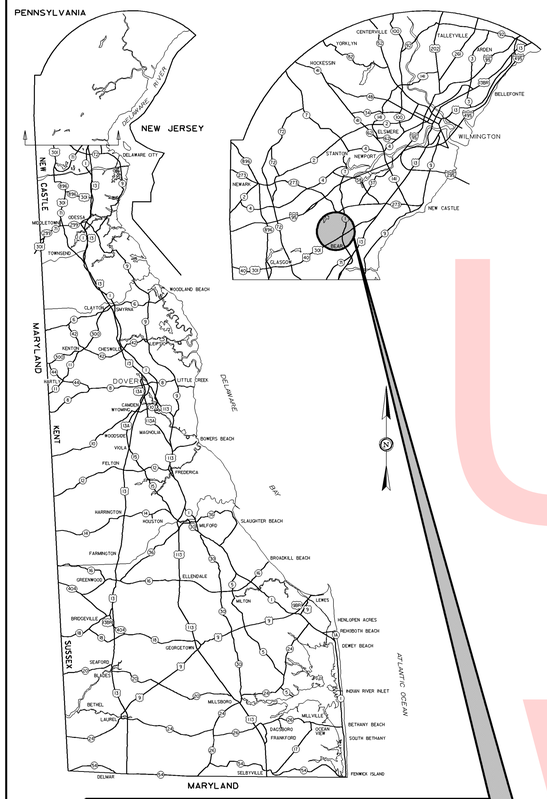


GENERAL LOCATION OF CONTRACT

THE STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY UNITS

CONSTRUCTION AND RIGHT-OF-WAY PLANS FOR:

BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

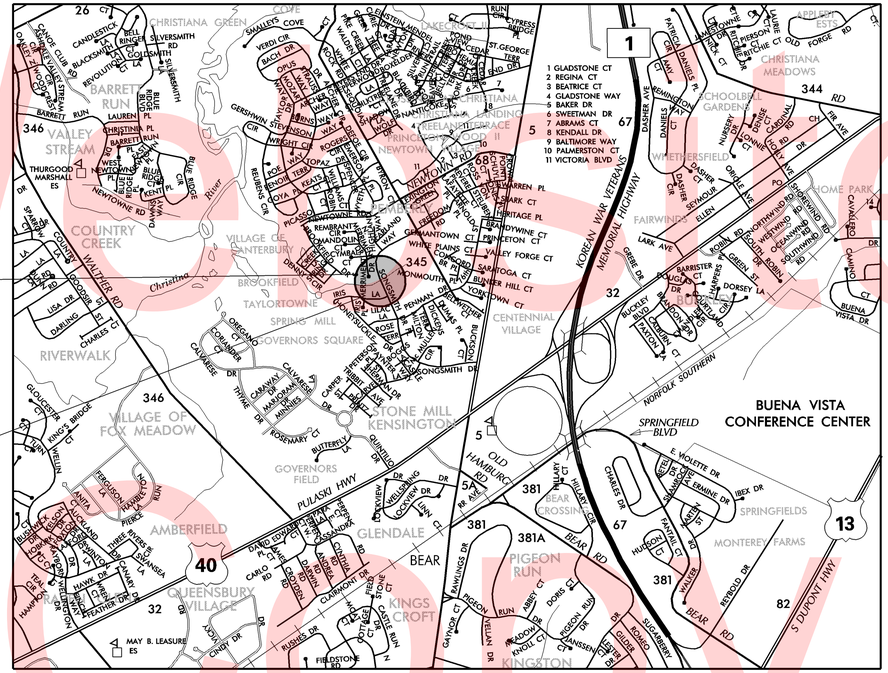
CONTRACT NUMBER: T201407103

FEDERAL AID PROJECT NUMBER: EBROS-N291(01)

COUNTY: NEW CASTLE **M.R. #:** N/A

BEGIN CONTRACT STATION 16+50

END CONTRACT STATION 19+70



RECOMMENDED

Edward C. Fisher — 01/06/2016
SQUAD MANAGER, CONSTRUCTION — DATE

Christopher Costello — 01/13/2016
GROUP ENGINEER, CONSTRUCTION — DATE

John A. Sergi — 01/13/2016
ASSISTANT DIRECTOR, CONSTRUCTION — DATE

DESIGN DESIGNATION

FUNCTIONAL CLASS: URBAN LOCAL ROAD	D.H.V. PROJECTED: 260	YEAR: 2040
TYPE OF CONSTRUCTION: PIPE REPLACEMENT	DESIGN SPEED: 30 M.P.H.	
A.A.D.T. CURRENT: 3325 YEAR: 2014	TRUCKS: 6 %	
A.A.D.T. PROJECTED: 4300 YEAR: 2040	DIRECTION OF DISTRIBUTION: 60 %	

INDEX OF SHEETS

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11	CONSTRUCTION SEQUENCE AND EROSION CONTROL PLAN-PHASE 1
12	CONSTRUCTION SEQUENCE AND EROSION CONTROL PLAN-PHASE 2
13	VEHICULAR DETOUR PLAN
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17	RIGHT-OF-WAY DATA SHEET
18	RIGHT-OF-WAY TABULATION SHEET

TOTAL SHEETS: 18

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME

RECOMMENDED

Vincent W. Davis
STORMWATER ENGINEER
DATE 01/19/2016

VINCENT W. DAVIS REGISTERED No. 12898 DELAWARE PROFESSIONAL ENGINEER — SEAL

RECOMMENDED

Kevin Lindell
SQUAD MANAGER, BRIDGE DESIGN
DATE 01/07/2016

KEVIN R. LINDELL LICENSED No. 15242 DELAWARE PROFESSIONAL ENGINEER — SEAL

RECOMMENDED

BRIDGE DESIGN ENGINEER
DATE 01/19/2016

JASON R. HASTINGS REGISTERED No. 19545 DELAWARE PROFESSIONAL ENGINEER — SEAL

RECOMMENDED

ASSISTANT DIRECTOR, BRIDGE
DATE 01/19/2016

BARRY A. BENTON REGISTERED No. 10774 DELAWARE PROFESSIONAL ENGINEER — SEAL

APPROVED

Robert Brian McCleary
CHIEF ENGINEER
DATE 01/20/2016

ROBERT BRIAN McCLEARY REGISTERED No. 8567 DELAWARE PROFESSIONAL ENGINEER — SEAL

LAST REVISED: 06/25/2015
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EXISTING SYMBOLS

DRAINAGE

	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
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
F.P.	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
LAMP	LAMP AND POST - RESIDENTIAL
MB	MAILBOX
P.M.	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
	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

DP-E	DELMARVA POWER- ELECTRIC
DP-G	DELMARVA POWER- GAS
VER-C	VERIZON CABLE
AW-W	ARTESIAN WATER
NCC-S	NEW CASTLE COUNTY SEWER

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
HC	HORIZONTAL CLEARANCE
	IMPACT ATTENUATOR
	JUNCTION BOX - DRAINAGE
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
CO	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
FIC	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

UTILITY COMPANY FACILITES

DP-G	DELMARVA POWER-GAS
AW-W	ARTESIAN WATER
VER-C	VERIZON CABLE

PAVEMENT SECTION(S)

	2" WMA SUPERPAVE TYPE 'C' OVER 4" WMA SUPERPAVE TYPE 'B' OVER 8" GRADED AGGREGATE BASE COURSE
	2" WMA SUPERPAVE TYPE 'C' OVER 8" GRADED AGGREGATE BASE COURSE

EROSION & SEDIMENT CONTROL

DWBAG	DEWATERING BAG
DWB	DEWATERING BASIN
ED	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
PST	PORTABLE SEDIMENT TANK
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 / NUMBER
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	TURBIDITY CURTAIN / LENGTH
T	TURBIDITY CURTAIN

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

BR 1-291 ON SONGSMITH DR.
OVER TRIBUTARY TO
SMALLEY'S POND

CONTRACT	T201407103
COUNTY	NEW CASTLE
BRIDGE NO.	1-291
DESIGNED BY:	KRK
CHECKED BY:	KRL

LEGEND

SHEET NO.	2
TOTAL SHTS.	18

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	SITE REVIEWER REQUIREMENT
( ) INSIGNIFICANT	NONE
( ) MINOR	CONTRACTOR CERTIFICATION COURSE TRAINING ONLY, AS DEFINED IN SECTION 13 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
( ) MEDIUM	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.
(X) MAJOR	SUPERINTENDENT AND AN INDIVIDUAL FROM CONTRACTOR'S STAFF SHALL BE CCR. ONE INDIVIDUAL FROM THE CONTRACTOR'S STAFF MUST BE A CCR PRIOR TO THE EXECUTION OF THE CONTRACT. THE SUPERINTENDENT MUST BECOME A CCR WITHIN ONE YEAR AFTER THE AWARD OF CONTRACT.

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)	FOR 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 AVAILIBLE 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 0.77 ACRES.
THE ADDED IMPERVIOUS AREA FOR THIS PROJECT IS 0.00 ACRES.

7. 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 THREE 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 THREE 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. IN AREAS WHERE TREES OR SHRUBS WILL BE OVERHANGING THE PROPOSED SIDEWALK, PRUNING MAY BE NECESSARY TO ACHIEVE A VERTICAL CLEAR SPACE OF 10 FEET ABOVE THE PROPOSED SIDEWALK ELEVATION. THE CONTRACTOR SHALL PRUNE EXISTING TREE AND SHRUB BRANCHES, WHICH OVERHANG THE SIDEWALK, IN ACCORDANCE WITH I.S.A. STANDARDS. THE CONTRACTOR SHALL NOTIFY DELDOT'S ROADSIDE ENVIRONMENTALIST ADMINISTRATOR, EUGENE 'CHIP' ROSAN, JR. AT (302) 760-2185 AND/OR HIS DESIGNEE, AT LEAST TWO (2) DAYS PRIOR TO THE PRUNING OPERATION. ALL COSTS ASSOCIATED WITH THE ABOVE WORK TO BE PAID UNDER ITEM 201000 - CLEARING AND GRUBBING.

3. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO EXCAVATE TEST PITS ALONG PROPOSED DRAINAGE RUNS, AT POINTS OF POSSIBLE UTILITY CONFLICTS, TO DETERMINE IF A CONFLICT EXISTS. ANY CONFLICTS SHALL BE COORDINATED BY THE CONTRACTOR, WITH THE ENGINEER AND THE UTILITY COMPANY INVOLVED. THE ENGINEER SHALL ULTIMATELY DETERMINE THE SOLUTION TO THE UTILITY CONFLICT. TEST HOLES SHALL BE MEASURED AND PAID FOR IN ACCORDANCE WITH ITEM 202000 - EXCAVATION AND EMBANKMENT, BUT ONLY TO THE ACTUAL DEPTH EXCAVATED.

4. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   - EXISTING CONCRETE HEADWALLS & WINGWALLS (UPSTREAM & DOWNSTREAM)
   - 2 - EXISITING DRAINAGE INLETS
   - EXISTING HANDRAIL ON THE DOWNSTREAM HEADWALL
   - EXISTING CMP PIPE ARCHES AND CONCRETE FLOW LINE
   - EXISTING 15" & 18" DRAINAGE CMP'S
   - DEBRIS IN THE CHANNEL
   - UPSTREAM & DOWNSTREAM CONCRETE APRON
   - DOWNSTREAM GROUTED RIPRAP APRON
   - ARTESIAN EXISTING WATER LINE THAT WILL BE RELOCATED

5. TO AVOID DAMAGE, PERMANENT SIGNS WITHIN THE PROJECT LIMITS MAY BE REMOVED DURING CONSTRUCTION IF NEEDED BUT MUST BE REPLACED TO MATCH EXISTING CONDITIONS BEFORE REOPENING THE ROADWAY. ALL WORK RELATED TO MOVING AND REINSTALLING THE SIGN SHALL BE INCIDENTAL TO ITEM *211000-REMOVAL OF STRUCTURES AND OBSTRUCTIONS. IF THE SIGN IS DAMAGED DURING CONSTRUCTION, THE SIGN MUST BE REPLACED AT THE CONSTRACTOR'S EXPENSE.

SECTION 300

6. 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. 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.
   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

7. 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

8. 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.

9. 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.

10. STATION AND ELEVATION DATA GIVEN FOR DRAINAGE STRUCTURES ARE TO BE APPLIED TO THE CENTER OF THE STRUCTURE FOR JUNCTION BOXES AND MANHOLES.

11. 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.

SECTION 900

12. 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 TEAM SUPPORT 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

13. CONTRACTOR IS TO TEST THE MATERIAL FROM THE EXCAVATED PIPES TRENCHES FOR SUITABILITY AS BACKFILL UNDER ROAD BOX USING DELDOT MATERIAL TESTERS.

14. HYDRAULIC DATA
    -DRAINAGE AREA: 0.41 SQ. MILES -DESIGN DISCHARGE: 777.88 CFS
    -DESIGN FREQUENCY: 25 YEARS -25 YEAR FLOOD ELEVATION: 43.83 FT
    PLEASE REFER TO THE HYDROLOGY & HYDRAULIC REPORT FOR MROE INFORMATION ON HOW THE 25-YEAR STORM ELEVATION WAS OBTAINED.

15. SCOUR ANALYSIS
    THE PROPOSED STRUCTURE HAS BEEN ANALYZED FOR THE EFFECTS OF SCOUR IN ACCORDANCE WITH HEC-14-HYDRAULIC DESIGN OF ENERGY DISSIPATORS FOR CULVERTS AND CHANNELS, THIRD EDITION. SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE WORST CASE OF THE OVERTOPPING FLOOD OR THE 500-YR FLOOD EVENT.
    DESIGN EVENT: 500 YEARS DESIGN VELOCITY: 12.90 FPS
    DESIGN DISCHARGE: 1309 CFS DESIGN DEPTH OF FLOW: 8.49 FT

16. ENVIRONMENTAL COMPLIANCE
    REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR ANY RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE ASSOCIATED WITH THIS PROJECT.

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

18. UTILITIES
    THE PROPOSED VERIZON CABLE LINE WILL BE INSTALLED IN ADVANCE OF THE PROJECT AND WILL REMAIN IN PLACE DURING CONSTRUCTION OF THE PROJECT. THE LINE IS ANTICIPATED TO BE AT AN APPROXIMATE ELEVATION OF 32.00. SEE UTILITY RELOCATION PLAN SHEET FOR THE LOCATION OF THE LINE.

SEE THE UTILITY STATEMENT FOR ADDENDUM DETAILS ON UTILITIES.

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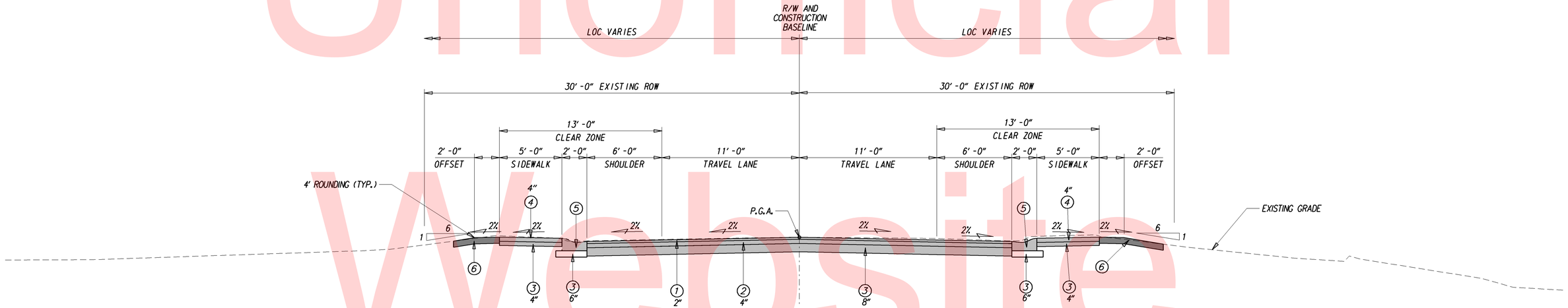
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND	CONTRACT T2014707103	BRIDGE NO. 1-291	NOTES	SHEET NO. 3
				COUNTY NEW CASTLE	DESIGNED BY: KRK		TOTAL SHTS. 18
					CHECKED BY: KRL		

LEGEND

1. ITEM 401801 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (CARBONATE STONE)
2. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
3. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
4. ITEM 705001- 4" PORTLAND CEMENT CONCRETE SIDEWALK
5. ITEM 701021 - INTERGRAL PCC CURB AND GUTTER, TYPE 2
6. ITEM 908004- TOPSOIL, 6" DEPTH
   ITEM 908019- STREAMBANK SEED MIX, SEEDING



TYPICAL ROADWAY SECTION

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

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 4 8 12
FEET

BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT	BRIDGE NO.	1-291
T201407103	DESIGNED BY: KRK	
COUNTY	CHECKED BY: KRL	
NEW CASTLE		

TYPICAL SECTIONS

SHEET NO.
4
TOTAL SHTS.
18

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CIRCULAR CURVE NO. 1

ELEMENT: CIRCULAR

	STATION	NORTHING	EASTING
PC (10001)	10+00.00	597939.8182	586337.1430
PI (10100)	14+13.71	597738.6075	585975.6563
CC (10002)		597540.2905	586559.5281
PT (10003)	16+72.57	597358.8569	586139.8146
Radius:	457.25		
Delta:	84° 16' 35.9264" Left		
Degree of Curvature(Arc):	12° 31' 49.8537"		
Length:	672.57		
Tangent:	413.71		
Chord:	613.56		
Middle Ordinate:	118.19		
External:	159.38		
Tangent Direction:	S 60° 53' 55.7245" W		
Radial Direction:	N 29° 06' 04.2755" W		
Chord Direction:	S 18° 45' 37.7613" W		
Radial Direction:	S 66° 37' 19.7980" W		
Tangent Direction:	S 23° 22' 40.2020" E		

CIRCULAR CURVE NO. 2

ELEMENT: CIRCULAR

	STATION	NORTHING	EASTING
PC (10004)	16+72.64	597358.7963	586139.8408
PI (10200)	19+44.73	597109.0381	586247.8061
CC (10005)		595950.5786	582882.1846
PT (10006)	22+15.76	596845.7407	586316.4365
Radius:	3549.00		
Delta:	8° 46' 06.0915" Right		
Degree of Curvature(Arc):	1° 36' 51.9134"		
Length:	543.13		
Tangent:	272.09		
Chord:	542.60		
Middle Ordinate:	10.38		
External:	10.42		
Tangent Direction:	S 23° 22' 40.2020" E		
Radial Direction:	S 66° 37' 19.7980" W		
Chord Direction:	S 18° 59' 37.1562" E		
Radial Direction:	S 75° 23' 25.8896" W		
Tangent Direction:	S 14° 36' 34.1104" E		

HORIZONTAL / VERTICAL CONTROL DATA

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
TP 2	21+83.76	24.64	596870.2433	586284.4409	51.36
TP 3	19+56.11	15.98	597089.2340	586226.6880	48.32
TP 4	17+54.57	25.07	597273.8130	586148.2460	47.37
TP 5	13+00.48	50.27	597740.6070	586093.2180	52.29
TP 6	13+84.69	-26.86	597634.8790	586139.6600	51.65
TP 7	15+33.91	-39.68	597496.6240	586144.2500	48.88
TP 8	17+26.22	-128.38	597358.6120	586279.3240	46.22
TP 15	18+49.23	-24.74	597203.7030	586229.0170	47.56
TP 16	21+85.41	-24.79	596881.5370	586332.5900	51.10
TP 9	18+20.84	112.51	597181.2756	586090.7459	38.59

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.

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 40 80 120
FEET

BR 1-291 ON SONGSMITH DR.
OVER TRIBUTARY TO
SMALLEY'S POND

CONTRACT	BRIDGE NO.	1-291
T201407103	DESIGNED BY: KRK	
COUNTY	CHECKED BY: KRL	
NEW CASTLE		

HORIZONTAL AND
VERTICAL CONTROL

SHEET NO.
5
TOTAL SHTS.
18

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DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INT. EL.	DIS. EL.
1	15" RCP	III	30.0'	1.23%	43.06	42.63
2	15" RCP	III	44.0'	6.25%	42.63	39.88
3	18" RCP	III	36.0'	6.42%	39.80	37.49
4	18" RCP	III	116.5'	1.86%	41.93	39.80

CURB SCHEDULE

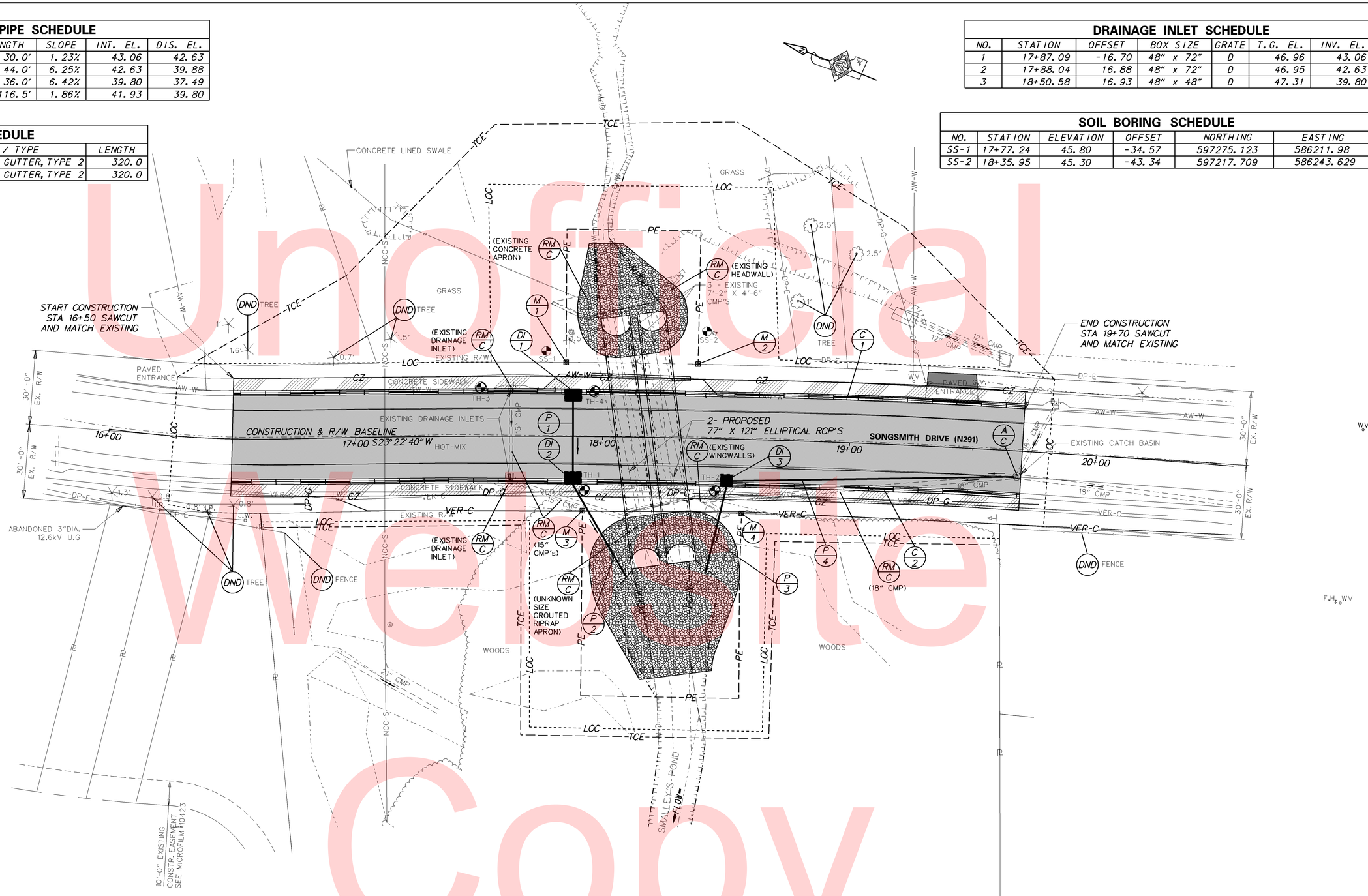
NO.	ITEM DESCRIPTION / TYPE	LENGTH
1	INTEGRAL P.C.C CURB AND GUTTER, TYPE 2	320.0
2	INTEGRAL P.C.C CURB AND GUTTER, TYPE 2	320.0

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
1	17+87.09	-16.70	48" x 72"	D	46.96	43.06
2	17+88.04	16.88	48" x 72"	D	46.95	42.63
3	18+50.58	16.93	48" x 48"	D	47.31	39.80

SOIL BORING SCHEDULE

NO.	STATION	ELEVATION	OFFSET	NORTHING	EASTING
SS-1	17+77.24	45.80	-34.57	597275.123	586211.98
SS-2	18+35.95	45.30	-43.34	597217.709	586243.629



RIGHT-OF-WAY MONUMENT SCHEDULE

NO.	TYPE	STATION	OFFSET	NORTHING	EASTING
M-1	CAPPED REBAR	17+85.00	30.00 L	597265.9953	586210.6856
M-2	CAPPED REBAR	18+38.00	30.00 L	597216.1430	586229.9613
M-3	CAPPED REBAR	17+92.00	30.00 R	597237.4866	586157.4293
M-4	CAPPED REBAR	18+57.00	30.00 R	597177.2858	586180.4488

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 20 40 60
FEET

BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT	BRIDGE NO. 1-291	CONSTRUCTION PLAN	SHEET NO.
T201407103	DESIGNED BY: KRK		6
COUNTY	CHECKED BY: KRL		TOTAL SHTS.
NEW CASTLE			18

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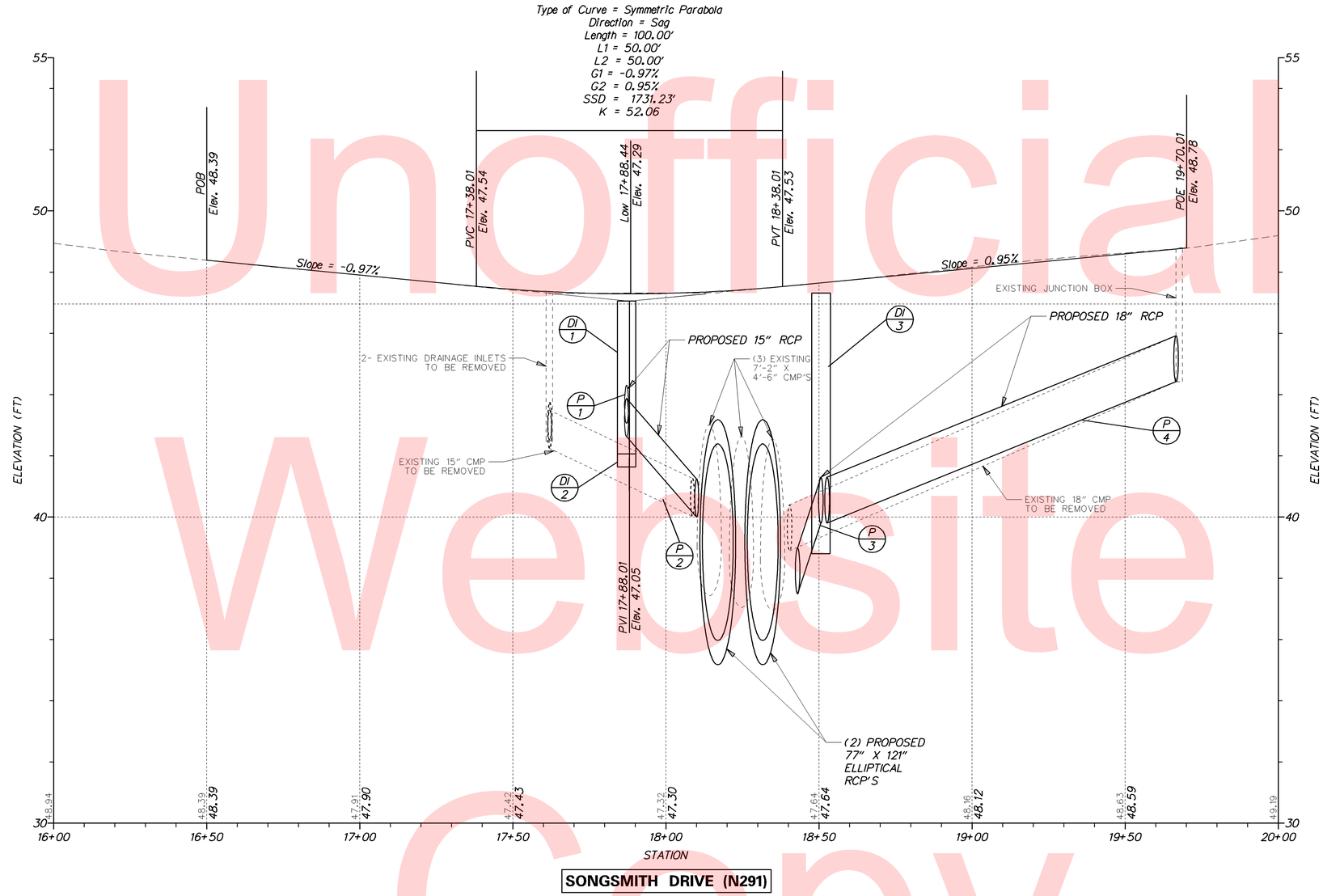

SONGSMITH DRIVE (N291)

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VERTICAL SCALE FEET 0 2 4 6

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 20 40 60 FEET	BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND	CONTRACT T201407103	BRIDGE NO. 1-291	PROFILE	SHEET NO. 7
				COUNTY NEW CASTLE	DESIGNED BY: KRK		TOTAL SHTS. 18
					CHECKED BY: KRL		

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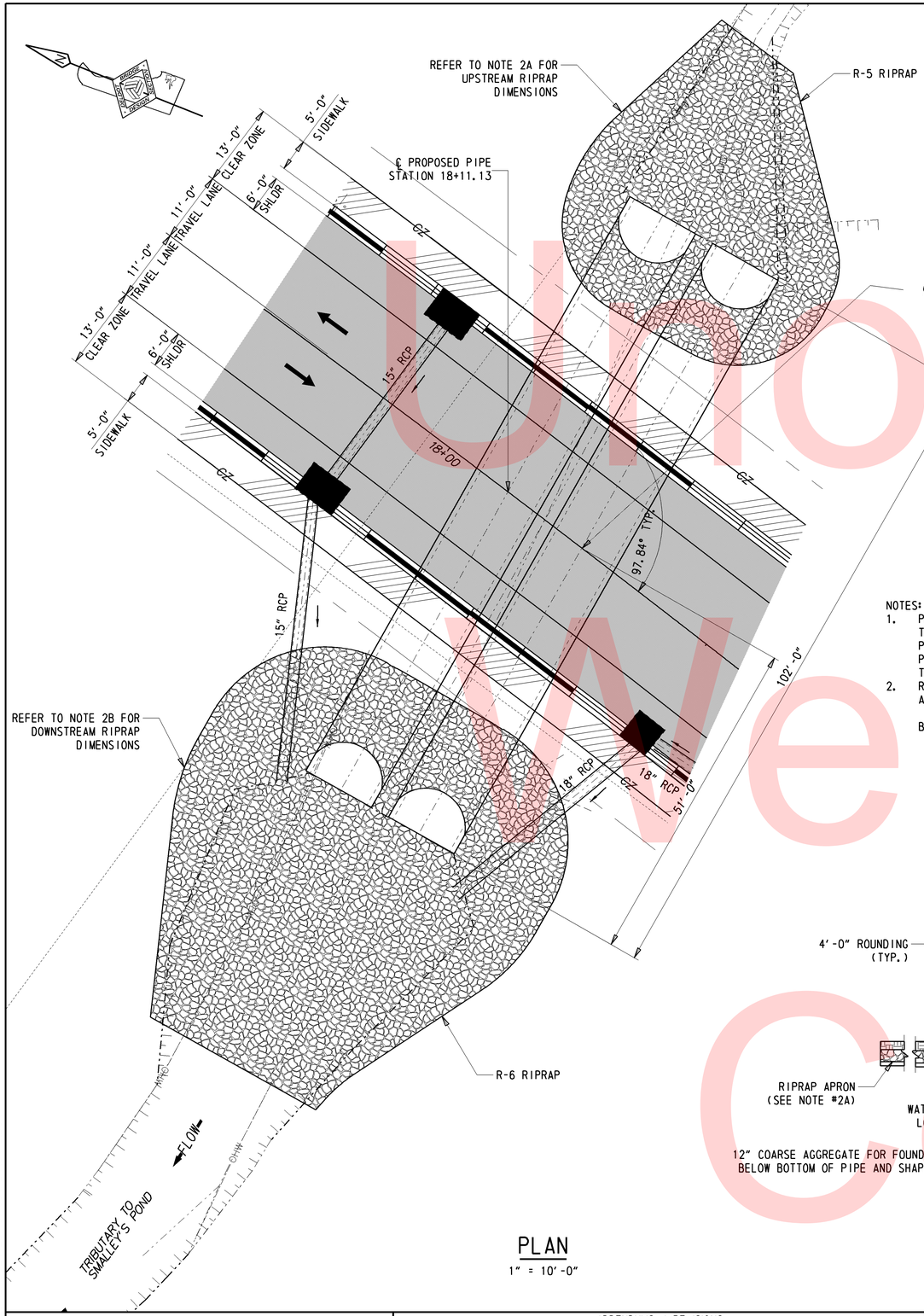
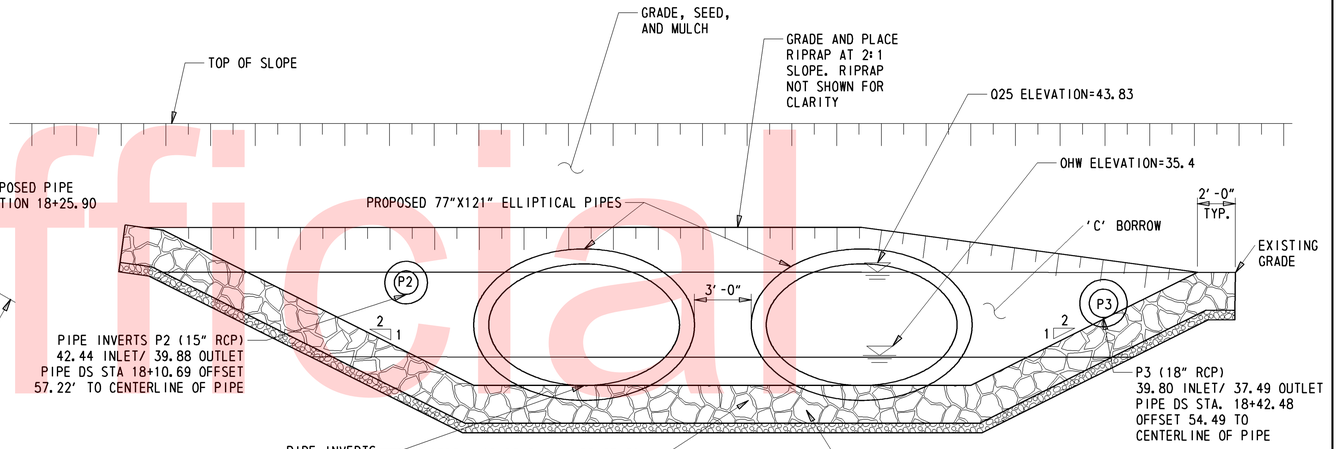


PLAN

1" = 10'-0"

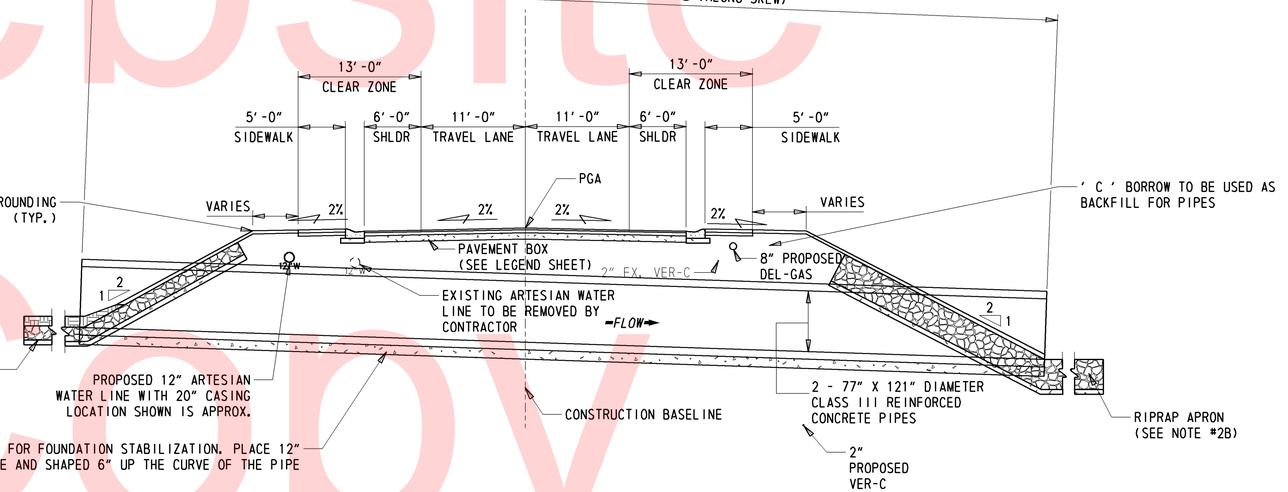


DOWNSTREAM BRIDGE ELEVATION

¼" = 1'-0"

NOTES:

1. PROPOSED BRIDGE
   THE EXISTING (3) 7' -2" X 4' -6" DIAMETER C.M.P PIPES SHALL BE REPLACED WITH (2) 77" X 121" ELLIPTICAL PIPES (102'-0" LONG). THE PIPE INVERTS SHALL BE SET AS THE STREAM ESTABLISHED GRADE. PLACE THE TWO MAIN PIPES WITH A 3'-0" GAP BETWEEN THE PIPES. PLACE 6" COURSE AGGREGATE BEDDING BENEATH PIPES AND 6" SHAPED UP THE CURVE OF EACH PIPE.
2. RIPRAP PLACEMENT
   A. UPSTREAM - R-5 RIPRAP SHALL BE PLACED IN THE CHANNEL BOTTOM 25'-0" FROM THE INLET ALONG THE STREAM CENTERLINE AND SHALL BE PLACED TO CREATE A SMOOTH BEND THAT MATCHES THE EXISTING STREAM BANKS.
   B. DOWNSTREAM - R-6 RIPRAP SHALL BE PLACED IN THE CHANNEL BOTTOM 45' -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

⅛" = 1'-0"

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE AS NOTED	BR 1-291 ON SONGSMITH DRIVE OVER TRIBUTARY TO SMALLEY'S POND	CONTRACT T201407103	BRIDGE NO. 1-291	BRIDGE PLAN, SECTION, & ELEVATION	SHEET NO. 8
				COUNTY NEW CASTLE	DESIGNED BY: KRK		TOTAL SHTS. 18
					CHECKED BY: KRL		

BORING: SS-1 | **DATE DRILLED:** 4/9/14
STATION: 17+77 | **OFFSET:** 34.56 | **ELEVATION:** 46.00 | **NORTHING:** 597275.123 | **EASTING:** 586211.98
COMMENTS: N/A

SAMPLE INFORMATION

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0	3	MOIST LOOSE BROWN CLAYEY COARSE TO FINE SAND AND FINE GRAVEL W/TRACE SILT.	A-2-4(0)	
		3			
		4			
	4.0	6			
2	4.0	2	MOIST STIFF BROWN CLAYEY SILT W/SOME FINE TO COARSE SAND AND FINE GRAVEL.	A-4(1)	
		4			
		6			
	9.0	6			
3	9.0	4	MOIST DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	BOTTOM OF COARSE AGGREGATE DEPTH = 12.24
		13			
		22			
	14.0	20			
4	14.0	4	MOIST MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	APPROXIMATE DEPTH OF WATER TABLE = 14.3
		4			
		8			
	19.0	9			
5	19.0	2	WET MEDIUM DENSE BROWN FINE SAND W/SOME SILT, TRACE OF COARSE SAND AND FINE GRAVEL.	A-2-4(0)	
		5			
		8			
	24.0	10			
6	24.0	3	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
		6			
		7			
	29.0	9			
7	29.0	2	WET LOOSE BROWN CLAYEY COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT.	A-2-4(0)	
		3			
		5			
	34.0	6			
8	34.0	2	WET FIRM BROWN CLAYEY FINE GRAVELLY SILT W/TRACE FINE TO COARSE SAND.	A-4(5)	
		2			
		3			
	39.0	4			
9	39.0	5	WET VERY STIFF BROWN CLAYEY FINE SANDY SILT W/TRACE COARSE SAND.	A-4(1)	
		8			
		12			
	44.0	14			
10	44.0	4	WET VERY STIFF GRAY CLAYEY FINE SANDY SILT.	A-4(5)	
		6			
		12			
	48.0	14			
11	48.0	5	WET VERY STIFF BROWN CLAYEY FINE SANDY SILT W/TRACE COARSE SAND AND FINE GRAVEL.	A-4(0)	
		6			
		8			
	50.0	12			
			END BORING		

BORING: SS-2 | **DATE DRILLED:** 4/9/14
STATION: 18+36 | **OFFSET:** 44.22 | **ELEVATION:** 45.5 | **NORTHING:** 597217.709 | **EASTING:** 586243.629
COMMENTS: N/A

SAMPLE INFORMATION

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0	6	MOIST MEDIUM DENSE BROWN SILTY COARSE SAND AND FINE GRAVEL W/SOME FINE SAND.	A-1-B	
		7			
		5			
	4.0	6			
2	4.0	4	MOIST STIFF BROWN CLAYEY FINE GRAVELLY SILT W/SOME FINE TO COARSE SAND.	A-4(0)	
		5			
		5			
	9.0	6			
3	9.0	3	WET FIRM BROWN CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF FINE GRAVEL.	A-4(2)	BOTTOM OF COARSE AGGREGATE DEPTH = 12.24
		4			
		4			
	14.0	5			
U-1	14.0				APPROXIMATE DEPTH OF WATER TABLE = 14.3
	16.0				
4	16.0	8	WET MEDIUM DENSE BROWN CLAYEY COARSE SANDY FINE GRAVEL W/SOME FINE SAND AND SILT.	A-2-4(0)	
		13			
		17			
	19.0	16			
5	19.0	8	WET MEDIUM DENSE BROWN FINE SAND W/SOME COARSE SAND AND SILT, TRACE OF FINE GRAVEL.	A-2-4(0)	
		9			
		12			
	24.0	11			
6	24.0	2	WET VERY LOOSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
		2			
		2			
	29.0	3			
7	29.0	3	WET STIFF BROWN SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND AND FINE GRAVEL.	A-6(8)	
		7			
		4			
	34.0	8			
8	34.0	6	WET STIFF BROWN SILTY FINE SANDY CLAY W/TRACE COARSE SAND AND FINE GRAVEL.	A-6(9)	
		7			
		7			
	39.0	9			
9	39.0	9	WET MEDIUM DENSE BROWN CLAYEY FINE SAND.	A-2-4(0)	
		9			
		8			
	44.0	9			
10	44.0	8	WET VERY STIFF BROWN FINE SANDY SILT W/SOME CLAY, TRACE OF COARSE SAND AND FINE GRAVEL.	A-4(1)	
		9			
		9			
	48.0	12			
11	48.0	10	WET VERY STIFF BROWN SILTY FINE SAND W/TRACE COARSE SAND AND FINE GRAVEL.	A-4(0)	
		9			
		11			
	50.0	13			
			END BORING		

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NOTE: THE BORING DATA PROVIDED INDICATES THE SOIL CONDITION ONLY AT THE SPECIFIC LOCATION EACH BORING WAS PERFORMED AND ONLY TO THE DEPTH PENETRATED.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

BR 1-291 ON SONGSMITH DRIVE OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT	BRIDGE NO.	1-291
T201471O3	DESIGNED BY: KRK	
COUNTY	CHECKED BY: KRL	
NEW CASTLE		

SOIL BORING LOG

SHEET NO.
9
TOTAL SHTS.
18

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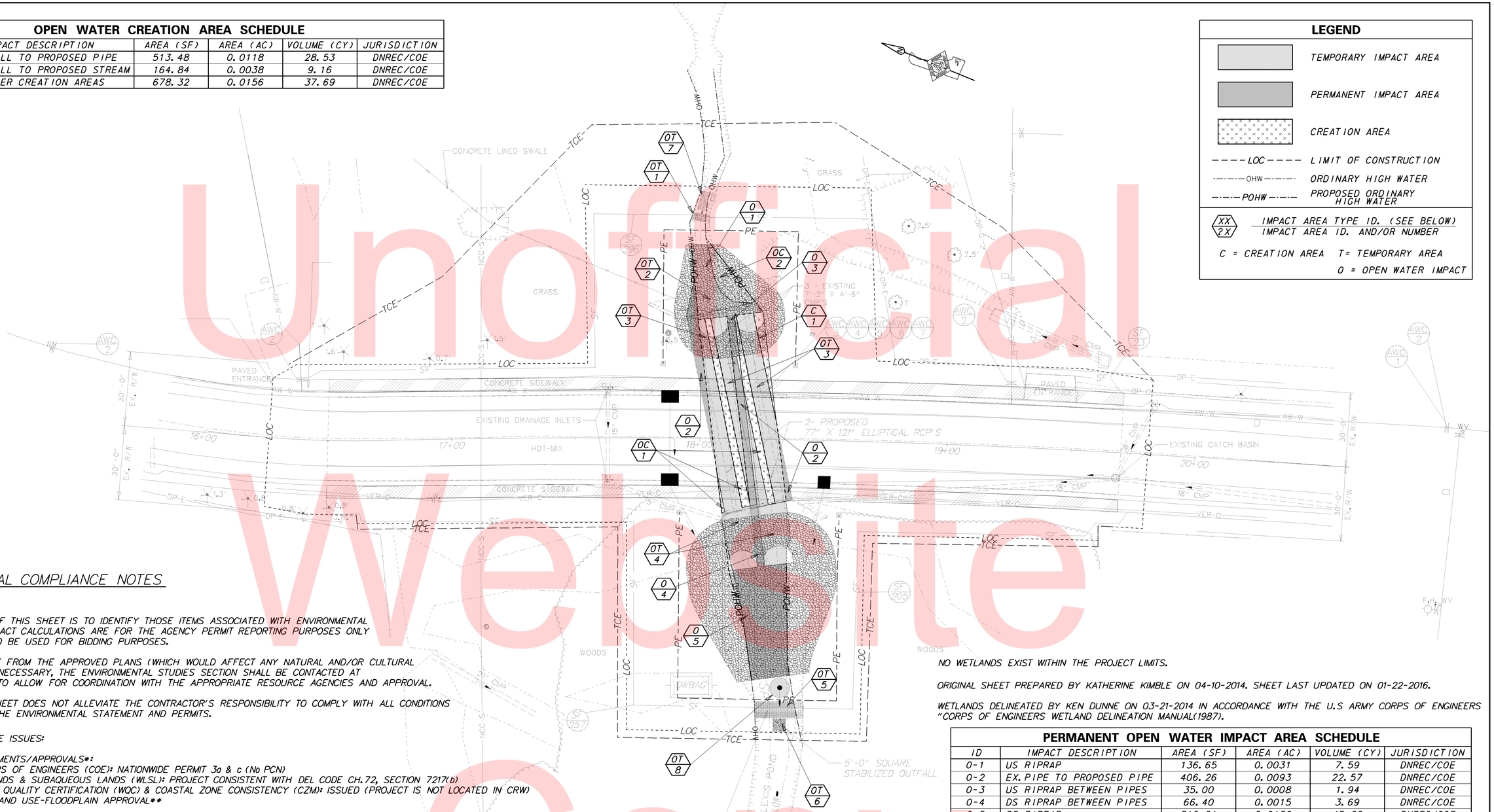
OPEN WATER CREATION AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OC-1	EX. FILL TO PROPOSED PIPE	513.48	0.0118	28.53	DNREC/COE
OC-2	EX. FILL TO PROPOSED STREAM	164.84	0.0038	9.16	DNREC/COE
TOTAL OPEN WATER CREATION AREAS		678.32	0.0156	37.69	DNREC/COE

LEGEND

- TEMPORARY IMPACT AREA
- PERMANENT IMPACT AREA
- CREATION AREA
- LOC — LIMIT OF CONSTRUCTION
- OHW — ORDINARY HIGH WATER
- POHW — PROPOSED ORDINARY HIGH WATER
- XX / 2X — IMPACT AREA TYPE ID. (SEE BELOW) / IMPACT AREA ID. AND/OR NUMBER
- C = CREATION AREA T= TEMPORARY AREA O = OPEN WATER IMPACT



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 3a & c (No PCN)
DNREC - WETLANDS & SUBAQUEOUS LANDS (WLSL): PROJECT CONSISTENT WITH DEL CODE CH.72, SECTION 7217(b)
DNREC - WATER QUALITY CERTIFICATION (WQC) & COASTAL ZONE CONSISTENCY (CZM): ISSUED (PROJECT IS NOT LOCATED IN CRW)
NCC DEPT. OF LAND USE-FLOODPLAIN APPROVAL**

* 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. PROJECT IS CONSISTENT WITH STIPULATION II.B.2 OF DELDOT'S PROGRAMMATIC AGREEMENT WITH DE SHPO, FHWA, AND ACHP

4. PROTECTION OF RESOURCES:

A. SILT FENCE INSTALLATION ADJACENT TO WOODED UPLANDS/WETLANDS: SANDBAGS SHALL BE USED TO SECURE SILT FENCE IN LIEU OF TRENCHING UNLESS PROPER EROSION & SEDIMENT CONTROL CANNOT 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.

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

NO WETLANDS EXIST WITHIN THE PROJECT LIMITS.

ORIGINAL SHEET PREPARED BY KATHERINE KIMBLE ON 04-10-2014. SHEET LAST UPDATED ON 01-22-2016.

WETLANDS DELINEATED BY KEN DUNNE ON 03-21-2014 IN ACCORDANCE WITH THE U.S ARMY CORPS OF ENGINEERS "CORPS OF ENGINEERS WETLAND DELINEATION MANUAL(1987).

PERMANENT OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
O-1	US RIPRAP	136.65	0.0031	7.59	DNREC/COE
O-2	EX. PIPE TO PROPOSED PIPE	406.26	0.0093	22.57	DNREC/COE
O-3	US RIPRAP BETWEEN PIPES	35.00	0.0008	1.94	DNREC/COE
O-4	DS RIPRAP BETWEEN PIPES	66.40	0.0015	3.69	DNREC/COE
O-5	DS RIPRAP	810.01	0.0186	45.00	DNREC/COE
TOTAL PERMANENT OPEN WATER IMPACTS		1454.32	0.033	80.79	DNREC/COE

TEMPORARY OPEN WATER IMPACT AREA SCHEDULE					
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	UPSTREAM SAND BAG DIKE	45.23	0.001	2.51	DNREC/COE
OT-2	EX. CONCRETE APRON U.S	195.78	0.0045	10.88	DNREC/COE
OT-3	EX. PIPES TO PROP. PIPES	1185.72	0.027	65.87	DNREC/COE
OT-4	EX. STREAMBED TO P. PIPES	538.43	0.0123	29.91	DNREC/COE
OT-5	DS SB SANDBAG DIKE	106.40	0.0024	5.91	DNREC/COE
OT-6	DS STABILIZED OUTFALL	25.00	0.00057	1.39	DNREC/COE
OT-7	STILLING WELL	23.94	0.00055	1.33	DNREC/COE
OT-8	SUMP PIT	50.27	0.0012	2.79	DNREC/COE
TOTAL FOR THIS SHEET		1155.59	0.0477	116.47	DNREC/COE

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT	BRIDGE NO.	1-291
T201407103	DESIGNED BY: KRK	
COUNTY	CHECKED BY: KRL	
NEW CASTLE		

ENVIRONMENTAL COMPLIANCE PLAN

SHEET NO. 10
TOTAL SHTS. 18

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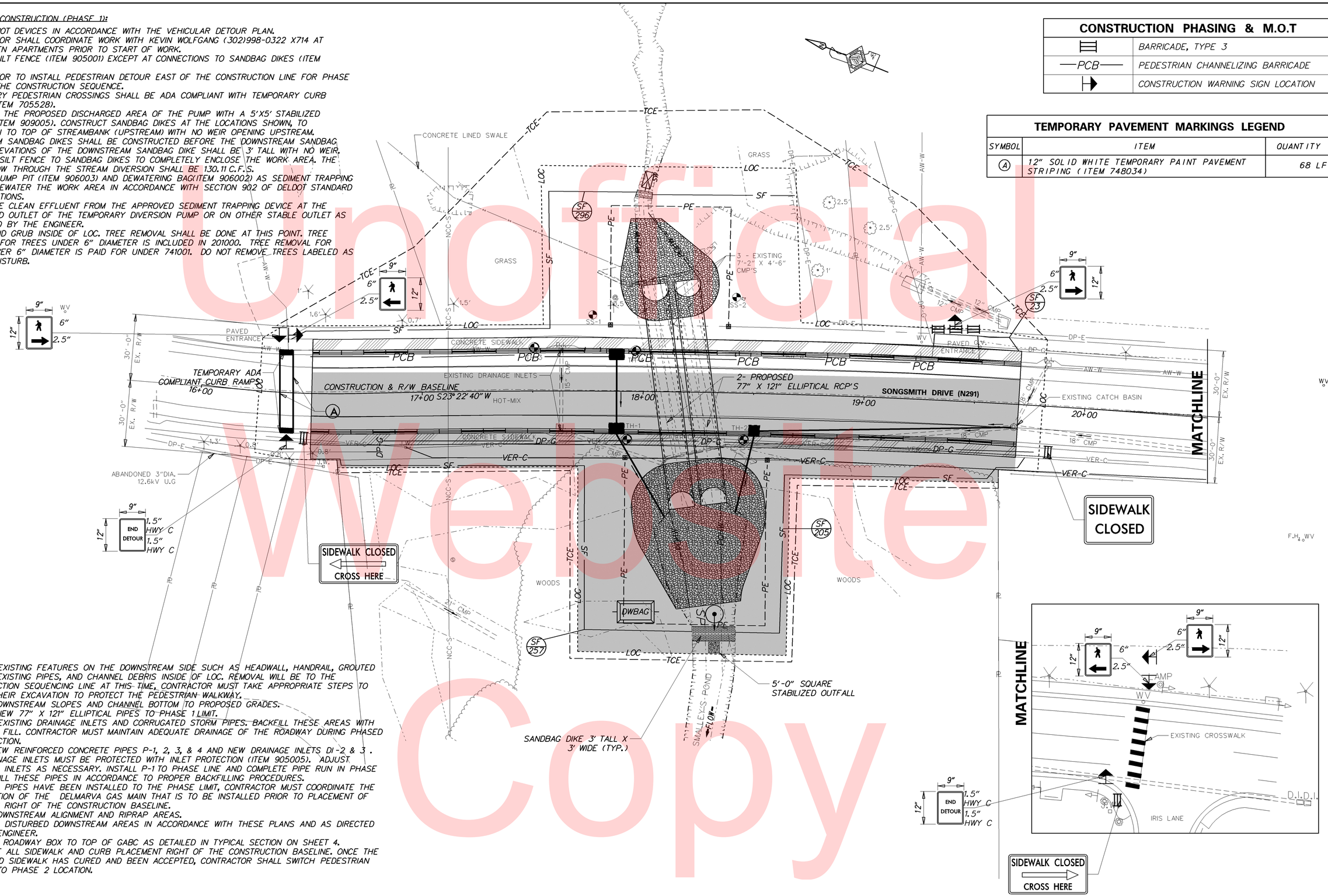
SEQUENCE OF CONSTRUCTION (PHASE 1):

1. INSTALL MOT DEVICES IN ACCORDANCE WITH THE VEHICULAR DETOUR PLAN. CONTRACTOR SHALL COORDINATE WORK WITH KEVIN WOLFGANG (302)998-0322 X714 AT EVERGREEN APARTMENTS PRIOR TO START OF WORK.
2. INSTALL SILT FENCE (ITEM 905001) EXCEPT AT CONNECTIONS TO SANDBAG DIKES (ITEM 909005).
3. CONTRACTOR TO INSTALL PEDESTRIAN DETOUR EAST OF THE CONSTRUCTION LINE FOR PHASE ONE OF THE CONSTRUCTION SEQUENCE.
4. TEMPORARY PEDESTRIAN CROSSINGS SHALL BE ADA COMPLIANT WITH TEMPORARY CURB RAMPS (ITEM 705528).
5. STABILIZE THE PROPOSED DISCHARGED AREA OF THE PUMP WITH A 5'X5' STABILIZED OUTFALL(ITEM 909005). CONSTRUCT SANDBAG DIKES AT THE LOCATIONS SHOWN, TO ELEVATION TO TOP OF STREAMBANK (UPSTREAM) WITH NO WEIR OPENING UPSTREAM. UPSTREAM SANDBAG DIKES SHALL BE CONSTRUCTED BEFORE THE DOWNSTREAM SANDBAG DIKES. ELEVATIONS OF THE DOWNSTREAM SANDBAG DIKE SHALL BE 3' TALL WITH NO WEIR. CONNECT SILT FENCE TO SANDBAG DIKES TO COMPLETELY ENCLOSE THE WORK AREA. THE BASE FLOW THROUGH THE STREAM DIVERSION SHALL BE 130.11 C.F.S.
6. INSTALL SUMP PIT (ITEM 906003) AND DEWATERING BAG(ITEM 906002) AS 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 TEMPORARY DIVERSION PUMP OR ON OTHER STABLE OUTLET AS APPROVED BY THE ENGINEER.
7. CLEAR AND GRUB INSIDE OF LOC. TREE REMOVAL SHALL BE DONE AT THIS POINT. TREE REMOVAL FOR TREES UNDER 6" DIAMETER IS INCLUDED IN 201000. TREE REMOVAL FOR TREES OVER 6" DIAMETER IS PAID FOR UNDER 741001. DO NOT REMOVE TREES LABELED AS DO NOT DISTURB.

CONSTRUCTION PHASING & M.O.T	
	BARRICADE, TYPE 3
—PCB—	PEDESTRIAN CHANNELIZING BARRICADE
	CONSTRUCTION WARNING SIGN LOCATION

TEMPORARY PAVEMENT MARKINGS LEGEND		
SYMBOL	ITEM	QUANTITY
(A)	12" SOLID WHITE TEMPORARY PAINT PAVEMENT STRIPING (ITEM 748034)	68 LF



8. REMOVE EXISTING FEATURES ON THE DOWNSTREAM SIDE SUCH AS HEADWALL, HANDRAIL, GROUTED RIPRAP, EXISTING PIPES, AND CHANNEL DEBRIS INSIDE OF LOC. REMOVAL WILL BE TO THE CONSTRUCTION SEQUENCING LINE AT THIS TIME, CONTRACTOR MUST TAKE APPROPRIATE STEPS TO SHORE THEIR EXCAVATION TO PROTECT THE PEDESTRIAN WALKWAY.
9. GRADE DOWNSTREAM SLOPES AND CHANNEL BOTTOM TO PROPOSED GRADES.
10. INSTALL NEW 77" X 121" ELLIPTICAL PIPES TO PHASE 1 LIMIT.
11. REMOVE EXISTING DRAINAGE INLETS AND CORRUGATED STORM PIPES. BACKFILL THESE AREAS WITH SUITABLE FILL. CONTRACTOR MUST MAINTAIN ADEQUATE DRAINAGE OF THE ROADWAY DURING PHASED CONSTRUCTION.
12. PLACE NEW REINFORCED CONCRETE PIPES P-1, 2, 3, & 4 AND NEW DRAINAGE INLETS DI-2 & 3 . ALL DRAINAGE INLETS MUST BE PROTECTED WITH INLET PROTECTION (ITEM 905005). ADJUST DRAINAGE INLETS AS NECESSARY. INSTALL P-1 TO PHASE LINE AND COMPLETE PIPE RUN IN PHASE 2. BACKFILL THESE PIPES IN ACCORDANCE TO PROPER BACKFILLING PROCEDURES.
13. ONCE ALL PIPES HAVE BEEN INSTALLED TO THE PHASE LIMIT, CONTRACTOR MUST COORDINATE THE INSTALLATION OF THE DELMARVA GAS MAIN THAT IS TO BE INSTALLED PRIOR TO PLACEMENT OF SIDEWALK RIGHT OF THE CONSTRUCTION BASELINE.
14. GRADE DOWNSTREAM ALIGNMENT AND RIPRAP AREAS.
15. STABILIZE DISTURBED DOWNSTREAM AREAS IN ACCORDANCE WITH THESE PLANS AND AS DIRECTED BY THE ENGINEER.
16. PREPARE ROADWAY BOX TO TOP OF GABC AS DETAILED IN TYPICAL SECTION ON SHEET 4.
17. COMPLETE ALL SIDEWALK AND CURB PLACEMENT RIGHT OF THE CONSTRUCTION BASELINE. ONCE THE CURB AND SIDEWALK HAS CURED AND BEEN ACCEPTED, CONTRACTOR SHALL SWITCH PEDESTRIAN DETOUR TO PHASE 2 LOCATION.

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 20 40 60 FEET	BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND	CONTRACT T201407103	BRIDGE NO. 1-291	CONSTRUCTION SEQUENCE AND EROSION CONTROL PLAN – PHASE 1	SHEET NO. 11
				COUNTY NEW CASTLE	DESIGNED BY: KRK		TOTAL SHTS. 18
					CHECKED BY: KRL		

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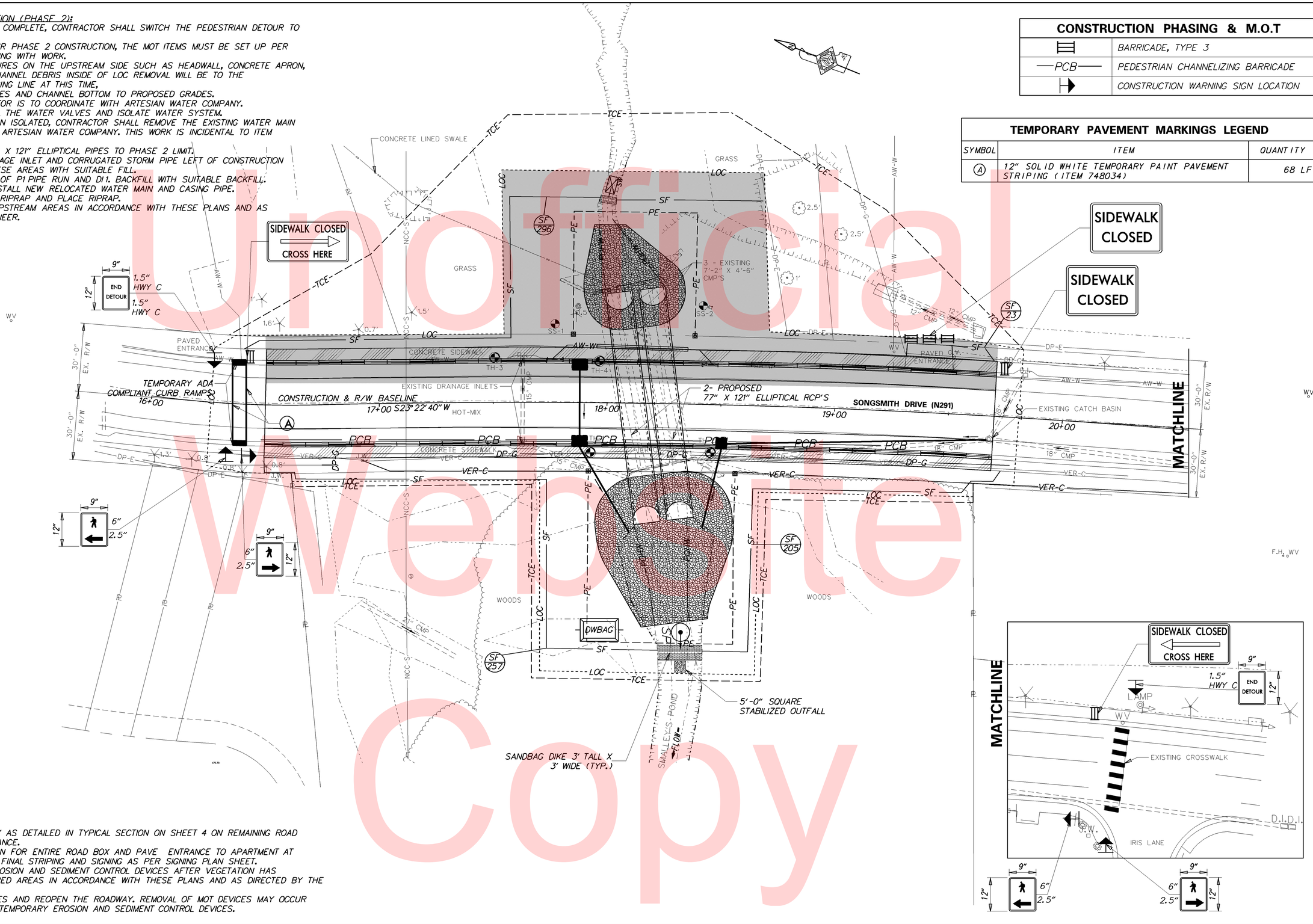
SEQUENCE OF CONSTRUCTION (PHASE 2):

1. ONCE PHASE 1 WORK IS COMPLETE, CONTRACTOR SHALL SWITCH THE PEDESTRIAN DETOUR TO PHASE 2.
2. FOR PEDESTRIAN DETOUR PHASE 2 CONSTRUCTION, THE MOT ITEMS MUST BE SET UP PER PLAN BEFORE PROCEEDING WITH WORK.
3. REMOVE EXISTING FEATURES ON THE UPSTREAM SIDE SUCH AS HEADWALL, CONCRETE APRON, EXISTING PIPES, AND CHANNEL DEBRIS INSIDE OF LOC REMOVAL WILL BE TO THE CONSTRUCTION SEQUENCING LINE AT THIS TIME,
4. GRADE UPSTREAM SLOPES AND CHANNEL BOTTOM TO PROPOSED GRADES.
5. AT THIS TIME, CONTRACTOR IS TO COORDINATE WITH ARTESIAN WATER COMPANY.
6. ARTESIAN IS TO INSTALL THE WATER VALVES AND ISOLATE WATER SYSTEM.
7. ONCE SYSTEM HAS BEEN ISOLATED, CONTRACTOR SHALL REMOVE THE EXISTING WATER MAIN PER THE DIRECTION OF ARTESIAN WATER COMPANY. THIS WORK IS INCIDENTAL TO ITEM #211000.
8. INSTALL REMAINDER 77" X 121" ELLIPTICAL PIPES TO PHASE 2 LIMIT.
9. REMOVE EXISTING DRAINAGE INLET AND CORRUGATED STORM PIPE LEFT OF CONSTRUCTION BASELINE. BACKFILL THESE AREAS WITH SUITABLE FILL.
10. PLACE THE REMAINDER OF P1 PIPE RUN AND DI1. BACKFILL WITH SUITABLE BACKFILL.
11. ARTESIAN WATER TO INSTALL NEW RELOCATED WATER MAIN AND CASING PIPE.
12. GRADE FOR UPSTREAM RIPRAP AND PLACE RIPRAP.
13. STABILIZE DISTURBED UPSTREAM AREAS IN ACCORDANCE WITH THESE PLANS AND AS DIRECTED BY THE ENGINEER.

CONSTRUCTION PHASING & M.O.T	
	BARRICADE, TYPE 3
—PCB—	PEDESTRIAN CHANNELIZING BARRICADE
	CONSTRUCTION WARNING SIGN LOCATION

TEMPORARY PAVEMENT MARKINGS LEGEND		
SYMBOL	ITEM	QUANTITY
(A)	12" SOLID WHITE TEMPORARY PAINT PAVEMENT STRIPING (ITEM 748034)	68 LF



14. PREPARE ROADWAY BOX AS DETAILED IN TYPICAL SECTION ON SHEET 4 ON REMAINING ROAD INCLUDING PAVED ENTRANCE.
15. PLACE HOTMIX PER PLAN FOR ENTIRE ROAD BOX AND PAVE ENTRANCE TO APARTMENT AT BLATTY PLACE. INSTALL FINAL STRIPING AND SIGNING AS PER SIGNING PLAN SHEET.
16. 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.
17. REMOVE ALL MOT DEVICES AND REOPEN THE ROADWAY. REMOVAL OF MOT DEVICES MAY OCCUR PRIOR TO REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.

Unofficial Website Copy

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 20 40 60 FEET	BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND	CONTRACT T201407103	BRIDGE NO. 1-291	CONSTRUCTION SEQUENCE AND EROSION CONTROL PLAN – PHASE 2	SHEET NO. 12
				COUNTY NEW CASTLE	DESIGNED BY: KRK		TOTAL SHTS. 18
					CHECKED BY: KRL		

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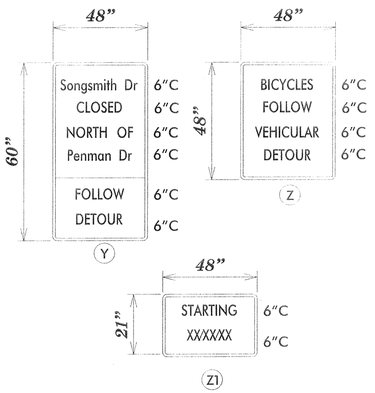
PORTABLE CHANGEABLE MESSAGE SIGNS

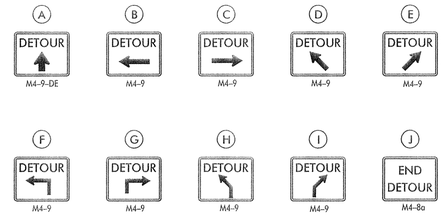
SPECIAL SIGNS



*D/GRETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND; BLACK LEGEND

*STARTING PLAQUE (Z1) SHALL BE AFFIXED OVER THE "FOLLOW DETOUR" PORTION OF SPECIAL SIGN 10 DAYS PRIOR TO IMPLEMENTATION OF DETOUR AND REMOVED WHEN DETOUR IS IN EFFECT.

LEGEND



GENERAL NOTES

1. ALL DETOUR SIGNING, INCLUDING TRAILBLAZERS, ARE TO BE SUPPLIED AND MAINTAINED BY THE GENERAL CONTRACTOR IN COMPLIANCE WITH "THE DELAWARE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD.)
2. THE CONTRACTOR SHALL COMPLY WITH GUIDELINES IN "THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD PART 6) FOR BARRICADES AND SIGNS (AS PER LATEST REVISION.)
3. DESIGN OF ALL SIGNS SHALL BE IN ACCORDANCE WITH THE FHWA STANDARD HIGHWAY SIGNS BOOK.
4. SIZES OF ALL SIGNS SHALL BE IN ACCORDANCE WITH "THE DELAWARE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (DE MUTCD.) SIZE OF SIGN SHALL BE BASED ON TYPE OF ROADWAY ON WHICH THE SIGN IS INSTALLED.
5. SIGNS NO LONGER IN USE SHALL BE COMPLETELY COVERED WITH NO RETROREFLECTIVE MATERIAL SHOWING, OR SHALL BE REMOVED, AS DIRECTED BY THE ENGINEER.
6. 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" (DE MUTCD) WILL PREVAIL.
7. SIGNS "N" THROUGH "Q" AND "T" AND "V", THE WORD "ROAD" SHOULD BE CHANGED TO "RAMP", "RR XING", OR "BRIDGE" WHERE APPLICABLE.
8. WARNING SIGNS AND DETOUR TRAILBLAZERS SHALL BE MOUNTED ON BREAKAWAY POSTS AND HAVE RETROREFLECTIVE FLUORESCENT ORANGE SHEETING.
9. "W" BARRICADES SHALL COMPLETELY RUN THE FULL WIDTH OF THE ROADWAY.
10. BARRICADES SHALL BE A MINIMUM OF 6 FEET WIDE UNLESS DIRECTED BY THE ENGINEER.

Unofficial Website Copy

RECOMMENDED Marvin Pedigo DATE: 10/29/14

RECOMMENDED DATE: 10/30/14

RECOMMENDED DATE:

APPROVED CHIEF SAFETY OFFICER DATE: 10-30-14

APPROVED TRAFFIC ENGINEER DATE: 10/30/14

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUM / REVISIONS

NOT TO SCALE

BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT T201407103

COUNTY NEW CASTLE

BRIDGE NO. 1-291

DESIGNED BY: PH

CHECKED BY: AW

VEHICULAR DETOUR PLAN

SHEET NO. 13

TOTAL SHTS. 18

N:\TRAFFIC\USERS\PETER\SAFETY\CANAL DISTRICT\CTP\T201407103 - BR 1-291 ON SONGSMITH DRIVE OVER SMALLEY'S POND\DETOUR\DGN

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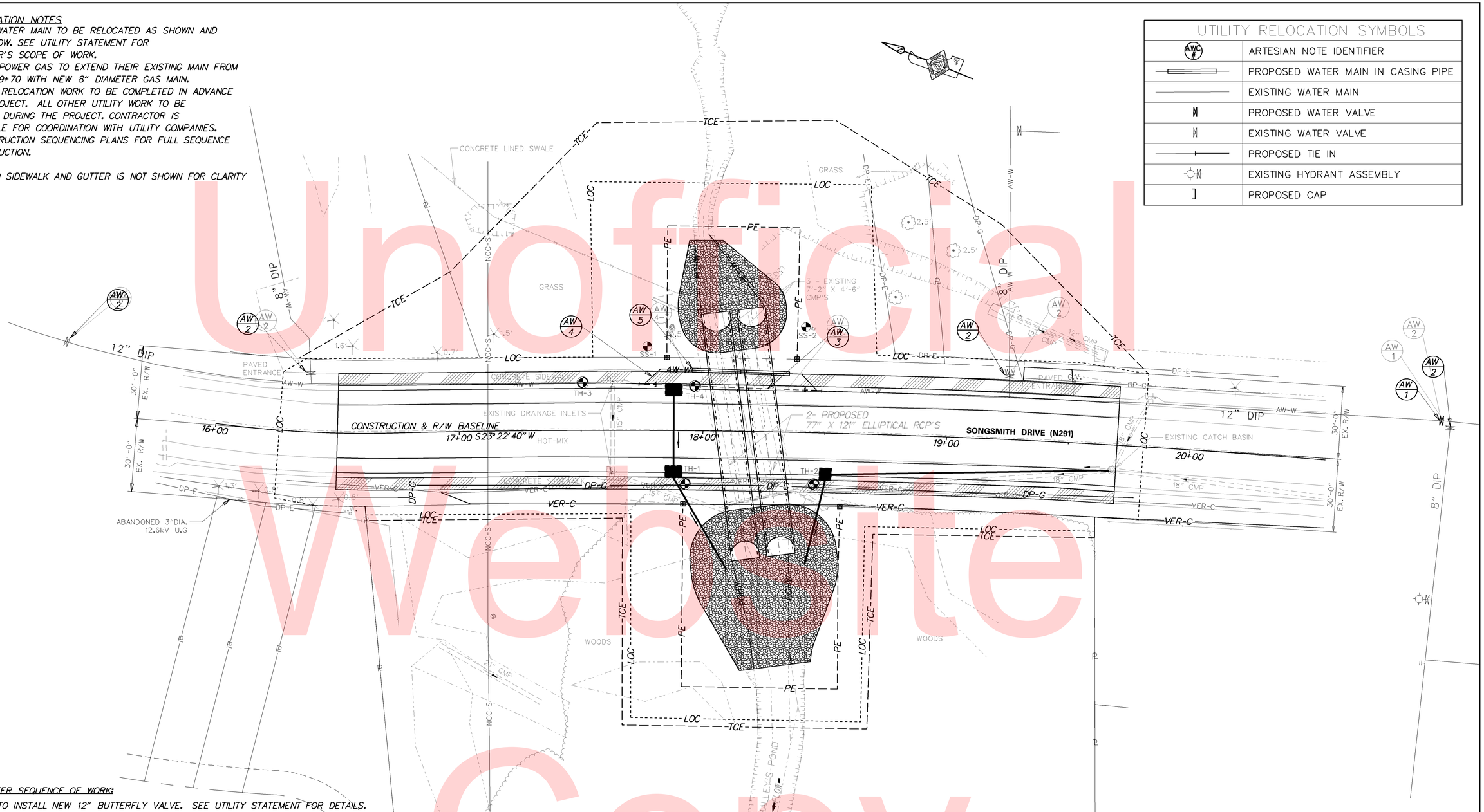
UTILITY RELOCATION NOTES

1. *ARTESIAN WATER MAIN TO BE RELOCATED AS SHOWN AND NOTED BELOW. SEE UTILITY STATEMENT FOR CONTRACTOR'S SCOPE OF WORK.*
2. *DELMARVA POWER GAS TO EXTEND THEIR EXISTING MAIN FROM 16+80 TO 19+70 WITH NEW 8" DIAMETER GAS MAIN.*
3. *VERIZION'S RELOCATION WORK TO BE COMPLETED IN ADVANCE OF THE PROJECT. ALL OTHER UTILITY WORK TO BE COMPLETED DURING THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH UTILITY COMPANIES.*
4. *SEE CONSTRUCTION SEQUENCING PLANS FOR FULL SEQUENCE OF CONSTRUCTION.*

NOTE: PROPOSED SIDEWALK AND GUTTER IS NOT SHOWN FOR CLARITY OF UTILITIES.

UTILITY RELOCATION SYMBOLS	
AWC #	ARTESIAN NOTE IDENTIFIER
	PROPOSED WATER MAIN IN CASING PIPE
	EXISTING WATER MAIN
	PROPOSED WATER VALVE
	EXISTING WATER VALVE
	PROPOSED TIE IN
	EXISTING HYDRANT ASSEMBLY
	PROPOSED CAP



ARTESIAN WATER SEQUENCE OF WORK:

1. *ARTESIAN TO INSTALL NEW 12" BUTTERFLY VALVE. SEE UTILITY STATEMENT FOR DETAILS.*
2. *ARTESIAN TO CLOSE 4 SYSTEM VALVES AS IDENTIFIED ON PLAN TO ISOLATE WATER SYSTEM AT THE CULVERT CROSSINGS.*
3. *STATE CONTRACTOR TO REMOVE ±50' SECTION OF WATER MAIN AS IDENTIFIED ON PLAN TO CLEAR WATER FACILITY FOR CULVERT REPLACEMENT.*
4. *AFTER CULVERT REPLACEMENT AND BEFORE SIDEWALK/ROAD PAVEMENT WORK, ARTESIAN SHALL REPLACE THE REMOVED SECTION OF WATER MAIN WITH NEW 12" DIP PIPE.*
5. *REPLACEMENT PIPE WILL BE INSTALLED THROUGH 40' OF NEW 20" STEEL CASING THAT WILL BE PLACED ON TOP OF OR JUST ABOVE NEW CULVERT PIPES.*
6. *CASING PIPE WILL BE INSTALLED AT APPROXIMATE DEPTH OF 2.5' AS MEASURED FROM THE PROPOSED GRADE TO THE TOP OF THE CASING PIPE.*
7. *DELDOT APPROVED BEARING PADS WILL BE USED BETWEEN CASING AND CULVERT PIPE IF NECESSARY.*
8. *ARTESIAN ASSUMES THAT WORK WILL TAKE PLACE WITHIN DELDOT ROAD CLOSURE AND NO ADDITIONAL M.O.T. WILL BE REQUIRED.*
9. *OPEN ALL CLOSED VALVES AND RETURN WATER SYSTEM TO NORMAL CONDITIONS.*

UTILITY TEST HOLE SCHEDULE

NO.	UTILITY	STATION	OFFSET	GRND EL.	COVER	O.D. & MATERIAL
TH-1	VER-C	17+87.00	22.5	47.81	2.42	2" PLASTIC
TH-2	VER-C	18+50.00	20.4	47.81	2.63	2" PLASTIC
TH-3	AW-W	17+50.00	-19.1	47.19	4.94	12" METAL
TH-4	AW-W	17+90.00	-20.3	47.41	4.01	12" METAL

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT	BRIDGE NO. 1-291	UTILITY RELOCATION PLAN	SHEET NO.
T201407103	DESIGNED BY: KRK		14
COUNTY	CHECKED BY: KRL		TOTAL SHTS.
NEW CASTLE			18

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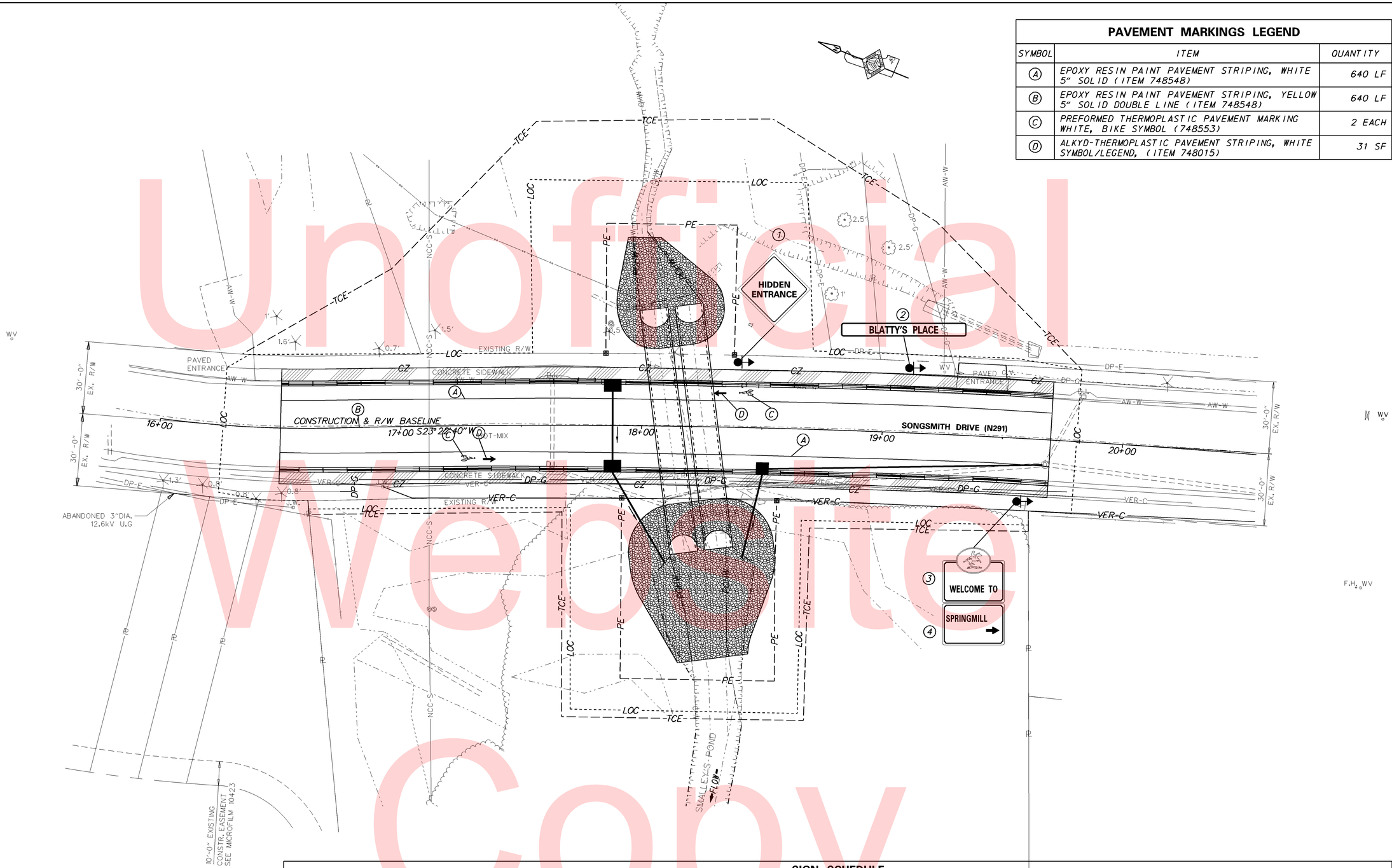
PAVEMENT MARKINGS LEGEND

SYMBOL	ITEM	QUANTITY
(A)	EPOXY RESIN PAINT PAVEMENT STRIPING, WHITE 5" SOLID (ITEM 748548)	640 LF
(B)	EPOXY RESIN PAINT PAVEMENT STRIPING, YELLOW 5" SOLID DOUBLE LINE (ITEM 748548)	640 LF
(C)	PREFORMED THERMOPLASTIC PAVEMENT MARKING WHITE, BIKE SYMBOL (748553)	2 EACH
(D)	ALKYD-THERMOPLASTIC PAVEMENT STRIPING, WHITE SYMBOL/LEGEND, (ITEM 748015)	31 SF



SIGN SCHEDULE

NO.	SHT. NO.	PLAN I.D.	CODE	QTY.	DESCRIPTION	ASSY. NO.	WIDTH (IN.)	HEIGHT (IN.)	AREA (SF)	ITEM 749687 ~ SINGLE POST (EA)			ITEM 749690 MULTI-POST (SF)			POST INSTALL TYPE	CODE X11 12' POST (W/ BASEPOST)	ITEM 749688 4" HOLE,0-6" (EA)	ITEM 749689 4" HOLE,>6" (EA)	REMARKS
										DISPOSITION	REMOVE	INSTALL	DISPOSITION	REMOVE	INSTALL					
1	15	1	W11-24aP-DE	1	HIDDEN ENTRANCE	1	24	24	4	REPOSITION	1	1				SOIL				
2	15	2	D3-1-DE1	1	PRIVATE STREET NAME " BLATTY'S PLACE"	1	36	36	9	REPOSITION	1	1				SOIL				
3	15	3	D3-2-DE1	1	WELCOME TO	1	36	36	9	REPOSITION	1	1				SOIL				
4	15	4	D3-2-DE2	1	DEVELOPMENT NAME "SPRINGMILL"	1	36	30	8	REPOSITION	1	1				SOIL				

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 20 40 60
FEET

BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT	BRIDGE NO.	1-291
T201407103	DESIGNED BY: KRK	
COUNTY	CHECKED BY: KRL	
NEW CASTLE		

SIGNING, STRIPING AND CONDUIT PLAN

SHEET NO.
15
TOTAL SHTS.
18

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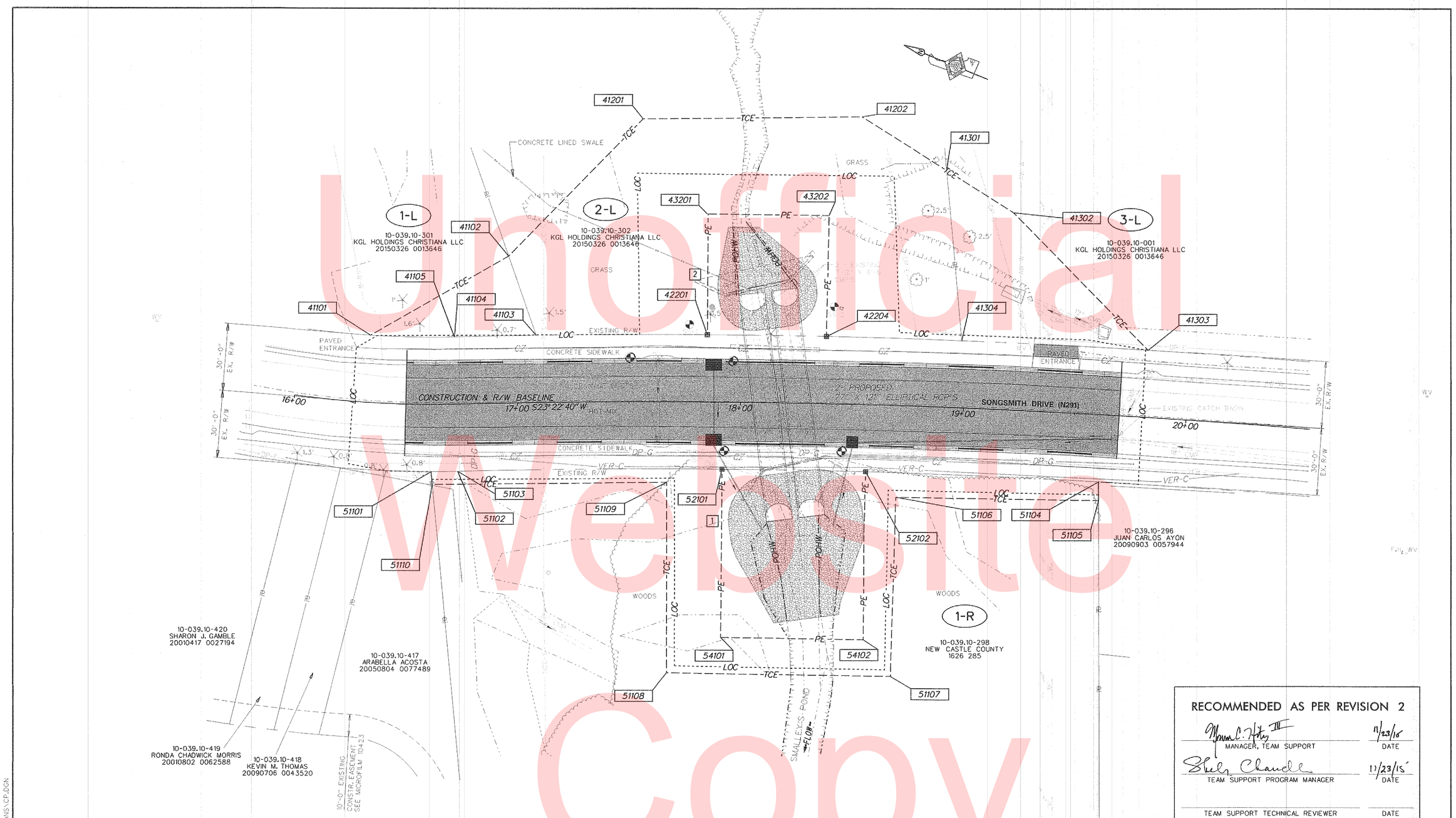

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RECOMMENDED AS PER REVISION 2

MANAGER, TEAM SUPPORT — DATE 11/23/15

TEAM SUPPORT PROGRAM MANAGER — DATE 11/23/15

TEAM SUPPORT TECHNICAL REVIEWER — DATE

ORIGINAL SIGNATURE DATE: 02/06/15

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

1 MODIFICATION TO PARCEL 1-R TO CONVERT FEE ACQUISITION TO PE; DELETED R/W PT. NO. 52103 AND 52104	2 MODIFICATION TO PARCEL 2-L TO CONVERT FEE ACQUISITION TO PE; DELETED R/W PT. NO. 42202 AND 42203

SCALE 0 20 40 60 FEET

BR 1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT T201407103	BRIDGE NO. 1-291	RIGHT-OF-WAY SHEET 1 OF 3	
COUNTY NEW CASTLE	DESIGNED BY: KRK	RIGHT-OF-WAY PLAN	SHEET NO. 16
	CHECKED BY: KRL		TOTAL SHTS. 18

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
10-039.10-298	(1-R) NEW CASTLE COUNTY	TCE-1	1626 285	5.080

ALIGNMENT NUMBER & DESCRIPTION: 10000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
51101	10000	16+61.39	30.00	597357.9481	586107.6832			S 22°40'37.94" E	11.92	11.92	-487.25
51102	10000	16+72.57	30.00	597346.9532	586112.2774	S 23°22'40.20" E	0.07				
51103	10000	16+72.64	30.00	597346.8925	586112.3036			S 22°24'51.22" E	118.35	118.35	3519.00
52101	10000	17+92.00	30.00	597237.4854	586157.4297	S 68°32'57.11" W	75.00				
54101	10000	17+92.00	105.00	597210.0593	586087.6287	N 20°54'52.08" E	64.05				
54102	10000	18+58.00	105.00	597150.2326	586110.4916	N 68°51'21.43" E	75.01				
52102	10000	18+57.00	30.00	597177.2884	586180.4481			S 19°32'59.90" E	104.61	104.61	3519.00
51104	10000	19+62.50	30.00	597078.7102	586215.4533	S 67°57'13.00" W	8.39				
51105	10000	19+63.00	38.38	597075.5599	586207.6742	N 21°05'00.44" W	91.00				
51106	10000	18+71.00	41.00	597160.4726	586174.9373	S 69°49'28.46" W	80.00				
51107	10000	18+71.00	121.00	597132.8810	586099.8461	N 21°00'53.73" W	100.45				
51108	10000	17+67.00	121.00	597226.6503	586063.8233	N 68°08'44.07" E	85.00				
51109	10000	17+67.00	36.00	597258.2915	586142.7147	N 22°29'10.81" W	105.00				
51110	10000	16+61.88	35.74	597355.3070	586102.5567	N 62°44'36.00" E	5.77				
51101	10000	16+61.39	30.00	597357.9481	586107.6832						

FIGURE 51100 AREA = 5998.9738 SQ. FT. (0.1377 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
10-039.10-298	(1-R) NEW CASTLE COUNTY	P/E-1	1626 285	5.080

1

ALIGNMENT NUMBER & DESCRIPTION: 10000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
54101	10000	17+92.00	105.00	597210.0593	586087.6287	N 68°32'57.11" E	75.00				
52101	10000	17+92.00	30.00	597237.4854	586157.4297			S 20°55'33.95" E	64.45	64.45	3519.00
52102	10000	18+57.00	30.00	597177.2884	586180.4481	S 68°51'21.43" W	75.01				
54102	10000	18+58.00	105.00	597150.2326	586110.4916	N 20°54'52.08" W	64.05				
54101	10000	17+92.00	105.00	597210.0593	586087.6287						

FIGURE 54100 AREA = 4824.8193 SQ. FT. (0.1108 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
10-039.10-301	(1-L) VILLAGE OF WINDHOVER APARTMENTS LLC	TCE-1	20050328 0028762	6.566

ALIGNMENT NUMBER & DESCRIPTION: 10000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
41101	10000	16+32.28	-30.00	597405.9308	586153.9544	S 51°42'04.55" E	71.46				
41102	10000	16+97.42	-65.65	597361.6435	586210.0345	S 48°53'00.49" W	37.53				
41103	10000	17+09.01	-30.00	597336.9616	586181.7576			N 23°05'02.08" W	36.68	36.68	-3579.00
41104	10000	16+72.64	-30.00	597370.7001	586167.3781	N 23°22'40.20" W	0.07				
41105	10000	16+72.57	-30.00	597370.7607	586167.3519			N 20°51'12.56" W	37.64	37.65	427.25
41101	10000	16+32.28	-30.00	597405.9308	586153.9544						

FIGURE 41100 AREA = 1354.3997 SQ. FT. (0.0311 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
10-039.10-302	(2-L) VILLAGE OF WINDHOVER APARTMENTS LLC	TCE-1	20050328 0028762	3.190

ALIGNMENT NUMBER & DESCRIPTION: 10000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
41103	10000	17+09.01	-30.00	597336.9616	586181.7576	N 48°53'00.49" E	37.53				
41102	10000	16+97.42	-65.65	597361.6435	586210.0345	S 67°28'14.30" E	85.80				
41201	10000	17+56.52	-126.29	597328.7692	586289.2852	S 22°31'19.52" E	98.25				
41202	10000	18+51.34	-128.46	597238.0144	586326.9180	S 10°11'01.14" W	44.80				
41301	10000	18+88.76	-105.80	597193.9205	586318.9972	S 62°59'00.00" W	76.41				
41304	10000	18+98.16	-30.00	597159.2133	586250.9294			N 20°13'21.23" W	60.67	60.67	-3579.00
42204	10000	18+38.00	-30.00	597216.1433	586229.9578	N 69°17'30.53" E	22.00				
42203	10000	18+38.00	-52.00	597223.9228	586250.5367	N 69°17'30.53" E	32.00				
43202	10000	18+38.00	-84.00	597235.2382	586280.4693	N 21°08'09.63" W	54.25				
43201	10000	17+85.00	-84.00	597285.8424	586260.9062	S 68°26'10.22" W	32.00				
42202	10000	17+85.00	-52.00	597274.0812	586231.1459	S 68°26'10.22" W	22.00				
42201	10000	17+85.00	-30.00	597265.9953	586210.6856			N 22°10'38.38" W	76.64	76.64	-3579.00
41103	10000	17+09.01	-30.00	597336.9616	586181.7576						

FIGURE 41200 AREA = 13944.1375 SQ. FT. (0.3201 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
10-039.10-302	(2-L) VILLAGE OF WINDHOVER APARTMENTS LLC	P/E-1	20050328 0028762	3.190

2

ALIGNMENT NUMBER & DESCRIPTION: 10000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
42201	10000	17+85.00	-30.00	597265.9953	586210.6856	N 68°26'10.22" E	54.00				
43201	10000	17+85.00	-84.00	597285.8424	586260.9062	S 21°08'09.63" E	54.25				
43202	10000	18+38.00	-84.00	597235.2382	586280.4693	S 69°17'30.53" W	54.00				
42204	10000	18+38.00	-30.00	597216.1433	586229.9578			N 21°08'09.20" W	53.45	53.45	-3579.00
42201	10000	17+85.00	-30.00	597265.9953	586210.6856						

FIGURE 43200 AREA = 2904.3139 SQ. FT. (0.0667 ACRES)

ASSESSMENT NUMBER	OWNERSHIP OF RECORD	TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)
10-039.10-001	(3-L) VILLAGE OF WINDHOVER APARTMENTS LLC	TCE-1	20050328 0028762	11.909

ALIGNMENT NUMBER & DESCRIPTION: 10000 - CONSTRUCTION BASELINE

PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
41304	10000	18+98.16	-30.00	597159.2133	586250.9294	N 62°59'00.00" E	76.41				
41301	10000	18+88.76	-105.80	597193.9205	586318.9972	S 10°11'01.14" W	35.46				
41302	10000	19+18.71	-88.16	597159.0147	586312.7270	S 23°33'28.26" W	86.15				
41303	10000	19+81.23	-30.00	597080.0410	586278.2934			N 19°03'59.33" W	83.77	83.77	-3579.00
41304	10000	18+98.16	-30.00	597159.2133	586250.9294						

FIGURE 41300 AREA = 3509.0934 SQ. FT. (0.0806 ACRES)

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LEGEND

FEE	AREA OF ACQUISITION
RW	AREA OCCUPIED BY EXISTING RW
P/E	PERMANENT EASEMENT
TCE	TEMPORARY CONSTRUCTION EASEMENT
*	"-" OFFSET IS LEFT OF BASELINE
**	"-" CURVE TURNS TO THE LEFT

RIGHT-OF-WAY SHEET 2 OF 3

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	
1 MODIFICATION TO PARCEL 1-R TO CONVERT FEE ACQUISITION TO PE DELETED PT. NO. 52103 AND 52104	2 MODIFICATION TO PARCEL 2-L TO CONVERT FEE ACQUISITION TO PE DELETED PT. NO. 42202 AND 42203

1-291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT	T201407103	
COUNTY	NEW CASTLE	
BRIDGE NO.	BR 1-291	
DESIGNED BY: KRK		
CHECKED BY: KRL		

RIGHT-OF-WAY DATA SHEET

SHEET NO.	17
TOTAL SHTS.	18

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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	ACQUISITION 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)			
10-039.10-298	16	(1-R) NEW CASTLE COUNTY	1626 285	D - 5.08	TCE-1				5998.9738 / 0.14			
					P/E-1			[1] 4824.8193 / 0.11		221284.80 / 5.08		
10-039.10-301	16	(1-L) VILLAGE OF WINDHOVER APARTMENTS LLC	20050328 0028762	D - 6.57	TCE-1				1354.3997 / 0.03	285997.536 / 6.57		
10-039.10-302	16	(2-L) VILLAGE OF WINDHOVER APARTMENTS LLC	20050328 0028762	D - 3.19	TCE-1				13944.1375 / 0.32			
					P/E-1			[2] 2904.3139 / 0.07		138956.40 / 3.19		
10-039.10-001	16	(3-L) VILLAGE OF WINDHOVER APARTMENTS LLC	20050328 0028762	D - 11.91	TCE-1				3509.0934 / 0.08	518751.684 / 11.91		

Unofficial Website Copy

ACQUISITION CODES

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

RIGHT–OF–WAY SHEET 3 OF 3

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

[1] MODIFICATION TO PARCEL 1-R TO CONVERT FEE ACQUISITION TO PE DELETED PT. NO. 52103 AND 52104	[2] MODIFICATION TO PARCEL 2-L TO CONVERT FEE ACQUISITION TO PE DELETED PT. NO. 42202 AND 42203

1–291 ON SONGSMITH DR. OVER TRIBUTARY TO SMALLEY'S POND

CONTRACT	T201407103	
COUNTY	NEW CASTLE	
BRIDGE NO.	BR 1–291	
DESIGNED BY: KRK		
CHECKED BY: KRL		

RIGHT–OF–WAY TABULATION SHEET

SHEET NO. 18
TOTAL SHTS. 18

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