



GENERAL LOCATION OF CONTRACT

# THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

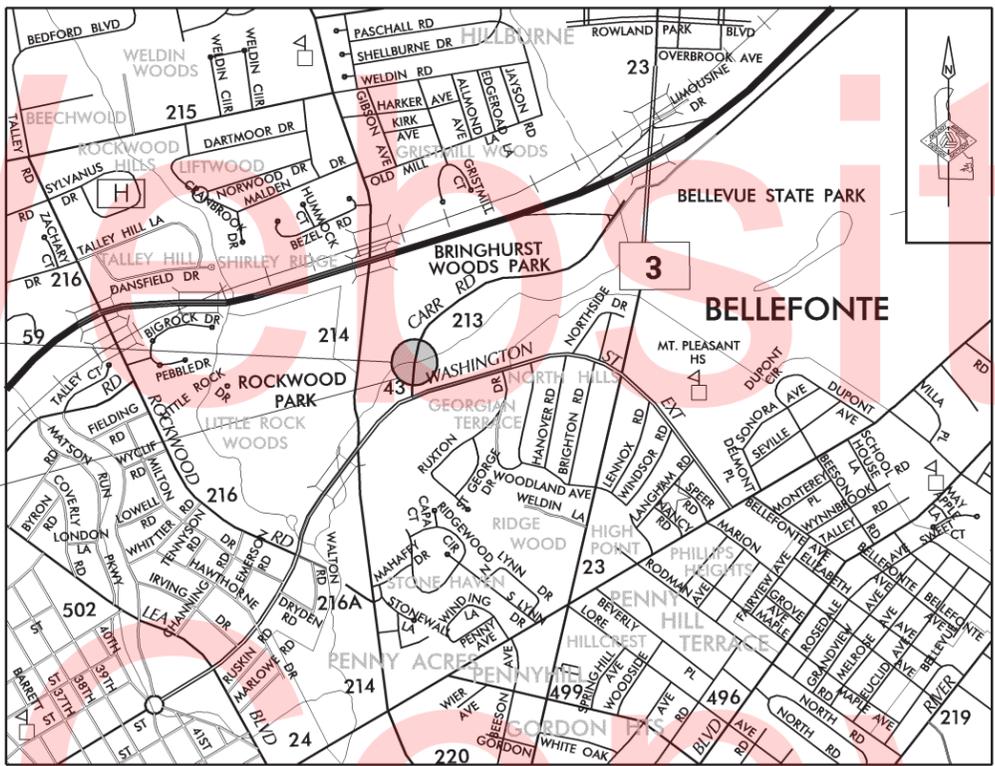
U.S. CUSTOMARY  
UNITS



CONSTRUCTION AND RIGHT-OF-WAY PLANS FOR:  
**BR 1-543**  
**ON N213 CARR ROAD**  
**OVER SHELLPOT CREEK**  
 CONTRACT NUMBER: **T201207103**  
 FEDERAL AID PROJECT NUMBER: **EBRN-N213(04)**  
 COUNTY: **NEW CASTLE** M.R. #: **N213**

DESIGN DESIGNATION		
FUNCTIONAL CLASS: URBAN COLLECTOR	D.H.V. PROJECTED: 182	YEAR: 2040
TYPE OF CONSTRUCTION: BRIDGE REPLACEMENT	DESIGN SPEED: 40 M.P.H.	
A.A.D.T. CURRENT: 2063	YEAR: 2010	TRUCKS: 9 %
A.A.D.T. PROJECTED: 2750	YEAR: 2040	DIRECTION OF DISTRIBUTION: 60 %

INDEX OF SHEETS	
SHEET NO	TABLE OF CONTENTS
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22	UTILITY LOCATION PLAN
23	VEHICULAR DETOUR PLAN
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**END**  
 CONTRACT T201207103  
 STATION 15 + 85.50

**BEGIN**  
 CONTRACT T201207103  
 STATION 9 + 57.30

TOTAL SHEETS: 26

APPROVED DESIGN EXCEPTIONS			
DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS	
DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS	
CONTRACT NO.	CONTRACT NAME
495	CARR ROAD WILMINGTON, WASHINGTON STREET TO SILVERSIDE ROAD
64-04-023	F-95 R/W, BRANDYWINE RIVER BRIDGE TO SOUTH OF DARLEY ROAD

**RECOMMENDED**

*[Signature]* 02/29/2016  
 SQUAD MANAGER, CONSTRUCTION DATE

*[Signature]* 02/29/2016  
 GROUP ENGINEER, CONSTRUCTION DATE

*[Signature]* 02/29/2016  
 ASSISTANT DIRECTOR, TRANSPORTATION SOLUTIONS (CONSTRUCTION) DATE

**RECOMMENDED**

*Vincent W. Davis*  
 STORMWATER ENGINEER

DATE 02/29/2016



**RECOMMENDED**

*[Signature]*  
 SQUAD MANAGER, BRIDGE DESIGN

DATE 02/22/2016



**RECOMMENDED**

*[Signature]*  
 BRIDGE DESIGN ENGINEER

DATE 03/04/2016



**RECOMMENDED**

*[Signature]*  
 ASSISTANT DIRECTOR, BRIDGE

DATE 03/04/2016



**APPROVED**

*Robert Brian McClary*  
 CHIEF ENGINEER

DATE 03/08/2016



## 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	
	NEW CASTLE COUNTY-SEWER
	CITY OF WILMINGTON-WATER
	DELMARVA POWER-GAS
	VERIZON

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	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
	HORIZONTAL CLEARANCE
	IMPACT ATTENUATOR
	JUNCTION BOX - DRAINAGE
	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

PAVEMENT SECTION(S)	
	PAVEMENT MILLING HOT-MIX AND 2" SUPERPAVE, TYPE C, PG 64-22, 160 GYRATIONS
	2" SUPERPAVE, TYPE C, PG 64-22, 160 GYRATIONS
	4" SUPERPAVE, TYPE B, PG 64-22, 160 GYRATIONS
	8" GRADED AGGREGATE BASE COURSE, TYPE B

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
	SEDIMENT TRAP WITH INLET AS OUTLET
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN
	TURBIDITY CURTAIN / LENGTH
	TURBIDITY CURTAIN

UTILITY COMPANY FACILITIES	
	NEW CASTLE COUNTY-SEWER
	NEW CASTLE COUNTY-WATER
	DELMARVA POWER-GAS
	VERIZON

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# GENERAL NOTES

- 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
( ) 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.
( x ) MAJOR	CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 6.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.

- 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.

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

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

- 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.

- THE DISTURBED AREA FOR THIS PROJECT IS 0.59 ACRES.
- 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

- 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

- 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.
- ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
  - EXISTING SUPERSTRUCTURE INCLUDING ROADWAY PAVEMENT AND FILL MATERIAL.
  - EXISTING WINGWALLS TO THE ELEVATIONS SHOWN ON PLANS.
  - EXISTING GUARDRAILS IN THEIR ENTIRETY.
  - EXISTING ABUTMENTS TO THE ELEVATIONS SHOWN ON PLANS.

### SECTION 300

- 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)
    - 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.

- 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'.

- 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.

- HOT-MIX MILLINGS MAY BE GENERATED FROM THE FOLLOWING SOURCES:
  - MATERIAL MADE AVAILABLE WHEN MILLED ON THIS CONTRACT UNDER ITEM 760000.
  - MATERIAL MILLED ON THIS CONTRACT AT THE CONTRACTOR'S CHOICE UNDER 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.
  - MILLED MATERIAL FURNISHED ON THE JOB FROM THE CONTRACTOR'S YARD OR OTHER OUTSIDE SOURCE. ALL MILLED MATERIALS SHALL MEET THE MATERIAL REQUIREMENTS OF ITEM 302514 - MILLED HOT-MIX BASE COURSE.

- PAYMENT CLARIFICATION:
  - 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.

- 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.

- 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'.

- 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.

- 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

- 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.

- STRUCTURAL ELEMENTS OF PORTLAND CEMENT CONCRETE SHALL BE AS NOTED:

(F'c = 28 DAY COMPRESSIVE STRENGTH)

CAST-IN-PLACE :

CLASS A (ITEM # 602017)-PARAPET (F'c=4.5ksi)

CLASS A (ITEM # 602015)-P.C.C. MASONRY, ABUTMENT ABOVE FOOTING, CLASS A (F'c=4.5ksi)

CLASS D (ITEM # 602013)-P.C.C. MASONRY, SUPERSTRUCTURE (F'c=4.5ksi)

CLASS A (ITEM # 602001)-P.C.C. MASONRY, (F'c=4.5 ksi) - MOMENT SLAB

MIX REQUIREMENTS SHALL CONFORM TO SECTION 812 OF THE SPECIFICATIONS WITH THE FOLLOWING EXCEPTIONS: ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

- BAR REINFORCEMENT  
REINFORCING STEEL SHALL CONFORM TO AASHTO M31 (ASTM A615), GRADE 60. ALL REINFORCING STEEL SHALL HAVE A CLEAR COVER OF 2" MINIMUM UNLESS OTHERWISE SPECIFIED ON PLANS. ALL REINFORCING STEEL SHALL BE PROTECTED WITH EPOXY COATED REINFORCING CONFORMING TO M284 (ASTM D3963).

- SUPERSTRUCTURE STEEL  
STRUCTURAL STEEL SHALL CONFORM TO ASTM A709 GRADE 50 INCLUDING THE ADDITIONAL REQUIREMENTS FOR CHARPY V-NOTCH TESTING OF AASHTO M270 FOR PRIMARY LOAD CARRYING MEMBERS. FOR WELDING OF STRUCTURAL STEEL, USE ANSI/AASHTO/AWS D1.5 WELDING CODE. EACH BEAM AND DIAPHRAGMS SHALL BE PAINTED WITH A URETHANE PAINT SYSTEM IN ACCORDANCE WITH SPECIAL PROVISION #605537-URETHANE PAINT SYSTEM - NOT A PAID ITEM. THE FINAL COLOR SHALL BE FEDERAL #10076 (BROWN) OF FED-STD-595C. PAYMENT FOR LABOR AND MATERIALS SHALL BE INCLUDED IN ITEM #605002 - STEEL STRUCTURES

### SECTION 700

- 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

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

### MISCELLANEOUS

- DESIGN CRITERIA  
2015 DELDOT BRIDGE DESIGN MANUAL  
2014 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION.

- LOADING  
AASHTO HL-93 FOR LIVE LOAD  
25 PSF DEAD LOAD HAS BEEN INCLUDED FOR FUTURE OVERLAY.  
15 PSF FOR SIP FORMS

- HYDRAULIC DATA  
DRAINAGE AREA = 4.29 SQ. MILES  
DESIGN FREQUENCY = 50 YEARS  
DESIGN DISCHARGE = 4979 CFS  
50 YEAR FLOOD ELEVATION = 98.80 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-14 - 'HYDRAULIC DESIGN OF ENERGY DISSIPATORS FOR CULVERTS AND CHANNELS.' SCOUR COUNTERMEASURES HAVE BEEN DESIGNED FOR THE WORST CASE OF THE OVERTOPPING FLOOD OR THE 500-YR FLOOD EVENT.

DESIGN EVENT 50 = OVERTOPPING      DESIGN VELOCITY: 13.99 FT/S  
DESIGN DISCHARGE: 4979 CFS      TAILWATER DEPTH: 15.90 FT

- ALL RUBBLE STONES FROM THE STRUCTURE SHALL BE CAREFULLY REMOVED, STORED AND PROTECTED BY THE CONTRACTOR FOR REUSE ON THE PROPOSED STRUCTURE. PAYMENT UNDER ITEM 211000-REMOVAL OF STRUCTURES AND OBSTRUCTIONS.

- EXISTING STONES THAT HAVE BEEN STORED AND PROTECTED SHALL BE FIELD PROCESSED BY THE CONTRACTOR AND SHALL BE USED AS STONE VENEER ON THE PROPOSED STRUCTURE AS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER. PAYMENT UNDER ITEM 610001 - STONE MASONRY.

- THE CONTRACTOR SHALL REBUILD ALL STONE COLUMNS TO THE DIMENSIONS OF THE EXISTING PLANS - CONTRACT #495 OR AS DIRECTED BY THE ENGINEER. ALL COLUMNS SHALL BE REBUILT FROM THE POINT OF REMOVAL EXCEPT FOR THE NORTH EAST COLUMN THAT SHOULD BE REMOVED TO THE ORIGINAL BASE AND REBUILD.

- REFER TO THE ENVIRONMENTAL COMPLIANCE PLAN FOR FURTHER RESTRICTIONS/GUIDANCE ASSOCIATED WITH THIS PROJECT.

- GUARDRAIL:  
THE EXISTING GUARDRAILS SHALL BE REMOVED IN THEIR ENTIRETY AND REPLACED WITH NEW GUARDRAILS IN THE SAME LOCATION OR AS DIRECTED BY THE ENGINEER.  
ALL GUARDRAIL ELEMENTS, SHAPES, AND HARDWARE FOR ITEMS 720050, 720585, & 725003 SHALL BE FUSION BONDED POLYESTER COATED IN CONFORMANCE WITH ITEM 605580 AND SHALL NOT BE GALVANIZED. THE COATING SHALL BE MEDIUM BROWN IN COLOR #10076, WITH THE PROPOSED COLOR BEING SUBMITTED TO THE ENGINEER FOR APPROVAL. PAYMENT FOR FURNISHING AND APPLICATION OF ALL MATERIALS NECESSARY FOR THE FUSION BONDED POLYESTER COATING SHALL BE INCLUDED IN THE BID PRICE FOR ITEMS 720050, 720585, & 725003.  
THE AREAS AROUND THE GUARDRAILS SHALL BE AS SHOWN ON THE TYPICAL SECTION SHEET.

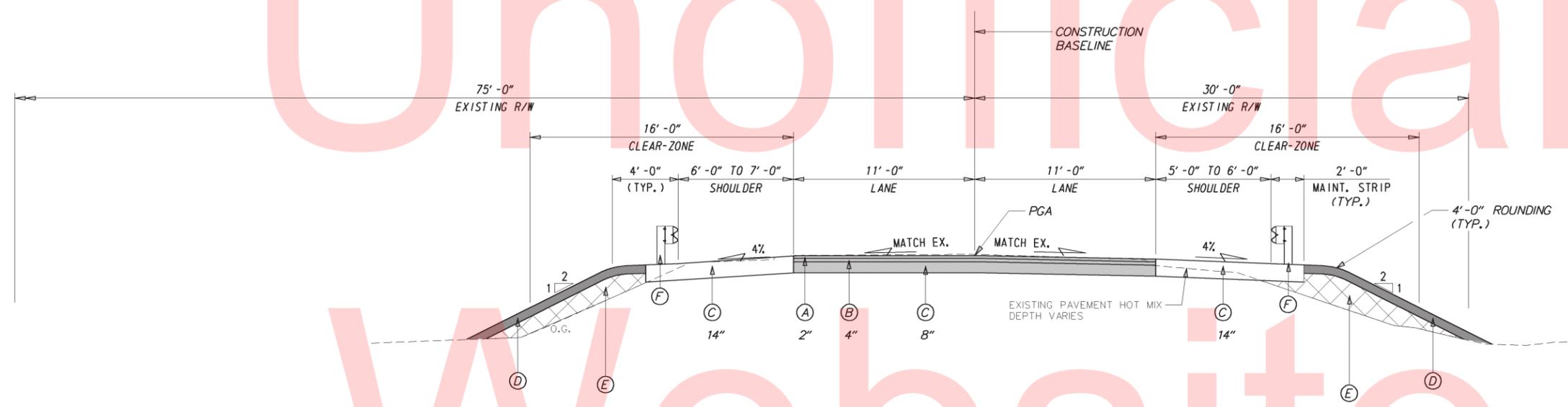
- TRAFFIC SIGNS:  
ALL WEIGHT LIMIT SIGNS SHALL BE REMOVED. THE CONTRACTOR SHALL NOTIFY DELDOT TRAFFIC, 21 DAYS PRIOR TO THE REMOVAL. ALL OTHER SIGNS SHALL REMAIN OR REPOSITIONED AS DIRECTED BY THE ENGINEER. PAYMENT FOR INSTALLATION AND REMOVAL OF TRAFFIC SIGNS SHALL BE UNDER ITEM #749687.

- THE CONTRACTOR SHALL CONTACT WILLIAM LOTHARP, THE CHIEF OF SCHEDULE FOR DART FIRST STATE, 14 DAYS PRIOR TO THE START OF THE CONSTRUCTION AT 302-576-6006.

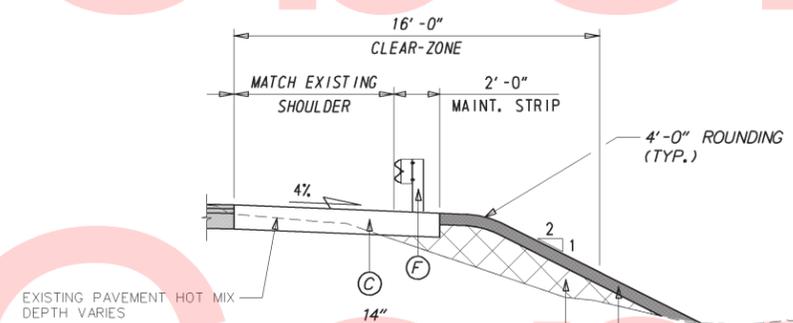
- THE CONTRACTOR SHALL PLACE LARGE FIELD STONES FROM STA. 13+70.00 TO STA. 14+00.00. STONES SHALL BE LARGE (MINIMUM SIZE OF 3'x3'x1' HIGH) AND RECTANGULAR IN SHAPE. COLOR SHALL SIMILAR TO FIELD STONES NEAR THE BRIDGE. STONES SHALL BE DRY STACKED ALONG THE EXISTING SLOPE WITH A SLIGHT BATTER AS DIRECTED BY THE ENGINEER IN THE FIELD. PAYMENT UNDER ITEM # 610507.

- PERMITTING FOR UTILITIES:  
AS OUTLINED IN THE DELDOT UTILITIES MANUAL, THE INDIVIDUAL UTILITY COMPANIES ARE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FROM MUNICIPAL, STATE AND FEDERAL GOVERNMENT AGENCIES AND RAILROADS. THIS INCLUDES BUT IS NOT LIMITED TO WATER QUALITY PERMIT/DNREC WATER QUALITY CERTIFICATION, DNREC SUBAQUEOUS LANDS/WETLANDS PERMITS, DNREC COASTAL ZONE CONSISTENCY CERTIFICATION, COUNTY FLOODPLAIN PERMITS, U.S. COAST GUARD PERMITS, U.S. ARMY CORPS 404 PERMITS, SEDIMENT AND EROSION PERMITS, AND RAILROAD CROSSING PERMITS. THE ENVIRONMENTAL PERMITS CITED ON THE EC SHEET(S) DO NOT AUTHORIZE ANY PART OF THE UTILITY WORK ASSOCIATED WITH THIS PROJECT.

# Unofficial



**TYPICAL SECTION**  
**STA. 12+50.00 TO STA. 13+03.00**  
**STA. 13+75.00 TO STA. 14+00.00**



**SECTION**  
**AT GUARDRAIL IMPROVEMENT**

**LEGEND**

- (A) ITEM 401801-SUPERPAVE TYPE C, 160 GYRATION, PG 64-22 (CARBONATE STONE)
- (B) ITEM 401810-SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
- (C) ITEM 302007 - GABC, TYPE B
- (D) ITEM 908004-TOPSOIL, 6" DEPTH
- (E) ITEM 908014-PERMANENT GRASS SEEDING, DRY GROUND
- (F) ITEM 209006-BORROW TYPE F
- (F) ITEM 720050-GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31

ADDENDUMS / REVISIONS



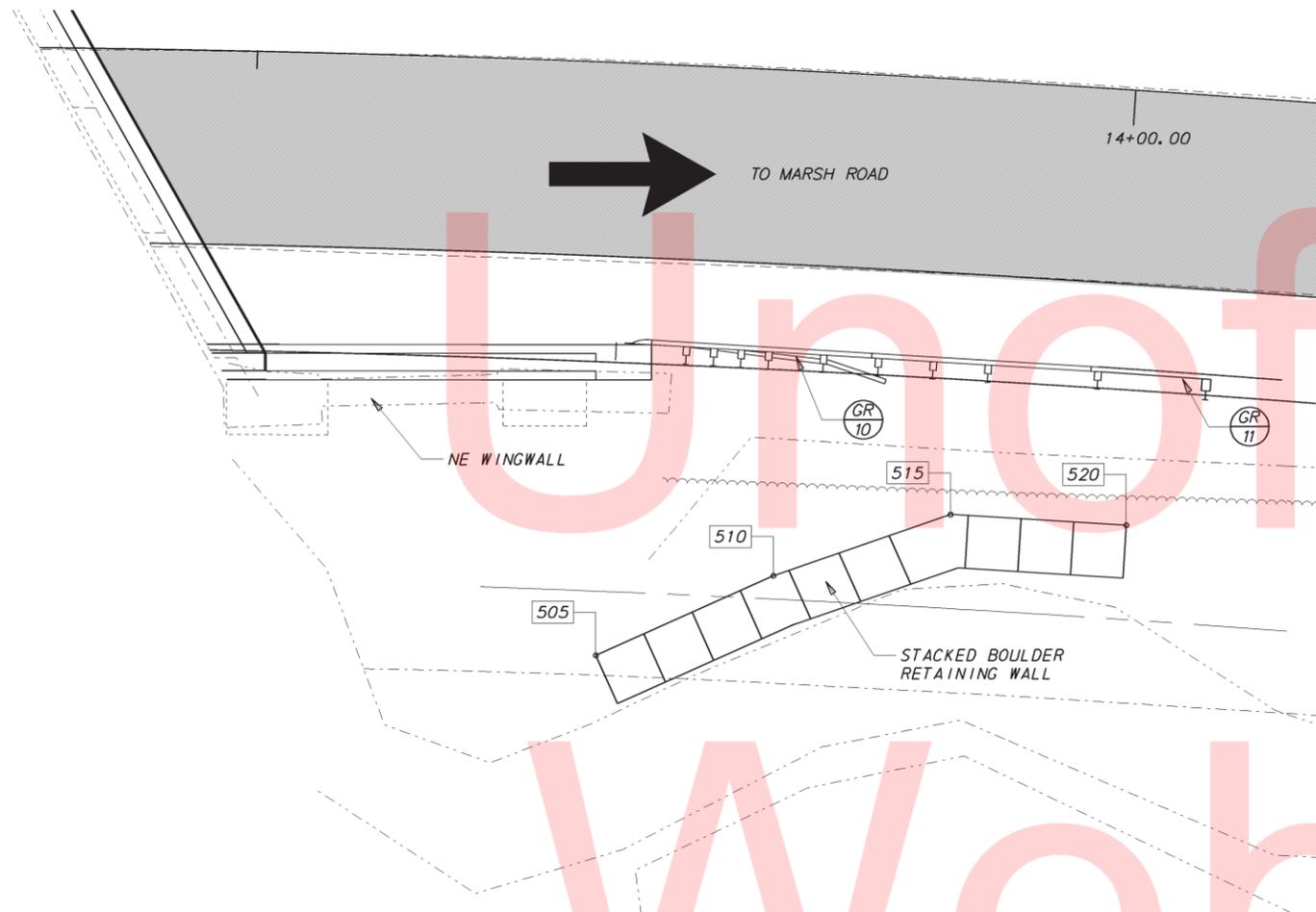
**BRIDGE 1-543**  
**ON N213 CARR ROAD**  
**OVER SHELLPOT CREEK**

CONTRACT	BRIDGE NO.	<b>1-543</b>
T201207103	DESIGNED BY:	PAM
COUNTY	CHECKED BY:	SR
NEW CASTLE		

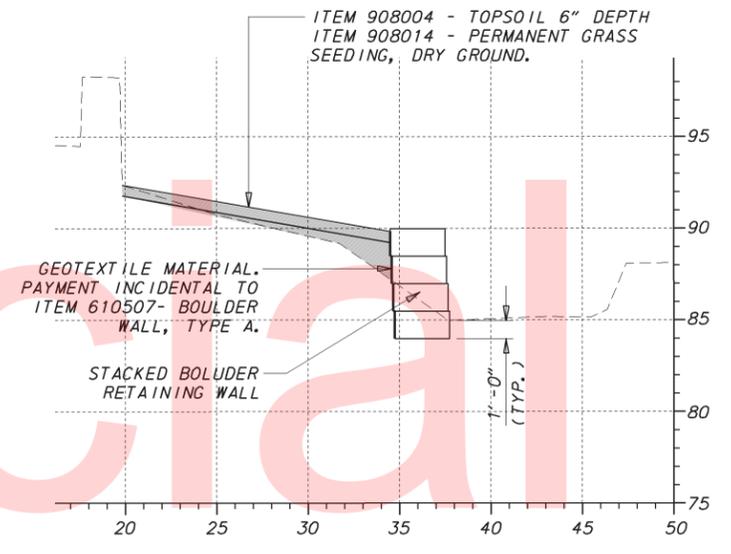
**TYPICAL SECTIONS**

SHEET NO.	4
TOTAL SHTS.	26

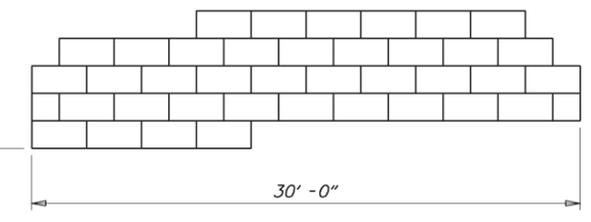
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**WALL PLAN**



**WALL SECTION**  
STA. 13+70.00



**WALL ELEVATION**

RETAINING WALL WORKING POINTS					
PT.	STATION	OFFSET	NORTHING	EASTING	TOP ELEV.
505	13+70.00	33.75	646114.1604	628515.2694	89.00
510	13+80.00	28.88	646124.8321	628513.1620	92.73
515	13+90.00	24.91	646135.3113	628512.0248	93.50
520	14+00.00	24.79	646144.7292	628514.6758	93.40

NOTE:  
ELEVATION AND SECTION ARE ONLY  
A REPRESENTATION OF THE PROPOSED  
WALL. WALL WILL BE MADE OF IRREGULAR  
FIELD BOULDERS WITH MINIMUM SIZE OF  
3'-0" x 3'-0" x 1'-0" HEIGHT

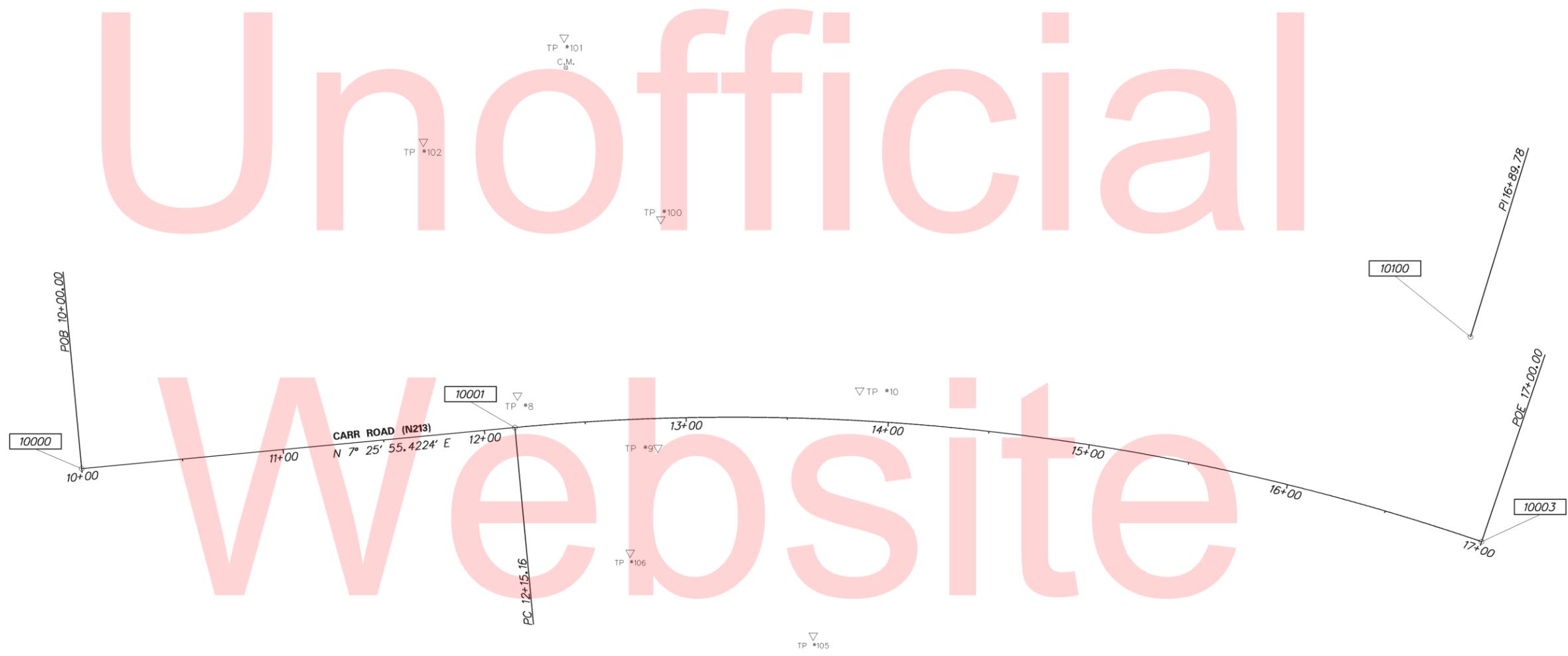
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**DATUM REFERENCE:**

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

VERTICAL - THIS PROJECT IS REFERENCED TO NAVD 88 AND BASED ON THE FOLLOWING STATE OF DELAWARE BENCHMARKS ESTABLISHED BY THE DELAWARE DEPARTMENT OF TRANSPORTATION:

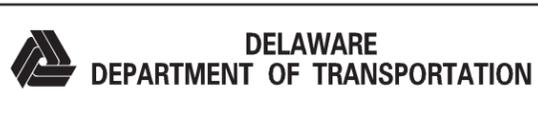


HORIZONTAL / VERTICAL CONTROL DATA					
POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION
TP #8	12+17.88	-15.60	645976.0237	628437.2575	95.74
TP #9	12+85.55	14.37	646038.0160	628477.7240	94.71
TP #10	13+85.03	-15.00	646141.5888	628472.3051	95.15
TP #100	12+90.30	-98.23	646064.4737	628368.1648	89.04
TP #101	12+51.54	-189.84	646037.7900	628270.2795	88.01
TP #102	11+83.38	-144.61	645958.4702	628304.8657	90.08
TP #105	13+66.90	106.88	646092.3012	628585.1158	87.21
TP #106	12+69.21	65.56	646013.1452	628525.1596	91.35

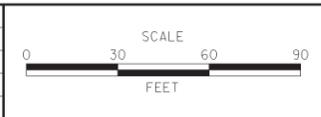
ELEMENT: BASELINE CIRCULAR CURVE  
 PC (10001) 12+15.16 645971.2697 628452.3706  
 PI (10100) 16+89.78 646441.9090 628513.7638  
 CC (10002) 645823.0340 629588.7430  
 PT (10004) 21+15.12 646731.3245 628889.9408  
 Radius: 1146.00  
 Delta: 44° 59' 40.9247" RIGHT.  
 Degree of Curvature (Arc): 4° 59' 58.6742"  
 Length: 899.96  
 Tangent: 474.63  
 Chord: 877.01  
 Middle Ordinate: 87.21  
 External: 94.40

CONSTRUCTION ALIGNMENT CONTROL				
POINT	STATION	OFFSET	NORTHING	EASTING
10000	10+00.00	0.00	645757.9206	628424.5400
10001	12+15.16	0.00	645971.2697	628452.3706
10100	16+89.78	-94.40	646441.9090	628513.7638
10003	17+00.00	0.00	646424.7555	628613.4240
10004	21+15.12	0.00	646731.3245	628889.9408

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ADDENDUMS / REVISIONS	



**BR 1-543 ON  
N213 CARR ROAD  
OVER SHELLPOT CREEK**

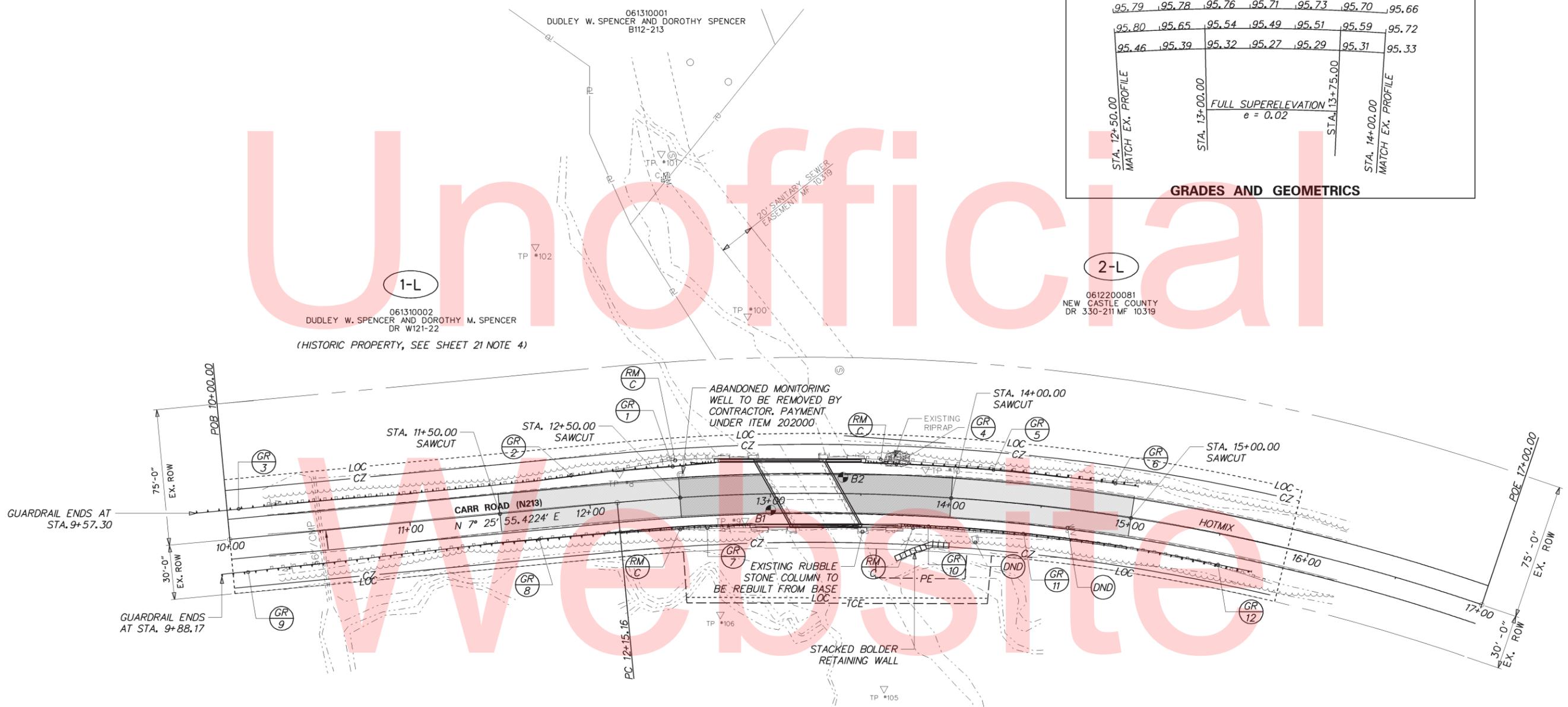
CONTRACT	BRIDGE NO.	<b>1-543</b>
T201207103	DESIGNED BY:	PAM
COUNTY	CHECKED BY:	SR
NEW CASTLE		

<b>HORIZONTAL AND VERTICAL CONTROL</b>	SHEET NO.	6
	TOTAL SHTS.	26

95.79	95.78	95.76	95.71	95.73	95.70	95.66
95.80	95.65	95.54	95.49	95.51	95.59	95.72
95.46	95.39	95.32	95.27	95.29	95.31	95.33
STA. 12+50.00 MATCH EX. PROFILE	FULL SUPERELEVATION e = 0.02					STA. 14+00.00 MATCH EX. PROFILE
	STA. 13+00.00				STA. 13+75.00	

**GRADES AND GEOMETRICS**

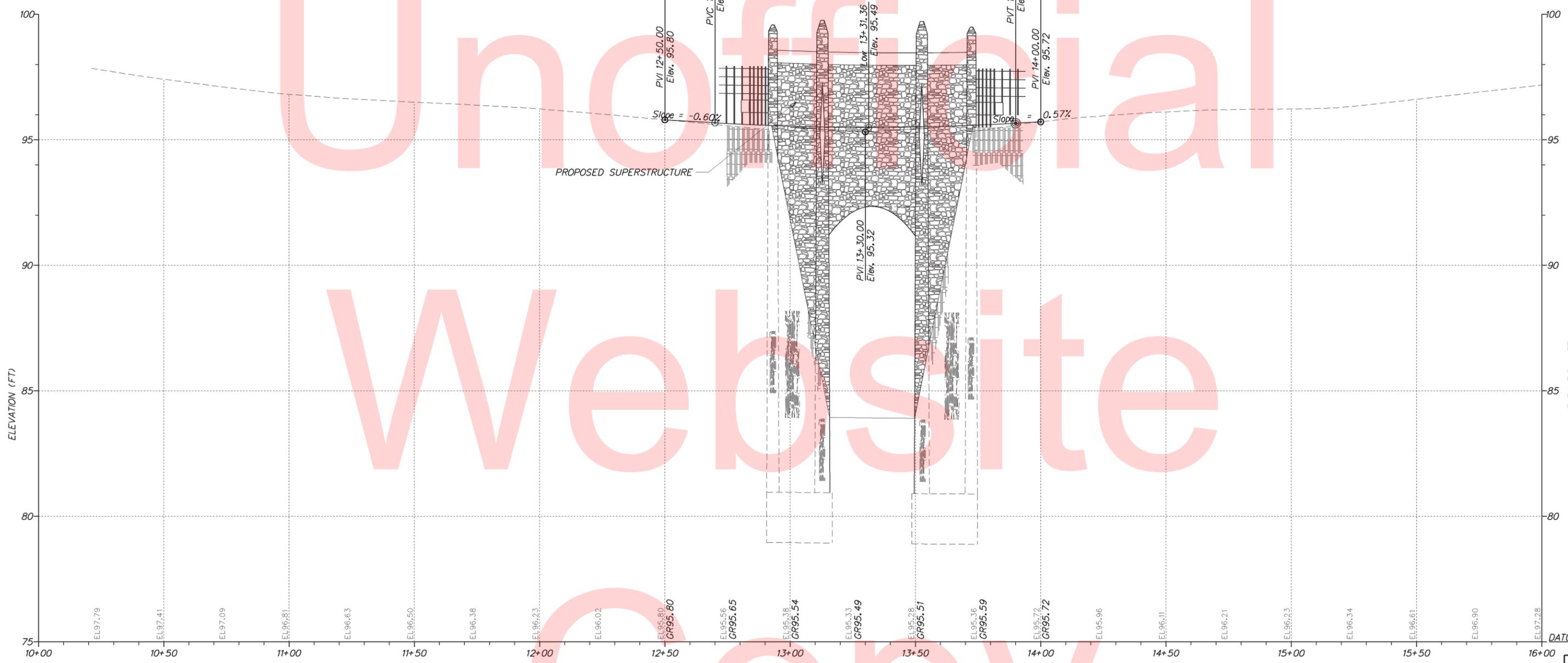
**Unofficial**



GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
1	BARRIER CONNECTION APPROACH, TYPE 2-31	12+69.80	18.41	25.00
2	GALVANIZED STEEL GUARDRAIL, TYPE 1-31	12+44.80	17.35	237.5
3	END TREATMENT, ATTENUATOR TYPE 1-31	10+07.30	17.35	50.00
4	BARRIER CONNECTION APPROACH, TYPE 2-31	13+52.25	17.35	25.00
5	GALVANIZED STEEL GUARDRAIL, TYPE 1-31	13+74.76	17.35	87.50
6	END TREATMENT, ATTENUATOR TYPE 1-31	14+62.25	17.35	50.00
7	BARRIER CONNECTION APPROACH, TYPE 2-31	12+88.17	16.28	25.00
8	GALVANIZED STEEL GUARDRAIL, TYPE 1-31	12+63.17	17.35	225.00
9	END TREATMENT, ATTENUATOR TYPE 1-31	10+38.17	17.35	50.00
10	BARRIER CONNECTION APPROACH, TYPE 2-31	13+73.00	15.90	25.00
11	GALVANIZED STEEL GUARDRAIL, TYPE 1-31	13+98.00	15.90	137.50
12	END TREATMENT, ATTENUATOR TYPE 1-31	15+35.50	15.90	50.00

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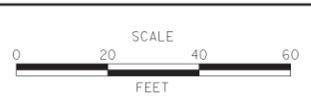
Type of Curve = Symmetric Parabola  
 Direction = Sag  
 Length = 120.00'  
 L1 = 60.00'  
 L2 = 60.00'  
 G1 = -0.60%  
 G2 = 0.57%  
 SSD = 450.34'  
 K = 102.62



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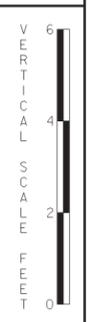
ADDENDUMS / REVISIONS	

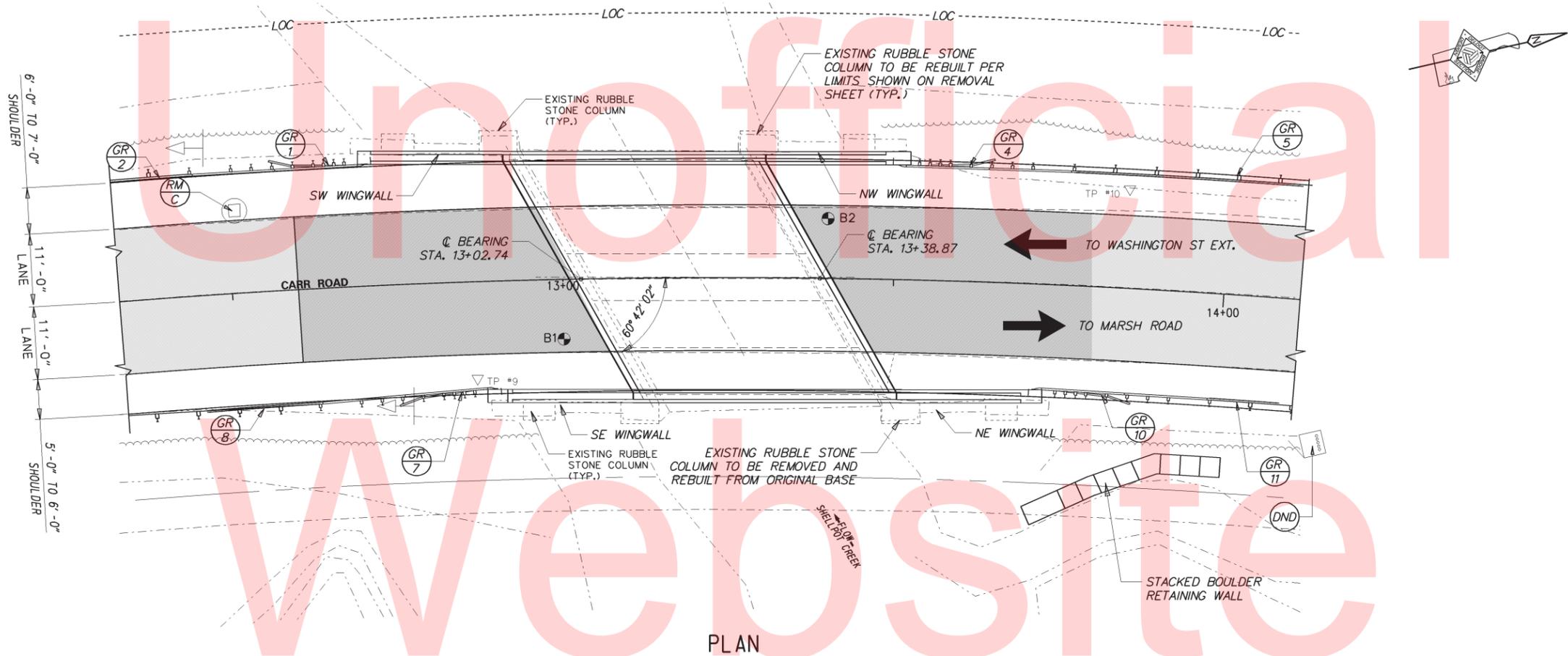


**BR 1-543**  
**ON N213 CARR ROAD**  
**OVER SHELLPOT CREEK**

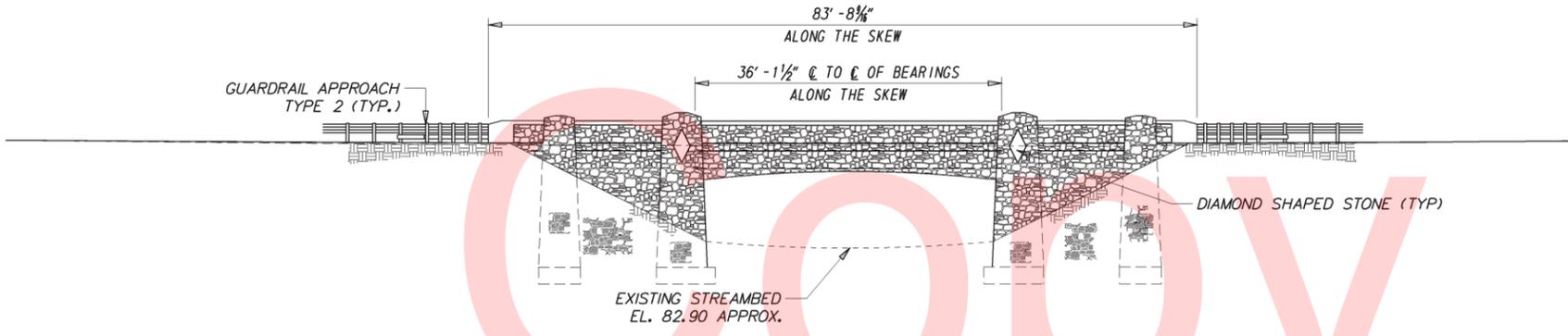
CONTRACT	BRIDGE NO.	<b>1-543</b>
T201207103	DESIGNED BY:	PAM
COUNTY	CHECKED BY:	SR
NEW CASTLE		

<b>PROFILE</b>	SHEET NO.	8
	TOTAL SHTS.	26





PLAN

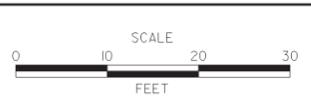


ELEVATION

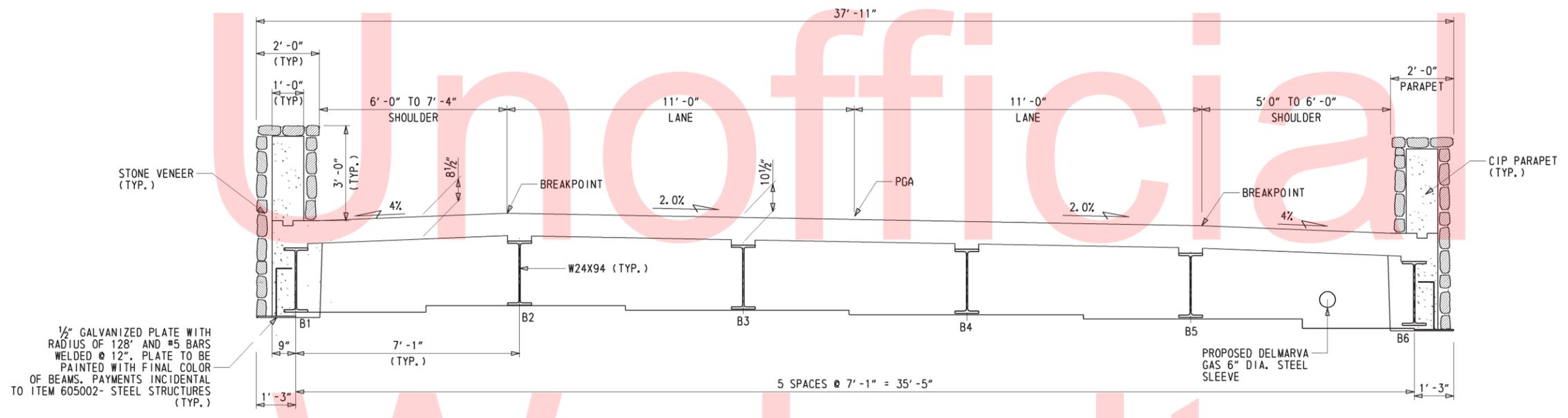
NOTE:  
REFER TO "ENVIRONMENTAL COMPLIANCE PLAN" NOTE 3 FOR  
ADDITIONAL GUIDANCE ON STREAM RESTORATION AND RIPRAP  
SLOPE TREATMENT

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ADDENDUMS / REVISIONS	



CONTRACT T201207103	BRIDGE NO. <b>1-543</b>
COUNTY NEW CASTLE	DESIGNED BY: PAM CHECKED BY: SR



**BRIDGE SECTION**

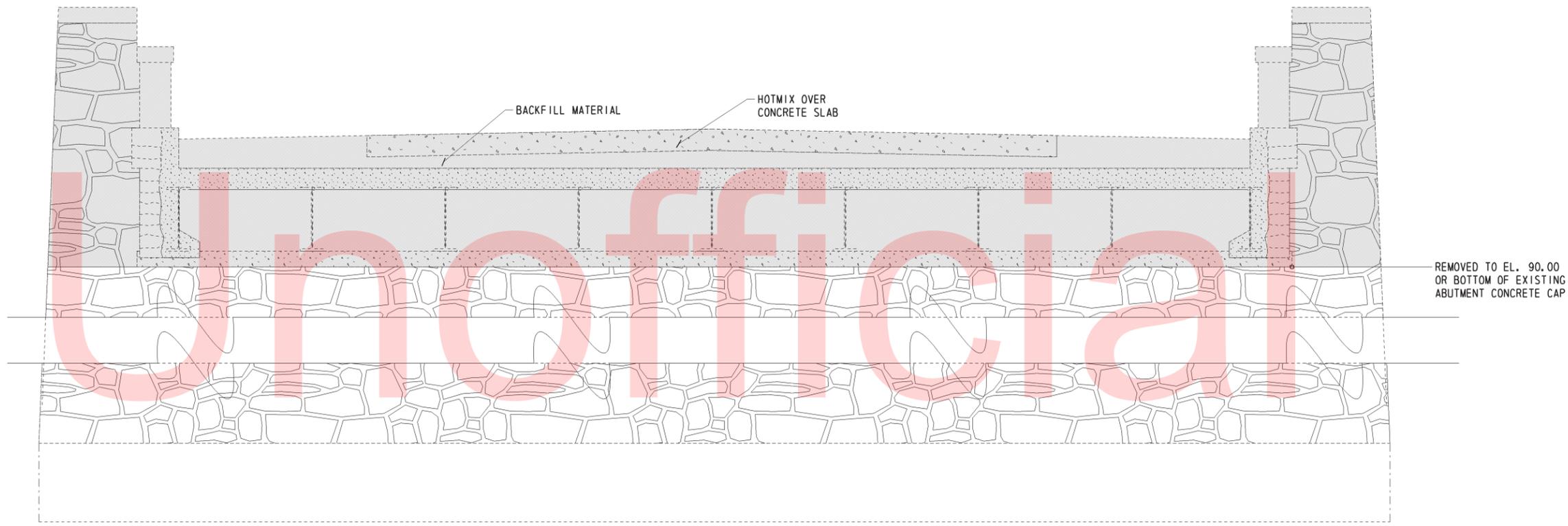
**LOAD RATING SUMMARY**

DESIGN VEHICLE	RATING FACTOR	RATING WEIGHT (TON)	CONTROLLING MEMBER	CONTROLLING POINT	LOAD EFFECT
HL-93 TRUCK (INVENTORY)	2.36	N/A	SPAN 1: BEAM 4	105.00	FLANGE STRESS
HL-93 TANDEM (INVENTORY)	2.20	N/A	SPAN 1: BEAM 4	105.00	FLANGE STRESS
HL-93 TRUCK TRAIN (INVENTORY)	N/A	N/A	N/A	N/A	N/A
HS-20 (INVENTORY)	2.85	102.48	SPAN 1: BEAM 4	110.00	SHEAR
HL-93 TRUCK (OPERATING)	3.07	N/A	SPAN 1: BEAM 4	105.00	FLANGE STRESS
HL-93 TANDEM (OPERATING)	2.86	N/A	SPAN 1: BEAM 4	105.00	FLANGE STRESS
HL-93 TRUCK TRAIN (OPERATING)	N/A	N/A	N/A	N/A	N/A
HS-20 (OPERATING)	3.69	132.84	SPAN 1: BEAM 4	110.00	SHEAR
DE S220 & LEGAL-LANE (LEGAL)	4.28	20.00	SPAN 1: BEAM 4	106.00	FLANGE STRESS
DE S335 & LEGAL-LANE (LEGAL)	2.31	35.00	SPAN 1: BEAM 4	105.00	FLANGE STRESS
DE S437 & LEGAL-LANE (LEGAL)	2.19	37.00	SPAN 1: BEAM 5	105.00	FLANGE STRESS
DE S330 & LEGAL-LANE (LEGAL)	4.14	30.00	SPAN 1: BEAM 6	105.00	FLANGE STRESS
DE S435 & LEGAL-LANE (LEGAL)	3.29	35.00	SPAN 1: BEAM 4	105.00	FLANGE STRESS
DE S540 & LEGAL-LANE (LEGAL)	3.03	40.00	SPAN 1: BEAM 4	105.00	FLANGE STRESS

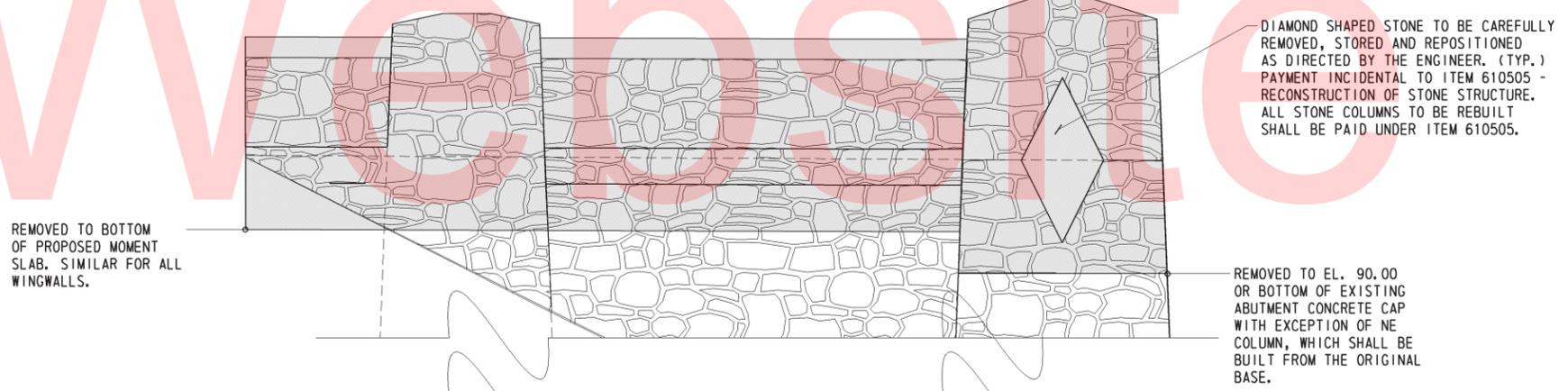
NOTE: LOAD RATING INCLUDES FUTURE WEARING SURFACE AS NOTED IN THE PLANS.

NOTE:  
6" DIA. STEEL SLEEVE TO BE PROVIDED BY DELMARVA GAS

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**BRIDGE SECTION**

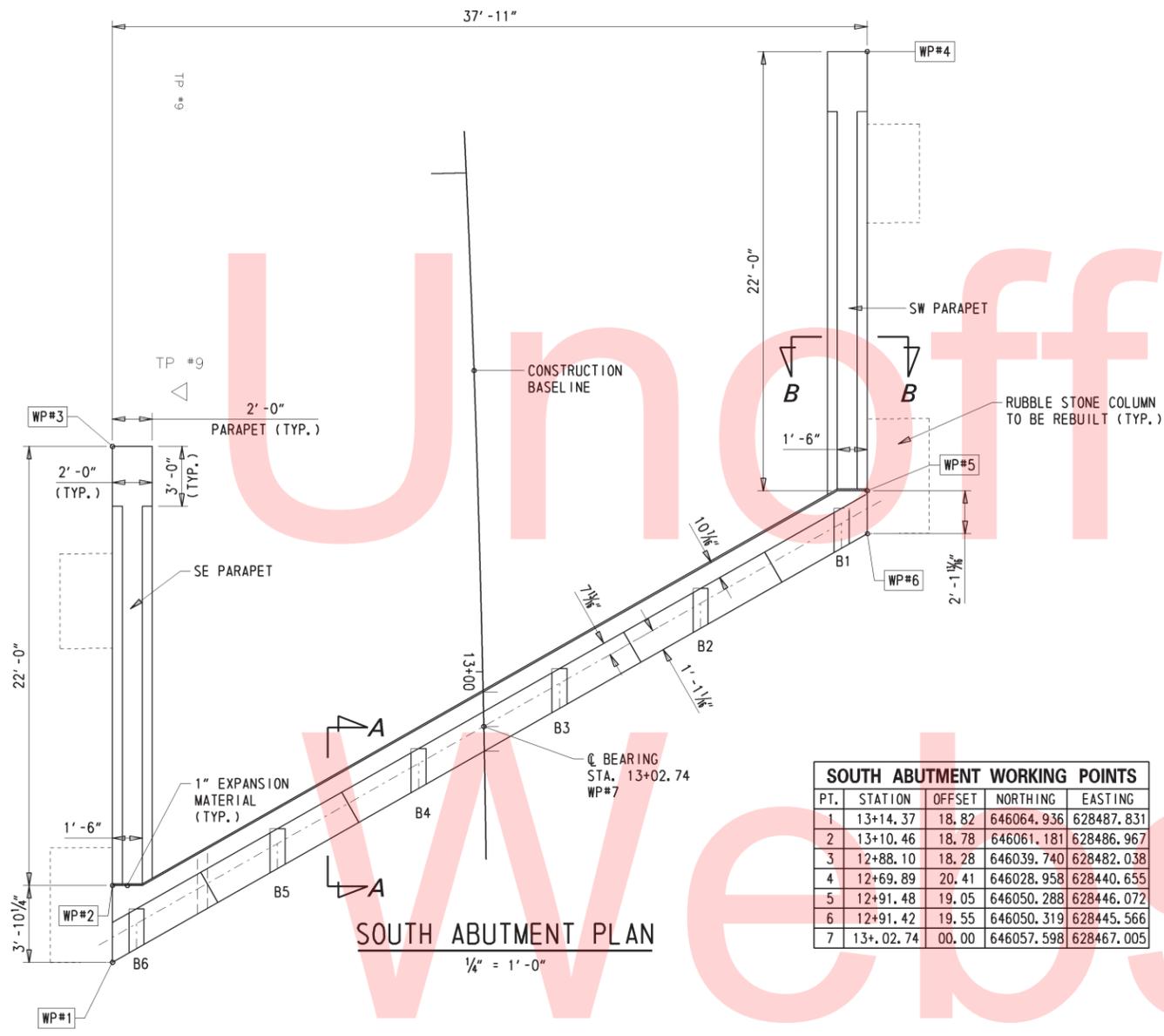


- NOTES:**
- EXISTING STONES TO BE REMOVED TO THE ELEVATIONS SHOWN ON PLANS, STORED, AND PROTECTED TO BE REUSED.
  - THE EXISTING BRIDGE STEEL BEAMS MAY CONTAIN LEAD PAINT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH ALL ENVIRONMENTAL REGULATIONS FOR HAZARDOUS MATERIALS IN THE STATE OF DELAWARE, DURING THE REMOVAL AND DISPOSAL OF THE EXISTING SUPERSTRUCTURE AND SUBSTRUCTURE. ALL COSTS ASSOCIATED WITH THE REMOVAL AND DISPOSAL OF HAZARDOUS MATERIALS SHALL BE PAID UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
  - THE CONTRACTOR SHALL RETRIEVE THE ONE DIAMOND SHAPED STONE FROM THE STREAM, STORE, CLEAN, AND REPOSITION IT IN THE RUBBLE STONE COLUMN AS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER. NEW DIAMOND SHAPED STONE SHALL BE PROVIDED WHERE THE EXISTING STONE CANNOT BE REUSED. PAYMENTS INCIDENTAL TO ITEM 610505 - RECONSTRUCTION OF STONE STRUCTURE.

**ELEVATION**  
ALL WINGWALLS  
NORTH AND SOUTH  
ABUTMENTS (TYP.)

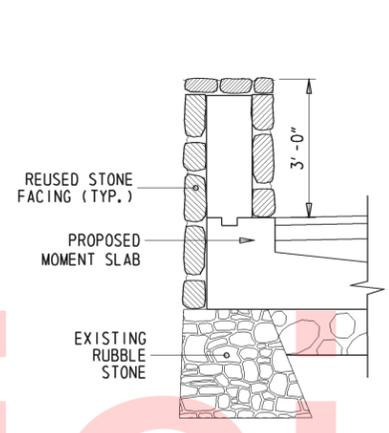
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<p><b>DELAWARE</b> DEPARTMENT OF TRANSPORTATION</p>	ADDENDUMS / REVISIONS	<p>SCALE 0 2 4 6 FEET</p>	<p><b>BRIDGE 1-543</b> ON N213 CARR ROAD OVER SHELLPOT CREEK</p>	CONTRACT T201207103	BRIDGE NO. <b>1-543</b>	<p><b>REMOVAL SHEET</b></p>	SHEET NO. 11
					COUNTY NEW CASTLE		DESIGNED BY: PAM

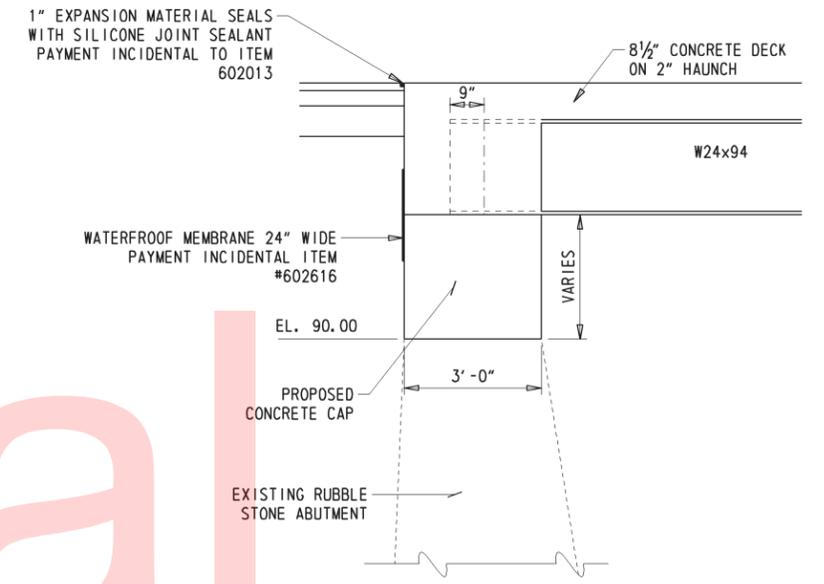


**SOUTH ABUTMENT PLAN**  
1/4" = 1'-0"

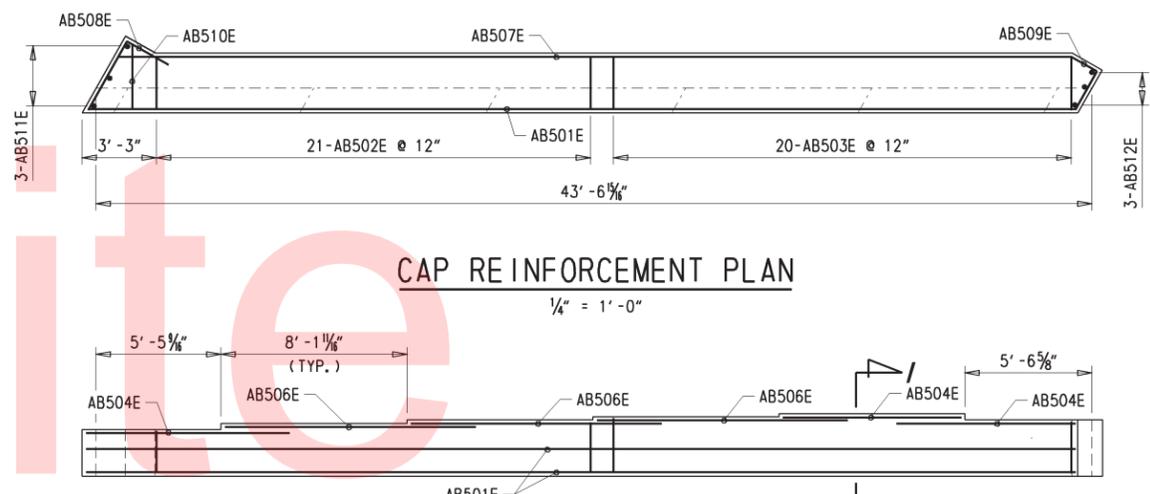
SOUTH ABUTMENT WORKING POINTS				
PT.	STATION	OFFSET	NORTHING	EASTING
1	13+14.37	18.82	646064.936	628487.831
2	13+10.46	18.78	646061.181	628486.967
3	12+88.10	18.28	646039.740	628482.038
4	12+69.89	20.41	646028.958	628440.655
5	12+91.48	19.05	646050.288	628446.072
6	12+91.42	19.55	646050.319	628445.566
7	13+02.74	00.00	646057.598	628467.005



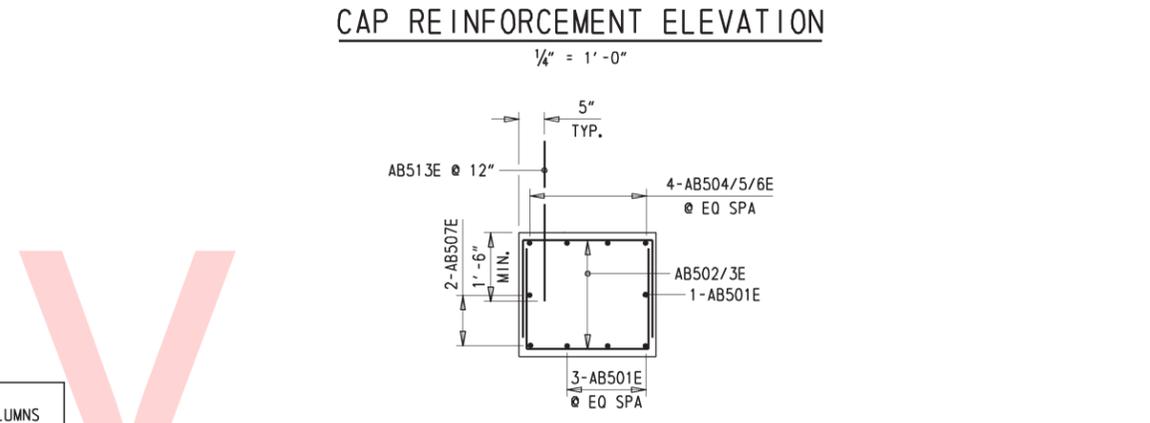
**SECTION B-B**  
1/2" = 1'-0"



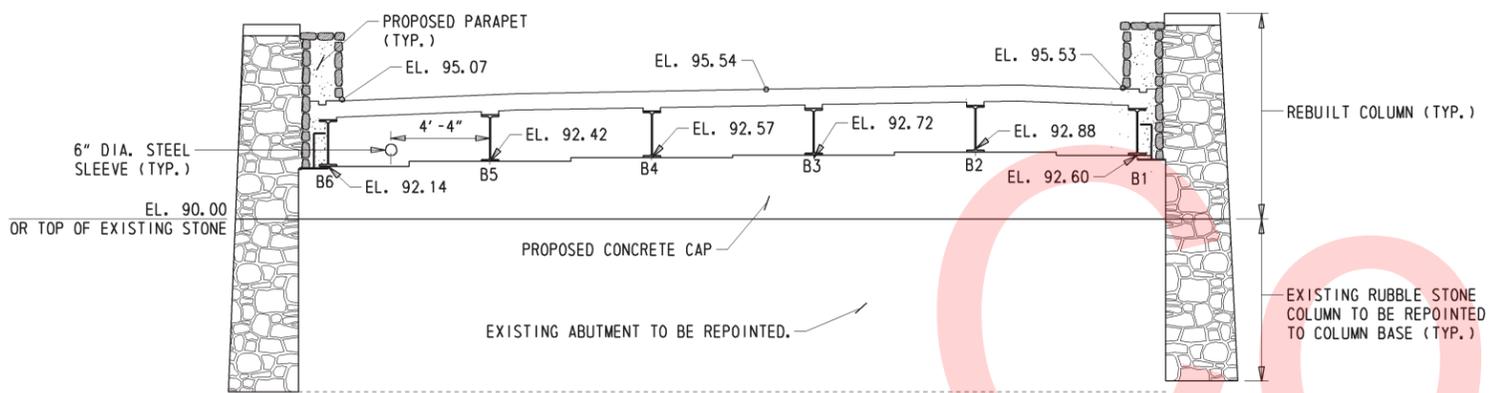
**SECTION A-A**  
1/2" = 1'-0"



**CAP REINFORCEMENT PLAN**  
1/4" = 1'-0"



**CAP REINFORCEMENT ELEVATION**  
1/4" = 1'-0"

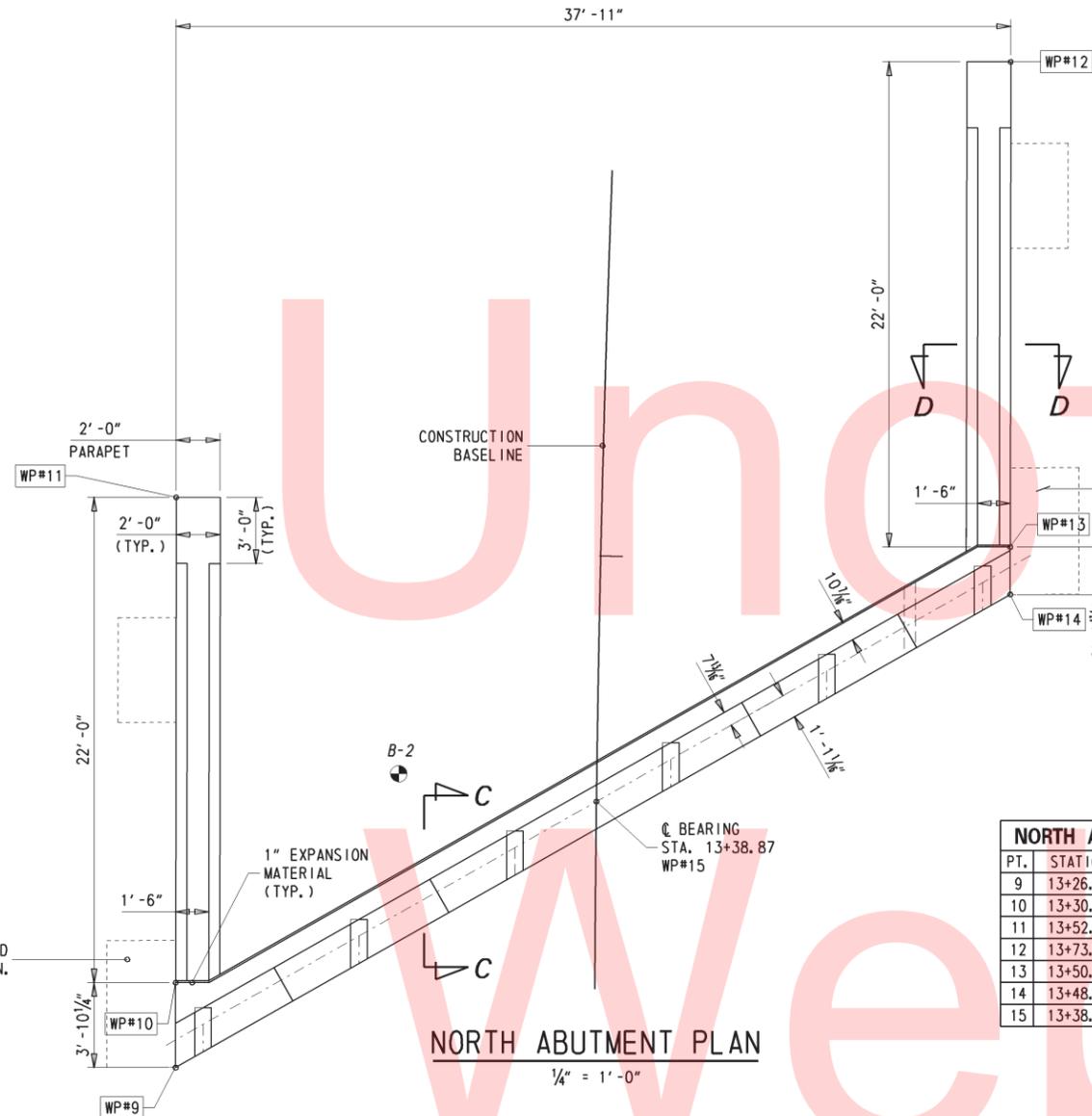


**SOUTH ABUTMENT ELEVATION**  
1/4" = 1'-0"

NOTES:  
 EXISTING RUBBLE STONE COLUMNS TO BE REBUILT PER DIMENSIONS ON CONTRACT #495 OR AS DIRECTED BY THE ENGINEER.  
 6" DIA. STEEL SLEEVE PROVIDED BY DELMARVA GAS. PAYMENT FOR INSTALLATION INCIDENTAL TO ITEM 602013.

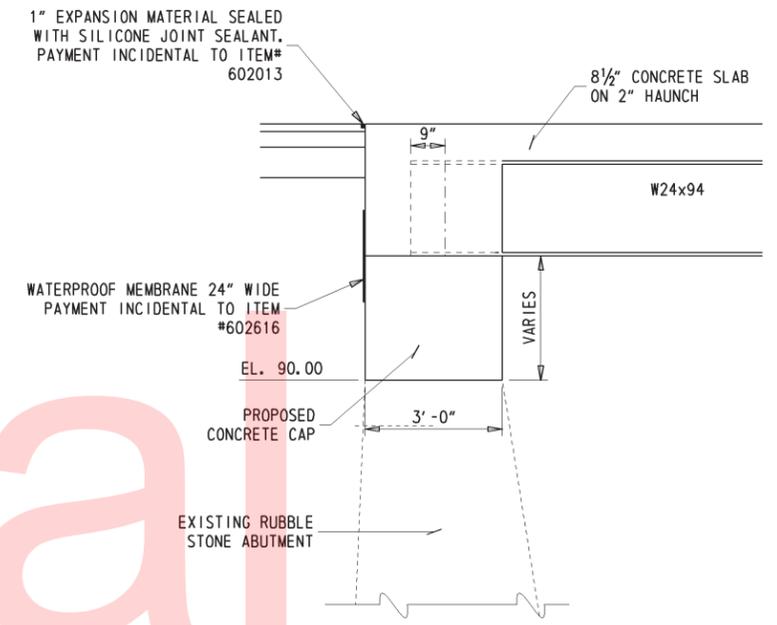
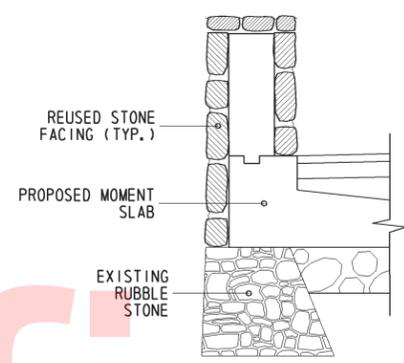
**CAP SECTION REINFORCEMENT (1-1)**  
1/2" = 1'-0"

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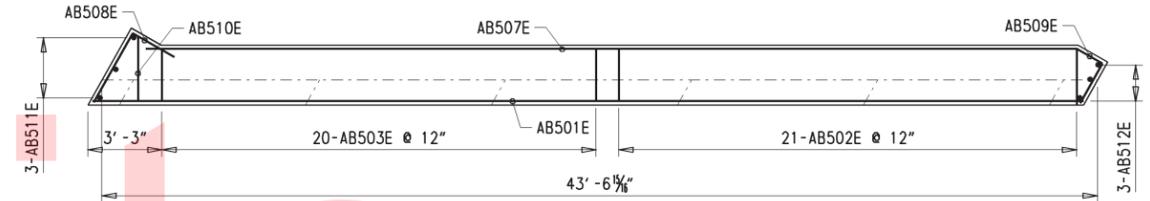


NORTH ABUTMENT WORKING POINTS					
PT.	STATION	OFFSET	NORTHING	EASTING	
9	13+26.78	19.02	646085.358	628453.645	
10	13+30.56	18.56	646088.994	628454.971	
11	13+52.19	19.35	646110.547	628459.417	
12	13+73.18	17.90	646121.328	628500.796	
13	13+50.83	18.60	646099.887	628495.867	
14	13+48.65	18.65	646097.884	628495.384	
15	13+38.87	00.00	646092.841	628474.957	

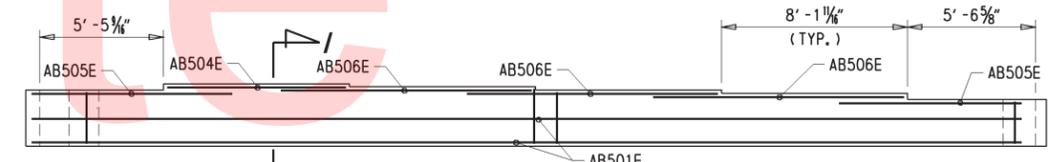
SECTION D-D  
1/2" = 1'-0"



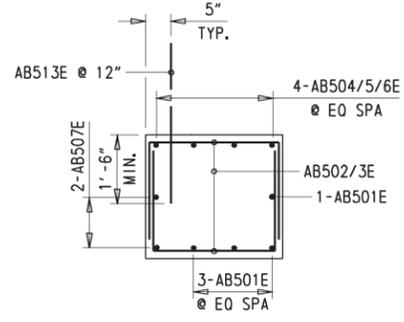
SECTION C-C  
1/2" = 1'-0"



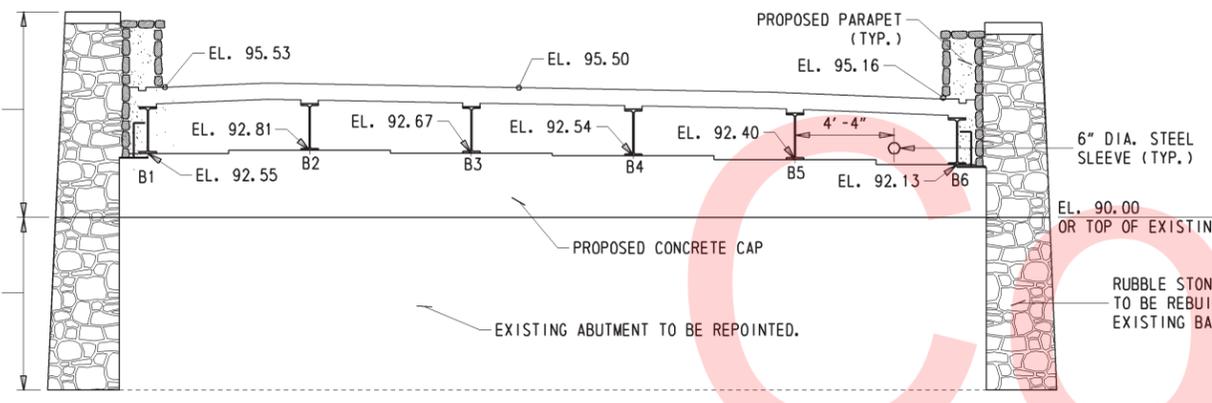
CAP REINFORCEMENT PLAN  
1/4" = 1'-0"



CAP REINFORCEMENT ELEVATION  
1/4" = 1'-0"



CAP SECTION REINFORCEMENT (I-I)  
1/4" = 1'-0"

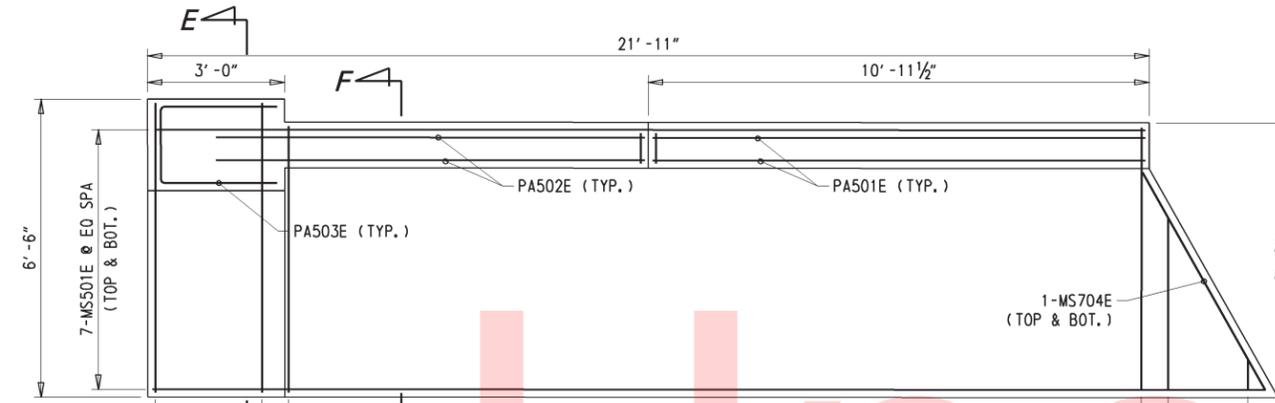


NORTH ABUTMENT ELEVATION  
1/4" = 1'-0"

NOTES:  
EXISTING RUBBLE STONE COLUMNS TO BE REBUILT PER DIMENSIONS ON CONTRACT #495 OR AS DIRECTED BY THE ENGINEER.  
6" DIA. STEEL SLEEVE PROVIDED BY DELMARVA GAS. PAYMENT FOR INSTALLATION INCIDENTAL TO ITEM 602013.

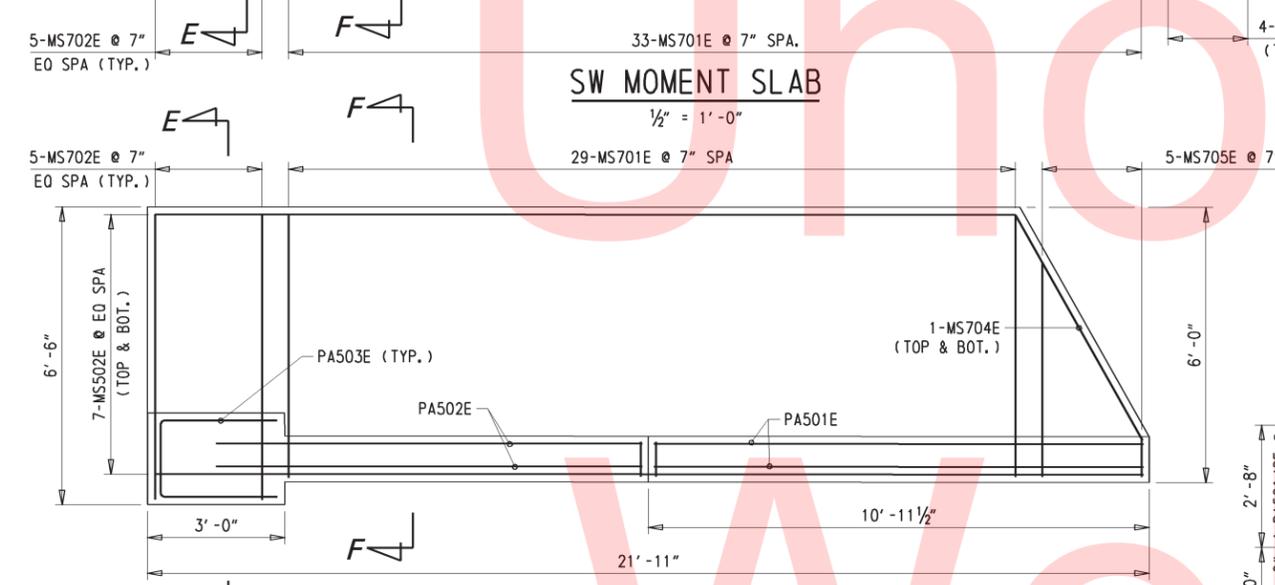
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BEND OR CUT MS701E, MS702E, MS501E MS502E & PA506E TO MATCH SLOPE OF MOMENT SLAB. PAYMENT INCIDENTAL TO ITEM #604000



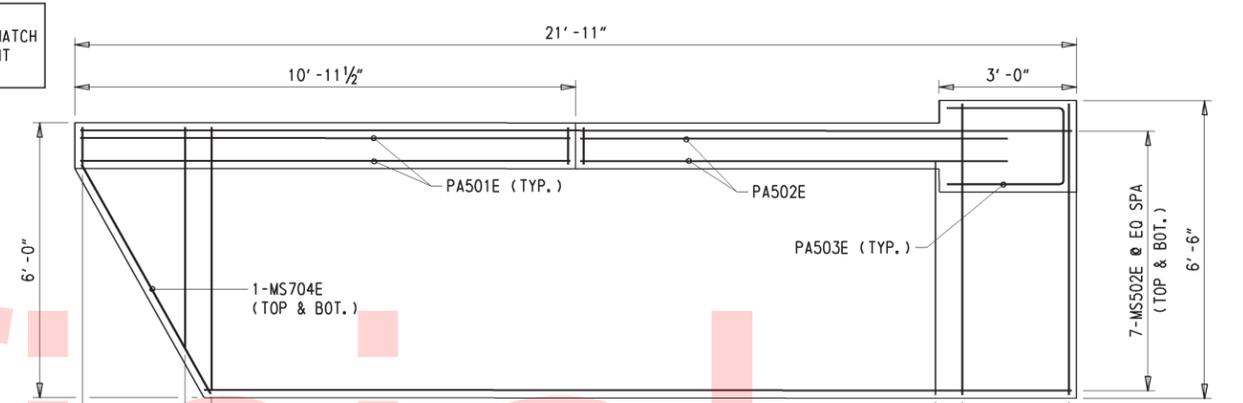
**SW MOMENT SLAB**

1/2" = 1'-0"



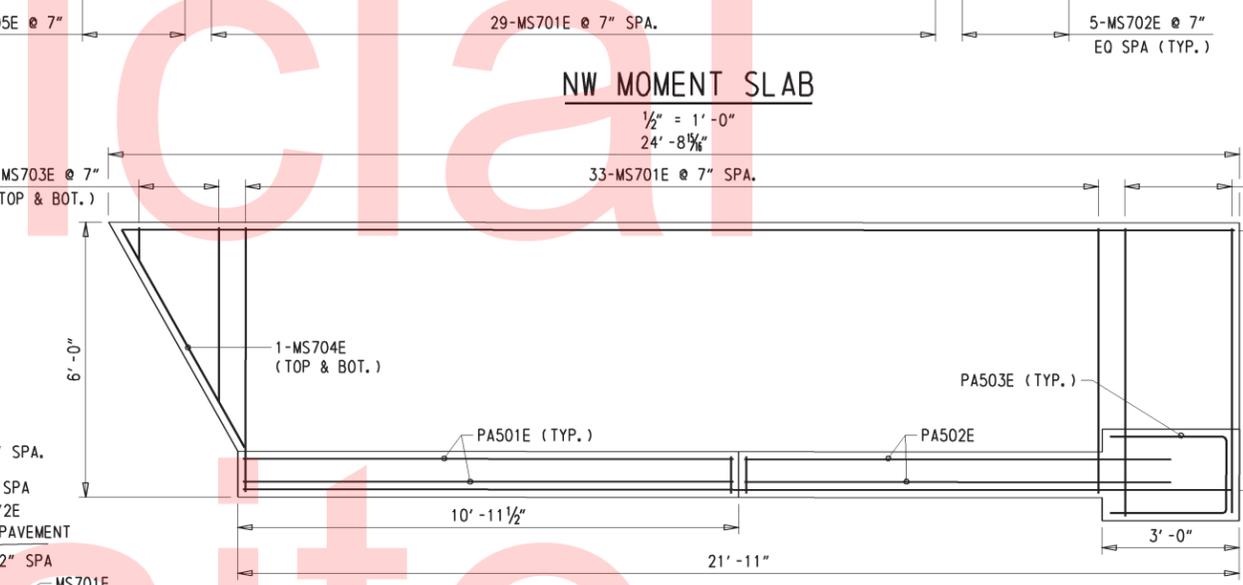
**SE MOMENT SLAB**

1/2" = 1'-0"



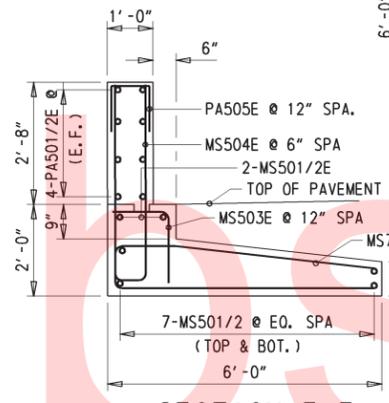
**NW MOMENT SLAB**

1/2" = 1'-0"



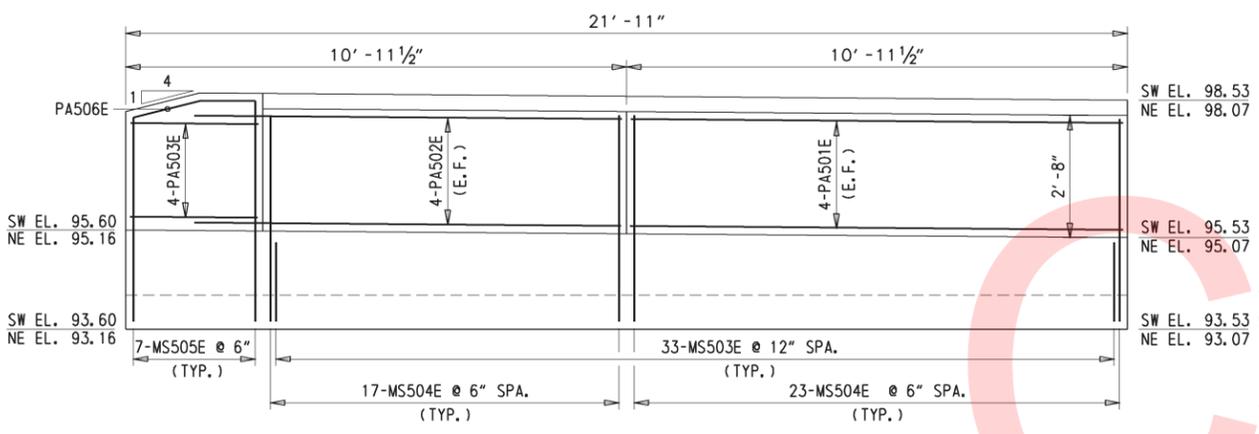
**NE MOMENT SLAB**

1/2" = 1'-0"



**SECTION F-F**

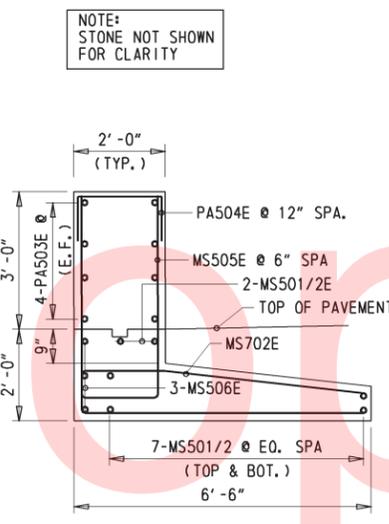
1" = 1'-0"



**NE/SW PARAPET ELEVATION**

1/2" = 1'-0"

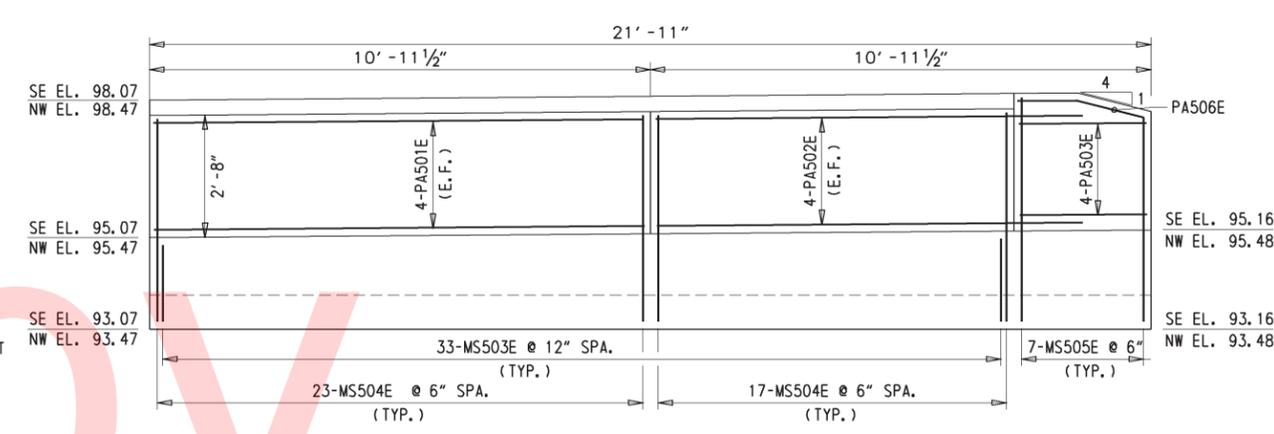
NOTE:  
THE CONTRACTOR HAS THE OPTION OF PRECASTING THE MOMENT SLAB AT NO ADDITIONAL COSTS TO THE DEPARTMENT.



**SECTION E-E**

1" = 1'-0"

NOTE:  
STONE NOT SHOWN FOR CLARITY



**SE/NW PARAPET ELEVATION**

1/2" = 1'-0"

ADDENDUMS / REVISIONS

SCALE AS NOTED

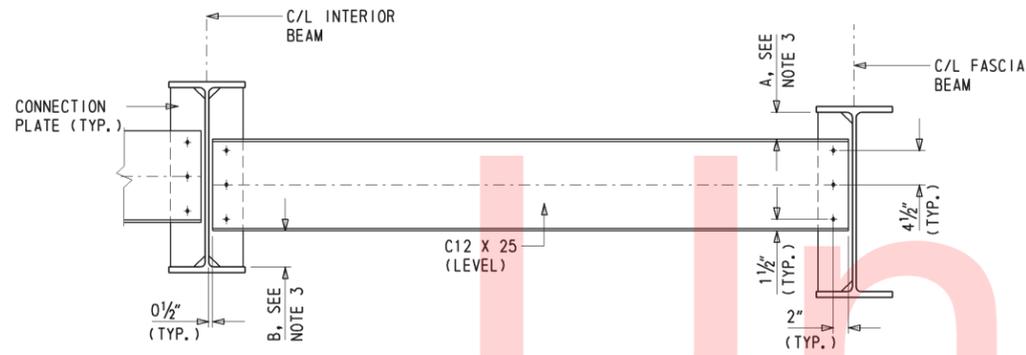
**BRIDGE 1-543  
ON N213 CARR ROAD  
OVER SHELLPOT CREEK**

CONTRACT T201207103	BRIDGE NO. 1-543
COUNTY NEW CASTLE	DESIGNED BY: PAM CHECKED BY: SR

**MOMENT SLAB  
DETAILS**

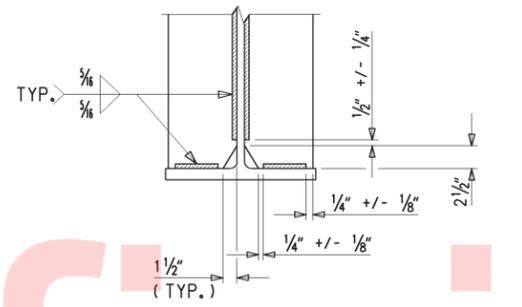
SHEET NO. 14
TOTAL SHTS. 26

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**INTERMEDIATE DIAPHRAGMS I**

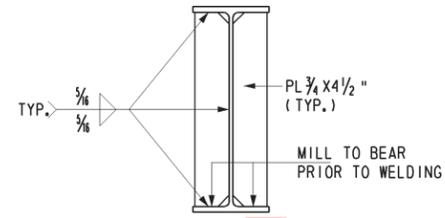
SCALE: 1" = 1'-0"  
(EXCEPT BAY 5)



**STIFFENER & CONNECTION PLATE**

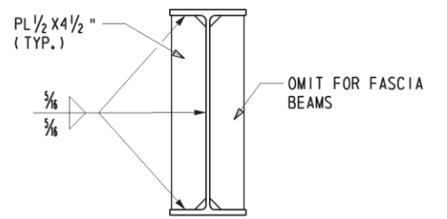
**WELD TERMINATION**

NOT TO SCALE



**BEARING STIFFENER**

SCALE: 1" = 1'-0"

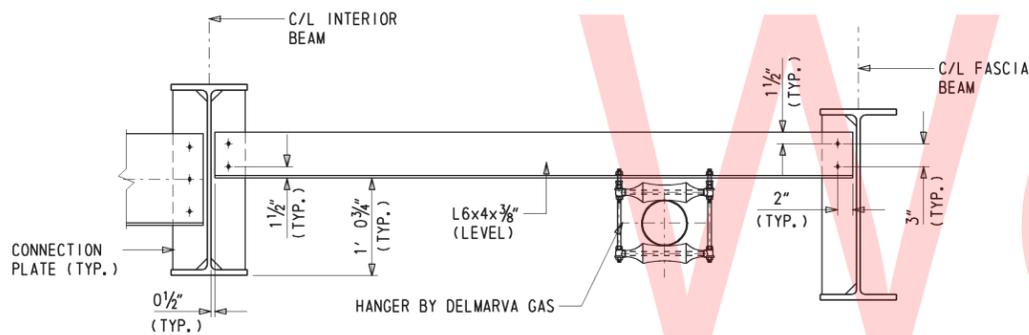


**CONNECTION PLATE**

SCALE: 1" = 1'-0"

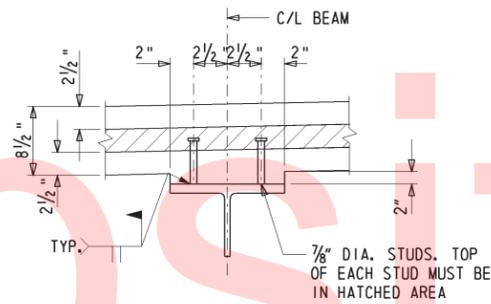
**NOTES:**

- FOR FRAMING PLAN, SEE SHEET 16.
- ALL BOLTS FOR DIAPHRAGM CONNECTIONS SHALL BE 7/8" DIA. HIGH STRENGTH BOLTS AASHTO M164 (ASTM A325) IN 5/8" DIA. OPEN HOLES.
- FOR INTERMEDIATE DIAPHRAGMS I SET A EQUAL TO B.



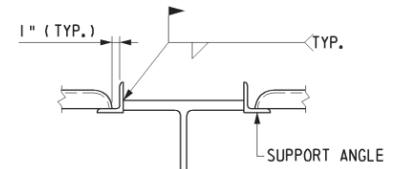
**INTERMEDIATE DIAPHRAGM II**

SCALE: 1" = 1'-0"  
(BAY 5 ONLY)



**SHEAR CONNECTORS**

NOT TO SCALE



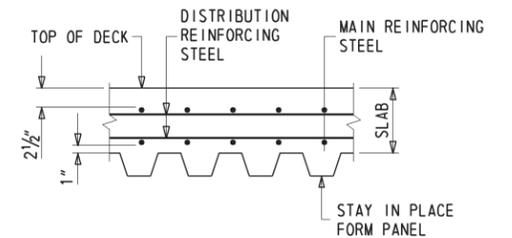
**COMPRESSION FLANGE FOR S.I.P. FORMS**

SCALE: 1" = 1'-0"

**NOTES:**

DELMARVA POWER HAS A 2" GAS MAIN IN SERVICE ON THE EXISTING STRUCTURE. THE SERVICE SHALL BE TEMPORARILY RELOCATED BY DELMARVA AND RE-ATTACHED TO THE STRUCTURE AFTER THE STEEL BEAMS ARE INSTALLED BUT BEFORE THE COMPLETION OF THE ROADWAY. THE 6" STEEL SLEEVE IN ABUTMENTS AND GAS HANGERS SHALL BE PROVIDED BY DELMARVA POWER. PAYMENT FOR THE INSTALLATION OF TWO 6" SLEEVES AND TWO GAS HANGERS BY THE CONTRACTOR SHALL BE INCIDENTAL TO ITEM 605002 - STEEL STRUCTURES. THE CONTRACTOR SHALL COORDINATE WITH MR. TED WAUGH, TELEPHONE 302-429-3706, OF DELMARVA REGARDING THE GAS MAIN INSTALLATION. PAYMENT FOR COORDINATION SHALL BE INCIDENTAL TO ITEM 605002.

STABILITY OF THE GIRDERS IS TO BE MAINTAINED BY THE CONTRACTOR DURING ERECTION UNTIL ALL GIRDERS AND DIAPHRAGMS ARE IN-PLACE, ALL BOLTS ARE PROPERLY INSTALLED AND DECK POURED. ERECTION LOADS INCLUDING SELF-WEIGHT OF THE STEEL MEMBERS, WIND LOADING AND CONSTRUCTION LIVE LOAD EFFECTS ARE TO BE EVALUATED BY THE CONTRACTOR FOR STABILITY, STRESSES AND DEFLECTIONS ON THE STEEL MEMBERS DURING ANY STAGE OF ERECTION.



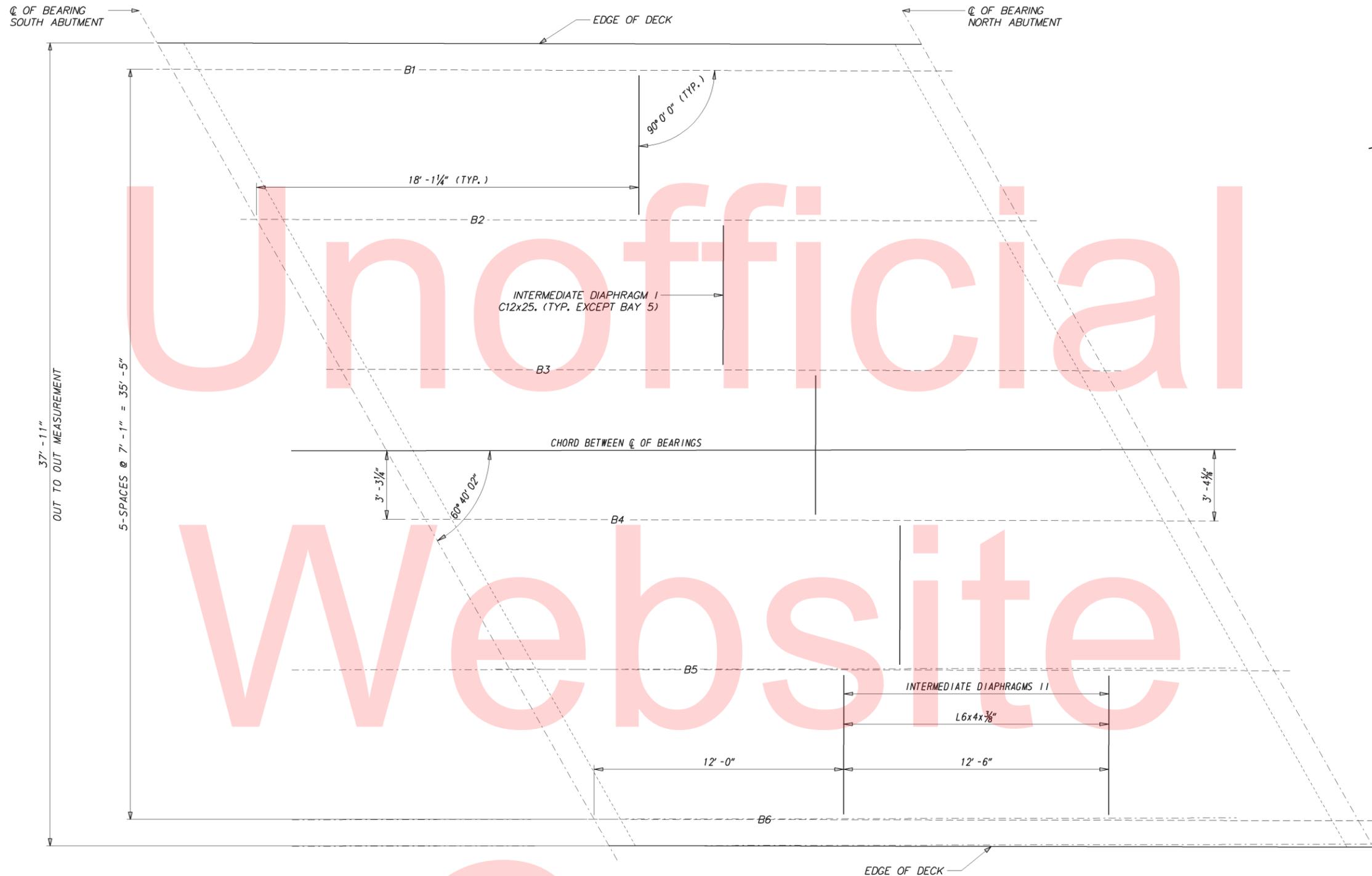
**STEEL FORM NOTE:**

FORMS SHALL BE VERTICALLY ADJUSTED TO ATTAIN LINE AND GRADE REQUIRED ON THE PLANS.

**STEEL FORM SECTION**

SCALE: 1" = 1'-0"

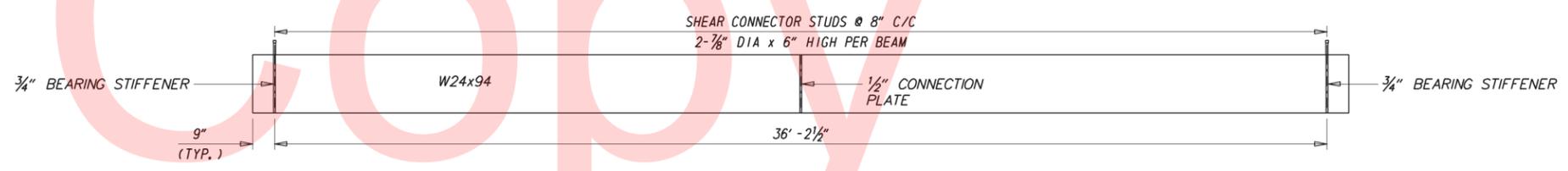
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**FRAMING PLAN**

$\frac{3}{8}" = 1'0"$



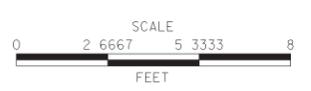
**BEAM ELEVATION**

$\frac{3}{8}" = 1'0"$

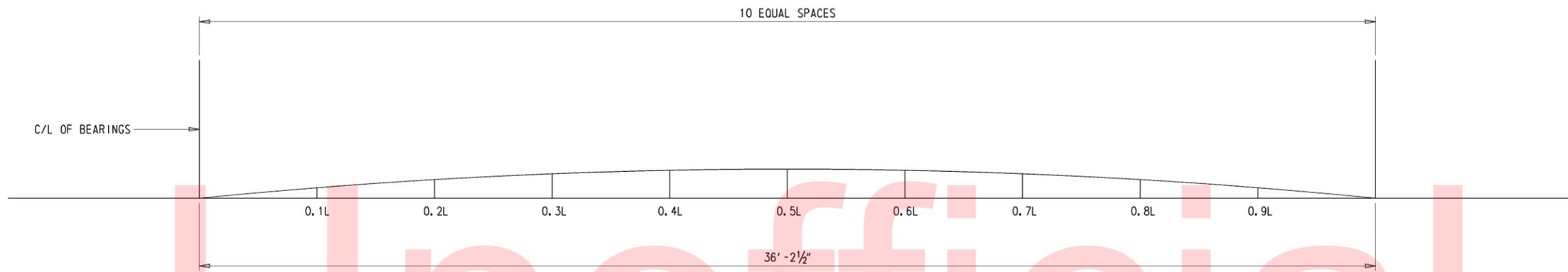
NOTE:  
BEAMS 5 AND BEAM 6 SHALL HAVE 2 CONNECTION PLATES AS SHOWN ON FRAMING PLAN.

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ADDENDUMS / REVISIONS	



CONTRACT	BRIDGE NO.	<b>1-543</b>
T201207103	DESIGNED BY:	PAM
COUNTY	CHECKED BY:	SR
NEW CASTLE		



**CAMBER DIAGRAM**  
(SCHEMATIC)

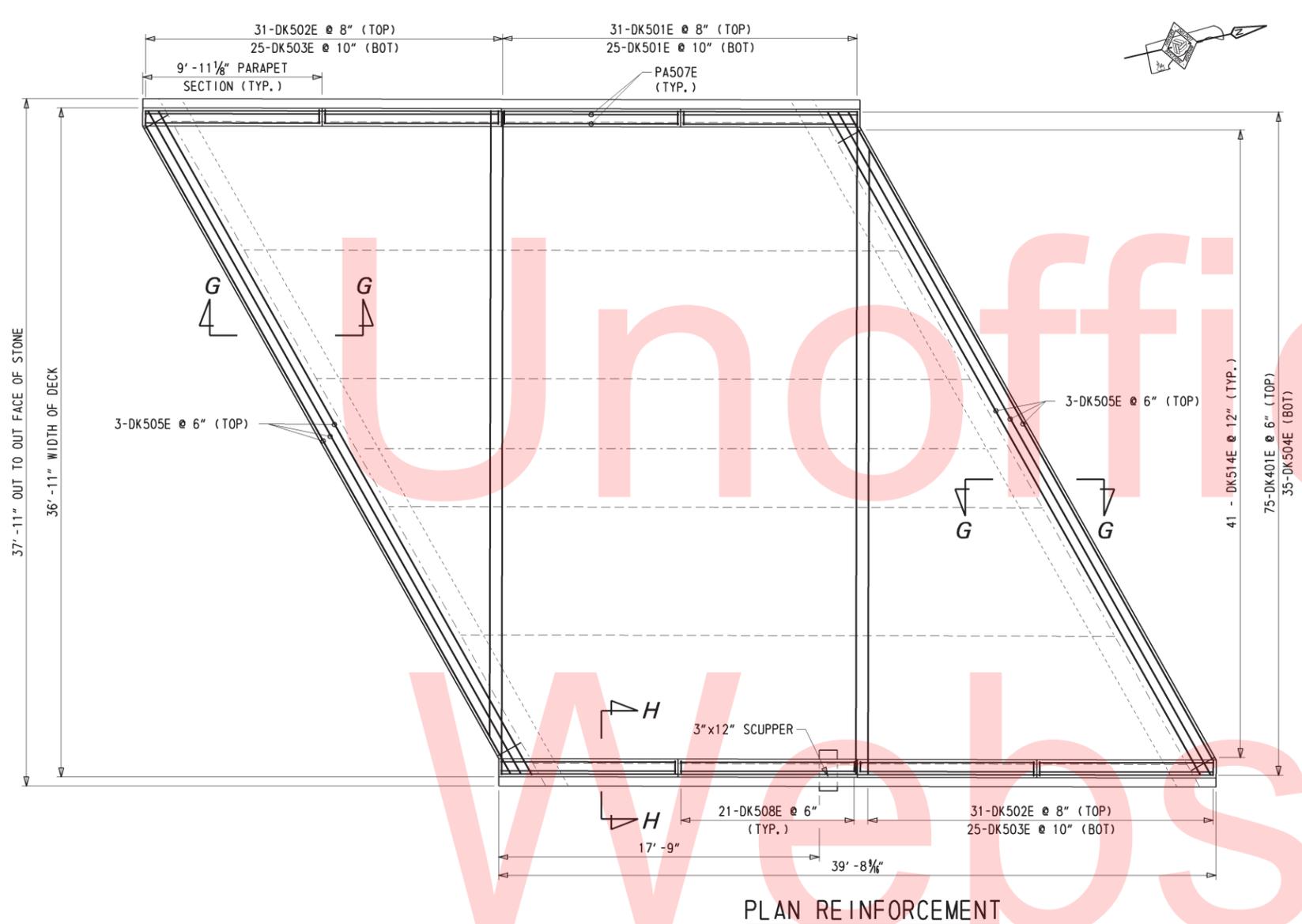
DEFLECTION AND TOTAL CAMBERS (INCH)												
BEAM		0	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	L
BEAM NO. 1	DLS	0	0	0	1/8	1/8	1/8	1/8	1/8	0	0	0
	DLC	0	3/8	3/8	1/2	3/8	3/8	3/8	1/2	3/8	3/8	0
	SLD	0	1/8	1/8	1/8	3/8	3/8	3/8	1/8	1/8	1/8	0
	TD&C	0	1/4	1/2	1/8	1/8	1/8	1/8	1/8	1/2	1/4	0
	VCO	0	0	0	0	0	0	0	0	0	0	0
TD&C+VCO	0	1/4	1/2	1/8	1/8	1/8	1/8	1/8	1/2	1/4	0	
BEAM NOS. 2-5	DLS	0	0	0	1/8	1/8	1/8	1/8	1/8	0	0	0
	DLC	0	1/8	1/4	3/8	3/8	3/8	3/8	1/4	1/8	1/8	0
	SLD	0	0	0	0	0	0	0	0	0	0	0
	TD&C	0	1/8	1/4	3/8	1/8	1/8	1/8	3/8	1/4	1/8	0
	VCO	0	0	0	0	0	0	0	0	0	0	0
TD&C+VCO	0	1/8	1/4	3/8	1/8	1/8	1/8	3/8	1/4	1/8	0	
BEAM NO. 6	DLS	0	0	0	1/8	1/8	1/8	1/8	1/8	0	0	0
	DLC	0	3/8	3/8	1/2	3/8	3/8	3/8	1/2	3/8	3/8	0
	SLD	0	1/8	1/8	1/8	3/8	3/8	3/8	1/8	1/8	1/8	0
	TD&C	0	1/4	1/2	1/8	1/8	1/8	1/8	1/8	1/2	1/4	0
	VCO	0	0	0	0	0	0	0	0	0	0	0
TD&C+VCO	0	1/4	1/2	1/8	1/8	1/8	1/8	1/8	1/2	1/4	0	

**LEGEND**

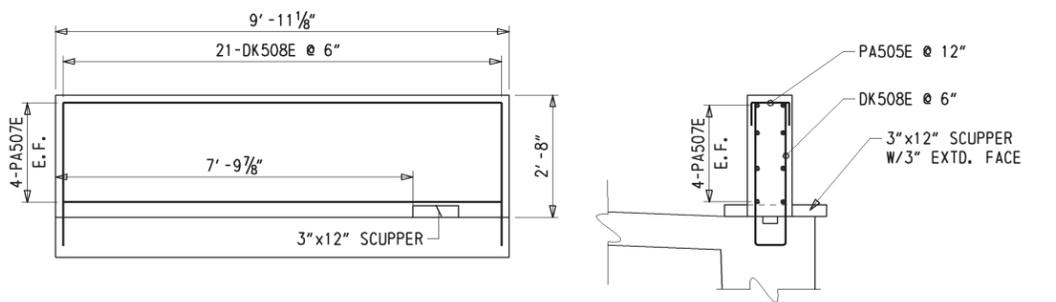
- DLS - DENOTES DEFLECTION DUE TO STRUCTURAL STEEL GIRDER (DC1)
- DLC - DENOTES DEFLECTION DUE TO DECK SLAB, HAUNCH, SIP FORMS (DC1)
- SDL - DENOTES DEFLECTION DUE TO PARAPET, SIDEWALK AND PROTECTIVE FENCE (DC2)
- TD&C - DENOTES TOTAL DEAD LOAD DEFLECTION AND CAMBER
- VCO - DENOTES CAMBER FOR VERTICAL CURVE ORDINATE DUE TO ROADWAY PROFILE

ALL BEAMS SHALL BE CAMBERED FOR DEAD LOAD DEFLECTION ORDINATES TO THE DIMENSIONS SHOWN ON THESE PLANS. THE CAMBER TOLERANCE IS ZERO UNDER TO THREE QUARTERS (3/4) INCH OVER.

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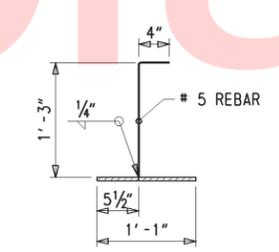
**PLAN REINFORCEMENT**  
1/4" = 1'-0"



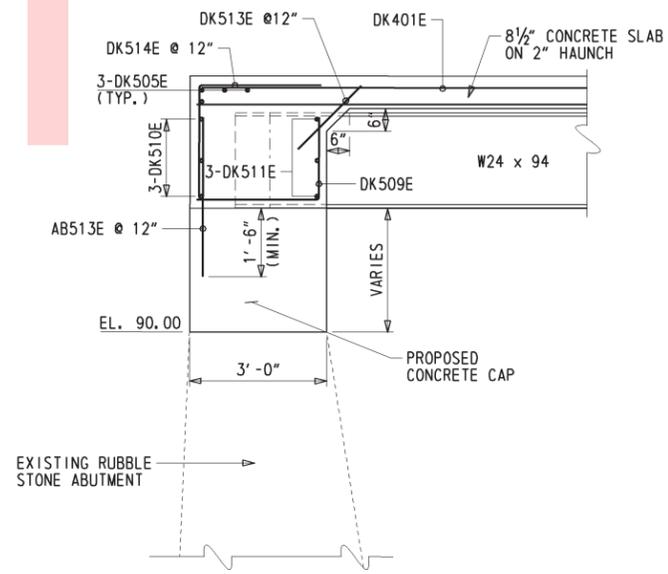
**DECK PARAPET ELEVATION**  
1/2" = 1'-0"

**DECK SECTION REINFORCEMENT**  
1/2" = 1'-0"

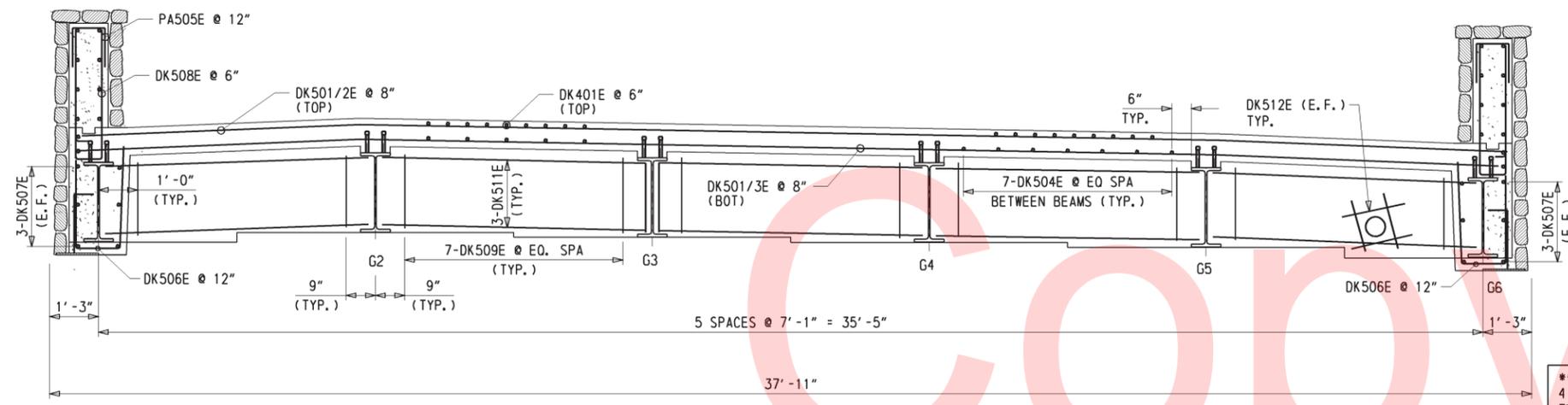
SEE LOCATION OF SOLE SCUPPER ON PLAN REINFORCEMENT THIS SHEET.



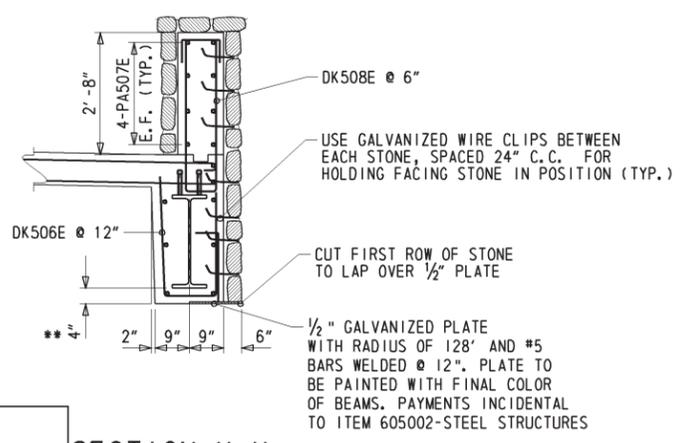
**1/2" PLATE**  
1/2" = 1'-0"



**SECTION G-G**  
1/2" = 1'-0"



**BRIDGE SECTION REINFORCEMENT**  
1/2" = 1'-0"



**SECTION H-H**  
1/2" = 1'-0"

\*\* 4" AT CENTER AND 16 1/2" AT THE ENDS OF THE BEAM (TYP.)  
CUT REBAR DK506E AND BEND DK507E TO CONFORM TO RADIUS OF FASCIA ENCASEMENT. CUT OR ADJUST DK508E AT SCUPPER. BEND DK510E TO CONFORM TO END OF DECK CONFIGURATION. PAYMENTS INCIDENTAL TO ITEM #604000-REINFORCEMENT, EPOXY COATED.

NOTE:  
EXTERIOR BEAMS TO BE ENCASED FOR FULL LENGTH OF BEAMS.

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ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.	<b>1-543</b>
T201207103	DESIGNED BY:	PAM
COUNTY	CHECKED BY:	SR
NEW CASTLE		





ENVIRONMENTAL COMPLIANCE NOTES

ORIGINAL SHEET PREPARED BY: PERCIVAL McNEIL ON 10-06-2014. SHEET LAST UPDATED ON XX-XX-XXXX.

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): \*3(a) and (c)(NWP \*23 WITH PCN)
  - DNREC - WETLANDS & SUBAQUEOUS LANDS (W/SL): SUBAQUEOUS LAND PERMIT
  - DNREC - WATER QUALITY (WQC) & COASTAL ZONE CONSISTENCY (CZM): ISSUED
  - \*\* NCCO FLOODPLAIN PERMITS

\* 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 - APRIL 15th - AUGUST 1st.
- MIGRATORY BIRDS - IMPACTS SHOULD BE AVOIDED BY PERFORMING CONSTRUCTION ACTIVITIES FROM AUGUST 1 TO APRIL 15 OF ANY CALENDAR YEAR. WORK ON THE UNDERSIDE OF THE STRUCTURE SHOULD BEGIN PRIOR TO APRIL 15 (TO PREVENT BIRDS FROM NESTING) OR WAIT UNTIL AFTER AUGUST 1 (AFTER THE HATCHLINGS HAVE LEFT) TO BEGIN WORK TO THE UNDERSIDE. IF NEITHER OF THESE OPTIONS IS PRACTICABLE, THEN DETERRENT NETTING (OR A SIMILAR DEVICE) NEEDS TO BE INSTALLED PRIOR TO APRIL 15. IF NETTING NEEDS TO BE INSTALLED, IT SHOULD BE A MAXIMUM OF 3/4 INCH X 3/4 INCH OPENING AND SHOULD BE PLACED HORIZONTALLY UNDERNEATH THE STRUCTURE. THE NETTING SHOULD BE PULLED TAUT AND ATTACHED IN A WAY THAT BIRDS ARE UNABLE TO ENTER THE AREA BETWEEN THE NETTING AND THE STRUCTURE. PAYMENT FOR NETTING SHALL BE INCIDENTAL TO ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS.

3. STREAM RESTORATION AND SLOPE RIPRAP TREATMENT

- A. OTHER AREAS OF THE CHANNEL BOTTOM AFFECTED BY CONSTRUCTION (INCLUDING, BUT NOT LIMITED TO, THE LOCATION OF SUMP PITS, STABILIZED OUTFALLS, TEMPORARY PIPES AND/OR SANDBAG DIKES AND DIVERSIONS) SHALL BE RESTORED TO EXISTING CONDITIONS.
- B. WHEN ALL EROSION AND SEDIMENT CONTROL MEASURES ARE REMOVED AND THE STREAM RETURNS TO ITS NATURAL FLOW CONDITIONS, THE FLOW MUST REMAIN ABOVE GROUND. IF THIS IS NOT ACHIEVED, THE CONTRACTOR WILL BE REQUIRED TO TAKE CORRECTIVE ACTION AT THE CONTRACTOR'S EXPENSE.
- C. WORK OUTSIDE THE SILT FENCE BUT WITHIN THE LOC WILL NOT BE ALLOWED TO ENTER THE SIDE CHANNELS OR MAIN CHANNEL WITHOUT PERMITS.

4. CULTURAL RESOURCE ISSUES:

THE CONTRACTOR WILL BE NOTIFIED THAT BRIDGE 1-543 IS INDIVIDUALLY ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES. DELDOT IS EXPECTING THE WORK WILL CONSTITUTE A FINDING OF AN ADVERSE EFFECT AND HAS CONFERRED WITH SHPO TO PROCESS THE FINDING AND EXPECTED MITIGATION REQUIRED. THE EXISTING STONES PART OF THE VENEER SHALL BE CAREFULLY REMOVED AND SALVAGED. THIS STONE SHALL BE PROCESSED BY THE CONTRACTOR AND SHALL BE USED AS THE STONE VENEER ON THE PROPOSED PARAPETS. IF ADDITIONAL STONE IS REQUIRED TO COMPLETE THE STONE VENEER IT SHALL MATCH, AS CLOSELY AS POSSIBLE, THE SIZE, COLOR AND TEXTURE OF THE EXISTING STONE OF THE RESPECTIVE BRIDGE. LIKewise, MORTAR SHALL MATCH AS CLOSELY AS POSSIBLE THE COLOR AND TEXTURE OF THAT PRESENT IN THE EXISTING BRIDGE.

THE ADJACENT NATIONAL REGISTER OF HISTORIC PLACES LISTED DWELLING, LAUREL, LIES ON THE SOUTHWEST SIDE OF CARR ROAD OR BRIDGE 1-543. THIS IS ALSO INDICATED ON CONSTRUCTION PLAN SHEET NUMBER 7 AS PARCEL NUMBER 1-L. NO FURTHER ENCROACHMENT, INCLUDING THE POSSIBLE USE OF STAGING AND STOCKPILING IS PERMITTED ON THIS PROPERTY.

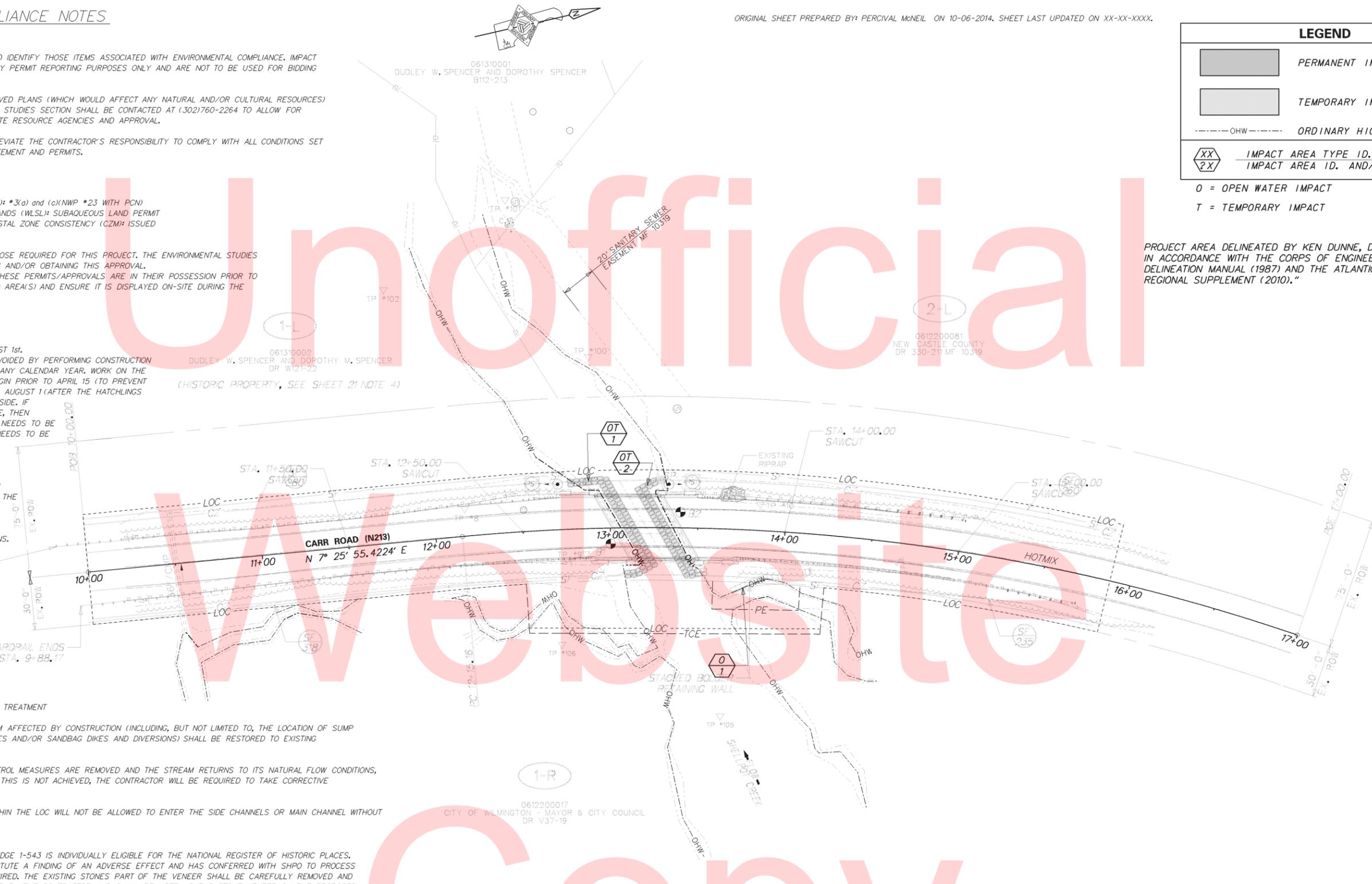
**LEGEND**

- PERMANENT IMPACT AREA
- TEMPORARY IMPACT AREA
- ORDINARY HIGH WATER
- IMPACT AREA TYPE ID. (SEE BELOW)
- IMPACT AREA ID. AND/OR NUMBER

O = OPEN WATER IMPACT  
 T = TEMPORARY IMPACT

PROJECT AREA DELINEATED BY KEN DUNNE, DELDOT, ON 2/21/2013, IN ACCORDANCE WITH THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE ATLANTIC AND GULF COAST REGIONAL SUPPLEMENT (2010)."

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**TEMPORARY OPEN WATER IMPACT AREA SCHEDULE**

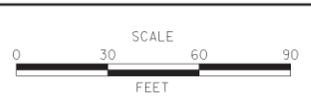
ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
OT-1	SANDBAG DIKE	573.46	0.013	42.479	DNREC/COE
OT-2	SANDBAG DIKE	531.23	0.012	39.350	DNREC/COE
<b>TOTAL TEMPORARY OPEN WATER IMPACTS</b>		<b>1104.69</b>	<b>0.025</b>	<b>81.829</b>	<b>DNREC/COE</b>

**PERMANENT OPEN WATER IMPACT AREA SCHEDULE**

ID	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION
O-1	BOULDER IN TRIBUTARY	11.10	0.0003	0.41	DNREC/COE
<b>TOTAL PERMANENT OPEN WATER IMPACTS</b>		<b>11.10</b>	<b>0.0003</b>	<b>0.41</b>	<b>DNREC/COE</b>

**DELAWARE DEPARTMENT OF TRANSPORTATION**

ADDENDUMS / REVISIONS



**BR 1-543 ON N213 CARR ROAD OVER SHELLPOT CREEK**

CONTRACT	BRIDGE NO.	<b>1-543</b>
T201207103	DESIGNED BY:	PAM
COUNTY	CHECKED BY:	SR
NEW CASTLE		

**ENVIRONMENTAL & COMPLIANCE PLAN**

SHEET NO. 21  
 TOTAL SHTS. 26

**LEGEND**

ALL UTILITY INFORMATION HEREON IS DEPICTED TO QUALITY LEVEL "B" (QL-B) UNLESS OTHERWISE NOTED. QL-B INFORMATION IS OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO IDENTIFY THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QL-B DATA ARE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES AND REDUCED ONTO PLAN DOCUMENTS.

SIZE INFORMATION SHOWN HEREON IS TAKEN FROM AVAILABLE UTILITY RECORDS.

**ABBREVIATIONS:**

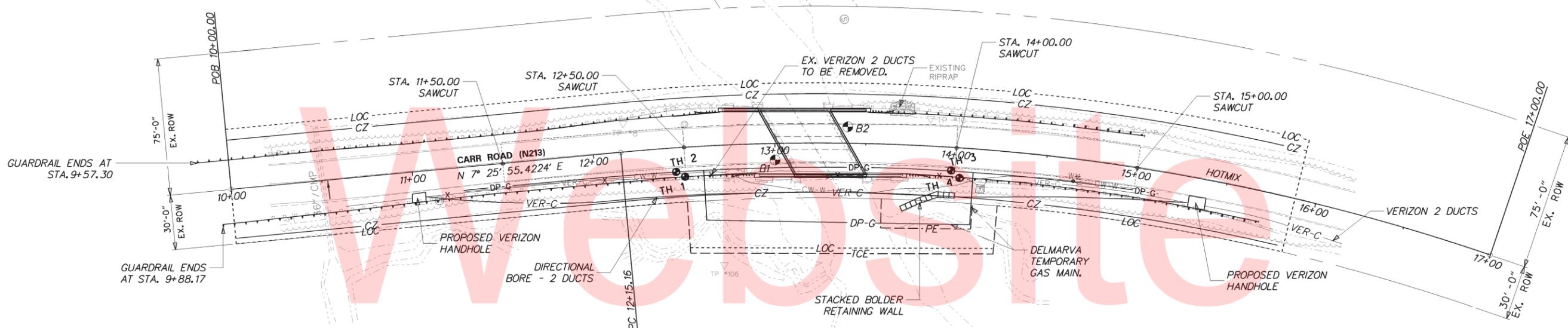
- (QL-C) DEPICTED ACCORDING TO RECORD INFORMATION AND EXISTING ASSOCIATED UTILITY STRUCTURES. NO ELECTRONIC INFORMATION WAS OBTAINED.
- (QL-D) DEPICTED ACCORDING TO RECORD INFORMATION. NO ELECTRONIC INFORMATION WAS OBTAINED.
- (DATFI) DEPICTED ACCORDING TO FIELD INSPECTION
- (FO) FIBER OPTIC

- (AATUR) ABANDONED ACCORDING TO UTILITY RECORDS
- (AATFI) ABANDONED ACCORDING TO FIELD INSPECTION
- (EATFI) EMPTY ACCORDING TO FIELD INSPECTION
- EOI END OF ELECTRONIC DESIGNATING INFORMATION
- EORI END OF UTILITY RECORD INFORMATION
- (NAP) NO ASSOCIATED PIPING FOUND FROM UTILITY STRUCTURE
- ⊕ FIBER OPTIC HANDHOLE
- ⊙ TELEPHONE HANDHOLE
- UTILITY ENDPOINT

UNLESS OTHERWISE NOTED, UTILITY LINE LIMITS DEPICTED REPRESENT FIELD DESIGNATING LIMITS AND NOT ENDPOINTS OF UTILITIES.

UTILITY INFORMATION LABELED "QL-C" OR "QL-D" IS DERIVED FROM FURNISHED RECORDS. SUCH INFORMATION MAY NOT BE ACCURATE OR RELIABLE. SO-DEEP, INC. EXPRESSLY DISCLAIMS RESPONSIBILITY FOR THE ACCURACY OR RELIABILITY OF UTILITY INFORMATION DEPICTED ACCORDING TO RECORDS.

Unofficial



UTILITY TEST HOLE SCHEDULE						
NO.	UTILITY	STATION	OFFSET	GRND EL.	COVER	O. D. & MATERIAL
1	VER-C	12+44	14.00 RT	95.13	2.80	4 1/2" & PLASTIC
1	CW-W	12+44	14.00 RT	95.13	2.61	8 3/4" & D. I.
2	DP-G	12+48	16.00 RT	95.12	1.98	2 1/2" & PLASTIC
3	DP-G	13+97	13.00 RT	95.02	2.50	2 1/2" & PLASTIC
4	VER-C	14+02	17.00 RT	94.92	5.25	4 1/2" & PLASTIC

NOTE:  
THE DELMARVA POWER 2" GAS MAIN SHALL BE RE-ATTACHED TO THE STRUCTURE AS SHOWN IN PLANS.

THE NEW GUARDRAIL AWAY FROM THE BRIDGE SHALL BE INSTALLED IN THE EXISTING LOCATION OR AS DIRECTED BY THE ENGINEER.

PORTABLE CHANGEABLE MESSAGE SIGNS

**PRIOR TO DETOUR**  
(10 DAYS PRIOR TO BEGINNING OF DETOUR)

PCMS-1

CARR ROAD TO CLOSE

STARTING XXXXXX

**DURING DETOUR**  
(DISPLAY FOR 5 DAYS AFTER IMPLEMENTATION OF DETOUR)

PCMS-1

CARR ROAD CLOSED

FOLLOW DETOUR

**PRIOR TO DETOUR**  
(10 DAYS PRIOR TO BEGINNING OF DETOUR)

PCMS-2

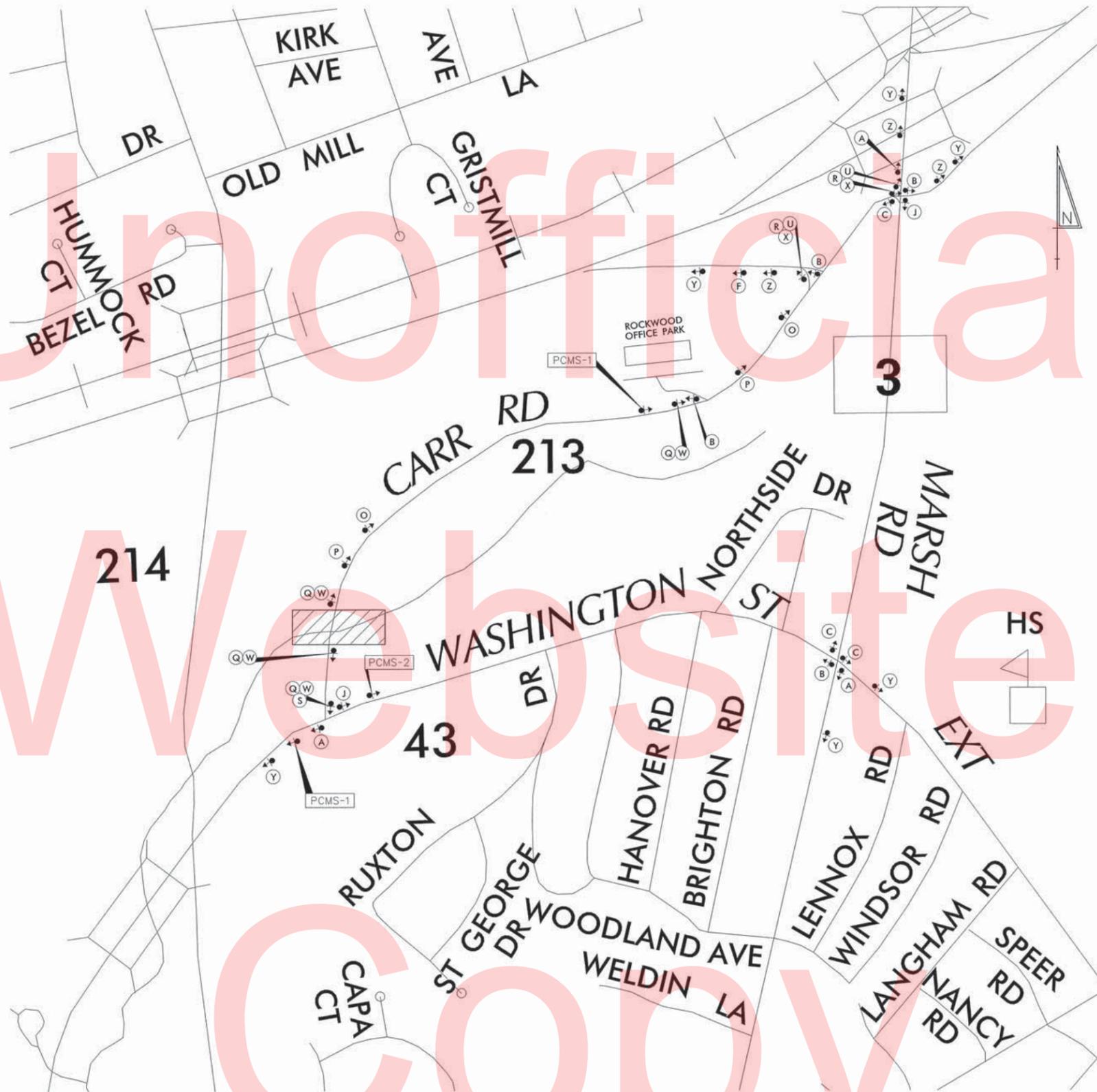
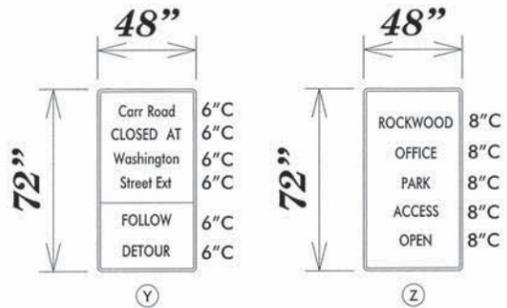
CARR ROAD TO CLOSE

STARTING XXXXXX

REMOVE PCMS-2 UPON IMPLEMENTATION OF DETOUR

SPECIAL SIGNS

\*D/G RETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND; BLACK LEGEND



LEGEND

Legend of signs and symbols:

- A-E: Detour signs with arrows (M4-9-DE, M4-9)
- F-J: Detour signs with arrows (M4-9, M4-9a)
- K-M: Detour Ahead signs (W20-2)
- N-P: Road Closed Ahead signs (W20-3)
- Q: Road Closed sign (R11-2)
- R-S: Detour signs with arrows (M4-10j, M4-10j)
- T-V: Road Closed signs (R11-3a, R11-3b, R11-4)
- W-X: Barricade symbols

GENERAL NOTES

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

RECOMMENDED *Michael J. Renora* DATE: 1-3-12

RECOMMENDED \_\_\_\_\_ DATE: \_\_\_\_\_

RECOMMENDED *Wayne E. Hamilton* DATE: 1-3-12

APPROVED CHIEF SAFETY OFFICER *[Signature]* DATE: 1-7-12

APPROVED TRAFFIC ENGINEER *[Signature]* DATE: 1/3/12

DELAWARE DEPARTMENT OF TRANSPORTATION

NOT TO SCALE

CARR RD (N213) BR 1-543

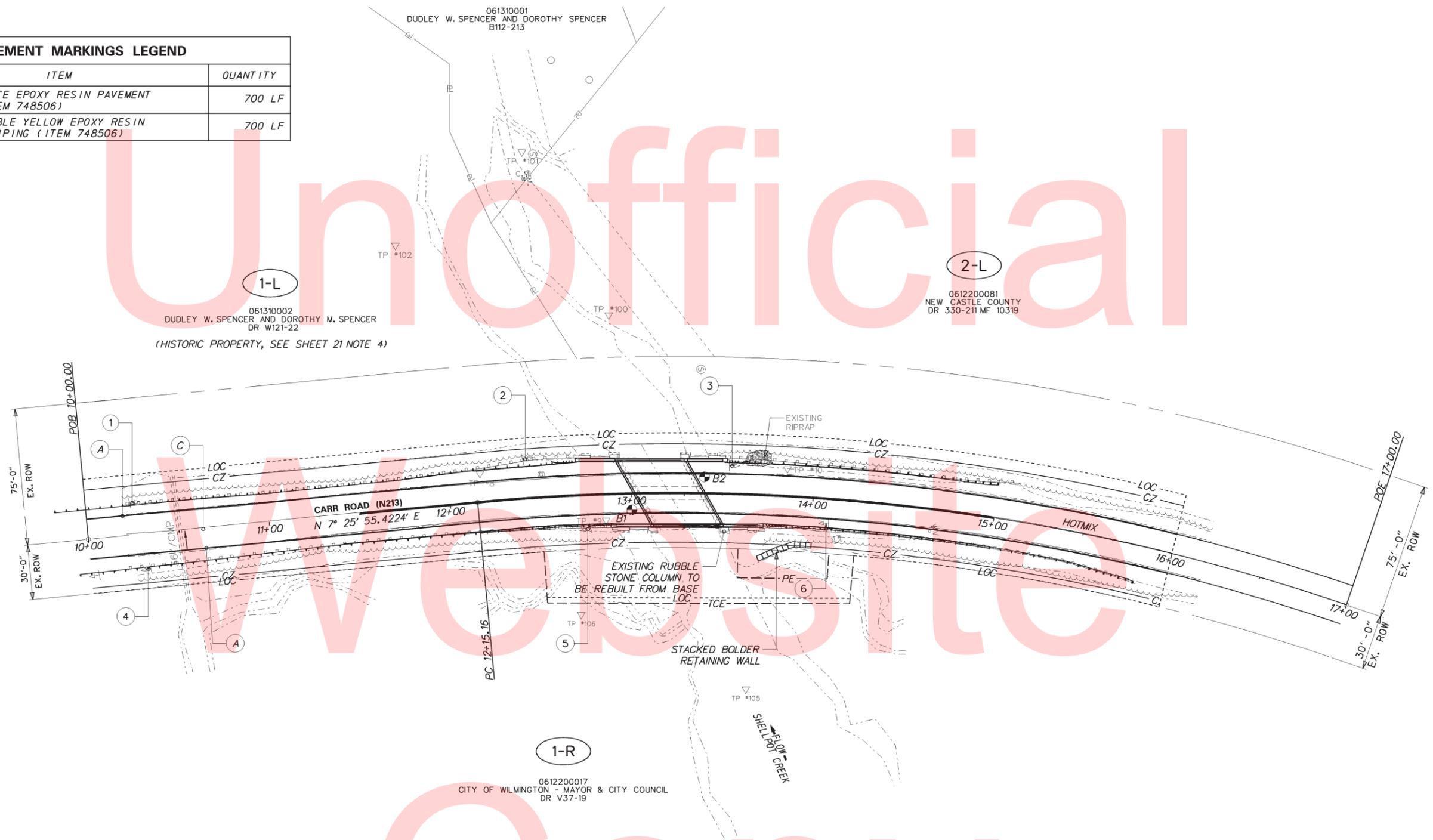
CONTRACT	ROAD NO.	N213
T201207103	DESIGNED BY:	MFR
COUNTY	CHECKED BY:	ASW
NEW CASTLE		

VEHICULAR DETOUR PLAN  
Carr Rd at Washington St Ext

SHEET NO.	23
TOTAL SHTS.	26

C:\DOCUMENTS AND SETTINGS\MICHAEL.RIVERA\MY DOCUMENTS\MICRO STATION DGN\CARR RD BR 1-543.DGN

PAVEMENT MARKINGS LEGEND		
SYMBOL	ITEM	QUANTITY
(A)	4" SOLID WHITE EPOXY RESIN PAVEMENT STRIPING (ITEM 748506)	700 LF
(C)	4" SOLID DOUBLE YELLOW EPOXY RESIN PAVEMENT STRIPING (ITEM 748506)	700 LF



**SIGN SCHEDULE**

#	SHT. NO.	PLAN ID.	CODE	QTY.	DESCRIPTION	ASSEMBLY NO.	WIDTH (IN)	HEIGHT (IN)	AREA (SF)	ITEM 749687 - SINGLE POST (EA)			ITEM 749689 - MULTI POST (SF)			POST INSTALLATION TYPE	Code X11-12' Post (w/ Basepost)	ITEM 749688 (EA) 4" HOLE, 0-6"	ITEM 749689 (EA) 4" HOLE, >6"	REMARKS
										DISPOSITION	REMOVE	INSTALL	DISPOSITION	REMOVE	INSTALL					
	24	1		1	CUSTOMRS-SERIES		24	30	5	REMAIN	0	0			0	0	0			
	24	1		1	CUSTOMRS-SERIES		18	9	1.125	REMAIN	0	0			0	0	0			
871	24	2	W8-1(30)	1	STOP AHEAD (Symbol) - 30x30		30"	30"	6.25	REMAIN	0	0			0	0	0	PLACED UNDER S1-1		
	24	2		1	CUSTOMRS-SERIES		24	12	2	REMAIN	0	0			0	0	0			
618	24	3	R12-1(24)	1	WEIGHT LIMITS XXTONS - 24x30		24	30	5	REMOVE	1	0			0	0	0			
50	24	4	R2-1-35(24)	1	SPEED LIMIT (35 MPH - 24x30)		24"	30"	5	REMAIN	0	0			0	0	0			
618	24	5	R12-1(24)	1	WEIGHT LIMITS XXTONS - 24x30		24"	30"	5	REMOVE	1	0			0	0	0			
1169	24	6	W11-2(30)	1	PEDESTRIAN (Symbol) - 30x30		30"	30"	6.25	REMAIN	0	0			0	0	0			

ADDENDUMS / REVISIONS



**BR 1-543 ON  
N213 CARR ROAD  
OVER SHELLPOT CREEK**

CONTRACT T201207103	BRIDGE NO. 1-543
COUNTY NEW CASTLE	DESIGNED BY: PAM
	CHECKED BY: SR

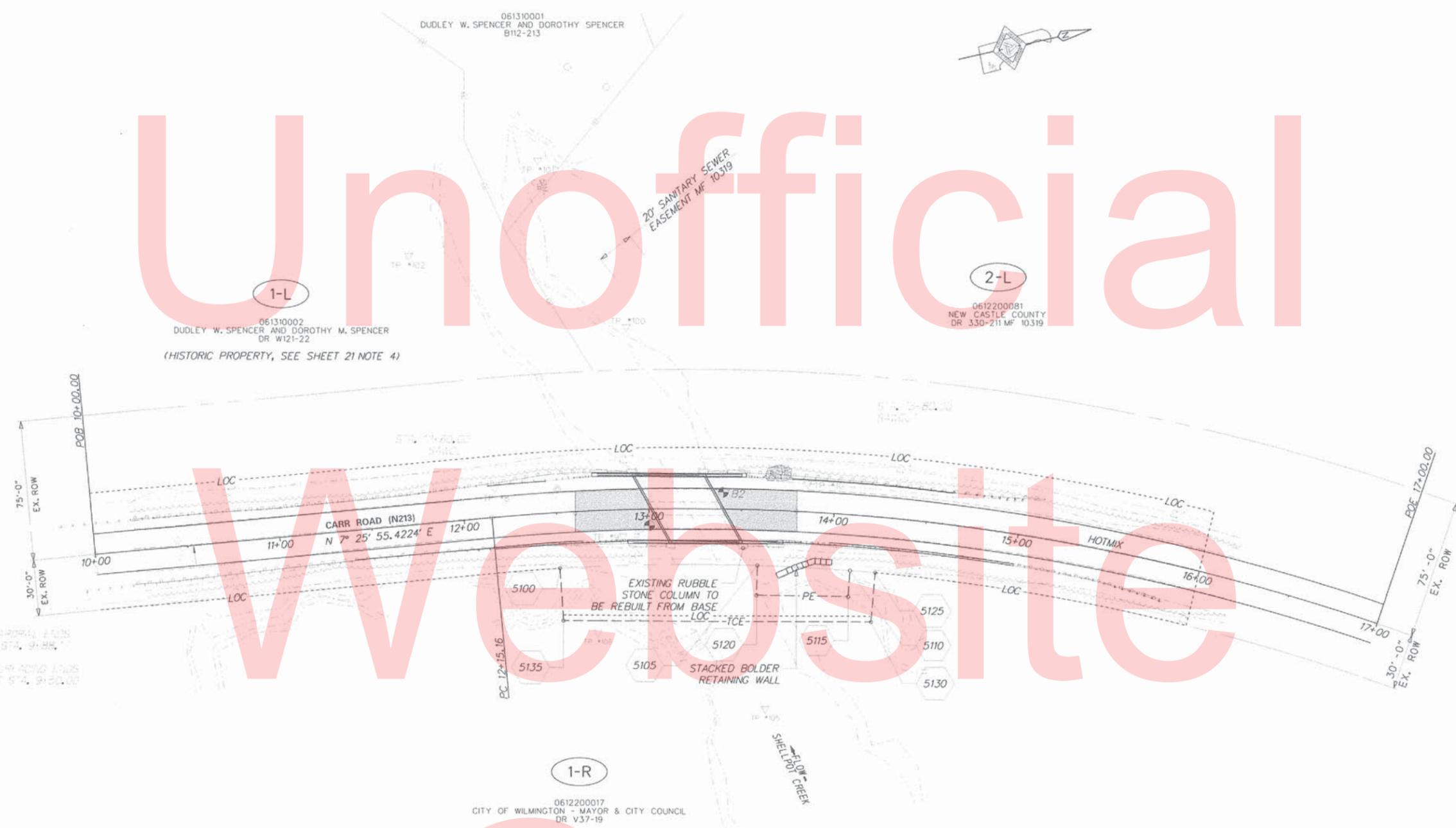
**SIGNING & STRIPING  
PLAN**

SHEET NO. 24
TOTAL SHTS. 26

Y:\NEWCASTLE\BRIDGE\T201207103\PLANS\SS01.DGN

**DELAWARE  
DEPARTMENT OF TRANSPORTATION**

# Unofficial



RECOMMENDED AS TO ENGINEERING NEED

*[Signature]* 6/12/15  
 MANAGER, TEAM SUPPORT DATE

*[Signature]* 6/12/15  
 PROGRAM MANAGER, TEAM SUPPORT DATE

*[Signature]* 6/12/15  
 TECHNICAL REVIEWER, TEAM SUPPORT DATE

# Copy

NOTE:  
 STORMWATER MANAGEMENT FACILITIES, INCLUDING BEST MANAGEMENT PRACTICE (BMP) FACILITIES, MAY BE PRESENT WITHIN THE LIMITS OF THIS PROJECT. PLEASE CONSULT THE CONSTRUCTION PLANS FOR THIS PROJECT TO DETERMINE THE TYPE AND LOCATION OF THESE FACILITIES.

ADDENDUMS / REVISIONS



BR 1-543 ON  
 N213 CARR ROAD  
 OVER SHELLPOT CREEK

CONTRACT	BROKE NO.	1-543
T201207103	DESIGNED BY	PAM
COUNTY	CHECKED BY	SR
NEW CASTLE		

RIGHT-OF-WAY PLAN

SHEET NO.	25
TOTAL SHEET	26

ASSESSMENT NUMBER	OWNERSHIP OF RECORD				TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)				
0612200017	(1-R) CITY OF WILMINGTON				P/E	DR V37-19	45.520				
ALIGNMENT NUMBER & DESCRIPTION: 4000 - BASELINE ALIGNMENT											
PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
5105	4000	13+59.50	30.00	646105.2612	628509.0190			N 15°56'09.98" E	50.15	50.15	1116.00
5110	4000	14+11.00	30.00	646153.4816	628522.7878	S 72°46'35.36" E	14.00				
5115	4000	14+11.00	44.00	646149.3362	628536.1600	S 13°37'18.23" W	49.51				
5120	4000	13+59.50	46.00	646101.2150	628524.4990	N 75°21'04.68" W	16.00				
5105	4000	13+59.50	30.00	646105.2612	628509.0190						
FIGURE 7010 AREA = 756,4111 SQ. FT. (0.0174 ACRES)											
ASSESSMENT NUMBER	OWNERSHIP OF RECORD				TYPE OF ACQUISITION	TITLE SOURCE	PARCEL AREA (ACRES)				
0612200017	(1-R) CITY OF WILMINGTON				TCE	DR V37-19	45.520				
ALIGNMENT NUMBER & DESCRIPTION: 4000 - BASELINE ALIGNMENT											
PT. NO.	ALIGN. NO.	STATION	OFFSET *	NORTH	EAST	BEARING	DISTANCE	CHORD BEARING	CHORD LENGTH	ARC LENGTH	RADIUS **
5100	4000	12+50.00	30.00	646000.9635	628487.0184			N 11°54'41.04" E	106.59	106.63	1116.00
5105	4000	13+59.50	30.00	646105.2612	628509.0190	S 75°21'04.68" E	16.00				
5120	4000	13+59.50	46.00	646101.2150	628524.4990	N 13°37'18.23" E	49.51				
5115	4000	14+11.00	44.00	646149.3362	628536.1600	N 72°46'35.36" W	14.00				
5110	4000	14+11.00	30.00	646153.4816	628522.7878			N 17°34'24.54" E	13.63	13.63	1116.00
5125	4000	14+25.00	30.00	646166.4788	628526.9042	S 72°04'35.55" E	26.50				
5130	4000	14+25.00	56.50	646158.3235	628552.1181	S 13°01'58.33" W	166.10				
5135	4000	12+50.00	58.00	645996.4993	628514.6602	N 80°49'33.23" W	28.00				
5100	4000	12+50.00	30.00	646000.9635	628487.0184						
FIGURE 7020 AREA = 4182,1899 SQ. FT. (0.0960 ACRES)											

COUNTY ASSESSMENT PARCEL NUMBER	PLAN SHEET NUMBER	OWNERSHIP OF RECORD	TITLE SOURCE	PROPERTY AREA BEFORE ACQUISITION (ACRE) D=DEED C=CALCULATED A=ASSESSMENT	ACQUISITION CODE FEE, R/W, P/E, TCE	AREA TO BE ACQUIRED		PROPERTY AREA REMAINING (SQ. FEET / ACRES)	DEED RECORD OF ACQUISITION	REMARKS
						ACQUISITION (SQ. FEET / ACRES)	AREA OCCUPIED BY EXISTING RIGHT OF WAY (SQ. FEET / ACRES)			
0612200017	24	(1-R) CITY OF WILMINGTON	DR V37-19	D - 45.52	P/E TCE			756,4111 / 0.02		
								4182,1899 / 0.10		1982851.20 / 45.52

LEGEND	
FEE	AREA OF ACQUISITION
RW	AREA OCCUPIED BY EXISTING RW
PE	PERMANENT EASEMENT
TCE	TEMPORARY CONSTRUCTION EASEMENT
*	OFFSET IS LEFT OF BASELINE
**	CURVE TURNS TO THE LEFT

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