FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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 MAY 2019, 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.

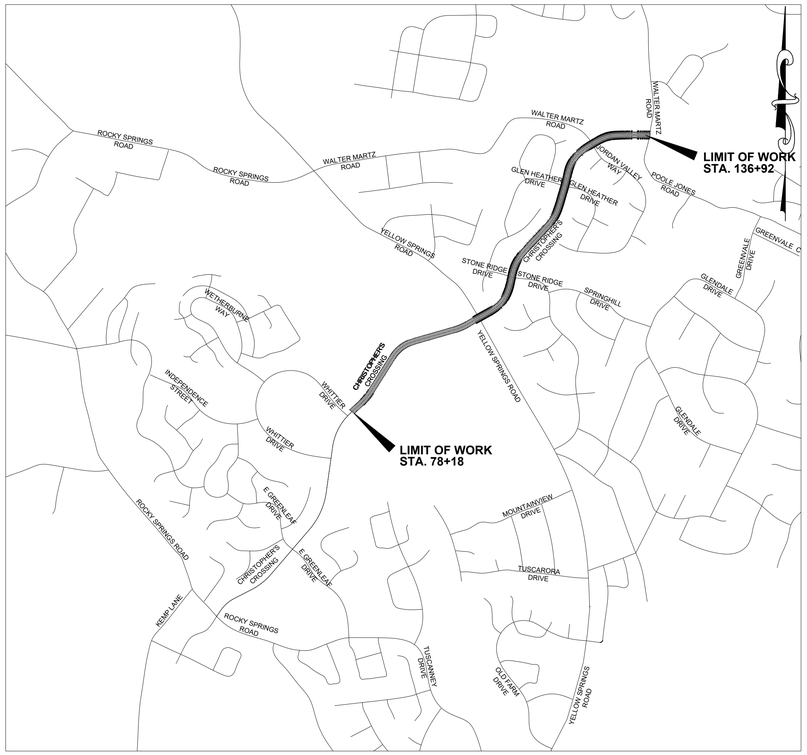
THE FREDERICK COUNTY DIVISION OF PUBLIC WORKS SHALL ONLY BE RESPONSIBLE FOR THE COMPLETENESS OF DOCUMENTS OBTAINED DIRECTLY FROM FREDERICK COUNTY. FAILURE TO ATTACH ALL ADDENDA MAY CAUSE THE BID TO BE NON-RESPONSIVE.

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. * _____ EXPIRATION DATE: _____

USCAE PERMIT NO. * _____ EXPIRATION DATE: _____



PROJECT VICINITY MAP
SCALE: 1"=1000'

DISTURBED AREA QUANTITY

THE TOTAL AREA TO BE DISTURBED AS SHOWN ON THESE PLANS HAS BEEN DETERMINED TO BE APPROXIMATELY 544,514 SQUARE FEET (12.50 AC.), AND THE TOTAL AMOUNT OF EXCAVATION AND FILL AS SHOWN ON THESE PLANS HAS BEEN COMPUTED TO BE APPROXIMATELY 6,944 CUBIC YARDS** OF EXCAVATION AND APPROXIMATELY 14,096 CUBIC YARDS** OF FILL.

ENGINEER'S NAME LICENSE REG NO. DATE

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

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.

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

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

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).

SIGNATURE DATE REG. NO.

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

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%

FREDERICK
SOIL CONSERVATION DISTRICT

APPROVED BY: _____
DISTRICT MANAGER

DATE: _____

FREDERICK COUNTY OFFICE OF PUBLIC WORKS

DIRECTOR DATE

FREDERICK COUNTY OFFICE OF TRANSPORTATION ENGINEERING

CHIEF DATE

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

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: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 01 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIAL PROVISIONS, THE LATEST EDITION OF THE MDOT SHA STANDARD SPECIFICATIONS, AND SUPPLEMENTAL SPECIFICATIONS.
2. WHERE REFERENCE IS MADE TO STANDARDS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE POSSESSION OF THE MDOT SHA BOOK OF STANDARDS FOR HIGHWAY AND INCIDENTAL STRUCTURES WITH THE LATEST UP TO DATE MDOT SHA STANDARDS AS OF THE DATE OF ADVERTISEMENT OF THIS PROJECT.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE THE LATEST APPROVED SET OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND ANY REFERENCED MDOT SHA STANDARDS AS OF NOTICE TO PROCEED.
4. HORIZONTAL CONTROL: THE COORDINATES FOR THIS PROJECT HAVE BEEN ESTABLISHED BY RTK GPS OBSERVATIONS ADJUSTED TO THE MARYLAND GRID SYSTEM, NAD 83/2011.
5. VERTICAL CONTROL: THE LOCATIONS AND ELEVATIONS BENCHMARKS ARE SHOWN ON GEOMETRIC LAYOUT PLAN. PROJECT ELEVATIONS SHOWN ARE IN U.S. SURVEY FEET AND AGREE WITH THE MARYLAND GRID SYSTEM, NAVD 88.
6. ALL INVERT ELEVATIONS ARE APPROXIMATE. INVERT ELEVATIONS OF PIPES MAY BE MODIFIED, AS DIRECTED BY THE ENGINEER, TO MEET CONDITIONS ENCOUNTERED DURING INSTALLATION OF DRAINAGE STRUCTURES. ALL PIPES SHALL BE CONSTRUCTED ON UNIFORM GRADE BETWEEN INVERT ELEVATIONS AS NOTED ON THE PLANS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
7. THE LOCATIONS AND LENGTHS OF PIPES TO BE INSTALLED SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING.
8. THE CONTRACTOR SHALL MAKE, CHECK, AND BE RESPONSIBLE FOR ALL MEASUREMENTS AND DIMENSIONS NECESSARY FOR THE PROPER CONSTRUCTION OF ALL WORK.
9. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS TO STORMDRAIN STRUCTURES AS NECESSARY IN ORDER TO MEET FIELD CONDITIONS AS APPROVED THE ENGINEER.
10. ALL DITCHES AND CHANNELS SHALL BE CONSTRUCTED AND STABILIZED IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS SHOWN ON THE PLANS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ACTUAL CONDITIONS AND PLANNING ALL CONSTRUCTION ACCORDINGLY. ALL DIMENSIONS SHOWN SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE ANY WORK COMMENCES.
12. ANY DAMAGE TO ADJACENT ROADS, YARDS, STRUCTURES, FENCES, SHRUBBERY, ETC., DURING CONSTRUCTION SHALL BE REPLACED IN KIND BY THE CONTRACTOR BEFORE ANY WORK COMMENCES.
13. THE CONTRACTOR SHALL GRADE FOR POSITIVE DRAINAGE AT ALL ROADWAY INTERSECTIONS, ENTRANCES, PARKING LOTS, AND YARDS IN CONFORMANCE WITH THE PROPOSED DRAINAGE PATTERNS SHOWN ON THE PLANS.
14. MAILBOXES SHALL BE REMOVED AND RESET BY THE CONTRACTOR AS NECESSARY TO COMPLETE THE WORK. THIS COST IS INCIDENTAL TO THE CLEARING AND GRUBBING ITEM. CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS AND THE POSTMASTER 48 HRS. PRIOR TO THE REMOVAL OF THE MAILBOXES. THE CONTRACTOR SHALL COORDINATE THE TEMPORARY RELOCATION AND FINAL PLACEMENT OF ALL EXISTING MAILBOXES WITH THE POST OFFICE IN FREDERICK, MD SUCH THAT MAIL DELIVERY IS UNINTERRUPTED.
15. MATERIALS SALVAGED FROM CONSTRUCTION SHALL BECOME THE CONTRACTOR'S PROPERTY UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS.
16. JOBSITE SAFETY SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS IS APPROXIMATE. THE CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO BEGINNING EXCAVATION TO DETERMINE THE LOCATION OF ALL EXISTING UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.
18. IF DURING CONSTRUCTION THE CONTRACTOR FINDS THAT CLEARANCES BETWEEN EXISTING UTILITIES AND PROPOSED WORK IS LESS THAN THAT NOTED OR IS LESS THAN SIX INCHES, HE SHALL CONTACT THE ENGINEER FOR INSTRUCTIONS ON HOW TO PROCEED.
19. THE CONTRACTOR MUST PROTECT IN PLACE ANY ACTIVE ABOVE GROUND AND OR UNDERGROUND UTILITIES FOUND UNLESS OTHER TREATMENT IS CALLED FOR. REPAIRS TO UTILITIES OR PROPERTY DAMAGE AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE MUST BE MADE AT THE CONTRACTOR'S EXPENSE BEFORE PROCEEDING WITH CONSTRUCTION. THE COUNTY OR THE PROPERTY OWNER SHALL NOT BEAR ANY COST OR RESPONSIBILITY FOR DAMAGE TO UTILITIES OR PROPERTY AS THE RESULT OF THE CONTRACTOR'S NEGLIGENCE.
20. THE CONTRACTOR SHALL PROTECT AND NOT INTERRUPT EXISTING UTILITY SERVICES DURING CONSTRUCTION, UNLESS AUTHORIZED BY THE ENGINEER. THE CONTRACTOR SHALL SUPPORT EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION AND THIS SUPPORT SHALL BE INCIDENTAL TO PERTINENT PAY ITEMS.
21. THE CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY AT ALL TIMES. IF ACCESS MUST BE INTERRUPTED FOR SHORT PERIODS OF TIME, THE INTERRUPTION SHALL BE COORDINATED WITH THE ENGINEER AND THE PROPERTY OWNER.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC THROUGHOUT THE ENTIRE PERIOD OF CONSTRUCTION BY PROVIDING A REASONABLY SMOOTH AND EVEN SURFACE SATISFACTORY FOR THE USE OF PUBLIC TRAFFIC, AND BY PROVIDING ACCESS TO ALL PUBLIC ROADS AND RESIDENTIAL AND COMMERCIAL ENTRANCES AT ALL TIMES.
23. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF THE ELECTRIC POWER AND TELEPHONE SERVICE CONNECTIONS NECESSARY FOR THE FIELD OFFICES AND PROJECT OPERATIONS WITH POTOMAC EDISON POWER COMPANY AND VERIZON TELEPHONE COMPANY. ALL COSTS, MATERIALS, AND INSTALLATION OF SERVICE CONNECTIONS SHALL BE PAID FOR BY THE CONTRACTOR.
24. THE CONTRACTOR SHALL ADJUST TO PROPOSED GRADE ALL EXISTING MANHOLES, VALVE BOXES, OR OTHER UTILITIES LOCATED WITHIN THE ASPHALT OVERLAY AND FULL DEPTH ASPHALT PAVING AREAS. IF A VALVE BOX WILL NEED MORE THAN ONE RISER, THE VALVE BOX MUST BE ADJUSTED TO THE FINAL GRADE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ASPHALT PAY ITEMS NECESSARY TO COMPLETE THE WORK.
25. THE CONTRACTOR SHALL ADJUST TO PROPOSED GRADE ALL EXISTING MANHOLES, VALVE BOXES, CLEANOUTS, OR OTHER UTILITIES LOCATED WITHIN THE CONCRETE SIDEWALK AND SHARED USE PATH. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONCRETE SIDEWALK ITEMS NECESSARY TO COMPLETE THE WORK.
26. ALL ASPHALT PAVEMENT UTILITY CUTS SHALL BE PERFORMED AND REPAIRED IN ACCORDANCE WITH FREDERICK COUNTY STANDARDS.
27. IN ANY AREA WHERE ASPHALT THAT IS TO BE REMOVED ADJOINS ASPHALT THAT IS TO REMAIN, THE ASPHALT PAVING SHALL BE SAWCUT IN ORDER TO PROVIDE A CLEAN JOINT BETWEEN THAT WHICH IS TO BE REMOVED AND THAT WHICH IS TO REMAIN.
28. IN AREAS WHERE CONCRETE THAT IS TO BE REMOVED ADJOINS CONCRETE THAT IS TO REMAIN, THE CONCRETE SHALL BE SAWCUT AT THE NEAREST JOINT AND A BITUMINOUS EXPANSION JOINT PROVIDED BETWEEN NEW AND EXISTING WORK. WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE SPECIFICATIONS AND ON THE APPROVED CONSTRUCTION DRAWINGS.
29. THE CONTRACTOR SHALL OBTAIN A ROADSIDE TREE PERMIT FOR ANY MAINTENANCE, TREATMENT, PLANTING, REMOVAL OR ROOT CUTTING OF TREES WITHIN THE PUBLIC RIGHT OF WAY. REPLACEMENT TREES, IF REQUIRED, WILL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. PERMIT REQUIREMENTS MAY BE OBTAINED FROM THE DEPARTMENT OF NATURAL RESOURCES-MARYLAND FOREST, PARK, AND WILDLIFE SERVICE WHOSE TELEPHONE NUMBER IS (301) 888-1638. THE CONTRACTOR SHALL ALLOW FOR THE TIME INVOLVED IN THE PROCESSING OF THE PERMIT WHEN MAKING APPLICATION.
30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND PROTECTING PROPERTY MARKERS, CONTROL POINTS AND BENCHMARKS FOR THE DURATION OF THE CONTRACT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE ANY OF THESE POINTS THAT ARE DISTURBED OR DAMAGED DURING THE CONSTRUCTION PROCESS. WHERE NECESSARY, POINTS SHALL BE REPLACED UNDER THE DIRECT SUPERVISION OF A REGISTERED SURVEYOR TO THE STANDARD WITH WHICH THEY WERE ESTABLISHED.
31. DEFINITION OF TERMS:
PROPOSED RIGHT OF WAY: DENOTES LAND BELONGING TO COUNTY OR STATE, WHICH CONTAINS THE ROADWAY AND SUPPORTING STRUCTURES.

PERPETUAL EASEMENT: PORTIONS OF PRIVATE PROPERTY FOR WHICH THE COUNTY HAS ACQUIRED THE RIGHT TO UTILIZE FOR THE INSTALLATION AND MAINTENANCE OF UTILITIES, DRAINAGE STRUCTURES, ETC.

REVERTIBLE EASEMENT: PORTIONS OF PRIVATE PROPERTY FOR WHICH THE COUNTY HAS ACQUIRED THE RIGHT TO CONSTRUCT AND MAINTAIN SUPPORTING SLOPES AND STRUCTURES FOR THE ROADWAY.

TEMPORARY CONSTRUCTION EASEMENT: PORTIONS OF PRIVATE PROPERTY ON WHICH THE COUNTY HAS ACQUIRED THE RIGHT TO OCCUPY AND GRADE ON DURING THE PERIOD OF CONSTRUCTION.

32. THE CONTRACTOR SHALL VERIFY THE DEPTHS OF THE UTILITIES TO CHECK IF THERE IS THE MINIMUM 30" OF COVER BEFORE USING VIBRATORY EQUIPMENT OVER WATER UTILITIES.
33. THE CONTRACTOR WILL NEED TO TAKE TEST PITS OF THE EXISTING WATER SERVICES AND WATER MAINS AT LOCATIONS OF FULL DEPTH PAVEMENT TO AVOID CONFLICTS.
34. ALL WATER AND SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FREDERICK COUNTY GENERAL CONDITIONS AND STANDARD SPECIFICATIONS FOR WATER MAINS, SANITARY SEWER AND RELATED STRUCTURES AND THE STANDARD DETAILS FOR WATER MAINS, SANITARY SEWER AND RELATED STRUCTURES.

EXISTING STORM INVERTS

1. PRECAST OPEN-BACK CURB INLET
INV IN=400.77
INV OUT=400.45
2. PRECAST OPEN-BACK CURB INLET
INV IN=400.60
INV OUT=400.00
3. PRECAST OPEN-BACK CURB INLET
INV IN=399.83
INV OUT=399.44
4. PRECAST OPEN-BACK CURB INLET
INV IN=400.51
INV OUT=400.04
5. HEADWALL
INV=396.76
6. HEADWALL
INV=397.14
7. HEADWALL
INV=395.96
8. HEADWALL
INV=394.92
9. RISER
TOP=393.83
INV OUT=387.83
10. OUTFALL
INV=384.46
11. DOUBLE GRATE INLET
TOP=388.80
INV OUT=383.77
12. HEADWALL
INV=383.25
13. DITCH INLET W/GRATE
TOP=386.80
INV IN=386.80(6")
INV IN=384.46(CONC. THROAT)
INV OUT=383.51
14. DITCH INLET W/GRATE
TOP=384.93
INV IN=380.48(6")
INV IN=380.78(18")
INV IN=383.66(NORTH THROAT)
INV IN=383.68(SOUTH THROAT)
INV OUT=380.47
15. HEADWALL
INV=377.72
16. HEADWALL
INV=376.95
17. HEADWALL
INV=372.34
18. HEADWALL
INV=371.49
19. HEADWALL
INV(a)=373.53
INV(b)=373.51
20. HEADWALL
INV(a)=373.07
INV(b)=373.09
21. CURB INLET
TOP=376.40
INV OUT=373.05
22. CURB INLET
TOP=376.50
INV IN=372.94
INV OUT=372.63
23. CURB INLET
TOP=377.05
INV IN=372.70
INV OUT=377.01(WEIR)
24. MANHOLE
TOP=377.20
INV IN(a)=
INV IN(b)=372.46
INV OUT=372.43
25. MANHOLE
TOP=377.59
INV IN=372.63
INV OUT=371.31
26. CURB INLET
TOP=377.45
OUT=372.63
27. HEADWALL
INV=396.71
*PIPE DAMAGED OTHER END NOT FOUND
28. CULVERT
INV IN=415.32
INV OUT=414.86
29. CULVERT
INV IN=412.99
INV OUT=412.62
30. CULVERT
INV IN=406.66
INV OUT=406.51
31. OUTFALL
INV=404.08
32. GRATE INLET
TOP=407.18
INV IN=403.18
INV OUT=403.19
33. HEADWALL
INV=402.24
34. CULVERT
INV IN=411.97
35. CULVERT
INV OUT=411.72
36. CULVERT
INV IN=411.53
37. CULVERT
INV OUT=410.70
38. SUMP DRAIN
INV=411.05
39. SUMP DRAIN
INV=410.87
40. HEADWALL
INV=397.37
41. HEADWALL
INV=396.52
42. HEADWALL
INV=391.20
43. HEADWALL
INV=396.34
44. HEADWALL
INV=392.40
45. HEADWALL
INV=394.56
46. HEADWALL
INV IN=394.13
INV OUT=394.12
47. HEADWALL
INV=393.25
48. CATCH BASIN
TOP=*NOT IN PLACE AT TIME OF SURVEY
INV IN=376.21
INV OUT=376.03
49. HEADWALL
INV=375.66
50. RISER
TOP=384.54
INV OUT=379.05
51. OUTFALL
INV=378.12
52. HEADWALL
INV=378.12
53. HEADWALL
INV=376.57
54. CULVERT
INV IN=408.41
INV OUT=408.37
55. CULVERT
INV IN=399.85
INV OUT=397.32
56. CULVERT
INV IN=412.99
INV OUT=412.62

* STRUCTURES 48 AND 49 WERE UNDER CONSTRUCTION AT TIME OF SURVEY

ABBREVIATIONS

A	- GRADE CHANGE/ ALGEBRAIC DIFFERENCE
AASHTO	- AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ADT	- AVERAGE DAILY TRAFFIC
.B/L	- BASELINE
BOA	- BEGINNING OF ALIGNMENT
BOT.	- BOTTOM
BP	- ALIGNMENT BEGINNNING
BVC	- BEGIN VERTICAL CURVE
BVCS	- BEGIN VERTICAL CURVE STATION
BVCE	- BEGIN VERTICAL CURVE ELEVATION
BVP	- BEGINNING OF VERTICAL PROFILE
C.B.	- CATCH BASIN
CL	- CLASS
C/O	- CLEAN OUT
CONC.	- CONCRETE
CIBTR./CAB.	- CONTROL CABINET
CORR.	- CORRECTION
CPDP	- CORRUGATED POLYPROPYLENE DRAINAGE PIPE
CPI	- CURVE POINT OF INTERSECTION
CULV.	- CULVERT
-C-	- CUT
Dc	- DEGREE OF CURVE
DHV	- DESIGN HOURLY VOLUME
D.S.	- DESIGN SPEED
E.B.	- EASTBOUND
ELEV.,EL.	- ELEVATION
EOA	- END OF ALIGNMENT
EP	- ALIGNMENT END
EX.	- EXISTING
e	- EXTERNAL
EVC	- END VERTICAL CURVE
EVCS	- END VERTICAL CURVE STATION
EVCE	- END VERTICAL CURVE ELEVATION
EVP	- END OF VERTICAL PROFILE
-F-	- FILL
G1	- GRADE 1
G2	- GRADE 2
H.S.D.	- HEADLIGHT SIGHT DISTANCE
H/WALL	- HEADWALL
HERCP	- HORIZONTAL ELLIPTICAL REINFORCED CONC. PIPE
HOR.	- HORIZONTAL
HP	- HIGH POINT
INV.	- INVERT
L	- LENGTH
LVC	- LENGTH OF VERTICAL CURVE
LP	- LIGHT POLE
LOD	- LIMIT OF DISTURBANCE
L.P.	- LOW POINT
MDSHA	- MARYLAND STATE HIGHWAY ADMINISTRATION
M.P.H.	- MILES PER HOUR
N.B.	- NORTHBOUND
N.T.S.	- NOT TO SCALE
PCC	- POINT OF COMPOUND CURVE
BP	- POINT OF BEGINNING
PC	- POINT OF CURVATURE
P/C	- POINT OF CROWN
POE	- POINT OF ENDING
PI	- POINT OF INTERSECTION
P/R	- POINT OF ROTATION
PT	- POINT OF TANGENCY
PVC	- POINT OF VERTICAL CURVATURE
PVI	- POINT OF VERTICAL INTERSECTION
PVT	- POINT OF VERTICAL TANGENCY
P/GE	- PROFILE GRADE ELEVATION
P.G.L.	- PROFILE GRADE LINE
P/GL	- PROFILE GROUND LINE
PROP.	- PROPOSED
PRC	- POINT OF REVERSE CURVE
R	- RADIUS
K	- RATE OF CHANGE OF GRADE
RCP	- REINFORCED CONCRETE PIPE
D.S.	- SATELLITE DISH
SDWK	- SIDEWALK
SHLD	- SHOULDER
S.B.	- SOUTHBOUND
STA.,sta	- STATION
S.S.D.	- STOPPING SIGHT DISTANCE
SE	- SUPERELEVATION
ST	- SPIRAL TANGENT INTERSECT
T	- TANGENT
TSP	- TRAFFIC SIGNAL POLE
TCE	- TEMPORARY CONSTRUCTION EASEMENT
U/BOX	- UTILITY BOX
VERT.	- VERTICAL
V.C.	- VERTICAL CURVE
VCC	- VERTICAL COMPOUND CURVE
VCCE	- VERTICAL COMPOUND CURVE ELEVATION
VCCS	- VERTICAL COMPOUND CURVE STATION
VRC	- VERTICAL REVERSE CURVE
VRCS	- VERTICAL REVERSE CURVE STATION
VRCE	- VERTICAL REVERSE CURVE ELEVATION
W.B.	- WESTBOUND

SYMBOL LEGEND

	RAILROAD SIGNAL
	RR MILEPOST
	MAIL BOX
D	STORM MANHOLE
	GRATE INLET
DR	DRAIN
TSP	TRAF. SIGNAL POLE
	SIGN
T	TELE. JUNC. BOX
	POWER POLE
	LIGHT POLE
	LAMP POST
	GUY WIRE
	GUY POLE
	ELEC. METER
E	ELEC. JUNC. BOX
AC	AC UNIT
S	SAN. SEW. MH
CO	CLEAN OUT
WV	WATER VALVE
	WATER METER
	FIRE HYDRANT
	GAS VALVE
	GAS METER
G	GAS MANHOLE
	BOLLARD
FLY	FLY STATION
	BENCHMARK
	FLARED END SECTION
	FLOW DIRECTION
	CENTERLINE OF DITCH
	CURB OPENING INLET
	CURB OPENING INLET
	CATCH BASIN (SINGLE)
	CATCH BASIN (DOUBLE)
	TEST PIT
	SOIL BORING
COMM	COMM. LINE PAINT MARK
E	ELEC. TRANSFORMER
UGE	ELECTRIC PAINT MARK
G	GAS LINE PAINT MARK
W	WATERLINE PAINT MARK
	FENCE (CHAIN-LINK)
X	FENCE
	WOODLINE

AB-1

REVISIONS		
MARK	DATE	DESCRIPTION

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

NOTES, ABBREVIATIONS, LEGEND AND CONVENTIONAL SIGNS

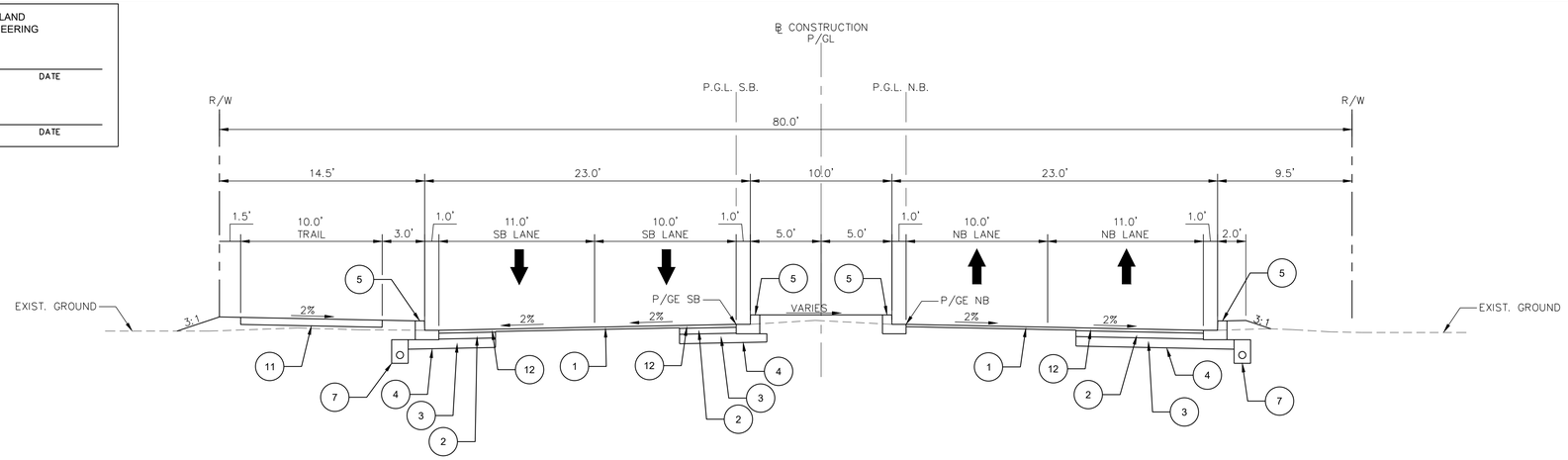
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AMT FILE NO. 15-0758.007 SHEET NO. 02 OF 118

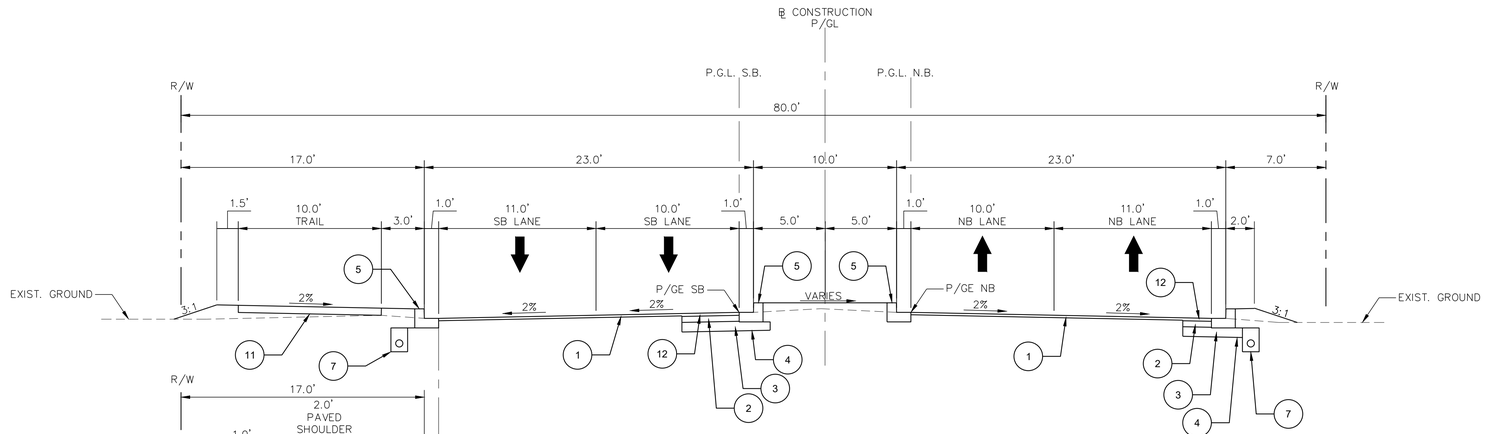
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DEVELOPMENT REVIEW ENGINEERING

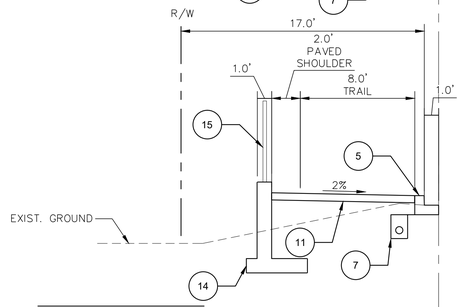
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STORMWATER MANAGEMENT DATE

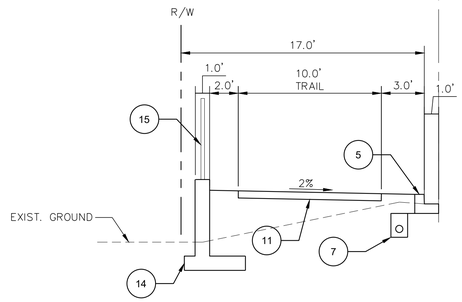


TYPICAL SECTION - CHRISTOPHERS CROSSING
STA. 102+50 TO STA. 136+92





STA. 79+60 TO STA. 88+50



STA. 96+75 TO STA. 100+25

TYPICAL SECTION - CHRISTOPHERS CROSSING
STA. 78+75 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" JOINTED PLAIN CONCRETE PAVEMENT – MIX #7
11. 1.5" 12.5mm SUPERPAVE SURFACE PG 64–22/3" 19mm SUPERPAVE BASE PG 64–22/2" 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. 5 FOOT ORNAMENTAL FENCE. SEE SHEETS RW–10 FOR DETAILS

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.
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 2008 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 2008 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.
6. GRADED AGGREGATE BASE IN ACCORDANCE WITH SECTIONS 501 OF THE 2008 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.

TS-1

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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CONSULTING ENGINEERS
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FREDERICK COUNTY, MARYLAND

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

TYPICAL SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=5'

AMT FILE NO. 15-0758.007 SHEET NO. 03 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

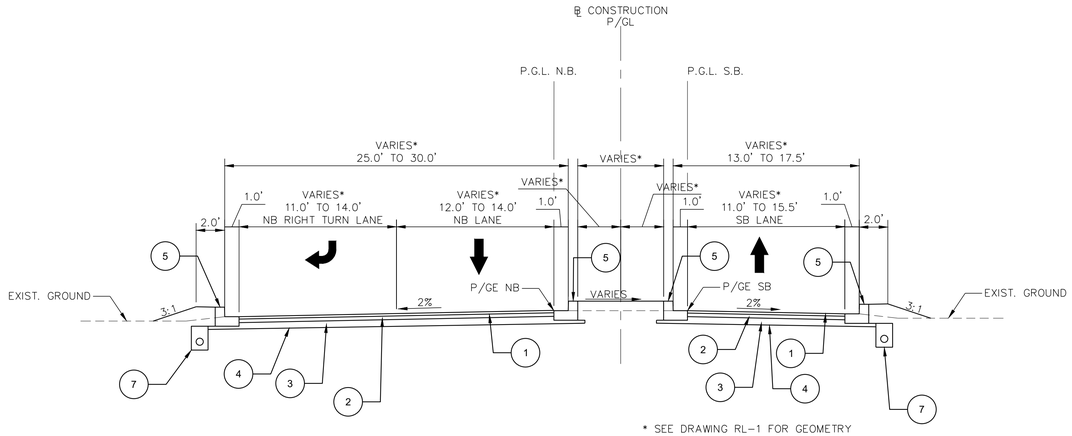
APPROVED: _____
STORMWATER MANAGEMENT DATE

○ KEYNOTES

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15. 5 FOOT ORNAMENTAL FENCE. SEE SHEETS RW-10 FOR DETAILS

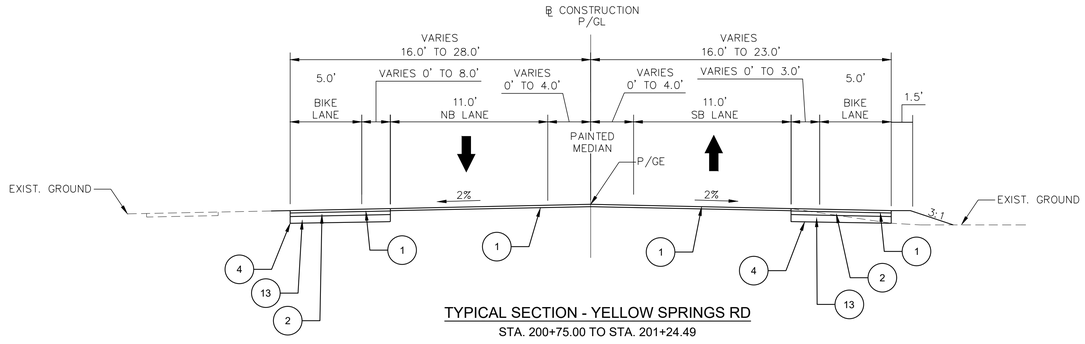
GENERAL NOTES

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.
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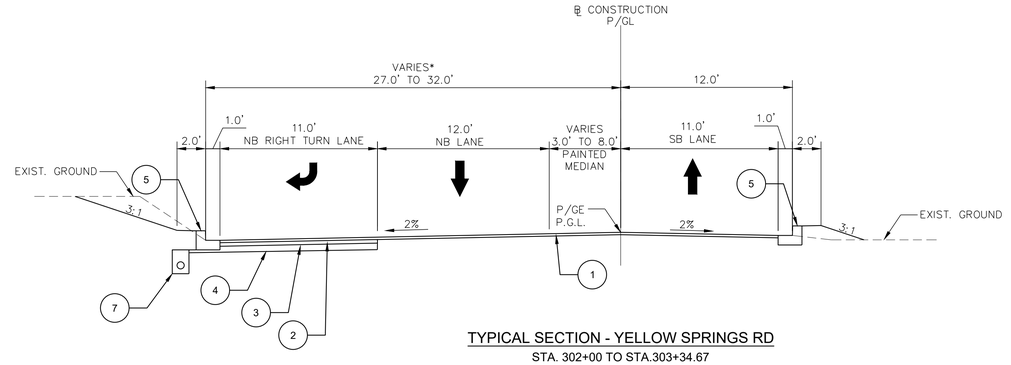


* SEE DRAWING RL-1 FOR GEOMETRY

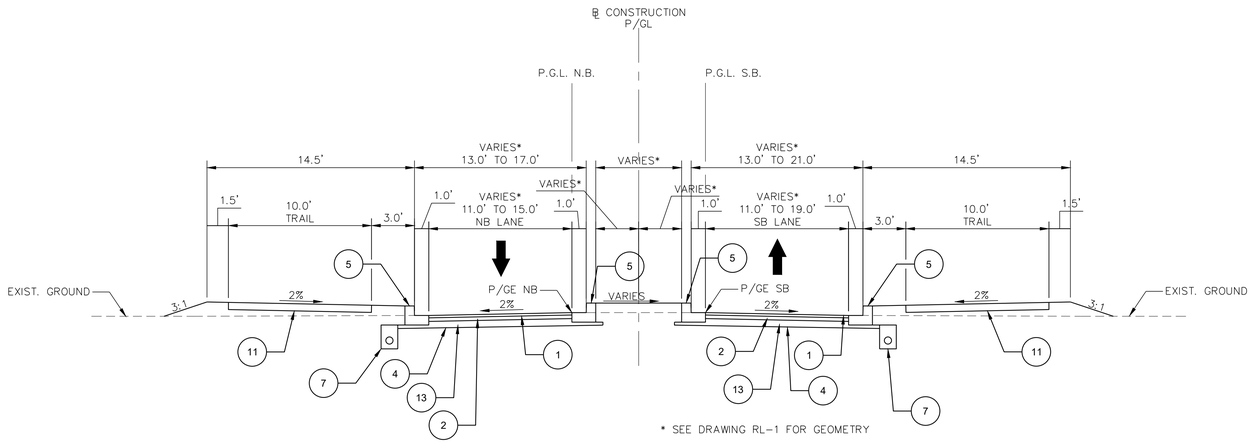
TYPICAL SECTION - YELLOW SPRINGS RD
STA. 300+82.66 TO STA. 302+00



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

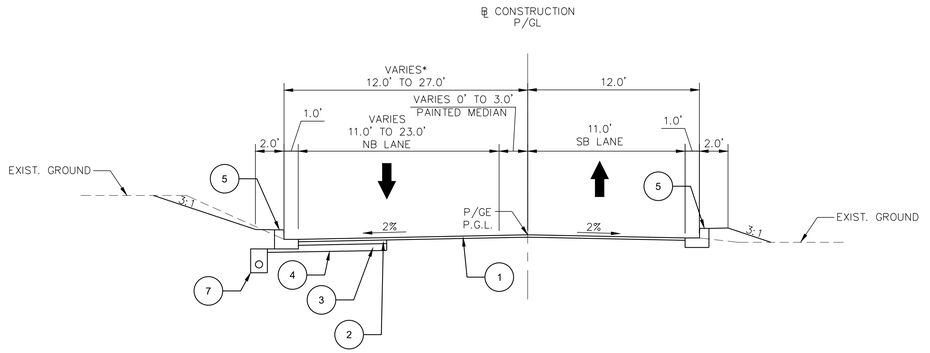


TYPICAL SECTION - YELLOW SPRINGS RD
STA. 302+00 TO STA.303+34.67



* SEE DRAWING RL-1 FOR GEOMETRY

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

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CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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FREDERICK COUNTY, MARYLAND
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FREDERICK COUNTY, MARYLAND

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

TYPICAL SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=5'

AMT FILE NO. 15-0758.007 SHEET NO. 04 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

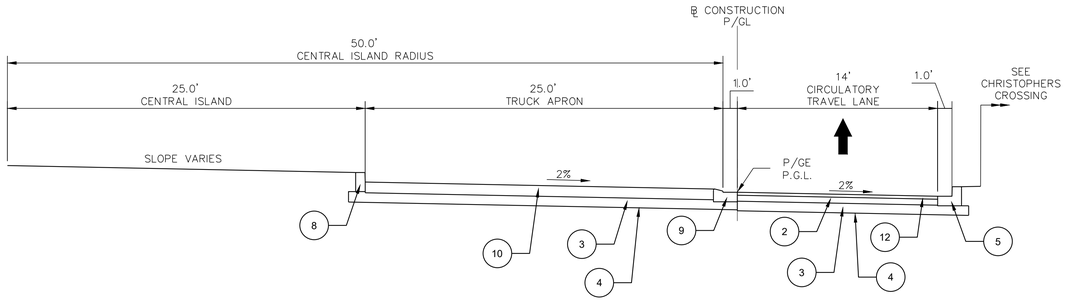
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STORMWATER MANAGEMENT DATE

○ KEYNOTES

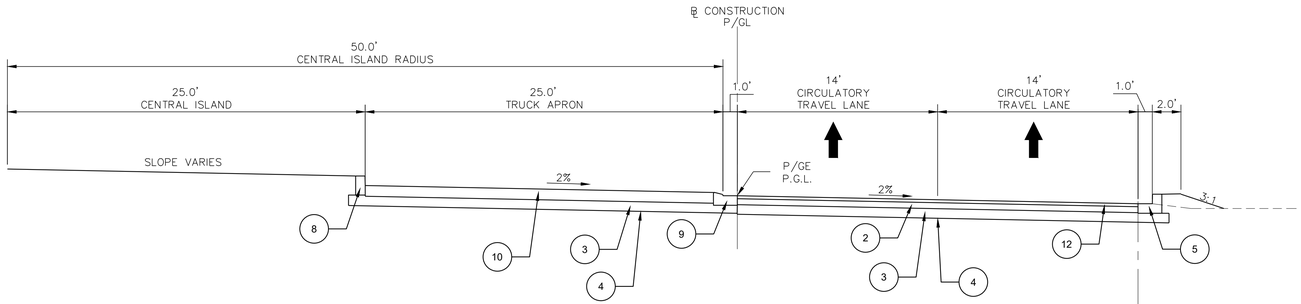
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2. 5" BASE COURSE – 19.0mm HMA SUPERPAVE PG64–22
3. 8" AGGREGATE BASE COURSE (CR–6 OR GAB)
4. TOP OF SUBGRADE
5. TYPE 'A' COMBINATION CURB AND GUTTER MDSHA STD MD–620.02
6. 5" CONCRETE SIDEWALK
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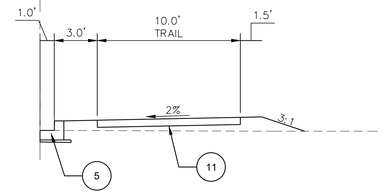
GENERAL NOTES

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.
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6. GRADED AGGREGATE BASE IN ACCORDANCE WITH SECTIONS 501 OF THE 2008 MARYLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS.



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

TS-3

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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RECONSTRUCTION OF
CHRISTOPHERS CROSSING
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TYPICAL SECTIONS

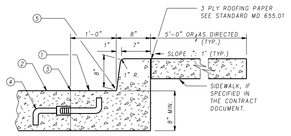
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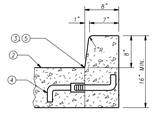
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

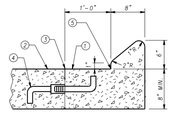
APPROVED: _____
STORMWATER MANAGEMENT DATE



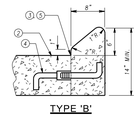
TYPE 'A'
COMBINATION CURB & GUTTER
DESIGN SPEED ≤45 MPH



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	

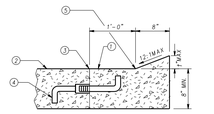
APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL ● SHA REVISIONS	APPROVAL ● FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

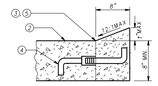
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
STANDARD TYPES A & B CONCRETE CURB AND COMBINATION CONCRETE CURB & GUTTER

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.

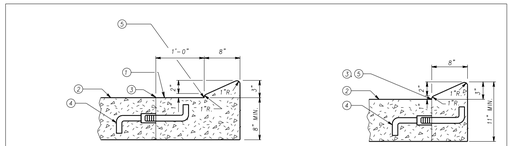
SPECIFICATION	CATEGORY CODE ITEMS
602	

APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

APPROVAL ● SHA REVISIONS	APPROVAL ● FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

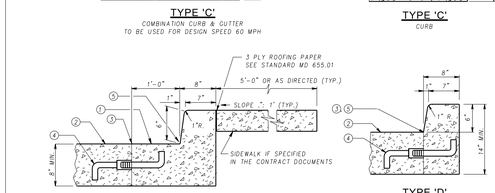
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
DEPRESSED CURB FOR COMBINATION CURB AND GUTTER AND DEPRESSED CURB FOR SIDEWALK RAMPS

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.

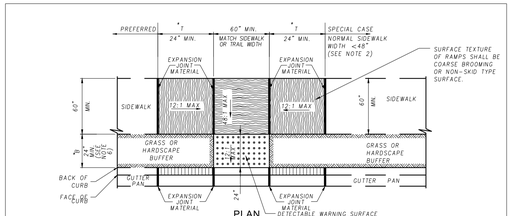
SPECIFICATION	CATEGORY CODE ITEMS
602	

APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

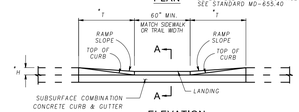
APPROVAL ● SHA REVISIONS	APPROVAL ● FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED	REVISED
REVISED	REVISED
REVISED	REVISED

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

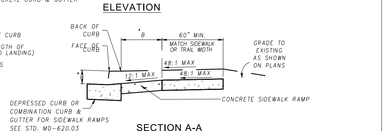


PLAN



ELEVATION

* – H = HEIGHT OF CURB
B = BUFFER WIDTH (BACK OF CURB TO FRONT OF SIDEWALK)
T = RAMP RUN LENGTH (LENGTH OF RAMP FROM SIDEWALK TO LANDING)
RAMP SLOPE (12 v:1 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. THE RAMP SLOPE (12 v:1 h) OR OVERALL RAMP GRADIENT SHALL NOT EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL, OR 48:1 IN THE CROSSWISE 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	

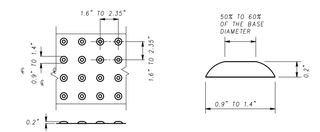
APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

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

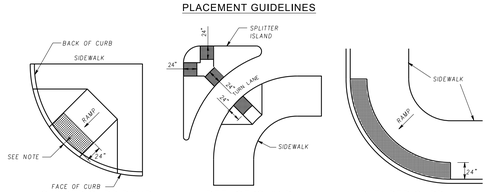
MAT DETAILS
SEE PLACEMENT GUIDELINES BELOW



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.

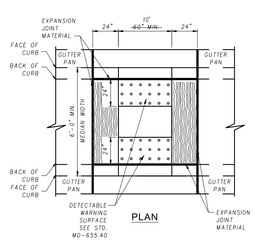
SPECIFICATION	CATEGORY CODE ITEMS
611	

APPROVED
DIRECTOR – OFFICE OF HIGHWAY DEVELOPMENT

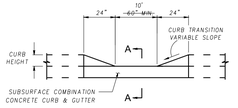
APPROVAL ● SHA REVISIONS	APPROVAL ● FEDERAL HIGHWAY ADMINISTRATION
APPROVAL	APPROVAL
REVISED 4-17-06	REVISED
REVISED	REVISED
REVISED	REVISED

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

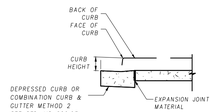
STANDARD NO. MD 655.40



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

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

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

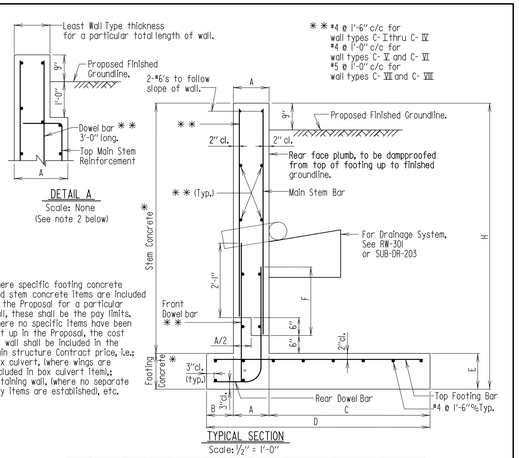
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 06 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



* 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.

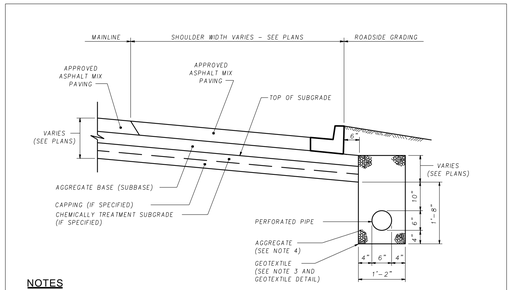
Wall Type	H	A	B	C	D	E	F	Rear Dowel Bar	Main Stem Bar	Top Foot. Bar
C-I	6'-0"	1'-0"	9"	2'-6"	4'-3"	1'-0"	2'-2"	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c
C-II	8'-0"	1'-0"	9"	3'-6"	5'-3"	1'-0"	2'-2"	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c	#5 @ 1'-0" c/c
C-III	10'-0"	1'-0"	1'-0"	4'-6"	6'-6"	1'-3"	2'-7"	#6 @ 6" 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
Director, Office of Structures
DATE: 12/04/2013
VERSION
1.0

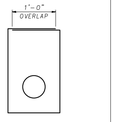
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
TYPE C RETAINING WALL SECTION (FOR POOR SOIL CONDITION AND TWO FOOT SURCHARGE)
DETAIL NO. RW-104 SHEET 1 OF 1

FREDERICK 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.



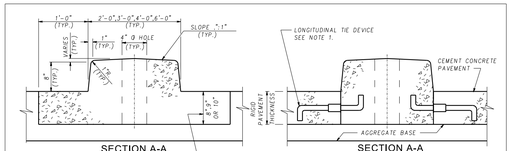
GEOTEXTILE FABRIC
DETAIL

SPECIFICATION	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
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" Ø HOLES IN MEDIAN FOR SIGNS, SPACED AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

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 MONOLITH CONCRETE MEDIAN TYPE 'A'
STANDARD NO. MD 645.01

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

DE-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 DETAILS

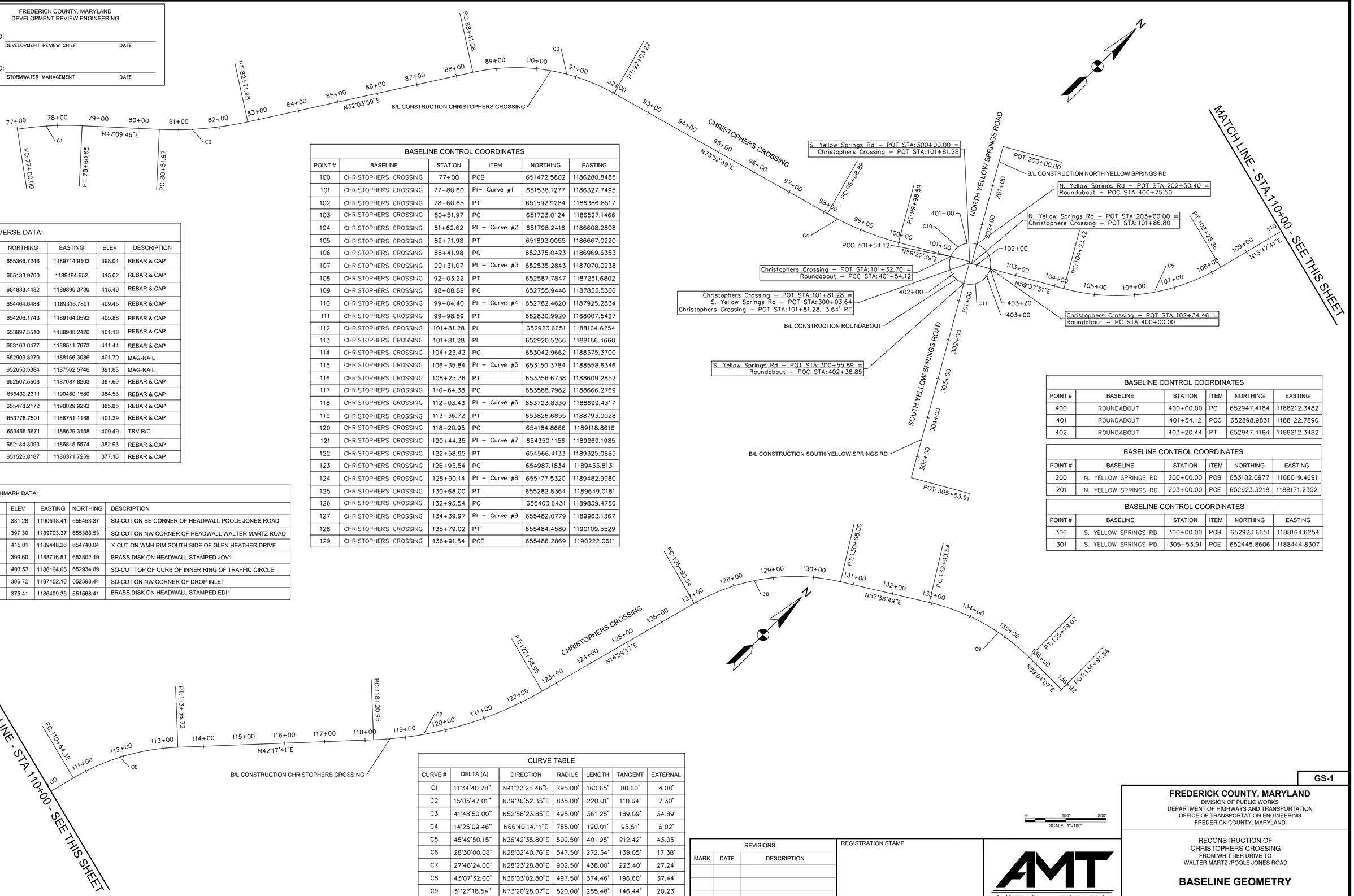
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 07 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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
100	CHRISTOPHERS CROSSING	77+00	POB	651472.5802	1186280.8485
101	CHRISTOPHERS CROSSING	77+80.60	PI– Curve #1	651538.1277	1186327.7495
102	CHRISTOPHERS CROSSING	78+60.65	PT	651592.9284	1186386.8517
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
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
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
112	CHRISTOPHERS CROSSING	101+81.28	PI	652923.6651	1188164.6254
113	CHRISTOPHERS CROSSING	101+81.28	PI	652920.5266	1188166.4660
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
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
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
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
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
129	CHRISTOPHERS CROSSING	136+91.54	POE	655486.2869	1190222.0611

BASELINE CONTROL COORDINATES

POINT #	BASELINE	STATION	ITEM	NORTHING	EASTING
400	ROUNDABOUT	400+00.00	PC	652947.4184	1188212.3482
401	ROUNDABOUT	401+54.12	PCC	652898.9831	1188122.7890
402	ROUNDABOUT	403+20.44	PT	652947.4184	1188212.3482

BASELINE CONTROL COORDINATES

POINT #	BASELINE	STATION	ITEM	NORTHING	EASTING
200	N. YELLOW SPRINGS RD	200+00.00	POB	653182.0977	1188019.4691
201	N. YELLOW SPRINGS RD	203+00.00	POE	652923.3218	1188171.2352

BASELINE CONTROL COORDINATES

POINT #	BASELINE	STATION	ITEM	NORTHING	EASTING
300	S. YELLOW SPRINGS RD	300+00.00	POB	652923.6651	1188164.6254
301	S. YELLOW SPRINGS RD	305+53.91	POE	652445.8606	1188444.8307

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'

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

GS-1

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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CONSULTING ENGINEERS
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FREDERICK COUNTY, MARYLAND
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DEPARTMENT OF HIGHWAYS AND TRANSPORTATION
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FREDERICK COUNTY, MARYLAND

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

BASELINE GEOMETRY

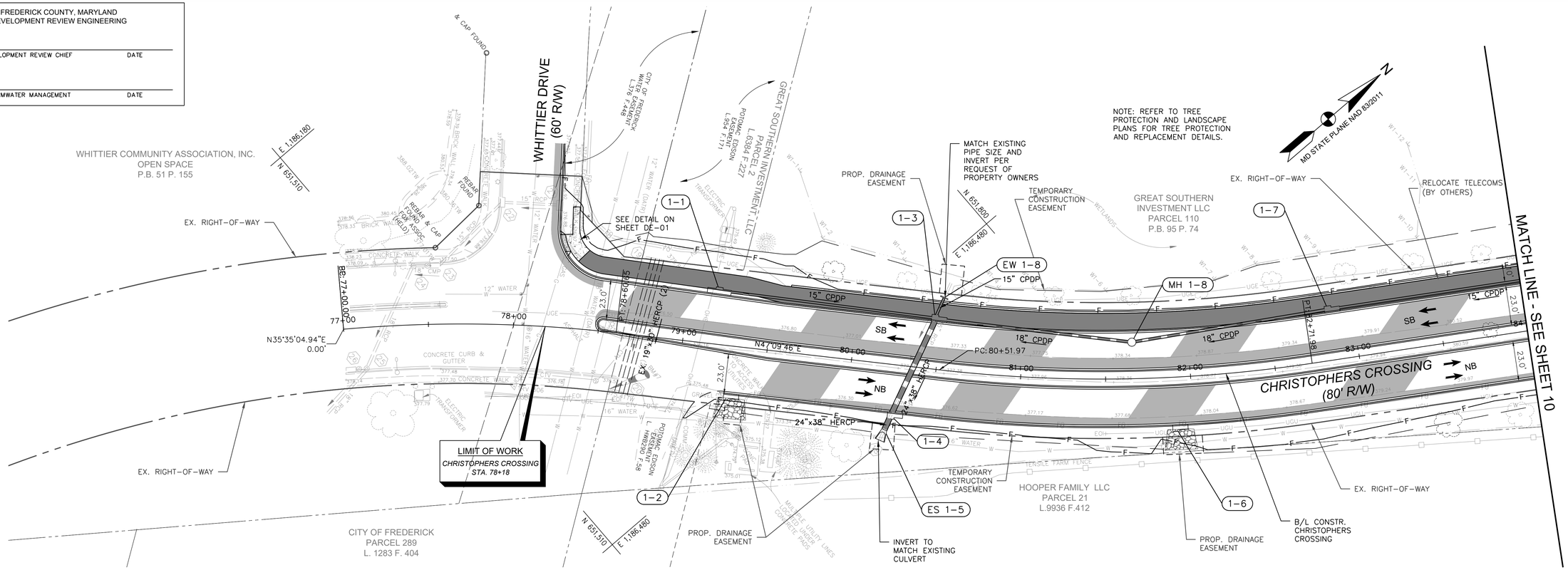
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 08 OF 118

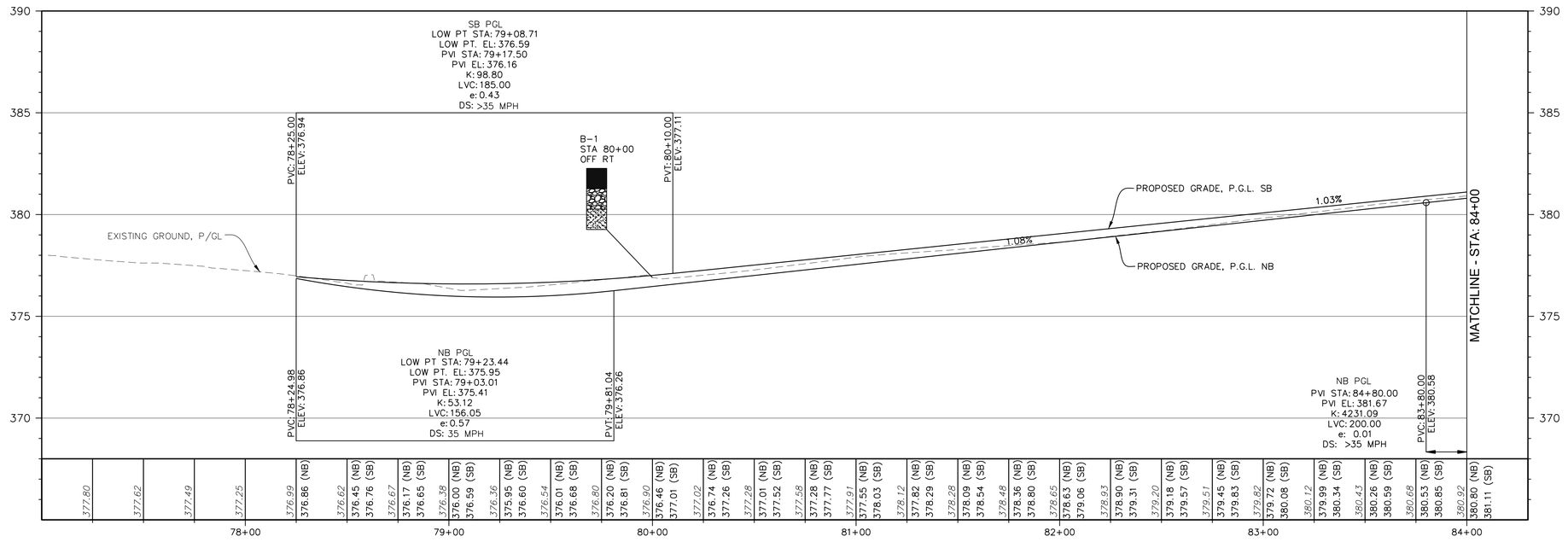
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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CONSULTING ENGINEERS
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FREDERICK COUNTY, MARYLAND
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FREDERICK COUNTY, MARYLAND

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

ROADWAY PLAN AND PROFILE

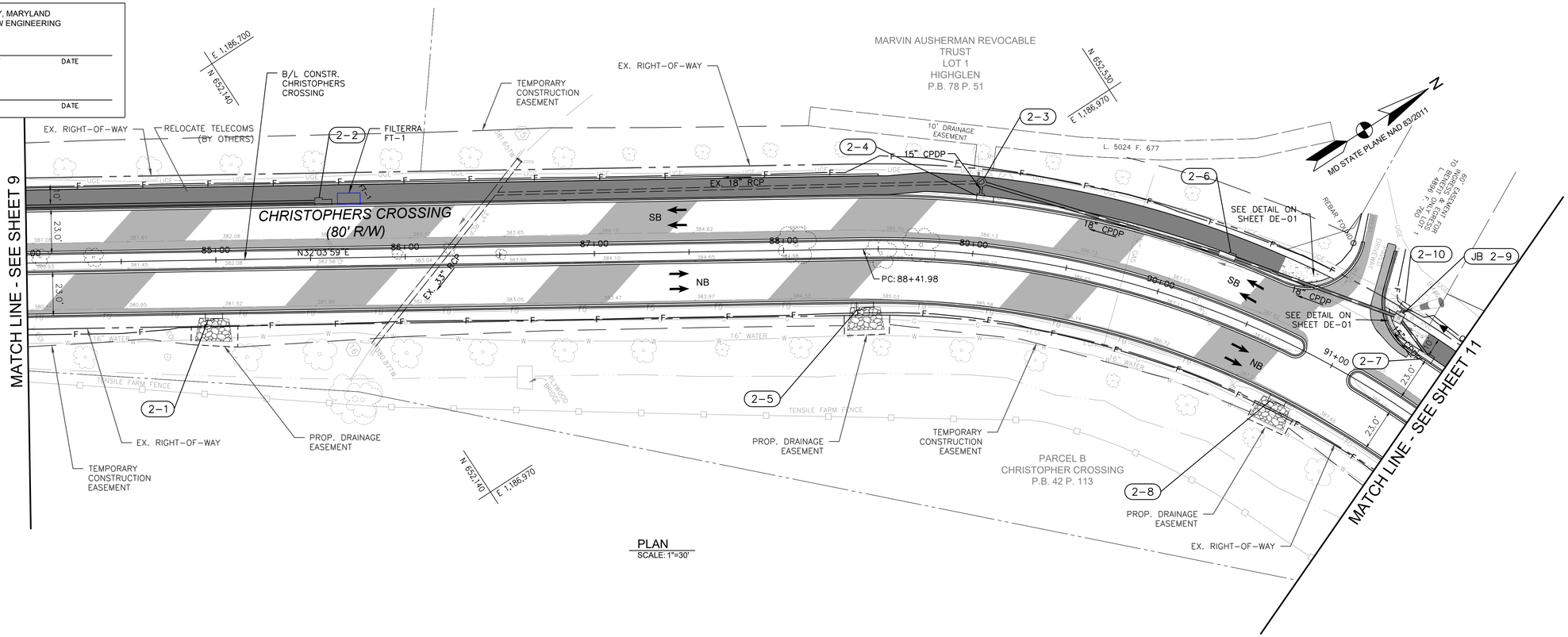
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AMT FILE NO. 15-0758.007 SHEET NO. 09 OF 118

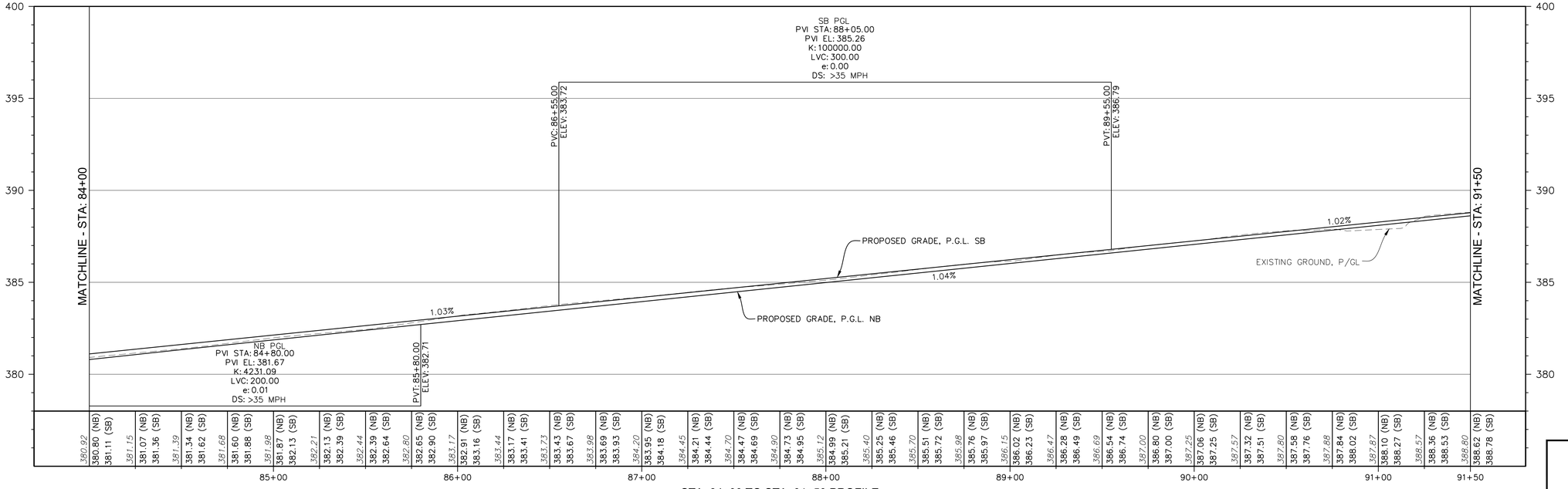
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=30'



STA. 84+00 TO STA. 91+50 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

REVISIONS		
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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

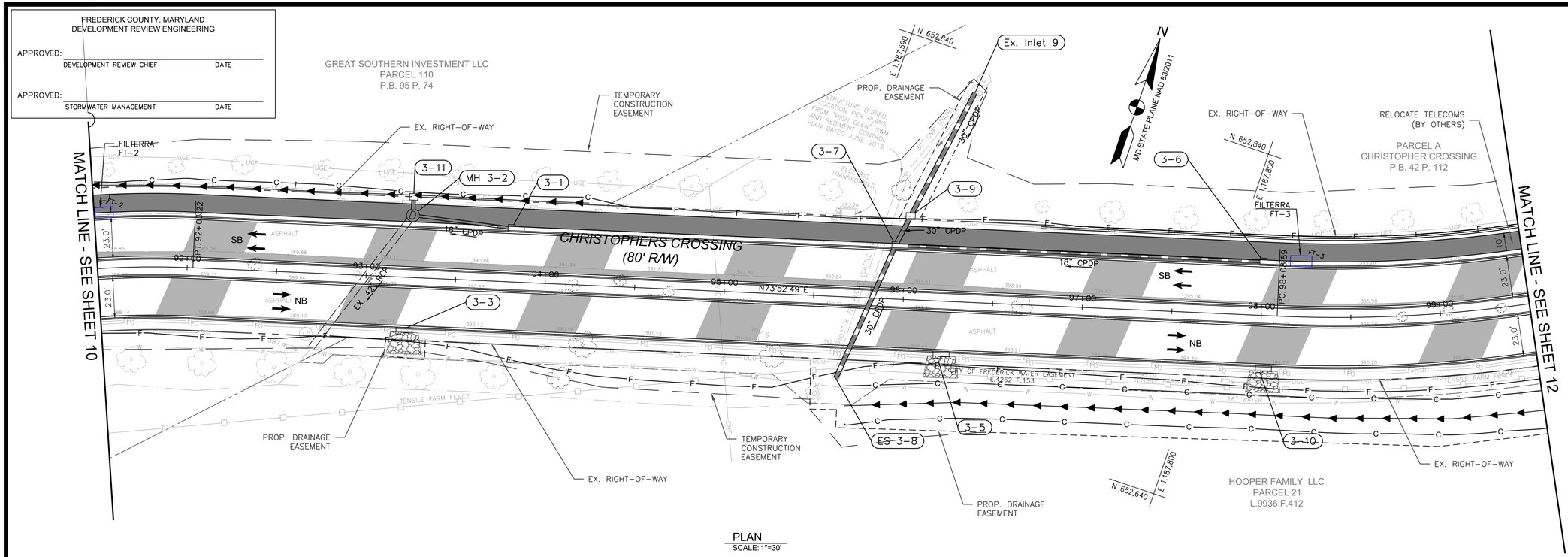
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AMT FILE NO. 15-0758.007 SHEET NO. 10 OF 118

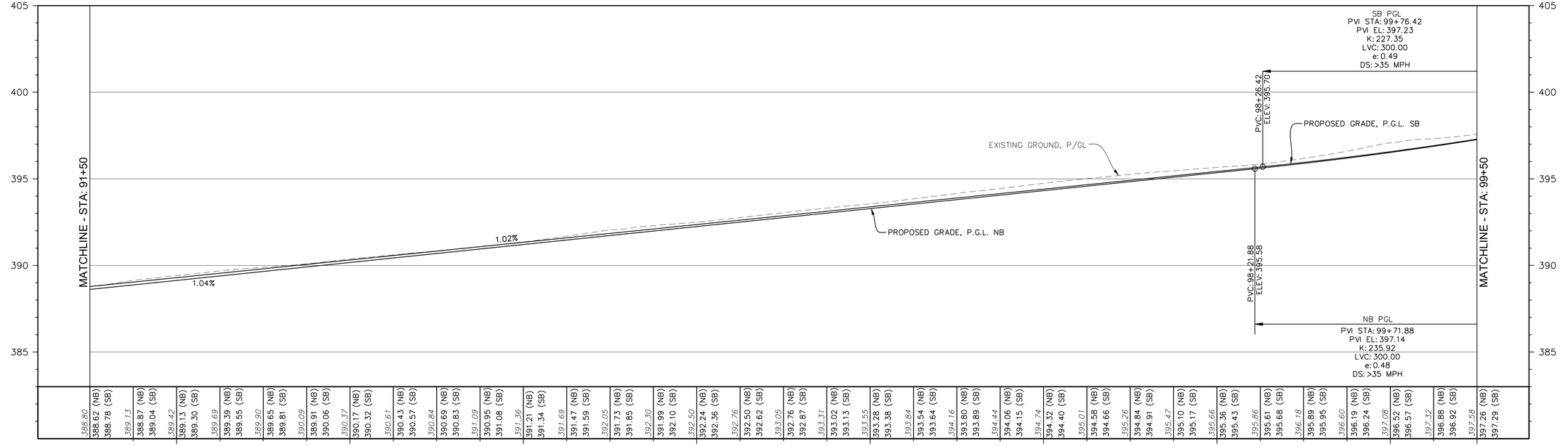
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 11 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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

YELLOW SPRINGS ROAD (90' R/W)

S30°23'26"E

REBAR & CAP FOUND (BENT)

EX. RIGHT-OF-WAY

TEMPORARY CONSTRUCTION EASEMENT

TIE PROPOSED SIDEWALK INTO EXISTING SIDEWALK

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

STD. MD 655.21
SEE SHEET DE-01

STD. MD 655.13
SEE SHEET DE-01

PROPOSED RIGHT-OF-WAY

STREETLIGHT (BY OTHERS)

STD. MD 655.13
SEE SHEET DE-01

ROBERT & SUSAN FOWLE
LOT 156

TEMPORARY CONSTRUCTION EASEMENT

30' UTILITY EASEMENT

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

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

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

E 1,187,950
N 652,900

N 653,200
E 1,188,350

MD STATE PLANE NAD 83/2011

RELOCATE TELECOMS (BY OTHERS)

DOUGLAS & ROSE MARSH TRUSTEES
LOT 155

KEVIN & ANGELA DORSEY
LOT 154

MATCH LINE - SEE SHEET 11

MATCH LINE - SEE SHEET 14

CHRISTOPHERS CROSSING
(80' R/W)

SB

NB

N59°27'39"E

N59°37'31"E

S30°23'21"E

PI: 101+81.28

PC: 104+23.62

18" CPDP

24" CPDP

SW-1

ES 4-20

UTILITY POLE TO BE RELOCATED

PROP. DRAINAGE EASEMENT

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

HOOPER FAMILY LLC
PARCEL 21
L.9936 F.412

EUGENE & ALICIA KUNST
LOT 92

ADJUST WATER MANHOLE

ADJUST WATER METER

AARON & JOANNA TOOTILL
LOT 93

GEORGE MAKRIDES
LOT 97

SALVATORE & CHUN CREMONA
LOT 98

JEFFREY & DONNA FOWLE
LOT 99

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

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

PLAN
SCALE: 1"=30'

SEE MATCH LINE THIS SHEET

SEE MATCH LINE THIS SHEET

RT

MD STATE PLANE NAD 83/2011

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

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

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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PS-4

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

ROADWAY PLAN

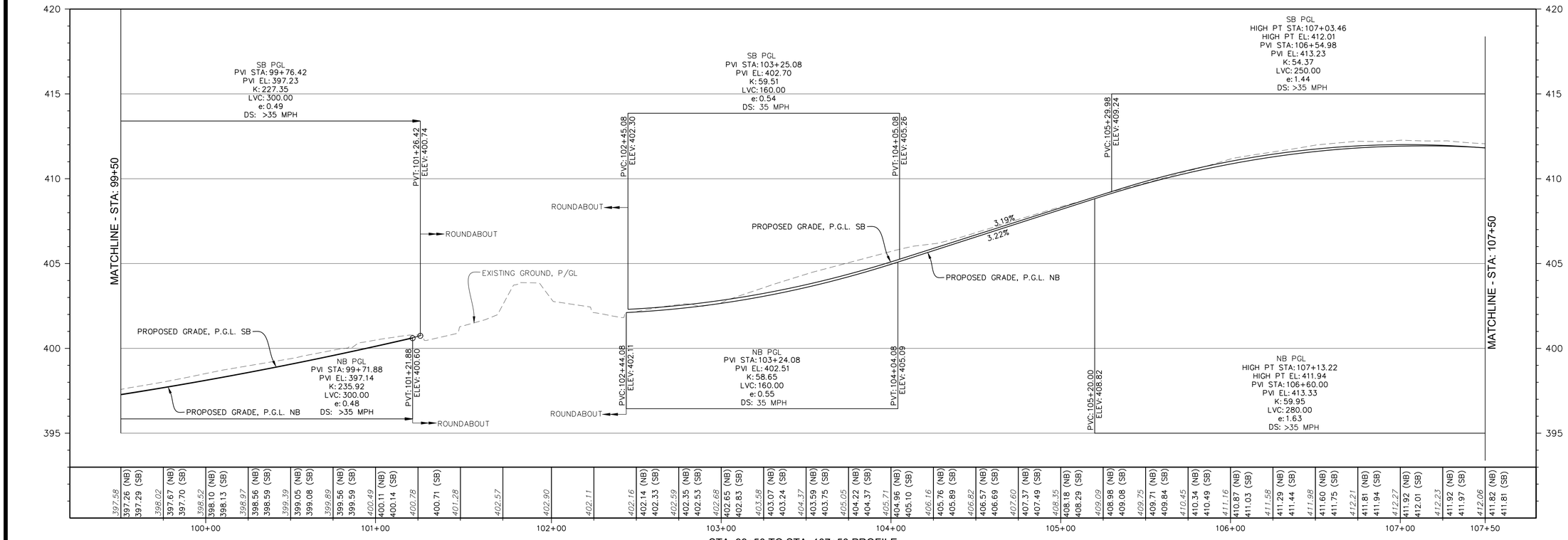
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AMT FILE NO. 15-0758.007 SHEET NO. 12 OF 118

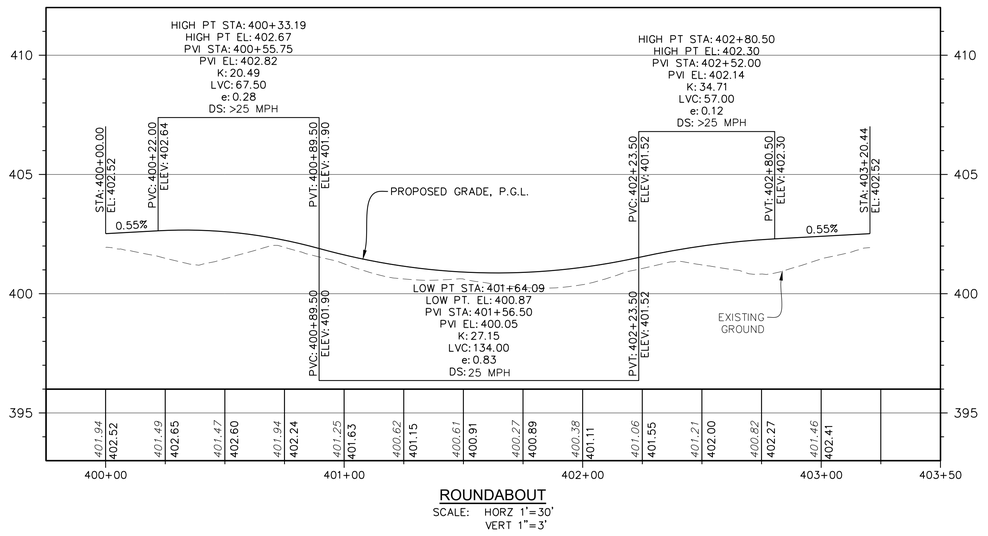
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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PS-5

FREDERICK COUNTY, MARYLAND
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FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
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WALTER MARTZ /POOLE JONES ROAD

ROADWAY PROFILE

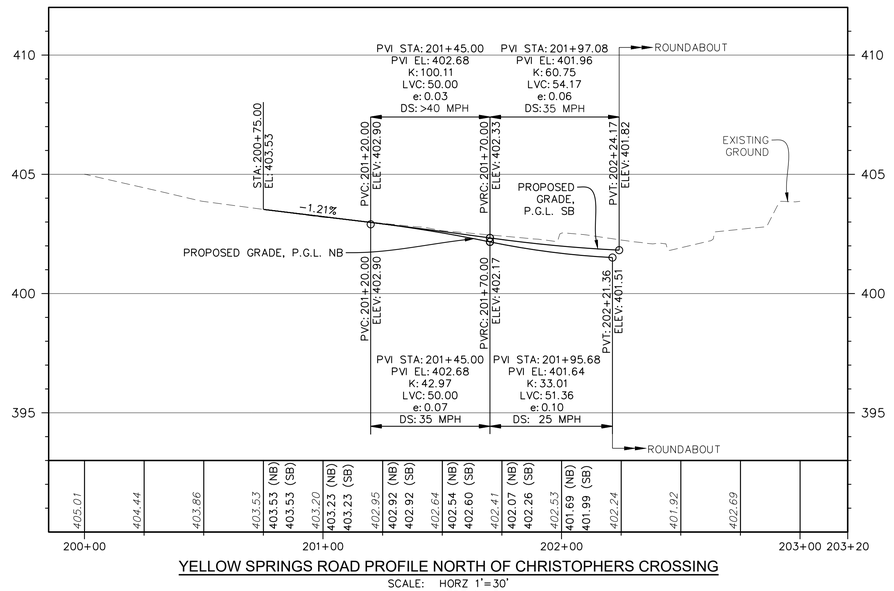
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 13 OF 118

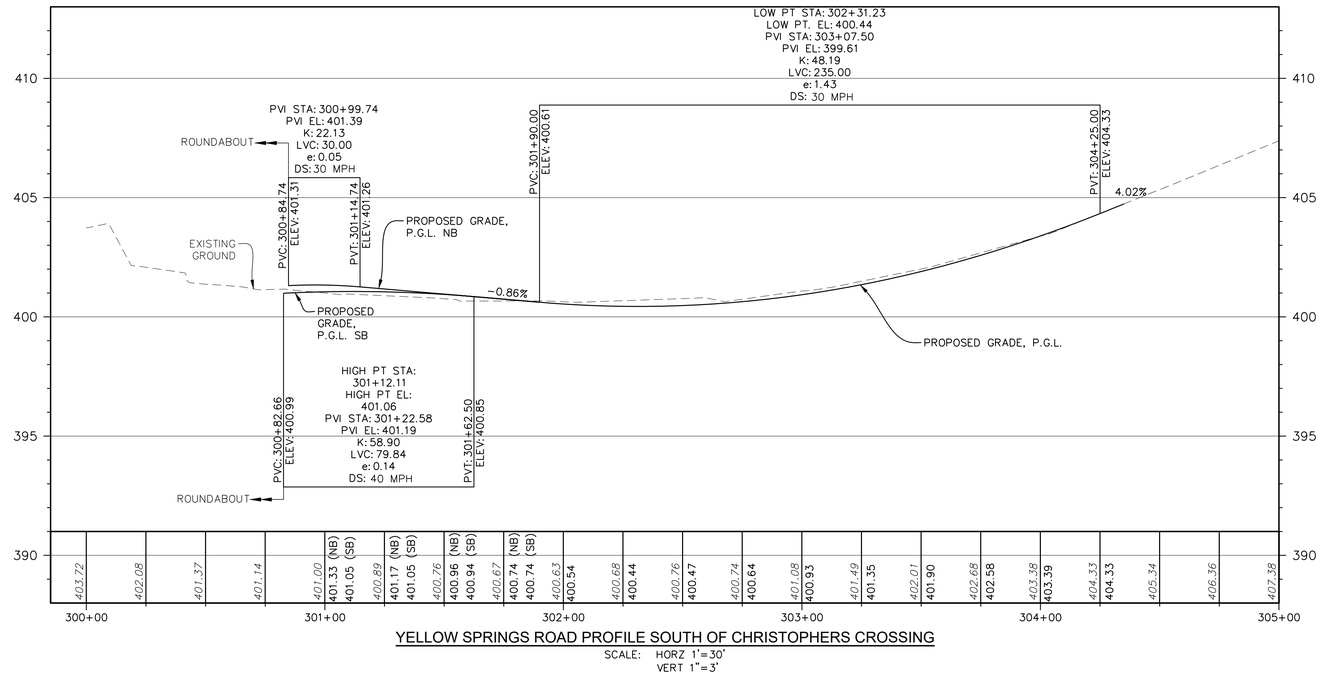
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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PS-6

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FREDERICK COUNTY, MARYLAND

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

ROADWAY PROFILE

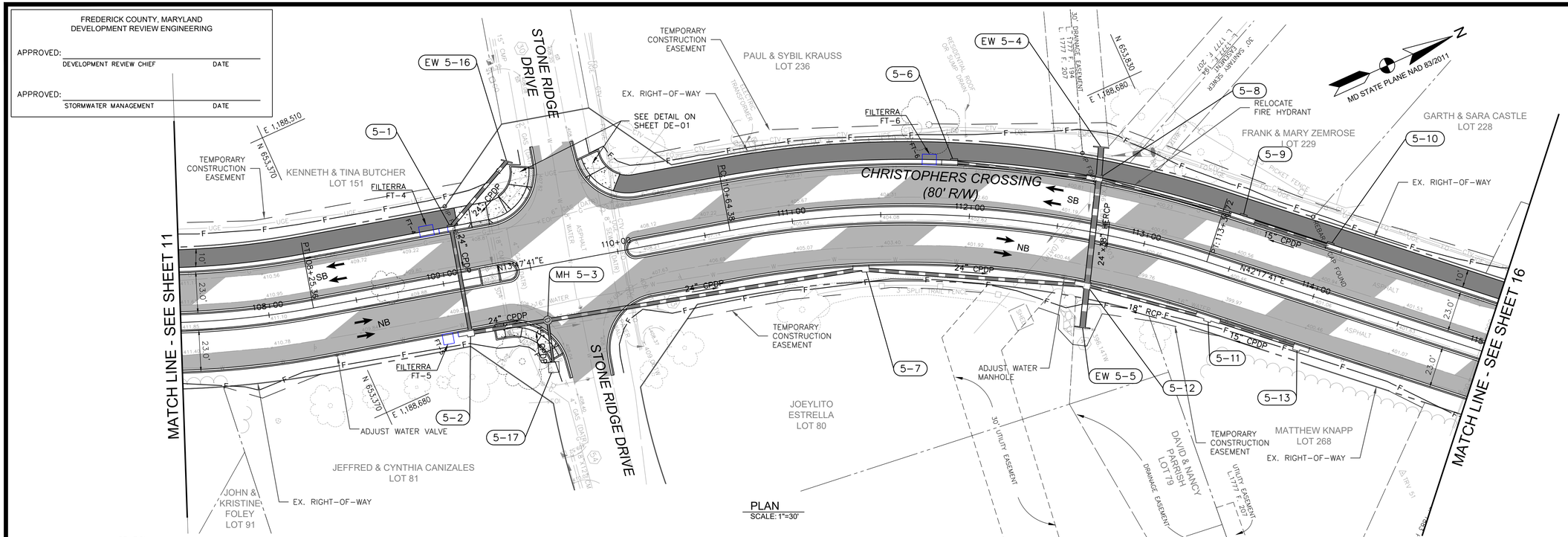
DATE: DECEMBER 2021 SCALE: 1"=30'

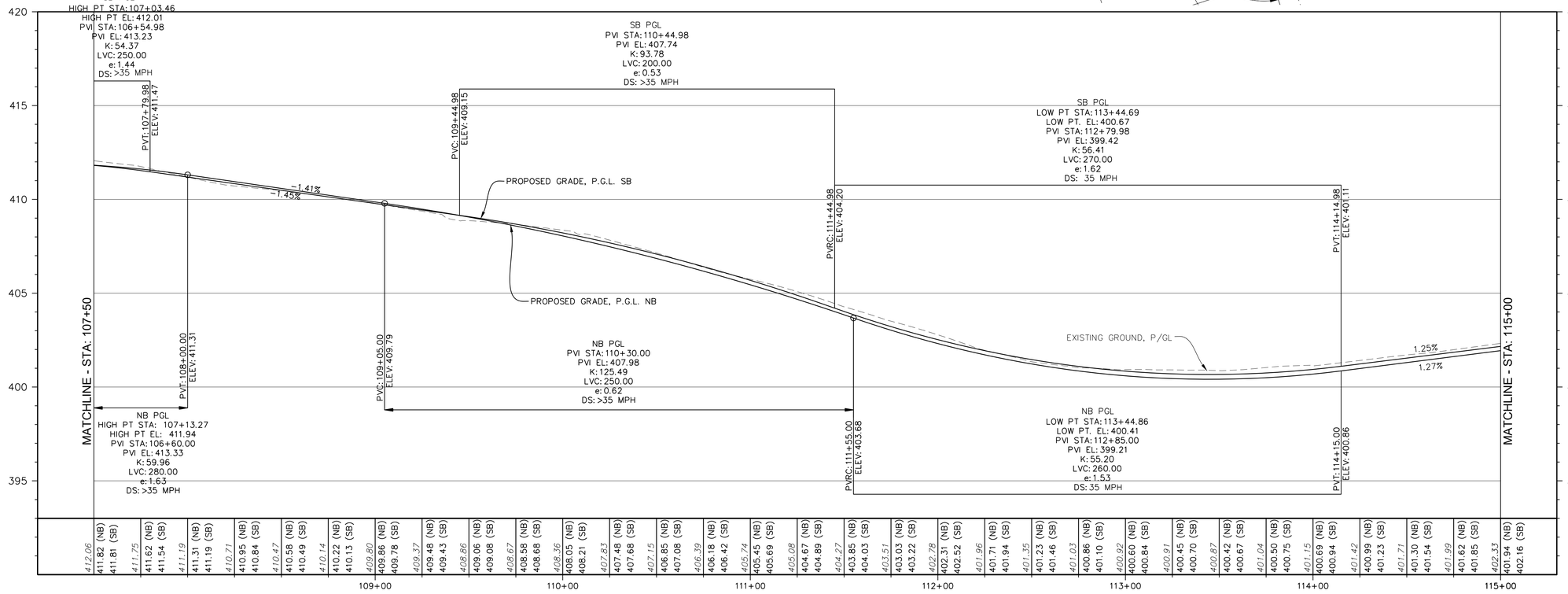
AMT FILE NO. 15-0758.007 SHEET NO. 14 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE





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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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

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

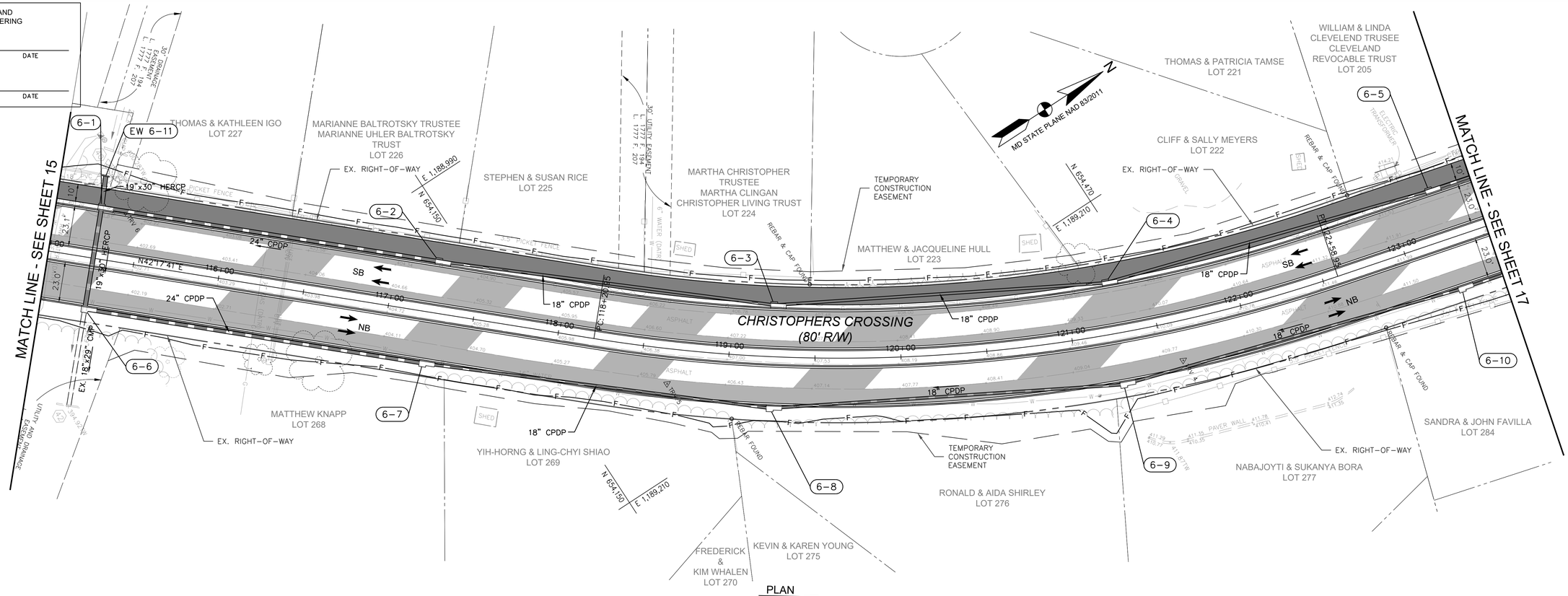
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 15 OF 118

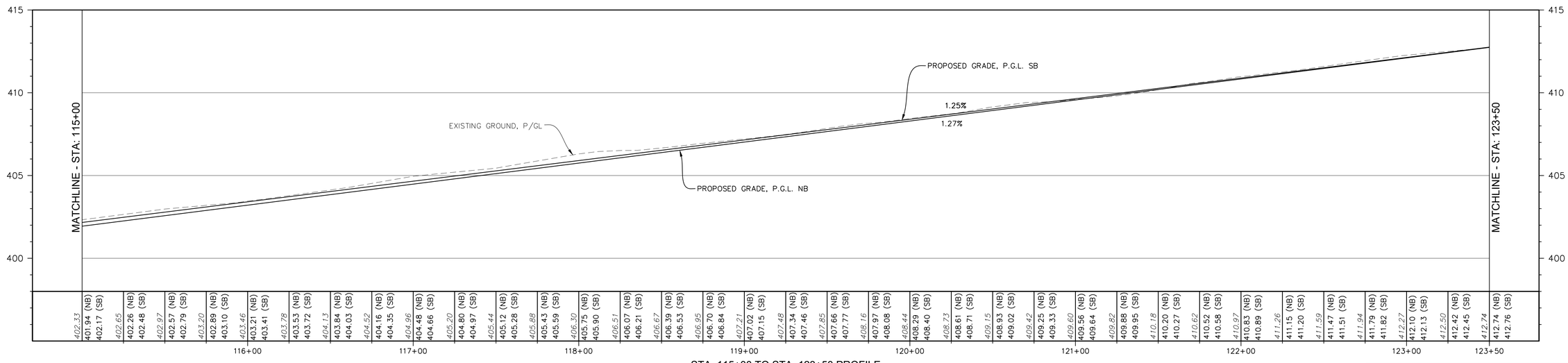
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=30'



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

PS-8

LEGEND

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

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
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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 PLAN AND PROFILE

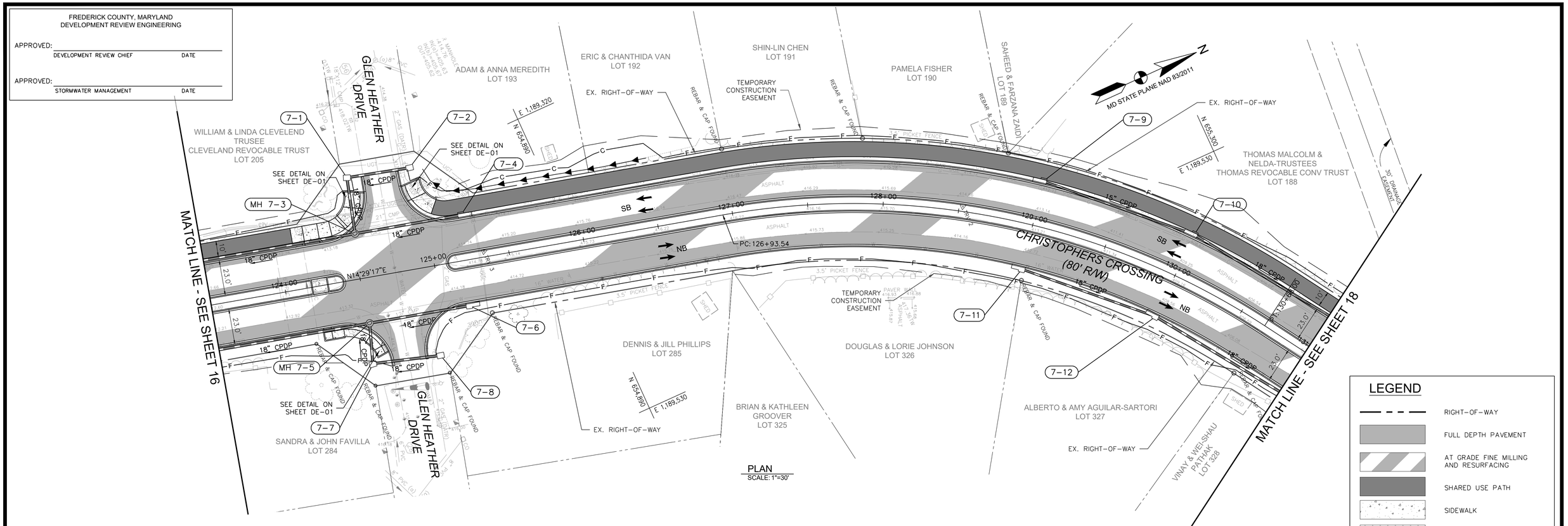
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 16 OF 118

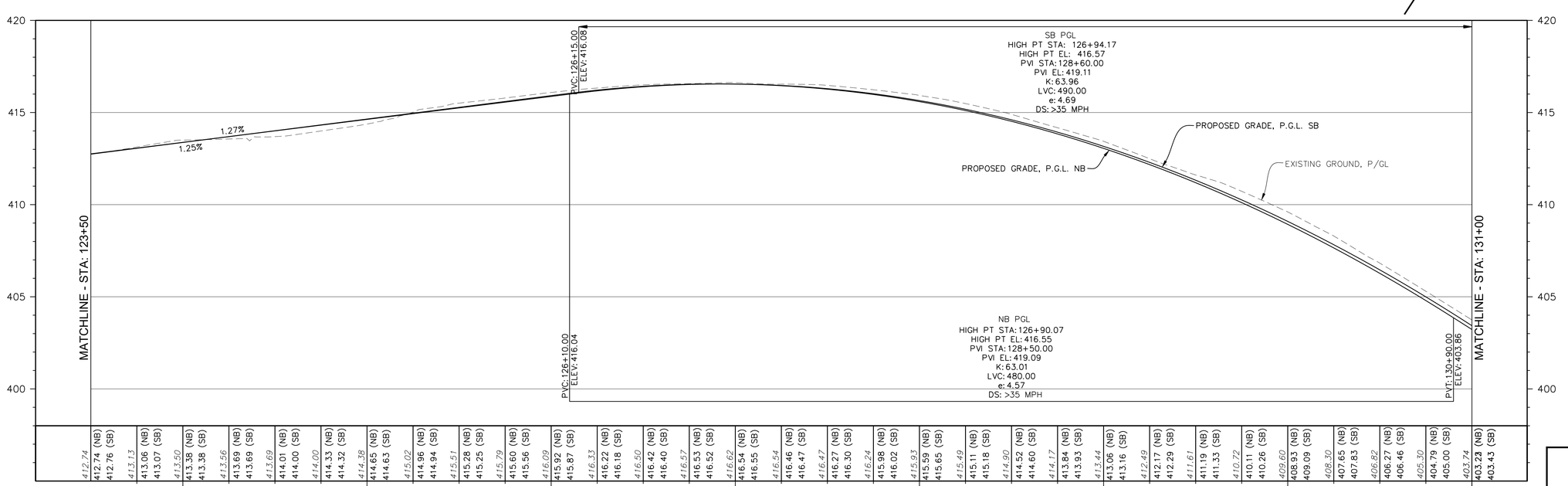
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=30'



STA. 123+50 TO STA. 131+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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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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

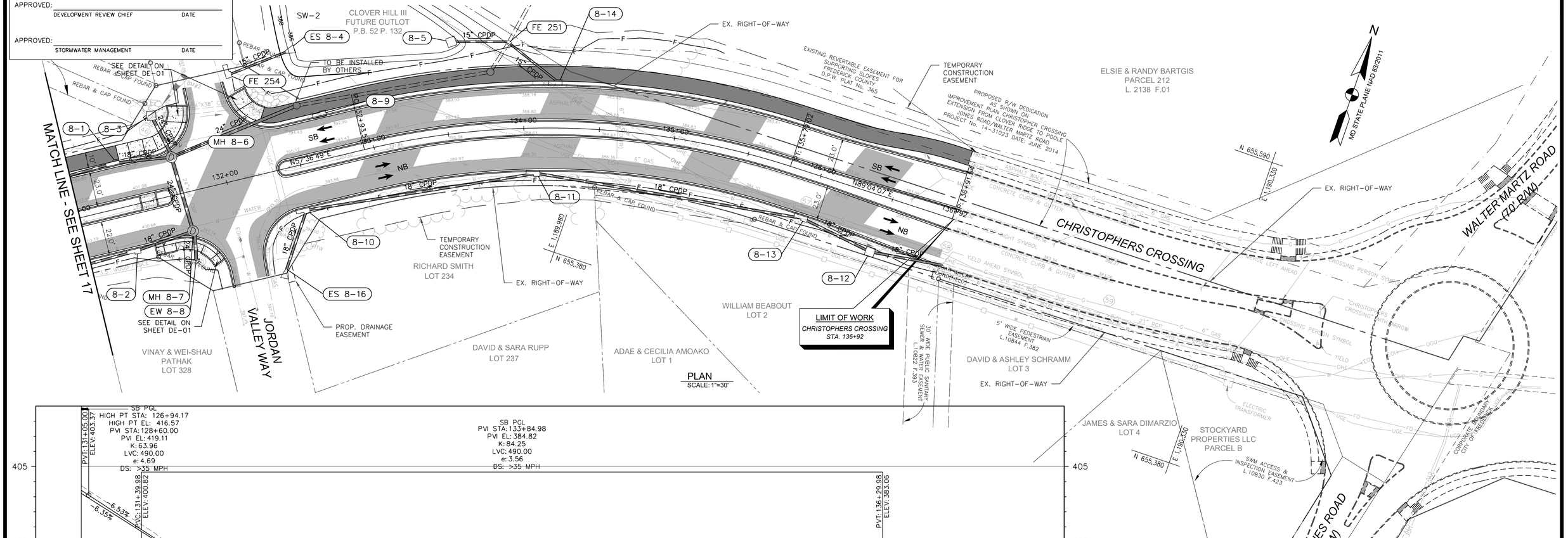
DATE: DECEMBER 2021 SCALE: 1"=30'

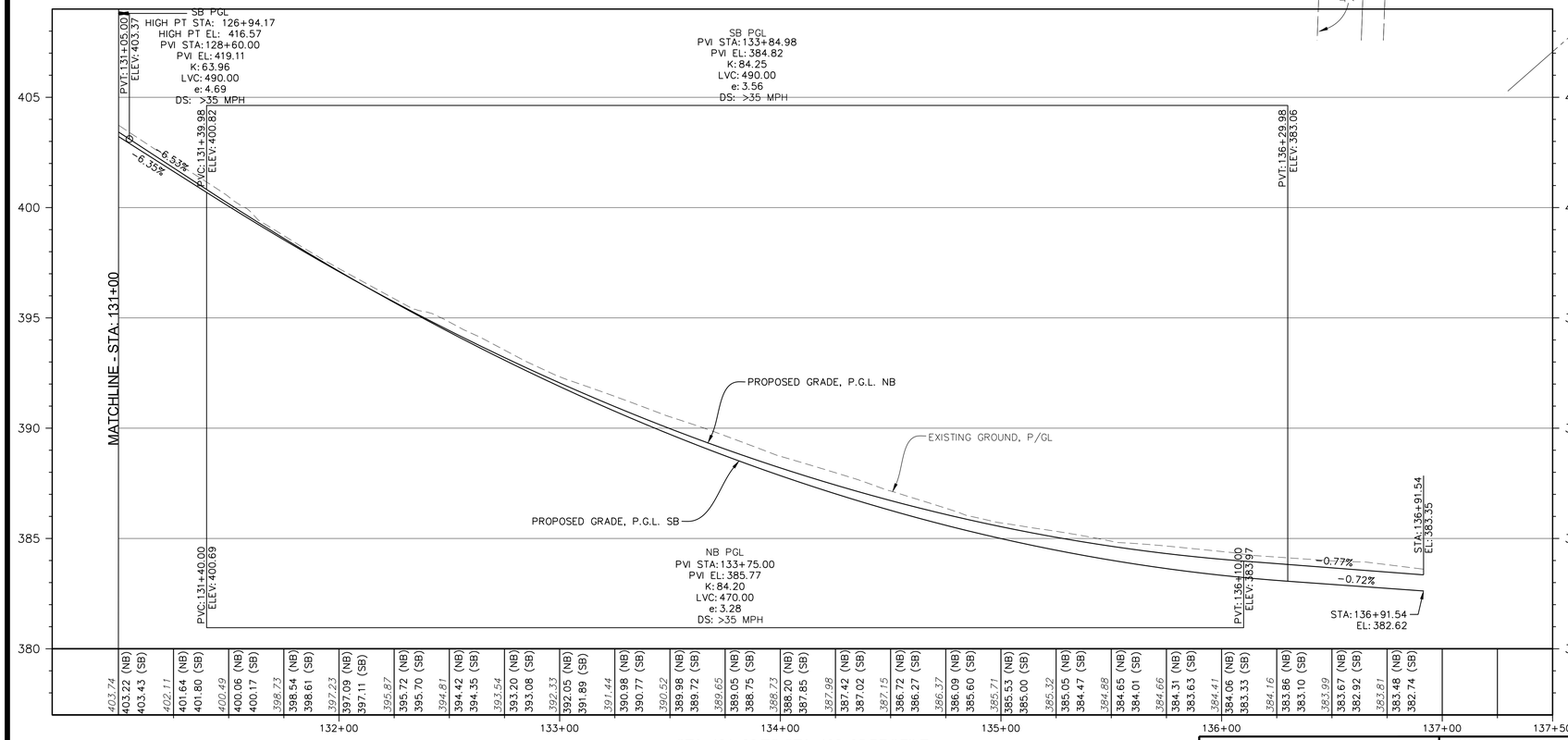
AMT FILE NO. 15-0758.007 SHEET NO. 17 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE





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

PS-10

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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CONSULTING ENGINEERS
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FREDERICK COUNTY, MARYLAND
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FREDERICK COUNTY, MARYLAND

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

ROADWAY PLAN AND PROFILE

DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 18 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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	RAB STA. 403+09.06, 17.02' RT	402.14	402.10	N 652942.7169 E 1188233.3169
302	CHRISTOPHERS CROSSING STA. 102+53.99, 17.76' RT	402.17	402.21	N 652941.9713 E 1188238.1847
303	CHRISTOPHERS CROSSING STA. 102+63.99, 15.02' RT	402.25	402.29	N 652949.3938 E 1188245.4260
304	CHRISTOPHERS CROSSING STA. 102+64.69, 13.73' RT	402.32	402.36	N 652950.8572 E 1188245.3740
305	CHRISTOPHERS CROSSING STA. 102+61.88, 5.43' RT	402.36	402.40	N 652956.5984 E 1188238.7462
306	CHRISTOPHERS CROSSING STA. 102+66.44, 7.42' LT	402.51	402.55	N 652969.9928 E 1188236.1842
307	CHRISTOPHERS CROSSING STA. 102+65.81, 8.71' LT	402.45	402.49	N 652970.7828 E 1188234.9928
308	CHRISTOPHERS CROSSING STA. 102+48.91, 15.99' LT	402.33	402.37	N 652968.5239 E 1188216.7277
309	RAB STA. 400+11.32, 15.00' RT	402.30	402.26	N 652966.8164 E 1188216.0570
310	CHRISTOPHERS CROSSING STA. 102+76.46, 11.07' RT	402.40	402.44	N 652959.1031 E 1188254.1826
311	CHRISTOPHERS CROSSING STA. 102+77.62, 11.73' RT	402.38	402.42	N 652959.1271 E 1188255.5188
312	CHRISTOPHERS CROSSING STA. 103+37.88, 3.03' RT	403.33	403.37	N 652997.1017 E 1188303.1017
313	CHRISTOPHERS CROSSING STA. 103+82.33, 3.33' RT	404.43	404.47	N 653019.3137 E 1188341.6060
314	CHRISTOPHERS CROSSING STA. 104+23.42, 5.00' RT	405.71	405.75	N 653038.6574 E 1188377.9048
315	CHRISTOPHERS CROSSING STA. 104+23.42, 5.00' LT	405.84	405.88	N 653047.2834 E 1188372.8461
316	CHRISTOPHERS CROSSING STA. 103+83.14, 6.63' LT	404.59	404.63	N 653028.3222 E 1188337.2646
317	CHRISTOPHERS CROSSING STA. 103+13.77, 4.47' LT	403.05	403.09	N 652991.3819 E 1188278.5087
318	CHRISTOPHERS CROSSING STA. 102+79.29, 5.22' LT	402.57	402.61	N 652974.5919 E 1188248.3835
319	CHRISTOPHERS CROSSING STA. 102+78.16, 4.57' LT	402.60	402.64	N 652973.4625 E 1188247.7381
320	CHRISTOPHERS CROSSING STA. 102+74.58, 5.52' RT	402.47	402.51	N 652962.9425 E 1188249.7503

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

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CONSULTING ENGINEERS
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RL-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

ROUNDABOUT LAYOUT

DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 19 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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

B/L CONSTRUCTION N. YELLOW SPRINGS ROAD

B/L CONSTRUCTION ROUNDABOUT

B/L CONSTRUCTION CHRISTOPHERS CROSSING

B/L CONSTRUCTION S. YELLOW SPRINGS RD

N. Yellow Springs Rd – POT STA: 202+50.40 = Roundabout – POC STA: 400+75.50

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

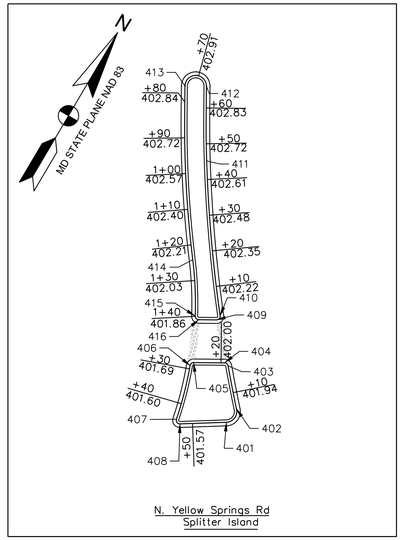
Christophers Crossing – POT STA: 101+32.70 = Roundabout – PCC STA: 401+54.12

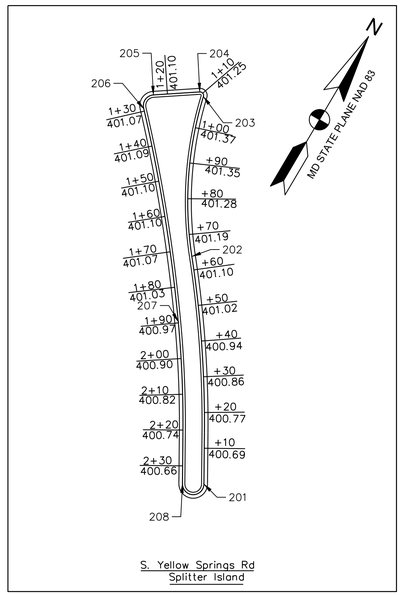
Christophers Crossing – POT STA: 102+34.46 = Roundabout – PC STA: 400+00.00

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

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

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





SCALE: 1"=20'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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RL-2

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

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

ROUNDABOUT LAYOUT

DATE: DECEMBER 2021 SCALE:

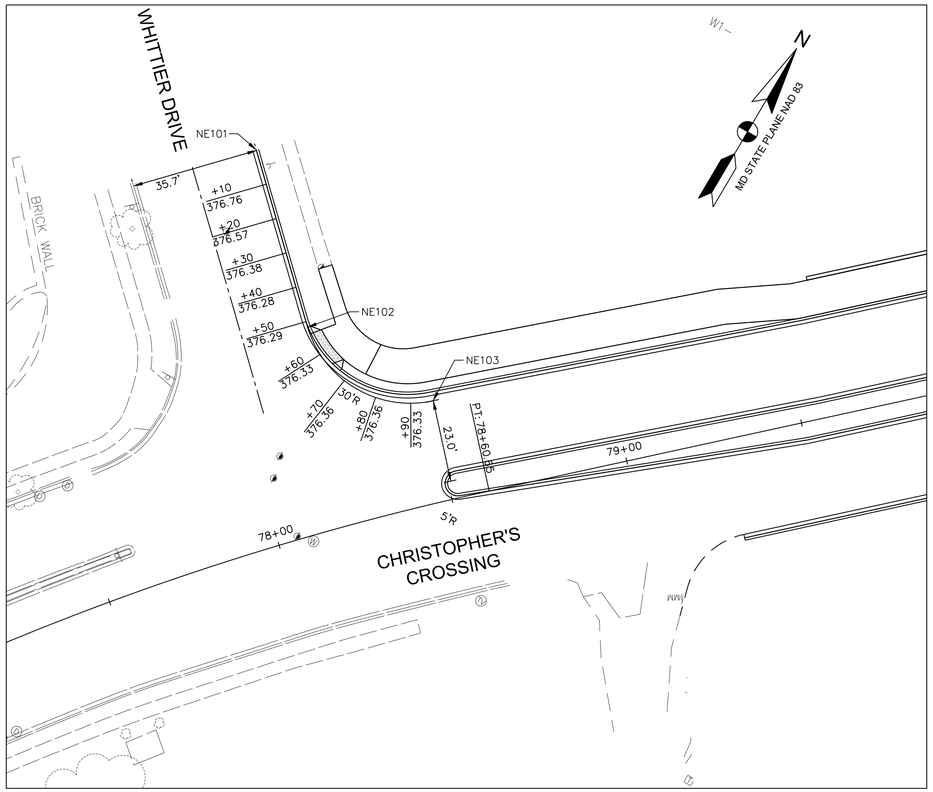
AMT FILE NO. 15-0758.007 SHEET NO. 20 OF 118

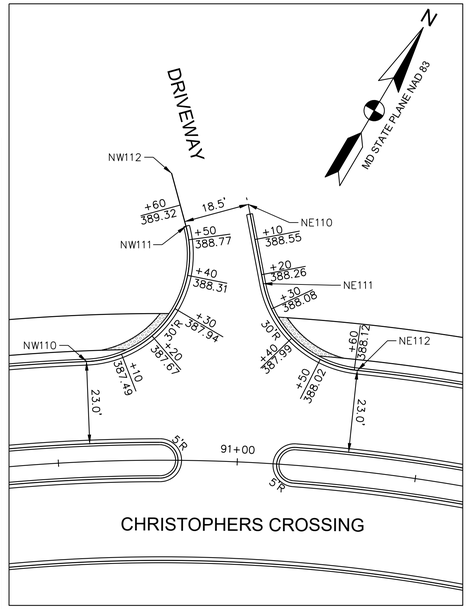
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

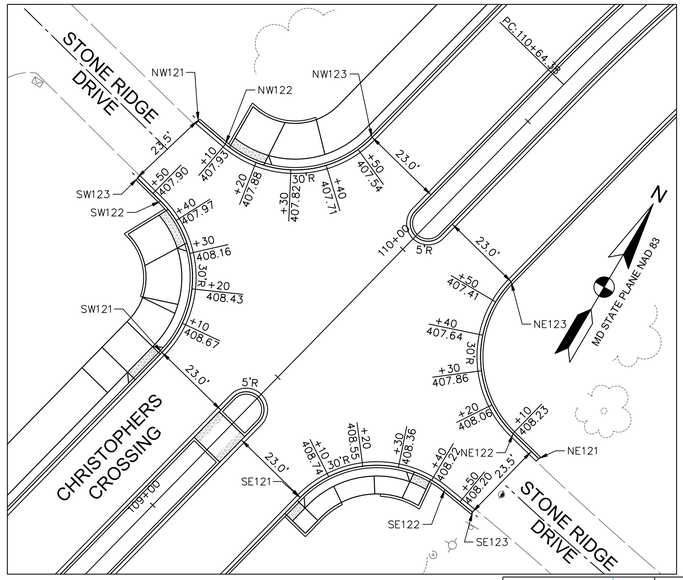
APPROVED: _____
STORMWATER MANAGEMENT DATE

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	376.34	376.30	N 651606.5846 E 1186319.8562
NE103	CHRISTOPHERS CROSSING STA. 78+51.05, 28.06' LT	376.33	376.29	N 651606.7015 E 1186360.5246



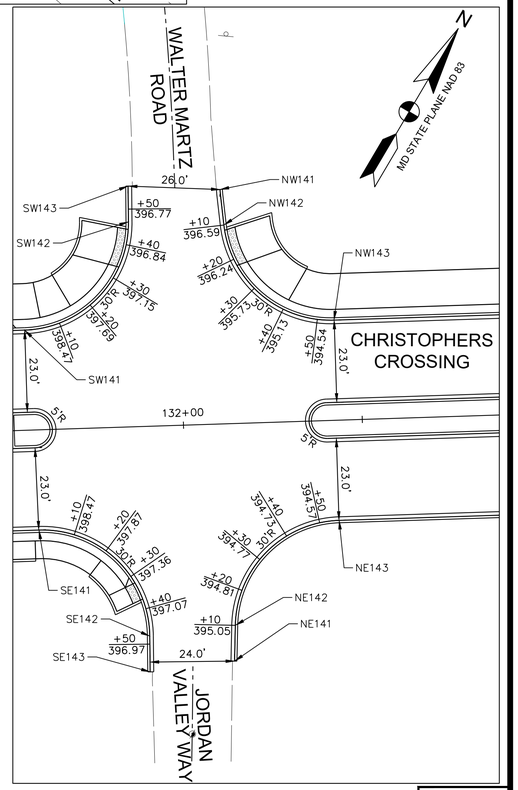


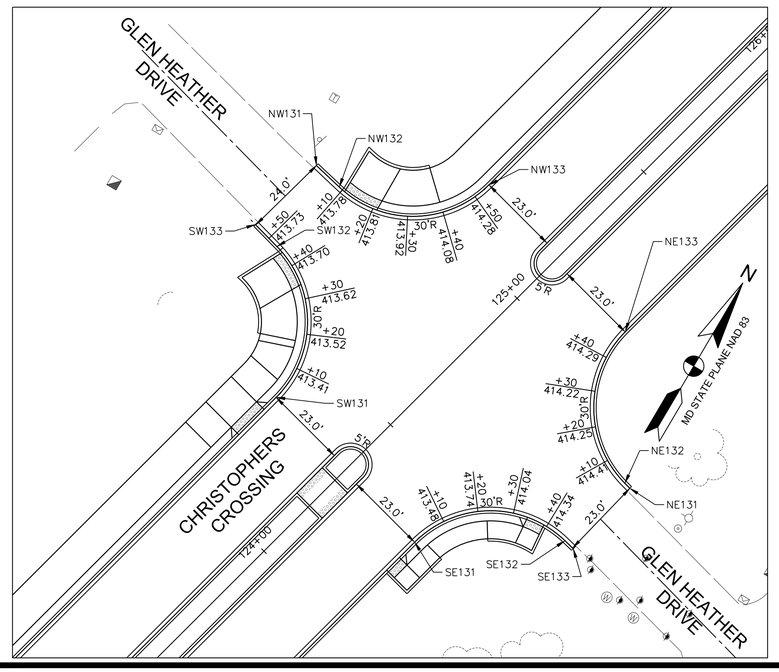
STAKEOUT INFORMATION - DRIVEWAY				
NO.	POINT INFORMATION	EDGE OF ROAD	FLOWLINE	COORDINATES
NW110	CHRISTOPHERS CROSSING STA. 90+59.01, 28.00' LT	387.43	387.39	N 652551.7994 E 1187105.7035
NW111	CHRISTOPHERS CROSSING STA. 90+84.85, 65.47' LT	389.02	388.98	N 652598.4915 E 1187110.3910
NW112	CHRISTOPHERS CROSSING STA. 90+81.24, 80.20' LT	389.93	389.89	N 652609.1745 E 1187099.4354
NE110	CHRISTOPHERS CROSSING STA. 90+99.99, 72.05' LT	388.98	388.94	N 652612.5994 E 1187122.2974
NE111	CHRISTOPHERS CROSSING STA. 91+04.66, 50.12' LT	388.25	388.21	N 652595.6447 E 1187137.1641
NE112	CHRISTOPHERS CROSSING STA. 91+30.76, 28.00' LT	388.16	388.12	N 652588.1264 E 1187172.1653



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 - 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	413.36	413.32	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 - 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+12.32, 65.52' LT	396.84	396.80	N 655415.4726 E 1189735.8020
NW142	CHRISTOPHERS CROSSING STA. 132+13.09, 55.55' LT	396.63	396.59	N 655407.4634 E 1189741.7894
NW143	CHRISTOPHERS CROSSING STA. 132+42.99, 28.00' LT	394.31	394.27	N 655400.2130 E 1189781.7956

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'

DE-02

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
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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

INTERSECTION DETAILS

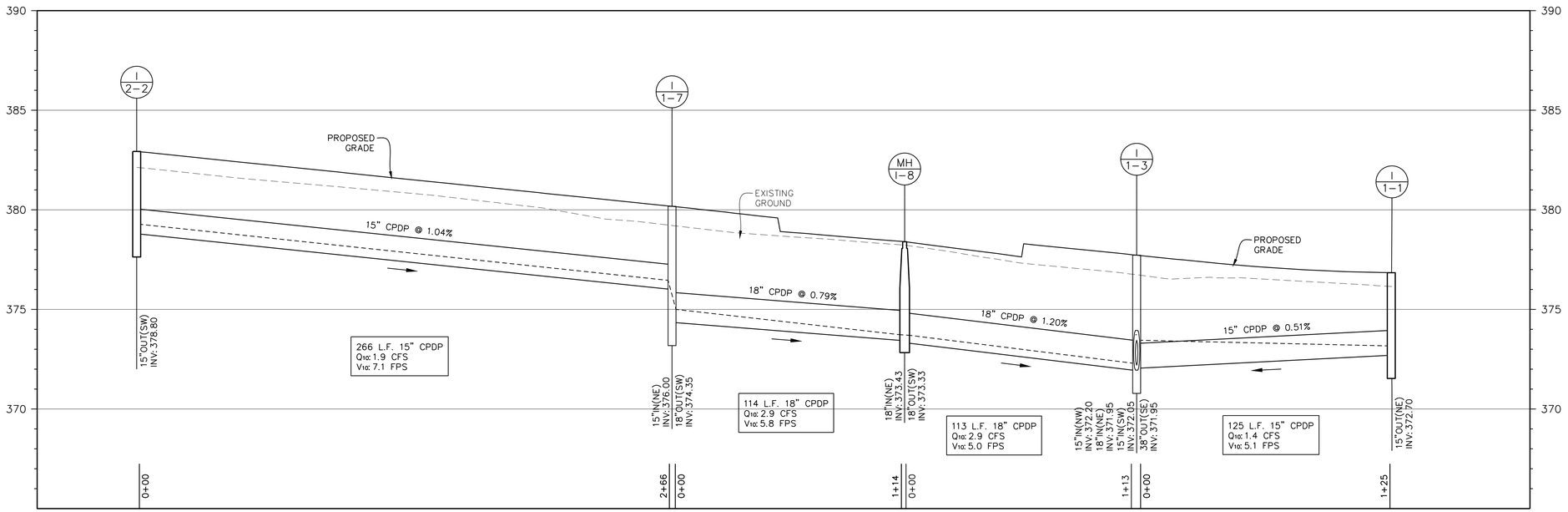
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 21 OF 118

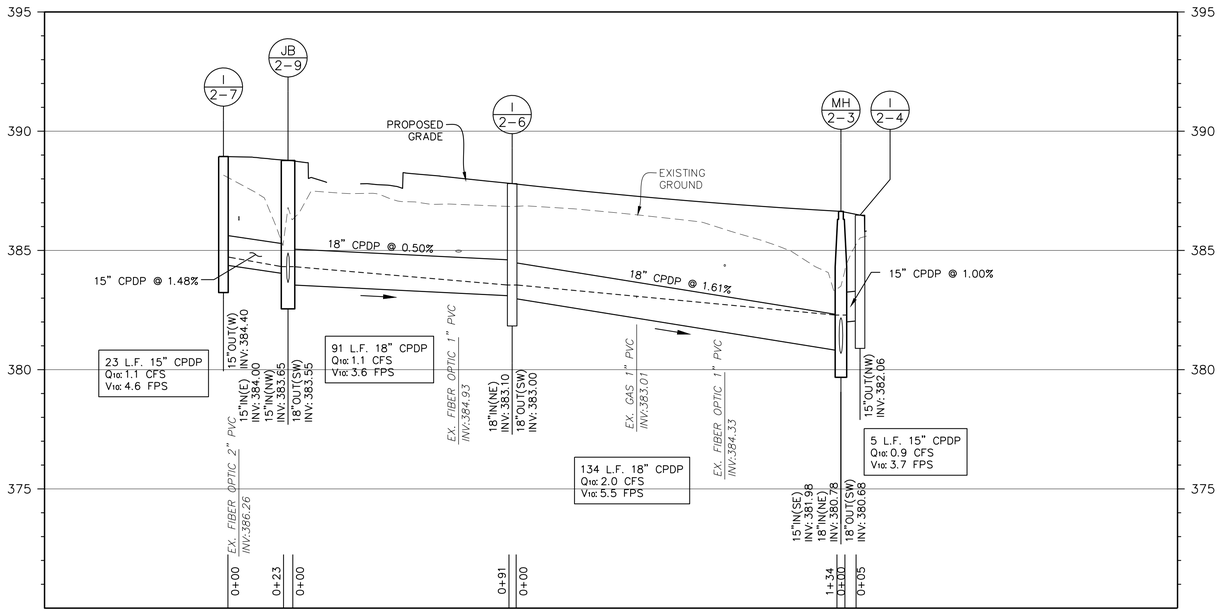
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

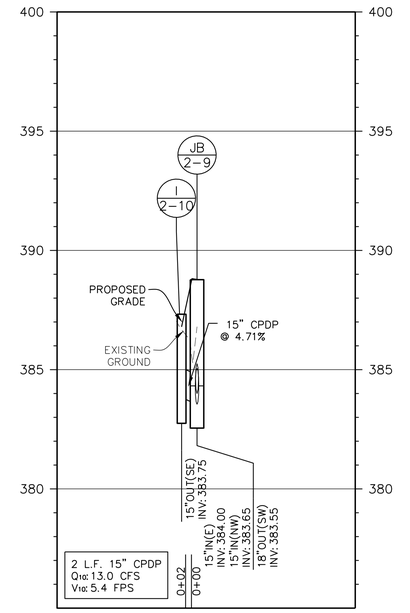
APPROVED: _____
STORMWATER MANAGEMENT DATE



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



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



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

DD-1

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

DRAINAGE PROFILE

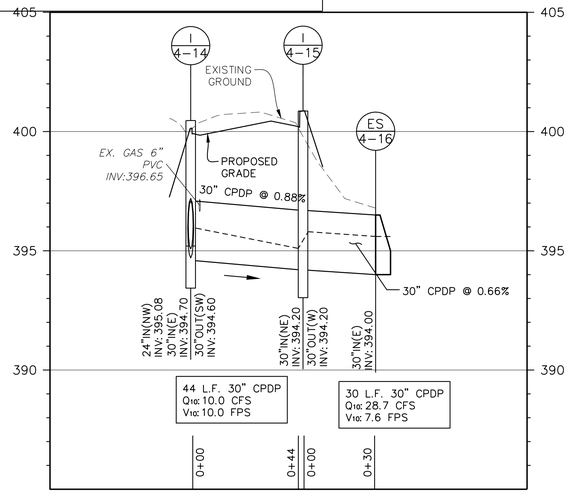
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AMT FILE NO. 15-0758.007 SHEET NO. 22 OF 118

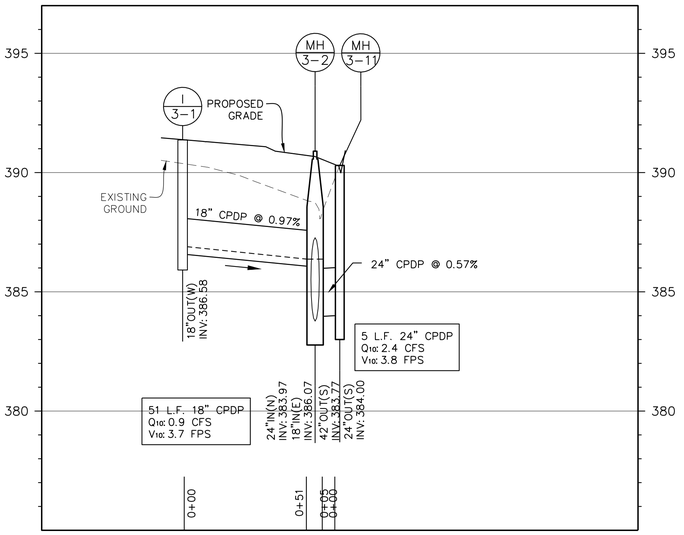
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

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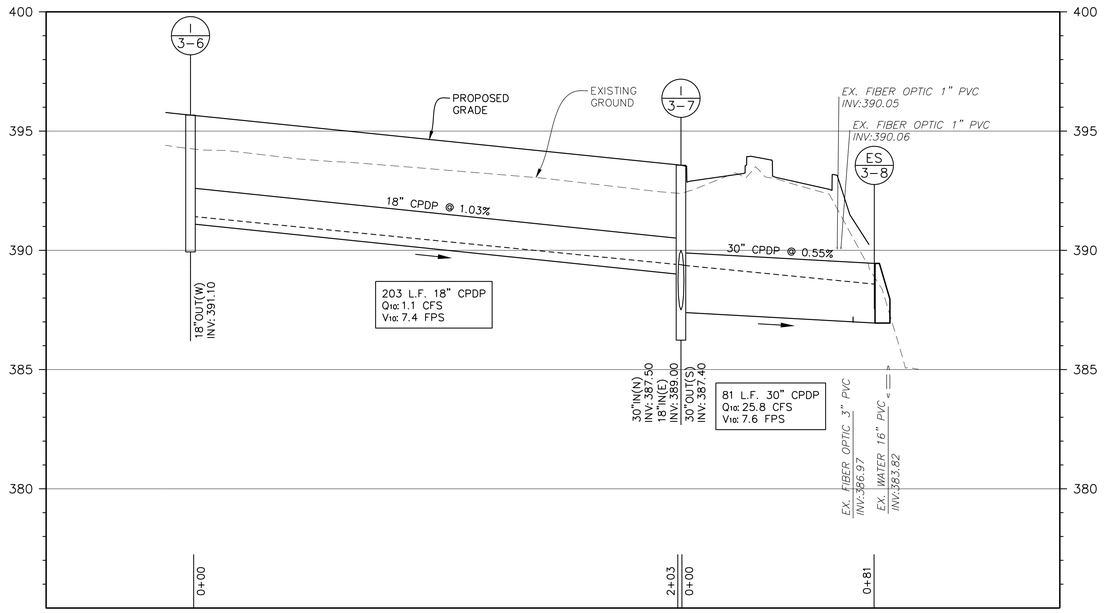
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STORMWATER MANAGEMENT DATE



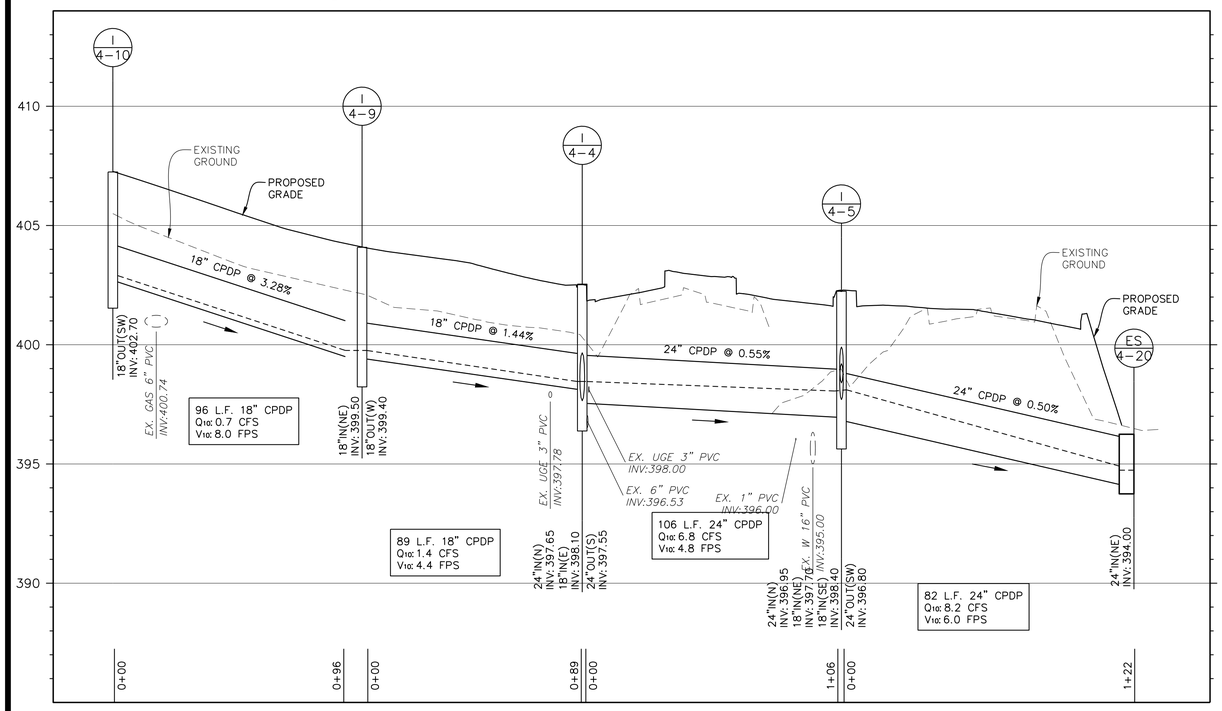
END SECTION 4-13 TO END SECTION 4-16
SCALE: HORZ 1"=30'
VERT 1"=3'



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



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



INLET 4-10 TO ES 4-20
SCALE: HORZ 1"=30'
VERT 1"=3'

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

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

DD-2

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

DRAINAGE PROFILE

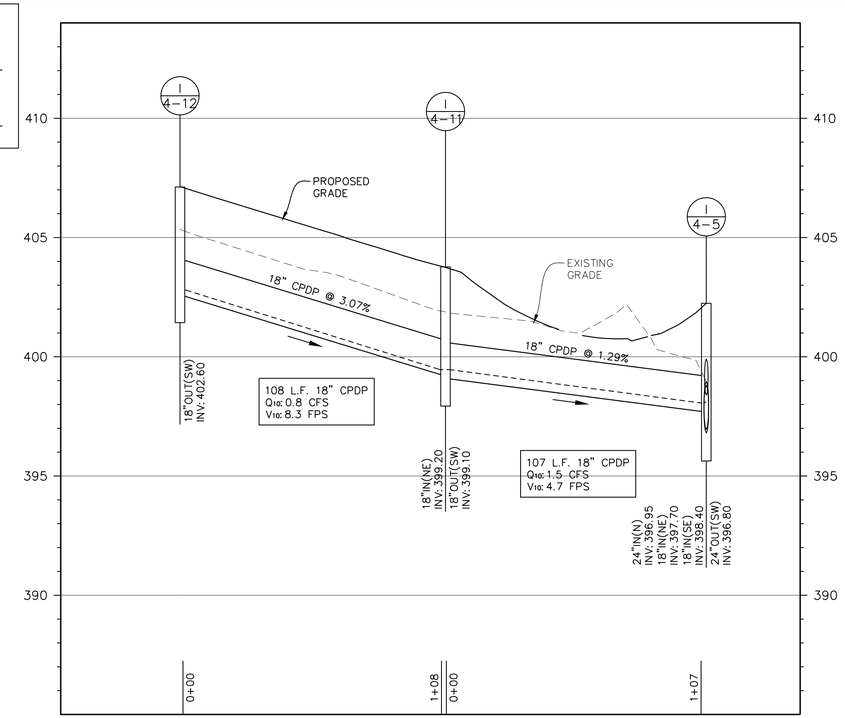
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AMT FILE NO. 15-0758.007 SHEET NO. 23 OF 118

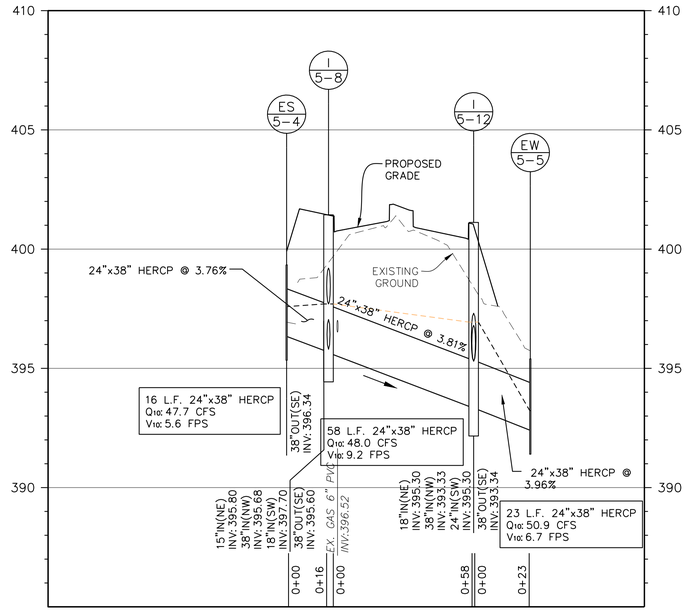
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

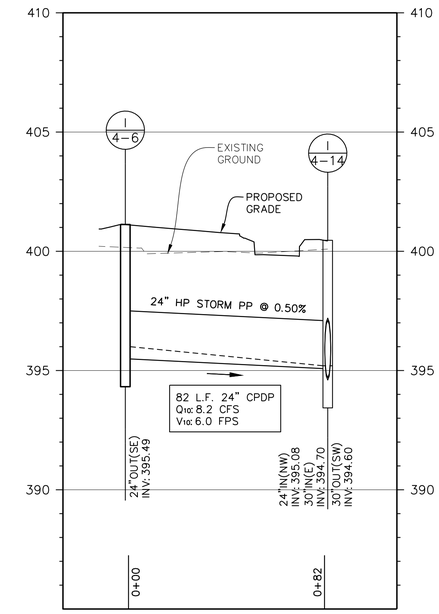
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STORMWATER MANAGEMENT DATE



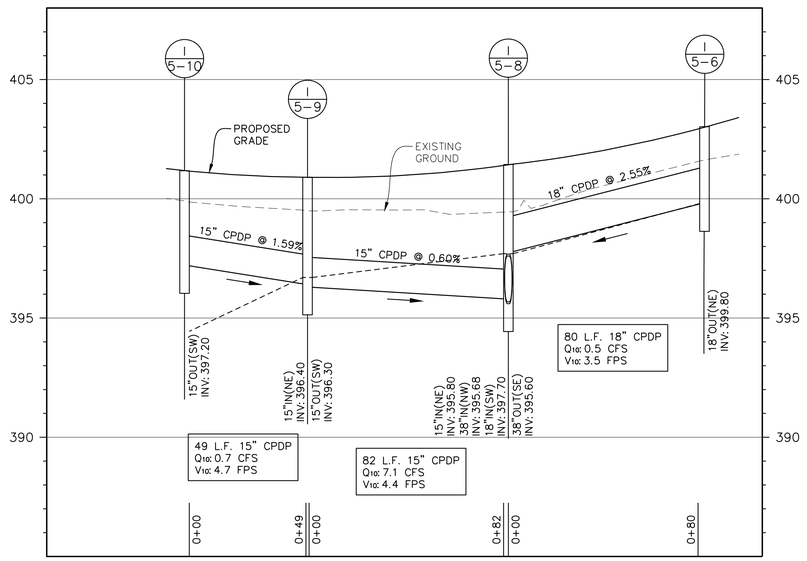
INLET 4-12 TO INLET 4-5
SCALE: HORZ 1"=30'
VERT 1"=3'



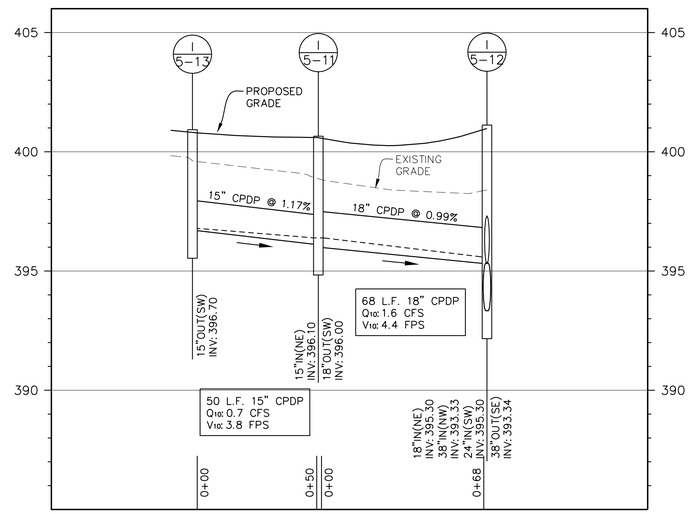
INLET 5-4 TO INLET 5-12
SCALE: HORZ 1"=30'
VERT 1"=3'



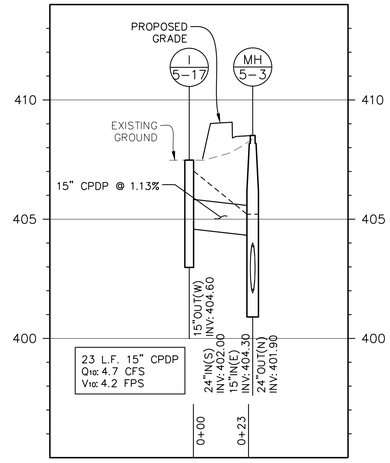
INLET 4-6 TO INLET 4-14
SCALE: HORZ 1"=30'
VERT 1"=3'



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



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



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

DD-3

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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FREDERICK COUNTY, MARYLAND
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FREDERICK COUNTY, MARYLAND

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

DRAINAGE PROFILE

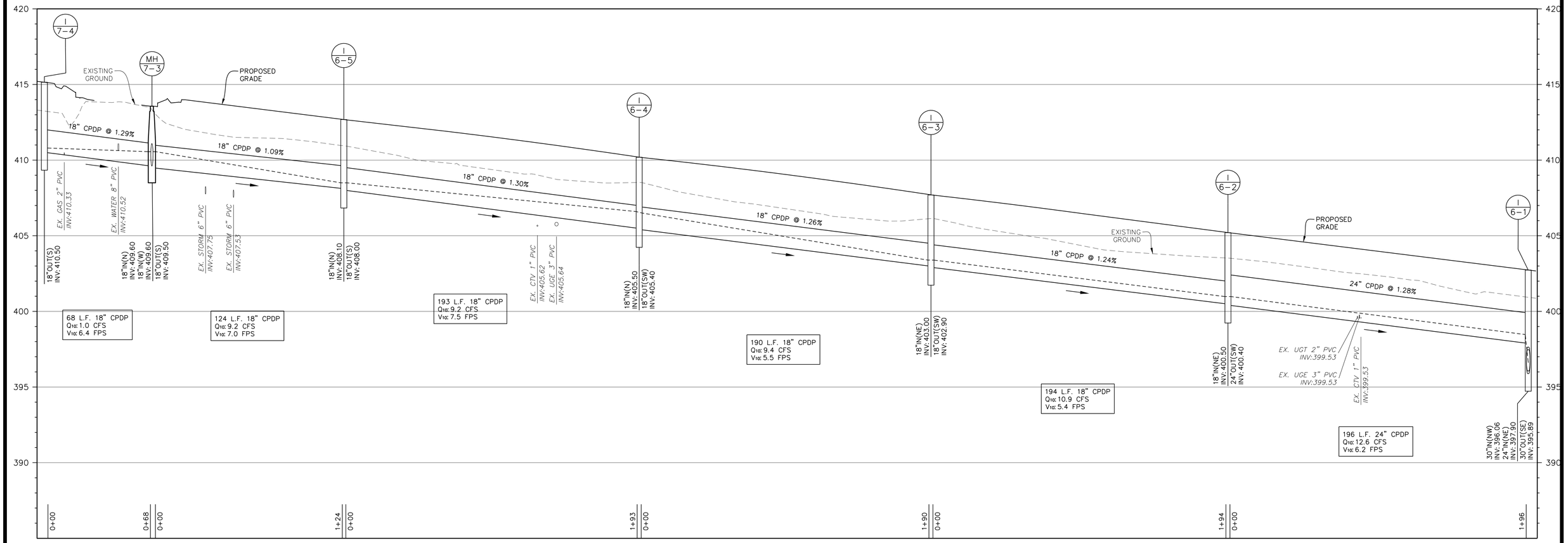
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 24 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



INLET 7-4 TO INLET 6-1
SCALE: HORZ 1"=30'
VERT 1"=3'

DD-4

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
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OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

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

DRAINAGE PROFILE

DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 25 OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

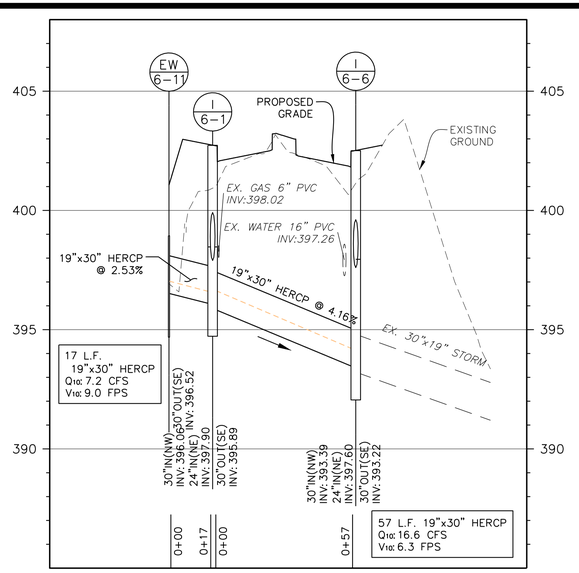
REGISTRATION STAMP

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CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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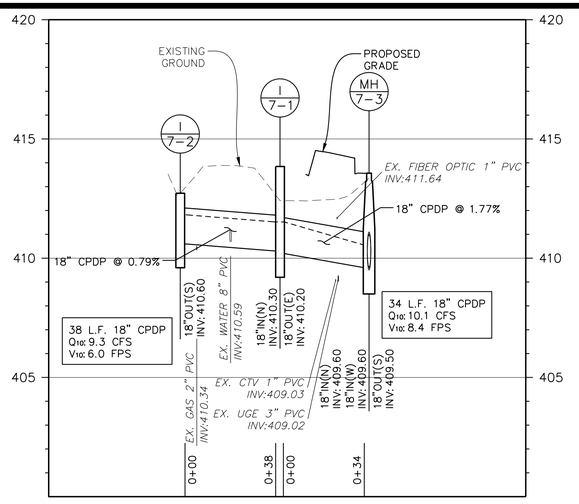
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

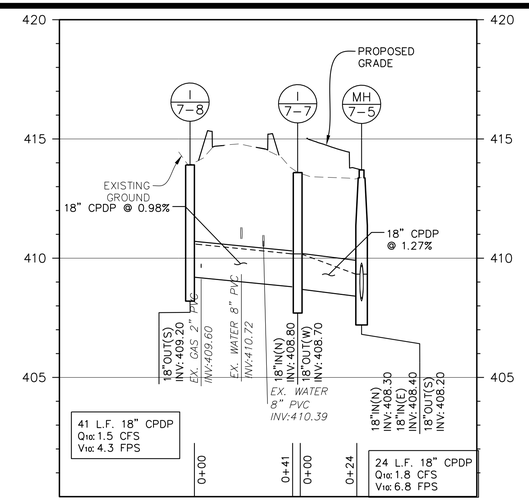
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STORMWATER MANAGEMENT DATE



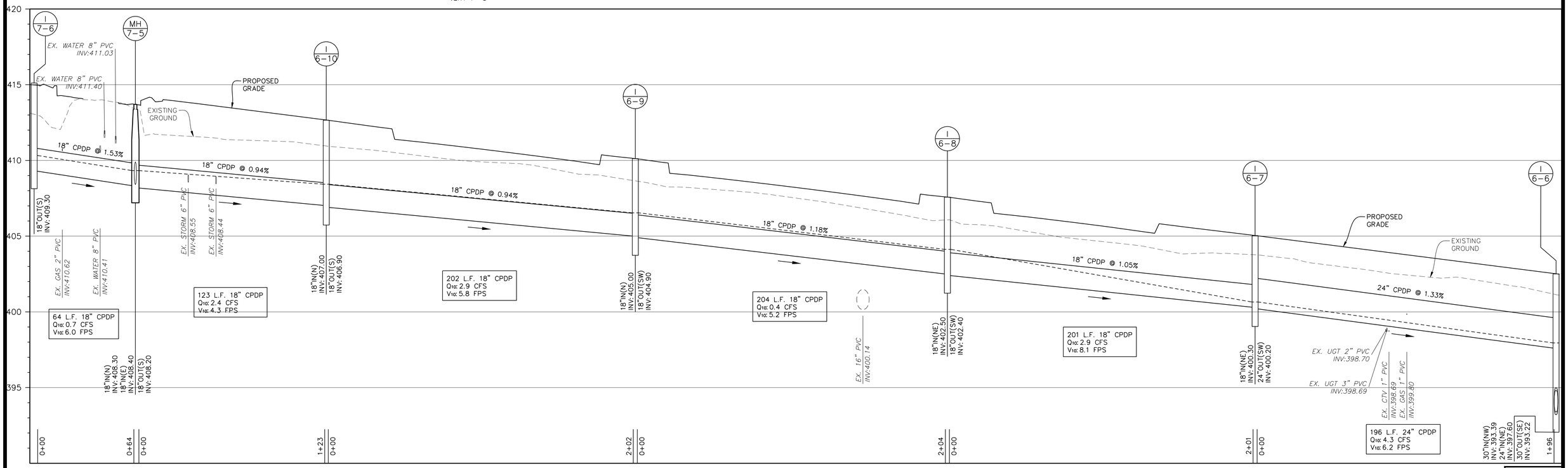
INLET 6-11 TO EXISTING OUTFALL
SCALE: HORZ 1"=30'
VERT 1"=3'



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



INLET 7-8 TO INLET 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

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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

DRAINAGE PROFILE

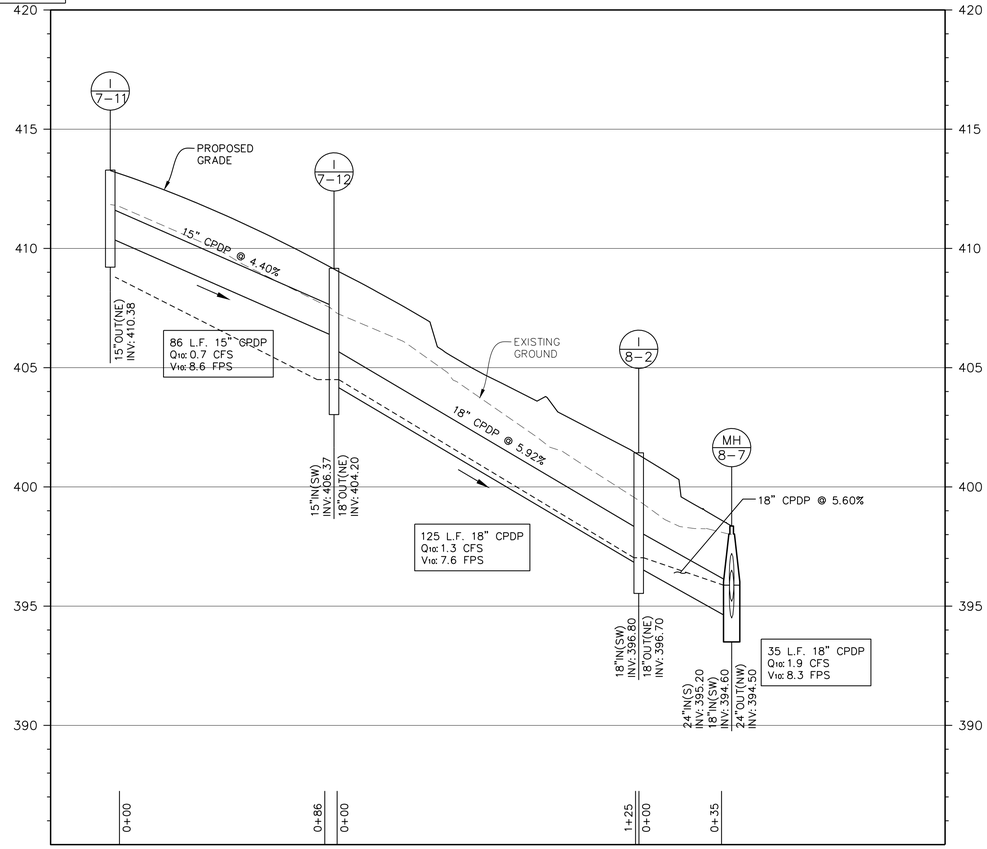
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 26 OF 118

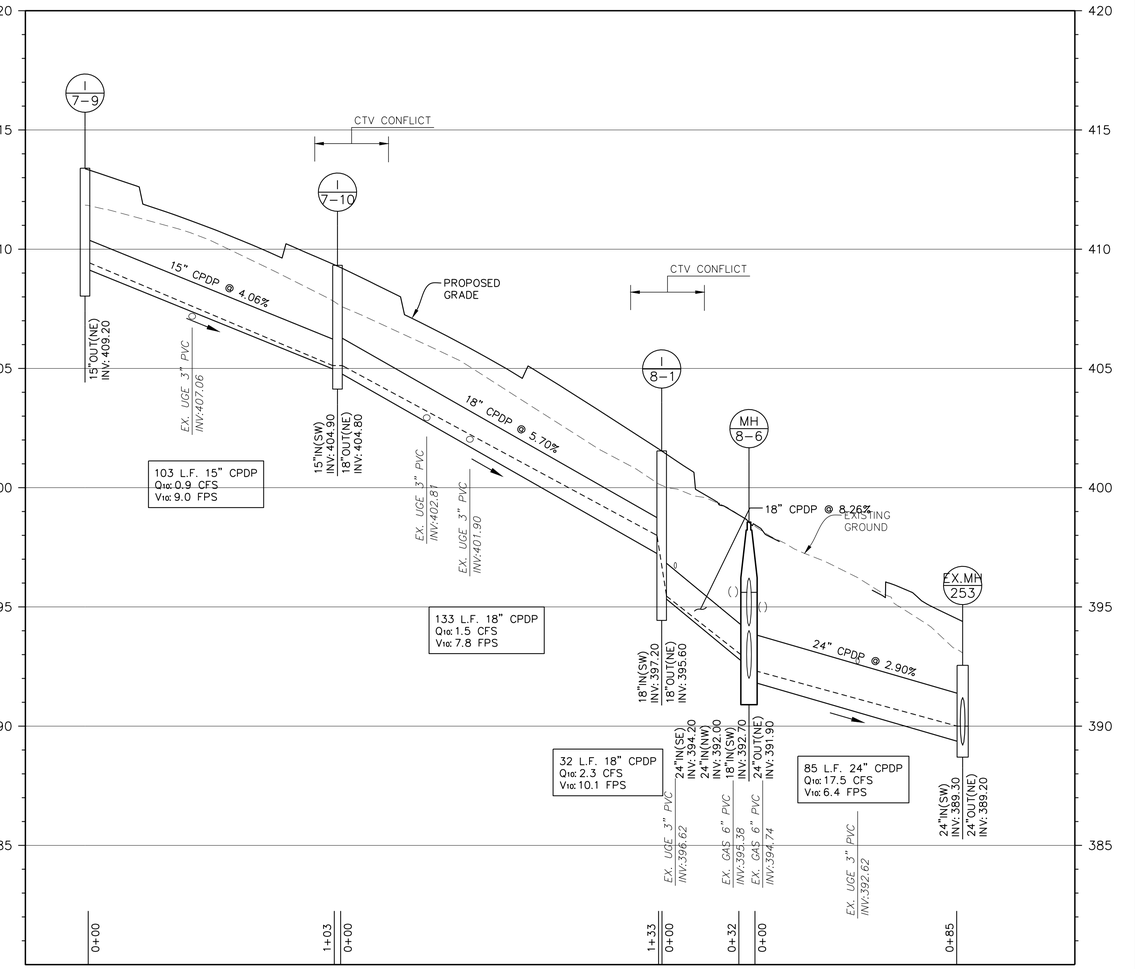
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

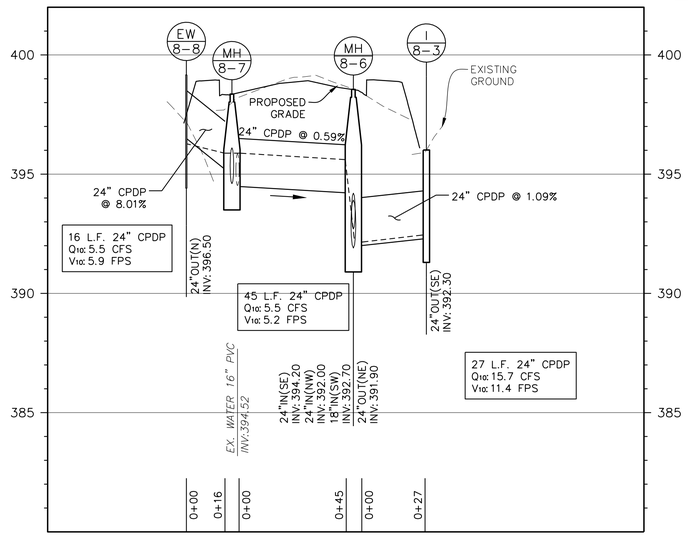
APPROVED: _____
STORMWATER MANAGEMENT DATE



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



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



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

DD-6

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
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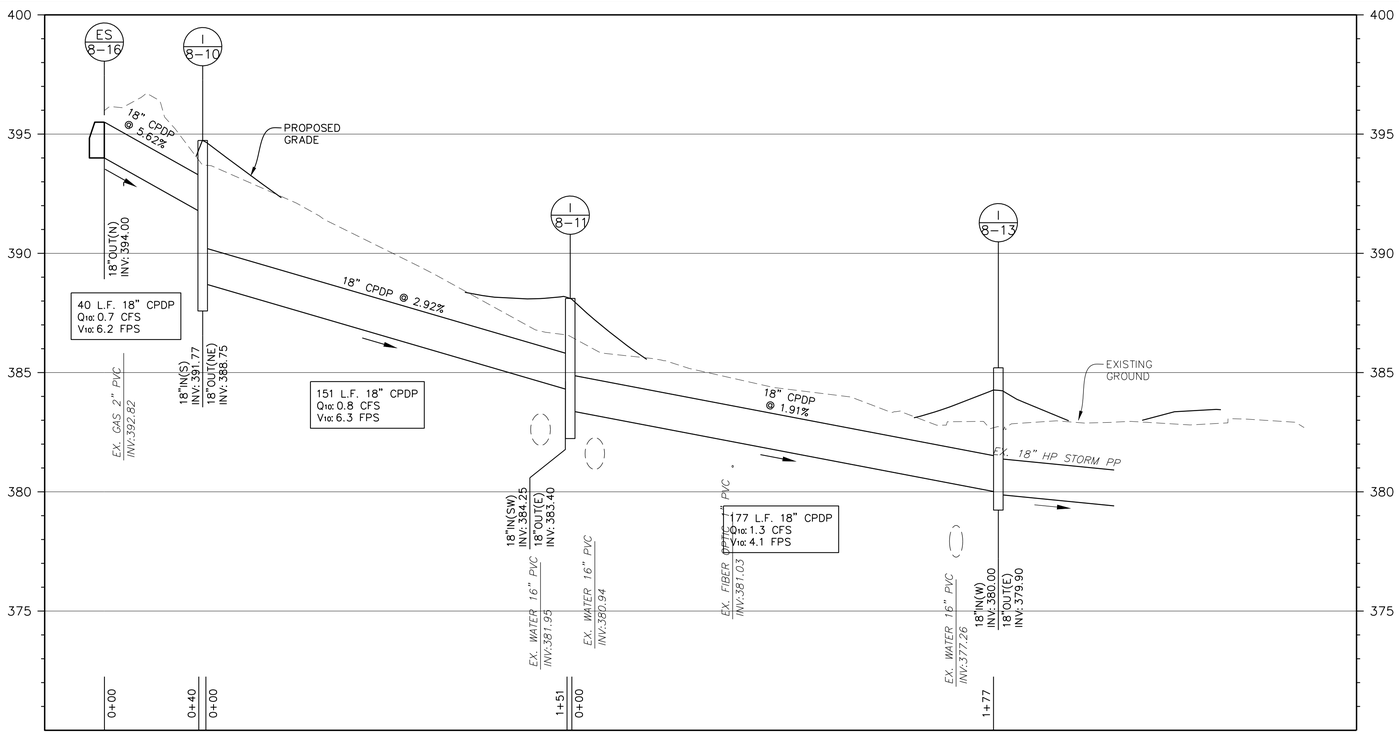
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AMT FILE NO. 15-0758.007 SHEET NO. 27 OF 118

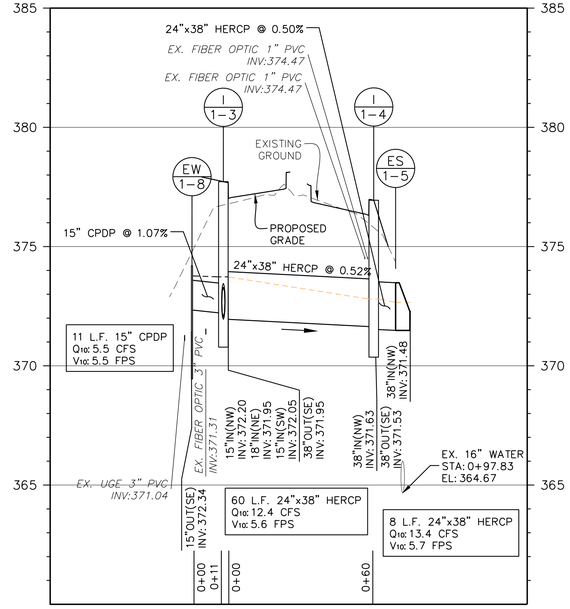
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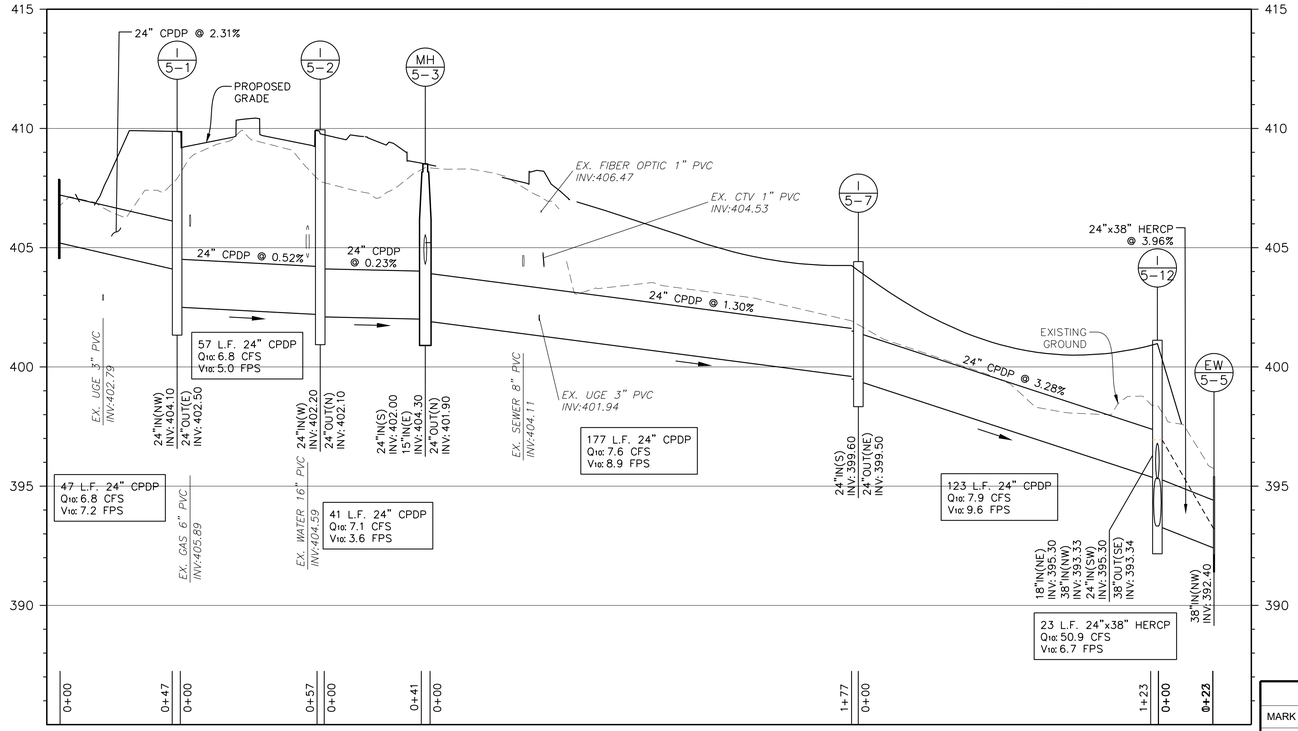
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STORMWATER MANAGEMENT DATE



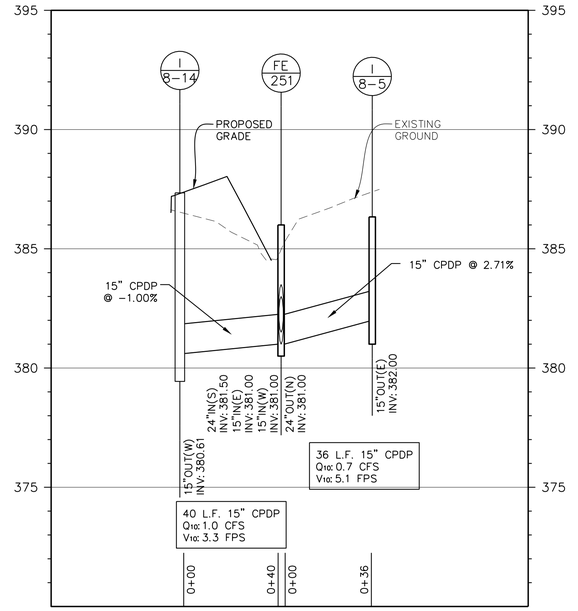
ENS SECTION 8-16 TO INLET 8-13
SCALE: HORZ 1"=30'
VERT 1"=3'



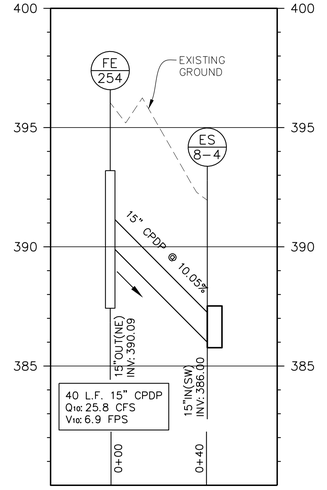
END SECTION 1-8 TO END SECTION 1-5
SCALE: HORZ 1"=30'
VERT 1"=3'



END SECTION 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'



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

DD-7

REVISIONS		
MARK	DATE	DESCRIPTION

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DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 28 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

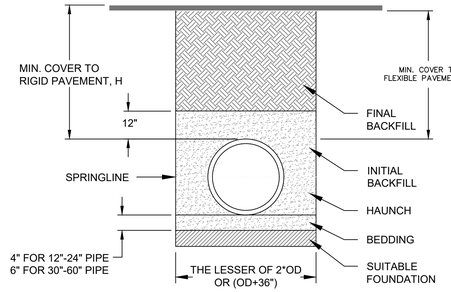
APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

PIPE TABLE				
FROM	TO	SIZE	MATERIAL	LENGTH (FT)
1-1	1-3	15"	15" CPDP	125'
1-3	1-4	38"	24"x38" HERCP	60'
1-4	ES 1-5	38"	24"x38" HERCP	8'
1-7	MH 1-8	18"	18" CPDP	114'
2-2	1-7	15"	15" CPDP	266'
2-4	2-3	15"	15" CPDP	5'
2-6	2-3	18"	18" CPDP	134'
2-7	JB 2-9	15"	15" CPDP	23'
3-1	MH 3-2	18"	18" CPDP	51'
3-6	3-7	18"	18" CPDP	203'
3-7	ES 3-8	30"	30" CPDP	81'
4-1	4-2	18"	18" CPDP	61'
4-2	4-18	18"	18" CPDP	11'
4-4	4-5	24"	24" CPDP	106'
4-5	ES 4-20	24"	24" CPDP	122'
4-9	4-4	18"	18" CPDP	89'
4-10	4-9	18"	18" CPDP	96'
4-11	4-5	18"	18" CPDP	107'
4-12	4-11	18"	18" CPDP	108'
4-15	ES 4-16	30"	30" CPDP	30'
5-1	5-2	24"	24" CPDP	57'
5-2	MH 5-3	24"	24" CPDP	41'
5-7	5-12	24"	24" CPDP	123'
5-8	5-12	38"	24"x38" HERCP	58'
5-10	5-9	15"	15" CPDP	49'
5-11	5-12	18"	18" CPDP	68'
5-12	EW 5-5	38"	24"x38" HERCP	23'
5-13	5-11	15"	15" CPDP	50'
5-17	MH 5-3	15"	15" CPDP	23'
6-1	6-6	30"	19"x30" HERCP	57'
6-2	6-1	24"	24" CPDP	196'
6-3	6-2	18"	18" CPDP	194'
6-4	6-3	18"	18" CPDP	190'
6-5	6-4	18"	18" CPDP	193'
6-7	6-6	24"	24" CPDP	196'
6-8	6-7	18"	18" CPDP	201'
6-9	6-8	18"	18" CPDP	204'
6-10	6-9	18"	18" CPDP	202'
7-1	MH 7-3	18"	18" CPDP	34'
7-2	7-1	18"	18" CPDP	38'

PIPE TABLE				
FROM	TO	SIZE	MATERIAL	LENGTH (FT)
7-4	MH 7-3	18"	18" CPDP	68'
7-6	MH 7-5	18"	18" CPDP	64'
7-7	MH 7-5	18"	18" CPDP	24'
7-8	7-7	18"	18" CPDP	41'
7-9	7-10	15"	15" CPDP	103'
7-10	8-1	18"	18" CPDP	133'
7-11	7-12	15"	15" CPDP	86'
7-12	8-2	18"	18" CPDP	125'
8-1	MH 8-6	18"	18" CPDP	32'
8-2	MH 8-7	18"	18" CPDP	35'
8-3	MH 8-6	24"	24" CPDP	27'
8-5	FE 251	15"	15" CPDP	36'
8-10	8-11	18"	18" CPDP	151'
8-11	8-13	18"	18" CPDP	177'
8-14	FE 251	15"	15" CPDP	40'
ES 4-17	4-14	30"	30" CPDP	4'
ES 8-16	8-10	18"	18" CPDP	40'
EW 1-8	1-3	15"	15" CPDP	11'
EW 4-3	4-4	24"	24" CPDP	18'
EW 4-19	4-5	18"	18" CPDP	5'
EW 5-16	5-1	24"	24" CPDP	47'
EW 6-11	6-1	30"	19"x30" HERCP	17'
EW 8-8	MH 8-7	24"	24" CPDP	16'
EX. INLET 9	3-9	30"	30" CPDP	74'
FE 254	ES 8-4	15"	15" CPDP	40'
JB 2-9	2-6	18"	18" CPDP	91'
MH 1-8	1-3	18"	18" CPDP	113'
MH 5-3	5-7	24"	24" CPDP	177'
MH 7-3	6-5	18"	18" CPDP	124'
MH 7-5	6-10	18"	18" CPDP	123'
MH 8-6	EX. MH 253	24"	24" CPDP	85'
MH 8-7	MH 8-6	24"	24" CPDP	45'

CORRUGATED POLYPROPYLENE DRAINAGE PIPE (CPDP) TRENCH DETAIL



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.

TABLE 1, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	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 .

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

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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.

TYPICAL STORM TRENCH DETAIL
HP STORM - MARYLAND

DRAWING NUMBER: STD-XXX

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

DRAWN BY:
DATE:
CHK'D BY:
SCALE: NTS
SHEET 1 OF 1

DD-9

REVISIONS		
MARK	DATE	DESCRIPTION

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

DRAINAGE PIPE SCHEDULES

DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 29 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

STRUCTURE SCHEDULE

STRUCTURE	STATION	OFFSET	TYPE	TOP	INVERT IN	INVERT OUT
1–2	79+29.54	30.03' R	Shallow 5' COG	376.20'		
ES 1–5	80+23.87	38.73' R	24" x 38"Concrete Elliptical End Section	374.07'	38" (NW) 371.48'	
1–4	80+26.64	29.98' R	5' COG	376.94'	38" (NW) 371.63'	38" (SE) 371.53'
1–3	80+46.06	30.00' L	COG	377.72'	15" (NW) 372.20' 18" (NE) 371.95' 15" (SW) 372.05'	38" (SE) 371.95'
EW 1–8	80+50.03	42.53' L	15" inch Concrete Headwall Mat_CONC	374.20'		15" (SE) 372.34'
MH 1–8	81+65.89	21.50' L	48" Dia MH	378.40'	18" (NE) 373.43'	18" (SW) 373.33'
1–6	81+90.00	30.00' R	5' Open Back COG	378.66'		
1–7	82+85.80	30.00' L	10' COG	380.18'	15" (NE) 376.00'	18" (SW) 374.35'
2–1	84+96.00	30.00' R	10' Open Back COG	381.96'		
2–5	88+40.00	30.00' R	5' Open Back COG	385.54'		
2–3	89+00.87	38.01' L	Std. 48" Dia. Manhole	386.64'	15" (SE) 381.98' 18" (NE) 380.78'	18" (SW) 380.68'
2–4	89+01.00	30.00' L	5' COG	386.48'		15" (NW) 382.06'
2–8	90+80.00	30.00' R	5' Open Back COG	388.08'		
JB 2–9	91+17.42	39.81' L	Junction Box	388.77'	15" (E) 384.00' 15" (NW) 383.65'	18" (SW) 383.55'
3–3	93+20.00	30.00' R	10' Open Back COG	390.57'		
MH 3–2	93+24.66	34.65' L	Std. 72" Dia. Manhole	390.90'	24" (N) 383.97' 18" (E) 386.07'	42" (S) 383.77'
ES 3–8	95+64.36	45.64' R	30" Concrete End Section	389.74'	30" (N) 386.95'	
3–5	96+20.00	30.00' R	10' Open Back COG	393.68'		
3–10	98+00.00	30.00' R	5' Open Back COG	395.55'		
3–6	98+00.00	30.00' L	5' COG	395.67'		18" (W) 391.10'
4–18	100+39.47	40.46' R	18 inch Flared End Section	395.72'	18" (NW) 394.00'	
4–2	100+40.00	28.50' R	5' COG	398.99'	18" (NW) 394.20'	18" (SE) 394.10'
ES 4–20	101+27.53	97.42' R	24 inch Flared End Section 67 x 74	396.25'	24" (NE) 394.00'	
ES 4–16	101+38.60	220.81' R	24 inch Flared End Section	396.25'	30" (E) 394.00'	
4–7	101+69.55	150.20' L	5' Open Back COG	403.03'		
4–8	101+81.28	140.27' L	5' Open Back COG	402.88'		
4–15	101+81.28	229.49' R	5' COS	400.86'	30" (NE) 394.20'	30" (W) 394.20'
4–6	102+13.76	146.18' R	5' COG	401.12'		24" (SE) 395.49'
4–14	102+14.18	231.03' R	5' COS	400.46'	24" (NW) 395.08' 30" (E) 394.70'	30" (SW) 394.60'
ES 4–17	102+19.96	230.58' R	30 inch Flared End Section	397.59'		30" (W) 394.80'
4–5	102+46.05	61.42' R	15' COS	402.24'	24" (N) 396.95' 18" (NE) 397.70' 18" (SE) 398.40'	24" (SW) 396.80'
EW 4–19	102+49.49	67.37' R	Type C EW for 18" Pipe	400.63'		18" (NW) 398.50'
4–4	102+62.08	46.60' L	15' COS	402.54'	24" (N) 397.65' 18" (E) 398.10'	24" (S) 397.55'
EW 4–3	102+72.00	64.01' L	Type C Endwall for 24" RCP	402.16'		24" (S) 399.50'
4–11	103+51.14	31.26' R	5' COG	403.77'	18" (NE) 399.20'	18" (SW) 399.10'
4–9	103+53.30	32.65' L	5' COG	404.09'	18" (NE) 399.50'	18" (W) 399.40'
4–12	104+59.93	29.84' R	5' COG	407.12'		18" (SW) 402.60'
4–10	104+60.00	30.09' L	5' COG	407.25'		18" (SW) 402.70'
5–1	109+10.00	30.00' L	Circular COG	409.88'	24" (NW) 404.10'	24" (E) 402.50'
5–2	109+10.00	30.00' R	5' COG	409.94'	24" (W) 402.20'	24" (N) 402.10'

STRUCTURE SCHEDULE

STRUCTURE	STATION	OFFSET	TYPE	TOP	INVERT IN	INVERT OUT
EW 5–16	109+47.68	61.39' L	79 x 6 x 48 inch Concrete Rectangular Headwall VH	407.86'		24" (SE) 405.20'
5–17	109+52.62	57.54' R	36 " x 36 " Yard Inlet	407.48'		15" (W) 404.60'
5–7	111+40.00	30.00' R	Shallow 5' COG	404.42'	24" (S) 399.60'	24" (NE) 399.50'
5–6	111+90.00	30.00' L	10' COG	403.02'		18" (NE) 399.80'
EW 5–4	112+66.09	47.98' L	Type C Endwall	399.34'		38" (SE) 396.34'
5–8	112+67.97	30.53' L	5' COG	401.44'	15" (NE) 395.80' 38" (NW) 395.68' 18" (SW) 397.70'	38" (SE) 395.60'
5–12	112+72.98	30.12' R	5' COG	401.12'	18" (NE) 395.30' 38" (NW) 393.33' 24" (SW) 395.30'	38" (SE) 393.34'
EW 5–5	112+75.35	53.75' R	Type C Endwall	395.40'	38" (NW) 392.40'	
5–11	113+47.23	30.03' R	10' COS	400.65'	15" (NE) 396.10'	18" (SW) 396.00'
5–9	113+48.43	29.97' L	10' COS	400.90'	15" (NE) 396.40'	15" (SW) 396.30'
5–10	114+00.00	30.00' L	5' COG	401.18'		15" (SW) 397.20'
5–13	114+00.00	30.00' R	5' COG	400.93'		15" (SW) 396.70'
EW 6–11	115+25.98	48.30' L	Type C Endwall	398.94'		30" (SE) 396.52'
6–6	115+26.16	30.00' R	5' COG	402.51'	30" (NW) 393.39' 24" (NE) 397.60'	30" (SE) 393.22'
6–1	115+26.44	30.00' L	10' COG	402.73'	30" (NW) 396.06' 24" (NE) 397.90'	30" (SE) 395.89'
6–7	117+25.00	30.00' R	5' COG	405.03'	18" (NE) 400.30'	24" (SW) 400.20'
6–2	117+25.00	30.00' L	5' COG	405.20'	18" (NE) 400.50'	24" (SW) 400.40'
6–8	119+25.00	30.00' R	5' COG	407.57'	18" (NE) 402.50'	18" (SW) 402.40'
6–3	119+25.00	30.00' L	5' COG	407.70'	18" (NE) 403.00'	18" (SW) 402.90'
6–9	121+25.00	30.00' R	5' COG	410.12'	18" (N) 405.00'	18" (SW) 404.90'
6–4	121+25.00	30.00' L	5' COG	410.19'	18" (N) 405.50'	18" (SW) 405.40'
6–10	123+25.00	30.00' R	5' COG	412.66'	18" (N) 407.00'	18" (S) 406.90'
6–5	123+25.00	30.00' L	5' COG	412.68'	18" (N) 408.10'	18" (S) 408.00'
7–7	124+48.51	57.10' R	Type K Inlet Single Opening	413.59'	18" (N) 408.80'	18" (W) 408.70'
MH 7–5	124+51.11	29.98' R	Concentric Structure 48 dia 24 frame 24 cone 5 wall 6 floor Mat_CONC	413.70'	18" (N) 408.30' 18" (E) 408.40'	18" (S) 408.20'
7–1	124+52.98	67.44' L	Type K Inlet Signle Opening	413.85'	18" (N) 410.30'	18" (E) 410.20'
7–8	124+93.60	59.18' R	Type K Inlet Single Opening	413.91'		18" (S) 409.20'
7–2	124+94.99	66.72' L	Type K Inlet Single Opening	412.72'		18" (S) 410.60'
7–6	125+18.00	30.00' R	5' COG	415.11'		18" (S) 409.30'
7–4	125+23.00	30.00' L	5' COG	415.15'		18" (S) 410.50'
7–11	129+00.00	30.00' R	5' COG	413.29'		15" (NE) 410.38'
7–9	129+00.00	30.00' L	5' COG	413.40'		15" (NE) 409.20'
7–12	130+00.00	30.00' R	5' COG	409.16'	15" (SW) 406.37'	18" (NE) 404.20'
7–10	130+00.00	30.00' L	5' COG	409.32'	15" (SW) 404.90'	18" (NE) 404.80'
8–2	131+32.00	30.00' R	5' COG	401.43'	18" (SW) 396.80'	18" (NE) 396.70'
8–1	131+32.00	30.00' L	5' COG	401.54'	18" (SW) 397.20'	18" (NE) 395.60'
8–3	131+61.72	54.73' L	24 " x 24 " Yard Inlet	396.01'		24" (SE) 392.30'
EW 8–8	131+68.37	44.84' R	56 x 6 x 57 inch Concrete Rectangular Headwall Mat_CONC	399.16'		24" (N) 396.50'
ES 8–16	132+25.03	64.92' R	18" Concrete End Section	395.79'		18" (N) 394.00'
8–10	132+47.00	30.00' R	5' COG	394.73'	18" (S) 391.77'	18" (NE) 388.75'

STRUCTURE SCHEDULE

STRUCTURE	STATION	OFFSET	TYPE	TOP	INVERT IN	INVERT OUT
ES 8–4	132+57.85	74.89' L	15" Concrete End Section	387.52'	15" (SW) 386.00'	
8–9	132+72.39	29.61' L	5" Open Back COG	393.45'		
8–5	133+58.59	60.52' L	Outlet Structure	386.34'		15" (E) 382.00'
FE 251	133+92.57	56.88' L	24"X24" Yard Inlet	386.00'	24" (S) 381.50' 15" (E) 381.00' 15" (W) 381.00'	24" (N) 381.00'
8–11	134+08.13	29.96' R	5' COG	388.11'	18" (SW) 384.25'	18" (E) 383.40'
8–14	134+22.87	29.97' L	Shallow 5' COG	387.35'		15" (W) 380.61'

DD-8

REVISIONS		
MARK	DATE	DESCRIPTION

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 STRUCTURE SCHEDULES

DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 30 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

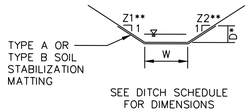
APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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	3	0	0.5	387.77	
92+00	45.7 LT	TYPE A SSM	3	3	0	0.5	388.73	
92+50	45.7 LT	TYPE A SSM	3	3	0	0.5	389.21	
93+00	45.7 LT	TYPE A SSM	3	3	0	0.5	389.75	
93+50	45.7 LT	TYPE A SSM	3	3	0	0.5	390.23	
94+00	45.7 LT	TYPE A SSM	3	3	0	0.5	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	



* D IS DEPTH OF LINING

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

TYPICAL DITCH CROSS SECTION
NOT TO SCALE

DD-10

REVISIONS		
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RECONSTRUCTION OF
CHRISTOPHERS CROSSING
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DRAINAGE DITCH SCHEDULES

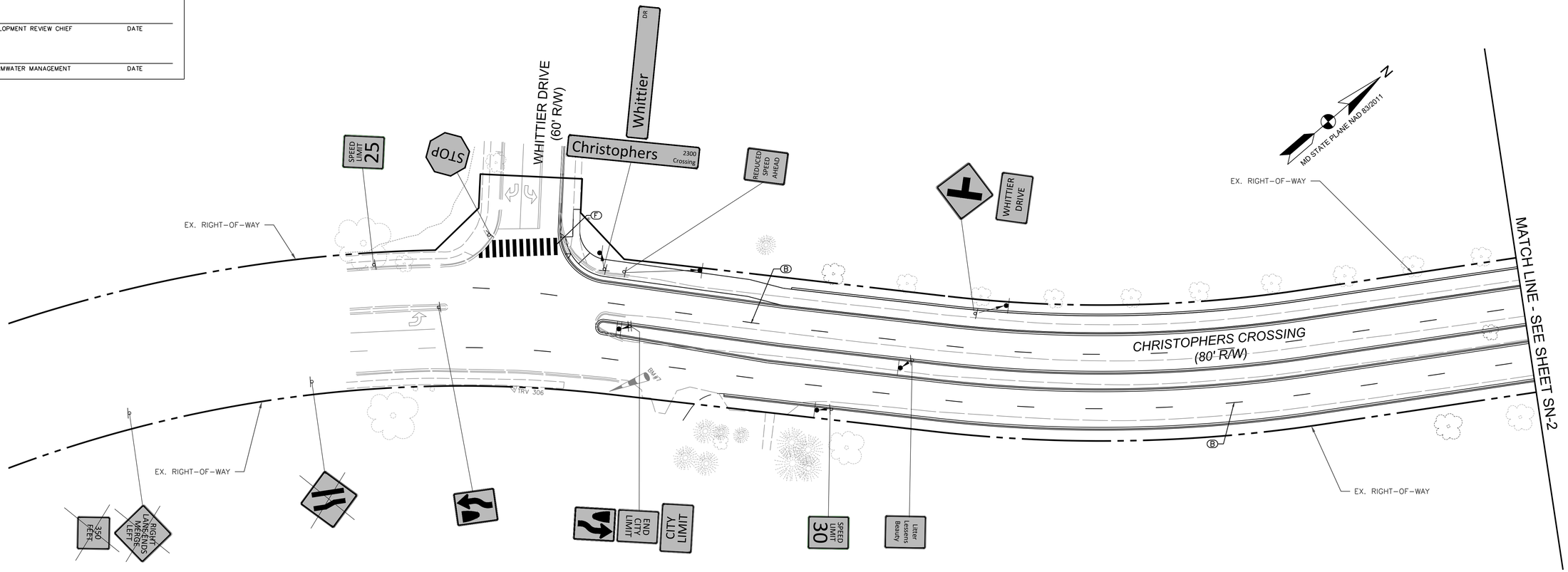
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 31 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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/OHD2/2018_STANDARD_SPECIFICATIONS.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).

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.
   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 THREATING 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'

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
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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

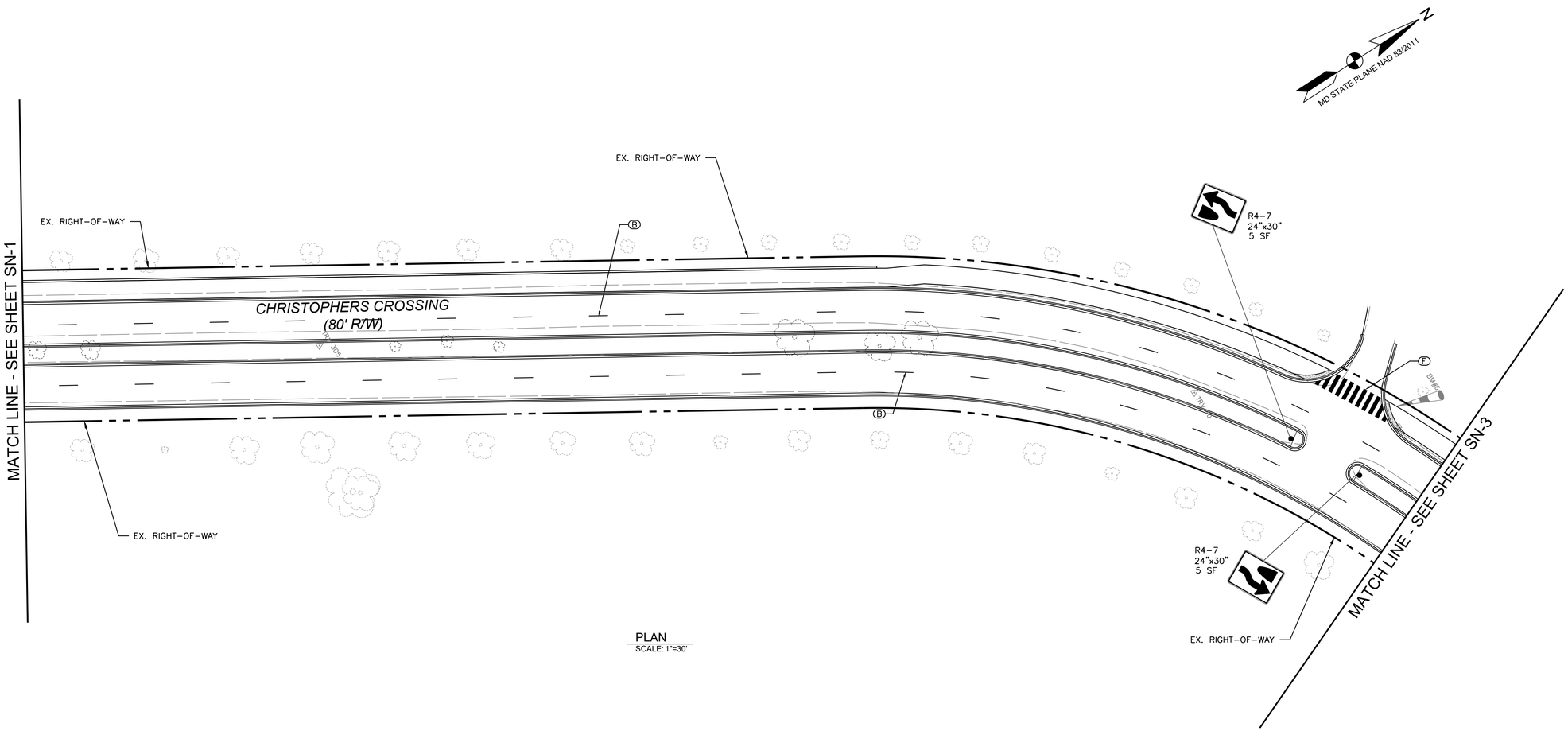
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 32 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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(410) 752-6352
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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

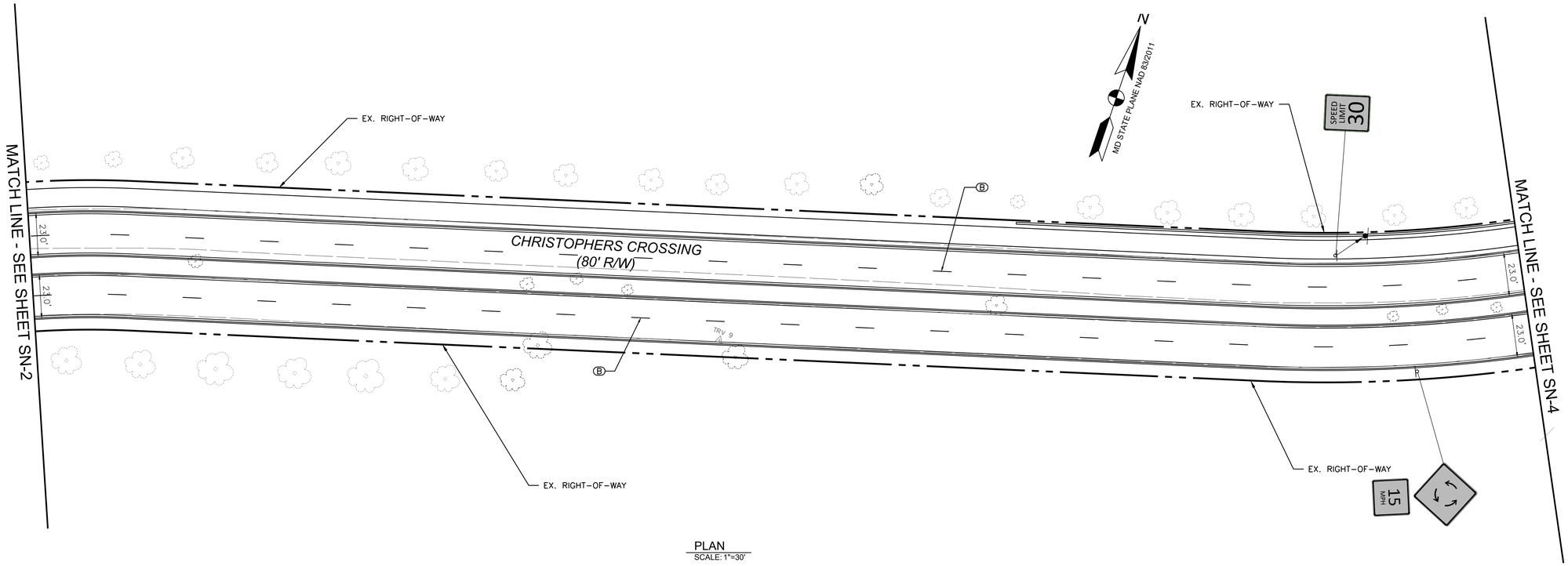
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 33 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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) 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

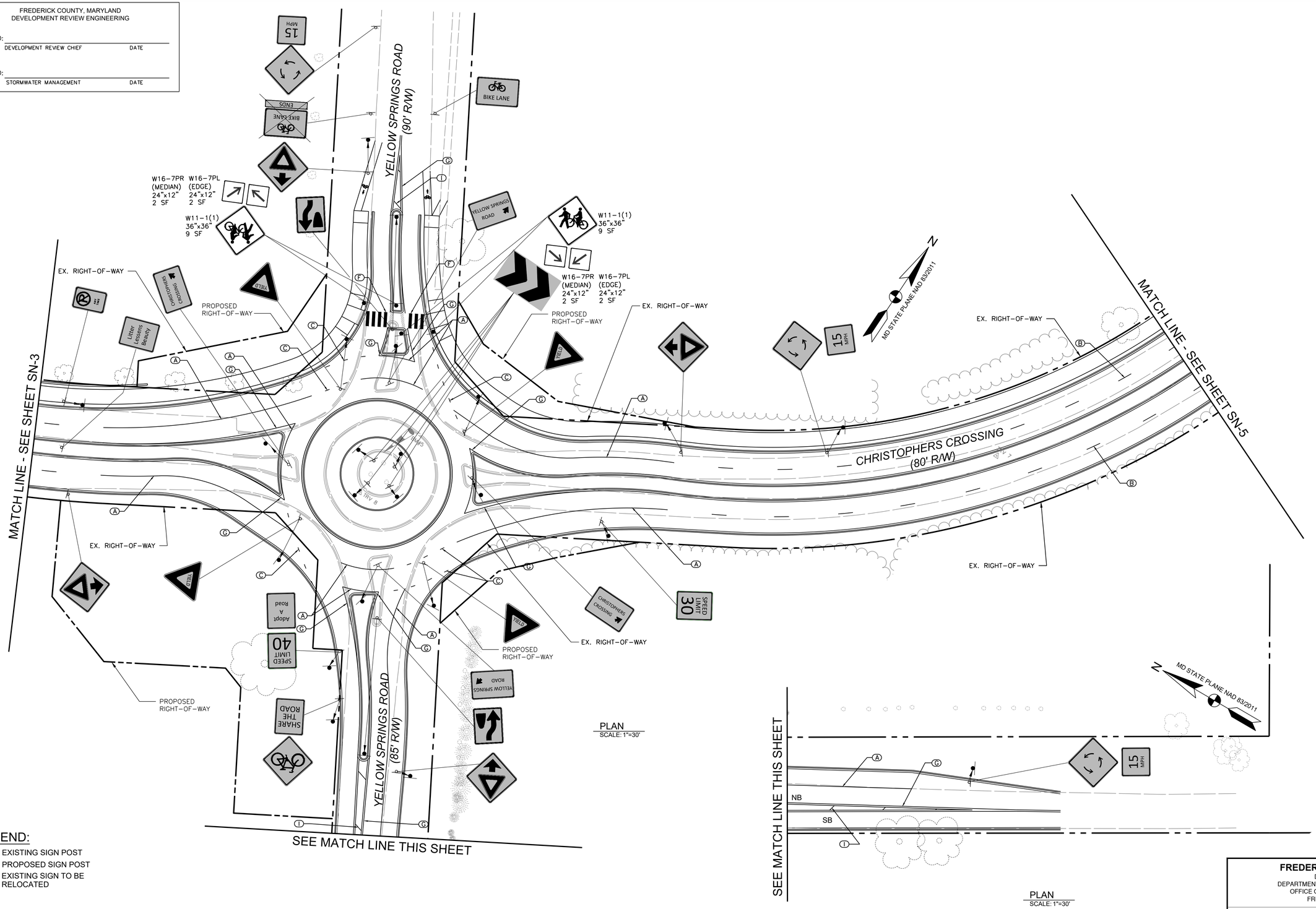
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 34 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=30'

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:

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- (I) 10 INCH YELLOW LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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SN-4

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FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
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SIGNING AND PAVEMENT MARKING PLAN

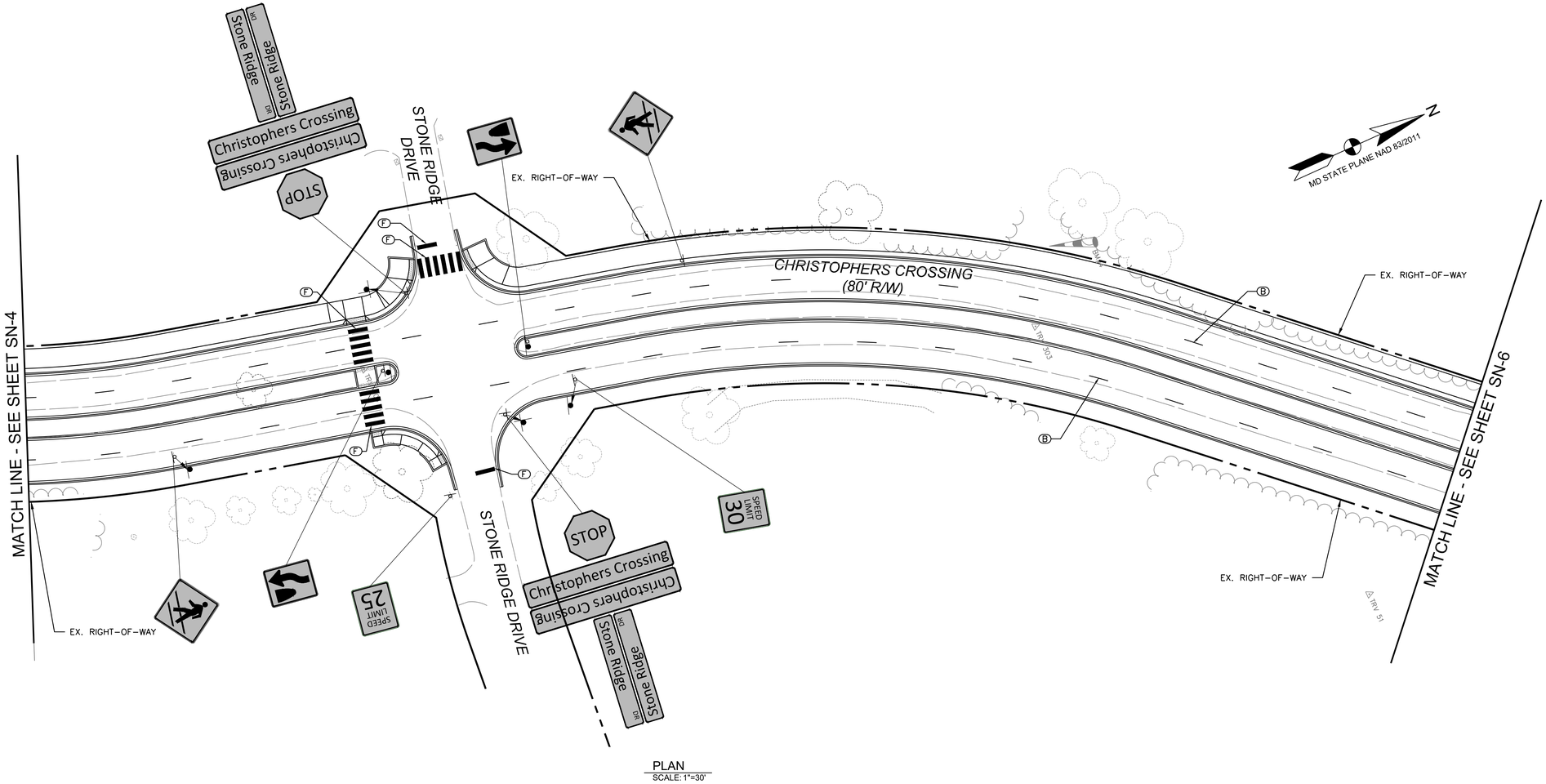
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 35 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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SCALE: 1"=30'

REVISIONS		
MARK	DATE	DESCRIPTION

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EMAIL: AMT1@AMTENGINEERING.COM

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
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SIGNING AND PAVEMENT MARKING PLAN

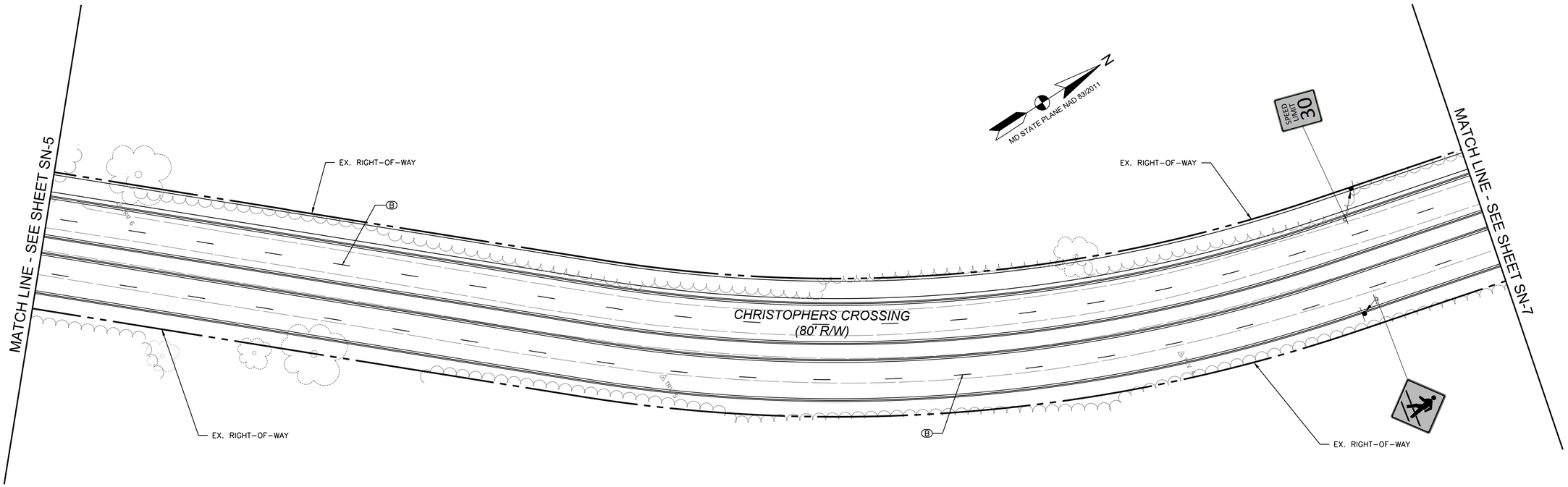
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 36 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=30'

LEGEND:

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

PAVEMENT MARKING LEGEND:

Ⓐ 5 INCH WHITE LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS - SOLID
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REVISIONS		
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SN-6

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

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
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SIGNING AND PAVEMENT MARKING PLAN

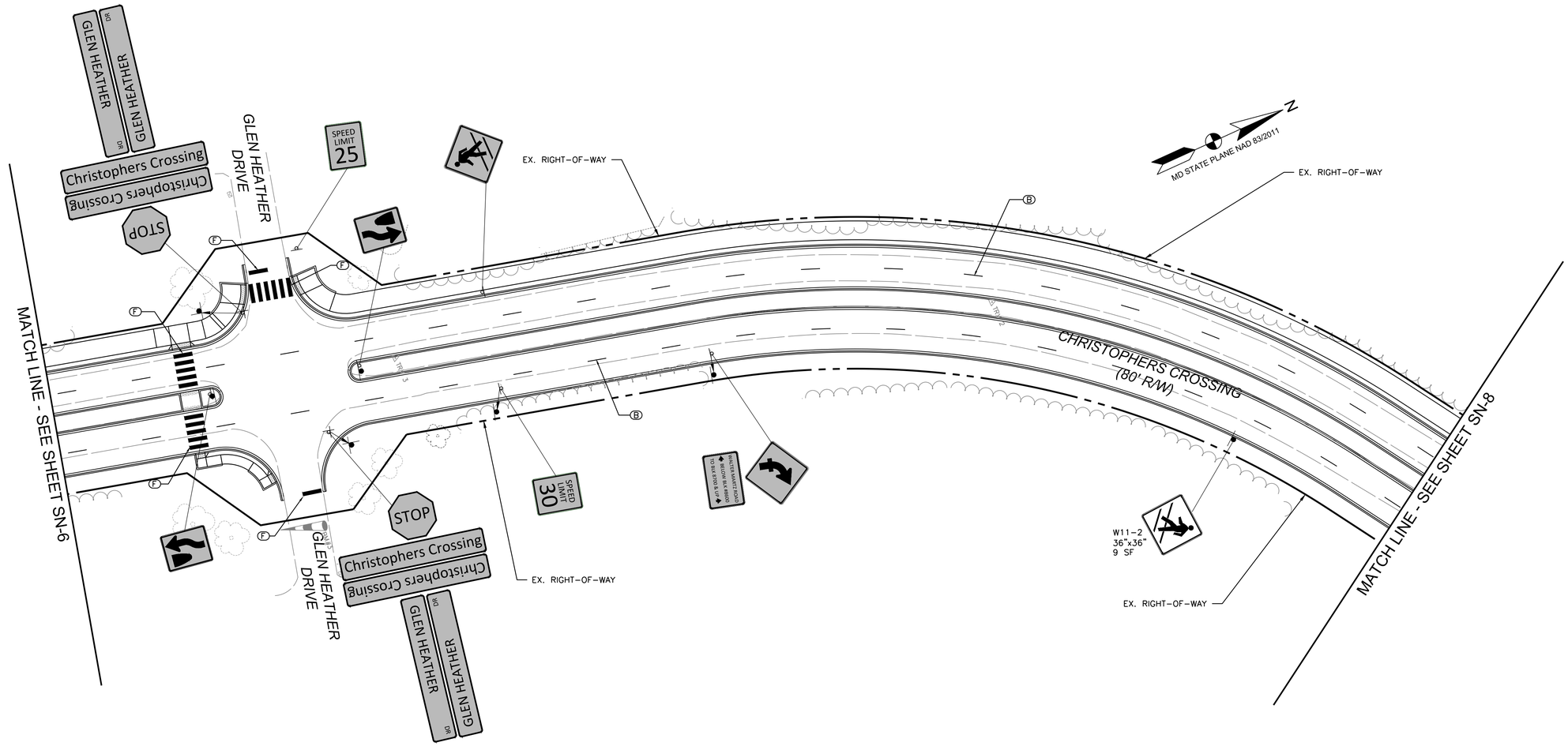
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 37 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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REVISIONS		
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SN-7

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

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

SIGNING AND PAVEMENT MARKING PLAN

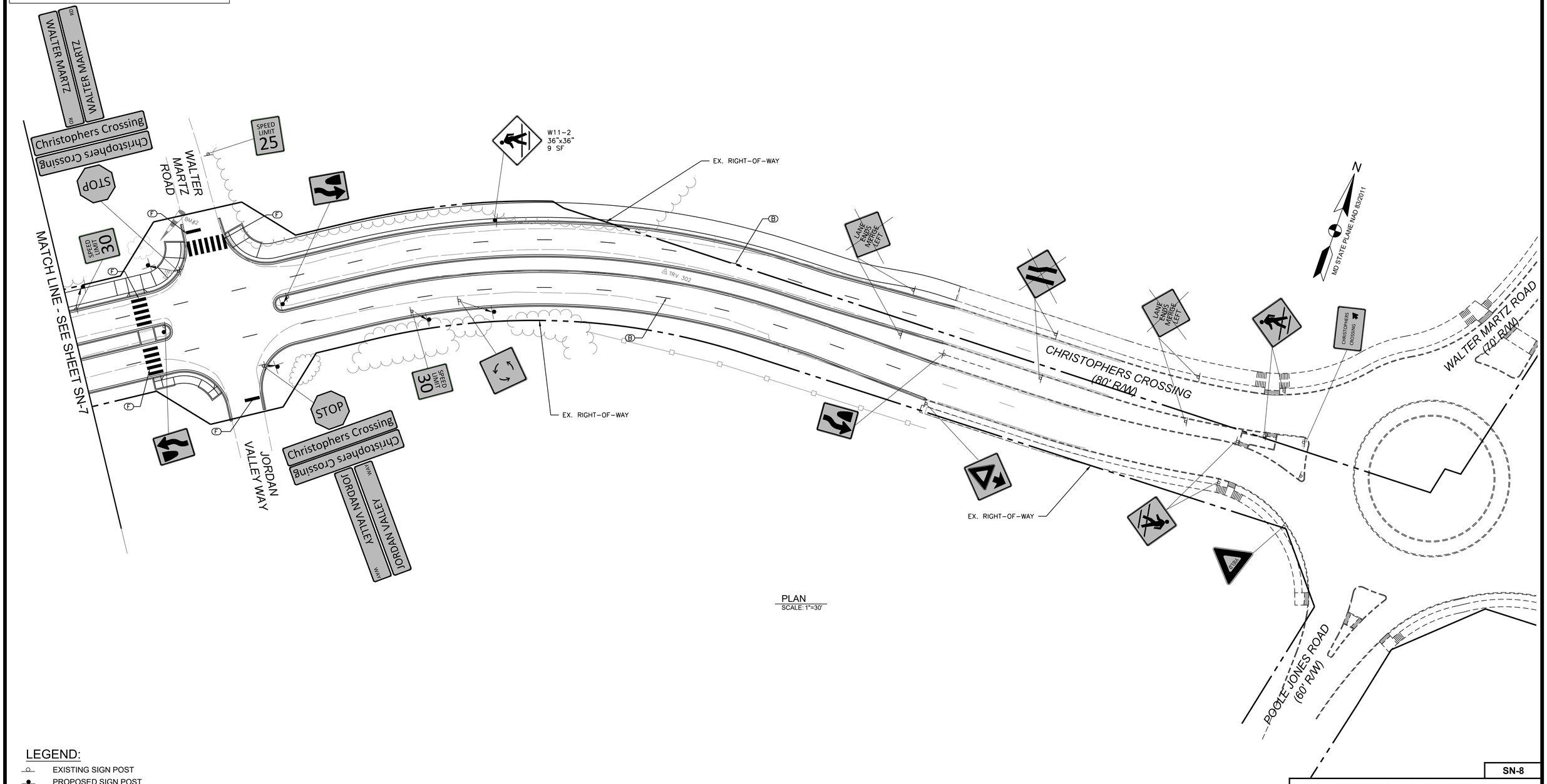
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 38 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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REVISIONS		
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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
FROM WHITTIER DRIVE TO
WALTER MARTZ /POOLE JONES ROAD

SIGNING AND PAVEMENT MARKING PLAN

DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 39 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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/BIZSTDSSPECS/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.

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

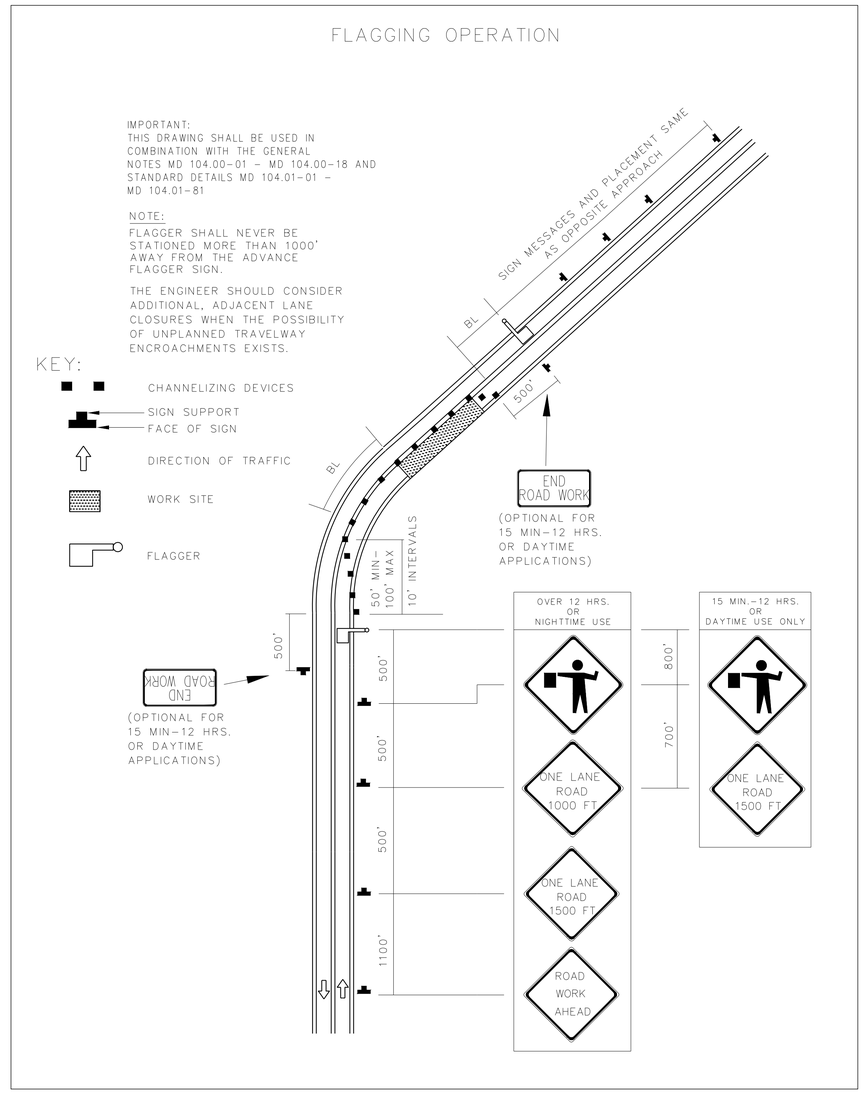
1. DURING OFF-PEAK HOURS PERFORM NECESSARY GRINDING AND RESURFACING, WEDGING AND LEVELING AND PLACE FINAL SURFACE COURSE AS INDICATED ON THE PLANS UNDER FLAGGING OPERATION PER STANDARDS NO. MD 104.02-10.
2. REMOVE EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL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

FLAGGING OPERATION

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

NOTE:
FLAGGER SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

THE ENGINEER SHOULD CONSIDER ADDITIONAL, ADJACENT LANE CLOSURES WHEN THE POSSIBILITY OF UNPLANNED TRAVELWAY ENCROACHMENTS EXISTS.



TP-1

REVISIONS		
MARK	DATE	DESCRIPTION

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

MAINTENANCE OF TRAFFIC - GENERAL NOTES

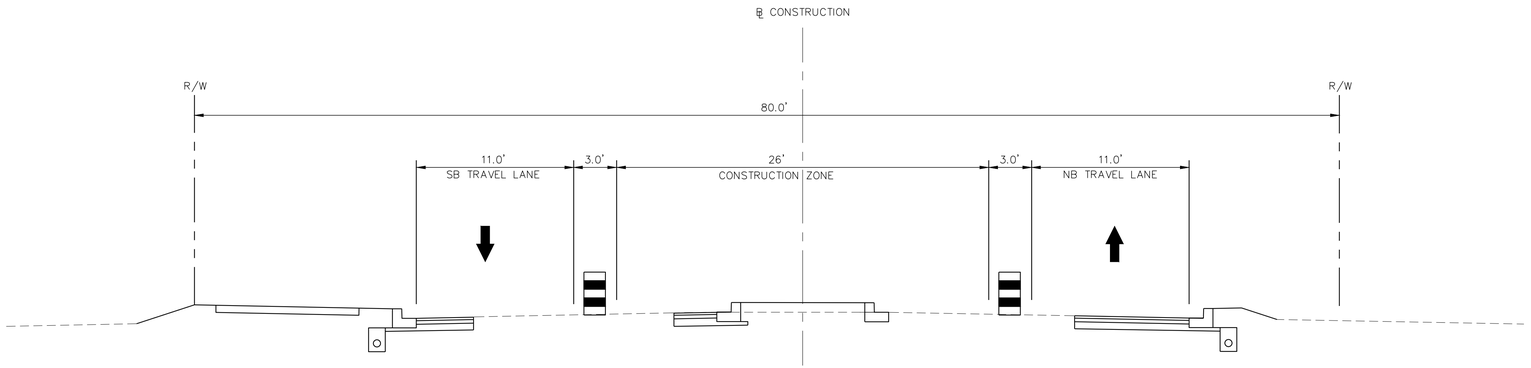
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 40 OF 118

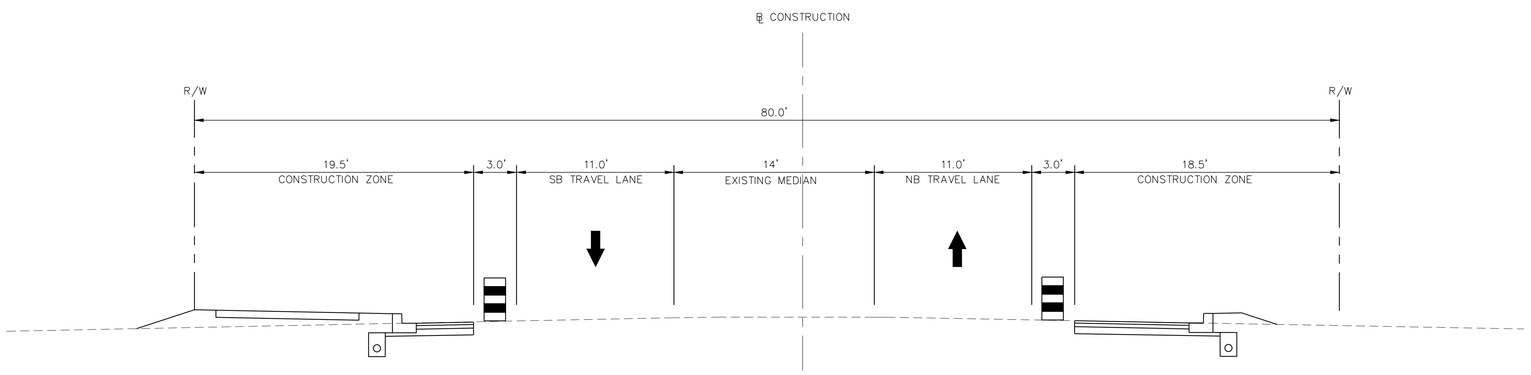
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 41 OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

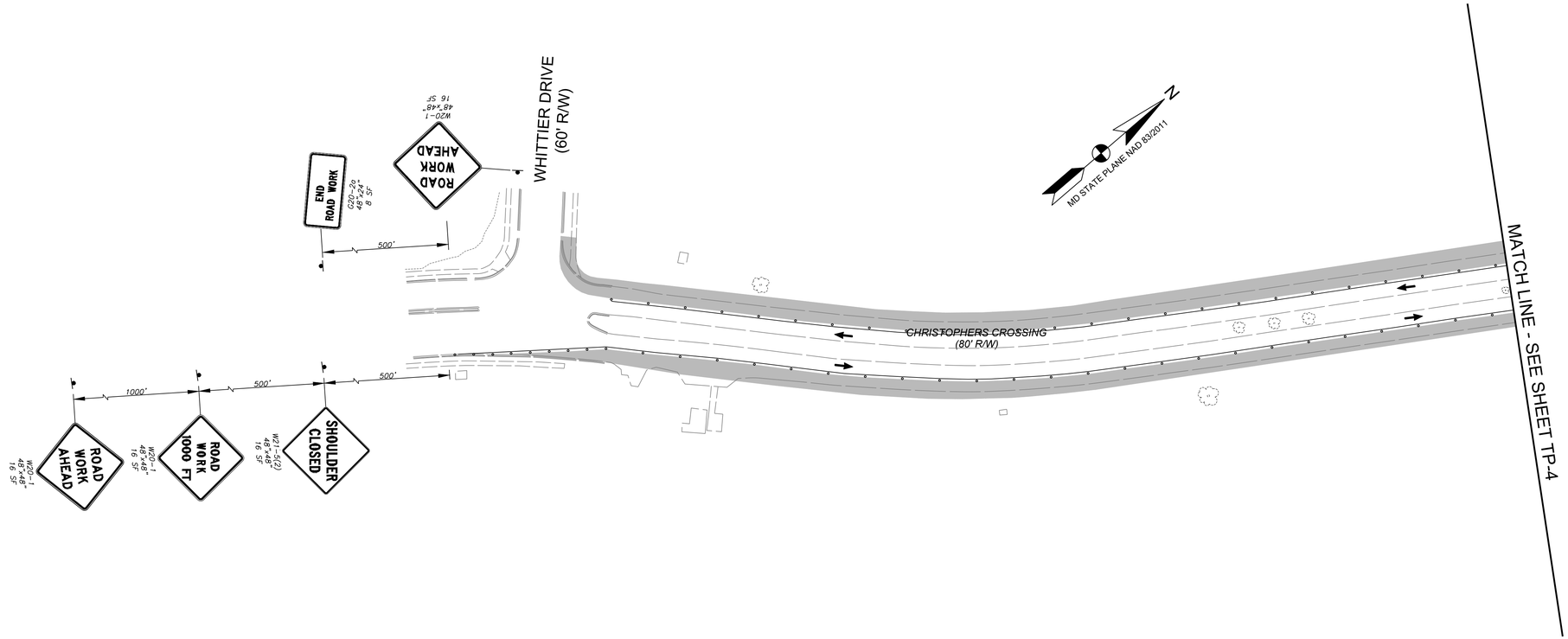
REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-4552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=50'

LEGEND:

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

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

REVISIONS		
MARK	DATE	DESCRIPTION

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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

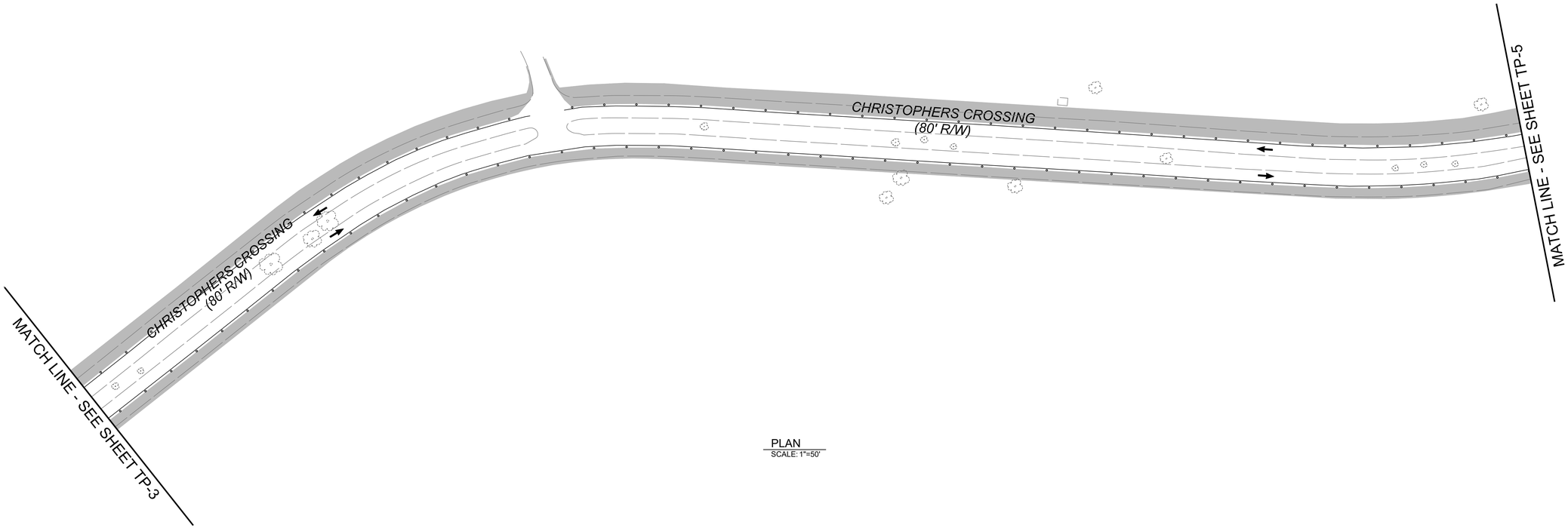
DATE: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 42 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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

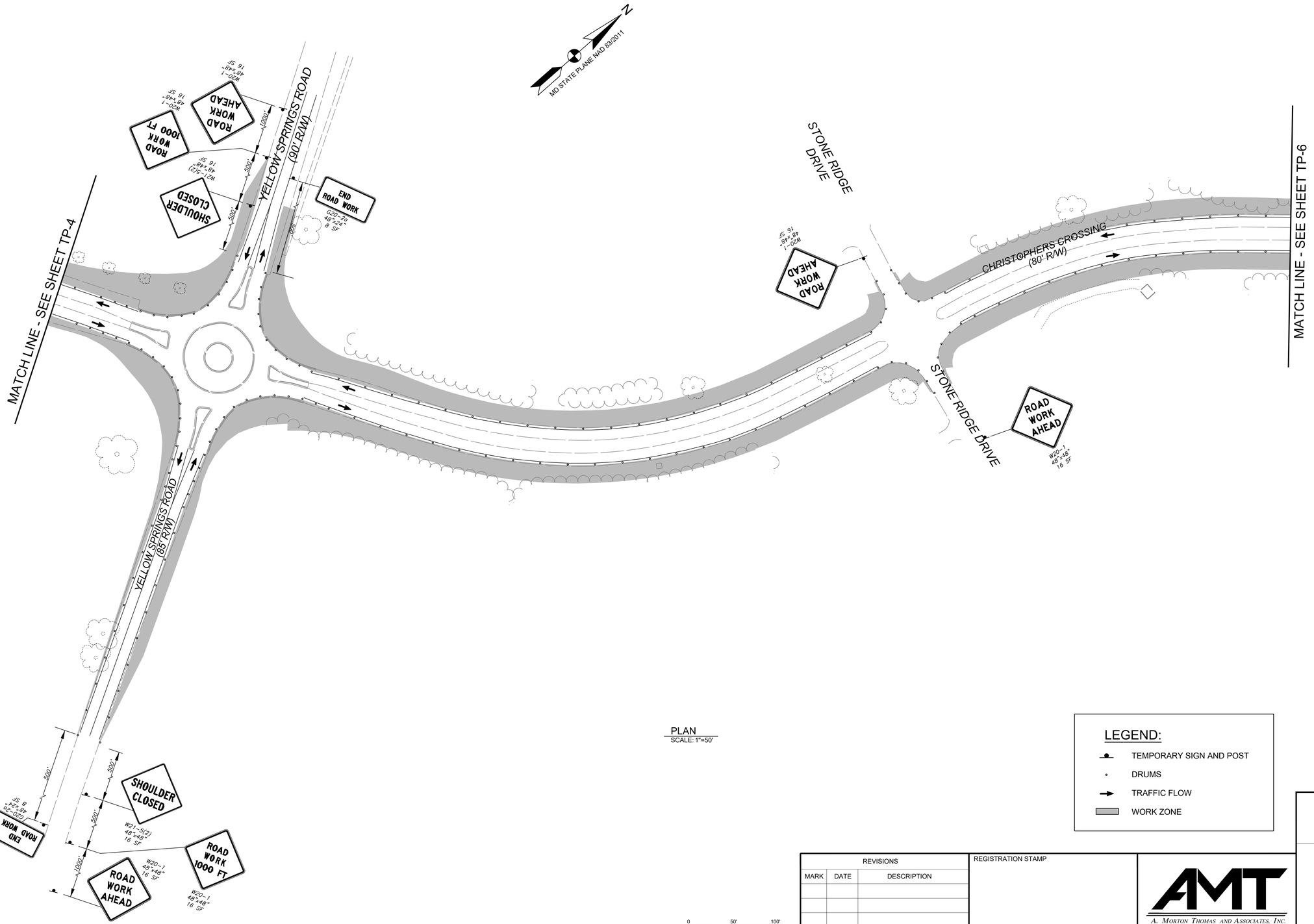
DATE: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 43 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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

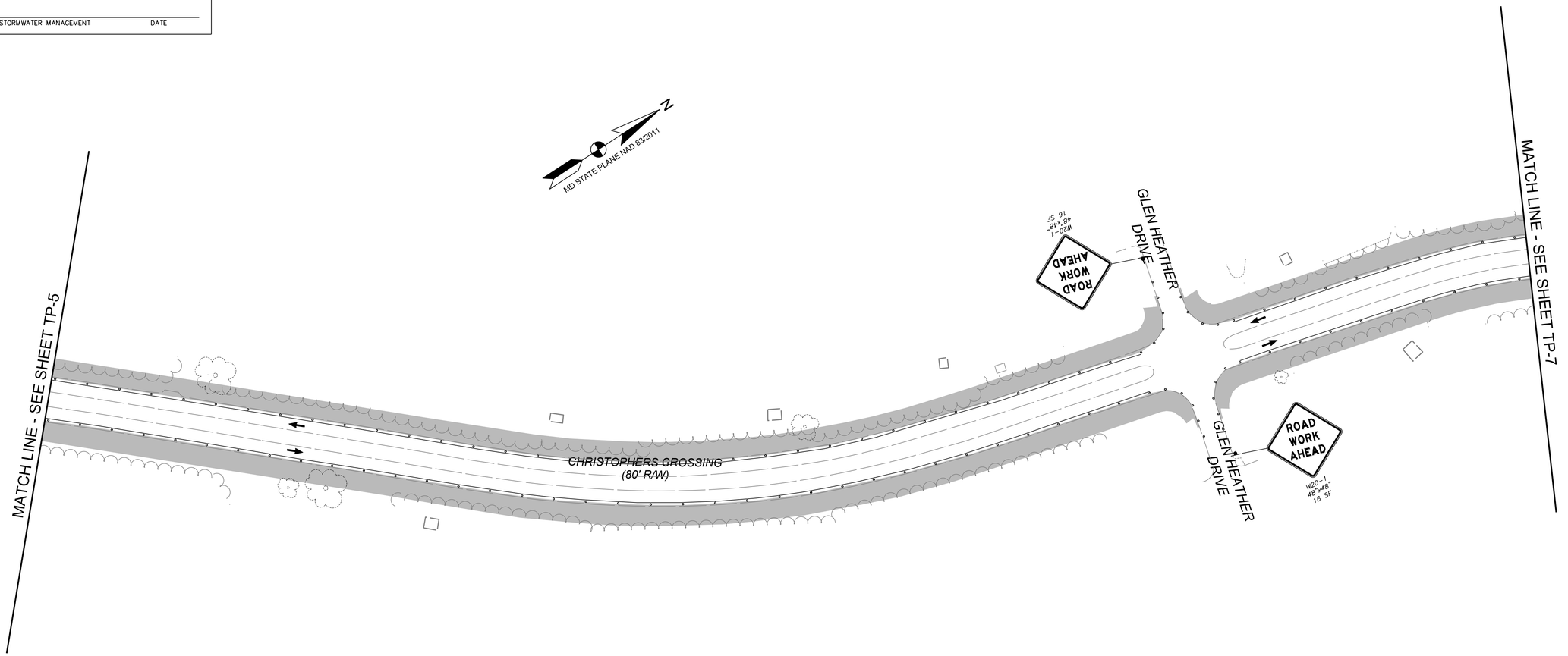
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AMT FILE NO. 15-0758.007 SHEET NO. 44 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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

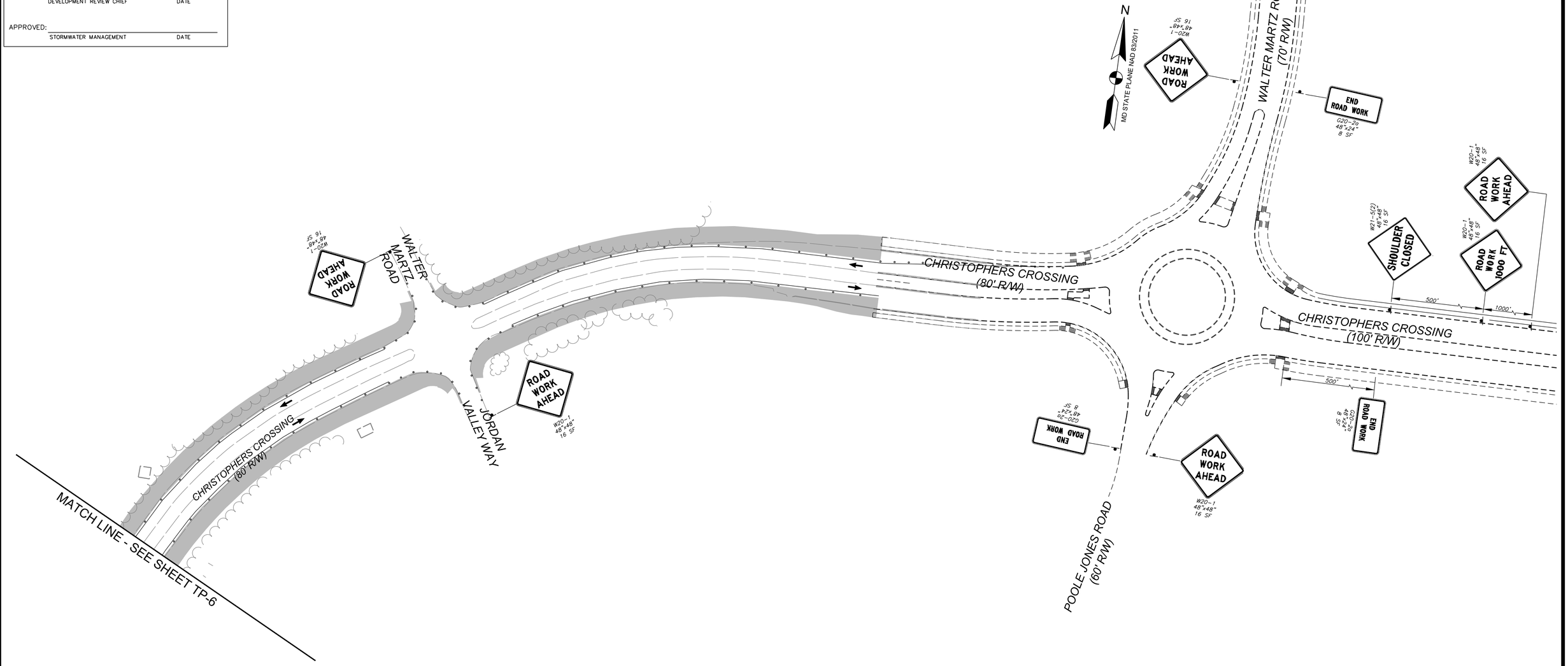
DATE: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 45 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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

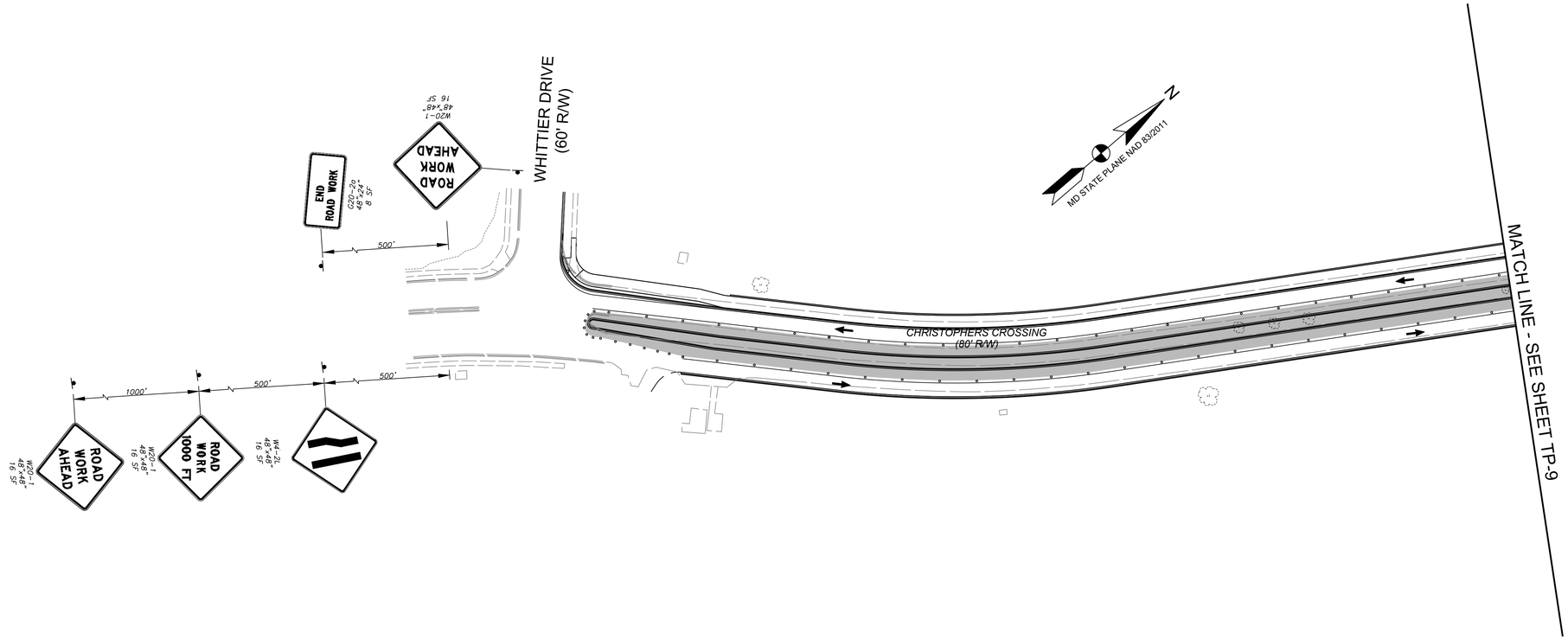
DATE: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 46 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=50'

LEGEND:

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

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

REVISIONS		
MARK	DATE	DESCRIPTION

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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: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 47 OF 118

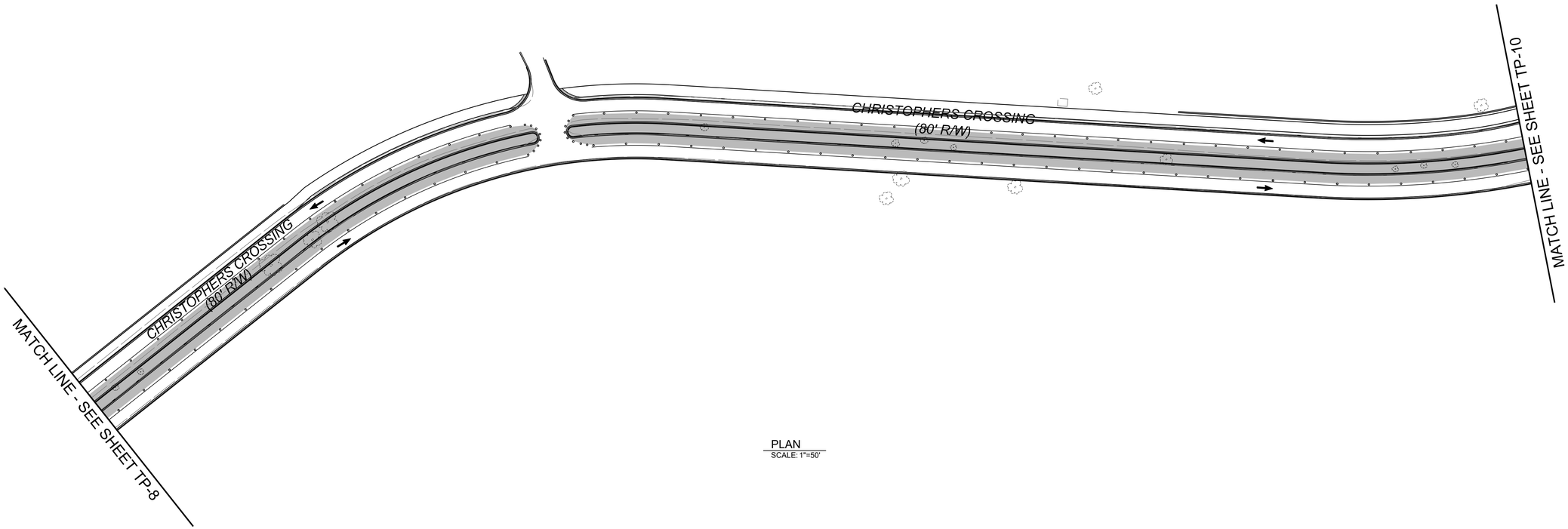
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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

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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

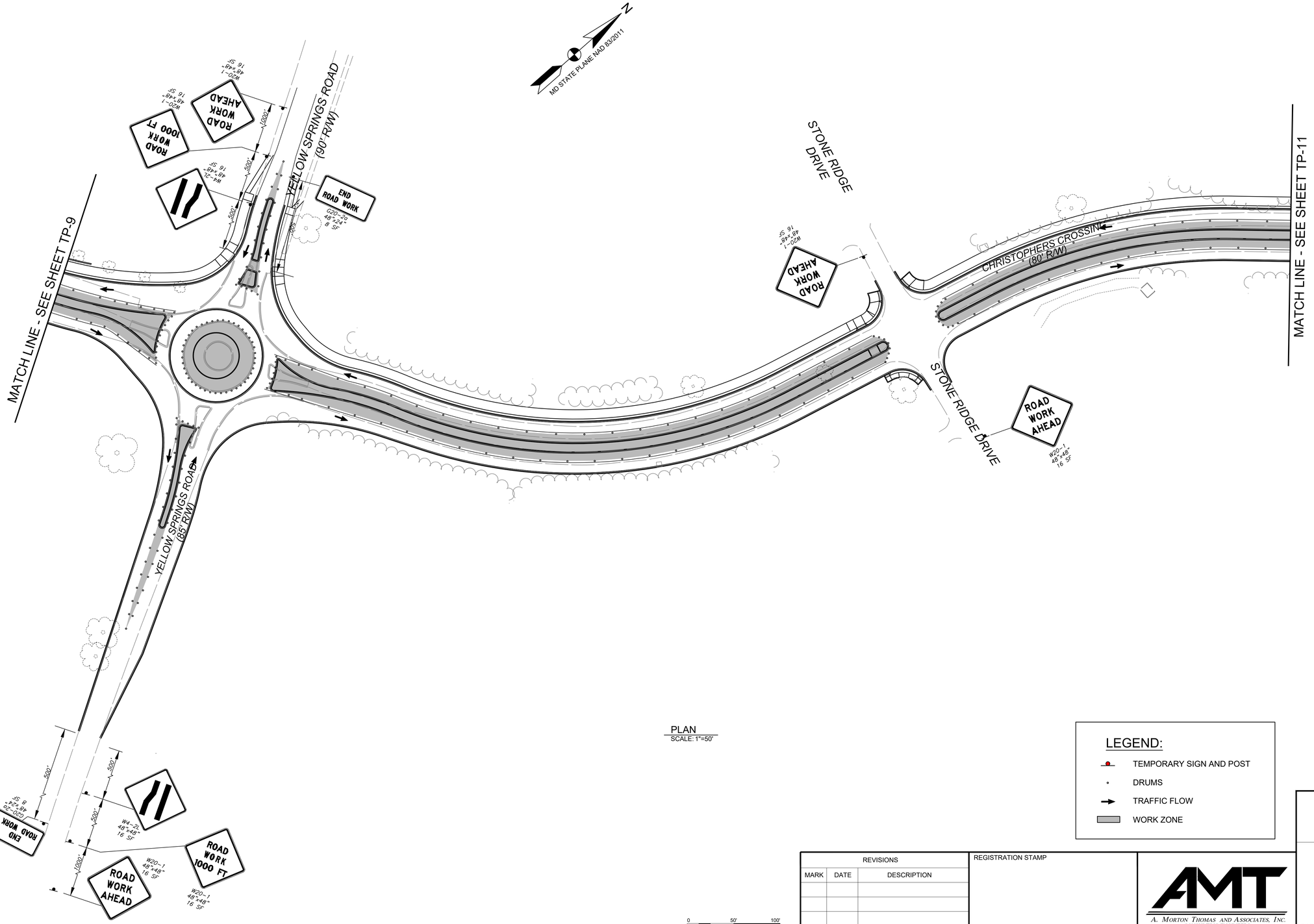
DATE: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 48 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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

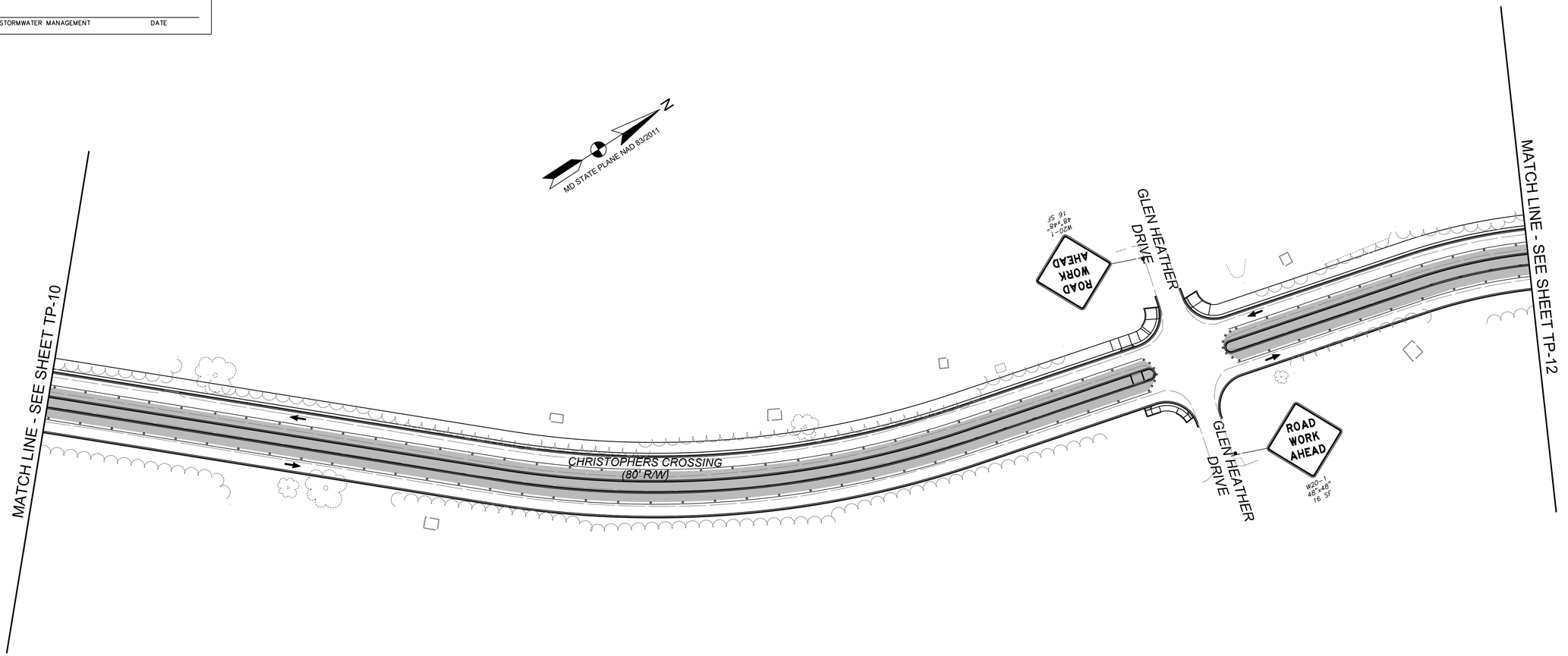
DATE: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 49 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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

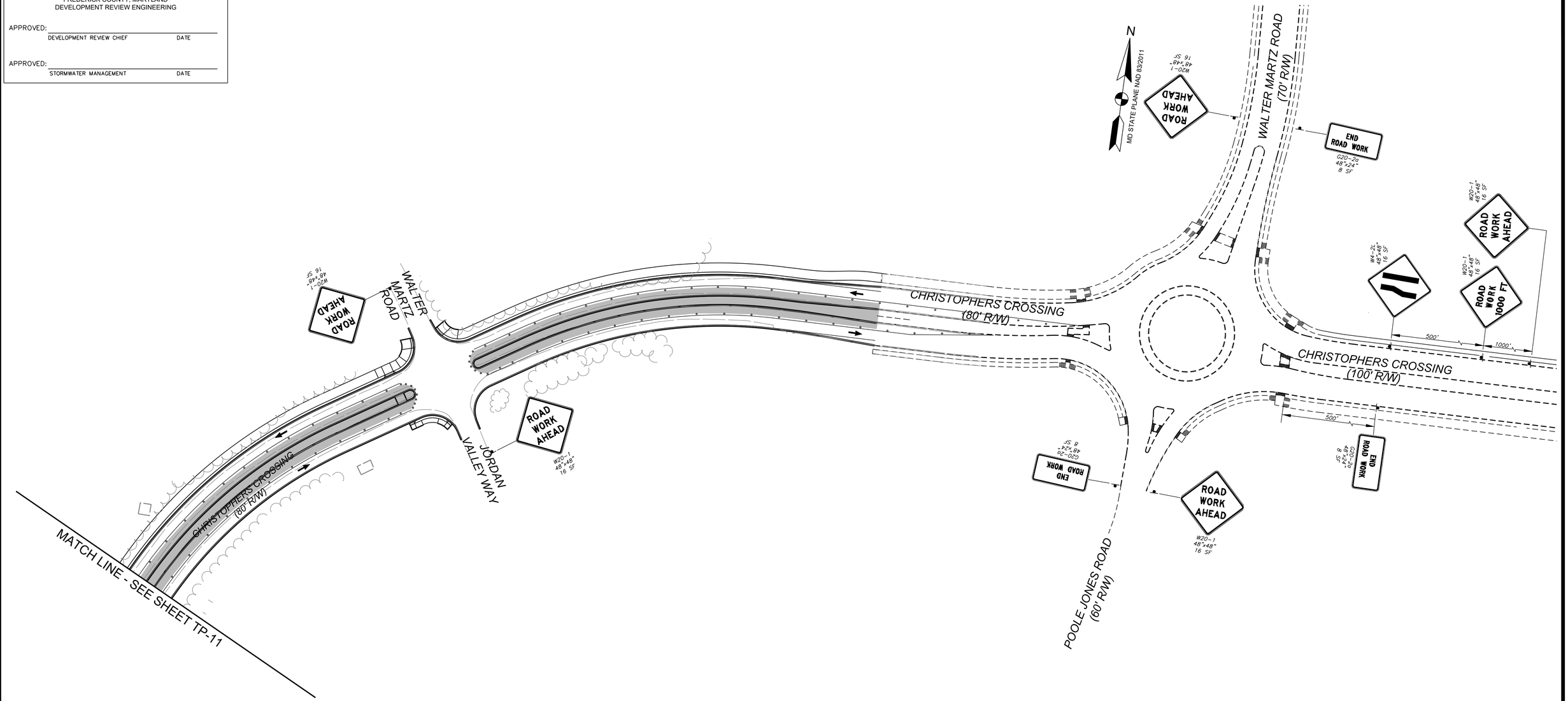
DATE: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 50 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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

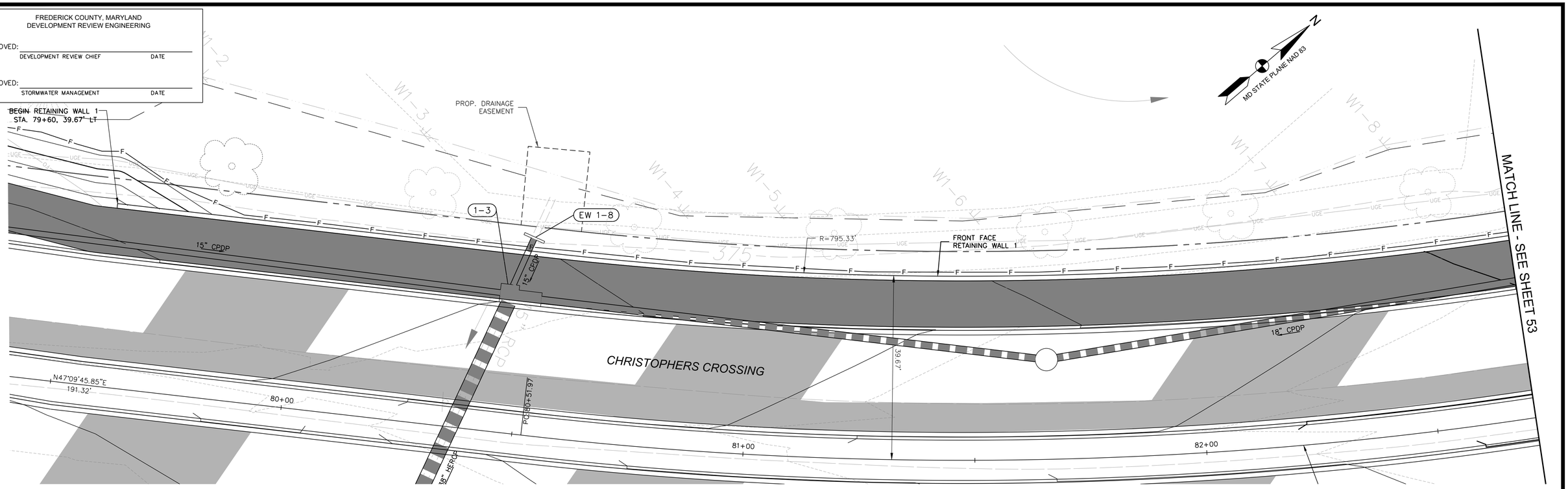
DATE: DECEMBER 2021 SCALE: 1"=50'

AMT FILE NO. 15-0758.007 SHEET NO. 51 OF 118

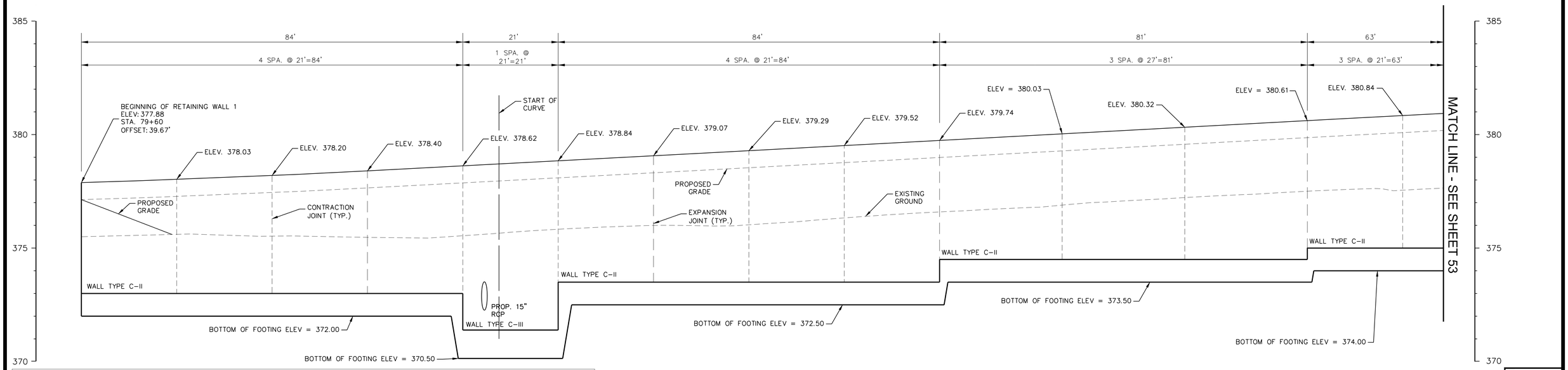
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

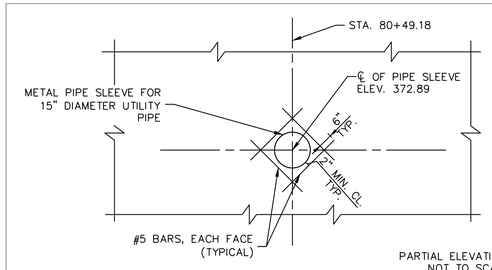
APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



RETAINING WALL 1 PLAN
SCALE: 1"=10'





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".

RETAINING WALL 1 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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CONSULTING ENGINEERS
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(410) 752-6552
EMAIL: AMT1@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

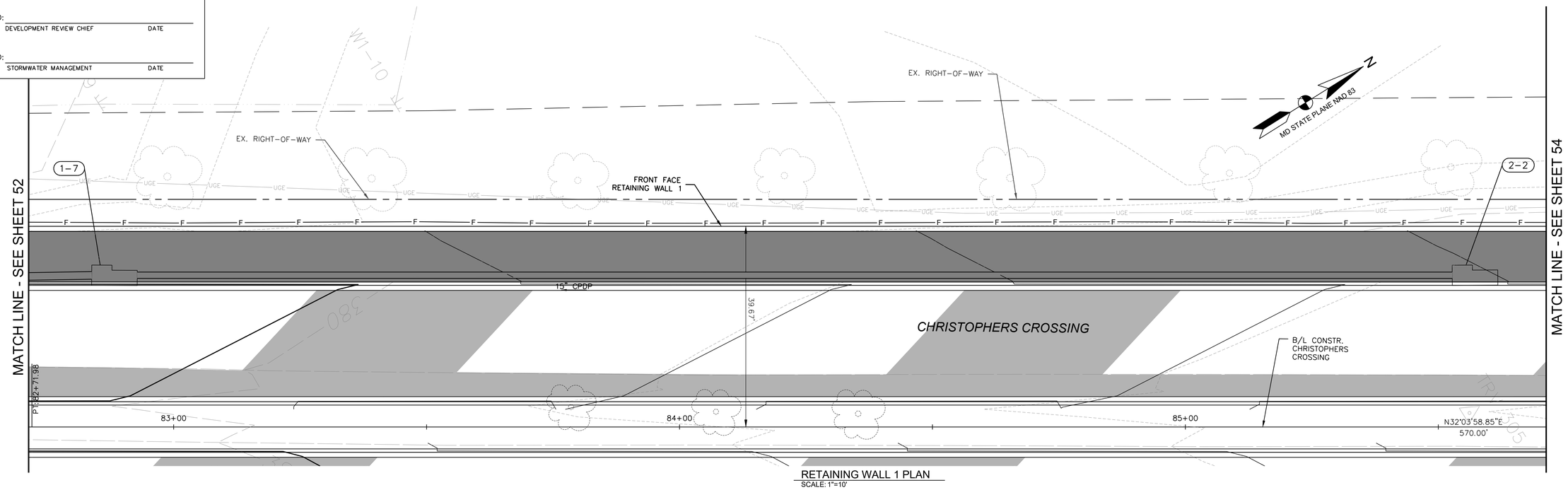
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 52 OF 118

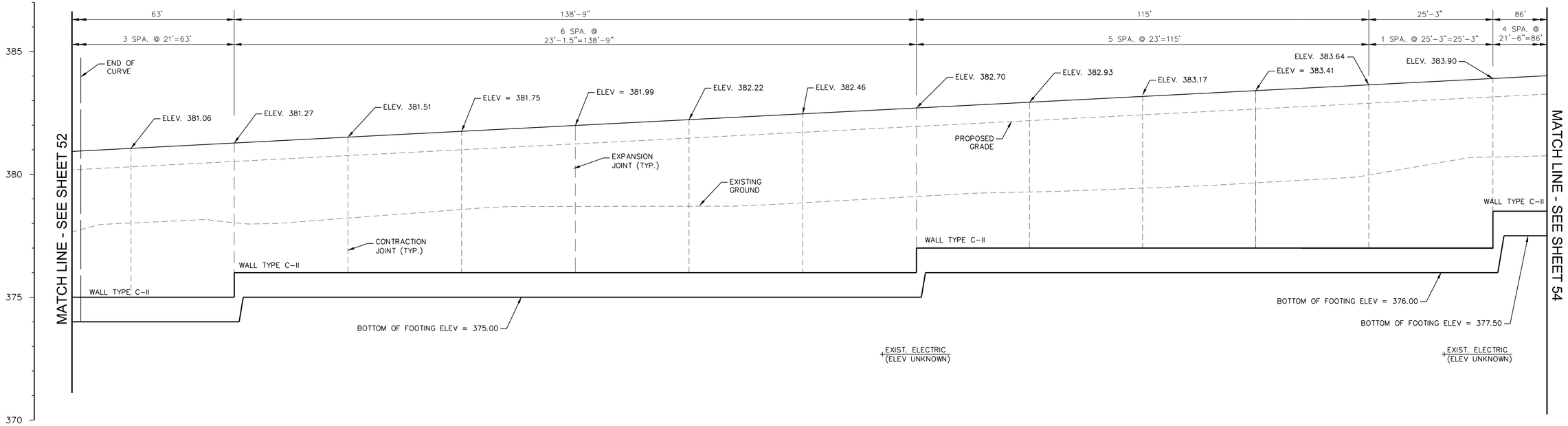
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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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: DECEMBER 2021 SCALE: 1"=30'

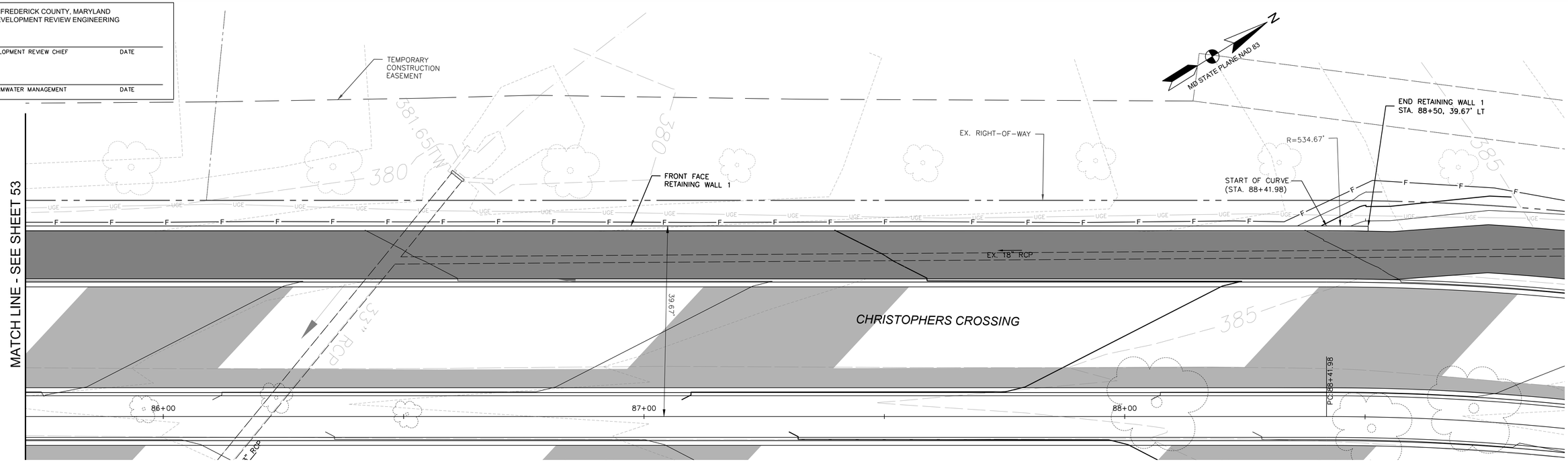
AMT FILE NO. 15-0758.007 SHEET NO. 53 OF 118

RW-1-2

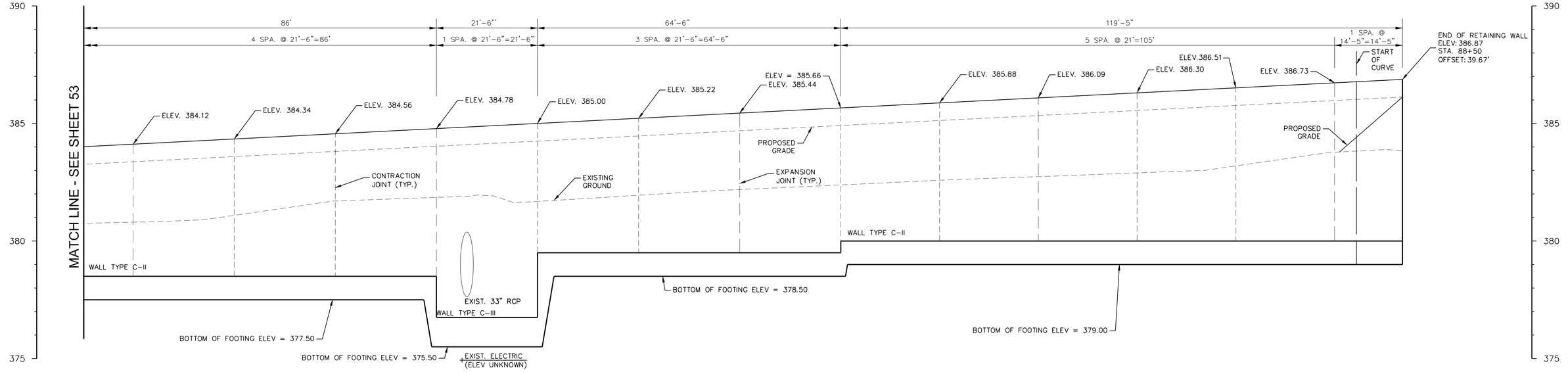
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

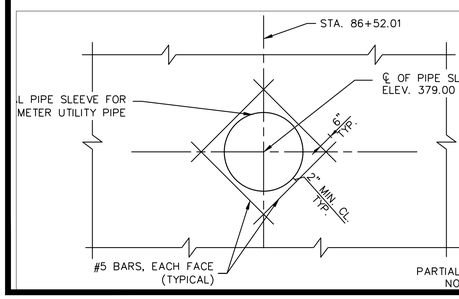
APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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

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

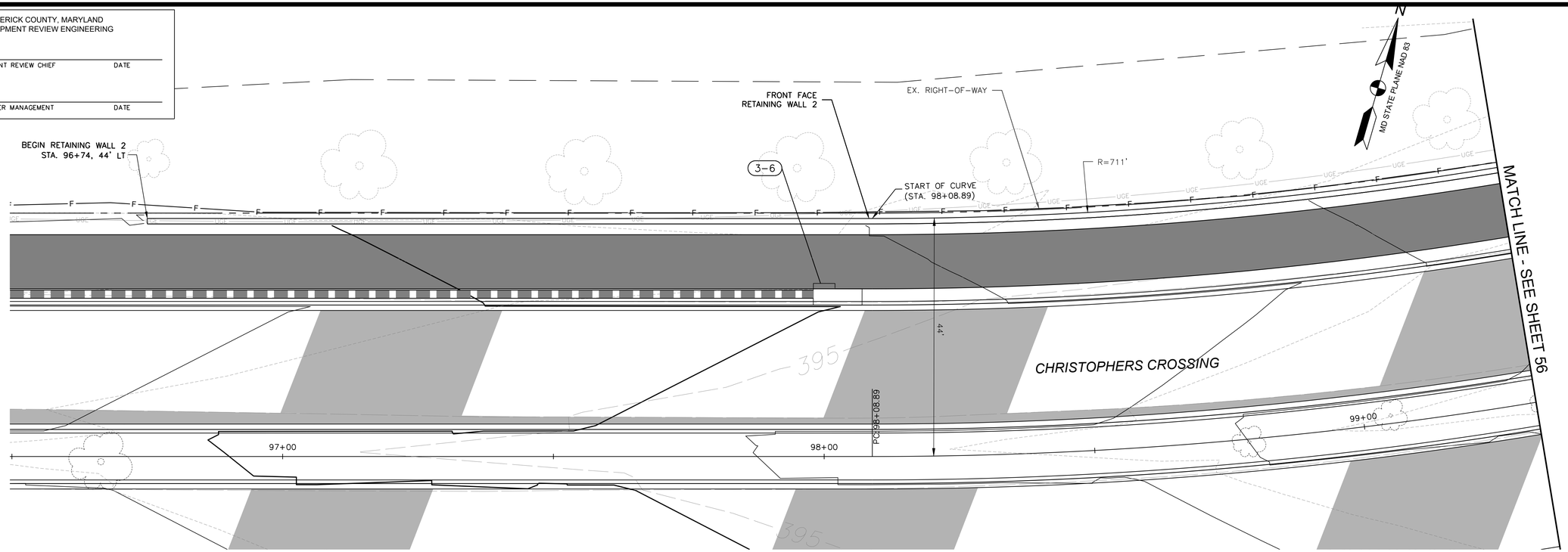
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 54 OF 118

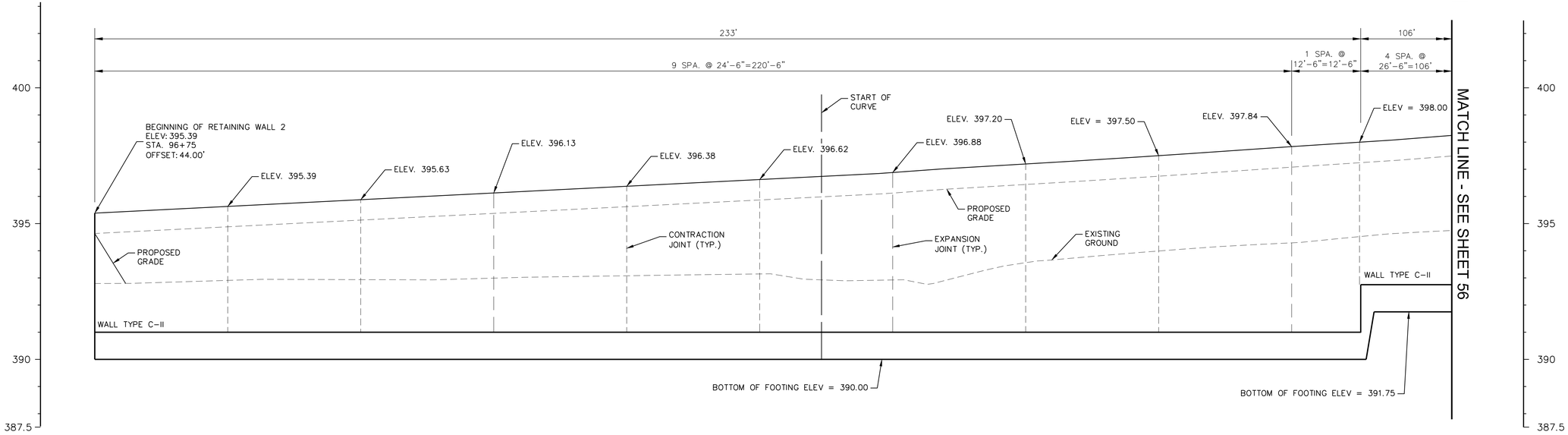
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



RETAINING WALL 2 PLAN
SCALE: 1"=10'



RETAINING WALL 2 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

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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

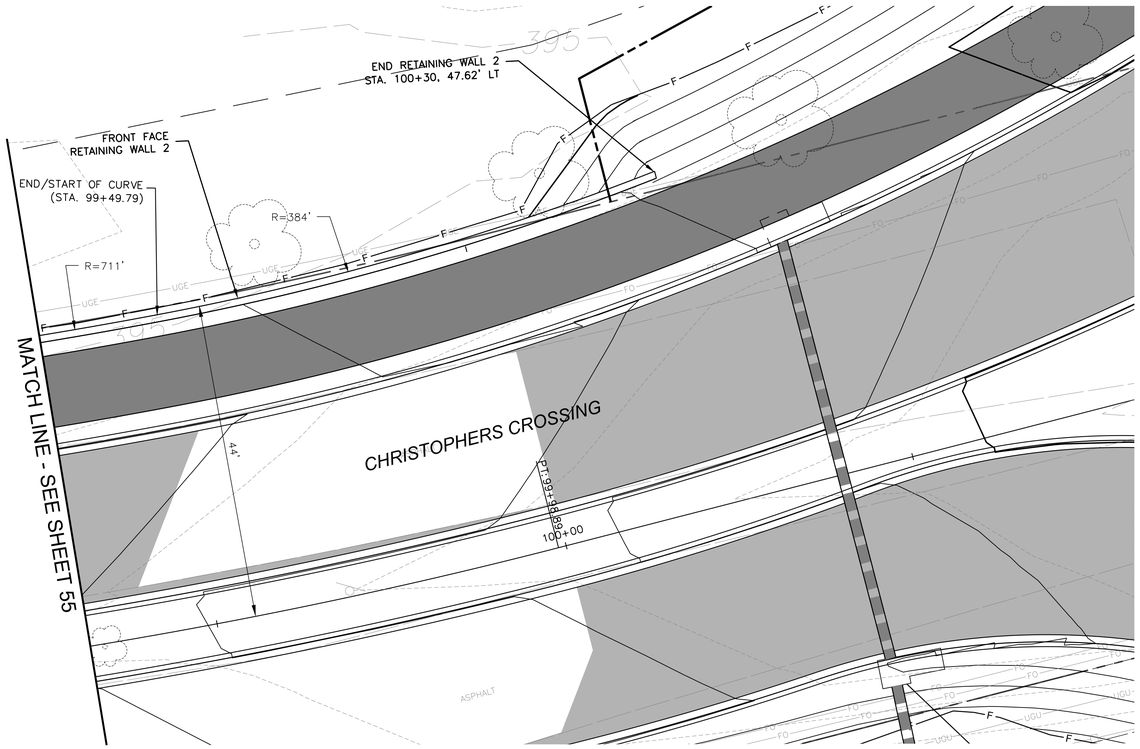
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 55 OF 118

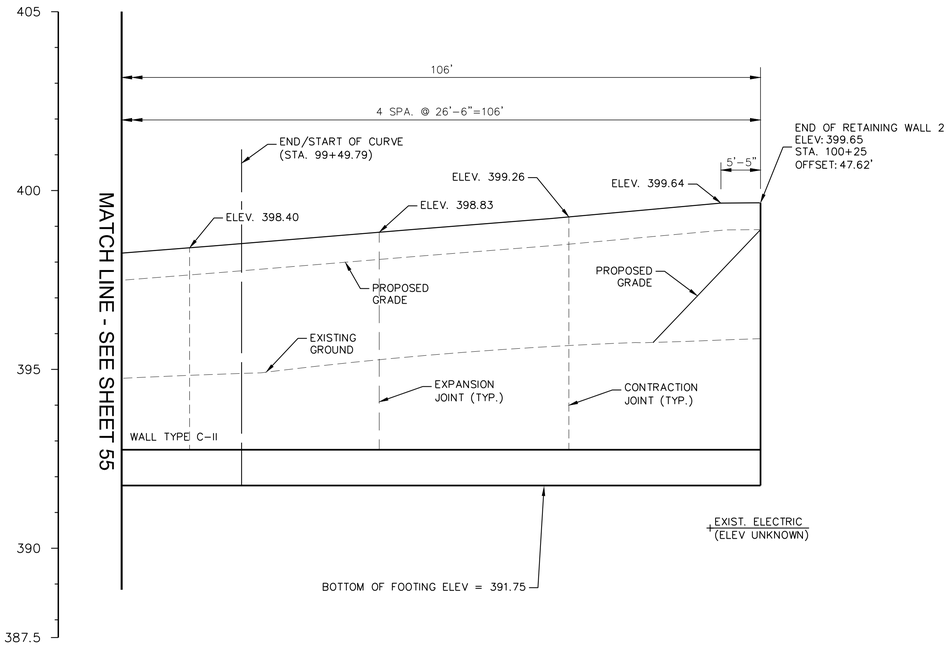
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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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

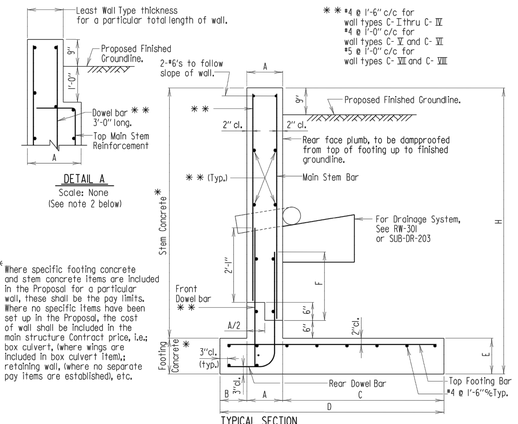
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 56 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



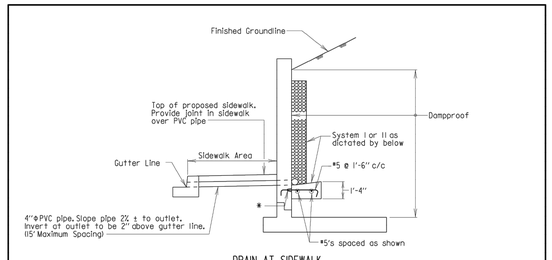
* Where specific footing concrete and stem concrete items are included in the Proposal for a particular wall, these shall be the pay limits. Where no specific items have been set up in the Proposal, the cost of wall shall be included in the main structure Contract price, i.e.; box culvert, (where wings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

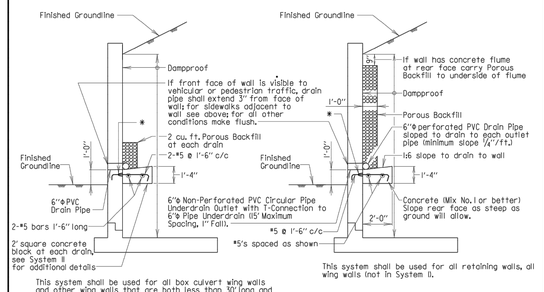
Wall Type	H	A	B	C	D	E	F	Rear Dowel Bar	Main Stem Bar	Top Foot. Bar
C-I	6'-0"	1'-0"	9"	2'-6"	4'-3"	1'-0"	2'-2"	#5 @ 1'-0"c/c	#5 @ 1'-0"c/c	#5 @ 1'-0"c/c
C-II	8'-0"	1'-0"	9"	3'-6"	5'-3"	1'-0"	2'-2"	#5 @ 1'-0"c/c	#5 @ 1'-0"c/c	#5 @ 1'-0"c/c
C-III	10'-0"	1'-0"	1'-0"	4'-6"	6'-6"	1'-3"	2'-7"	#6 @ 6"c/c	#6 @ 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'-3"	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 __

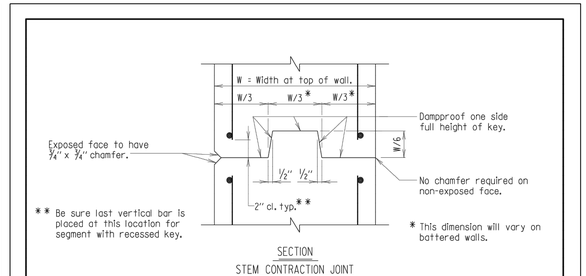
RETAINING WALLS

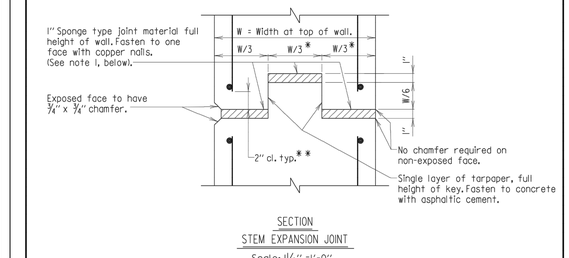




APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
DIRECTOR OFFICE OF STRUCTURES DATE: 01/22/2001	RETAINING WALL AND WING WALL DRAINAGE SYSTEMS
VERSION 1.0	DETAIL NO. RW-301 SHEET __ OF __

RETAINING WALLS

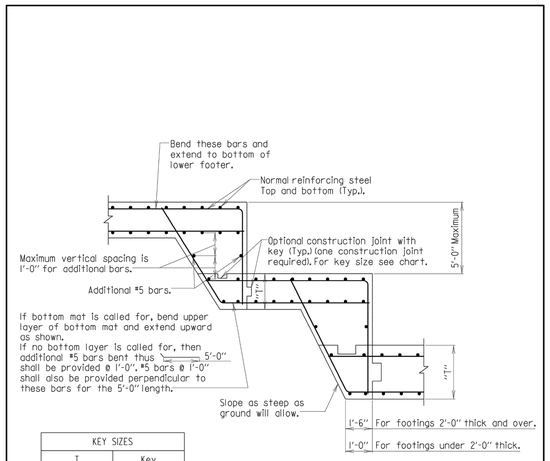




Notes:
1. Joint locations shall be as shown on contract drawing. If no locations are given concrete retaining walls shall have contraction joints a maximum of every 30'-0"; and expansion joints, with 1" sponge type material (see 911.02), a maximum of every 90'-0"
2. Stop key 9" below top of wall.
3. 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: 3/8"=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 LAP

GENERAL NOTES

SPECIFICATIONS: MDOT SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2020.

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 SPECIFICATION IN CONTRACT DOCUMENTS.

RW-6

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

RETAINING WALL DETAILS AND NOTES

DATE: DECEMBER 2021 SCALE: N.T.S.

AMT FILE NO. 15-0758.007 SHEET NO. 57 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

BAR SIZE	LOCATION CATEGORY A — 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.

BAR SIZE	LOCATION CATEGORY B — 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"

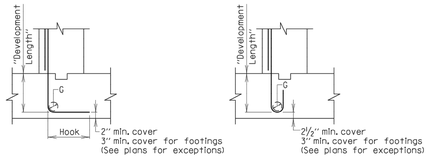
Location Category B - All bars not in Location Category A.

[ ] = 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
Jon O'Neal, 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.

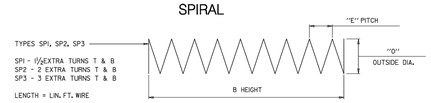
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Jon O'Neal, DIRECTOR OFFICE OF STRUCTURES DATE: 05/01/2001	DEVELOPMENT LENGTH DIMENSIONS OF HOOKED BARS FOR GRADE 60 REINFORCING STEEL IN MIX NO.3 (3500 P.S.I.) CONCRETE NON-EPOXY COATED REINFORCING
VERSION: 1.0	DETAIL NO. REBAR-DL-201 SHEET 1 OF 1

REBAR - DEVELOPMENT LENGTH

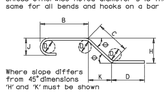
TYPICAL BAR BENDS

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

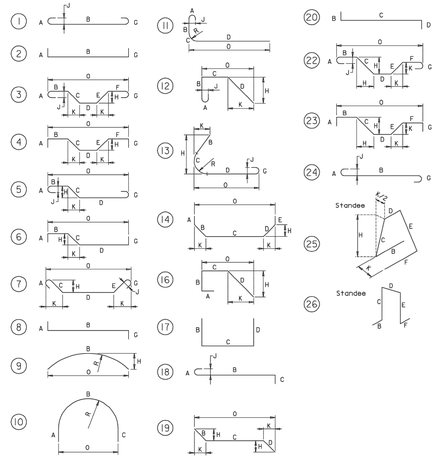
BENDING TOLERANCE NOTE
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Earl Lewis, 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

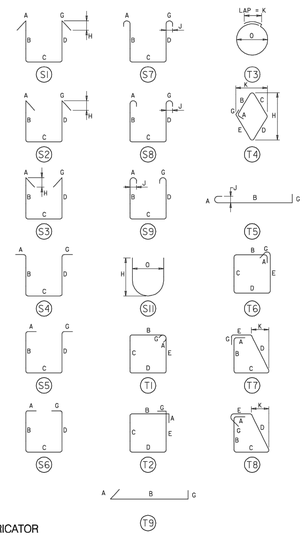
BENDING TOLERANCE NOTE
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Earl Lewis, 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
Earl Lewis, 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

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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RW-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

RETAINING WALL DETAILS

DATE: DECEMBER 2021 SCALE: N.T.S.

AMT FILE NO. 15-0758.007 SHEET NO. 58 OF 118

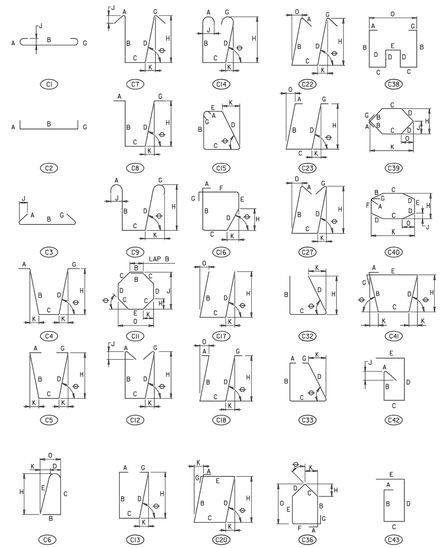
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

SHA TYPICAL BAR BENDS

TIES AND STIRRUPS



NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

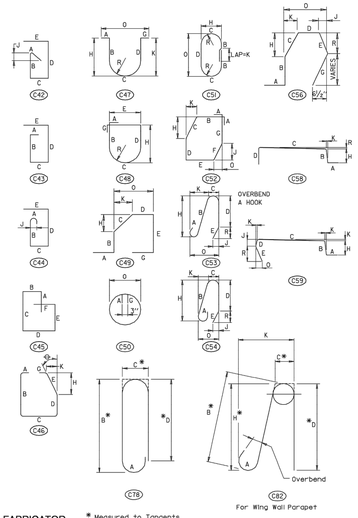
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
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

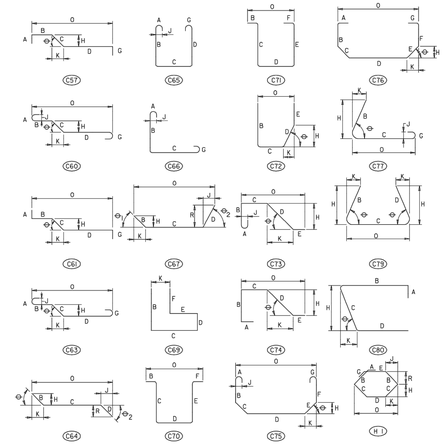
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
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

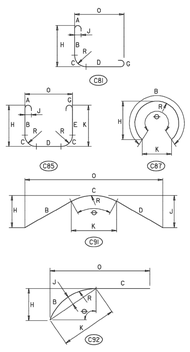
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

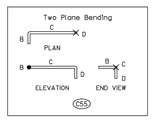
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
DIRECTOR OFFICE OF STRUCTURES DATE: 02/01/1994	BAR BEND TYPES SHA - STANDARD PIN BENDING
VERSION 1.0	DETAIL NO. REBAR-BB-101 SHEET 6 OF 8

REBAR BAR BENDS

SHA TYPICAL BAR BENDS

RADIUS BENDING





NOTE TO FABRICATOR

BENDING TOLERANCE NOTE

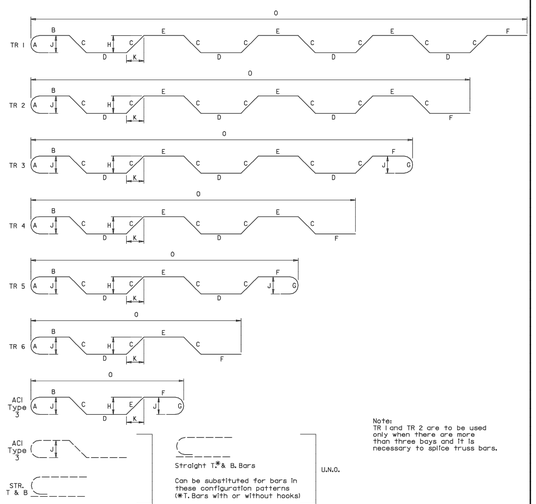
TIES AND STIRRUPS SHALL BE BENT WITH A PLUS ZERO INCH (+0") MINUS (-) NORMAL ACI BENDING TOLERANCES

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
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:
TR 1 and TR 2 are to be used only when there are more than three bays and it is necessary to splice truss bars.

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 TRUSS BAR CONFIGURATIONS
VERSION 1.0	DETAIL NO. REBAR-BB-101 SHEET 8 OF 8

REBAR BAR BENDS

RW-8

REVISIONS		
MARK	DATE	DESCRIPTION

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(410) 752-4552
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
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RETAINING WALL DETAILS

DATE: DECEMBER 2021 SCALE: N.T.S.

AMT FILE NO. 15-0758.007 SHEET NO. 59 OF 118

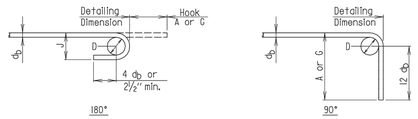
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

HOOKS TABLE I REFERENCES

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



RECOMMENDED END HOOKS, ALL GRADES

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

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
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

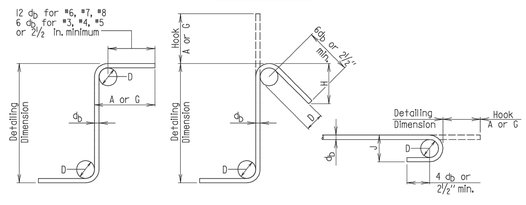
REBAR BAR BENDS

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



STIRRUP AND TIE HOOK DIMENSIONS, in.

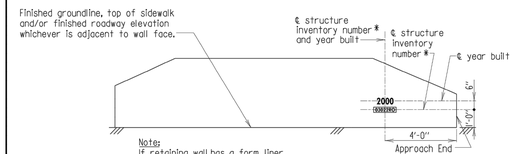
BAR SIZE	D, in.	90 - deg hook A or G	135 - deg hook A or G	135 - deg hook H, approx
#3	1½	4	4	2½
#4	2	4½	4½	3
#5	2½	6	5½	3¾
#6	4½	1'-0	7¼	4½
#7	5¼	1'-2	9	5¼
#8	6	1'-4	10¼	6

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

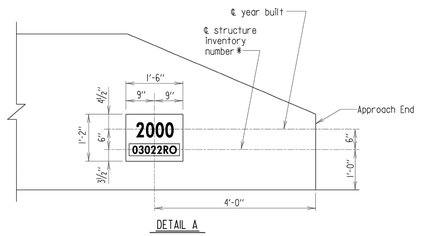
APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
DIRECTOR OFFICE OF STRUCTURES DATE: 11/17/1997	REINFORCING STEEL HOOK TABLES AND DIAGRAMS
VERSION 1.0	DETAIL NO. REBAR-BB-102 SHEET 2 OF 2

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



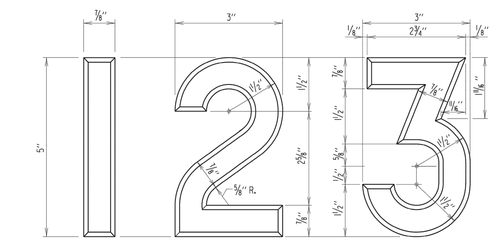
DETAIL A

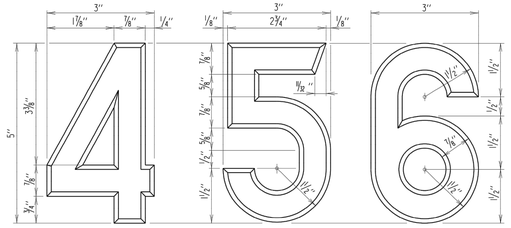
Notes:
1. For existing structures, where a year built is shown on the structure and structure is to be rehabilitated, the marking should read 1942-2000 (old year first - new year).
2. For existing structures with no year built contact the Office of Structures for old year.
3. For Year Built Numerals 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
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

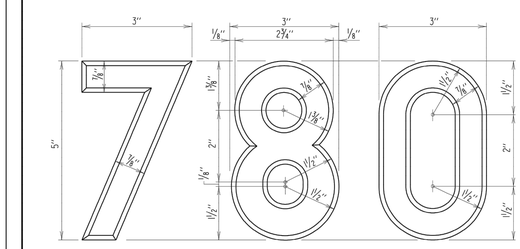


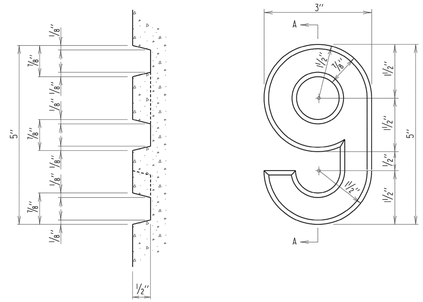


Note:
Year built numerals to be indented into concrete (unpainted) - as indicated on Detail Nos. SI-101, SI-103 and SI-104.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
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
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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RW-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

RETAINING WALL DETAILS

DATE: DECEMBER 2021 SCALE: N.T.S.

AMT FILE NO. 15-0758.007 SHEET NO. 60 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

GENERAL NOTES

Specifications: Latest SHA Specifications and Special Provisions for materials and construction. Latest AASHTO Standard Specifications for Highway Bridges for design.

Materials: All posts and pickets shall be hot rolled steel conforming to A 787, G90. All rail channels shall be rolled "U" channels conforming to A 653, G90. All steel shall be hot dipped galvanized in conformance with A 525, G90.

All pickets for the fences shall be square with 16 gauge thickness and a tensile strength of 50,000 psi.

All horizontal rails for the fence shall be 1⅜" wide by 1½" deep, and shall be rolled into "U" channels with a wall thickness of 0.12".

Rail attachment bracket shall be die cast of zinc per ASTM B 86-83 Z 33521. Ball and socket design capable of 30 degrees swivel. Bracket shall fully encapsulate rail end.

Rings shall be cast aluminum. Attach rings to top rail by inserting mounting block into top rail and riveting through side of rail using ¼" rivet. Hold bottom of ring in place by inserting dowel that protrudes from ring through predrilled hole in middle rail. Rings may be omited if the slope of the railing is set at an angle more than 10 degrees.

Vertical posts for the fence shall be 2" square with a 14 gauge thickness and a tensile strength of 50,000 psi.

All anchor plates shall be steel conforming to A 709, Grade 50.

Anchor studs or anchor bolts shall conform to A 276, Type 430 or Type 304 stainless steel annealed, hot-finished, ultimate strength 70,000 psi min., 20% min. elongation. Threads may be rolled or cut.

Epoxy grout for anchor studs in cored holes shall conform to 902.11 (d).

Construction: All picket, rail, bracket and post attachments shall be made with ¼" industrial drive rivets.

All longitudinal rails shall be parallel to top of wall.

All metal shall be given a polyester resin based powder coating applied by the electrostatic spray process.

The finished color shall be black.

For post spacing see pertinent structure sheets.

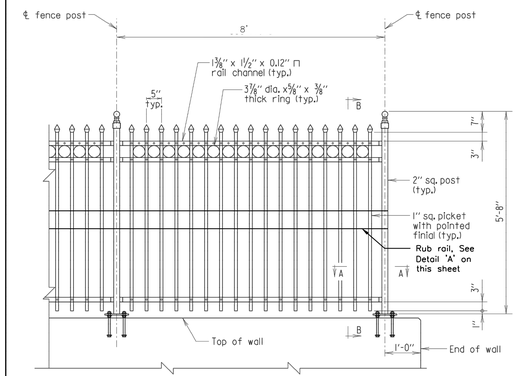
Precoated longitudinal rails, if cut, shall have the cut end coated with touch up material supplied by the manufacturer prior to erection.

Measurement and Payment: The furnishing, fabricating, erecting, etc., of all new fence on the bridges, complete in place, will not be measured for payment but all costs thereof shall be incidental to the "5-foot Ornamental Fence" item.

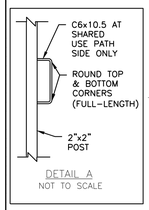
Any defects uncovered by the inspection of welds on base plates and posts shall be repaired or replaced by new members at no additional cost to the Administration.

APPROVAL	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF STRUCTURES
Director, Office of Structures DATE: 02/10/2017	ORNAMENTAL FENCE GENERAL NOTES
VERSION 1.0	DETAIL NO. SUP-FR(FN)-401 SHEET __ OF __

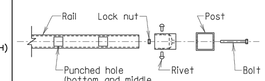
SUPER FENCE/RAILING



ORNAMENTAL FENCE ELEVATION
Scale: ½" = 1'-0"



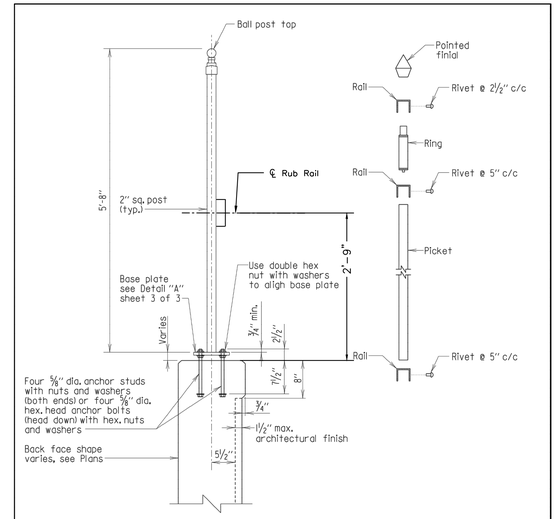
DETAIL A
NOT TO SCALE



SECTION A-A (EXPLODED)
Scale: 1½" = 1'-0"

5 FOOT ORNAMENTAL FENCE DETAIL

MDOT SHA STD: SUP-FR(FN)-403 MODIFIED SHEET 1 OF 3



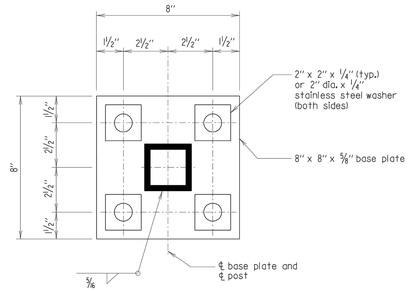
TYPICAL SECTION
Scale: ¾" = 1'-0"

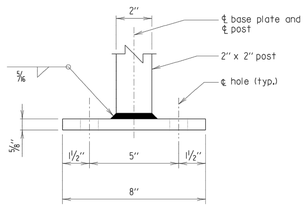
SECTION B-B (EXPLODED)
Scale: 1½" = 1'-0"

NOTES:
1. ALL FENCE POSTS SHALL BE SET PLUMB.
2. ALL LONGITUDINAL RAIL CHANNELS SHALL BE PARALLEL TO TOP OF WALL
3. FOR FENCE POST SPACING, SEE 5 FOOT ORNAMENTAL FENCE DETAIL SHEET 1 OF 3

5 FOOT ORNAMENTAL FENCE DETAIL

MDOT SHA STD: SUP-FR(FN)-403 MODIFIED SHEET 2 OF 3





DETAIL "A"
Scale: 3" = 1'-0"

5 FOOT ORNAMENTAL FENCE
BASE PLATE DETAILS

MDOT SHA STD: SUP-FR(FN)-403 MODIFIED SHEET 3 OF 3

RW-10

REVISIONS		
MARK	DATE	DESCRIPTION

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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 DETAILS

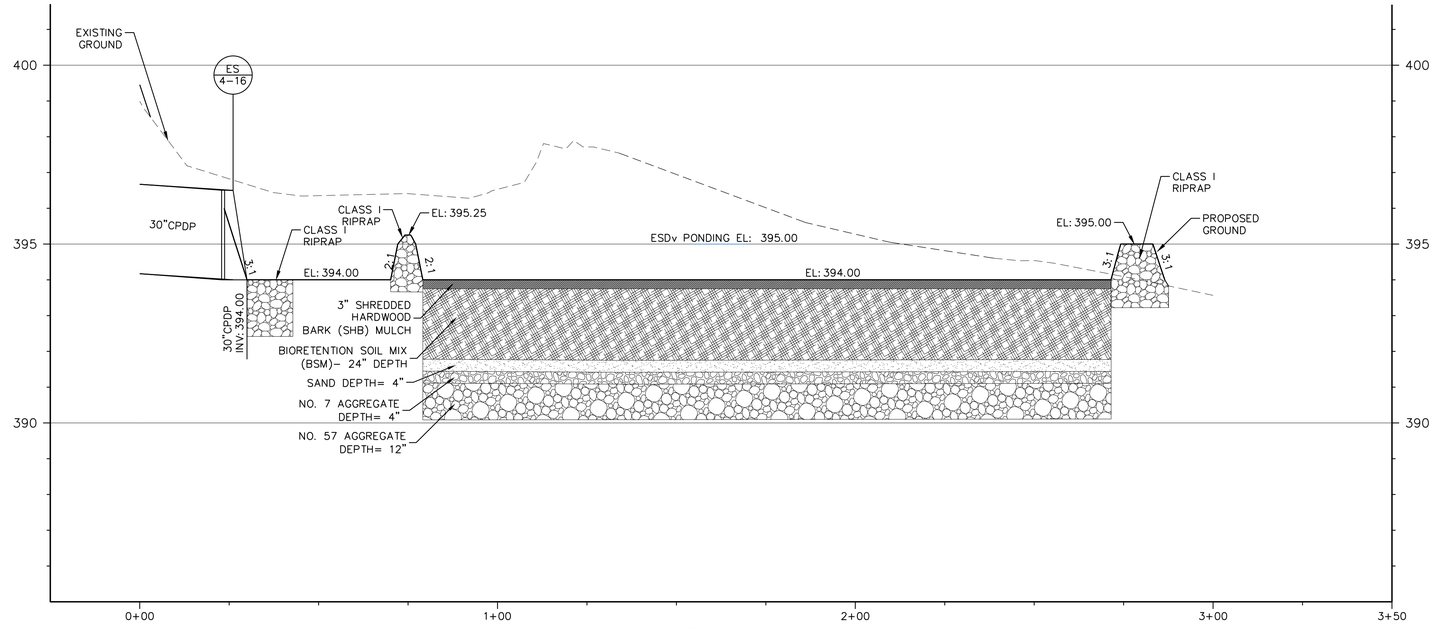
DATE: DECEMBER 2021 SCALE: N.T.S.

AMT FILE NO. 15-0758.007 SHEET NO. 61 OF 118

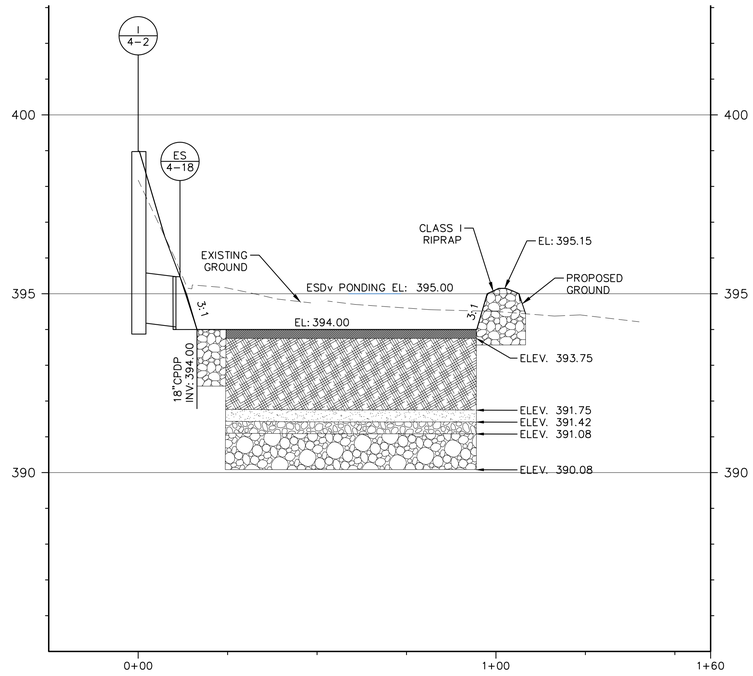
FREDERICK COUNTY, MARYLAND
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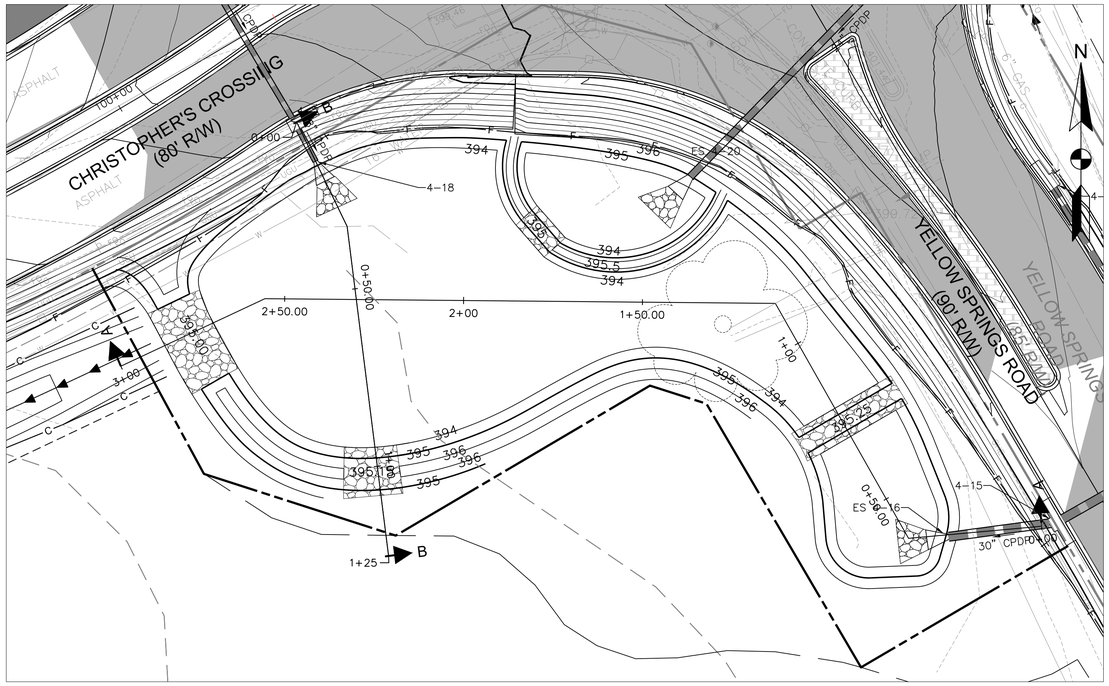
APPROVED: _____
STORMWATER MANAGEMENT DATE



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



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



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

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

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:	1.44 INCHES
PROVIDED ESDv:	12,095 CU. FT.
IMPERVIOUS AREA TREATED:	2.18 ACRES

NOTES

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

REVISIONS		
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SW-1

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FREDERICK COUNTY, MARYLAND

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

STORMWATER MANAGEMENT PLAN

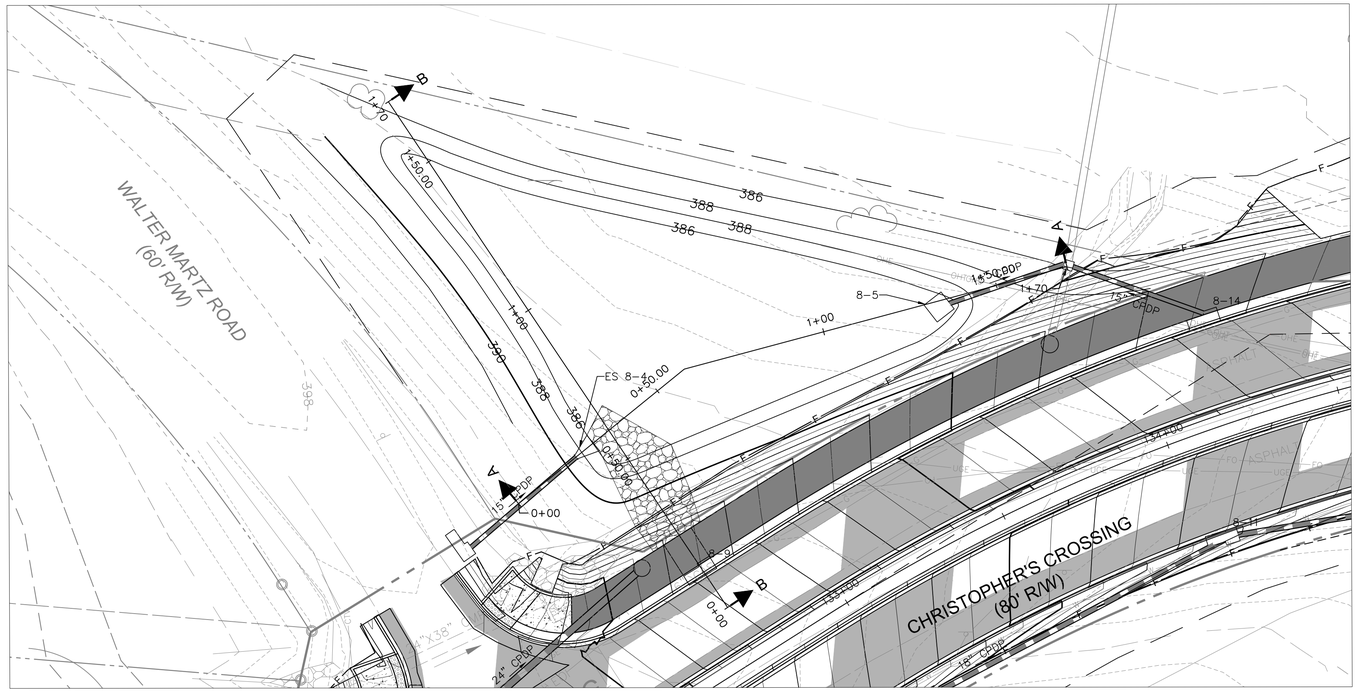
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 62 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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

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

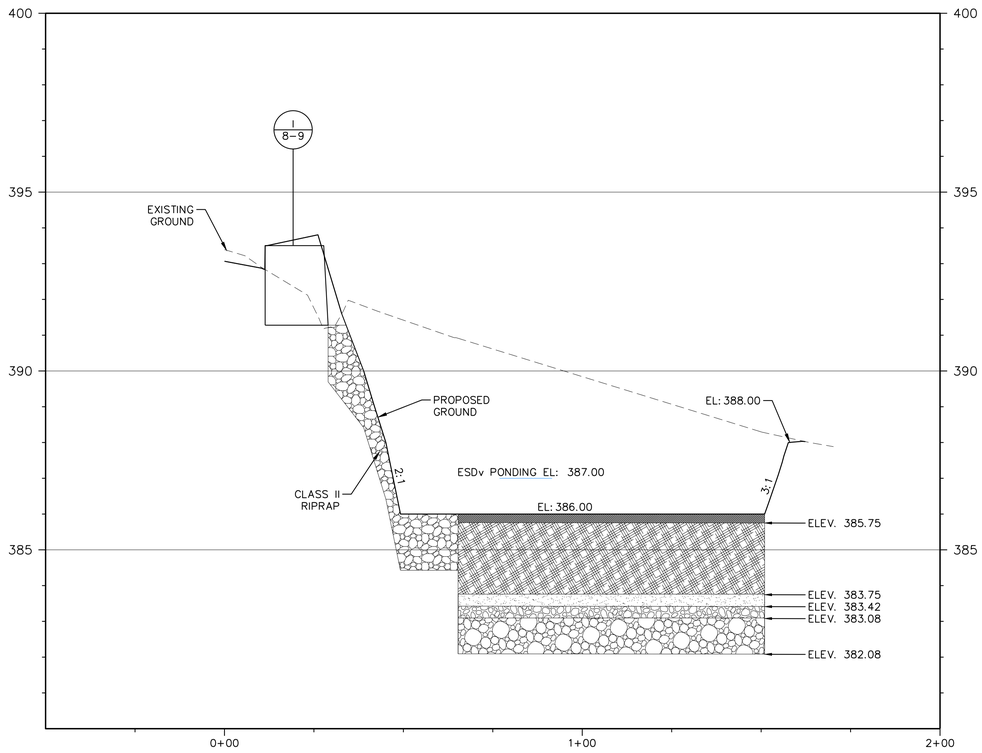
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SWM FACILITY ANALYSIS

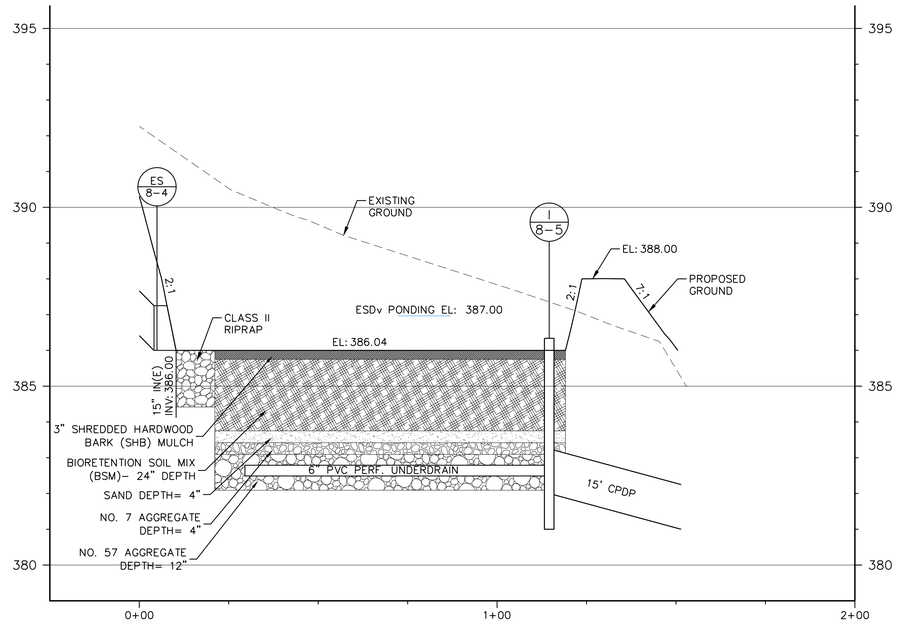
FACILITY NAME:	BR-2 (BIORETENTION)
DRAINAGE AREA:	1.47 ACRES
RCN:	81
Tc:	0.10 HR
TARGET Pe:	1.80 INCHES
TARGET ESDv:	5,201 CU. FT.
PROVIDED Pe:	2.17 INCHES
PROVIDED ESDv:	6,276 CU. FT.
IMPERVIOUS AREA TREATED:	1.04 ACRES

NOTES

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



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



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

SW-2

REVISIONS		
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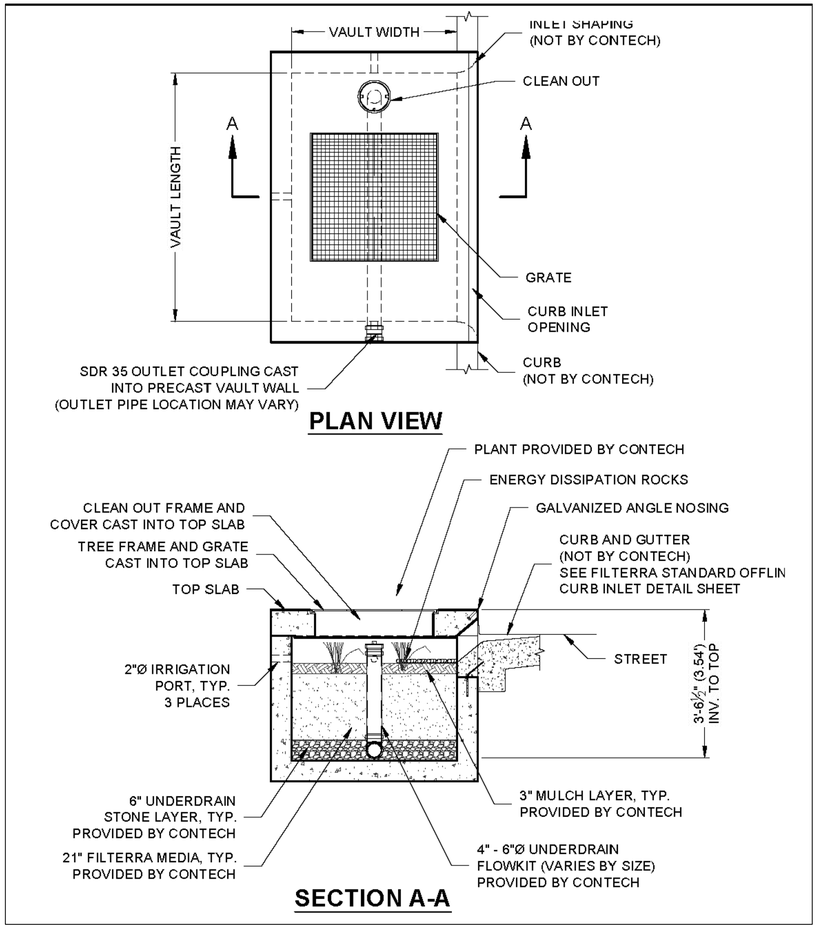
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 63 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

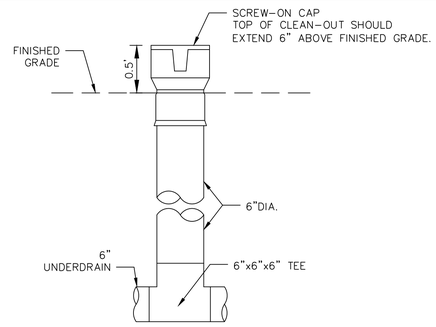
APPROVED: _____
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APPROVED: _____
STORMWATER MANAGEMENT DATE



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

FILTERRA PLANTER BOX SCHEDULE				
STATION	OFFSET (FT)	BOX SIZE	BYPASS INLET	REMARKS
85+70	27.9 LT	6' x 12'	2–2	FT–1
91+55	27.8 LT	6' x 10'	2–7	FT–2
98+21	28.0 LT	6' x 10'	3–6	FT–3
108+96	28.0 LT	6' x 8'	5–1	FT–4
108+97	28.0 RT	6' x 6'	5–2	FT–5
111+77	27.9 LT	6' x 8'	5–6	FT–6



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.

OBSERVATION WELL/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.

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SW-3

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RECONSTRUCTION OF
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STORMWATER MANAGEMENT DETAILS

DATE: DECEMBER 2021 SCALE:

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FREDERICK COUNTY, MARYLAND
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APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

LIMITS OF DISTURBANCE =
544,514 SQ. FT. (12.50 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	1" ½"-1/4"	45 LB/AC	90 LB/AC	90 LB/AC	2 TONS/AC

FREDERICK
SOIL CONSERVATION DISTRICT

APPROVED BY: _____
DISTRICT MANAGER

DATE: _____

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) 752-8352
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: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 65 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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:

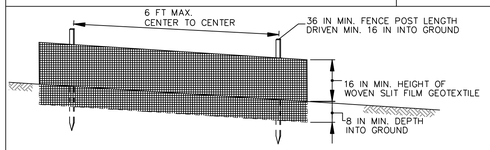
A. USE I WATERS (WITHOUT YELLOW PERCH): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
B. USE I WATERS (WITH YELLOW PERCH): IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD FEBRUARY 15 THROUGH JUNE 15, INCLUSIVE DURING ANY YEAR.
C. USE 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.

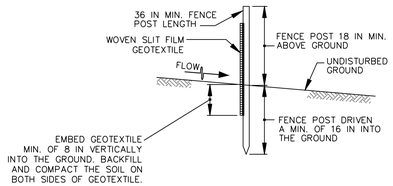
11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

DETAIL E-1 SILT FENCE

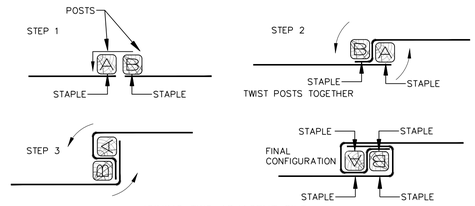
STANDARD SYMBOL: SF



ELEVATION



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

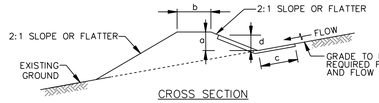
1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

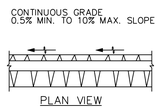
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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
a – 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 ± 1/16 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.

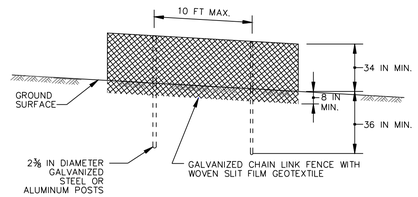
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

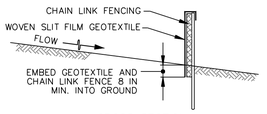
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

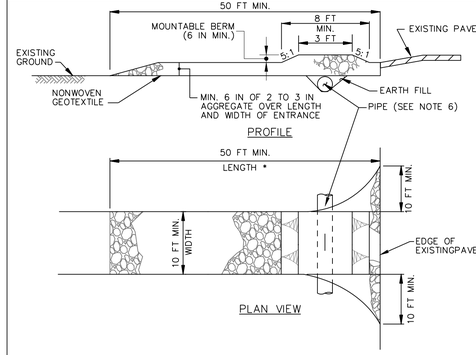
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY 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



PROFILE

PLAN VIEW

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: _____

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
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: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 66 OF 118

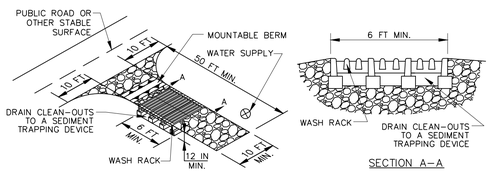
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

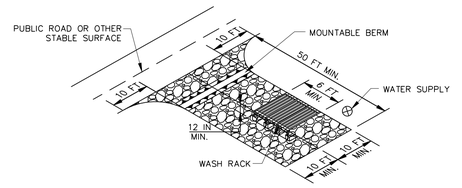
APPROVED: _____
STORMWATER MANAGEMENT DATE

DETAIL B-2 WASH RACK OPTION

STANDARD SYMBOL: WR



ISOMETRIC VIEW – WASH RACK IN SCE



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.

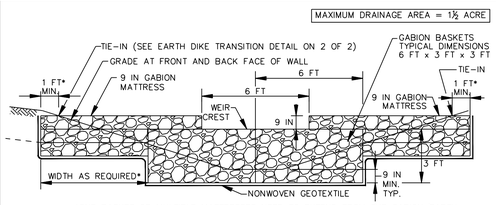
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-8 TEMPORARY GABION OUTLET STRUCTURE

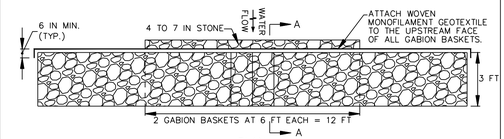
STANDARD SYMBOL: TGOS

MAXIMUM DRAINAGE AREA = 1½ ACRE

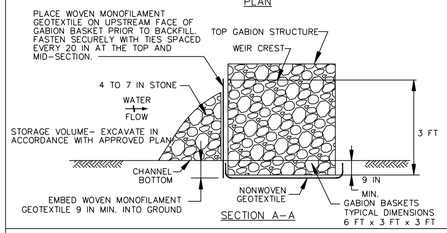


*ONE BASKET OR MULTIPLE MATTRESSES NEED TO EXTEND FROM THE GABION/EARTH INTERSECTION (TIE IN) TO A MINIMUM 1 FOOT BEYOND THE TIE IN.

ELEVATION



PLAN



SECTION A–A

1 OF 2

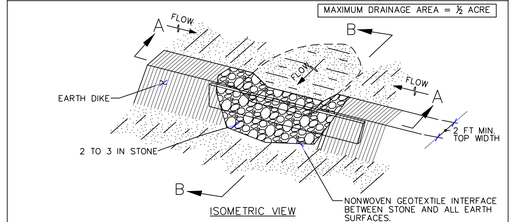
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

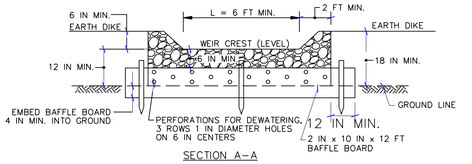
DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

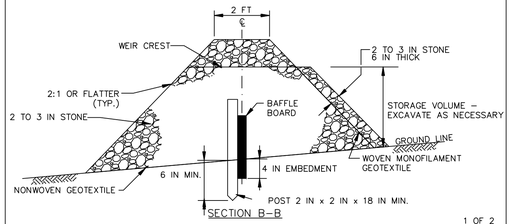
MAXIMUM DRAINAGE AREA = ½ ACRE



ISOMETRIC VIEW



SECTION A–A



SECTION B–B

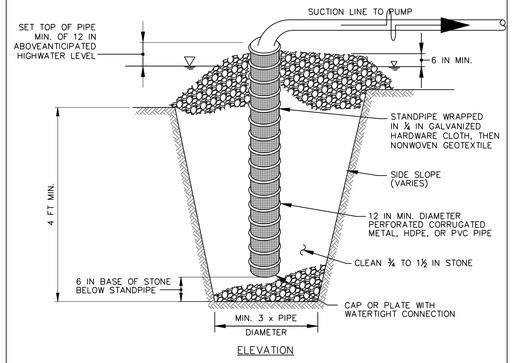
1 OF 2

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 ¼ 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.

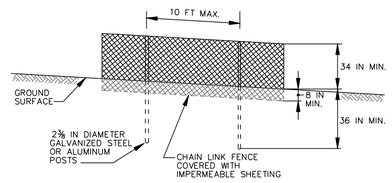
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

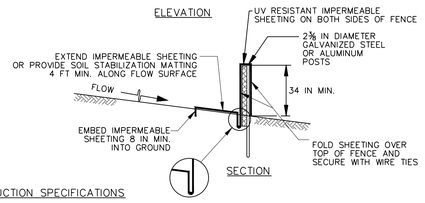
DETAIL C-9 DIVERSION FENCE

STANDARD SYMBOL: DF

MAXIMUM DRAINAGE AREA = 2 ACRES



ELEVATION



SECTION

CONSTRUCTION SPECIFICATIONS

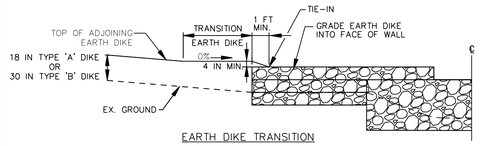
1. USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2⅜ INCH MAXIMUM OPENING).
2. USE 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
3. FASTEN CHAIN LINK FENCE SECURELY 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: _____

ES-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

EROSION & SEDIMENT CONTROL DETAILS

DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 67 OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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

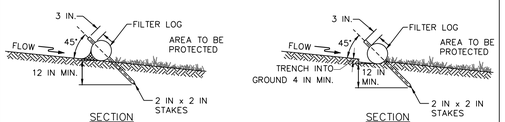
FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

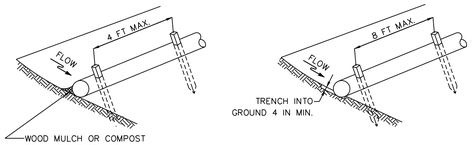
DETAIL E-6 FILTER LOG

STANDARD SYMBOL
FL-18
DESIGNATION FL-18 REFERS TO 18 INCH DIAMETER FILTER LOG.



SECTION

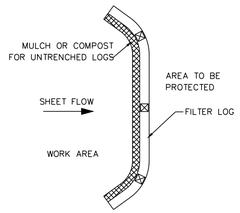
SECTION



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 UNTRENCHED 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

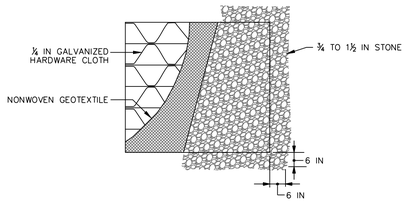
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

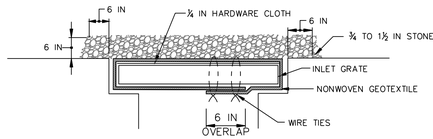
DETAIL E-9-2 AT-GRADE INLET PROTECTION

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.

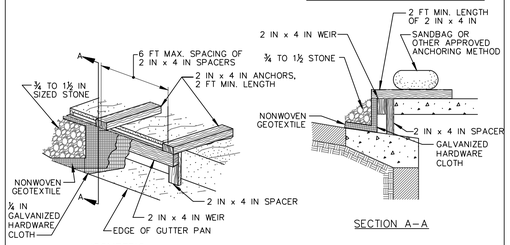
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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



ISOMETRIC

SECTION A-A

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 CONSTRUCTION ONLY. THIS OFFICE ASSUMES NO RESPONSIBILITY OR 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 SESIMENTATION	
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/SIZE)	
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 /BANKFILL/COMPACTION	
D. CONCCRETE STRUCTURES	
1. FOOTER DEMINSONS	
2. REINFORCING 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: _____

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) 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

EROSION & SEDIMENT CONTROL DETAILS

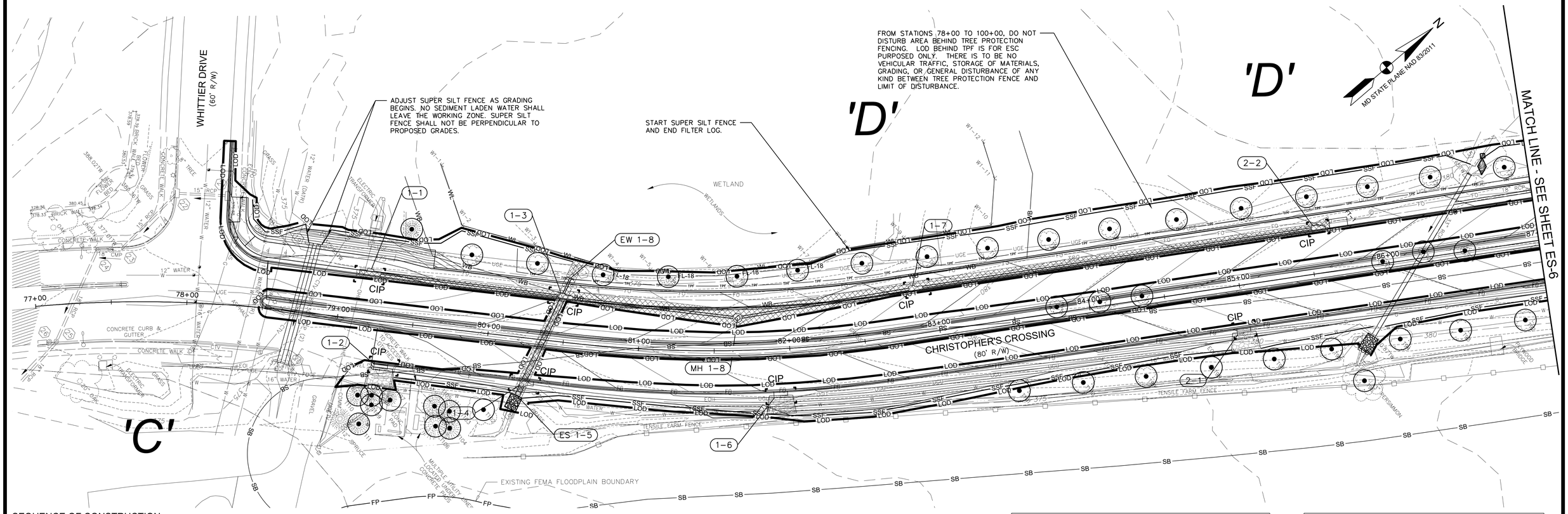
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 68 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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.

CONSTRUCTION:

5. THE LIMITS OF DISTURBANCE MUST BE FIELD MARKED PRIOR TO INSTALLATION OF SEDIMENT CONTROL MEASURES, CONSTRUCTION OR ANY OTHER LAND DISTURBING ACTIVITIES.
6. CLEAR AND GRADE FOR INSTALLATION OF PERIMETER SEDIMENT CONTROL DEVICES, ONLY DISTURBING THE AREA NEEDED FOR INSTALLATION OF THE SEDIMENT CONTROL DEVICES.
7. DISTURBED AREAS WITHIN THE PROJECT LIMITS SHALL HAVE EITHER PERMANENT OR TEMPORARY STABILIZATION AT THE END OF EACH WORK DAY.
8. 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.

MISS UTILITY
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OR LOG ON TO www.missutility.net

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
	SOIL BOUNDARY		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

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	82+50 LT	86+60 LT	CHRISTOPHERS CROSSING	415
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+15	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+50	LT	CHRISTOPHERS CROSSING	1
CIP	79+30	RT	CHRISTOPHERS CROSSING	1
CIP	81+80	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	82+50 LT	CHRISTOPHERS CROSSING	180

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: _____

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
(410) 752-4552
EMAIL: AMT1@AMTENGINEERING.COM

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

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

EROSION AND SEDIMENT CONTROL PLAN

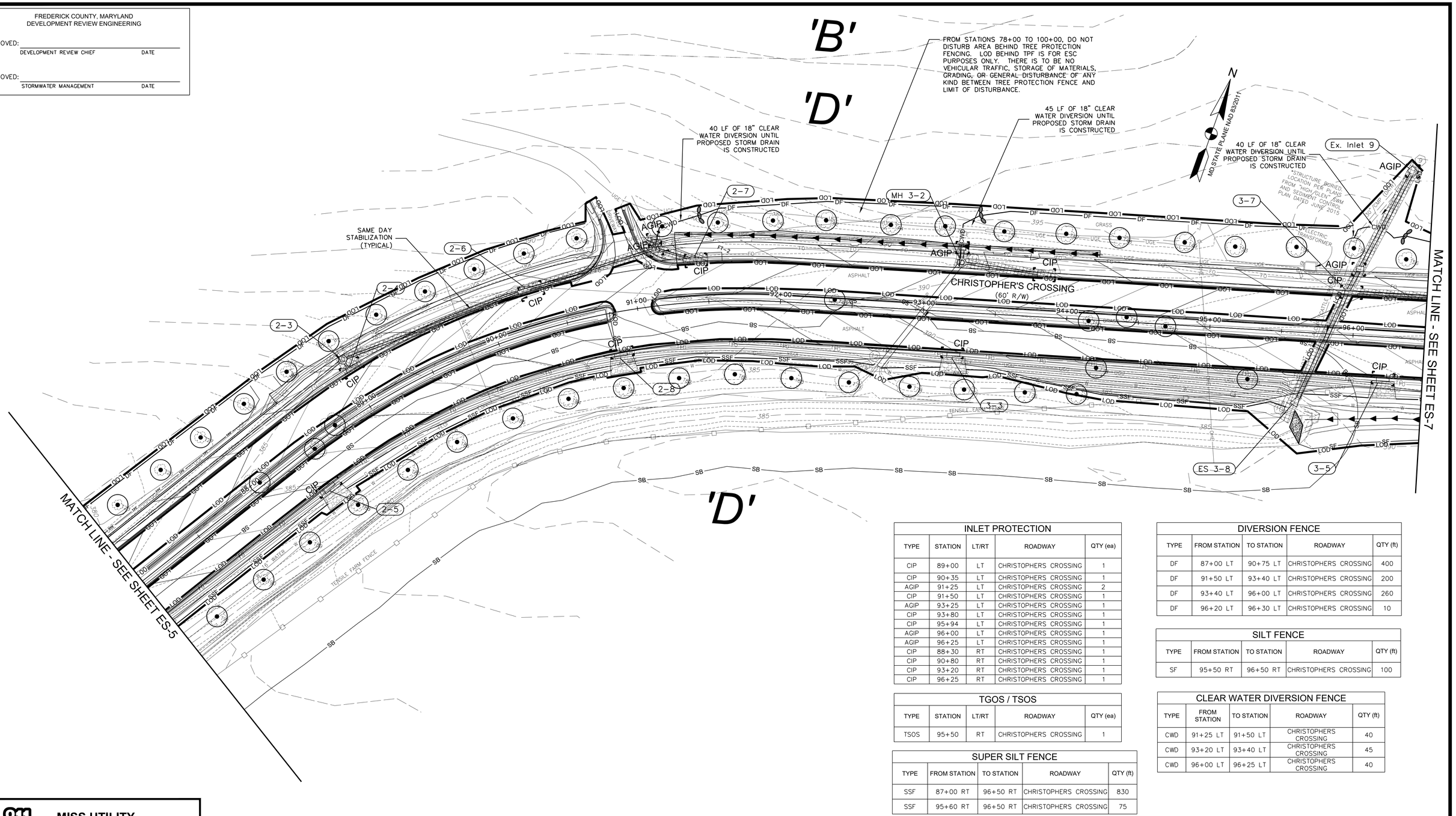
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 69 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



INLET PROTECTION

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	89+00	LT	CHRISTOPHERS CROSSING	1
CIP	90+35	LT	CHRISTOPHERS CROSSING	1
AGIP	91+25	LT	CHRISTOPHERS CROSSING	2
CIP	91+50	LT	CHRISTOPHERS CROSSING	1
AGIP	93+25	LT	CHRISTOPHERS CROSSING	1
CIP	93+80	LT	CHRISTOPHERS CROSSING	1
CIP	95+94	LT	CHRISTOPHERS CROSSING	1
AGIP	96+00	LT	CHRISTOPHERS CROSSING	1
AGIP	96+25	LT	CHRISTOPHERS CROSSING	1
CIP	88+30	RT	CHRISTOPHERS CROSSING	1
CIP	90+80	RT	CHRISTOPHERS CROSSING	1
CIP	93+20	RT	CHRISTOPHERS CROSSING	1
CIP	96+25	RT	CHRISTOPHERS CROSSING	1

TGOS / TSOS

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
TSOS	95+50	RT	CHRISTOPHERS CROSSING	1

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

DIVERSION FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
DF	87+00 LT	90+75 LT	CHRISTOPHERS CROSSING	400
DF	91+50 LT	93+40 LT	CHRISTOPHERS CROSSING	200
DF	93+40 LT	96+00 LT	CHRISTOPHERS CROSSING	260
DF	96+20 LT	96+30 LT	CHRISTOPHERS CROSSING	10

SILT FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SF	95+50 RT	96+50 RT	CHRISTOPHERS CROSSING	100

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	45
CWD	96+00 LT	96+25 LT	CHRISTOPHERS CROSSING	40

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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
	SOIL BOUNDARY		SAME DAY STABILIZATION AREA
DF	DIVERSION FENCE	CIP / AGIP	CURB INLET PROTECTION / AT-GRADE INLET PROTECTION
		TGOS / TSOS	TEMPORARY GABION OUTLET STRUCTURE / TEMPORARY STONE OUTLET STRUCTURE
			SUMP PIT

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

FREDERICK
SOIL CONSERVATION DISTRICT

APPROVED BY: _____
DISTRICT MANAGER

DATE: _____

ES-6

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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FREDERICK COUNTY, MARYLAND
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FREDERICK COUNTY, MARYLAND

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

EROSION AND SEDIMENT CONTROL PLAN

DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 70 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

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	LT/RT	CHRISTOPHERS CROSSING	2
CIP	100+50	LT/RT	CHRISTOPHERS CROSSING	2
CIP	102+40	RT	CHRISTOPHERS CROSSING	1
CIP	102+60	LT	CHRISTOPHERS CROSSING	1
CIP	103+50	LT/RT	CHRISTOPHERS CROSSING	2
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	100+00 LT	CHRISTOPHERS CROSSING	340
DF	100+00 LT	101+40 LT	CHRISTOPHERS CROSSING	200
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.

CREST OF DIVERSION FENCE

SAME DAY STABILIZATION (TYPICAL)

MATCH LINE - SEE SHEET ES-8

MATCH LINE - SEE SHEET ES-6

'B'

'D'

SCALE: 1"=30'

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
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- CWD — CLEAR WATER DIVERSION
- SAF — SAFETY FENCE (BOF)
- SOIL BOUNDARY
- 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

811 Know what's below. Call before you dig.

MISS UTILITY
48 HOURS BEFORE YOU DIG
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FREDERICK
SOIL CONSERVATION DISTRICT

APPROVED BY: _____
DISTRICT MANAGER

DATE: _____

ES-7

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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

EROSION AND SEDIMENT CONTROL PLAN

DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 71 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

EARTH DIKE				
TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
A-1	104+50 LT	105+50 LT	CHRISTOPHERS CROSSING	110

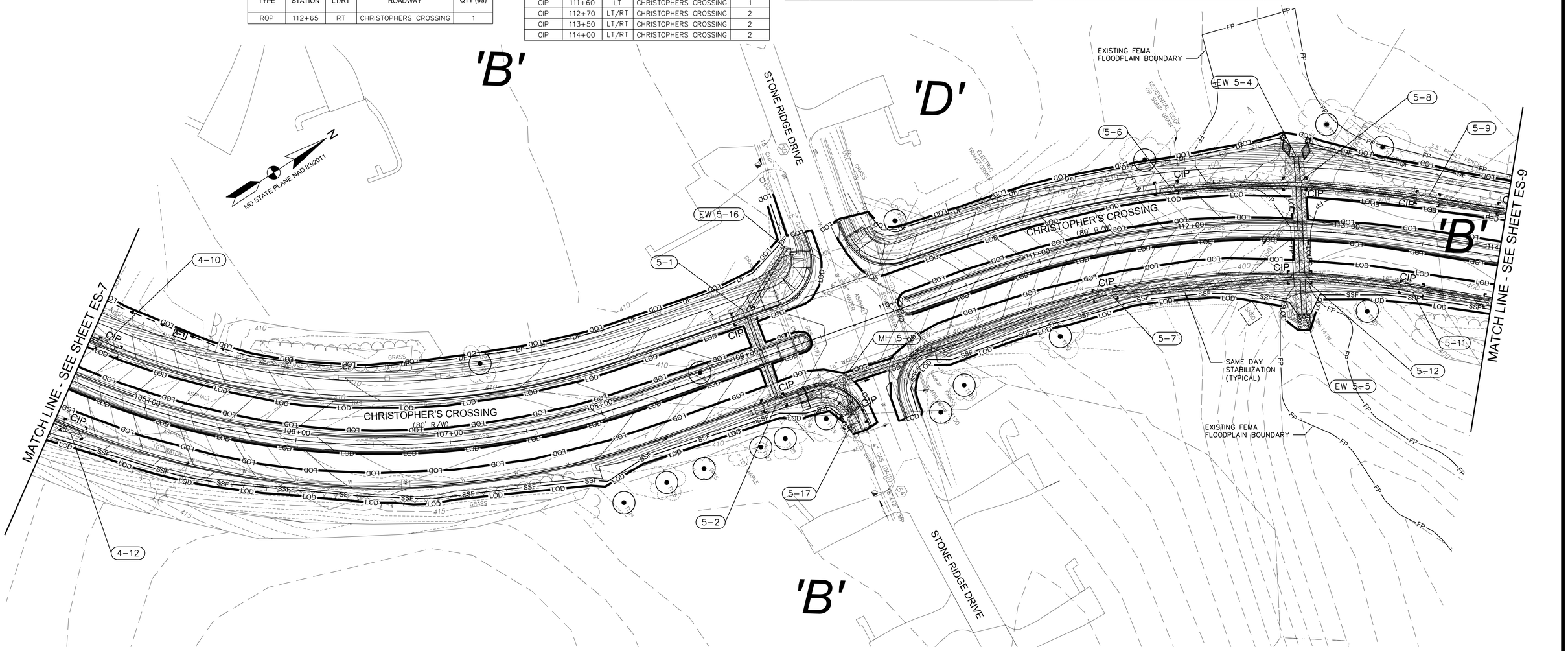
ROCK OUTLET PROTECTION (ROP)				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
ROP	112+65	RT	CHRISTOPHERS CROSSING	1

INLET PROTECTION				
TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	104+50	LT/RT	CHRISTOPHERS CROSSING	2
CIP	109+10	LT/RT	CHRISTOPHERS CROSSING	2
AGIP	109+60	RT	CHRISTOPHERS CROSSING	1
CIP	111+40	RT	CHRISTOPHERS CROSSING	1
CIP	111+60	LT	CHRISTOPHERS CROSSING	1
CIP	112+70	LT/RT	CHRISTOPHERS CROSSING	2
CIP	113+50	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



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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
	SOIL BOUNDARY		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) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK
SOIL CONSERVATION DISTRICT

APPROVED BY: _____
DISTRICT MANAGER

DATE: _____

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

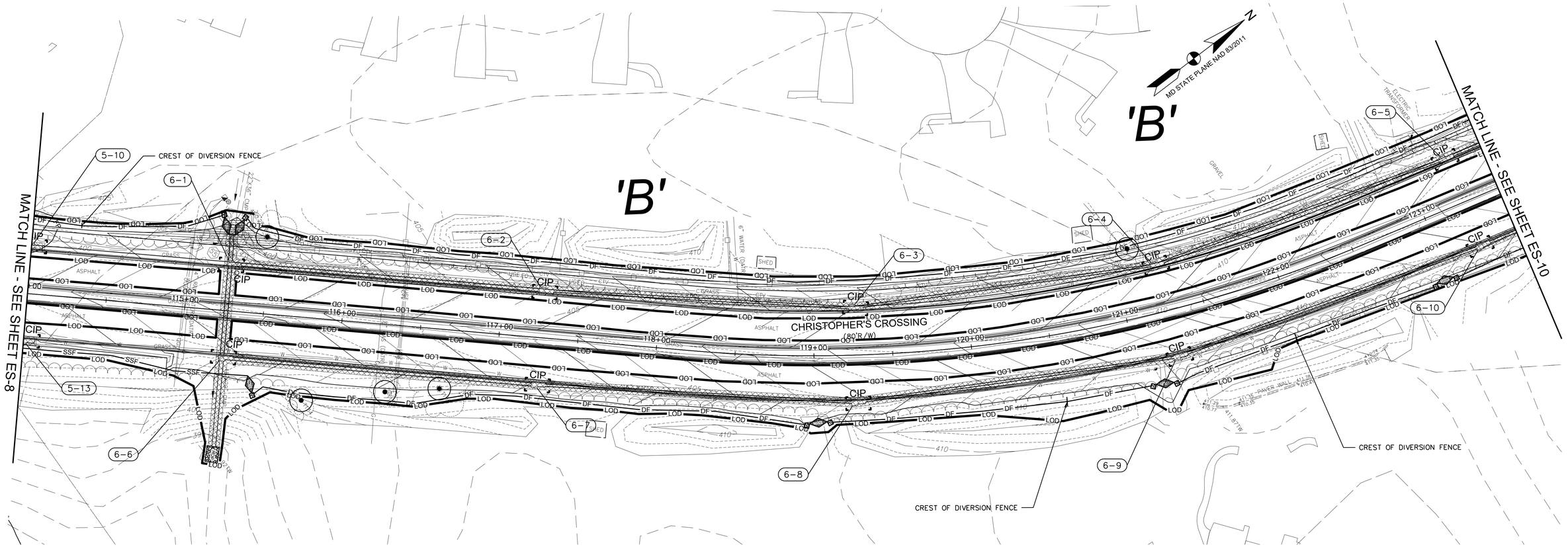
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 72 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



INLET PROTECTION

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
CIP	115+25	LT/RT	CHRISTOPHERS CROSSING	2
CIP	117+25	LT/RT	CHRISTOPHERS CROSSING	2
CIP	119+25	LT/RT	CHRISTOPHERS CROSSING	2
CIP	121+25	LT/RT	CHRISTOPHERS CROSSING	2
CIP	123+25	LT/RT	CHRISTOPHERS CROSSING	2

SUPER SILT FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SSF	114+00 RT	115+50 RT	CHRISTOPHERS CROSSING	150

ROCK OUTLET PROTECTION (ROP)

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
ROP	115+25	RT	CHRISTOPHERS CROSSING	1

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+90	LT	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: _____

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Know what's below. Call before you dig.

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

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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
	SOIL BOUNDARY		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) 752-6552
EMAIL: AMT1@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

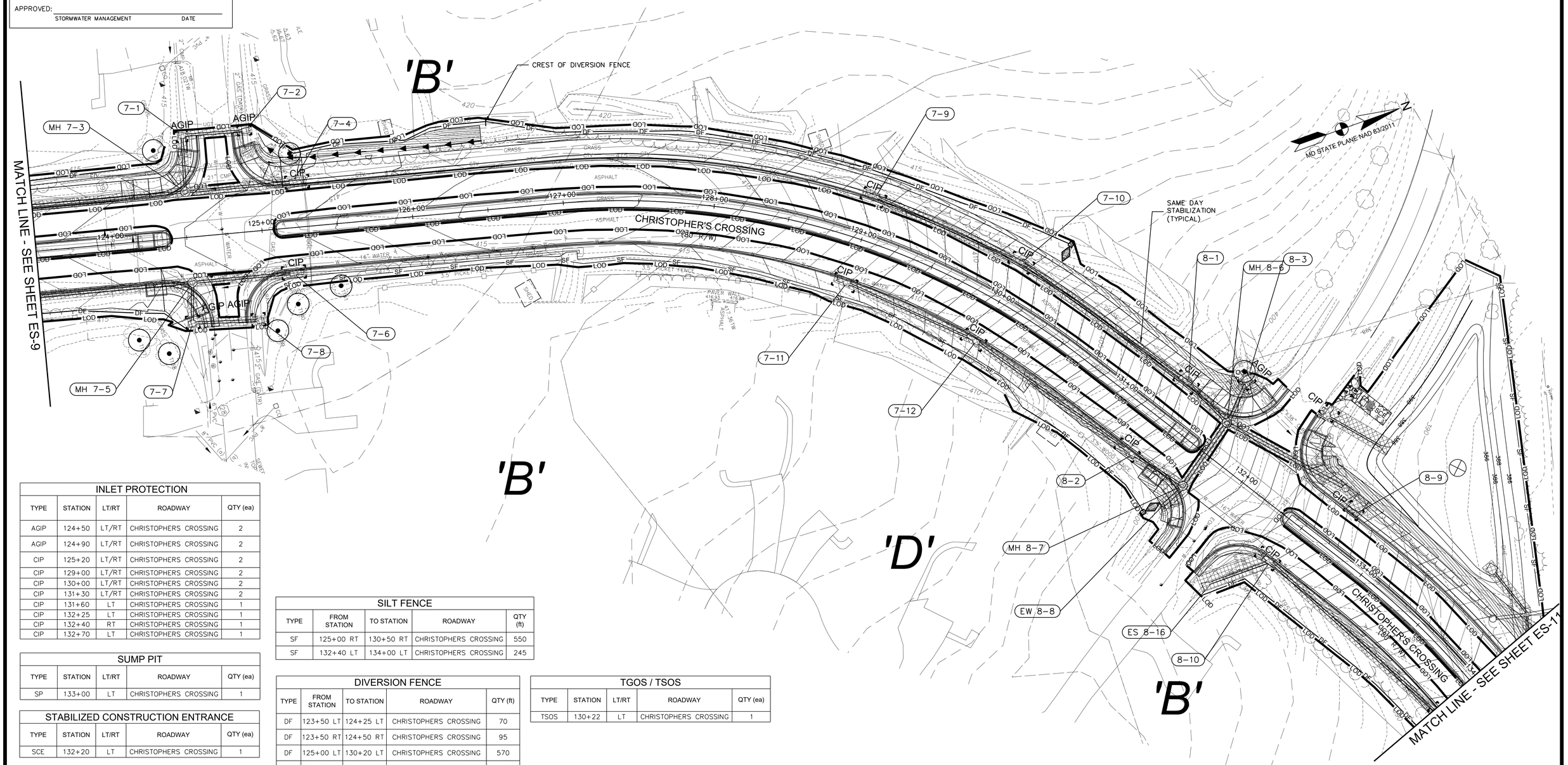
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 73 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



INLET PROTECTION

TYPE	STATION	LT/RT	ROADWAY	QTY (ea)
AGIP	124+50	LT/RT	CHRISTOPHERS CROSSING	2
AGIP	124+90	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
CIP	131+60	LT	CHRISTOPHERS CROSSING	1
CIP	132+25	LT	CHRISTOPHERS CROSSING	1
CIP	132+40	RT	CHRISTOPHERS CROSSING	1
CIP	132+70	LT	CHRISTOPHERS CROSSING	1

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

SILT FENCE

TYPE	FROM STATION	TO STATION	ROADWAY	QTY (ft)
SF	125+00 RT	130+50 RT	CHRISTOPHERS CROSSING	550
SF	132+40 LT	134+00 LT	CHRISTOPHERS CROSSING	245

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	130+50 RT	131+70 RT	CHRISTOPHERS CROSSING	110
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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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
	SOIL BOUNDARY		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

FREDERICK
SOIL CONSERVATION DISTRICT

APPROVED BY: _____
DISTRICT MANAGER

DATE: _____

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

ES-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) 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

EROSION AND SEDIMENT CONTROL PLAN

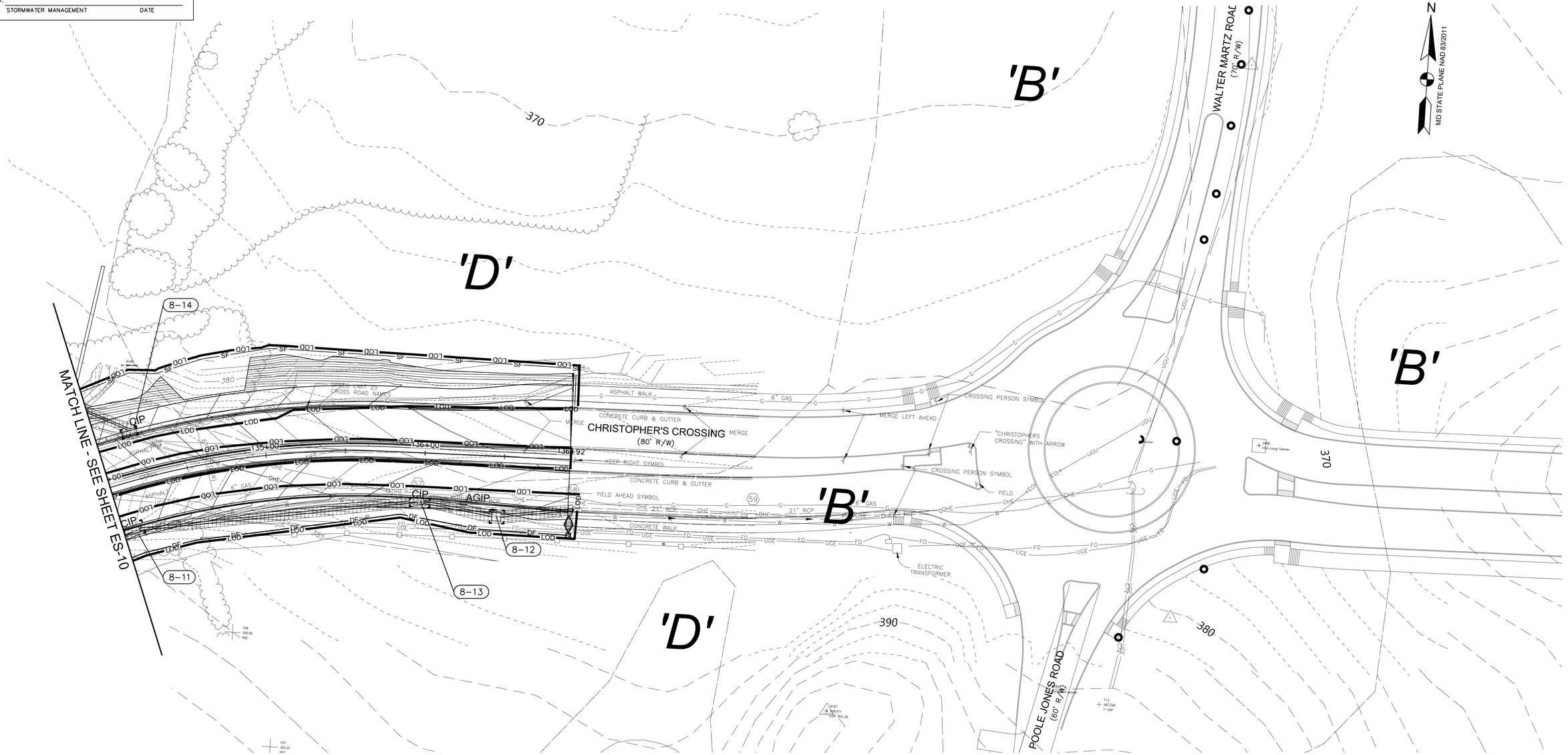
DATE: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 74 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



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+05	RT	CHRISTOPHERS CROSSING	1
CIP	134+15	LT	CHRISTOPHERS CROSSING	1
CIP	136+00	RT	CHRISTOPHERS CROSSING	1
AGIP	136+45	RT	CHRISTOPHERS CROSSING	1

FREDERICK
SOIL CONSERVATION DISTRICT

APPROVED BY: _____
DISTRICT MANAGER

DATE: _____

MISS UTILITY
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LEGEND

- LOD — LIMITS OF DISTURBANCE
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- CWD — CLEAR WATER DIVERSION
- SAF — SAFETY FENCE (BOF)
- SOIL BOUNDARY
- 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

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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EMAIL: AMT1@AMTENGINEERING.COM

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: DECEMBER 2021 SCALE:

AMT FILE NO. 15-0758.007 SHEET NO. 75 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

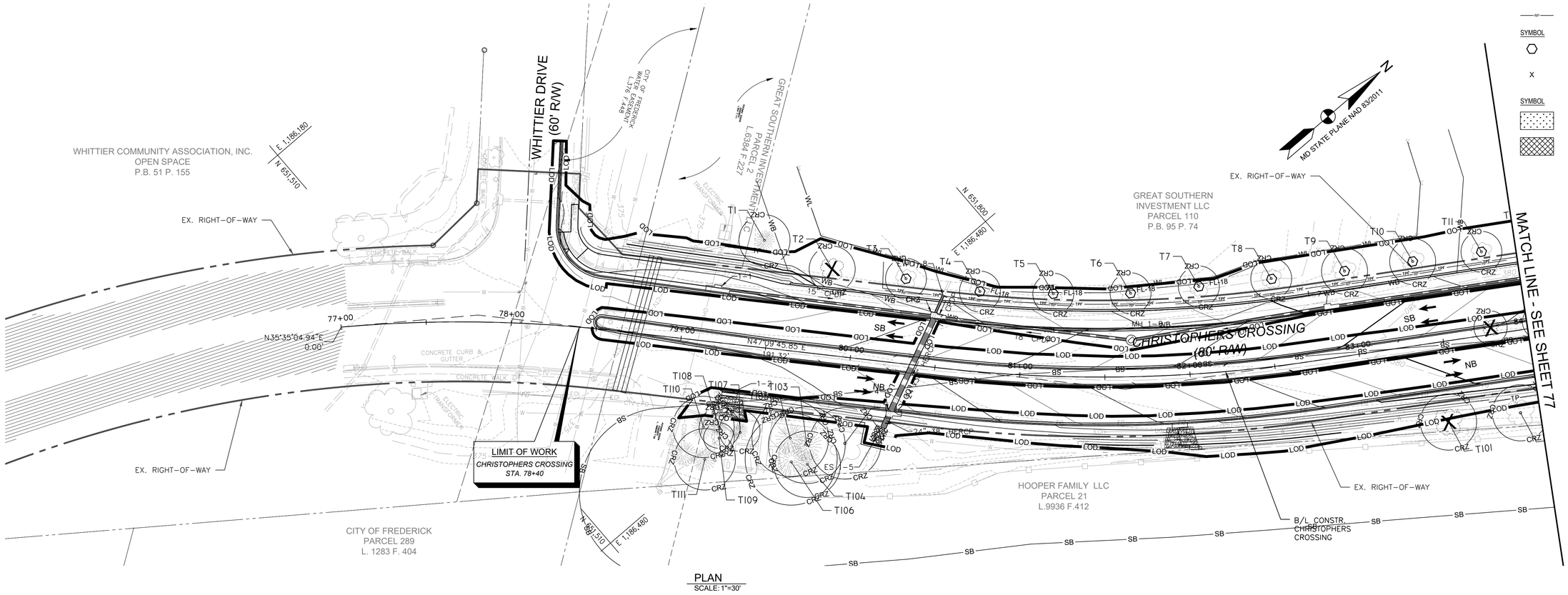
APPROVED: _____
STORMWATER MANAGEMENT DATE

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
2ND / CRZ / 1ST	EXISTING TREE WITH CRITICAL ROOT ZONE
TPF	TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING

SYMBOL	DESCRIPTION
	TRUNK PROTECTION
X	EX. TREE TO BE REMOVED

SYMBOL	DESCRIPTION
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

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

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: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 76 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
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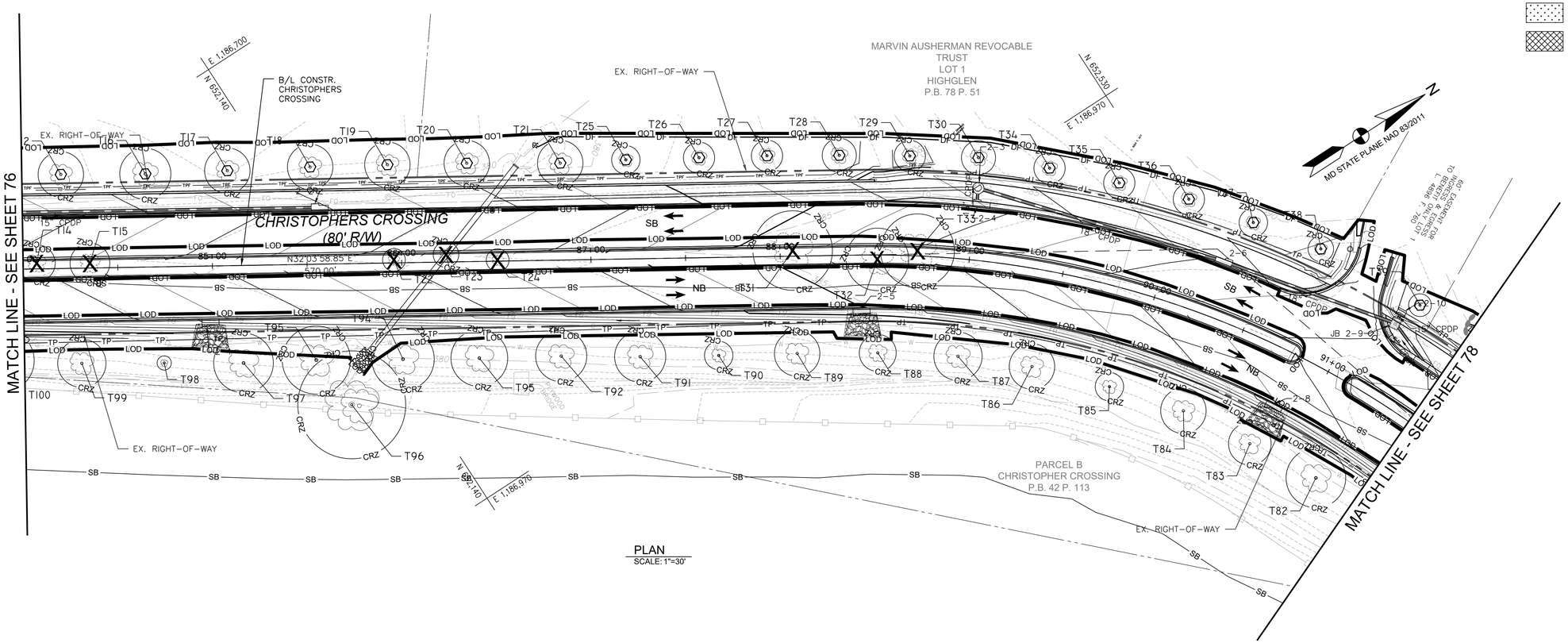
APPROVED: _____
STORMWATER MANAGEMENT DATE

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
2ND CRZ DF TPF	EXISTING TREE WITH CRITICAL ROOT ZONE
TPF	TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING

SYMBOL	DESCRIPTION
	TRUNK PROTECTION
X	EX. TREE TO BE REMOVED

SYMBOL	DESCRIPTION
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

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) 752-4552
EMAIL: AMT1@AMTENGINEERING.COM

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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

TREE PROTECTION PLAN

DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 77 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

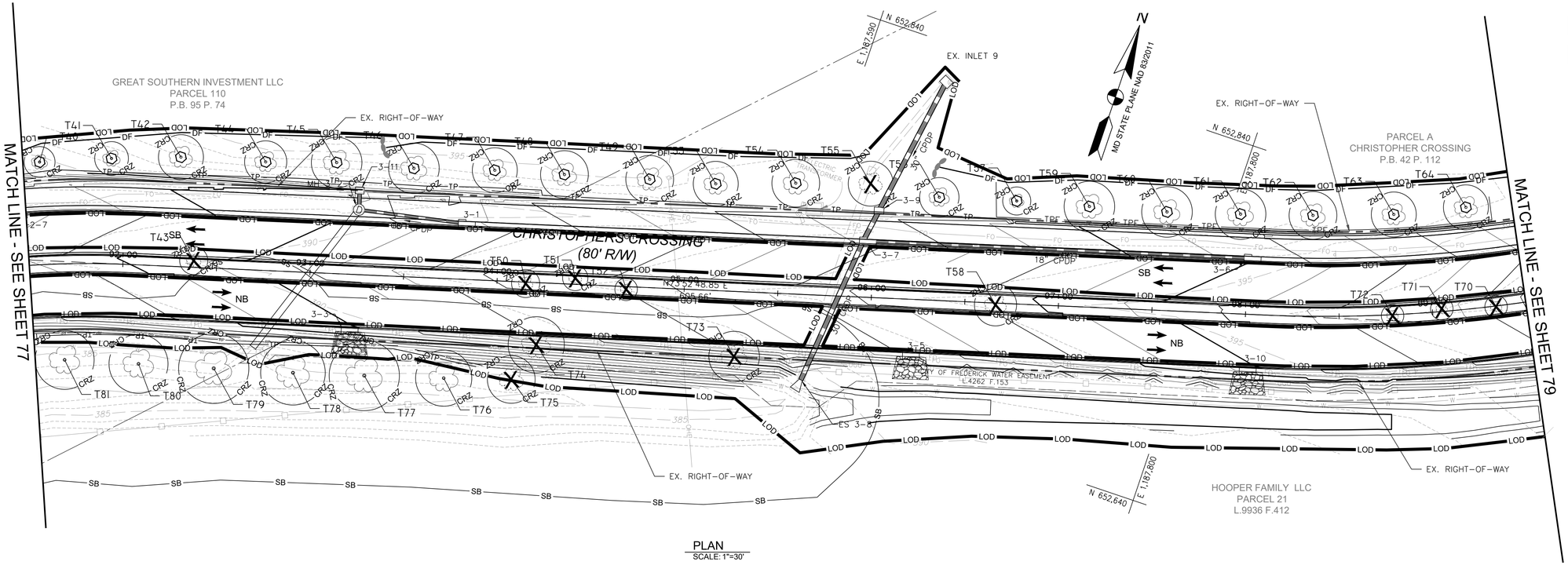
APPROVED: _____
STORMWATER MANAGEMENT DATE

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
CRZ / DF / TPF	EXISTING TREE WITH CRITICAL ROOT ZONE
TPF	TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING

SYMBOL	DESCRIPTION
⬡	TRUNK PROTECTION
X	EX. TREE TO BE REMOVED

SYMBOL	DESCRIPTION
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

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) 757-5552
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: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 78 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
20" CRZ 15'	EXISTING TREE WITH CRITICAL ROOT ZONE
TPF	TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING

SYMBOL	DESCRIPTION
⬡	TRUNK PROTECTION
X	EX. TREE TO BE REMOVED

SYMBOL	DESCRIPTION
⁘	VERTICAL MULCHING
▨	VEGETATION CLEARING

LIMIT OF WORK
YELLOW SPRINGS RD.
STA. 200+00

YELLOW SPRINGS ROAD (80' R/W)

PROPOSED RIGHT-OF-WAY

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

ROBERT & SUSAN FOWLE
LOT 156

KEVIN & ANGELA DORSEY
LOT 154

DOUGLAS & ROSE MARSH TRUSTEES
LOT 155

CHRISTOPHERS CROSSING (80' R/W)

EUGENE & ALICIA KUNST
LOT 92

AARON & JOANNA TOOTILL
LOT 93

JEFFREY & DONNA FOWLE
LOT 99

SALVATORE & CHUN CREMONA
LOT 98

GEORGE MAKRIDES
LOT 97

HOOPER FAMILY LLC
PARCEL 21
L. 5412 F. 412

MATCH LINE - SEE SHEET 78

MATCH LINE - SEE SHEET 80

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+34

PLAN
SCALE: 1"=30'

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

REVISIONS		
MARK	DATE	DESCRIPTION

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A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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(410) 752-8552
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: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 79 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

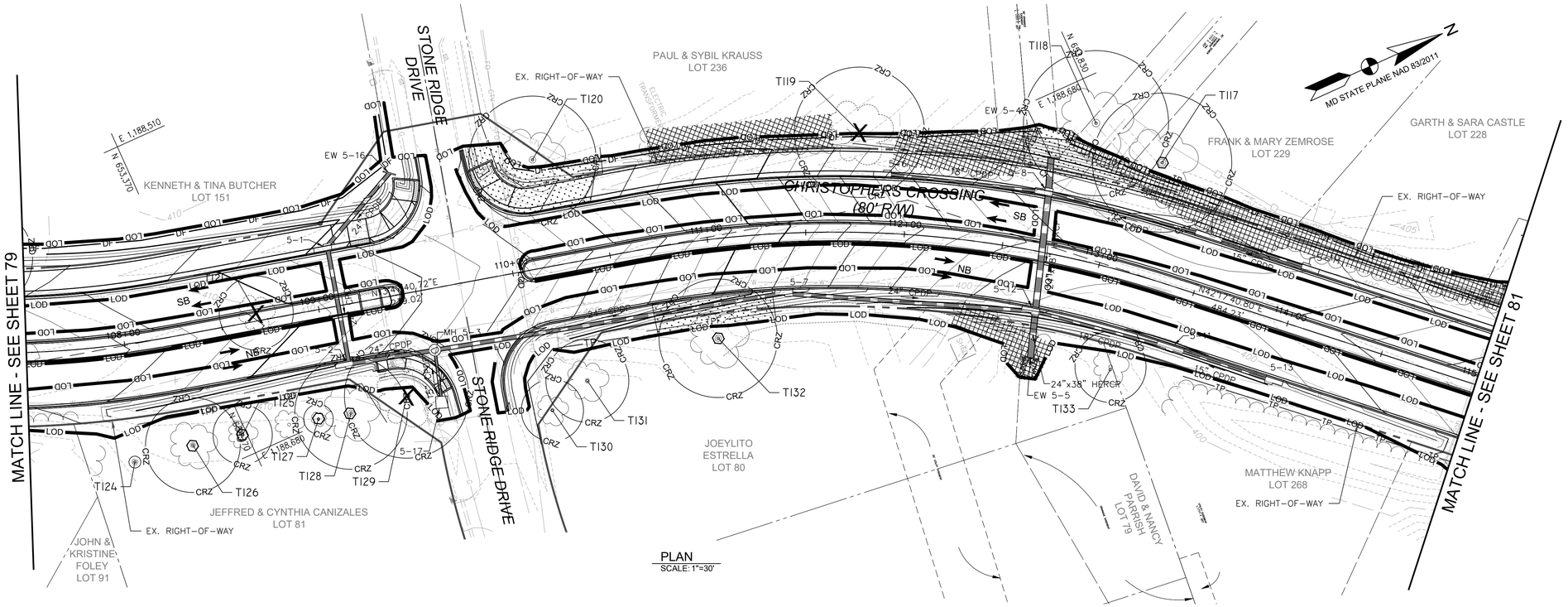
APPROVED: _____
STORMWATER MANAGEMENT DATE

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
24" CRZ 18"	EXISTING TREE WITH CRITICAL ROOT ZONE
TPF	TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING

SYMBOL	DESCRIPTION
⬡	TRUNK PROTECTION
X	EX. TREE TO BE REMOVED

SYMBOL	DESCRIPTION
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
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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: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 80 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
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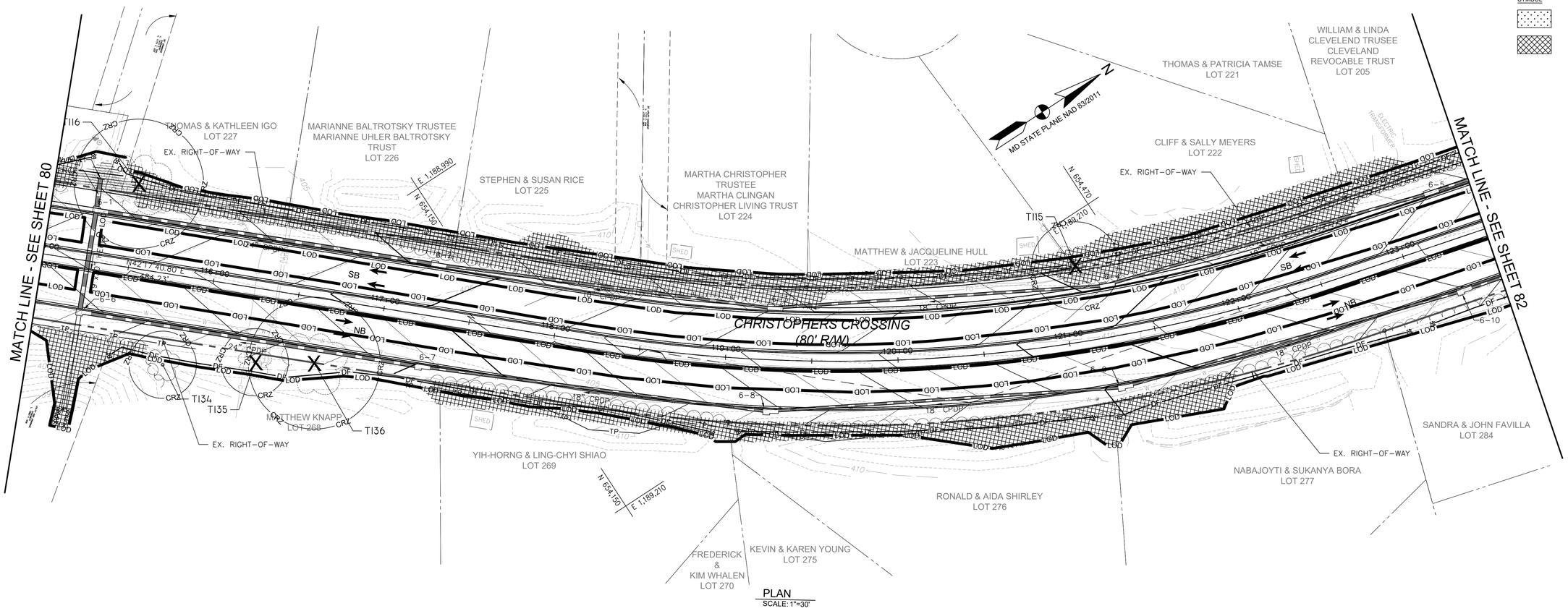
APPROVED: _____
STORMWATER MANAGEMENT DATE

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
24" DBH CRZ 18' LOD	EXISTING TREE WITH CRITICAL ROOT ZONE
TPF	TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING

SYMBOL	DESCRIPTION
	TRUNK PROTECTION
X	EX. TREE TO BE REMOVED

SYMBOL	DESCRIPTION
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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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: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 81 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

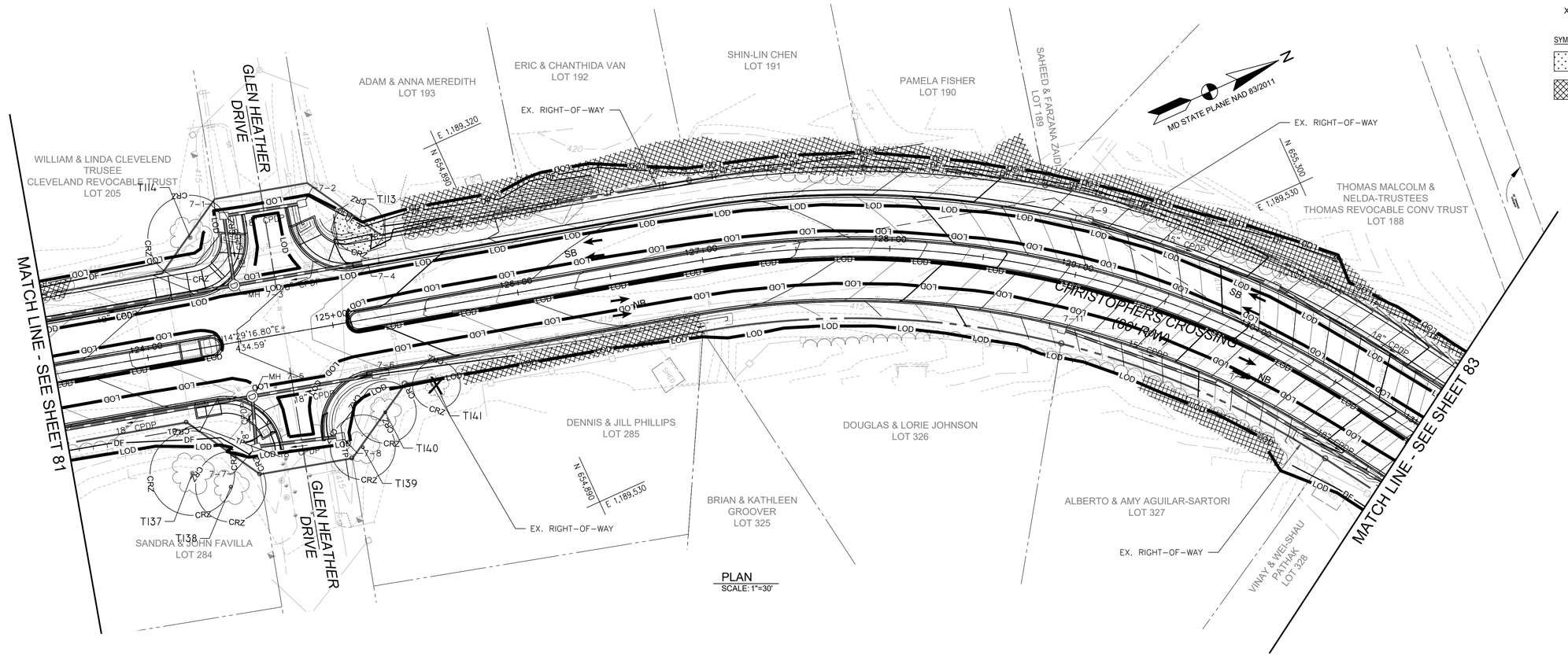
APPROVED: _____
STORMWATER MANAGEMENT DATE

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
24D CRZ 18"	EXISTING TREE WITH CRITICAL ROOT ZONE
TPF	TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING

SYMBOL	DESCRIPTION
⬡	TRUNK PROTECTION
X	EX. TREE TO BE REMOVED

SYMBOL	DESCRIPTION
	VERTICAL MULCHING
	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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LF-7

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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: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 82 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

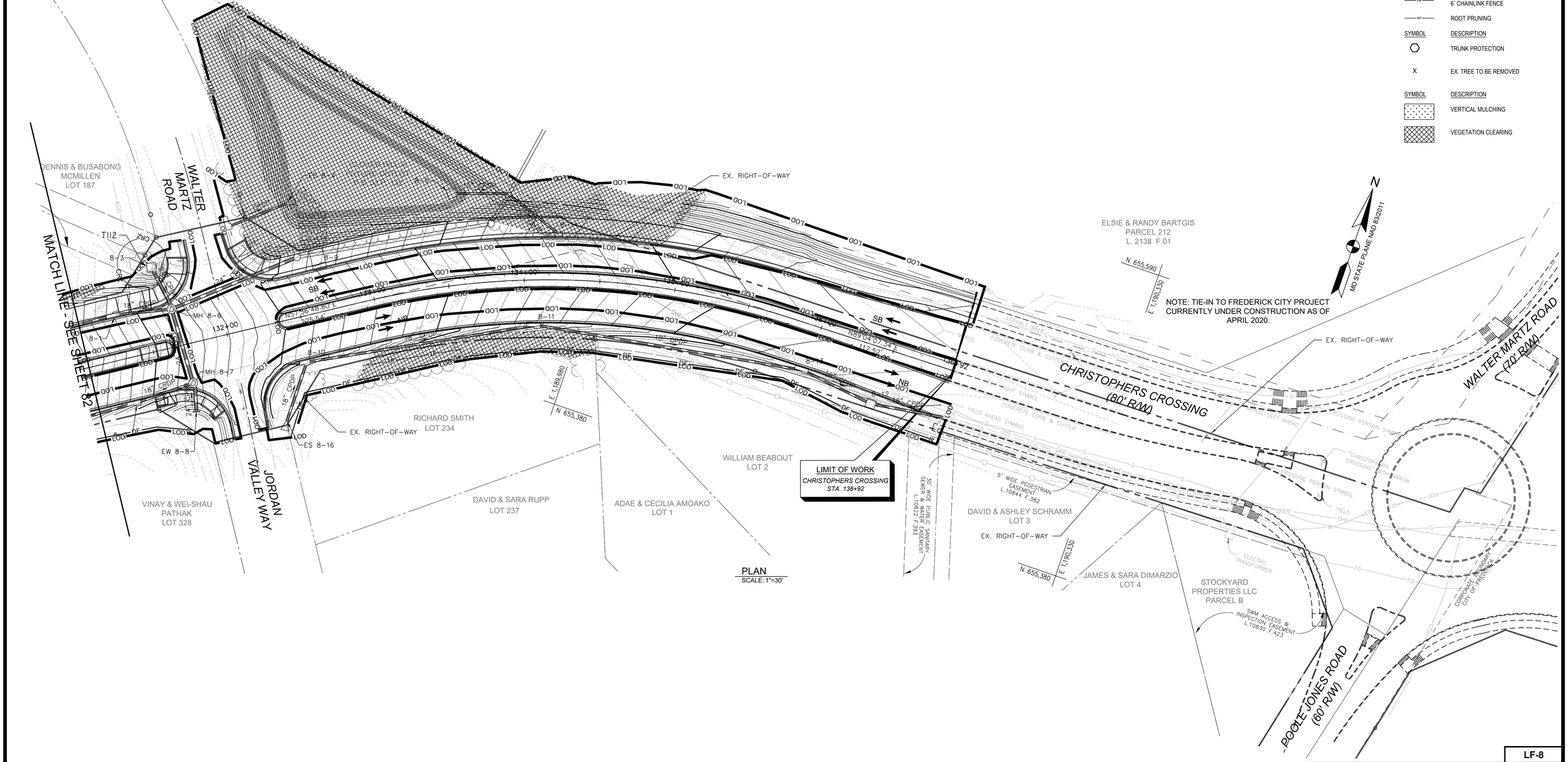
APPROVED: _____
STORMWATER MANAGEMENT DATE

TREE PROTECTION LEGEND

SYMBOL	DESCRIPTION
LOD	LIMIT OF DISTURBANCE
2ND / CR / DR	EXISTING TREE WITH CRITICAL ROOT ZONE
TPF	TREE PROTECTION FENCE
TP	TREE PROTECTION FENCE - 6' CHAINLINK FENCE
RP	ROOT PRUNING

SYMBOL	DESCRIPTION
⬡	TRUNK PROTECTION
X	EX. TREE TO BE REMOVED

SYMBOL	DESCRIPTION
⋰⋰⋰	VERTICAL MULCHING
▨	VEGETATION CLEARING



PLAN
SCALE: 1"=30'

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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LF-8

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OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

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

TREE PROTECTION PLAN

DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 83 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

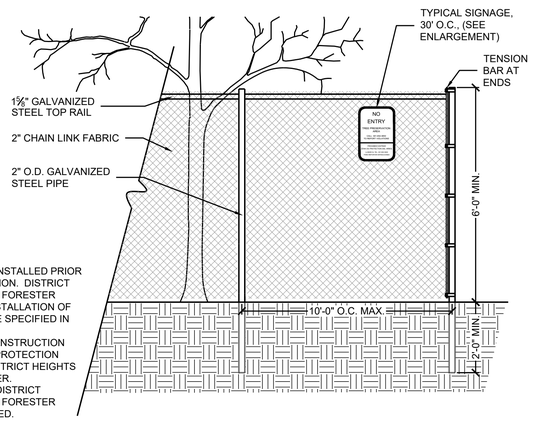
APPROVED: _____
STORMWATER MANAGEMENT DATE

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION	QTY	DETAIL
TPF	TREE PROTECTION FENCE	4,685 LF	2/LF-9
TP	TREE PROTECTION FENCE - 6` CHAINLINK FENCE	1,509 LF	1/LF-9
RP	ROOT PRUNING	923 LF	5/LF-9
SYMBOL	DESCRIPTION	QTY	DETAIL
⬡	TRUNK PROTECTION	53	3/LF-9
X	EXISTING TREE TO BE REMOVED	41	
SYMBOL	DESCRIPTION	QTY	DETAIL
	VERTICAL MULCHING	4,613 SF	
	FOREST/ TREE HEDGE CLEARING	74,503 SF	

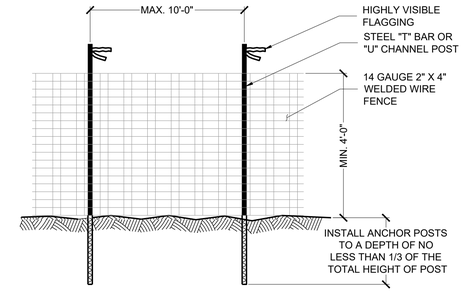


SIGN ENLARGEMENT
2" = 1'-0"



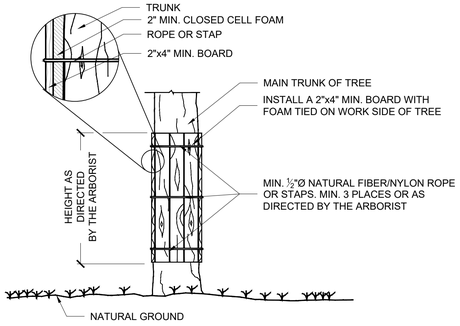
NOTES:
1. TREE PROTECTION FENCE (TPF) SHALL BE INSTALLED PRIOR TO ANY SITE WORK CLEARING, OR DEMOLITION. DISTRICT HEIGHTS CONSTRUCTION MANAGER/URBAN FORESTER SHALL BE NOTIFIED 72 HOURS PRIOR TO INSTALLATION OF ANY OTHER TREE PRESERVATION MEASURE SPECIFIED IN PLANS AND SHALL APPROVE LAYOUT.
2. NO PERSONNEL, 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 STAPS 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.	

NOTES:
1. ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.
2. SIGNS SHOULD BE PROPERLY MAINTAINED.
3. 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
NOT TO SCALE





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

LF-9

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

DETAILS AND NOTES

DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 84 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

LEGEND

LOD — LIMIT OF DISTURBANCE

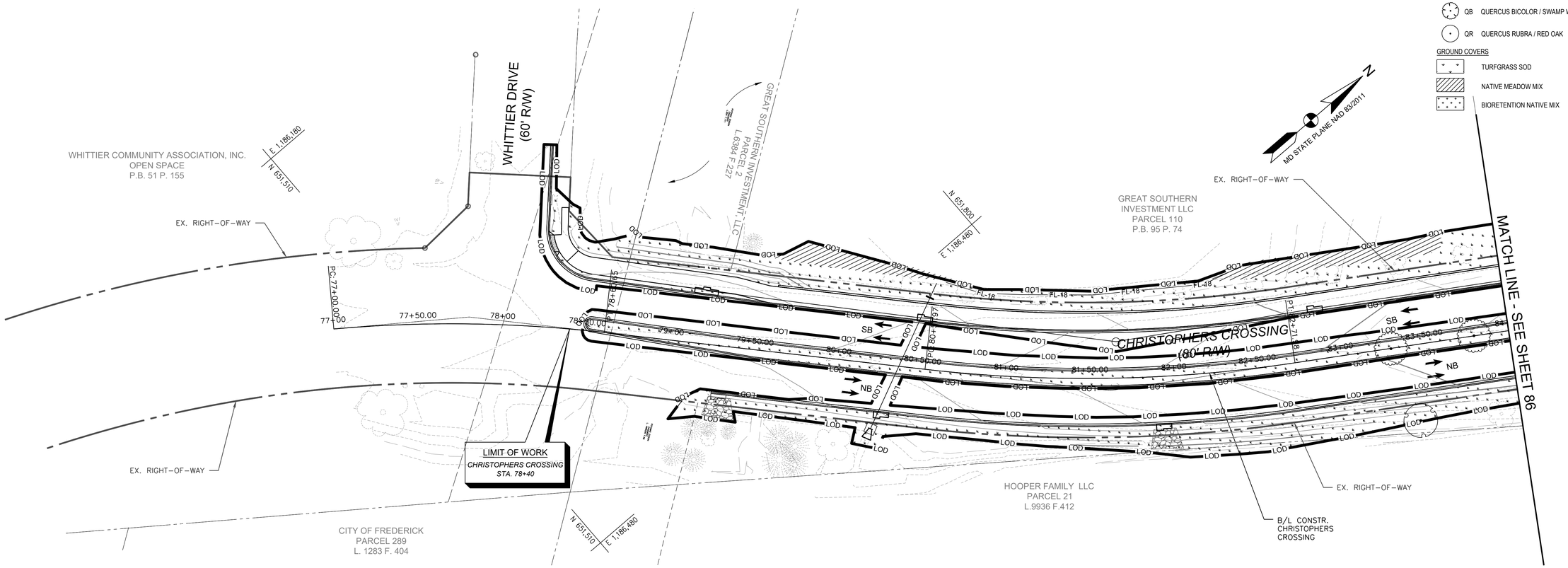
EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- CO CELTIS OCCIDENTALIS / COMMON HACKBERRY
- GD GYMNOCLADUS DIOICA 'ESPRESSO' KENTUCKY COFFEETREE
- 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	1	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL	
	LR	2	LIQUIDAMBAR STYRACIFLUA 'HAPDELL' TM / HAPPIDAZE SWEET GUM	B & B	2"CAL	
GROUND COVERS	**CODE**	**QTY**	**BOTANICAL / COMMON NAME**	**CONT**		
	NM	2,265 SF	NATIVE GRASS MIX	SEED		
	SOD	36,777 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD		

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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LP-1

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FREDERICK COUNTY, MARYLAND

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

LANDSCAPE PLAN

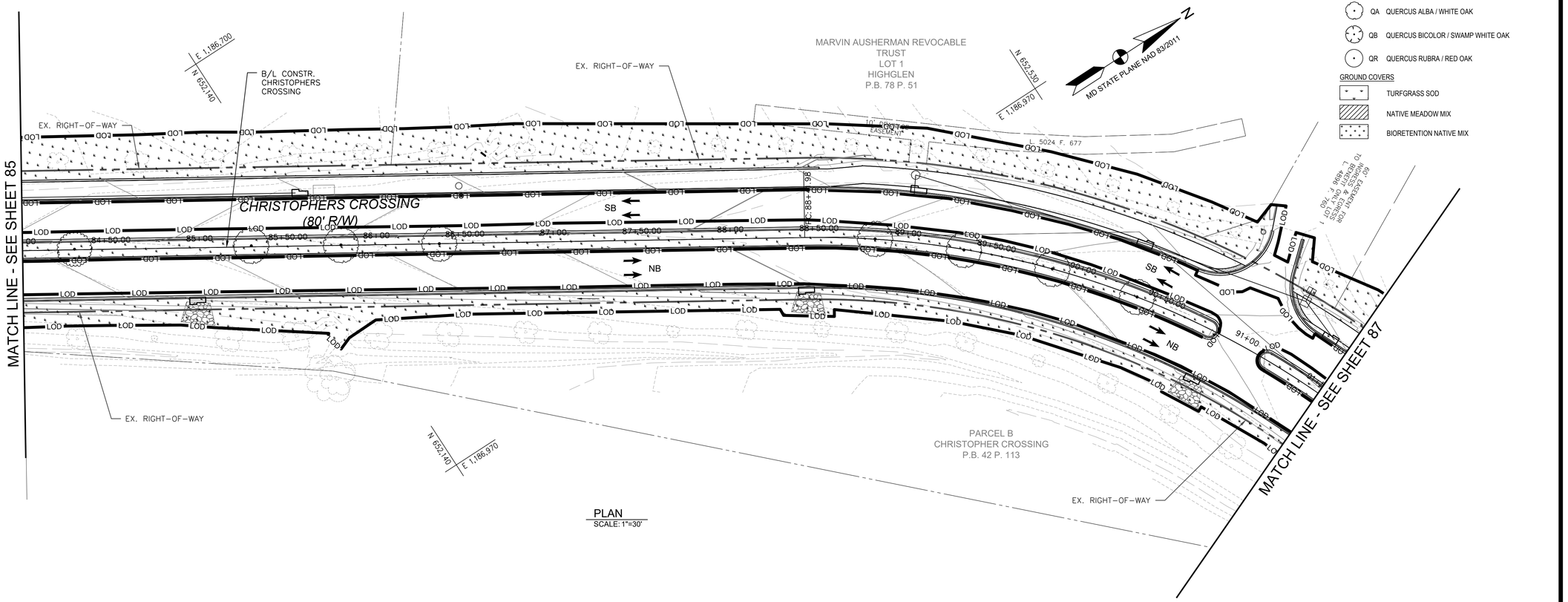
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 85 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=30'

PLANT SCHEDULE LP-2

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	LR	1	LIQUIDAMBAR STYRACIFLUA `HAPDELL` TM / HAPPIDAZE SWEET GUM	B & B	2"CAL	
	NS	7	NYSSA SYLVATICA / SOUR GUM	B & B	2"CAL	

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
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901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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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: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 86 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

LEGEND

LOD — LIMIT OF DISTURBANCE

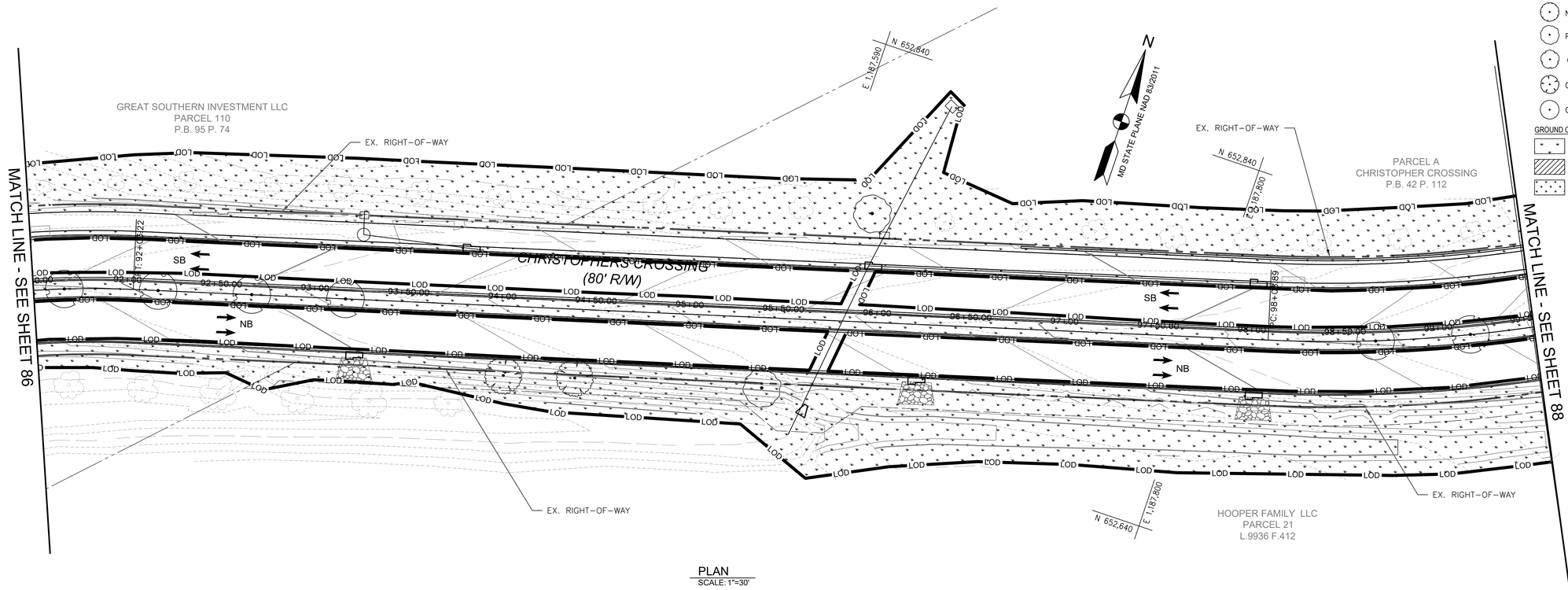
EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- CO CELTIS OCCIDENTALIS / COMMON HACKBERRY
- GD GYMNOCLADUS DIOICA 'ESPRESSO' KENTUCKY COFFEETREE
- 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-3

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AS	6	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL	
	PO	2	PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE	B & B	2"CAL	
	QB	2	QUERCUS BICOLOR / SWAMP WHITE OAK	B & B	2"CAL	
GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT		
	SOD	2,462 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD		

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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(410) 752-4552
EMAIL: AMT1@AMTENGINEERING.COM

LP-3

FREDERICK COUNTY, MARYLAND
DIVISION OF PUBLIC WORKS
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FREDERICK COUNTY, MARYLAND

RECONSTRUCTION OF
CHRISTOPHERS CROSSING
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LANDSCAPE PLAN

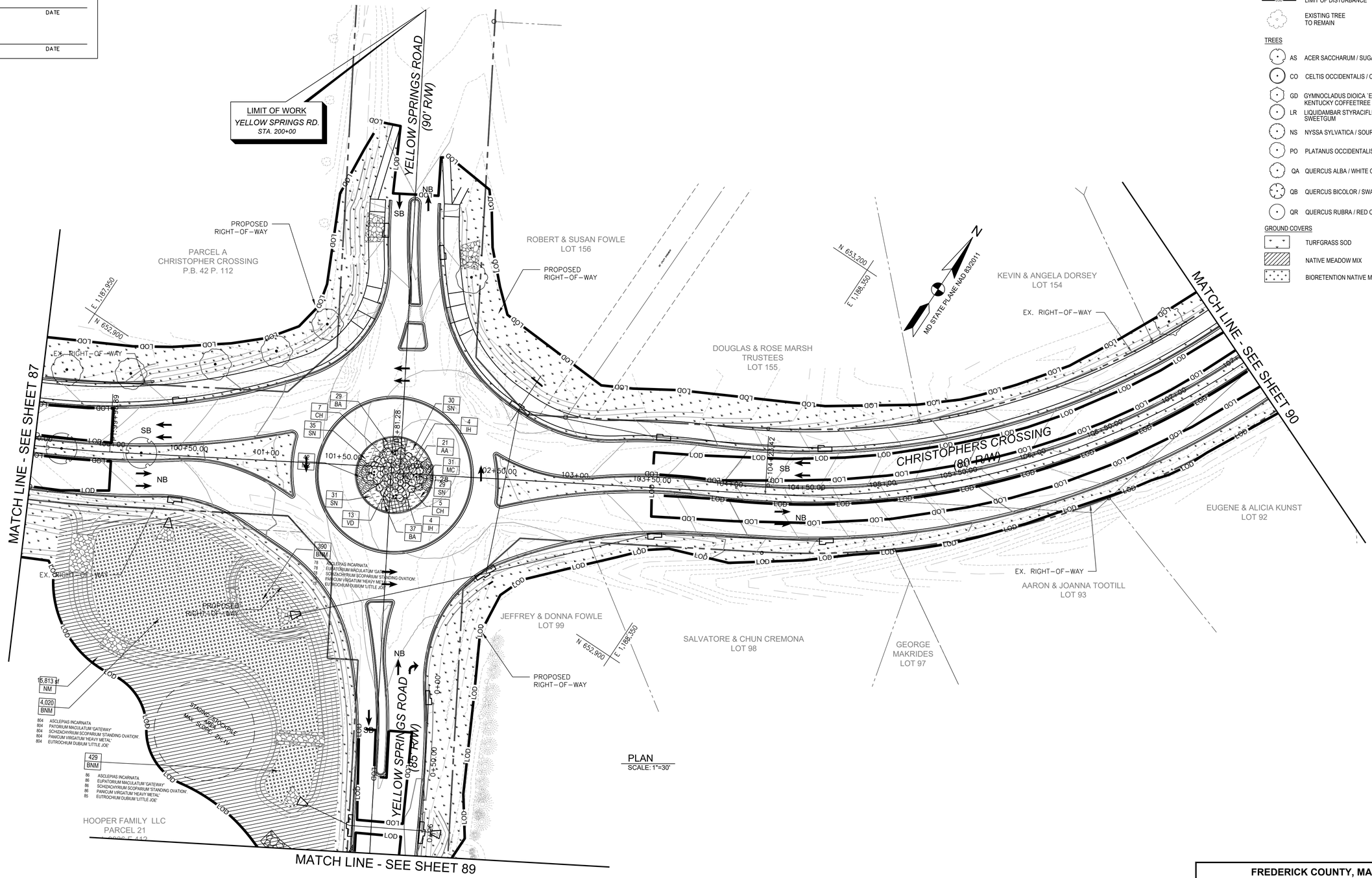
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 87 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=30"

*SEE PLANT SCHEDULE LP-5

LEGEND

- LOD — LIMIT OF DISTURBANCE
- EXISTING TREE TO REMAIN

TREES

- AS ACER SACCHARUM / SUGAR MAPLE
- CO CELTIS OCCIDENTALIS / COMMON HACKBERRY
- GD GYMNOCLADUS DIOICA 'ESPRESSO' KENTUCKY COFFEETREE
- 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

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
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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

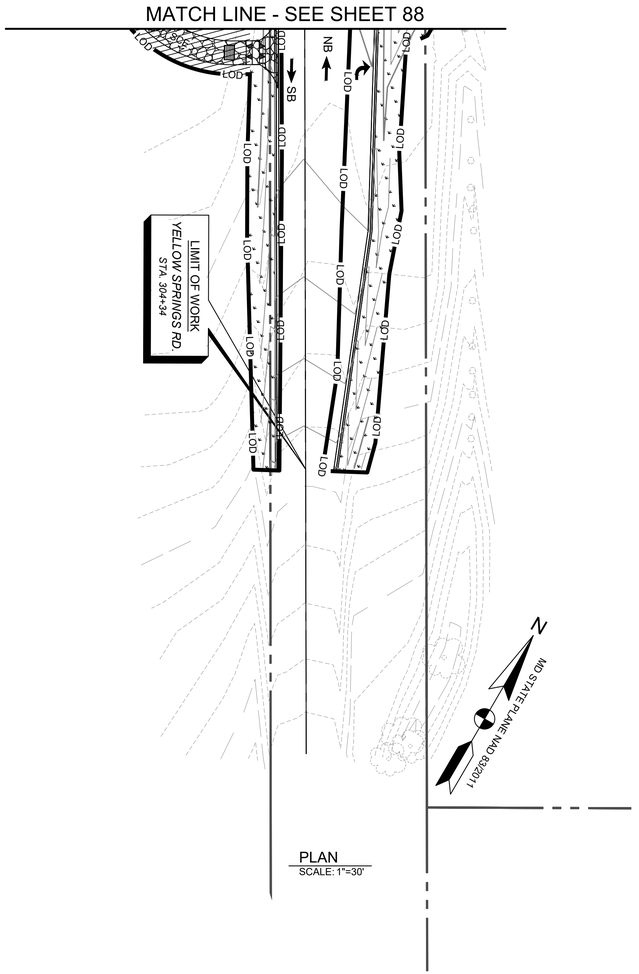
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 88 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



LEGEND

- LOD — LIMIT OF DISTURBANCE
- EXISTING TREE TO REMAIN

TREES

- AS — ACER SACCHARUM / SUGAR MAPLE
- CO — CELTIS OCCIDENTALIS / COMMON HACKBERRY
- GD — GYMNOCLADUS DIOICA 'ESPRESSO' KENTUCKY COFFEETREE
- 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

TREES	CODE	QTY	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AS	2	ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL	
	AG2	4	AMELANCHIER X GRANDIFLORA `AUTUMN BRILLIANCE` / `AUTUMN BRILLIANCE` SERVICEBERRY	B & B		8`-10` H
	GD	1	GYMNOCLADUS DIOICA `ESPRESSO` / KENTUCKY COFFEETREE	B & B	2"CAL	
	PO	6	PLATANUS OCCIDENTALIS / AMERICAN SYCAMORE	B & B	2"CAL	

SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	AA	21	ARONIA ARBUTIFOLIA `BRILLIANTISSIMA` / `BRILLIANTISSIMA` RED CHOKEBERRY	5 GAL
	CH	12	CLETHRA ALNIFOLIA `HUMMINGBIRD` / `HUMMINGBIRD` SUMMERSWEET	5 GAL
	IH	8	ITEA VIRGINICA `HENRY`S GARNET` / `HENRY`S GARNET` SWEETSPIRE	5 GAL
	VD	13	VIBURNUM DENTATUM `BLUE MUFFIN` / `BLUE MUFFIN` SOUTHERN ARROWWOOD	5 GAL

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	
	BA	66	BAPTISIA AUSTRALIS / BLUE WILD INDIGO	1 GAL	24" o.c.
	BNM	4,839	BIORETENTION NATIVE MIX	1 GAL	18" o.c.
	MC	73	MUHLENBERGIA CAPILLARIS / PINK MUHLY	1 GAL	24" o.c.
	NM	15,813 SF	NATIVE GRASS MIX	SEED	
	SN	125	SORGHASTRUM NUTANS / INDIAN GRASS	1 GAL	24" o.c.
	SOD	47,567 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

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

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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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

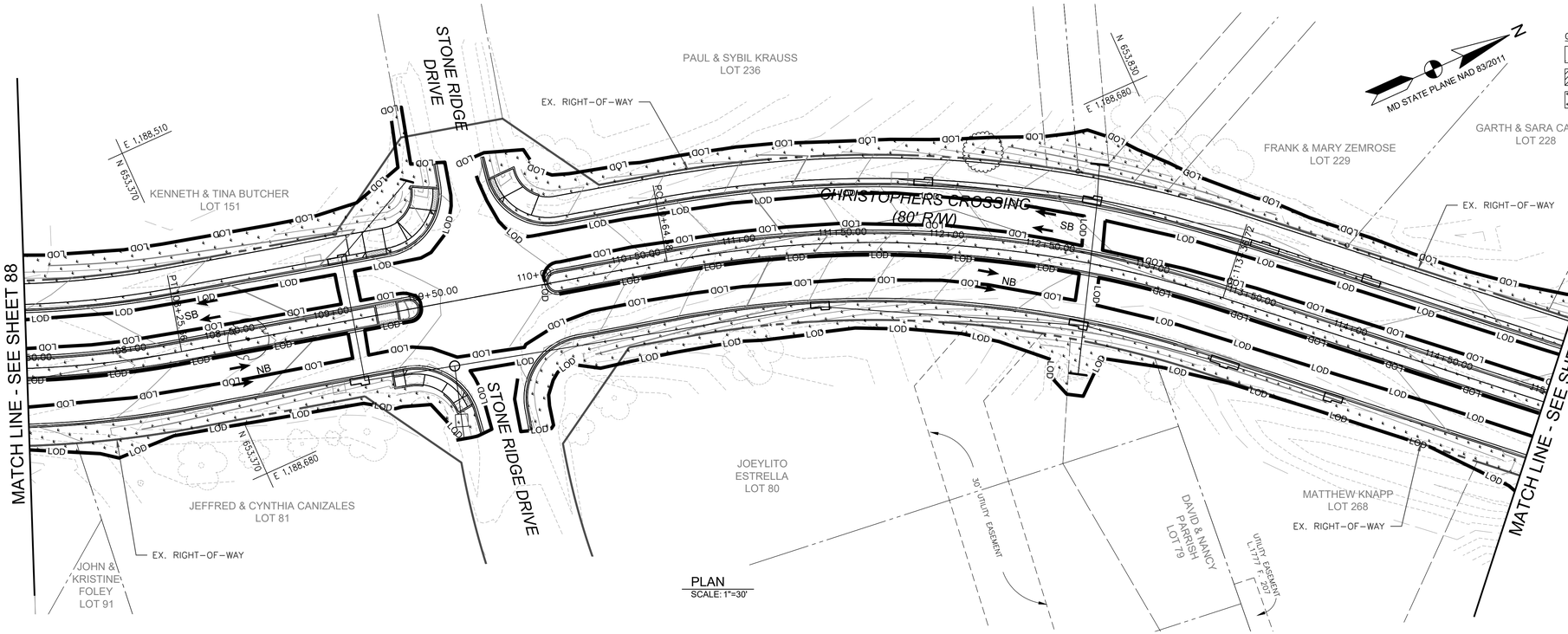
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 89 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLAN
SCALE: 1"=30'

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

LEGEND

LOD — LIMIT OF DISTURBANCE

EXISTING TREE TO REMAIN

TREES

- AS — ACER SACCHARUM / SUGAR MAPLE
- CO — CELTIS OCCIDENTALIS / COMMON HACKBERRY
- GD — GYMNOCLADUS DIOICA 'ESPRESSO' KENTUCKY COFFEETREE
- 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-5

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	
	BNM	2,460	BIORETENTION NATIVE MIX	1 GAL	18" o.c.
	NM	9,806 SF	NATIVE GRASS MIX	SEED	
	SOD	30,141 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

LP-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

LANDSCAPE PLAN

DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 90 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

LEGEND

LOD — LIMIT OF DISTURBANCE

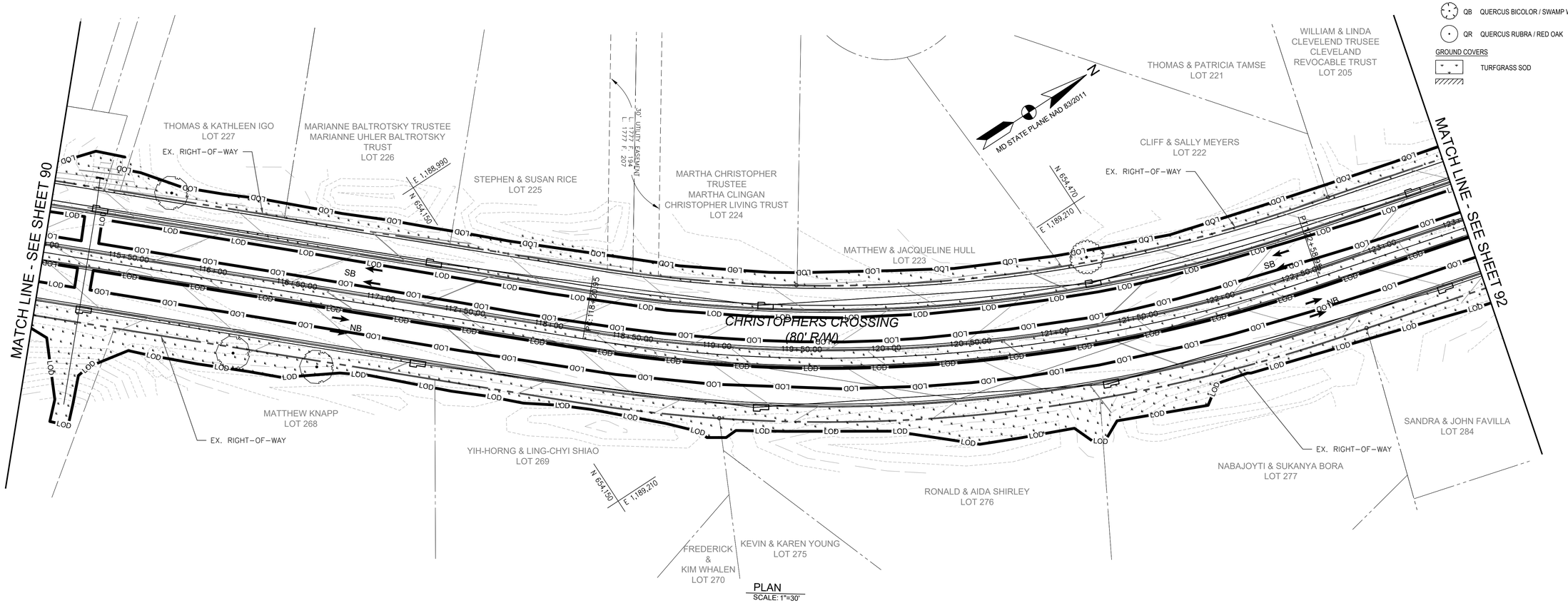
EXISTING TREE TO REMAIN

TREES

- AS — ACER SACCHARUM / SUGAR MAPLE
- CO — CELTIS OCCIDENTALIS / COMMON HACKBERRY
- GD — GYMNOCLADUS DIOICA 'ESPRESSO' KENTUCKY COFFEETREE
- 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



PLAN
SCALE: 1"=30'

PLANT SCHEDULE LP-6

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	2,218 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

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

REVISIONS		
MARK	DATE	DESCRIPTION

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LP-7

FREDERICK COUNTY, MARYLAND
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OFFICE OF TRANSPORTATION ENGINEERING
FREDERICK COUNTY, MARYLAND

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

LANDSCAPE PLAN

DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 91 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

LEGEND

LOD — LIMIT OF DISTURBANCE

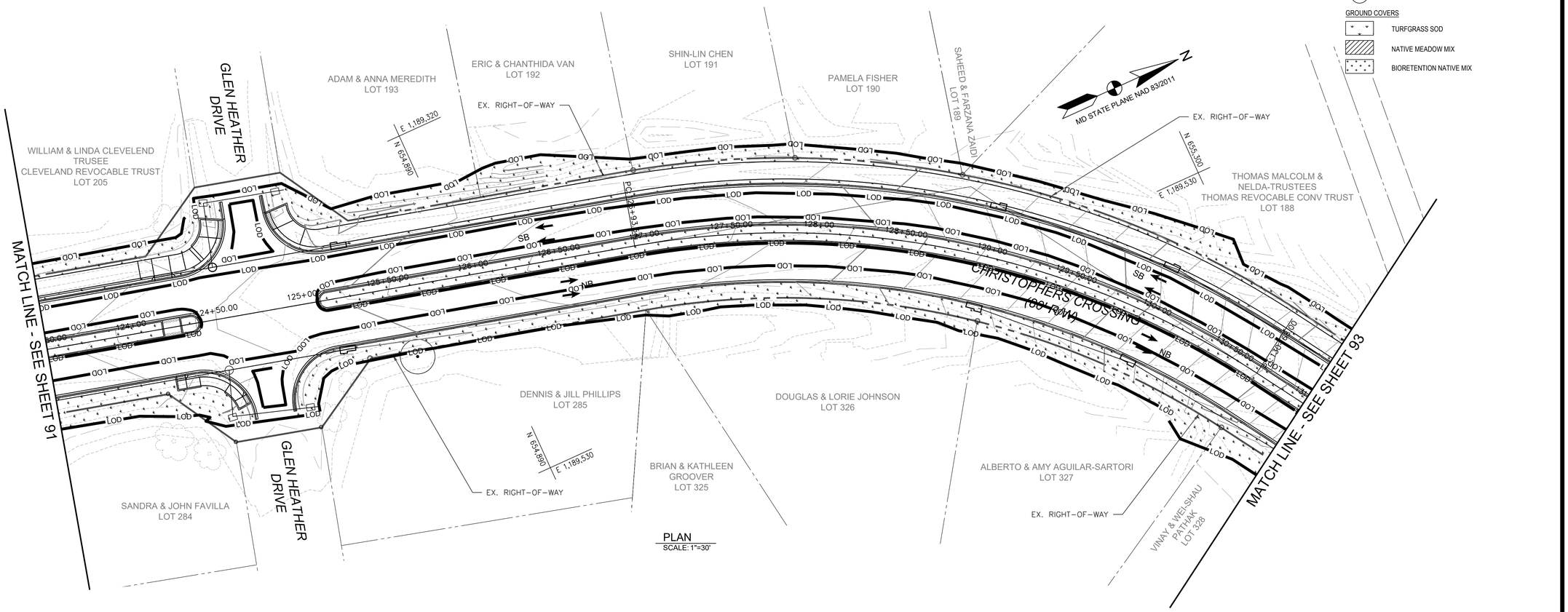
EXISTING TREE TO REMAIN

TREES

- AS — ACER SACCHARUM / SUGAR MAPLE
- CO — CELTIS OCCIDENTALIS / COMMON HACKBERRY
- GD — GYMNOCLADUS DIOICA 'ESPRESSO' KENTUCKY COFFEETREE
- 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
•	QR	1	QUERCUS RUBRA / RED OAK	B & B	2"CAL

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT
	SOD	26,066 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD

LP-8

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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RECONSTRUCTION OF
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LANDSCAPE PLAN

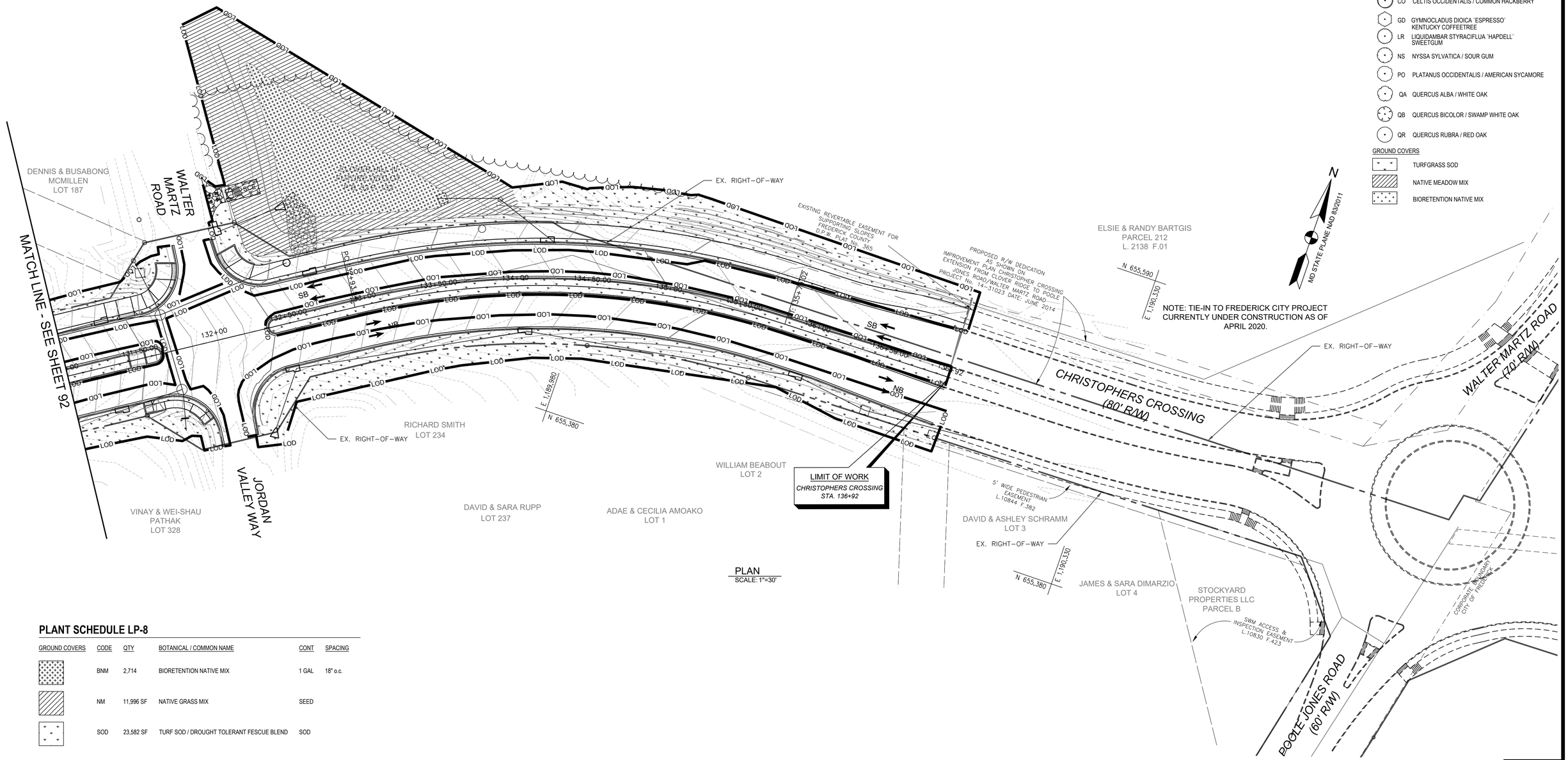
DATE: DECEMBER 2021 SCALE: 1"=30'

AMT FILE NO. 15-0758.007 SHEET NO. 92 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE



PLANT SCHEDULE LP-8

GROUND COVERS	CODE	QTY	BOTANICAL / COMMON NAME	CONT	SPACING
	BNM	2,714	BIORETENTION NATIVE MIX	1 GAL	18" o.c.
	NM	11,996 SF	NATIVE GRASS MIX	SEED	
	SOD	23,582 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

LP-9

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

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

LANDSCAPE PLAN

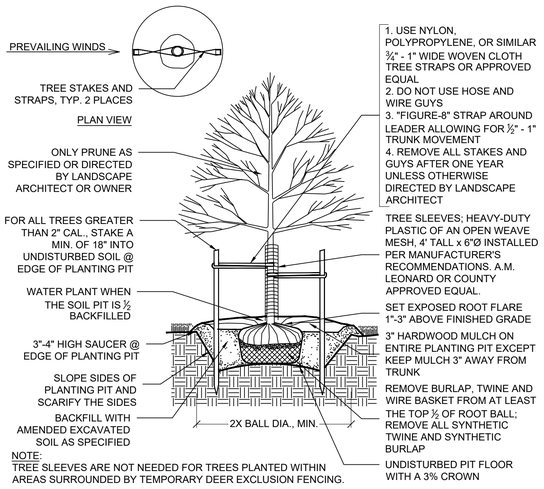
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AMT FILE NO. 15-0758.007 SHEET NO. 93 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

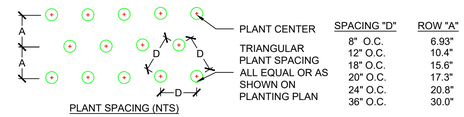
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APPROVED: _____
STORMWATER MANAGEMENT DATE



NOTE:
TREE SLEEVES ARE NOT NEEDED FOR TREES PLANTED WITHIN AREAS SURROUNDED BY TEMPORARY DEER EXCLUSION FENCING.

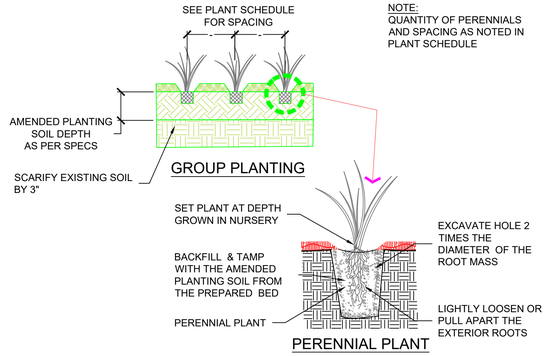
1 DECIDUOUS TREE PLANTING WITH DEER PROTECTION
NOT TO SCALE 329343-31



PLANT SPACING (NTS)

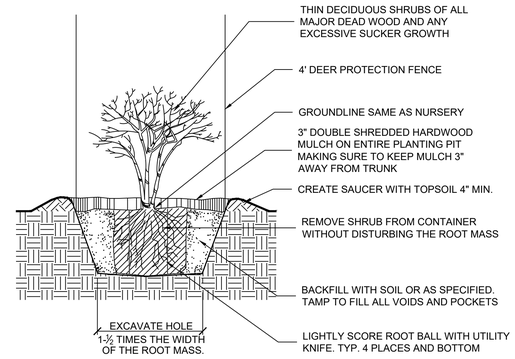
SPACING "D"	ROW "A"	PLANTS PER 10 SQ. FT.
8" O.C.	6.93"	26
12" O.C.	10.4"	11.5
18" O.C.	15.6"	5.12
20" O.C.	17.3"	2.42
24" O.C.	20.8"	2.9
36" O.C.	30.0"	1.28

NOTE:
QUANTITY OF PERENNIALS AND SPACING AS NOTED IN PLANT SCHEDULE



PERENNIAL PLANT

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	LP-5	LP-6	LP-7	LP-8	BOTANICAL / COMMON NAME	CONT	CAL	SIZE
	AS	10	1		6	2	1				ACER SACCHARUM / SUGAR MAPLE	B & B	2"CAL	
	AG2	4				4					AMELANCHIER X GRANDIFLORA 'AUTUMN BRILLIANCE' / 'AUTUMN BRILLIANCE' SERVICEBERRY	B & B		8'-10' H
	GD	1				1					GYMNOCLADUS DIOICA 'ESPRESSO' / KENTUCKY COFFEETREE	B & B	2"CAL	
	LR	5	2	1			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	8			2	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	1							1		QUERCUS RUBRA / RED OAK	B & B	2"CAL	

SHRUBS	CODE	QTY	LP-1	LP-2	LP-3	LP-4	LP-5	LP-6	LP-7	LP-8	BOTANICAL / COMMON NAME	CONT
	AA	21				21					ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA' / 'BRILLIANTISSIMA' RED CHOKEBERRY	5 GAL
	CH	12				12					CLETHRA ALNIFOLIA 'HUMMINGBIRD' / 'HUMMINGBIRD' SUMMERSWEET	5 GAL
	IH	8				8					ITEA VIRGINICA 'HENRY'S GARNET' / 'HENRY'S GARNET' SWEETSPIRE	5 GAL
	VD	13				13					VIBURNUM DENTATUM 'BLUE MUFFIN' / 'BLUE MUFFIN' SOUTHERN ARROWWOOD	5 GAL

GROUND COVERS	CODE	QTY	LP-1	LP-2	LP-3	LP-4	LP-5	LP-6	LP-7	LP-8	BOTANICAL / COMMON NAME	CONT	SPACING
	BA	66				66					BAPTISIA AUSTRALIS / BLUE WILD INDIGO	1 GAL	24" o.c.
	BNM	10,013 (SEE PLANT LIST FOR MIX COMPONENTS PLANT SPECIES IN DRIFTS OF 11 to 23)				4,839	2,460			2,714	BIORETENTION NATIVE MIX	1 GAL	18" o.c.
	MC	73				73					MUHLENBERGIA CAPILLARIS / PINK MUHLY	1 GAL	24" o.c.
	NM	39,880 SF 2,265 SF (ERNMX-111 BY ERNST SEED OR APPROVED EQUAL)				15,813 SF	9,806 SF			11,996 SF	NATIVE GRASS MIX	SEED	
	SN	125				125					SORGHASTRUM NUTANS / INDIAN GRASS	1 GAL	24" o.c.
	SOD	167,399 SF	36,777 SF		2,462 SF	47,567 SF	28,926 SF	2,019 SF	26,066 SF	23,582 SF	TURF SOD / DROUGHT TOLERANT FESCUE BLEND	SOD	

BIORETENTION NATIVE MIX

20%	ASCLEPIAS INCARNATA	1 GAL. CONT.	24" O.C.
20%	EUPATORIUM MACULATUM 'GATEWAY'	1 GAL. CONT.	24" O.C.
20%	SCHIZACHYRIUM SCOPARIUM 'STANDING OVATION'	1 GAL. CONT.	24" O.C.
20%	PANICUM VIRGATUM 'HEAVY METAL'	1 GAL. CONT.	24" O.C.
20%	EUTROCHIUM DUBIUM 'LITTLE JOE'	1 GAL. CONT.	24" 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 "LANDSCAPE SPECIFICATION GUIDELINES" by the Landscape Contractors Association MD-DC-VA.
4. Plants shall conform to the current edition of the American Standard for Nursery Stock. (ANSI z60.1)
5. Plant names shall be those given in the latest edition of Hortus III, L.H. Bailey Hortorium.
6. Topsoil shall meet specifications as per the 2011 MD Standards and Specifications for Soil Erosion and Sediment Control.
7. Soil testing shall be as described in PDD standard specification Section 723.
8. The Contractor shall apply grass according to the 2011 MD Standard and Specifications for Soil Erosion and Sediment Control. Do not use Kentucky 31 tall fescue.
9. The Contractor shall stake out all planting beds and tree locations for approval by the Landscape Architect or Owner and representative before digging. It is the Contractor's responsibility to locate and coordinate plantings with all existing utilities. If discrepancies occur because of utility locations or other existing conditions the Contractor shall notify the Landscape Architect and Owner's representative immediately to coordinate any necessary adjustments.
10. 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.
11. It is of utmost importance that all plant material be set slightly higher in relation to grade than it was grown in the nursery and with good earth to root contact. Any materials or work may be rejected by the Landscape Architect if it does not meet this or any other requirement of the specifications. Rejected materials shall be removed from the site by the Contractor at Contractor's expense.
12. The Contractor shall mulch and water all plants well on the day they are planted. Individual planting shall be mulched.
13. In case of discrepancies between quantities on the plant list and the plan, the plan shall govern.
14. Seed or sod bare areas as directed by Owner for all disturbed areas to be stabilized that are not landscaped or covered.

7.1 *SHA LANDSCAPE NOTES.* *Landscape construction within rights of way of the Maryland State Highway Administration (SHA) and within SHA property, easement areas and lands to be conveyed to SHA shall conform to these Notes. For guidance regarding design modifications during construction, refer to SHA Landscape Design Guide, SHA Landscape Estimating Manual, and SHA Environmental Guide for Access and District Permit Applicants at http://www.roads.maryland.gov/index.aspx?PageId=25.*

7.2 *SHA Standard Specifications.* *Landscape construction shall conform to Sections 701 through 716, and landscape materials shall conform to Section 920 of the most recent revision of SHA Standard Specifications for Construction and Materials, including all revisions and supplements, and as specified in these notes. These requirements shall supersede all other specifications for work on SHA property. All SHA specifications for landscaping and landscape materials published in 2008 have been replaced. Current Specifications are at http://www.roads.maryland.gov/Index.aspx?PageId=44.*

7.3 *Erosion and Sediment Control Manager (ESCM).* *Soil disturbance such as grading, excavation, soil placement or other activities that involve soil disturbance shall be supervised by an ESCM Manager with a valid "SHA Yellow Card" in conformance with SHA Standard Specifications and any applicable Erosion and Sediment Control Permit.*

7.4 *SHA Standard Details for Trees, Shrubs and Planting Beds.* *The installation of trees, shrubs, planting beds and other landscape construction related to Section 710 of the SHA Standard Specifications shall conform to the "SHA Book of Standards for Highway & Incidental Structures - Category 7" at http://apps.roads.maryland.gov/BusinessWithSHA/bizStdsSpecs/desManualStdPub/publicationsonline/ohd/bookstd/toccat7.asp.*

7.5 *Temporary Stabilization* *shall be installed in conformance with Section 704 to ensure that areas of soil disturbance are protected from wind, rainfall and flowing water until permanent stabilization is installed.*

1. *Temporary Mulch, either as temporary straw mulch or temporary matting mulch, shall be installed at the end of each working day to provide "same day stabilization" unless other approved stabilization is installed.*
2. *Temporary straw mulch shall be installed on areas and slopes flatter than 4:1; temporary matting mulch shall be applied on slopes 4:1 and steeper, and to areas within channels.*
3. *Temporary Seed shall be installed in lieu of Temporary Mulch when soil redisturbance is expected more than 30 days after soil disturbance. The required application rate shall be 100 lbs per acre of 37-0-0 (SCU) fertilizer.*

7.6 *Roadway Pavement Removal.* *Areas of roadway pavement removal shall be excavated to remove pavements, aggregate base, and compacted soil to a minimum depth of 10 inches below the pavement surface, or as necessary to remove all materials unsuitable for landscaping. The excavated areas shall be restored with subsoil and topsoil as part of Soil Restoration.*

7.7 *Excavation and Debris Removal.* *Debris related to the demolition of sidewalks, driveways, curbs, trees, stumps, roots, fencing, pipes, and other materials that may interfere with landscape installation or future maintenance shall be excavated as necessary for their complete removal and disposal.*

7.8 *Soil Restoration.* *Areas of pavement removal, excavation or drilling in landscaped areas shall remove excavated debris and restore the subgrade with approved subsoil and topsoil placed in conformance with Section 701 of the SHA Standard Specifications.*

1. *A layer of approved topsoil of at least a 4-inch depth shall be placed on all disturbed areas flatter than 2:1 and in all channels prior to seeding, sodding or other landscaping, unless otherwise specified.*
2. *A layer of approved topsoil of at least a 2-inch depth shall be placed on all disturbed areas 2:1 and steeper prior to seeding, sodding or other landscaping, unless otherwise specified.*
3. *Bioretention Soil Mix (BSM) and other materials installed in conjunction with SPI 316 - Stormwater Filtration Facilities and SHA stormwater details shall be installed in conformance with SHA Landscape Notes and landscape plans. Plant materials and mulch shall be installed in BSM in conformance with stormwater details, Section 710 or other SHA Specifications.*

7.15 *Trees and Other Plant Material Installation.* *Trees, shrubs, perennials, annuals, bulbs, landscape beds, bark mulch and similar materials shall be installed in conformance with Section 710 and 711 of the SHA Standard Specifications. Tree and shrubs shall be pruned at the time of installation to ensure sidewalk clearance for pedestrians is maintained to a height of 8 feet. No tree or shrub shall be installed within 3 feet of curbs, sidewalks, or pavement edges.*

LP-10

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RECONSTRUCTION OF
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FROM WHITTIER DRIVE TO
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DETAILS AND NOTES

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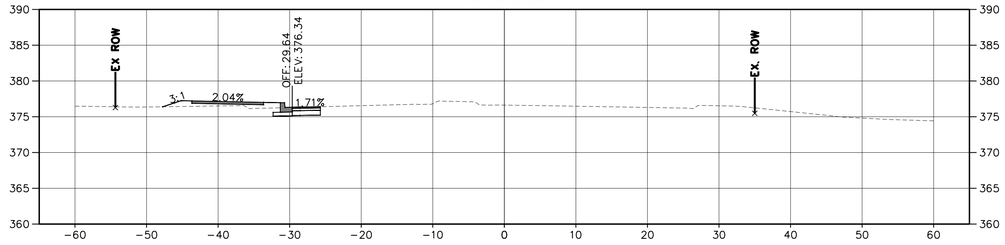
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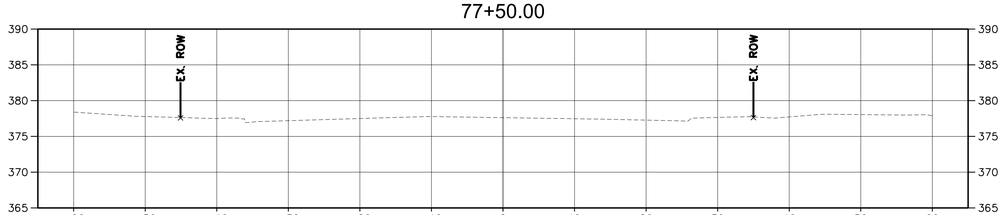
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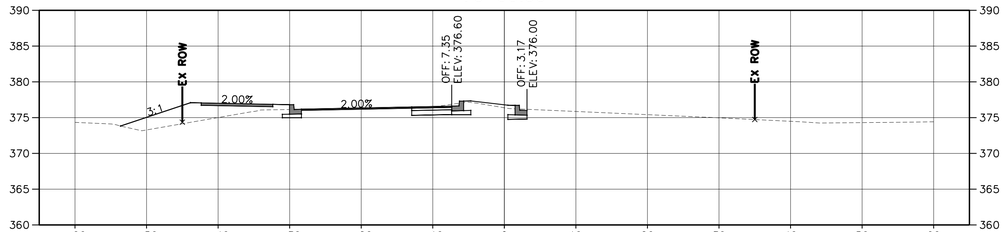
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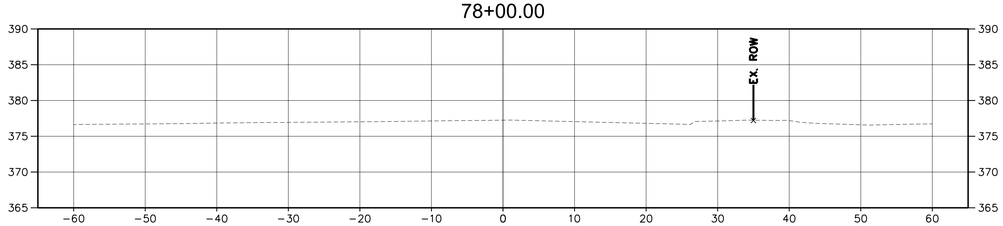
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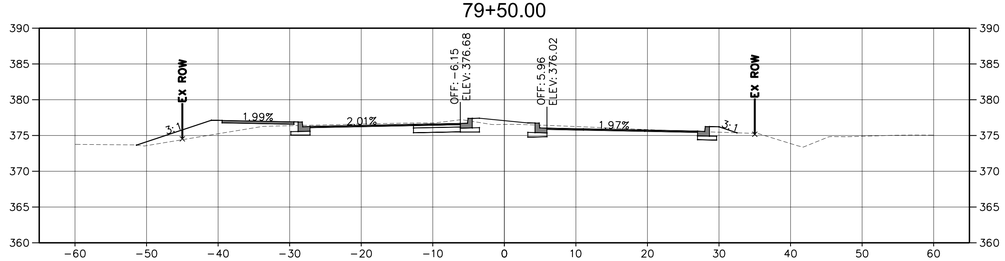
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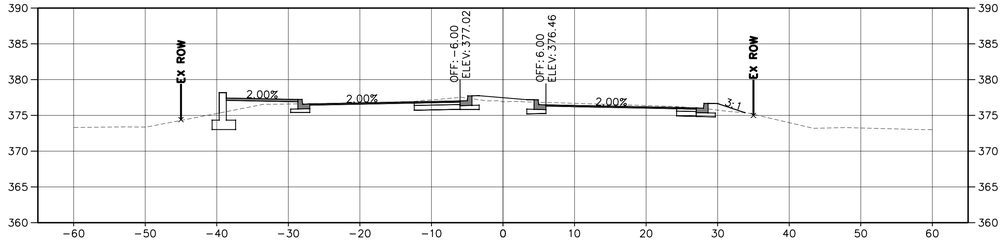
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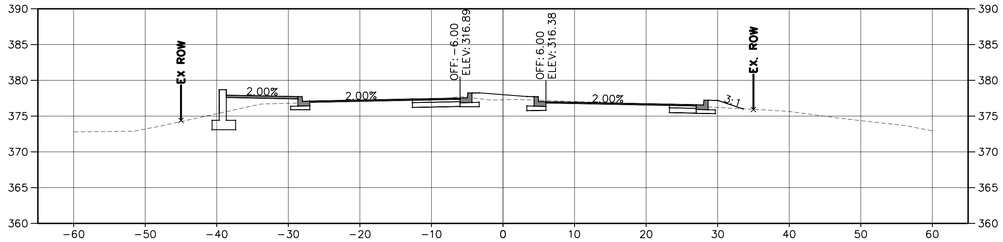
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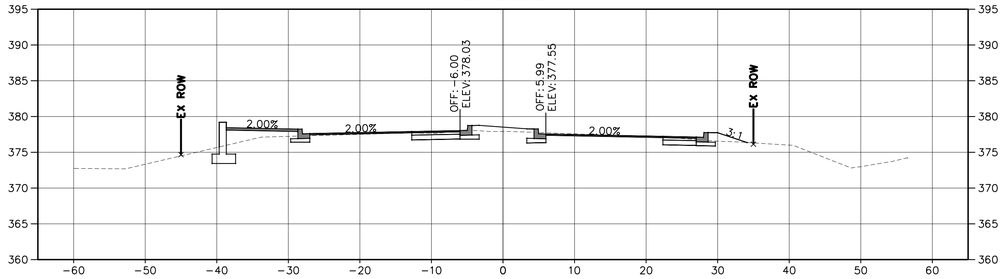
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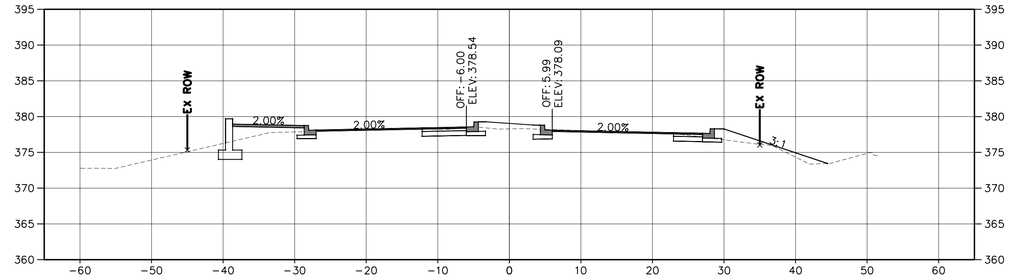
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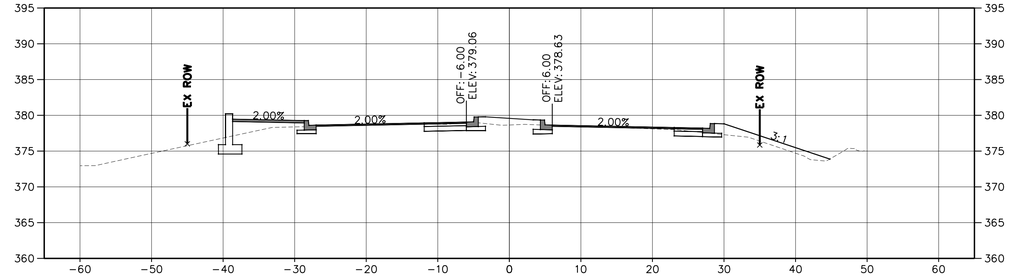
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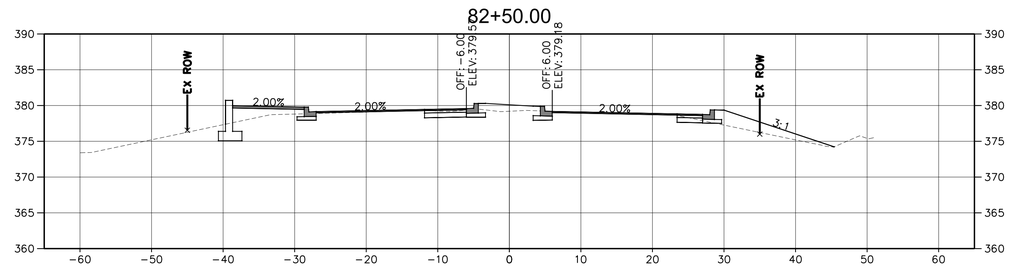
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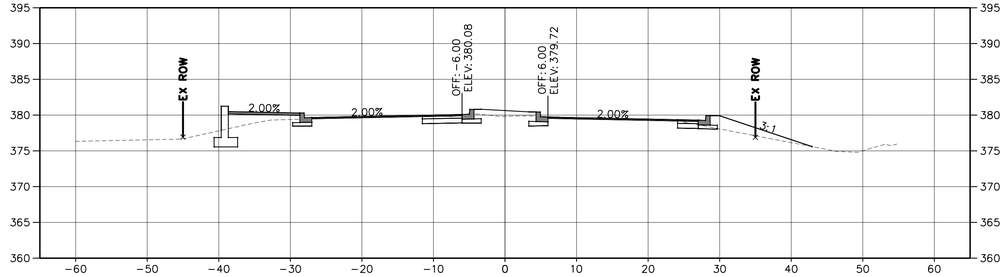
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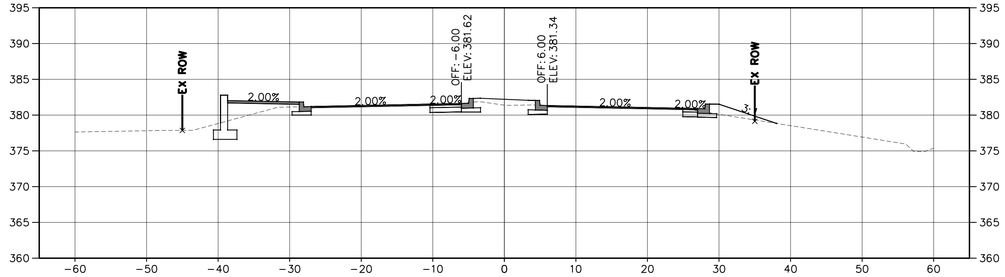
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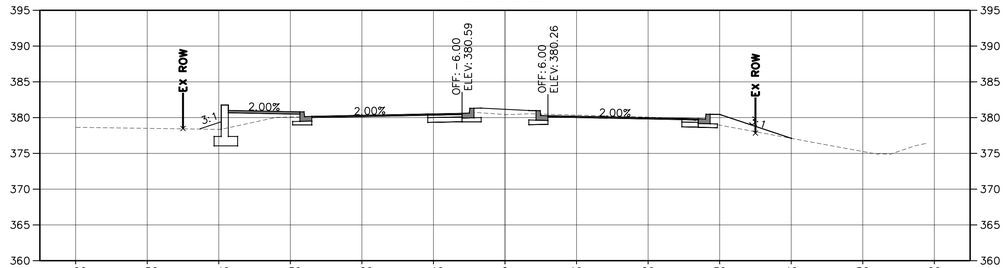
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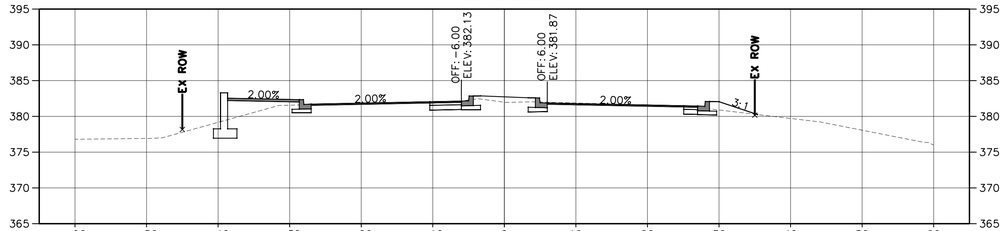
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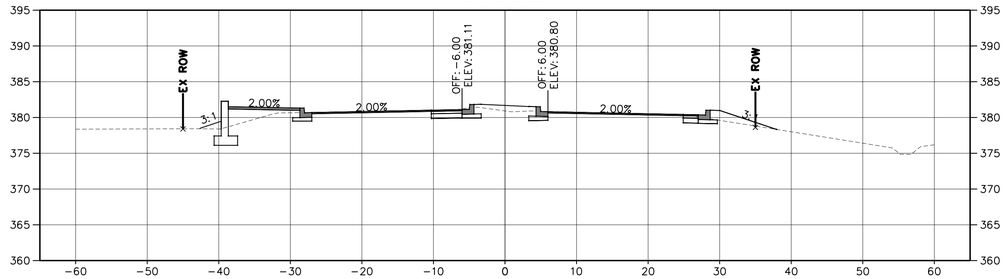
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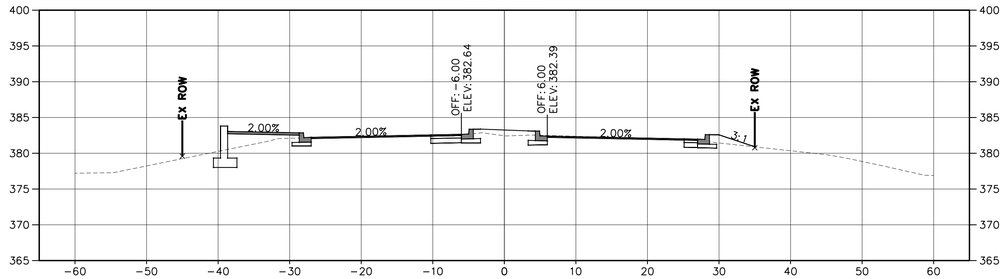
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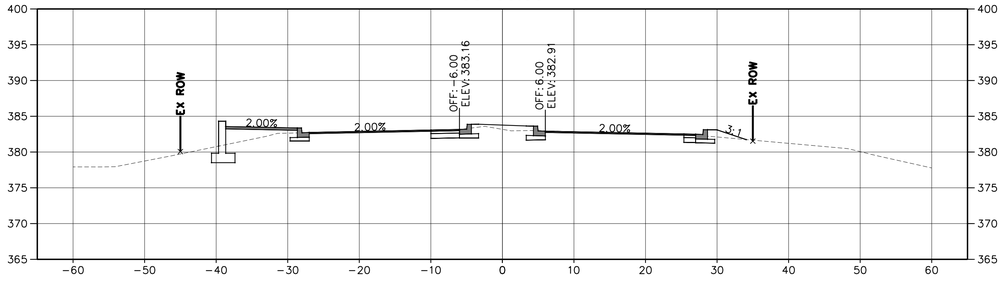
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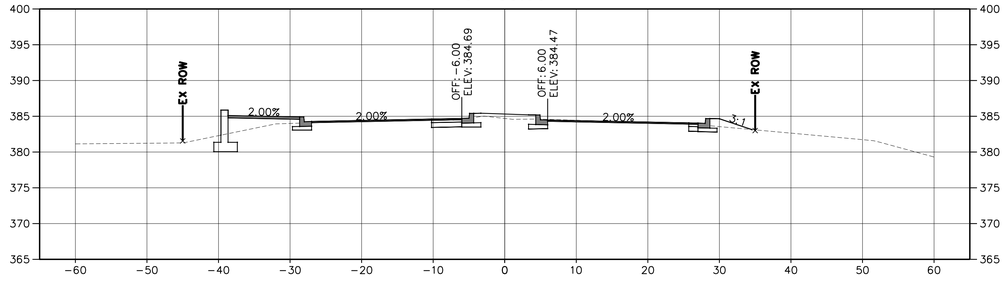
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APPROVED: _____
STORMWATER MANAGEMENT DATE

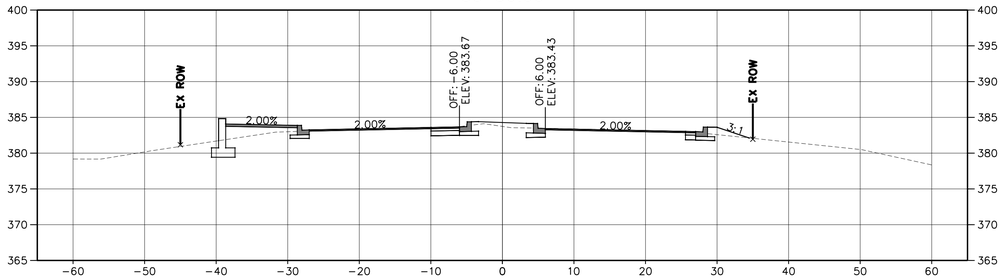
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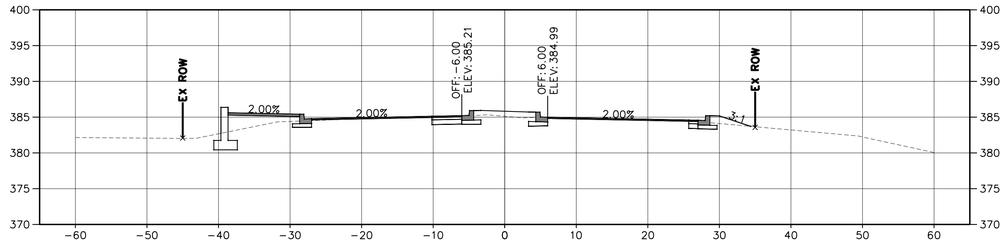
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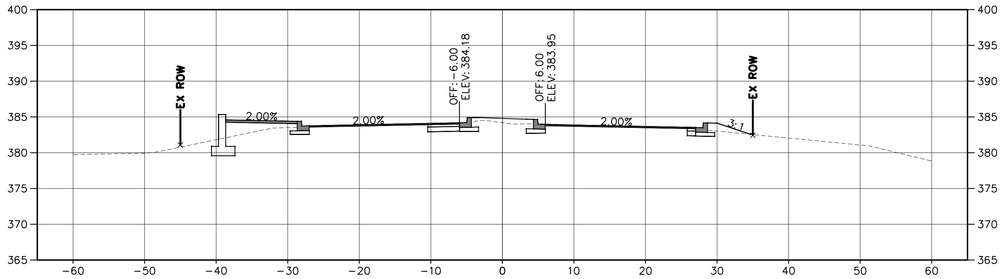
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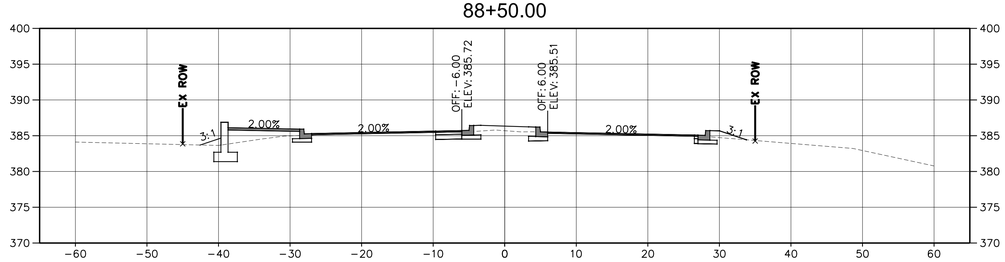
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88+50.00



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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 98 OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

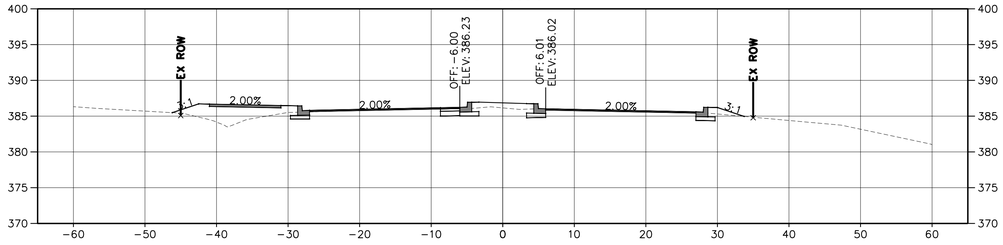
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

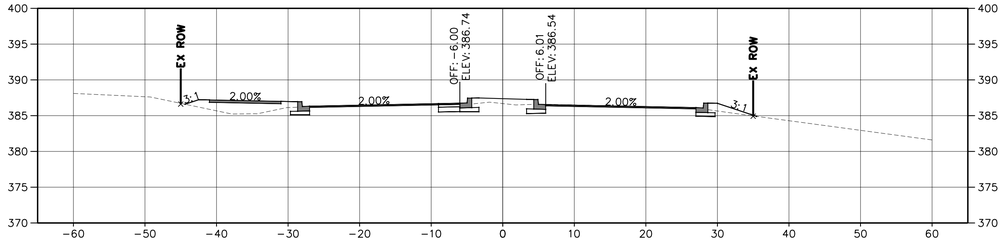
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

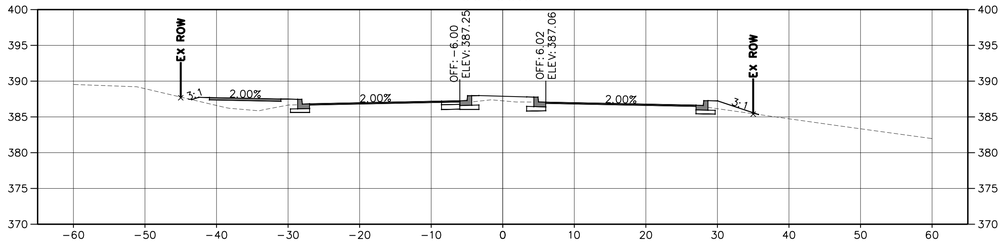
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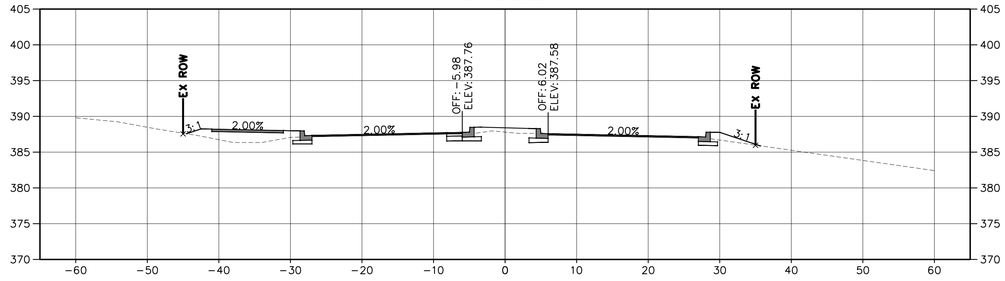
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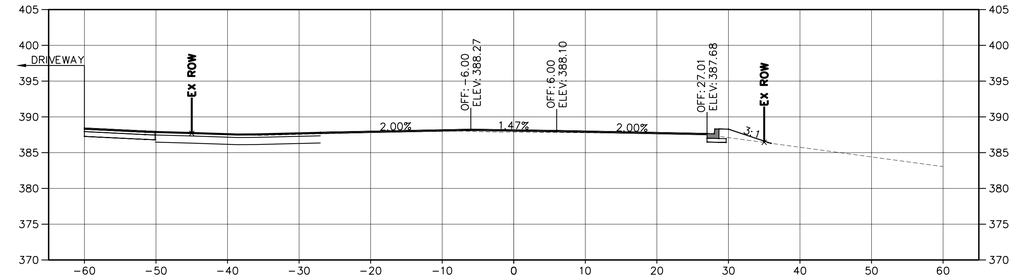
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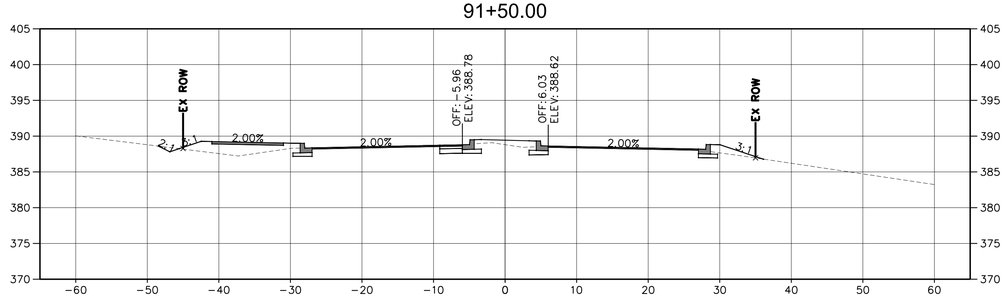
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91+50.00



CS-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

CROSS SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 99 OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

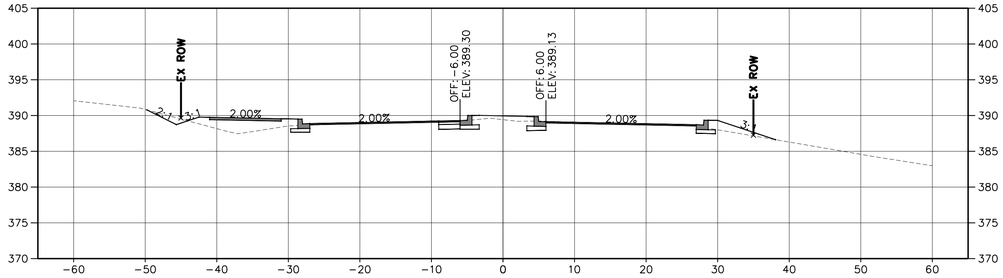
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

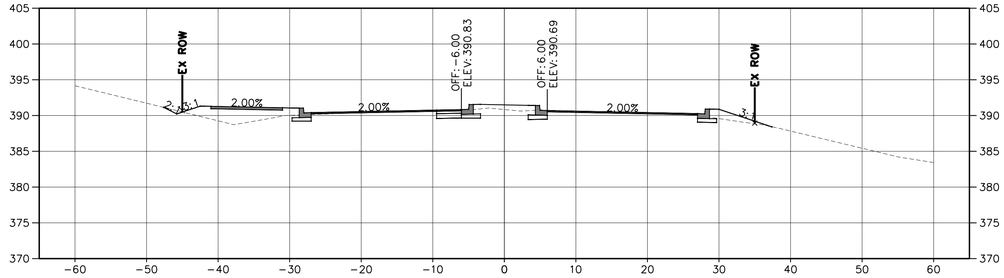
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DEVELOPMENT REVIEW CHIEF DATE

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STORMWATER MANAGEMENT DATE

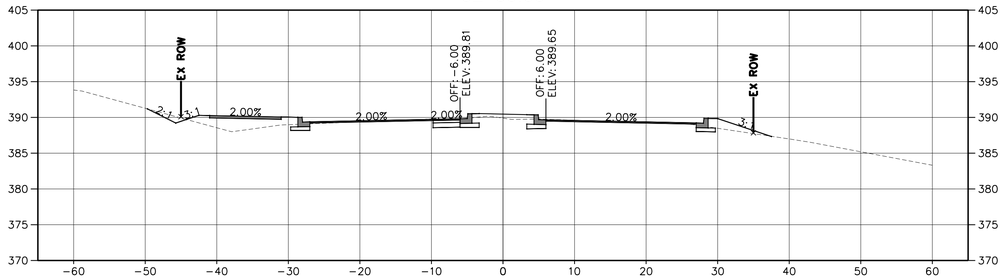
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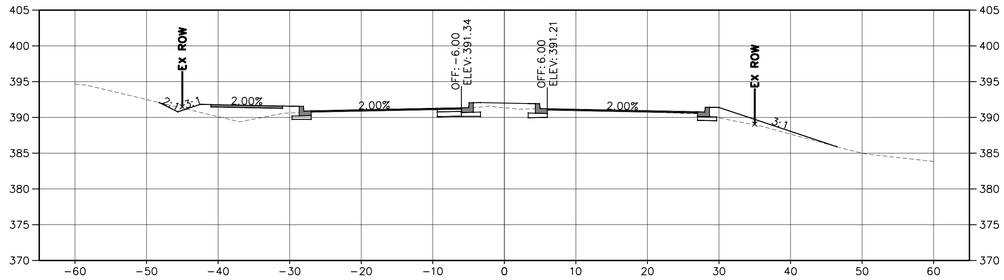
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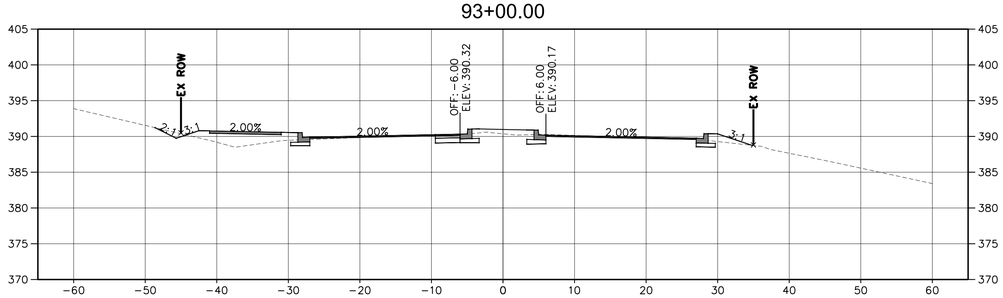
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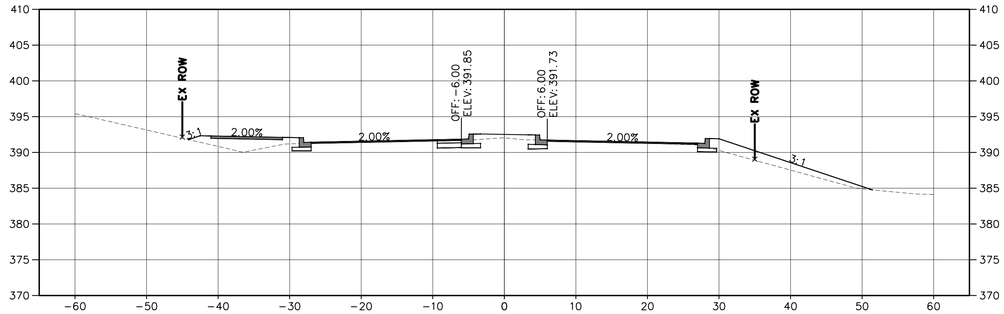
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94+50.00



CS-6

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
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: DECEMBER 2021 SCALE: 1"=10'

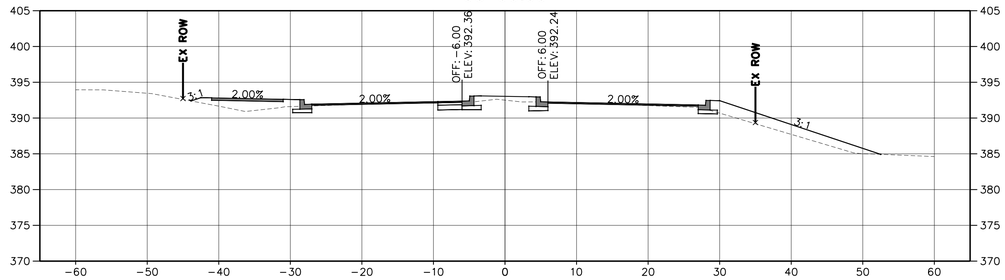
AMT FILE NO. 15-0758.007 SHEET NO. 100OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

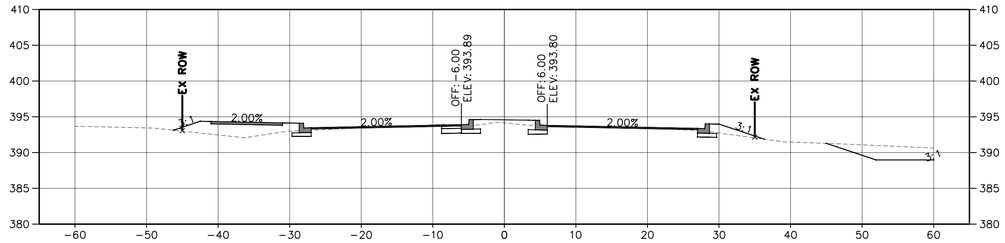
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DEVELOPMENT REVIEW CHIEF DATE

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STORMWATER MANAGEMENT DATE

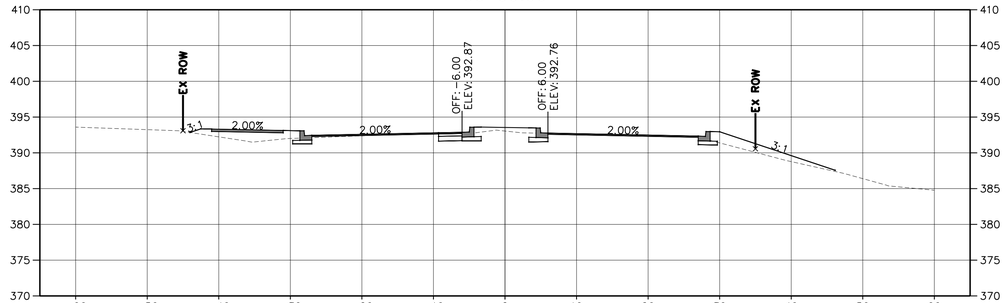
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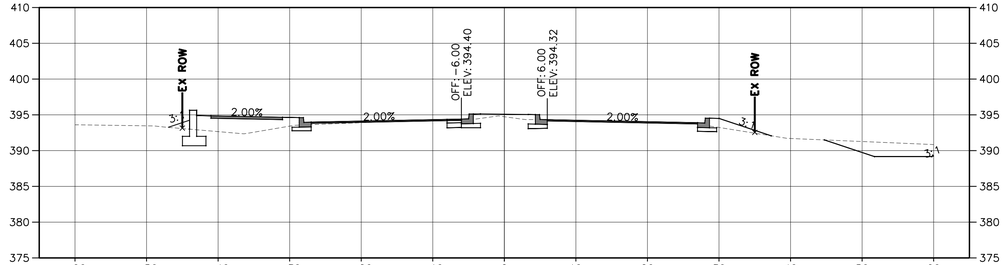
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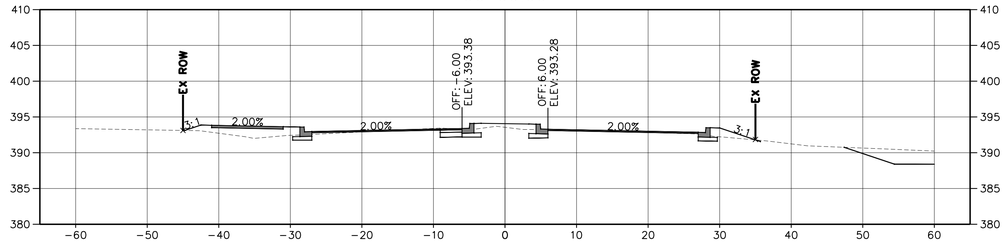
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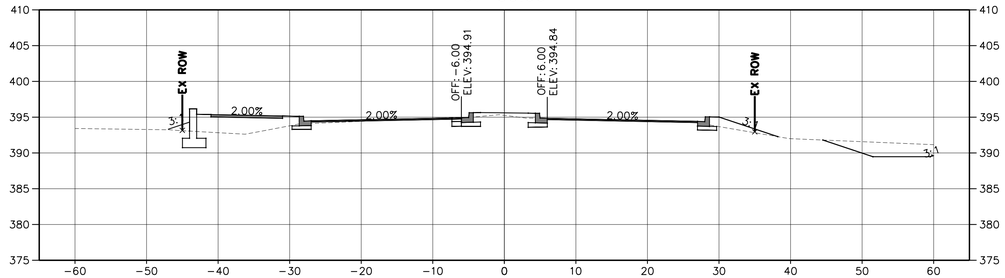
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CS-7

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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 101OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

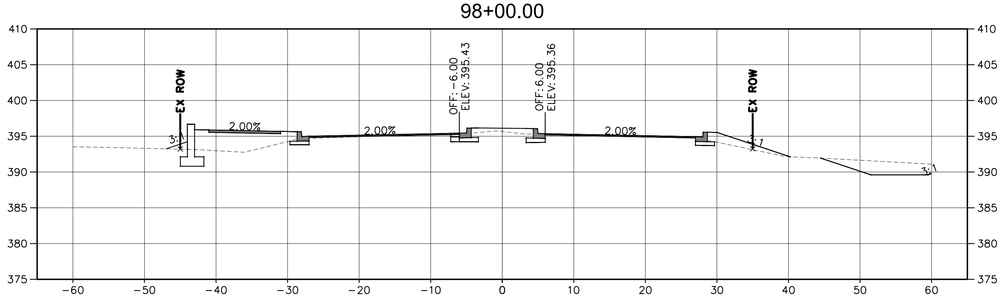
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

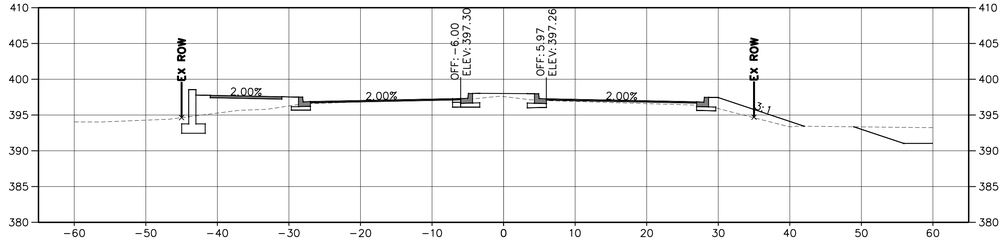
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

98+00.00



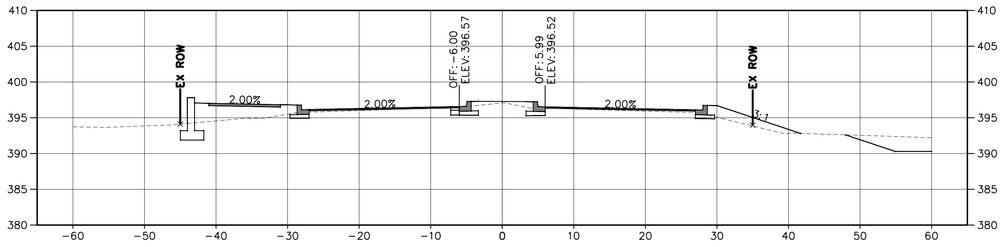
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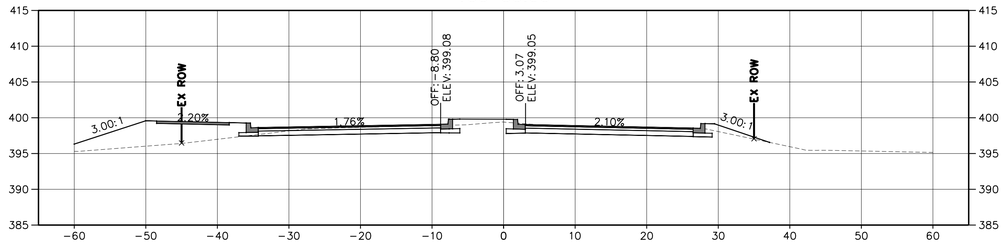
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CS-8

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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 102 OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

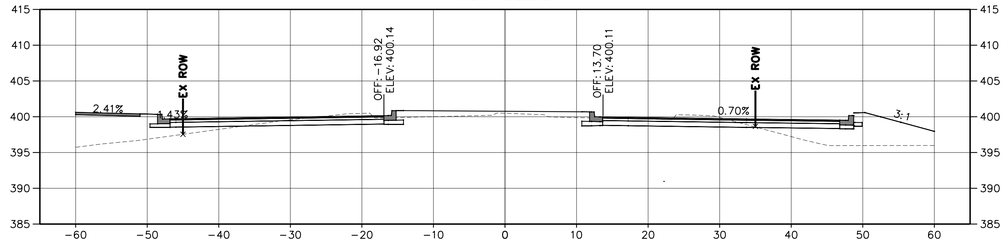
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

101+00.00



101+50.00

SEE ROUNDABOUT CROSS SECTIONS

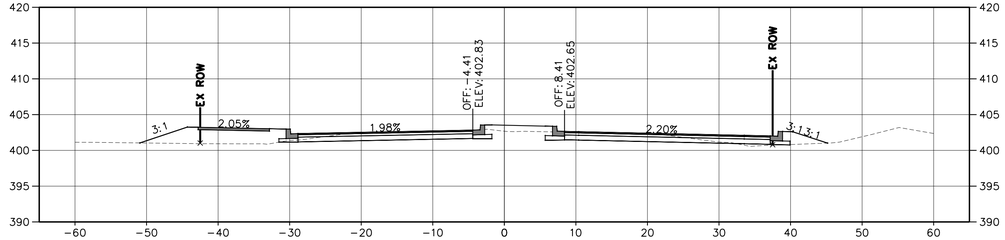
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SEE ROUNDABOUT CROSS SECTIONS

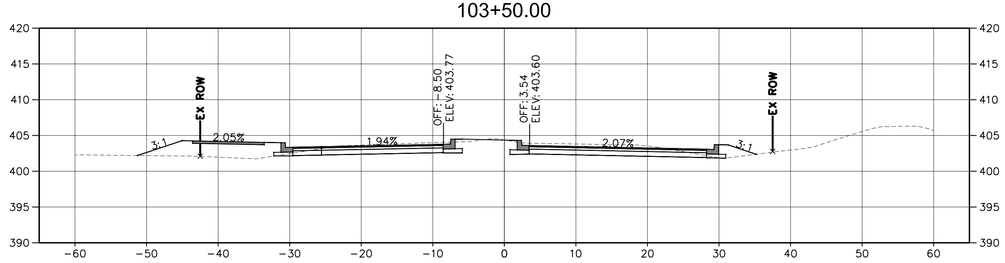
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SEE ROUNDABOUT CROSS SECTIONS

103+00.00



103+50.00



CS-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

CROSS SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 10 OF 118

REVISIONS		
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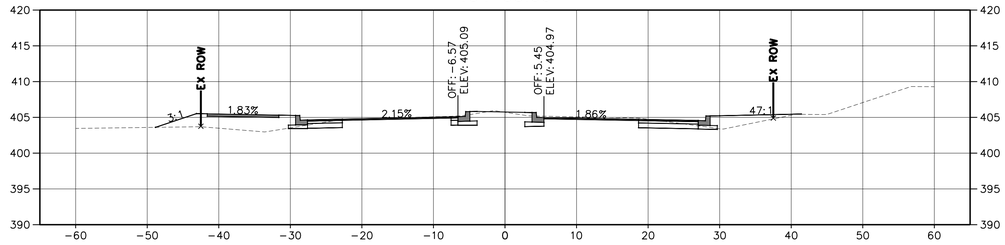
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-4552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

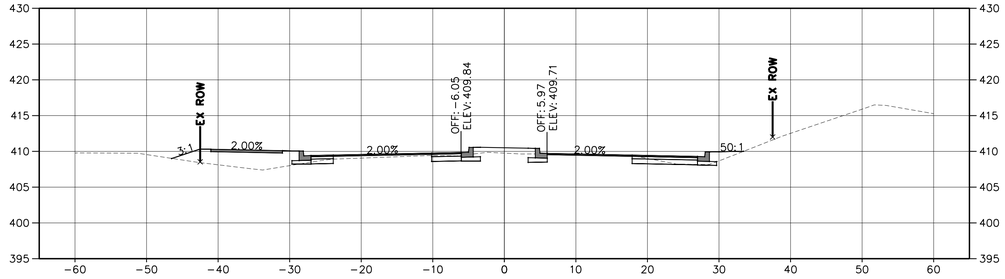
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

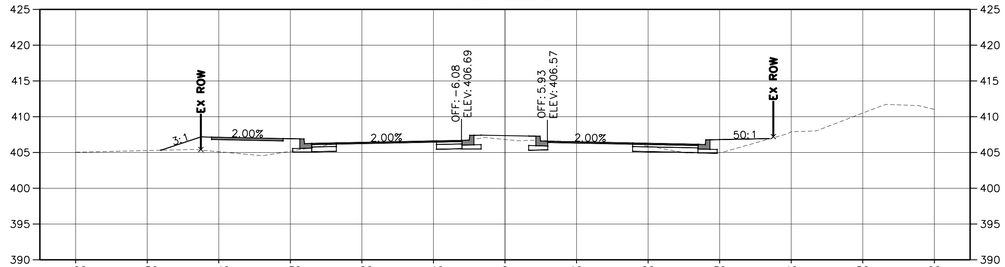
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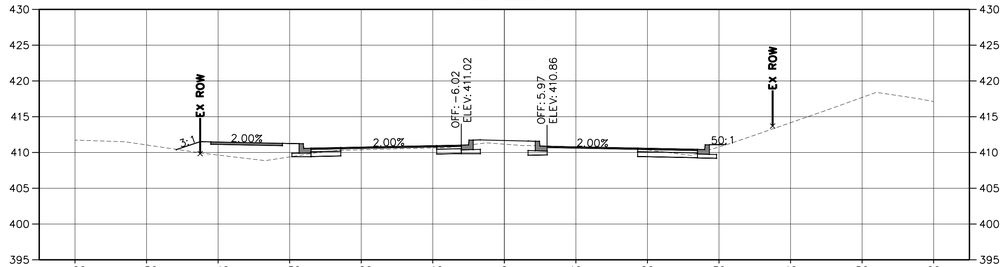
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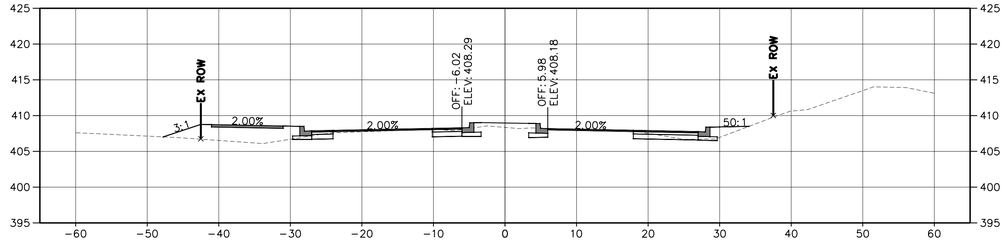
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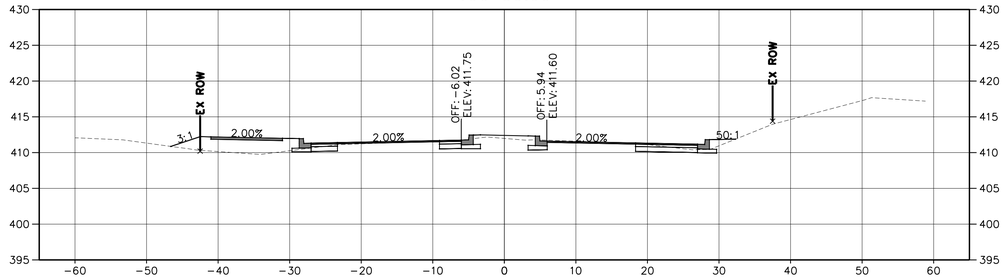
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105+00.00



106+50.00



CS-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

CROSS SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 104 OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

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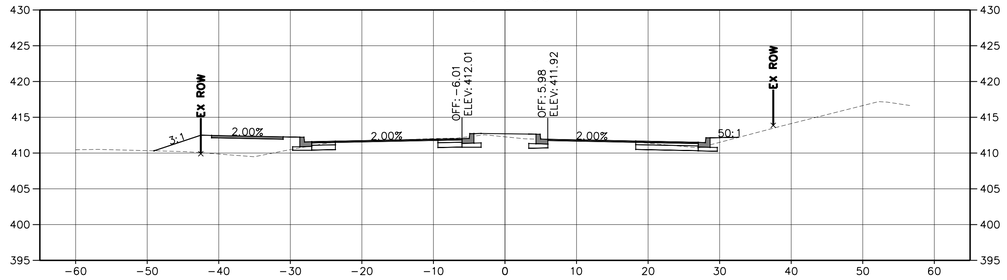
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8352
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

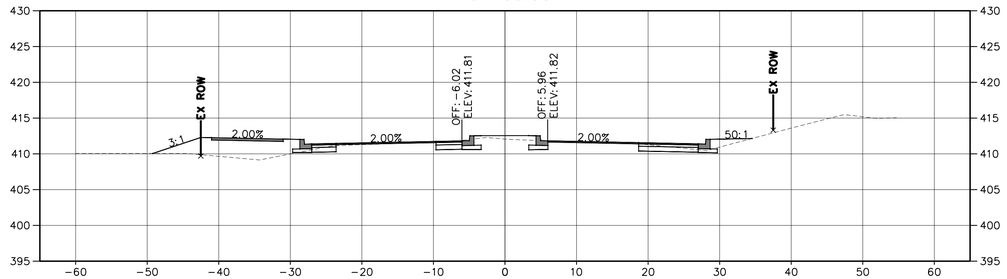
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DEVELOPMENT REVIEW CHIEF DATE

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STORMWATER MANAGEMENT DATE

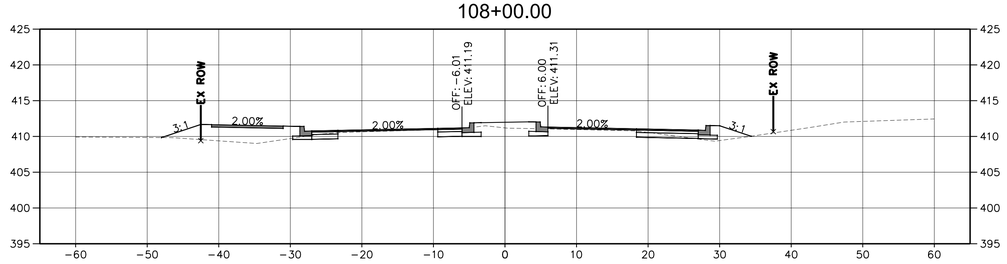
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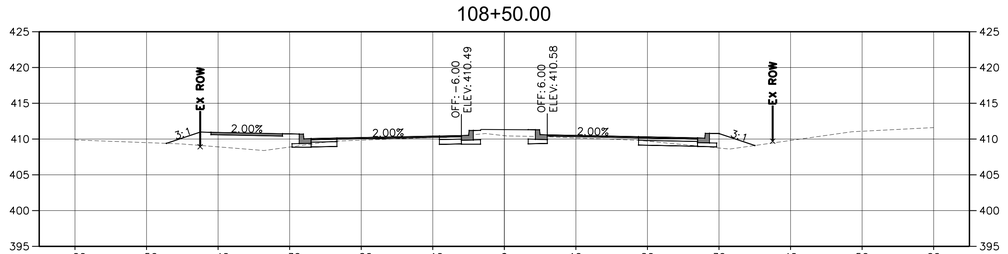
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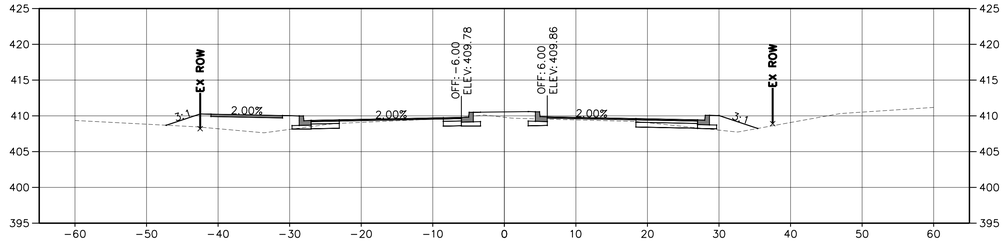
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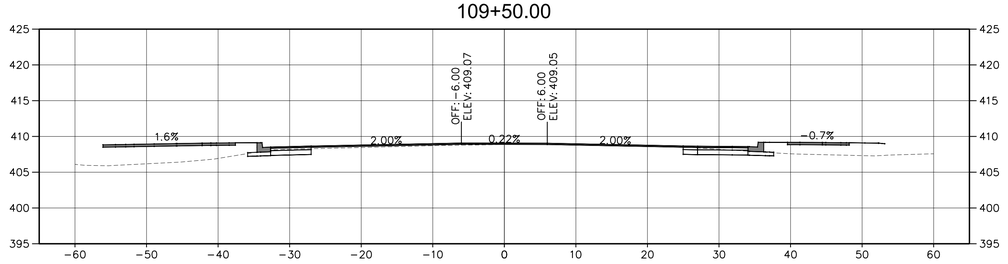
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109+00.00



109+50.00



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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 105OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

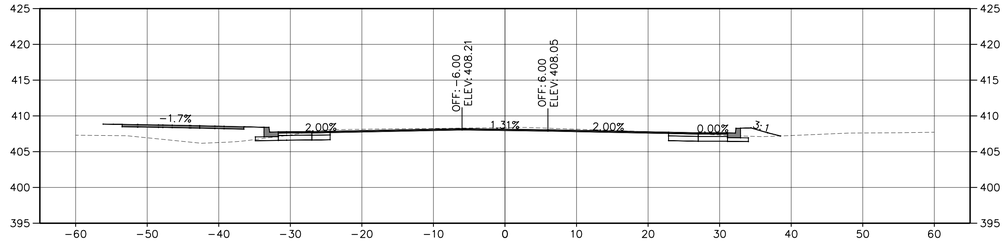
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

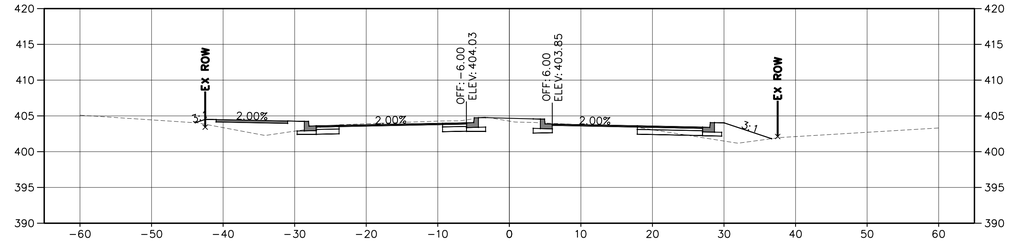
APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

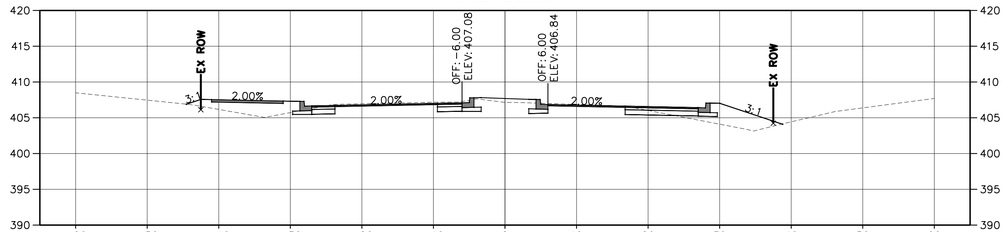
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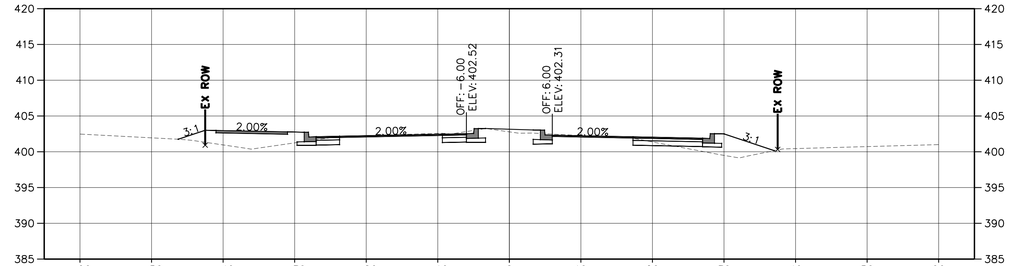
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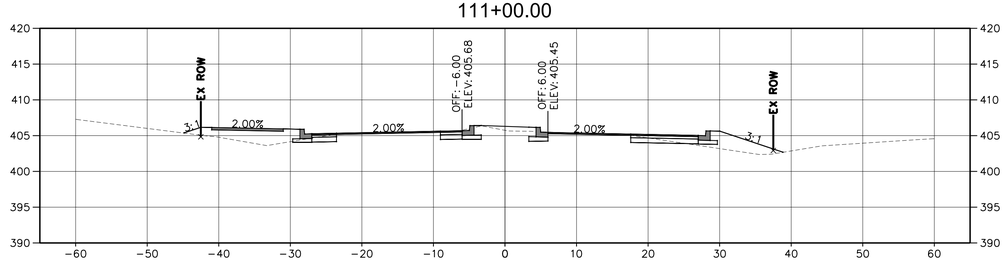
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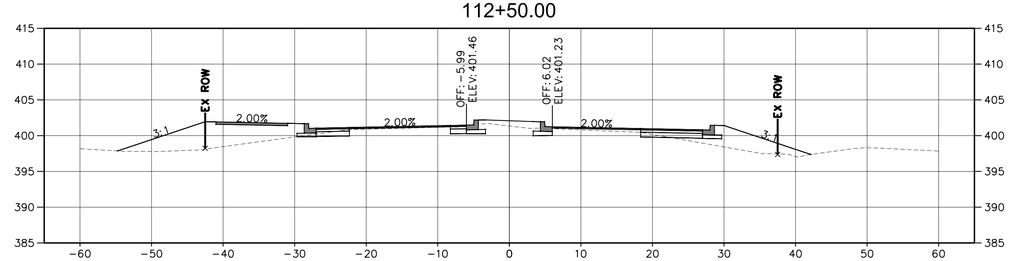
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111+00.00



112+50.00



CS-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

CROSS SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 106 OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

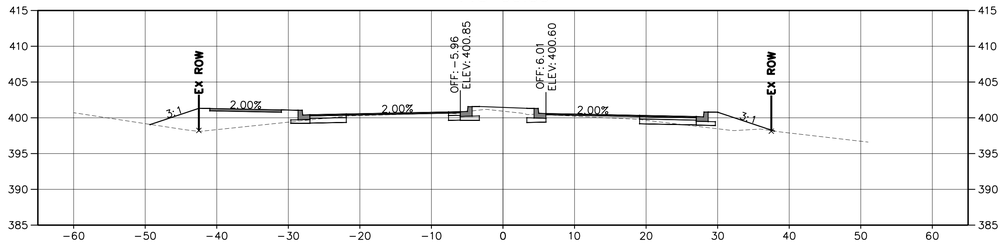
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-4552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

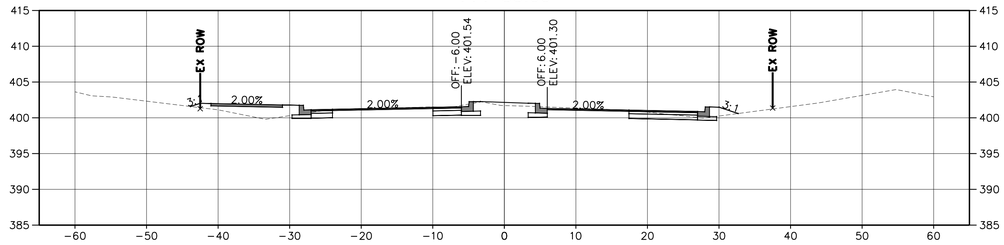
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

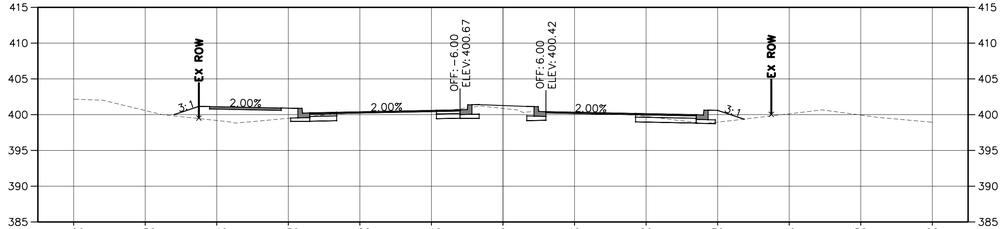
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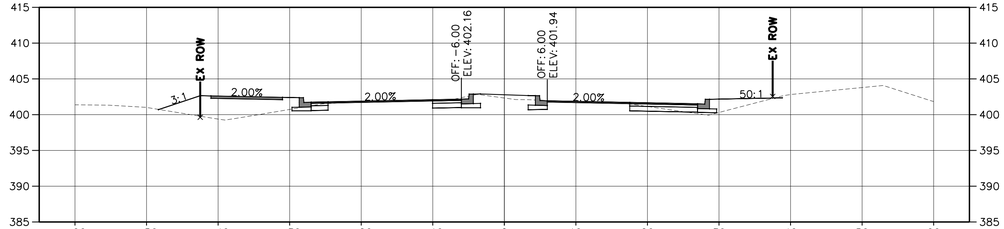
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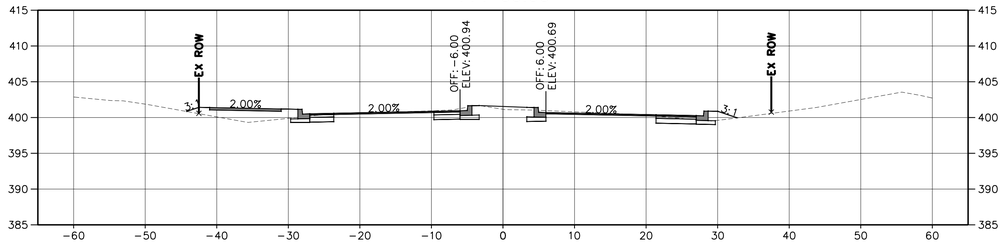
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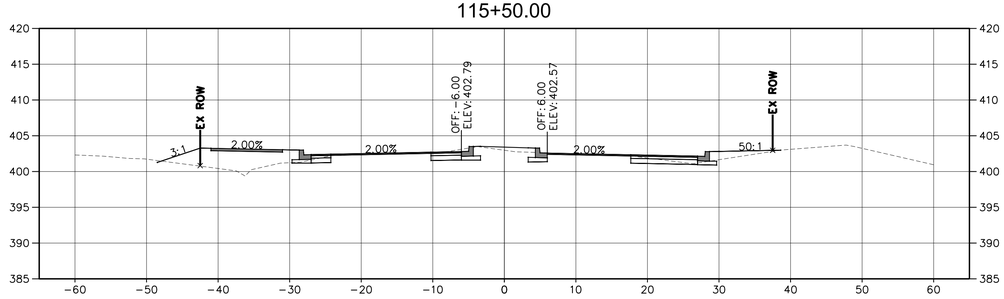
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114+00.00



115+50.00



CS-13

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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 107OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

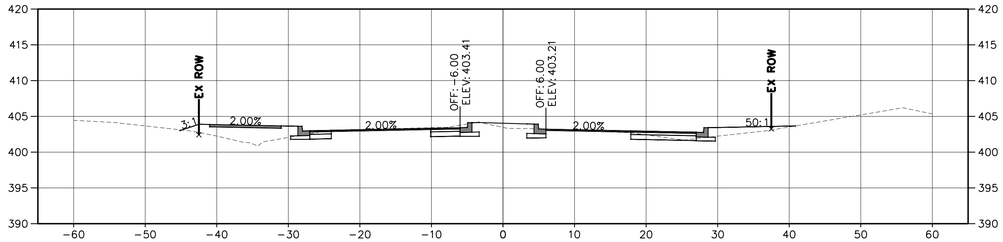
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

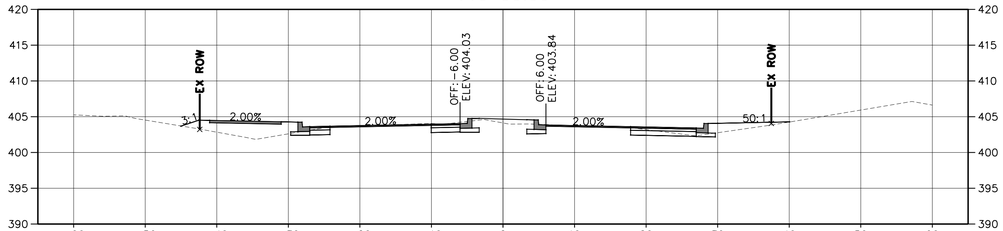
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

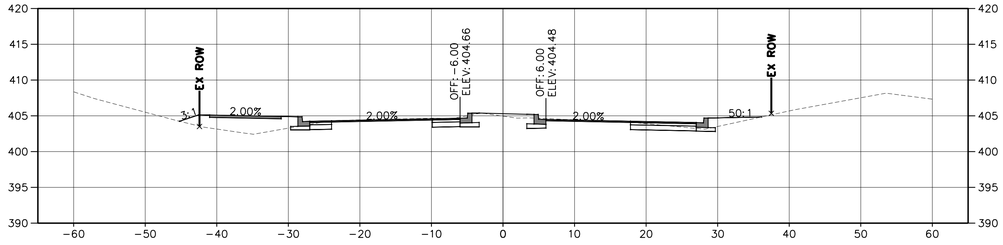
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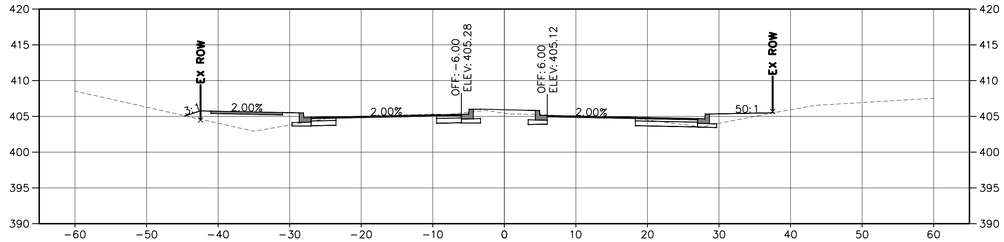
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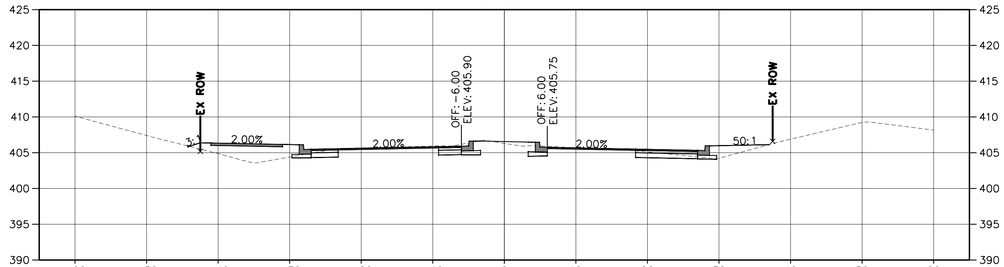
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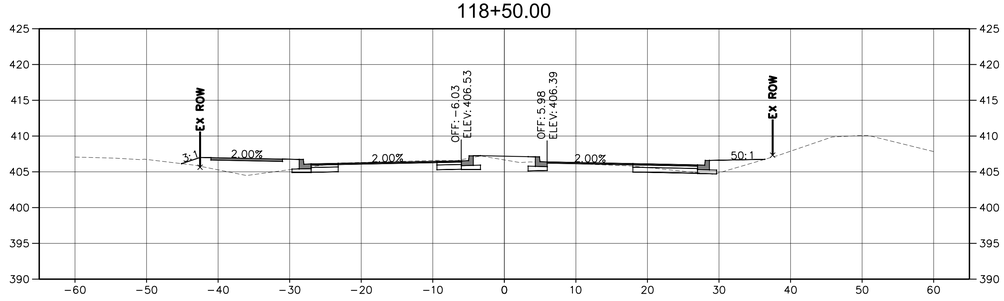
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118+00.00



118+50.00



CS-14

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
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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: DECEMBER 2021 SCALE: 1"=10'

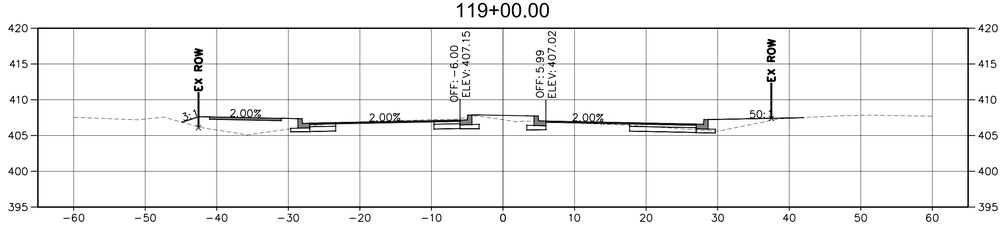
AMT FILE NO. 15-0758.007 SHEET NO. 10 OF 11

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

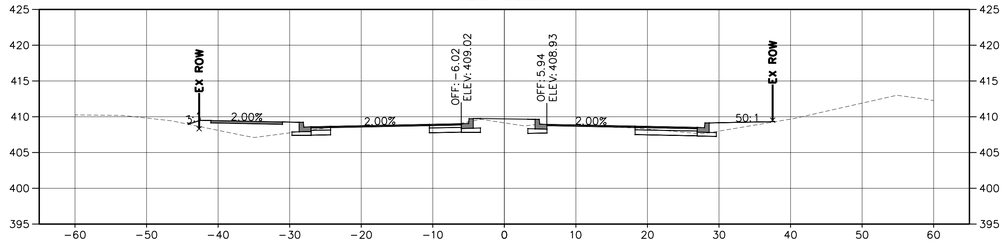
APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

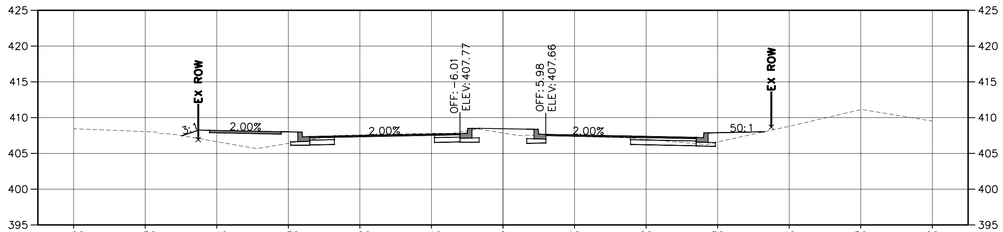
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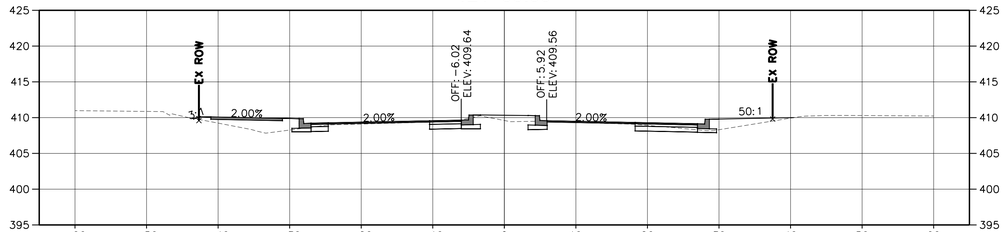
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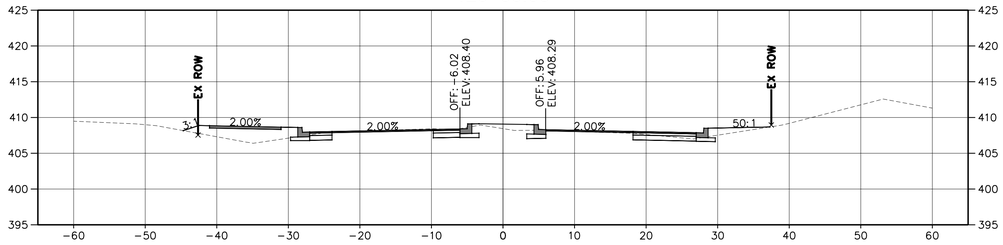
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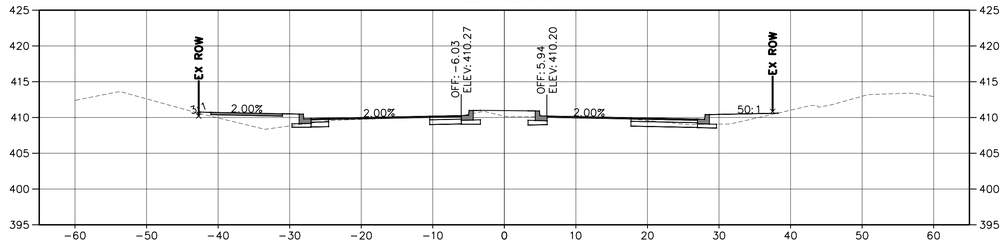
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120+00.00



121+50.00



CS-15

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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(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: DECEMBER 2021 SCALE: 1"=10'

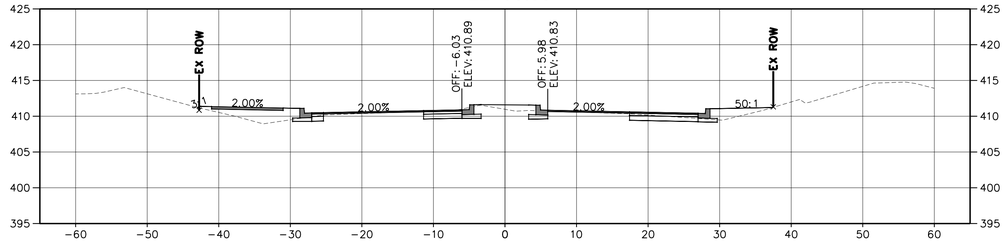
AMT FILE NO. 15-0758.007 SHEET NO. 109 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

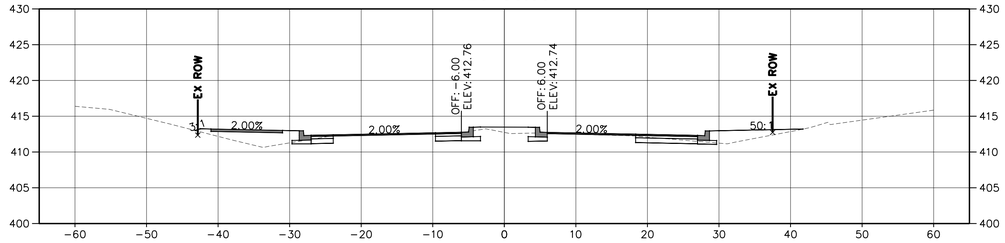
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

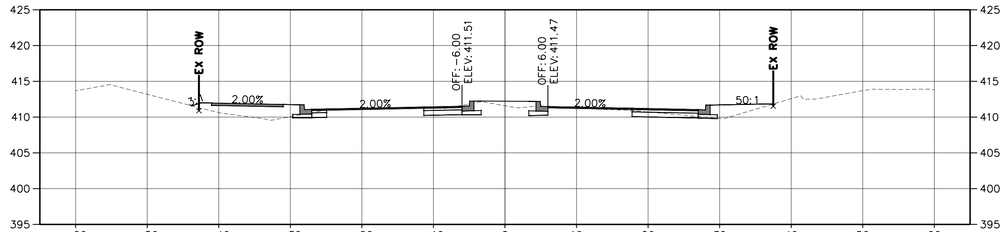
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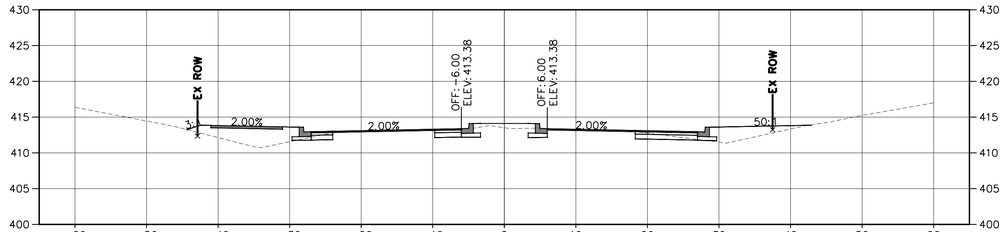
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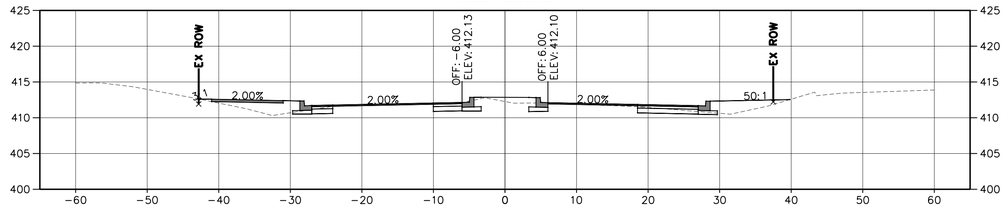
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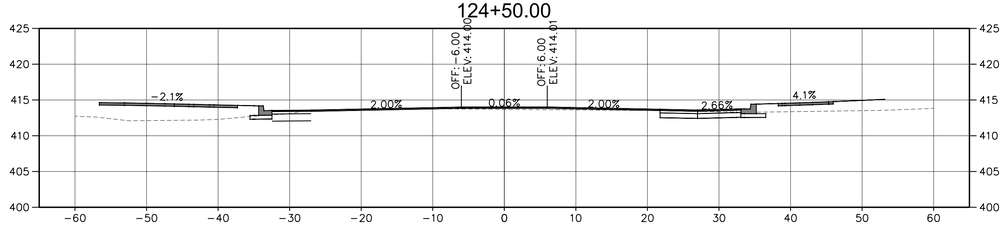
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123+00.00



124+50.00



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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 110OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

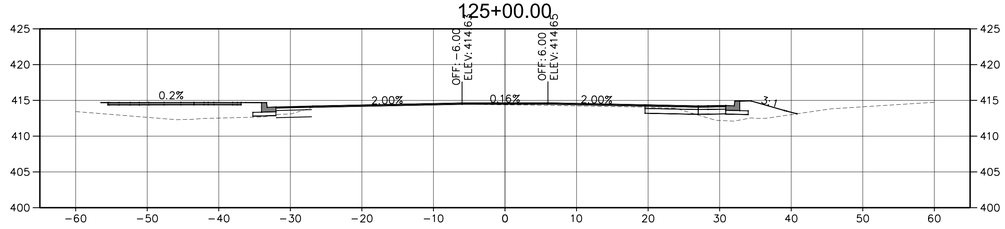
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

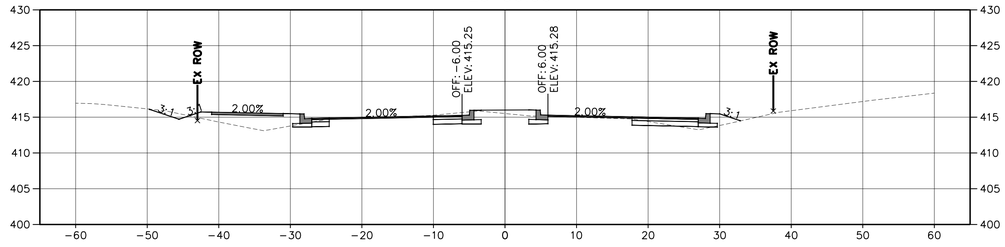
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

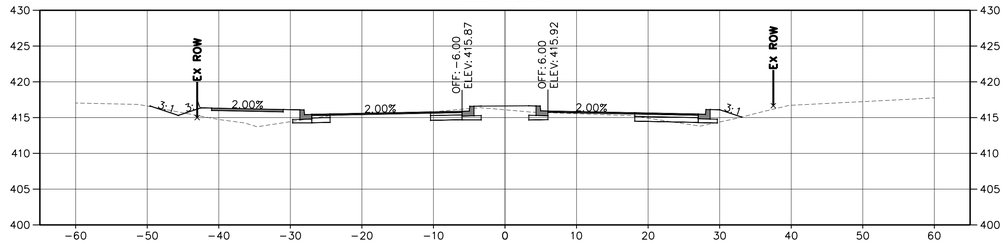
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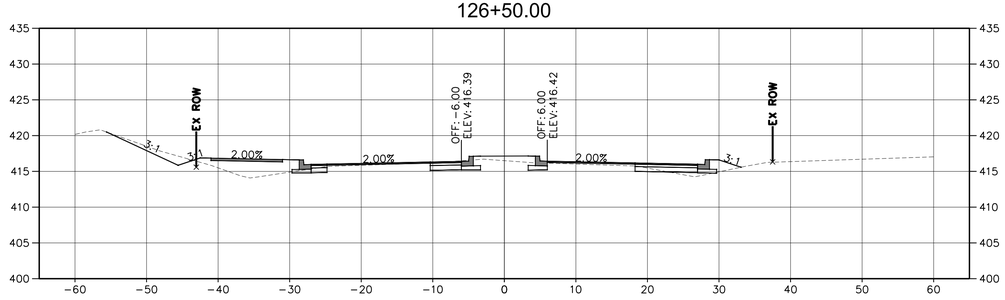
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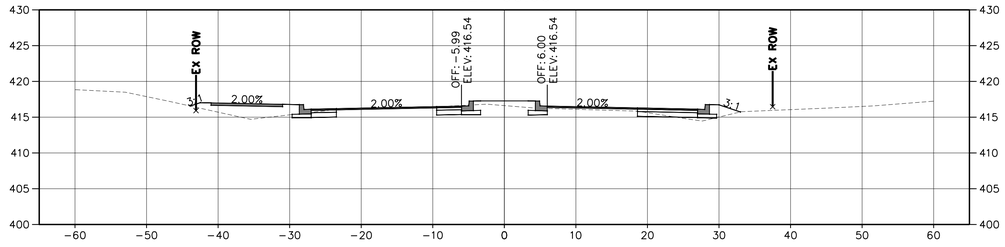
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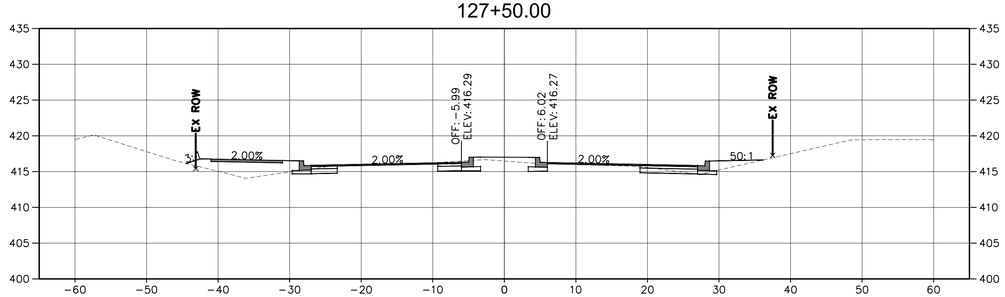
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127+00.00



127+50.00



CS-17

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-8352
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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

CROSS SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=10'

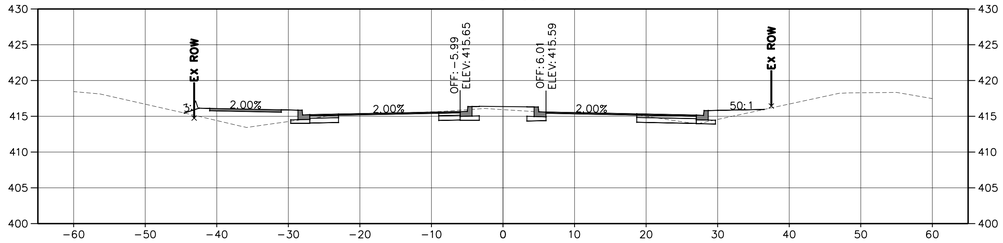
AMT FILE NO. 15-0758.007 SHEET NO. 11OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

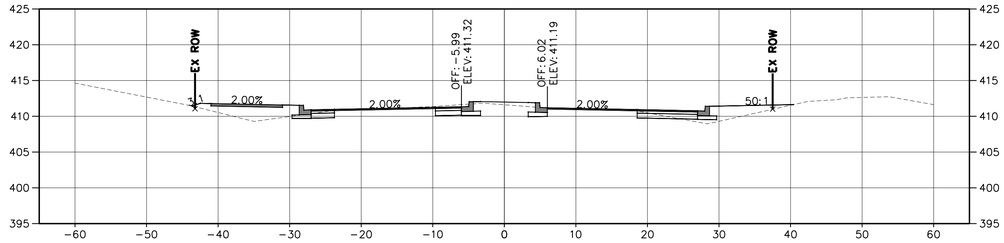
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

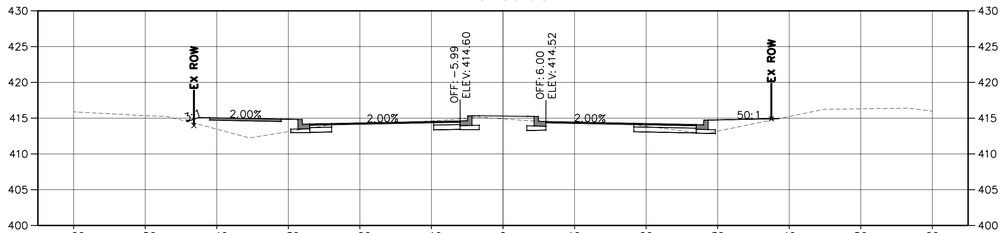
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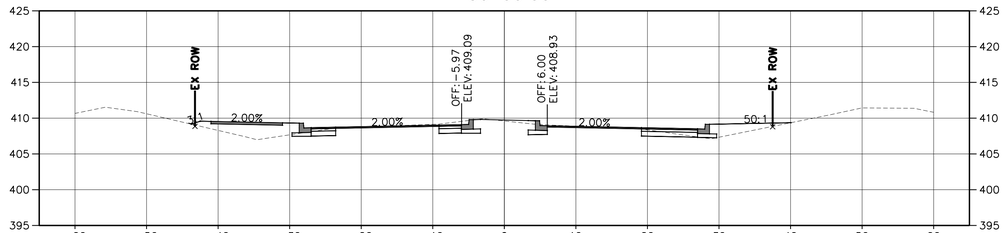
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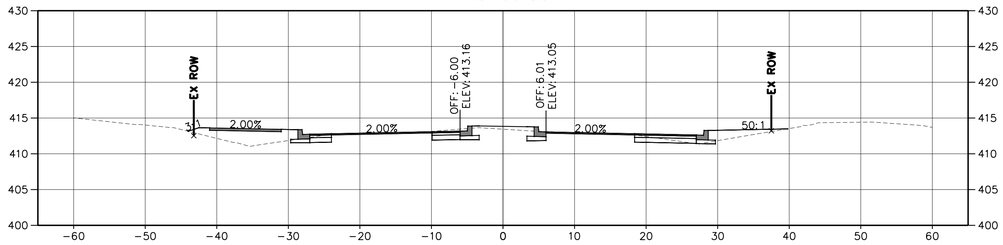
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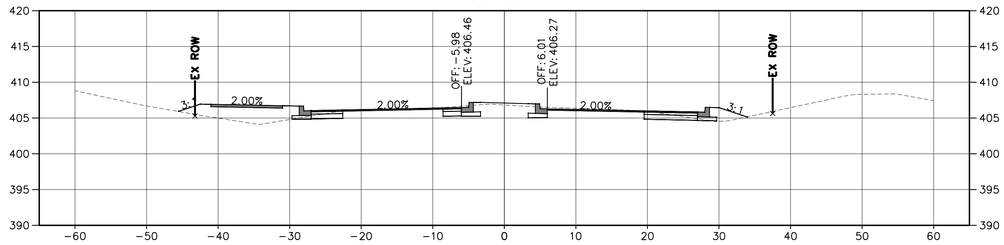
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129+00.00



130+50.00



CS-18

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
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(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: DECEMBER 2021 SCALE: 1"=10'

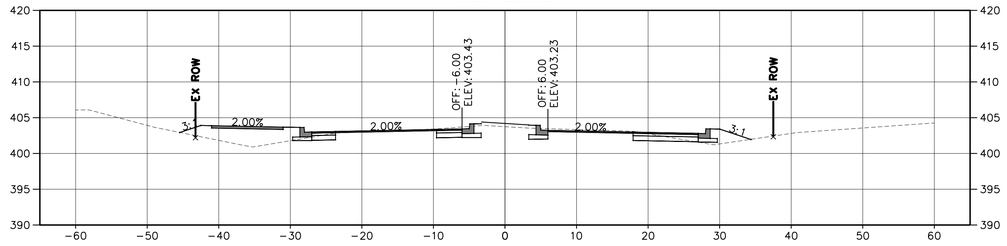
AMT FILE NO. 15-0758.007 SHEET NO. 112OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

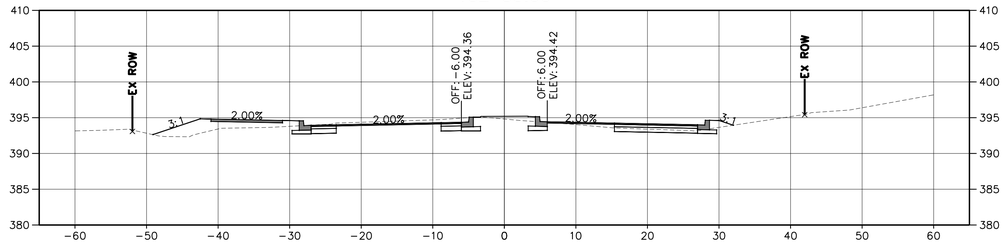
APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

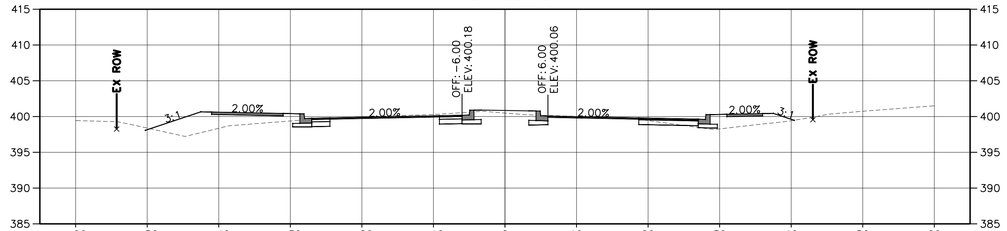
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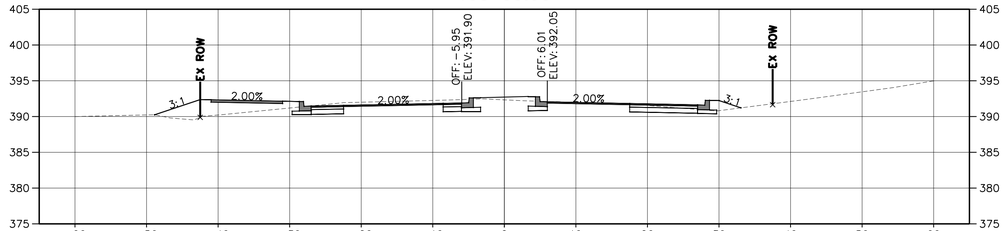
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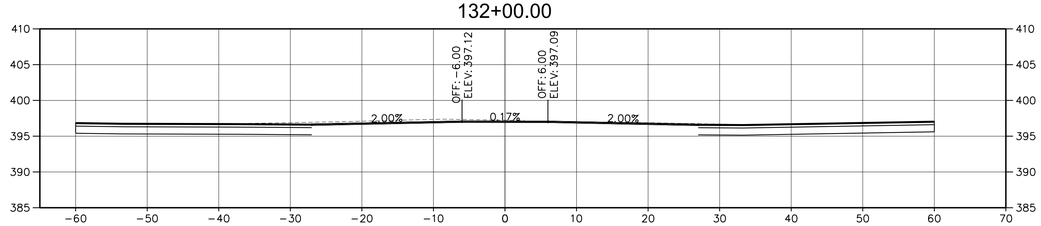
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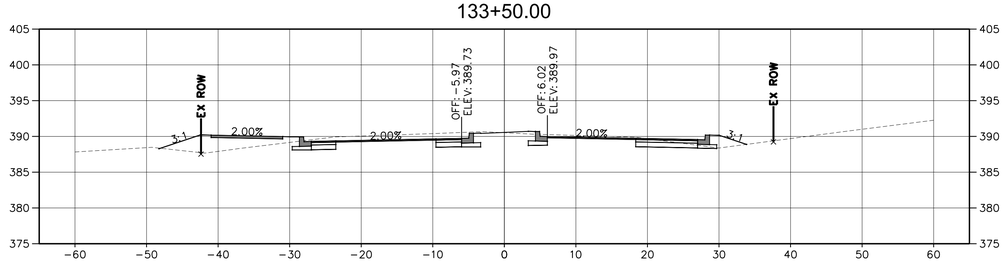
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132+00.00



133+50.00



CS-19

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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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: DECEMBER 2021 SCALE: 1"=10'

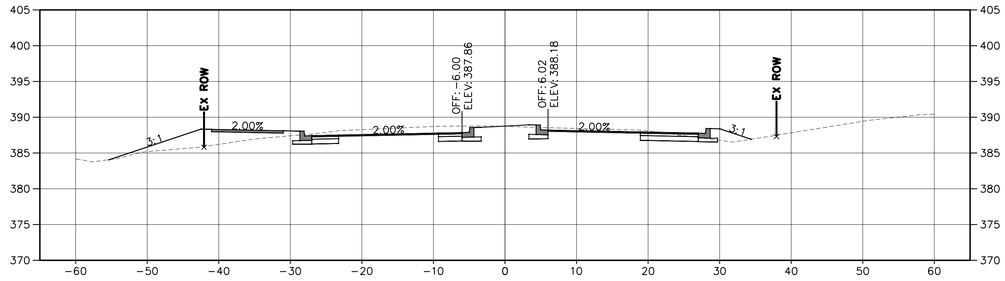
AMT FILE NO. 15-0758.007 SHEET NO. 113 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

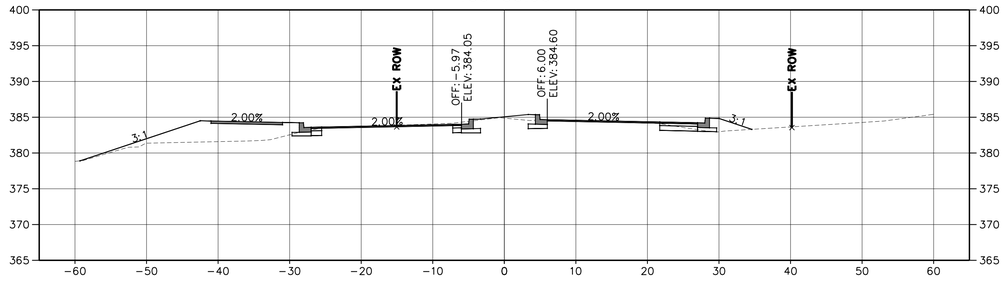
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

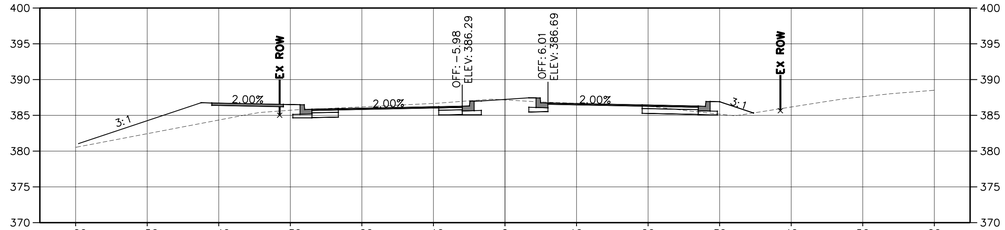
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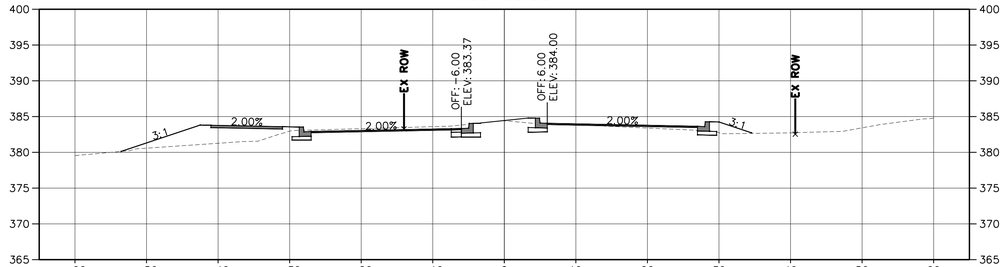
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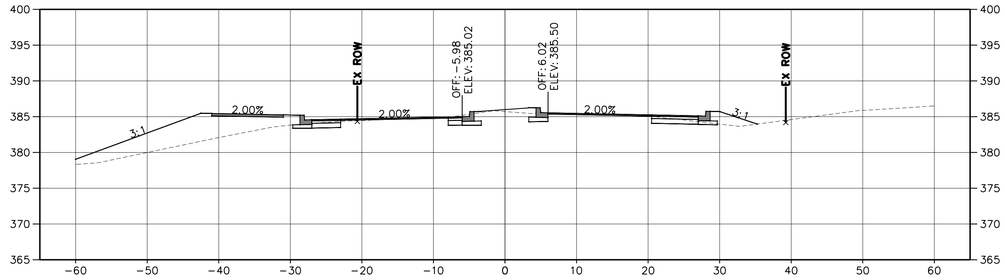
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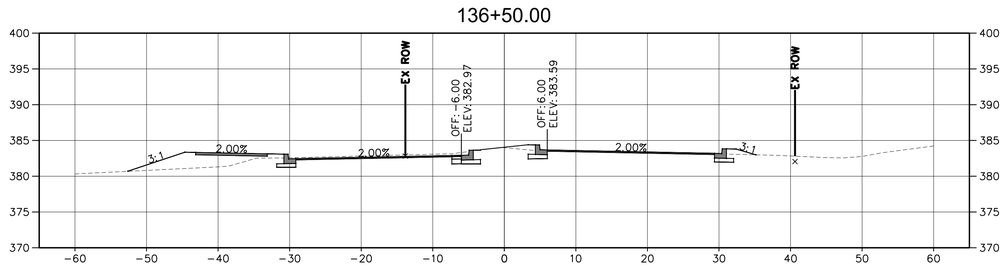
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136+50.00



CS-20

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

A. MORTON THOMAS AND ASSOCIATES, INC.
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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

CROSS SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=10'

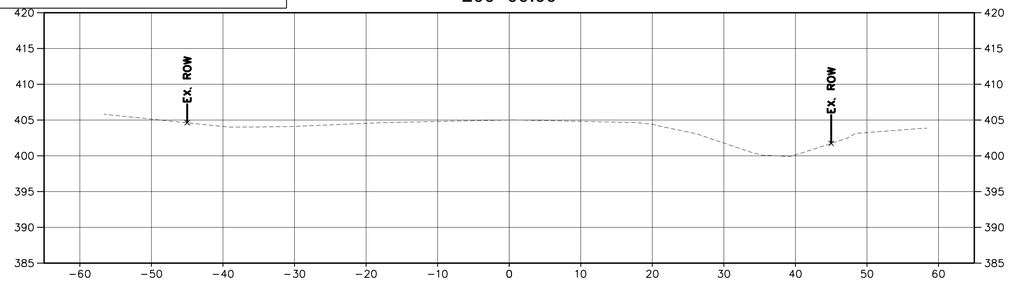
AMT FILE NO. 15-0758.007 SHEET NO. 114 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

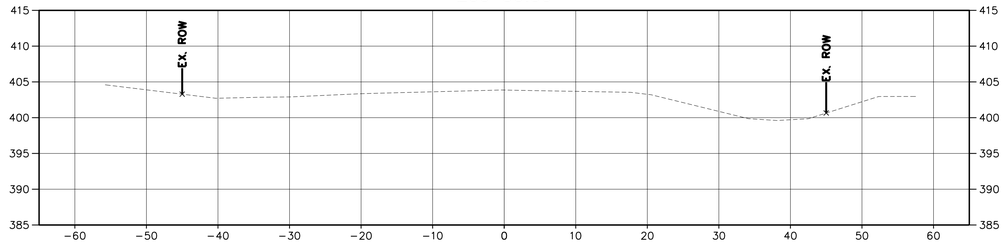
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DEVELOPMENT REVIEW CHIEF DATE

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STORMWATER MANAGEMENT DATE

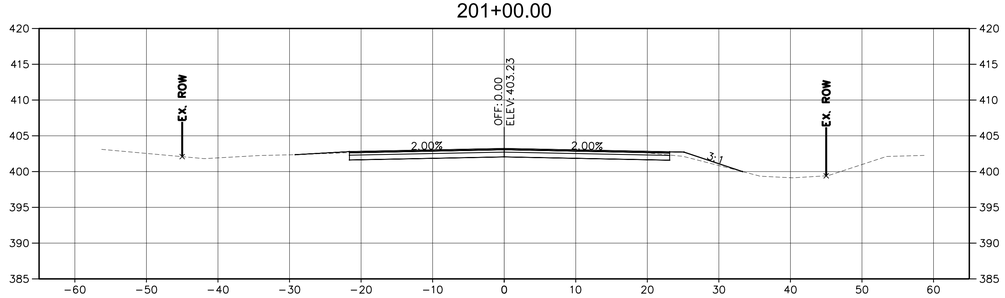
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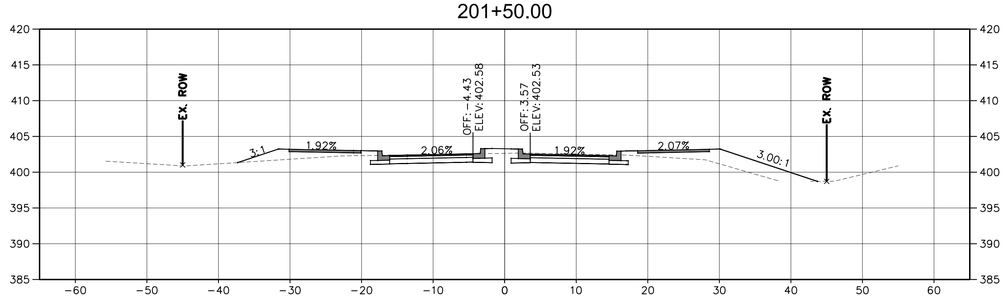
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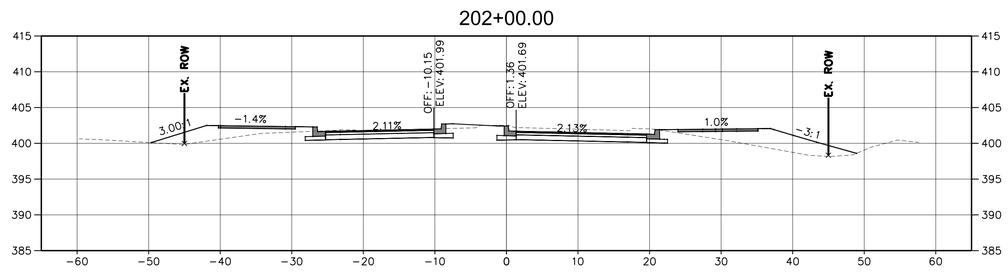
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201+50.00



202+00.00



202+50.00

SEE ROUNDABOUT CROSS SECTIONS

203+00.00

SEE ROUNDABOUT CROSS SECTIONS

REVISIONS		
MARK	DATE	DESCRIPTION

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A. MORTON THOMAS AND ASSOCIATES, INC.
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901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
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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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 115 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

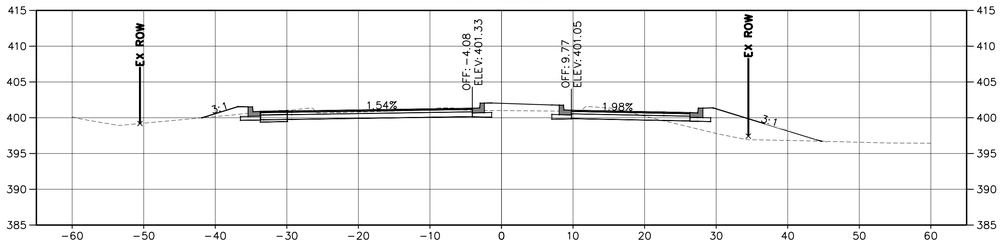
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

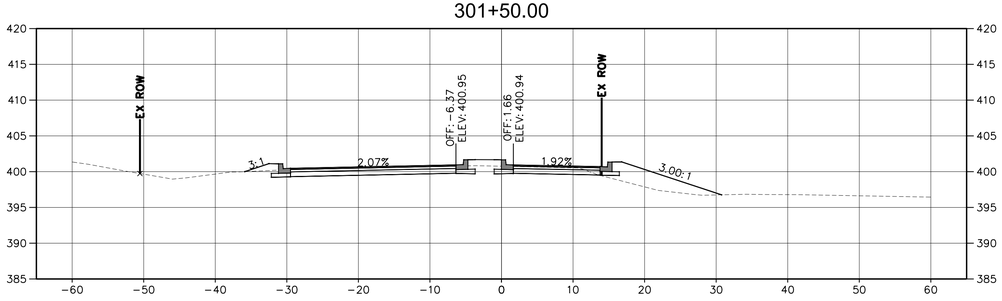
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SEE ROUNDABOUT CROSS SECTIONS

300+50.00
SEE ROUNDABOUT CROSS SECTIONS

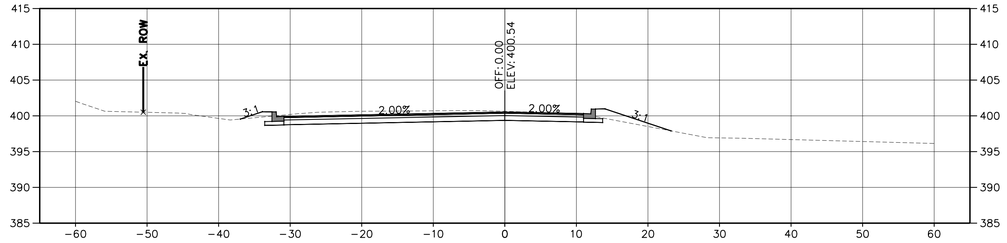
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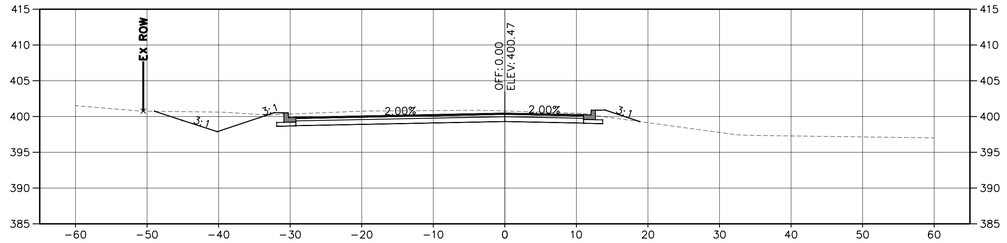
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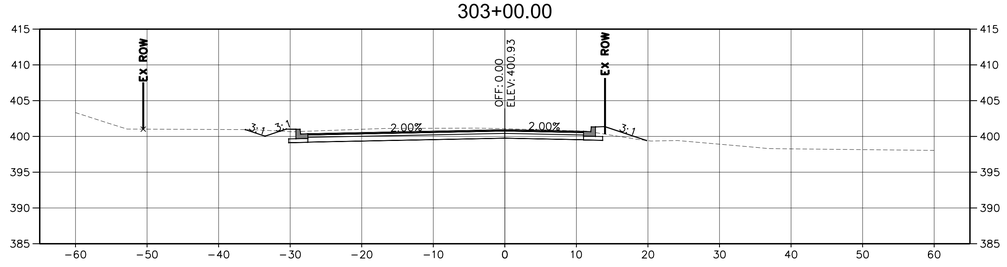
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302+50.00



303+00.00



CS-22

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

CROSS SECTIONS

DATE: DECEMBER 2021 SCALE: 1"=10'

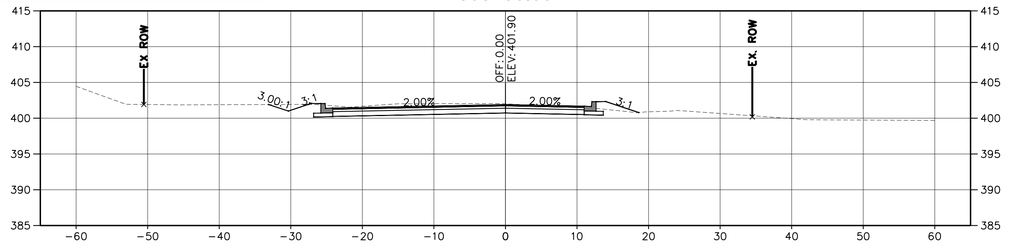
AMT FILE NO. 15-0758.007 SHEET NO. 116 OF 118

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

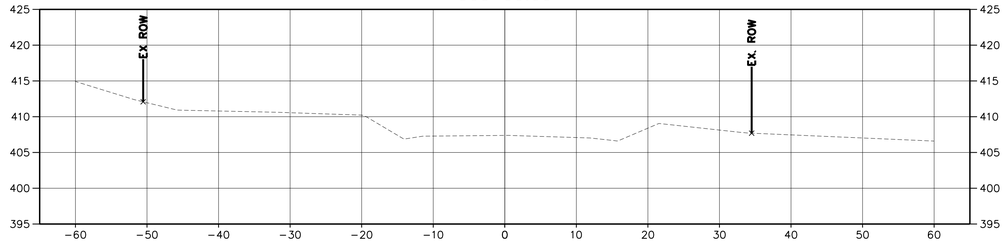
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DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

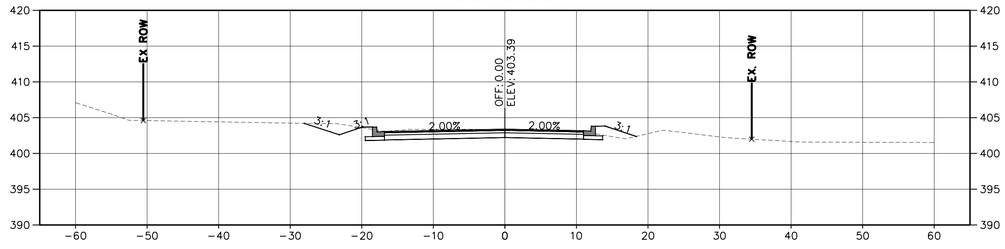
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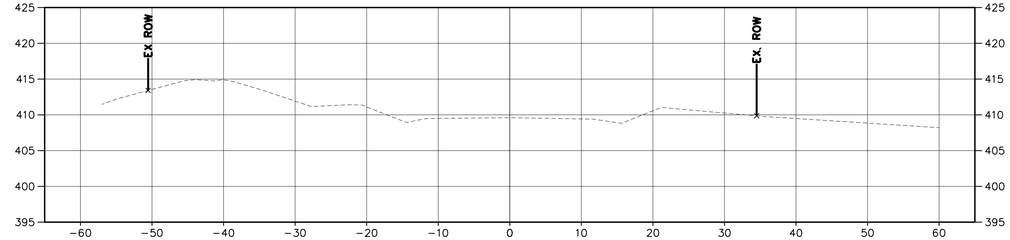
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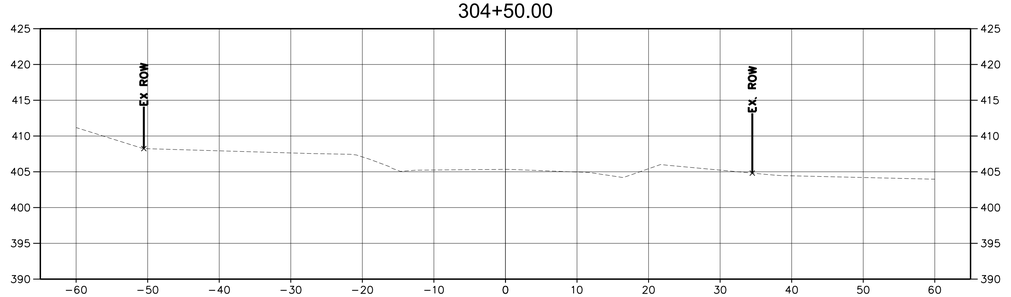
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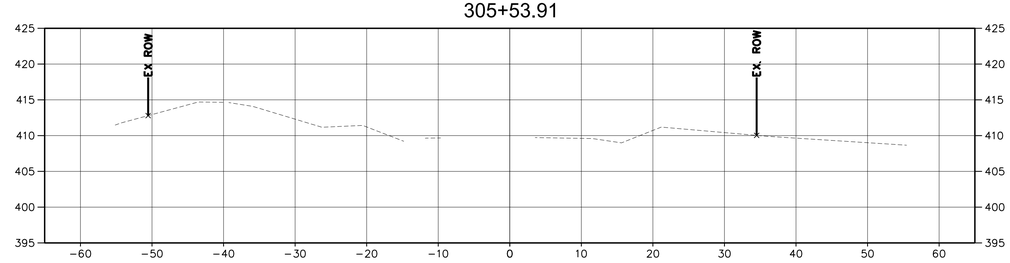
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304+50.00



305+53.91



CS-23

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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 117OF 118

REVISIONS		
MARK	DATE	DESCRIPTION

REGISTRATION STAMP

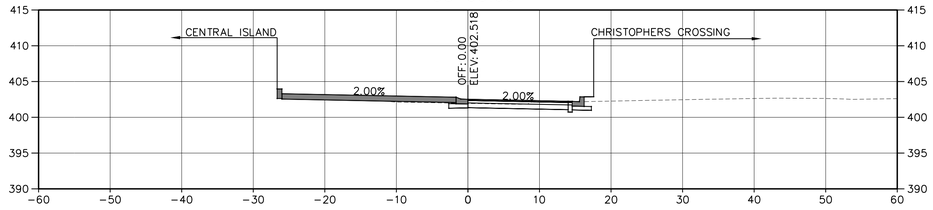
A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
901 DULANEY VALLEY ROAD, SUITE 710 TOWSON, MD 21204
(410) 752-6552
EMAIL: AMT1@AMTENGINEERING.COM

FREDERICK COUNTY, MARYLAND
DEVELOPMENT REVIEW ENGINEERING

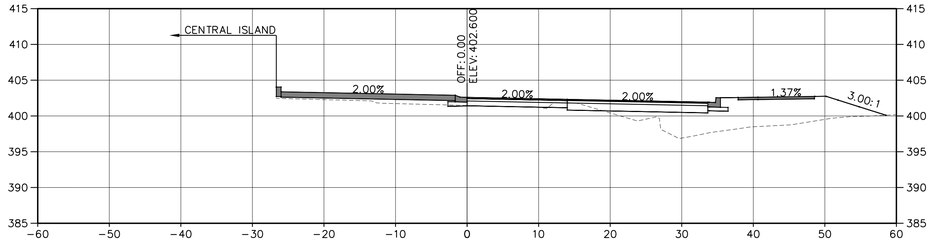
APPROVED: _____
DEVELOPMENT REVIEW CHIEF DATE

APPROVED: _____
STORMWATER MANAGEMENT DATE

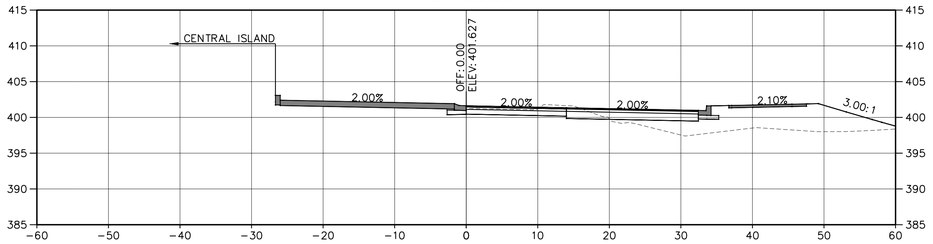
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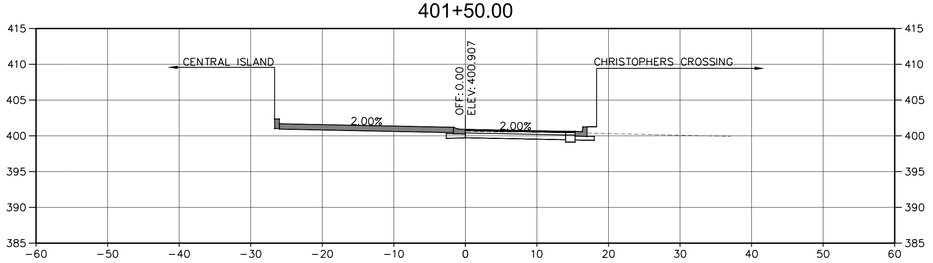
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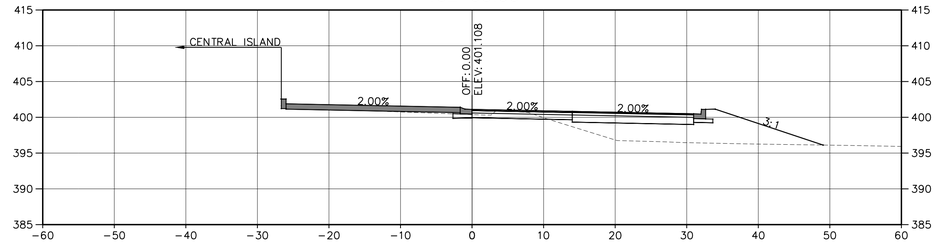
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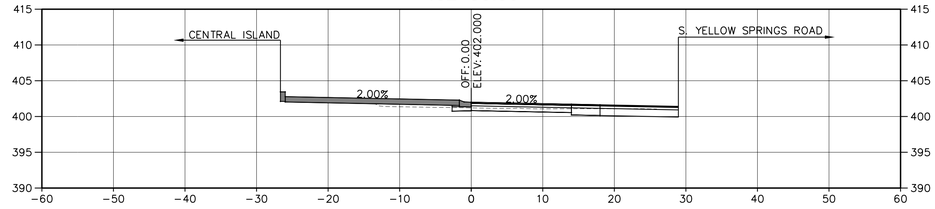
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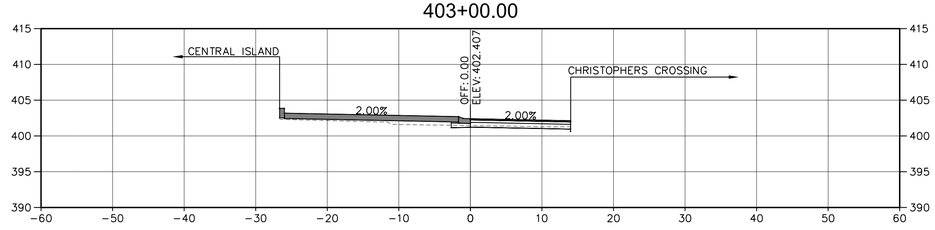
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402+50.00



403+00.00



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

CS-24

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: DECEMBER 2021 SCALE: 1"=10'

AMT FILE NO. 15-0758.007 SHEET NO. 118 OF 118