THE STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY UNITS

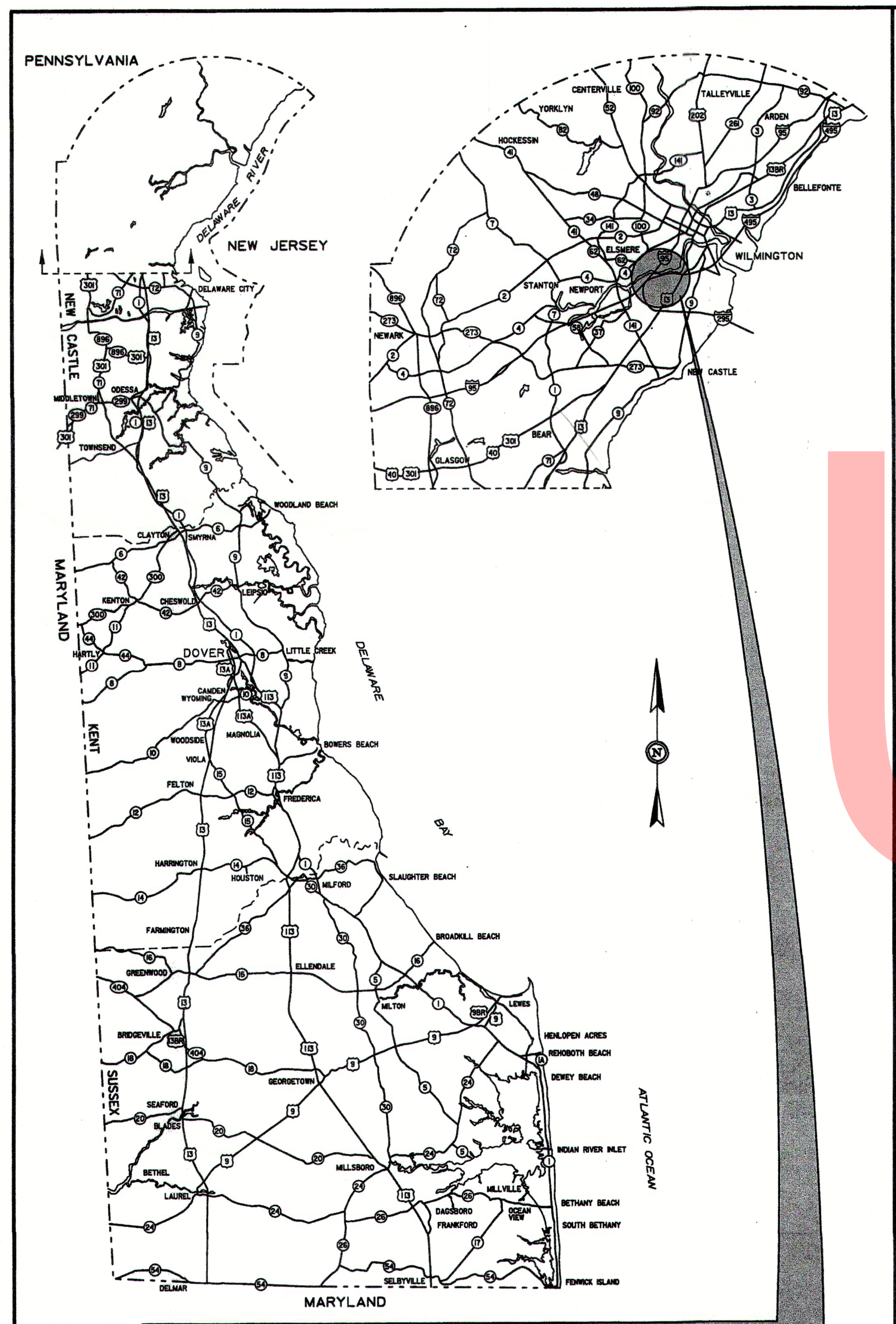
CONSTRUCTION PLANS FOR:

I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT NUMBER: T201509002

FEDERAL AID PROJECT NUMBER: ENHS-2015(27)

COUNTY: NEW CASTLE   M.R. #: N33, N56, N59, N60



GENERAL LOCATION OF CONTRACT

LIMIT OF CONSTRUCTION I-95, CHRISTINA RIVER

LIMIT OF CONSTRUCTION I-495, 600 FEET PRIOR TO EXIT 5

LIMIT OF CONSTRUCTION I-495, 300 FEET PAST US 13

LIMIT OF CONSTRUCTION I-495, 300 FEET PRIOR TO US 13

LIMIT OF CONSTRUCTION US 13, I-495

LIMIT OF CONSTRUCTION US 13, MEDORI BOULEVARD

LIMIT OF CONSTRUCTION I-95, RAMP TO I-295 NB

LOCATION MAP

SCALE: 1" = 3000'

LIMIT OF CONSTRUCTION I-295, 2000 FEET PRIOR TO US 13

PREPARED BY THE CONSULTING FIRM OF

WRA Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

JOSEPH STEPHEN MAZAR REGISTERED No. 7974 DELAWARE PROFESSIONAL ENGINEER

SEAL

RECOMMENDED   DATE 3/16/2016

DESIGN DESIGNATION		
FUNCTIONAL CLASS: INTERSTATE/OTHER PRINCIPAL ARTERIAL	D.H.V. PROJECTED: N/A	YEAR: N/A
TYPE OF CONSTRUCTION: ROADWAY LIGHTING	DESIGN SPEED: N/A	
A.A.D.T. CURRENT: 179, 689 (I-95) YEAR: 2014	TRUCKS: N/A	
A.A.D.T. PROJECTED: N/A YEAR: N/A	DIRECTION OF DISTRIBUTION: N/A	

INDEX OF SHEETS

TOTAL SHEETS: 26

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

ASSOCIATED CONTRACTS

CONTRACT NO.	CONTRACT NAME
DMB-13-01	I-295 SOUTHBOUND RECONSTRUCTION PROJECT FROM I-95 TO LANDERS LANE

RECOMMENDED	RECOMMENDED	RECOMMENDED	RECOMMENDED	RECOMMENDED	APPROVED
STORMWATER ENGINEER	SQUAD MANAGER, TRANSPORTATION SOLUTIONS (PROJECT DEVELOPMENT OR BRIDGE DESIGN)	BRIDGE DESIGN ENGINEER	GROUP ENGINEER, NORTH DISTRICT DESIGN ENGINEER	ASSISTANT DIRECTOR, NORTH DISTRICT MAINTENANCE AND OPERATIONS	CHIEF ENGINEER
DATE	DATE	DATE MARCH 29, 2016	DATE March 30, 2016	DATE APRIL 04, 2016	DATE April 4, 2016
SEAL	SEAL	SEAL: BARRY A. BENTON REGISTERED No. 10774 DELAWARE PROFESSIONAL ENGINEER	SEAL: BRIAN J. SCHILLING LICENSE No. 16591 DELAWARE PROFESSIONAL ENGINEER	SEAL: DONALD D. WEBER LICENSE No. 9176 DELAWARE PROFESSIONAL ENGINEER	SEAL: ROBERT BRIAN McCLEARY REGISTERED No. 8567 DELAWARE PROFESSIONAL ENGINEER

LAST REVISED: 8/7/2008
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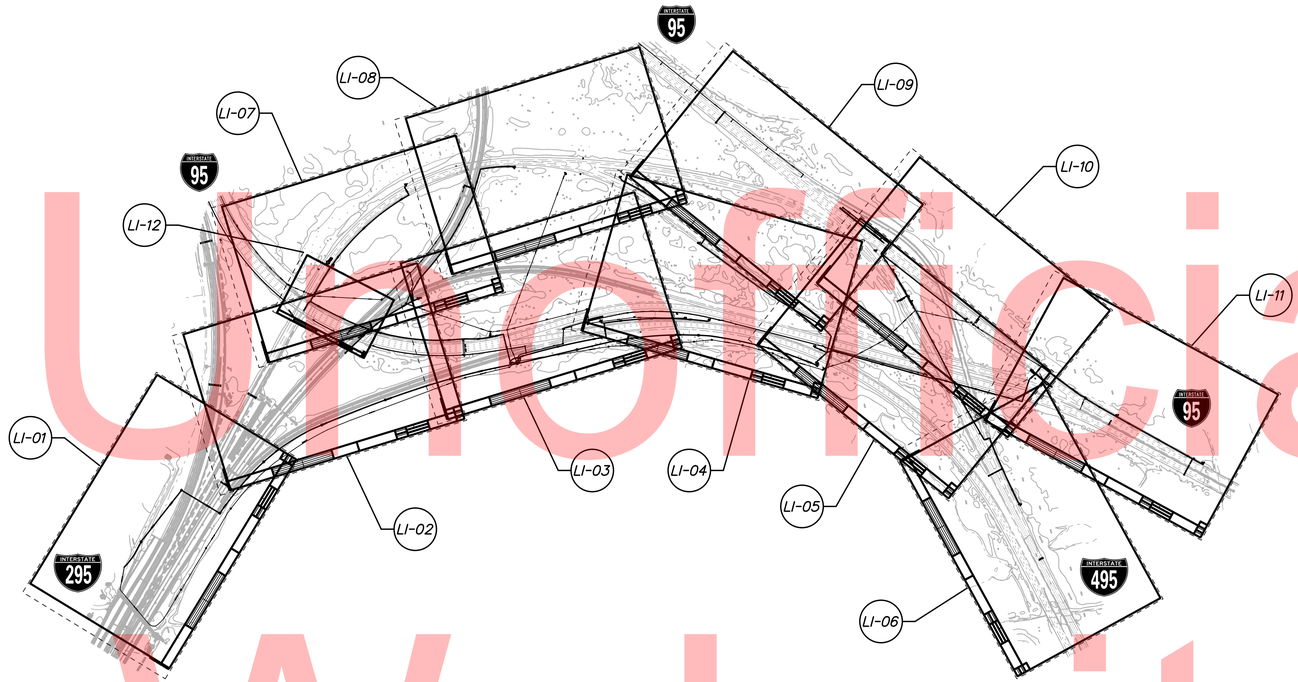

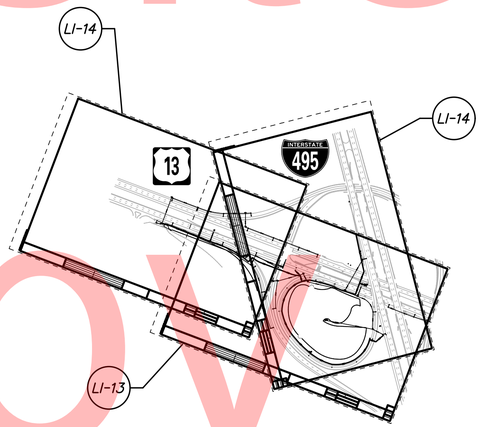

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

SCALE
0 500 1000 1500
FEET

I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT	T201509002
COUNTY	NEW CASTLE
BRIDGE NO.	N/A
DESIGNED BY:	WRA
CHECKED BY:	WRA

PLAN SHEET INDEX

	IS-01
SHEET NO.	2
TOTAL SHTS.	26

GENERAL NOTES

1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS", DATED AUGUST 2001 AND THE DELAWARE DEPARTMENT OF TRANSPORTATION "STANDARD CONSTRUCTION DETAILS", DATED 2001, INCLUDING ALL REVISIONS UP TO THE DATE OF ADVERTISEMENT.

2. ELECTRONIC PROJECT FILES THAT WILL BE MADE AVAILABLE TO THE CONTRACTOR INCLUDE:

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

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

3. AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED TRAFFIC CONTROL SUPERVISOR REQUIREMENT FOR THIS PROJECT.

(X)	THE CONTRACTOR SHALL NOT BE REQUIRED TO HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT.
( )	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT OR ANOTHER ATSSA CERTIFIED MEMBER OF THE CONTRACTOR'S PROJECT STAFF MAY BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR IS INCIDENTAL TO ITEM 743000.
( )	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE ATSSA SUPERVISOR'S SOLE JOB SHALL BE SUPERVISION OF THE INSTALLATION, OPERATION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES FOR THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT SHALL NOT BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR SHALL BE PAID FOR UNDER ITEM 743031.

4. THE CONTRACTOR SHALL FOLLOW ALL STATE AND LOCAL ORDINANCES CONCERNING CONSTRUCTION NOISE DURING THE DURATION OF THE CONSTRUCTION ACTIVITIES.

5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO WORK.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH DRBA AND THE CONTRACTOR CONSTRUCTING DRBA CONTRACT NO. DMB-13-01. THE CONTRACTOR IS ADVISED THAT CONSTRUCTION OF CONTRACT NO. DMB-13-01 MAY BE ONGOING DURING CONSTRUCTION OF THIS CONTRACT AND THAT COORDINATION OF MAINTENANCE OF TRAFFIC, WORK ZONE ACCESS, PLACEMENT OF EQUIPMENT TO AVOID IMPACTS AND OTHER ITEMS MAY BE NECESSARY. THE CONTRACTOR MAY ALSO BE REQUIRED TO ATTEND COORDINATION MEETINGS WITH DRBA AND THE CONTRACT NO. DMB-13-01 CONTRACTOR. ALL REQUIRED COORDINATION WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT WILL BE INCIDENTAL TO THE OVERALL CONTRACT.

7. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH DRBA AND NEW CASTLE COUNTY TO GAIN ACCESS TO WORK AREAS ALONG PORTIONS OF I-295.

PROJECT NOTES

SECTION 200

1. ITEMS TO BE REMOVED UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: HIGH MAST LIGHT POLES, LOW LEVEL LIGHT POLES, POLE BASES, CABINET BASES, TRANSFORMER BASES, PEDESTAL BASES, JUNCTION WELLS, VAULTS, ELECTRICAL CABLES, AND ANY OTHER EQUIPMENT DESIGNATED FOR REMOVAL ON THE PLANS THAT IS NOT COVERED UNDER OTHER PAY ITEMS.

2. APPROVED COVERS SHALL BE INSTALLED OVER ALL LOADED TRUCKS OR TRAILERS HAULING BORROW, EXCAVATED MATERIALS, AGGREGATES, ETC. TO OR FROM THE PROJECT SITE OVER STATE MAINTAINED ROADS. THE COVERS SHALL BE INSTALLED TO PREVENT MATERIAL FROM LEAVING THE TRUCKS OR TRAILERS. THE MATERIAL SHALL BE FULLY COVERED AND THE COVERS TIED ON THE REAR AND BOTH SIDES. ANY MATERIALS DELIVERED, TRANSPORTED, OR REMOVED IN UNCOVERED TRUCKS OR TRAILERS WILL BE INCORPORATED INTO THE PROJECT, OR REMOVED FROM THE SITE, WITH NO PAYMENT TO THE CONTRACTOR FOR FURNISHING, REMOVING, OR PLACING THE MATERIALS.

3. WHEN PERFORMING ANY EXCAVATION OR BACKFILLING OPERATION, THE CONTRACTOR SHALL PROVIDE DEWATERING MEASURES AT ALL TIMES TO KEEP THE GROUNDWATER LEVEL AT LEAST ONE FOOT BELOW THE EXCAVATION ELEVATION, IN COMPLIANCE WITH DELDOT STANDARD SPECIFICATIONS, SECTION 111 - DEWATERING OPERATIONS. THE CONTRACTOR SHALL ALSO PROVIDE NECESSARY DEWATERING TO STABILIZE EXCAVATED SLOPES DURING CONSTRUCTION AND UNTIL THE SLOPES ARE STABILIZED AS DETERMINED BY THE ENGINEER. ALL COSTS SHALL BE INCIDENTAL TO THE APPLICABLE EXCAVATION OR BACKFILLING ITEM.

4. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO EXCAVATE TEST PITS OR CONDUCT TEST HOLES TO DETERMINE THE DEPTH AND LOCATION OF EXISTING UTILITIES SO THEY CAN BE AVOIDED WHEN COMPLETING PROPOSED CONDUIT BORES, CONDUIT TRENCHING OR OTHER EQUIPMENT INSTALLATION.

SECTION 300

1. A. THE CONTRACTOR MAY ELECT TO USE ANY OF THE FOLLOWING MATERIALS TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B':
   a. CRUSHED STONE (PER STANDARD SPECIFICATION 821)
   b. CRUSHED CONCRETE (PER STANDARD SPECIFICATION 821)

   THE CONTRACTOR WILL NOT BE ALLOWED TO MIX DIFFERENT MATERIALS (OR SIMILAR MATERIALS FROM DIFFERENT SOURCES) TO MEET THE REQUIREMENTS OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

   ALL OF THE ABOVE LISTED MATERIALS ARE PERMITTED FOR USE ON THE JOB, PROVIDED THEY ARE SEPARATED INTO APPROVED AREAS. EACH AREA OF BASE COURSE MUST BE CONSTRUCTED USING MATERIALS FROM A SINGULAR SOURCE, FULL DEPTH, IN ORDER THAT PROPER TESTING MAY BE ACCOMPLISHED. THE CONTRACTOR AND ENGINEER SHALL AGREE ON THE LIMITS OF EACH SOURCE OF MATERIAL PRIOR TO PLACEMENT.

   B. THE QUANTITY USED FOR BASE OF EACH OF THE ABOVE LISTED MATERIALS WILL BE THE CONTRACTOR'S CHOICE, WITH THE TOTAL BEING EQUAL TO THE ACTUAL QUANTITY USED UNDER ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

SECTION 700

1. ALL UNDERDRAIN OUTLETS, CATCH BASINS, PIPES, CONDUITS, JUNCTION WELLS, ETC. IN GUARDRAIL AREAS OR NEAR OTHER CONSTRUCTION YET TO BE PERFORMED SHALL BE VISIBLY MARKED BY THE CONTRACTOR AT THE TIME OF INSTALLATION IN ORDER TO AVOID FUTURE DAMAGE DURING DRIVING OF THE GUARDRAIL POSTS OR PERFORMANCE OF OTHER CONSTRUCTION. THE LOCATION OF GUARDRAIL POSTS AND OTHER CONSTRUCTION SHALL BE STAKED IN THE FIELD PRIOR TO PLACING THESE ITEMS. THE LOCATION OF THESE ITEMS SHALL BE ADJUSTED TO AVOID CONFLICTS WITH THE GUARDRAIL OR OTHER CONSTRUCTION. ALTERATIONS TO THE GUARDRAIL POST SPACING WILL NOT BE ALLOWED. ANY WORK REQUIRED TO RELOCATE THESE ITEMS DUE TO CONFLICTS WITH GUARDRAIL OR OTHER CONSTRUCTION SHALL BE PERFORMED TO THE SATISFACTION OF THE ENGINEER AND SHALL BE AT THE CONTRACTOR'S EXPENSE, INCLUDING ANY REMOVAL AND REPLACEMENT OF PAVEMENT.

2. THE COST OF ANY FLOODLIGHTING NECESSARY DUE TO WORK BY THE CONTRACTOR ON ANY ITEM OCCURRING AFTER DARK SHALL BE INCIDENTAL TO THE BID PRICE OF THE ITEM BEING CONSTRUCTED. DURING NIGHT WORK, ALL PERSONS WITHIN THE WORK ZONE SHALL HAVE SAFETY WEAR IN ACCORDANCE WITH THE DEMUTCD.

LIGHTING GENERAL NOTES:

1. ALL GROUND WIRE CONNECTIONS TO GROUND RODS SHALL BE COMPLETED USING EXOTHERMIC WELDS.

2. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON THE LOCATIONS OF ALL CONDUIT, JUNCTION WELLS, POLE BASES AND EQUIPMENT BASES TO ELIMINATE CONSTRUCTION CONFLICTS. THE CONTRACTOR SHALL STAKE ALL PROPOSED EQUIPMENT LOCATIONS FOR APPROVAL BY THE ENGINEER BEFORE INSTALLATION.

3. COLOR CODING SHALL BE PROVIDED THROUGHOUT THE ENTIRE NETWORK FOR SERVICE, FEEDER, BRANCH AND CONTROL CONDUCTORS. EACH PHASE SHALL BE AN INDEPENDENT COLOR. CONDUCTORS SHALL HAVE FACTORY IMPREGNATED COLOR THROUGHOUT THEIR ENTIRE LENGTH.

4. ALL FUSED CONNECTIONS SHALL BE MADE IN THE POLE BASE. SPLICES IN JUNCTION BOXES OR PULL BOXES SHALL NOT BE FUSED.

5. ALL CONDUITS SHALL BE BONDED IN A CONTINUOUS RUN FROM THE SOURCE BY A COPPER GROUNDING CONDUCTOR WITH SIZE AS NOTED ON PLANS. 10 FEET OF ADDITIONAL SLACK FOR EACH GROUND WIRE IN EACH JUNCTION WELL SHALL BE PROVIDED AND NEATLY COILED.

6. ALL STATION, OFFSET AND DIMENSION INFORMATION SHOWN FOR PROPOSED LIGHTING STANDARDS IS TO THE CENTER OF THE PROPOSED POLE BASE.

7. ALL PROPOSED CONDUITS (SERVICE RUNS) SHALL BE RIGID POLYVINYL CHLORIDE SCHEDULE 80 WHEN INSTALLED BY TRENCHING AND SDR-13.5 HDPE WHEN INSTALLED BY BORING, UNLESS OTHERWISE NOTED ON PLANS.

8. SPLICES FOR ALL ROADWAY LIGHTING ELECTRICAL CABLES SHALL BE COMPLETED USING APPROVED SPLICE KITS OR METHODS APPROVED BY THE ENGINEER AND SHALL BE INCIDENTAL TO THE SUPPLY AND INSTALLATION OF THE VARIOUS ROADWAY LIGHTING ELECTRICAL CABLES.

9. (1) 3/4" DIAMETER BY 10' LONG GROUND ROD SHALL BE INSTALLED AT EACH LIGHTING STANDARD POLE BASE. (1) 3/4" DIAMETER BY 10' LONG GROUND ROD SHALL BE INSTALLED IN THE JUNCTION WELL CLOSEST TO THE LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE AND THE BARE COPPER GROUNDING CONDUCTORS FOR EACH RUN OF CIRCUITS SHALL BE CONNECTED TO THE GROUND ROD. (1) 3/4" DIAMETER BY 10' LONG GROUND ROD SHALL BE INSTALLED AT THE LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE WHICH SHALL BE BONDED TO THE GROUND ROD IN THE JUNCTION WELL CLOSEST TO THE LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE. (1) 3/4" DIAMETER BY 10' LONG GROUND ROD SHALL BE INSTALLED AT THE ELECTRIC SERVICE PEDESTAL. GROUND RODS SHALL BE SEPARATED BY A MINIMUM OF 6 FEET.

10. THE EXISTING ELECTRICAL CABLES IN ALL CONDUITS DESIGNATED TO BE ABANDONED SHALL BE REMOVED AS DIRECTED BY THE ENGINEER. THE EXISTING CONDUITS SHALL BE CAPPED AND ABANDONED IN PLACE.

11. ALL FOUNDATIONS FOR EXISTING LIGHT POLES OR EQUIPMENT DESIGNATED TO BE REMOVED SHALL BE REMOVED TO A DEPTH OF 1'-0" BELOW FINISHED GRADE. THE AREA SHALL BE BACKFILLED, SEEDED AND MULCHED.

12. ALL PROPOSED ROADWAY LIGHTING CONDUITS (SERVICE RUNS) SHALL BE SEALED WITH A DUCT SEAL/WATER BLOCK FOAM (POLYWATER FST OR APPROVED EQUAL). SEALING LIGHTING CONDUITS WILL NOT BE MEASURED AND PAID FOR BUT WILL BE INCIDENTAL TO THE PERTINENT FURNISH AND INSTALL ELECTRICAL CABLE ITEMS.

13. THE CONTRACTOR SHALL VERIFY THAT THE REMOVAL OF AN EXISTING JUNCTION WELL DESIGNATED TO BE REMOVED OR THE ABANDONING OF EXISTING ELECTRICAL CONDUITS AND CABLES DESIGNATED TO BE ABANDONED WILL NOT ADVERSELY AFFECT EXISTING EQUIPMENT TO REMAIN PRIOR TO REMOVAL OR ABANDONING OF EQUIPMENT AS SHOWN ON THE PLANS.

14. THE EXISTING LIGHTING SYSTEM SHALL REMAIN OPERATIONAL UNTIL THE PROPOSED LIGHTING SYSTEM IS CONSTRUCTED AND READY TO BE ENERGIZED. OUTAGES TO THE ROADWAY LIGHTING ARE EXPECTED WHEN TRANSITIONING FROM THE EXISTING TO PROPOSED SYSTEMS AND DURING THE TRANSITION OF THE 13.2 KV SERVICE LINE. OUTAGES SHOULD BE MINIMIZED TO THE FULLEST EXTENT POSSIBLE.

15. SERVICE RUNS ARE SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL LOCATE THE SERVICE RUNS IN A MANNER THAT AVOIDS CONFLICTS WITH ALL EXISTING AND PROPOSED FEATURES AS FIELD CONDITIONS DICTATE AND AS APPROVED BY THE ENGINEER.

16. WHERE THE PLANS INDICATE TWO CONDUITS TO BE INSTALLED BETWEEN THE LIGHT POLE BASE AND ADJACENT JUNCTION WELL, ONE CONDUIT SHALL BE USED AS A SPARE AS SPECIFIED BY SECTION 5.9 OF THE DELDOT LIGHTING DESIGN GUIDELINES.

UTILITY GENERAL NOTES:

1. ALL CONDUITS FOR THE 13.2 KV SERVICE LINE SHALL BE INSTALLED WITH A MINIMUM COVER OF 36 INCHES MEASURED FROM FINISHED GRADE. ALL CONDUITS SHALL BE MARKED WITH WARNING TAPE.

2. EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATIONS PRIOR TO COMMENCING WORK.

3. IF ANY UTILITY IS DAMAGED THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE OWNER OF THE UTILITY IMMEDIATELY. ANY DAMAGE TO THE UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE UNDER THE DIRECTION OF THE UTILITY OWNER.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF CONDUITS, MANHOLES, ELECTRICAL CABLES, CABLE SPLICES, CABLE TERMINATIONS, AND TRANSFORMER PADS FOR THE 13.2 KV SERVICE LINE UPGRADE. DELMARVA POWER WILL COMPLETE FINAL CABLE CONNECTIONS, UPGRADE SERVICE POLE, INSTALL NEW TRANSFORMERS AND REMOVE EXISTING TRANSFORMERS. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION FOR THE 13.2 KV SERVICE LINE UPGRADE WITH DELMARVA POWER AND ENSURE THE LOCATION OF ALL PROPOSED EQUIPMENT IS APPROVED PRIOR TO INSTALLATION.

5. THE CONTRACTOR SHALL COMPLETE HIS PORTION OF THE WORK FOR THE 13.2 KV SERVICE LINE UPGRADE PRIOR TO REQUESTING DE-ENERGIZATION OF THE EXISTING LINE AND ENGERGIZATION OF THE NEW LINE BY DELMARVA POWER SO THAT DOWN TIME IS MINIMIZED. THE CONTRACTOR SHALL ARRANGE A MEETING WITH DELMARVA POWER, DELDOT NORTH DISTRICT AND THE ENGINEER TO COORDINATE THE SERVICE TRANSITION AND ENSURE THAT POWER IS AVAILABLE WHEN REQUIRED.

6. THE CONTRACTOR SHALL COORDINATE ALL WORK INVOLVING DELMARVA POWER WITH TOM SMITH (302-283-5757).

TRAFIC CONTROL NOTES:

1. NO EQUIPMENT SHALL BE STORED IN THE MEDIAN, OR WITHIN THE CLEAR ZONE, AT ANY TIME DURING NON-WORKING HOURS.

2. A TYPE II TRUCK MOUNTED ATTENUATOR (TMA) SHALL BE REQUIRED ON THIS PROJECT DURING ALL LANE CLOSURES AND SHOULDER CLOSURES WHERE WORKERS OR EQUIPMENT ARE PRESENT IN A CLOSED TRAVEL LANE OR CLOSED SHOULDER, AS DIRECTED BY THE ENGINEER. THE ROLL AHEAD DISTANCE SHALL BE AS PER THE MANUFACTURER'S RECOMMENDATIONS. THE TMA SHALL CONFORM TO THE REQUIREMENTS OF SECTION 6F.82 OF THE DELAWARE MUTCD.

3. A TRAFFIC OFFICER SHALL BE REQUIRED DURING THE SET UP AND REMOVAL OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ACTIVITIES THAT REQUIRE A LANE CLOSURE AND FOR TRAFFIC DRAGS DURING THE REMOVAL AND ERECTION OF THE HIGH MAST LIGHT POLES, AS DIRECTED BY THE ENGINEER.

4. MAINTENANCE OF TRAFFIC DURING CONSTRUCTION ACTIVITIES OR OTHER OPERATIONS SHALL CONFORM TO TYPICAL APPLICATIONS 3A, 5A, 5B, 33, 37, 42, 43 & 44, AS DIRECTED BY THE ENGINEER .

5. ALL WORK REQUIRING A SINGLE LANE CLOSURE USING TYPICAL APPLICATION 5B OR 33 SHALL NOT BE PERMITTED BETWEEN 6:00 AM AND 9:00 AM OR BETWEEN 3:00 PM AND 6:00 PM.

6. ALL WORK REQUIRING A DOUBLE LANE CLOSURE USING TYPICAL APPLICATION 37 SHALL NOT BE PERMITTED BETWEEN 5:00 AM AND 10:00 AM OR BETWEEN 2:00 PM AND 7:00 PM.

LIGHTING SYMBOL LEGEND

SYMBOL	DESCRIPTION
	– PROPOSED LIGHTING STANDARD
	– EXISTING LIGHTING STANDARD
	– HIGH MAST LIGHTING STANDARD (EXISTING AND PROPOSED)
	– PROPOSED UNDERPASS LUMINAIRE
MA	– PROPOSED MANHOLE AND IDENTIFIER
CA X	– PROPOSED LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE AND IDENTIFIER
CA X	– EXISTING LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE AND IDENTIFIER
	– PROPOSED JUNCTION WELL LIGHTING
	– EXISTING JUNCTION WELL (OTHER)
J.W.	– EXISTING JUNCTION WELL LIGHTING
T T	– ELECTRICAL TRANSFORMER (EXISTING AND PROPOSED)
E	– EXISTING ELECTRICAL VAULT
P P	– ELECTRIC UTILITY SERVICE EQUIPMENT (EXISTING AND PROPOSED)
—LI-CON—	– PROPOSED LIGHTING SERVICE RUN (CONDUIT)
—EX-CON—	– EXISTING SERVICE RUN
—HIGH VOLT—	– PROPOSED PRIMARY SERVICE RUN
—EX. HIGH VOLT—	– EXISTING HIGH VOLTAGE LINE
LS LS	– LIGHTING STANDARD IDENTIFIER (EXISTING AND PROPOSED)
SR SR	– SERVICE RUN IDENTIFIER (EXISTING AND PROPOSED)
JW JW	– JUNCTION WELL IDENTIFIER (TYPE) (EXISTING AND PROPOSED)
JB	– EXISTING STRUCTURE MOUNTED JUNCTION BOX IDENTIFIER
RM C RM O	– REMOVE BY CONTRACTOR / REMOVE BY OTHERS
AB	– ABANDON BY CONTRACTOR

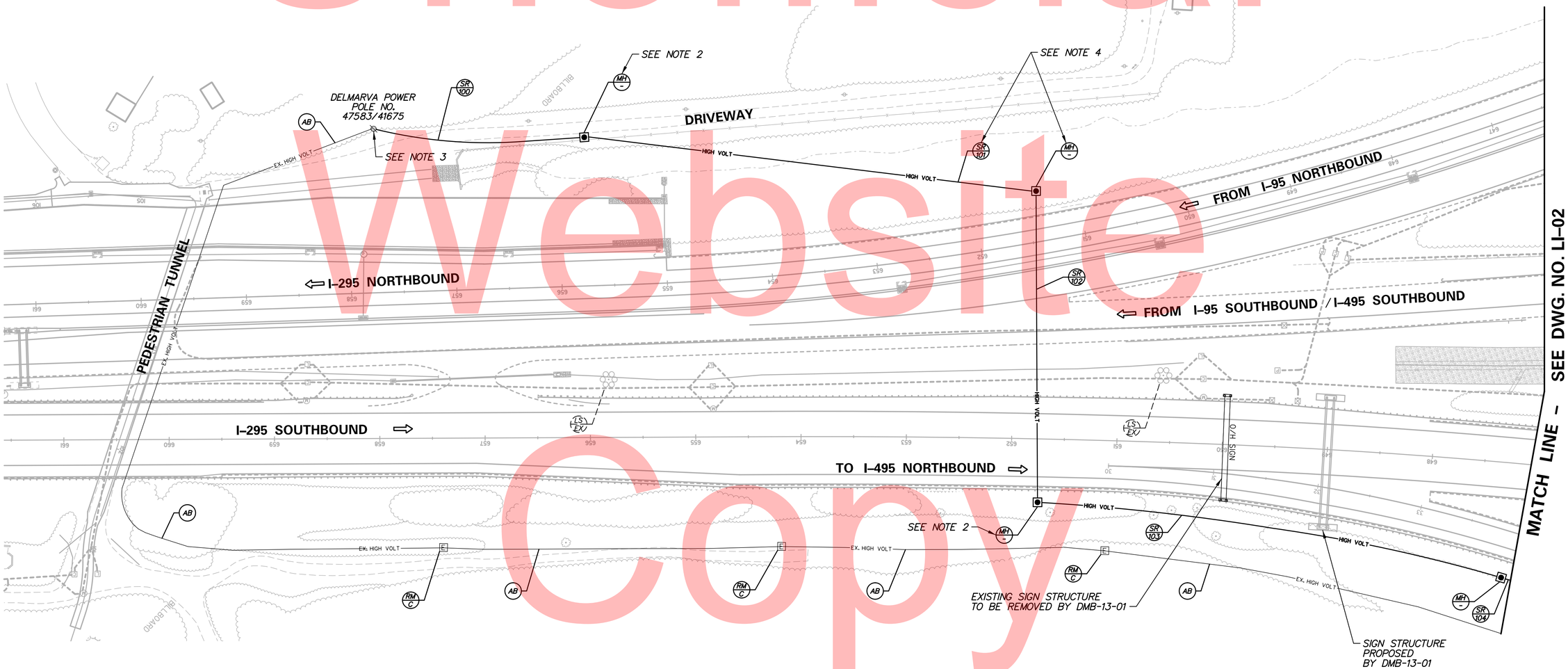
13.2 KV SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
100	1	4.0"	190	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	190	EMPTY SPARE	TRENCH
101	1	4.0"	446	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	BORE
	1	4.0"	446	EMPTY SPARE	BORE
102	1	4.0"	296	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	BORE
	1	4.0"	296	EMPTY SPARE	BORE
103	1	4.0"	452	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	452	EMPTY SPARE	TRENCH
104	1	4.0"	452*	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	452*	EMPTY SPARE	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

NOTES:

1. ALL LINEWORK ON THIS PLAN SHOWN SCREENED (GREYSCALE) REFLECTS EXISTING CONDITIONS OR CONSTRUCTION PROPOSED BY OTHERS UNDER DRBA CONTRACT NO. DMB-13-01. THE BASELINE(S) SHOWN ARE NOT TO BE STAKED OUT IN THIS PROJECT, BUT ARE PROVIDED FOR REFERENCE PURPOSES FOR COORDINATION WITH DMB-13-01.
2. PULL ELECTRICAL CABLES THROUGH MANHOLE WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE MANHOLE.
3. THE CONTRACTOR SHALL COORDINATE WITH DELMARVA POWER WHO WILL UPGRADE EXISTING POLE NO. 47583/41675 WITH A NEW POLE-MOUNTED FUSED CUTOUT SWITCH. THE CONTRACTOR SHALL SWEEP THE PROPOSED (2) 4 INCH CONDUITS 2 FEET ABOVE GRADE AT THE BASE OF THE POLE AND TERMINATE CABLES WITH 50 FEET OF SLACK FOR EACH CONDUCTOR COILED FOR DELMARVA POWER TO MAKE FINAL CONNECTIONS. SEE DWG. NO. LI-15 FOR 13.2 KV SERVICE LINE SINGLE-LINE DIAGRAM.
4. THE CONTRACTOR IS ADVISED THAT BORING OF PROPOSED CONDUITS WILL REQUIRE DEEP DRILLING TO MAINTAIN A MINIMUM COVER OF 36 INCHES BELOW FINISHED GRADE WHEN CROSSING UNDER THE EXISTING STREAM BED AND A TURN UPWARD TO BREACH GRADE FOR THE MANHOLE ALONG THE RAMP FROM I-95 NORTHBOUND THAT IS SET AT A HIGHER ELEVATION.



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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 50 100 150 FEET	I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS	CONTRACT T201509002	BRIDGE NO. N/A	LIGHTING PLAN
				COUNTY NEW CASTLE	DESIGNED BY: WRA	
					CHECKED BY: WRA	

LI-01
SHEET NO. 4
TOTAL SHTS. 26

LIGHTING SERVICE SCHEDULE

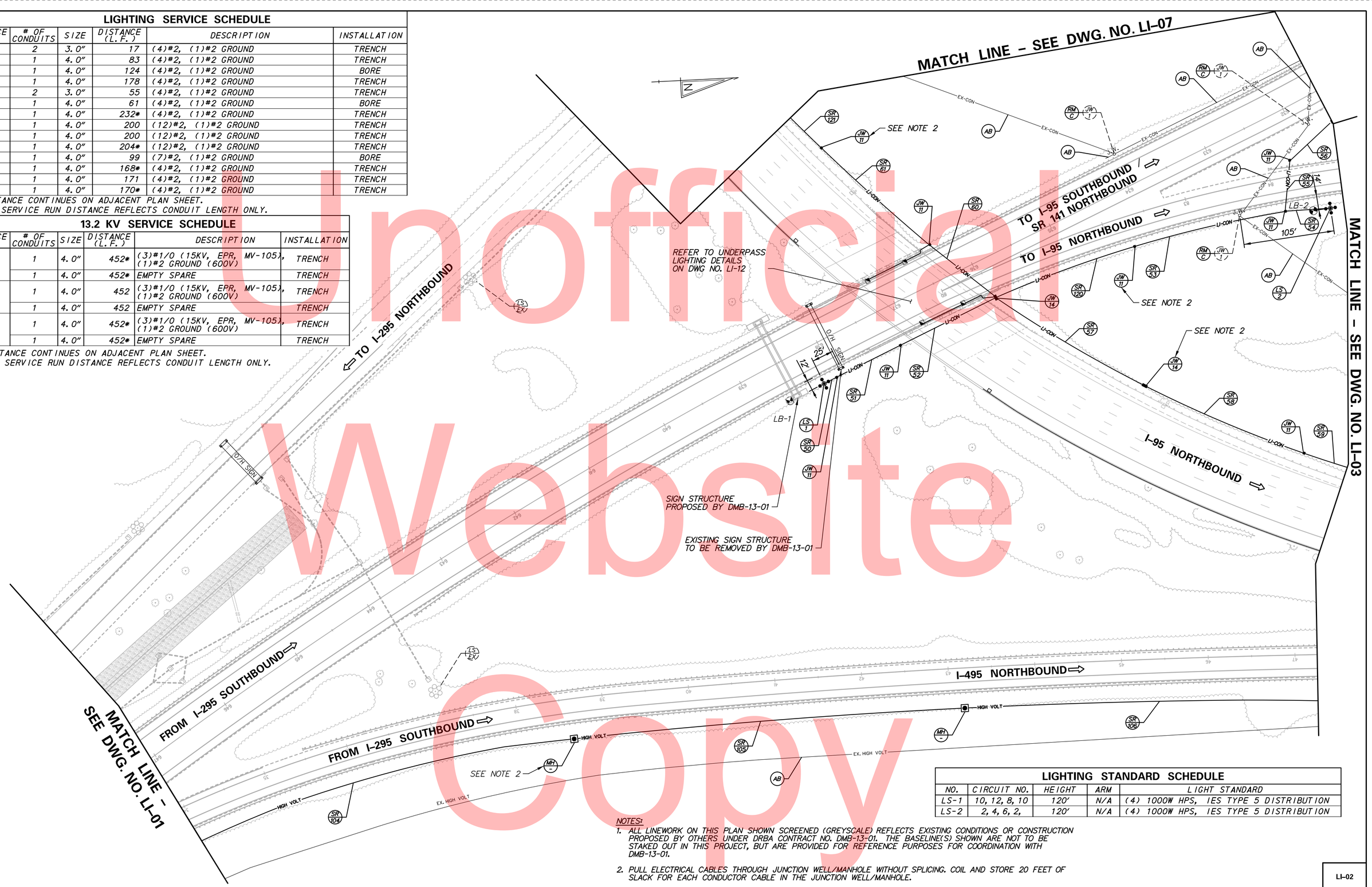
SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
50	2	3.0"	17	(4)#2, (1)#2 GROUND	TRENCH
51	1	4.0"	83	(4)#2, (1)#2 GROUND	TRENCH
52	1	4.0"	124	(4)#2, (1)#2 GROUND	BORE
53	1	4.0"	178	(4)#2, (1)#2 GROUND	TRENCH
54	2	3.0"	55	(4)#2, (1)#2 GROUND	TRENCH
55	1	4.0"	61	(4)#2, (1)#2 GROUND	BORE
56	1	4.0"	232*	(4)#2, (1)#2 GROUND	TRENCH
57	1	4.0"	200	(12)#2, (1)#2 GROUND	TRENCH
58	1	4.0"	200	(12)#2, (1)#2 GROUND	TRENCH
59	1	4.0"	204*	(12)#2, (1)#2 GROUND	TRENCH
60	1	4.0"	99	(7)#2, (1)#2 GROUND	BORE
61	1	4.0"	168*	(4)#2, (1)#2 GROUND	TRENCH
120	1	4.0"	171	(4)#2, (1)#2 GROUND	TRENCH
121	1	4.0"	170*	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

13.2 KV SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
104	1	4.0"	452*	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	452*	EMPTY SPARE	TRENCH
105	1	4.0"	452	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	452	EMPTY SPARE	TRENCH
106	1	4.0"	452*	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	452*	EMPTY SPARE	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-1	10, 12, 8, 10	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-2	2, 4, 6, 2,	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

NOTES:
1. ALL LINEWORK ON THIS PLAN SHOWN SCREENED (GREYSCALE) REFLECTS EXISTING CONDITIONS OR CONSTRUCTION PROPOSED BY OTHERS UNDER DRBA CONTRACT NO. DMB-13-01. THE BASELINE(S) SHOWN ARE NOT TO BE STAKED OUT IN THIS PROJECT, BUT ARE PROVIDED FOR REFERENCE PURPOSES FOR COORDINATION WITH DMB-13-01.
2. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL/MANHOLE WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL/MANHOLE.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 50 100 150
FEET

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT	T201509002
COUNTY	NEW CASTLE
BRIDGE NO.	N/A
DESIGNED BY:	WRA
CHECKED BY:	WRA

LIGHTING PLAN

LI-02

SHEET NO.	5
TOTAL SHTS.	26

13.2 KV SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
106	1	4.0"	452*	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	452*	EMPTY SPARE	TRENCH
107	1	4.0"	452	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	452	EMPTY SPARE	TRENCH
108	1	4.0"	406	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	406	EMPTY SPARE	TRENCH
109	1	4.0"	406	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	406	EMPTY SPARE	TRENCH
110	1	4.0"	406*	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	406*	EMPTY SPARE	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

NOTES:
1. ALL LINEWORK ON THIS PLAN SHOWN SCREENED (GREYSCALE) REFLECTS EXISTING CONDITIONS OR CONSTRUCTION PROPOSED BY OTHERS UNDER DRBA CONTRACT NO. DMB-13-01. THE BASELINE(S) SHOWN ARE NOT TO BE STAKED OUT IN THIS PROJECT, BUT ARE PROVIDED FOR REFERENCE PURPOSES FOR COORDINATION WITH DMB-13-01.
2. FOLLOWING ENERGIZATION OF THE NEW 13.2 KV LINE AND DEENERGIZATION OF THE EXISTING 13.2 KV LINE THE CONTRACTOR SHALL REMOVE ALL EXISTING ELECTRICAL VAULTS AND ABANDON ALL EXISTING LINES. THE CONTRACTOR SHALL COORDINATE WITH DELMARVA POWER FOR THE REMOVAL OF THE EXISTING PAD MOUNTED TRANSFORMER.
3. REMOVE THE EXISTING GUARDRAIL END TREATMENT AND GUARDRAIL AS SHOWN ON PLANS.
4. TIE AND TRANSITION PROPOSED TYPE 1-31 GUARDRAIL INTO THE EXISTING TYPE 1-27 GUARDRAIL PER STD. NO. B-7.

LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
59	1	4.0"	204*	(12)#2, (1)#2 GROUND	TRENCH
62	1	4.0"	205	(12)#2, (1)#2 GROUND	TRENCH
63	2	3.0"	10	(4)#2, (1)#2 GROUND	TRENCH
64	1	4.0"	86	(12)#2, (1)#2 GROUND	TRENCH
65	1	4.0"	192	(12)#2, (1)#2 GROUND	BORE
66	4	4.0"	7	(8)#2, (1)#2 GROUND IN 1 CONDUIT (8)#2, (1)#2 GROUND IN 1 CONDUIT 2 CONDUITS ARE SPARES	TRENCH
67**	1	3.0"	12	(4)#4/0, (1)#2 GROUND	TRENCH
68**	1	3.0"	34	(4)#4/0, (1)#2 GROUND	TRENCH
69	1	4.0"	292	(4)#2, (1)#2 GROUND	TRENCH
70	1	4.0"	173	(4)#2, (1)#2 GROUND	TRENCH
71	1	4.0"	93	(4)#2, (1)#2 GROUND	BORE
72	2	3.0"	20	(4)#2, (1)#2 GROUND	TRENCH
73	1	4.0"	226	(4)#2, (1)#2 GROUND	TRENCH
122	1	4.0"	197	(4)#2, (1)#2 GROUND	TRENCH
123	1	4.0"	231*	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
** GALVANIZED RIGID CONDUIT.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

ITMS CONDUIT RUN SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
300	1	2.0"	72	REMOVE EX. (2)#4, EX. (1)#6 GROUND TO REMAIN, INSTALL (2)#2***	EXISTING
301	1	2.0"	251	REMOVE EX. (2)#4, EX. (1)#6 GROUND TO REMAIN, INSTALL (2)#2***	EXISTING
302	1	2.0"	105	REMOVE EX. (2)#4, EX. (1)#6 GROUND TO REMAIN, INSTALL (2)#2***	EXISTING
303	1	2.0"	47	EX. (2)#6 TO REMAIN, EX. (1)#6 GROUND TO REMAIN	EXISTING
304	1	2.0"	435	REMOVE EX. (2)#4, EX. (1)#6 GROUND TO REMAIN, INSTALL (2)#2***	EXISTING
305	1	2.0"	610*	REMOVE EX. (2)#4, EX. (1)#6 GROUND TO REMAIN, INSTALL (2)#2***	EXISTING
140**	1	2.0"	44	(4)#2, (1)#6 GROUND	TRENCH***
141**	1	2.0"	15	(4)#2, (1)#6 GROUND	TRENCH***

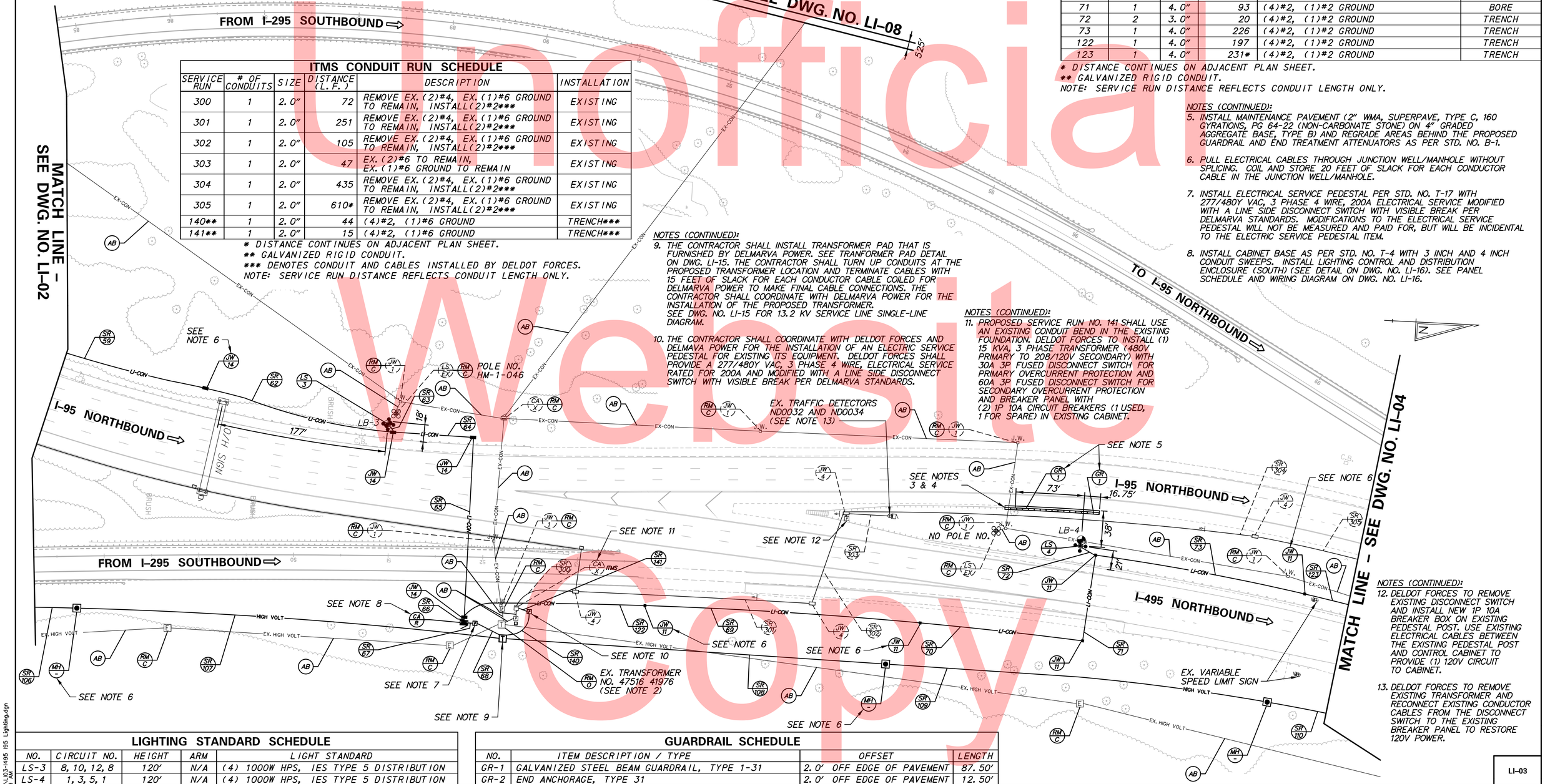
* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
** GALVANIZED RIGID CONDUIT.
*** DENOTES CONDUIT AND CABLES INSTALLED BY DELDOT FORCES.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

NOTES (CONTINUED):
9. THE CONTRACTOR SHALL INSTALL TRANSFORMER PAD THAT IS FURNISHED BY DELMARVA POWER. SEE TRANFORMER PAD DETAIL ON DWG. LI-15. THE CONTRACTOR SHALL TURN UP CONDUITS AT THE PROPOSED TRANSFORMER LOCATION AND TERMINATE CABLES WITH 15 FEET OF SLACK FOR EACH CONDUCTOR CABLE COILED FOR DELMARVA POWER TO MAKE FINAL CABLE CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WITH DELMARVA POWER FOR THE INSTALLATION OF THE PROPOSED TRANSFORMER. SEE DWG. NO. LI-15 FOR 13.2 KV SERVICE LINE SINGLE-LINE DIAGRAM.
10. THE CONTRACTOR SHALL COORDINATE WITH DELDOT FORCES AND DELMAVA POWER FOR THE INSTALLATION OF AN ELECTRIC SERVICE PEDESTAL FOR EXISTING ITS EQUIPMENT. DELDOT FORCES SHALL PROVIDE A 277/480Y VAC, 3 PHASE 4 WIRE, ELECTRICAL SERVICE RATED FOR 200A AND MODIFIED WITH A LINE SIDE DISCONNECT SWITCH WITH VISIBLE BREAK PER DELMARVA STANDARDS.

NOTES (CONTINUED):
11. PROPOSED SERVICE RUN NO. 141 SHALL USE AN EXISTING CONDUIT BEND IN THE EXISTING FOUNDATION. DELDOT FORCES TO INSTALL (1) 15 KVA, 3 PHASE TRANSFORMER (480V PRIMARY TO 208/120V SECONDARY) WITH 30A 3P FUSED DISCONNECT SWITCH FOR PRIMARY OVERCURRENT PROTECTION AND 60A 3P FUSED DISCONNECT SWITCH FOR SECONDARY OVERCURRENT PROTECTION AND BREAKER PANEL WITH (2) 1P 10A CIRCUIT BREAKERS (1 USED, 1 FOR SPARE) IN EXISTING CABINET.

NOTES (CONTINUED):
5. INSTALL MAINTENANCE PAVEMENT (2" WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE) ON 4" GRADED AGGREGATE BASE, TYPE B) AND REGRADE AREAS BEHIND THE PROPOSED GUARDRAIL AND END TREATMENT ATTENUATORS AS PER STD. NO. B-1.
6. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL/MANHOLE WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL/MANHOLE.
7. INSTALL ELECTRICAL SERVICE PEDESTAL PER STD. NO. T-17 WITH 277/480Y VAC, 3 PHASE 4 WIRE, 200A ELECTRICAL SERVICE MODIFIED WITH A LINE SIDE DISCONNECT SWITCH WITH VISIBLE BREAK PER DELMARVA STANDARDS. MODIFICATIONS TO THE ELECTRICAL SERVICE PEDESTAL WILL NOT BE MEASURED AND PAID FOR, BUT WILL BE INCIDENTAL TO THE ELECTRIC SERVICE PEDESTAL ITEM.
8. INSTALL CABINET BASE AS PER STD. NO. T-4 WITH 3 INCH AND 4 INCH CONDUIT SWEEPS. INSTALL LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE (SOUTH) (SEE DETAIL ON DWG. NO. LI-16). SEE PANEL SCHEDULE AND WIRING DIAGRAM ON DWG. NO. LI-16.

NOTES (CONTINUED):
12. DELDOT FORCES TO REMOVE EXISTING DISCONNECT SWITCH AND INSTALL NEW 1P 10A BREAKER BOX ON EXISTING PEDESTAL POST. USE EXISTING ELECTRICAL CABLES BETWEEN THE EXISTING PEDESTAL POST AND CONTROL CABINET TO PROVIDE (1) 120V CIRCUIT TO CABINET.
13. DELDOT FORCES TO REMOVE EXISTING TRANSFORMER AND RECONNECT EXISTING CONDUCTOR CABLES FROM THE DISCONNECT SWITCH TO THE EXISTING BREAKER PANEL TO RESTORE 120V POWER.



LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-3	8, 10, 12, 8	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-4	1, 3, 5, 1	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	OFFSET	LENGTH
GR-1	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	2.0' OFF EDGE OF PAVEMENT	87.50'
GR-2	END ANCHORAGE, TYPE 31	2.0' OFF EDGE OF PAVEMENT	12.50'

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 50 100 150
FEET

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT	T201509002
COUNTY	NEW CASTLE
BRIDGE NO.	N/A
DESIGNED BY:	WRA
CHECKED BY:	WRA

LIGHTING PLAN

LI-03

SHEET NO.	6
TOTAL SHTS.	26

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LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-5	3, 5, 1, 3	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-10	3, 5, 1, 3	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

ITMS CONDUIT RUN SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
305	1	2.0"	610*	REMOVE EX.(2)#4, EX.(1)#6 GROUND TO REMAIN, INSTALL(2)#2***	EXISTING
306	1	1.5"	25	REMOVE EX.(2)#4, EX.(1)#6 GROUND TO REMAIN, INSTALL(2)#2***	EXISTING
307	1	1.5"	678*	REMOVE EX.(2)#4, EX.(1)#6 GROUND TO REMAIN, INSTALL(2)#2***	EXISTING

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
*** DENOTES CONDUIT AND CABLES INSTALLED BY DELDOT FORCES.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

LIGHTING SERVICE SCHEDULE

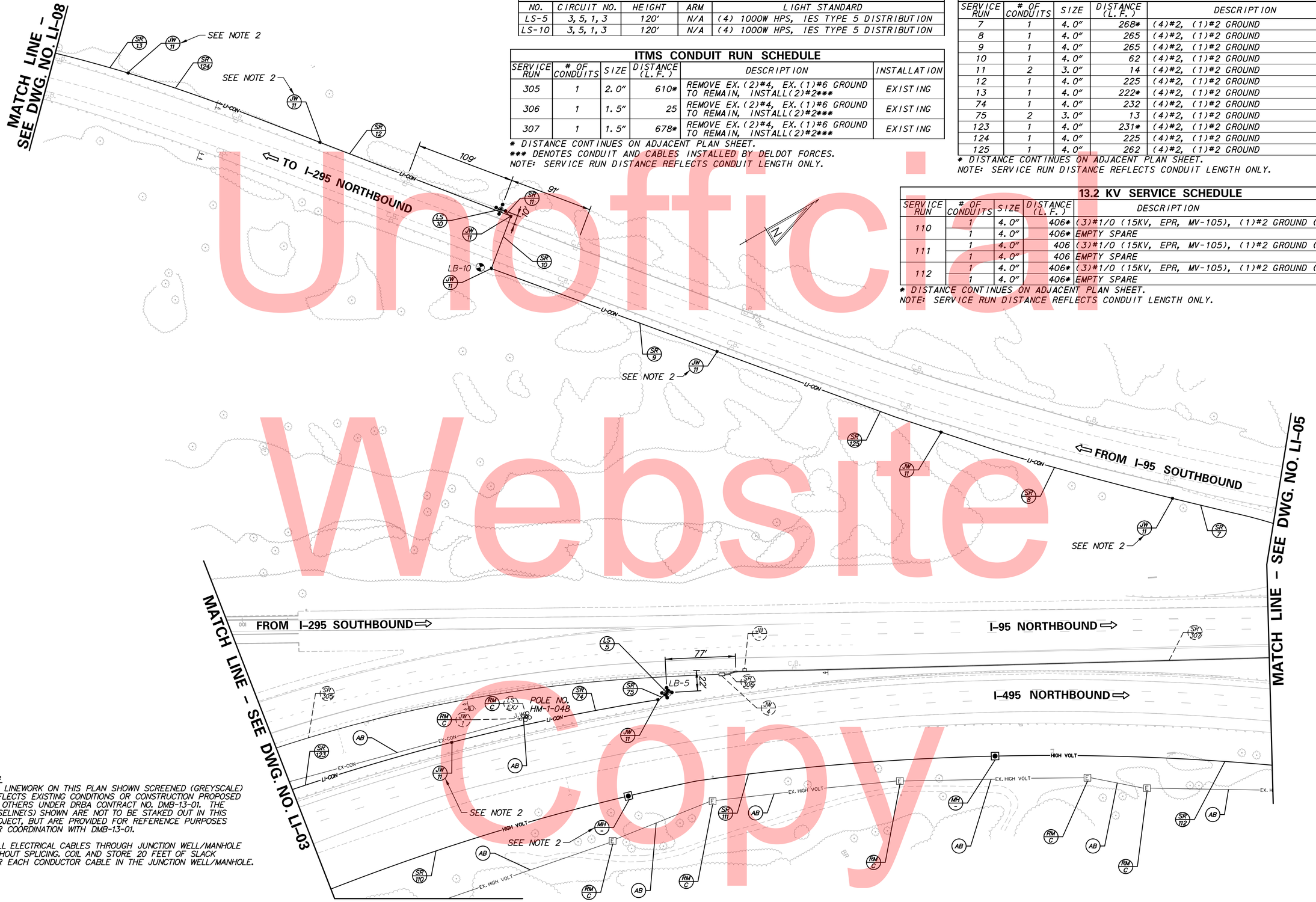
SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
7	1	4.0"	268*	(4)#2, (1)#2 GROUND	TRENCH/BORE
8	1	4.0"	265	(4)#2, (1)#2 GROUND	TRENCH
9	1	4.0"	265	(4)#2, (1)#2 GROUND	TRENCH
10	1	4.0"	62	(4)#2, (1)#2 GROUND	BORE
11	2	3.0"	14	(4)#2, (1)#2 GROUND	TRENCH
12	1	4.0"	225	(4)#2, (1)#2 GROUND	TRENCH
13	1	4.0"	222*	(4)#2, (1)#2 GROUND	TRENCH
74	1	4.0"	232	(4)#2, (1)#2 GROUND	TRENCH
75	2	3.0"	13	(4)#2, (1)#2 GROUND	TRENCH
123	1	4.0"	231*	(4)#2, (1)#2 GROUND	TRENCH
124	1	4.0"	225	(4)#2, (1)#2 GROUND	TRENCH
125	1	4.0"	262	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

13.2 KV SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
110	1	4.0"	406*	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	406*	EMPTY SPARE	TRENCH
111	1	4.0"	406	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	406	EMPTY SPARE	TRENCH
112	1	4.0"	406*	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	406*	EMPTY SPARE	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



NOTES:
1. ALL LINEWORK ON THIS PLAN SHOWN SCREENED (GREYSCALE) REFLECTS EXISTING CONDITIONS OR CONSTRUCTION PROPOSED BY OTHERS UNDER DRBA CONTRACT NO. DMB-13-01. THE BASELINE(S) SHOWN ARE NOT TO BE STAKED OUT IN THIS PROJECT, BUT ARE PROVIDED FOR REFERENCE PURPOSES FOR COORDINATION WITH DMB-13-01.
2. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL/MANHOLE WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL/MANHOLE.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 50 100 150
FEET

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT	BRIDGE NO.	N/A
T201509002	DESIGNED BY: WRA	
COUNTY	CHECKED BY: WRA	
NEW CASTLE		

LIGHTING PLAN

LI-04
SHEET NO. 7
TOTAL SHTS. 26

LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
1**	1	3.0"	16	(4)#4/0, (1)#2 GROUND	TRENCH
2**	1	3.0"	11	(4)#4/0, (1)#2 GROUND	TRENCH
3	4	4.0"	7	(12)#2, (1)#2 GROUND IN 1 CONDUIT (8)#2, (1)#2 GROUND IN 1 CONDUIT 2 CONDUITS ARE SPARES	TRENCH
4	2	4.0"	89	(12)#2, (1)#2 GROUND IN 1 CONDUIT (8)#2, (1)#2 GROUND IN 1 CONDUIT	BORE
5	2	3.0"	87	(4)#2, (1)#2 GROUND	TRENCH
6	1	4.0"	110	(4)#2, (1)#2 GROUND	BORE
7	1	4.0"	268*	(4)#2, (1)#2 GROUND	TRENCH/BORE
15	2	4.0"	247	(8)#2, (1)#2 GROUND IN 1 CONDUIT (8)#2, (1)#2 GROUND IN 1 CONDUIT	TRENCH
16	2	4.0"	251	(8)#2, (1)#2 GROUND IN 1 CONDUIT (8)#2, (1)#2 GROUND IN 1 CONDUIT	TRENCH
17	2	4.0"	122	(8)#2, (1)#2 GROUND IN 1 CONDUIT (8)#2, (1)#2 GROUND IN 1 CONDUIT	BORE
18	1	4.0"	142	(4)#2, (1)#2 GROUND	TRENCH
19	2	3.0"	18	(4)#2, (1)#2 GROUND	TRENCH
20	1	4.0"	284*	(4)#2, (1)#2 GROUND	TRENCH
25	1	4.0"	225	(8)#2, (1)#2 GROUND	BORE
26	1	4.0"	180*	(8)#2, (1)#2 GROUND	TRENCH
37	1	4.0"	233	(8)#2, (1)#2 GROUND	TRENCH
38	1	4.0"	233*	(8)#2, (1)#2 GROUND	TRENCH
126	2	4.0"	194	(8)#2, (1)#2 GROUND IN 1 CONDUIT (8)#2, (1)#2 GROUND IN 1 CONDUIT	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
** GALVANIZED RIGID CONDUIT.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

NOTES:
1. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL.
2. FOLLOWING ENERGIZATION OF THE NEW 13.2 KV LINE AND DEENERGIZATION OF THE EXISTING 13.2 KV LINE THE CONTRACTOR SHALL REMOVE ALL EXISTING ELECTRICAL VAULTS AND ABANDON ALL EXISTING LINES. THE CONTRACTOR SHALL COORDINATE WITH DELMARVA POWER FOR THE REMOVAL OF THE EXISTING PAD MOUNTED TRANSFORMER.
3. INSTALL ELECTRICAL SERVICE PEDESTAL PER STD. NO. T-17 WITH 277/480Y VAC, 3 PHASE 4 WIRE, 200A ELECTRICAL SERVICE MODIFIED WITH A LINE SIDE DISCONNECT SWITCH WITH VISIBLE BREAK PER DELMARVA STANDARDS. MODIFICATIONS TO THE ELECTRICAL SERVICE PEDESTAL WILL NOT BE MEASURED AND PAID FOR, BUT WILL BE INCIDENTAL TO THE ELECTRIC SERVICE PEDESTAL ITEM.
4. INSTALL CABINET BASE AS PER STD. NO. T-4 WITH 3 INCH AND 4 INCH CONDUIT SWEEPS. INSTALL LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE (NORTH) (SEE DETAIL ON DWG. NO. LI-16). SEE PANEL SCHEDULE AND WIRING DIAGRAM ON DWG. NO. LI-16.

LIGHTING STANDARD SCHEDULE

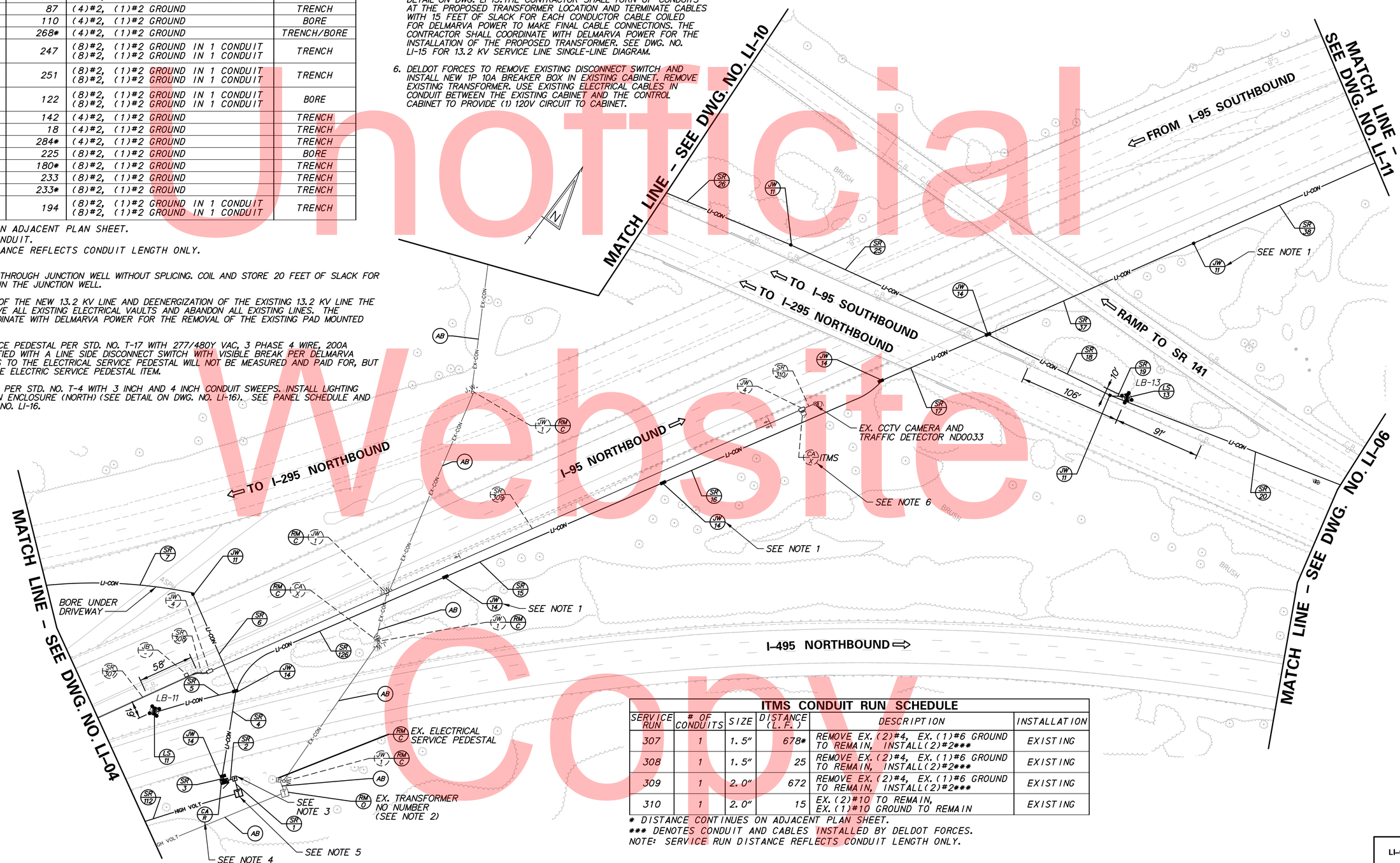
NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-11	1, 3, 5, 1	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-13	2, 4, 6, 2	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

NOTES CONTINUED:
5. THE CONTRACTOR SHALL INSTALL TRANSFORMER PAD THAT IS FURNISHED BY DELMARVA POWER. SEE TRANSFORMER PAD DETAIL ON DWG. LI-15.THE CONTRACTOR SHALL TURN UP CONDUITS AT THE PROPOSED TRANSFORMER LOCATION AND TERMINATE CABLES WITH 15 FEET OF SLACK FOR EACH CONDUCTOR CABLE COILED FOR DELMARVA POWER TO MAKE FINAL CABLE CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WITH DELMARVA POWER FOR THE INSTALLATION OF THE PROPOSED TRANSFORMER. SEE DWG. NO. LI-15 FOR 13.2 KV SERVICE LINE SINGLE-LINE DIAGRAM.
6. DELDOT FORCES TO REMOVE EXISTING DISCONNECT SWITCH AND INSTALL NEW 1P 10A BREAKER BOX IN EXISTING CABINET. REMOVE EXISTING TRANSFORMER. USE EXISTING ELECTRICAL CABLES IN CONDUIT BETWEEN THE EXISTING CABINET AND THE CONTROL CABINET TO PROVIDE (1) 120V CIRCUIT TO CABINET.

13.2 KV SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
112	1	4.0"	406*	(3)#1/0 (15KV, EPR, MV-105), (1)#2 GROUND (600V)	TRENCH
	1	4.0"	406*	EMPTY SPARE	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



ITMS CONDUIT RUN SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
307	1	1.5"	678*	REMOVE EX.(2)#4, EX.(1)#6 GROUND TO REMAIN, INSTALL(2)#2***	EXISTING
308	1	1.5"	25	REMOVE EX.(2)#4, EX.(1)#6 GROUND TO REMAIN, INSTALL(2)#2***	EXISTING
309	1	2.0"	672	REMOVE EX.(2)#4, EX.(1)#6 GROUND TO REMAIN, INSTALL(2)#2***	EXISTING
310	1	2.0"	15	EX.(2)#10 TO REMAIN, EX.(1)#10 GROUND TO REMAIN	EXISTING

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
*** DENOTES CONDUIT AND CABLES INSTALLED BY DELDOT FORCES.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 50 100 150
FEET

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT	T201509002
COUNTY	NEW CASTLE
BRIDGE NO.	N/A
DESIGNED BY:	WRA
CHECKED BY:	WRA

LIGHTING PLAN

LI-05

SHEET NO.	8
TOTAL SHTS.	26

LIGHTING STANDARD SCHEDULE

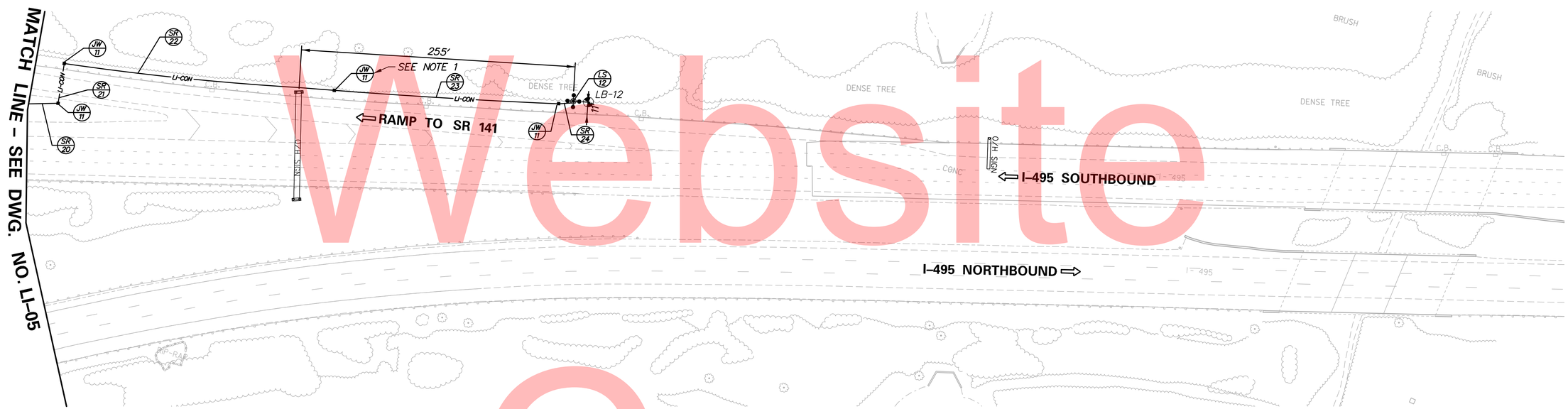
NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-12	4, 6, 2, 4	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
20	1	4.0"	284*	(4)#2, (1)#2 GROUND	TRENCH
21	1	4.0"	38	(4)#2, (1)#2 GROUND	BORE
22	1	4.0"	253	(4)#2, (1)#2 GROUND	TRENCH
23	1	4.0"	209	(4)#2, (1)#2 GROUND	TRENCH
24	2	3.0"	14	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

NOTES:
1. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL.



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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 50 100 150 FEET

I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT	BRIDGE NO.	N/A
T201509002	DESIGNED BY: WRA	
COUNTY	CHECKED BY: WRA	
NEW CASTLE		

LIGHTING PLAN

LI-06

SHEET NO.	TOTAL SHTS.
9	26

LIGHTING SERVICE SCHEDULE

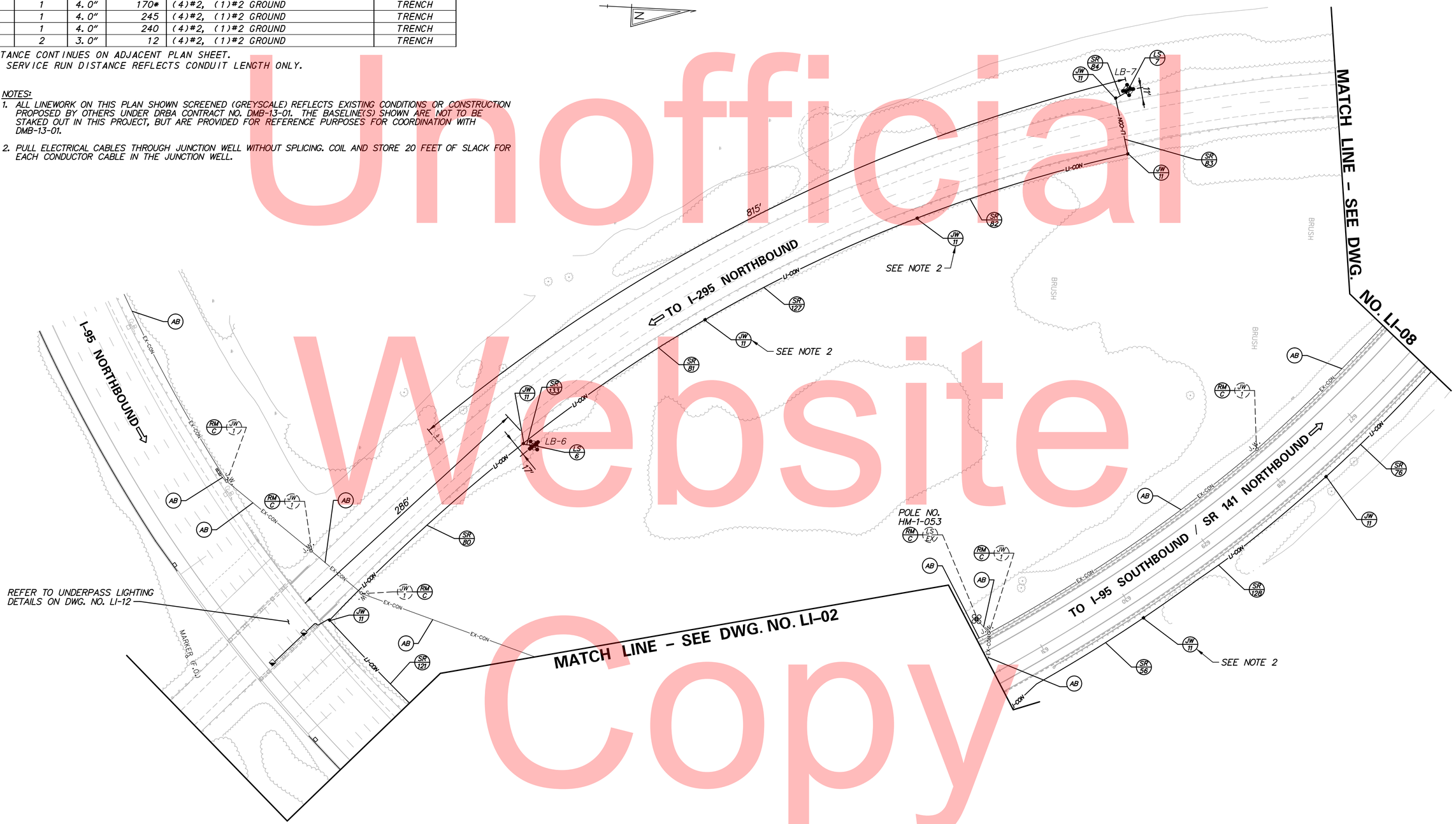
SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
56	1	4.0"	232*	(4)#2, (1)#2 GROUND	TRENCH
76	1	4.0"	243*	(4)#2, (1)#2 GROUND	TRENCH
80	1	4.0"	272	(4)#2, (1)#2 GROUND	TRENCH
81	1	4.0"	229	(4)#2, (1)#2 GROUND	TRENCH
82	1	4.0"	230	(4)#2, (1)#2 GROUND	TRENCH
83	1	4.0"	60	(4)#2, (1)#2 GROUND	BORE
84	2	3.0"	16	(4)#2, (1)#2 GROUND	TRENCH
121	1	4.0"	170*	(4)#2, (1)#2 GROUND	TRENCH
127	1	4.0"	245	(4)#2, (1)#2 GROUND	TRENCH
128	1	4.0"	240	(4)#2, (1)#2 GROUND	TRENCH
133	2	3.0"	12	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-6	7, 9, 11, 7	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-7	9, 11, 7, 9,	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

NOTES:
1. ALL LINEWORK ON THIS PLAN SHOWN SCREENED (GREYSCALE) REFLECTS EXISTING CONDITIONS OR CONSTRUCTION PROPOSED BY OTHERS UNDER DRBA CONTRACT NO. DMB-13-01. THE BASELINE(S) SHOWN ARE NOT TO BE STAKED OUT IN THIS PROJECT, BUT ARE PROVIDED FOR REFERENCE PURPOSES FOR COORDINATION WITH DMB-13-01.
2. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL.



DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 50 100 150 FEET	I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS	CONTRACT T201509002	BRIDGE NO. N/A	LIGHTING PLAN
				COUNTY NEW CASTLE	DESIGNED BY: WRA	
					CHECKED BY: WRA	

LI-07
SHEET NO. 10
TOTAL SHTS. 26

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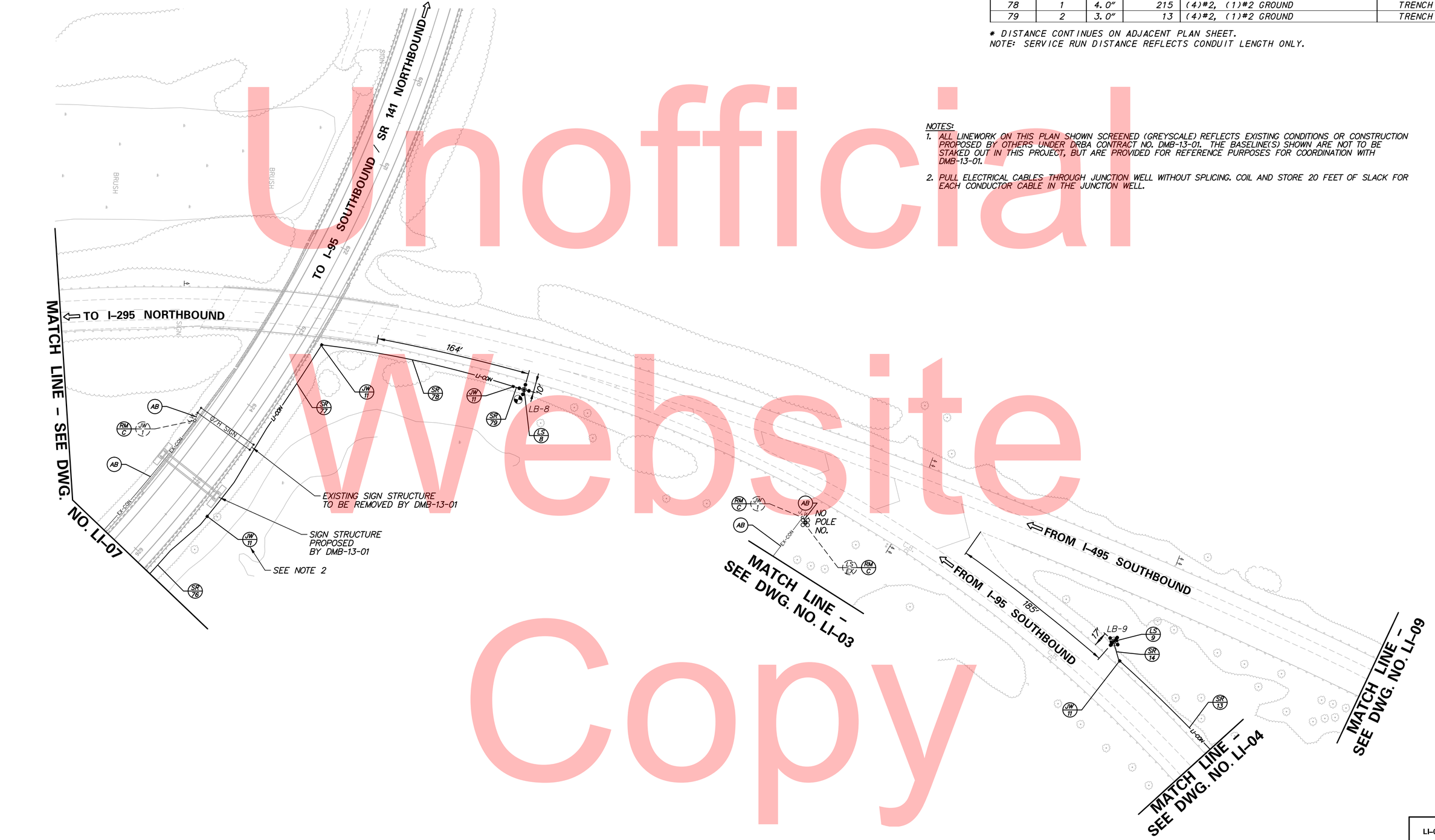
LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-8	4, 6, 2, 4	120′	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-9	5, 1, 3, 5	120′	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
13	1	4.0″	222*	(4)#2, (1)#2 GROUND	TRENCH
14	2	3.0″	23	(4)#2, (1)#2 GROUND	TRENCH
76	1	4.0″	243*	(4)#2, (1)#2 GROUND	TRENCH
77	1	4.0″	227	(4)#2, (1)#2 GROUND	TRENCH
78	1	4.0″	215	(4)#2, (1)#2 GROUND	TRENCH
79	2	3.0″	13	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



NOTES:

1. ALL LINEWORK ON THIS PLAN SHOWN SCREENED (GREYSCALE) REFLECTS EXISTING CONDITIONS OR CONSTRUCTION PROPOSED BY OTHERS UNDER DRBA CONTRACT NO. DMB-13-01. THE BASELINE(S) SHOWN ARE NOT TO BE STAKED OUT IN THIS PROJECT, BUT ARE PROVIDED FOR REFERENCE PURPOSES FOR COORDINATION WITH DMB-13-01.
2. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL.

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 50 100 150
FEET

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT	BRIDGE NO.	N/A
T201509002	DESIGNED BY: WRA	
COUNTY	CHECKED BY: WRA	
NEW CASTLE		

LIGHTING PLAN

LI-08
SHEET NO. 11
TOTAL SHTS. 26

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	OFFSET	LENGTH
GR-3	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 2-31	2.0'+ OFF EDGE OF PAVEMENT	50.00'
GR-4	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	2.0' OFF EDGE OF PAVEMENT	225.00'
GR-5	END ANCHORAGE, TYPE 31	2.0' OFF EDGE OF PAVEMENT	12.50'

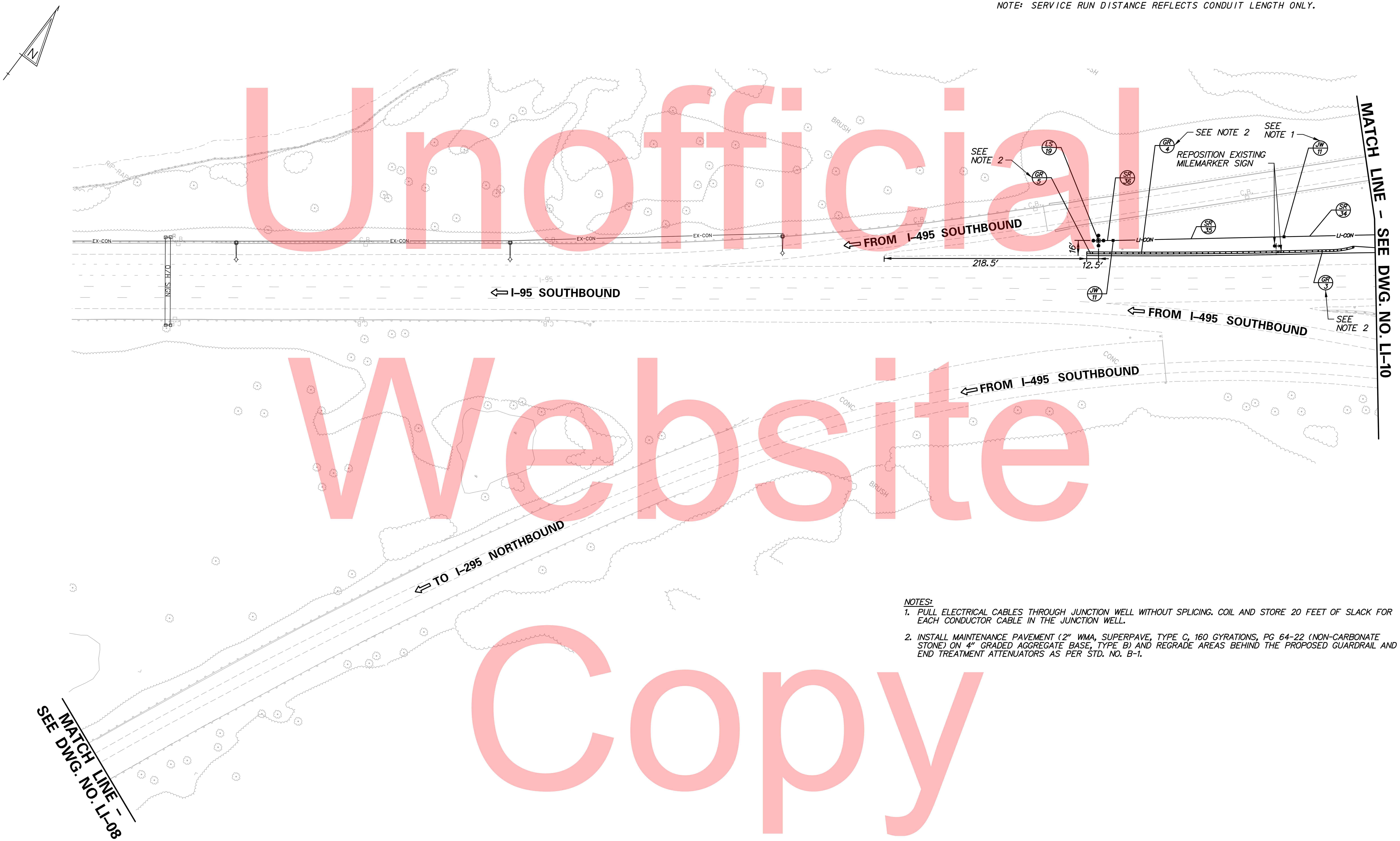
LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-19	7, 9, 11, 7	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
34	1	4.0"	185*	(4)#2, (1)#2 GROUND	TRENCH
35	1	4.0"	185	(4)#2, (1)#2 GROUND	TRENCH
36	2	3.0"	16	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



NOTES:
1. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL.
2. INSTALL MAINTENANCE PAVEMENT (2" WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE) ON 4" GRADED AGGREGATE BASE, TYPE B) AND REGRADE AREAS BEHIND THE PROPOSED GUARDRAIL AND END TREATMENT ATTENUATORS AS PER STD. NO. B-1.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 50 100 150 FEET

I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT	T201509002
COUNTY	NEW CASTLE
BRIDGE NO.	N/A
DESIGNED BY:	WRA
CHECKED BY:	WRA

LIGHTING PLAN

LI-09

SHEET NO. 12
TOTAL SHTS. 26

LIGHTING STANDARD SCHEDULE

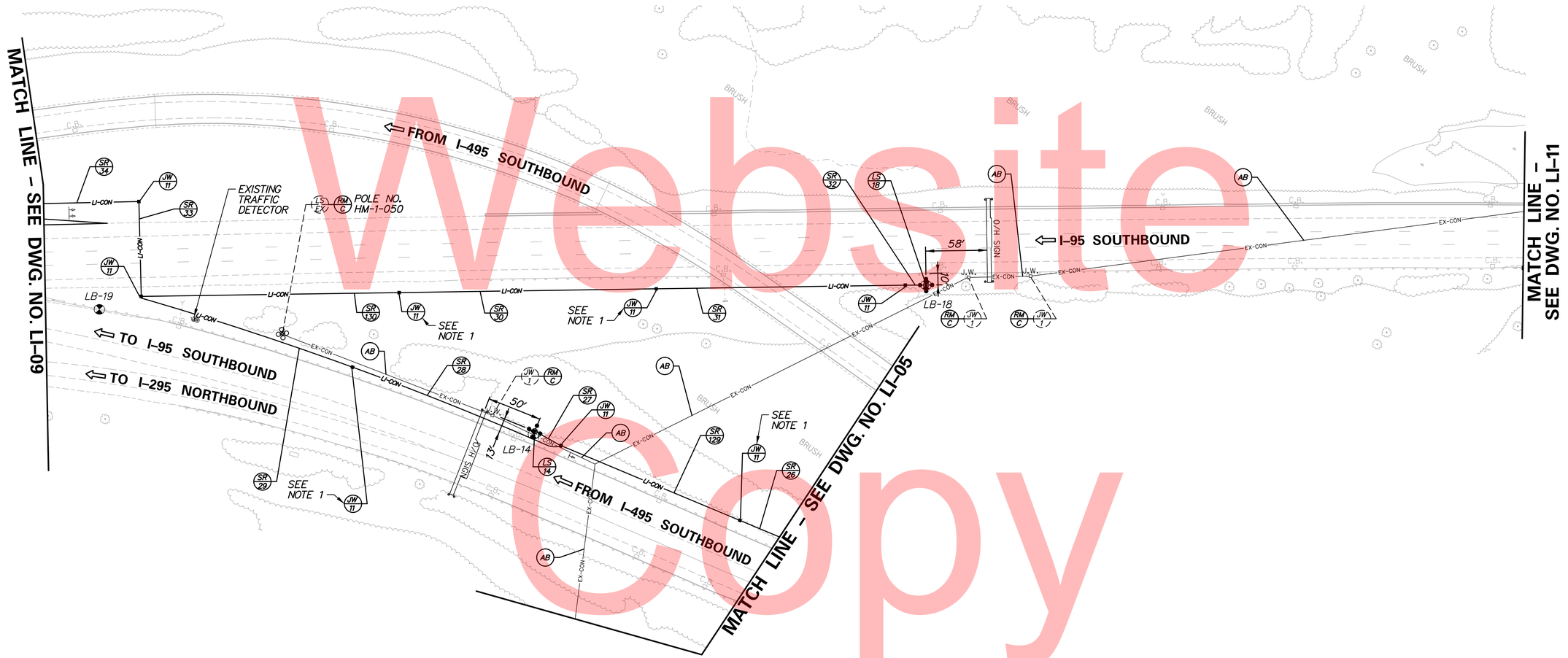
NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-14	8, 10, 12, 8	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-18	9, 11, 7, 9	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

NOTES:
1. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL.

LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
26	1	4.0"	180*	(8)#2, (1)#2 GROUND	TRENCH
27	2	3.0"	28	(4)#2, (1)#2 GROUND	TRENCH
28	1	4.0"	203	(4)#2, (1)#2 GROUND	TRENCH
29	1	4.0"	202	(4)#2, (1)#2 GROUND	TRENCH
30	1	4.0"	233	(4)#2, (1)#2 GROUND	TRENCH
31	1	4.0"	226	(4)#2, (1)#2 GROUND	TRENCH
32	2	3.0"	19	(4)#2, (1)#2 GROUND	TRENCH
33	1	4.0"	86	(4)#2, (1)#2 GROUND	BORE
34	1	4.0"	185*	(4)#2, (1)#2 GROUND	TRENCH
129	1	4.0"	176	(8)#2, (1)#2 GROUND	TRENCH
130	1	4.0"	234	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 50 100 150 FEET	I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS	CONTRACT T201509002	BRIDGE NO. N/A	LIGHTING PLAN	LI-10
				COUNTY NEW CASTLE	DESIGNED BY: WRA		SHEET NO. 13
					CHECKED BY: WRA		TOTAL SHTS. 26

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GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	OFFSET	LENGTH
GR-6	GUARDRAIL END TREATMENT ATTENUATOR, TYPE 2-31	9.0' + OFF EDGE OF PAVEMENT	50.00'
GR-7	GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31	VARIES, 3.0'-9.0' OFF EDGE OF PAVEMENT	75.00'

LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-15	15, 17, 13, 15	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-16	13, 15, 17, 13	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION
LS-17	10, 12, 8, 10	120'	N/A	(4) 1000W HPS, IES TYPE 5 DISTRIBUTION

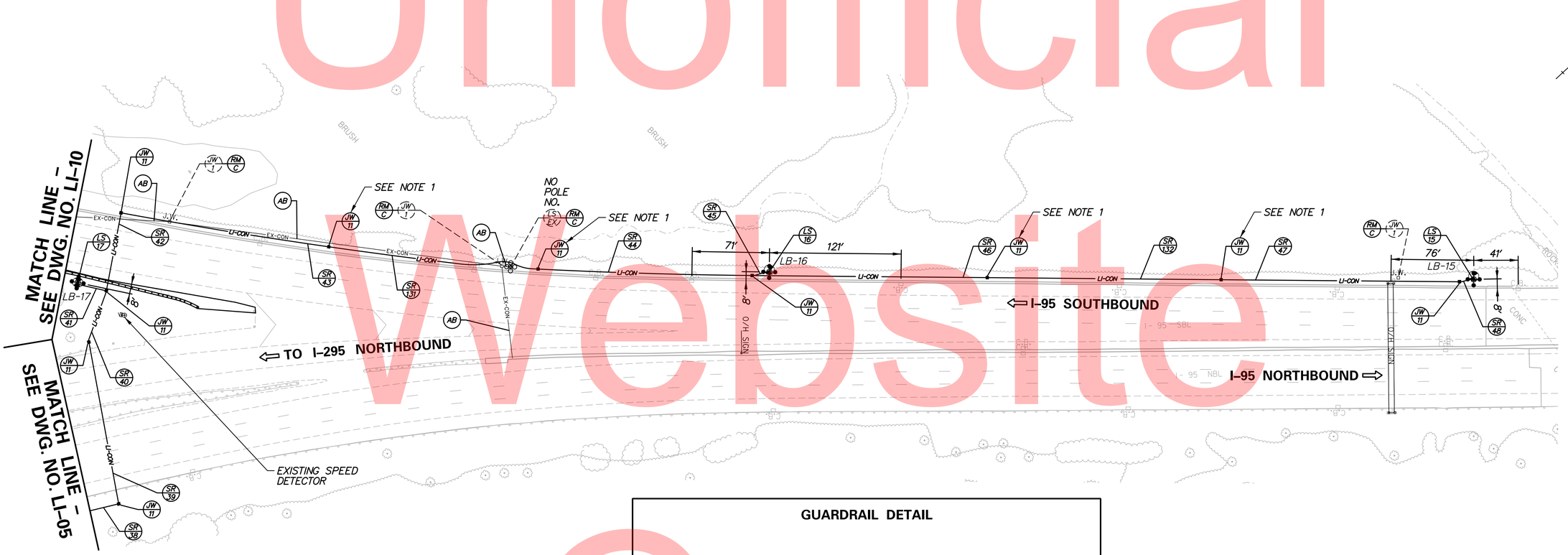
NOTES:

1. PULL ELECTRICAL CABLES THROUGH JUNCTION WELL WITHOUT SPLICING. COIL AND STORE 20 FEET OF SLACK FOR EACH CONDUCTOR CABLE IN THE JUNCTION WELL.
2. INSTALL MAINTENANCE PAVEMENT (2" WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE) ON 4" GRADED AGGREGATE BASE, TYPE B) AND REGRADE AREAS BEHIND THE PROPOSED GUARDRAIL AND END TREATMENT ATTENUATORS AS PER STD. NO. B-1.
3. REMOVE THE EXISTING GUARDRAIL END TREATMENT AND GUARDRAIL AS SHOWN ON THE PLANS.
4. TIE AND TRANSITION PROPOSED TYPE 1-31 GUARDRAIL INTO THE EXISTING TYPE 1-27 GUARDRAIL PER STD. NO. B-7.

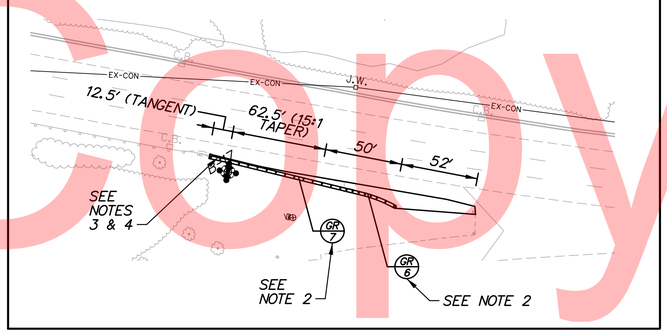
LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
38	1	4.0"	235*	(8)#2, (1)#2 GROUND	TRENCH
39	1	4.0"	152	(8)#2, (1)#2 GROUND	BORE
40	1	4.0"	50	(8)#2, (1)#2 GROUND	TRENCH
41	2	3.0"	28	(4)#2, (1)#2 GROUND	TRENCH
42	1	4.0"	73	(4)#2, (1)#2 GROUND	BORE
43	1	4.0"	194	(4)#2, (1)#2 GROUND	TRENCH
44	1	4.0"	198	(4)#2, (1)#2 GROUND	TRENCH
45	2	3.0"	17	(4)#2, (1)#2 GROUND	TRENCH
46	1	4.0"	217	(4)#2, (1)#2 GROUND	TRENCH
47	1	4.0"	219	(4)#2, (1)#2 GROUND	TRENCH
48	2	3.0"	14	(4)#2, (1)#2 GROUND	TRENCH
131	1	4.0"	195	(4)#2, (1)#2 GROUND	TRENCH
132	1	4.0"	216	(4)#2, (1)#2 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



GUARDRAIL DETAIL



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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 50 100 150 FEET

I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT	BRIDGE NO.	N/A
T201509002	DESIGNED BY: WRA	
COUNTY	CHECKED BY: WRA	
NEW CASTLE		

LIGHTING PLAN

LI-11

SHEET NO.	TOTAL SHTS.
14	26

NOTES:

1. ALL UNDERPASS LUMINAIRES, CONDUIT, STRAPS AND JUNCTION BOXES SHALL BE ATTACHED TO CONCRETE STRUCTURES USING 1/4" STAINLESS STEEL WEDGE ANCHORS WITH A MINIMUM EMBEDMENT OF 2" AND A MINIMUM TENSILE PULLOUT STRENGTH OF 500 LBS. THE COST OF THE ANCHOR BOLTS WILL NOT BE MEASURED AND PAID FOR BUT WILL BE INCIDENTAL TO OTHER NEGOTIABLE ITEMS IN THE CONTRACT.
2. CONDUITS MOUNTED TO BRIDGE STRUCTURE SHALL BE 1" DIAMETER GALVANIZED RIGID CONDUIT, UNLESS OTHERWISE NOTED.
3. ALL CONDUITS MOUNTED TO THE BRIDGE STRUCTURE SHALL BE SUPPORTED BY 2 HOLE STAINLESS STEEL CONDUIT STRAPS OR CLAMPS SPACED AT A MAXIMUM DISTANCE OF 5'-0" BETWEEN SUPPORTS. CONDUITS SHALL ALSO BE SUPPORTED WITHIN 1'-0" OF EACH JUNCTION BOX, CONDULET OR LUMINAIRE.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PROPOSED UNDERPASS LIGHTING SYSTEM COMPONENTS INCLUDING CONDUIT, CONDUIT STRAPS AND CLAMPS, JUNCTION BOXES, BENDS, CONDULETS, EXPANSION COUPLINGS AND UNDERPASS LUMINAIRES TO THE ENGINEER FOR APPROVAL. SHOP DRAWING PREPARATION SHALL BE INCIDENTAL TO THE PERTINENT ITEMS IN THE CONTRACT.
5. ALL CONDUIT STRAPS, CLAMPS, WEDGE ANCHORS AND CONDULETS WILL NOT BE MEASURED AND PAID FOR BUT WILL BE INCIDENTAL TO THE PERTINENT ITEMS IN THE CONTRACT.
6. SEE DRAWING NOS. LI-02 AND LI-07 FOR SERVICE RUN CONNECTION TO THE UNDERPASS LIGHTING SYSTEM.
7. ALL LINEWORK ON THIS PLAN SHOWN SCREENED (GREYSCALE) REFLECTS EXISTING CONDITIONS OR CONSTRUCTION PROPOSED BY OTHERS UNDER DRBA CONTRACT NO. DMB-13-01. THE BASELINE(S) SHOWN ARE NOT TO BE STAKED OUT IN THIS PROJECT, BUT ARE PROVIDED FOR REFERENCE PURPOSES FOR COORDINATION WITH DMB-13-01.
8. REPAIR MAINTENANCE PAVEMENT BETWEEN THE BACK SIDE OF THE CONCRETE BARRIER/GUARDRAIL AND THE BRIDGE SLOPE PROTECTION THAT IS IMPACTED BY CONDUIT INSTALLATION. REPLACE WITH 2" WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE) ON 4" GRADED AGGREGATE BASE, TYPE B.

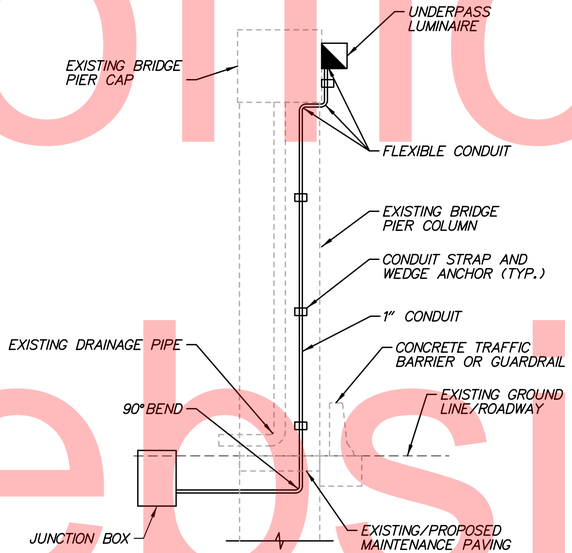
LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-33	7	15'	N/A	100W HPS, IES TYPE 4 DISTRIBUTION
LS-34	11	20'	N/A	100W HPS, IES TYPE 4 DISTRIBUTION
LS-35	12	13'	N/A	100W HPS, IES TYPE 4 DISTRIBUTION
LS-36	10	18'	N/A	100W HPS, IES TYPE 4 DISTRIBUTION
LS-37	8	13'	N/A	100W HPS, IES TYPE 4 DISTRIBUTION
LS-38	12	18'	N/A	100W HPS, IES TYPE 4 DISTRIBUTION

LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
90**	1	1.0"	60	(3)#10, (1)#10 GROUND	TRENCH/ON STRUCTURE
91**	1	1.0"	45	(2)#10, (1)#10 GROUND	ON STRUCTURE
92**	1	1.0"	60	(3)#10, (1)#10 GROUND	TRENCH/ON STRUCTURE
93**	1	1.0"	48	(2)#10, (1)#10 GROUND	ON STRUCTURE
94**	1	1.0"	60	(3)#10, (1)#10 GROUND	TRENCH/ON STRUCTURE
95**	1	1.0"	52	(2)#10, (1)#10 GROUND	ON STRUCTURE

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
** GALVANIZED RIGID CONDUIT.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.



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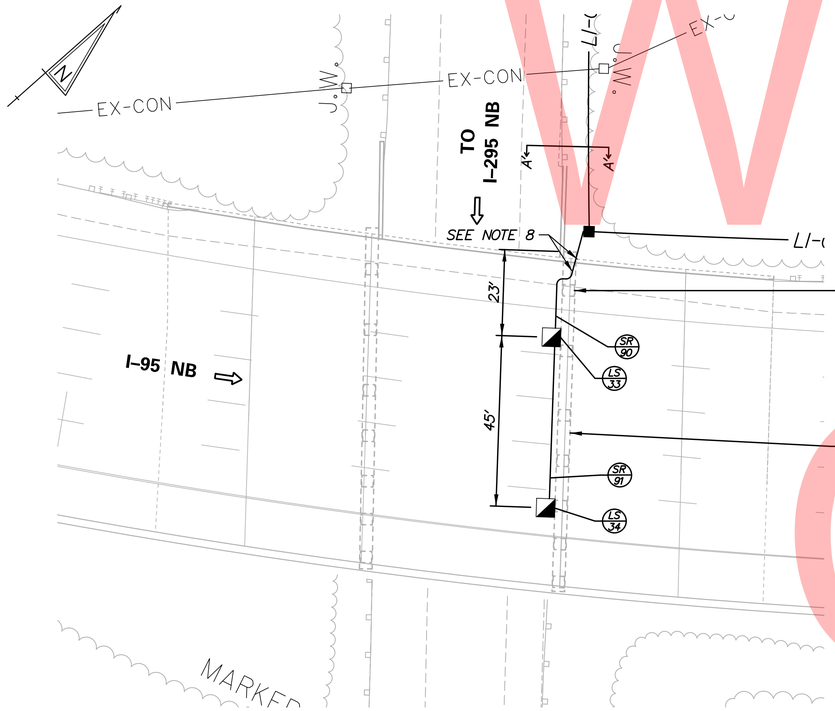

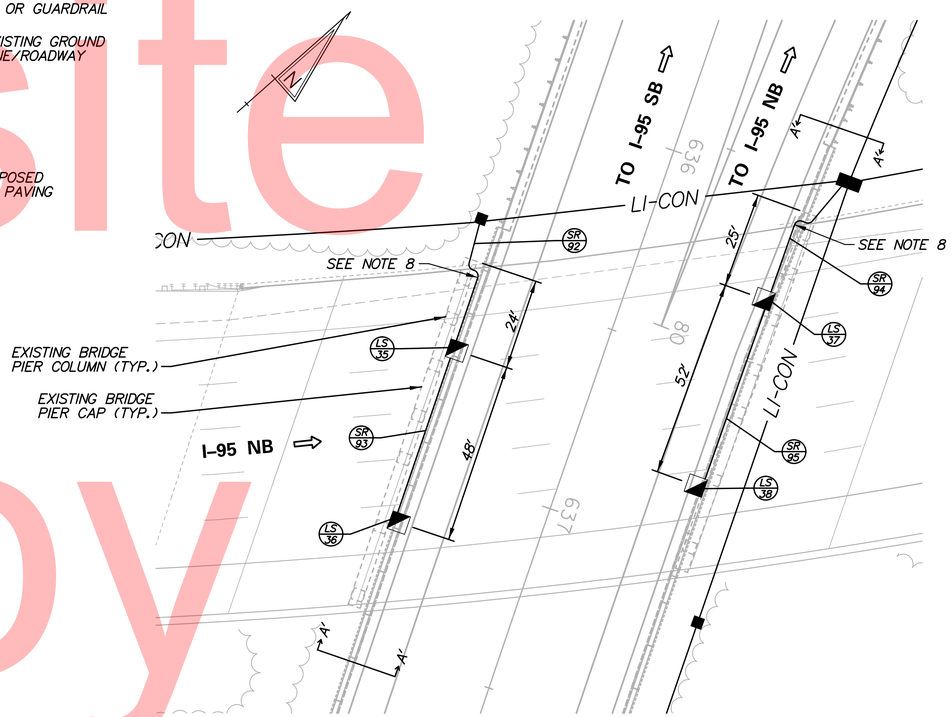

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 20 40 60
FEET

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT	BRIDGE NO.	N/A
T201509002	DESIGNED BY: WRA	
COUNTY	CHECKED BY: WRA	
NEW CASTLE		

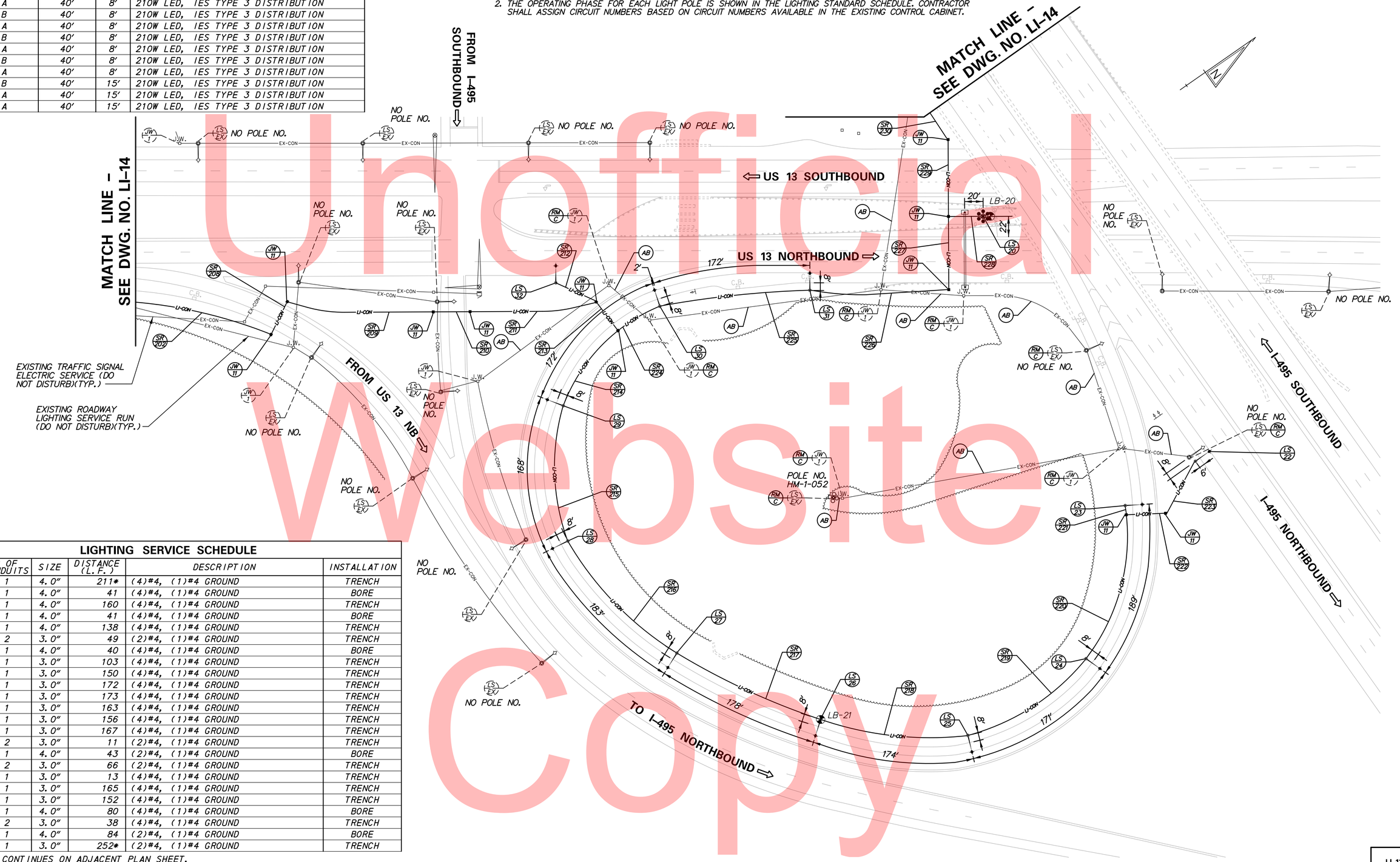
LIGHTING DETAILS

LI-12	
SHEET NO.	15
TOTAL SHTS.	26

LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-20	A, B, A, B, A, B	120'	N/A	(6) 376W LED, IES TYPE 5 DISTRIBUTION
LS-22	B	40'	15'	315W LED, IES TYPE 3 DISTRIBUTION
LS-23	A	40'	8'	210W LED, IES TYPE 3 DISTRIBUTION
LS-24	B	40'	8'	210W LED, IES TYPE 3 DISTRIBUTION
LS-25	A	40'	8'	210W LED, IES TYPE 3 DISTRIBUTION
LS-26	B	40'	8'	210W LED, IES TYPE 3 DISTRIBUTION
LS-27	A	40'	8'	210W LED, IES TYPE 3 DISTRIBUTION
LS-28	B	40'	8'	210W LED, IES TYPE 3 DISTRIBUTION
LS-29	A	40'	8'	210W LED, IES TYPE 3 DISTRIBUTION
LS-30	B	40'	15'	210W LED, IES TYPE 3 DISTRIBUTION
LS-31	A	40'	15'	210W LED, IES TYPE 3 DISTRIBUTION
LS-32	A	40'	15'	210W LED, IES TYPE 3 DISTRIBUTION

NOTES:
1. ALL PROPOSED 40 FOOT HEIGHT LIGHT POLES SHALL BE INSTALLED ON TYPE 6 POLE BASES WITH A POLE BASE EXTENSION PROVIDING AN ADDITIONAL 2 FEET IN DEPTH BELOW GRADE FOR THE FOUNDATION (8 FOOT DEPTH TOTAL).
2. THE OPERATING PHASE FOR EACH LIGHT POLE IS SHOWN IN THE LIGHTING STANDARD SCHEDULE. CONTRACTOR SHALL ASSIGN CIRCUIT NUMBERS BASED ON CIRCUIT NUMBERS AVAILABLE IN THE EXISTING CONTROL CABINET.



LIGHTING SERVICE SCHEDULE

SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
202	1	4.0"	211*	(4)#4, (1)#4 GROUND	TRENCH
208	1	4.0"	41	(4)#4, (1)#4 GROUND	BORE
209	1	4.0"	160	(4)#4, (1)#4 GROUND	TRENCH
210	1	4.0"	41	(4)#4, (1)#4 GROUND	BORE
211	1	4.0"	138	(4)#4, (1)#4 GROUND	TRENCH
212	2	3.0"	49	(2)#4, (1)#4 GROUND	TRENCH
213	1	4.0"	40	(4)#4, (1)#4 GROUND	BORE
214	1	3.0"	103	(4)#4, (1)#4 GROUND	TRENCH
215	1	3.0"	150	(4)#4, (1)#4 GROUND	TRENCH
216	1	3.0"	172	(4)#4, (1)#4 GROUND	TRENCH
217	1	3.0"	173	(4)#4, (1)#4 GROUND	TRENCH
218	1	3.0"	163	(4)#4, (1)#4 GROUND	TRENCH
219	1	3.0"	156	(4)#4, (1)#4 GROUND	TRENCH
220	1	3.0"	167	(4)#4, (1)#4 GROUND	TRENCH
221	2	3.0"	11	(2)#4, (1)#4 GROUND	TRENCH
222	1	4.0"	43	(2)#4, (1)#4 GROUND	BORE
223	2	3.0"	66	(2)#4, (1)#4 GROUND	TRENCH
224	1	3.0"	13	(4)#4, (1)#4 GROUND	TRENCH
225	1	3.0"	165	(4)#4, (1)#4 GROUND	TRENCH
226	1	3.0"	152	(4)#4, (1)#4 GROUND	TRENCH
227	1	4.0"	80	(4)#4, (1)#4 GROUND	BORE
228	2	3.0"	38	(4)#4, (1)#4 GROUND	TRENCH
229	1	4.0"	84	(2)#4, (1)#4 GROUND	BORE
230	1	3.0"	252*	(2)#4, (1)#4 GROUND	TRENCH

* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 50 100 150 FEET

I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT	T201509002
COUNTY	NEW CASTLE
BRIDGE NO.	N/A
DESIGNED BY:	WRA
CHECKED BY:	WRA

LIGHTING PLAN

LI-13

SHEET NO.	16
TOTAL SHTS.	26

LIGHTING SERVICE SCHEDULE

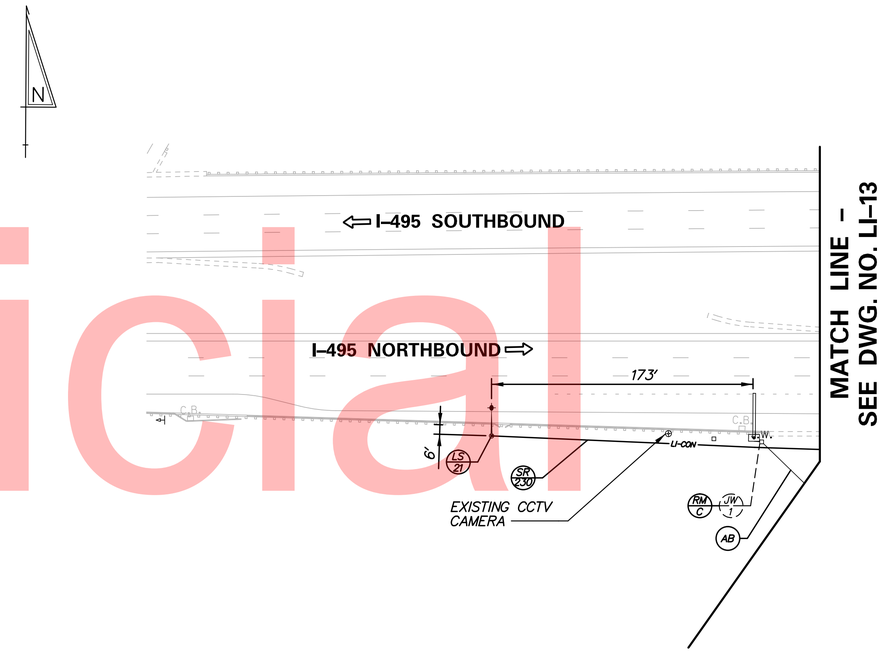
SERVICE RUN	# OF CONDUITS	SIZE	DISTANCE (L.F.)	DESCRIPTION	INSTALLATION
200	1	4.0"	210	(4)#4, (1)#4 GROUND	TRENCH
201	1	4.0"	210	(4)#4, (1)#4 GROUND	TRENCH
202	1	4.0"	211*	(4)#4, (1)#4 GROUND	TRENCH
230	1	3.0"	252*	(2)#4, (1)#4 GROUND	TRENCH

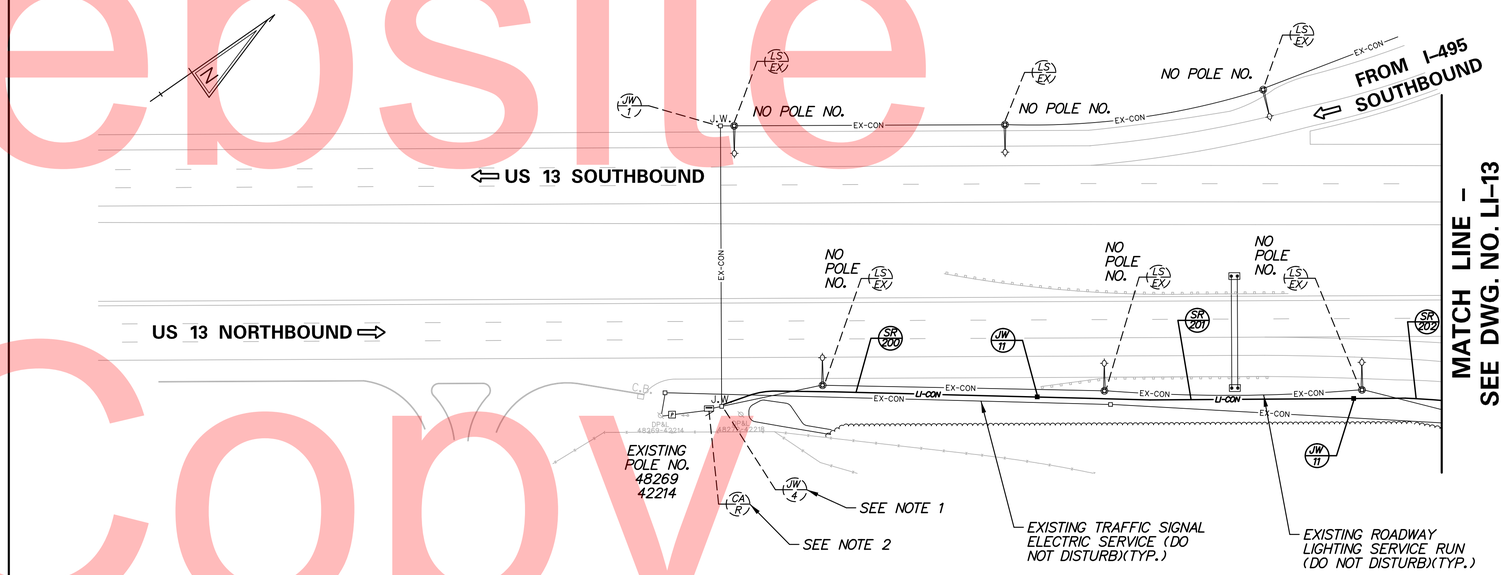
* DISTANCE CONTINUES ON ADJACENT PLAN SHEET.
NOTE: SERVICE RUN DISTANCE REFLECTS CONDUIT LENGTH ONLY.

LIGHTING STANDARD SCHEDULE

NO.	CIRCUIT NO.	HEIGHT	ARM	LIGHT STANDARD
LS-21	A	40'	15'	315W LED, IES TYPE 3 DISTRIBUTION

NOTES:
1. REPAIR EXISTING JUNCTION WELL.
2. THE CONTRACTOR SHALL USE THE EXISTING CABINET AND INSTALL (2) 1P CIRCUIT BREAKERS IN THE EXISTING PANEL TO OPERATE THE PROPOSED LIGHT POLES. MODIFICATIONS TO THE EXISTING CABINET WILL NOT BE MEASURED AND PAID FOR, BUT WILL BE INCIDENTAL TO THE OVERALL CONTRACT.
3. ALL PROPOSED 40 FOOT HEIGHT LIGHT POLES SHALL BE INSTALLED ON TYPE 6 POLE BASES WITH A POLE BASE EXTENSION PROVIDING AN ADDITIONAL 2 FEET IN DEPTH BELOW GRADE FOR THE FOUNDATION (8 FOOT DEPTH TOTAL).
4. THE OPERATING PHASE FOR EACH LIGHT POLE IS SHOWN IN THE LIGHTING STANDARD SCHEDULE. CONTRACTOR SHALL ASSIGN CIRCUIT NUMBERS BASED ON CIRCUIT NUMBERS AVAILABLE IN THE EXISTING CONTROL CABINET.





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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 50 100 150
FEET

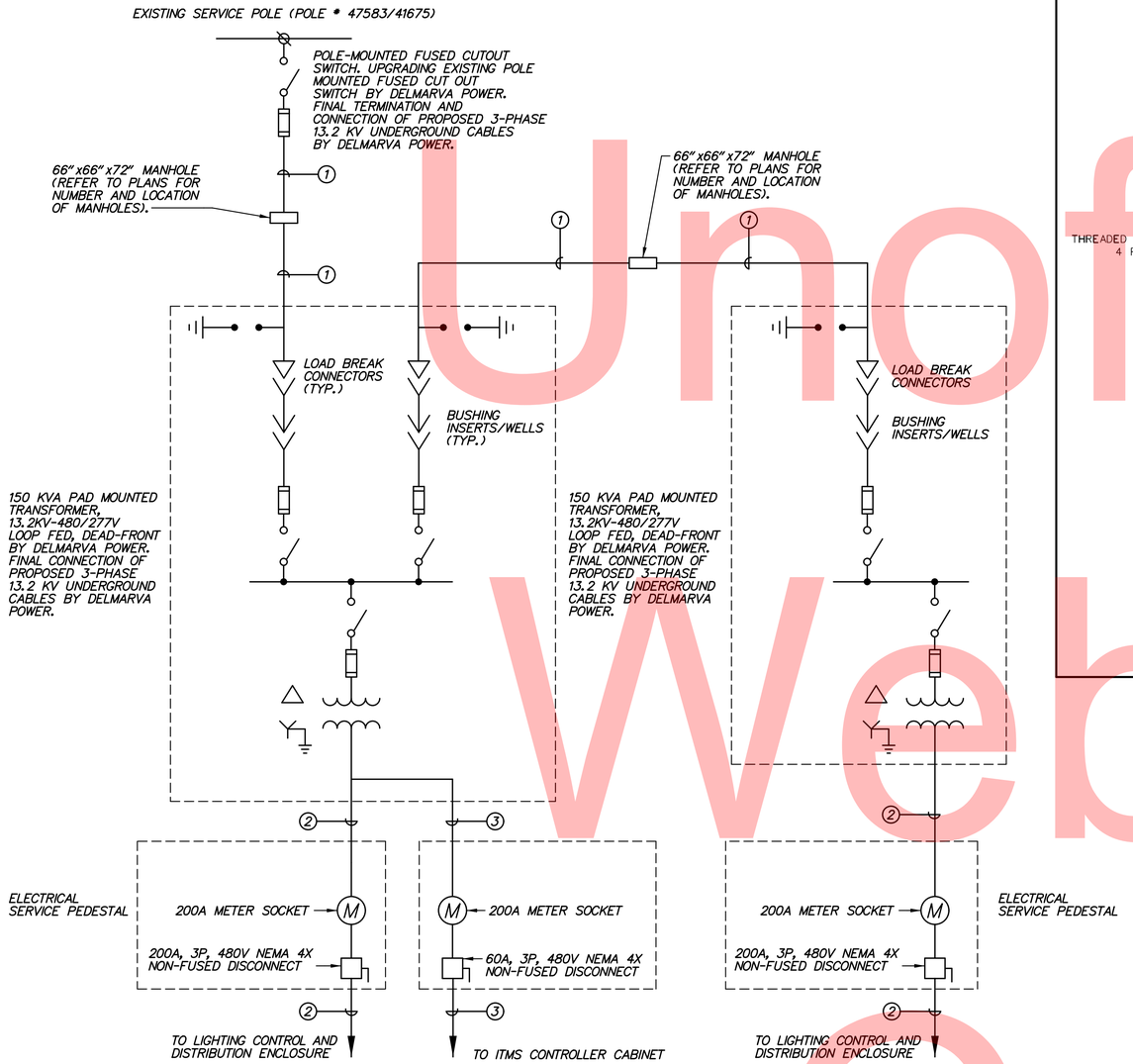
I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT	T201509002
COUNTY	NEW CASTLE
BRIDGE NO.	N/A
DESIGNED BY:	WRA
CHECKED BY:	WRA

LIGHTING PLAN

	LI-14
SHEET NO.	17
TOTAL SHTS.	26

13.2 KV SERVICE LINE SINGLE-LINE DIAGRAM



SINGLE LINE DIAGRAM SYMBOLS

POLE MOUNTED FUSED CUT-OUT SWITCH

LIGHTNING ARRESTOR

GROUND CONNECTION

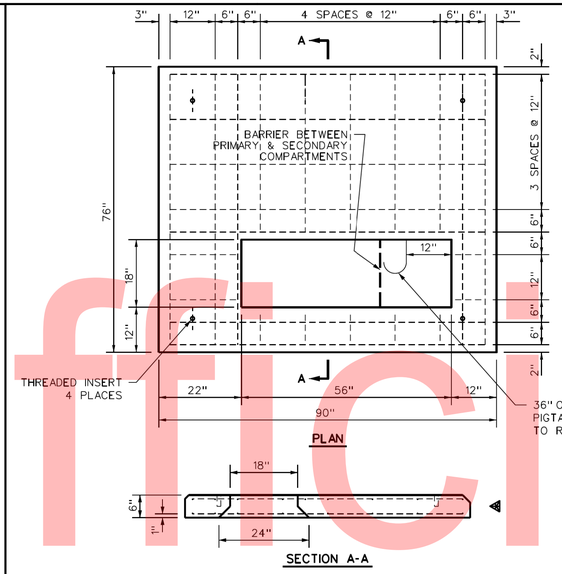
TRANSFORMER, SIZE AS NOTED ON DRAWING SYMBOLS DENOTE DELTA AND WYE CONFIGURATION

FEEDER SCHEDULE:

① (2) 4-INCH PVC CONDUITS WITH ONE CONTAINING (3) #2 (15KV, EPR, MV-105) CONDUCTORS AND (1) #2 GROUND (600V) AND ONE CONDUIT USED AS A SPARE

② (1) 3-INCH RGS CONDUIT WITH (4) #4/0 CONDUCTORS AND (1) #2 GROUND

③ (1) 2-INCH RGS CONDUIT WITH (4) #2 CONDUCTORS AND (1) #6 GROUND



NOTE:
PICK-UP, TRANSPORTATION, AND INSTALLATION OF PAD MOUNTED TRANSFORMERS AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER WILL NOT BE MEASURED AND PAID FOR SEPARATELY, BUT WILL BE INCIDENTAL TO THE OVERALL CONTRACT.

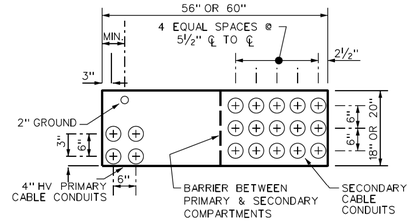
90"x76" TRANSFORMER PAD DETAIL

PRE-CAST CONCRETE PAD

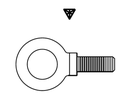
INSTALLATION DETAILS

1. Pad shall be set on a minimum 6" thick crushed stone bed (max. stone size shall be 1") and the top of the pad should be 3" above ground level.
2. The soil beneath the crushed stone shall be well compacted.
3. Top of the conduit should be 2" above the surface of the pad.
4. Pad and transformer must be set so that the slope shall not exceed 3° to prevent the possibility of internal flashover. (½" / 12")
5. When pad is installed in traffic area (parking lot, etc.) appropriate protective barriers must be installed. (See Z-579)
6. Each of the 4 inserts is properly rated and will accept a 1"-8 UNC heavy duty eyebolt with shoulder (Chicago #30 or equivalent).
7. These pads are not stocked and must be ordered by reservation.
8. Approximate lifting weights: 0112-2852 - 3,200 lbs.
   0132-6974 - 3,800 lbs.
   0132-6982 - 5,300 lbs.
9. See Z-805 for grounding details.

REBAR SCHEDULE SIZE	REBAR SCHEDULE SPACING	CONCRETE MIX 4000 PSI CU. FT.	PAD SIZE	PRECAST PAD STOCK NO.	COMPATIBLE UNIT DESIGNATION	TRANSMISSION SIZE (kV)	TRANSMISSION SIZE (kVA)
#4	12" C.C.	20	7'-6" X 6'-4"	0112-2852	3PMTPAD-A	15 25	75-500 75-500
#4	12" C.C.	25	7'-6" X 7'-6"	0132-6974	3PMTPAD-B	15 25 35	750-1500 750-2500 75-1000
#4	12" C.C.	35	8'-10" X 8'-5"	0132-6982	3PMTPAD-C	15 35 ALL STEPDOWN	2000-2500 1500-2500 75-1000

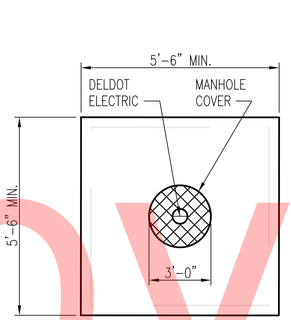


CONDUIT OPENING FOR PRECAST PADS TYPICAL DUCT DETAILS

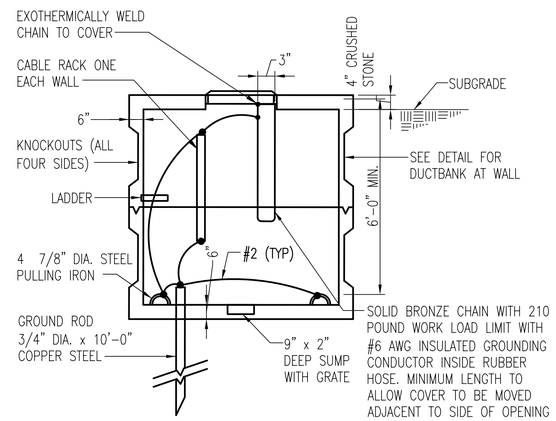


1"-8 UNC HEAVY DUTY EYEBOLT
SEE NOTE 6

PRECAST ELECTRICAL MANHOLE DETAIL



PLAN



SECTION

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

NOT TO SCALE

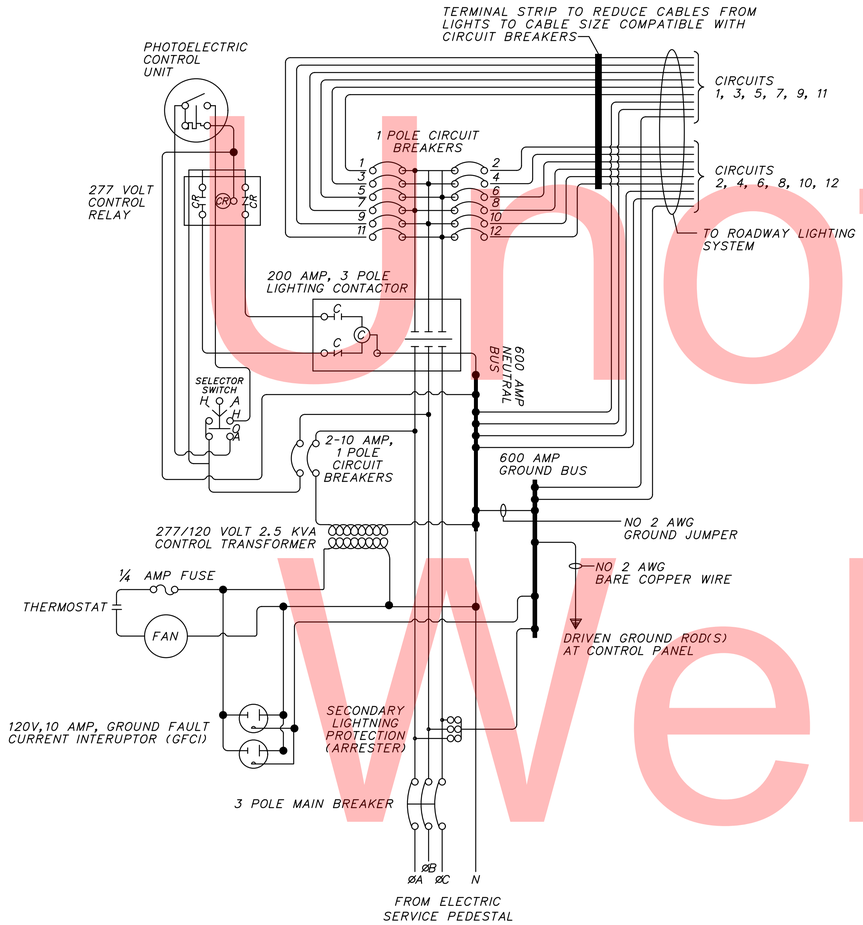
I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT	BRIDGE NO.	N/A
T201509002	DESIGNED BY: WRA	
COUNTY	CHECKED BY: WRA	
NEW CASTLE		

LIGHTING DETAILS

LI-15	
SHEET NO.	18
TOTAL SHTS.	26

LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE WIRING DIAGRAM



PANEL SCHEDULE SOUTH

AIC RATING - MINIMUM 22KA
SOLID NEUTRAL
ENCLOSURE: BASE MOUNTED CABINET

600 AMP BUS
480/277 VOLTS
SURFACE MOUNTED

200 AMP MAIN
3 PHASE, 4 WIRE + GROUND
PANEL LOCATION: SEE PLANS

LOAD SERVED	CIRCUIT BREAKER FRAME	TRIP	POLE	CKT. NO.	CKT. NO.	CIRCUIT BREAKER FRAME	TRIP	POLE	LOAD SERVED
3-1000W HPS	100			1	2	100			3-1000W HPS
3-1000W HPS	100	20	3	3	4	100	20	3	3-1000W HPS
2-1000W HPS	100			5	6	100			2-1000W HPS
3-1000W HPS, 1-100W HPS	100			7	8	100			3-1000W HPS, 1-100W HPS
3-1000W HPS	100	20	3	9	10	100	20	3	3-1000W HPS, 1-100W HPS
2-1000W HPS, 1-100W HPS	100			11	12	100			2-1000W HPS, 2-100W HPS
PHOTOELECTRIC CONTROL	100	10	1	13	14	100	-	1	SPACE
FAN, GFCI	100	10	1	15	16	100	-	1	SPACE
SPACE	100	-	1	17	18	100	-	1	SPACE
SPACE	100	-	1	19	20	100	-	1	SPACE
SPACE	100	-	1	21	22	100	-	1	SPACE
SPACE	100	-	1	23	24	100	-	1	SPACE

PANEL SCHEDULE NORTH

AIC RATING - MINIMUM 22KA
SOLID NEUTRAL
ENCLOSURE: BASE MOUNTED CABINET

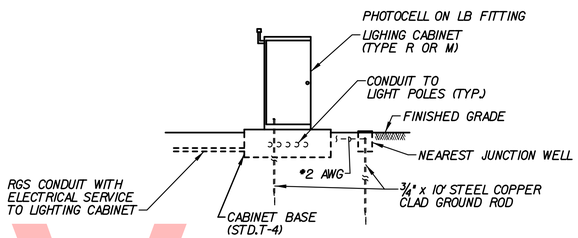
600 AMP BUS
480/277 VOLTS
SURFACE MOUNTED

200 AMP MAIN
3 PHASE, 4 WIRE + GROUND
PANEL LOCATION: SEE PLANS

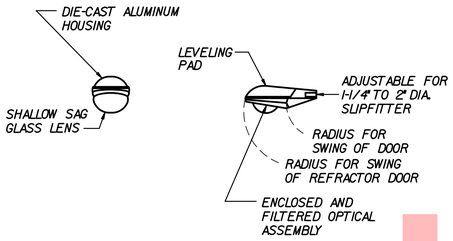
LOAD SERVED	CIRCUIT BREAKER FRAME	TRIP	POLE	CKT. NO.	CKT. NO.	CIRCUIT BREAKER FRAME	TRIP	POLE	LOAD SERVED
4-1000W HPS	100			1	2	100			3-1000W HPS
4-1000W HPS	100	20	3	3	4	100	20	3	3-1000W HPS
4-1000W HPS	100			5	6	100			2-1000W HPS
3-1000W HPS	100			7	8	100			3-1000W HPS
3-1000W HPS	100	20	3	9	10	100	20	3	3-1000W HPS
2-1000W HPS	100			11	12	100			2-1000W HPS
3-1000W HPS	100			13	14	100			
3-1000W HPS	100	20	3	15	16	100	20	3	SPARE
2-1000W HPS	100			17	18	100			
PHOTOELECTRIC CONTROL	100	10	1	19	20	100	-	1	SPACE
FAN, GFCI	100	10	1	21	22	100	-	1	SPACE
SPACE	100	-	1	23	24	100	-	1	SPACE

NOTES:

1. ALL WIRING FROM SERVICE FEEDS SHALL BE INSTALLED IN FLEXIBLE CONDUIT WITHIN THE LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE.
2. NO CONDUCTORS MAY ENTER OR EXIT THROUGH THE REAR OF ANY PANEL.
3. THE LIGHTING CONTACTOR SHALL BE IN A PROPERLY SIZED ENCLOSURE.
4. A CONTINUOUS GROUNDING CONDUCTOR SHALL BE INSTALLED FROM THE METER PEDESTAL DISCONNECT SWITCH THROUGH ALL PANELS, THEN TO THE GROUNDING ELECTRODE.
5. ALL CONDUCTORS NOT IN CONDUIT SHALL BE BUNDLED OR WRAPPED AND SECURED IN CABINET AWAY FROM SHARP EDGES.
6. ALL CABLES SHALL MEET AMPACITY REQUIREMENTS OF THE NATIONAL ELECTRIC CODE. THE MINIMUM CABLE SIZE SHALL BE NO. 12 AWG.
7. ACTUAL NUMBER OF BREAKERS AND BREAKER RATING SHALL BE AS INDICATED ON PLANS AND RESPECTIVE PANEL SCHEDULES.

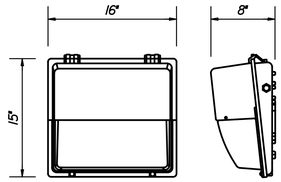


LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE DETAIL
SCALE: NONE



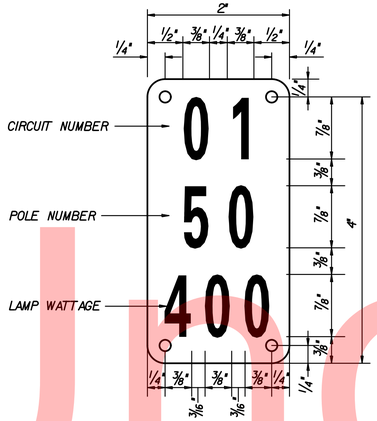
ALL PROPOSED LIGHTING STANDARD LUMINAIRES SHALL BE COBRAHEAD STYLE FIXTURES MOUNTED WITH A ZERO DEGREE TILT ANGLE.THE LUMINAIRE SHALL HAVE A MULTIVOLT BALLAST REGULATOR.PHOTOCONTROL SHALL BE AT THE LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE.

HPS LUMINAIRE DETAIL
SCALE: NONE

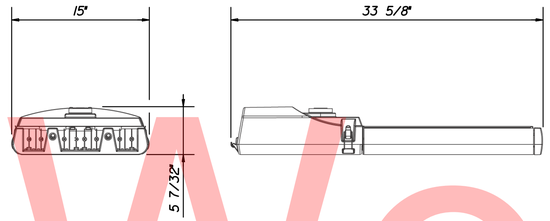


ALL PROPOSED UNDERPASS LUMINAIRES SHALL BE WALL MOUNT STYLE FIXTURES AND SHALL OPERATE AT 277 VOLTS.PHOTOCONTROL SHALL BE AT THE LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE.

UNDERPASS LUMINAIRE DETAIL
SCALE: NONE



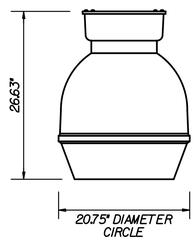
TYPICAL POLE IDENTIFICATION TAG
SCALE: NONE



NOTES:

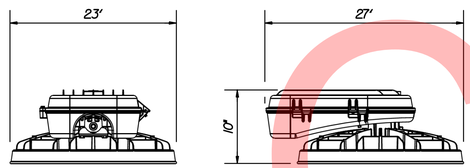
1. PROPOSED LED LUMINAIRES SHALL UTILIZE 6 LIGHT SQUARES, HAVE A 6000K COLOR TEMPERATURE, 70 CRI AND A TYPE III DISTRIBUTION.
2. LUMINAIRES SHALL PRODUCE A MINIMUM NUMBER OF INITIAL LUMENS FOR THE SPECIFIED WATTAGE:
   210 WATTS - 22,704 LUMENS
   315 WATTS - 31,062 LUMENS
3. UNIVERSAL VOLTAGE 120-277 VOLTS.

LED LUMINAIRE DETAIL
SCALE: NONE



ALL PROPOSED HIGH MAST LUMINAIRES SHALL HAVE CUTOFF OPTICS AND A HIGH BEAM ANGLE.THE LUMINAIRE SHALL HAVE A MULTIVOLT BALLAST REGULATOR.PHOTOCONTROL SHALL BE AT THE LIGHTING CONTROL AND DISTRIBUTION ENCLOSURE.

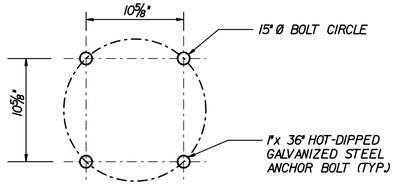
HIGH MAST LUMINAIRE DETAIL
SCALE: NONE



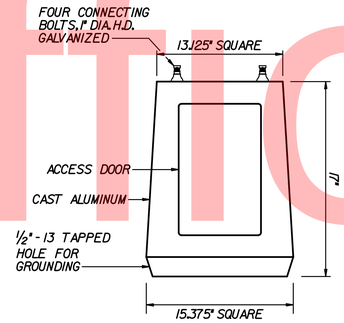
NOTES:

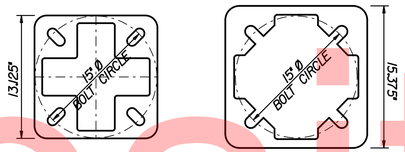
1. PROPOSED HIGH MAST LED LUMINAIRES SHALL UTILIZE 9 LED MODULES, HAVE A 5000K COLOR TEMPERATURE AND AN AREA WIDE DISTRIBUTION.
2. UNIVERSAL VOLTAGE 120-277 VOLTS.

HIGH MAST LED LUMINAIRE DETAIL
SCALE: NONE



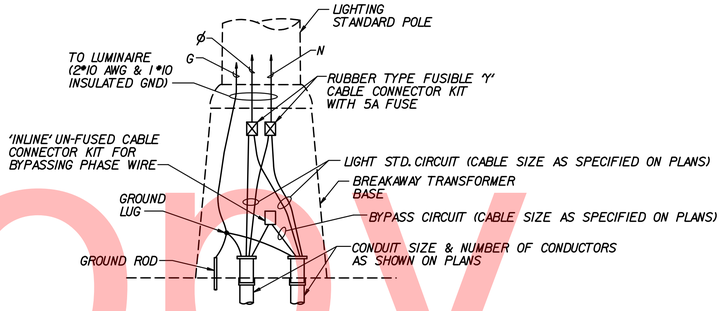
FOUNDATION ANCHOR BOLT CIRCLE DETAIL
SCALE: NONE



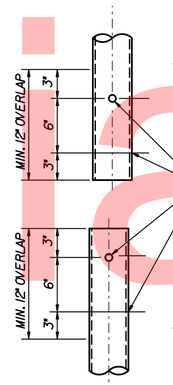


TOP **BOTTOM**

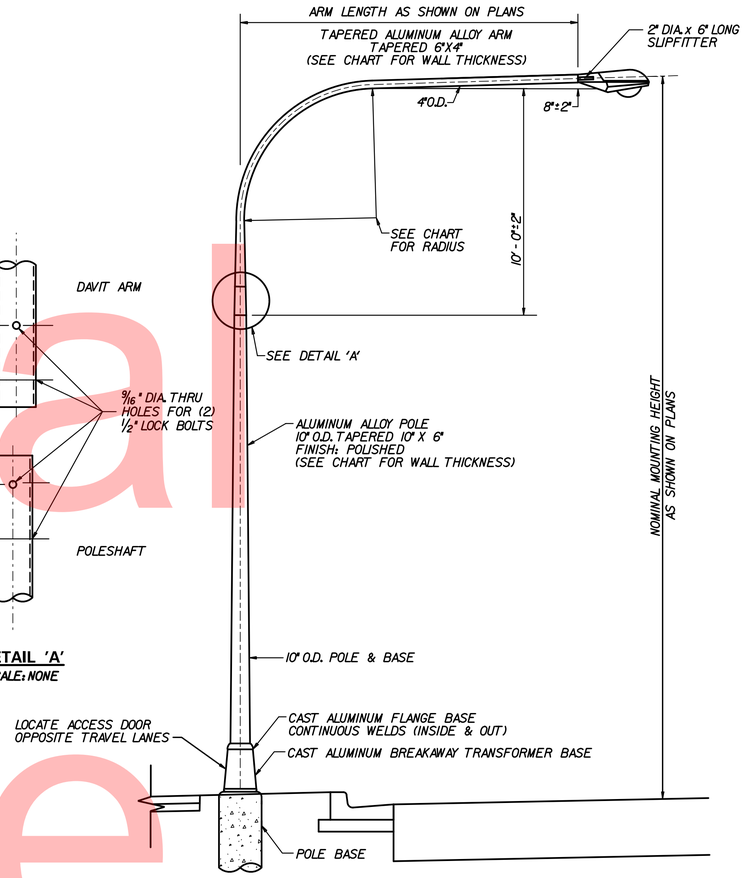
BREAKAWAY TRANSFORMER BASE DETAIL
SCALE: NONE



WIRING IN TRANSFORMER BASE
SCALE: NONE



DETAIL 'A'
SCALE: NONE



MOUNTING HEIGHT	ARM LENGTH	BEND RADIUS	WALL THICKNESS
30'	8'	5'-6"	0.156"
30'	12'	5'-6"	0.156"
30'	15'	5'-6"	0.156"
30'	20'	7'-0"	0.156"
40'	12'	5'-6"	0.188"
40'	15'	5'-6"	0.188"

ALUMINUM LIGHTING STANDARD WITH SINGLE DAVIT ARM
SCALE: NONE

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS	

NOT TO SCALE

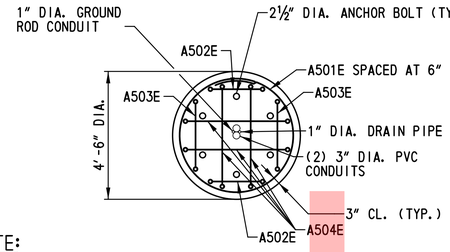
I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT	BRIDGE NO.	N/A
T201509002	DESIGNED BY: WRA	
COUNTY	CHECKED BY: WRA	
NEW CASTLE		

LIGHTING DETAILS

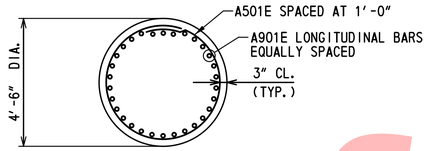
LI-17

SHEET NO.
20
TOTAL SHTS.
26



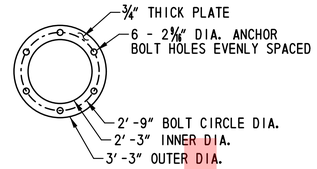
NOTE:
A901E LONGITUDINAL BARS NOT SHOWN FOR CLARITY.

SECTION A-A
SCALE: ⅜"=1'-0"

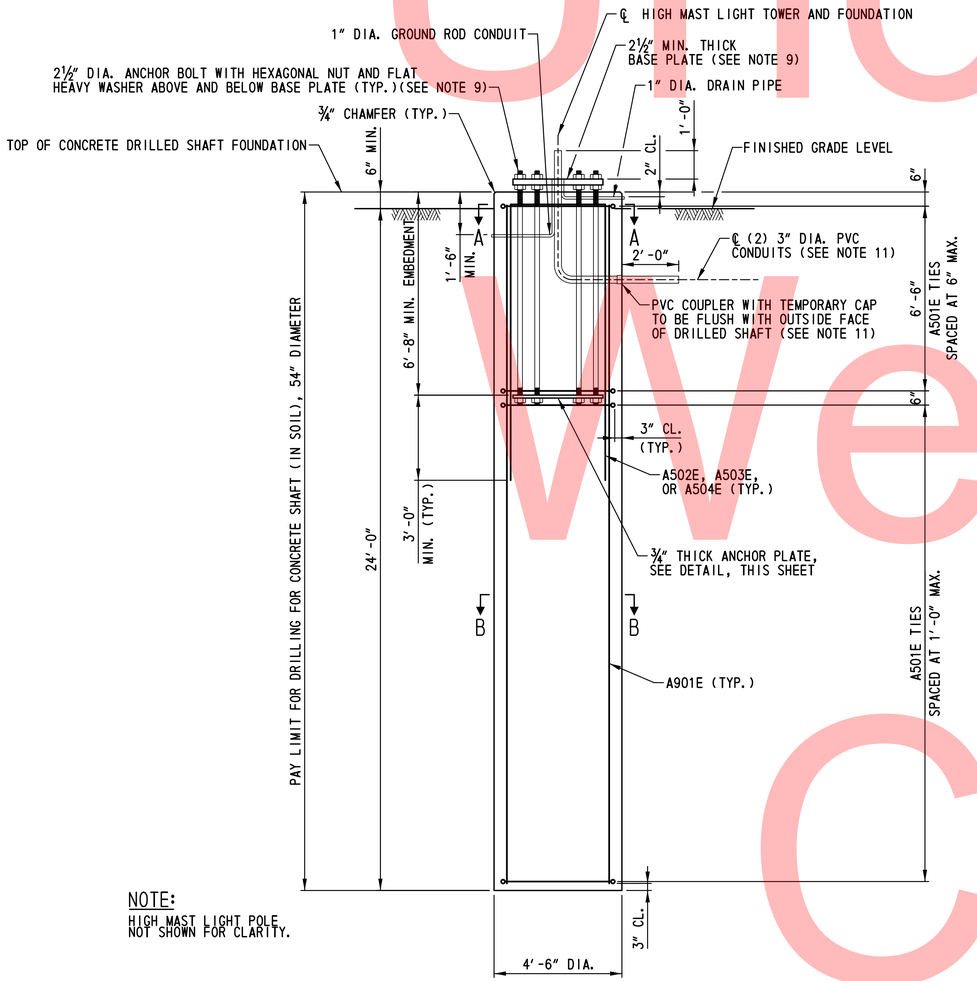


NOTE:
ANCHOR BOLTS NOT SHOWN FOR CLARITY.

SECTION B-B
SCALE: ⅜"=1'-0"

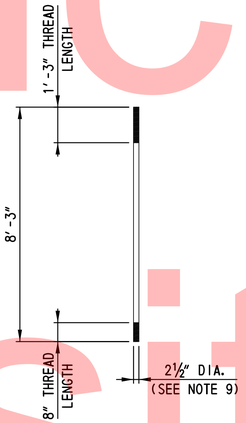


ANCHOR PLATE DETAIL
SCALE: ⅜"=1'-0"



NOTE:
HIGH MAST LIGHT POLE NOT SHOWN FOR CLARITY.

CAISSON FOUNDATION DETAIL
SCALE: ⅜"=1'-0"

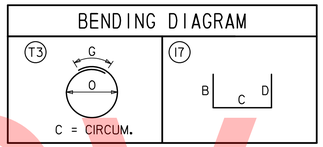


ANCHOR BOLT DETAIL
SCALE: ⅜"=1'-0"

GENERAL NOTES:

1. BEFORE CONSTRUCTING THE DRILLED SHAFT THE CONTRACTOR SHALL ACCURATELY LOCATE EXISTING UNDERGROUND UTILITIES IN THE VICINITY OF NEW CONSTRUCTION TO DETERMINE IF THERE IS A CONFLICT. IF A CONFLICT EXISTS, ADJUST THE LOCATION OF THE DRILLED SHAFT TO AVOID CONFLICT AND COMMENCE WITH CONSTRUCTION ONCE APPROVED BY ENGINEER.
2. ALL REINFORCEMENT SHALL BE GRADE 60 MINIMUM AND EPOXY COATED IN ACCORDANCE WITH AASHTO M 284 (ASTM A 775). ALL BAR DIMENSIONS ARE MEASURED OUT TO OUT AND MINIMUM COVER SHALL BE 3" UNLESS OTHERWISE NOTED.
3. CONCRETE IN DRILLED SHAFT FOUNDATION SHALL BE CLASS A (4500 P.S.I) SEE SPECIAL PROVISIONS.
4. ALL NEW STEEL PLATES SHALL CONFORM TO A709, GRADE 36.
5. ANCHOR BOLTS SHALL CONFORM TO F 1554 GRADE 105 UNC THREAD. HEX NUTS SHALL BE USED AND CONFORM TO A 194 GRADE 2H OR A 563 GR. DH. HEAVY WASHERS SHALL BE USED AND CONFORM TO F 436. ANCHOR BOLTS SHALL BE THREADED FOR 15" AT THE TOP END AND 8" AT THE BOTTOM END. NUTS, WASHERS, AND THE ANCHOR BOLTS SHALL BE GALVANIZED PER A 153. THE ANCHOR BOLTS SHALL STICK THROUGH THE TOP BASE PLATE NUTS FOR A LENGTH OF 1 1/2".
6. STEEL TEMPLATES SHALL BE USED TO SET ANCHOR BOLTS PLUMB WHEN POURING THE CONCRETE FOUNDATION. STEEL TEMPLATES SHALL CONTAIN HOLES FOR THE ANCHOR BOLTS 1/16" LARGER THAN THE ANCHOR BOLT DIAMETER.
7. ANCHOR BOLTS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL. AFTER INSTALLATION, FIRM CONTACT SHALL EXIST BETWEEN THE ANCHOR BOLT NUTS, WASHER, AND BASE PLATE. IF ANY ANCHOR BOLT IS IN A MISALIGNED POSITION, A BEVELED WASHER IS REQUIRED IF MISALIGNMENT OF THE ANCHOR ROD IS GREATER THAN 1:40.
8. THE INSTALLATION AND TIGHTENING OF THE ANCHOR BOLTS SHALL BE PERFORMED IN STRICT CONFORMANCE WITH THE SEQUENCE OUTLINED IN APPENDIX A, PART 1 AND 2, SECTION 5.2 OF THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 469 - FATIGUE RESISTANCE DESIGN OF CANTILEVER SIGNAL, SIGN AND LIGHT SUPPORTS. SEE SPECIAL PROVISIONS.
9. BASE PLATE THICKNESS TO BE CONFIRMED BY MANUFACTURER'S SUBMITTED POLE AND BASE PLATE DESIGNS. IF BASE PLATE DESIGN REQUIRES A BASE PLATE THICKER THAN 2 1/2" THE ANCHOR BOLT DIAMETER SHALL BE INCREASED TO MATCH THE BASE PLATE THICKNESS.
10. THE ORIENTATION OF THE PVC EXTENSION OUT OF THE DRILLED SHAFT FOUNDATION SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
11. UPON COMPLETION OF INSTALLING THE DRILLED SHAFT FOUNDATION, THE CONTRACTOR SHALL LOCATE THE CONDUIT CAST INTO THE DRILLED SHAFT AND INSTALL THE PVC EXTENSION WITH CAP.
12. PAYMENT FOR THE CAISSON FOUNDATION WILL BE MADE UNDER THE DRILLING FOR CONCRETE SHAFT (IN SOIL), 54" DIAMETER ITEM.
13. TEMPORARY STEEL CASING SHALL BE PROVIDED IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND SHALL BE INCIDENTAL TO THE DRILLING FOR CONCRETE SHAFT (IN SOIL), 54" DIAMETER ITEM.
14. THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH AASHTO LTS-6 WITH 2015 INTERIM REVISIONS AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION WITH 2015 AND 2016 INTERIM REVISIONS.

BENDING DIAGRAM



BAR MARK	SIZE	NO. REQ'D.	LENGTH	TYPE	DIM. B	DIM. C	DIM. D	DIM. G	DIM. O
A501E	5	32	14'-11"	T3		12'-7"		2'-4"	4'-0"
A502E	5	2	20'-6"	17	9'-3"	2'-0"	9'-3"		
A503E	5	2	21'-0"	17	9'-3"	2'-6"	9'-3"		
A504E	5	4	22'-2"	17	9'-3"	3'-8"	9'-3"		
A901E	9	30	23'-9"	STR.					

N:\31882-005\CADD\UB-1495 I95 Lighting.dgn
4/22/2016 10:43:50 AM

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE: AS NOTED

I-95/I-295/I-495 INTERSTATE HIGH MAST LIGHTING IMPROVEMENTS

CONTRACT	BRIDGE NO.	N/A
T201509002	DESIGNED BY: WRA	
COUNTY	CHECKED BY: WRA	
NEW CASTLE		

LIGHTING DETAILS

LI-18

SHEET NO.	TOTAL SHTS.
21	26

BORING: LB-1 **DATE DRILLED:** 6/10/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 620429.6 **EASTING:** 607874.0
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN CLAYEY COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT.	A-2-4(0)	
	0.0	9			
2	0.0		MOIST BROWN SILTY COARSE TO FINE SAND AND FINE GRAVEL.	A-1-B	
	2.0				
3	2.0		MOIST BROWN SILTY COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF CLAY.	A-2-4(0)	
	4.0				
4	4.0		MOIST BROWN SILTY COARSE TO FINE SAND AND FINE GRAVEL W/TRACE CLAY.	A-1-B	
	6.0				
5	6.0	11	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
		10			
		11			
	8.0	13			
6	8.0	8	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		12			
		8			
	10.0	7			
7	10.0	WH	MOIST VERY LOOSE BROWN COARSE SANDY FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-A	
		WH			
		1			
	12.0	2			
8	12.0	3	MOIST LOOSE BROWN COARSE SANDY FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-B	
		3			
		2			
	14.0	3			
9	14.0	3	MOIST LOOSE BROWN COARSE SANDY FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-A	
		3			
		2			
	16.0	2			
10	16.0	9	MOIST MEDIUM DENSE BROWN FINE GRAVEL AND COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		7			
		7			
	18.0	8			
11	18.0	14	MOIST VERY DENSE BROWN COARSE SANDY FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-A	
		21			
		34			
	24.0	30			
12	24.0	24	MOIST VERY DENSE GRAY COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-A	
		22			
		28			
	28.0	26			
13	28.0	50	NO SIEVE ANALYSIS - INDICATION OF MOIST VERY DENSE GRAY FINE TO COARSE SAND W/SOME FINE GRAVEL AND SILT.		
	34.0				
14	34.0	10	WET MEDIUM DENSE BROWN SILTY FINE GRAVEL W/SOME COARSE TO FINE SAND AND CLAY.	A-1-B	
		8			
		9			
	38.0	8			
15	38.0	26	WET VERY STIFF RED FINE GRAVELLY CLAY W/SOME COARSE TO FINE SAND AND SILT.	A-6(1)	
		11			
		11			
	44.0	13			
16	44.0	9	WET VERY STIFF RED FINE GRAVELLY CLAY W/SOME FINE SAND AND SILT, TRACE OF COARSE SAND.	A-6(7)	
		13			
		13			
	48.0	15			
	48.0		END BORING		
	50.0				

BORING: LB-2 **DATE DRILLED:** 6/11/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 621020.9 **EASTING:** 607625.1
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
	0.0				
2	0.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME CLAY, TRACE OF FINE GRAVEL.	A-2-4(0)	
	2.0				
3	2.0		MOIST BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
	4.0				
4	4.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF CLAY.	A-2-4(0)	
	6.0				
5	6.0	16	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		13			
		12			
	8.0	10			
6	8.0	9	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		8			
		7			
	10.0	10			
7	10.0	3	MOIST LOOSE BROWN COARSE SAND AND FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-B	
		3			
		3			
	12.0	3			
8	12.0	4	MOIST LOOSE BROWN COARSE SAND AND FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-A	
		5			
		3			
	14.0	3			
9	14.0	4	MOIST LOOSE BROWN FINE GRAVELLY COARSE SAND W/TRACE FINE SAND AND SILT.	A-1-B	
		3			
		3			
	16.0	4			
10	16.0	36	MOIST MEDIUM DENSE BROWN COARSE SANDY FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-A	
		10			
		10			
	18.0	7			
11	18.0	10	MOIST SAND DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
		11			
		13			
	24.0	12			
12	24.0	11	MOIST MEDIUM DENSE BROWN COARSE SANDY FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-A	
		8			
		7			
	28.0	9			

BORING: LB-2 CONT.

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
13	28.0	11	MOIST MEDIUM DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
		10			
		9			
	34.0	10			
14	34.0	7	MOIST MEDIUM DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
		10			
		11			
	38.0	20			
15	38.0	11	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		15			
		11			
	44.0	13			
16	44.0	12	MOIST DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/SOME SILT.	A-1-B	
		17			
		18			
	48.0	17			
	48.0		END BORING		
	50.0				

BORING: LB-3 **DATE DRILLED:** 6/1/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 621418.2 **EASTING:** 607976.5
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL W/SOME SILT.	A-1-B	
	0.0				
2	0.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME CLAY, TRACE OF FINE GRAVEL.	A-2-4(0)	
	2.0				
3	2.0		MOIST BROWN CLAYEY COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND SILT.	A-2-4(0)	
	4.0				
4	4.0	7	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
		12			
		13			
	6.0	14			
5	6.0	5	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL	A-1-B	
		8			
		9			
	8.0	10			
6	8.0	11	MOIST DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
		18			
		24			
	10.0	23			
7	10.0	17	MOIST DENSE BROWN COARSE SAND W/SOME FINE GRAVEL AND FINE SAND, TRACE OF SILT.	A-1-B	
		20			
		28			
	12.0	35			
8	12.0	9	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE.	A-1-B	
		11			
		13			
	14.0	15			
9	14.0	11	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
		12			
		16			
	16.0	15			
10	16.0	18	SATURATED FIRM BLACK ORGANIC SILT W/TRACE FINE TO COARSE SAND.	A-4(0)	
		4			
		4			
	18.0	6			
11	18.0	2	SATURATED FIRM BLACK ORGANIC SILTY CLAY W/TRACE FINE TO COARSE SAND AND FINE GRAVEL.	A-7-5(19)	
		3			
		3			
	24.0	2			
12	24.0	2	SATURATED SOFT BLACK ORGANIC SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-5(22)	
		2			
		1			
	29.0	3			
13	29.0	2	SATURATED STIFF BLACK CLAYEY SILT W/SOME FINE GRAVEL, TRACE OF FINE TO COARSE SAND.	A-4(4)	
		3			
		7			
	34.0	9			
14	34.0	4	SATURATED LOOSE GRAY COARSE TO FINE SAND AND FINE GRAVEL, TRACE OF SILT.	A-1-B	
		4			
		6			
	39.0	9			
15	39.0	29	SATURATED VERY DENSE GRAY SILTY FINE SAND AND FINE GRAVEL W/SOME COARSE SAND.	A-1-B	
		32			
		23			
	44.0	13			
16	44.0	7	SATURATED VERY STIFF RED FINE SANDY SILT.	A-4(0)	
		8			
		10			
	48.0	11			
17	48.0	10	SATURATED VERY STIFF RED FINE SANDY SILT W/TRACE COARSE SAND.	A-4(0)	
		12			
		12			
	53.0	14			
	53.0		END BORING		
	55.0				

BORING: LB-4 **DATE DRILLED:** 5/21/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 622155.8 **EASTING:** 608062
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
	0.0				
2	0.0		MOIST BROWN COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND SILT.	A-1-B	
	2.0				
3	2.0		MOIST BROWN COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND SILT.	A-1-B	
	4.0				
4	4.0	5	MOIST VERY DENSE BROWN COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND SILT.	A-1-B	
		18			
		40			
	6.0	20			

BORING: LB-4 CONT.

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
5	6.0	6	MOIST VERY DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
		18			
		32			
	8.0	23			
6	8.0	20	MOIST DENSE BROWN FINE GRAVEL AND COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		20			
		15			
	10.0	10			
7	10.0	13	MOIST MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		16			
		13			
	12.0	11			
8	12.0	1	SATURATED SOFT BROWN ORGANIC SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-5(21)	
		2			
		1			
	14.0	3			
9	14.0	3	SATURATED FIRM BROWN ORGANIC SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-5(22)	
		4			
		4			
	16.0	5			
10	16.0	4	SATURATED FIRM BROWN ORGANIC SILTY CLAY W/TRACE FINE TO COARSE SAND AND FINE GRAVEL.	A-7-5(19)	
		4			
		4			
	18.0	5			
11	18.0	1	SATURATED FIRM BROWN ORGANIC SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-5(21)	
		3			
		3			
	24.0	3			
12	24.0	1	SATURATED FIRM BROWN CLAYEY FINE SANDY SILT W/SOME CLAY, TRACE OF COARSE SAND.	A-4(3)	
		2			
		3			
	29.0	3			
13	29.0	2	SATURATED DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/TRACE SILT.	A-1-B	
		20			
		25			
	34.0	20			
14	34.0	30	SATURATED VERY DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-A	
		40			
		30			
	39.0	20			
15	39.0	18	SATURATED VERY DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		35			
		25			
	44.0	30			
16	44.0	6	SATURATED STIFF RED SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND.	A-7-6(19)	
		7			
		8			
	48.0	12			
17	48.0	8	SATURATED VERY STIFF RED FINE SANDY SILT W/TRACE COARSE SAND, FINE GRAVEL AND CLAY.	A-4(0)	
		10			
		10			
	54.0	12			
	54.0		END BORING		
	56.0				

BORING: LB-5 **DATE DRILLED:** 5/21/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 622850.3 **EASTING:** 608229.2
COMMENTS: N/A

SAMPLE INFORMATION

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST SAND SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
	0.0				
2	0.0		MOIST BROWN COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND SILT.	A-1-B	
	2.0				
3	2.0		MOIST BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, SILT AND CLAY.	A-1-B	
	4.0				
4	4.0		MOIST BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
	6.0				
5	6.0	7	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-1-B	
		9			
		11			
	8.0	14			
6	8.0	12	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/TRACE FINE GRAVEL AND SILT.	A-1-B	
		14			
		10			
	10.0	11			
7	10.0	1	WET SOFT BROWN SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-6(13)	
		2			
		2			
	12.0	4			
8	12.0	3	WET SOFT BROWN COARSE SANDY SILT W/SOME FINE SAND, TRACE OF FINE GRAVEL.	A-4(0)	
		2			
		1			
	14.0	2			
9	14.0	3	SATURATED FIRM BROWN SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-6(15)	
		4			
		3			
	16.0	4			
10	16.0	2	SATURATED FIRM BROWN SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-5(19)	
		3			
		3			
	18.0	4			
11	18.0	3	SATURATED FIRM BROWN CLAYEY SILT W/TRACE FINE TO COARSE SAND.	A-4(11)	
		3			
		3			
	24.0	3			
12	24.0	3	SATURATED FIRM BROWN SILTY CLAY W/TRACE FINE TO COARSE SAND AND FINE GRAVEL.	A-6(10)	
		3			
		4			
	28.0	4			
13	28.0	9	SATURATED VERY STIFF BROWN COARSE TO FINE SANDY SILT W/TRACE FINE GRAVEL.	A-4(0)	
		10			
		11			
	34.0	13			
14	34.0	9	SATURATED MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		11			
		13			
	38.0	16			
15	38.0	8	SATURATED MEDIUM DENSE BROWN FINE GRAVEL AND COARSE SAND W/TRACE FINE SAND AND SILT.	A-1-B	
		9			
		12			
	44.0	13			
16	44.0	11	SATURATED VERY STIFF RED FINE SANDY SILT W/TRACE COARSE SAND AND FINE GRAVEL.	A-4(0)	
		13			
		13			
	48.0	14			
	48.0		END BORING		
	50.0				

BORING: LB-6 **DATE DRILLED:** 6/8/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 620529 **EASTING:** 607275.5
COMMENTS: N/A

SAMPLE INFORMATION

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN FINE GRAVELLY COARSE TO FINE SAND W/SOME SILT.	A-1-B	
	0.0				
2	0.0		MOIST BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
	2.0				
3	2.0		MOIST BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
	4.0				
4	4.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
	6.0				
5	6.0	8	MOIST VERY DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
		22			
		32			
	8.0	35			
6	8.0	14	MOIST DENSE BROWN COARSE SAND W/SOME FINE GRAVEL AND FINE SAND, TRACE OF SILT.	A-1-B	
		24			
		26			
	10.0	29			
7	10.0	7	MOIST DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
		19			
		20			
	12.0	16			
8	12.0	6	MOIST MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		9			
		11			
	14.0	16			
9	14.0	9	MOIST MEDIUM DENSE BROWN COARSE SAND W/SOME FINE GRAVEL, TRACE OF FINE SAND AND SILT.	A-1-B	
		11			
		9			
	16.0	9			
10	16.0	5	WET MEDIUM DENSE BROWN COARSE SAND W/TRACE FINE GRAVEL, FINE SAND AND SILT.	A-1-B	
		6			
		5			
	18.0	5			
11	18.0	8	WET VERY LOOSE BROWN COARSE SAND W/SOME FINE GRAVEL, TRACE OF FINE SAND AND SILT.	A-1-B	
		2			
		2			
	24.0	2			

BORING: LB-6 CONT.

SAMPLE INFORMATION

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
12	24.0	2	WET LOOSE BROWN COARSE SAND W/TRACE FINE GRAVEL, FINE SAND AND SILT.	A-1-B	
		3			
		3			
	28.0	3			
13	28.0	8	WET LOOSE BROWN COARSE SAND W/SOME FINE GRAVEL, TRACE OF FINE SAND AND SILT.	A-1-B	
		6			
		4			
	34.0	4			
14	34.0	9	WET MEDIUM DENSE BROWN FINE SAND W/SOME COARSE SAND AND SILT, TRACE OF FINE GRAVEL.	A-2-4(0)	
		10			
		11			
	38.0	16			
15	38.0	38	WET MEDIUM DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-A	
		14			
		14			
	44.0	16			
16	44.0	24	WET DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
		16			
		14			
	48.0	15			
	48.0		END BORING		
	50.0				

BORING: LB-7 **DATE DRILLED:** 6/2/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 621125.2 **EASTING:** 606876.9
COMMENTS: N/A

SAMPLE INFORMATION

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
	0.0				
2	0.0		MOIST BROWN COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND SILT.	A-1-B	
	2.0				
3	2.0	3	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
		7			
		10			
	4.0	12			
4	4.0	9	MOIST VERY STIFF BROWN CLAYEY COARSE SANDY SILT W/SOME FINE SAND AND FINE GRAVEL.	A-4(0)	
		11			
		13			
	6.0	16			
5	6.0	9	MOIST VERY STIFF BROWN COARSE SANDY SILT W/SOME FINE SAND, FINE GRAVEL AND CLAY.	A-4(0)	
		11			
		13			
	8.0	30			
6	8.0	32	MOIST HARD BROWN COARSE SANDY SILT W/SOME FINE SAND AND CLAY, TRACE OF FINE GRAVEL.	A-4(0)	
		32			
		18			
	10.0	26			
7	10.0	22	MOIST DENSE BROWN SILTY COARSE SAND W/SOME FINE SAND, TRACE OF FINE GRAVEL.	A-2-4(0)	
		18			
		15			
	12.0	12			
8	12.0	16	MOIST VERY DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-1-B	
		20			
		30			
	14.0	24			
9	14.0	35	MOIST VERY DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-1-B	
	16.0	50			
10	16.0	22	MOIST DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
		25			
		22			
	18.0	18			
11	18.0	17	MOIST VERY DENSE BROWN COARSE SAND W/SOME FINE SAND AND FINE GRAVEL, TRACE OF SILT.	A-1-B	
		25			
		25			
	24.0	26			
12	24.0	1	WET VERY LOOSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
		1			
		2			
	29.0	5			
13	29.0	7	WET MEDIUM DENSE BROWN COARSE SAND W/SOME FINE SAND, TRACE OF FINE GRAVEL AND SILT.	A-1-B	
		10			
		10			
	34.0	9			
14	34.0	4	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/TRACE FINE GRAVEL AND SILT.	A-1-B	
		6			
		8			
	39.0	9			
15	39.0	8	WET VERY STIFF BROWN FINE SANDY SILT W/SOME COARSE SAND AND FINE GRAVEL.	A-4(0)	
		10			
		14			
	44.0	13			
16	44.0	30	WET VERY DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		40			
		30			
	49.0	25			
	49.0		END BORING		
	51.0				

BORING: LB-8 **DATE DRILLED:** 6/4/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 621846.6 **EASTING:** 606942
COMMENTS: N/A

SAMPLE INFORMATION

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
	0.0				
2	0.0		MOIST BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-1-B	
	2.0				
3	2.0		MOIST BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL AND CLAY.	A-2-4(0)	
	4.0				
4	4.0	9	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
		11			
		15			
	6.0	24			

BORING: LB-8 CONT.

SAMPLE INFORMATION

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
5	6.0	8	MOIST DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
		16			
		32			
	8.0	23			
6	8.0	11	MOIST HARD BROWN CLAYEY FINE SANDY FINE GRAVELLY SILT W/SOME COARSE SAND.	A-4(0)	
		13			
		24			
	10.0	36			
7	10.0	21	MOIST HARD BROWN COARSE SANDY SILT W/SOME FINE SAND, FINE GRAVEL AND CLAY/	A-4(0)	
		32			
		33			
	12.0	28			
8	12.0	18	MOIST VERY DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
		32			
		33			
	14.0	50			
9	14.0	14	MOIST DENSE BROWN SILTY COARSE SAND W/SOME FINE SAND AND FINE GRAVEL.	A-1-B	
		16			
		24			
	16.0	39			
10	16.0	14	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
		10			
		12			
	18.0	10			
11	18.0	24	MOIST VERY DENSE BROWN COARSE SAND W/SOME FINE GRAVEL, FINE SAND AND SILT.	A-1-B	
		26			
		37			
	24.0	25			
12	24.0	10	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-B	
		12			
		10			
	29.0	9			
13	29.0	7	MOIST MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/TRACE FINE SAND AND SILT.	A-1-B	
		7			
		9			
	34.0	11			
14	34.0	8	WET MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/TRACE FINE SAND AND SILT.	A-1-B	
		10			
		12			
	39.0	9			
15	39.0	13	WET MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
		14			
		15			
	44.0	20			
16	44.0	17	NO SAMPLE		
		20			
		19			
	48.0	15			
	48.0		END BORING		
	50.0				

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NONE

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT T201509002
COUNTY NEW CASTLE
BRIDGE NO. N/A
DESIGNED BY: WRA
CHECKED BY: WRA

BORING LOG

BO-02
SHEET NO. 23
TOTAL SHTS. 26

BORING: LB-9 **DATE DRILLED:** 6/9/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 622508.8 **EASTING:** 607173.2
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
	0.0				
2	0.0		MOIST BROWN SILTY COARSE SAND W/SOME FINE SAND AND FINE GRAVEL.	A-2-4(0)	
	2.0				
3	2.0		WET BROWN CLAYEY COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-2-4(0)	
	4.0				
4	4.0		WET BROWN SILTY COARSE TO FINE SAND W/SOME CLAY, TRACE OF FINE GRAVEL.	A-2-4(0)	
	6.0				
5	6.0	15	WET DENSE BROWN SILTY COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND CLAY.	A-2-4(0)	
		20			
		18			
	8.0	17			
6	8.0	50	WET VERY DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
	10.0				
7	10.0	20	WET DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
		26			
		21			
	12.0	20			
8	12.0	13	WET VERY DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
		24			
		44			
	14.0	39			
9	14.0	50	WET VERY DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-2-4(0)	
	16.0				
10	16.0	19	WET DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
		16			
		21			
	18.0	16			
11	18.0	15	WET DENSE BROWN COARSE SAND W/SOME FINE SAND AND FINE GRAVEL, TRACE OF SILT.	A-1-B	
		25			
		21			
	24.0	20			
12	24.0	14	WET VERY DENSE BROWN COARSE SAND W/TRACE FINE SAND, FINE GRAVEL AND SILT.	A-1-B	
		16			
	28.0	50			
13	28.0	50	WET VERY DENSE BROWN COARSE SAND AND FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-B	
	34.0				
14	34.0	21	WET MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND AND FINE GRAVEL.	A-2-4(0)	
		11			
		9			
	38.0	10			
15	38.0	38	WET DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		18			
		17			
	44.0	16			
16	44.0	10	WET DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
		16			
		15			
	48.0	17			
	48.0		END BORING		
	50.0				

BORING: LB-10 **DATE DRILLED:** 6/3/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 622906.2 **EASTING:** 607722.4
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
	0.0				
2	0.0		MOIST BROWN SILTY COARSE SAND W/SOME FINE SAND AND FINE GRAVEL.	A-1-B	
	2.0				
3	2.0		MOIST BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-1-B	
	4.0				
4	4.0		MOIST BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
	6.0				
5	6.0	9	MOIST DENSE BROWN FINE GRAVEL AND COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
		12			
		21			
	8.0	13			
6	8.0	9	MOIST VERY STIFF BROWN COARSE TO FINE SANDY SILT W/SOME CLAY, TRACE OF FINE GRAVEL.	A-4(0)	
		11			
		12			
	10.0	14			
7	10.0	10	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
		13			
		16			
	12.0	17			
8	12.0	13	MOIST DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
		18			
		22			
	14.0	14			
9	14.0	18	MOIST DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
		21			
		20			
	16.0	16			
10	16.0	10	MOIST DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
		21			
		24			
	18.0	14			
11	18.0	6	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/TRACE SILT AND FINE GRAVEL.	A-1-B	
		7			
		9			
	24.0	9			
12	24.0	3	WET LOOSE BROWN COARSE SAND W/SOME FINE GRAVEL, TRACE OF FINE SAND AND SILT.	A-1-B	
		5			
		5			
	28.0	6			
13	28.0	5	WET MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/TRACE FINE SAND AND SILT.	A-1-B	
		6			
		7			
	34.0	6			

BORING: LB-10 CONT.

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
14	34.0	5	WET LOOSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND,	A-1-B	
		4	TRACE OF SILT.		
		5			
	39.0	3			
15	39.0	8	WET MEDIUM DENSE BROWN COARSE SAND W/SOME FINE GRAVEL, TRACE	A-1-B	
		9	OF FINE SAND AND SILT.		
		9			
	44.0	11			
16	44.0	10	WET MEDIUM DENSE BROWN FINE SAND AND FINE GRAVEL W/SOME	A-1-B	
		11	COARSE SAND AND SILT.		
		14			
	48.0	16			
	48.0		END BORING		
	50.0				

BORING: LB-11 **DATE DRILLED:** 6/1/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 623483 **EASTING:** 608568.9
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		WET BROWN FINE SANDY SILT W/SOME COARSE SAND, TRACE OF FINE	A-4(0)	
	0.0		GRAVEL.		
2	0.0	9	WET HARD BROWN COARSE SANDY SILT W/TRACE FINE SAND AND FINE	A-4(0)	
		16	GRAVEL.		
		19			
	2.0	20			
3	2.0	9	WET VERY DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE	A-2-4(0)	
		40	GRAVEL.		
	4.0	50			
4	4.0	10	WET STIFF BROWN COARSE TO FINE SANDY SILT W/SOME CLAY, TRACE	A-4(0)	
		9	OF FINE GRAVEL.		
		7			
	6.0	12			
5	6.0	6	WET MEDIUM DENSE BROWN FINE GRAVELLY COARSE TO FINE SAND	A-1-B	
		12	W/SOME SILT.		
		12			
	8.0	12			
6	8.0	6	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME FINE	A-1-B	
		8	GRAVEL, TRACE OF SILT.		
		9			
	10.0	12			
7	10.0	3	WET MEDIUM DENSE BROWN COARSE SAND W/SOME FINE GRAVEL AND	A-1-B	
		5	FINE SAND, TRACE OF SILT.		
		6			
	12.0	3			
8	12.0	2	SATURATED FIRM BROWN SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-6(17)	
		2			
		3			
	14.0	4			
9	14.0	3	SATURATED FIRM BLACK ORGANIC SILTY CLAY W/TRACE FINE TO	A-7-6(18)	
		4	COARSE SAND.		
		3			
	16.0	4			
10	16.0	2	SATURATED SOFT BLACK ORGANIC CLAYEY SILT W/TRACE FINE TO	A-5(11)	
		2	COARSE SAND AND FINE GRAVEL.		
		2			
	18.0	2			
U-1	18.0				
	22.0				
11	22.0	20	SATURATED VERY DENSE BLACK FINE GRAVEL W/SOME SILT AND FINE	A-1-A	
	24.0	50	TO COARSE SAND.		
12	24.0	50	SATURATED VERY DENSE BLACK COARSE TO FINE SAND W/SOME FINE	A-1-B	
	29.0		GRAVEL, TRACE OF SILT.		
13	29.0	42	SATURATED VERY DENSE BLACK COARSE SANDY FINE GRAVEL W/SOME	A-1-B	
		20	FINE SAND AND SILT.		
	34.0	50			
14	34.0	11	SATURATED VERY STIFF RED SILTY CLAY W/SOME FINE SAND, TRACE	A-7-6(16)	
		11	OF COARSE SAND.		
		9			
	39.0	14			
15	39.0	9	SATURATED VERY STIFF RED CLAYEY FINE SANDY SILT W/TRACE	A-4(2)	
		10	COARSE SAND.		
		11			
	44.0	9			
16	44.0	7	SATURATED VERY STIFF RED CLAYEY FINE SANDY SILT W/SOME COARSE	A-4(0)	
		11	SAND.		
		16			
	49.0	25			
	49.0		END BORING		
	51.0				

BORING: LB-12 **DATE DRILLED:** 6/16/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 624542.9 **EASTING:** 609911.9
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		MOIST BROWN SILTY COARSE SAND W/SOME FINE SAND, TRACE OF FINE	A-2-4(0)	
	0.0		GRAVEL.		
2	0.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME CLAY, TRACE OF	A-2-4(0)	
	2.0		FINE GRAVEL.		
3	2.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
	4.0				
4	4.0		MOIST BROWN SILTY COARSE SAND W/SOME FINE GRAVEL AND FINE	A-1-B	
	6.0		SAND.		
5	6.0	8	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE	A-2-4(0)	
		10	FINE GRAVEL.		
		13			
	8.0	13			
6	8.0	8	MOIST DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE	A-1-B	
		11	GRAVEL.		
		22			
	10.0	23			

BORING: LB-12 CONT.

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
7	10.0	11	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME	A-2-4(0)	
		13	CLAY, TRACE OF FINE GRAVEL.		
		15			
	12.0	16			
8	12.0	11	MOIST MEDIUM DENSE BROWN SILTY COARSE SAND W/SOME FINE SAND	A-1-B	
		8	AND FINE GRAVEL.		
		9			
	14.0	11			
9	14.0	7	MOIST MEDIUM DENSE BROWN SILTY COARSE SAND W/SOME FINE SAND	A-2-4(0)	
		9	AND FINE GRAVEL, TRACE OF CLAY.		
		8			
	16.0	9			
10	16.0	7	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE	A-1-B	
		8	FINE GRAVEL.		
		9			
	18.0	13			
11	18.0	8	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME	A-2-4(0)	
		11	CLAY, TRACE OF FINE GRAVEL.		
		13			
	24.0	16			
12	24.0	7	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME	A-2-4(0)	
		9	FINE GRAVEL.		
		13			
	29.0	17			
13	29.0	13	MOIST VERY DENSE BROWN FINE GRAVELLY COARSE SAND W/TRACE FINE	A-1-B	
	34.0	50	SAND AND SILT.		
14	34.0	50	NO SAMPLE		
	39.0				
15	39.0	9	WET MEDIUM DENSE BROWN FINE TO COARSE SAND W/SOME SILT, TRACE	A-2-4(0)	
		11	OF FINE GRAVEL.		
		13			
	44.0	10			
16	44.0	28	SATURATED HARD BLACK FINE GRAVELLY SILT W/SOME FINE SAND,	A-4(0)	
	48.0	50	TRACE OF COARSE SAND.		
	48.0		END BORING		
	50.0				

BORING: LB-13 **DATE DRILLED:** 6/18/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 624348.9 **EASTING:** 609177.7
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0		WET BROWN COARSE TO FINE SANDY SILT W/TRACE FINE GRAVEL AND	A-4(0)	
	0.0		CLAY.		
2	0.0		WET BROWN CLAYEY COARSE TO FINE SAND W/SOME SILT, TRACE OF	A-2-4(0)	
	2.0		FINE GRAVEL.		
3	2.0		WET BROWN COARSE TO FINE SANDY SILT W/SOME CLAY, TRACE OF	A-4(0)	
	4.0		FINE GRAVEL.		
4	4.0		WET BROWN CLAYEY COARSE TO FINE SANDY SILT W/TRACE FINE	A-4(0)	
	6.0		GRAVEL.		
5	6.0	9	WET MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE	A-2-4(0)	
		10	GRAVEL.		
		11			
	8.0	16			
6	8.0	14	NO SAMPLE		
		10			
		19			
	10.0	22			
7	10.0	7	WET MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE	A-2-4(0)	
		10	GRAVEL.		
		13			
	12.0	12			
8	12.0	10	WET MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE	A-2-4(0)	
		12	GRAVEL AND CLAY.		
		14			
	14.0	17			
9	14.0	7	WET MEDIUM DENSE BROWN CLAYEY COARSE TO FINE SAND AND FINE	A-2-4(0)	
		12	GRAVEL.		
		15			
	16.0	19			
10	16.0	12	WET MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME CLAY	A-2-4(0)	
		13	AND FINE GRAVEL.		
		12			
	18.0	16			
11	18.0	9	WET MEDIUM DENSE BROWN CLAYEY COARSE TO FINE SAND W/SOME	A-2-4(0)	
		10	SILT, TRACE OF FINE GRAVEL.		
		11			
	24.0	9			
12	24.0	8	WET MEDIUM DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE	A-1-B	
		9	SAND AND SILT.		
		10			
	28.0	10			
13	28.0	6	NO SIEVE ANALYSIS - INDICATION OF WET MEDIUM DENSE COARSE		
		7	SANDY FINE GRAVEL W/SOME FINE SAND AND SILT.		
		9			
	34.0	11			
14	34.0	20	WET DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND,	A-1-A	
		31	TRACE OF SILT.		
		16			
	38.0	11			
15	38.0	50	WET DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/TRACE	A-1-B	
	44.0		SILT.		
16	44.0	50	WET DENSE BROWN COARSE TO FINE SANDY FINE GRAVEL W/TRACE	A-1-B	
	48.0		SILT.		
	48.0		END BORING		
	50.0				

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NONE

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT T201509002
COUNTY NEW CASTLE
BRIDGE NO. N/A
DESIGNED BY: WRA
CHECKED BY: WRA

BORING LOG

BO-03
SHEET NO. 24
TOTAL SHTS. 26

BORING: LB-14 | **DATE DRILLED:** 6/22/15
STATION: | **OFFSET:** | **ELEVATION:** | **NORTHING:** 624171.1 | **EASTING:** 608435.3
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
	SAMPLE INFORMATION				
1	0.0 0.0		MOIST BROWN COARSE TO FINE SANDY SILT W/SOME CLAY, TRACE OF FINE GRAVEL.	A-4(0)	
2	0.0 2.0		MOIST BROWN COARSE TO FINE SANDY SILT W/SOME CLAY, TRACE OF FINE GRAVEL.	A-4(0)	
3	2.0 4.0		MOIST BROWN CLAYEY COARSE TO FINE SANDY SILT W/TRACE FINE GRAVEL.	A-4(0)	
4	4.0 6.0		MOIST BROWN COARSE TO FINE SANDY SILT W/TRACE FINE GRAVEL.	A-4(0)	
5	6.0 8.0	10 15 13 14	MOIST MEDIUM DENSE BROWN CLAYEY COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-2-4(0)	
6	8.0 10.0	9 11 13 17	MOIST VERY STIFF BROWN FINE TO COARSE SANDY SILT W/TRACE FINE GRAVEL AND CLAY.	A-4(0)	
7	10.0 12.0	16 24 16 14	MOIST DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
8	12.0 14.0	16 39 42 50	MOIST VERY DENSE BROWN SILTY FINE TO COARSE SAND AND FINE GRAVEL.	A-1-B	
9	14.0 16.0	7 9 9 8	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
10	16.0 18.0	5 10 9 9	MOIST MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-1-B	
11	18.0 24.0	7 14 11 9	MOIST MEDIUM DENSE BROWN FINE GRAVEL AND COARSE SAND W/SOME FINE SAND, TRACE OF FINE GRAVEL.	A-1-B	
12	24.0 28.0	36 50	WET VERY DENSE BROWN COARSE TO FINE SAND W/TRACE FINE GRAVEL AND SILT.	A-1-B	
13	28.0 34.0	6 8 9 9	WET MEDIUM DENSE BROWN FINE TO COARSE SANDY FINE GRAVEL W/TRACE SILT.	A-1-A	
14	34.0 38.0	8 9 7 6	WET MEDIUM DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/TRACE SILT.	A-1-B	
15	38.0 44.0	11 16 20 10	WET DENSE BROWN SILTY FINE GRAVEL W/TRACE FINE TO COARSE SAND.	A-1-B	
16	44.0 48.0	38 50	WET VERY DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/SOME SILT.	A-1-B	
	48.0 50.0		END BORING		

BORING: LB-15 | **DATE DRILLED:** 6/23/15
STATION: | **OFFSET:** | **ELEVATION:** | **NORTHING:** 625764.820 | **EASTING:** 609957.478
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
	SAMPLE INFORMATION				
1	0.0 0.0		NO SAMPLE		
2	0.0 2.0	6 7 6 7	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL AND CLAY.	A-2-4(0)	
3	2.0 4.0	4 6 8 9	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME CLAY, TRACE OF FINE GRAVEL.	A-2-4(0)	
4	4.0 6.0	10 10 11 10	MOIST VERY STIFF BROWN COARSE TO FINE SANDY SILT W/TRACE FINE GRAVEL.	A-4(0)	
5	6.0 8.0	4 5 4 5	MOIST STIFF BROWN COARSE TO FINE SANDY SILT W/TRACE FINE GRAVEL AND CLAY.	A-4(0)	
6	8.0 10.0	4 5 4 15	MOIST STIFF BROWN COARSE TO FINE SANDY SILT W/TRACE FINE GRAVEL AND CLAY.	A-4(0)	
7	10.0 12.0	5 19 19 14	MOIST DENSE BROWN SILTY COARSE SAND W/SOME FINE SAND AND FINE GRAVEL.	A-1-B	
8	12.0 14.0	3 11 12 9	MOIST VERY STIFF BROWN COARSE TO FINE SANDY SILT W/TRACE FINE GRAVEL AND CLAY.	A-4(0)	
9	14.0 16.0	12 20 22 23	MOIST DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-1-B	
10	16.0 18.0	6 9 12 13	MOIST MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF FINE GRAVEL.	A-1-B	
11	18.0 24.0	12 15 14 17	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND AND FINE GRAVEL.	A-1-B	

BORING: LB-15 CONT.

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
	SAMPLE INFORMATION				
12	24.0 29.0	12 7 6 5	NO SIEVE ANALYSIS - INDICATION OF MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.		
13	29.0 34.0	7 7 8 9	MOIST MEDIUM DENSE BROWN FINE GRAVEL W/SOME COARSE SAND, TRACE OF FINE SAND AND SILT.	A-1-A	
14	34.0 39.0	5 10 11 8	MOIST MEDIUM DENSE BROWN FINE GRAVEL W/SOME COARSE SAND, TRACE OF FINE SAND AND SILT.	A-1-A	
15	39.0 44.0	5 11 12 17	MOIST MEDIUM DENSE BROWN FINE GRAVEL W/TRACE COARSE TO FINE SAND AND SILT.	A-1-A	
16	44.0 49.0	12 17 11 12	MOIST MEDIUM DENSE BROWN FINE GRAVEL W/TRACE COARSE TO FINE SAND AND SILT.	A-1-A	
17	49.0 53.0	14 12 11 11	MOIST MEDIUM DENSE BROWN FINE GRAVEL W/TRACE COARSE TO FINE SAND.	A-1-A	
	53.0 55.0		END BORING		

BORING: LB-16 | **DATE DRILLED:** 6/23/15
STATION: | **OFFSET:** | **ELEVATION:** | **NORTHING:** 625297.143 | **EASTING:** 609515.891
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
	SAMPLE INFORMATION				
1	0.0 2.0	3 3 3 3	MOIST LOOSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
2	2.0 4.0	2 4 2 3	MOIST LOOSE BROWN COARSE TO FINE SAND W/SOME SILT AND FINE GRAVEL.	A-1-B	
3	4.0 6.0	2 3 3 4	MOIST LOOSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
4	6.0 8.0	5 7 8 9	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
5	8.0 10.0	8 9 10 13	MOIST MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
6	10.0 12.0	5 7 11 16	MOIST MEDIUM DENSE BROWN FINE GRAVELLY COARSE TO FINE SAND W/SOME SILT.	A-1-B	
7	12.0 14.0	8 9 16 13	MOIST MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
8	14.0 16.0	9 10 12 16	MOIST MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
9	16.0 18.0	3 4 3 3	MOIST LOOSE BROWN FINE CLAYEY COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
10	18.0 24.0	4 5 9 6	MOIST MEDIUM DENSE BROWN FINE GRAVEL AND COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
11	24.0 28.0	3 4 3 3	MOIST LOOSE BROWN COARSE SANDY FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-A	
12	28.0 34.0	9 11 16 26	MOIST MEDIUM DENSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-A	
13	34.0 38.0	7 9 13 15	MOIST MEDIUM DENSE BROWN FINE GRAVEL AND COARSE TO FINE SAND W/TRACE SILT.	A-1-B	
14	38.0 44.0	16 24 38 31	MOIST VERY DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
15	44.0 48.0	10 13 17 15	MOIST DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/TRACE SILT.	A-1-B	
16	48.0 54.0	11 13 13 17	MOIST MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
17	54.0 58.0	50	NO RECOVERY		
	58.0 60.0		END BORING		

BORING: LB-17 | **DATE DRILLED:** 6/2/15
STATION: | **OFFSET:** | **ELEVATION:** | **NORTHING:** 624832 | **EASTING:** 609074.4
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
	SAMPLE INFORMATION				
1	0.0 0.0		MOIST BROWN SILTY COARSE TO FINE SAND AND FINE GRAVEL.	A-1-B	
2	0.0 2.0		MOIST BROWN CLAYEY COARSE TO FINE SANDY SILT W/SOME FINE GRAVEL.	A-4(0)	
3	2.0 4.0		MOIST BROWN SILTY COARSE SAND W/SOME FINE SAND AND FINE GRAVEL.	A-1-B	
4	4.0 6.0	3 10 20 14	MOIST MEDIUM DENSE BROWN SILTY COARSE SAND AND FINE GRAVEL W/SOME FINE SAND.	A-1-B	
5	6.0 8.0	5 10 12 11	MOIST MEDIUM DENSE BROWN FINE TO COARSE SAND AND FINE GRAVEL W/SOME SILT.	A-1-B	
6	8.0 10.0	12 9 8 7	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
7	10.0 12.0	4 3 2 2	MOIST LOOSE BROWN COARSE SANDY FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-A	
8	12.0 14.0	3 2 1 1	MOIST VERY LOOSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND SILT.	A-1-B	
9	14.0 16.0	1 1 1 2	MOIST VERY LOOSE BROWN COARSE SAND AND FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-B	
10	16.0 18.0	1 1 3 2	MOIST VERY LOOSE BROWN COARSE SAND AND FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-B	
11	18.0 24.0	2 4 5 4	MOIST LOOSE BROWN FINE GRAVEL FINE GRAVEL W/SOME COARSE TO FINE SAND, TRACE OF SILT.	A-1-A	
12	24.0 29.0	4 7 11 23	MOIST MEDIUM BROWN COARSE SANDY FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-A	
13	29.0 34.0	4 9 15 15	WET BROWN FINE SANDY SILT W/SOME CLAY, TRACE OF COARSE SAND.	A-4(0)	
14	34.0 39.0	4 6 9 12	WET MEDIUM DENSE RED SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND.	A-7-6(16)	
15	39.0 44.0	3 5 7 5	WET STIFF RED SILTY FINE SANDY CLAY W/TRACE COARSE SAND.	A-6(5)	
U-1	44.0 46.0				
16	46.0 48.0	5 11 16 15	WET VERY STIFF RED CLAYEY FINE SANDY SILT W/TRACE COARSE SAND AND FINE GRAVEL.	A-4(3)	
17	48.0 53.0	5 8 10 17	WET MEDIUM DENSE RED SILTY FINE SAND W/TRACE COARSE SAND.	A-2-4(0)	
	53.0 55.0		END BORING		

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NONE

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT T201509002
COUNTY NEW CASTLE
BRIDGE NO. N/A
DESIGNED BY: WRA
CHECKED BY: WRA

BORING LOG

BO-04
SHEET NO. 25
TOTAL SHTS. 26

BORING: LB-18 **DATE DRILLED:** 6/24/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 624492.9 **EASTING:** 608637.5
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0 0.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
2	0.0 2.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
3	2.0 4.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
4	4.0 6.0		MOIST BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-2-4(0)	
5	6.0 8.0	11 22 26 19	MOIST DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/SOME SILT.	A-1-B	
6	8.0 10.0	7 9 15 13	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
7	10.0 12.0	5 7 6 6	WET MEDIUM DENSE BROWN FINE GRAVELLY COARSE TO FINE SAND W/TRACE SILT.	A-1-B	
8	12.0 14.0	9 11 16 14	WET MEDIUM DENSE BROWN COARSE SAND W/SOME FINE SAND AND FINE GRAVEL, TRACE OF SILT.	A-1-B	
9	14.0 16.0	50	WET VERY DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
10	16.0 18.0	50	WET VERY DENSE BROWN FINE TO COARSE SAND AND FINE GRAVEL W/TRACE SILT.	A-1-B	
11	18.0 24.0	8 6 6 9	WET MEDIUM DENSE BROWN COARSE TO FINE SAND AND FINE GRAVEL W/TRACE SILT.	A-1-B	
12	24.0 28.0	9 8 11 10	WET MEDIUM DENSE BROWN FINE GRAVEL W/SOME COARSE SAND, TRACE OF FINE SAND AND SILT.	A-1-A	
13	28.0 34.0	18 16 12 13	WET MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/TRACE FINE SAND AND SILT.	A-1-B	
14	34.0 38.0	7 9 16 11	WET VERY STIFF BROWN SILTY FINE SANDY CLAY W/TRACE COARSE SAND.	A-6(5)	
15	38.0 44.0	16 23 19 16	WET HARD BROWN CLAYEY FINE SANDY SILT W/TRACE COARSE SAND.	A-4(1)	
16	44.0 48.0	11 14 15 19	WET MEDIUM DENSE BROWN SILTY FINE SAND W/TRACE COARSE SAND.	A-2-4(0)	
	48.0 50.0		END BORING		

BORING: LB-19 **DATE DRILLED:** 6/24/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 624024.952 **EASTING:** 608053.742
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0 0.0	3 12 9 16	MOIST MEDIUM DENSE BROWN SILTY COARSE SAND AND FINE GRAVEL W/SOME FINE SAND AND CLAY.	A-1-B	
2	0.0 2.0	16 13 20 23	MOIST DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL AND CLAY.	A-2-4(0)	
3	2.0 4.0	6 11 13 10	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE FINE GRAVEL.	A-2-4(0)	
4	4.0 6.0	8 11 13 24	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF CLAY.	A-2-4(0)	
5	6.0 8.0	2 11 14 16	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
6	8.0 10.0	8 11 12 14	MOIST MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/SOME FINE GRAVEL.	A-1-B	
7	10.0 12.0	14 13 11 10	MOIST MEDIUM DENSE BROWN SILTY COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND CLAY.	A-2-4(0)	
8	12.0 14.0	6 11 15 18	WET MEDIUM DENSE BROWN FINE TO COARSE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
9	14.0 16.0	14 15 14 15	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
10	16.0 18.0	1 2 2 5	SATURATED SOFT BLACK ORGANIC SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-5(20)	
U-1	18.0 22.0		SATURATED BLACK ORGANIC SILTY CLAY W/ TRACE OF FINE TO COARSE SAND.	A-7-5(19)	

BORING: LB-19 CONT.

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
11	22.0 24.0	3 3 5 6	SATURATED FIRM BLACK ORGANIC SILTY CLAY W/TRACE COARSE TO FINE SAND.	A-7-5(17)	
12	24.0 29.0	1 2 3 5	SATURATED FIRM BLACK ORGANIC SILTY CLAY W/SOME COARSE SAND, TRACE OF FINE SAND.	A-7-5(21)	
U-2	29.0 32.0				
13	32.0 34.0	2 3 4 4	SATURATED FIRM BLACK ORGANIC SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-5(19)	
14	34.0 39.0	2 3 4 5	SATURATED FIRM BLACK FINE SANDY SILT W/TRACE COARSE SAND AND FINE GRAVEL.	A-4(0)	
15	39.0 44.0	15 25 30 38	SATURATED VERY DENSE GRAY COARSE SANDY FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-A	
16	44.0 48.0 48.0 50.0	50	SATURATED DENSE GRAY FINE GRAVELLY COARSE SAND W/SOME FINE SAND, TRACE OF SILT. END BORING	A-1-B	

BORING: LB-20 **DATE DRILLED:** 6/29/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 625265.947 **EASTING:** 616513.597
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0 0.0		MOIST GRAY SILTY COARSE SANDY FINE GRAVEL W/SOME FINE SAND AND CLAY.	A-2-4(0)	
2	0.0 2.0		WET GRAY COARSE SANDY SILT W/SOME FINE SAND, FINE GRAVEL AND CLAY.	A-4(0)	
3	2.0 4.0		WET GRAY FINE SANDY SILT W/SOME COARSE SAND AND CLAY, TRACE OF FINE GRAVEL.	A-4(0)	
4	4.0 6.0	1 3 3 5	WET FIRM BROWN CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF FINE GRAVEL.	A-4(1)	
5	6.0 8.0	5 9 19 18	WET VERY STIFF BROWN CLAYEY FINE TO COARSE SANDY SILT W/TRACE FINE GRAVEL.	A-4(1)	
6	8.0 10.0	7 11 12 14	WET VERY STIFF BROWN CLAYEY SILT W/TRACE FINE TO COARSE SAND AND FINE GRAVEL.	A-4(4)	
7	10.0 12.0	5 9 11 17	WET VERY STIFF BROWN SILT W/SOME CLAY, TRACE OF FINE SAND.	A-4(3)	
8	12.0 14.0	5 12 15 15	WET VERY STIFF BROWN CLAYEY SILT W/TRACE FINE TO COARSE SAND.	A-4(8)	
9	14.0 16.0	15 24 38 27	WET HARD BROWN CLAYEY SILT W/TRACE FINE TO COARSE SAND.	A-4(8)	
10	16.0 18.0	30 28 35 41	WET HARD BROWN SILT W/SOME CLAY, TRACE OF FINE TO COARSE SAND.	A-4(3)	
11	18.0 24.0	5 8 11 12	WET HARD BROWN SILT W/SOME CLAY, TRACE OF FINE TO COARSE SAND.	A-4(5)	
12	24.0 29.0	5 7 11 13	WET VERY STIFF BROWN CLAYEY SILT W/TRACE FINE TO COARSE SAND.	A-4(8)	
13	29.0 34.0	5 8 13 19	WET VERY STIFF GRAY CLAYEY SILT W/TRACE FINE SAND.	A-4(9)	
14	34.0 39.0	7 10 10 17	WET VERY STIFF GRAY SILTY CLAY W/TRACE FINE SAND.	A-7-5(19)	
15	39.0 44.0	9 10 17 18	WET VERY STIFF GRAY SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-5(20)	
16	44.0 48.0	5 10 14 17	WET VERY STIFF GRAY CLAYEY FINE SANDY SILT W/TRACE COARSE SAND.	A-4(5)	
	48.0 50.0		END BORING		

BORING: LB-21 **DATE DRILLED:** 6/11/15
STATION: **OFFSET:** **ELEVATION:** **NORTHING:** 624820.9 **EASTING:** 616833.6
COMMENTS: N/A

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
1	0.0 0.0		MOIST BROWN COARSE SAND W/SOME FINE SAND, FINE GRAVEL AND SILT.	A-1-B	
2	0.0 2.0		MOIST BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL AND SILT.	A-1-B	
3	2.0 4.0		MOIST BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	

BORING: LB-21 CONT.

NO.	DEPTH	BLOWS /6"	DESCRIPTION	CLASS /G.I.	REMARKS
	6.0	18 17			
5	6.0 8.0	7 11 9 11	MOIST MEDIUM DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND AND SILT.	A-1-B	
6	8.0 10.0	6 6 6 6	MOIST MEDIUM DENSE BROWN COARSE SAND AND FINE GRAVEL W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
7	10.0 12.0	9 15 22 32	MOIST DENSE BROWN FINE GRAVELLY COARSE SAND W/SOME FINE SAND, TRACE OF SILT.	A-1-B	
8	12.0 14.0	4 10 12 16	WET MEDIUM DENSE BROWN FINE GRAVELLY FINE TO COARSE SAND, TRACE OF SILT.	A-1-B	
9	14.0 16.0	11 13 7 11	WET LOOSE BROWN COARSE TO FINE SAND W/SOME FINE GRAVEL, TRACE OF SILT.	A-1-B	
U-1	16.0 18.0		NO RECOVERY		
11	18.0 24.0	7 11 20 22	WET HARD RED SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-6(14)	
12	24.0 29.0	7 11 17 18	WET VERY STIFF GRAY CLAYEY SILT W/SOME ORGANIC MATTER, TRACE OF FINE SAND.	A-4(11)	
U-2	29.0 32.0				
13	32.0 34.0	7 13 14 17	WET VERY STIFF GRAY CLAYEY SILT W/TRACE FINE TO COARSE SAND.	A-4(9)	
14	34.0 39.0	4 10 13 17	WET VERY STIFF GRAY SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-6(11)	
15	39.0 44.0	6 13 20 24	WET HARD GRAY CLAYEY SILT W/SOME FINE SAND.	A-4(6)	
16	44.0 49.0	8 9 23 25	WET DENSE GRAY SILTY FINE SAND.	A-2-4(0)	
17	49.0 53.0	5 8 13 17	WET VERY STIFF RED SILTY CLAY W/TRACE FINE TO COARSE SAND.	A-7-6(21)	
	53.0 55.0		END BORING		

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NONE

I-95/I-295/I-495 INTERSTATE
HIGH MAST LIGHTING
IMPROVEMENTS

CONTRACT T201509002
COUNTY NEW CASTLE
BRIDGE NO. N/A
DESIGNED BY: WRA
CHECKED BY: WRA

BORING LOG

BO-05
SHEET NO. 26
TOTAL SHTS. 26