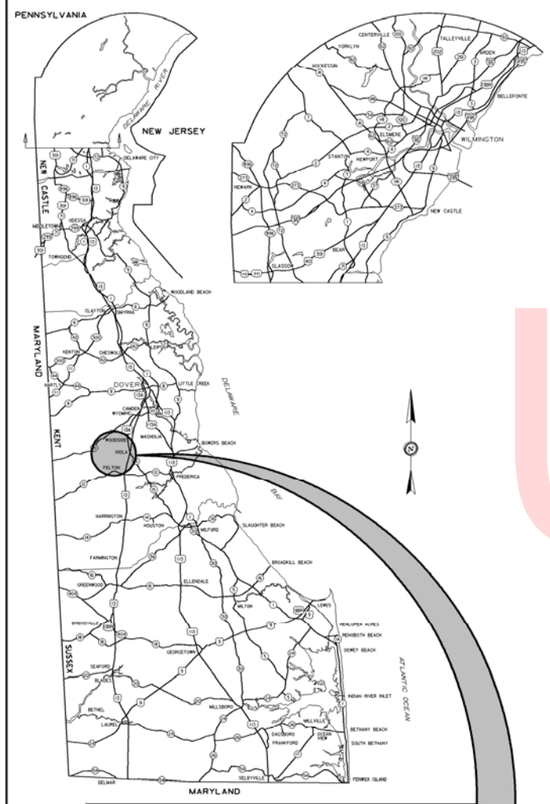


GENERAL LOCATION OF CONTRACT

THE STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

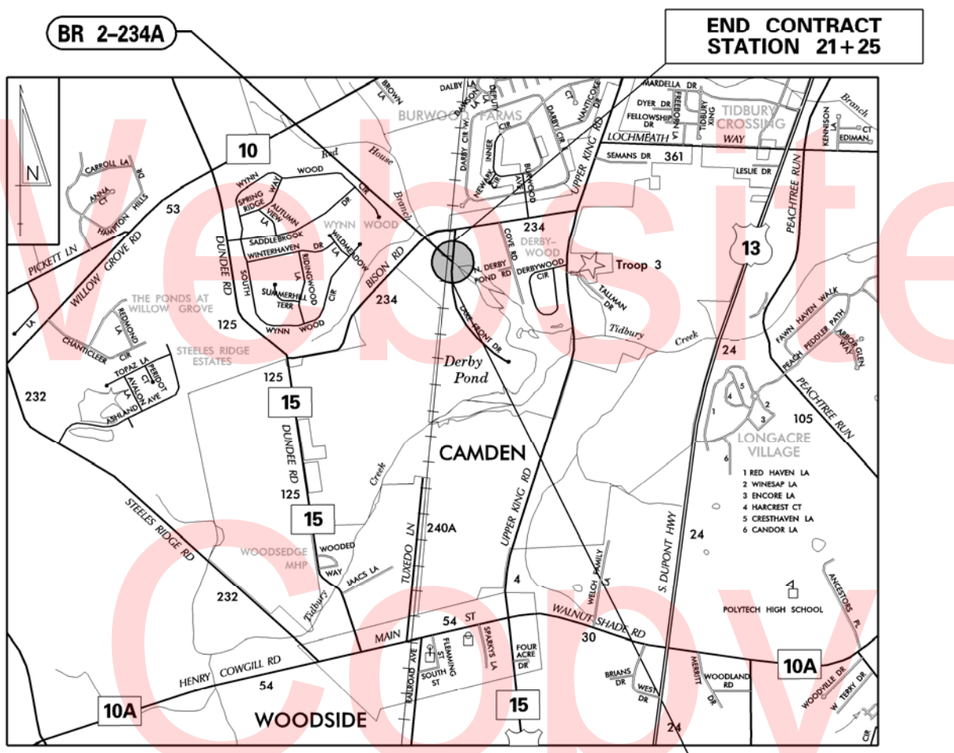
U.S. CUSTOMARY UNITS

CONSTRUCTION & RIGHT-OF-WAY PLANS FOR:

BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH

CONTRACT NUMBER: T201407208
FEDERAL AID PROJECT NUMBER: N/A

COUNTY: KENT **M.R. #:** 000



DESIGN DESIGNATION

FUNCTIONAL CLASS: RURAL LOCAL ROAD	D.H.V. PROJECTED: 18	YEAR: 2040
TYPE OF CONSTRUCTION: PIPE INSERT	DESIGN SPEED: 30 M.P.H.	
A.A.D.T. CURRENT: 200 YEAR: 2015	TRUCKS: 7 %	
A.A.D.T. PROJECTED: 250 YEAR: 2040	DIRECTION OF DISTRIBUTION: 60 %	

INDEX OF SHEETS

TOTAL SHEETS: 13

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME
S-850-77	DERBY SHORES

RECOMMENDED

SQUAD MANAGER, CONSTRUCTION — DATE 12/13/2016

GROUP ENGINEER, CONSTRUCTION — DATE 12/13/2016

ASSISTANT DIRECTOR, CONSTRUCTION — DATE 12/13/2016

RECOMMENDED
STORMWATER ENGINEER
DATE 12/13/2016
VINCENT W. DAVIS REGISTERED No. 12898 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
SQUAD MANAGER, BRIDGE DESIGN
DATE 12/13/2016
CRAIG A. STEVENS LICENSED No. 15250 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
BRIDGE DESIGN ENGINEER
DATE 12/14/2016
JASON N. HASTINGS REGISTERED No. 13545 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
ASSISTANT DIRECTOR, BRIDGE
DATE 12/14/2016
BARRY A. BENTON REGISTERED No. 10774 DELAWARE PROFESSIONAL ENGINEER
SEAL

APPROVED
CHIEF ENGINEER
DATE 12/14/2016
ROBERT BRIAN MCCLEARY REGISTERED No. 8567 DELAWARE PROFESSIONAL ENGINEER
SEAL

LAST REVISED: 03/03/2011
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EXISTING SYMBOLS

DRAINAGE

—ss—	DITCH OR STREAM CENTERLINE
—→—	DIRECTIONAL STREAM FLOW ARROW
C.B. / D.I.	DRAINAGE INLET
J.B.	DRAINAGE JUNCTION BOX
Ⓓ	DRAINAGE MANHOLE
SIZE/TYPE LABEL	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES

	BOLLARD - STEEL POLE
⊠	BOLLARD - WOOD POST
(TYPE LABEL)	CURB
(TYPE LABEL)	CURB AND GUTTER
—x—	FENCE - CHAINLINK OR STRANDED
—o—	FENCE - STOCKADE OR SPLIT RAIL
FP	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
LAMP	LAMP AND POST - RESIDENTIAL
MB	MAILBOX
PM	PARKING METER AND POST
	PAVEMENT - FLEXIBLE
	PAVEMENT - RIGID
□	PILE - BRIDGE
○	PILLAR OR MISCELLANEOUS POST
	TRAFFIC SIGN AND POST
	WALL - BRICK OR BLOCK
	WALL - STONE

NATURAL ROADSIDE FEATURES

	GRASS LAWN
	HEDGEROW OR THICKET
	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
— WL —	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

RIGHT-OF-WAY SYMBOLS

C.M.	PROPERTY MARKER - CONCRETE MON.
I.P.	PROPERTY MARKER - IRON PIPE
100+00	HISTORIC RIGHT-OF-WAY BASELINE
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
— EASEMENT TYPE —	EXISTING EASEMENT
— DA —	EXISTING DENIAL OF ACCESS
— R/W-DA —	EXISTING R/W & DENIAL OF ACCESS

SURVEY CONTROL & MONUMENTATION

B.M.	SURVEY BENCHMARK LOCATION
T.P.	SURVEY TIE POINT LOCATION
△	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS

UTILITY

	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
TV	CABLE TV DISTRIBUTION BOX
Ⓔ	ELECTRIC MANHOLE
EM	ELECTRIC METER
E	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
Ⓖ	GAS MANHOLE
G.M.	GAS METER
G.V.	GAS VALVE
G.P.	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
Ⓢ	SANITARY SEWER MANHOLE
S.V.	SANITARY SEWER VALVE
VENT	SANITARY SEWER VENT OR CLEANOUT
S.D.F.	SEPTIC DRAIN FIELD
B	TELEPHONE BOOTH
Ⓣ	TELEPHONE MANHOLE
T	TELEPHONE TEST POINT
J.W.	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
⊗	TRAFFIC - SIGNAL POLE AND BASE
U	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
F.H.	WATER - FIRE HYDRANT
W.M.	WATER METER
W.V.	WATER VALVE
WELL	WELL HEAD
?	MANHOLE - UNDETERMINED OWNER

UTILITY COMPANY FACILITIES

—COM-C—	COMCAST CABLE
— DP-E —	DELMARVA POWER - ELECTRIC
—ESNG-G—	EASTERN SHORE NATURAL GAS
—VER-C—	VERIZON
—DP-E-OH—	DELMARVA POWER - ELECTRIC

PROPOSED SYMBOLS

CONSTRUCTION

	CONCRETE SAFETY BARRIER - PERMANENT
×—BFS—×	BIOFILTRATION SWALE
	BRICK PATTERNED SURFACE
	BUTT JOINT
100+00	CONSTRUCTION BASELINE
—CSF—	CONSTRUCTION SAFETY FENCE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB & GUTTER, TYPE 4
—CZ—	CLEAR ZONE
■	DRAINAGE INLET
×—→—×	DITCH
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2
	GUARDRAIL, TYPE 3
	GUARDRAIL END ANCHORAGE
	GUARDRAIL END TREATMENT, TYPE 1
	GUARDRAIL END TREATMENT, TYPE 2
	GUARDRAIL END TREATMENT, TYPE 3
	IMPACT ATTENUATOR
■	JUNCTION BOX - DRAINAGE
— LO —	LATERAL OFFSET
---LOC---	LIMIT OF CONSTRUCTION
MB	MAILBOX
●	MANHOLE
	PAVEMENT PATCH
	PAVEMENT REMOVAL - TOPSOIL, SEED AND MULCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK - 4"
	P.C.C. SIDEWALK - 6" (USE 8" DEPTH FOR CHANNELIZATION ISLANDS.)
	UNDERDRAIN
	UNDERDRAIN OUTLET

RIGHT-OF-WAY SYMBOLS

▣	PROPOSED RIGHT-OF-WAY MONUMENT
— DA —	PROPOSED DENIAL OF ACCESS
— PE —	PROPOSED PERMANENT EASEMENT
— R/W —	PROPOSED RIGHT-OF-WAY
— R/W-DA —	PROPOSED R/W & DENIAL OF ACCESS
— TCE —	TEMPORARY CONSTRUCTION EASEMENT
100+00	PROPOSED RIGHT-OF-WAY BASELINE

IDENTIFIERS

(A C)	ADJUST BY CONTRACTOR
(A O)	ADJUST BY OTHERS
(B)	CONCRETE SAFETY BARRIER
(C)	CURB OR CURB & GUTTER
(C/JB)	CONVERT TO JUNCTION BOX
(C/MH)	CONVERT TO DRAINAGE MANHOLE
(C O)	CURB OPENING
(CR)	CURB RAMP / TYPE
(CR-N)	CURB RAMP / TYPE - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
(CSF)	CONSTRUCTION SAFETY FENCE
(DI)	DRAINAGE INLET
(DND)	DO NOT DISTURB
(ED)	ENERGY DISSIPATOR
(F)	FENCE
(FES)	FLARED END SECTION
(FF C)	FILL WITH FLOWABLE FILL
(FS)	FILTRATION STRUCTURE
(GR)	GUARDRAIL
(JB)	JUNCTION BOX
(MH)	MANHOLE
(M)	MONUMENT - RIGHT-OF-WAY
(P)	PIPE
(RL C)	RELOCATE BY CONTRACTOR
(RL O)	RELOCATE BY OTHERS
(RM C)	REMOVE BY CONTRACTOR
(RM O)	REMOVE BY OTHERS
(UD)	UNDERDRAIN / LENGTH
(UDO)	UNDERDRAIN OUTLET PIPE

LANDSCAPING

(LS)	LANDSCAPE PLANTINGS
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

TRAFFIC

— ITMS-CON —	ITMS CONDUIT
— SIG-CON —	SIGNAL CONDUIT
■	CONDUIT JUNCTION WELL
	LUMINAIRE
→	PAVEMENT MARKINGS
— — — —	PAVEMENT STRIPING
	TRAFFIC SIGN

PAVEMENT SECTION(S)

	2" MILLING 2" BITUMINOUS CONCRETE, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22, (CARBONATE STONE)
	2" BITUMINOUS CONCRETE, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22, (CARBONATE STONE) 2¼" BITUMINOUS CONCRETE, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22 8" GRADED AGGREGATE BASE COURSE, TYPE B

EROSION & SEDIMENT CONTROL

DWBAG	DEWATERING BAG
DWB	DEWATERING BASIN
ED	EARTH DIKE
■	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
PST	PORTABLE SEDIMENT TANK
P	PUMP
SBD	SANDBAG DIKE
SB	SANDBAG DIVERSION
	STONE CHECK DAM
SCE	STABILIZED CONSTRUCTION ENTRANCE
SF	SILT FENCE / LENGTH
—SF—	SILT FENCE
—RSF—	SILT FENCE - REINFORCED
SP	SUMP PIT
ST	SEDIMENT TRAP
ST	SEDIMENT TRAP
ST	SEDIMENT TRAP WITH INLET AS OUTLET
ST	SEDIMENT TRAP PIPE OUTLET
SW	STILLING WELL
	TEMPORARY SWALE
TSD	TEMPORARY SLOPE DRAIN
T XXX	TURBIDITY CURTAIN / LENGTH
—T—	TURBIDITY CURTAIN

UTILITY COMPANY FACILITIES

—VER-C—	VERIZON

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LAST REVISED: 01/09/2014
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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

BR 2-234A ON LAKE FRONT
DRIVE OVER RED HOUSE BRANCH

CONTRACT	BRIDGE NO.	2-234A
T201407208	DESIGNED BY: NED	
COUNTY	CHECKED BY: CAS	
KENT		

LEGEND

SHEET NO.	2
TOTAL SHTS.	13

GENERAL NOTES

1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2001 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.

2.

EROSION POTENTIAL FOR THIS PROJECT	CONTRACTOR ESC SUPERVISOR REQUIREMENT
( ) INSIGNIFICANT	NONE
( ) MINOR	CONTRACTOR TRAINING PROGRAM, AS DEFINED IN SECTION 6.2 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
(X) MAJOR	CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 6.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.

3. ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR, INCLUDE:

( )	NONE
( )	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
(X)	ALL PLAN SHEETS, IN PDF FORMAT.
( )	EXISTING DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
( )	PROPOSED DIGITAL TERRAIN MODEL, IN .DTM FILE FORMAT, COMPATIBLE WITH SOFTWARE CURRENTLY USED BY DELDOT.
( )	DESIGN FILE, IN .DGN FILE FORMAT, CONTAINING ONLY THE PROPOSED 3D TRIANGLES OF THE PROPOSED DIGITAL TERRAIN MODEL (DTM).

NOTE: THE DOCUMENT ENTITLED "RELEASE FOR DELIVERY OF DOCUMENTS IN ELECTRONIC FORM TO A CONTRACTOR" MUST BE SIGNED BY ALL PARTIES PRIOR TO THE DELIVERY OF ANY ELECTRONIC PROJECT FILES.

4. PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR, INCLUDE:

(X)	CROSS SECTIONS (WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR)
(X)	RIGHT-OF-WAY PLANS (INCLUDED IN PLAN SET)

5. AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

(X)	THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT.
( )	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 743000.
( )	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE ATSSA SUPERVISOR'S SOLE JOB SHALL BE SUPERVISION OF THE INSTALLATION, OPERATION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES FOR THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT SHALL NOT BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR SHALL BE PAID FOR UNDER ITEM 743031.

6. THE DISTURBED AREA FOR THIS PROJECT IS 0.3320 ACRES.
7. THE ADDITIONAL IMPERVIOUS AREA FOR THIS PROJECT IS 0.00 SQ. FEET.
8. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY. THE SEDIMENT AND STORMWATER MANAGEMENT PLANS ARE VALID FOR A FIVE YEAR PERIOD, BEGINNING ON THE DATE THE STORMWATER ENGINEER SIGNED THE CONSTRUCTION TITLE SHEET. IF THE FINAL ACCEPTANCE OF THE PROJECT IS ANTICIPATED TO EXTEND BEYOND THE FIVE YEARS, THE CONTRACTOR WILL INFORM THE ENGINEER THREE MONTHS PRIOR TO THE EXPIRATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS. THE STORMWATER ENGINEER WILL REVIEW THE CURRENT SEDIMENT AND STORMWATER MANAGEMENT PLAN AND ISSUE AN EXTENSION WITH ANY APPROPRIATE MODIFICATIONS.

PROJECT NOTES

SECTION 100

1. ANY DAMAGE TO ITEMS NOTED TO BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

SECTION 200

2. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   - THE EXISTING PAVED SLOPE ON THE DOWNSTREAM END OF THE BRIDGE
   - THE EXISTING 3'-7" RISE x 5'-4" SPAN CORRUGATED METAL DRAINAGE PIPE LOCATED NORTHEAST OF THE BRIDGE
   - WOODEN FENCE IN PARCEL 1-R. THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO CLOSE FENCE DURING CONSTRUCTION. THE CONTRACTOR SHALL ALSO RESET THE FENCE TO ITS ORIGINAL LOCATION AT THE COMPLETION OF CONSTRUCTION.

SECTION 300

3. A. THE CONTRACTOR MAY ELECT TO USE ANY OF THE FOLLOWING MATERIALS TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B':
   a. CRUSHED STONE (PER STANDARD SPECIFICATION 821)
   b. CRUSHED CONCRETE (PER STANDARD SPECIFICATION 821)
   c. HOT-MIX MILLINGS (PER SPECIAL PROVISION 302514 MILLED HOT-MIX BASE COURSE)

   THE CONTRACTOR WILL NOT BE ALLOWED TO MIX DIFFERENT MATERIALS (OR SIMILAR MATERIALS FROM DIFFERENT SOURCES) TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

   ALL OF THE ABOVE LISTED MATERIALS ARE PERMITTED FOR USE ON THE JOB, PROVIDED THEY ARE SEPARATED INTO APPROVED AREAS. EACH AREA OF BASE COURSE MUST BE CONSTRUCTED USING MATERIALS FROM A SINGULAR SOURCE, FULL DEPTH, IN ORDER THAT PROPER TESTING MAY BE ACCOMPLISHED. THE CONTRACTOR AND ENGINEER SHALL AGREE ON THE LIMITS OF EACH SOURCE OF MATERIAL PRIOR TO PLACEMENT.

   B. THE QUANTITY USED FOR BASE OF EACH OF THE ABOVE LISTED MATERIALS WILL BE THE CONTRACTOR'S CHOICE, WITH THE TOTAL BEING EQUAL TO THE ACTUAL QUANTITY USED UNDER ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

   C. THE CONTRACTOR MAY ALSO ELECT TO RECYCLE MILLINGS FOR USE IN HOT-MIX AS PERMITTED BY THE STANDARD SPECIFICATIONS. THE CHOICE OF THE QUANTITY OF MILLINGS USED FOR THIS PURPOSE, OR FOR BASE COURSE, LIES WITH THE CONTRACTOR. ALL EXCESS MILLING MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR.

   D. HOT-MIX MILLINGS MAY BE GENERATED FROM THE FOLLOWING SOURCES:
   a. MATERIAL MADE AVAILABLE WHEN MILLED ON THIS CONTRACT UNDER ITEM 760006.
   b. MATERIAL MILLED ON THIS CONTRACT AT THE CONTRACTOR'S CHOICE UNDER ITEM 202000.
   c. MILLED MATERIAL FURNISHED ON THE JOB FROM THE CONTRACTOR'S YARD OR OTHER OUTSIDE SOURCE.
   ALL MILLED MATERIALS SHALL MEET THE MATERIAL REQUIREMENTS OF ITEM 302514 - MILLED HOT-MIX BASE COURSE.

   E. PAYMENT CLARIFICATION:
   a. SHOULD THE CONTRACTOR ELECT TO MILL PORTIONS OF HOT-MIX SHOWN ON THE PLANS TO BE REMOVED UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT THE COST OF MILLING THIS HOT-MIX WILL BE PAID AS ITEM 202000 - EXCAVATION AND EMBANKMENT. THE MILLINGS GENERATED MAY BE RECYCLED INTO HOT-MIX, UTILIZED FOR BASE COURSE, OR DISPOSED OF TO AN APPROVED SITE. HAULING COSTS FOR DISPOSAL AND/OR RECYCLING ARE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.

   b. SHOULD THE CONTRACTOR ELECT TO TEMPORARILY STOCKPILE MILLINGS ON THE JOB SITE FOR LATER USE, ALL COSTS FOR STOCKPILING AND SUBSEQUENT REHANDLING SHALL BE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.

   c. MILLINGS USED FOR BASE COURSE SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE. NO SEPARATE PAYMENT WILL BE MADE TO FURNISH MILLINGS FROM AN OUTSIDE SOURCE OR TRANSPORT MILLINGS WITHIN THE PROJECT LIMITS. MILLINGS USED FOR BASE COURSE WILL BE PAID FOR AT THE UNIT BID PRICE FOR ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

   d. ALL COSTS TO UTILIZE MILLINGS IN RECYCLED HOT-MIX WILL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE HOT-MIX ITEM USING THE RECYCLED MATERIAL.

SECTION 300 CONTINUED...

   e. SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE IS PROVIDED TO SPECIFY THE MEANS OF LAY DOWN AND COMPACTION AS WELL AS THE MATERIAL REQUIREMENTS FOR MILLINGS USED AS BASE COURSE. ALL COSTS TO BRING THE MILLINGS INTO COMPLIANCE WITH THE REQUIREMENTS OF ITEM - 302514 MILLED HOT-MIX BASE COURSE ARE INCIDENTAL TO ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'. NO PAYMENT WILL BE MADE FOR ITEM 302514 - MILLED HOT-MIX BASE COURSE. THE QUANTITY OF MILLINGS USED FOR BASE COURSE WILL BE PAID FOR UNDER ITEM 302007 - GRADED AGGREGATE BASE COURSE.

SECTION 600

4. THE DEPARTMENT AND THE CONTRACTOR SHALL INSPECT ALL EXISTING PIPES AND DRAINAGE STRUCTURES TO BE USED IN THE FINAL DRAINAGE SYSTEM AND AGREE ON THE CONDITION PRIOR TO THE START OF CONSTRUCTION. EXISTING PIPES AND DRAINAGE STRUCTURES DAMAGED DUE TO CONTRACTOR OPERATIONS SHALL BE REPAIRED OR REPLACED IN-KIND AT THE CONTRACTOR'S EXPENSE. THE DEPARTMENT WILL VIDEO INSPECT NEW PIPE RUNS TO CONFIRM CONDITION PRIOR TO ACCEPTANCE. PIPE CLEANING PRIOR TO VIDEO INSPECTION AND MAINTENANCE OF TRAFFIC DURING THE VIDEO INSPECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND INCIDENTAL TO THE PIPE ITEM THAT IS BEING VIDEO INSPECTED.

SECTION 700

5. IN AREAS WHERE PROPOSED CURB MEETS EXISTING CURB AND THE TWO CURB TYPES ARE NOT SIMILAR, THE PROPOSED CURB SHALL BE TRANSITIONED IN 10 LINEAR FEET, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK, INCLUDING SAW CUTTING EXISTING CURB SHALL BE INCIDENTAL TO THE PROPOSED CURB ITEM.

6. ALL PAVED AREAS TO BE RECONSTRUCTED OR WIDENED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT.

SECTION 900

7. THIS PROJECT IS COVERED UNDER AN NPDES GENERAL PERMIT FOR CONSTRUCTION. UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THIS CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NOI IS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S STORMWATER SECTION. A COPY OF THE GENERAL PERMIT OR THE NOI CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

MISCELLANEOUS

8. HYDRAULIC DATA
   -DRAINAGE AREA = 1.35 SQ. MILES
   -DESIGN FREQUENCY = 25-YEARS
   -DESIGN DISCHARGE = 366 CFS
   -25-YEAR FLOOD ELEVATION = 34.39 FT

9. SCOUR ANALYSIS
   SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE SCOUR DESIGN FLOOD IN ACCORDANCE WITH HEC 14 - HYDRAULIC DESIGN OF ENERGY DISSIPATORS FOR CULVERTS AND CHANNELS.
   -DESIGN EVENT = 100-YEAR
   -DESIGN DISCHARGE = 549 CFS
   -DESIGN VELOCITY = 14.76 FT/SEC
   -TAILWATER DEPTH = 5.50 FT

10. ALL WORK PERFORMED BY THE CONTRACTOR SHALL BE LIMITED TO DOWNSTREAM OF THE EXISTING RAILROAD HEADWALL. THE CONTRACTOR SHALL NOT DISTURB THE RAILROAD BRIDGE, AND ALL WORK WITHIN THE EXISTING RAILROAD RIGHT-OF-WAY MUST BE LIMITED AS MUCH AS POSSIBLE.

11. CONTINGENT QUANTITIES:
    THESE CONTRACT DRAWINGS HAVE BEEN PREPARED BASED ON ORIGINAL CONTRACT PLANS AND FIELD INSPECTION NOTES. ACTUAL CONDITIONS MAY REQUIRE MODIFICATION IN CONSTRUCTION DETAILS AND WORK QUANTITIES. ALL DIMENSIONS AND DETAILS SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING ANY MATERIALS. THE ESTIMATED QUANTITIES FOR THE FOLLOWING PAY ITEMS INCLUDE CONTINGENCY FACTORS TO ACCOUNT FOR THE ANTICIPATED VARIATIONS IN THE ACTUAL QUANTITY.
    -ITEM #602581 - GROUTING: 25% CONTINGENCY

12. THE CONTRACTOR SHALL CONTACT JAMILA JONES, THE CHIEF OF SCHEDULING FOR DART FIRST STATE, 14 DAYS PRIOR TO THE START OF CONSTRUCTION AT 302-576-6006.

13. REFER TO THE CONSTRUCTION PLAN SHEETS FOR THE LOCATION OF THE CLEAR ZONE AREA LIMITS.

14. UTILITIES
    SEE UTILITY STATEMENT FOR RELOCATION DETAILS.

15. ENVIRONMENTAL COMPLIANCE
    SEE ENVIRONMENTAL COMPLIANCE NOTES AND PLAN FOR FURTHER RESTRICTIONS/GUIDANCE ASSOCIATED WITH THIS PROJECT.

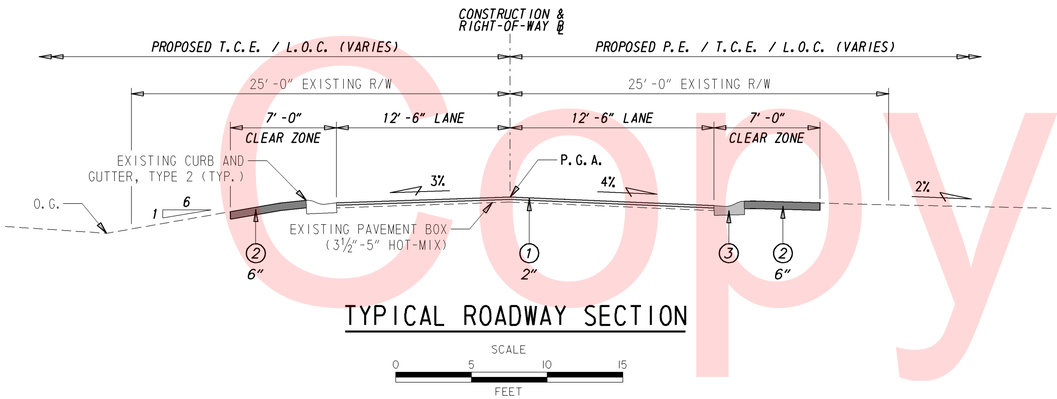
TYPICAL SECTION LEGEND

① ITEM 760006 - PAVEMENT - MILLING, HOT-MIX, 2" DEPTH
ITEM 401801 - BITUMINOUS CONCRETE, SUPERPAVE TYPE C, PG 64-22, 160 GYRATIONS (CARBONATE STONE) (TON)

② ITEM 908004 - TOPSOIL, 6" DEPTH
ITEM 908019 - STREAMBANK SEED MIX, SEEDING

③ ITEM 701021 - INTEGRAL PORTLAND CEMENT CONCRETE CURB & GUTTER, TYPE 2 (FROM APPROX. STA. 19+26 TO 20+00)

MATERIAL	LIFT THICKNESS	
	MINIMUM	MAXIMUM
HOT-MIX, TYPE 'C'	1.25"	2"
HOT-MIX, TYPE 'B'	2.25"	4"
BITUMINOUS CONCRETE BASE COURSE	3"	6"
GRADED AGGREGATE BASE COURSE	--	8"



TYPICAL ROADWAY SECTION

SCALE
0 5 10 15
FEET

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH	CONTRACT T201407208 / COUNTY KENT	BRIDGE NO. 2-234A / DESIGNED BY: NED / CHECKED BY: CAS	NOTES & TYPICAL SECTION	SHEET NO. 3 / TOTAL SHTS. 13

LAST REVISED: 09/19/2014
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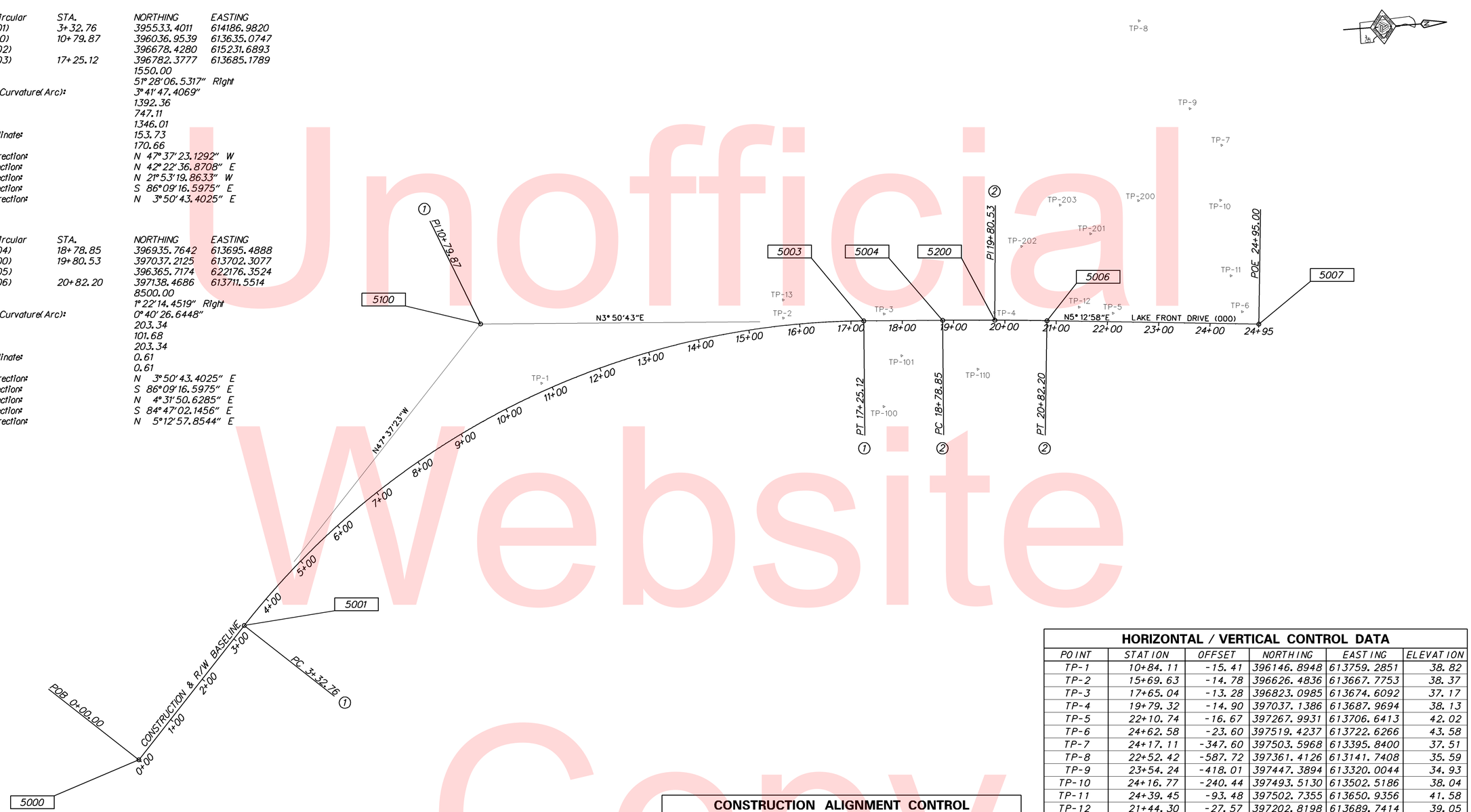
Curve #1

Element: Circular	STA.	NORTHING	EASTING
PC (5001)	3+32.76	395533.4011	614186.9820
PI (5100)	10+79.87	396036.9539	613635.0747
CC (5002)		396678.4280	615231.6893
PT (5003)	17+25.12	396782.3777	613685.1789
Radius:		1550.00	
Delta:		51°28'06.5317" Right	
Degree of Curvature(Arc):		3°41'47.4069"	
Length:		1392.36	
Tangent:		747.11	
Chord:		1346.01	
Middle Ordinate:		153.73	
External:		170.66	
Tangent Direction:		N 47°37'23.1292" W	
Radial Direction:		N 42°22'36.8708" E	
Chord Direction:		N 21°53'19.8633" W	
Radial Direction:		S 86°09'16.5975" E	
Tangent Direction:		N 3°50'43.4025" E	

Curve #2

Element: Circular	STA.	NORTHING	EASTING
PC (5004)	18+78.85	396935.7642	613695.4888
PI (5200)	19+80.53	397037.2125	613702.3077
CC (5005)		396365.7174	622176.3524
PT (5006)	20+82.20	397138.4686	613711.5514
Radius:		8500.00	
Delta:		1°22'14.4519" Right	
Degree of Curvature(Arc):		0°40'26.6448"	
Length:		203.34	
Tangent:		101.68	
Chord:		203.34	
Middle Ordinate:		0.61	
External:		0.61	
Tangent Direction:		N 3°50'43.4025" E	
Radial Direction:		S 86°09'16.5975" E	
Chord Direction:		N 4°31'50.6285" E	
Radial Direction:		S 84°47'02.1456" E	
Tangent Direction:		N 5°12'57.8544" E	



CONSTRUCTION ALIGNMENT CONTROL

POINT	STATION	OFFSET	NORTHING	EASTING
5000	0+00.00	0.00	395309.1163	614432.8040
5007	24+95.00	0.00	397549.5576	613749.0797

DATUM REFERENCE:

HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83/91).

VERTICAL - THIS PROJECT IS REFERENCED TO NAVD 88.

HORIZONTAL / VERTICAL CONTROL DATA

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
TP-1	10+84.11	-15.41	396146.8948	613759.2851	38.82
TP-2	15+69.63	-14.78	396626.4836	613667.7753	38.37
TP-3	17+65.04	-13.28	396823.0985	613674.6092	37.17
TP-4	19+79.32	-14.90	397037.1386	613687.9694	38.13
TP-5	22+10.74	-16.67	397267.9931	613706.6413	42.02
TP-6	24+62.58	-23.60	397519.4237	613722.6266	43.58
TP-7	24+17.11	-347.60	397503.5968	613395.8400	37.51
TP-8	22+52.42	-587.72	397361.4126	613141.7408	35.59
TP-9	23+54.24	-418.01	397447.3894	613320.0044	34.93
TP-10	24+16.77	-240.44	397493.5130	613502.5186	38.04
TP-11	24+39.45	-93.48	397502.7355	613650.9356	41.58
TP-12	21+44.30	-27.57	397202.8198	613689.7414	39.05
TP-13	15+72.95	-49.84	396628.7416	613632.6174	38.08
TP-100	17+62.77	167.40	396808.7186	613854.7290	34.52
TP-101	17+98.42	68.53	396850.9197	613758.4752	35.88
TP-110	19+47.43	95.75	396996.9802	613795.8391	35.95
TP-200	22+56.68	-237.00	397333.7694	613491.3955	32.06
TP-201	21+64.50	-170.79	397235.9591	613548.9515	31.80
TP-202	20+31.20	-144.42	397099.9298	613563.1714	32.73
TP-203	21+04.04	-225.84	397180.7562	613488.6359	35.52

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 100 200 300
FEET

BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH

CONTRACT	BRIDGE NO.	2-234A
T201407208	DESIGNED BY: NED	
COUNTY	CHECKED BY: CAS	
KENT		

HORIZONTAL AND VERTICAL CONTROL

SHEET NO.
4
TOTAL SHTS.
13

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DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
1	18" RCP	III	8.00'	6.9%	32.62	32.07
2	54" HDPE	S	70.00'	1.3%	30.94	30.00

NOTE: THE PROPOSED PIPE 1 SHALL TIE INTO THE EXISTING 18" RCP LOCATED SOUTHEAST OF THE BRIDGE. PIPE 2 SHALL TIE INTO THE EXISTING JUNCTION BOX NORTHEAST OF THE BRIDGE. PIPE 2 WILL REQUIRE A CONCRETE COLLAR TO BE POURED TO JOIN THE PROPOSED PIPE TO THE EXISTING JUNCTION BOX. CONCRETE PIPE COLLAR SHALL BE INCIDENTAL TO ITEM *612532. BENEATH PIPE 2, A MINIMUM OF 12" OF COARSE AGGREGATE BEDDING SHALL BE PLACED BENEATH THE PIPE AND 6" SHAPED UP THE CURVES OF THE PIPE. THE EXCAVATED TRENCH FOR PIPE 2 WILL BE BACKFILLED WITH BORROW TYPE B.

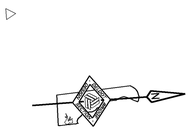
RIGHT-OF-WAY MONUMENT SCHEDULE

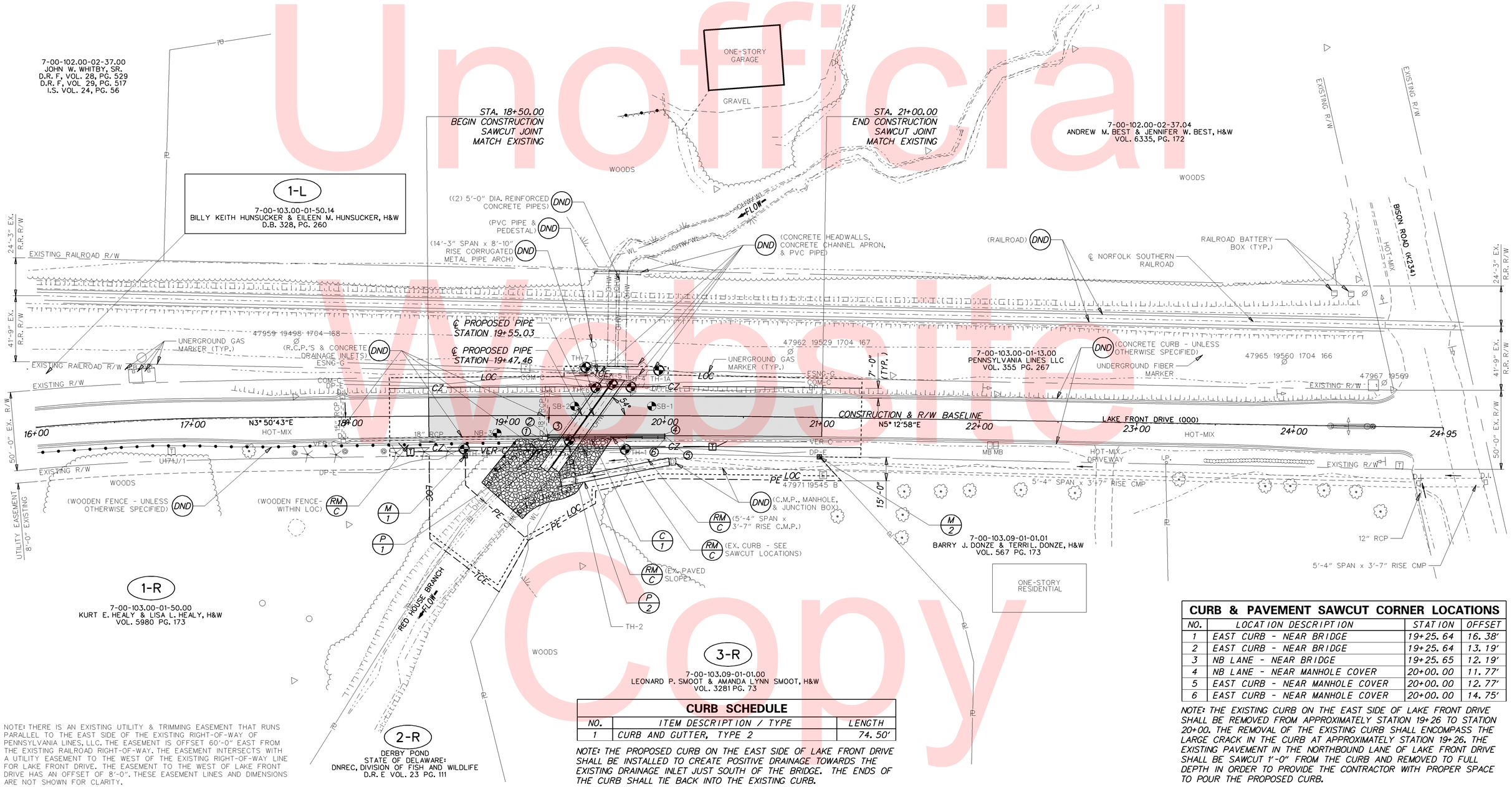
NO.	TYPE	STATION	OFFSET	NORTHING	EASTING
1	CAPPED REBAR	18+73.00	25.28	396928.2265	613720.3207
2	CAPPED REBAR	20+98.67	24.95	397152.6030	613737.8938

NOTE: RIGHT-OF-WAY MONUMENT 1 DENOTES THE SOUTHEAST INTERSECTION OF THE PROPOSED PERMANENT EASEMENT AND THE EXISTING RIGHT-OF-WAY. RIGHT-OF-WAY MONUMENT 2 DENOTES THE NORTHEAST INTERSECTION OF THE PROPOSED PERMANENT EASEMENT AND THE EXISTING RIGHT-OF-WAY.

PAVEMENT CORE SCHEDULE

NO.	STATION	OFFSET	LOCATION DESCRIPTION	PAVEMENT BOX DESCRIPTION
SB-1	19+91.68	-6.03'	N. OF BRIDGE (SB LANE)	4" HOT-MIX
SB-2	19+42.70	-5.84'	S. OF BRIDGE (SB LANE)	5" HOT-MIX
NB-3	18+93.23	11.11'	S. OF BRIDGE (NB LANE)	3½" HOT-MIX





CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
1	CURB AND GUTTER, TYPE 2	74.50'

NOTE: THE PROPOSED CURB ON THE EAST SIDE OF LAKE FRONT DRIVE SHALL BE INSTALLED TO CREATE POSITIVE DRAINAGE TOWARDS THE EXISTING DRAINAGE INLET JUST SOUTH OF THE BRIDGE. THE ENDS OF THE CURB SHALL TIE BACK INTO THE EXISTING CURB.

CURB & PAVEMENT SAWCUT CORNER LOCATIONS

NO.	LOCATION DESCRIPTION	STATION	OFFSET
1	EAST CURB - NEAR BRIDGE	19+25.64	16.38'
2	EAST CURB - NEAR BRIDGE	19+25.64	13.19'
3	NB LANE - NEAR BRIDGE	19+25.65	12.19'
4	NB LANE - NEAR MANHOLE COVER	20+00.00	11.77'
5	EAST CURB - NEAR MANHOLE COVER	20+00.00	12.77'
6	EAST CURB - NEAR MANHOLE COVER	20+00.00	14.75'

NOTE: THE EXISTING CURB ON THE EAST SIDE OF LAKE FRONT DRIVE SHALL BE REMOVED FROM APPROXIMATELY STATION 19+26 TO STATION 20+00. THE REMOVAL OF THE EXISTING CURB SHALL ENCOMPASS THE LARGE CRACK IN THE CURB AT APPROXIMATELY STATION 19+26. THE EXISTING PAVEMENT IN THE NORTHBOUND LANE OF LAKE FRONT DRIVE SHALL BE SAWCUT 1'-0" FROM THE CURB AND REMOVED TO FULL DEPTH IN ORDER TO PROVIDE THE CONTRACTOR WITH PROPER SPACE TO POUR THE PROPOSED CURB.

NOTE: THERE IS AN EXISTING UTILITY & TRIMMING EASEMENT THAT RUNS PARALLEL TO THE EAST SIDE OF THE EXISTING RIGHT-OF-WAY OF PENNSYLVANIA LINES, LLC. THE EASEMENT IS OFFSET 60'-0" EAST FROM THE EXISTING RAILROAD RIGHT-OF-WAY. THE EASEMENT INTERSECTS WITH A UTILITY EASEMENT TO THE WEST OF THE EXISTING RIGHT-OF-WAY LINE FOR LAKE FRONT DRIVE. THE EASEMENT TO THE WEST OF LAKE FRONT DRIVE HAS AN OFFSET OF 8'-0". THESE EASEMENT LINES AND DIMENSIONS ARE NOT SHOWN FOR CLARITY.

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH	CONTRACT T201407208	BRIDGE NO. 2-234A	CONSTRUCTION PLAN	SHEET NO. 5
				COUNTY KENT	DESIGNED BY: NED		TOTAL SHTS. 13
					CHECKED BY: CAS		

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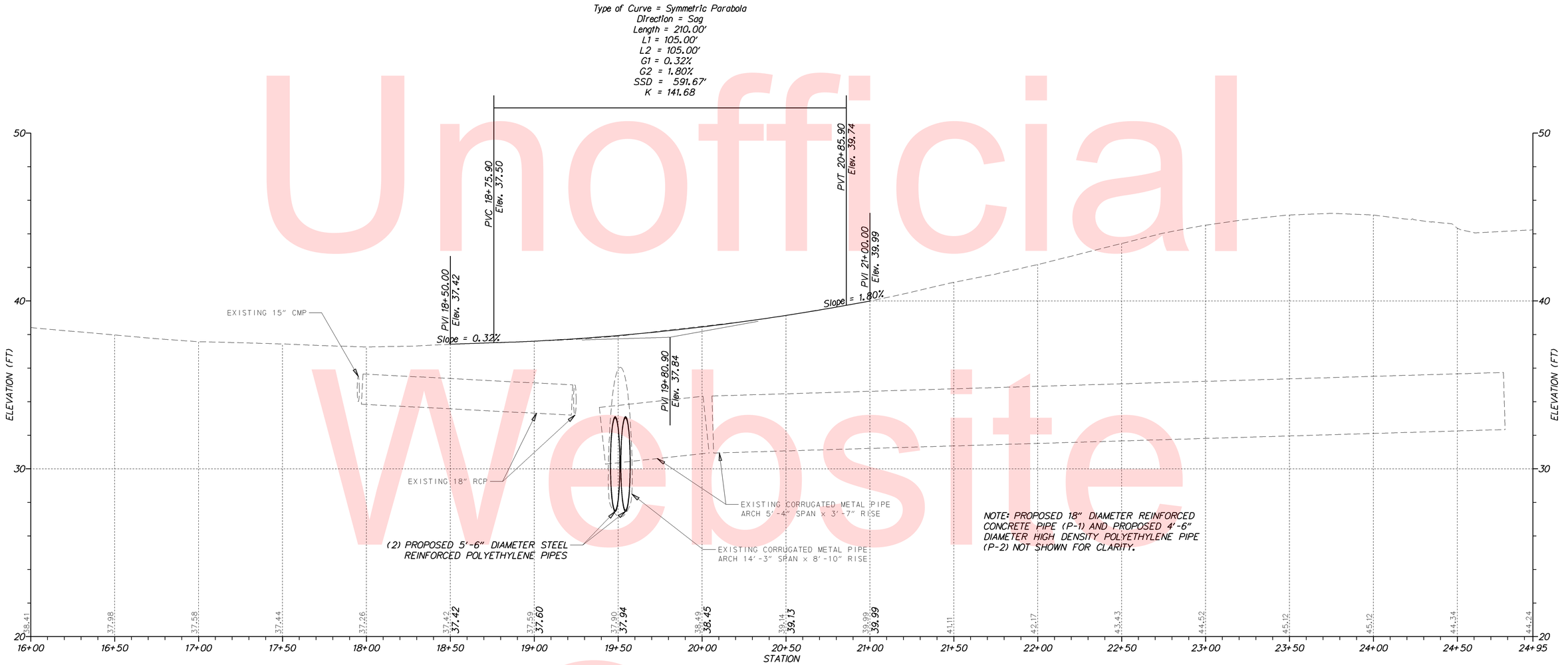

LAKE FRONT DRIVE (K000)

VERTICAL SCALE FEET 0 3 6 9

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH	CONTRACT T201407208	BRIDGE NO. 2-234A	PROFILE	SHEET NO. 6
				COUNTY KENT	DESIGNED BY: NED		TOTAL SHTS. 13
					CHECKED BY: CAS		

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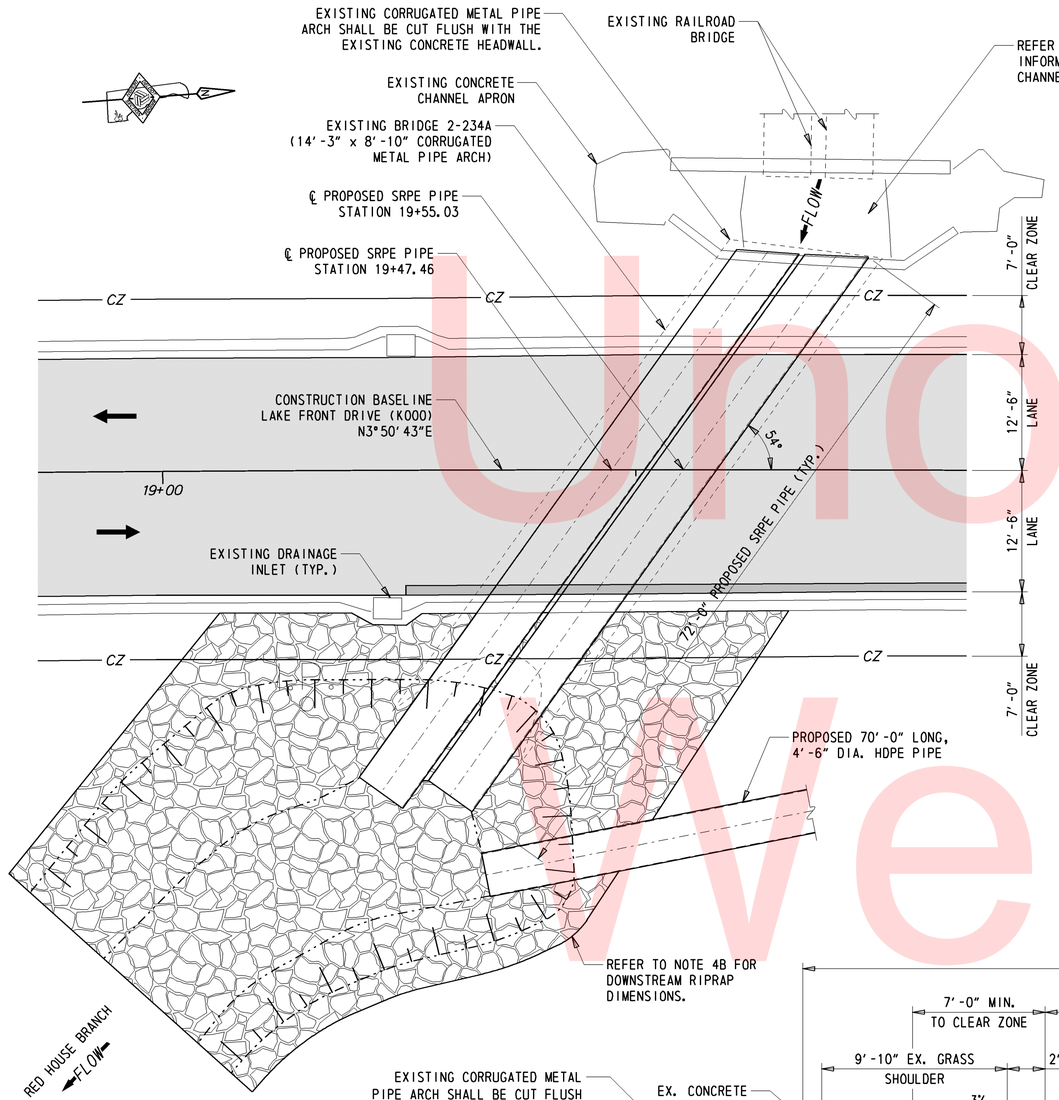
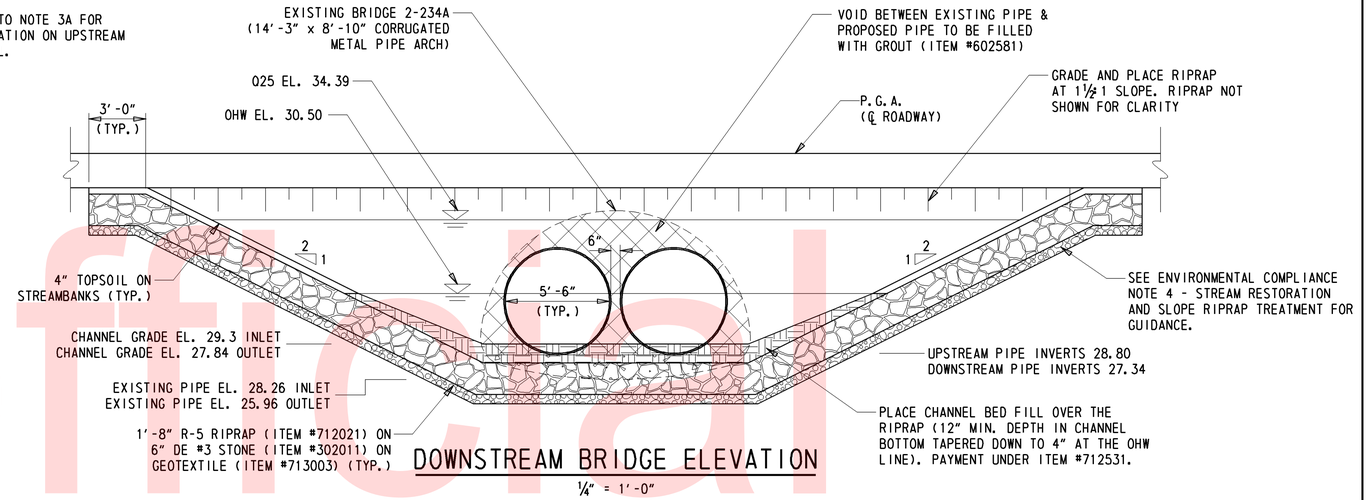


PLAN

1/8" = 1'-0"

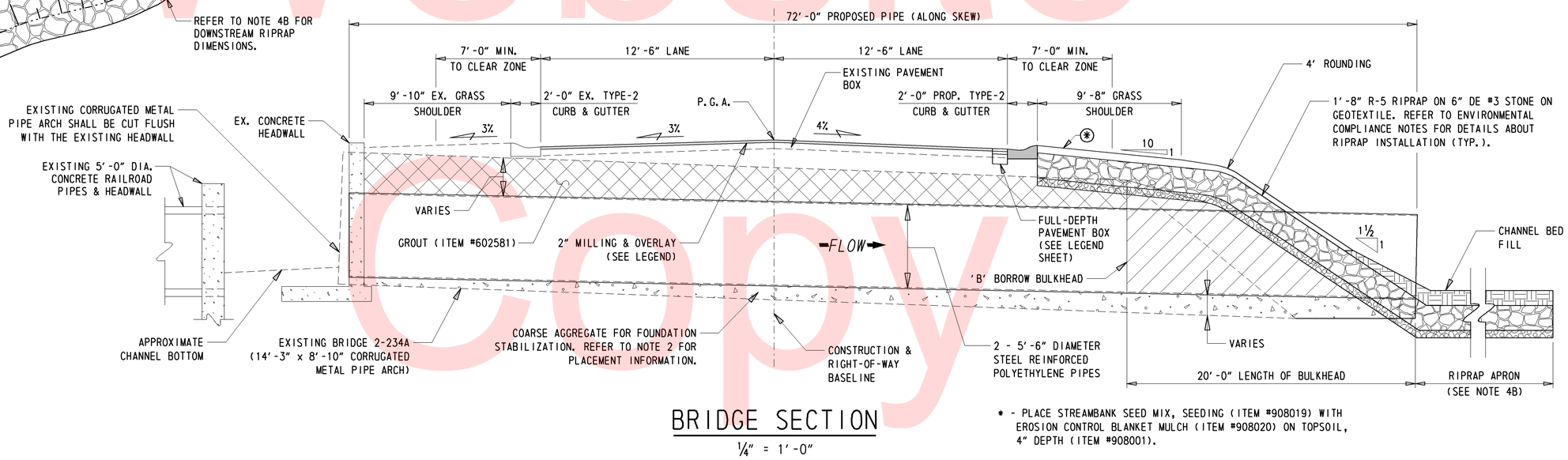


DOWNSTREAM BRIDGE ELEVATION

1/4" = 1'-0"

NOTES:

1. ALL WORK PERFORMED BY THE CONTRACTOR SHALL BE LIMITED TO DOWNSTREAM OF THE EXISTING RAILROAD HEADWALL. THE CONTRACTOR SHALL NOT DISTURB THE RAILROAD BRIDGE, AND ALL WORK WITHIN THE EXISTING RAILROAD RIGHT-OF-WAY MUST BE LIMITED AS MUCH AS POSSIBLE.
2. PROPOSED BRIDGE:
   THE EXISTING 14'-3" x 8'-10" CORRUGATED METAL PIPE ARCH SHALL BE LEFT IN PLACE. THE SEDIMENT WITHIN THE EXISTING PIPE ARCH SHALL BE REMOVED DOWN TO THE BOTTOM OF THE EXISTING PIPE ARCH IN ACCORDANCE WITH SECTION 207 OF THE STANDARD SPECIFICATIONS. THE PROPOSED (2) 5'-6" DIAMETER STEEL REINFORCED POLYETHYLENE PIPES (72'-0" LONG) SHALL BE SLID INSIDE THE EXISTING PIPE ARCH. BOTH PIPES SHALL BE PLACED 6" BELOW THE ESTABLISHED STREAM GRADE AT THE ELEVATION SPECIFIED ABOVE. THE PIPES SHALL BE PLACED WITH A 6" GAP BETWEEN THE OUTER WALLS OF EACH RUN. A LAYER OF COARSE AGGREGATE SHALL BE PLACED AT THE BOTTOM OF THE EXISTING PIPE ARCH TO ESTABLISH THE INVERT ELEVATIONS SPECIFIED ABOVE AND TO PROVIDE STABILIZATION FOR THE PROPOSED PIPES. BENEATH THE PORTION OF PROPOSED PIPES THAT EXTENDS PAST THE EXISTING PIPE ARCH, PLACE MINIMUM OF 12" OF COARSE AGGREGATE BEDDING BENEATH THE PIPES AND 6" SHAPED UP THE CURVE OF EACH PIPE. SPACERS ON THE TOPS, SIDES, AND BETWEEN THE PIPES SHALL BE PLACED IN ORDER TO MAINTAIN SPACING AND PREVENT FLOTATION OF THE PIPES. BULKHEADS SHALL BE CONSTRUCTED AT EACH END OF BRIDGE 2-234A. THE VOID BETWEEN THE EXISTING PIPE ARCH AND THE PROPOSED PIPE SHALL BE FILLED WITH GROUT. THE PROPOSED PIPES SHALL BE SAWCUT FLUSH WITH THE EXISTING HEADWALL AT THE WEST END OF BRIDGE 2-234A.
3. INVERT ELEVATIONS FOR THE EXISTING BRIDGE 2-234A WERE TAKEN FROM ARCHIVE PLANS (CONTRACT S-850-77). THE INVERT ELEVATIONS FOR THE PROPOSED PIPES OF BRIDGE 2-234A WERE CALCULATED BASED ON THE ELEVATIONS PROVIDED BY THE ARCHIVED PLANS REFERENCED ABOVE. ALL ELEVATIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
4. RIPRAP PLACEMENT
   A. UPSTREAM - THE CHANNEL BETWEEN THE RAILROAD BRIDGE AND BRIDGE 2-234A SHALL NOT BE DISTURBED BEYOND REMOVING THE EXISTING SEDIMENT BUILDUP DOWN TO THE CONCRETE APRON. THE CONCRETE APRON SHALL NOT BE DISTURBED IN THE PROCESS. NO RIPRAP SHALL BE PLACED UPSTREAM OF BRIDGE 2-234A.
   B. DOWNSTREAM - RIPRAP SHALL BE PLACED IN THE CHANNEL BOTTOM 30'-0" FROM THE PIPE OUTLET ALONG THE STREAM CENTERLINE AND SHALL BE PLACED TO CREATE A SMOOTH BEND THAT MATCHES THE EXISTING STREAM BANKS.



BRIDGE SECTION

1/4" = 1'-0"

* - PLACE STREAMBANK SEED MIX, SEEDING (ITEM #908019) WITH EROSION CONTROL BLANKET MULCH (ITEM #908020) ON TOPSOIL, 4" DEPTH (ITEM #908001).

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH	CONTRACT T201407208	BRIDGE NO. 2-234A	BRIDGE PLAN, SECTION, & ELEVATION
				COUNTY KENT	DESIGNED BY: NED	SHEET NO. 7
					CHECKED BY: CAS	TOTAL SHTS. 13

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ENVIRONMENTAL COMPLIANCE NOTES

1. GENERAL NOTES:

   A. THE PURPOSE OF THIS SHEET IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE. IMPACT CALCULATIONS ARE FOR THE AGENCY PERMIT REPORTING PURPOSES ONLY AND ARE NOT TO BE USED FOR BIDDING PURPOSES.

   B. IF A DEPARTURE FROM THE APPROVED PLANS (WHICH WOULD AFFECT ANY NATURAL AND/OR CULTURAL RESOURCES) IS NECESSARY, THE ENVIRONMENTAL STUDIES SECTION SHALL BE CONTACTED AT (302)760-2264 TO ALLOW FOR COORDINATION WITH THE APPROPRIATE RESOURCE AGENCIES AND APPROVAL.

   C. USE OF THIS SHEET DOES NOT ALLEVIATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL CONDITIONS SET FORTH IN THE ENVIRONMENTAL STATEMENT AND PERMITS.

2. NATURAL RESOURCE ISSUES:

   A. PERMIT REQUIREMENTS/APPROVALS*:
      U.S. ARMY CORPS OF ENGINEERS (COE): NWP #3(a) AND (c) (NO PCN)
      DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): PROJECT CONSISTENT WITH DEL. CODE CH. 72, SECTION 7217, SPECIAL EXEMPTION B
      DNREC - WATER QUALITY (WQC) & COASTAL ZONE CONSISTENCY (CZM): ISSUED (PROJECT IS NOT LOCATED IN CRW)

      * THE PERMITS/APPROVALS LISTED ARE THOSE REQUIRED FOR THIS PROJECT. THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING AND/OR OBTAINING THIS APPROVAL.
      ** THE CONTRACTOR MUST ENSURE THAT THESE PERMITS/APPROVALS ARE IN THEIR POSSESSION PRIOR TO BEGINNING CONSTRUCTION IN THE PERMITTED AREA(S) AND ENSURE IT IS DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD.

   B. CONSTRUCTION RESTRICTIONS:
      FISHERIES - CONSTRUCTION ACTIVITIES THAT WOULD AFFECT THE DOWNSTREAM POND LEVEL (DERBY POND) SHALL NOT TAKE PLACE CONCURRENT WITH AGRICULTURAL WATER WITHDRAWAL ACTIVITES (TYPICALLY MAY 1 THROUGH OCTOBER 31). IF WORK IS NECESSARY DURING THAT TIME, CONTACT THE ESO SECTION SO THEY CAN COORDINATE WITH DNREC FISHERIES AND THE FARM OPERATORS. IN ADDITION, STRINGENT SEDIMENT CONTROL MEASURES SHOULD BE IMPLEMENTED DURING CONSTRUCTION SO WATER QUALITY ISSUES ARE NOT EXACERBATED.
      ENDANGERED SPECIES - A STATE-RARE FRESHWATER MUSSEL IS LOCATED DOWNSTREAM OF THIS PROJECT. IN ORDER TO MINIMIZE IMPACTS TO THIS POPULATION, MEASURES SHALL BE TAKEN TO DECREASE DOWNSTREAM SEDIMENTATION DURING CONSTRUCTION ACTIVITIES.
      MIGRATORY BIRDS - NONE

3. CULTURAL RESOURCE ISSUES: NONE

4. STREAM RESTORATION AND SLOPE RIPRAP TREATMENT

   A. THE CONTRACTOR SHALL FOLLOW THE SPECIAL PROVISIONS OF ITEM #712531 - CHANNEL BED FILL IN REGARDS TO THE SALVAGING OF ON-SITE NATURAL STREAM BOTTOM MATERIAL OR THE FURNISHING OF OFF-SITE MATERIAL. ALL RIPRAP IN THE CHANNEL BOTTOM (I.E. BELOW THE WATER LINE) SHALL BE RECESSED ONE FOOT BELOW STREAM BED ELEVATION AND CHOKED WITH BORROW TYPE 'B' SO THAT ALL OF THE VOIDS IN THE RIPRAP ARE FILLED WITH MATERIAL. PAYMENT UNDER ITEM #209002 - BORROW TYPE 'B'. THE RIPRAP SHALL THEN BE COVERED WITH 12" CHANNEL BED FILL TO MATCH EXISTING ELEVATIONS. PAYMENT UNDER ITEM #712531 - CHANNEL BED FILL.

   B. OTHER AREAS OF THE CHANNEL BOTTOM AFFECTED BY CONSTRUCTION (INCLUDING, BUT NOT LIMITED TO, THE LOCATION OF SUMP PITS, STABILIZED OUTFALLS, SANDBAG DIKES, AND DIVERSIONS) SHALL BE RESTORED TO EXISTING CONDITIONS. ANY CAVITIES OR SCOUR HOLES RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE FILLED WITH CHANNEL BED FILL. PAYMENT UNDER ITEM #712531 - CHANNEL BED FILL.

   C. WHEN ALL EROSION AND SEDIMENT CONTROL MEASURES ARE REMOVED AND THE STREAM RETURNS TO ITS NATURAL FLOW CONDITIONS, THE FLOW MUST REMAIN ABOVE GROUND AND ABOVE THE RIPRAP (I.E. THE FLOW CANNOT BE "LOST" IN THE RIPRAP OR BENEATH THE STRUCTURE). IF THIS IS NOT ACHIEVED, THE CONTRACTOR WILL BE REQUIRED TO TAKE CORRECTIVE ACTION AT THE CONTRACTOR'S EXPENSE.

   D. ALL RIPRAP ON THE STREAM BANK, OUTSIDE THE CHANNEL BED, SHALL BE CHOKED WITH DELAWARE #57 STONE, FILLED WITH TOPSOIL, SEEDED AND MULCHED WITH ROSION CONTROL BLANKET (ITEM #908020). PLACE JUST ENOUGH CHOKE MATERIAL TO PREVENT THE LOSS OF TOPSOIL THROUGH THE RIPRAP, AND THEN FINISH FILLING THE VOIDS WITH TOPSOIL SO THAT THE RIPRAP PEAKS ARE BARELY VISIBLE. AN ADDITIONAL 4" TOPSOIL LAYER SHALL BE PLACED ON TOP OF THE RIPRAP. SEEDING SHALL BE STREAMBANK SEED MIX, SEEDING (ITEM #908019) ON THE SLOPE. ALL WORK, STARTING WITH THE INITIAL CHOKING WITH TOPSOIL THROUGH THE SEEDING AND MULCHING, SHALL BE COMPLETED PRIOR TO ANY RAIN EVENT. PAYMENT FOR RIPRAP AND DELAWARE #57 STONE SHALL BE PAID FOR UNDER THE RIPRAP ITEM. ALL OTHER ITEMS SHALL BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.

   E. THE TOPSOIL/SEED/MULCH CAN BE PLACED BEFORE OR AFTER THE REMOVAL OF THE STREAM DIVERSION. IF IT OCCURS AFTER STREAM DIVERSION REMOVAL, A TURBIDITY CURTAIN SHALL BE USED TO MINIMIZE IN-STREAM SEDIMENTATION. PAYMENT SHALL BE INCIDENTAL TO ITEM #909005 - STREAM DIVERSION.

   F. THE CONTRACTOR HAS THE OPTION TO USE LIGHT CHANNEL BED FILL IN ACCORDANCE WITH THE SPECIAL PROVISIONS OF ITEM #712531 - CHANNEL BED FILL AT THIS LOCATION.

5. PROTECTION OF RESOURCES

   A. CLEARING IN WETLAND AREAS SHALL BE KEPT TO A MINIMUM ABSOLUTELY NECESSARY FOR CONSTRUCTION ACCESS. IN WETLAND AREAS THAT ARE CLEARED, THERE SHALL BE NO GRUBBING EXCEPT WHERE NECESSARY TO CONSTRUCT PROJECT COMPONENTS SUCH AS FOUNDATIONS AND RIPRAP PROTECTION. VEGETATION SHALL BE CUT FLUSH WITH THE GROUND (I.E. NO DISTURBANCE OF THE ROOT MAT. TEMPORARILY DISTURBED WETLAND AREAS SHALL BE RESTORED TO GRADE AND SEEDED WITH TEMPORARY GRASS SEEDING (PAYMENT UNDER ITEM 908017).

   B. SILT FENCE OR CONSTRUCTION SAFETY FENCE SHALL BE USED ALONG THE LIMITS OF CONSTRUCTION IN ALL AREAS WHERE WATER/WETLANDS ARE BEING IMPACTED (AS SHOWN ON EC SHEETS), AND ALSO IN ANY AREA WHERE WATER/WETLANDS EXIST WITHIN 20 FEET OF THE LOC (AS SHOWN ON CONSTRUCTION PLANS). CONTRACTOR ACCESS BEYOND THE LOC IS STRICTLY PROHIBITED.

   C. SILT FENCE INSTALLATION ADJACENT TO WOODED UPLANDS/WETLANDS: SANDBAGS SHALL BE USED TO SECURE SILT FENCE IN LIEU OF TRENCHING PROVIDED PROPER EROSION & SEDIMENT CONTROL CAN BE MAINTAINED. SANDBAGS USED TO SECURE SILT FENCE SHALL BE INCIDENTAL TO ITEM NUMBER 905001 - SILT FENCE. THE ENVIRONMENTAL STUDIES SECTION (CAROL SULLIVAN, 302-760-2129) CAN PROVIDE FURTHER GUIDANCE REGARDING THIS METHOD OF INSTALLATION.

   D. ALL TREES TO BE REMOVED SHALL BE CLEARLY MARKED WITH PAINT PRIOR TO THE E&S SEDIMENT CONTROL/ENVIRONMENTAL MEETING.

6. PLANTING GUIDANCE (INFORMATIONAL ONLY, WORK TO BE DONE BY OTHERS. THERE SHALL BE NO PAYMENT FOR PLANTING ON THIS CONTRACT):

   A. UPON FINAL ACCEPTANCE OF THE CONTRACT, APPROPRIATE TREES AND/OR SHRUBS SHALL BE PLANTED IN A NATURALIZED PATTERN (MINIMUM 8', MAXIMUM 12' CENTERS) IN TEMPORARILY DISTURBED WOODED WETLAND AREAS WITHIN THE LOC. FINAL PLANT COUNTS WILL BE BASED ON FIELD CONDITIONS AND DETERMINED BY THE ROADSIDE ENVIRONMENTAL ADMINISTRATOR OR HIS DESIGNEE. SPECIFIC PLANT SELECTION IS ALSO AT HIS DISCRETION BUT SHALL BE A NATIVE SPECIES APPROVED BY THE DELAWARE DEPARTMENT OF NATURAL RESOURCES.

WETLANDS DELINEATED BY CHRISTIE BONNIWELL ON 05-19-2015 AND 07-24-2015 IN ACCORDANCE WITH THE 1987 CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND REGIONAL SUPPLEMENTS.

ORIGINAL SHEET PREPARED BY NICHOLAS DEAN ON 07-27-2015. SHEET LAST UPDATED ON 07/25/2016.

E.C. SHEET 1 OF 2

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH	CONTRACT T201407208	BRIDGE NO. 2-234A	ENVIRONMENTAL COMPLIANCE NOTES	SHEET NO. 8
				COUNTY KENT	DESIGNED BY: NED		TOTAL SHTS. 13
					CHECKED BY: CAS		

LAST REVISED: 09/19/2014
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LEGEND

- PERMANENT IMPACT AREA
- TEMPORARY IMPACT AREA
- CREATION AREA
- OHW — ORDINARY HIGH WATER
- WL — WETLAND BOUNDARY
- OHW/WL — ORD. HIGH WATER / WETLAND
- POHW — PROPOSED ORDINARY HIGH WATER
- XX / ?X — IMPACT AREA TYPE ID. (SEE BELOW) / IMPACT AREA ID. AND/OR NUMBER

O = OPEN WATER IMPACT W = WETLAND IMPACT

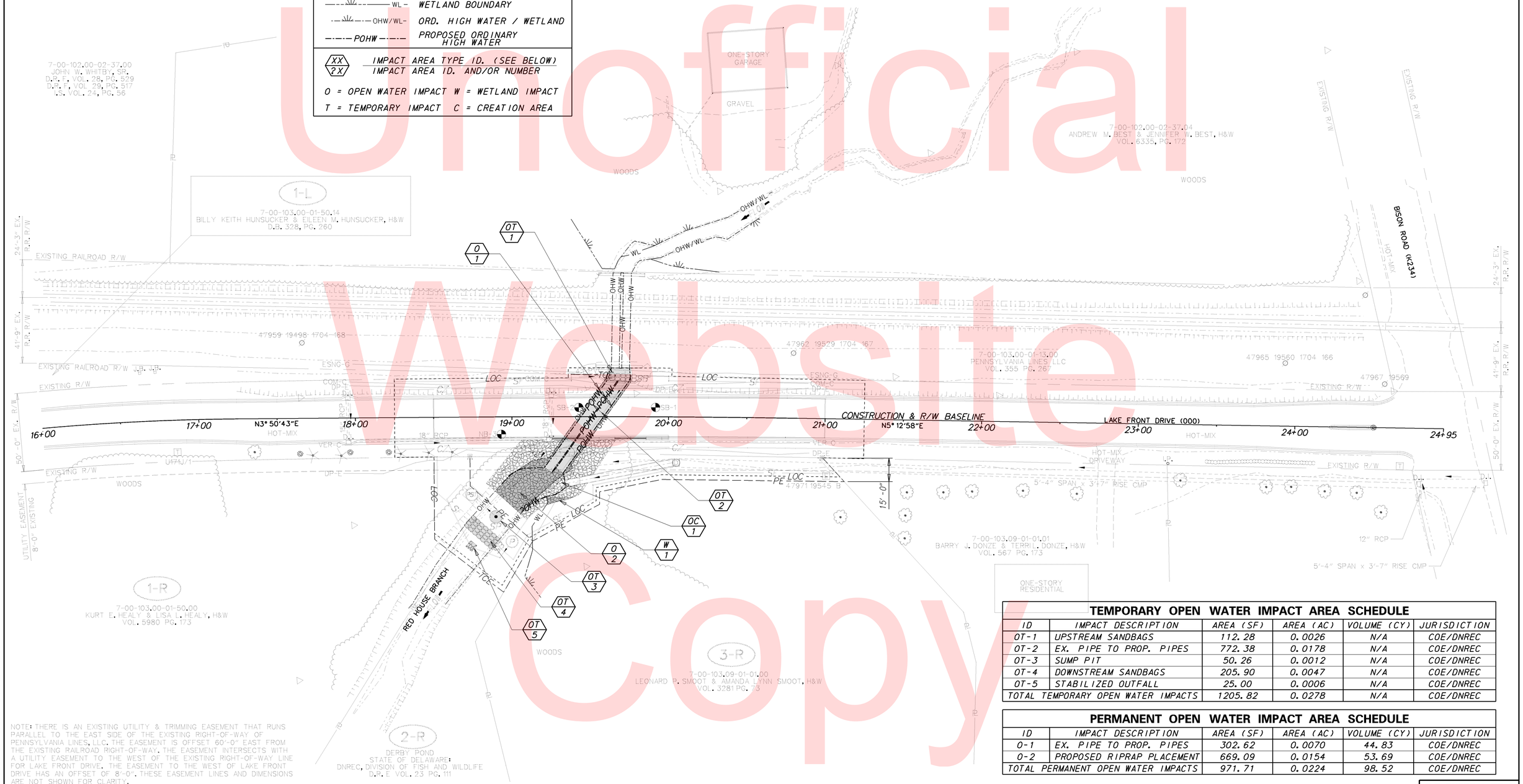
T = TEMPORARY IMPACT C = CREATION AREA

OPEN WATER CREATION AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OC-1	D.S. CHANNEL REGRADING	124.99	0.0029	10.03	COE/DNREC
TOTAL OPEN WATER CREATION AREAS		124.99	0.0029	10.03	COE/DNREC

PERMANENT WETLAND IMPACT AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
W-1	PROP. RIPRAP - NORTH BANK	45.32	0.0010	3.64	COE
TOTAL PERMANENT WETLAND IMPACT AREAS		45.32	0.0010	3.64	COE



NOTE: THERE IS AN EXISTING UTILITY & TRIMMING EASEMENT THAT RUNS PARALLEL TO THE EAST SIDE OF THE EXISTING RIGHT-OF-WAY OF PENNSYLVANIA LINES, LLC. THE EASEMENT IS OFFSET 60'-0" EAST FROM THE EXISTING RAILROAD RIGHT-OF-WAY. THE EASEMENT INTERSECTS WITH A UTILITY EASEMENT TO THE WEST OF THE EXISTING RIGHT-OF-WAY LINE FOR LAKE FRONT DRIVE. THE EASEMENT TO THE WEST OF LAKE FRONT DRIVE HAS AN OFFSET OF 8'-0". THESE EASEMENT LINES AND DIMENSIONS ARE NOT SHOWN FOR CLARITY.

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	UPSTREAM SANDBAGS	112.28	0.0026	N/A	COE/DNREC
OT-2	EX. PIPE TO PROP. PIPES	772.38	0.0178	N/A	COE/DNREC
OT-3	SUMP PIT	50.26	0.0012	N/A	COE/DNREC
OT-4	DOWNSTREAM SANDBAGS	205.90	0.0047	N/A	COE/DNREC
OT-5	STABILIZED OUTFALL	25.00	0.0006	N/A	COE/DNREC
TOTAL TEMPORARY OPEN WATER IMPACTS		1205.82	0.0278	N/A	COE/DNREC

PERMANENT OPEN WATER IMPACT AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
O-1	EX. PIPE TO PROP. PIPES	302.62	0.0070	44.83	COE/DNREC
O-2	PROPOSED RIPRAP PLACEMENT	669.09	0.0154	53.69	COE/DNREC
TOTAL PERMANENT OPEN WATER IMPACTS		971.71	0.0224	98.52	COE/DNREC

E.C. SHEET 2 OF 2

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH

CONTRACT	BRIDGE NO.	2-234A
T201407208	DESIGNED BY: NED	
COUNTY	CHECKED BY: CAS	
KENT		

ENVIRONMENTAL COMPLIANCE PLAN

SHEET NO. 9 TOTAL SHTS. 13

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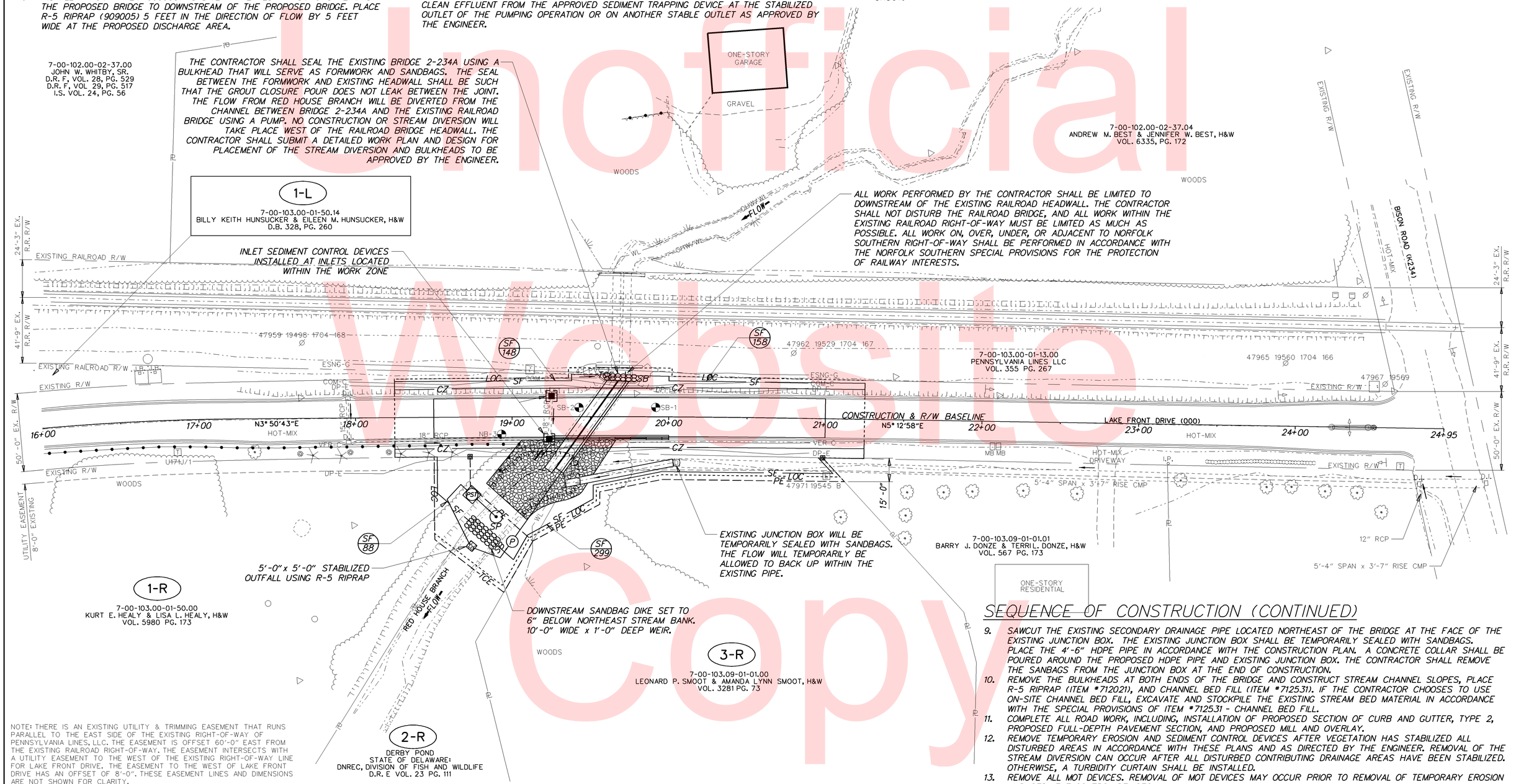
SEQUENCE OF CONSTRUCTION

1. INSTALL MOT DEVICES IN ACCORDANCE WITH THE TA-10 LANE CLOSURE OF THE DE-MUTCD. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL PROTECT THE EAST EDGE OF THE ROADWAY WITHIN THE WORK AREA AND RESTORE THE ROADWAY TO TWO-WAY TRAFFIC CONDITIONS.
2. INSTALL SILT FENCE (ITEM 905001) EXCEPT CONNECTION TO SANDBAG DIKES (ITEM 909005). SANDBAG SILT FENCE SHALL BE INSTALLED AT LOCATIONS IDENTIFIED DURING THE E&S PRECONSTRUCTION MEETING. SEE EC NOTE 5 FOR DETAILS.
3. REMOVE THE EXISTING WOODEN FENCE WITHIN THE LOC ON THE SOUTHEAST SIDE OF THE BRIDGE. THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO CLOSE FENCE DURING CONSTRUCTION. THE CONTRACTOR SHALL RESET THE WOODEN FENCE AT THE COMPLETION OF CONSTRUCTION.
4. INSTALL A PUMP (ITEM 909005) TO DIVERT THE FLOW FROM UPSTREAM OF THE PROPOSED BRIDGE TO DOWNSTREAM OF THE PROPOSED BRIDGE. PLACE R-5 RIPRAP (909005) 5 FEET IN THE DIRECTION OF FLOW BY 5 FEET WIDE AT THE PROPOSED DISCHARGE AREA.
5. CONSTRUCT THE SANDBAG DIKES AND FORMWORK, AT THE LOCATION SHOWN TO COMPLETELY SEAL OFF THE EXISTING BRIDGE 2-234A. THE SANDBAGS AND FORMWORK SHALL BE PLACED IN A MANNER THAT ALLOWS THE HOSE FOR THE PUMP TO PASS THROUGH IT. THE ELEVATION OF THE DOWNSTREAM SANDBAG DIKE SHALL BE 6" BELOW THE TOP OF THE NORTHEAST STREAM BANK WITH A 1'x10' WEIR OPENING. CONNECT THE SILT FENCE TO THE SANDBAG DIKES TO COMPLETELY ENCLOSE THE WORK AREA. USE A PUMP (ITEM 909005) TO DIVERT THE STREAM BASE FLOW THROUGH A HOSE RUNNING THROUGH THE EXISTING BRIDGE 2-234A. WHEN THE FLOW IS HIGHER THAN THE PUMP CAPACITY DURING RAINFALL EVENTS, THE STREAM FLOW IS ALLOWED TO BACK UP UPSTREAM OF THE PROPOSED BRIDGE. THEREFORE, THE ENCLOSED AREA SHALL BE KEPT CLEAR OF DEBRIS AND OBSTRUCTIONS AT THE END OF EACH WORKDAY. THE BASE FLOW USED FOR THE PUMPS SHALL BE 13.0 CFS.
6. INSTALL INLET SEDIMENT CONTROLS, SUMP PIT (ITEM 906003) AND A PORTABLE SEDIMENT TANK (ITEM 906001) AS A SEDIMENT TRAPPING DEVICE. DEWATER THE WORK AREA IN ACCORDANCE WITH SECTION 902 OF DELDOT STANDARD SPECIFICATIONS. DISCHARGE CLEAN EFFLUENT FROM THE APPROVED SEDIMENT TRAPPING DEVICE AT THE STABILIZED OUTLET OF THE PUMPING OPERATION OR ON ANOTHER STABLE OUTLET AS APPROVED BY THE ENGINEER.
7. ONCE THE WORK AREA IS DEWATERED, REMOVE THE SEDIMENT FROM WITHIN THE EXISTING PIPE ARCH AND THE CONCRETE APRON BETWEEN THE RAILROAD BRIDGE AND THE UPSTREAM END OF BRIDGE 2-234A. PLACE THE COARSE AGGREGATE FOR FOUNDATION STABILIZATION, AND INSTALL THE NORTHERN 5'-6" STEEL REINFORCED POLYETHYLENE (SRPE) PIPE. ONCE THE NORTHERN SRPE PIPE IS INSTALLED, REROUTE THE STREAM DIVERSION HOSE TO RUN THROUGH THE NEWLY INSTALLED PIPE. INSTALL THE SOUTHERN 5'-6" SRPE PIPE. EACH PIPE SHALL BE SAWCUT FLUSH WITH THE HEADWALL AT THE WEST END (UPSTREAM).
8. PLACE SPACERS ON THE TOPS, SIDES, AND BETWEEN THE PIPES IN ORDER TO MAINTAIN SPACING AND PREVENT FLOTATION OF THE PIPES. CONSTRUCT BULKHEADS AT EACH END OF BRIDGE 2-234A. THE BULKHEADS SHOULD SEAL THE OPENINGS AT EACH END OF THE EXISTING PIPE ARCH. THE EXISTING CORRUGATED METAL PIPE ARCH SHALL BE CUT FLUSH WITH THE EXISTING HEADWALL ON THE WEST END (UPSTREAM). THE BULKHEAD ON THE UPSTREAM SIDE SHOULD BE PLACED FLUSH WITH THE EXISTING HEADWALL AND SHALL ACT AS THE FORMWORK FOR THE CLOSURE POUR. COMPLETELY FILL THE VOID BETWEEN THE PROPOSED PIPES AND THE EXISTING PIPE ARCH WITH GROUT.



SEQUENCE OF CONSTRUCTION (CONTINUED)

9. SAWCUT THE EXISTING SECONDARY DRAINAGE PIPE LOCATED NORTHEAST OF THE BRIDGE AT THE FACE OF THE EXISTING JUNCTION BOX. THE EXISTING JUNCTION BOX SHALL BE TEMPORARILY SEALED WITH SANDBAGS. PLACE THE 4'-6" HDPE PIPE IN ACCORDANCE WITH THE CONSTRUCTION PLAN. A CONCRETE COLLAR SHALL BE POURED AROUND THE PROPOSED HDPE PIPE AND EXISTING JUNCTION BOX. THE CONTRACTOR SHALL REMOVE THE SANBAGS FROM THE JUNCTION BOX AT THE END OF CONSTRUCTION.
10. REMOVE THE BULKHEADS AT BOTH ENDS OF THE BRIDGE AND CONSTRUCT STREAM CHANNEL SLOPES, PLACE R-5 RIPRAP (ITEM #712021), AND CHANNEL BED FILL (ITEM #7125.31). IF THE CONTRACTOR CHOOSES TO USE ON-SITE CHANNEL BED FILL, EXCAVATE AND STOCKPILE THE EXISTING STREAM BED MATERIAL IN ACCORDANCE WITH THE SPECIAL PROVISIONS OF ITEM #7125.31 - CHANNEL BED FILL.
11. COMPLETE ALL ROAD WORK, INCLUDING, INSTALLATION OF PROPOSED SECTION OF CURB AND GUTTER, TYPE 2, PROPOSED FULL-DEPTH PAVEMENT SECTION, AND PROPOSED MILL AND OVERLAY.
12. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER VEGETATION HAS STABILIZED ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS AND AS DIRECTED BY THE ENGINEER. REMOVAL OF THE STREAM DIVERSION CAN OCCUR AFTER ALL DISTURBED CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED. OTHERWISE, A TURBIDITY CURTAIN SHALL BE INSTALLED.
13. REMOVE ALL MOT DEVICES. REMOVAL OF MOT DEVICES MAY OCCUR PRIOR TO REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.

NOTE: THERE IS AN EXISTING UTILITY & TRIMMING EASEMENT THAT RUNS PARALLEL TO THE EAST SIDE OF THE EXISTING RIGHT-OF-WAY OF PENNSYLVANIA LINES, LLC. THE EASEMENT IS OFFSET 60'-0" EAST FROM THE EXISTING RAILROAD RIGHT-OF-WAY. THE EASEMENT INTERSECTS WITH A UTILITY EASEMENT TO THE WEST OF THE EXISTING RIGHT-OF-WAY LINE FOR LAKE FRONT DRIVE. THE EASEMENT TO THE WEST OF LAKE FRONT DRIVE HAS AN OFFSET OF 8'-0". THESE EASEMENT LINES AND DIMENSIONS ARE NOT SHOWN FOR CLARITY.

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH	CONTRACT T201407208	BRIDGE NO. 2-234A	CONSTRUCTION SEQUENCE & EROSION CONTROL PLAN	SHEET NO. 10
				COUNTY KENT	DESIGNED BY: NED		TOTAL SHTS. 13
					CHECKED BY: CAS		

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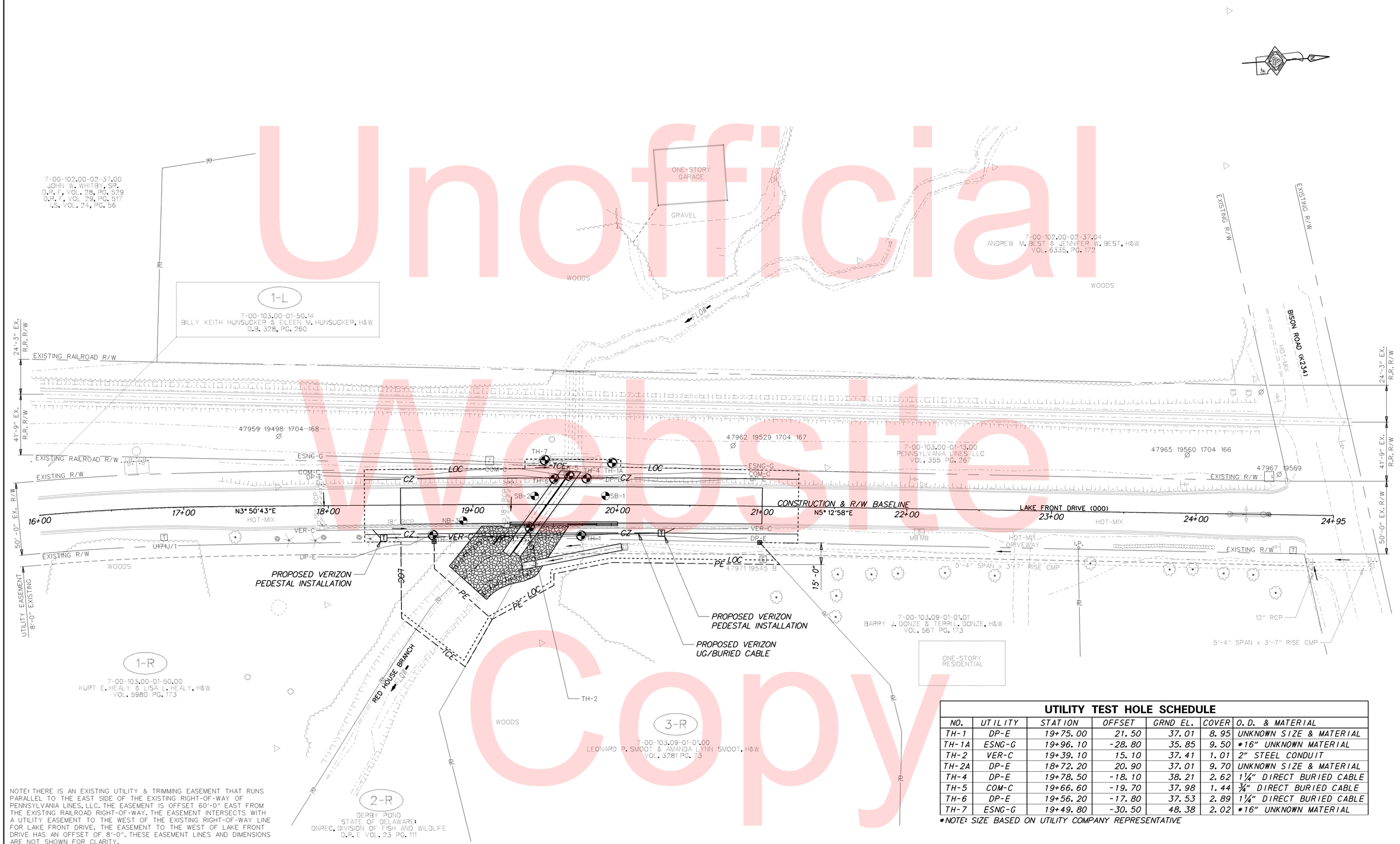

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UTILITY TEST HOLE SCHEDULE

NO.	UTILITY	STATION	OFFSET	GRND EL.	COVER	O.D. & MATERIAL
TH-1	DP-E	19+75.00	21.50	37.01	8.95	UNKNOWN SIZE & MATERIAL
TH-1A	ESNG-G	19+96.10	-28.80	35.85	9.50	*16" UNKNOWN MATERIAL
TH-2	VER-C	19+39.10	15.10	37.41	1.01	2" STEEL CONDUIT
TH-2A	DP-E	18+72.20	20.90	37.01	9.70	UNKNOWN SIZE & MATERIAL
TH-4	DP-E	19+78.50	-18.10	38.21	2.62	1¼" DIRECT BURIED CABLE
TH-5	COM-C	19+66.60	-19.70	37.98	1.44	¾" DIRECT BURIED CABLE
TH-6	DP-E	19+56.20	-17.80	37.53	2.89	1¼" DIRECT BURIED CABLE
TH-7	ESNG-G	19+49.80	-30.50	48.38	2.02	*16" UNKNOWN MATERIAL

*NOTE: SIZE BASED ON UTILITY COMPANY REPRESENTATIVE

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH

CONTRACT	BRIDGE NO.	2-234A
T201407208	DESIGNED BY: NED	
COUNTY	CHECKED BY: CAS	
KENT		

UTILITY RELOCATION PLAN

SHEET NO.
11
TOTAL SHTS.
13

Unofficial Website Copy

7-00-102.00-02-37.00
JOHN W. WHITBY, SR.
D.R. F, VOL. 28, PG. 529
D.R. F, VOL 29, PG. 517
I.S. VOL. 24, PG. 56

ONE-STORY GARAGE

GRAVEL

WOODS

7-00-102.00-02-37.04
ANDREW M. BEST & JENNIFER W. BEST, H&W
VOL. 6335, PG. 172

WOODS

EXISTING R/W

EXISTING R/W

BISON ROAD (K234)

HOT-MIX

1-L
7-00-103.00-01-50.14
BILLY KEITH HUNSUCKER & EILEEN M. HUNSUCKER, H&W
D.B. 328, PG. 260

24'-3" EX. R.R. R/W

EXISTING RAILROAD R/W

41'-9" EX. R.R. R/W

EXISTING RAILROAD R/W

EXISTING R/W

50'-0" EX. R/W

EXISTING R/W

UTILITY EASEMENT 8'-0" EXISTING

WOODS

47959 19498 1704 168

10002
10001

10003
10004

47962 19529 1704 167

7-00-103.00-01-13.00
PENNSYLVANIA LINES LLC
VOL. 355 PG. 267

47965 19560 1704 166

47967 19569

EXISTING R/W

24'-3" EX. R.R. R/W

41'-9" EX. R.R. R/W

50'-0" EX. R/W

ESNG-C
COM-C
COM-E
DP-E
LOC
TCE
SB-2
SB-1
NB-3
18" RCP
15" RCP
VER-C
DP-E
CONSTRUCTION & R/W BASELINE
N5° 12'58"E
N3° 50'43"E
HOT-MIX
LAKE FRONT DRIVE (000)
HOT-MIX
HOT-MIX DRIVEWAY
MB MB
I.P.
16+00
17+00
18+00
19+00
20+00
21+00
22+00
23+00
24+00
24+95
U74J/1
DP-E
17001
14001
14004
14002
17004
14003
17002
PE
PE-LOC
15002
16004
16001
15001
16005
16006
16002
16003
PE LOC
4797 19545
15'-0"
5'-4" SPAN x 3'-7" RISE CMP
12" RCP
5'-4" SPAN x 3'-7" RISE CMP
18001
17003
WOODS
RED HOUSE BRANCH
FLOW
FLOW
WL
CHANNEL
CHANNEL
7-00-103.09-01-01.01
BARRY J. DONZE & TERRI L. DONZE, H&W
VOL. 567 PG. 173
ONE-STORY RESIDENTIAL
1-R
7-00-103.00-01-50.00
KURT E. HEALY & LISA L. HEALY, H&W
VOL. 5980 PG. 173
2-R
DERBY POND
STATE OF DELAWARE:
DNREC, DIVISION OF FISH AND WILDLIFE
D.R. E VOL. 23 PG. 111
3-R
7-00-103.09-01-01.00
LEONARD P. SMOOT & AMANDA LYNN SMOOT, H&W
VOL. 3281 PG. 73

NOTE: THERE IS AN EXISTING UTILITY & TRIMMING EASEMENT THAT RUNS PARALLEL TO THE EAST SIDE OF THE EXISTING RIGHT-OF-WAY OF PENNSYLVANIA LINES, LLC. THE EASEMENT IS OFFSET 60'-0" EAST FROM THE EXISTING RAILROAD RIGHT-OF-WAY. THE EASEMENT INTERSECTS WITH A UTILITY EASEMENT TO THE WEST OF THE EXISTING RIGHT-OF-WAY LINE FOR LAKE FRONT DRIVE. THE EASEMENT TO THE WEST OF LAKE FRONT DRIVE HAS AN OFFSET OF 8'-0". THESE EASEMENT LINES AND DIMENSIONS ARE NOT SHOWN FOR CLARITY.

RECOMMENDED AS PER REVISION 1

Monroe C. Hoey III — 9/22/16
MANAGER, ROW ENGINEERING — DATE

Shehnaz Chandla — 9/22/16
PROGRAM MANAGER, TEAM SUPPORT — DATE

[illegible] — 9/22/16
TECHNICAL REVIEWER, ~~TEAM SUPPORT~~ CENTURY ENGINEERING — DATE

ORIGINAL SIGNATURE DATE: 08-17-2016

RIGHT-OF-WAY SHEET 1 OF 2

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS
1 - DELETED FEE ON PARCEL 1-R, 2-R, AND 3-R AND CHANGED IT TO PE - NED 09/19/2016

SCALE
0 30 60 90
FEET

BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH

CONTRACT	T201407208
COUNTY	KENT
BRIDGE NO.	2-234A
DESIGNED BY:	NED
CHECKED BY:	CAS

RIGHT-OF-WAY PLAN

SHEET NO.	12
TOTAL SHTS.	13

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
7-00-103.00-01-50.14	(1-L) BILLY KEITH HUNSUCKER & EILEEN M. HUNSUCKER, H&W	TCE	D.B. 328 PG. 260	2.140

ALIGNMENT NUMBER & DESCRIPTION: 5000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
10001	5000	19+35.99	-24.73	396994.5789	613674.8498	N 85°40'36.20" W	2.39				
10002	5000	19+35.99	-27.12	396994.7590	613672.4666	N 5°29'56.59" E	30.28				
10003	5000	19+66.17	-26.50	397024.8978	613675.3682	S 55°14'08.86" E	2.02				
10004	5000	19+65.15	-24.76	397023.7479	613677.0249			S 4°15'52.45" W	29.25	29.25	-10402.75
10001	5000	19+35.99	-24.73	396994.5789	613674.8498						

FIGURE 10001 AREA = 61.3871 SQ. FT. (0.0014 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
7 7-00-103.00-01-50.00	(1-R) KURT E. HEALY & LISA L. HEALY, H&W	P/E	VOL. 5980 PG. 173	3.277

ALIGNMENT NUMBER & DESCRIPTION: 5000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
14001	5000	18+73.00	25.28	396928.2265	613720.3207			N 3°57'06.39" E	41.79	41.79	10352.75
14002	5000	19+14.89	25.28	396969.9143	613723.2006	S 41°48'11.77" E	41.80				
14003	5000	18+85.61	55.24	396938.7578	613751.0609	S 45°39'30.72" W	16.87				
14004	5000	18+73.00	44.00	396926.9688	613738.9977	N 86°08'51.27" W	18.72				
14001	5000	18+73.00	25.28	396928.2265	613720.3207						

FIGURE 14001 AREA = 743.8442 SQ. FT. (0.0171 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
7-00-103.00-01-50.00	(1-R) KURT E. HEALY & LISA L. HEALY, H&W	TCE	VOL. 5980 PG. 173	3.277

ALIGNMENT NUMBER & DESCRIPTION: 5000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
17001	5000	18+50.00	25.31	396905.2790	613718.8076			N 3°46'21.02" E	23.00	23.00	10352.75
14001	5000	18+73.00	25.28	396928.2265	613720.3207	S 86°08'51.27" E	18.72				
14004	5000	18+73.00	44.00	396926.9688	613738.9977	N 45°39'30.72" E	16.87				
14003	5000	18+85.61	55.24	396938.7578	613751.0609	S 41°48'11.77" E	21.44				
17002	5000	18+70.58	70.58	396922.7755	613765.3523	S 51°47'16.77" E	18.52				
17003	5000	18+60.13	85.86	396911.3200	613779.9034	S 41°40'39.11" W	12.82				
17004	5000	18+50.00	78.00	396901.7450	613771.3792	N 86°09'15.24" W	52.69				
17001	5000	18+50.00	25.31	396905.2790	613718.8076						

FIGURE 17001 AREA = 1384.7678 SQ. FT. (0.0318 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
7 DERBY POND	(2-R) STATE OF DELAWARE: DNREC, DIVISION OF FISH AND WILDLIFE	P/E	D.R. E VOL. 23 PG. 111	40.100

ALIGNMENT NUMBER & DESCRIPTION: 5000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
14002	5000	19+14.89	25.28	396969.9143	613723.2006			N 4°08'53.71" E	29.22	29.22	10352.75
15001	5000	19+44.20	25.26	396999.0548	613725.3140	S 56°01'45.93" E	62.41				
15002	5000	19+13.00	79.43	396964.1804	613777.0747	S 45°39'30.72" W	36.37				
14003	5000	18+85.61	55.24	396938.7578	613751.0609	N 41°48'11.77" W	41.80				
14002	5000	19+14.89	25.28	396969.9143	613723.2006						

FIGURE 15001 AREA = 1550.6098 SQ. FT. (0.0356 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
DERBY POND	(2-R) STATE OF DELAWARE: DNREC, DIVISION OF FISH AND WILDLIFE	TCE	D.R. E VOL. 23 PG. 111	40.100

ALIGNMENT NUMBER & DESCRIPTION: 5000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
14003	5000	18+85.61	55.24	396938.7578	613751.0609	N 45°39'30.72" E	36.37				
15002	5000	19+13.00	79.43	396964.1804	613777.0747	S 56°01'45.93" E	37.60				
18001	5000	18+94.00	112.01	396943.1700	613808.2584	S 41°40'39.11" W	42.64				
17003	5000	18+60.13	85.86	396911.3200	613779.9034	N 51°47'16.77" W	18.52				
17002	5000	18+70.58	70.58	396922.7755	613765.3523	N 41°48'11.77" W	21.44				
14003	5000	18+85.61	55.24	396938.7578	613751.0609						

FIGURE 18001 AREA = 1552.4061 SQ. FT. (0.0356 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
7 7-00-103.09-01-01.00	(3-R) LEONARD P. SMOOT & AMANDA LYNN SMOOT, H&W	P/E	VOL. 3281 PG. 73	3.200

ALIGNMENT NUMBER & DESCRIPTION: 5000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
16001	5000	19+45.44	23.10	397000.4484	613723.2455	N 5°29'56.56" E	152.86				
16002	5000	20+98.67	24.95	397152.6030	613737.8938	N 51°49'52.88" E	20.71				
16003	5000	21+12.89	40.00	397165.3985	613754.1724	S 5°00'05.88" W	116.48				
16004	5000	19+96.00	40.00	397049.3577	613744.0168	S 6°52'32.02" E	40.59				
16005	5000	19+56.00	48.00	397009.0548	613748.8765	S 85°38'10.87" E	7.99				
16006	5000	19+56.00	56.00	397008.4466	613756.8472	S 24°33'29.10" E	48.67				
15002	5000	19+13.00	79.43	396964.1804	613777.0747	N 56°01'45.93" W	64.91				
16001	5000	19+45.44	23.10	397000.4484	613723.2455						

FIGURE 16001 AREA = 3505.6268 SQ. FT. (0.0805 ACRES)

COUNTY ASSESSMENT PARCEL NUMBER	PLAN SHEET NUMBER	OWNERSHIP OF RECORD	TITLE SOURCE	PROPERTY AREA BEFORE ACQUISITION (ACRE) D=DEED C=CALCULATED A=ASSESMENT	ACQUISITION CODE FEE, R/W, P/E, TCE	AREA TO BE ACQUIRED: ACQUISITION (SQ. FEET /ACRES)	AREA TO BE ACQUIRED: AREA OCCUPIED BY EXISTING RIGHT OF WAY (SQ. FEET /ACRES)	AREA TO BE ACQUIRED: EASEMENT: PERMANENT (SQ. FEET /ACRES)	AREA TO BE ACQUIRED: EASEMENT: TEMPORARY (SQ. FEET /ACRES)	PROPERTY AREA REMAINING (SQ. FEET /ACRES)	DEED RECORD OF ACQUISTITION	REMARKS
7-00-103.00-01-50.14	6	(1-L) BILLY KEITH HUNSUCKER & EILEEN M. HUNSUCKER, H&W	D.B. 328 PG. 260	D - 2.14	TCE				61.3871 / 0.00	93218.40 / 2.14		
7-00-103.00-01-50.00	6	(1-R) KURT E. HEALY & LISA L. HEALY, H&W	VOL. 5980 PG. 173	D - 3.28	7 P/E			743.8442 / 0.02				
					TCE				1384.7678 / 0.03	142746.12 / 3.28		
DERBY POND	6	(2-R) STATE OF DELAWARE: DNREC, DIVISION OF FISH AND WILDLIFE	D.R. E VOL. 23 PG. 111	C - 40.10	7 P/E			1550.6098 / 0.04				FOR THE USE OF THE BOARD OF FISH & GAME COMMISSIONERS
					TCE				1552.4061 / 0.04	1746756.00 / 40.10		
7-00-103.09-01-01.00	6	(3-R) LEONARD P. SMOOT & AMANDA LYNN SMOOT, H&W	VOL. 3281 PG. 73	D - 3.20	7 P/E			3505.6268 / 0.08		139392.00 / 3.20		

LEGEND

FEE AREA OF ACQUISITION
R/W AREA OCCUPIED BY EXISTING R/W
P/E PERMANENT EASEMENT
TCE TEMPORARY CONSTRUCTION EASEMENT

* "-" OFFSET IS LEFT OF BASELINE
** "-" CURVE TURNS TO THE LEFT

RIGHT-OF-WAY SHEET 2 OF 2

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

7 - DELETED FEE ON PARCEL 1-R, 2-R, AND 3-R AND CHANGED IT TO PE - NED 09/19/2016

BR 2-234A ON LAKE FRONT DRIVE OVER RED HOUSE BRANCH

CONTRACT	BRIDGE NO.	2-234A
T201407208	DESIGNED BY: NED	
COUNTY	CHECKED BY: CAS	
KENT		

RIGHT-OF-WAY DATA & TABULATION SHEET

SHEET NO. 13
TOTAL SHTS. 13

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