

THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

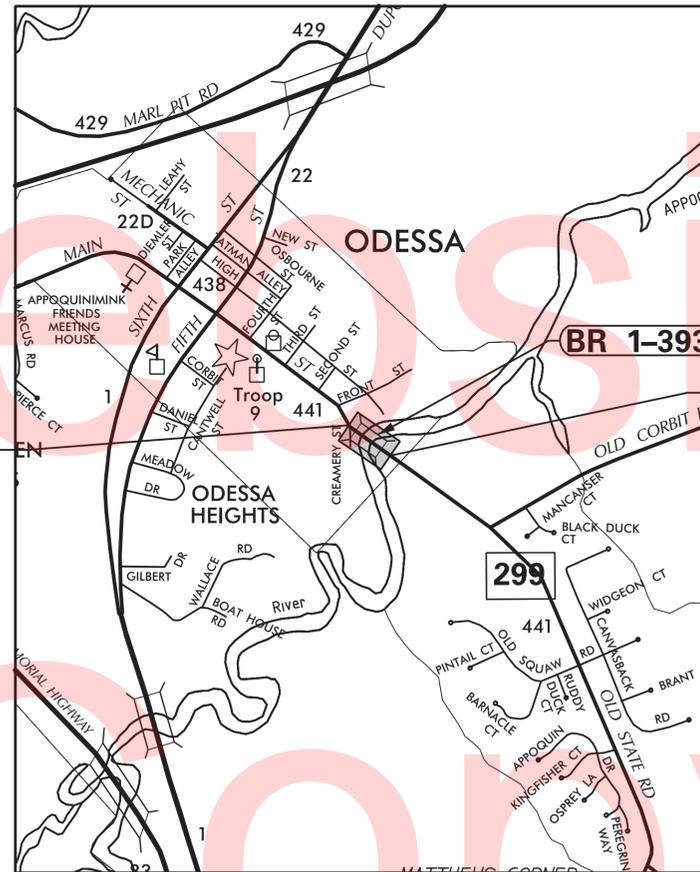
U.S. CUSTOMARY
UNITS
FINAL PLAN



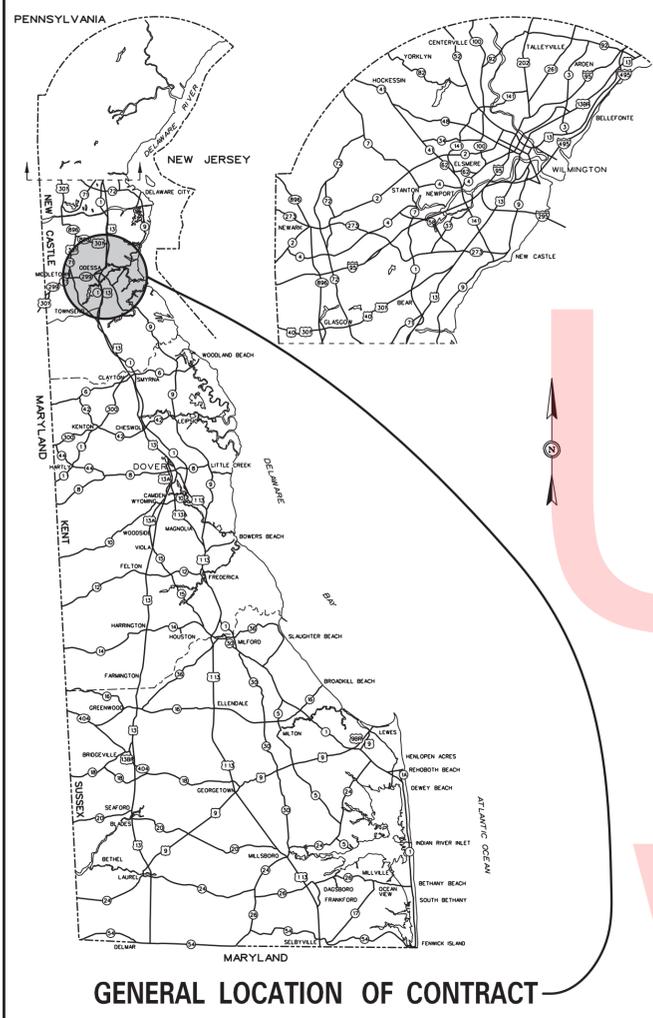
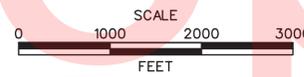
CONSTRUCTION PLANS FOR: BR 1-393 ON SR299 MAIN STREET OVER APPOQUINIMINK RIVER

CONSTRUCTION CONTRACT NUMBER: T201307401
FEDERAL AID PROJECT NUMBER: EBH0S-N441(01)

COUNTY: NEW CASTLE M.R. #: 441



LOCATION MAP



GENERAL LOCATION OF CONTRACT

DESIGN DESIGNATION		
FUNCTIONAL CLASS: MAJOR COLLECTOR	D.H.V. PROJECTED: 420	YEAR: 2040
TYPE OF CONSTRUCTION: REHABILITATION	DESIGN SPEED: 30 M.P.H.	
A.A.D.T. CURRENT: 5156	YEAR: 2012	TRUCKS: 7%
A.A.D.T. PROJECTED: 7000	YEAR: 2040	DIRECTION OF DISTRIBUTION: 60%

INDEX OF SHEETS	
SHEET NO	TABLE OF CONTENTS
1	TITLE
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8	CONSTRUCTION PHASING, MAINTENANCE OF TRAFFIC AND EROSION CONTROL PLAN
9-10	RIGHT-OF-WAY PLAN

TOTAL SHEETS: 10

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME
89-074-01	BR. 393 ON S.R. 299 OVER APPOQUINIMINK RIVER

PREPARED BY
THE CONSULTING FIRM OF

AECOM TECHNICAL SERVICES, INC
1700 MARKET STREET, SUITE 1600
PHILADELPHIA, PA 19103
(215) 735-0832



SEAL

N.A. Sheard

02/03/2016

RECOMMENDED

DATE

RECOMMENDED

Edward C. Fisher 02/18/2016
AREA ENGINEER, CONSTRUCTION DATE

Christopher Costello 02/20/2016
GROUP ENGINEER, CONSTRUCTION DATE

Jim A. Quinn 02/20/2016
ASSISTANT DIRECTOR, CONSTRUCTION DATE

RECOMMENDED

Stephen Orlik

SQUAD MANAGER, BRIDGE DESIGN

02/17/2016

DATE



SEAL

RECOMMENDED

Jason W. Hastings

BRIDGE DESIGN ENGINEER

02/23/2016

DATE



SEAL

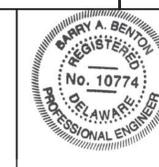
RECOMMENDED

Robert Brian McClary

ASSISTANT DIRECTOR, BRIDGE

02/24/2016

DATE



SEAL

APPROVED

Robert Brian McClary

CHIEF ENGINEER

03/24/2016

DATE



SEAL

LAST REVISED: 04/08/2015 P:\60213789 - DELDOT AGR 1558 BRIDGE DESIGN SERVICES\TASK 0008 - REHAB BR 1-393 ODESSA 900 WORK\910 CAD\20-SHEETS\CIVIL\TC01.DGN

EXISTING SYMBOLS

DRAINAGE	
	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
	DRAINAGE INLET
	DRAINAGE JUNCTION BOX
	DRAINAGE MANHOLE
	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES	
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	CURB
	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
	LAMP AND POST - RESIDENTIAL
	MAILBOX
	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
	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

RIGHT-OF-WAY SYMBOLS	
	PROPERTY MARKER - CONCRETE MON.
	PROPERTY MARKER - IRON PIPE
	HISTORIC RIGHT-OF-WAY BASELINE
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING DENIAL OF ACCESS
	EXISTING R/W & DENIAL OF ACCESS

SURVEY CONTROL & MONUMENTATION	
	SURVEY BENCHMARK LOCATION
	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS

UTILITY	
	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
	CABLE TV DISTRIBUTION BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
	GAS MANHOLE
	GAS METER
	GAS VALVE
	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	SANITARY SEWER VENT OR CLEANOUT
	SEPTIC DRAIN FIELD
	TELEPHONE BOOTH
	TELEPHONE MANHOLE
	TELEPHONE TEST POINT
	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
	WATER - FIRE HYDRANT
	WATER METER
	WATER VALVE
	WELL HEAD
	MANHOLE - UNDETERMINED OWNER

UTILITY COMPANY FACILITIES	
	EXISTING VERIZON FACILITIES-OVERHEAD
	EXISTING CHESAPEAKE UTILITY - GAS
	EXISTING SANITARY SEWER-NCCS
	EXISTING NCCS
	EXISTING ELECTRIC-DP&L OVERHEAD
	EXISTING FORCE MAIN

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BRICK PATTERNED SURFACE
	BUTT JOINT
	CONSTRUCTION BASELINE
	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
	CLEAR ZONE
	DRAINAGE INLET
	DITCH
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPE 1
	GUARDRAIL, TYPE 2
	GUARDRAIL, TYPE 3
	GUARDRAIL END ANCHORAGE
	GUARDRAIL END TREATMENT, TYPE 1
	GUARDRAIL END TREATMENT, TYPE 2
	GUARDRAIL END TREATMENT, TYPE 3
	IMPACT ATTENUATOR
	JUNCTION BOX - DRAINAGE
	LATERAL OFFSET
	LIMIT OF CONSTRUCTION
	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
	PROPOSED DENIAL OF ACCESS
	PROPOSED PERMANENT EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED R/W & DENIAL OF ACCESS
	TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED RIGHT-OF-WAY BASELINE

PROPOSED SYMBOLS

IDENTIFIERS	
	ADJUST BY CONTRACTOR
	ADJUST BY OTHERS
	CONCRETE SAFETY BARRIER
	CURB OR CURB & GUTTER
	CONVERT TO JUNCTION BOX
	CONVERT TO DRAINAGE MANHOLE
	CURB OPENING
	CURB RAMP / TYPE
	CURB RAMP / TYPE - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
	CONSTRUCTION SAFETY FENCE
	DRAINAGE INLET
	DO NOT DISTURB
	ENERGY DISSIPATOR
	FENCE
	FLARED END SECTION
	FILL WITH FLOWABLE FILL
	FILTRATION STRUCTURE
	GUARDRAIL
	JUNCTION BOX
	MANHOLE
	MONUMENT - RIGHT-OF-WAY
	PIPE
	RELOCATE BY CONTRACTOR
	RELOCATE BY OTHERS
	REMOVE BY CONTRACTOR
	REMOVE BY OTHERS
	UNDERDRAIN / LENGTH
	UNDERDRAIN OUTLET PIPE

LANDSCAPING	
	LANDSCAPE PLANTINGS
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

TRAFFIC	
	ITMS CONDUIT
	SIGNAL CONDUIT
	CONDUIT JUNCTION WELL
	LUMINAIRE
	PAVEMENT MARKINGS
	PAVEMENT STRIPING
	TRAFFIC SIGN

MISCELLANEOUS SYMBOLS	
	GROUT BAGS

PAVEMENT SECTION(S)	
	OVERLAY PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS
	RECONSTRUCTED PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS
	DRIVEWAY AND ENTRANCE PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS

EROSION & SEDIMENT CONTROL	
	DEWATERING BAG
	DEWATERING BASIN
	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
	PORTABLE SEDIMENT TANK
	SANDBAG DIKE
	SANDBAG DIVERSION
	STONE CHECK DAM
	STABILIZED CONSTRUCTION ENTRANCE
	SILT FENCE / LENGTH
	SILT FENCE
	SILT FENCE - REINFORCED
	SUMP PIT
	SEDIMENT TRAP / NUMBER
	SEDIMENT TRAP
	SEDIMENT TRAP WITH INLET AS OUTLET
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN
	TURBIDITY CURTAIN / LENGTH
	TURBIDITY CURTAIN
	GEOTUBE / GEOTEXTILE DEWATERING BAG

CONSTRUCTION PHASING & M.O.T	
	BARRICADE, TYPE 3
	CONCRETE SAFETY BARRIER - PORTABLE
	CONSTRUCTION SAFETY FENCE / LENGTH
	CONSTRUCTION SAFETY FENCE
	CONSTRUCTION WARNING SIGN LOCATION
	CONSTRUCTION WARNING SIGN
	CRASH CUSHION ARRAY
	DRUM - TRAFFIC CONTROL
	FLAGGER LOCATION
	PHASING TRAFFIC FLOW ARROW
	TEMPORARY CONSTRUCTION
	TEMPORARY PAVEMENT MARKING ARROW
	TRUCK WITH MOUNTED ATTENUATOR
	WORK AREA - ACTIVE PHASE

LAST REVISED: 04/08/2015 P:\60213789 - DELDOT_AGR 1588 BRIDGE DESIGN SERVICES\TASK 0008 - REHAB BR 1-393 ODESSA 900 WORK\910 CAD\20-SHEETS\CIVIL\1001.DGN

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.

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

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

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

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

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

()	CROSS SECTIONS
(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 0.17 ACRES. IMPERVIOUS AREA ADDED 0 SF.

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 300

- 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':
 - CRUSHED STONE (PER STANDARD SPECIFICATION 821)
 - CRUSHED CONCRETE (PER STANDARD SPECIFICATION 821)

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'.

- A. THE USE OF GRADED AGGREGATE BASE COURSE (GABC) IN THE TRAVEL WAY, TEMPORARY TRAVEL WAY, HIGH VOLUME ENTRANCES AND ACCESS RAMP FOR THE PURPOSE OF PROVIDING A TEMPORARY ROADWAY SURFACE, POTHOLE REPAIR, TAPERED EDGE FOR UTILITIES, BUTT JOINTS, AND LONGITUDINAL DROP-OFFS (MILLING AND PAVING OPERATIONS) IS PROHIBITED UNLESS IT IS OTHERWISE DESIGNATED TO BE USED IN THE CONTRACT PLANS. USE COLD PATCH, BITUMINOUS CONCRETE, BITUMINOUS CONCRETE WEDGE, OR TAPER MILL, AS NOTED IN THE CONTRACT DOCUMENTS OR APPROVED BY THE ENGINEER. PAYMENT FOR COLD PATCH, BITUMINOUS CONCRETE OR BITUMINOUS CONCRETE WEDGE SHALL BE PAID AS NOTED IN THE CONTRACT DOCUMENTS. TAPER MILL BITUMINOUS CONCRETE SHALL BE PAID UNDER THE BITUMINOUS CONCRETE MILLING ITEM.

- GABC SHALL BE USED AT THE FOLLOWING LOCATIONS WHERE ACCESS TO A BUSINESS, RESIDENCE, OR EDGE DROP OFF NEEDS TO BE MAINTAINED UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE ENGINEER TO USE BITUMINOUS CONCRETE OR COLD PATCH. GABC WILL BE ROLLED AND COMPACTED TO HELP PREVENT THE MATERIAL FROM UNRAVELLING:
 - DRIVEWAYS
 - ENTRANCES
 - LOW VOLUME ACCESS RAMPS (IDENTIFIED IN THE CONTRACT DOCUMENTS)
 - EDGE DROP-OFFS ADJACENT TO LIVE ROADWAY (LANES AND SHOULDER) AND THE PROPOSED ROAD CONSTRUCTION
 - EDGE OF ROADWAY DROP-OFF

GRADING AND MAINTAINING BASE COURSE THAT IS BEING USED FOR ROADWAY WEDGE/FILLET BETWEEN TRAVEL LANES AND PAVEMENT BOX, EDGE OF TRAVELWAY, DRIVEWAY OR ENTRANCE ACCESS SHALL BE INCIDENTAL TO ITEM NO. 743000 - MAINTENANCE OF TRAFFIC. THE BASE COURSE MATERIAL SHALL BE PLACED AT NO GREATER THAN THE SLOPE SPECIFIED IN TABLE 6G-1 AND SHALL BE COMPACTED. EXCESS BASE COURSE MATERIAL SHALL BE PUSHED AHEAD AND USED IN THE NEXT SEGMENT AND SHALL BE INCIDENTAL TO THE PARTICULAR BASE COURSE PAY ITEM. NO SEPARATE PAYMENT SHALL BE MADE FOR GABC TEMPORARY ROADWAY MATERIAL (TRM) USED TO PROTECT EDGE DROP-OFFS, UNLESS THE MATERIAL IS EVENTUALLY UTILIZED AS PART OF A PERMANENT ROADWAY AT WHICH TIME THE MATERIAL WOULD BE PAID FOR UNDER THE RESPECTIVE CONTRACT MATERIAL ITEM. VERTICAL DIFFERENCES SHALL BE CORRECTED IN ACCORDANCE WITH TABLE 6G-1 OF THE DELAWARE MUTCD.

SECTION 900

- 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 NOIS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S STORMWATER SECTION. A COPY OF THE GENERAL PERMIT OR THE NOICAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

MISCELLANEOUS

- LOCATION AND DESCRIPTION: BRIDGE NO. 1-393 IS LOCATED OVER THE APPOQUINIMINK RIVER NEAR THE CITY OF ODESSA, NEW CASTLE COUNTY, DELAWARE AND CARRIES SR 299 (MAIN STREET) OVER THE APPOQUINIMINK RIVER. THE WORK INVOLVES THE REPAIR OF A SCOUR HOLE BELOW THE PIER CAP OF PIER 1 AND REMEDIATION FOR THE POTENTIAL SCOUR AT BOTH ABUTMENTS.
- AS BUILT PLANS OF THE EXISTING STRUCTURE ARE AVAILABLE AND SHALL BE OBTAINED THROUGH THE DEPARTMENT AND USED IN CONJUNCTION WITH THESE DRAWINGS WHEN DETERMINING EXISTING DIMENSIONS. ALL DIMENSIONS SHOWN ON THESE DRAWINGS WERE TAKEN FROM THE EXISTING PLANS AND SHOULD BE VERIFIED IN THE FIELD. THE EXISTING PLANS ARE AS FOLLOWS:

CONTRACT NO.	DESCRIPTION
89-074-01	BR. 393 ON S.R. 299 OVER APPOQUINIMINK RIVER

- ANY DAMAGE DONE BY THE CONTRACTOR'S OPERATIONS TO THE EXISTING FACILITIES NOT DESIGNATED FOR REPAIRS UNDER THE CONTRACT SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL NOT BE ALLOWED TO WORK IN THE APPOQUINIMINK RIVER FROM MARCH 15 TO JUNE 30 OF ANY CALENDAR YEAR DUE TO FISHERY RESTRICTIONS.
- THE CONTRACTOR MUST BE AWARE THAT THE PROJECT TAKES PLACE WITHIN THE ODESSA HISTORIC DISTRICT. SEVERAL NATIONAL REGISTER PROPERTIES ARE WITHIN THE DISTRICT AND NEAR THE LIMIT OF CONSTRUCTION (LOC). AS SUCH, NO FURTHER WORK SHOULD BE UNDERTAKEN OTHER THAN THE NECESSARY PLANS AND SCOPE, AS INDICATED. ANY PLAN MODIFICATION SIGNIFICANT IN NATURE OR NEW INFORMATION NOT INITIALLY KNOWN THAT ALTERS PLANS AND DESIGNS WILL BE COORDINATED WITH DISTRICT ENGINEER AND THE ENVIRONMENTAL STUDIES OFFICE (NATHANIEL DELESLINE 302-760-2278; NATHANIEL.DELESLINE@STATE.DE.US.) THIS INCLUDES THE CURRENT STOCKPILING, STAGING, AND ACCESS AREAS. IF NECESSARY, THEY WILL COORDINATE WITH THE DELAWARE STATE HISTORIC PRESERVATION OFFICE (SHPO) AND FEDERAL HIGHWAY ADMINISTRATION (FHWA) OR ANY OTHER INTERESTED PARTY BEFORE ANY ACTION IS IMPLEMENTED. PROPOSED OR NECESSARY MODIFICATIONS AND CHANGES WILL BE REVIEWED TO ENSURE PROPER TREATMENT AND CONSIDERATIONS TO HISTORIC PROPERTIES, PER SHPO, FHWA THE PROPERTY OWNERS), AND THE CONTRACTOR'S DIALOGUE.

- BEFORE CONSTRUCTION ACTIVITIES, THE CONTRACTOR WILL RECORD AND MONITOR SITE CONDITIONS BY USE OF VIDEO OR OTHER DATA RECORDATION. AS PART OF THAT EFFORT, THE CONTRACTOR MAY ALSO UNDERTAKE FIELD MEASUREMENTS AND RECORD EXISTING CONDITIONS FOR DESIGN DETAILS AND ANY CONTRASTING SPECIFICATIONS. COPIES WILL BE PROVIDED TO THE APPROPRIATED PERSONNEL DURING THE PRE-CONSTRUCTION MEETING AND PRIOR TO CONSTRUCTION. THE DEPARTMENT SHALL REVIEW AND APPROVE THE VIDEO PRIOR TO BEGINNING OF CONSTRUCTION ACTIVITIES. THE EFFORTS WILL BE USED FOR ANY DISPUTE RESOLUTIONS, SHOULD THEY ARISE.

IF UNFORESEEN DAMAGE OCCURS TO ANY PROPERTIES WITHIN THE PROPOSED HISTORIC DISTRICT (HD), AS A DIRECT RESULT OF THE UNDERTAKING, DELDOT'S ENVIRONMENTAL STUDIES PERSONNEL WILL BE CONTACTED PRIOR TO IMPLEMENTATION TO ENSURE THAT PROPOSED REPAIRS WILL MEET THE SECRETARY OF THE INTERIOR STANDARDS FOR REHABILITATION AND/OR TREATMENT OF HISTORIC PROPERTIES. ANY REPAIR MEASURES WILL AVOID AND MINIMIZE POTENTIAL ADVERSE EFFECTS AS DETERMINED BY DELDOT, SHPO, AND FHWA.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADHERING TO THE CONSTRUCTION SITE POLLUTION PREVENTION SPECIFICATIONS AS DETAILED IN SECTION 3.6 OF THE "DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK". ALL COSTS ASSOCIATED WITH ADHERING TO THE STANDARDS SHALL BE INCIDENTAL TO THE OVERALL CONTRACT COSTS.

- HYDRAULIC DATA
 DRAINAGE AREA : 20.8 SQ MI (AT SR-299)
 DESIGN FREQUENCY : 100-YR STORM TIDE FROM DELAWARE RIVER
 DESIGN DISCHARGE : 13214 CFS (MAX)
 100-YR STORM TIDE HEADWATER ELEVATION : 7.79 FT (MAX)
 MEAN HIGH WATER ELEVATION (MHW) : 2.55 FT
 MEAN LOW WATER ELEVATION (MLW) : -2.79 FT
 VERTICAL UNDER CLEARANCE ABOVE MHW : 4.64 FT

SCOUR ANALYSIS
 THE PROPOSED STRUCTURE HAS BEEN ANALYZED FOR THE EFFECTS OF SCOUR IN ACCORDANCE WITH HEC-18- 'EVALUATING SCOUR AT BRIDGES' AND HEC-25- 'TIDAL HYDROLOGY, HYDRAULICS, AND SCOUR AT BRIDGES'. SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE WORSE CASE OF THE OVERTOPPING FLOOD, THE 100-YR FLOOD EVENT, OR THE 500-YR FLOOD EVENT.

DESIGN EVENT : APPOQUINIMINK RIVER 100-YR FLOOD EVENT (MLW FROM DELAWARE RIVER)
 DESIGN VELOCITY : 13.52 FT/S
 DESIGN DISCHARGE : 4792 CFS
 DESIGN DEPTH OF FLOW : 8.8 FT
 DESIGN HEADWATER ELEVATION : 1.2 FT

- ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.
- REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR ANY RESTRICTIONS AND ADDITIONAL GUIDANCE THAT MAY BE ASSOCIATED WITH THIS PROJECT.
- PROJECT FALLS WITHIN TOWN LIMITS OF THE TOWN OF ODESSA.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO THE PARKING LOT FOR NEW CASTLE COUNTY.
- THE CONTRACTOR SHALL CONTACT WILLIAM LOTHARP, THE CHIEF OF SCHEDULING FOR DART FIRST STATE, 14 DAYS PRIOR TO THE START OF CONSTRUCTION AT 302-576-6006.

CONSTRUCTION STAGING AND ACCESS

- THE CONTRACTOR SHALL COMPLETE AN UNDERWATER INSPECTION TO CONFIRM THE EXISTING CONDITIONS AND ALERT THE ENGINEER OF ANY SIGNIFICANT DIFFERENCES FROM THE CONTRACT DRAWINGS. PAYMENT INCIDENTAL TO ITEM NO. 763000.
- THE CONTRACTOR SHALL NOTE THIS WORK IS BEING COMPLETED UNDER WATER AND THERE IS LIMITED VERTICAL CLEARANCE, ESPECIALLY DURING HIGH TIDE.
- THIS WORK FOR INSTALLATION OF SCOUR PROTECTION MEASURES IS ANTICIPATED TO UTILIZE PONTOONS OR BARGES AND CRANES. ROAD CLOSURES ARE NOT ANTICIPATED.
- EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS. 2" OF GABC (CRUSHER RUN) SHALL BE PLACED ON THE UNPAVED AREA OF THE BOAT RAMP AND PAID FOR UNDER ITEM NO. 302005. IF THE PAVED AREA GETS DAMAGED IT SHALL BE REPAVED. PAVING WILL BE PAID FOR UNDER ITEM NO. 401801. THE VEGETATED AREA AROUND THE BOAT RAMP NEEDS TO BE REGRADED, TOPSOILED, SEEDED WITH STREAMBANK MIX SEEDING AND MULCHED IN ACCORDANCE WITH DELAWARE STANDARD SPECIFICATION 908. ANY OTHER AREA SHALL BE RESTORED TO ORIGINAL CONDITION. THE SEED SHALL ADHERE TO SPECIFICATION SECTION 908 STREAMBANK MIX SEEDING. 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.
- VEGETATION IF REMOVED, SHALL NOT BE GRUBBED IN THE AREA OF THE BOAT RAMP. MINIMIZE VEGETATION REMOVAL.

UTILITIES

- THE CONTRACTOR SHALL GIVE NOTIFICATION BY TELEPHONE BY CALLING "MISS UTILITY" AT 1-800-282-8555 A MINIMUM OF TWO FULL WORKING DAYS PRIOR TO STARTING WORK TO LOCATE ALL UTILITIES.
- COORDINATE THE REQUIREMENTS FOR PROTECTION OF ANY UTILITY WITH THE UTILITY OWNER PRIOR TO STARTING WORK.
- THE CONTRACTOR SHALL CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED, AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE AND LOCATION OF ANY UTILITY.



DELAWARE
DEPARTMENT OF TRANSPORTATION

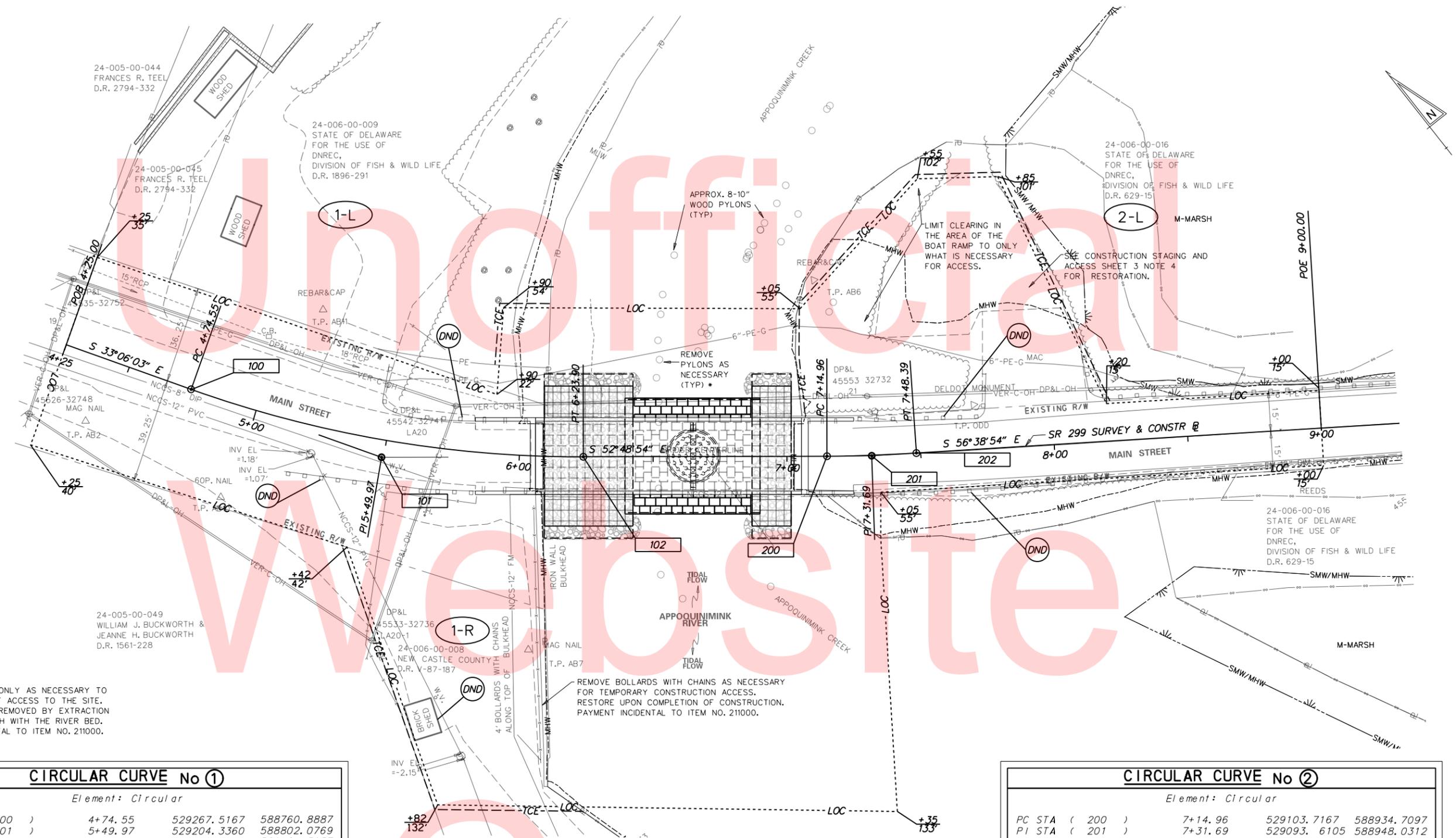
ADDENDUMS / REVISIONS

NOT TO SCALE

BR 1-393 ON
SR299 MAIN STREET OVER
APPOQUINIMINK RIVER

CONTRACT	BRIDGE NO.	1-393	NOTES	SHEET NO.
T201307401	DESIGNED BY: KMH			3
COUNTY	CHECKED BY: JLC			TOTAL SHTS.
NEW CASTLE			10	

LAST REVISED: 06/10/2015
 PA: 60213789 - DELDOT AGR 1558 BRIDGE DESIGN SERVICES/TASK 0008 - REHAB BR 1-393 ODESSA 900 WORK/910 CAD/20-SHEETS/CIVIL/CP01.DGN



CIRCULAR CURVE No ①			
Element: Circular			
PC STA (100)	4+74.55	529267.5167	588760.8887
PI STA (101)	5+49.97	529204.3360	588802.0769
CC STA ()		529504.5626	589124.5057
PT STA (102)	6+23.90	529158.7525	588862.1635
Radius:	434.06		
Delta:	19° 42' 51" Left		
Degree of Curvature(Arc)	13° 12' 00"		
Length:	149.35		
Tangent:	75.42		
Chord:	148.61		
Middle Ordinate:	6.41		
External:	6.50		
Tangent Direction:	S 33° 06' 03" E		
Radial Direction:	S 56° 53' 57" W		
Chord Direction:	S 42° 57' 28" E		
Radial Direction:	S 37° 11' 06" W		
Tangent Direction:	S 52° 48' 54" E		

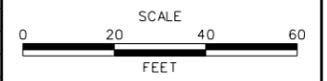
CONSTRUCTION ALIGNMENT CONTROL				
POINT	STATION	OFFSET	NORTHING	EASTING
POB	4+25.00	0	529309.1200	588733.7808
POE	9+25.00	0	528986.1527	589108.7424

HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
T.P. ODD	7+70.81	17.88 L	529085.7779	588989.8927	6.5300
T.P. AB2	4+41.36	27.13 R	529282.0949	588722.2851	11.9000
T.P. AB6	7+10.18	65.75 L	529158.9239	588970.5849	3.4100
T.P. AB7	6+06.12	72.30 R	529114.0259	588802.2029	3.4600
T.P. AB10	4+96.63	34.81 R	529228.8702	588745.2638	9.1200
T.P. AB11	5+15.03	42.80 L	529261.3037	588818.0662	8.2000

CIRCULAR CURVE No ②			
Element: Circular			
PC STA (200)	7+14.96	529103.7167	588934.7097
PI STA (201)	7+31.69	529093.6105	588948.0312
CC STA ()		529501.7967	589236.7054
PT STA (202)	7+48.39	529084.4176	588961.9987
Radius:	499.67		
Delta:	3° 50' 00" Left		
Degree of Curvature(Arc)	11° 28' 00"		
Length:	33.43		
Tangent:	16.72		
Chord:	33.42		
Middle Ordinate:	0.28		
External:	0.28		
Tangent Direction:	S 52° 48' 54" E		
Radial Direction:	S 37° 11' 06" W		
Chord Direction:	S 54° 43' 54" E		
Radial Direction:	S 33° 21' 06" W		
Tangent Direction:	S 56° 38' 54" E		



ADDENDUMS / REVISIONS	

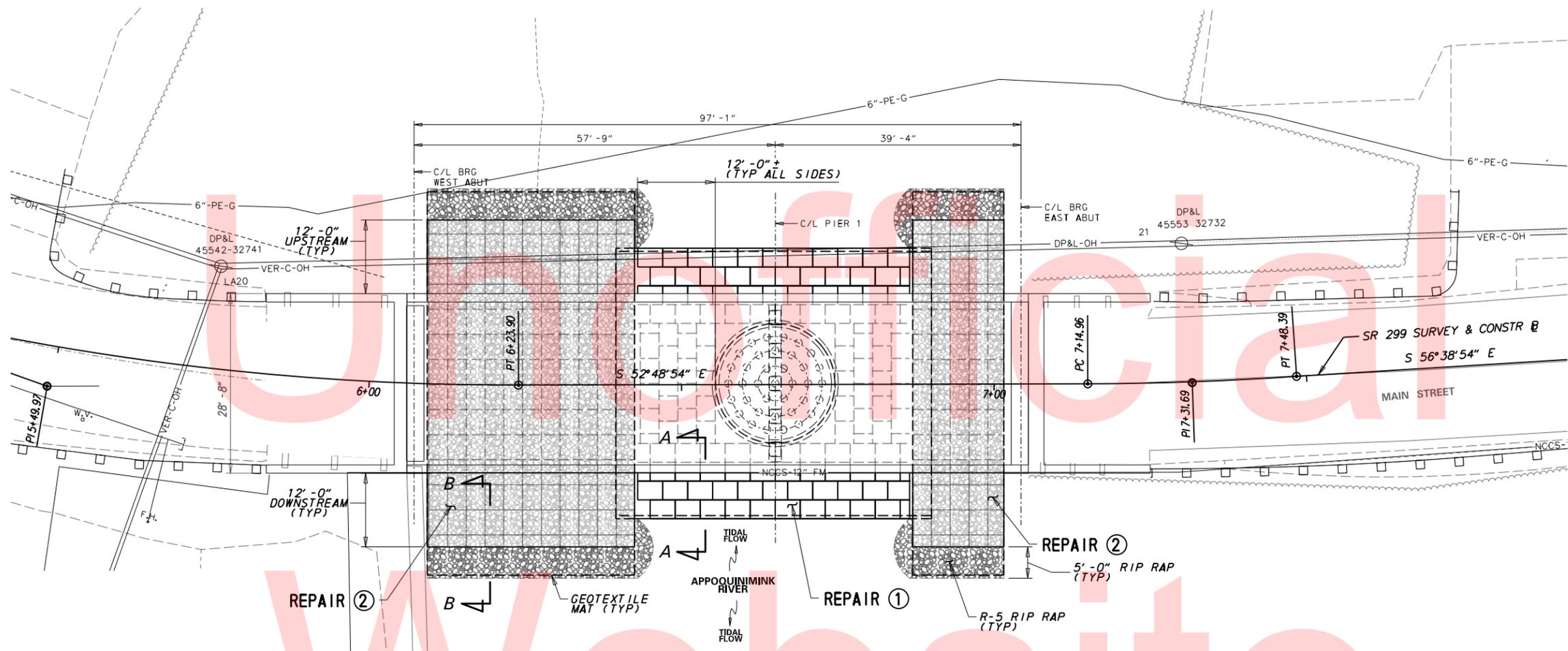


**BR 1-393 ON
 SR299 MAIN STREET OVER
 APPOQUINIMINK RIVER**

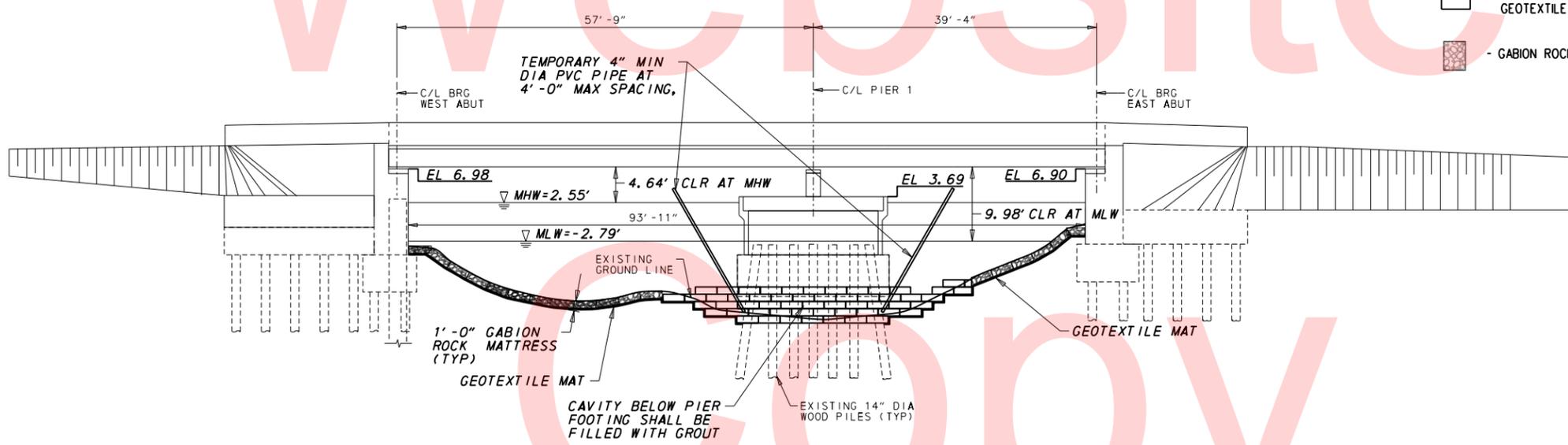
CONTRACT	BRIDGE NO.	1-393
T201307401	DESIGNED BY:	KMH
COUNTY	CHECKED BY:	JLC
NEW CASTLE		

CONSTRUCTION PLAN

SHEET NO.	4
TOTAL SHTS.	10



ABUTMENT/PIER SCOUR REPAIR PLAN



ABUTMENT/PIER SCOUR ELEVATION

LEGEND

- GROUT FILLED GEOTEXTILE BAG
- GABION ROCK MATTRESS

REPAIR ①

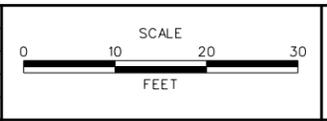
INSTALL GEOTEXTILE MAT, GROUT BAGS, BONDBREAKER AROUND PILES AND PRESSURE GROUT. (ITEMS 713500, 712558, 602516)

REPAIR ②

COMPLETE EXCAVATION AS REQUIRED, INSTALL GEOTEXTILE MAT AND GABION ROCK MATTRESS. INSTALL R-5 RIPRAP AND GEOTEXTILE MAT. (ITEMS 202546, 713500, 712506, 712021)

LAST REVISED: 06/03/2014
 PA:60213789 - DELDOT AGR 1558 BRIDGE DESIGN SERVICES/TASK 0008 - REHAB BR 1-393 ODESSA 900 WORK\910 CAD\20-SHEETS\STRUCTURE\PE01.DGN

ADDENDUMS / REVISIONS



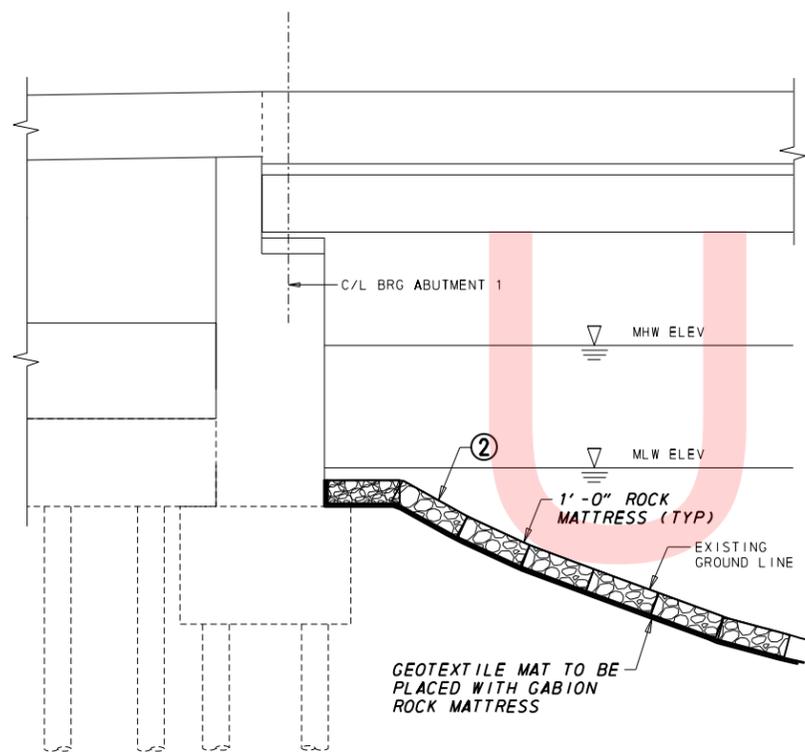
BR 1-393 ON SR299 MAIN STREET OVER APPOQUINIMINK RIVER

CONTRACT	BRIDGE NO.	1-393
T201307401	DESIGNED BY:	JMP
COUNTY	CHECKED BY:	RAD
NEW CASTLE		

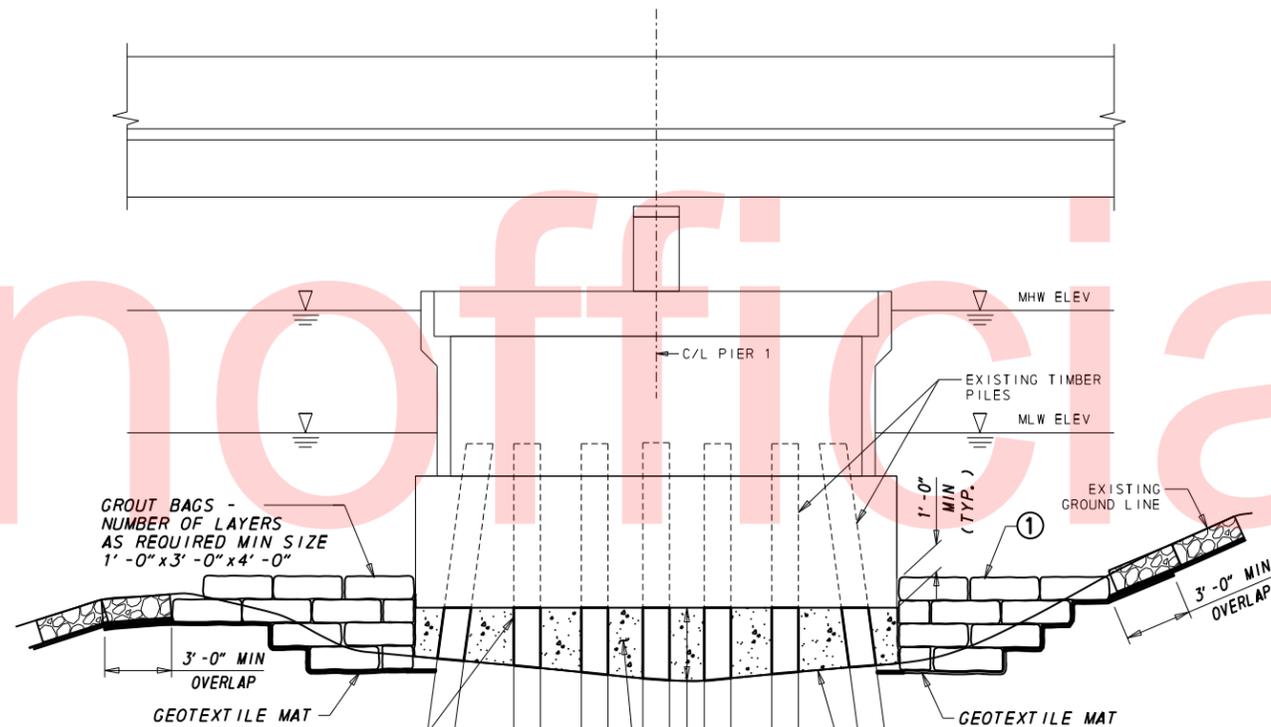
BRIDGE PLAN AND ELEVATION

SHEET NO.	5
TOTAL SHTS.	10

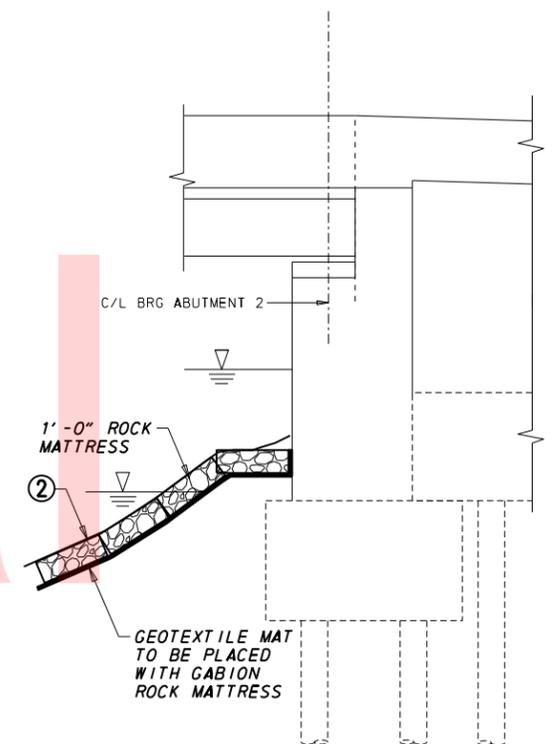
LAST REVISED: 08/03/2015
 PA: 60213789 - DELDOT AGR 1558 BRIDGE DESIGN SERVICES TASK 0008 - REHAB BR 1-393 ODESSA 900 WORK 910 CAD 20-SHEETS\STRUCTURE\SD001.DGN



SECTION AT ABUTMENT 1



SECTION AT PIER 1



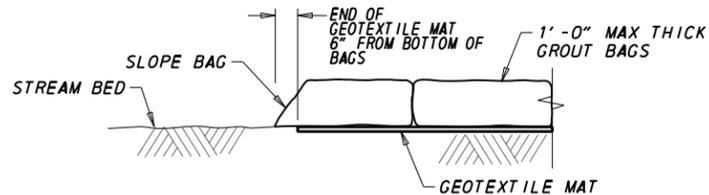
SECTION AT ABUTMENT 2

WRAP PILES WITH BOND BREAKER (TYP.)

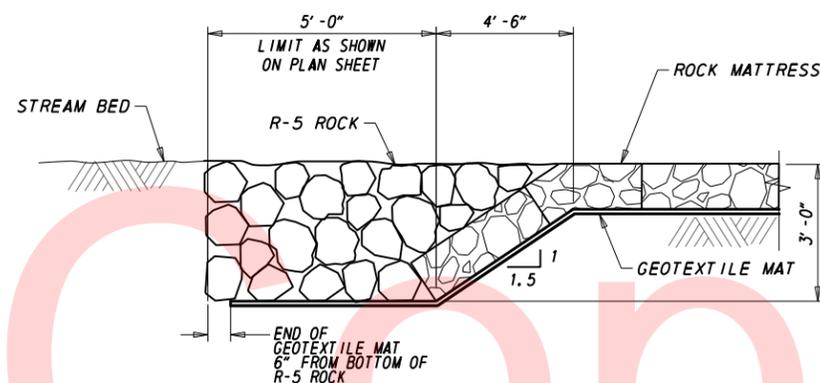
SCOUR DEPTH VARIES FROM 5'-6" TO 4'-0"

PRESSURE GROUT VOID SPACE BELOW PIER CAP

BASED ON 2013 UNDERWATER INSPECTION REPORT. TO BE VERIFIED IN FIELD.



SECTION A-A



SECTION B-B

REPAIR ① NOTES

- OVERLAP JOINTS OF THE PRECEDING GROUT BAG LAYER.
- DO NOT OVERFILL THE BAGS OR ALLOW GROUT TO BE POURED BETWEEN THE SEAMS OF TWO BAGS.

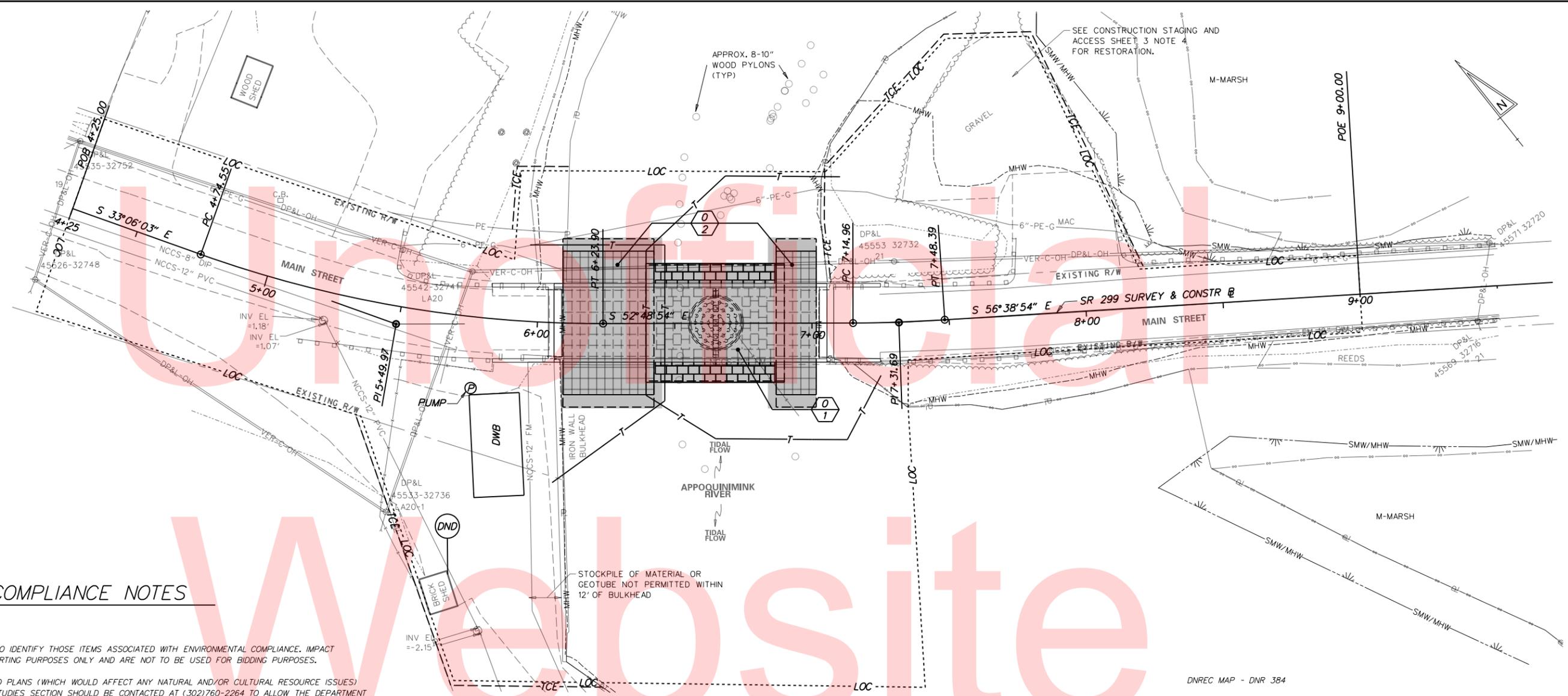
REPAIR ② NOTES

- HYDRAULICALLY EXCAVATE STREAMBED APPROXIMATELY 1'-0". FINAL STREAMBED ELEVATION WITH ROCK MATTRESS IS APPROXIMATELY THE SAME AS EXISTING.

NOTES

FOR LOCATION OF SECTIONS A-A & B-B, SEE SHEET 5.
 SECTIONS A-A AND B-B TYPICAL FOR BOTH SIDES OF THE BRIDGE.

LAST REVISED: 06/10/2015
 PA:60213789 - DELDOT AGR 1558 BRIDGE DESIGN SERVICES/TASK 0008 - REHAB BR 1-393 ODESSA 900 WORK/910 CAD/20-SHEETS/CIVIL/EC01.DGN



ENVIRONMENTAL COMPLIANCE NOTES

1. GENERAL NOTES:
 - A. THE PURPOSE OF THESE SHEETS IS TO IDENTIFY THOSE ITEMS ASSOCIATED WITH ENVIRONMENTAL COMPLIANCE. IMPACT CALCULATIONS ARE FOR AGENCY 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 RESOURCE ISSUES) IS NECESSARY, THE ENVIRONMENTAL STUDIES SECTION SHOULD BE CONTACTED AT (302)760-2264 TO ALLOW THE DEPARTMENT TO COORDINATE WITH THE APPROPRIATE AGENCIES FOR 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:
 - CORPS OF ENGINEERS: NWP #23
 - DNREC - SUBAQUEOUS LANDS PERMIT**
 - DNREC - WATER QUALITY (WQC) AND COASTAL ZONE CONSISTENCY (CZM): ISSUED (PROJECT IS NOT LOCATED IN CRW)
 - U.S. COAST GUARD - ADVANCE NOTIFICATION*
 - NEW CASTLE COUNTY DEPT OF LAND USE: NCC FLOODPLAIN
 - * - THE PERMITS/APPROVALS LISTED ARE THOSE REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE U.S. COAST GUARD (SEE NOTE 4 FOR FURTHER DETAILS). THE ENVIRONMENTAL STUDIES SECTION IS RESPONSIBLE FOR COORDINATING/OBTAINING THESE PERMITS.
 - ** - THE CONTRACTOR MUST ENSURE THAT THESE PERMITS/APPROVALS (DNREC REPAIR & REPLACE AUTHORIZATION) ARE IN THEIR POSSESSION PRIOR TO THE BEGINNING OF CONSTRUCTION IN THE PERMITTED AREA(S) AND SHALL BE DISPLAYED ON-SITE DURING THE ENTIRE CONSTRUCTION PERIOD.
 - B. CONSTRUCTION RESTRICTIONS:
 - FISHERIES - ANADROMOUS FISH: NO IN-WATER WORK FROM MARCH 15 TO JUNE 30 (INCLUSIVE)
 - ENDANGERED SPECIES: NONE
 - MIGRATORY BIRDS - APRIL 15 TO AUGUST 1 (INCLUSIVE) EITHER BEGIN WORK ON THE UNDERSIDE OF THE STRUCTURE PRIOR TO APRIL 15 (TO PREVENT BIRDS FROM NESTING) OR WAIT UNTIL AFTER AUGUST 1 (AFTER HATCHLINGS HAVE LEFT) TO BEGIN WORK TO UNDERSIDE. IF NEITHER OF THESE OPTIONS IS PRACTICABLE, THEN DETERRENT NETTING OR SIMILAR DEVICE SHALL BE INSTALLED PRIOR TO APRIL 15.
3. CULTURAL RESOURCE ISSUES:

FOR UNDERTAKING IN A HISTORIC DISTRICT REFER TO PROJECT NOTES 5 AND 6 ON SHEET 3 OF 10.

4. U.S. COAST GUARD ADVANCED COORDINATION/APPROVAL:

THE WATERWAYS ARE USED FOR RECREATIONAL PURPOSES. THE CONTRACTOR SHALL PROVIDE SAFE PASSAGE THROUGH THE WORK AREAS FOR THE WATERWAY USERS AND SHALL HAVE THE PASSAGEWAY CLEARLY MARKED. PAYMENT IS INCLUDED UNDER PAY ITEM 763522, "COAST GUARD SPECIFIC CONDITIONS". ANY CONTRACTOR ACTIVITY, WHICH WILL RESULT IN THE SHORT-TERM RESTRICTION OF THE WATERWAYS TO THOSE INDIVIDUALS, IS TO BE COORDINATED WITH THE ENGINEER AND THE U.S. COAST GUARD 5th COAST GUARD DISTRICT 30 DAYS IN ADVANCE, AND WITH U.S. COAST GUARD SECTOR DELAWARE BAY 60 DAYS IN ADVANCE. THE WORK WITHIN THE WATER SHALL BE LIMITED TO WHAT APPEARS ON THESE PLANS AND BARGE PLACEMENT. WORK WITHIN THE WATERWAY IS LIMITED TO FIVE WEEKS. FULL WATERWAYS CLOSURE MUST NOT EXCEED TWO WEEKS. ALL PHASING OF WORK MUST BE COORDINATED WITH U.S. COAST GUARD PRIOR TO BEGINNING WORK AND BE IN CONFORMANCE WITH ITEM 763522, "COAST GUARD SPECIFIC CONDITIONS". CONTACT CAPT. HAL PITTS, AS WELL AS SUBMIT A WRITTEN NOTICE (WHICH INCLUDES A SKETCH DEPICTING THE LOCATION AND DURATION OF ALL RESTRICTIONS) TO THE COMMANDING OFFICER (AOWB), 5th COAST GUARD DISTRICT, FEDERAL BUILDING 431 CRAWFORD ST., PORTSMOUTH, VA 23704 FOR APPROVAL 30 DAYS IN ADVANCE. CONTACT MST2 AMANDA BOONE, AS WELL AS SUBMIT A WRITTEN NOTICE (WHICH INCLUDES THE LOCATION OF THE PROJECT, THE TYPE OF WORK AND MEANS AND METHODS USED, AND DATES, TIMES, AND DURATION OF WATERWAYS CLOSURE) TO THE SECTOR DELAWARE BAY USCG WWM DEPARTMENT, 1 WASHINGTON AVE, PHILADELPHIA, PA 19147 FOR COORDINATION AND APPROVAL 60 DAYS IN ADVANCE.

5. VEGETATION, IF REMOVED, SHALL NOT BE GRUBBED IN THE AREA OF THE BOAT RAMP. MINIMIZE VEGETATION REMOVAL.

PERMANENT OPEN WATER AREA IMPACT				
IDENTIFIER	IMPACT	AREA (ft ²)	AREA (ACRES)	VOLUME (yd ³)
0-1	SCOUR REPAIR AT PIER	1943	0.04	359
0-2	SCOUR REPAIR AT ABUTMENTS	3055	0.07	112
TOTAL PERMANENT OPEN IMPACTS		4998	0.11	471

DNREC MAP - DNR 384

THERE ARE NO DNREC JURISDICTIONAL WETLANDS WITHIN THE LIMITS OF CONSTRUCTION

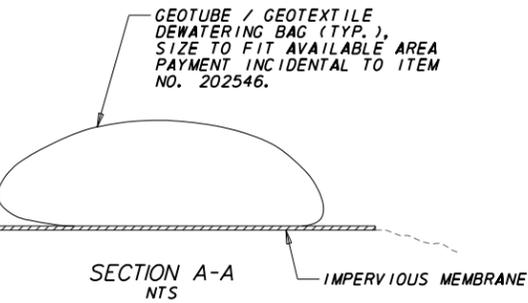
SHEET PREPARED BY PT ON 06/03/2014
 SHEET LAST UPDATED BY KMH ON 11/11/15

LEGEND	
	PERMANENT IMPACT AREA
	STATE MAPPED WETLAND / MEAN HIGH WATER
	STATE MAPPED WETLAND
	MEAN HIGH WATER
	IMPACT AREA TYPE ID. (SEE BELOW)
	IMPACT AREA ID. AND/OR NUMBER
0 = OPEN WATER IMPACT	

WETLANDS DELINEATED BY KEN DUNNE OF DELDOT'S ENVIRONMENTAL STUDIES SECTION ON 8/5/13 IN ACCORDANCE WITH THE 1987 CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND REGIONAL SUPPLEMENTS.

LAST REVISED: 06/10/2015
 PA: 60213789 - DELDOT AGR 1558 BRIDGE DESIGN SERVICES/TASK 0008 - REHAB BR 1-393 ODESSA 900 WORK 910 CAD\20-SHEETS\CIVIL\ES01.DGN

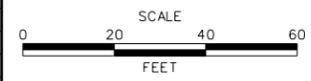
W11-10 DE
 30" x 30"
 BLACK ON ORANGE



CONSTRUCTION SEQUENCE

1. PLACE ALL PERTINENT TEMPORARY TRAFFIC CONTROL DEVICES AND WARNING SIGNS AS PER CONSTRUCTION PHASING MOT AND EROSION CONTROL PLANS.
2. UTILIZE THE EXISTING BOAT RAMP AREA NORTHEAST OF BR 1-393 (STA 7+75 TO STA 8+15 LT) AND THE EXISTING PAVED AREA SOUTHWEST OF BR 1-393 (STA 4+25 TO STA 6+00 RT) FOR CONSTRUCTION ACCESS.
3. USE TA-10 IN THE EVENT OF A LANE CLOSURE ON SR299.
4. INSTALL TURBIDITY CURTAIN (T-1) AROUND EXISTING PIER AND EAST ABUTMENT.
5. PREPARE DEWATERING AREA PER SECTION A-A AND ASSEMBLE GEOTUBES. AVOID EXCAVATION OF EXISTING SOILS.
6. INSTALL PUMP AND DISCHARGE HOSE SYSTEM. COORDINATE LOCATION OF HOSES WITH DELDOT.
7. CLEAR EXISTING DISLODGED RIPRAP FROM THE BOTTOM OF THE CHANNEL AND COMPLETE HYDRAULIC EXCAVATION AS DIRECTED. PAYMENT INCIDENTAL TO ITEM NO. 211000.
8. INSTALL PROPOSED SCOUR COUNTERMEASURES AT EXISTING PIER AND EAST ABUTMENT AS PER BRIDGE PLAN AND ELEVATION. UTILIZE CRANE AND/OR PONTON FOR PLACEMENT OF STONE MATTRESSES AS REQUIRED. COORDINATE THE INSPECTION OF THIS WORK WITH THE DEPARTMENT'S INDEPENDENT UNDERWATER DIVE TEAM.
9. UPON COMPLETION OF SCOUR COUNTERMEASURE INSTALLATIONS AT EXISTING PIER AND EAST ABUTMENT, REMOVE EXCESS GROUT MATERIALS TRAPPED BY TURBIDITY CURTAIN. UNINSTALL TURBIDITY CURTAIN (T-1) WHEN SUSPENDED SOIL PARTICLES HAVE BEEN SETTLED.
10. INSTALL TURBIDITY CURTAIN (T-2) AROUND EXISTING WEST ABUTMENT.
11. CLEAR EXISTING DISLODGED RIPRAP FROM THE BOTTOM OF THE CHANNEL AND COMPLETE HYDRAULIC EXCAVATION AS DIRECTED.
12. INSTALL PROPOSED SCOUR COUNTERMEASURES AT WEST ABUTMENT AS PER BRIDGE PLAN AND ELEVATION. UTILIZE CRANE AND/OR PONTON FOR PLACEMENT OF STONE MATTRESSES AS REQUIRED. COORDINATE THE INSPECTION OF THIS WORK WITH THE DEPARTMENT'S INDEPENDENT UNDERWATER DIVE TEAM.
13. UPON COMPLETION OF SCOUR COUNTERMEASURE INSTALLATIONS AT THE WEST ABUTMENT, REMOVE TURBIDITY CURTAIN (T-2) WHEN SUSPENDED SOIL PARTICLES HAVE BEEN SETTLED.
14. UPON COMPLETION OF ALL STRUCTURAL REPAIRS AND ITEMS ASSOCIATED WITH HYDRAULIC EXCAVATION. RESTORE ALL DISTURBED AREAS TO ORIGINAL CONDITION.

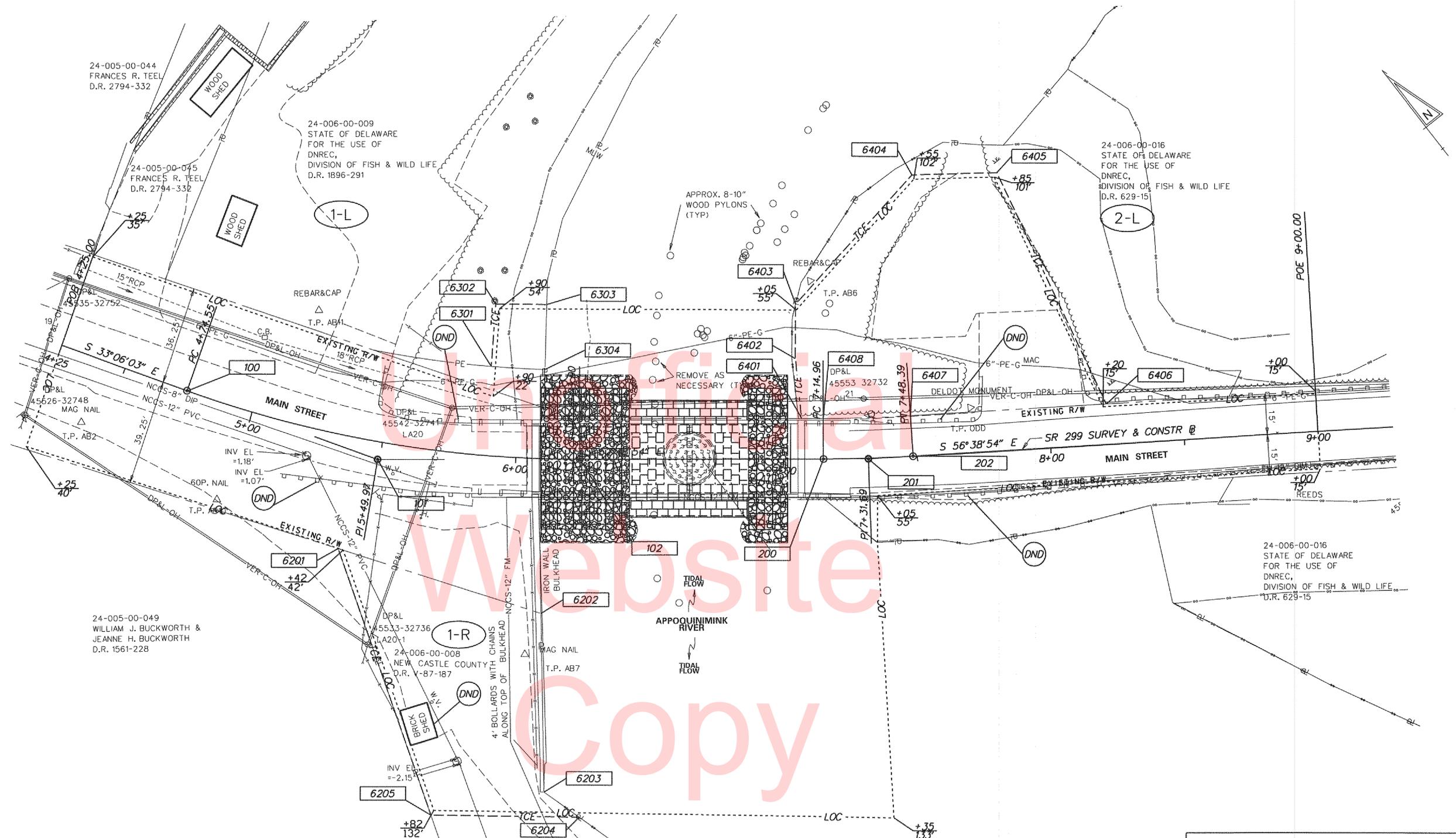
ADDENDUMS / REVISIONS	



CONTRACT	BRIDGE NO.	1-393
T201307401	DESIGNED BY:	KMH
COUNTY	CHECKED BY:	JLC
NEW CASTLE		

SHEET NO.	8
TOTAL SHTS.	10

LAST REVISED: 05/08/2015
 P:\B0213789 - DELDOT AGR 1558 BRIDGE DESIGN SERVICES\TASK 0008 - REHAB BR 1-393 ODESSA\900 WORK\910 CAD\20-SHEETS\CIVIL\RW01.DGN



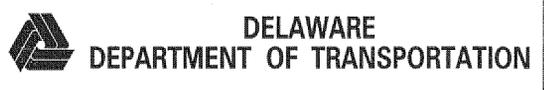
RECOMMENDED AS TO ENGINEERING NEED

Heather Dull 5.26.15
 MANAGER, TEAM SUPPORT DATE

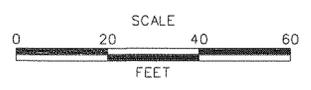
Shelby Claude 5/26/15
 PROGRAM MANAGER, TEAM SUPPORT DATE

Bob Gold 5/22/15
 TECHNICAL REVIEWER, TEAM SUPPORT DATE

NOTE:
 1. THIS SHEET SHALL BE USED FOR RIGHT-OF-WAY ACQUISITION PURPOSES ONLY.



ADDENDUMS / REVISIONS	



**BR 1-393 ON
 SR299 MAIN STREET OVER
 APPOQUINIMINK RIVER**

CONTRACT T201307401	BRIDGE NO. 1-393
COUNTY NEW CASTLE	DESIGNED BY: CPD
	CHECKED BY: RAD

RIGHT-OF-WAY PLAN		SHEET NO. 9
		TOTAL SHTS. 10

