U.S. CUSTOMARY UNITS

THE STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION

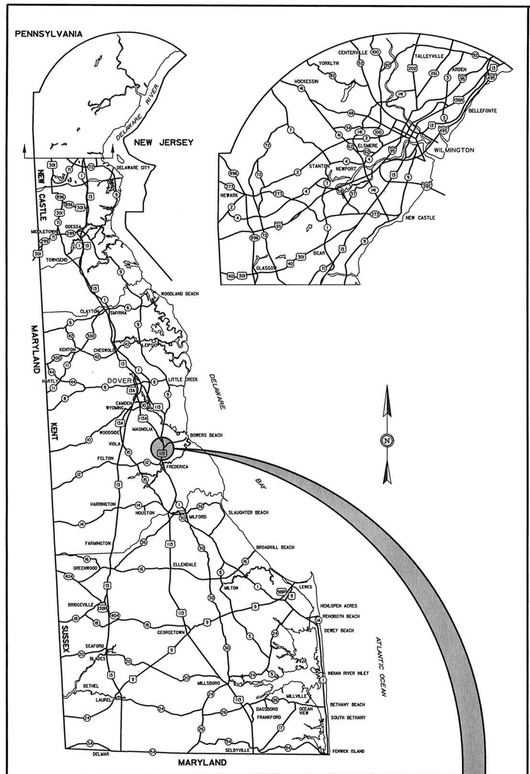
CONSTRUCTION PLANS FOR:

SR1, LITTLE HEAVEN
GRADE SEPARATED INTERSECTION

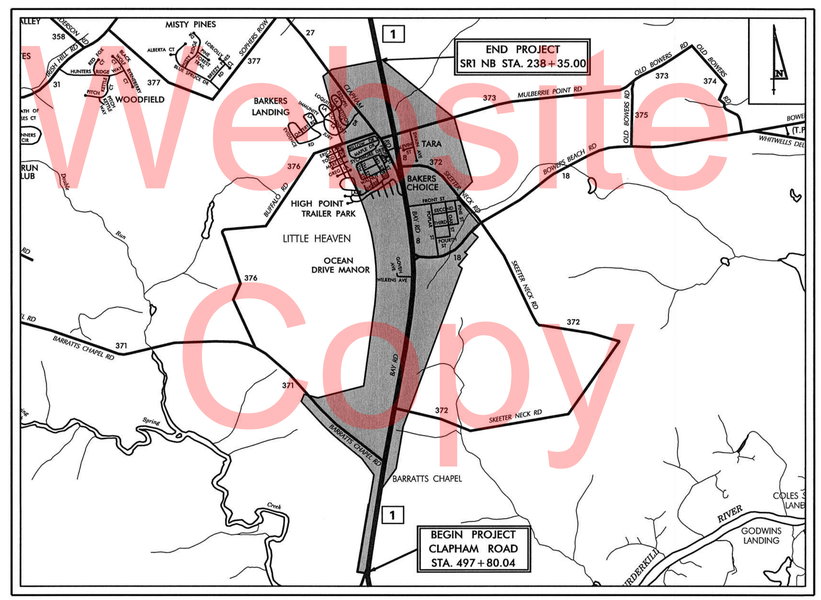
CONTRACT NUMBER: T200412202
FEDERAL AID PROJECT NUMBER: NH-K008(6)

COUNTY: KENT M.R. #: 008
FROM MILEPOST 50 TO MILEPOST 52
ROADWAY LENGTH: 15,361.00 FEET = 2.91 MILES
STRUCTURE LENGTH: 127.25 FEET = 0.024 MILES
TOTAL LENGTH: 15,488.25 FEET = 2.934 MILES

Unofficial Website Copy



GENERAL LOCATION OF CONTRACT



PROJECT LOCATION
NOT TO SCALE

DESIGN DESIGNATION

SR1 (BAY ROAD)	FUNCTIONAL CLASS: RURAL PRINCIPAL ARTERIAL		D.H.V. PROJECTED: 5157	YEAR: 2030
	TYPE OF CONSTRUCTION: NEW CONSTRUCTION		DESIGN SPEED: 60 M.P.H.	
	A.A.D.T. CURRENT: 36599	YEAR: 2006	TRUCKS: 9.0 %	
	A.A.D.T. PROJECTED: 46046	YEAR: 2030	DIRECTION OF DISTRIBUTION: 58.4 %	
CLAPHAM RD	FUNCTIONAL CLASS: RURAL MINOR ARTERIAL		D.H.V. PROJECTED: 2025	YEAR: 2030
	TYPE OF CONSTRUCTION: NEW CONSTRUCTION		DESIGN SPEED: 50 M.P.H.	
	A.A.D.T. CURRENT: 5250	YEAR: 2006	TRUCKS: 9.0 %	
	A.A.D.T. PROJECTED: 18084	YEAR: 2030	DIRECTION OF DISTRIBUTION: 58.4 %	
LITTLE HEAVEN RD	FUNCTIONAL CLASS: RURAL MAJOR COLLECTOR		D.H.V. PROJECTED: 849	YEAR: 2030
	TYPE OF CONSTRUCTION: NEW CONSTRUCTION		DESIGN SPEED: 50 M.P.H.	
	A.A.D.T. CURRENT: N/A	YEAR: 2006	TRUCKS: 3.9 %	
	A.A.D.T. PROJECTED: 5981	YEAR: 2030	DIRECTION OF DISTRIBUTION: 63.8 %	
K18 - BOWERS BEACH RD	FUNCTIONAL CLASS: RURAL MAJOR COLLECTOR		D.H.V. PROJECTED: 504	YEAR: 2030
	TYPE OF CONSTRUCTION: NEW CONSTRUCTION		DESIGN SPEED: 50 M.P.H.	
	A.A.D.T. CURRENT: 1294	YEAR: 2006	TRUCKS: 6.8 %	
	A.A.D.T. PROJECTED: 3786	YEAR: 2030	DIRECTION OF DISTRIBUTION: 70 %	
BARRATT'S CHAPEL RD	FUNCTIONAL CLASS: RURAL MAJOR COLLECTOR		D.H.V. PROJECTED: 1503	YEAR: 2030
	TYPE OF CONSTRUCTION: NEW CONSTRUCTION		DESIGN SPEED: 50 M.P.H.	
	A.A.D.T. CURRENT: 1815	YEAR: 2006	TRUCKS: 3.9 %	
	A.A.D.T. PROJECTED: 10582	YEAR: 2030	DIRECTION OF DISTRIBUTION: 63.8 %	
MULBERRIE POINT RD	FUNCTIONAL CLASS: RURAL LOCAL ROAD		D.H.V. PROJECTED: 52	YEAR: 2030
	TYPE OF CONSTRUCTION: NEW CONSTRUCTION		DESIGN SPEED: 30 M.P.H.	
	A.A.D.T. CURRENT: 188	YEAR: 2006	TRUCKS: 3.9 %	
	A.A.D.T. PROJECTED: 366	YEAR: 2030	DIRECTION OF DISTRIBUTION: 54.1 %	

INDEX OF SHEETS

SHEET Nº	TABLE OF CONTENTS
1	TITLE SHEET
2-4	INDEX SHEETS
5	LEGEND SHEET
6-8	NOTES
9-27	TYPICAL SECTIONS
28	TRAVERSE POINTS
29-36	HORIZONTAL AND VERTICAL CONTROL SHEETS
37-81	CONSTRUCTION PLANS
82-145	PROFILES
146-160	SUPERELEVATION TRANSITION SHEETS
161-204	GRADES AND GEOMETRICS
205-228	STORMWATER MANAGEMENT PLANS
229-244	CONSTRUCTION DETAILS
245-248	RETAINING WALL DETAILS
249-274	BRIDGE PLANS
275-278	CULVERT PLANS
279-431	CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLANS
432-440	ENVIRONMENTAL COMPLIANCE PLANS
441-448	WETLAND MITIGATION PLANS
449-460	DETOUR PLANS
461-466	LANDSCAPING PLANS
467-517	UTILITY RELOCATION, LIGHTING, AND ITMS CONDUIT PLANS
518-562	SIGNING AND STRIPING PLANS
563-570	SIGNING DETAILS
571-581	GROUND MOUNT DETAILS
582-593	SIGN STRUCTURE DETAILS
594-616	SIGNALIZATION PLANS
617	EARTHWORK SUMMARY
618-641	SEWER PLANS

TOTAL SHEETS: 641

APPROVED DESIGN EXCEPTIONS

DESIGN PARAMETER	REQUIRED	PROVIDED	DATE

ADDENDA & REVISIONS

DESCRIPTION	NAME & DATE

PREPARED BY
THE CONSULTING FIRM OF
CENTURY ENGINEERING
4134 N. DUPONT HWY.
DOVER, DE 19901
(302) 734-9188

WILLIAM FRANKLIN COMPTON REGISTERED No. 12301 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED — DATE 8/28/14

RECOMMENDED

SQUAD MANAGER, CONSTRUCTION — DATE 9/18/14

GROUP ENGINEER, CONSTRUCTION — DATE 9/17/2014

ASSISTANT DIRECTOR, TRANSPORTATION SOLUTIONS (CONSTRUCTION) — DATE 9/5/14

RECOMMENDED
STORMWATER ENGINEER
DATE 20 NOV 2014
VINCENT W. DAVIS REGISTERED No. 12898 DELAWARE PROFESSIONAL ENGINEER
SEAL

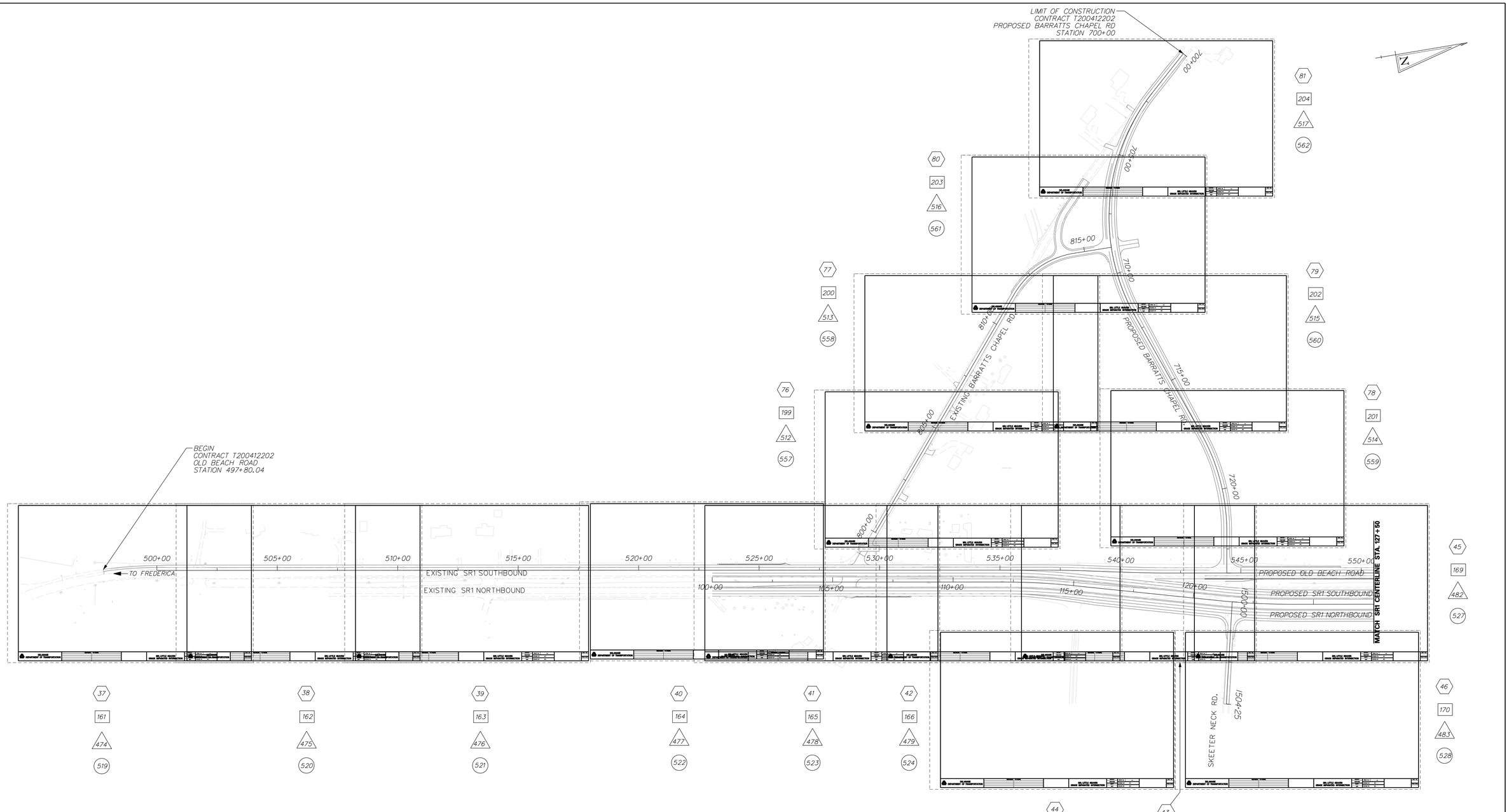
RECOMMENDED
SQUAD MANAGER, TRANSPORTATION SOLUTIONS
DATE NOVEMBER 20, 2014
D. THAD MCILVAINE REGISTERED No. 13178 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
BRIDGE DESIGN ENGINEER
(DESIGN OF SHEETS 249-278 AND SHEETS 582-593)
DATE 20 NOVEMBER 2014
JASON N. HASTINGS REGISTERED No. 13545 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
GROUP ENGINEER, PROJECT DEVELOPMENT
DATE 11·20·14
JAMES W. SATTERFIELD IV LICENSED No. 10391 DELAWARE PROFESSIONAL ENGINEER
SEAL

RECOMMENDED
ASSISTANT DIRECTOR,
TRANSPORTATION SOLUTIONS
DATE 11/20/14
MICHAEL H. SIMMONS REGISTERED No. 8211 DELAWARE PROFESSIONAL ENGINEER
SEAL

APPROVED
CHIEF ENGINEER
DATE 11/25/14
ROBERT BRIAN McCLEARY REGISTERED No. 8567 DELAWARE PROFESSIONAL ENGINEER
SEAL



LEGEND

- CONSTRUCTION PLANS
- GRADES AND GEOMETRICS
- UTILITY RELOCATION, LIGHTING, AND ITMS CONDUIT PLANS
- SIGNING AND STRIPING PLANS

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 200 400 600 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-	**INDEX SHEET**	SHEET NO.
T200412202	DESIGNED BY:	SFP		2
COUNTY				TOTAL SHTS.
KENT	CHECKED BY:	WFC		641

12/1/2014
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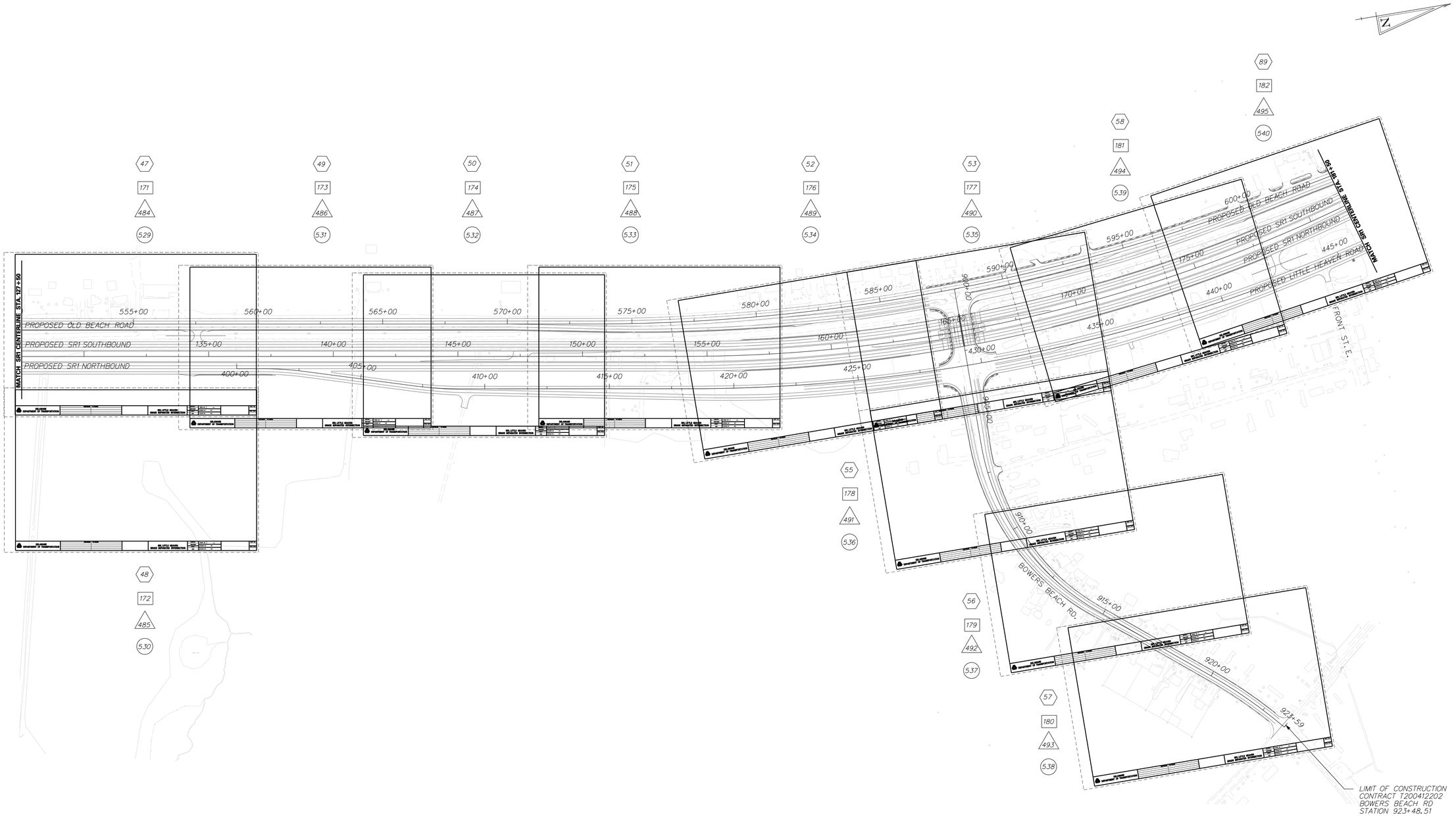
LEGEND

- CONSTRUCTION PLANS
- GRADES AND GEOMETRICS
- UTILITY RELOCATION, LIGHTING AND ITMS CONDUIT PLANS
- SIGNING AND STRIPING PLANS



DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 200 400 600 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

INDEX SHEET

SHEET NO.
3
TOTAL SHTS.
641

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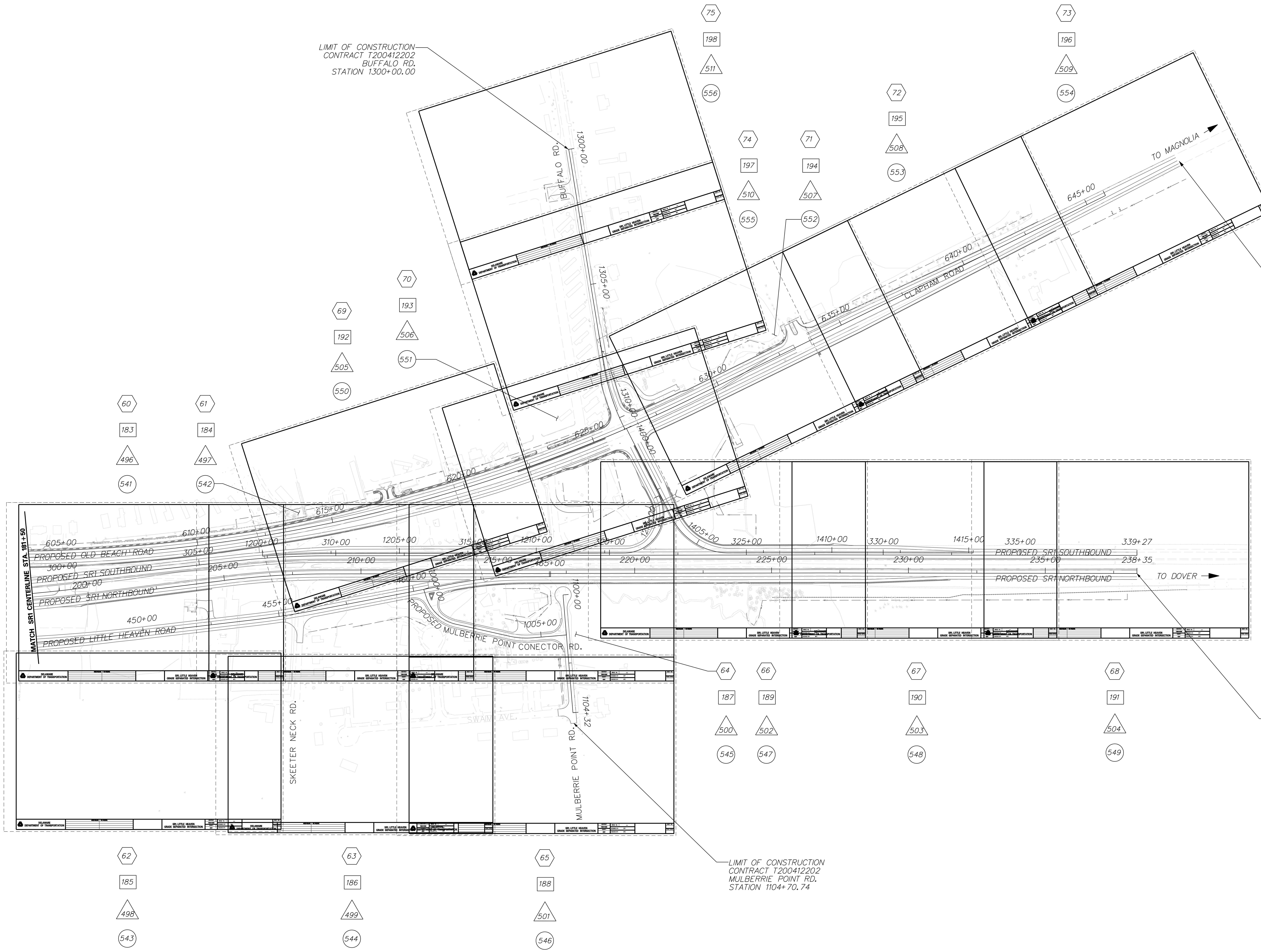

LEGEND

- (hexagon) CONSTRUCTION PLANS
- (square) GRADES AND GEOMETRICS
- (triangle) UTILITY RELOCATION, LIGHTING AND ITMS CONDUIT PLANS
- (circle) SIGNING AND STRIPING PLANS

SCALE 0 200 400 600 FEET

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION	CONTRACT	T200412202	BRIDGE NO.	-	INDEX SHEET	SHEET NO.	4
			COUNTY	KENT	DESIGNED BY: SFP	CHECKED BY: WFC		TOTAL SHTS.	641

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EXISTING SYMBOLS

DRAINAGE

	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
C.B.	DRAINAGE CATCH BASIN
J.B.	DRAINAGE JUNCTION BOX
D	DRAINAGE MANHOLE
SIZE/TYPE LABEL	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES

(TYPE LABEL)	CURB
(TYPE LABEL)	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
FP	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
LAMP	LAMP AND POST - RESIDENTIAL
MB	MAILBOX
PM	PARKING METER AND POST
	PAVEMENT - FLEXIBLE
	PAVEMENT - RIGID
	PILE - BRIDGE
	PILLAR OR MISCELLANEOUS POST
	TRAFFIC SIGN AND POST
	WALL - BRICK OR BLOCK
	WALL - STONE

NATURAL ROADSIDE FEATURES

	GRASS LAWN
	HEDGEROW OR THICKET
	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
WL	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

SURVEY CONTROL & MONUMENTATION

B.M.	SURVEY BENCHMARK LOCATION
T.P.	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS
C.M.	PROPERTY MARKER - CONCRETE MON.
I.P.	PROPERTY MARKER - IRON PIPE

UTILITY

	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
TV	CABLE TV DISTRIBUTION BOX
E	ELECTRIC MANHOLE
E	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
G	GAS MANHOLE
G.M.	GAS METER
G.V.	GAS VALVE
G.P.	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
S	SANITARY SEWER MANHOLE
S.V.	SANITARY SEWER VALVE
VENT	SANITARY SEWER VENT OR CLEANOUT
S.D.F.	SEPTIC DRAIN FIELD
B	TELEPHONE BOOTH
T	TELEPHONE MANHOLE
T	TELEPHONE TEST POINT
J.W.	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
U	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
F.H.	WATER - FIRE HYDRANT
W.M.	WATER METER
W.V.	WATER VALVE
WELL	WELL HEAD

UTILITY COMPANY FACILITIES

VER-UG	VERIZON UNDERGROUND
KCS	KENT COUNTY SEWER UNDERGROUND
AW-UG	ARTESIAN WATER UNDERGROUND
CPDE-UG	DELMARVA POWER UNDERGROUND
COM-UG	COMCAST CABLE UNDERGROUND
DOT-UG	DELDOT UNDERGROUND (SIGNAL)

PROPOSED SYMBOLS

CONSTRUCTION

	CONCRETE SAFETY BARRIER - PERMANENT
BFS	BIOFILTRATION SWALE
	BUTT JOINT
100+00	CONSTRUCTION BASELINE
	PCC CURB, TYPE 1 & TYPE 3
	PCC CURB, TYPE 2
	INTEGRAL PCC CURB & GUTTER, TYPE 1
	INTEGRAL PCC CURB & GUTTER, TYPE 2
	INTEGRAL PCC CURB & GUTTER, TYPE 3
	INTEGRAL PCC CURB & GUTTER, TYPE 4
CZ	CLEAR ZONE
	DRAINAGE INLET
	DITCH & DIRECTIONAL FLOW ARROW
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPES 1 & 3
	GUARDRAIL, TYPE 2
	GUARDRAIL END TREATMENT - PARALLEL
	GUARDRAIL END TREATMENT - PARABOLIC
HC	HORIZONTAL CLEARANCE
	JUNCTION BOX - DRAINAGE
LOC	LIMIT OF CONSTRUCTION
	MANHOLE
	PAVEMENT PATCH (ASPHALT)
	PAVEMENT PATCH (P.C.C.)
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK @ 4"
	P.C.C. SIDEWALK @ 6"
	UNDERDRAIN & DIRECTIONAL FLOW ARROW
	UNDERDRAIN OUTLET

CONSTRUCTION PHASING SYMBOLS

	BARRICADE, TYPE 3
	CONCRETE SAFETY BARRIER - PORTABLE
	CONSTRUCTION WARNING SIGN LOCATION
END ROAD WORK	CONSTRUCTION WARNING SIGN
	DRUM - TRAFFIC CONTROL
PHASE	PHASING TRAFFIC FLOW ARROW

LANDSCAPING

	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

EROSION & SEDIMENT CONTROL

DWB	DEWATERING BASIN
	EROSION CONTROL BLANKET
ED	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
PST	PORTABLE SEDIMENT TANK
RSF	REINFORCED SILT FENCE
SBD	SANDBAG DIKE
SB	SANDBAG DIVERSION
	STONE CHECK DAM
SCE	STABILIZED CONSTRUCTION ENTRANCE
SF	SILT FENCE
SP-1	SUMP PIT, TYPE 1
SP-2	SUMP PIT, TYPE 2
ST	SEDIMENT TRAP
ST	SEDIMENT TRAP WITH INLET AS OUTLET
ST	SEDIMENT TRAP PIPE OUTLET
SW	STILLING WELL
	TEMPORARY SWALE
TSD	TEMPORARY SLOPE DRAIN

IDENTIFIERS

A C	ADJUST BY CONTRACTOR
A O	ADJUST BY OTHERS
B	CONCRETE SAFETY BARRIER
C	CURB OR CURB & GUTTER
CJB	CONVERT TO JUNCTION BOX
CMH	CONVERT TO DRAINAGE MANHOLE
C O	CURB OPENING
CR	CURB RAMP
CR-N	CURB RAMP - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
DI	DRAINAGE INLET
DND	DO NOT DISTURB
FES	FLARED END SECTION
FS	FILTRATION STRUCTURE
GR	GUARDRAIL
JB	JUNCTION BOX
LS	LANDSCAPE PLANTINGS
MH	MANHOLE
M	MONUMENT - RIGHT-OF-WAY
P	PIPE
RL C	RELOCATE BY CONTRACTOR
RL O	RELOCATE BY OTHERS
RM C	REMOVE BY CONTRACTOR
RM O	REMOVE BY OTHERS
ST	SEDIMENT TRAP
RSF	REINFORCED SILT FENCE
UD	UNDERDRAIN
TRM	TURF REINFORCEMENT MAT

PAVEMENT SECTION(S)

	FULL DEPTH PAVEMENT SECTION
	MILL AND OVERLAY SECTION
	REMOVE EXISTING PAVEMENT (TOPSOIL, SEED AND MULCH)
	DRIVEWAY SECTION
	MAINTENANCE ACCESS ROAD (STORMWATER FACILITIES)

RIGHT-OF-WAY SYMBOLS

	PROPOSED RIGHT-OF-WAY MONUMENT
PL	EXISTING PROPERTY LINE
EASEMENT TYPE	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
DA	PROPOSED DENIAL OF ACCESS
PE	PROPOSED PERMANENT EASEMENT
R/W	PROPOSED RIGHT-OF-WAY
R/W-DA	PROPOSED R/W & DENIAL OF ACCESS
TCE	PROPOSED TEMPORARY CONSTRUCTION EASEMENT
100+00	PROPOSED RIGHT-OF-WAY BASELINE
100+00	EXISTING RIGHT-OF-WAY BASELINE

TRAFFIC

ITMS-CON	ITMS CONDUIT
SIG-CON	SIGNAL CONDUIT
	CONDUIT JUNCTION WELL
	LUMINAIRE
	PAVEMENT MARKINGS
	PAVEMENT STRIPING
	TRAFFIC SIGN

UTILITY COMPANY FACILITIES

VER-UG	VERIZON UNDERGROUND
KCS	KENT COUNTY SEWER UNDERGROUND
AW-UG	ARTESIAN WATER UNDERGROUND
DP-E-UG	DELMARVA POWER UNDERGROUND
COM-UG	COMCAST CABLE UNDERGROUND
DOT-UG	DELDOT UNDERGROUND (SIGNAL)

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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. SITE REVIEWER - AN EROSION CONTROL SITE REVIEWER SHALL BE A PERSON FROM THE CONTRACTOR'S STAFF ASSIGNED TO EROSION AND SEDIMENT CONTROL IMPLEMENTATION AND MAINTENANCE AND SHALL BE REQUIRED ON SPECIFIC PROJECTS. THE NAME AND DNREC CERTIFICATION NUMBER OF EACH SITE REVIEWER SO REQUIRED SHALL BE SUBMITTED TO THE DEPARTMENT PRIOR TO THE EXECUTION OF THE CONTRACT. THE NAME OF THE DELAWARE REGISTERED PROFESSIONAL ENGINEER PROVIDING DIRECTION AND SUPERVISION OF THE SITE REVIEWER, AS REQUIRED IN SECTION 12.3 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, SHALL ALSO BE SUBMITTED TO THE DEPARTMENT PRIOR TO THE EXECUTION OF THE CONTRACT. THE SITE REVIEWER REQUIREMENTS IN EFFECT ON THIS PROJECT SHALL BE MARKED WITH AN "X" BELOW:

EROSION POTENTIAL FOR THIS PROJECT	SITE REVIEWER REQUIREMENT
( ) INSIGNIFICANT	NONE
( ) MINOR	CONTRACTOR CERTIFICATION COURSE TRAINING ONLY, AS DEFINED IN SECTION 13 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
( ) MEDIUM	THE SUPERINTENDENT OR A SEPARATE INDIVIDUAL FROM THE CONTRACTOR'S STAFF SHALL BE A CERTIFIED CONSTRUCTION REVIEWER (CCR), AS DEFINED IN SECTION 12 OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
(X) MAJOR	SUPERINTENDENT AND AN INDIVIDUAL FROM CONTRACTOR'S STAFF SHALL BE CCR. ONE INDIVIDUAL FROM THE CONTRACTOR'S STAFF MUST BE A CCR PRIOR TO THE EXECUTION OF THE CONTRACT. THE SUPERINTENDENT MUST BECOME A CCR WITHIN ONE YEAR AFTER THE AWARD OF CONTRACT.

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

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

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

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

(X)	CROSS SECTIONS
(X)	RIGHT-OF-WAY PLANS (WILL BE MADE AVAILABLE TO THE AWARDED CONTRACTOR)

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

( )	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.
(X)	THE CONTRACTOR SHALL HAVE AN ATSSA SUPERVISOR ASSIGNED TO THIS PROJECT. THE ATSSA SUPERVISOR'S SOLE JOB SHALL BE SUPERVISION OF THE INSTALLATION, OPERATION AND MAINTENANCE OF TRAFFIC CONTROL DEVICES FOR THIS PROJECT. THE CONTRACTOR'S GENERAL SUPERINTENDENT FOR THIS PROJECT SHALL NOT BE THE ATSSA SUPERVISOR. PAYMENT FOR ATSSA SUPERVISOR SHALL BE PAID FOR UNDER ITEM 743031.

6. THE DISTURBED AREA FOR THIS PROJECT IS 160.2 ACRES.

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

8. THE EROSION AND SEDIMENT CONTROL PLANS HAVE BEEN APPROVED BY DELDOT'S STORMWATER ENGINEER UNDER DELDOT'S DELEGATED AUTHORITY. THE EROSION AND SEDIMENT CONTROL PLANS ARE VALID FOR A THREE YEAR PERIOD, BEGINNING ON THE DATE THE STORMWATER ENGINEER SIGNED THE CONSTRUCTION TITLE SHEET. IF THE FINAL ACCEPTANCE OF THE PROJECT IS ANTICIPATED TO EXTEND BEYOND THE THREE YEARS, THE CONTRACTOR SHALL INFORM THE ENGINEER THREE MONTHS PRIOR TO THE EXPIRATION OF THE EROSION AND SEDIMENT CONTROL PLAN APPROVAL. DELDOT WILL REVIEW THE CURRENT EROSION AND SEDIMENT CONTROL PLAN AND ISSUE AN EXTENSION WITH ANY APPROPRIATE MODIFICATIONS.

9. THE CONTRACTOR SHALL GIVE TWO (2) WEEKS NOTICE TO THE PROPERTY OWNER WHEN ANY FIXTURE, SHRUB OR OTHER OBJECT MUST BE REMOVED FROM THE RIGHT OF WAY OR EASEMENT AREA. IF THE OWNER HAS NOT ATTEMPTED TO SALVAGE THIS PROPERTY, THE CONTRACTOR SHALL REMOVE IT WITHOUT OBLIGATION. COMPENSATION SHALL BE INCIDENTAL TO THE CONTRACT.

10. THE CONTRACTOR SHALL PROVIDE AND INSTALL PVC SLEEVES (4" INSIDE MINIMUM DIAMETER, 6" INSIDE MAXIMUM DIAMETER) IN PROPOSED CONCRETE SIDEWALKS, ISLANDS, AND MEDIANS FOR FUTURE TRAFFIC SIGN POSTS AS DIRECTED BY THE ENGINEER. THE LOWER END OF THE SLEEVE SHALL SIT ON THE TOP OF THE SUBBASE MATERIAL. THE COST SHALL BE INCIDENTAL TO THE CONTRACT.

11. STAGING AREAS - PROPER EROSION AND SEDIMENT CONTROL MEASURES AS DETERMINED BY THE ENGINEER SHALL BE INSTALLED IN ALL STAGING AREAS. ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE CONTRACT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE AREA IS UNPAVED, IT SHALL BE RE-GRADED, TOPSOILED, SEEDED AND MULCHED IN ACCORDANCE WITH DELAWARE STANDARD SPECIFICATIONS 732, 734 AND 735, FOR TOPSOIL, SEED AND MULCH RESPECTIVELY, TO THE SATISFACTION OF THE ENGINEER. THE SEED SHALL ADHERE TO THE SPECIFICATIONS OF SECTION 734 FOR PERMANENT GRASS SEEDING - DRY GROUND. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH REESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE. ALL STAGING AREAS SHALL BE SECTIONED OFF FROM THE TRAVELING PUBLIC USING TRAFFIC CONTROL DEVICES APPROVED BY THE ENGINEER, ALL COSTS SHALL BE PAID BY THE RESPECTIVE TRAFFIC CONTROL ITEM.

12. EXISTING UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. COMPLETENESS OR CORRECTNESS THEREOF IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE UTILITY COMPANIES INVOLVED IN ORDER TO OBTAIN THE MOST ACCURATE INFORMATION AVAILABLE AS TO UTILITY LOCATION AND ELEVATION. NO CONSTRUCTION AROUND OR ADJACENT TO UTILITIES SHALL BEGIN WITHOUT NOTIFYING THEIR OWNERS AT LEAST TWO WORKING DAYS (48 HOURS) IN ADVANCE. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE AN ANY DAMAGE DONE TO THEM DUE TO HIS/HER NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED AT THE CONTRACTOR'S EXPENSE. TO LOCATE EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT MISS UTILITY OF DELMARVA THREE (3) CONSECUTIVE WORKING DAYS PRIOR TO EXCAVATION, AT 1-800-282-8555.

13. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE WORK WITH ANY CONSTRUCTION ACTIVITY BY UTILITY COMPANIES, OR ADJACENT CONSTRUCTION CONTRACTS. PROPOSED UTILITY RELOCATIONS ARE SHOWN ON THE PLANS. REFER TO UTILITY STATEMENT FOR DETAILED SCOPE AND TIMING OF UTILITY WORK.

14. ALL PROPOSED UTILITY WORK SHOWN ON THE PLANS SHALL BE INSTALLED BY THE RESPECTIVE UTILITY COMPANY, UNLESS OTHERWISE NOTED.

15. CONTRACTOR SHALL SUPPLY MESSAGE BOARDS THAT ARE TO BE PLACED TEN (10) DAYS PRIOR TO ANY ROAD CONSTRUCTION. THE PROPER WORDING ON THE MESSAGE BOARD WILL NEED TO BE COORDINATED WITH THE DISTRICT SAFETY OFFICER.

16. THE CONTRACTOR SHALL HAVE THE RIGHT-OF-WAY AND EASEMENT LINES ESTABLISHED TO THE SATISFACTION OF THE ENGINEER AND CHECKED BY THE DEPARTMENT PRIOR TO PERFORMING ANY WORK. THE RIGHT OF WAY LINES MUST REMAIN ESTABLISHED FOR THE DURATION OF THE WORK. ALL COSTS ARE INCIDENTAL TO ITEM 763501, CONSTRUCTION ENGINEERING.

PROJECT NOTES

SECTION 100

1. ANY DAMAGE DONE BY THE CONTRACTOR TO ITEMS NOTED TO REMAIN OR BE RELOCATED OR RESET BY THE CONTRACTOR, AT THE DISCRETION OF THE ENGINEER, SHALL BE REPAIRED AND/OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

2. PROPERTY MARKERS LOCATED ALONG RIGHT OF WAY LINES THAT ARE NOT REVISED AS PART OF THIS CONTRACT SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 107.09 OF THE STANDARD SPECIFICATIONS. ANY SUCH PROPERTY MARKERS THAT ARE DISTURBED OR DESTROYED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR WITH NEW MARKERS OF COMPARABLE MATERIAL AND SIZE TO THE ORIGINAL AND MEETING THE CURRENT STANDARDS. ALL MARKERS THAT ARE PLACED SHALL BE LOCATED AND SET BY, OR UNDER THE SUPERVISION OF, A REGISTERED PROFESSIONAL ENGINEER OR LAND SURVEYOR LICENSED TO PRACTICE IN THE STATE OF DELAWARE. COSTS TO BE INCIDENTAL TO THE LUMP SUM BID FOR ITEM 763501, CONSTRUCTION ENGINEERING. UNLESS SPECIFIED OTHERWISE IN THE RIGHT OF WAY AGREEMENT WITH THE PROPERTY OWNER, ESTABLISHING NEW PROPERTY CORNERS ALONG THE PROPOSED RIGHT OF WAY IS THE RESPONSIBILITY OF THE PROPERTY OWNERS. IN THESE CASES, THE CONTRACTOR NEED ONLY ESTABLISH THE NEW RIGHT OF WAY LINE ALONG THE PROPERTY IN QUESTION. COSTS TO ESTABLISH THE RIGHT OF WAY LINE, IF NECESSARY, TO BE INCIDENTAL TO ITEM 763501, CONSTRUCTION ENGINEERING.

SECTION 200

3. THE CONTRACTOR SHALL REMOVE AND RESET ALL MAILBOXES TO MAINTAIN MAIL SERVICE AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL RELOCATE MAILBOXES AS REQUIRED BY THE PROPOSED GEOMETRICS AND AS DIRECTED BY THE ENGINEER. WHEN RELOCATING MAILBOXES IN CURBED SECTIONS, THE FACE OF THE MAILBOX SHALL BE FLUSH WITH THE BACK EDGE OF CURB. WHEN RELOCATING MAILBOXES IN OPEN SECTIONS, THE FACE OF THE MAILBOX SHALL SET BACK 8 INCHES FROM THE EDGE OF THE PAVED SHOULDER. THE BOTTOM OF THE MAILBOX SHALL BE SET 46 INCHES ABOVE THE ROADWAY SURFACE. MAILBOXES LOCATED AT DRIVEWAY ENTRANCES SHALL BE PLACED ON THE FAR SIDE OF THE DRIVEWAY IN THE DIRECTION OF TRAVEL. POSTS BEING RESET IN CONCRETE SIDEWALK SHALL BE PLACED IN AN APPROPRIATE SIZE PVC SLEEVE. COST FOR ALL WORK AND MATERIALS SHALL BE INCIDENTAL TO ITEM 201000 - CLEARING AND GRUBBING.

4. IN AREAS WHERE TREES OR SHRUBS WILL BE OVERHANGING THE PROPOSED SIDEWALK, PRUNING MAY BE NECESSARY TO ACHIEVE A VERTICAL CLEAR SPACE OF 10 FEET ABOVE THE PROPOSED SIDEWALK ELEVATION. THE CONTRACTOR SHALL PRUNE EXISTING TREE AND SHRUB BRANCHES, WHICH OVERHANG THE SIDEWALK, IN ACCORDANCE WITH I.S.A. STANDARDS. THE CONTRACTOR SHALL NOTIFY DELDOT'S ROADSIDE ENVIRONMENTAL ADMINISTRATOR, EUGENE 'CHIP' ROSAN, JR. (302) 760-2185 AND/OR HIS DESIGNEE, AT LEAST TWO (2) DAYS PRIOR TO THE PRUNING OPERATION. ALL COSTS ASSOCIATED WITH THE ABOVE WORK TO BE PAID UNDER ITEM 201000 - CLEARING AND GRUBBING.

5. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO EXCAVATE TEST PITS ALONG PROPOSED DRAINAGE RUNS, AT POINTS OF POSSIBLE UTILITY CONFLICTS, TO DETERMINE IF CONFLICTS EXIST. ANY CONFLICTS SHALL BE COORDINATED BY THE CONTRACTOR, WITH THE ENGINEER AND THE UTILITY COMPANY INVOLVED. THE ENGINEER SHALL ULTIMATELY DETERMINE THE SOLUTION TO THE UTILITY CONFLICT. TEST HOLES SHALL BE MEASURED AND PAID FOR IN ACCORDANCE WITH ITEM 208000, BUT ONLY TO THE ACTUAL DEPTH EXCAVATED.

6. ITEMS TO BE REMOVED UNDER ITEM 211000 ½ REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL INCLUDE: BUILDINGS, FOUNDATIONS, STRUCTURES, VERIZON VAULTS, ABANDONED TRAFFIC STRUCTURES, CONDUITS, EXISTING DRAINAGE STRUCTURES AND ADJOINING CONCRETE APRONS, EXISTING DRAINAGE PIPES, AND WIRE UNLESS NOTED OTHERWISE; AND ANY OTHER VISIBLE OBSTRUCTIONS WITHIN THE RIGHT OF WAY THAT ARE NOT PAID FOR UNDER OTHER BID ITEMS

7. THIS PROJECT IS COVERED UNDER A "NPDES" GENERAL PERMIT FOR CONSTRUCTION, UNDER THE GENERAL PERMIT, COMPLIANCE WITH DELDOT'S APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLANS WILL CONSTITUTE COMPLIANCE WITH THE NPDES INDUSTRIAL PERMITTING REQUIREMENTS FOR THIS CONSTRUCTION PROJECT. A COPY OF THE NPDES GENERAL PERMIT AND NOI IS KEPT ON FILE IN EACH OF THE CONSTRUCTION OFFICES AND THE DEPARTMENT'S TEAM SUPPORT SECTION. A COPY OF THE GENERAL PERMIT OR THE NOI CAN BE OBTAINED UPON REQUEST FROM EITHER THE DEPARTMENT'S STORMWATER ENGINEER OR THE APPROPRIATE CONSTRUCTION ENGINEER.

8. REMOVAL OF EXISTING UNDERDRAIN SHALL BE INCIDENTAL TO ITEM 202000. CONNECTING TO AN EXISTING UNDERDRAIN SYSTEM SHALL BE INCIDENTAL TO THE UNDERDRAIN ITEM BEING INSTALLED AS SHOWN ON THE PLANS.

9. UNSUITABLE MATERIALS FROM ROADWAY AND UNDERCUT EXCAVATION SHALL NOT BE USED AS FILL AND SHALL BE LEGALLY DISPOSED OF OUTSIDE THE PROJECT AREA. ALL COSTS INCIDENTAL TO THE ITEM BEING REMOVED.

10. DELETE STANDARD SPEC 104.10 AND REPLACE WITH: THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, SHALL BE DIRECTED TO USE ON THE PROJECT MATERIALS AS MAY BE FOUND IN THE EXCAVATIONS THAT ARE DETERMINED BY THE ENGINEER FOR USE IN AREAS REQUIRING BORROW TYPES A, B, OR C ELSEWHERE WITHIN THE PROJECT. PAYMENT FOR PLACING THESE MATERIALS AT LOCATIONS AS DIRECTED BY THE ENGINEER SHALL BE INCIDENTAL TO THE ITEM THAT GENERATED THE MATERIAL. IT SHALL BE THE RESPONSIBLITY OF THE CONTRACTOR TO DRY OR WET THE MATERIALS. IF NEEDED SO THAT THE MATERIALS WILL MEET THE REQUIREMENTS OF ITS INTENDED USE. THE CONTRACTOR MAY, WITH THE APPROVAL OF THE ENGINEER, STOCKPILE MATERIALS TO MEET THESE REQUIREMENTS, HOWEVER, MOVING THE MATERIAL FROM THE STOCKPILE AND THEN UTILIZING THE MATERIAL SHALL NOT BE MEASURED FOR PAYMENT. ALL MATERIALS ENCOUNTERED IN THE EXCAVATIONS OF THE PROJECT THAT ARE NOT USED ELSEWHERE ON THE PROJECT SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. ALL COSTS ASSOCIATED WITH STOCKPILING THE MATERIAL, MOVING ANY MATERIALS FROM ANY STOCKPILES, WETTING AND/OR DRYING THE MATERIAL, OR REMOVAL AND FINAL DISPOSAL SHALL BE INCIDENTAL TO THE ITEM THAT GENERATED THE MATERIAL.

11. FOR ESTIMATING PAYMENT OF EARTHWORK ITEMS, TWO THIRDS OF THE FACTORY RATED CAPACITY OF THE EARTH MOVING EQUIPMENT SHALL BE USED. FOR 10-WHEEL DUMP TRUCKS, TEN CUBIC YARDS SHALL BE USED.

12. THE DEPARTMENT HAS IDENTIFIED THE POTENTIAL FOR ENCOUNTERING HAZARDOUS MATERIALS WHEN PERFORMING WORK WITHIN AND IN THE VICINITY OF PROJECT PARCELS NUMBER 132, 146, 150, 164, 170, 171, 180, AND 181. IT SHOULD ALSO BE NOTED THAT THE POTENTIAL FOR UNDERGROUND STORAGE TANKS EXIST ON PARCEL NOS. 164 AND 170. THE CONTRACTOR SHALL COORDINATE WITH THE DEPARTMENT AND PROVIDE THE DEPARTMENT WITH A MINIMUM 14 CALENDAR DAY NOTICE PRIOR TO PERFORMING ANY WORK IN THESE AREAS. THE SPECIAL PROVISION SPECIFICATION FOR ITEM #202560 - CONTAMINATED MATERIAL HAS BEEN INCLUDED IN THE CONTRACT FOR THIS POTENTIAL.

13. CONTRACTOR SHALL REMOVE ABANDONED VERIZON CONCRETE VAULTS AND CONDUITS. THIS WORK SHALL BE PAID UNDER ITEM 211000 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS. ABANDONED CONDUIT RUNNING BETWEEN CONCRETE VAULTS MAY BE LEFT IN PLACE AND PLUGGED WHERE IT DOES NOT CONFLICT WITH PROPOSED WORK. IF THE REMOVAL OF THE VAULT RESULTS IN A VOID BELOW THE LIMIT OF ROADWAY OR PIPE EXCAVATION, THEN THE VOID SHALL BE FILLED USING BORROW, TYPE C (ITEM 209003).

14. CONTRACTOR SHALL WARP SIDE SLOPES OF STORMWATER MANAGMENT PONDS TO COVER INLET AND OUTLET PIPES. COST INCIDENTAL TO ITEM 271000 - STORMWATER MANAGMENT POND.

15. BORROW TYPE A, OR EXCAVATED MATERIAL MEETING TYPE A REQUIREMENTS, SHALL BE USED TO BACKFILL ALL DRY UNDERCUT AREAS AS DIRECTED BY THE ENGINEER. BORROW TYPE B, OR EXCAVATED MATERIAL MEETING TYPE B REQUIREMENTS, SHALL BE USED IN UNDERCUT WITH WET CONDITIONS AS DIRECTED BY THE ENGINEER.

16. EXCAVATED MATERIAL MEETING BORROW TYPE F REQUIREMENTS SHALL BE USED WHERE ITEM #209006 - BORROW, TYPE F HAS BEEN CALLED OUT IN THE PLANS. BORROW, TYPE F SHALL NOT BE HAULED IN FROM AN OFFSITE SOURCE UNTIL ALL AVAILABLE EXCAVATED MATERIAL MEETING BORROW TYPE F HAS BEEN UTILIZED FOR EMBANKMENT.

PROJECT NOTES (CONTINUED)

17. A REVIEW OF THE SOIL BORINGS AND EARTHWORK SUMMARY INDICATES THAT THE ONSITE EXCAVATION PERFORMED UNDER ITEMS 202000, 207000, 208000 (AND PIPE EXCAVATION GENERATED FROM PIPES LESS THAN 24 INCHES IN DIAMETER), 271000, AND ANY OTHER EXCAVATION ITEM PROVIDING SUITABLE EMBANKMENT MATERIAL, WILL PROVIDE MATERIAL TO MEET THE MAJORITY OF THE EMBANKMENT REQUIREMENTS OF THE CONTRACT. THE CONTRACTOR IS RESPONSIBLE TO MANAGE THE EXCAVATED MATERIALS BY STOCKPILING, DEWATERING, DRYING, WETTING, DOUBLE HANDLING IF NECESSARY, AND PLACING THE MATERIALS SO THAT ALL ON-SITE EXCAVATED MATERIALS MEETING EMBANKMENT SPECIFICATIONS, INCLUDING EXISTING PAVEMENTS AND EXCESS EXCAVATED MATERIALS FROM PIPE TRENCHES, STRUCTURE EXCAVATIONS, ECT. ARE INCORPORATED INTO THE PROJECT. EXCAVATION QUANTITIES TO BE PAID WILL BE MEASURED ONLY WHEN THE MATERIAL IS INITIALLY EXCAVATED. SURVEY TO ESTABLISH THE ORIGINAL AND FINAL ELEVATIONS OF STRIPPED TOPSOIL AND EXCAVATED MATERIAL FOR EMBANKMENT SHALL BE AGREED UPON BY THE CONTRACTOR'S AND ENGINEER'S SURVEY PARTIES. NO EXCAVATION MAY BEGIN UNTIL ORIGINAL SURFACE ELEVATIONS HAVE BEEN ESTABLISHED BY SURVEY. NO BACKFILLING OF ANY EXCAVATED AREAS MAY PROCEED UNTIL THE BOTTOM ELEVATION OF THE EXCAVATION HAS BEEN ESTABLISHED BY SURVEY. PLACING, STOCKPILING, DEWATERING, DRYING, WETTING, DOUBLE HANDLING, ETC. ARE INCIDENTAL TO THE ITEMS UNDER WHICH THE MATERIALS ARE EXCAVATED. OFF-SITE BORROW MAY BE UTILIZED TO COMPLETE THE EMBANKMENTS ONLY WHEN APPROVED IN ADVANCE BY THE ENGINEEER.

ITEM 202000 - EXCAVATION AND EMBANKMENT

EXCAVATION FROM AREAS OTHER THAN THE STORMWATER PONDS AND WETLAND MITIGATION AREA WILL BE MEASURED AND PAID FOR UNDER ITEM 202000. THE WORK WILL INCLUDE EXCAVATION OF SOIL, EXISTING ASPHALT, BASE MATERIALS, TOPSOIL, OR OTHER MATERIALS AS DESIGNATED ON THE PLANS, AND PLACEMENT OF ALL EMBANKMENTS. EXISTING CONCRETE PAVEMENT, CURB, ETC. WILL BE EXCAVATED UNDER ITEM 758000. ALSO INCIDENTAL TO ITEM 202000 IS ANY NECESSARY DRYING, WETTING, OR DEWATERING (INCLUDING PERMITS IF REQUIRED) TO BRING THE EXCAVATED MATERIAL INTO SPECIFICATION COMPLIANCE. MEASUREMENT OF ALL MATERIAL PAID FOR UNDER ITEM 202000 WILL BE MADE AT THE TIME OF ITS ORIGINAL EXCAVATION. ANY STOCKPILING OR DOUBLE-HANDLING OF THE MATERIAL IS INCIDENTAL TO ITEM 202000. UNLESS OTHERWISE APPROVED BY THE ENGINEER, NO BORROW MATERIAL FROM AN OUTSIDE SOURCE WILL BE APPROVED FOR USE ON THE CONTRACT UNTIL ALL AVAILABLE ON-SITE EXCAVATION HAS BEEN COMPLETED AND EMBANKED.

EXCAVATED ASPHALT PAVEMENT AND/OR CONCRETE MAY BE PLACED IN THE EMBANKMENTS, BUT ONLY IF THEY CAN BE INCORPORATED AS DETAILED IN STANDARD SPECIFICATION 202.05. EXCESS ASPHALT OR CONCRETE MAY NOT BE PLACED IN ANY OVER-EXCAVATED AREAS OR BELOW EXISTING GROUND IN ANY OTHER EXCAVATIONS. EXISTING ASPHALT OR CONCRETE PAVEMENTS UNDER EMBANKMENTS 3 FEET OR MORE IN HEIGHT, MEASURED FROM THE BOTTOM OF THE TYPE A BORROW, SHALL BE BROKEN UP AND LEFT IN PLACE IN ACCORDANCE WITH STANDARD SPECIFICATION 202.05(a) WITH COSTS INCIDENTAL TO ITEM 202000.

THE CONTRACTOR HAS THE OPTION OF REMOVING EXISTING ASPHALT PAVEMENT BY MILLING. PAYMENT FOR MILLING WILL BE MADE UNDER ITEM 760507 ONLY WHERE INDICATED ON THE PLANS OR UNDER ITEM 202000 IF THE CONTRACTOR ELECTS TO REMOVE, BY MILLING, ANY PAVEMENT DESIGNATED TO BE EXCAVATED. THESE MILLINGS MAY BE USED TO MEET THE GABC NEEDS OF THE PROJECT UNDER ITEM 302007, OR RECYCLED INTO WARM MIX ASPHALT.

IT IS ANTICIPATED THAT MATERIAL MEETING THE REQUIREMENTS OF BORROW, TYPE A WILL BE FOUND IN THE EXCAVATION FOR THE PROJECT. THE CONTRACTOR SHALL MANAGE THE EXCAVATION SO THAT AFTER MEETING THE EMBANKMENT REQUIREMENTS, ANY REMAINING EXCAVATED MATERIAL MEETING THE GRADATION FOR BORROW, TYPE A (OR OTHER MATERIAL APPROVED BY THE ENGINEER) SHALL BE PLACED IN THE TOP ONE FOOT OF EMBANKMENT IMMEDIATELY BELOW THE GRADED AGGREGATE BASE COURSE. COSTS TO STOCKPILE, DOUBLE HANDLE, OR OTHERWISE MANAGE THIS MATERIAL ARE INCIDENTAL TO THE ITEM UNDER WHICH THE MATERIAL IS EXCAVATED.

ITEM 271000 - STORMWATER EXCAVATION

STORMWATER PONDS 455, 456, 457, 458, 459, SHALL BE EXCAVATED AND FINAL GRADED TO THE DESIGNED BOTTOM ELEVATIONS. MATERIAL EXCAVATED FROM THE PONDS SHALL BE USED TO MEET THE EMBANKMENT AND TOPSOILING NEEDS FOR THE CONTRACT. THESE PONDS MAY BE EXCAVATED BELOW FINAL PLAN ELEVATION IN ORDER TO OBTAIN ADDITIONAL EMBANKMENT MATERIAL IF DESIRED BY THE CONTRACTOR. IF THESE PONDS ARE OVEREXCAVATED, THE CONTRACTOR MUST BACKFILL THE OVER-EXCAVATION WITH MATERIAL MEETING TYPE F BORROW REQUIREMENTS OR WITH EXCESS TOPSOIL FROM THE PROJECT. FURNISHING, HAULING AND PLACING MATERIAL TO FILL THE OVER-EXCAVATED AREA IS INCIDENTAL TO ITEM 271000. ANY DEWATERING (INCLUDING PERMITS IF REQUIRED), DRYING, OR WETTING OF MATERIAL WITHIN THE EXCAVATIONS TO MEET EMBANKMENT SPECIFICATIONS IS ALSO INCIDENTAL TO ITEM 271000. THE INITIAL OVER-EXCAVATION WILL BE PAID AT THE UNIT PRICE BID FOR ITEM 271000. ONLY THE FINAL LIFT OF TOPSOILING PLACED ON THE POND FLOORS TO THE DESIGNED ELEVATION WILL BE PAID UNDER ITEM 733002 (OR ITEM 732002 IF SUFFICIENT ON- SITE MATERIAL IS NOT AVAILABLE).

PROPOSALS TO EXCAVATE BELOW THE DESIGNED BOTTOM OF THE STORMWATER PONDS WILL NOT BE APPROVED UNDER EITHER OF THE FOLLOWING CONDITIONS:

1. IF THE INTENDED USE OF THE OVER-EXCAVATED MATERIAL IS FOR FILL BELOW THE TYPE A BORROW CAPPING, AND THE AWARDED BID PRICE FOR BORROW, TYPE F (ITEM 209006) IS LOWER THAN THE BID PRICE FOR ITEM 271000 (STORMWATER MANAGEMENT POND): IN THIS CASE, THE BORROW, TYPE F ITEM SHALL BE USED TO CONSTRUCT THE EMBANKMENT.

2. IF THE INTENDED USE OF THE OVER-EXCAVATED MATERIAL IS FOR THE TYPE A BORROW CAPPING, AND THE AWARDED BID PRICE FOR BORROW, TYPE A (ITEM 209001) IS LOWER THAN THE BID PRICE FOR ITEM 271000 (STORMWATER MANAGEMENT POND: IN THIS CASE, THE BORROW, TYPE A ITEM SHALL BE USED TO CONSTRUCT THE EMBANKMENT CAPPING.

WETLAND MITIGATION SITE

THE WETLAND MITIGATION SITE SHALL BE EXCAVATED AND FINAL GRADED TO THE DESIGNED BOTTOM ELEVATIONS. MATERIAL EXCAVATED FROM THIS SITE SHALL BE USED TO CONSTRUCT EMBANKMENT OR TYPE A CAPPING (IF THE MATERIAL MEETS THE GRADATION REQUIREMENTS). NO OVER-EXCAVATION OF THIS SITE IS PERMITTED. TOPSOIL EXCAVATED FROM THIS SITE MUST REMAIN AT THIS LOCATION FOR PLACEMENT IN THE MITIGATION SITE AS PART OF THE FINAL GRADING. SPECIAL CONSTRUCTION REQUIREMENTS FOR THE MITIGATION SITE ARE INCLUDED IN THE "WETLAND MITIGATION PLANS". MATERIAL EXCAVATED FROM THE SITE WILL BE PAID FOR UNDER ITEM 271000.

STOCKPILE AREAS

THREE STOCKPILE LOCATIONS ARE DESIGNATED ON THE PLANS FOR USE BY THE CONTRACTOR. THESE ARE LOCATED AS LISTED BELOW:

1) BETWEEN SB SR1 STA 530 AND 543+50, LT

2) BETWEEN SWM FACILITY 456 AND THE WETLAND MITIGATION SITE

3) BETWEEN CLAPHAM RD STA 627+50 AND 629+50 RT

THESE AREAS MAY BE USED TO STORE EXCAVATED MATERIALS, EQUIPMENT, ETC. AS DESIRED BY THE CONTRACTOR.

ADDITIONAL STOCKPILE AREAS MAY BE OBTAINED BY THE CONTRACTOR, IN ACCORDANCE WITH SECTIONS 110.07 AND 110.10 OF THE STANDARD SPECIFICATIONS, SUBJECT TO THE APPROVAL OF THE ENGINEER. THESE STOCKPILE AREAS MAY BE LOCATED OUTSIDE THE PROJECT LIMITS, IF NECESSARY. COSTS FOR SECONDARY MOVEMENTS OF STOCKPILED MATERIALS (EXCEPT TOPSOIL) TO BE INCORPORATED PERMANENTLY INTO THE PROJECT, OR TAKEN TO OFFSITE DISPOSAL SITES, WILL BE INCIDENTAL TO THE EXCAVATION ITEMS THAT GENERATED THE MATERIAL. PAYMENT WILL BE MADE ONLY ONE TIME, THAT BEING WHEN THE MATERIAL IS ORIGINALLY EXCAVATED. STOCKPILED TOPSOILTHAT CAN BE INCORPORATED INTO THE PERMANENT PROJECT WILL BE PAID FOR UNDER ITEM 733002, TOPSOILING 6" DEPTH. NO ADDITIONAL PAYMENT WILL BE MADE FOR OFF- SITE STOCKPILING.

18. PRIOR TO BEGINNING ANY EXCAVATION ON THE PROJECT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A PLAN DETAILING THE INTENDED MEANS OF MEETING THE REQUIRED EMBANKMENT NEEDS, INCLUDING THE BORROW, TYPE A CAPPING. THE PLAN SHALL INCLUDE, BUT IS NOT LIMITED TO THE FOLLOWING INFORMATION:

A) ANTICIPATED VOLUMES OF MATERIAL OBTAINED FROM EACH STORMWATER POND UNDER ITEM 271000. ANY ANTICIPATED OVER-EXCAVATION OF PONDS SHOULD BE IDENTIFIED.

B) ANTICIPATED VOLUME OF ROADWAY EXCAVATION AVAILABLE FOR EMBANKMENT UNDER ITEM 202000 INCLUDING ANTICIPATED USE OF EXISTING ASPHALT ROADWAY (EMBANKMENT, MILLED FOR USE AS GABC, OR RECYCLED INTO WMA)

C) ANTICIPATED NEED FOR OUTSIDE BORROW AND THE ESTIMATED TIMEFRAME FOR BRINGING THIS MATERIAL ONTO THE PROJECT.

D) ANTICIPATED VOLUME OF ONSITE TOPSOIL STRIPPING AND IT'S USE ON THE PROJECT TO INCLUDE TOPSOILING, AND FILLING ANY OVER-EXCAVATED AREAS.

E) ANTICIPATED VOLUME OF MATERIALS UNSUITABLE FOR EMBANKMENT TO BE REMOVED FROM THE PROJECT.

F) SEQUENCE OF EXCAVATION AND ANTICIPATED TIMEFRAMES TO COMPLETE EACH ELEMENT (EACH POND, ROADWAY EXCAVATION, ETC.)

THIS PLAN SHALL BE UPDATED AS REQUESTED BY THE ENGINEER TO REFLECT ACTUAL CONDITIONS ENCOUNTERED IN THE FIELD.

SECTION 300

19. 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)
   c. HOT-MIX MILLINGS (PER SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE)

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

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

B. THE QUANTITY USED FOR BASE OF EACH OFTHE ABOVE LISTED MATERIALS WILL BE THE CONTRACTOR'S CHOICE, WITH THE TOTAL MEETING THE ADVERTISED QUANTITY OF ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

C. THE CONTRACTOR MAY ALSO ELECT TO RECYCLE MILLINGS FOR USE IN HOT-MIX AS PERMITTED BY THE STANDARD SPECIFICATIONS. THE CHOICE OF THE QUANTITY OF MILLINGS USED FOR THIS PURPOSE, OR FOR BASE COURSE, LIES WITH THE CONTRACTOR. ALL MILLING MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR.

D. HOT-MIX MILLINGS MAY BE GENERATED FROM THE FOLLOWING SOURCES:
   a. MATERIAL MADE AVAILABLE WHEN MILLED ON THIS CONTRACT UNDER ITEM 760507.
   b. MATERIAL MILLED ON THIS CONTRACT AT THE CONTRACTOR'S CHOICE UNDER ITEM 202000.
   c. MILLED MATERIAL FURNISHED ON THE JOB FROM THE CONTRACTOR'S YARD OR OTHER OUTSIDE SOURCE.
   (ALL MILLED MATERIALS SHALL MEET THE MATERIAL REQUIREMENTS OF ITEM 302514 - MILLED HOT-MIX BASE COURSE).

E. PAYMENT CLARIFICATION:
   a. SHOULD THE CONTRACTOR ELECT TO MILL PORTIONS OF HOT-MIX SHOWN ON THE PLANS TO BE REMOVED UNDER ITEM 202000 - EXCAVATION AND EMBANKMENT THE COST OF MILLING THIS HOT-MIX WILL BE PAID AS ITEM 202000 - EXCAVATION AND EMBANKMENT. THE MILLINGS GENERATED MAY BE RECYCLED INTO HOTOMIX, UTILIZED FOR BASE COURSE, OR DISPOSED OF TO AN APPROVED SITE. HAULING COSTS FOR DISPOSAL AND/OR RECYCLING ARE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.

   b. MILLINGS GENERATED UNDER ITEM 760507 - PROFILE MILLINGS, TAPERCUT MAY BE RECYCLED INTO HOT-MIX, UTILIZED FOR BASE COURSE OR DISPOSED OF BY THE CONTRACTOR TO AN APPROVED SITE. NO SEPARATE PAYMENT WILL BE MADE FOR TRANSPORTING MILLINGS ON SITE OR TO AN APPROVED DISPOSAL SITE.

   c. SHOULD THE CONTRACTOR ELECT TO TEMPORARILY STOCKPILE MILLINGS ON THE JOB SITE FOR LATER USE, ALL COSTS FOR STOCKPILING AND SUBSEQUENT REHANDLING SHALL BE INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.

   d. MILLINGS USED FOR BASE COURSE SHALL BE PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE. NO SEPARATE PAYMENT WILL BE MADE TO FURNISH MILLINGS FROM AN OUTSIDE SOURCE OR TRANSPORT MILLINGS WITHIN THE PROJECT LIMITS. MILLINGS USED FOR BASE COURSE WILL BE PAID IN PLACE AT THE UNIT BID PRICE FOR ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'.

   e. ALL COSTS TO UTILIZE MILLINGS IN RECYCLED HOT-MIX WILL BE INCIDENTAL TO THE UNIT PRICE BID FOR THE HOT-MIX ITEM USING THE RECYCLED MATERIAL.

   f. SPECIAL PROVISION 302514 - MILLED HOT-MIX BASE COURSE IS PROVIDED TO SPECIFY THE MEANS OF LAY DOWN AND COMPACTION AS WELL AS THE MATERIAL REQUIREMENTS FOR MILLINGS USED AS BASE COURSE. ALL COSTS TO BRING THE MILLINGS INTO COMPLIANCE WITH THE REQUIREMENTS OF 302514 - MILLED HOT-MIX BASE COURSE ARE INCIDENTAL TO ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE 'B'. NO PAYMENT WILL BE MADE FOR ITEM 302514 - MILLED HOT-MIX BASE COURSE. THE QUANTITY OF MILLINGS USED FOR BASE COURSE WILL BE PAID FOR UNDER ITEM 302007 - GRADED AGGREGATE BASE COURSE.

SECTION 400

20. THE PAVEMENT SECTION FOR HOT MIX RESIDENTIAL DRIVEWAYS SHALL BE 2" HOTMIX, TYPE 'C' OVER 8" GRADED AGGREGATE BASE COURSE, TYPE 'B' UNLESS OTHERWISE NOTED ON THE PLANS.

21. IT IS THE INTENT OF THIS PROJECT TO DEVELOP PROPOSED GRADES BY UTILIZING A TYPE B AND/OR TYPE C HOTMIX WEDGE LIFT ON SPECIFIED OVERLAY SECTIONS. ALL COSTS PAID UNDER THE HOT MIX, TYPE B OR TYPE C WEDGE LIFT ITEM.

22. DURING PAVING OPERATIONS, IF AN EDGE DROP-OFF IS CORRECTED USING WARM-MIX MATERIAL, THE MATERIAL USED TO CONSTRUCT THE SAFETY FILLET IN ACCORDANCE WITH THE REQUIREMENTS LISTED ON PAGE 6G-15 OF THE DELAWARE MUTCD WILL BE PAID FOR AT THE UNIT BID PRICE FOR THE PAVEMENT ITEM BEING PLACED. PAYMENT PER TON INCLUDES PLACING, GRADING, COMPACTING, AND REMOVING THE FILLET.

23. NO SURCHARGE OR PREMIUM PAYMENT IN ADDITION TO THE UNIT BID PRICES WILL BE MADE FOR PAVING DRIVEWAYS AND/OR ENTRANCES. THESE COSTS ARE TO BE INCIDENTAL TO THE PRICES BID FOR THE ITEMS USED TO PAVE THE DRIVEWAYS AND/OR ENTRANCES. THE INTENT OF THE CONTRACT IS TO TIE THE IMPROVEMENTS INTO RESIDENTIAL AND COMMERCIAL DRIVEWAYS AND ENTRANCES AS SHOWN ON THE PLANS. THE LIMITS OF THE TIE IN MAY BE ADJUSTED IN THE FIELD WITH THE APPROVAL OF THE ENGINEER TO ENSURE PROPER GRADING OF THE DRIVEWAY/ENTRANCE. ALL WORK SHALL OCCUR WITHIN THE LIMITS OF THE RIGHT OF WAY AND EASEMENTS SHOWN ON THE PLANS.

24. REGARDING ITEM 401580, RIDE QUALITY OF HOT-MIX PAVEMENT, ALL MILL AND OVERLAY PORTIONS OF THE PROJECT SHALL BE CONSIDERED "CLASS 2". NEW, FULL DEPTH CONSTRUCTION PORTIONS SHALL BE CONSIDERED "CLASS 1".

SECTION 600

25. THE DEPARTMENT AND THE CONTRACTOR SHALL INSPECT ALL EXISTING PIPES AND DRAINAGE STRUCTURES TO BE USED IN THE FINAL DRAINAGE SYSTEM AND AGREE ON THE CONDITION PRIOR TO THE START OF CONSTRUCTION. EXISTING PIPES AND DRAINAGE STRUCTURES DAMAGED DUE TO CONTRACTOR OPERATIONS SHALL BE REPAIRED OR REPLACED IN-KIND AT THE CONTRACTOR'S EXPENSE. ANY DAMAGE DETERMINED TO BE EXISTING SHALL BE REPAIRED USING APPLICABLE UNIT BID PRICES OR A NEGOTIATED PRICE. THE DEPARTMENT WILL VIDEO INSPECT NEW PIPE RUNS TO CONFIRM CONDITION PRIOR TO ACCEPTANCE. PIPE CLEANING PRIOR TO VIDEO INSPECTION AND MAINTENANCE OF TRAFFIC DURING THE VIDEO INSPECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR AND INCIDENTAL TO THE PIPE ITEM THAT IS BEING VIDEO INSPECTED.

26. IN AREAS WHERE PLACEMENT OF PROPOSED PIPES CONFLICTS WITH THE ABANDONED 36" SEWER FORCE MAIN, ABANDONED UTILITY PIPES AND/OR CONDUITS, OR ABANDONED DRAINAGE PIPES, THE CONTRACTOR SHALL REMOVE REQUIRED PIPE OR CONDUIT SECTIONS AND PLUG THE ENDS OF ANY THE EXISTING SEWER OR DRAINAGE PIPE TO REMAIN. COST SHALL BE INCIDENTAL TO PROPOSED PIPE BEING INSTALLED. ANY FLOWABLE FILL REQUIRED TO FILL AN EXISTING PIPE WILL BE PAID FOR UNDER ITEM 208001.

27. SHOULD THE CONTRACTOR ELECT TO INITIALLY PLACE PORTIONS OF PIPE RUNS, OR SHOULD THE PHASING PLANS DICTATE PLACING PORTIONS OF PIPE RUNS, AND IF THE PARTIAL RUNS REQUIRE COMPLETION DURING A LATER PHASE OF WORK, ANY PIPE JOINTS THAT ARE NON - STANDARD MUST BE CONSTRUCTED USING A CONCRETE BOX, CONCRETE COLLAR, OR OTHER APPROVED DEVICE. UNLESS NOTED OTHERWISE ON THE PLANS, THE CONTRACTOR SHALL PROPOSE AND SUBMIT THE CONNECTION DEVICE FOR APPROVAL, SUBJECT TO THE CONDITIONS LISTED IN PROJECT NOTE 58. COSTS FOR THE CONNECTION DEVICES ARE INCIDENTAL TO THE PRICE OF THE PIPES BEING INSTALLED.

SECTION 700

28. IN AREAS WHERE PROPOSED CURB MEETS EXISTING CURB AND THE TWO CURB TYPES ARE NOT SIMILAR, THE PROPOSED CURB SHALL BE TRANSITIONED IN 10 LINEAR FEET TO MATCH THE EXISTING, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR TRANSITION SHALL BE INCIDENTAL TO THE PROPOSED CURB ITEM. HOWEVER, THIS 10' SECTION WILL BE PAID UNDER NEW CURB ITEM.

29. WHERE NEW CONCRETE SIDEWALK IS CONSTRUCTED TO MEET EXISTING SIDEWALK, SAWCUT THE EXISTING SIDEWALK OR MEET THE NEAREST EXISTING SIDEWALK JOINT. ALL SAW CUTTING SHALL BE FULL DEPTH, UNLESS OTHERWISE NOTED ON THE PLANS OR DIRECTED BE THE ENGINEER AND SHALL BE PAID FOR IN ITEM 762002- SAWCUTTING, CONCRETE, FULL DEPTH.

30. PORTLAND CEMENT CONCRETE CHANNELIZING ISLANDS THAT ARE LESS THAN 75 SQ. FT. MAY BE POURED MONOLITHICALLY, OR AS DIRECTED BY THE ENGINEER.

31. STATION, OFFSET AND ELEVATION DATA GIVEN FOR DRAINAGE STRUCTURES ARE TO BE APPLIED TO THE CENTERLINE OF THE GRATE AT THE FLOWLINE FOR CURB INLETS, THE CENTER OF THE STRUCTURE FOR LAWN BASINS AND JUNCTION BOXES, AND THE CENTER OF THE LID FOR MANHOLES WHICH ARE NOT ADJACENT TO A CURB.

32. DRAINAGE INLET GRATES WHICH ARE TO REMAIN, WITHIN THE PROJECT LIMITS, WHICH ARE NOT TYPE 1 SHALL BE REPLACED. THE ACTUAL LOCATIONS AND THE NEED FOR ANY GRATE MODIFICATIONS OR FOR NEW FRAMES SHALL BE DETERMINED BY THE ENGINEER. ITEMS 708060, 708061 AND/OR 708062 SHALL BE UTILIZED AS APPLICABLE FOR THIS PURPOSE.

33. THE KENT COUNTY DEPARTMENT OF PUBLIC WORKS SHALL SUPPLY AT THEIR YARD AND THE STATE'S CONTRACTOR SHALL INSTALL NEW SELF SEALING MANHOLE FRAMES AND COVERS ON ALL COUNTY SEWER MANHOLES, WHICH ARE TO BE ADJUSTED AND REPAIRED, WITHIN THE PROJECT LIMITS IN ACCORDANCE WITH THE COUNTY'S STANDARD SPECIFICATIONS. THE EXISTING MANHOLE FRAMES AND COVERS THAT ARE REMOVED SHALL BECOME THE PROPERTY OF THE STATE'S CONTRACTOR. ALL COSTS FOR TRANSPORTING THE SEWER MANHOLE FRAMES/COVERS SHALL BE INCIDENTAL TO ITEM 710506, ADJUSTING AND REPAIRING EXISTING SANITARY MANHOLES.

PROJECT NOTES (CONTINUED)

34. PRIOR TO APPLYING ANY SEEDING OR MULCHING ITEM ON FINAL SLOPES, THE SLOPES SHALL BE TRACKED BY DRIVING A BULLDOZER UP AND DOWN THE SLOPES, SUCH THAT THE CLEATS MAKE HORIZONTALLY ORIENTED INDENTATIONS IN THE SLOPE. ALL COSTS ASSOCIATED WITH PERFORMING THIS WORK SHALL BE INCIDENTAL TO THE SEEDING ITEM BEING APPLIED TO THE FINAL SLOPE.

35. ONLY THE UNIT BID PRICES (NO SURCHARGES OR PREMIUMS) FOR NECESSARY TRAFFIC CONTROL DEVICES AND ITEMS, WILL BE MADE FOR NIGHTTIME PAVING OR ANY OTHER WORK PERFORMED AFTER DARK. ALL COSTS ASSOCIATED WITH PERFORMING WORK AT NIGHT SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEMS BEING CONSTRUCTED AT NIGHT.

36. THE CONTRACTOR SHALL MAKE AVAILABLE AT LEAST ONE EMPLOYEE TO ATTEND AND REPRESENT THE FIRM AT ALL SCHEDULED JOB PROGRESS MEETINGS, PROJECT WORKING GROUP MEETINGS, OR OTHER INFORMATIONAL MEETINGS AS REQUESTED BY THE ENGINEER. THE PERSON ATTENDING SHALL BE KNOWLEDGEABLE OF CURRENT JOB PROGRESS, THE ANTICIPATED CONSTRUCTION SCHEDULE, AND ANY ONGOING OR POTENTIAL CONTRACT ISSUES. COSTS ARE INCIDENTAL TO ITEM 743000, MAINTENANCE OF TRAFFIC.

37. THE PROJECT WILL EXTEND OVER SEVERAL WINTER PERIODS AND ALL SNOW REMOVAL ALONG THE STATE MAINTAINED ROADWAYS WILL BE HANDLED BY STATE FORCES. FOLLOWING THE SNOW REMOVAL OPERATION, REPAIRS TO ANY MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE PERFORMED BY THE CONTRACTOR. COSTS TO REPAIR DEVICES THAT CAN REMAIN IN PLACE SHALL BE INCIDENTAL TO ITEM 743000. COSTS TO REPLACE DEVICES THAT CANNOT BE SALVAGED WILL BE PAID UNDER THE APPLICABLE INDIVIDUAL MOT ITEM.

38. THE CONTRACTOR SHALL INSTALL ALL PERMANENT SIGNAGE AND TEMPORARY SIGNAGE AS SHOWN ON THE CONTRACT DOCUMENTS. ALL COSTS COVERED UNDER THE APPROPRIATE ITEMS.

39. THE CONTRACTOR SHALL ADJUST PERFORATED PIPE UNDERDRAINS HORIZONTALLY WHEN IN CONFLICT WITH DRAINAGE PIPES. ALL COSTS SHALL BE INCIDENTAL TO ITEM 715001, PERFORATED PIPE UNDERDRAINS, 6".

40. ALL PAVED AREAS (INCLUDING DRIVEWAYS) TO BE RECONSTRUCTED OR WIDENED SHALL BE SAWCUT AT THE POINT WHERE THE NEW PAVEMENT IS TO TIE INTO THE EXISTING PAVEMENT.

41. ALL HOT MIX AND/OR CONCRETE SAW CUTTING SHALL BE FULL DEPTH, UNLESS OTHERWISE NOTED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER. FOR FULL DEPTH SAW CUTTING OF OVERLAID CONCRETE PAVEMENT, PAYMENT WILL BE MADE ONLY FOR SAW CUTTING, CONCRETE, FULL DEPTH (ITEM 762002). SAW CUTTING THROUGH THE HOT MIX OVERLAY IS INCIDENTAL TO THE CONCRETE SAW CUTTING ITEM IN THIS CASE.

42. THE CONTRACTOR SHALL ENCOUNTER CONCRETE PAVEMENT UNDER THE EXISTING HOTMIX PAVEMENT AT LOCATIONS NOTED IN THE CONTRACT DOCUMENTS. WHERE CONCRETE REMOVAL IS REQUIRED FOR FULL DEPTH ROADWAY CONSTRUCTION, ALL COSTS FOR PCC REMOVAL SHALL BE PAID FOR UNDER ITEM #758000 AND THE ASHALT REMOVAL SHALL BE PAID FOR UNDER ITEM #202000.

43. EXISTING TOPSOIL STRIPPED FROM THE STORMWATER FACILITY AREAS AND ANY OPEN FIELD AREAS SHALL BE STOCKPILED FOR USE UNDER ITEM 733002. DUE TO HIGH SALT CONTENT, TOPSOIL EXCAVATED FROM THE SR 1 MEDIAN MAY BE ONLY USED TO BACKFILL OVER-EXCAVATED PORTIONS OF THE STORMWATER PONDS, OR CONSIDERED AS WASTE AND REMOVED FROM THE SITE. ANY ADDITIONAL EXCESS TOPSOIL FROM THE PROJECT MAY BE USED TO BACKFILL STORMWATER POND OVER-EXCAVATIONS OR REMOVED AND DISPOSED OF BY THE CONTRACTOR. UNLESS APPROVED BY THE ENGINEER, TOPSOIL FROM OUTSIDE SOURCES WILL NOT BE AUTHORIZED UNTIL ALL TOPSOILING MATERIAL STRIPPED FROM THE SITE HAS BEEN USED.

44. CASINGS IF REQUIRED FOR INSTALLATION OF POLE BASES SHALL BE INCIDENTAL TO THE ITEM BEING INTALLED. THE CASING SHALL BE STEEL, PVC, OR OTHER PERMANENT MATERIAL CAPABLE OF SUPPORTING THE AUGERED HOLE TO ITS FULL DEPTH. THE CASING SHALL BE ADVANCED AS THE EXCAVATION PROGRESSES TO ELIMINATE ANY VOID BETWEEN THE CASING AND THE SURROUNDING SOIL. ANY RESULTING VOIDS BETWEEN THE CASING AND ORGINAL GROUND SHALL BE PRESSURE GROUTED PRIOR TO PLACING CONCRETE FOR THE POLE BASE. THE CASING SHALL BE INSTALLED OR CUT OFF IF REQUIRED SO THAT THE TOP OF THE CASING IS AT OR SLIGHTLY BELOW THE FINISHED GROUND ELEVATION SURROUNDING THE POLE BASE. THE CASING SHALL REMAIN IN PLACE. JUST PRIOR TO CONCRETE PLACEMENT, THE EXCAVATION SHALL BE INSPECTED AND ANY EXCESS WATER SHALL BE PUMPED SO THAT THE CONCRETE IS PLACED IN A DRY HOLE. COSTS TO FURNISH AND INSTALL THE CASING, PRESSURE GROUT IF REQUIRED, CUT OFF IF REQUIRED, AND PUMP OUT ANY EXCESS WATER SHALL BE INCIDENTAL IN THE UNIT PRICE BID PER EACH POLE BASE.

45. UNDERDRAIN OUTLET PIPE (ITEM 715500) SHALL BE INSTALLED AT THE ENDS OF ALL UNDERDRAIN RUNS THAT OUTLET EITHER TO A DITCH OR TO A STORMWATER POND. THIS NON-PERFORATED PIPE SHALL BE PLACED FROM THE MAIN UNDERDRAIN RUN THAT PARALLELS THE ROADWAY TO THE FINAL OUTLET POSITION. IF THE UNDERDRAIN RUNS STRAIGHT INTO THE DITCH OR POND, NON-PERFORATED OUTLET PIPE SHALL BE RUN OUTSIDE OF THE PAVEMENT BOX. ANY BENDS, TEES OR OTHER FITTINGS TO CONNECT THE OUTLET PIPE TO THE MAIN UNDERDRAIN ARE INCIDENTAL TO ITEM 715500.

46. ITEM 727015 - DELETE ITEM "A" UNDER CONSTRUCTION METHODS AND REPLACE WITH:
    A. EXACT LOCATION TO BE SET BY (OR BY A SURVEYOR UNDER THE DIRECT SUPERVISION OF) A PROFESSIONAL ENGINEER OR PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF DELAWARE IN ACCORDANCE WITH THE PLANS OR AS DIRECTED BY THE ENGINEER.

MISCELLANEOUS

47. THE CONTRACTOR SHALL CONTACT THE CHIEF OF SCHEDULING FOR DART FIRST STATE 14 DAYS PRIOR TO THE START OF CONSTRUCTION.

48. RIGHT-OF-WAY PLANS FOR RIGHT-OF-WAY OR EASEMENT STAKEOUT PURPOSES ARE AVAILABLE FROM THE DEPARTMENT, UPON AWARD OF THE CONTRACT.

49. DRAINAGE INLETS LOCATED IN THE MEDIAN SHALL HAVE THE GRATE CENTERED ON THE BASIN. IF A COVERSLAB IS REQUIRED, THE COVERSLAB SHALL BE CONSTRUCTED TO FACILITATE CENTERING THE GRATE OVER THE BASIN. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER. ALL COSTS ARE INCIDENTAL TO THE ITEM BEING INSTALLED.

50. THE EXISTING HISTORIC SIGN LOCATED ON THE BARRATTS CHAPEL PARCEL (PARCEL 103) SHALL BE REMOVED, STORED AND RESET AT THE END OF THE PHASE OF CONSTRUCTION. THIS WORK SHALL BE COORDINATED WITH THOMAS SUMMERS FROM THE OFFICE OF THE STATE ARCHIVES (302-744-5047). ALL COSTS ASSOCIATED WITH REMOVING THE SIGN, STORING THE SIGN, RESETTING THE SIGN AND COORDINATION WITH THE OFFICE OF STATE ARCHIVES SHALL BE INCLUDED IN ITEM 201000 - CLEARING AND GRUBBING.

51. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN AN APPROPRIATE CLEAR ZONE AT THE END OF EACH WORK DAY. IN AREAS WITH CURB, THE CLEAR ZONE SHALL BE FROM THE EDGE OF THE TRAVEL LANE TO THE BACK THE CURB. IN AREAS WITHOUT CURB THE CLEAR ZONE SHALL BE FROM THE EDGE OF THE TRAVEL WAY. THE CLEAR ZONE SHALL NOT CONTAIN ANY OBSTACLES, SUCH AS EQUIPMENT, MATERIAL, OR STOCKPILES. THE CLEAR ZONE ALSO SHALL NOT CONTAIN OPEN EXCAVATIONS, TRENCHES, OR STRUCTURES. THIS INCLUDES COVERING DRAINAGE INLETS AND MANHOLES WITHOUT TOPS AND GRATES, WITH STEEL PLATES OR OTHER APPROVED PROTECTION CAPABLE OF SUPPORTING AN ERRANT VEHICLE ARE REQUIRED FOR COVERING THE DRAINAGE INLETS AND MANHOLES NOTED ABOVE. COST OF MAINTAINING THE CLEAR ZONE IS INCIDENTAL TO THE CONTRACT.

52. ALL COSTS ASSOCIATED WITH THE REMOVAL OF ELECTRICAL SERVICES FOR SIGNS THAT ARE TO BE REMOVED SHALL BE INCIDENTAL TO ITEM 201000 - CLEARING AND GRUBBING. THIS WORK SHALL BE DONE BY AN ELECTRICIAN LICENSED TO WORK IN THE STATE OF DELAWARE.

53. THE INTENT OF THIS CONTRACT IS TO MINIMIZE IMPACTS TO THE WATERS AND WETLANDS WITHIN THE PROJECT LIMITS. WORK SHALL BE DONE FROM THE ROADSIDE WHEN POSSIBLE. IF THE CONTRACTOR CHOOSES TO WORK IN THE WATERS THE CONTRACTOR SHALL USE TIMBER MATTING UNDER ALL EQUIPMENT TO MINIMIZE IMPACTS. THE CONTRACTOR SHALL SEE THE ENVIRONMENTAL COMPLIANCE PLANS FOR ADDITIONAL INFORMATION. ALL COSTS ASSOCIATED WITH THE USE OF MATTING SHALL BE INCIDENTAL TO THE ITEMS BEING CONSTRUCTED.

54. NO ADDITIONAL PAYMENT WILL BE MADE FOR NIGHTTIME PAVING OPERATIONS ON THIS CONTRACT. ANY ADDITIONAL COSTS ASSOCIATED WITH NIGHTTIME PAVING SHALL BE INCIDENTAL TO THE ITEMS BEING INSTALLED. ONLY THE UNIT BID PRICES (NO SURCHARGE OR PREMIUMS) FOR NECESSARY TRAFFIC CONTROL ITEMS WILL BE MADE FOR NIGHTTIME PAVING OR ANY OTHER WORK PERFORMED AFTER DARK.

55. TUBULAR MARKERS MEETING THE REQUIREMENTS OF ITEM 720611 - FLEXIBLE DELINEATOR, PERMANENT SHALL BE INSTALLED ON THE CORNERS OF ISLANDS NOT OFFSET THE FULL WIDTH OF THE SHOULDER ADJACENT TO THE ROADWAY. THE COST OF PROVIDING AND INSTALLING THE TUBULAR MARKERS SHALL BE INCIDENTAL TO THE ISLAND CURBING ITEM BEING CONSTRUCTED. NO ADDITIONAL PAYMENT WILL BE MADE UNDER ITEM 720611 - FLEXIBLE DELINEATOR, PERMANENT.

56. THE CONTRACTOR MAY SUBMIT A REVISED CONSTRUCTION SEQUENCE FOR APPROVAL BY THE ENGINEER, WITH A COPY ALSO SENT TO THE STORMWATER ENGINEER, PRIOR TO OR DURING CONSTRUCTION OF THE PROJECT. ANY PROPOSED REVISED SEQUENCE OF CONSTRUCTION MUST COMPLY WITH ALL CONDITIONS LISTED UNDER "CONSTRUCTION SCHEDULE PARAMETERS", "MAINTENANCE OF TRAFFIC NOTES", "GENERAL NOTES", "ENVIRONMENTAL REQUIREMENTS", AND "PROJECT NOTES". UNLESS APPROVED OTHERWISE BY THE ENGINEER, THE REVISED PLAN SHALL NOT ADD COST OR CONSTRUCTION TIME TO THE CONTRACT.

57. ANY DEWATERING MEASURES NECESSARY FOR THE INSTALLATION OF THE PROPOSED DITCHES, PIPES, DRAINAGE INLETS, MANHOLES, JUNCTION BOXES, CULVERTS, STORMWATER PONDS, MITIGATION SITE, BRIDGES, AND STORMWATER OUTLET STRUCTURES SHALL BE INCIDENTAL TO THE ITEM BEING INSTALLED. THE METHOD OF DEWATERING SHALL BE SUBMITTED TO THE ENGINEER, WITH A COPY ALSO SENT TO THE STORMWATER ENGINEER, FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. WORK INDICATED ON THE PLANS AS PAY ITEMS RELATED TO DRAINAGE OUTFALLS, STORMWATER POND OUTLETS, ETC.WILL BE PAID FOR AT THEIR RESPECTIVE BID PRICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS NECESSARY FOR DEWATERING (SEE STANDARD SPECIFICATION SECTION 111) WITH COSTS ALSO INCIDENTAL TO THE ITEMS REQUIRING THE PERMITS.

58. ALL EXISTING INLETS AND PIPES LOCATED WITHIN THE PROJECT LIMITS THAT ARE TO REMAIN SHALL BE FLUSHED OF ALL DEBRIS AND SEDIMENT AT THE END OF THE PROJECT AND AS NECESSARY DURING THE PROJECT IF CLOGGED. COSTS SHALL BE INCIDENTAL TO ITEM 201000.

59. ALL DRAINAGE INLETS NOT LOCATED ALONG CURB SHALL HAVE THE GRATE CENTERED ON THE BASIN. IF A COVERSLAB IS REQUIRED, THE COVERSLAB SHALL BE CONSTRUCTED TO FACILITATE CENTERING THE GRATE OVER THE BASIN. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR NON STANDARD INLETS FOR APPROVAL BY THE ENGINEER. ALL COSTS ARE INCIDENTAL TO THE ITEM BEING INSTALLED.

60. MEASURES FOR MAINTAINING PUBLIC TRAFFIC, SUCH AS TEMPORARY ROADS, DETOURS, RUN-AROUNDS, ETC. SHALL BE CONSTRUCTED UTILIZING THE APPLICABLE STANDARD BID ITEMS, NOT TEMPORARY ROADWAY MATERIAL (TRM). TRM IS INTENDED FOR MAINTAINING INGRESS AND EGRESS TO RESIDENCES AND BUSINESSES, AS WELL AS MAINTENANCE OF EXISTING ROADWAYS. TRM SHALL ALSO BE USED TO MAINTAIN DETOUR ROADS, ETC. AFTER THEIR INITIAL CONSTRUCTION.

61. HIGHWAY LIGHTING SHALL BE PROVIDED ALONG ALL RAMPS AND GORE AREAS PRIOR TO OPENING THE ROADWAYS TO TRAFFIC. THE PREFERENCE WOULD BE TO HAVE THE PERMANENT LIGHTING INSTALLED AND ENERGIZED PRIOR TO OPENING THE VARIOUS PHASES OF THE PROJECT TO TRAFFIC. SHOULD THE CONTRACTOR ELECT TO COMPLETE THE PERMANENT FACILITIES AFTER THE ROADWAYS ARE OPENED TO TRAFFIC, THEN TEMPORARY LIGHT PLANTS AS DIRECTED BY THE ENGINEER MUST BE PROVIDED BY THE CONTRACTOR UNTIL THE PERMANENT FACILITIES ARE ENERGIZED WITH COSTS INCIDENTAL TO ITEM 743000, MAINTENANCE OF TRAFFIC. LIGHT PLANTS FOR THIS PURPOSE WILL NOT BE PAID SEPARATELY.

62. THE DELDOT BRIDGE SECTION IS RESPONSIBLE FOR THE DESIGN OF THE BRIDGE PLANS (SHEETS 249 TO 278) AND SIGN STRUCTURE DETAIL PLANS (SHEETS 582 TO 593).

63. MILLING OF FINISHED SURFACE CONCRETE PATCHES AT PIPE CROSSINGS WILL BE MEASURED AND PAID AS PART OF ITEM 760507. ANY ADDITIONAL COSTS TO MILL THE CONCRETE ARE INCIDENTAL TO THE PROFILE MILLING, HOTMIX ITEM.

64. PERMITTING FOR UTILITIES: AS OUTLINED IN CHAPTER 3 OF THE DELDOT UTILITIES MANUAL, THE INDIVIDUAL UTILITY COMPANIES ARE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS FROM MUNICIPAL, STATE AND FEDERAL GOVERNMENT AGENCIES AND RAILROADS. THIS INCLUDES BUT IS NOT LIMITED TO WATER QUALITY PERMIT/DNREC WATER QUALITY CERTIFICATION, DNREC SUBAQUEOUS LANDS/WETLANDS PERMITS, DNREC COASTAL ZONE CONSISTENCY CERTIFICATION, COUNTY FLOODPLAIN PERMITS (NEW CASTLE COUNTY ONLY), U.S. COAST GUARD PERMITS, U.S. ARMY CORPS 404 PERMITS, SEDIMENT AND EROSION PERMITS, AND RAILROAD CROSSING PERMITS. THE ENVIRONMENTAL PERMITS CITED ON THE EC SHEETS(S) DO NOT AUTHORIZE ANY PART OF THE UTILITY WORK ASSOCIATED WITH THIS PROJECT.

65. THE CONTRACTOR MAY ENCOUNTER RECESSED/RAISED PAVEMENT MARKERS (RPMs) IN EXISTING PAVEMENT THAT IS SPECIFIED TO BE OVERLAID, MILLED, EXCAVATED, OR OTHERWISE REMOVED. IN ALL THESE CASES, THE EXISTING RMPs SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR, WITH COSTS INCIDENTAL TO THE APPLICABLE OVERLAY, MILLING, EXCAVATION, OR OTHER PAVEMENT REMOVAL ITEM.

66. FOR AREAS SHOWN AS "MILL AND OVERLAY" ON THE PLANS, MILLING SHALL NOT BE PERFORMED WHERE THE PROPOSED PROFILE IS 4 INCHES OR MORE ABOVE THE EXISTING PAVEMENT. IN THESE AREAS, A TACK COAT SHALL BE APPLIED AND THE EXISTING PAVEMENT SHALL BE OVERLAID WITH THE APPROPRIATE THICKNESS OF WARM MIX ASPHALT USING AT LEAST TWO LIFTS OF MATERIAL. MILLING WILL NOT BE NECESSARY IN THESE AREAS UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

67. WHERE NEW PAVEMENT IS BEING CONSTRUCTED OVER EXISTING PAVEMENT, THE OLD PAVEMENT SHALL BE BROKEN UP FOR DRAINAGE PURPOSES AND LEFT IN PLACE (PER SECTION 202.05) WHENEVER THE PROPOSED PROFILE ALLOWS THE FULL PAVEMENT BOX DEPTH, (FROM BOTTOM OF BORROW, TYPE A) TO BE CONSTRUCTED OVER THE EXISTING PAVEMENT. COST FOR BREAKING THE PAVEMENT IS INCIDENTAL TO ITEM 202000.

68. ITEM 906003, SUMP PIT, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD CONSTRUCTION DETAIL FOR A TYPE 2 UNIT SHOWN ON SHEET E-16.

69. ITEM 908007, TOPSOILING, IS INTENDED FOR USE ONLY IN THE WETLAND MITIGATION SITE AND SHALL BE PLACED AT A DEPTH OF 9 INCHES (SEE DETAILS ON PLAN SHEETS 441 AND 443).

70. REGARDING ITEM 401580, PORTIONS OF THE PROJECT WHERE ANY OF THE PAVEMENT WIDTH IS DESIGNED TO BE MILLED AND/OR OVERLAID WILL BE CONSIDERED "CLASS 2 PROJECTS" UNLESS DIRECTED OTHERWISE BY THE ENGINEER. PORTIONS OF THE PROJECT THAT ARE NEWLY CONSTRUCTED OR TOTALLY RECONSTRUCTED FOR THE FULL WIDTH OF THE PAVEMENT WILL BE CONSIDERED "CLASS 3 PROJECTS" UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

CLARIFICATION OF THE BRIDGE ELEMENTS TO BE PAID UNDER THE VARIOUS STRUCTURAL CONCRETE ITEMS IS LISTED BELOW:

71. ITEM 602002 (PCC MASONRY, CLASS B) IS INTENDED FOR CONSTRUCTION OF THE MOMENT SLABS APPROACHING THE BRIDGE ADJACENT TO MSE WALLS 1, 2, 5, AND 6. A CONSTRUCTION JOINT IS PERMITTED AT THE INTERFACE BETWEEN THE BARRIER WALL AND MOMENT SLAB. THE BARRIER WALL RESTING ON THE MOMENT SLAB WILL BE PAID UNDER ITEM 601017 (PCC MASONRY, PARAPET, CLASS A). THE SLEEPER SLABS ARE ALSO TO BE PAID UNDER ITEM 602002.

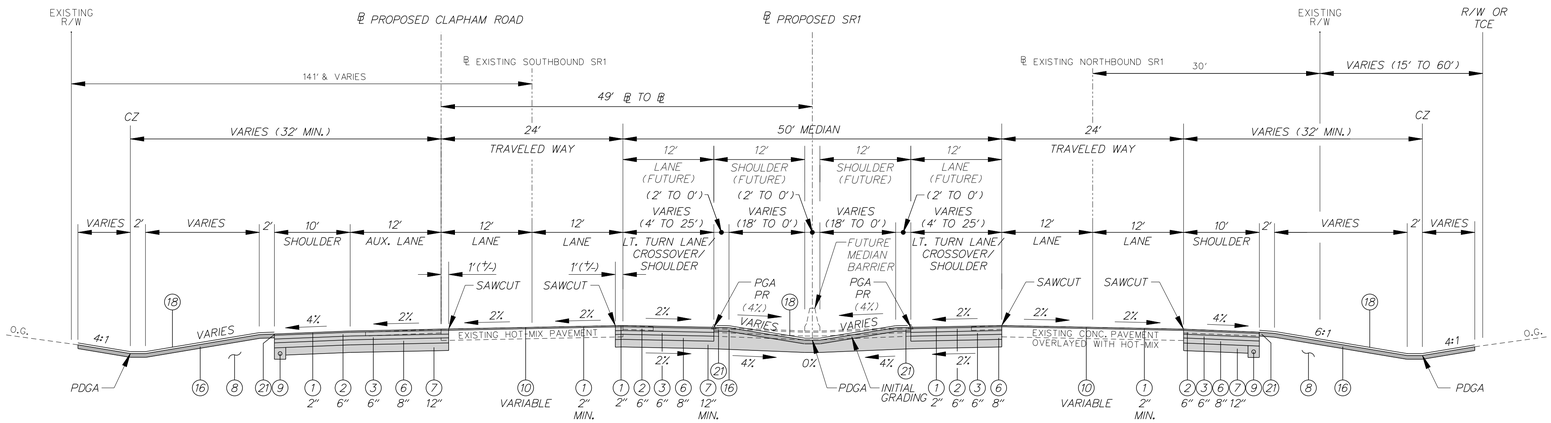
72. ITEM 602009 (PCC MASONRY, APPROACH SLAB, CLASS A) IS INTENDED FOR CONSTRUCTION OF THE TWO APPROACH SLABS ONLY.

73. ITEM 602013 (PCC MASONRY, SUPERSTRUCTURE, CLASS D) IS INTENDED FOR CONSTRUCTION OF THE BRIDGE DECK, INCLUDING THE TWO HAUNCHES PLACED OVER THE ABUTMENTS AT EITHER END OF THE DECK. THESE HAUNCHES ARE INTENDED TO BE PLACED MONOLITHIC WITH THE BRIDGE DECK.

74. ITEM 602015 (PCC MASONRY, ABUTMENT ABOVE FOOTING, CLASS A) IS INTENDED FOR CONSTRUCTION OF BOTH ABUTMENTS INCLUDING FOOTINGS AND WALLS.

75. ITEM 602017 (PCC MASONRY, PARAPET, CLASS A) IS INTENDED FOR CONSTRUCTION OF ALL BARRIER WALLS LOCATED ON THE MOMENT SLABS, SLEEPER SLABS, APPROACH SLABS, AND BRIDGE DECK. NOTE THAT 2 INCHES OF BITUMINOUS CONCRETE WILL BE PLACED OVER THE MOMENT SLABS AND SLEEPER SLABS. THE CONTRACTOR SHALL FORM THE BARRIER WALL OVER THESE ELEMENTS TO PROVIDE A 3 INCH REVEAL BETWEEN THE TOP OF BITUMINOUS CONCRETE AND THE BREAK POINT IN THE PARAPET WALL.

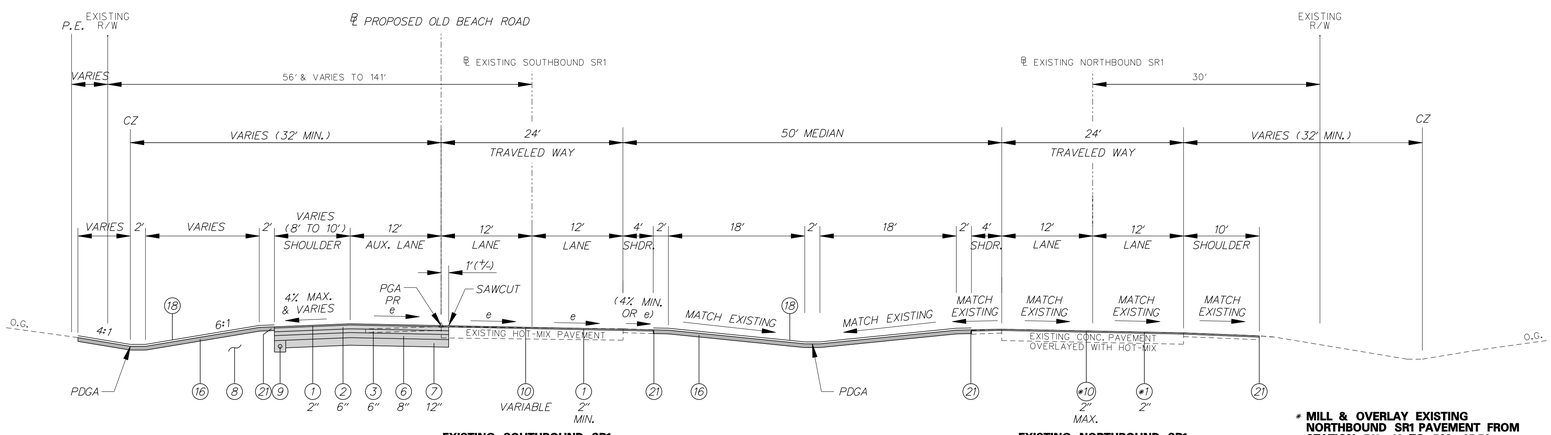
TREE MITIGATION SUMMARY	
TREES TO BE REMOVED:	3.1 AC
MITIGATION REQUIRED:	3.1 AC



EXISTING SOUTHBOUND SR1 **EXISTING NORTHBOUND SR1**

NOTE: SEE CROSSOVER TYPICAL SECTION FOR STATION 105+18 TO 106+20.

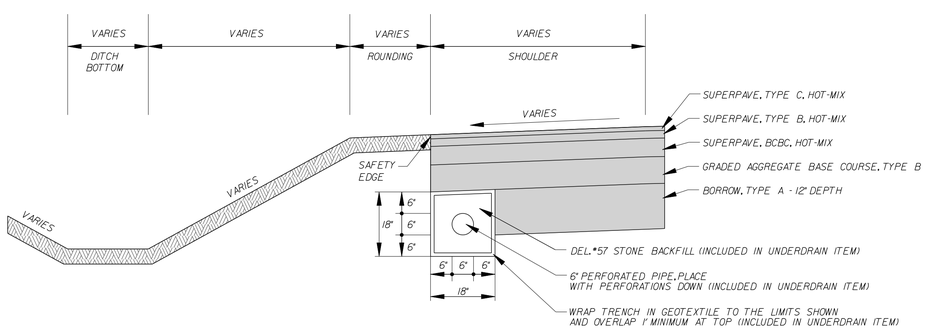
TYPICAL NORMAL MILL & OVERLAY SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 100+00.00 TO 109+36.47



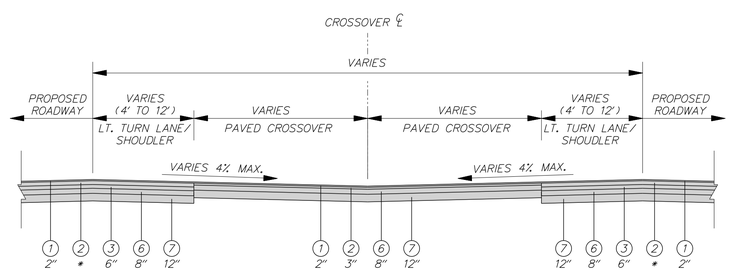
EXISTING SOUTHBOUND SR1 **EXISTING NORTHBOUND SR1**

* MILL & OVERLAY EXISTING NORTHBOUND SR1 PAVEMENT FROM STATION 511+40 TO 523+05.50

TYPICAL NORMAL MILL & OVERLAY SECTION – PROPOSED OLD BEACH ROAD
STATION 497+80.00 TO 523+05.50



PERFORATED PIPE UNDERDRAIN DETAIL



CROSSOVER TYPICAL SECTION

STATION 105+18 TO 106+20
STATION 134+17 TO 134+92
STATION 147+00 TO 148+02
STATION 177+60 TO 178+63
STATION 182+28 TO 183+29

* 6" FOR PROPOSED SR1
3" FOR SERVICE ROADS

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

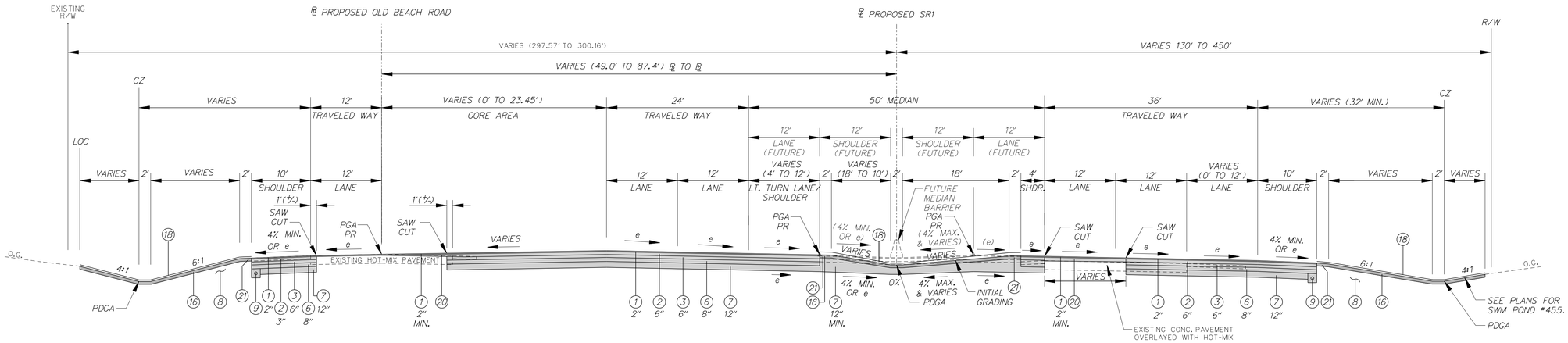
CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

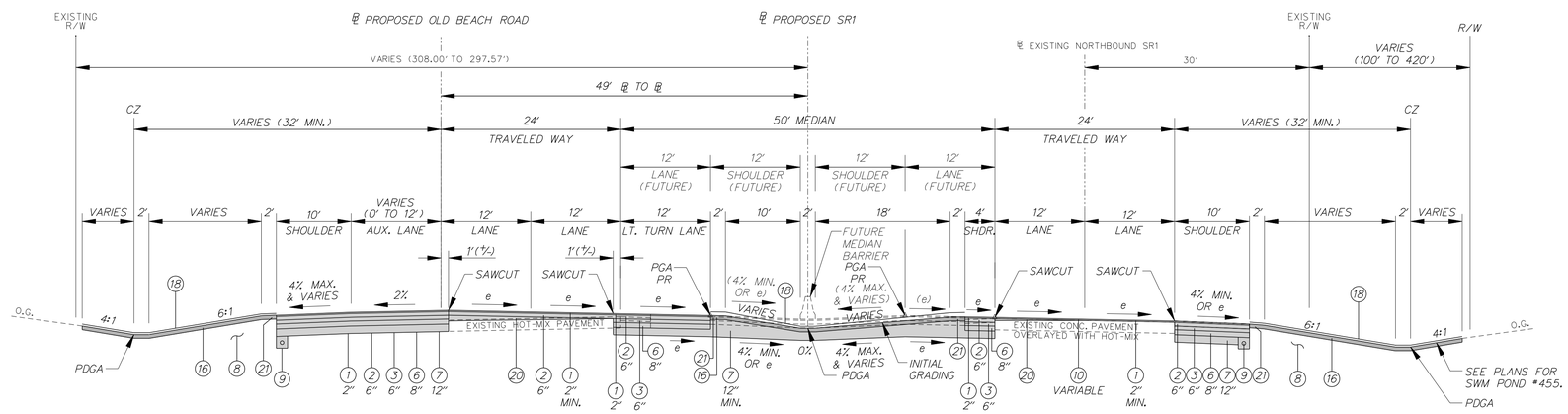
NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.



PROPOSED OLD BEACH ROAD **PROPOSED SOUTHBOUND SR1** **PROPOSED NORTHBOUND SR1**

TYPICAL SUPERELEVATION MILL & OVERLAY SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 111+96.81 TO 116+38.19



PROPOSED SOUTHBOUND SR1 **PROPOSED NORTHBOUND SR1**

TYPICAL SUPERELEVATION MILL & OVERLAY SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 109+36.48 TO 111+96.80

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

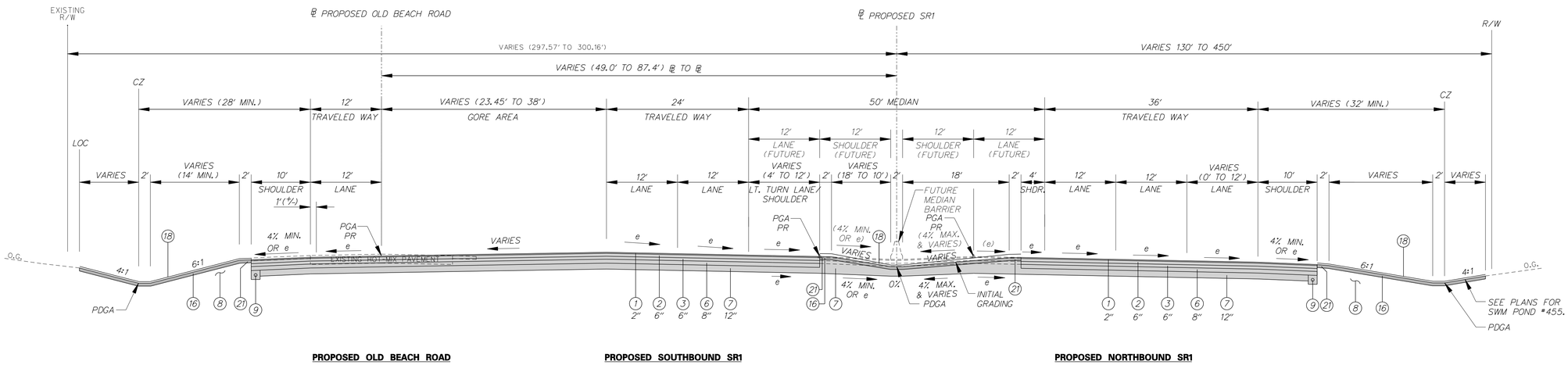
SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

TYPICAL SECTIONS

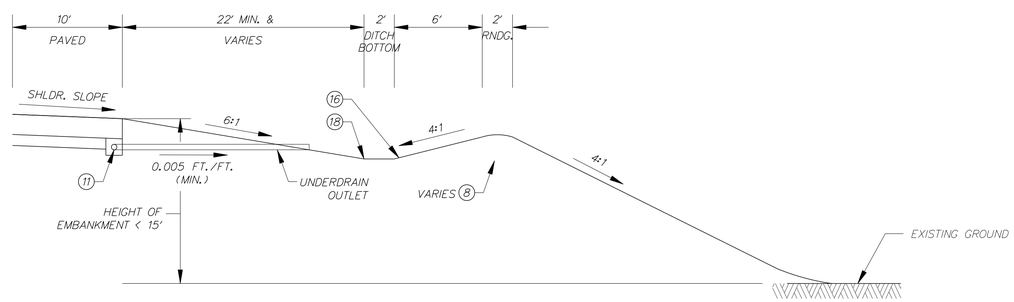
SHEET NO. 10
TOTAL SHTS. 641

1/6/2015 4:29:03 PM
G:\PROJECTS\035I7.00 DELDOT AGMT 1223 DOTS Open End\035I7.16 SR, LITTLE HEAVEN FINAL DESIGN\DGN Files\ts01.dgn



PROPOSED OLD BEACH ROAD **PROPOSED SOUTHBOUND SR1** **PROPOSED NORTHBOUND SR1**

TYPICAL SUPERELEVATION SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 116+38.20 TO 118+34.15



TYPICAL SIDE SLOPE DITCH DETAIL
STATION 114+00 TO 116+25
STATION 126+75 TO 129+00

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
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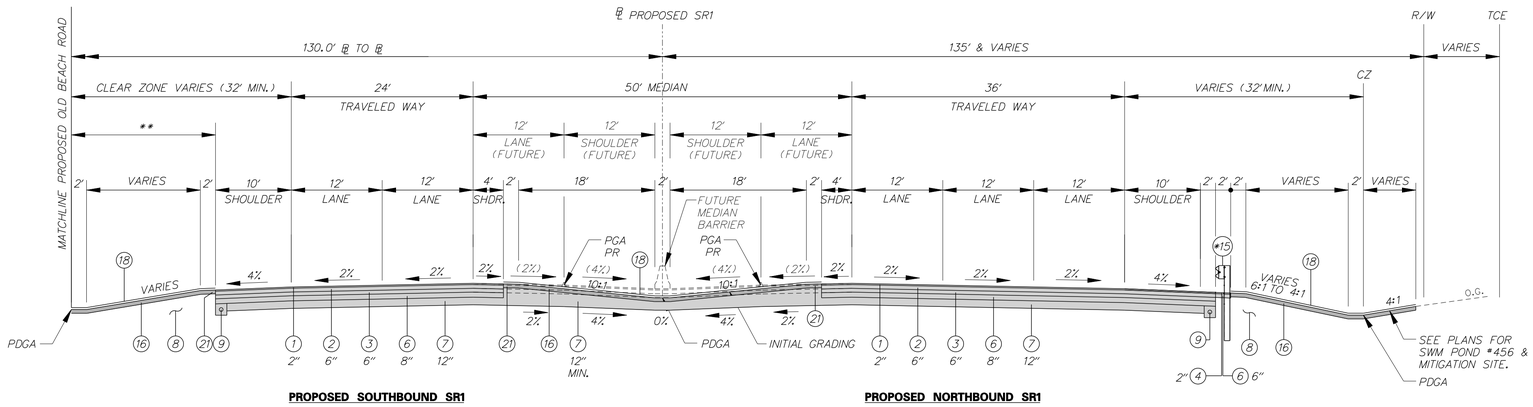
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

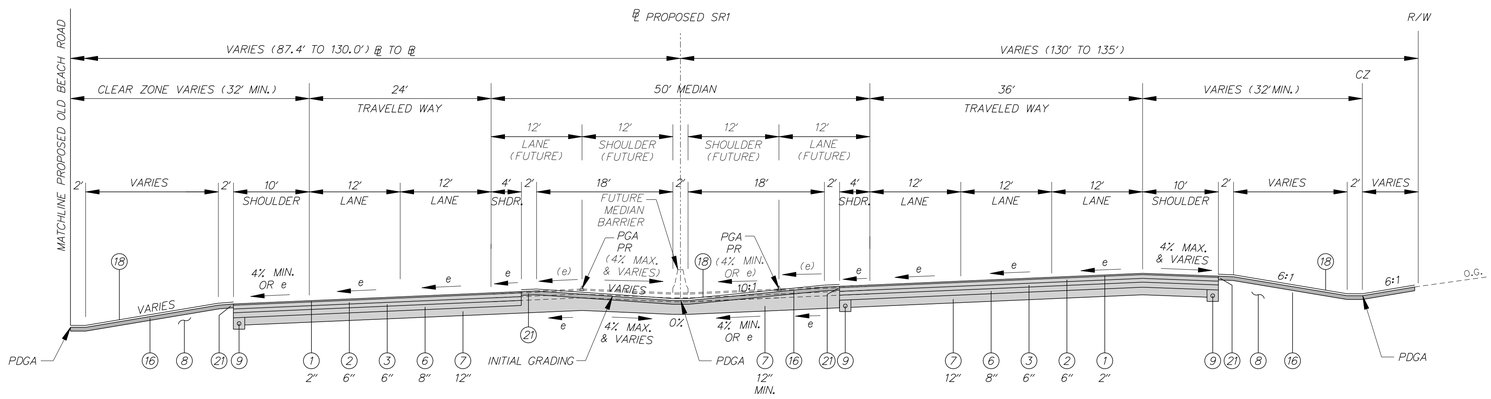


PROPOSED SOUTHBOUND SR1 **PROPOSED NORTHBOUND SR1**

TYPICAL NORMAL SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 126+70.76 TO 137+12.48

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

** SEE CROSSOVER TYPICAL SECTION FOR STATION 134+17 TO 134+92.



PROPOSED SOUTHBOUND SR1 **PROPOSED NORTHBOUND SR1**

TYPICAL SUPERELEVATION SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 118+34.16 TO 126+70.75

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
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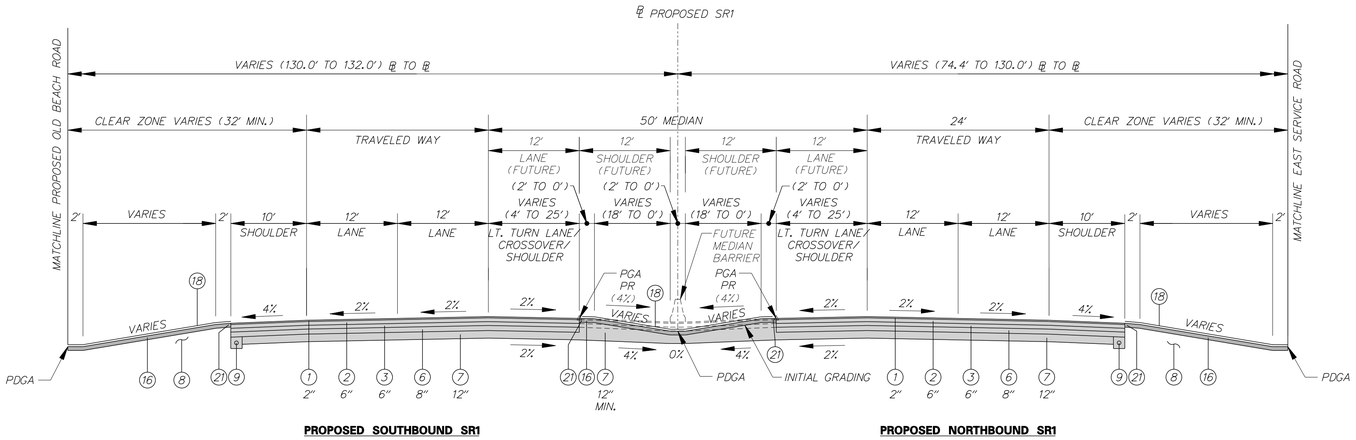
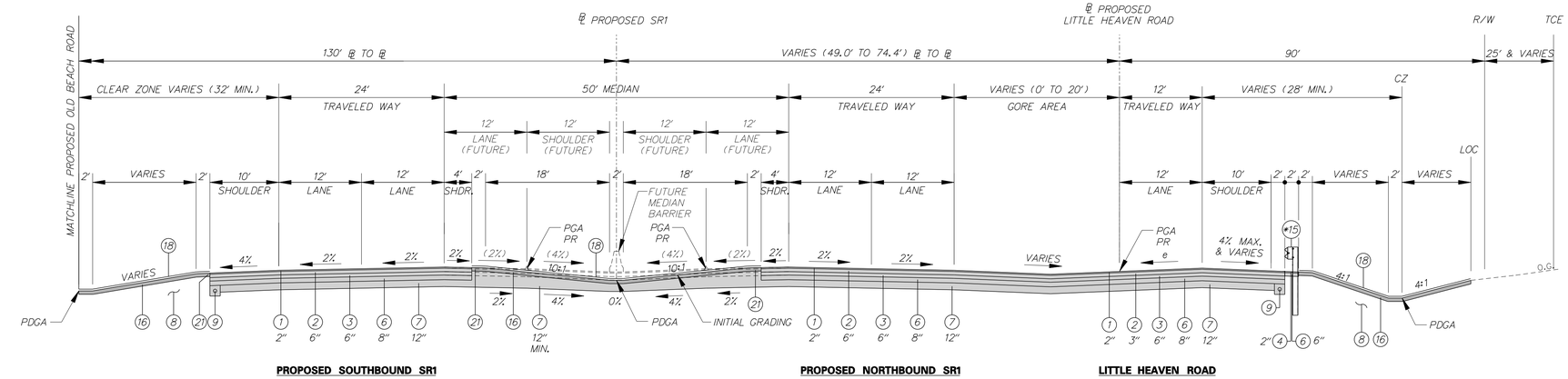
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.



TYPICAL NORMAL SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 139+92.48 TO 152+12.19

NOTE: SEE CROSSOVER TYPICAL SECTION FOR STATION 147+00 TO 148+02.



TYPICAL NORMAL SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 137+12.49 TO 139+92.47

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

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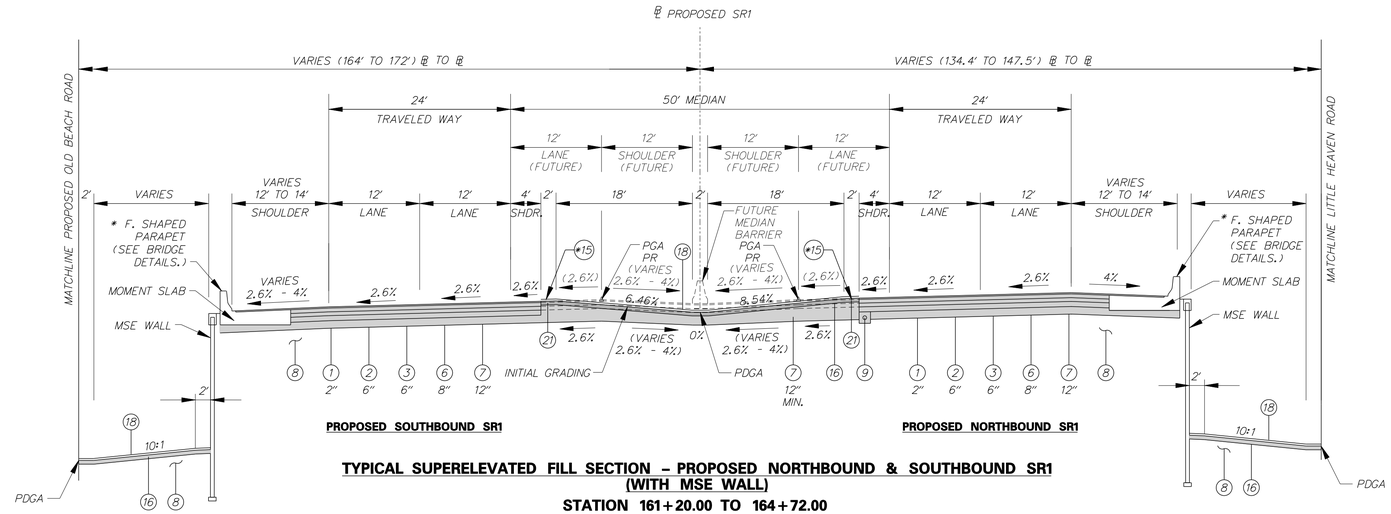
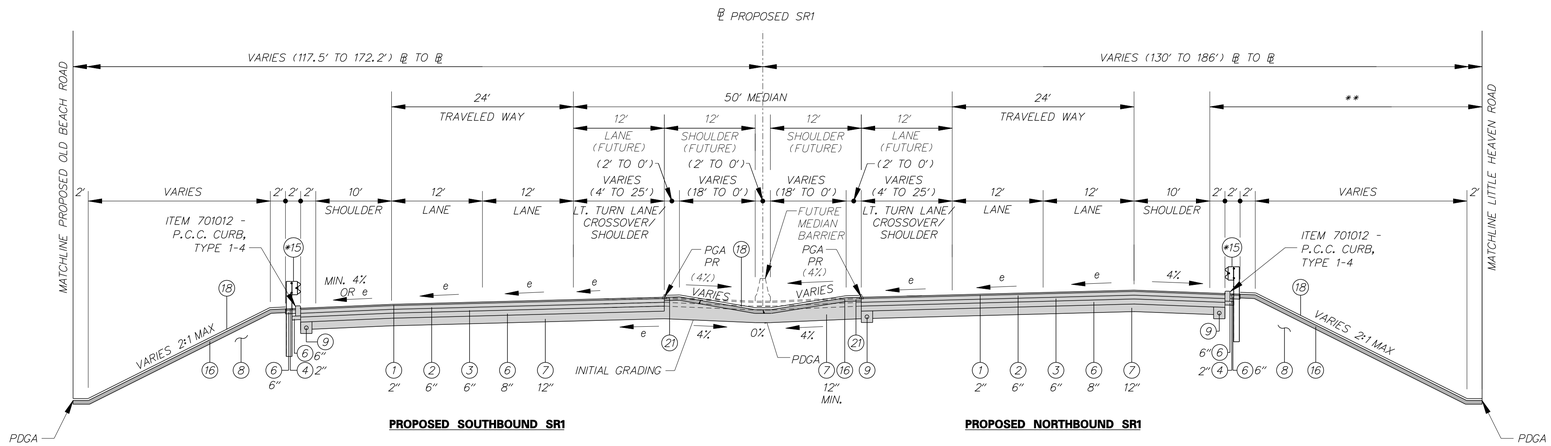


TYPICAL SUPERELEVATED FILL SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
(WITH MSE WALL)
STATION 161+20.00 TO 164+72.00
STATION 165+82.00 TO 169+70.00

END STATIONS FOR MSE WALLS ARE AS FOLLOWS:
NE: STATION 168+85
NW: STATION 169+70
SE: STATION 163+10
SW: STATION 161+20

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

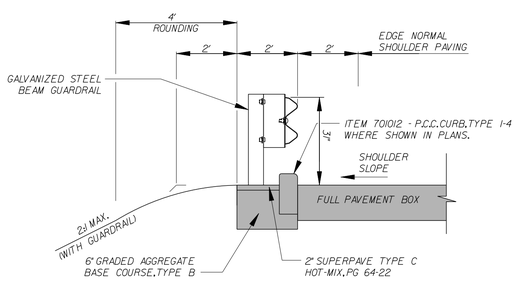


TYPICAL SUPERELEVATED FILL SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 152+12.20 TO 161+19.99
STATION 169+70.01 TO 183+52.60

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

** SEE CROSSOVER TYPICAL SECTION FOR STATION 177+60 TO 178+63.

NOTE: SEE CROSSOVER TYPICAL SECTION FOR STATION 182+28 TO 183+29.



GUARDRAIL DETAIL
TYPE 1 – 31

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	–
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

TYPICAL SECTIONS

SHEET NO. 14
TOTAL SHTS. 641

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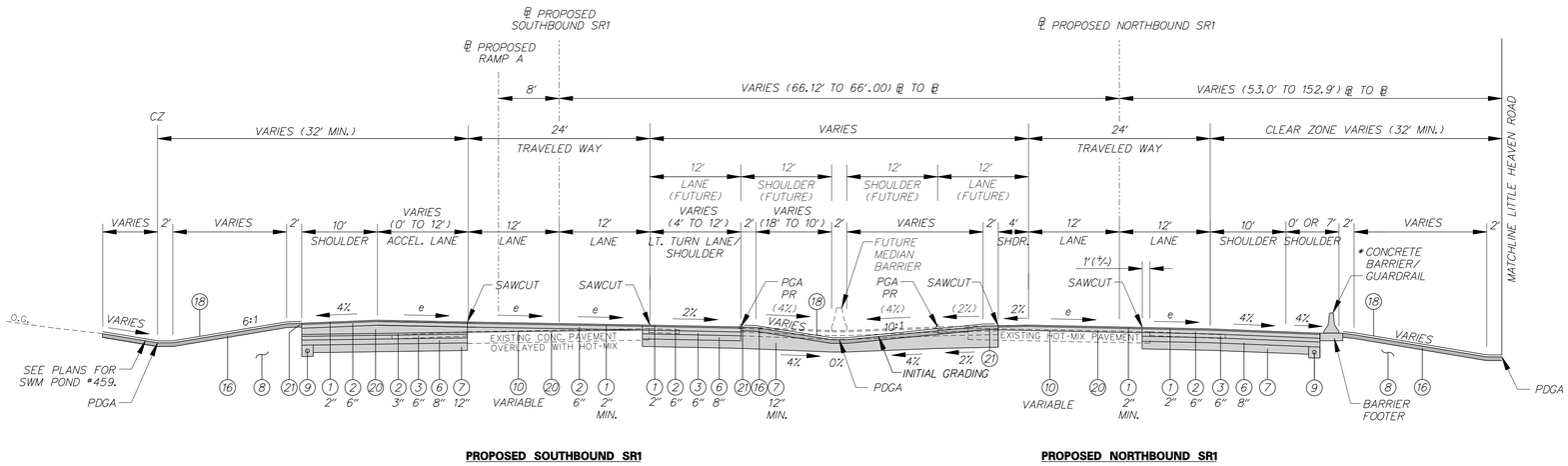
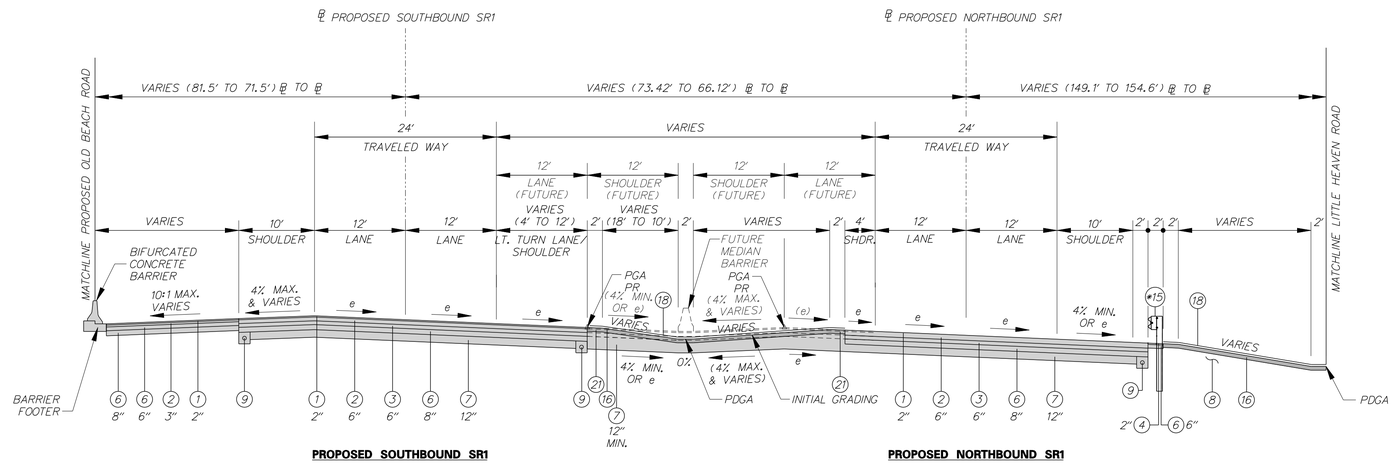


TYPICAL MILL & OVERLAY SUPERELEVATION SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 206+46.21 TO 212+49.96

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.



TYPICAL SUPERELEVATION SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 200+00.00 TO 206+46.20

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
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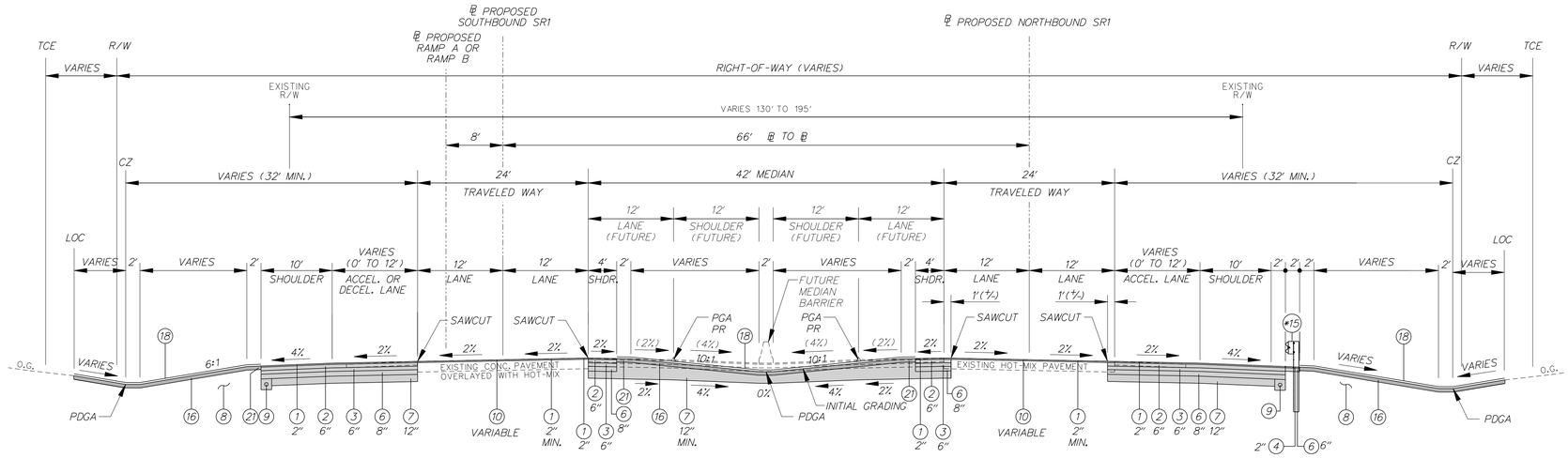
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

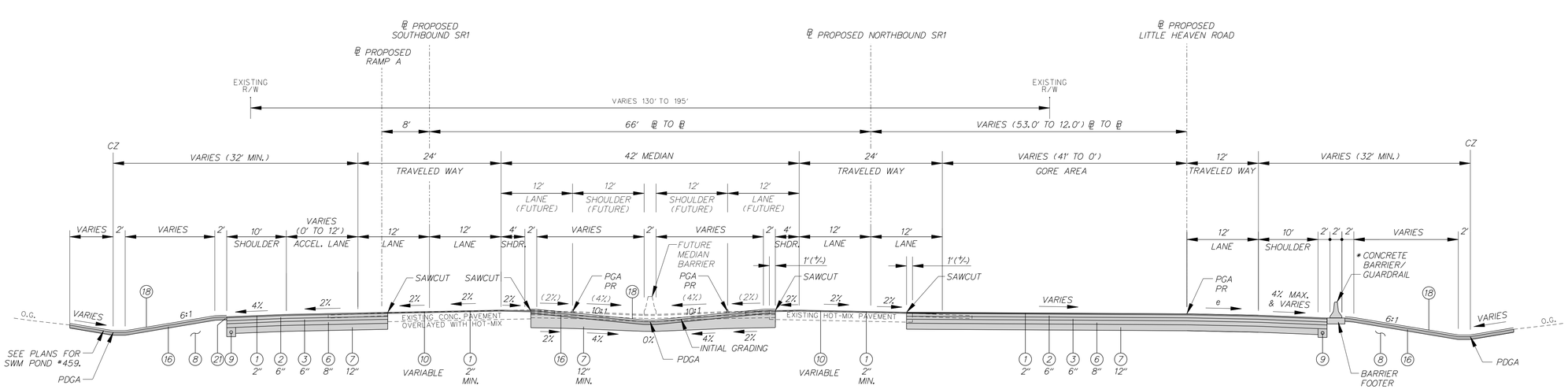


PROPOSED SOUTHBOUND SR1 **PROPOSED NORTHBOUND SR1**

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

TYPICAL MILL & OVERLAY NORMAL SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 215+93.14 TO 238+35.00

* SEE MUCK EXCAVTION IN THE CONSTRUCTION DETAILS AT STATION 217+58 RT. TO STATION 225+50 RT. AND STATION 222+87 LT. TO STATION 226+00 LT.



PROPOSED SOUTHBOUND SR1 **PROPOSED NORTHBOUND SR1** **LITTLE HEAVEN ROAD**

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

TYPICAL MILL & OVERLAY NORMAL SECTION – PROPOSED NORTHBOUND & SOUTHBOUND SR1
STATION 212+49.97 TO 215+93.13

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
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5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

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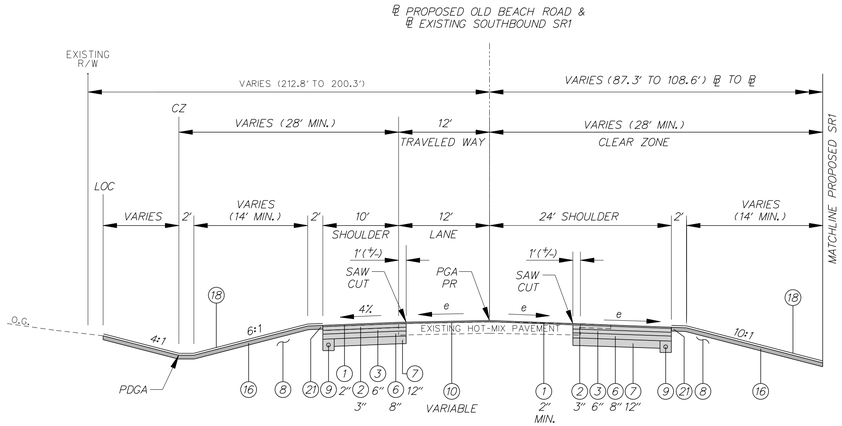
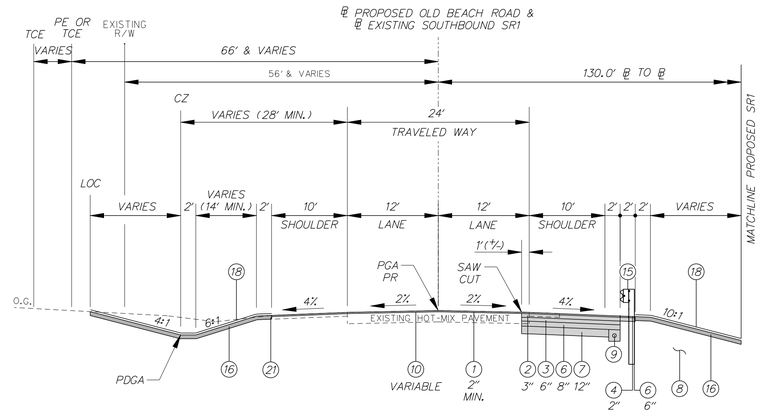
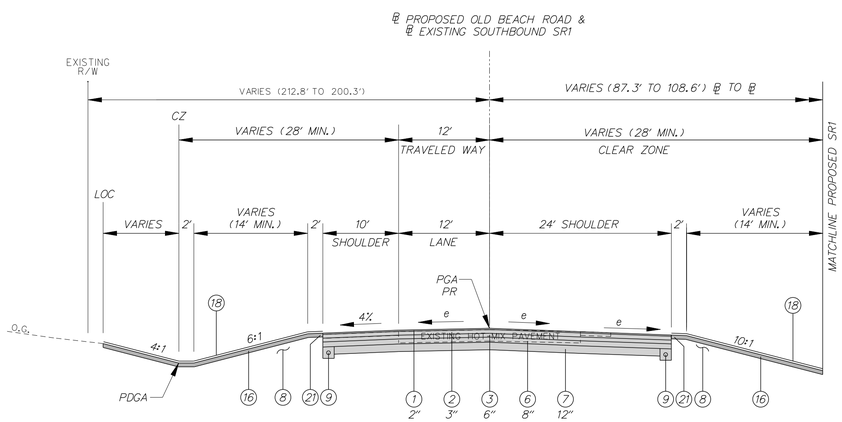


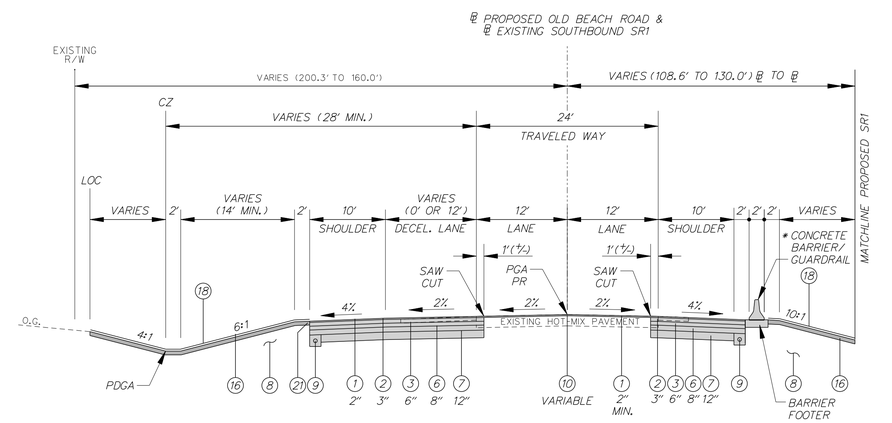
TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD (RAMP)
STATION 543+00.00 TO 543+49.99



TYPICAL MILL & OVERLAY NORMAL SECTION – PROPOSED OLD BEACH ROAD (WITH ADDITIONAL 10 FOOT SHOULDER)
STATION 549+40.00 TO 570+15.94



TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD (RAMP)
STATION 541+44.29 TO 542+99.99



TYPICAL NORMAL SECTION – PROPOSED OLD BEACH ROAD (WITH CONC. BARRIER & DECELERATION LANE)
STATION 543+50.00 TO 545+49.99 (P.C.C. BARRIER)
STATION 545+50.00 TO 549+39.99 (GUARDRAIL)

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

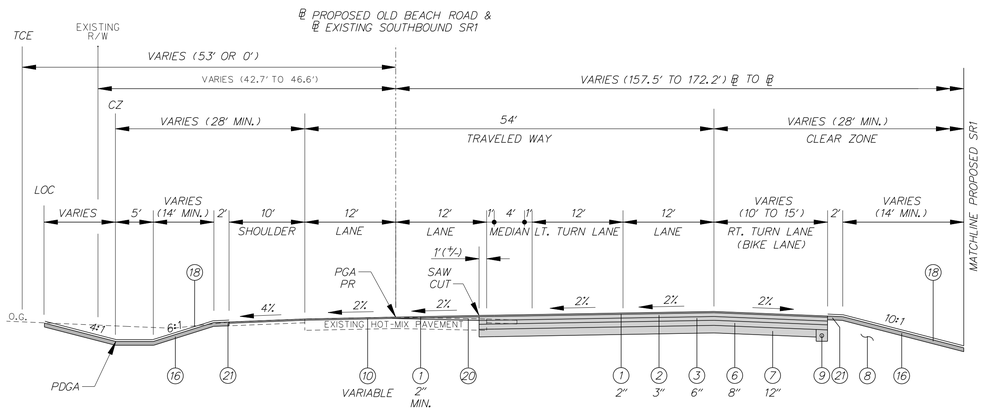
NOT TO SCALE

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

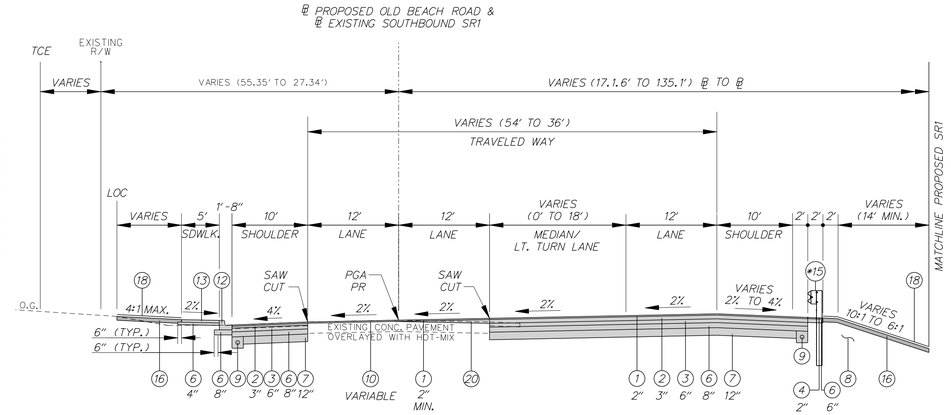
CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

TYPICAL SECTIONS

SHEET NO.
17
TOTAL SHTS.
641

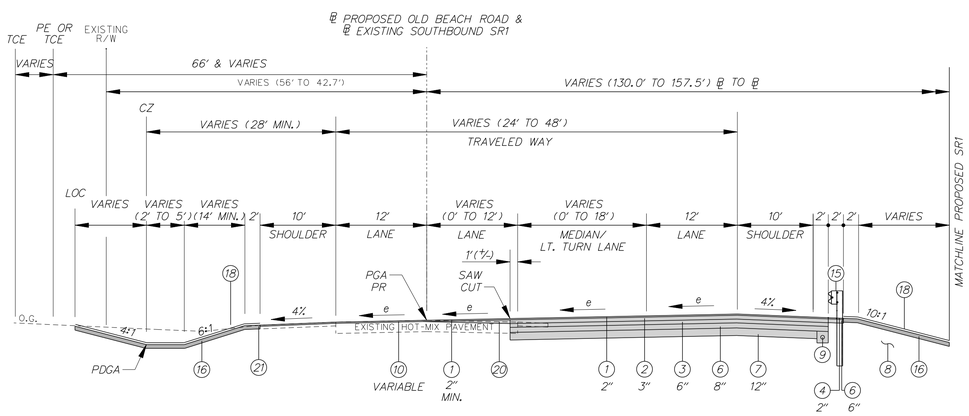


TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD
STATION 581+51.16 TO 588+63.28

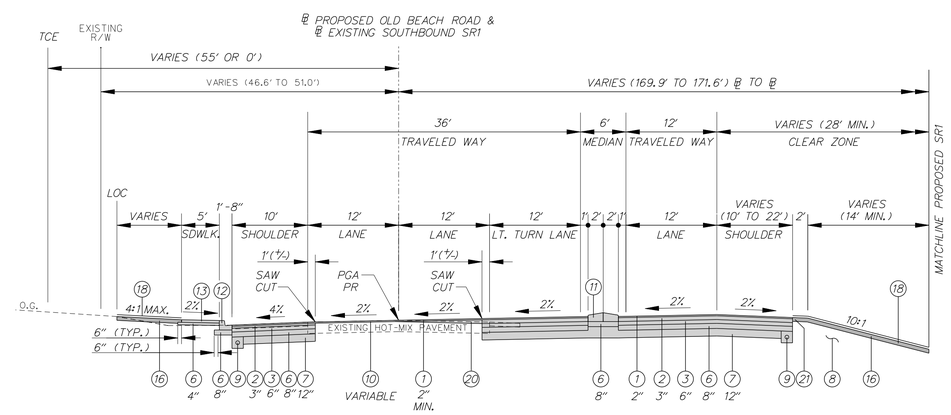


TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD
STATION 593+85.00 TO 602+98.38

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.



TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD
STATION 570+15.95 TO 581+51.15



TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD
STATION 588+63.29 TO 593+84.99

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

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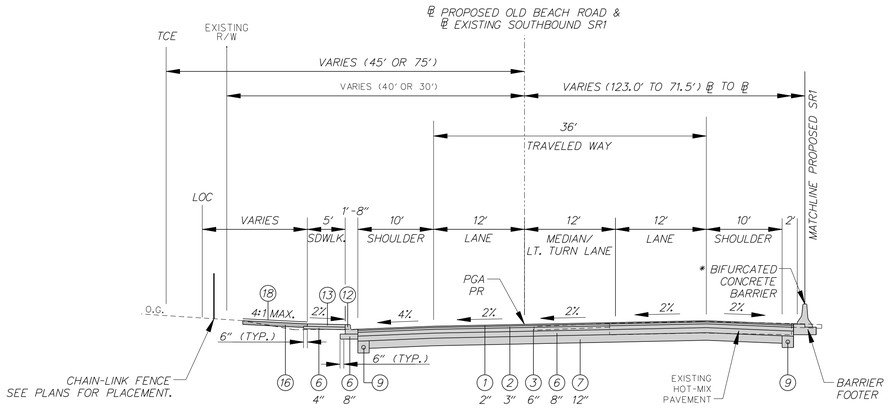
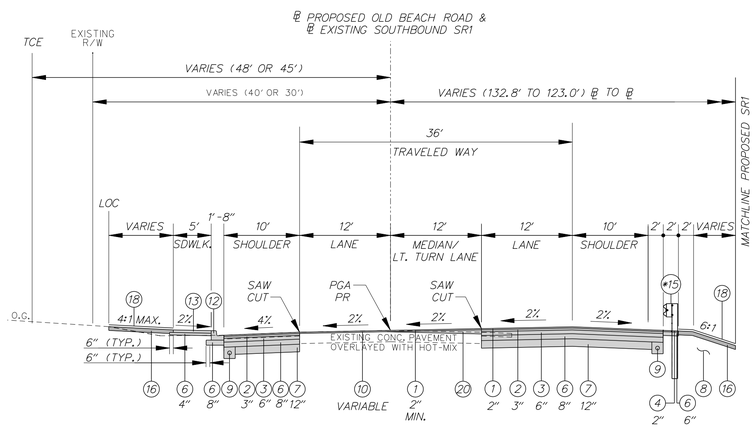
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION	CONTRACT T200412202	BRIDGE NO. -	TYPICAL SECTIONS	SHEET NO. 18
				COUNTY KENT	DESIGNED BY: SFP		TOTAL SHTS. 641
					CHECKED BY: WFC		



TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD

STATION 605+48.56 TO 612+65.63

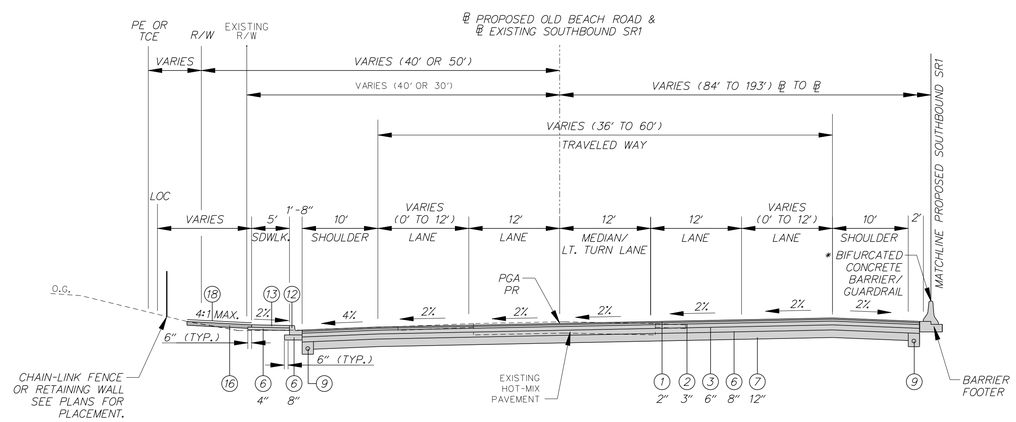
* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.



TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD

STATION 602+98.39 TO 605+48.55

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.



TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD

STATION 612+65.64 TO 618+05.41

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION

PDGA - PROFILE DITCH GRADE APPLICATION

PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

1/6/2016
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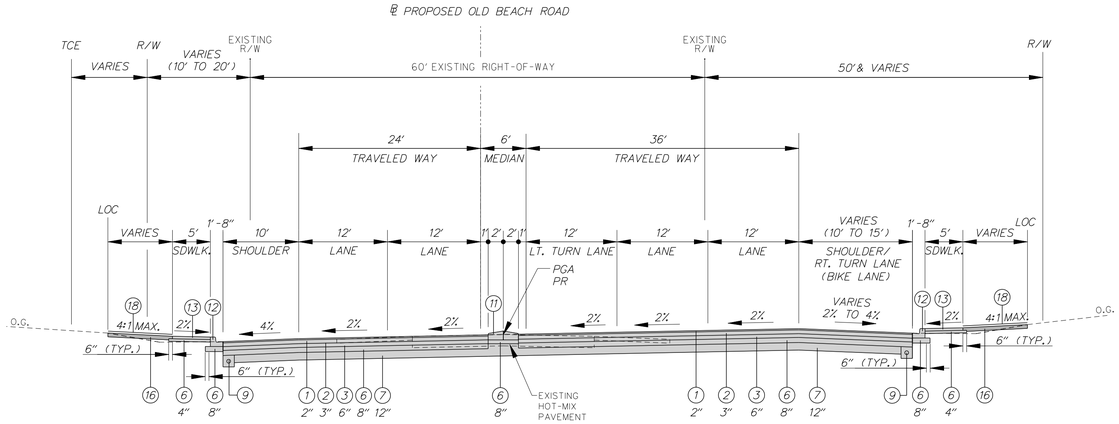
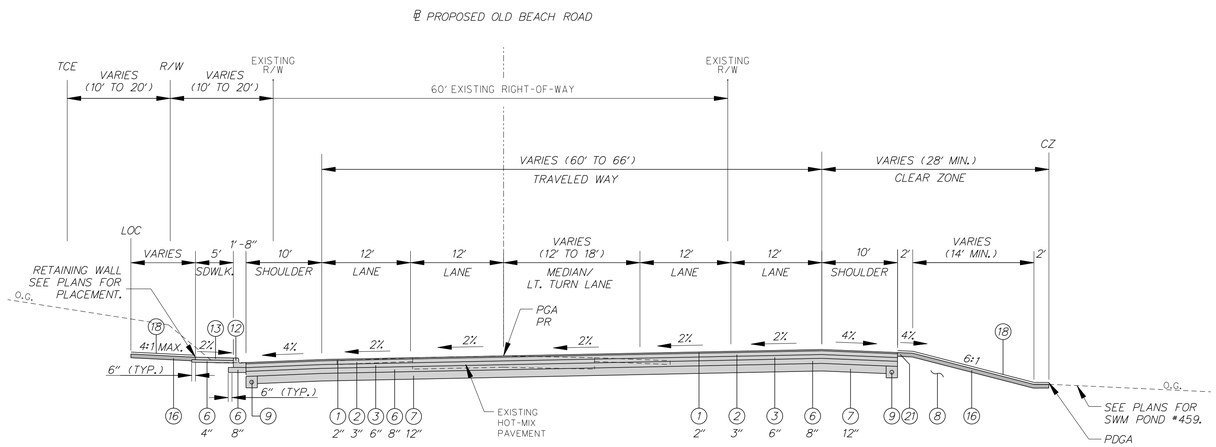


TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD
STATION 622+03.76 TO 625+43.72



TYPICAL SUPERELEVATION SECTION – PROPOSED OLD BEACH ROAD
STATION 618+05.41 TO 622+03.76

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
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13. ITEM 705001 - PCC SIDEWALK, 4"
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15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
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6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

1/6/2016
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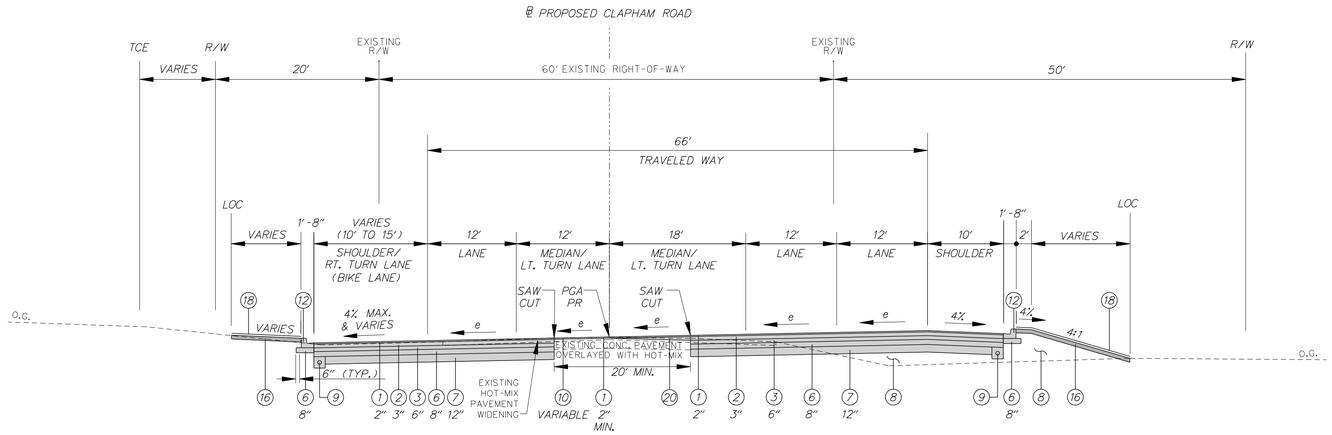
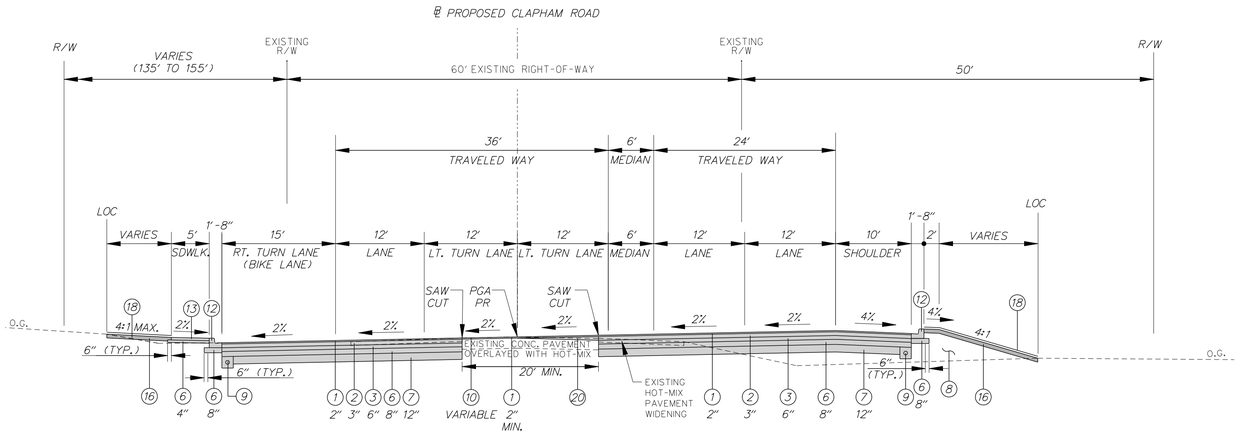


TYPICAL SUPERELEVATION SECTION – PROPOSED CLAPHAM ROAD

STATION 628+64.35 TO 635+55.23



TYPICAL SUPERELEVATION SECTION – PROPOSED CLAPHAM ROAD

STATION 625+43.72 TO 628+64.34

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION

PDGA - PROFILE DITCH GRADE APPLICATION

PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

TYPICAL SECTIONS

SHEET NO. 21

TOTAL SHTS. 641

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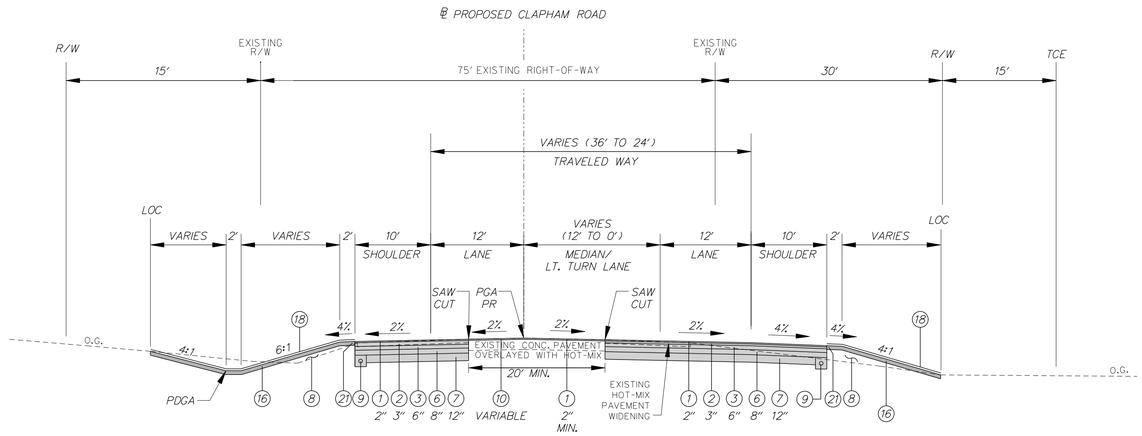
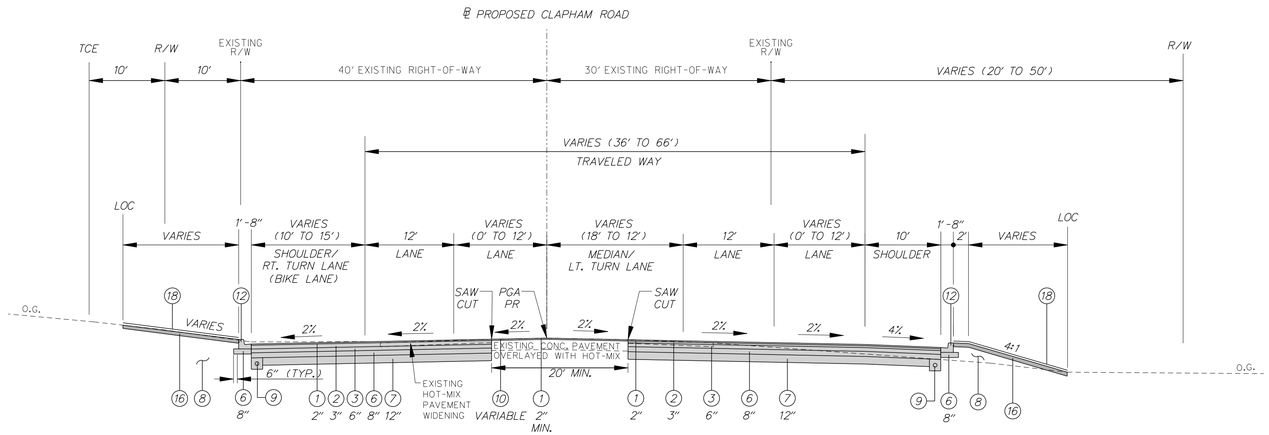


TYPICAL NORMAL SECTION – PROPOSED CLAPHAM ROAD
STATION 643+56.29 TO 649+50.00



TYPICAL NORMAL SECTION – PROPOSED CLAPHAM ROAD
STATION 635+55.24 TO 643+56.28

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

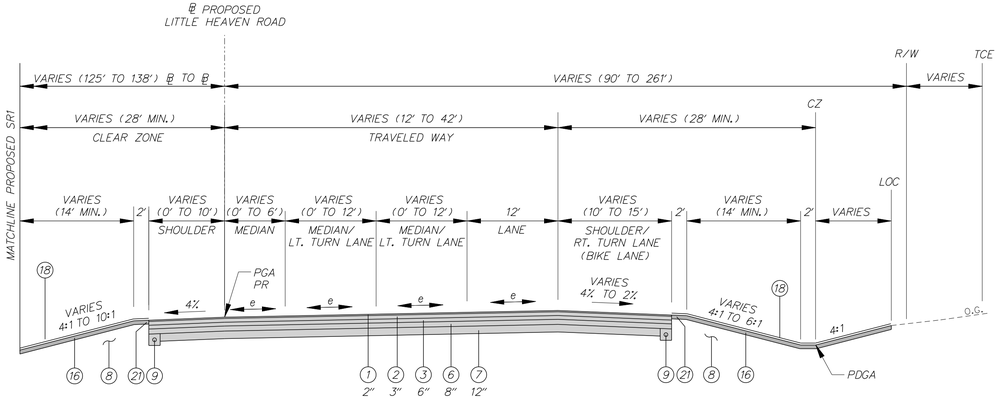
NOT TO SCALE

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

TYPICAL SECTIONS

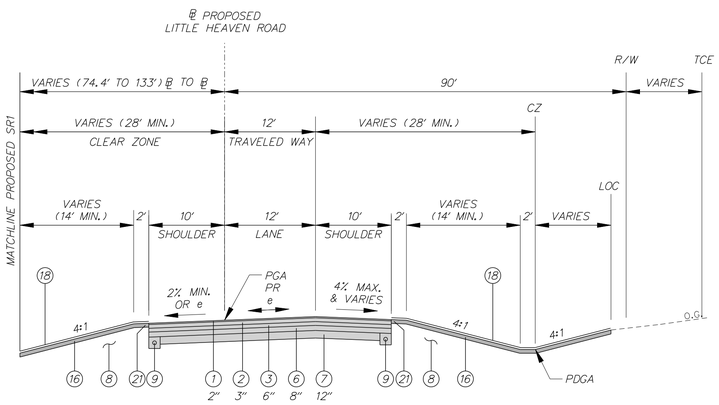
SHEET NO.
22
TOTAL SHTS.
641



TYPICAL SUPERELEVATION SECTION – PROPOSED LITTLE HEAVEN ROAD

STATION 407+83.07 TO 428+30.97

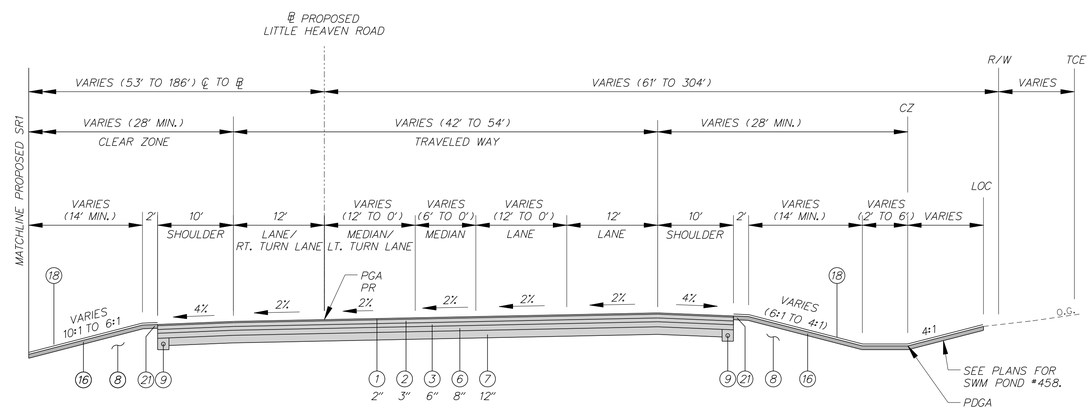
CONTRACTOR SHALL PLACE 5" OF TYPE B HOT-MIX WITH NO TYPE C IN INITIAL PHASES. IN FINAL PHASE, CONTRACTOR SHALL MILL 2" AND OVERLAY WITH 2" OF TYPE C HOT-MIX.



TYPICAL SUPERELEVATION SECTION – PROPOSED LITTLE HEAVEN ROAD (RAMP)

STATION 403+80.09 TO 407+83.06

CONTRACTOR SHALL PLACE 5" OF TYPE B HOT-MIX WITH NO TYPE C IN INITIAL PHASES. IN FINAL PHASE, CONTRACTOR SHALL MILL 2" AND OVERLAY WITH 2" OF TYPE C HOT-MIX.



TYPICAL SUPERELEVATION SECTION – PROPOSED LITTLE HEAVEN ROAD

STATION 430+63.96 TO 460+62.73

CONTRACTOR SHALL PLACE 5" OF TYPE B HOT-MIX WITH NO TYPE C IN INITIAL PHASES. IN FINAL PHASE, CONTRACTOR SHALL MILL 2" AND OVERLAY WITH 2" OF TYPE C HOT-MIX.

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION

PDGA - PROFILE DITCH GRADE APPLICATION

PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

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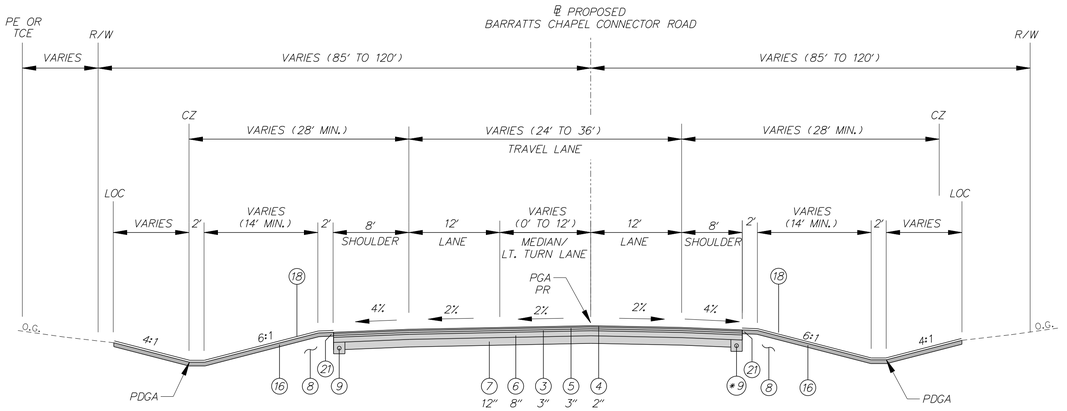
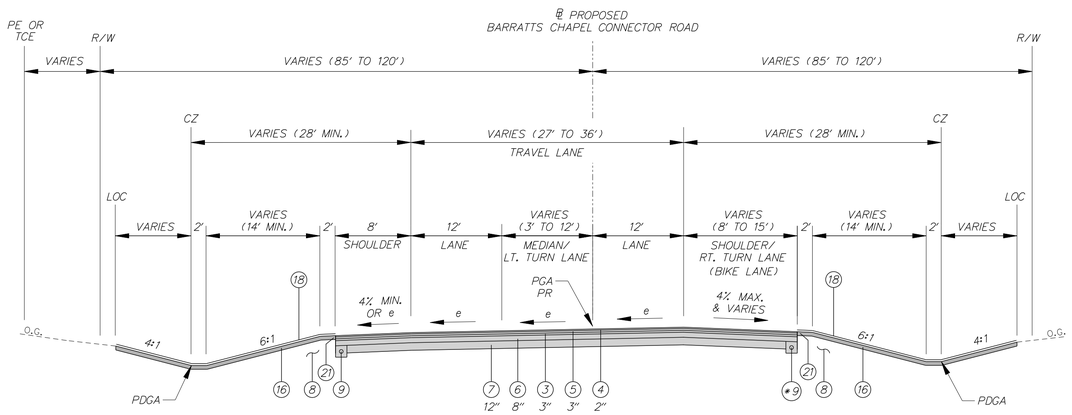
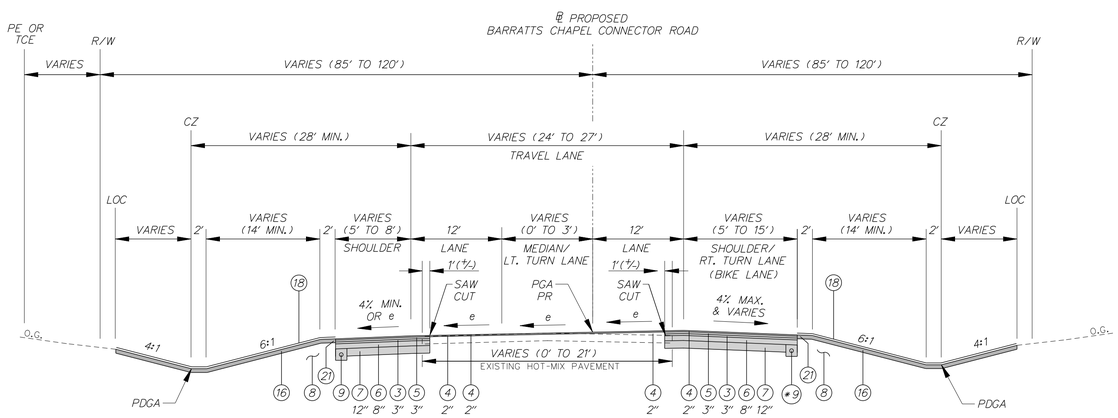


TYPICAL NORMAL SECTION – PROPOSED BARRATTS CHAPEL ROAD
STATION 713+35.53 TO 716+07.31

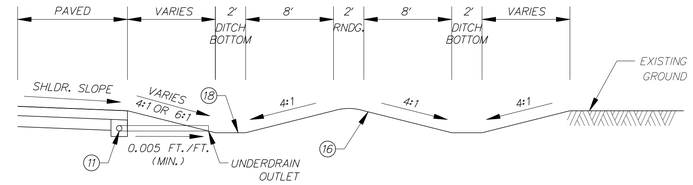


TYPICAL SUPERELEVATION SECTION – PROPOSED BARRATTS CHAPEL ROAD
STATION 704+39.08 TO 713+35.53

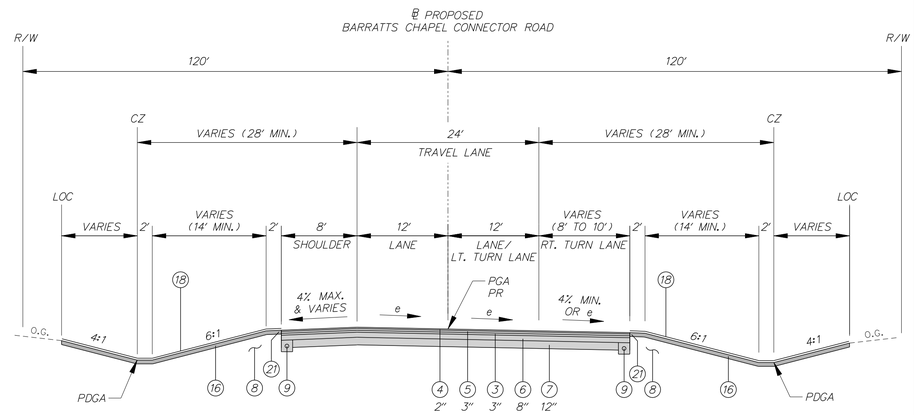
* UNDERDRAIN SHALL NOT BE INSTALLED BETWEEN STATION 702+50 TO STATION 709+30 OFFSET RIGHT.



TYPICAL SUPERELEVATION SECTION – PROPOSED BARRATTS CHAPEL ROAD
STATION 700+00.00 TO 704+39.08



TYPICAL SIDE SLOPE DITCH DETAIL
STATION 708+00 TO 712+25
STATION 812+00 TO 815+42



TYPICAL SUPERELEVATION SECTION – PROPOSED BARRATTS CHAPEL ROAD
STATION 716+07.31 TO 723+15.99

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

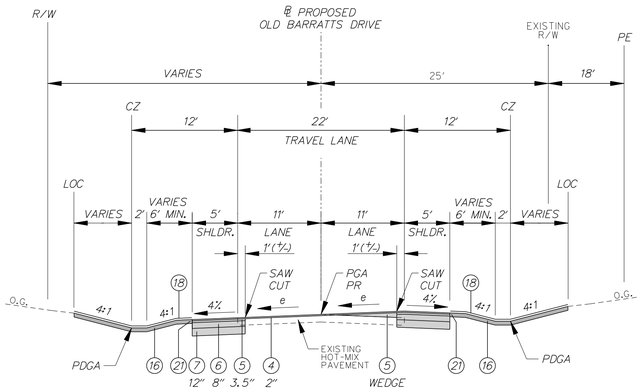
PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

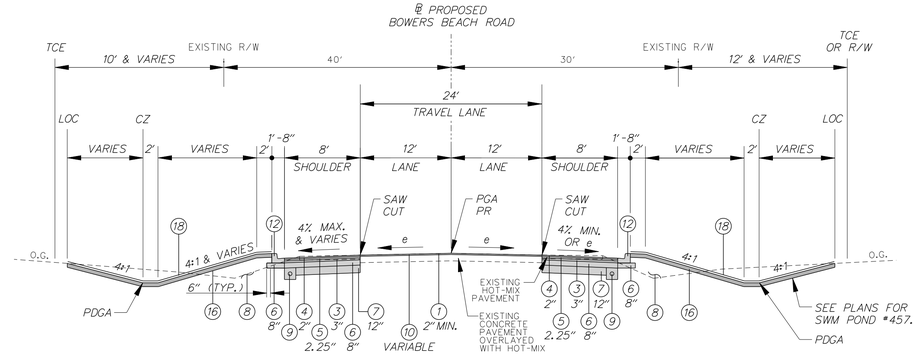
1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

1/6/2015 G:\PROJECTS\03517.00 (DELDOT AGMT 1223 DOTS Open End)\03517.16 SR1, LITTLE HEAVEN FINAL DESIGN\DGN Files\ts01.dgn 5:02:54 PM



TYPICAL SUPERELEVATION SECTION – OLD BARRATTS DRIVE

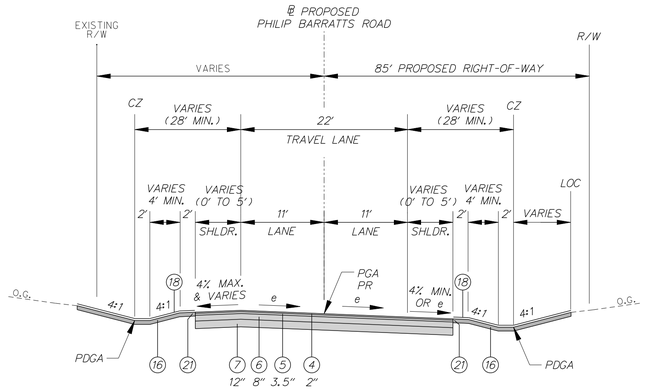
STATION 1600+00 TO 1603+30



TYPICAL NORMAL SECTION – PROPOSED BOWERS BEACH ROAD

STATION 916+92.14 TO 923+48.50

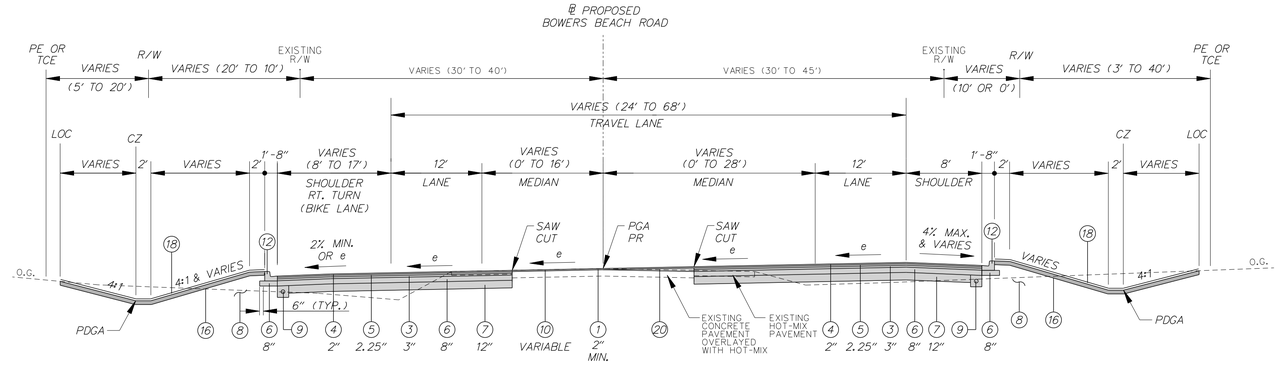
SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR DITCH LOCATIONS AND GRADING DETAILS BEHIND THE CURB.



TYPICAL SUPERELEVATION SECTION – PHILIP BARRATTS ROAD

STATION 809+00.00 TO 815+57.66

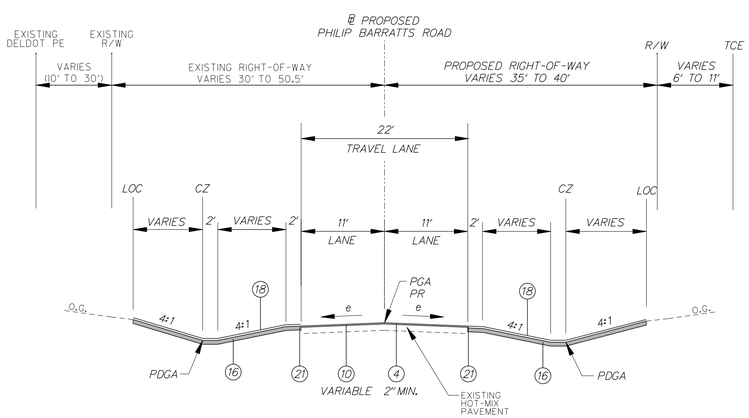
CONTRACTOR SHALL USE THIS PAVEMENT SECTION TO CONSTRUCT EMERGENCY VEHICLE ENTRANCE FROM SR1 (NOT CROSSOVER CONSTRUCTION.)



TYPICAL SUPERELEVATION SECTION – PROPOSED BOWERS BEACH ROAD

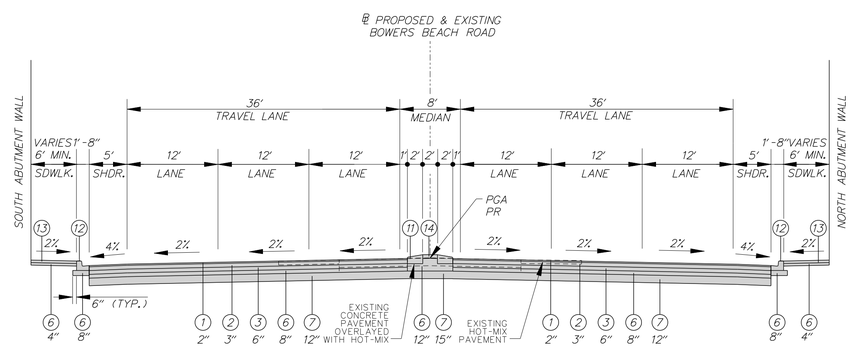
STATION 904+05.00 TO 916+92.13

SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR DITCH LOCATIONS AND GRADING DETAILS BEHIND THE CURB.



TYPICAL NORMAL SECTION – PHILIP BARRATTS ROAD

STATION 798+94.71 TO 808+99.99



TYPICAL NORMAL SECTION – PROPOSED BOWERS BEACH ROAD

STATION 901+28.60 TO 902+13.13

CONTRACTOR SHALL PLACE 5" OF TYPE B HOT-MIX WITH NO TYPE C IN INITIAL PHASES. IN FINAL PHASE, CONTRACTOR SHALL MILL 2" AND OVERLAY WITH 2" OF TYPE C HOT-MIX.

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION

PDGA - PROFILE DITCH GRADE APPLICATION

PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
4. CONTRACTOR SHALL TEST ROLL ALL SUBGRADE SOIL PRIOR TO THE PLACEMENT OF THE SUBBASE COURSE PER STANDARD SPECIFICATION 202.02. ALL UNSUITABLE MATERIAL FOUND SHALL BE EXCAVATED TO THE DEPTH OF STABLE SOIL, OR AS DIRECTED BY THE ENGINEER, AND BACKFILLED WITH APPROVED MATERIAL. THE CONTRACTOR SHALL COMPACT ALL MATERIALS TO MEET THE DELDOT STANDARD SPECIFICATIONS.
5. WITHIN THE MEDIAN, SUBBASE SOIL SHALL BE CONSTRUCTED TO MATCH CROSS SLOPES WITH THE FUTURE LANES.
6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. SEE SUPERELEVATION TRANSITION SHEETS FOR THE DESIGNED SUPERELEVATIONS OF THE PAVEMENT.
8. SEE GRADES AND GEOMETRICS SHEETS FOR FURTHER DETAILS WITHIN THE LIMITS OF THE INTERSECTIONS.
9. SEE CONSTRUCTION PLANS FOR PLACEMENT OF GUARDRAIL AND CONCRETE BARRIERS.
10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
11. SEE CROSS SECTIONS AND GRADES AND GEOMETRIC SHEETS FOR WALL BIFURCATION LIMITS.
12. PROFILE HOT-MIX MILLING SHALL NOT EXCEED 2" IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
13. EXISTING PAVEMENT SHALL NOT REQUIRE MILLING IF THE WARM MIX ASPHALT BEING PLACED EXCEEDS 4 INCHES IN DEPTH, OR AS DIRECTED BY THE ENGINEER.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

TYPICAL SECTIONS

SHEET NO. 25

TOTAL SHTS. 641

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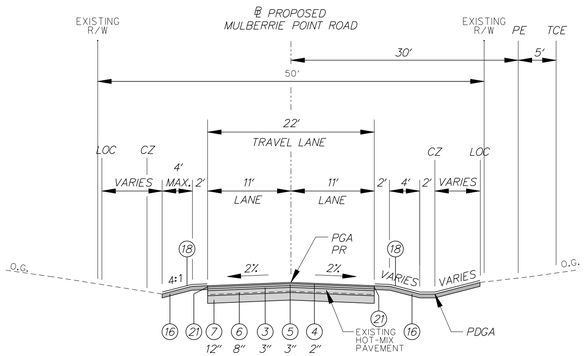
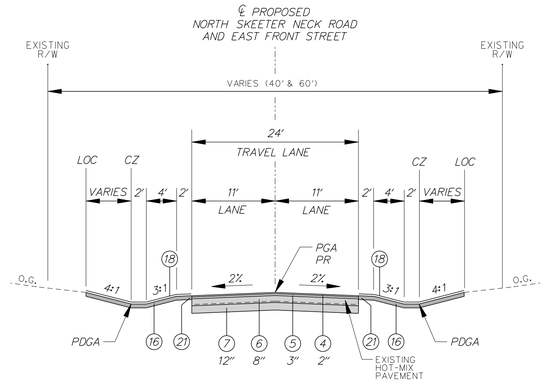
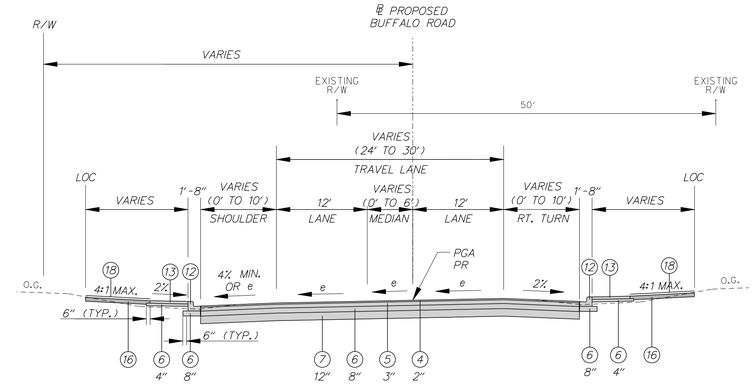


TYPICAL NORMAL SECTION – MULBERRIE POINT ROAD
STATION 1100+50.88 TO 1104+70.74



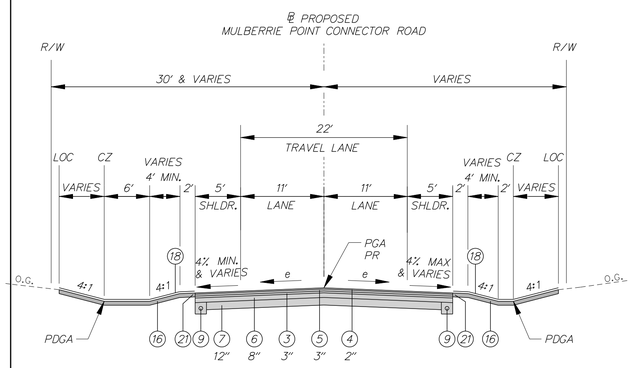
TYPICAL NORMAL FULL DEPTH SECTION
NORTH SKEETER NECK ROAD ENTRANCE
EAST FRONT STREET

CONTRACTOR SHALL USE THESE PAVEMENT DEPTHS TO CONSTRUCT CELL TOWER ENTRANCE AT STATION 452+50 LT.

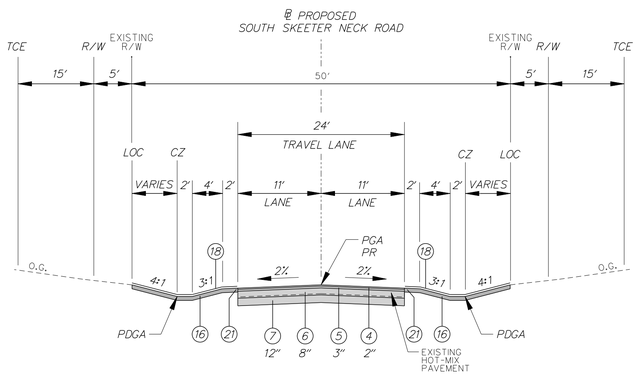


TYPICAL SUPERELEVATION FULL DEPTH SECTION – BUFFALO ROAD
STATION 1306+50.01 TO 1309+54.00

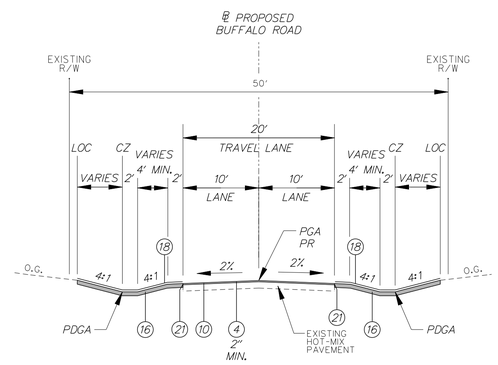
CONTRACTOR SHALL USE THESE PAVEMENT DEPTHS TO CONSTRUCT HIGH POINT ENTRANCE AT STATION 1301+50 RT.



TYPICAL SUPERELEVATION SECTION – MULBERRIE POINT CONNECTOR ROAD
STATION 1001+25.41 TO 1005+30.68



TYPICAL NORMAL FULL DEPTH SECTION – SOUTH SKEETER NECK ROAD
STATION 1501+53.90 TO 1504+25.00



TYPICAL NORMAL MILL & OVERLAY SECTION – BUFFALO ROAD
STATION 1300+00.00 TO 1306+50.00

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
5. ITEM 401810 - WMA, SUPERPAVE TYPE B, 160 GYRATIONS, PG 64-22
6. ITEM 302007 - GRADED AGGREGATE BASE COURSE, TYPE B
7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
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16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
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19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
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    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
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CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
3. PERFORATED PIPE UNDERDRAIN SHALL MAINTAIN .005% MINIMUM SLOPE IN ALL APPLICATIONS.
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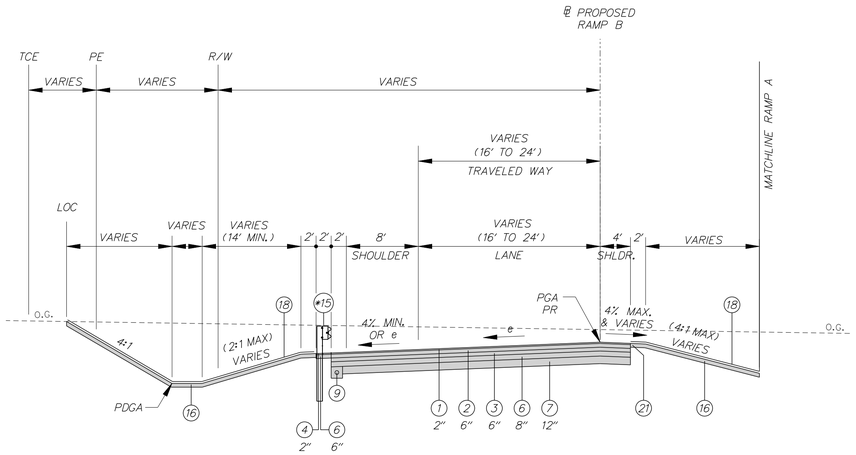
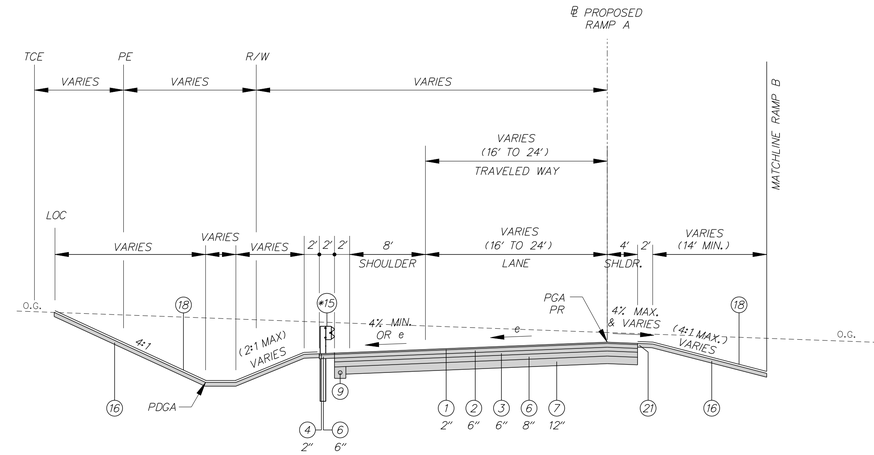


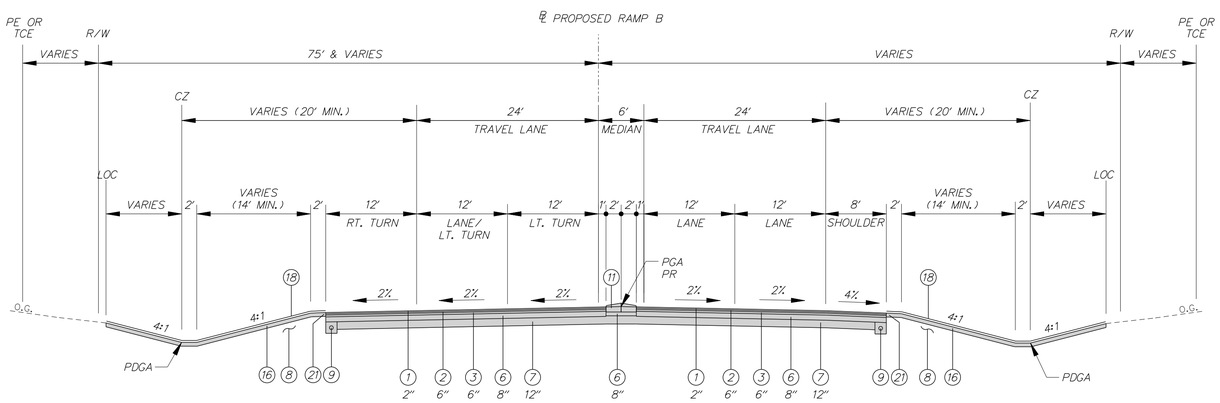
TYPICAL SUPERELEVATION SECTION – RAMP B
STATION 1402+97.23 TO 1405+32.11

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.



TYPICAL SUPERELEVATION SECTION – RAMP A
STATION 1213+91.76 TO 1216+13.80

* SEE SCHEDULES FOR BARRIER TYPES, LIMITS, AND PLACEMENT.



TYPICAL NORMAL SECTION – RAMP A & RAMP B
STATION 1400+51.86 TO 1402+72.97

LEGEND

1. ITEM 401830 - WMA, SUPERPAVE, TYPE C, 160 GYRATIONS, PG 70-22 (NON-CARBONATE STONE)
2. ITEM 401813 - WMA, SUPERPAVE, TYPE B, 160 GYRATIONS, PG 70-22
3. ITEM 401819 - WMA, SUPERPAVE, BCBC, 160 GYRATIONS, PG 64-22
4. ITEM 401827 - WMA, SUPERPAVE TYPE C, 160 GYRATIONS, PG 64-22 (NON-CARBONATE STONE)
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7. ITEM 209001 - BORROW, TYPE A AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE A
8. ITEM 209006 - BORROW, TYPE F AND/OR EXCAVATED MATERIAL MEETING BORROW, TYPE F (IN FILL SECTIONS)
9. ITEM 715001 - PERFORATED PIPE UNDERDRAINS, 6"
10. ITEM 760507 - PROFILE MILLING, HOT-MIX
11. ITEM 701011 - PORTLAND CEMENT CONCRETE CURB, TYPE 2
12. ITEM 701022 - INTEGRAL PCC CURB & GUTTER, TYPE 3-8
13. ITEM 705001 - PCC SIDEWALK, 4"
14. ITEM 705002 - PCC SIDEWALK, 6"
15. ITEM 720050 - GALVANIZED STEEL BEAM GUARDRAIL, TYPE 1-31
16. ITEM 732002 OR 733002 - TOPSOIL OR TOPSOILING, 6"
    ITEM 734013 - PERMANENT GRASS SEEDING, DRY GROUND
18. ITEM 735535 - SOIL RETENTION BLANKET MULCH, TYPE 5
19. ITEM 727000 - RIGHT-OF-WAY FENCE (WHERE SHOWN ON PLANS)
20. ITEM 401824 - WMA, TYPE C, 160 GYR., PG 64-22, WEDGE OR
    ITEM 401825 - WMA, TYPE B, 160 GYR., PG 64-22, WEDGE
21. ITEM 401752 - SAFETY EDGE

FILL SLOPE RATIO CHART	
HEIGHT OF FILL	SLOPE RATIO
0' TO 5'	6:1
> 5' TO 10'	4:1
> 10' TO 15'	3:1
> 15'	2:1 WITH GUARDRAIL

CUT SLOPE RATIO CHART	
DEPTH OF CUT	SLOPE RATIO
0' TO 5'	4:1
> 5' TO 10'	3:1
> 10'	2:1

PR - POINT OF ROTATION
PDGA - PROFILE DITCH GRADE APPLICATION
PGA - PROFILE GRADE APPLICATION

MAXIMUM SINGLE LIFTS FOR THE FOLLOWING MATERIALS AFTER COMPACTION ARE:
2" = WARM-MIX, TYPE C
3" = WARM-MIX, TYPE B
6" = WARM-MIX, BCBC

NOTES:

1. MAXIMUM ALGEBRAIC DIFFERENCE OF CROSS SLOPES SHALL NOT EXCEED 8%.
2. THE CONTRACTOR SHALL SAWCUT FULL DEPTH 1' (+/-) INTO THE EXISTING HOT-MIX TRAVEL LANE FOR CONSTRUCTION OF THE PROPOSED FULL DEPTH PAVEMENT OR AS DIRECTED BY ENGINEER IN THE FIELD. WHERE PCC PAVEMENT IS IDENTIFIED, CONTRACTOR SHALL PRESERVE THE EXISTING EDGE OF THE CONCRETE AND CONSTRUCT THE PROPOSED PAVEMENT BOX ADJACENT TO THE EDGE.
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6. BORROW, TYPE A SHALL BE PLACED IN SUCCESSIVE LAYERS NOT TO EXCEED 8" IN DEPTH, LOOSE MEASUREMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
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10. HORIZONTAL CLEARANCE IS MEASURED TO THE POINT 1.5 FT. BEHIND THE BACK OF THE CURB, WHERE APPLICABLE.
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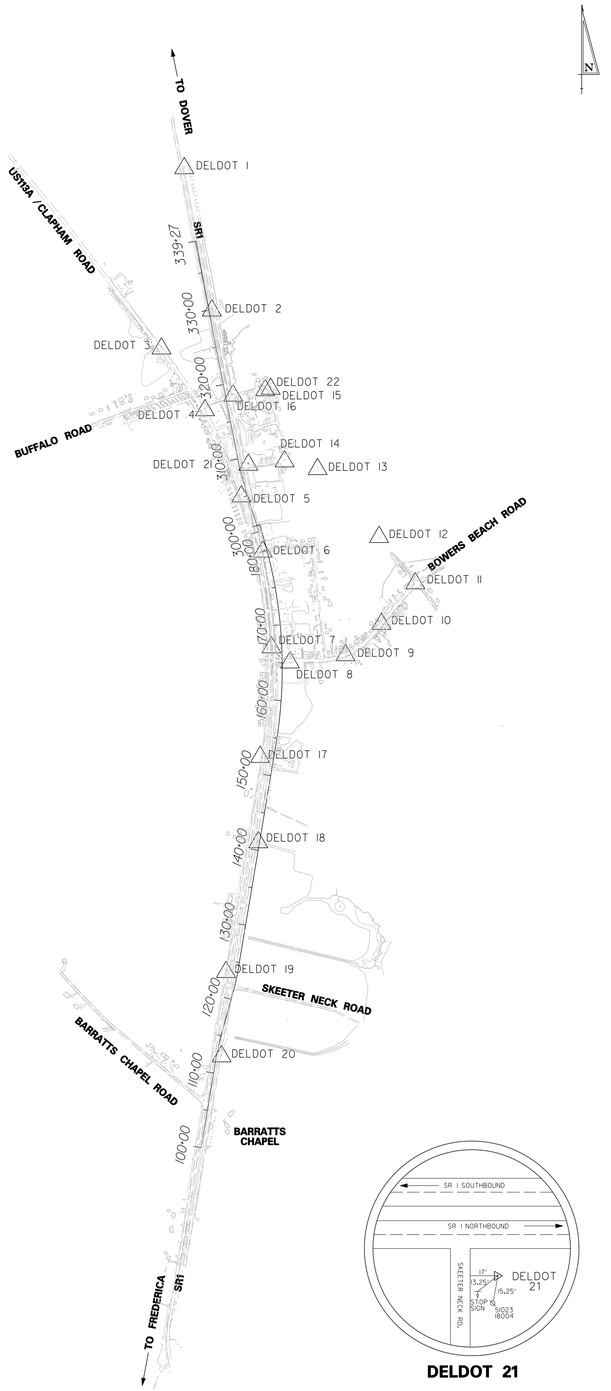
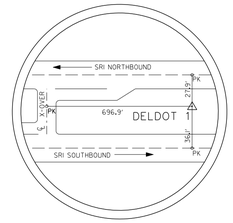
TRAVERSE POINT OVERVIEW



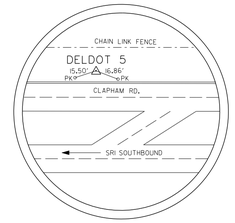
DELDOT 21

NORTHING: 382000.2739
EASTING: 644377.5761
ELEVATION: 17.545'



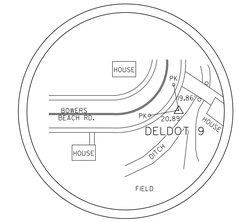
DELDOT 1 (GPS Disc)

NORTHING: 385914.3299
EASTING: 643531.4715
ELEVATION: 16.857'



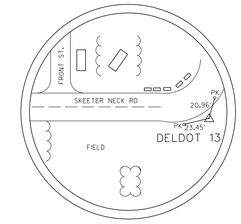
DELDOT 5

NORTHING: 381583.4236
EASTING: 644286.3588
ELEVATION: 23.040'



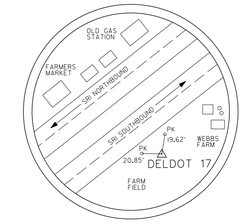
DELDOT 9

NORTHING: 379458.2948
EASTING: 645680.7999
ELEVATION: 26.832'



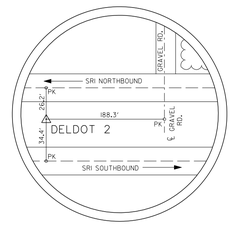
DELDOT 13

NORTHING: 381943.1543
EASTING: 645290.8173
ELEVATION: 23.322'



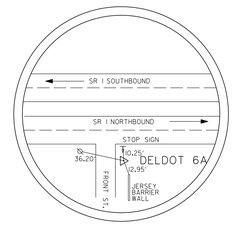
DELDOT 17

NORTHING: 378115.8344
EASTING: 644552.8740
ELEVATION: 31.477'



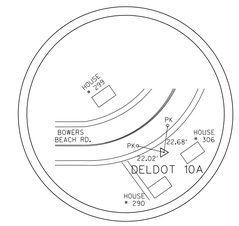
DELDOT 2 (GPS Disc)

NORTHING: 384036.3107
EASTING: 643895.7503
ELEVATION: 15.187'



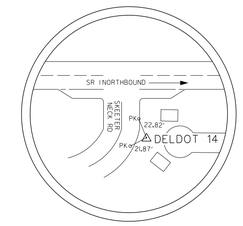
DELDOT 6A

NORTHING: 380857.8658
EASTING: 644572.5060
ELEVATION: 25.705'



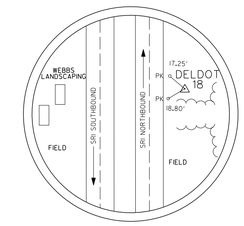
DELDOT 10A

NORTHING: 379871.6781
EASTING: 646154.6181
ELEVATION: 22.622'



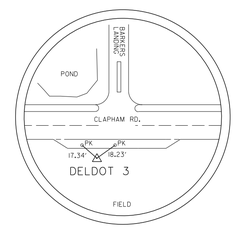
DELDOT 14

NORTHING: 382045.1107
EASTING: 644855.9344
ELEVATION: 19.882'



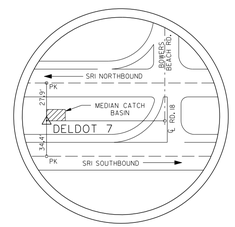
DELDOT 18

NORTHING: 377017.2987
EASTING: 644508.1338
ELEVATION: 34.997'



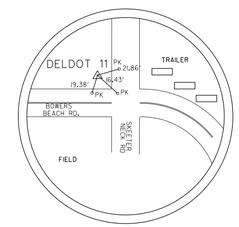
DELDOT 3

NORTHING: 383534.4330
EASTING: 643229.8907
ELEVATION: 19.60'



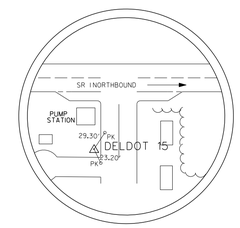
DELDOT 7 (GPS Disc)

NORTHING: 379590.5105
EASTING: 644682.8783
ELEVATION: 25.287'



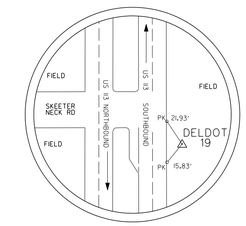
DELDOT 11

NORTHING: 380403.2372
EASTING: 646566.1022
ELEVATION: 23.172'



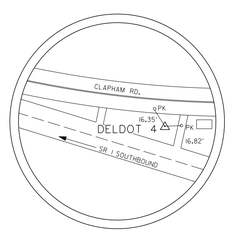
DELDOT 15

NORTHING: 382984.1747
EASTING: 644600.2159
ELEVATION: 13.192'



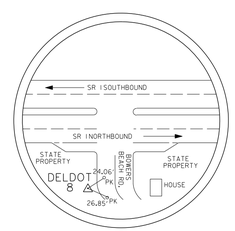
DELDOT 19

NORTHING: 375305.2808
EASTING: 644082.7679
ELEVATION: 32.187'



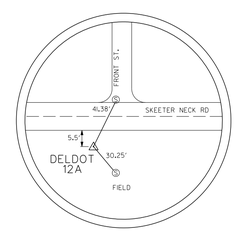
DELDOT 4

NORTHING: 382720.2758
EASTING: 643805.0879
ELEVATION: 17.16'



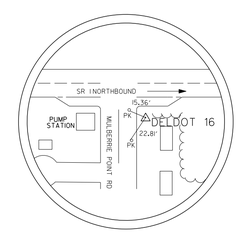
DELDOT 8

NORTHING: 379362.3395
EASTING: 644946.8664
ELEVATION: 27.910'



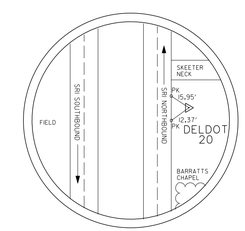
DELDOT 12A

NORTHING: 381018.7229
EASTING: 646123.0445
ELEVATION: 19.53'



DELDOT 16

NORTHING: 382913.1224
EASTING: 644176.0509
ELEVATION: 11.26'



DELDOT 20

NORTHING: 374192.7608
EASTING: 644024.4095
ELEVATION: 30.237'

NOTE:
ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

ALL POINTS ARE CENTURY ENGINEERING, INC. CAPPED REBAR UNLESS OTHERWISE NOTED.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

TRAVERSE POINTS

SHEET NO.
28
TOTAL SHTS.
641

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CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200289	500+00.00	0.00	370700.9688	643325.8788
200278	100+00.00	0.00	372966.5790	643755.7004
200311	505+00.00	0.00	371194.0760	643408.6151
200312	510+00.00	0.00	371687.1832	643491.3513
200313	515+00.00	0.00	372180.2904	643574.0876
200314	520+00.00	0.00	372673.3976	643656.8238
200315	525+00.00	0.00	373166.5048	643739.5601
200352	490+00.00	0.00	369731.5842	643484.5380
200353	490+50.82	0.00	369777.1465	643462.0276

NOTES:

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

2. EXISTING ALIGNMENTS DEVELOPED USING AS-BUILTS IN CONTRACTS NO. 71-05-004, 81-109-02, 64-01-020, 919, AND 371.

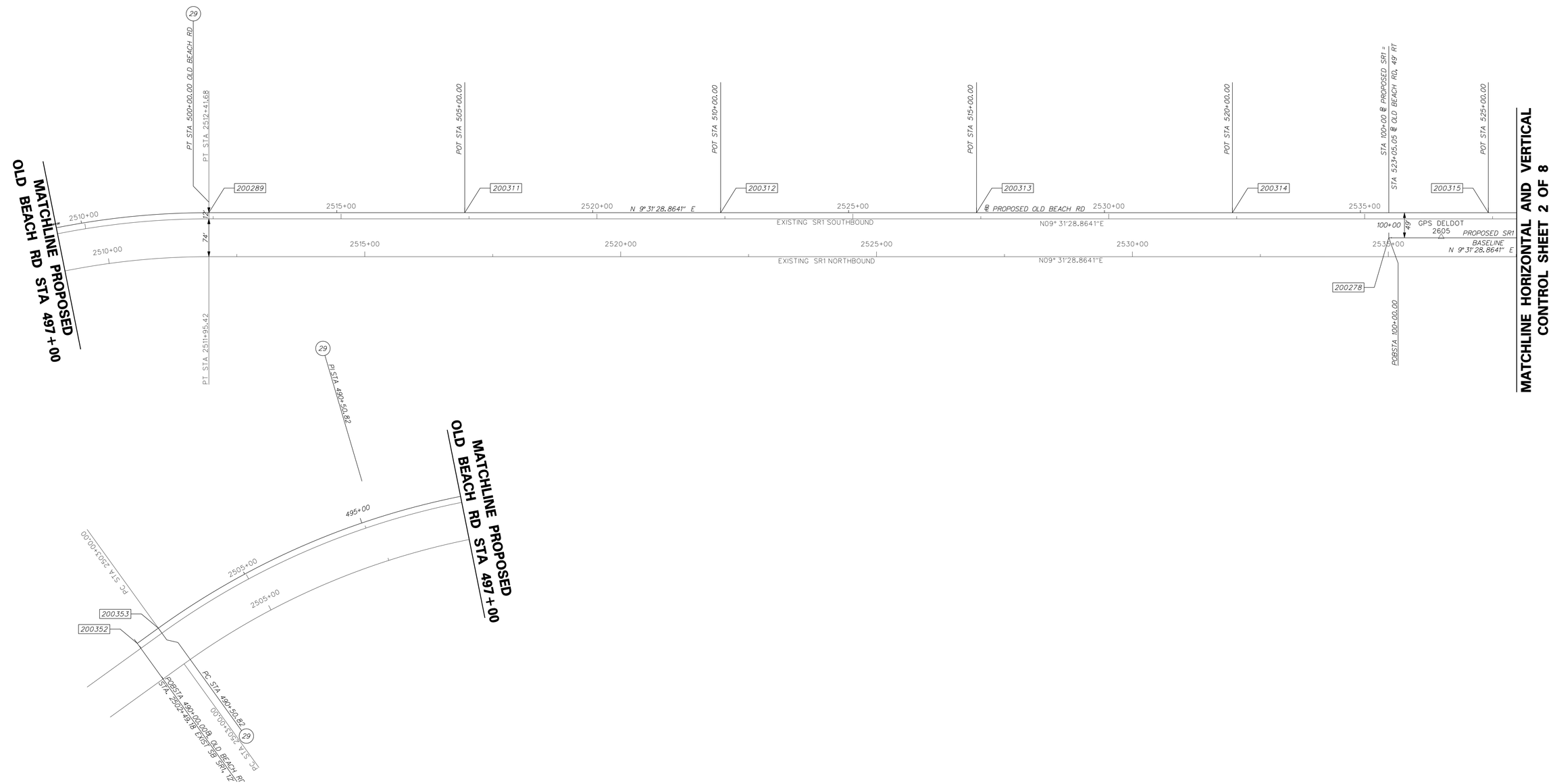
CURVE (29)
(PROPOSED OLD BEACH ROAD)

PC (200353)	490+50.8197	369777.1465	643462.0276
PI ( )	495+41.4934	370217.0593	643244.6858
CC (200354)		370449.7153	644823.3468
PT (200355)	500+00.0000	370700.9688	643325.8788

Radius: 1518.4000
Delta: 35°49'00.0000" Right
Degree of Curvature(Arc): 3°46'24.3524"
Length: 949.1803
Tangent: 490.6737
Chord: 933.8009
Middle Ordinate: 73.5669
External: 77.3128
Tangent Direction: N 26°17'31.1359" W
Radial Direction: N 63°42'28.8641" E
Chord Direction: N 8°23'01.1359" W
Radial Direction: S 80°28'31.1359" E
Tangent Direction: N 9°31'28.8641" E

HORIZONTAL / VERTICAL CONTROL DATA

POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
DELDOT 2605	101+02.46	-1.68	373067.9022	643770.9980	26.78'



MATCHLINE HORIZONTAL AND VERTICAL CONTROL SHEET 2 OF 8

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 100 200 300 FEET	SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION	CONTRACT T200412202	BRIDGE NO. -	HORIZONTAL AND VERTICAL CONTROL SHEET 1 OF 8
				COUNTY KENT	DESIGNED BY: SFP	SHEET NO. 29
					CHECKED BY: WFC	TOTAL SHTS. 641

HORIZONTAL / VERTICAL CONTROL DATA

POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
DELDOT 19	546+66.26	-27.65	375305.2808	644082.7679	32.187'
DELDOT 20	112+54.94	61.46	374192.7608	644024.4095	30.237'

CURVE 1 (PROPOSED SR1 CENTERLINE)

PC (200280)	111+96.8015	374146.8683	643953.8190
PI (200281)	113+51.4718	374299.4033	643979.4308
CC ( )		373650.0996	646912.4032
PT (200282)	115+05.8684	374448.4956	644020.5935

Radius: 3000.0000
Delta: 5°54'09.8714" Right
Degree of Curvature(Arc): 1°54'35.4935"
Length: 309.0669
Tangent: 154.6703
Chord: 308.9302
Middle Ordinate: 3.9792
External: 3.9845
Tangent Direction: N 9°31'53.3470" E
Radial Direction: S 80°28'06.6530" E
Chord Direction: N 12°28'58.2827" E
Radial Direction: S 74°33'56.7816" E
Tangent Direction: N 15°26'03.2184" E

CURVE 2 (OLD BEACH ROAD)

PC (200291)	536+81.0036	374331.2104	643935.0855
PI (200292)	537+71.1065	374420.0694	643950.0056
CC ( )		373503.2626	648866.0593
PT (200293)	538+61.1899	374508.3332	643968.1175

Radius: 5000.0000
Delta: 2°03'53.2183" Right
Degree of Curvature(Arc): 1°08'45.2961"
Length: 180.1863
Tangent: 90.1029
Chord: 180.1765
Middle Ordinate: 0.8117
External: 0.8118
Tangent Direction: N 9°31'53.3470" E
Radial Direction: S 80°28'06.6530" E
Chord Direction: N 10°33'49.9561" E
Radial Direction: S 78°24'13.4347" E
Tangent Direction: N 11°35'46.5653" E

CURVE 3 (OLD BEACH ROAD)

PC (200294)	540+14.0448	374658.0682	643998.8436
PI (200295)	541+04.1477	374746.3319	644016.9555
CC ( )		375663.1387	639100.9018
PT (200296)	541+94.2311	374835.1909	644031.8756

Radius: 5000.0000
Delta: 2°03'53.2183" Left
Degree of Curvature(Arc): 1°08'45.2961"
Length: 180.1863
Tangent: 90.1029
Chord: 180.1765
Middle Ordinate: 0.8117
External: 0.8118
Tangent Direction: N 11°35'46.5653" E
Radial Direction: S 78°24'13.4347" E
Chord Direction: N 10°33'49.9561" E
Radial Direction: S 80°28'06.6531" E
Tangent Direction: N 9°31'53.3469" E

CURVE 4 (SR1 CENTERLINE)

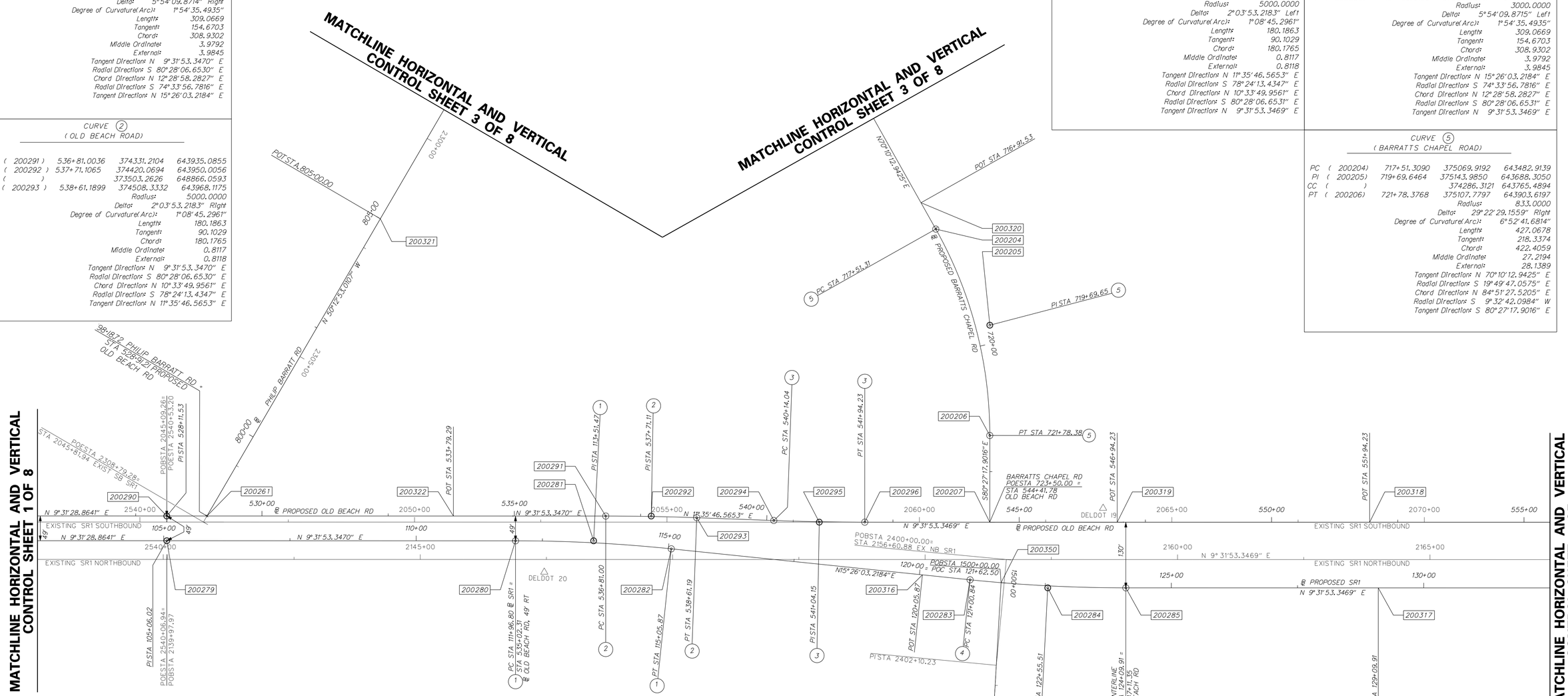
PC (200283)	121+00.8440	375022.0144	644178.9355
PI (200284)	122+55.5143	375171.1067	644220.0982
CC ( )		375820.4104	641287.1257
PT (200285)	124+09.9109	375323.6417	644245.7100

Radius: 3000.0000
Delta: 5°54'09.8715" Left
Degree of Curvature(Arc): 1°54'35.4935"
Length: 309.0669
Tangent: 154.6703
Chord: 308.9302
Middle Ordinate: 3.9792
External: 3.9845
Tangent Direction: N 15°26'03.2184" E
Radial Direction: S 74°33'56.7816" E
Chord Direction: N 12°28'58.2827" E
Radial Direction: S 80°28'06.6531" E
Tangent Direction: N 9°31'53.3469" E

CURVE 5 (BARRATTS CHAPEL ROAD)

PC (200204)	717+51.3090	375069.9192	643482.9139
PI (200205)	719+69.6464	375143.9850	643688.3050
CC ( )		374286.3121	643765.4894
PT (200206)	721+78.3768	375107.7797	643903.6197

Radius: 833.0000
Delta: 29°22'29.1559" Right
Degree of Curvature(Arc): 6°52'41.6814"
Length: 427.0678
Tangent: 218.3374
Chord: 422.4059
Middle Ordinate: 27.2194
External: 28.1389
Tangent Direction: N 70°10'12.9425" E
Radial Direction: S 19°49'47.0575" E
Chord Direction: N 84°51'27.5205" E
Radial Direction: S 9°32'42.0984" W
Tangent Direction: S 80°27'17.9016" E



CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200204	717+51.31	0.00	375069.9192	643482.9139
200205	719+69.65	28.14	375143.9850	643688.3050
200206	721+78.38	0.00	375107.7797	643903.6197
200207	723+50.00	0.00	375079.3207	644072.8668
200261	798+18.72	0.00	373552.3202	643804.3039
200279	105+06.02	0.00	373465.6273	643839.4334
200280	111+96.80	0.00	374146.8683	643953.8190
200281	113+51.47	3.98	374299.4033	643979.4308
200282	115+05.87	0.00	374448.4956	644020.5935
200283	121+00.84	0.00	375022.0144	644178.9355
200284	122+55.51	3.98	375171.1067	644220.0982
200285	124+09.91	0.00	375323.6417	644245.7100
200290	528+11.53	0.00	373473.7368	643791.1092
200291	536+81.00	0.00	374331.2104	643935.0855
200292	537+71.11	0.81	374420.0694	643950.0056
200293	538+61.19	0.00	374508.3332	643968.1175
200294	540+14.05	0.00	374658.0682	643998.8436

CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200295	541+04.15	0.81	374746.3319	644016.9555
200296	541+94.23	0.00	374835.1909	644031.8756
200316	120+05.87	0.00	374930.4639	644153.6595
200317	129+09.91	0.00	375816.7391	644328.5048
200318	551+94.23	0.00	375821.3857	644197.4652
200319	546+94.23	0.00	375328.2883	644114.6704
200320	716+91.53	0.00	375049.6417	643426.6827
200321	805+00.00	0.00	373988.2805	643280.7746
200322	533+79.28	0.00	374033.6579	643885.1242
200350	1500+00.00	0.00	375081.6151	644194.7332
200351	1504+25.00	0.00	374987.2105	644609.1157

NOTES:

1.ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

2.EXISTING ALIGNMENTS DEVELOPED USING AS-BUILTS IN CONTRACTS NO. 71-05-004, 81-109-02, 919, AND 371.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 100 200 300 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

HORIZONTAL AND VERTICAL CONTROL SHEET 2 OF 8

SHEET NO. 30
TOTAL SHTS. 641

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CURVE 6
(PHI LI P BARRATT ROAD)

PC (200262)	811+45.3632	374401.2563	642784.8465
PI (200263)	813+10.9079	374507.1904	642657.6340
CC ( )		374670.2131	643008.8157
PT (200264)	814+54.6251	374672.7307	642658.8248

Radius: 350.0000
Delta: 50°37'36.7024" Right
Degree of Curvature(Arc): 16°22'12.8018"
Length: 309.2619
Tangent: 165.5446
Chord: 299.2988
Middle Ordinate: 33.6062
External: 37.1757
Tangent Direction: N 50°12'53.0107" W
Radial Direction: N 39°47'06.9893" E
Chord Direction: N 24°54'04.6595" W
Radial Direction: S 89°35'16.3083" E
Tangent Direction: N 0°24'43.6917" E

CURVE 7
(BARRATTS CHAPEL ROAD)

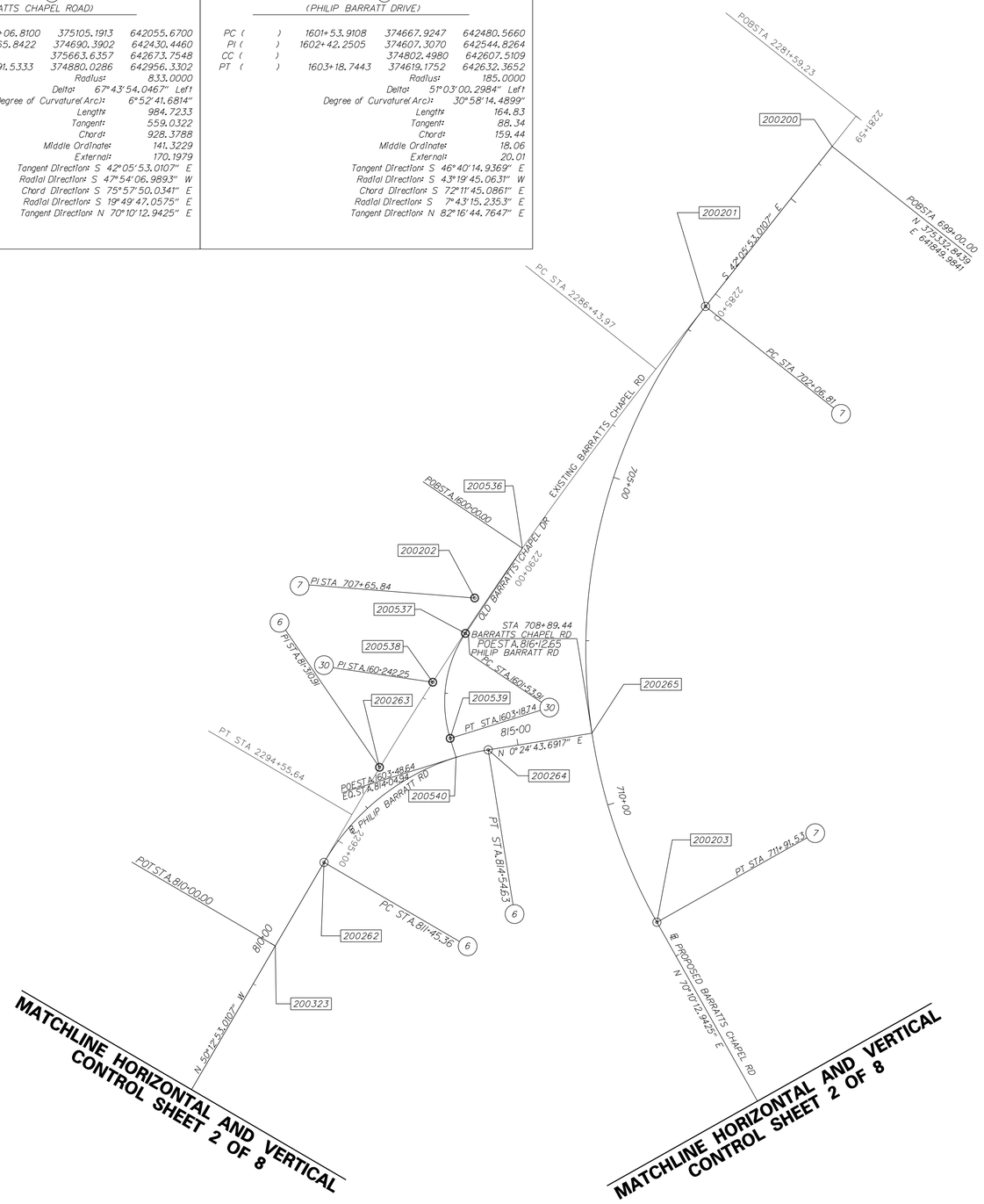
PC (200201)	702+06.8100	375105.1913	642055.6700
PI (200202)	707+65.8422	374690.3902	642430.4460
CC ( )		375663.6357	642673.7548
PT (200203)	711+91.5333	374880.0286	642956.3302

Radius: 833.0000
Delta: 67°43'54.0467" Left
Degree of Curvature(Arc): 6°52'41.6814"
Length: 984.7233
Tangent: 559.0322
Chord: 928.3788
Middle Ordinate: 141.3229
External: 170.1979
Tangent Direction: S 42°05'53.0107" E
Radial Direction: S 47°54'06.9893" W
Chord Direction: S 75°57'50.0341" E
Radial Direction: S 19°49'47.0575" E
Tangent Direction: N 70°10'12.9425" E

CURVE 30
(PHILIP BARRATT DRIVE)

PC ( )	1601+53.9108	374667.9247	642480.5660
PI ( )	1602+42.2505	374607.3070	642544.8264
CC ( )		374802.4980	642607.5109
PT ( )	1603+18.7443	374619.1752	642632.3652

Radius: 185.0000
Delta: 51°03'00.2984" Left
Degree of Curvature(Arc): 30°58'14.4899"
Length: 164.83
Tangent: 88.34
Chord: 159.44
Middle Ordinate: 18.06
External: 20.01
Tangent Direction: S 46°40'14.9369" E
Radial Direction: S 43°19'45.0631" W
Chord Direction: S 72°11'45.0861" E
Radial Direction: S 7°43'15.2353" E
Tangent Direction: N 82°16'44.7647" E



MATCHLINE HORIZONTAL AND VERTICAL CONTROL SHEET 2 OF 8

MATCHLINE HORIZONTAL AND VERTICAL CONTROL SHEET 2 OF 8

NOTES:

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

2. BASE LINES DEVELOPED USING AS-BUILTS IN CONTRACTS NO. 71-05-004, 81-109-02, 919, AND 371.

CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200200	699+00.00	0.00	375332.8439	641849.9841
200201	702+06.81	0.00	375105.1913	642055.6700
200202	707+65.84	170.19	374690.3902	642430.4460
200203	711+91.53	0.00	374880.0286	642956.3302
200262	811+45.36	0.00	374401.2563	642784.8465
200263	813+10.91	37.17	374507.1904	642657.6340
200264	814+54.63	0.00	374672.7307	642658.8248
200265	816+12.65	0.00	374830.7499	642659.9615
200323	810+00.00	0.00	374308.2366	642896.5506
200536	1600+00.00	0.00	374733.5366	642368.6077
200537	1601+53.91	0.00	374667.9247	642480.5660
200538	1602+42.25	20.01	374607.3070	642544.8264
200539	1603+18.74	0.00	374619.1752	642632.3652
200540	1603+48.64	0.00	374623.1915	642661.9888

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 100 200 300 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

HORIZONTAL AND VERTICAL CONTROL SHEET 3 OF 8

SHEET NO. 31
TOTAL SHTS. 641

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CURVE 8 (LITTLE HEAVEN ROAD)

PC (200227)	401+00.0000	376600.1116	644509.7249
PI (200228)	401+87.1897	376686.0976	644524.1626
CC ( )		376379.8774	645821.3639
PT (200229)	402+74.1302	376769.4628	644549.7023

Radius: 1330.0000
Delta: 7° 30' 05.2129" Right
Degree of Curvature(Arc): 4° 18' 28.6320"
Length: 174.1302
Tangent: 87.1897
Chord: 174.0059
Middle Ordinate: 2.8487
External: 2.8548
Tangent Direction: N 9° 31' 53.3469" E
Radial Direction: S 80° 28' 06.6531" E
Chord Direction: N 13° 16' 55.9534" E
Radial Direction: S 72° 58' 01.4402" E
Tangent Direction: N 17° 01' 58.5598" E

CURVE 9 (LITTLE HEAVEN ROAD)

PC (200230)	407+20.1968	377195.9634	644680.3647
PI (200231)	408+07.3865	377279.3287	644705.9044
CC ( )		377585.5488	643408.7031
PT (200232)	408+94.3270	377365.3147	644720.3421

Radius: 1330.0000
Delta: 7° 30' 05.2129" Left
Degree of Curvature(Arc): 4° 18' 28.6320"
Length: 174.1302
Tangent: 87.1897
Chord: 174.0059
Middle Ordinate: 2.8487
External: 2.8548
Tangent Direction: N 17° 01' 58.5598" E
Radial Direction: S 72° 58' 01.4402" E
Chord Direction: N 13° 16' 55.9534" E
Radial Direction: S 80° 28' 06.6531" E
Tangent Direction: N 9° 31' 53.3469" E

CURVE 10 (OLD BEACH ROAD)

PC (200297)	573+37.3723	377934.9403	644552.3470
PI (200298)	587+22.3622	379300.8101	644781.6869
CC ( )		379200.0445	637017.8191
PT (200299)	600+77.5936	380660.2677	644516.9756

Radius: 7640.0000
Delta: 20° 33' 00.5241" Left
Degree of Curvature(Arc): 0° 44' 59.8011"
Length: 2740.2212
Tangent: 1384.9899
Chord: 2725.5570
Middle Ordinate: 122.5247
External: 124.5217
Tangent Direction: N 9° 31' 53.3469" E
Radial Direction: S 80° 28' 06.6531" E
Chord Direction: N 0° 44' 36.9151" W
Radial Direction: N 78° 58' 52.8228" E
Tangent Direction: N 11° 01' 07.1772" W

CURVE 11 (PROPOSED SR1 CENTERLINE)

PC (200286)	154+13.5206	378285.7858	644743.0764
PI (200287)	169+12.1724	379763.7484	644991.2375
CC ( )		379295.8822	638727.2884
PT (200288)	183+52.6135	381188.4461	645526.2712

Radius: 6100.0000
Delta: 27° 36' 22.2004" Left
Degree of Curvature(Arc): 0° 56' 21.3903"
Length: 2939.0929
Tangent: 1498.6518
Chord: 2910.7458
Middle Ordinate: 176.1592
External: 181.3977
Tangent Direction: N 9° 31' 53.3469" E
Radial Direction: S 80° 28' 06.6531" E
Chord Direction: N 4° 16' 17.7533" W
Radial Direction: N 71° 55' 31.1466" E
Tangent Direction: N 18° 04' 28.8534" W

CURVE 12 (LITTLE HEAVEN ROAD)

PC (200233)	418+19.9506	378278.1597	644873.6157
PI (200234)	434+38.8541	379874.7139	645141.6893
CC ( )		379387.6098	638266.1109
PT (200235)	449+96.8650	381417.5276	644651.2055

Radius: 6700.0000
Delta: 27° 10' 03.8273" Left
Degree of Curvature(Arc): 0° 51' 18.5792"
Length: 3176.9144
Tangent: 1618.9035
Chord: 3147.2364
Middle Ordinate: 187.4179
External: 192.8114
Tangent Direction: N 9° 31' 53.3469" E
Radial Direction: S 80° 28' 06.6531" E
Chord Direction: N 4° 03' 08.5667" W
Radial Direction: N 72° 21' 49.5196" E
Tangent Direction: N 17° 38' 10.4804" W

NOTES:

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

2. EXISTING ALIGNMENTS DEVELOPED USING AS-BUILTS IN CONTRACTS NO. 71-05-004, 81-109-02, 919, AND 371.

HORIZONTAL / VERTICAL CONTROL DATA

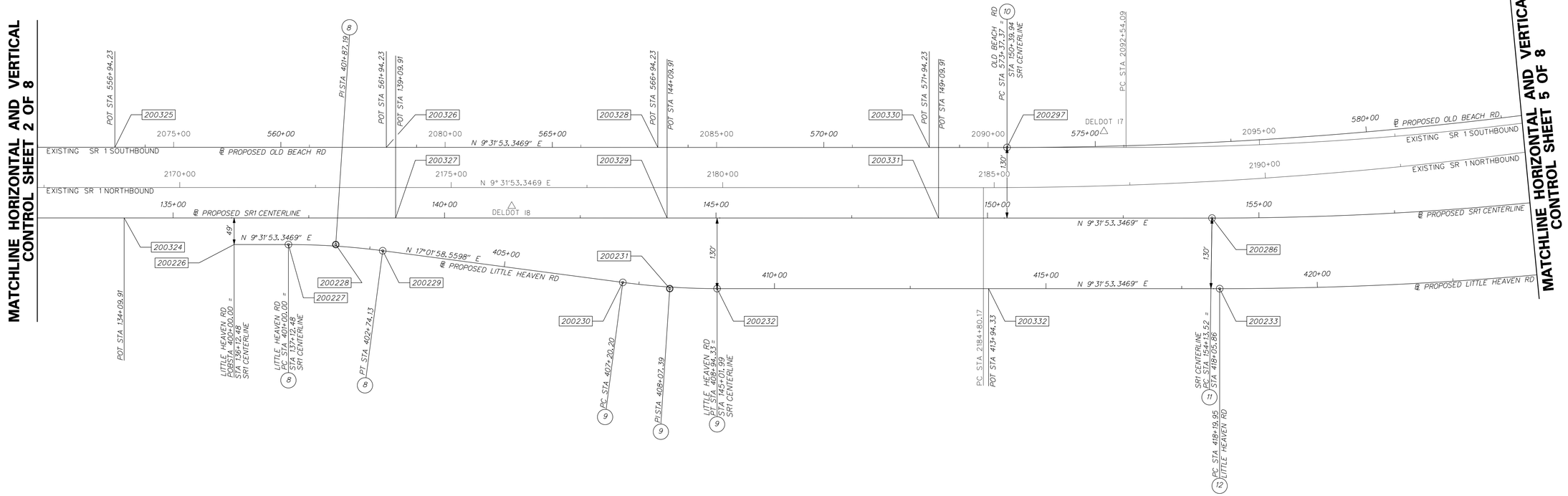
POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
DELDOT 17	141+23.68	-21.72	378115.8344	644552.8740	31.477'
DELDOT 18	575.16.51	-27.34	377017.2987	644508.1338	34.997'

CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200226	400+00.00	0.00	376501.4921	644493.1659
200227	401+00.00	0.00	376600.1116	644509.7249
200228	401+87.19	2.85	376686.0976	644524.1626
200229	402+74.13	0.00	376769.4628	644549.7023
200230	407+20.20	0.00	377195.9634	644680.3647
200231	408+07.39	2.85	377279.3287	644705.9044
200232	408+94.39	0.00	377365.3147	644720.3421
200233	418+19.95	0.00	378278.1597	644873.6157
200286	154+13.52	0.00	378285.7858	644743.0764
200297	573+37.37	0.00	377934.9403	644552.3470
200324	134+09.91	0.00	376309.8365	644411.2996
200325	556+94.23	0.00	376314.4830	644280.2600
200326	561+94.23	0.00	376807.5804	644363.0547
200327	139+09.91	0.00	376802.9338	644494.0943
200328	566+94.23	0.00	377300.6778	644445.8495

CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200329	144+09.91	0.00	377296.0312	644576.8891
200330	571+94.23	0.00	377793.7752	644528.6443
200331	149+09.91	0.00	377789.1286	644659.6839
200332	413+94.32	0.00	377858.4120	644803.1369



DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 100 200 300 FEET	SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION	CONTRACT T200412202	BRIDGE NO. -	HORIZONTAL AND VERTICAL CONTROL SHEET 4 OF 8	SHEET NO. 32
				COUNTY KENT	DESIGNED BY: SFP		TOTAL SHTS. 641
					CHECKED BY: WFC		

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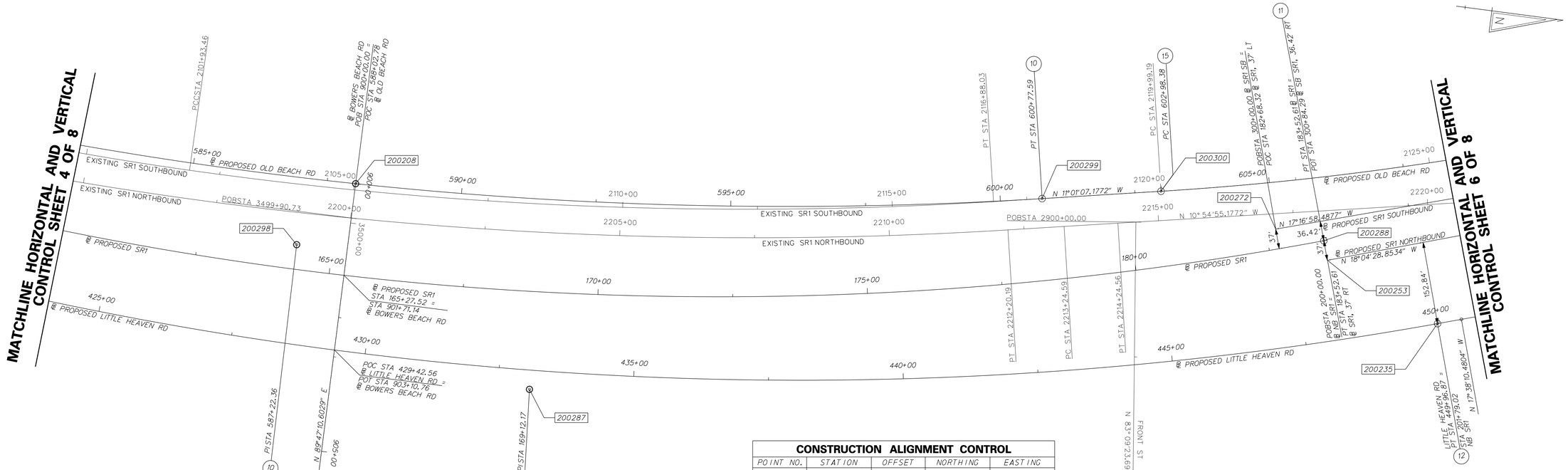

CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200208	900+00.00	0.00	379394.4720	644655.3447
200209	906+34.30	0.00	379396.8380	645289.6358
200210	910+84.53	100.81	379398.5175	645739.8701
200211	914+75.75	0.00	379746.9174	646025.0598
200212	920+03.58	0.00	380155.3575	646359.4015
200218	921+63.88	6.71	380279.4005	646460.9401
200219	923+23.44	0.00	380384.7836	646581.7340
200220	923+58.76	0.00	380408.0055	646608.3518
200234	434+38.85	192.81	379874.7139	645141.6893
200235	449+96.86	0.00	381417.5276	644651.2055
200253	200+00.00	0.00	381199.9256	644561.4454
200272	300+00.00	0.00	381097.1397	644516.5406
200287	169+12.17	181.40	379763.7484	644991.2375
200288	183+52.61	0.00	381188.4461	644526.2712
200298	587+22.36	124.52	379300.8101	644781.6869
200299	600+77.59	0.00	380660.2677	644516.9756
200300	602+98.38	0.00	380876.9857	644474.7766

HORIZONTAL / VERTICAL CONTROL DATA

POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
DELDOT 6A	180+18.59	-56.50	380857.8658	644572.5060	25.705'
DELDOT 7	589+97.18	34.99	379590.5105	644682.8783	25.287'
DELDOT 8	902+91.40	33.22	379362.3395	644946.8664	27.910'
DELDOT 9	910+27.70	22.26	379458.2948	645680.7999	26.832'
DELDOT 10A	916+54.61	21.24	379871.6781	646154.6181	22.622'
DELDOT 11	923+23.79	-24.18	380403.2372	646566.1022	23.172'

CURVE 1.0 (OLD BEACH ROAD)

PC (200297)	573+37.3723	377934.9403	644552.3470
PI (200298)	587+22.3622	379300.8101	644781.6869
CC (200298)		379200.0445	637017.8191
PT ( )	600+77.5936	380660.2677	644516.9756

Radius: 7640.0000
Delta: 20°33'00.5241" Left
Degree of Curvature(Arc): 0°44'59.8011"
Length: 2740.2212
Tangent: 1384.9899
Chord: 2725.5570
Middle Ordinate: 122.5247
External: 124.5217
Tangent Direction: N 9°31'53.3469" E
Radial Direction: S 80°28'06.6531" E
Chord Direction: N 0°44'36.9151" W
Radial Direction: N 78°58'52.8228" E
Tangent Direction: N 11°01'07.1772" W

CURVE 1.1 (PROPOSED SR1 CENTERLINE)

PC (200286)	154+13.5206	378285.7858	644743.0764
PI (200287)	169+12.1724	379763.7484	644991.2375
CC ( )		379295.8822	638727.2884
PT (200288)	183+52.6135	381188.4461	644526.2712

Radius: 6100.0000
Delta: 27°36'22.2004" Left
Degree of Curvature(Arc): 0°56'21.3903"
Length: 2939.0929
Tangent: 1498.6518
Chord: 2910.7458
Middle Ordinate: 176.1592
External: 181.3977
Tangent Direction: N 9°31'53.3469" E
Radial Direction: S 80°28'06.6531" E
Chord Direction: N 4°16'17.7533" W
Radial Direction: N 71°55'31.1466" E
Tangent Direction: N 18°04'28.8534" W

CURVE 1.2 (LITTLE HEAVEN ROAD)

PC (200233)	418+19.9506	378278.1597	644873.6157
PI (200234)	434+38.8541	379874.7139	645141.6893
CC ( )		379387.6098	638266.1109
PT (200235)	449+96.8650	381417.5276	644651.2055

Radius: 6700.0000
Delta: 27°10'03.8273" Left
Degree of Curvature(Arc): 0°51'18.5792"
Length: 3176.9144
Tangent: 1618.9035
Chord: 3147.2364
Middle Ordinate: 187.4179
External: 192.8114
Tangent Direction: N 9°31'53.3469" E
Radial Direction: S 80°28'06.6531" E
Chord Direction: N 4°03'08.5667" W
Radial Direction: N 72°21'49.5196" E
Tangent Direction: N 17°38'10.4804" W

CURVE 1.3 (BOWERS BEACH ROAD)

PC (200209)	906+34.2955	379396.8380	645289.6358
PI (200210)	910+84.5330	379398.5175	645739.8701
CC ( )		380351.8314	645286.0735
PT (200211)	914+75.7464	379746.9147	646025.0598

Radius: 955.0000
Delta: 50°29'00.0000" Left
Degree of Curvature(Arc): 5°59'58.4090"
Length: 841.4509
Tangent: 450.2375
Chord: 814.4950
Middle Ordinate: 91.1861
External: 100.8119
Tangent Direction: N 89°47'10.6029" E
Radial Direction: S 0°12'49.3971" E
Chord Direction: N 64°32'40.6029" E
Radial Direction: S 50°41'49.3971" E
Tangent Direction: N 39°18'10.6029" E

CURVE 1.4 (BOWERS BEACH ROAD)

PC (200212)	920+03.5814	380155.3575	646359.4015
PI (200218)	921+63.8836	380279.4005	646460.9401
CC ( )		378945.5240	647837.3741
PT (200219)	923+23.4361	380384.7836	646581.7340

Radius: 1910.0000
Delta: 9°35'41.7571" Right
Degree of Curvature(Arc): 2°59'59.2045"
Length: 319.8546
Tangent: 160.3021
Chord: 319.4810
Middle Ordinate: 6.6916
External: 6.7151
Tangent Direction: N 39°18'10.6029" E
Radial Direction: S 50°41'49.3971" E
Chord Direction: N 44°06'01.4814" E
Radial Direction: S 41°06'07.6400" E
Tangent Direction: N 48°53'52.3600" E

CURVE 1.5 (OLD BEACH ROAD)

PC (200300)	602+98.3817	380876.9857	644474.7766
PI (200301)	616+22.1266	382176.3273	644221.7710
CC ( )		379781.8183	638850.4092
PT (200302)	629+00.2255	383233.0276	643424.4724

Radius: 5730.0000
Delta: 26°00'59.4759" Left
Degree of Curvature(Arc): 0°59'59.7348"
Length: 2601.8437
Tangent: 1323.7449
Chord: 2579.5489
Middle Ordinate: 147.0454
External: 150.9183
Tangent Direction: N 11°01'07.1772" W
Radial Direction: N 78°58'52.8228" E
Chord Direction: N 24°01'36.9151" W
Radial Direction: N 52°57'53.3469" E
Tangent Direction: N 37°02'06.6531" W

NOTES:

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

2. EXISTING ALIGNMENTS DEVELOPED USING AS-BUILTS IN CONTRACTS NO. 71-05-004, 81-109-02, 919, AND 371.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 100 200 300 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

HORIZONTAL AND VERTICAL CONTROL SHEET 5 OF 8

SHEET NO. 33
TOTAL SHTS. 641

CURVE (16)
(PROPOSED SB SR1 CENTERLINE)

PC (200273)	306+33.9144	381702.4325	644328.2109
PI (200337)	307+98.0757	381859.1818	644279.4402
CC ( )		382593.7029	647192.7592
PT (200274)	309+61.9099	382020.3168	644248.0642

Radius: 3000.0000
Delta: 6°15'51.3105" Right
Degree of Curvature(Arc): 1°54'35.4935"
Length: 327.9955
Tangent: 164.1613
Chord: 327.8322
Middle Ordinate: 4.4814
External: 4.4881
Tangent Direction: N 17°16'58.4877" W
Radial Direction: N 72°43'01.5123" E
Chord Direction: N 14°09'02.8324" W
Radial Direction: N 78°58'52.8228" E
Tangent Direction: N 11°01'07.1772" W

CURVE (17)
(NB SR1 CENTERLINE)

PC (200254)	205+05.4004	381680.3860	644404.6417
PI (200255)	206+90.3605	381856.2187	644347.2567
CC ( )		382611.1551	647256.6005
PT (200256)	208+74.8528	382037.7690	644311.9055

Radius: 3000.0000
Delta: 7°03'21.6762" Right
Degree of Curvature(Arc): 1°54'35.4935"
Length: 369.4524
Tangent: 184.9600
Chord: 369.2190
Middle Ordinate: 5.6855
External: 5.6963
Tangent Direction: N 18°04'28.8534" W
Radial Direction: N 71°55'31.1466" E
Chord Direction: N 14°32'48.0153" W
Radial Direction: N 78°58'52.8228" E
Tangent Direction: N 11°01'07.1772" W

CURVE (18)
(LITTLE HEAVEN ROAD)

PC (200236)	454+14.5589	381815.5895	644524.6557
PI (200237)	455+24.6661	381920.5216	644491.2962
CC ( )		380906.6711	641665.6581
PT (200238)	456+34.6744	382022.7259	644450.3343

Radius: 3000.0000
Delta: 4°12'14.0309" Left
Degree of Curvature(Arc): 1°54'35.4935"
Length: 220.1156
Tangent: 110.1072
Chord: 220.0662
Middle Ordinate: 2.0186
External: 2.0199
Tangent Direction: N 17°38'10.4804" W
Radial Direction: N 72°21'49.5196" E
Chord Direction: N 19°44'17.4959" W
Radial Direction: N 68°09'35.4887" E
Tangent Direction: N 21°50'24.5113" W

NOTES:

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

2. EXISTING ALIGNMENTS DEVELOPED USING AS-BUILTS IN CONTRACTS NO. 71-05-004, 81-109-02, 919, AND 371.

CURVE (19)
(MULBERRIE CONNECTOR)

PC (200244)	1000+29.1420	382410.5661	644326.0461
PI (200245)	1001+14.5076	382451.9235	644400.7244
CC ( )		382541.7870	644253.3751
PT (200246)	1001+84.3596	382537.2500	644403.3065

Radius: 150.0000
Delta: 59°17'19.5126" Left
Degree of Curvature(Arc): 38°11'49.8708"
Length: 155.2176
Tangent: 85.3656
Chord: 148.3845
Middle Ordinate: 19.6332
External: 22.5899
Tangent Direction: N 61°01'19.3358" E
Radial Direction: S 28°58'40.6642" E
Chord Direction: N 31°22'39.5795" E
Radial Direction: S 88°16'00.1768" E
Tangent Direction: N 1°43'59.8232" E

CURVE (20)
(MULBERRIE CONNECTOR)

PC (200247)	1003+83.9462	382736.7453	644409.3434
PI (200248)	1004+26.1044	382778.8842	644410.6185
CC ( )		382745.0632	644134.4692
PT (200249)	1004+67.6112	382819.4699	644399.2118

Radius: 275.0000
Delta: 17°25'53.2762" Left
Degree of Curvature(Arc): 20°50'05.3841"
Length: 83.6650
Tangent: 42.1582
Chord: 83.3427
Middle Ordinate: 3.1756
External: 3.2127
Tangent Direction: N 1°43'59.8232" E
Radial Direction: S 88°16'00.1768" E
Chord Direction: N 6°58'56.8149" W
Radial Direction: N 74°18'06.5470" E
Tangent Direction: N 15°41'53.4530" W

CURVE (13)
(OLD BEACH ROAD)

PC (200300)	602+98.3817	380876.9857	644474.7766
PI (200301)	616+22.1266	382176.3273	644221.7710
CC ( )		379781.8183	638850.4092
PT (200302)	629+00.2255	383233.0276	643424.4724

Radius: 5730.0000
Delta: 26°00'59.4759" Left
Degree of Curvature(Arc): 0°59'59.7348"
Length: 2601.8437
Tangent: 1323.7449
Chord: 2579.5489
Middle Ordinate: 147.0454
External: 150.9183
Tangent Direction: N 11°01'07.1772" W
Radial Direction: N 78°58'52.8228" E
Chord Direction: N 24°01'36.9151" W
Radial Direction: N 52°57'53.3469" E
Tangent Direction: N 37°02'06.6531" W

CURVE (21)
(LITTLE HEAVEN ROAD)

PC (200239)	461+53.1852	382504.0208	644257.4388
PI (200240)	462+79.1588	382620.9526	644210.5744
CC ( )		382998.8050	645491.9786
PT (200241)	464+04.3830	382744.6039	644186.4972

Radius: 1330.0000
Delta: 10°49'17.3341" Right
Degree of Curvature(Arc): 4°18'28.6320"
Length: 251.1977
Tangent: 125.9736
Chord: 250.8245
Middle Ordinate: 5.9261
External: 5.9526
Tangent Direction: N 21°50'24.5113" W
Radial Direction: N 68°09'35.4887" E
Chord Direction: N 16°25'45.8443" W
Radial Direction: N 78°58'52.8228" E
Tangent Direction: N 11°01'07.1772" W

CURVE (22)
(RAMP A)

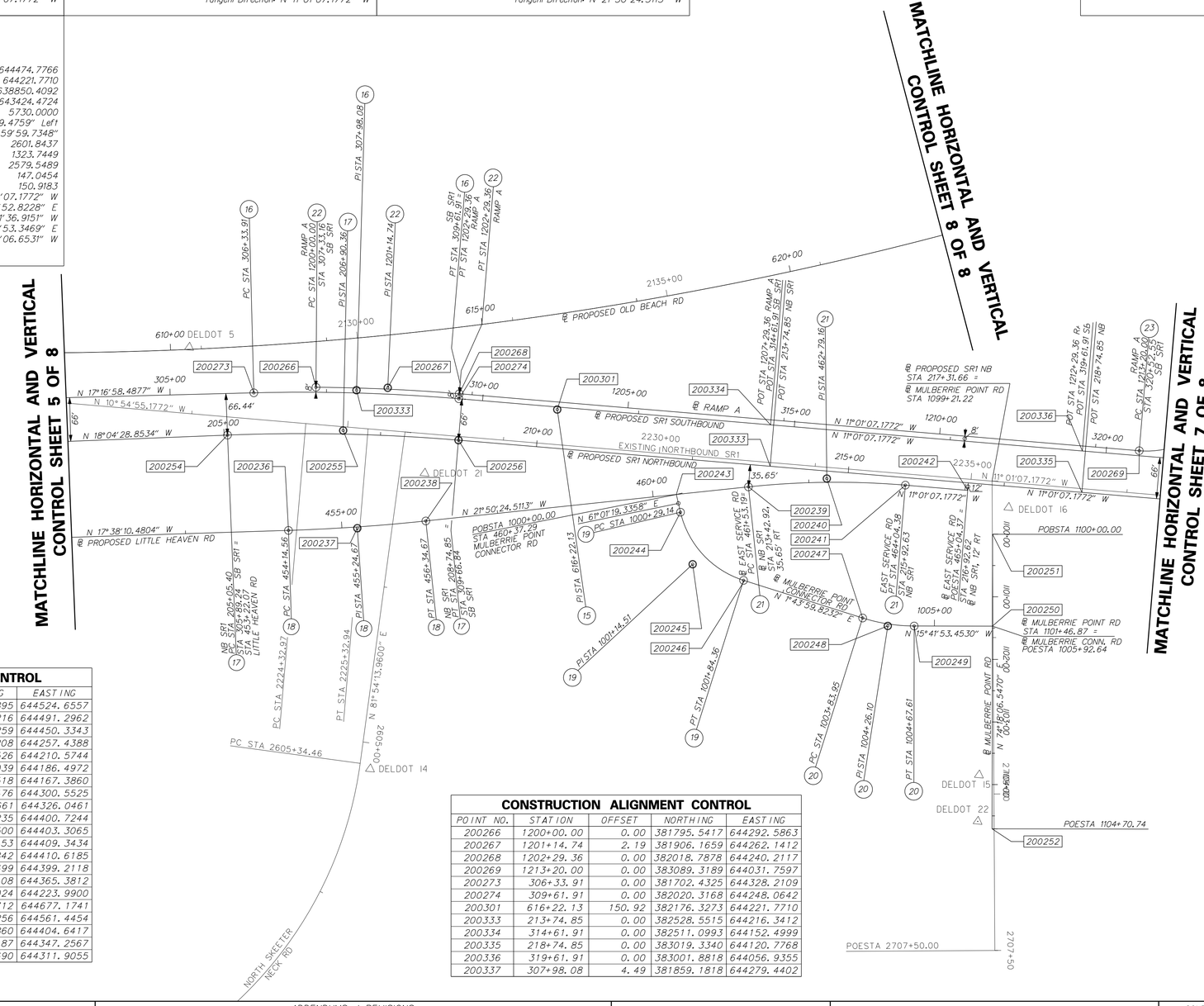
PC (200266)	1200+00.0000	381795.5417	644292.5863
PI (200267)	1201+14.7371	381906.1659	644262.1412
CC ( )		382593.7029	647192.7592
PT (200268)	1202+29.3630	382018.7878	644240.2117

Radius: 3008.0000
Delta: 4°22'07.8968" Right
Degree of Curvature(Arc): 1°54'17.2077"
Length: 229.3630
Tangent: 114.7371
Chord: 229.3074
Middle Ordinate: 2.1859
External: 2.1875
Tangent Direction: N 15°23'15.0740" W
Radial Direction: N 74°36'44.9260" E
Chord Direction: N 13°12'11.1256" W
Radial Direction: N 78°58'52.8228" E
Tangent Direction: N 11°01'07.1772" W

CURVE (23)
(RAMP A)

PC (200269)	1213+20.0000	383089.3189	644031.7597
PI (200270)	1215+54.5258	383319.5212	643986.9351
CC ( )		383061.7964	643890.4143
PT (200271)	1216+13.8011	383175.3961	643801.9208

Radius: 144.0000
Delta: 116°53'59.0298" Left
Degree of Curvature(Arc): 39°47'19.4488"
Length: 293.8011
Tangent: 234.5258
Chord: 245.4286
Middle Ordinate: 68.6528
External: 131.2060
Tangent Direction: N 11°01'07.1772" W
Radial Direction: N 78°58'52.8228" E
Chord Direction: N 69°28'06.6921" W
Radial Direction: N 37°55'06.2070" W
Tangent Direction: S 52°04'53.7930" W



CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200236	454+14.56	0.00	381815.5895	644524.6557
200237	455+24.67	2.02	381920.5216	644491.2962
200238	456+34.67	0.00	382022.7259	644450.3343
200239	461+53.19	0.00	382504.0208	644257.4388
200240	462+79.16	5.95	382620.9526	644210.5744
200241	464+04.38	0.00	382744.6039	644186.4972
200242	465+04.37	0.00	382842.7518	644167.3860
200243	1000+00.00	0.00	382396.4476	644300.5525
200244	1000+29.14	0.00	382410.5661	644326.0461
200245	1001+14.51	22.59	382451.9235	644400.7244
200246	1001+84.36	0.00	382537.2500	644403.3065
200247	1003+83.95	0.00	382736.7453	644409.3434
200248	1004+26.10	3.21	382778.8842	644410.6185
200249	1004+67.61	0.00	382819.4699	644399.2118
200250	1005+92.64	0.00	382939.8408	644365.3812
200251	1100+00.00	0.00	382900.1024	644223.9900
200252	1104+70.74	0.00	383027.4712	644677.1741
200253	200+00.00	0.00	381199.9256	644561.4454
200254	205+05.40	0.00	381680.3860	644404.6417
200255	206+90.36	5.70	381856.2187	644347.2567
200256	208+74.85	0.00	382037.7690	644311.9055

CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200266	1200+00.00	0.00	381795.5417	644292.5863
200267	1201+14.74	2.19	381906.1659	644262.1412
200268	1202+29.36	0.00	382018.7878	644240.2117
200269	1213+20.00	0.00	383089.3189	644031.7597
200273	306+33.91	0.00	381702.4325	644328.2109
200274	309+61.91	0.00	382020.3168	644248.0642
200301	616+22.13	150.92	382176.3273	644221.7710
200333	213+74.85	0.00	382528.5515	644216.3412
200334	314+61.91	0.00	382511.0993	644152.4999
200335	218+74.85	0.00	383019.3340	644120.7768
200336	319+61.91	0.00	383001.8818	644056.9355
200337	307+98.08	4.49	381859.1818	644279.4402

HORIZONTAL / VERTICAL CONTROL DATA

POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
DELDOT 5	610+30.19	-3.24	381583.4236	644286.3588	23.040'
DELDOT 14	455+19.41	387.32	382045.1107	644855.9344	19.882'
DELDOT 15	1103+84.92	20.83	382984.1747	644600.2159	13.192'
DELDOT 16	217+60.10	33.96	382913.1224	644176.0509	11.260'
DELDOT 21	208+24.54	56.88	382000.2739	644377.5761	17.545'
DELDOT 22	1104+58.97	22.80	383002.3410	644672.0100	14.270'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 100 200 300 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

HORIZONTAL AND VERTICAL CONTROL SHEET 6 OF 8

SHEET NO. 34
TOTAL SHTS. 641

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CURVE 23 (RAMP A)

PC (200269)	1213+20.0000	383089.3189	644031.7597
PI (200270)	1215+54.5258	383319.5212	643986.9351
CC ( )		383061.7964	643890.4143
PT (200271)	1216+13.8011	383175.3961	643801.9208

Radius: 144.0000
Delta: 116°53'59.0298" Left
Degree of Curvature(Arc): 39°47'19.4488"
Length: 293.8011
Tangent: 234.5258
Chord: 245.4286
Middle Ordinate: 68.6528
External: 131.2060
Tangent Direction: N 11°01'07.1772" W
Radial Direction: N 78°58'52.8228" E
Chord Direction: N 69°28'06.6921" W
Radial Direction: N 37°55'06.2070" W
Tangent Direction: S 52°04'53.7930" W

CURVE 24 (RAMP B)

PC (200305)	1403+68.7051	383238.9619	643873.7573
PI (200306)	1405+10.5402	383326.1251	643985.6492
CC ( )		383421.1948	643731.7989
PT (200307)	1406+23.1071	383465.3455	643958.5404

Radius: 231.0000
Delta: 63°06'00.9702" Left
Degree of Curvature(Arc): 24°48'12.1239"
Length: 254.4020
Tangent: 141.8352
Chord: 241.7389
Middle Ordinate: 34.1458
External: 40.0687
Tangent Direction: N 52°04'53.7930" E
Radial Direction: S 37°55'06.2070" E
Chord Direction: N 20°31'53.3079" E
Radial Direction: N 78°58'52.8228" E
Tangent Direction: N 11°01'07.1772" W

CURVE 25 (RAMP B)

PC (200308)	1409+13.1060	383749.9983	643903.1133
PI (200344)	1409+68.8246	383804.6897	643892.4639
CC ( )		389491.6951	673390.3071
PT (200309)	1410+24.5431	383859.4203	643882.0174

Radius: 30041.0000
Delta: 0°12'45.1398" Right
Degree of Curvature(Arc): 0°11'26.6110"
Length: 111.4372
Tangent: 55.7186
Chord: 111.4371
Middle Ordinate: 0.0517
External: 0.0517
Tangent Direction: N 11°01'07.1772" W
Radial Direction: N 78°58'52.8228" E
Chord Direction: N 10°54'44.6073" W
Radial Direction: N 79°11'37.9627" E
Tangent Direction: N 10°48'22.0373" W

CURVE 26 (PROPOSED NB SR1 CENTERLINE)

PC (200257)	226+33.6490	383764.1418	643975.7491
PI (200258)	226+89.2304	383818.6985	643965.1259
CC ( )		389491.6951	673390.3071
PT (200259)	227+44.8117	383873.2943	643954.7052

Radius: 29967.0000
Delta: 0°12'45.1398" Right
Degree of Curvature(Arc): 0°11'28.3065"
Length: 111.1627
Tangent: 55.5814
Chord: 111.1626
Middle Ordinate: 0.0515
External: 0.0515
Tangent Direction: N 11°01'07.1772" W
Radial Direction: N 78°58'52.8228" E
Chord Direction: N 10°54'44.6073" W
Radial Direction: N 79°11'37.9627" E
Tangent Direction: N 10°48'22.0373" W

CURVE 27 (PROPOSED SB SR1 CENTERLINE)

PC (200275)	327+25.6347	383751.5273	643910.9658
PI (200345)	327+81.3385	383806.2042	643900.3192
CC ( )		389491.6951	673390.3071
PT (200276)	328+37.0422	383860.9202	643889.8755

Radius: 30033.0000
Delta: 0°12'45.1398" Right
Degree of Curvature(Arc): 0°11'26.7939"
Length: 111.4075
Tangent: 55.7038
Chord: 111.4074
Middle Ordinate: 0.0517
External: 0.0517
Tangent Direction: N 11°01'07.1772" W
Radial Direction: N 78°58'52.8228" E
Chord Direction: N 10°54'44.6073" W
Radial Direction: N 79°11'37.9627" E
Tangent Direction: N 10°48'22.0373" W

NOTES:

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

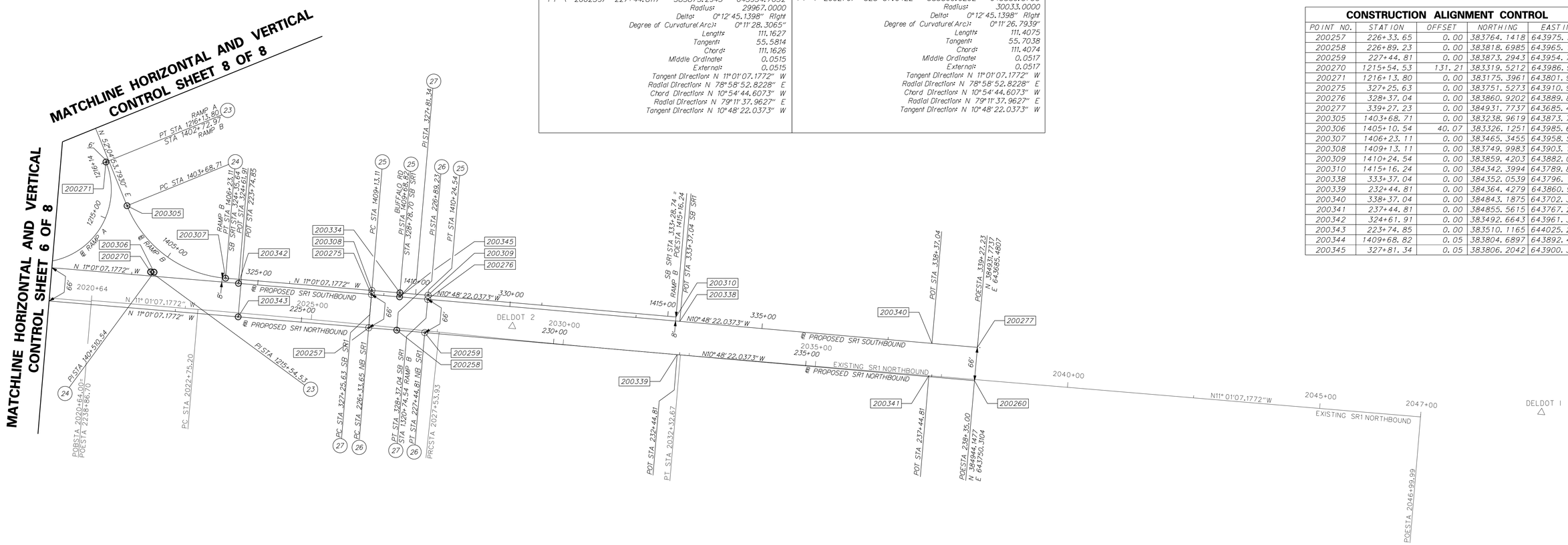
2. EXISTING ALIGNMENTS DEVELOPED USING AS-BUILTS IN CONTRACTS NO. 71-05-004, 81-109-02, 919, AND 371.

HORIZONTAL / VERTICAL CONTROL DATA

POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
DELDOT 1			385914.3299	643531.4715	16.857'
DELDOT 2	229+16.06	-27.08	384036.3107	643895.7503	15.187'

CONSTRUCTION ALIGNMENT CONTROL

POINT NO.	STATION	OFFSET	NORTHING	EASTING
200257	226+33.65	0.00	383764.1418	643975.7491
200258	226+89.23	0.00	383818.6985	643965.1259
200259	227+44.81	0.00	383873.2943	643954.7052
200270	1215+54.53	131.21	383319.5212	643986.9351
200271	1216+13.80	0.00	383175.3961	643801.9208
200275	327+25.63	0.00	383751.5273	643910.9658
200276	328+37.04	0.00	383860.9202	643889.8755
200277	339+27.23	0.00	384931.7737	643685.4807
200305	1403+68.71	0.00	383238.9619	643873.7573
200306	1405+10.54	40.07	383326.1251	643985.6492
200307	1406+23.11	0.00	383465.3455	643958.5404
200308	1409+13.11	0.00	383749.9983	643903.1133
200309	1410+24.54	0.00	383859.4203	643882.0174
200310	1415+16.24	0.00	384342.3994	643789.8307
200338	333+37.04	0.00	384352.0539	643796.1324
200339	232+44.81	0.00	384364.4279	643860.9621
200340	338+37.04	0.00	384483.1875	643702.3893
200341	237+44.81	0.00	384855.5615	643767.2189
200342	324+61.91	0.00	383492.6643	643961.3712
200343	223+74.85	0.00	383510.1165	644025.2125
200344	1409+68.82	0.05	383804.6897	643892.4639
200345	327+81.34	0.05	383806.2042	643900.3192



DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 100 200 300 FEET	SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION	CONTRACT T200412202	BRIDGE NO. -	HORIZONTAL AND VERTICAL CONTROL SHEET 7 OF 8	SHEET NO. 35
				COUNTY KENT	DESIGNED BY: SFP		TOTAL SHTS. 641
					CHECKED BY: WFC		

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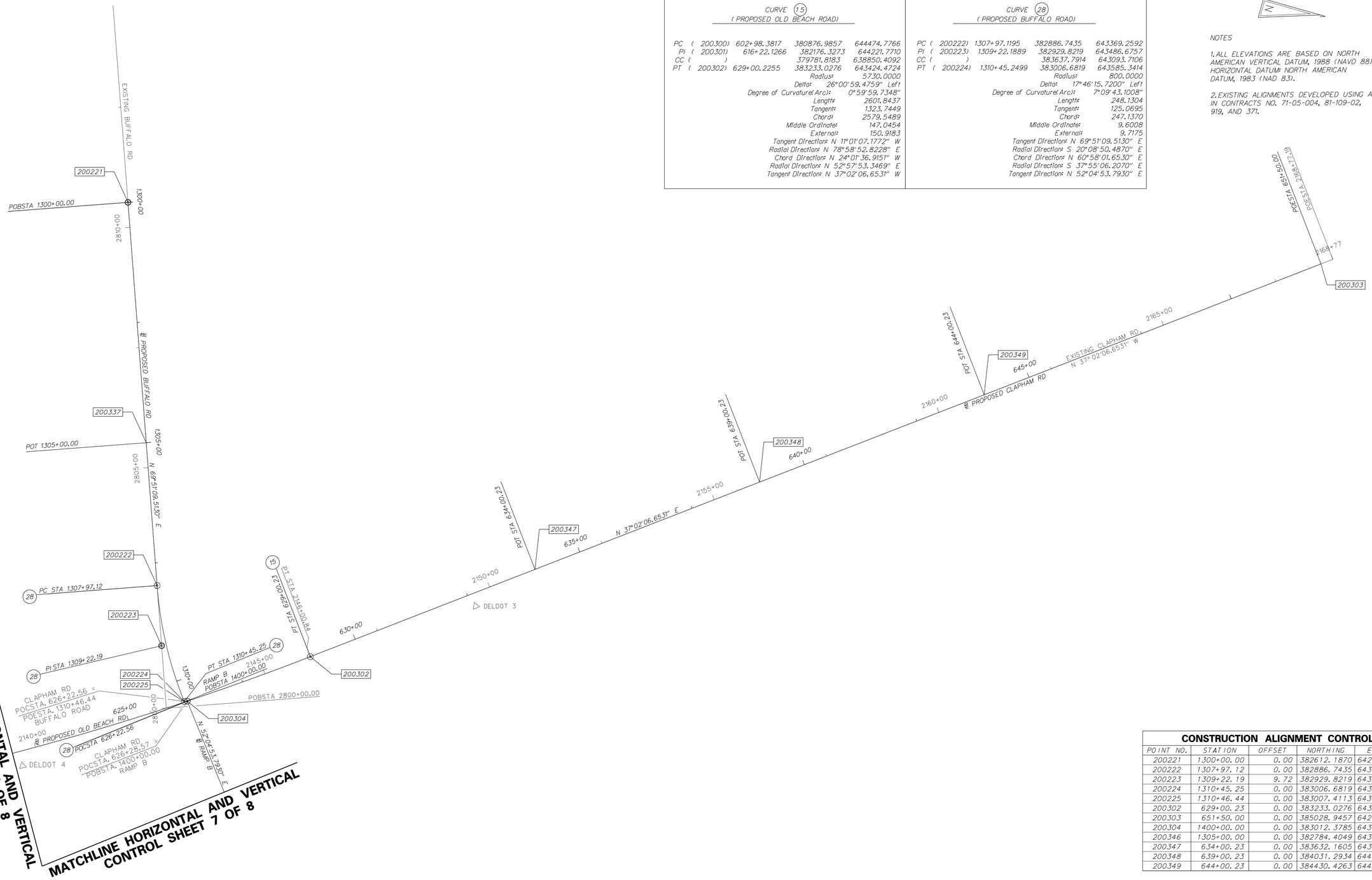
CURVE 15 (PROPOSED OLD BEACH ROAD)			
PC (200300)	602+98.3817	380876.9857	644474.7766
PI (200301)	616+22.1266	382176.3273	644221.7710
CC ( )		379781.8183	638850.4092
PT (200302)	629+00.2255	383233.0276	643424.4724
Radius:			5730.0000
Delta:		26°00'59.4759"	Left
Degree of Curvature(Arc):		0°59'59.7348"	
Length:			2601.8437
Tangent:			1323.7449
Chord:			2579.5489
Middle Ordinate:			147.0454
External:			150.9183
Tangent Direction:		N 11°01'07.1772"	W
Radial Direction:		N 78°58'52.8228"	E
Chord Direction:		N 24°01'36.9151"	W
Radial Direction:		N 52°57'53.3469"	E
Tangent Direction:		N 37°02'06.6531"	W

CURVE 28 (PROPOSED BUFFALO ROAD)			
PC (200222)	1307+97.1195	382886.7435	643369.2592
PI (200223)	1309+22.1889	382929.8219	643486.6757
CC ( )		383637.7914	643093.7106
PT (200224)	1310+45.2499	383006.6819	643585.3414
Radius:			800.0000
Delta:		17°46'15.7200"	Left
Degree of Curvature(Arc):		7°09'43.1008"	
Length:			248.1304
Tangent:			125.0695
Chord:			247.1370
Middle Ordinate:			9.6008
External:			9.7175
Tangent Direction:		N 69°51'09.5130"	E
Radial Direction:		S 20°08'50.4870"	E
Chord Direction:		N 60°58'01.6530"	E
Radial Direction:		S 37°55'06.2070"	E
Tangent Direction:		N 52°04'53.7930"	E

NOTES

1. ALL ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM, 1988 (NAVD 88). HORIZONTAL DATUM: NORTH AMERICAN DATUM, 1983 (NAD 83).

2. EXISTING ALIGNMENTS DEVELOPED USING AS-BUILTS IN CONTRACTS NO. 71-05-004, 81-109-02, 919, AND 371.



CONSTRUCTION ALIGNMENT CONTROL				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
200221	1300+00.00	0.00	382612.1870	642620.9156
200222	1307+97.12	0.00	382886.7435	643369.2592
200223	1309+22.19	9.72	382929.8219	643486.6757
200224	1310+45.25	0.00	383006.6819	643585.3414
200225	1310+46.44	0.00	383007.4113	643586.2777
200302	629+00.23	0.00	383233.0276	643424.4724
200303	651+50.00	0.00	385028.9457	642069.4213
200304	1400+00.00	0.00	383012.3785	643582.8907
200346	1305+00.00	0.00	382784.4049	643090.3205
200347	634+00.23	0.00	383632.1605	643725.6250
200348	639+00.23	0.00	384031.2934	644026.7777
200349	644+00.23	0.00	384430.4263	644327.9303

HORIZONTAL / VERTICAL CONTROL DATA					
POINT NO.	STATION	OFFSET	NORTHING	EASTING	ELEVATION
DELDOT 3	632+58.01	26.22	383534.4330	643229.8907	19.600'
DELDOT 4	622+63.58	30.55	382720.2758	643805.0879	17.160'

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 100 200 300 FEET

SR1, LITTLE HEAVEN
GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

HORIZONTAL AND VERTICAL CONTROL
SHEET 8 OF 8

SHEET NO. 36
TOTAL SHTS. 641

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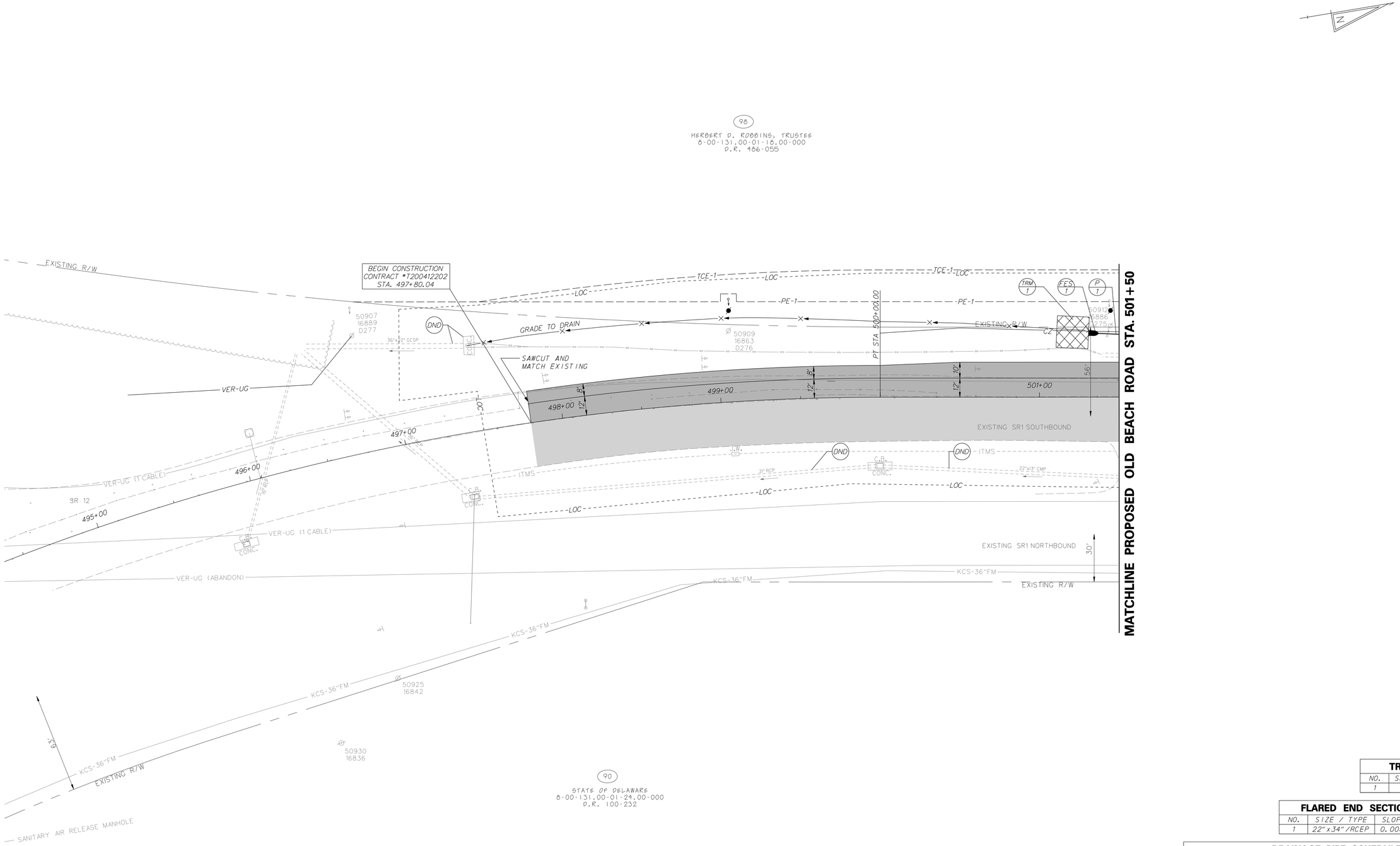

TRM SCHEDULE		
NO.	SRBM TYPE	LENGTH
1	6	15.0'

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
1	22"x34"/RCEP	0.0086	NO

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
1	22"x34"/RCEP	IV	64.00'	0.0086	11.45'	10.90'

UNDERDRAIN SCHEDULE					
ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	501+00 TO 500+00 LT	100'	6" PEP	DITCH	9.96'
OLD BEACH ROAD	504+00 TO 501+00 LT	300'	6" PEP	DITCH	10.61'

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

SR1, LITTLE HEAVEN
GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 37
TOTAL SHTS. 641

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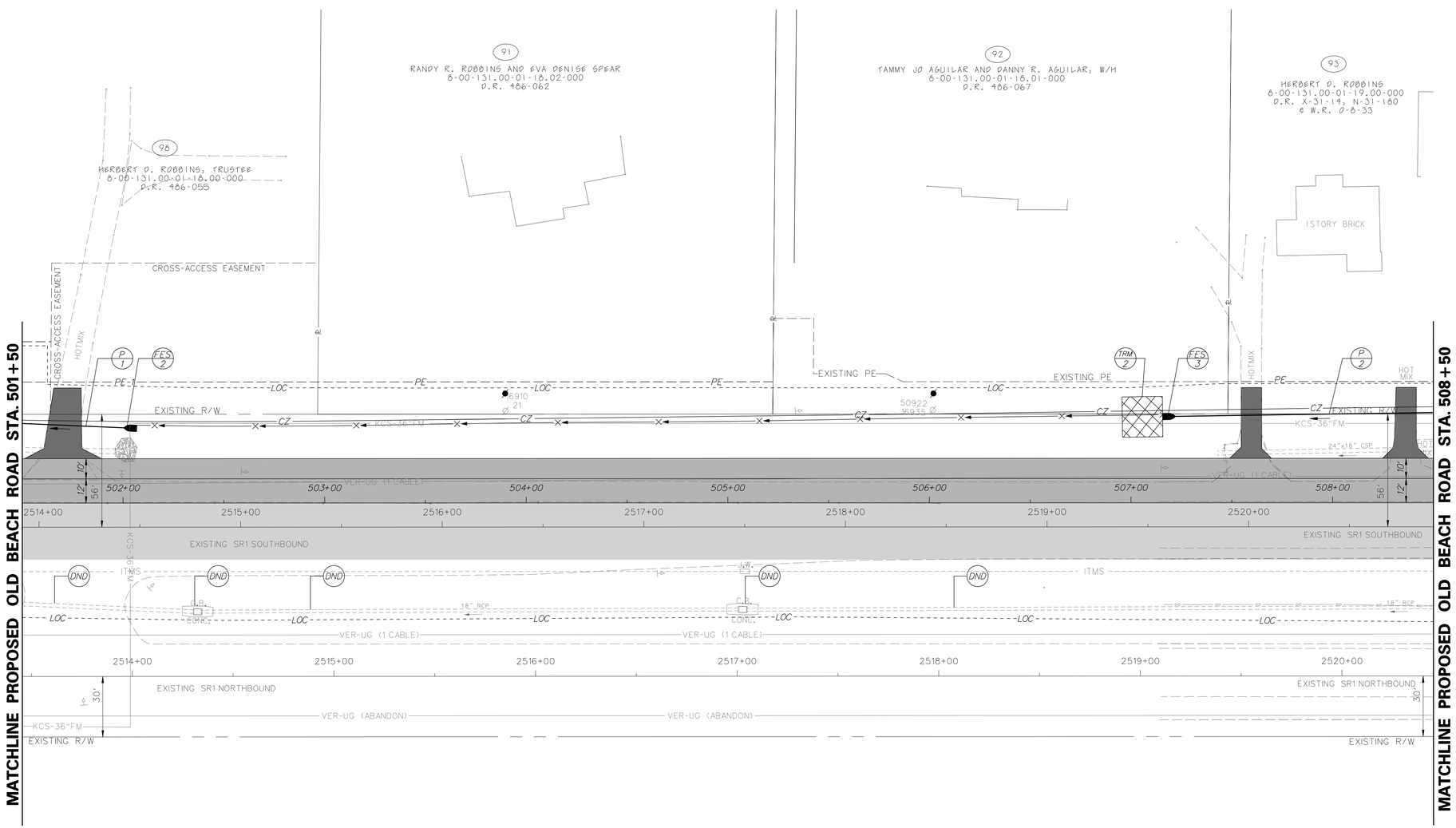

TRM SCHEDULE		
NO.	SRBM TYPE	LENGTH
2	6	15.0'

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
2	22"x34"/RCEP	0.0086	NO
3	22"x34"/RCEP	0.0080	NO

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
2	22"x34"/RCEP	IV	144.00'	0.0080	16.96'	15.82'

UNDERDRAIN SCHEDULE					
ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD*	504+00 TO 507+00 LT	300'	6" PEP	DITCH	15.71'
OLD BEACH ROAD	509+00 TO 507+00 LT	200'	6" PEP	DITCH	15.71'

* UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 38

TOTAL SHTS. 641

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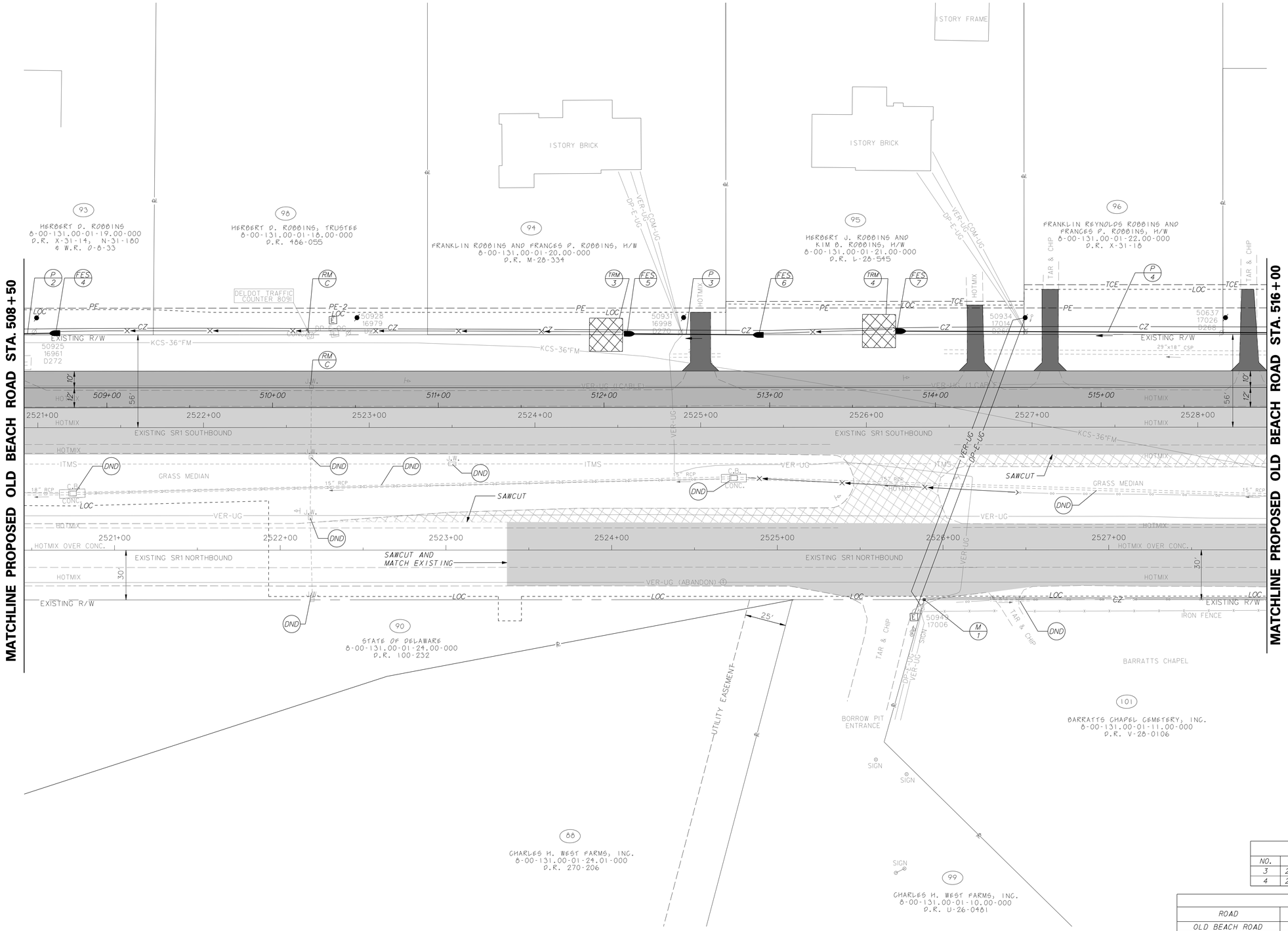

TRM SCHEDULE		
NO.	SRBM TYPE	LENGTH
3	6	15.0'
4	6	15.0'

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
4	22"x34"/RCEP	0.0080	NO
5	22"x34"/RCEP	0.0082	NO
6	22"x34"/RCEP	0.0082	NO
7	22"x34"/RCEP	0.0030	NO

RIGHT-OF-WAY MONUMENT SCHEDULE				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
1	2525+88.63	30.00	372055.7751	643670.8172

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
3	22"x34"/RCEP	IV	72.00'	0.0082	20.37'	19.78'
4	22"x34"/RCEP	IV	320.00'	0.0030	21.65'	20.69'

UNDERDRAIN SCHEDULE					
ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	512+00 TO 509+00 LT	300'	6" PEP	DITCH	17.82'
OLD BEACH ROAD	513+25 TO 512+00 LT	125'	6" PEP	DITCH	20.04'
OLD BEACH ROAD	516+25 TO 513+25 LT	300'	6" PEP	DITCH	20.95'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 39

TOTAL SHTS. 641

4/20/2005
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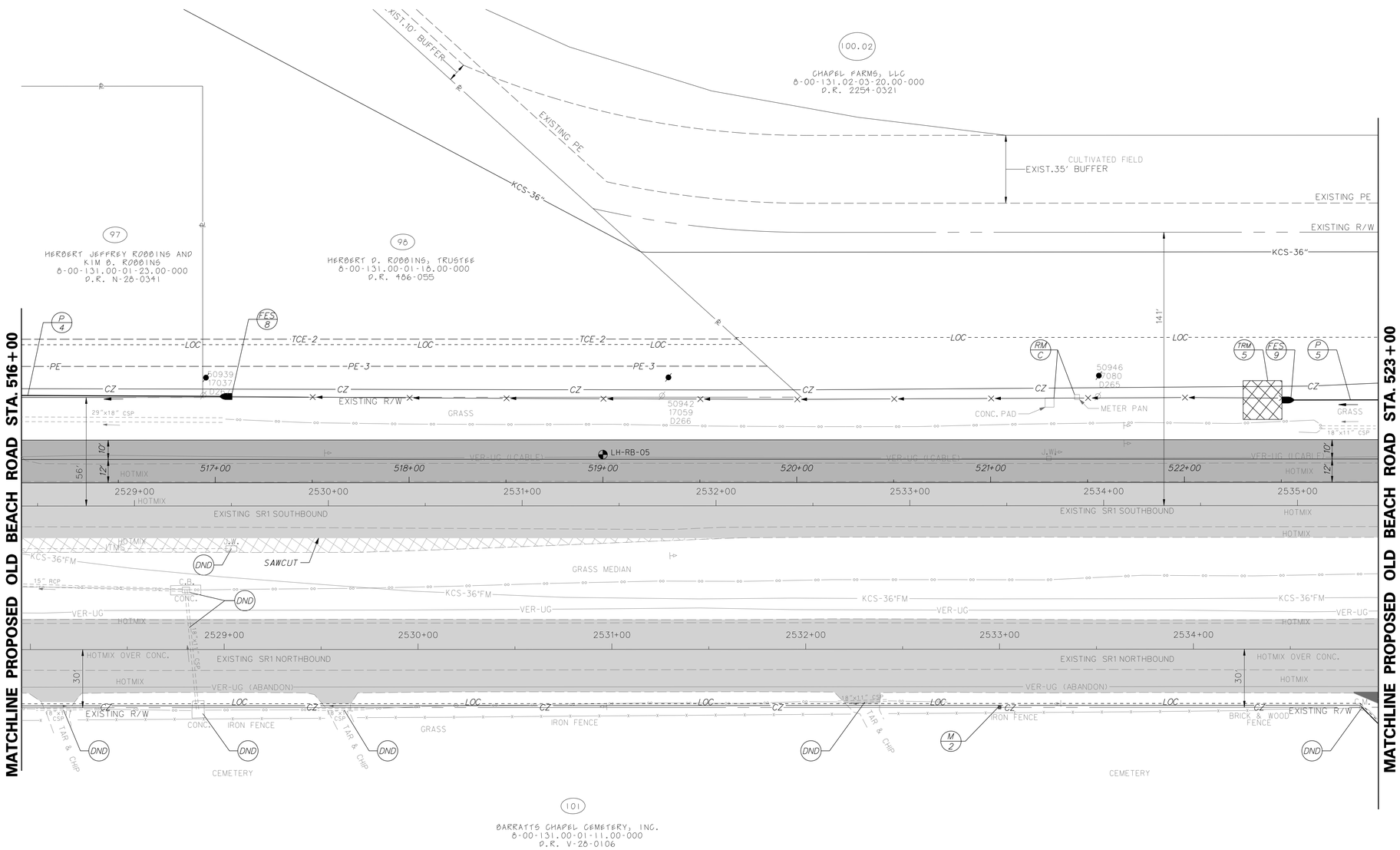

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
5	6	15.0'

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
8	22"x34"/RCEP	0.0030	NO
9	24"/RCP	0.0042	NO

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
2	2533+00.00	30.00	372757.3410	643788.5298

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
5	24"/RCP	IV	56.00'	0.0043	23.95'	23.72'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	518+00 TO 516+35 LT	165'	6" PEP	DITCH	21.84'
OLD BEACH ROAD	521+00 TO 518+00 LT	300'	6" PEP	DITCH	22.07'
OLD BEACH ROAD	524+00 TO 521+00 LT	300'	6" PEP	DITCH	23.14'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 40

TOTAL SHTS. 641

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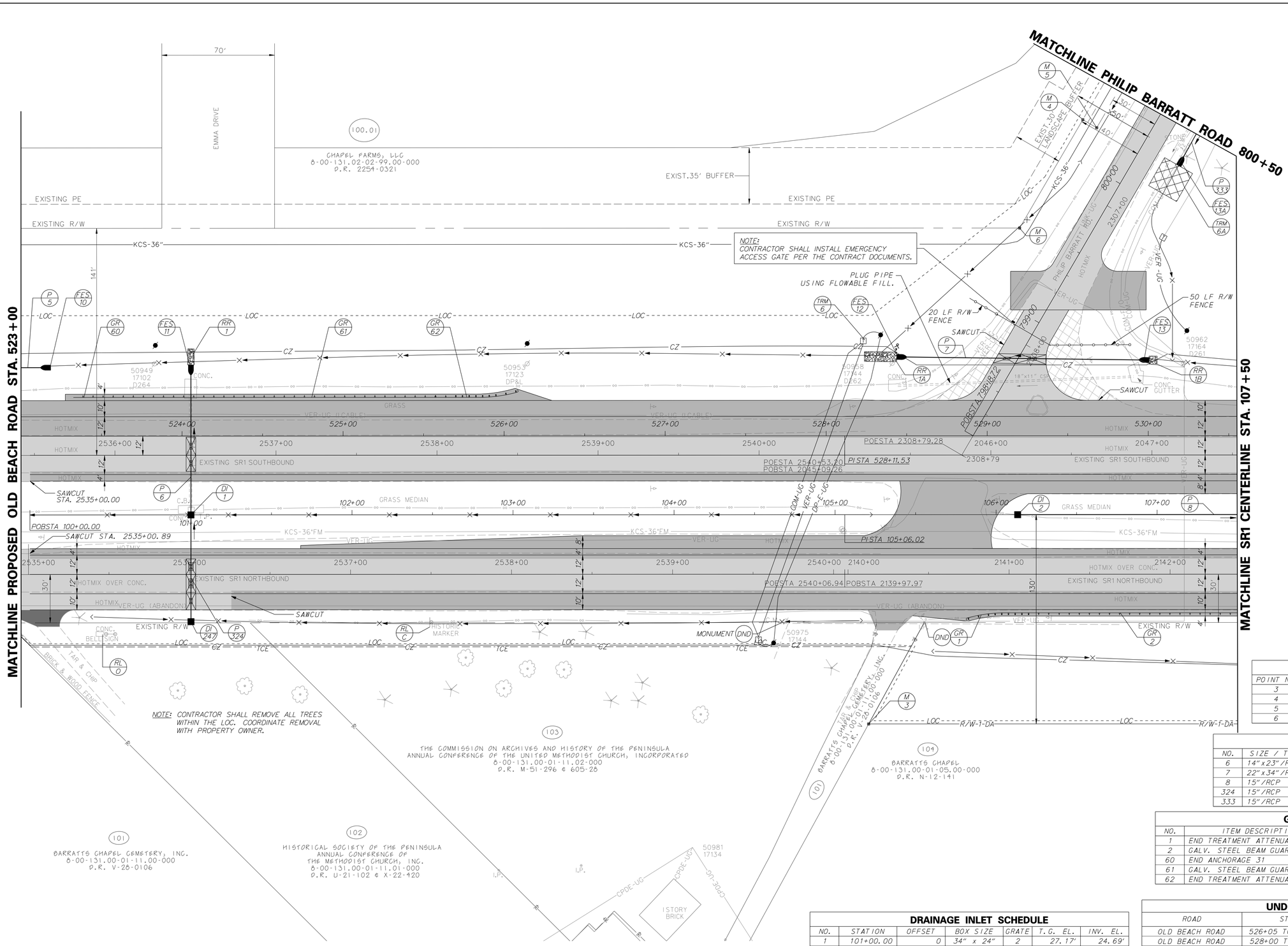

TRM SCHEDULE		
NO.	SRBM TYPE	LENGTH
6	6	15.0'
6A	6	15.0'

RIPRAP SCHEDULE		
NO.	TYPE	AREA (SF)
1	R-4	40.00
1A	R-4	120.00
1B	R-4	25.00

FLARED END SECTION			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
10	24"/RCP	0.0042	NO
11	14"x23"/RCEP	0.0037	NO
12	22"x34"/RCEP	0.0031	NO
13	22"X34"/RCEP	0.0031	NO
13A	15" /RCP	0.0059	NO

RIGHT-OF-WAY MONUMENT SCHEDULE				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
3	105+20.81	130.00	373458.6835	643970.0873
4	800+22.67	-40.00	373652.0948	643621.9795
5	800+22.67	-30.00	373659.7793	643628.3786
6	799+44.74	-40.00	373602.2265	643681.8647

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
6	14"x23"/RCEP	IV	86.00'	0.0037	24.69'	24.37'
7	22"x34"/RCEP	IV	144.00'	0.0031	26.33'	25.89'
8	15"/RCP	IV	259.00'	0.0035	25.80'	24.90'
324	15"/RCP	IV	64.00'	0.0034	24.91'	24.69'
333	15"/RCP	IV	32.00'	0.0059	27.54'	27.35'

GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
1	END TREATMENT ATTENUATOR, TYPE 2-31	105+82.68	A	50.00'
2	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	106+32.68	61.00	117.18'
60	END ANCHORAGE 31	523+31.00	-24.00	14.00'
61	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	523+45.00	-24.00	212.50'
62	END TREATMENT ATTENUATOR, TYPE 2-31	525+57.50	A	50.00'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
1	101+00.00	0	34" x 24"	2	27.17'	24.69'
2	106+13.40	0	34" x 24"	2	29.31'	25.80'
247	101+00.00	66.3	34" x 24"	2	27.45'	24.91'

UNDERDRAIN SCHEDULE					
ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	526+05 TO 524+10 LT	195'	6" PEP	DITCH	24.83'
OLD BEACH ROAD	528+00 TO 526+05 LT	195'	6" PEP	DITCH	26.05'
OLD BEACH ROAD	531+00 TO 528+00 LT	300'	6" PEP	DITCH	26.92'
SR1 NB 58' RT	107+48 TO 105+70 RT	178'	6" PEP	DITCH	27.10'

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

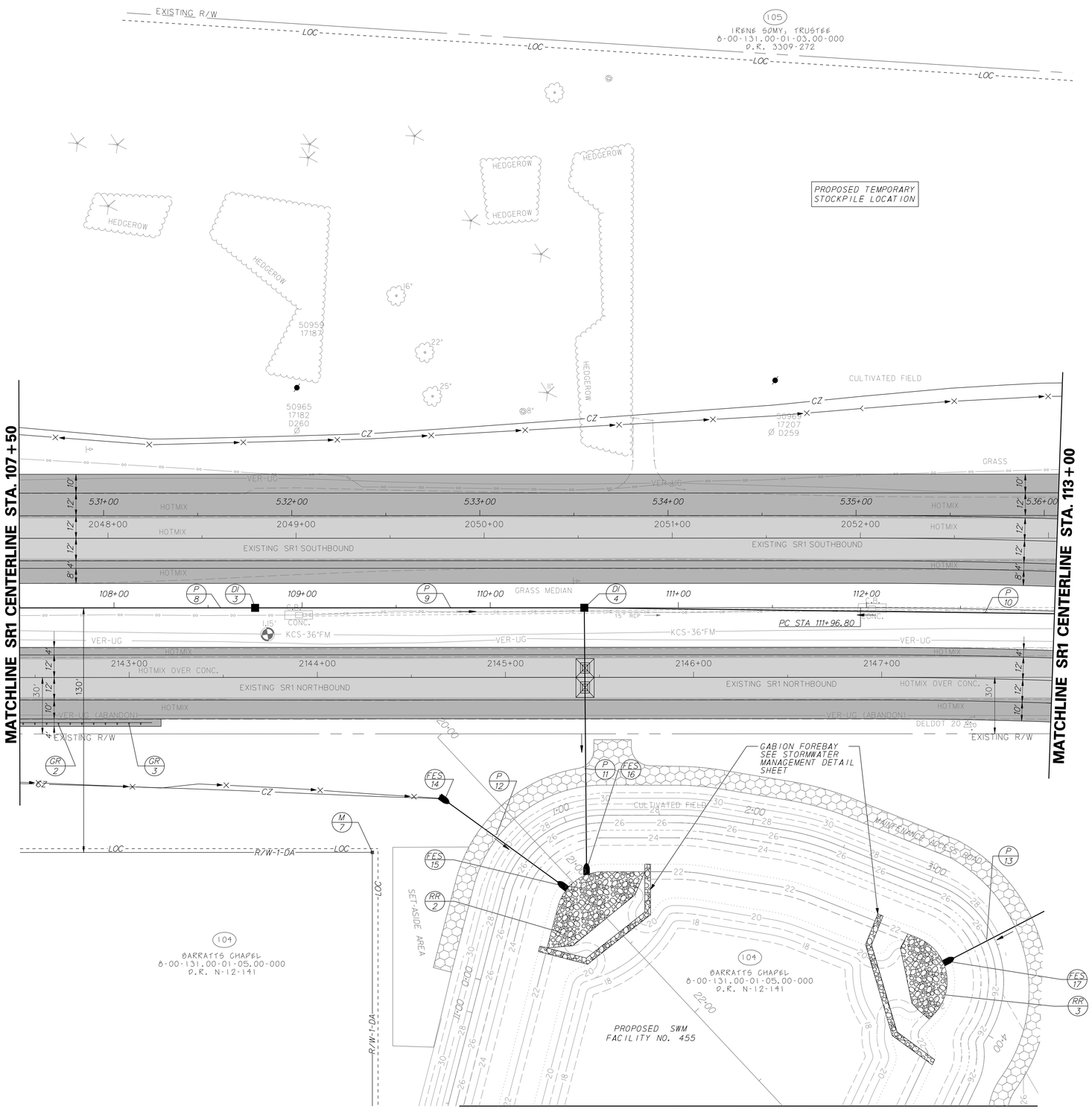
SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 41
TOTAL SHTS. 641



MATCHLINE PLAN SHEET 44

RIPRAP SCHEDULE		
NO.	TYPE	AREA (SF)
2	R-4	1148.00
3	R-4	735.00

FLARED END SECTION SCHEDULE			
NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
14	18"/RCP	0.0267	NO
15	18"/RCP	0.0267	NO
16	36" / RCP	0.0043	NO
17	18" / RCP	0.0136	NO

RIGHT-OF-WAY MONUMENT SCHEDULE				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
7	109+37.29	130.00	373869.4107	644039.0515

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
3	108+75.00	0	34" x 24"	2	29.61'	24.80'
4	110+50.00	0	48" x 48"	2	30.25'	22.60'

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
9	15"/RCP	IV	172.00'	0.0044	24.80'	24.05'
10	33"/RCP	IV	296.00'	0.0040	23.89'	22.70'
11	36"/RCP	IV	132.00'	0.0043	22.60'	22.03'
12	18"/RCP	IV	72.00'	0.0267	24.07'	22.16'
13	18"/RCP	IV	168.00'	0.0136	24.36'	22.08'

GUARDRAIL SCHEDULE				
NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
2	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	107+50.00	61.00	57.82'
3	END ANCHORAGE 31	108+07.68	61.00	14.00'

UNDERDRAIN SCHEDULE					
ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD*	531+00 TO 532+75 LT	175'	6" PEP	DITCH	27.63'
OLD BEACH ROAD	534+00 TO 532+75 LT	125'	6" PEP	DITCH	27.63'
OLD BEACH ROAD	536+00 TO 534+00 LT	200'	6" PEP	DITCH	28.39'
SR1 NB 58' RT	110+48 TO 107+48 RT	300'	6" PEP	DITCH	27.24'
SR1 NB 58' RT	112+83 TO 110+52 RT	231'	6" PEP	POND	27.75'

* UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 42

TOTAL SHTS. 641

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MATCHLINE PLAN SHEET 44

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	536+00 TO 538+12 LT	212'	6" PEP	DITCH	28.98'
OLD BEACH ROAD	538+18 TO 540+00 LT	182'	6" PEP	DITCH	27.76'
OLD BEACH ROAD	543+00 TO 540+00 LT	300'	6" PEP	DITCH	27.76'
SR1 NB 70' RT	112+83 TO 114+44 RT	161'	6" PEP	DITCH	26.97'
SR1 NB 70' RT	114+44 TO 116+06 RT	162'	6" PEP	DITCH	27.10'
SR1 NB 70' RT	119+06 TO 116+06 RT	300'	6" PEP	DITCH	27.10'
SR1 NB 70' RT	119+98 TO 119+06 RT	92'	6" PEP	DITCH	29.27'
SR1 NB 70' RT	120+75 TO 120+02 RT	73'	6" PEP	DITCH	30.49'
SR1 NB 21' RT	119+98 TO 118+00 RT	198'	6" PEP	DI-8	29.40'

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
7	6	15.0'

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
4	R-4	40
4A	R-4	70

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
18	27" / RCP	0.0069	YES
19	18" / RCP	0.0136	NO
20	19"x30"/RCEP	0.0036	NO

BARRIER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
1	PCC SAFETY BARRIER PERM., DOUBLE FACE	11.03'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
8	115+66.88	130.00	374472.7134	644162.1434

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
5	113+50.00	0	48" x 48"	2	30.98'	23.89'
6	115+09.00	0	48" x 48"	2	30.04'	24.61'
7	116+06.24	0	48" x 30"	2	29.76'	25.32'
8	118+00.00	0	34" x 24"	2	30.58'	26.15'
9+	543+52.96	39.89'	+	2	31.10'	28.24'
10+	543+10.00	32.00'	+	2	31.26'	27.80'
11	120+00.00	0	48" x 30"	2	31.70'	27.45'

+ SPECIAL INLET III. SEE CONSTRUCTION DETAIL SHEETS.

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
15	33"/RCP	IV	155.00'	0.0040	24.61'	23.99'
16	18"/RCP	IV	93.00'	0.0041	25.32'	24.94'
17	15"/RCP	IV	190.00'	0.0041	26.15'	25.37'
18	27"RCP	IV	114.00'	0.0069	25.94'	25.15'
19	18"/RCP	IV	40.00'	0.0036	28.24'	28.10'
20	21"/RCP	IV	70.00'	0.0036	27.80'	27.55'
21	19"x30"/RCEP	IV	103.00'	0.0036	27.45'	27.08'
22	15"/RCP	IV	197.00'	0.0059	29.20'	28.05'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 43

TOTAL SHTS. 641

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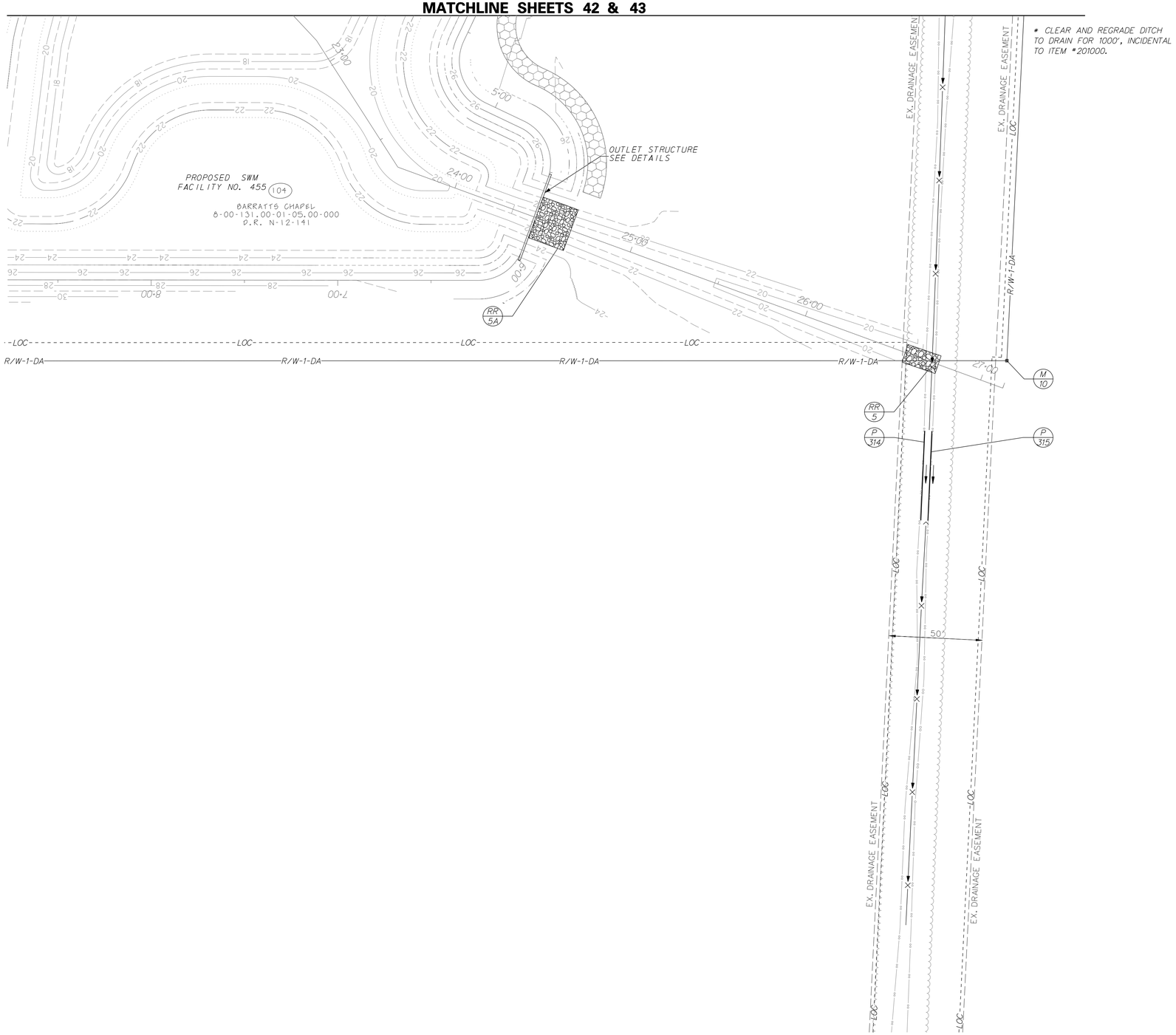
MATCHLINE SHEETS 42 & 43



* CLEAR AND REGRADE DITCH TO DRAIN FOR 1000', INCIDENTAL TO ITEM *201000.

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
5	R-4	188.00
5A	R-4	464.00

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
9*	109+37.29	450.00	373816.4220	644354.6339
10	115+82.92	428.44	374408.7490	644454.0901

* LOCATED NEAR PROPOSED SWM FACILITY

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
314	19"X30"/RCEP	IV	48.00'	0.0032	*	*
315	19"X30"/RCEP	IV	48.00'	0.0032	*	*

* INVERTS SHALL MATCH FINAL DITCH GRADE

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO.
44
TOTAL SHTS.
641

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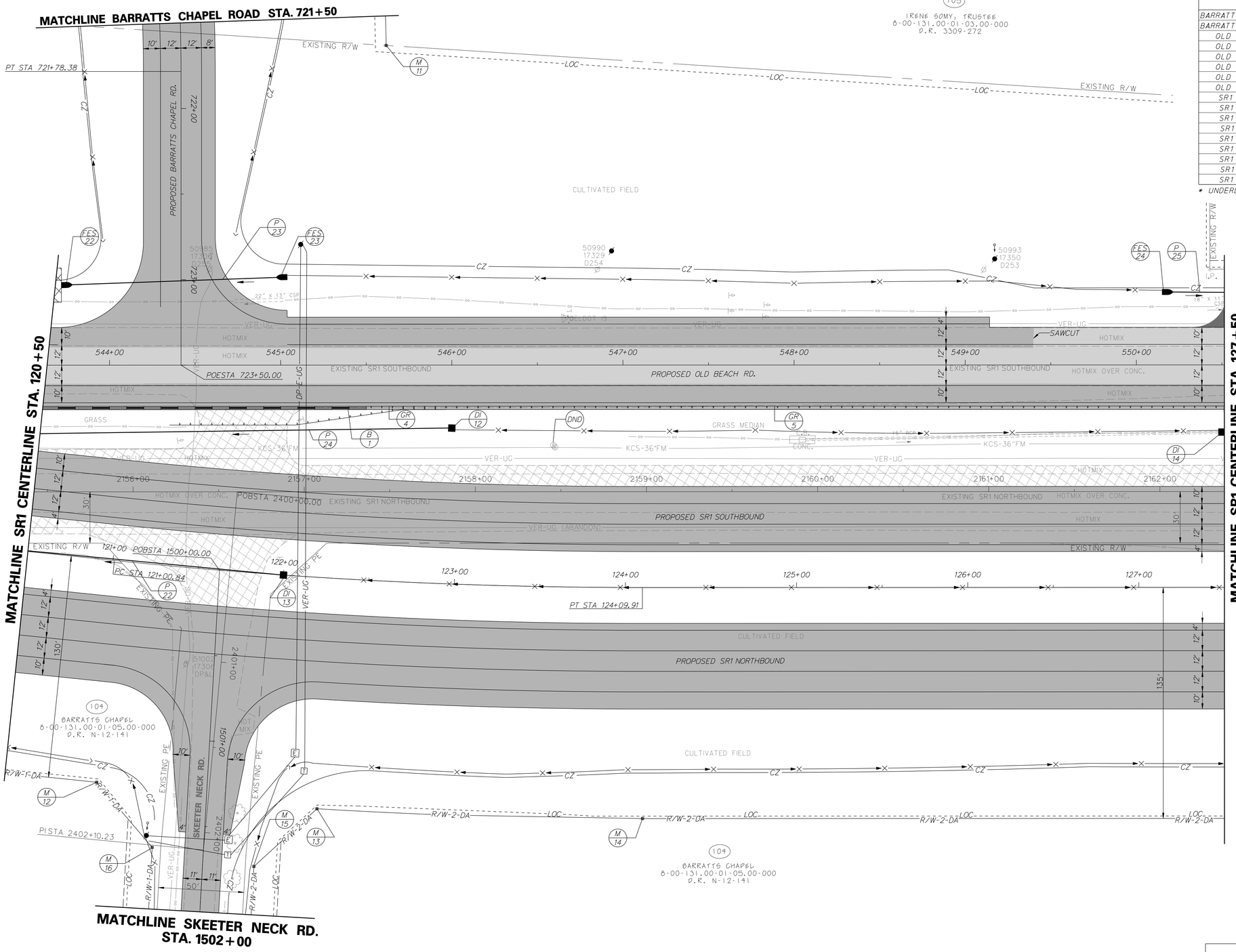

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
BARRATTS CHAPEL ROAD	719+96 TO 722+96 RT	300'	6" PEP	DITCH	29.85
BARRATTS CHAPEL ROAD	719+96 TO 722+96 LT	300'	6" PEP	DITCH	29.60
OLD BEACH ROAD	547+78 TO 545+39 LT	239'	6" PEP	DITCH	30.19
OLD BEACH ROAD	545+39 TO 543+00 LT	239'	6" PEP	DITCH	29.03
OLD BEACH ROAD	547+78 TO 549+39 LT	161'	6" PEP	DITCH	30.45
OLD BEACH ROAD	547+78 TO 550+50 RT	272'	6" PEP	DI-14	29.63
OLD BEACH ROAD	547+78 TO 546+00 RT	178'	6" PEP	DI-12	30.22
OLD BEACH ROAD	546+00 TO 543+10 RT	290'	6" PEP	DI-10	29.15
SR1 SB 58' LT	123+00 TO 120+00 LT	300'	6" PEP	DI-10	29.30
SR1 SB 58' LT	124+97 TO 123+00 LT	197'	6" PEP	DI-12	29.75
SR1 SB 58' LT	124+97 TO 127+49 LT	252'	6" PEP	DI-14	30.00
SR1 NB 70' RT	123+75 TO 120+75 RT	300'	6" PEP	DITCH	31.46
SR1 NB 70' RT	124+97 TO 123+75 RT	122'	6" PEP	DITCH	33.60
SR1 NB 70' RT	124+97 TO 125+50 RT	53'	6" PEP	DITCH	32.42
SR1 NB 70' RT	125+50 TO 128+50 RT	300'	6" PEP	DITCH	30.20
SR1 NB 21' RT	122+00 TO 120+00 RT	200'	6" PEP	DI-11	30.00
SR1 NB 21' RT *	126+71 TO 122+00 RT	471'	6" PEP	DI-13	31.76

* UNDERDRAIN SHALL BE GREATER THAN 300'

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
22	18"/RCP	0.0050	NO
23	18"/RCP	0.0050	NO
24	15"/RCP	0.0050	NO

BARRIER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
1	PCC SAFETY BARRIER PERM., DOUBLE FACE	188.97'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
11	721+65.08	-120.00	375228.5211	643908.4972
12	121+03.70	130.00	374990.2872	644305.0396
13	122+27.77	135.00	375114.6504	644341.6515
14	124+09.91	135.00	375301.2871	644378.8463
15	2402+18.18	-30.00	375072.7232	644368.8205
16	2402+10.46	30.00	375015.9387	644347.9582

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
12	546+00.00	36.81'	34" x 24"	2	32.26'	29.15'
13	122+00.00	0	34" x 24"	2	32.82'	29.20'
14	550+50.00	39.24'	34" x 24"	2	31.61'	28.50'

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
23	18"/RCP	IV	120.00'	0.0050	29.46'	28.86'
24	15"/RCP	IV	244.00'	0.0033	29.15'	28.35'
25	15"/RCP	IV	72.00'	0.0050	29.89'	29.53'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
4	CONNECTION, APPROACH TYPE 1-31	545+42.75	24.00	27.00'
5	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	545+69.75	24.00	481.69'

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

SR1, LITTLE HEAVEN
GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 45
TOTAL SHTS. 641

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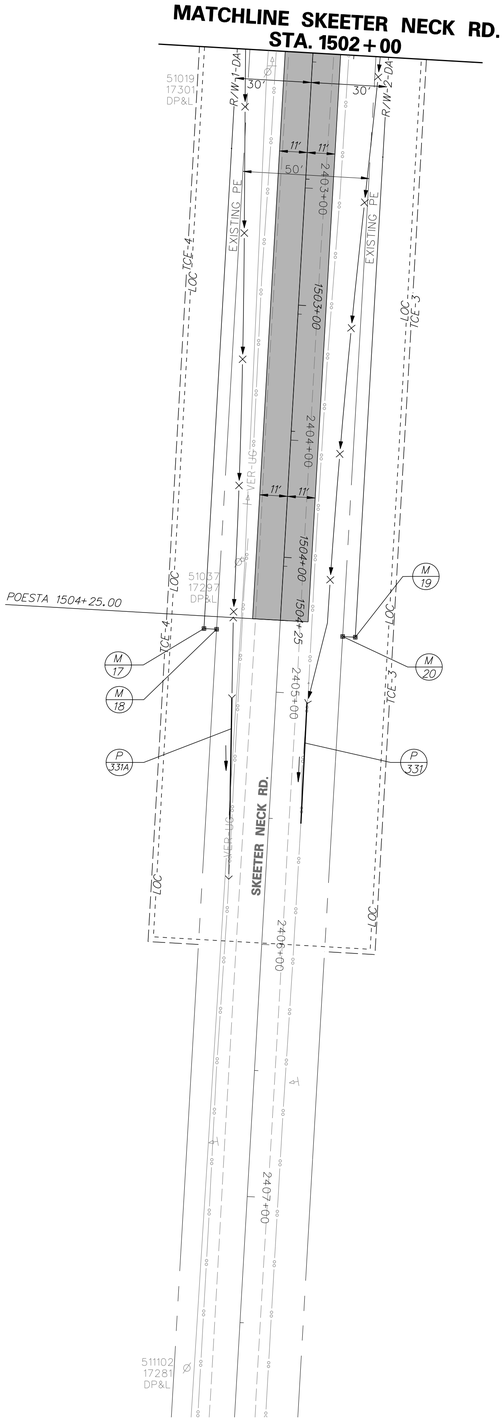

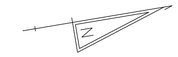

104

BARRATTS CHAPEL
8-00-131.00-01-05.00-000
D.R. N-12-141

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
17	2404+76.47	30.00	374956.8493	644607.3269
18	2404+76.47	25.00	374961.7244	644608.4375
19	2404+76.47	-30.00	375015.3504	644620.6546
20	2404+76.47	-25.00	375010.4753	644619.5439
21*	2410+49.48	-25.00	374883.1940	645178.2361
22*	127+57.67	1031.66	375495.7642	645320.7098
23*	130+89.80	1031.89	375823.2765	645375.9405
23A*	133+23.97	1351.19	376001.3412	645729.6087
23B*	131+87.19	1664.61	375814.5504	646016.0460
23C*	127+06.98	1789.47	375320.2963	646059.6713

* LOCATED NEAR PROPOSED WETLAND MITIGATION

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
331	14"X23" /RCEP	V	48.00'	0.0008	29.48'	29.44'
331A	14"X23" /RCEP	V	48.00'	0.0075	29.17	28.81

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY: SFP	
COUNTY		
KENT	CHECKED BY: WEC	

CONSTRUCTION PLAN

SHEET NO. 46

TOTAL SHTS. 641

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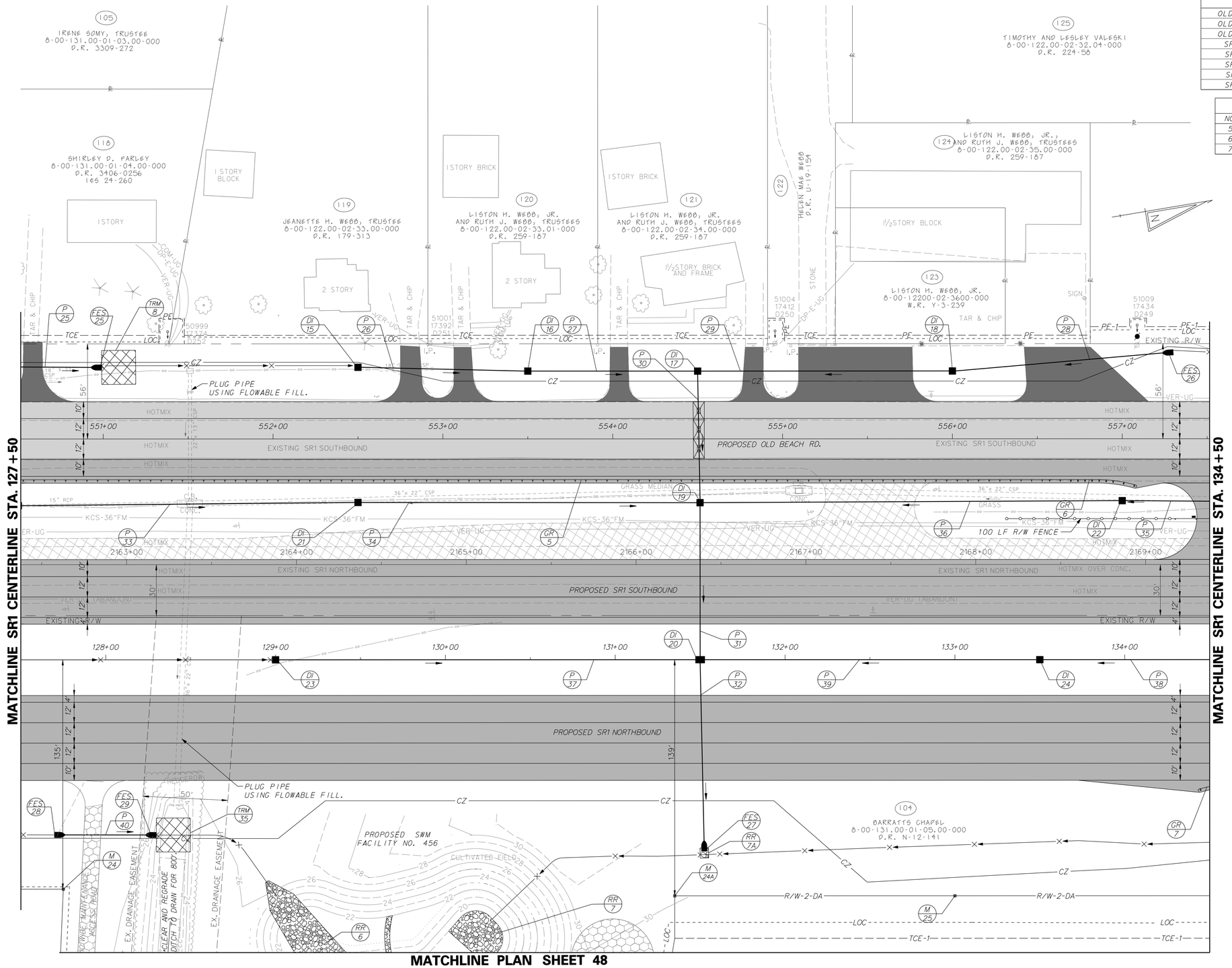

MATCHLINE PLAN SHEET 48

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	550+50 TO 552+50 RT	200'	6" PEP	DI-21	28.62'
OLD BEACH ROAD	552+50 TO 554+48 RT	198'	6" PEP	DI-19	27.64'
OLD BEACH ROAD	554+53 TO 557+00 RT	247'	6" PEP	DI-22	26.40'
SR1 SB 58' LT	127+49 TO 129+49 LT	200'	6" PEP	DI-21	29.00'
SR1 SB 58' LT	129+49 TO 131+48 LT	199'	6" PEP	DI-19	27.00'
SR1 SB 58' LT	131+52 TO 134+00 LT	248'	6" PEP	DI-22	26.00'
SR1 NB 70' RT	128+50 TO 131+48 RT	298'	6" PEP	DITCH	28.50'
SR1 NB 70' RT	131+52 TO 133+36 RT	184'	6" PEP	DITCH	27.42'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
5	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	550+51.44	24.00	605.81'
6	END TREATMENT ATTENUATOR, TYPE 2-31	556+57.25	24.00	50.00'
7	END TREATMENT ATTENUATOR, TYPE 2-31	134+44.50	A	5.50'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
35	6	15.0'
8	6	15.0'

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
6	R-4	1730.00
7	R-4	608.00
7A	R-4	30.00

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
25	15" / RCP	0.0050	NO
26	30" / RCP	0.0069	YES
27	48" / RCP	0.0029	NO
28	18" / RCP	0.0060	NO
29	18" / RCP	0.0060	NO

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
24	127+75.00	135.00	375661.3361	644439.3012
24A	131+35.00	139.00	376015.7038	644502.8583
25	133+00.00	139.00	376178.4260	644530.1805

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
15	552+50.00	-42.16'	48" x 30"	2	28.75'	24.30'
16	553+50.00	-39.93'	48" x 30"	2	30.52'	23.65'
17	554+50.00	-39.88'	48" x 48"	2	30.03'	22.96'
18	556+00.00	-39.92'	48" x 48"	2	29.29'	24.00'
19	554+51.42	37.57'	48" x 48"	2	29.60'	22.00'
20	131+50.00	0	66" x 48"	2	30.76'	21.65'
21	552+50.00	37.39'	34" x 24"	2	30.61'	27.40'
22	557+00.00	36.41'	48" x 48"	2	28.49'	22.81'
23	129+00.00	0	34" x 24"	2	32.20'	23.25'
24	133+50.00	0	48" x 48"	2	29.61'	22.42'

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
26	18" /RCP	IV	96.00'	0.0066	24.30'	23.67'
27	18" /RCP	IV	96.00'	0.0070	23.65'	22.98'
28	30" /RCP	IV	123.00'	0.0069	24.87'	24.02'
29	33" /RCP	IV	146.00'	0.0070	24.00'	22.98'
30	36" /RCP	IV	73.00'	0.0071	22.96'	22.44'
31	42" /RCP	IV	88.00'	0.0037	22.00'	21.67'
32	48" /RCP	IV	103.00'	0.0027	21.65'	21.37
33	15" /HDPE	IV	197.00'	0.0051	28.50'	27.50'
34	15" /HDPE	IV	198.00'	0.0083	27.40'	25.75'
35	24" /HDPE	IV	191.00'	0.0032	23.44'	22.83'
36	27" /RCP	IV	245.00'	0.0032	22.81'	22.02'
37	15" /RCP	IV	246.00'	0.0059	23.25'	21.80'
38	27" /RCP	IV	221.00'	0.0032	23.15'	22.44'
39	27" /RCP	IV	195.00'	0.0032	22.42'	21.80'
40	18" /RCP	V	48.00'	0.0060	28.78'	28.50'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 47

TOTAL SHTS. 641

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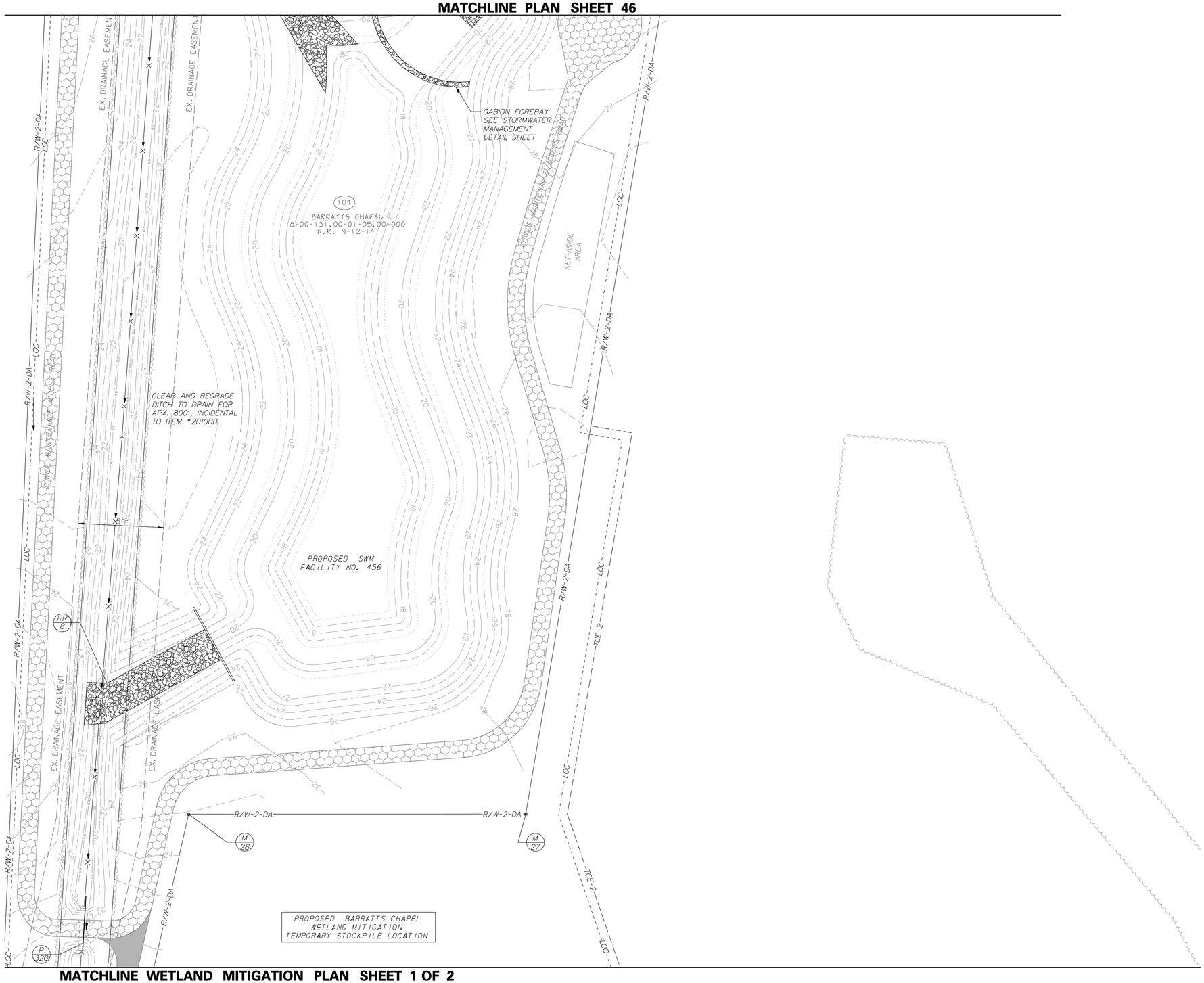
MATCHLINE PLAN SHEET 46



MATCHLINE WETLAND MITIGATION PLAN SHEET 1 OF 2

RIPRAP SCHEDULE		
NO.	TYPE	AREA (SF)
8	R-4	1739.00

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
320	36"/RCP	V	32.00'	0.0113	18.00'	17.64'
334**	54"/RCP	V	48.00'	0.0043	18.35'	18.18'

** SEE WETLAND MITIGATION SHEET FOR PIPE LOCATION.

RIGHT-OF-WAY MONUMENT SCHEDULE				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
26*	127+06.98	1789.47	375320.2963	646059.6713
26A*	127+57.67	1031.66	375495.7642	645320.7098
26B*	128+32.87	749.13	375616.7108	645054.5311
26C*	-	-	375814.5501	646016.0460
26D*	-	-	376001.3412	645729.6088
26E*	-	-	375823.2765	645375.9406
27	130+55.00	640.00	375853.8479	644983.6947
28	128+57.61	640.00	375659.1801	644951.0085

* LOCATED NEAR PROPOSED WETLAND MITIGATION

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 48

TOTAL SHTS. 641

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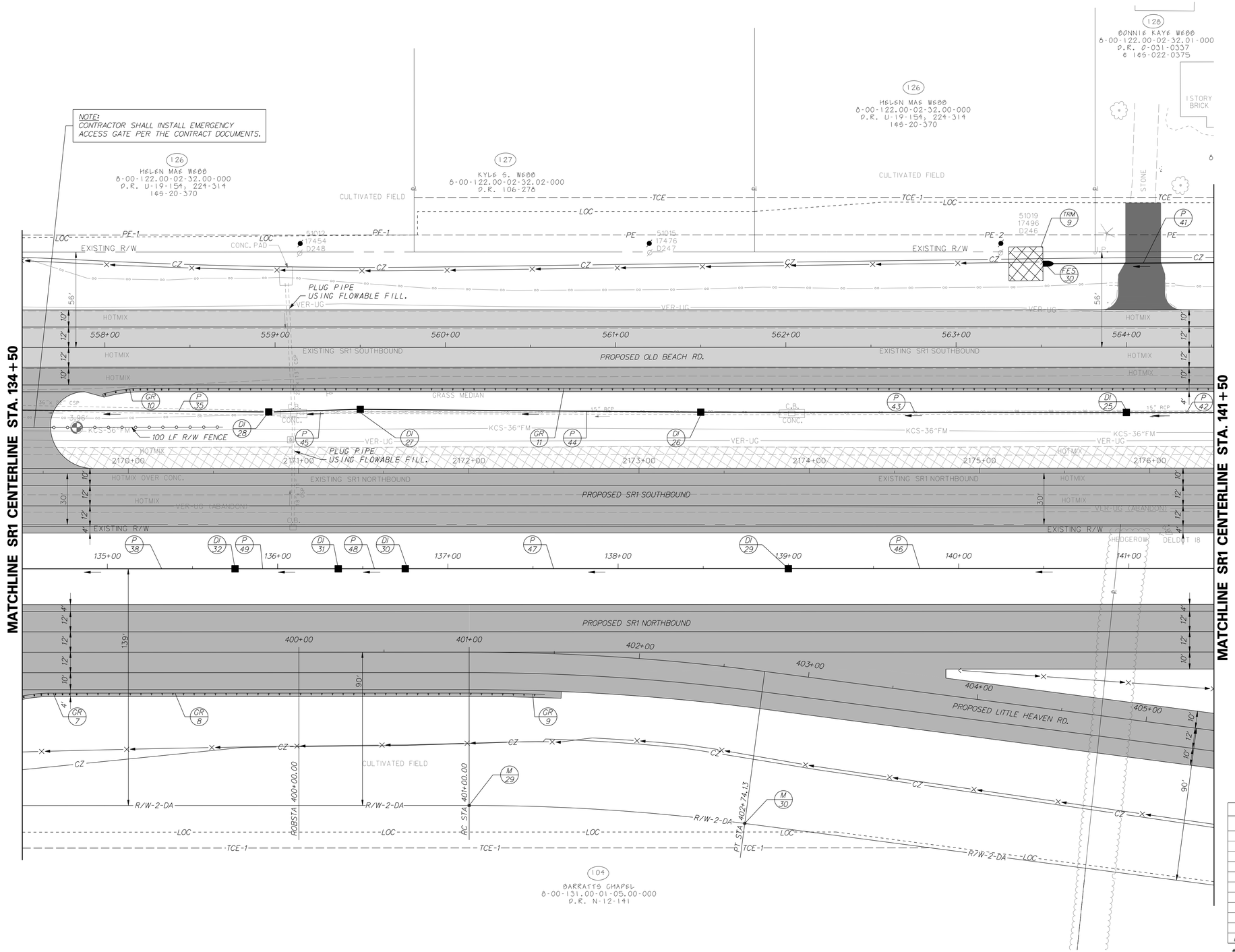

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
9	6	15.0'

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
30	30" / RCP	0.0030	NO

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
29	401+00.00	90.00	376585.2085	644598.4824
30	402+74.13	90.00	376743.0999	644635.7546

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
25	564+00.00	38.29'	48" x 30"	2	29.95'	25.08'
26	561+50.00	36.53'	48" x 48"	2	28.67'	24.27'
27	559+50.00	35.37'	48" x 48"	2	27.84'	23.62'
28+	558+96.22	37.86'	+	2	27.62'	23.44'
29	139+00.00	0	48" x 48"	2	29.49'	24.20'
30	136+75.00	0	48" x 48"	2	28.80'	23.47'
31	136+35.62	0	48" x 48"	2	28.78'	23.35'
32	135+75.00	0	48" x 48"	2	28.82'	23.15'

+ SPECIAL INLET V1. SEE CONSTRUCTION DETAIL SHEETS.

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
41	30"/RCP	IV	104.00'	0.0030	27.13'	26.82'
42	18"/HDPE	IV	246.00'	0.0032	25.89'	25.10'
43	24"/HDPE	IV	246.00'	0.0032	25.08'	24.29'
44	24"/HDPE	IV	196.00'	0.0032	24.27'	23.64'
45	24"/HDPE	IV	49.00'	0.0032	23.62'	23.46'
46	24"/RCP	IV	297.00'	0.0032	25.17'	24.22'
47	27"/RCP	IV	221.00'	0.0032	24.20'	23.49'
48	27"/RCP	IV	35.00'	0.0032	23.47'	23.36'
49	27"/RCP	IV	57.00'	0.0032	23.35'	23.17'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
7	END TREATMENT ATTENUATOR, TYPE 2-31	134+50.00	A	44.50'
8	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	134+94.50	73.00	250.00'
9	END ANCHORAGE 31	137+44.50	73.40	14.00'
10	END TREATMENT ATTENUATOR, TYPE 2-31	558+00.00	A	50.00'
11	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	558+50.00	24.00	601.44'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	557+00 TO 558+96 RT	196'	6" PEP	DI-28	25.68'
OLD BEACH ROAD	561+50 TO 558+96 RT	254'	6" PEP	DI-28	25.68'
OLD BEACH ROAD	564+00 TO 561+50 RT	250'	6" PEP	DI-26	26.75'
SR1 SB 58' LT*	136+49 TO 135+95 LT	54'	6" PEP	DI-28	25.50'
SR1 SB 58' LT	134+00 TO 135+95 LT	195'	6" PEP	DI-28	25.50'
SR1 SB 58' LT	138+49 TO 136+49 LT	200'	6" PEP	DI-27	25.80'
SR1 SB 58' LT	140+99 TO 138+49 LT	250'	6" PEP	DI-26	26.80'
SR1 NB 70' RT	133+36 TO 136+12 RT	276'	6" PEP	DITCH	26.50'
LITTLE HEAVEN RD	403+00 TO 400+00 RT	300'	6" PEP	DITCH	26.50'
LITTLE HEAVEN RD	406+00 TO 403+00 RT	300'	6" PEP	DITCH	27.23'
LITTLE HEAVEN RD**	403+80 TO 407+00 LT	320'	6" PEP	DITCH	30.11'

* UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD

** UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD
UNDERDRAIN SHALL BE GREATER THAN 300'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 49
TOTAL SHTS. 641

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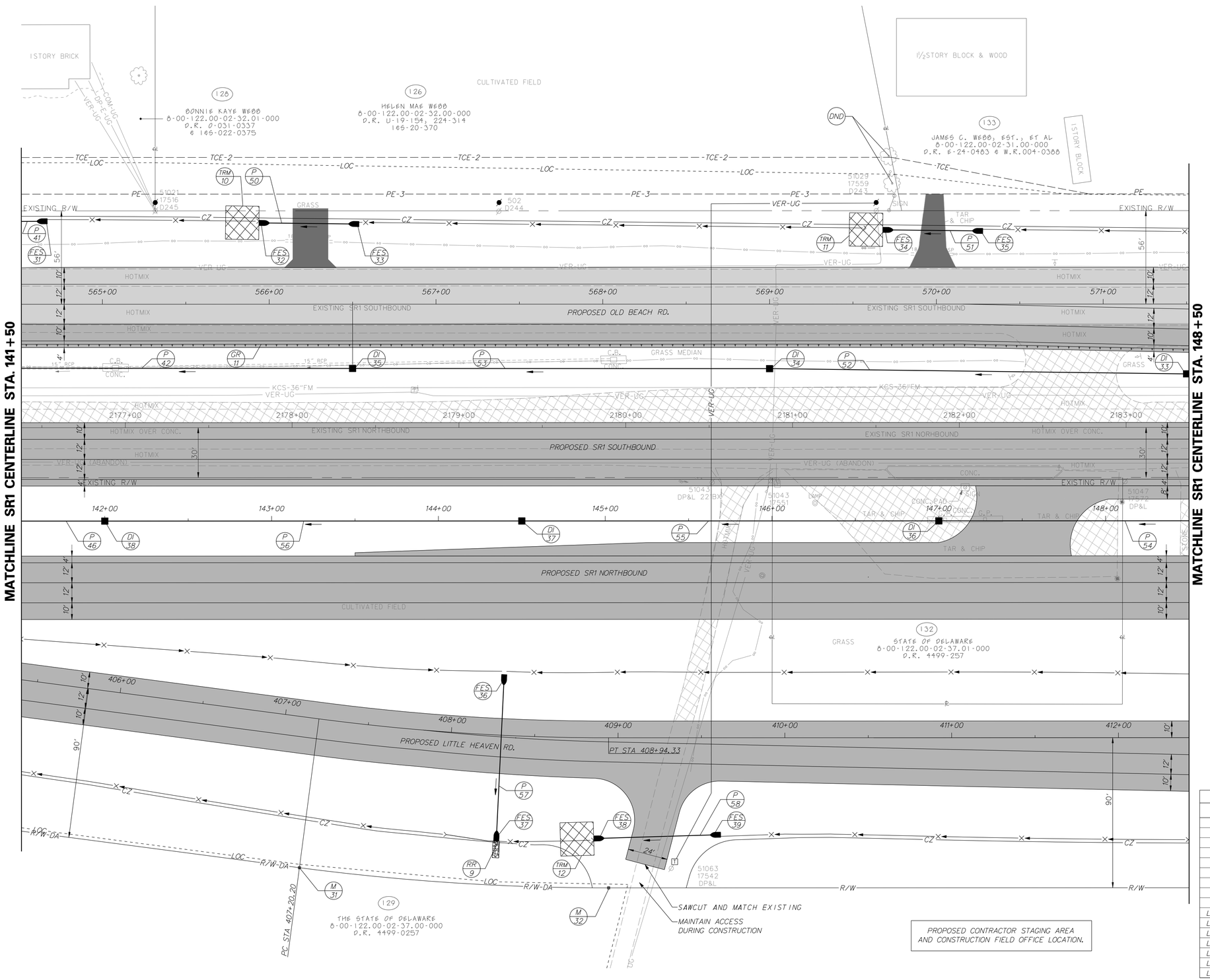

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
10	6	15.0'
11	6	15.0'
12	6	15.0'

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
9	R-4	40.00

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
31	30"/RCP	0.0030	NO
32	22"x34"/RCEP	0.0030	NO
33	22"x34"/RCEP	0.0030	NO
34	18"/RCP	0.0030	NO
35	18"/RCP	0.0030	NO
36	21"/RCP	0.0175	NO
37	21"/RCP	0.0175	NO
38	18"/RCP	0.0109	NO
39	18"/RCP	0.0109	NO

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
31	407+20.20	90.00	377169.6005	644766.4170
32	408+94.33	90.00	377350.4116	644809.0997

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
33	571+50.00	41.87'	34" x 24"	2	30.93'	27.50'
34	569+00.00	38.70'	48" x 30"	2	30.72'	26.69'
35	556+50.00	38.51'	48" x 30"	2	30.45'	25.89'
36	147+00.00	0	48" x 48"	2	34.02'	26.79'
37	144+50.00	0	48" x 48"	2	32.95'	25.98'
38	142+00.00	0	48" x 48"	2	31.36'	25.17'

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
50	22"x34"/RCEP	IV	48.00'	0.0030	27.70'	27.56'
51	18"/RCP	IV	48.00'	0.0030	28.84'	28.70'
52	15"/HDPE	IV	246.00'	0.0032	27.50'	26.71'
53	18"/HDPE	IV	246.00'	0.0032	26.69'	25.91'
54	21"/RCP	IV	247.00'	0.0032	27.60'	26.81'
55	21"/RCP	IV	247.00'	0.0032	26.79'	26.00'
56	24"/RCP	IV	247.00'	0.0032	25.98'	25.19'
57	21"/RCP	IV	88.00'	0.0175	26.99'	25.44'
58	18"/RCP	IV	64.00'	0.0109	26.56'	25.87'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
11	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	564+51.44	24.00	700.00'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	566+50 TO 564+00 RT	250'	6" PEP	DI-25	28.05'
OLD BEACH ROAD	569+00 TO 566+50 RT	250'	6" PEP	DI-35	28.57'
OLD BEACH ROAD	571+50 TO 569+00 RT	250'	6" PEP	DI-34	28.86'
SR1 SB 58' LT	143+49 TO 140+99 LT	250'	6" PEP	DI-25	27.50'
SR1 SB 58' LT	145+99 TO 143+49 LT	250'	6" PEP	DI-35	28.40'
SR1 SB 58' LT	148+37 TO 145+99 LT	238'	6" PEP	DI-34	28.40'
SR1 NB 58' RT	143+50 TO 142+00 RT	150'	6" PEP	DITCH	29.20'
SR1 NB 58' RT	146+50 TO 143+50 RT	300'	6" PEP	DITCH	30.22'
SR1 NB 58' RT	148+37 TO 146+50 RT	187'	6" PEP	DITCH	31.87'
LITTLE HEAVEN ROAD	408+28 TO 407+00 LT	128'	6" PEP	DITCH	30.11'
LITTLE HEAVEN ROAD	411+29 TO 408+32 LT	297'	6" PEP	DITCH	30.41'
LITTLE HEAVEN ROAD	412+01 TO 411+29 LT	72'	6" PEP	DITCH	31.60'
LITTLE HEAVEN ROAD	408+28 TO 406+00 RT	228'	6" PEP	DITCH	29.26'
LITTLE HEAVEN ROAD	411+32 TO 408+32 RT	300'	6" PEP	DITCH	31.36'
LITTLE HEAVEN ROAD	412+01 TO 411+32 RT	69'	6" PEP	DITCH	31.20'
LITTLE HEAVEN ROAD	412+01 TO 412+60 RT	59'	6" PEP	DITCH	31.17'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-	CONSTRUCTION PLAN	SHEET NO.
T200412202	DESIGNED BY:	SFP		50
COUNTY				TOTAL SHTS.
KENT	CHECKED BY:	WFC		641

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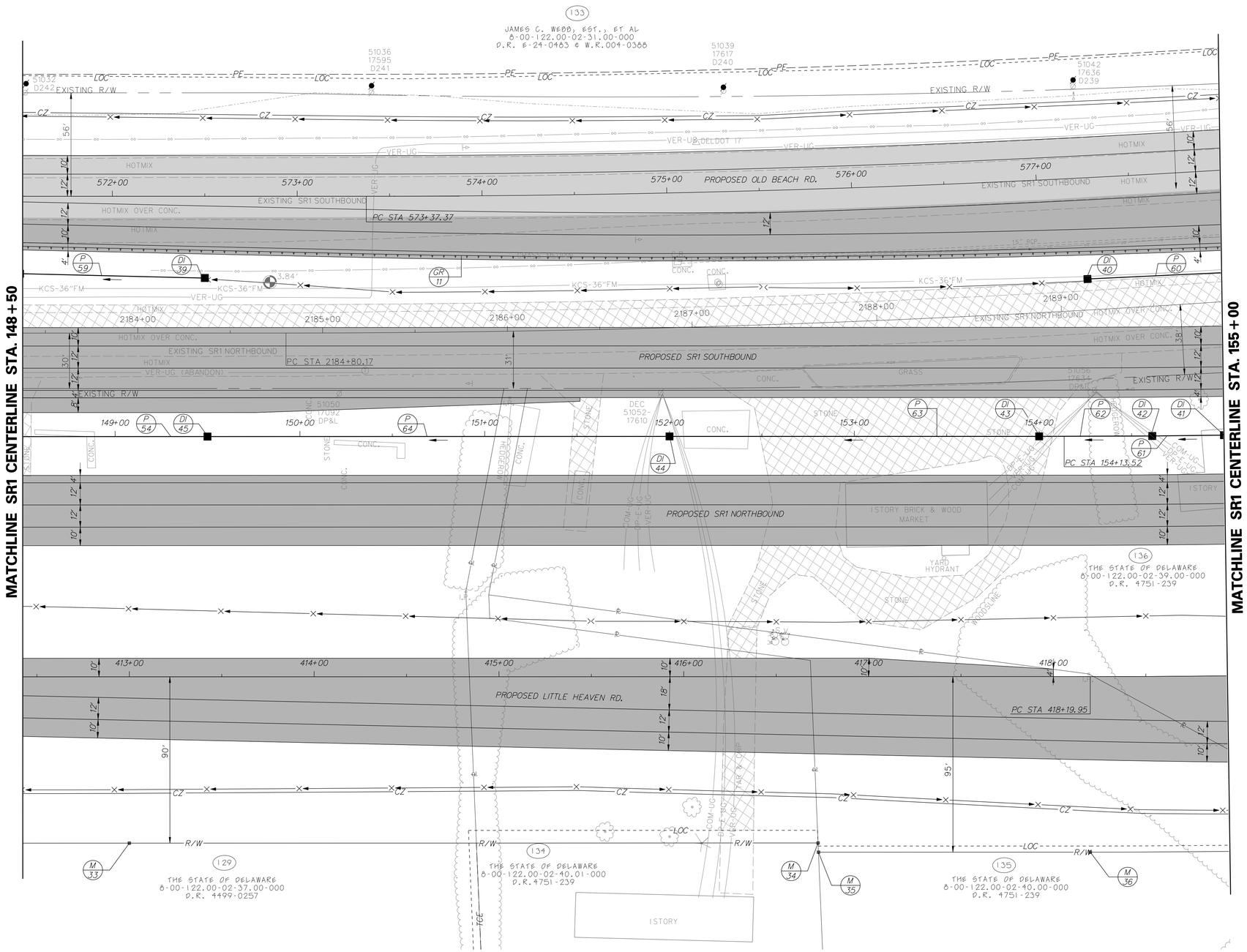

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
33	413+00.00	90.00	377750.4841	644876.2749
34	416+72.65	90.00	378117.9916	644937.9822
35	416+72.86	95.00	378117.3703	644942.9478
36	418+19.95	95.00	378262.4287	644967.3042

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
39	572+50.00	44.21'	34" x 24"	2	30.99'	27.83
40	577+25.00	54.77'	48" x 30"	2	31.62'	24.99'
41	155+00.00	0	34" x 24"	2	32.51'	29.39'
42	154+61.19	0	34" x 24"	2	32.47'	29.26'
43	154+00.00	0	48" x 30"	2	32.58'	29.06'
44	152+00.00	0	48" x 48"	2	33.28'	28.41'
45	149+50.00	0	48" x 48"	2	34.07'	27.60'

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
59	15"/HDPE		97.00'	0.0032	27.83'	27.52'
60	18"/HDPE		273.00'	0.0030	24.99'	24.17'
61	15"/RCP	IV	35.00'	0.0031	29.39'	29.28'
62	15"/RCP	IV	58.00'	0.0031	29.26'	29.08'
63	18"/RCP	IV	197.00'	0.0032	29.06'	28.43'
64	21"/RCP	IV	247.00'	0.0032	28.41'	27.62'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
11	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	571+51.44	27.02	648.24'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	572+50 TO 571+50 RT	100'	6" PEP	DI-33	29.00'
OLD BEACH ROAD	575+35 TO 572+50 RT	285'	6" PEP	DI-39	29.15'
OLD BEACH ROAD	575+35 TO 577+25 RT	190'	6" PEP	DI-40	29.75'
SR1 SB 58' LT	148+37 TO 151+00 LT	263'	6" PEP	DITCH	31.58'
SR1 SB 58' LT*	151+00 TO 154+27 LT	327'	6" PEP	DI-40	29.45'
SR1 NB 58' RT	148+37 TO 148+61 RT	24'	6" PEP	DITCH	32.09'
SR1 NB 58' RT	148+61 TO 151+61 RT	300'	6" PEP	DITCH	31.37'
SR1 NB 58' RT	151+61 TO 154+61 RT	300'	6" PEP	DITCH	31.59'
SR1 NB 21' RT	152+92 TO 154+61 RT	169'	6" PEP	DI-42	29.70'
LITTLE HEAVEN ROAD	412+01 TO 412+60 LT	59'	6" PEP	DITCH	31.57'
LITTLE HEAVEN ROAD	412+60 TO 415+60 LT	300'	6" PEP	DITCH	30.51'
LITTLE HEAVEN ROAD	415+60 TO 418+60 LT	300'	6" PEP	DITCH	28.41'
LITTLE HEAVEN ROAD	412+60 TO 415+60 RT	300'	6" PEP	DITCH	29.92'
LITTLE HEAVEN ROAD	415+60 TO 418+60 RT	300'	6" PEP	DITCH	29.13'

* UNDERDRAIN SHALL BE GREATER THAN 300'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 51
TOTAL SHTS. 641

1/5/2005
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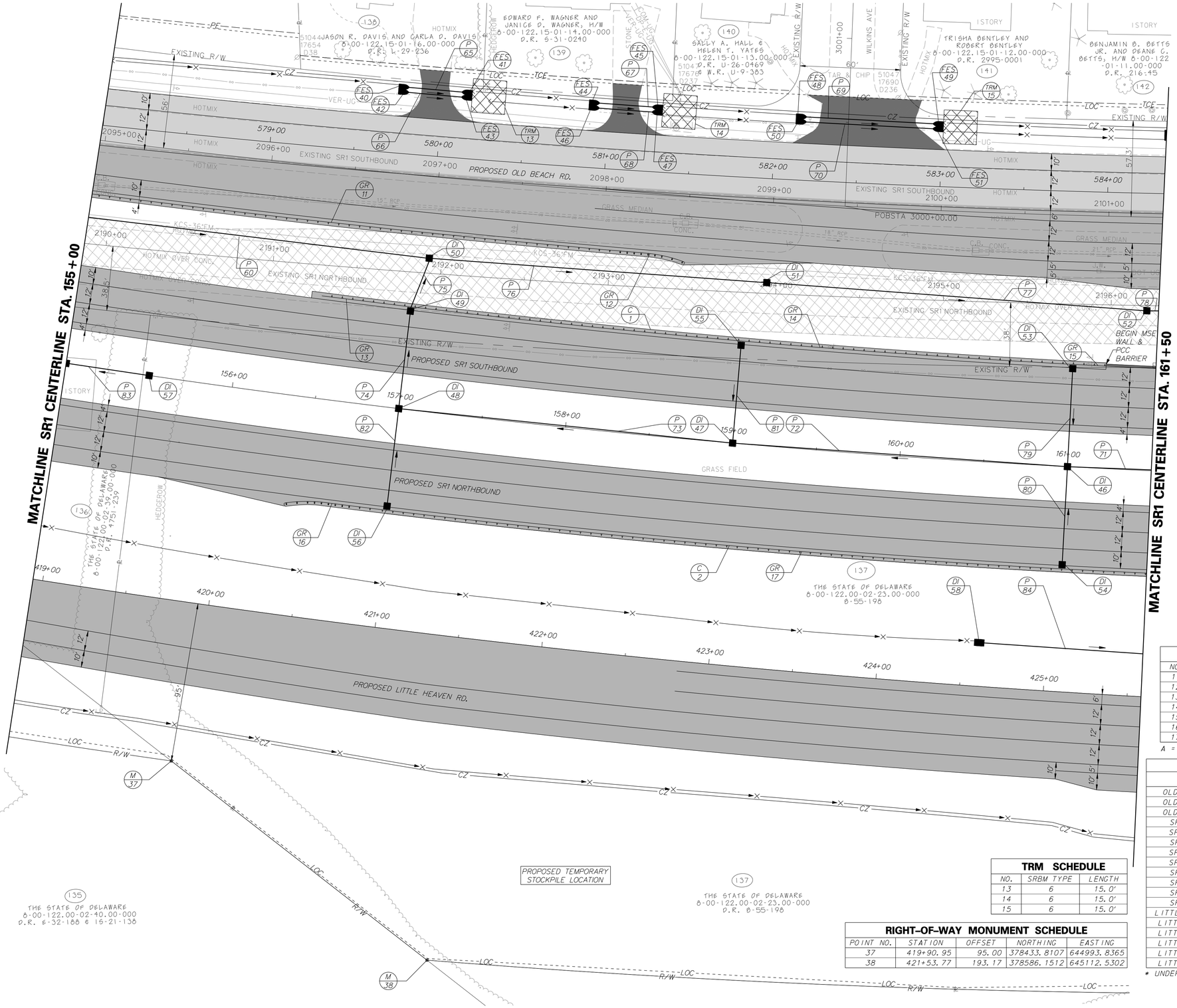

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
1	CURB TYPE 1-4	450'
2	CURB TYPE 1-4	460'

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
40	14"x23"/RCEP	0.0041	NO
41	14"x23"/RCEP	0.0041	NO
42	14"x23"/RCEP	0.0041	NO
43	14"x23"/RCEP	0.0041	NO
44	14"x23"/RCEP	0.0041	NO
45	14"x23"/RCEP	0.0041	NO
46	14"x23"/RCEP	0.0041	NO
47	14"x23"/RCEP	0.0041	NO
48	14"x23"/RCEP	0.0040	NO
49	14"x23"/RCEP	0.0040	NO
50	14"x23"/RCEP	0.0040	NO
51	14"x23"/RCEP	0.0040	NO

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
65	14"x23"/RCEP	IV	32.00'	0.0041	28.68'	28.54'
66	14"x23"/RCEP	IV	32.00'	0.0041	28.68'	28.54'
67	14"x23"/RCEP	IV	32.00'	0.0041	28.21'	28.07'
68	14"x23"/RCEP	IV	32.00'	0.0041	28.21'	28.07'
69	14"x23"/RCEP	IV	80.00'	0.0040	27.70'	27.37'
70	14"x23"/RCEP	IV	80.00'	0.0040	27.70'	27.37'
71	15"/RCP	IV	197.00'	0.0156	39.41'	36.34'
72	18"/RCP	IV	196.00'	0.0157	36.24'	33.17'
73	21"/RCP	IV	196.00'	0.0157	33.07'	30.00'
74	21"/RCP	IV	57.00'	0.0147	29.90'	29.07'
75	21"/RCP	IV	30.00'	0.0186	25.97'	25.42'
76	30"/HDPE		273.00'	0.0030	24.12'	23.53'
77	30"/HDPE		223.00'	0.0030	23.48'	22.81'
78	36"/HDPE		248.00'	0.0030	22.76'	22.02'
79	15"/RCP	IV	57.00'	0.0093	36.87'	36.34'
80	15"/RCP	IV	57.00'	0.0093	36.87'	36.34'
81	15"/RCP	IV	57.00'	0.0058	33.50'	33.17'
82	15"/RCP	IV	57.00'	0.0094	30.53'	30.00'
83	15"/RCP	IV	46.00'	0.0033	29.56'	29.41'
84	24"/HDPE		134.00'	0.0021	21.48'	21.20'

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
46	161+00.00	0	48" x 30"	2	42.99'	36.24'
47	159+00.00	0	48" x 30"	2	37.97'	33.07'
48	157+00.00	0	48" x 48"	2	34.10'	29.90'
49	157+00.00	-59.51'	34" x 24"	1	*	25.97'
50	580+00.00	60.87'	48" x 48"	2	30.26'	24.12'
51	582+00.00	61.99'	48" x 48"	2	29.51'	23.48'
52	584+25.00	69.98'	48" x 48"	2	28.41'	22.76'
53	161+00.00	-59.51'	34" x 24"	1	*	36.87'
54	161+00.00	59.51'	34" x 24"	1	*	36.87'
55	159+00.00	-59.51'	34" x 24"	1	*	33.50'
56	157+00.00	59.51'	34" x 24"	1	*	30.53'
57	155+50.00	0	34" x 24"	2	32.69'	29.56'
58+	424+59.88	-26.04'	+	2	25.41'	21.48'

+ SPECIAL INLET VI. SEE CONSTRUCTION DETAIL SHEETS.
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
11	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	577+99.68	41.33	300.32'
12	END TREATMENT ATTENUATOR, TYPE 2-31	581+00.00	A	50.00'
13	END ANCHORAGE 31	156+44.50	-61.00	14.00'
14	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	156+58.50	-61.00	450.00'
15	CONNECTION, EXIT TYPE 31	161+08.50	-61.00	14.50'
16	END TREATMENT ATTENUATOR, TYPE 2-31	156+40.25	A	50.00'
17	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	156+90.25	61.00	459.75'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	577+25 TO 580+00 RT	275'	6" PEP	DI-50	28.25'
OLD BEACH ROAD	580+00 TO 582+00 RT	200'	6" PEP	DI-51	27.34'
OLD BEACH ROAD	582+00 TO 584+25 RT	225'	6" PEP	DI-52	26.25'
SR1 SB 58' LT	159+00 TO 157+00 LT	200'	6" PEP	DI-49	31.27'
SR1 SB 58' LT	161+00 TO 159+00 LT	200'	6" PEP	DI-55	35.15'
SR1 NB 21' RT	157+00 TO 154+61 RT	239'	6" PEP	DI-42	29.70'
SR1 NB 21' RT	159+00 TO 157+00 RT	200'	6" PEP	DI-48	31.93'
SR1 NB 21' RT	161+00 TO 159+00 RT	200'	6" PEP	DI-47	35.80'
SR1 NB 58' RT	157+00 TO 154+61 RT	239'	6" PEP	DITCH	31.59'
SR1 NB 58' RT	157+61 TO 157+00 RT	61'	6" PEP	DI-56	33.22'
SR1 NB 58' RT	160+54 TO 157+61 RT	293'	6" PEP	DITCH	34.10'
SR1 NB 58' RT	160+98 TO 160+54 RT	44'	6" PEP	DI-58	23.24'
LITTLE HEAVEN RD*	421+60 TO 419+25 LT	235'	6" PEP	DITCH	27.76'
LITTLE HEAVEN RD	418+60 TO 419+25 LT	65'	6" PEP	DITCH	27.76'
LITTLE HEAVEN RD	421+60 TO 424+60 LT	300'	6" PEP	DI-58	23.24'
LITTLE HEAVEN RD	426+00 TO 424+60 LT	140'	6" PEP	DI-58	23.24'
LITTLE HEAVEN RD	418+60 TO 421+60 RT	300'	6" PEP	DITCH	26.27'
LITTLE HEAVEN RD	421+60 TO 424+60 RT	300'	6" PEP	DITCH	24.72'

* UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD.

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
13	6	15.0'
14	6	15.0'
15	6	15.0'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
37	419+90.95	95.00	378433.8107	644993.8365
38	421+53.77	193.17	378586.1512	645112.5302

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 52 / TOTAL SHTS. 641

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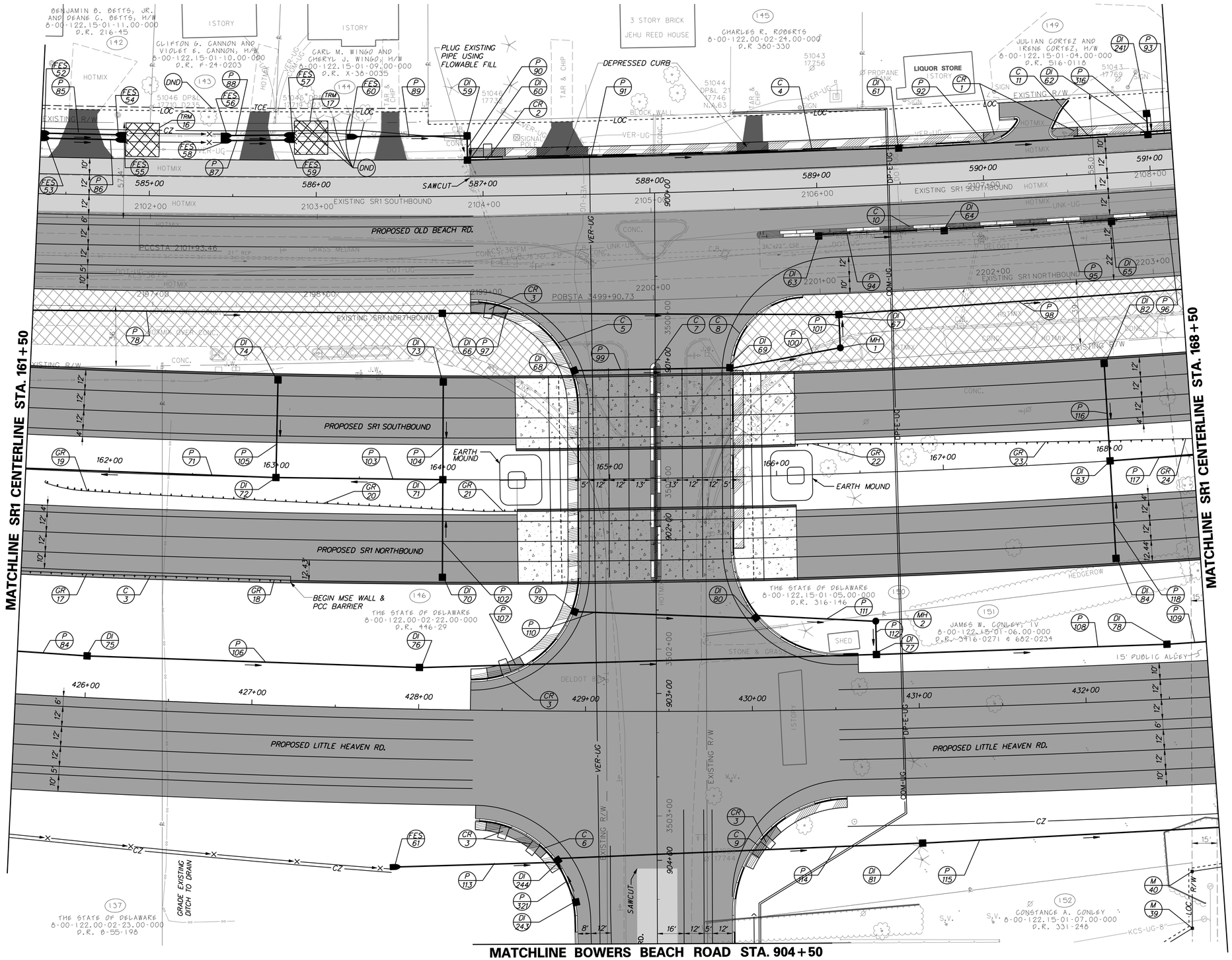

NOTE: SEE CONSTRUCTION DETAILS FOR EARTH MOUND DETAILS.

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	**SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION**	CONTRACT T200412202	BRIDGE NO. -	**CONSTRUCTION PLAN**	SHEET NO. 53
				COUNTY KENT	DESIGNED BY: SFP		TOTAL SHTS. 641
					CHECKED BY: WFC		

1/15/2015
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TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
16	6	15.0'
17	6	15.0'

FLARED END STRUCTURE SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
52	14"x23"/RCEP	0.0042	NO
53	14"x23"/RCEP	0.0042	NO
54	14"x23"/RCEP	0.0042	NO
55	14"x23"/RCEP	0.0042	NO
56	21" / RCP	0.0041	NO
57	21" / RCP	0.0041	NO
58	21" / RCP	0.0041	NO
59	21" / RCP	0.0041	NO
60	21" / RCP	0.0561	YES
61	18" / RCP	0.0061	YES

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
3	CURB TYPE 1-4	162'
4	CURB & GUTTER TYPE 3-8	349'
5	CURB & GUTTER TYPE 3-8	305'
6	CURB & GUTTER TYPE 3-8	110'
7	CURB TYPE 2	270'
8	CURB & GUTTER TYPE 3-8	289'
9	CURB & GUTTER TYPE 3-8	127'
10	CURB TYPE 2	505'
11	CURB & GUTTER TYPE 3-8	99'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
39	432+57.05	137.88	379716.6400	645096.0663
40	432+58.54	103.82	379716.5128	645061.9784

MANHOLE SCHEDULE

NO.	STATION	OFFSET	TYPE/SIZE	T.G. EL.	INV. EL.
1	589+10.31	96.42'	48" x 48"	28.67'	21.72'
2	430+75.01	-52.66	48" x 48"	29.28'	21.64'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
17	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	161+50.00	61.00	140.25'
18	CONNECTION, APPROACH TYPE 1-31	162+90.25	61.00	27.00'
19	END TREATMENT ATTENUATOR, TYPE 2-31	161+63.08	A	50.00'
20	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	162+12.91	12.19	212.50'
21	CONNECTION, APPROACH TYPE 1-31	164+24.77	18.97	27.00'
22	CONNECTION, APPROACH TYPE 1-31	166+04.33	-18.56	27.00'
23	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	166+31.52	-18.56	212.50'
24	END TREATMENT ATTENUATOR, TYPE 2-31	168+44.38	A	5.62'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
85	14"x23"/RCEP	IV	40.00'	0.0042	26.78'	26.62'
86	14"x23"/RCEP	IV	40.00'	0.0042	26.78'	26.62'
87	21"/RCP	IV	32.00'	0.0041	26.33'	26.19'
88	21"/RCP	IV	32.00'	0.0041	26.33'	26.19'
89	21"/RCP	IV	64.00'	0.0561	25.70'	22.11'
90	27"/RCP	IV	11.00'	0.0030	22.03'	22.00'
91	27"/RCP	IV	254.00'	0.0030	21.98'	21.22'
92	30"/RCP	IV	146.00'	0.0030	21.20'	20.76'
93	24"x38"/RCEP	IV	121.00'	0.0030	20.74'	20.38'
94	15"/RCP	IV	72.00'	0.0044	22.54'	22.22'
95	15"/RCP	IV	98.00'	0.0044	22.12'	21.69'
96	15"/RCP	IV	98.00'	0.0044	21.59'	21.16'
97	33"/RCP	IV	234.00'	0.0030	21.95'	21.25'
98	36"/HDPE		213.00'	0.0030	21.23'	20.59'
99	15"/RCP	IV	93.00'	0.0032	22.50'	22.20'
100	15"/RCP	IV	63.00'	0.0044	22.10'	21.82'
101	15"/RCP	IV	16.00'	0.0053	21.72'	21.64'
102	15"/RCP	IV	57.00'	0.0092	41.64'	41.11'
103	15"/RCP	IV	97.00'	0.0155	41.01'	39.51'
104	15"/RCP	IV	57.00'	0.0092	41.64'	41.11'
105	15"/RCP	IV	57.00'	0.0093	40.04'	39.51'
106	30"/HDPE		195.00'	0.0026	21.20'	20.69'
107	30"/RCP	IV	270.00'	0.0026	20.68'	19.97'
108	30"/HDPE		170.00'	0.0026	19.97'	19.53'
109	36"/HDPE		245.00'	0.0026	19.53'	18.89'
110	15"/RCP	IV	108.00'	0.0037	22.50'	22.10'
111	15"/RCP	IV	68.00'	0.0047	22.00'	21.68'
112	15"/RCP	IV	16.00'	0.0048	21.64'	21.56'
113	18"/RCP	IV	93.00'	0.0061	22.96'	22.40'
114	18"/RCP	IV	216.00'	0.0058	22.35'	21.09'
115	18"/HDPE		200.00'	0.0057	21.04'	19.90'
116	15"/RCP	IV	58.00'	0.0097	44.79'	44.23'
117	15"/RCP	IV	197.00'	0.0099	42.94'	40.98'
118	15"/RCP	IV	58.00'	0.0097	44.79'	44.23'
316	15"/RCP	IV	10.00'	0.0084	21.58'	21.50'
321	15"/RCP	IV	23.00'	0.0043	23.50'	23.40'

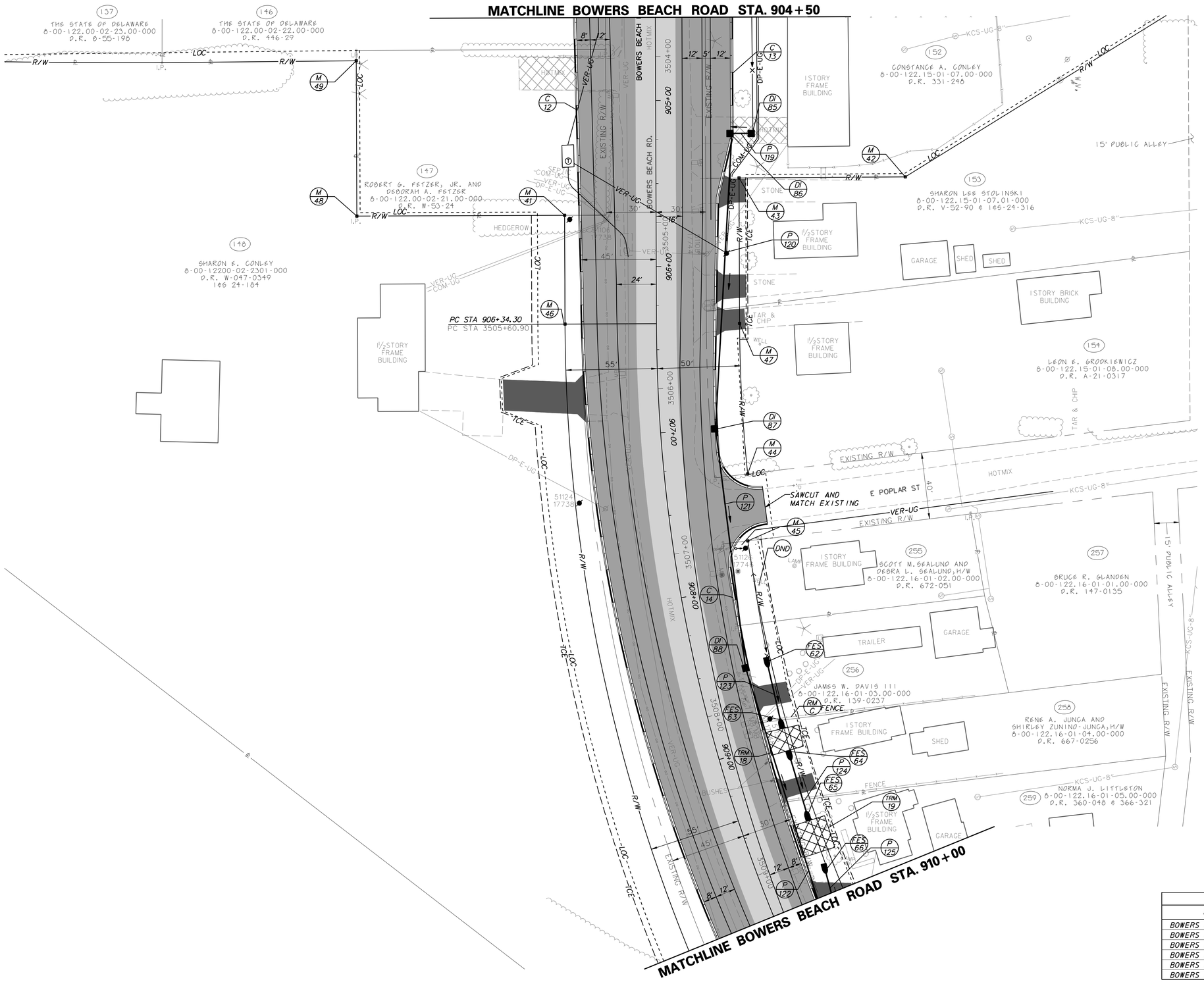
DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
59	586+90.81	-36.18'	48" x 48"	2	25.86'	22.03'
60	586+90.82	**	48" x 48"	1	*	21.98'
61	589+50.00	**	48" x 48"	1	*	21.20'
62	591+00.00	**	48" x 48"	1	*	20.74'
63	589+00.00	**	34" x 24"	1	*	22.54'
64	589+75.00	**	34" x 24"	1	*	22.12'
65	590+75.00	**	34" x 24"	1	*	21.59'
66	586+75.00	70.03'	48" x 48"	2	27.54'	21.95'
67	589+25.00	75.20'	48" x 48"	2	26.72'	21.23'
68	901+06.82	**	34" x 24"	1	*	22.50'
69	901+05.05	**	34" x 24"	1	*	22.10'
70	164+00.00	**	34" x 24"	1	*	41.64'
71	164+00.00	0	34" x 24"	2	48.82'	41.01'
72	163+00.00	0	34" x 24"	2	47.40'	39.41'
73	164+00.00	**	34" x 24"	1	*	41.64'
74	163+00.00	**	34" x 24"	1	*	40.04'
75	426+00.00	-24.97'	48" x 48"	2	25.90'	21.20'
76	428+00.00	-25.00'	48" x 48"	2	26.99'	20.68'
77	430+75.00	-32.66'	48" x 48"	2	27.38'	19.97'
78	432+50.00	-32.88'	48" x 48"	2	26.76'	19.53'
79	902+50.30	**	34" x 24"	1	*	22.50'
80	902+53.98	**	48" x 30"	1	*	22.00'
81+	431+00.00	80.97'	+	2	24.81'	21.04'
82	168+00.00	**	34" x 24"	1	*	44.79'
83	168+00.00	0	34" x 24"	2	49.07'	42.94'
84	168+00.00	**	34" x 24"	1	*	44.79'
241	591+00.00	-34.29'	34" x 24"	2	25.96'	21.58'
243	904+25.00	**	48" x 30"	1	*	23.50'
244	904+00.00	**	48" x 30"	1	*	22.35'

\+ SPECIAL INLET VII. SEE CONSTRUCTION DETAIL SHEETS.
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	588+63 TO 589+50 LT	87'	6" PEP	DI-61	23.74'
OLD BEACH ROAD	584+25 TO 586+75 RT	250'	6" PEP	DI-66	24.96'
OLD BEACH ROAD	586+75 TO 589+25 RT	250'	6" PEP	DI-67	24.14'
OLD BEACH ROAD	589+25 TO 591+25 RT	200'	6" PEP	DI-118	23.56'
SR1 SB 58' LT	161+45 TO 161+00 LT	45'	6" PEP	DI-53	40.17'
SR1 NB 21' RT	164+00 TO 161+00 RT	300'	6" PEP	DI-46	40.16'
SR1 NB 21' RT	166+11 TO 164+00 RT	211'	6" PEP	DI-71	46.01'
SR1 NB 21' RT	166+11 TO 168+00 RT	189'	6" PEP	DI-83	46.49'
SR1 NB 58' RT	161+20 TO 161+00 RT	20'	6" PEP	DI-54	42.04'
LITTLE HEAVEN ROAD	428+00 TO 426+00 LT	200'	6" PEP	DI-75	23.73'
LITTLE HEAVEN ROAD	429+73 TO 428+00 LT	173'	6" PEP	DI-76	24.82'
LITTLE HEAVEN ROAD	429+73 TO 432+50 LT	277'	6" PEP	DI-78	24.59'
LITTLE HEAVEN ROAD	427+60 TO 424+60 RT	300'	6" PEP	DITCH	24.72'
LITTLE HEAVEN ROAD	429+73 TO 427+60 RT	213'	6" PEP	DITCH	26.05'
LITTLE HEAVEN ROAD	429+73 TO 431+00 RT	127'	6" PEP	DI-81	22.64'
LITTLE HEAVEN ROAD	431+00 TO 433+00 RT	200'	6" PEP	DI-132	20.48'



TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
18	6	12.0'
19	6	15.0'

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
62	14"x23"/RCEP	0.0032	NO
63	14"x23"/RCEP	0.0032	NO
64	14"x23"/RCEP	0.0032	NO
65	14"x23"/RCEP	0.0032	NO
66	14"x23"/RCEP	0.0032	NO

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
12	CURB & GUTTER TYPE 3-8	566'
13	CURB & GUTTER TYPE 3-8	303'
14	CURB & GUTTER TYPE 3-8	246'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
41	905+68.86	55.00	379341.5944	645224.4105
42	905+46.52	-150.00	379546.5091	645201.2968
43	905+46.81	-50.00	379446.5113	645201.9604
44	907+30.01	-50.00	379451.7172	645379.9853
45	907+72.08	-45.00	379451.7805	645420.2686
46	906+34.30	55.00	379341.8384	645289.8410
47	906+34.30	-50.00	379446.8377	645289.4493
48	905+68.86	180.00	379216.5952	645224.8768
49	904+75.44	180.00	379216.2468	645131.4575

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
85	905+20.00	-57.43'	34" x 18"	2	26.25'	23.40'
86	905+20.00	**	34" x 24"	1	*	23.30'
87	907+00.00	**	48" x 30"	1	*	22.15'
88	908+50.00	**	48" x 30"	1	*	21.40'

* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
119	15"/RCP	IV	10.00'	0.0050	23.40'	23.35'
120	15"/RCP	IV	175.00'	0.0063	23.30'	22.20'
121	15"/RCP	IV	141.00'	0.0050	22.15'	21.45'
122	18"/RCP	IV	166.00'	0.0049	21.40'	20.59'
123	14"X23"/RCEP	V	32.00'	0.0032	23.72'	23.62'
124	14"X23"/RCEP	V	28.00'	0.0033	23.53'	23.44'
125	18"/RCP	V	34.00'	0.0613	22.96'	20.85'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
BOWERS BEACH ROAD	904+35 TO 905+20 LT	85'	6" PEP	DI-86	25.32'
BOWERS BEACH ROAD	905+20 TO 907+00 LT	180'	6" PEP	DI-87	24.12'
BOWERS BEACH ROAD	907+00 TO 908+50 LT	150'	6" PEP	DI-88	22.93'
BOWERS BEACH ROAD	908+50 TO 910+25 LT	175'	6" PEP	DI-90	22.34'
BOWERS BEACH ROAD	904+41 TO 907+41 RT	300'	6" PEP	DITCH	26.42'
BOWERS BEACH ROAD	907+41 TO 910+41 RT	300'	6" PEP	DITCH	25.07'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 55
TOTAL SHTS. 641

1/15/2015
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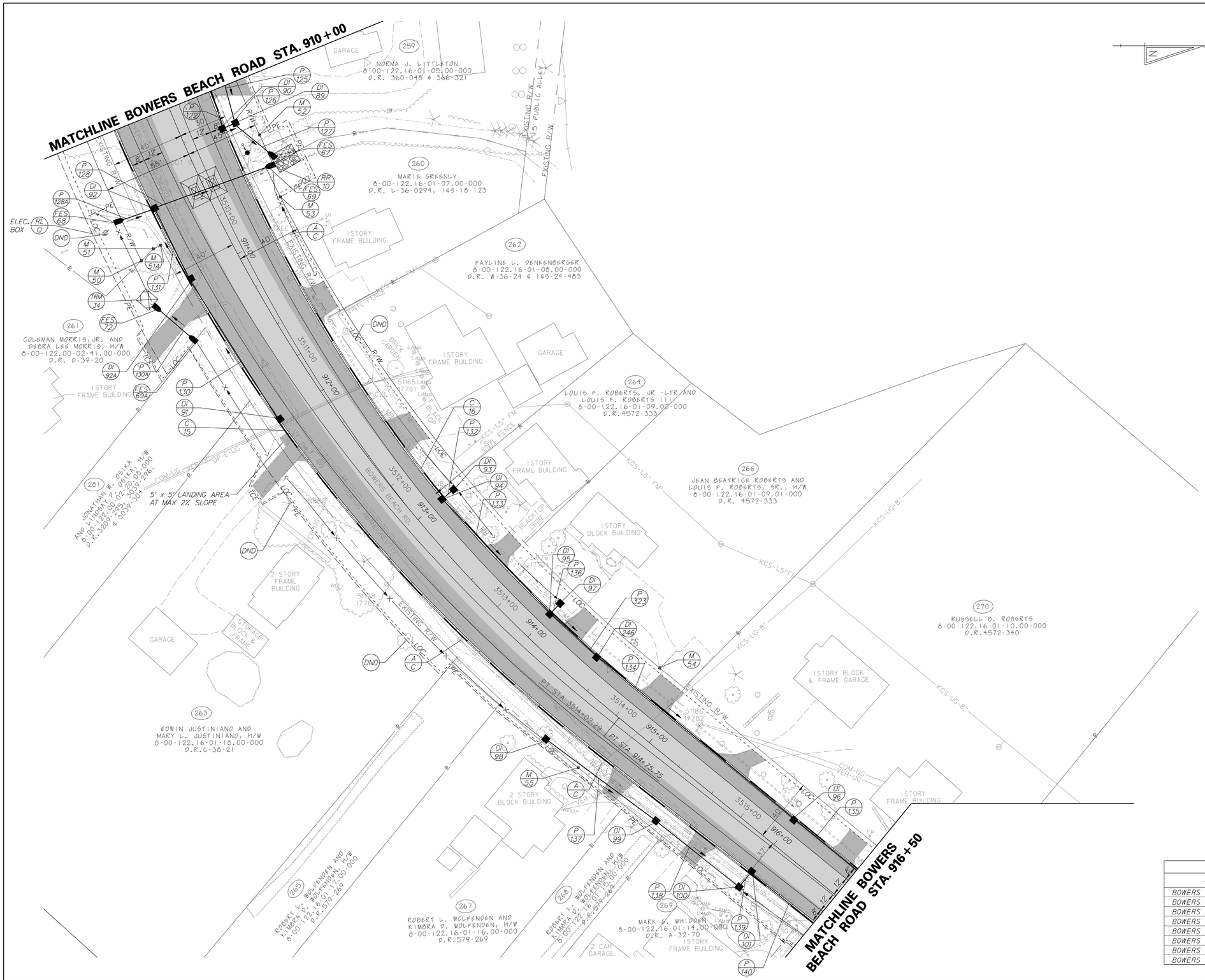


NOTE:

THE DRIVEWAY AT PARCEL 263 SHALL BE CONSTRUCTED WITH A 5' WIDE 2% GRADE LANDING AREA ALONG THE CURB LINE AND A MAX 8.1% SLOPE BACK TO MATCH THE EXISTING DRIVEWAY TO MEET HANDICAP ACCESSIBILITY REQUIREMENTS.

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
34	6	15.0'

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
10	R-4	180.00

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
67	21"/RCP	0.0051	NO
68	36"/RCP	0.0046	YES
69	36"/RCP	0.0046	NO
69A	15"/RCP	0.0103	NO
72	15"/RCP	0.0103	NO

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
15	CURB & GUTTER TYPE 3-8	666'
16	CURB & GUTTER TYPE 3-8	640'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
50	910+77.02	55.00	379450.1231	645741.0705
51	910+73.93	45.00	379457.5968	645733.6721
51A	910+73.93	40.00	379462.0680	645731.4341
52	910+38.42	-45.00	378523.4706	645662.7942
53	910+80.49	-40.00	379536.4401	645701.2386
54	914+75.71	-40.00	379772.2259	645994.0865
55	914+75.71	40.00	379721.5522	646055.9912

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
89	910+25.00	-34.40'	48" x 48"	2	24.24'	20.45'
90	910+25.00	**	48" x 30"	1	*	20.53'
91	912+00.00	**	34" x 24"	1	*	23.30'
92	910+50.00	**	48" x 30"	1	*	20.61'
92A	911+00.00	**	34" x 24"	1	*	22.80'
93	913+00.00	-28.98'	34" x 18"	2	23.20'	19.82'
94	913+00.00	**	34" x 24"	1	*	19.80'
95	914+00.00	**	48" x 30"	1	*	19.52'
96	916+00.00	**	48" x 30"	1	*	18.94'
97	914+00.00	-28.92'	34" x 18"	2	22.75'	19.54'
98	914+50.00	39.38'	34" x 24"	2	23.00'	19.28'
99	915+34.00	34.98'	34" x 24"	2	22.71'	19.04'
100	916+00.00	34.05'	34" x 24"	2	22.00'	18.85'
101	916+00.00	**	34" x 24"	1	*	18.83'
246	914+40.00	**	48" x 30"	1	*	19.41'

* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
126	18"/RCP	IV	5.00'	0.0051	20.53'	20.50'
127	21"/RCP	IV	26.00'	0.0051	20.45'	20.32'
128	36"/RCP	IV	72.00'	0.0046	20.61'	20.28'
128A	36"/RCP	IV	17.00'	0.0046	20.68'	20.61'
130	15"/RCP	IV	101.00'	0.0040	23.30'	22.90'
130A	15"/RCP	IV	24.00'	0.0103	23.14'	22.89'
131	15"/RCP	IV	47.00'	0.0045	22.80'	22.59'
132	15"/RCP	IV	6.00'	0.0032	19.82'	19.80'
133	15"/RCP	IV	94.00'	0.0030	19.80'	19.52'
134	18"/RCP	IV	155.00'	0.0030	19.41'	18.94'
135	18"/RCP	IV	219.00'	0.0030	18.94'	18.29'
136	15"/RCP	IV	6.00'	0.0029	19.54'	19.52'
137	15"/RCP	IV	82.00'	0.0030	19.28'	19.04'
138	15"/RCP	IV	63.00'	0.0029	19.04'	18.85'
139	15"/RCP	IV	9.00'	0.0030	18.85'	18.83'
140	15"/RCP	IV	247.00'	0.0030	18.83'	18.09'
323	18"/RCP	IV	35.00'	0.0030	19.52'	19.41'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
BOWERS BEACH ROAD	910+25 TO 910+52 LT	27'	6" PEP	DITCH	22.19'
BOWERS BEACH ROAD	910+63 TO 913+00 LT	237'	6" PEP	DI-94	21.40'
BOWERS BEACH ROAD	913+00 TO 914+00 LT	100'	6" PEP	DI-95	20.94'
BOWERS BEACH ROAD	914+00 TO 916+00 LT	200'	6" PEP	DI-96	20.75'
BOWERS BEACH ROAD	910+52 TO 911+00 RT	48'	6" PEP	DI-92	24.83'
BOWERS BEACH ROAD	911+00 TO 912+00 RT	100'	6" PEP	DI-91	24.23'
BOWERS BEACH ROAD	912+00 TO 914+50 RT	250'	6" PEP	DI-98	20.73'
BOWERS BEACH ROAD	914+50 TO 916+00 RT	150'	6" PEP	DI-101	20.96'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

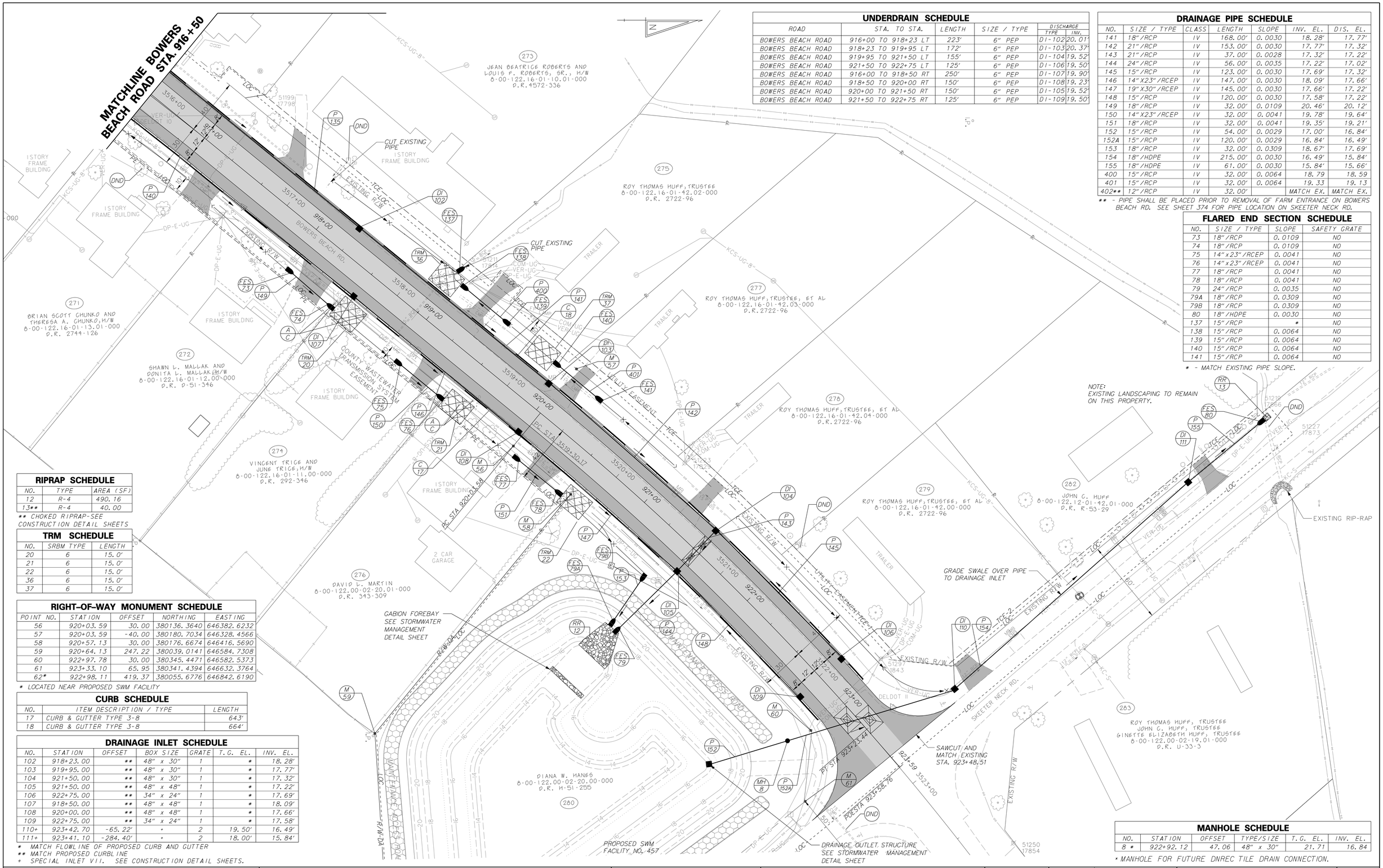
SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 56
TOTAL SHTS. 641

1/5/2015 G:\PROJECTS\03517.00 (DELDOT AGMT 223 DOTS Open End\03517.16 SR1, LITTLE HEAVEN FINAL DESIGN\DGN Files\psi8lhc.dgn 12:03:13 PM



UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
BOWERS BEACH ROAD	916+00 TO 918+23 LT	223'	6" PEP	DI-102	20.01'
BOWERS BEACH ROAD	918+23 TO 919+95 LT	172'	6" PEP	DI-103	20.37'
BOWERS BEACH ROAD	919+95 TO 921+50 LT	155'	6" PEP	DI-104	19.52'
BOWERS BEACH ROAD	921+50 TO 922+75 LT	125'	6" PEP	DI-106	19.50'
BOWERS BEACH ROAD	916+00 TO 918+50 RT	250'	6" PEP	DI-107	19.90'
BOWERS BEACH ROAD	918+50 TO 920+00 RT	150'	6" PEP	DI-108	19.23'
BOWERS BEACH ROAD	920+00 TO 921+50 RT	150'	6" PEP	DI-105	19.52'
BOWERS BEACH ROAD	921+50 TO 922+75 RT	125'	6" PEP	DI-109	19.50'

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
141	18"/RCP	IV	168.00'	0.0030	18.28'	17.77'
142	21"/RCP	IV	153.00'	0.0030	17.77'	17.32'
143	21"/RCP	IV	37.00'	0.0028	17.32'	17.22'
144	24"/RCP	IV	56.00'	0.0035	17.22'	17.02'
145	15"/RCP	IV	123.00'	0.0030	17.69'	17.32'
146	14"X23"/RCEP	IV	147.00'	0.0030	18.09'	17.66'
147	19"X30"/RCEP	IV	145.00'	0.0030	17.66'	17.22'
148	15"/RCP	IV	120.00'	0.0030	17.58'	17.22'
149	18"/RCP	IV	32.00'	0.0109	20.46'	20.12'
150	14"X23"/RCEP	IV	32.00'	0.0041	19.78'	19.64'
151	18"/RCP	IV	32.00'	0.0041	19.35'	19.21'
152	15"/RCP	IV	54.00'	0.0029	17.00'	16.84'
152A	15"/RCP	IV	120.00'	0.0029	16.84'	16.49'
153	18"/RCP	IV	32.00'	0.0309	18.67'	17.69'
154	18"/HDPE	IV	215.00'	0.0030	16.49'	15.84'
155	18"/HDPE	IV	61.00'	0.0030	15.84'	15.66'
400	15"/RCP	IV	32.00'	0.0064	18.79	18.59
401	15"/RCP	IV	32.00'	0.0064	19.33	19.13
402**	12"/RCP	IV	32.00'		MATCH EX.	MATCH EX.

** - PIPE SHALL BE PLACED PRIOR TO REMOVAL OF FARM ENTRANCE ON BOWERS BEACH RD. SEE SHEET 374 FOR PIPE LOCATION ON SKEETER NECK RD.

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
73	18"/RCP	0.0109	NO
74	18"/RCP	0.0109	NO
75	14"x23"/RCEP	0.0041	NO
76	14"x23"/RCEP	0.0041	NO
77	18"/RCP	0.0041	NO
78	18"/RCP	0.0041	NO
79	24"/RCP	0.0035	NO
79A	18"/RCP	0.0309	NO
79B	18"/RCP	0.0309	NO
80	18"/HDPE	0.0030	NO
137	15"/RCP	*	NO
138	15"/RCP	0.0064	NO
139	15"/RCP	0.0064	NO
140	15"/RCP	0.0064	NO
141	15"/RCP	0.0064	NO

* - MATCH EXISTING PIPE SLOPE.

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
12	R-4	490.16
13**	R-4	40.00

** CHOKED RIPRAP-SEE CONSTRUCTION DETAIL SHEETS

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
20	6	15.0'
21	6	15.0'
22	6	15.0'
36	6	15.0'
37	6	15.0'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
56	920+03.59	30.00	380136.3640	646382.6232
57	920+03.59	-40.00	380180.7034	646328.4566
58	920+57.13	30.00	380176.6674	646416.5690
59	920+64.13	247.22	380039.0141	646584.7308
60	922+97.78	30.00	380345.4471	646582.5373
61	923+33.10	65.95	380341.4394	646632.3764
62*	922+98.11	419.37	380055.6776	646842.6190

* LOCATED NEAR PROPOSED SWM FACILITY

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
17	CURB & GUTTER TYPE 3-8	643'
18	CURB & GUTTER TYPE 3-8	664'

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
102	918+23.00	**	48" x 30"	1	*	18.28'
103	919+95.00	**	48" x 30"	1	*	17.77'
104	921+50.00	**	48" x 30"	1	*	17.32'
105	921+50.00	**	48" x 48"	1	*	17.22'
106	922+75.00	**	34" x 24"	1	*	17.69'
107	918+50.00	**	48" x 48"	1	*	18.09'
108	920+00.00	**	48" x 48"	1	*	17.66'
109	922+75.00	**	34" x 24"	1	*	17.58'
110+	923+42.70	-65.22'	+	2	19.50'	16.49'
111+	923+41.10	-284.40'	+	2	18.00'	15.84'

* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE
+ SPECIAL INLET VII. SEE CONSTRUCTION DETAIL SHEETS.

MANHOLE SCHEDULE

NO.	STATION	OFFSET	TYPE/SIZE	T.G. EL.	INV. EL.
8 *	922+92.12	47.06	48" x 30"	21.71	16.84

* MANHOLE FOR FUTURE DNREC TILE DRAIN CONNECTION.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

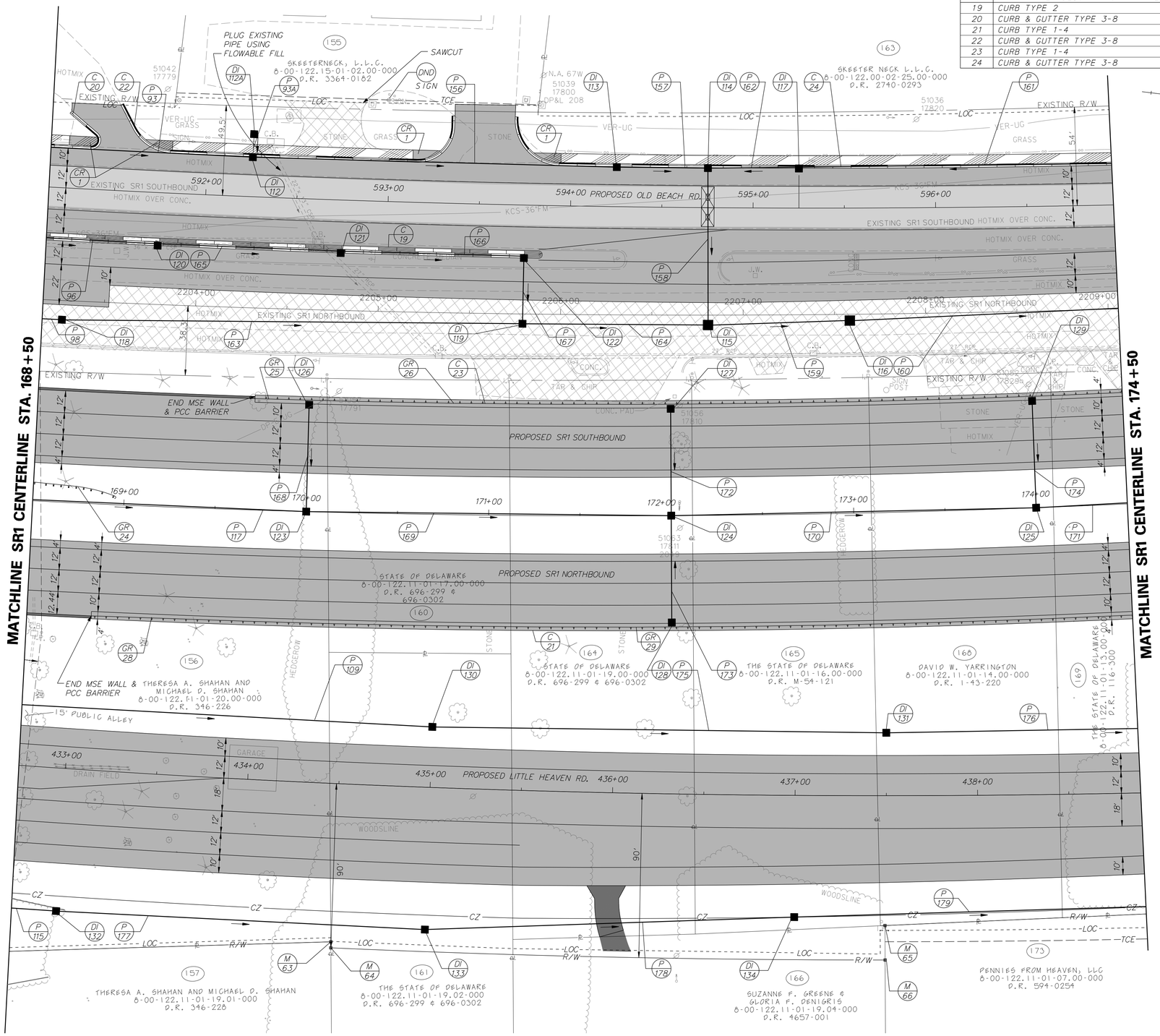
SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 57
TOTAL SHTS. 641



CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
19	CURB TYPE 2	546'
20	CURB & GUTTER TYPE 3-8	53'
21	CURB TYPE 1-4	571'
22	CURB & GUTTER TYPE 3-8	213'
23	CURB TYPE 1-4	476'
24	CURB & GUTTER TYPE 3-8	344'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	589+50 TO 592+25 LT	275'	6" PEP	DI-112	23.29'
OLD BEACH ROAD	592+25 TO 594+25 LT	200'	6" PEP	DI-113	23.10'
OLD BEACH ROAD	594+25 TO 594+75 LT	50'	6" PEP	DI-114	23.00'
OLD BEACH ROAD	595+25 TO 594+75 LT	50'	6" PEP	DI-114	23.00'
OLD BEACH ROAD	597+00 TO 595+25 LT	175'	6" PEP	DI-117	22.70'
OLD BEACH ROAD	591+25 TO 593+75 RT	250'	6" PEP	DI-119	24.25'
OLD BEACH ROAD	593+75 TO 594+75 RT	100'	6" PEP	DI-115	22.88'
OLD BEACH ROAD	597+50 TO 594+75 RT	275'	6" PEP	DI-115	22.88'
SR1 SB 58' LT	168+00 TO 170+00 LT	200'	6" PEP	DI-126	43.10'
SR1 SB 58' LT	170+00 TO 172+00 LT	200'	6" PEP	DI-127	37.84'
SR1 SB 58' LT	172+00 TO 174+00 LT	200'	6" PEP	DI-129	32.04'
SR1 NB 21' RT	168+00 TO 170+00 RT	200'	6" PEP	DI-123	44.11'
SR1 NB 21' RT	170+00 TO 172+00 RT	200'	6" PEP	DI-124	37.84'
SR1 NB 21' RT	172+00 TO 174+00 RT	200'	6" PEP	DI-125	32.03'
SR1 NB 58' RT	168+00 TO 169+00 RT	100'	6" PEP	DITCH	46.50'
SR1 NB 58' RT	169+00 TO 172+00 RT	300'	6" PEP	DI-128	39.71'
SR1 NB 58' RT	172+00 TO 174+25 RT	225'	6" PEP	DITCH	33.11'
LITTLE HEAVEN ROAD	432+50 TO 435+00 LT	250'	6" PEP	DI-130	23.30'
LITTLE HEAVEN ROAD	435+00 TO 437+50 LT	250'	6" PEP	DI-131	22.32'
LITTLE HEAVEN ROAD	437+50 TO 440+00 LT	250'	6" PEP	DI-150	21.52'
LITTLE HEAVEN ROAD	433+00 TO 435+00 RT	200'	6" PEP	DITCH	25.17'
LITTLE HEAVEN ROAD	435+00 TO 437+00 RT	200'	6" PEP	DITCH	24.42'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
24	END TREATMENT ATTENUATOR, TYPE 2-31	168+50.00	A	47.38'
25	CONNECTION, APPROACH TYPE 1-31	169+62.75	-61.00	27.00'
26	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	169+89.75	-61.00	460.25'
28	CONNECTION, EXIT TYPE 31	168+82.00	61.00	14.50'
29	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	168+96.50	61.00	553.50'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
112	592+25.00	**	48" x 48"	1	*	20.36'
112A	592+25.00	-34.26'	34" x 24"	1	25.17'	21.85'
113	594+25.00	**	48" x 48"	1	*	19.76'
114	594+75.09	**	48" x 48"	1	*	19.62'
115	594+75.81	64.26'	66" x 66"	2	25.05'	19.40'
116	595+52.84	61.62'	66" x 66"	2	25.24'	19.17'
117	595+25.00	**	48" x 30"	1	*	19.85'
118	591+25.00	72.19'	48" x 48"	2	26.14'	20.54'
119	593+75.00	65.00'	48" x 48"	2	25.64'	19.75'
120	591+75.00	**	34" x 24"	1	*	21.06'
121	592+75.00	**	34" x 24"	1	*	20.53'
122	593+75.00	**	34" x 24"	1	*	20.00'
123	170+00.00	0	34" x 24"	1	45.92'	37.42'
124	172+00.00	0	48" x 30"	2	40.67'	31.34'
125	174+00.00	0	48" x 48"	2	34.86'	26.71'
126	170+00.00	-59.51'	34" x 24"	1	*	41.54'
127	172+00.00	-59.51'	34" x 24"	1	*	36.02'
128	172+00.00	59.51'	34" x 24"	1	*	36.02'
129	174+00.00	-59.51'	34" x 24"	1	*	29.94'
130	435+00.00	-33.16'	48" x 48"	2	25.88'	18.89'
131	437+50.00	-34.45'	48" x 48"	2	24.90'	18.23'
132+	433+00.00	78.23'	+	2	22.65'	19.31'
133+	435+00.00	77.91'	+	2	22.05'	18.73'
134+	437+00.00	66.66'	+	2	23.28'	18.14'

\+ SPECIAL INLET VII. SEE CONSTRUCTION DETAIL SHEETS.
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
93A	15"/RCP	IV	12.00'	0.0086	21.85'	21.75'
156	30"/RCP	IV	195.00'	0.0030	20.36'	19.78'
157	30"/RCP	IV	46.00'	0.0030	19.76'	19.62'
158	33"/RCP	IV	81.00'	0.0025	19.62'	19.42'
159	42"/HDPE		72.00'	0.0029	19.40'	19.19'
160	42"/HDPE		193.00'	0.0030	19.17'	18.59'
161	18"/RCP	IV	171.00'	0.0032	20.41'	19.87'
162	18"/RCP	IV	46.00'	0.0032	19.85'	19.70'
163	36"/HDPE		248.00'	0.0030	20.54'	19.80'
164	36"/HDPE		97.00'	0.0031	19.75'	19.45'
165	15"/RCP	IV	98.00'	0.0044	21.06'	20.63'
166	15"/RCP	IV	98.00'	0.0044	20.53'	20.10'
167	15"/RCP	IV	34.00'	0.0044	20.00'	19.85'
168	15"/RCP	IV	58.00'	0.0097	41.54'	40.98'
169	18"/RCP	IV	197.00'	0.0100	37.42'	35.46'
170	21"/RCP	IV	196.00'	0.0100	31.34'	29.38'
171	24"/RCP	IV	196.00'	0.0100	26.71'	24.75'
172	15"/RCP	IV	57.00'	0.0098	36.02'	35.46'
173	15"/RCP	IV	57.00'	0.0098	36.02'	35.46'
174	15"/RCP	IV	57.00'	0.0099	29.94'	29.38'
175	36"/HDPE		245.00'	0.0027	18.89'	18.23'
176	36"/HDPE		245.00'	0.0027	18.23'	17.57'
177	24"/HDPE		200.00'	0.0029	19.31'	18.73'
178	24"/HDPE		200.00'	0.0029	18.73'	18.14'
179	24"/HDPE		200.00'	0.0029	18.14'	17.56'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
63	434+49.39	86.70	379908.6135	645032.7839
64	434+49.56	90.00	379909.0347	645036.0604
65	437+49.28	71.92	380209.0782	644988.0299
66	437+49.32	90.00	380211.3055	645005.9644

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

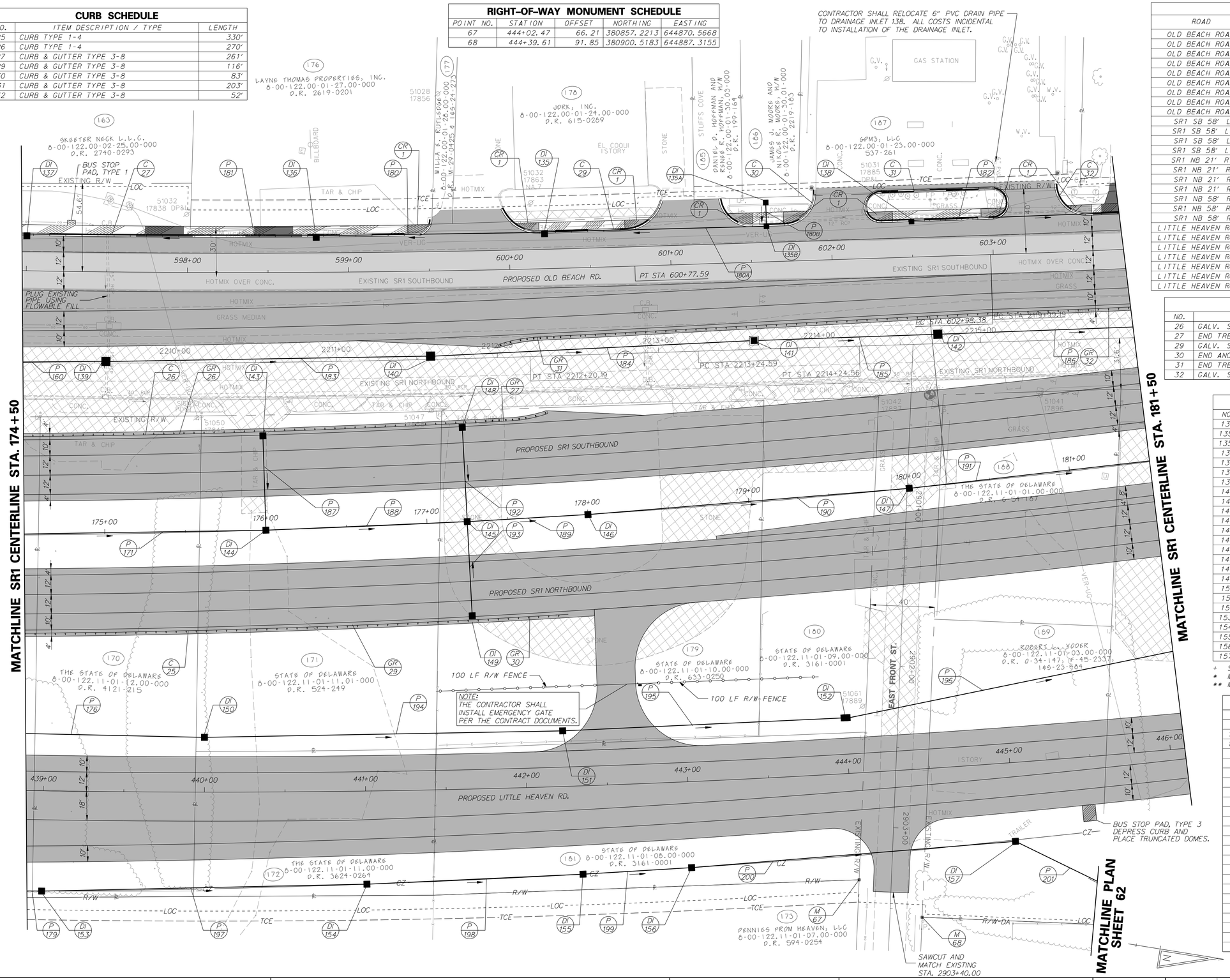
SHEET NO. 58
TOTAL SHTS. 641

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
25	CURB TYPE 1-4	330'
26	CURB TYPE 1-4	270'
27	CURB & GUTTER TYPE 3-8	261'
29	CURB & GUTTER TYPE 3-8	116'
30	CURB & GUTTER TYPE 3-8	83'
31	CURB & GUTTER TYPE 3-8	203'
32	CURB & GUTTER TYPE 3-8	52'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
67	444+02.47	66.21	380857.2213	644870.5668
68	444+39.61	91.85	380900.5183	644887.3155



UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	598+80 TO 597+00 LT	180'	6" PEP	DI-137	22.91'
OLD BEACH ROAD	600+05 TO 598+80 LT	125'	6" PEP	DI-136	23.34'
OLD BEACH ROAD	602+02 TO 600+05 LT	197'	6" PEP	DI-135	23.63'
OLD BEACH ROAD	602+02 TO 602+50 LT	48'	6" PEP	DI-138	23.81'
OLD BEACH ROAD	602+50 TO 604+00 LT	150'	6" PEP	DI-158	23.74'
OLD BEACH ROAD	599+50 TO 597+50 RT	200'	6" PEP	DI-139	22.91'
OLD BEACH ROAD	601+50 TO 599+50 RT	200'	6" PEP	DI-140	23.41'
OLD BEACH ROAD	602+02 TO 601+50 RT	52'	6" PEP	DI-141	23.71'
OLD BEACH ROAD	602+02 TO 604+35 RT	233'	6" PEP	DI-165	22.93'
SR1 SB 58' LT	174+00 TO 176+00 LT	200'	6" PEP	DI-143	27.67'
SR1 SB 58' LT	176+00 TO 177+25 LT	125'	6" PEP	DI-148	25.96'
SR1 SB 58' LT	177+25 TO 180+23 LT	298'	6" PEP	DI-142	23.27'
SR1 SB 58' LT	180+23 TO 182+02 LT	179'	6" PEP	DI-165	22.93'
SR1 NB 21' RT	174+00 TO 176+00 RT	200'	6" PEP	DI-144	27.67'
SR1 NB 21' RT	176+00 TO 177+25 RT	125'	6" PEP	DI-145	25.96'
SR1 NB 21' RT	177+25 TO 180+00 RT	275'	6" PEP	DI-147	24.38'
SR1 NB 21' RT	180+00 TO 181+93 RT	193'	6" PEP	DI-166	23.51'
SR1 NB 58' RT	174+25 TO 177+25 RT	300'	6" PEP	DI-149	27.83'
SR1 NB 58' RT	177+25 TO 179+00 RT	175'	6" PEP	DITCH	26.62'
SR1 NB 58' RT	179+00 TO 181+93 RT	293'	6" PEP	DI-167	19.17'
LITTLE HEAVEN ROAD	440+00 TO 442+23 LT	223'	6" PEP	DI-151	20.56'
LITTLE HEAVEN ROAD	444+00 TO 442+23 LT	157'	6" PEP	DI-151	20.56'
LITTLE HEAVEN ROAD	446+48 TO 444+00 LT	248'	6" PEP	DI-152	21.07'
LITTLE HEAVEN ROAD	437+00 TO 440+00 RT	300'	6" PEP	DITCH	23.30'
LITTLE HEAVEN ROAD	440+00 TO 442+33 RT	233'	6" PEP	DITCH	22.33'
LITTLE HEAVEN ROAD	445+00 TO 442+33 RT	267'	6" PEP	DITCH	22.33'
LITTLE HEAVEN ROAD	446+48 TO 445+00 RT	148'	6" PEP	DITCH	23.21'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
26	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	174+50.00	-61.00	277.25'
27	END TREATMENT ATTENUATOR, TYPE 2-31	177+27.25	A	50.00'
29	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	174+50.00	61.00	321.50'
30	END ANCHORAGE 31	177+71.50	61.00	14.00'
31	END TREATMENT ATTENUATOR, TYPE 2-31	599+92.75	A	50.00'
32	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	600+42.75	41.63	347.92'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
135	600+22.00	*	34" x 24"	1	*	21.46'
135A	601+60.00	36.80'	34" x 24"	2	26.00'	21.93'
135B	601+60.00	*	34" x 24"	1	*	21.89'
136	598+80.00	*	34" x 24"	1	*	20.99'
137	597+00.00	*	34" x 24"	1	*	20.41'
138	602+50.00	*	34" x 24"	1	*	20.78'
139	597+49.98	55.53'	66" x 66"	2	25.74'	18.57'
140	599+50.00	52.78'	66" x 66"	2	26.24'	17.96'
141	601+50.00	48.58'	66" x 66"	2	26.54'	17.36'
142	602+64.08	48.34'	66" x 66"	2	26.10'	16.98'
143	176+00.00	-59.51'	34" x 24"	1	30.64'	25.31'
144	176+00.00	0	48" x 48"	2	30.50'	24.27'
145	177+25.00	0	48" x 48"	2	28.79'	22.82'
146	178+00.00	0	48" x 48"	2	28.13'	22.01'
147	180+00.00	0	48" x 48"	2	27.21'	19.95'
148	177+25.00	-59.51'	34" x 24"	1	28.98'	23.62'
149	177+25.00	59.51'	34" x 24"	1	*	23.62'
150	440+00.00	-33.93'	48" x 48"	2	24.10'	17.57'
151	442+23.39	-34.49'	48" x 48"	2	23.39'	16.98'
152	444+00.00	-34.60'	48" x 48"	2	23.90'	16.52'
153+	439+00.00	62.22'	+	2	22.51'	17.56'
154+	441+00.00	57.77'	+	2	21.74'	16.98'
155+	442+33.06	54.77'	+	2	21.38'	16.60'
156+	443+00.00	53.33'	+	2	21.43'	16.41'
157+	445+00.00	46.07'	+	2	22.25'	15.83'

\+ SPECIAL INLET VII. SEE CONSTRUCTION DETAIL SHEETS.
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
180	15"/RCP	IV	139.00'	0.0032	21.46'	21.01'
180A	15"/RCP	IV	135.00'	0.0032	21.89'	21.46'
180B	15"/RCP	IV	12.00'	0.0032	21.93'	21.89'
181	15"/RCP	IV	177.00'	0.0032	20.99'	20.43'
182	15"/RCP	IV	147.00'	0.0078	20.78'	19.64'
183	42"/HDPE		196.00'	0.0030	18.57'	17.98'
184	42"/HDPE		195.00'	0.0030	17.96'	17.38'
185	42"/HDPE		109.00'	0.0033	17.36'	17.00'
186	42"/HDPE		167.00'	0.0030	16.98'	16.46'
187	15"/RCP	IV	57.00'	0.0099	25.31'	24.75'
188	24"/RCP	IV	121.00'	0.0100	24.27'	23.06'
189	27"/RCP	IV	71.00'	0.0100	22.82'	22.11'
190	30"/RCP	IV	196.00'	0.0100	22.01'	20.05'
191	30"/RCP	IV	189.00'	0.0104	19.95'	17.99'
192	15"/RCP	IV	57.00'	0.0099	23.62'	23.06'
193	15"/RCP	IV	57.00'	0.0099	23.62'	23.06'
194	36"/HDPE		218.00'	0.0027	17.57'	16.98'
195	36"/HDPE		171.00'	0.0027	16.98'	16.52'
196	36"/HDPE		244.00'	0.0027	16.52'	15.85'
197	24"/HDPE		200.00'	0.0029	17.56'	16.98'
198	24"/HDPE		132.00'	0.0029	16.98'	16.60'
199	24"/HDPE		66.00'	0.0029	16.60'	16.41'
200	24"/HDPE		200.00'	0.0029	16.41'	15.83'
201	24"/HDPE		105.00'	0.0031	15.83'	15.52'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 59 / TOTAL SHTS. 641

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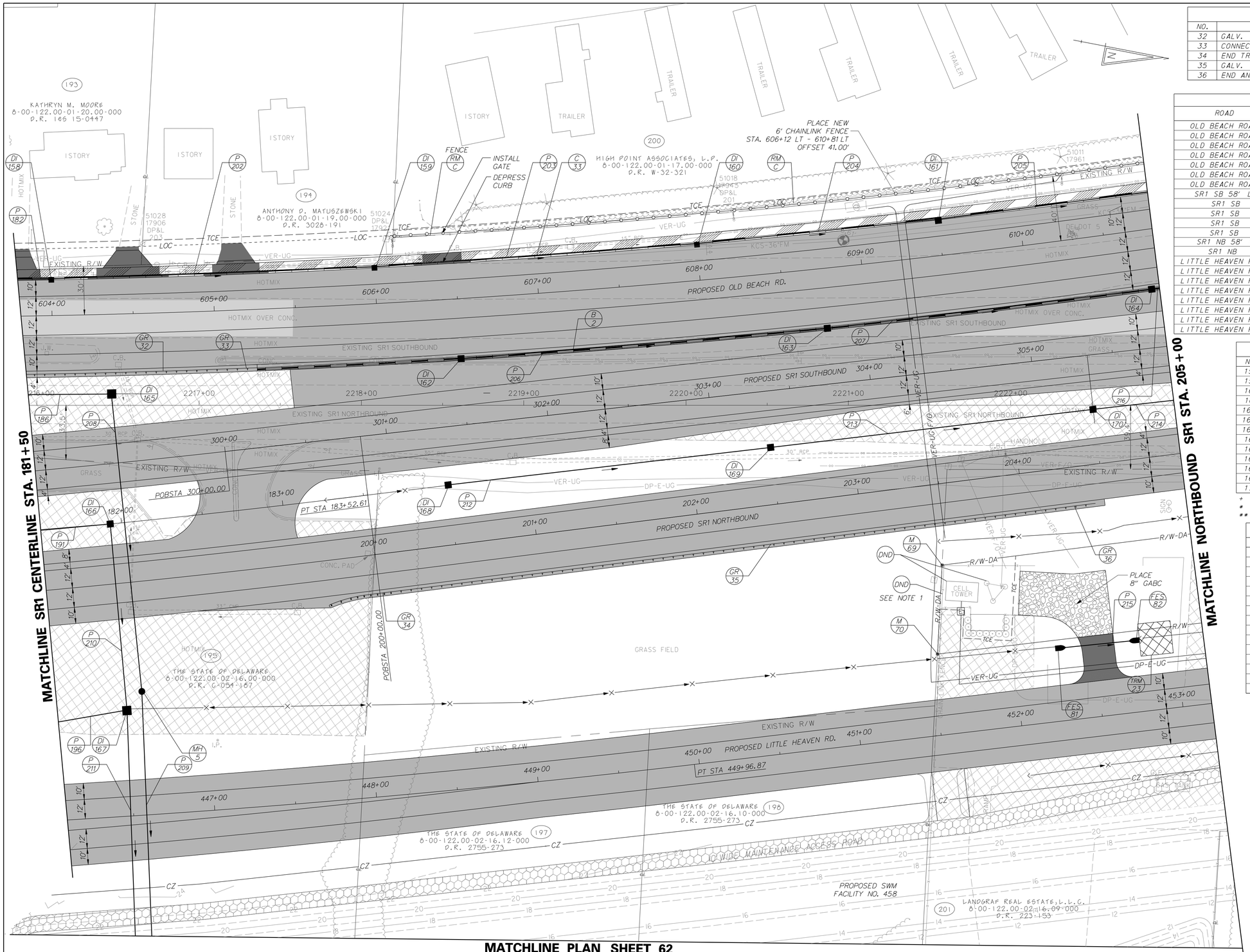

MATCHLINE PLAN SHEET 62

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
32	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	603+90.67	36.00	114.58'
33	CONNECTION, APPROACH TYPE 1-31	605+05.25	36.00	27.00'
34	END TREATMENT ATTENUATOR, TYPE 2-31	183+22.21	A	50.00'
35	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	200+19.60	24.00	412.50'
36	END ANCHORAGE 31	204+32.10	24.00	14.00'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	604+00 TO 606+00 LT	200'	6" PEP	DI-159	23.87'
OLD BEACH ROAD	606+00 TO 608+00 LT	200'	6" PEP	DI-160	23.47'
OLD BEACH ROAD	608+00 TO 609+50 LT	150'	6" PEP	DI-161	21.87'
OLD BEACH ROAD	609+50 TO 611+00 LT	150'	6" PEP	DI-171	19.95'
OLD BEACH ROAD	604+35 TO 606+50 RT	215'	6" PEP	DI-162	22.78'
OLD BEACH ROAD	606+50 TO 608+75 RT	225'	6" PEP	DI-163	22.91'
OLD BEACH ROAD	608+75 TO 610+75 RT	200'	6" PEP	DI-164	20.35'
SR1 SB 58' LT	182+13 TO 301+50 LT	205'	6" PEP	DI-162	22.55'
SR1 SB	301+50 TO 303+78 LT	228'	6" PEP	DI-163	22.68'
SR1 SB	303+78 TO 305+78 LT	200'	6" PEP	DI-164	20.12'
SR1 SB	300+84 TO 303+35 RT	251'	6" PEP	DI-169	21.99'
SR1 SB	303+35 TO 305+35 RT	200'	6" PEP	DI-170	21.18'
SR1 NB 58' RT	182+02 TO 200+12 RT	163'	6" PEP	DITCH	24.14'
SR1 NB	200+12 TO 203+12 RT	300'	6" PEP	DITCH	21.84'
LITTLE HEAVEN ROAD	447+15 TO 446+60 LT	55'	6" PEP	MH-5	20.00'
LITTLE HEAVEN ROAD	447+15 TO 448+87 LT	172'	6" PEP	DITCH	22.62'
LITTLE HEAVEN ROAD	448+87 TO 451+87 LT	300'	6" PEP	DITCH	19.56'
LITTLE HEAVEN ROAD	451+87 TO 453+75 LT	188'	6" PEP	DITCH	17.35'
LITTLE HEAVEN ROAD	447+15 TO 446+60 RT	55'	6" PEP	POND	23.75'
LITTLE HEAVEN ROAD	447+15 TO 447+25 RT	10'	6" PEP	POND	23.80'
LITTLE HEAVEN ROAD	447+25 TO 450+25 RT	300'	6" PEP	POND	21.44'
LITTLE HEAVEN ROAD	450+25 TO 453+25 RT	300'	6" PEP	POND	17.80'

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
158	604+00.00	**	34" x 24"	1	*	19.59'
159	606+00.00	**	34" x 24"	1	*	17.99'
160	608+00.00	**	34" x 24"	1	*	16.42'
161	609+50.00	**	48" x 30"	1	*	15.23'
162+	606+50.00	**	+	1	*	19.00'
163+	608+75.00	**	+	1	*	17.15'
164+	610+75.00	**	+	1	*	15.49'
165	604+35.51	49.13'	66" x 66"	2	25.76'	16.44'
166	181+93.00	0	48" x 48"	2	26.34'	17.89'
167	446+50.00	-65.02'	66" x 66"	2	22.00'	16.40'
168	200+50.00	-37.00'	34" x 24"	2	25.46'	21.50'
169	202+50.00	-35.15'	34" x 24"	2	24.59'	19.05'
170	204+50.00	-33.60'	48" x 30"	2	23.78'	16.62'

\+ SPECIAL INLET II. SEE CONSTRUCTION DETAIL SHEETS
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
202	15"/RCP	IV	196.00'	0.0079	19.59'	18.04'
203	15"/RCP	IV	196.00'	0.0078	17.99'	16.47'
204	15"/RCP	IV	146.00'	0.0078	16.42'	15.28'
205	18"/RCP	IV	145.00'	0.0078	15.23'	14.09'
206	15"/RCP	IV	224.00'	0.0078	19.00'	17.25'
207	15"/RCP	IV	198.00'	0.0079	17.15'	15.59'
208	48"/RCP	IV	180.00'	0.0027	16.44'	15.97'
209	48"/RCP	IV	169.00'	0.0027	15.97'	15.52'
210	33"/RCP	IV	111.00'	0.0123	17.89'	16.53'
211	42"/RCP	IV	157.00'	0.0055	16.40'	15.54'
212	15"/RCP	IV	197.00'	0.0119	21.50'	19.15'
213	15"/RCP	IV	197.00'	0.0118	19.05'	16.72'
214	18"/RCP	IV	148.00'	0.0119	16.62'	14.87'
215	18"/RCP	IV	40.00'	0.0089	18.58'	18.22'
216	15"/RCP	IV	173.00'	0.0078	15.49'	14.13'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
69	203+45.78	50.00	381544.1528	644501.6984
70	451+53.59	-50.00	381551.7402	644556.0714

MANHOLE SCHEDULE

NO.	STATION	OFFSET	TYPE/SIZE	T.G. EL.	INV. EL.
5	446+60.08	-76.18'	66" x 30"	23.27'	15.97'

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
33	CURB & GUTTER TYPE 3-8	699'

BARRIER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
2	PCC SAFETY BARRIER PERM., DOUBLE FACE	533.50'

FLARED END SECTION

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
81	18"/RCP	0.0089	NO
82	18"/RCP	0.0089	NO

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
23	6	15.0'

NOTE:
1. CONTRACTOR SHALL NOT DISTURB PERIMETER FENCE AROUND CELL TOWER AND EQUIPMENT.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 60
TOTAL SHTS. 641

12/1/2014
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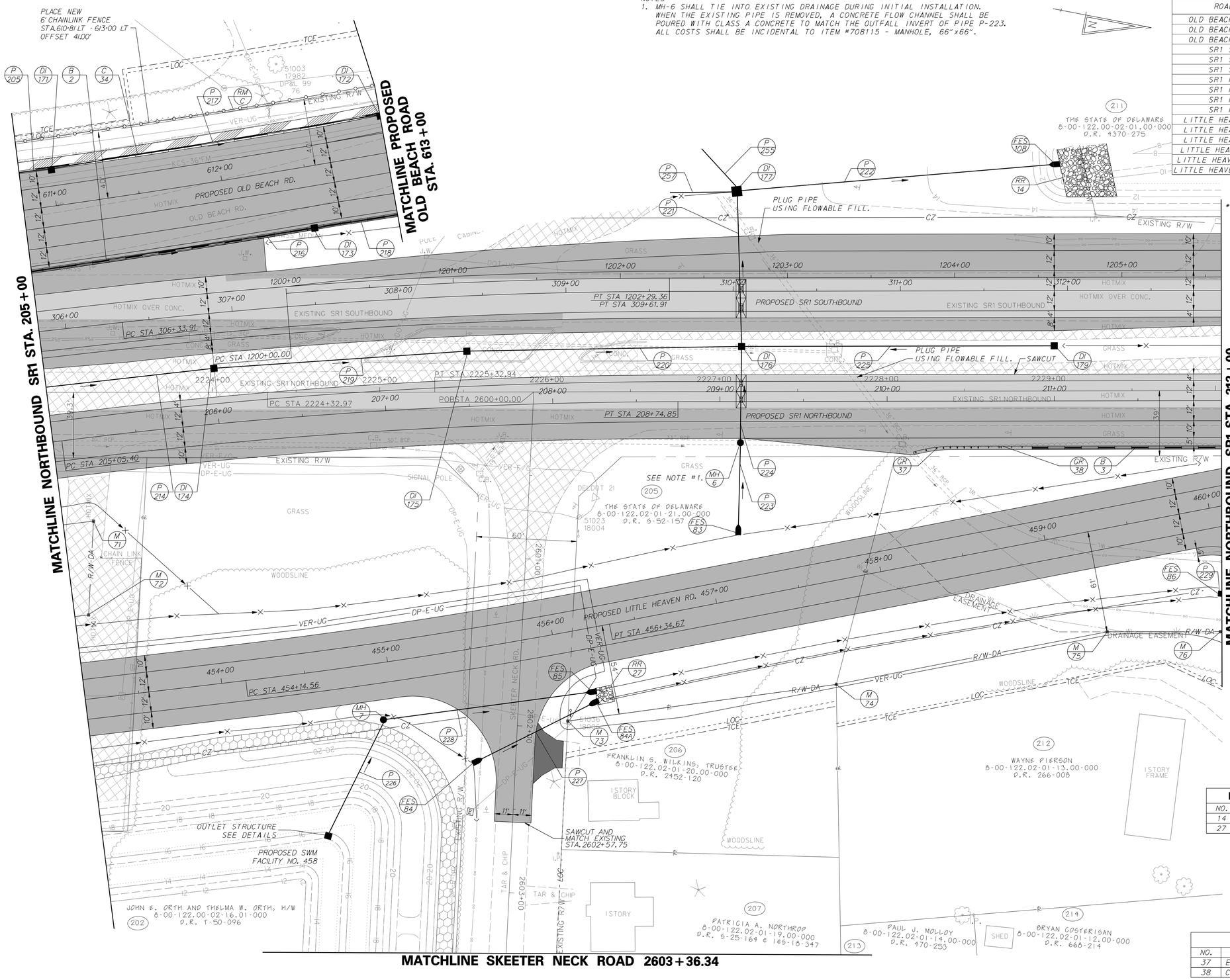
NOTES:
1. MH-6 SHALL TIE INTO EXISTING DRAINAGE DURING INITIAL INSTALLATION. WHEN THE EXISTING PIPE IS REMOVED, A CONCRETE FLOW CHANNEL SHALL BE POURED WITH CLASS A CONCRETE TO MATCH THE OUTFALL INVERT OF PIPE P-223. ALL COSTS SHALL BE INCIDENTAL TO ITEM #708115 - MANHOLE, 66"x66".



UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	611+00 TO 613+00 LT	200'	6" PEP	DI-172	17.16'
OLD BEACH ROAD	610+75 TO 612+50 RT	175'	6" PEP	DI-173	18.53'
OLD BEACH ROAD	612+50 TO 613+75 RT	125'	6" PEP	DI-198	16.37'
SR1 SB	305+78 TO 307+54 LT	176'	6" PEP	DI-173	18.53'
SR1 SB	307+54 TO 310+04 LT	250'	6" PEP	DI-177	14.03'
SR1 SB	310+04 TO 311+73 LT	169'	6" PEP	POND	13.70'
SR1 NB	203+12 TO 206+12 RT	300'	6" PEP	DITCH	18.67'
SR1 NB	206+12 TO 209+12 RT	300'	6" PEP	MH-6	15.70'
SR1 NB	209+12 TO 209+75 RT	63'	6" PEP	DITCH	14.83'
SR1 NB	209+75 TO 212+75 RT	300'	6" PEP	DI-180	12.00'
LITTLE HEAVEN RD	453+25 TO 456+25 RT	300'	6" PEP	DITCH	14.80'
LITTLE HEAVEN RD	456+25 TO 459+00 RT	275'	6" PEP	DITCH	12.73'
LITTLE HEAVEN RD	459+00 TO 460+95 RT	195'	6" PEP	DITCH	11.81'
LITTLE HEAVEN RD*	456+25 TO 453+75 LT	250'	6" PEP	DITCH	17.35'
LITTLE HEAVEN RD**	456+25 TO 459+00 LT	275'	6" PEP	DITCH	12.54'
LITTLE HEAVEN RD***	459+75 TO 459+00 LT	75'	6" PEP	DITCH	12.54'

* UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD
** UNDERDRAIN SHALL BE LOCATED ON THE LEFT SIDE OF THE ALIGNMENT AND OUTLET ON THE RIGHT SIDE
*** UNDERDRAIN SHALL BE LOCATED ON THE LEFT SIDE OF THE ALIGNMENT AND OUTLET ON THE RIGHT SIDE. UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
171	611+00.00	**	48" x 30"	1	*	14.04'
172	613+00.00	**	48" x 30"	1	*	12.46'
173+	612+50.00	**	+	1	*	14.03'
174	206+00.00	-33.19'	48" x 30"	2	22.35'	14.77'
175	207+50.00	-33.08'	48" x 30"	2	20.43'	12.91'
176	209+13.00	-33.00'	48" x 30"	2	18.33'	10.76'
179	211+00.00	-33.00'	34" x 24"	2	15.92'	12.00'

\+ SPECIAL INLET I. SEE CONSTRUCTION DETAIL SHEETS
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
217	18"/RCP	IV	195.00'	0.0078	14.04'	12.51'
218	15"/RCP	IV	122.00'	0.0079	14.03'	13.07'
219	18"/RCP	IV	148.00'	0.0119	14.77'	13.01'
220	18"/RCP	IV	160.00	0.0119	12.91'	11.00'
221	27"/RCP	IV	89.00'	0.0074	10.76'	10.10'
222	48"/RCP	IV	184.00'	0.0055	10.05'	9.04'
223	18"/RCP	IV	47.00'	0.0141	14.25'	13.50'
224	21"/RCP	IV	54.00'	0.0090	11.27'	10.78'
225	15"/RCP	IV	184.00'	0.0054	12.00'	11.00'
226	24"X38"/RCEP	IV	73.00'	0.0044	15.38'	15.06'
227	24"/RCP	V	84.00'	0.0157	15.82'	14.50'
228	24"X38"/RCEP	V	118.00'	0.0045	15.06'	14.54'
229	38"X60"/RCEP	V	104.00'	0.0051	10.69'	10.16'

MANHOLE SCHEDULE

NO.	STATION	OFFSET	TYPE/SIZE	T.G. EL.	INV. EL.
6+	209+12.00	24.60	66" x 66"	18.53	10.78'
7*	454+93.00	34.00	66" x 66"	18.54	15.06'

\+ MANHOLE USED TO TEMPORARILY INTERCEPT EXISTING DRAINAGE DURING CONSTRUCTION. UPON REMOVAL OF EXISTING DRAINAGE PROVIDE FLOW CHANNEL AT INVERTS OF EXISTING PIPES. COST INCIDENTAL TO MANHOLE INSTALLATION.
* SPECIAL MANHOLE I. SEE CONSTRUCTION DETAIL SHEET.

BARRIER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
2	PCC SAFETY BARRIER PERM., DOUBLE FACE	221.70'
3	PCC SAFETY BARRIER PERM., DOUBLE FACE	113.33'

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
34	CURB & GUTTER TYPE 3-8	219'

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
83	18"/RCP	0.0141	YES
84	24"/RCP	0.0157	NO
84A	24"/RCP	0.0157	NO
85	24"x38"/RCEP	0.0045	NO
86	38"x60"/RCEP	0.0040	NO
108	48"/RCP	0.0055	NO

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
14	R-4	1458.00
27	R-4	100.00

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
71	205+18.39	49.97	381708.0418	644448.2113
72	453+25.76	-50.00	381715.8141	644503.9098
73	455+99.83	52.48	382009.2670	644512.0469
74	457+61.04	61.18	382162.7856	644460.1156
75	459+26.14	61.00	382315.9668	644398.5247
76	459+92.71	73.73	382382.4878	644385.5751

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
37	END TREATMENT ATTENUATOR, TYPE 2-31	210+16.92	A	50.00'
38	CONNECTION, APPROACH TYPE 1-31	210+66.92	27.00	27.00'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 61
TOTAL SHTS. 641

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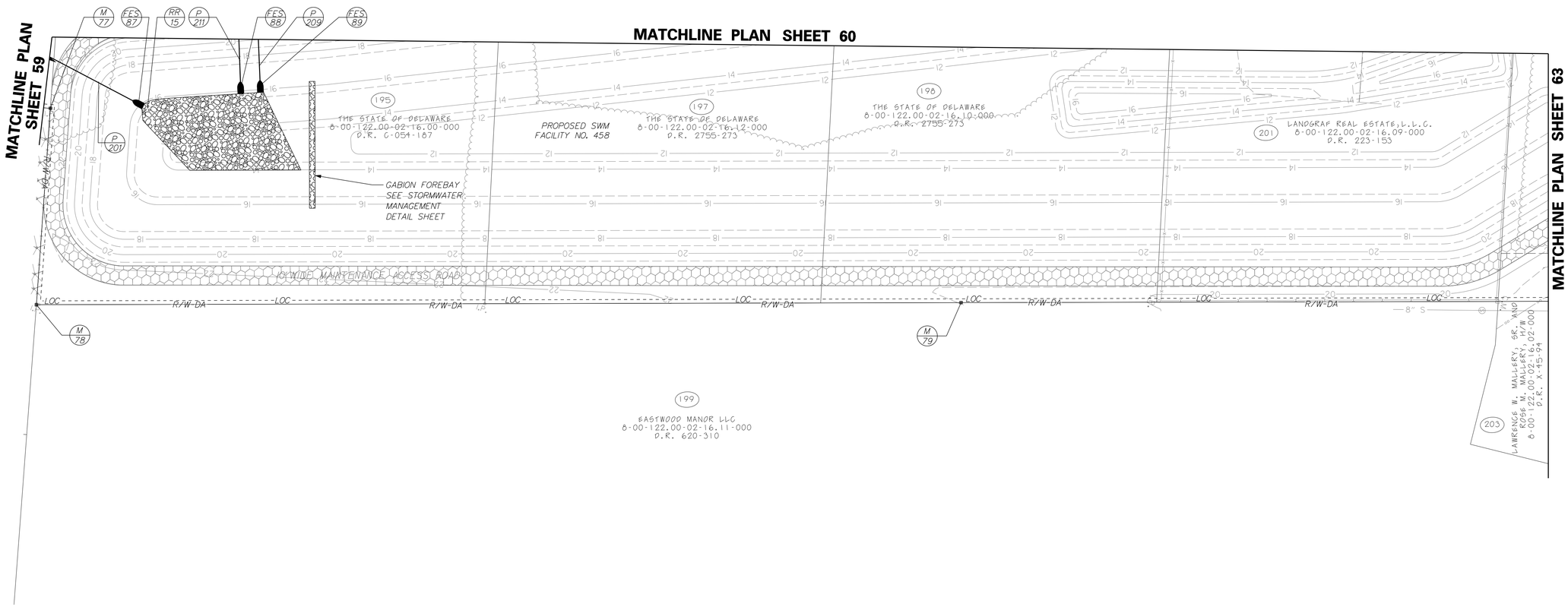

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
15	R-4	2504.00

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
87	24"/HDPE	0.0030	NO
88	42"/RCP	0.0055	NO
89	48"/RCP	0.0027	NO

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
77	445+47.33	104.28	381009.7346	644874.2084
78	445+35.28	206.16	381021.9622	644976.0961
79	450+00.00	245.13	381494.7818	644883.8607

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 62

TOTAL SHTS. 641

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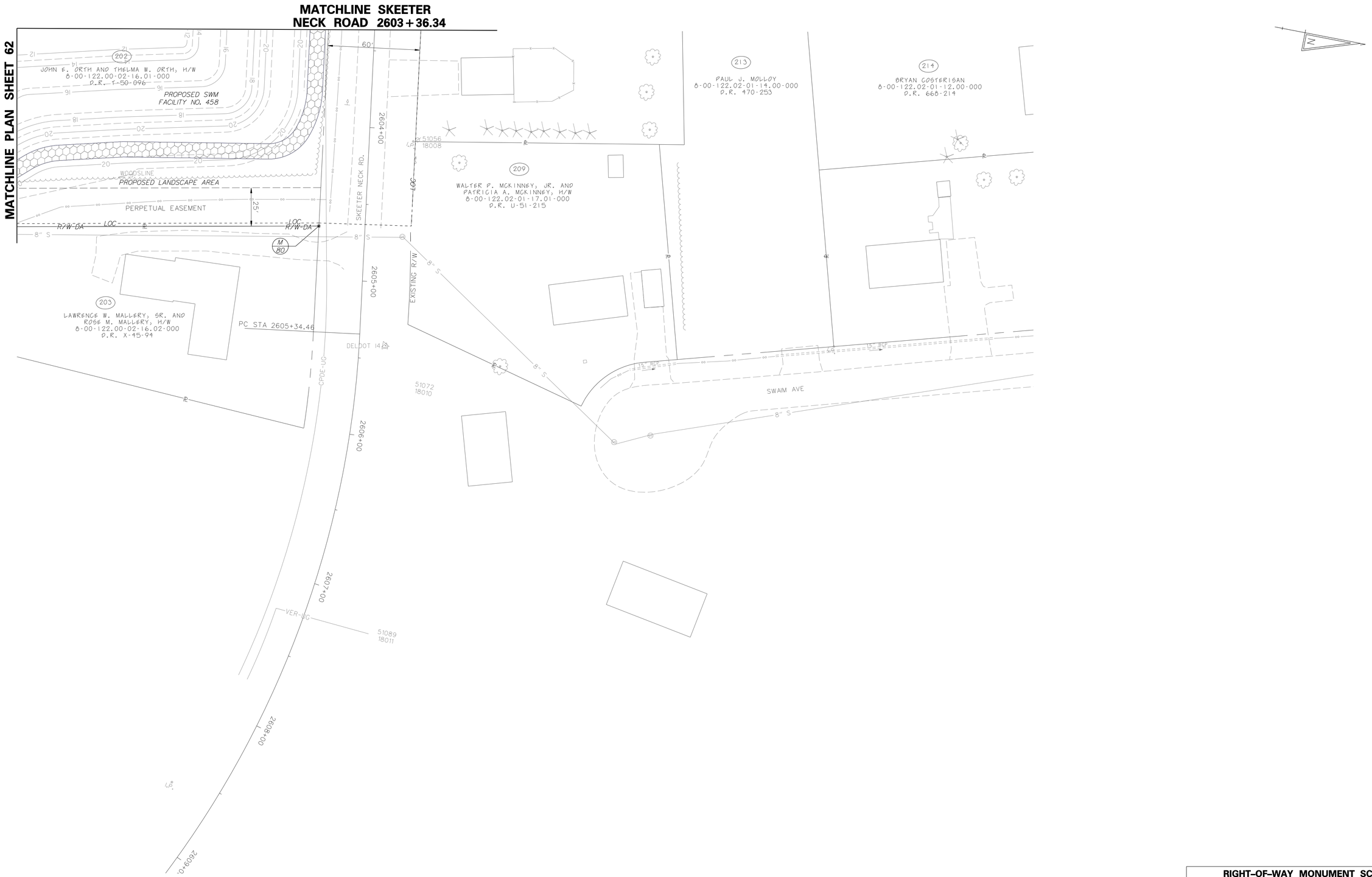

RIGHT-OF-WAY MONUMENT SCHEDULE				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
80	454+91.29	303.93	381987.8711	644787.6711

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO.
63
TOTAL SHTS.
641

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BARRIER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
3	PCC SAFETY BARRIER PERM., DOUBLE FACE	76.67'
4	PCC SAFETY BARRIER PERM., DOUBLE FACE	450.00'

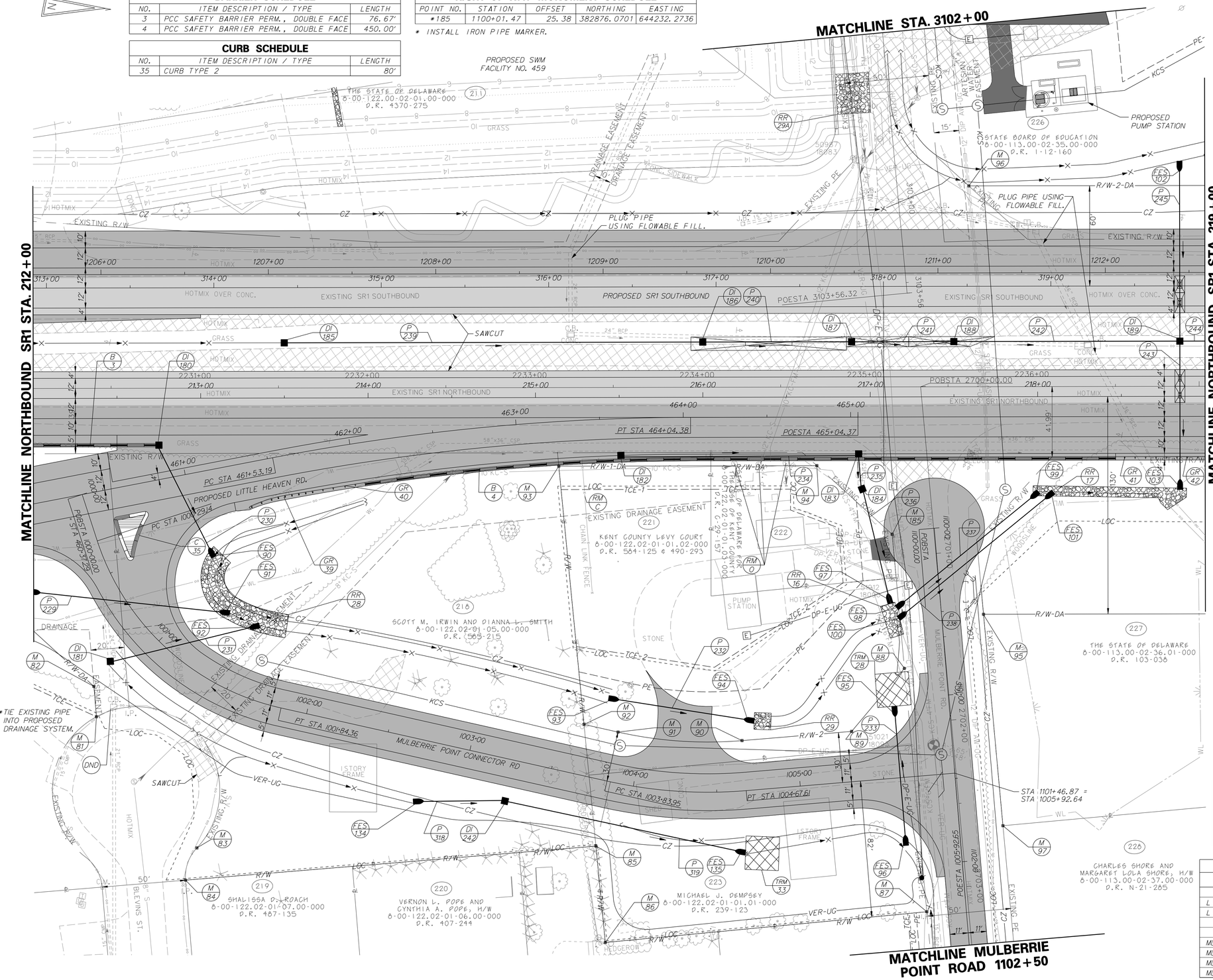
CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
35	CURB TYPE 2	80'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
*185	1100+01.47	25.38	382876.0701	644232.2736

* INSTALL IRON PIPE MARKER.



RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
81	1001+03.96	58.48	382429.9470	644429.3218
82	1000+93.65	46.81	382425.0441	644411.8233
83	1001+65.45	94.55	382503.7212	644494.9446
84	1001+65.56	114.96	382500.7243	644515.1358
85	1003+85.72	39.39	382737.5781	644448.7716
86	1003+98.91	94.89	382753.9958	644504.2486
87	1005+69.07	81.13	382939.0926	644449.8696
88	1005+67.91	-64.91	382898.4612	644309.5827
89	1005+33.33	-30.00	382874.6154	644352.5506
90	1004+67.61	-30.00	382811.3528	644370.3308
91	1003+83.95	-30.00	382737.6527	644379.3571
92	1003+63.13	-30.00	382716.8494	644378.7276
93	215+13.87	41.00	382672.8402	644230.0156
94	216+68.01	41.00	382824.1421	644200.5543
95	1100+53.70	-25.04	382938.7367	644268.9122
96	318+51.12	-60.00	382881.6627	644019.2175
97	1101+80.56	-26.04	382974.0288	644390.7642

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
16	R-4	225.00
17**	R-4	588.00
28	R-4	1015.00
29	R-4	100.00
29A	R-5	480.00

**CHOKED RIPRAP-SEE ENVIRONMENTAL COMPLIANCE SHEETS

TRM SCHEDULE

NO.	SRBM TYPE	LENGTH
28	6	15.0'
33	6	15.0'

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
90	15"/RCP	0.0038	NO
91	38"x60"/RCEP	0.0040	NO
92	18"/RCP	0.0050	NO
93	38"x60"/RCEP	0.0046	NO
94	38"x60"/RCEP	0.0046	NO
95	14"X23"/RCEP	0.0316	NO
96	14"X23"/RCEP	0.0316	NO
97	15"/RCP	0.0044	NO
98	19"x30"/RCEP	0.0037	NO
99	19"x30"/RCEP	0.0037	NO
100	19"x30"/RCEP	0.0034	NO
101	19"x30"/RCEP	0.0034	NO
102	18"/RCP	0.0027	NO
103	27"/RCP	0.0027	NO
134	15"/RCP	0.0050	YES
135	15"/RCP	0.0055	NO

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
180++	212+75.00	**	++	1	*	10.50'
181***	1000+87.09	26.81'	48" x 48"	2	13.30'	10.50'
182+	215+51.00	**	+	1	*	8.90'
183+	216+93.00	**	+	1	*	8.42'
184+++	216+95.10	55.02'	+++	2	10.90'	8.31'
185	213+50.00	-33.00'	34" x 24"	2	13.35'	10.00'
186	216+00.00	-33.00'	34" x 24"	2	11.49'	7.88'
187	216+88.90	-33.00	48" x 30"	2	11.31'	7.60'
188	217+50.00	-33.00'	48" x 48"	2	11.37'	7.40'
189	218+85.00	-33.00'	48" x 48"	2	11.54'	6.90'
242	1003+27.00	24.98'	48" x 30"	2	16.04'	11.30'

\+ SPECIAL INLET I. SEE CONSTRUCTION DETAIL SHEETS
++ SPECIAL INLET II. SEE CONSTRUCTION DETAIL SHEETS
+++ SPECIAL INLET III. SEE CONSTRUCTION DETAIL SHEETS
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE
*** SPECIAL INLET IV. SEE CONSTRUCTION DETAIL SHEETS.

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
230	15"/RCP	IV	67.00'	0.0040	10.50'	10.23'
231	18"/RCP	IV	84.00'	0.0049	10.50'	10.09'
232	38"X60"/RCEP	IV	72.00'	0.0046	9.46'	9.14'
233	14"X23"/RCEP	V	72.00'	0.0048	8.90'	8.47'
234	15"/RCP	IV	139.00'	0.0034	8.90'	8.42'
235	15"/RCP	IV	17.00'	0.0035	8.42'	8.36'
236	15"/RCP	IV	65.00'	0.0044	8.31'	8.03'
237	19"X30"/RCEP	IV	97.00'	0.0037	7.28'	6.92'
238	19"X30"/RCEP	IV	107.00'	0.0034	7.28'	6.92'
239	15"/RCP	IV	246.00'	0.0039	10.00'	9.05'
240	15"/RCP	IV	85.00'	0.0031	7.88'	7.62'
241	18"/RCP	IV	57.00'	0.0031	7.60'	7.42'
242	24"/RCP	IV	131.00'	0.0031	7.40'	7.00'
243	27"/RCP	IV	81.00'	0.0027	6.90'	6.69'
244	15"/RCP	IV	246.00'	0.0034	7.83'	7.00'
245	18"/RCP	IV	100.00'	0.0027	7.18'	6.92'
318	15"/RCP	IV	47.00'	0.0050	12.97'	12.74'
319	15"/RCP	IV	140.00'	0.0055	11.30'	10.53'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
39	END TREATMENT ATTENUATOR, TYPE 2-31	461+35.86	A	50.00'
40	CONNECTION, APPROACH TYPE 1-31	461+85.86	24.00	27.00'
41	CONNECTION, EXIT TYPE 31	218+43.49	36.00	14.50'
42	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	218+57.99	36.00	42.01'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
SR1 SB	311+73 TO 314+73 LT	300'	6" PEP	POND	10.70'
LITTLE HEAVEN ROAD	461+00 TO 461+36 RT	36'	6" PEP	DITCH	11.20'
LITTLE HEAVEN ROAD	461+36 TO 463+60 RT	224'	6" PEP	DI-182	9.00'
SR1 NB*	215+50 TO 216+93 RT	143'	6" PEP	DI-183	9.07'
SR1 NB	218+85 TO 216+93 RT	192'	6" PEP	DI-183	9.07'
MULBERRIE CONNECTOR	1002+59 TO 1001+25 RT	134'	6" PEP	DITCH	14.42'
MULBERRIE CONNECTOR	1002+59 TO 1005+31 RT	272'	6" PEP	DITCH	9.60'
MULBERRIE CONNECTOR	1002+59 TO 1001+25 LT	134'	6" PEP	DITCH	12.84'
MULBERRIE CONNECTOR	1002+59 TO 1005+31 LT	272'	6" PEP	DITCH	9.25'

* UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD FOR FINAL FOUR (4') FEET

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 64
TOTAL SHTS. 641

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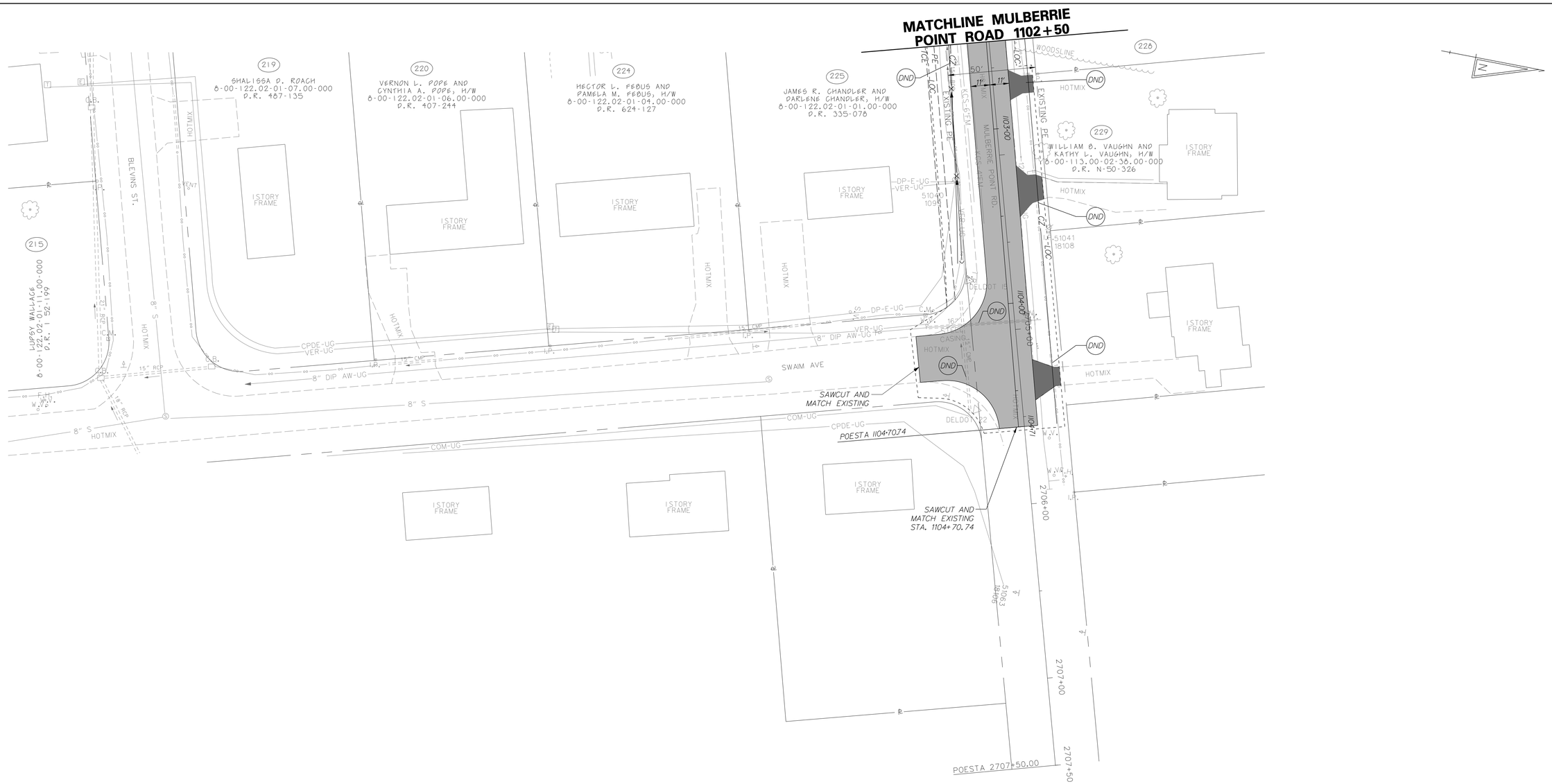

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION	CONTRACT T200412202	BRIDGE NO. -	CONSTRUCTION PLAN	SHEET NO. 65
				COUNTY KENT	DESIGNED BY: SFP		TOTAL SHTS. 641
					CHECKED BY: WFC		

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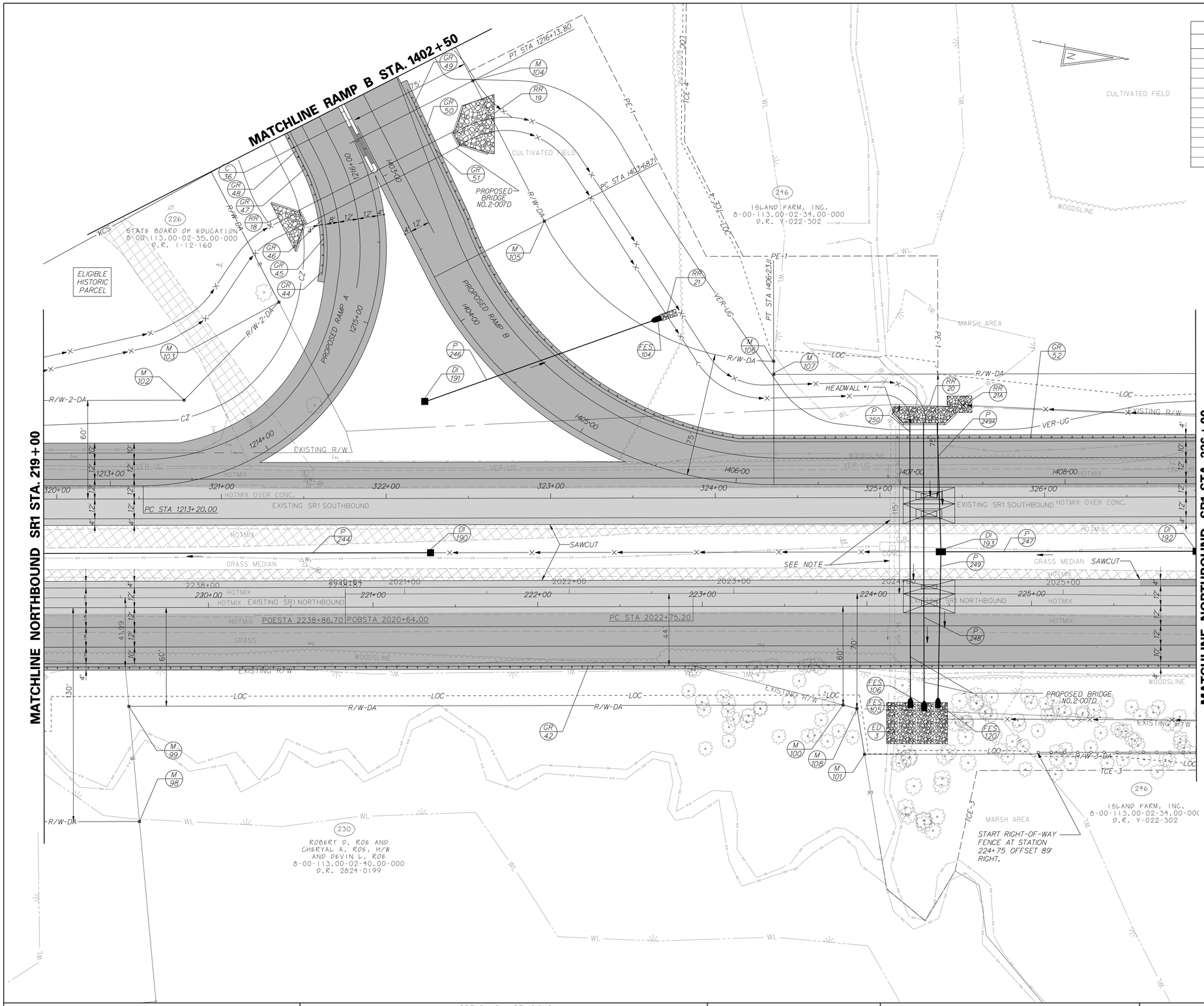

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
SR1 SB RAMP A	1213+92 TO 1214+21 LT	29'	6" PEP	DITCH	7.97'
SR1 SB RAMP A	1215+67 TO 1214+21 LT	146'	6" PEP	DITCH	7.97'
SR1 SB RAMP A	1216+14 TO 1215+86 LT	28'	6" PEP	DITCH	11.17'
SR1 SB RAMP B	1403+05 TO 1404+52 LT	147'	6" PEP	DITCH	8.10'
SR1 SB RAMP B	1404+58 TO 1404+92 LT	34'	6" PEP	DITCH	8.01'
SR1 SB RAMP B	1405+32 TO 1404+92 LT	40'	6" PEP	DITCH	8.01'
SR1 SB	320+50 TO 318+50 LT	200'	6" PEP	DITCH	9.07'
SR1 SB	322+24 TO 320+50 LT	174'	6" PEP	DITCH	9.73'
SR1 SB	325+24 TO 322+24 LT	300'	6" PEP	DI-191	9.05'
SR1 NB	221+85 TO 218+85 RT	300'	6" PEP	DITCH	9.26'
SR1 NB	224+39 TO 221+85 RT	254'	6" PEP	DITCH	9.65'
SR1 NB	227+50 TO 224+50 RT	300'	6" PEP	DITCH	10.23'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
42	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	219+00.00	36.00	700.00'
44	END ANCHORAGE 31	1215+23.33	-34.00	14.00'
45	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	1215+41.20	-34.00	5.73'
46	GUARDRAIL OVER CULVERT, TYPE 2-31	1215+48.70	-34.00	38.54'
47	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	1215+99.15	-34.00	18.23'
48	END TREATMENT ATTENUATOR, TYPE 2-31	1402+65.93	A	12.34'
49	END ANCHORAGE 31	1402+57.90	-37.24	14.00'
50	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	1402+71.90	-36.77	5.73'
51	GUARDRAIL OVER CULVERT, TYPE 1-31	1402+77.62	-36.55	38.54'
52	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	1403+16.13	-35.07	530.64'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
190	221+35.00	-33.00'	48" x 30"	2	11.85'	7.83'
191	221+31.64	-124.95'	34" x 18"	2	11.22'	7.25'
192	226+00.00	-33.00'	48" x 30"	2	13.53'	7.92'
193	224+45.00	-33.00'	72" x 48"	2	12.49'	5.99'

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
246	15"/RCP	IV	145.00'	0.0050	7.25'	6.53'
247	18"/RCP	IV	150.00'	0.0050	7.92'	7.17'
248	72"/RCP	V	167.00'	0.0020	4.22'	3.89'
249	54"/RCP	V	93.00'	0.0020	5.99'	5.81'
249A	54"/RCP	V	76.00'	0.0020	6.14'	5.99'
250	54"/RCP	V	165.00'	0.0020	6.14'	5.81'

NOTE: PIPE 248 SHALL HAVE 1.00' OF CHANNEL BED FILL PLACED WITHIN THE PIPE. SEE ENVIRONMENTAL COMPLIANCE PLANS FOR DETAILS.

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
98	219+57.86	130.00	383125.6542	644232.5159
99	219+51.57	60.00	383106.1020	644165.0084
100	223+85.44	60.00	383531.9734	644082.0834
101	223+98.35	90.00	383550.3819	644109.0624
102	320+77.45	-60.00	383103.8240	643975.9586
103	321+35.17	-119.48	383149.1144	643906.5381
104	1402+72.97	-75.00	383239.2959	643752.1432
105	1403+68.71	-75.00	383298.1285	643827.6669
106	324+35.64	-83.00	383451.0109	643884.9230
107	324+35.64	-75.00	383452.5399	643892.7755
108	223+93.82	62.23	383540.6240	644082.6742

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
36	CURB TYPE 2	95'

ENERGY DISSIPATOR SCHEDULE

NO.	RR TYPE	LENGTH	WIDTH	POOL DEPTH
3*	R-5	25.00'	37.00'	1.75'

*SEE CONSTRUCTION DETAILS

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
104	15"/RCP	0.0053	NO
105	54"/RCP	0.0020	NO
106	72"/RCP	0.0020	NO
120	54"/RCP	0.0020	NO

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
18	R-5	200.00
19	R-5	780.00
20	R-5	339.00
21	R-4	40.00
21A	R-4	132.00

NOTE: REMOVE EXISTING CATCH BASIN, PLUG BOTH ENDS OF PIPES AND FILL WITH FLOWABLE FILL.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

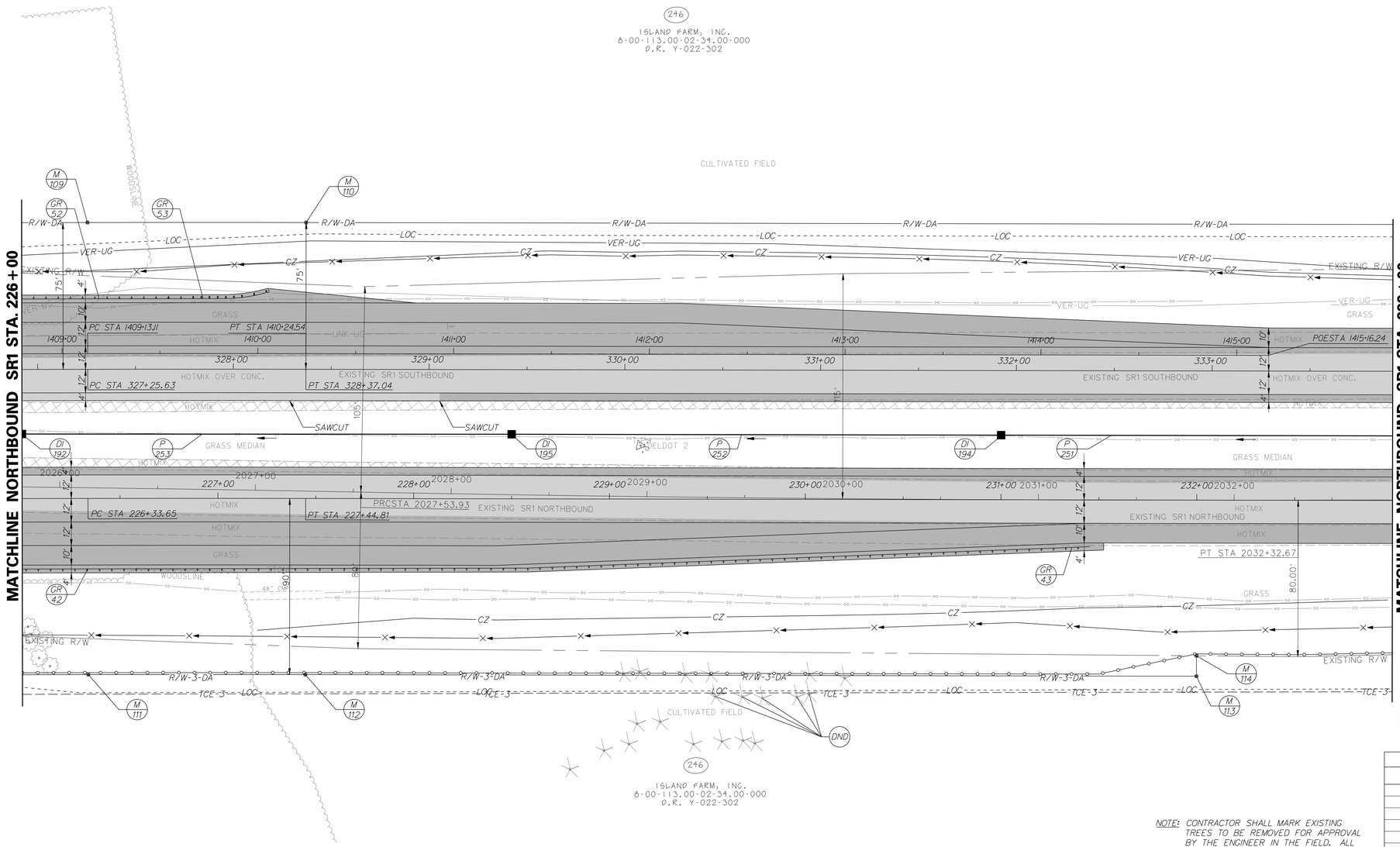
SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 66
TOTAL SHTS. 641



DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
194	231+00.00	-33.00'	34" x 24"	2	16.98'	10.48'
195	228+50.00	-33.00'	34" x 24"	2	15.33'	9.20'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
109	1409+13.11	-67.00	383737.1926	643837.3484
110	1410+24.54	-67.00	383846.8588	643816.2055
111	226+33.65	90.00	383781.3434	644064.0900
112	227+44.81	90.00	383890.1681	644043.1095
113	232+00.00	90.00	384337.2846	643957.7677
114	232+00.00	79.57	384335.3294	643947.5240

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
251	15"/RCP	IV	247.00'	0.0050	11.77'	10.53'
252	15"/RCP	IV	247.00'	0.0050	10.48'	9.25'
253	15"/RCP	IV	247.00'	0.0050	9.20'	7.97'

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
42	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	226+00.00	36.00	532.99'
43	END ANCHORAGE 31	231+32.99	24.39	14.00'
52	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	226+00.00	-102.00	75.09'
53	END TREATMENT ATTENUATOR, TYPE 2-31	226+74.94	A	50.00'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
SR1 SB	328+44 TO 325+44 LT	300'	6" PEP	DITCH	10.15'
SR1 SB	331+44 TO 328+44 LT	300'	6" PEP	DITCH	12.27'
SR1 SB	332+67 TO 331+44 LT	123'	6" PEP	DITCH	14.58'
SR1 SB	332+67 TO 333+19 LT	52'	6" PEP	DITCH	15.00'
SR1 NB	230+50 TO 227+50 RT	300'	6" PEP	DITCH	12.33'
SR1 NB	231+83 TO 230+50 RT	133'	6" PEP	DITCH	14.63'
SR1 NB	231+83 TO 232+35 RT	52'	6" PEP	DITCH	15.02'

NOTE: CONTRACTOR SHALL MARK EXISTING TREES TO BE REMOVED FOR APPROVAL BY THE ENGINEER IN THE FIELD. ALL COSTS INCIDENTAL TO CONSTRUCTION ENGINEERING.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 67

TOTAL SHTS. 641

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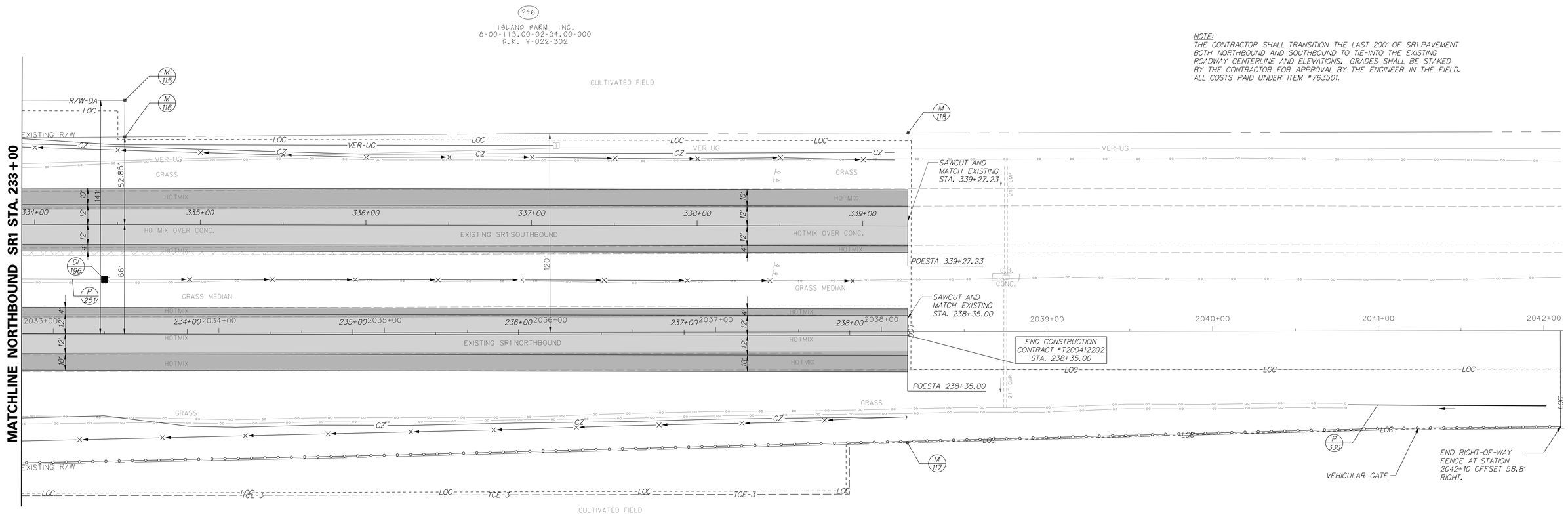

NOTE:
THE CONTRACTOR SHALL TRANSITION THE LAST 200' OF SR1 PAVEMENT BOTH NORTHBOUND AND SOUTHBOUND TO TIE-INTO THE EXISTING ROADWAY CENTERLINE AND ELEVATIONS. GRADES SHALL BE STAKED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER IN THE FIELD. ALL COSTS PAID UNDER ITEM #763501.

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
115	334+54.29	-75.00	384453.1619	643700.4798
116	334+54.29	-52.85	384457.3151	643722.2390
117	238+35.00	64.87	384956.3098	643814.0294
118	339+27.23	-56.24	384921.2291	643630.2368

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
196	233+50.00	-33.00'	34" x 24"	2	16.92'	11.77'

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
330	24"/RCP	IV	120.00'	0.0025	13.97'	13.60'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
SR1 SB	333+19 TO 335+25 LT	206'	6" PEP	DITCH	14.75'
SR1 SB*	339+27 TO 335+25 LT	402'	6" PEP	DITCH	14.75'
SR1 NB	232+35 TO 235+35 RT	300'	6" PEP	DITCH	14.61'
SR1 NB	235+35 TO 238+35 RT	300'	6" PEP	DITCH	14.18'

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 30 60 90
FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 68
TOTAL SHTS. 641

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UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
OLD BEACH ROAD	613+00 TO 614+50 LT	150'	6" PEP	DI-197	15.39'
OLD BEACH ROAD	614+60 TO 616+48 LT	188'	6" PEP	DI-200	13.69'
OLD BEACH ROAD	617+85 TO 616+60 LT	125'	6" PEP	DI-201	13.68'
OLD BEACH ROAD	618+50 TO 617+85 LT	65'	6" PEP	DI-204	13.94'
OLD BEACH ROAD	620+00 TO 618+50 LT	150'	6" PEP	DI-203	14.14'
OLD BEACH ROAD	621+80 TO 620+00 LT	180'	6" PEP	DI-202	14.60'
OLD BEACH ROAD	613+75 TO 614+85 RT	110'	6" PEP	DI-177	14.69'
OLD BEACH ROAD	615+00 TO 616+60 RT	160'	6" PEP	POND	14.74'
OLD BEACH ROAD	619+82 TO 616+82 RT	300'	6" PEP	POND	14.76'

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
177	615+00.00	**	72" X 72"	2	*	10.05'
197	614+50.64	**	72" X 48"	1	*	11.24'
198+	613+75.00	**	+	2	*	12.97'
199	614+60.00	**	72" X 72"	1	*	11.30'
200	616+45.60	**	66" x 66"	1	*	9.72'
201	616+60.44	**	72" x 72"	1	*	9.59'
202	620+00.00	**	34" x 24"	1	*	12.60'
203	618+50.00	**	34" x 24"	1	*	11.60'
204	617+83.46	**	34" x 24"	1	*	11.00'

\+ SPECIAL INLET I. SEE CONSTRUCTION DETAIL SHEETS
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
254	18"/RCP	IV	145.00'	0.0079	12.46'	11.32'
255	42"/RCP	IV	98.00'	0.0117	11.24'	10.10'
256	42"/RCP	IV	12.00'	0.0092	11.46'	11.35'
257	15"/RCP	IV	123.00'	0.0079	12.97'	12.00'
258	42"/RCP	IV	18.00'	0.0092	11.51'	11.35'
259	42"/RCP	IV	179.00'	0.0086	11.30'	9.77'
260	42"/RCP	IV	9.00'	0.0089	9.72'	9.64'
261	48"/RCP	IV	106.00'	0.0052	9.59'	9.04'
262	15"/RCP	IV	146.00'	0.0062	12.60'	11.70'
263	15"/RCP	IV	63.00'	0.0079	11.60'	11.10'
264	15"/RCP	IV	118.00'	0.0085	11.00'	10.00'

BARRIER SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
2	PCC SAFETY BARRIER PERM., DOUBLE FACE	251.80'

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
37	CURB & GUTTER TYPE 3-8	504'
38	CURB TYPE 2	87'
39	CURB & GUTTER TYPE 3-8	244'

RIGHT-OF-WAY MONUMENT SCHEDULE

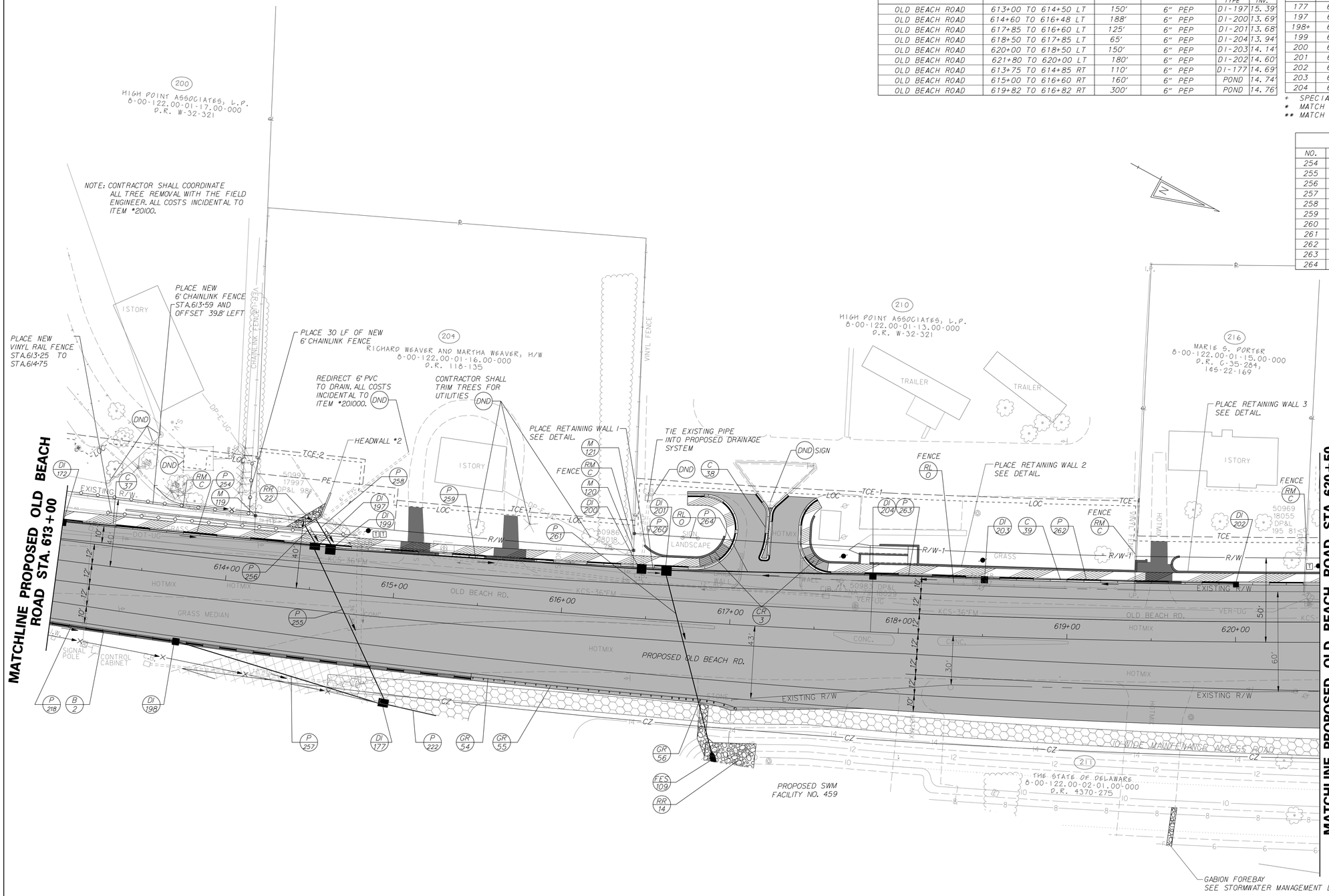
POINT NO.	STATION	OFFSET	NORTHING	EASTING
119	614+13.40	-40.00	381928.7955	644119.8222
120	616+40.11	-40.00	382135.5417	644030.7650
121	616+39.79	-50.00	382131.1203	644021.7901

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
109	48"/RCP	0.0052	NO

RIPRAP SCHEDULE

NO.	TYPE	AREA (SF)
22	R-4	102.00



NOTE:

CONTRACTOR SHALL REMOVE FENCE ON PARCELS 204 AND 210 TO THE PROPOSED RIGHT OF WAY, AS SHOWN ON THE PLANS.

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
54	CONNECTION, APPROACH TYPE 1-31	615+42.75	42.33	27.00'
55	GALV. STEEL BEAM GUARDRAIL, TYPE 1-31	615+69.75	42.76	87.50'
56	END TREATMENT ATTENUATOR, TYPE 2-31	616+56.42	A	50.00'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 69 TOTAL SHTS. 641

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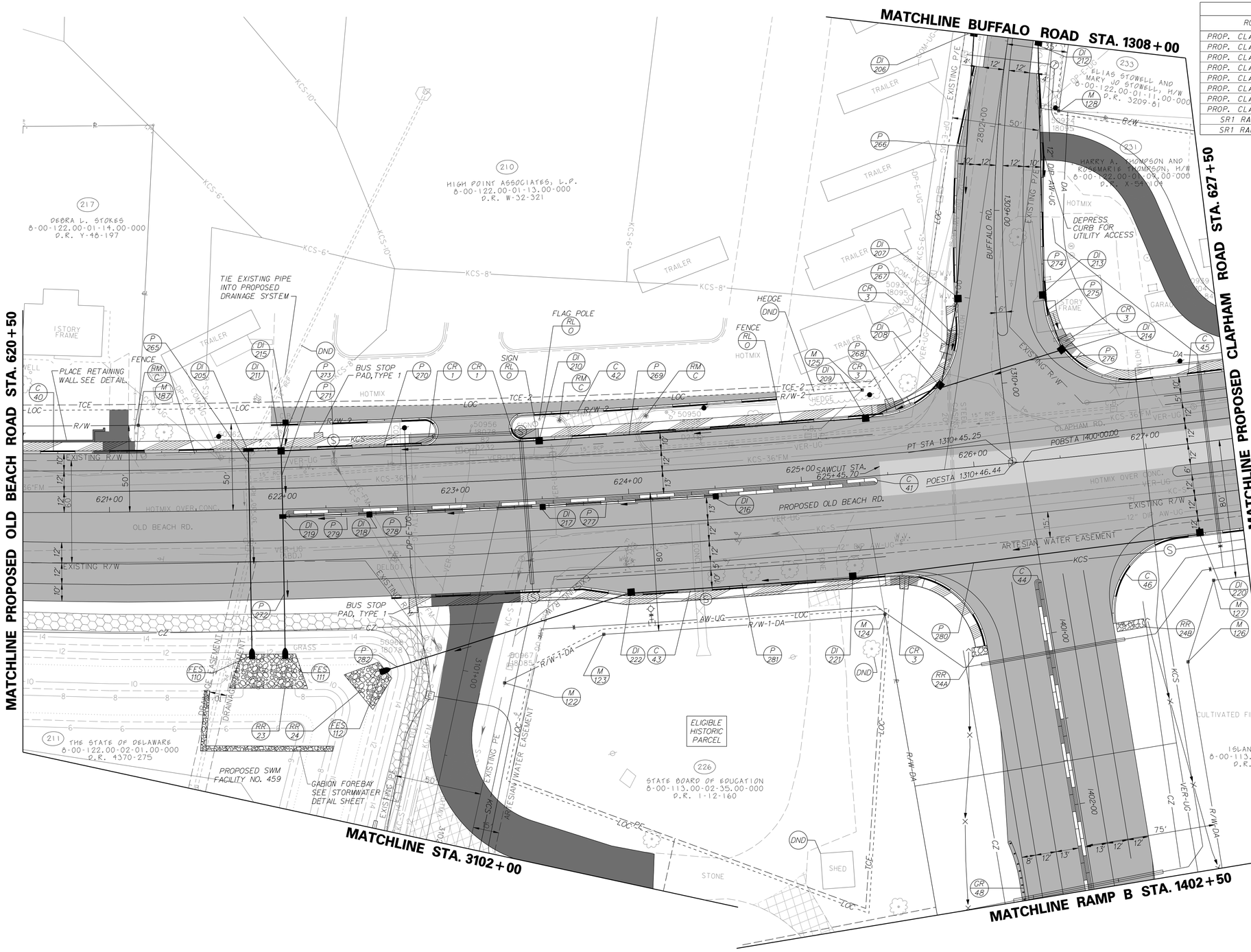

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
PROP. CLAPHAM ROAD	622+00 TO 621+80 LT	20'	6" PEP	DI-205	15.13'
PROP. CLAPHAM ROAD	623+50 TO 622+00 LT	150'	6" PEP	DI-211	15.22'
PROP. CLAPHAM ROAD	625+40 TO 623+50 LT	190'	6" PEP	DI-210	15.69'
PROP. CLAPHAM ROAD	628+40 TO 625+40 LT	300'	6" PEP	DI-209	16.55'
PROP. CLAPHAM ROAD	621+80 TO 619+82 RT	198'	6" PEP	POND	15.83'
PROP. CLAPHAM ROAD	624+00 TO 622+00 RT	200'	6" PEP	POND	16.56'
PROP. CLAPHAM ROAD	625+25 TO 624+00 RT	125'	6" PEP	DI-222	17.33'
PROP. CLAPHAM ROAD	627+25 TO 625+25 RT	200'	6" PEP	DI-221	17.65'
SR1 RAMP A & B	1400+52 TO 1402+92 LT	240'	6" PEP	DITCH	12.11'
SR1 RAMP A & B	1400+52 TO 1402+73 RT	221'	6" PEP	DITCH	12.50'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
122	623+23.23	105.00	382810.2205	643837.9943
123	623+80.94	80.00	382847.1146	643786.0002
124	625+41.47	80.00	382984.1645	643698.2003
125	625+39.43	-50.00	382910.8257	643590.8430
126	1401+29.39	-75.00	383151.0588	643638.8727
127	627+29.59	80.00	383141.5653	643590.4725
128	1308+39.31	-35.00	382934.4905	643394.6970

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
205	621+81.00	**	72" x 24"	1	*	9.70'
206	1308+00.00	19.79'	34" x 24"	2	22.25'	15.90'
207	1309+50.00	**	48" x 30"	1	*	13.82'
208	625+83.86	**	48" x 48"	2	*	13.53'
209	625+40.00	**	48" x 48"	1	*	13.25'
210	623+50.00	**	48" x 48"	1	*	12.25'
211	622+00.00	**	48" x 48"	1	*	9.85'
212	1308+00.00	-17.78'	48" x 30"	2	22.65'	15.60'
213	1309+50.00	**	48" x 30"	1	*	14.56'
214	626+58.58	**	48" x 30"	1	*	13.80'
215	622+03.00	-49.08	34" x 18"	1	*	12.70'
216	624+50.00	**	34" x 24"	1	*	12.32'
217	623+50.00	**	34" x 24"	1	*	11.54'
218	622+50.00	**	34" x 24"	1	*	10.76'
219	622+00.00	**	48" x 30"	1	*	9.55'
220	627+25.00	**	34" x 24"	1	*	12.11'
221	625+25.00	**	34" x 24"	1	*	10.87'
222	623+98.00	**	48" x 30"	1	*	10.00'

* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
265	54"/RCP	IV	112.00'	0.0059	9.70'	9.05'
266	15"/RCP	IV	150.00'	0.0050	15.90'	15.15'
267	15"/RCP	IV	47.00'	0.0051	13.82'	13.58'
268	21"/RCP	IV	43.00'	0.0053	13.53'	13.30'
269	24"/RCP	IV	185.00'	0.0051	13.25'	12.30'
270	24"/RCP	IV	145.00'	0.0052	12.25'	11.50'
271	24"/RCP	IV	35.00'	0.0073	9.85'	9.60'
272	24"/RCP	IV	75.00'	0.0068	9.55'	9.04'
273	15"/RCP	IV	13.00'	0.0154	12.70'	12.50'
274	15"/RCP	IV	142.00'	0.0038	15.67'	15.13'
275	15"/RCP	IV	29.00'	0.0038	14.56'	14.45'
276	18"/RCP	IV	72.00'	0.0038	13.80'	13.53'
277	15"/RCP	IV	97.00'	0.0070	12.32'	11.64'
278	15"/RCP	IV	97.00'	0.0070	11.54'	10.86'
279	15"/RCP	IV	47.00'	0.0071	10.76'	10.44'
280	15"/RCP	IV	199.00'	0.0050	12.11'	11.12'
281	15"/RCP	IV	125.00'	0.0050	10.87'	10.25'
282	15"/RCP	IV	141.00'	0.0051	10.00'	9.28'

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
40	CURB & GUTTER TYPE 3-8	496'
41	CURB TYPE 2	689'
42	CURB & GUTTER TYPE 3-8	393'
43	CURB & GUTTER TYPE 3-8	313'
44	CURB TYPE 2	366'
45	CURB & GUTTER TYPE 3-8	262'
46	CURB & GUTTER TYPE 3-8	72'

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
110	54"/RCP	0.0059	NO
111	24"/RCP	0.0068	NO
112	15"/RCP	0.0051	NO

RIPRAP SCHEDULE

NO.	TYPE	AREA
23	R-4	756.00
24	R-4	380.00
24A	R-4	46.00
24B	R-4	82.00

GUARDRAIL SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	BEGIN STA.	OFFSET	LENGTH
48	END TREATMENT ATTENUATOR, TYPE 2-31	1402+50.00	A	37.66'

A = OFFSET ATTENUATORS AS PER STANDARD DETAILS

NOTES:

1. CONTRACTOR SHALL REMOVE FENCE ON PARCEL 217 TO THE PROPOSED RIGHT OF WAY, AS SHOWN ON THE PLANS.
2. CONTRACTOR MAY ENCOUNTER SEPTIC ON PARCEL 226. COST INCIDENTAL TO ITEM 202000 - EXCAVATION AND EMBANKMENT.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 70 TOTAL SHTS. 641

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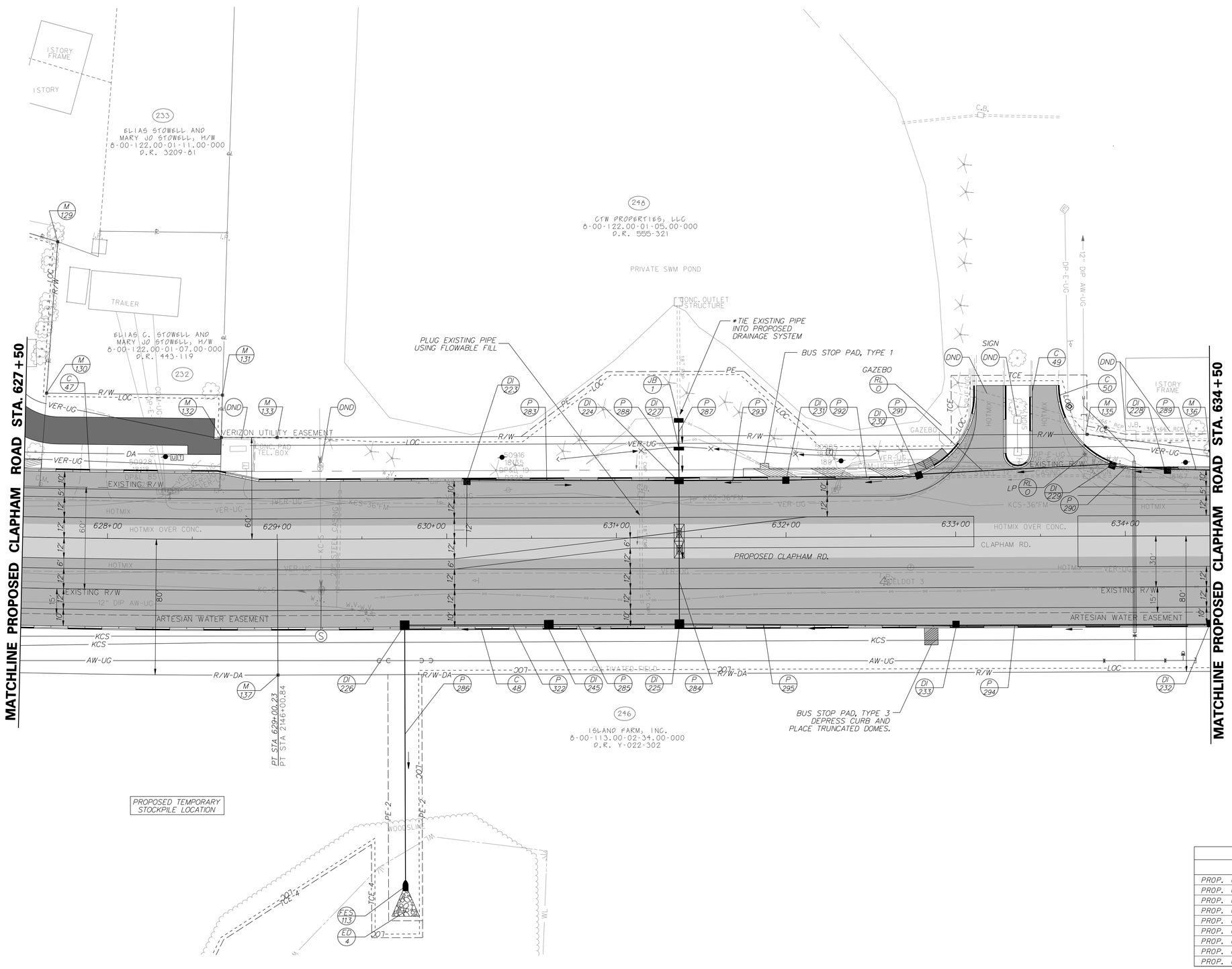

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
113	42"/RCP	0.0036	NO

JUNCTION BOX SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	INV. EL.
1	631+37.00	-69.15'	66" X 30"	13.34'

ENERGY DISSIPATOR SCHEDULE

NO.	RR TYPE	LENGTH	WIDTH	POOL DEPTH
4	R-4	15.00'	13.00'	1.00'

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
47	CURB & GUTTER TYPE 3-8	596'
48	CURB & GUTTER TYPE 3-8	702'
49	CURB & GUTTER TYPE 3-8	107'
50	CURB & GUTTER TYPE 3-8	119'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
129	627+67.28	-174.31	383024.2561	643361.7633
130	627+62.36	-85.00	383072.4387	643437.1120
131	628+67.63	-85.00	383156.1401	643375.8901
132	628+67.03	-60.00	383170.6086	643396.2865
133	629+00.23	-60.00	383196.8893	643376.5765
135	633+77.76	-60.00	383579.0139	643089.0114
136	634+50.00	-50.00	383641.7786	643053.4270
137	629+00.23	80.00	383281.2121	643488.3337

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
223	630+12.00	**	34" x 24"	1	*	15.06'
224	631+37.00	**	66" x 48"	1	*	12.63'
225	631+37.00	**	66" x 66"	1	*	12.30'
226	629+75.00	**	66" x 66"	1	*	11.70'
227+	631+37.00	-52.54'	+	2	18.35'	12.73'
228	634+25.00	**	48" x 30"	1	*	13.76'
229	633+79.28	**	48" x 48"	1	*	13.58'
230	632+90.22	**	48" x 48"	1	*	13.23'
231	632+00.00	**	48" x 48"	1	*	12.88'
232	634+50.00	**	48" x 30"	1	*	13.76'
233	633+00.00	**	48" x 30"	1	*	13.06'
245	630+60.00	**	66" x 66"	1	*	12.03'

\+ SPECIAL INLET V. SEE CONSTRUCTION DETAIL SHEETS.
* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
283	15"/RCP	IV	121.00'	0.0035	15.06'	14.64'
284	42"/RCP	IV	80.00'	0.0035	12.63'	12.35'
285	42"/RCP	IV	71.00'	0.0035	12.30'	12.05'
286	42"/RCP	IV	146.00'	0.0036	11.70'	11.18'
287	18"/RCP	IV	14.00'	0.0036	13.34'	13.29'
288	36"/RCP	IV	16.00'	0.0033	12.73'	12.68'
289	15"/RCP	IV	172.00'	0.0045	14.57'	13.81'
290	18"/RCP	IV	28.00'	0.0054	13.76'	13.61'
291	18"/RCP	IV	112.00'	0.0027	13.58'	13.28'
292	21"/RCP	IV	76.00'	0.0041	13.23'	12.92'
293	21"/RCP	IV	58.00'	0.0035	12.88'	12.68'
294	21"/RCP	IV	146.00'	0.0045	13.76'	13.11'
295	21"/RCP	IV	158.00'	0.0045	13.06'	12.35'
322	42"/RCP	IV	79.00'	0.0035	12.03'	11.75'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
PROP. CLAPHAM ROAD*	628+40 TO 630+12 LT	172'	6" PEP	DI-223	17.12'
PROP. CLAPHAM ROAD	631+36 TO 630+12 LT	124'	6" PEP	DI-223	17.12'
PROP. CLAPHAM ROAD	632+00 TO 631+36 LT	64'	6" PEP	DI-224	17.16'
PROP. CLAPHAM ROAD	634+25 TO 632+00 LT	225'	6" PEP	DI-231	17.19'
PROP. CLAPHAM ROAD	629+75 TO 627+25 RT	250'	6" PEP	DI-220	18.16'
PROP. CLAPHAM ROAD	630+60 TO 629+75 RT	85'	6" PEP	DI-226	17.48'
PROP. CLAPHAM ROAD	631+37 TO 630+60 RT	77'	6" PEP	DI-245	16.79'
PROP. CLAPHAM ROAD	633+00 TO 631+37 RT	163'	6" PEP	DI-225	16.80'
PROP. CLAPHAM ROAD	634+50 TO 633+00 RT	150'	6" PEP	DI-233	16.88'

* UNDERDRAIN SHALL BE SLOPED AGAINST PROFILE OF ROAD.

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 71
TOTAL SHTS. 641

1/13/2015
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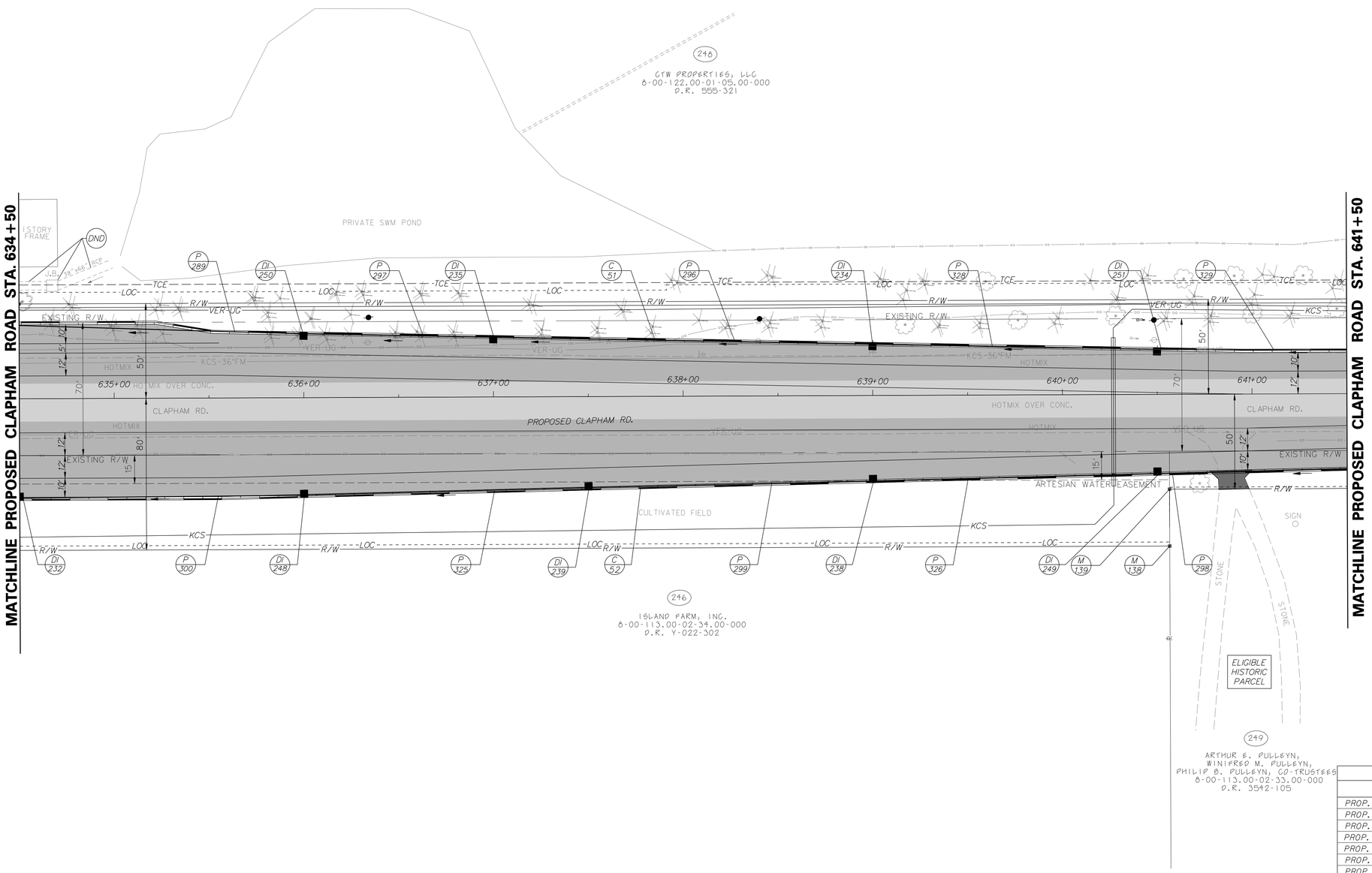

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
51	CURB & GUTTER TYPE 3-8	701'
52	CURB & GUTTER TYPE 3-8	701'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
138	640+56.29	80.00	384204.0572	642792.0311
139	640+56.29	50.00	384185.9881	642768.0831

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
234	639+00.00	**	34" x 24"	1	*	15.98'
235	637+00.00	**	34" x 24"	1	*	15.05'
238	639+00.00	**	34" x 24"	1	*	15.88'
239	637+50.00	**	48" x 30"	1	*	15.17'
248	636+00.00	**	48" x 30"	1	*	14.46'
249	640+50.00	**	34" x 24"	1	*	16.59'
250	636+00.00	**	34" x 24"	1	*	14.57'
251	640+50.00	**	34" x 24"	1	*	16.69'

* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
296	15"/RCP	IV	197.00'	0.0045	15.98'	15.10'
297	15"/RCP	IV	97.00'	0.0045	15.05'	14.62'
298	15"/RCP	IV	147.00'	0.0045	17.30'	16.64'
299	15"/RCP	IV	147.00'	0.0045	15.88'	15.22'
300	18"/RCP	IV	146.00'	0.0045	14.46'	13.81'
325	18"/RCP	IV	146.00'	0.0045	15.17'	14.51'
326	15"/RCP	IV	147.00'	0.0045	16.59'	15.93'
328	15"/RCP	IV	147.00'	0.0045	16.69'	16.03'
329	15"/RCP	IV	147.00'	0.0045	17.40'	16.74'

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
PROP. CLAPHAM ROAD	637+00 TO 636+00 LT	100'	6" PEP	DI-250	17.29'
PROP. CLAPHAM ROAD	636+00 TO 634+25 LT	175'	6" PEP	DI-228	17.39'
PROP. CLAPHAM ROAD	639+00 TO 637+00 LT	200'	6" PEP	DI-235	17.48'
PROP. CLAPHAM ROAD	640+50 TO 639+00 LT	150'	6" PEP	DI-234	17.69'
PROP. CLAPHAM ROAD	642+00 TO 640+50 LT	150'	6" PEP	DI-251	17.96'
PROP. CLAPHAM ROAD	636+00 TO 634+50 RT	150'	6" PEP	DI-232	16.96'
PROP. CLAPHAM ROAD	637+50 TO 636+00 RT	150'	6" PEP	DI-248	17.04'
PROP. CLAPHAM ROAD	639+00 TO 637+50 RT	150'	6" PEP	DI-239	17.16'
PROP. CLAPHAM ROAD	640+50 TO 639+00 RT	150'	6" PEP	DI-238	17.29'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 72
TOTAL SHTS. 641

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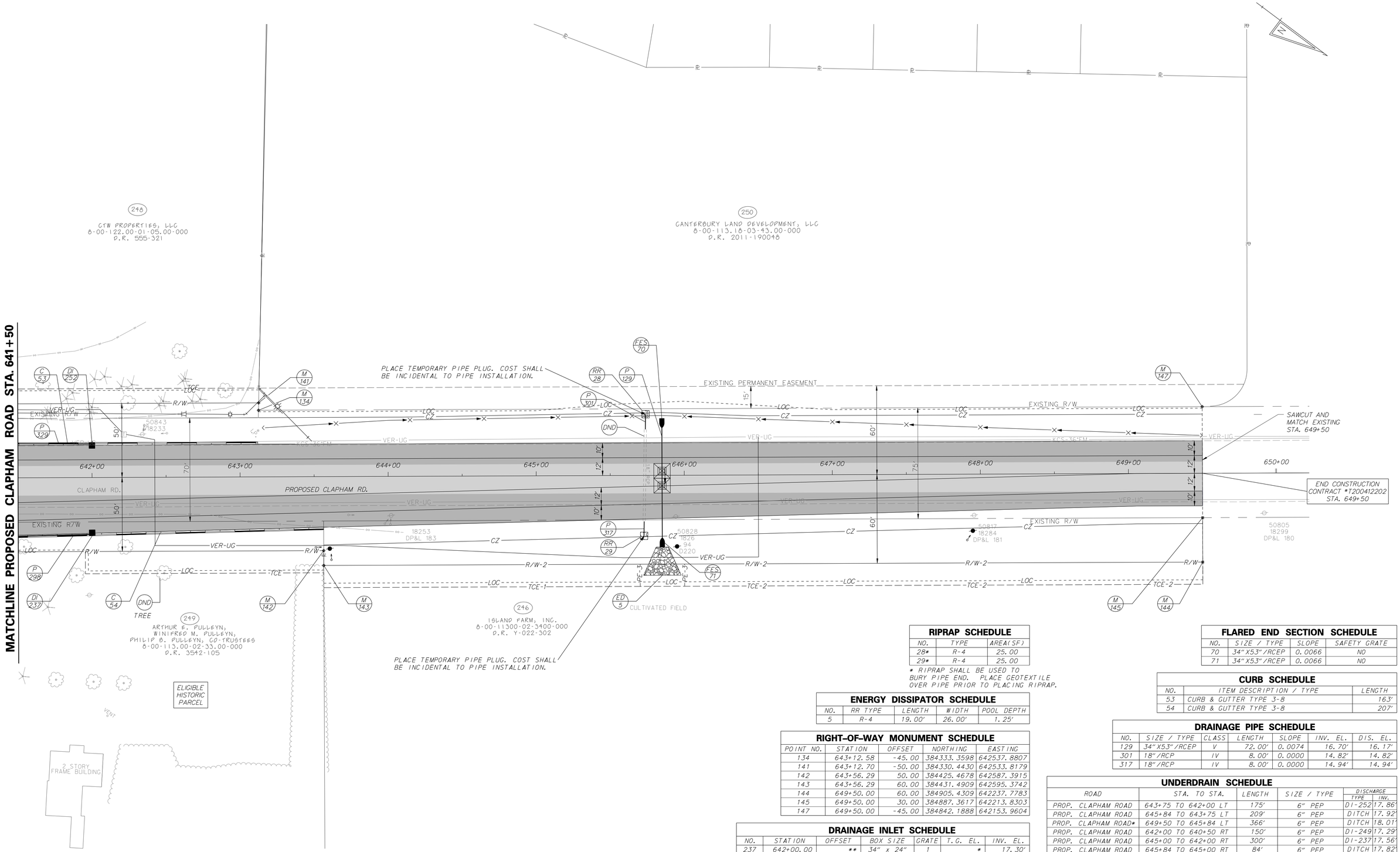

RIPRAP SCHEDULE

NO.	TYPE	AREA(SF)
28*	R-4	25.00
29*	R-4	25.00

* RIPRAP SHALL BE USED TO BURY PIPE END. PLACE GEOTEXTILE OVER PIPE PRIOR TO PLACING RIPRAP.

FLARED END SECTION SCHEDULE

NO.	SIZE / TYPE	SLOPE	SAFETY GRATE
70	34" X53" /RCEP	0.0066	NO
71	34" X53" /RCEP	0.0066	NO

CURB SCHEDULE

NO.	ITEM DESCRIPTION / TYPE	LENGTH
53	CURB & GUTTER TYPE 3-8	163'
54	CURB & GUTTER TYPE 3-8	207'

ENERGY DISSIPATOR SCHEDULE

NO.	RR TYPE	LENGTH	WIDTH	POOL DEPTH
5	R-4	19.00'	26.00'	1.25'

DRAINAGE PIPE SCHEDULE

NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
129	34" X53" /RCEP	V	72.00'	0.0074	16.70'	16.17'
301	18" /RCP	IV	8.00'	0.0000	14.82'	14.82'
317	18" /RCP	IV	8.00'	0.0000	14.94'	14.94'

RIGHT-OF-WAY MONUMENT SCHEDULE

POINT NO.	STATION	OFFSET	NORTHING	EASTING
134	643+12.58	-45.00	384333.3598	642537.8807
141	643+12.70	-50.00	384330.4430	642533.8179
142	643+56.29	50.00	384425.4678	642587.3915
143	643+56.29	60.00	384431.4909	642595.3742
144	649+50.00	60.00	384905.4309	642237.7783
145	649+50.00	30.00	384887.3617	642213.8303
147	649+50.00	-45.00	384842.1888	642153.9604

UNDERDRAIN SCHEDULE

ROAD	STA. TO STA.	LENGTH	SIZE / TYPE	DISCHARGE TYPE	DISCHARGE INV.
PROP. CLAPHAM ROAD	643+75 TO 642+00 LT	175'	6" PEP	DI-252	17.86'
PROP. CLAPHAM ROAD	645+84 TO 643+75 LT	209'	6" PEP	DITCH	17.92'
PROP. CLAPHAM ROAD*	649+50 TO 645+84 LT	366'	6" PEP	DITCH	18.01'
PROP. CLAPHAM ROAD	642+00 TO 640+50 RT	150'	6" PEP	DI-249	17.29'
PROP. CLAPHAM ROAD	645+00 TO 642+00 RT	300'	6" PEP	DI-237	17.56'
PROP. CLAPHAM ROAD	645+84 TO 645+00 RT	84'	6" PEP	DITCH	17.82'
PROP. CLAPHAM ROAD*	649+50 TO 645+84 RT	366'	6" PEP	DITCH	17.89'

DRAINAGE INLET SCHEDULE

NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
237	642+00.00	**	34" x 24"	1	*	17.30'
252	642+00.00	**	34" x 24"	1	*	17.40'

* MATCH FLOWLINE OF PROPOSED CURB AND GUTTER
** MATCH PROPOSED CURBLINE

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY		
KENT	CHECKED BY:	WFC

CONSTRUCTION PLAN

SHEET NO. 73
TOTAL SHTS. 641

1/5/2015
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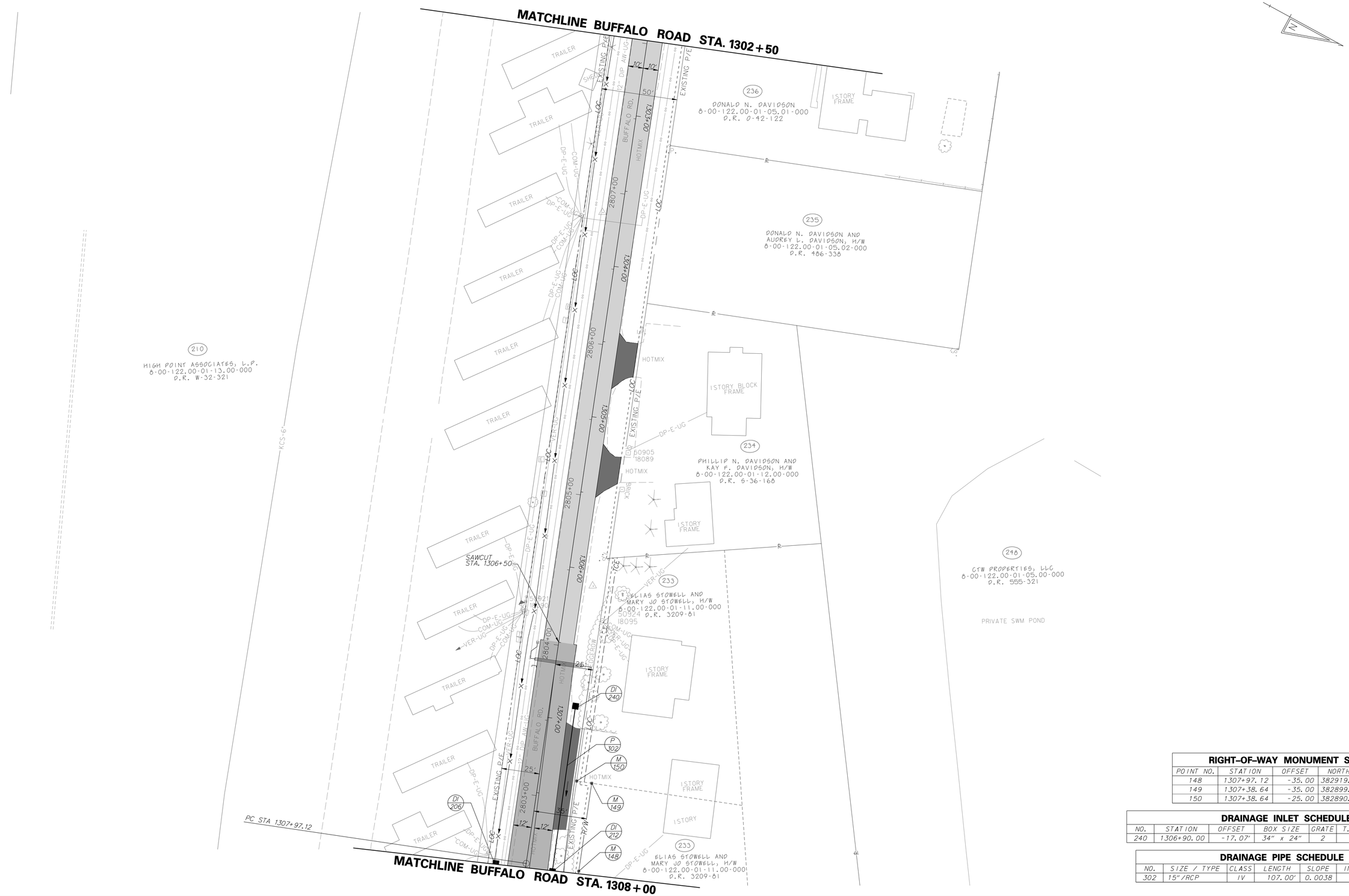

RIGHT-OF-WAY MONUMENT SCHEDULE				
POINT NO.	STATION	OFFSET	NORTHING	EASTING
148	1307+97.12	-35.00	382919.6018	643357.2040
149	1307+38.64	-35.00	382899.4608	643302.3067
150	1307+38.64	-25.00	382890.0727	643305.7511

DRAINAGE INLET SCHEDULE						
NO.	STATION	OFFSET	BOX SIZE	GRATE	T.G. EL.	INV. EL.
240	1306+90.00	-17.07'	34" x 24"	2	24.00'	19.90'

DRAINAGE PIPE SCHEDULE						
NO.	SIZE / TYPE	CLASS	LENGTH	SLOPE	INV. EL.	DIS. EL.
302	15"/RCP	IV	107.00'	0.0038	19.90'	19.50'

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION

CONTRACT	BRIDGE NO.	-
T200412202	DESIGNED BY:	SFP
COUNTY	CHECKED BY:	WFC
KENT		

CONSTRUCTION PLAN

SHEET NO. 74

TOTAL SHTS. 641

12/1/2014
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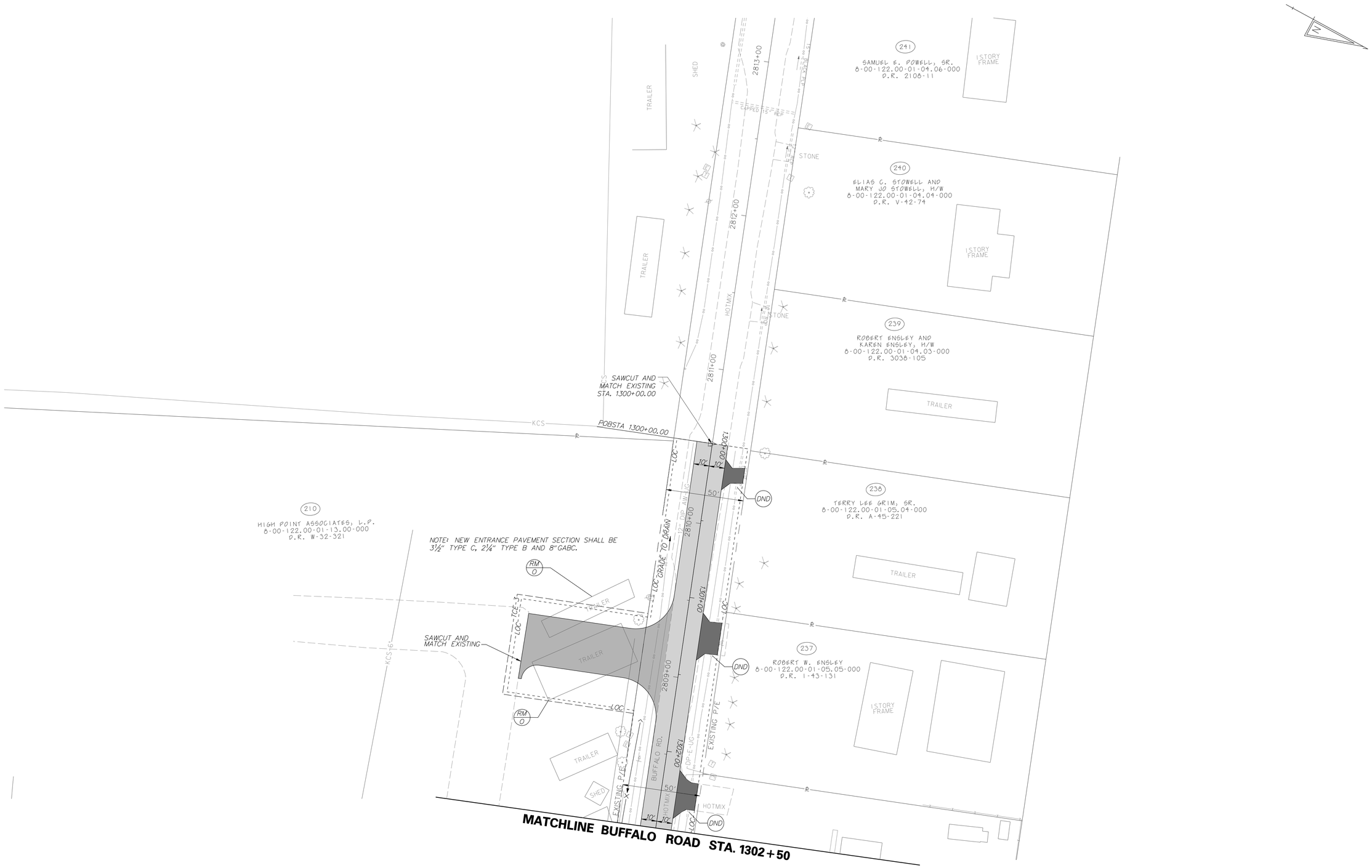

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 30 60 90 FEET	SR1, LITTLE HEAVEN GRADE SEPARATED INTERSECTION	CONTRACT T200412202	BRIDGE NO. -	CONSTRUCTION PLAN	SHEET NO. 75
				COUNTY KENT	DESIGNED BY: SFP		TOTAL SHTS. 641
					CHECKED BY: WFC		

12/1/2014
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