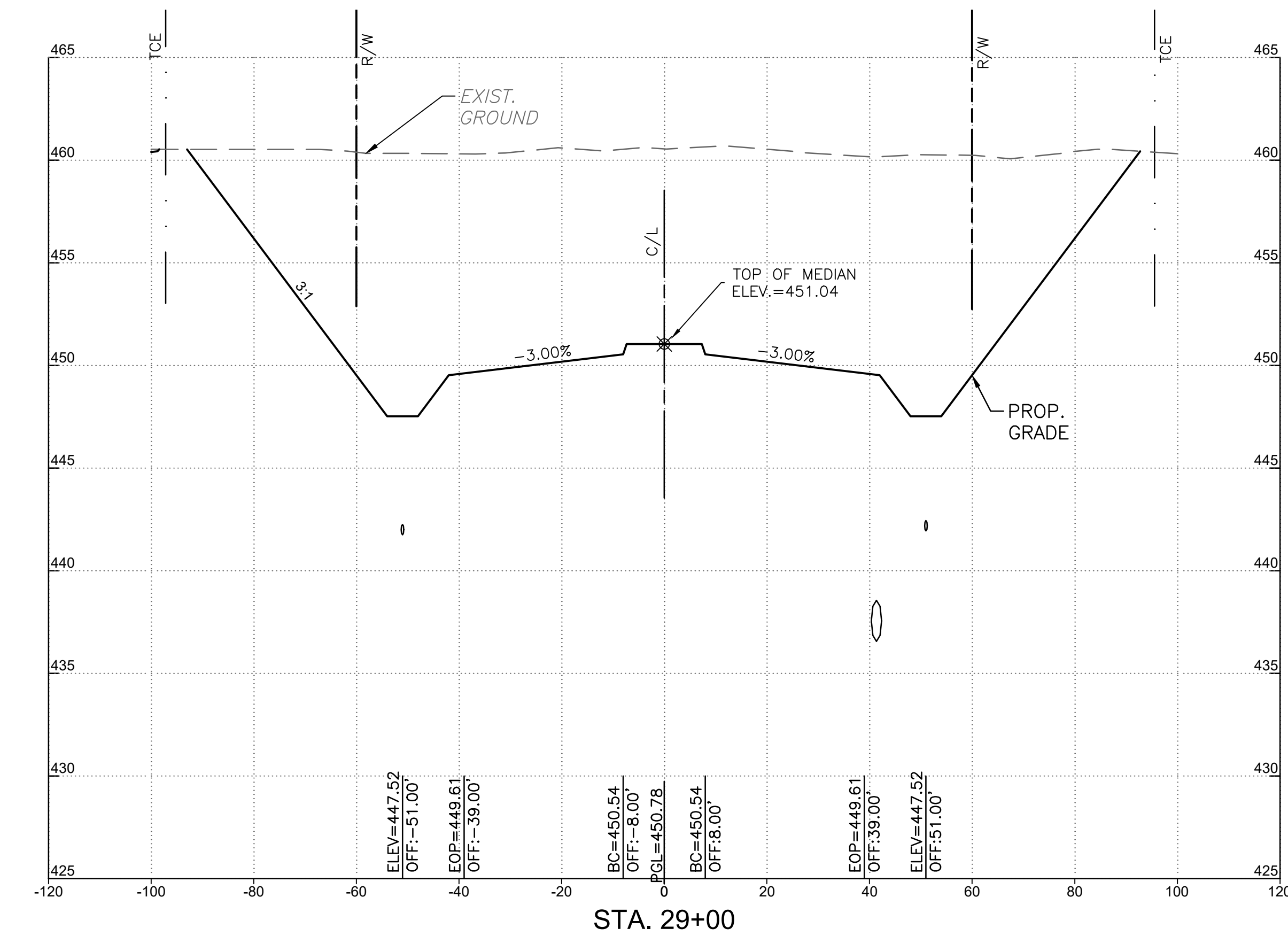
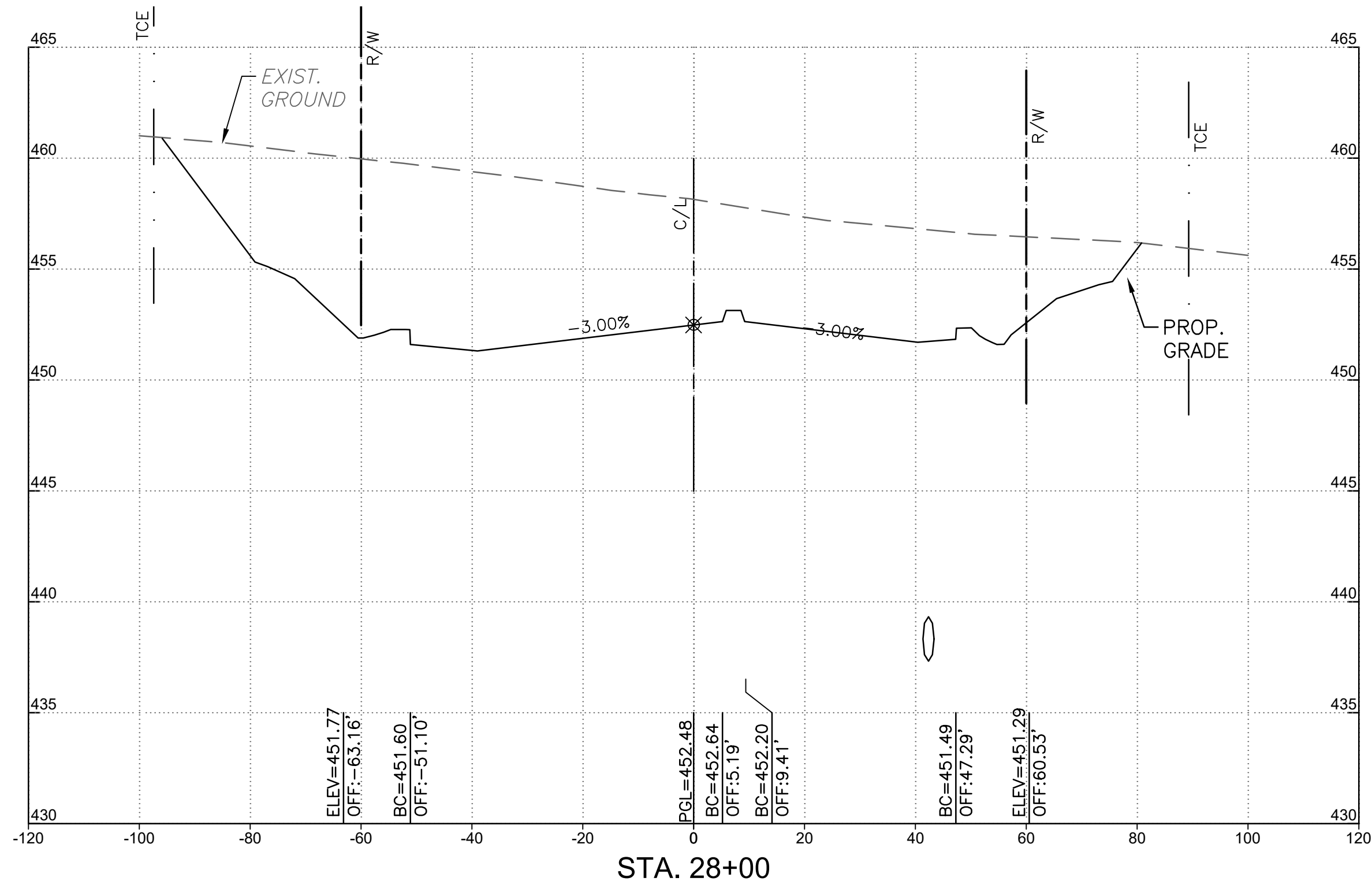
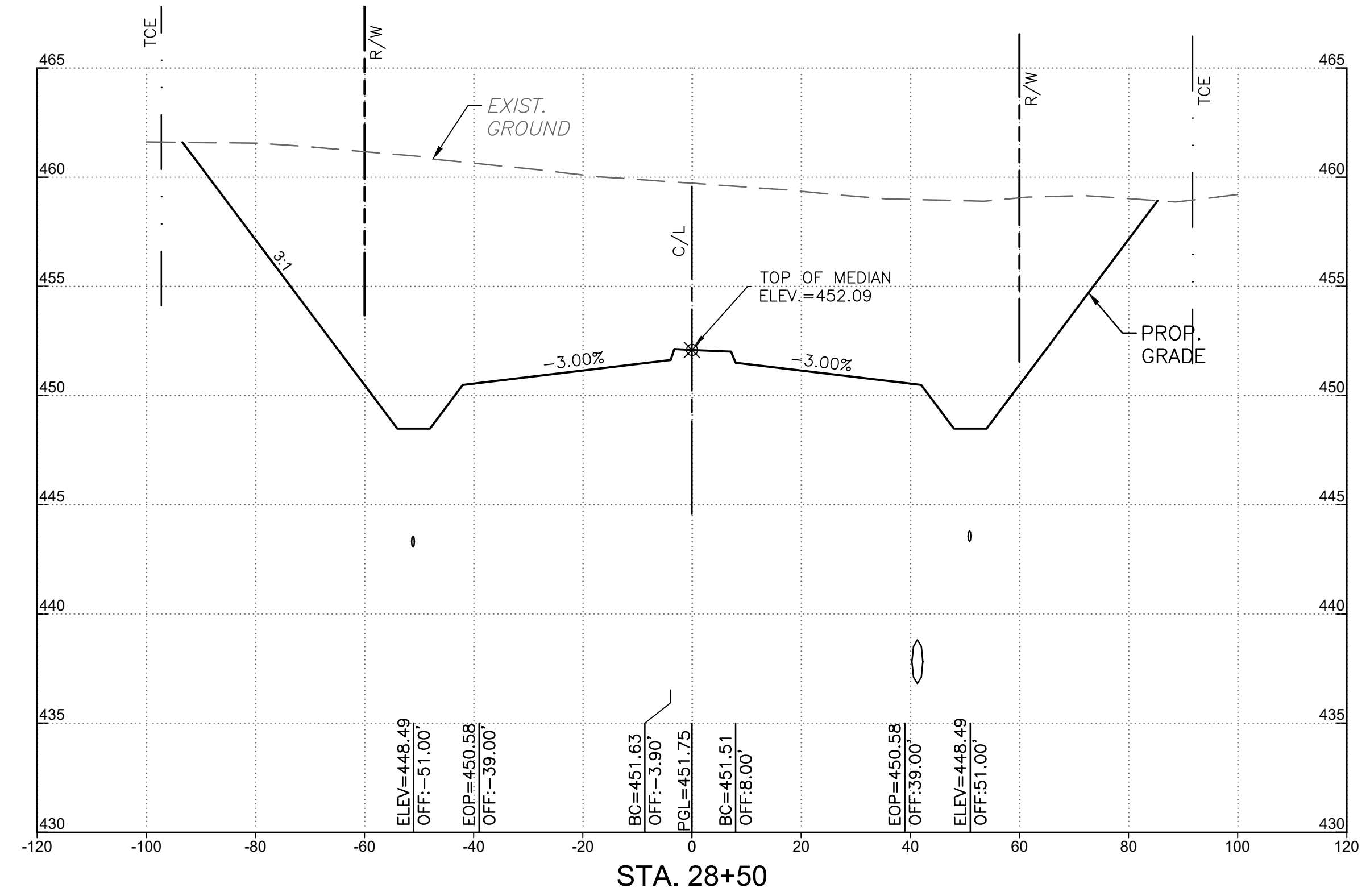
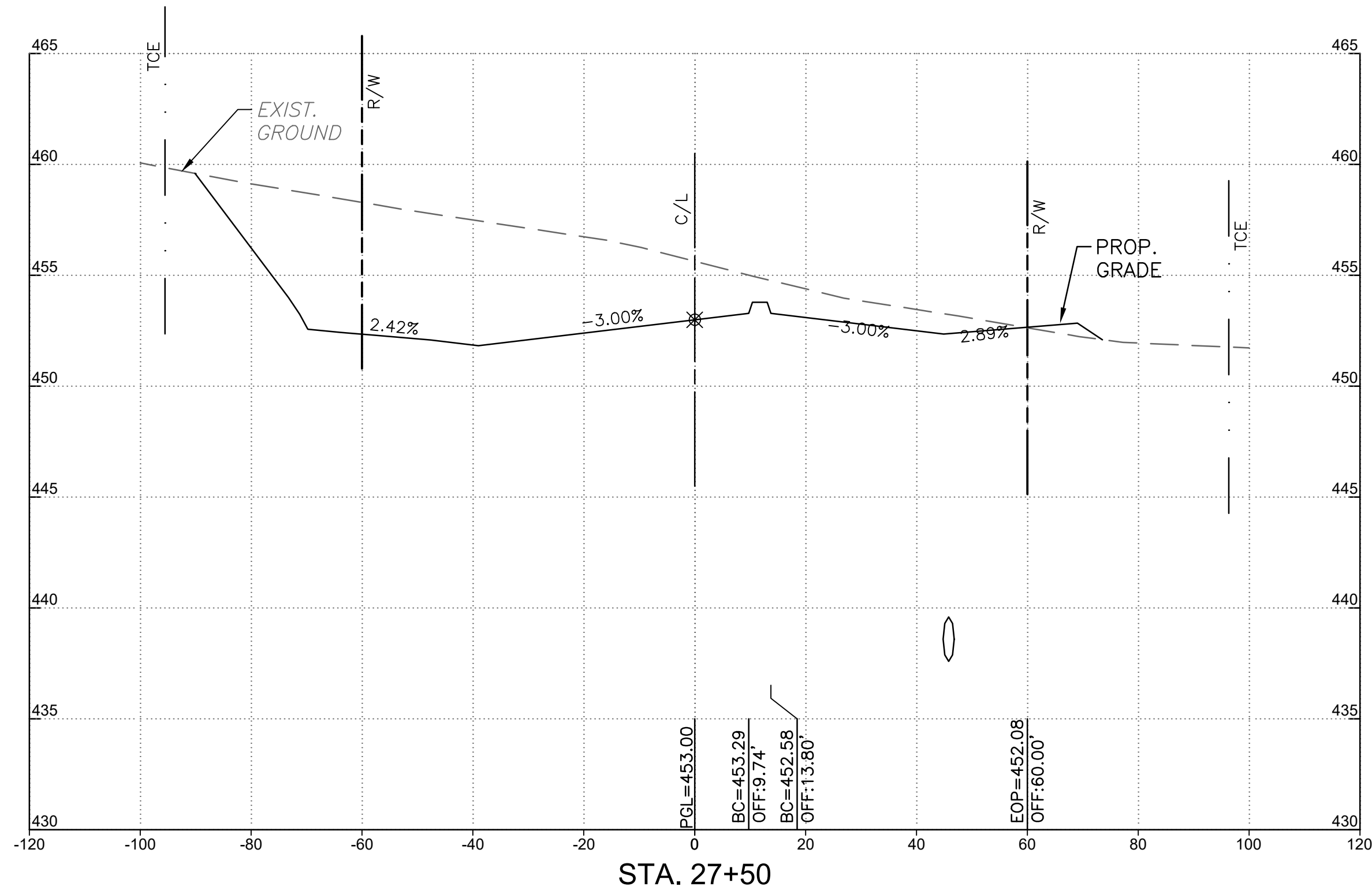
NO.	REVISION DESCRIPTION	BY	DATE

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

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 Phone: 240-313-2460 Fax: 240-313-2401

**HALFWAY BOULEVARD
 EXTENDED
 CROSS SECTIONS
 STA. 25+00 TO 27+00**

SCALE	H:1" = 20' V:1" = 5'
SHEET NO.	68
PROJECT NO.	10-273
SHA:	WA067ZM1
FAP:	APL-3(804)E



DESIGNED BY:	KDUUGA	NO.		REVISION DESCRIPTION		BY		DATE	
DRAWN BY:	KDUUGA								
CHECKED BY:	PJM								
DATE:	JAN 2024								

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DIVISION OF ENGINEERING

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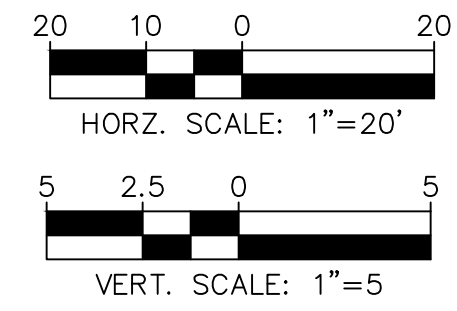
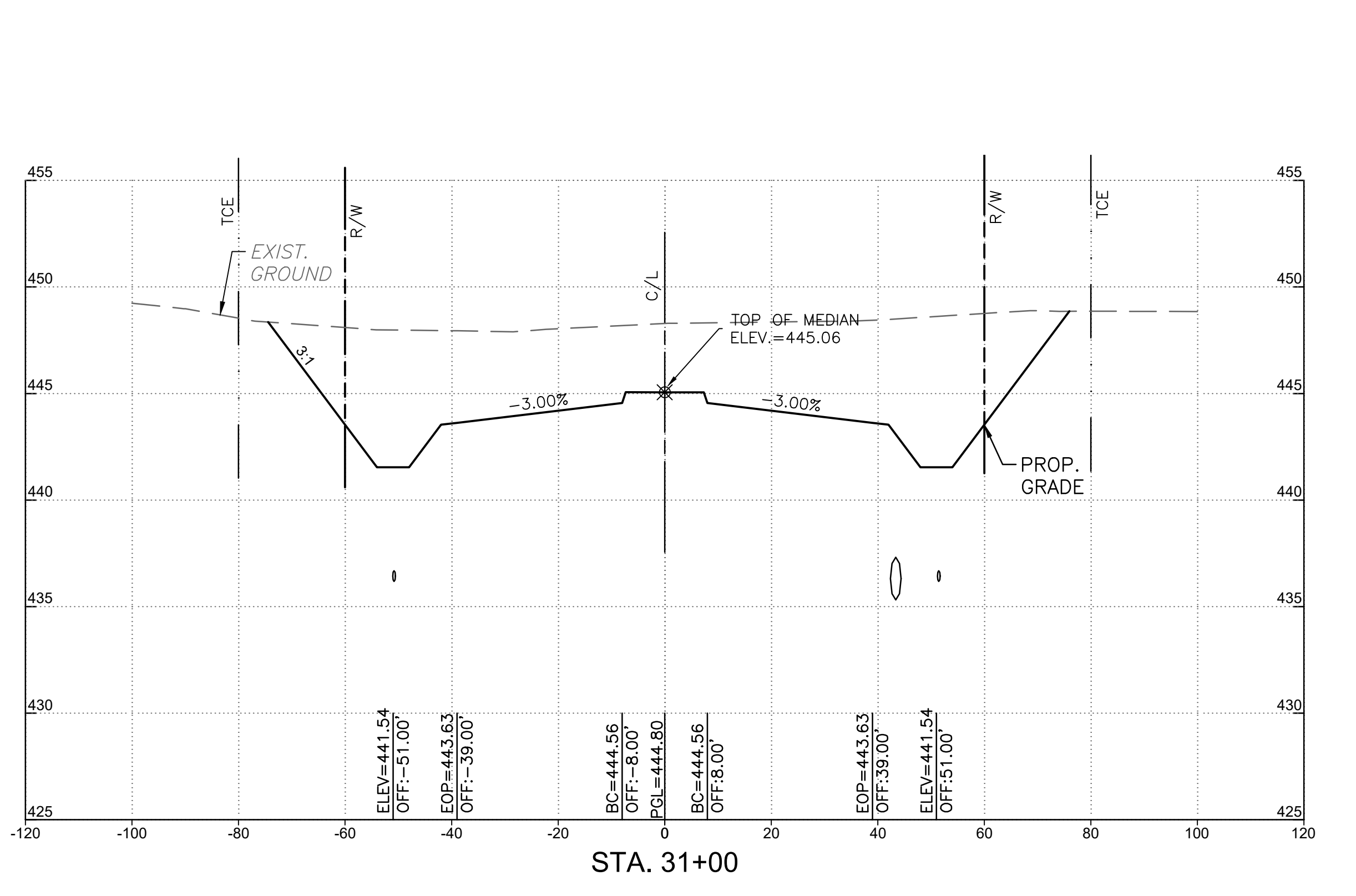
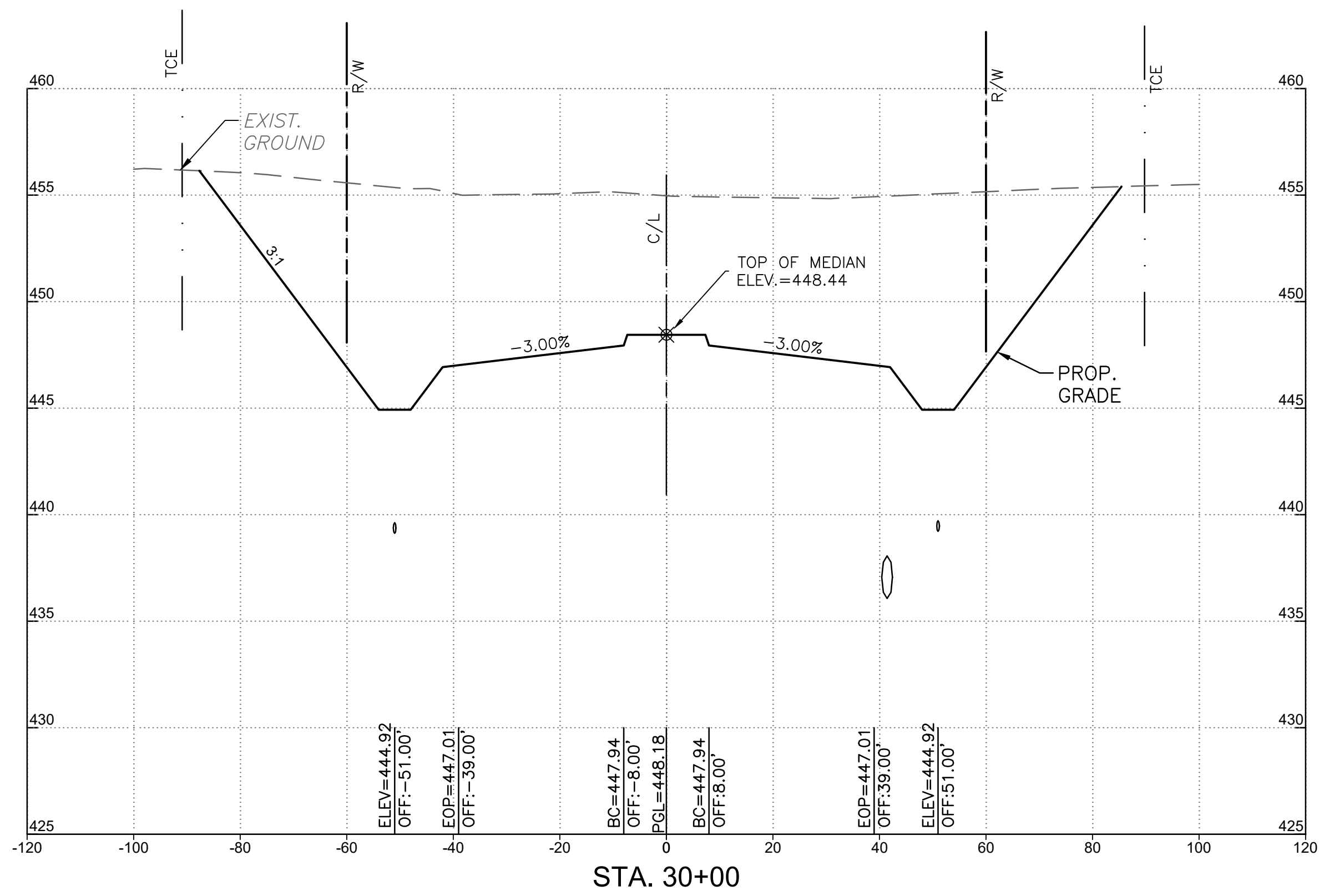
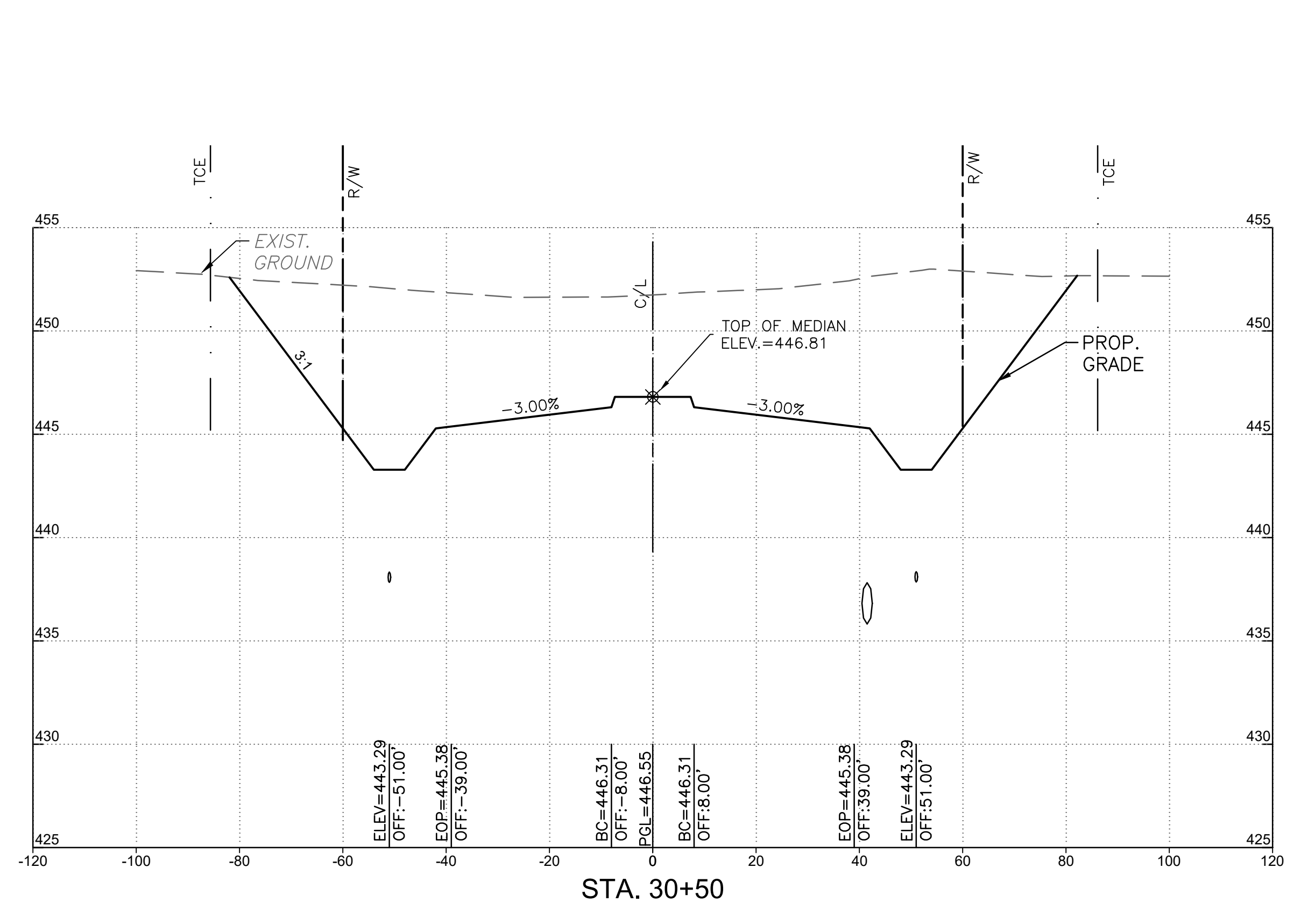
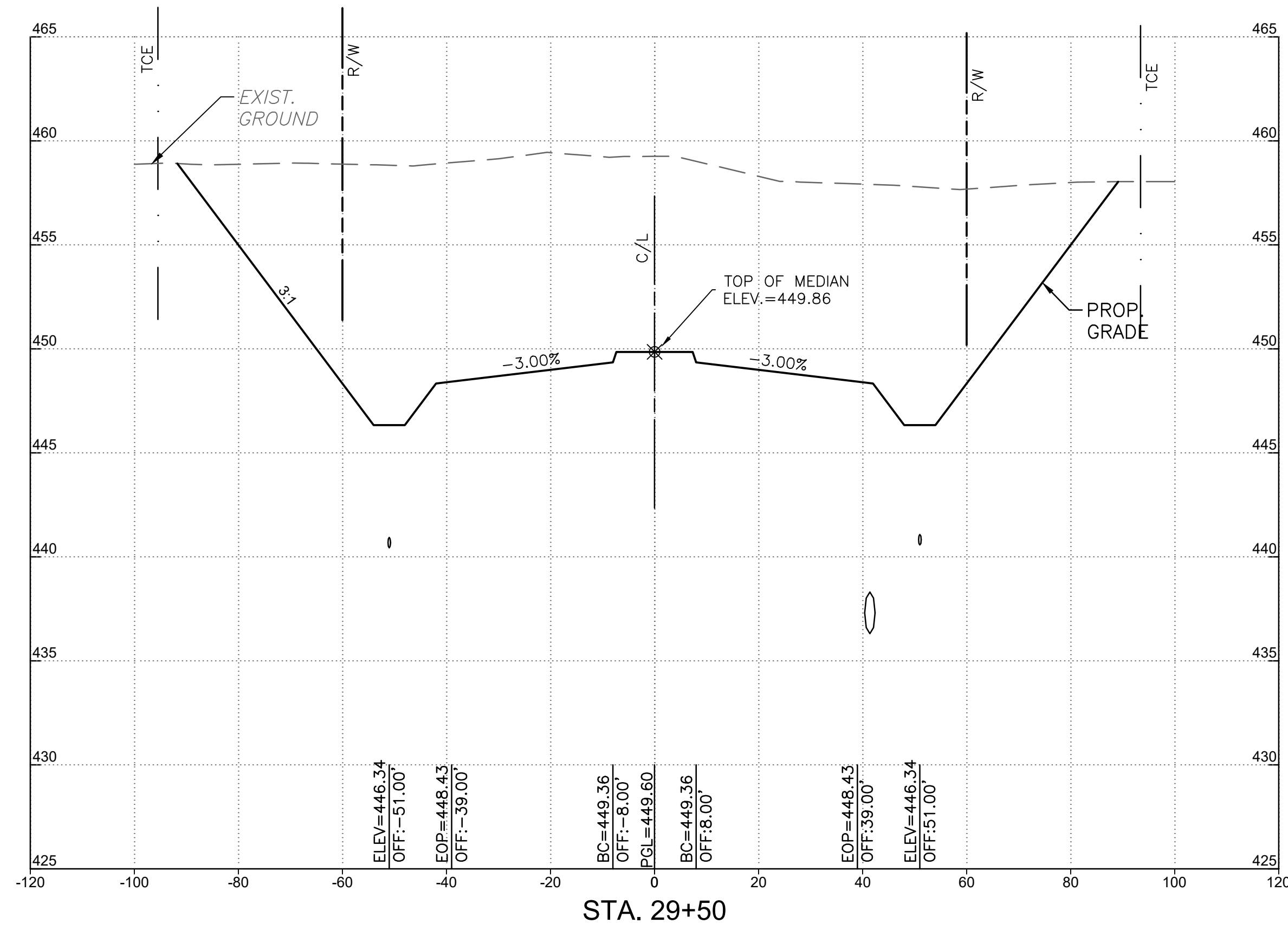
SCALE
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SHEET NO.
69

PROJECT NO.
10-273

SHA: WA067ZM1
FAP: APL-3(804)E

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 DIVISION OF ENGINEERING
 Washington County Administrative Annex Building
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 Phone: 240-313-2460 Fax: 240-313-2401

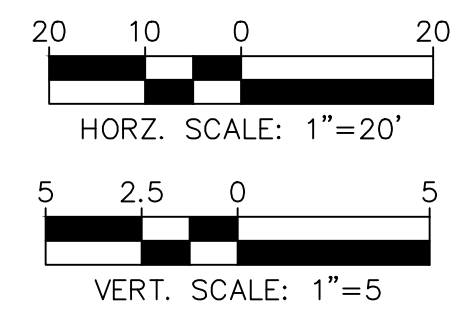
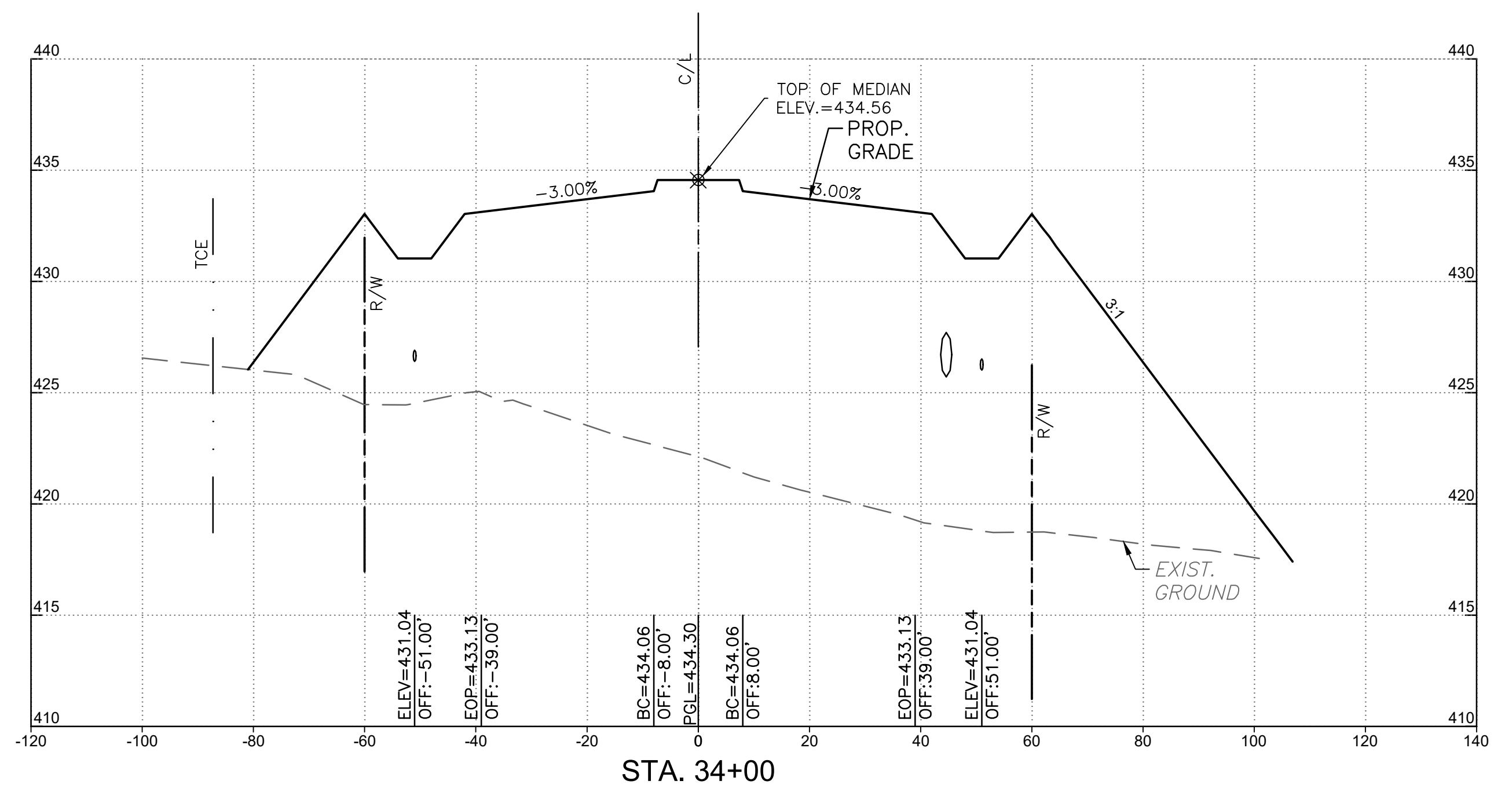
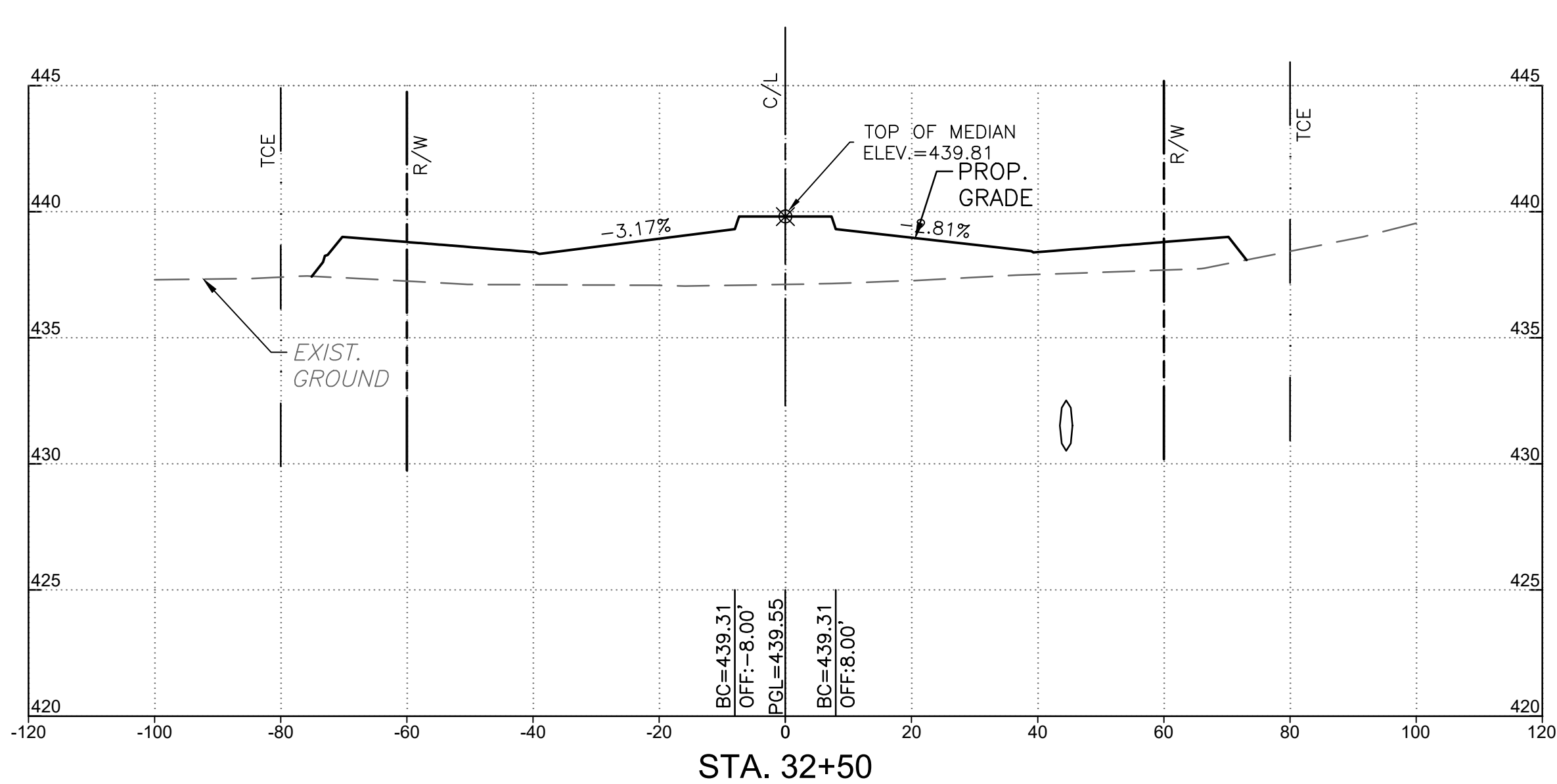
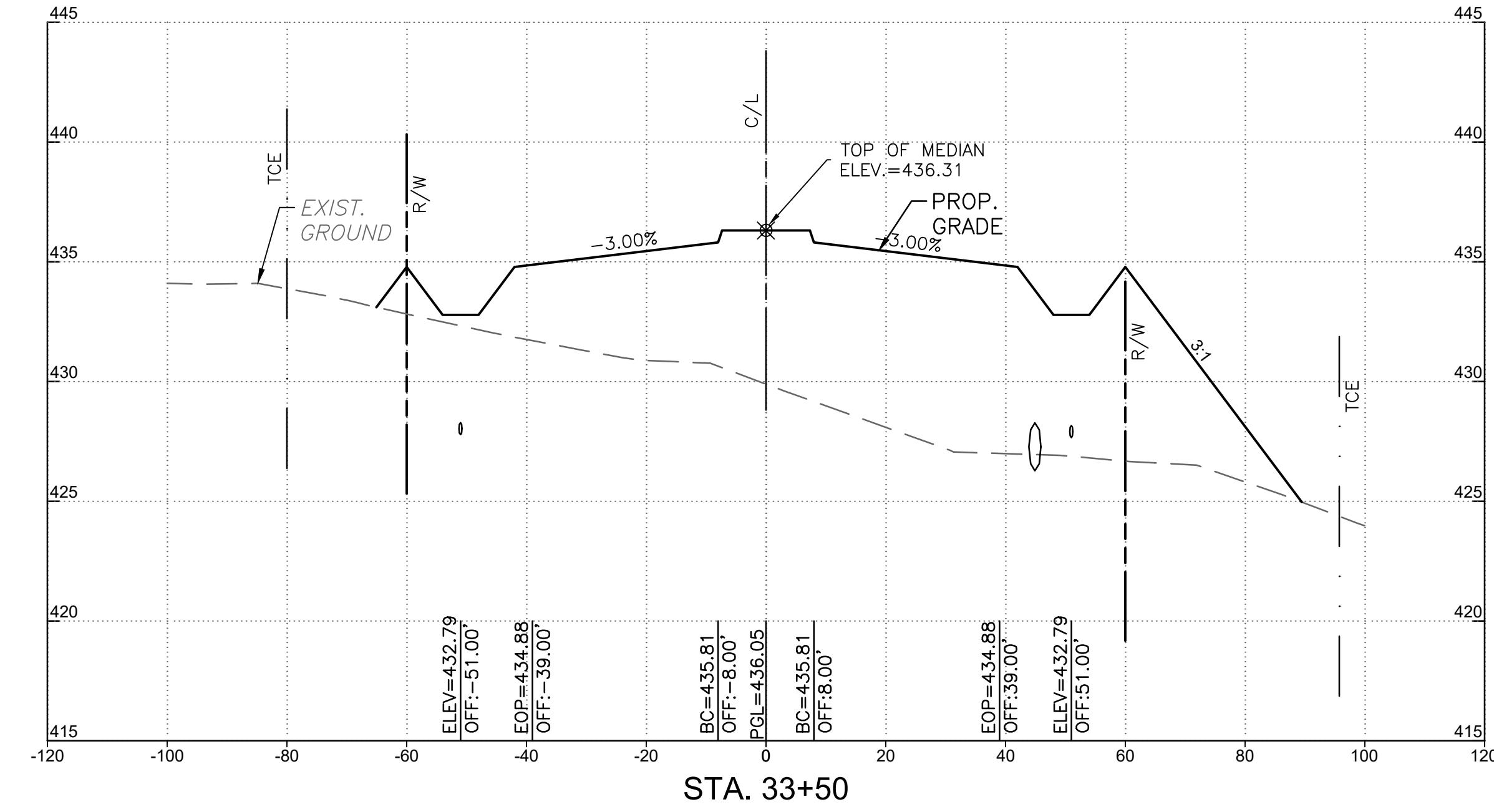
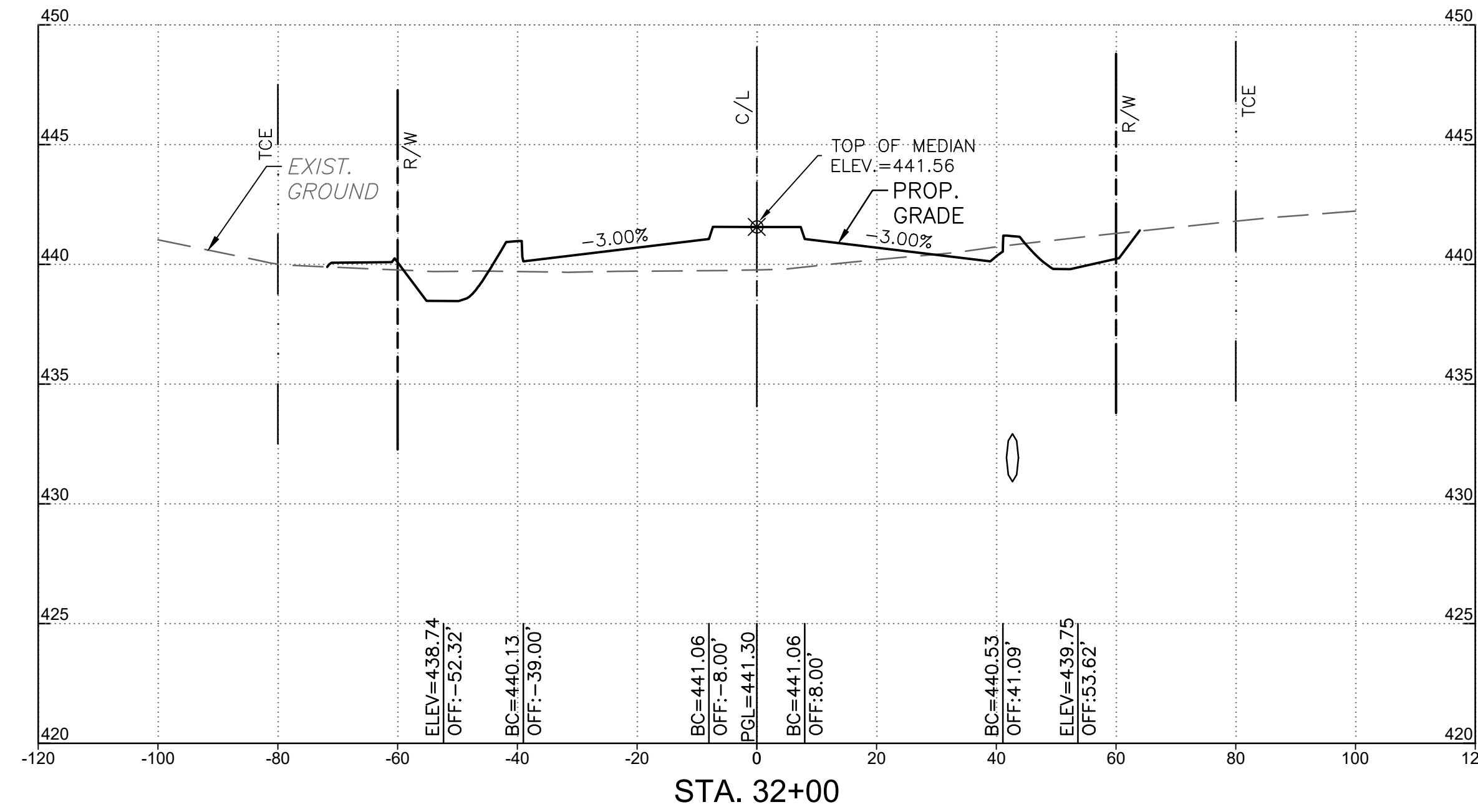
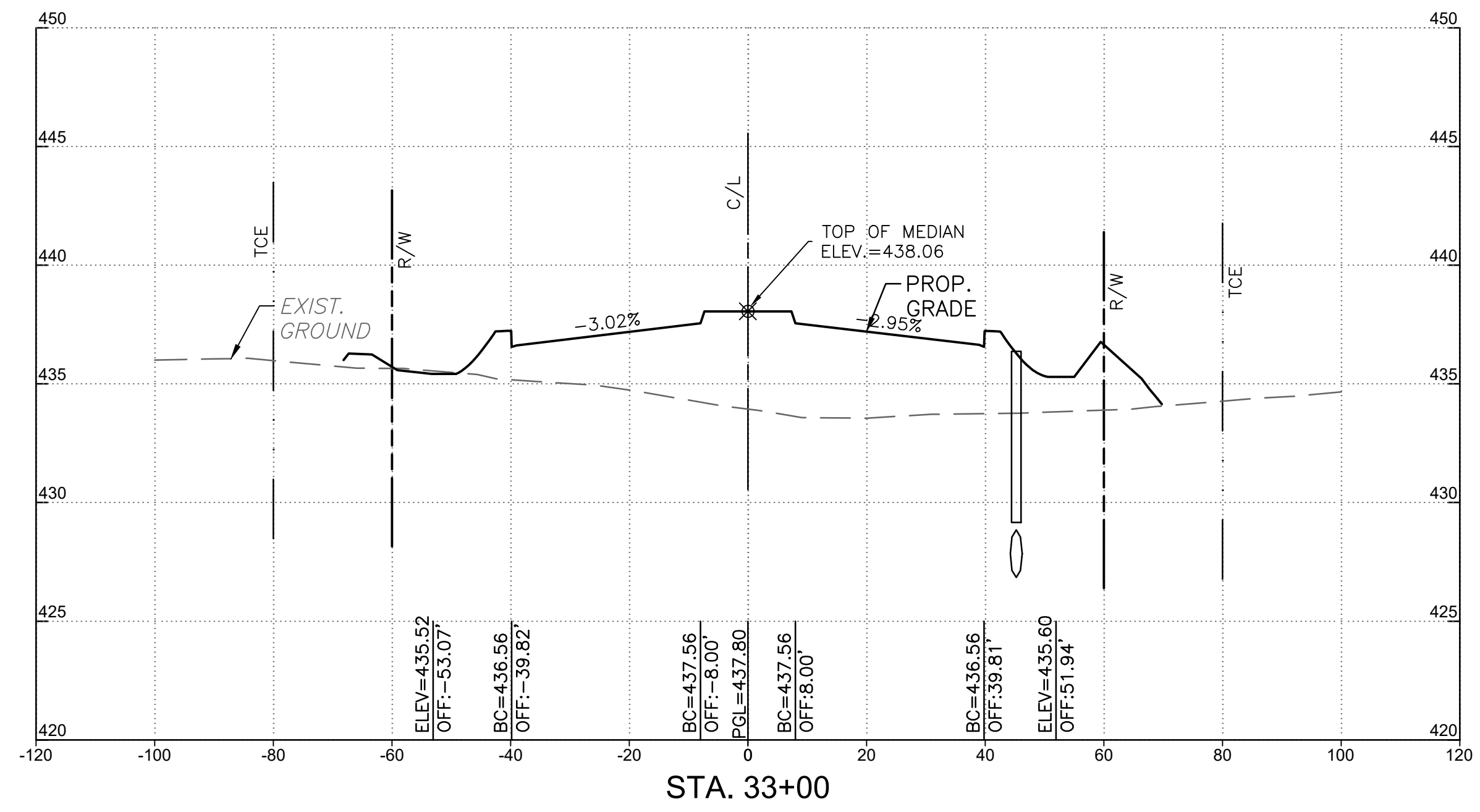
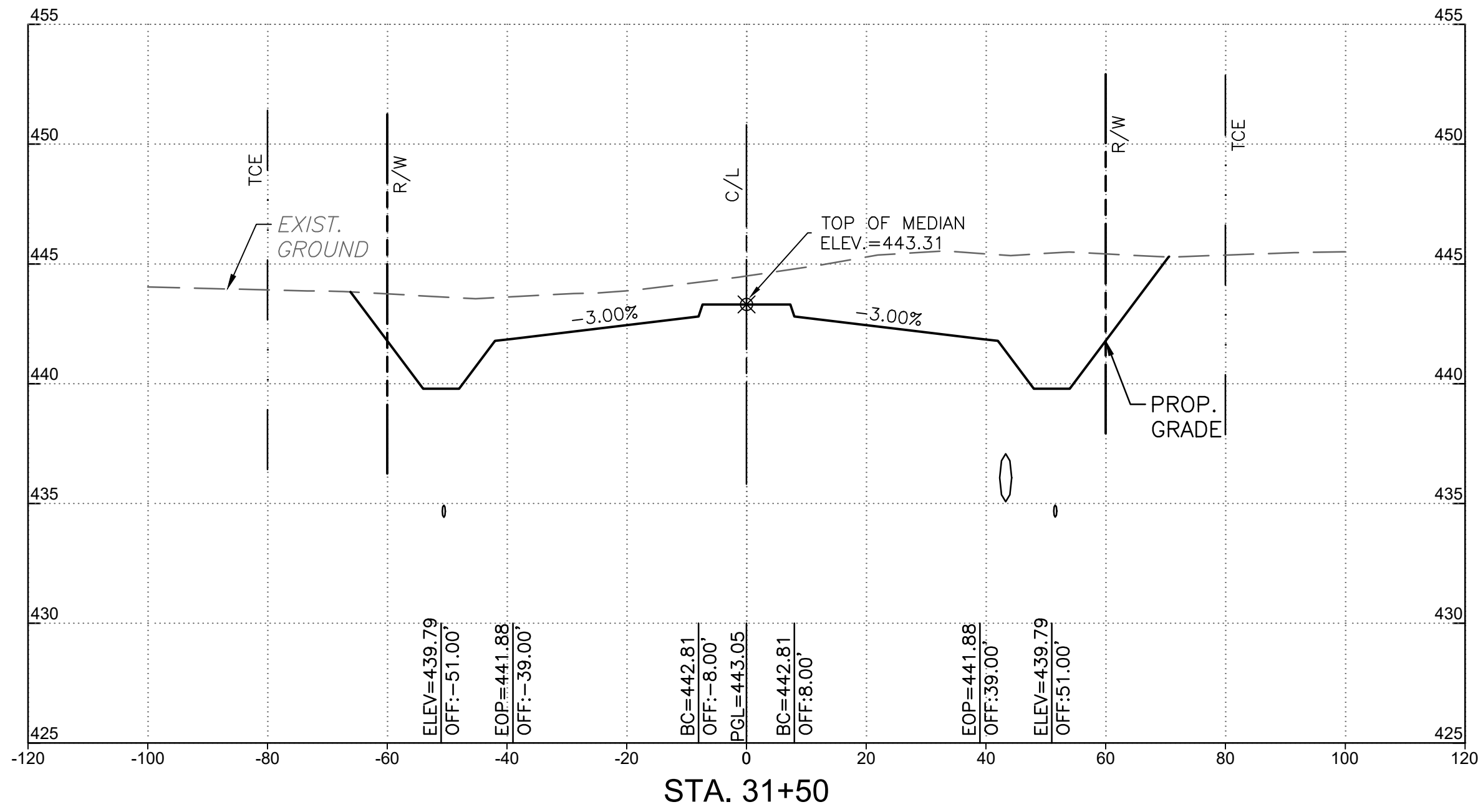


HALFWAY BOULEVARD EXTENDED CROSS SECTIONS STA. 29+50 TO 31+00

SCALE
 H:1" = 20' V:1" = 5'

SHEET NO.
 70

PROJECT NO.
 10-273
 SHA: WA06ZM1
 FAP: APL-3(804)E



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
 DRAWN BY: KDUUGA
 CHECKED BY: PJM
 DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

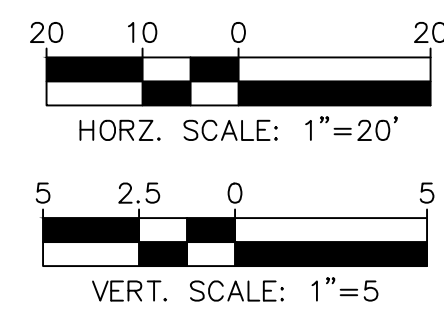
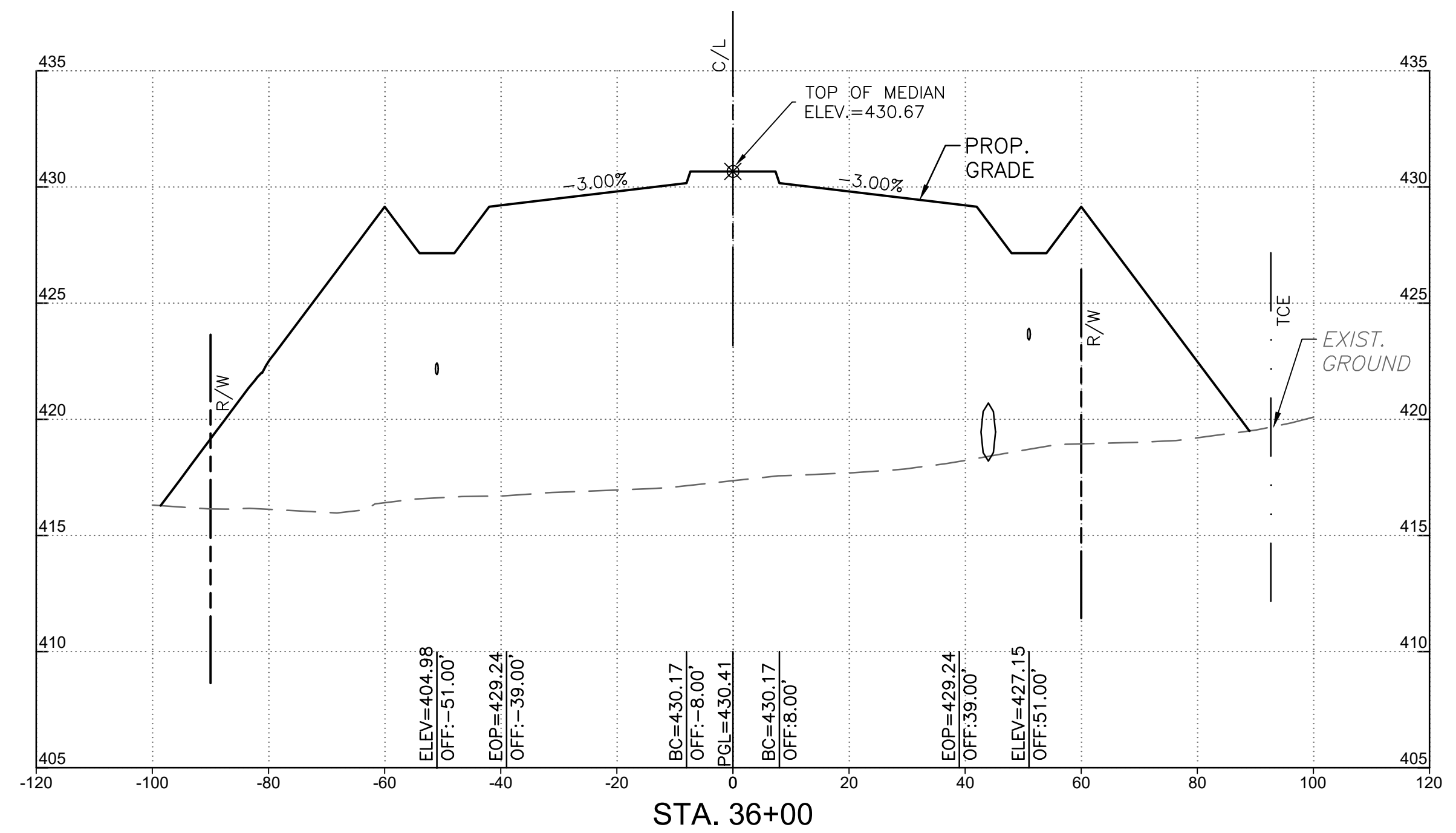
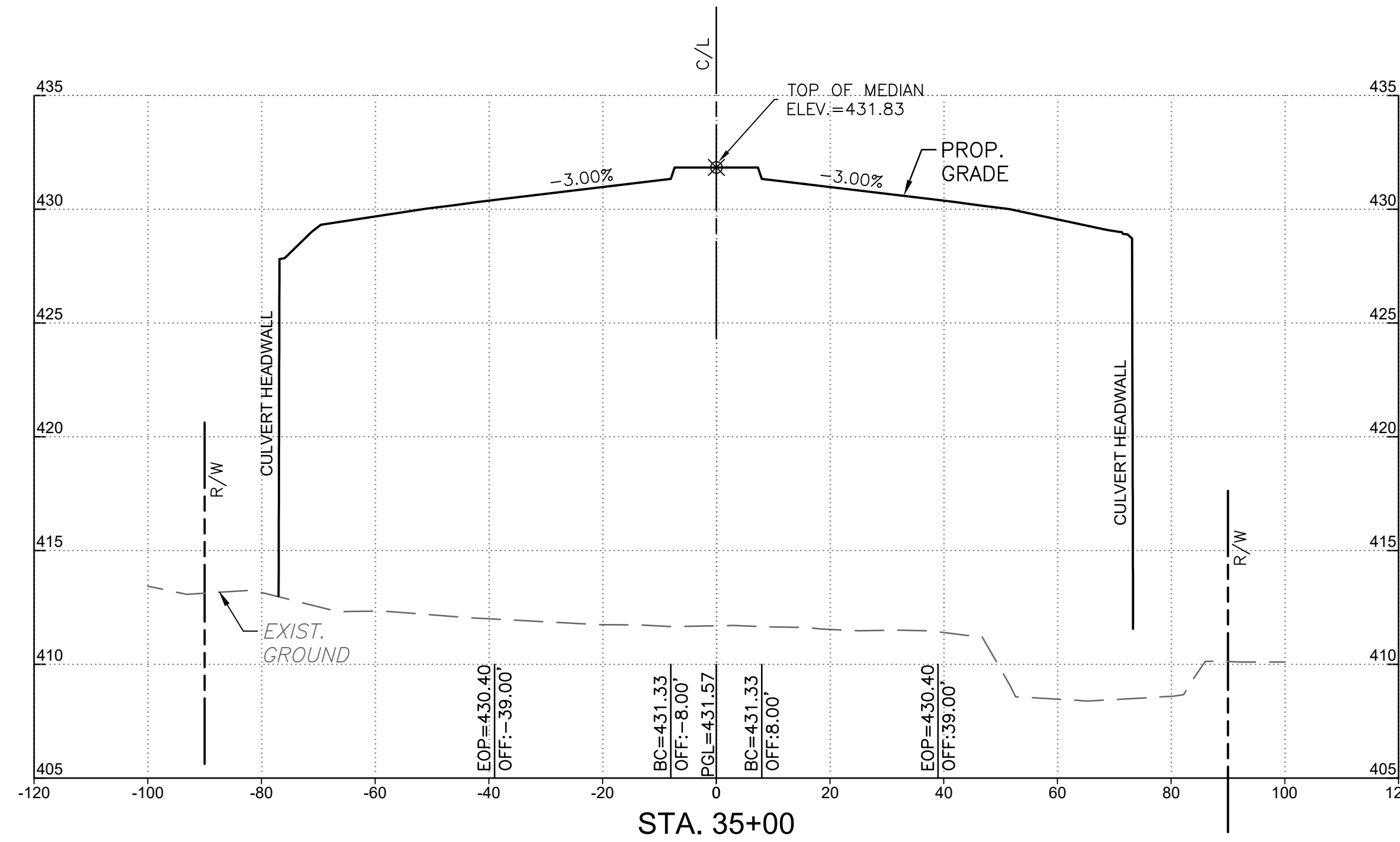
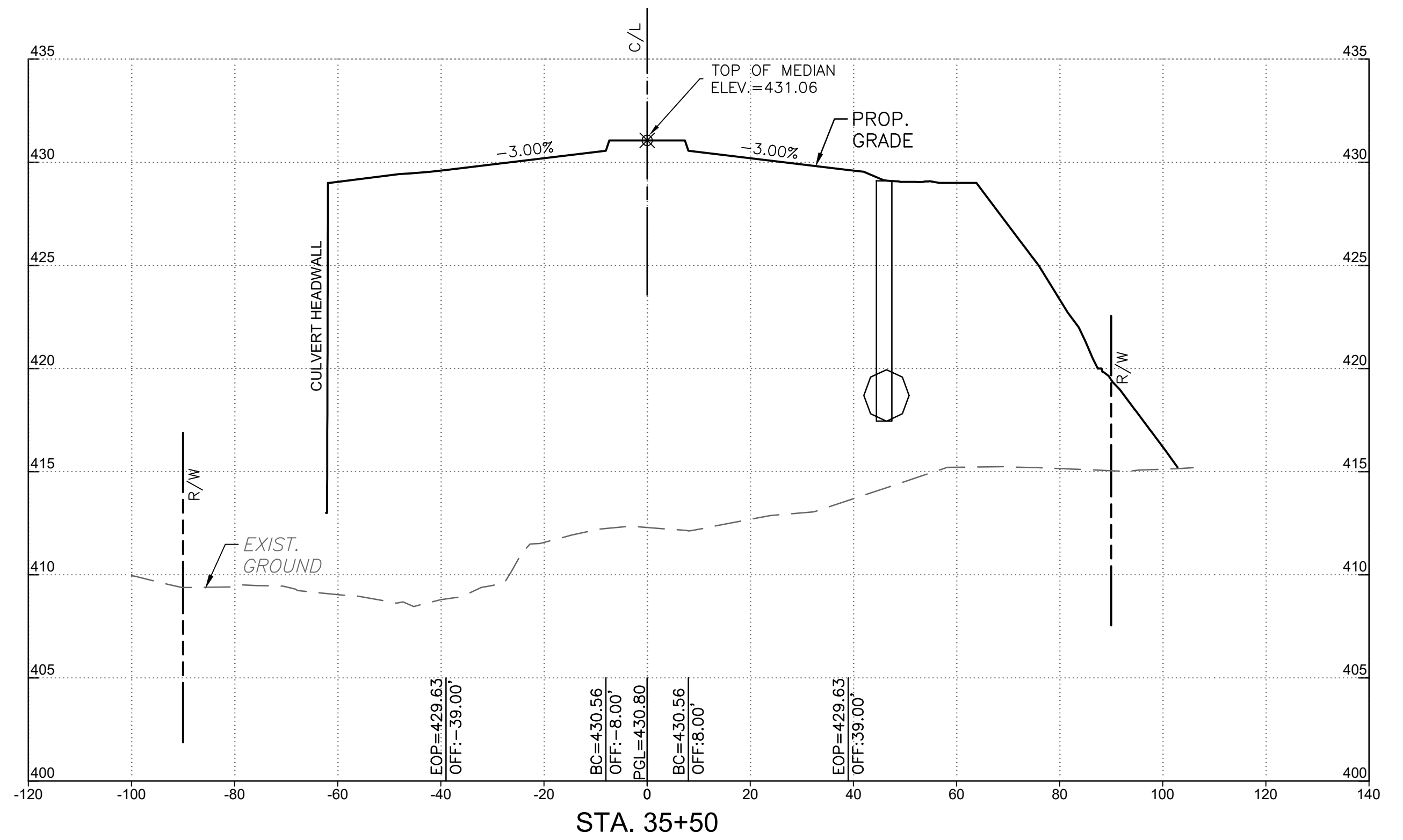
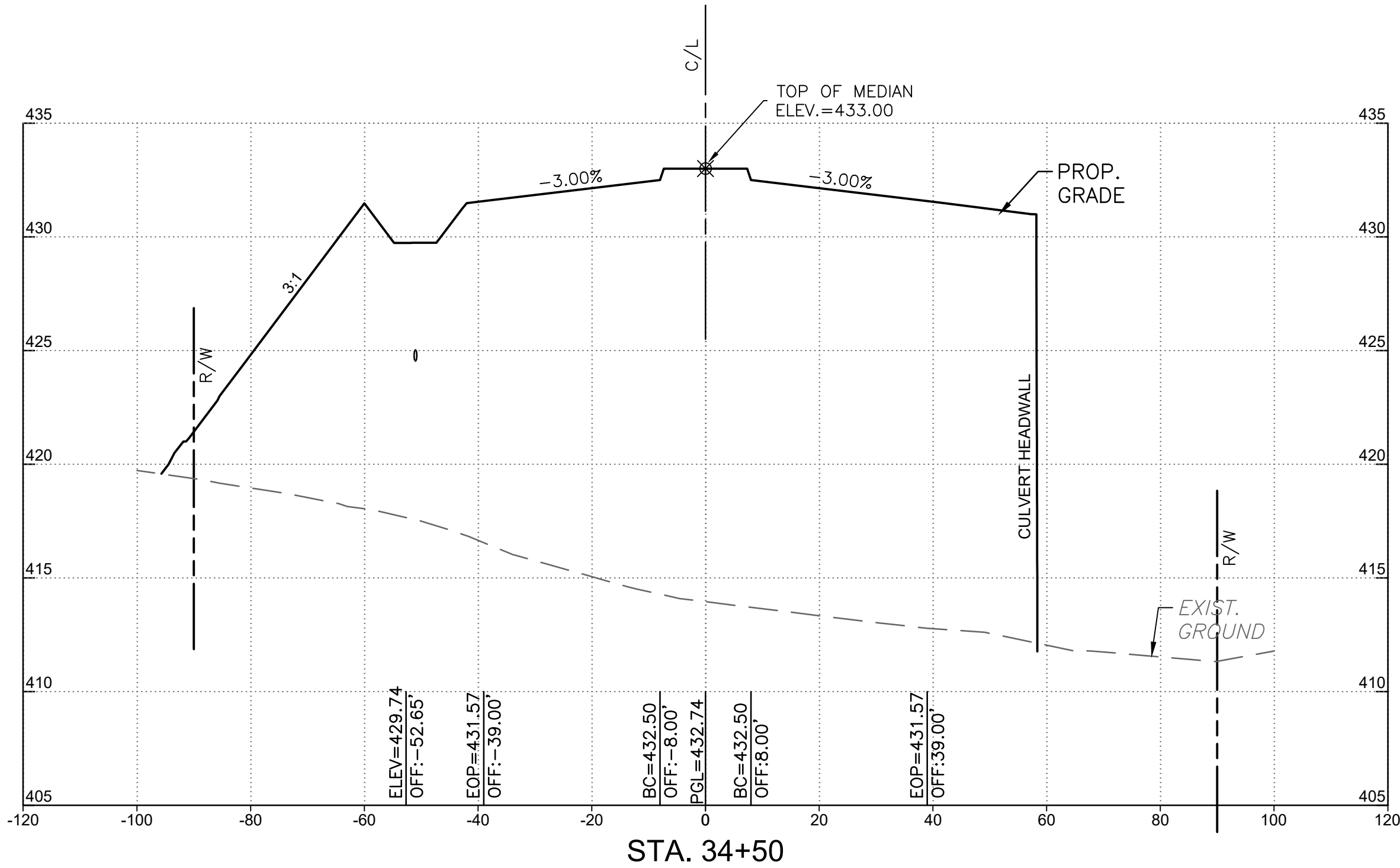
HALFWAY BOULEVARD
 EXTENDED
 CROSS SECTIONS
 STA. 31+50 TO 34+00

SCALE
 H:1" = 20' V:1" = 5'

SHEET NO.
 71

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E



DESIGNED BY: KDUUGA	DRAWN BY: KDUUGA	CHECKED BY: PJM	DATE: JAN 2024
NO.	REVISION DESCRIPTION	BY	DATE

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

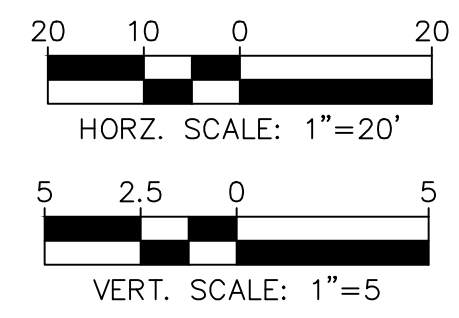
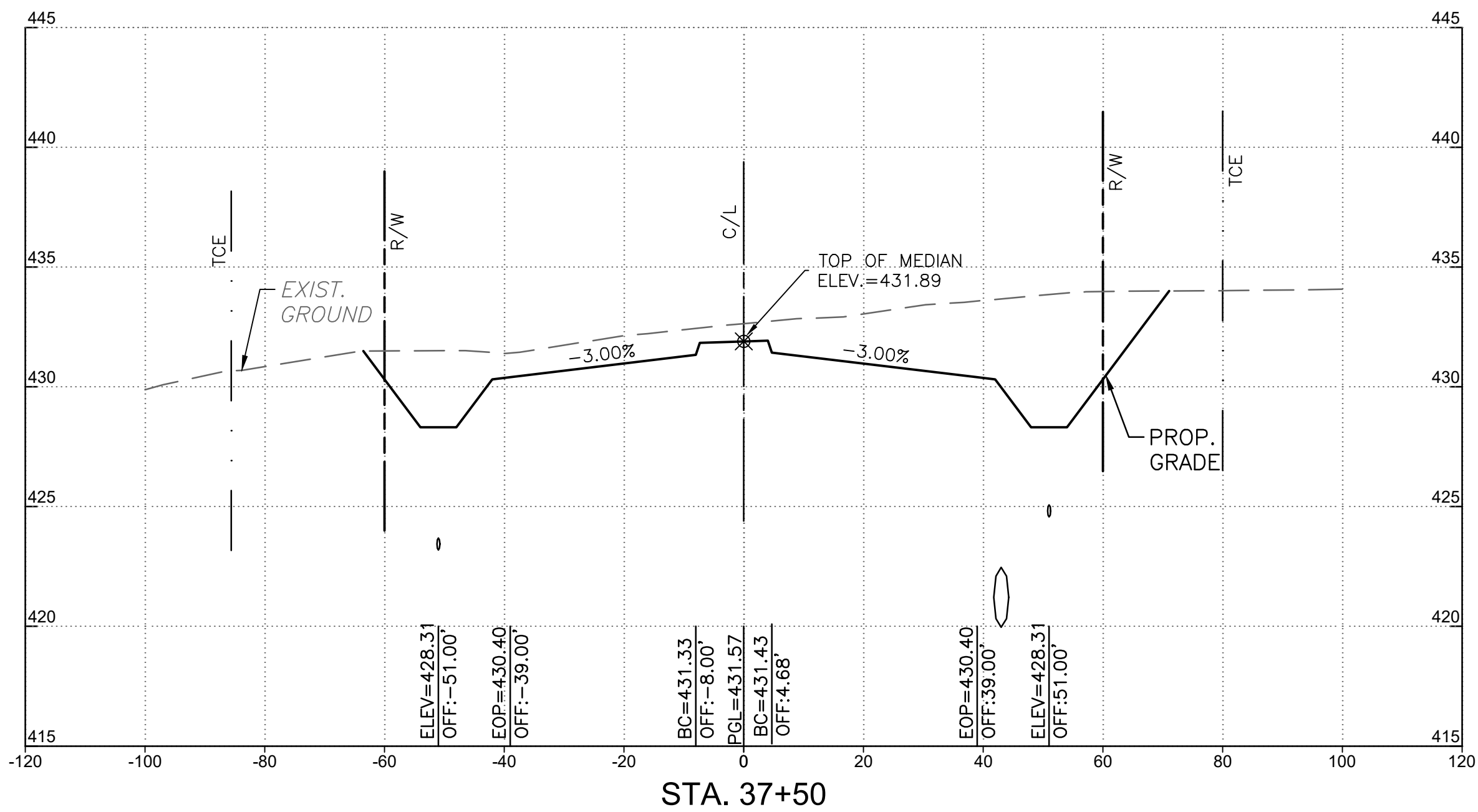
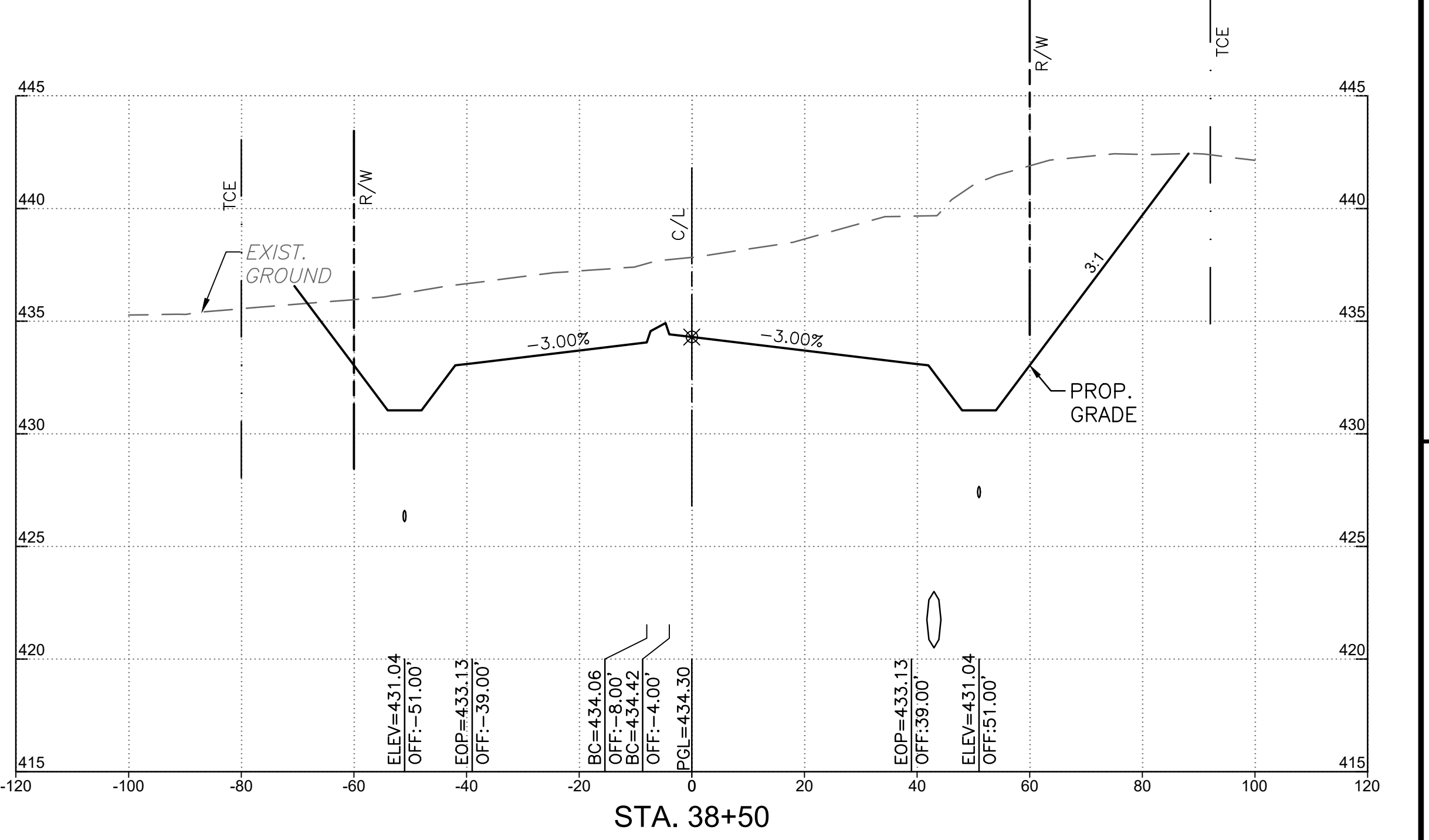
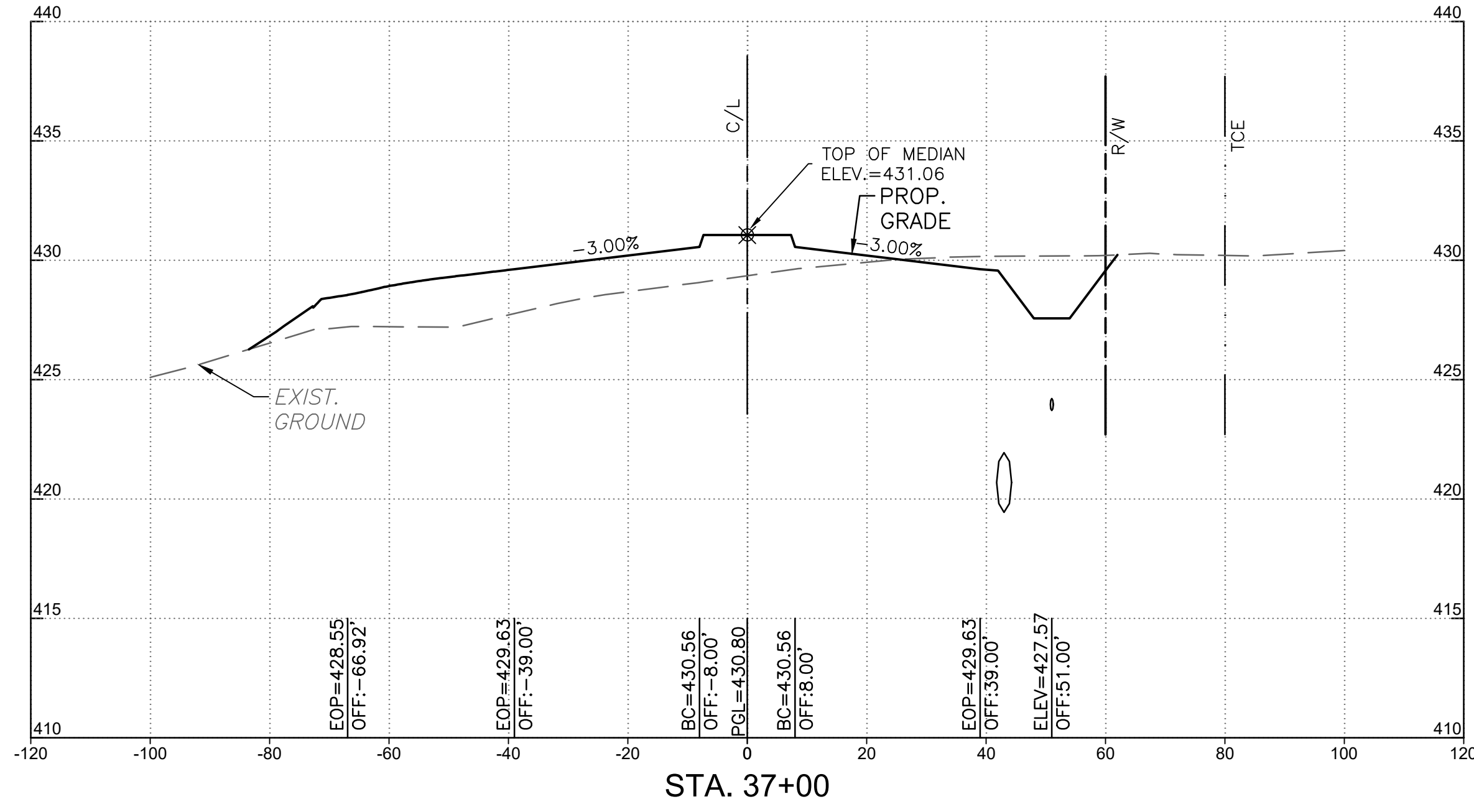
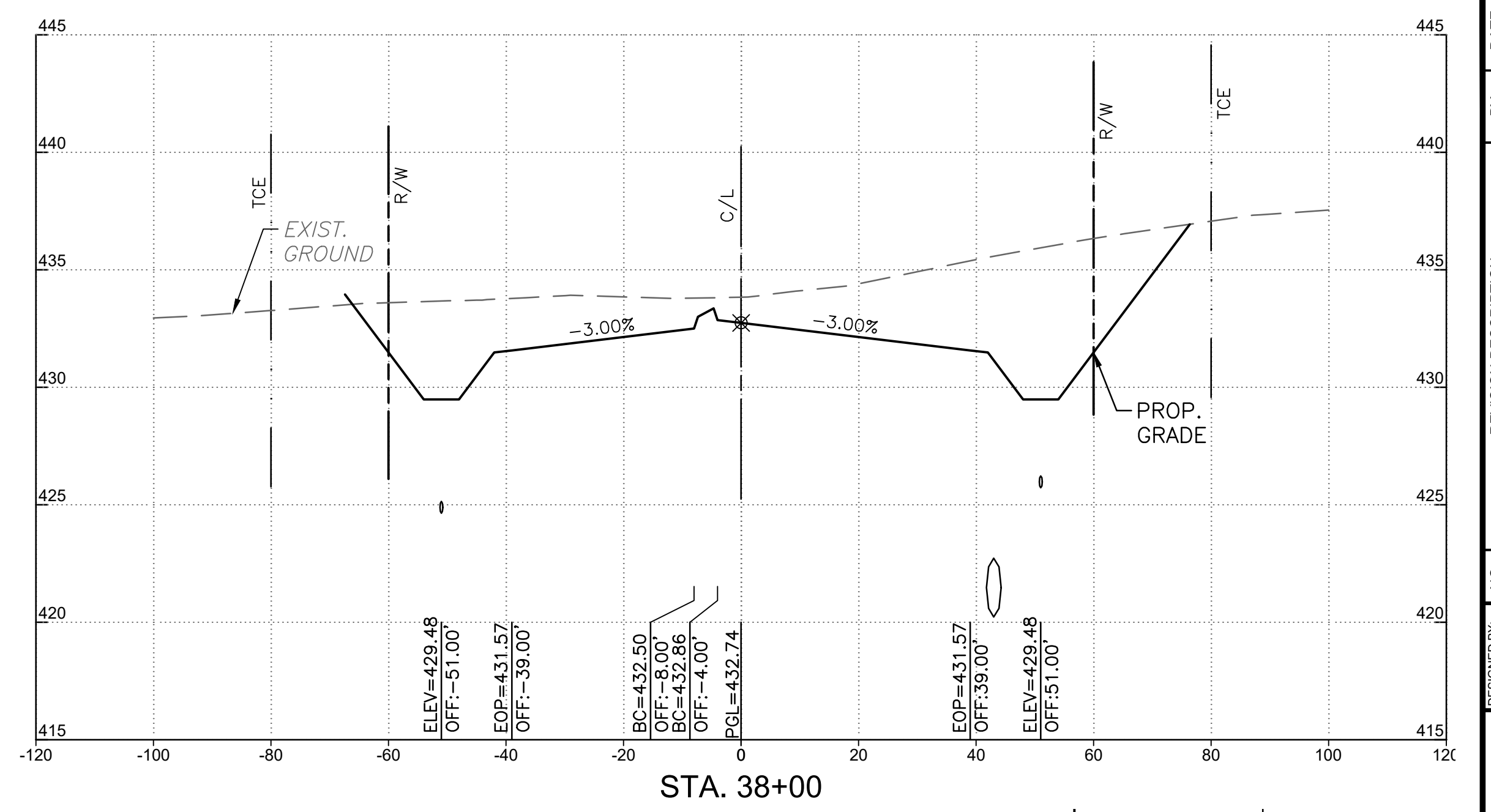
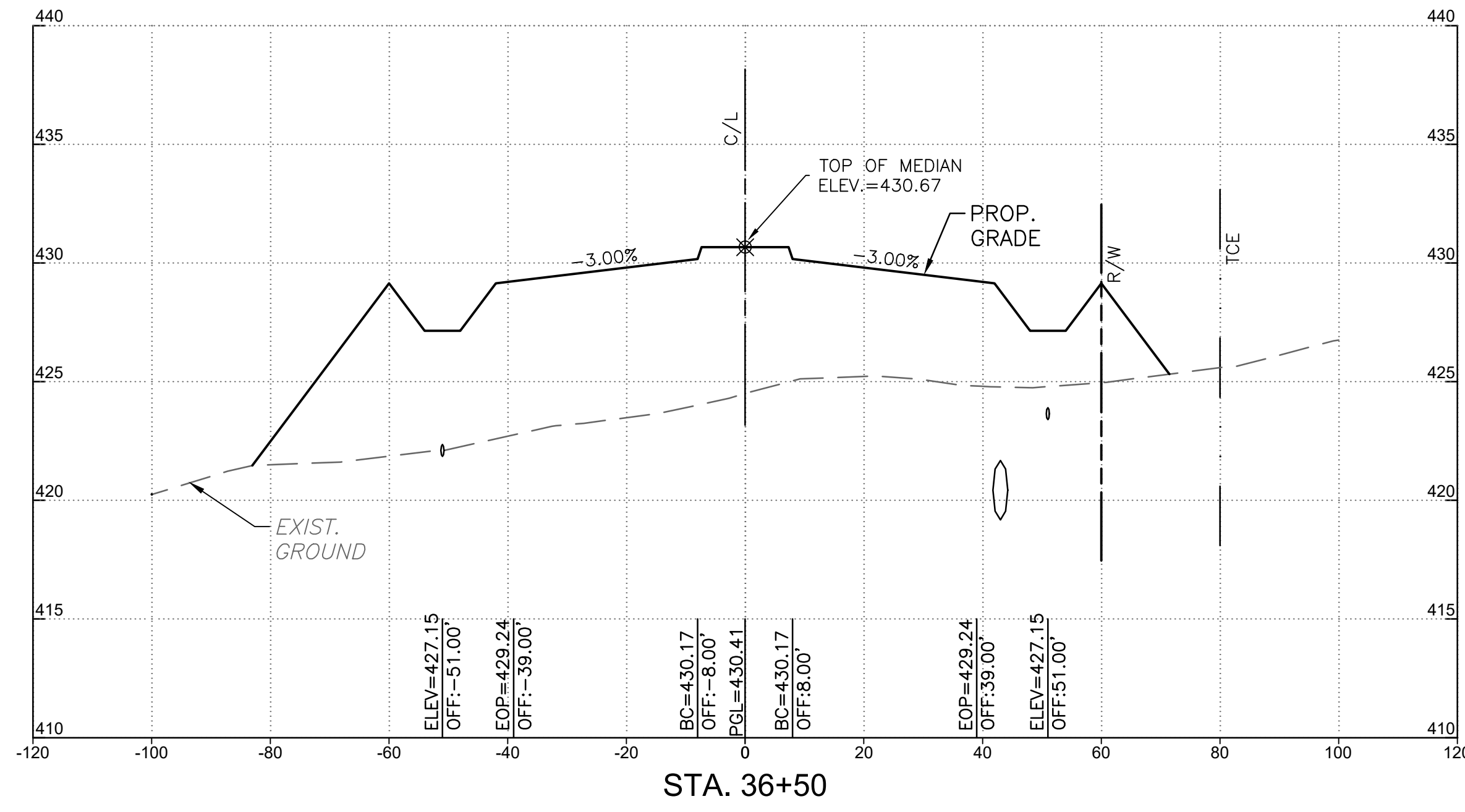
Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

**HALFWAY BOULEVARD
EXTENDED
CROSS SECTIONS
STA. 34+50 TO 36+00**

SCALE
H:1" = 20' V:1" = 5'

SHEET NO.
72

PROJECT NO.
10-273
SHA: WA067ZM1
FAP: APL-3(804)E



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
 DRAWN BY: KDUUGA
 CHECKED BY: PJM
 DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

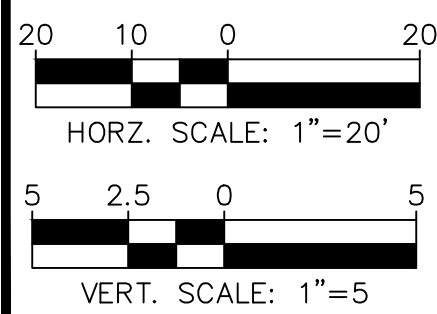
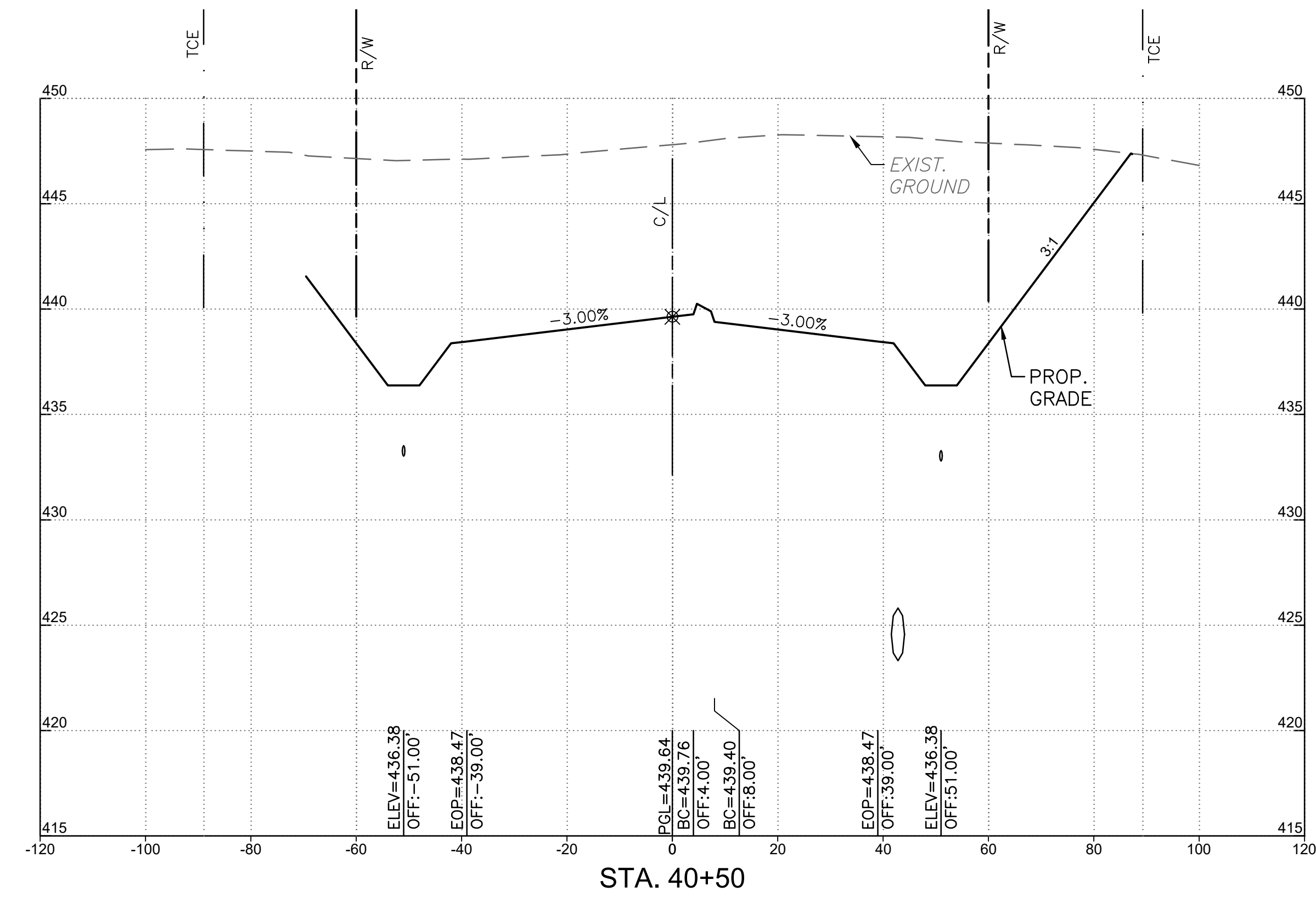
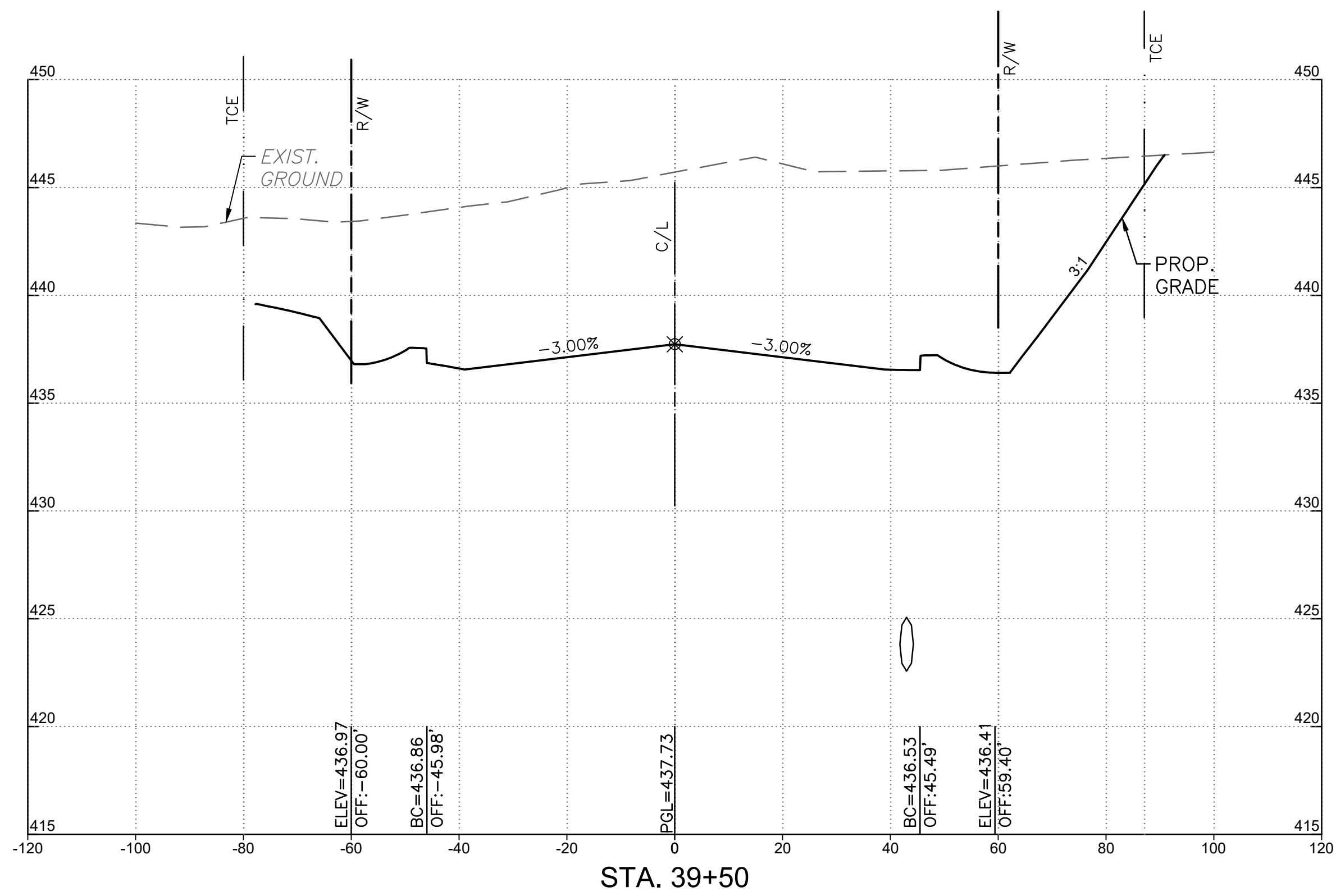
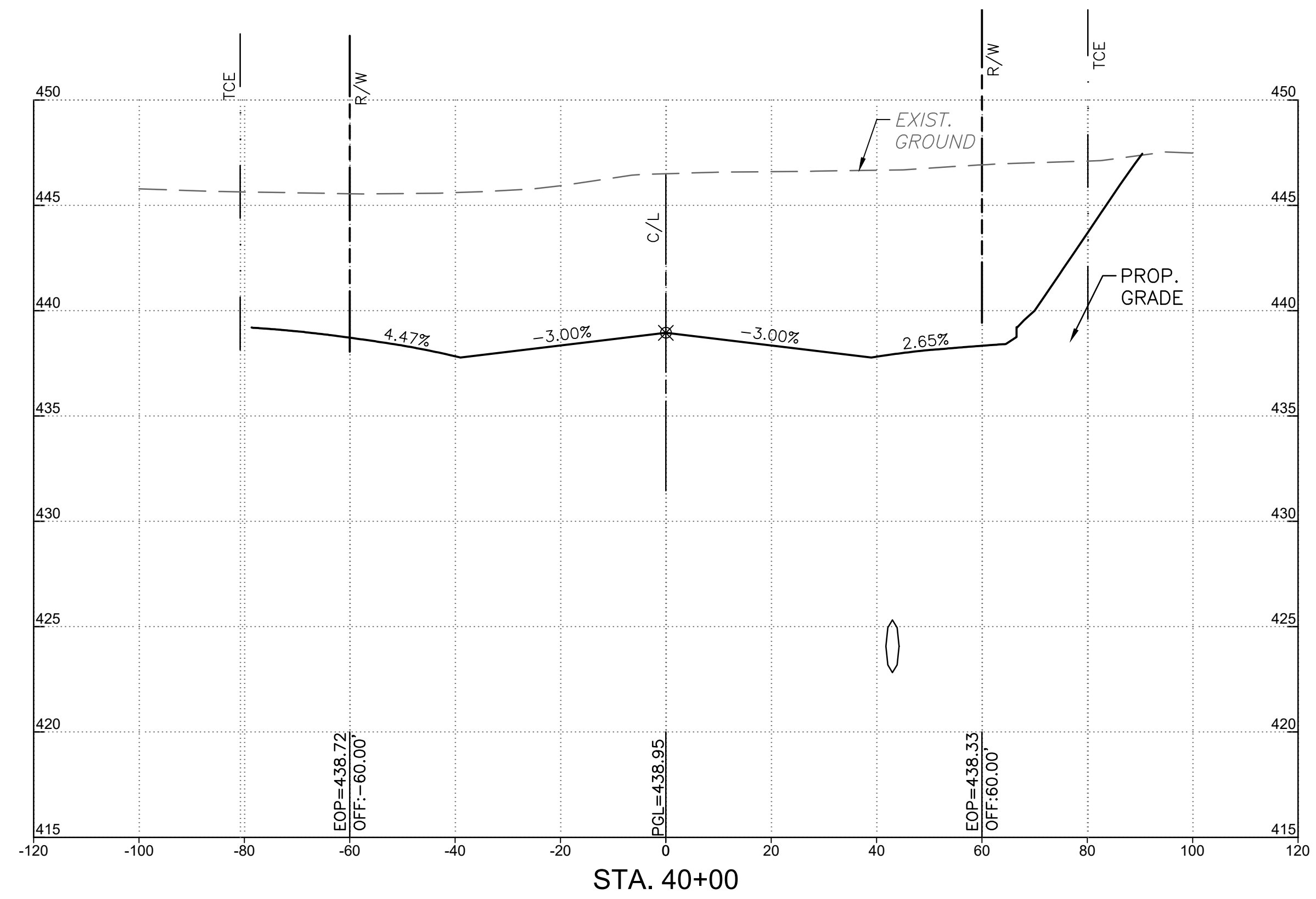
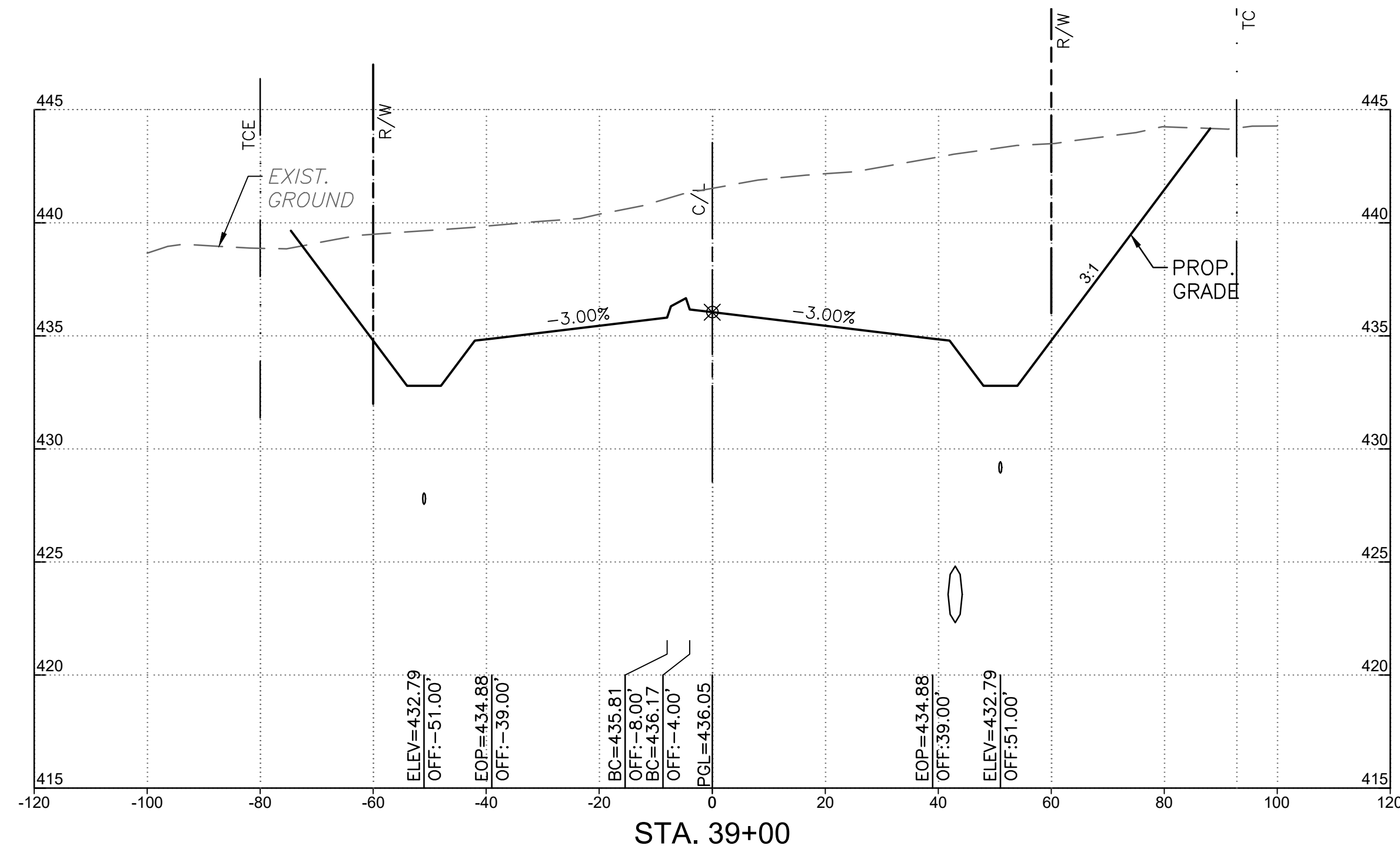
**HALFWAY BOULEVARD
 EXTENDED
 CROSS SECTIONS
 STA. 36+50 TO 38+50**

SCALE
 H:1" = 20' V:1" = 5'

SHEET NO.
 73

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
 DRAWN BY: KDUUGA
 CHECKED BY: PJM
 DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-315-2460 Fax: 240-315-2401

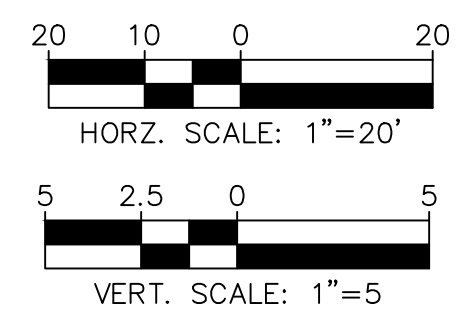
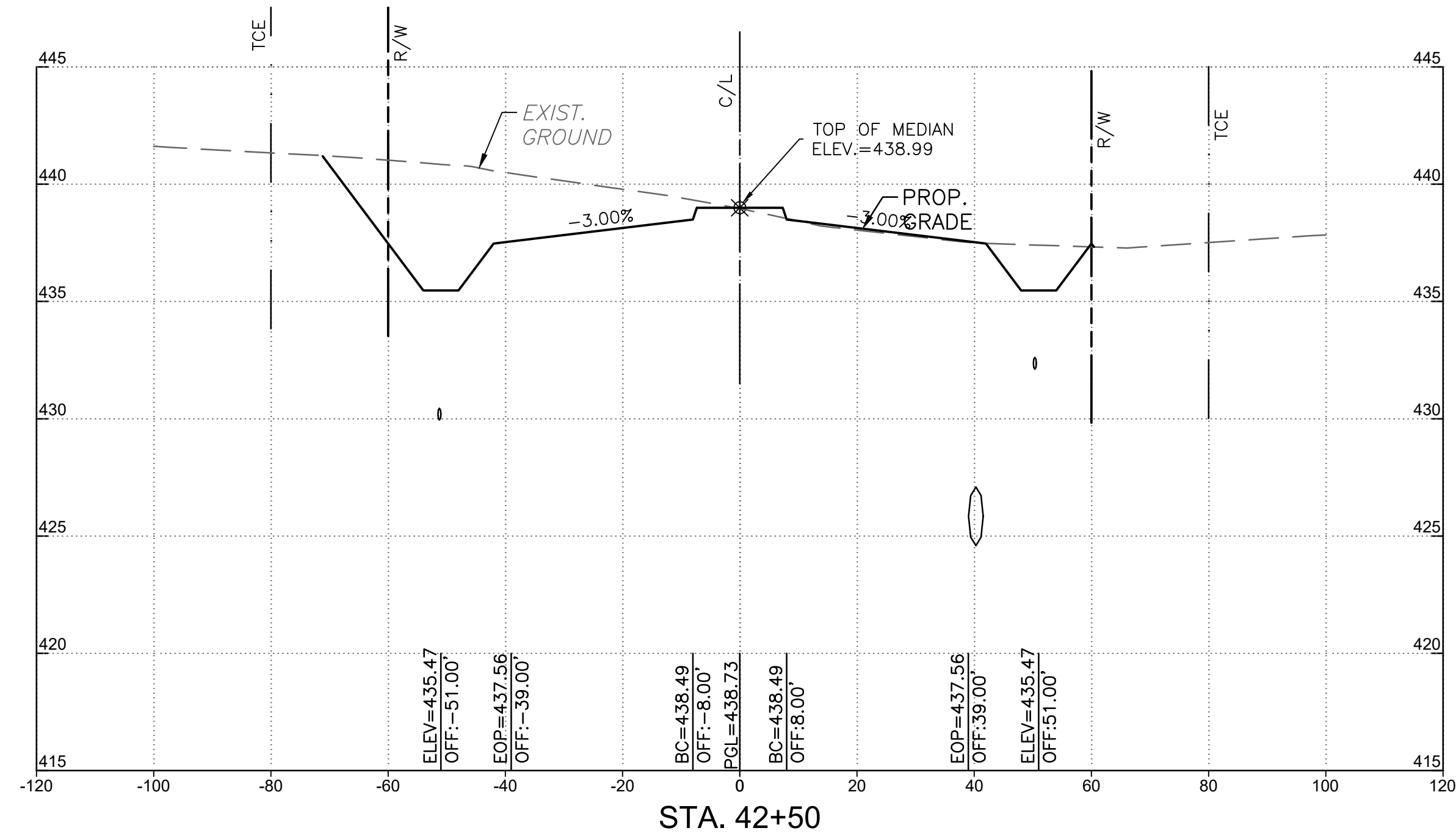
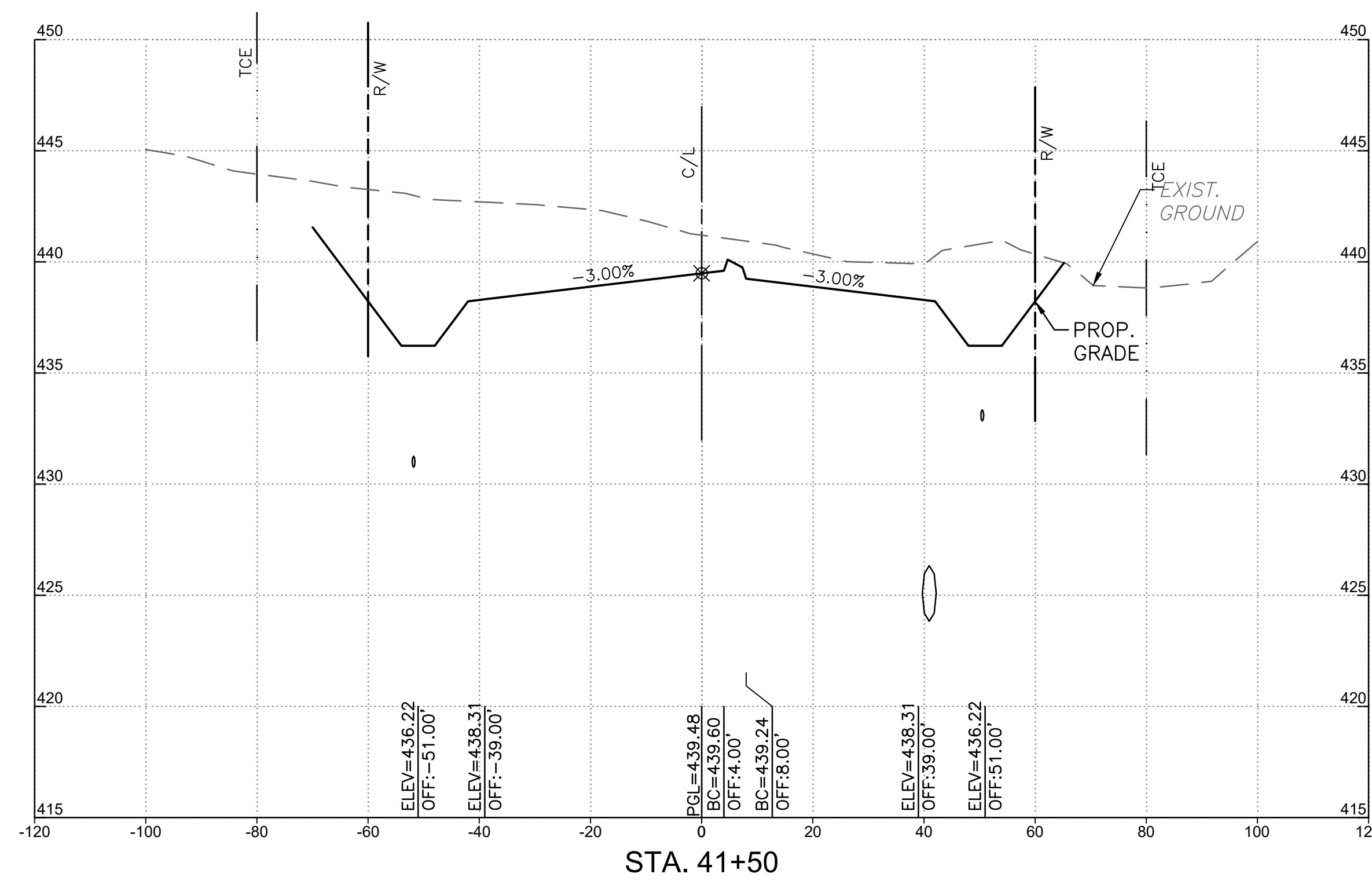
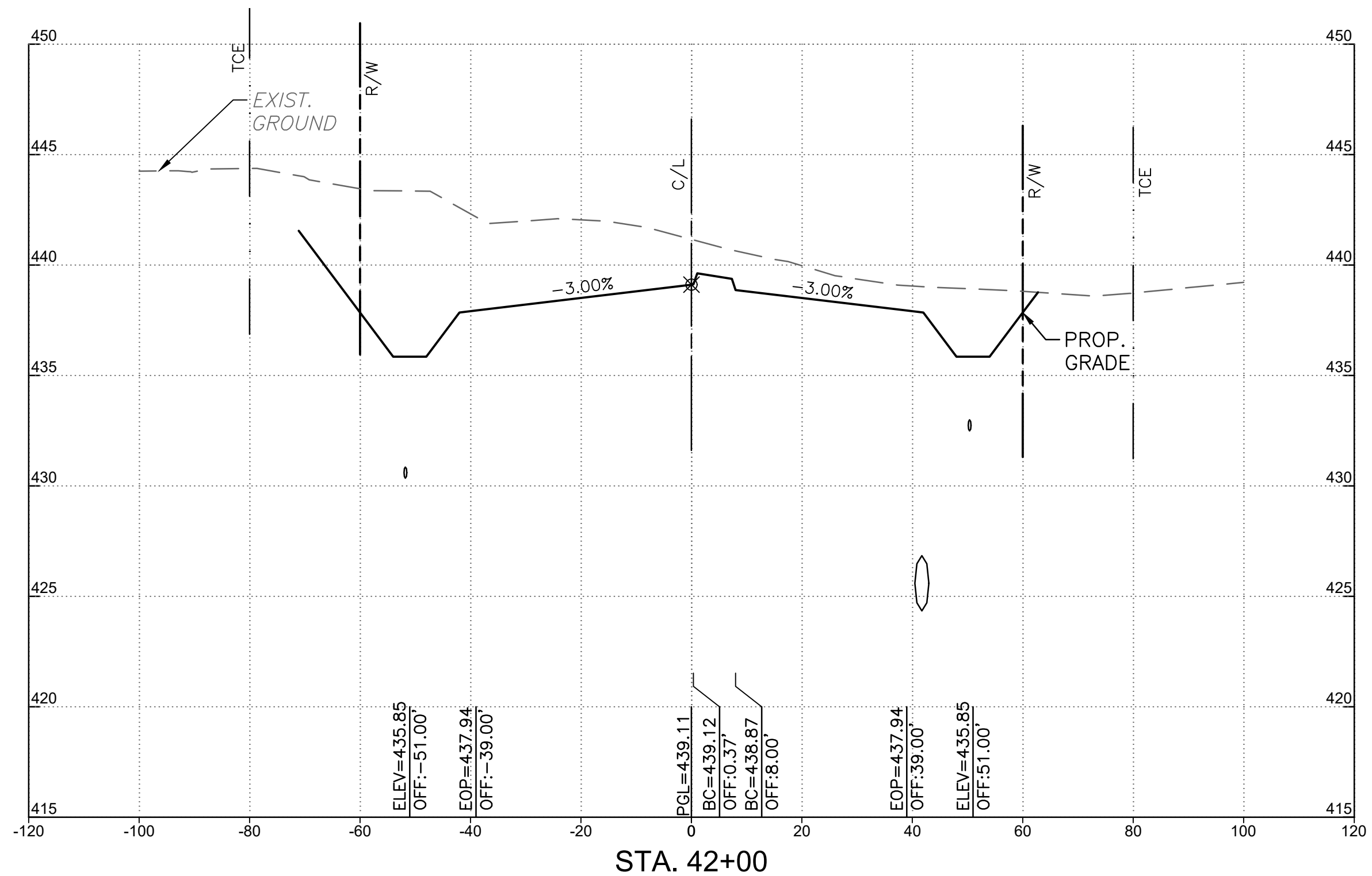
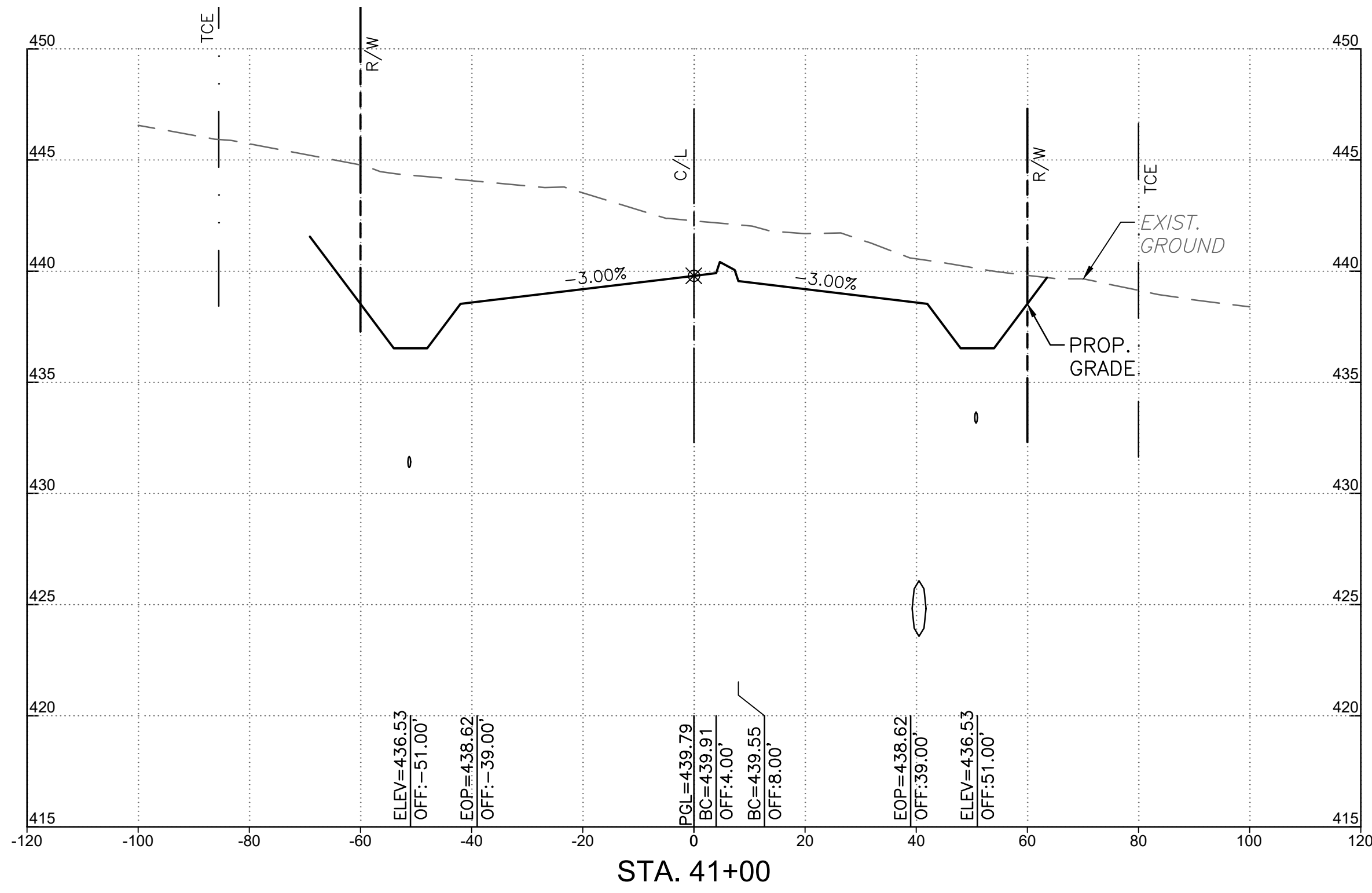
HALFWAY BOULEVARD
 EXTENDED
 CROSS SECTIONS
 STA. 39+00 TO 40+50

SCALE
 H:1" = 20' V:1" = 5'

SHEET NO.
 74

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E

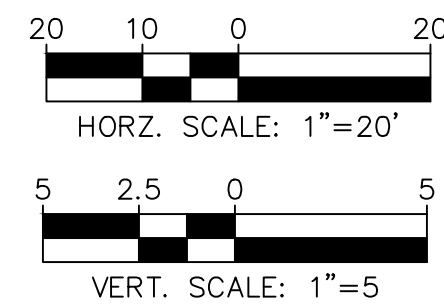
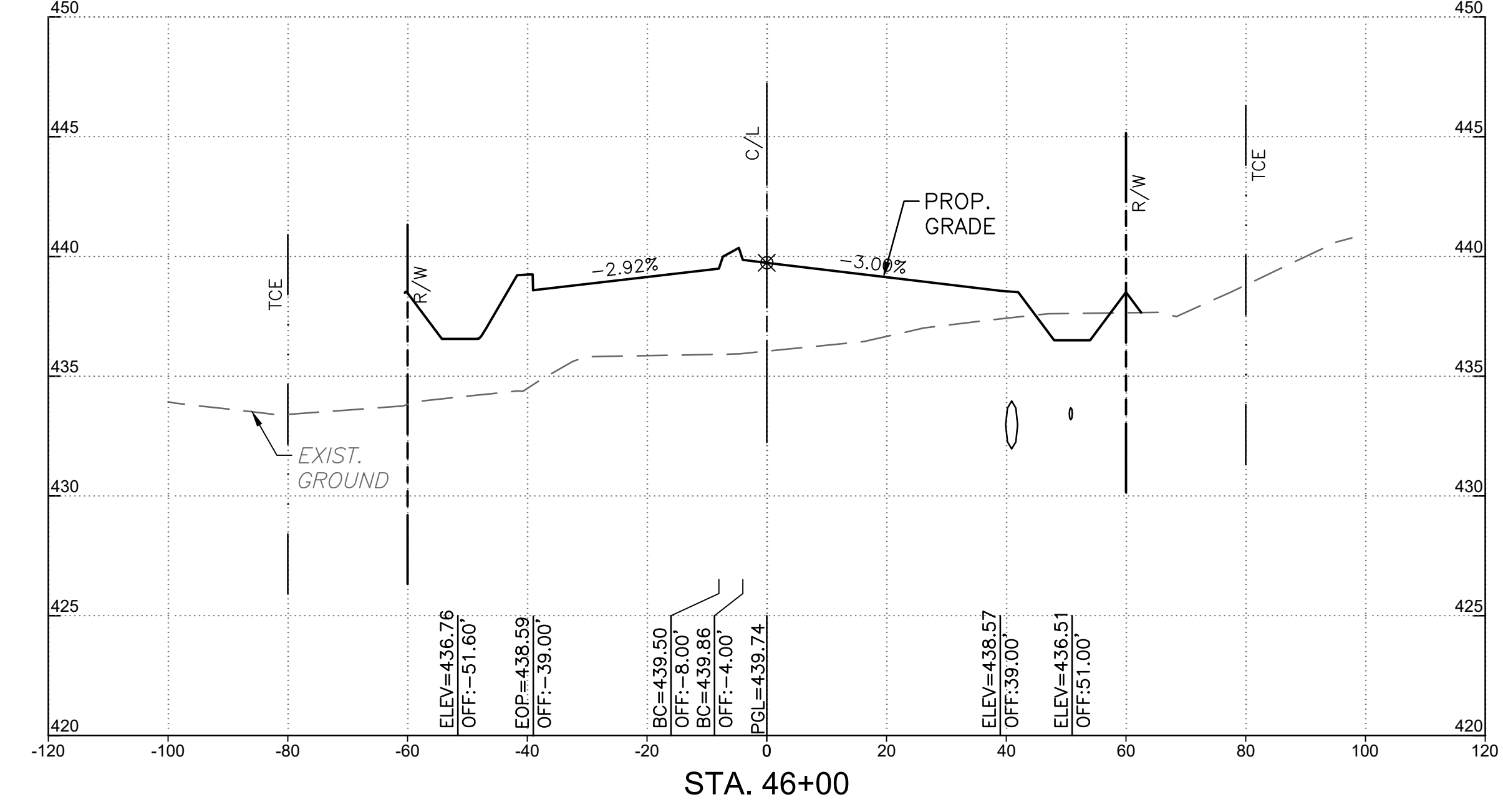
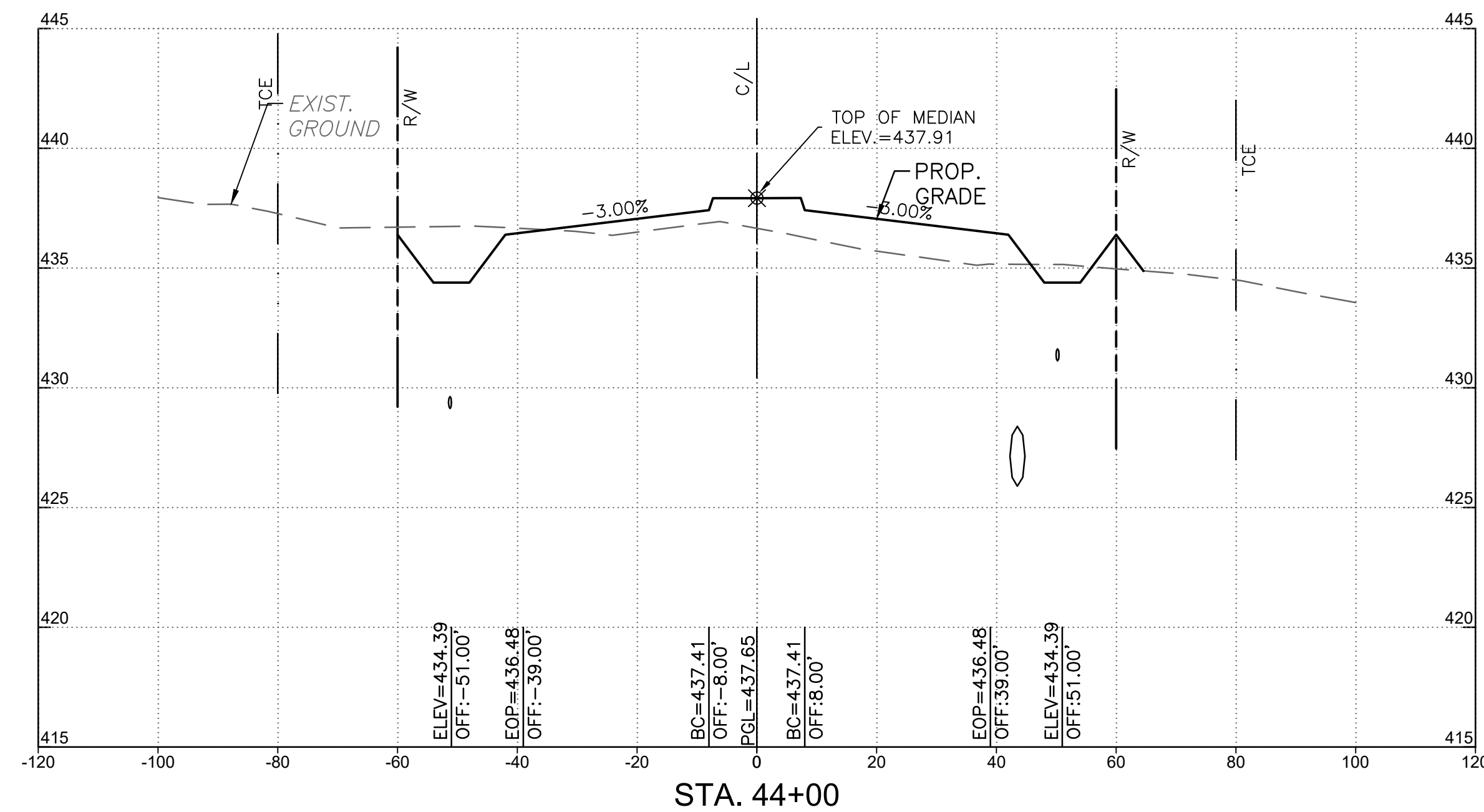
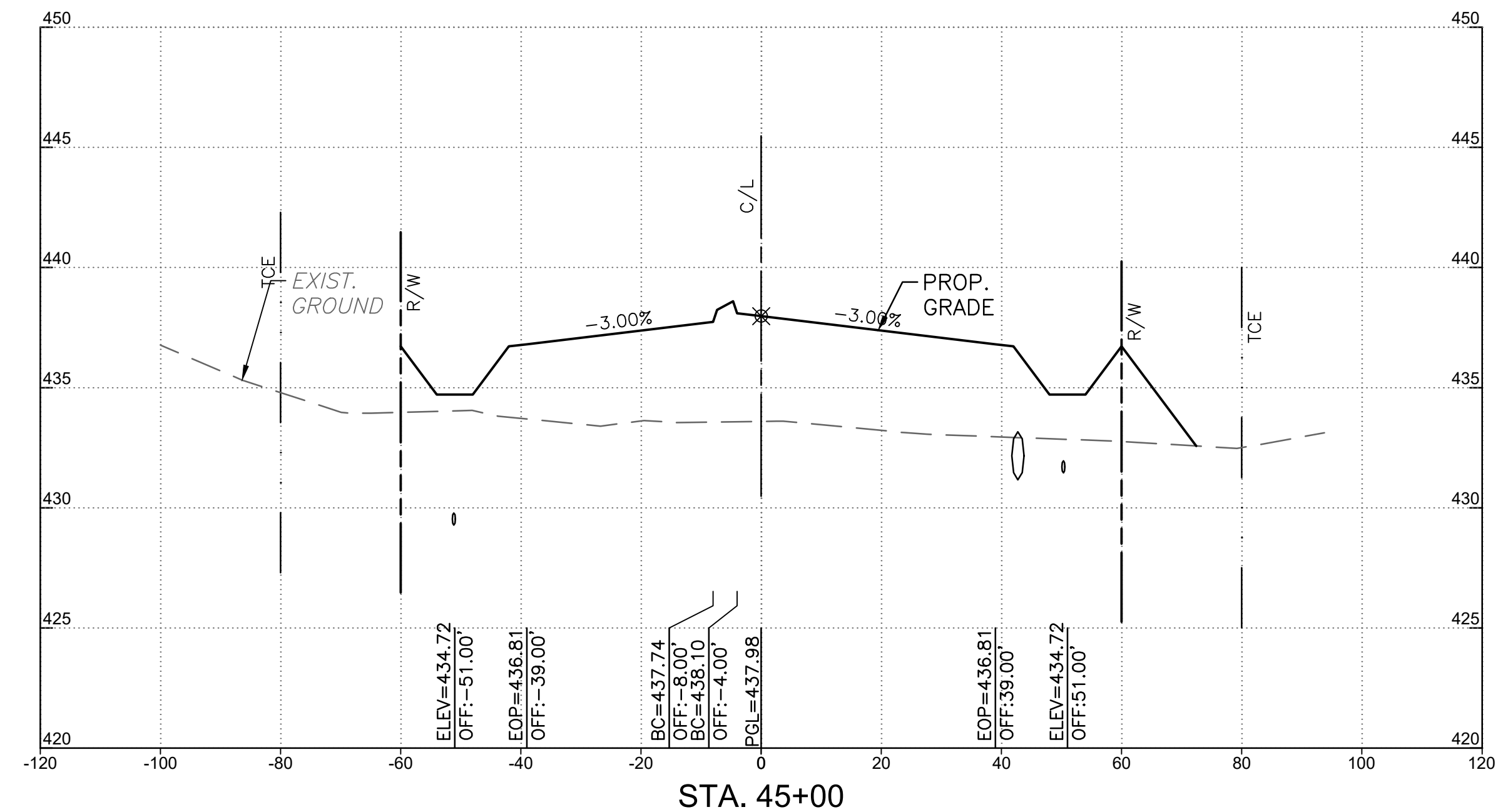
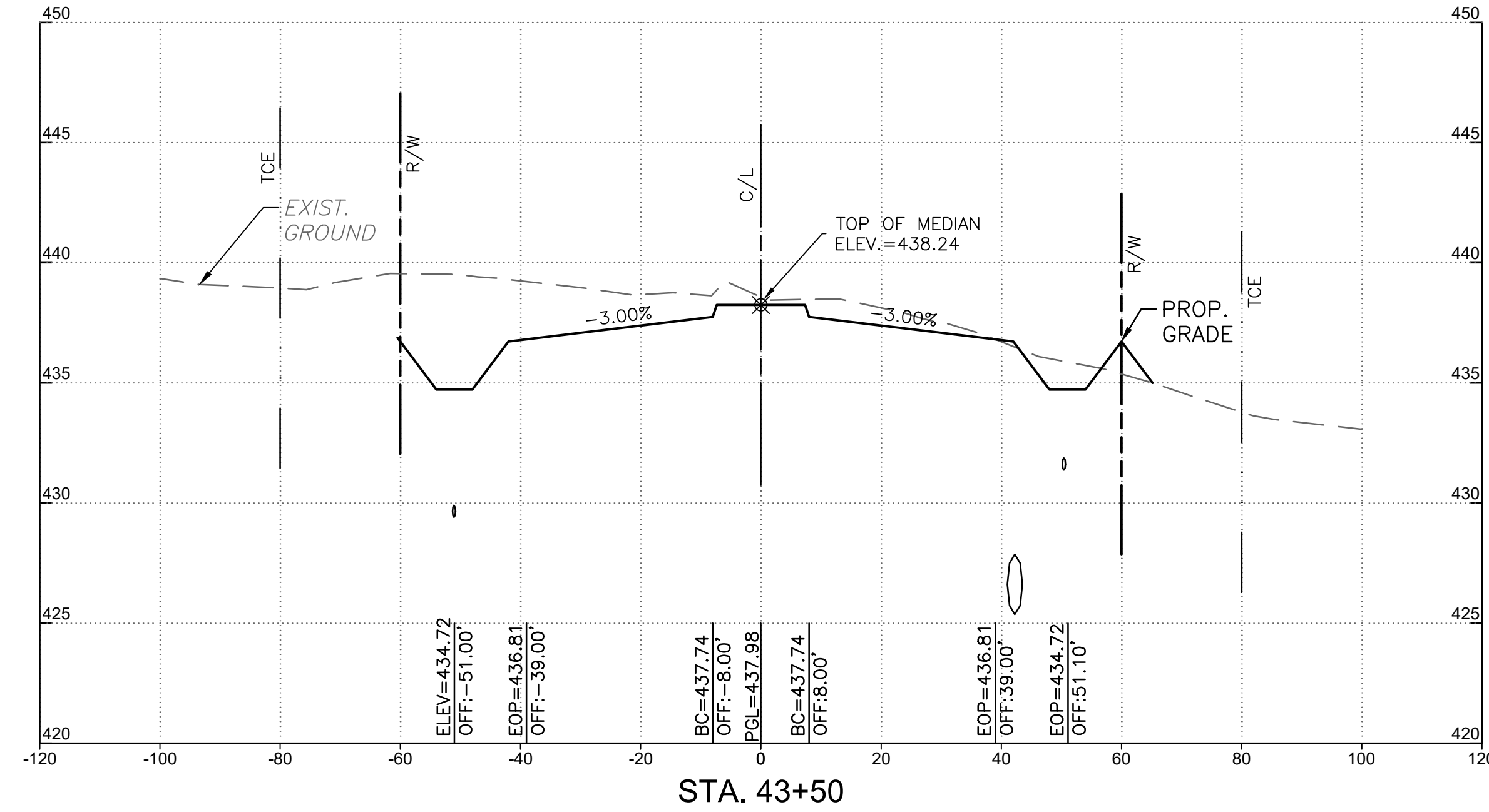
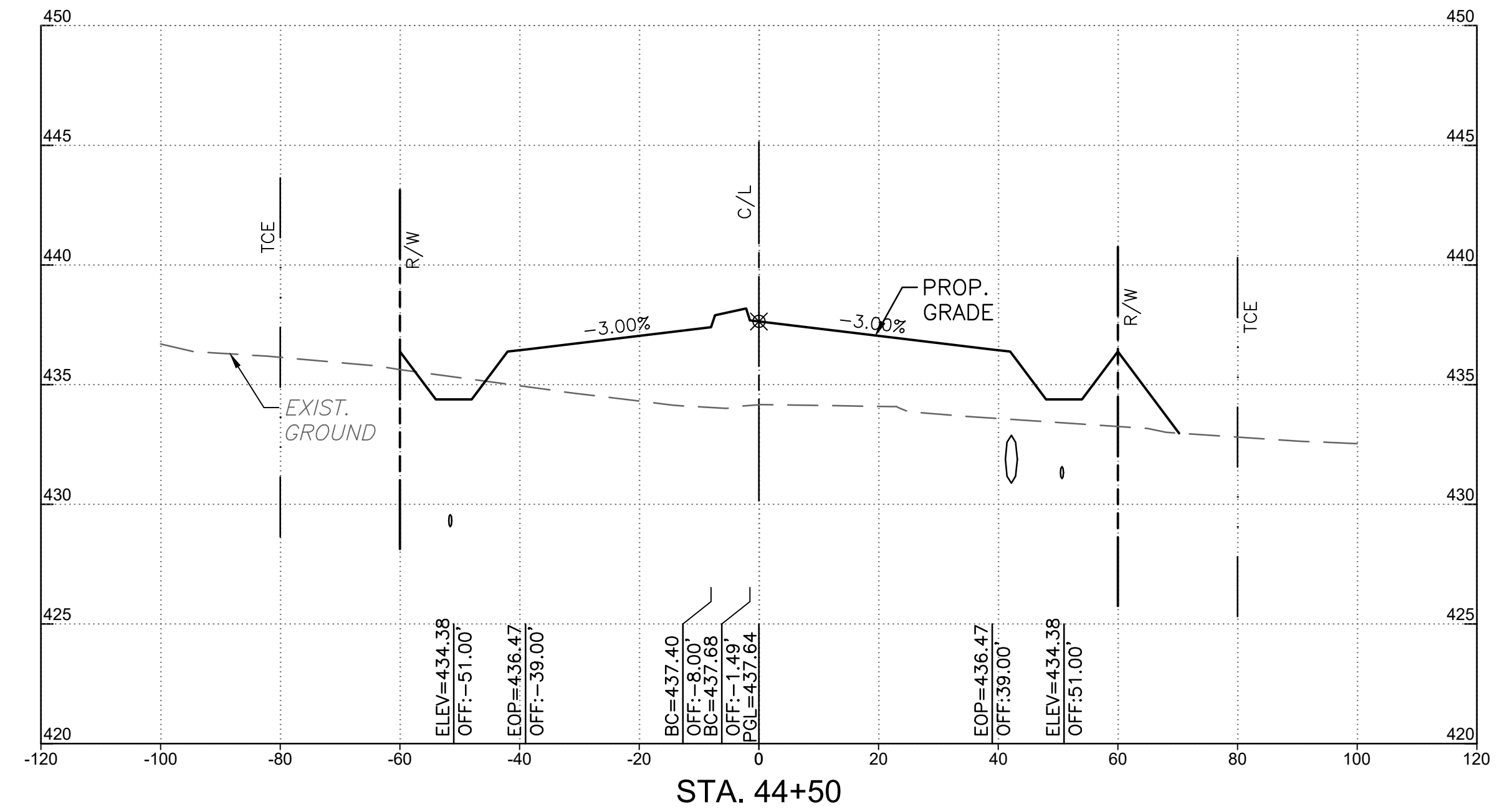
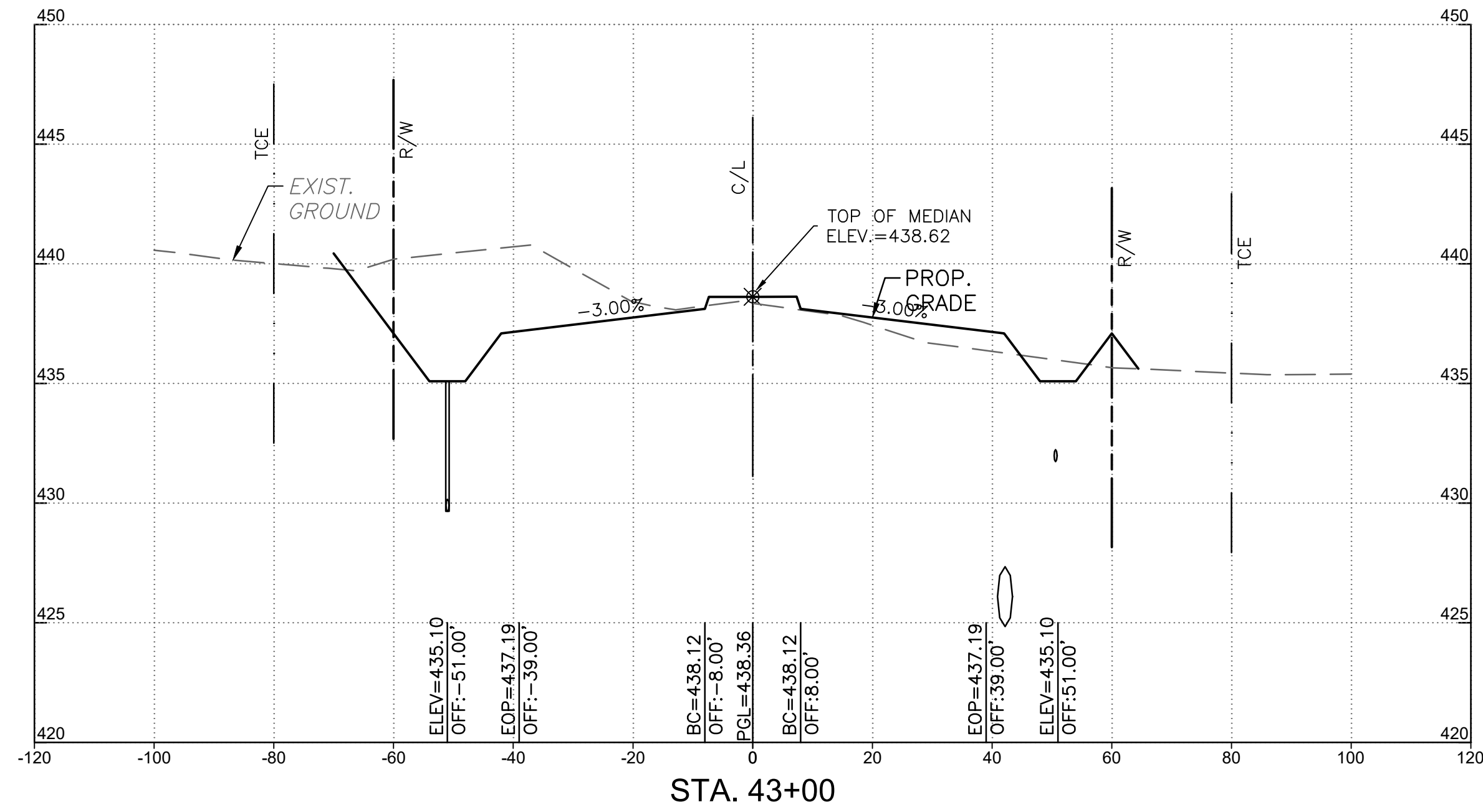


DESIGNED BY:	NO.	REVISION DESCRIPTION	BY	DATE
KDU/GCA				
DRAWN BY:				
KDU/GCA				
CHECKED BY:				
PLM				
DATE:				
JAN 2024				

WASHINGTON COUNTY, MARYLAND	
DIVISION OF ENGINEERING	
Washington County Administrative Annex, Building 7 Phone: 240-313-2460 Fax: 240-313-2401	

HALFWAY BOULEVARD EXTENDED	
CROSS SECTIONS	
STA. 41+00 TO 42+50	

SCALE
H:1" = 20' V:1" = 5'
SHEET NO.
75
PROJECT NO.
10-273
SHA: WA067ZM1
FAP: APL-3(804)E



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
 DRAWN BY: KDUUGA
 CHECKED BY: P.J.M.
 DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-315-2460 Fax: 240-315-2401

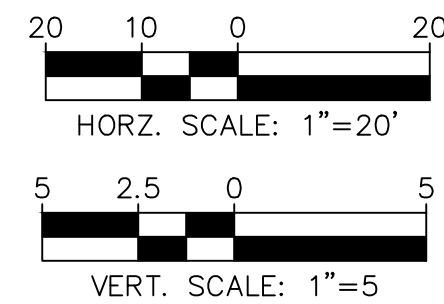
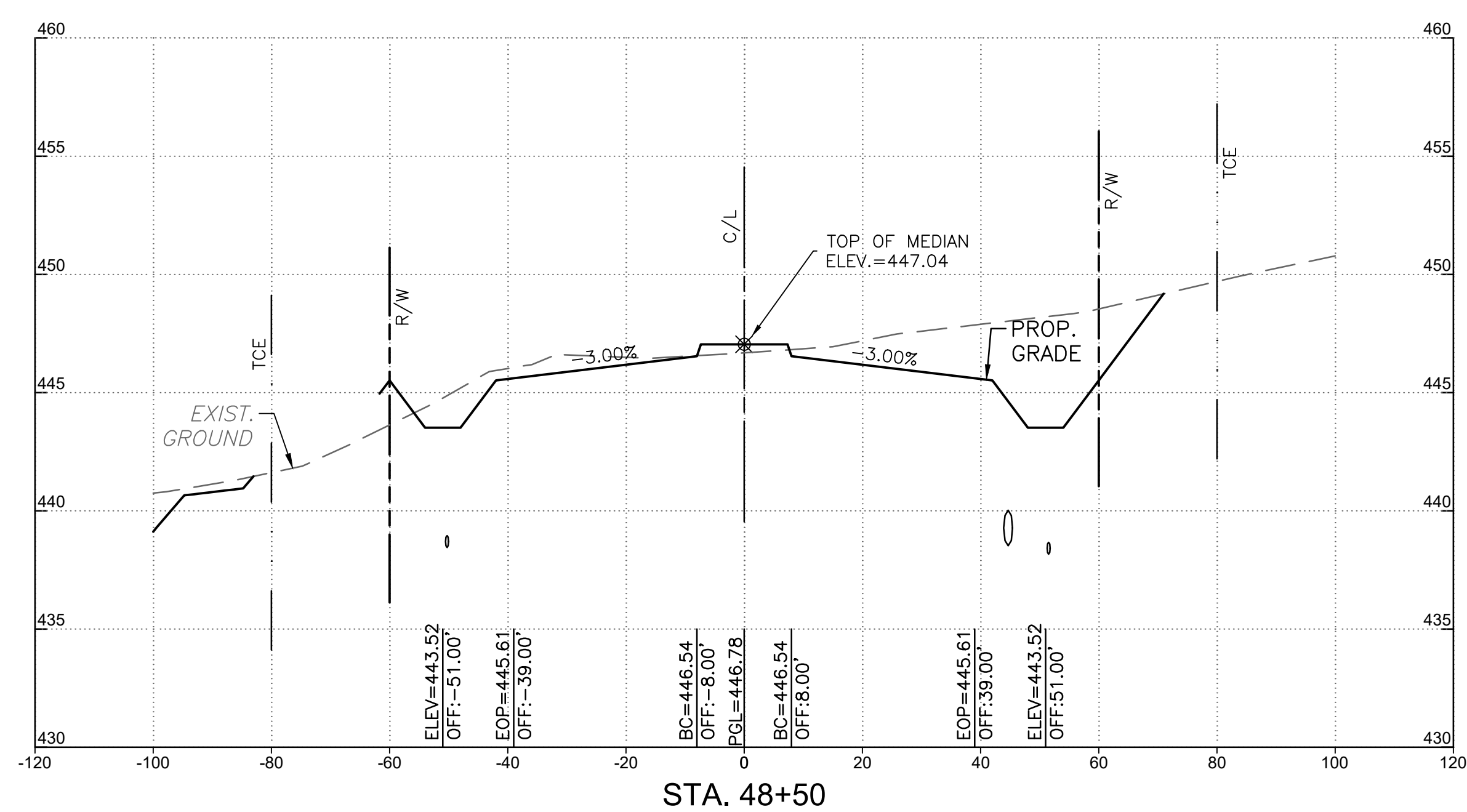
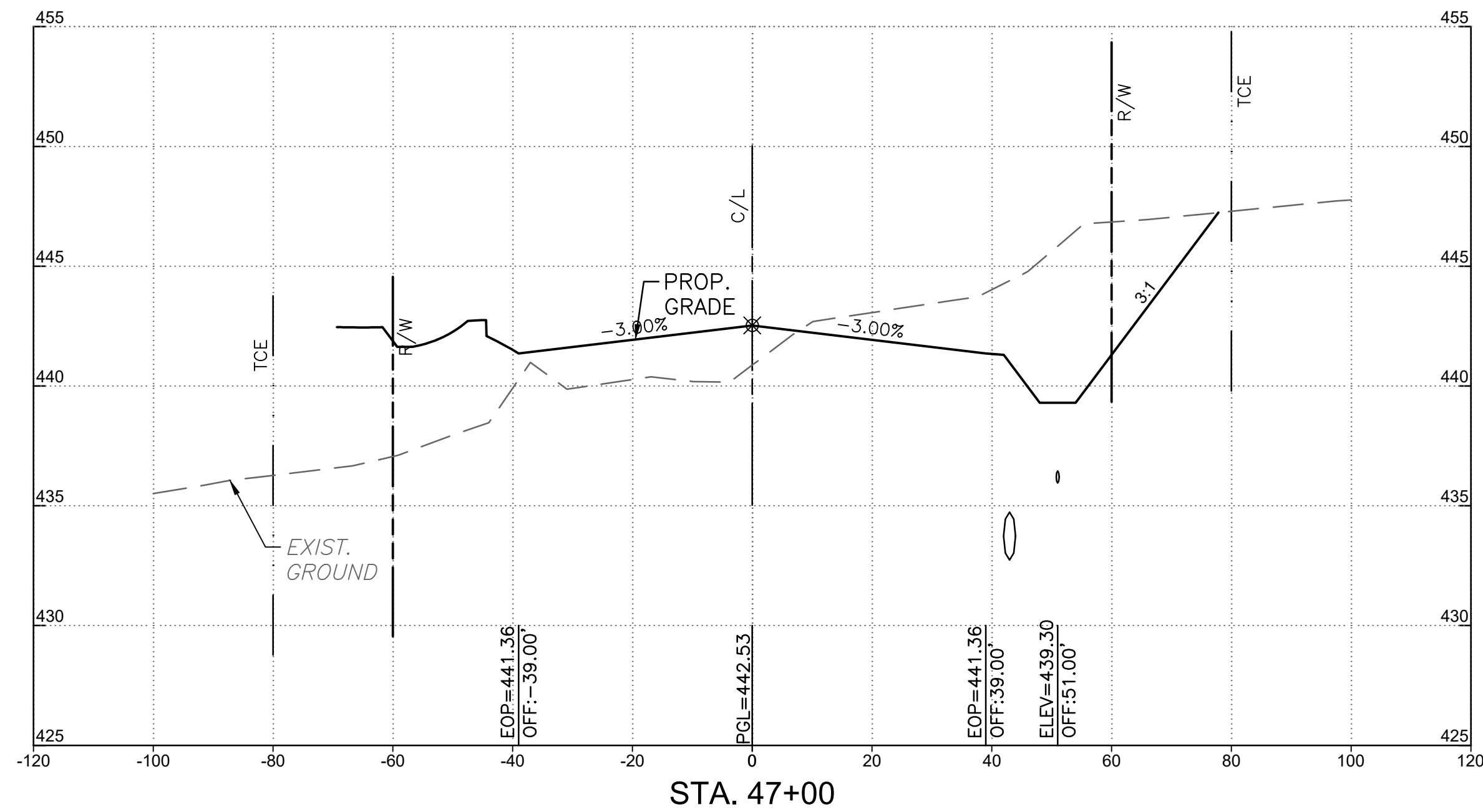
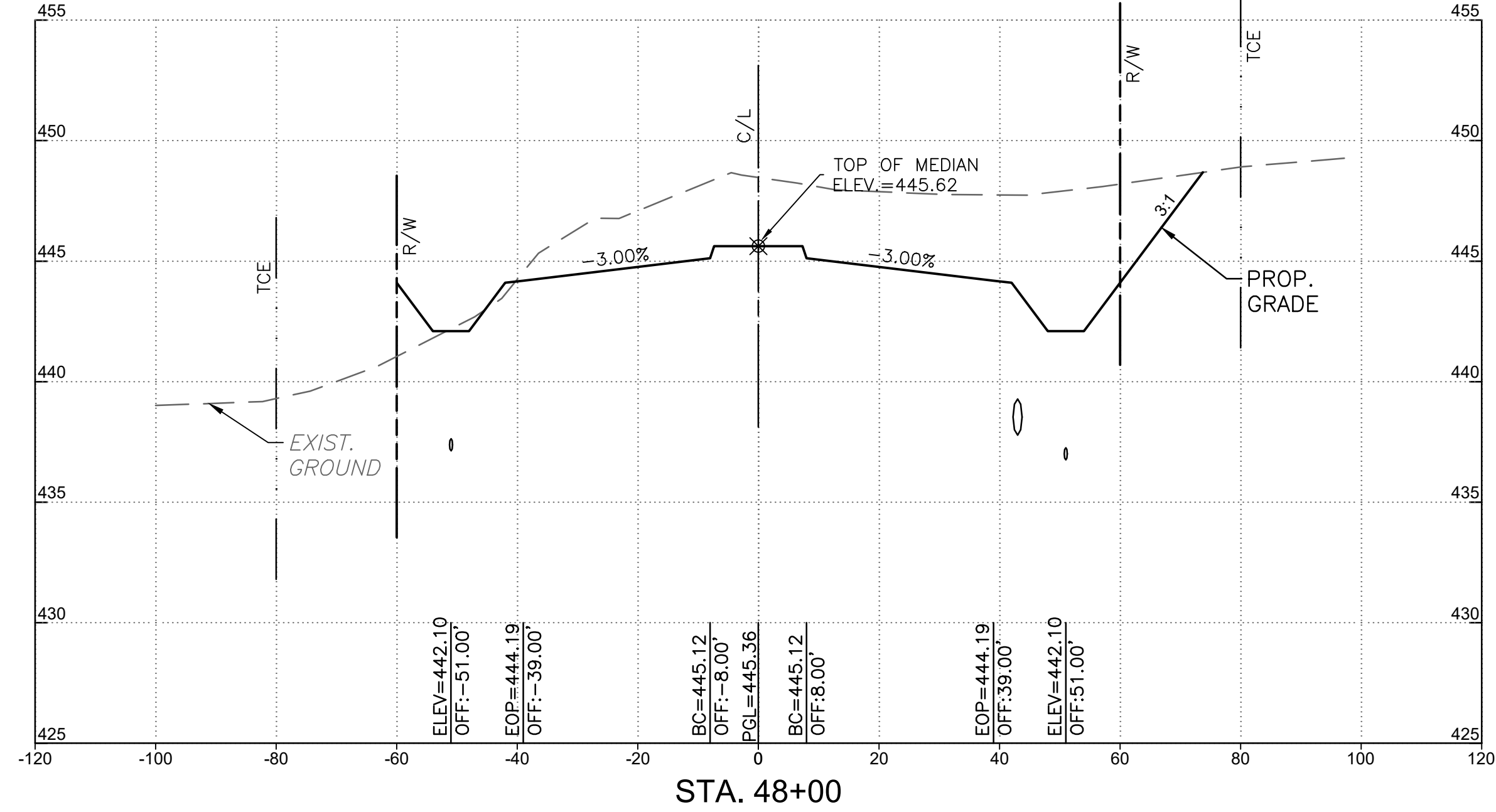
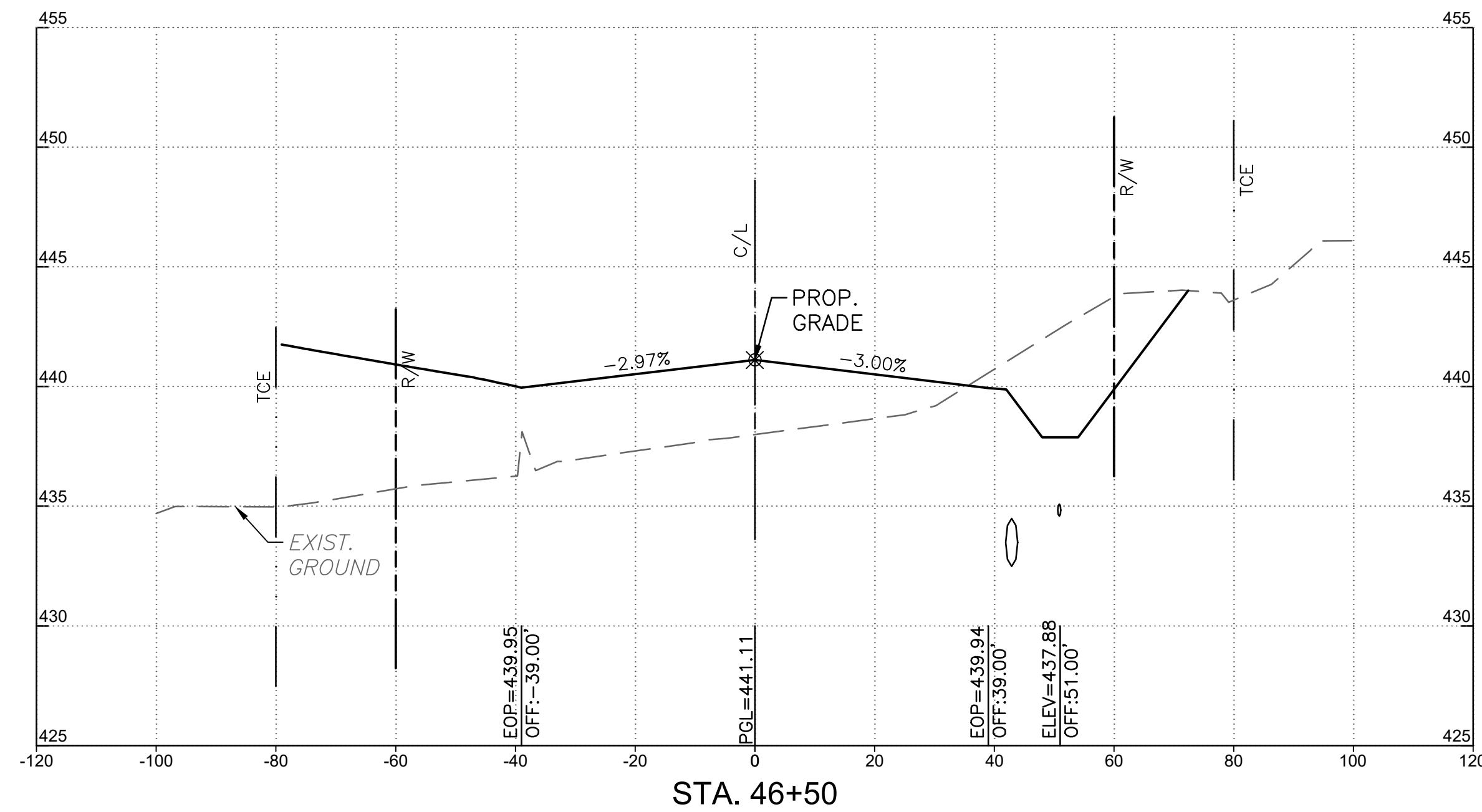
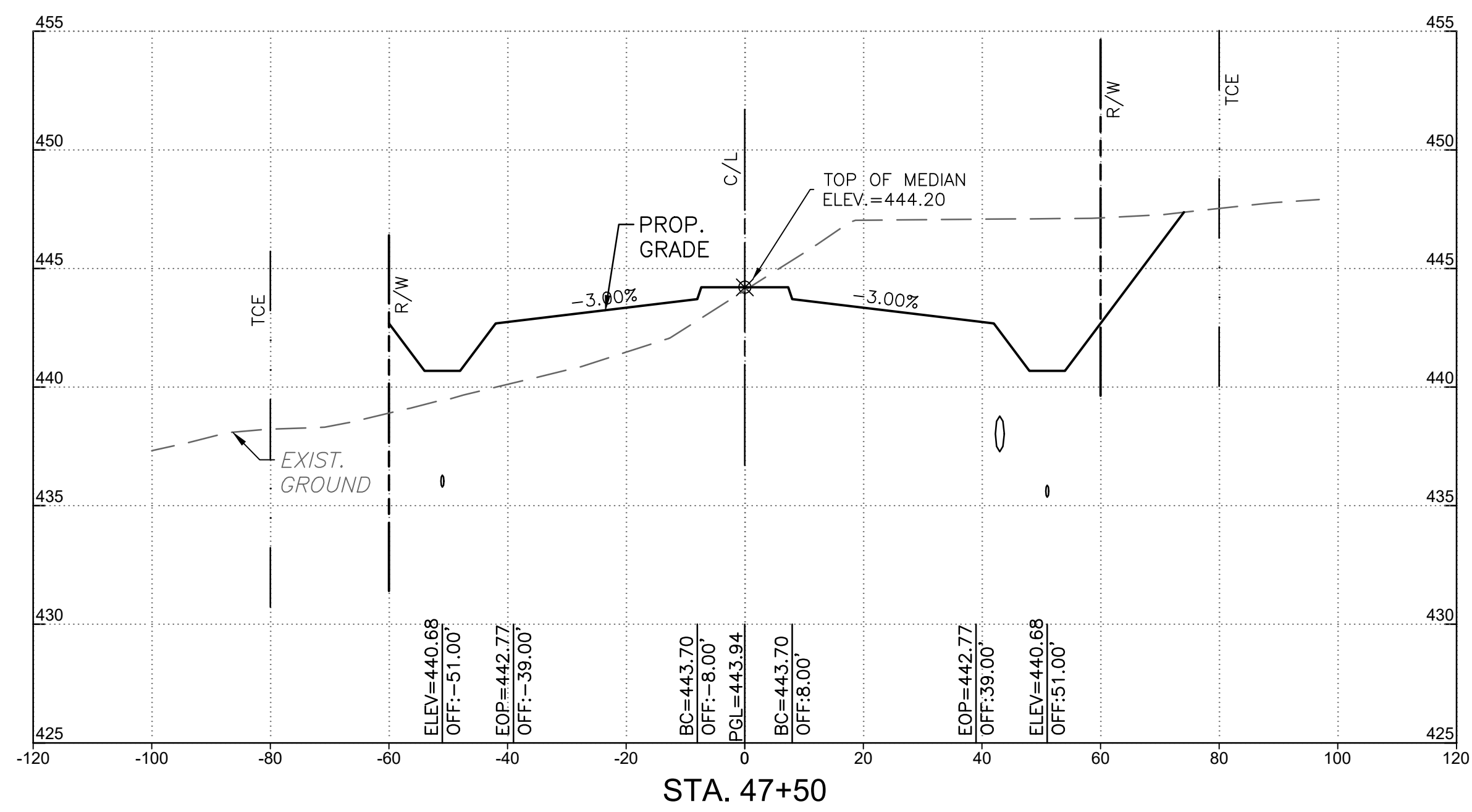
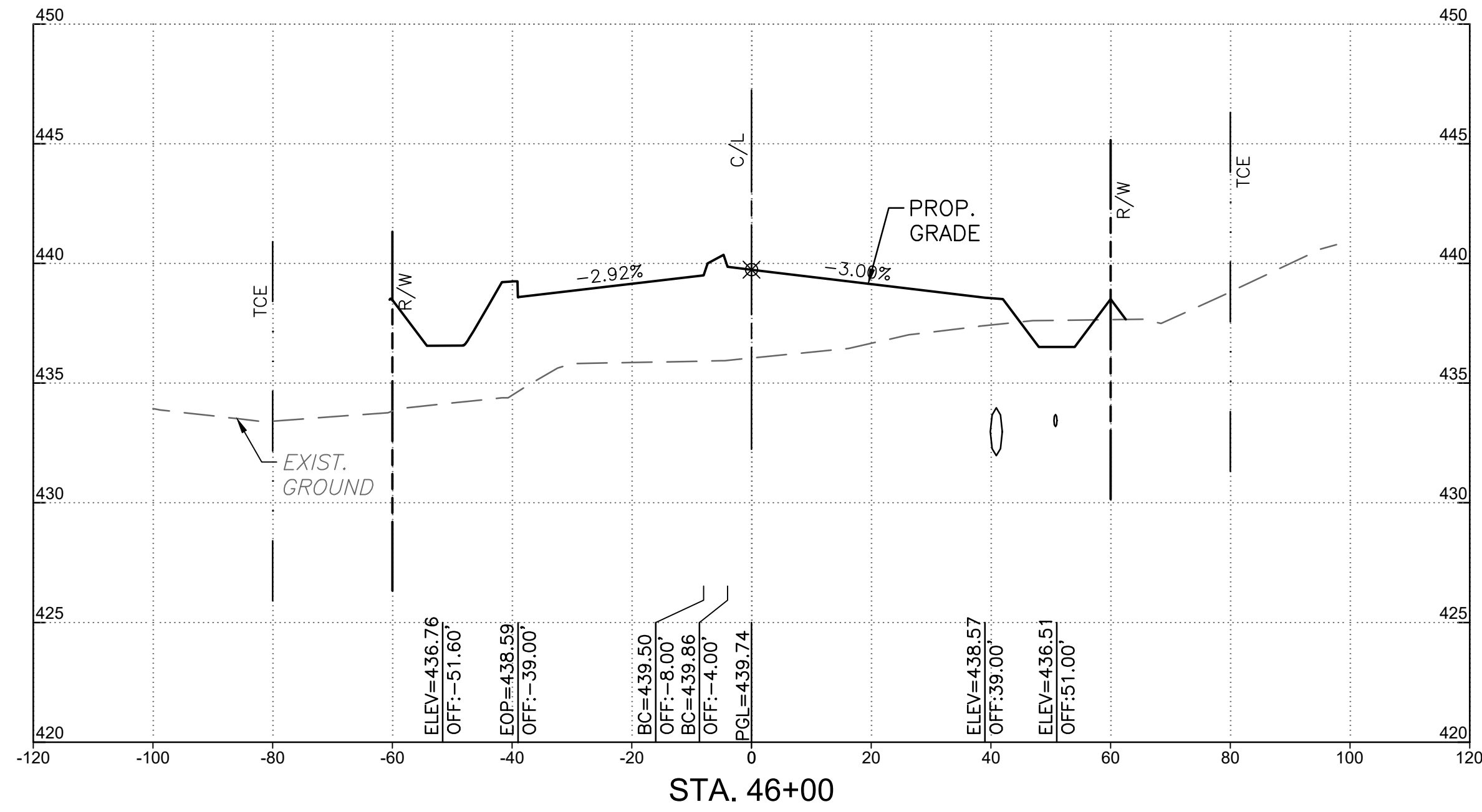
HALFWAY BOULEVARD
 EXTENDED
 CROSS SECTIONS
 STA. 43+00 TO 45+50

SCALE
 H:1" = 20' V:1" = 5'

SHEET NO.
 76

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
DRAWN BY: KDUUGA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

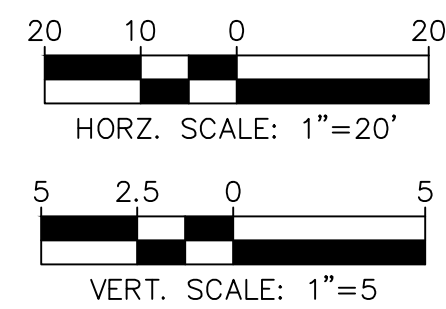
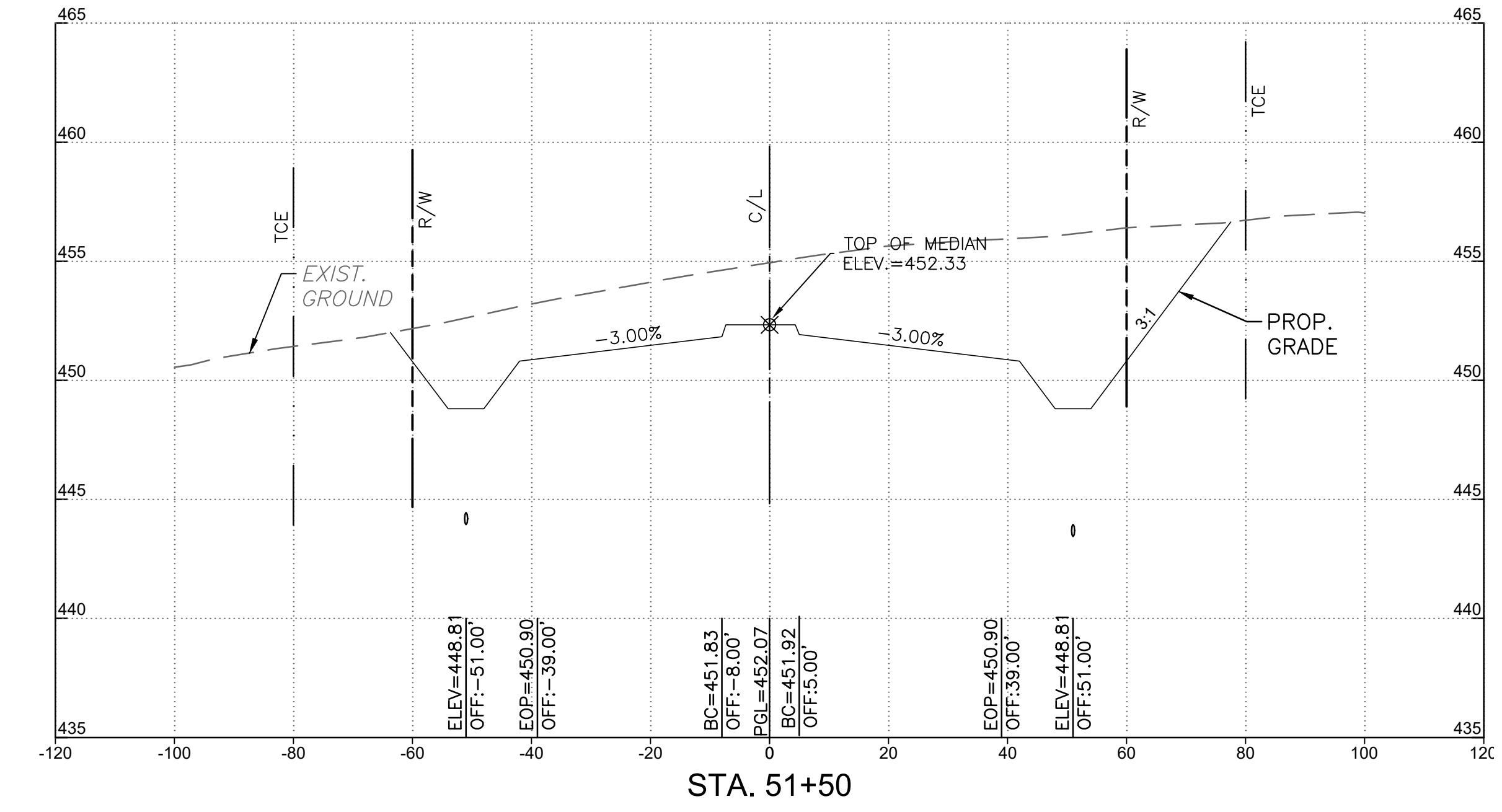
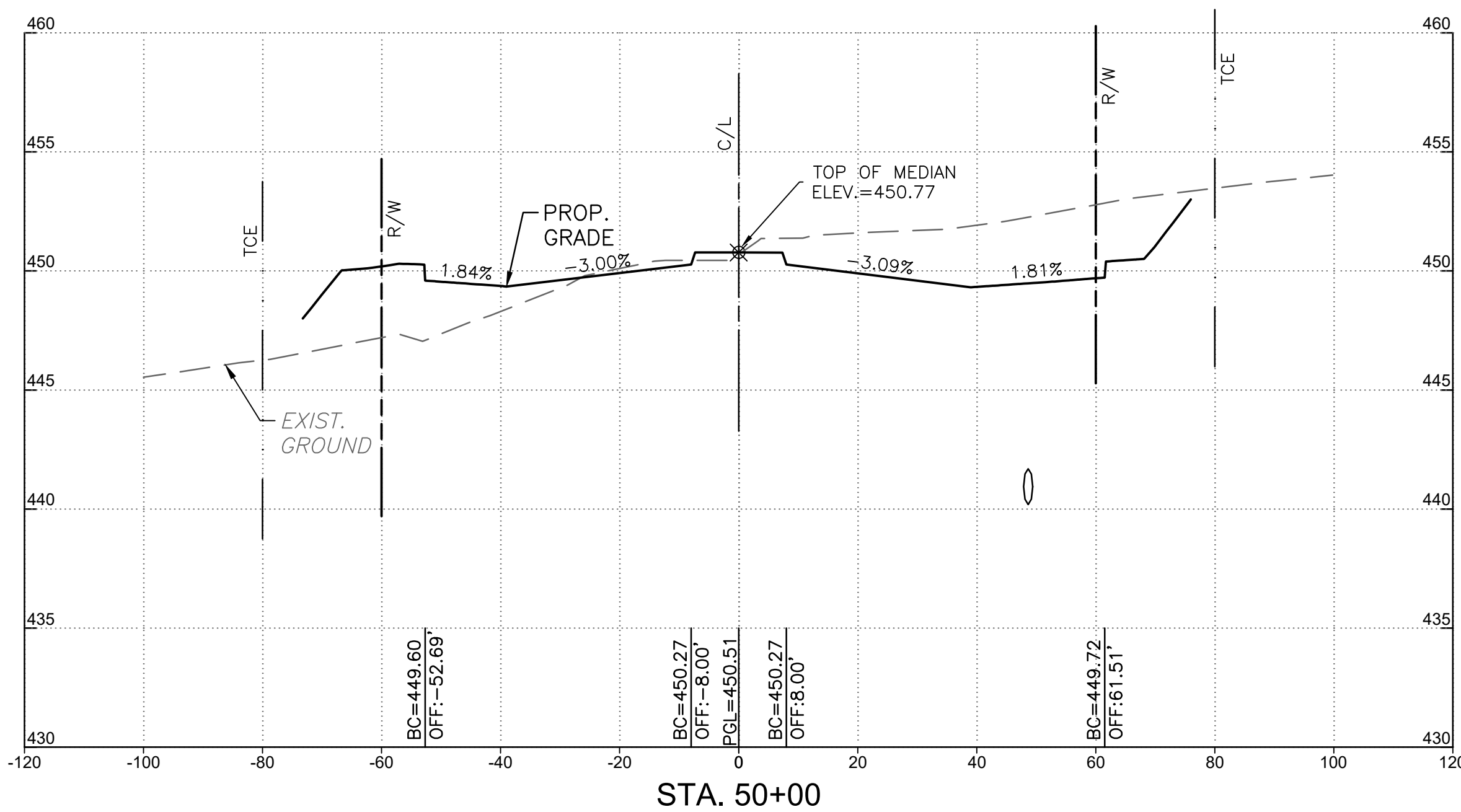
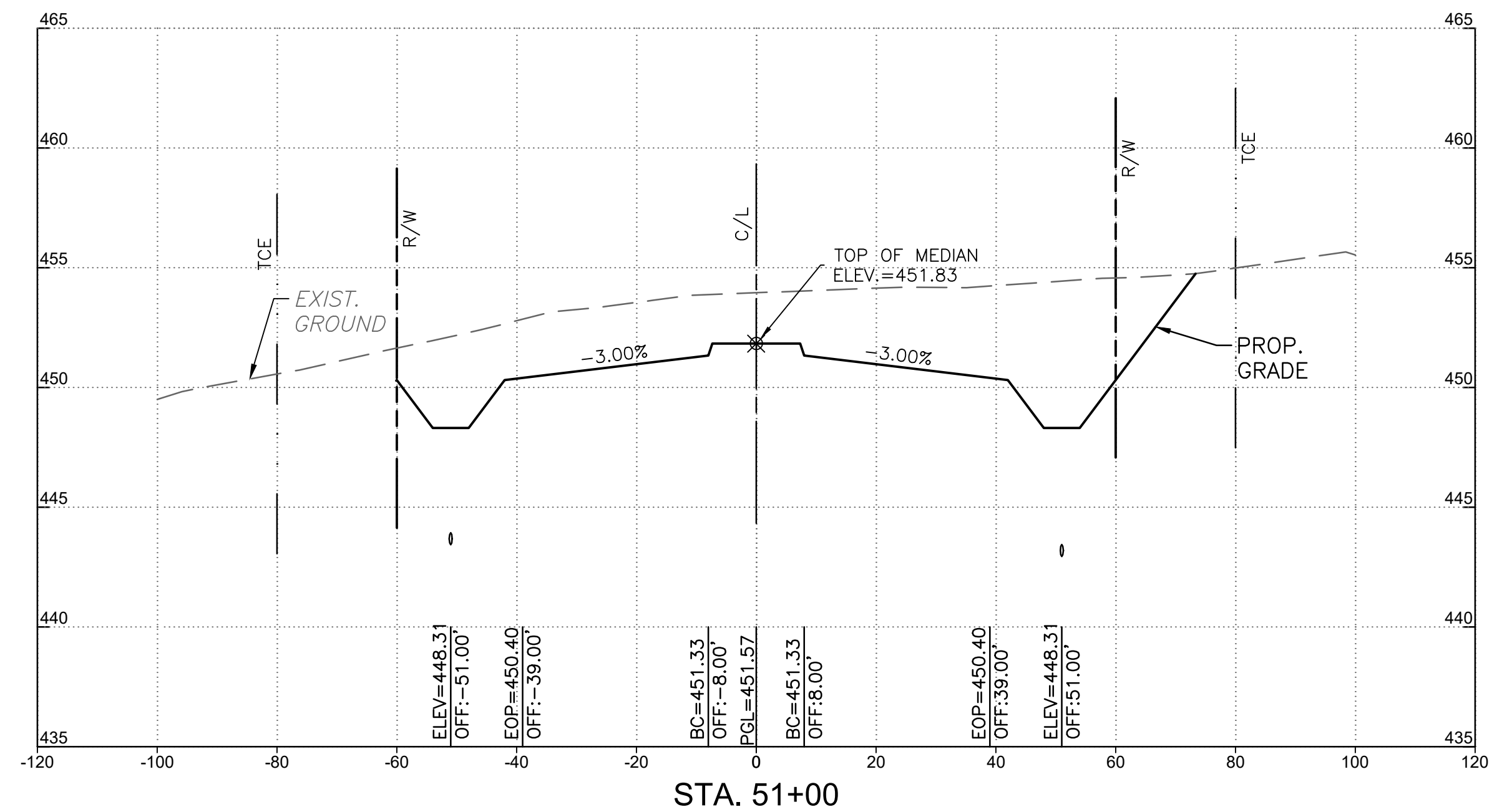
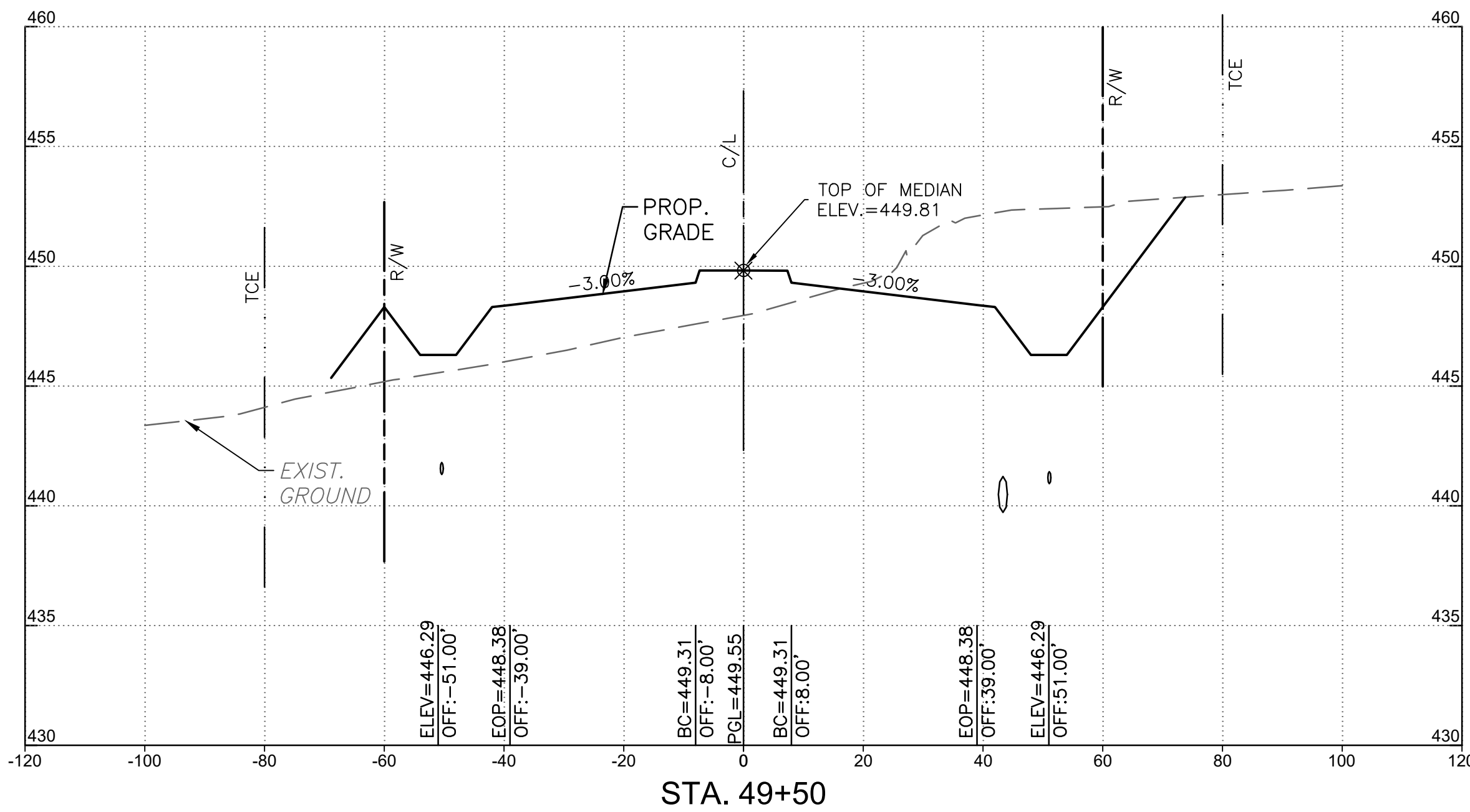
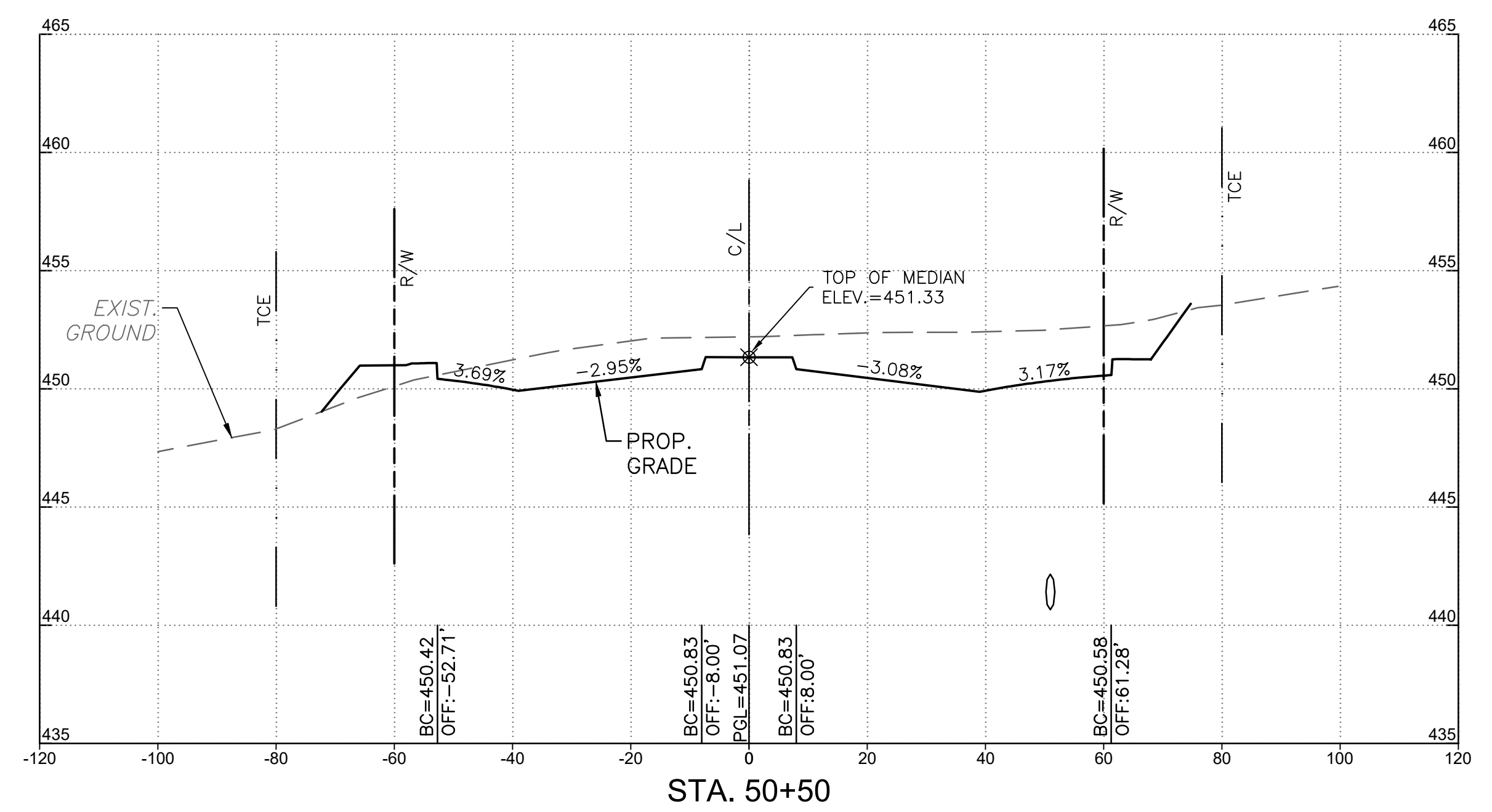
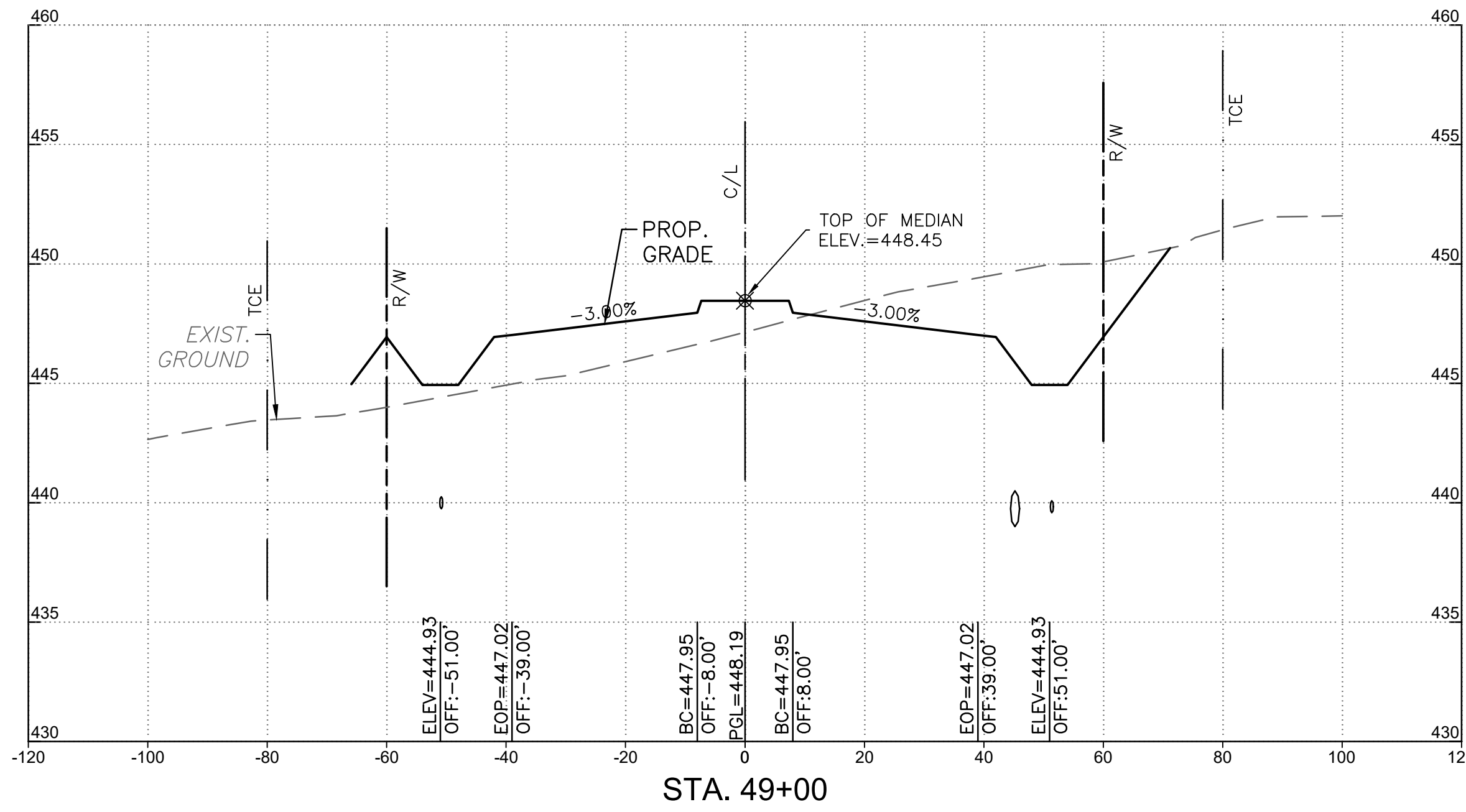
HALFWAY BOULEVARD
EXTENDED
CROSS SECTIONS
STA. 46+00 TO 48+50

SCALE
H:1" = 20' V:1" = 5'

SHEET NO.
77

PROJECT NO.
10-273

SHA: WA067ZM1
FAP: APL-3(804)E



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUJGA
DRAWN BY: KDUJGA
CHECKED BY: PJM
DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
DIVISION OF ENGINEERING

Washington County Administrative Annex Building
747 Northern Ave., Hagerstown, MD 21742
Phone: 240-313-2460 Fax: 240-313-2401

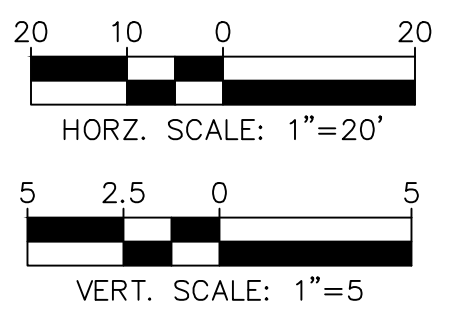
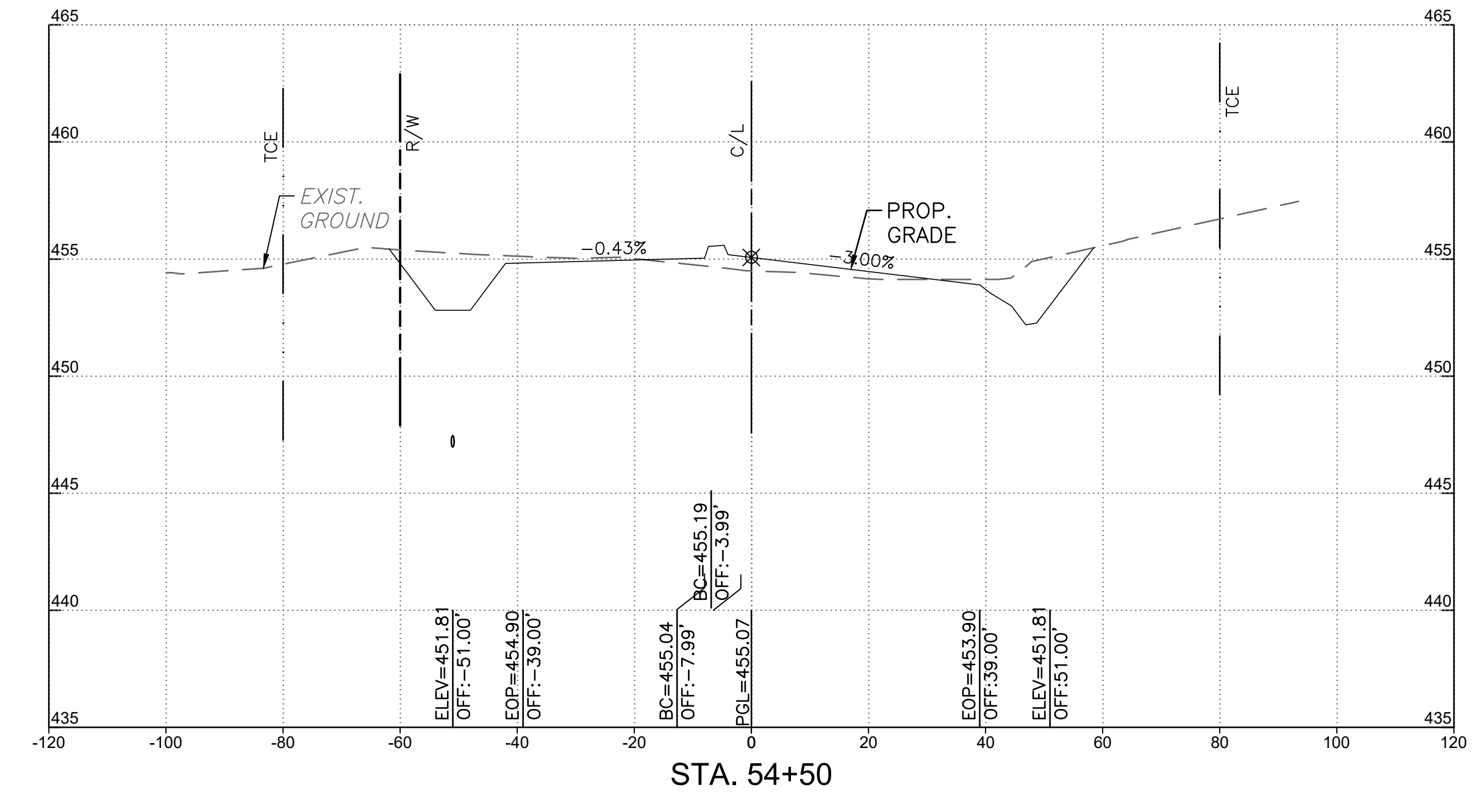
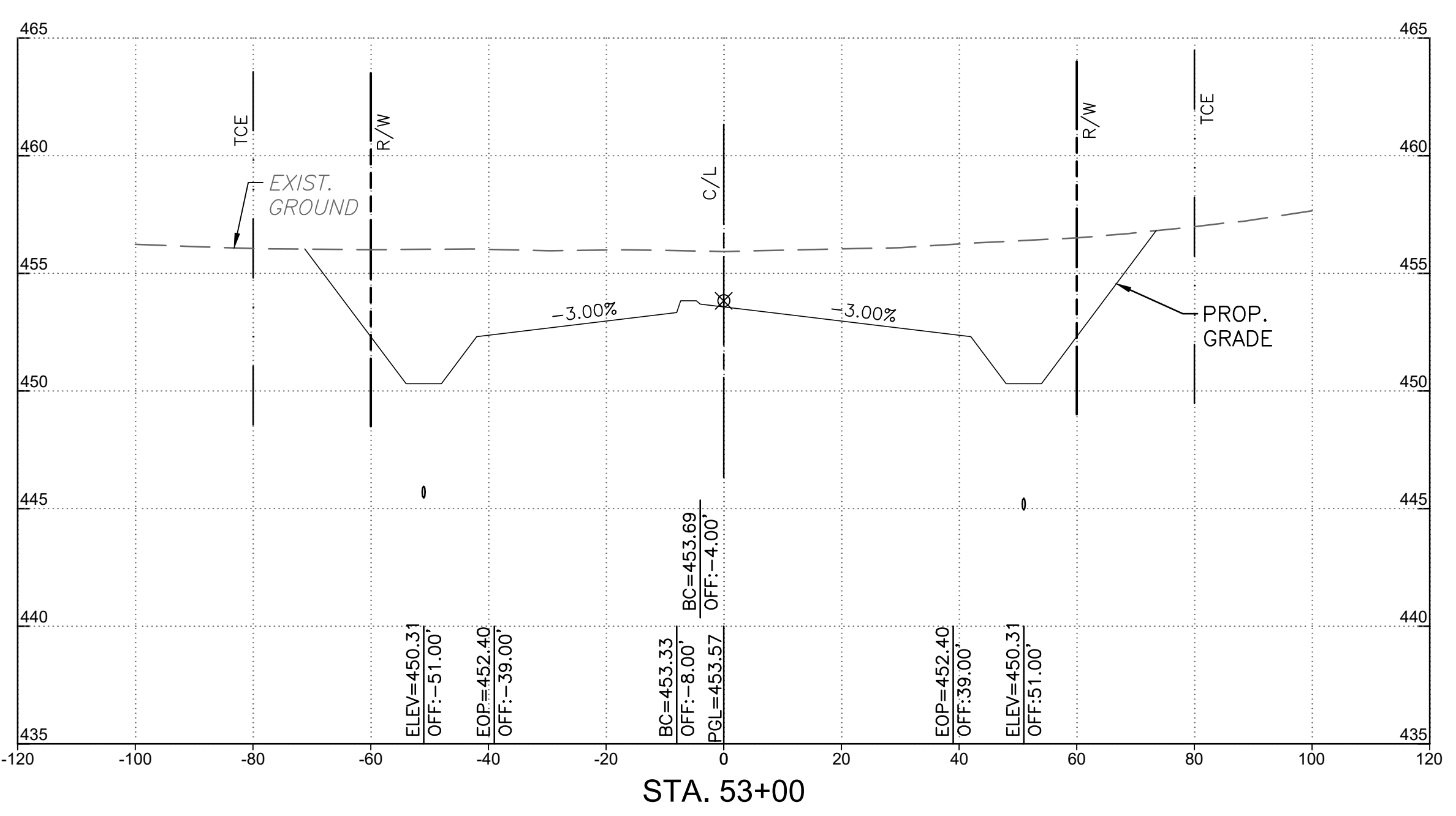
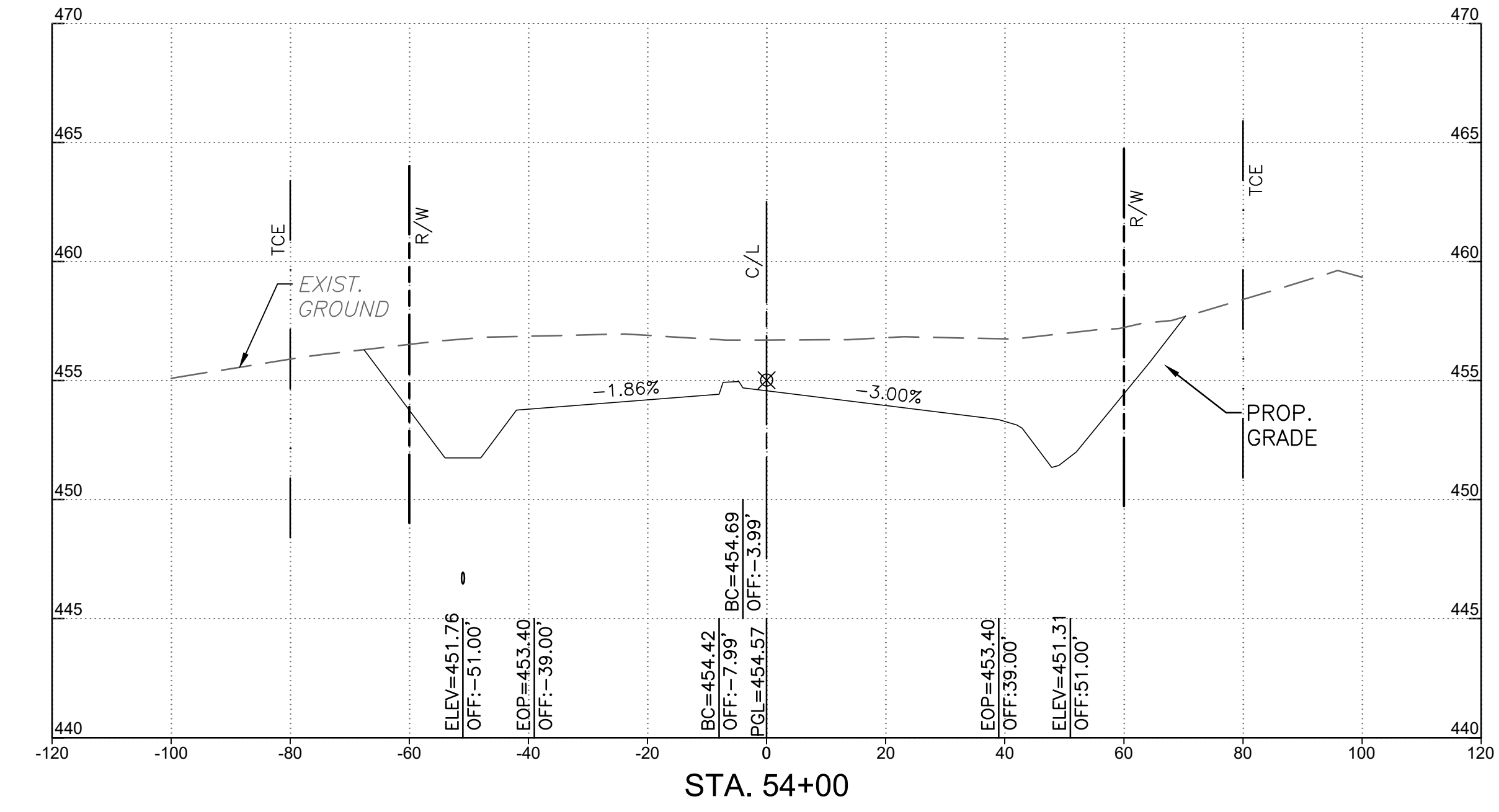
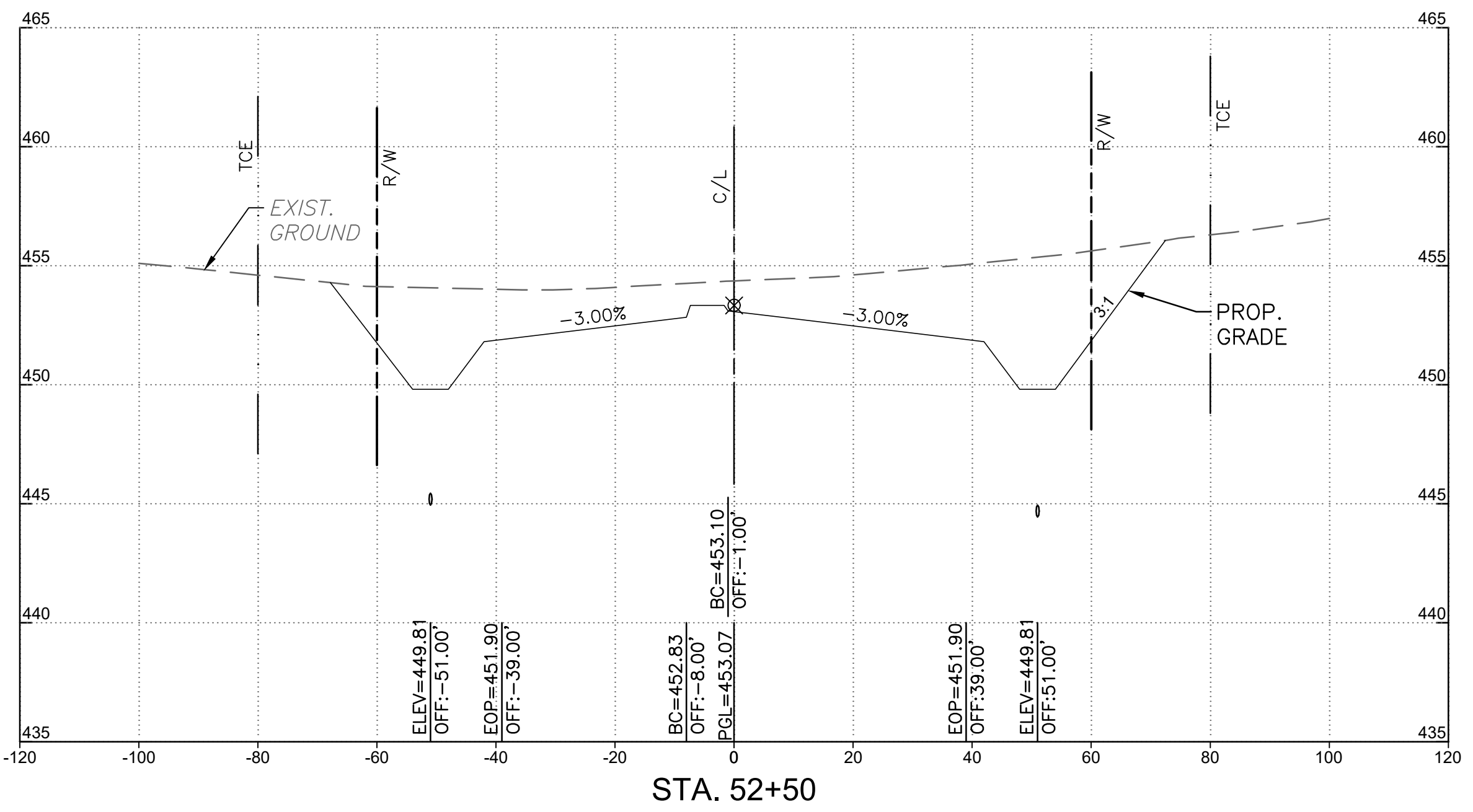
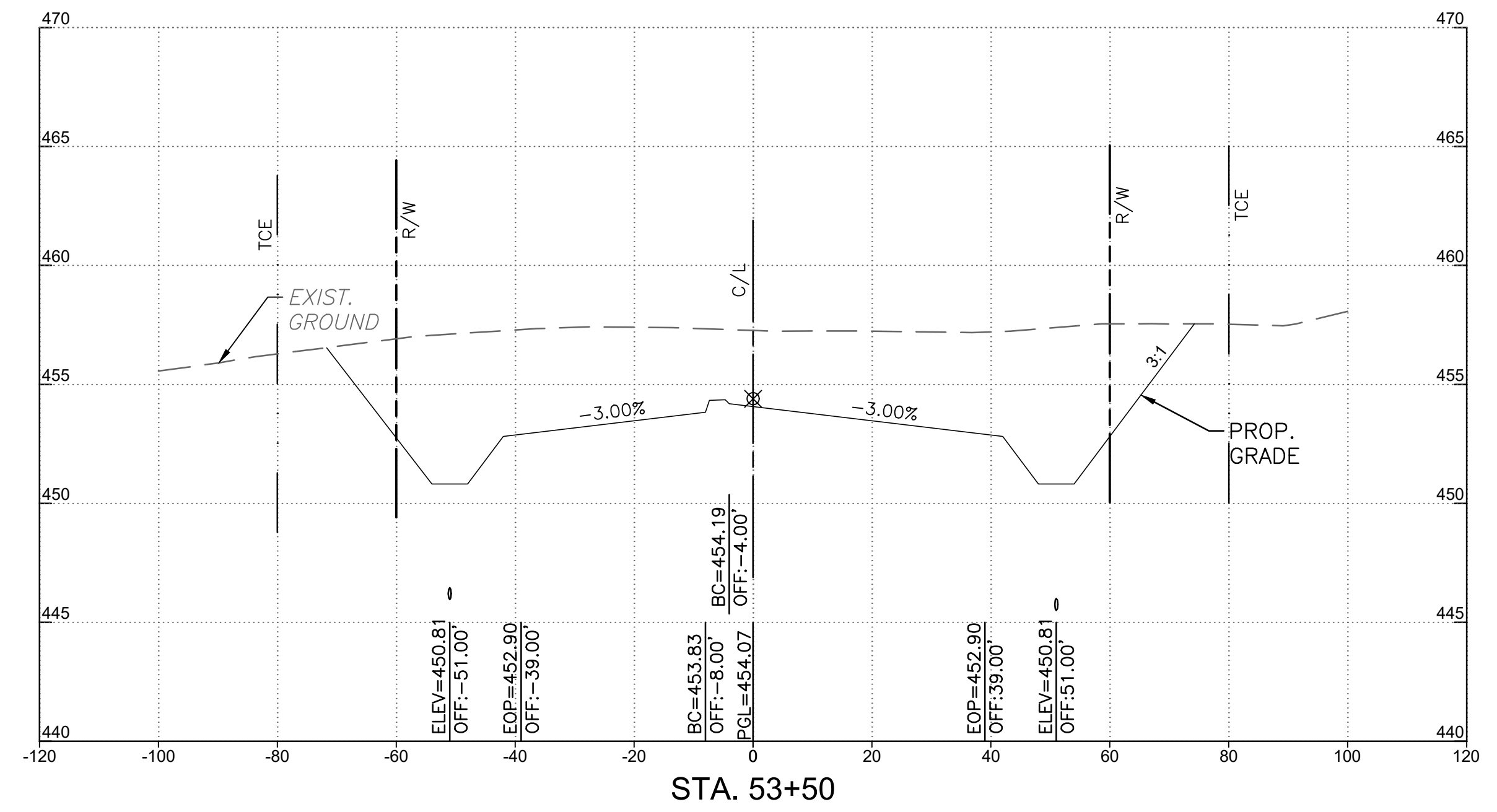
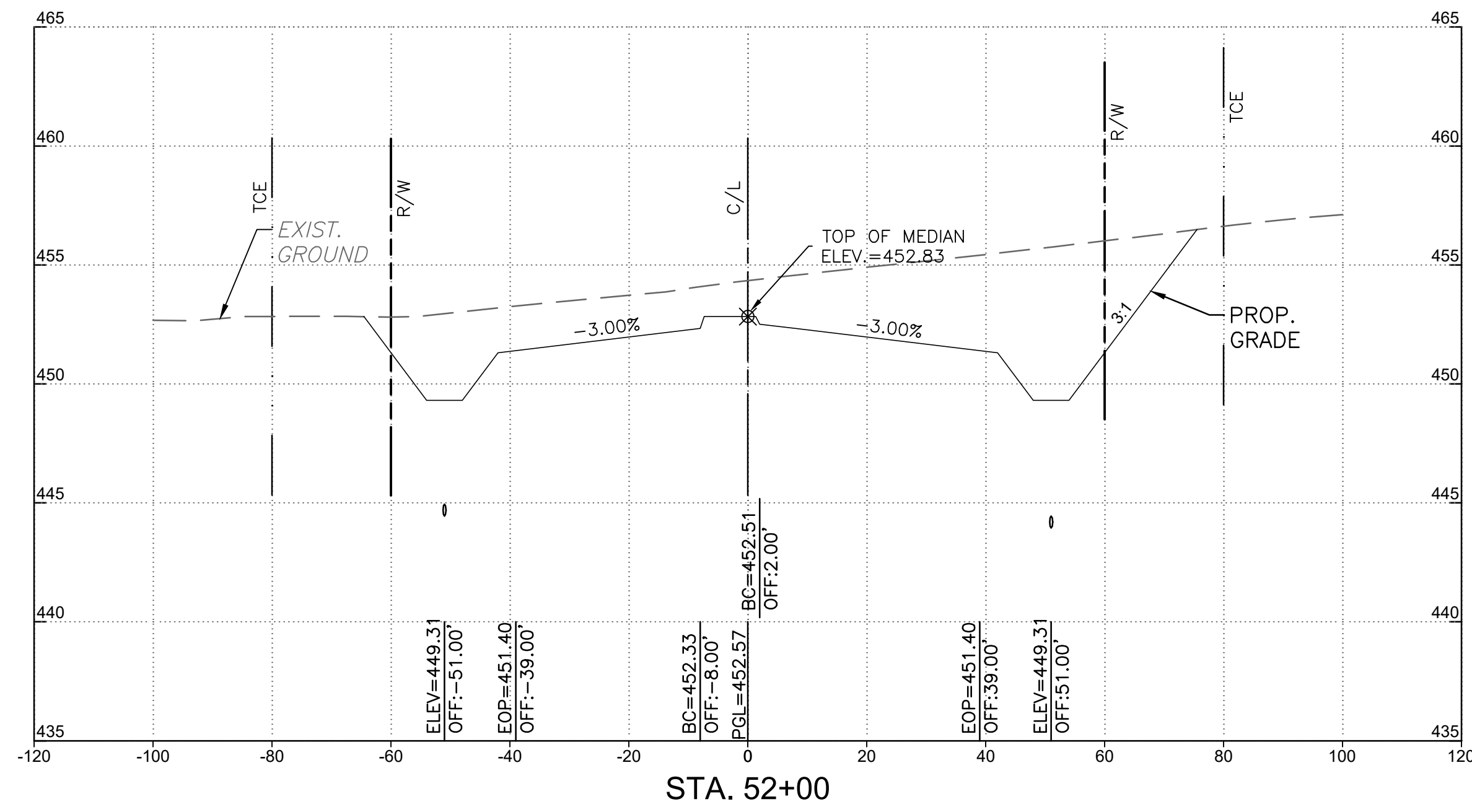
**HALFWAY BOULEVARD
EXTENDED
CROSS SECTIONS
STA. 49+00 TO 51+50**

SCALE
H:1" = 20' V:1" = 5'

SHEET NO.
78

PROJECT NO.
10-273

SHA: WA067ZM1
FAP: APL-3(804)E



NO.	REVISION DESCRIPTION	BY	DATE

DESIGNED BY: KDUUGA
 DRAWN BY: KDUUGA
 CHECKED BY: PJM
 DATE: JAN 2024

WASHINGTON COUNTY, MARYLAND
 DIVISION OF ENGINEERING

Washington County Administrative Annex Building
 747 Northern Ave., Hagerstown, MD 21742
 Phone: 240-313-2460 Fax: 240-313-2401

**HALFWAY BOULEVARD
 EXTENDED
 CROSS SECTIONS
 STA. 52+00 TO 54+50**

SCALE
 H:1" = 20' V:1" = 5'

SHEET NO.
 79

PROJECT NO.
 10-273

SHA: WA067ZM1
 FAP: APL-3(804)E