Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 10/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

REVIEWED IN ACCORDANCE WITH LOCAL COUNTY REQUIREMENTS. FREDERICK COUNTY ASSUMES NO LIABILITY FOR DESIGN AND/OR CONSTRUCTION. APPROVAL IS VALID FOR TWO (2) YEARS AFTER THE LAST DATE SHOWN ABOVE. THE PROJECT MUST BE UNDER CONSTRUCTION BEFORE THE APPROVAL EXPIRATION TO BE CONSIDERED ACTIVE. OTHERWISE, RESUBMIT OF PLANS INCLUDING APPLICABLE FEES, MUST BE MADE TO DEVELOPMENT REVIEW FOR APPROVAL. FEES FOR RESUBMITTAL CANNOT BE WAIVED.

REV. #	DATE	REVISION DESCRIPTION *FILL IN THESE BLOCKS FOR REVISIONS ONLY	CONSULTANT DATE & INITIAL	DEV. REVIEW DATE & INITIAL

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING

RECONSTRUCTION OF CHRISTOPHERS CROSSING FROM WHITTIER DRIVE TO WALTER MARTZ /POOLE JONES ROAD

FREDERICK COUNTY PROJECT NO. C6308.6308.01

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NOTICE TO BIDDERS

THE SPECIFICATIONS FOR THIS CONTRACT WILL BE THOSE OF THE MDOT SHA, TITLED "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS", DATED JULY 2022, REVISIONS THERETO, AND THE SPECIAL PROVISIONS.

SEDIMENT AND EROSION CONTROL WILL BE STRICTLY ENFORCED DURING CONSTRUCTION BY ENVIRONMENTAL COMPLIANCE SECTION PHONE NO. 310-600-3507.

THE GRADING LIMITS SHOWN ON THE PLANS ARE NOT TO BE EXCEEDED. CHANGES IN GRADING EROSION AND SEDIMENT CONTROL PLAN, OR OTHER SEGMENT OF THE WORK MUST BE REVIEWED AND APPROVED BY THE FREDERICK COUNTY DIVISION OF PUBLIC WORKS.

THE FREDERICK COUNTY DIVISION OF PUBLIC WORKS SHALL ONLY BE RESPONSIBLE FOR THE COMPLETENESS OF DOCUMENTS OBTAINED DIRECTLY FROM FREDERICK COUNTY. FAILURE TO ATTACH ALL ADDENDA MAY CAUSE THE BID TO BE NON-RESPONSIVE.

IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR THAT THE STANDARD PLATES IN HIS/HER POSSESSION ARE THE LATEST REVISED MDOT SHA STANDARD PLATES AS OF THE DATE OF THE AWARD OF THIS PROJECT.

RIGHT OF WAY LINES ON THESE PLANS DO NOT INCLUDE EASEMENTS. THEY ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THESE LINES DO NOT REPRESENT THE OFFICIAL PROPERTY ACQUISITION LINES. FOR OFFICIAL FEE SIMPLE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE R/W PLATS NUMBERED

MDE PERMIT NO. 22-NT-3022 / 202260133 EXPIRATION DATE: 08/11/2027

USACE PERMIT NO. N/A EXPIRATION DATE: _____

OWNER'S / DEVELOPER'S CERTIFICATION

I CERTIFY THAT THIS PLAN OF SEDIMENT CONTROL WILL BE IMPLEMENTED TO THE FULLEST EXTENT, AND ALL STRUCTURES WILL BE INSTALLED TO THE DESIGN AND SPECIFICATIONS AS SPELLED OUT IN THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATION OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE EVALUATION BY THE FREDERICK COUNTY SOIL CONSERVATION DISTRICT PERSONNEL AND COOPERATING AGENCIES.

AMANDA RADCLIFFE, P.E., CHIEF
FREDERICK COUNTY OFFICE OF TRANSPORTATION ENGINEERING
355 MONTEVUE LANE, SUITE 200
FREDERICK, MARYLAND 21702
301-600-2932

ADA COMPLIANCE

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

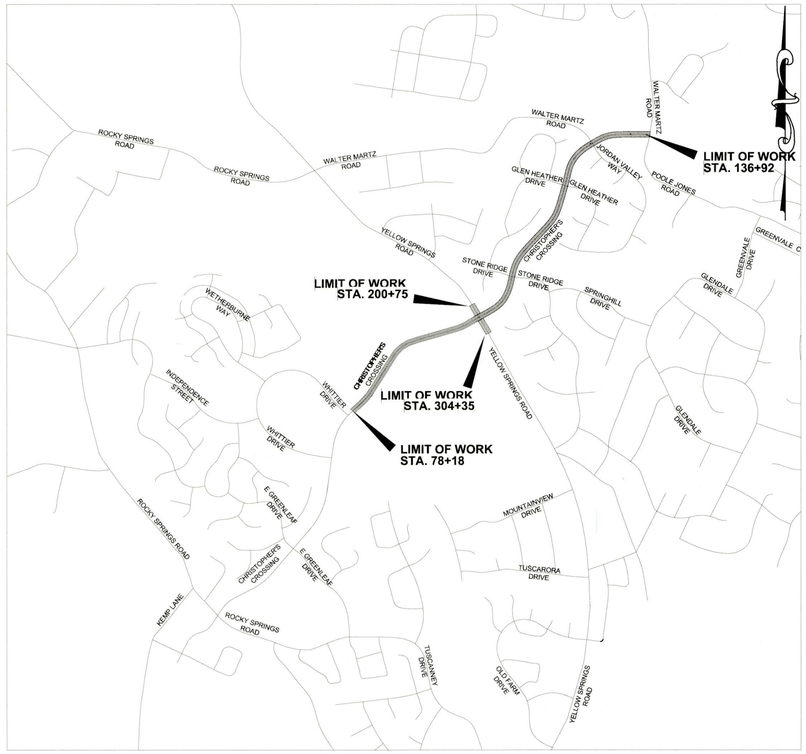
HEIDI VAN LUVEN, P.E. | 24232 LICENSE REG. NO. | 08/15/2022 DATE

ENGINEER'S 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. 24232, EXPIRATION DATE: 06/08/2023

HEIDI VAN LUVEN, P.E. | 24232 LICENSE REG. NO. | 08/15/2022 DATE



PROJECT VICINITY MAP
SCALE: 1"=1000'

CHRISTOPHERS CROSSING TRAFFIC DATA	
ROAD CLASSIFICATION	MAJOR ARTERIAL
DESIGN SPEED	35 MPH
A.D.T. (EXISTING) 2019	7000
A.D.T. (FUTURE) 2039	12600
PERCENT TRUCKS	2.5%

YELLOW SPRINGS ROAD TRAFFIC DATA	
ROAD CLASSIFICATION	MAJOR ARTERIAL
DESIGN SPEED	40 MPH
A.D.T. (EXISTING) 2019	8660
A.D.T. (FUTURE) 2039	14050
PERCENT TRUCKS	1.5%

SURVEY INFORMATION

THE DATA COLLECTED ELECTRONICALLY AND NO PHYSICAL FIELD BOOK EXISTS. CONTROL INFORMATION IS AVAILABLE UPON REQUEST.

FIELD SURVEYS PREPARED BY:
A. MORTON THOMAS & ASSOCIATES
MARCH 2020

HORIZONTAL DATUM: NAD 83/2011

VERTICAL DATUM: NAVD 88

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH LOCAL ORDINANCES, COMAR 26.17.01.07 AND 2017 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (LATEST VERSION AND REVISIONS).

KIMI SCHMIDT, P.E. | 31204 LICENSE REG NO. | 08/15/2022 DATE

DISTURBED AREA QUANTITY

THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE APPROXIMATELY 525,334 SQUARE FEET (12.06 AC.), AND THE TOTAL AMOUNT OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAS BEEN COMPUTED TO BE APPROXIMATELY 5,110 CUBIC YARDS** OF EXCAVATION AND APPROXIMATELY 8,700 CUBIC YARDS** OF FILL.

KIMI SCHMIDT, P.E. | 31204 LICENSE REG NO. | 08/15/2022 DATE

** THESE QUANTITIES ARE APPROXIMATE AND SHALL NOT BE USED BY THE CONTRACTOR FOR BIDDING PURPOSES.

CONTRACT NO. 174B-SW

EXISTING UTILITIES

THE TYPE AND LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE AS TO THE ACCURACY OF SAID LOCATIONS. CONTACT "MISS UTILITY" AT 1-800-257-7777 A MINIMUM OF 5 DAYS PRIOR TO START OF WORK.

FOR FIRE HYDRANT RELOCATIONS IN CHRISTOPHERS CROSSING THAT ARE SERVED BY COUNTY WATER, CONTACT THE DWSU CONSTRUCTION MANAGER PRIOR TO PRE-CONSTRUCTION MEETING AT 301-600-2266.

PRIVATE UTILITY NOTE

UPON APPROVAL OF THE IMPROVEMENT PLANS AND PRIOR TO ISSUANCE OF THE GRADING PERMIT, A PLUMBING PERMIT THAT COVERS ONSITE PRIVATE WATER, SEWER AND STORM DRAIN UTILITY WORK IS REQUIRED. THE APPLICATION MUST BE APPROVED PRIOR TO START OF CONSTRUCTION FOR ALL PROPOSED PRIVATE PORTION OF UTILITIES INCLUDING STORM DRAINS, WATER AND SEWER LINES, MONITORING MANHOLES, HYDRANTS, AND ANY OTHER ONSITE PRIVATE UTILITY WORK. APPLICATIONS CAN BE SUBMITTED BY THE FREDERICK COUNTY LICENSED UTILITY CONTRACTOR VIA THE CITIZEN PORTAL. Planningandpermitting.frederickcountymd.gov

FREDERICK SOIL CONSERVATION DISTRICT
Approved By _____
District Manager
Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

FREDERICK COUNTY OFFICE OF PUBLIC WORKS

Robert Sell for JS 10/19/22
DIRECTOR DATE

FREDERICK COUNTY OFFICE OF TRANSPORTATION ENGINEERING

10/19/22
CHIEF DATE

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

TT-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TITLE SHEET

DATE: SEPTEMBER 2022 SCALE:

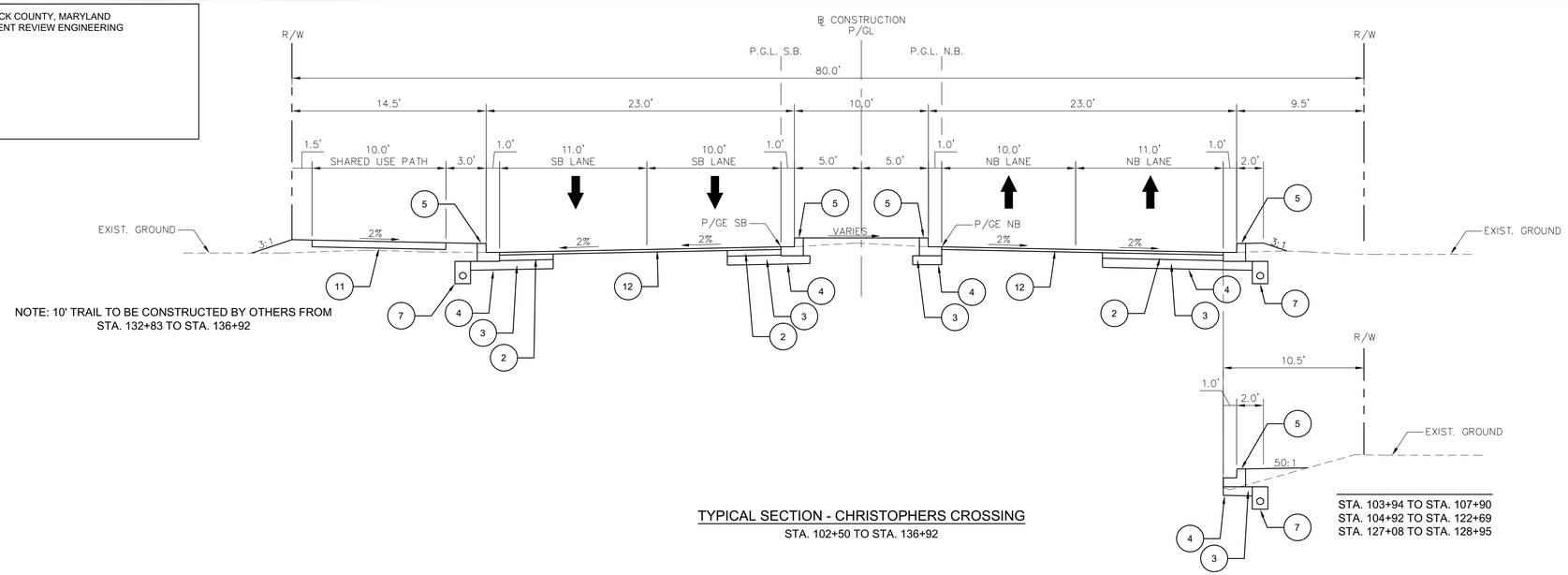
AMT FILE NO. 15-0758.007 SHEET NO. 01 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

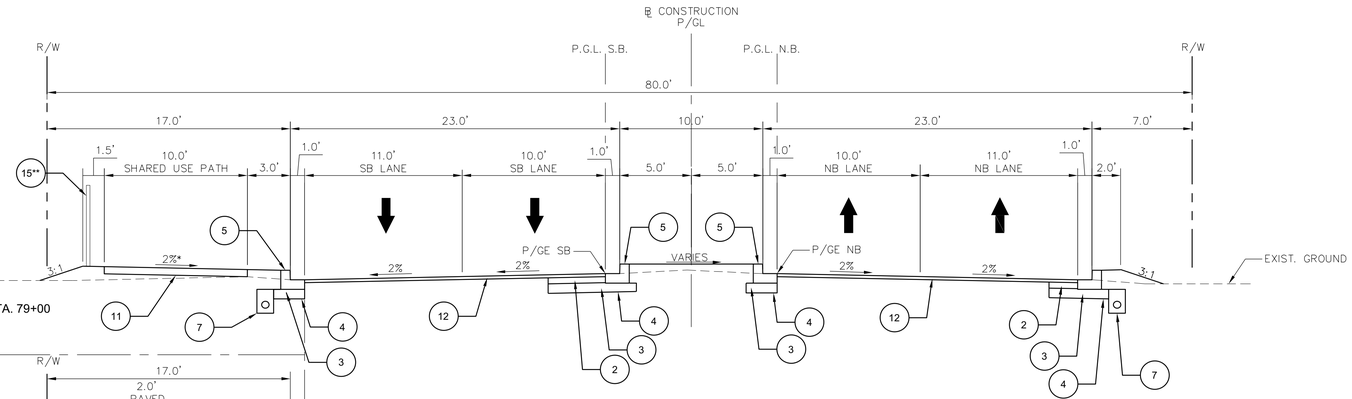
APPROVED: 11/16/22

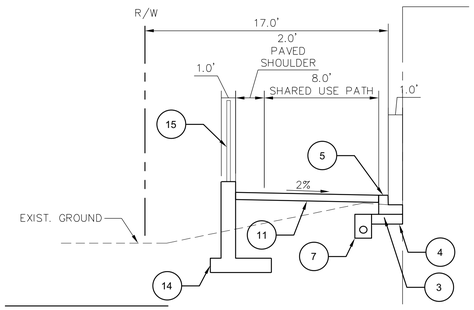
Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

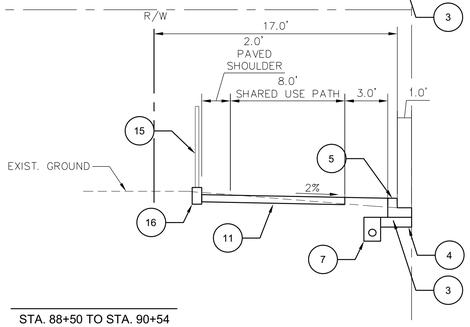


TYPICAL SECTION - CHRISTOPHERS CROSSING
STA. 102+50 TO STA. 136+92

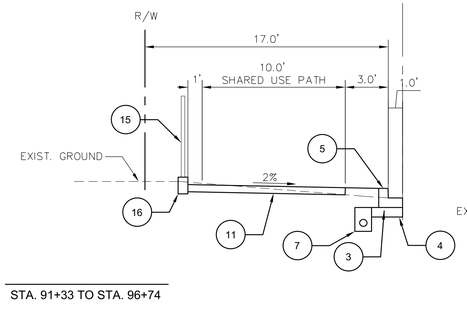




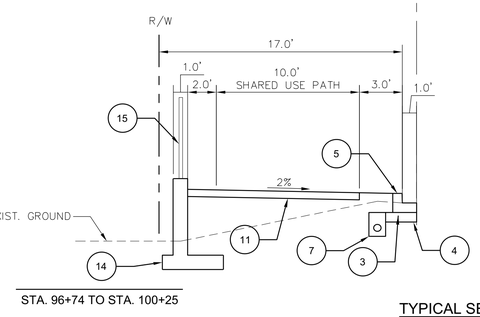
STA. 79+60 TO STA. 88+50



STA. 88+50 TO STA. 90+54



STA. 91+33 TO STA. 96+74



STA. 96+74 TO STA. 100+25

TYPICAL SECTION - CHRISTOPHERS CROSSING
STA. 78+18 TO STA. 101+25

○ KEYNOTES

1. 2" SURFACE COURSE – 12.5mm HMA SUPERPAVE PG64-22
2. 5" BASE COURSE – 19.0mm HMA SUPERPAVE PG64-22
3. 8" AGGREGATE BASE COURSE (CR-6 OR GAB)
4. TOP OF SUBGRADE
5. TYPE 'A' COMBINATION CURB AND GUTTER MDSHA STD MD-620.02
6. 5" CONCRETE SIDEWALK
7. 6" LONGITUDINAL UNDERDRAIN MDSHA STD. MD-387.11-01
8. TYPE 'A' CURB SHA MDSTD MD-620.02
9. TYPE 'C' COMBINATION CURB AND GUTTER MDSHA STD MD-620.02-01
10. 9" STAMPED CONCRETE PAVEMENT – MIX #7
11. 1.5" 12.5mm SUPERPAVE SURFACE PG 64-22/3" 19mm SUPERPAVE BASE PG 64-22/3" MIN. CR-6 CRUSHER RUN
12. 2.5" SURFACE COURSE – 12.5mm HMA SUPERPAVE PG64-22
13. 6" AGGREGATE BASE COURSE (CR-6 OR GAB)
14. TYPE C-II/C-III RETAINING WALL. SEE SHEETS RW-1 TO RW-10 AND DE-2 FOR DETAILS.
15. 4 FOOT ORNAMENTAL FENCE. SEE SHEET RW-10 FOR DETAILS
16. TYPE 'D' CURB MD-620.02-01

GENERAL NOTES

1. PLACE 4" FURNISHED TOPSOIL AND TURFGRASS ESTABLISHMENT FOR ALL SLOPES UNLESS OTHERWISE NOTED.
2. SAW CUT TO BE PERFORMED 1' INSIDE EXISTING EDGE OF PAVEMENT FOR FULL-DEPTH WIDENING ON CHRISTOPHERS CROSSING AND 4' INSIDE EDGE OF PAVEMENT FOR CONSTRUCTION OF CURB AND GUTTER ON SIDE ROADS. COST OF SAW CUT TO BE INCIDENTAL TO THE CLASS OF EXCAVATION IN WHICH IT OCCURS.
3. REVERSE GUTTER SLOPE FOR HIGH SIDE COMBINATION CURB AND GUTTER.
4. HOT MIX ASPHALT SURFACE AND BASE COURSE MATERIAL SHOULD MEET THE SPECIFICATIONS IN SECTIONS 901 AND 904 OF THE 2022 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
5. HOT MIX ASPHALT (HMA) SURFACE AND BASE COURSES SHOULD BE PLACED IN ACCORDANCE WITH SECTION 504 OF THE 2022 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
6. GRADED AGGREGATE BASE IN ACCORDANCE WITH SECTIONS 501 OF THE 2022 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
7. USE MDOT SHA STANDARD SUPERPAVE ASPHALT MIX 9.5MM FOR WEDGE/LEVEL, PG 64S-22, LEVEL 2 AS NEEDED TO ACHIEVE PROPOSED ROADWAY GRADE.
8. FOLLOW ROUNDING DETAIL ON ALL CUT SLOPES (SEE SHEET DE-2).

SCALE: 1"=5'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JAMES THOMAS GRAVELLE
21531
PROFESSIONAL ENGINEER
11/9/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

TS-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TYPICAL SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=5'

AMT FILE NO. 15-0758.007 SHEET NO. 03 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

KEYNOTES

1. 2" SURFACE COURSE – 12.5mm HMA SUPERPAVE PG64-22
2. 5" BASE COURSE – 19.0mm HMA SUPERPAVE PG64-22
3. 8" AGGREGATE BASE COURSE (CR-6 OR GAB)
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5. TYPE 'A' COMBINATION CURB AND GUTTER MDSHA STD MD-620.02
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14. TYPE C-II/C-III RETAINING WALL. SEE SHEETS RW-1 TO RW-10 AND DE-2 FOR DETAILS.
15. 4 FOOT ORNAMENTAL FENCE. SEE SHEET RW-10 FOR DETAIL
16. TYPE 'D' CURB MD-620.02-01

GENERAL NOTES

1. PLACE 4" FURNISHED TOPSOIL AND TURFGRASS ESTABLISHMENT FOR ALL SLOPES UNLESS OTHERWISE NOTED.
2. SAW CUT TO BE PERFORMED 1' INSIDE EXISTING EDGE OF PAVEMENT FOR FULL-DEPTH WIDENING ON CHRISTOPHERS CROSSING AND 4' INSIDE EDGE OF PAVEMENT FOR CONSTRUCTION OF CURB AND GUTTER ON SIDE ROADS. COST OF SAW CUT TO BE INCIDENTAL TO THE CLASS OF EXCAVATION IN WHICH IT OCCURS.
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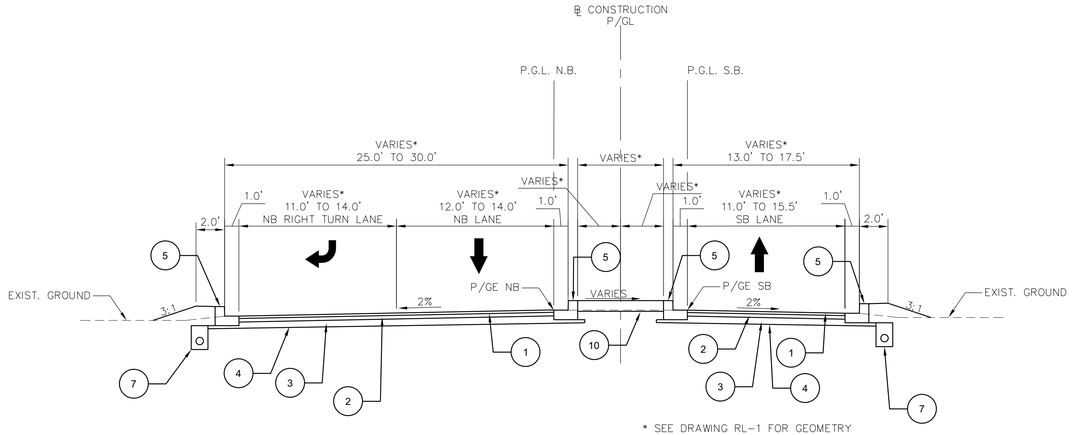
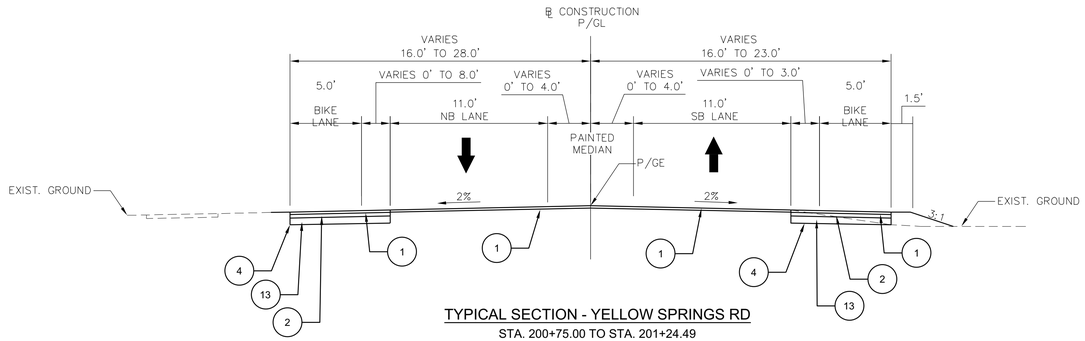
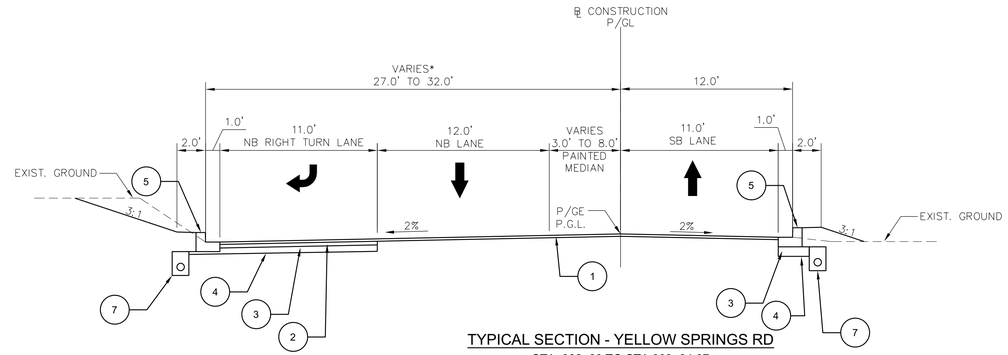
7. USE MDOT SHA STANDARD SUPERPAVE ASPHALT MIX 9.5MM FOR WEDGE/LEVEL, PG 64S-22, LEVEL 2 AS NEEDED TO ACHIEVE PROPOSED ROADWAY GRADE.
8. FOLLOW ROUNDING DETAIL ON ALL CUT SLOPES (SEE SHEET DE-2).



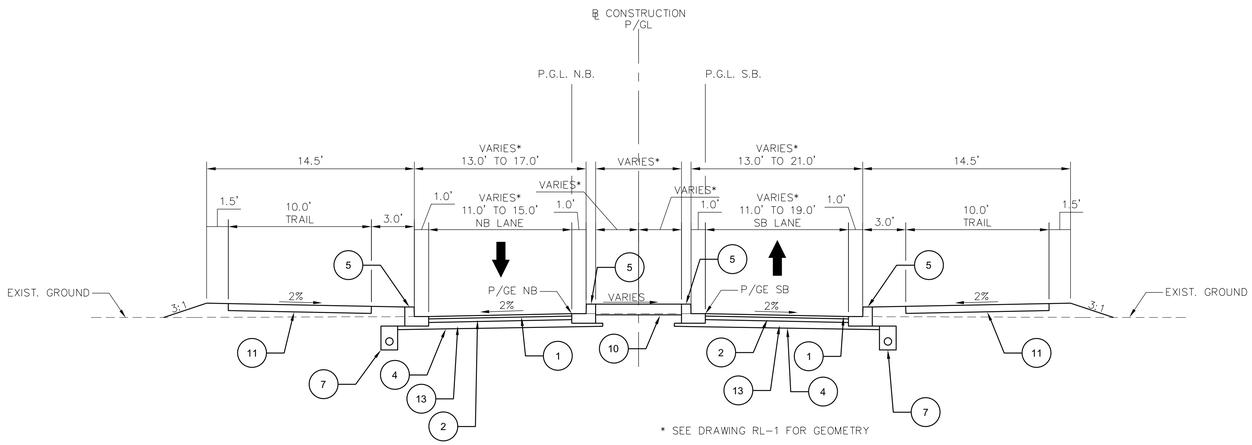
TYPICAL SECTION - YELLOW SPRINGS RD
STA. 300+82.66 TO STA. 302+00



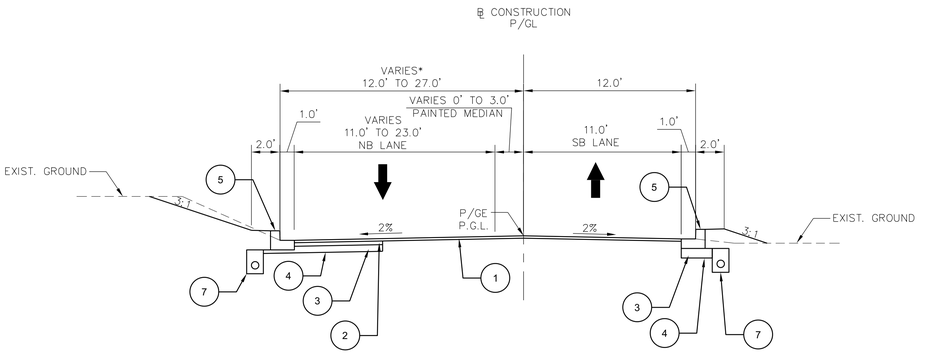
TYPICAL SECTION - YELLOW SPRINGS RD
STA. 200+75.00 TO STA. 201+24.49



TYPICAL SECTION - YELLOW SPRINGS RD
STA. 302+00 TO STA.303+34.67



TYPICAL SECTION - YELLOW SPRINGS RD
STA. 201+24.49 TO STA. 202+24.17



TYPICAL SECTION - YELLOW SPRINGS RD
STA.303+34.67 TO STA. 304+35

TS-2

0 5' 10'
SCALE: 1"=5'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND · 21235 · PROFESSIONAL ENGINEER
11/7/2022

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8352
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TYPICAL SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=5'

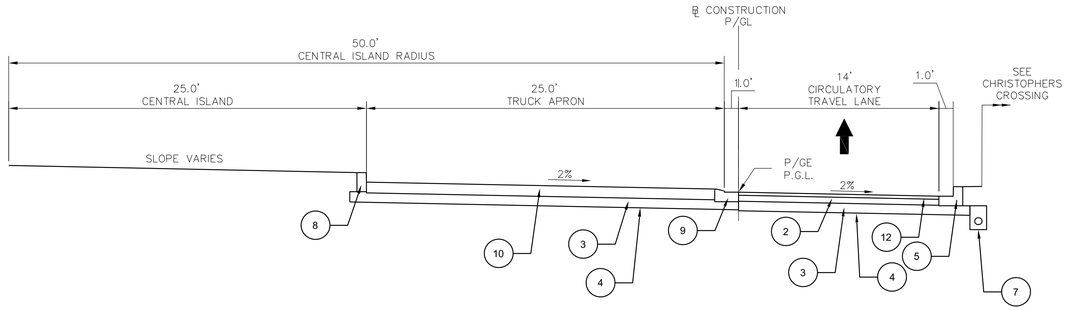
AMT FILE NO. 15-0758.007 SHEET NO. 04 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

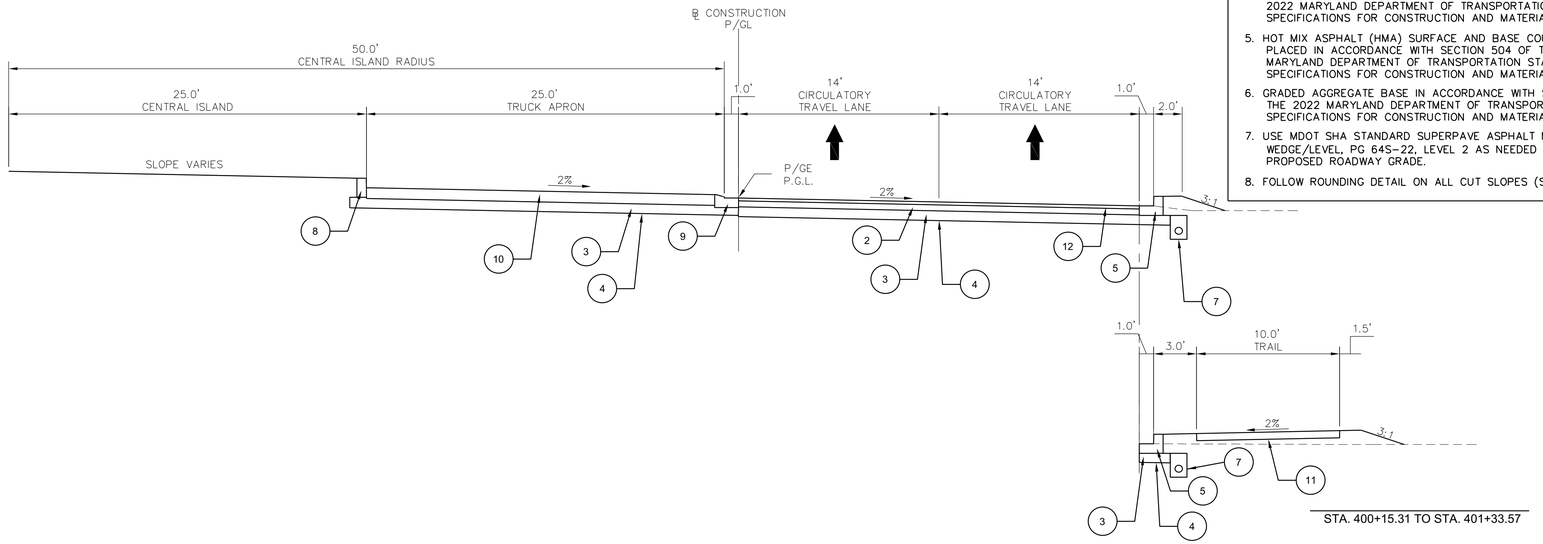
Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



TYPICAL SECTION - ROUNDABOUT

STA. 400+00 TO STA. 400+15.31
STA. 401+33.57 TO STA. 401+75.97
STA. 403+00.24 TO STA. 403+20.44



STA. 400+15.31 TO STA. 401+33.57

TYPICAL SECTION - ROUNDABOUT

STA. 400+15.31 TO STA. 401+33.57
STA. 401+75.97 TO STA. 403+00.24

KEYNOTES

1. 2" SURFACE COURSE – 12.5mm HMA SUPERPAVE PG64–22
2. 5" BASE COURSE – 19.0mm HMA SUPERPAVE PG64–22
3. 8" AGGREGATE BASE COURSE (CR–6 OR GAB)
4. TOP OF SUBGRADE
5. TYPE 'A' COMBINATION CURB AND GUTTER MDSHA STD MD–620.02
6. 5" CONCRETE SIDEWALK
7. 6" LONGITUDINAL UNDERDRAIN MDSHA STD. MD–387.11–01
8. TYPE 'A' CURB SHA MDSTD MD–620.02
9. TYPE 'C' COMBINATION CURB AND GUTTER MDSHA STD MD–620.02–01
10. 9" STAMPED CONCRETE PAVEMENT – MIX #7
11. 1.5" 12.5mm SUPERPAVE SURFACE PG 64–22/3" 19mm SUPERPAVE BASE PG 64–22/3" MIN. CR–6 CRUSHER RUN
12. 2.5" SURFACE COURSE – 12.5mm HMA SUPERPAVE PG64–22
13. 6" AGGREGATE BASE COURSE (CR–6 OR GAB)
14. TYPE C–II/C–III RETAINING WALL. SEE SHEETS RW–1 TO RW–10 AND DE–2 FOR DETAILS.
15. 4 FOOT ORNAMENTAL FENCE. SEE SHEET RW–10 FOR DETAIL
16. TYPE 'D' CURB MD–620.02–01

GENERAL NOTES

1. PLACE 4" FURNISHED TOPSOIL AND TURFGRASS ESTABLISHMENT FOR ALL SLOPES UNLESS OTHERWISE NOTED.
2. SAW CUT TO BE PERFORMED 1' INSIDE EXISTING EDGE OF PAVEMENT FOR FULL–DEPTH WIDENING ON CHRISTOPHERS CROSSING AND 4' INSIDE EDGE OF PAVEMENT FOR CONSTRUCTION OF CURB AND GUTTER ON SIDE ROADS. COST OF SAW CUT TO BE INCIDENTAL TO THE CLASS OF EXCAVATION IN WHICH IT OCCURS.
3. REVERSE GUTTER SLOPE FOR HIGH SIDE COMBINATION CURB AND GUTTER.
4. HOT MIX ASPHALT SURFACE AND BASE COURSE MATERIAL SHOULD MEET THE SPECIFICATIONS IN SECTIONS 901 AND 904 OF THE 2022 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
5. HOT MIX ASPHALT (HMA) SURFACE AND BASE COURSES SHOULD BE PLACED IN ACCORDANCE WITH SECTION 504 OF THE 2022 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
6. GRADED AGGREGATE BASE IN ACCORDANCE WITH SECTIONS 501 OF THE 2022 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
7. USE MDOT SHA STANDARD SUPERPAVE ASPHALT MIX 9.5MM FOR WEDGE/LEVEL, PG 64S–22, LEVEL 2 AS NEEDED TO ACHIEVE PROPOSED ROADWAY GRADE.
8. FOLLOW ROUNDING DETAIL ON ALL CUT SLOPES (SEE SHEET DE–2).

0 5' 10'
SCALE: 1"=5'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND · 21235 · PROFESSIONAL ENGINEER
11/7/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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EMAIL: AMT1@AMTENGINEERING.COM

TS-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TYPICAL SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=5'

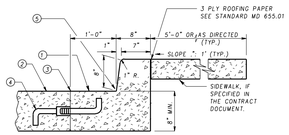
AMT FILE NO. 15-0758.007 SHEET NO. 05 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

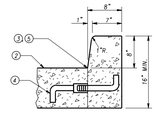
APPROVED 11/16/22

Signature:

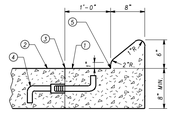
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



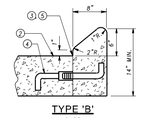
TYPE 'A'
COMBINATION CURB & GUTTER
DESIGN SPEED ≤45 MPH



TYPE 'A'
CURB



TYPE 'B'
COMBINATION CURB & GUTTER
DESIGN SPEED 50 MPH



TYPE 'B'
CURB

① SLOPE GUTTER PAN " " PER FOOT TOWARD FLOW LINE ON ALL ROADWAYS INCLUDING SUPERELEVATED SECTIONS, EXCEPT INTERCHANGE RAMPS.
② ROADWAY PAVEMENT SLOPE.
③ ROADWAY PAVEMENT CONSTRUCTION JOINT.
④ PROVIDE LONGITUDINAL TIE DEVICE "J" BAR MODIFIED. REFER TO STANDARD NO MD 572.61.
⑤ FLOW LINE.

NOTES

A. RIGID PAVEMENT ROADWAY ADJACENT TO COMBINATION CURB AND GUTTER AND CLOSED SECTION ROADWAY USING RIGID PAVEMENT WITH COMBINATION CURB AND GUTTER SHALL BE TIED AT THE ROADWAY PAVEMENT CONSTRUCTION JOINT. REFER TO STANDARD MD 572.61 FOR METHOD OF LONGITUDINAL TIE DEVICES. SPACING OF THE TIE BARS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. RIGID PAVEMENT AND CURB SHALL BE CONSTRUCTED AS INDICATED. TIE DEVICES ARE NOT REQUIRED WHEN USING FLEXIBLE PAVEMENT FOR ROADWAY.
B. MAXIMUM JOINT SPACING FOR CONCRETE CURB AND COMBINATION CURB & GUTTER IS 10'. SEE SPECIFICATION FOR LOCATIONS AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED.
C. TYPE A OR B COMBINATION CURB AND GUTTER SHALL BE USED FOR ALL APPLICABLE NEW CONSTRUCTION AND IN THOSE AREAS WHERE THE COMBINATION CURB AND GUTTER IS TO BE REPLACED IN KIND.
D. TYPE A OR B CURB SHALL BE USED FOR THE REPLACEMENT OF LIKE KIND OF CURB ONLY. NOT TO BE USED FOR NEW CONSTRUCTION EXCEPT WHERE INDICATED ON APPROPRIATE INLET STANDARDS.

SPECIFICATION	CATEGORY CODE ITEMS
602	

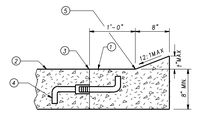
APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

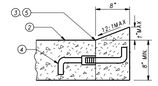
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPES A & B CONCRETE CURB AND COMBINATION CONCRETE CURB & GUTTER

STANDARD NO. MD 620.02

1 OF 2



DEPRESSED CURB FOR COMBINATION CONCRETE CURB & GUTTER FOR SIDEWALK RAMPS



DEPRESSED CONCRETE CURB FOR SIDEWALK RAMPS

① SLOPE GUTTER PAN " " PER FOOT TOWARD FLOW LINE ON ALL ROADWAYS INCLUDING SUPERELEVATED SECTIONS, EXCEPT INTERCHANGE RAMPS.
② ROADWAY PAVEMENT SLOPE.
③ ROADWAY PAVEMENT CONSTRUCTION JOINT.
④ PROVIDE LONGITUDINAL TIE DEVICE "J" BAR MODIFIED. REFER TO STANDARD NO MD 572.61.
⑤ FLOW LINE.

NOTES

A. RIGID PAVEMENT ROADWAY ADJACENT TO COMBINATION CURB AND GUTTER AND CLOSED SECTION ROADWAY USING RIGID PAVEMENT WITH COMBINATION CURB AND GUTTER SHALL BE KEYED AND TIED AT THE ROADWAY PAVEMENT CONSTRUCTION JOINT. REFER TO STANDARD MD 572.61 FOR METHOD OF KEYWAY AND LONGITUDINAL TIE DEVICES. SPACING OF THE TIE BARS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. RIGID PAVEMENT AND CURB SHALL BE CONSTRUCTED AS INDICATED. TIE DEVICES AND KEYS ARE NOT REQUIRED WHEN USING FLEXIBLE PAVEMENT FOR ROADWAY.
B. MAXIMUM JOINT SPACING FOR CONCRETE CURB AND COMBINATION CURB & GUTTER IS 10'. SEE SPECIFICATION FOR LOCATIONS AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED.
C. PAYMENT FOR DEPRESSING THE CURB WILL BE INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR THE ITEM CONCRETE CURB OR COMBINATION CONCRETE CURB AND GUTTER, AS SPECIFIED IN THE CONTRACT DOCUMENTS.

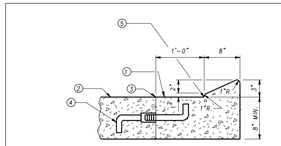
SPECIFICATION	CATEGORY CODE ITEMS
602	

APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

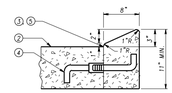
APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
DEPRESSED CURB FOR COMBINATION CURB AND GUTTER AND DEPRESSED CURB FOR SIDEWALK RAMPS

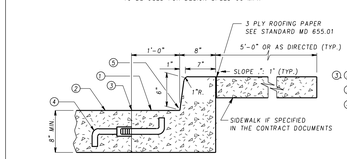
STANDARD NO. MD 620.03



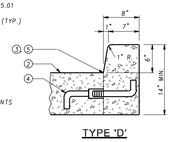
TYPE 'C'
COMBINATION CURB & GUTTER
TO BE USED FOR DESIGN SPEED 60 MPH



TYPE 'C'
CURB



TYPE 'D'
COMBINATION CURB & GUTTER TO BE USED
ADJACENT TO PARKING LOCATIONS DESIGNED
FOR PERSONS WITH DISABILITIES



TYPE 'D'
CURB

① SLOPE GUTTER PAN " " PER FOOT TOWARD FLOW LINE ON ALL ROADWAYS INCLUDING SUPERELEVATED SECTIONS, EXCEPT INTERCHANGE RAMPS.
② ROADWAY PAVEMENT SLOPE.
③ ROADWAY PAVEMENT CONSTRUCTION JOINT.
④ PROVIDE LONGITUDINAL TIE DEVICE "J" BAR MODIFIED. REFER TO STANDARD NO MD 572.61.
⑤ FLOW LINE.

NOTES

A. RIGID PAVEMENT ROADWAY ADJACENT TO COMBINATION CURB AND GUTTER AND CLOSED SECTION ROADWAY USING RIGID PAVEMENT WITH COMBINATION CURB AND GUTTER SHALL BE TIED AT THE ROADWAY PAVEMENT CONSTRUCTION JOINT. REFER TO STANDARD MD 572.61 FOR METHOD OF LONGITUDINAL TIE DEVICES. SPACING OF THE TIE BARS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. RIGID PAVEMENT AND CURB SHALL BE CONSTRUCTED AS INDICATED. TIE DEVICES ARE NOT REQUIRED WHEN USING FLEXIBLE PAVEMENT FOR ROADWAY.
B. MAXIMUM JOINT SPACING FOR CONCRETE CURB AND COMBINATION CURB & GUTTER IS 10'. SEE SPECIFICATION FOR LOCATIONS AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED.
C. TYPE C OR D COMBINATION CURB AND GUTTER SHALL BE USED FOR ALL APPLICABLE NEW CONSTRUCTION AND IN THOSE AREAS WHERE THE COMBINATION CURB AND GUTTER IS TO BE REPLACED IN KIND.
D. TYPE C OR D CURB SHALL BE USED FOR THE REPLACEMENT OF LIKE KIND OF CURB ONLY. NOT TO BE USED FOR NEW CONSTRUCTION EXCEPT WHERE INDICATED ON APPROPRIATE INLET STANDARDS.

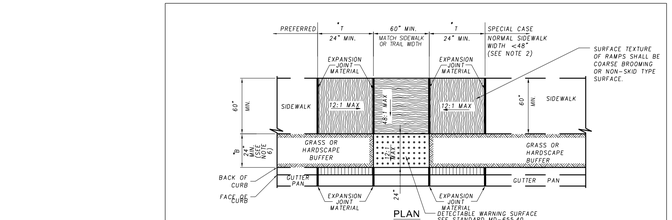
SPECIFICATION	CATEGORY CODE ITEMS
602	

APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

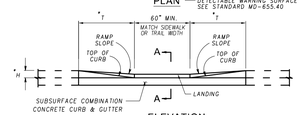
APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPES C AND D CONCRETE CURB AND COMBINATION CONCRETE CURB & GUTTER

STANDARD NO. MD 620.02-01

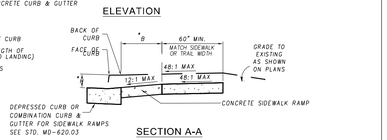


PLAN



ELEVATION

* – H = HEIGHT OF CURB
B = BUFFER WIDTH (BACK OF CURB TO FRONT OF SIDEWALK)
T = TRANSITION LENGTH OF RAMP FROM SIDEWALK TO LANDING)
T = (12 x H)
ALL MEASUREMENTS IN INCHES



SECTION A-A

NOTES

1. TO BE USED WHERE AT LEAST 7'-0" EXISTS BETWEEN THE BACK OF CURB AND THE BACK OF SIDEWALK. THIS STANDARD MAY BE MODIFIED TO SUIT A PARTICULAR LOCATION.
2. WHERE 60" SIDEWALK CAN NOT BE PROVIDED, A DESIGN WAIVER MUST BE REQUESTED.
3. NO RAMP/LANDING IN THE DIRECTION OF PEDESTRIAN TRAVEL SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL, OR 48:1 IN THE CROSS DIRECTION.
4. EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STD. MD-655.01.
5. SIDEWALK RAMPS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE RAMP ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASES.
6. FOR BUFFER WIDTHS LESS THAN 24", WIDEN SIDEWALK TO BACK OF CURB AS SHOWN FOR THE SPECIAL CASE, THEN BUILD PARALLEL RAMP USING STANDARD MD-655.12.
7. TRANSITION PANELS TO TIE INTO EXISTING SIDEWALK MUST BE A MINIMUM OF 5' IN LENGTH
8. IF THE BUFFER AREA IS GREATER THAN OR EQUAL TO 4' THE LANDING AREA MUST BE 2% X 2%. IF THE BUFFER AREA IS LESS THAN 4' THE LANDING AREA CROSS-SLOPE CANNOT EXCEED THE GRADE OF THE ROAD.

SPECIFICATION	CATEGORY CODE ITEMS
603 & 611	

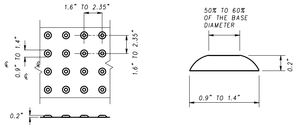
APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

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

STANDARD NO. MD 655.13

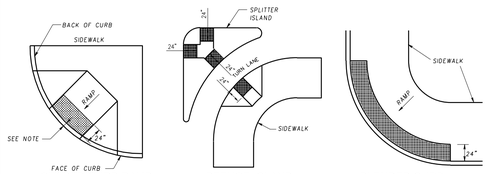
MAT DETAILS
SEE PLACEMENT GUIDELINES BELOW



DOME SPACING

DOME SECTION

PLACEMENT GUIDELINES



SHARED CURB RAMP

REFUGE ISLAND

BLENDED CURB

WHERE ISLANDS OR MEDIANS ARE LESS THAN 6 FEET WIDE, THE DETECTABLE WARNING SHOULD EXTEND ACROSS THE FULL LENGTH OF THE CUT THROUGH THE ISLAND OR MEDIAN

NOTES

1. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 TO 8 INCHES FROM THE FACE OF CURB.
2. FOR SKEWED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF CURB ARE NO LESS THAN 0.5" AND NO MORE THAN 3.0" FROM THE BACK OF CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.
3. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
4. DETECTABLE WARNING SURFACES ARE REQUIRED AT STREET CROSSING & SIGNALIZED INTERSECTIONS.

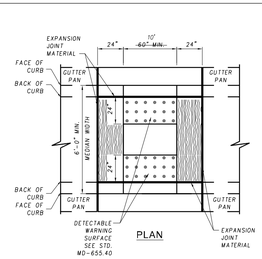
SPECIFICATION	CATEGORY CODE ITEMS
611	

APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

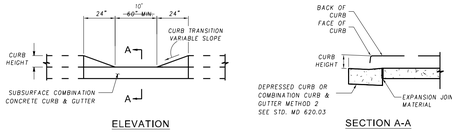
APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED 4-17-06	REVISED
REVISED	REVISED
REVISED	REVISED

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

STANDARD NO. MD 655.40



PLAN



ELEVATION

SECTION A-A

NOTES

1. TO BE USED WHERE A STREET-LEVEL PEDESTRIAN CROSSING IS REQUIRED THROUGH RAISED MEDIANS OR RAISED ISLANDS AND THERE IS INSUFFICIENT WIDTH TO PROVIDE A RAMPED MEDIAN OR ISLAND OPENING (STD. MD-655.22).
2. EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD MD-655.01.
3. CUT-THROUGH MEDIAN AND ISLAND OPENINGS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE OPENING ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED OPENING VARIES FROM STANDARD METHODS.
4. WHERE 60" CUT THROUGHS CAN NOT BE PROVIDED A DESIGN WAIVER MUST BE REQUESTED.

SPECIFICATION	CATEGORY CODE ITEMS
603 & 611	

APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
CUT-THROUGH MEDIAN AND ISLAND OPENINGS

STANDARD NO. MD 655.21

DE-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY DETAILS

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 06 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

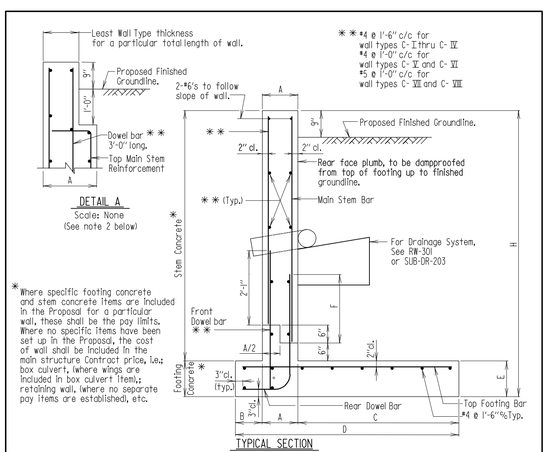
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



* Where specific footing concrete and stem concrete items are included in the Proposal for a particular wall, these shall be the pay limits. Where no specific items have been set up in the Proposal, the cost of wall shall be included in the main structure Contract price, i.e.; box culvert, where wings are included in box culvert item; retaining wall, (where no separate pay items are established, etc.

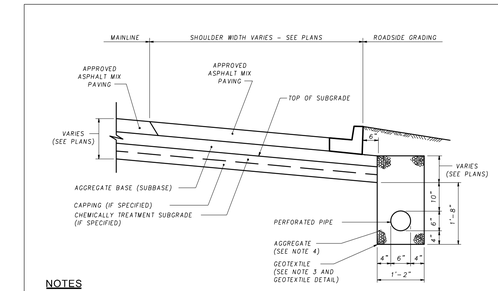
Wall Type	H	A	B	C	D	E	F	Rear Dowel Bar	Main Stem Bar	Top Foot. Bar
C-I	6'-0"	1'-0"	9"	2'-6"	4'-3"	1'-0"	2'-2"	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c
C-II	8'-0"	1'-0"	9"	3'-6"	5'-3"	1'-0"	2'-2"	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c
C-III	10'-0"	1'-0"	1'-0"	4'-6"	6'-6"	1'-3"	2'-7"	#6 @ 6" c/c	#6 @ 1'-0" c/c	#6 @ 6" c/c
C-IV	12'-0"	1'-0"	1'-0"	5'-6"	7'-6"	1'-3"	2'-7"	#6 @ 6" c/c	#6 @ 1'-0" c/c	#6 @ 6" c/c
C-V	14'-0"	1'-3"	1'-6"	6'-0"	8'-9"	1'-6"	3'-6"	#7 @ 6" c/c	#7 @ 1'-0" c/c	#7 @ 6" c/c
C-VI	16'-0"	1'-6"	2'-3"	6'-9"	10'-6"	1'-6"	3'-6"	#7 @ 6" c/c	#7 @ 1'-0" c/c	#7 @ 6" c/c
C-VII	18'-0"	2'-3"	3'-0"	7'-3"	12'-6"	1'-9"	3'-6"	#7 @ 6" c/c	#7 @ 1'-0" c/c	#7 @ 6" c/c
C-VIII	20'-0"	2'-3"	4'-0"	8'-9"	15'-0"	1'-9"	4'-7"	#8 @ 6" c/c	#8 @ 1'-0" c/c	#8 @ 6" c/c

Notes:
1. A "Poor Soil Condition" is that foundation material that can support a safe bearing pressure of 3 ksf and has an angle of friction of 30°.
2. If in the length of a wall the type of wall changes and provides for a different thickness of stem, then "Detail A" shall be used for all walls of greater than the least wall thickness.
3. Contractor has option of lapping main stem reinforcement with rear dowel reinforcement as shown or by extending the rear dowel reinforcement with no splicing. However, no additional compensation to Contractor will be allowed for whichever alternative is selected.
4. These walls are valid if traffic is present on the level area adjacent to the wall.

APPROVAL
Ed Sachs DIRECTOR OFFICE OF STRUCTURES
DATE 12/04/2013
VERSION
1.0

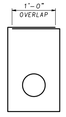
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
TYPE C RETAINING WALL SECTION (FOR POOR SOIL CONDITION AND TWO FOOT SURCHARGE)
DETAIL NO. RW-104 SHEET 1 OF 1

RETAINING WALLS



NOTES

1. LONGITUDINAL UNDERDRAIN SHALL BE PLACED ACCORDING TO THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. THE UNDERDRAIN TRENCH SHALL NOT BE CONSTRUCTED BEFORE PLACEMENT OF THE BASE (SUBBASE) COURSE.
3. LONGITUDINAL UNDERDRAIN TRENCH SHALL BE WRAPPED IN CLASS SD TYPE II GEOTEXTILE.
4. AGGREGATE SHALL CONFORM TO No. 57 AGGREGATE, 901.01 OF THE STANDARD SPECIFICATION FOR CONSTRUCTION AND MATERIALS.
5. AGGREGATE SHALL BE TAMPED WITH A LIGHT VIBRATORY TAMPER PRIOR TO OVERLAPPING THE GEOTEXTILE FABRIC.
6. CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR 6" PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN SHALL CONSTITUTE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS NECESSARY TO DO THE WORK.
7. IF ANY EXISTING LONGITUDINAL UNDERDRAIN IS ENCOUNTERED DURING WIDENING EXCAVATION, THE UNDERDRAIN PIPE SHOULD BE REMOVED UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY VOID CREATED BY THE REMOVAL OF THE UNDERDRAIN PIPE SHOULD BE BACKFILLED BY MATERIAL SUITABLE FOR EMBANKMENT CONSTRUCTION. IF NO LONGITUDINAL UNDERDRAIN IS FOUND, BUT EXISTING UNDERDRAIN OUTLETS MAY BE IMPACTED BY NEW WIDENING, OUTLETS SHALL BE CONNECTED TO THE NEW UNDERDRAINS OR OTHER DRAINAGE FACILITIES.
8. OUTLET THE UNDERDRAINS INTO OTHER DRAINAGE STRUCTURES WHENEVER POSSIBLE AT INTERVALS NOT TO EXCEED 250'. REFER TO STD. NOS. 387.11, 387.11-01, 387.21 AND 387.21-01.

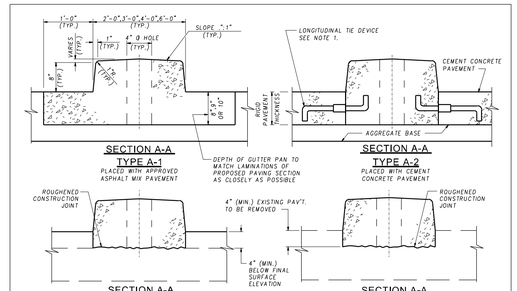


GEOTEXTILE FABRIC
DETAIL

SPECIFICATION 602	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
LONGITUDINAL UNDERDRAIN LOCATED AT CURB & GUTTER EDGE FOR FLEXIBLE PAVEMENT
STANDARD NO. MD 387.11-01



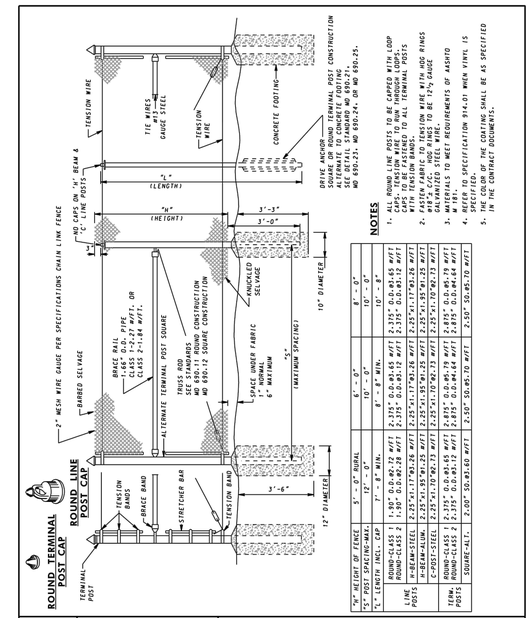
NOTES

1. UNLESS OTHERWISE SPECIFIED, LONGITUDINAL TIE BAR DEVICE, TYPE 'A' OR TYPE 'B', PLACED AT MIDDLE OF KEYWAY @ SPACED ACCORDING TO SPECIFICATIONS FOR CONCRETE PAVEMENT SHALL BE USED AT CONSTRUCTION JOINT BETWEEN MONOLITHIC CONCRETE MEDIAN (OR GUTTER PAN) AND CONCRETE PAVEMENT. SEE STANDARD MD 572.61. SOLID BAR AND SLEEVE MAY BE REPLACE BY TUBE WITH INTERNAL THREAD.
2. JOINT SPACING WILL BE A MAXIMUM OF 10'-0" APART, SEE SPECIFICATIONS FOR LOCATION AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED. CONCRETE PAVEMENT, JOINTS SHALL MATCH PAVEMENT JOINTS.
3. ALLOW 4" O HOLES IN MEDIAN FOR SIGNS, SPACED AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

SPECIFICATION 602	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD MONOLITH CONCRETE MEDIAN TYPE 'A'
STANDARD NO. MD 645.01



NOTES

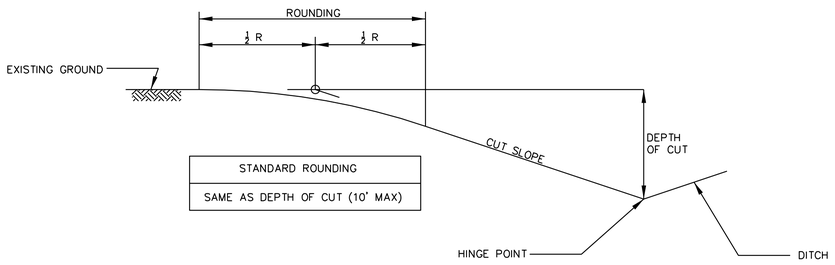
1. ALL ROUND LINE POSTS TO BE CAPPED WITH LOOP CAPS TO BE USED FOR TOP RAIL AND ROUND TERMINAL POSTS WITH TENSION WIRE.
2. FASTEN FABRIC TO TENSION WIRE WITH HOG RINGS OF GALVANIZED STEEL WIRE.
3. MATERIALS TO MEET REQUIREMENTS OF AASHTO M181.
4. REFER TO SPECIFICATION 914.01 WHEN VINYL IS SPECIFIED.
5. THICKNESS OF THE COATING SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS.

"H" HEIGHT OF FENCE		5' - 0"	6' - 0"	8' - 0"
"S" POST SPACING-MAX.		12' - 0"	10' - 0"	10' - 0"
"L" LENGTH INCL. CAP		7' - 8" MIN.	8' - 8" MIN.	10' - 8"
LINE POSTS	ROUND-CLASS 1 H-BEAM-STEEL	1.90" O.D.-#2.72 WT/FT 2.25"x1.15"-#3.26 WT/FT	2.375" O.D.-#3.65 WT/FT 2.25"x1.15"-#3.26 WT/FT	2.375" O.D.-#3.65 WT/FT 2.25"x1.15"-#3.26 WT/FT
	H-BEAM-ALUM.	2.25"x1.15"-#1.25 WT/FT	2.25"x1.15"-#1.25 WT/FT	2.25"x1.15"-#1.25 WT/FT
	C-POST-STEEL	2.25"x1.70"-#2.73 WT/FT	2.25"x1.70"-#2.73 WT/FT	2.25"x1.70"-#2.73 WT/FT
TERM. POSTS	ROUND-CLASS 1 H-BEAM-STEEL	2.375" O.D.-#3.65 WT/FT 2.25"x1.15"-#3.26 WT/FT	2.875" O.D.-#5.79 WT/FT 2.25"x1.15"-#3.26 WT/FT	2.875" O.D.-#5.79 WT/FT 2.25"x1.15"-#3.26 WT/FT
	H-BEAM-ALUM.	2.25"x1.15"-#1.25 WT/FT	2.25"x1.15"-#1.25 WT/FT	2.25"x1.15"-#1.25 WT/FT
	SQUARE-ALT.	2.00" SQ.-#5.60 WT/FT	2.50" SQ.-#5.70 WT/FT	2.50" SQ.-#5.70 WT/FT

SPECIFICATION 607	CATEGORY CODE ITEMS
APPROVED	DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL • SHA REVISIONS	APPROVAL • FEDERAL HIGHWAY ADMINISTRATION
APPROVAL 6-6-84	APPROVAL 8-1-84
REVISED 10-1-01	REVISED 10-10-89
REVISED	REVISED
REVISED	REVISED

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
CHAIN LINK FENCE
TYPICAL 5 FT. RURAL 6 FT. & 8 FT
STANDARD NO. MD 690.01



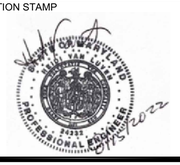
STANDARD ROUNDING
SAME AS DEPTH OF CUT (10' MAX)

ROUNDING DETAIL

DE-2

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP



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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY DETAILS

DATE: SEPTEMBER 2022 SCALE:

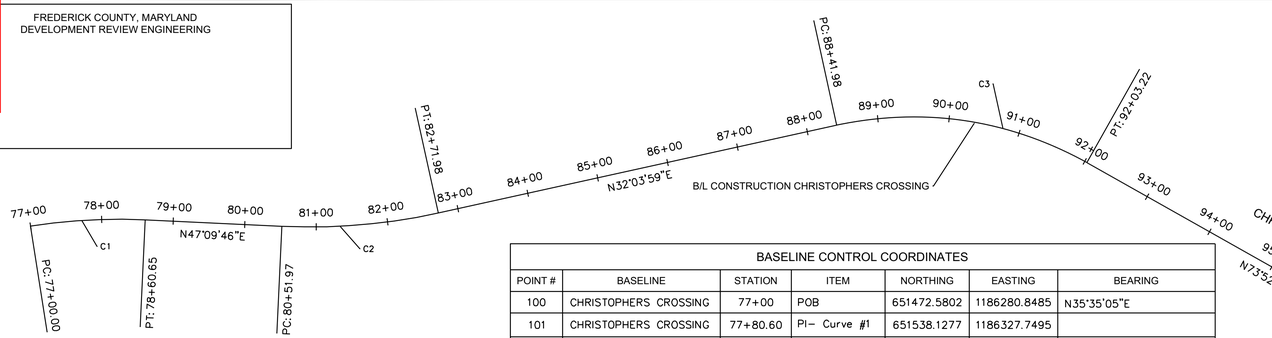
AMT FILE NO. 15-0758.007 SHEET NO. 07 OF 121

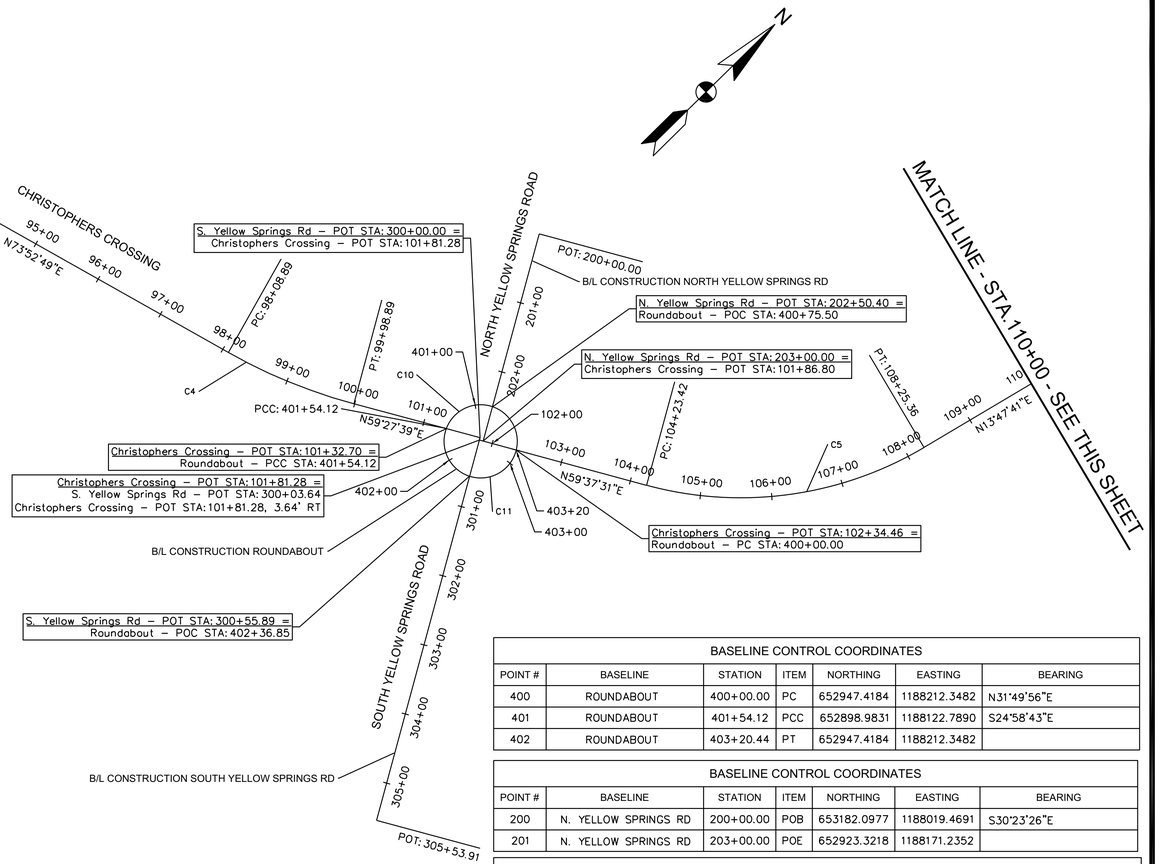
Division of Planning and Permitting
Department of Development
Review Engineering

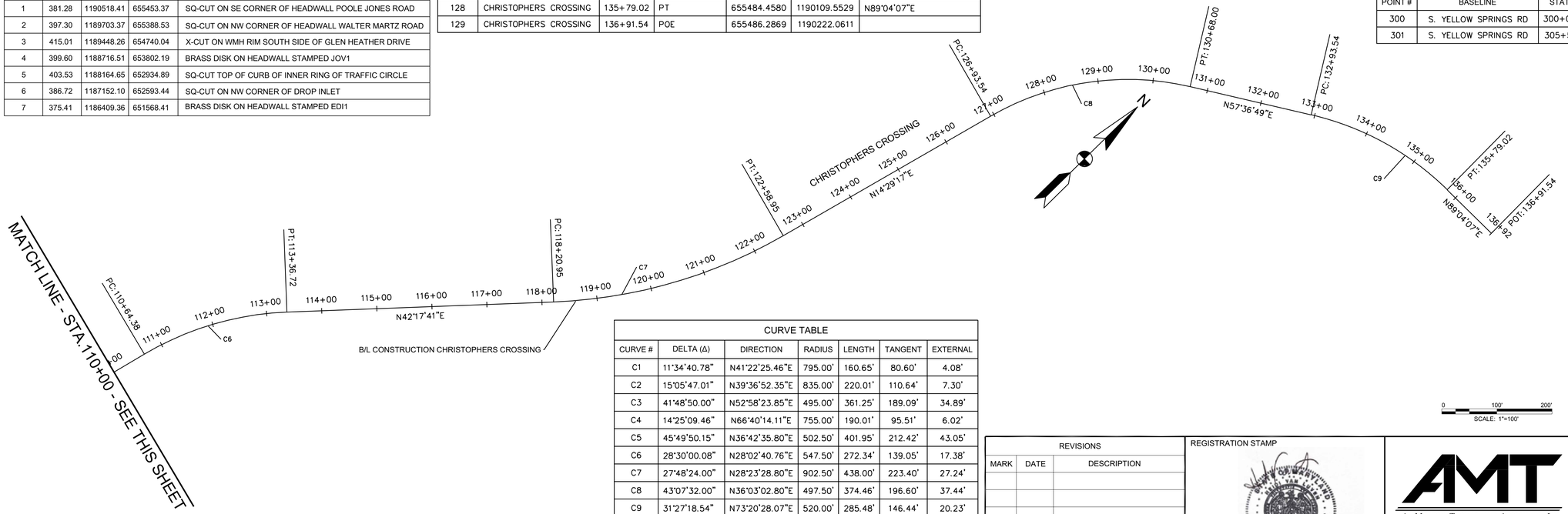
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING







TRAVERSE DATA:				
NO	NORTHING	EASTING	ELEV	DESCRIPTION
1	655366.7246	1189714.9102	398.04	REBAR & CAP
2	655133.9700	1189494.652	415.02	REBAR & CAP
3	654833.4432	1189390.3730	415.46	REBAR & CAP
4	654464.6488	1189316.7801	409.45	REBAR & CAP
5	654206.1743	1189164.0592	405.88	REBAR & CAP
6	653997.5510	1188908.2420	401.18	REBAR & CAP
7	653163.0477	1188511.7673	411.44	REBAR & CAP
8	652903.8370	1188166.3086	401.70	MAG-NAIL
9	652650.5384	1187562.5746	391.83	MAG-NAIL
10	652507.5508	1187087.8203	387.69	REBAR & CAP
301	655432.2311	1190480.1580	384.53	REBAR & CAP
302	655478.2172	1190029.9293	385.85	REBAR & CAP
303	653778.7501	1188751.1188	401.39	REBAR & CAP
304	653455.5671	1188629.3158	409.49	TRV R/C
305	652134.3093	1186815.5574	382.93	REBAR & CAP
306	651526.8187	1186371.7259	377.16	REBAR & CAP

BENCHMARK DATA:				
NO	ELEV	EASTING	NORTHING	DESCRIPTION
1	381.28	1190518.41	655453.37	SQ-CUT ON SE CORNER OF HEADWALL POOLE JONES ROAD
2	397.30	1189703.37	655388.53	SQ-CUT ON NW CORNER OF HEADWALL WALTER MARTZ ROAD
3	415.01	1189448.26	654740.04	X-CUT ON WMH RIM SOUTH SIDE OF GLEN HEATHER DRIVE
4	399.60	1188716.51	653802.19	BRASS DISK ON HEADWALL STAMPED JOV1
5	403.53	1188164.65	652934.89	SQ-CUT TOP OF CURB OF INNER RING OF TRAFFIC CIRCLE
6	386.72	1187152.10	652593.44	SQ-CUT ON NW CORNER OF DROP INLET
7	375.41	1186409.36	651568.41	BRASS DISK ON HEADWALL STAMPED EDI1

BASELINE CONTROL COORDINATES						
POINT #	BASELINE	STATION	ITEM	NORTHING	EASTING	BEARING
100	CHRISTOPHERS CROSSING	77+00	POB	651472.5802	1186280.8485	N35°35'05"E
101	CHRISTOPHERS CROSSING	77+80.60	PI– Curve #1	651538.1277	1186327.7495	
102	CHRISTOPHERS CROSSING	78+60.65	PT	651592.9284	1186386.8517	N47°09'46"E
103	CHRISTOPHERS CROSSING	80+51.97	PC	651723.0124	1186527.1466	
104	CHRISTOPHERS CROSSING	81+62.62	PI – Curve #2	651798.2416	1186608.2808	
105	CHRISTOPHERS CROSSING	82+71.98	PT	651892.0055	1186667.0220	N32°03'59"E
106	CHRISTOPHERS CROSSING	88+41.98	PC	652375.0423	1186969.6353	
107	CHRISTOPHERS CROSSING	90+31.07	PI – Curve #3	652535.2843	1187070.0238	
108	CHRISTOPHERS CROSSING	92+03.22	PT	652587.7847	1187251.6802	N73°52'49"E
109	CHRISTOPHERS CROSSING	98+08.89	PC	652755.9446	1187833.5306	
110	CHRISTOPHERS CROSSING	99+04.40	PI – Curve #4	652782.4620	1187925.2834	
111	CHRISTOPHERS CROSSING	99+98.89	PT	652830.9920	1188007.5427	N59°27'39"E
112	CHRISTOPHERS CROSSING	101+81.28	PI	652923.6651	1188164.6254	
113	CHRISTOPHERS CROSSING	101+81.28	PI	652920.5266	1188166.4660	N59°37'31"E
114	CHRISTOPHERS CROSSING	104+23.42	PC	653042.9662	1188375.3700	
115	CHRISTOPHERS CROSSING	106+35.84	PI – Curve #5	653150.3784	1188558.6346	
116	CHRISTOPHERS CROSSING	108+25.36	PT	653356.6738	1188609.2852	N13°47'41"E
117	CHRISTOPHERS CROSSING	110+64.38	PC	653588.7962	1188666.2769	
118	CHRISTOPHERS CROSSING	112+03.43	PI – Curve #6	653723.8330	1188699.4317	
119	CHRISTOPHERS CROSSING	113+36.72	PT	653826.6855	1188793.0028	N42°17'41"E
120	CHRISTOPHERS CROSSING	118+20.95	PC	654184.8666	1189118.8616	
121	CHRISTOPHERS CROSSING	120+44.35	PI – Curve #7	654350.1156	1189269.1985	
122	CHRISTOPHERS CROSSING	122+58.95	PT	654566.4133	1189325.0885	N14°29'17"E
123	CHRISTOPHERS CROSSING	126+93.54	PC	654987.1834	1189433.8131	
124	CHRISTOPHERS CROSSING	128+90.14	PI – Curve #8	655177.5320	1189482.9980	
125	CHRISTOPHERS CROSSING	130+68.00	PT	655282.8364	1189649.0181	N57°36'49"E
126	CHRISTOPHERS CROSSING	132+93.54	PC	655403.6431	1189839.4786	
127	CHRISTOPHERS CROSSING	134+39.97	PI – Curve #9	655482.0779	1189963.1367	
128	CHRISTOPHERS CROSSING	135+79.02	PT	655484.4580	1190109.5529	N89°04'07"E
129	CHRISTOPHERS CROSSING	136+91.54	POE	655486.2869	1190222.0611	

CURVE TABLE						
CURVE #	DELTA (Δ)	DIRECTION	RADIUS	LENGTH	TANGENT	EXTERNAL
C1	11°34'40.78"	N41°22'25.46"E	795.00'	160.65'	80.60'	4.08'
C2	15°05'47.01"	N39°36'52.35"E	835.00'	220.01'	110.64'	7.30'
C3	41°48'50.00"	N52°58'23.85"E	495.00'	361.25'	189.09'	34.89'
C4	14°25'09.46"	N66°40'14.11"E	755.00'	190.01'	95.51'	6.02'
C5	45°49'50.15"	N36°42'35.80"E	502.50'	401.95'	212.42'	43.05'
C6	28°30'00.08"	N28°02'40.76"E	547.50'	272.34'	139.05'	17.38'
C7	27°48'24.00"	N28°23'28.80"E	902.50'	438.00'	223.40'	27.24'
C8	43°07'32.00"	N36°03'02.80"E	497.50'	374.46'	196.60'	37.44'
C9	31°27'18.54"	N73°20'28.07"E	520.00'	285.48'	146.44'	20.23'
C10	173°08'47.26"	S61°35'40.77"W	51.00'	154.12'	851.71'	802.23'
C11	186°51'12.74"	N61°35'40.77"E	51.00'	166.32'	851.71'	904.23'

BASELINE CONTROL COORDINATES						
POINT #	BASELINE	STATION	ITEM	NORTHING	EASTING	BEARING
400	ROUNDABOUT	400+00.00	PC	652947.4184	1188212.3482	N31°49'56"E
401	ROUNDABOUT	401+54.12	PCC	652898.9831	1188122.7890	S24°58'43"E
402	ROUNDABOUT	403+20.44	PT	652947.4184	1188212.3482	

BASELINE CONTROL COORDINATES						
POINT #	BASELINE	STATION	ITEM	NORTHING	EASTING	BEARING
200	N. YELLOW SPRINGS RD	200+00.00	POB	653182.0977	1188019.4691	S30°23'26"E
201	N. YELLOW SPRINGS RD	203+00.00	POE	652923.3218	1188171.2352	

BASELINE CONTROL COORDINATES						
POINT #	BASELINE	STATION	ITEM	NORTHING	EASTING	BEARING
300	S. YELLOW SPRINGS RD	300+00.00	POB	652923.6651	1188164.6254	S30°23'21"E
301	S. YELLOW SPRINGS RD	305+53.91	POE	652445.8606	1188444.8307	

0 100' 200'
SCALE: 1"=100'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

GS-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

BASELINE GEOMETRY

DATE: SEPTEMBER 2022 SCALE:

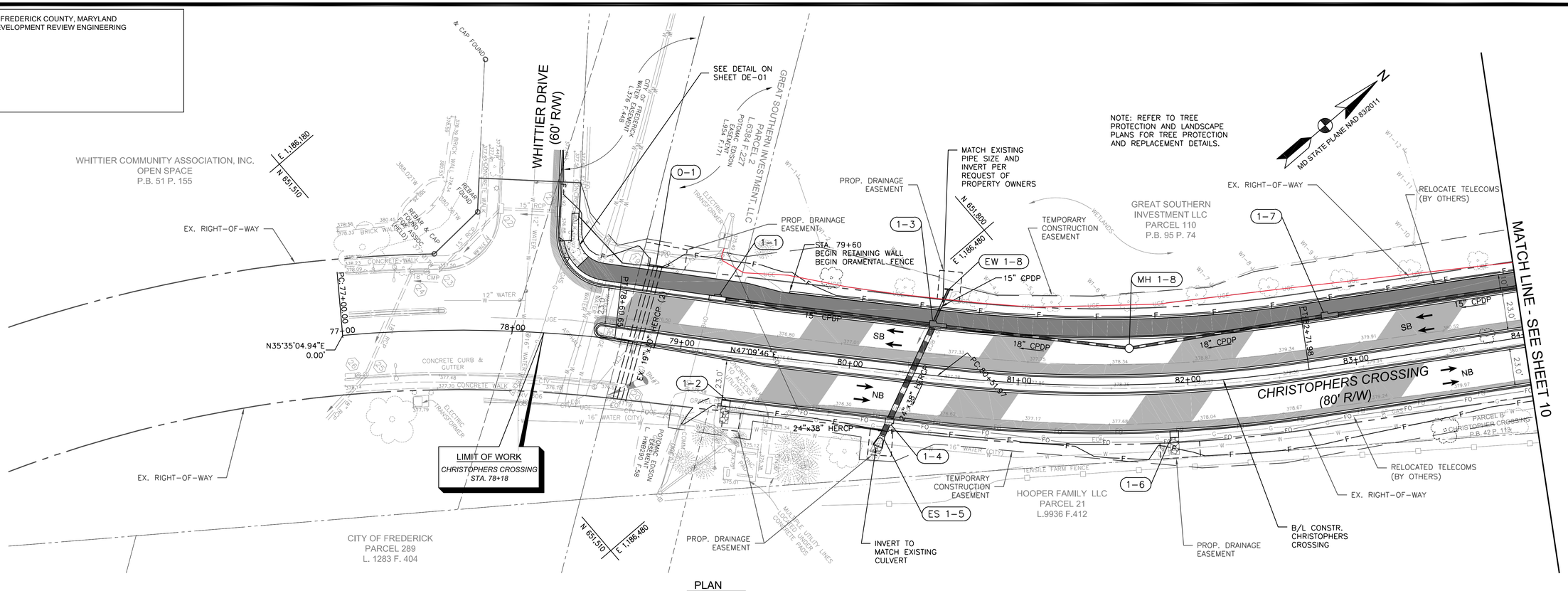
AMT FILE NO. 15-0758.007 SHEET NO. 08 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

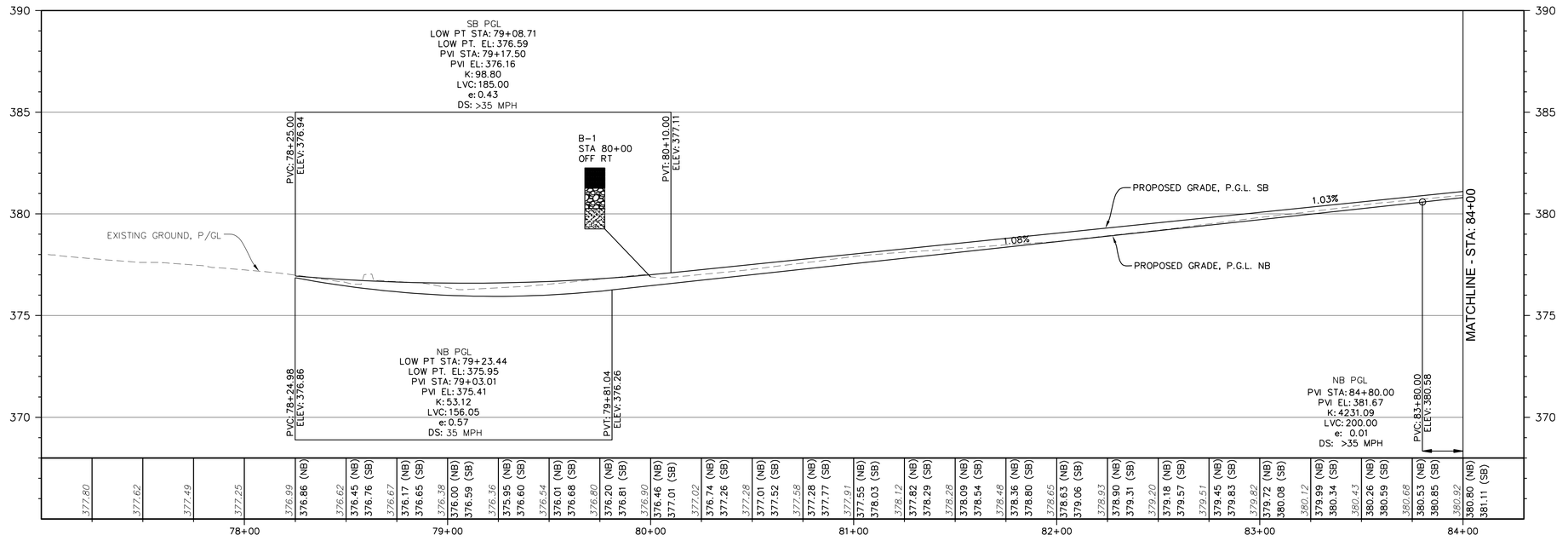
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'



STA. 77+00 TO STA. 84+00 PROFILE
SCALE: HORZ 1"=30'
VERT 1"=3'

0 30' 60'
SCALE: 1"=30'

LEGEND

- RIGHT-OF-WAY
- FULL DEPTH PAVEMENT
- AT GRADE FINE MILLING AND RESURFACING
- SHARED USE PATH
- SIDEWALK
- STAMPED CONCRETE
- RIP-RAP
- CENTERLINE OF DITCH

PS-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 09 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STEVEN W. WARFIELD
No. 21431
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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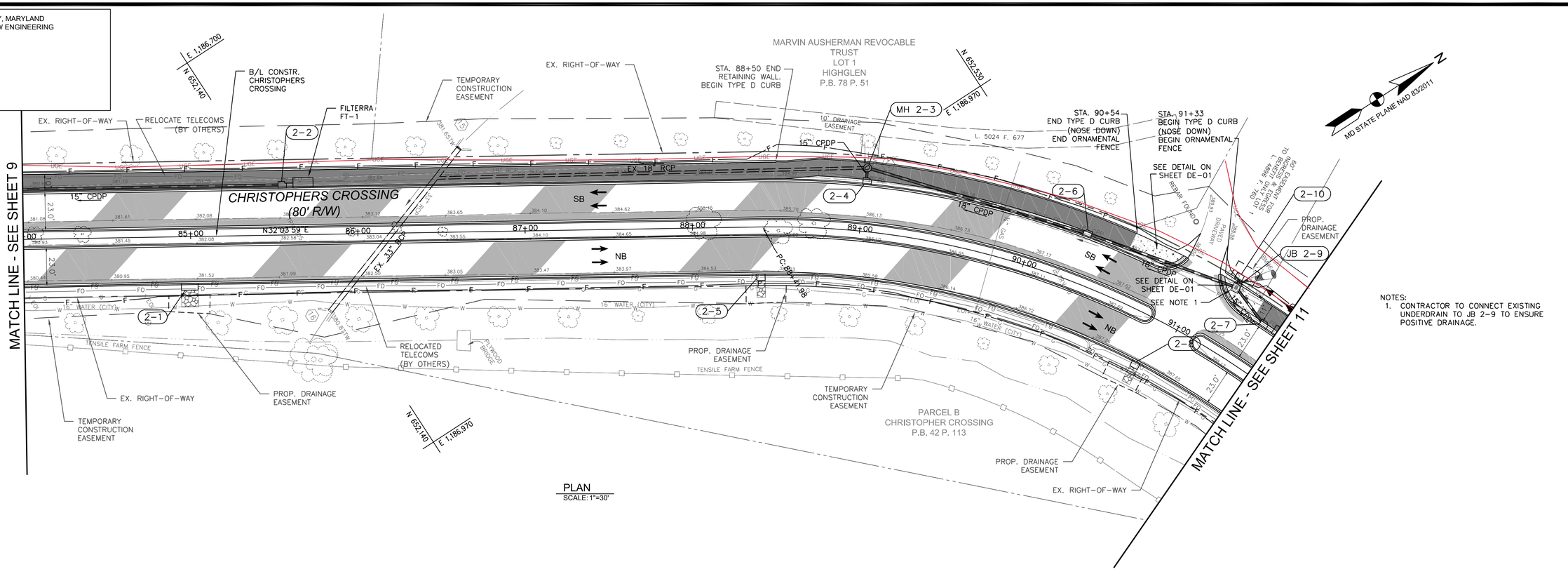
EMAIL: AMT1@AMTENGINEERING.COM

Division of Planning and Permitting
Department of Development
Review Engineering

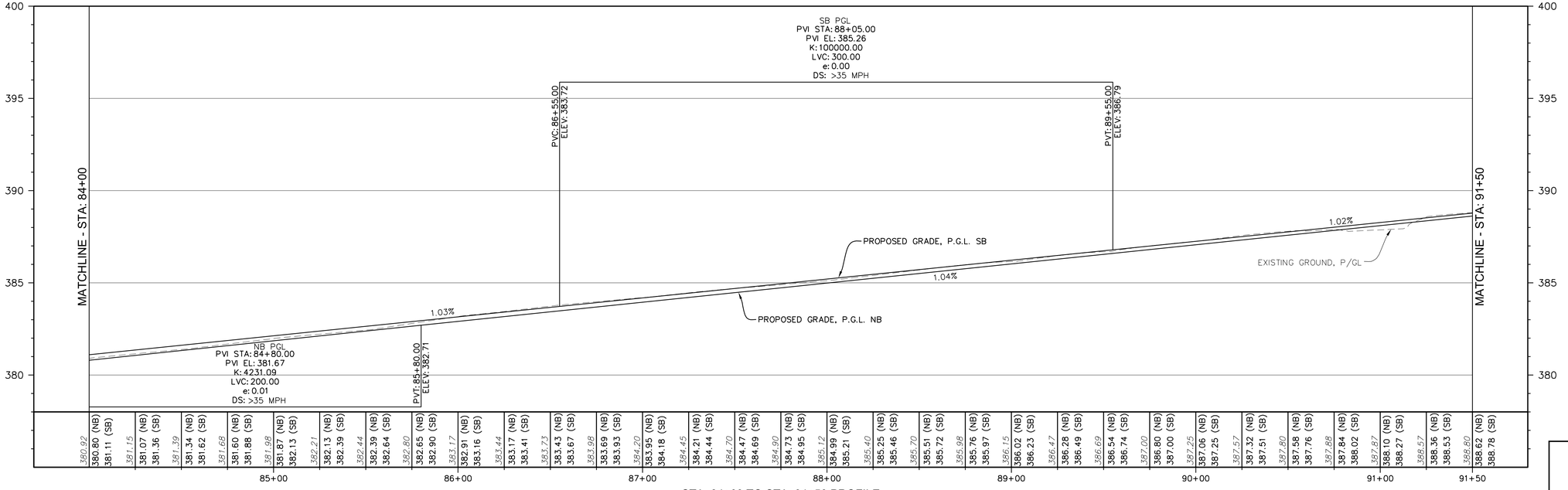
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'



STA. 84+00 TO STA. 91+50 PROFILE
SCALE: HORZ 1"=30'
VERT 1"=3'

SCALE: 1"=30'

LEGEND

- RIGHT-OF-WAY
- FULL DEPTH PAVEMENT
- AT GRADE FINE MILLING AND RESURFACING
- SHARED USE PATH
- SIDEWALK
- STAMPED CONCRETE
- RIP-RAP
- CENTERLINE OF DITCH

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

PS-2

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

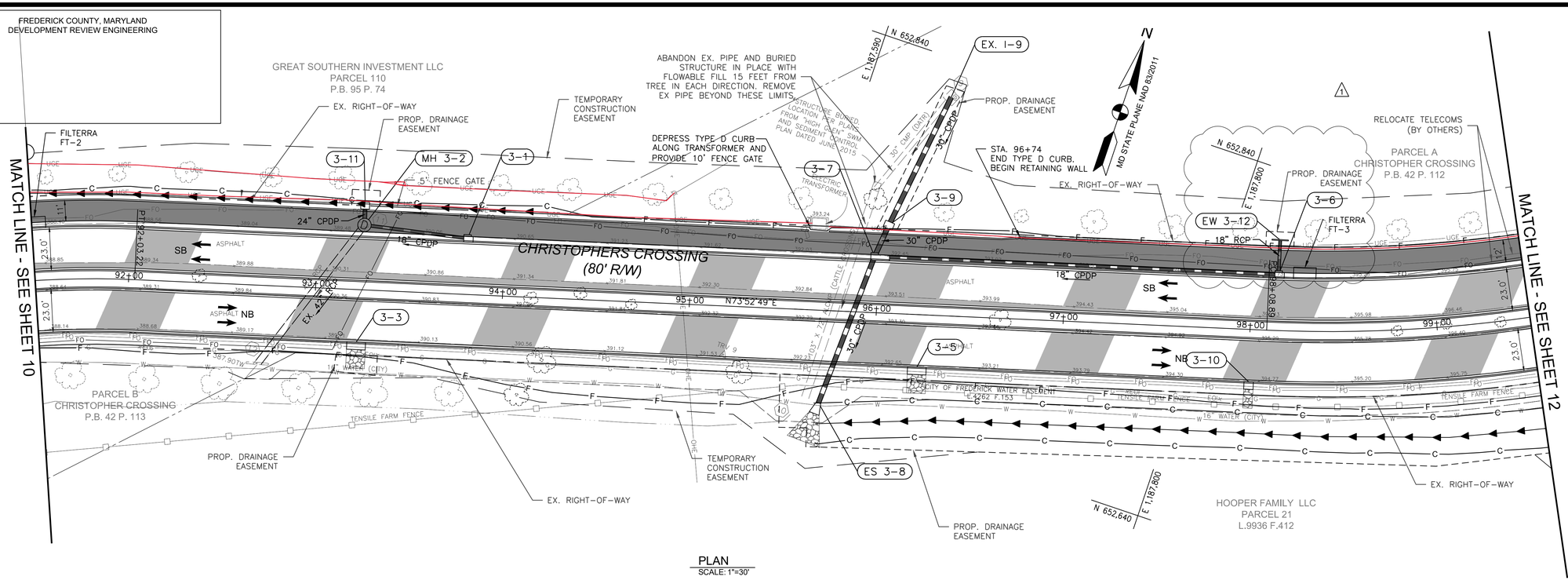
AMT FILE NO. 15-0758.007 SHEET NO. 10 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

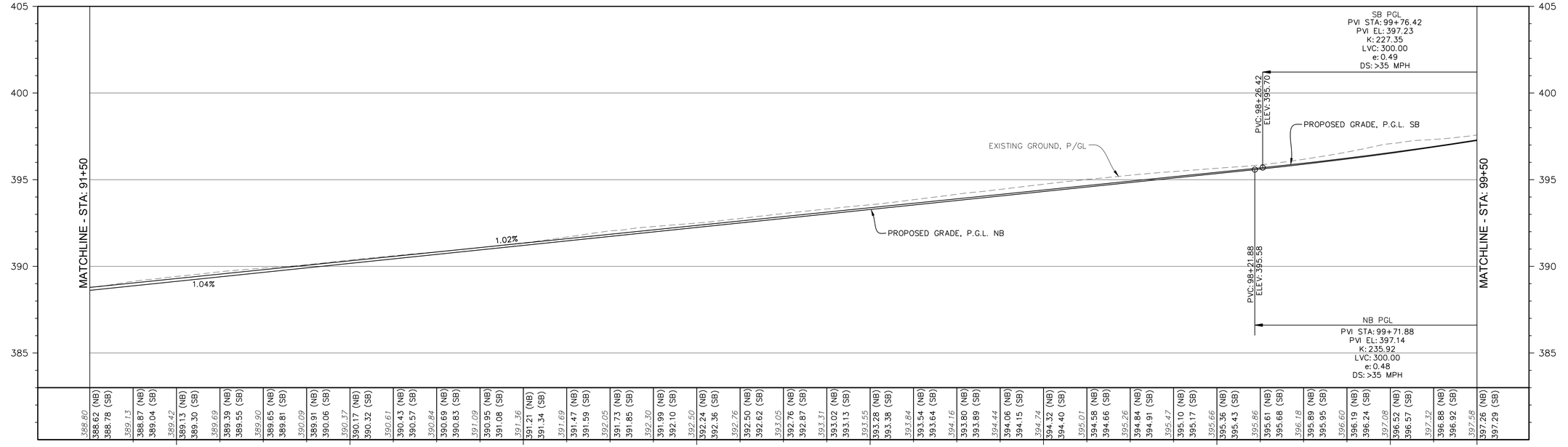
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'



STA. 91+50 TO STA. 99+50 PROFILE
SCALE: HORZ 1"=30'
VERT 1"=3'

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

REGISTRATION STAMP

STATE OF MARYLAND — JEFFREY TAD CLARK — 24331 — PROFESSIONAL ENGINEER — 11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
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PS-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 11 OF 121

LEGEND

- RIGHT-OF-WAY
- FULL DEPTH PAVEMENT
- AT GRADE FINE MILLING AND RESURFACING
- SHARED USE PATH
- SIDEWALK
- STAMPED CONCRETE
- RIP-RAP
- CENTERLINE OF DITCH

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

LIMIT OF WORK
YELLOW SPRINGS RD.
STA. 200+75

YELLOW SPRINGS ROAD (90' R/W)

S30°23'26"E

200+00

REBAR & CAP FOUND (RENT)

EX. RIGHT-OF-WAY

PROPOSED DRAINAGE EASEMENT

PARCEL A
CHRISTOPHER CROSSING
P.B. 42 P. 112

STD. MD 655.21
SEE SHEET DE-01

RELOCATE STREET LIGHT TO CURB RAMP (BY OTHERS)
STD. MD 655.13
SEE SHEET DE-01

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED HAND HOLE (TYP.)
SEE NOTE 2 THIS SHEET

STA. 100+25
END RETAINING WALL
END ORNAMENTAL FENCE

Christophers Crossing – STA:101+81.28 =
S. Yellow Springs Rd – STA: 300+00.00

Christophers Crossing – STA:101+32.70 =
Roundabout – STA: 401+54.12

PROPOSED RIGHT-OF-WAY

RELOCATE TELECOMS (BY OTHERS)

E 1,187,950
N 652,900

TIE PROPOSED SIDEWALK INTO EXISTING SIDEWALK

ADJUST WATER VALVE

RELOCATE STREET LIGHT TO CURB RAMP (BY OTHERS)
STD. MD 655.13
SEE SHEET DE-01

ROBERT & SUSAN FOWLE
LOT 156

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED RIGHT-OF-WAY

Christophers Crossing – STA:101+86.79 =
N. Yellow Springs Rd – STA: 202+50.40

30' UTILITY EASEMENT

Christophers Crossing – STA:101+86.80 =
N. Yellow Springs Rd – STA: 203+00.00

N 653,200
E 1,186,550

MD STATE PLANE NAD 83/2011

KEVIN & ANGELA DORSEY
LOT 154

DOUGLAS & ROSE MARSH
TRUSTEES
LOT 155

TEMPORARY CONSTRUCTION EASEMENT

MATCH LINE - SEE SHEET 14

CHRISTOPHERS CROSSING
(80' R/W)

EUGENE & ALICIA KUNST
LOT 92

MATCH LINE - SEE SHEET 11

EX. RIGHT-OF-WAY

SW-1

ADJUST WATER VALVE

ADJUST GAS VALVE

ADJUST WATER VALVES

PROP. DRAINAGE EASEMENT

UTILITY POLE TO BE RELOCATED BY OTHERS

S. Yellow Springs Rd – STA: 300+55.89 =
Roundabout – STA: 402+36.85

PROP. DRAINAGE EASEMENT

PROPOSED RIGHT-OF-WAY

HOOPER FAMILY LLC
PARCEL 21
L.9936 F.412

TEMPORARY CONSTRUCTION EASEMENT

PROPOSED RIGHT-OF-WAY

Christophers Crossing – STA:102+34.46 =
Roundabout – STA: 400+00.00

JEFFREY & DONNA FOWLE
LOT 99

PROP. DRAINAGE EASEMENT

E 1,188,350
N 652,900

SALVATORE & CHUN CREMONA
LOT 98

GEORGE MAKRIDES
LOT 97

TEMPORARY CONSTRUCTION EASEMENT

EX. RIGHT-OF-WAY

AARON & JOANNA TOOTILL
LOT 93

ADJUST WATER MANHOLE

ADJUST WATER METER

* COMMUNICATIONS PEDESTALS TO BE REPLACED WITH 8'X12' UNDERGROUND VAULT BY OTHERS

Christophers Crossing – STA:101+81.28 =
S. Yellow Springs Rd – STA: 300+03.64
Christophers Crossing – STA:101+81.28, 3.64' RT

YELLOW SPRINGS ROAD (85' R/W)

S30°23'21"E

302+00

RELOCATED GAS LINE (BY OTHERS)

TEMPORARY CONSTRUCTION EASEMENT

SEE MATCH LINE THIS SHEET

PLAN
SCALE: 1"=30'

MD STATE PLANE NAD 83/2011

SEE MATCH LINE THIS SHEET

LIMIT OF WORK
YELLOW SPRINGS RD.
STA. 304+35

TEMPORARY CONSTRUCTION EASEMENT

PLAN
SCALE: 1"=30'

LEGEND

- RIGHT-OF-WAY
- FULL DEPTH PAVEMENT
- AT GRADE FINE MILLING AND RESURFACING
- SHARED USE PATH
- SIDEWALK
- STAMPED CONCRETE
- RIP-RAP
- CENTERLINE OF DITCH

NOTE:

1. SEE SHEETS RL-1 AND RL-2 FOR ROUNDABOUT LAYOUT AND CURB STAKEOUT INFORMATION

2. CONTRACTOR TO INSTALL HAND HOLES AT EACH QUADRANT OF ROUNDABOUT AND CONNECT WITH (2) PARALLEL 3" PVC CONDUIT RUNS ACROSS EACH LEG OF YELLOW SPRINGS ROAD, AND ACROSS THE WEST APPROACH OF CHRISTOPHERS CROSSING FOR FUTURE LIGHTING.

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JOHN W. SCHWARTZ
No. 24331
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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(410) 752-4552
EMAIL: AMT1@AMTENGINEERING.COM

PS-4

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

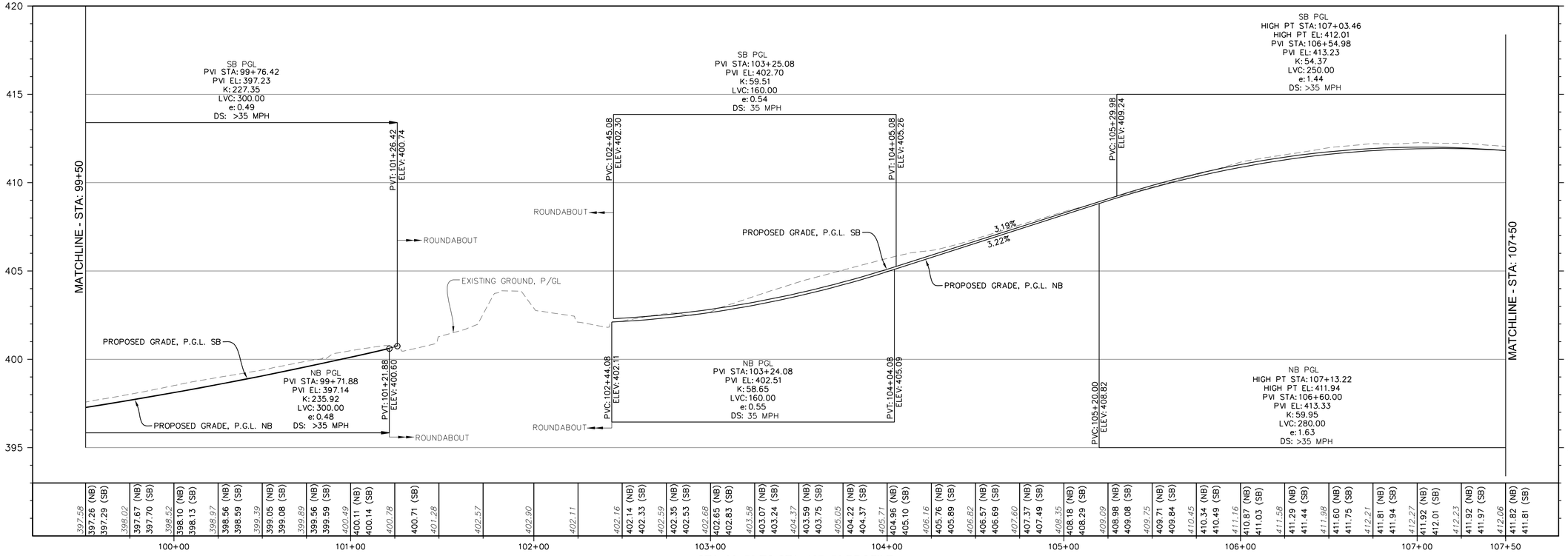
AMT FILE NO. 15-0758.007 SHEET NO. 12 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

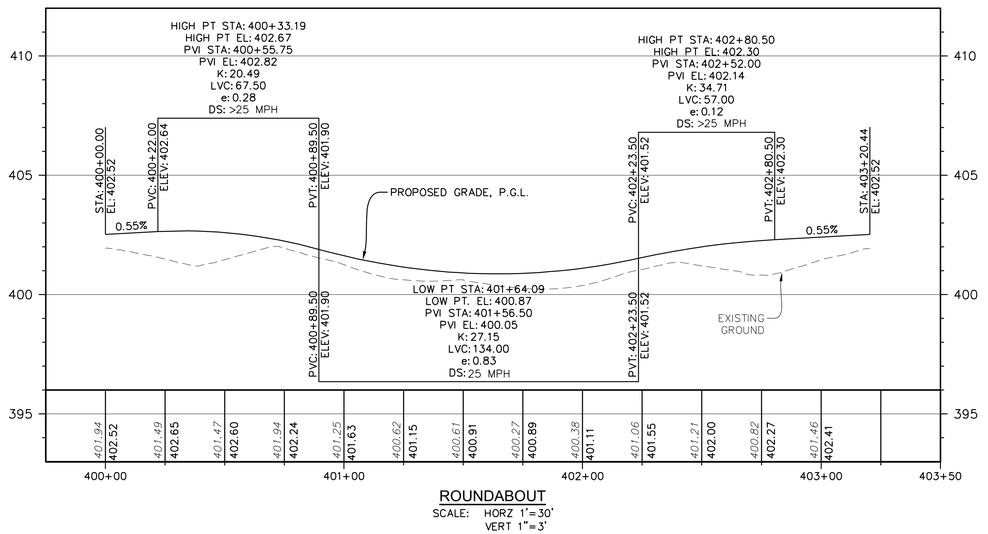
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



STA. 99+50 TO STA. 107+50 PROFILE
SCALE: HORZ 1"=30'
VERT 1"=3'



ROUNDABOUT
SCALE: HORZ 1"=30'
VERT 1"=3'

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

PS-5

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

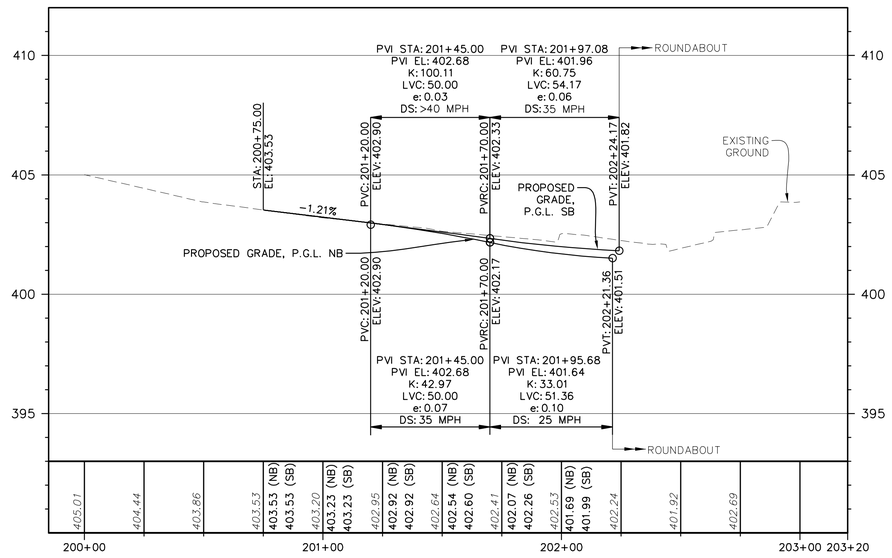
AMT FILE NO. 15-0758.007 SHEET NO. 13 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

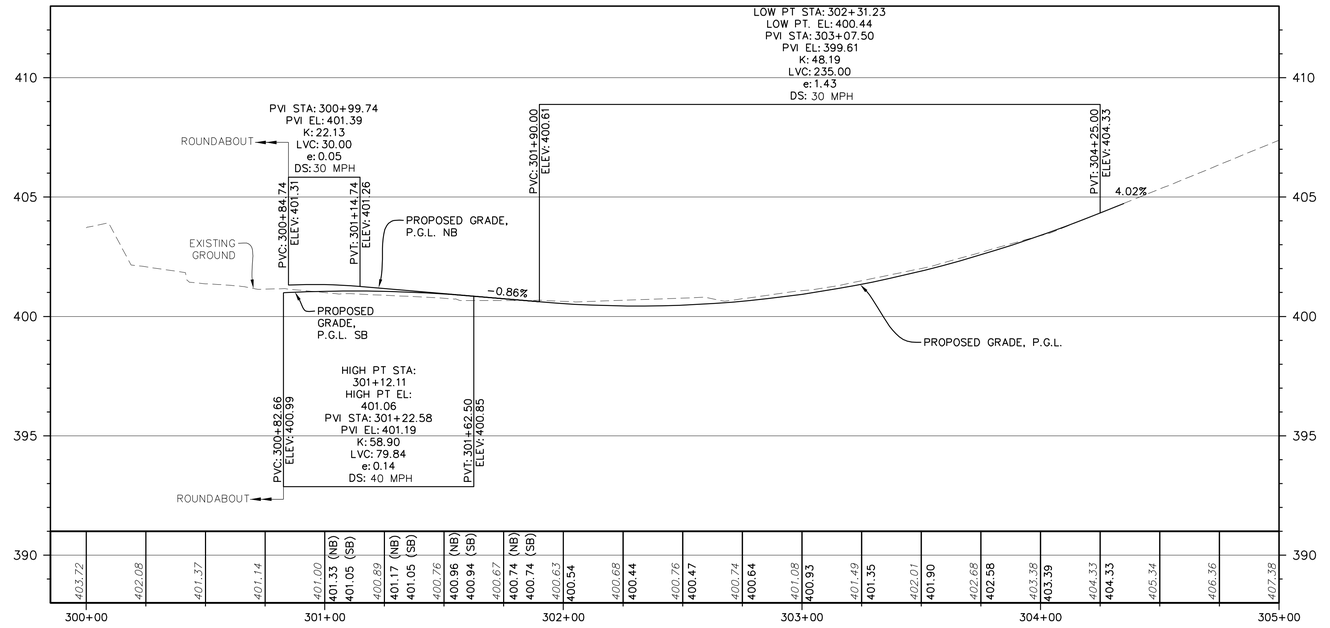
Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



YELLOW SPRINGS ROAD PROFILE NORTH OF CHRISTOPHERS CROSSING

SCALE: HORZ 1"=30'
VERT 1"=3'



YELLOW SPRINGS ROAD PROFILE SOUTH OF CHRISTOPHERS CROSSING

SCALE: HORZ 1"=30'
VERT 1"=3'

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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PS-6

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 14 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

MD STATE PLANE NAD 83/2011

PLAN
SCALE: 1"=30'

STA. 107+50 TO STA. 115+00 PROFILE
SCALE: HORZ 1"=30'
VERT 1"=3'

0 30' 60'
SCALE: 1"=30'

LEGEND

- RIGHT-OF-WAY
- FULL DEPTH PAVEMENT
- AT GRADE FINE MILLING AND RESURFACING
- SHARED USE PATH
- SIDEWALK
- STAMPED CONCRETE
- RIP-RAP
- CENTERLINE OF DITCH

NOTE 1:

CONTRACTOR TO INSTALL HAND HOLES AT EACH QUADRANT OF INTERSECTION AND CONNECT THEM WITH (2) PARALLEL 3" PVC CONDUIT RUNS ACROSS EACH LEG OF STONE RIDGE DRIVE AND ACROSS THE SOUTH APPROACH OF CHRISTOPHERS CROSSING.

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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PS-7

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

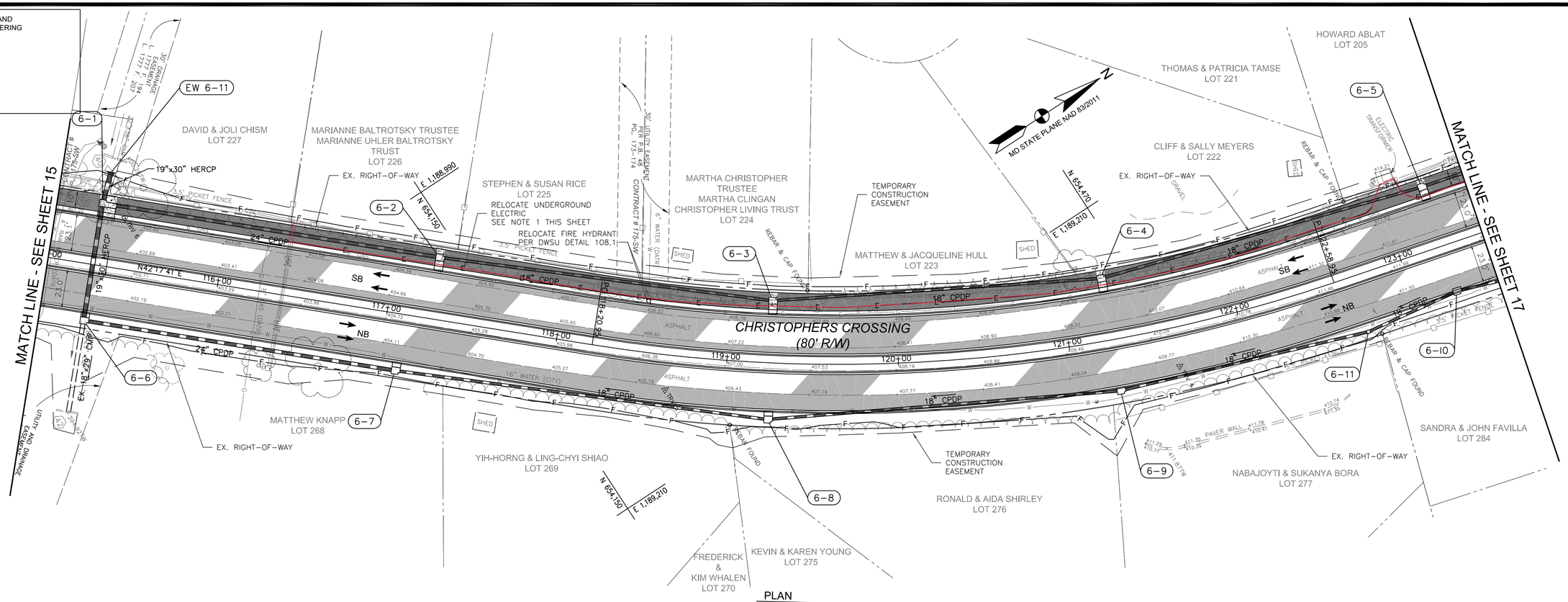
AMT FILE NO. 15-0758.007 SHEET NO. 15 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

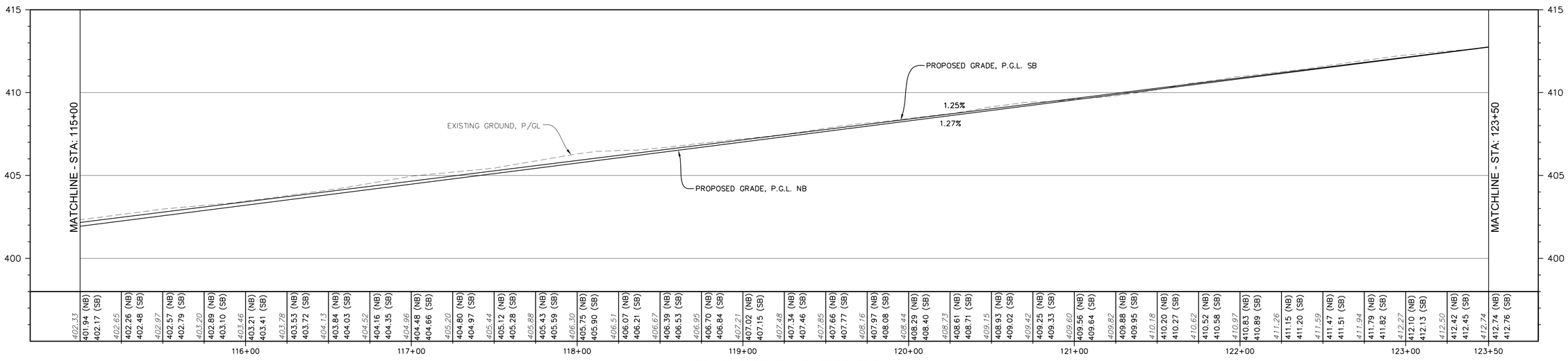
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'



STA. 115+00 TO STA. 123+50 PROFILE
SCALE: HORZ 1"=30'
VERT 1"=3'

LEGEND

- RIGHT-OF-WAY
- FULL DEPTH PAVEMENT
- AT GRADE FINE MILLING AND RESURFACING
- SHARED USE PATH
- SIDEWALK
- STAMPED CONCRETE
- RIP-RAP
- CENTERLINE OF DITCH

NOTE 1:

CONTRACTOR TO INSTALL THE FOLLOWING PVC CONDUIT AS ITEMIZED BELOW FOR ELECTRIC, UP TO EXISTING JUNCTIONS. UTILITY PROVIDER TO INSTALL ELECTRIC LINE IN CONDUIT.

STA 1116+38 TO STA 1123+00: (2) 6" PVC CONDUITS
STA 1123+00 TO STA 1123+50 : (2) 6" PVC CONDUITS, (2) 5" PVC CONDUITS

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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PS-8

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

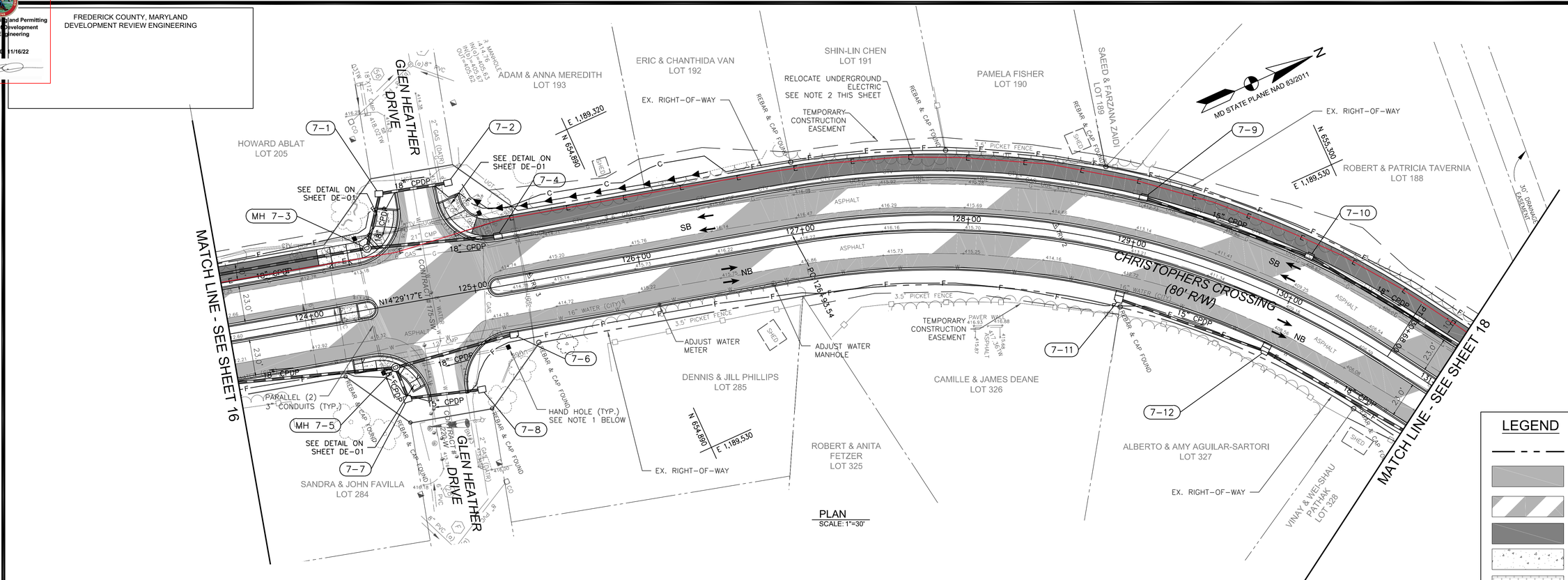
AMT FILE NO. 15-0758.007 SHEET NO. 16 OF 121

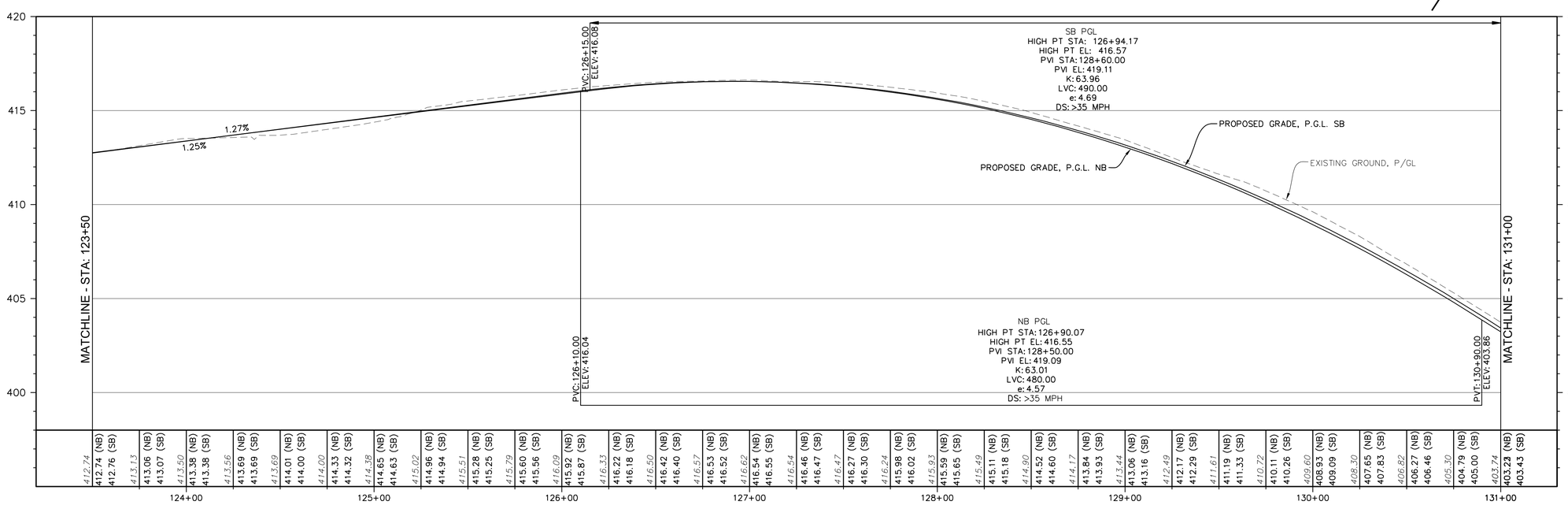
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING





STA. 123+50 TO STA. 131+00 PROFILE
SCALE: HORZ 1"=30'
VERT 1"=3'

SCALE: 1"=30'

LEGEND

- RIGHT-OF-WAY
- FULL DEPTH PAVEMENT
- AT GRADE FINE MILLING AND RESURFACING
- SHARED USE PATH
- SIDEWALK
- STAMPED CONCRETE
- RIP-RAP
- CENTERLINE OF DITCH

NOTES:

1. CONTRACTOR TO INSTALL HAND HOLES AT EACH QUADRANT OF INTERSECTION AND CONNECT THEM WITH (2) PARALLEL 3" PVC CONDUIT RUNS ACROSS EACH LEG OF GLEN HEATHER DRIVE AND ACROSS THE SOUTH APPROACH OF CHRISTOPHERS CROSSING.
2. CONTRACTOR TO INSTALL THE FOLLOWING PVC CONDUIT AS ITEMIZED BELOW FOR ELECTRIC, UP TO EXISTING JUNCTIONS. UTILITY PROVIDER TO INSTALL ELECTRIC LINE IN CONDUIT.

   STA 123+50 TO 125+35: (2) 6" PVC CONDUITS, (2) 5" CONDUITS
   STA 125+35 TO STA 131+00: (2) 6" CONDUITS

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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EMAIL: AMT1@AMTENGINEERING.COM

PS-9

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

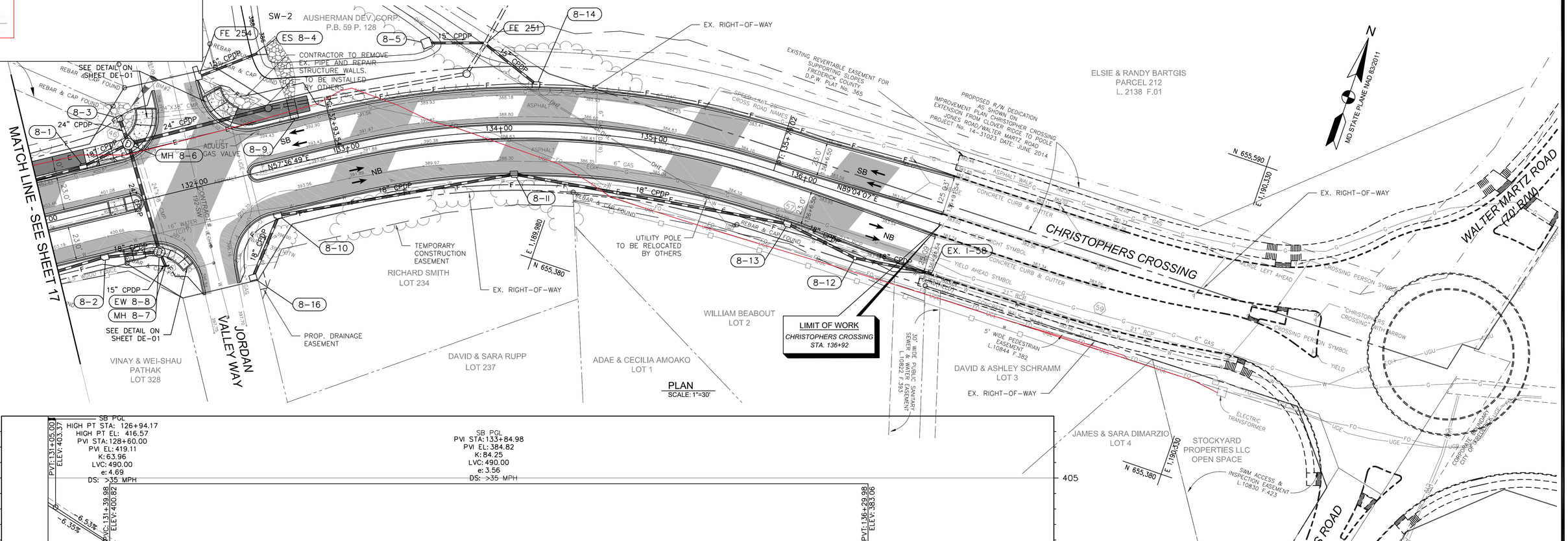
AMT FILE NO. 15-0758.007 SHEET NO. 17 OF 121

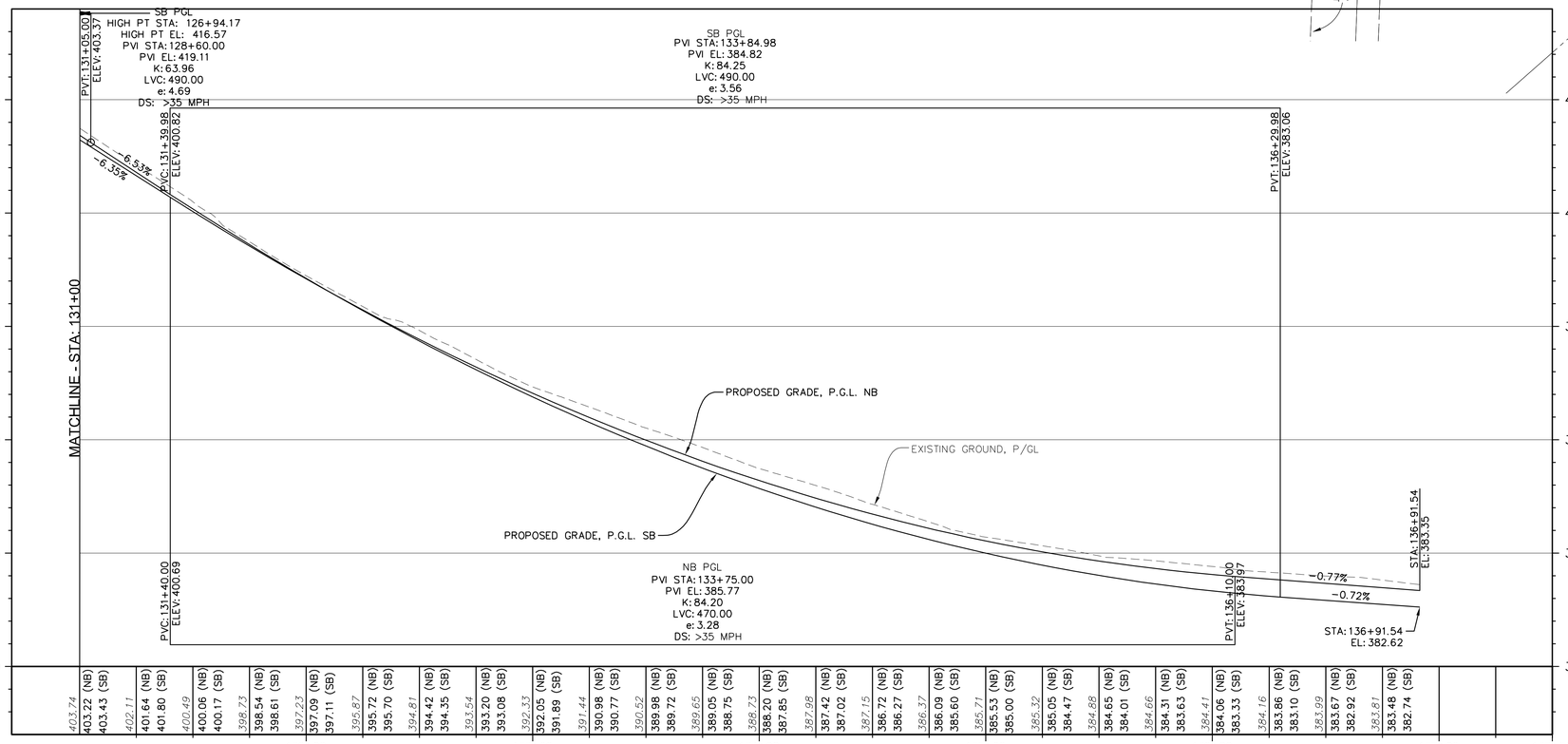
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING





STA. 131+00 TO STA. 136+95 PROFILE
SCALE: HORZ 1"=30'
VERT 1"=3'

SCALE: 1"=30'

LEGEND

- RIGHT-OF-WAY
- FULL DEPTH PAVEMENT
- AT GRADE FINE MILLING AND RESURFACING
- SHARED USE PATH
- SIDEWALK
- STAMPED CONCRETE
- RIP-RAP
- CENTERLINE OF DITCH

NOTES:

1. CONTRACTOR TO INSTALL THE FOLLOWING PVC CONDUIT AS ITEMIZED BELOW FOR ELECTRIC, UP TO EXISTING JUNCTIONS. UTILITY PROVIDER TO INSTALL ELECTRIC LINE IN CONDUIT.

   STA 131+00 TO 132+55: (2) 6" PVC CONDUITS

PS-10

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 18 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

PS-01

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (MD 387.11-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 78+22 TO LT. STA 84+00	635
CHRISTOPHERS CROSSING RT. STA 79+32 TO RT. STA 84+00	477

STANDARD TYPE A COMBINATION CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 78+22 TO LT. STA 84+00	636
CHRISTOPHERS CROSSING MEDIAN STA 78+49 TO STA 84+00	1106
CHRISTOPHERS CROSSING RT. STA 79+28 TO RT. STA 84+00	480

DETECTABLE WARNING SURFACES (MD 655.40)	
LOCATION – STATION	SF
CHRISTOPHERS CROSSING STA 78+27, OFF 50' LT.	20

PS-02

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (MD 387.11-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 84+00 TO LT. STA 90+84	700
CHRISTOPHERS CROSSING RT. STA 84+00 TO RT. STA 91+50	733
CHRISTOPHERS CROSSING LT. STA 91+06 TO LT. STA 91+50	52

STANDARD TYPE A COMBINATION CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 84+00 TO LT. STA 90+82	700
CHRISTOPHERS CROSSING MEDIAN STA 84+00 TO STA 90+83	1373
CHRISTOPHERS CROSSING RT. STA 84+00 TO RT. STA 91+50	733
CHRISTOPHERS CROSSING LT. STA 91+08 TO LT. STA 91+50	50
CHRISTOPHERS CROSSING MEDIAN STA 84+00 TO STA 90+83	1373

STANDARD TYPE D CURB 8" DEPTH (MD 620.02-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 88+50 TO LT. STA 90+55	222
CHRISTOPHERS CROSSING LT. STA 91+34 TO LT. STA 91+50	17

DETECTABLE WARNING SURFACES (MD 655.40)	
LOCATION – STATION	SF
CHRISTOPHERS CROSSING STA 90+75, OFF 35' LT.	35
CHRISTOPHERS CROSSING STA 91+15, OFF 35' LT.	35

PS-03

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (MD 387.11-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 91+50 TO LT. STA 99+50	798
CHRISTOPHERS CROSSING RT. STA 91+50 TO RT. STA 99+50	802

STANDARD TYPE A COMBINATION CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 91+50 TO LT. STA 99+50	798
CHRISTOPHERS CROSSING MEDIAN STA 91+50 TO STA 99+50	1600
CHRISTOPHERS CROSSING RT. STA 91+50 TO RT. STA 99+50	802

STANDARD TYPE D CURB 8" DEPTH (MD 620.02-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 91+50 TO LT. STA 96+74	530

PS-04

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (MD 387.11-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 99+50 TO LT. STA 101+26	177
CHRISTOPHERS CROSSING RT. STA 99+50 TO RT. STA 101+15	174
CHRISTOPHERS CROSSING LT. STA 102+55 TO LT. STA 107+50	481
CHRISTOPHERS CROSSING RT. STA 102+56 TO RT. STA 107+50	516
NORTH YELLOW SPRINGS RT. STA 201+24 TO RT. STA 202+39	135
NORTH YELLOW SPRINGS LT. STA 201+25 TO LT. STA 202+51	144
SOUTH YELLOW SPRINGS RT. STA 300+57 TO RT. STA 304+35	396
SOUTH YELLOW SPRINGS LT. STA 300+57 TO LT. STA 304+35	397

STANDARD TYPE A COMBINATION CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 99+50 TO LT. STA 101+26	177
CHRISTOPHERS CROSSING MEDIAN STA 99+50 TO STA 101+17	384
CHRISTOPHERS CROSSING RT. STA 99+50 TO RT. STA 101+15	174
CHRISTOPHERS CROSSING LT. STA 102+55 TO LT. STA 107+50	481
CHRISTOPHERS CROSSING MEDIAN STA 102+50 TO STA 107+50	1039
CHRISTOPHERS CROSSING RT. STA 102+56 TO RT. STA 107+50	516
NORTH YELLOW SPRINGS MEDIAN STA 201+22 TO STA 201+91	146
NORTH YELLOW SPRINGS MEDIAN STA 202+03 TO STA 202+20	60
NORTH YELLOW SPRINGS RT. STA 201+24 TO RT. STA 202+39	135
SOUTH YELLOW SPRINGS LT. STA 201+25 TO LT. STA 202+51	144
SOUTH YELLOW SPRINGS MEDIAN STA 300+87 TO STA 301+99	245
SOUTH YELLOW SPRINGS RT. STA 300+57 TO RT. STA 304+35	396
SOUTH YELLOW SPRINGS LT. STA 300+57 TO LT. STA 304+35	397

STANDARD TYPE A CURB 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING ISLAND STA 101+59 TO STA 102+08	157

STANDARD TYPE C CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING ISLAND STA 101+34 TO STA 102+33	314

DETECTABLE WARNING SURFACES (MD 655.40)	
LOCATION – STATION	SF
CHRISTOPHERS CROSSING STA 101+66, OFF 101' LT.	20
CHRISTOPHERS CROSSING STA 101+87, OFF 104' LT	20
CHRISTOPHERS CROSSING STA 101+95, OFF 104' LT	20
CHRISTOPHERS CROSSING STA 102+13, OFF 104' LT	20

PS-07

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (MD 387.11-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 107+50 TO LT. STA 109+62	234
CHRISTOPHERS CROSSING RT. STA 107+50 TO RT. STA 109+61	239
CHRISTOPHERS CROSSING LT. STA 109+86 TO LT. STA 115+00	553
CHRISTOPHERS CROSSING RT. STA 109+85 TO RT. STA 115+00	529

STANDARD TYPE A COMBINATION CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 107+50 TO LT. STA 109+62	234
CHRISTOPHERS CROSSING MEDIAN STA 107+50 TO STA 109+42	390
CHRISTOPHERS CROSSING RT. STA 107+50 TO RT. STA 109+61	239
CHRISTOPHERS CROSSING LT. STA 109+86 TO LT. STA 115+00	553
CHRISTOPHERS CROSSING MEDIAN STA 110+05 TO STA 115+00	995
CHRISTOPHERS CROSSING RT. STA 109+85 TO RT. STA 115+00	529

DETECTABLE WARNING SURFACES (MD 655.40)	
LOCATION – STATION	SF
CHRISTOPHERS CROSSING STA 109+27, OFF 30' LT.	20
CHRISTOPHERS CROSSING STA 109+27, OFF 4' LT	20
CHRISTOPHERS CROSSING STA 109+27, OFF 4' RT.	20
CHRISTOPHERS CROSSING STA 109+27, OFF 30' RT.	10
CHRISTOPHERS CROSSING STA 109+57, OFF 49' RT	10
CHRISTOPHERS CROSSING STA 109+59, OFF 50' LT	20
CHRISTOPHERS CROSSING STA 109+89, OFF 50' LT	20

PS-08

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (MD 387.11-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 115+00 TO LT. STA 123+50	836
CHRISTOPHERS CROSSING RT. STA 115+00 TO RT. STA 123+50	864

STANDARD TYPE A COMBINATION CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 115+00 TO LT. STA 123+50	836
CHRISTOPHERS CROSSING MEDIAN STA 115+00 TO STA 123+50	1700
CHRISTOPHERS CROSSING RT. STA 115+00 TO RT. STA 123+50	864

PS-09

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (MD 387.11-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 123+50 TO LT. STA 124+63	138
CHRISTOPHERS CROSSING RT. STA 123+50 TO RT. STA 124+62	132
CHRISTOPHERS CROSSING LT. STA 124+87 TO LT. STA 131+00	659
CHRISTOPHERS CROSSING RT. STA 124+85 TO RT. STA 131+00	613

STANDARD TYPE A COMBINATION CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 123+50 TO LT. STA 124+63	138
CHRISTOPHERS CROSSING MEDIAN STA 123+50 TO STA 124+39	202
CHRISTOPHERS CROSSING RT. STA 123+50 TO RT. STA 124+62	131
CHRISTOPHERS CROSSING LT. STA 124+87 TO LT. STA 131+00	659
CHRISTOPHERS CROSSING MEDIAN STA 125+09 TO STA 131+00	1188
CHRISTOPHERS CROSSING RT. STA 124+85 TO RT. STA 131+00	613

DETECTABLE WARNING SURFACES (MD 655.40)	
LOCATION – STATION	SF
CHRISTOPHERS CROSSING STA 124+23, OFF 30' LT.	20
CHRISTOPHERS CROSSING STA 124+23, OFF 4' LT.	20
CHRISTOPHERS CROSSING STA 124+23, OFF 4' RT.	20
CHRISTOPHERS CROSSING STA 124+23, OFF 30' RT.	10
CHRISTOPHERS CROSSING STA 124+58, OFF 48' RT.	10
CHRISTOPHERS CROSSING STA 124+60, OFF 50' LT.	20
CHRISTOPHERS CROSSING STA 124+90, OFF 50' LT.	20

PS-10

6 INCH PERFORATED CIRCULAR PIPE LONGITUDINAL UNDERDRAIN (MD 387.11-01)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 131+00 TO LT. STA 131+87	113
CHRISTOPHERS CROSSING RT. STA 131+00 TO RT. STA 131+88	116
CHRISTOPHERS CROSSING LT. STA 132+16 TO LT. STA 136+92	517
CHRISTOPHERS CROSSING RT. STA 132+12 TO RT. STA 136+92	489

STANDARD TYPE A COMBINATION CURB & GUTTER 12" GUTTER PAN 8" DEPTH (MD 620.02)	
LOCATION – STATION	LF
CHRISTOPHERS CROSSING LT. STA 131+00 TO LT. STA 131+87	113
CHRISTOPHERS CROSSING MEDIAN STA 131+00 TO STA 131+63	132
CHRISTOPHERS CROSSING RT. STA 131+00 TO RT. STA 131+88	116
CHRISTOPHERS CROSSING LT. STA 132+16 TO LT. STA 136+92	462
CHRISTOPHERS CROSSING MEDIAN STA 132+35 TO STA 136+92	919
CHRISTOPHERS CROSSING RT. STA 132+12 TO RT. STA 136+92	856

DETECTABLE WARNING SURFACES (MD 655.40)	
LOCATION – STATION	SF
CHRISTOPHERS CROSSING STA 131+47, OFF 30' LT.	20
CHRISTOPHERS CROSSING STA 131+47, OFF 4' LT.	20
CHRISTOPHERS CROSSING STA 131+47, OFF 4' RT.	20
CHRISTOPHERS CROSSING STA 131+47, OFF 30' RT.	10
CHRISTOPHERS CROSSING STA 131+85, OFF 47' RT.	10
CHRISTOPHERS CROSSING STA 131+85, OFF 50' LT.	20
CHRISTOPHERS CROSSING STA 132+19, OFF 50' LT.	20

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND · 21335 · PROFESSIONAL ENGINEER

11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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EMAIL: AMT1@AMTENGINEERING.COM

PS-11

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROADWAY QUANTITIES

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 19 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

STAKEOUT INFORMATION				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
101	CHRISTOPHERS CROSSING STA. 99+96.67, 5.00' RT	398.04	398.08	N 652825.5519 E 1188008.1553
102	CHRISTOPHERS CROSSING STA. 100+42.95, 2.51' RT	398.91	398.95	N 652851.2159 E 1188046.7658
103	CHRISTOPHERS CROSSING STA. 100+80.86, 5.59' RT	399.68	399.72	N 652867.8218 E 1188080.9769
104	CHRISTOPHERS CROSSING STA. 101+17.46, 22.28' RT	400.49	400.53	N 652872.0476 E 1188120.9836
105	RAB STA. 401+71.67, 15.50' RT	400.59	400.55	N 652873.7455 E 1188121.7487
106	RAB STA. 401+43.24, 17.01' RT	400.63	400.59	N 652905.5021 E 1188102.6873
107	CHRISTOPHERS CROSSING STA. 101+15.05, 19.41' LT	400.47	400.51	N 652906.7311 E 1188097.7205
108	CHRISTOPHERS CROSSING STA. 99+97.28, 5.00' LT	398.08	398.12	N 652834.4829 E 1188003.6164

STAKEOUT INFORMATION				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
201	YELLOW SPRINGS ROAD STA. 301+95.99, 7.00' LT	400.57	400.61	N 652758.1405 E 1188269.8111
202	YELLOW SPRINGS ROAD STA. 301+32.40, 3.05' LT	401.10	401.14	N 652810.9970 E 1188234.2319
203	YELLOW SPRINGS ROAD STA. 300+87.67, 5.87' LT	401.32	401.36	N 652851.0075 E 1188214.0433
204	RAB STA. 402+40.70, 30.50' RT	401.26	401.22	N 652851.5894 E 1188212.5049
205	RAB STA. 402+32.70, 32.06' RT	401.11	401.07	N 652844.2110 E 1188201.8127
206	YELLOW SPRINGS ROAD STA. 300+91.24, 10.76' RT	401.03	401.07	N 652839.5222 E 1188201.4984
207	YELLOW SPRINGS ROAD STA. 301+50.67, 0.58' RT	400.93	400.97	N 652793.3967 E 1188240.3447
208	YELLOW SPRINGS ROAD STA. 301+95.99, 1.00' LT	400.58	400.62	N 652755.1053 E 1188264.6355

STAKEOUT INFORMATION				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
301	CHRISTOPHERS CROSSING STA. 104+23.42, 5.00' LT	405.86	405.90	N 653047.2834 E 1188372.8461
302	CHRISTOPHERS CROSSING STA. 103+83.14, 6.63' LT	404.59	404.63	N 653028.3222 E 1188337.2646
303	CHRISTOPHERS CROSSING STA. 103+13.77, 4.47' LT	403.06	403.10	N 652991.3819 E 1188278.5087
304	CHRISTOPHERS CROSSING STA. 102+48.91, 15.99' LT	402.33	402.37	N 652968.5239 E 1188216.7277
305	RAB STA. 400+11.32, 15.00' RT	402.30	402.26	N 652966.8164 E 1188216.0570
306	RAB STA. 403+09.06, 17.02' RT	402.11	402.07	N 652942.7169 E 1188233.3169
307	CHRISTOPHERS CROSSING STA. 102+53.99, 17.76' RT	402.18	402.22	N 652941.9713 E 1188238.1847
308	CHRISTOPHERS CROSSING STA. 103+37.88, 3.03' RT	403.33	403.37	N 652997.1017 E 1188303.1017
309	CHRISTOPHERS CROSSING STA. 103+82.33, 3.33' RT	404.43	404.47	N 653019.3137 E 1188341.6060
310	CHRISTOPHERS CROSSING STA. 104+23.42, 5.00' RT	405.71	405.75	N 653038.6574 E 1188377.9048

STAKEOUT INFORMATION				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
401	RAB STA. 400+70.96, 32.06' RT	401.70	401.66	N 652997.7710 E 1188138.5131
402	YELLOW SPRINGS ROAD STA. 202+15.42, 12.20' LT	401.87	401.91	N 653002.4484 E 1188138.9670
403	YELLOW SPRINGS ROAD STA. 202+03.44, 9.76' LT	401.96	402.00	N 653011.5517 E 1188130.8102
404	YELLOW SPRINGS ROAD STA. 202+02.62, 8.78' LT	401.94	401.98	N 653011.7582 E 1188129.5496
405	YELLOW SPRINGS ROAD STA. 202+02.62, 0.13' LT	401.65	401.69	N 653007.3800 E 1188122.0848
406	YELLOW SPRINGS ROAD STA. 202+03.46, 0.86' RT	401.65	401.69	N 653006.1585 E 1188121.6573
407	YELLOW SPRINGS ROAD STA. 202+18.48, 4.54' RT	401.53	401.57	N 652991.3420 E 1188126.0855
408	RAB STA. 400+78.96, 30.5' RT	401.57	401.53	N 652990.7145 E 1188127.6059
409	YELLOW SPRINGS ROAD STA. 201+90.62, 6.41' LT	402.05	402.09	N 653020.9110 E 1188121.4358
410	YELLOW SPRINGS ROAD STA. 201+89.47, 7.40' LT	402.10	402.14	N 653022.4026 E 1188121.7072
411	YELLOW SPRINGS ROAD STA. 201+46.21, 3.26' LT	402.63	402.67	N 653057.6210 E 1188096.2458
412	YELLOW SPRINGS ROAD STA. 201+25.34, 3.00' LT	402.85	402.89	N 653075.4978 E 1188085.4654
413	YELLOW SPRINGS ROAD STA. 201+25.34, 3.00' RT	402.85	402.89	N 653072.4625 E 1188080.2898
414	YELLOW SPRINGS ROAD STA. 201+73.86, 0.38' RT	402.09	402.13	N 653031.9362 E 1188107.0980
415	YELLOW SPRINGS ROAD STA. 201+89.60, 0.45' LT	401.83	401.87	N 653018.7804 E 1188115.7762
416	YELLOW SPRINGS ROAD STA. 201+90.62, 1.45' LT	401.77	401.81	N 653018.4016 E 1188117.1573

STAKEOUT INFORMATION				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
NW01	YELLOW SPRINGS ROAD STA. 201+24.10, 16.00' RT	402.64	402.60	N 653066.9562 E 1188068.4483
NW02	YELLOW SPRINGS ROAD STA. 201+33.82, 16.00' RT	402.54	402.50	N 653058.5745 E 1188073.3640
NW03	YELLOW SPRINGS ROAD STA. 201+63.02, 14.66' RT	402.10	402.06	N 653034.0609 E 1188073.2885
NW04	RAB STA. 401+17.31, 33.85' RT	400.58	400.54	N 652944.4404 E 1188087.6147
NW05	CHRISTOPHERS CROSSING STA. 99+49.79, 28.00' LT	396.87	396.83	N 652832.4223 E 1187951.8374

STAKEOUT INFORMATION				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
NE01	CHRISTOPHERS CROSSING STA. 104+23.42, 28.00' LT	405.42	405.38	N 653067.1230 E 1188361.2103
NE02	CHRISTOPHERS CROSSING STA. 103+85.00, 29.56' LT	404.17	404.13	N 653049.0416 E 1188327.2794
NE03	CHRISTOPHERS CROSSING STA. 103+25.57, 29.07' LT	402.89	402.85	N 653018.5660 E 1188276.2578
NE04	CHRISTOPHERS CROSSING STA. 102+63.38, 43.45' LT	401.81	401.77	N 652999.5227 E 1188215.3286
NE05	RAB STA. 400+29.96, 36.07' RT	401.96	401.92	N 652999.7464 E 1188205.1325
NE06	YELLOW SPRINGS ROAD STA. 201+86.89, 22.56' LT	401.83	401.79	N 653032.3026 E 1188133.4706
NE07	YELLOW SPRINGS ROAD STA. 201+24.51, 16.00' LT	402.64	402.60	N 653082.7938 E 1188096.2572

STAKEOUT INFORMATION				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
SW01	CHRISTOPHERS CROSSING STA. 99+96.67, 28.00' RT	397.62	397.58	N 652805.7081 E 1188019.7838
SW02	CHRISTOPHERS CROSSING STA. 100+29.47, 26.84' RT	398.20	398.16	N 652823.4103 E 1188047.5195
SW03	CHRISTOPHERS CROSSING STA. 100+88.53, 41.01' RT	399.57	399.53	N 652841.2150 E 1188105.5882
SW04	RAB STA. 401+92.14, 35.09' RT	400.33	400.29	N 652840.8754 E 1188136.3394
SW05	YELLOW SPRINGS ROAD STA. 301+18.86, 20.73' RT	400.79	400.75	N 652810.6506 E 1188206.8749
SW06	YELLOW SPRINGS ROAD STA. 301+90.69, 12.00' RT	400.40	400.36	N 652753.1042 E 1188250.7384

STAKEOUT INFORMATION				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
SE01	YELLOW SPRINGS ROAD STA. 301+81.50, 32.00' LT	400.22	400.18	N 652783.2864 E 1188284.0463
SE02	YELLOW SPRINGS ROAD STA. 301+43.83, 29.86' LT	400.52	400.48	N 652814.6991 E 1188263.1386
SE03	YELLOW SPRINGS ROAD STA. 301+06.40, 32.67' LT	400.82	400.78	N 652848.4091 E 1188246.6330
SE04	RAB STA. 402+87.22, 38.49' RT	401.55	401.51	N 652911.9514 E 1188258.0948
SE05	CHRISTOPHERS CROSSING STA. 103+77.55, 28.00' RT	403.89	403.85	N 652995.6191 E 1188349.9591
SE06	CHRISTOPHERS CROSSING STA. 104+23.42, 28.00' RT	405.29	405.25	N 653018.8096 E 1188389.5267

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STEVEN VAN CAMP
84335
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

RL-2

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROUNDABOUT LAYOUT

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 20 OF 121

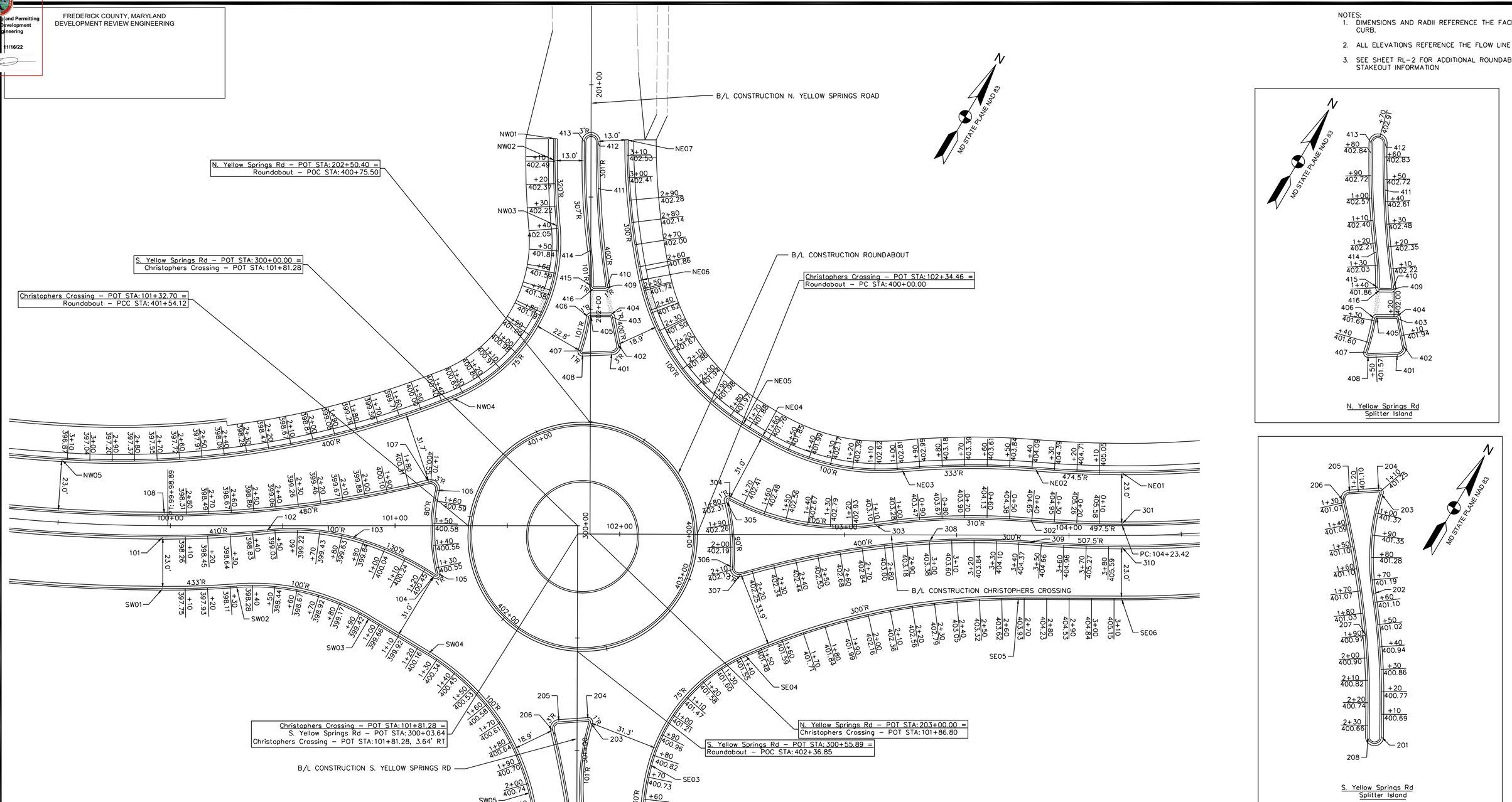
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

NOTES:
1. DIMENSIONS AND RADII REFERENCE THE FACE OF CURB.
2. ALL ELEVATIONS REFERENCE THE FLOW LINE
3. SEE SHEET RL-2 FOR ADDITIONAL ROUNDABOUT STAKEOUT INFORMATION



RL-1

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

SCALE: 1"=20'

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

ROUNDABOUT LAYOUT

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 20 OF 121

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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EMAIL: AMT1@AMTENGINEERING.COM

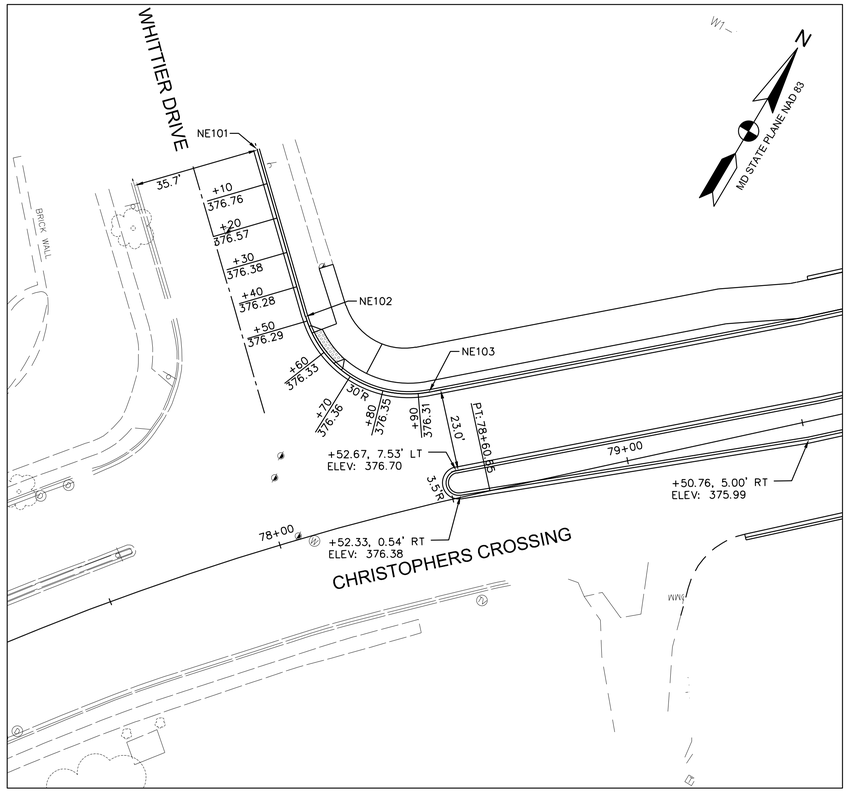
Division of Planning and Permitting
Department of Development
Review Engineering

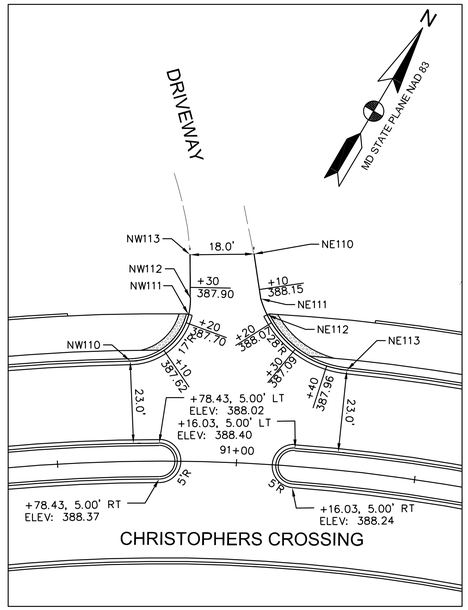
APPROVED: 11/16/22

Signature:

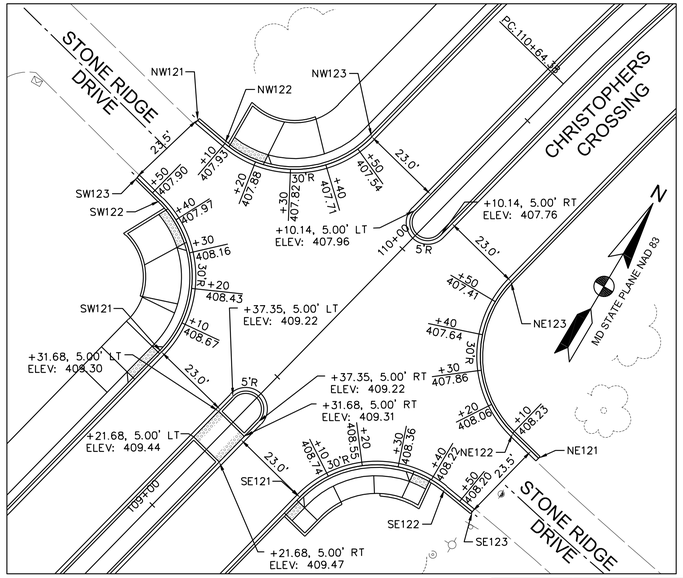
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

STAKEOUT INFORMATION - WHITTIER DR.				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
NE101	CHRISTOPHERS CROSSING STA. 78+22.97, 108.10' LT	377.00	376.96	N 651641.9982 E 1186282.3141
NE102	CHRISTOPHERS CROSSING STA. 78+23.44, 56.50' LT	376.33	376.29	N 651608.6714 E 1186317.7169
NE103	CHRISTOPHERS CROSSING STA. 78+50.22, 30.67' LT	376.33	376.29	N 651607.9405 E 1186358.0946



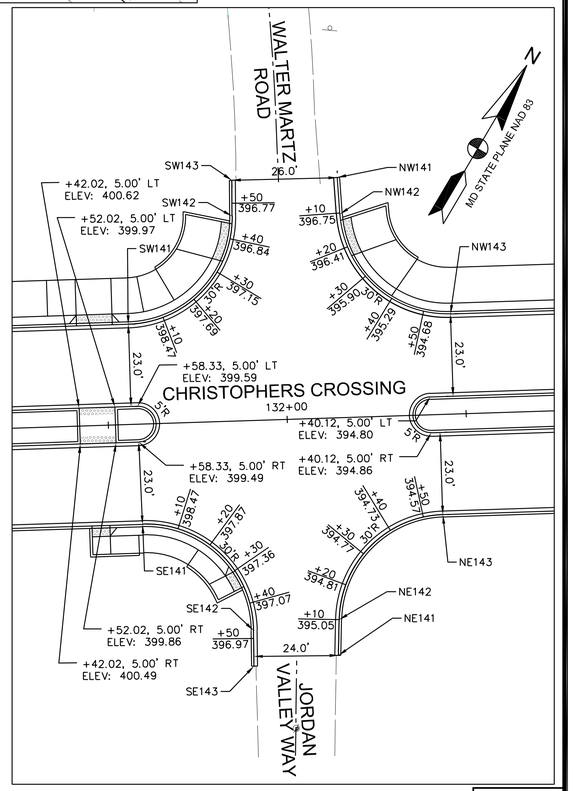


STAKEOUT INFORMATION - DRIVEWAY				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
NW110	CHRISTOPHERS CROSSING STA. 90+70.86, 28.00' LT	387.57	387.53	N 652558.4592 E 1187116.3135
NW111	CHRISTOPHERS CROSSING STA. 90+86.02, 41.00' LT	387.78	387.74	N 652577.9004 E 1187123.6607
NW112	CHRISTOPHERS CROSSING STA. 90+86.38, 45.71' LT	387.88	387.84	N 652582.1831 E 1187121.6675
NW113	CHRISTOPHERS CROSSING STA. 90+86.14, 57.66' LT	388.17	388.13	N 652592.4366 E 1187115.5281
NE110	CHRISTOPHERS CROSSING STA. 91+02.17, 58.48' LT	388.26	388.22	N 652601.7695 E 1187130.8360
NE111	CHRISTOPHERS CROSSING STA. 91+04.39, 46.03' LT	388.16	388.12	N 652591.8858 E 1187138.7923
NE112	CHRISTOPHERS CROSSING STA. 91+06.21, 41.68' LT	388.13	388.09	N 652588.9360 E 1187142.5593
NE113	CHRISTOPHERS CROSSING STA. 91+28.16, 28.00' LT	388.03	387.99	N 652586.9817 E 1187169.6717

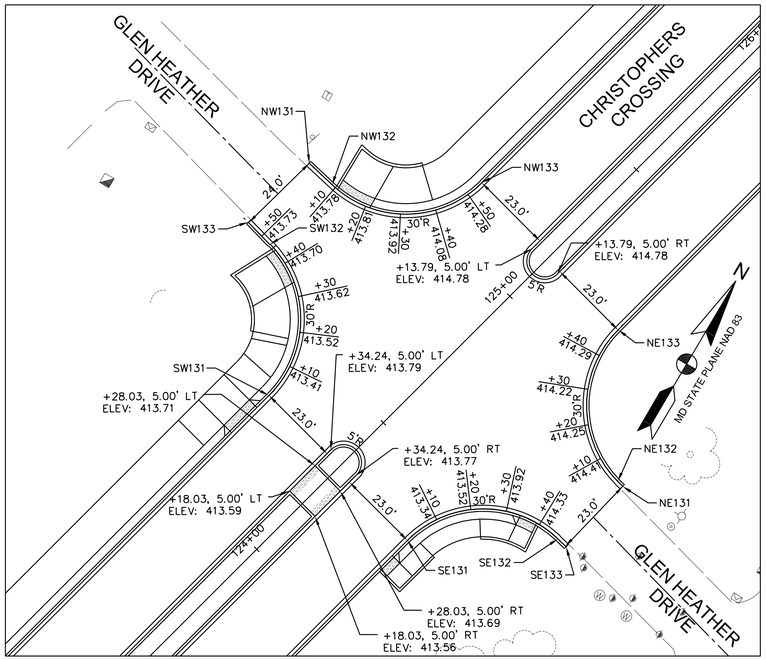


NOTES:
1. DIMENSIONS AND RADII REFERENCE THE FACE OF CURB.
2. ALL ELEVATIONS REFERENCE THE FLOW LINE.

STAKEOUT INFORMATION - STONE RIDGE DR.				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
SW121	CHRISTOPHERS CROSSING STA. 109+32.35, 28.00' LT	408.91	408.87	N 653467.2512 E 1188607.6030
SW122	CHRISTOPHERS CROSSING STA. 109+62.35, 57.80' LT	407.95	407.91	N 653503.4902 E 1188585.8183
SW123	CHRISTOPHERS CROSSING STA. 109+62.41, 66.90' LT	407.94	407.90	N 653505.7197 E 1188576.9956
NW121	CHRISTOPHERS CROSSING STA. 109+85.72, 65.97' LT	408.03	407.99	N 653528.1342 E 1188583.4565
NW122	CHRISTOPHERS CROSSING STA. 109+86.39, 55.99' LT	407.97	407.93	N 653526.4059 E 1188593.3060
NW123	CHRISTOPHERS CROSSING STA. 110+16.32, 28.00' LT	407.47	407.43	N 653548.8012 E 1188627.6255
SE121	CHRISTOPHERS CROSSING STA. 109+30.32, 28.00' RT	408.97	408.93	N 653451.9254 E 1188661.5034
SE122	CHRISTOPHERS CROSSING STA. 109+60.20, 55.33' RT	408.23	408.19	N 653474.4282 E 1188695.1677
SE123	CHRISTOPHERS CROSSING STA. 109+61.09, 65.29' RT	408.27	408.23	N 653472.9183 E 1188705.0531
NE121	CHRISTOPHERS CROSSING STA. 109+84.71, 68.01' RT	408.40	408.36	N 653495.2033 E 1188713.3281
NE122	CHRISTOPHERS CROSSING STA. 109+84.68, 58.08' RT	408.27	408.23	N 653497.5441 E 1188703.6797
NE123	CHRISTOPHERS CROSSING STA. 110+14.68, 28.00' RT	407.29	407.25	N 653533.8516 E 1188681.6183



STAKEOUT INFORMATION - WALTER MARTZ RD.				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
SW141	CHRISTOPHERS CROSSING STA. 131+56.45, 28.00' LT	399.34	399.30	N 655353.8610 E 1189708.7182
SW142	CHRISTOPHERS CROSSING STA. 131+86.44, 57.31' LT	396.81	396.77	N 655394.6744 E 1189718.3472
SW143	CHRISTOPHERS CROSSING STA. 131+86.68, 67.30' LT	396.87	396.83	N 655403.2401 E 1189713.1874
NW141	CHRISTOPHERS CROSSING STA. 132+16.17, 67.14' LT	396.98	396.94	N 655418.8985 E 1189738.1842
NW142	CHRISTOPHERS CROSSING STA. 132+16.56, 56.87' LT	396.79	396.75	N 655410.4345 E 1189744.0112
NW143	CHRISTOPHERS CROSSING STA. 132+46.54, 28.00' LT	394.26	394.22	N 655402.1126 E 1189784.7904



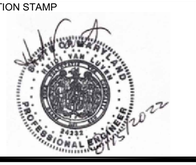
STAKEOUT INFORMATION - GLEN HEATHER DR.				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
SW131	CHRISTOPHERS CROSSING STA. 124+32.76, 28.00' LT	413.35	413.31	N 654741.7041 E 1189341.4630
SW132	CHRISTOPHERS CROSSING STA. 124+62.76, 57.69' LT	413.76	413.72	N 654778.1747 E 1189320.2223
SW133	CHRISTOPHERS CROSSING STA. 124+62.85, 66.28' LT	413.78	413.74	N 654780.4106 E 1189311.9248
NW131	CHRISTOPHERS CROSSING STA. 124+86.57, 65.92' LT	413.84	413.80	N 654803.2868 E 1189318.2050
NW132	CHRISTOPHERS CROSSING STA. 124+86.83, 57.11' LT	413.82	413.78	N 654801.3349 E 1189326.8075
NW133	CHRISTOPHERS CROSSING STA. 125+16.81, 28.00' LT	414.42	414.38	N 654823.0846 E 1189362.4912
SE131	CHRISTOPHERS CROSSING STA. 124+31.59, 28.00' RT	413.33	413.29	N 654726.5595 E 1189395.3890
SE132	CHRISTOPHERS CROSSING STA. 124+61.58, 57.38' RT	414.57	414.53	N 654748.2484 E 1189431.3395
SE133	CHRISTOPHERS CROSSING STA. 124+61.65, 60.62' RT	414.66	414.62	N 654747.5026 E 1189434.4926
NE131	CHRISTOPHERS CROSSING STA. 124+84.76, 59.83' RT	414.72	414.68	N 654770.0825 E 1189439.5058
NE132	CHRISTOPHERS CROSSING STA. 124+84.77, 57.87' RT	414.66	414.62	N 654770.5799 E 1189437.6145
NE133	CHRISTOPHERS CROSSING STA. 125+14.77, 28.00' RT	414.41	414.37	N 654807.0984 E 1189416.1998

STAKEOUT INFORMATION - JORDAN VALLEY WAY				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
SE141	CHRISTOPHERS CROSSING STA. 131+58.69, 28.00' RT	399.11	399.07	N 655307.7684 E 1189740.6003
SE142	CHRISTOPHERS CROSSING STA. 131+88.68, 58.63' RT	397.02	396.98	N 655297.9694 E 1189782.3338
SE143	CHRISTOPHERS CROSSING STA. 131+88.47, 68.63' RT	397.08	397.04	N 655289.4147 E 1189787.5119
NE141	CHRISTOPHERS CROSSING STA. 132+12.14, 66.38' RT	395.65	395.61	N 655303.9934 E 1189806.2982
NE142	CHRISTOPHERS CROSSING STA. 132+12.68, 56.39' RT	395.09	395.05	N 655312.7128 E 1189801.4024
NE143	CHRISTOPHERS CROSSING STA. 132+42.64, 28.00' RT	394.38	394.34	N 655352.7342 E 1189811.4921

0 10' 20' 40'
SCALE: 1"=20'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP



A. MORTON THOMAS AND ASSOCIATES, INC.
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DE-02

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

INTERSECTION DETAILS

DATE: SEPTEMBER 2022 SCALE:

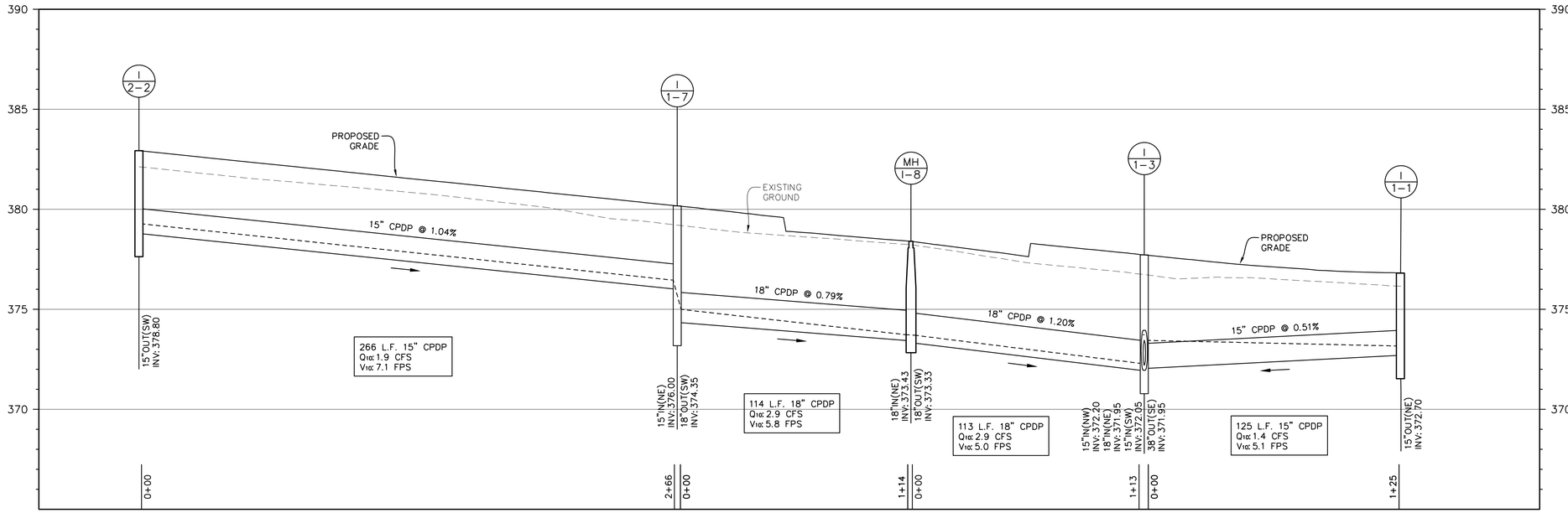
AMT FILE NO. 15-0758.007 SHEET NO. 22 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

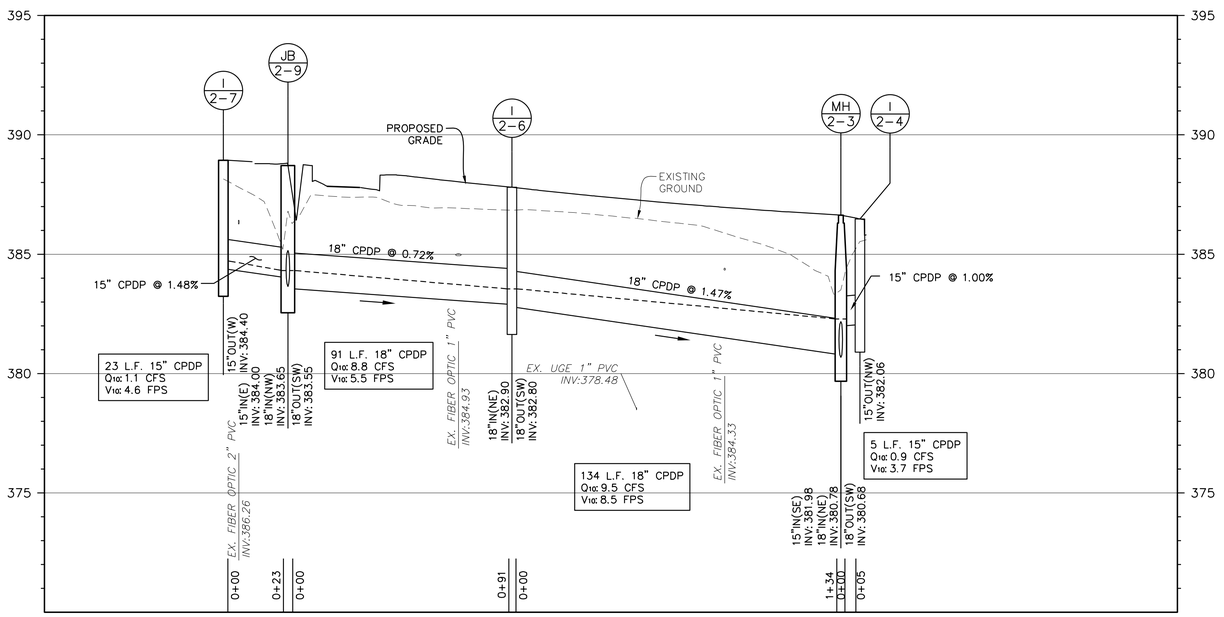
APPROVED: 11/16/22

Signature:

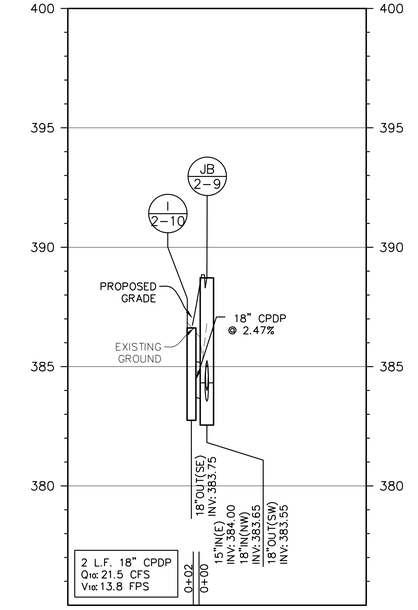
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



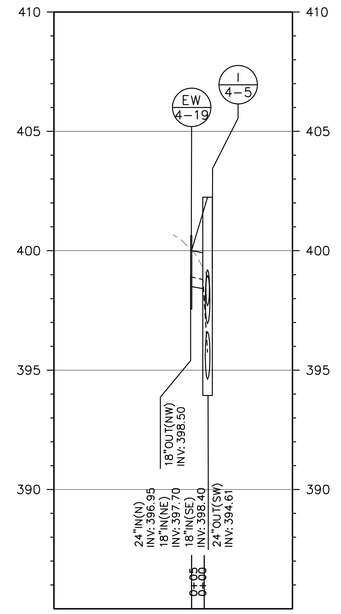
INLET 2-2 TO INLET 1-1
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 2-7 TO EXISTING PIPE
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 2-10 TO JUNCTION BOX 2-9
SCALE: HORZ 1"=30'
VERT 1"=3'



ENDWALL 4-19 TO INLET 4-5
SCALE: HORZ 1"=30'
VERT 1"=3'

DD-1

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE PROFILE

DATE: SEPTEMBER 2022 SCALE:

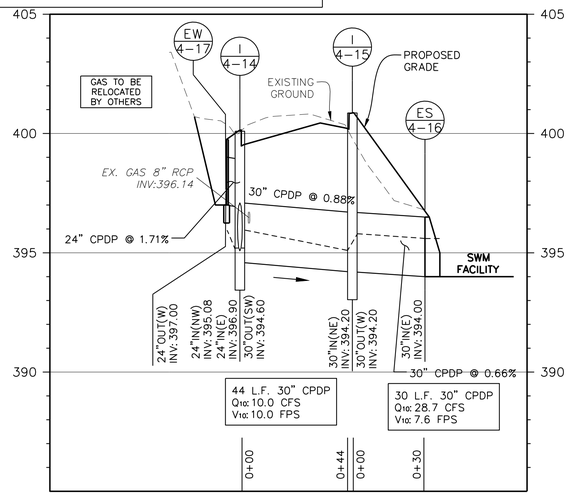
AMT FILE NO. 15-0758.007 SHEET NO. 23 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

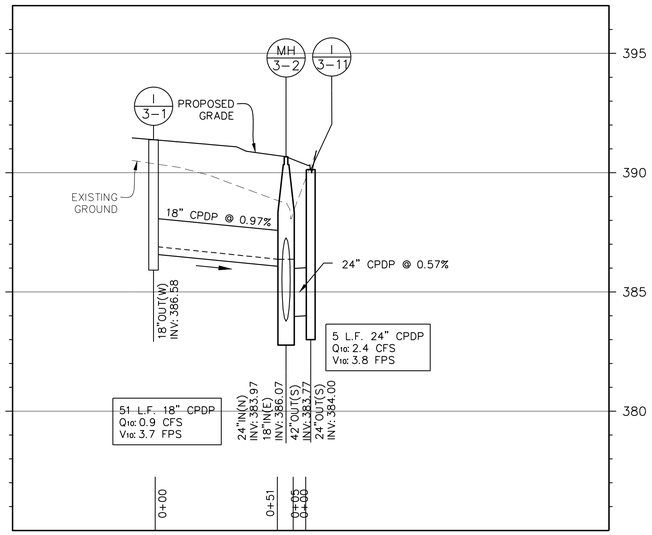
APPROVED 11/16/22

Signature:

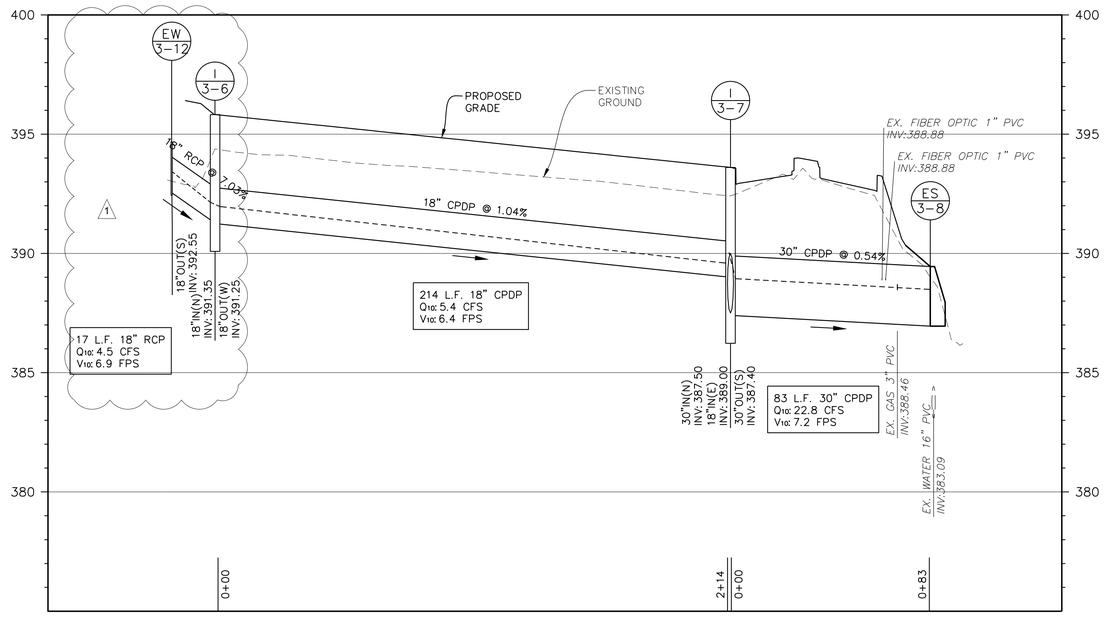
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



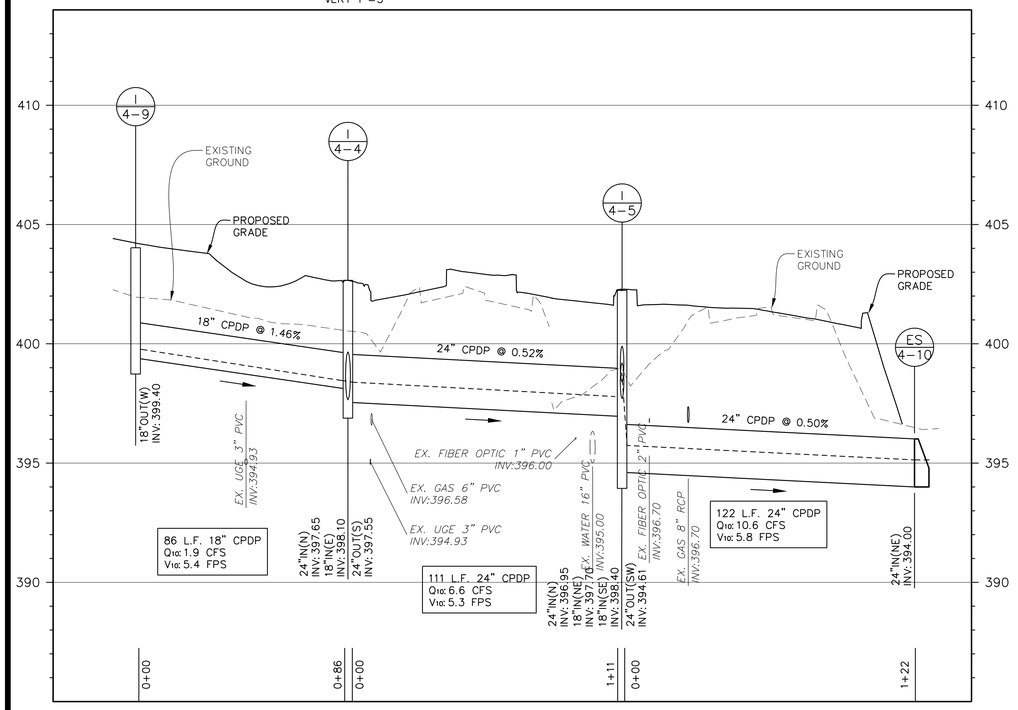
END WALL 4-17 TO END SECTION 4-16
SCALE: HORZ 1"=30'
VERT 1"=3'



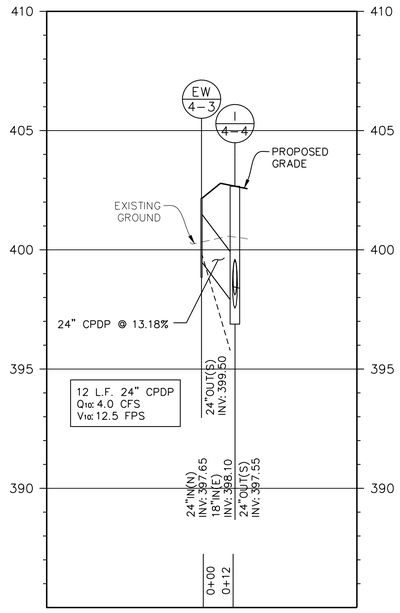
INLET 3-1 TO EXISTING PIPE
SCALE: HORZ 1"=30'
VERT 1"=3'



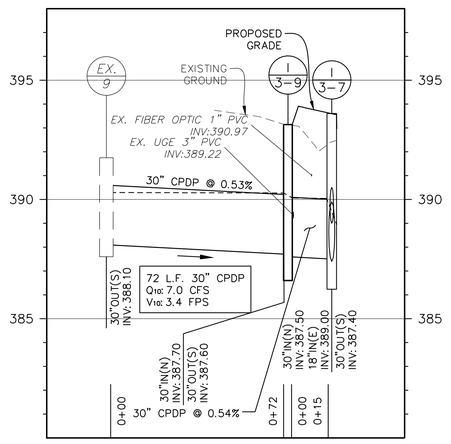
INLET 3-6 TO INLET 3-8
SCALE: HORZ 1"=30'
VERT 1"=3'



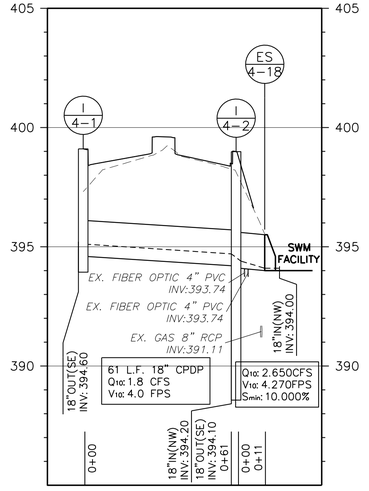
INLET 4-9 TO END SECTION 4-10
SCALE: HORZ 1"=30'
VERT 1"=3'



EW 4-3 TO INLET 4-4
SCALE: HORZ 1"=30'
VERT 1"=3'



EXISTING I-9 TO INLET 3-7
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 4-1 TO END SECTION 4-18
SCALE: HORZ 1"=30'
VERT 1"=3'

DD-2

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

REGISTRATION STAMP

JOHN C. WOLFORD
No. 24331
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
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901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE PROFILE

DATE: SEPTEMBER 2022 SCALE:

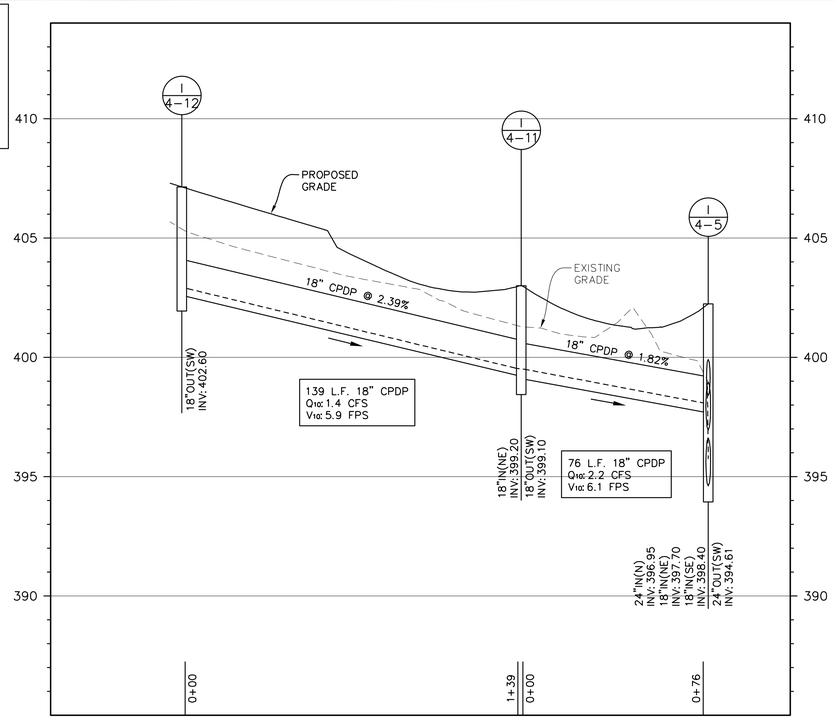
AMT FILE NO. 15-0758.007 SHEET NO. 24 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

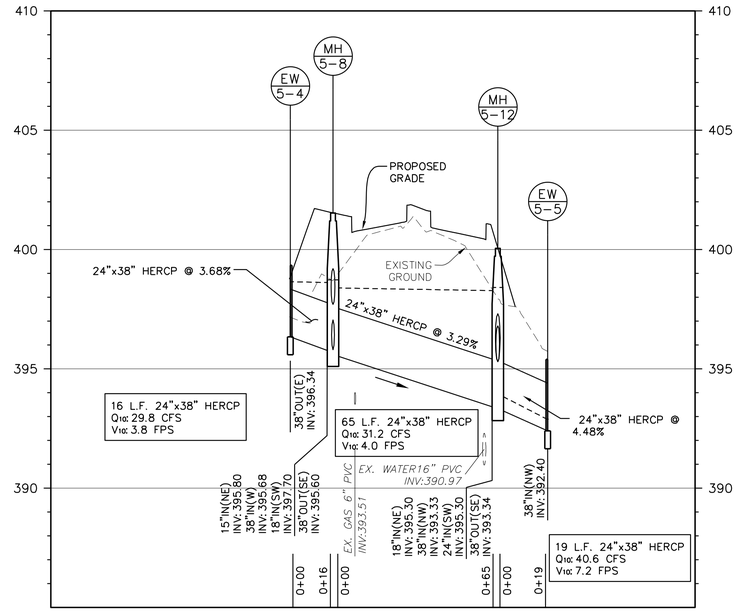
APPROVED: 11/16/22

Signature:

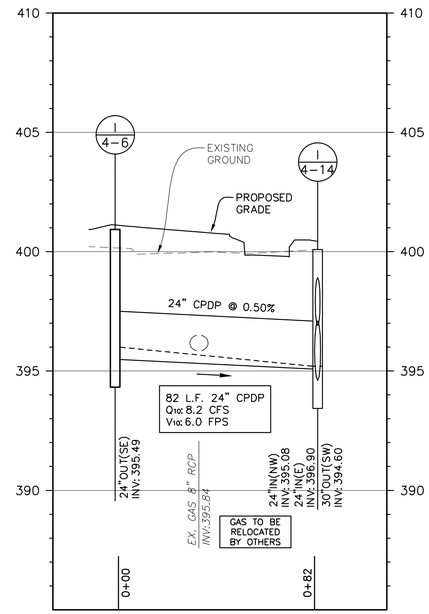
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



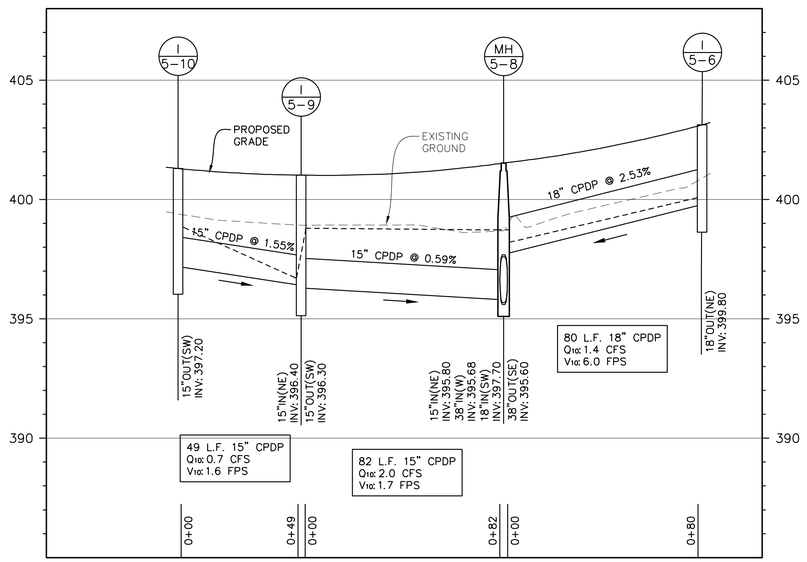
INLET 4-12 TO INLET 4-5
SCALE: HORZ 1"=30'
VERT 1"=3'



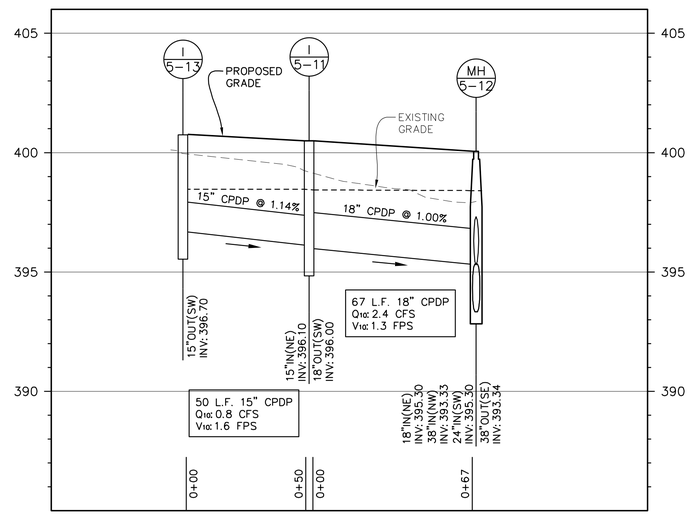
INLET 5-4 TO MANHOLE 5-12
SCALE: HORZ 1"=30'
VERT 1"=3'



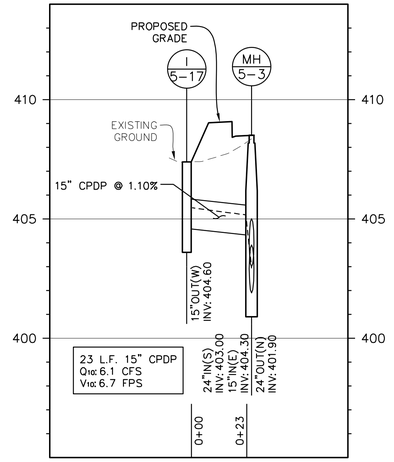
INLET 4-6 TO INLET 4-14
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 5-10 TO 5-8
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 5-13 TO MANHOLE 5-12
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 5-17 TO MANHOLE 5-3
SCALE: HORZ 1"=30'
VERT 1"=3'

DD-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE PROFILE

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 25 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

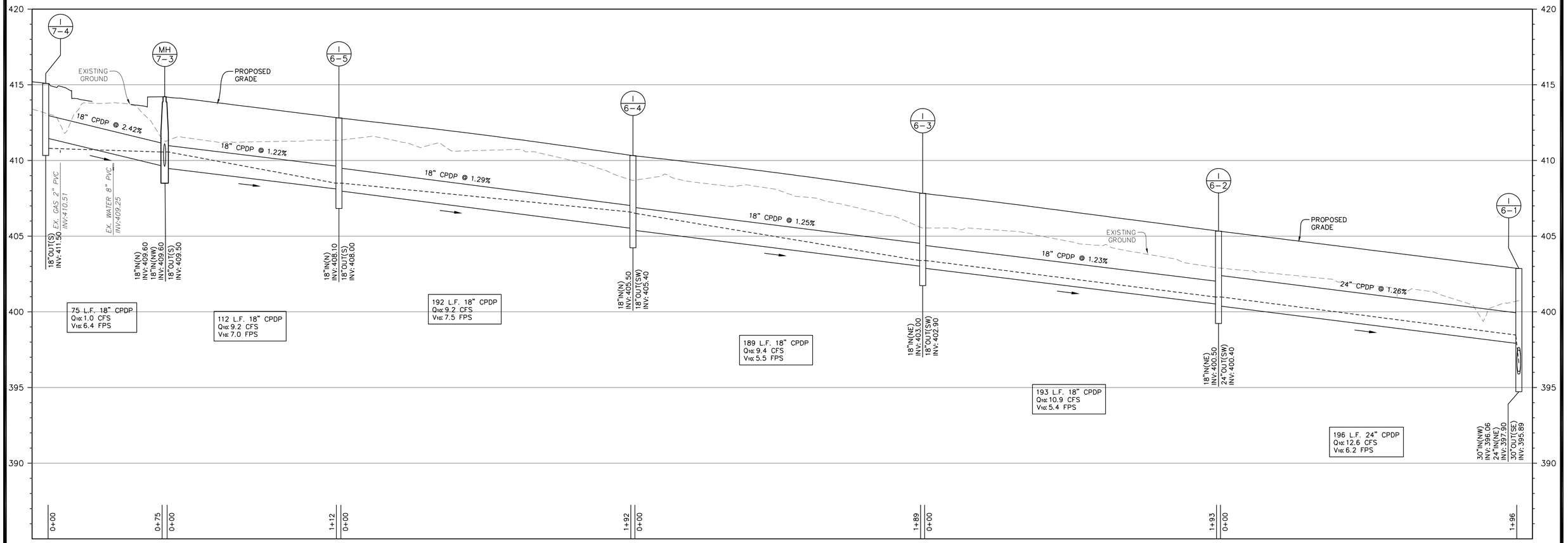
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMTI@AMTENGINEERING.COM

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



INLET 7-4 TO INLET 6-1

SCALE: HORZ 1"=30'
VERT 1"=3'

DD-4

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
KELLY O'HARA
34231
PROFESSIONAL ENGINEER
11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
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FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE PROFILE

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 26 OF 121

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Department of Development
Review Engineering

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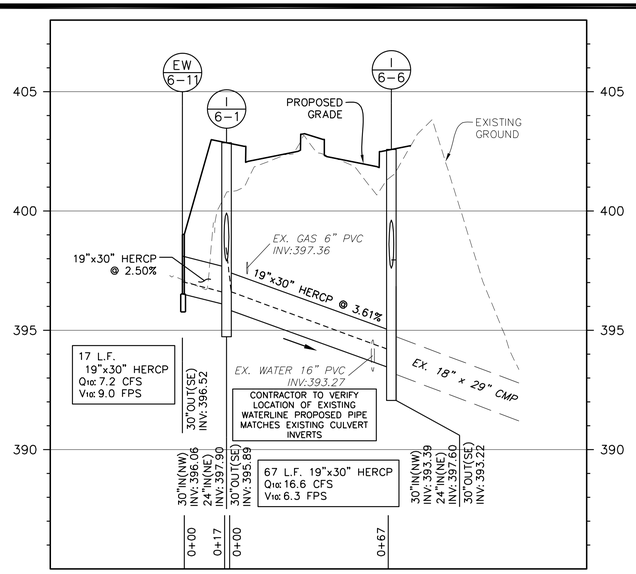
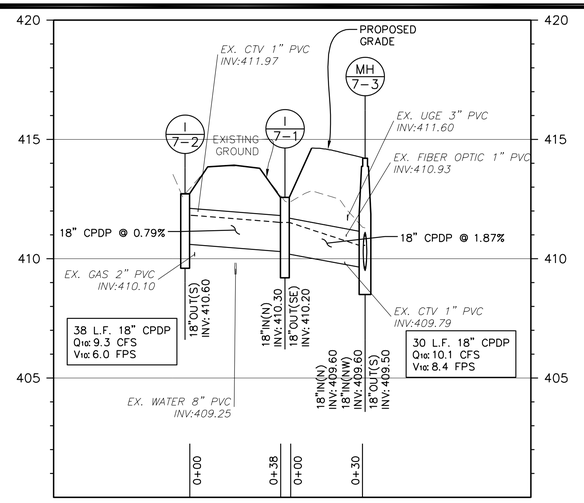
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



ENDWALL 6-11 TO EXISTING OUTFALL
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 7-2 TO MANHOLE 7-3
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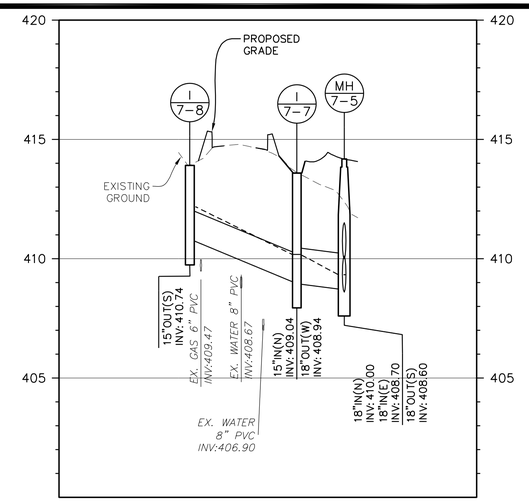
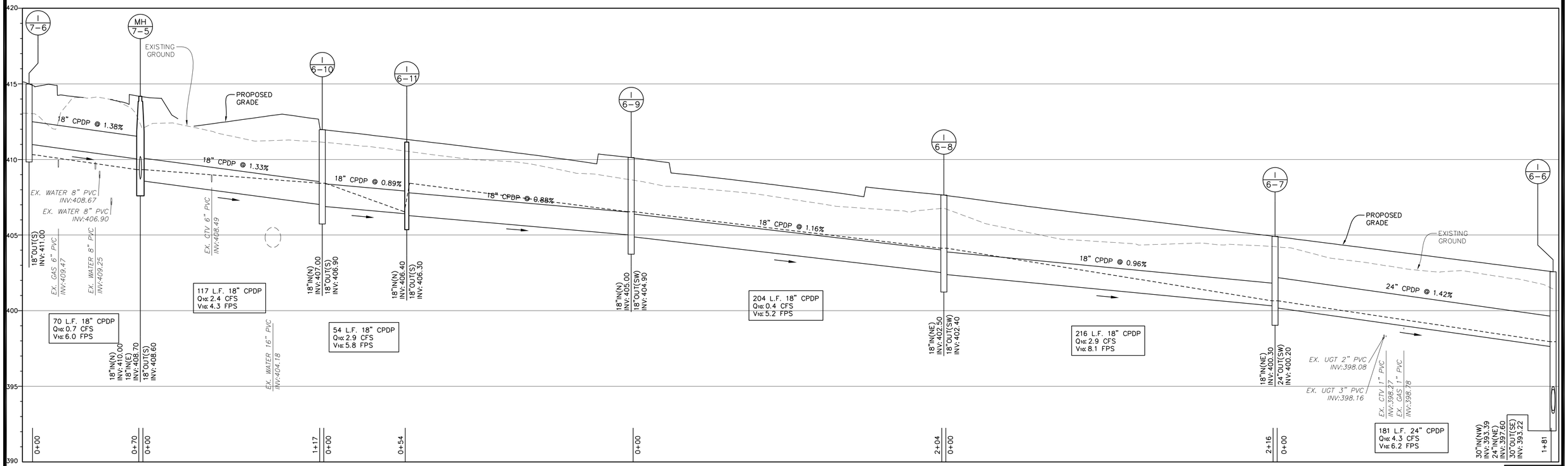
VERT 1"=3'



INLET 7-8 TO MANHOLE 7-5
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 7-6 TO INLET 6-6
SCALE: HORZ 1"=30'
VERT 1"=3'

DD-5

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — STEVEN VAN GRUNSVEN — 21933 — PROFESSIONAL ENGINEER — 11/15/2022

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE PROFILE

DATE: SEPTEMBER 2022 SCALE:

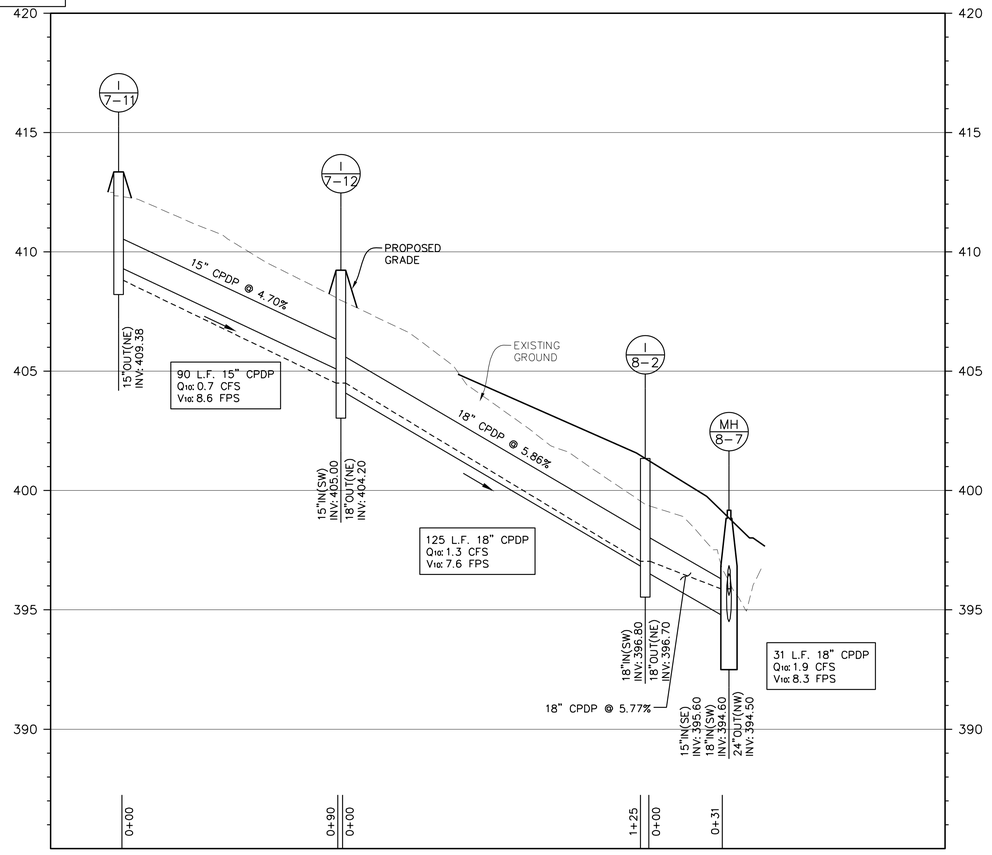
AMT FILE NO. 15-0758.007 SHEET NO. 27 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

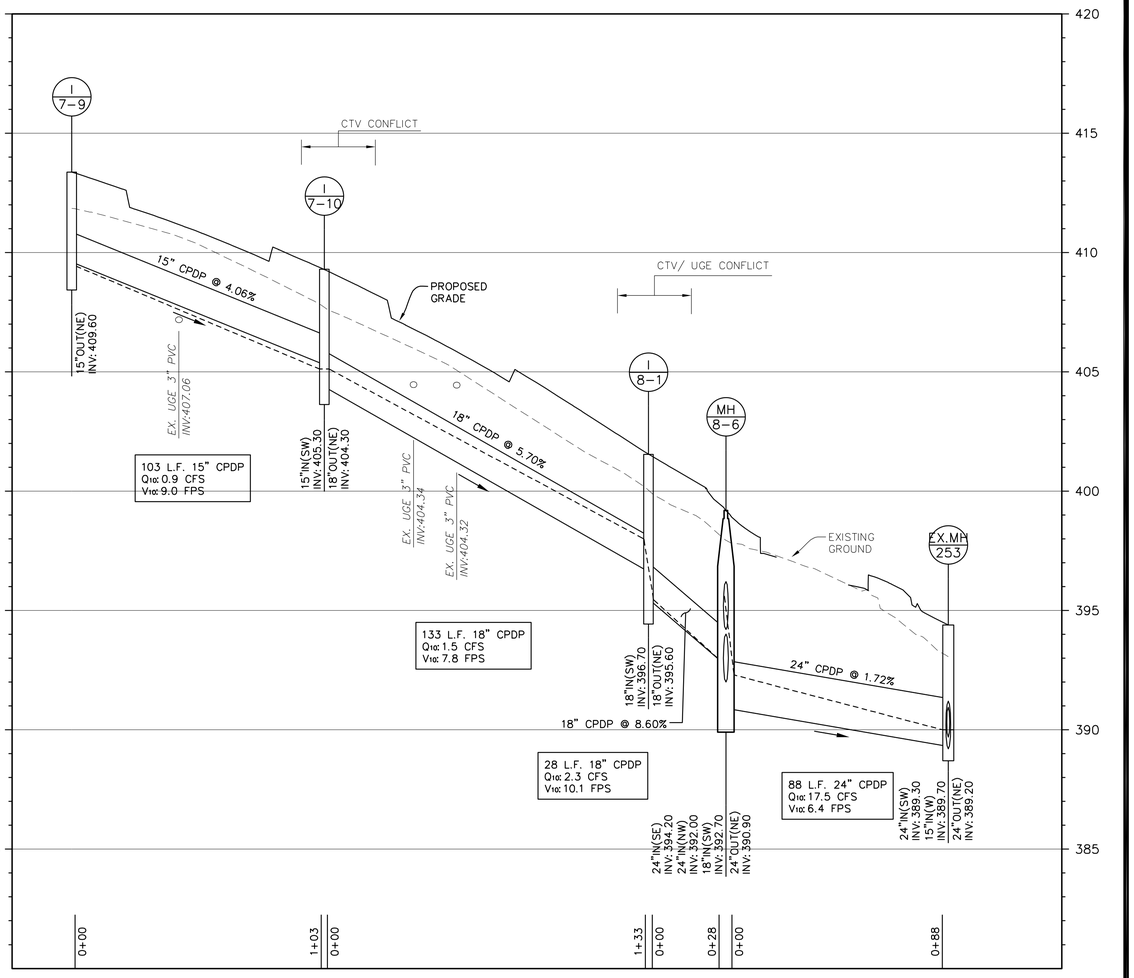
APPROVED 11/16/22

Signature:

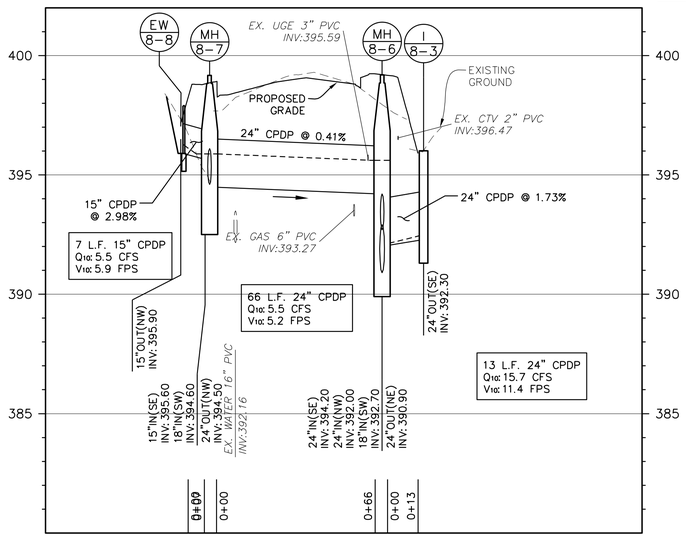
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



INLET 7-11 TO MANHOLE 8-7
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 7-9 TO EXISTING MH-253
SCALE: HORZ 1"=30'
VERT 1"=3'



ENDWALL 8-8 TO INLET 8-3
SCALE: HORZ 1"=30'
VERT 1"=3'

DD-6

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE PROFILE

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 28 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

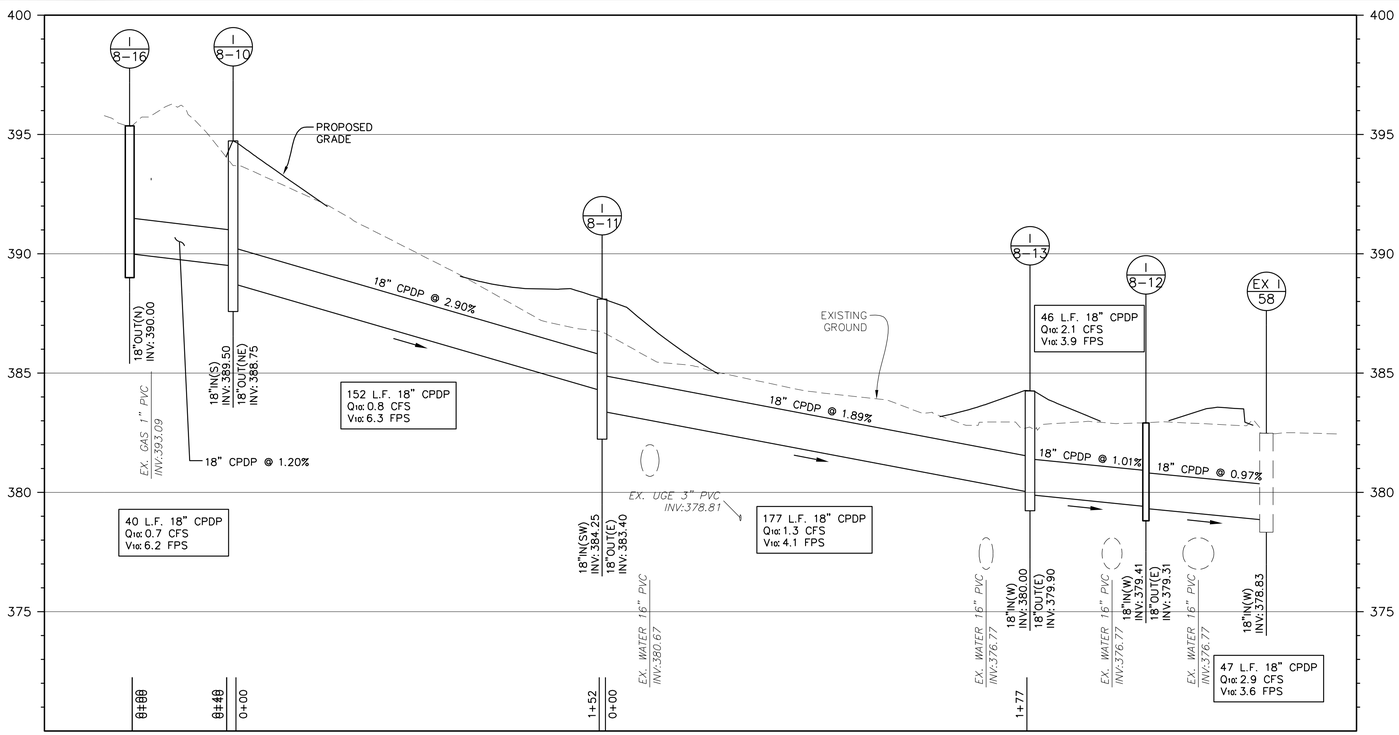
A. Morton Thomas and Associates, Inc.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 757-8552
EMAIL: AMT1@AMTENGINEERING.COM

Division of Planning and Permitting
Department of Development
Review Engineering

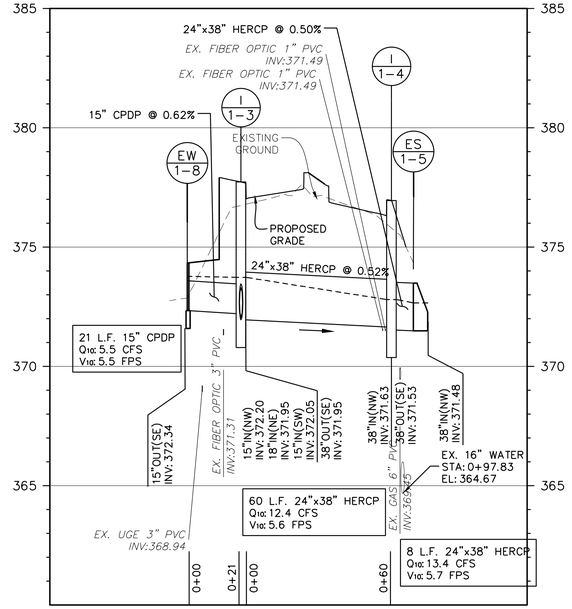
APPROVED: 11/16/22

Signature:

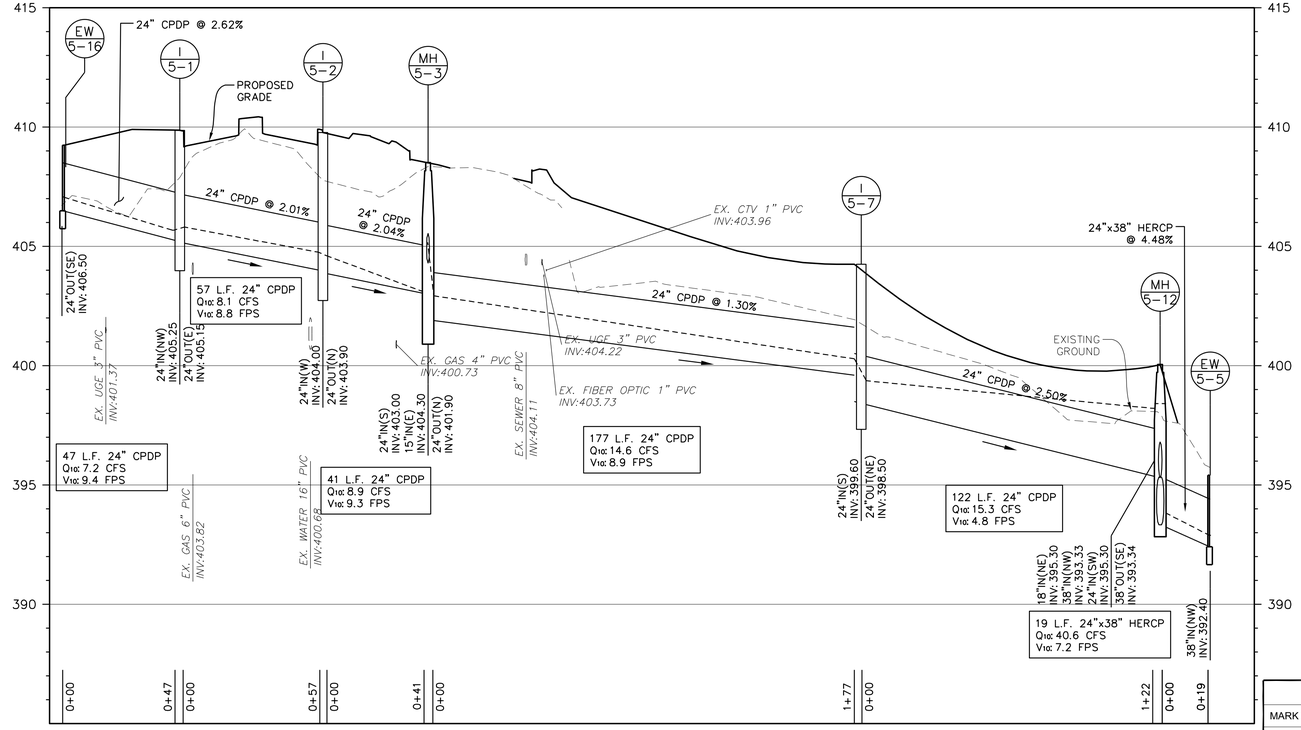
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



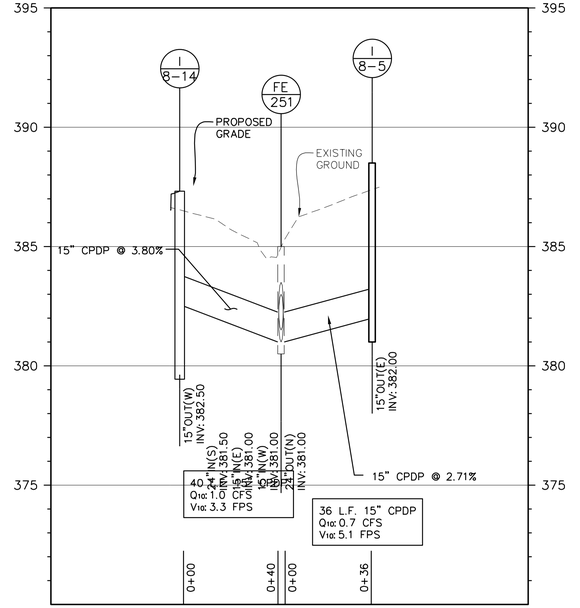
INLET 8-16 TO EX. INLET I-58
SCALE: HORZ 1"=30'
VERT 1"=3'



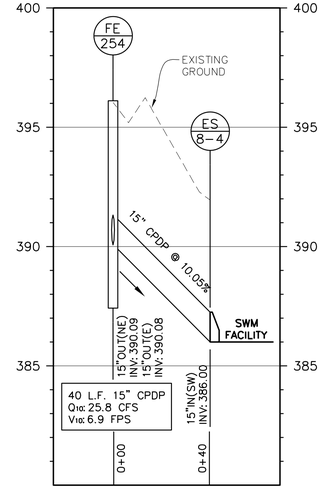
END WALL 1-8 TO END SECTION 1-5
SCALE: HORZ 1"=30'
VERT 1"=3'



END WALL 5-16 TO ENDWALL 5-5
SCALE: HORZ 1"=30'
VERT 1"=3'



INLET 8-14 TO INLET 8-5
SCALE: HORZ 1"=30'
VERT 1"=3'



EX INLET FE-254 TO END SECTION 8-4
SCALE: HORZ 1"=30'
VERT 1"=3'

DD-7

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21335 — PROFESSIONAL ENGINEER — 11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE PROFILE

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 29 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

PIPE TABLE			
FROM	TO	SIZE & MATERIAL	LENGTH (FT)
EW 3-12	3-6	18" RCP	17'
EW 4-19	4-5	18" CPDP	5'
EW 4-17	4-14	24" CPDP	4'
MH 1-8	1-3	18" CPDP	113'
EW 6-11	6-1	19"x30" HERCP	17'
EW 5-4	MH 5-8	24"x38" HERCP	16'
EW 4-3	4-4	24" CPDP	12'
EX. I-9	3-9	30" CPDP	72'
EW 1-8	1-3	15" CPDP	21'
FE 254	ES 8-4	15" CPDP	40'
JB 2-9	2-6	18" CPDP	91'
MH 5-12	EW 5-5	24"x38" HERCP	19'
MH 5-8	MH 5-12	24"x38" HERCP	65'
MH 5-3	5-7	24" CPDP	177'
EW 5-16	5-1	24" CPDP	47'
MH 8-6	EX. MH-253	24" CPDP	88'
EW 8-8	MH 8-7	15" CPDP	7'
MH 8-7	MH 8-6	24" CPDP	66'
MH 7-5	6-10	18" CPDP	117'
MH 7-3	6-5	18" CPDP	112'
1-1	1-3	15" CPDP	125'
1-3	1-4	24"x38" HERCP	60'
1-4	ES 1-5	24"x38" HERCP	8'
1-7	MH 1-8	18" CPDP	114'
2-10	JB 2-9	18" CPDP	2'
2-6	MH 2-3	18" CPDP	134'
2-7	JB 2-9	15" CPDP	23'
2-4	MH 2-3	15" CPDP	5'
2-2	1-7	15" CPDP	266'
3-9	3-7	30" CPDP	15'
3-11	MH 3-2	24" CPDP	5'
3-7	ES 3-8	30" CPDP	83'
3-1	MH 3-2	18" CPDP	51'
3-6	3-7	18" CPDP	214' 1
4-5	ES 4-10	24" CPDP	122'
4-14	4-15	30" CPDP	44'
4-2	ES 4-18	18" CPDP	11'
4-1	4-2	18" CPDP	61'
4-6	4-14	24" CPDP	82'
4-12	4-11	18" CPDP	139'
4-9	4-4	18" CPDP	86'

PIPE TABLE			
FROM	TO	SIZE & MATERIAL	LENGTH (FT)
4-4	4-5	24" CPDP	111'
4-11	4-5	18" CPDP	76'
4-15	ES 4-16	30" CPDP	30'
5-6	MH 5-8	18" CPDP	80'
5-9	MH 5-8	15" CPDP	82'
5-13	5-11	15" CPDP	50'
5-10	5-9	15" CPDP	49'
5-2	MH 5-3	24" CPDP	41'
5-7	MH 5-12	24" CPDP	122'
5-11	MH 5-12	18" CPDP	67'
5-17	MH 5-3	15" CPDP	23'
5-1	5-2	24" CPDP	57'
6-11	6-9	18" CPDP	146'
6-7	6-6	24" CPDP	181'
6-8	6-7	18" CPDP	216'
6-9	6-8	18" CPDP	204'
6-10	6-11	18" CPDP	54'
6-2	6-1	24" CPDP	196'
6-3	6-2	18" CPDP	193'
6-4	6-3	18" CPDP	189'
6-5	6-4	18" CPDP	192'
6-1	6-6	19"x30" HERCP	67'
7-10	8-1	18" CPDP	133'
7-12	8-2	18" CPDP	125'
7-11	7-12	15" CPDP	90'
7-9	7-10	15" CPDP	103'
7-8	7-7	15" CPDP	41'
7-7	MH 7-5	18" CPDP	17'
7-6	MH 7-5	18" CPDP	70'
7-1	MH 7-3	18" CPDP	30'
7-2	7-1	18" CPDP	38'
7-4	MH 7-3	18" CPDP	75'
8-12	EX. I-58	18" CPDP	47'
8-13	8-12	18" CPDP	46'
8-5	FE 251	15" CPDP	36'
8-14	FE 251	15" CPDP	40'
8-3	MH 8-6	24" CPDP	13'
8-16	8-10	18" CPDP	40'
8-11	8-13	18" CPDP	177'
8-10	8-11	18" CPDP	152'
8-2	MH 8-7	18" CPDP	31'

CORRUGATED POLYPROPYLENE DRAINAGE PIPE (CPDP) TRENCH DETAIL

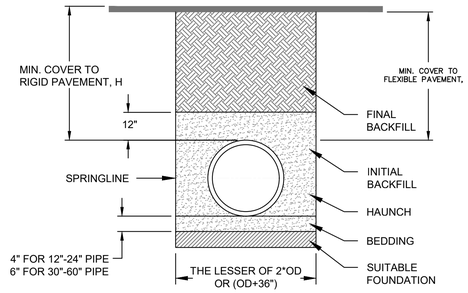

TABLE 1, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

	SURFACE LIVE LOADING CONDITION	
PIPE DIAM.	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
60"	24"	60"

*VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

	CLASS I	CLASS II			CLASS III	
PIPE DIA	COMPACTED	95%	90%	85%	95%	90%
.2 (5mm)	41 (12.5m)	28 (8.5m)	21 (6.4m)	16 (4.9m)	20 (6.1m)	16 (4.9m)
15" (375mm)	42 (12.8m)	29 (8.8m)	21 (6.4m)	16 (4.9m)	21 (6.4m)	16 (4.9m)
18" (450mm)	44 (13.4m)	30 (9.1m)	21 (6.4m)	16 (4.9m)	22 (6.7m)	17 (5.2m)
24" (600mm)	37 (11.3m)	26 (7.9m)	18 (5.5m)	14 (4.3m)	19 (5.8m)	14 (4.3m)
30" (750mm)	39 (11.9m)	27 (8.2m)	19 (5.8m)	14 (4.3m)	19 (5.8m)	15 (4.6m)
36" (900mm)	28 (8.5m)	20 (6.1m)	14 (4.3m)	10 (3.0m)	14 (4.3m)	11 (3.4m)
42" (1050mm)	30 (9.1m)	21 (6.4m)	14 (4.3m)	10 (3.0m)	15 (4.6m)	11 (3.4m)
48" (1200mm)	29 (8.8m)	20 (6.1m)	14 (4.3m)	9 (2.7m)	14 (4.3m)	10 (3.0m)
60" (1500mm)	29 (8.8m)	20 (6.1m)	14 (4.3m)	9 (2.7m)	14 (4.3m)	10 (3.0m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE .

NOTES:

1. 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 ADDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. EXCAVATION: EXCAVATE TO A DEPTH OF AT LEAST 4 IN. BELOW THE BOTTOM OF THE PIPE. WHEN RIPPABLE ROCK IS ENCOUNTERED, REMOVE ROCKS, BOULDERS, AND OTHER HARD, LUMPY OR UNYIELDING MATERIAL TO A DEPTH OF AT LEAST 12 IN. BELOW THE BOTTOM OF THE OUTER DIAMETER OF THE PIPE. WHEN NONRIPPABLE ROCK IS ENCOUNTERED, REMOVE IT TO A DEPTH OF AT LEAST 8 IN BELOW THE OUTER DIAMETER OF THE PIPE.
4. FOUNDATION: FINE GRADE AND COMPACT THE SUBGRADE TO AT LEAST 97 PERCENT OF THE MAXIMUM DRY DENSITY PER T 180. REMOVE AND DISPOSE OF ALL SOFT AND UNSTABLE MATERIALS AND ALL OTHER PORTIONS OF THE SUBGRADE THAT WILL NOT PROPERLY COMPACT IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 301.
5. BEDDING: PLACE AND COMPACT BEDDING BACKFILL ENSURING THAT THE MOISTURE CONTENT IS IN THE RANGE OF OPTIMUM CONTENT TO OBTAIN THOROUGH COMPACTION. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED. MATERIALS SHALL MEET THE REQUIREMENTS OF A 145 A-1, A-2-4, A-2-5, A-3, SELECTED BACKFILL OR SELECT BORROW.
6. INITIAL BACKFILL: PLACE MATERIAL ALONG THE SIDE OF THE PIPE FOR THE FULL WIDTH OF THE TRENCH IN LAYERS NOT EXCEEDING AN UNCOMPACTED DEPTH OF 6 IN. COMPACT EACH LAYER SIMULTANEOUSLY ON BOTH SIDES OF THE PIPE USING AN APPROVED MECHANICAL TAMPER. COMPACT THOROUGHLY UNDER HAUNCHES OF PIPE. CONTINUE THIS METHOD UNTIL COMPACTED BACKFILL MATERIAL IS AT LEAST 12 IN. ABOVE THE TOP OF THE PIPE. MATERIALS SHALL MEET THE REQUIREMENTS OF A 145 A-1, A-2-4, A-2-5, A-3, SELECTED BACKFILL OR SELECT BORROW.
7. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. 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.

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D

NOTE: ALL DIMENSIONS ARE ± 1/2 FOOT.

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ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

DIA. DET/RET SYSTEM

TYPICAL STORM TRENCH DETAIL
HP STORM - MARYLAND

DRAWING NUMBER: STD-XXX

ADS
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026
ADVANCED DRAINAGE SYSTEMS, INC.

DRAWN BY:
DATE:
DATE RVS:
SCALE: NTS
SHEET 1 OF 1

RIPRAP OUTFALL SCHEDULE

OUTFALL STRUCTURE	OUTFALL TYPE	MDE DETAIL	d/2	L	W	T	RIPRAP CLASS	QUANTITY	COMMENTS
			(IN)	(FT)	(FT)	(IN)		(SY)	
ES 1-5	24"x38" END SECTION	ROP II	15	5	5	19	I	3	MDE DETAIL D-4-1-B
ES 3-8	30" END SECTION	ROP II	15	16	18	19	I	32	MDE DETAIL D-4-1-B
I 1-2	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	5	19	I	6	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 1-6	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	5	19	I	6	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 2-1	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	10	19	I	11	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 2-5	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	5	19	I	6	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 2-8	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	5	19	I	6	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 3-3	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	10	19	I	11	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 3-5	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	10	19	I	11	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 3-10	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	5	19	I	6	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 4-7	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	15	5	19	I	8	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1
I 4-8	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	10	5	19	I	6	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1

DD-8

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

REGISTRATION STAMP

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CONSULTING ENGINEERS
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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE PIPE SCHEDULES

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 30 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

STRUCTURE SCHEDULE

STRUCTURE	STATION	OFFSET	TYPE	MDSHA STD. NUMBER	TOP	INVERT OUT	NOTES
0-1	78+79.88	45.71' L	HEADWALL (MODIFIED TYPE F)	SEE MODIFICATION DETAIL	N/A	MATCH EX.	
1-1	79+18.15	30.93' L	10' COS	MD 374.61	376.82'	372.70	
1-2	79+30.03	28.10' R	5' COG (OPEN BACK)	MD 374.68	375.64'	N/A	
ES 1-5	80+23.87	38.73' R	ENDSECTION ELLIPTICAL CONC. (24" x 38")	MD 369.00	N/A	371.48	
1-4	80+26.64	29.98' R	5' COG	MD 374.51	376.94'	371.53	
1-3	80+46.06	30.00' L	10' COG	MD 374.51	377.72'	372.20	
EW 1-8	80+53.07	51.48' L	ENDWALL CONC. (15")	MD 354.01	N/A	372.34	
MH 1-8	81+65.89	21.50' L	MANHOLE (STD. 48")	MD 384.01	378.41'	373.43	
1-6	81+90.49	28.04' R	5' COG (OPEN BACK)	MD 374.68	378.74'	N/A	
1-7	82+85.80	30.00' L	10' COG	MD 374.51	380.18'	374.35	
2-1	84+99.00	28.03' R	10' COG (OPEN BACK)	MD 374.68	382.07'	N/A	
2-2	85+54.76	30.00' L	5' COG	MD 374.51	382.93'	378.80	
2-5	88+40.48	28.03' R	5' COG (OPEN BACK)	MD 374.68	385.62'	N/A	
MH 2-3	89+00.87	38.01' L	MANHOLE (STD. 48")	MD 384.01	386.64'	380.68	
2-4	89+01.00	30.00' L	5' COG	MD 374.51	386.48'	382.06	
2-6	90+30.00	30.00' L	5' COG	MD 374.51	387.80'	382.90	
2-8	90+87.36	28.00' R	5' COG (OPEN BACK)	MD 374.68	387.52'	N/A	
2-10	91+16.01	46.10' L	TYPE K (SINGLE)	MD 378.11	386.62'	383.75	
JB 2-9	91+17.42	39.81' L	JUNCTION BOX (6'x5')	MD 386.11	388.71'	384.00	
2-7	91+41.00	30.00' L	5' COG	MD 374.51	388.94'	384.40	
3-3	93+23.00	28.05' R	10' COG (OPEN BACK)	MD 374.68	389.96'	N/A	
3-11	93+24.58	45.00' L	TYPE K (SINGLE)	MD 378.11	390.13'	384.00	
MH 3-2	93+24.66	34.65' L	MANHOLE (STD. 72")	MD 384.05	390.67'	383.77	
3-1	93+80.00	29.96' L	5' COG	MD 374.51	391.38'	386.58	
ES 3-8	95+71.30	49.44' R	ENDSECTION CONC. (30")	MD 368.01	N/A	386.95	
3-7	95+97.77	30.01' L	10' COG	MD 374.51	393.61'	387.50	1
3-9	96+04.66	47.03' L	YARD INLET (3'x3')	MD 381.01	393.14'	387.70	
3-5	96+22.97	28.07' R	10' COG (OPEN BACK)	MD 374.68	393.07'	N/A	
3-10	98+00.51	28.04' R	5' COG (OPEN BACK)	MD 374.68	394.91'	N/A	
3-6	98+14.18	30.01' L	5' COG	MD 374.51	395.82'	391.25	
EW 3-12	98+14.31	48.40' L	ENDWALL CONC. 18"	MD 354.01	394.68'	392.55	1
ES 4-18	100+39.47	40.46' R	ENDSECTION CONC. (18")	MD 368.01	N/A	394.00	
4-1	100+39.82	35.60' L	5' COG	MD 374.51	399.11'	394.60	
4-2	100+40.00	28.50' R	5' COG	MD 374.51	398.99'	394.20	
ES 4-10	101+27.53	97.42' R	ENDSECTION CONC. (24")	MD 368.01	N/A	394.00	
ES 4-16	101+38.60	220.81' R	ENDSECTION CONC. (30")	MD 368.01	N/A	394.00	
4-7	101+71.38	150.76' L	5' COG (OPEN BACK)	MD 374.68	402.37'	N/A	
4-8	101+81.28	140.19' L	5' COG (OPEN BACK)	MD 374.68	402.86'	???	
4-15	101+81.28	229.49' R	5' COS	MD 374.61	400.86'	N/A	
4-6	102+13.76	146.18' R	5' COG	MD 374.51	400.93'	395.49	

STRUCTURE SCHEDULE

STRUCTURE	STATION	OFFSET	TYPE	MDSHA STD. NUMBER	TOP	INVERT OUT	NOTES
4-14	102+14.18	231.03' R	5' COS	MD 374.61	N/A	394.60	
EW 4-17	102+19.96	230.58' R	ENDWALL CONC. (24")	MD 354.01	399.66'	397.00	
4-5	102+46.05	61.42' R	15' COS	MD 374.61	N/A	396.95	
EW 4-19	102+49.49	67.37' R	ENDWALL CONC. (18")	MD 354.01	400.63'	N/A	
4-4_CURB	102+60.97	44.94' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	402.51'	???	TOP OF CURB ELEVATION
4-4	102+65.07	51.81' L	10' COS (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	N/A	397.65	RIM ELEVATION
EW 4-3	102+72.00	64.01' L	ENDWALL CONC. (24")	MD 354.01	402.16'	399.50	
4-11	103+20.10	35.64' R	5' COG	MD 374.51	402.99'	N/A	
4-9_CURB	103+51.32	30.63' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	404.03'	399.40	TOP OF CURB ELEVATION
4-9	103+53.24	38.65' L	10' COG (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	404.03'	???	RIM ELEVATION
4-12	104+59.94	29.99' R	5' COG	MD 374.51	407.14'	402.60	
5-1	109+10.00	30.00' L	5' COG (CIRCULAR)	MD 374.62	409.86'	405.25	
5-2	109+10.00	30.00' R	5' COG	MD 374.51	N/A	403.90	
EW 5-16	109+47.68	61.39' L	ENDWALL CONC. (24")	MD 354.01	409.16'	406.50	
5-17	109+51.54	58.02' R	YARD INLET (2'x2')	MD 381.01	407.39'	404.60	
MH 5-3	109+54.03	30.96' R	MANHOLE (STD. 48")	MD 384.01	408.51'	403.00	
5-7	111+40.00	30.00' R	5' COG (SHALLOW)	MD 374.66	404.26'	399.60	
5-6	111+89.94	36.27' L	10' COG (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	403.13'	N/A	RIM ELEVATION
5-6_CURB	111+91.92	28.29' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	N/A	???	TOP OF CURB ELEVATION
EW 5-4	112+59.29	51.27' L	ENDWALL CONC. (24"x38")	MD 355.02	399.34'	396.34	
MH 5-8	112+67.97	35.98' L	MANHOLE (STD. 60")	MD 384.03	401.54'	395.80	
MH 5-12	112+73.29	32.87' R	MANHOLE (STD. 60")	MD 384.03	N/A	395.30	
EW 5-5	112+75.35	53.75' R	ENDWALL CONC. (24"x38")	MD 355.02	395.40'	396.00	
5-11	113+47.22	33.04' R	10' COS (MODIFIED OFFSET 5')	SEE MODIFICATION DETAIL	400.50'	N/A	RIM ELEVATION
5-11_CURB	113+47.23	28.04' R	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	400.58'	???	TOP OF CURB ELEVATION
5-9	113+48.38	36.10' L	10' COS (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	401.03'	N/A	RIM ELEVATION
5-9_CURB	113+48.45	28.10' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	400.58'	N/A	TOP OF CURB ELEVATION
5-13_CURB	113+97.98	28.02' R	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	400.74'	N/A	TOP OF CURB ELEVATION
5-10_CURB	113+98.00	28.13' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	401.06'	???	TOP OF CURB ELEVATION
5-10	114+00.01	36.12' L	5' COG (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	401.30'	397.20	RIM ELEVATION
5-13	114+00.03	33.00' R	5' COG (MODIFIED OFFSET 5')	SEE MODIFICATION DETAIL	400.74'	N/A	RIM ELEVATION
6-6_CURB	115+24.16	28.03' R	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	402.41'	N/A	TOP OF CURB ELEVATION
6-1_CURB	115+24.44	28.13' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	402.61'	???	TOP OF CURB ELEVATION
6-6	115+26.16	33.03' R	5' COG (MODIFIED OFFSET 5')	SEE MODIFICATION DETAIL	402.58'	393.39	RIM ELEVATION
6-1	115+26.45	36.14' L	10' COG (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	N/A	396.06	RIM ELEVATION
EW 6-11	115+28.25	54.53' L	ENDWALL CONC. (19"x30")	MD 355.02	398.94'	N/A	
6-7_CURB	117+07.84	28.04' R	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	404.76'	???	TOP OF CURB ELEVATION
6-7	117+09.84	33.04' R	5' COG (MODIFIED OFFSET 5')	SEE MODIFICATION DETAIL	404.91'	N/A	RIM ELEVATION
6-2_CURB	117+23.01	28.15' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	405.16'	???	TOP OF CURB ELEVATION
6-2	117+25.00	36.15' L	5' COG (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	405.33'	N/A	RIM ELEVATION

STRUCTURE SCHEDULE

STRUCTURE	STATION	OFFSET	TYPE	MDSHA STD. NUMBER	TOP	INVERT OUT	NOTES
6-3_CURB	119+22.96	28.20' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	407.57'	N/A	TOP OF CURB ELEVATION
6-8_CURB	119+23.03	28.03' R	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	407.53'	???	TOP OF CURB ELEVATION
6-3	119+24.94	36.22' L	5' COG (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	407.82'	403.00	RIM ELEVATION
6-8	119+25.04	33.00' R	5' COG (MODIFIED OFFSET 5')	SEE MODIFICATION DETAIL	407.64'	N/A	RIM ELEVATION
6-4_CURB	121+22.94	28.34' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	410.12'	???	TOP OF CURB ELEVATION
6-4	121+24.99	36.34' L	5' COG (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	410.32'	405.50	RIM ELEVATION
6-9	121+25.00	30.00' R	5' COG	MD 374.51	410.13'	405.00	
6-11	122+68.91	33.50' R	YARD INLET (2'x2')	MD 381.01	411.15'	N/A	
6-5_CURB	123+23.00	28.41' L	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	412.61'	???	TOP OF CURB ELEVATION
6-5	123+25.00	36.41' L	5' COG (MODIFIED OFFSET 8')	SEE MODIFICATION DETAIL	412.81'	406.90	RIM ELEVATION
6-10	123+25.50	28.00' R	5' COG (MODIFIED TYPE B)	SEE MODIFICATION DETAIL	412.64'	???	
MH 7-3	124+40.21	36.39' L	MANHOLE (STD. 48")	MD 384.01	414.21'	409.60	
MH 7-5	124+44.78	37.24' R	MANHOLE (STD. 48")	MD 384.01	414.18'	410.00	
7-7	124+48.51	57.10' R	TYPE K (SINGLE)	MD 378.11	413.59'	408.94	
7-1	124+52.98	67.44' L	TYPE K (SINGLE)	MD 378.11	412.57'	410.30	
7-8	124+93.60	59.18' R	TYPE K (SINGLE)	MD 378.11	413.91'	410.74	
7-2	124+94.99	66.72' L	TYPE K (SINGLE)	MD 378.11	412.72'	410.60	
7-6	125+18.00	30.00' R	5' COG	MD 374.51	414.98'	411.00	
7-4	125+18.62	29.96' L	5' COG	MD 374.51	415.09'	411.50	
7-11	128+99.97	33.00' R	5' COG (MODIFIED OFFSET 5')	SEE MODIFICATION DETAIL	413.35'	409.38	RIM ELEVATION
7-9	129+00.00	30.00' L	5' COG	MD 374.51	413.37'	N/A	
7-11_CURB	129+02.14	28.02' R	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	413.14'	???	TOP OF CURB ELEVATION
7-12	129+99.90	33.01' R	5' COG (MODIFIED OFFSET 5')	SEE MODIFICATION DETAIL	409.23'	405.00	RIM ELEVATION
7-10	130+00.00	30.00' L	5' COG	MD 374.51	409.30'	N/A	
7-12_CURB	130+02.19	28.06' R	TOP OF CURB WORKING POINT	SEE MODIFICATION DETAIL	408.33'	???	TOP OF CURB ELEVATION
8-2	131+32.00	30.00' R	5' COG	MD 374.51	401.34'	396.80	
8-1	131+32.00	30.00' L	5' COG	MD 374.51	401.54'	396.70	
8-3	131+61.72	54.73' L	YARD INLET (3'x3')	MD 381.01	396.01'	392.30	
MH 8-6	131+63.52	37.47' L	MANHOLE (STD. 48")	MD 384.01	N/A	394.20	
EW 8-8	131+68.37	44.84' R	ENDWALL CONC. (24")	MD 354.01	399.16'	395.90	
8-16	132+21.63	65.13' R	TYPE K (SINGLE)	MD 378.11	395.36'	390.00	
8-10	132+47.00	30.00' R	5' COG	MD 374.51	N/A	388.75	
ES 8-4	132+57.85	74.89' L	ENDSECTION CONC. (15")	MD 368.01	387.44'	N/A	
8-9	132+71.88	28.07' L	5' COG (OPEN BACK)	MD 374.68	393.42'	???	
8-5	133+58.59	60.52' L	TYPE K (DOUBLE)	MD 378.03	388.50'	383.40	
8-11	134+08.13	28.36' R	5' COG (MODIFIED TYPE B)	SEE MODIFICATION DETAIL	388.10'	???	
8-14	134+22.87	29.97' L	5' COG (SHALLOW)	MD 374.66	387.32'	382.50	
8-13	135+98.45	29.96' R	5' COG	MD 374.51	384.25'	380.00	
8-12	136+46.42	37.58' R	YARD INLET (2'x2')	MD 381.01	382.91'	379.41	

DD-9

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE STRUCTURE SCHEDULES

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

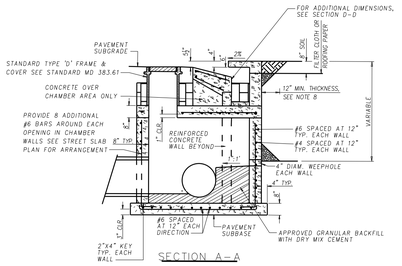
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

CHRISTOPHERS CROSSING SB DITCH SCHEDULE								
STATION	OFFSET (FT)	LINING	Z1	Z2	W (FT)	D (FT)	INVERT	REMARKS
91+50	47.0 LT	TYPE A SSM	3	2	0	1.0	387.77	
92+00	45.7 LT	TYPE A SSM	3	2	0	1.0	388.73	
92+50	45.7 LT	TYPE A SSM	3	2	0	1.0	389.21	
93+00	45.7 LT	TYPE A SSM	3	2	0	1.0	389.75	
93+50	45.7 LT	TYPE A SSM	3	2	0	1.0	390.23	
94+00	45.7 LT	TYPE A SSM	3	2	0	1.0	390.77	
125+50	45.1 LT	TYPE A SSM	3	3	0	0.5	414.87	
126+00	45.7 LT	TYPE A SSM	3	3	0	0.5	415.30	
126+50	46.7 LT	TYPE A SSM	3	3	0	0.5	415.48	

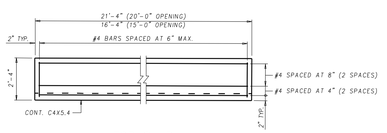
CHRISTOPHERS CROSSING NB DITCH SCHEDULE								
STATION	OFFSET (FT)	LINING	Z1	Z2	W (FT)	D (FT)	INVERT	REMARKS
96+00	55.5 RT	TYPE A SSM	3	3	0	0.5	388.39	
96+50	55.5 RT	TYPE A SSM	3	3	0	0.5	388.96	
97+00	55.5 RT	TYPE A SSM	3	3	0	0.5	389.16	
97+50	55.5 RT	TYPE A SSM	3	3	0	0.5	389.47	
98+00	55.5 RT	TYPE A SSM	3	3	0	0.5	389.61	
98+50	57.2 RT	TYPE A SSM	3	3	0	0.5	389.84	
99+00	59.0 RT	TYPE A SSM	3	3	0	0.5	390.28	
99+50	60.0 RT	TYPE A SSM	3	3	0	0.5	391.03	

YELLOW SPRINGS RD NB DITCH SCHEDULE								
STATION	OFFSET (FT)	LINING	Z1	Z2	W (FT)	D (FT)	INVERT	REMARKS
302+50	40.19 LT	TYPE A SSM	3	2.5	0	0.5	397.88	
303+00	34.3 LT	TYPE A SSM	3	2.8	0	0.5	399.77	
303+50	30.5 LT	TYPE A SSM	3	3	0	0.5	400.95	
304+00	23.1 LT	TYPE A SSM	3	3	0	0.5	402.61	

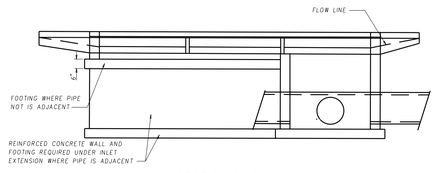
ROUNDABOUT NW QUADRANT DITCH SCHEDULE								
STATION	OFFSET (FT)	LINING	Z1	Z2	W (FT)	D (FT)	INVERT	REMARKS
201+50	46.9 RT	TYPE A SSM	3	2	4	0.5	398.27	YELLOW SPRINGS BASELINE
202+00	55.7 RT	TYPE A SSM	3	2	4	0.5	397.19	YELLOW SPRINGS BASELINE
101+00	77.7 LT	TYPE A SSM	3	2	4	0.5	396.44	CHRISTOPHERS CROSSING BASELINE
100+50	65.5 LT	TYPE A SSM	3	2	4	0.5	395.41	CHRISTOPHERS CROSSING BASELINE



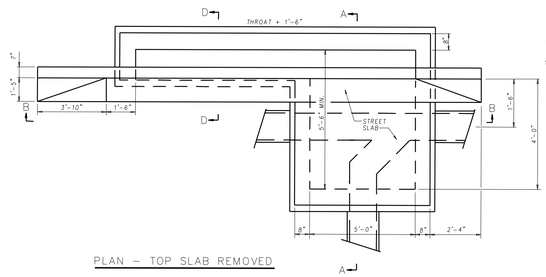
SECTION A–A



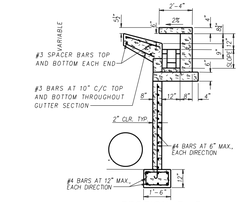
TOP SLAB



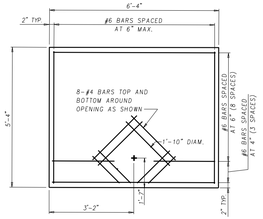
SECTION B–B



PLAN – TOP SLAB REMOVED



SECTION D–D



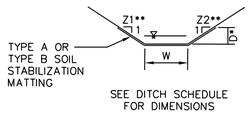
STREET SLAB

GENERAL NOTES

1. LOADING: AASHTO HS 20-44.
2. INLET MAY BE PRECAST OR CAST IN PLACE. ON WALLS, REINFORCEMENT SHALL BE AS SHOWN ON STD MD 351.52-01 TABLE WITH 1 " COVER FOR WELDED WIRE FABRIC (PRECAST) OR 2" COVER FOR DEFORMED BARS (CAST IN PLACE). ON BASE, REINFORCEMENT SHALL BE AS SHOWN ON MD STD. 374.51-01 TABLE WITH 1 " COVER (PRECAST) AND 2" COVER (CAST IN PLACE) FROM TOP OF BASE.
3. REINFORCING STEEL FOR CONCRETE SHALL CONFORM TO AASHTO DESIGNATION: M31 (ASTM A615) GRADE 60. ALL SPLICES SHALL BE LAPPED A MINIMUM OF 24 BAR DIAMETERS UNLESS OTHERWISE NOTED. MINIMUM COVER FOR REINFORCING BARS SHALL BE 2" UNLESS OTHERWISE NOTED.
4. FOR PIPES LARGER THAN 30" PROVIDE STEPS IN CHANNEL.
5. FOR TYPE "A" INLET USE SECTION A–A WITH A THROAT OPENING OF 5'–0". LONGER OPENINGS REQUIRE A SPECIAL DESIGN.
6. FOR TREATMENT OF THE CHANNEL, STEPS AND OTHER ASSOCIATED DETAILS, REFER TO THE STANDARD STORM DRAINAGE DETAILS.
7. INSTALL FOUNDATION DRAINAGE MATERIAL AROUND STRUCTURE FROM BOTTOM OF WEEPHOLES WITHIN 8" OF SURFACE.
8. CONCRETE SHALL BE MIX NO.6 (4500 PSI) FOR PRECAST UNITS AND MIX NO.3 (3500 PSI) FOR STRUCTURES CAST IN PLACE.
9. MODIFIED "B" INLETS SHALL BE MEASURED AND PAID FOR AS EACH.

DESIGNATION	T	NO. OF PIPE SUPPORTS
B – 10	10'– 0"	1
B – 15	15'– 0"	2
B – 20	20'– 0"	3

MODIFIED "B" INLET
NOT TO SCALE

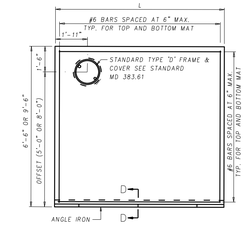


SEE DITCH SCHEDULE FOR DIMENSIONS

* D IS DEPTH OF LINING

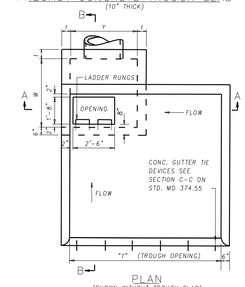
** Z1 IS FORESLOPE (CLOSEST TO ROADWAY)
Z2 IS BACKSLOPE (FARTHEST FROM ROADWAY)

TYPICAL DITCH CROSS SECTION
NOT TO SCALE

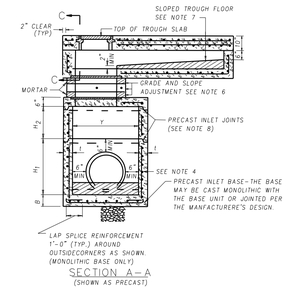


PRECAST CONCRETE TROUGH SLAB
(10" THICK)

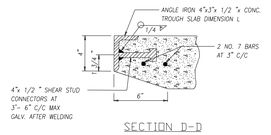
INLET TYPE	T	L
COG – 5	5'– 0"	6'– 0"
COG – 10	10'– 0"	11'– 0"
COG – 15	15'– 0"	16'– 0"
COG – 20	20'– 0"	21'– 0"



PLAN
(SHOWN WITHOUT TROUGH SLAB)



SECTION A–A
(SHOWN AS PRECAST)

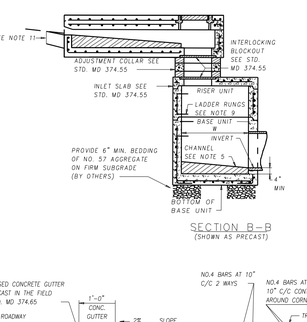


SECTION D–D

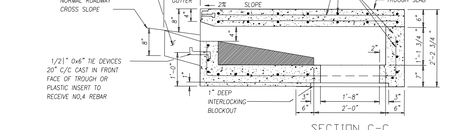
PIPE SIZE, MIN.TO MAX.	CAST IN PLACE/PRECAST DIMENSIONS									Min. Distance - (ft.) Top of Curb - Pipe Invert
	W	Y	H_1 BASE	H_2 RISER	MIN.	WALL REINFORCING: CAST IN PLACE DEFORMED BARS	WALL REINFORCING: PRECAST WWF	B	BASE REINFORCING: CAST IN PLACE DEFORMED BARS	BASE REINFORCING: PRECAST WWF	
12"	4'–0"	4'–0"	2' to 10'	1'to 5'	6"	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C1 LAYER	4X4,W7.0XW7.0	3.84
15" – 24"	4'–0"	4'–0"	3' to 10'	1'to 5'	6"	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C1 LAYER	4X4,W7.0XW7.0	4.11–4.82
27" – 33"	4'–0"	4'–0"	4' to 10'	1'to 5'	6"	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C1 LAYER	4X4,W7.0XW7.0	5.19–5.73
36"	4'–0"	4'–0"	5' to 10'	1'to 5'	6"	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C1 LAYER	4X4,W7.0XW7.0	6.00

GENERAL NOTES

1. THIS REVISED STANDARD TO BE USED WITH TYPE A COMBINATION CURB AND GUTTER ONLY.
2. CURB OPENINGS SHALL NOT ENCROACH ON CROSSWALK AREAS.
3. CONCRETE SHALL BE MIX NO.6 (4500 PSI) FOR PRECAST UNITS AND MIX NO.3 (3500 PSI) FOR STRUCTURES CAST IN PLACE.
4. INLET MAY BE PRECAST OR CAST IN PLACE. ON WALLS, REINFORCEMENT SHALL BE AS SHOWN ON STD MD 351.52–01 TABLE WITH 1 " COVER FOR WELDED WIRE FABRIC (PRECAST) OR 2" COVER FOR DEFORMED BARS (CAST IN PLACE). ON BASE, REINFORCEMENT SHALL BE AS SHOWN ON MD STD. 374.51–01 TABLE WITH 1 " COVER (PRECAST) AND 2" COVER (CAST IN PLACE) FROM TOP OF BASE.
5. A CONCRETE OR BRICK CHANNEL WHICH SLOPES AT LEAST 2 IN./FT. TOWARD THE OUTLET SHALL BE PROVIDED IN THE FIELD.
6. GRADE AND SLOPE ADJUSTMENTS SHALL BE COMPLETED IN THE FIELD USING PRECAST ADJUSTMENT COLLAR AND MORTAR.
7. SLOPED TROUGH FLOOR TO BE CAST IN THE FIELD AND USED ONLY WHEN ROAD GRADE IS 1.5% OR LESS. WHEN SLOPED TROUGH FLOOR IS USED, ROUGHEN PRECAST TROUGH FLOOR.
8. PRECAST INLET JOINTS– THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING THE MANUFACTURER'S RECOMMENDED ASTM OR AASHTO APPROVED SEALANT.
9. LADDER RUNGS SHALL BE PLACED IN VERTICAL ALIGNMENT AT 1'–1" C/C. RUNG TYPE SHALL BE IN ACCORDANCE WITH STANDARDS MD 383.91 OR MD 383.92. RUNGS ARE INCIDENTAL TO THE COST OF THE INLET.
10. ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER WELDING IN ACCORDANCE WITH ASTM A 123, SEE STD. MD 374.55 & MD 374.64.
11. SEE STANDARD MD 374.65 FOR DEPRESSED GUTTER PAN.
12. SEE STANDARD MD 374.64 FOR ALTERNATE PRECAST COG TROUGHS.
13. PAY MEASUREMENTS FOR CAST IN PLACE UNIT SHALL BE THE SAME AS THE PRECAST UNIT. REFER TO NOTE 14. ALL OTHER DIMENSIONS SHOWN FOR PRECAST SHALL APPLY TO CAST IN PLACE.
14. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 6'–2" MEASURED FROM THE PIPE INVERT TO THE TOP OF THE TROUGH SLAB. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 6'–2" INCLUDING ALL APPURTENANCES.
15. PRECAST BASE UNIT WALLS MAY TAPER PER MANUFACTURER'S DESIGN.
16. FROM CURB LINE, INLET HAS BEEN DESIGNED FOR HS–25 LOADING ACCORDING TO AASHTO LFRD BRIDGE DESIGN SPECIFICATIONS.
17. SEE STD MD 374.51–01 FOR PIPE / PRECAST DIMENSIONS TABLE.
18. ALL STEEL REINFORCEMENT SHOWN SHALL BE SIZE #4 SPACED AT 6" ON CENTERS, UNLESS OTHERWISE NOTED.
19. CLIP STEEL REINFORCEMENT IN TROUGH SLAB AROUND MANHOLE.
19. MODIFIED OFFSET COG INLETS WILL BE MEASURED AND PAID FOR AS EACH.



SECTION B–B
(SHOWN AS PRECAST)



SECTION C–C

MODIFIED OFFSET COG INLET
(5' or 8' OFFSET)
NOT TO SCALE

DD-10

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE DITCH SCHEDULES AND INLET DETAILS

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 32 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-6552
EMAIL: AMT1@AMTENGINEERING.COM

Division of Planning and Permitting
Department of Development
Review Engineering

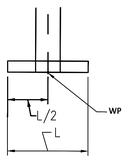
APPROVED 11/16/22

Signature:

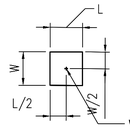
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

TYPE C ENDWALL (STD. 354.01)

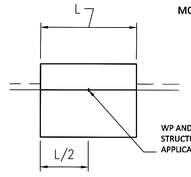
TYPE C ENDWALL ELLIPTICAL (STD. 355.02)



JUNCTION BOX (STD. 386.11)

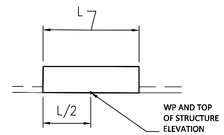


MODIFIED B INLET

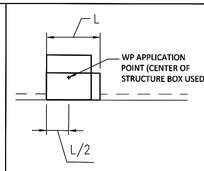


SHALLOW COG (STD. 374.66)

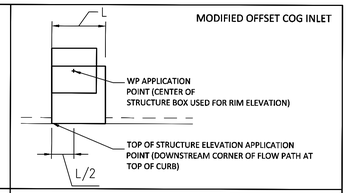
COG/COS OPENING (STD. 374.68)



COG INLET (STD. 374.51)

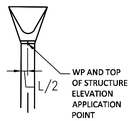


MODIFIED OFFSET COG INLET

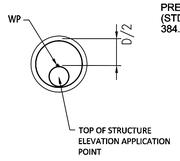


CONCRETE END SECTION (STD. 368.01)

CONCRETE END SECTION ELLIPTICAL (STD. 369.00)

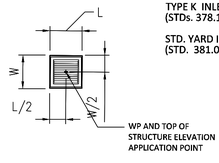


PRECAST MANHOLE (STDs. 384.01, 384.03 & 384.05)

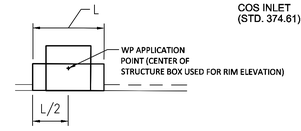


TYPE K INLETS (STDs. 378.11 & 378.03)

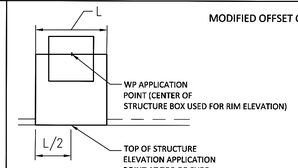
STD. YARD INLET (STD. 381.01)



COS INLET (STD. 374.61)

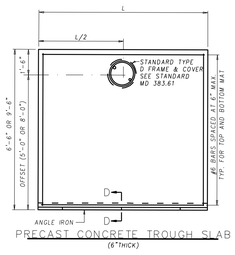


MODIFIED OFFSET COS INLET



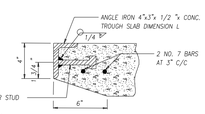
PROPOSED STRUCTURE WORK POINT LOCATIONS

NOT TO SCALE

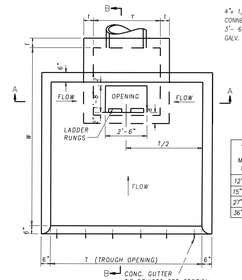


PRECAST CONCRETE TROUGH SLAB (6"THICK)

INLET TYPE	T	L
COS-5	5'-0"	6'-0"
COS-10	10'-0"	11'-0"



SECTION D-D

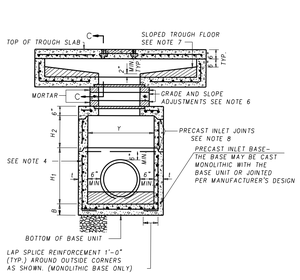


PLAN
(SHOWN WITHOUT TROUGH SLAB)

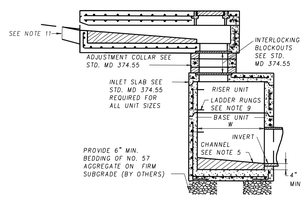
NOTES

1. THIS STANDARD TO BE USED WITH TYPE A COMBINATION CURB AND GUTTER ONLY.
2. CURB OPENINGS SHALL NOT ENCROACH ON CROSSWALK AREAS.
3. CONCRETE SHALL BE MIX NO.6 (4500 PSI) FOR PRECAST UNITS AND CONCRETE MIX NO.3 (3500 PSI) FOR CAST IN PLACE UNITS.
4. INLET MAY BE PRECAST OR CAST IN PLACE. ON WALLS, REINFORCEMENT SHALL BE AS SHOWN ON TABLE (STD MD 379.61.01) WITH 2"COVER FOR WELDED WIRE FABRIC (PRECAST) OR 2" COVER FOR DEFORMED BARS (CAST IN PLACE). ON BASE, REINFORCEMENT SHALL BE AS SHOWN ON STD MD 374.61-01 WITH 1 " COVER (PRECAST) AND 2" COVER (CAST IN PLACE)FROM TOP OF BASE.
5. A CONCRETE OR BRICK CHANNEL WHICH SLOPES AT LEAST 2 IN./FT TOWARD THE OUTLET SHALL BE PROVIDED IN THE FIELD.
6. GRADE AND SLOPE ADJUSTMENTS SHALL BE COMPLETED IN THE FIELD USING PRECAST ADJUSTMENT COLLAR AND MORTAR.
7. SLOPED TROUGH FLOOR TO BE CAST IN THE FIELD AND USED ONLY WHEN ROAD GRADE IS 1.5% OR LESS. WHEN SLOPED TROUGH FLOOR IS USED, ROUGHEN PRECAST TROUGH FLOOR.
8. PRECAST INLET JOINTS- THE MANUFACTURER SHALL FORM MALE AND FEMALE ENDS OF JOINTS USING THEIR OWN DESIGN. THE JOINTS SHALL BE SEALED BY THE CONTRACTOR AND MADE WATERTIGHT USING THE MANUFACTURER'S RECOMMENDED ASTM OR AASHTO APPROVED SEALANT.
9. LADDER RUNGS SHALL BE PLACED IN VERTICAL ALIGNMENT AT 1'-3" C/C. RUNGS ARE INCIDENTAL TO THE COST OF THE INLET.
10. ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER WELDING IN ACCORDANCE WITH ASTM A 123. SEE STDS. MD 374.55 & MD 374.64.
11. SEE STANDARD MD 374.65 FOR DEPRESSED GUTTER PAN.
12. SEE STANDARD MD 374.64 FOR ALTERNATE PRECAST COS TROUGHS.
13. PAY MEASUREMENTS FOR CAST IN PLACE UNIT SHALL BE THE SAME AS THE PRECAST UNIT. REFER TO NOTE 14. ALL OTHER DIMENSIONS SHOWN FOR PRECAST UNIT SHALL APPLY TO CAST IN PLACE UNIT.
14. MINIMUM DEPTH PAYMENT PER EACH SHALL BE 6'-2" MEASURED FROM THE PIPE INVERT TO THE TOP OF THE TROUGH SLAB. VERTICAL DEPTH PAYMENT PER LINEAR FOOT SHALL INCLUDE ALL DEPTHS IN EXCESS OF 6'-2" INCLUDING ALL APPURTENANCES.
15. PRECAST BASE UNIT WALLS MAY TAPER PER MANUFACTURER'S DESIGN.
16. FROM CURB LINE, INLET HAS BEEN DESIGNED FOR HS-25 LOADING, ACCORDING TO AASHTO LFRD BRIDGE DESIGN SPECIFICATIONS.
16. MODIFIED OFFSET COS INLETS WILL BE MEASURED AND PAID FOR AS EACH.

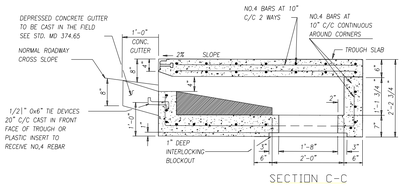
PIPE SIZE MIN.TO MAX.	CAST IN PLACE/PRECAST DIMENSIONS									Min. Distance - (ft.) Top of Curb - Pipe Invert
	W	Y	H_1 BASE	H_2 RISER	t MIN.	WALL REINFORCEMENT: CAST IN PLACE DEFORMED BARS	WALL REINFORCEMENT: PRECAST WWR	B	BASE REINFORCEMENT: CAST IN PLACE DEFORMED BARS	BASE REINFORCEMENT: PRECAST WWR	
12"	4'-0"	4'-0"	2' to 10'	1'to 5'	6	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C,1 LAYER	4X4,W7.0XW7.0	3.84
15" – 24"	4'-0"	4'-0"	2' to 10'	1'to 5'	6	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C,1 LAYER	4X4,W7.0XW7.0	4.11-4.92
27" – 33"	4'-0"	4'-0"	4' to 10'	1'to 5'	6	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C,1 LAYER	4X4,W7.0XW7.0	5.19-5.73
36"	4'-0"	4'-0"	5' to 10'	1'to 5'	6	NO. 4 @ 6" C/C, 2 LAYERS	4x4, W5.0xW5.0	7.5"	NO.4@6"C/C,1 LAYER	4X4,W7.0XW7.0	6.00



SECTION A-A
(SHOWN AS PRECAST)



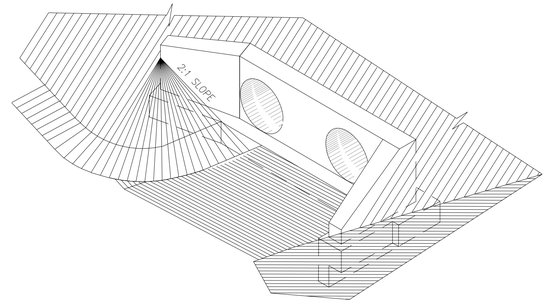
SECTION B-B
(SHOWN AS PRECAST)



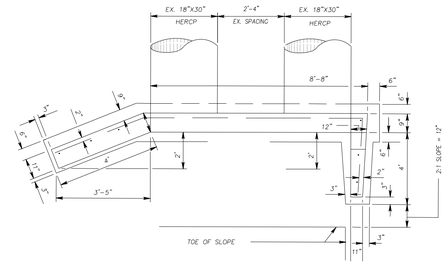
SECTION C-C

MODIFIED OFFSET COS INLET (5' or 8' OFFSET)

NOT TO SCALE



ISOMETRIC VIEW



PLAN

GENERAL NOTES

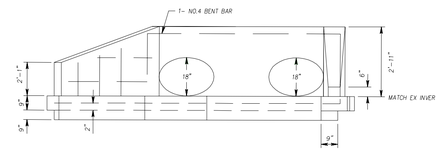
SPECIFICATIONS: LATEST S.H.A.

CONCRETE SHALL BE MIX NO.2

REINFORCING: DEFORMED STEEL BARS
VERTICAL NO.6 BARS 12" C/C
HORIZONTAL NO.4 BARS 12" C/C HOOKED ON ONE END

CHAMFER: ALL EXPOSED EDGES 1"x1" OR AS DIRECTED.

MODIFIED TYPE F ENDWALL WILL BE MEASURED AND PAID FOR AS EACH.



ELEVATION

MODIFIED TYPE F ENDWALL

NOT TO SCALE

DD-11

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DRAINAGE INLET DETAILS

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 33 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21233 — PROFESSIONAL ENGINEER — 11/15/2022

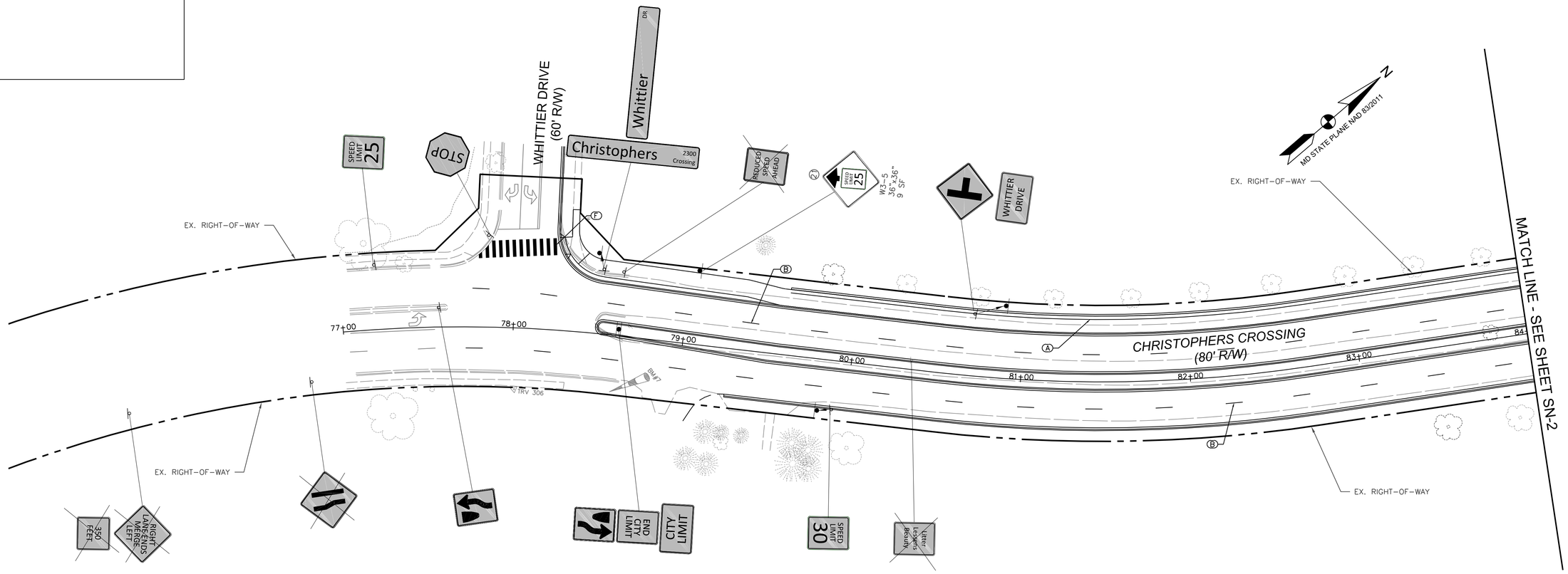
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 737-8582
EMAIL: AMT1@AMTENGINEERING.COM

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

FREDERICK COUNTY, MD SIGNAGE AND MARKING PLAN

I. GENERAL NOTES FOR SIGNAGE AND PAVEMENT MARKING SPECIFICATIONS

1. ALL SIGNAGE AND PAVEMENT MARKING SHALL COMPLY WITH THE LATEST "STANDARD SPECIFICATIONS FOR CONSTRUCTION & MATERIALS", AS PUBLISHED BY THE MARYLAND DEPARTMENT OF TRANSPORTATION (MDOT) STATE HIGHWAY ADMINISTRATION (SHA), AND LATEST REVISIONS OR ADDITIONS, INCLUDING SPECIFICATION AND LATEST REVISIONS HEREIN. THE SPECIFICATIONS SHALL HEREAFTER BE REFERRED TO AS THE SPECIFICATIONS.

   THE SPECIFICATIONS ARE ASSESSABLE ON LINE AT:

   HTTPS://WWW.ROADS.MARYLAND.GOV/OHD2/2022_STANDARD_SPECIFICATIONS_FOR CONSTRUCTION_AND_MATERIALS.PDF

2. ALL STANDARD DETAILS AND STANDARD PLATES REFERRED TO SHALL BE THOSE OF THE STATE OF MARYLAND, DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION'S "BOOK OF STANDARDS FOR HIGHWAY & INCIDENTAL STRUCTURES" OR FREDERICK COUNTY STANDARD DETAILS AND THE LATEST REVISION THERETO. THE STATE OF MARYLAND, DEPARTMENT OF TRANSPORTATION, AND STATE HIGHWAY ADMINISTRATION "BOOK OF STANDARDS" SHALL BE REFERRED TO AS THE MARYLAND STATE HIGHWAY ADMINISTRATION'S "BOOK OF STANDARDS" OR MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS. ACCESS TO THE STATE OF MARYLAND HIGHWAY ADMINISTRATION STANDARDS CAN BE FOUND ON-LINE AT:

   HTTP://APPS.ROADS.MARYLAND.GOV/BUSINESSWITHSHA/BIZSTDSSPECS/DESMANUALSTDPUB/PUBLICATIONSONLINE/OHD/BOOKSTD/INDEX.ASP

3. REFERENCES TO THE STATE OF MARYLAND, STATE, S.R.C., STATE ROADS COMMISSION, STATE HIGHWAY ADMINISTRATION, OR COMMISSION IN THESE SPECIFICATIONS SHALL BE INTERPRETED TO MEAN FREDERICK COUNTY, MARYLAND.

4. REFERENCES TO OFFICIALS OF MARYLAND STATE GOVERNMENT OR THE MARYLAND STATE HIGHWAY ADMINISTRATION BOOK OF STANDARDS SHALL BE INTERPRETED TO MEAN THE APPROPRIATE OFFICIAL IN FREDERICK COUNTY GOVERNMENT, UNLESS SPECIFIED OTHERWISE.

II. CONSTRUCTION & REQUIREMENTS

A. PAVEMENT MARKINGS: SELECTED FROM THE QUALIFIED PRODUCTS LIST (QPL)

1. ALL MARKINGS SHALL BE 5" THERMO-PLASTIC, UNLESS EXCEPTION IS REQUESTED AND GRANTED. TEMPORARY TAPE CAN BE USED ON BASE PAVEMENT AND BE COMPLETELY REMOVED BEFORE FINAL STRIPING.
2. GRINDING OF PAVEMENT MARKINGS ON FINAL WEARING SURFACE IS PROHIBITED.
3. TEMPORARY WATERBORNE PAINT MARKINGS MAY BE USED ON BASE OR TEMPORARY SURFACES ONLY AND BE 5 INCH IN WIDTH. TEMPORARY TAPE CAN BE USED ON BASE SURFACE.
4. SCHOOL ZONE CROSSWALKS SHALL HAVE LONGITUDINAL LINES (NOT DIAGONAL) AND BE EITHER A LADDER (TRANSVERSE LINES WITH LONGITUDINAL LINES THROUGH CROSSWALK) OR CROSS-HATCHED (LONGITUDINAL LINES, TO THE DIRECTION OF TRAVEL, WITHOUT TRANSVERSE LINES ON TOP AND BOTTOM OF CROSSWALK).
5. OTHER CROSSWALKS MAY BE INDICATED USING TWO TRANSVERSE LINES.
6. APPROVED PAVEMENT MARKING TYPES AND COLORS ARE SELECTED FROM THE QPL AND FOUND HERE:

   HTTPS://WWW.ROADS.MARYLAND.GOV/MDOTSHA/PAGES/INDEX.ASPX?PAGEID=600#REFLECT

B. SIGN POST MATERIAL -2 INCH SQUARE TUBE STEEL SIGN POST

   THIS WORK SHALL CONSIST OF FURNISHING AND ERECTING STEEL SIGN POSTS AS SPECIFIED IN THE CONTRACT DOCUMENTS, MANUFACTURER'S RECOMMENDATIONS OR AS DIRECTED BY THE ENGINEER. ALL POSTS REQUIRE UTILITY CLEARANCES. IF POSTS OTHER THAN THE STANDARD 2 INCH SQUARE TUBES ARE DESIRED, DOCUMENTATION OF THE REQUEST NEEDS TO BE SUBMITTED TO AND SIGNED OFF BY FREDERICK COUNTY DIVISION OF PLANNING AND PERMITTING.

1. GALVANIZED STEEL POSTS -2 INCH SQUARE, 14 GAUGE STEEL, BOLT KNOCKOUTS (NO HOLES) DRIVE RIVETS 1 INCH ON CENTER ON ALL 4 SIDES UN-PUNCHED, AND CAPPED.
2. GALVANIZED STEEL SLEEVES -2 ¼" X 36", 14 GAUGE STEEL
3. GALVANIZING FOR POSTS AND SLEEVES -A123
4. GALVANIZING FOR HARDWARE -A153
5. GALVANIZING FOR BARE METAL -A780
6. TAMPER RESISTANT BOLTS, NUTS, WASHERS, FASTENERS, RIVETS, ETC. -909.07

C. TRAFFIC SIGN REQUIREMENTS

1. 3M DG CUBED GRADE REFLECTORIZED SHEETING (DIAMOND GRADE CUBED) & 3M ELECTROCUT FILM SERIES 1170 (OR EQUIVALENT).
2. ALL SIGNS (EXCEPT STOP SIGNS) MUST HAVE ROUNDED CORNERS INCLUDING STREET NAME SIGNS (SNS).
3. STOP SIGNS MINIMUM SIZE IS 30 INCHES; 36 INCHES ON MULTILANE ROADS WITH APPROACHING SPEED LIMITS OVER 40MPH.
4. ALL SIGNS TO BE FIRMLY & SECURELY FASTENED WITH MATERIALS MEETING STANDARDS IN SECTION B.
5. WHERE FEASIBLE, MINIMIZE SIGN POSTS BY PLACING TRAFFIC SIGNS ON EXISTING POLES.
6. PLACE TRAFFIC SIGNS FOR DRIVER VISIBILITY, ESPECIALLY STOP SIGNS.
7. IDENTIFICATION STICKERS ON BACK SIDE OF SIGNS TO BE NON-REFLECTIVE SIGN GRADE SHEETING WITH STANDARD ADHESIVE. (DETAIL A).
8. MINIMUM SIGN HEIGHT TO BE 7' ABOVE GROUND SURFACE.

D. STREET NAME SIGNS (SNS) & ROAD NAME LETTERING & SHEETING

1. 3M DG CUBED GRADE REFLECTORIZED SHEETING (DIAMOND GRADE CUBED) & 3M ELECTROCUT FILM SERIES 1170 (OR EQUIVALENT)
2. ALL STREET NAME SIGNS (SNS) MUST HAVE ROUNDED CORNERS.
3. SNS -USE DOUBLE BLADE (NOT EXTRUDED BLADES).
4. ALL SIGNS TO BE FIRMLY & SECURELY FASTENED WITH MATERIALS MEETING STANDARDS IN SECTION B.
5. MOUNT SNS ABOVE STOP SIGNS WHEN PRESENT ON SIGN POSTS.
6. SIGN COLOR TO BE LATEST ADOPTED STATE STANDARD.
7. INSTALL SNS FOR BOTH MAIN STREET AND INTERSECTING STREET(S):

   A. THE MAIN SNS SHALL BE THE TOP SIGN IF INTERSECTING SNS IS PRESENT.
   B. 9 INCH HIGH DOUBLE ALUMINUM BLADES (DOUBLE OR 2 SNS BLADES TO BE USED. EXTRUDED ALUMINUM BLADES NOT PERMITTED).
   C. 6 INCH ROAD NAME, 3 INCH ROAD SUFFIX & 3 INCH HUNDRED BLOCK NUMBER WITH ARROW POINTING TOWARDS INCREASING BLOCK NUMBERS.
   D. WHITE (REFLECTORIZED) LETTERING ON GREEN (REFLECTORIZED) BACKGROUND FOR PUBLIC ROADS. FOR ROADS MAINTAINED BY THE CITY OF FREDERICK SIGNS SHALL HAVE GREEN (REFLECTORIZED) LETTERING ON WHITE (RELECTORIZED) BACKGROUND.
   E. BLACK LETTERING ON WHITE (REFLECTORIZED) BACKGROUND FOR PRIVATE ROADS.
   F. FIRST LETTER ONLY IN STREET NAME SHOULD BE CAPITALIZED.
   G. FEDERAL HIGHWAY FONT (HIGHWAY GOTHIC).

E. RIGHT-OF-WAY LANDSCAPE (AMENITIES) AGREEMENT

1. DOCUMENTATION NEEDS TO BE SUBMITTED AND APPROVED BY FREDERICK COUNTY DIVISION OF PLANNING AND PERMITTING FOR ANY TREES, SHRUBS, HARDSCAPE, ETC. THAT ARE PLANNED TO BE INSTALLED IN THE PUBLIC RIGHT-OF-WAY. THE DIVISION OF PLANNING AND PERMITTING MAY REQUIRE ADDITIONAL COORDINATION WITH THE DIVISION OF PUBLIC WORKS TO REVIEW AMENITIES THAT DRAW CONCERN TO OBSTRUCTING SAFE LINE-OF-SIGHT DISTANCES, CREATE ROADSIDE HAZARDS OR COULD CAUSE DIFFICULTIES IN MAINTAINING THE PUBLIC IMPROVEMENTS.
2. THIS AGREEMENT WILL STATE THE RESPONSIBLE OWNER(S) OF THE AMENITIES AND CLARIFY THE REQUIREMENTS AND TERMS FOR THE FUTURE MAINTENANCE, REPAIR OR REPLACEMENT OF THE AMENITIES IN THE PUBLIC RIGHT-OF-WAY IN ORDER TO BE KEPT IN GOOD CONDITION.
3. IF RESPONSIBLE OWNER(S) FAIL IN THE OBLIGATION TO KEEP AMENITIES IN GOOD CONDITION FREDERICK COUNTY HAS THE RIGHT TO TAKE NECESSARY ACTION TO REMOVE AMENITIES THREATENING PUBLIC SAFETY, HEALTH OR WELFARE AT OWNER'S EXPENSE.
4. A SAMPLE LANDSCAPING LICENSE AGREEMENT CAN BE FOUND HERE:

   HTTPS://WWW.FREDERICKCOUNTYMD.GOV/DOCUMENTCENTER/HOME/INDEX/182

0 30' 60'
SCALE: 1"=30'

LEGEND:

- EXISTING SIGN POST
- PROPOSED SIGN POST
- EXISTING SIGN TO BE RELOCATED
- EXISTING SIGN TO REMAIN
- EXISTING SIGN AND SUPPORT TO BE REMOVED
- PROPOSED SIGN

PAVEMENT MARKING LEGEND:

(A) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(B) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - 10' LINE, 30' GAP
(C) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - 3' LINE, 9' GAP
(D) WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
(E) 12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(F) 24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(G) 5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(H) 5 INCH DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

SN-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

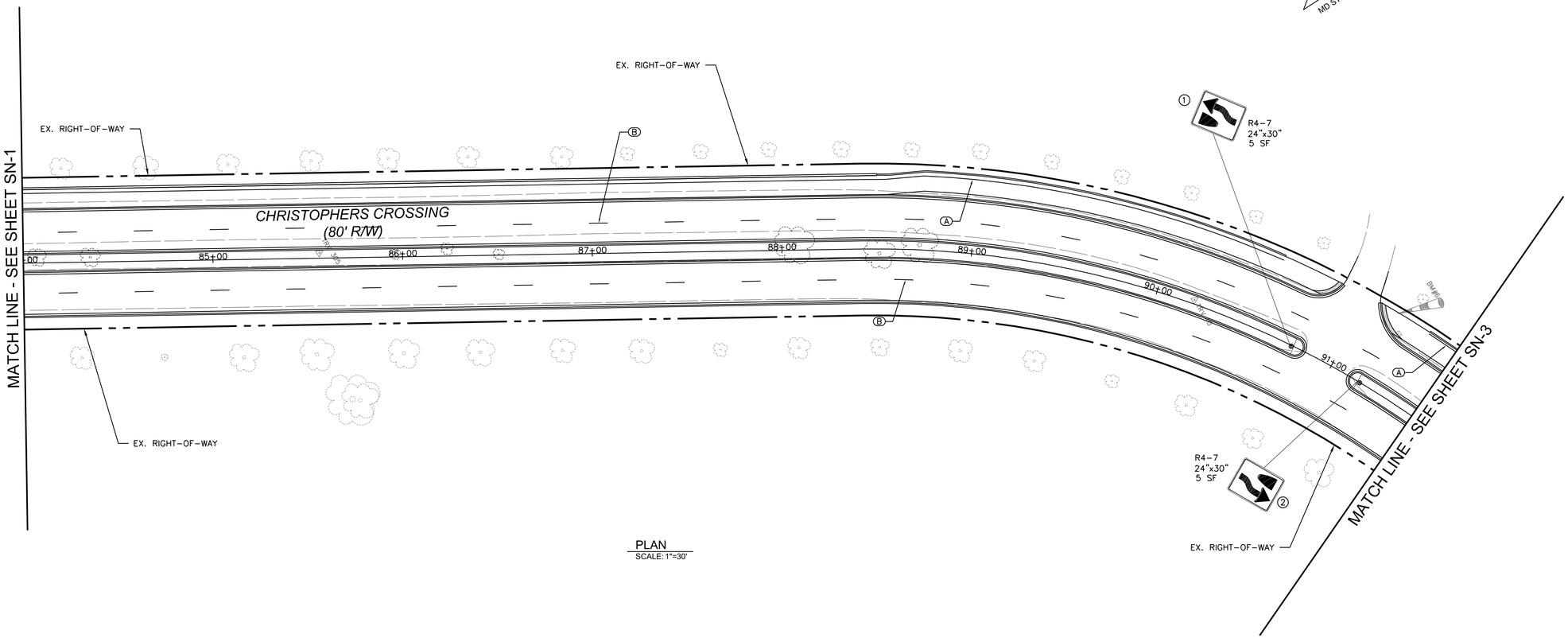
AMT FILE NO. 15-0758.007 SHEET NO. 34 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

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0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

SN-2

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

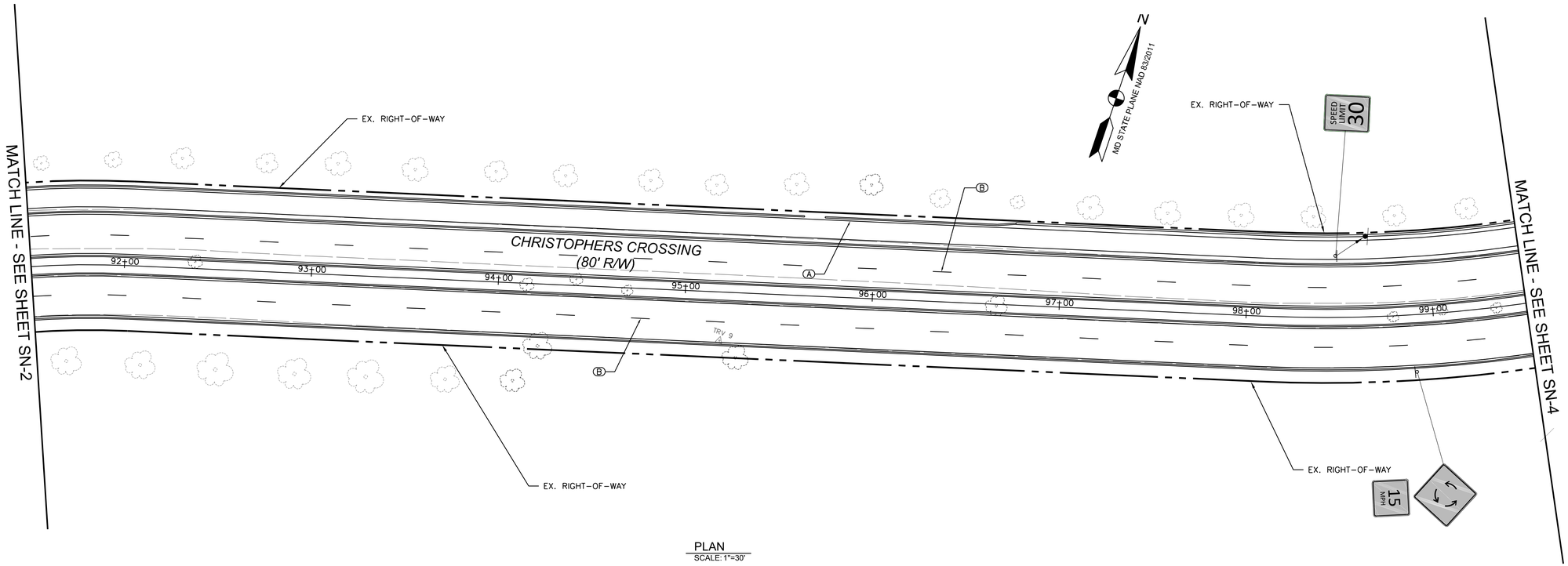
AMT FILE NO. 15-0758.007 SHEET NO. 35 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND:

- EXISTING SIGN POST
- PROPOSED SIGN POST
- EXISTING SIGN TO BE RELOCATED
- SPEED LIMIT 40 — EXISTING SIGN TO REMAIN
- SPEED LIMIT 40 — EXISTING SIGN AND SUPPORT TO BE REMOVED
- SPEED LIMIT 40 — PROPOSED SIGN

PAVEMENT MARKING LEGEND:

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0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — CHRISTOPHER M. VAN ECK — 24335 — PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

SN-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

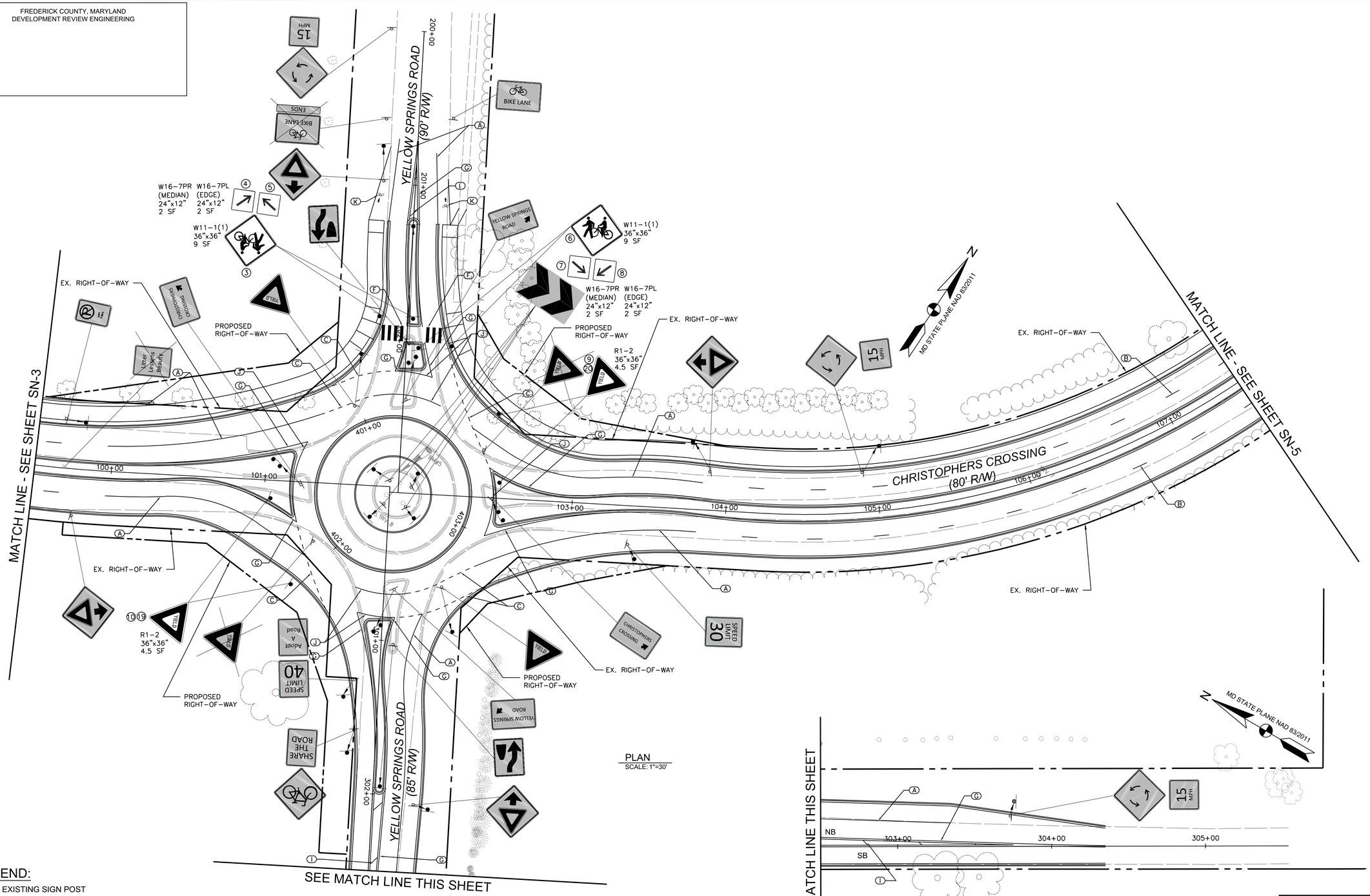
AMT FILE NO. 15-0758.007 SHEET NO. 36 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

PLAN
SCALE: 1"=30'

LEGEND:

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- PROPOSED SIGN POST
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(H) 5 INCH DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(I) 10 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(J) 10 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(K) BIKE LANE SYMBOL AND ARROW HEAT APPLIED WHITE PERMANENT PREFORMED PAVEMENT MARKING

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 24331 — PROFESSIONAL ENGINEER — 11/7/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT@AMTENGINEERING.COM

SN-4

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

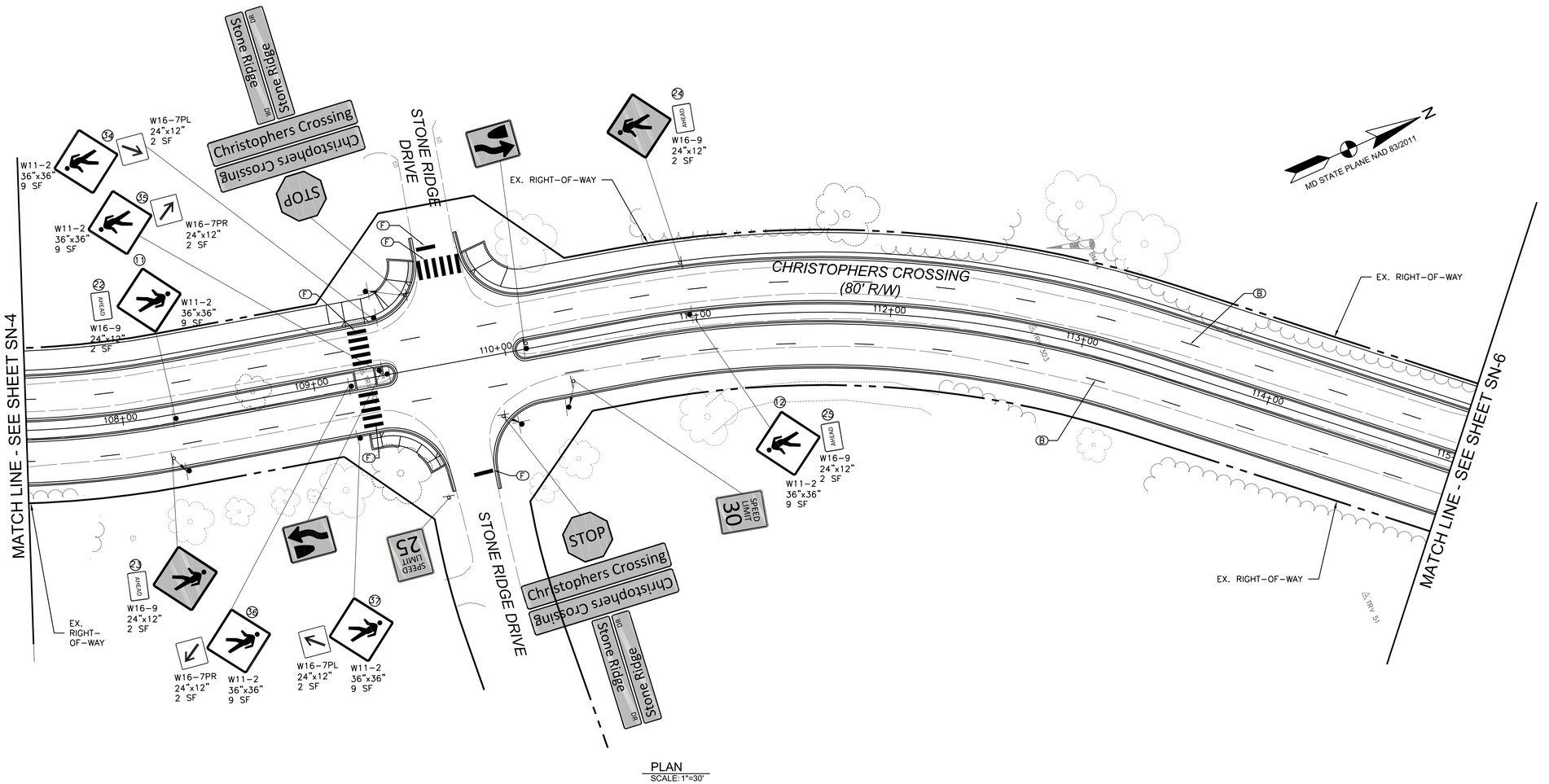
AMT FILE NO. 15-0758.007 SHEET NO. 37 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND:

- EXISTING SIGN POST
- PROPOSED SIGN POST
- EXISTING SIGN TO BE RELOCATED
- EXISTING SIGN TO REMAIN
- EXISTING SIGN AND SUPPORT TO BE REMOVED
- PROPOSED SIGN

PAVEMENT MARKING LEGEND:

Ⓐ 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
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SCALE: 1"=30'

REVISIONS		
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REGISTRATION STAMP

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SN-5

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

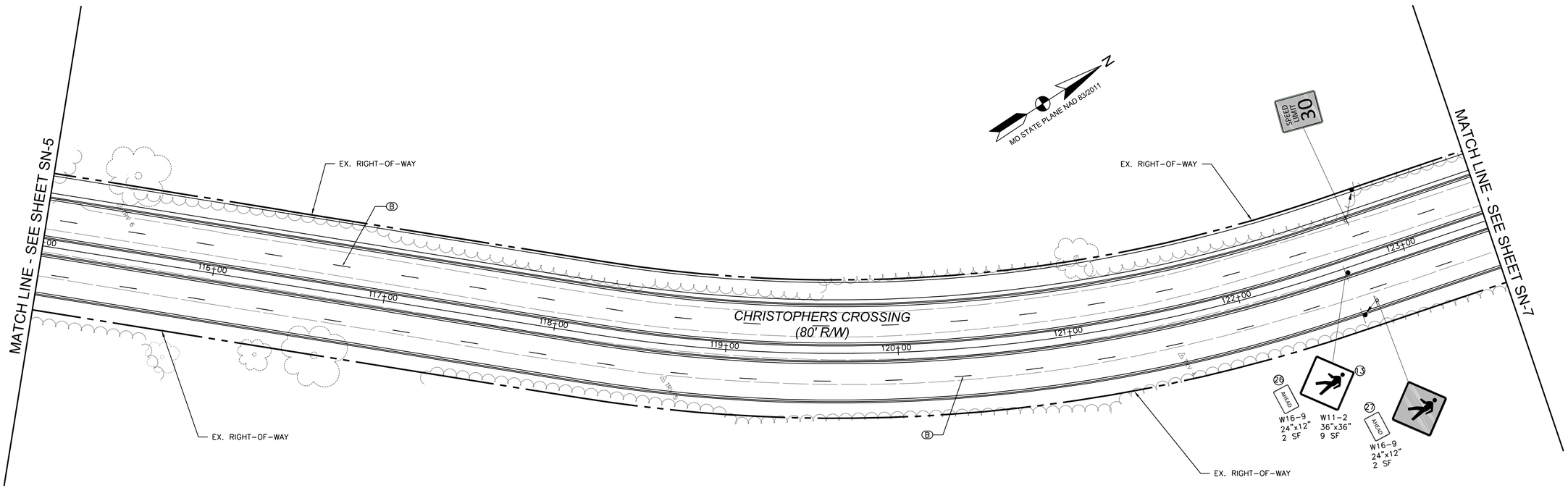
AMT FILE NO. 15-0758.007 SHEET NO. 38 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND:

- EXISTING SIGN POST
- PROPOSED SIGN POST
- EXISTING SIGN TO BE RELOCATED
- SPEED LIMIT 40 — EXISTING SIGN TO REMAIN
- SPEED LIMIT 40 — EXISTING SIGN AND SUPPORT TO BE REMOVED
- SPEED LIMIT 40 — PROPOSED SIGN

PAVEMENT MARKING LEGEND:

(A) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(B) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - 10' LINE, 30' GAP
(C) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - 3' LINE, 9' GAP
(D) WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
(E) 12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(F) 24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(G) 5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
(H) 5 INCH DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 757-8552
EMAIL: AMT1@AMTENGINEERING.COM

SN-6

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

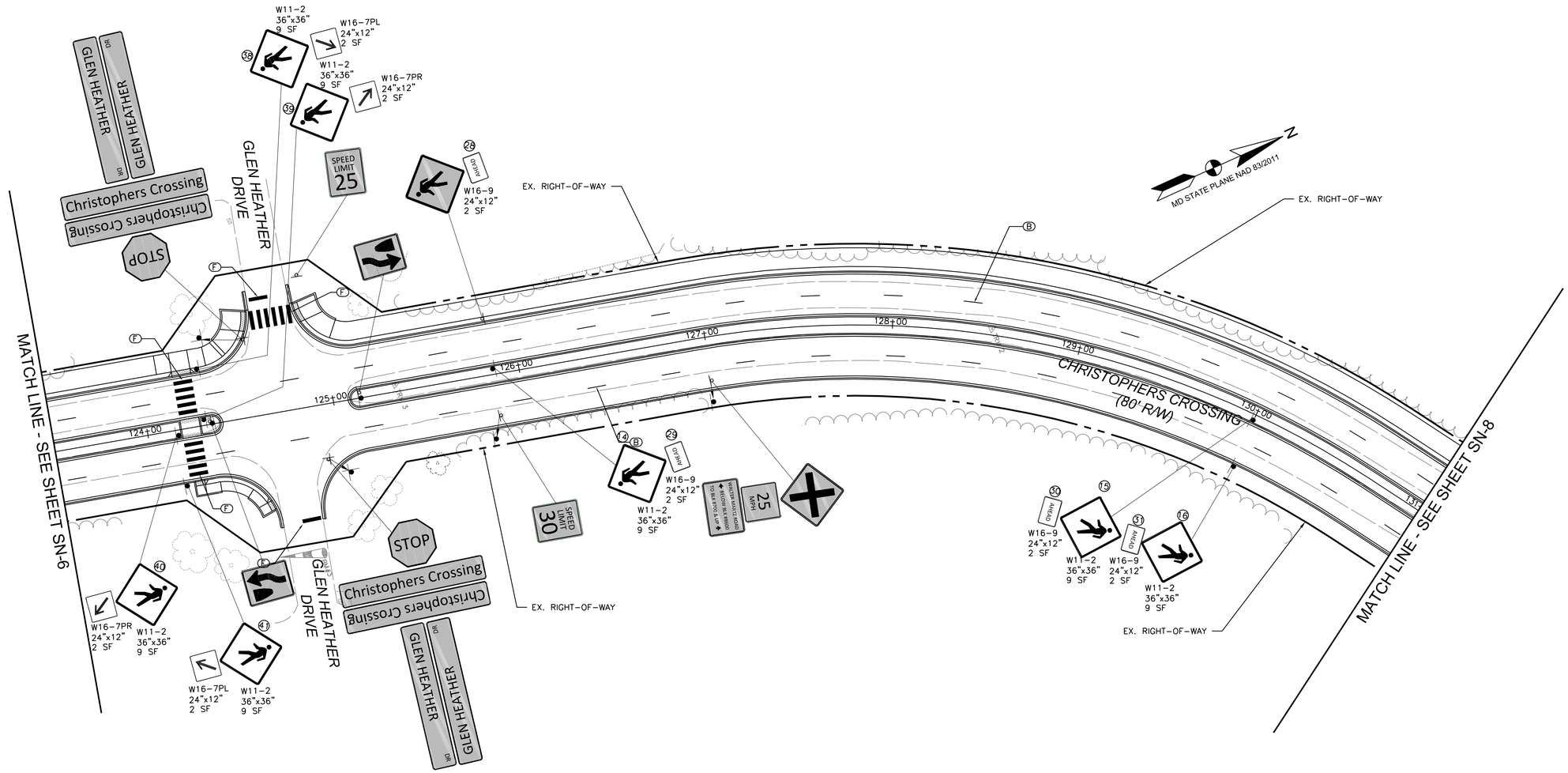
AMT FILE NO. 15-0758.007 SHEET NO. 39 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND:

- EXISTING SIGN POST
- PROPOSED SIGN POST
- EXISTING SIGN TO BE RELOCATED
- EXISTING SIGN TO REMAIN
- EXISTING SIGN AND SUPPORT TO BE REMOVED
- PROPOSED SIGN

PAVEMENT MARKING LEGEND:

- (A) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
- (B) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - 10' LINE, 30' GAP
- (C) 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - 3' LINE, 9' GAP
- (D) WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
- (E) 12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
- (F) 24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS - SOLID
- (G) 5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
- (H) 5 INCH DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JOSEPH C. MERKERT
21335
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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(410) 752-6552
EMAIL: AMT@AMTENGINEERING.COM

SN-7

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

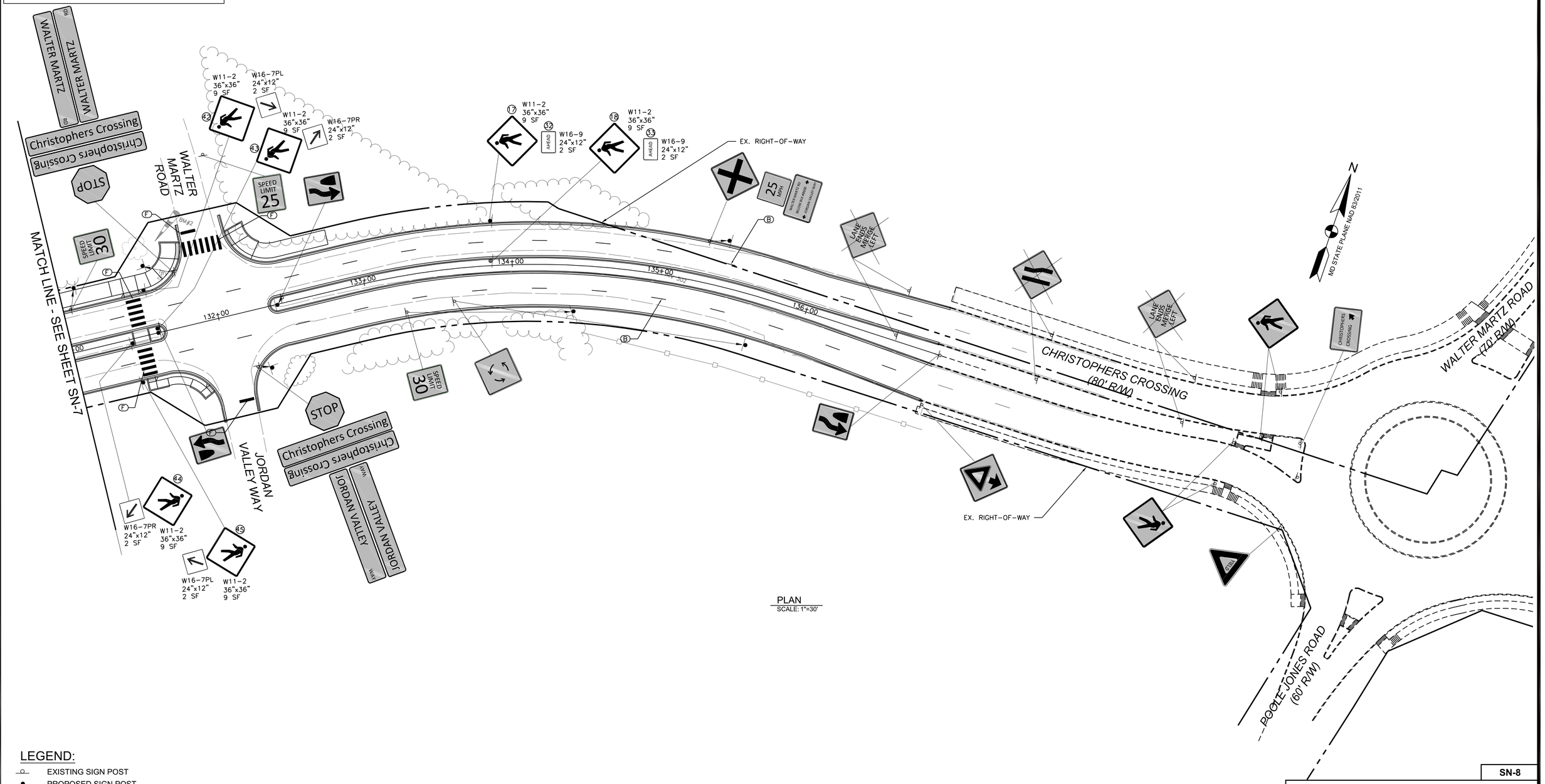
AMT FILE NO. 15-0758.007 SHEET NO. 40 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND:

- EXISTING SIGN POST
- PROPOSED SIGN POST
- EXISTING SIGN TO BE RELOCATED
- SPEED LIMIT 40 — EXISTING SIGN TO REMAIN
- SPEED LIMIT 40 — EXISTING SIGN AND SUPPORT TO BE REMOVED
- SPEED LIMIT 40 — PROPOSED SIGN

PAVEMENT MARKING LEGEND:

Ⓐ 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
Ⓑ 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - 10' LINE, 30' GAP
Ⓒ 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - 3' LINE, 9' GAP
Ⓓ WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGENDS AND SYMBOLS
Ⓔ 12 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
Ⓕ 24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS - SOLID
Ⓖ 5 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
Ⓗ 5 INCH DOUBLE YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

JACOB VAN CAMP TEW IV
21231
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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(410) 252-6552
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SN-8

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
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WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 41 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

SHEET NO.	SIGN NO.	REMARKS	CODE NUMBERS *																			
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SN-02	①	R4-7 (24"x30"), ONE STEEL U-CHANNEL POST	5	15																		
SN-02	②	R4-7 (24"x30"), ONE STEEL U-CHANNEL POST	5	15																		
SN-04	③	W11-1 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-04	④	W16-7PR (24"x12"), ONE STEEL U-CHANNEL POST	2	15																		
SN-04	⑤	W16-7PL (24"x12"), ONE STEEL U-CHANNEL POST	2	15																		
SN-04	⑥	W11-1 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-04	⑦	W16-7PR (24"x12"), ONE STEEL U-CHANNEL POST	2	15																		
SN-04	⑧	W16-7PL (24"x12"), ONE STEEL U-CHANNEL POST	2	15																		
SN-04	⑨	R1-2 (36"x36"x36"), ONE STEEL U-CHANNEL POST	4.5	15																		
SN-04	⑩	R1-2 (36"x36"x36"), ONE STEEL U-CHANNEL POST	4.5	15																		
SN-05	⑪	W11-2 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-05	⑫	W11-2 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-06	⑬	W11-2 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-07	⑭	W11-2 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-07	⑮	W11-2 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-07	⑯	W11-2 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-08	⑰	W11-2 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-08	⑱	W11-2 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-04	⑲	R1-2 (36"x36"x36"), ONE STEEL U-CHANNEL POST	4.5	15																		
SN-04	⑳	R1-2 (36"x36"x36"), ONE STEEL U-CHANNEL POST	4.5	15																		
SN-01	㉑	W3-5 (36"x36"), ONE STEEL U-CHANNEL POST	9	15																		
SN-05	㉒	W16-9 (24"x12")	2																			
SN-05	㉓	W16-9 (24"x12")	2																			
SN-05	㉔	W16-9 (24"x12")	2																			
SN-05	㉕	W16-9 (24"x12")	2																			
SN-06	㉖	W16-9 (24"x12")	2																			
SN-06	㉗	W16-9 (24"x12")	2																			
SN-07	㉘	W16-9 (24"x12")	2																			
SN-07	㉙	W16-9 (24"x12")	2																			
SN-07	㉚	W16-9 (24"x12")	2																			
SN-07	㉛	W16-9 (24"x12")	2																			
SN-08	㉜	W16-9 (24"x12")	2																			
SN-08	㉝	W16-9 (24"x12")	2																			
SN-05	㉞	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
SN-05	㉟	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
SN-05	㊱	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
SN-05	㊲	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
SN-05	㊳	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
SN-05	㊴	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
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SN-05	㊷	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
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SN-05	㊹	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
SN-05	㊺	W11-2 (36"x36"), W16-7 (24"x12"), ONE STEEL U-CHANNEL POST	11	15																		
SN-01		RELOCATE EXISTING GROUND MOUNTED SIGNS		90	84																	
SN-03		RELOCATE EXISTING GROUND MOUNTED SIGNS		15	6																	
SN-04		RELOCATE EXISTING GROUND MOUNTED SIGNS		435	125																	
SN-05		RELOCATE EXISTING GROUND MOUNTED SIGNS		90	77																	
SN-06		RELOCATE EXISTING GROUND MOUNTED SIGNS		30	15																	
SN-07		RELOCATE EXISTING GROUND MOUNTED SIGNS		90	78																	
SN-08		RELOCATE EXISTING GROUND MOUNTED SIGNS		105	75																	
SN-01		REMOVE EXISTING GROUND MOUNTED SIGNS				18																
SN-04		REMOVE EXISTING GROUND MOUNTED SIGNS				15																
SN-07		REMOVE EXISTING GROUND MOUNTED SIGNS				54																
SN-01		5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES					790															
SN-01		24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES								110												
SN-02		5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES					1100															
SN-03		5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES					1200															
SN-04		5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES					1520															
SN-04		5" YELLOW PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES						1600														
SN-04		10" YELLOW PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES							30													
SN-04		24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES								70												
SN-05		5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES					400															
SN-05		24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES								190												
SN-06		5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES					425															
SN-07		5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES					400															
SN-07		24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES								180												
SN-08		5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES					300															
SN-08		24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES								190												
SN-04		24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES									40											
ESTIMATED QUANTITIES			291	1350	460	85	6135	1600	30	740	40	#	#	#	#	#	#	#	#	#	#	#
PROPOSAL QUANTITIES			300	1350	460	90	6135	1600	30	750	40	#	#	#	#	#	#	#	#	#	#	#

* CODE NUMBER DESCRIPTION & UNIT		
CODE NUMBERS	DESCRIPTION	UNIT
1	SHEET ALUMINIUM SIGNS	S.F.
2	GALVANIZED STEEL U-CHANNEL POSTS	L.F.
3	RELOCATE EXISTING GROUND MOUNTED SIGNS	S.F.
4	REMOVE EXISTING GROUND MOUNTED SIGNS	S.F.
5	5" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	L.F.
6	5" YELLOW PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	L.F.
7	10" YELLOW PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	L.F.
8	24" WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LINES	L.F.
9	WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING LEGEND AND SYMBOLS	S.F.

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21235 — PROFESSIONAL ENGINEER — 9/7/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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SN-9

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

INDEX OF QUANTITIES

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 42 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

GENERAL NOTES:

1. A PRE-CONSTRUCTION MEETING SHALL BE REQUIRED WITH THE DEPARTMENT OF ENGINEERING AND CONSTRUCTION MANAGEMENT (DECM) TO DISCUSS CONSTRUCTION PHASING, UNUSUAL SITE CONDITIONS, SPECIAL REQUIREMENTS, PLEASE CALL 301-600-3508, FIVE (5) DAYS IN ADVANCE AND BETWEEN THE HOURS OF 7:30 A.M. AND 3:30 P.M.
2. ALL SIDEWALKS SHALL BE INSTALLED IN ACCORDANCE WITH CURRENT AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS AND LAWS.
3. PROGRESS MEETINGS AMONG REPRESENTATIVES OF DECM, THE CONTRACTOR, AND THE DEVELOPER MAY BE SCHEDULED ON AN AGREED TIME PERIOD TO MONITOR CONSTRUCTION PROGRESS.
4. AN INSPECTION OF THE CONSTRUCTION STAKEOUT IS REQUIRED BY DECM.
5. ALL WORK, CONSTRUCTION METHODS AND MATERIALS SHALL BE IN ACCORDANCE WITH THE MARYLAND STATE HIGHWAY ADMINISTRATION (MD SHA) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2008, HEREIN REFERRED TO AS THE SHA GRAY BOOK, AND ALL CURRENT REVISIONS AND SUPPLEMENTS. THESE SPECIFICATIONS AND STANDARDS FOR ITEMS SUCH AS INLET AND MANHOLE STRUCTURES ARE AVAILABLE ONLINE FROM THE SHA WEBSITE;

   HTTP://APPS.ROADS.MARYLAND.GOV/BUSINESSWITHSHA/BIZSTDSSDECS/DESMANUALSTDPUB/PUBLICATIONSONLINE/OHD/BOOKSTD/INDEX.ASP
6. THE CONTRACTOR SHALL CONTACT DECM 24 HOURS IN ADVANCE OF PLACING CONTROLLED FILL WITHIN THE PROPOSED ROAD RIGHT-OF-WAY. MOISTURE/DENSITY TESTING IS REQUIRED IN ACCORDANCE WITH THE APPROVED SPECIFICATIONS AND SECTION 204 OF THE SHA GRAY BOOK, AND ALL CURRENT REVISIONS AND SUPPLEMENTS. ALL MOISTURE/DENSITY TESTING FOR FILL AREAS, SUBGRADE, CULVERT AND STRUCTURE BACKFILL IS TO BE PERFORMED AND APPROVED BY THE DEVELOPER'S GEOTECHNICAL ENGINEER AND MONITORED BY DECM. ANY FAILING TESTS SHALL BE DOCUMENTED SO THAT THE AREA MAY BE RE-TESTED IN ORDER TO OBTAIN FINAL APPROVAL.
7. IF WET AREAS ARE DETERMINED PRESENT IN THE PROPOSED ROAD RIGHT-OF-WAY, UNDER DRAIN AND UNDER DRAIN OUTLETS SHALL BE INSTALLED TO ALLEVIATE POTENTIAL SUBGRADE FAILURE.
8. PROVIDE FOR DRAIN CURTAINS AND OUTLETS BEHIND ALL CURB AND GUTTER MONUMENTAL ISLANDS IN THE ROADWAY MEDIAN.
9. ALL REQUIRED ROADWAY SIGNS, BARRICADES, STRIPING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST MARYLAND VERSION OF THE FEDERAL HIGHWAY ADMINISTRATION'S, (FHWA) MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE INSTALLATION OF ALL REQUIRED ROADWAY SIGNS, INCLUDING STREET NAME SIGNS, SHALL COMMENCE THE NEXT BUSINESS DAY AFTER THE PLACEMENT OF THE BASE COURSE ASPHALT.
10. IF REQUIRED, A MAINTENANCE OF TRAFFIC (MOT) PLAN SHALL BE SUBMITTED TO THE FREDERICK COUNTY COMMUNITY DEVELOPMENT DIVISION FOR WRITTEN APPROVAL PRIOR TO COMMENCEMENT OF THE WORK. THE CONTACT NUMBER IS 301-600-1138. ANY ANTICIPATED ROAD CLOSURES SHALL BE REQUESTED IN WRITING AND REQUIRE AN APPROVED MOT/DETOUR PLAN. ALL ROAD CLOSURE REQUESTS SHALL BE APPROVED IN WRITING BY THE COUNTY PRIOR TO IMPLEMENTATION.
11. BENCHMARKS SHALL BE ESTABLISHED AND MAINTAINED UNTIL ACCEPTANCE OF THE ROADWAY IMPROVEMENTS.
12. THE CONTRACTOR SHALL BE REQUIRED TO CONTACT DECM AT LEAST 24 HOURS IN ADVANCE OF INSTALLING STORM DRAINS, STORM DRAINAGE APPURTENANCES AND CURB AND GUTTER. A PROOF ROLL IS REQUIRED PRIOR TO PLACING CURB AND GUTTER.
13. PROVIDE FOR WEEP GUTTERS IN AN INLET THROAT OPENING TO ALLOW WATER IN THE GUTTER PAN TO ENTER INTO INLETS AFTER PLACING BASE PAVING.
14. THE CONTRACTOR SHALL SCHEDULE PROOF ROLL INSPECTIONS WITH DECM A MINIMUM OF 24 HOURS IN ADVANCE, PRIOR TO PLACEMENT OF BASE ASPHALT COURSE, AND AFTER FINAL SATISFACTORY COMPLETION OF SUBGRADE DENSITY/MOISTURE TESTING; SHA GRAY BOOK SPECIFICATIONS SECTION 204.03.04 SHALL APPLY.
15. PRIOR TO PLACING THE SURFACE ASPHALT COURSE, THE BASE COURSE SHALL BE INSPECTED BY DECM. THE
16. CONTRACTOR IS REQUIRED TO CONTACT DECM A MINIMUM OF 24 HOURS IN ADVANCE OF PLACING THE SURFACE ASPHALT COURSE.

    THE FOLLOWING SHALL BE DONE PRIOR TO APPLICATION PLACEMENT OF THE FINAL SURFACE ASPHALT COURSE:

    A. ALL EXISTING BASE PAVEMENT SHALL BE EXAMINED FOR ANY DEFECTIVE AREAS. EXAMPLES INCLUDE, AND ARE NOT LIMITED TO, SUBGRADE FAILURES, ASPHALT SLIPPAGE, BROKEN CURB AND GUTTER, SETTLEMENT OF PAVED AREAS AND INLET AND MANHOLE STRUCTURES, ETC.

    B. REVIEW EXISTING BASE ASPHALT FOR A SMOOTH POLISHED SURFACE CAUSED BY CONSTRUCTION AND/OR EXISTING TRAFFIC. FOR EXAMPLE, DURING THE HOME BUILDING PROCESS.

    C. ALL AREAS AND ITEMS AS DESCRIBED IN PARAGRAPHS A) AND B) ABOVE SHALL BE REPAIRED OR REPLACED IN ACCORDANCE WITH THE ORIGINAL APPROVED DRAWINGS TO THE SATISFACTION OF DECM.

    D. POLISHED SURFACES SHALL BE "SKIM MILLED" WITH A MILLING MACHINE TO ROUGHEN THE BASE ASPHALT LAYER, AND THEN TACK COATED, TO ENHANCE ADHESION OF THE FINAL SURFACE ASPHALT COURSE.

    E. CHECK CURB AND GUTTER FOR DAMAGE AND REPLACE OR REPAIR.

1. REPLACE CURB THAT HAS DAMAGE GREATER THAN 3" DEPTH AND 6" LENGTH/DIAMETER.
2. REPLACE CURB THAT HAS BEEN CRACKED COMPLETELY THROUGH AND HAS SETTLEMENT IN EXCESS OF 1/8"
3. REPLACE CURB AT INLETS IF THERE ARE GAPS GREATER THAN THE 1/2" PREFORMED EXPANSION MATERIAL.
4. WHEN REPLACING CURB, ANY JOINT SPACING SHALL NOT BE LESS THAN FOUR (4) FEET IN LENGTH.
5. REPAIR ANY MINOR CRACKS AND CHIPS IN CURB.
6. SEAL ANY CRACKS IN GUTTER PAN. APPLY SEALER TO THE ENTIRE GUTTER PORTION AND 1" UP THE FACE OF ALL JOINTS, AS PER SECTION 602.03.01G OF THE SHA STANDARD SPECIFICATIONS.

16. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS PRIOR TO DECM RECOMMENDING ACCEPTANCE OF THE STREET(S) BY THE BOARD OF COUNTY COMMISSIONERS (BOCC). ALL PROPOSED STREETS TO BE ACCEPTED MUST PASS A FINAL WALK-THROUGH INSPECTION BY DECM AND THE FREDERICK COUNTV OFFICE OF HIGHWAY OPERATIONS (OHO).
17. PLEASE CONTACT THE DECM INSPECTION STAFF OR SUPERVISOR WITH ANY QUESTIONS.
18. DROP OFF IN SURFACE ELEVATION OF MORE THAN 2" WITHIN THE CLEARZONE MUST BE PROTECTED AT ALL TIMES. THE CONTRACTOR SHALL USE A FLAGGING OPERATION AS NEEDED TO WORK ADJACENT TO A TRAVEL LANE AND SHALL INSTALL SAFETY SLOPES AT THE EXPOSED EDGE PRIOR TO REVERTING TO NORMAL TRAFFIC CONTROL.

SEQUENCE OF CONSTRUCTION:

PHASE 1

CHRISTOPHERS CROSSING WIDENING WITH TRAIL AND SIDEWALK CONSTRUCTION

1. INSTALL TEMPORARY TRAFFIC CONTROL DEVICES ALONG CHRISTOPHERS CROSSING AND SIDE ROADS PER STANDARDS NO. MD 104.02-02 AND AS INDICATED ON PLANS. REMOVE THE EXISTING SIGNS APPROACHING THE SOUTHERN END OF THE PROJECT AS NOTED ON SHEET SN-1.
2. INSTALL EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH EROSION AND SEDIMENT CONTROL PLANS.
3. ACCESS TO SIDE ROADS AND ENTRANCES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
4. CONSTRUCT OUTSIDE CURB, TRAIL AND SIDEWALK AS INDICATED ON PLANS, MAINTAINING A SINGLE LANE IN EACH DIRECTION
5. CONSTRUCT PIPE CROSSINGS ACROSS CHRISTOPHERS CROSSING UNDER FLAGGING OPERATION PER STANDARDS NO. MD 104.02-10, DURING OFF-PEAK HOURS.

PHASE 2

CHRISTOPHER CROSSING MEDIAN AND ROUNDABOUT

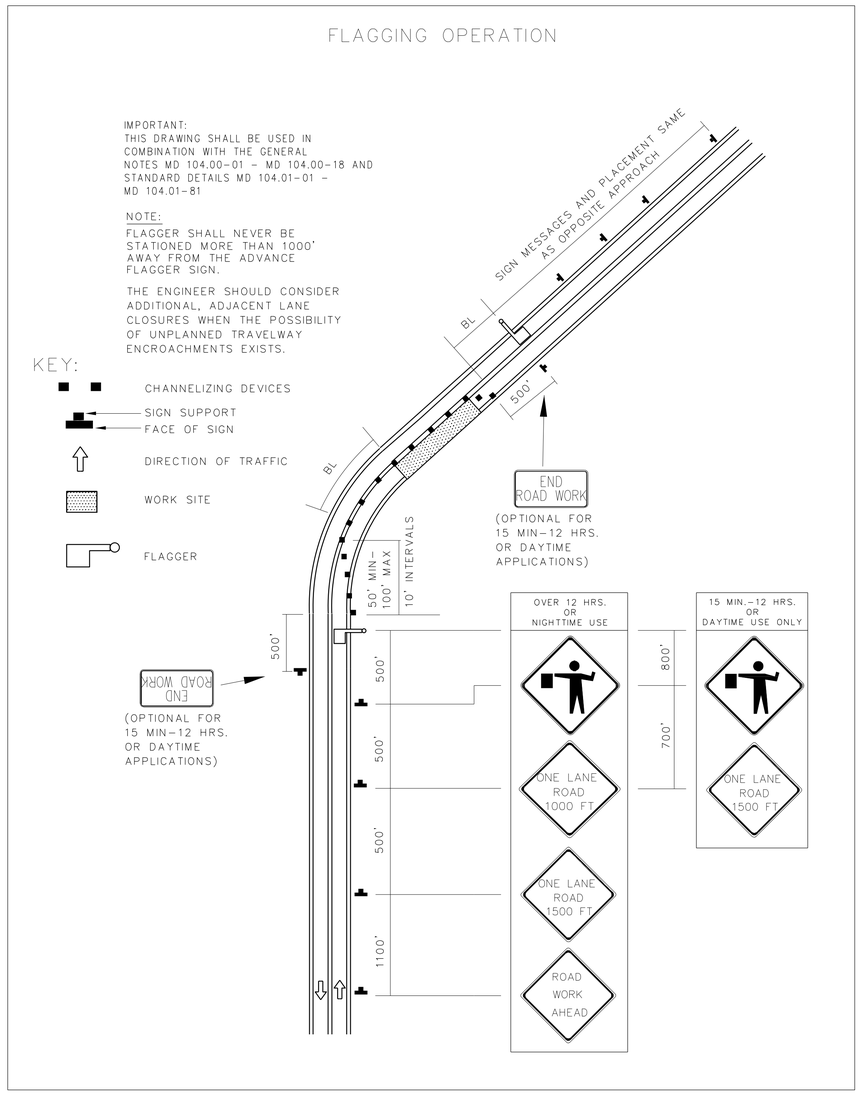
1. INSTALL TEMPORARY TRAFFIC CONTROLS ALONG CHRISTOPHERS CROSSING PER STANDARDS NO. MD 104.04-02 AND AS INDICATED ON PLANS.
2. INSTALL SEDIMENT CONTROLS IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS.
3. ADJUST TRAFFIC DEVICES AT ROUNDABOUT TO REMOVE EXISTING SPLITTER ISLANDS BEFORE MEDIAN CONSTRUCTION.
4. CONSTRUCT MEDIAN AND ROUNDABOUT MAINTAINING A SINGLE LANE IN EACH DIRECTION.
5. ACCESS TO SIDE ROADS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

PHASE 3

FINAL HMA SURFACE COURSE

1. DURING OFF-PEAK HOURS PERFORM NECESSARY GRINDING AND RESURFACING, WEDGING AND LEVELING AND PLACE FINAL SURFACE COURSE AS INDICATED ON THE PLANS UNDER FLAGGING OPERATION PER STANDARDS NO. MD 104.02-10.
2. REMOVE EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLANS AND APPLY PAVEMENT MARKINGS PER THE SIGNING AND PAVEMENT MARKING SHEETS.

FLAGGING OPERATION



TP-1

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC - GENERAL NOTES

DATE: SEPTEMBER 2022 SCALE:

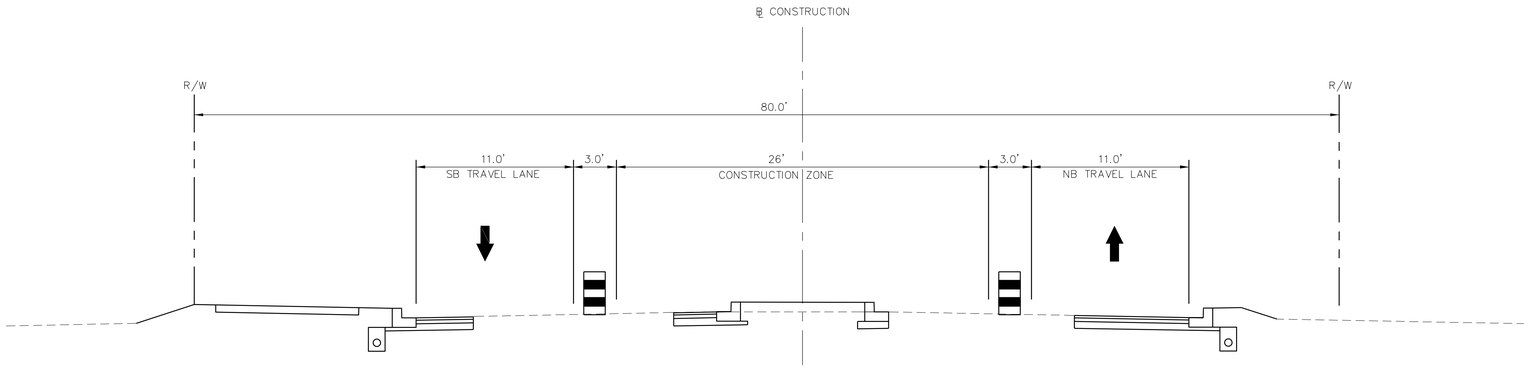
AMT FILE NO. 15-0758.007 SHEET NO. 43 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

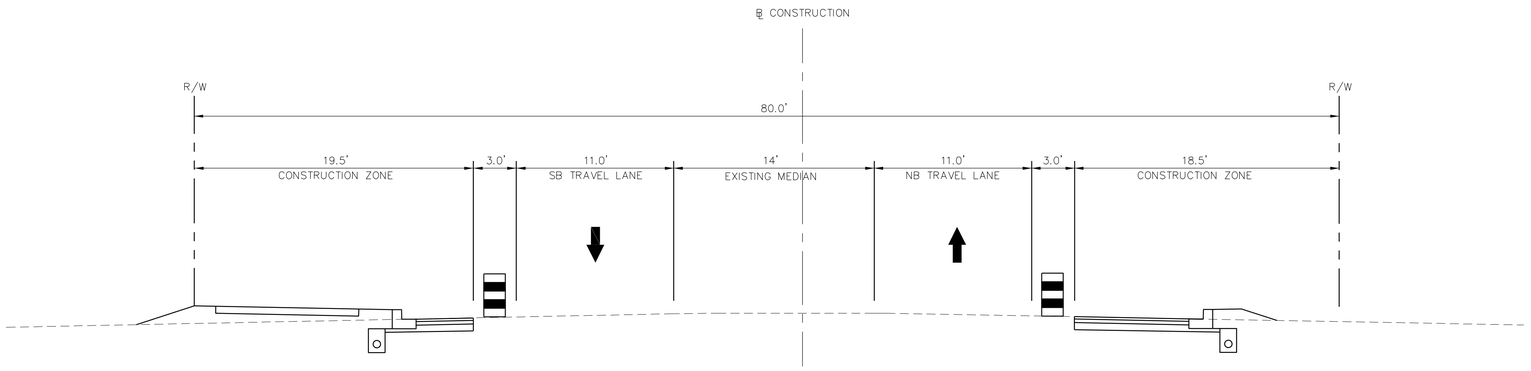
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



TYPICAL SECTION - PHASE 2



TYPICAL SECTION - PHASE 1

TP-2

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC TYPICAL SECTIONS

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 44 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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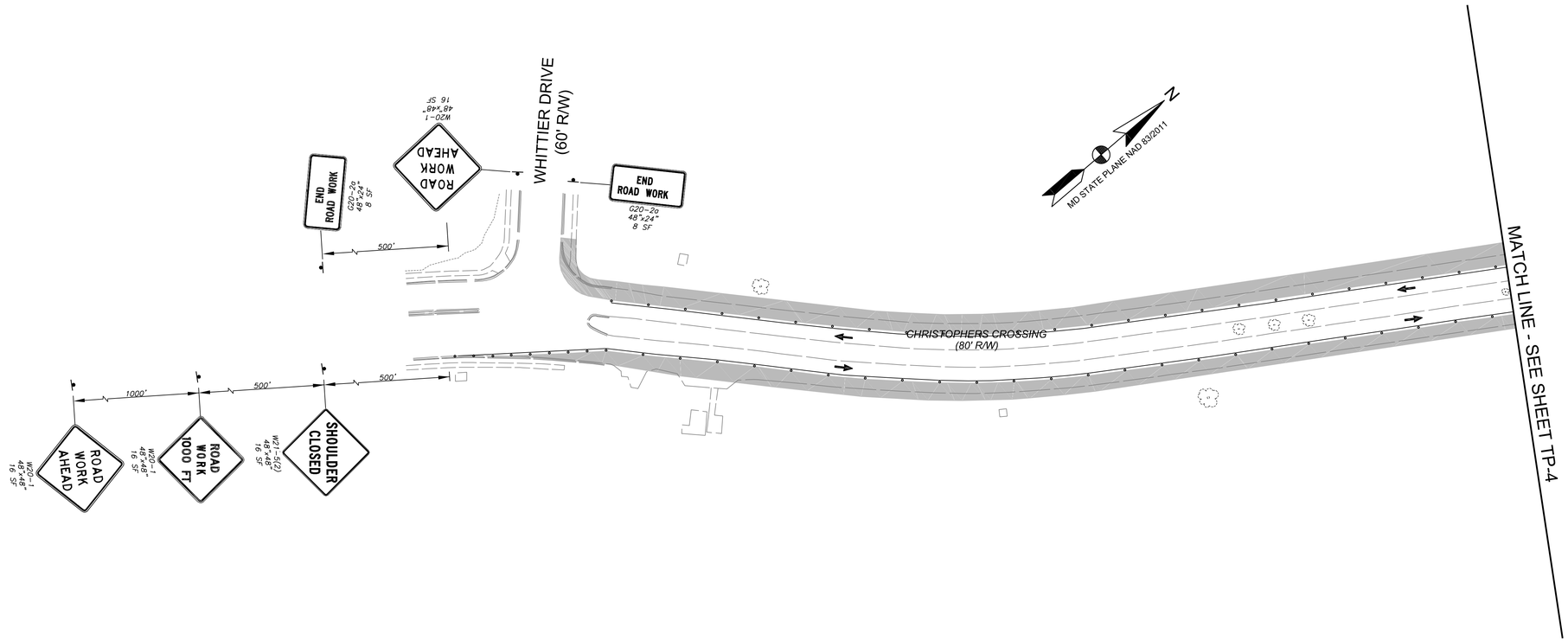
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

0 50' 100'
SCALE: 1"=50'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JAMES W. CRAIG
21339
PROFESSIONAL ENGINEER
11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

TP-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 1

DATE: SEPTEMBER 2022 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 45 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

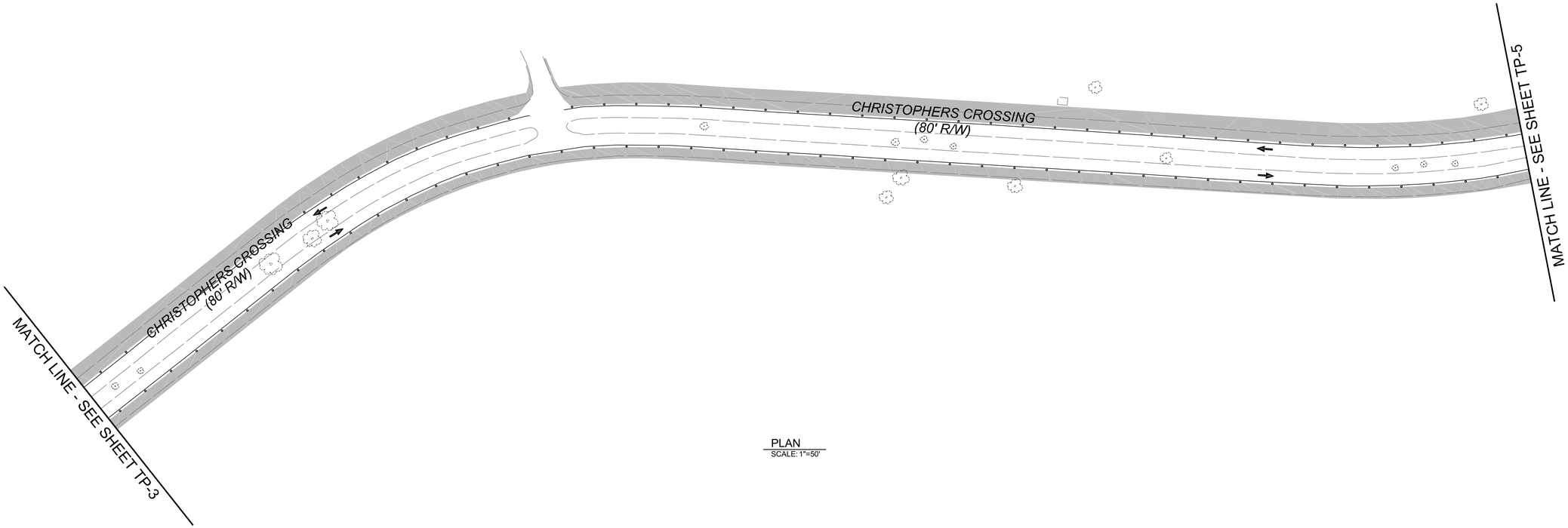
APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

N

MD STATE PLANE NAD 83/2011



PLAN
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

0 50' 100'
SCALE: 1"=50'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JOSEPH A. MORTON THOMAS
21235
PROFESSIONAL ENGINEER
11/7/2022

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

TP-4

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 1

DATE: SEPTEMBER 2022 SCALE: 1"=50'

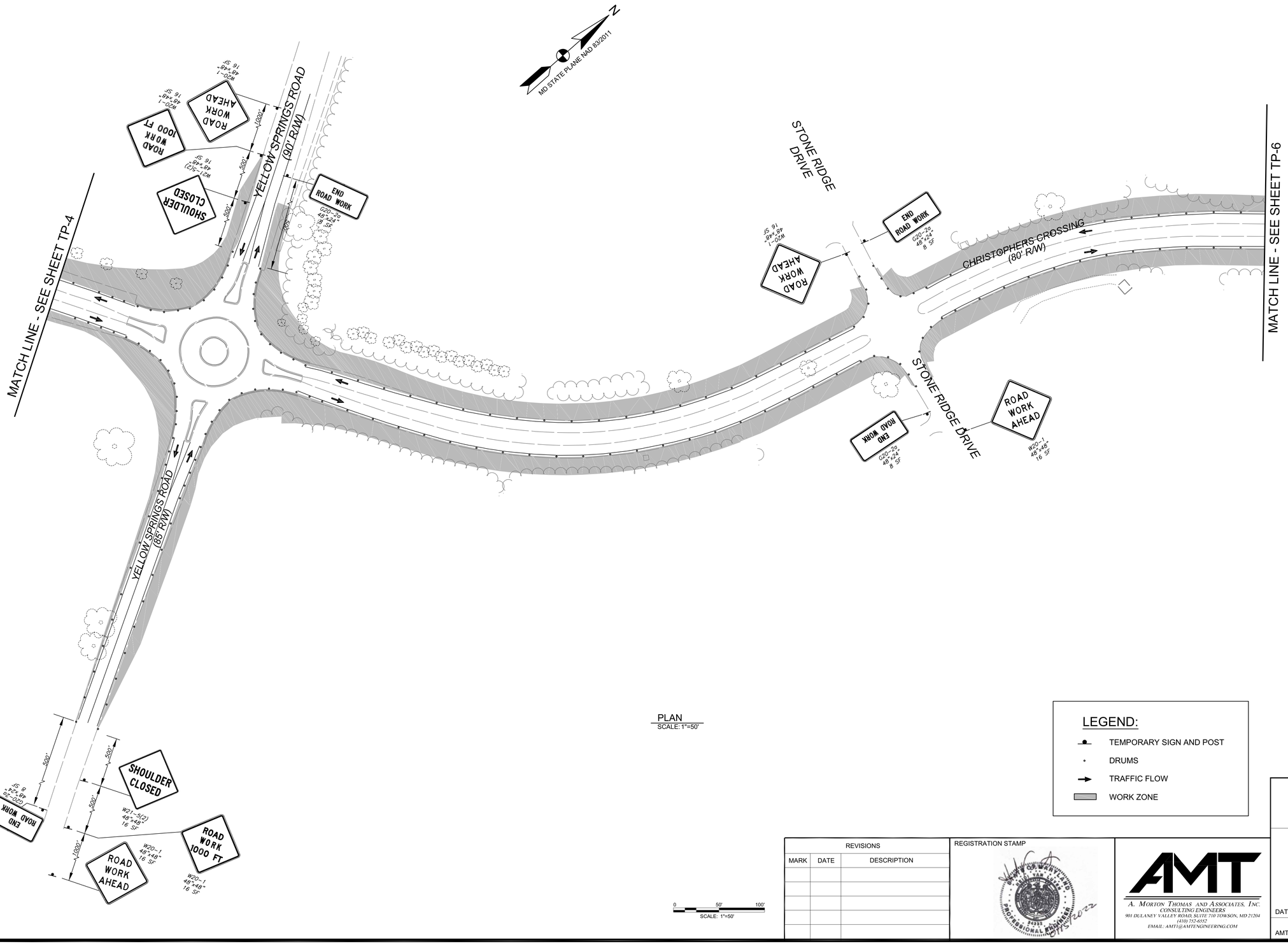
AMT FILE NO. 15-0758.007 SHEET NO. 46 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=50'

0 50' 100'
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STEVEN C. WARFIELD
No. 24331
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

TP-5

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 1

DATE: SEPTEMBER 2022 SCALE: 1"=50'

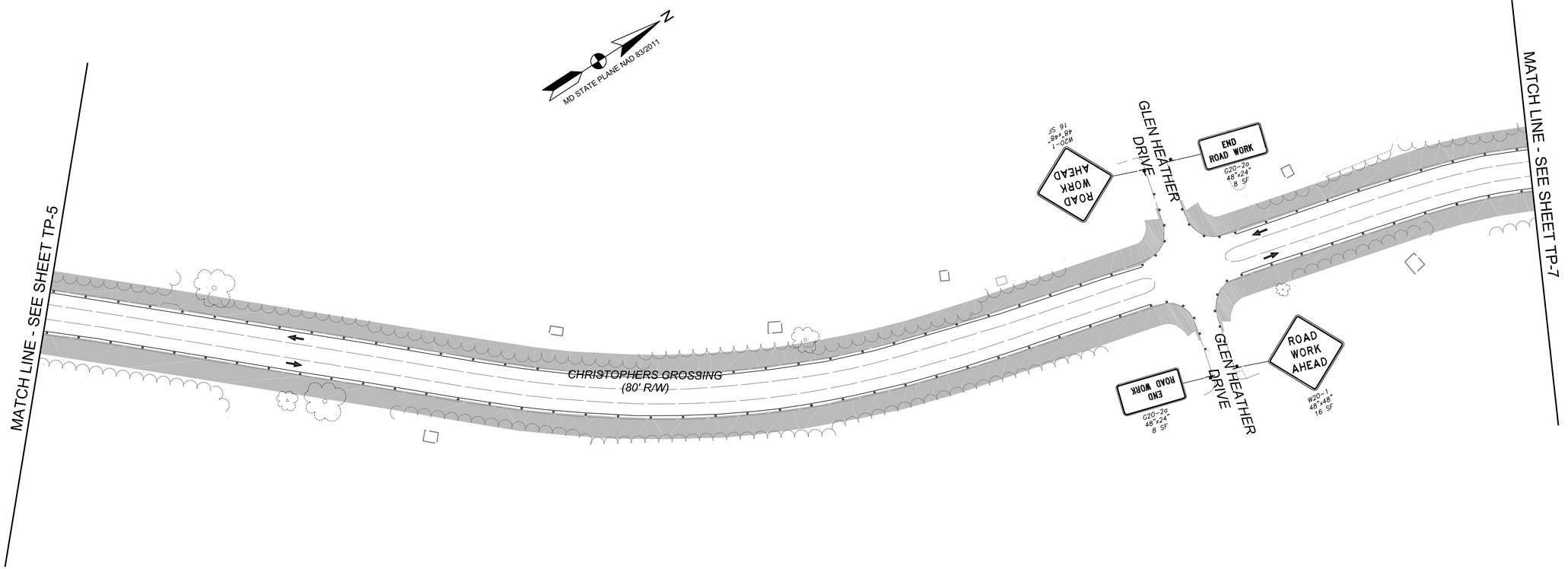
AMT FILE NO. 15-0758.007 SHEET NO. 47 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

0 50' 100'
SCALE: 1"=50'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JOHN W. THOMAS
24231
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

TP-6

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 1

DATE: SEPTEMBER 2022 SCALE: 1"=50'

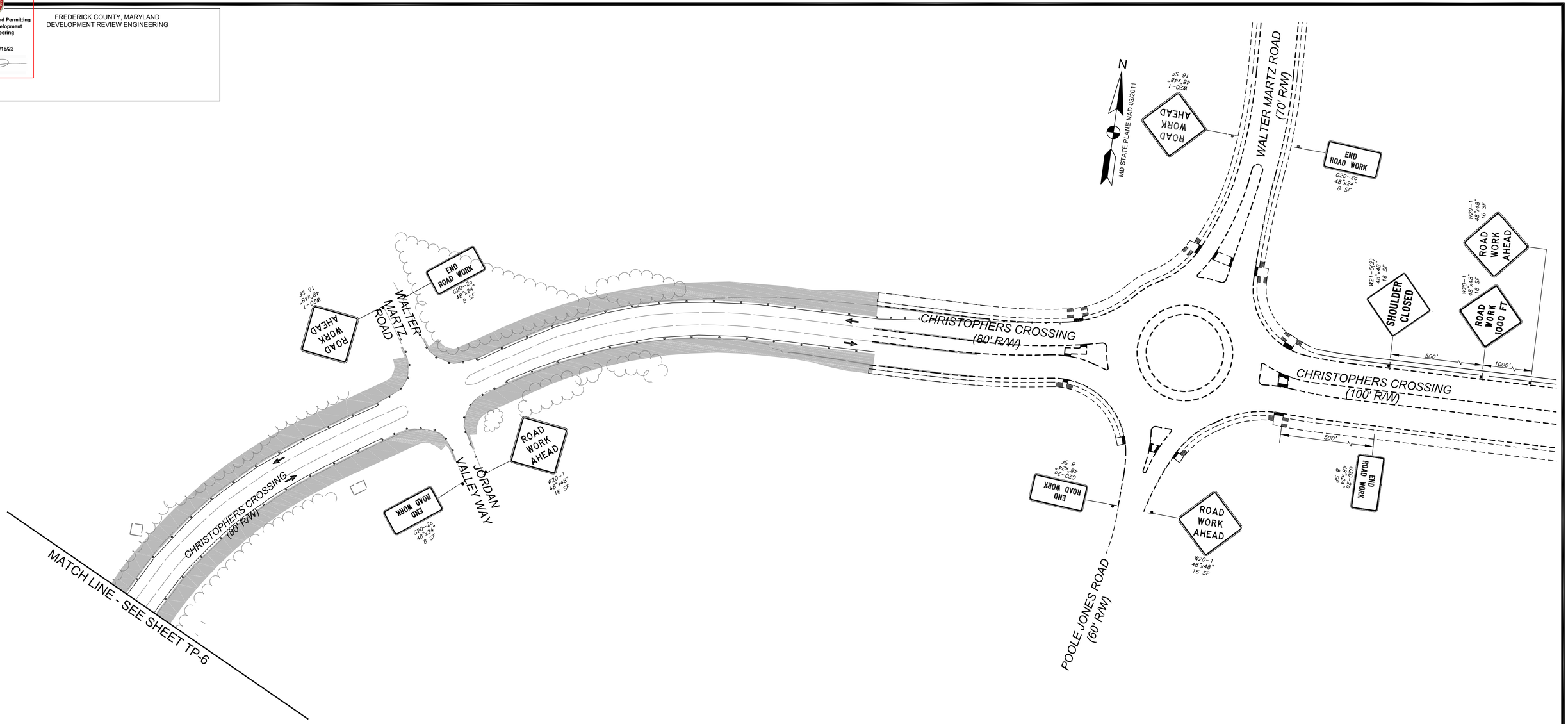
AMT FILE NO. 15-0758.007 SHEET NO. 48 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

0 50' 100'
SCALE: 1"=50'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — JOHN W. TAYLOR — 24331 — PROFESSIONAL ENGINEER
11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

TP-7

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 1

DATE: SEPTEMBER 2022 SCALE: 1"=50'

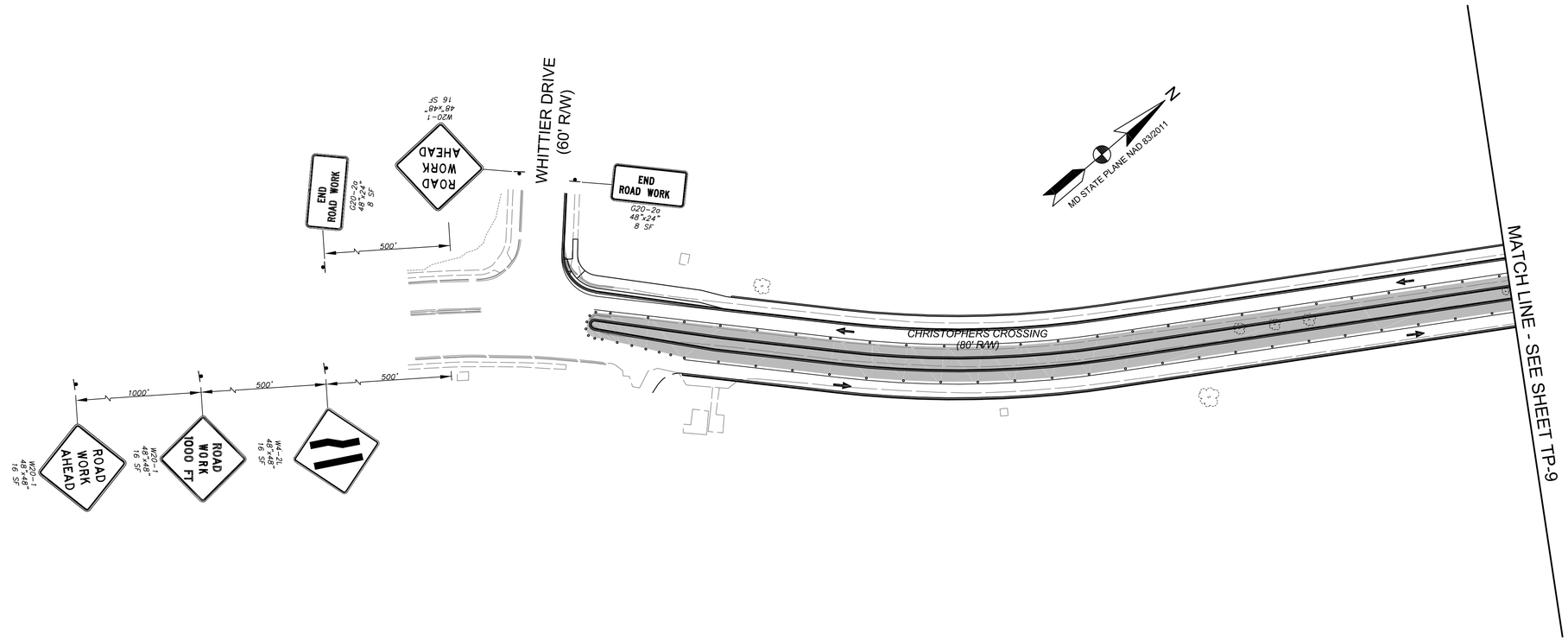
AMT FILE NO. 15-0758.007 SHEET NO. 49 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

0 50' 100'
SCALE: 1"=50'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
MATTHEW T. GRIMES
21331
PROFESSIONAL ENGINEER
11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

TP-8

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 2

DATE: SEPTEMBER 2022 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 50 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

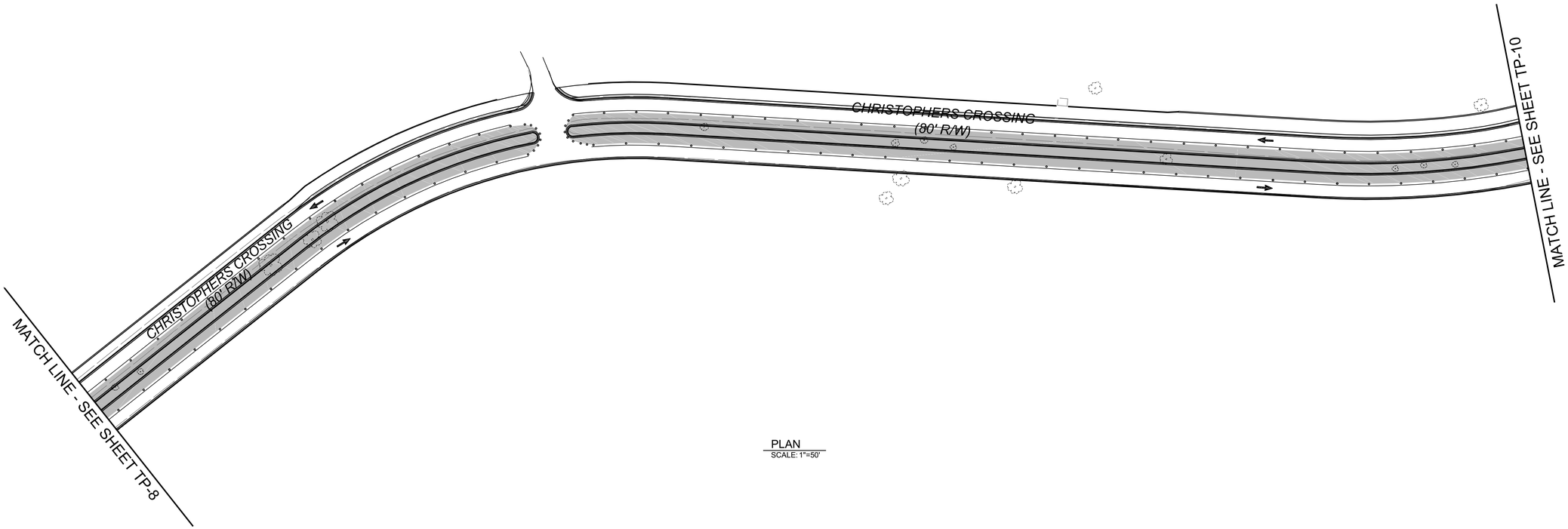
APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

N

MD STATE PLANE NAD 83/2011



PLAN
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

0 50' 100'
SCALE: 1"=50'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
24335
PROFESSIONAL ENGINEER
11/16/2022

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

TP-9

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 2

DATE: SEPTEMBER 2022 SCALE: 1"=50'

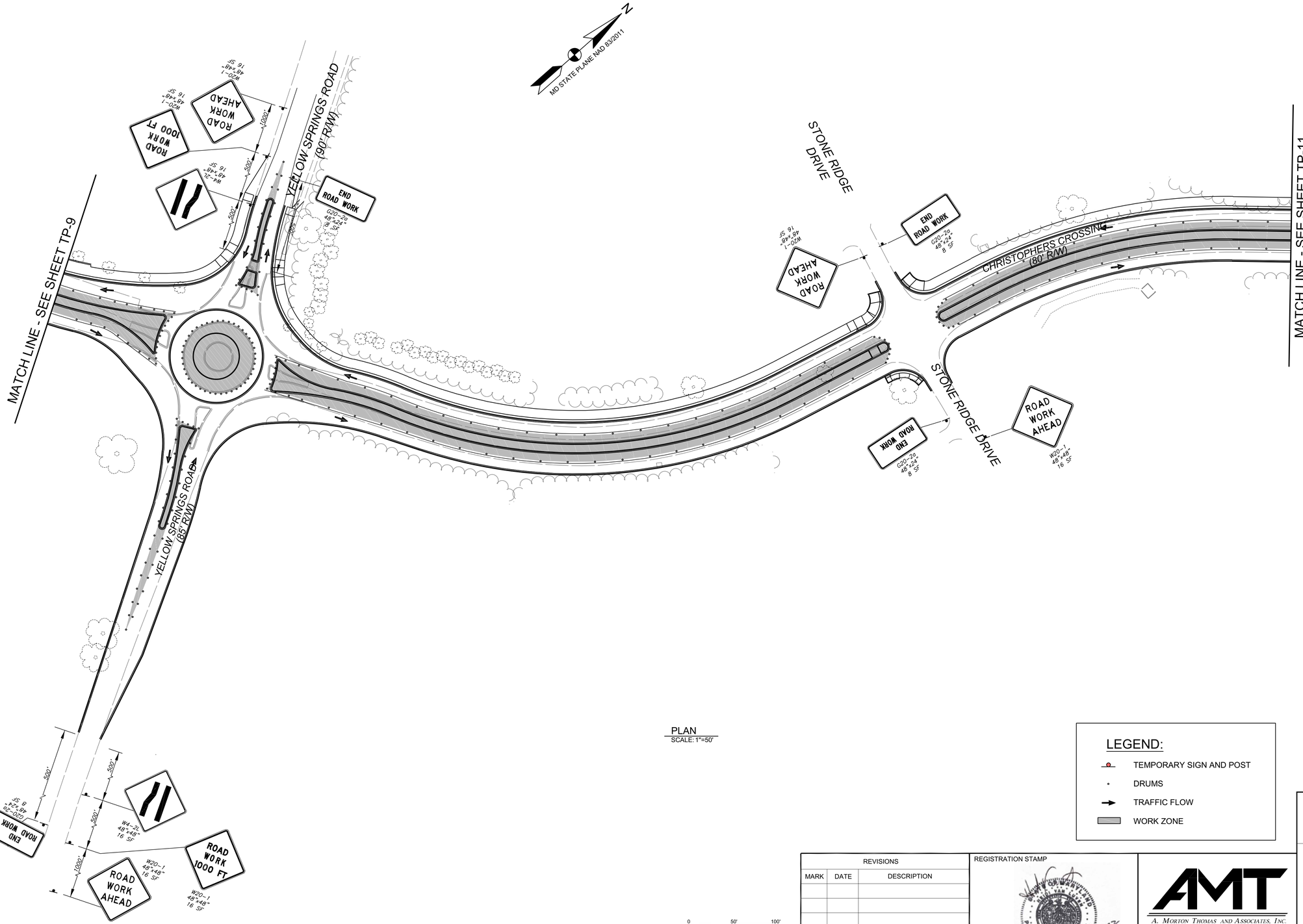
AMT FILE NO. 15-0758.007 SHEET NO. 51 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=50'

0 50' 100'
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

TP-10

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 2

DATE: SEPTEMBER 2022 SCALE: 1"=50'

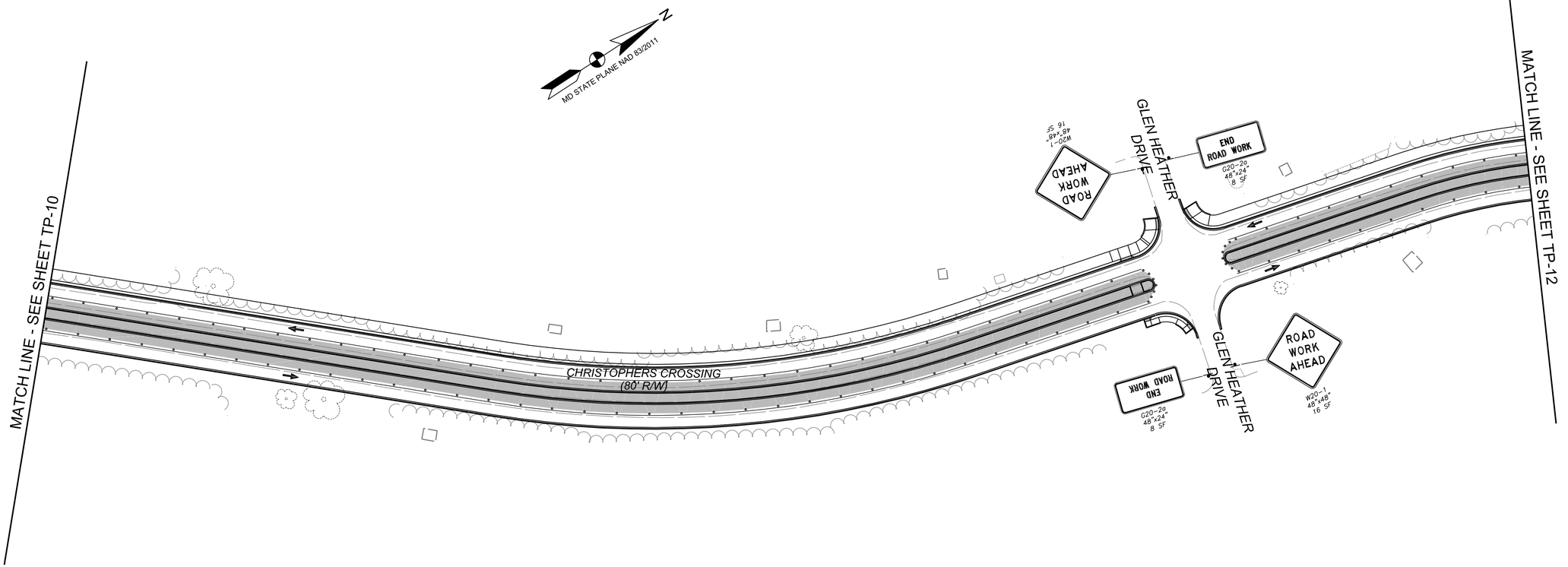
AMT FILE NO. 15-0758.007 SHEET NO. 52 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

0 50' 100'
SCALE: 1"=50'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JOHN W. THOMAS
24231
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
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(410) 752-8352
EMAIL: AMT1@AMTENGINEERING.COM

TP-11

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 2

DATE: SEPTEMBER 2022 SCALE: 1"=50'

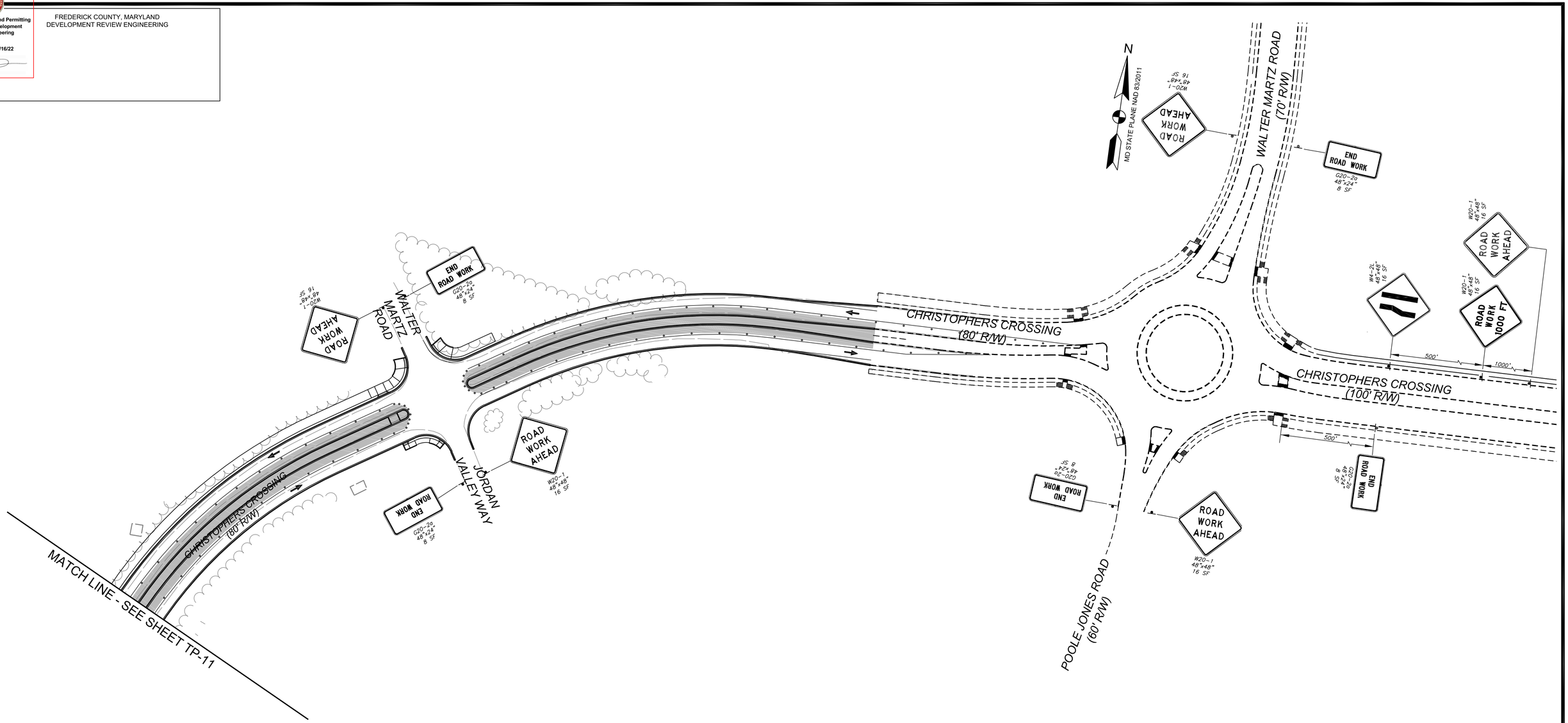
AMT FILE NO. 15-0758.007 SHEET NO. 53 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=50'

LEGEND:

- TEMPORARY SIGN AND POST
- DRUMS
- TRAFFIC FLOW
- WORK ZONE

0 50' 100'
SCALE: 1"=50'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND · KELLY M. MORTON · 24231 · PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

TP-12

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

MAINTENANCE OF TRAFFIC PHASE 2

DATE: SEPTEMBER 2022 SCALE: 1"=50'

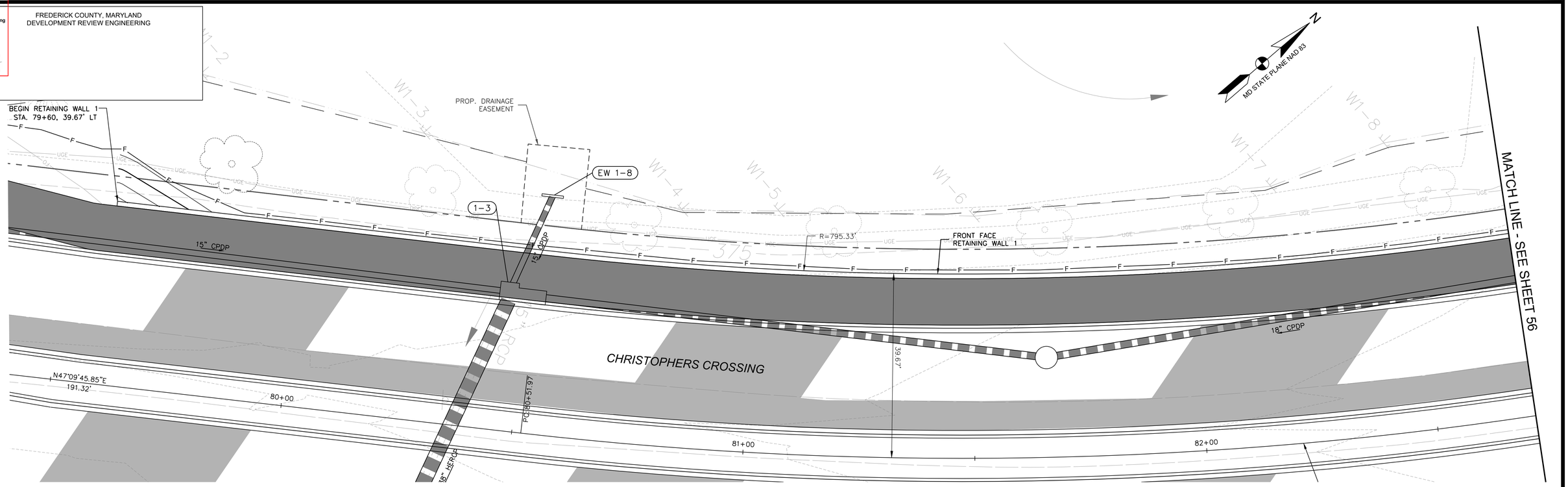
AMT FILE NO. 15-0758.007 SHEET NO. 54 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

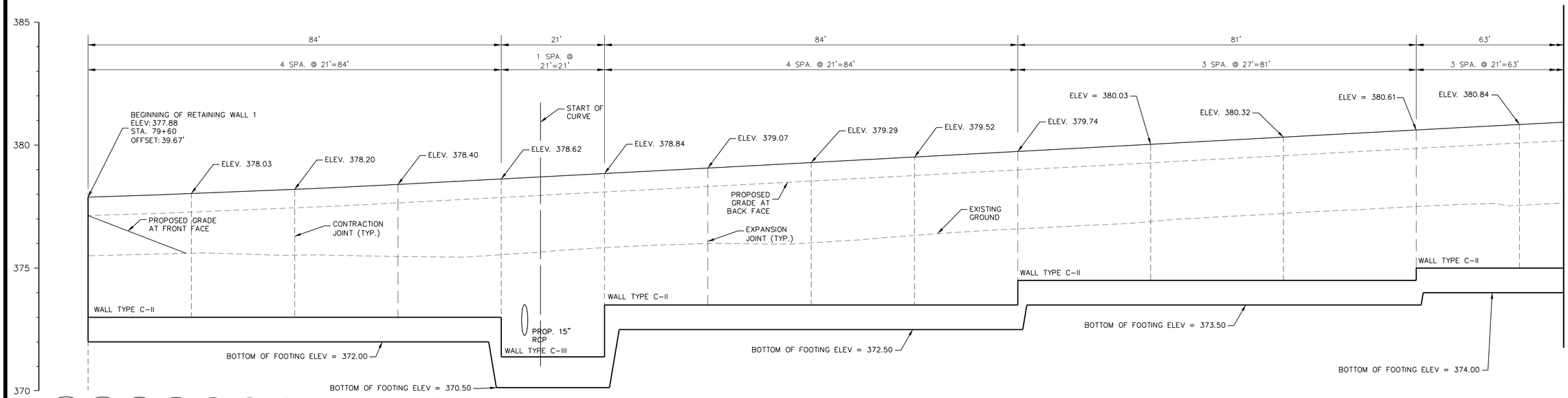
APPROVED: 11/16/22

Signature:

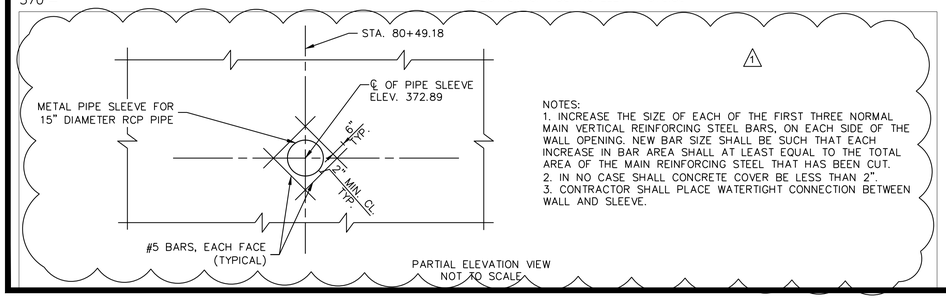
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



RETAINING WALL 1 PLAN
SCALE: 1"=10'



RETAINING WALL 1 PROFILE
SCALE: HORZ 1"=10'
VERT 1"=2'



PARTIAL ELEVATION VIEW
NOT TO SCALE

NOTES:
1. INCREASE THE SIZE OF EACH OF THE FIRST THREE NORMAL MAIN VERTICAL REINFORCING STEEL BARS, ON EACH SIDE OF THE WALL OPENING. NEW BAR SIZE SHALL BE SUCH THAT EACH INCREASE IN BAR AREA SHALL AT LEAST EQUAL TO THE TOTAL AREA OF THE MAIN REINFORCING STEEL THAT HAS BEEN CUT.
2. IN NO CASE SHALL CONCRETE COVER BE LESS THAN 2".
3. CONTRACTOR SHALL PLACE WATERTIGHT CONNECTION BETWEEN WALL AND SLEEVE.

0 10' 20'
SCALE: 1"=10'

NOTE:
1. ALL DIMENSIONS MEASURED AT FRONT FACE OF RETAINING WALL

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

REGISTRATION STAMP

STATE OF MARYLAND
SCOTT VAN LAETHEM
21335
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT@AMTENGINEERING.COM

RW-1-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL 1 PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

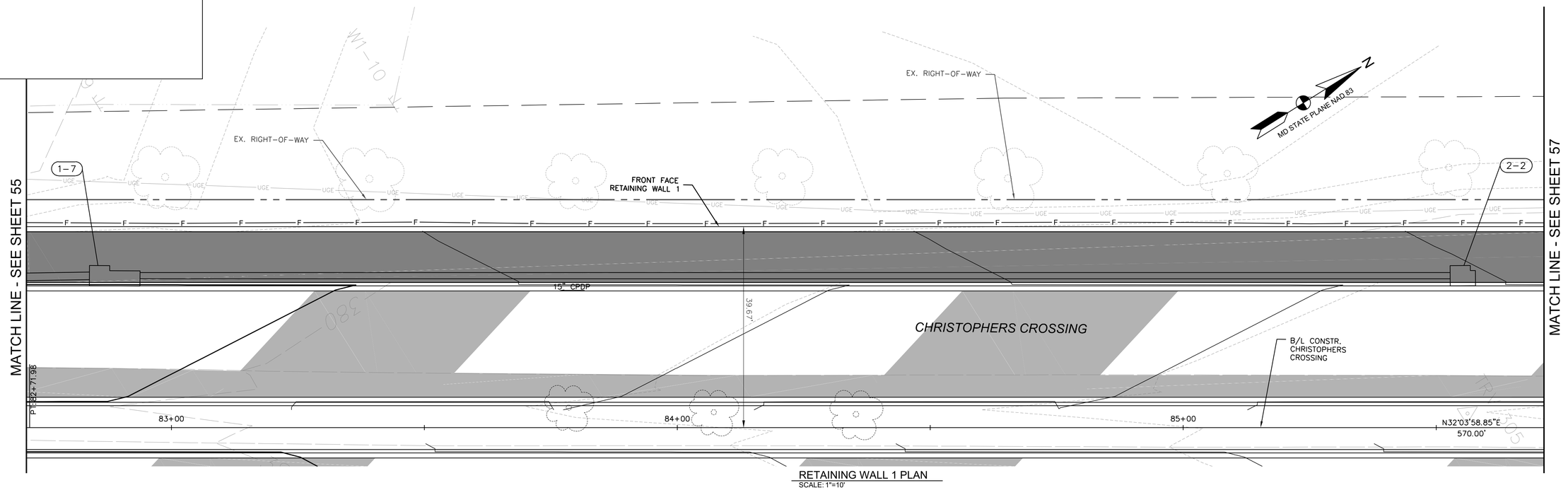
AMT FILE NO. 15-0758.007 SHEET NO. 55 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

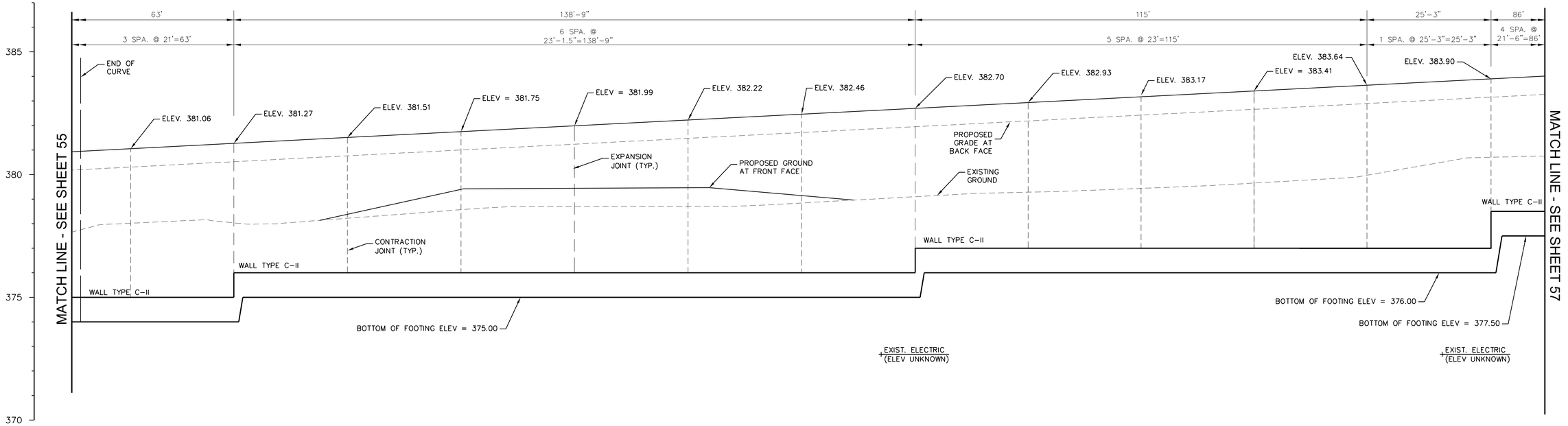
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



RETAINING WALL 1 PLAN
SCALE: 1"=10'



RETAINING WALL 1 PROFILE
SCALE: HORZ 1"=10'
VERT 1"=2'

NOTE:
1. ALL DIMENSIONS MEASURED AT FRONT FACE OF RETAINING WALL

0 10' 20'
SCALE: 1"=10'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND · STEVEN M. VAN HORN · 21335 · PROFESSIONAL ENGINEER
11/7/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL 1 PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 56 OF 121

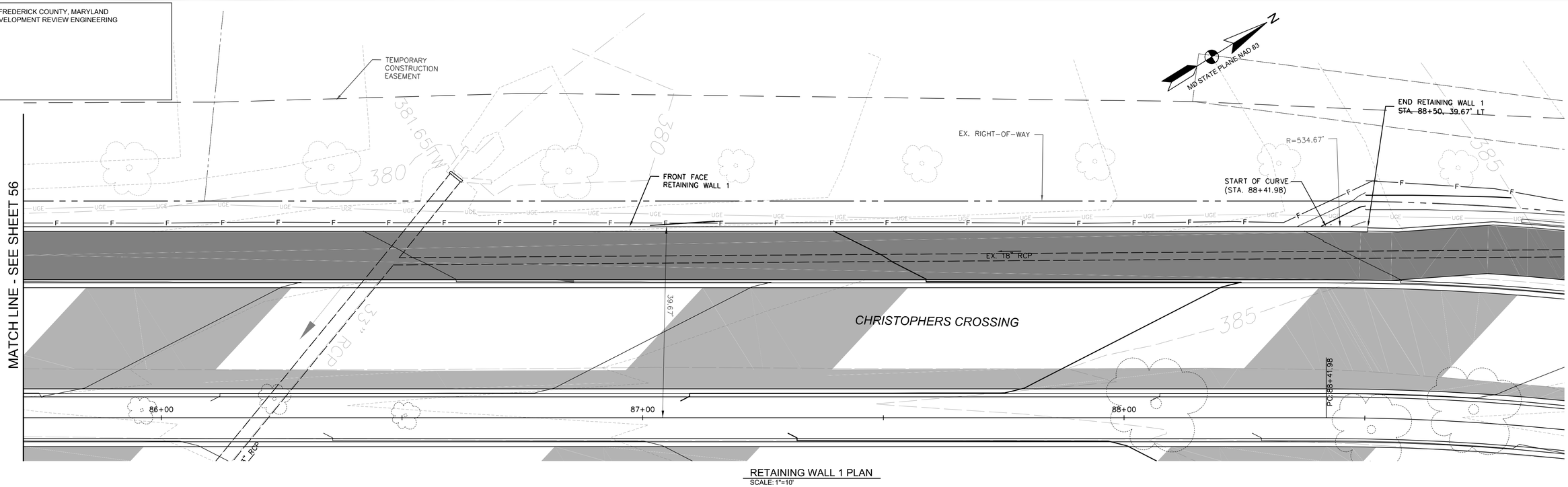
RW-1-2

Division of Planning and Permitting
Department of Development
Review Engineering

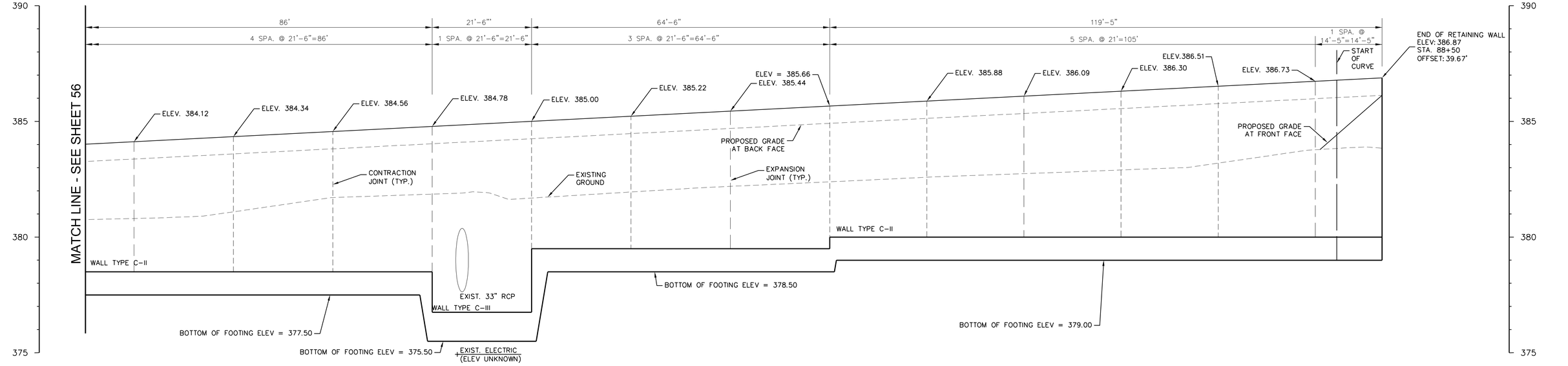
APPROVED: 11/16/22

Signature:

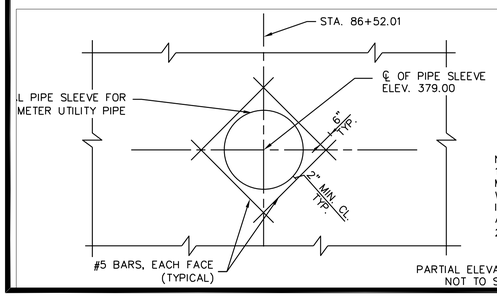
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



RETAINING WALL 1 PLAN
SCALE: 1"=10'



RETAINING WALL 1 PROFILE
SCALE: HORZ 1"=10'
VERT 1"=2'



PARTIAL ELEVATION VIEW
NOT TO SCALE

NOTES:
1. INCREASE THE SIZE OF EACH OF THE FIRST THREE NORMAL MAIN VERTICAL REINFORCING STEEL BARS, ON EACH SIDE OF THE WALL OPENING. NEW BAR SIZE SHALL BE SUCH THAT EACH INCREASE IN BAR AREA SHALL AT LEAST EQUAL TO THE TOTAL AREA OF THE MAIN REINFORCING STEEL THAT HAS BEEN CUT.
2. IN NO CASE SHALL CONCRETE COVER BE LESS THAN 2".

0 10' 20'
SCALE: 1"=10'

NOTE:
1. ALL DIMENSIONS MEASURED AT FRONT FACE OF RETAINING WALL

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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RW-1-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL 1 PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

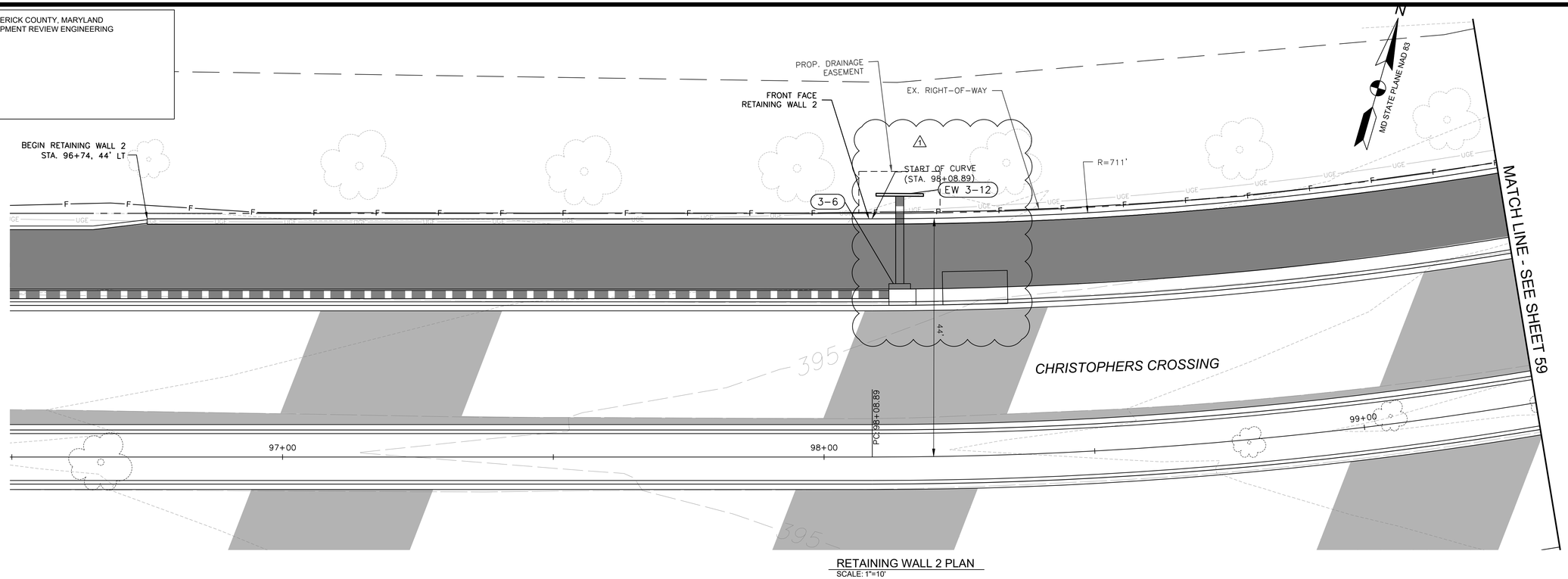
AMT FILE NO. 15-0758.007 SHEET NO. 57 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

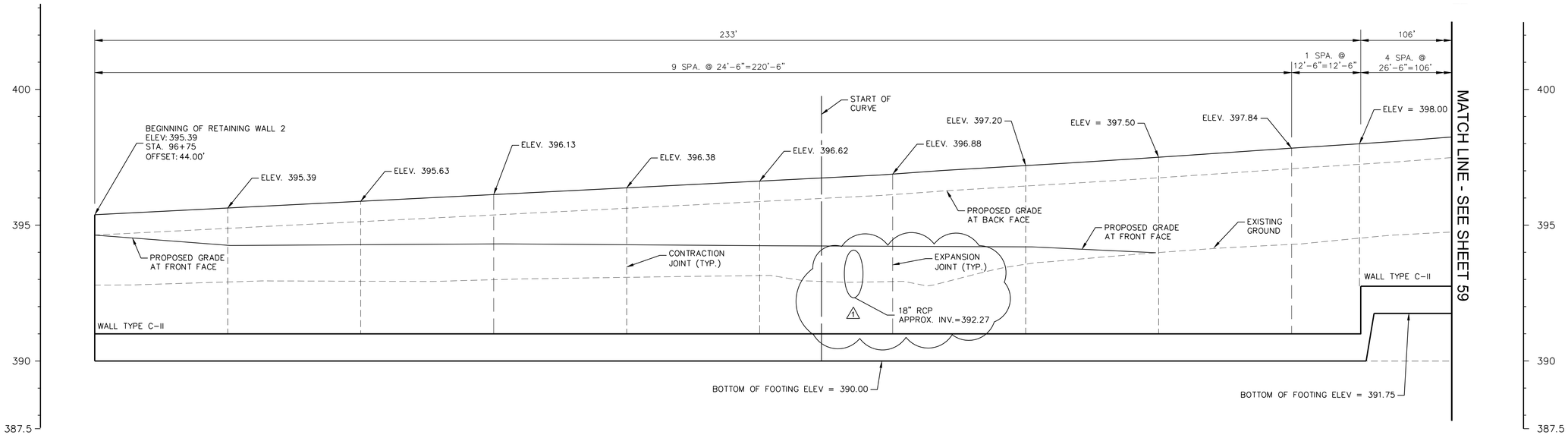
APPROVED: 11/16/22

Signature:

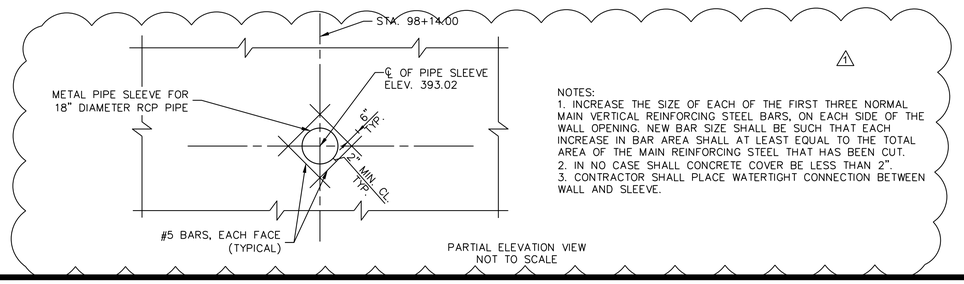
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



RETAINING WALL 2 PLAN
SCALE: 1"=10'



RETAINING WALL 2 PROFILE
SCALE: HORZ 1"=10'
VERT 1"=2'



PARTIAL ELEVATION VIEW
NOT TO SCALE

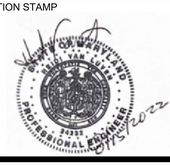
NOTES:
1. INCREASE THE SIZE OF EACH OF THE FIRST THREE NORMAL MAIN VERTICAL REINFORCING STEEL BARS, ON EACH SIDE OF THE WALL OPENING. NEW BAR SIZE SHALL BE SUCH THAT EACH INCREASE IN BAR AREA SHALL AT LEAST EQUAL TO THE TOTAL AREA OF THE MAIN REINFORCING STEEL THAT HAS BEEN CUT.
2. IN NO CASE SHALL CONCRETE COVER BE LESS THAN 2".
3. CONTRACTOR SHALL PLACE WATERTIGHT CONNECTION BETWEEN WALL AND SLEEVE.

0 10' 20'
SCALE: 1"=10'

NOTE:
1. ALL DIMENSIONS MEASURED AT FRONT FACE OF RETAINING WALL

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

REGISTRATION STAMP



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RW-2-4

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL 2 PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

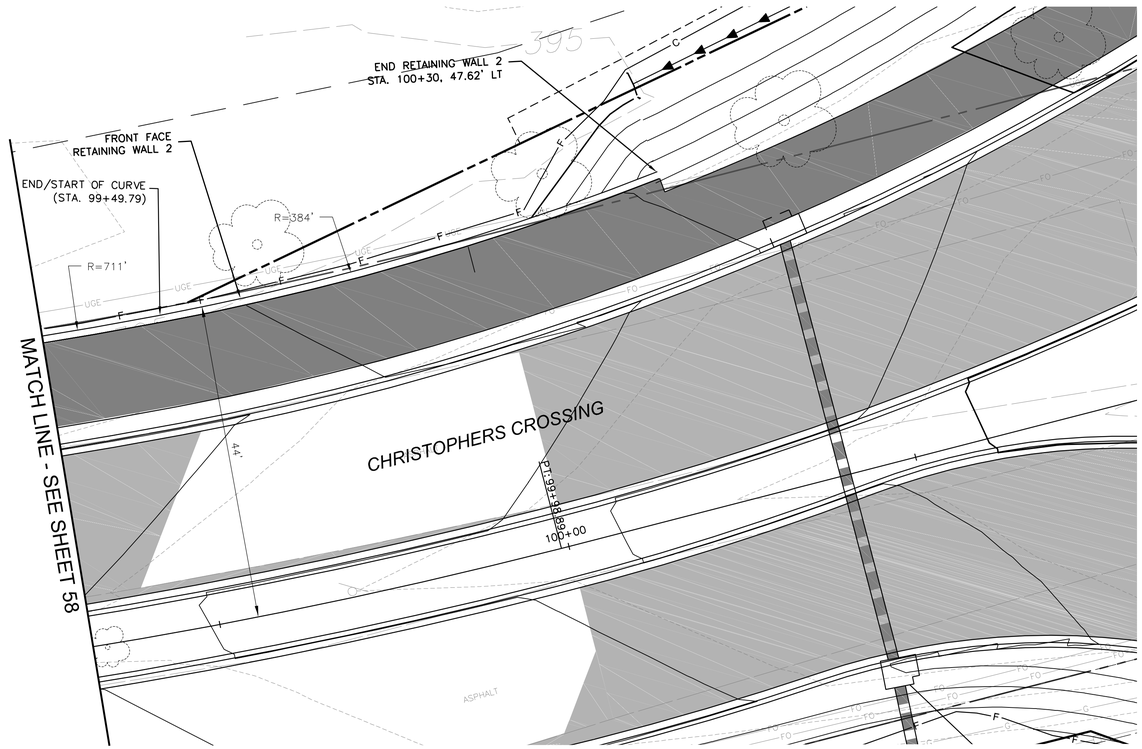
AMT FILE NO. 15-0758.007 SHEET NO. 58 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

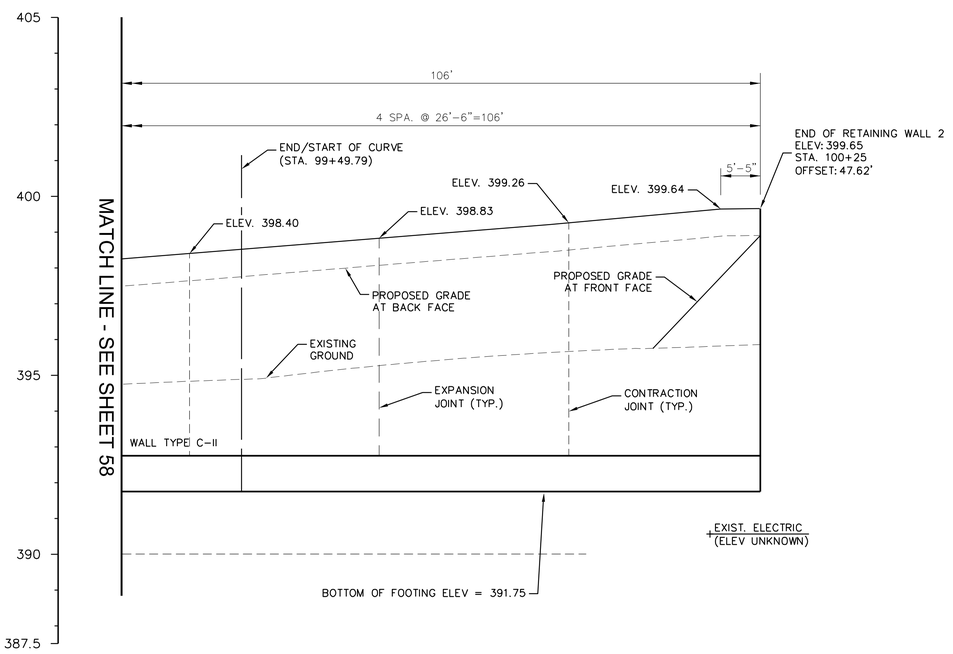
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



RETAINING WALL 2 PLAN
SCALE: 1"=10'



RETAINING WALL 2 PROFILE
SCALE: HORZ 1"=10'
VERT 1"=2'

0 10' 20'
SCALE: 1"=10'

NOTE:
1. ALL DIMENSIONS MEASURED AT FRONT FACE OF RETAINING WALL

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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RW-2-5

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL 2 PLAN AND PROFILE

DATE: SEPTEMBER 2022 SCALE: 1"=30'

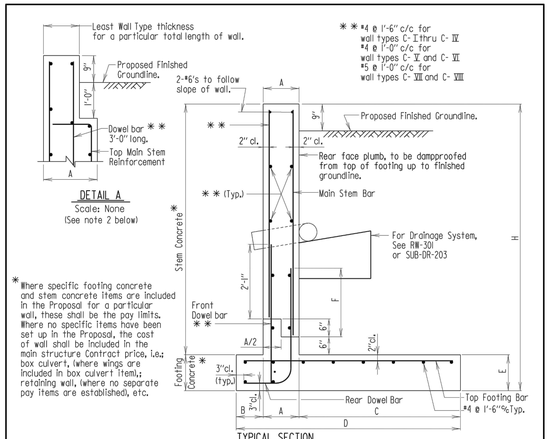
AMT FILE NO. 15-0758.007 SHEET NO. 59 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



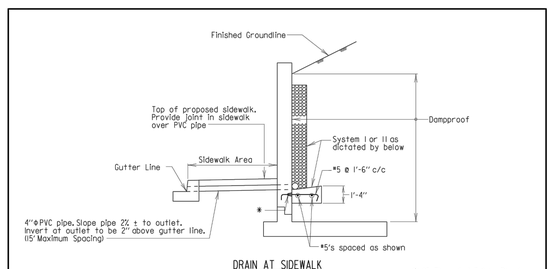
TYPICAL SECTION
Scale: ½" = 1'-0"

Wall Type	H	A	B	C	D	E	F	Rear Dowel Bar	Main Stem Bar	Top Foot. Bar
C-I	6'-0"	1'-0"	9"	2'-6"	4'-3"	1'-0"	2'-2"	#5 @ 1'-0"c/c	#5 @ 1'-0"c/c	#5 @ 1'-0"c/c
C-II	8'-0"	1'-0"	9"	3'-6"	5'-3"	1'-0"	2'-2"	#5 @ 1'-0"c/c	#5 @ 1'-0"c/c	#5 @ 1'-0"c/c
C-III	10'-0"	1'-0"	1'-0"	4'-6"	6'-6"	1'-3"	2'-7"	#6 @ 6"c/c	#6 @ 1'-0"c/c	#6 @ 6"c/c
C-IX	12'-0"	1'-0"	1'-0"	5'-6"	7'-6"	1'-3"	2'-7"	#6 @ 6"c/c	#6 @ 1'-0"c/c	#6 @ 6"c/c
C-X	14'-0"	1'-3"	1'-6"	6'-0"	8'-9"	1'-6"	3'-6"	#7 @ 6"c/c	#7 @ 1'-0"c/c	#7 @ 6"c/c
C-XI	16'-0"	1'-6"	2'-3"	6'-9"	10'-6"	1'-6"	3'-6"	#7 @ 6"c/c	#7 @ 1'-0"c/c	#7 @ 6"c/c
C-XII	18'-0"	2'-3"	3'-0"	7'-3"	12'-6"	1'-9"	3'-6"	#7 @ 6"c/c	#7 @ 1'-0"c/c	#7 @ 6"c/c
C-XIII	20'-0"	2'-3"	4'-0"	8'-9"	15'-0"	1'-9"	4'-7"	#8 @ 6"c/c	#8 @ 1'-0"c/c	#8 @ 6"c/c

Notes:
1. A "Poor Soil Condition" is that foundation material that can support a safe bearing pressure of 3 ksf and has an angle of friction of 30°.
2. If in the length of a wall the type of wall changes and provides for a different thickness of stem, then "Detail A" shall be used for all walls of greater than the least wall thickness.
3. Contractor has option of lapping main stem reinforcement with rear dowel reinforcement as shown; or by extending the rear dowel reinforcement with no splicing. However, no additional compensation to Contractor will be allowed for whichever alternative is selected.
4. These walls are valid if traffic is present on the level area adjacent to the wall.

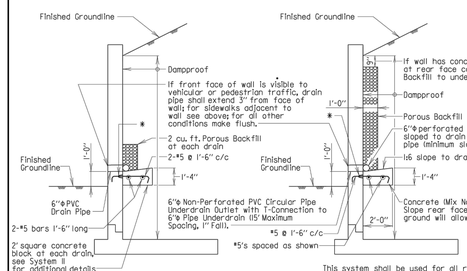
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 12/04/2013	TYPE C RETAINING WALL SECTION (FOR POOR SOIL CONDITION AND TWO FOOT SURCHARGE)
VERSION 1.0	DETAIL NO. RW-104 SHEET __ OF __

RETAINING WALLS

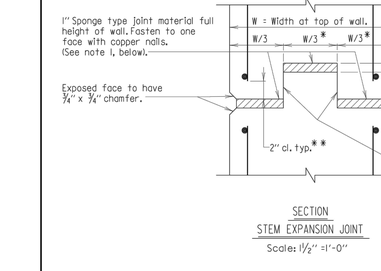


DRAIN AT SIDEWALK
Scale : None

* #5 Threaded Rebar Dowel Coupler at 1'-6" c/c.



SYSTEM I
Scale : None

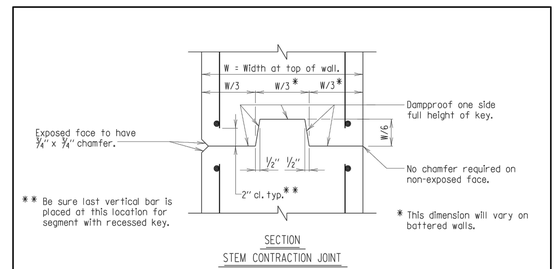


SYSTEM II
Scale : None

Notes
1. Exact elevation of drain to be determined by Engineer in field.
2. Porous backfill (refer to Section 403).
3. Use this detail for bridges with wing walls that are not parallel to the highway. For bridges with wing walls parallel to the highway see Detail No. SUB-DR-203 sheet 5 of 5 for details.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 01/22/2001	RETAINING WALL AND WING WALL DRAINAGE SYSTEMS
VERSION 1.0	DETAIL NO. RW-301 SHEET __ OF __

RETAINING WALLS



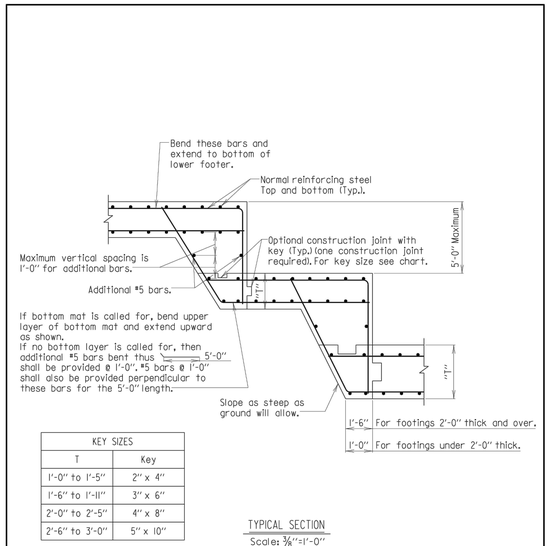
SECTION
STEM CONTRACTION JOINT
Scale: 1½" = 1'-0"

SECTION
STEM EXPANSION JOINT
Scale: 1½" = 1'-0"

Notes:
1. Joint locations shall be as shown on contract drawing. If no locations are given concrete retaining walls shall have contraction joints a maximum of every 30'-0"; and expansion joints, with 1" sponge type material (see 911.02), a maximum of every 90'-0"
2. Stop key 9" below top of wall.
3. Reinforcing steel shall not pass through contraction or expansion joint.
4. For battered walls, with stems greater than 12 feet height, key dimensions noted thus *, shall be based on wall thickness at mid height.
5. All keys are nominal size.
6. Only place contraction and expansion joints in stems (no joint in footer).

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 05/04/2006	CONCRETE RETAINING WALL CONTRACTION AND EXPANSION JOINTS
VERSION 1.0	DETAIL NO. RW-401 SHEET __ OF __

RETAINING WALLS



KEY SIZES	
T	Key
1'-0" to 1'-5"	2" x 4"
1'-6" to 1'-11"	3" x 6"
2'-0" to 2'-5"	4" x 8"
2'-6" to 3'-0"	5" x 10"

TYPICAL SECTION
Scale: ⅜"=1'-0"

Notes:
1. All keys are nominal size.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 08/28/2002	STEPPED FOOTING DETAIL
VERSION 1.0	DETAIL NO. RW-402 SHEET __ OF __

RETAINING WALLS

LOCATION CATEGORY A							
BAR SIZE	CENTER TO CENTER SPACING						
	3"		4"		5"	≥ 6"	
#4	2'-5"	3'-1"	2'-5"	2'-10"	2'-5"	2'-10"	2'-5"	2'-10"
#5	3'-1"	4'-0"	3'-0"	3'-10"	3'-0"	3'-7"	3'-0"	3'-7"
#6	4'-5"	5'-9"	3'-7"	4'-8"	3'-7"	4'-8"	3'-7"	4'-8"
#7	6'-0"	7'-10"	4'-6"	5'-11"	4'-2"	5'-5"	4'-2"	5'-5"
#8	7'-10"	10'-3"	5'-11"	7'-8"	4'-9"	6'-2"	4'-9"	6'-2"
#9	10'-0"	13'-0"	7'-6"	9'-9"	6'-0"	7'-10"	5'-10"	7'-8"
#10	-	-	9'-6"	12'-5"	7'-7"	9'-11"	7'-2"	9'-5"
#11	-	-	11'-8"	15'-3"	9'-4"	12'-3"	8'-8"	11'-4"

Location Category A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in: footings, pier caps, etc.

LOCATION CATEGORY B							
BAR SIZE	CENTER TO CENTER SPACING						
	3"		4"		5"	≥ 6"	
#4	1'-10"	2'-9"	1'-10"	2'-2"	1'-10"	2'-2"	1'-10"	2'-2"
#5	2'-5"	3'-7"	2'-4"	3'-5"	2'-4"	2'-9"	2'-4"	2'-9"
#6	3'-5"	5'-1"	2'-9"	4'-1"	2'-9"	4'-1"	2'-9"	4'-1"
#7	4'-8"	6'-11"	3'-6"	5'-3"	3'-2"	4'-9"	3'-2"	4'-9"
#8	6'-1"	9'-1"	4'-7"	6'-10"	3'-8"	5'-5"	3'-8"	5'-5"
#9	7'-8"	11'-6"	5'-9"	8'-8"	4'-8"	6'-11"	4'-6"	6'-9"
#10	-	-	7'-4"	10'-11"	5'-10"	8'-9"	5'-7"	8'-4"
#11	-	-	9'-0"	13'-6"	7'-2"	10'-9"	6'-8"	10'-0"

Location Category B - All bars not in Location Category A.

□ = Non-epoxy coated ▨ = Epoxy coated

Note:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate Reinforcing Steel Design, fy = 60 ksi, and Concrete Design, f'c = 3000 psi.
4. These bar laps assume cover of 2". Greater lap lengths will be required for cover less than 2".
5. These bar laps are Class B splices based on the development lengths in Det. No. REBAR-DL-101. Class B splices are 1.3 times the development length.
6. Class A splices may be used when (a) the area of reinforcement provided is at least twice that required by analysis over the entire length of the lap splice and (b) one-half or less of the total reinforcement is spliced within the required lap splice length. Class A splices are 1.0 times the development length.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 03/21/2017	BAR LAP DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO.3 (3500 P.S.I.) CONCRETE
VERSION 1.0	DETAIL NO. REBAR-BL-101 SHEET __ OF __

REBAR - BAR LAPS

GENERAL NOTES

SPECIFICATIONS: MDOT SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2022.

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2017.

LOADING: EARTH PRESSURE LOADING AND SURCHARGE AS INDICATED IN MDOT SHA STD. NO. RW-104

CONCRETE: CONCRETE: COMPRESSIVE STRENGTH FOR DESIGN SHALL BE f'c = 3,000 PSI FOR ELEMENTS USING MIX NO. 3 CONCRETE.

ALL CONCRETE IN FOOTINGS SHALL BE MIX NO. 3 (3,500 PSI).

ALL CONCRETE IN RETAINING WALL STEMS SHALL BE MIX NO. 3 (3,500 PSI)

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A 615 GRADE 60, WITH A YIELD STRENGTH FOR DESIGN OF fy=60,000 PSI.

ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS.

MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE 2" EXCEPT FOR THE FOLLOWING LOCATIONS.

LOCATION	CLEAR COVER
BOTTOM AND SIDES OF ALL FOOTINGS.	3 IN.

FOR TIES AND STIRRUPS: STANDARD ACI BENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (−) NORMAL ACI BENDING TOLERANCES.

FOUNDATIONS: CHANGES TO BOTTOM OF WALL ELEVATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

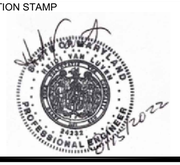
BOTTOM OF FOOTINGS SHALL BE A MINIMUM OF 2'-6" BELOW FINISHED GRADE

AESTHETIC TREATMENT: AESTHETIC TREATMENT OF WALL TO BE IN ACCORDANCE WITH MDOT SHA STANDARD SPECIFICATIONS SECTION 456 – ARCHITECTURAL TREATMENT.

RW-6

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP



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FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL DETAILS AND NOTES

DATE: SEPTEMBER 2022 SCALE: N.T.S.

AMT FILE NO. 15-0758.007 SHEET NO. 60 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

LOCATION CATEGORY A								
BAR SIZE	CENTER TO CENTER SPACING							
	3"		4"		5"		≥ 6"	
#4	1'-10"	2'-5"	1'-10"	2'-2"	1'-10"	2'-2"	1'-10"	2'-2"
#5	2'-5"	3'-1"	2'-4"	3'-0"	2'-4"	2'-9"	2'-4"	2'-9"
#6	3'-5"	4'-5"	2'-9"	3'-7"	2'-9"	3'-7"	2'-9"	3'-7"
#7	4'-8"	6'-1"	3'-6"	4'-7"	3'-2"	4'-2"	3'-2"	4'-2"
#8	6'-1"	7'-11"	4'-7"	5'-11"	3'-8"	4'-9"	3'-8"	4'-9"
#9	7'-8"	10'-0"	5'-9"	7'-6"	4'-8"	6'-0"	4'-6"	5'-11"
#10	-	-	7'-4"	9'-6"	5'-10"	7'-8"	5'-7"	7'-3"
#11	-	-	9'-0"	11'-9"	7'-2"	9'-5"	6'-8"	8'-8"

Location Category A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in: footings, pier caps, etc.

LOCATION CATEGORY B								
BAR SIZE	CENTER TO CENTER SPACING							
	3"		4"		5"		≥ 6"	
#4	1'-5"	2'-1"	1'-5"	1'-8"	1'-5"	1'-8"	1'-5"	1'-8"
#5	1'-10"	2'-9"	1'-9"	2'-8"	1'-9"	2'-1"	1'-9"	2'-1"
#6	2'-8"	3'-11"	2'-1"	3'-2"	2'-1"	3'-2"	2'-1"	3'-2"
#7	3'-7"	5'-4"	2'-8"	4'-0"	2'-6"	3'-8"	2'-6"	3'-8"
#8	4'-8"	7'-0"	3'-6"	5'-3"	2'-10"	4'-2"	2'-10"	4'-2"
#9	5'-11"	8'-10"	4'-5"	6'-8"	3'-7"	5'-4"	3'-6"	5'-2"
#10	-	-	5'-8"	8'-5"	4'-6"	6'-9"	4'-3"	6'-5"
#11	-	-	6'-11"	10'-4"	5'-7"	8'-4"	5'-2"	7'-8"

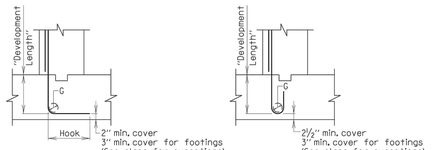
Location Category B - All bars not in Location Category A.

= Non-epoxy coated = Epoxy coated

Note:
1. When development length is not specified on the Plans, the above dimensions shall be used.
2. These development lengths do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These development lengths only apply where the General Notes indicate Reinforcing Steel Design, fy = 60 ksi, and Concrete Design, f'c = 3000 psi.
4. These development lengths assume cover of 2". Greater development lengths will be required for cover less than 2".
5. The Excess Reinforcement Factor was assumed to be 1.0 when calculating these dimensions.
6. Atr was assumed to be 0 when calculating the Reinforcement Confinement Factor.
7. If depth of member does not allow bar development length indicated in Location Categories A and B; then hooks shall be added to all bars not conforming, as per D, E, and F per Det. No. REBAR-DL-201.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 03/21/2017	DEVELOPMENT LENGTH DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO.3 (3500 P.S.I.) CONCRETE
VERSION: 1.0	DETAIL NO. REBAR-DL-101 SHEET 1 OF X

REBAR - DEVELOPMENT LENGTH



STANDARD 90° HOOK STANDARD 180° HOOK

BAR SIZE	* LOCATION CATEGORY		
	D	E	F
#4	8"	11"	9"
#5	10"	1'-2"	11"
#6	1'-0"	1'-5"	1'-2"
#7	1'-2"	1'-8"	1'-4"
#8	1'-4"	1'-10"	1'-6"
#9	1'-6"	2'-1"	1'-8"
#10	1'-8"	2'-4"	1'-11"
#11	1'-10"	2'-7"	2'-1"

Note:
For Hook Dimensions and Bends, see Detail No. REBAR-BB-102.

* LOCATION CATEGORY:

D- All bars terminating with a standard 180° hook with side cover (normal to plane of hook) not less than 2½", and for 90° deg. hook, cover on bar extension beyond hook not less than 2".
E- All bars not in Category D.
F- All bars with hook enclosed vertically or horizontally within ties or stirrup-ties spaced along the full development length not greater than 3d where d is the diameter of the hooked bar.

Note:
1. When development length is not specified on the Plans, the above dimensions shall be used.
2. These development lengths do not apply when bar is in lightweight concrete or any other strength of concrete.
3. These development lengths only apply where the General Notes indicate Reinforcing Steel Design, fy = 60 ksi, and Concrete Design, f'c = 3000 psi.
4. If depth of member does not allow bar development length indicated in Categories A, B, and C, Detail No. REBAR-DL-101; then hook shall be added to all bars not conforming, as per D, E & F.

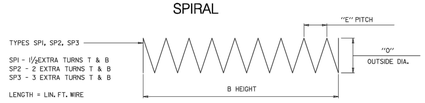
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 05/10/2011	DEVELOPMENT LENGTH DIMENSIONS OF HOOKED BARS FOR GRADE 60 REINFORCING STEEL IN MIX NO.3 (3500 P.S.I.) CONCRETE NON-EPOXY COATED REINFORCING
VERSION: 1.0	DETAIL NO. REBAR-DL-201 SHEET 1 OF 1

REBAR - DEVELOPMENT LENGTH

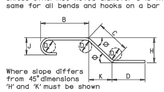
TYPICAL BAR BENDS

DETAILS AND NOTES

SPIRAL



Unless otherwise noted diameter D is the same for all bends and hooks on a bar



ENLARGED VIEW SHOWING BAR BENDING DETAILS

Notes:
1. All dimensions are out-to-out of bar or to tangent points for 135° and 180° hooks.
2. 'J' dimensions on 180° hooks to be shown only where necessary to restrict hook size. Otherwise standard hooks are to be used.
3. Where 'J' is not shown, "J" will be kept equal to or less than 'H' on truss bars. Where 'J' can exceed 'H' it should be shown.
4. 'H' dimension on stirrups to be shown where necessary to fit within concrete.
5. Where bars are to be bent more accurately than standard bending tolerances, bending dimensions which require closer fabrication should have limits indicated.

NOTE TO FABRICATOR

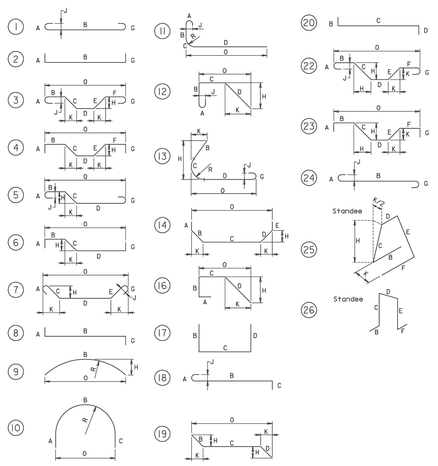
BENDING TOLERANCE NOTE
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 02/01/1994	BAR BEND TYPES GENERAL NOTES
VERSION: 1.0	DETAIL NO. REBAR-BB-101 SHEET 1 OF 8

REBAR BAR BENDS

ACI TYPICAL BAR BENDS

STANDARD PIN BENDING



NOTE TO FABRICATOR

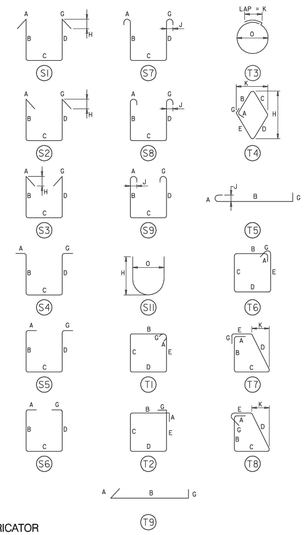
BENDING TOLERANCE NOTE
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 02/01/1994	BAR BEND TYPES ACI - STANDARD PIN BENDING
VERSION: 1.0	DETAIL NO. REBAR-BB-101 SHEET 2 OF 8

REBAR BAR BENDS

ACI TYPICAL BAR BENDS

TIES AND STIRRUPS



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

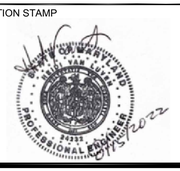
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 02/01/1994	BAR BEND TYPES ACI - TIES A
VERSION: 1.0	DETAIL NO. REBAR-BB-101 SHEET 3 OF 8

REBAR BAR BENDS

RW-7

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP



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DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL DETAILS

DATE: SEPTEMBER 2022 SCALE: N.T.S.

AMT FILE NO. 15-0758.007 SHEET NO. 61 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

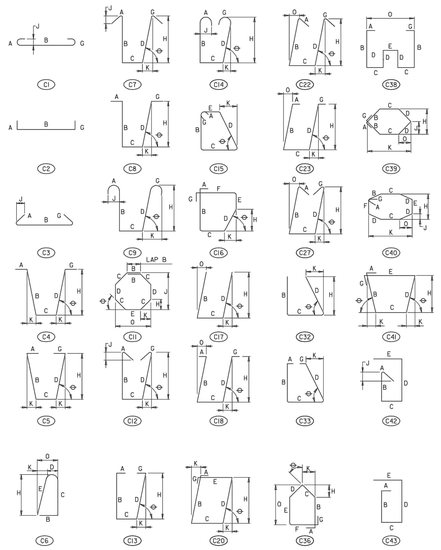
APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

SHA TYPICAL BAR BENDS

TIES AND STIRRUPS



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

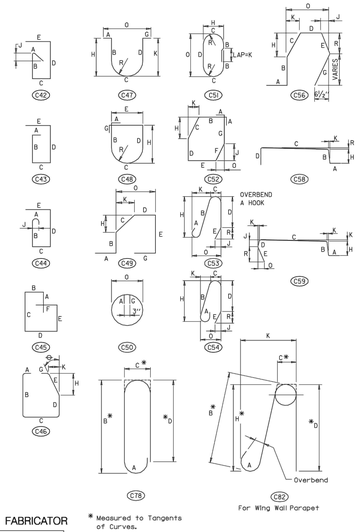
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
E.A. Hinkel, DIRECTOR OFFICE OF STRUCTURES DATE: 02/01/1994	BAR BEND TYPES SHA - TIES AND STIRRUPS
VERSION 1.0	DETAIL NO. REBAR-BB-101 SHEET 4 OF 8

REBAR BAR BENDS

SHA TYPICAL BAR BENDS

TIES AND STIRRUPS



* Measured to Tangents of Curves.

NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

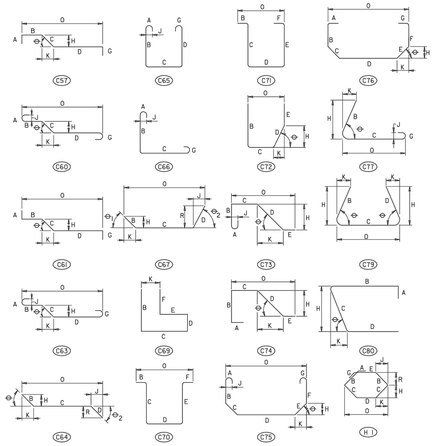
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
E.A. Hinkel, DIRECTOR OFFICE OF STRUCTURES DATE: 02/01/1994	BAR BEND TYPES SHA - TIES AND STIRRUPS
VERSION 1.0	DETAIL NO. REBAR-BB-101 SHEET 5 OF 8

REBAR BAR BENDS

SHA TYPICAL BAR BENDS

STANDARD PIN BENDING



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

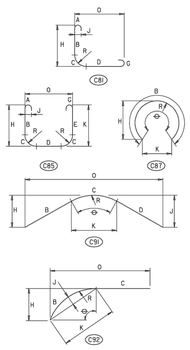
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

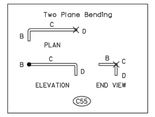
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
E.A. Hinkel, DIRECTOR OFFICE OF STRUCTURES DATE: 02/01/1994	BAR BEND TYPES SHA - STANDARD PIN BENDING
VERSION 1.0	DETAIL NO. REBAR-BB-101 SHEET 6 OF 8

REBAR BAR BENDS

SHA TYPICAL BAR BENDS

RADIUS BENDING





NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

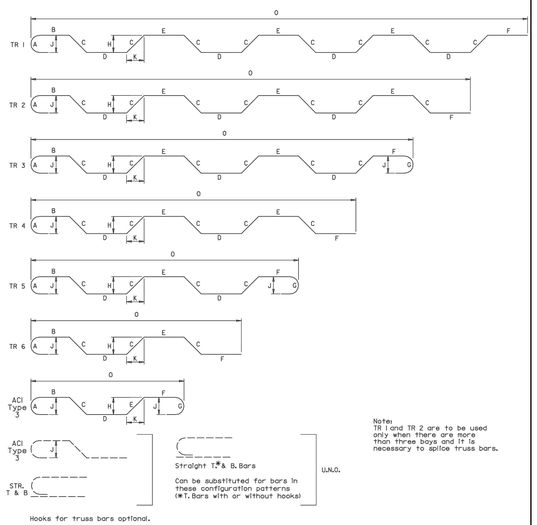
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
E.A. Hinkel, DIRECTOR OFFICE OF STRUCTURES DATE: 02/01/1994	BAR BEND TYPES SHA - RADIUS BENDING
VERSION 1.0	DETAIL NO. REBAR-BB-101 SHEET 7 OF 8

REBAR BAR BENDS

SHA TYPICAL BAR BENDS

TRUSS BAR CONFIGURATIONS



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

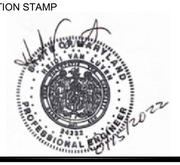
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
E.A. Hinkel, DIRECTOR OFFICE OF STRUCTURES DATE: 02/01/1994	BAR BEND TYPES TRUSS BAR CONFIGURATIONS
VERSION 1.0	DETAIL NO. REBAR-BB-101 SHEET 8 OF 8

REBAR BAR BENDS

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP



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RW-8

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL DETAILS

DATE: SEPTEMBER 2022 SCALE: N.T.S.

AMT FILE NO. 15-0758.007 SHEET NO. 62 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

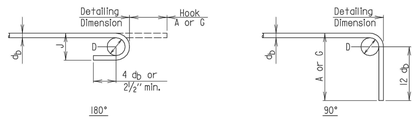
APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

HOOKS TABLE I REFERENCES

1. ACI Types 1 thru 26
2. SHA Standard Pin Bending
3. SHA Radius Bending



BAR SIZE	Finished bend diameter D, In.	180 - deg hook A or G In	180 - deg hook J, In.	90 - deg hook A or G In
#3	2¼	5	3	6
#4	3	6	4	8
#5	3¾	7	5	10
#6	4½	8	6	1-0
#7	5¼	10	7	1-2
#8	6	11	8	1-4
#9	9½	1-3	11¾	1-7
#10	10¾	1-5	1-1¼	1-10
#11	12	1-7	1-2¾	2-0
#14	18¼	2-3	1-9¾	2-7
#18	24	3-0	2-4½	3-5

RECOMMENDED END HOOKS, ALL GRADES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Glen Ondrusek DIRECTOR OFFICE OF STRUCTURES DATE: 11/17/1997	REINFORCING STEEL HOOK TABLES AND DIAGRAMS
VERSION 1.0	DETAIL NO. REBAR-BB-102 SHEET 1 OF 2

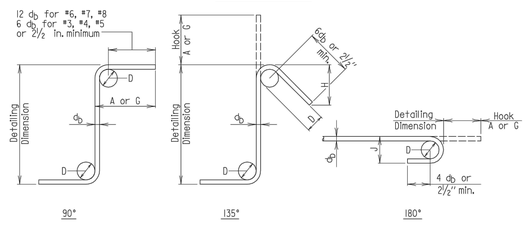
REBAR BAR BENDS

HOOKS TABLE II REFERENCES

1. ACI Types S1 thru S11
2. ACI Types T1 thru T8
3. SHA Ties and Stirrups

(Note: Tie and stirrup types supplied in sizes #3-#8)

STIRRUP AND TIE HOOKS



BAR SIZE	D, In.	90 - deg hook A or G	135 - deg hook A or G	135 - deg hook H, approx
#3	1½	4	4	2½
#4	2	4½	4½	3
#5	2½	6	5½	3¾
#6	4½	1-0	7¼	4½
#7	5¼	1-2	9	5¼
#8	6	1-4	10¼	6

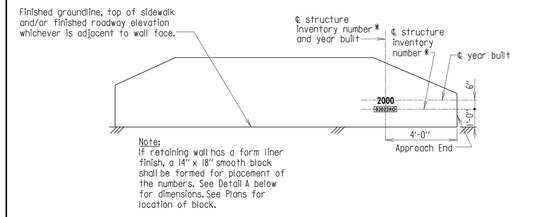
STIRRUP AND TIE HOOK DIMENSIONS, In.

RECOMMENDED END HOOKS, ALL GRADES

BAR SIZE	Finished bend diameter D, In.	180 - deg hook A or G In	180 - deg hook J, In.
#3	2¼	5	3
#4	3	6	4
#5	3¾	7	5
#6	4½	8	6
#7	5¼	10	7
#8	6	11	8

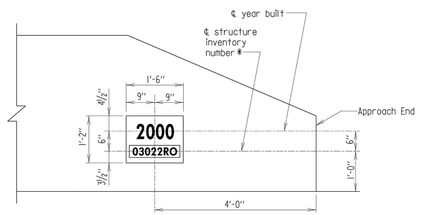
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Glen Ondrusek DIRECTOR OFFICE OF STRUCTURES DATE: 11/17/1997	REINFORCING STEEL HOOK TABLES AND DIAGRAMS
VERSION 1.0	DETAIL NO. REBAR-BB-102 SHEET 2 OF 2

REBAR BAR BENDS



Note:
If retaining wall has a form liner finish, a 14" x 18" smooth block shall be formed for placement of the numbers. See Detail A below for dimensions. See Plans for location of block.

RETAINING WALLS



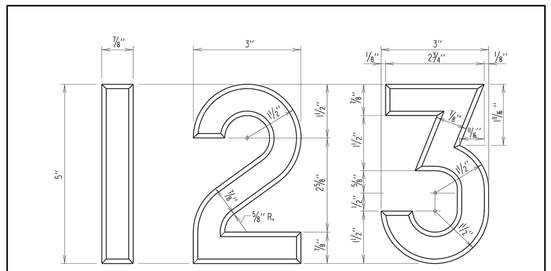
DETAIL A

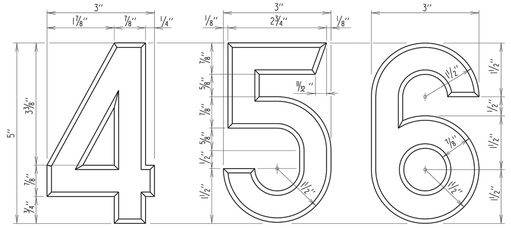
Notes:
1. For existing structures, where a year built is shown on the structure and structure is to be rehabilitated, the marking should read 1942-2000 (old year first - new year).
2. For existing structures with no year built contact the Office of Structures for old year.
3. For Year Built Numerals refer to Detail No. SI-201.
4. For retaining walls that are not visible from the approach roadway, refer to Detail No. SI-102.

*Black numbers 3" high on a painted white background, (5" x 17").

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Glen Ondrusek DIRECTOR OFFICE OF STRUCTURES DATE: 10/17/2013	LOCATION OF YEAR BUILT MARKING AND STRUCTURE INVENTORY NUMBER ON RETAINING WALLS
VERSION 1.0	DETAIL NO. SI-104 SHEET 1 OF 1

STRUCTURE INVENTORY

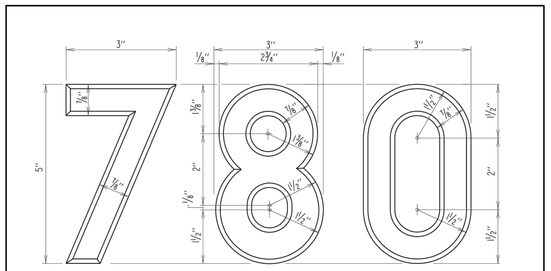


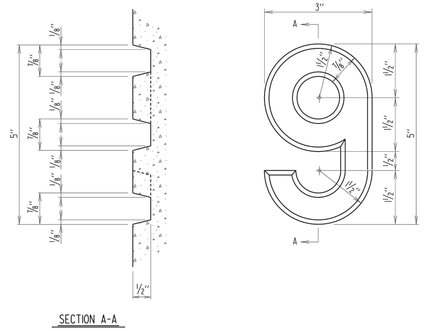


Note:
Year built numerals to be indented into concrete (unpainted) - as indicated on Detail Nos. SI-101, SI-103 and SI-104.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Glen Ondrusek DIRECTOR OFFICE OF STRUCTURES DATE: 11/15/2019	NUMERALS FOR YEAR BUILT MARKING ON STRUCTURES
VERSION 1.01	DETAIL NO. SI-201 SHEET 1 OF 2

STRUCTURE INVENTORY





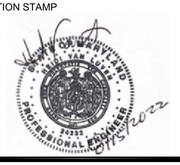
SECTION A-A

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Glen Ondrusek DIRECTOR OFFICE OF STRUCTURES DATE: 11/15/2019	NUMERALS FOR YEAR BUILT MARKING ON STRUCTURES
VERSION 1.01	DETAIL NO. SI-201 SHEET 2 OF 2

STRUCTURE INVENTORY

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP



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FREDERICK COUNTY, MARYLAND
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DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL DETAILS

DATE: SEPTEMBER 2022 SCALE: N.T.S.

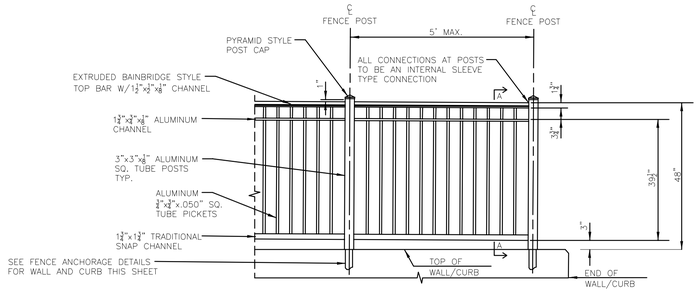
AMT FILE NO. 15-0758.007 SHEET NO. 63 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

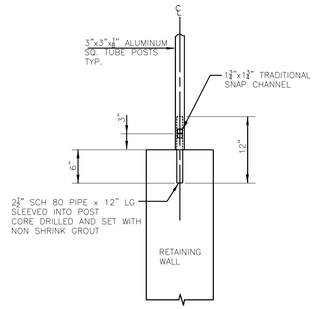
Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



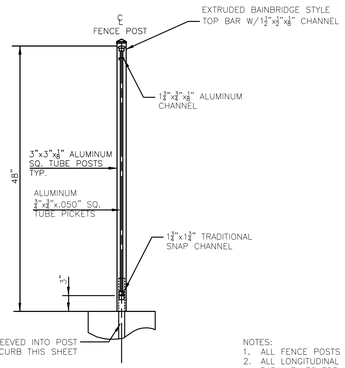
ORNAMENTAL FENCE ON WALL/CURB ELEVATION

NOT TO SCALE



FENCE ANCHORAGE ON WALL DETAIL

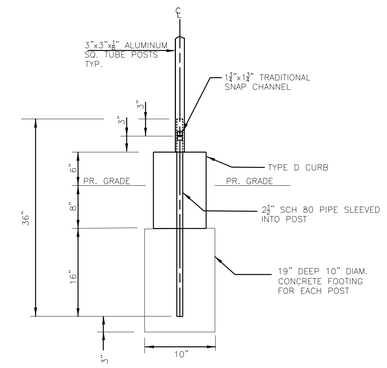
NOT TO SCALE



ORNAMENTAL FENCE TYPICAL SECTION A–A

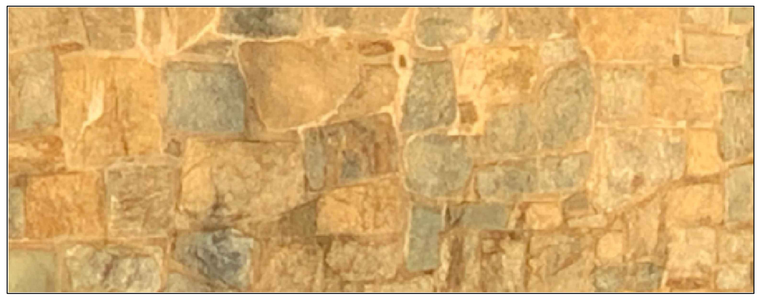
NOT TO SCALE

NOTES:
1. ALL FENCE POSTS SHALL BE SET PLUMB.
2. ALL LONGITUDINAL RAIL CHANNELS SHALL BE PARALLEL TO TOP OF WALL.
3. ALL FENCE APPURTENANCES AND ANCHORAGE, INCLUDING CONCRETE FOOTING UNDER CURB, SHALL BE CONSIDERED INCIDENTAL TO FENCE ITEM.



FENCE ANCHORAGE ON TYPE D CURB DETAIL

NOT TO SCALE



STONE ARCHITECTURAL TREATMENT PATTERN DETAIL FOR RETAINING WALL

NOT TO SCALE

NOTES:
1. ARCHITECTURAL TREATMENT TO EXTEND FROM GROUND LEVEL UP TO 6 INCHES FROM TOP OF WALL.
2. ARCHITECTURAL TREATMENT SHALL BE IN ACCORDANCE WITH MDOT SHA STANDARD SPECIFICATIONS SECTION 456 – ARCHITECTURAL TREATMENT.
3. DETAIL SHOWN IS FOR GENERAL PATTERN TO BE USED ALONG ENTIRE LENGTH OF BOTH RETAINING WALLS. CONTRACTOR TO COORDINATE WITH ENGINEER PRIOR TO ORDERING FORM LINERS TO ENSURE PATTERN IS ACCEPTABLE.
4. CONTRACTOR SHALL PROVIDE A 4'–0" X 4'0" SAMPLE MOCK–UP AT THE PROJECT SITE FOR REVIEW BY THE ENGINEER PRIOR TO APPLICATION OF THE TREATMENT AND TREATMENT STAINING.
5. COST OF ARCHITECTURAL TREATMENT IS INCIDENTAL TO PAY ITEMS FOR THE WALL.

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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EMAIL: AMT1@AMTENGINEERING.COM

RW-10

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

RETAINING WALL DETAILS

DATE: SEPTEMBER 2022 SCALE: N.T.S.

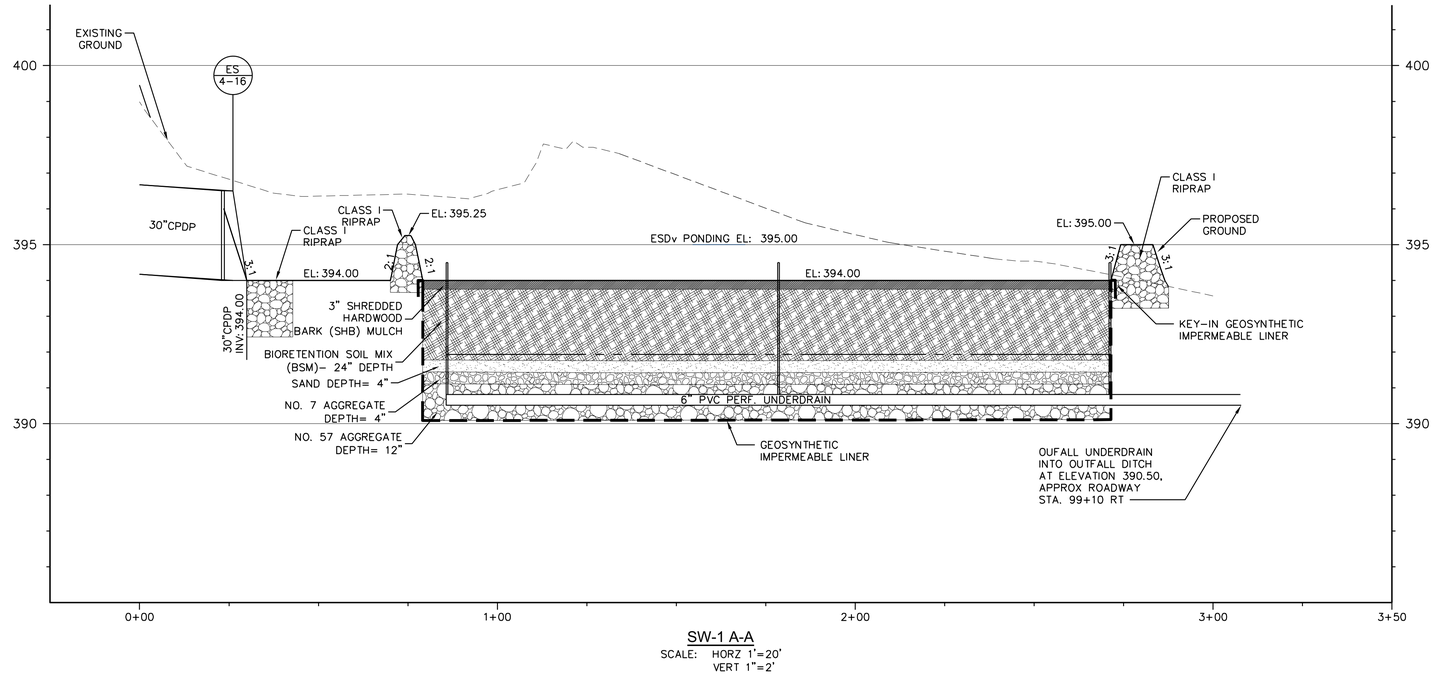
AMT FILE NO. 15-0758.007 SHEET NO. 64 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



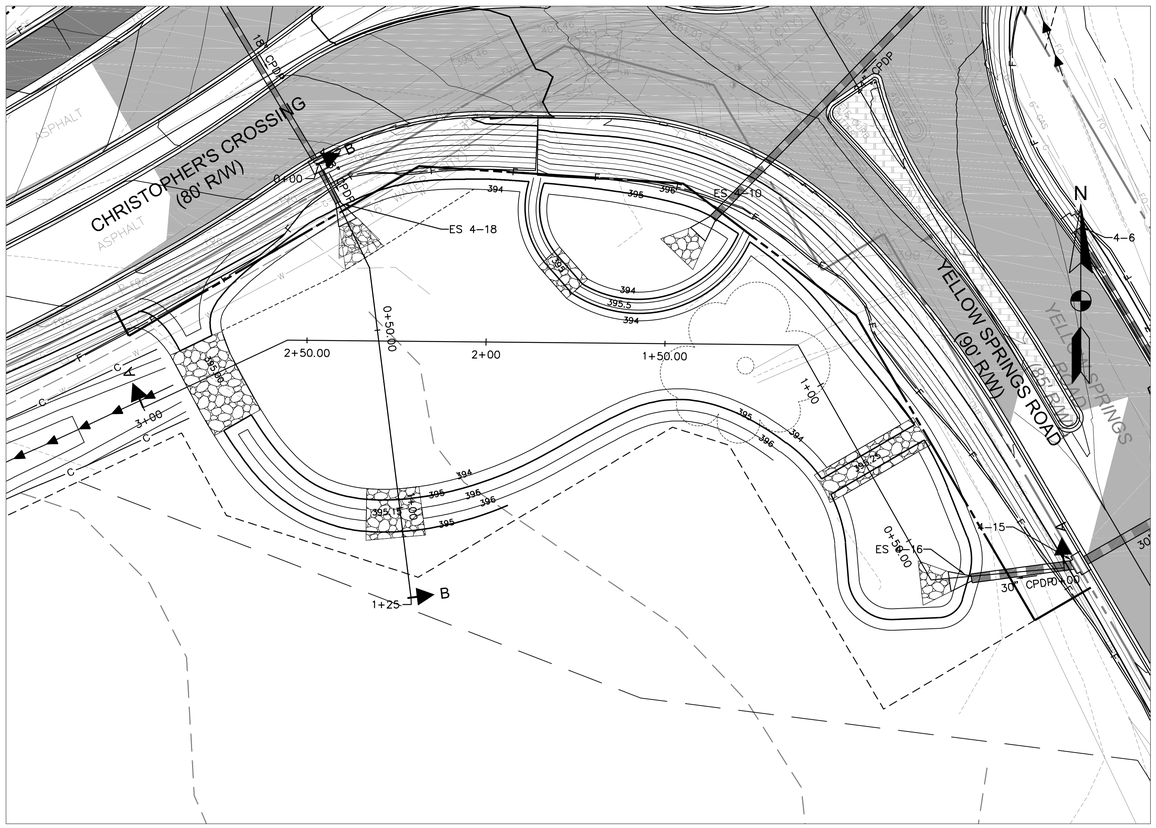
SW-1 A-A
SCALE: HORZ 1"=20'
VERT 1"=2'

SWM FACILITY ANALYSIS

FACILITY NAME:	BR-1 (BIORETENTION)
DRAINAGE AREA:	10.93 ACRES
RCN:	81
Tc:	0.21 HR
TARGET Pe:	1.00 INCHES
TARGET ESDv:	8,404 CU. FT.
PROVIDED Pe:	1.42 INCHES
PROVIDED ESDv:	11,939 CU. FT.
IMPERVIOUS AREA TREATED:	2.17 ACRES

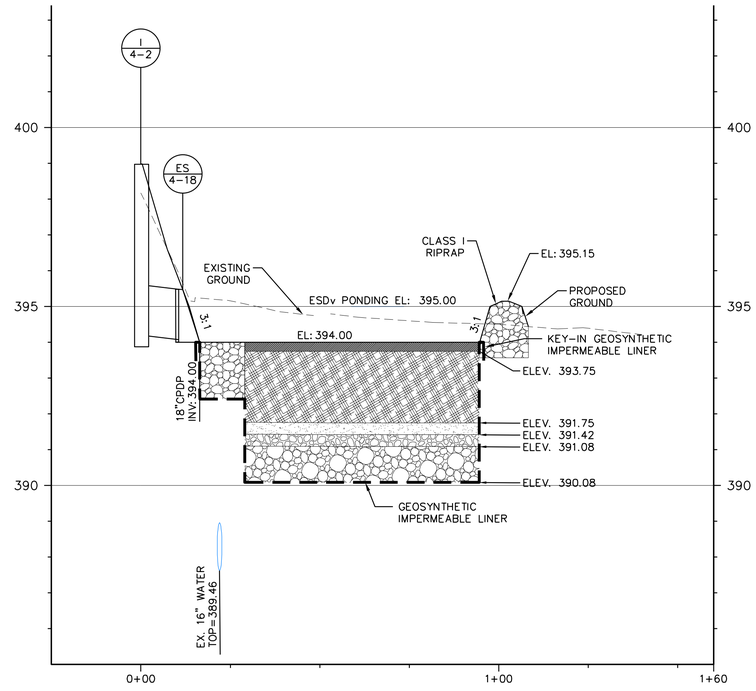
NOTES

1. REFER TO LANDSCAPE PLANS FOR PLANTING SCHEDULE AND MATERIALS WITHIN THE SWM FACILITY FOOTPRINT.



PROPOSED BIORETENTION FACILITY - PLAN VIEW
SCALE: 1"=20'

0 10' 20' 40'
SCALE: 1"=20'



SW-1 B-B
SCALE: HORZ 1"=20'
VERT 1"=2'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STEVEN C. WATTS — No. 24331 — PROFESSIONAL ENGINEER — 09/15/2022

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SW-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

STORMWATER MANAGEMENT PLAN

DATE: SEPTEMBER 2022 SCALE:

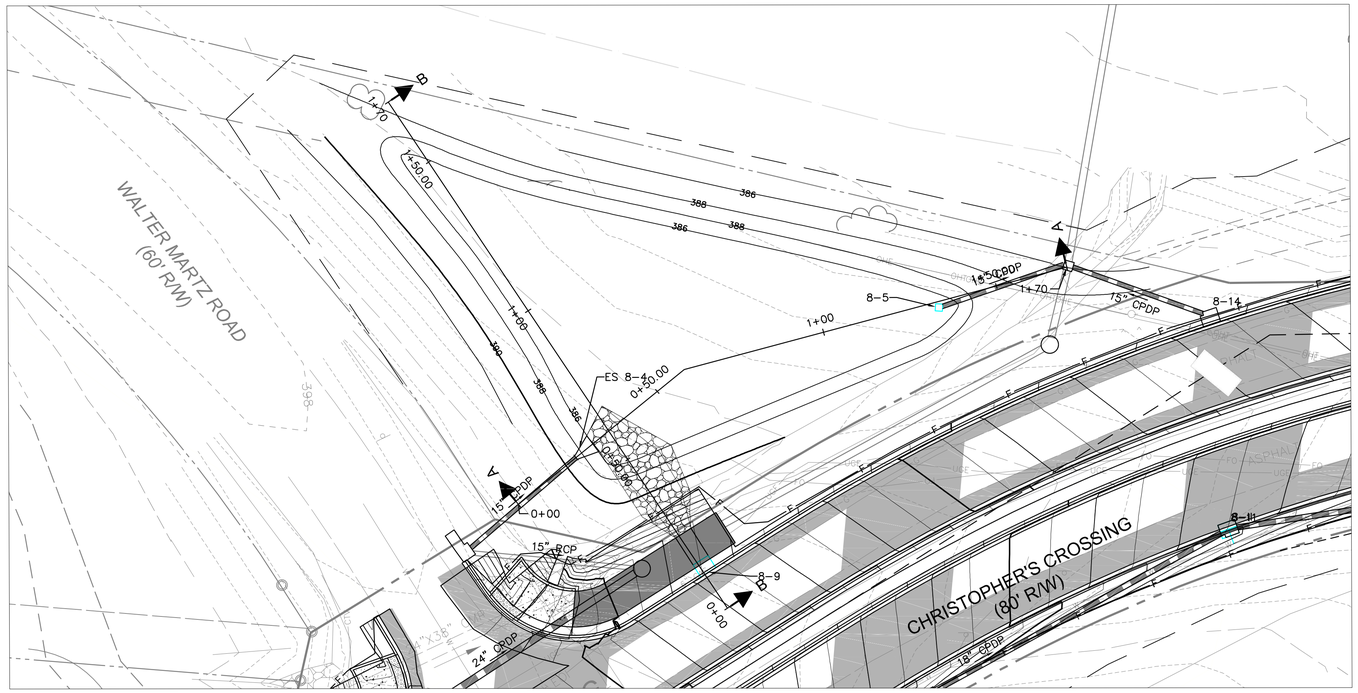
AMT FILE NO. 15-0758.007 SHEET NO. 65 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

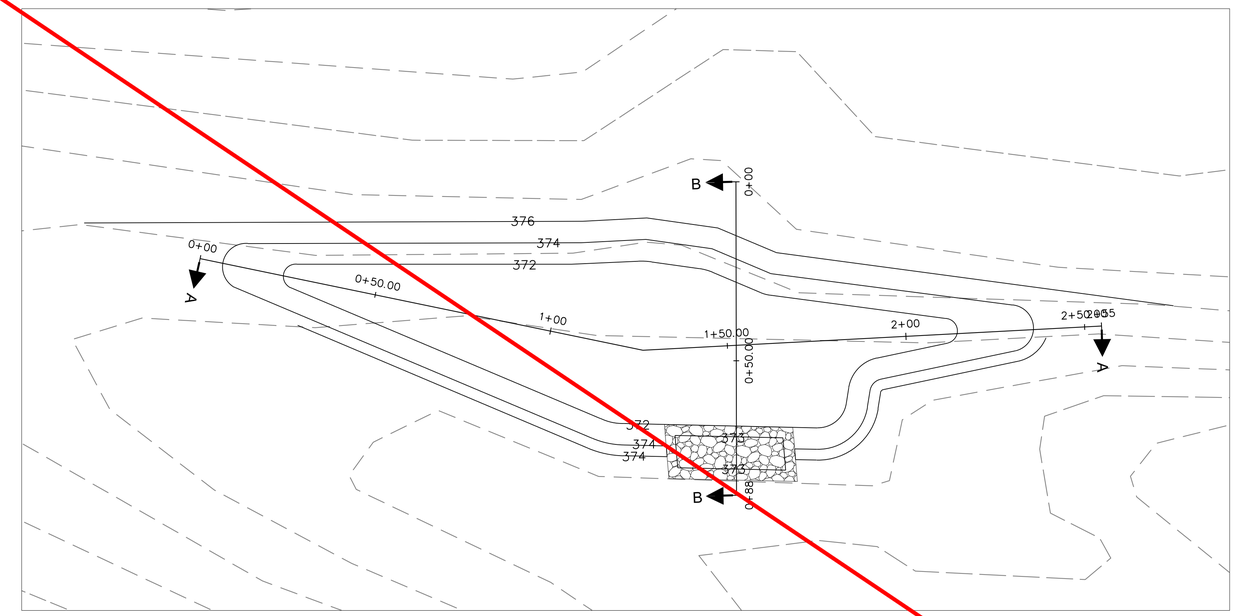

WALTER MARTZ ROAD
(60' R/W)
CHRISTOPHER'S CROSSING
(80' R/W)
B
1+70
1+50.00
1+66
386
388
386
388
386
398
ES 8-4
0+50.00
0+50.00
A
15" CPDP
0+00
15" RCP
8-9
B
0+00
24" CPDP
A
18" CPDP
1+70
8-5
1+00
15" CPDP
8-14
8-11
18" CPDP
F
F
F

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

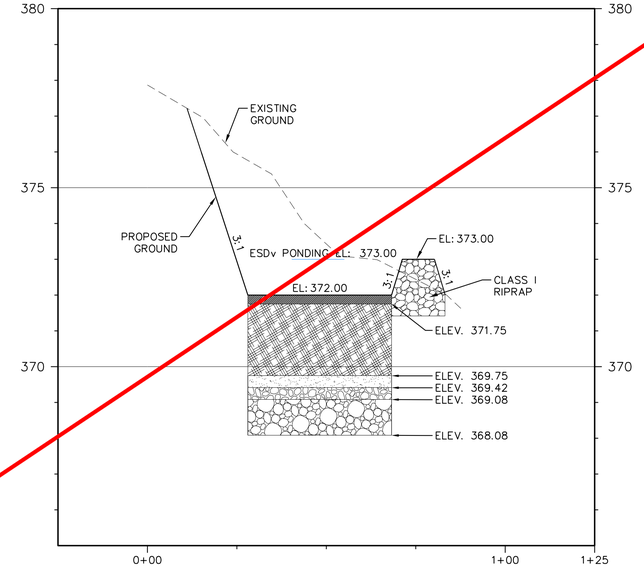
Signature:

REMOVED FROM PROJECT

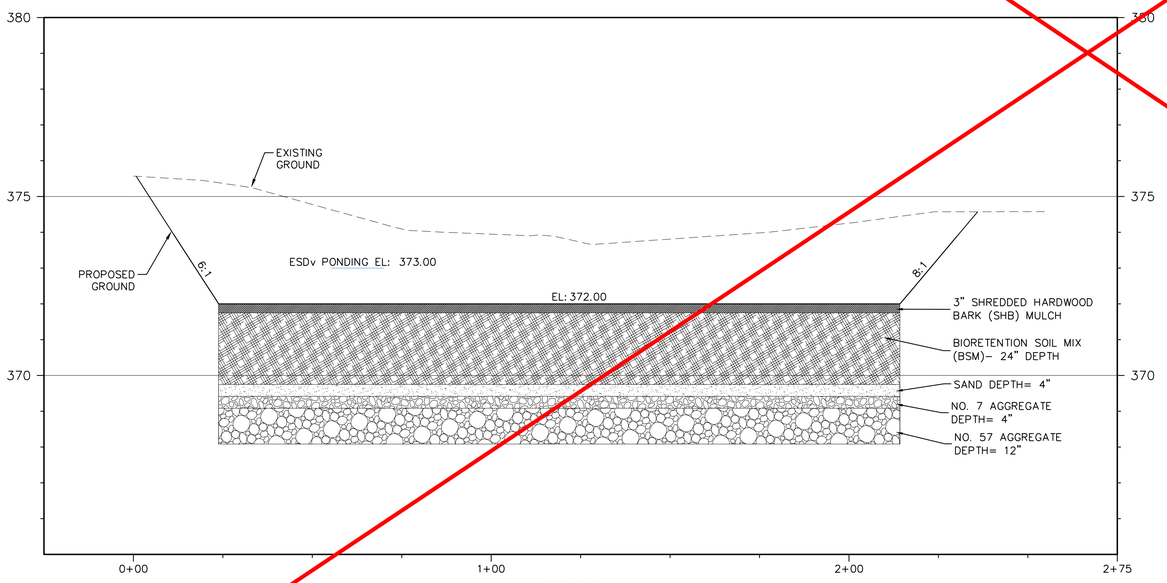


PROPOSED BIORETENTION FACILITY - PLAN VIEW
SCALE: 1"=20'

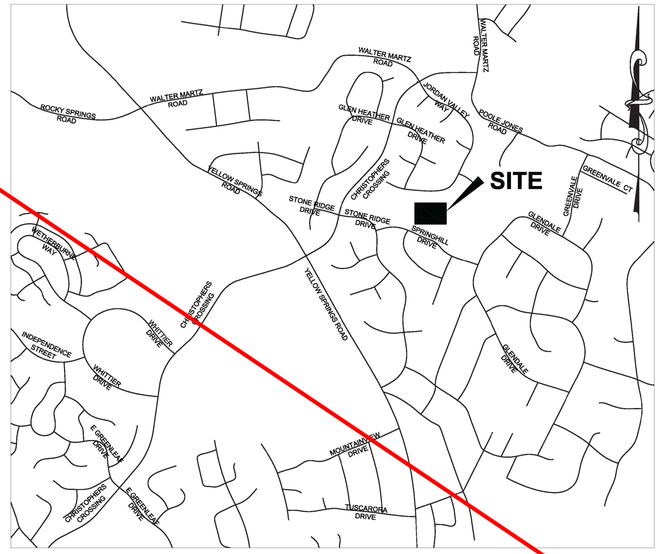
0 10' 20' 40'
SCALE: 1"=20'



SW-3 B-B
SCALE: HORZ 1"=20'
VERT 1"=2'



SW-3 A-A
SCALE: HORZ 1"=20'
VERT 1"=2'



PROJECT KEY MAP
SCALE: 1"=1000'

SW-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

STORMWATER MANAGEMENT PLAN

DATE: SEPTEMBER 2020 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 53 OF 106

REVISIONS		
MARK	DATE	DESCRIPTION

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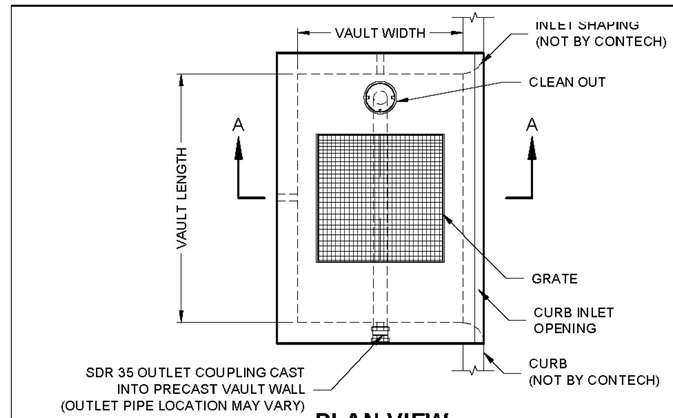
Division of Planning and Permitting
Department of Development
Review Engineering

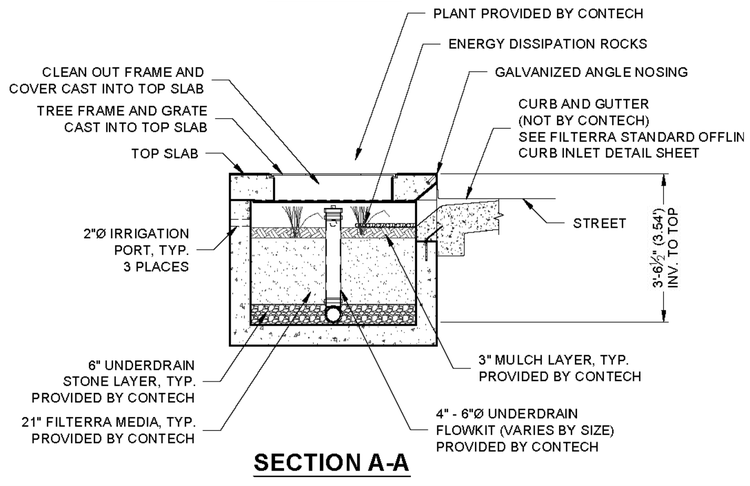
APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN VIEW

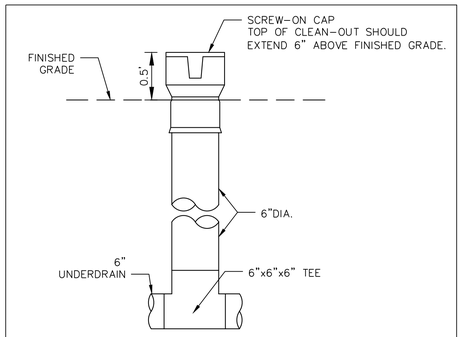


SECTION A-A

PROPOSED FILTERRA PLANTER BOX DETAIL
SCALE: N.T.S.

FILTERRA PLANTER BOX SCHEDULE				
STATION	OFFSET (FT)	BOX SIZE	BYPASS INLET	REMARKS
85+67	28.7 LT	6' x 12'	2–2	FT–1
91+52	27.9 LT	6' x 10'	2–7	FT–2
98+24	28.1 LT	6' x 10'	3–6	FT–3
103+99	28.0 LT	6' x 8'	5–1	FT–4
109+00	28.0 RT	6' x 6'	5–2	FT–5
111+75	28.0 LT	6' x 8'	5–6	FT–6

1 5LF OF 6" UNDERDRAIN BETWEEN EACH FILTERRA AND THE BYPASS INLET WILL BE PAID FOR PER ITEM 387109.



EACH OBSERVATION WELL SHALL HAVE THE FOLLOWING:

1. FOR AN UNDERGROUND FLUSH MOUNTED OBSERVATION WELL PROVIDE A TUBE MADE OF PVC OR EQUAL, WITH AND INSIDE DIAMETER OF AT LEAST 8 INCHES.
2. THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA–VIOLET RAYS. THE LID SHALL BE VENTED. THE LID SHALL BE MARKED WITH BOTH OBSERVATION WELL/CLEANOUT' AND THE DEPTH TO THE INVERT. MARKINGS SHALL BE VISABLE UPON COMPLETION OF THE PROJECT AND MUST BE RESISTANT TO WEATHERING.

CLEANOUT AND CAP DETAIL
NTS

Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration-

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 – 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with ¼-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; $f'_c = 3500$ psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) *not using previously approved State or local standards* requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone **(AASHTO)** #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

RIPRAP OUTFALL SCHEDULE									
OUTFALL STRUCTURE	OUTFALL TYPE	MDE DETAIL	d/2	L	W	T	RIPRAP CLASS	QUANTITY	COMMENTS
			(IN)	(FT)	(FT)	(IN)		(SY)	
ES 4-18	18" END SECTION	ROP II	9	11	12	19	I	15	MDE DETAIL D-4-1-B
ES 4-10	24" END SECTION	ROP II	12	8	12	19	I	21	MDE DETAIL D-4-1-B
ES 4-16	30" END SECTION	ROP II	15	8	12	19	I	11	MDE DETAIL D-4-1-B
FOREBAY WEIR	N/A	N/A	N/A	9	33	19	I	33	BIORETENTION (BR-1)
FOREBAY WEIR	N/A	N/A	N/A	8	12	19	I	11	BIORETENTION (BR-1)
SPILLWAY	N/A	N/A	N/A	15	24	19	I	40	BIORETENTION (BR-1)
OVERFLOW SPILLWAY	N/A	N/A	N/A	14	14	19	I	22	BIORETENTION (BR-1)
ES 8-4	15" END SECTION	ROP II	15	10	16	32	II	18	MDE DETAIL D-4-1-B
I 8-9	OPEN BACK COG	RIPRAP INFLOW PROTECTION	N/A	23	13	32	II	33	10' ENTRANCE AND EXIT SECTIONS ARE NOT TO BE APPLIED PER MDE DETAIL D-3-1

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

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SW-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

STORMWATER MANAGEMENT DETAILS

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 67 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

LIMITS OF DISTURBANCE =
525,334 SQ. FT. (12.06 ACRES)

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING & MULCHING

A. SEEDING

1. SPECIFICATIONS

a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.

c. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.

d. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

2. APPLICATION

a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.

i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.

b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.

i. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.

c. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).

i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE.

II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.

III. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

B. MULCHING

1. MULCH MATERIALS (IN ORDER OF PREFERENCE)

a. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

b. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.

i. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.

II. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

III. WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.

IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.

v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

2. APPLICATION

a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

3. ANCHORING

A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.

II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TAX II, TERRATACK AR OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.

IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION

a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.

b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.

c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

2. PERMANENT STABILIZATION

a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

i. SOIL PH BETWEEN 6.0 AND 7.0.

II. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).

III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.

IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.

b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.

c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.

d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.

e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.

3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.

c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.

d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:

a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1½ INCHES IN DIAMETER.

b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

6. TOPSOIL APPLICATION

a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.

b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.

c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING

AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.

2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.

3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.

4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.

5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

FREDERICK COUNTY STANDARD SEDIMENT & EROSION CONTROL NOTES

1. ALL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" AS APPROVED BY THE COUNTY.

2. ALL DISTURBED AREAS NOT UNDER ACTIVE GRADING TO BE SEEDED WITHIN 7 DAYS OF INITIAL GRADING. FOR TEMPORARY SEEDING SPECIFICATIONS SEE SECTION B1, "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PUBLISHED JOINTLY BY WATER MANAGEMENT ADMINISTRATION, SOIL CONSERVATION SERVICE AND STATE SOIL CONSERVATION COMMITTEE.

3. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AT THE INITIATION OF GRADING.

4. ALL STORM DRAIN AND SANITARY SEWER LINES NOT IN PAVED AREAS AND NOT SUBJECT TO ACTIVE GRADING ARE TO BE MULCHED & SEEDED WITHIN 7 DAYS OF INITIAL BACKFILL.

5. ELECTRIC POWER, TELEPHONE AND GAS LINES NOT IN ACTIVE GRADING AREAS ARE TO BE COMPACTED, SEEDED AND MULCHED WITHIN 7 DAYS AFTER INITIAL BACKFILL.

6. ALL EARTH BERMS AND SEDIMENT DAMS ARE TO BE MULCHED AND SEEDED (SEE SECTION B OF ABOVE REFERENCE) WITHIN 7 DAYS AFTER GRADING. ALL SOIL STOCKPILES ARE TO BE MULCHED AND SEEDED WITHIN 7 DAYS.

7. DURING CONSTRUCTION, ALL SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED AFTER EACH RAINFALL AND REPAIRED IF NECESSARY. SEDIMENT TO BE REMOVED TO A SUITABLE DISPOSAL AREA AND STABILIZED WITH PERMANENT VEGETATIVE COVER. (SEE SECTION B OF "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" PUBLISHED JOINTLY BY WATER MANAGEMENT ADMINISTRATION, SOIL CONSERVATION SERVICE, AND STATE SOIL CONSERVATION COMMITTEE.).

8. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT EROSION CONTROL MEASURES UNTIL DISTURBED AREAS ARE STABILIZED.

9. AFTER FINE GRADING, ALL DISTURBED AREAS ARE TO BE PERMANENTLY MULCHED AND SEEDED (SEE SECTION B).

10. NO SLOPE SHALL BE GREATER THAN 2:1.

11. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS WHICH ARE SHOWN ON THE PLAN AND AREA CURRENTLY BEING USED FOR MATERIAL STORAGE OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL".

12. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN CONTINUOUS COMPLIANCE WITH THE LATEST VERSION OF THE MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.

13. ALL UTILITIES, SUCH AS; STORM DRAIN, PUBLIC WATER, SANITARY SEWER, ELECTRIC POWER, TELEPHONE, CABLE AND GAS LINES, THAT ARE NOT IN PAVED AREAS AND ARE NOT UNDERGOING ACTIVE GRADING SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 3 DAYS OF INITIAL DISTURBANCE.

14. THE OWNER DEVELOPER OR THEIR DESIGNATE IS RESPONSIBLE FOR CONDUCTING ROUTINE MAINTENANCE. THE SITE AND CONTROLS SHOULD BE INSPECTED WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT**. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN A SUITABLE AREA AND SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED.

**ANY PROJECT THAT HAS A STATE ISSUED N.O.I. PERMIT DOCUMENT EACH INSPECTION AND MAINTAIN AN INSPECTION LOG (PLEASE SEE NOI FOR DETAILS).

NOTES FOR UTILITY WORK

1. DISTURBANCE OUTSIDE THE LIMIT OF DISTURBANCE CANNOT EXCEED 5,000 SQUARE FEET.

2. PLACE ALL EXCAVATED MATERIAL ON THE HIGH SIDE OF THE TRENCH.

3. ONLY COMPLETE AS MUCH WORK AS CAN BE DONE IN ONE DAY SO BACKFILLING, FINAL GRADING, SEEDING, AND MULCHING CAN OCCUR.

4. ANY SEDIMENT CONTROL MEASURES DISTURBED BY CONSTRUCTION SHALL BE REPAIRED THE SAME DAY.

NOTES FOR SECONDARY UTILITY WORK

A. DISTURBANCE FROM SECONDARY UTILITIES SUCH AS PHONE, CABLE, ELECTRIC CABLE, T.V. CABLE, ETC. SHALL BE THE SUBCONTRACTORS RESPONSIBILITY. THE WORK AREA SHALL BE RETURNED TO EXISTING GRADE. SEED AND MULCH THE DISTURBED AREA FROM THE INSTALLATION OR RELOCATION OF ANY LINES OR CONDUIT.

B. THE SUBCONTRACTORS SHALL BE RESPONSIBLE FOR THE REINSTALLATION OR REPAIR OF ANY SILT FENCE OR SEDIMENT CONTROLS MEASURES THAT WERE DAMAGED OR MOVED DURING THE INSTALLATION OR RELOCATION OF ANY LINES OR CONDUIT.

TREE PROTECTION NOTES

1. THE CONTRACTOR SHALL NOT REMOVE OR INTENTIONALLY DAMAGE ANY TREES NOT MARKED FOR REMOVAL.

2. THE CONTRACTOR SHALL AVOID AND MINIMIZE PASSAGE OF HEAVY CONSTRUCTION EQUIPMENT WITHIN THE TREE DRIP LINE.

3. THE CONTRACTOR SHALL FINE GRADE AROUND TREES WITH SMALL EQUIPMENT OR HAND GRADE ONLY.

4. THE CONTRACTOR SHALL INSTALL TREE PROTECTION FENCING AND PLANKING AS REQUIRED BY THE COUNTY INSPECTOR.

5. ALL TREES WITHIN THE LIMIT OF DISTURBANCE NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED AS PER THE TREE PROTECTION AND PLANNING DETAILS. TREE PLANKING SHALL BE UTILIZED FOR TREES THAT ARE DIRECTLY ADJACENT TO OR HAVE THE POTENTIAL TO BE DAMAGED BY MACHINERY THAT IS IN CLOSE OPERATION. TREE PROTECTION FENCING SHALL BE USED FOR TREES WHERE THERE IS NECESSARY ROOM TO AVOID DURING CONSTRUCTION.

PERMANENT SEEDING SUMMARY

NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS	N	P_2O_5	K_2O	LIME RATE
3	SHEEP FESCUE REDTOP KOREAN LESPEDEZA	20 1 10	3/1-5/315-1 0/15	½"-1/4"	45 LB/AC	90 LB/AC	90 LB/AC	2 TONS/AC

FREDERICK SOIL CONSERVATION DISTRICT

Approved By: _____
District Manager

Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE (FROM FIGURE B.3): 6b SEED MIXTURE (FROM TABLE B.1)					FERTILIZER RATE (10-20-20)	LIME RATE
NO.	SPECIES	APPLICATION RATE (lb/ac)	SEEDING DATES	SEEDING DEPTHS		
TEMPORARY	ANNUAL RYEGRASS	40	3/1-5/31 8/15-10/15	0.5"	4.36 LB/AC.	2 TONS/AC
TEMPORARY	WHEAT	120	3/1-5/31 8/15-10/15	1.0"	4.36 LB/AC	2 TONS/AC

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

ES-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION & SEDIMENT CONTROL NOTES

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 68 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS AND 100-YEAR FLOODPLAINS

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

2. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIALS FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.

4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.

6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.

7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES:

ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.)AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.

8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.

9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:

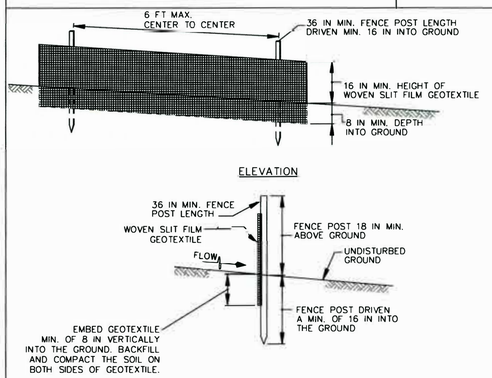
   A. USE I WATERS (WITHOUT YELLOW PERCH): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
   B. USE I WATERS (WITH YELLOW PERCH): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD FEBRUARY 15 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
   C. USE III WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THORUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
   D. USE IV WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH MAY 31, INCLUSIVE, DURING ANY YEAR.

10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.

11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

DETAIL E-1 SILT FENCE

STANDARD SYMBOL: SF



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

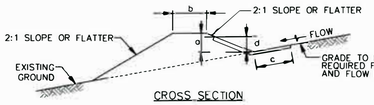
1 OF 2

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 C-1 EARTH DIKE

STANDARD SYMBOL: A-1 (PLACE DESIGNATION (E.G. A-1) ON FLOW CHANNEL SIDE OF DIKE.)



CROSS SECTION

PLAN VIEW

	DIKE TYPE A	DIKE TYPE B
o – DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b – DIKE WIDTH	24 IN MIN.	36 IN MIN.
c – FLOW WIDTH	4 FT MIN.	6 FT MIN.
d – FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

A-1	SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2	SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3	4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

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 E-1 SILT FENCE

STANDARD SYMBOL: SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

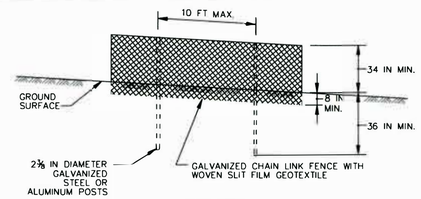
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

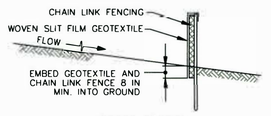
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

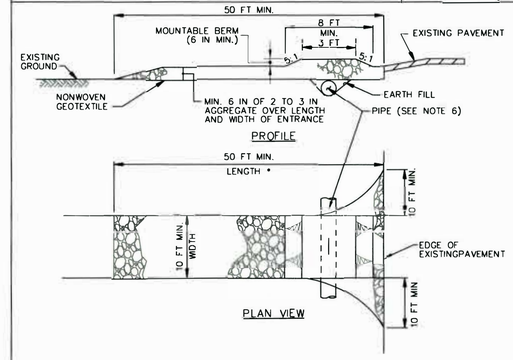
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

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

1. 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.
2. 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.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. 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.
5. 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

FREDERICK SOIL CONSERVATION DISTRICT

Approved By: _____ District Manager

Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — DAVID VAN METER — 24931 — PROFESSIONAL ENGINEER — 11/16/2022

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
401 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 532-6552
EMAIL: AMT1@AMTENGINEERING.COM

ES-2

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION & SEDIMENT CONTROL DETAILS

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 69 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

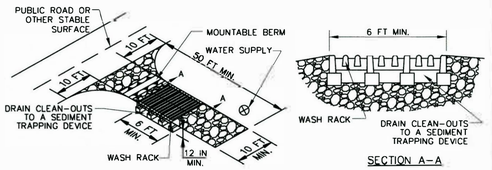
APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

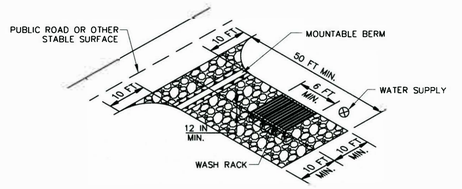
DETAIL B-2 WASH RACK OPTION

STANDARD SYMBOL: WR



ISOMETRIC VIEW – WASH RACK IN SCE

SECTION A–A



ISOMETRIC VIEW– WASH RACK ALONG SCE

CONSTRUCTION SPECIFICATIONS

1. USE A WASH RACK DESIGNED AND CONSTRUCTED/MANUFACTURED FOR THE ANTICIPATED TRAFFIC LOADS. CONCRETE, STEEL, OR OTHER MATERIALS ARE ACCEPTABLE. PRE-FABRICATED UNITS SUCH AS CATTLE GUARDS ARE ACCEPTABLE. USE MINIMUM DIMENSION OF 6 FEET x 10 FEET. ORIENT DIRECTION OF RIBS AS SHOWN ON THE DETAIL.
2. INSTALL PRIOR TO, ALONG SIDE OF, OR AS PART OF THE SCE.
3. DIRECT WASH WATER TO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. KEEP AREA UNDER WASH RACK FREE OF ACCUMULATED SEDIMENT. IF DAMAGED, REPAIR OR REPLACE WASH RACK.

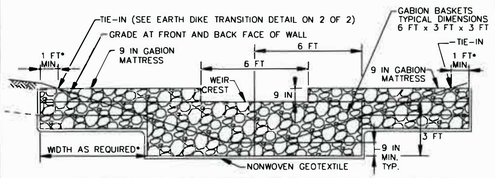
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

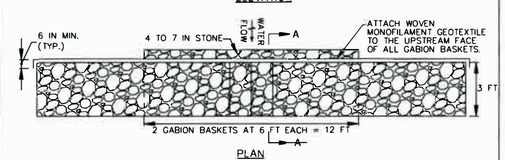
STANDARD SYMBOL: TGOS

MAXIMUM DRAINAGE AREA = 1½ ACRE

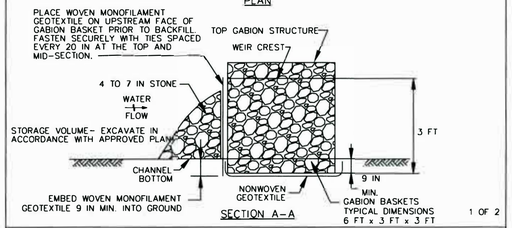


*ONE BASKET OR MULTIPLE MATTRESSES NEED TO EXTEND FROM THE GABION/EARTH INTERSECTION (TIE IN) TO A MINIMUM 1 FOOT BEYOND THE TIE IN.

ELEVATION



PLAN



SECTION A–A

1 OF 2

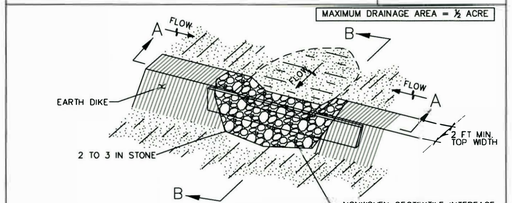
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

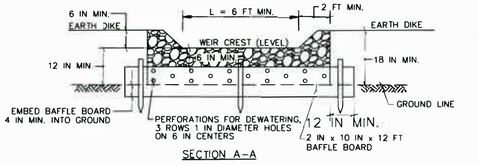
DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

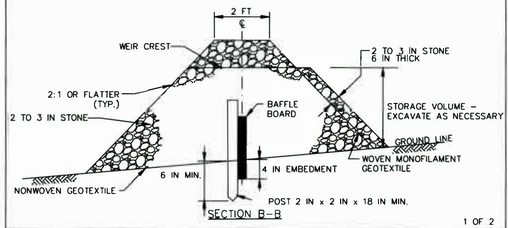
MAXIMUM DRAINAGE AREA = ½ ACRE



ISOMETRIC VIEW



SECTION A–A



SECTION B–B

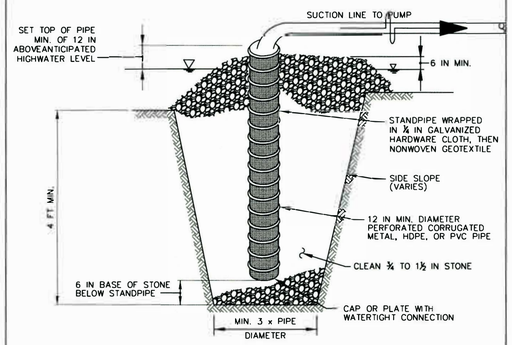
1 OF 2

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



ELEVATION

CONSTRUCTION SPECIFICATIONS

1. 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 CAPPED WITH WATERTIGHT SEAL.
2. WRAP PIPE WITH ½ INCH GALVANIZED HARDWARE CLOTH AND WRAP NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE HARDWARE CLOTH.
3. EXCAVATE PIT TO THREE TIMES THE PIPE DIAMETER AND FOUR FEET IN DEPTH. PLACE ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE, 6 INCHES IN DEPTH PRIOR TO PIPE PLACEMENT.
4. SET TOP OF PIPE MINIMUM 12 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
5. BACKFILL PIT AROUND THE PIPE WITH ¾ TO 1½ INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE AND EXTEND STONE A MINIMUM OF 6 INCHES ABOVE ANTICIPATED WATER SURFACE ELEVATION.
6. DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
7. A SUMP PIT REQUIRES FREQUENT MAINTENANCE. IF SYSTEM CLOGS, REMOVE PERFORATED PIPE AND REPLACE GEOTEXTILE AND STONE. KEEP POINT OF DISCHARGE FREE OF EROSION.

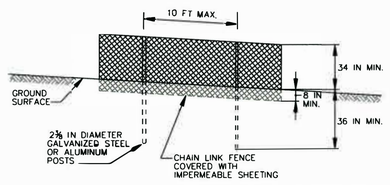
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

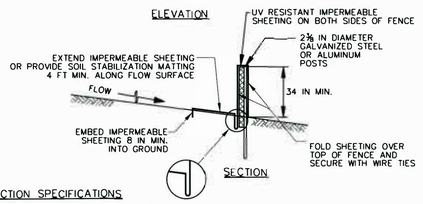
DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES



ELEVATION



SECTION

CONSTRUCTION SPECIFICATIONS

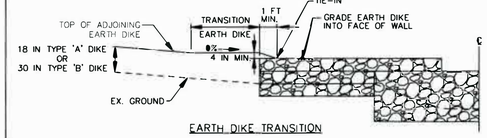
1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
4. SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
5. EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
6. WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
7. KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

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 E-8 TEMPORARY GABION OUTLET STRUCTURE

STANDARD SYMBOL: TGOS



EARTH DIKE TRANSITION

NOTES:
1. PROVIDE TRANSITION LENGTH AND HEIGHT AS SPECIFIED ON PLAN. HEIGHT OF TRANSITION EARTH DIKE MUST EXCEED 4 INCH MINIMUM FREEBOARD ABOVE TOP OF GABION AND EXTEND AT THIS ELEVATION UNTIL IT INTERCEPTS THE TOP OF ADJOINING EARTH DIKE.
2. PROVIDE POSITIVE DRAINAGE ALONG EARTH DIKE TO GABION OUTLET STRUCTURE.
3. COMPACT FILL.
4. SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED ON PLAN. BANK PROJECTIONS OR IRREGULARITIES ARE NOT ALLOWED.

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE BASKETS MADE OF 11 GAUGE WIRE OR HEAVIER.
3. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
4. INSTALL GABIONS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
5. EMBED THE GABION OUTLET STRUCTURE INTO THE SOIL A MINIMUM OF 9 INCHES. PROVIDE NONWOVEN GEOTEXTILE UNDER ALL GABIONS.
6. FILL GABION BASKETS WITH CLEAN 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE WITHOUT REBAR OR WIRE MESH.
7. MAKE THE WEIR CREST OF THE GABION OUTLET STRUCTURE 9 INCHES LOWER THAN THE TOP OF THE ADJACENT GABIONS.
8. PROVIDE A MINIMUM WEIR CREST OF 6 FEET.
9. ATTACH WOVEN MONOFILAMENT GEOTEXTILE TO THE UPSTREAM FACE OF GABION BASKETS AND COVER WITH 4 TO 7 INCH STONE.
10. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 12 INCHES OF THE WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO FUNCTION. MAINTAIN LINE, GRADE, AND CROSS SECTION.
11. UPON REMOVAL OF GABION OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

2 OF 2

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 E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE NONWOVEN GEOTEXTILE ON INTERFACE BETWEEN GROUND AND STONE.
3. PERFORATE BAFFLE BOARD WITH 3 ROWS OF 1 INCH DIAMETER HOLES 6 INCHES ON CENTER, EMBED A MINIMUM OF 4 INCHES INTO GROUND, AND EXTEND BAFFEL BOARD MINIMUM OF 12 INCHES INTO EARTH DIKE.
4. USE CLEAN 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE AND COVER WITH A MINIMUM OF 6 INCHES OF ADDITIONAL STONE.
5. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H-1 MATERIALS.
6. SET WEIR CREST OF STONE 6 INCHES LOWER THAN THE TOP OF EARTH DIKE. USE MINIMUM LENGTH OF 6 FEET FOR WEIR CREST.
7. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 6 INCHES OF WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO DRAIN. MAINTAIN LINE, GRADE, AND CROSS SECTION.
8. UPON REMOVAL OF STONE OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

2 OF 2

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

FREDERICK SOIL CONSERVATION DISTRICT

Approved By: _____
District Manager

Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

ES-3

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 7358552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO WALTER MARTZ /POOLE JONES ROAD

EROSION & SEDIMENT CONTROL DETAILS

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 70 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

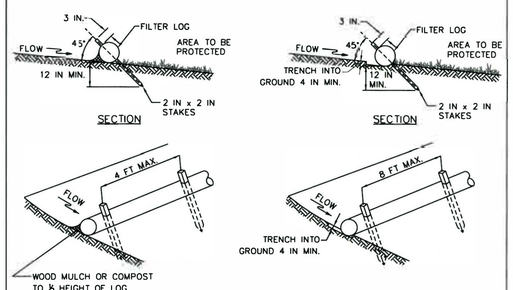
APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

DETAIL E-6 FILTER LOG

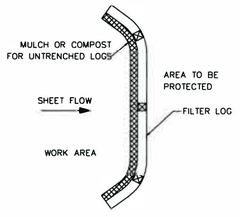
STANDARD SYMBOL
FL-18
DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG



UNTRENCHED INSTALLATION OR ENTRENCHED INSTALLATION*

*THIS APPLICATION MAY NOT BE USED WITH LOGS SMALLER THAN 12 IN.

ISOMETRIC VIEW



PLAN

1 OF 2

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 E-6 FILTER LOG

STANDARD SYMBOL
FL-18
DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG

CONSTRUCTION SPECIFICATIONS

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
2. FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
4. FOR UNTRENCHEO INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
7. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF ½ THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

2 OF 2

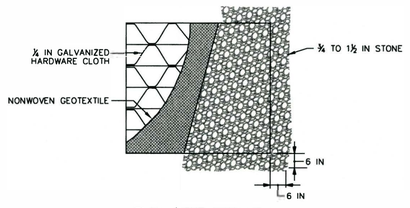
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

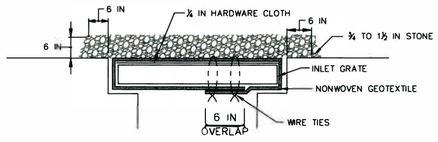
DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL
AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



PLAN / CUT AWAY VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

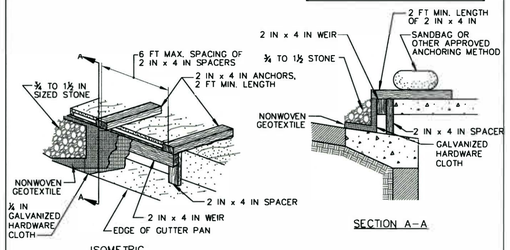
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL
CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

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

SEDIMENT CONTROL/ STORM WATER MANAGEMENT REQUIRED INSPECTIONS

YOU MUST NOTIFY THE SEDIMENT CONTROL AND STORMWATER MANAGEMENT OFFICE AT 301-694-1679 BEFORE 9:00 A.M. 24 HOURS PRIOR TO THE REQUIRED INSPECTION.
FAILURE TO NOTIFY THIS OFFICE WILL RESULT IN A STOP WORK ORDER OR OTHER PENEALTIES AS OUTLINED IN FREDERICK COUNTY CODES.

**********NOTICE********

THIS LIST IS FOR SEQUENCE OF CONSTRACTION ONLY. THIS OFFICE ASSUMES NO RESPONSIBILITYOR LIABILITY FOR IMPROPER INSTALLATION OF ANY ITEM ON THIS CHECKLIST. THIS OFFICE RECCOMMENDS THAT A PROFESSIONAL ENGINEER BE PRESENT FOR EACH OF THE REQUIRED INSPECTIONS.

TYPE OF INSPECTION	MISC. COMMENTS /INITIALS
1. PRECONSTRUCTION MEETING	
2. COMPLETION OF SEDIMENT CONYTROL MEASURE (IF USING BASIN SEE #6 BELOW)	
3. PRIOR TO MODIFICATION OR REMOVAL OF SED. CONTRL.	
4. INFILTRATION SYSTEMS	
A. SITE READINESS PER SEQUENCE OF CONSTRUCTION	
B. INFILTRATION AREA, PROTECTED FROM SEDIMENTATION	
C. DIMENSIONS	
D. FILTRATING MATERIAL	
E. FILL MATERIAL	
F. SIZE, PLACEMENT, TYPE OF PIPING	
G. OBSERVATION WELL	
H. COVER/STABILIZATION	
5. OPEN CHANNEL FLOW ATTENUATION	
A. SITE READINESS PER SEQUENCE OF CONSTUCTION	
B. CROSS SECTION CONFORMANCE	
C. MATERIAL (TYPE/S IZE)	
D. STABILIZATION	
6. RENTENTION/DETENTION STRUCTURES (BASIN/PONDS)	
A. SUBGRADE PREPARARTION	
1. CORE TRENCH	
2. SUITABLE MATERIAL/ COMPACTION	
B. EMBANKMENT CONSTRUCTION	
1. SUITABLE MATERIAL/COMPACTION	
2. SLOPE GRADE	
3. DIMENSIONS	
C. BARREL AND RISER ASSEMBLY	
1. CORRECT MATERIAL ONSITE	
2. SIZZING	
3. ANTI-SEEP COLLARS	
4. ANTI-FLOTATION DEVICE	
5. CONCRETE CRADLE (RCP ONLY)	
6. INSTALLATION /BAKKFILL/COMPACTION	
D. CONCCRETE STRUCTURES	
1. FOOTER DEMINSONS	
2. REINFORCINS MATERIAL (TYPE, SIZE,PLACEMENT)	
3. WEIR POUR/MATERIAL/SLUMP TEST	
4. FORM STRIP AND FINISHING	
E. IMPOUNDING AREA	
1. LOW FLOW CHANNELS/STABILIZATION	
2. DEWATERING DEVICE	
3. EMERGENCY SPILLWAY	
4. EXTENDED DETENTION DEVICE	
F. OUTFALL AREA (LEVEL SPREADER,RIPRAP CHANNEL, ECT.,	
G. VEGETATIVE STABILIZATION	
H. MISCELLANEOUS	

FREDERICK SOIL CONSERVATION DISTRICT

Approved By _____
District Manager

Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

ES-4

REVISIONS

MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 727-6552
EMAIL: AMT@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION & SEDIMENT CONTROL DETAILS

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 71 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

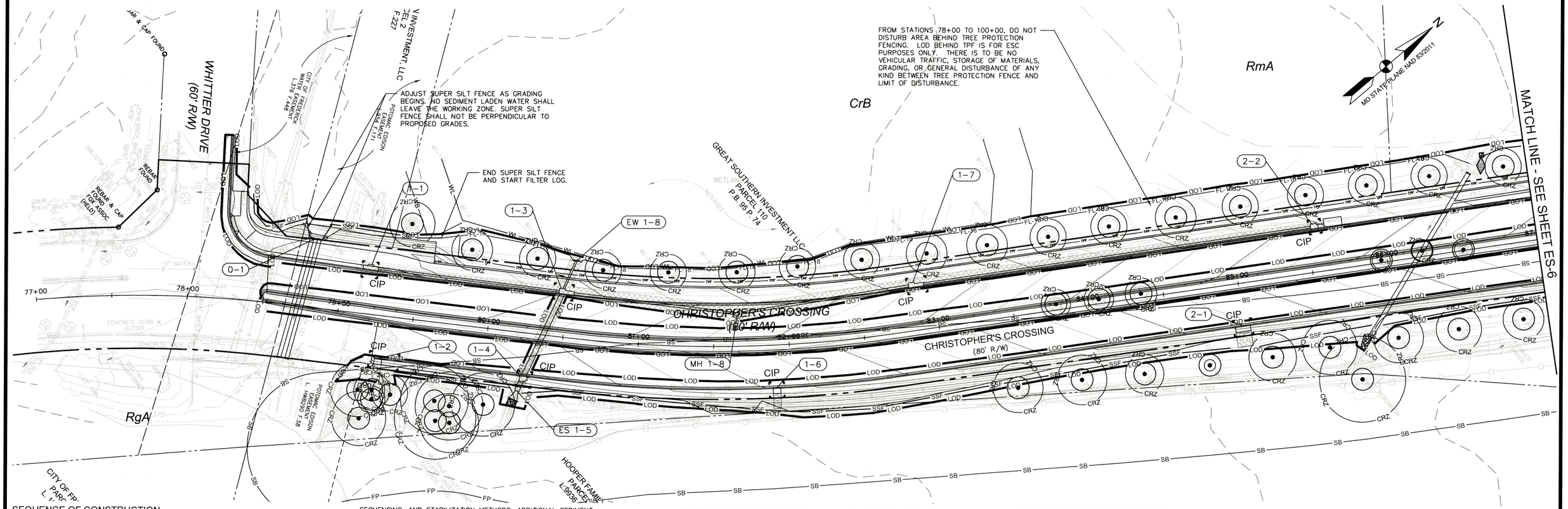
SENSITIVE AREAS

NO CONSTRUCTION ACTIVITIES SHALL BE UNDERTAKEN WITHIN SPECIFIED SENSITIVE AREAS OF THE PROJECT WITHOUT PRIOR NOTIFICATION OF THE ENGINEER. ALL WORK IN THESE AREAS SHALL BE MONITORED BY A RESPONSIBLE PARTY DESIGNATED BY THE CONTRACTOR TO ASSURE THAT REASONABLE CARE IS TAKEN IN OR ADJACENT TO THESE AREAS. AREAS CONSIDERED SENSITIVE ARE DEFINED AS: FLOODPLAINS, WETLANDS (TIDAL, NONTIDAL AND ASSOCIATED BUFFERS), CRITICAL AREAS, FORESTED AREAS, ARCHEOLOGICAL SITES, HISTORIC SITES, PARKLAND, OPEN WATER AND TIER II WATERS.

DUST CONTROL

DUST CONTROL METHOD FOR THIS SITE TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES: CALCUIM CHLORIDE SHALL BE APPLIED TO EXPOSED SURFACES AT A RATE THAT WILL KEEP SURFACE MOIST UNTIL SOIL IS STABILIZED ACCORDING TO VEGETATIVE SPECS. FOR THIS SITE AND AREAS TO BE PAVED ARE COMPLETED.

SOIL TYPES		SOIL GROUP
CrB	Croton–Abbottstown silt loams, 3 to 8 percent slopes	D
KeC	Klinesville very channery loam, 8 to 15 percent slopes	D
PaB	Penn loam, 3 to 8 percent slopes	B
PeC	Penn channery loam, 8 to 15 percent slopes	B
PrA	Penn–Reaville silt loam, 0 to 3 percent slopes	B
PrB	Penn–Reaville silt loams, 3 to 8 percent slopes	B
PqB	Penn–Reaville–Urban land complex, 0 to 8 percent slopes	D
RgA	Readington silt loam, 0 to 3 percent slopes	C
RmA	Reaville silt loam, 0 to 3 percent slopes	D
RwA	Rowland silt loam, 0 to 3 percent slopes	C



SEQUENCE OF CONSTRUCTION

PRE–CONSTRUCTION:

1. THE CONTRACTOR SHALL NOTIFY THE FREDERICK SOIL CONSERVATION DISTRICT AT 301–695–2803 EXT. 3, AND THE FREDERICK ENVIRONMENTAL COMPLIANCE DIVISION AT 301–600–3507 AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION TO SCHEDULE A PRE–CONSTRUCTION MEETING. THE CONTRACTOR SHALL PROVIDE THE NAME OF THE PERSON ON THE SITE WHO IS RESPONSIBLE FOR INSPECTION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES, AND A COPY OF THEIR GREEN CARD TO THE SEDIMENT CONTROL INSPECTOR AT THE PRE–CONSTRUCTION MEETING.
2. LOCATION OF THE CONCRETE WASHOUT WILL BE DETERMINED AT THE PRE–CONSTRUCTION MEETING.
3. THE CONTRACTOR SHALL CALL "MISS UTILITY" (1–800–257–7777) A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION, BORING, PILE DRIVING AND/ OR DIGGING FOR THE LOCATION OF GAS, ELECTRIC, TELEPHONE, WATER AND SEWER LINES.
4. ALL REGULATORY PERMITS MUST BE OBTAINED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
5. DEPENDING ON SITE CONDITIONS, PHASING OR CONSTRUCTION SEQUENCING, AND STABILIZATION METHODS, ADDITIONAL SEDIMENT CONTROLS (OTHER THAN AS SHOWN HEREON) MAY BE REQUIRED BY THE INSPECTOR.

CONSTRUCTION:

6. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION OR ANY OTHER LAND DISTURBING ACTIVITIES.
7. CLEAR AND GRADE FOR INSTALLATION OF PERIMETER SEDIMENT CONTROL DEVICES, ONLY DISTURBING THE AREA NEEDED FOR INSTALLATION OF THE SEDIMENT CONTROL DEVICES.
8. DISTURBED AREAS WITHIN THE PROJECT LIMITS SHALL HAVE EITHER PERMANENT OR TEMPORARY STABILIZATION AT THE END OF EACH WORK DAY.
9. ANY MATERIAL OR DEBRIS LEAVING THE SITE SHALL BE TAKEN TO AN APPROVED SITE FOR DISPOSAL.
8. WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE CONTRACTOR SHALL COMMENCE WIDENING OF CHRISTOPHERS CROSSING PER THE MOT SOC.
9. INSTALL INLET PROTECTION AND ADDITIONAL SEDIMENT CONTROL MEASURES AS THE PROPOSED STORM DRAIN SYSTEM IS INSTALLED AND MEDIAN WORK IS COMPLETED.
10. ONCE THE UPSTREAM AREAS THAT DRAIN INTO THE SWM FACILITY ARE STABILIZED, THE CONTRACTOR MAY CONSTRUCT THE BIORETENTION FACILITIES. THE CONTRACTOR SHALL TAKE EXTREME CAUTION NOT TO ALLOW DISTURBED AREAS TO DRAIN INTO THE FACILITY.
11. WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR'S APPROVAL, REMOVE THE EROSION AND SEDIMENT CONTROL MEASURES.
12. ANY AREAS DISTURBED DURING THE REMOVAL OF THE ESC MEASURES SHALL BE IMMEDIATELY STABILIZED.

STOCKPILE NOTES

1. ALL STOCKPILING AND STAGING SHALL OCCUR WITHIN THE LIMIT OF DISTURBANCE.
2. NO STOCKPILING ALLOWED ON ASPHALT.
3. MAXIMUM STOCKPILE HEIGHT SHALL NOT EXCEED 15 FEET AND MAXIMUM SLOPE SHALL NOT EXCEED 2:1.
4. ALL STOCKPILES LEFT AT THE END OF THE DAY NEED TO BE STABILIZED UNTIL THE NEXT DISTURBANCE.

100-YR FLOODPLAIN/ WETLAND NOTES

1. 100–YR FLOODPLAIN LINES SHOWN ON THE PLANS ARE PER FEMA FIRM MAPPING. NO CHANGES ARE PROPOSED THAT IMPACT THE 100–YR FLOODPLAIN WITHIN THE PROJECT LIMITS OF DISTURBANCE.
2. WETLAND DELINEATIONS WERE FIELD VERIFIED AND ARE SHOWN ON PLANS.

811 MISS UTILITY
48 HOURS BEFORE YOU DIG
CALL "MISS UTILITY" AT 811
OR LOG ON TO www.missutility.net
Know what's below. Call before you dig.

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE–DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

a. 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

b. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING

LEGEND

LOD	LIMITS OF DISTURBANCE		EARTH DIKE
SF	SILT FENCE	P	PUMP AROUND AND FLEX PIPE
SSF	SUPER SILT FENCE	SCE	STABILIZED CONSTRUCTION ENTRANCE
CWD	CLEAR WATER DIVERSION		FILTER BAG
SAF	SAFETY FENCE (BOF)		SANDBAGS
CrB	SOIL BOUNDARY & SOIL TYPE		SAME DAY STABILIZATION AREA
DF	DIVERSION FENCE		SUMP PIT
		CIP	CURB INLET PROTECTION
		AGIP	AT–GRADE INLET PROTECTION
		TGOS	TEMPORARY GABION OUTLET STRUCTURE
		TSOS	TEMPORARY STONE OUTLET STRUCTURE

SCALE: 1"=30'

DIVERSION FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
DF	86+75 LT	87+00 LT	CHRISTOPHERS CROSSING	25

SUPER SILT FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SSF	78+85 LT	80+40 LT	CHRISTOPHERS CROSSING	255
SSF	79+50 RT	87+00 RT	CHRISTOPHERS CROSSING	770

ROCK OUTLET PROTECTION (ROP)

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
ROP	80+30	RT	CHRISTOPHERS CROSSING	1
ROP	85+75	RT	CHRISTOPHERS CROSSING	1

INLET PROTECTION

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	79+18	LT	CHRISTOPHERS CROSSING	1
CIP	80+26	RT	CHRISTOPHERS CROSSING	1
CIP	80+46	LT	CHRISTOPHERS CROSSING	1
CIP	82+90	LT	CHRISTOPHERS CROSSING	1
CIP	85+55	LT	CHRISTOPHERS CROSSING	1
CIP	79+30	RT	CHRISTOPHERS CROSSING	1
CIP	81+90	RT	CHRISTOPHERS CROSSING	1
CIP	85+00	RT	CHRISTOPHERS CROSSING	1

FILTER LOG (18 INCH)

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
FL–18	80+60 LT	86+60 LT	CHRISTOPHERS CROSSING	595

TGOS / TSOS

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
TSOS	86+75	LT	CHRISTOPHERS CROSSING	1

FREDERICK SOIL CONSERVATION DISTRICT

Approved By _____
District Manager

Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

ES-5

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION AND SEDIMENT CONTROL PLAN

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 72 OF 121

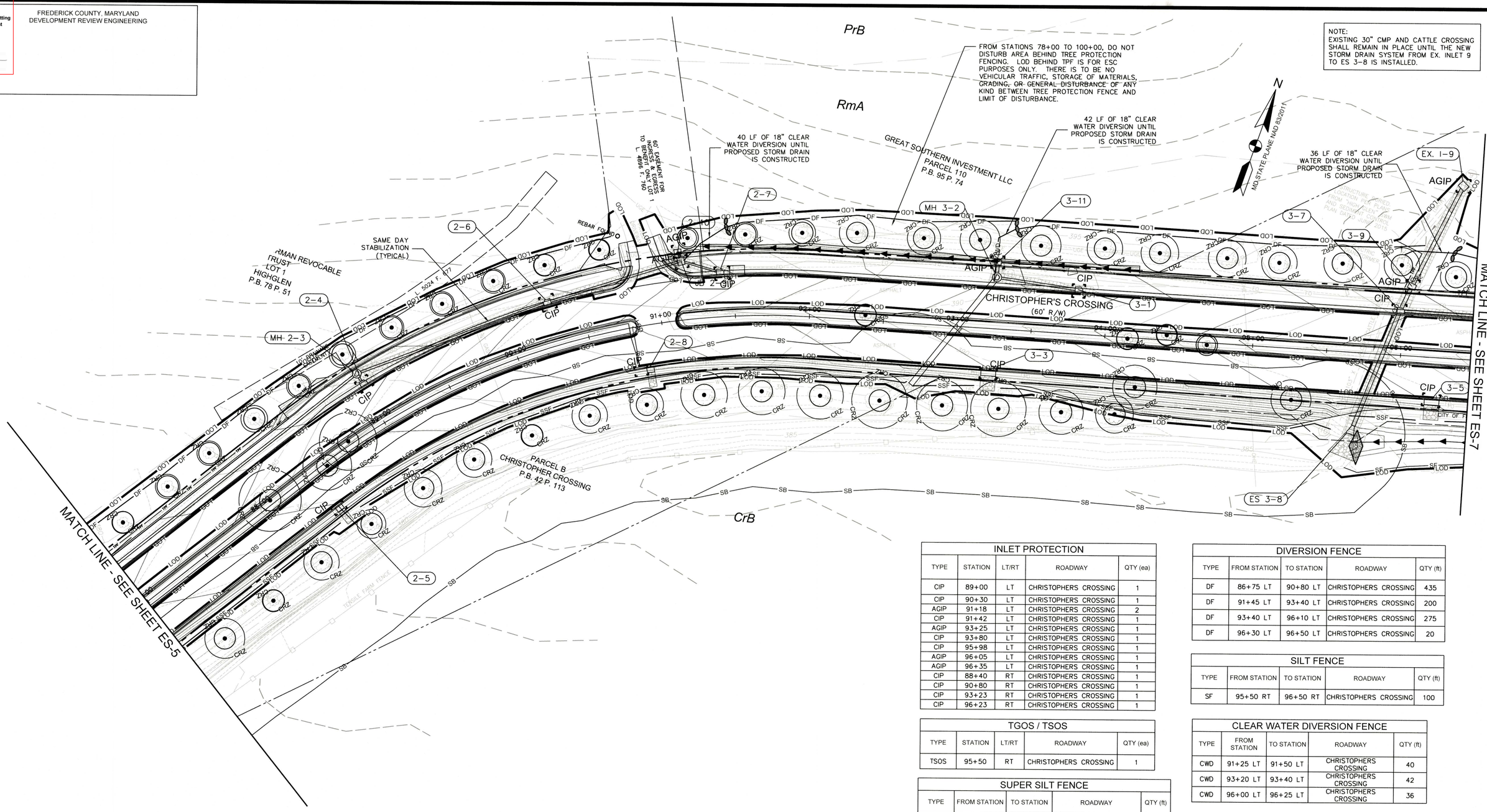
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

NOTE:
EXISTING 30" CMP AND CATTLE CROSSING SHALL REMAIN IN PLACE UNTIL THE NEW STORM DRAIN SYSTEM FROM EX. INLET 9 TO ES 3-8 IS INSTALLED.



INLET PROTECTION				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	89+00	LT	CHRISTOPHERS CROSSING	1
CIP	90+30	LT	CHRISTOPHERS CROSSING	1
AGIP	91+18	LT	CHRISTOPHERS CROSSING	2
CIP	91+42	LT	CHRISTOPHERS CROSSING	1
AGIP	93+25	LT	CHRISTOPHERS CROSSING	1
CIP	93+80	LT	CHRISTOPHERS CROSSING	1
CIP	95+98	LT	CHRISTOPHERS CROSSING	1
AGIP	96+05	LT	CHRISTOPHERS CROSSING	1
AGIP	96+35	LT	CHRISTOPHERS CROSSING	1
CIP	88+40	RT	CHRISTOPHERS CROSSING	1
CIP	90+80	RT	CHRISTOPHERS CROSSING	1
CIP	93+23	RT	CHRISTOPHERS CROSSING	1
CIP	96+23	RT	CHRISTOPHERS CROSSING	1

DIVERSION FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
DF	86+75 LT	90+80 LT	CHRISTOPHERS CROSSING	435
DF	91+45 LT	93+40 LT	CHRISTOPHERS CROSSING	200
DF	93+40 LT	96+10 LT	CHRISTOPHERS CROSSING	275
DF	96+30 LT	96+50 LT	CHRISTOPHERS CROSSING	20

SILT FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SF	95+50 RT	96+50 RT	CHRISTOPHERS CROSSING	100

TGOS / TSOS				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
TSOS	95+50	RT	CHRISTOPHERS CROSSING	1

CLEAR WATER DIVERSION FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
CWD	91+25 LT	91+50 LT	CHRISTOPHERS CROSSING	40
CWD	93+20 LT	93+40 LT	CHRISTOPHERS CROSSING	42
CWD	96+00 LT	96+25 LT	CHRISTOPHERS CROSSING	36

SUPER SILT FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SSF	87+00 RT	96+50 RT	CHRISTOPHERS CROSSING	830
SSF	95+60 RT	96+50 RT	CHRISTOPHERS CROSSING	75

811 Know what's below. Call before you dig.

MISS UTILITY
48 HOURS BEFORE YOU DIG
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OR LOG ON TO www.missutility.net

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

a. 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

b. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING

LEGEND

LOD	LIMITS OF DISTURBANCE		EARTH DIKE
SF	SILT FENCE	P	PUMP AROUND AND FLEX PIPE
SSF	SUPER SILT FENCE	SCE	STABILIZED CONSTRUCTION ENTRANCE
CWD	CLEAR WATER DIVERSION		FILTER BAG
SAF	SAFETY FENCE (BOF)		SANDBAGS
CrB	SOIL BOUNDARY & SOIL TYPE		SAME DAY STABILIZATION AREA
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		TGOS	TEMPORARY GABION OUTLET STRUCTURE
		TSOS	TEMPORARY STONE OUTLET STRUCTURE
			SUMP PIT

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

FREDERICK SOIL CONSERVATION DISTRICT

Approved By _____
District Manager

Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

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ES-6

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION AND SEDIMENT CONTROL PLAN

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 73 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

TGOS / TSOS

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
TGOS	99+65	RT	CHRISTOPHERS CROSSING	1
TSOS	102+60	LT	CHRISTOPHERS CROSSING	2
TSOS	302+35	LT	YELLOW SPRINGS	1

STABILIZED CONSTRUCTION ENTRANCE

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
SCE	302+55	RT	YELLOW SPRINGS	1

ROCK OUTLET PROTECTION (ROP)

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
ROP	302+30	RT	YELLOW SPRINGS	1

EARTH DIKE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
A-1	201+20 LT	202+40 LT	YELLOW SPRINGS	125
A-1	102+90 LT	104+50 LT	CHRISTOPHERS CROSSING	165

SILT FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SF	97+00 RT	99+75 RT	CHRISTOPHERS CROSSING	280
SF	300+75 RT	304+25 RT	YELLOW SPRINGS	460

SUPER SILT FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SSF	96+60 RT	99+65 RT	CHRISTOPHERS CROSSING	315
SSF	102+60 RT	104+50 RT	CHRISTOPHERS CROSSING	185

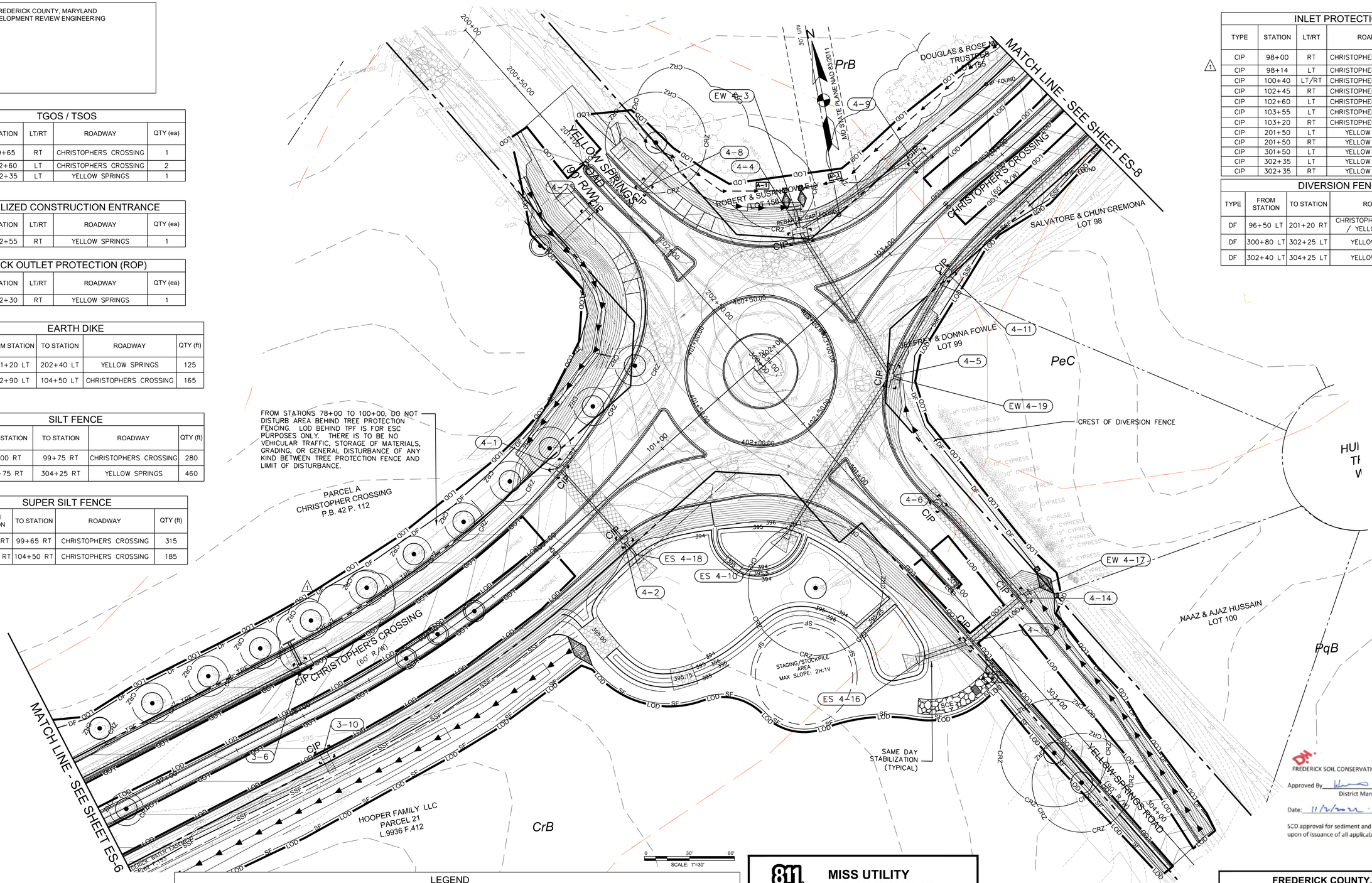
INLET PROTECTION

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	98+00	RT	CHRISTOPHERS CROSSING	1
CIP	98+14	LT	CHRISTOPHERS CROSSING	1
CIP	100+40	LT/RT	CHRISTOPHERS CROSSING	2
CIP	102+45	RT	CHRISTOPHERS CROSSING	1
CIP	102+60	LT	CHRISTOPHERS CROSSING	1
CIP	103+55	LT	CHRISTOPHERS CROSSING	1
CIP	103+20	RT	CHRISTOPHERS CROSSING	1
CIP	201+50	LT	YELLOW SPRINGS	1
CIP	201+50	RT	YELLOW SPRINGS	1
CIP	301+50	LT	YELLOW SPRINGS	1
CIP	302+35	LT	YELLOW SPRINGS	1
CIP	302+35	RT	YELLOW SPRINGS	1

DIVERSION FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
DF	96+50 LT	201+20 RT	CHRISTOPHERS CROSSING / YELLOW SPRINGS	540
DF	300+80 LT	302+25 LT	YELLOW SPRINGS	170
DF	302+40 LT	304+25 LT	YELLOW SPRINGS	200

FROM STATIONS 78+00 TO 100+00, DO NOT DISTURB AREA BEHIND TREE PROTECTION FENCING. LOD BEHIND TPF IS FOR ESC PURPOSES ONLY. THERE IS TO BE NO VEHICULAR TRAFFIC, STORAGE OF MATERIALS, GRADING, OR GENERAL DISTURBANCE OF ANY KIND BETWEEN TREE PROTECTION FENCE AND LIMIT OF DISTURBANCE.



0 30' 60'
SCALE: 1"=30'

LEGEND

LOD — LIMITS OF DISTURBANCE		EARTH DIKE	CIP — CURB INLET PROTECTION
SF — SILT FENCE	P	PUMP AROUND AND FLEX PIPE	AGIP — AT-GRADE INLET PROTECTION
SSF — SUPER SILT FENCE	SCE	STABILIZED CONSTRUCTION ENTRANCE	TGOS — TEMPORARY GABION OUTLET STRUCTURE
CWD — CLEAR WATER DIVERSION		FILTER BAG	TSOS — TEMPORARY STONE OUTLET STRUCTURE
SAF — SAFETY FENCE (BOF)		SANDBAGS	SUMP PIT
CrB — SOIL BOUNDARY & SOIL TYPE		SAME DAY STABILIZATION AREA	
DF — DIVERSION FENCE			

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

a. 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

b. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING

FREDERICK SOIL CONSERVATION DISTRICT
Approved By _____ District Manager
Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

ES-7

Know what's below. Call before you dig.

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48 HOURS BEFORE YOU DIG
CALL "MISS UTILITY" AT 811
OR LOG ON TO www.missutility.net

REVISIONS		
MARK	DATE	DESCRIPTION
1	11/23/22	ADDENDUM NO. 1

REGISTRATION STAMP

STATE OF MARYLAND — 30333 — PROFESSIONAL ENGINEER — 11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6582
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION AND SEDIMENT CONTROL PLAN

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 74 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

EARTH DIKE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
A–1	104+50 LT	105+50 LT	CHRISTOPHERS CROSSING	110

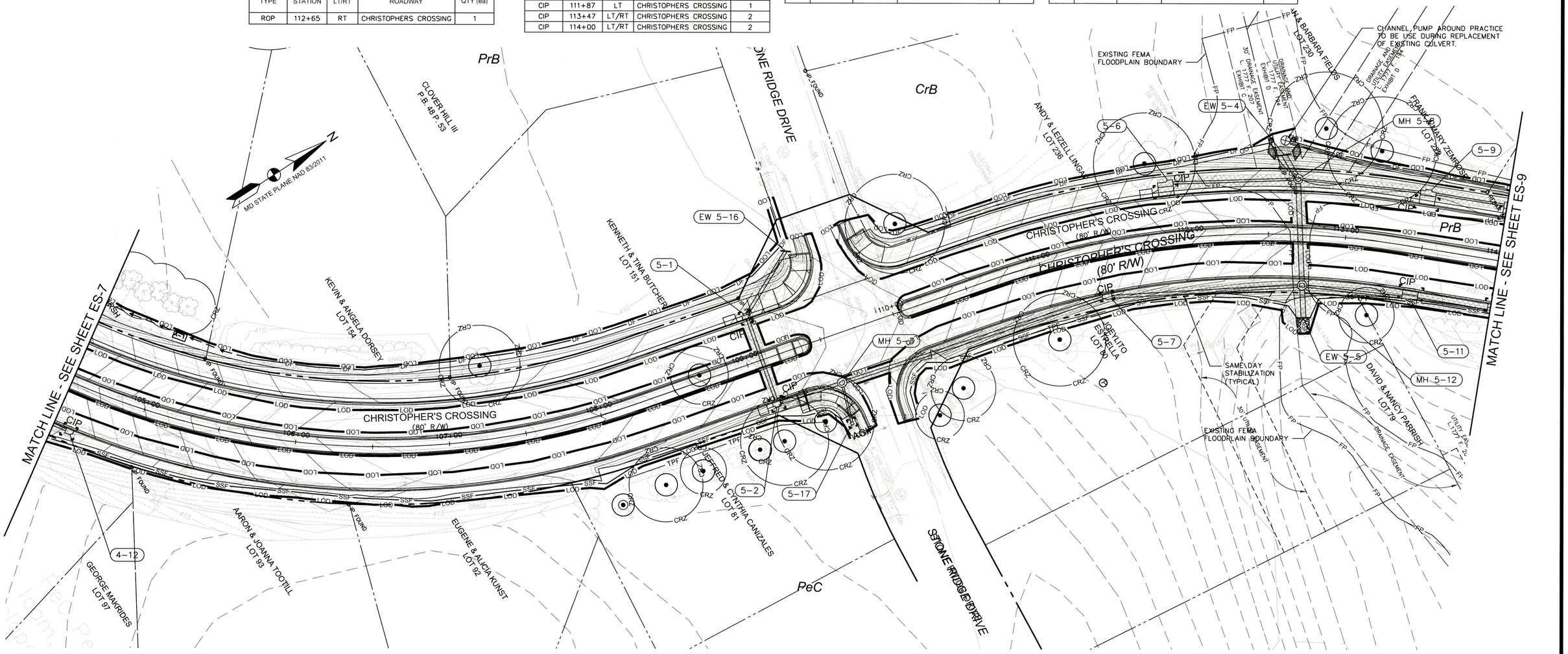
ROCK OUTLET PROTECTION (ROP)				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
ROP	112+65	RT	CHRISTOPHERS CROSSING	1

INLET PROTECTION				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	104+60	RT	CHRISTOPHERS CROSSING	1
CIP	109+10	LT/RT	CHRISTOPHERS CROSSING	2
AGIP	109+52	RT	CHRISTOPHERS CROSSING	1
CIP	111+40	RT	CHRISTOPHERS CROSSING	1
CIP	111+87	LT	CHRISTOPHERS CROSSING	1
CIP	113+47	LT/RT	CHRISTOPHERS CROSSING	2
CIP	114+00	LT/RT	CHRISTOPHERS CROSSING	2

DIVERSION FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
DF	105+50 LT	109+40 LT	CHRISTOPHERS CROSSING	390
DF	110+00 LT	112+60 LT	CHRISTOPHERS CROSSING	280
DF	112+75 LT	114+00 LT	CHRISTOPHERS CROSSING	130

SUPER SILT FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SSF	104+50 RT	109+50 RT	CHRISTOPHERS CROSSING	545
SSF	110+00 RT	112+70 RT	CHRISTOPHERS CROSSING	290
SSF	112+90 RT	114+00 RT	CHRISTOPHERS CROSSING	125

TGOS / TSOS				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
TSOS	112+62	LT	CHRISTOPHERS CROSSING	1
TSOS	112+74	LT	CHRISTOPHERS CROSSING	1



FREDERICK SOIL CONSERVATION DISTRICT

Approved By _____
District Manager

Date: 11/2/2022

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STANDARD STABILIZATION NOTE

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a. 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

b. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING

LEGEND

LOD	LIMITS OF DISTURBANCE		EARTH DIKE
SF	SILT FENCE	P	PUMP AROUND AND FLEX PIPE
SSF	SUPER SILT FENCE	SCE	STABILIZED CONSTRUCTION ENTRANCE
CWD	CLEAR WATER DIVERSION		FILTER BAG
SAF	SAFETY FENCE (BOF)		SANDBAGS
CrB	SOIL BOUNDARY & SOIL TYPE		SAME DAY STABILIZATION AREA
DF	DIVERSION FENCE	CIP	CURB INLET PROTECTION
		AGIP	AT-GRADE INLET PROTECTION
		TGOS	TEMPORARY GABION OUTLET STRUCTURE
		TSOS	TEMPORARY STONE OUTLET STRUCTURE
			SUMP PIT

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21031 — PROFESSIONAL ENGINEER — 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

ES-8

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION AND SEDIMENT CONTROL PLAN

DATE: SEPTEMBER 2022 SCALE:

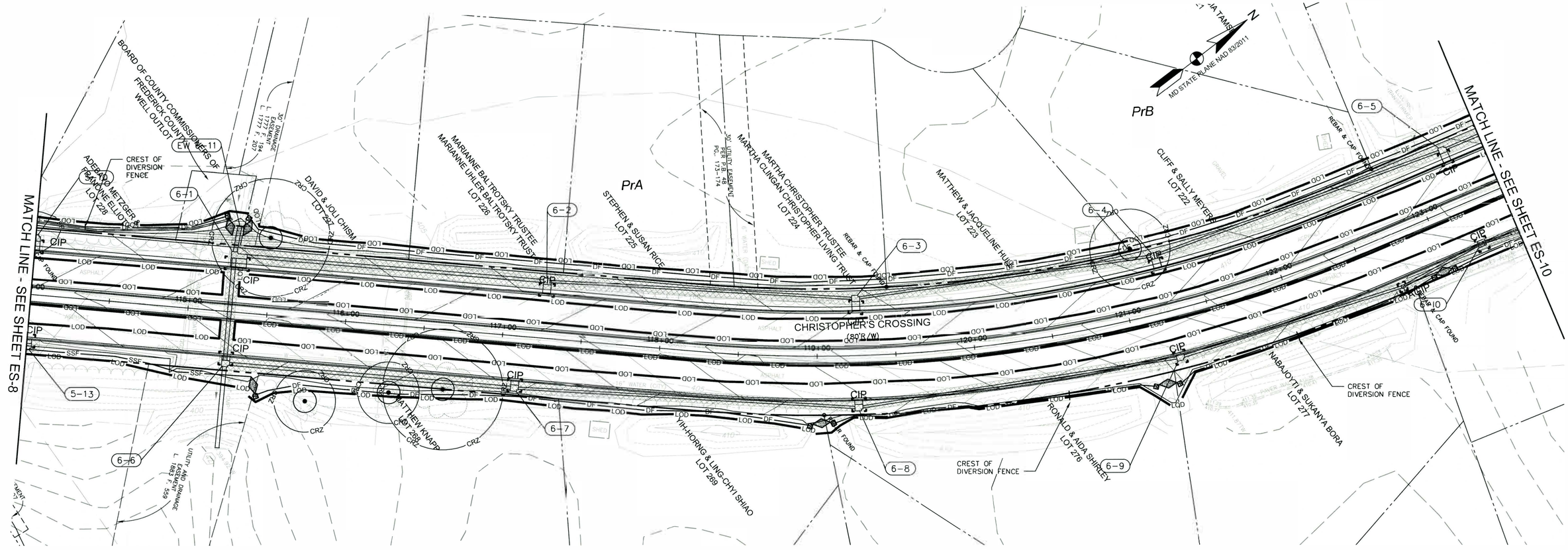
AMT FILE NO. 15-0758.007 SHEET NO. 75 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



INLET PROTECTION				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	115+25	LT/RT	CHRISTOPHERS CROSSING	2
CIP	117+25	LT	CHRISTOPHERS CROSSING	1
CIP	117+10	RT	CHRISTOPHERS CROSSING	1
CIP	119+25	LT/RT	CHRISTOPHERS CROSSING	2
CIP	121+25	LT/RT	CHRISTOPHERS CROSSING	2
CIP	123+25	LT/RT	CHRISTOPHERS CROSSING	2
AGIP	122+70	RT	CHRISTOPHERS CROSSING	1

SUPER SILT FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SSF	114+00 RT	115+50 RT	CHRISTOPHERS CROSSING	150

TGOS / TSOS				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
TSOS	115+25	LT	CHRISTOPHERS CROSSING	2
TSOS	115+50	RT	CHRISTOPHERS CROSSING	1
TSOS	119+25	RT	CHRISTOPHERS CROSSING	1
TSOS	121+25	RT	CHRISTOPHERS CROSSING	1
TSOS	122+95	RT	CHRISTOPHERS CROSSING	1

DIVERSION FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
DF	114+00 LT	115+20 LT	CHRISTOPHERS CROSSING	120
DF	115+30 LT	123+50 LT	CHRISTOPHERS CROSSING	790
DF	115+40 RT	119+00 RT	CHRISTOPHERS CROSSING	350
DF	119+10 RT	121+20 RT	CHRISTOPHERS CROSSING	210
DF	121+30 RT	122+90 RT	CHRISTOPHERS CROSSING	180
DF	123+00 RT	123+50 RT	CHRISTOPHERS CROSSING	50

FREDERICK SOIL CONSERVATION DISTRICT

Approved By: _____
District Manager

Date: 11/2/2022

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LEGEND

LOD	LIMITS OF DISTURBANCE		EARTH DIKE
SF	SILT FENCE	P	PUMP AROUND AND FLEX PIPE
SSF	SUPER SILT FENCE	SCE	STABILIZED CONSTRUCTION ENTRANCE
CWD	CLEAR WATER DIVERSION		FILTER BAG
SAF	SAFETY FENCE (BOF)		SANDBAGS
CrB	SOIL BOUNDARY & SOIL TYPE		SAME DAY STABILIZATION AREA
DF	DIVERSION FENCE		
CIP	CURB INLET PROTECTION		
AGIP	AT-GRADE INLET PROTECTION		
TGOS	TEMPORARY GABION OUTLET STRUCTURE		
TSOS	TEMPORARY STONE OUTLET STRUCTURE		
	SUMP PIT		

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8532
EMAIL: AMT@AMTENGINEERING.COM

ES-9

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION AND SEDIMENT CONTROL PLAN

DATE: SEPTEMBER 2022 SCALE:

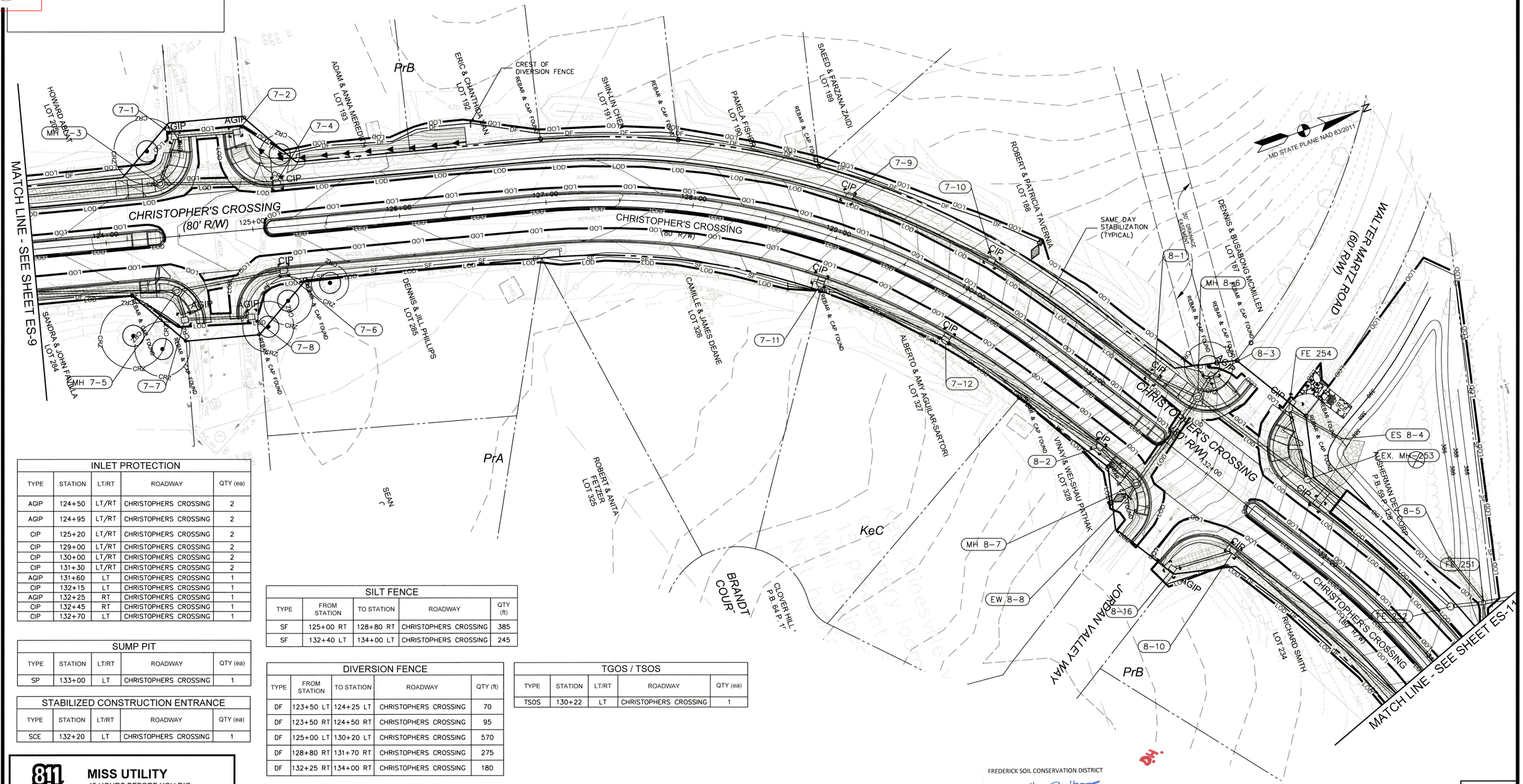
AMT FILE NO. 15-0758.007 SHEET NO. 76 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



INLET PROTECTION				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
AGIP	124+50	LT/RT	CHRISTOPHERS CROSSING	2
AGIP	124+95	LT/RT	CHRISTOPHERS CROSSING	2
CIP	125+20	LT/RT	CHRISTOPHERS CROSSING	2
CIP	129+00	LT/RT	CHRISTOPHERS CROSSING	2
CIP	130+00	LT/RT	CHRISTOPHERS CROSSING	2
CIP	131+30	LT/RT	CHRISTOPHERS CROSSING	2
AGIP	131+60	LT	CHRISTOPHERS CROSSING	1
CIP	132+15	LT	CHRISTOPHERS CROSSING	1
AGIP	132+25	RT	CHRISTOPHERS CROSSING	1
CIP	132+45	RT	CHRISTOPHERS CROSSING	1
CIP	132+70	LT	CHRISTOPHERS CROSSING	1

SILT FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SF	125+00 RT	128+80 RT	CHRISTOPHERS CROSSING	385
SF	132+40 LT	134+00 LT	CHRISTOPHERS CROSSING	245

SUMP PIT				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
SP	133+00	LT	CHRISTOPHERS CROSSING	1

STABILIZED CONSTRUCTION ENTRANCE				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
SCE	132+20	LT	CHRISTOPHERS CROSSING	1

DIVERSION FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
DF	123+50 LT	124+25 LT	CHRISTOPHERS CROSSING	70
DF	123+50 RT	124+50 RT	CHRISTOPHERS CROSSING	95
DF	125+00 LT	130+20 LT	CHRISTOPHERS CROSSING	570
DF	128+80 RT	131+70 RT	CHRISTOPHERS CROSSING	275
DF	132+25 RT	134+00 RT	CHRISTOPHERS CROSSING	180

TGOS / TSOS				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
TSOS	130+22	LT	CHRISTOPHERS CROSSING	1

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a. 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

b. SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING

LEGEND

- LOD — LIMITS OF DISTURBANCE
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- CWD — CLEAR WATER DIVERSION
- SAF — SAFETY FENCE (BOF)
- CrB — SOIL BOUNDARY & SOIL TYPE
- DF — DIVERSION FENCE
- EARTH DIKE
- PUMP AROUND AND FLEX PIPE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- FILTER BAG
- SANDBAGS
- SAME DAY STABILIZATION AREA
- CIP — CURB INLET PROTECTION
- AGIP — AT-GRADE INLET PROTECTION
- TGOS — TEMPORARY GABION OUTLET STRUCTURE
- TSOS — TEMPORARY STONE OUTLET STRUCTURE
- SUMP PIT

FREDERICK SOIL CONSERVATION DISTRICT

Approved By _____ District Manager

Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 32332 — PROFESSIONAL ENGINEER — 11/2/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-4552
EMAIL: AMT@AMTENGINEERING.COM

ES-10

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION AND SEDIMENT CONTROL PLAN

DATE: SEPTEMBER 2022 SCALE:

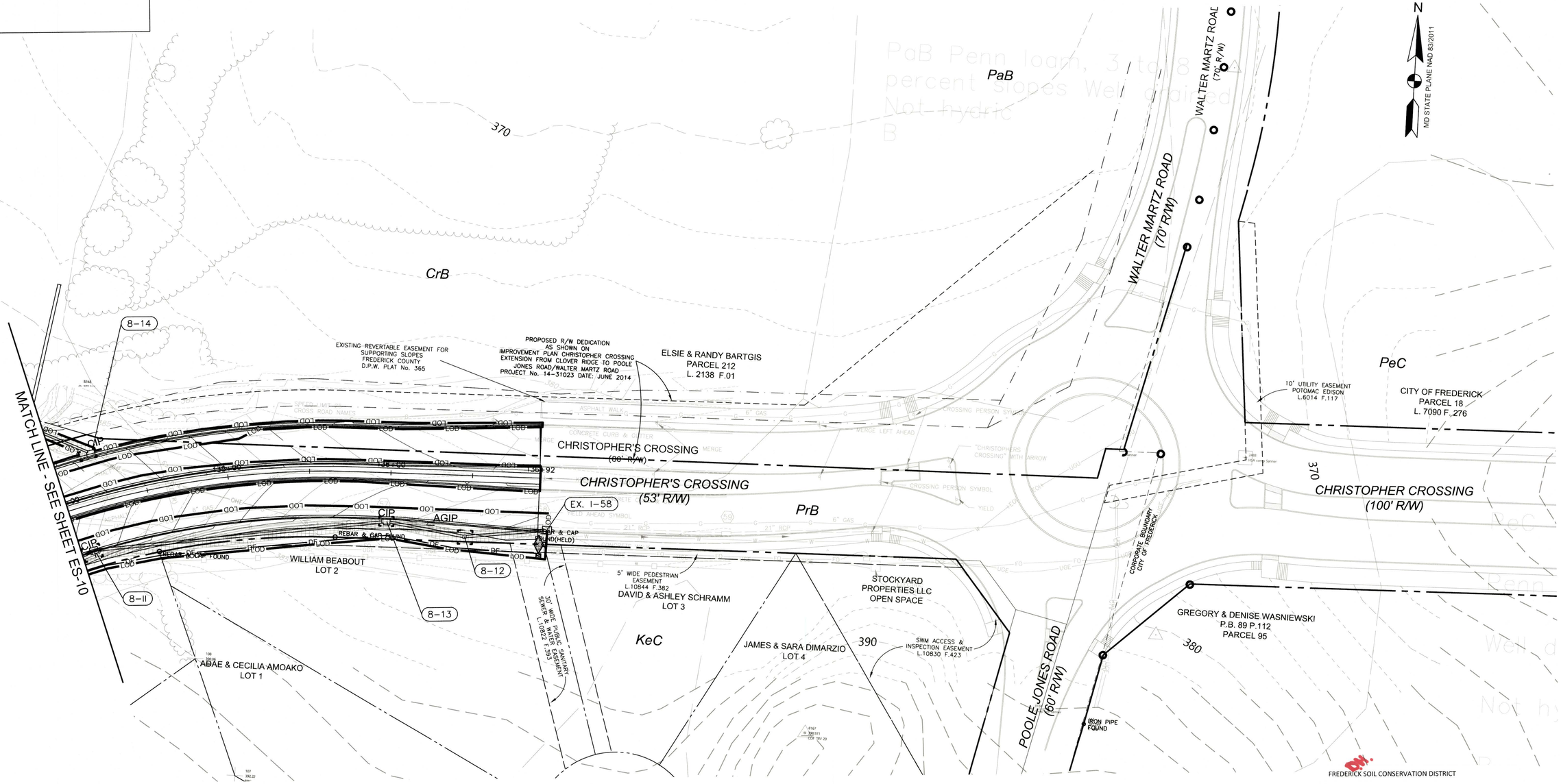
AMT FILE NO. 15-0758.007 SHEET NO. 77 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



DIVERSION FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
DF	134+00 RT	136+92 RT	CHRISTOPHERS CROSSING	275

TGOS / TSOS				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
TSOS	136+90	RT	CHRISTOPHERS CROSSING	1

SILT FENCE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SF	134+00 LT	136+92 LT	CHRISTOPHERS CROSSING	300

INLET PROTECTION				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	134+10	RT	CHRISTOPHERS CROSSING	1
CIP	134+25	LT	CHRISTOPHERS CROSSING	1
CIP	136+00	RT	CHRISTOPHERS CROSSING	1
AGIP	136+45	RT	CHRISTOPHERS CROSSING	1

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- STABILIZED CONSTRUCTION ENTRANCE (SCE)
- FILTER BAG
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- TGOS — TEMPORARY GABION OUTLET STRUCTURE
- TSOS — TEMPORARY STONE OUTLET STRUCTURE
- SUMP PIT

SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — JOSEPH A. MORTON THOMAS — 21331 — PROFESSIONAL ENGINEER — 11/7/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK SOIL CONSERVATION DISTRICT

Approved By _____
District Manager

Date: 11/2/2022

SCD approval for sediment and erosion control is contingent upon of issuance of all applicable regulatory permits.

ES-11

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

EROSION AND SEDIMENT CONTROL PLAN

DATE: SEPTEMBER 2022 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 78 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

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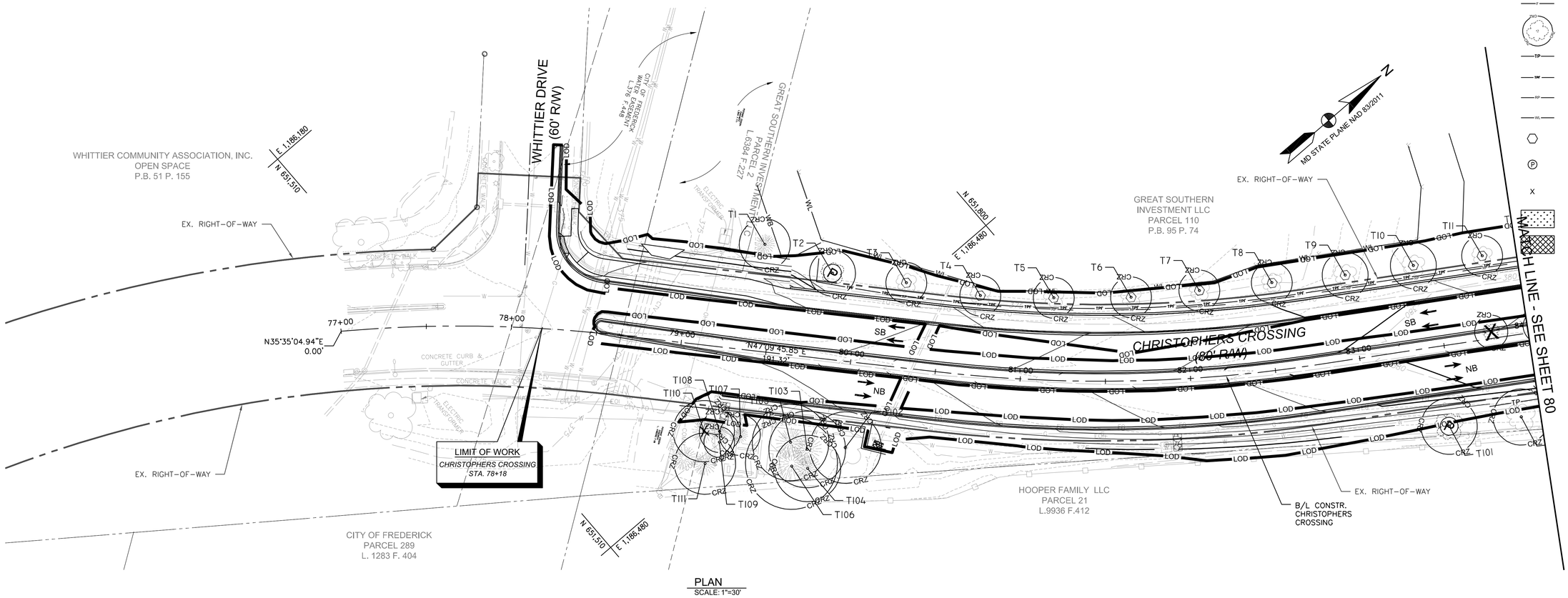
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
C	CUT LINE
F	FILL LINE
CRZ	EXISTING TREE WITH CRITICAL ROOT ZONE
TP	TREE PROTECTION FENCE
TPF	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING
WL	WETLAND
	TRUNK PROTECTION
P	EX. TREE RECOMMENDED TO REMOVE BUT WILL REMAIN AT OWNER'S REQUEST & RISK
X	EX. TREE TO BE REMOVED
	VERTICAL MULCHING
	VEGETATION CLEARING

NOTE: REFER TO SHEET LF-9 FOR LIST OF TREES

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

JOSEPH VAN CLEVE
21251
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

LF-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TREE PROTECTION PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 79 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

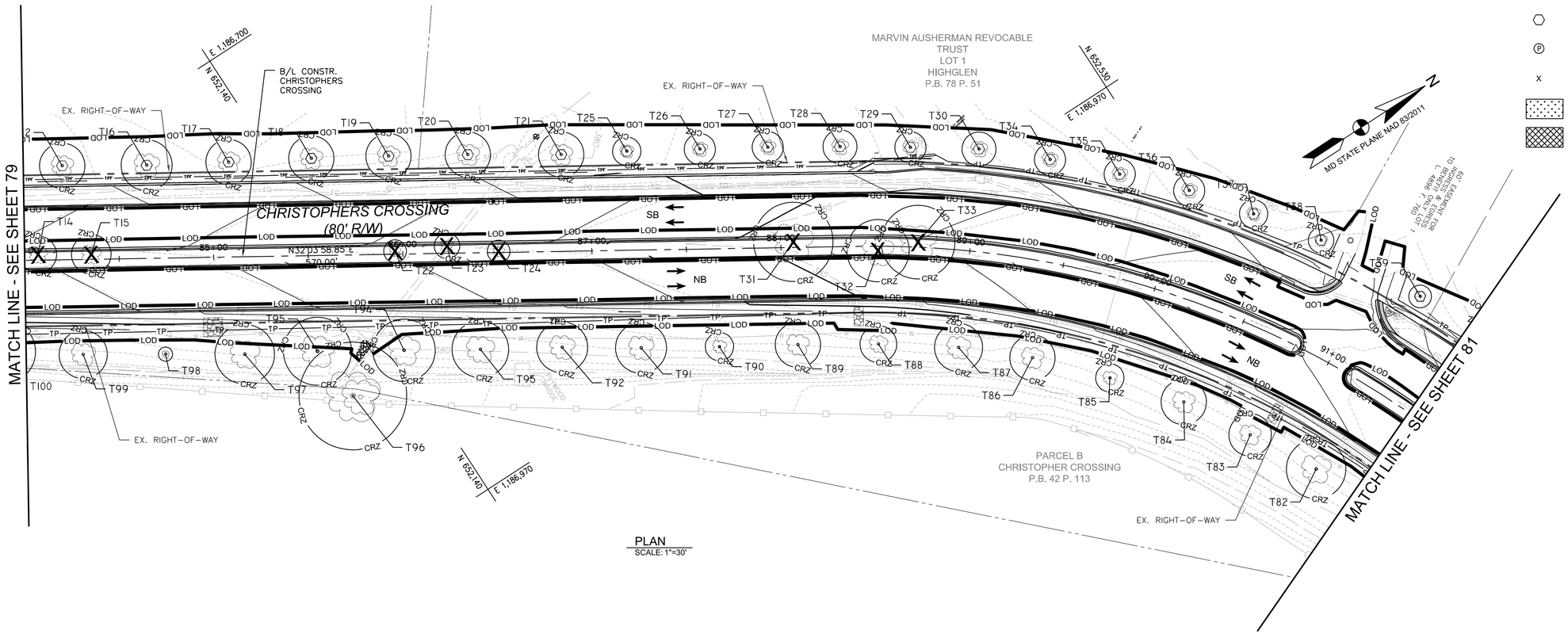
APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
C	CUT LINE
F	FILL LINE
CRZ	EXISTING TREE WITH CRITICAL ROOT ZONE
TP	TREE PROTECTION FENCE
TPF	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING
WL	WETLAND
	TRUNK PROTECTION
P	EX. TREE RECOMMENDED TO REMOVE BUT WILL REMAIN AT OWNER'S REQUEST & RISK
X	EX. TREE TO BE REMOVED
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

NOTE: REFER TO SHEET LF-9 FOR LIST OF TREES

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
STEVEN W. THOMAS
34331
PROFESSIONAL ENGINEER
11/15/2022

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CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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EMAIL: AMT1@AMTENGINEERING.COM

LF-2

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TREE PROTECTION PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 80 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

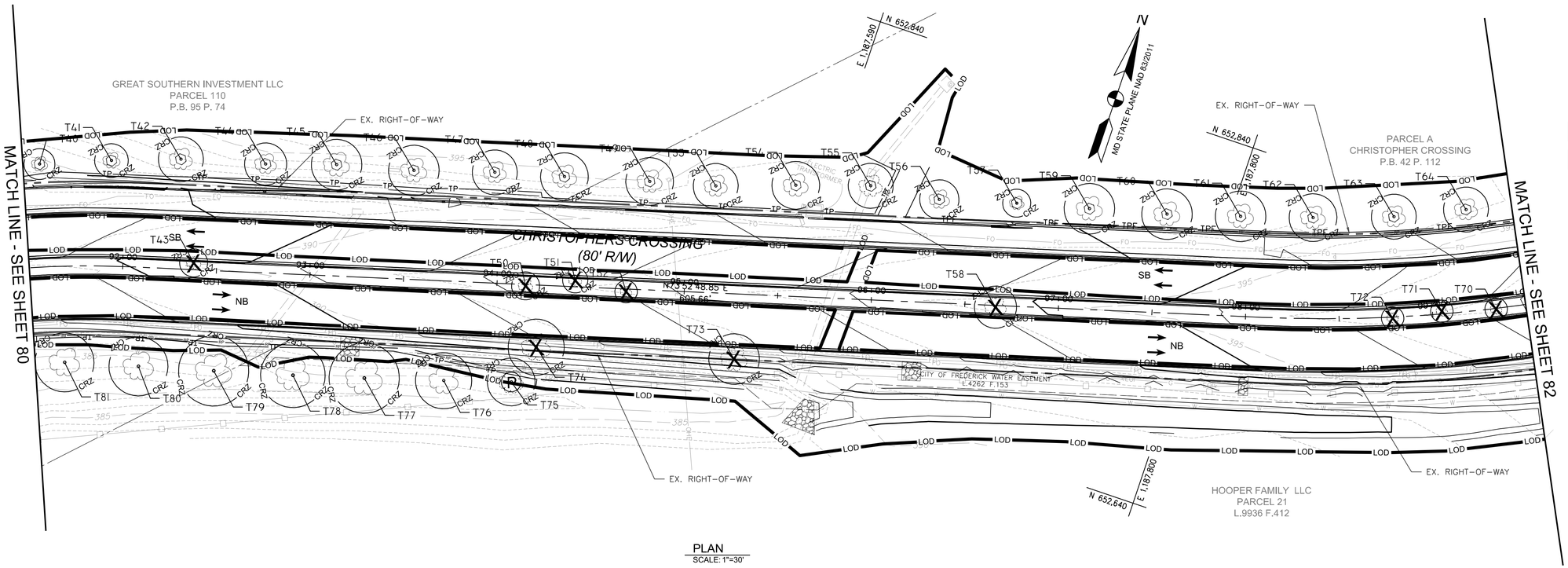
APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
C	CUT LINE
F	FILL LINE
CRZ / TPD	EXISTING TREE WITH CRITICAL ROOT ZONE
TP	TREE PROTECTION FENCE
TPF	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING
WL	WETLAND
	TRUNK PROTECTION
P	EX. TREE RECOMMENDED TO REMOVE BUT WILL REMAIN AT OWNER'S REQUEST & RISK
X	EX. TREE TO BE REMOVED
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

NOTE: REFER TO SHEET LF-9 FOR LIST OF TREES

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

LF-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TREE PROTECTION PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 81 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

LIMIT OF WORK
YELLOW SPRINGS RD.
STA. 200+75

YELLOW SPRINGS ROAD (90' R/W)

PROPOSED RIGHT-OF-WAY

PARCEL A
CHRISTOPHER CROSSING
P.B. 42 P. 112

ROBERT & SUSAN FOWLE
LOT 156

PROPOSED RIGHT-OF-WAY

DOUGLAS & ROSE MARSH TRUSTEES
LOT 155

KEVIN & ANGELA DORSEY
LOT 154

EX. RIGHT-OF-WAY

CHRISTOPHERS CROSSING
(60' R/W)

EUGENE & ALICIA KUNST
LOT 92

EX. RIGHT-OF-WAY

AARON & JOANNA TOOTILL
LOT 93

HOOPER FAMILY LLC
PARCEL 21
L.9936 F.412

JEFFREY & DONNA FOWLE
LOT 99

SALVATORE & CHUN CREMONA
LOT 98

GEORGE MAKRIDES
LOT 97

PROPOSED RIGHT-OF-WAY

YELLOW SPRINGS ROAD (85' R/W)

MATCH LINE - SEE SHEET 81

MATCH LINE - SEE SHEET 83

SEE MATCH LINE THIS SHEET

MD STATE PLANE NAD 83/2011

PLAN
SCALE: 1"=30'

SEE MATCH LINE THIS SHEET

LIMIT OF WORK
YELLOW SPRINGS RD.
STA. 304+35

PLAN
SCALE: 1"=30'

NOTE: REFER TO SHEET LF-9 FOR LIST OF TREES

0 30' 60'
SCALE: 1"=30'

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
C	CUT LINE
F	FILL LINE
CRZ TP	EXISTING TREE WITH CRITICAL ROOT ZONE
TP	TREE PROTECTION FENCE
TPF	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING
WL	WETLAND
	TRUNK PROTECTION
P	EX. TREE RECOMMENDED TO REMOVE BUT WILL REMAIN AT OWNER'S REQUEST & RISK
X	EX. TREE TO BE REMOVED
	VERTICAL MULCHING
	VEGETATION CLEARING

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21233 — PROFESSIONAL ENGINEER — 9/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 737-8355
EMAIL: AMT1@AMTENGINEERING.COM

LF-4

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TREE PROTECTION PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 82 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
C	CUT LINE
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CRZ / DBH	EXISTING TREE WITH CRITICAL ROOT ZONE
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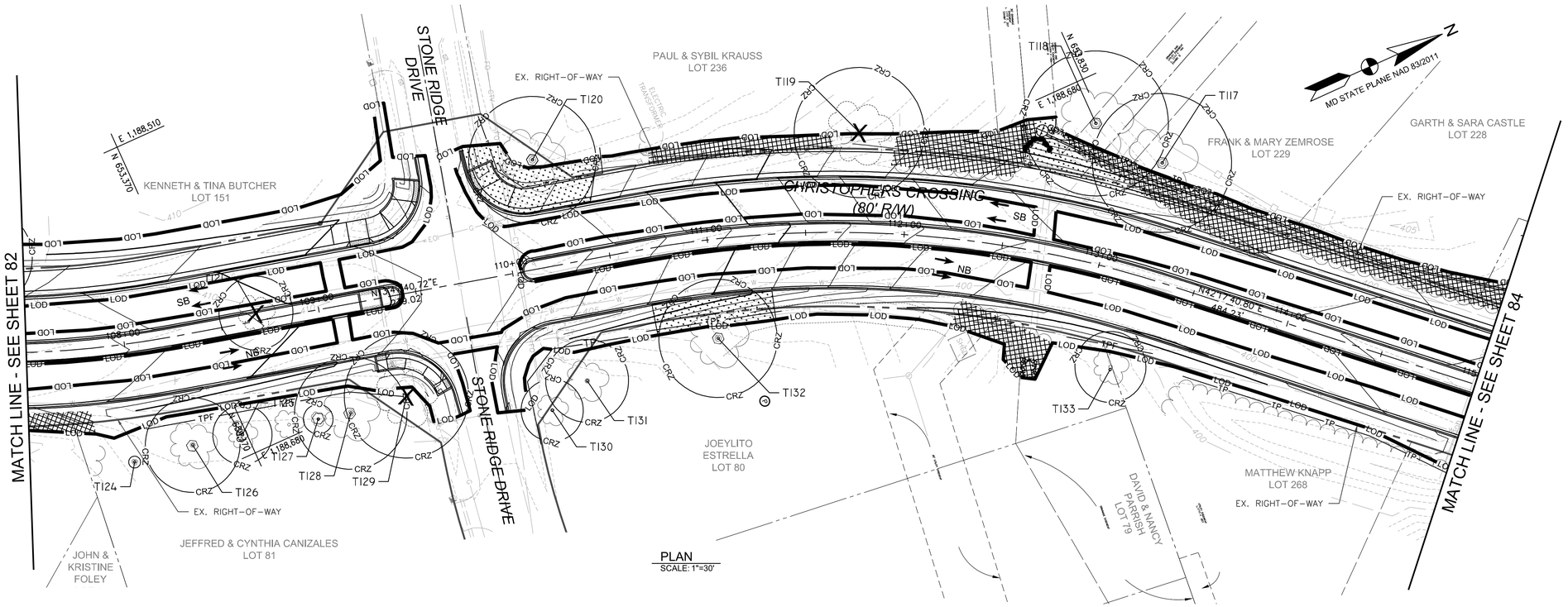
X	EX. TREE TO BE REMOVED
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

NOTE: REFER TO SHEET LF-9 FOR LIST OF TREES

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 757-6352
EMAIL: AMT1@AMTENGINEERING.COM

LF-5

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TREE PROTECTION PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 83 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
C	CUT LINE
F	FILL LINE
CRZ / DBH	EXISTING TREE WITH CRITICAL ROOT ZONE
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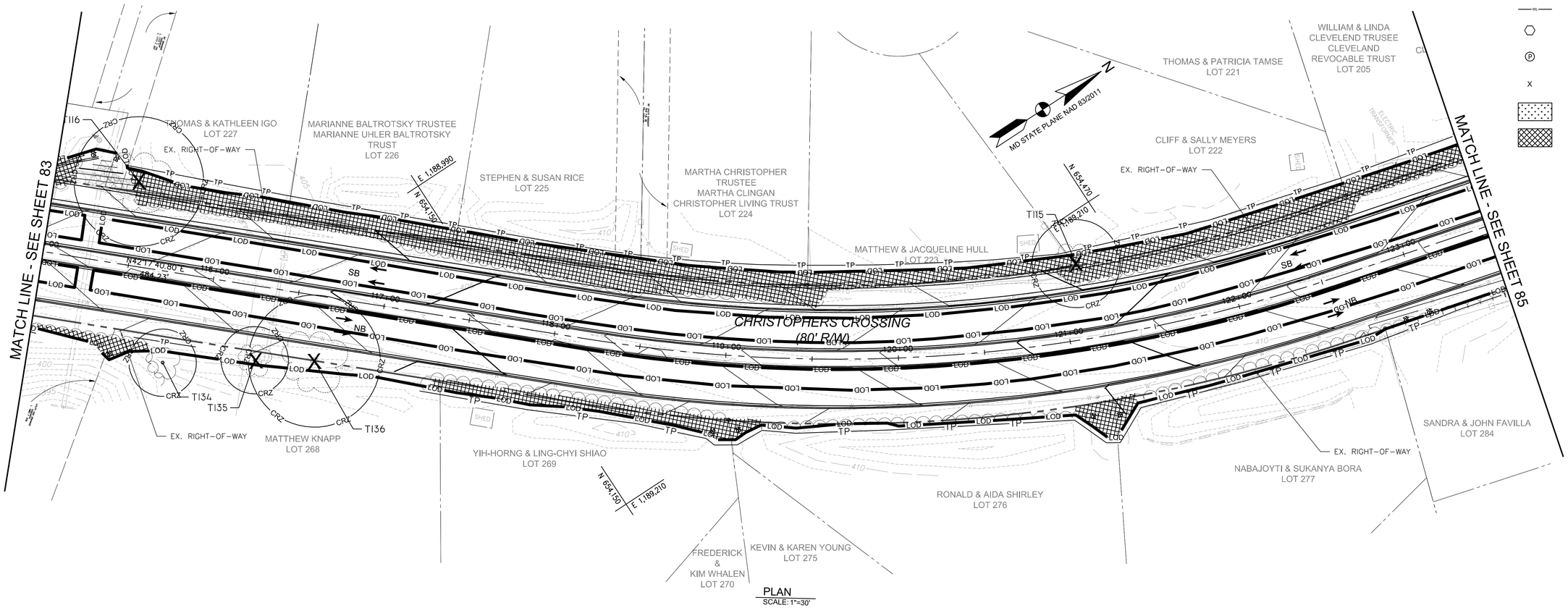


PLAN
SCALE: 1"=30'

NOTE: REFER TO SHEET LF-9 FOR LIST OF TREES

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
MICHAEL VAN CAMPEN LEWIS
21315
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-6552
EMAIL: AMT1@AMTENGINEERING.COM

LF-6

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TREE PROTECTION PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

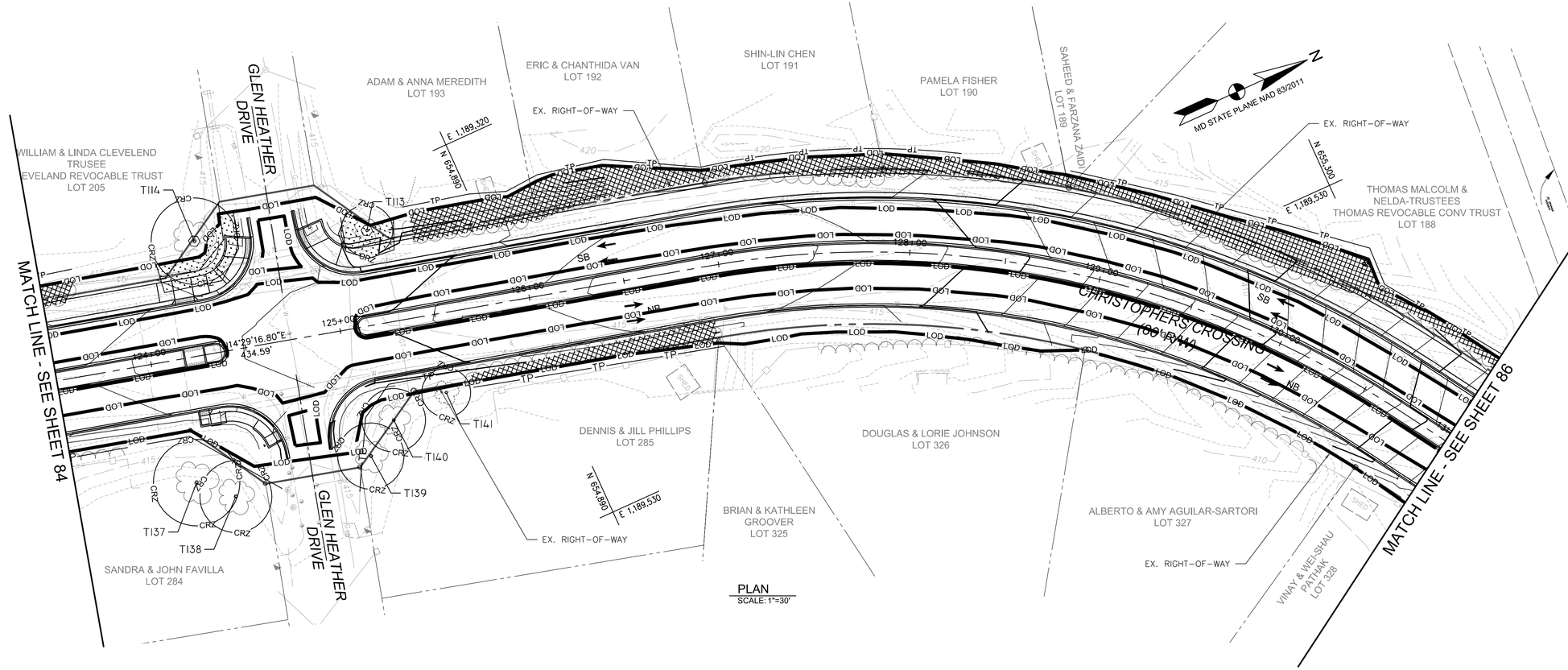
AMT FILE NO. 15-0758.007 SHEET NO. 84 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30"

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
C	CUT LINE
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CRZ	EXISTING TREE WITH CRITICAL ROOT ZONE
TP	TREE PROTECTION FENCE
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	TRUNK PROTECTION
P	EX. TREE RECOMMENDED TO REMOVE BUT WILL REMAIN AT OWNER'S REQUEST & RISK
X	EX. TREE TO BE REMOVED
	VERTICAL MULCHING
	VEGETATION CLEARING

NOTE: REFER TO SHEET LF-9 FOR LIST OF TREES

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND · JOSEPH A. MORTON THOMAS · 21235 · PROFESSIONAL ENGINEER
11/7/2022

AMT
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

LF-7

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TREE PROTECTION PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 85 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
C	CUT LINE
F	FILL LINE
	EXISTING TREE WITH CRITICAL ROOT ZONE
TP	TREE PROTECTION FENCE
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RP	ROOT PRUNING
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	TRUNK PROTECTION
P	EX. TREE RECOMMENDED TO REMOVE BUT WILL REMAIN AT OWNER'S REQUEST & RISK
X	EX. TREE TO BE REMOVED
	VERTICAL MULCHING
	VEGETATION CLEARING

N
MD STATE PLANE NAD 83/2011

NOTE: TIE-IN TO FREDERICK CITY PROJECT CURRENTLY UNDER CONSTRUCTION AS OF APRIL 2020.

MATCH LINE - SEE SHEET 85

DENNIS & BUSABONG MCMILLEN LOT 187

WALTER MARTZ ROAD

T112

C112

SB

NB

N57°56'48.80"E 795.54'

132+00

133+00

134+00

135+00

136+00

137+00

TP

EX. RIGHT-OF-WAY

RICHARD SMITH LOT 234

E 1,189,980
N 655,380

WILLIAM BEABOUT LOT 2

LIMIT OF WORK
CHRISTOPHERS CROSSING
STA. 136+92

N89°04'07.34"E 112.52'

N88°55'52"E

CHRISTOPHERS CROSSING (80' R/W)

ELSIE & RANDY BARTGIS PARCEL 212 L. 2138 F.01

N 655,590
E 1,190,330

EX. RIGHT-OF-WAY

WALTER MARTZ ROAD (70' R/W)

5' WIDE PEDESTRIAN EASEMENT L.10844 F.382

30' WIDE PUBLIC SANITARY SEWER & WATER EASEMENT L.10822 F.393

DAVID & ASHLEY SCHRAMM LOT 3

EX. RIGHT-OF-WAY

N 655,380
E 1,190,330

JAMES & SARA DIMARZIO LOT 4

STOCKYARD PROPERTIES LLC PARCEL B

SWM ACCESS & INSPECTION EASEMENT L.10830 F.423

CORPORATE BOUNDARY CITY OF FREDERICK

POOLE JONES ROAD (60' R/W)

VINAY & WEI-SHAU PATHAK LOT 328

JORDAN VALLEY WAY

DAVID & SARA RUPP LOT 237

ADAE & CECILIA AMOAKO LOT 1

PLAN
SCALE: 1"=30'

NOTE: REFER TO SHEET LF-9 FOR LIST OF TREES

0 30' 60'
SCALE: 1"=30'

LF-8

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
STEVEN C. SNYDER
24355
PROFESSIONAL ENGINEER
11/7/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

TREE PROTECTION PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 86 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

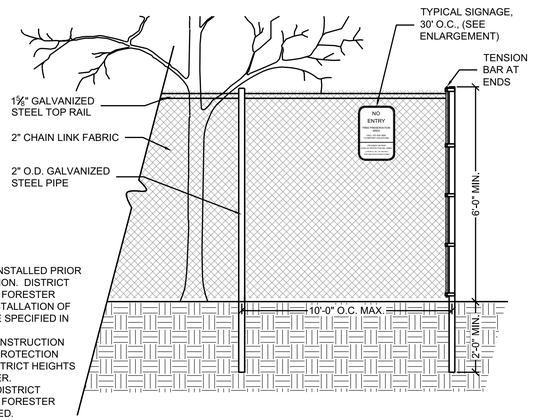
Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

REFERENCE NOTES SCHEDULE

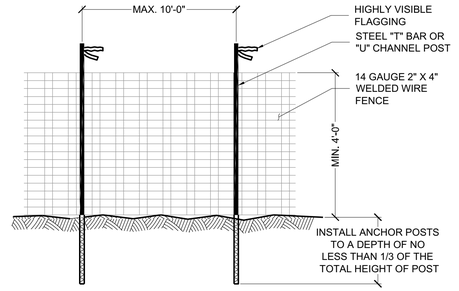
SYMBOL		DESCRIPTION	QTY	DETAIL
TP		TREE PROTECTION FENCE	5,264 LF	2/LF-9
DW		TREE PROTECTION FENCE - 6` CHAINLINK FENCE	1,725 LF	1/LF-9
SYMBOL		DESCRIPTION	QTY	DETAIL
		TRUNK PROTECTION	58	3/LF-9
X		EXISTING TREE TO BE REMOVED	51	
RP		ROOT PRUNING	1,242 LF	5/LF-9
SYMBOL		DESCRIPTION	QTY	DETAIL
		VERTICAL MULCHING	5,463 SF	
		FOREST/ TREE HEDGE CLEARING	68,329 SF	
SYMBOL		DESCRIPTION	QTY	DETAIL
P		PRESERVE TREE AT OWNER`S RISK	4	

SIGN ENLARGEMENT
2" = 1'-0"



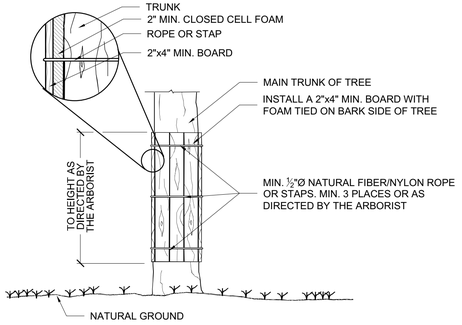
NOTES:
1. TREE PROTECTION FENCE (TPF) SHALL BE INSTALLED PRIOR TO ANY SITE WORK CLEARING, OR DEMOLITION. DISTRICT HEIGHTS CONSTRUCTION MANAGER/URBAN FORESTER SHALL BE NOTIFIED 72 HOURS PRIOR TO INSTALLATION OF ANY OTHER TREE PRESERVATION MEASURE SPECIFIED IN PLANS AND SHALL APPROVE LAYOUT.
2. NO PERSONNEL, VEHICLES, EQUIPMENT, CONSTRUCTION MATERIALS, OR DEBRIS ALLOWED IN TREE PROTECTION AREAS WITHOUT WRITTEN CONSENT OF DISTRICT HEIGHTS CONSTRUCTION MANAGER/URBAN FORESTER.
3. REMOVE TPF ONLY WITH APPROVAL FROM DISTRICT HEIGHTS CONSTRUCTION MANAGER/URBAN FORESTER AFTER ALL SITE WORK HAS BEEN COMPLETED.
4. SIGN MATERIAL TO BE WEATHER RESISTANT.

1 6` CHAIN LINK TREE PROTECTION FENCE
1/2" = 1'-0" 0203-01



NOTES:
1. FOREST PROTECTION DEVICE ONLY
2. SET TREE RETENTION AREA AS PART OF THE PRE-CONSTRUCTION REVIEW PROCESS
3. STAKE & FLAG THE BOUNDARIES OF RETENTION AREA PRIOR TO INSTALLATION OF DEVICE
4. AVOID INJURY TO ROOTS WHEN PLACING POSTS FOR THE SIGNS.
5. PROTECTIVE SIGNAGE IS REQUIRED
6. MAINTAIN THE DEVICE THROUGHOUT CONSTRUCTION.
7. ALTERNATIVE TREE PROTECTION DEVICES (IN LIEU OF WIRE MESH): SUPER SILT FENCE (SSF) OR 3 STRANDS OF SMOOTH 12 GAUGE WIRE. ATTACH HIGHLY VISIBLE FLAGGING TO WIRES @ 12" O.C.

2 WIRE MESH TREE PROTECTION FENCING
NOT TO SCALE 0203-02



NOTES:
1. COMPLETE ALL INSTALLATION UNDER THE DIRECTION OF A CERTIFIED ARBORIST
2. TIE BOARDS WITH WITH 1/2" DIAMETER ROPE OR STRAPS SUFFICIENT TO PROTECT ALL AREAS OF THE TREE EXPOSED TO CONSTRUCTION.
3. PROTECT THE TRUNK FROM DAMAGE DUE TO THE STRAPS WITH ADDITIONAL FOAM AND BOARDS AS NEEDED

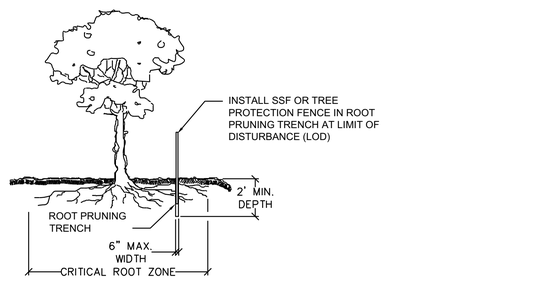
3 TRUNK PROTECTION
NOT TO SCALE 0203-03

SPECIMEN, CHAMPION AND HISTORIC TREE TABLE

NO.	COMMON NAME	SCIENTIFIC NAME	D.B.H (INCHES)	CONDITION RATING	CONDITION COMMENTS
T1	White pine	*Pinus strobus*	10	GOOD/AVG.	
T2	London planetree	*Platanus x acerifolia*	9	GOOD	
T3	London planetree	*Platanus x acerifolia*	8	GOOD	
T4	London planetree	*Platanus x acerifolia*	8	GOOD	
T5	London planetree	*Platanus x acerifolia*	8	GOOD	
T6	London planetree	*Platanus x acerifolia*	8	GOOD	
T7	London planetree	*Platanus x acerifolia*	8	GOOD	
T8	London planetree	*Platanus x acerifolia*	8	GOOD	
T9	London planetree	*Platanus x acerifolia*	9	GOOD	
T10	London planetree	*Platanus x acerifolia*	9	GOOD	
T11	London planetree	*Platanus x acerifolia*	8	GOOD	
T12	London planetree	*Platanus x acerifolia*	8	GOOD	staked and cabled
T13	Honeylocust	*Gleditsia triacanthos*	6.5	GOOD	
T14	Honeylocust	*Gleditsia triacanthos*	6.5	GOOD	
T15	Honeylocust	*Gleditsia triacanthos*	7	GOOD	
T16	London planetree	*Platanus x acerifolia*	9	GOOD	
T17	London planetree	*Platanus x acerifolia*	8	GOOD	
T18	London planetree	*Platanus x acerifolia*	8	GOOD	
T19	London planetree	*Platanus x acerifolia*	8	GOOD	
T20	London planetree	*Platanus x acerifolia*	8	GOOD	
T21	London planetree	*Platanus x acerifolia*	8	GOOD	
T22	Honeylocust	*Gleditsia triacanthos*	4	GOOD	
T23	Honeylocust	*Gleditsia triacanthos*	4.5	GOOD	
T24	Honeylocust	*Gleditsia triacanthos*	4	GOOD	
T25	London planetree	*Platanus x acerifolia*	5	GOOD	
T26	London planetree	*Platanus x acerifolia*	5.5	GOOD	
T27	London planetree	*Platanus x acerifolia*	5.5	GOOD	
T28	London planetree	*Platanus x acerifolia*	6	GOOD	
T29	London planetree	*Platanus x acerifolia*	5.5	GOOD	
T30	London planetree	*Platanus x acerifolia*	6	GOOD	
T31	Honeylocust	*Gleditsia triacanthos*	14	GOOD	
T32	Honeylocust	*Gleditsia triacanthos*	11	GOOD	
T33	Honeylocust	*Gleditsia triacanthos*	13	GOOD	
T34	London planetree	*Platanus x acerifolia*	5.5	GOOD	
T35	London planetree	*Platanus x acerifolia*	5.5	GOOD	
T36	London planetree	*Platanus x acerifolia*	5.5	GOOD	
T37	London planetree	*Platanus x acerifolia*	5	GOOD	
T38	London planetree	*Platanus x acerifolia*	4.5	GOOD	
T39	London planetree	*Platanus x acerifolia*	4	GOOD	staked and cabled
T40	London planetree	*Platanus x acerifolia*	5.5	GOOD	
T41	London planetree	*Platanus x acerifolia*	6	GOOD	
T42	London planetree	*Platanus x acerifolia*	8	GOOD	
T43	Honeylocust	*Gleditsia triacanthos*	5	GOOD	
T44	London planetree	*Platanus x acerifolia*	7.5	GOOD	
T45	London planetree	*Platanus x acerifolia*	9	GOOD	
T46	London planetree	*Platanus x acerifolia*	9	GOOD	
T47	London planetree	*Platanus x acerifolia*	8	GOOD	
T48	London planetree	*Platanus x acerifolia*	8.5	GOOD	
T49	London planetree	*Platanus x acerifolia*	8.5	GOOD	
T50	Honeylocust	*Gleditsia triacanthos*	5	GOOD	
T51	Honeylocust	*Gleditsia triacanthos*	4.5	GOOD	
T52	Honeylocust	*Gleditsia triacanthos*	4	GOOD	
T53	London planetree	*Platanus x acerifolia*	8	GOOD	
T54	London planetree	*Platanus x acerifolia*	8.5	GOOD	
T55	London planetree	*Platanus x acerifolia*	8	GOOD	
T56	London planetree	*Platanus x acerifolia*	7	GOOD	
T57	Honeylocust	*Gleditsia triacanthos*	5	GOOD	staked and cabled
T58	London planetree	*Platanus x acerifolia*	7.5	GOOD	
T59	London planetree	*Platanus x acerifolia*	9	GOOD	
T60	London planetree	*Platanus x acerifolia*	9	GOOD	
T61	London planetree	*Platanus x acerifolia*	9	GOOD	
T62	London planetree	*Platanus x acerifolia*	8.5	GOOD	
T63	London planetree	*Platanus x acerifolia*	8	GOOD	
T64	London planetree	*Platanus x acerifolia*	8	GOOD	
T65	London planetree	*Platanus x acerifolia*	8.5	GOOD	
T66	London planetree	*Platanus x acerifolia*	9	GOOD	
T67	London planetree	*Platanus x acerifolia*	9.5	GOOD	
T68	London planetree	*Platanus x acerifolia*	8.5	GOOD	
T69	London planetree	*Platanus x acerifolia*	9	GOOD	
T70	Honeylocust	*Gleditsia triacanthos*	4	GOOD	staked and cabled
T71	Honeylocust	*Gleditsia triacanthos*	4	AVG.	in decline , staked and cabled
T72	Honeylocust	*Gleditsia triacanthos*	4	GOOD	staked and cabled
T73	Honeylocust	*Gleditsia triacanthos*	9	GOOD	
T74	Honeylocust	*Gleditsia triacanthos*	10	GOOD/AVG.	healed wound in trunk
T75	London planetree	*Platanus x acerifolia*	8.5	GOOD	
T76	London planetree	*Platanus x acerifolia*	10	GOOD	
T77	London planetree	*Platanus x acerifolia*	12.5	GOOD	
T78	London planetree	*Platanus x acerifolia*	11.5	GOOD	
T79	London planetree	*Platanus x acerifolia*	12.5	GOOD	
T80	London planetree	*Platanus x acerifolia*	10.5	GOOD	
T81	London planetree	*Platanus x acerifolia*	10.5	GOOD	
T82	London planetree	*Platanus x acerifolia*	10.5	GOOD	
T83	London planetree	*Platanus x acerifolia*	7.5	GOOD	
T84	London planetree	*Platanus x acerifolia*	8	GOOD	
T85	London planetree	*Platanus x acerifolia*	5	GOOD	
T86	London planetree	*Platanus x acerifolia*	8	GOOD	
T87	London planetree	*Platanus x acerifolia*	8.5	GOOD	
T88	London planetree	*Platanus x acerifolia*	6.5	AVG/POOR	sparse canopy
T89	London planetree	*Platanus x acerifolia*	8	GOOD	
T90	London planetree	*Platanus x acerifolia*	5	GOOD/AVG.	staked and cabled
T91	London planetree	*Platanus x acerifolia*	9	GOOD	
T92	London planetree	*Platanus x acerifolia*	9	GOOD	
T93	London planetree	*Platanus x acerifolia*	10	GOOD	
T94	London planetree	*Platanus x acerifolia*	11	GOOD	
T95	London planetree	*Platanus x acerifolia*	12	GOOD	
T96	Persimmon	*Diospyros virginiana*	19	GOOD	13.5,13.5 double trunk. hollow in one base
T97	London planetree	*Platanus x acerifolia*	10.5	GOOD	
T98	London planetree	*Platanus x acerifolia*	2.5	GOOD/AVG.	Bloodgood, staked and cabled
T99	London planetree	*Platanus x acerifolia*	8.5	GOOD/AVG.	thin canopy
T100	London planetree	*Platanus x acerifolia*	11	GOOD	
T101	London planetree	*Platanus x acerifolia*	11	GOOD	
T102	Honeylocust	*Gleditsia triacanthos*	14	GOOD/AVG.	poor form
T103	Norway spruce	*Picea abies*	15	GOOD/AVG.	crowded canopy
T104	Norway spruce	*Picea abies*	13	GOOD/AVG.	crowded canopy
T105	Norway spruce	*Picea abies*	15	GOOD/AVG.	crowded canopy
T106	Norway spruce	*Picea abies*	18	GOOD/AVG.	crowded canopy
T107	Burford Holly	*Ilex cornuta 'Burfordii'*	8	GOOD/AVG.	crowded canopy 4, 5, 5
T108	Burford Holly	*Ilex cornuta 'Burfordii'*	8	GOOD/AVG.	crowded canopy 4, 5,4
T109	Burford Holly	*Ilex cornuta 'Burfordii'*	6	GOOD/AVG.	crowded canopy ,4, 5
T110	Leyland cypress	*x Cuprocyparis leylandii*	12	AVG.	crowded canopy
T111	Norway spruce	*Picea abies*	12	AVG.	crowded canopy
T112	Silver maple	*Acer saccharinum*	11	GOOD/AVG.	4,5,6,7
T113	Japanese flowering cherry	*Prunus serrulata*	9	AVG.	in decline
T114	Red maple	*Acer rubrum*	15	GOOD	
T115	Willow oak	*Quercus phellos*	17	GOOD	
T116	Silver maple	*Acer saccharinum*	25	GOOD	
T117	Silver maple	*Acer saccharinum*	23.5	GOOD	
T118	Silver maple	*Acer saccharinum*	24.5	GOOD	
T119	Silver maple	*Acer saccharinum*	22	GOOD	
T120	Pin oak	*Quercus palustris*	21.5	GOOD	
T121	Silver maple	*Acer saccharinum*	12.5	GOOD	
T122	Red maple	*Acer rubrum*	17.5	GOOD	
T123	Red mulberry	*Morus rubra*	22.5	AVG.	poor form
T124	River birch	*Betula lenta*	2	GOOD	7.5,8,9,8,7.5,4,8
T125	Red maple	*Acer rubrum*	10	AVG/POOR	large wound in trunk
T126	Red maple	*Acer rubrum*	16	GOOD	
T127	Japanese flowering cherry	*Prunus serrulata*	5	GOOD/AVG.	shaded crown
T128	River birch	*Betula lenta*	19	GOOD	10.5,4,4,3,8,3,10,5
T129	Red maple	*Acer rubrum*	21	GOOD	
T130	Red maple	*Acer rubrum*	10.5	AVG/POOR	in decline
T131	River birch	*Betula lenta*	14	GOOD/AVG.	codominate leaders
T132	Pin oak	*Quercus palustris*	20	GOOD	
T133	Black walnut	*Juglans nigra*	12	GOOD	
T134	Norway maple	*Acer plantanoides*	13	GOOD	
T135	Black walnut	*Juglans nigra*	13	GOOD	
T136	Black walnut	*Juglans nigra*	25.5	GOOD	
T137	River birch	*Betula lenta*	15	GOOD	10,9.5,7
T138	London planetree	*Platanus x acerifolia*	12.5	GOOD	
T139	Japanese flowering cherry	*Prunus serrulata*	11.5	GOOD	
T140	Japanese zelkova	*Zelkova serrata*	11	GOOD	
T141	Sawtooth oak	*Quercus acutissima*	8.5	GOOD	
T142	Honeylocust	*Gleditsia triacanthos*	30	POOR	Dead
T143	Honeylocust	*Gleditsia triacanthos*	24	GOOD/AVG.	
T144	Honeylocust	*Gleditsia triacanthos*	22	GOOD/AVG.	
T145	London planetree	*Platanus x acerifolia*	4	GOOD/AVG.	

NOTES:
1. PLACE SIGNS AT 30' O.C.
2. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
3. SIGNS SHOULD BE PROPERLY MAINTAINED.
4. AVOID INJURY TO ROOTS WHEN PLACING POSTS FOR THE SIGNS.

4 TREE PROTECTION SIGNAGE
NOT TO SCALE 0203-04



NOTES:
1. TREE RETENTION AREAS WILL BE SET AS PART OF THE PRE-CONSTRUCTION REVIEW PROCESS.
2. BOUNDARIES OF RETENTION AREAS SHOULD BE STAKED AND FLAGGED PRIOR TO TRENCHING
3. EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
4. ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
5. TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.

5 ROOT PRUNING WITH FENCE
1" = 1'-0" 3293-02

VERTICAL MULCHING FOR SOIL DECOMPACTION

- DECOMPACT SOIL NO CLOSER THAN 3 FEET TO TREE TRUNK AND 10 FEET BEYOND CRITICAL ROOT ZONE, OR AS NOTED ON PLANS.
- BORE HOLES 2" TO 3" IN DIAMETER, A MINIMUM OF 12" DEEP, AT 24" O.C, WITH SOIL AUGER OR SUPERSONIC AIR TOOL (SSAT).
- BACKFILL HOLES WITH AN EQUAL MIX OF EXCAVATED SOIL, LEAF COMPOST, AND SAND.
- FOR MINOR FILLS, DECOMPACT SOILS PRIOR TO PLACEMENT OF FILL.
- FOR DECOMPACTION OF SOILS RELATED TO CONSTRUCTION TRAFFIC, BORE HOLES AFTER REMOVING PROTECTIVE MATTING. FURTHER TRAFFIC OVER DECOMPACTED AREAS SHALL BE PROHIBITED.
- FOR ANY OTHER DECOMPACTION, SEE PLAN NOTES AND SPECIFICATIONS FOR TIMING.
- CONTRACTOR TO SUBMIT RECOMMENDED MATERIALS FOR REVIEW.
- REFER TO SPECIFICATIONS AND CONSTRUCTION DOCUMENTS FOR ADDITIONAL INFORMATION.

6 VERTICAL MULCHING FOR SOIL DECOMPACTION
NOT TO SCALE 0203-07

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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LF-9

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DETAILS AND NOTES

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 87 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

LEGEND

LOD — LIMIT OF DISTURBANCE

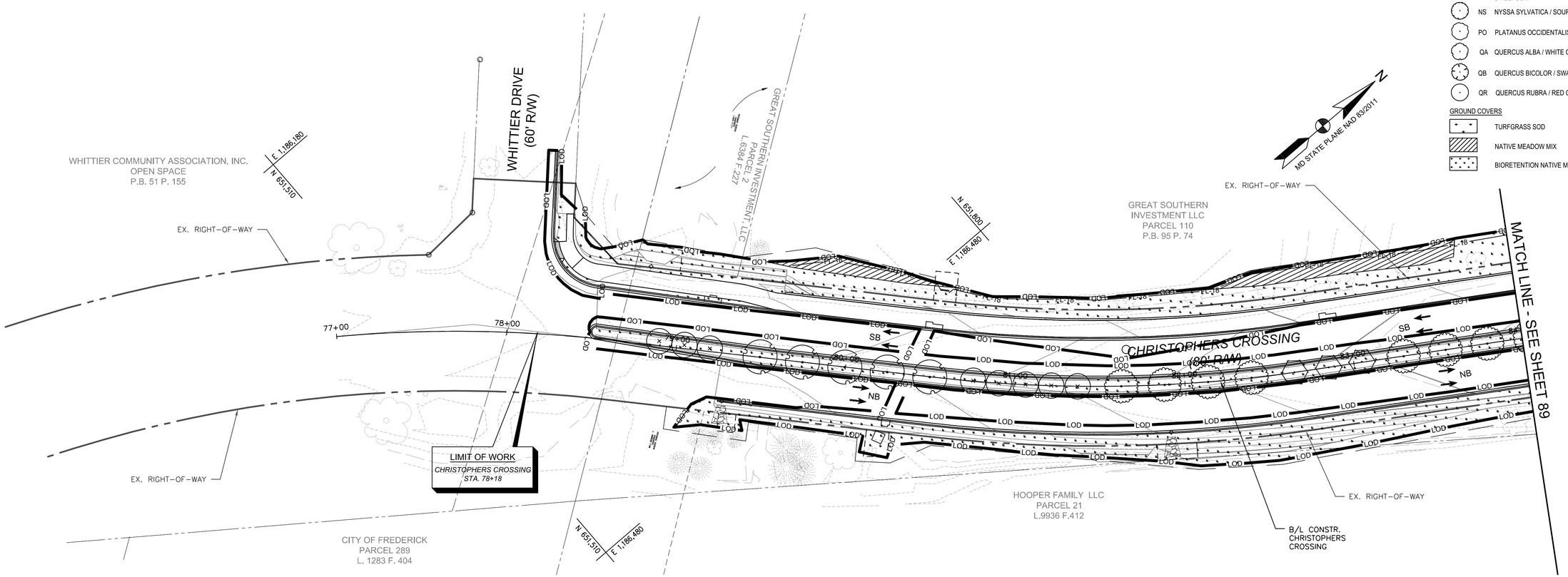
EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA `ESPRESSO` KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA `HAPDELL` SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX



PLAN
SCALE: 1"=30'

PLANT SCHEDULE LP-1

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AS	5	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL	
	CCA	8	CERCIS CANADENSIS 'APPALACHIAN RED' / APPALACHIAN RED EASTERN REDBUD	B & B	2"CAL	
	CF	3	CORNUS FLORIDA / FLOWERING DOGWOOD	B & B	2"CAL	
	LR	7	LIQUIDAMBAR STYRACIFLUA `HAPDELL` TM / HAPPIDAZE SWEET GUM	B & B	2"CAL	

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	NM	2,057 SF	NATIVE GRASS MIX	SEED
	SOD	20,115 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

JACOB CHRISTOPHER WILLIAMS
21331
PROFESSIONAL ENGINEER
11/15/2022

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LP-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

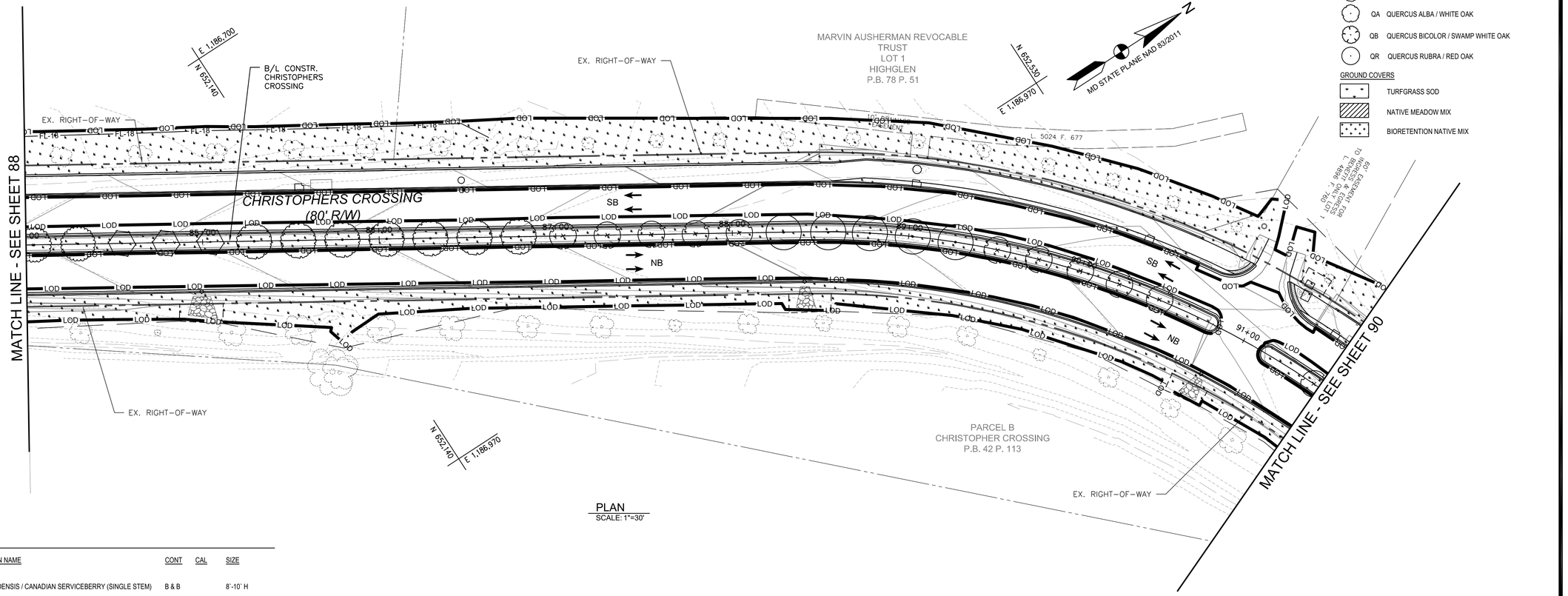
AMT FILE NO. 15-0758.007 SHEET NO. 88 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND

LOD — LIMIT OF DISTURBANCE

EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA `ESPRESSO` KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA `HAPDELL` SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX

PLANT SCHEDULE LP-2

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AC	11	AMELANCHIER CANADENSIS / CANADIAN SERVICEBERRY (SINGLE STEM)	B & B		8`-10` H
	CF	3	CORNUS FLORIDA / FLOWERING DOGWOOD	B & B	2"CAL	
	LR	2	LIQUIDAMBAR STYRACIFLUA `HAPDELL` TM / HAPPIDAZE SWEET GUM	B & B	2"CAL	
	NS	7	NYSSA SYLVATICA / SOUR GUM	B & B	2"CAL	
	QR	5	QUERCUS RUBRA / RED OAK	B & B	2"CAL	

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	SOD	34,601 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21321 — PROFESSIONAL ENGINEER — 11/15/2022

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LP-2

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

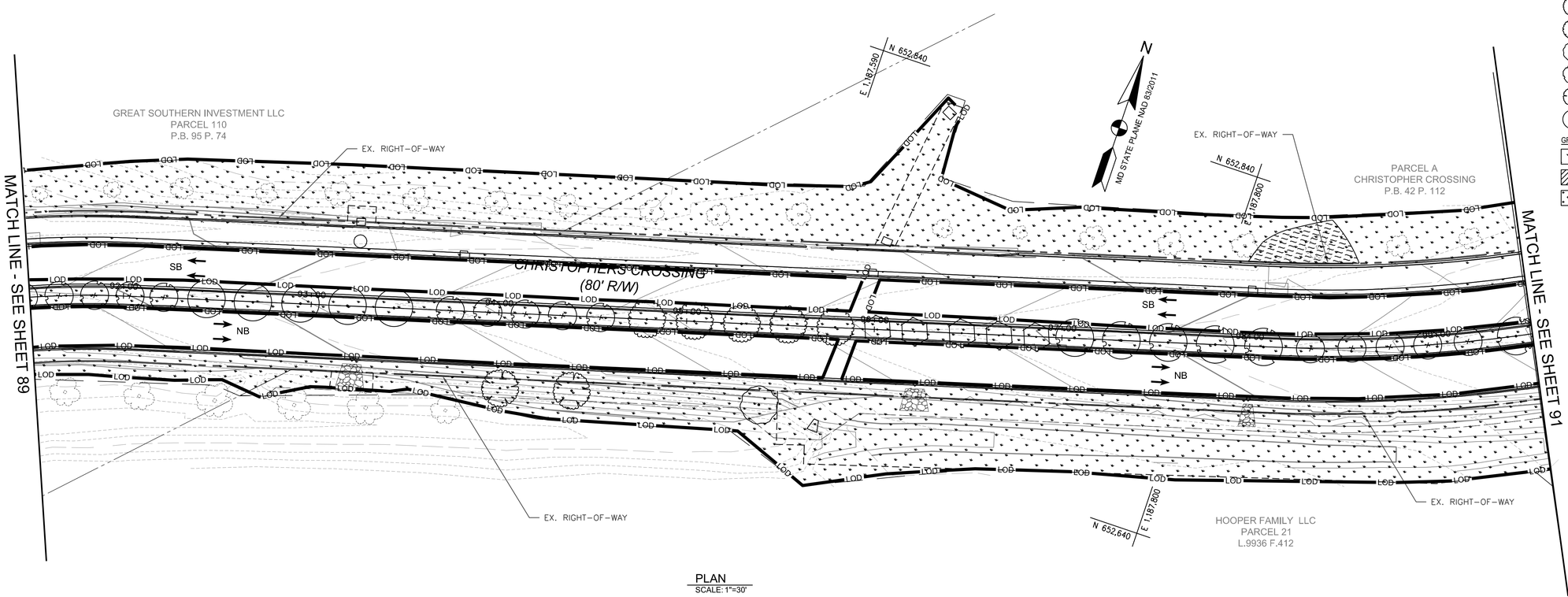
AMT FILE NO. 15-0758.007 SHEET NO. 89 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND

- LOD — LIMIT OF DISTURBANCE
- EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA `ESPRESSO` KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA `HAPDELL` SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX

PLANT SCHEDULE LP-3

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AS	6	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL	
	AC	9	AMELANCHIER CANADENSIS / CANADIAN SERVICEBERRY (SINGLE STEM)	B & B		8`-10` H
	CCA	5	CERCIS CANADENSIS 'APPALACHIAN RED' / APPALACHIAN RED EASTERN REDBUD	B & B	2"CAL	
	CF	5	CORNUS FLORIDA / FLOWERING DOGWOOD	B & B	2"CAL	
	LR	5	LIQUIDAMBAR STYRACIFLUA `HAPDELL` TM / HAPPIDAZE SWEET GUM	B & B	2"CAL	
	PO	1	PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE	B & B	2"CAL	
	QB	2	QUERCUS BICOLOR / SWAMP WHITE OAK	B & B	2"CAL	
	QR	5	QUERCUS RUBRA / RED OAK	B & B	2"CAL	

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	SOD	2,401 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — JOHN W. HOFFMAN — No. 21351 — PROFESSIONAL ENGINEER — 11/15/2022

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LP-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

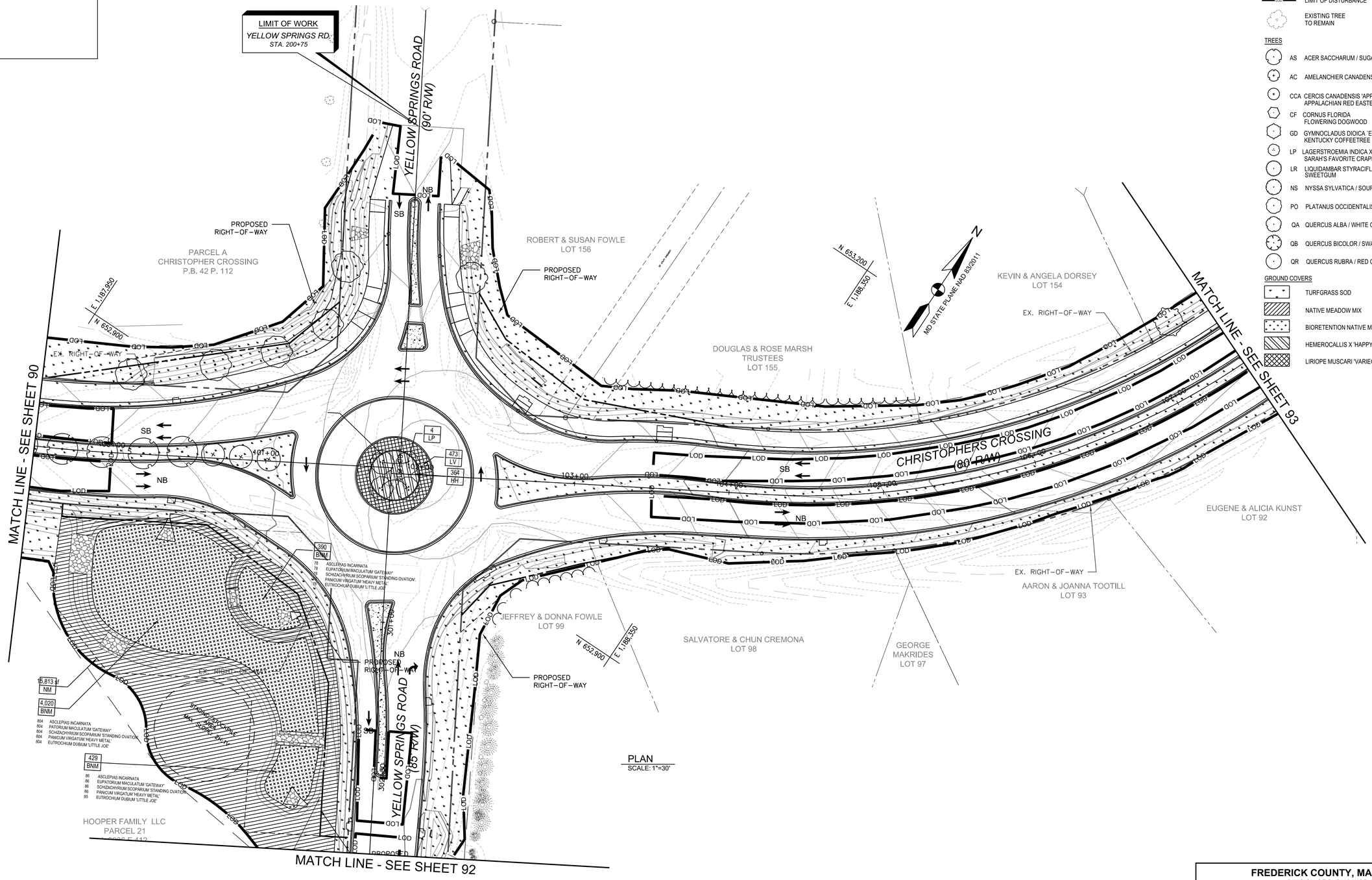
AMT FILE NO. 15-0758.007 SHEET NO. 90 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

*SEE PLANT SCHEDULE LP-5

LEGEND

- LOD — LIMIT OF DISTURBANCE
- EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA `ESPRESSO` KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA `HAPDELL` SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX
- HEMEROCALLIS X 'HAPPY RETURNS'
- LIRIOPE MUSCARI 'VARIEGATA'

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — JEFFREY TAN CHEE — 24333 — PROFESSIONAL ENGINEER — 11/9/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

LP-4

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

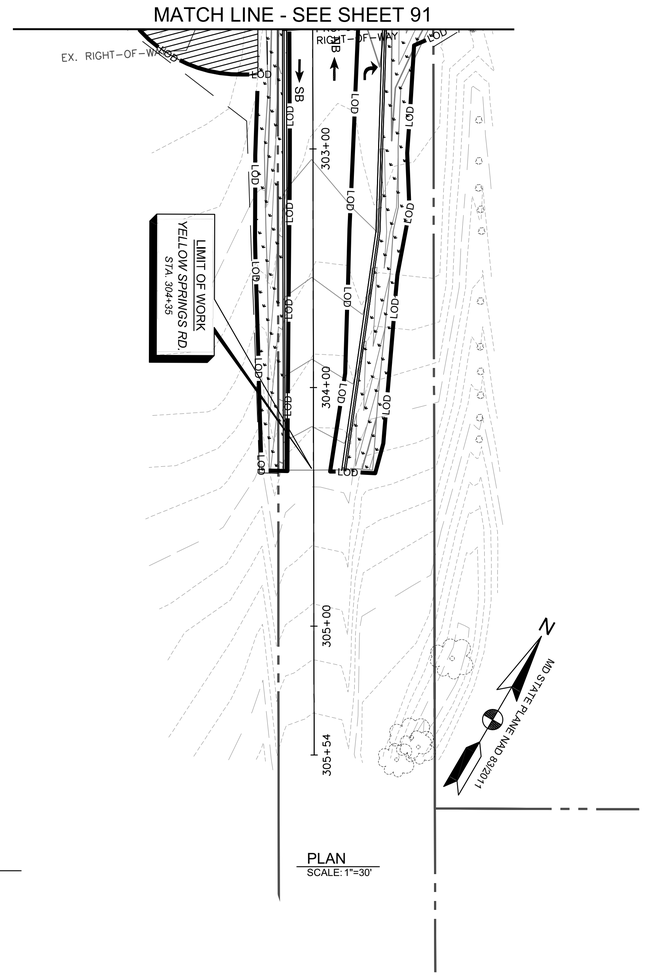
AMT FILE NO. 15-0758.007 SHEET NO. 91 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND

LOD LIMIT OF DISTURBANCE

EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA `ESPRESSO` KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA `HAPDELL` SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX

PLANT SCHEDULE LP-4 & 5

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AS	4	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL	
+	CCA	3	CERCIS CANADENSIS 'APPALACHIAN RED' / APPALACHIAN RED EASTERN REDBUD	B & B	2"CAL	
	GD	1	GYMNOCLADUS DIOICA `ESPRESSO` / KENTUCKY COFFEETREE	B & B	2"CAL	
	LP	4	LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' / SARAH'S FAVORITE CRAPE MYRTLE MULIT-TRUNK	B & B		8`-10` H
	PO	6	PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE	B & B	2"CAL	

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	
	BNM	4,839	BIORETENTION NATIVE MIX	1 GAL	18" o.c.
	HH	364	HEMEROCALLIS X 'HAPPY RETURNS' / HAPPY RETURNS DAYLILY	1 GAL	18" o.c.
	LV	473	LIRIOPE MUSCARI 'VARIEGATA' / VARIEGATED LILYTURF	1 GAL	18" o.c.
	NM	15,813 SF	NATIVE GRASS MIX	SEED	
	SOD	113,923 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND · JEFFREY A. THOMAS · 21233 · PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 757-6352
EMAIL: AMT1@AMTENGINEERING.COM

LP-5

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

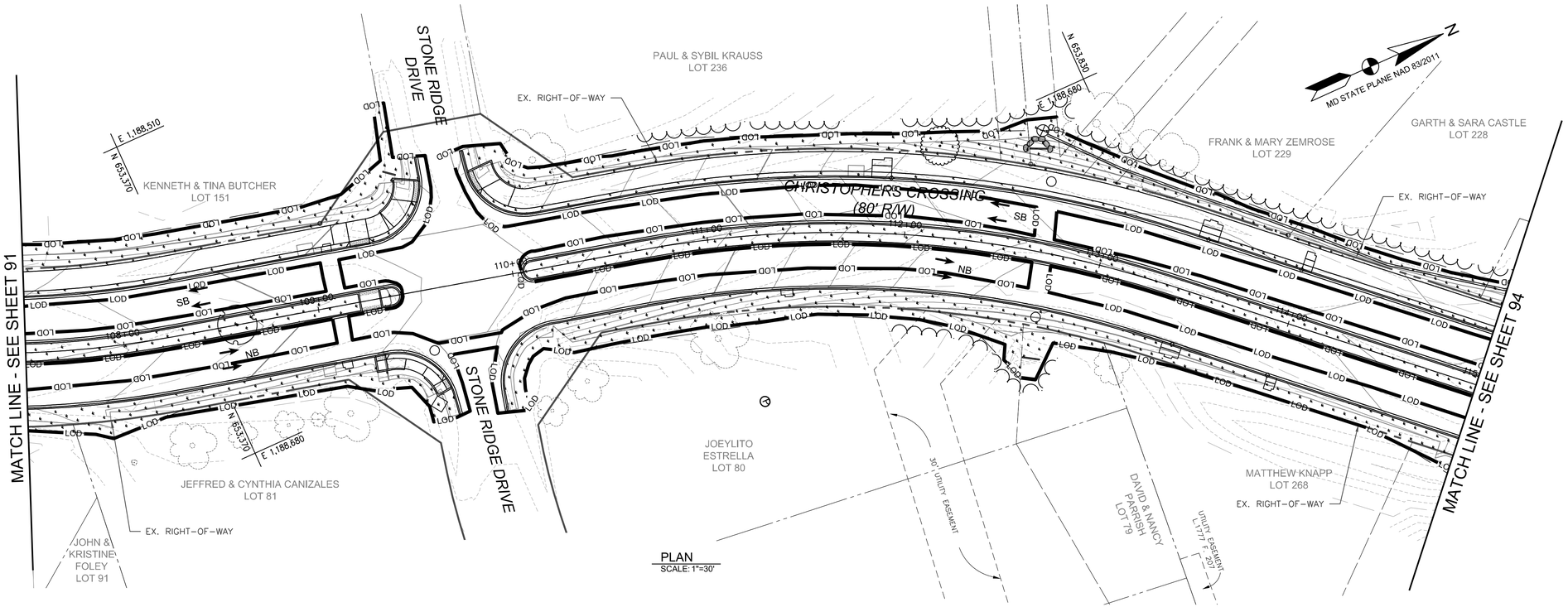
AMT FILE NO. 15-0758.007 SHEET NO. 92 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND

LOD — LIMIT OF DISTURBANCE

EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA `ESPRESSO` KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA `HAPDELL` SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX

PLANT SCHEDULE LP-6

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
	AS	1	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL
	LR	1	LIQUIDAMBAR STYRACIFLUA `HAPDELL` TM / HAPPIDAZE SWEET GUM	B & B	2"CAL
GROUND COVERS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**CONT**	
	SOD	29,802 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21235 — PROFESSIONAL ENGINEER — 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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(410) 737-8552
EMAIL: AMT1@AMTENGINEERING.COM

LP-6

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 93 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

LEGEND

LOD — LIMIT OF DISTURBANCE

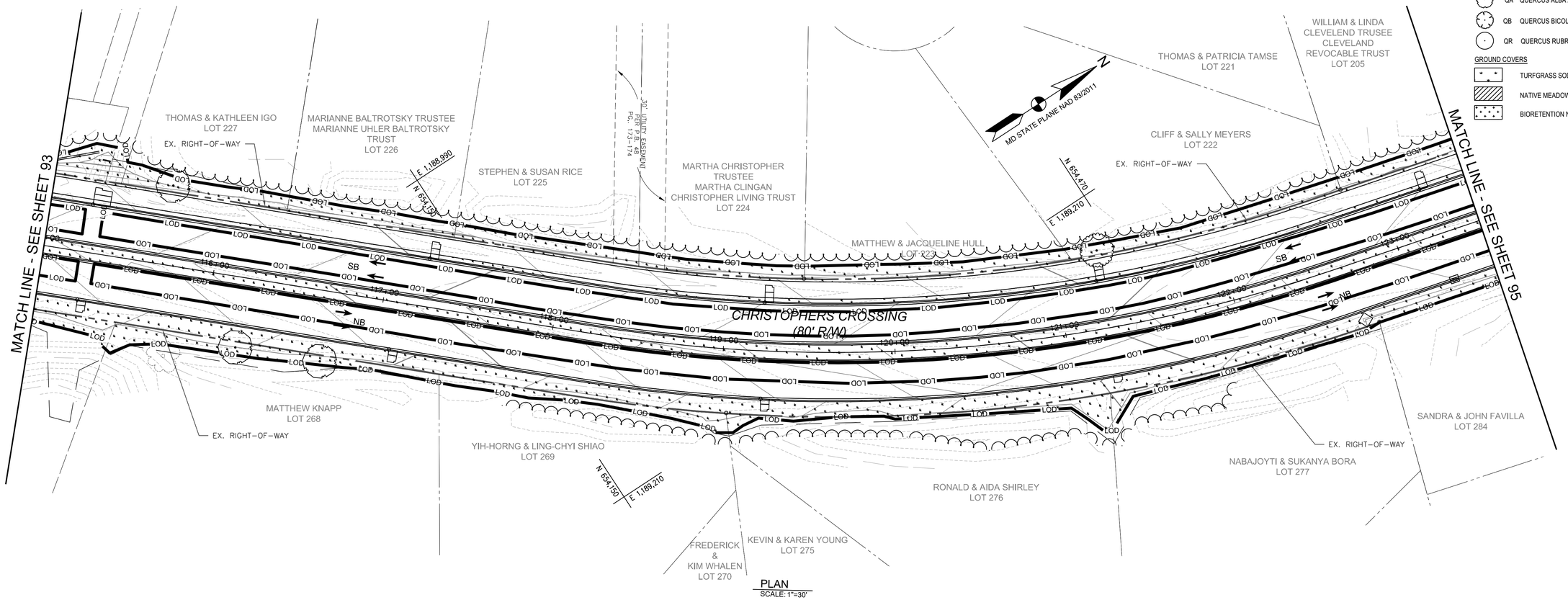
EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA `ESPRESSO` KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA `HAPDELL` SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX



PLAN
SCALE: 1"=30'

0 30' 60'
SCALE: 1"=30'

PLANT SCHEDULE LP-7

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
	LR	1	LIQUIDAMBAR STYRACIFLUA `HAPDELL` TM / HAPPIDAZE SWEET GUM	B & B	2"CAL
	QA	3	QUERCUS ALBA / WHITE OAK	B & B	2"CAL
GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	
	SOD	21,737 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

JOHN C. MAYNARD
No. 21321
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 757-8552
EMAIL: AMT1@AMTENGINEERING.COM

LP-7

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 94 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

LEGEND

LOD — LIMIT OF DISTURBANCE

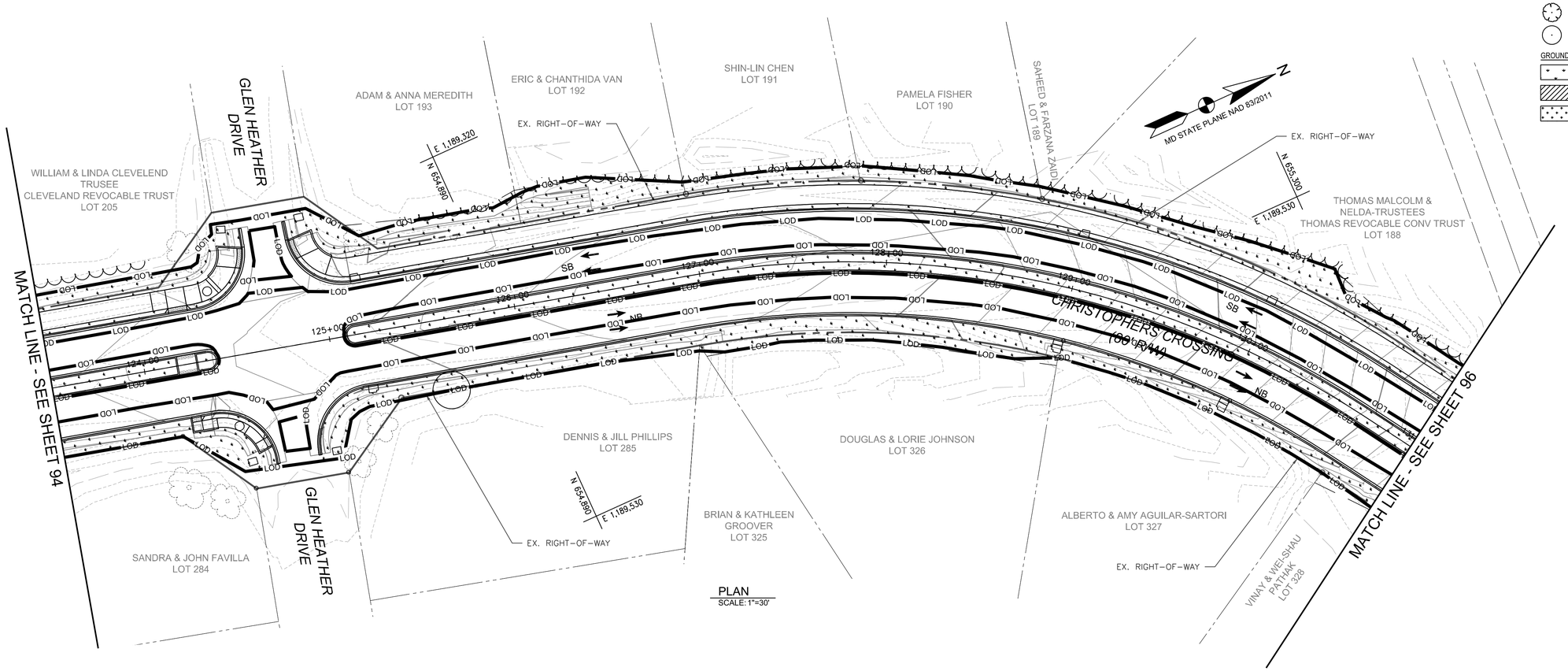
EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA `ESPRESSO` KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA `HAPDELL` SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX



PLAN
SCALE: 1"=30'

0 30' 60'
SCALE: 1"=30'

PLANT SCHEDULE LP-8

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
	QR	1	QUERCUS RUBRA / RED OAK	B & B	2"CAL

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	SOD	23,647 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 24231 — PROFESSIONAL ENGINEER — 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

LP-8

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

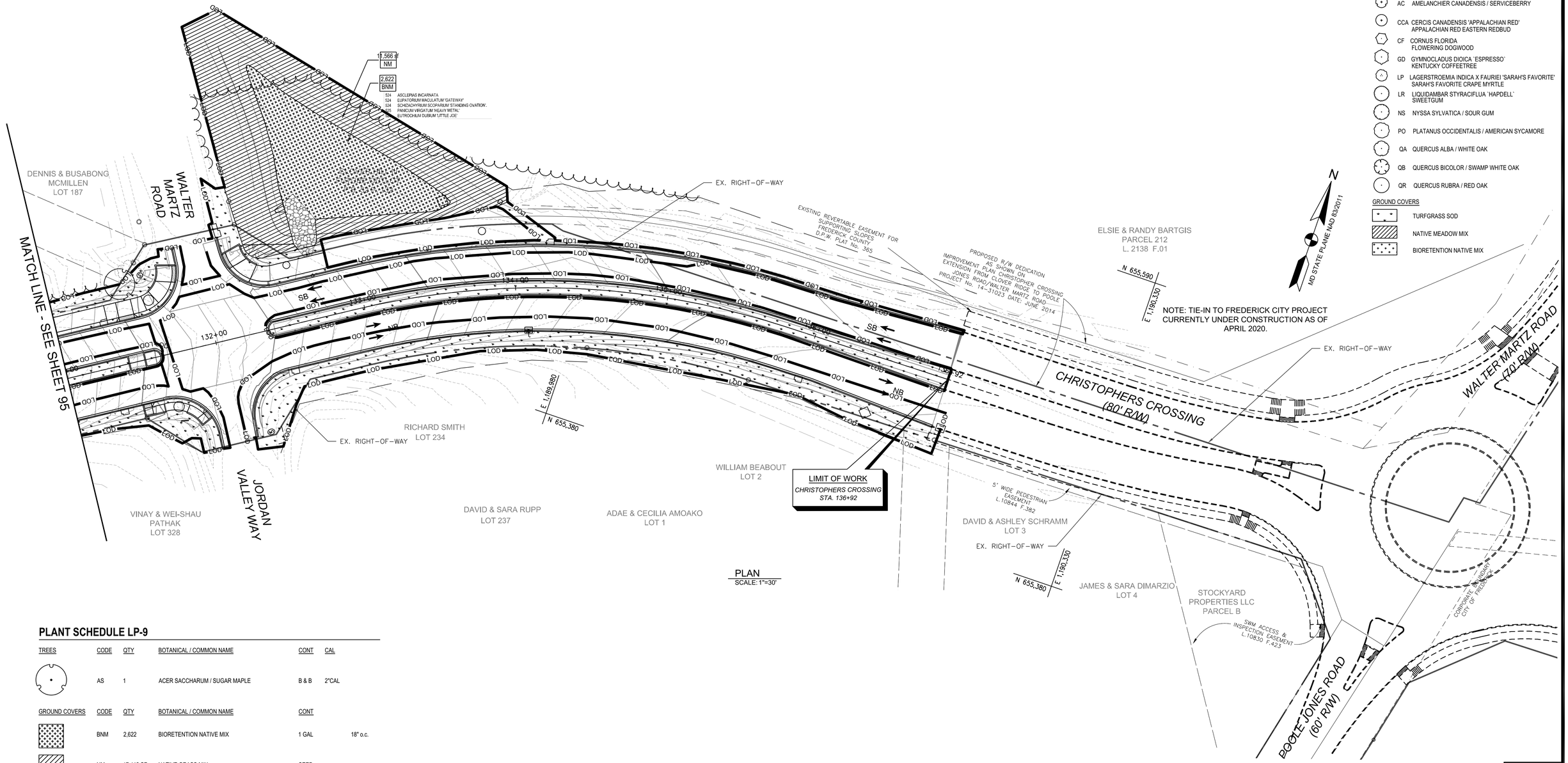
AMT FILE NO. 15-0758.007 SHEET NO. 95 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING



PLAN
SCALE: 1"=30'

LEGEND

- LOD — LIMIT OF DISTURBANCE
- EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- AC AMELANCHIER CANADENSIS / SERVICEBERRY
- CCA CERCIS CANADENSIS 'APPALACHIAN RED' APPALACHIAN RED EASTERN REDBUD
- CF CORNUS FLORIDA FLOWERING DOGWOOD
- GD GYMNOCLADUS DIOICA 'ESPRESSO' KENTUCKY COFFEETREE
- LP LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' SARAH'S FAVORITE CRAPE MYRTLE
- LR LIQUIDAMBAR STYRACIFLUA 'HAPDELL' SWEETGUM
- NS NYSSA SYLVATICA / SOUR GUM
- PO PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE
- QA QUERCUS ALBA / WHITE OAK
- QB QUERCUS BICOLOR / SWAMP WHITE OAK
- QR QUERCUS RUBRA / RED OAK

GROUND COVERS

- TURFGRASS SOD
- NATIVE MEADOW MIX
- BIORETENTION NATIVE MIX

PLANT SCHEDULE LP-9

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL
	AS	1	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	
	BNM	2,622	BIORETENTION NATIVE MIX	1 GAL	18" o.c.
	NM	17,442 SF	NATIVE GRASS MIX	SEED	
	SOD	13,855 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

0 30' 60'
SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

LP-9

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

LANDSCAPE PLAN

DATE: SEPTEMBER 2022 SCALE: 1"=30'

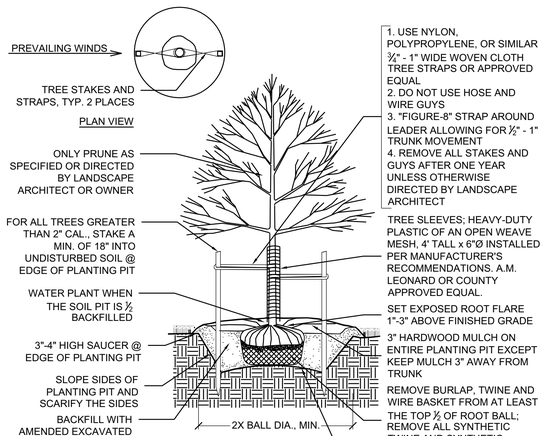
AMT FILE NO. 15-0758.007 SHEET NO. 96 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

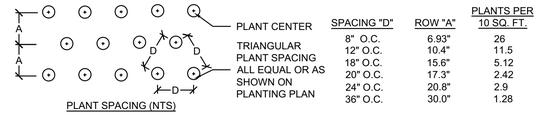


NOTE:
TREE SLEEVES ARE NOT NEEDED FOR TREES PLANTED WITHIN AREAS SURROUNDED BY TEMPORARY DEER EXCLUSION FENCING.

1 DECIDUOUS TREE PLANTING WITH DEER PROTECTION

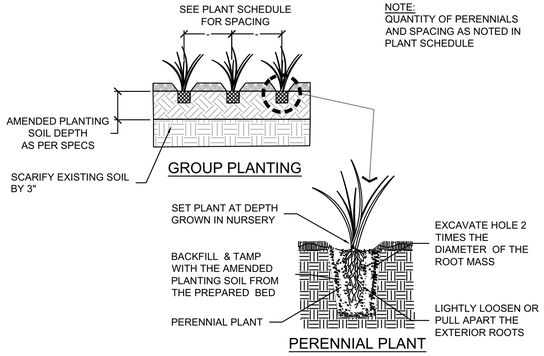
NOT TO SCALE

329343-31



PLANT SPACING (NTS)

SPACING "D"	ROW "A"	PLANTS PER 10 SQ. FT.
8" O.C.	6.93"	26
12" O.C.	10.4"	11.5
18" O.C.	15.6"	5.12
20" O.C.	17.3"	2.42
24" O.C.	20.8"	2.9
36" O.C.	30.0"	1.28

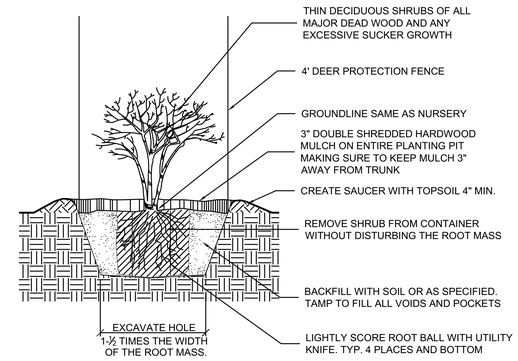


NOTE:
QUANTITY OF PERENNIALS AND SPACING AS NOTED IN PLANT SCHEDULE

2 HERBACEOUS & GRASS PLANTING DETAIL

NOT TO SCALE

329301-10



NOTES:
1. REMOVE ALL NON-ORGANIC MATERIAL FROM THE SOIL PIT AND HAND TAMP LOOSE SOIL AT BOTTOM OF THE PIT
2. PLANT EVERGREEN AND DECIDUOUS SHRUBS USING THE SAME METHOD
3. 4' DEER PROTECTION FENCE IS NOT NEEDED FOR SHRUBS PLANTED WITHIN AREAS SURROUNDED BY TEMPORARY DEER EXCLUSION FENCING.

3 CONTAINERIZED SHRUB PLANTING WITH DEER PROTECTION

NOT TO SCALE

329333-13

PLANT SCHEDULE

TREES	CODE	QTY	LP-1	LP-2	LP-3	LP-4&5	LP-6	LP-7	LP-8	LP-9	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AS	17	5		6	4	1			1	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL	
	AC	20		11	9						AMELANCHIER CANADENSIS / CANADIAN SERVICEBERRY (SINGLE STEM)	B & B		8'-10' H
	CCA	16	8		5	3					CERCIS CANADENSIS 'APPALACHIAN RED' / APPALACHIAN RED EASTERN REDBUD	B & B	2"CAL	
	CF	11	3	3	5						CORNUS FLORIDA / FLOWERING DOGWOOD	B & B	2"CAL	
	GD	1				1					GYMNOCLADUS DIOICA 'ESPRESSO' / KENTUCKY COFFEETREE	B & B	2"CAL	
	LP	4				4					LAGERSTROEMIA INDICA X FAURIEI 'SARAH'S FAVORITE' / SARAH'S FAVORITE CRAPE MYRTLE MULIT-TRUNK	B & B		8'-10' H
	LR	16	7	2	5		1	1			LIQUIDAMBAR STYRACIFLUA 'HAPDELL' TM / HAPPIDAZE SWEET GUM	B & B	2"CAL	
	NS	7		7							NYSSA SYLVATICA / SOUR GUM	B & B	2"CAL	
	PO	7			1	6					PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE	B & B	2"CAL	
	QA	3						3			QUERCUS ALBA / WHITE OAK	B & B	2"CAL	
	QB	2			2						QUERCUS BICOLOR / SWAMP WHITE OAK	B & B	2"CAL	
	QR	11		5	5				1		QUERCUS RUBRA / RED OAK	B & B	2"CAL	

GROUND COVERS	CODE	QTY	LP-1	LP-2	LP-3	LP-4&5	LP-6	LP-7	LP-8	LP-9	BOTANICAL / COMMON NAME	CONT	SPACING
	BNM	7,461				4,839				2,622	BIORETENTION NATIVE MIX (SEE PLANT LIST FOR MIX COMPONENTS PLANT SPECIES IN DRIFTS OF 11 to 23)	1 GAL	18" o.c.
	HH	364				364					HEMEROCALLIS X 'HAPPY RETURNS' / HAPPY RETURNS DAYLILY	1 GAL	18" o.c.
	LV	473				473					LIRIOPE MUSCARI 'VARIEGATA' / VARIEGATED LILYTURF	1 GAL	18" o.c.
	NM	35,312 SF	2,057 SF			15,813 SF				17,442 SF	NATIVE GRASS MIX (ERNMX-111 BY ERNST SEED OR APPROVED EQUAL)	SEED	
	SOD	258,668 SF	20,115 SF	34,601 SF	2,401 SF	113,923 SF	28,587 SF	21,539 SF	23,647 SF	13,855 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

BIORETENTION NATIVE MIX

20%	ASCLEPIAS INCARNATA	1 GAL. CONT.	18" O.C.
20%	EUPATORIUM MACULATUM 'GATEWAY'	1 GAL. CONT.	18" O.C.
20%	SCHIZACHYRIUM SCOPARIUM 'STANDING OVATION'	1 GAL. CONT.	18" O.C.
20%	PANICUM VIRGATUM 'HEAVY METAL'	1 GAL. CONT.	18" O.C.
20%	EUTROCHIUM DUBIUM 'LITTLE JOE'	1 GAL. CONT.	18" O.C.

GENERAL PLANTING NOTES:

1. This plan is for planting purposes only, and any other information shown is for reference only, see site plan for information about all layout, grading and other site improvements.
2. Call Miss Utility at 811 or 1-800-257-7777 to mark utilities at least 48 hours before digging.
3. All materials and planting procedures except as otherwise noted shall conform to the latest edition of "Maryland Department of Transportation State Highway Administration STANDARD SPECIFICATIONS for CONSTRUCTION and MATERIALS".
   3.1. Administration shall mean Frederick County Department of Transportation.
4. All plant material shall be labeled by the nursery and delivered with labels in place for inspection. Substitutions in plant species or size will not be permitted except with the approval of the Landscape Architect and Owner. Do not prune until plant material has been planted but as soon thereafter as is advisable under standard horticultural practices. For tree pruning and care methods please refer to ANSI A-300, latest edition.
5. In case of discrepancies between quantities on the plant list and the plan, the plan shall govern.

LP-10

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

DETAILS AND NOTES

DATE: SEPTEMBER 2022 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 97 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

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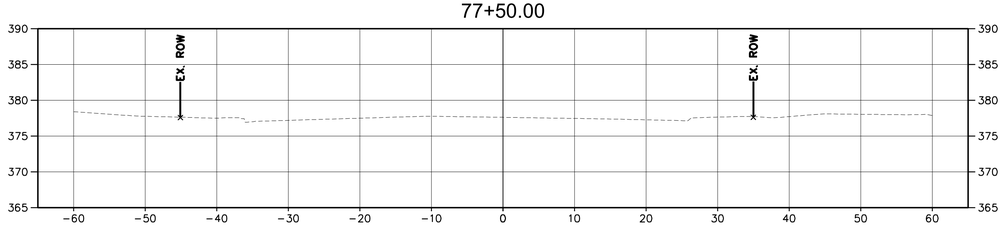

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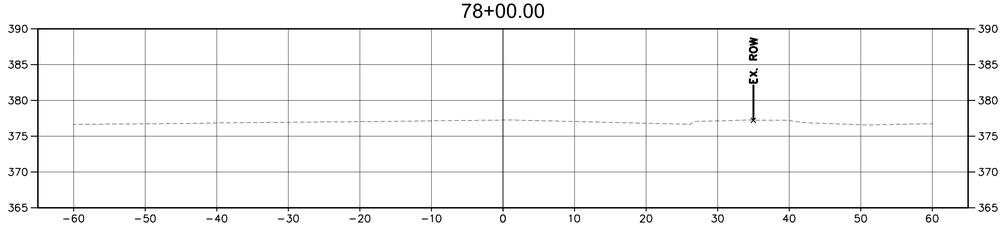

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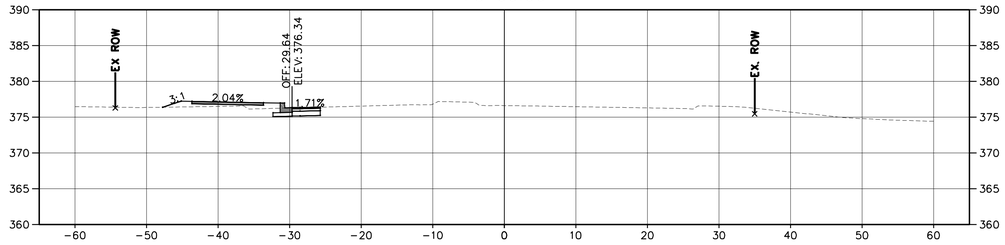

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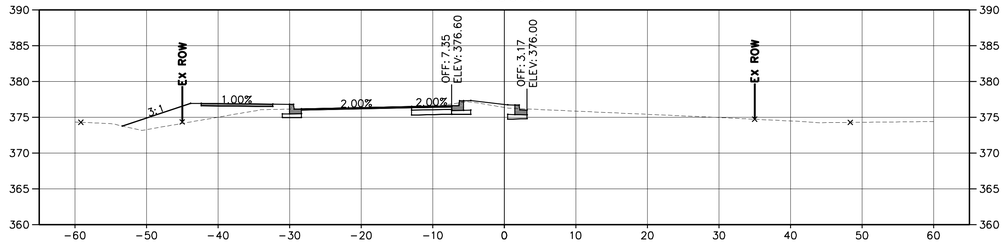

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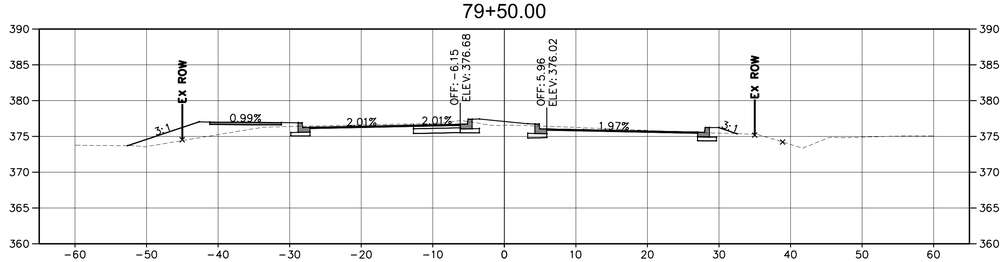


CS-1

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 98 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 24231 — PROFESSIONAL ENGINEER — 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8352
EMAIL: AMT1@AMTENGINEERING.COM

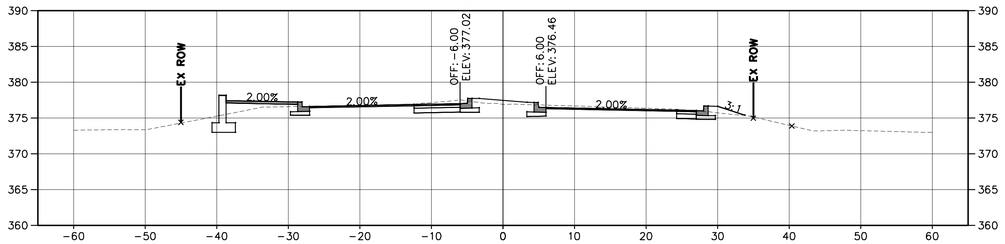
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

80+00.00



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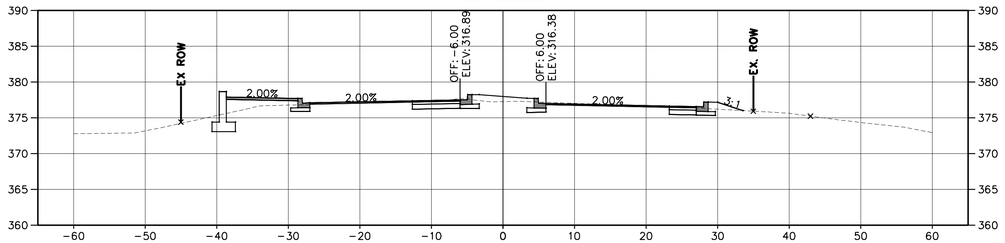

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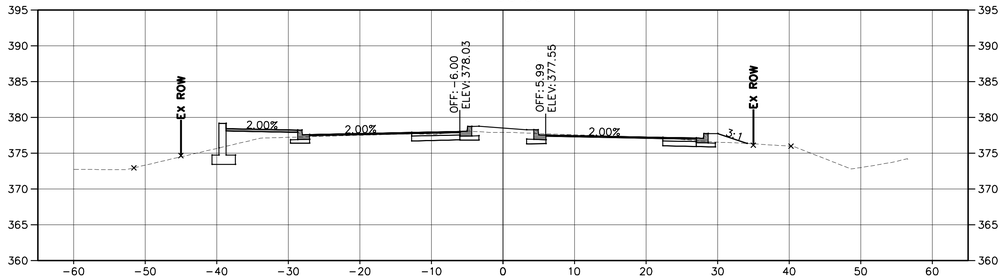

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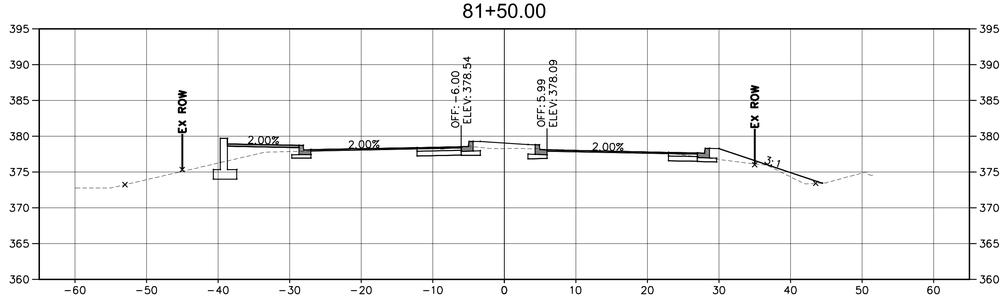

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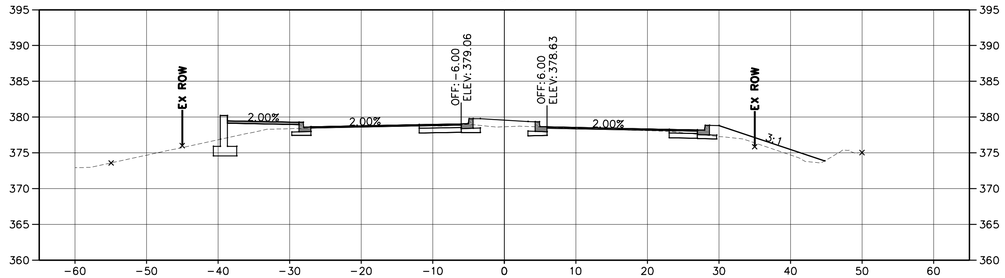

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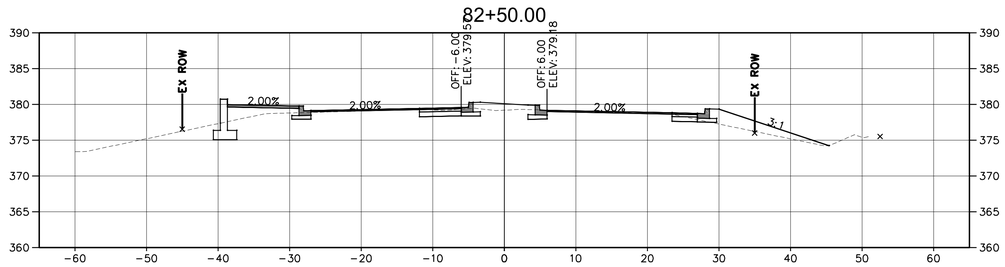


CS-2

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 99 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

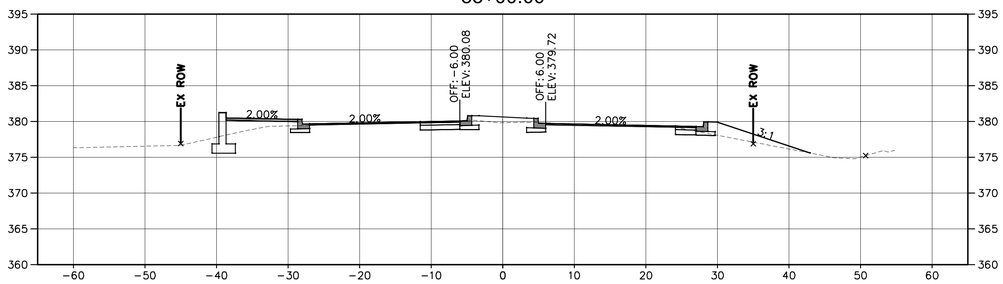
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

83+00.00



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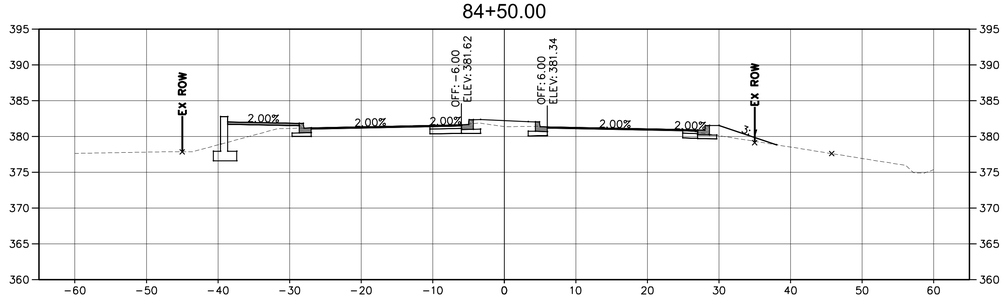

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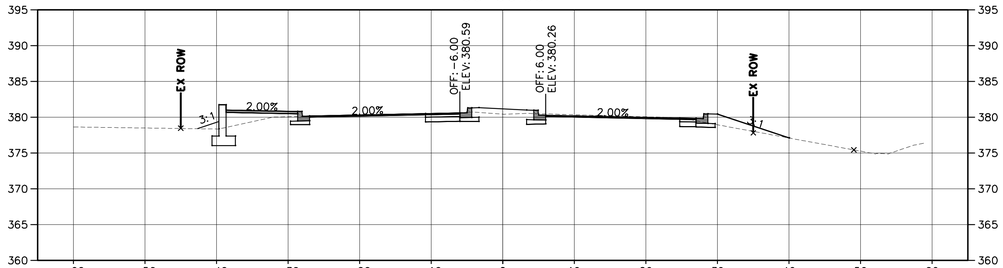

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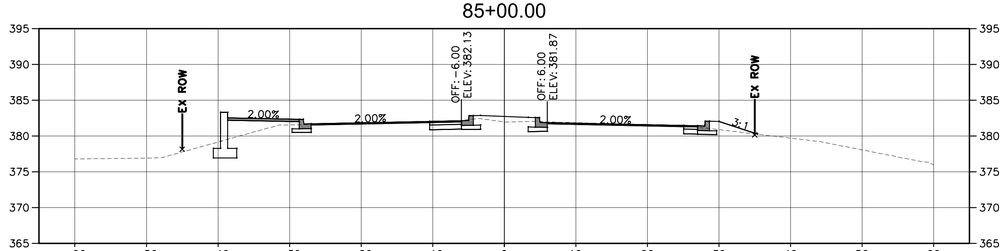

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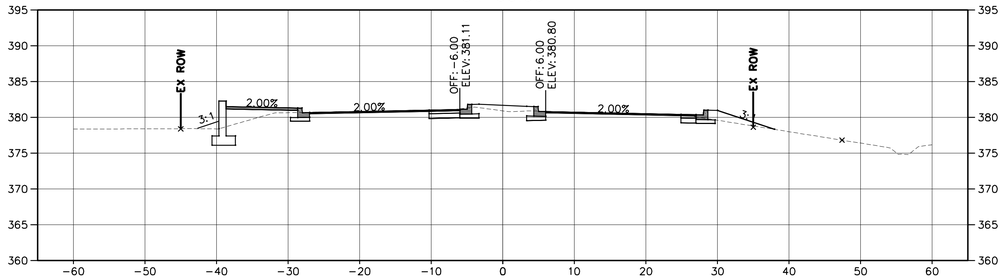

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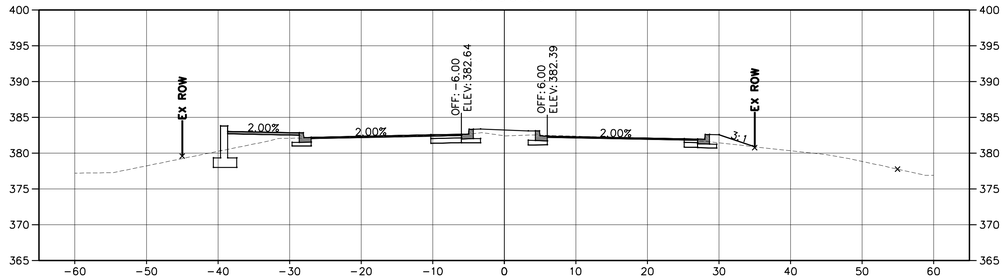


CS-3

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STEVEN C. THOMAS — STATE OF MARYLAND — 21431 — PROFESSIONAL ENGINEER — 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 100OF 121

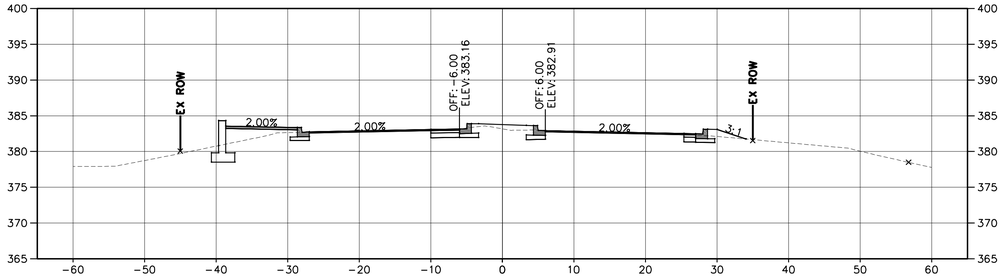
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

86+00.00



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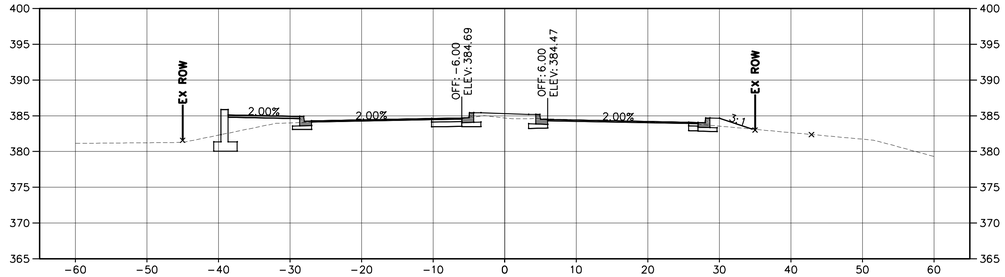

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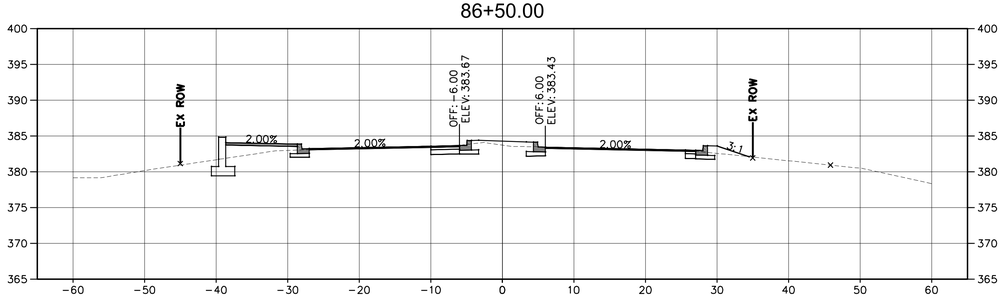

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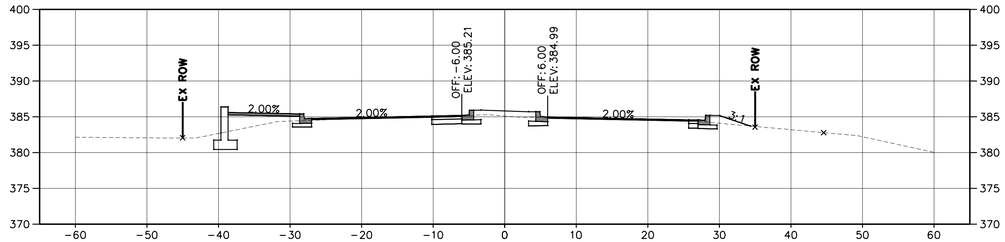

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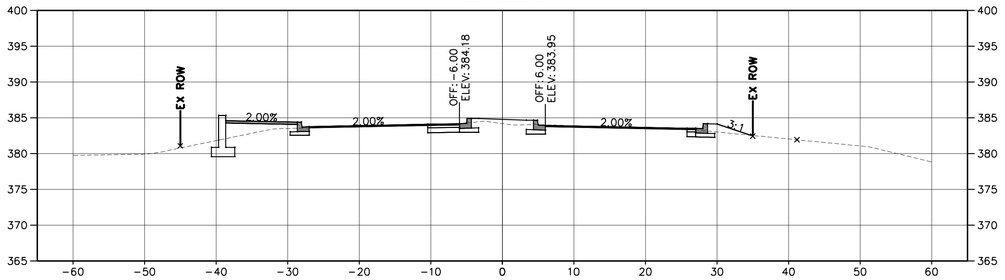

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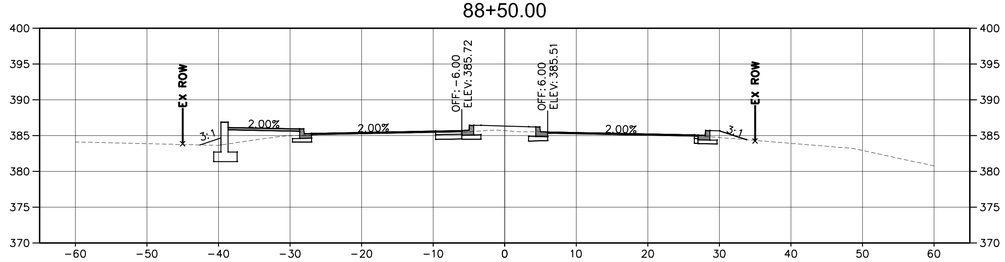


CS-4

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 101OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

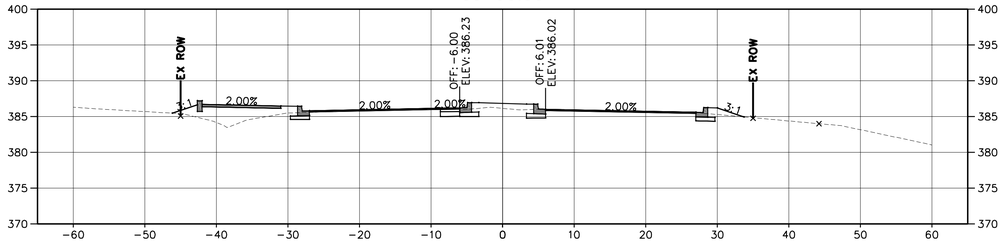
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

89+00.00



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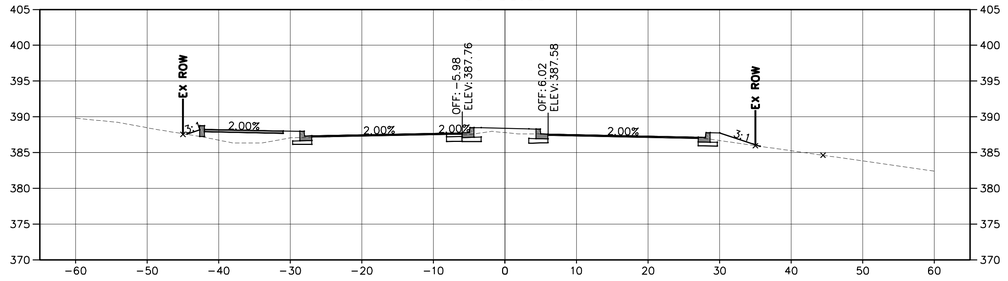

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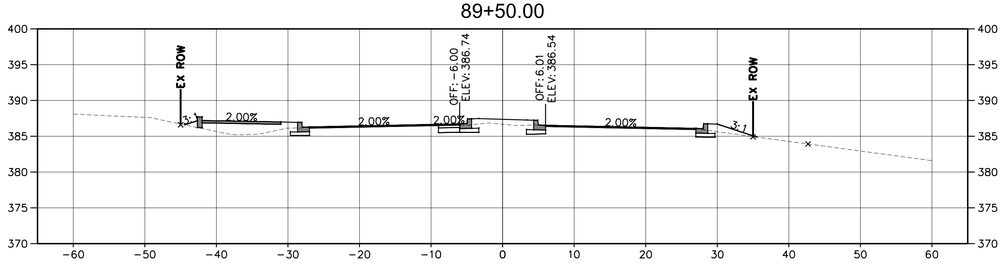

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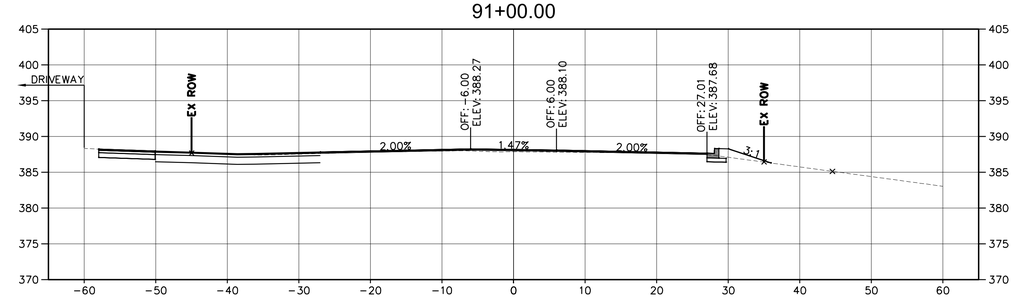

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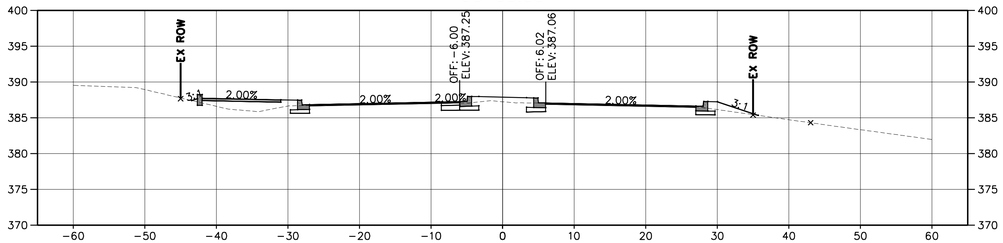

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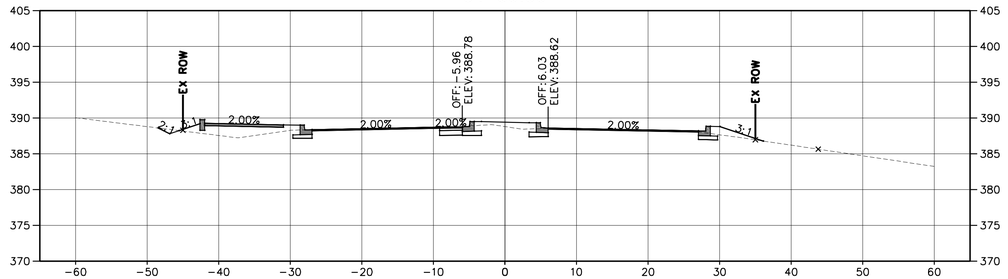


CS-5

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
21235
PROFESSIONAL ENGINEER
11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 102 OF 121

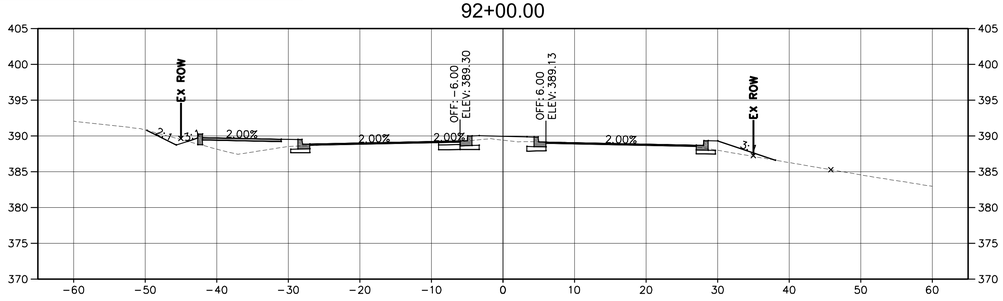
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

92+00.00



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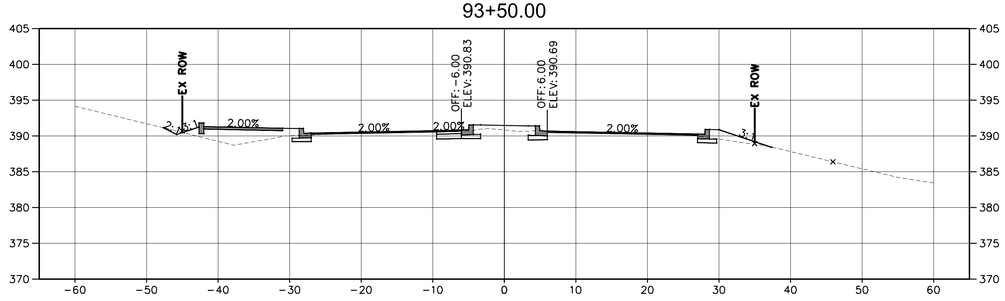

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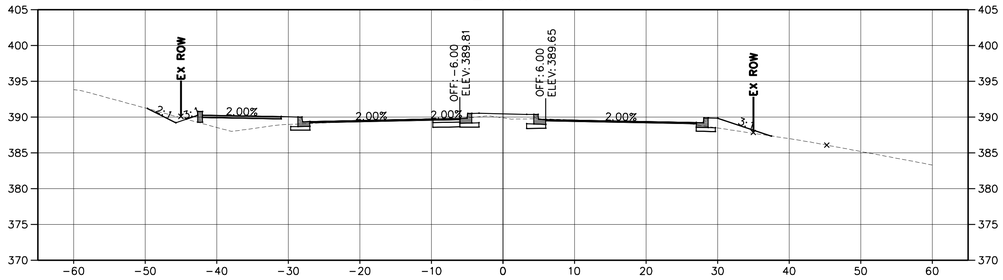

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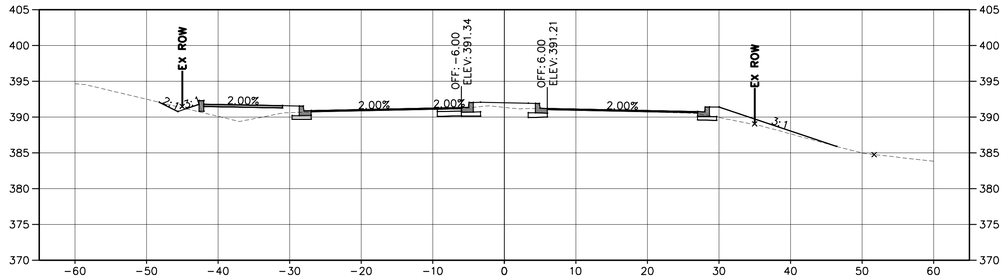

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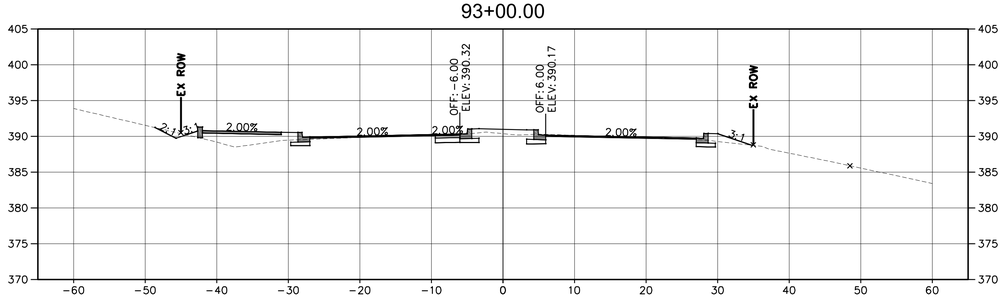

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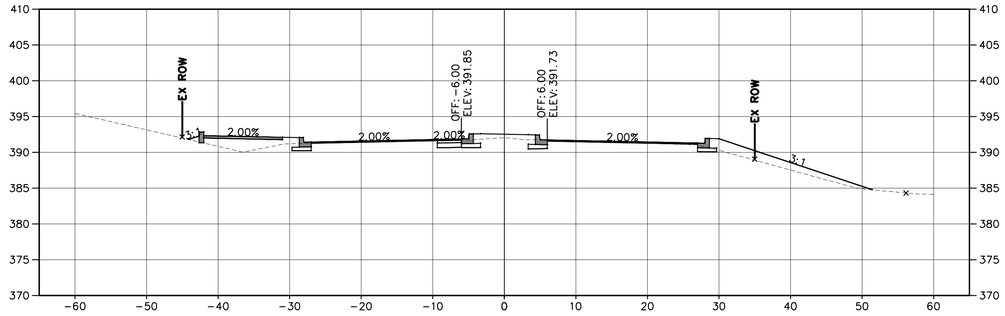


CS-6

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 103OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. Morton Thomas and Associates, Inc.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

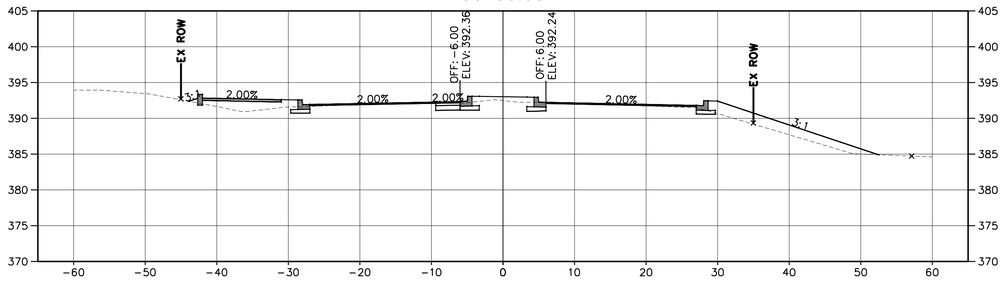
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

95+00.00



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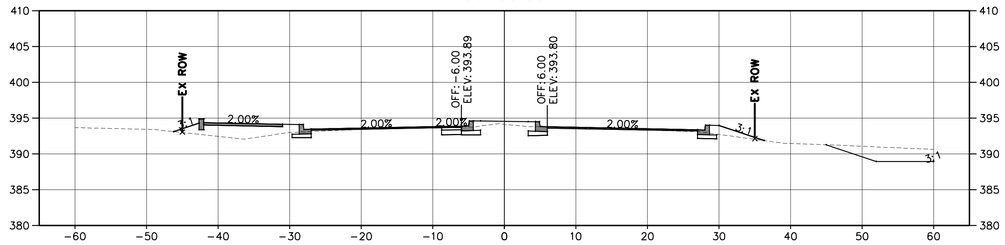

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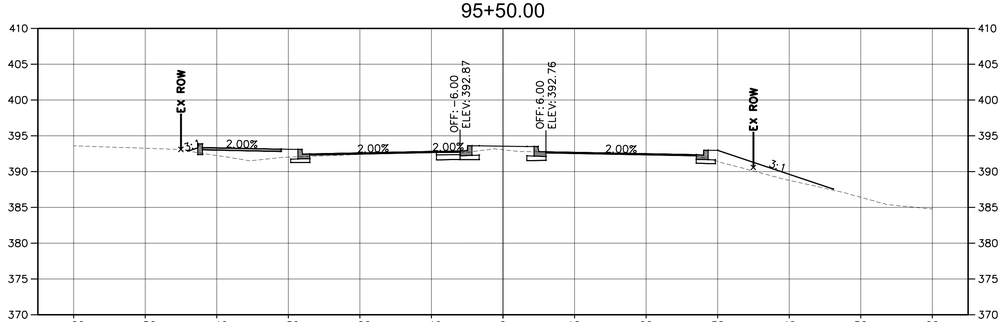

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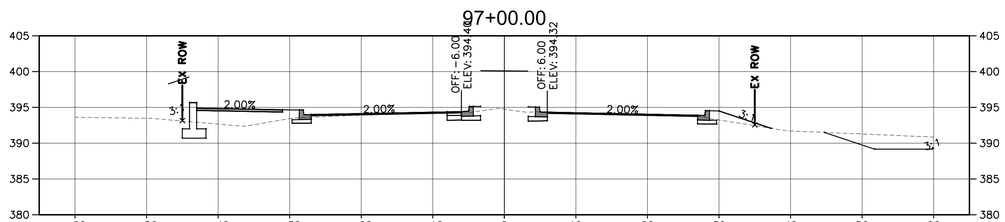

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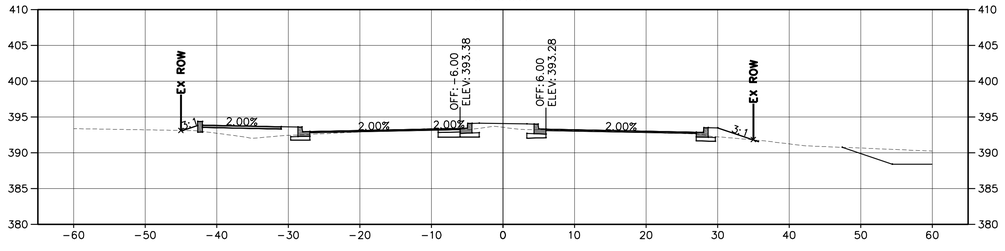

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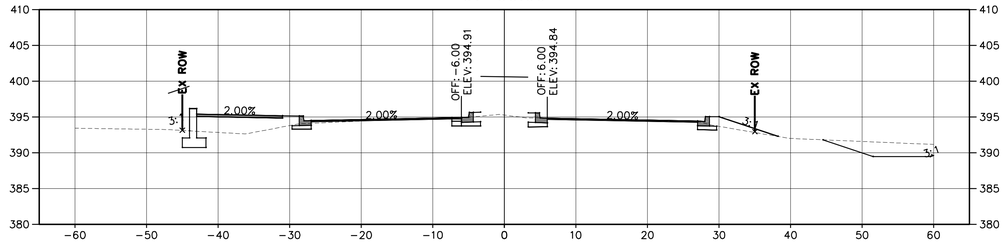


CS-7

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 104OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 24331 — PROFESSIONAL ENGINEER — 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

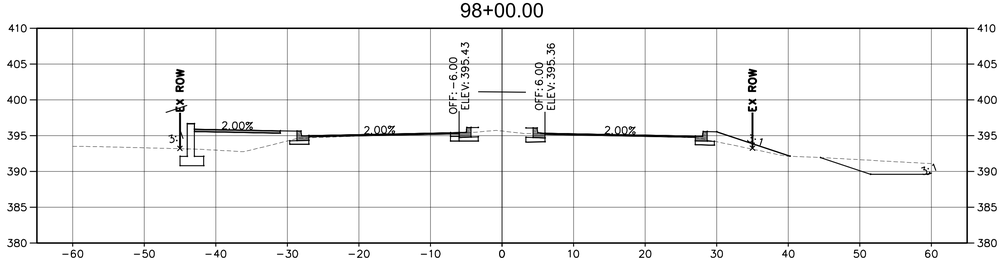
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

98+00.00



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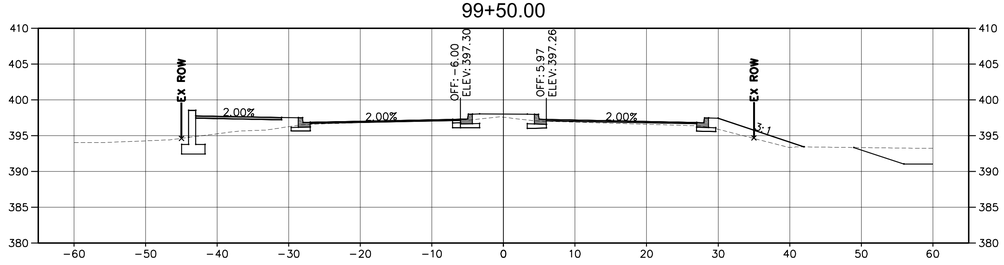

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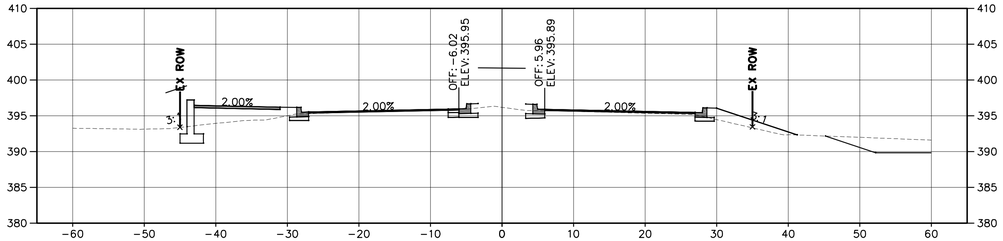

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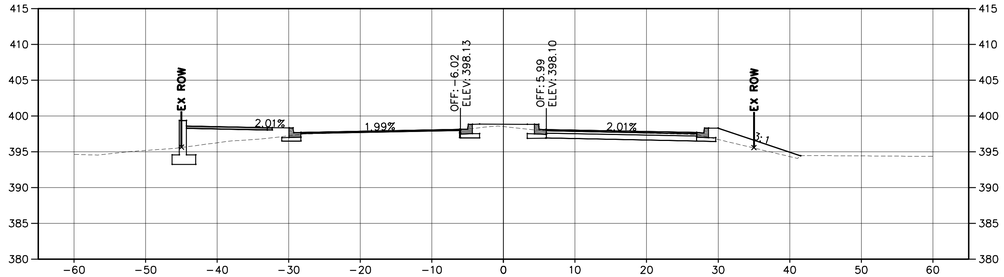

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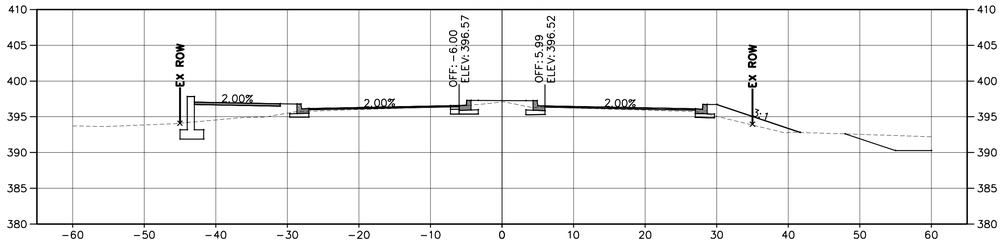

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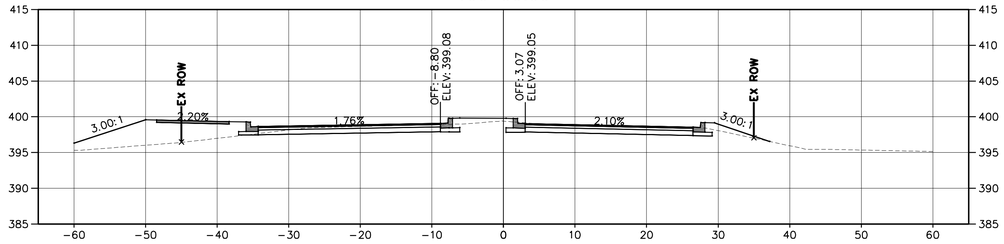


CS-8

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 105OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. Morton Thomas and Associates, Inc.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

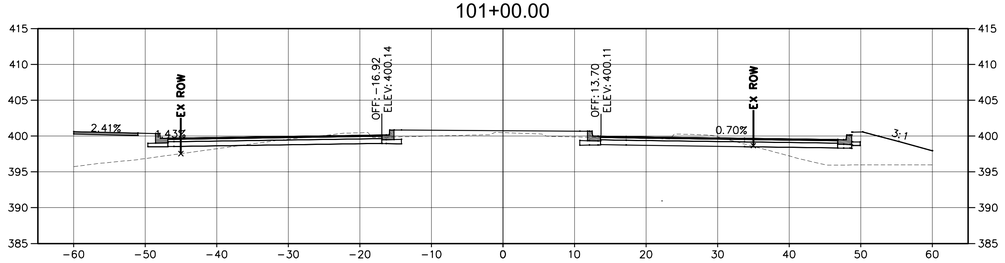
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

101+00.00



101+50.00

SEE ROUNDABOUT CROSS SECTIONS

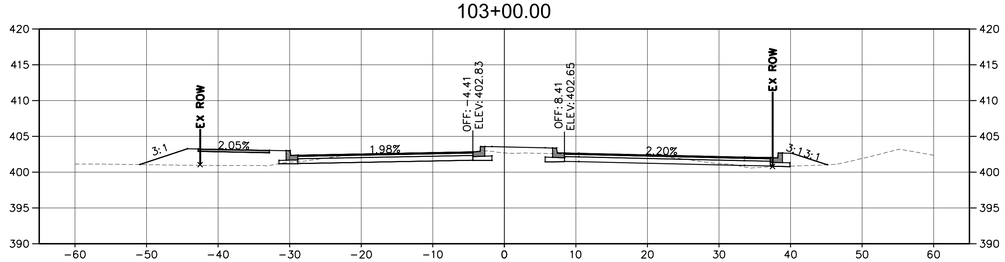
102+00.00

SEE ROUNDABOUT CROSS SECTIONS

102+50.00

SEE ROUNDABOUT CROSS SECTIONS

103+00.00



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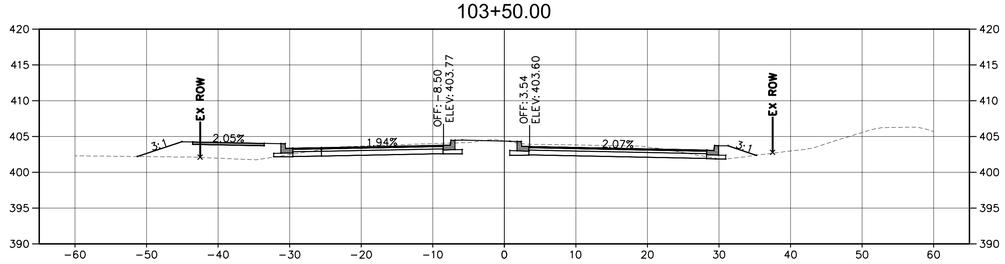


CS-9

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
ELLIS W. MORTON, JR.
24235
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 106OF 121

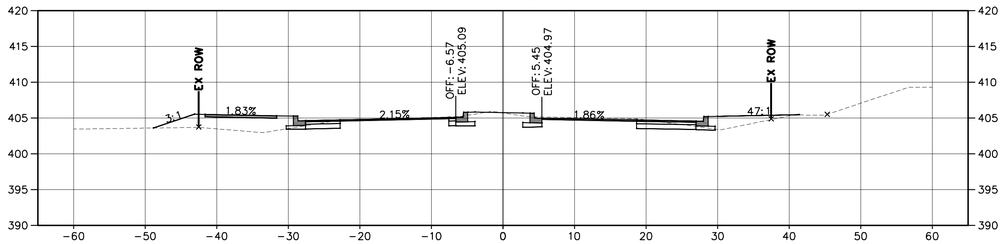
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

104+00.00



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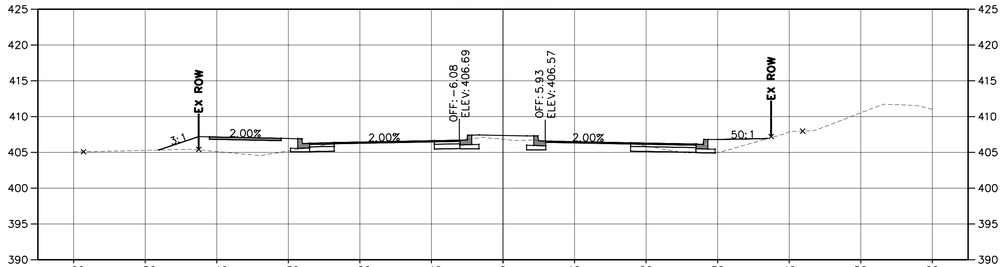

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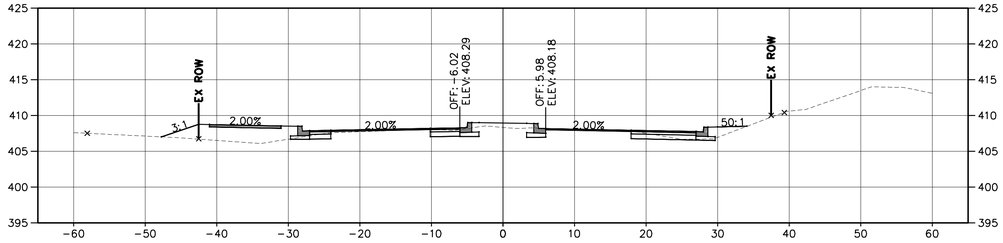

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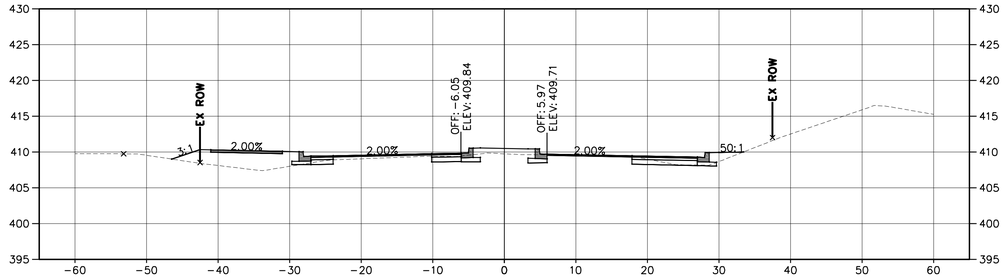

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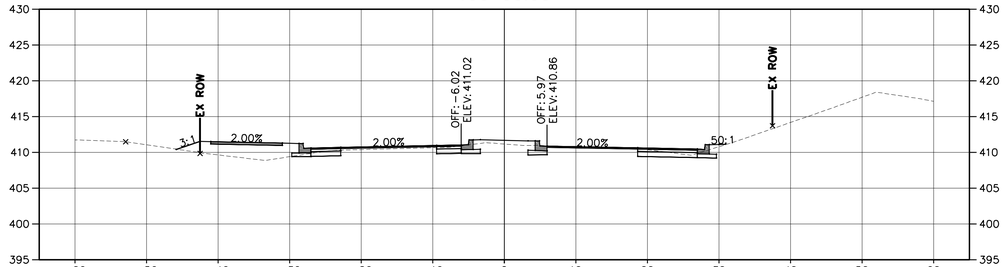

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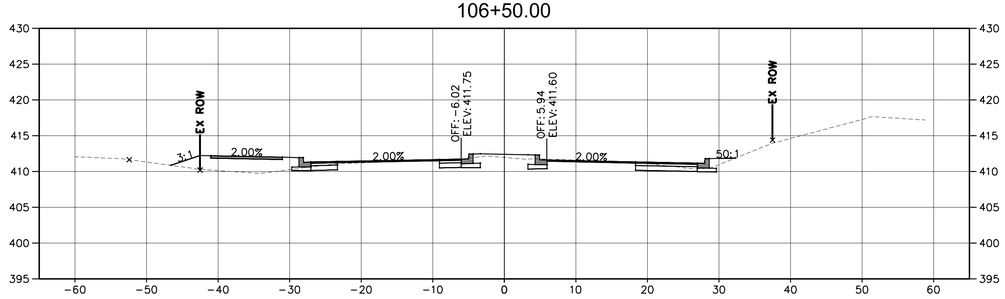


CS-10

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
ANTHONY JOSEPH MARTZ
21335
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8352
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 107OF 121

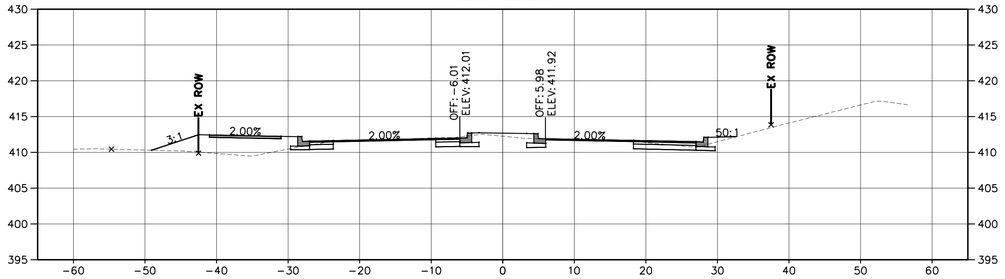
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

107+00.00



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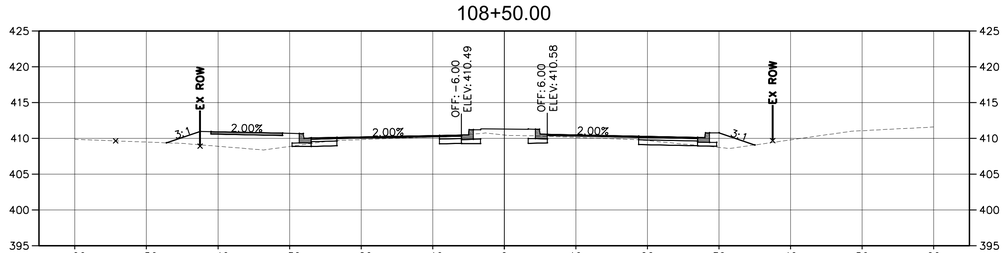

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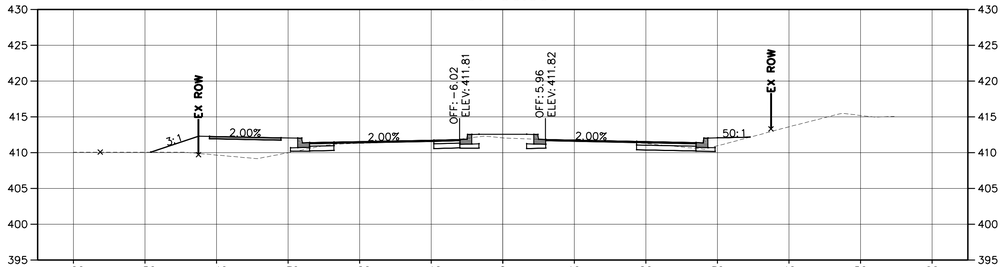

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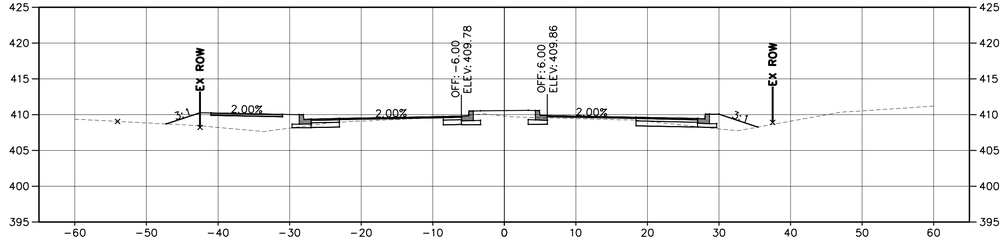

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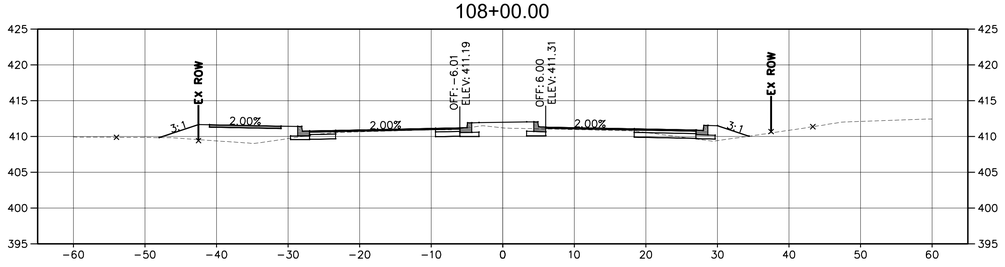

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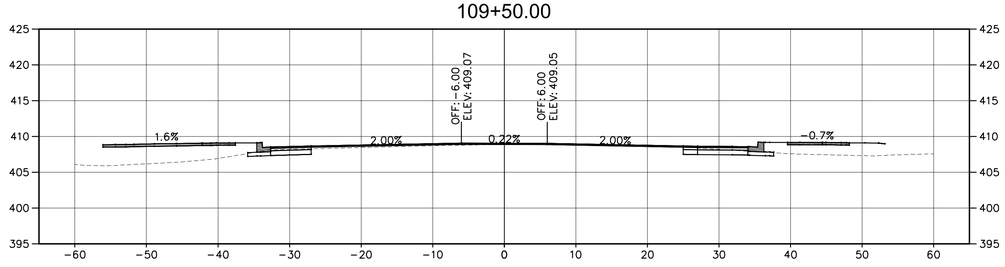


CS-11

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 108OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

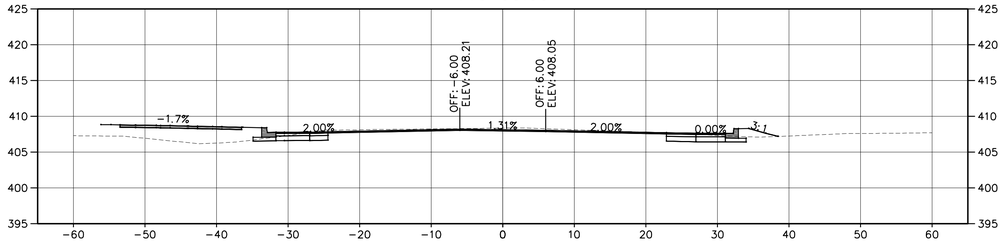
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

110+00.00



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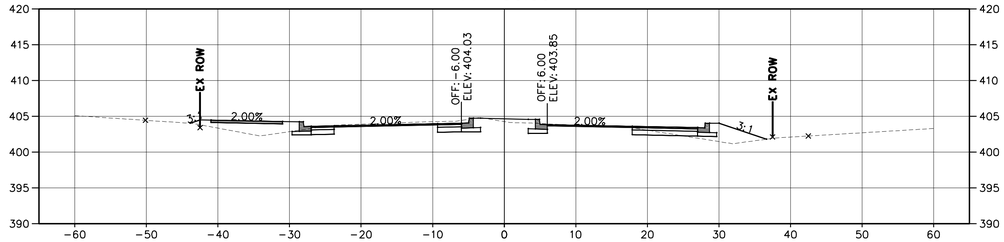

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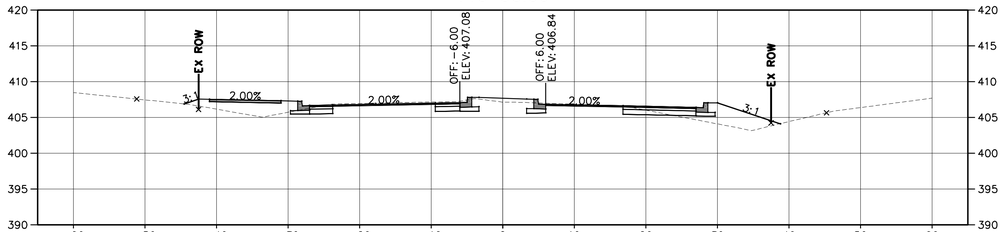

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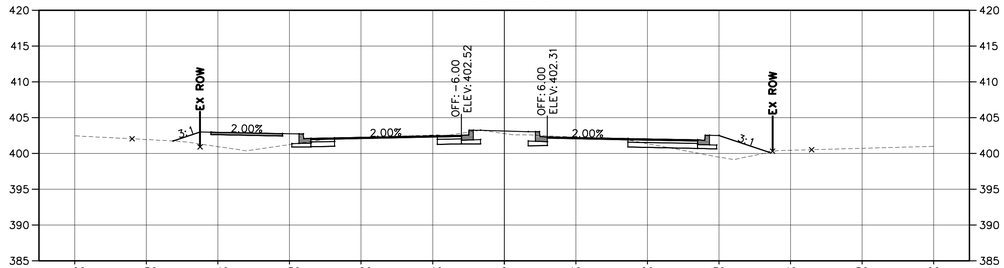

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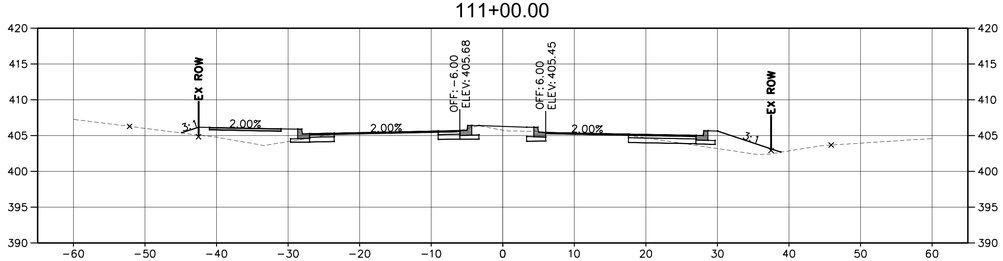

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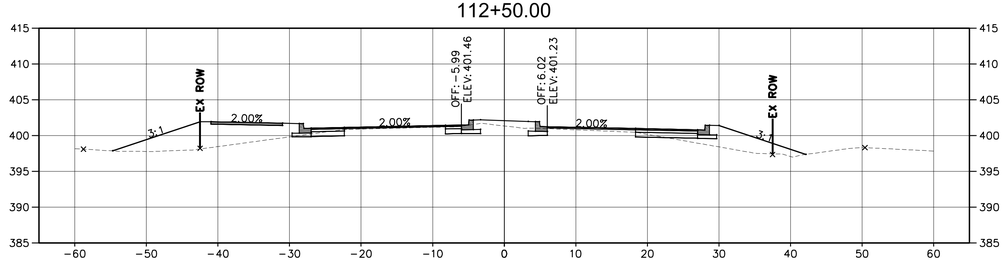


CS-12

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
34233
PROFESSIONAL ENGINEER
11/16/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 109OF 121

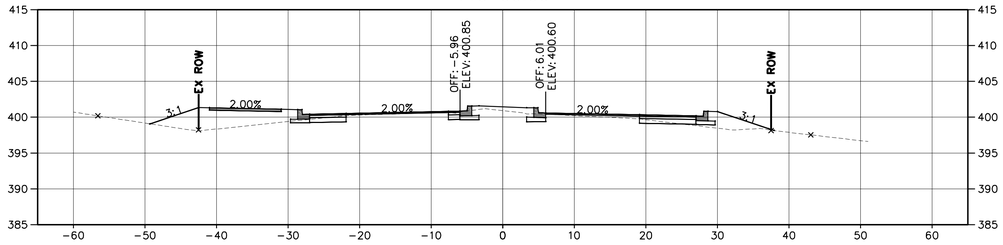
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

113+00.00



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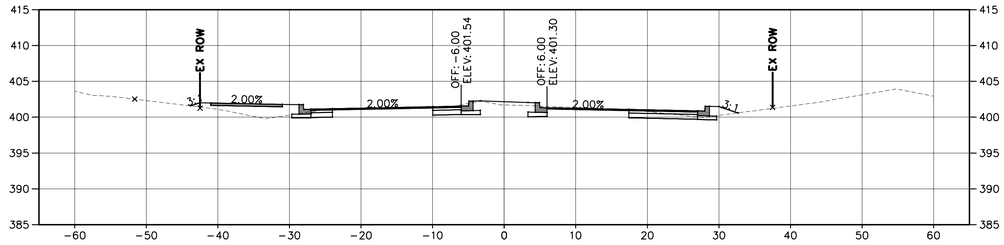

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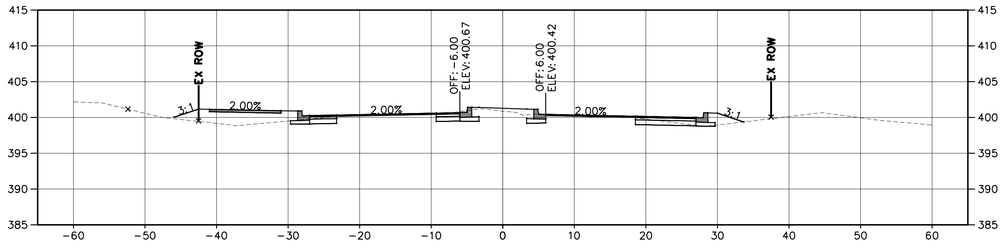

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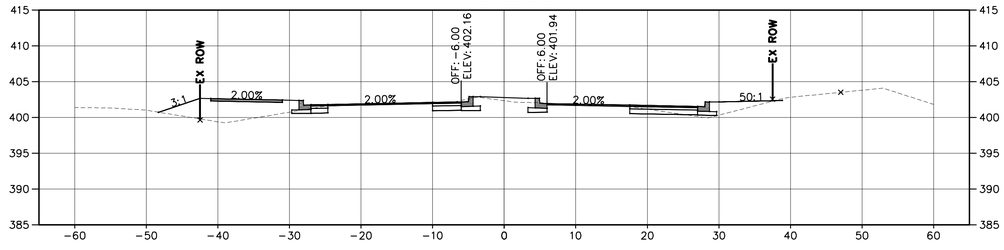

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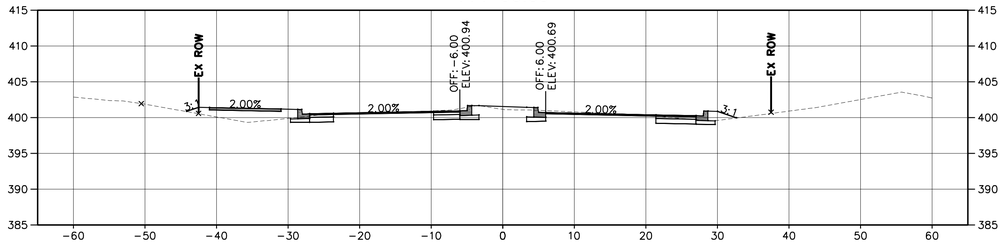

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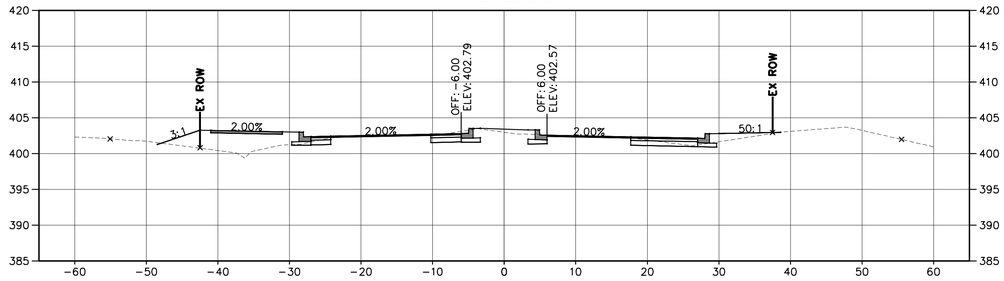


CS-13

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND · 21235 · PROFESSIONAL ENGINEER · 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 11 OF 121

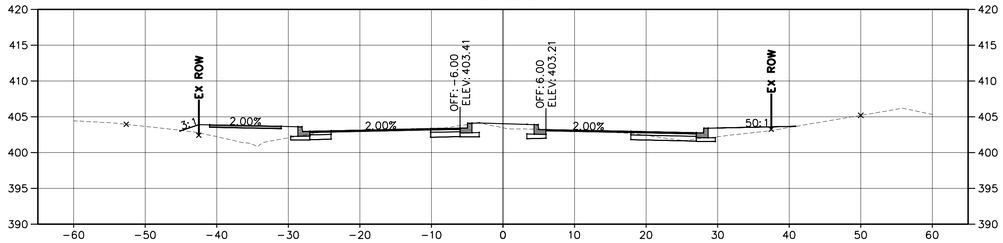
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

116+00.00



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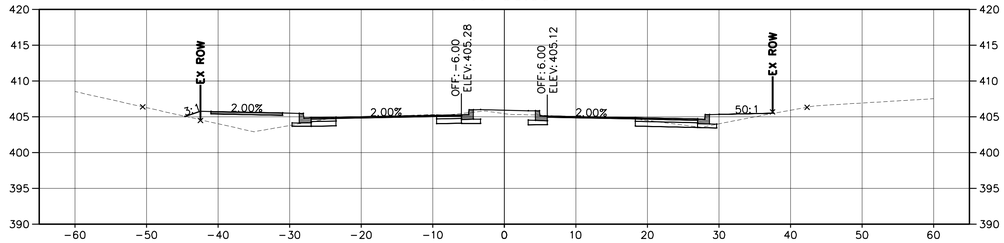

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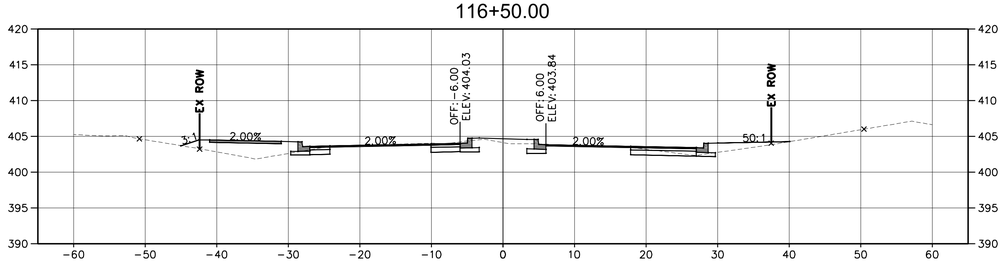

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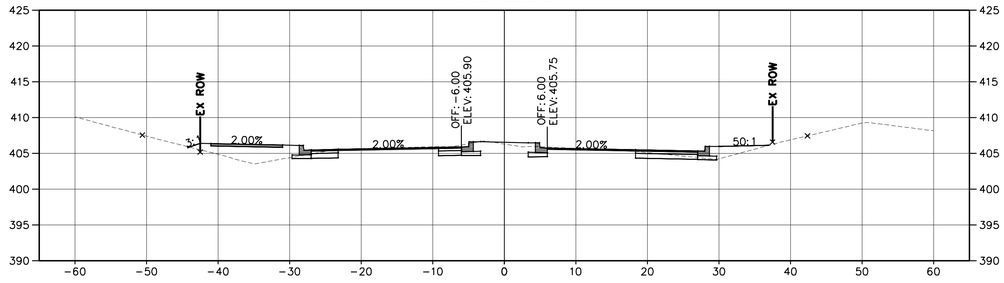

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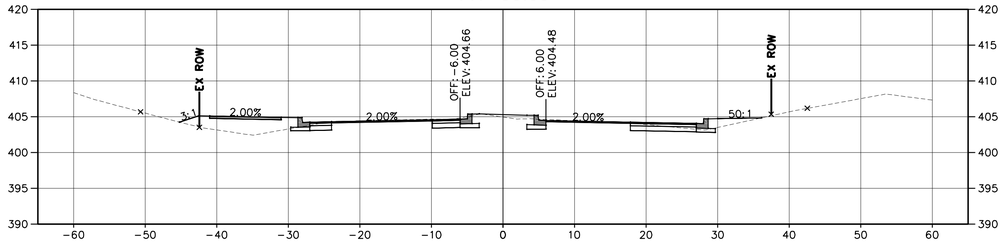

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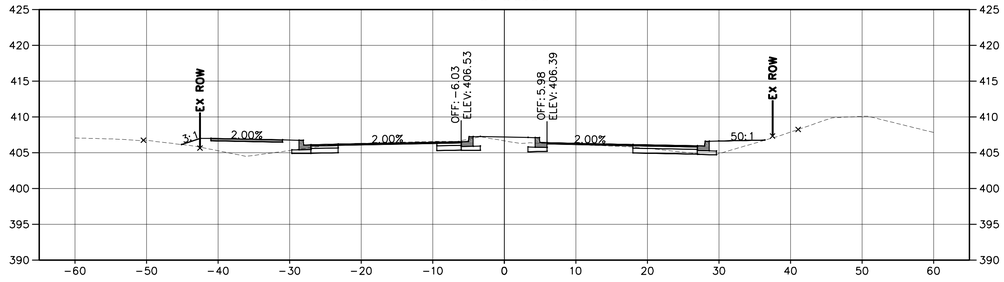


CS-14

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 111OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
CARL VAN DYKE
21335
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

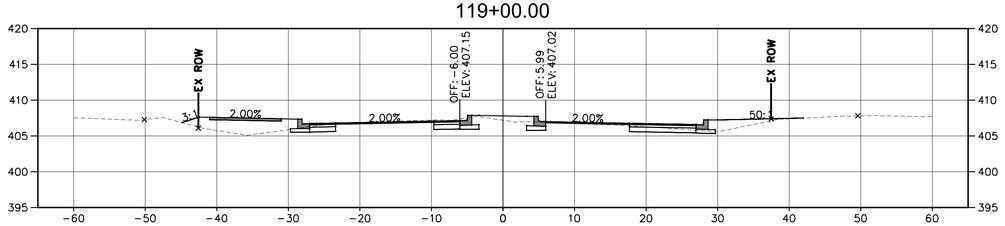
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

119+00.00



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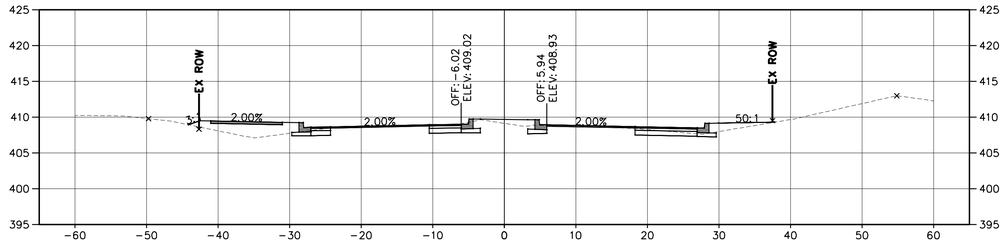

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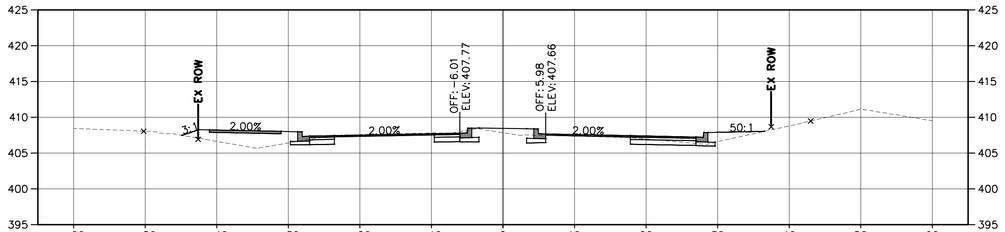

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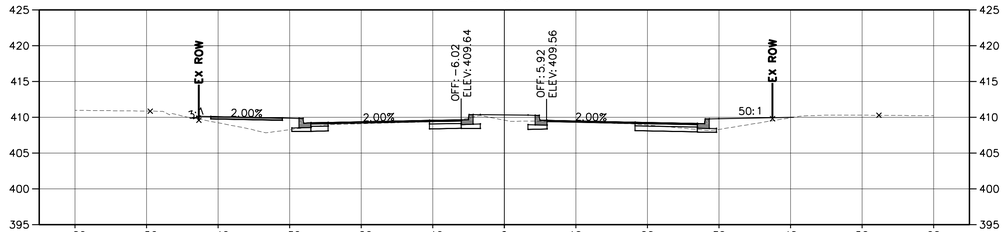

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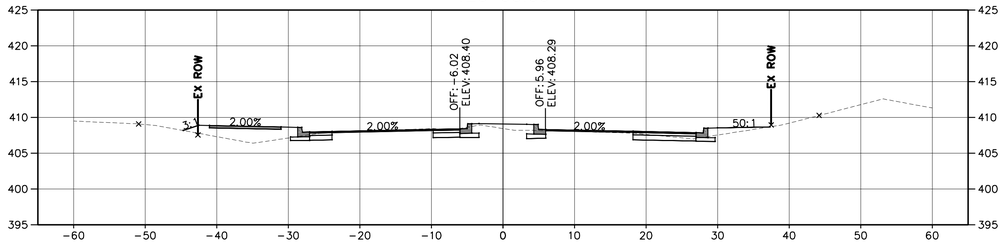

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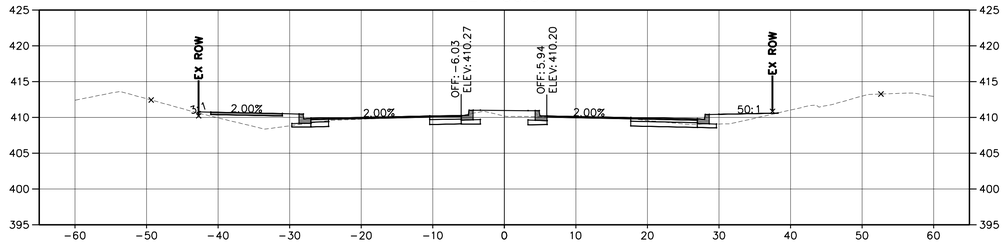


CS-15

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JOHN W. THOMAS
24231
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 112OF 121

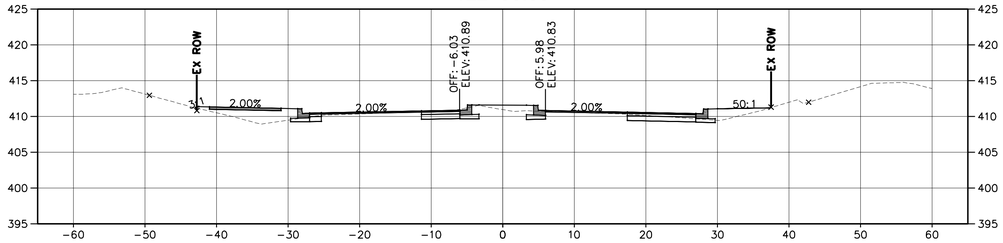
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

122+00.00



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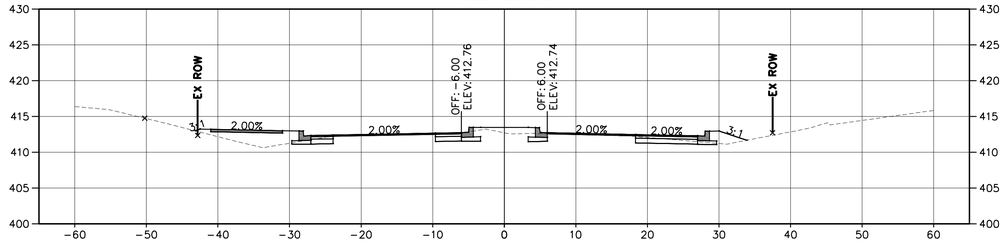

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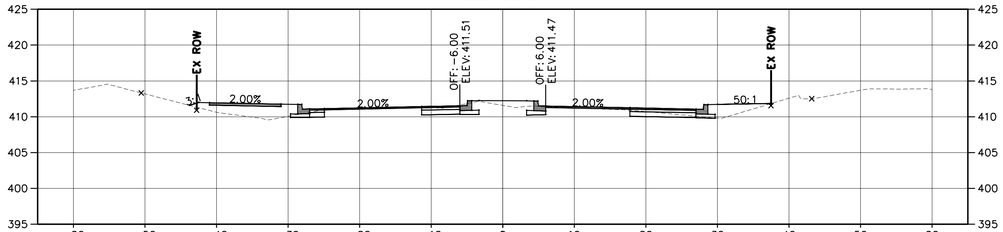

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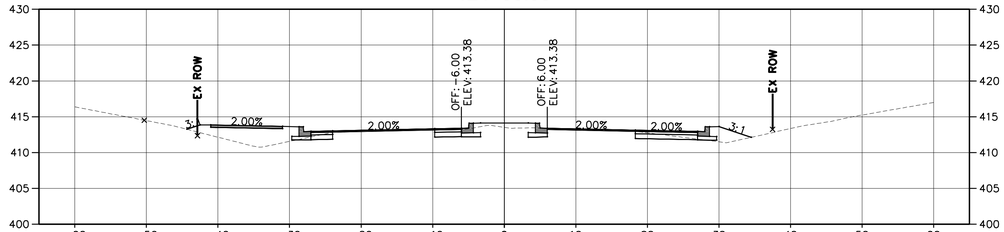

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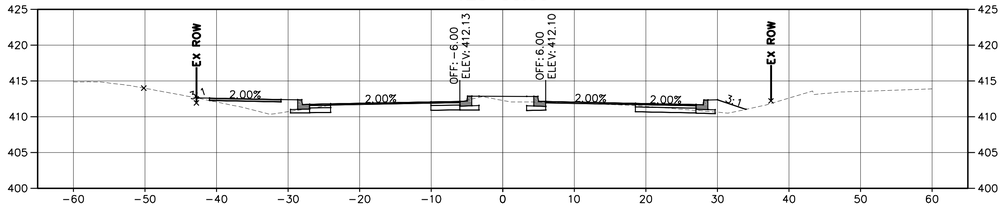

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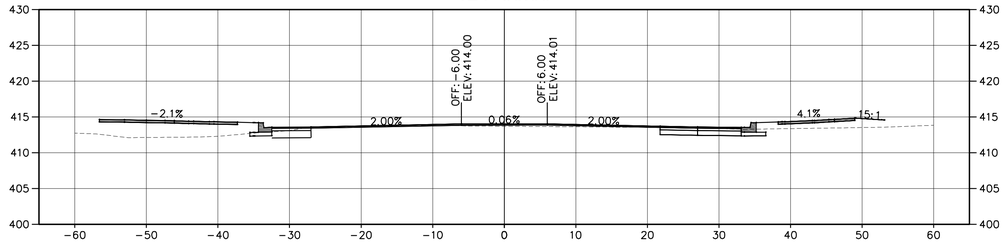


CS-16

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 113 OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21235 — PROFESSIONAL ENGINEER — 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

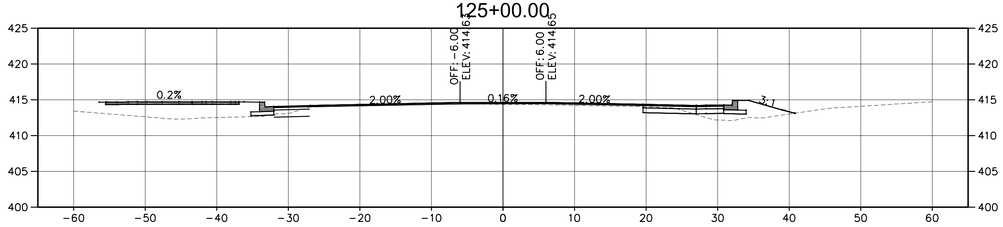
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

125+00.00



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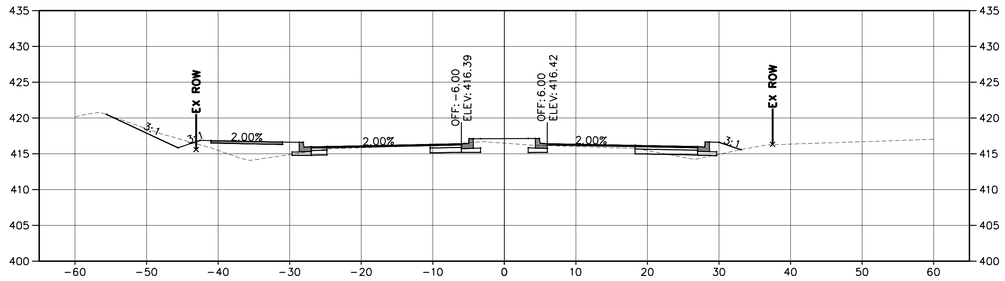

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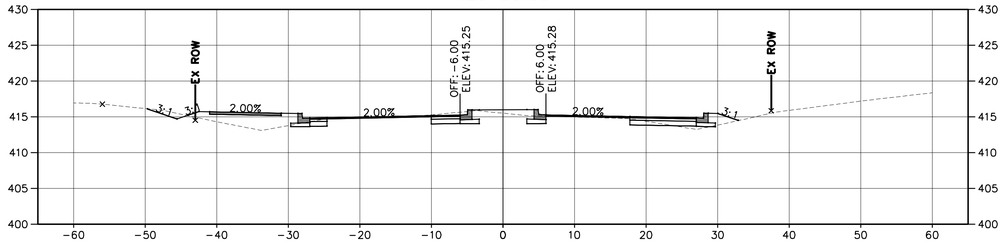

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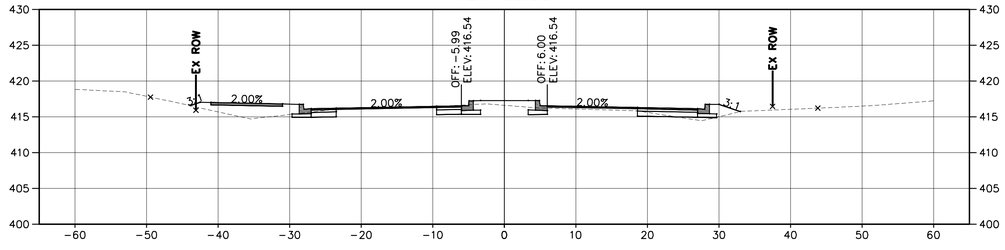

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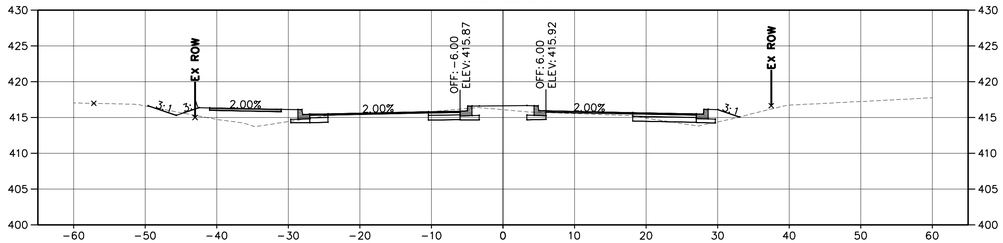

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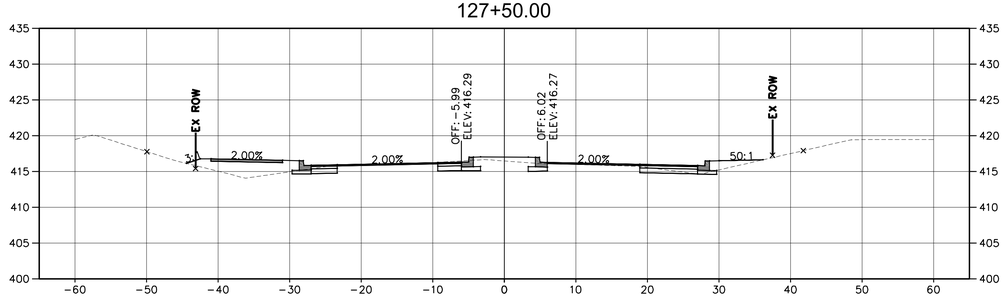


CS-17

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 114OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 21235 — PROFESSIONAL ENGINEER — 10/7/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

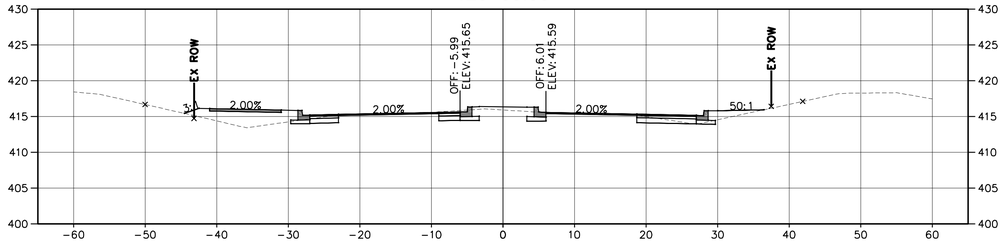
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

128+00.00



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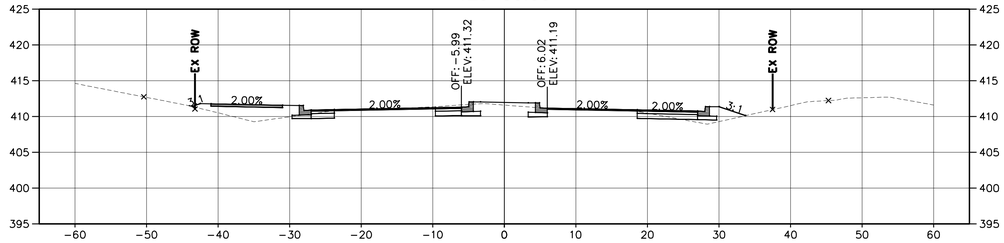

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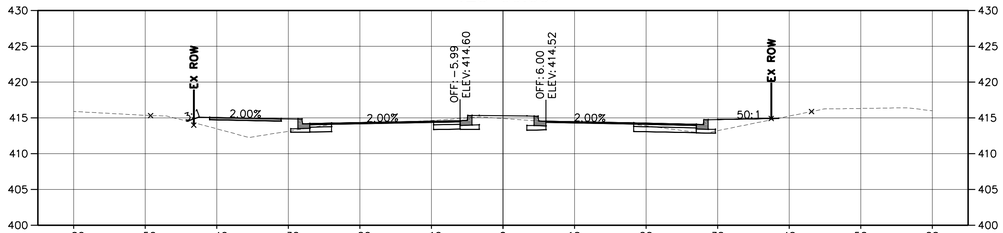

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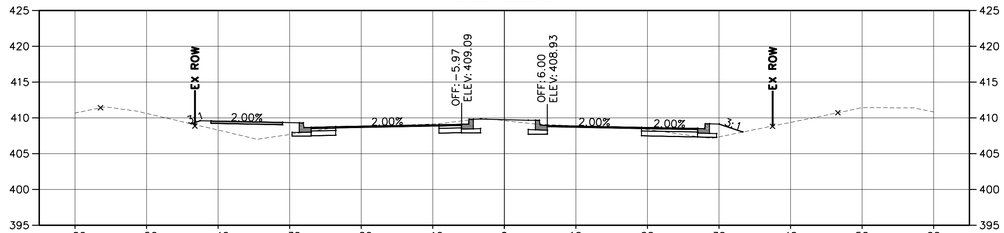

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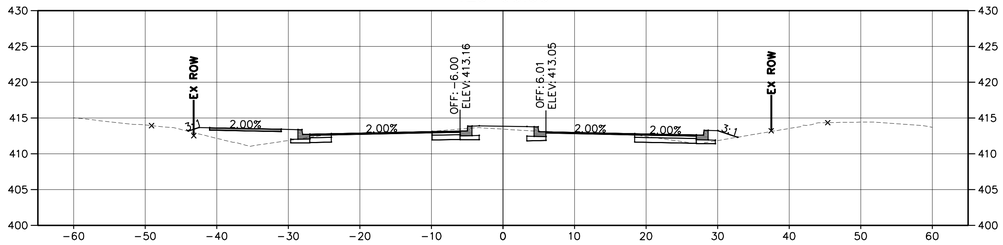

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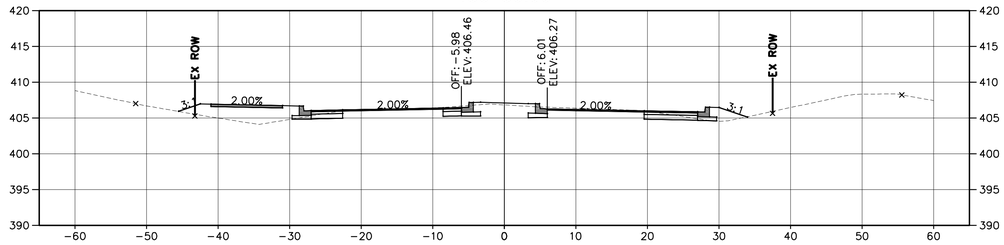


CS-18

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND — 24231 — PROFESSIONAL ENGINEER — 11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 11 OF 121

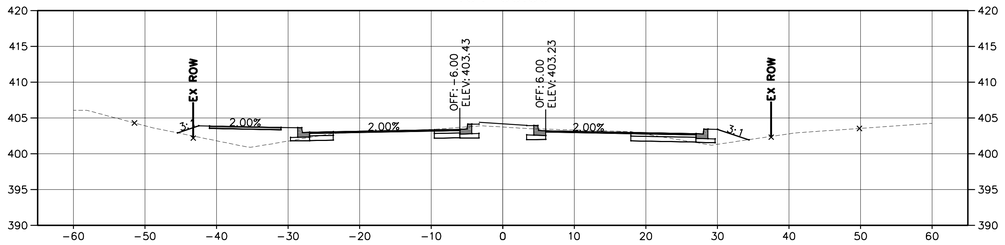
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

131+00.00



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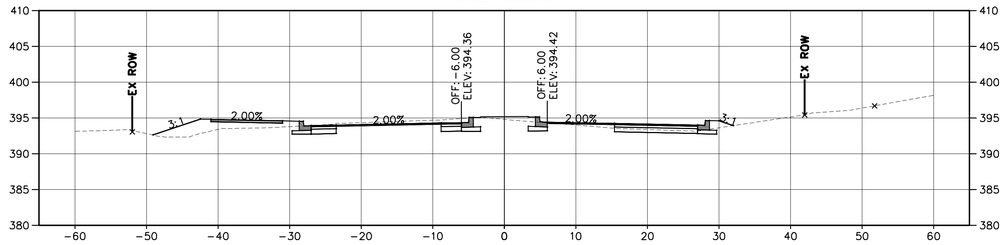

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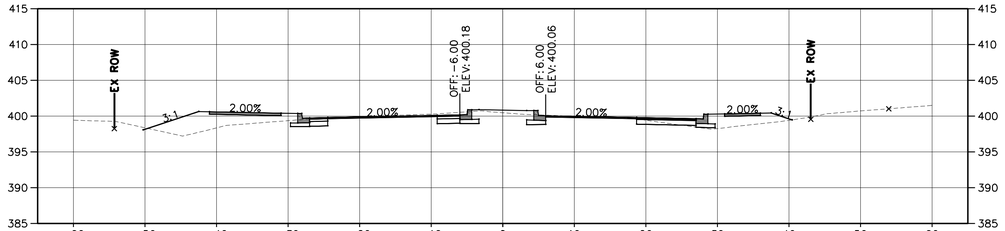

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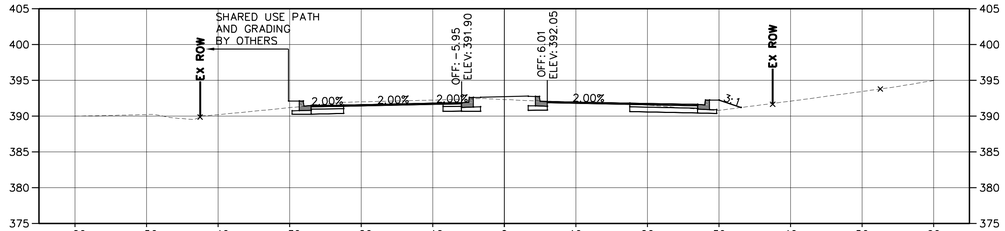

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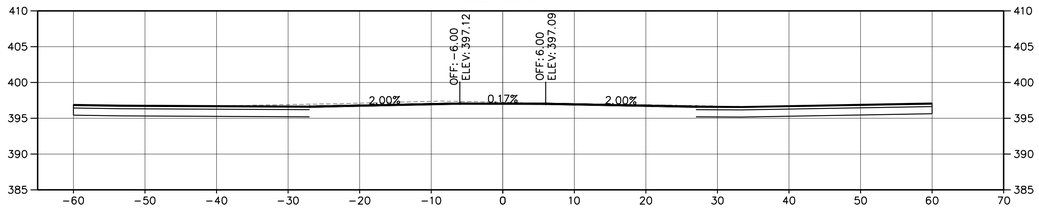

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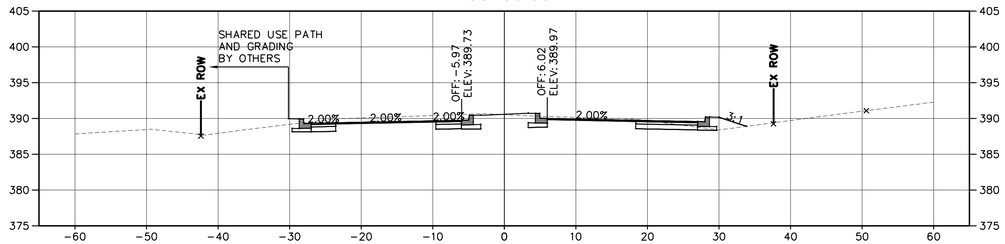


CS-19

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 116OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6532
EMAIL: AMT1@AMTENGINEERING.COM

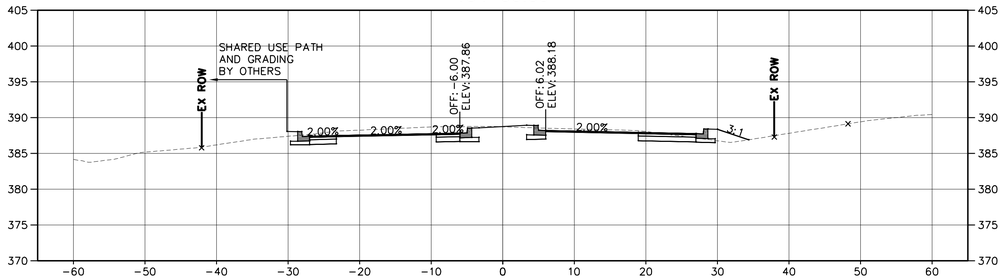
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

134+00.00



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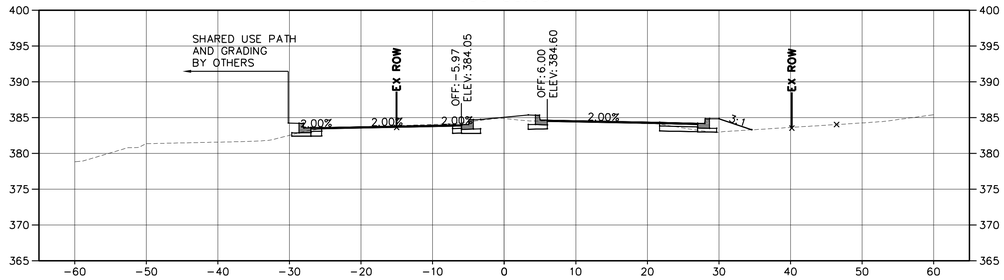

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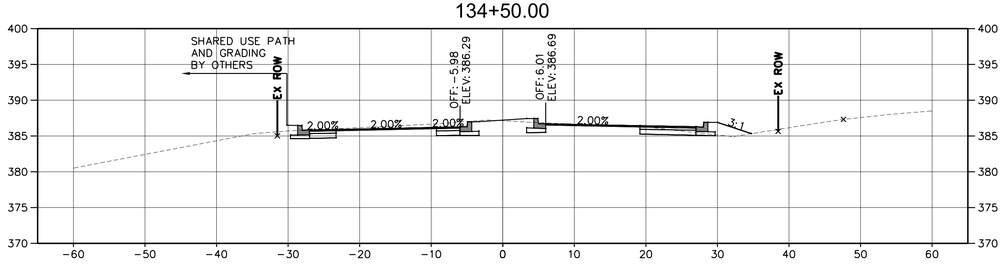

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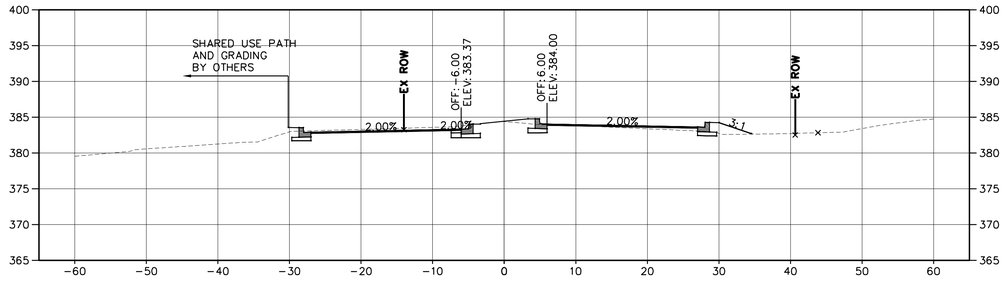

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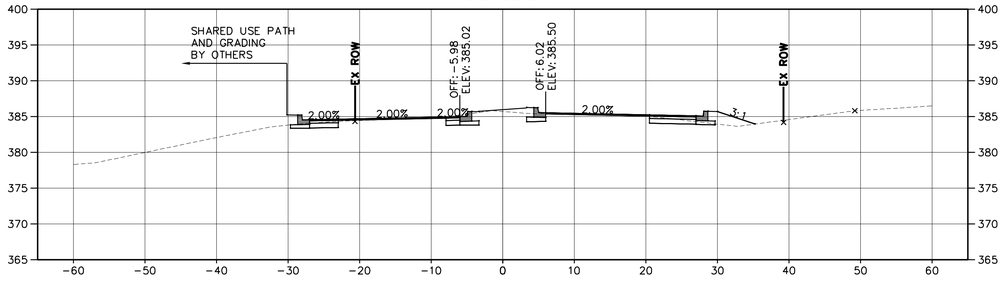

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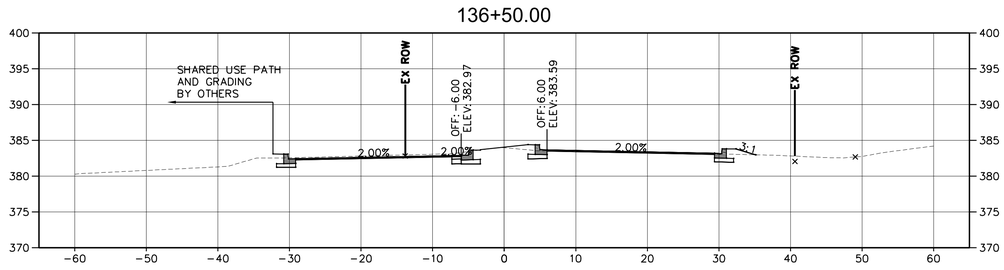


CS-20

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 117OF 121

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STATE OF MARYLAND
JOSEPH A. MORTON THOMAS
21039
PROFESSIONAL ENGINEER
11/7/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

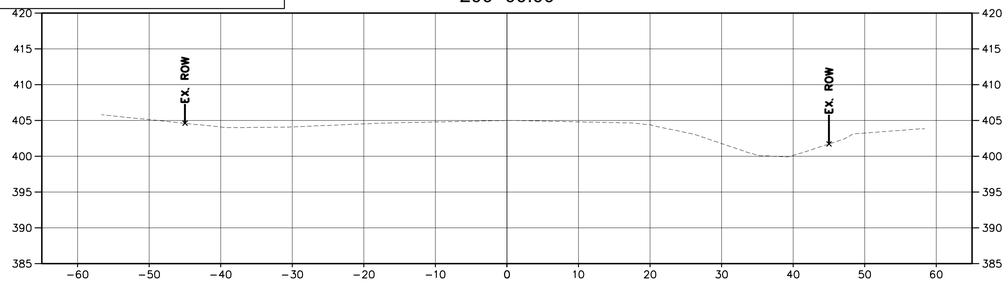
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

200+00.00



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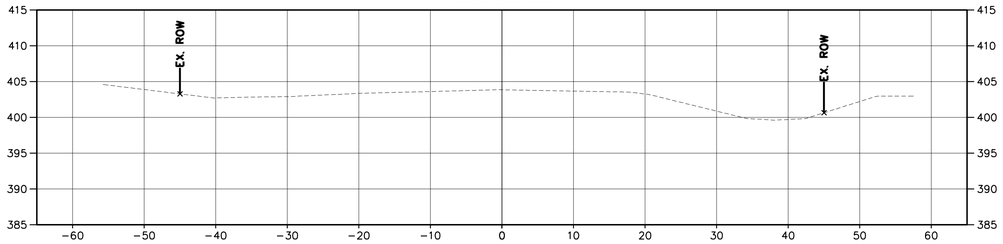

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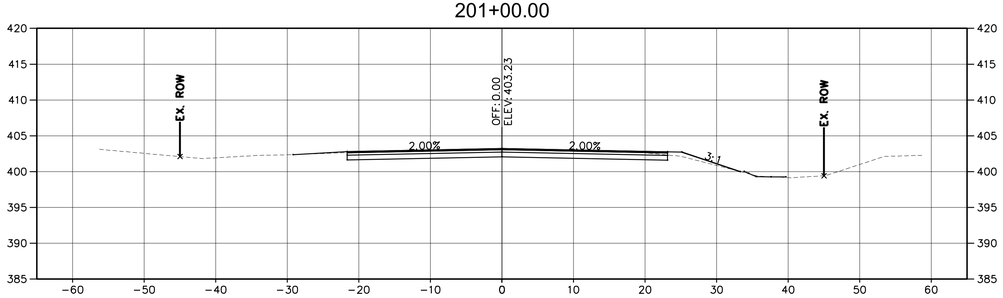

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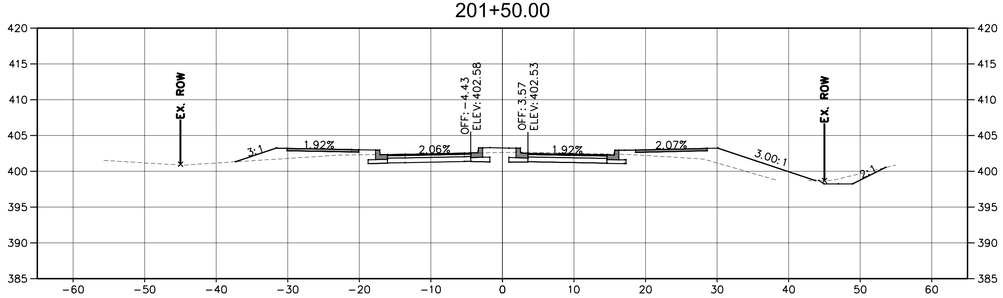
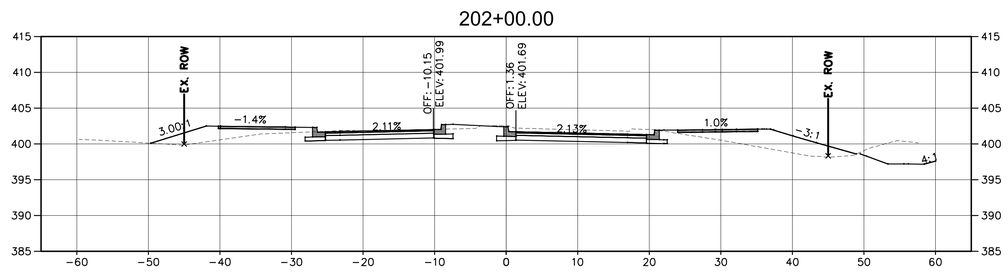


202+00.00



202+50.00

SEE ROUNDABOUT CROSS SECTIONS

203+00.00

SEE ROUNDABOUT CROSS SECTIONS

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

CS-21

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 118 OF 121

Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

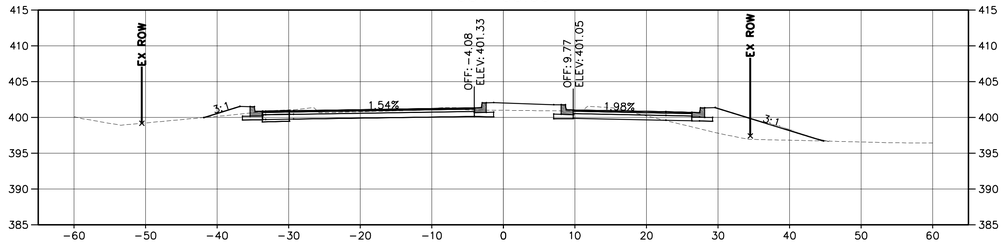
Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

300+00.00
SEE ROUNDABOUT CROSS SECTIONS

300+50.00
SEE ROUNDABOUT CROSS SECTIONS

301+00.00



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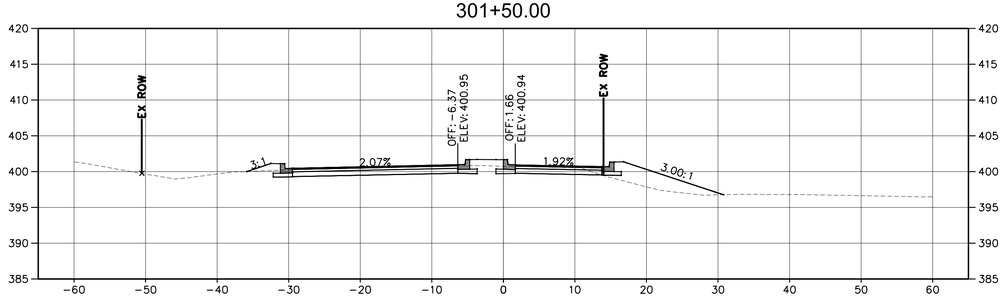

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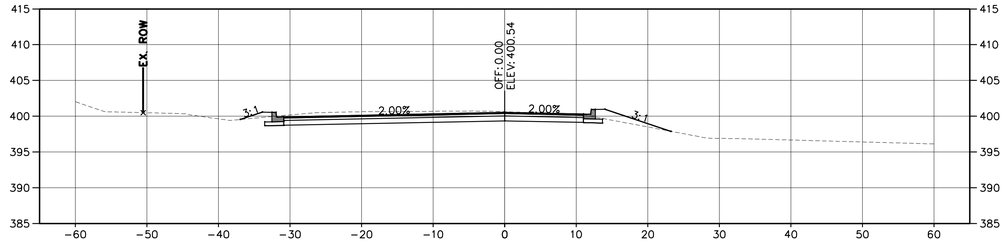

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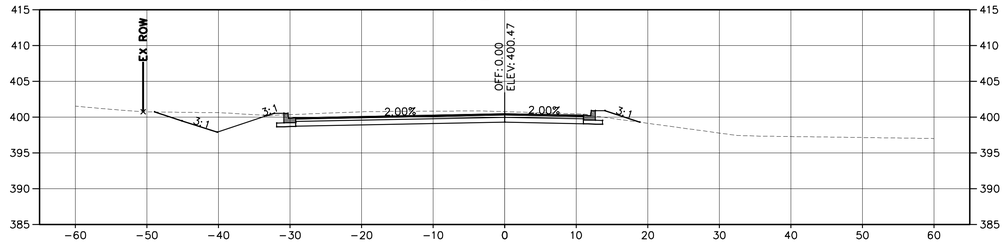

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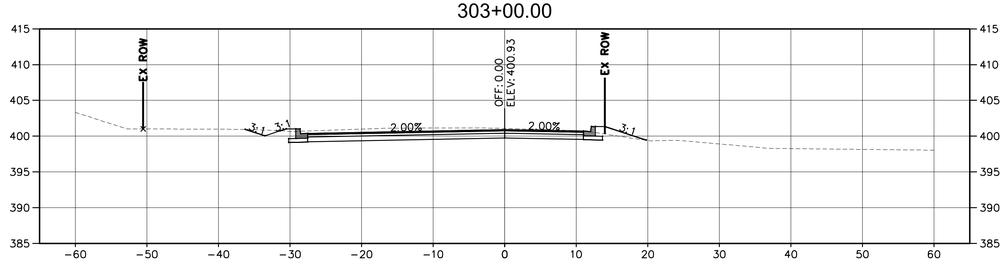


CS-22

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 252-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 119OF 121

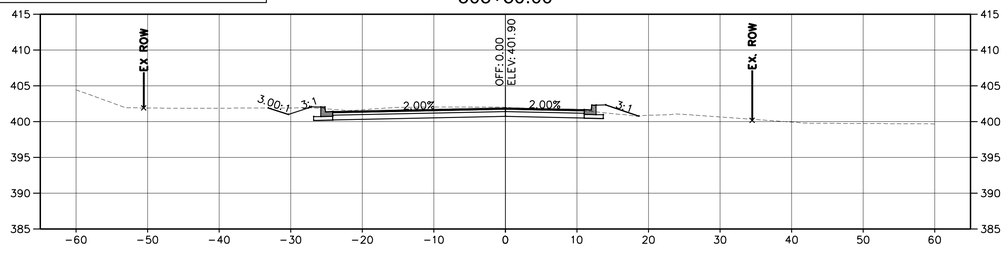
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

303+50.00



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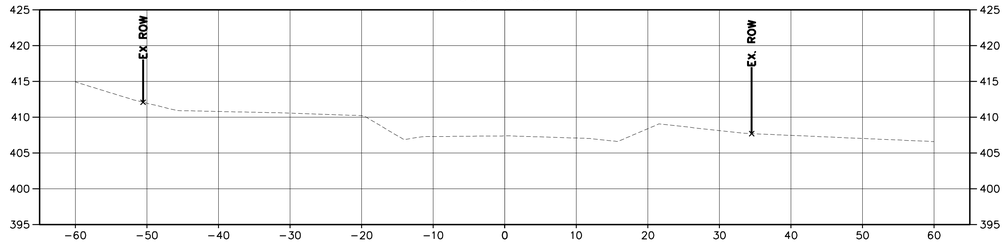

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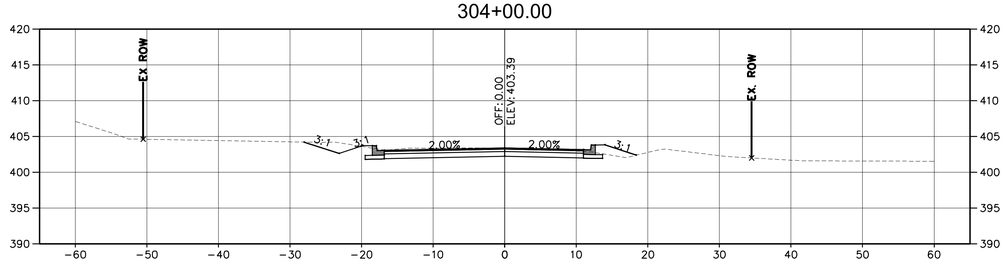

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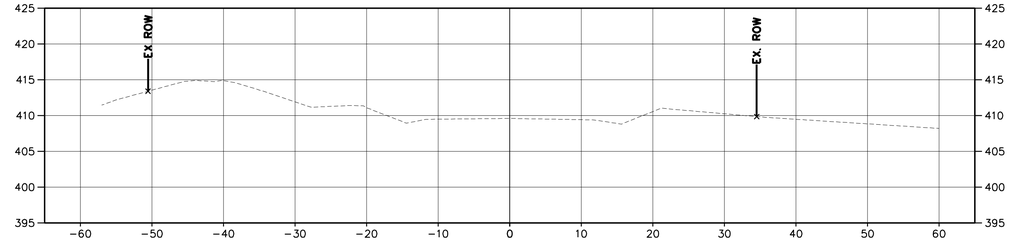

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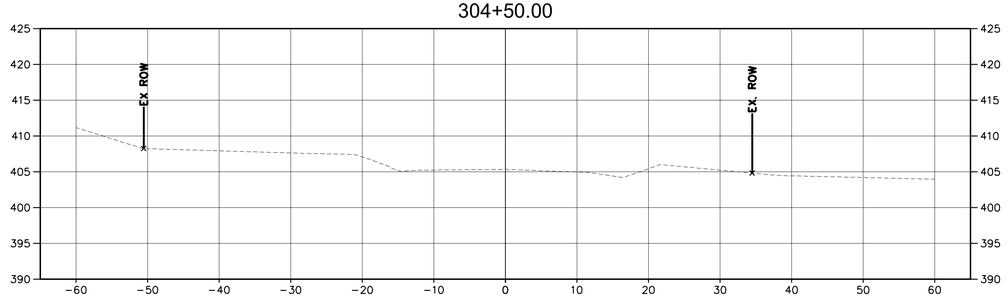

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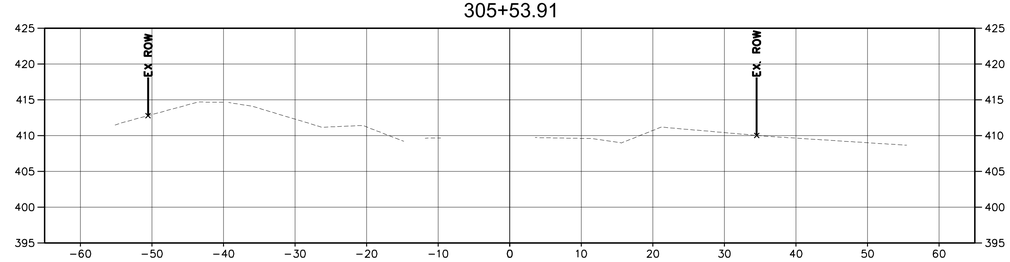

CS-23

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

STEVEN VAN GRUNSVEN
21933
PROFESSIONAL ENGINEER
11/15/2022

A. MORTON THOMAS AND ASSOCIATES, INC.
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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

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CROSS SECTIONS

DATE: SEPTEMBER 2022 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 120OF 121

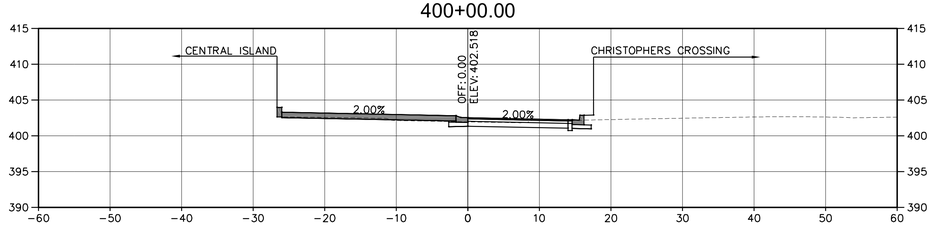
Division of Planning and Permitting
Department of Development
Review Engineering

APPROVED: 11/16/22

Signature:

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

400+00.00



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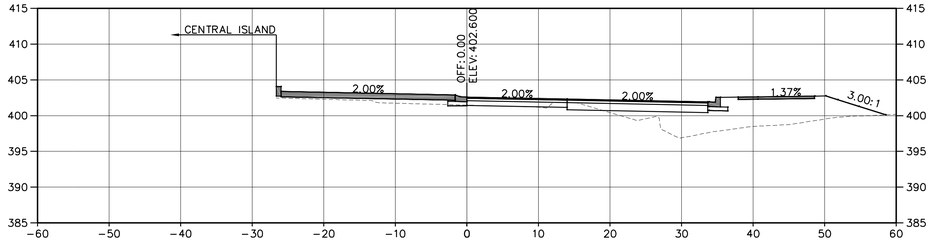

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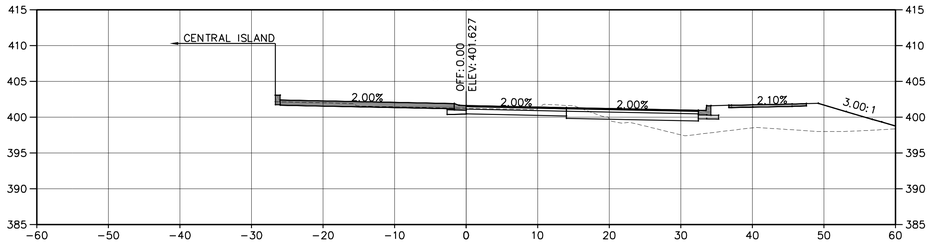

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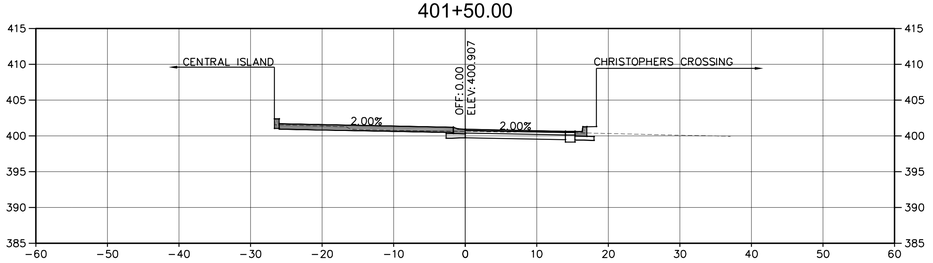

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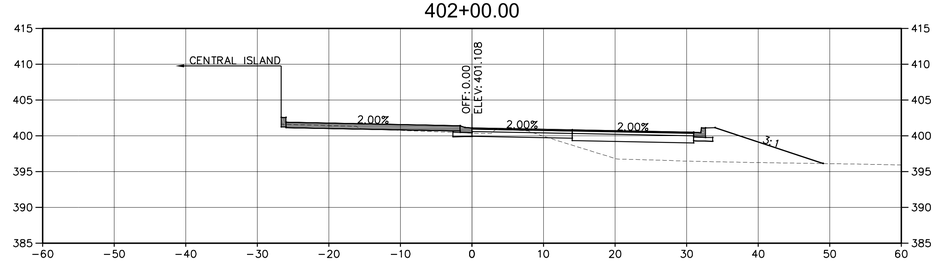

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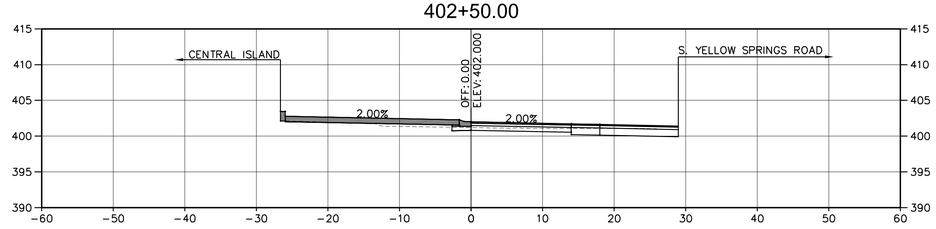

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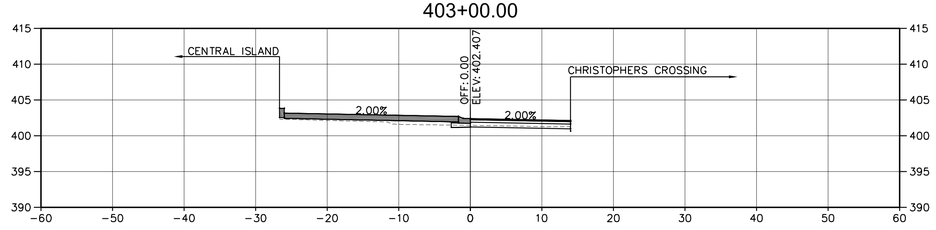

REVISIONS		
MARK	DATE	DESCRIPTION

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CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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CS-24

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
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AMT FILE NO. 15-0758.007 SHEET NO. 121OF 121