FINAL PLANS

THE STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY UNITS

CONSTRUCTION PLANS FOR:

BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON

CONTRACT NUMBER: T201007202

FEDERAL AID PROJECT NUMBER: EBROS-K040(2)

COUNTY: KENT **M.R. #:** K040

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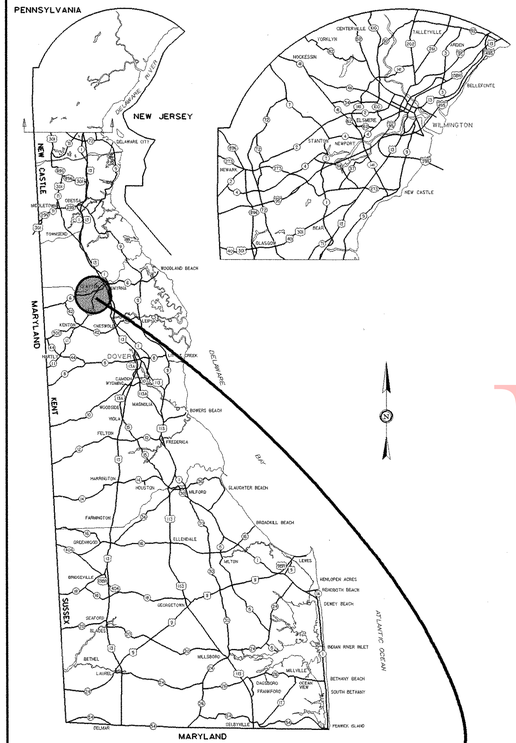
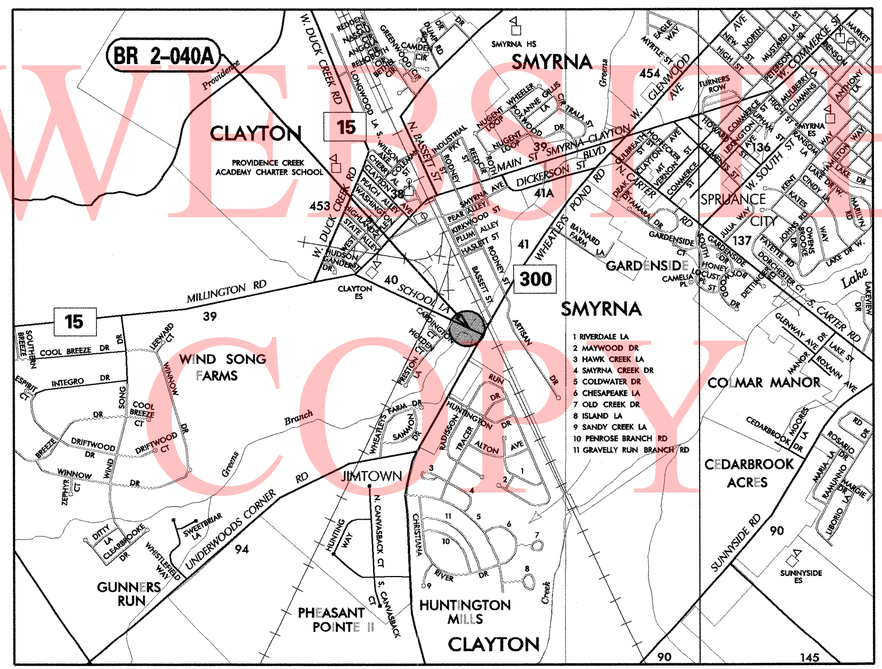


GENERAL LOCATION OF CONTRACT



DESIGN DESIGNATION

FUNCTIONAL CLASS: URBAN LOCAL	D.H.V. PROJECTED: 336	YEAR: 2040
TYPE OF CONSTRUCTION: BRIDGE REPLACEMENT	DESIGN SPEED: 40 M.P.H.	
A.A.D.T. CURRENT: 2042 YEAR: 2008	TRUCKS: 8 %	
A.A.D.T. PROJECTED: 4000 YEAR: 2040	DIRECTION OF DISTRIBUTION: 60 %	

INDEX OF SHEETS

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TOTAL SHEETS: 15

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME
83-072-02	REPLACEMENT OF BRIDGE #40A ON ROAD NO. 40-CLAYTON

PREPARED BY THE CONSULTING FIRM OF

SEAL

RECOMMENDED DATE

RECOMMENDED

SQUAD MANAGER, CONSTRUCTION DATE

GROUP ENGINEER, CONSTRUCTION DATE

ASSISTANT DIRECTOR, TRANSPORTATION SOLUTIONS (CONSTRUCTION) DATE

RECOMMENDED
Vincent W. Davis
STORMWATER ENGINEER
DATE 16 MAR 2011
VINCENT W. DAVIS REGISTERED No. 12898 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
SQUAD MANAGER, TRANSPORTATION SOLUTIONS (PROJECT DEVELOPMENT OR BRIDGE DESIGN)
DATE MARCH 15, 2011
BARRY A. BENTON REGISTERED No. 10774 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
Jiten K. Soneji
BRIDGE DESIGN ENGINEER
DATE March 17, 2011
JITEN K. SONEJI REGISTERED NO. 9207 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
GROUP ENGINEER, PROJECT DEVELOPMENT
DATE
SEAL

RECOMMENDED
Jim T. Pappas III
ASSISTANT DIRECTOR, TRANSPORTATION SOLUTIONS
DATE 3-17-11
JAMES T. PAPPAS III LICENSED No. 10571 DELAWARE PROFESSIONAL ENGINEER
SEAL

APPROVED
Natalie Baumhart
CHIEF ENGINEER
DATE 3/17/11
NATALIE B. BAUMHART REGISTERED No. 9280 DELAWARE PROFESSIONAL ENGINEER
SEAL

LAST REVISED: 8/7/2008
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3/15/2011 30-072-02

EXISTING SYMBOLS

DRAINAGE

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

MANMADE ROADSIDE FEATURES

(TYPE LABEL)	CURB
(TYPE LABEL)	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	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

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
C.M.	PROPERTY MARKER - CONCRETE MON.
I.P.	PROPERTY MARKER - IRON PIPE

UTILITY

	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
TV	CABLE TV DISTRIBUTION BOX
E	ELECTRIC MANHOLE
EM	ELECTRIC METER
E	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
G	GAS MANHOLE
G.M.	GAS METER
G.V.	GAS VALVE
G.P.	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
S	SANITARY SEWER MANHOLE
S.V.	SANITARY SEWER VALVE
VENT	SANITARY SEWER VENT OR CLEANOUT
S.D.F.	SEPTIC DRAIN FIELD
B	TELEPHONE BOOTH
T	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

UTILITY COMPANY FACILITIES

CU-G	CHESAPEAKE UTILITIES - GAS
TC-W	TOWN OF CLAYTON - WATER

PROPOSED SYMBOLS

CONSTRUCTION

	CONCRETE SAFETY BARRIER - PERMANENT
BFS	BIOFILTRATION SWALE
	BUTT JOINT
100+00	CONSTRUCTION BASELINE
	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, TYPES 1 & 3
	GUARDRAIL, TYPE 2
	GUARDRAIL END TREATMENT - PARALLEL
	GUARDRAIL END TREATMENT - PARABOLIC
HC	HORIZONTAL CLEARANCE
	JUNCTION BOX - DRAINAGE
LOC	LIMIT OF CONSTRUCTION
	MANHOLE
	PAVEMENT PATCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK @ 4"
	P.C.C. SIDEWALK @ 6"
	UNDERDRAIN
	UNDERDRAIN OUTLET

CONSTRUCTION PHASING SYMBOLS

	BARRICADE, TYPE 3
	CONCRETE SAFETY BARRIER - PORTABLE
	CONSTRUCTION WARNING SIGN LOCATION
END ROAD WORK	CONSTRUCTION WARNING SIGN
	CRASH CUSHION ARRAY
	DRUM - TRAFFIC CONTROL
	PHASING TRAFFIC FLOW ARROW

LANDSCAPING

	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

EROSION & SEDIMENT CONTROL

DWB	DEWATERING BASIN
	EROSION CONTROL BLANKET
ED	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
PST	PORTABLE SEDIMENT TANK
RSF	REINFORCED SILT FENCE
SBD	SANDBAG DIKE
SB	SANDBAG DIVERSION
	STONE CHECK DAM
SCE	STABILIZED CONSTRUCTION ENTRANCE
SF	SILT FENCE
SP-1	SUMP PIT, TYPE 1
SP-2	SUMP PIT, TYPE 2
ST	SEDIMENT TRAP
ST	SEDIMENT TRAP WITH INLET AS OUTLET
ST	SEDIMENT TRAP PIPE OUTLET
SW	STILLING WELL
	TEMPORARY SWALE
TSD	TEMPORARY SLOPE DRAIN

IDENTIFIERS

A/C	ADJUST BY CONTRACTOR
A/O	ADJUST BY OTHERS
B	CONCRETE SAFETY BARRIER
C	CURB OR CURB & GUTTER
CJB	CONVERT TO JUNCTION BOX
CMH	CONVERT TO DRAINAGE MANHOLE
C/O	CURB OPENING
CR	CURB RAMP / TYPE
CR-W	CURB RAMP / TYPE - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
DI	DRAINAGE INLET
DND	DO NOT DISTURB
FES	FLARED END SECTION
FS	FILTRATION STRUCTURE
GR	GUARDRAIL
JB	JUNCTION BOX
LS	LANDSCAPE PLANTINGS
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
ST	SEDIMENT TRAP
SF	SILT FENCE
UD	UNDERDRAIN

PAVEMENT SECTION(S)

	ROTO-MILL 2" AND RE-SURFACE WITH 2" SUPERPAVE, TYPE C HOT-MIX
	2" SUPERPAVE, TYPE C HOT-MIX 3" SUPERPAVE, TYPE B HOT-MIX 9" GRADED AGGREGATE BASE COURSE, TYPE B
	2" SUPERPAVE, TYPE C HOT-MIX 6" GRADED AGGREGATE BASE COURSE, TYPE B

RIGHT-OF-WAY SYMBOLS

	PROPOSED RIGHT-OF-WAY MONUMENT
PP	EXISTING PROPERTY LINE
EASEMENT TYPE	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
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
100+00	HISTORIC RIGHT-OF-WAY BASELINE

TRAFFIC

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

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON

CONTRACT T201007202	BRIDGE NO. BR 2-040A	LEGEND	SHEET NO. 2
COUNTY KENT	DESIGNED BY: KRL		TOTAL SHTS. 15
	CHECKED BY: BAB		

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. THE CONTRACTOR SHALL GIVE TWO (2) WEEKS NOTICE TO THE PROPERTY OWNER WHEN ANY FIXTURE, SHRUB OR OTHER OBJECT MUST BE REMOVED FROM THE RIGHT OF WAY OR EASEMENT AREA. IF THE OWNER HAS NOT ATTEMPTED TO SALVAGE THIS PROPERTY, THE CONTRACTOR SHALL REMOVE IT WITHOUT OBLIGATION. COMPENSATION SHALL BE INCIDENTAL TO THE CONTRACT.

3. THE ENDS OF ALL CURBS SHALL BE DEPRESSED FLUSH WITH THE PAVEMENT AT A RATIO OF TWELVE TO ONE (12:1) UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

4. THE CONTRACTOR SHALL PROVIDE AND INSTALL PVC SLEEVES (4" INSIDE MINIMUM DIAMETER, 6" INSIDE MAXIMUM DIAMETER) IN PROPOSED CONCRETE SIDEWALKS, ISLANDS, AND MEDIANS FOR FUTURE TRAFFIC SIGN POSTS AS DIRECTED BY THE ENGINEER. THE LOWER END OF THE SLEEVE SHALL SIT ON THE TOP OF THE SUBBASE MATERIAL. THE COST SHALL BE INCIDENTAL TO THE CONTRACT.

5. STAGING AREAS - PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS. ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE CONTRACT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE AREA IS UNPAVED, IT SHALL BE RE-GRADED, TOPSOILED, SEEDED AND MULCHED IN ACCORDANCE WITH DELAWARE STANDARD SPECIFICATIONS 732, 734 AND 735, FOR TOPSOIL, SEED AND MULCH RESPECTIVELY, TO THE SATISFACTION OF THE ENGINEER. THE SEED SHALL ADHERE TO THE SPECIFICATIONS OF SECTION 734 FOR PERMANENT GRASS SEEDING - DRY GROUND. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH REESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE.

6. SITE REVIEWER - AN EROSION CONTROL SITE REVIEWER SHALL BE A PERSON FROM THE CONTRACTOR'S STAFF ASSIGNED TO EROSION AND SEDIMENT CONTROL IMPLEMENTATION AND MAINTENANCE AND SHALL BE REQUIRED ON SPECIFIC PROJECTS. THE NAME AND DNREC CERTIFICATION NUMBER OF EACH SITE REVIEWER SO REQUIRED SHALL BE SUBMITTED TO THE DEPARTMENT AT THE TIME OF BID. THE NAME OF THE DELAWARE REGISTERED PROFESSIONAL ENGINEER PROVIDING DIRECTION AND SUPERVISION OF THE SITE REVIEWER, AS REQUIRED IN SECTION 12.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, SHALL ALSO BE SUBMITTED TO THE DEPARTMENT AT THE TIME OF BID. THE SITE REVIEWER REQUIREMENTS IN EFFECT ON THIS PROJECT SHALL BE MARKED WITH AN "X" BELOW:

EROSION POTENTIAL FOR THIS PROJECT	SITE REVIEWER REQUIREMENT
( ) INSIGNIFICANT	NONE
( ) MINOR	CONTRACTOR CERTIFICATION COURSE TRAINING ONLY, AS DEFINED IN SECTION 13 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
(X) MEDIUM	AT THE TIME OF BID OF THE CONTRACT, EITHER THE SUPERINTENDENT OR A SEPARATE INDIVIDUAL FROM THE CONTRACTOR'S STAFF SHALL BE A CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 12 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
( ) MAJOR	SUPERINTENDENT AND AN INDIVIDUAL FROM CONTRACTOR'S STAFF SHALL BE CCR. ONE INDIVIDUAL FROM THE CONTRACTOR'S STAFF MUST BE A CCR AT THE TIME OF BID OF THE CONTRACT. THE SUPERINTENDENT MUST BECOME A CCR WITHIN ONE YEAR AFTER THE AWARD OF CONTRACT.

7. ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR INCLUDE:

(X)	NONE
( )	ASCII DATA FILES WITH COORDINATES AND ELEVATIONS FOR PROPOSED POINTS AS SELECTED BY THE ENGINEER.
( )	RASTER FILES, IN .CAL FILE FORMAT, FOR ALL PLAN SHEETS.
( )	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).

8. 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.
( )	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.

9. THE DISTURBED AREA FOR THIS PROJECT IS 0.522 ACRES.

PROJECT NOTES

SECTION 100

1. UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR SHALL, AS PART OF HIS PROJECT SCHEDULE, SUBMIT TO THE ENGINEER AN ESTIMATE OF THE MONTHLY PAYMENTS EXPECTED TO BE RECEIVED ON THE CONTRACT. THIS WILL BE REFERENCED AS THE "MONTHLY PAYMENT CHART".

   A CHART IN MICROSOFT EXCEL, MICROSOFT WORD, OR HAND WRITTEN FORMAT WILL BE ACCEPTABLE FOR THIS PURPOSE. THE CHART SHOULD INCLUDE, AS A MINIMUM, COLUMNS FOR THE MONTH, YEAR AND ESTIMATED MONTHLY PAYMENTS. THE TOTAL OF ALL ESTIMATED MONTHLY PAYMENTS SHOULD EQUAL THE AWARDED CONTRACT TOTAL BID PRICE.

   THE ENGINEER MAY REQUEST AN UPDATED "MONTHLY PAYMENT CHART" AT HIS DISCRETION, DEPENDING ON THE ACCURACY OF THE INITIAL ESTIMATES AND ACCORDING TO THE OVERALL NEEDS OF THE DEPARTMENT.

   THE "MONTHLY PAYMENT CHART" WILL NOT BE CONSIDERED A BINDING DOCUMENT BY EITHER THE CONTRACTOR OR THE DEPARTMENT AND IS CONSIDERED SOLELY INFORMATIONAL.

   ON PROJECTS REQUIRING CPM SCHEDULES, THE CONTRACTOR MAY, BUT IS NOT REQUIRED TO, "COST LOAD" THE CPM SCHEDULE IN ORDER TO GENERATE THE MONTHLY SPEND PAYMENT CHART.

   COSTS TO PREPARE AND/OR UPDATE THE "MONTHLY PAYMENT CHART" ARE ADDRESSED AS FOLLOWS:
   A. ON CONTRACTS REQUIRING CPM SCHEDULES AND UPDATES, PREPARATION OF THE INITIAL CHART SHALL BE INCIDENTAL TO ITEM 763508. UPDATES SHALL BE INCIDENTAL TO ITEM 763509.

   B. ON CONTRACTS NOT REQUIRING CPM SCHEDULES, THE COST TO PREPARE AND UPDATE THE "MONTHLY PAYMENT CHART" SHALL BE INCLUDED IN ITEM 763000 - INITIAL EXPENSE.

SECTION 200

2. SHORING SHALL BE REQUIRED FOR ANY EXCAVATION EXCEEDING 5 FEET IN HEIGHT, THE COST OF SHORING SHALL BE INCIDENTAL TO ITEM # 207000 - EXCAVATION AND BACKFILL FOR STRUCTURES. IN LIEU OF SHORING, THE CONTRACTOR MAY USE A 2:1 CUT SLOPE. NO PAYMENT SHALL BE MADE FOR ADDITIONAL EXCAVATION OR FILL OUTSIDE THE LIMITS AS DEFINED IN SECTION 207 OF THE STANDARD SPECIFICATIONS.

3. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   - REMOVAL OF THE EXISTING C.M.P.'S AND PORTION OF HEADWALL SHOWN ON PLANS. EXISTING SPILLWAY SHALL NOT BE DISTURBED
   - REMOVAL OF ALL EXISTING GUARDRAIL.

SECTION 600

4. STRUCTURAL ELEMENTS OF PORTLAND CEMENT CONCRETE SHALL BE AS NOTED:
   (F'c = 28 DAY COMPRESSIVE STRENGTH)
   CLASS A - HEADWALL (F'c = 4.5 KSI)
   MIX REQUIREMENTS SHALL CONFORM TO SECTION 812 OF THE SPECIFICATIONS. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE ANY APPROVED CONCRETE ADDITIVES TO ACCELERATE THE CONCRETE CURING TIME FOR CAST-IN-PLACE CONCRETE SO THAT IT REACHES THE 28 DAY COMPRESSIVE STRENGTH BEFORE THE ROAD IS OPEN TO TRAFFIC. PAYMENT SHALL BE INCIDENTAL TO THE RESPECTIVE CONCRETE BID ITEM.

5. REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60. ALL REINFORCING STEEL SHALL HAVE A CLEAR COVER OF 2" UNLESS OTHERWISE SPECIFIED ON THE PLANS. EPOXY COATED REINFORCING STEEL SHALL CONFORM TO AASHTO M284 (ASTM D3963).

6. LIMITS OF COURSE AGGREGATE FOR FOUNDATION STABILIZATION AND SUBFOUNDATION BACKFILL (ITEM #608000) SHALL EXTEND 18" OUTSIDE OF THE NEAT LINE PERIMETER OF THE VERTICAL FACES OF THE PIPES.

SECTION 700

7. WHERE PROPOSED CONCRETE SIDEWALK IS CONSTRUCTED TO MEET EXISTING SIDEWALK, THE EXISTING SIDEWALK SHALL BE SAWCUT AT THE TIE-IN POINT OR MEET THE NEAREST EXISTING SIDEWALK JOINT. ALL SAW CUTTING SHALL BE FULL DEPTH, UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER AND SHALL BE PAID FOR UNDER ITEM 762002 - SAWCUTTING, CONCRETE, FULL DEPTH.

8. 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. ALL HOT-MIX SAW CUTTING SHALL BE FULL DEPTH, UNLESS OTHERWISE NOTED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

9. 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.

10. THE CONTRACTOR SHALL DELIVER ALL MILLED MATERIAL TO THE DELAWARE DEPARTMENT OF TRANSPORTATION'S CHESWOLD MAINTENANCE YARD. THE MATERIAL SHALL BE NEATLY STOCKPILED AT THE YARD. COSTS FOR THIS WORK SHALL BE INCIDENTAL TO ITEM 760000 - PAVEMENT MILLING, HOT-MIX.

MISCELLANEOUS

11. THE CONTRACTOR SHALL CONTACT MICHAEL ELLER, THE CHIEF OF SCHEDULING FOR DART FIRST STATE, 14 DAYS PRIOR TO THE START OF CONSTRUCTION AT 302-576-6061.

12. DESIGN CRITERIA: 2010 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5TH EDITION, USING AASHTO HL93 FOR LIVE LOAD, AND 25 PSF FOR FUTURE WEARING SURFACE.

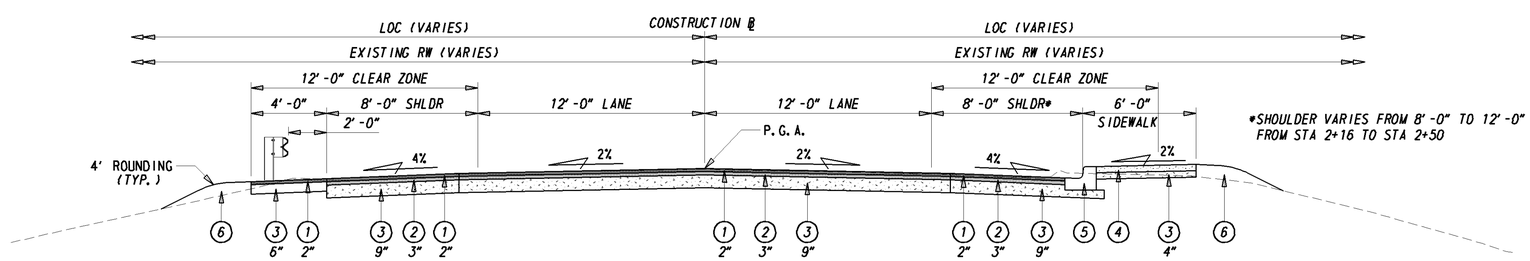
13. HYDRAULIC DATA
    DRAINAGE AREA = 2.10 SQ. MILES
    DESIGN FREQUENCY = 25 YEARS — 50 YR FLOOD ELEVATION = 32.63 FT
    DESIGN DISCHARGE = 469 CFS — PROPOSED OPENING = 3 X 28.27 SF

14. THE PROPOSED STRUCTURE HAS BEEN ANALYZED FOR THE EFFECTS OF SCOUR IN ACCORDANCE WITH HEC-18-'EVALUATING SCOUR AT BRIDGES' AND HEC-23-'BRIDGE SCOUR AND STREAM INSTABILITY COUNTERMEASURES.' SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE WORST CASE OF THE OVERTOPPING FLOOD OR THE 500-YR FLOOD EVENT.
    DESIGN EVENT = OVERTOPPING — DESIGN VELOCITY = 11.25 FT/SEC
    DESIGN DISCHARGE = 832 CFS — DESIGN DEPTH OF FLOW = 4.88 FT

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

TYP. SECTION LEGEND

1. SUPERPAVE, TYPE C HOT MIX, 160 GYRATIONS, PG 64-22. (ITEM #401645)
2. SUPERPAVE, TYPE B HOT MIX, 160 GYRATIONS, PG 64-22. (ITEM #401648)
3. GRADED AGGREGATE BASE COURSE TYPE B (ITEM #302007)
4. 4" P.C.C. SIDEWALK (ITEM #705001)
5. INTEGRAL P.C.C. CURB & GUTTER, TYPE 3 (ITEM #701022)
6. 6" TOPSOIL (ITEM #732002), PERMANENT GRASS SEEDING DRY GROUND (ITEM #734013), AND SOIL RETENTION BLANKET MULCH, TYPE 3 (ITEM #735533)



TYPICAL ROADWAY SECTION

(STA 1+50 TO STA 2+50)
1/4" = 1'-0"

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LAST REVISED: 5/5/2009
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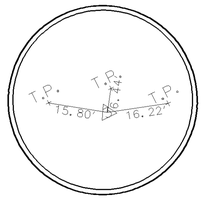
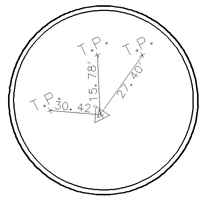
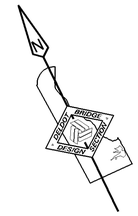
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	BR 2-40A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON	CONTRACT T201007202	BRIDGE NO. 2-040A	GENERAL NOTES, PROJECT NOTES & TYPICAL SECTION	SHEET NO. 3
			COUNTY KENT	DESIGNED BY: KRL		TOTAL SHTS. 15
				CHECKED BY: BAB		



TRAVERSE POINT #3
PK NAIL



TRAVERSE POINT #4
PK NAIL



DATUM REFERENCE:
HORIZONTAL - THIS PROJECT IS REFERENCED TO THE DELAWARE STATE PLANE COORDINATE SYSTEM (NAD 83/07).

VERTICAL - THIS PROJECT IS REFERENCED TO NAVD 88 AND BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARKS ESTABLISHED BY THE DELAWARE DEPARTMENT OF TRANSPORTATION:
GPS #SCL1, ELEVATION 39.55
GPS #SCLA, ELEVATION 38.19

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CONSTRUCTION ALIGNMENT CONTROL				
POINT	STATION	OFFSET	NORTHING	EASTING
5000	0+00.00	0.00	468224.16	595377.74
5001	3+98.43	0.00	468050.32	595736.24

HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
3	2+05.22	-19.21	468151.91	595570.78	34.83
4	2+73.52	38.42	468070.25	595607.08	35.87

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 20 40 60
FEET

BR 2-040A ON K040 SCHOOL LANE
OVER DUCK CREEK, CLAYTON

CONTRACT	BRIDGE NO.	2-040A
T201007202	DESIGNED BY: KRL	
COUNTY		
KENT	CHECKED BY: BAB	

HORIZONTAL AND
VERTICAL CONTROL

SHEET NO. 4
TOTAL SHTS. 15

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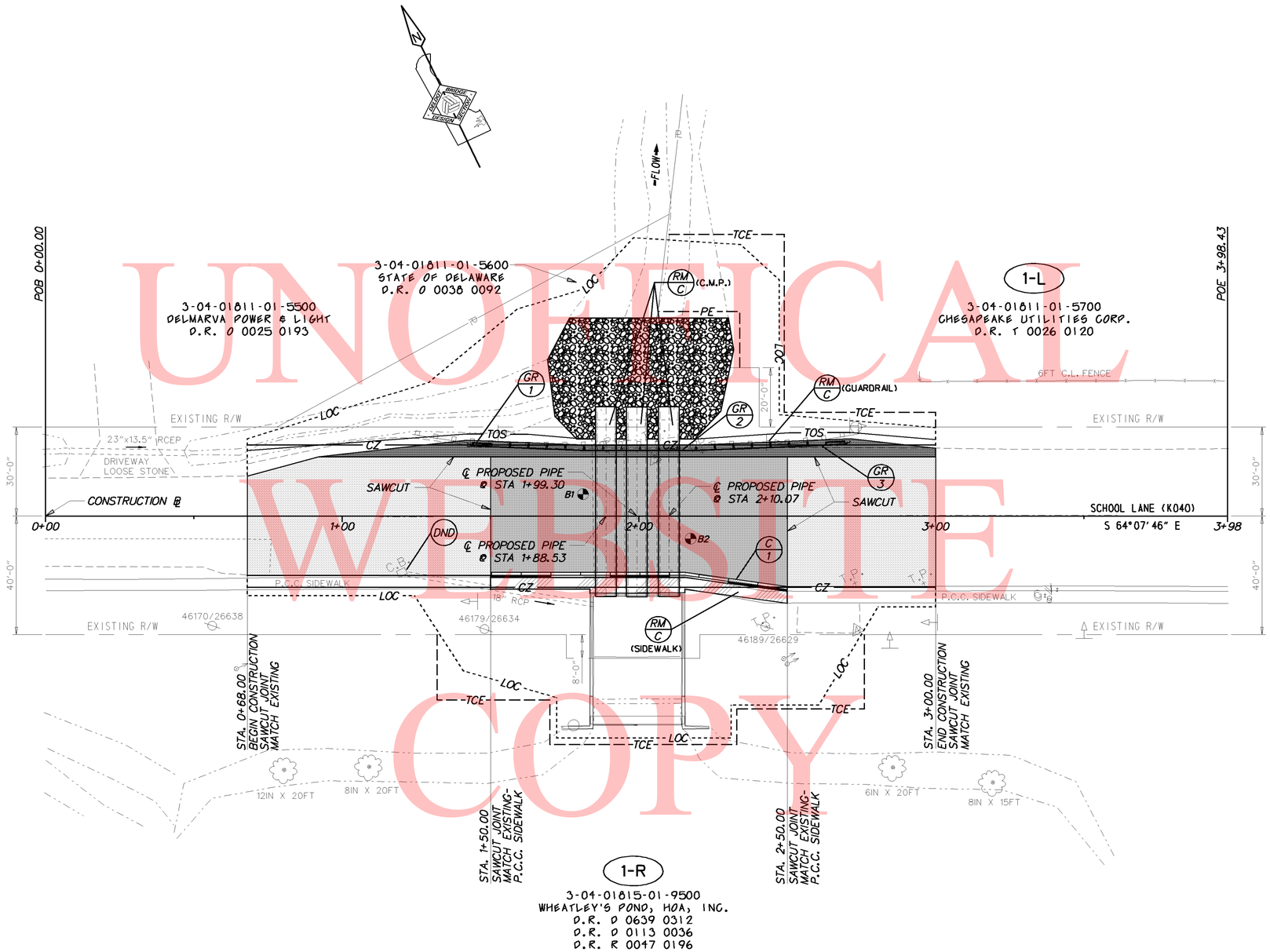

UNOFFICIAL WEBSITE COPY

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
1	INTEGRAL P.C.C. CURB AND GUTTER / 3	100.50'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
1	GUARDRAIL END TREATMENT ATTENUATOR/1	1+41.91	24'-22'	37.50'
2	GUARDRAIL, TYPE 1	1+81.38	22'	37.50'
3	GUARDRAIL END TREATMENT ATTENUATOR/1	2+19.38	22'-24'	50.00'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON

CONTRACT	BRIDGE NO.	2-040A
T201007202	DESIGNED BY: KRL	
COUNTY		
KENT	CHECKED BY: BAB	

CONSTRUCTION PLAN

SHEET NO. 5
TOTAL SHTS. 15

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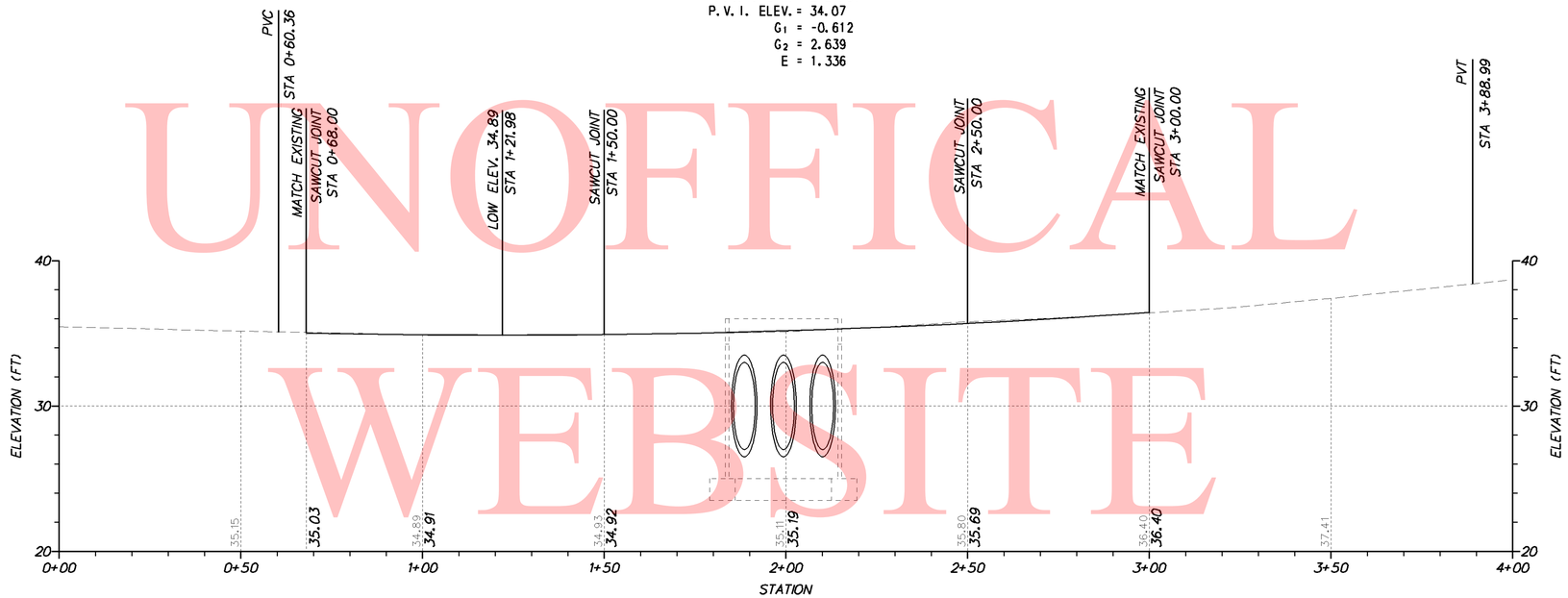
VERTICAL CURVE DATA

L.V.C. = 328.63'
P.V.I. STA. = 2+24.67
P.V.I. ELEV. = 34.07
G_1 = -0.612
G_2 = 2.639
E = 1.336



School Lane (K040) Profile

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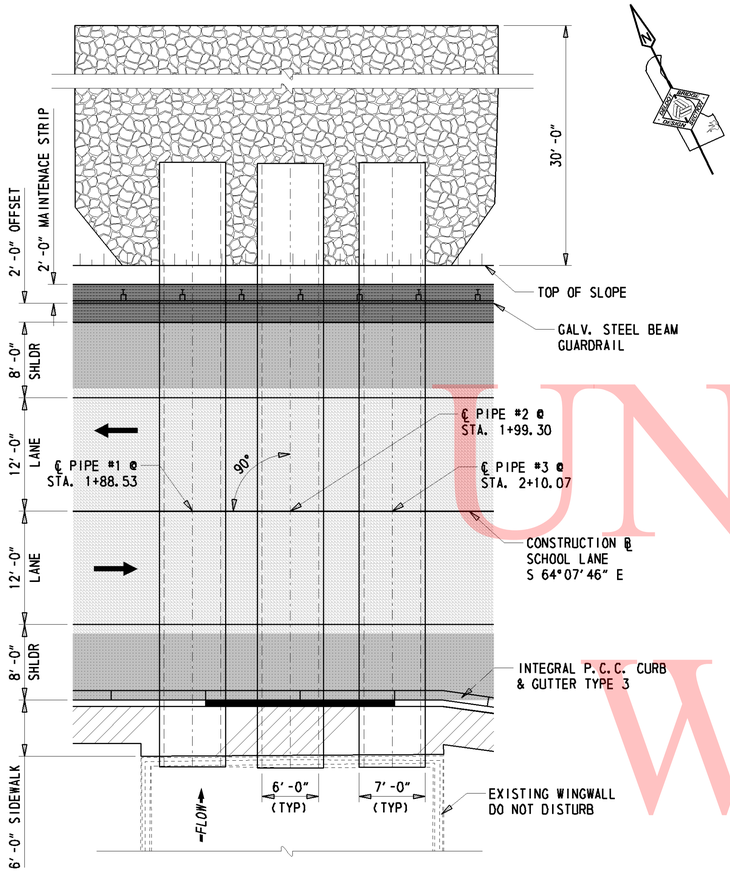
VERTICAL SCALE FEET 15 10 5 0

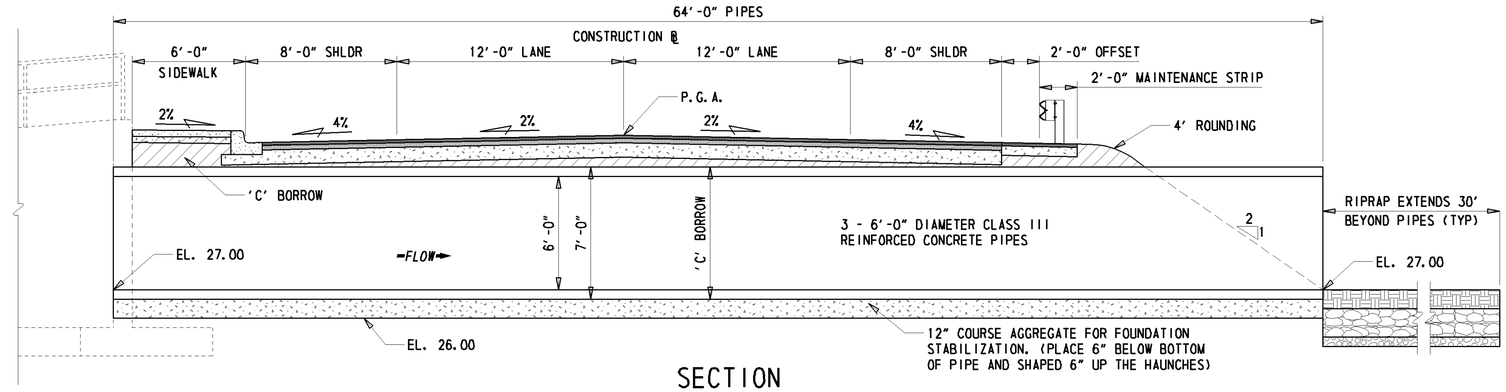
Y:\KENT\040\BRIDGE\T201007202\PLANS\PF.DGN

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 20 40 60 FEET	BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON	CONTRACT T201007202	BRIDGE NO. BR 2-040A	PROFILES	SHEET NO. 6
				COUNTY KENT	DESIGNED BY: KRL		TOTAL SHTS. 15
					CHECKED BY: BAB		



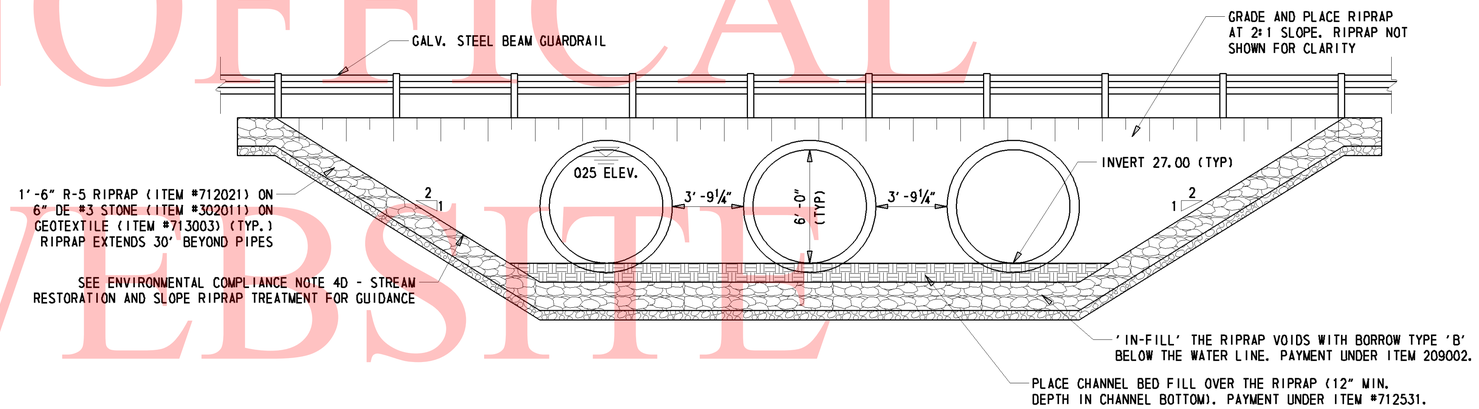
PLAN

1/8" = 1'-0"



SECTION

1/4" = 1'-0"



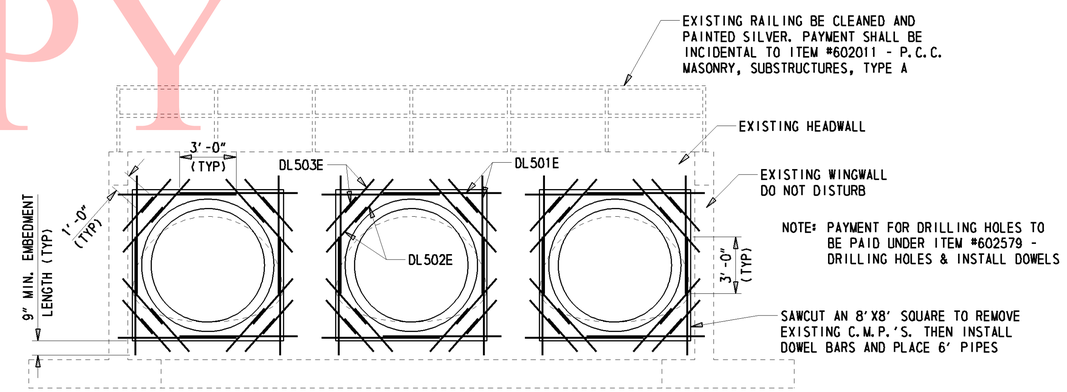
DOWNSTREAM ELEVATION

1/4" = 1'-0"

CAST-IN-PLACE CONCRETE PARAPET REINFORCING BAR LIST								
QTY.	SIZE	LENGTH	MARK	TYPE	A	B	C	D
48	5	6-3 0	DL501E	STR		6-3 0		
48	5	3-2 0	DL502E	STR		3-2 0		
48	5	2-4 0	DL503E	STR		2-4 0		

NOTES:

1. ALL EXISTING C.M.P.'S SHALL BE REMOVED IN THEIR ENTIRETY BY SAWCUTTING AN 8'X8' SQUARE IN THE EXISTING HEADWALL FOR EACH PIPE. DOWEL BARS SHALL THEN BE DRILLED AND INSTALLED IN ACCORDANCE WITH ITEM 602579 AND AS SHOWN IN THE UPSTREAM ELEVATION DETAIL WITH A MIN EMBEDMENT LENGTH OF 0'-9" FOR ALL DOWEL BARS.
2. PROPOSED 6'-0" CLASS III REINFORCED CONCRETE PIPES SHALL CONFORM TO AASHTO M170-6 SPECS. PIPES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS EQUAL TO 4000 PSI.
3. AFTER PLACING PROPOSED PIPES, CONTRACTOR SHALL PLACE FORMWORK AND POUR CLASS 'A' CONCRETE AROUND THE GAPS BETWEEN THE EXISTING HEADWALL AND PROPOSED PIPES.



UPSTREAM ELEVATION

1/4" = 1'-0"

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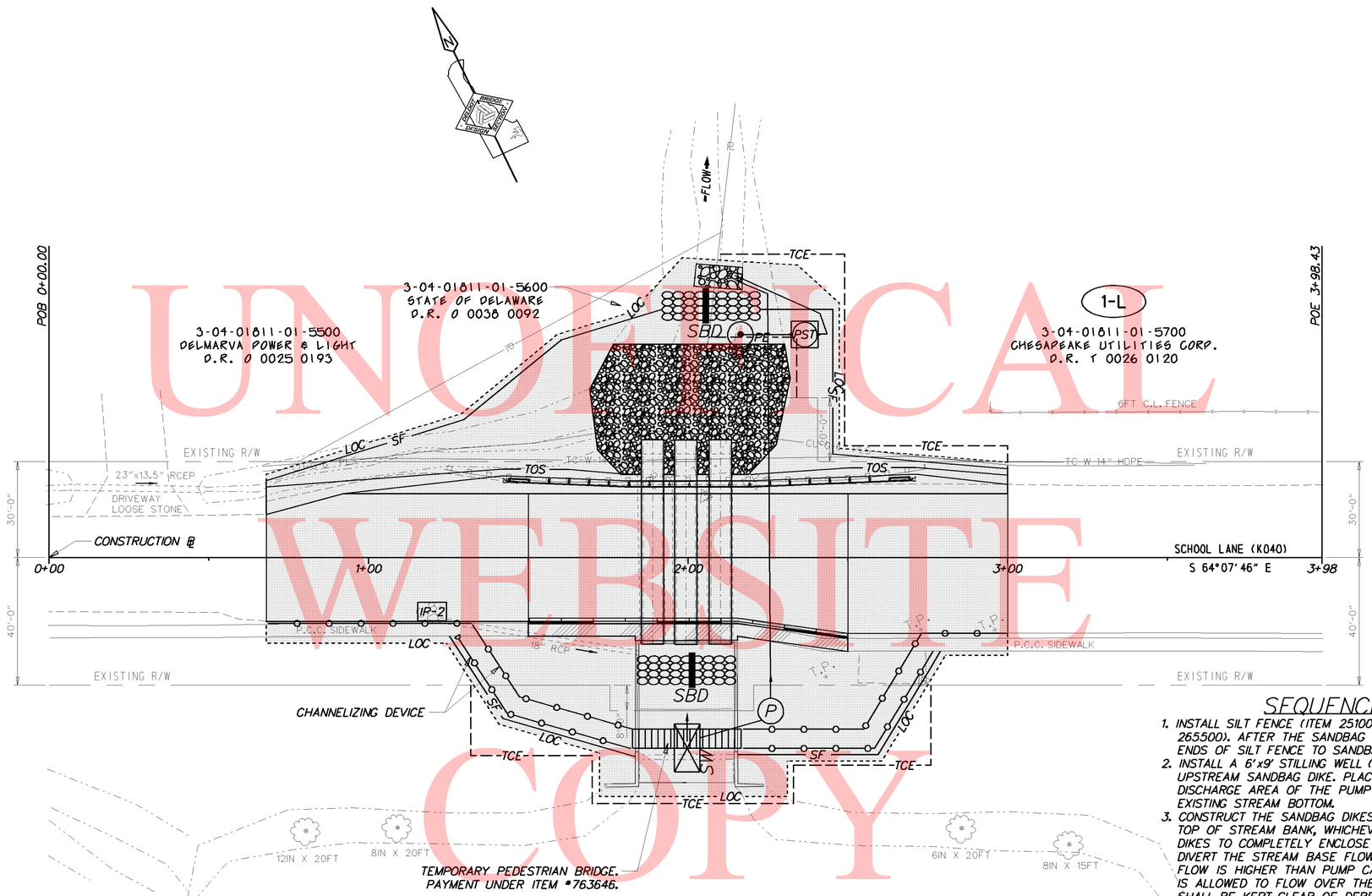
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	BR 2-40A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON	CONTRACT T201007202	BRIDGE NO. 2-40A	BRIDGE PLAN, SECTION & ELEVATION	SHEET NO. 7
			COUNTY KENT	DESIGNED BY: KRL		TOTAL SHTS. 15
				CHECKED BY: BAB		



1-R

3-04-01815-01-9500
WHEATLEY'S POND, HOA, INC.
D.R. O 0639 0312
D.R. O 0113 0036
D.R. R 0047 0196

SEQUENCE OF CONSTRUCTION

1. INSTALL SILT FENCE (ITEM 251000) EXCEPT CONNECTION TO SANDBAG DIKES (ITEM 265500). AFTER THE SANDBAG DIKES ARE CONSTRUCTED IN STEP 3, CONNECT ENDS OF SILT FENCE TO SANDBAG DIKES TO COMPLETELY ENCLOSE THE WORK AREA.
2. INSTALL A 6'x9' STILLING WELL (ITEM 265500) JUST UPSTREAM OF THE PROPOSED UPSTREAM SANDBAG DIKE. PLACE R5 RIPRAP (ITEM 265500) AT THE PROPOSED DISCHARGE AREA OF THE PUMP WITH THE TOP OF STONES LEVEL WITH THE EXISTING STREAM BOTTOM.
3. CONSTRUCT THE SANDBAG DIKES, AT THE LOCATIONS SHOWN, 3 FEET HIGH OR TO TOP OF STREAM BANK, WHICHEVER IS LOWER. CONNECT SILT FENCE TO SANDBAG DIKES TO COMPLETELY ENCLOSE THE WORK AREA. USE PUMP (ITEM 265500) TO DIVERT THE STREAM BASE FLOW AROUND THE ENCLOSED WORK AREA. WHEN THE FLOW IS HIGHER THAN PUMP CAPACITY DURING RAINFALL EVENTS, THE STREAM FLOW IS ALLOWED TO FLOW OVER THE SANDBAG DIKE. THEREFORE, THE ENCLOSED AREA SHALL BE KEPT CLEAR OF DEBRIS AND OBSTRUCTIONS AT THE END OF EACH WORKDAY.
4. INSTALL SUMP PIT, TYPE 2 (ITEM 263001) AND A PORTABLE SEDIMENT TANK (ITEM 270000) AS A SEDIMENT TRAPPING DEVICE. DEWATER THE WORK AREA IN ACCORDANCE WITH SECTION 111 OF DELDOT STANDARD SPECIFICATIONS. DISCHARGE CLEAN EFFLUENT FROM THE APPROVED SEDIMENT TRAPPING DEVICE AT THE RIPRAPPED DISCHARGE AREA FOR THE DIVERSION PUMP OR ON OTHER STABLE OUTLET AS APPROVED BY THE ENGINEER.
5. INSTALL CHANNELIZING DEVICE AND TEMPORARY PEDESTRIAN BRIDGE AS SHOWN ON THIS PLAN SHEET TO SEPARATE ALL PEDESTRIAN TRAFFIC FROM THE CONSTRUCTION AREA. PAYMENT UNDER ITEM 763646 - MAINTENANCE OF TRAFFIC FOR PEDESTRIAN ACCESS.
6. SAWCUT A 8'X8' SQUARE IN THE EXISTING HEADWALL FOR EACH PIPE AND REMOVE THE 3 EXISTING C.M.P.'S, EXISTING HOTMIX, GUARDRAIL, AND P.C.C. SIDEWALK WITHIN THE CONSTRUCTION LIMITS SHOWN ON CONSTRUCTION PLAN SHEET.
7. IF THE CONTRACTOR CHOOSES TO USE ON-SITE CHANNEL BED FILL, EXCAVATE AND STOCKPILE THE EXISTING STREAMBED MATERIAL IN ACCORDANCE WITH THE SPECIAL PROVISIONS OF ITEM #712531-CHANNEL BED FILL.
8. DRILL AND INSTALL DOWEL BARS INTO EXISTING HEADWALL AS SHOWN ON SHEET #7, THEN INSTALL 3 REINFORCED CONCRETE PIPES, RIPRAP AND CHANNEL BED FILL.
9. CONSTRUCT SLOPES, PLACE RIPRAP, AND COMPLETE ALL ROAD WORK.
10. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES WHEN THEY ARE NO LONGER NEEDED. STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THESE PLANS AND AS DIRECTED BY THE ENGINEER.

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 20 40 60 FEET	BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON	CONTRACT T201007202	BRIDGE NO. 2-040A	CONSTRUCTION SEQUENCE AND EROSION CONTROL PLAN	SHEET NO. 8
				COUNTY KENT	DESIGNED BY: KRL		TOTAL SHTS. 15
					CHECKED BY: BAB		

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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): NATIONWIDE PERMIT #3(a) (NO PCN)
DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): PROJECT CONSISTENT WITH DEL. CODE CH. 72, SECTION 7217(b) AS AMENDED BY SB 186
DNREC - WATER QUALITY (WQC) & COASTAL ZONE CONSISTENCY (CZM): WAIVED (PROJECT IS NOT LOCATED IN CPW)

* 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 - NONE
ENDANGERED SPECIES - NONE
MIGRATORY BIRDS - NONE

3. CULTURAL RESOURCE ISSUES:

A. COORDINATION ONGOING

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 UPSTREAM/DOWNSTREAM 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, TEMPORARY PIPES AND/OR 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.

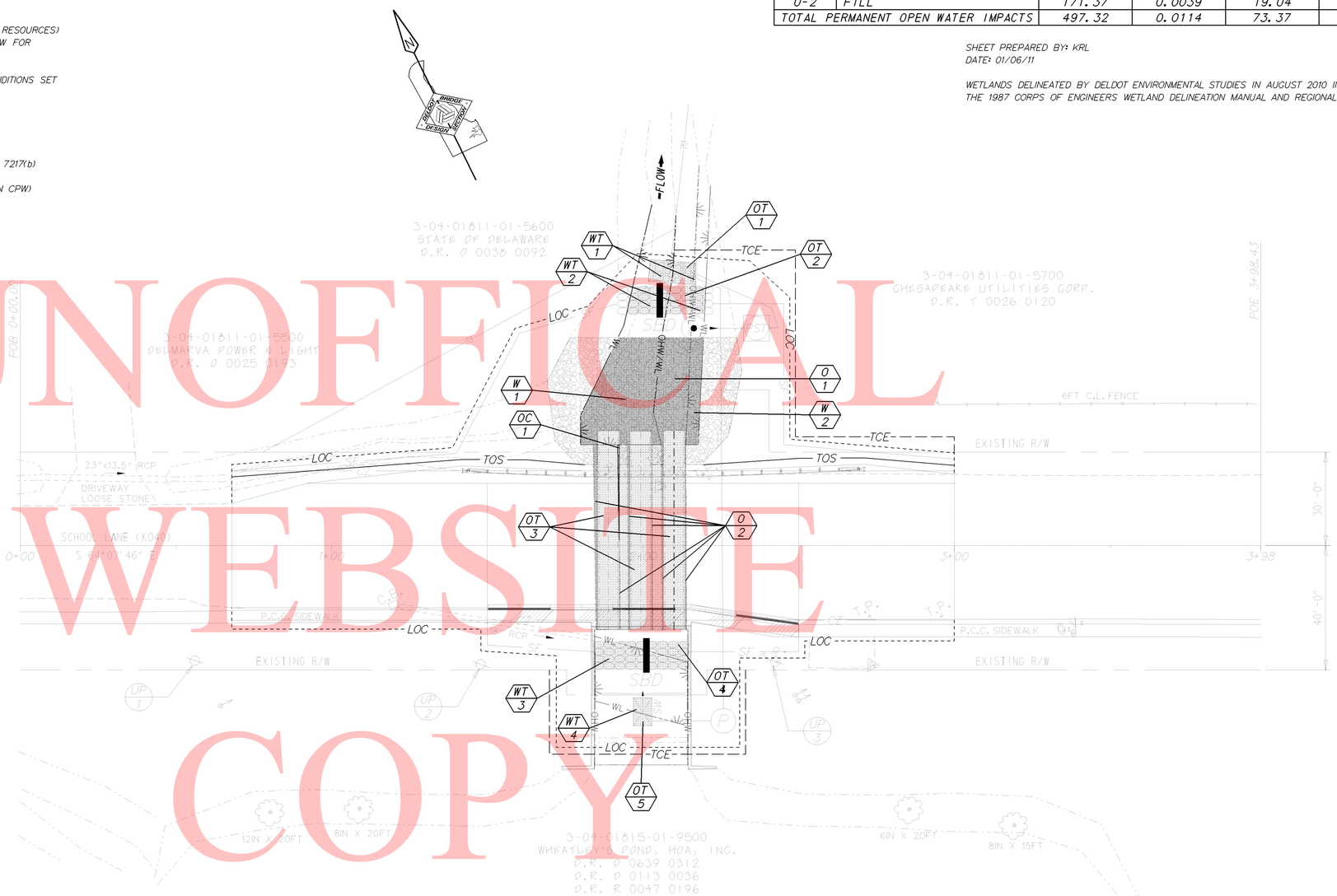
D. ALL RIPRAP ON THE STREAM BANK, OUTSIDE THE CHANNEL BED, SHALL BE CHOKED WITH DELAWARE #57 STONE, FILLED WITH TOPSOIL, SEEDED AND MULCHED WITH SOIL RETENTION BLANKET MULCH, TYPE 3 (ITEM 735533). PLACE JUST ENOUGH CHOKE MATERIAL TO PREVENT THE LOSS OF TOPSOIL THROUGH THE RIPRAP, AND THEN FINISH FILLING 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 PERMANENT GRASS SEEDING WET GROUND (ITEM NO. 734015) FROM STREAM BASE FLOW ELEVATION TO 2' UP THE SLOPE AND PERMANENT GRASS SEEDING DRY GROUND (ITEM NO. 734013) ON THE REMAINING 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.

PERMANENT OPEN WATER IMPACT AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
O-1	RIPRAP	325.95	0.0075	54.33	COE/DNREC
O-2	FILL	171.37	0.0039	19.04	COE/DNREC
TOTAL PERMANENT OPEN WATER IMPACTS		497.32	0.0114	73.37	COE/DNREC

SHEET PREPARED BY: KRL
DATE: 01/06/11

WETLANDS DELINEATED BY DELDOT ENVIRONMENTAL STUDIES IN AUGUST 2010 IN ACCORDANCE WITH THE 1987 CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND REGIONAL SUPPLEMENT.



LEGEND

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

C = CREATION AREA T = TEMPORARY IMPACT
O = OPEN WATER IMPACT W = WETLAND IMPACT

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	RIRRAP	47.19	0.0011	7.87	COE/DNREC
OT-2	SANDBAGS	70.55	0.0016	23.52	COE/DNREC
OT-3	FILL	1344.00	0.0103	224.00	COE/DNREC
OT-4	SANDBAGS	83.55	0.0019	27.83	COE/DNREC
OT-5	STILLING WELL	22.71	0.0005	3.79	COE/DNREC
TOTAL TEMPORARY OPEN WATER IMPACTS		1568.00	0.0154	287.01	COE/DNREC

OPEN WATER CREATION AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OC-1	CHANNEL CREATION	7.49	0.0002	1.25	COE/DNREC
TOTAL OPEN WATER CREATION AREAS		7.49	0.0002	1.25	COE/DNREC

TEMPORARY WETLAND IMPACT AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
WT-1	RIPRAP	57.13	0.0011	9.52	COE
WT-2	SANDBAGS	148.84	0.0034	49.61	COE
WT-3	SANDBAGS	194.80	0.0045	64.93	COE
WT-4	STILLING WELL	31.29	0.0007	5.22	COE
TOTAL TEMPORARY WETLAND IMPACT AREAS		432.06	0.0097	129.28	COE

PERMANENT WETLAND IMPACT AREA SCHEDULE

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
W-1	RIPRAP	620.20	0.0142	103.37	COE
W-2	RIPRAP	137.84	0.0032	22.97	COE
TOTAL PERMANENT WETLAND IMPACT AREAS		758.04	0.0174	126.34	COE

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CHANGEABLE MESSAGE BOARDS

CMS-1

PRIOR TO DETOUR
(10 Days prior to beginning of detour)

SCHOOL LANE CLOSED	STARTING ON XX/XX/XX

CMS-1

DURING DETOUR

SCHOOL LANE CLOSED	FOLLOW POSTED DETOUR

CMS-2

PRIOR TO DETOUR
(10 Days prior to beginning of detour)

XXXXXXXX XXXXXXXX XXXXXXXX	XXXXXXXX XXXXXXXX XXXXXXXX

CMS-2

DURING DETOUR

XXXXXXXX XXXXXXXX XXXXXXXX	XXXXXXXX XXXXXXXX XXXXXXXX

SPECIAL SIGNS

U

48" × 72"

School Ln Closed at 300
FOLLOW DETOUR

6"C 6"C 6"C 6"C 6"C 6"C

D/G ORANGE
BLACK LEGEND

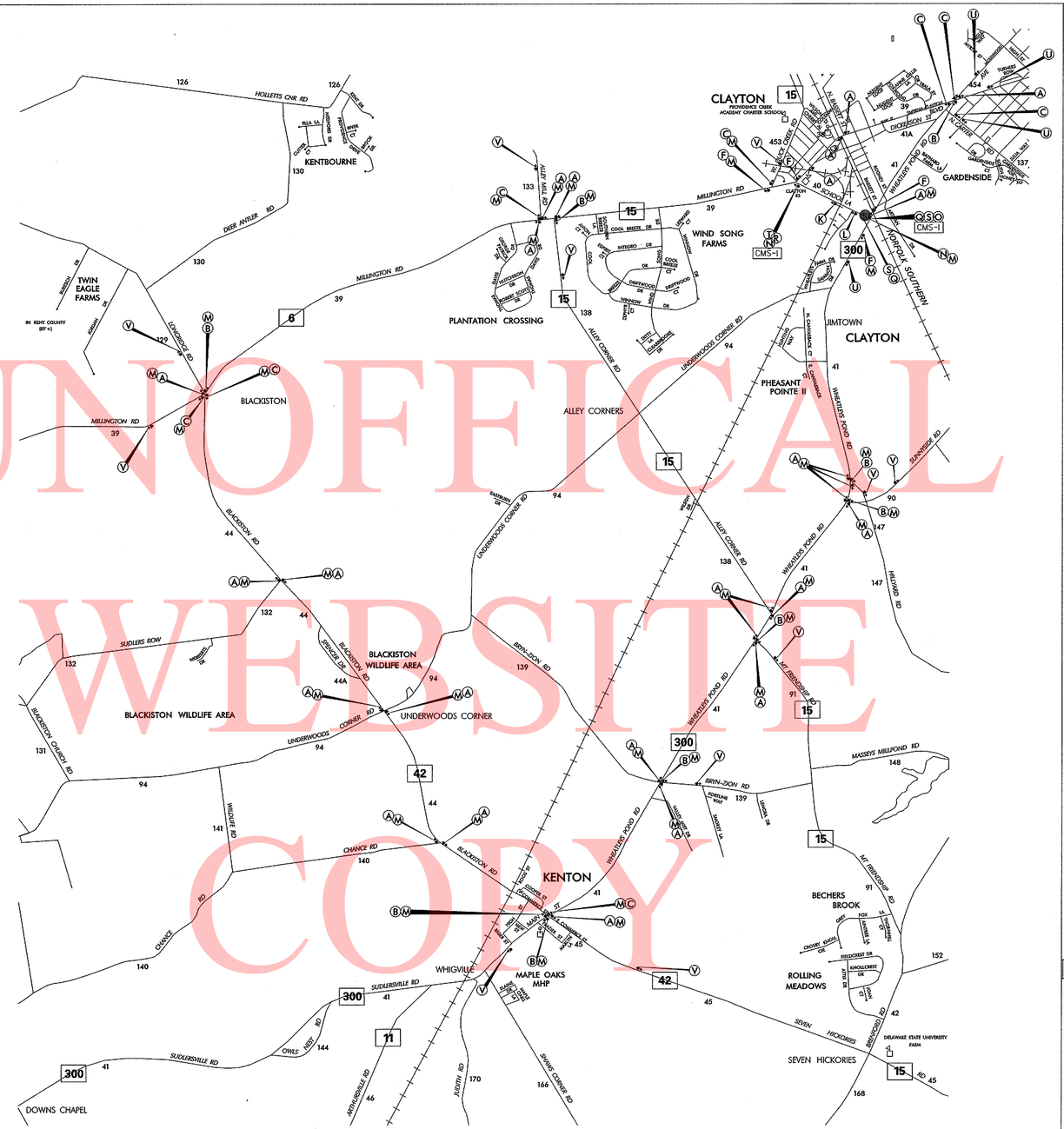
V

48" × 72"

School Ln Closed at 300
FOLLOW TRUCK DETOUR

6"C 6"C 6"C 6"C 6"C 6"C

D/G ORANGE
BLACK LEGEND



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A DETOUR

B DETOUR

C DETOUR

D DETOUR

E DETOUR

F END DETOUR

G DETOUR AHEAD

H DETOUR 1000 FT

I DETOUR 500 FT

J ROAD CLOSED AHEAD

K ROAD CLOSED 1000 FT

L ROAD CLOSED 500 FT

M TRUCK

N DETOUR

O DETOUR

P ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY

Q ROAD CLOSED

R ROAD CLOSED TO THRU TRAFFIC

S

T

GENERAL NOTES

1. ALL DETOUR SIGNING INCLUDING, TRAILBLAZERS, ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR IN COMPLIANCE TO THE DE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
2. THE CONTRACTOR SHALL COMPLY WITH GUIDELINES IN "THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (DE- MUTCD PART 6) FOR LIGHTS, BARRICADES AND SIGNS.(AS PER LATEST REVISION)
3. FIELD CONDITIONS MAY DICTATE CHANGES AT SOME TIME DURING THE LIFE OF THE CONTRACT. IN THE EVENT OF OMISSIONS OR CORRECTIONS, THE SIGNING PROVISIONS OF THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES WILL PREVAIL.
4. SIGNS J THROUGH L AND P THROUGH R ,THE WORD (ROAD) SHOULD BE CHANGED TO RAMP, R/R OR BRIDGE WHERE APPLICABLE.
5. WARNING SIGNS SHOULD BE MOUNTED ON BREAKAWAY POSTS AND HAVE RETROREFLECTIVE FLUORESCENT SHEETING.
6. "S" BARRICADES SHALL COMPLETELY RUN THE FULL WIDTH OF ROADWAY.
7. BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

RECOMMENDED Michael Fleming DATE: 3/3/11	RECOMMENDED James King DATE: 3/3/11	RECOMMENDED ____ DATE: ____	APPROVED CHIEF SAFETY OFFICER [signature] DATE: 3-3-11	APPROVED TRAFFIC ENGINEER [signature] DATE: 3/3/11

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUM / REVISIONS

NOT TO SCALE

BR 2-040A ON SCHOOL LANE OVER DUCK CREEK, CLAYTON

CONTRACT	ROAD NO.	K040
T201007202	DESIGNED BY:	MF
COUNTY		
KENT	CHECKED BY:	

DETOUR PLAN

SHEET NO.

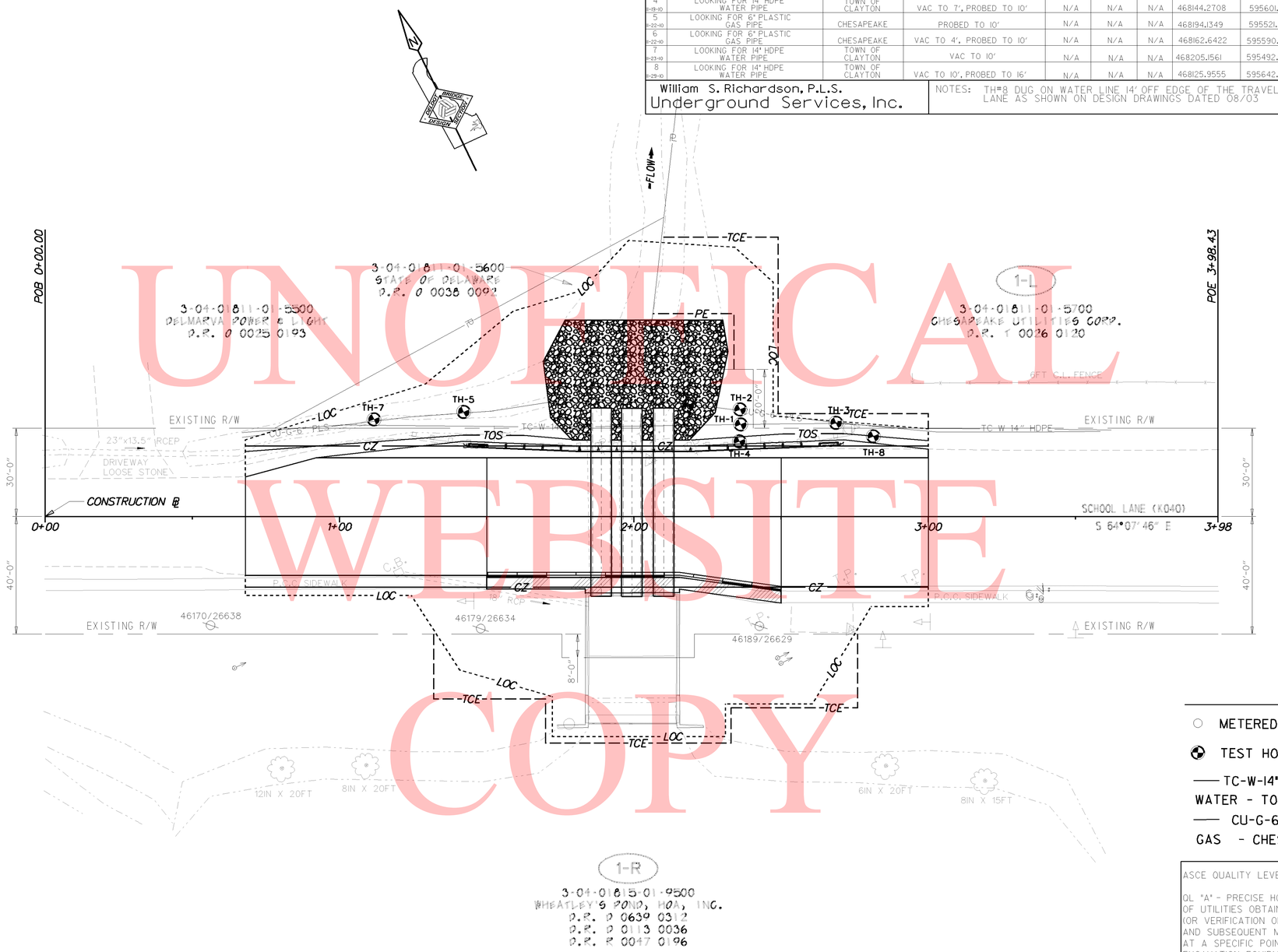
TOTAL SHTS.

TEST HOLE	ACTUAL SIZE, MATERIAL, TYPE OF UTILITY	OWNER	UTILITY CONDITION GOOD	POOR	OTHER	REF. MARK ELEV.	UTILITY TOP EL.	UTILITY BOTTOM EL.	WIDTH	NORTHING	EASTING	SURFACE/DEPTH ASPHALT	CONC.	SOIL	GENERALIZED SOIL TYPE SELECT FILL	ROCK	SAND	CLAY	OTHER
1 8-18-10	LOOKING FOR 14" HDPE WATER LINE	TOWN OF CLAYTON	PROBED TO 17'				N/A	N/A	N/A	468149.2503	595603.9438			X		X	X	X	WATER
2 8-18-10	LOOKING FOR 6" PLASTIC GAS PIPE	CHESAPEAKE	PROBED TO 12'				N/A	N/A	N/A	468153.9369	595605.9861			X					MUD AND WATER
3 8-19-10	6" PLASTIC GAS PIPE	CHESAPEAKE	NO VISUAL			HUB 35.41'	26.47'	N/A	N/A	468135.6133	595633.3713			X		X	X	X	MUD AND WATER
4 8-19-10	LOOKING FOR 14" HDPE WATER PIPE	TOWN OF CLAYTON	VAC TO 7', PROBED TO 10'				N/A	N/A	N/A	468144.2708	595601.0580	X							GRAVEL AND WATER
5 8-22-10	LOOKING FOR 6" PLASTIC GAS PIPE	CHESAPEAKE	PROBED TO 10'				N/A	N/A	N/A	468194.1349	595521.1602			X					GRAVEL AND WATER
6 8-22-10	LOOKING FOR 6" PLASTIC GAS PIPE	CHESAPEAKE	VAC TO 4', PROBED TO 10'				N/A	N/A	N/A	468162.6422	595590.6289			X					GRAVEL AND WATER
7 8-23-10	LOOKING FOR 14" HDPE WATER PIPE	TOWN OF CLAYTON	VAC TO 10'				N/A	N/A	N/A	468205.1561	595492.6241			X		X	X		GRAVEL AND WATER
8 8-25-10	LOOKING FOR 14" HDPE WATER PIPE	TOWN OF CLAYTON	VAC TO 10', PROBED TO 16'				N/A	N/A	N/A	468125.9555	595642.7322			X					MUD, GRAVEL AND WATER

William S. Richardson, P.L.S.
Underground Services, Inc.

NOTES: TH#8 DUG ON WATER LINE 14' OFF EDGE OF THE TRAVEL LANE AS SHOWN ON DESIGN DRAWINGS DATED 08/03

CHECKED BY: WSR
Date: 12/06/10



LEGEND

- METERED DEPTH (NOT TO BE USED FOR DESIGN)
- TEST HOLES
- TC-W-14" HDPE
- WATER - TOWN OF CLAYTON 14" HDPE (QL-C)
- CU-G-6" PLS
- GAS - CHESAPEAKE UTILITY 6" PLS W/TRACE WIRE

ASCE QUALITY LEVEL STANDARD DEFINITIONS:

QL "A" - PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT [TEST HOLE] USING MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT.

QL "B" - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES.

QL "C" - INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

QL "D" - INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

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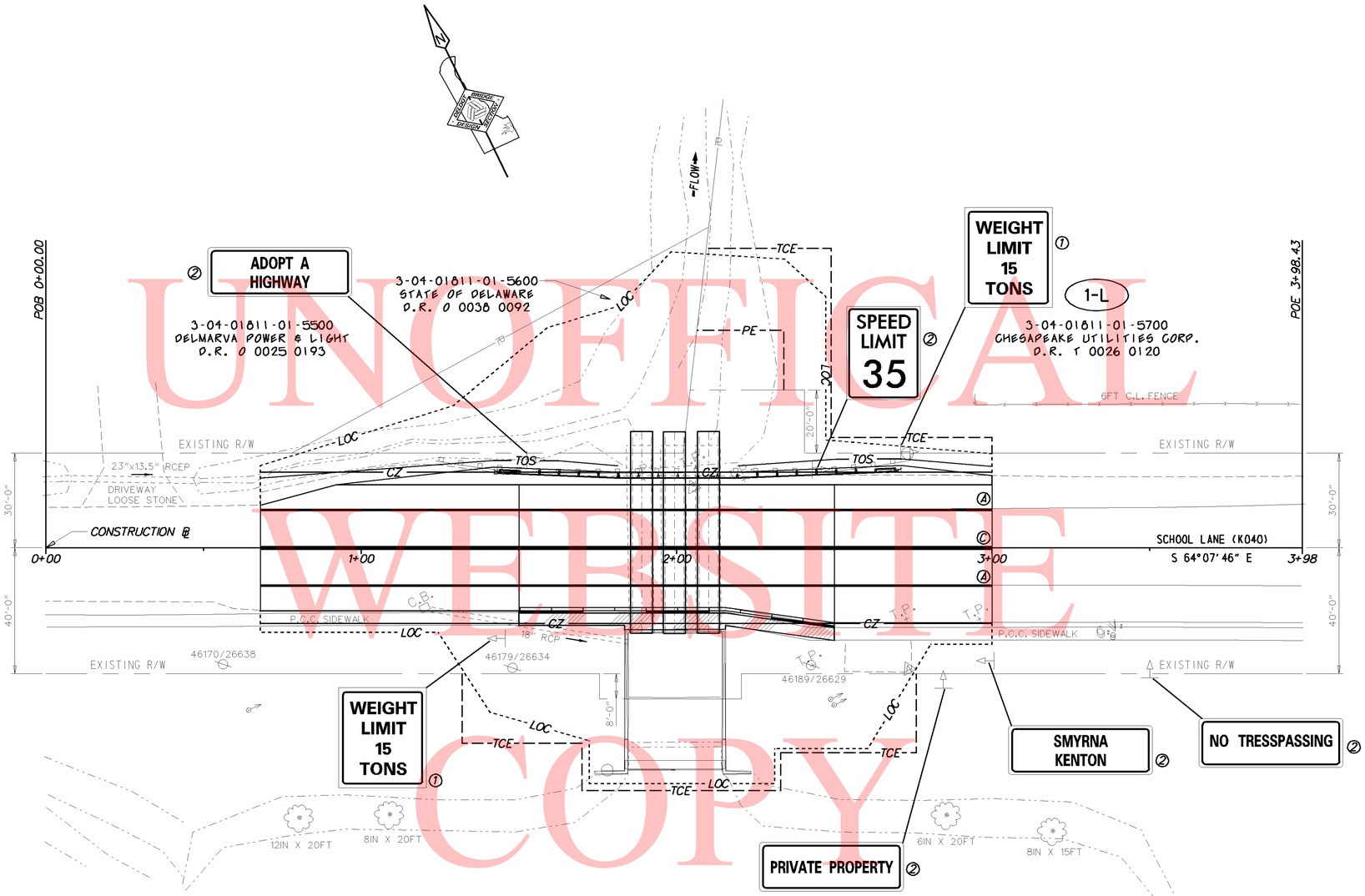
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 20 40 60 FEET	BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON	CONTRACT T201007202	BRIDGE NO. 2-040A	UTILITY PLAN	SHEET NO. 11
				COUNTY KENT	DESIGNED BY: KRL		TOTAL SHTS. 15
					CHECKED BY: BAB		

SIGNING LEGEND	
①	REMOVE EXISTING SIGN
②	EXISTING SIGN TO REMAIN
③	PLACE NEW SIGN
④	RENEW EXISTING SIGN
⑤	REPOSITION EXISTING SIGN



1-R

3-04-01815-01-9500
WHEATLEY'S POND, HOA, INC.
D.R. D 0639 0312
D.R. D 0113 0036
D.R. R 0047 0196

PAVEMENT MARKINGS LEGEND		
SYMBOL	ITEM	QUANTITY
Ⓐ	4" SOLID WHITE EPOXY RESIN PAVEMENT STRIPING (ITEM 748506)	464 LF
Ⓒ	4" SOLID DOUBLE YELLOW EPOXY RESIN PAVEMENT STRIPING (ITEM 748506)	464 LF

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

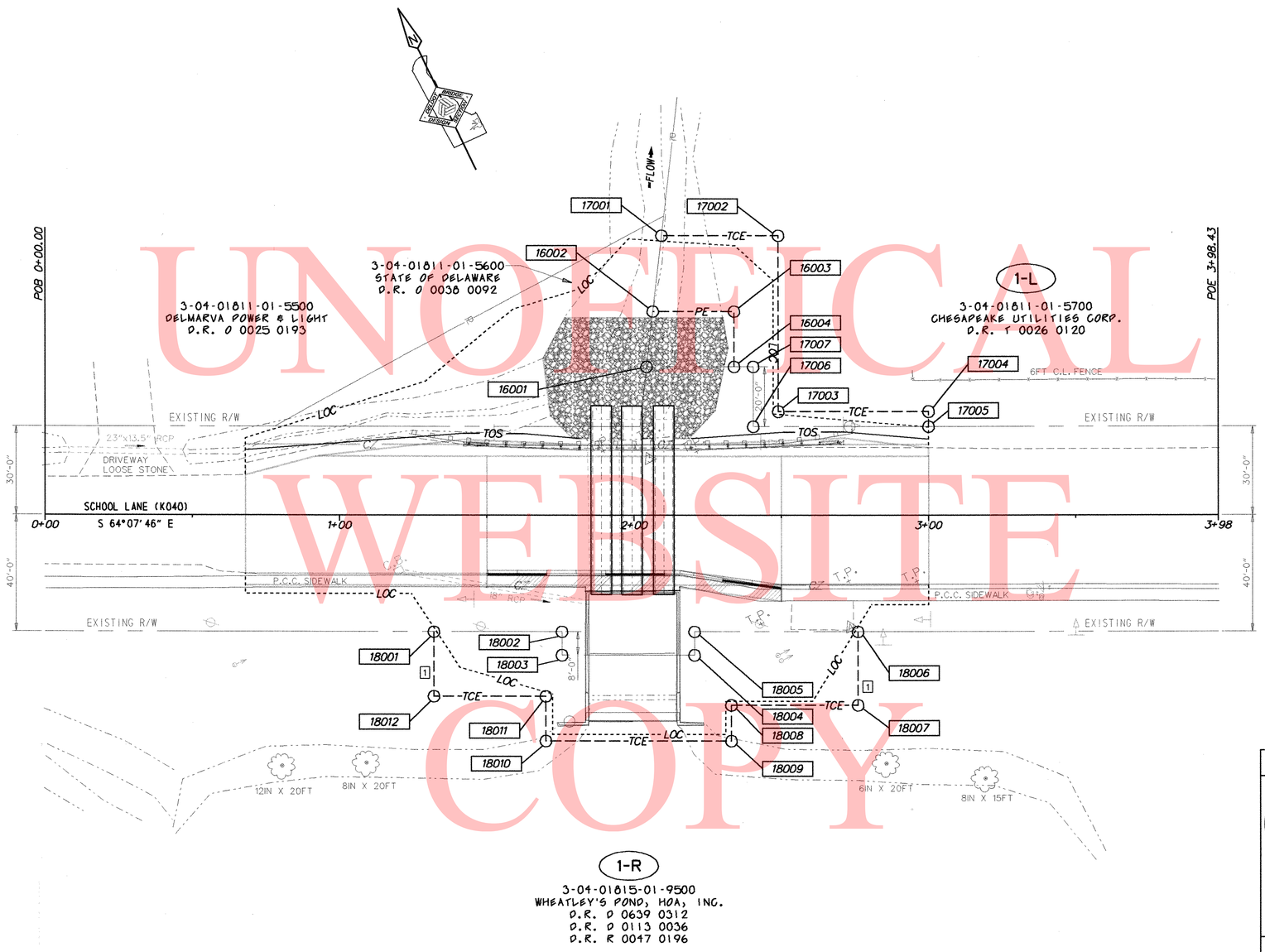
SCALE 0 20 40 60 FEET

BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON

CONTRACT	BRIDGE NO. 2-040A
T201007202	DESIGNED BY: KRL
COUNTY	
KENT	CHECKED BY: BAB

SIGNING, STRIPING AND CONDUIT PLAN

SHEET NO.
12
TOTAL SHTS.
15



1-R

3-04-01815-01-9500
WHEATLEY'S POND, HOA, INC.
D.R. D 0639 0312
D.R. D 0113 0036
D.R. R 0047 0196

ORIGINAL SIGNATURE DATE: OCT 26, 2010

RECOMMENDED WITH REVISION #1

TEAM SUPPORT SQUAD MANAGER	DATE 2/2/11
TEAM SUPPORT ENGINEER	DATE 2.2.11
ASSISTANT DIRECTOR, ENGINEERING SUPPORT	DATE 2/2/11

"AS-ACQUIRED" PLANS

I CERTIFY THAT ALL PROPOSED RIGHT-OF-WAY HAS BEEN ACQUIRED IN THE NAME OF THE STATE OF DELAWARE AND THAT THESE PLANS ACCURATELY DEPICT THE NATURE AND EXTENT OF THE REAL ESTATE SECTION ACQUISITION UNDER THIS PROJECT.

CHIEF, REAL ESTATE — DATE

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

1 HAD TO EXPAND THE LIMITS OF THE TCE TAKE FROM PARCEL 1-R DUE TO A PEDESTRIAN ACCESS PATH THAT IS NEEDED DURING CONSTRUCTION

SCALE 0 20 40 60 FEET

BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON

CONTRACT	BRIDGE NO.	2-040A
T201007202	DESIGNED BY: KRL	
COUNTY	CHECKED BY: BAB	
KENT		

RIGHT-OF-WAY PLAN

SHEET NO. 13
TOTAL SHTS. 15

211/2011 30-072-02

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ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
3-04-01815-01-9500	(1-R) WHEATLEY'S POND, HOA, INC.	TCE	D.R. D 0639 0312	24.100

1

ALIGNMENT NUMBER & DESCRIPTION: 5000 - SCHOOL LANE CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
18001	5000	1+32.00	40.00	468130.5757	595479.0582						
18002	5000	1+75.50	40.00	468111.5950	595518.1988	S 64°07'46.23" E	43.5000				
18003	5000	1+75.50	48.00	468104.3967	595514.7081	S 25°52'13.77" W	8.0000				
18004	5000	2+20.50	48.00	468084.7615	595555.1983	S 64°07'46.23" E	45.0000				
18005	5000	2+20.50	40.00	468091.9598	595558.6890	N 25°52'13.77" E	8.0000				
18006	5000	2+76.00	40.00	468067.7430	595608.6269	S 64°07'46.23" E	55.5000				
18007	5000	2+76.00	65.00	468045.2484	595597.7185	S 25°52'13.77" W	25.0000				
18008	5000	2+33.00	65.00	468064.0110	595559.0278	N 64°07'46.23" W	43.0000				
18009	5000	2+33.00	77.00	468053.2136	595553.7918	S 25°52'13.77" W	12.0000				
18010	5000	1+70.00	77.00	468080.7029	595497.1055	N 64°07'46.23" W	63.0000				
18011	5000	1+70.00	62.00	468094.1996	595503.6505	N 25°52'13.77" E	15.0000				
18012	5000	1+32.00	62.00	468110.7805	595469.4588	N 64°07'46.23" W	38.0000				
18001	5000	1+32.00	40.00	468130.5757	595479.0582	N 25°52'13.77" E	22.0000				

FIGURE 18001 AREA = 3882.0000 SQ. FT. (0.0891 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
3-04-01811-01-5700	(1-L) CHESAPEAKE UTILITIES CORP.	TCE	D.R. T 0026 0120	1.120

ALIGNMENT NUMBER & DESCRIPTION: 5000 - SCHOOL LANE CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
17001	5000	2+09.38	-95.00	468218.2825	595607.5891						
17002	5000	2+49.00	-95.00	468200.9948	595643.2385	S 64°07'46.23" E	39.6200				
17003	5000	2+49.00	-35.00	468147.0078	595617.0582	S 25°52'13.77" W	60.0000				
17004	5000	3+00.00	-35.00	468124.7545	595662.9471	S 64°07'46.23" E	51.0000				
17005	5000	3+00.00	-30.00	468120.2556	595660.7654	S 25°52'13.77" W	5.0000				
17006	5000	2+40.50	-30.00	468146.2178	595607.2283	N 64°07'46.23" W	59.5000				
17007	5000	2+40.50	-50.00	468164.2134	595615.9551	N 25°52'13.77" E	20.0000				
16004	5000	2+34.00	-50.00	468167.0496	595610.1065	N 64°07'46.23" W	6.5000				
16003	5000	2+34.00	-69.00	468184.1455	595618.3970	N 25°52'13.77" E	19.0000				
16002	5000	2+06.42	-69.00	468196.1797	595593.5810	N 64°07'46.23" W	27.5800				
17001	5000	2+09.38	-95.00	468218.2825	595607.5891	N 32°21'55.56" E	26.1679				

FIGURE 17001 AREA = 1778.6000 SQ. FT. (0.0408 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
3-04-01811-01-5700	(1-L) CHESAPEAKE UTILITIES CORP.	P/E	D.R. T 0026 0120	1.120

ALIGNMENT NUMBER & DESCRIPTION: 5000 - SCHOOL LANE CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
16001	5000	2+04.25	-50.00	468180.0307	595583.3380						
16002	5000	2+06.42	-69.00	468196.1797	595593.5810	N 32°23'09.75" E	19.1235				
16003	5000	2+34.00	-69.00	468184.1455	595618.3970	S 64°07'46.23" E	27.5800				
16004	5000	2+34.00	-50.00	468167.0496	595610.1065	S 25°52'13.77" W	19.0000				
16001	5000	2+04.25	-50.00	468180.0307	595583.3380	N 64°07'46.23" W	29.7500				

FIGURE 16001 AREA = 544.6350 SQ. FT. (0.0125 ACRES)

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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

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

1 HAD TO EXPAND THE LIMITS OF THE TCE TAKE FROM PARCEL 1-R DUE TO A PEDESTRIAN ACCESS PATH THAT IS NEEDED DURING CONSTRUCTION

BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON

CONTRACT: T201007202
COUNTY: KENT
BRIDGE NO.: 2-040A
DESIGNED BY: KRL
CHECKED BY: BAB

RIGHT-OF-WAY DATA SHEET

SHEET NO. 14
TOTAL SHTS. 15

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COUNTY ASSESSMENT PARCEL NUMBER	PLAN SHEET NUMBER	OWNERSHIP OF RECORD	TITLE SOURCE	PROPERTY AREA BEFORE ACQUISITION (ACRE) D=DEED C=CALCULATED A=ASSESMENT	ACQUISTITION CODE FEE, R/W, P/E, TCE	AREA TO BE ACQUIRED				PROPERTY AREA REMAINING (SQ. FEET /ACRES)	DEED RECORD OF ACQUISTITION	REMARKS
						ACQUISITION (SQ. FEET /ACRES)	AREA OCCUPIED BY EXISTING RIGHT OF WAY (SQ. FEET /ACRES)	EASEMENT PERMANENT (SQ. FEET /ACRES)	EASEMENT TEMPORARY (SQ. FEET /ACRES)			
3-04-01815-01-9500	13	(1-R) WHEATLEY'S POND, HOA, INC.	D.R. D 0639 0312	D - 24.10	TCE				3882.00 / 0.09	1049796.00 / 24.10		1
3-04-01811-01-5700	13	(1-L) CHESAPEAKE UTILITIES CORP.	D.R. T 0026 0120	D - 1.12	TCE				1778.60 / 0.04			
					P/E			544.635 / 0.01		48787.20 / 1.12		

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ACQUISTITION CODES

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

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

1 HAD TO EXPAND THE LIMITS OF THE TCE TAKE FROM PARCEL 1-R DUE TO A PEDESTRIAN ACCESS PATH THAT IS NEEDED DURING CONSTRUCTION

BR 2-040A ON K040 SCHOOL LANE OVER DUCK CREEK, CLAYTON

CONTRACT T201007202
COUNTY KENT
BRIDGE NO. 2-040A
DESIGNED BY: KRL
CHECKED BY: BAB

RIGHT-OF-WAY TABULATION SHEET

SHEET NO. 15
TOTAL SHTS. 15

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