

STATE OF DELAWARE



DEPARTMENT OF TRANSPORTATION
MAINTENANCE SUPPORT – SOUTH DISTRICT
PLANS AND SPECIFICATIONS FOR:

CONTRACT NO: T201287901 P3E NO: 12-37777

CONTRACT TITLE: GUARDRAIL SAFETY IMPROVEMENTS &
REPAIR, SOUTH, 2012

PLANS PREPARED BY: TIM PHILLIPS (DESIGN TECHNICIAN)

PLANS REVIEWED BY: Jim Wyatt DATE: 10/17/11
MAINT. SUPPORT MANAGER

<p>DATE RECOMMENDED: <u>OCTOBER 17, 2011</u></p> <p>ASSISTANT MAINT. ENGINEER: <u>Shante A. Hastings</u></p>	
<p>DATE RECOMMENDED: <u>10-17-11</u></p> <p>MAINTENANCE ENGINEER: <u>[Signature]</u></p>	
<p>DATE APPROVED: <u>10/17/11</u></p> <p>SOUTH DISTRICT ENGINEER: <u>[Signature]</u></p>	

SOUTH DISTRICT

GUARDRAIL SAFETY IMPROVEMENTS & REPAIR, SOUTH, 2012

CONTRACT DESCRIPTION

THIS CONTRACT IS INTENDED TO REPLACE GUARDRAIL END TREATMENTS, BRIDGE ATTACHMENTS AND ALL OTHER GUARDRAIL COMPONENTS AS WELL AS PLACING NEW COMPONENTS ON UNPROTECTED BRIDGES AND STRUCTURES AS NOTED HEREIN THE CONTRACT PLANS. ALL NEW RAIL AND COMPONENTS INSTALLED SHALL BE COMPLIANT WITH NCHRP 350 TESTING, DELAWARE DOT STANDARD SPECIFICATIONS, STANDARD DETAILS AND THESE PLANS.

THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO MAINTENANCE OF TRAFFIC, AS REQUIRED PER LOCATION, REMOVAL OF EXISTING NON-COMPLIANT GUARDRAIL COMPONENTS, REPAIR / REPLACEMENT OF DAMAGED GUARDRAIL COMPONENTS, PLACEMENT OF GABC AND/ OR WARM MIX MAINTENANCE STRIPS, TOPSOIL, SEED, MULCH AND BORROW AND ALL OTHER WORK ASSOCIATED WITH THE COMPLETION OF THE CONTRACT OBJECTIVES. SPECIFIC LOCATION SHEETS AND DETAILS CAN BE FOUND WITHIN THIS PACKAGE.

MOT PLANS MUST BE SUBMITTED TO THE DEPARTMENT FOR APPROVAL PRIOR TO THE START OF ANY WORK.

THE CONTRACT TIME FOR THE KNOWN LOCATIONS (LOC. 2-10) WILL BE 25 CALENDAR DAYS FROM THE DATE SPECIFIED IN THE NOTICE TO PROCEED. LIQUIDATED DAMAGES WILL BE ASSESSED AFTER THIS TIME EXPIRES IF THESE KNOWN LOCATIONS ARE NOT SUBSTANTIALLY COMPLETE.

THIS CONTRACT ALSO INCLUDES AN OPEN END (UNKNOWN LOCATION) PORTION THAT WILL BE 365 CALENDAR DAYS IN LENGTH. THE ANTICIPATED NOTICE TO PROCEED DATE FOR THIS PORTION IS FEBRUARY 13, 2012. THIS PORTION WILL INCLUDE THE REPAIR OF DAMAGED GUARDRAIL ON AN AS NEEDED BASIS AND WILL BE ISSUED VIA JOB ORDER.

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GUARDRAIL SAFETY IMPROVEMENTS & REPAIR, SOUTH, 2012

GENERAL CONTRACT PLAN NOTES

1. CONSTRUCTION OF THIS CONTRACT SHALL CONFORM TO DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED AUGUST 2001 AS AMENDED BY THE SUPPLEMENTAL SPECIFICATIONS, THE SPECIAL PROVISIONS, THE MOST RECENT STANDARD CONSTRUCTION DETAILS, DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THESE PLANS.
2. THE PURPOSE OF THIS CONTRACT IS TO MAKE GENERAL IMPROVEMENTS TO ROADS AND/OR STREETS WITHIN THE DISTRICT HEREIN SPECIFIED. DEPENDING ON FUND AVAILABILITY, THE DEPARTMENT RESERVES THE RIGHT TO ADD OR DELETE LOCATIONS AND/OR QUANTITIES FOR THIS CONTRACT. SUCH LOCATION OR QUANTITY ADDITIONS OR DELETIONS SHALL NOT BE CAUSE FOR AN INCREASE OR DECREASE IN ANY CONTRACT UNIT BID PRICES. NO ITEM PRICES ARE TO BE RENEGOTIATED DUE TO EITHER AN INCREASE OR DECREASE IN QUANTITY USAGE RESULTING FROM SAID ADDITIONS OR DELETIONS. IN THE CASE WHERE CONTRACT UNIT PRICES ARE NOT AVAILABLE THE PRICES ARE TO BE NEGOTIATED.
3. THE CONTRACTOR SHALL PROVIDE ALL RESIDENTS AND BUSINESSES WHO LIVE ADJACENT TO THE WORK ZONE A MINIMUM 48 HR. PRIOR WRITTEN NOTICE FOR THE START OF CONSTRUCTION WORK. THIS NOTIFICATION SHALL INCLUDE THE SCOPE OF WORK, WORKING HOURS, ANTICIPATED START AND COMPLETION DATES, CONTRACTOR NAME & ADDRESS, AND DELDOT CONTACT NUMBERS. FAILURE TO GIVE PROPER NOTICE WILL RESULT IN A SUSPENSION OF WORK REQUIRING NOTICE, UNTIL PROPER NOTICE IS PROVIDED. ACCESS TO ALL BUSINESSES AND RESIDENCES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THIS CONTRACT. ANY TEMPORARY CLOSURE OF A DRIVEWAY FOR TIE-IN PURPOSES SHALL BE COORDINATED WITH THE ENGINEER AND/OR PROPERTY OWNER IN ADVANCE OF THE CLOSURE.
4. THE CONTRACTOR SHALL SUBMIT THE REQUIRED COPIES OF A DETAILED PROGRESS SCHEDULE (PSC) AS OUTLINED IN STANDARD SPECIFICATION 108.04 PRIOR TO OR AT THE PRECONSTRUCTION MEETING. DETAILS SHALL INCLUDE A DESCRIPTION OF EACH WORK ACTIVITY, THE PLANNED DAYS OF WORK, MULTIPLE CREWS OR SHIFTS, AND SCHEDULED WORKING HOURS. DURING THE CONTRACT, THE CONTRACTOR SHALL SUBMIT TWO-WEEK (OR AS REQUIRED) "LOOK AHEAD" SCHEDULES TO THE AREA ENGINEER/ MANAGER NO LATER THAN NOON OF EACH THURSDAY. FAILURE TO COMPLY WILL RESULT IN A SUSPENSION OF ALL CONTRACT WORK WITH TIME CHARGES CONTINUING TO BE ASSESSED.
5. LOCATION LISTINGS INDICATE GENERAL LIMITS OF CONSTRUCTION, MAJOR TYPES OF IMPROVEMENTS, AND ESTIMATED QUANTITIES. DURING THE BIDDING PERIOD, ANY QUESTIONS PERTAINING TO LOCATIONS SHALL BE DIRECTED TO THE CONTRACT ADMINISTRATOR. AFTER THE AWARD, SUCH QUESTIONS SHALL BE REFERRED TO THE APPROPRIATE DISTRICT ENGINEER OR HIS REPRESENTATIVE.
6. ANY AND ALL CONSTRUCTION ENGINEERING SHALL BE INCIDENTAL TO THE CONTRACT.
7. NO ENVIRONMENTAL PERMITS ARE REQUIRED FOR THIS WORK PROVIDED DITCHES OCCUR IN UPLANDS AND ARE CONVEYING ONLY ROADSIDE STORM WATER (I.E. NON CORPS-JURISDICTIONAL). IF THERE IS ANY QUESTION AS TO WHETHER OR NOT THE DITCHES ARE LOCATED IN JURISDICTIONAL WATERS, CONTACT THE DELDOT ENVIRONMENTAL SECTION AT 302-760-2264
8. ALL PORTLAND CEMENT CONCRETE MUST BE RECEIVED FROM AN APPROVED PRODUCTION PLANT UNLESS OTHERWISE APPROVED BY THE ENGINEER. ONLY CALIBRATED VOLUMETRIC CONCRETE TRUCKS WILL BE PERMITTED TO PROVIDE ON-SITE MIXTURES. THIS PERTAINS TO BOTH WORK OCCURRING DURING NORMAL WORKING HOURS AND NIGHTTIME RESTRICTED WORK.

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GENERAL CONTRACT PLAN NOTES cont.

9. 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.
10. THE MINIMUM AND MAXIMUM SINGLE LIFT THICKNESSES OF MATERIALS SHALL BE AS FOLLOWS:
 - TYPE C WARM-MIX: 1.25" - 2.00"
 - TYPE B WARM-MIX: 2.25" - 3.00"
 - BCBC: 3.00" - 6.00"
 - GABC: 2.00" - 8.00"
11. THE COST OF FINE GRADING, COMPACTING, AND PREPARING EXISTING SHOULDERS FOR PAVING SHALL BE INCIDENTAL TO SECTIONS 401().
12. THE USE OF A GRADER ON EXISTING SHOULDERS OR EDGE DROP-OFFS AND THE GRADING OF TOPSOIL, MODIFIED, SHALL BE AS DIRECTED BY THE ENGINEER.
13. THE CONTRACTOR IS REMINDED THAT SECTION 105.07 OF THE STANDARD SPECIFICATIONS REQUIRES THE GENERAL CONTRACTOR TO HAVE A COMPETENT SUPERINTENDENT OR FOREMAN ON THE PROJECT AT ALL TIMES.
14. THE CONTRACTOR SHALL NOT REMOVE ANY EXISTING GUARDRAIL OR END SECTIONS WHILE LEAVING THE LOCATION SITE UNPROTECTED UNLESS USE OF PORTABLE BARRIER / CRASH CUSHIONS ARE USED IN ACCORDANCE WITH THE TRAFFIC CONTROL MANUAL SECTION 6F-82, THIS WORK SHALL BE INCIDENTAL TO THE WORK IT PROTECTS.
15. UNDERGROUND UTILITIES MAY BE PRESENT AT ALL LOCATIONS. THEREFORE, ALL STANDARD PRACTICES AND PROCEDURES FOUND IN THE LATEST VERSION OF THE DELDOT UTILITY MANUAL SHALL BE FOLLOWED. THE CONTRACTOR IS REQUIRED TO CONTACT MISS UTILITY TO HAVE UTILITIES MARKED OUT PRIOR TO BEGINNING WORK AT ANY LOCATION. *IN THE EVENT THAT A UTILITY IS INADVERTENTLY DISTURBED, THE CONTRACTOR IS REQUIRED TO CONTACT THE PROPER UTILITY COMPANY IMMEDIATELY SO THEY CAN VERIFY THE EXTENT OF THE DAMAGE AND MAKE REPAIRS.*
16. ALL CONCRETE ANCHOR BLOCKS LEFT FROM TWISTED END TREATMENTS OR END ANCHORAGES SHALL BE REMOVED AND PAID AS INCIDENTAL TO ITEM 211002, REMOVAL OF STRUCTURES AND OBSTRUCTIONS (GUARDRAIL). VOIDS SHALL BE FILLED WITH ITEM 302005 – GABC OR AS DICTATED BY THE INSPECTOR.
17. PAYMENT SHALL BE MADE UNDER ITEM #302005 – GABC TYPE B FOR BACKFILL OF EXISTING GUARDRAIL POST HOLES, LOW GRADES, AND BACKFILL ANY CONCRETE ANCHOR HOLES WHERE TWISTED-END / END TREATMENT SECTIONS ARE REMOVED AND THE ANCHOR BLOCKS ARE DEEMED TO ALSO BE REMOVED.
18. THE ENGINEER /REPRESENTATIVE SHALL DETERMINE FOR THE CONTRACTOR WHAT, IF ANY, GUARDRAIL ELEMENTS SHALL BE RETAINED BY THE DEPARTMENT AND DELIVERED TO THE NEAREST STATE MAINTENANCE YARD. ANY GUARDRAIL ELEMENTS NOT TO BE RETAINED, AS DETERMINED BY THE ENGINEER, BECOME THE PROPERTY OF THE CONTRACTOR. PAYMENT FOR THE REMOVAL, LEGAL DISPOSAL AND/OR DELIVERY OF REUSABLE ELEMENTS, INCLUDING, BUT NOT LIMITED TO RAILS, POSTS, END ATTACHMENTS, AND ANCHORS ARE TO BE PAID INCIDENTAL TO ITEM #211002.

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19. THE CONTRACTOR SHALL NOT EXCAVATE ADJACENT TO TRAVEL LANES AN AREA FOR MORE ROADWAY THEN CAN BE CONSTRUCTED TO THE TOP OF THE EXISTING COURSE IN THE SAME DAY. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE TRAFFIC CONTROL MANUAL TO FORM A 4:1 WEDGE/FILLET FOR AREA OF GRADE DIFFERENTIAL FROM EXISTING COURSE TO PAVEMENT EDGE. THE WEDGE FILLET MATERIAL SHALL BE GRADED AGGREGATE BASE COURSE, TYPE B AND SHALL BE PAID FOR UNDER ITEM 302005.
20. DAMAGE CAUSED BY THE CONTRACTOR TO EXISTING HOT MIX MAINTENANCE STRIPS SHALL BE REPAIRED INCIDENTAL TO ITEM # 211002, REMOVAL OF STRUCTURES AND OBSTRUCTIONS (GUARDRAIL).
21. ITEM #401800 (SUPERPAVE, TYPE C WARM MIX, 115 GYRATIONS) AND ITEM #302005 (GABC, TYPE B) SHALL BE USED TO EXTEND HOT MIX MAINTENANCE STRIPS AS NEEDED AT END TREATMENTS. THE NEW MAINTENANCE STRIPS SHALL BE MADE UP OF 2" TYPE C HOT MIX OVER 4" GABC AT A WIDTH OF 2' TO 4' BY THE LENGTH OF THE GUARDRAIL / END TREATMENT. THE ACTUAL SIZE AND DEPTH OF MAINTENANCE STRIPS WILL VARY BY LOCATION.
22. POST VOIDS AND / OR HOT MIX THAT IS DAMAGED DURING THE RELOCATION OF GUARDRAIL ELEMENTS SHALL BE REPAIRED WITH LIKE MATERIAL AS APPROVED BY THE ENGINEER AND SHALL BE INCIDENTAL TO THE RELOCATING GUARDRAIL ITEM.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY TREES OR BRUSH WITHIN 4' OF THE BACK OF THE EXISTING OR PROPOSED GUARDRAIL AND SHALL BE INCIDENTAL TO THE GUARDRAIL ITEM BEING INSTALLED.
24. ALL HOLES LEFT IN BRIDGE PARAPET WALLS, WHICH WERE CAUSED BY THE REMOVAL OF EXISTING NON-COMPLIANT BRIDGE ATTACHMENTS SHALL BE FILLED WITH NON-SHRINK GROUT. THIS WORK SHALL BE INCIDENTAL TO ITEM 211002.
25. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CURVED RADIUS SECTIONS FOR PROPER FIT PRIOR TO INSTALLING GUARDRAIL.
26. MAINTENANCE STRIPS SHALL EXTEND PAST GUARDRAIL TO ENSURE ACCEPTABLE APPROACH SLOPES PER DELDOT STANDARD DETAILS.
27. NON-AVAILABILITY OF MATERIALS SHALL BE VERIFIED BY AT LEAST THREE (3) DIFFERENT SOURCES. VERIFICATION SHALL BE FORMAL AND SUPPLIED BY THE CONTRACTOR IN WRITING. IF THERE IS A VERIFIED NON-AVAILABILITY OF MATERIALS, TIME CHARGES SHALL COMMENCE ON THE FIRST WORKING DAY FOLLOWING THE DELIVERY DATE OF SAID MATERIALS.
28. DEPENDANT ON WEATHER, THE WARM MIX MAINTENANCE STRIP MAY NEED TO BE INSTALLED AFTER THE GUARDRAIL IS INSTALLED. THE CONTRACTOR SHALL EXCAVATE AND INSTALL GABC TO A DEPTH OF 2" BELOW FINISH GRADE AND THEN PLACE WARM MIX. IF WARM MIX IS AVAILABLE AT THAT TIME IT MAY BE PLACED AT THAT TIME, HOWEVER, THE CONTRACTOR SHALL BE PREPARED TO INSTALL WARM MIX ON A RETURN TRIP IF MATERIAL IS NOT AVAILABLE DUE TO WEATHER OR ANY OTHER REASON.

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MAINTENANCE OF TRAFFIC

1. WORK SHALL BE PERFORMED IN A MANNER THAT WILL ENSURE THE LEAST PRACTICAL OBSTRUCTION TO THE TRAVELING PUBLIC, CONSISTENT WITH SAFETY STANDARDS AND SHALL COMPLY WITH THE REQUIREMENTS OF THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) PART 6, HEREIN REFERRED TO AS THE TRAFFIC CONTROL MANUAL (INCLUDING REVISIONS IN EFFECT AT THE TIME OF ADVERTISEMENT FOR BIDS).
2. THE CONTRACTOR SHALL SUBMIT THE PROPOSED TRAFFIC PLANS FOR ALL KNOWN LOCATIONS TO THE SOUTH DISTRICT SAFETY OFFICER FOR APPROVAL PRIOR TO RECEIVING THE NOTICE TO PROCEED.
3. THE CONTRACTOR SHALL SUBMIT THE PROPOSED TRAFFIC PLANS FOR EACH WORK-ORDER ISSUED LOCATION TO THE SOUTH DISTRICT SAFETY OFFICER FOR APPROVAL PRIOR TO THE START OF WORK ON THAT LOCATION.
4. THE CONTRACTOR SHALL SUBMIT TO THE SOUTH DISTRICT SAFETY OFFICER A TRAFFIC CONTROL PLAN, INCLUDING THE NECESSARY NCHRP 350 CERTIFICATIONS FOR ALL DEVICES THAT WILL BE UTILIZED FOR EACH LOCATION BEFORE THE START OF THE PRE-CONSTRUCTION MEETING. WRITTEN APPROVAL MUST BE RECEIVED BEFORE THE START OF WORK AT EACH AND EVERY LOCATION.
5. ALL TRAFFIC CONTROL DEVICES SHALL BE IN NEW OR REFURBISHED CONDITION AND SHALL BE IN COMPLIANCE WITH THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND NCHRP 350 AS DEFINED IN SECTION "6A.01" OF THE MANUAL. THE DEVICES SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE AND SHALL BE MAINTAINED IN GOOD CONDITION FOR THE DURATION OF THE CONTRACT.
6. EFFECTIVE JANUARY 4, 2010, THE HORIZONTAL CIRCUMFERENTIAL MARKINGS ON PLASTIC DRUMS SHALL BE MADE OF FLUORESCENT ORANGE AND WHITE PRISMATIC RETRO REFLECTIVE SHEETING.
7. THE CONTRACTOR, WITH THE ENGINEER, SHALL INVENTORY ALL SIGNS ON ALL ROADS SUBJECT TO IMPROVEMENTS. NECESSARY SIGNS SHALL BE MAINTAINED IN OPERATION DURING CONSTRUCTION AND ANY OTHER SIGNS SHALL BE PROPERLY STORED WITH THE CONTRACTOR, WHO SHALL BE RESPONSIBLE FOR LOSS OR DAMAGE. IMMEDIATELY PRIOR TO FINAL INSPECTION, THE CONTRACTOR AND ENGINEER SHALL AGAIN INVENTORY THE TRAFFIC SIGNS AND ACCOUNT FOR ANY LOST OR DAMAGED SIGNS.
8. THE SET UP OF TRAFFIC CONES SHALL BE INCIDENTAL TO THE ITEMS THAT THEY PROTECT. ALL FLAGGERS, WARNING SIGNS AND TRUCK MOUNTED ATTENUATORS SHALL BE PAID SEPARATELY.
9. 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 CASE 16 OF THE DELAWARE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR TO THE SATISFACTION OF THE ENGINEER AND SHALL BE ADA COMPLIANT. THE COST FOR ANY PROVISIONS SHALL BE INCIDENTAL TO THE WORK.
10. WHEN SIDE ROADS INTERSECT THE WORK ZONE, ADDITIONAL TRAFFIC CONTROL DEVICES SHALL BE ERECTED INCLUDING PERMANENT AND TEMPORARY WARNING SIGNS.
11. ALL ROADWAY EXCAVATION IN OR ADJACENT TO TRAVELWAYS SHALL BE PROPERLY BACKFILLED AT THE END OF EACH DAY PRIOR TO TRAFFIC RETURNING TO UNRESTRICTED TRAVEL PER SECTION 6G.21 OF THE TRAFFIC CONTROL MANUAL. THIS INCLUDES ALL UTILITIES AND/OR OBSTACLES WITHIN OR ADJACENT TO THE TRAVELWAYS AS OUTLINED IN THE TRAFFIC CONTROL MANUAL.

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OPEN END REPAIR NOTES

1. NO UTILITY RELOCATION INVOLVEMENT IS ANTICIPATED. SHOULD ANY CONFLICTS BE ENCOUNTERED DURING CONSTRUCTION REQUIRING ADJUSTMENT AND/OR RELOCATION OF THE AGENCIES' EXISTING FACILITIES, THE NECESSARY RELOCATION WORK SHALL BE ACCOMPLISHED BY THE RESPECTIVE AGENCIES' FORCES, AS DIRECTED BY THE DISTRICT ENGINEER. ANY ADJUSTMENTS AND/OR RELOCATIONS OF MUNICIPALLY OWNED FACILITIES SHALL BE DONE BY THE STATE'S CONTRACTOR IN ACCORDANCE WITH THE RESPECTIVE AGENCIES' STANDARD SPECIFICATIONS AS DIRECTED BY THE DISTRICT ENGINEER.
2. IT IS ANTICIPATED THAT ALL WORK WILL OCCUR WITHIN DELDOT'S EXISTING RIGHT OF WAY OR EASEMENT AREAS. SHOULD THE NEED OCCUR TO TRESPASS ONTO PRIVATE PROPERTY; IT WILL BE THE RESPONSIBILITY OF THE PROJECT MANAGER TO SECURE SUCH TRESPASS NEEDS.
3. IT IS ANTICIPATED THAT ALL WORK WILL OCCUR WITHIN DELDOT'S RIGHT OF WAY. SHOULD THE NEED OCCUR TO TRESPASS ONTO RAILROAD PROPERTY, INCLUDING THE HIGHWAY-RAIL CROSSING; IT WILL BE THE RESPONSIBILITY OF THE PROJECT MANAGER TO CONTACT THE RAILROAD CHIEF ENGINEER AND OBTAIN WRITTEN AUTHORIZATION BEFORE ENTERING.
4. THE PROJECT MANAGER SHALL BE RESPONSIBLE FOR COORDINATING WITH THE TRAFFIC SECTION RELATING TO ANY IMPACTS TO TRAFFIC SECTION FACILITIES (INCLUDING BUT NOT LIMITED TO TRAFFIC LOOPS, JUNCTION WELLS ETC.) AT LEAST 4 WEEKS IN ADVANCE OF THE START OF THE ACTIVITY. PRIOR TO INITIATING ANY WORK ON THIS CONTRACT (OR SITES), THE PROJECT MANAGER SHALL BE RESPONSIBLE FOR PREPARING AND SUBMITTING FOR APPROVAL OF THE SAFETY SECTION, A MAINTENANCE OF TRAFFIC PLAN. SUFFICIENT TIME SHALL BE PROVIDED FOR THE REVIEW AND APPROVAL OF THE PLAN. THE MAINTENANCE OF TRAFFIC PLAN SHALL INCLUDE PROPOSED TIME RESTRICTIONS ON THE CLOSURE OF TRAVEL LANES SUBJECT TO THE APPROVAL OF THE SAFETY SECTION.
5. THE PROJECT MANAGER IS RESPONSIBLE FOR ENSURING ANY REQUIRED DOCUMENTS AND ANALYSIS AS PART OF THE ADOPTED WORK ZONE SAFETY AND MOBILITY PROCEDURES AND GUIDELINES HAS BEEN COMPLETED PRIOR TO ANY WORK STARTING ON THIS CONTRACT.
6. FOR THE PURPOSE OF THE REPAIR PORTION OF THE CONTRACT, THE REPLACEMENT GUARDRAIL TYPE AND LOCATION SHALL BE IDENTICAL TO THE DAMAGED GUARDRAIL, EXCEPT IN THE INSTANCES WHEN AN UPGRADE TO THE CURRENT STANDARD OF GUARDRAIL IS DEEMED NECESSARY, OR WHEN OTHERWISE DIRECTED BY THE ENGINEER.
7. BACKFILL OF HOLES CREATED BY POST REMOVAL, IN COMPACTED LIFTS, PROVIDING AND INSTALLING RAIL BACKUP PLATES, BOLTS, NUTS, AND WASHERS, PROVIDING AND SETTING UP TRAFFIC CONES AND/OR PATTERNS ARE INCIDENTAL TO THE BID ITEMS. COST FOR EXCAVATING AND DISPOSING OF UP TO ONE (1) CUBIC YARD OF MATERIAL AND/OR GRADING (UP TO A 6" DEPTH) TO MEET THE MANUFACTURER'S SLOPE REQUIREMENTS IS INCIDENTAL TO THE UNIT PRICE BID FOR *ITEMS 720585, 720586, OR 720588.*

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OPEN END REPAIR NOTES cont.

8. WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL BE GENERATED THROUGH JOB-ORDERS ISSUED TO THE CONTRACTOR BY THE DEPARTMENT'S SOUTH DISTRICT. UP TO SIX (6) WORK-ORDERS WILL BE ISSUED AT ONE TIME, AS A GROUP TO COMPOSE A JOB ORDER, TO ALLOW FOR THE MOST EFFICIENT ALLOCATION OF THE CONTRACTORS WORK FORCE.
9. A SINGLE MOBILIZATION WILL BE PAID PER JOB ORDER. FOR EXAMPLE, IF A JOB ORDER IS ISSUED THAT INCLUDES 3 DIFFERENT WORK ORDERS / LOCATIONS, ONE MOBILIZATION WILL BE PAID, NOT THREE.
10. EXECUTION OF EACH WORK-ORDER GROUP IS TO BEGIN WITHIN FIVE (5) DAYS OF ITS BEING ISSUED TO THE CONTRACTOR, UNLESS REQUIRED MATERIALS ARE NOT AVAILABLE, AND WORK SHALL BE COMPLETED WITHIN FIVE (5) WORKING DAYS. FOR EXAMPLE, WORK ASSOCIATED WITH A WORK-ORDER GROUP ISSUED ON A MONDAY SHALL BEGIN THE FOLLOWING MONDAY AND BE COMPLETED BY THE END OF THAT FRIDAY. NON-AVAILABILITY OF MATERIAL SHALL BE VERIFIED BY AT LEAST THREE (3) DIFFERENT SOURCES, WITH THE VERIFICATION FORMALLY PRESENTED IN WRITING BY THE CONTRACTOR TO THE DEPARTMENT WITHIN FIVE (5) WORKING DAYS. CONTRACTOR SHALL PRESENT SHIPPING TICKETS, WHICH UPON VERIFICATION, BY THE DISTRICT, WILL ESTABLISH THE DATE OF MATERIAL AVAILABILITY FOR *ITEMS 720588, 720585, AND 720586*, AND FOR ANY OTHER PREVIOUSLY UNAVAILABLE ITEMS.
11. IF WORK DOES NOT COMMENCE, OR NON-AVAILABILITY OF MATERIALS IS NOT PRESENTED, IN WRITING, WITHIN THE SPECIFIED FIVE (5) WORKING DAYS, TIME CHARGES EQUAL TO LIQUIDATED DAMAGES FOR THE WORK-ORDER GROUP SHALL COMMENCE. IF THERE IS A VERIFIED NON-AVAILABILITY OF MATERIALS, TIME CHARGES SHALL COMMENCE ON THE FIFTH (5TH) WORKING DAY FOLLOWING THE DELIVERY DATE.
12. THE DEPARTMENT WILL ATTEMPT TO ASSIGN JOB-ORDERS IN A MANNER THAT WILL KEEP THE DISTANCE BETWEEN WORK ORDER LOCATIONS TO A MINIMUM AND IN LOGICAL SEQUENCE.
13. FAILURE TO COMPLETE A WORK GROUP IN THE SPECIFIED TIME SHALL CONSTITUTE "FAILURE TO PURSUE THE WORK" AND SUBJECTS THE CONTRACTOR TO LIQUIDATED DAMAGES AS OUTLINED IN SUBSECTION 108.08 OF THE STANDARD SPECIFICATIONS. EACH WORK-ORDER GROUP IS TO BE COMPLETED WITHIN FIVE (5) WORKING DAYS. ADDITIONAL ITEMS AND/OR WORKING DAYS MAY BE ADDED TO ANY WORK-ORDER AS NEEDED, AT THE DISCRETION OF THE ENGINEER. IF WORK ON A SPECIFIC WORK-ORDER GROUP IS NOT COMPLETED WITHIN THE ALLOTTED TIME, LIQUIDATED DAMAGES WILL BE ASSESSED IN ACCORDANCE WITH SUBSECTION 108.09 BASED ON THE TOTAL VALUE OF THAT WORK-ORDER GROUP.
14. A SEMI-FINAL INSPECTION WILL BE PERFORMED ON EACH WORK-ORDER GROUP AFTER THE DEPARTMENT RECEIVES COPIES OF THE COMPLETED WORK-ORDERS FROM THE CONTRACTOR. ALL WORK MUST MEET THE DEPARTMENT'S SPECIFICATIONS, THE REQUIREMENTS AS OUTLINED IN THIS CONTRACT, AND THE MANUFACTURER'S SPECIFICATIONS PERTAINING TO GUARDRAIL END TREATMENTS (WHEN APPLICABLE) BEFORE THEY CAN BE CONSIDERED COMPLETE. IF ALL THE WORK-ORDERS ARE SATISFACTORILY COMPLETED, THE WORK WILL BE ACCEPTED BY THE DEPARTMENT, AT WHICH TIME THAT WORK-ORDER GROUP WILL BE CONSIDERED CLOSED. UPON CLOSURE, THE DEPARTMENT WILL PROCESS THE CONTRACTOR'S INVOICES FOR THE SPECIFIC WORK-ORDERS IN THAT GROUP.

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REPAIR TYPES

GUARDRAIL END TREATMENT ATTENUATOR, TYPE I (ET-2000, ET-2000 PLUS OR COMPARABLE BRAND)

LEVEL I REPAIR

A LEVEL I REPAIR FOR THE ET-2000 IMPACT ATTENUATOR SHALL BE USED WHEN THE ATTENUATOR IS DAMAGED UP TO, BUT NOT INCLUDING POST THREE.

THE FOLLOWING ITEMS SHALL BE REUSED OR REPLACED AT THE DISCRETION OF THE ENGINEER:

A LEVEL I REPAIR SHALL CONSIST OF THE FOLLOWING:

PC 985 A	GUARDRAIL EXTRUDER	(REUSE)
PC 782 G	BEARING PLATE	(REUSE)
PC 3000 G	ASSEMBLY CABLE	(REUSE)
PC 9852 A	STRUT	(REUSE)
PC 704 A	CABLE ANCHOR	(REUSE)
PC 62 G	DEEP BEAM GUARDRAIL	(REPLACE)
PC 4147 B	WOOD POST	(REPLACE)

ALL BOLTS, WASHERS AND NUTS SHALL BE INCIDENTAL TO REPAIR.

LEVEL II REPAIR

A LEVEL II REPAIR FOR THE ET-2000 IMPACT ATTENUATOR SHALL BE USED WHEN THE ATTENUATOR IS DAMAGED UP TO BUT NOT INCLUDING POST FIVE THE FOLLOWING ITEMS SHALL BE REPLACED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ALL ITEMS SPECIFIED IN LEVEL I REPAIR PLUS THE FOLLOWING:

PC 4075 B	WOOD BLOCK	(REPLACE)
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ALL BOLTS, WASHERS AND NUTS SHALL BE INCIDENTAL TO REPAIR.

LEVEL III REPAIR

A LEVEL III REPAIR FOR THIS UNIT SHALL BE A COMPLETE REPLACEMENT OF THE DAMAGED UNIT, WHICH SHALL INCLUDE PARTS AND LABOR TO BRING UNIT UP TO STANDARD.

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GUARDRAIL END TREATMENT ATTENUATOR TYPE II (SRT-350, 6 & 8 POST OR COMPARABLE BRAND)

LEVEL I REPAIR

A LEVEL I REPAIR FOR IMPACT ATTENUATOR TYPE II – SRT-350 (BOTH 6 AND 8 POST) SHALL BE USED WHEN THE ATTENUATOR IS DAMAGED TO BUT NOT PAST THE SECOND POST, THE FOLLOWING ITEM SHALL BE REPLACED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PC 923 G	12/BARRIER/98' (TERMINAL)
PC 9852 A	STRUT ASSEMBLY
PC 3000 G	3/4 X 6'6" CABLE
PC 700 A	CABLE ANCHOR BRACKET
PC 36	BACK UP PLATE
PC 4147 B	3'9" POST 5 1/2" X 7 1/2"
PC 775 G	5/8" X 6" X 8" BEARING PLATE
PC 705 G	2"OD X 5 1/2" PIPE
PC 34 G	12/12'6/5 SRT 1 (GUARDRAIL)

ALL BOLTS, WASHERS AND NUTS SHALL BE INCIDENTAL TO REPAIR.

LEVEL II REPAIR

A LEVEL II REPAIR FOR IMPACT ATTENUATOR TYPE II – SRT-350 (BOTH 6 AND 8 POST) SHALL BE USED WHEN THE ATTENUATOR IS DAMAGED TO BUT NOT PAST THE THIRD POST, THE FOLLOWING ITEM SHALL BE REPLACED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

PC 4147 B	3'9" POST 5 1/2" X 7 1/2"
PC 4063 B	6'0" POST 6" X 8"
PC 4075 B	14" BLOCK 6" X 8"
PC 3 G	12' X 12" BACK UP PLATE
P 34 G	12/12'6/5 SRT 1 GUARDRAIL

ALL BOLTS, WASHERS AND NUTS SHALL BE INCIDENTAL TO REPAIR.

NOTE: IF DAMAGE TO 5' TUBE SLEEVE (PC 7366) OCCURS THIS WILL BE CONSIDERED A LEVEL II REPAIR, SOIL PLATE (PC 7666) MAY ALSO NEED TO BE REPLACED.

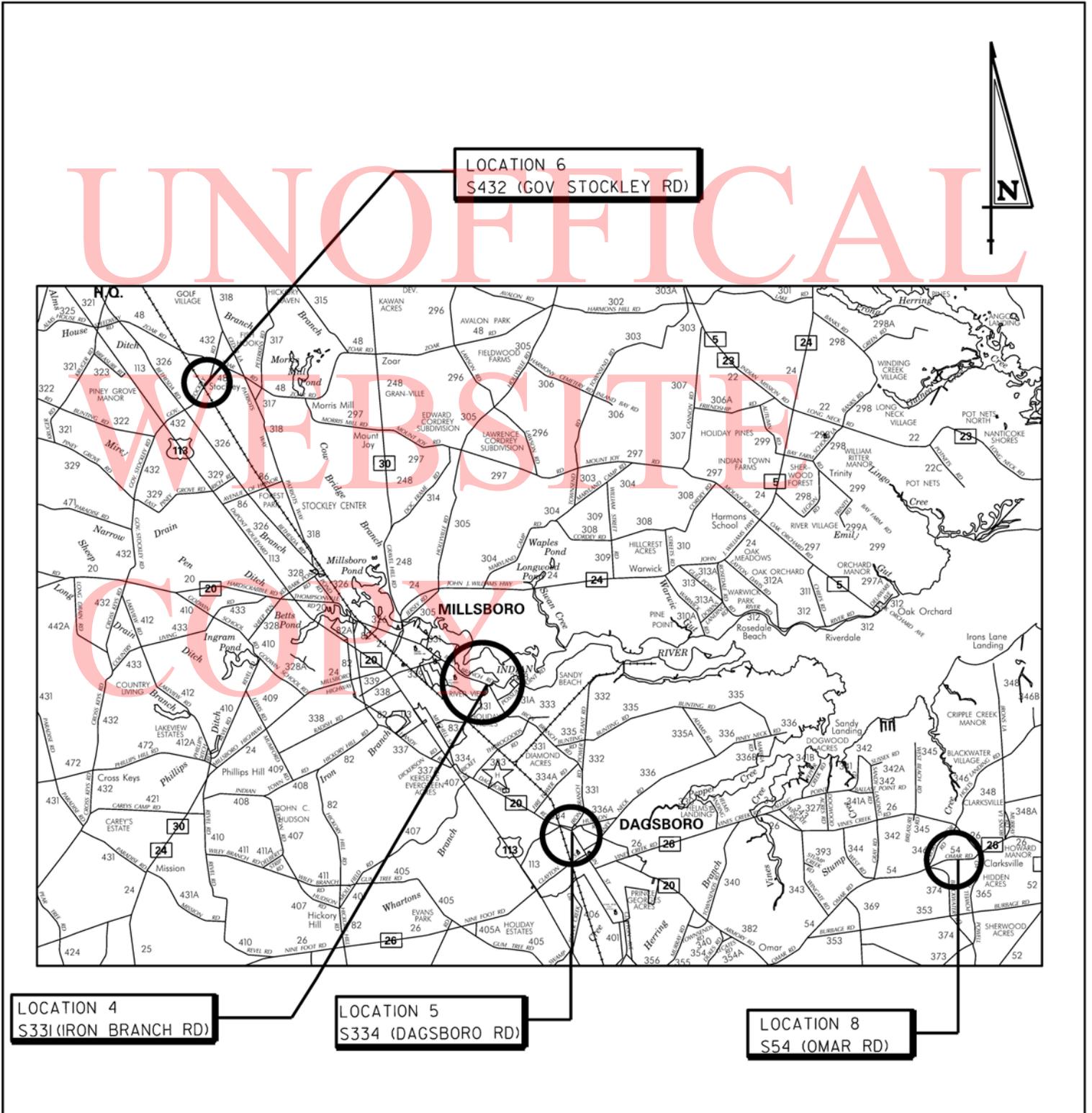
LEVEL III REPAIR

A LEVEL III REPAIR FOR THIS UNIT SHALL BE A COMPLETE REPLACEMENT OF THE DAMAGED UNIT, WHICH SHALL INCLUDE PARTS AND LABOR TO BRING UNIT UP TO STANDARD.

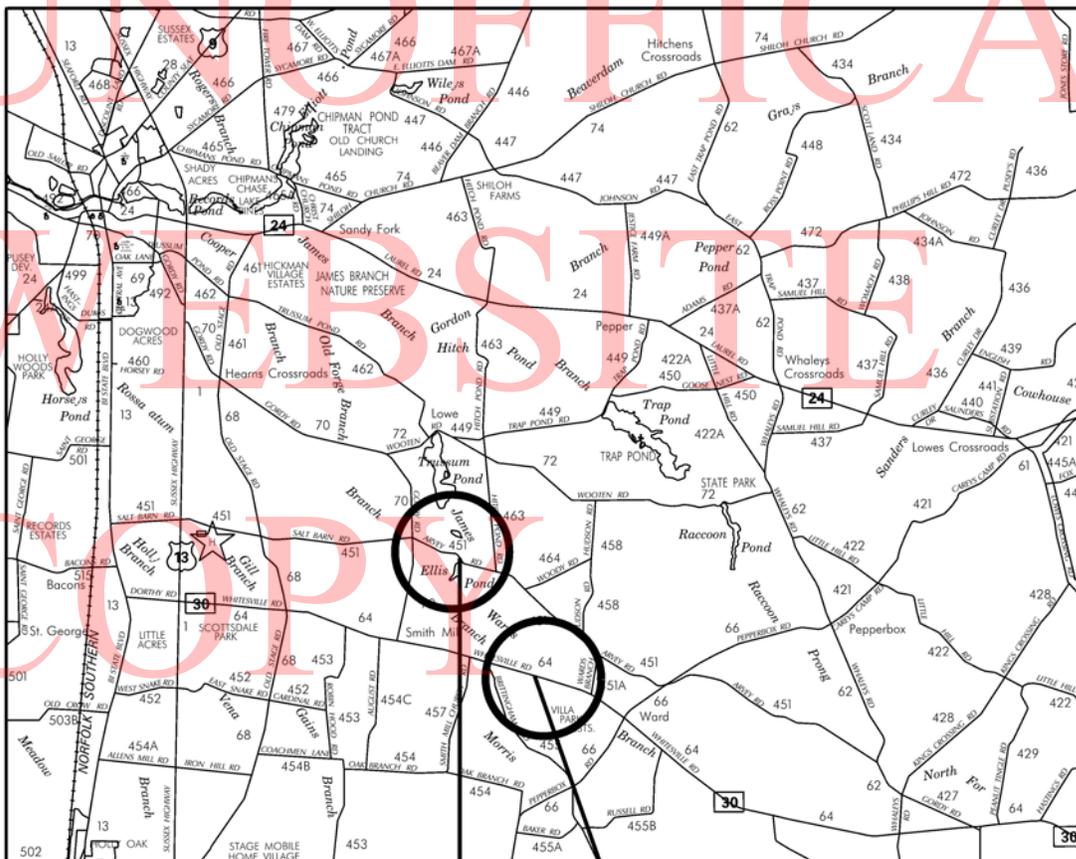
LOCATION MAP
LOCATION 3



LOCATION MAP
LOCATIONS 4, 5, 6 & 8



LOCATION MAP
LOCATIONS 7 & 10



LOCATION 7
S45I (ARVEY RD)

LOCATION 10
S64 (WHITESVILLE RD)

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201287901

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SOUTH
MAINTENANCE

GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012

LOCATION 1 (VARIOUS LOCATIONS THROUGHOUT SUSSEX COUNTY) FROM TO

LENGTH

GENERAL IMPROVEMENTS

REPAIR DAMAGED GUARDRAIL ON AN AS NEEDED BASIS

COMMENTS:

MATERIAL ESTIMATE FOR LOCATION 1

211002	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (GUARDRAIL)	500.00 L.F.
720005	STEEL RAIL ELEMENT, STRAIGHT	200.00 L.F.
720007	GALVANIZED STEEL POSTS	30.00 EACH
720010	TREATED WOOD BLOCK	30.00 EACH
720041	REFLECTORIZED WASHERS	50.00 EACH
720043	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-27	200.00 L.F.
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	2.00 EACH
720586	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 2-31	2.00 EACH
720591	END ANCHORAGE REPAIR	1.00 L.S.
720595	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1, LEVEL I REPAIR	2.00 EACH
720596	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1, LEVEL II REPAIR	2.00 EACH
720597	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 2, LEVEL I REPAIR	2.00 EACH
720598	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 2, LEVEL II REPAIR	2.00 EACH
720603	REMOVE AND RESET GALVANIZED STEEL POST AND OFFSET BLOCK	50.00 EACH
725503	GUARDRAIL TO BARRIER CONNECTION (APPROACH TYPE) REPAIR	1.00 L.S.
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	16.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	85.00 HOUR
743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	15.00 HOUR
743525	TEMPORARY WARNING SIGNS	60.00 EA-DY
763615	JOB ORDER MOBILIZATION, SOUTH DISTRICT	3.00 EACH

** DENOTES FIXED PRICE ITEM

CONTRACT T201287901

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SOUTH
MAINTENANCE

GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012

LOCATION 2

211(MCCOY STREET) FROM S225 (MARSHAL ST) TO MCCOLLEY ST

LENGTH

AADT 2119

GENERAL IMPROVEMENTS

GUARDRAIL SAFETY IMPROVEMENTS

COMMENTS:

Please see attached sheets for comments

MATERIAL ESTIMATE FOR LOCATION 2

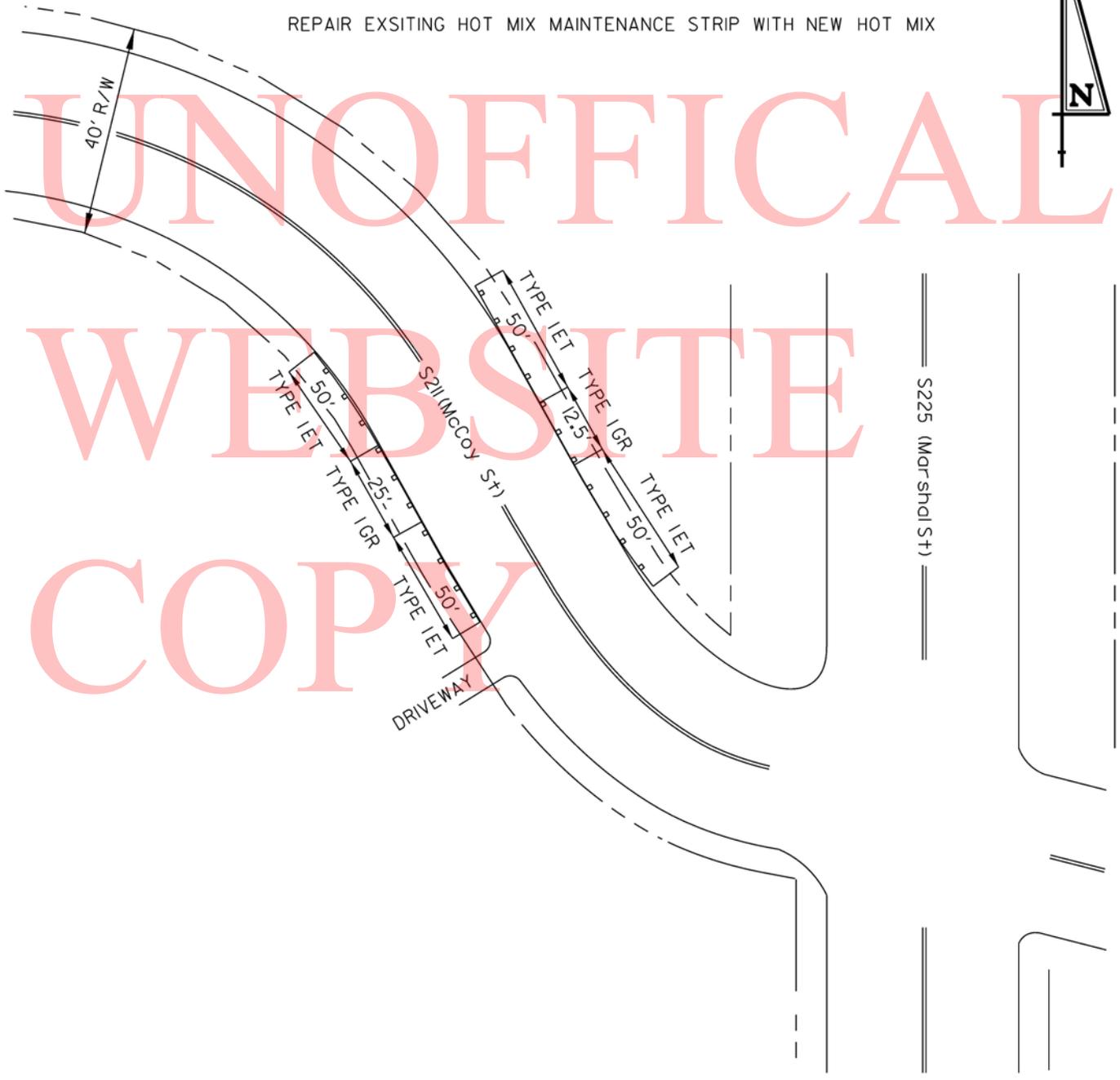
211002	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (GUARDRAIL)	237.50 L.F.
302005	GRADED AGGREGATE BASE COURSE, TYPE B	4.00 TON
401800	WMA, SUPERPAVE, TYPE C, 115 GYRATIONS, PG 64-22 (CARBONATE STONE)	5.00 TON
720050	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	37.50 L.F.
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	4.00 EACH
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	2.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	34.00 HOUR
743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	6.00 HOUR
743525	TEMPORARY WARNING SIGNS	32.00 EA-DY

** DENOTES FIXED PRICE ITEM

LOCATION 2 - S211 (MCCOY ST)
FROM: S225 (MARSHAL ST) TO: MCCOLLEY ST
BRIDGE 3-935

REMOVE 237.5' GUARDRAIL AND PLACE NEW GALV.
STEEL BEAM GUARDRAIL PER DRAWING

REPAIR EXSITING HOT MIX MAINTENANCE STRIP WITH NEW HOT MIX



•NOT TO SCALE•

LOCATION 3

267(PILOTTOWN ROAD) FROM RODNEY AVE TO END OF ROAD

LENGTH

AADT 1713

GENERAL IMPROVEMENTS

GUARDRAIL SAFETY IMPROVEMENTS

COMMENTS:

Please see attached sheets for comments

MATERIAL ESTIMATE FOR LOCATION 3

202000	EXCAVATION AND EMBANKMENT	2.00 C.Y.
211002	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (GUARDRAIL)	437.50 L.F.
302005	GRADED AGGREGATE BASE COURSE, TYPE B	5.00 TON
401800	WMA, SUPERPAVE, TYPE C, 115 GYRATIONS, PG 64-22 (CARBONATE STONE)	5.00 TON
720050	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	168.75 L.F.
720055	CURVED GUARDRAIL SECTION	37.50 L.F.
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	3.00 EACH
725002	GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1-31	4.00 EACH
726001	END ANCHORAGE 31	1.00 EACH
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	2.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	34.00 HOUR
743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	6.00 HOUR
743525	TEMPORARY WARNING SIGNS	16.00 EA-DY

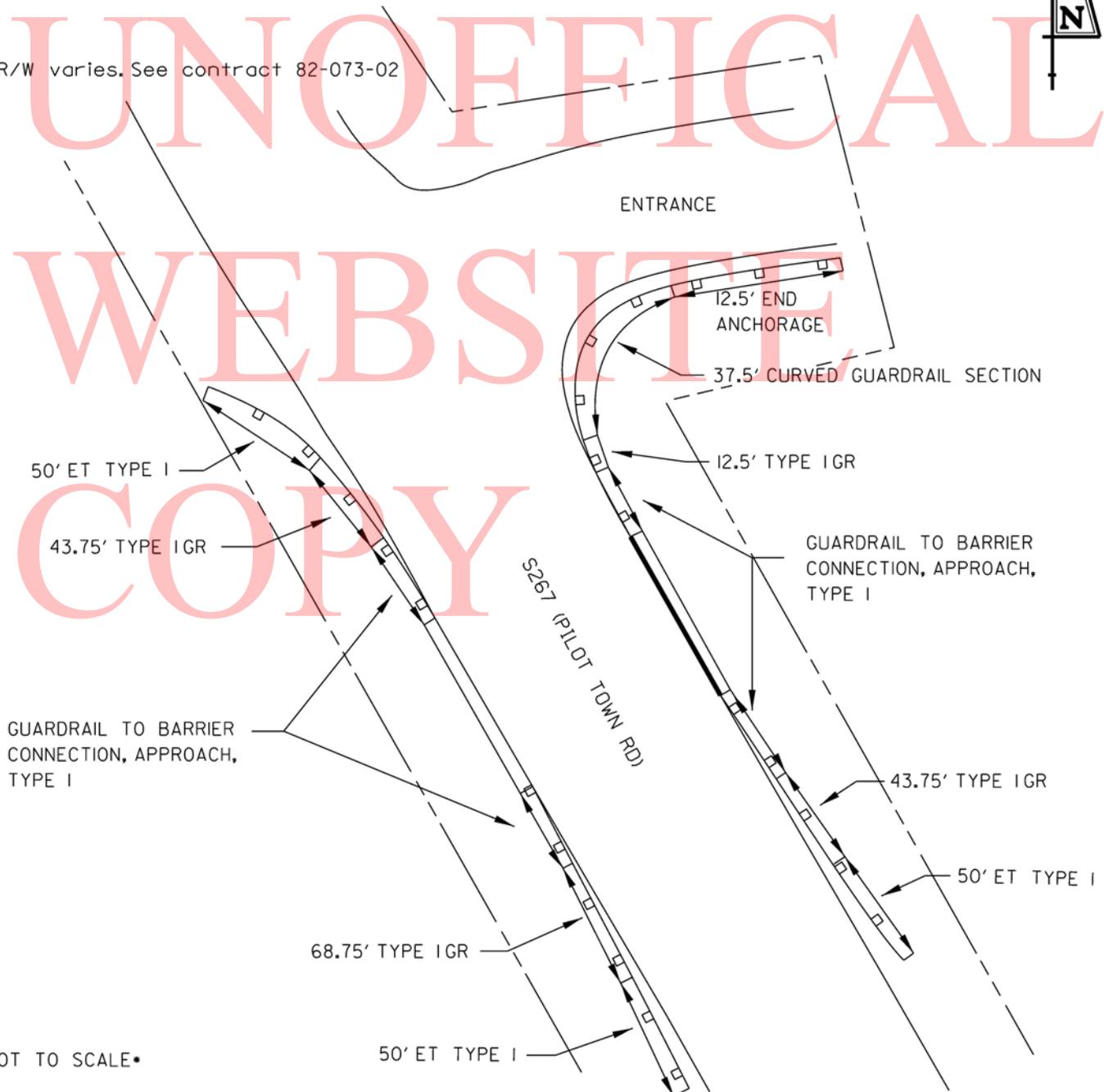
** DENOTES FIXED PRICE ITEM

LOCATION 3 - S267 (PILOTTOWN RD)
FROM: RODNEY RD TO: END OF ROAD
BRIDGE 3-715

REMOVE 437.5' GUARDRAIL AND PLACE NEW GALV. STEEL BEAM GUARDRAIL PER DRAWING.
PLACE 2" WMA 4' WIDE OVER 4" GABC MAINTENANCE STRIP BENEATH 25' OF ADDITIONAL GUARDRAIL.
REMAINDER OF MAINTENANCE STRIP SHALL BE REPAIRED AS NEEDED WITH WMA.
EXTEND GUARDRAIL 25' ON THE SOUTH WEST SIDE OF BRIDGE APPROACH AS SHOWN.



R/W varies. See contract 82-073-02



•NOT TO SCALE•

CONTRACT T201287901

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SOUTH
MAINTENANCE

GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012

LOCATION 4 331(IRON BRANCH ROAD) FROM S333 (THOROGOOD RD) TO S339 (OLD LANDING RD)

LENGTH

GENERAL IMPROVEMENTS

GUARDRAIL SAFETY IMPROVEMENTS

COMMENTS:

Please see attached sheets for comments

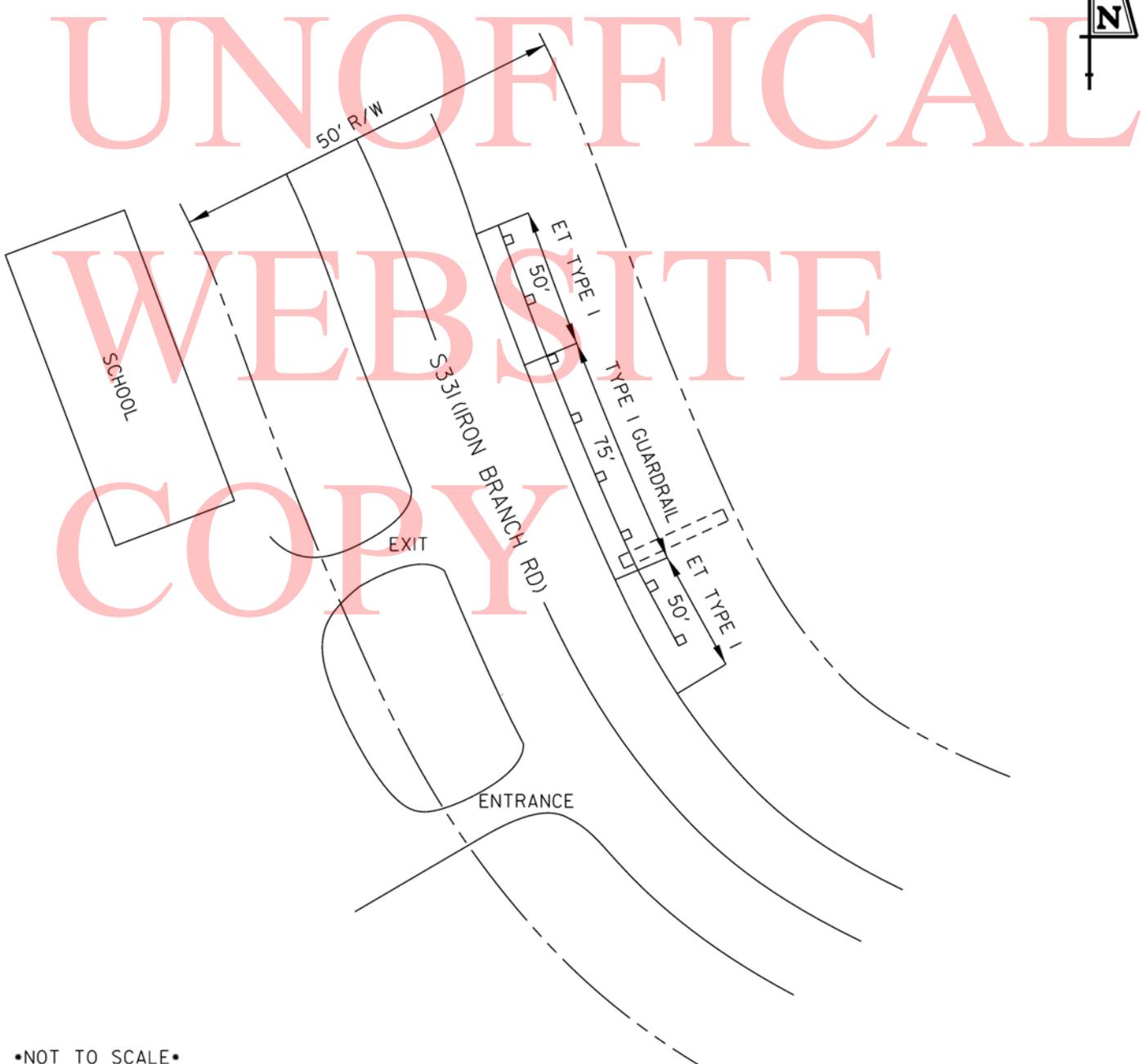
MATERIAL ESTIMATE FOR LOCATION 4

202000	EXCAVATION AND EMBANKMENT	15.00 C.Y.
302005	GRADED AGGREGATE BASE COURSE, TYPE B	25.00 TON
401800	WMA, SUPERPAVE, TYPE C, 115 GYRATIONS, PG 64-22 (CARBONATE STONE)	12.00 TON
720050	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	75.00 L.F.
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	2.00 EACH
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	1.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	17.00 HOUR
743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	3.00 HOUR
743525	TEMPORARY WARNING SIGNS	8.00 EA-DY

** DENOTES FIXED PRICE ITEM

LOCATION 4 - S331 (IRON BRANCH RD)
FROM: S333 (THOROGOODS RD) TO: S339 (OLD LANDING RD)

PLACE 175' OF NEW GUARDRAIL ACROSS FROM EXIT OF SCHOOL PARKING LOT.
EXCAVATE 6" DEPTH AND PLACE 2" WMA OVER 4" GABC, BENEATH NEW GUARDRAIL.
MAINTENANCE STRIP SHALL START AT ROAD EDGE TO 6" BEHIND POSTS AND
EXTEND 10' BEYOND GUARDRAIL ON ALL SIDES.



•NOT TO SCALE•

CONTRACT T201287901

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SOUTH
MAINTENANCE

GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012

LOCATION 5

334(DAGSBORO RD) FROM S336 (PINEY NECK RD) TO S331 (IRON BRANCH RD)

LENGTH

AADT 17956

GENERAL IMPROVEMENTS

GUARDRAIL SAFETY IMPROVEMENTS

COMMENTS:

Please see attached sheets for comments

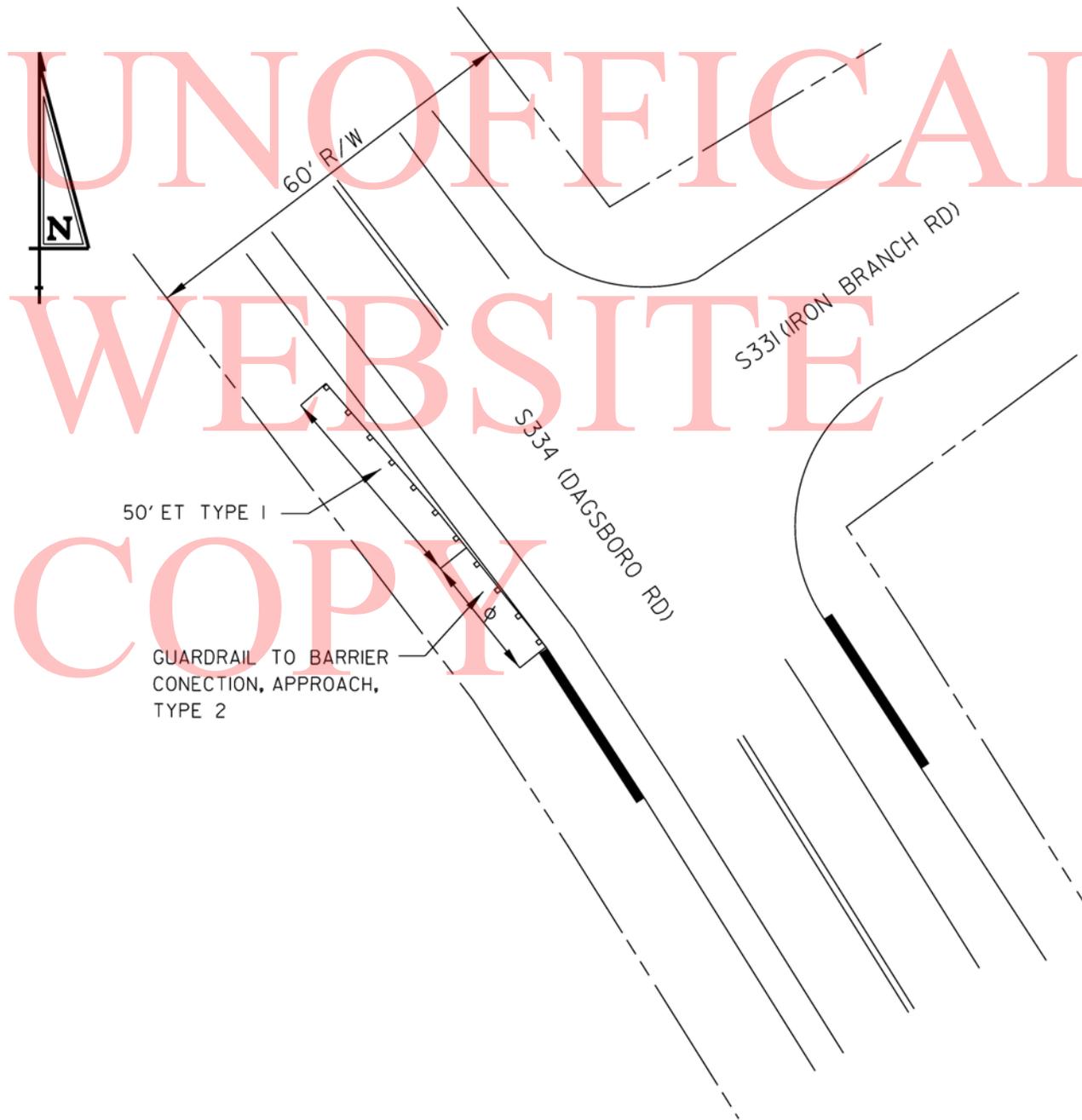
MATERIAL ESTIMATE FOR LOCATION 5

202000	EXCAVATION AND EMBANKMENT	8.00 C.Y.
302005	GRADED AGGREGATE BASE COURSE, TYPE B	12.00 TON
401800	WMA, SUPERPAVE, TYPE C, 115 GYRATIONS, PG 64-22 (CARBONATE STONE)	6.00 TON
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	1.00 EACH
725003	GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 2-31	1.00 EACH
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	1.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	17.00 HOUR
743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	3.00 HOUR
743525	TEMPORARY WARNING SIGNS	16.00 EA-DY

** DENOTES FIXED PRICE ITEM

LOCATION 5 - S334 (DAGSBORO RD)
FROM: S336 (PINEY NECK RD) TO: S331 (IRON BRANCH RD)
BRIDGE 3-522

PLACE 75' NEW GUARDRAIL ON NORTHWEST BRIDGE APPROACH.
EXCAVATE 6" DEPTH AND PLACE 2" WMA OVER 4" GABC, BENEATH NEW GUARDRAIL.
MAINTENANCE STRIP SHALL START AT ROAD EDGE TO 6" BEHIND POSTS AND
EXTEND 10' BEYOND GUARDRAIL ON ALL SIDES.



•NOT TO SCALE•

CONTRACT T201287901

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SOUTH
MAINTENANCE

GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012

LOCATION 6

432(GOV. STOCKLEY ROAD) FROM S326 (BETHESDA RD) TO S48 (ZOAR RD)

LENGTH

AADT 720

GENERAL IMPROVEMENTS

GUARDRAIL SAFETY IMPROVEMENTS

COMMENTS:

Please see attached sheets for comments

MATERIAL ESTIMATE FOR LOCATION 6

202000	EXCAVATION AND EMBANKMENT	35.00 C.Y.
302005	GRADED AGGREGATE BASE COURSE, TYPE B	55.00 TON
401800	WMA, SUPERPAVE, TYPE C, 115 GYRATIONS, PG 64-22 (CARBONATE STONE)	24.00 TON
720050	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	100.00 L.F.
720054	GUARDRAIL OVER CULVERTS, TYPE 2-31	2.00 EACH
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	4.00 EACH
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	2.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	34.00 HOUR
743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	6.00 HOUR
743525	TEMPORARY WARNING SIGNS	16.00 EA-DY

** DENOTES FIXED PRICE ITEM

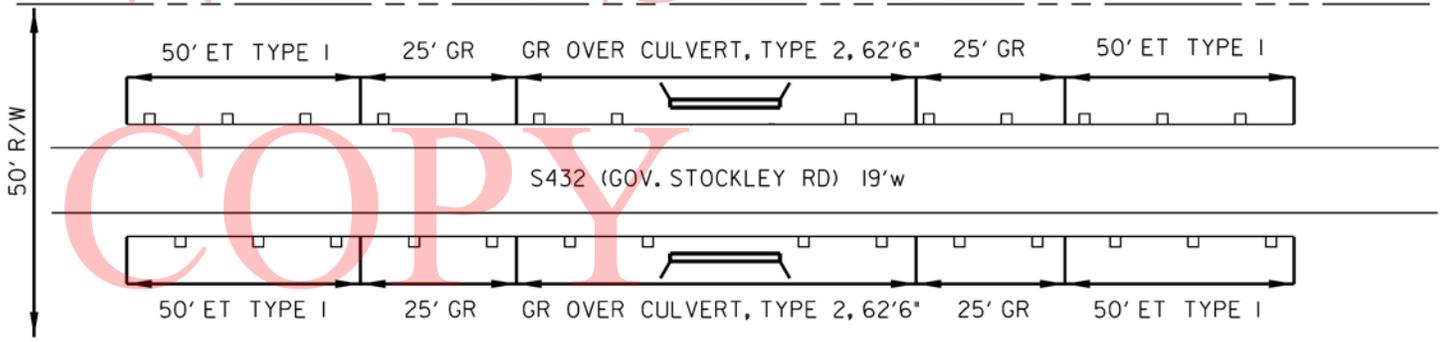
LOCATION 6 - S432 (GOV STOCKLEY RD)
FROM: S326 (BETHESDA RD) TO: S48 (ZOAR RD)
BRIDGE 3-671

PLACE 425' NEW GUARDRAIL AT BRIDGE.

EXCAVATE 6" DEPTH AND PLACE 2" WMA OVER 4" GABC, BENEATH NEW GUARDRAIL.
MAINTENANCE STRIP SHALL START AT ROAD EDGE TO 6" BEHIND POSTS AND
EXTEND 10' BEYOND QUARDRAIL ON ALL SIDES.



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CONTRACT T201287901

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SOUTH
MAINTENANCE

GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012

LOCATION 7

451(ARVEY ROAD) FROM S70 (GORDY RD) TO S463 (HITCH POND RD)

LENGTH

AADT 271

GENERAL IMPROVEMENTS

GUARDRAIL SAFETY IMPROVEMENTS

COMMENTS:

Please see attached sheets for comments

MATERIAL ESTIMATE FOR LOCATION 7

202000	EXCAVATION AND EMBANKMENT	30.00 C.Y.
302005	GRADED AGGREGATE BASE COURSE, TYPE B	50.00 TON
720027	BRIDGE RAIL RETROFIT, TYPE 2	175.00 L.F.
720050	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	150.00 L.F.
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	4.00 EACH
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	2.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	34.00 HOUR
743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	6.00 HOUR
743525	TEMPORARY WARNING SIGNS	16.00 EA-DY

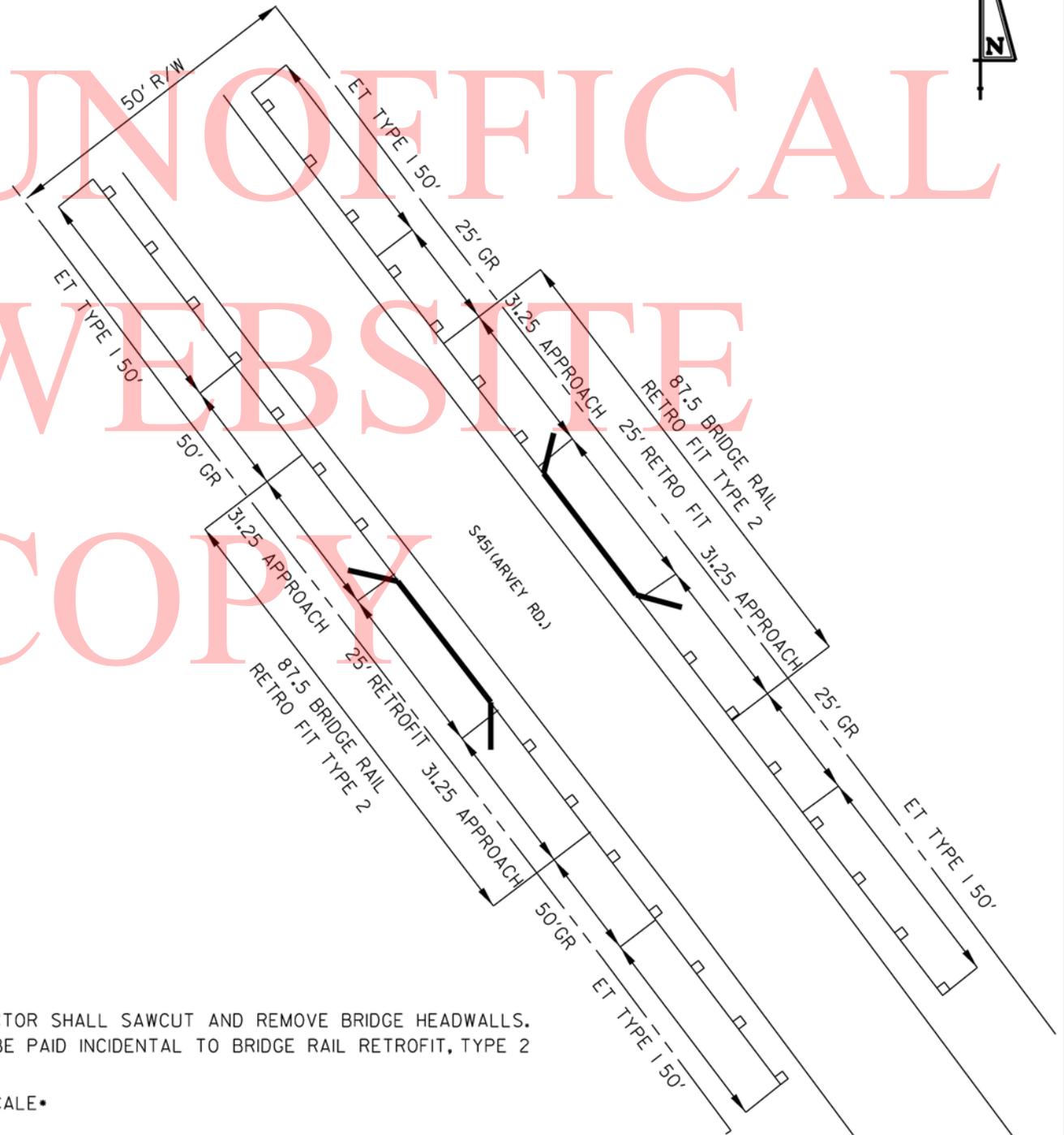
** DENOTES FIXED PRICE ITEM

LOCATION 7 - S45I (ARVEY RD)
FROM: S70 (GORDY RD) TO: S463 (HITCH POND RD)
BRIDGE 3-357

PLACE 525' NEW GUARDRAIL AT BRIDGE.
EXCAVATE 3" DEPTH AND PLACE 3" GABC, BENEATH NEW GUARDRAIL.
MAINTENANCE STRIP SHALL BE A WIDTH OF 4' AND SHALL EXTEND 10' BEYOND GUARDRAIL ON ALL SIDES.



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THE CONTRACTOR SHALL SAWCUT AND REMOVE BRIDGE HEADWALLS.
THIS SHALL BE PAID INCIDENTAL TO BRIDGE RAIL RETROFIT, TYPE 2

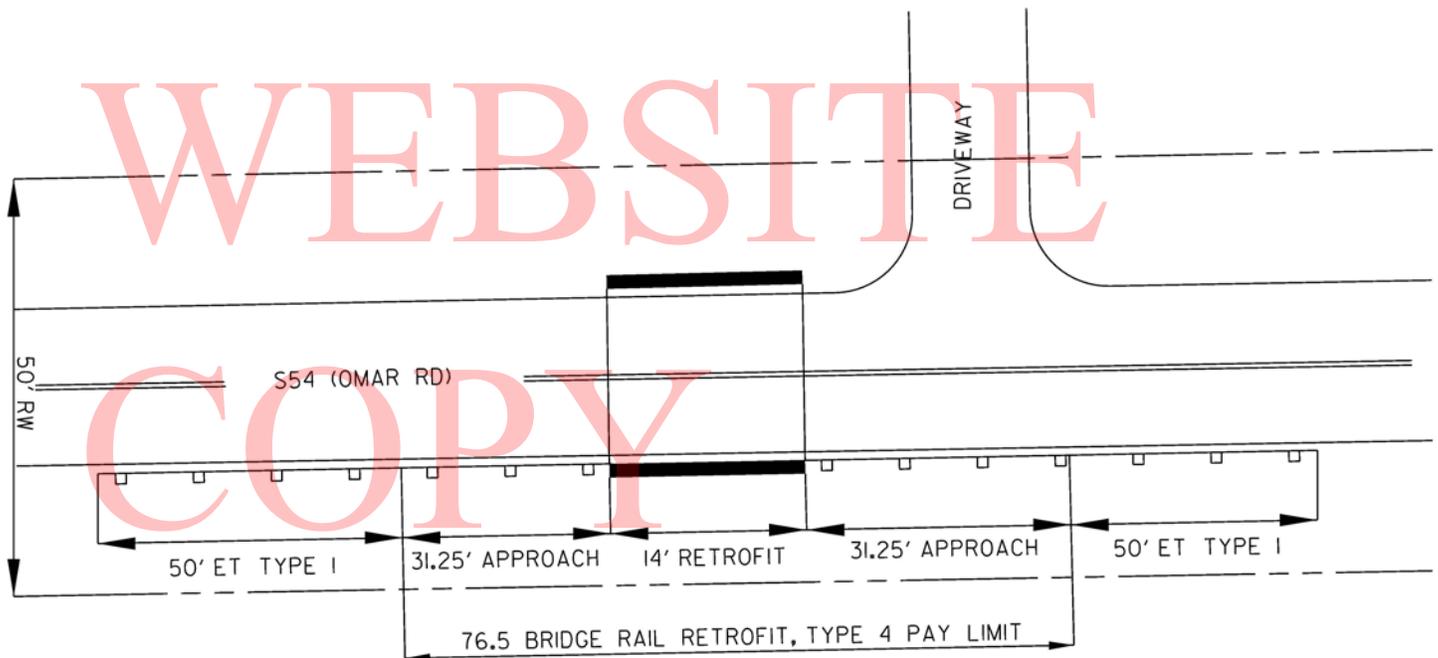
•NOT TO SCALE•

LOCATION 8 - S54 (OMAR RD)
FROM: S346 (HICKORY MANOR RD) TO: S365 (POWELL FARM RD)
BRIDGE 3-447

PLACE 176.5' NEW GUARDRAIL AT SOUTH BRIDGE WALL.

PLACE GUARDRAIL BRIDGE RAIL RETROFIT, TYPE 4 OVER SOUTH BRIDGE WALL.
THIS SHALL BE PAID AS ITEM 720605, BRIDGE RAIL RETROFIT, SPECIAL.

EXCAVATE 6" DEPTH AND PLACE 2" WMA OVER 4" GABC, BENEATH NEW GUARDRAIL.
MAINTENANCE STRIP SHALL START AT ROAD EDGE TO 6" BEHIND POSTS AND
EXTEND 10' BEYOND GUARDRAIL ON ALL SIDES.



•NOT TO SCALE•

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT T201287901

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SOUTH
MAINTENANCE

GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012

LOCATION 9

600(FAWN ROAD) FROM S582 (NEWTON RD) TO S565 (SUNNYSIDE RD)

LENGTH

AADT 802

GENERAL IMPROVEMENTS

GUARDRAIL SAFETY IMPROVEMENTS

COMMENTS:

Please see attached sheets for comments

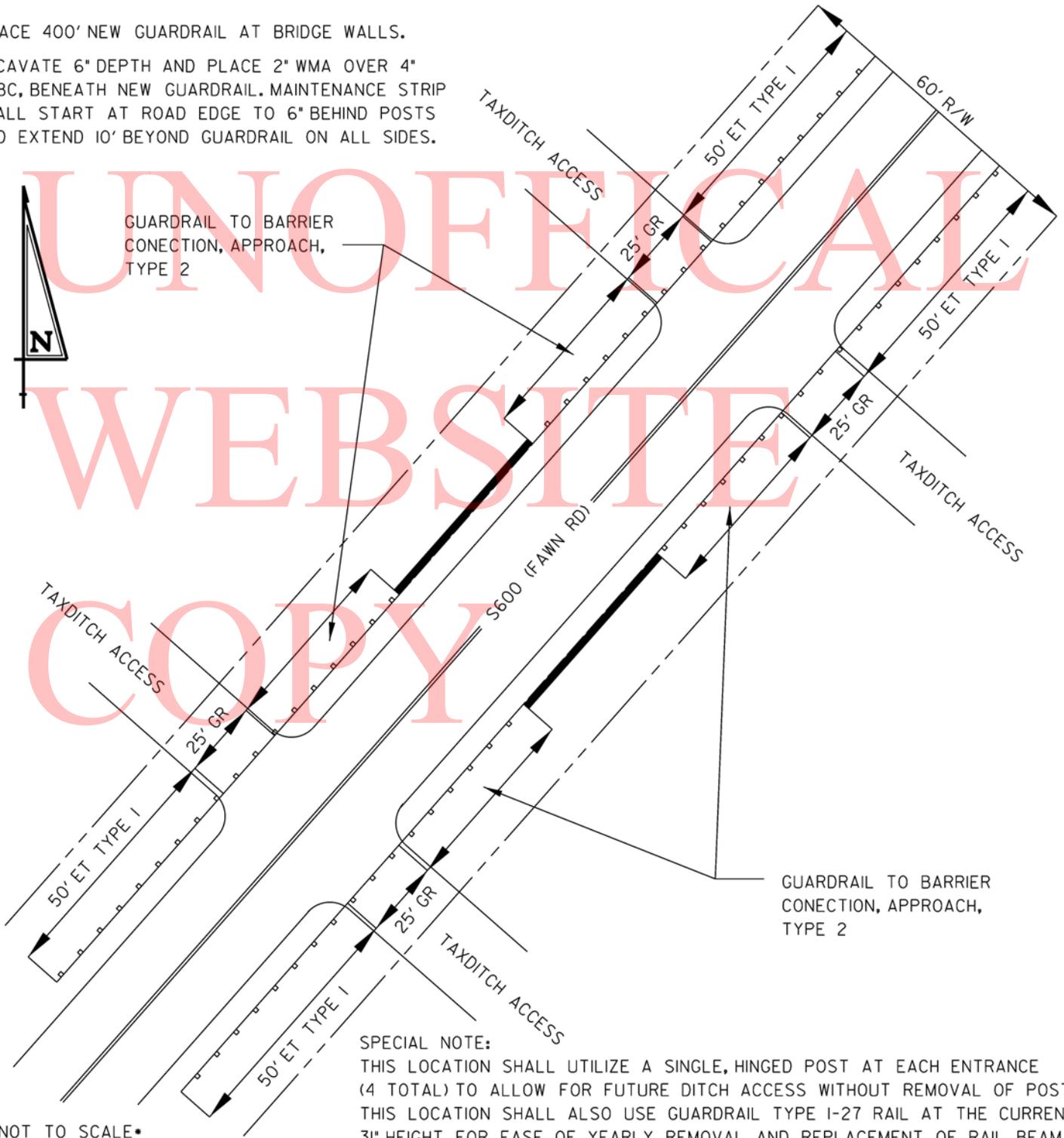
MATERIAL ESTIMATE FOR LOCATION 9

202000	EXCAVATION AND EMBANKMENT	55.00 C.Y.
302005	GRADED AGGREGATE BASE COURSE, TYPE B	80.00 TON
401800	WMA, SUPERPAVE, TYPE C, 115 GYRATIONS, PG 64-22 (CARBONATE STONE)	45.00 TON
720005	STEEL RAIL ELEMENT, STRAIGHT	50.00 L.F.
720050	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	100.00 L.F.
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	4.00 EACH
725003	GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 2-31	4.00 EACH
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	3.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	51.00 HOUR
743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	9.00 HOUR
743525	TEMPORARY WARNING SIGNS	24.00 EA-DY

** DENOTES FIXED PRICE ITEM

LOCATION 9 - S600 (FAWN RD)
FROM: S582 (NEWTON RD) TO: S565 (SUNNYSIDE RD)
BRIDGE 3-13I

PLACE 400' NEW GUARDRAIL AT BRIDGE WALLS.
EXCAVATE 6" DEPTH AND PLACE 2" WMA OVER 4" GABC, BENEATH NEW GUARDRAIL. MAINTENANCE STRIP SHALL START AT ROAD EDGE TO 6" BEHIND POSTS AND EXTEND 10' BEYOND GUARDRAIL ON ALL SIDES.

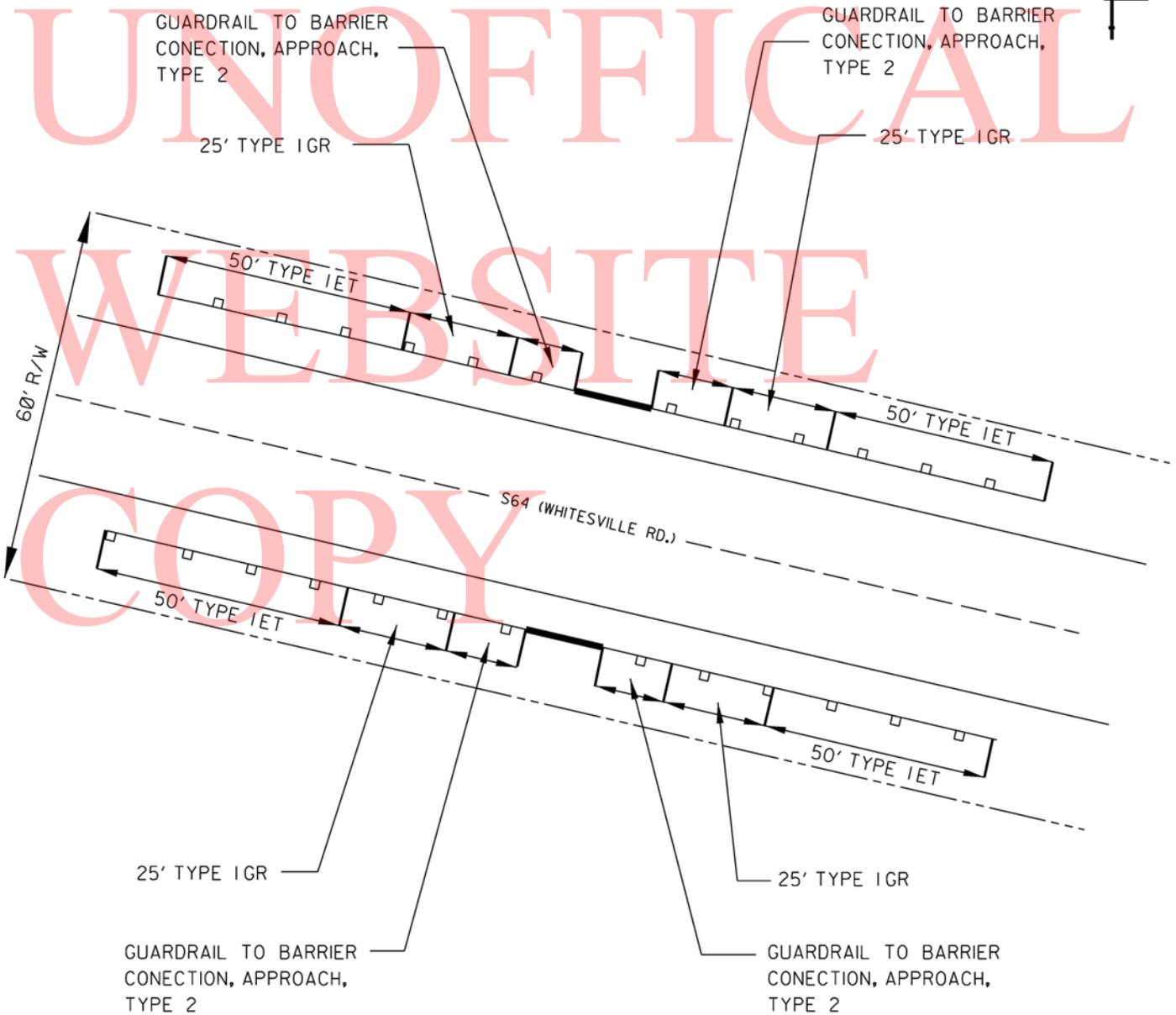


SPECIAL NOTE:
THIS LOCATION SHALL UTILIZE A SINGLE, HINGED POST AT EACH ENTRANCE (4 TOTAL) TO ALLOW FOR FUTURE DITCH ACCESS WITHOUT REMOVAL OF POST. THIS LOCATION SHALL ALSO USE GUARDRAIL TYPE I-27 RAIL AT THE CURRENT 31" HEIGHT FOR EASE OF YEARLY REMOVAL AND REPLACEMENT OF RAIL BEAM.

•NOT TO SCALE•

LOCATION 10 - S64 (WHITESVILLE RD)
FROM: S455 (BRITTINGHAM RD) TO: S451A (WARDS BRANCH RD)
BRIDGE 3-338

PLACE 400' NEW GUARDRAIL AT BRIDGE WALLS.
INSTALL W-BEAM & RUBRAIL ACROSS BRIDGE PARAPET WALL.
ADDITIONAL W-BEAM SHALL BE PAID AS ITEM 720005, STEEL RAIL ELEMENT, STRAIGHT.
EXCAVATE 6" DEPTH AND PLACE 2" WMA OVER 4" GABC, BENEATH NEW GUARDRAIL.
MAINTENANCE STRIP SHALL BE A WIDTH OF 4' AND EXTEND 10' BEYOND GURADRAIL ON ALL SIDES.



•NOT TO SCALE•

DELAWARE DEPARTMENT OF TRANSPORTATION

CONTRACT: T201287901

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SOUTH GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012
 MAINTENANCE

CONTRACT QUANTITIES SUMMARY SHEET

202000	EXCAVATION AND EMBANKMENT	213.00 C.Y.
211002	REMOVAL OF STRUCTURES AND OBSTRUCTIONS (GUARDRAIL)	1,175.00 L.F.
302005	GRADED AGGREGATE BASE COURSE, TYPE B	343.00 TON
401800	WMA, SUPERPAVE, TYPE C, 115 GYRATIONS, PG 64-22 (CARBONATE STONE)	155.00 TON
720005	STEEL RAIL ELEMENT, STRAIGHT	300.00 L.F.
720007	GALVANIZED STEEL POSTS	30.00 EACH
720010	TREATED WOOD BLOCK	30.00 EACH
720027	BRIDGE RAIL RETROFIT, TYPE 2	175.00 L.F.
720041	REFLECTORIZED WASHERS	50.00 EACH
720043	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-27	200.00 L.F.
720050	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	731.25 L.F.
720054	GUARDRAIL OVER CULVERTS, TYPE 2-31	2.00 EACH
720055	CURVED GUARDRAIL SECTION	37.50 L.F.
720585	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 1-31	30.00 EACH
720586	GUARDRAIL END TREATMENT ATTENUATOR,TYPE 2-31	2.00 EACH
720591	END ANCHORAGE REPAIR	1.00 L.S.
720595	GUARDRAIL END TREATMENT ATTENUATOR,TYPE 1, LEVEL I REPAIR	2.00 EACH
720596	GUARDRAIL END TREATMENT ATTENUATOR,TYPE 1, LEVEL II REPAIR	2.00 EACH
720597	GUARDRAIL END TREATMENT ATTENUATOR,TYPE 2, LEVEL I REPAIR	2.00 EACH
720598	GUARDRAIL END TREATMENT ATTENUATOR,TYPE 2, LEVEL II REPAIR	2.00 EACH
720603	REMOVE AND RESET GALVANIZED STEEL POST AND OFFSET BLOCK	50.00 EACH
720605	BRIDGE RAIL RETROFIT, SPECIAL	76.50 L.F.
725002	GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 1-31	4.00 EACH
725003	GUARDRAIL TO BARRIER CONNECTION, APPROACH TYPE 2-31	9.00 EACH
725503	GUARDRAIL TO BARRIER CONNECTION (APPROACH TYPE) REPAIR	1.00 L.S.
726001	END ANCHORAGE 31	1.00 EACH
743010	FURNISH AND MAINTAIN TRUCK MOUNTED ATTENUATOR, TYPE II	32.00 EA-DY
743052	** FLAGGER, SUSSEX COUNTY, STATE	357.00 HOUR

DELAWARE DEPARTMENT OF TRANSPORTATION

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SOUTH GUARDRAIL SAFETY IMPROVEMENTS, SOUTH, 2012
MAINTENANCE

CONTRACT QUANTITIES SUMMARY SHEET

743064	** FLAGGER, SUSSEX COUNTY, STATE, OVERTIME	63.00 HOUR
743525	TEMPORARY WARNING SIGNS	212.00 EA-DY
763000	INITIAL EXPENSE	LUMP SUM
763615	JOB ORDER MOBILIZATION, SOUTH DISTRICT	3.00 EACH

** DENOTES FIXED PRICE ITEM

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