

**THE STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION**
Plans and Specifications for Bridge Painting Program

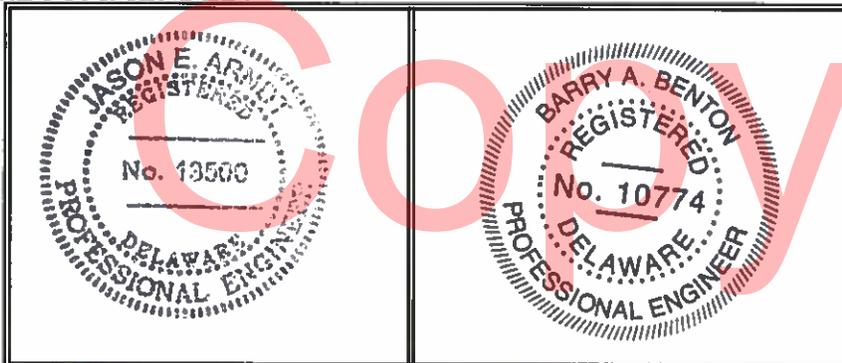
Contract No.: T201407801

F.A.P. No. EBHN-2014(19)
Primavera No. 14-07803

Title: Bridge Painting, New Castle County, 2015
Location: Bridges 1-009, 1-010P, 1-013P, 1-147, 1-155, 1-229A, 1-527, 1-558, & 1-900N&S
County: New Castle

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RECOMMENDED:





Bridge Management Engineer
Date: 3/23/15



Assistant Director, Bridge
Date: 3/23/15

GENERAL NOTES

1. This project is to be constructed in accordance with Delaware Department of Transportation “Standard Specifications”, dated August 2001 and the Delaware Department of Transportation “Standard Construction Details”, dated 2001, including all revisions up to the date of advertisement.
2. The contractor shall give two (2) weeks notice to the property owner when any fixture, shrub, or other object must be removed from the right of way or easement area. If the owner has not attempted to salvage this property, the contractor shall remove it without obligation. Compensation shall be incidental to the contract.
3. Site reviewer. An erosion control site reviewer shall be a person from the contractor’s staff assigned to Erosion and Sediment Control Implementation and Maintenance and shall be required on specific projects. The name and DNREC certification number of each site reviewer so required shall be submitted to the Department prior to the execution of the contract. The name of the Delaware registered professional engineer providing direction and supervision of the site reviewer, as required in Section 12.3 of the Delaware Sediment and Stormwater Regulations, shall also be submitted to the Department prior to execution of the contract. The site reviewer requirements in effect on this project shall be as marked with an (x) below:

Erosion potential for this project	Site reviewer requirement
<input checked="" type="checkbox"/> Insignificant	None
<input type="checkbox"/> Minor	Contractor certification course training only. See 1 below.
<input type="checkbox"/> Medium	Superintendent or a separate individual from the contractor’s staff shall be a certified construction reviewer (CCR). See 2 below.
<input type="checkbox"/> Major	Superintendent and an individual from the contractor’s staff shall be CCR. See 3 below.

1. As defined in section 13 of the Delaware Sediment and Stormwater Regulations.
2. As defined in section 12 of the Delaware Sediment and Stormwater Regulations.
3. One individual from the contractor’s staff must be a CCR prior to the execution of the contract. The superintendent must become a CCR within one year after the award of contract.

4. The disturbed area for the project is 0.00 Acres.
5. The additional impervious area for this project is 0.00 Sq. Ft.
6. 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.
7. Electronic project files that will be made available to the contractor include: None.

PROJECT NOTES

1. The purpose of this contract is to clean, paint and repair the items listed on this contract. The paint system used for all steel shall be applied in a three (3) coat system application in all stripped and cleaned areas unless directed otherwise by Engineer in Specific Notes. **All crevices 1/2" or less shall be sealed with a paintable caulk where pack rust is not present. Areas that exhibit pack rust, as directed by the Engineer, shall be treated with a 100% solids penetrating sealer and sealed using a paintable caulk as directed by manufacturer's recommendations and requirements; payment incidental to Item # 605522 – Urethane Paint System.**
2. **All steel (including but not limited to (structural steel, utility brackets, railings, attachments, window frames, armor angles, downspouts, etc.) shall be cleaned, repaired and painted unless directed by Engineer.**
3. Trash, rubbish, debris, or brush, which hampers contract operations (determined by the Engineer), shall be removed within the project limits and shall be incidental to Item no. 605533 – Cleaning Existing Steel Structures, Hazardous Base, 605532 – Cleaning Existing Steel Structures (Non-Hazardous Base), or 605634 – One Coat Paint System, Existing Steel. The Contractor, just prior to the start of the Contractor's cleaning operation, shall remove all signs attached to the steel. The signs shall be reinstalled upon completion of the painting of the bridge as directed by the Engineer. Payment shall be incidental to the corresponding Item no. 605533, 605532, or 605634.
4. Bridges 1-229A, 1-558 and 1-155 may have a lead based paint system on all or portions of the structural steel. The Contractor is to use Item no. 605533 – Cleaning Existing Steel Structures, Hazardous Base for the paint removal on the structures. All paint systems on the structural steel on these structures shall be removed and properly disposed of as per Item no. 605533.

For all bridges in this contract, any cleaning requiring pressure washing shall be incidental to Item no. 605533, 605532, or 605634. The Contractor shall be responsible to check and monitor the structure during the paint removal process to ensure that damage is not occurring to any part of the structure.
5. During the cleaning operation, the Contractor shall report to the Engineer any defects in the steel. These defects include, but are not limited to, loss of section, cracking, buckling, loose bolts, and loose rivets.
6. All work shall be performed in a manner that will reasonably provide the least practicable obstruction to all road users, including vehicular, pedestrian, and bicycle traffic, and shall conform to the requirements of the most recent, at time of bid including all revisions, Delaware Manual on Uniform Traffic Control Devices, Part 6, herein referred to as the Traffic Control Manual.
7. Maintenance of traffic shall be as per the detour plans or traffic control case as provided for each bridge. All traffic control devices required shall be included in the lump sum bid price for Item No. 763643 – Maintenance of Traffic.
8. American Traffic Safety Association (ATSSA) Certified Traffic Control Supervisor Requirement for the project:

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

9. All traffic control devices shall be in new or refurbished condition, shall be in compliance with the Traffic Control Manual and with the NCHRP Report 350 and/or MASH as defined in Section 'A' of the Traffic Control Manual, and shall be approved by the Engineer before installation. Traffic control devices shall be maintained in good condition for duration of use.
10. Contract equipment can be stored adjacent to the roadway during appointed construction hours (as deemed by the Engineer). During non-construction hours, all construction equipment shall be removed from all shoulders and lanes. All equipment shall be stored in accordance with the Traffic Control Manual. All traffic control devices required for equipment storage shall be included in the lump sum bid price for Item No. 763643 – Maintenance of Traffic.
11. All work shall be performed within the existing right-of-way unless otherwise noted. Right-of-way information and existing plans shall be available upon request at the DelDOT Administration Office.
12. No equipment is allowed in any waterway or wetland.

13. There are no environmental permits (including but not limited to COE, DNREC Subaqueous Lands and Wetlands, Coast Guard, New Castle County Floodplain), or environmental construction restrictions associated with any of the contract locations. As such, no Environmental Compliance sheet was prepared. Bridge 1-009 and 1-155 are National Register eligible historic bridges; the contractor shall refer to the structure specific notes for further instructions.
14. The Contractor may store the equipment needed for this project at a pre-approved area or in the nearest State of Delaware maintenance yard. The Contractor must remove equipment from the jobsite if and when the district deems it necessary. The contractor is to stay within the confines of the state right-of-way as indicated in the attached Right-of-Way maps. Areas within the state right-of-way limits in which the soil and vegetation have been damaged from equipment during this contract, shall be repaired with topsoil, seed and mulch in accordance with the standard specifications at the Contractor's own expense.
15. Containment systems are required for all abrasive blasting. The design of the containment system must be submitted and approved by the Department prior to any work being performed.
16. All downspouts shall be vacuum power tool cleaned or abrasive blast cleaned, and where necessary, galvanized downspouts shall be painted with a moisture cure aluminum paint system. If the downspouts are non-galvanized, then they shall be painted with the regular urethane paint system used to paint the bridge as indicated in Item no. 605522. All galvanized utility or lighting conduits shall be brush painted with moisture cure aluminum paint after receiving an S.S.P.C. SP-7 (Brush off blast cleaning) finish. All non-galvanized utility or lighting conduits shall be brush painted with the regular urethane paint system after receiving an S.S.P.C. SP-6 (Commercial blast cleaning) finish. If there are any dry standpipes, natural gas line conduits, or any plastic pipe conduits on the bridges, then they shall be left as is. All steel weep hole pipes that protrude from the abutments and wingwalls shall be cleaned and painted with the regular urethane paint system (Payment under Item no. 605522). Any gas mains and/or other utilities found on Bridges shall be shielded during blasting operations. Payment for shielding shall be under Item no. 605533, 605532, or 605634 (whichever pertains to project). Lights and conduit that are attached to the bridge should be painted as noted above. The fences attached to the parapet of any of the bridges should not be painted.
17. All steel bearings for these bridges shall be abrasive blast cleaned to an S.S.P.C. SP-10 finish. Care shall be taken when cleaning "frozen" bearings, because the abrasive blasting operation sometimes causes the bearings to "unfreeze". All pitted areas of the structural steel shall be brush painted along with spraying when applying every coat of paint of the three-coat system. Cleaning of bearing areas shall be included under Item no. 605533 or 605532. After all the bearings have been painted, and after the paint has cured, and after all concrete has been sealed, the contractor shall lubricate all the bearings with a NLGI grade 2 grease either Mobil Centaur Moly grease, Shell Rhodina SDX 2 grease, or an approved equal. Grease shall be black or clear in color. Grease shall be painted with one coat of the topcoat paint. Payment shall be incidental to Item no. 605522. This note should be ignored for Bridge 1-009. Follow Special Provision #605634 for Bridge 1-009.
18. Hazardous waste shall be removed immediately from the jobsite and disposed of at a licensed hazardous waste disposal facility. The waste shall be removed from the jobsite by a licensed hazardous waste hauling Contractor with the required permits and approvals by DNREC. All copies of hazardous waste manifests and tickets shall be submitted to the Department as per Item no. 605533.
19. The bidder will be required to provide a Warranty and Guarantee for all Paint Systems under this contract for a period of two (2) years as covered under Item no. 605690. The Warranty and Guarantee will not take effect until the date of final acceptance.
20. All concrete surfaces as directed in the Structure Specific Notes shall be prepared and sealed as indicated in Item no. 602707 or 602527. All boundaries between sealed and unsealed concrete will be a straight horizontal or vertical line unless directed otherwise by the Engineer or Structure Specific Notes.
21. In regards to the air monitoring requirement in Item no. 605533-Cleaning Existing Steel Structures, Hazardous Base; paint removal shall include all blasting and clean up activities.
22. Two Portable Changeable Message Signs shall be placed at each bridge location, for each roadway affected, ten days prior to the start of construction and five days after the start of construction to notify drivers of the lane/shoulder closure and impending construction activity. The message shall include the dates and times of the lane closures and how long the closures will be necessary, message shall be approved by the Safety Officer. For locations that have parallel structures, a total of two variable message boards shall be used for both bridges. Payment under item # 743004.

23. Unless otherwise noted on the plans, the Contractor shall, as part of his Project Schedule, submit to the Engineer an estimate of the monthly payments expected to be received on the contract. This will be referenced as the "Monthly Payment Chart".

A chart in Microsoft Excel, Microsoft Word, or hand written format will be acceptable for this purpose. The chart should include, as a minimum, columns for the month, year, and estimated monthly payments. The total of all estimated monthly payments should equal the awarded contract total bid price.

The Engineer may request an updated "Monthly Payment Chart" at his discretion, depending on the accuracy of the initial estimates and according to the overall needs of the Department.

The "Monthly Payment Chart" will not be considered a binding document by either the Contractor or the Department and is considered solely informational.

On projects requiring CPM Schedules, the Contractor may, but is not required to, "Cost Load" the CPM Schedule in order to generate the monthly payment estimates.

Costs to prepare and/or update the "Monthly Payment Chart" are addressed as follows:

- a. On Contracts requiring CPM Schedules and Updates, preparation of the initial chart shall be incidental to Item 763508. Updates shall be incidental to Item 763509
- b. On contracts not requiring CPM Schedules, the cost to prepare and update the "Monthly Payment Chart" shall be included in Item 763000, Initial Expense.

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STRUCTURE SPECIFIC NOTES**1-009**

1. Bridge 1-009 carries Smith Bridge Rd (Road #221) over Brandywine Creek near Brandywine Creek State Park. Its location is 39°50'15.84"N latitude, 75°34'44.77"W longitude.
2. The structural steel paint color shall be reddish-brown (# 10076) as per federal standard 595C. The color shall be submitted for approval.
3. The coating shall be considered a "one coat" system using a High Ratio Co-Polymerized Calcium Sulfonate.
4. The galvanized truss connection plates and rods shall not be painted. The galvanized clip angles connecting the timber deck shall be painted.
5. A High Ratio Co-Polymerized Calcium Sulfonate Penetrant should be applied liberally to the top face of the top flange of the structural steel between the timber deck planks as per special provision.
6. Water and debris resulting from power washing must be contained to prevent migration into Brandywine Creek.
7. The attached Smith Bridge Road Detour shall be used only for the duration of work on this structure.
8. The contractor shall be permitted to store equipment within the right of way closed off by the included Maintenance of Traffic Plan (Detour) for the duration of work on this structure.
9. The contractor should be aware that Bridge 1-009 is eligible for the National Register of Historic Places. Cleaning shall be limited to the absolute minimum required to remove the paint system and corrosion. Bridge 1-009 is also in a historical district.
10. U.S. Coast Guard 30-day 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 one month in advance. The work with the water shall be limited to what appears on these plans. If any additional in-water/wetlands work is needed, it must be coordinated with the U.S. Coast Guard prior to beginning work and be in conformance with item 763522, "Coast Guard Specific Conditions". Contact Bill Brazier at (757) 398-6422, as well as submit a written notice (which includes a sketch depicting the location and duration of all restrictions) to the commanding officer (AWOB), 5th Coast Guard District, Federal Building 431 Crawford St., Portsmouth, VA 23704 for approval

1-010P

1. Bridge 1-010P carries Pedestrian Bridge over I-495 near Claymont. Its location is 39°47'50"N latitude, 75°27'3.13"W longitude.
2. The structural steel paint color shall be reddish-brown (# 10076) as per federal standard 595C. The color shall be submitted for approval.
3. All structural steel at joint locations (pier #3, pier #5, and both abutments) extending 10' from either side of centerline of bearing shall be painted.
4. Work is permitted at any time, however lane closures are restricted to specified times.
5. Only lane and/or shoulder closures of I-495 shall be permitted using Typical Application 33 or 37 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times. Any work being done over the center lane of I-495 must use Typical Application 37 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. Single lane closures along I-495 are permitted between 8:00 PM and 5:00 AM, Sunday night through Friday morning. Double lane closures along I-495 are permitted between 10:00 PM and 5:00 AM, Sunday night through Friday morning. Pedestrian traffic will be maintained on the structure.
6. Equipment only to be stored on-site during the hours of 8:00pm and 5:00am in accordance with Table 6G-2 of the DE-MUTCD.

- 7 The contractor's containment and scaffold system may remain in place during non-work hours provided that the minimum clearance above the lanes and shoulders is at least 16'-6". The Contractor shall contact the Transportation Management Center (TMC) and Dennis Blades (302-744-2717) of the Department of Motor Vehicles – Motor Fuel Tax – Oversize/Overweight Permits to notify them of the reduced vertical clearance. The contractor shall not have any of the containment and/or scaffold system extending beyond the work area provided by the lane/shoulder closure during cleaning and painting operations. The intent is that the containment/scaffold system does not extend into an open traffic lane when occupied by personnel.

1-013P

1. Bridge 1-013P carries Pedestrian Bridge over I-495 near Claymont. Its location is 39°48'29"N latitude, 75°27'09" W longitude.
2. The structural steel paint color shall be reddish-brown (# 10076) as per federal standard 595C. The color shall be submitted for approval.
3. All structural steel at the abutments and extending 40' from the ends of the girders shall be painted.
4. Work is permitted at any time, however lane closures are restricted to specified times. Work access shall be from I-495 only.
5. Only lane and/or shoulder closures of I-495 shall be permitted using Typical Application 33 or 37 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times. Any work being done over the center lane of I-495 must use Typical Application 37 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. Single lane closures along I-495 are permitted between 8:00 PM and 5:00 AM, Sunday night through Friday morning. Double lane closures along I-495 are permitted between 10:00 PM and 5:00 AM, Sunday night through Friday morning. Pedestrian traffic will be maintained on the structure.
6. Equipment only to be stored on-site during the hours of 8:00pm and 5:00am in accordance with Table 6G-2 of the DE-MUTCD.
7. The contractor's containment and scaffold system may remain in place during non-work hours provided that the minimum clearance above the lanes and shoulders is at least 16'-6". The Contractor shall contact the Transportation Management Center (TMC) and Dennis Blades (302-744-2717) of the Department of Motor Vehicles – Motor Fuel Tax – Oversize/Overweight Permits to notify them of the reduced vertical clearance. The contractor shall not have any of the containment and/or scaffold system extending beyond the work area provided by the lane/shoulder closure during cleaning and painting operations. The intent is that the containment/scaffold system does not extend into an open traffic lane when occupied by personnel.

1-147

1. Bridge 1-147 carries Faulkland Rd. (Road #270) over Red Clay Creek near Prices Corner. Its location is 39°44'51.53"N latitude, 75°38'10.89"W longitude.
2. The structural steel paint color shall be reddish-brown (#10076) as per federal standard 595C. The color shall be submitted for approval. All steel shall be painted
3. Abutment seats and bearing pedestals shall be prepared and sealed with Epoxy Protective Coating for Concrete as indicated in Item no. 602527.
4. Abutment backwalls shall be prepared and sealed as indicated in Item no. 602707.
5. The concrete sealer color shall be white (#37722) as per federal standard 595C. The color shall be submitted for approval.
6. Lane and/or shoulder closures of Faulkland Rd. shall be permitted using Typical Applications 6 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times. Shoulder closures shall be permitted between the hours of 9:00am and 3:00pm on Faulkland Rd. At no time shall the railroad tracks be obstructed
7. U.S. Coast Guard 30-day 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 one month in advance. The work with the water shall be limited to what appears on these plans. If any additional in-water/wetlands work is needed, it must be coordinated with the U.S. Coast Guard prior to beginning work and be in conformance with item 763522, "Coast Guard Specific Conditions". Contact Bill Brazier at (757) 398-6422, as well as submit a written notice (which includes a sketch

depicting the location and duration of all restrictions) to the commanding officer (AWOB), 5th Coast Guard District, Federal Building 431 Crawford St., Portsmouth, VA 23704 for approval.

1-155

1. Bridge 1-155 carries Old Capital Trail (Road #012) over Red Clay Creek near Marshallton. Its location is 39°43'42.13"N latitude, 75°38'12.46"W longitude.
2. The contractor shall be aware that Bridge 1-155 is individually eligible for the national Register of Historic Places. No further work effort or changes in scope shall be offered unless first approved by DeIDOT's Environmental Studies Section.
3. If unforeseen damage to Bridge 1-155 occurs, the contractor will notify DeIDOT Environmental Studies Qualified Staff prior to implementing repair to ensure that repairs/efforts will meet The Secretary of The interior Standards, as determined by DeIDOT. This outreach, if applicable, shall include consultation with other historic agencies that have authorized part of the federal historic compliance on this contract.
4. The structural steel paint color shall be forest green (#24172) as per federal standard 595C. The color shall be submitted for approval.
5. Abutment seats, bearing pedestals, and curbs tops and faces along the girders and light pilasters shall be prepared and sealed with Epoxy Protective Coating for Concrete as indicated in Item no. 602527.
6. Light pilasters at ends of the thru-girders shall be prepared and sealed as indicated in Item no. 602707.
7. The concrete sealer color shall be white (#37722) as per federal standard 595C. The color shall be submitted for approval.
8. Lane and shoulder closures of Old Capital Trail shall be permitted using Typical Application 10 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane at all times. Lane and shoulder closures shall be permitted between the hours of 9:00am and 3:00pm on Old Capital Trail.
9. Sidewalk shall not be closed at any time during construction. Sidewalk shall be protected from over-blast and over-spray, payment shall be incidental to the respective cleaning and painting items.
10. U.S. Coast Guard 30-day 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 one month in advance. The work with the water shall be limited to what appears on these plans. If any additional in-water/wetlands work is needed, it must be coordinated with the U.S. Coast Guard prior to beginning work and be in conformance with item 763522, "Coast Guard Specific Conditions". Contact Bill Brazier at (757) 398-6422, as well as submit a written notice (which includes a sketch depicting the location and duration of all restrictions) to the commanding officer (AWOB), 5th Coast Guard District, Federal Building 431 Crawford St., Portsmouth, VA 23704 for approval.

1-229A

1. Bridge 1-229A carries Capital Trail (Road #011) over Muddy Run near Newark. Its location is 39°41'39.56"N latitude, 75°43'13.17"W longitude.
2. The structural steel paint color shall be forest green (#24172) as per federal standard 595C. The color shall be submitted for approval.
3. Lane and/or shoulder closures of Capital Trail shall be permitted using Typical Application 33 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times. Lane and/or shoulder closures are only permitted between the hours of 8:00pm and 6:00am due to high daytime volumes on Capital Trail
4. The Contractor shall maintain access to and along pedestrian facilities at all times during construction. Earth, stone and gravel surfaces are not acceptable for providing pedestrian access. Where pedestrian routes are closed or blocked, alternate pedestrian access shall be provided using TA-28 and/or TA-29 of the Delaware Manual on Uniform Traffic Control Devices or to the

satisfaction of the Engineer. Pedestrian detour routes or alternate pedestrian facilities shall consist of ADA compliant facilities to the level of which exist on the pedestrian route. The cost for any provisions shall be incidental to item 763643.

1-527

1. Bridge 1-527 carries Boxwood Rd. (Road #334) over SR141 near Newport. Its location is 39°43'32.19"N lat, 75°37'1.71"W long.
2. The structural steel paint color shall be forest green (#24172) as per federal standard 595C. The color shall be submitted for approval.
3. Abutment seats, pier cap tops and bearing pedestals shall be prepared and sealed with Epoxy Protective Coating for Concrete as indicated in Item no. 602527.
4. All abutment walls, back walls, wing walls, parapet walls (both faces and top), deck overhang, pier cap faces, pier columns, and pier barrier wall shall be prepared and sealed as indicated in Item no. 602707.
5. The concrete sealer color shall be white (#37722) as per federal standard 595C. The color shall be submitted for approval.
6. Lane and/or shoulder closures of Boxwood Rd. and SR141 shall be permitted using Typical Application 33 of the Traffic Control Manual as directed by the Eng. and/or the Safety Officer. The contractor must maintain one thru lane in each direction at all times. Lane and/or shoulder closures are only permitted between the hours of 8:00pm and 6:00am due to high daytime volumes on SR141.
7. Sidewalk closures on Boxwood Rd. shall be permitted using Typical Application 28 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain an open sidewalk at all times.
8. Equipment only to be stored on-site during the hours of 8:00pm and 6:00am in accordance with Table 6G-2 of the DE-MUTCD.
9. The contractor's containment and scaffold system may remain in place during non-work hours provided that the minimum clearance above the lanes and shoulders is at least 16'-6". The Contractor shall contact the Transportation Management Center (TMC) and Dennis Blades (302-744-2717) of the Department of Motor Vehicles – Motor Fuel Tax – Oversize/Overweight Permits to notify them of the reduced vertical clearance. The contractor shall not have any of the containment and/or scaffold system extending beyond the work area provided by the lane/shoulder closure during cleaning and painting operations. The intent is that the containment/scaffold system does not extend into an open traffic lane when occupied by personnel.

1-558

1. Bridge 1-558 carries Gov. Printz BLVD (Road#050) over Holly Oak Creek near Wilmington. Its location is 39°47'8.26"N latitude, 75°28'16.93"W longitude.
2. The structural steel paint color shall be forest green (#24172) as per federal standard 595C. The color shall be submitted for approval. Exposed areas of conc. encased beams shall be cleaned and painted.
3. Only lane and/or shoulder closures of Gov. Printz BLVD shall be permitted using Typical Applications 5A and 5B of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times. Lane and/or shoulder closures shall be permitted between the hours of 9:00am and 3:00pm on Gov. Printz BLVD. Do not block bike path at any time.
4. Boat, barge, or other flotation device may be needed for construction and inspection access of the work area. Any necessary boat, barge, or other access method shall be made available to the State's inspection personnel as directed and is incidental to the overall contract.

1-900N

1. Bridge 1-900N carries SR1 (Road #082) over Bear-Corbit Rd near Wrangle Hill. Its location is 39°35'26.81"N latitude, 75°39'38.43"W longitude.
2. The structural steel paint color shall be forest green (#24172) as per federal standard 595C. The color shall be submitted for approval.
3. Abutment seats, pier cap tops and bearing pedestals shall be prepared and sealed with Epoxy Protective Coating for Concrete as indicated in Item no. 602527.
4. Abutment breast walls and back walls, pier cap faces, wing walls, railings, pier columns, and railing at pier shall be prepared and sealed as indicated in Item no. 602707.
5. The concrete sealer color shall be white (#37722) as per federal standard 595C. The color shall be submitted for approval.
6. Lane and/or shoulder closures of SR1 shall be permitted using Typical Application 3A of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times. Lane and/or shoulder closures are only permitted between the hours of 9:00am and 3:00pm on SR1.
7. Lane and/or shoulder closures of Bear-Corbit Rd. shall be permitted using Typical Applications 33 and 46 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times.
8. The contractor's containment and scaffold system may remain in place during non-work hours provided that the minimum clearance above the lanes and shoulders is at least 16'-6". The Contractor shall contact the Transportation Management Center (TMC) and Dennis Blades (302-744-2717) of the Department of Motor Vehicles – Motor Fuel Tax – Oversize/Overweight Permits to notify them of the reduced vertical clearance. The contractor shall not have any of the containment and/or scaffold system extending beyond the work area provided by the lane/shoulder closure during cleaning and painting operations. The intent is that the containment/scaffold system does not extend into an open traffic lane when occupied by personnel.

1-900S

1. Bridge 1-900S carries SR1 (Road #082) over Bear-Corbit Rd near Wrangle Hill. Its location is 39°35'28.17"N latitude, 75°39'38.79"W longitude.
2. The structural steel paint color shall be forest green (#24172) as per federal standard 595C. The color shall be submitted for approval.
3. Abutment seats, pier cap tops and bearing pedestals shall be prepared and sealed with Epoxy Protective Coating for Concrete as indicated in Item no. 602527.
4. Abutment breast walls and back walls, pier cap faces, wing walls, railings, pier columns, and railing at pier shall be prepared and sealed as indicated in Item no. 602707.
5. The concrete sealer color shall be white (#37722) as per federal standard 595C. The color shall be submitted for approval.
6. Lane and/or shoulder closures of SR1 shall be permitted using Typical Application 3A of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times.
7. Lane and/or shoulder closures of Bear-Corbit Rd. shall be permitted using Typical Applications 33 or 46 of the Traffic Control Manual as directed by the Engineer and/or the Safety Officer. The contractor must maintain one through lane in each direction at all times. Shoulder closures shall be permitted between the hours of 9:00am and 3:00pm on Bear-Corbit Rd.
8. The contractor's containment and scaffold system may remain in place during non-work hours provided that the minimum clearance above the lanes and shoulders is at least 16'-6". The Contractor shall contact the Transportation Management Center (TMC) and Dennis Blades (302-744-2717) of the Department of Motor Vehicles – Motor Fuel Tax – Oversize/Overweight Permits to notify them of the reduced vertical clearance. The contractor shall not have any of the containment and/or scaffold system extending beyond the work area provided by the lane/shoulder closure during cleaning and painting operations. The intent is that the containment/scaffold system does not extend into an open traffic lane when occupied by personnel.

QUANTITY SHEET

ITEM No.	DESCRIPTION	UNIT	1-009	1-010P	1-013P	1-147	1-155	1-229A	1-527	1-558	1-900N	1-900S	Total
602527	Epoxy Protective Coating for Concrete	L.S.	-	-	-	L.S.	L.S.	-	L.S.	-	L.S.	L.S.	L.S.
602707	Silicone Acrylic Concrete Sealer	L.S.	-	-	-	L.S.	L.S.	-	L.S.	-	L.S.	L.S.	L.S.
605522	Urethane Paint System, Existing Steel	L.S.	-	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.
605532	Cleaning of Existing Steel Structures, Non-Hazardous Base	L.S.	-	L.S.	L.S.	L.S.	-	-	L.S.	-	L.S.	L.S.	L.S.
605533	Cleaning of Existing Steel Structures, Hazardous Base	L.S.	-	-	-	-	L.S.	L.S.	-	L.S.	-	-	L.S.
605634	One Coat Paint System, Existing Steel	L.S.	L.S.	-	-	-	-	-	-	-	-	-	L.S.
605690	Coating Warranty												
743004	Furnish and Maintain Portable Changeable Message Sign	EA-DY	30	30	30	30	45	30	60	30	60	60	405
743007	Traffic Officers	HR	0	120	120	0	0	180	580	108	260	260	1628
743050	Flagger, New Castle, State	HR	0	0	0	260	540	0	0	0	0	0	800
743062	Flagger, New Castle, State, Overtime	HR	0	0	0	60	120	0	0	0	0	0	180
763000	Initial Expense	L.S.						L.S.					
763522	Coast Guard Specific Conditions	L.S.	L.S.	-	-	L.S.	L.S.	-	-	-	-	-	L.S.
763643	Maintenance of Traffic	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.	L.S.

*Fixed Price

Bridge No.	Area of Steel (ft ²)
1-009	4,300
1-010P	1,300
1-013P	2,700
1-147	6,000
1-155	17,000
1-229A	4,000
1-527	24,000
1-558	4,000
1-900N	17,000
1-900S	16,500

Bridge No.	Area of Concrete (ft ²)	
	602527	602707
1-009	0	0
1-010P	0	0
1-013P	0	0
1-147	200	500
1-155	700	1,500
1-229A	0	0
1-527	750	7,600
1-558	0	0
1-900N	1,250	10,000
1-900S	1,250	10,000

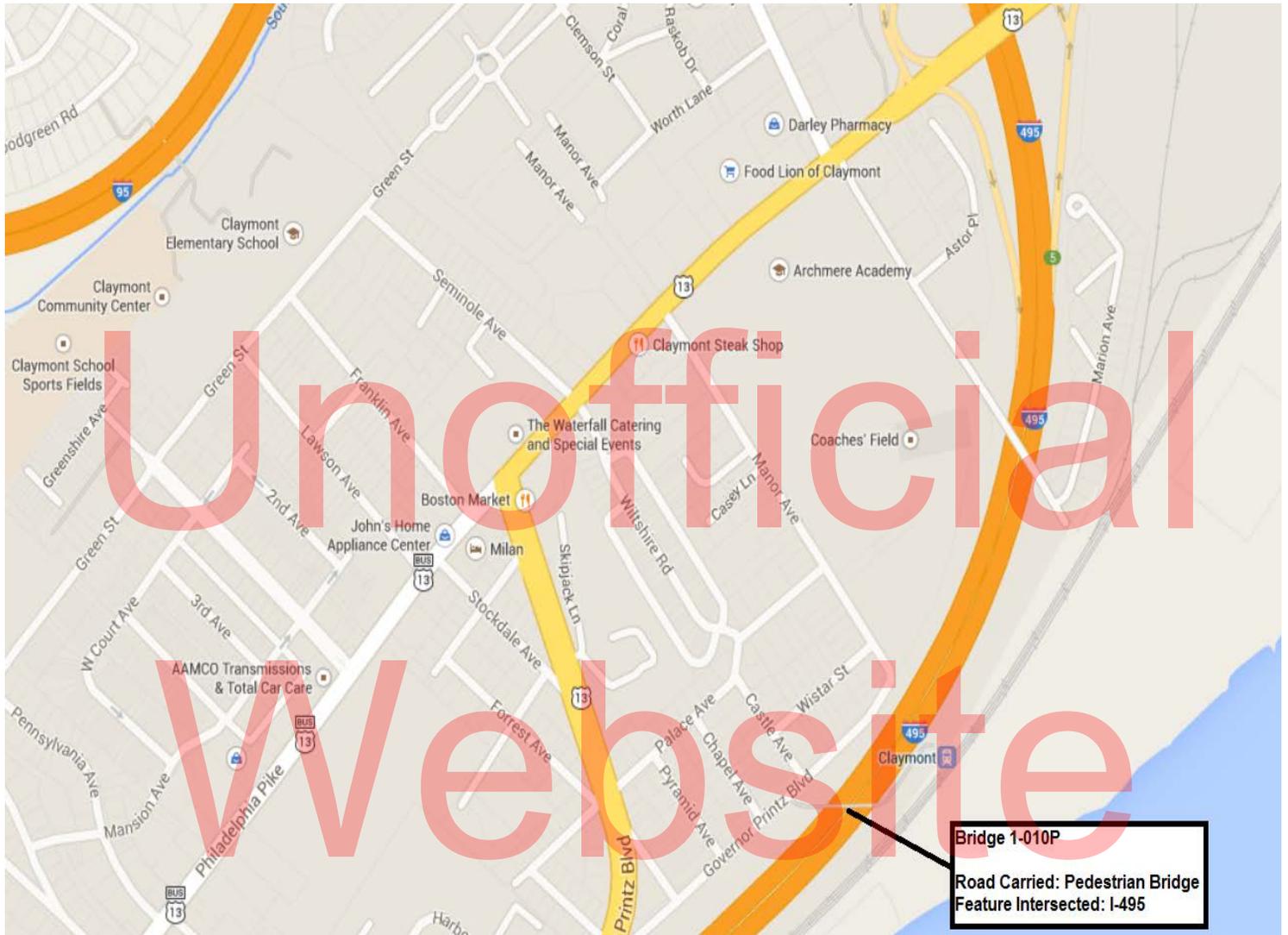
Areas given are estimates only; the contractor should verify all quantities before submitting bids.

Copy



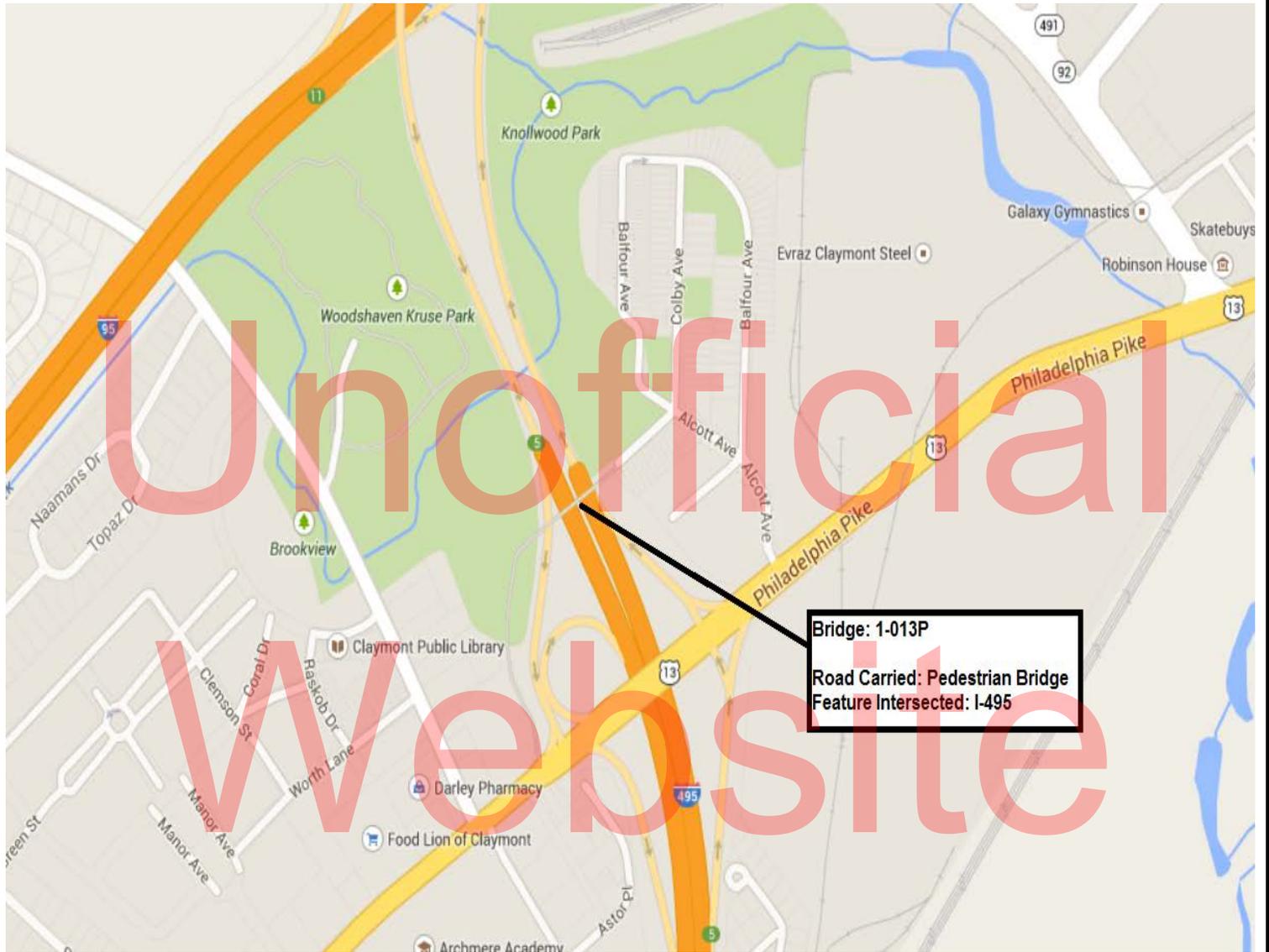
Bridge 1-009

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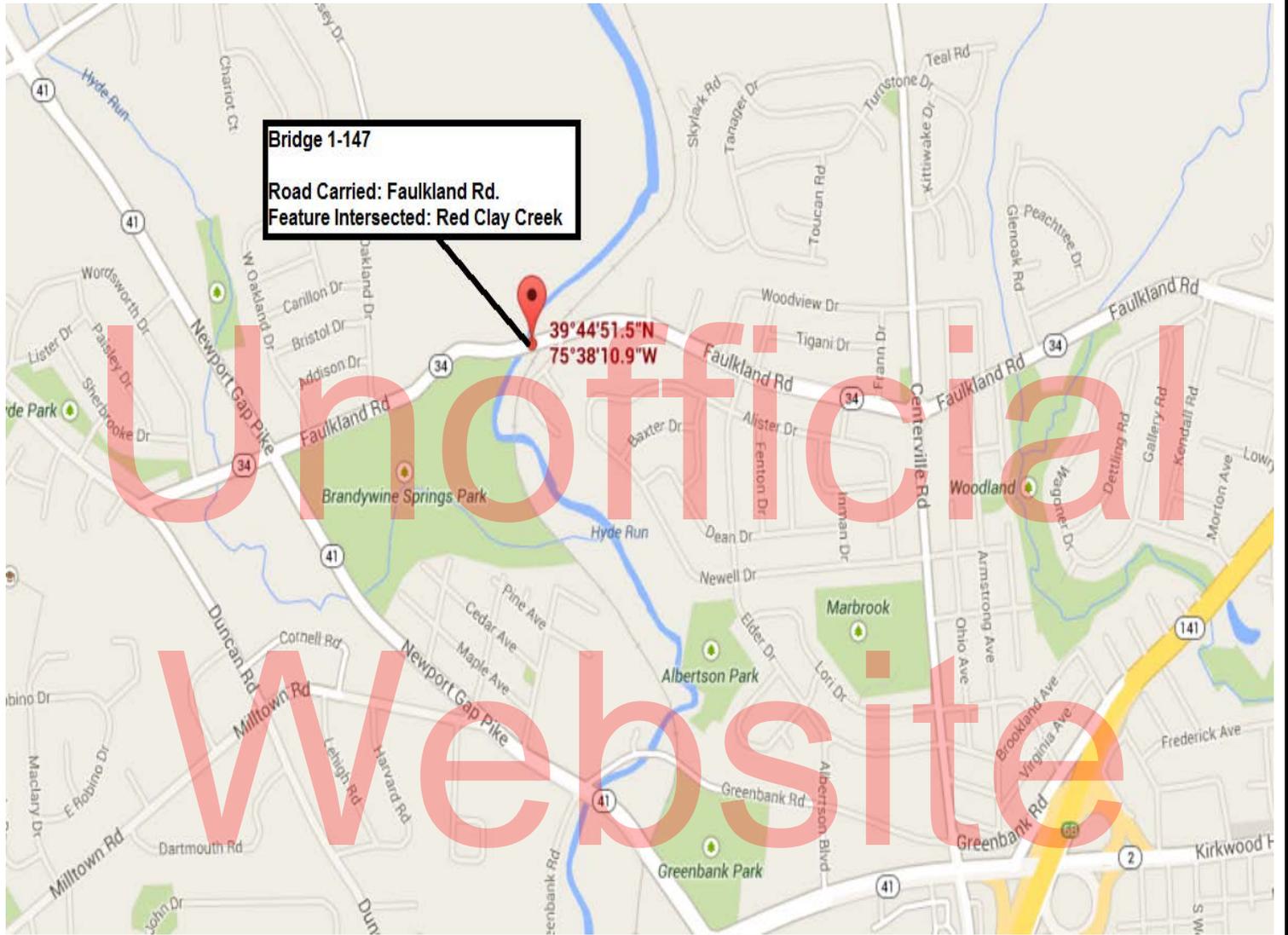
Bridge 1-010P

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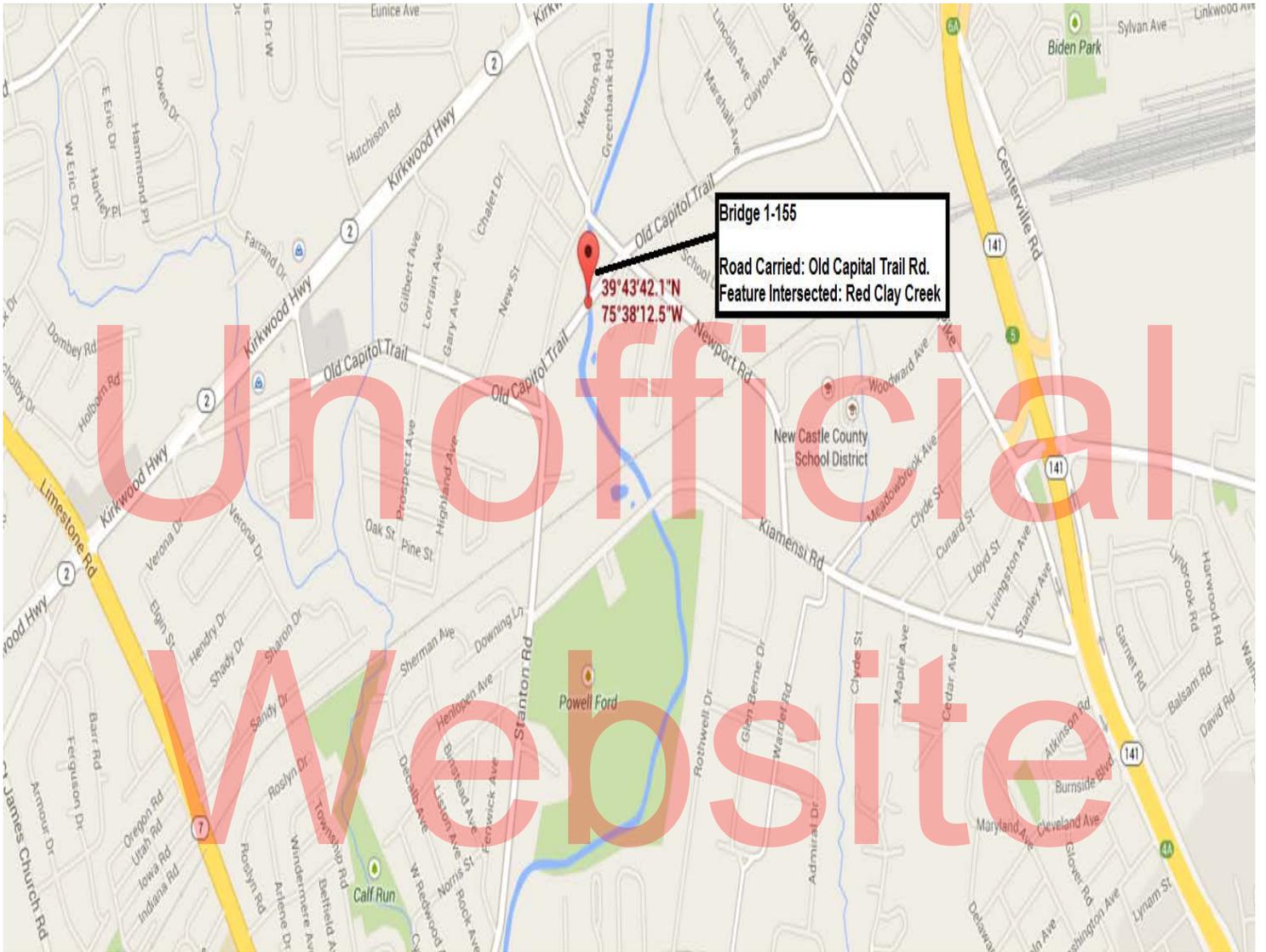
Bridges 1-013P

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Bridge 1-147

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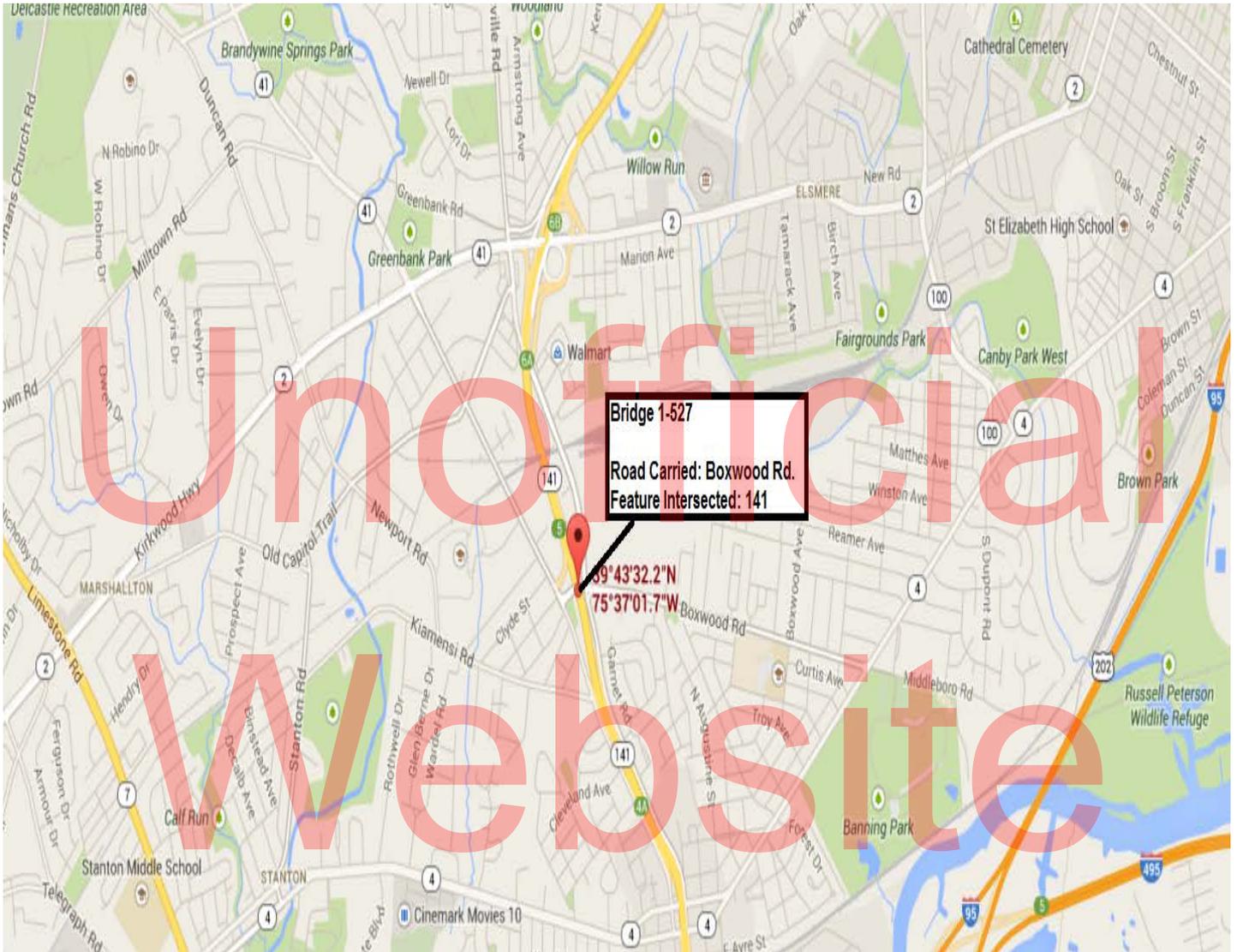


Bridges 1-155

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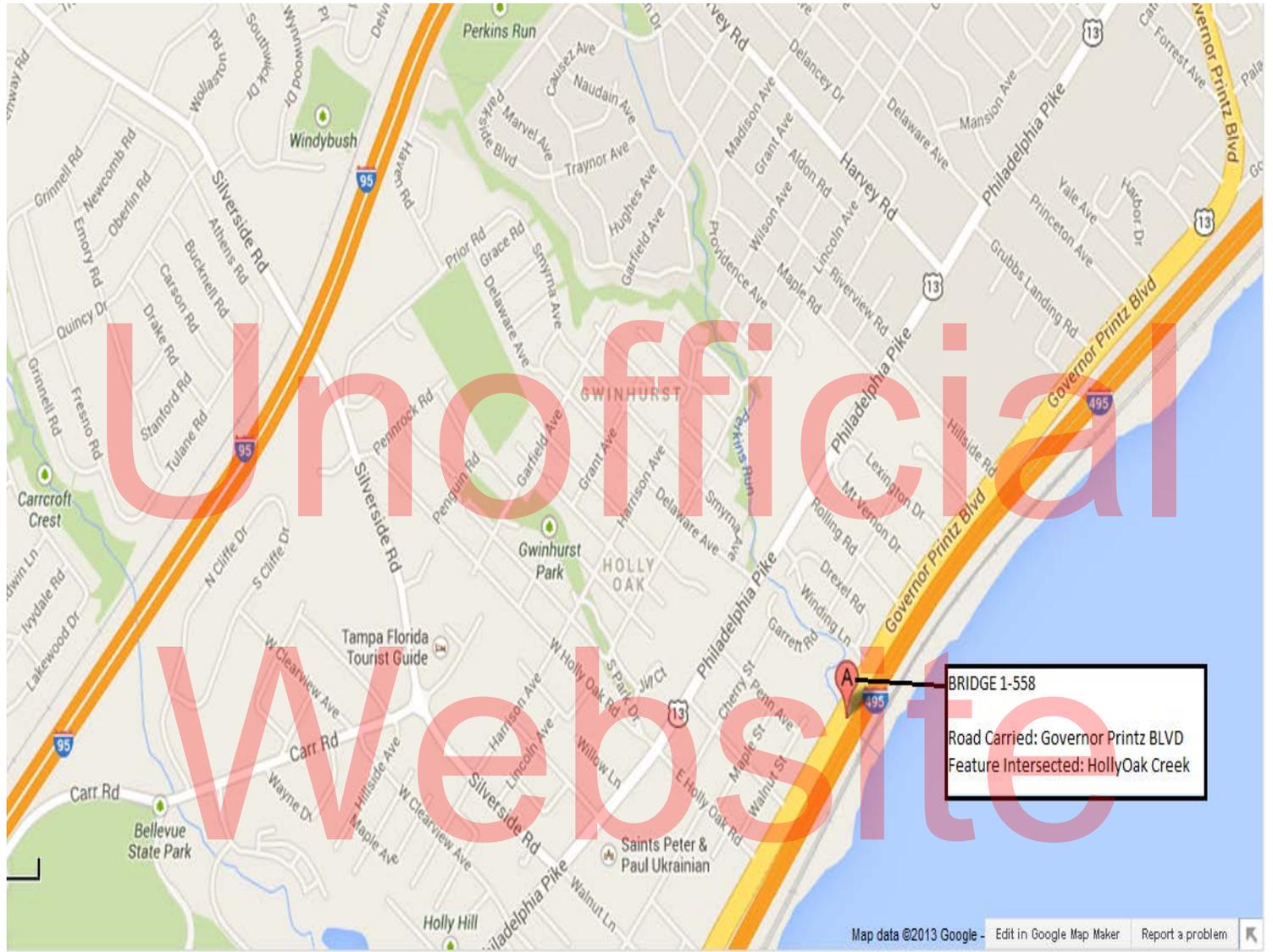


Bridge 1-229A
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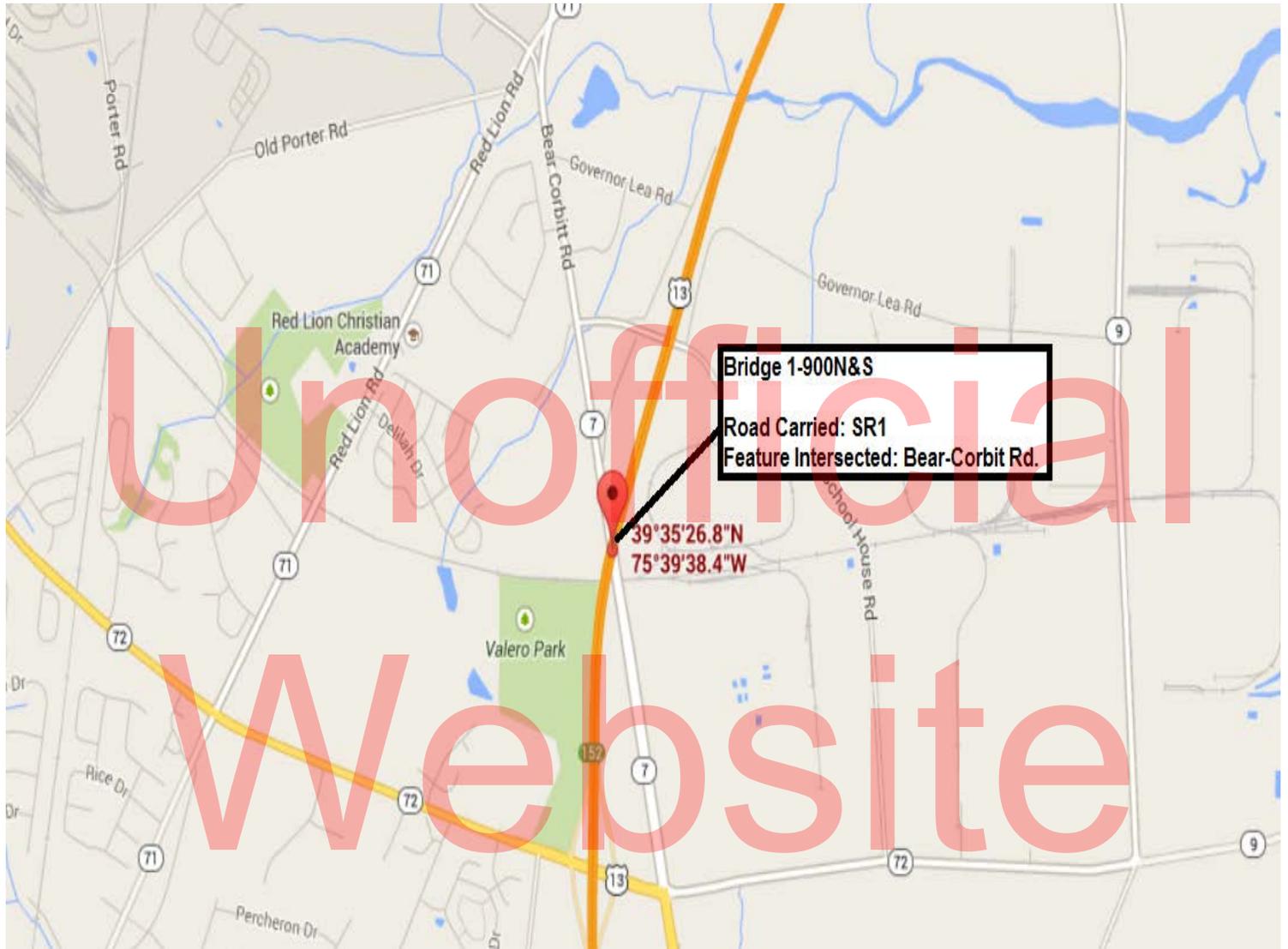
Bridge 1-527

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Bridges 1-558

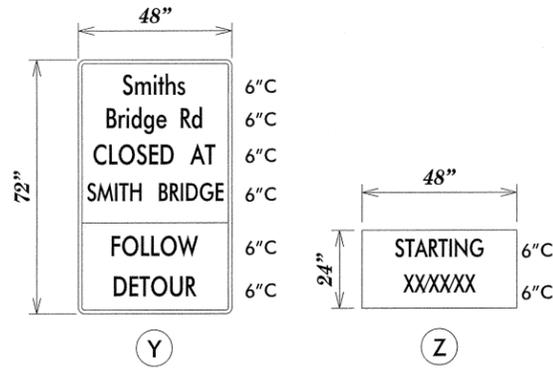
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Bridge 1-900N&S

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SPECIAL SIGNS



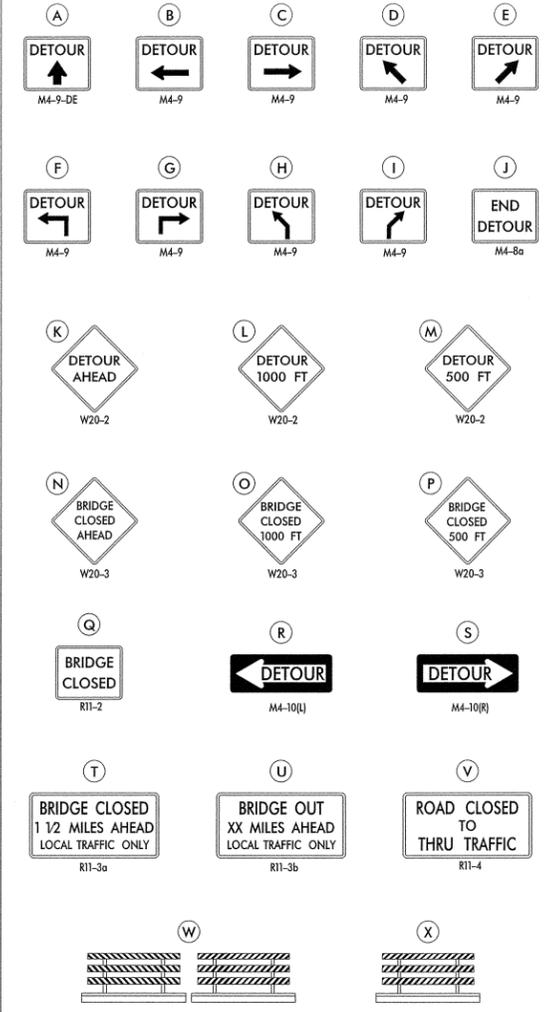
***DG RETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND; BLACK LEGEND**

NOTE FOR SIGNS (YZ)

1. WHERE INDICATED ON PLAN, "Z" PLAQUE SHALL BE AFFIXED OVER THE "FOLLOW DETOUR" PORTION OF SPECIAL SIGN "Y". SPECIAL SIGN "Y" WITH "Z" PLAQUE SHALL BE PLACED 10 DAYS PRIOR TO IMPLEMENTATION OF THE DETOUR. UPON IMPLEMENTATION OF DETOUR, "Z" PLAQUE SHALL BE REMOVED AND SPECIAL SIGN "Y" SHALL BE RELOCATED TO LOCATIONS SPECIFIED ON THE DETOUR PLAN AND SHALL REMAIN POSTED FOR THE DURATION OF THE DETOUR.



LEGEND

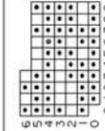


GENERAL NOTES

- 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 "Q" 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 <i>[Signature]</i> DATE: 1-28-14	RECOMMENDED <i>[Signature]</i> DATE: 1-28-2014	RECOMMENDED _____ DATE: _____	APPROVED CHIEF SAFETY OFFICER <i>[Signature]</i> DATE: 1-29-14	APPROVED TRAFFIC ENGINEER <i>[Signature]</i> DATE: 2/1/14
<p>DELAWARE DEPARTMENT OF TRANSPORTATION</p>			<p>BRIDGE PAINTING NEW CASTLE COUNTY, 2015</p>	<p>VEHICULAR DETOUR PLAN SMITH BRIDGE RD (N221)</p>
<p>CONTRACT T201407801</p> <p>COUNTY NEW CASTLE</p>		<p>ROAD NO. N221</p> <p>DESIGNED BY: MFR</p> <p>CHECKED BY: MSW</p>	<p>SHEET NO. 12</p> <p>TOTAL SHTS. 12</p>	<p>NOT TO SCALE</p>

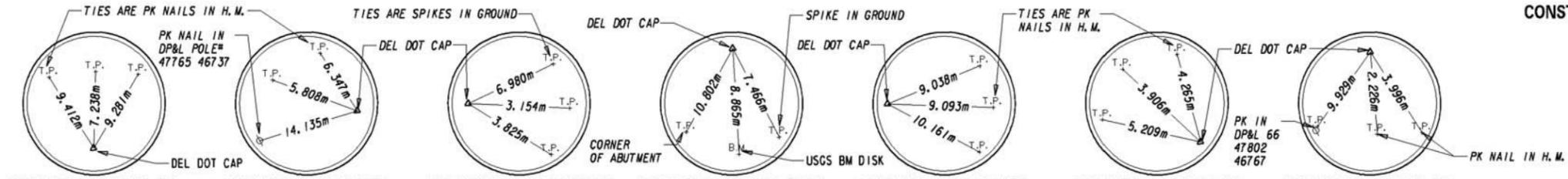
SMALL
MEDIUM
LARGE



CONSTRUCTION PLAN BR. 1-9

METRIC

CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHTS.
99-071-02	NEW CASTLE	EBRN-N221(1)	7	59
BRIDGE 9 ON SMITHS BRIDGE ROAD OVER BRANDYWINE CREEK				
REVISIONS				



TRAVERSE POINT #	STATION	COORDINATES
4	STA. 0+022.805 / 4.323	NORTHING = 203901.852 EASTING = 138442.629 EL. = 43.838
5	STA. 0+071.412 / 16.266	NORTHING = 203940.526 EASTING = 138476.494 EL. = 44.100
330	STA. 0+092.592 / -13.539	NORTHING = 203974.168 EASTING = 138469.979 EL. = 44.312
340	STA. 0+152.937 / -12.462	NORTHING = 203992.149 EASTING = 138530.049 EL. = 42.976
6	STA. 0+169.451 / 20.332	NORTHING = 203964.829 EASTING = 138554.675 EL. = 46.271
7	STA. 0+194.251 / 8.042	NORTHING = 203983.834 EASTING = 138575.643 EL. = 44.939
8	STA. 0+237.903 / -4.716	NORTHING = 204010.079 EASTING = 138612.938 EL. = 46.667

NOTE: ALL STATIONS, OFFSETS, COORDINATES, AND ELEVATIONS ARE IN METERS. (-) DENOTES LEFT OF CENTERLINE.

COORDS SCALED FROM NAD 1927, AZIMUTH DETERMINED MAGNETICALLY IN FIELD, ELEVATIONS BASED ON NGS RIVET DESIGNATION RV 16 RDGRR (ELEV. 66.187 m)

HORIZONTAL CURVE #5 DATA

P. I. STA. = 0+186.945
 $\Delta = 3^{\circ}58'02''$ LEFT
 R = 500.000 m
 T = 17.317 m
 L = 34.621 m
 E = 0.300 m

HORIZONTAL CURVE #4 DATA

P. I. STA. = 0+152.146
 $\Delta = 2^{\circ}10'09''$ RIGHT
 R = 150.000 m
 T = 2.840 m
 L = 5.679 m
 E = 0.027 m

HORIZONTAL CURVE #3 DATA

P. I. STA. = 0+081.858
 $\Delta = 67^{\circ}50'36''$ RIGHT
 R = 30.000 m
 T = 20.176 m
 L = 35.523 m
 E = 6.153 m

HORIZONTAL CURVE #2 DATA

P. I. STA. = 0+054.130
 $\Delta = 29^{\circ}30'52''$ LEFT
 R = 30.000 m
 T = 7.902 m
 L = 15.454 m
 E = 1.023 m

HORIZONTAL CURVE #1 DATA

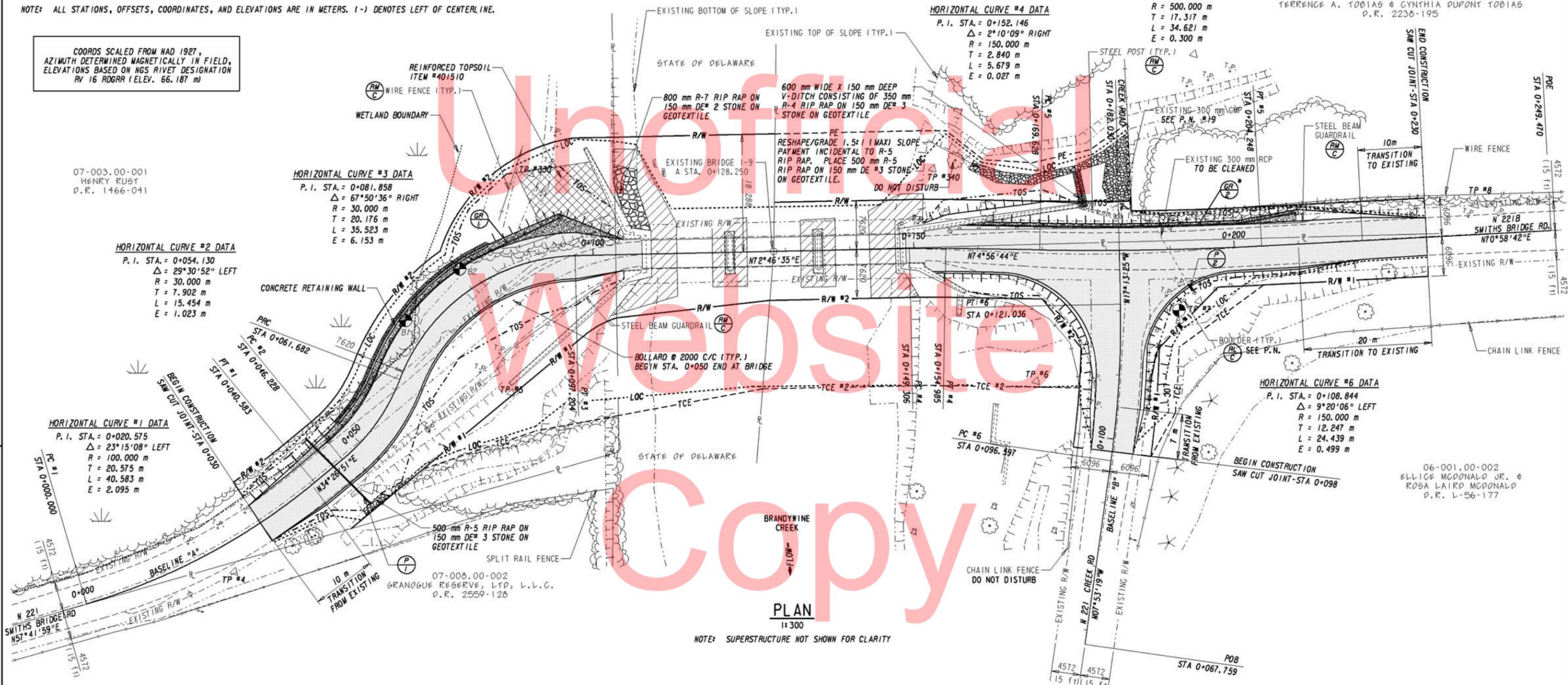
P. I. STA. = 0+020.575
 $\Delta = 23^{\circ}15'08''$ LEFT
 R = 100.000 m
 T = 20.575 m
 L = 40.583 m
 E = 2.095 m

HORIZONTAL CURVE #6 DATA

P. I. STA. = 0+108.844
 $\Delta = 9^{\circ}20'06''$ LEFT
 R = 150.000 m
 T = 12.247 m
 L = 24.439 m
 E = 0.499 m

06-001.00-001
TERRENCE A. TOBIAS & CYNTHIA DUPONT TOBIAS
P.R. 2236-195

06-001.00-002
ELLIGE McDONALD JR. &
ROSA LAIRD McDONALD
P.R. L-56-177



PLAN
1:300

NOTE: SUPERSTRUCTURE NOT SHOWN FOR CLARITY

PROPOSED PAVEMENT LEGEND

	50 mm SUPERPAVE, TYPE "C", HOT MIX, ON 75 mm SUPERPAVE, TYPE "B", HOT MIX, ON 300 mm GRADED AGGREGATE BASE COURSE TYPE "B"
	150 mm GRADED AGGREGATE BASE COURSE ON GEOTEXTILE

LEGEND

	LIMIT OF CONSTRUCTION
	PROPOSED TOE OF SLOPE
	PROPOSED TOP OF SLOPE
	FILL SCOUR HOLES WITH R-7 RIP RAP ON 150 mm DE #2 STONE. (TYP. @ ABUTMENTS & PIERS) TOP OF RIP RAP SHALL NOT EXCEED EXISTING STREAM BOTTOM ELEVATION.

* GUARDRAIL IS TO BE INSTALLED UP TO THE STONE WINGWALL. THE WINGWALL HEIGHT SHALL BE GREATER THAN OR EQUAL TO THE GUARDRAIL AT THE TIE IN POINT. ANY MATERIALS OR FABRICATION NECESSARY SHALL BE INCIDENTAL TO ITEM # 720562 - STEEL BACKED TIMBER GUARDRAIL.

GUARDRAIL PLACEMENT SCHEDULE

NO.	DESCRIPTION
1	1- TIMBER GUARDRAIL END TAPER, 33.53 m STEEL BACKED TIMBER GUARDRAIL AND 1- TIMBER GUARDRAIL END TAPER
2	48.77 m STEEL BACKED TIMBER GUARDRAIL AND 1- TIMBER GUARDRAIL END TAPER GUARDRAIL AT STATION 0+210

** PIPE IS TO BE MITERED TO MATCH SLOPE. PAYMENT FOR CUTTING PIPE AND PLACING MORTAR COAT OVER CUT SURFACE IS INCIDENTAL TO THE PIPE ITEM. ANY REQUIRED DEWATERING IS INCIDENTAL TO THE PIPE ITEM.

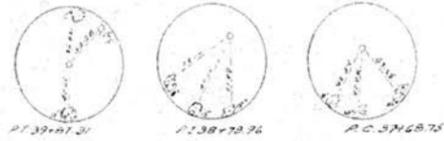
PIPE SCHEDULE

NO.	SIZE/TYPE	LENGTH	SLOPE	ENT. INV.	DIS. INV.
1**	450 mm/R.C.P.	14.6 m	0.62 %	42.84 m	42.75 m
2	300 mm/R.C.P.	1.2 m	---	MATCH EXISTING	---

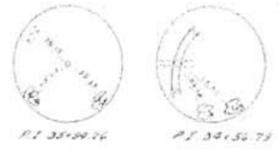
Y:\NEWCASTL\7221\BRIDGE\9907102\PLANS\CP01.DGN

CADD DESIGN CWI DESIGN CHKD. DEF

B.M. 10
 30 D. NAIL IN 1 1/2 AS
 27 1/2" 2 1/2" of 5/16 42 1/2"
 EL. 115.072



B.M. 9
 20 D. NAIL IN 3 1/2"
 TREE 10 1/2"
 STA. 36+59
 EL. 75.002



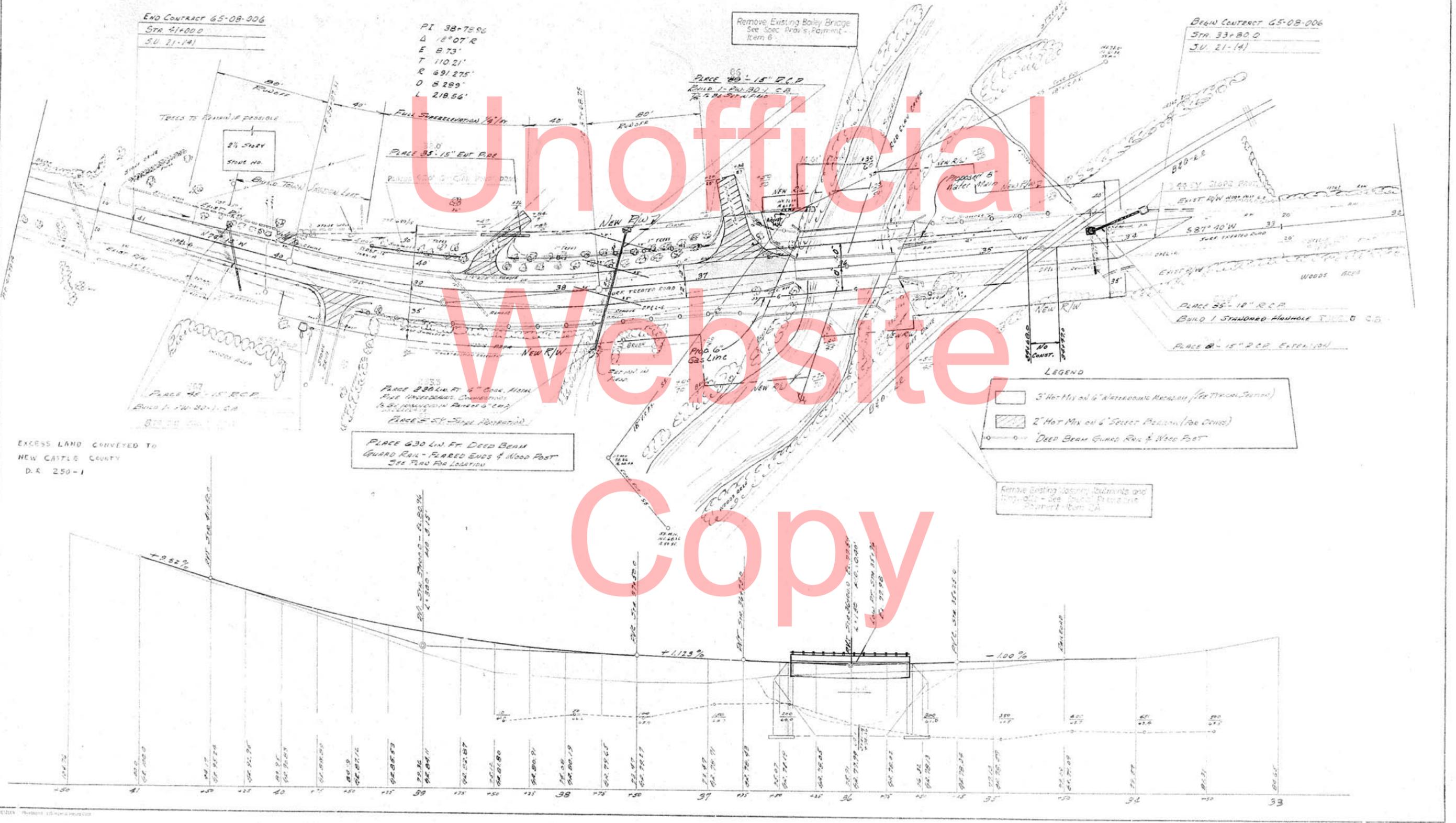
COUNTY	CONTRACT	DATE	DESIGNER	SCALE	SHEET
New Castle	65-08-006	2	DEL. 5/21/14	3	14
BRIDGE #147 ON FAULKLAND ROAD OVER RUE CLAY CREEK - STA. 36+00.0					
REVISIONS					
45 BUILT IN RED 7/29/68 EWR					

END CONTRACT 65-08-006
 STA. 41+00.0
 S.U. 21-14

PI 38+75.96
 Δ 15°07' R
 E 8.73'
 T 110.21'
 R 491.275'
 D 8.289'
 L 218.56'

Remove Existing Bailey Bridge
 See Spec. Prov's. Payment -
 Item 6.

BEGIN CONTRACT 65-08-006
 STA. 33+00.0
 S.U. 21-14



LEGEND

[Symbol]	3" Hot Mix on 6" Watercourse Archway (See Typical Section)
[Symbol]	2" Hot Mix on 6" Select Bedding (See Detail)
[Symbol]	Deep Beam Guard Rail & Wood Post

Remove Existing Masonry Abutments and
 Piers - See Typical Section
 Payment - Item 6.

EXCESS LAND CONVEYED TO
 NEW CASTLE COUNTY
 D.R. 250-1

PLACE 630 LIN. FT. DEEP BEAM
 GUARD RAIL - FLARED ENDS & WOOD POST
 SEE PLAN FOR LOCATION

PLACE 230 LIN. FT. 6" CORR. METAL
 PIPE UNDERPASS CHANNELS
 18" DEEP UNDERPASS PAVEMENT 6" CORR.
 CHANNELS
 PLACE 5" ST. SINGLE PAVEMENT

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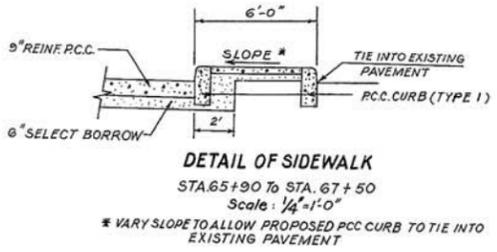
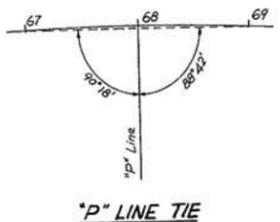
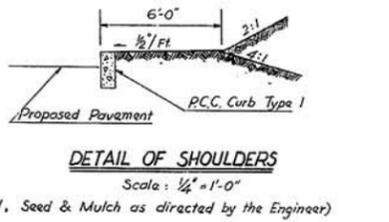
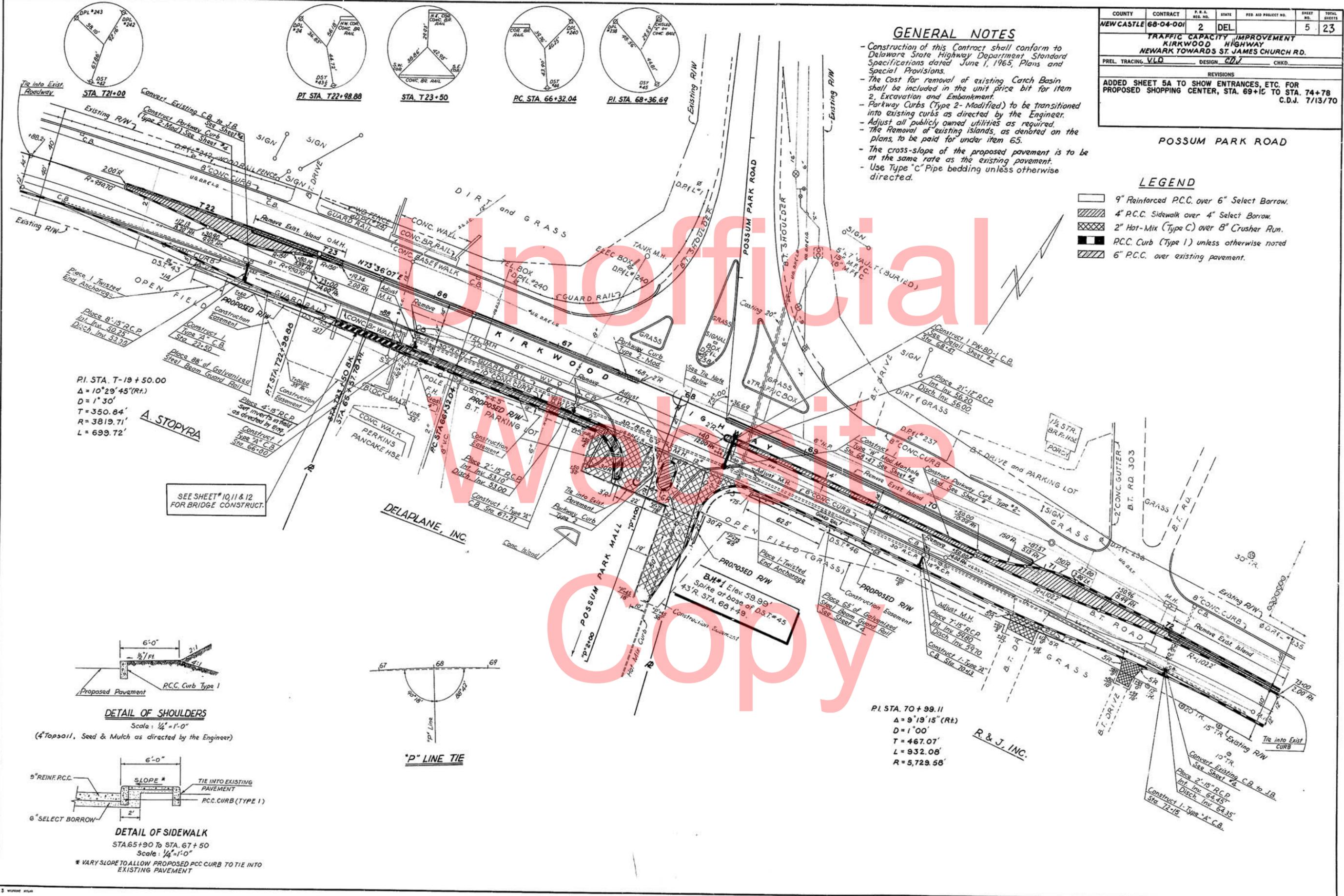
COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
NEWCASTLE	68-04-001	2	DEL.		5	23
TRAFFIC CAPACITY IMPROVEMENT KIRKWOOD HIGHWAY NEWARK TOWARDS ST. JAMES CHURCH RD.						
PREL. TRACING: VLD		DESIGN: CDV		CHKD:		
REVISIONS						
ADDED SHEET 5A TO SHOW ENTRANCES, ETC. FOR PROPOSED SHOPPING CENTER, STA. 69+15 TO STA. 74+78 C.D.J. 7/13/70						

GENERAL NOTES

- Construction of this Contract shall conform to Delaware State Highway Department Standard Specifications dated June 1, 1965, Plans and Special Provisions.
- The Cost for removal of existing Catch Basin shall be included in the unit price bid for item 2, Excavation and Embankment.
- Parkway Curbs (Type 2- Modified) to be transitioned into existing curbs as directed by the Engineer.
- Adjust all publicly owned utilities as required.
- The Removal of existing islands, as denoted on the plans, to be paid for under item 65.
- The cross-slope of the proposed pavement is to be at the same rate as the existing pavement.
- Use Type "C" Pipe bedding unless otherwise directed.

LEGEND

- 9" Reinforced P.C.C. over 6" Select Borrow.
- 4" P.C.C. Sidewalk over 4" Select Borrow.
- 2" Hot-Mix (Type C) over 8" Crusher Run.
- P.C.C. Curb (Type 1) unless otherwise noted.
- 6" P.C.C. over existing pavement.



PI STA. 70+99.11
 $\Delta = 9'19'15''$ (Rt.)
 $D = 1'00'$
 $T = 467.07'$
 $L = 932.08'$
 $R = 5,729.58'$

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COPY

PERF. PIPE UNDERDRAIN - 6"
 1167 LF STA. 72+50, C/L RTE. 141, LT. TO STA. 64+50, B/L SBL, LT.
 299 LF STA. 69+92.76 TO STA. 73+00, C/L RTE. 141
 791 LF STA. 75+00 TO STA. 83+25, B/L NBL, LT.
 498 LF STA. 69+92.76, C/L RTE. 141, RT. TO STA. 75+50, B/L NBL, RT.
 261 LF STA. 81+85 TO STA. 84+50, B/L NBL, RT.

Place Temporary Sediment Traps at each open inlet allowing Temporary drainage to enter storm sewer system.

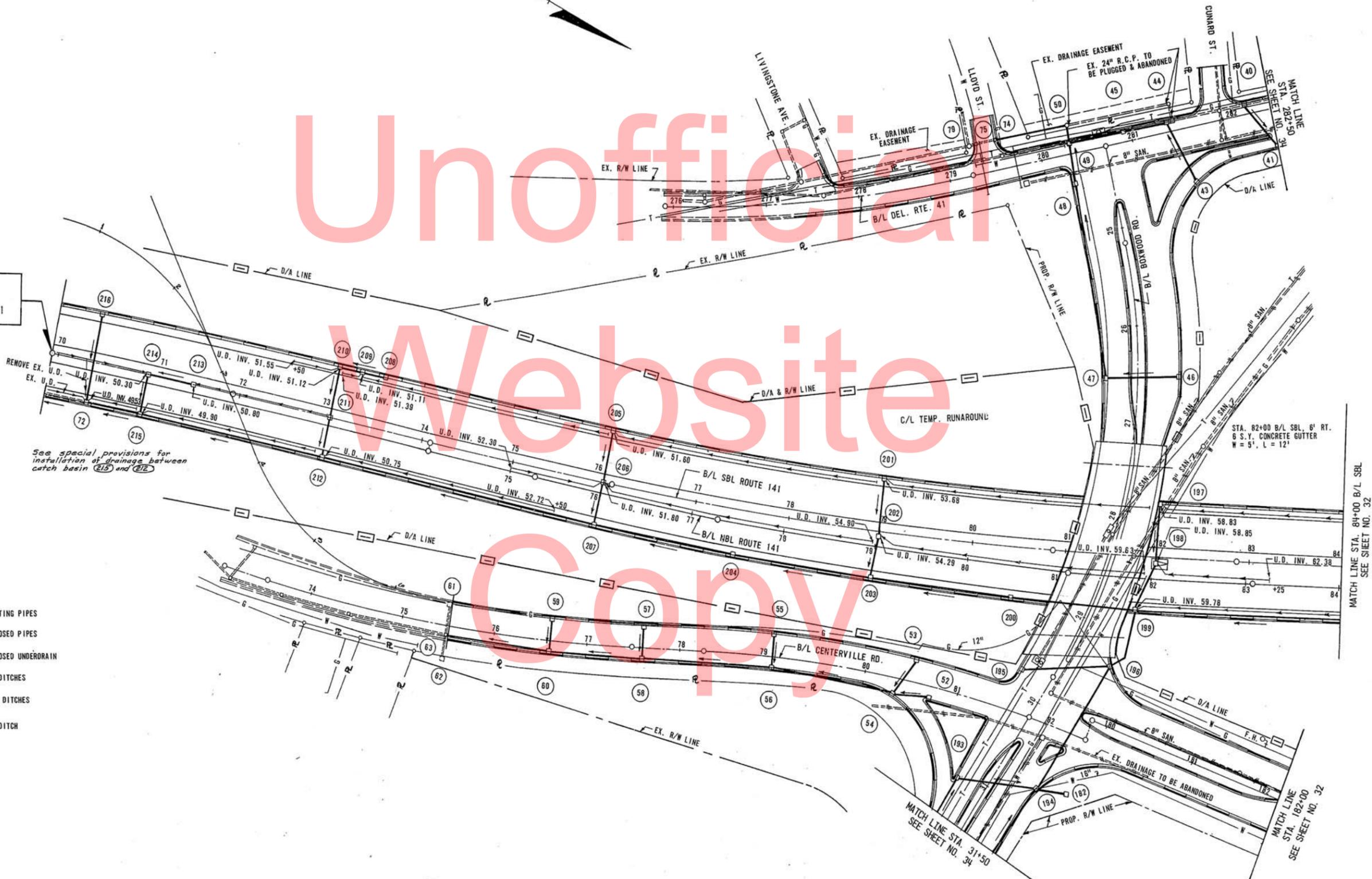
COUNTY	CONTRACT	F.R.A. SER. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
NEW CASTLE	76-08-008	2	DEL.		31	137
RELOCATED DELAWARE ROUTE 141						
PREL. TRACING	DESIGN	CHKD.				
REVISIONS						

LIMIT OF WORK
 CONTRACT NO. 69-02-003
 STA. 69+92.76 C/L RTE. 141

See special provisions for installation of drainage between catch basin (215) and (212)

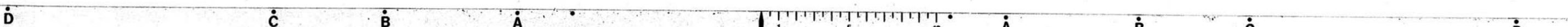
LEGEND

- EXISTING PIPES
- PROPOSED PIPES
- PROPOSED UNDERDRAIN
- CUT DITCHES
- FILL DITCHES
- SOD DITCH



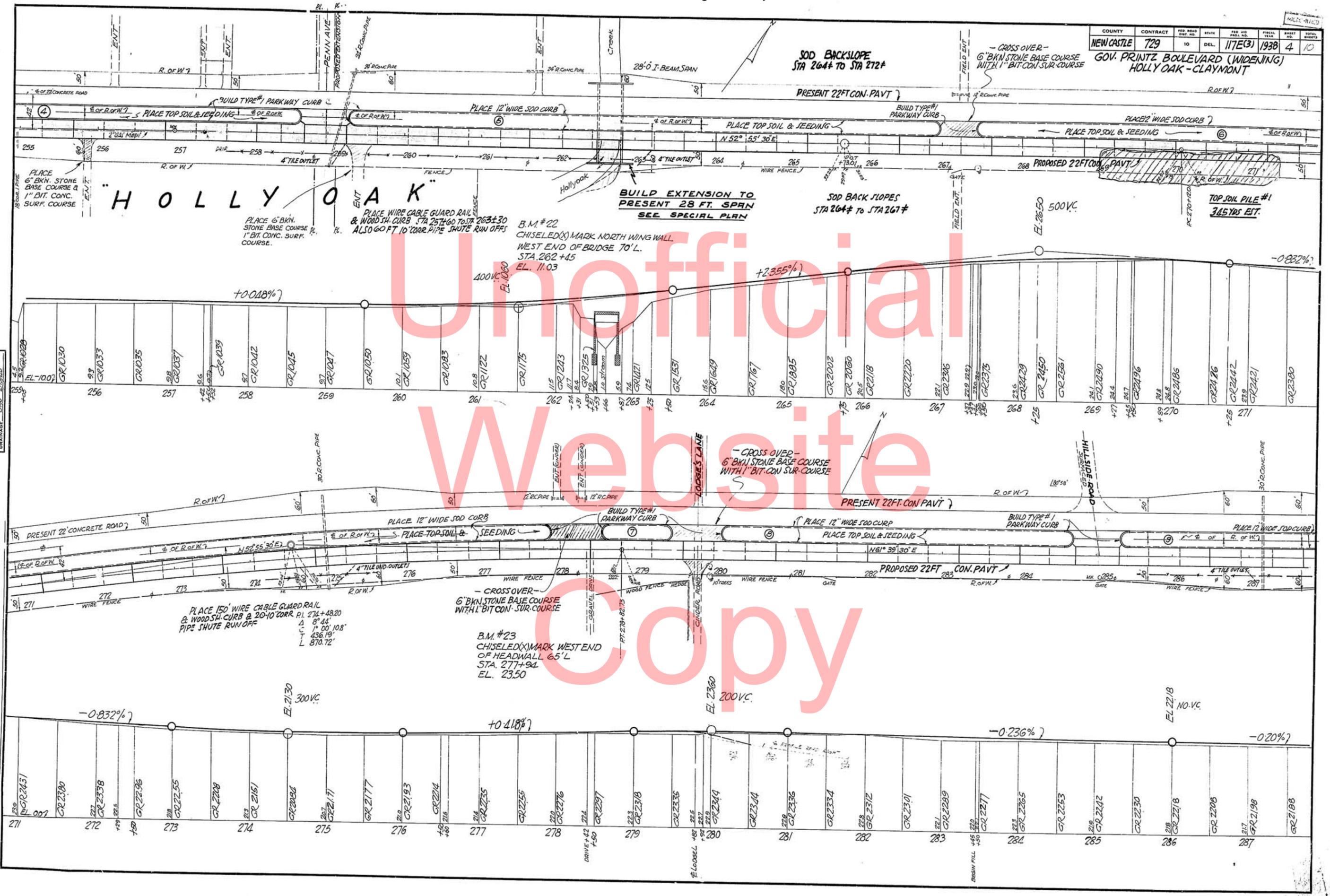
DRAINAGE PLAN I

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COUNTY	CONTRACT	PER. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
NEWCASTLE	729	10	DEL.	117E(3)	1938	4	10

GOV. PRINTZ BOULEVARD (WIDENING)
HOLLY OAK - CLAYMONT



GRADE BEARINGS - JULY 1, 2 - 5, 1940
TIE POINTS
BENCH MARKS STATION 1, 6
DRAINAGE

REVISIONS

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D C B A

SCALE	CONTRACT	COUNTY	FEDERAL AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
1" = 50'	89-10-05	NEW CASTLE	F-1003(9)	56	

SR I
SOUTH OF ST. GEORGES
TO TYBOUTS

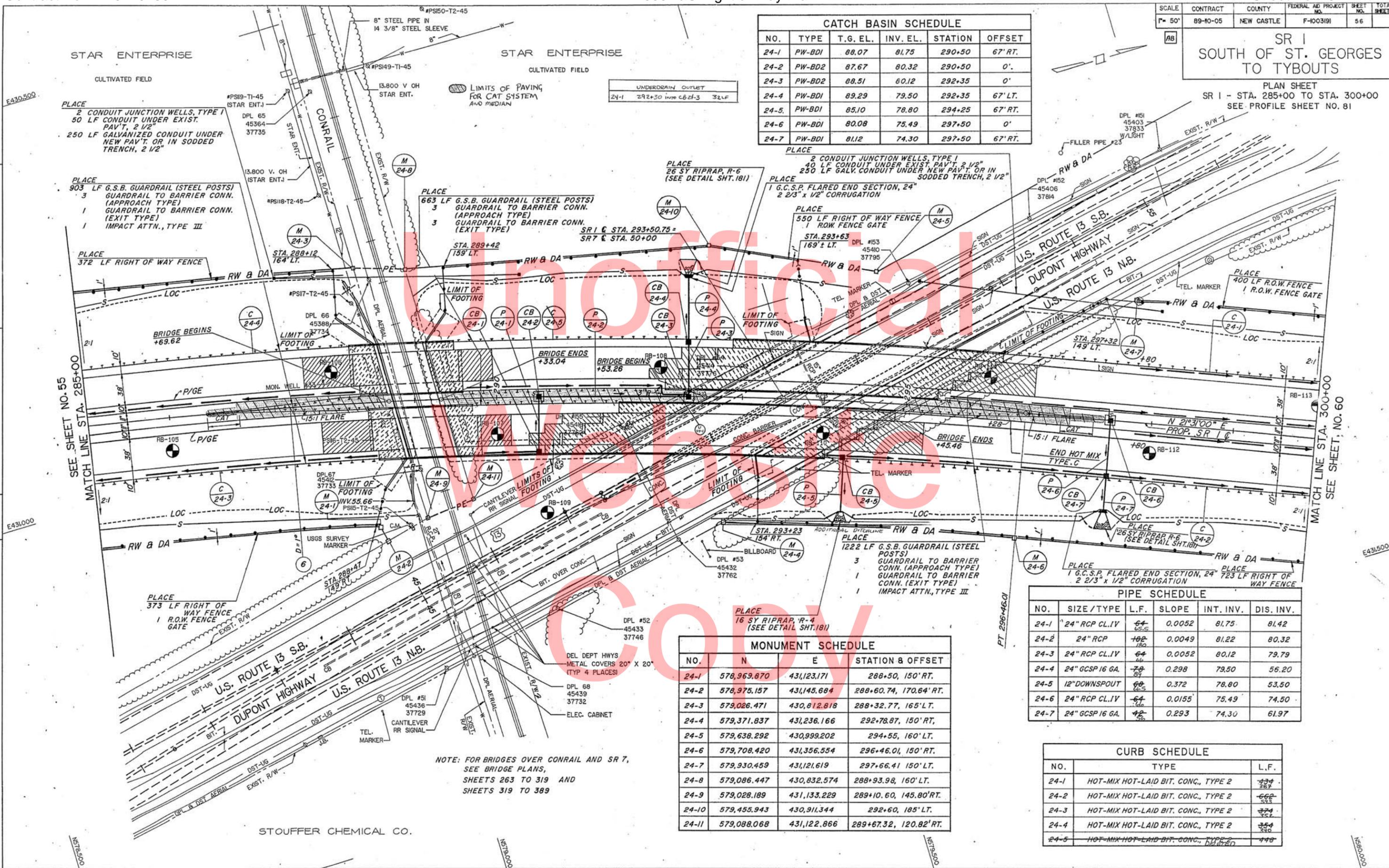
PLAN SHEET
SR I - STA. 285+00 TO STA. 300+00
SEE PROFILE SHEET NO. 81

NO.	TYPE	T.G. EL.	INV. EL.	STATION	OFFSET
24-1	PW-BD1	88.07	81.75	290+50	67' RT.
24-2	PW-BD2	87.67	80.32	290+50	0'
24-3	PW-BD2	88.51	80.12	292+35	0'
24-4	PW-BD1	89.29	79.50	292+35	67' LT.
24-5	PW-BD1	85.10	78.80	294+25	67' RT.
24-6	PW-BD1	80.08	75.49	297+50	0'
24-7	PW-BD1	81.12	74.30	297+50	67' RT.

NO.	SIZE / TYPE	L.F.	SLOPE	INT. INV.	DIS. INV.
24-1	24" RCP CL.IV	64	0.0052	81.75	81.42
24-2	24" RCP	182	0.0049	81.22	80.32
24-3	24" RCP CL.IV	64	0.0052	80.12	79.79
24-4	24" GCSP 16 GA.	79	0.298	79.50	56.20
24-5	12" DOWNSPOUT	68	0.372	78.80	53.50
24-6	24" RCP CL.IV	64	0.0155	75.49	74.50
24-7	24" GCSP 16 GA.	42	0.293	74.30	61.97

NO.	N	E	STATION & OFFSET
24-1	578,969.870	431,123.171	288+50, 150' RT.
24-2	578,975.157	431,145.684	288+60.74, 170.64' RT.
24-3	579,026.471	430,812.818	288+32.77, 165' LT.
24-4	579,371.837	431,236.166	292+78.87, 150' RT.
24-5	579,638.292	430,999.202	294+55, 160' LT.
24-6	579,708.420	431,356.554	296+46.01, 150' RT.
24-7	579,930.459	431,121.619	297+66.41, 150' LT.
24-8	579,086.447	430,832.574	288+93.98, 160' LT.
24-9	579,028.189	431,133.229	289+10.60, 145.80' RT.
24-10	579,455.943	430,911.344	292+60, 185' LT.
24-11	579,088.068	431,122.866	289+67.32, 120.82' RT.

NO.	TYPE	L.F.
24-1	HOT-MIX HOT-LAID BIT. CONC., TYPE 2	327
24-2	HOT-MIX HOT-LAID BIT. CONC., TYPE 2	662
24-3	HOT-MIX HOT-LAID BIT. CONC., TYPE 2	324
24-4	HOT-MIX HOT-LAID BIT. CONC., TYPE 2	354
24-5	HOT-MIX HOT-LAID BIT. CONC., TYPE 2	448



REVISIONS
 CHD.
 DESIGN
 PREL. TRACKING
 SEE SHEET NO. 55
 MATCH LINE STA. 285+00
 MATCH LINE STA. 300+00
 SEE SHEET, NO. 60