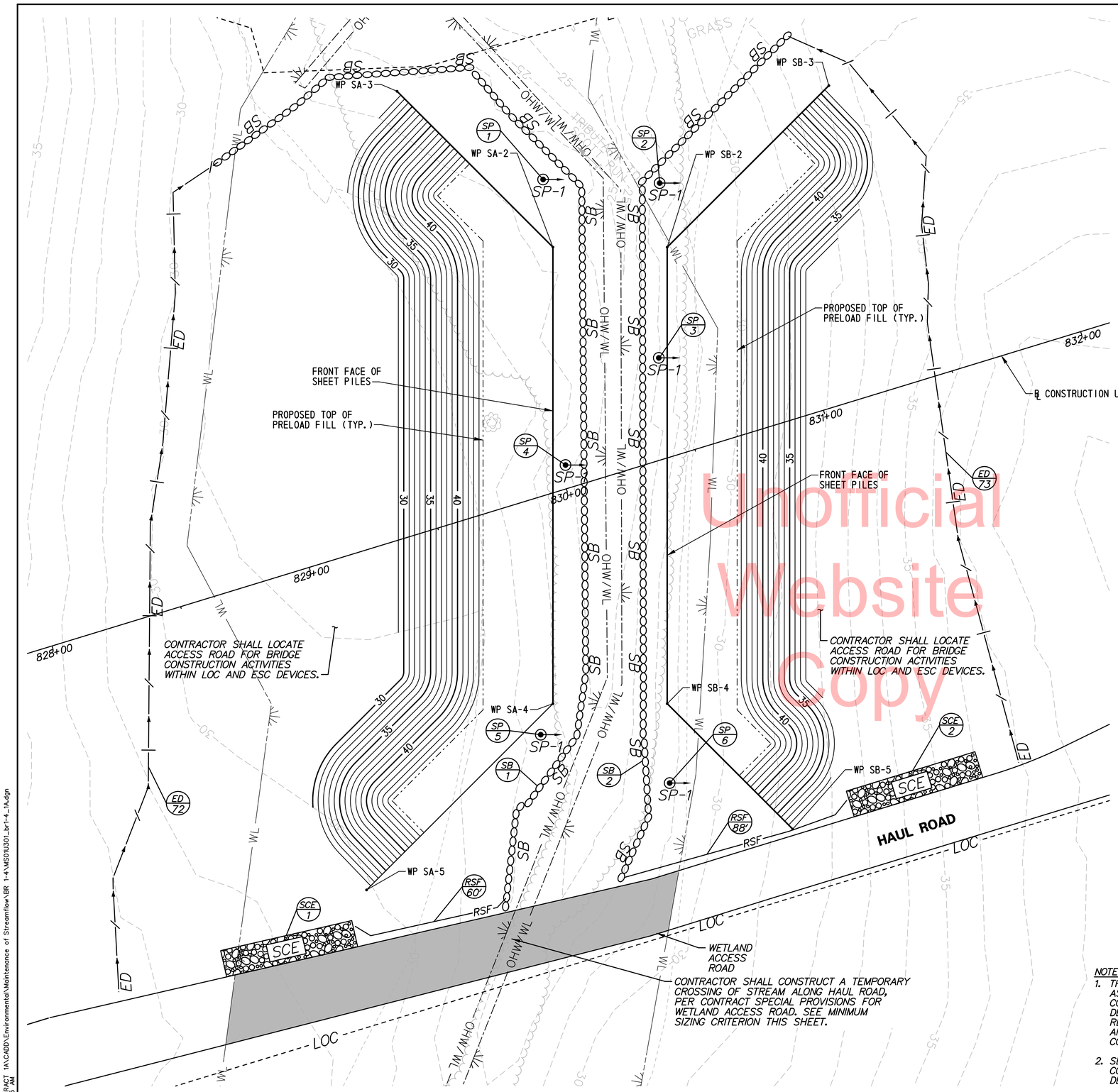

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SEQUENCE OF CONSTRUCTION - STAGE 1

NOTES:

1. REFER TO CORRESPONDING PRELOAD STAGE BRIDGE PLANS FOR BRIDGE BR 1-436, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG A TRIBUTARY OF SCOTT RUN. REFER TO CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLANS FOR INFORMATION ON EROSION AND SEDIMENT CONTROLS SHOWN HEREON BUT NOT REFERRED TO IN THIS SEQUENCE OF CONSTRUCTION. THE ENVIRONMENTAL MONITOR SHALL BE CONSULTED AND INCLUDED IN ANY REVISIONS IN THE SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. THE TEMPORARY CROSSING FOR HAUL ROAD ACTIVITIES SHALL BE CONSTRUCTED PER DETAIL, THIS SHEET. THE CONTRACTOR SHALL NOT ACCESS THE STREAM, IMPACT THE STREAM, NOR CHANGE THE STREAM PROFILE DURING CONSTRUCTION ACTIVITIES.
3. CLEAR AND GRUB AS NECESSARY TO INSTALL STABILIZED CONSTRUCTION ENTRANCES, SCE-1 AND SCE-2, SUMP PITS, REINFORCED SILT FENCE AND EARTH DIKES. INSTALL SANDBAG DIVERSIONS AS SHOWN. CLEAR AND GRUB FOR ACCESS ROAD AND PRELOAD FILL PLACEMENT.
4. PROCEED WITH INSTALLATION OF SHEET PILING AND PRELOAD FILL PLACEMENT. THE CONTRACTOR IS ALERTED TO THE SETTLEMENT QUARANTINE PERIOD SPECIFIED FOR PRELOAD FILL PLACEMENT BEFORE PROCEEDING WITH FURTHER BRIDGE CONSTRUCTION.
5. PROCEED WITH STAGE 2 OF SEQUENCE OF CONSTRUCTION AFTER SETTLEMENT QUARANTINE PERIOD.

STABILIZED CONSTRUCTION ENTRANCE (SCE)

NO.	STATION, OFFSET	TONS	REMARKS
SCE 1	828+38, 164' RT.	60	℄ US 301
SCE 2	830+66, 164' RT.	60	℄ US 301

SUMP PIT (SP)

SUMP PITS SHALL BE USED FOR DEWATERING WORK AREA AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING SUMP PITS AND PROVIDING ADEQUATE PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

EARTH DIKE SCHEDULE

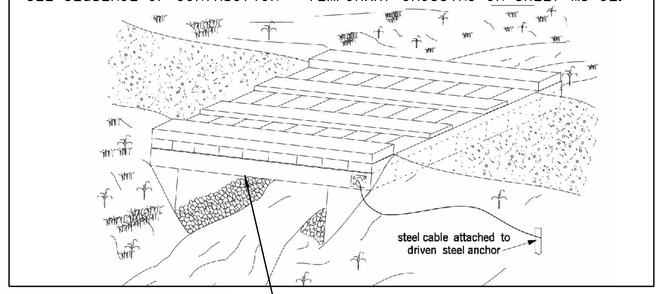
NO.	BEGIN STA.	END STA.	OFFSET	LENGTH	TYPE
72	827+86	828+92	130.00 RT	322'	A-1
73	831+31	831+28	142.00 RT	300'	A-1

SANDBAG DIVERSION (SB)

NO.	STATION-OFFSET	L.F.	REMARKS
SB 1	829+33, 142' RT. TO 828+92, 148' LT.	445	℄ US 301
SB 2	829+75, 147' RT. TO 831+28, 137' LT.	345	℄ US 301

DETAIL: TEMPORARY STREAM CROSSING FOR HAUL ROAD

SEE SEQUENCE OF CONTRUCTION - TEMPORARY CROSSING ON SHEET MS-02.



COST OF TEMPORARY CROSSING SHALL BE INCIDENTAL TO COST OF WETLAND ACCESS ROAD, TYPE II. WETLAND ACCESS ROAD, TYPE II AT THIS LOCATION IS INDEPENDENT OF BRIDGE 1-436 CONSTRUCTION AND SHALL BE PAID FOR AS SEPARATE ITEM NO. 202508.

ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET, WITH THE EXCEPTION OF THE TEMPORARY CROSSING FOR THE WETLAND ACCESS ROAD, TYPE II, SHALL BE PAID FOR UNDER ITEM 601506 FOR MAINTENANCE OF STREAM FLOW FOR BRIDGE BR 1-436.

SIZING OF HYDRAULIC OPENING OF TEMPORARY CROSSING

MINIMUM AREA REQUIRED: 40.0 SF

MINIMUM TOP WIDTH ELEVATION: 28.0

ACCESS ROAD

TYPE	S.Y.
WETLAND ACCESS ROAD	425

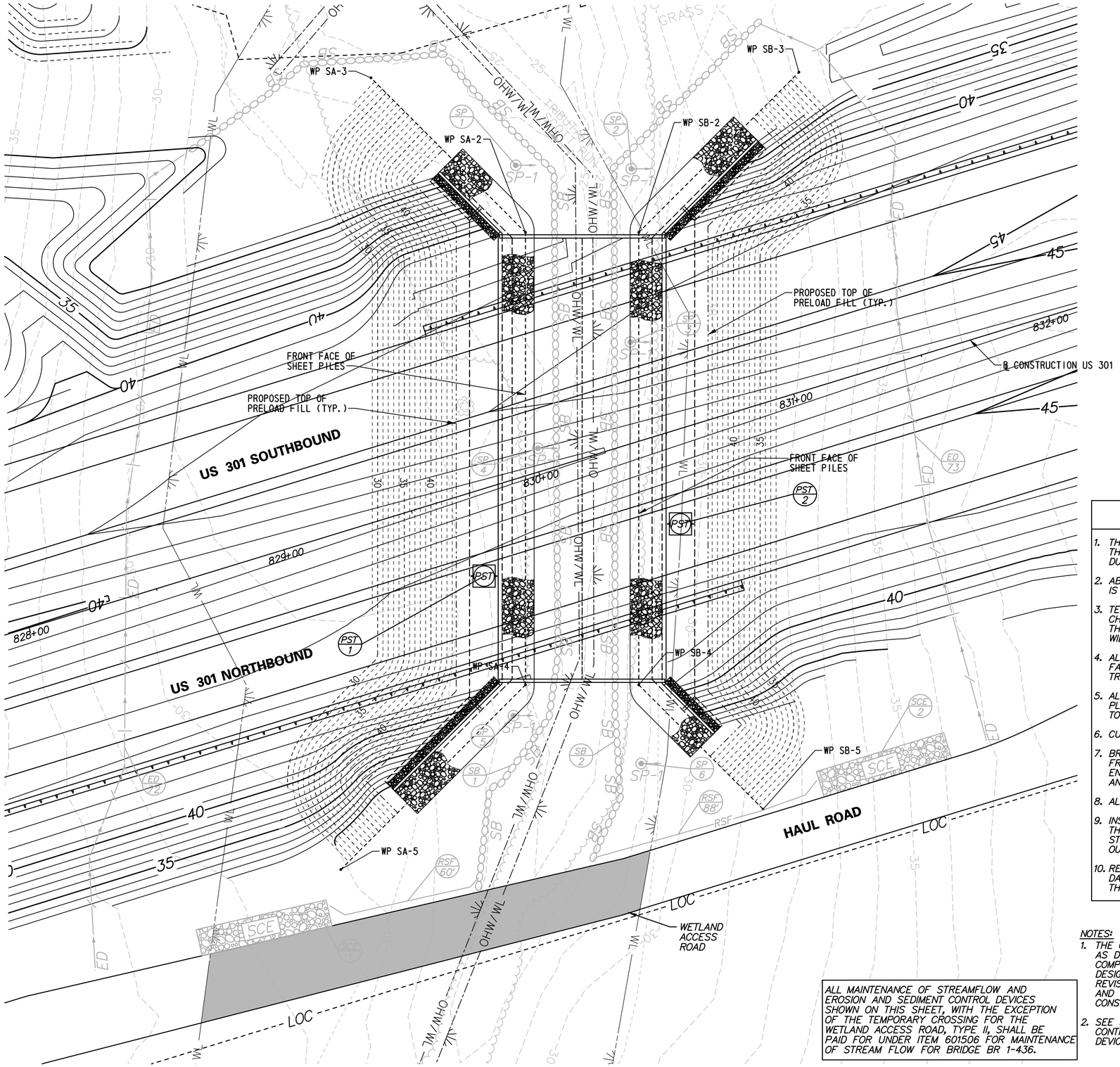
COMPUTED FLOWRATE

STORM EVENT	CFS
2-YEAR	100 +/-

NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGE BR 1-436, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. SEE SHEETS CS-40, CS-41, GR-02 AND GR-03 OF THE CONSTRUCTION PHASING, M.O.T., AND EROSION CONTRAL PLANS - PHASE 2 AND BORROW SITE GRADING PLANS FOR ADJACENT EROSION AND SEDIMENT CONTROL DEVICES AND COORDINATION OF ACTIVITIES.

MS-01



ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET, WITH THE EXCEPTION OF THE TEMPORARY CROSSING FOR THE WETLAND ACCESS ROAD, TYPE II, SHALL BE PAID FOR UNDER ITEM 601506 FOR MAINTENANCE OF STREAM FLOW FOR BRIDGE BR 1-436.

SEQUENCE OF CONSTRUCTION - STAGE 2

NOTES:

1. REFER TO CORRESPONDING PRELOAD STAGE PLANS BRIDGE PLANS FOR BRIDGE BR 1-436, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG A TRIBUTARY OF SCOTT RUN. REFER TO CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLANS FOR INFORMATION ON EROSION AND SEDIMENT CONTROLS SHOWN HEREON BUT NOT REFERRED TO IN THIS SEQUENCE OF CONSTRUCTION.THE ENVIRONMENTAL MONITOR SHALL BE CONSULTED AND INCLUDED IN ANY REVISIONS IN THE SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. SEE NOTES ON SHEET ST-02 FOR REMOVAL OF SHEET PILE AND PRELOAD FILL EXCAVATION. PROCEED WITH SUBSTRUCTURE CONSTRUCTION OF BRIDGE BR 1-436 FOOTINGS AND WINGWALLS.
3. PROCEED WITH INSTALLATION OF SCOUR COUNTERMEASURES. SUMP PITS MAY BE REMOVED UNDER THE DIRECTION OF THE ENGINEER AND ESC INSPECTOR TO ALLOW FOR INSTALLATION OF RIPRAP TO FINAL GRADE. SEE NOTES ON SHEET BR1-4/PE-01 FOR REQUIREMENTS FOR RIPRAP PLACEMENT.
4. PROCEED WITH SUPERSTRUCTURE CONSTRUCTION OF BRIDGE BR 1-436.
5. PROCEED WITH FINAL GRADING AT WINGWALLS AND TIE INTO PROPOSED GRADING AND CONSTRUCTION OF US 301 NB AND SB ROADWAYS.
6. UPON COMPLETION OF GRADING ACTIVITIES, ALL EROSION AND SEDIMENT CONTROL DEVICES MAY BE REMOVED UNDER THE DIRECTION OF THE ENGINEER AND ESC INSPECTOR. ANY AREAS DISTURBED IN THE PROCESS SHALL BE IMMEDIATELY STABILIZED PER NOTE THIS SHEET.
7. SEE ADDITIONAL ENVIRONMENTAL GUIDELINES ON SHEET EC-04 IN THE CONTRACT DOCUMENTS FOR FINAL STABILIZATION AND VEGETATIVE PLANTINGS REQUIRED WITHIN THE DISTURBED AREAS OF THE LOC.

PORTABLE SEDIMENT TANK (PST)

PORTABLE SEDIMENT TANK (PST) SHALL BE USED FOR DEWATERING SEDIMENT LADEN RUNOFF AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE QUANTITY OF PSTS AND PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

SAME DAY STABILIZATION NOTE

WHERE NOTED, AREAS SHALL BE STABILIZED WITHIN THE SAME WORKING DAY. NO AREA SHALL REMAIN UNSTABILIZED OVERNIGHT UNLESS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.

TEMPORARY STREAM CROSSING - CONSTRUCTION NOTES
SEE DETAIL ON SHEET MS-01

1. THE TEMPORARY CROSSING FOR HAUL ROAD ACTIVITIES SHALL BE CONSTRUCTED PER DETAIL AND NOTES,SHEET MS-01. THE CONTRACTOR SHALL NOT ACCESS THE STREAM, IMPACT THE STREAM, NOR CHANGE THE STREAM PROFILE DURING CONSTRUCTION ACTIVITIES.
2. ABUTMENTS SHALL BE PLACED PARALLEL TO, AND ON, STABLE BANKS SUCH THAT THE BOTTOM OF THE STRUCTURE IS AT OR ABOVE MINIMUM TOP WIDTH ELEVATION PER CONTRACT SPECIAL PROVISIONS.
3. TEMPORARY ACCESS BRIDGE SHOULD BE CONSTRUCTED TO SPAN THE ENTIRE CHANNEL (OHW/WL). IF THE BANKFULL CHANNEL WIDTH EXCEEDS 8 FEET, THEN A FOOTING, PIER, OR OTHER SUPPORT MAY BE CONSTRUCTED WITHIN THE WATERWAY. NO SUPPORT WILL BE PERMITTED WITHIN THE CHANNEL FOR WATERWAYS LESS THAN 8 FEET WIDE. ONE ADDITIONAL BRIDGE SUPPORT WILL BE PERMITTED FOR EACH ADDITIONAL 8-FOOT WIDTH OF CHANNEL.
4. ALL DECKING MEMBERS SHOULD BE PLACED PERPENDICULARLY TO THE STRINGERS, BUTTED TIGHTLY, AND SECURELY FASTENED TO THE STRINGERS. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY.
5. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS. ONE RUN PLANK SHOULD BE PROVIDED FOR EACH TRACK OF THE EQUIPMENT WEELS AND SHOULD BE SECURELY FASTENED TO THE LENGTH OF THE SPAN.
6. CURBS OR FENDERS MAY BE INSTALLED ALONG THE OUTER SIDES OF THE DECK TO PROVIDE ADDITIONAL SAFETY.
7. BRIDGE SHOULD BE SECURELY ANCHORED AT ONE END USING A STEEL CABLE OR CHAIN TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM AND POSSIBLY CAUSING AN OBSTRUCTION TO THE FLOW. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOOD WATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, BOULDERS, OR DRIVEN STEEL ANCHORS.
8. ALL AREAS DISTURBED DURING INSTALLATION SHALL BE STABILIZED WITHIN 14 CALENDAR DAYS OF REMOVAL.
9. INSPECTION AND MAINTENANCE SHALL BE PERFORMED ON A DAILY BASIS AND AFTER ALL STORM EVENTS TO ENSURE THAT THE STRUCTURE COMPLIES WITH ALL STANDARDS AND SPECIFICATIONS. THIS INCLUDES BRIDGE AND STREAMBANK STABILITY AND REMOVAL OF TRAPPED SEDIMENT AND DEBRIS WHICH SHALL BE DISPOSED OF IN A STABILIZED AREA OUTSIDE OF THE FLOODPLAIN.
10. REMOVAL OF THE TEMPORARY BRIDGE SHALL INCLUDE ALL BRIDGE MATERIALS AND STRUCTURES WITHIN 14 CALENDAR DAYS OF START OF DEMOLITION. AREAS DISTURBED IN THE PROCESS SHALL BE PERMANENTLY STABILIZED PER NOTE THIS SHEET AND PER ENVIRONMENTAL COMPLIANCE GUIDELINES OF THE CONTRACT DOCUMENTS.

NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGE BR 1-436, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. SEE SHEETS CS-40, CS-41, GR-02 AND GR-03 OF THE CONSTRUCTION PHASING, M.O.T., AND EROSION CONTRAL PLANS - PHASE 2 AND BORROW SITE GRADING PLANS FOR ADJACENT EROSION AND SEDIMENT CONTROL DEVICES AND COORDINATION OF ACTIVITIES.

MS-02

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR 1-436
T200911308	DESIGNED BY: D.B.R.	
COUNTY		
NEW CASTLE	CHECKED BY: J.D.C.	

MAINTENANCE OF STREAM FLOW PLAN STAGE 2

SHEET NO. 596
TOTAL SHTS. 875

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TEMPORARY PIPE (TP)

NO.	STATION	SIZE	L. F.	REMARKS
TP 1	910+00, 14' RT. TO 909+90, 67' RT.	48" DIA., MIN.	54	@ HYETTS CORNER RD
TP 2	910+10, 14' RT. TO 909+96, 69' RT.	48" DIA., MIN	56	@ HYETTS CORNER RD

PORTABLE SEDIMENT TANK (PST)

PORTABLE SEDIMENT TANK (PST) SHALL BE USED FOR DEWATERING SEDIMENT LADEN RUNOFF AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE QUANTITY OF PSTS AND PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

EARTH DIKE SCHEDULE

NO.	BEGIN STA.	END STA.	OFFSET	LENGTH	TYPE
75	911+83	913+52	84.00 LT	266'	A-1

SEDIMENT TRAP SCHEDULE

NO.	D. AREA	LENGTH	WIDTH	DEPTH	OUT. TYPE	WEIR EL.	CLEAN EL.	WEIR LENGTH	EMBANK. EL.
61	0.46 AC	34'	12'	2.00'	STONE	28.85	26.00	2.00	30.00

SANDBAG DIKE (SB)

NO.	STATION-OFFSET	L. F.	REMARKS
SB 1	909+84, 66' RT.	17'	@ HYETTS CORNER RD

ACCESS ROAD

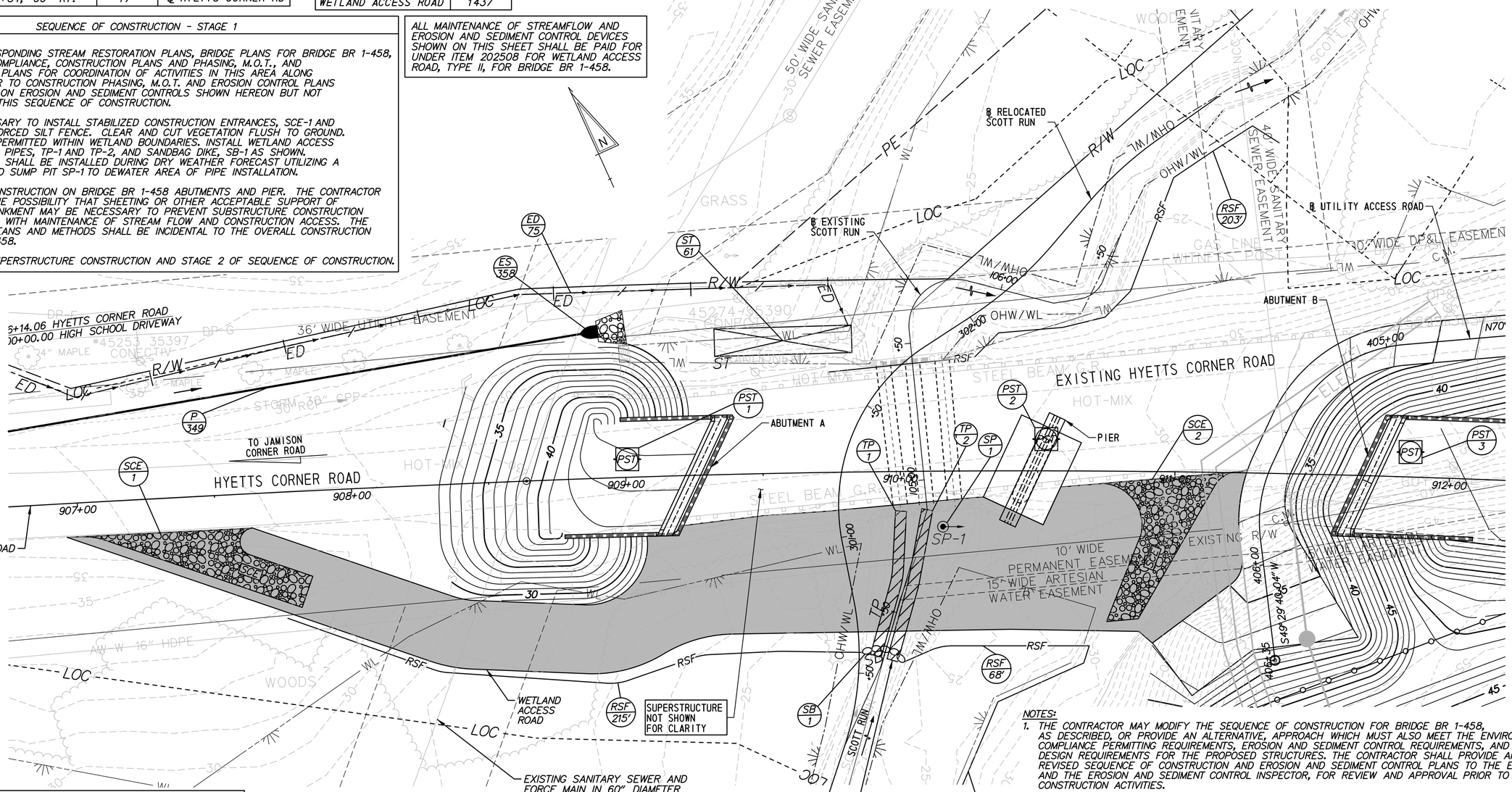
TYPE	S. Y.
WETLAND ACCESS ROAD	1437

ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 202508 FOR WETLAND ACCESS ROAD, TYPE II, FOR BRIDGE BR 1-458.

SEQUENCE OF CONSTRUCTION - STAGE 1

NOTES:

1. REFER TO CORRESPONDING STREAM RESTORATION PLANS, BRIDGE PLANS FOR BRIDGE BR 1-458, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG SCOTT RUN. REFER TO CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLANS FOR INFORMATION ON EROSION AND SEDIMENT CONTROLS SHOWN HEREON BUT NOT REFERRED TO IN THIS SEQUENCE OF CONSTRUCTION.
2. CLEAR AS NECESSARY TO INSTALL STABILIZED CONSTRUCTION ENTRANCES, SCE-1 AND SCE-2 AND REINFORCED SILT FENCE. CLEAR AND CUT VEGETATION FLUSH TO GROUND. NO GRUBBING IS PERMITTED WITHIN WETLAND BOUNDARIES. INSTALL WETLAND ACCESS ROAD, TEMPORARY PIPES, TP-1 AND TP-2, AND SANDBAG DIKE, SB-1 AS SHOWN. TEMPORARY PIPES SHALL BE INSTALLED DURING DRY WEATHER FORECAST UTILIZING A PUMP-AROUND AND SUMP PIT SP-1 TO DEWATER AREA OF PIPE INSTALLATION.
3. PROCEED WITH CONSTRUCTION ON BRIDGE BR 1-458 ABUTMENTS AND PIER. THE CONTRACTOR IS ALERTED TO THE POSSIBILITY THAT SHEETING OR OTHER ACCEPTABLE SUPPORT OF EXCAVATION/EMBANKMENT MAY BE NECESSARY TO PREVENT SUBSTRUCTURE CONSTRUCTION FROM CONFLICTING WITH MAINTENANCE OF STREAM FLOW AND CONSTRUCTION ACCESS. THE COST OF SUCH MEANS AND METHODS SHALL BE INCIDENTAL TO THE OVERALL CONSTRUCTION OF BRIDGE BR 1-458.
4. PROCEED WITH SUPERSTRUCTURE CONSTRUCTION AND STAGE 2 OF SEQUENCE OF CONSTRUCTION.



NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGE BR 1-458, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE EXISTING UTILITIES DURING WETLAND ACCESS ROAD AND BRIDGE CONSTRUCTION. THE TOTAL LOAD APPLIED TO THE EXISTING CASED SANITARY SEWER AND FORCE MAIN DUE TO THE CONTRACTOR'S WETLAND ACCESS ROAD AND EQUIPMENT SHALL NOT EXCEED 2,400 PSF AT THE TOP OF THE STEEL SLEEVE. THE DEPTH OF COVER TO THE EXISTING STEEL SLEEVE IN THE AREA OF THE WETLAND ACCESS ROAD IS APPROXIMATELY 8 FEET, AND SHALL BE VERIFIED BY TEST PIT BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION OF THE WETLAND ACCESS ROAD. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
3. SEE SHEETS CS-38, CS-39, CS-61, AND CS-62 OF THE CONSTRUCTION PHASING, M.O.T., AND EROSION CONTRAL PLANS - PHASES 2 AND 4 FOR ADJACENT EROSION AND SEDIMENT CONTROL DEVICES AND COORDINATION OF ACTIVITIES.

SUMP PIT (SP)

SUMP PITS SHALL BE USED FOR DEWATERING WORK AREA AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING SUMP PITS AND PROVIDING ADEQUATE PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

STABILIZED CONSTRUCTION ENTRANCE (SCE)

NO.	STATION, OFFSET	TONS	REMARKS
SCE 1	907+36, 13' RT.	60	@ HYETTS CORNER RD
SCE 1	911+00, 2' RT.	60	@ HYETTS CORNER RD

SIZING OF HYDRAULIC OPENING OF TEMPORARY CROSSING

MINIMUM AREA REQUIRED: 120.0 SF
MINIMUM TOP WIDTH ELEVATION: 25.0

COMPUTED FLOWRATE

STORM EVENT	CFS
2-YEAR	420 +/-

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR 1-458
T200911308	DESIGNED BY: D.B.R.	
COUNTY		
NEW CASTLE	CHECKED BY: J.D.C.	

MAINTENANCE OF STREAM FLOW PLAN STAGE 1

MS-03

SHEET NO. 597

TOTAL SHTS. 875

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SUMP PIT (SP)

SUMP PITS SHALL BE USED FOR DEWATERING WORK AREA AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING SUMP PITS AND PROVIDING ADEQUATE PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 202508 FOR WETLAND ACCESS ROAD, TYPE II, FOR BRIDGE BR 1-458.

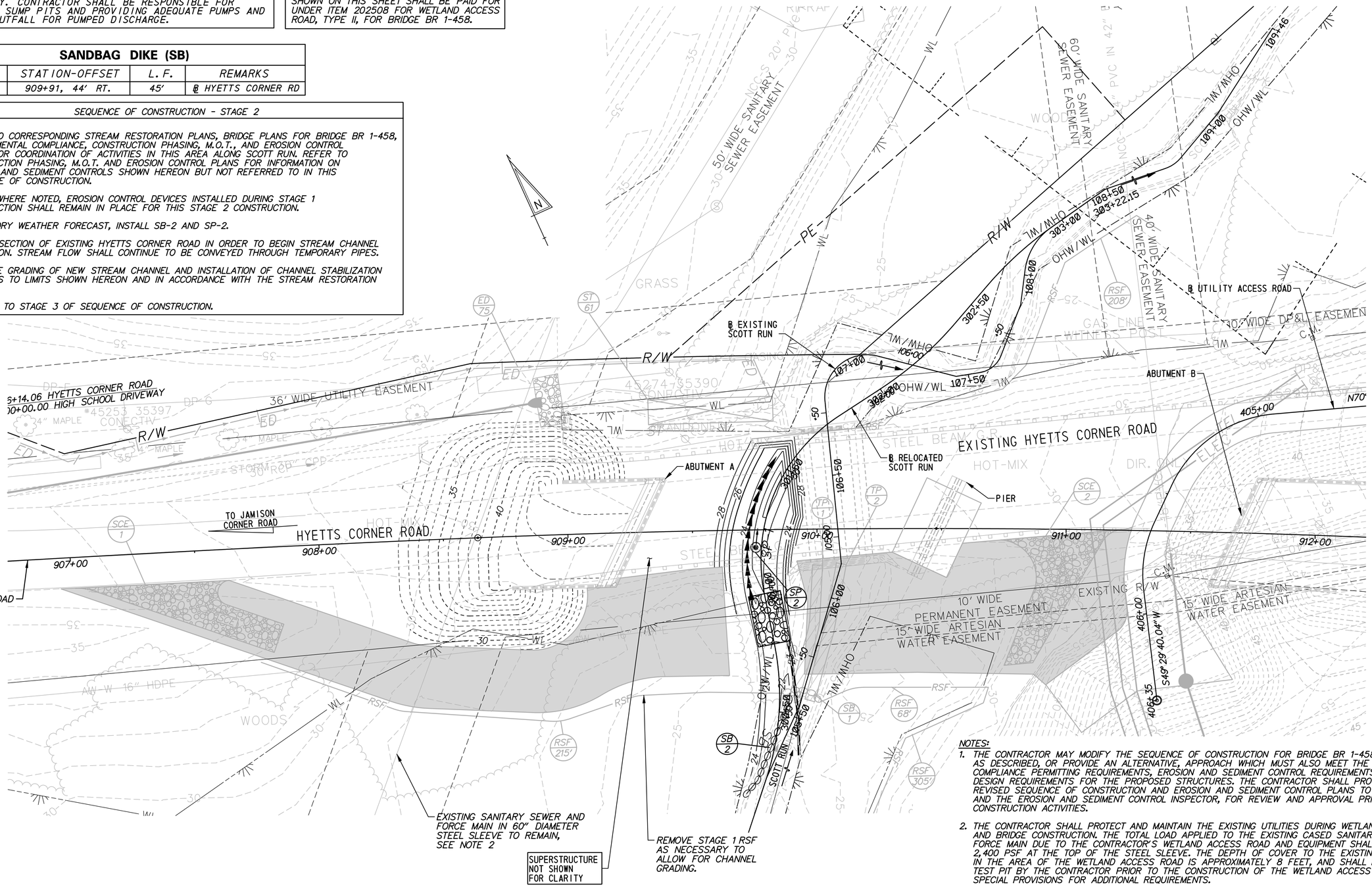
SANDBAG DIKE (SB)

NO.	STATION-OFFSET	L. F.	REMARKS
SB 2	909+91, 44' RT.	45'	@ HYETTS CORNER RD

SEQUENCE OF CONSTRUCTION - STAGE 2

NOTES:

1. REFER TO CORRESPONDING STREAM RESTORATION PLANS, BRIDGE PLANS FOR BRIDGE BR 1-458, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG SCOTT RUN. REFER TO CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLANS FOR INFORMATION ON EROSION AND SEDIMENT CONTROLS SHOWN HEREON BUT NOT REFERRED TO IN THIS SEQUENCE OF CONSTRUCTION.
2. EXCEPT WHERE NOTED, EROSION CONTROL DEVICES INSTALLED DURING STAGE 1 CONSTRUCTION SHALL REMAIN IN PLACE FOR THIS STAGE 2 CONSTRUCTION.
3. DURING DRY WEATHER FORECAST, INSTALL SB-2 AND SP-2.
4. REMOVE SECTION OF EXISTING HYETTS CORNER ROAD IN ORDER TO BEGIN STREAM CHANNEL RELOCATION. STREAM FLOW SHALL CONTINUE TO BE CONVEYED THROUGH TEMPORARY PIPES.
5. COMPLETE GRADING OF NEW STREAM CHANNEL AND INSTALLATION OF CHANNEL STABILIZATION FEATURES TO LIMITS SHOWN HEREON AND IN ACCORDANCE WITH THE STREAM RESTORATION PLANS.
6. PROCEED TO STAGE 3 OF SEQUENCE OF CONSTRUCTION.



NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGE BR 1-458, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE EXISTING UTILITIES DURING WETLAND ACCESS ROAD AND BRIDGE CONSTRUCTION. THE TOTAL LOAD APPLIED TO THE EXISTING CASED SANITARY SEWER AND FORCE MAIN DUE TO THE CONTRACTOR'S WETLAND ACCESS ROAD AND EQUIPMENT SHALL NOT EXCEED 2,400 PSF AT THE TOP OF THE STEEL SLEEVE. THE DEPTH OF COVER TO THE EXISTING STEEL SLEEVE IN THE AREA OF THE WETLAND ACCESS ROAD IS APPROXIMATELY 8 FEET, AND SHALL BE VERIFIED BY TEST PIT BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION OF THE WETLAND ACCESS ROAD. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
3. SEE SHEETS CS-38, CS-39, CS-61, AND CS-21 OF THE CONSTRUCTION PHASING, M.O.T., AND EROSION CONTRAL PLANS - PHASES 2 AND 4 FOR ADJACENT EROSION AND SEDIMENT CONTROL DEVICES AND COORDINATION OF ACTIVITIES.

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DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 20 40 60 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. BR 1-458	MAINTENANCE OF STREAM FLOW PLAN STAGE 2	MS-04
				COUNTY NEW CASTLE	DESIGNED BY: D.B.R.		SHEET NO. 598
					CHECKED BY: J.D.C.		TOTAL SHTS. 875

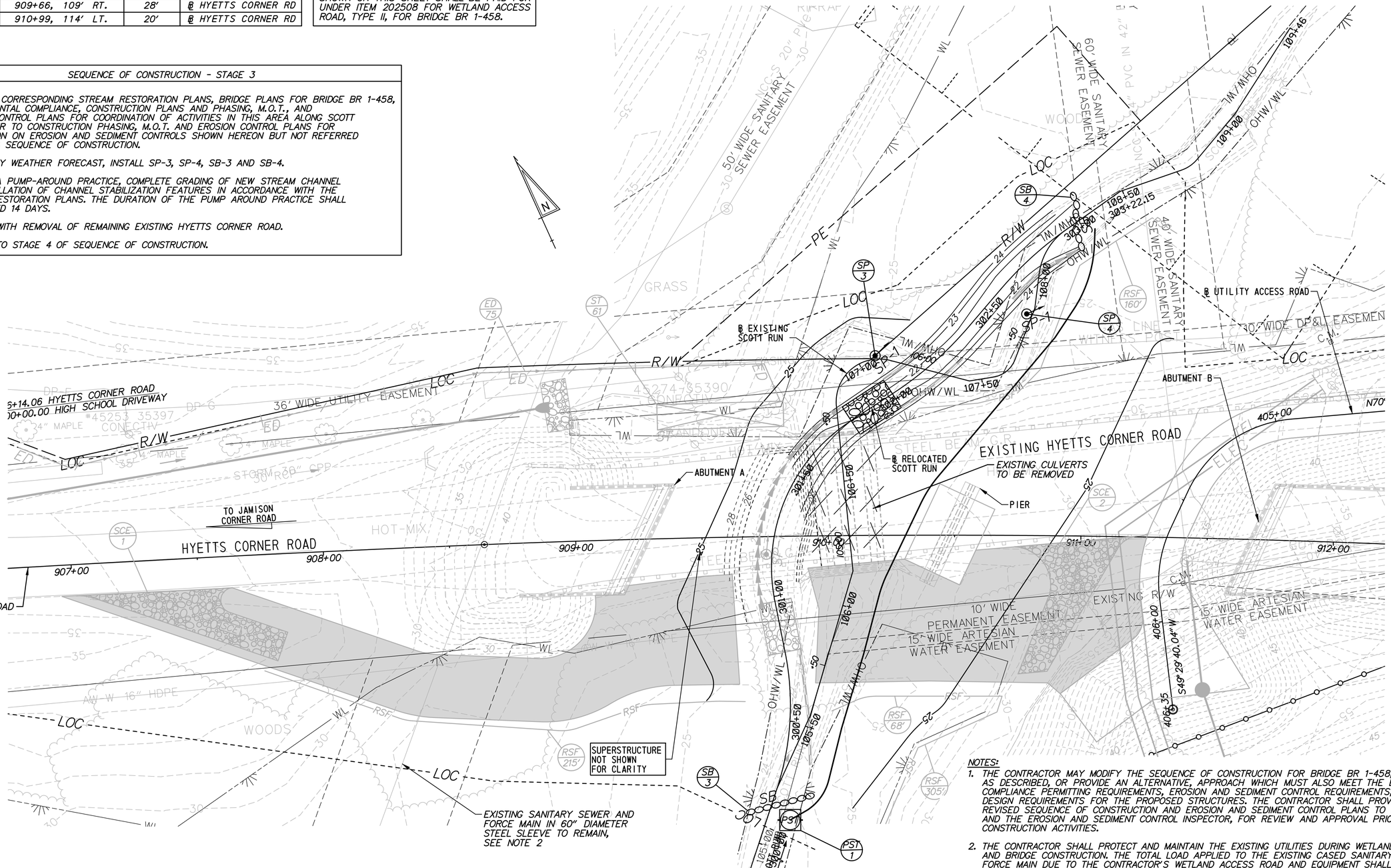
SANDBAG DIKE (SB)			
NO.	STATION-OFFSET	L. F.	REMARKS
SB 3	909+66, 109' RT.	28'	@ HYETTS CORNER RD
SB 4	910+99, 114' LT.	20'	@ HYETTS CORNER RD

ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 202508 FOR WETLAND ACCESS ROAD, TYPE II, FOR BRIDGE BR 1-458.

SEQUENCE OF CONSTRUCTION - STAGE 3

NOTES:

1. REFER TO CORRESPONDING STREAM RESTORATION PLANS, BRIDGE PLANS FOR BRIDGE BR 1-458, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG SCOTT RUN. REFER TO CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLANS FOR INFORMATION ON EROSION AND SEDIMENT CONTROLS SHOWN HEREON BUT NOT REFERRED TO IN THIS SEQUENCE OF CONSTRUCTION.
2. DURING DRY WEATHER FORECAST, INSTALL SP-3, SP-4, SB-3 AND SB-4.
3. UTILIZING A PUMP-AROUND PRACTICE, COMPLETE GRADING OF NEW STREAM CHANNEL AND INSTALLATION OF CHANNEL STABILIZATION FEATURES IN ACCORDANCE WITH THE STREAM RESTORATION PLANS. THE DURATION OF THE PUMP AROUND PRACTICE SHALL NOT EXCEED 14 DAYS.
4. PROCEED WITH REMOVAL OF REMAINING EXISTING HYETTS CORNER ROAD.
5. PROCEED TO STAGE 4 OF SEQUENCE OF CONSTRUCTION.



NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGE BR 1-458, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE EXISTING UTILITIES DURING WETLAND ACCESS ROAD AND BRIDGE CONSTRUCTION. THE TOTAL LOAD APPLIED TO THE EXISTING CASED SANITARY SEWER AND FORCE MAIN DUE TO THE CONTRACTOR'S WETLAND ACCESS ROAD AND EQUIPMENT SHALL NOT EXCEED 2,400 PSF AT THE TOP OF THE STEEL SLEEVE. THE DEPTH OF COVER TO THE EXISTING STEEL SLEEVE IN THE AREA OF THE WETLAND ACCESS ROAD IS APPROXIMATELY 8 FEET, AND SHALL BE VERIFIED BY TEST PIT BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION OF THE WETLAND ACCESS ROAD. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
3. SEE SHEETS CS-38, CS-39, CS-61, AND CS-62 OF THE CONSTRUCTION PHASING, M.O.T., AND EROSION CONTRAL PLANS - PHASES 2 AND 4 FOR ADJACENT EROSION AND SEDIMENT CONTROL DEVICES AND COORDINATION OF ACTIVITIES.

SUMP PIT (SP)

SUMP PITS SHALL BE USED FOR DEWATERING WORK AREA AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING SUMP PITS AND PROVIDING ADEQUATE PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

MS-05

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR 1-458
T200911308	DESIGNED BY: D.B.R.	
COUNTY	CHECKED BY: J.D.C.	
NEW CASTLE		

MAINTENANCE OF STREAM FLOW PLAN STAGE 3

SHEET NO. 599
TOTAL SHTS. 875

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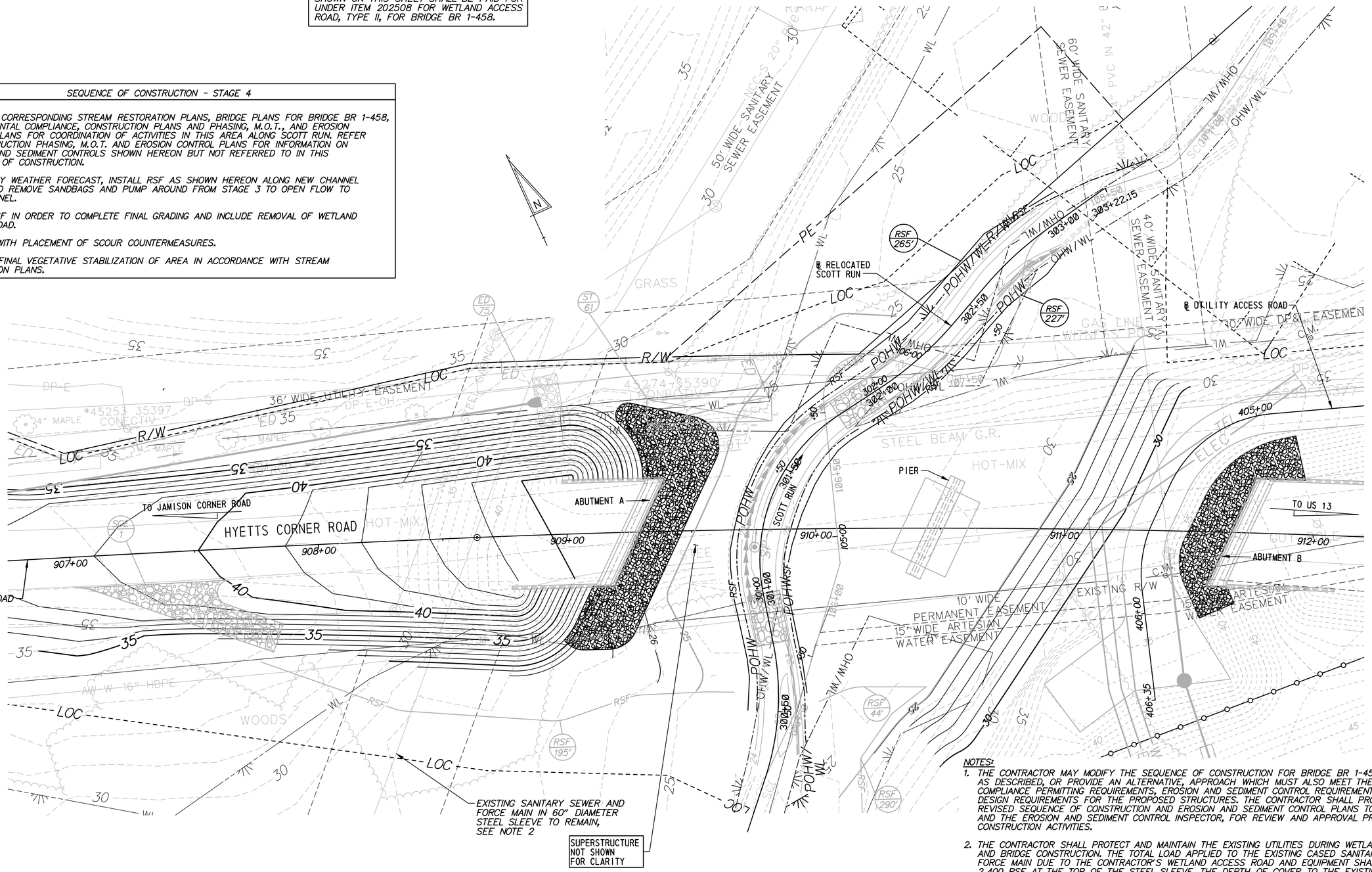
ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 202508 FOR WETLAND ACCESS ROAD, TYPE II, FOR BRIDGE BR 1-458.

SEQUENCE OF CONSTRUCTION - STAGE 4

NOTES:

1. REFER TO CORRESPONDING STREAM RESTORATION PLANS, BRIDGE PLANS FOR BRIDGE BR 1-458, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG SCOTT RUN. REFER TO CONSTRUCTION PHASING, M.O.T. AND EROSION CONTROL PLANS FOR INFORMATION ON EROSION AND SEDIMENT CONTROLS SHOWN HEREON BUT NOT REFERRED TO IN THIS SEQUENCE OF CONSTRUCTION.
2. DURING DRY WEATHER FORECAST, INSTALL RSF AS SHOWN HEREON ALONG NEW CHANNEL BANKS AND REMOVE SANDBAGS AND PUMP AROUND FROM STAGE 3 TO OPEN FLOW TO INTO CHANNEL.
3. ADJUST RSF IN ORDER TO COMPLETE FINAL GRADING AND INCLUDE REMOVAL OF WETLAND ACCESS ROAD.
4. PROCEED WITH PLACEMENT OF SCOUR COUNTERMEASURES.
5. PERFORM FINAL VEGETATIVE STABILIZATION OF AREA IN ACCORDANCE WITH STREAM RESTORATION PLANS.



NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGE BR 1-458, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE EXISTING UTILITIES DURING WETLAND ACCESS ROAD AND BRIDGE CONSTRUCTION. THE TOTAL LOAD APPLIED TO THE EXISTING CASED SANITARY SEWER AND FORCE MAIN DUE TO THE CONTRACTOR'S WETLAND ACCESS ROAD AND EQUIPMENT SHALL NOT EXCEED 2,400 PSF AT THE TOP OF THE STEEL SLEEVE. THE DEPTH OF COVER TO THE EXISTING STEEL SLEEVE IN THE AREA OF THE WETLAND ACCESS ROAD IS APPROXIMATELY 8 FEET, AND SHALL BE VERIFIED BY TEST PIT BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION OF THE WETLAND ACCESS ROAD. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
3. SEE SHEETS CS-38, CS-39, CS-61, AND CS-62 OF THE CONSTRUCTION PHASING, M.O.T., AND EROSION CONTRAL PLANS - PHASES 2 AND 4 FOR ADJACENT EROSION AND SEDIMENT CONTROL DEVICES AND COORDINATION OF ACTIVITIES.

MS-06

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR 1-458
T200911308	DESIGNED BY: D.B.R.	
COUNTY		
NEW CASTLE	CHECKED BY: J.D.C.	

MAINTENANCE OF STREAM FLOW PLAN STAGE 4

SHEET NO. 600
TOTAL SHTS. 875

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SUMP PIT (SP)

SUMP PITS SHALL BE USED FOR DEWATERING WORK AREA AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING SUMP PITS AND PROVIDING ADEQUATE PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

PORTABLE SEDIMENT TANK (PST)

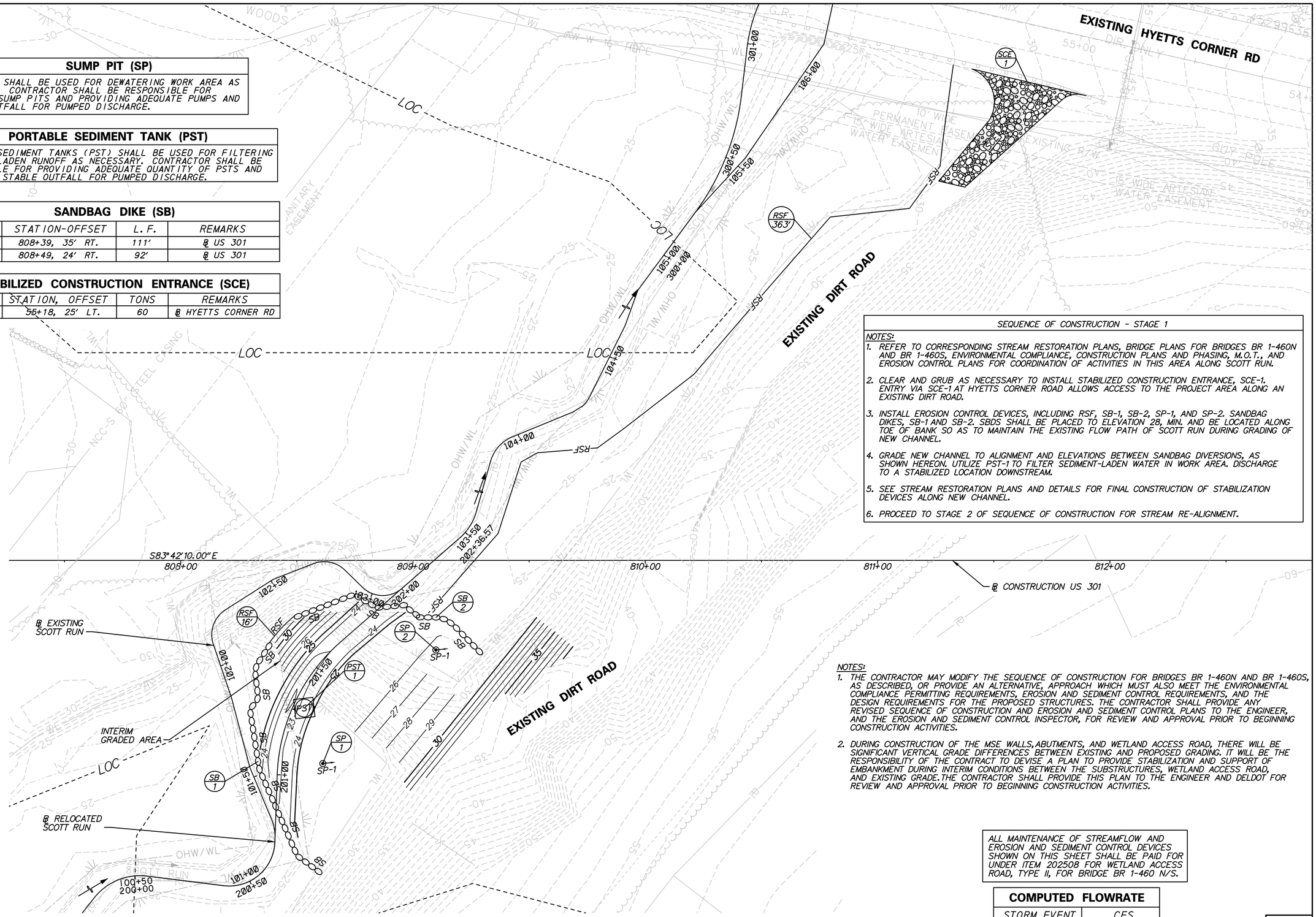
PORTABLE SEDIMENT TANKS (PST) SHALL BE USED FOR FILTERING SEDIMENT LADEN RUNOFF AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE QUANTITY OF PSTS AND PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

SANDBAG DIKE (SB)

NO.	STATION-OFFSET	L. F.	REMARKS
SB 1	808+39, 35' RT.	111'	℄ US 301
SB 2	808+49, 24' RT.	92'	℄ US 301

STABILIZED CONSTRUCTION ENTRANCE (SCE)

NO.	STATION, OFFSET	TONS	REMARKS
SCE 1	55+18, 25' LT.	60	℄ HYETTS CORNER RD



SEQUENCE OF CONSTRUCTION - STAGE 1

NOTES:

1. REFER TO CORRESPONDING STREAM RESTORATION PLANS, BRIDGE PLANS FOR BRIDGES BR 1-460N AND BR 1-460S, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG SCOTT RUN.
2. CLEAR AND GRUB AS NECESSARY TO INSTALL STABILIZED CONSTRUCTION ENTRANCE, SCE-1. ENTRY VIA SCE-1 AT HYETTS CORNER ROAD ALLOWS ACCESS TO THE PROJECT AREA ALONG AN EXISTING DIRT ROAD.
3. INSTALL EROSION CONTROL DEVICES, INCLUDING RSF, SB-1, SB-2, SP-1, AND SP-2. SANDBAG DIKES, SB-1 AND SB-2. SBDS SHALL BE PLACED TO ELEVATION 28, MIN. AND BE LOCATED ALONG TOE OF BANK SO AS TO MAINTAIN THE EXISTING FLOW PATH OF SCOTT RUN DURING GRADING OF NEW CHANNEL.
4. GRADE NEW CHANNEL TO ALIGNMENT AND ELEVATIONS BETWEEN SANDBAG DIVERSIONS, AS SHOWN HEREON. UTILIZE PST-1 TO FILTER SEDIMENT-LADEN WATER IN WORK AREA. DISCHARGE TO A STABILIZED LOCATION DOWNSTREAM.
5. SEE STREAM RESTORATION PLANS AND DETAILS FOR FINAL CONSTRUCTION OF STABILIZATION DEVICES ALONG NEW CHANNEL.
6. PROCEED TO STAGE 2 OF SEQUENCE OF CONSTRUCTION FOR STREAM RE-ALIGNMENT.

NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGES BR 1-460N AND BR 1-460S, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. DURING CONSTRUCTION OF THE MSE WALLS, ABUTMENTS, AND WETLAND ACCESS ROAD, THERE WILL BE SIGNIFICANT VERTICAL GRADE DIFFERENCES BETWEEN EXISTING AND PROPOSED GRADING. IT WILL BE THE RESPONSIBILITY OF THE CONTRACT TO DEVISE A PLAN TO PROVIDE STABILIZATION AND SUPPORT OF EMBANKMENT DURING INTERIM CONDITIONS BETWEEN THE SUBSTRUCTURES, WETLAND ACCESS ROAD, AND EXISTING GRADE. THE CONTRACTOR SHALL PROVIDE THIS PLAN TO THE ENGINEER AND DELDOT FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.

ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 202508 FOR WETLAND ACCESS ROAD, TYPE II, FOR BRIDGE BR 1-460 N/S.

COMPUTED FLOWRATE

STORM EVENT	CFS
2-YEAR	420 +/-

MS-07

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR 1-460 N/S
T200911308	DESIGNED BY: D.B.R.	
COUNTY		
NEW CASTLE	CHECKED BY: J.D.C.	

MAINTENANCE OF STREAM FLOW PLAN STAGE 1

SHEET NO. 601

TOTAL SHTS. 875

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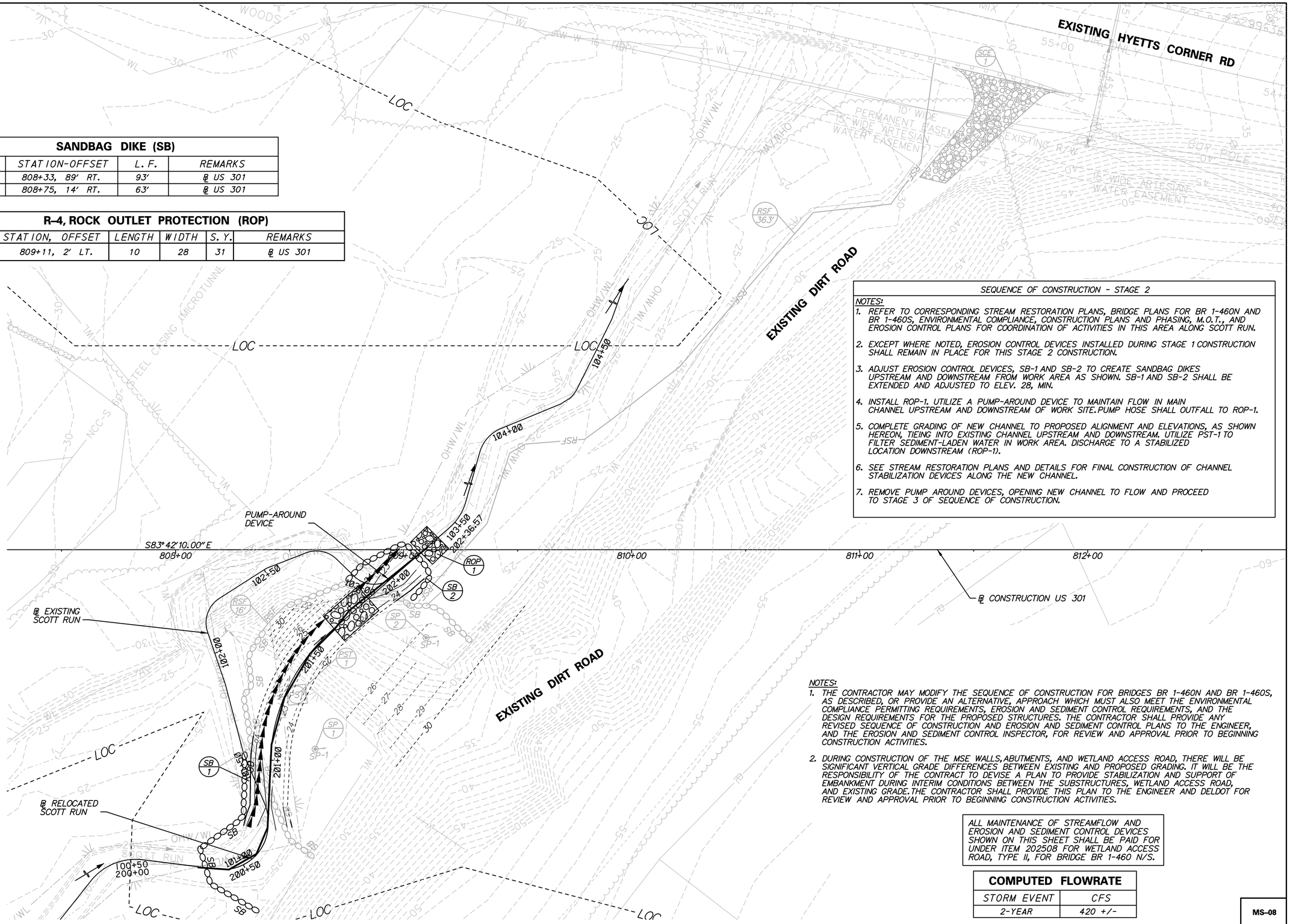

SANDBAG DIKE (SB)			
NO.	STATION-OFFSET	L. F.	REMARKS
SB 1	808+33, 89' RT.	93'	℄ US 301
SB 2	808+75, 14' RT.	63'	℄ US 301

R-4, ROCK OUTLET PROTECTION (ROP)					
NO.	STATION, OFFSET	LENGTH	WIDTH	S. Y.	REMARKS
ROP 1	809+11, 2' LT.	10	28	31	℄ US 301

SEQUENCE OF CONSTRUCTION - STAGE 2

NOTES:

1. REFER TO CORRESPONDING STREAM RESTORATION PLANS, BRIDGE PLANS FOR BR 1-460N AND BR 1-460S, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG SCOTT RUN.
2. EXCEPT WHERE NOTED, EROSION CONTROL DEVICES INSTALLED DURING STAGE 1 CONSTRUCTION SHALL REMAIN IN PLACE FOR THIS STAGE 2 CONSTRUCTION.
3. ADJUST EROSION CONTROL DEVICES, SB-1 AND SB-2 TO CREATE SANDBAG DIKES UPSTREAM AND DOWNSTREAM FROM WORK AREA AS SHOWN. SB-1 AND SB-2 SHALL BE EXTENDED AND ADJUSTED TO ELEV. 28, MIN.
4. INSTALL ROP-1. UTILIZE A PUMP-AROUND DEVICE TO MAINTAIN FLOW IN MAIN CHANNEL UPSTREAM AND DOWNSTREAM OF WORK SITE. PUMP HOSE SHALL OUTFALL TO ROP-1.
5. COMPLETE GRADING OF NEW CHANNEL TO PROPOSED ALIGNMENT AND ELEVATIONS, AS SHOWN HEREON, TIEING INTO EXISTING CHANNEL UPSTREAM AND DOWNSTREAM. UTILIZE PST-1 TO FILTER SEDIMENT-LADEN WATER IN WORK AREA. DISCHARGE TO A STABILIZED LOCATION DOWNSTREAM (ROP-1).
6. SEE STREAM RESTORATION PLANS AND DETAILS FOR FINAL CONSTRUCTION OF CHANNEL STABILIZATION DEVICES ALONG THE NEW CHANNEL.
7. REMOVE PUMP AROUND DEVICES, OPENING NEW CHANNEL TO FLOW AND PROCEED TO STAGE 3 OF SEQUENCE OF CONSTRUCTION.

NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGES BR 1-460N AND BR 1-460S, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. DURING CONSTRUCTION OF THE MSE WALLS, ABUTMENTS, AND WETLAND ACCESS ROAD, THERE WILL BE SIGNIFICANT VERTICAL GRADE DIFFERENCES BETWEEN EXISTING AND PROPOSED GRADING. IT WILL BE THE RESPONSIBILITY OF THE CONTRACT TO DEVISE A PLAN TO PROVIDE STABILIZATION AND SUPPORT OF EMBANKMENT DURING INTERIM CONDITIONS BETWEEN THE SUBSTRUCTURES, WETLAND ACCESS ROAD, AND EXISTING GRADE. THE CONTRACTOR SHALL PROVIDE THIS PLAN TO THE ENGINEER AND DELDOT FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.

ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 202508 FOR WETLAND ACCESS ROAD, TYPE II, FOR BRIDGE BR 1-460 N/S.

COMPUTED FLOWRATE	
STORM EVENT	CFS
2-YEAR	420 +/-

MS-08

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR 1-460 N/S
T200911308	DESIGNED BY: D.B.R.	
COUNTY	CHECKED BY: J.D.C.	
NEW CASTLE		

MAINTENANCE OF STREAM FLOW PLAN STAGE 2

SHEET NO. 602

TOTAL SHTS. 875

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ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 202508 FOR WETLAND ACCESS ROAD, TYPE II, FOR BRIDGE BR 1-460 N/S.

SUMP PIT (SP)

SUMP PIT (SP-3) SHALL BE USED FOR DEWATERING SEDIMENT LADEN RUNOFF AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING SP-3 IN THE SCOUR HOLE LOCATED IN THE EXISTING CHANNEL AND PROVIDING ADEQUATE PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

PORTABLE SEDIMENT TANK (PST)

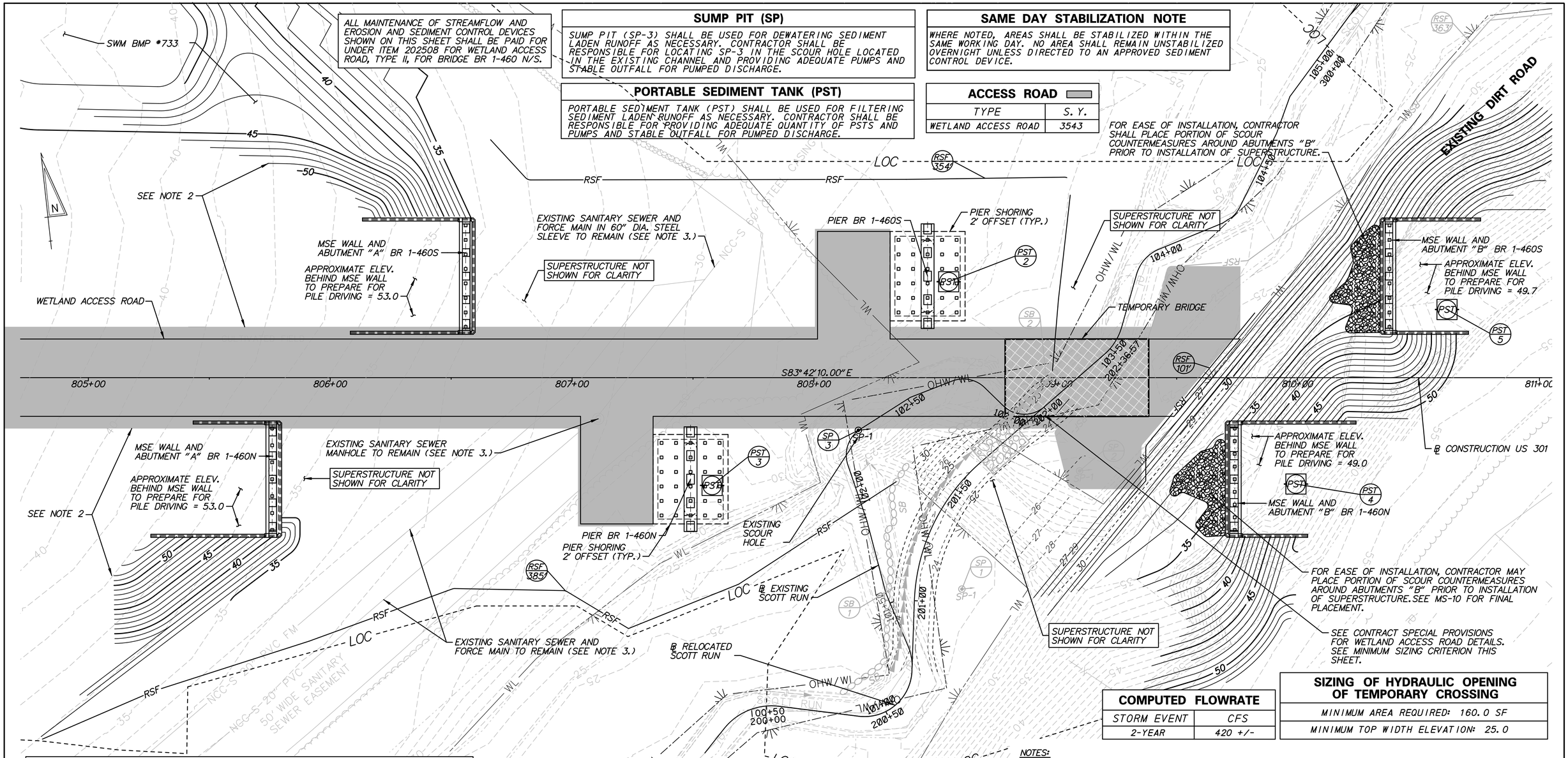
PORTABLE SEDIMENT TANK (PST) SHALL BE USED FOR FILTERING SEDIMENT LADEN RUNOFF AS NECESSARY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE QUANTITY OF PSTS AND PUMPS AND STABLE OUTFALL FOR PUMPED DISCHARGE.

SAME DAY STABILIZATION NOTE

WHERE NOTED, AREAS SHALL BE STABILIZED WITHIN THE SAME WORKING DAY. NO AREA SHALL REMAIN UNSTABILIZED OVERNIGHT UNLESS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.

ACCESS ROAD

TYPE	S. Y.
WETLAND ACCESS ROAD	3543



COMPUTED FLOWRATE

STORM EVENT	CFS
2-YEAR	420 +/-

SIZING OF HYDRAULIC OPENING OF TEMPORARY CROSSING

MINIMUM AREA REQUIRED: 160.0 SF
MINIMUM TOP WIDTH ELEVATION: 25.0

SEQUENCE OF CONSTRUCTION - STAGE 3

NOTES:

1. REFER TO CORRESPONDING STREAM RESTORATION PLANS, BRIDGE PLANS FOR BR 1-460N AND BR 1-460S, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG SCOTT RUN.
2. EXCEPT WHERE NOTED, EROSION CONTROL DEVICES INSTALLED DURING STAGES 1 AND 2 CONSTRUCTION SHALL REMAIN IN PLACE FOR THIS STAGE 3 CONSTRUCTION.
3. STAGE 3 CONSTRUCTION SHALL BE CONDUCTED FROM THE WETLAND ACCESS ROAD ACCESSED VIA A STABILIZED CONSTRUCTION ENTRANCE (SCE) FROM THE CONTRACT HAUL ROAD. CONTRACTOR UNDER DIRECTION OF ENGINEER SHALL LOCATE THIS SCE IN FIELD. SCE-1 SHALL REMAIN IN PLACE FOR AVAILABLE ACCESS TO CONSTRUCT MSE WALLS AND ABUTMENTS "B".
4. INSTALL EROSION CONTROL DEVICES, SP-3 AND PSTS.
5. CLEAR AND CUT VEGETATION FLUSH TO GROUND FOR WETLAND ACCESS ROAD. NO GRUBBING WITHIN WETLAND BOUNDARIES IS PERMITTED. CONSTRUCT AND GRADE WETLAND ACCESS ROAD AS SHOWN FOR PIER AND ABUTMENT CONSTRUCTION AND TO PREPARE FOR STAGE 4 SUPERSTRUCTURE CONSTRUCTION.
6. PROCEED WITH PIER CONSTRUCTION PER BRIDGE BR 1-460N AND BR 1-460S PIER PLANS.

SEQUENCE OF CONSTRUCTION - STAGE 3

NOTES:

7. REMOVE SP-3 AND FILL AND GRADE SCOUR HOLE IN EXISTING CHANNEL TO INTERIM GRADE OF WETLAND ACCESS ROAD AS SHOWN OR AS APPROVED BY THE ENGINEER. ADJUST SB-2 AND RSF TO ALLOW FOR CONSTRUCTION OF TEMPORARY BRIDGE.
8. CONSTRUCT TEMPORARY BRIDGE CROSSING AT ELEV. 25 (MIN.) AND COMPLETE GRADING OF WETLAND ACCESS ROAD TO LIMITS AS SHOWN OR AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS FOR THE TEMPORARY CROSSING TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
9. PROCEED WITH MSE WALL CONSTRUCTION AND ABUTMENT "B" CONSTRUCTION PER BRIDGE BR 1-7N AND BR 1-7S CONSTRUCTION PLANS. TO FACILITATE RIPRAP PLACEMENT, THE CONTRACTOR MAY PLACE PORTIONS OF THE FINAL SCOUR COUNTERMEASURES ALONG "B" ABUTMENTS PRIOR TO SUPERSTRUCTURE INSTALLATION.
10. PROCEED WITH MSE WALL CONSTRUCTION AND ABUTMENT "A" CONSTRUCTION AND GRADING PER BRIDGE BR 1-460N AND BR 1-460S CONSTRUCTION PLANS. INSTALL SUPERSTRUCTURE OF BOTH SPANS.
11. PROCEED TO STAGE 4 OF SEQUENCE OF CONSTRUCTION FOR FINAL BRIDGE GRADING AND STREAM VALLEY RE-CONSTRUCTION.

NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGES BR 1-460N AND BR 1-460S, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
2. DURING CONSTRUCTION OF THE MSE WALLS, ABUTMENTS, AND WETLAND ACCESS ROAD, THERE WILL BE SIGNIFICANT VERTICAL GRADE DIFFERENCES BETWEEN EXISTING AND PROPOSED GRADING. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DEVISE A PLAN TO PROVIDE STABILIZATION AND SUPPORT OF EMBANKMENT DURING INTERIM CONDITIONS BETWEEN THE SUBSTRUCTURES, WETLAND ACCESS ROAD, AND EXISTING GRADE. THE CONTRACTOR SHALL PROVIDE THIS PLAN TO THE ENGINEER AND DELDOT FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
3. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THE EXISTING UTILITIES DURING WETLAND ACCESS ROAD AND BRIDGE CONSTRUCTION. THE TOTAL LOAD APPLIED TO THE EXISTING SANITARY MANHOLE DUE TO THE CONTRACTOR'S WETLAND ACCESS ROAD AND EQUIPMENT SHALL NOT EXCEED THE EQUIVALENT PRESSURE OF AASHTO HS-20 LOADING AT THE EXISTING GROUND SURFACE. THE TOTAL LOAD APPLIED TO THE EXISTING SANITARY SEWER AND FORCE MAIN DUE TO THE CONTRACTOR'S WETLAND ACCESS ROAD AND EQUIPMENT SHALL NOT EXCEED 2,400 PSF AT THE TOP OF THE PIPE. THE DEPTH OF COVER TO THE EXISTING SANITARY FORCE MAIN IN THE AREA OF THE WETLAND ACCESS ROAD IS APPROXIMATELY 6 FEET, AND SHALL BE VERIFIED BY TEST PIT BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION OF THE WETLAND ACCESS ROAD. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

MS-09

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR 1-460 N/S
T200911308	DESIGNED BY: D.B.R.	
COUNTY		
NEW CASTLE	CHECKED BY: J.D.C.	

MAINTENANCE OF STREAM FLOW PLAN STAGE 3

SHEET NO. 603
TOTAL SHTS. 875

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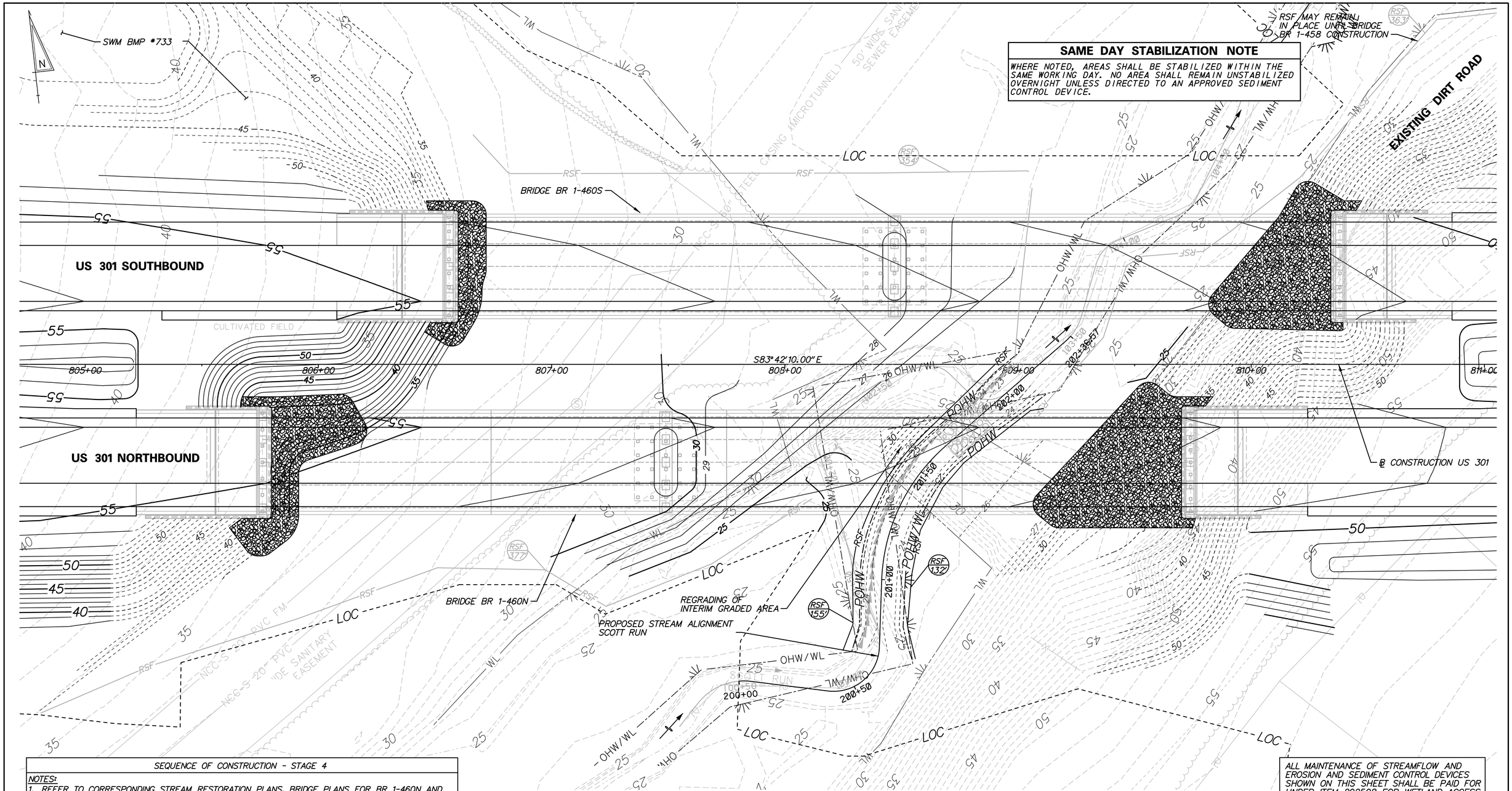

SAME DAY STABILIZATION NOTE

WHERE NOTED, AREAS SHALL BE STABILIZED WITHIN THE SAME WORKING DAY. NO AREA SHALL REMAIN UNSTABILIZED OVERNIGHT UNLESS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.

SEQUENCE OF CONSTRUCTION - STAGE 4

NOTES:

1. REFER TO CORRESPONDING STREAM RESTORATION PLANS, BRIDGE PLANS FOR BR 1-460N AND BR 1-460S, ENVIRONMENTAL COMPLIANCE, CONSTRUCTION PLANS AND PHASING, M.O.T., AND EROSION CONTROL PLANS FOR COORDINATION OF ACTIVITIES IN THIS AREA ALONG SCOTT RUN.
2. EXCEPT WHERE NOTED, EROSION CONTROL DEVICES INSTALLED DURING STAGES 1, 2, AND 3 CONSTRUCTION SHALL REMAIN IN PLACE FOR THIS STAGE 4 CONSTRUCTION.
3. STAGE 4 CONSTRUCTION SHALL INVOLVE REMOVAL OF TEMPORARY BRIDGE AND WETLAND ACCESS ROAD, FINAL GRADING, AND FINAL PLACEMENT OF SCOUR COUNTERMEASURES AS SHOWN.
4. UNDER DIRECTION OF ENGINEER, REMOVE ALL SUMP PITS (SPS), PORTABLE SEDIMENT TANKS (PSTS), AND SANDBAG DIVERSIONS (SBS). STABILIZE ALL AREAS DISTURBED IN THE PROCESS.
5. INSTALL REINFORCED SILT FENCE ALONG TOP OF BANK OF NEW STREAM CHANNEL AS SHOWN.
6. PROCEED WITH FINAL GRADING OPERATIONS.

SEQUENCE OF CONSTRUCTION - STAGE 4

NOTES:

7. PROCEED WITH PLACEMENT OF SCOUR COUNTERMEASURES. REFER TO BRIDGE PLANS FOR DETAILS AT PIERS AND ABUTMENTS.
8. FINAL GRADING ALONG PROPOSED MEDIAN SHALL TIE INTO PROPOSED GRADING FOR US 301 ROADWAY CONSTRUCTION.
9. UPON COMPLETION OF GRADING ACTIVITIES, ALL EROSION AND SEDIMENT CONTROL DEVICES MAY BE REMOVED UNDER THE DIRECTION OF THE ENGINEER AND ES INSPECTOR. ANY AREAS DISTURBED IN THE PROCESS SHALL BE IMMEDIATELY STABILIZED PER NOTE THIS SHEET.
10. SEE LANDSCAPE AND STREAM RESTORATION PLAN SHEETS FOR FINAL STABILIZATION AND VEGETATIVE PLANTINGS.

ALL MAINTENANCE OF STREAMFLOW AND EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER ITEM 202508 FOR WETLAND ACCESS ROAD, TYPE II, FOR BRIDGE BR 1-460 N/S.

NOTES:

1. THE CONTRACTOR MAY MODIFY THE SEQUENCE OF CONSTRUCTION FOR BRIDGES BR 1-460N AND BR 1-460S, AS DESCRIBED, OR PROVIDE AN ALTERNATIVE, APPROACH WHICH MUST ALSO MEET THE ENVIRONMENTAL COMPLIANCE PERMITTING REQUIREMENTS, EROSION AND SEDIMENT CONTROL REQUIREMENTS, AND THE DESIGN REQUIREMENTS FOR THE PROPOSED STRUCTURES. THE CONTRACTOR SHALL PROVIDE ANY REVISED SEQUENCE OF CONSTRUCTION AND EROSION AND SEDIMENT CONTROL PLANS TO THE ENGINEER, AND THE EROSION AND SEDIMENT CONTROL INSPECTOR, FOR REVIEW AND APPROVAL PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.

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DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR 1-460 N/S
T200911308	DESIGNED BY: D.B.R.	
COUNTY		
NEW CASTLE	CHECKED BY: J.D.C.	

MAINTENANCE OF STREAM FLOW PLAN STAGE 4

MS-10

SHEET NO. 604

TOTAL SHTS. 875

ROCK TOE PROTECTION	
FROM STATION	TO STATION
200+71, LT	201+66, LT
201+86, LT	202+11, LT

RIFFLE GRADE CONTROL	
FROM STATION	TO STATION
201+66	201+86

NOTES:
1. LT & RT DESIGNATIONS REFER TO LEFT & RIGHT FACING DOWNSTREAM/UPSTATION.

2. RIFFLE GRADE CONTROL STATION LIMITS REPRESENT THE "AT GRADE" PORTION OF THE RIFFLE GRADE CONTROL. ADDITIONAL RIFFLE GRADE CONTROL MATERIAL IS PLACED ALONG THE GLIDE AND RUN AREAS AS SHOWN ON THE RIFFLE GRADE CONTROL DETAILS (SHEET SR-007).

REESTABLISH EXISTING CHANNEL CONDITIONS IF TEMPORARY STREAM IMPACTS OCCUR OUTSIDE OF THE CHANNEL RELOCATION AREA DUE TO BRIDGE CONSTRUCTION

MATCH LINE STA. 104+73 (SHEET SR-002)

LEGEND

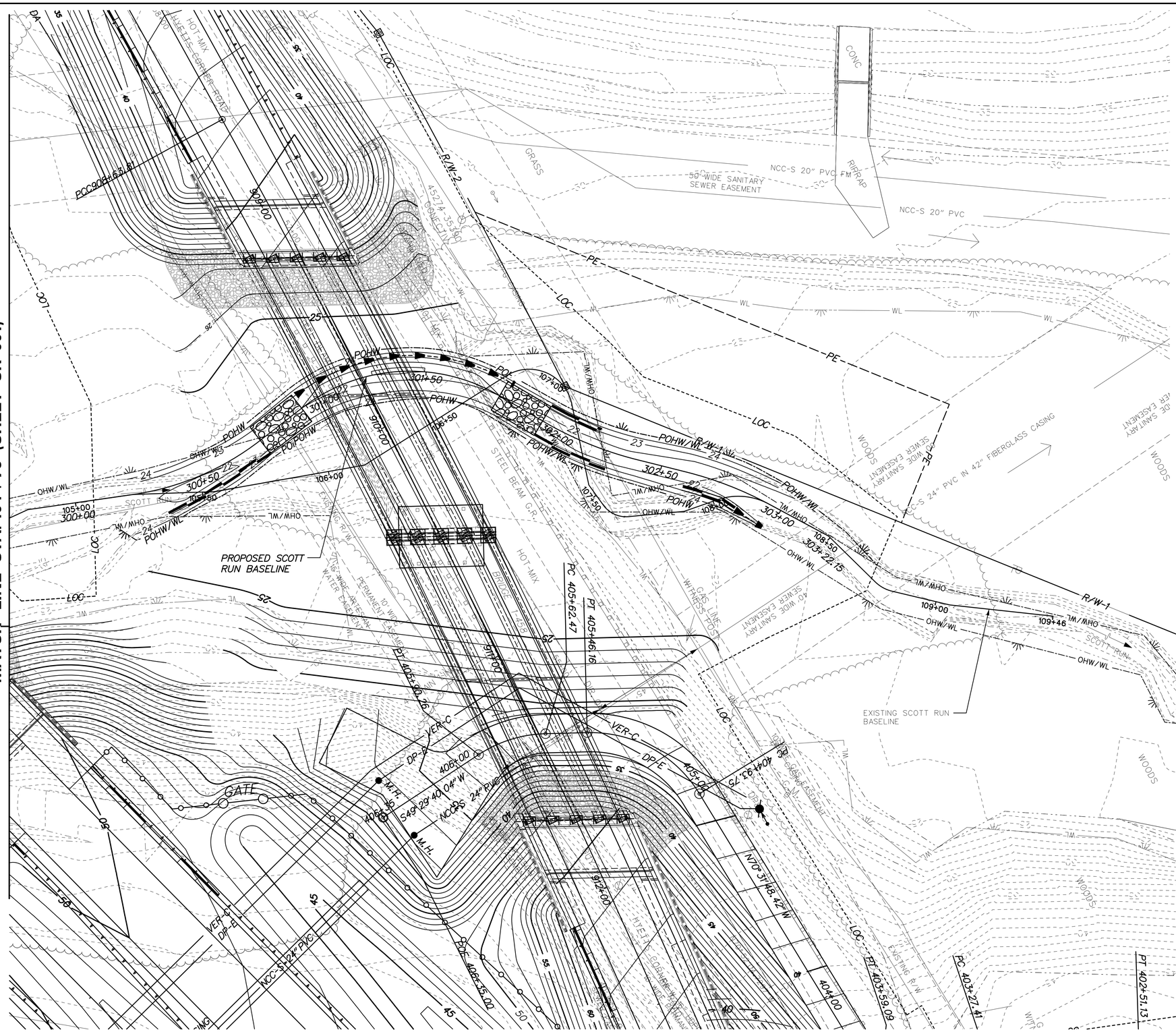
SOIL LIFT

RIFFLE GRADE CONTROL

ROCK TOE PROTECTION

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 20 40 60 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. BR1-460N&S	SCOTT RUN STREAM RESTORATION PLAN	SR-001
				COUNTY NEW CASTLE	DESIGNED BY: MRM		SHEET NO. 605
					CHECKED BY: DJG		TOTAL SHTS. 875

MATCH LINE STA. 104+73 (SHEET SR-001)



FABRIC ENCAPSULATED SOIL LIFT	
FROM STATION	TO STATION
300+35, RT	300+77.5, RT
302+00, LT	302+23, LT
302+00, RT	302+29, RT
302+60, RT	302+83, RT

ROCK TOE PROTECTION	
FROM STATION	TO STATION
300+98, LT	301+80.5, LT
302+83, RT	302+95, RT

RIFFLE GRADE CONTROL	
FROM STATION	TO STATION
300+77.5	300+98
301+80.5	302+00

NOTES:

1. LT & RT DESIGNATIONS REFER TO LEFT & RIGHT FACING DOWNSTREAM/UPSTATION.

2. RIFFLE GRADE CONTROL STATION LIMITS REPRESENT THE "AT GRADE" PORTION OF THE RIFFLE GRADE CONTROL. ADDITIONAL RIFFLE GRADE CONTROL MATERIAL IS PLACED ALONG THE GLIDE AND RUN AREAS AS SHOWN ON THE RIFFLE GRADE CONTROL DETAILS (SHEET SR-007).

3. REMOVE EXISTING GROUND AND REPLACE WITH ITEM 209512-STREAM RESTORATION BORROW, ITEM 209513-STREAM RESTORATION BORROW MIX, AND ITEM 732002-TOPSOIL, 6" DEPTH FROM STA. 301+00, LT & RT TO STA. 301+67, LT AND TO STA. 302+18, RT. REMOVE EXISTING GROUND WITHIN THE AREA THAT EXTENDS 10 FEET FROM THE PROPOSED TOP-OF-BANK. MAINTAIN A 2:1 SLOPE ALONG THE EXISITNG GROUND AT THE EDGE OF THE EXCAVATION AREA. EXTEND THE EXCAVATION DEPTH TO AN ELEVATION OF 21 FEET. SEE CROSS SECTION SHEETS SR-013 AND SR-014.

LEGEND

- SOIL LIFT
- RIFFLE GRADE CONTROL
- ROCK TOE PROTECTION

SR-002

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR1-458
T200911308	DESIGNED BY:	MRM
COUNTY	CHECKED BY:	DJG
NEW CASTLE		

SCOTT RUN STREAM RESTORATION PLAN

SHEET NO. 606

TOTAL SHTS. 875

CIRCULAR CURVE NO 3

	STATION	NORTHING	EASTING
ELEMENT: CIRCULAR			
PC (10304)	200+99.6698	555250.5694	585816.2361
PI (10404)	201+34.3726	555284.9120	585821.2232
CC (10405)		555239.0727	585895.4057
PT (10305)	201+65.1559	555304.7355	585849.7067

RADIUS:	80.0000
DELTA:	46°54'03.3838" RIGHT
DEGREE OF CURVATURE (ARC):	71°37'11.0145"
LENGTH:	65.4861
TANGENT:	34.7028
CHORD:	63.6730
MIDDLE ORDINATE:	6.6076
EXTERNAL:	7.2025
TANGENT DIRECTION:	N 8°15'45.1122" E
RADIAL DIRECTION:	S 81°44'14.8878" E
CHORD DIRECTION:	N 31°42'46.8041" E
RADIAL DIRECTION:	S 34°50'11.5041" E
TANGENT DIRECTION:	N 55°09'48.4959" E

CIRCULAR CURVE NO 4

	STATION	NORTHING	EASTING
ELEMENT: CIRCULAR			
PC (10306)	202+33.1821	555343.5946	585905.5417
PI (10406)	202+34.8799	555344.5645	585906.9352
CC (10407)		555362.9304	585892.0847
PT (10307)	202+36.5719	555345.7241	585908.1753

RADIUS:	23.5576
DELTA:	8°14'39.9000" LEFT
DEGREE OF CURVATURE (ARC):	243°12'56.4859"
LENGTH:	3.3898
TANGENT:	1.6978
CHORD:	3.3868
MIDDLE ORDINATE:	0.0609
EXTERNAL:	0.0611
TANGENT DIRECTION:	N 55°09'48.4960" E
RADIAL DIRECTION:	S 34°50'11.5040" E
CHORD DIRECTION:	N 51°02'28.5459" E
RADIAL DIRECTION:	S 43°04'51.4041" E
TANGENT DIRECTION:	N 46°55'08.5959" E

CIRCULAR CURVE NO 2

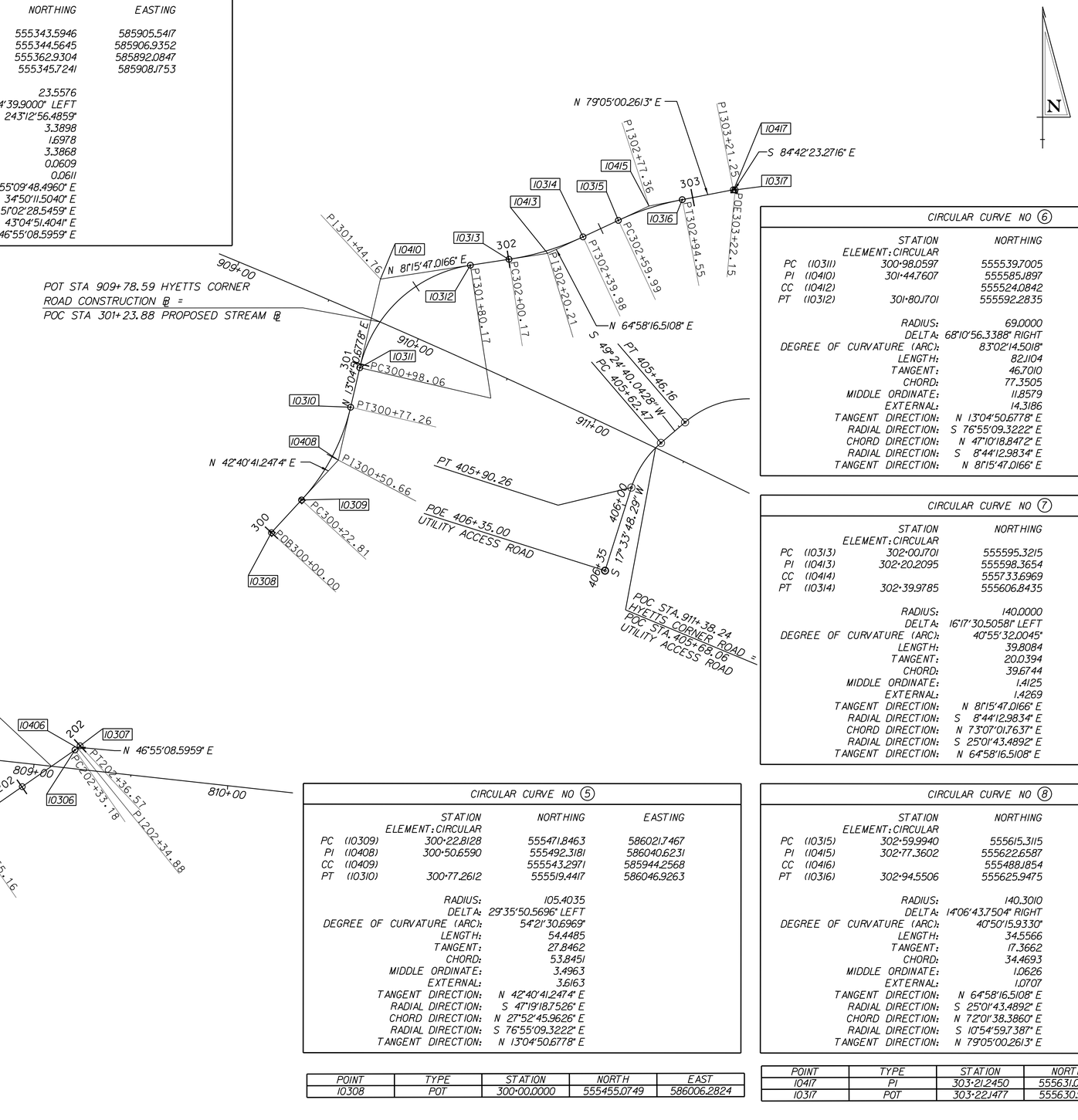
	STATION	NORTHING	EASTING
ELEMENT: CIRCULAR			
PC (10302)	200+38.3882	555205.9420	585788.0995
PI (10402)	200+59.9066	555200.9470	585809.0301
CC (10403)		555225.0678	585792.6637
PT (10303)	200+71.0453	555222.2421	585812.1225

RADIUS:	19.6629
DELTA:	95°09'34.9467" LEFT
DEGREE OF CURVATURE (ARC):	291°23'26.1176"
LENGTH:	32.6571
TANGENT:	21.5184
CHORD:	29.0310
MIDDLE ORDINATE:	6.3990
EXTERNAL:	9.4862
TANGENT DIRECTION:	S 76°34'39.9411" E
RADIAL DIRECTION:	S 13°25'20.0589" W
CHORD DIRECTION:	N 55°50'32.5855" E
RADIAL DIRECTION:	S 81°44'14.8878" E
TANGENT DIRECTION:	N 8°15'45.1122" E

CIRCULAR CURVE NO 1

	STATION	NORTHING	EASTING
ELEMENT: CIRCULAR			
PC (10300)	200+00.0000	555214.3164	585750.6706
PI (10400)	200+02.6184	555214.2495	585753.2882
CC (10401)		555189.3246	585750.0319
PT (10301)	200+05.2178	555213.6417	585755.8351

RADIUS:	25.0000
DELTA:	11°57'29.8063" RIGHT
DEGREE OF CURVATURE (ARC):	229°10'59.2250"
LENGTH:	5.2178
TANGENT:	2.6184
CHORD:	5.2083
MIDDLE ORDINATE:	0.1360
EXTERNAL:	0.1367
TANGENT DIRECTION:	S 88°32'09.7475" E
RADIAL DIRECTION:	S 1°27'50.2525" W
CHORD DIRECTION:	S 82°33'24.8443" E
RADIAL DIRECTION:	S 13°25'20.0589" W
TANGENT DIRECTION:	S 76°34'39.9411" E



CIRCULAR CURVE NO 6

	STATION	NORTHING	EASTING
ELEMENT: CIRCULAR			
PC (10311)	300+98.0597	555539.7005	586051.6325
PI (10410)	301+44.7607	555585.1897	586062.2021
CC (10412)		555524.0842	586118.8421
PT (10312)	301+80.1701	555592.2835	586108.3611

RADIUS:	69.0000
DELTA:	68°10'56.3388" RIGHT
DEGREE OF CURVATURE (ARC):	83°02'14.5018"
LENGTH:	82.1104
TANGENT:	46.7010
CHORD:	77.3505
MIDDLE ORDINATE:	11.8579
EXTERNAL:	14.3186
TANGENT DIRECTION:	N 13°04'50.6778" E
RADIAL DIRECTION:	S 76°55'09.3222" E
CHORD DIRECTION:	N 47°10'18.8472" E
RADIAL DIRECTION:	S 8°44'12.9834" E
TANGENT DIRECTION:	N 81°15'47.0166" E

CIRCULAR CURVE NO 7

	STATION	NORTHING	EASTING
ELEMENT: CIRCULAR			
PC (10313)	302+00.1701	555595.3215	586128.1291
PI (10413)	302+20.2095	555598.3654	586147.9359
CC (10414)		555733.6969	586106.8633
PT (10314)	302+39.9785	555606.8435	586166.0935

RADIUS:	140.0000
DELTA:	16°17'30.5058" LEFT
DEGREE OF CURVATURE (ARC):	40°55'32.0045"
LENGTH:	39.8084
TANGENT:	20.0394
CHORD:	39.6744
MIDDLE ORDINATE:	1.4125
EXTERNAL:	1.4269
TANGENT DIRECTION:	N 81°15'47.0166" E
RADIAL DIRECTION:	S 8°44'12.9834" E
CHORD DIRECTION:	N 73°07'01.7637" E
RADIAL DIRECTION:	S 25°01'43.4892" E
TANGENT DIRECTION:	N 64°58'16.5108" E

CIRCULAR CURVE NO 5

	STATION	NORTHING	EASTING
ELEMENT: CIRCULAR			
PC (10309)	300+22.8128	555471.8463	586021.7467
PI (10408)	300+50.6590	555492.3181	586040.6231
CC (10409)		555543.2971	585944.2568
PT (10310)	300+77.2612	555519.4417	586046.9263

RADIUS:	105.4035
DELTA:	29°35'50.5696" LEFT
DEGREE OF CURVATURE (ARC):	54°21'30.6969"
LENGTH:	54.4485
TANGENT:	27.8462
CHORD:	53.8451
MIDDLE ORDINATE:	3.4963
EXTERNAL:	3.6163
TANGENT DIRECTION:	N 42°40'41.2474" E
RADIAL DIRECTION:	S 47°19'18.7526" E
CHORD DIRECTION:	N 27°52'45.9626" E
RADIAL DIRECTION:	S 76°55'09.3222" E
TANGENT DIRECTION:	N 13°04'50.6778" E

CIRCULAR CURVE NO 8

	STATION	NORTHING	EASTING
ELEMENT: CIRCULAR			
PC (10315)	302+59.9940	555615.3115	586184.2295
PI (10415)	302+77.3602	555622.6587	586199.9649
CC (10416)		555488.1854	586243.5870
PT (10316)	302+94.5506	555625.9475	586217.0168

RADIUS:	140.3010
DELTA:	14°06'43.7504" RIGHT
DEGREE OF CURVATURE (ARC):	40°50'15.9330"
LENGTH:	34.5566
TANGENT:	17.3662
CHORD:	34.4693
MIDDLE ORDINATE:	1.0626
EXTERNAL:	1.0707
TANGENT DIRECTION:	N 64°58'16.5108" E
RADIAL DIRECTION:	S 25°01'43.4892" E
CHORD DIRECTION:	N 72°01'38.3860" E
RADIAL DIRECTION:	S 10°54'59.7387" E
TANGENT DIRECTION:	N 79°05'00.2613" E

POINT	TYPE	STATION	NORTH	EAST
10308	POT	300+00.0000	555455.0749	586006.2824

POINT	TYPE	STATION	NORTH	EAST
10417	PI	303+21.2450	555631.0029	586243.2282
10317	POT	303+22.1477	555630.9196	586244.1270

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

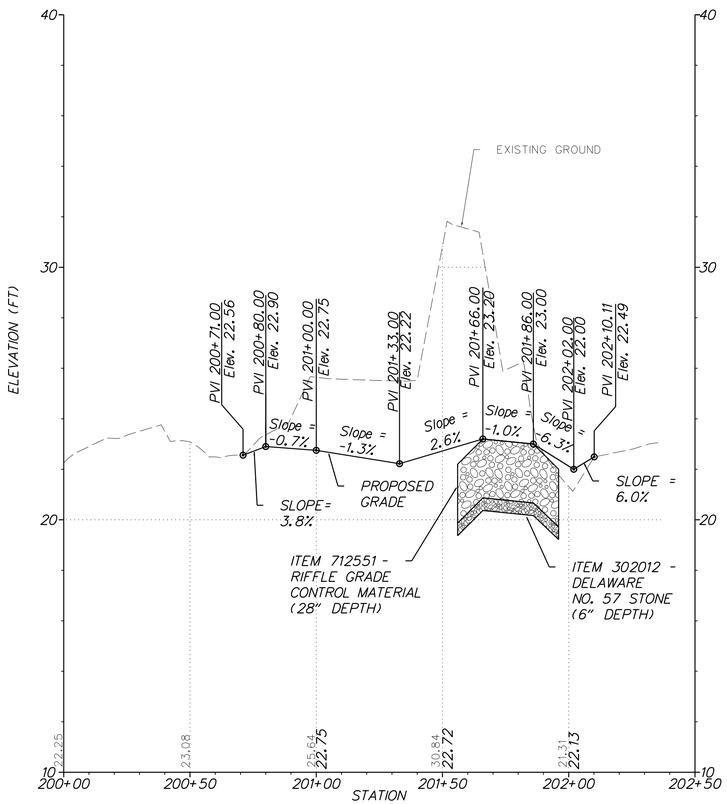
SCALE 0 30 60 90 FEET

US 301, SR 896 TO SR 1

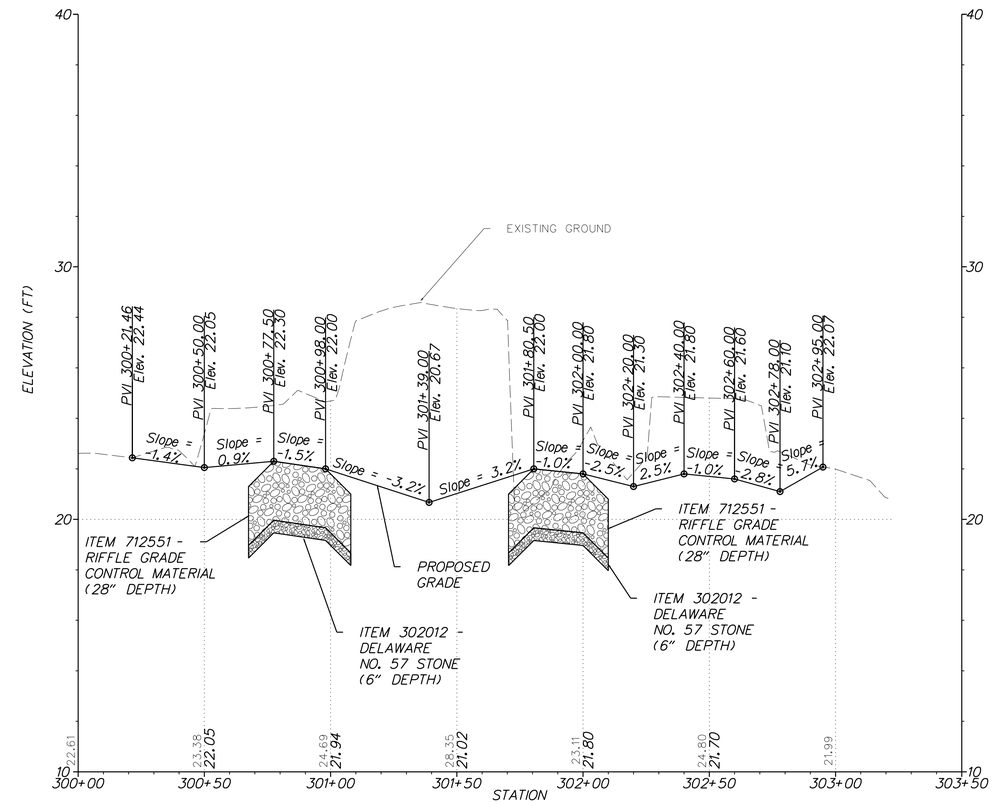
CONTRACT: T200911308
COUNTY: NEW CASTLE
BRIDGE NO. BR1–458 & BR1–460
DESIGNED BY: MRM
CHECKED BY: DJG

SCOTT RUN STREAM RESTORATION HORIZONTAL AND VERTICAL CONTROL

SR–003
SHEET NO. 607
TOTAL SHTS. 875



SCOTT RUN – AT BR1–460 N&S / US 301



SCOTT RUN – AT BR1–458 / HYETTS CORNER ROAD

VERTICAL SCALE FEET 0 2 4 6

SR–004

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 30 60 90 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO. BR1–458 & BR1–460	SCOTT RUN STREAM RESTORATION PROFILE	SHEET NO.
T200911308	DESIGNED BY: MRM		608
COUNTY			TOTAL SHTS.
NEW CASTLE	CHECKED BY: DJG		875

NOTES:

1. SEE SCOTT RUN STREAM RESTORATION CROSS SECTIONS FOR DETAILED INFORMATION OF PROPOSED GRADE (SHEETS SR-010 TO SR-015).

2. THE TYPICAL POOL AND RUN SECTIONS REPRESENT THE PROPOSED CHANNEL GEOMETRY TO BE CONSTRUCTED AT THE SPECIFIED STATIONS. THE PROPOSED POOL/RUN GEOMETRY TRANSITIONS INTO THE CHANNEL GEOMETRY (RIFFLES AND EXISTING) LOCATED UPSTREAM AND DOWNSTREAM OF THE PROPOSED POOL/RUN SECTION. SEE THE SCOTT RUN STREAM RESTORATION CROSS SECTIONS (SHEETS SR-010 TO SR-015) FOR DETAILED DEPICTION OF PROPOSED GRADE AND CROSS SECTIONS REPRESENTING THE CHANNEL TRANSITIONING BETWEEN POOL/RUN SECTIONS AND RIFFLES/EXISTING GEOMETRY.

3. PLANT ONLY SILKY DOGWOOD (CORNUS AMOMUM) LIVE STAKES UNDERNEATH THE PROPOSED BRIDGES AND WITHIN THE CLEAR ZONES. SEE SCOTT RUN STREAM RESTORATION LANDSCAPE PLANS (SHEETS SR-016 AND SR-017) FOR PLANTING ZONE LOCATIONS.

4. SEE SOIL RETENTION BLANKET MULCH AND BIOENGINEERING STABILIZATION WITH TOE ANCHOR TRENCH DETAIL (SHEET SR-008) FOR DETAILS ON HOW TO SECURE THE SOIL RETENTION BLANKET MULCH, TYPE 5 ALONG THE TOP-OF-BANK AND BOTTOM-OF-BANK AREAS.

5. ROCK TOE PROTECTION IS PROPOSED FROM STA. 200+71 TO STA. 201+66, LT; FROM STA. 201+86 TO STA. 202+11, LT; FROM STA. 300+98 TO STA. 301+80.5, LT; AND FROM STA. 302+83 TO STA. 302+95, RT. SEE SHEET SR-008 FOR ELEVATIONS OF THE TOP OF ROCK TOE PROTECTION FACE.

6. SEE ROCK TOE PROTECTION WITH SOIL RETENTION BLANKET MULCH AND BIOENGINEERING STABILIZATION DETAIL (SHEET SR-008) FOR DETAILS ON HOW TO SECURE THE SOIL RETENTION BLANKET MULCH, TYPE 5 ALONG THE TOP-OF-BANK AND BOTTOM-OF-BANK AREAS WHERE ROCK TOE PROTECTION IS PROPOSED.

7. THE BANK TREATMENT CONSISTS OF ITEM 735542-FABRIC ENCAPSULATED SOIL LIFT FROM STA. 300+35 TO STA. 300+77.5, RT; FROM STA. 302+00 TO STA. 302+23, LT; FROM STA. 302+00 TO 302+29, RT; AND FROM STA. 302+60 TO 302+83, RT. SEE FABRIC ENCAPSULATED SOIL LIFT DETAIL (SHEET SR-009).

8. DIVERT STREAM FLOW INTO THE NEWLY CONSTRUCTED CHANNEL UPON COMPLETION AND STABILIZATION OF ALL PROPOSED WORK AND FOLLOWING APPROVAL BY THE ENGINEER. IMMEDIATELY STABILIZE ANY DISTURBANCE RESULTING FROM THE REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL PRACTICES.

9. SEED WITH ITEM 734557-RIPARIAN SEED MIX - STREAM RESTORATION UNDERNEATH AND PRIOR TO PLACING ITEM 735535-SOIL RETENTION BLANKET MULCH, TYPE 5.

10. ANY TOPSOIL BEING PLACED IN ACCORDANCE WITH THE SCOTT RUN STREAM RESTORATION PLANS, INCLUDING ITEM 908004-TOPSOIL, 6" DEPTH AND THE TOPSOIL USED TO CONSTRUCT ITEM 735542-FABRIC ENCAPSULATED SOIL LIFT (SEE DETAIL ON SHEET SR-009), SHALL HAVE A MINIMUM ORGANIC MATTER CONTENT OF 3% IN ACCORDANCE WITH AASHTO T 194. NO ADDITIONAL PAYMENT WILL BE MADE FOR ACTIONS NECESSARY TO MEET THIS REQUIREMENT.

11. ENSURE THAT ITEM 209512-STREAM RESTORATION BORROW REQUIRED ALONG THE SCOTT RUN STREAM RESTORATION AREA MEETS THE FOLLOWING REQUIREMENTS:

A. ALL MATERIAL SHALL BE FREE OF FROZEN MATERIAL, RUBBISH, ROCK GREATER THAN THREE (3) INCHES (75 MM) IN ANY DIRECTION, OR ORGANIC MATTER GREATER THAN 2 PERCENT (INCLUDING LEAVES, ROOTS, GRASS OR SEWAGE).

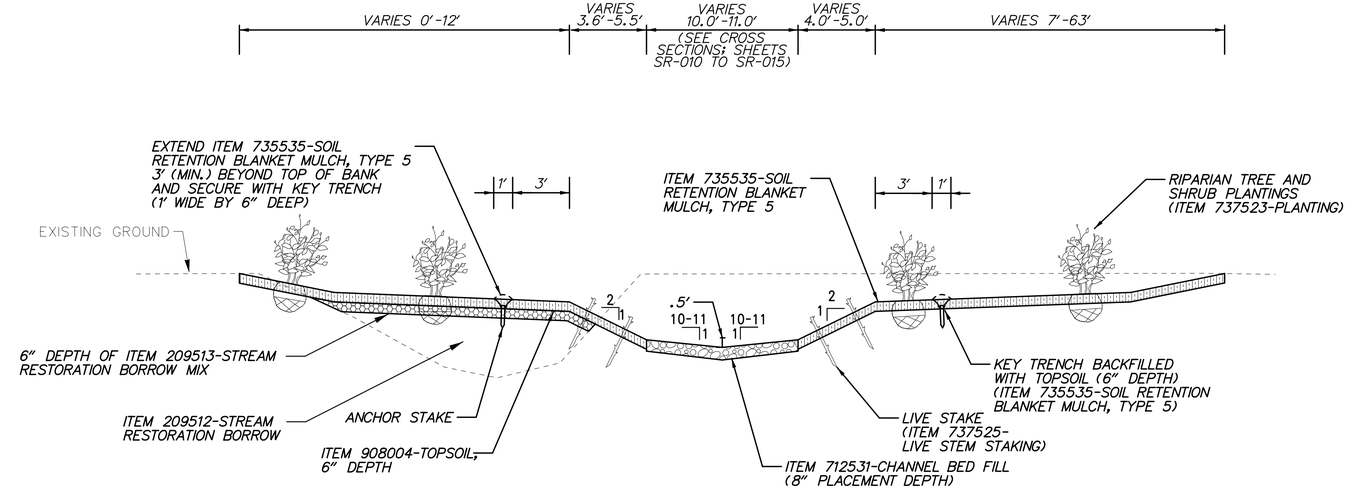
B. 85 TO 100 PERCENT INCLUSIVE, BY DRY WEIGHT, PASSING A 1 INCH (25 MM) SIEVE.

C. MINIMUM OF 55 PERCENT, BY DRY WEIGHT, PASSING A NO. 10 (2 MM) SIEVE.

D. MINIMUM OF 10 PERCENT, BY DRY WEIGHT, PASSING A NO. 200 (75 MICROMETER) SIEVE.

12. THE CONTRACTOR SHALL VERIFY THE ELEVATION OF THE GAS LINE THAT CROSSES UNDER THE PROPOSED STREAM RESTORATION WORK AT STREAM ALIGNMENT STATION 302+26 AND COORDINATE THE FINDINGS WITH THE ENGINEER A MINIMUM OF TWO WEEKS PRIOR TO BEGINNING WORK IN SCOTT RUN. THIS WORK IS INCIDENTAL TO ITEM 763501-CONSTRUCTION ENGINEERING.

13. REMOVE EXISTING GROUND AND REPLACE WITH ITEM 209512-STREAM RESTORATION BORROW FROM STA. 301+00, LT & RT TO STA. 301+67, LT AND TO STA. 302+18, RT. REMOVE EXISTING GROUND WITHIN THE AREA THAT EXTENDS 10 FEET FROM THE PROPOSED TOP-OF-BANK. MAINTAIN A 2:1 SLOPE ALONG THE EXISITNG GROUND AT THE EDGE OF THE EXCAVATION AREA. EXTEND THE EXCAVATION DEPTH TO AN ELEVATION OF 21 FEET. SEE CROSS SECTION SHEETS SR-013 AND SR-014.

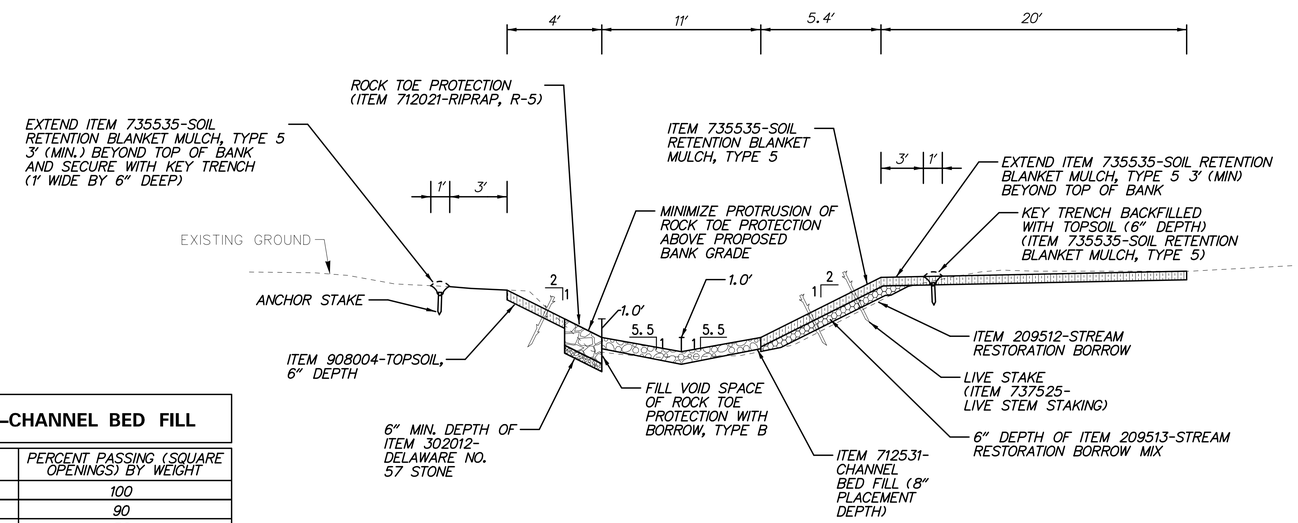


TYPICAL RIFFLE SECTION

NOT TO SCALE

STA. 200+80 TO STA. 201+00*
STA. 302+40 TO STA. 302+60

* ROCK TOE PROTECTION IS LOCATED ALONG THE LEFT BANK (FACING DOWNSTREAM/UPSTATION) FROM STA. 200+80 TO 201+00



TYPICAL RUN SECTION

NOT TO SCALE

STA. 202+02*

*SEE NOTE 2 ON THIS SHEET (SR-005)

ITEM 712531-CHANNEL BED FILL

ROCK SIZE IN INCHES (MM)	PERCENT PASSING (SQUARE OPENINGS) BY WEIGHT
6.0 (152)	100
3.5 (90)	90
1.5 (37.5)	50
1.0 (25)	30
0.5 (12.5)	15
0.05 (1.18)*	5

*ASSOCIATED SIEVE SIZE IS NO. 16

SR-005

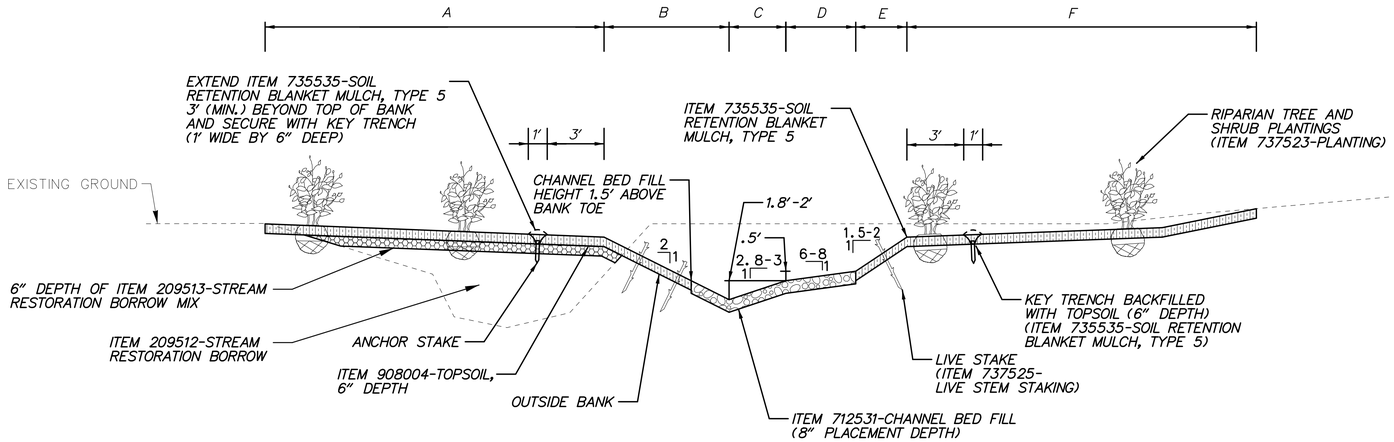
DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO. BR1-458 & BR1-460	SCOTT RUN STREAM RESTORATION TYPICAL SECTIONS	SHEET NO.
T200911308	DESIGNED BY: MRM		609
COUNTY			TOTAL SHTS.
NEW CASTLE	CHECKED BY: DJG		875



TYPICAL POOL SECTION – 1

NOT TO SCALE

STA. 201+33
STA. 300+50
STA. 301+39

TYPICAL POOL SECTION – 1

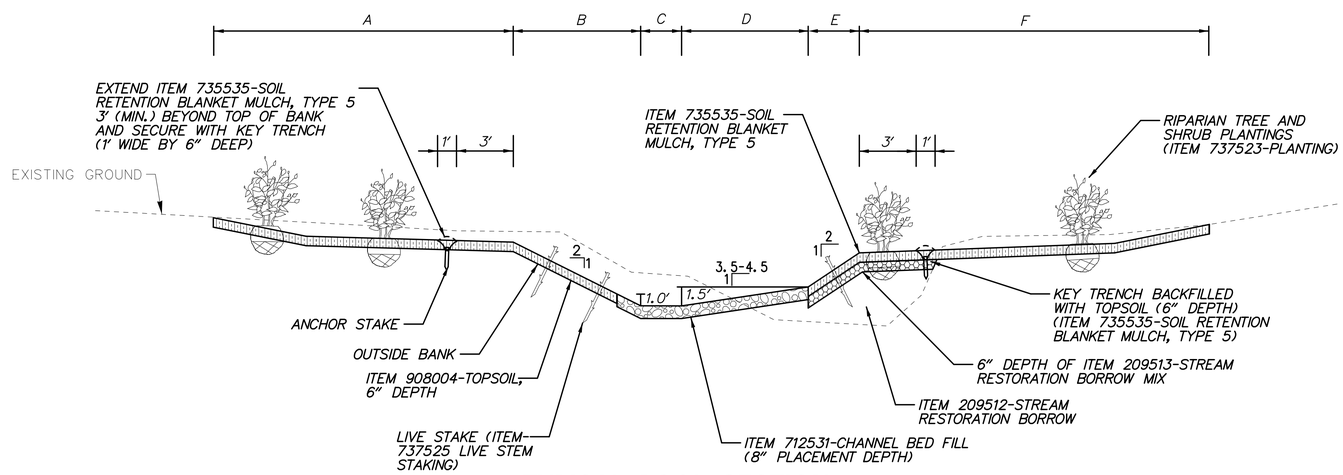
TYPICAL POOL LOCATION	LENGTH (FT)					
	A	B	C	D	E	F
201+33	41.9	7.8	5.5	3.0	2.8	19.0
300+50	38.7	7.6	5.5	4.0	2.3	30.7
301+39	13.4	8.6	6.0	3.2	2.6	87.4

NOTES:

1. SEE NOTE 2 ON SHEET SR-005

2. THE LOCATION OF THE OUTSIDE BANK VARIES BETWEEN THE LEFT AND RIGHT BANK (FACING DOWNSTREAM/UPSTATION). SEE THE CROSS SECTIONS FOR THE LOCATION OF THE OUTSIDE BANK (SHEETS SR-010 TO SR-015).

3. BANK TREATMENTS VARY. SEE THE PLAN SHEETS (SR-001 AND SR-002), CROSS SECTIONS SHEETS (SR-010 TO SR-015), AND LANDSCAPE SHEETS (SR-016 AND SR-017) FOR LOCATIONS OF BANK TREATMENTS.



TYPICAL POOL SECTION – 2

NOT TO SCALE

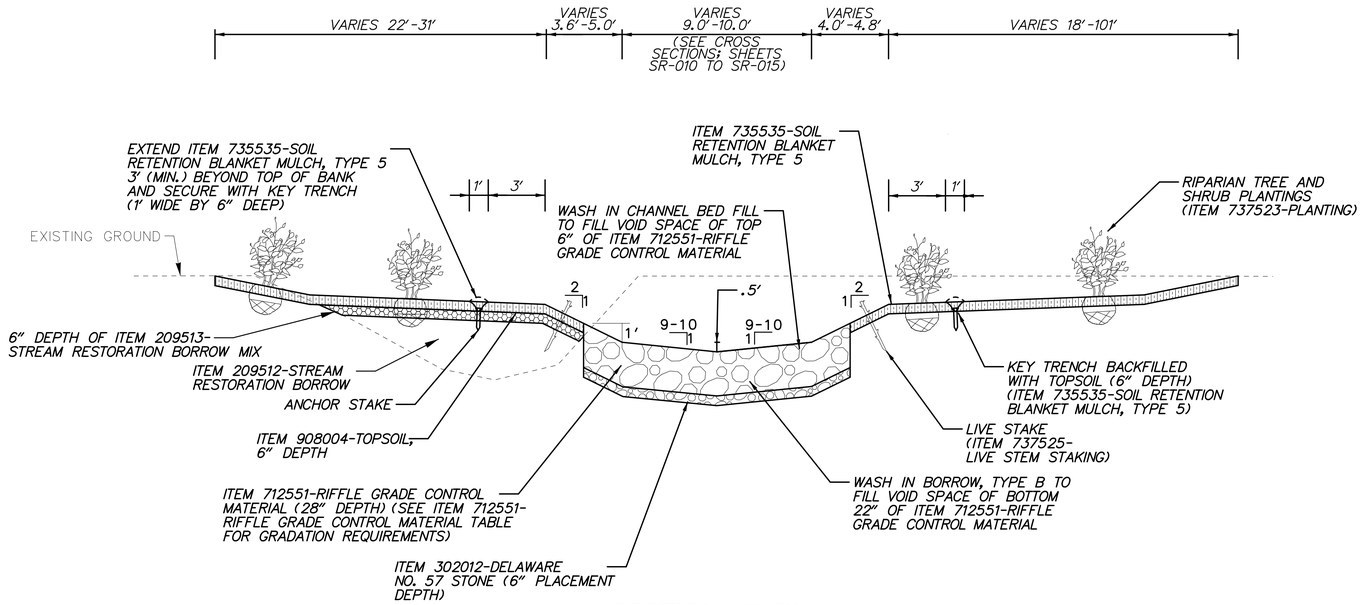
STA. 302+20
STA. 302+78

TYPICAL POOL SECTION – 2

TYPICAL POOL LOCATION	LENGTH (FT)					
	A	B	C	D	E	F
302+20	71.4	6.7	3.0	5.3	4.4	8.6
302+78	0	7.6	3.3	7.0	3.3	52.7

SR–006

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. BR1–458 & BR1–460	SCOTT RUN STREAM RESTORATION TYPICAL SECTIONS	SHEET NO. 610
				COUNTY NEW CASTLE	DESIGNED BY: MRM		TOTAL SHTS. 875
					CHECKED BY: DJG		

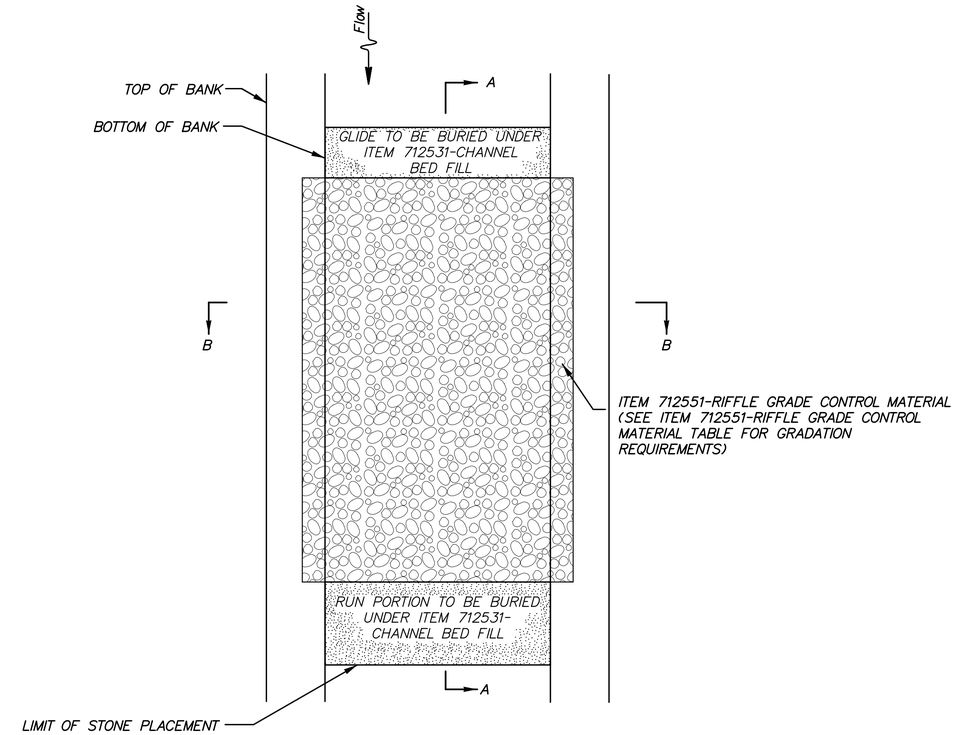


SECTION 'B–B'
RIFFLE GRADE CONTROL

STA. 201+66 TO STA. 201+86
STA. 300+77.5 TO STA. 300+98
STA. 301+80.5 TO STA. 302+00

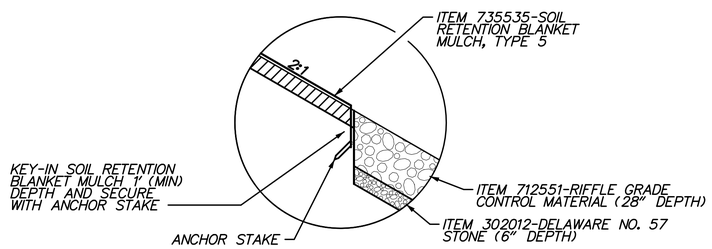
NOTES:

1. MINIMIZE PROTRUSION OF ITEM 712551-RIFFLE GRADE CONTROL MATERIAL ABOVE PROPOSED CHANNEL GRADE.
2. CROSS-SECTION DIMENSIONS OF RIFFLE GRADE CONTROL ARE VARIABLE. SEE SCOTT RUN STREAM RESTORATION CROSS SECTIONS (SHEETS SR-010 TO SR-015) FOR DIMENSIONS.
3. WASH IN BORROW, TYPE B TO FILL VOID SPACE OF BOTTOM 22" OF ITEM 712551-RIFFLE GRADE CONTROL MATERIAL. WASH IN CHANNEL BED FILL TO FILL VOID SPACE OF TOP 6" OF ITEM 712551- RIFFLE GRADE CONTROL MATERIAL. PAYMENT OF BORROW, TYPE B AND CHANNEL BED FILL WASHED INTO THE VOID SPACE IS INCIDENTAL TO PAYMENT OF ITEM 712551-RIFFLE GRADE CONTROL MATERIAL.
4. STATION LIMITS PROVIDED WITH THE RIFFLE GRADE CONTROL DETAILS REPRESENT THE "AT GRADE" PORTION OF THE RIFFLE GRADE CONTROL. ADDITIONAL RIFFLE GRADE CONTROL MATERIAL IS PLACED ALONG THE GLIDE AND RUN AREAS AS SHOWN ON THE DETAILS.

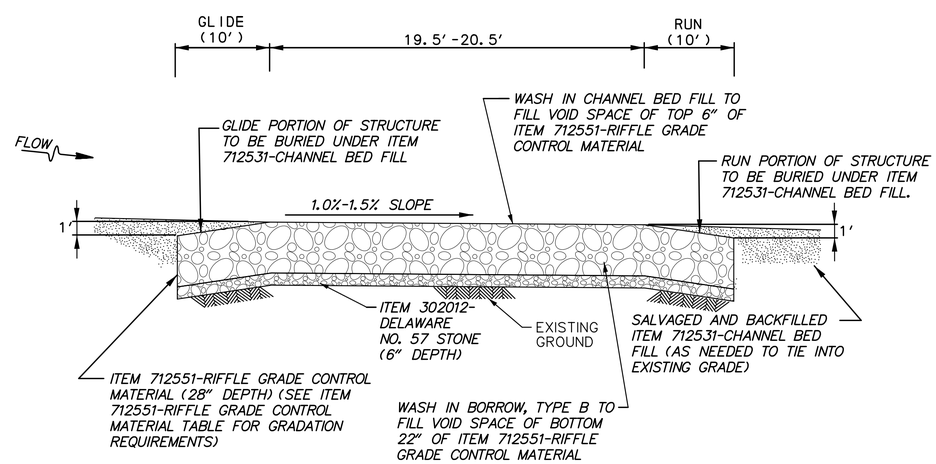


PLAN VIEW
RIFFLE GRADE CONTROL

STA. 201+66 TO STA. 201+86
STA. 300+77.5 TO STA. 300+98
STA. 301+80.5 TO STA. 302+00



RIFFLE GRADE CONTROL AND SOIL RETENTION BLANKET MULCH KEY DETAIL



SECTION 'A–A'
RIFFLE GRADE CONTROL

STA. 201+66 TO STA. 201+86
STA. 300+77.5 TO STA. 300+98
STA. 301+80.5 TO STA. 302+00

ITEM 712551–RIFFLE GRADE CONTROL MATERIAL

ROCK SIZE IN INCHES (MM)	PERCENT PASSING (SQUARE OPENINGS) BY WEIGHT
24.0 (610)	100
18.0 (457)	90
12.0 (305)	50
3.0 (76)	30
2.5 (63)	15
0.75 (19)	5

MEETING THE REQUIREMENTS OF ITEM 712551-RIFFLE GRADE CONTROL MATERIAL CAN BE ACCOMPLISHED BY A UNIFORMLY GRADED MIX CONSISTING OF 20% RIPRAP, R-6, 70% RIPRAP,R-5, AND 10% DELAWARE NO.1 STONE. RIPRAP, R-6, RIPRAP, R-5 AND DELAWARE NO. 1 STONE SHALL CONFORM TO REQUIREMENTS IN SECTIONS 712.04 AND 813.

SR–007

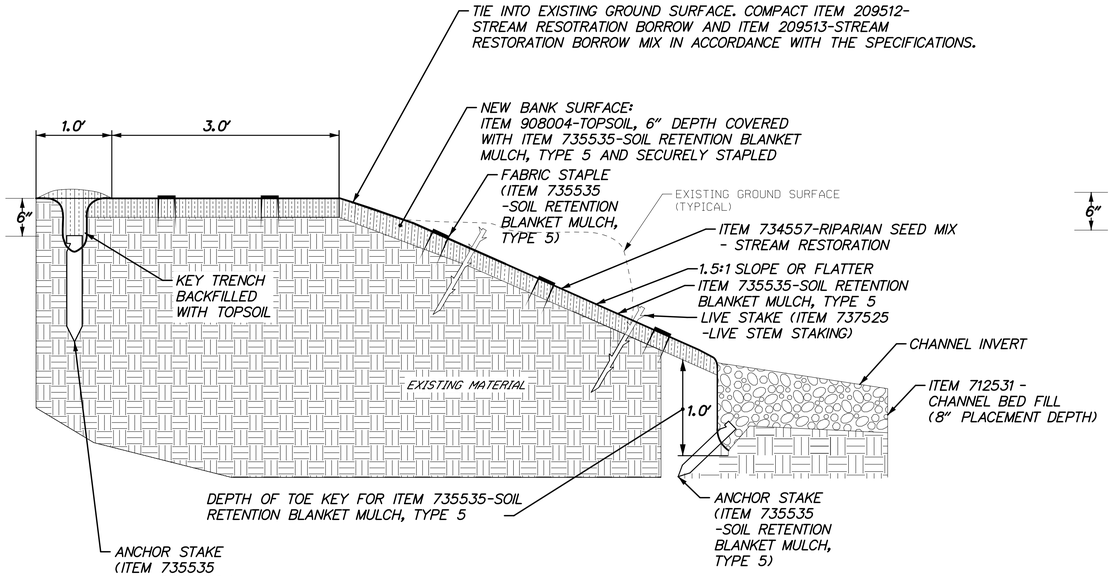
DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

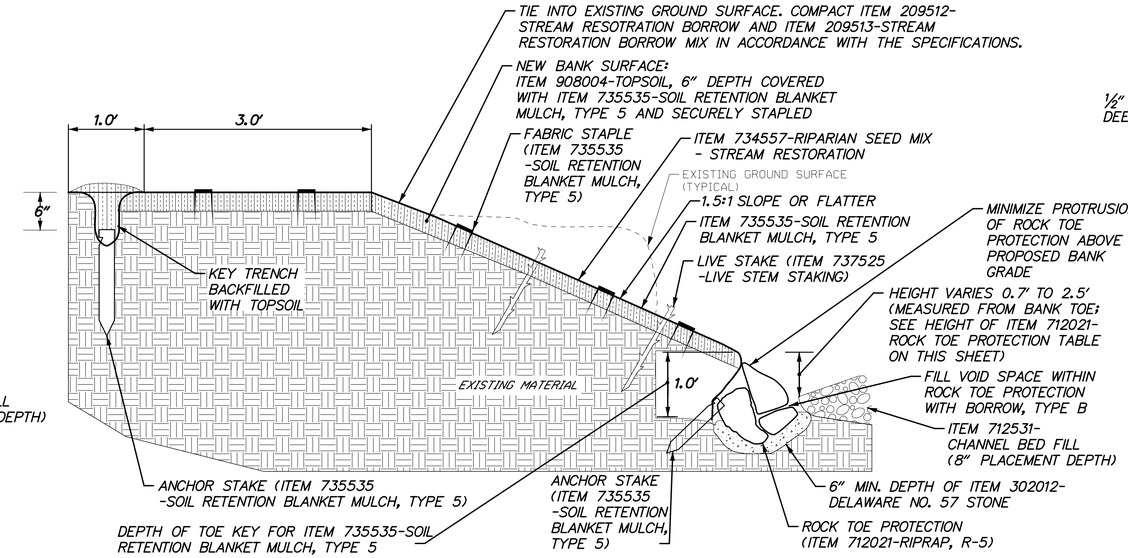
NOT TO SCALE

US 301, SR 896 TO SR 1

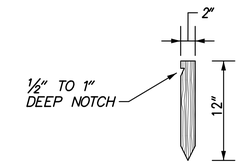
CONTRACT	BRIDGE NO. BR1–458 & BR1–460	SCOTT RUN STREAM RESTORATION DETAILS	SHEET NO.
T200911308	DESIGNED BY: MRM		611
COUNTY			TOTAL SHTS.
NEW CASTLE	CHECKED BY: DJG		875



SOIL RETENTION BLANKET MULCH AND BIOENGINEERING STABILIZATION WITH TOE ANCHOR TRENCH



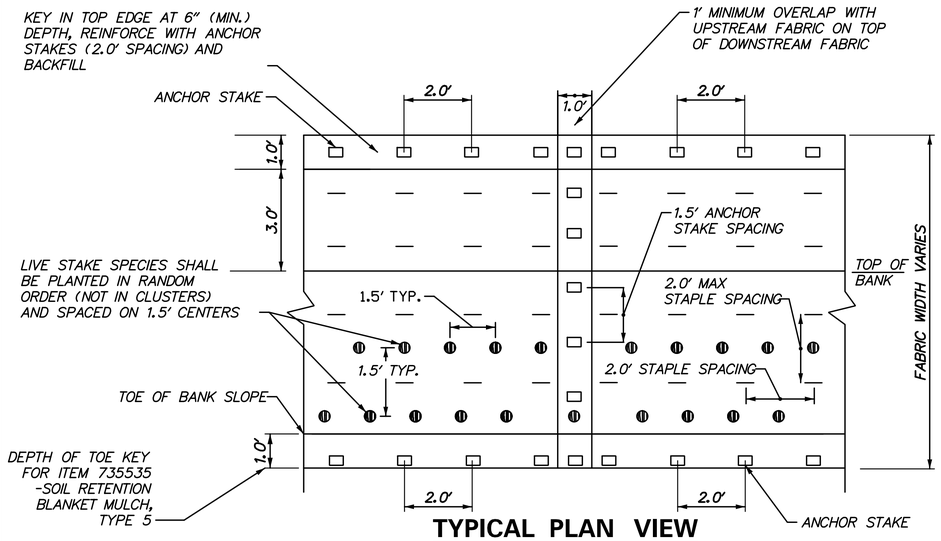
ROCK TOE PROTECTION WITH SOIL RETENTION BLANKET MULCH AND BIOENGINEERING STABILIZATION



1" X 2" NOTCHED HARDWOOD STAKE *

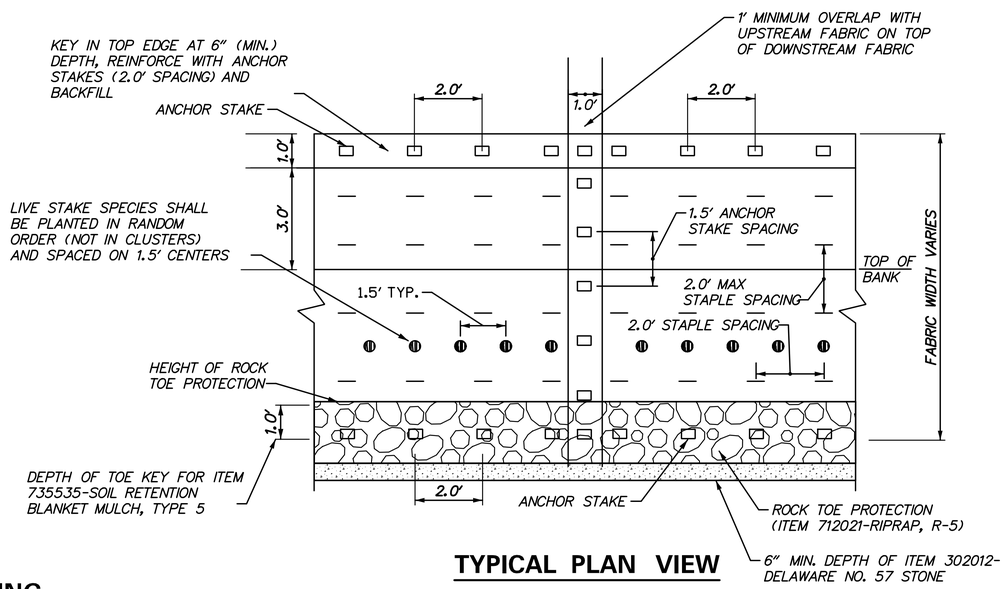
ANCHOR STAKE

* OR EQUIVALENT



TYPICAL PLAN VIEW

PLAN VIEW OF SOIL RETENTION BLANKET MULCH AND BIOENGINEERING STABILIZATION WITH TOE ANCHOR TRENCH



TYPICAL PLAN VIEW

PLAN VIEW OF ROCK TOE PROTECTION WITH SOIL RETENTION BLANKET MULCH AND BIOENGINEERING STABILIZATION

HEIGHT OF ITEM 712021-RIPRAP, R-5 FOR ROCK TOE PROTECTION

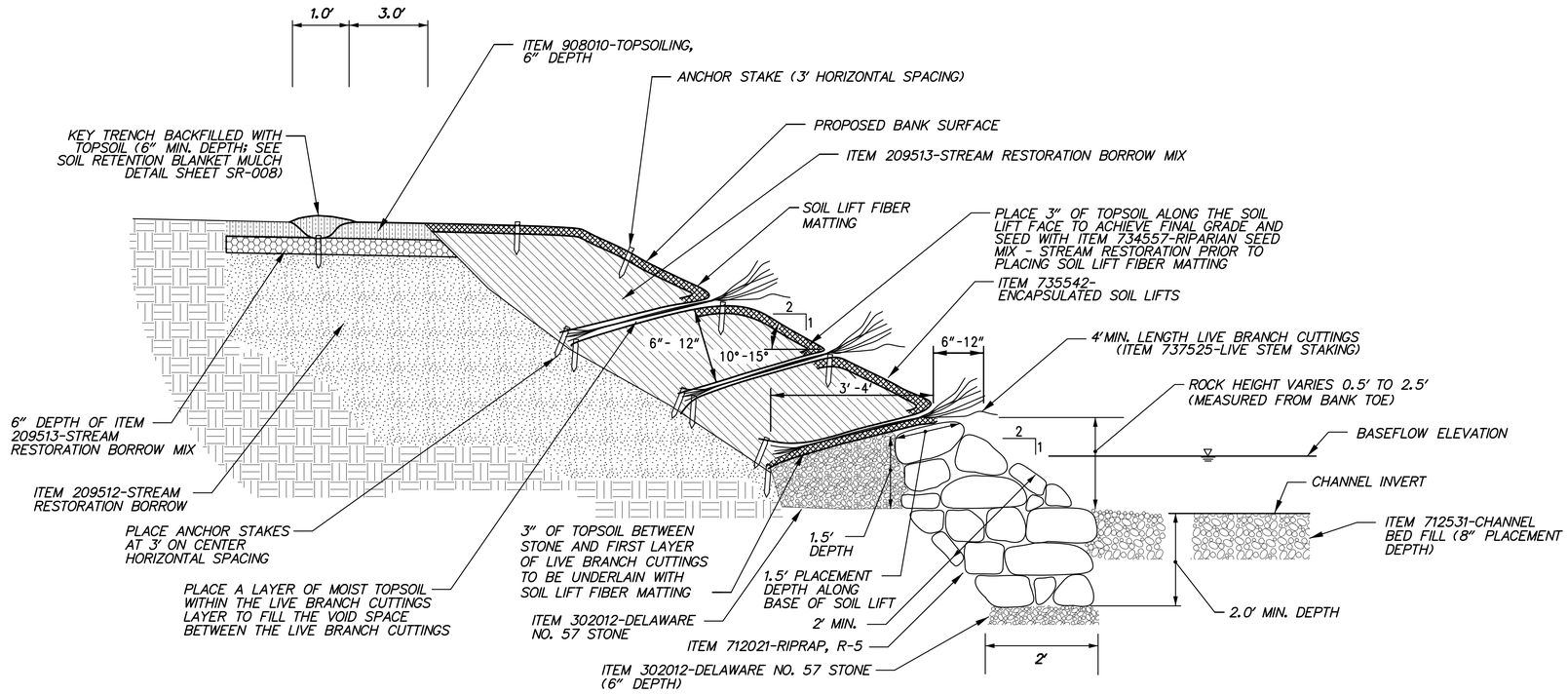
STATION*	HEIGHT ABOVE BANK TOE (FEET)	ELEVATION (FEET)
200+71, LT	1.1	24.4
200+80, LT	1.0	24.4
201+00, LT	1.0	24.25
201+15, LT	1.7	24.2
201+25, LT	2.0	24.1
201+33, LT	2.3	24.0
201+50, LT	1.7	24.4
201+66, LT	1.0	24.7
201+86, LT	1.0	24.5
202+02, LT	1.0	24.0
202+11, LT	1.9	23.7
300+98, LT	1.0	23.5
301+20, LT	1.8	23.2
301+39, LT	2.5	23.0
301+60, LT	1.7	23.2
301+80.5, LT	1.0	23.5
302+83, RT	0.7	23.0
302+95, RT	1.5	23.0

* LT & RT DESIGNATIONS REFER TO LEFT & RIGHT FACING DOWNSTREAM/UPSTATION

NOTE:
BLANKET MULCH TO BE ROLLED LENGTHWISE ALONG STREAMBANK EXTENDING BELOW THE TOE ANCHOR TRENCH AND A MINIMUM OF 3.0' OVER TOP OF BANK. IF MORE THAN ONE ROLL IS REQUIRED, MID-BANK OVERLAP SHOULD BE A MINIMUM OF 1.0' AND SECURELY FASTENED WITH ANCHOR STAKES. TOP EDGE OF BLANKET MULCH SHALL BE KEYED INTO EXISTING GROUND SURFACE AT A MINIMUM DEPTH OF 6" AND FASTENED W/ANCHOR STAKES SPACED EVERY 2.0'.

SR-008

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	NOT TO SCALE	US 301, SR 896 TO SR 1	CONTRACT T200911308	BRIDGE NO. BR1-458 & BR1-460	SCOTT RUN STREAM RESTORATION DETAILS	SHEET NO. 612
				COUNTY NEW CASTLE	DESIGNED BY: MRM		TOTAL SHTS. 875
					CHECKED BY: DJG		



ITEM 735542 – FABRIC ENCAPSULATED SOIL LIFT

NOTES:

1. THE NUMBER OF LIFTS CONSTRUCTED IS DEPENDENT ON BANK HEIGHT AND INDIVIDUAL LIFT HEIGHT. LIFT HEIGHT RANGES FROM 6 TO 12 INCHES.

2. INSTALL LIVE BRANCH CUTTINGS IN A CRISSCROSS FASHION AT A RATE OF 10 CUTTINGS PER LINEAR FEET.

3. TOPSOIL SHALL HAVE A MINIMUM ORGANIC CONTENT OF 3%. SEE NOTE 10 ON SHEET SR-005.

4. FILL VOID SPACE OF RIPRAP, R-5 WITH BORROW, TYPE B. PAYMENT OF BORROW, TYPE B, IS INCIDENTAL TO PAYMENT OF ITEM 735542-FABRIC ENCAPSULATED SOIL LIFT.

5. HEIGHT OF RIPRAP, R-5 ROCK VARIES. SEE THE HEIGHT OF RIPRAP R-5 FOR ITEM 735542-FABRIC ENCAPSULTED SOIL LIFT TABLE AND THE CROSS SECTIONS (SHEETS SR-010 TO SR-015).

6. ENSURE A SMOOTH AND STABLE TRANSITION WHERE THE FABRIC ENCAPSULATED SOIL LIFT TIES INTO EXISTING GROUND. SOME OVER-EXCAVATION MAY BE NECESSARY TO ALLOW ENOUGH HORIZONTAL DEPTH (3 TO 4 FEET AS INDICATED ON THE DETAIL) TO COMPLETE CONSTRUCTION OF THE FABRIC ENCAPSULATED SOIL LIFTS WITHIN THE TRANSITION ZONES. EXTEND THE SOIL LIFT FIBER MATTING A MINIMUM OF 3 FEET TO OVERLAP EXISTING EXISTING GROUND AT THE TIE-IN POINT. THE CONTRACTOR SHALL COORDINATE THE ANTICIPATED TRANSITION APPROACH WITH THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTING THE FABRIC ENCAPSULATED SOIL LIFTS.

HEIGHT OF RIPRAP, R-5 FOR ITEM 735542- FABRIC ENCAPSULATED SOIL LIFT

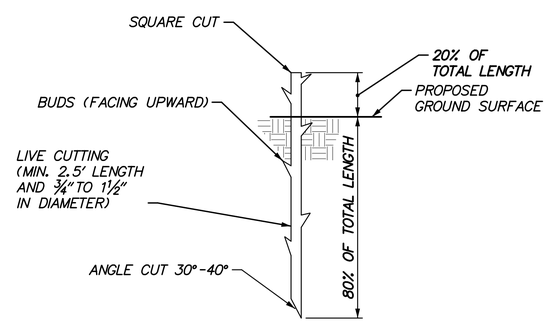
STATION*	HEIGHT ABOVE BANK TOE (FEET)	ELEVATION (FEET)
300+35, RT	1.1	23.5
300+50, RT	2.5	23.5
300+65, RT	1.5	23.5
300+77.5, RT	1.0	23.8
302+00, LT	1.0	23.3
302+20, LT	1.7	23.3
302+23, LT	1.6	23.3
302+00, RT	1.0	23.3
302+20, RT	1.7	23.0
302+29, RT	1.3	23.0
302+60, RT	1.0	23.1
302+78, RT	0.5	23.1
302+83, RT	0.7	23.0

* LT & RT DESIGNATIONS REFER TO LEFT & RIGHT FACING DOWNSTREAM/UPSTATION

ITEM 734557–RIPARIAN SEED MIX – STREAM RESTORATION

BOTANICAL NAME	COMMON NAME	FREQUENCY (%)	SEEDING RATE (LBS./AC)
AGROSTIS ALBA / GIGANTEA	REDTOP	16.5	20
DICHANTHELIUM CLANDESTINUM	DEER TONGUE GRASS	25	30
LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	16.5	20
PANICUM VIRGATUM	SWITCHGRASS	21	25
SCIRPUS CYPERINUS	WOOL GRASS	21	25
		TOTAL RATE	120

NOTE: LIVE STAKE, SOIL LIFT, RIPARIAN, AND RIPARIAN SEED MIX ZONES TO BE SEEDED WITH ITEM 734557-RIPARIAN SEED MIX - STREAM RESTORATION AT THE RATE INDICATED IN THE TABLE ABOVE.



NOTE:
LIVE STAKES SHALL BE INSTALLED WHILE DORMANT (LATE FALL TO EARLY SPRING).

LIVE STAKE

LIVE STAKE NOTES

1. HARVESTING AND INSTALLATION OF LIVE STAKE MATERIALS SHALL TAKE PLACE DURING THE DORMANT PERIOD OF THE YEAR; GENERALLY NOVEMBER 15 THROUGH MARCH 1. IF COMPLETION OF GRADING DOES NOT OCCUR WITHIN THIS WINDOW; THAT IS, IF THE CONTRACTOR HAS NOT COMPLETED HARVESTING AND INSTALLATION ON OR BEFORE MARCH 1, THE CONTRACTOR SHALL WAIT UNTIL THE DORMANT PERIOD THAT BEGINS ON THE FOLLOWING NOVEMBER 15 TO HARVEST AND INSTALL THE REMAINING LIVE STAKES.

2. LIVE STAKE MATERIALS SHALL BE PURCHASED FROM A NURSERY SPECIALIZING IN THE PRODUCTION OF SIMILAR MATERIALS AND SHALL INCLUDE CONFIRMATION OF SPECIES. EACH LIVE STAKE SHALL CONFORM TO THE RANGE OF DIMENSIONS SPECIFIED IN THE DETAIL.

3. LIVE STAKES SHALL BE TRANSPORTED IN CLIMATE-CONTROLLED CONDITIONS TO INSURE AGAINST TEMPERATURES GREATER THAN 50 DEGREES FAHRENHEIT. LIVE STAKES STORED ON SITE SHALL BE KEPT MOIST, SHADED, AND PROTECTED AGAINST DESICCATION. MATERIALS STORED OFFSITE SHALL BE REFRIGERATED AND KEPT MOIST. IN NO CASE SHALL NON-REFRIGERATED MATERIALS BE STORED LONGER THAN FIVE (5) CALENDAR DAYS.

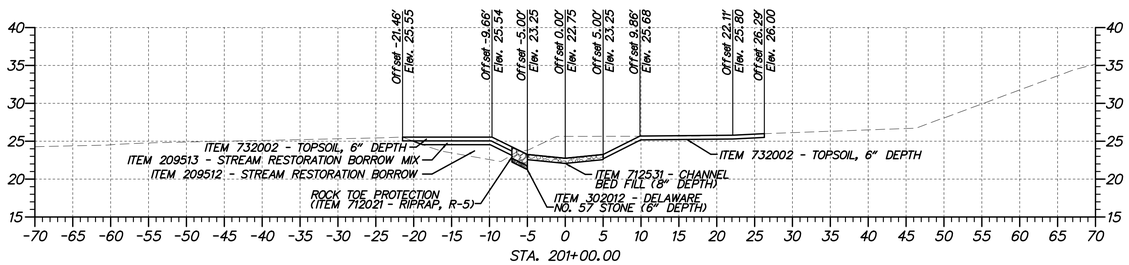
4. DURING INSTALLATION, LIVE STAKES SHALL BE KEPT DAMP BY EITHER COVERING WITH WET BURLAP OR HEELING INTO MOIST MULCH UNTIL READY FOR USE. STAKES SHALL BE INSPECTED FOR SIGNS OF DESICCATION, INCLUDING BUT NOT LIMITED TO BLACKENING OF CUT ENDS AND LENGTHWISE WRINKLING OF BARK, AND ALL UNSUITABLE MATERIALS SHALL BE APPROPRIATELY DISCARDED.

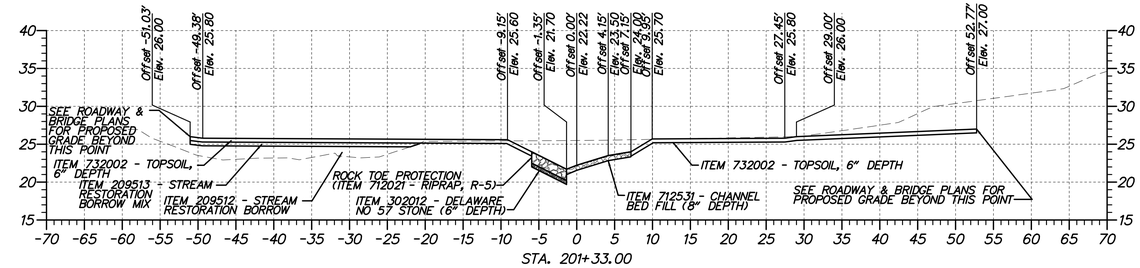
5. THE CONTRACTOR SHALL REMOVE ALL SIDE BRANCHES FROM ALL LIVE STAKES, CLEANLY AND WITHOUT CAUSING DAMAGE TO BARK. BUDS SHALL BE ORIENTED TOWARD THE TOP OF EACH STAKE. WITHIN TWO (2) HOURS PRIOR TO INSTALLATION, USING PRUNING SHEARS OR A POWER SAW, THE CONTRACTOR SHALL CUT EACH STAKE AT AN ANGLE ON THE BOTTOM END AS INDICATED IN THE DETAIL.

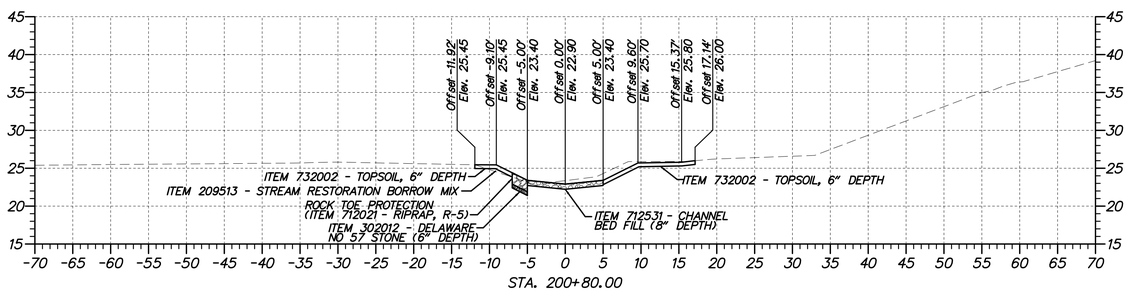
6. LIVE STAKES SHALL BE INSTALLED AT APPROXIMATE EIGHTEEN (18)-INCH SPACING THROUGHOUT THE PLANTING ZONE. WITH THE APPROVAL OF THE ENGINEER, THE CONTRACTOR SHALL ACHIEVE SUCH SPACING BY PREPARING HOLES USING A POINTED DIGGING BAR, REBAR, OR OTHER SIMILAR IMPLEMENTS TO ACHIEVE BOTH THE DEPTH AND THE DIAMETER REQUIRED FOR EACH STAKE. LIVE STAKES SHALL BE DRIVEN INTO THE PREPARED HOLE USING A DEAD BLOW HAMMER UNTIL THE STAKE HAS BEEN FIRMLY PLACED AS APPROVED BY THE ENGINEER. DO NOT SPLIT THE LIVE STAKES DURING INSTALLATION. DISCARD AND REPLACE ANY LIVE STAKES THAT SHATTER DURING INSTALLATION.

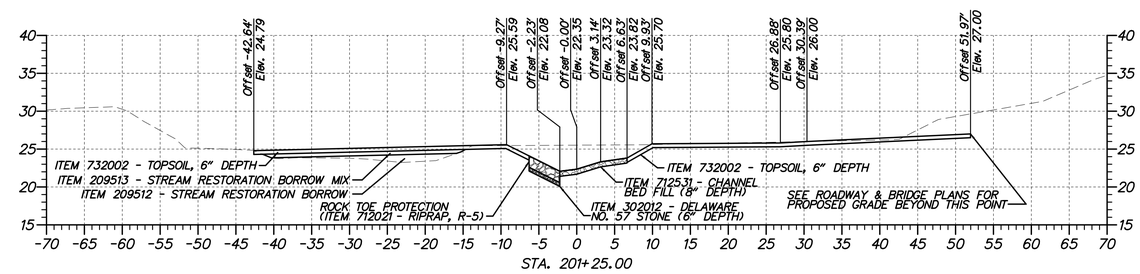
7. THE CONTRACTOR SHALL FIRMLY BACKFILL ALL VOIDS SURROUNDING EACH LIVE STAKE BY HAND TAMPING THE SOIL TIGHTLY AGAINST EACH STAKE WITHOUT SCARRING THE STAKE.

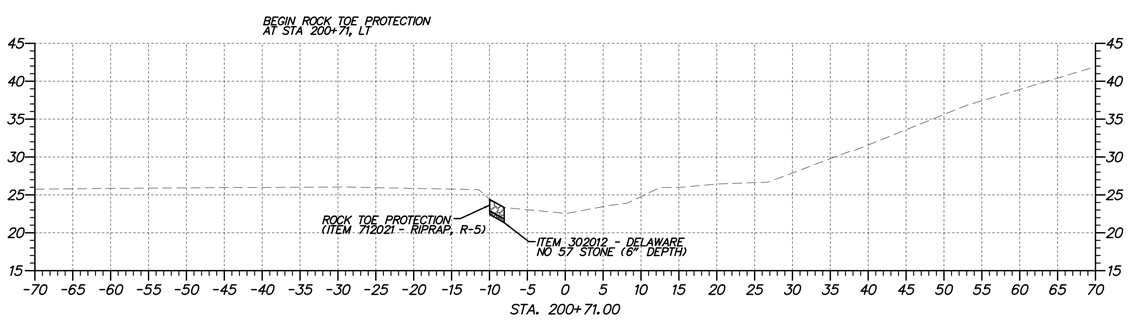
8. PLANT LIVE STAKES AT 18 INCHES ON CENTER SPACING WHICH CORRESPONDS TO ONE (1) LIVE STAKE PER 2.25 SQUARE FEET AND FOUR (4) LIVE STAKES PER 9 SQUARE FEET.

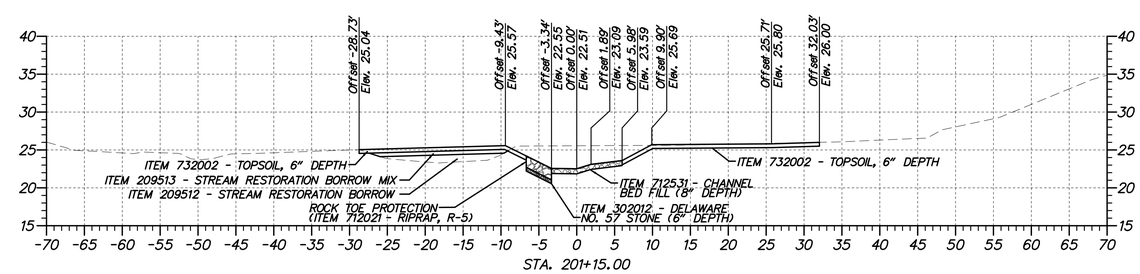






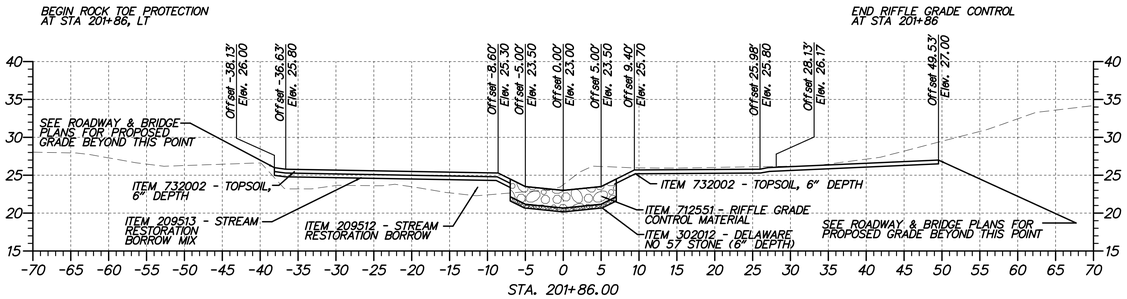


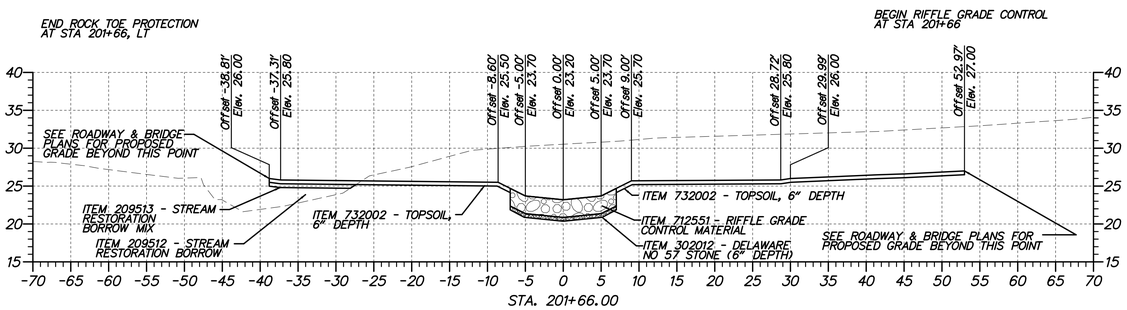


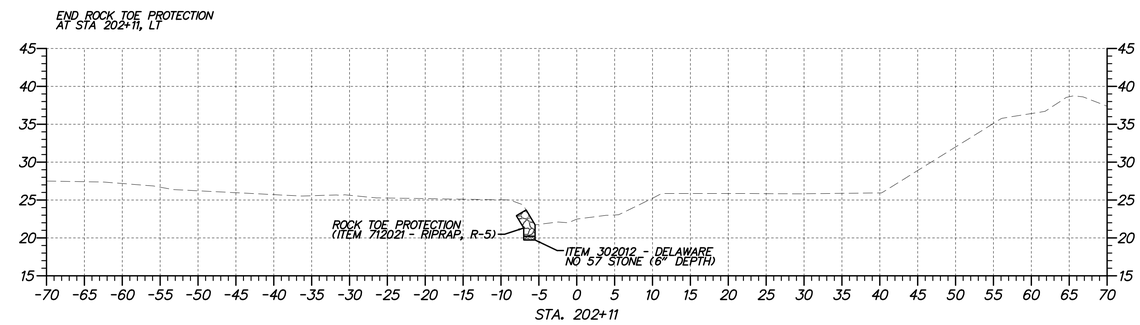


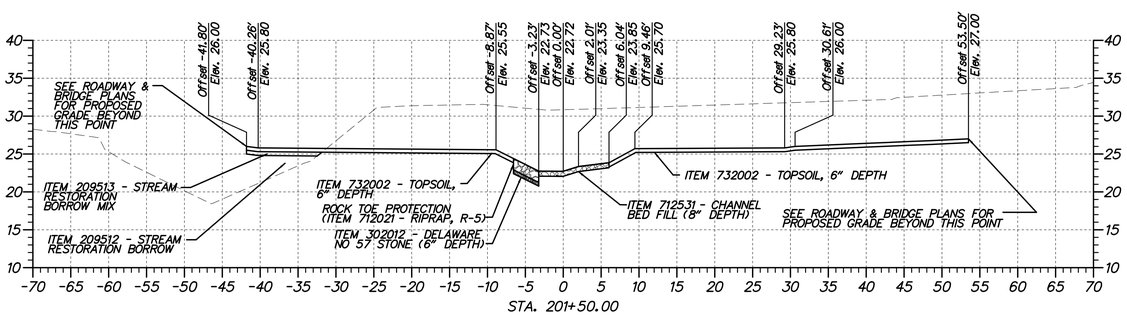
SR-010

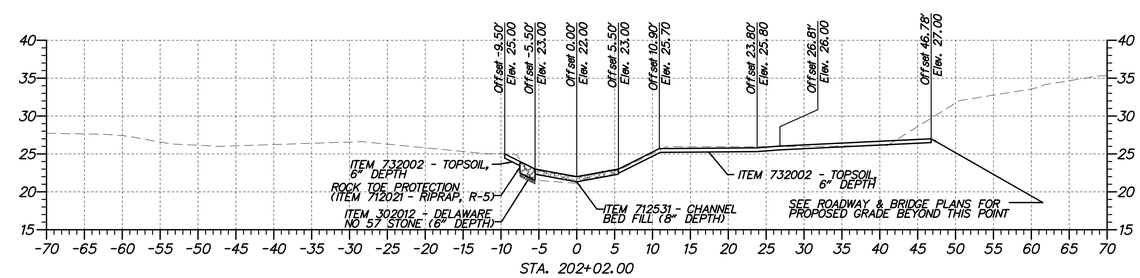
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 10 20 30 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308 / COUNTY NEW CASTLE	BRIDGE NO. BR1-460 N&S / DESIGNED BY: MRM / CHECKED BY: DJG	SCOTT RUN STREAM RESTORATION CROSS SECTIONS	SHEET NO. 614 / TOTAL SHTS. 875











SR-011

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 10 20 30 FEET

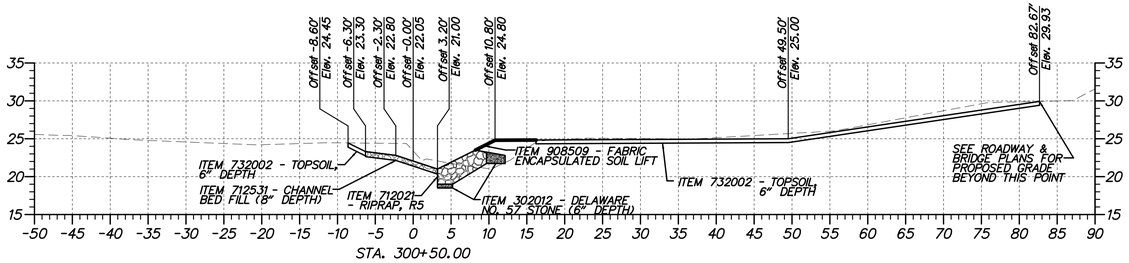
US 301, SR 896 TO SR 1

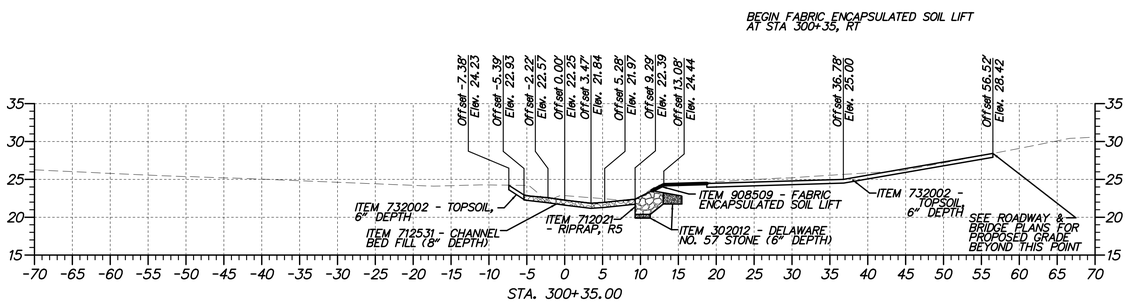
CONTRACT	BRIDGE NO.	BR1-460 N&S
T200911308	DESIGNED BY: MRM	
COUNTY		
NEW CASTLE	CHECKED BY: DJG	

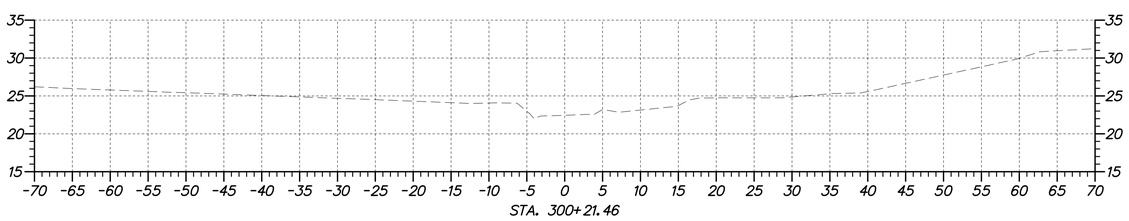
SCOTT RUN STREAM RESTORATION CROSS SECTIONS

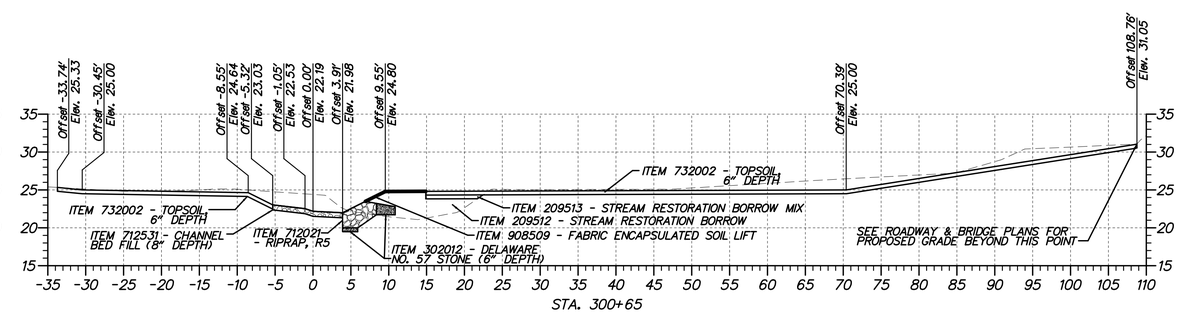
SHEET NO. 615

TOTAL SHTS. 875





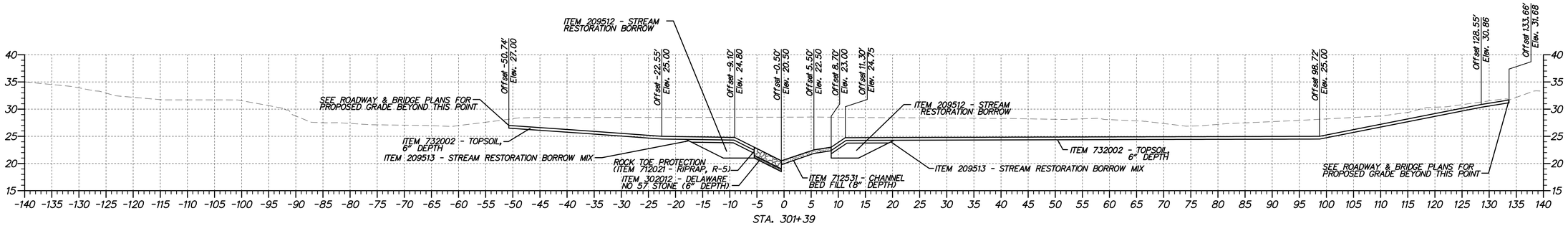


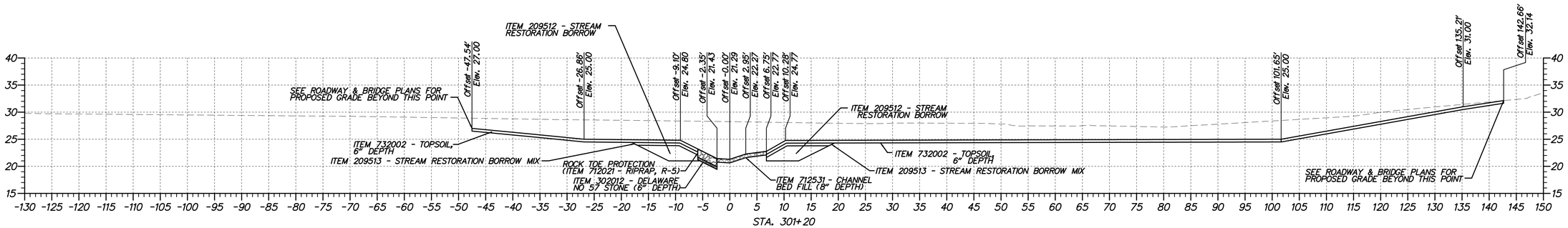


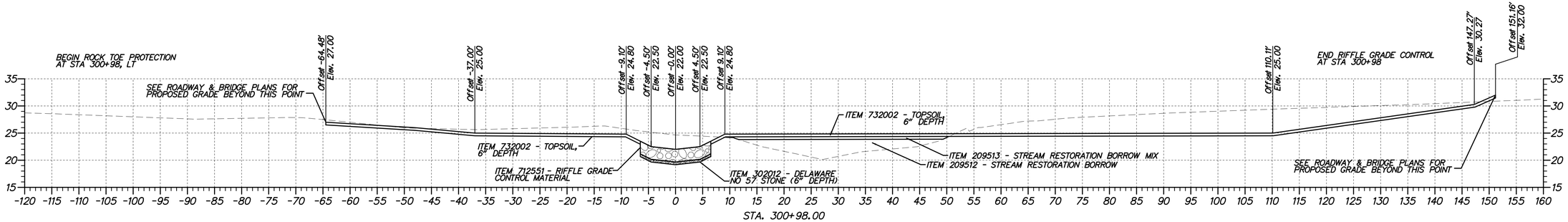
SR-012

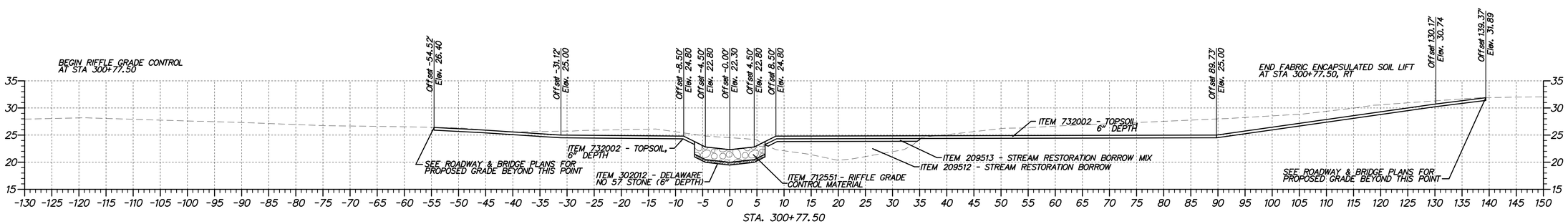
DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 10 20 30 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308 / COUNTY NEW CASTLE	BRIDGE NO. BR1-458 / DESIGNED BY: MRM / CHECKED BY: DJG	SCOTT RUN STREAM RESTORATION CROSS SECTIONS

SHEET NO. 616
TOTAL SHTS. 875



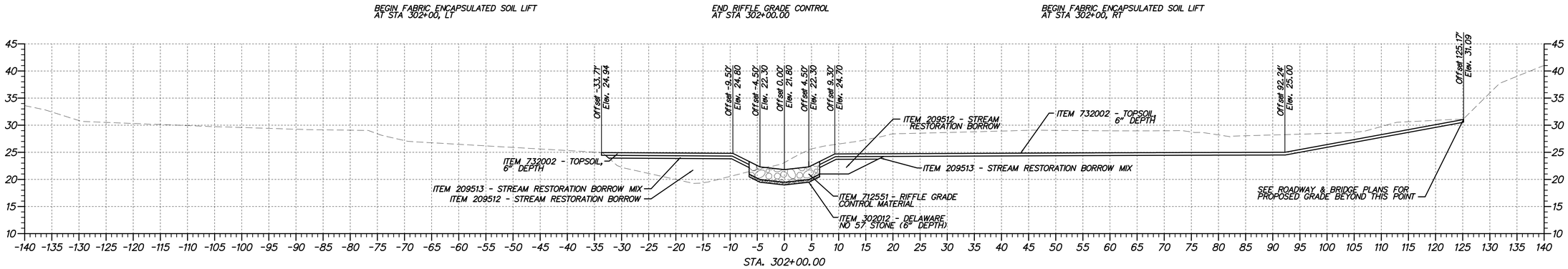


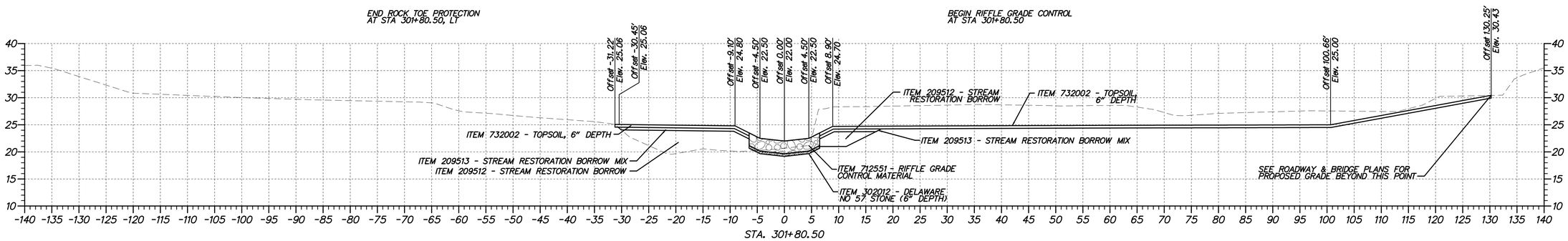


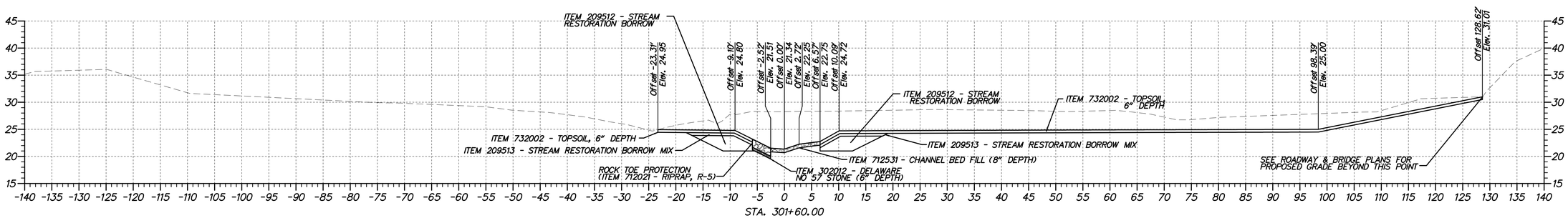


SR-013

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 10 20 30 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308 / COUNTY NEW CASTLE	BRIDGE NO. BR1-458 / DESIGNED BY: MRM / CHECKED BY: DJG	SCOTT RUN STREAM RESTORATION CROSS SECTIONS	SHEET NO. 617 / TOTAL SHTS. 875







SR-014

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 10 20 30 FEET

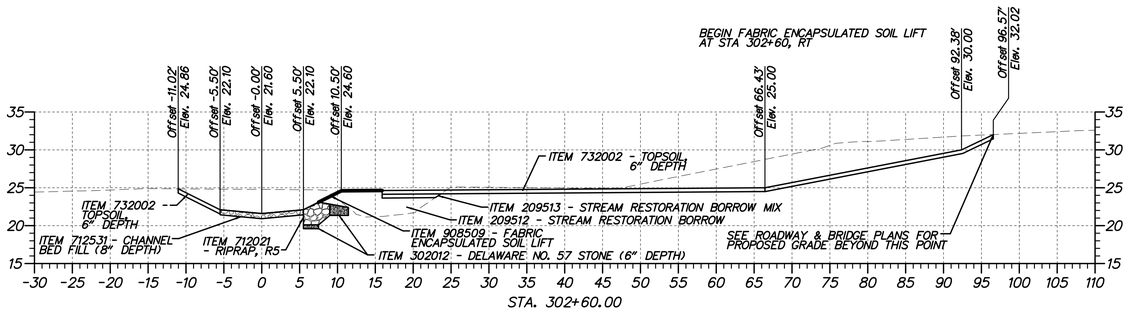
US 301, SR 896 TO SR 1

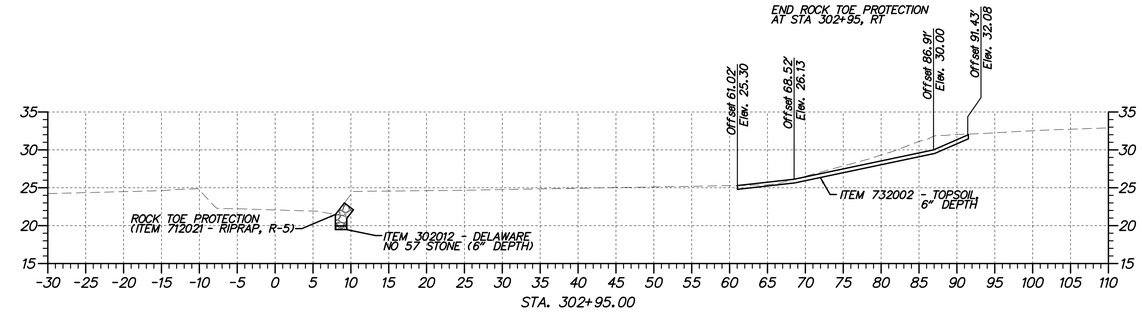
CONTRACT	BRIDGE NO.	BR1-458
T200911308	DESIGNED BY: MRM	
COUNTY		
NEW CASTLE	CHECKED BY: DJG	

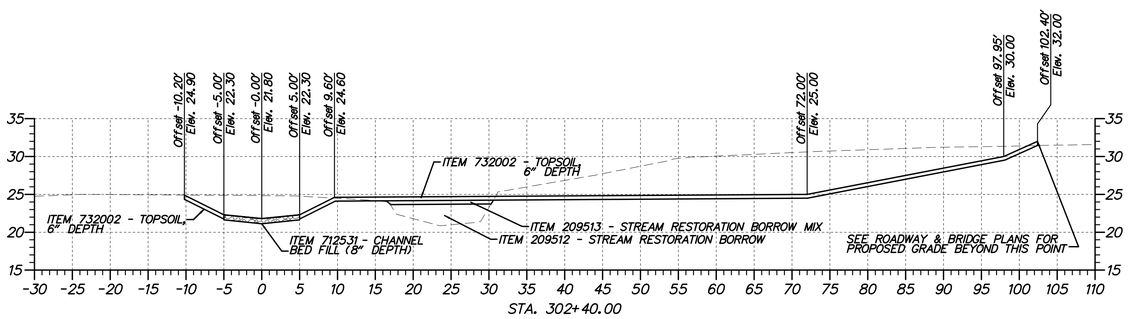
SCOTT RUN STREAM RESTORATION CROSS SECTIONS

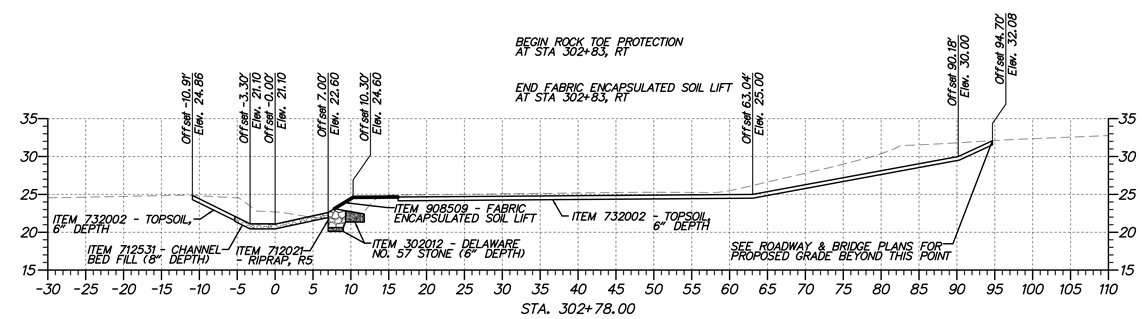
SHEET NO. 618

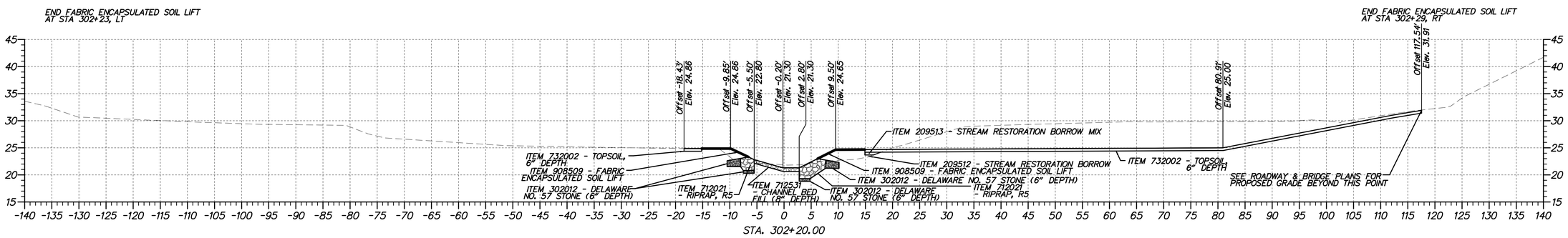
TOTAL SHTS. 875











SR-015

DELAWARE DEPARTMENT OF TRANSPORTATION	ADDENDUMS / REVISIONS	SCALE 0 10 20 30 FEET	US 301, SR 896 TO SR 1	CONTRACT T200911308 / COUNTY NEW CASTLE	BRIDGE NO. BR1-458 / DESIGNED BY: MRM / CHECKED BY: DJG	SCOTT RUN STREAM RESTORATION CROSS SECTIONS

SHEET NO. 619
TOTAL SHTS. 875

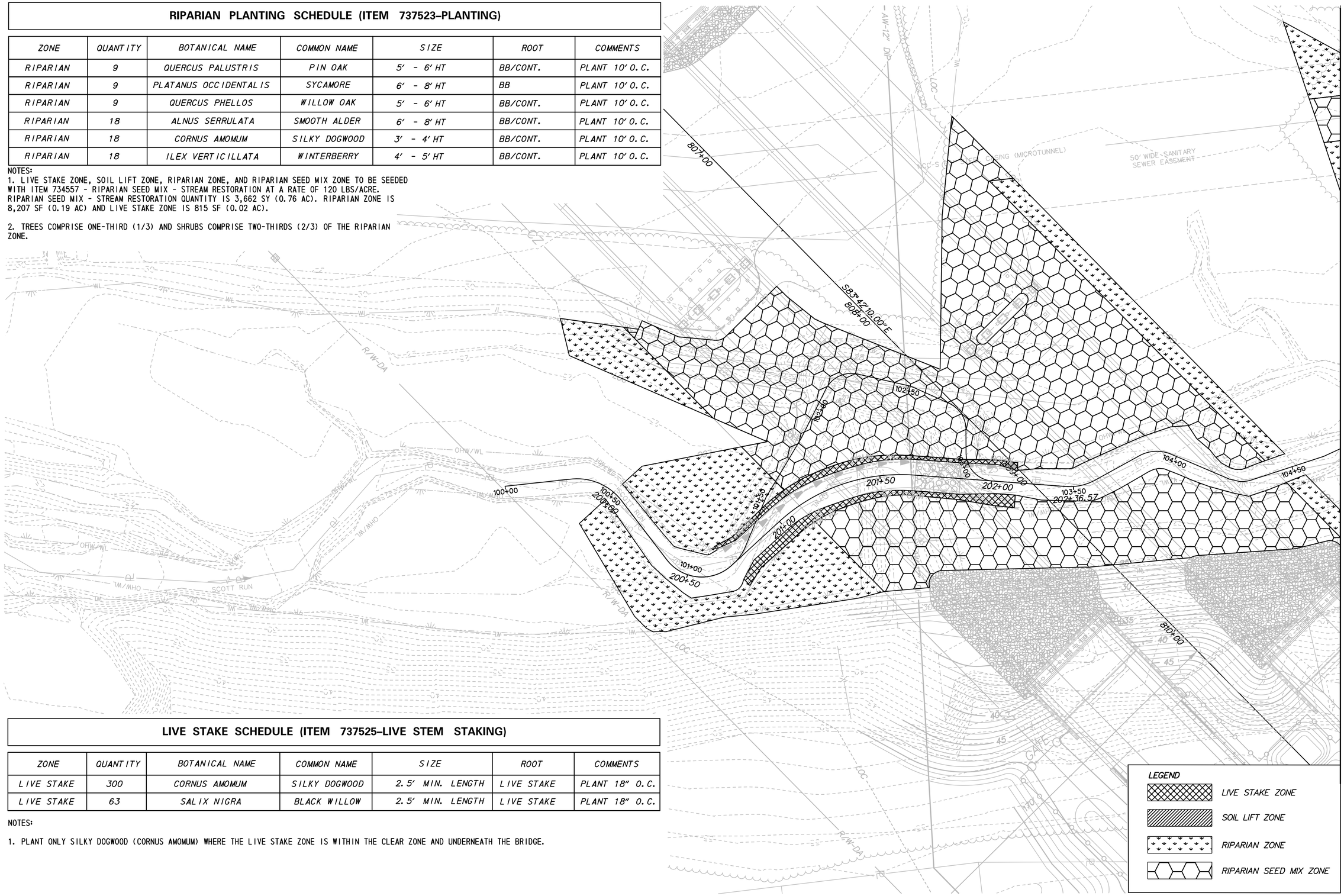
RIPARIAN PLANTING SCHEDULE (ITEM 737523–PLANTING)

ZONE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
RIPARIAN	9	QUERCUS PALUSTRIS	PIN OAK	5′ - 6′ HT	BB/CONT.	PLANT 10′ O.C.
RIPARIAN	9	PLATANUS OCCIDENTALIS	SYCAMORE	6′ - 8′ HT	BB	PLANT 10′ O.C.
RIPARIAN	9	QUERCUS PHELLOS	WILLOW OAK	5′ - 6′ HT	BB/CONT.	PLANT 10′ O.C.
RIPARIAN	18	ALNUS SERRULATA	SMOOTH ALDER	6′ - 8′ HT	BB/CONT.	PLANT 10′ O.C.
RIPARIAN	18	CORNUS AMOMUM	SILKY DOGWOOD	3′ - 4′ HT	BB/CONT.	PLANT 10′ O.C.
RIPARIAN	18	ILEX VERTICILLATA	WINTERBERRY	4′ - 5′ HT	BB/CONT.	PLANT 10′ O.C.

NOTES:

1. LIVE STAKE ZONE, SOIL LIFT ZONE, RIPARIAN ZONE, AND RIPARIAN SEED MIX ZONE TO BE SEEDED WITH ITEM 734557 - RIPARIAN SEED MIX - STREAM RESTORATION AT A RATE OF 120 LBS/ACRE. RIPARIAN SEED MIX - STREAM RESTORATION QUANTITY IS 3,662 SY (0.76 AC). RIPARIAN ZONE IS 8,207 SF (0.19 AC) AND LIVE STAKE ZONE IS 815 SF (0.02 AC).

2. TREES COMPRISE ONE-THIRD (1/3) AND SHRUBS COMPRISE TWO-THIRDS (2/3) OF THE RIPARIAN ZONE.



MATCH LINE STA. 104 + 73 (SHEET SR–017)

LEGEND

- LIVE STAKE ZONE
- SOIL LIFT ZONE
- RIPARIAN ZONE
- RIPARIAN SEED MIX ZONE

LIVE STAKE SCHEDULE (ITEM 737525–LIVE STEM STAKING)

ZONE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
LIVE STAKE	300	CORNUS AMOMUM	SILKY DOGWOOD	2.5′ MIN. LENGTH	LIVE STAKE	PLANT 18″ O.C.
LIVE STAKE	63	SALIX NIGRA	BLACK WILLOW	2.5′ MIN. LENGTH	LIVE STAKE	PLANT 18″ O.C.

NOTES:

1. PLANT ONLY SILKY DOGWOOD (CORNUS AMOMUM) WHERE THE LIVE STAKE ZONE IS WITHIN THE CLEAR ZONE AND UNDERNEATH THE BRIDGE.

SR–016

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT T200911308

COUNTY NEW CASTLE

BRIDGE NO. BR1–460 N&S

DESIGNED BY: MRM

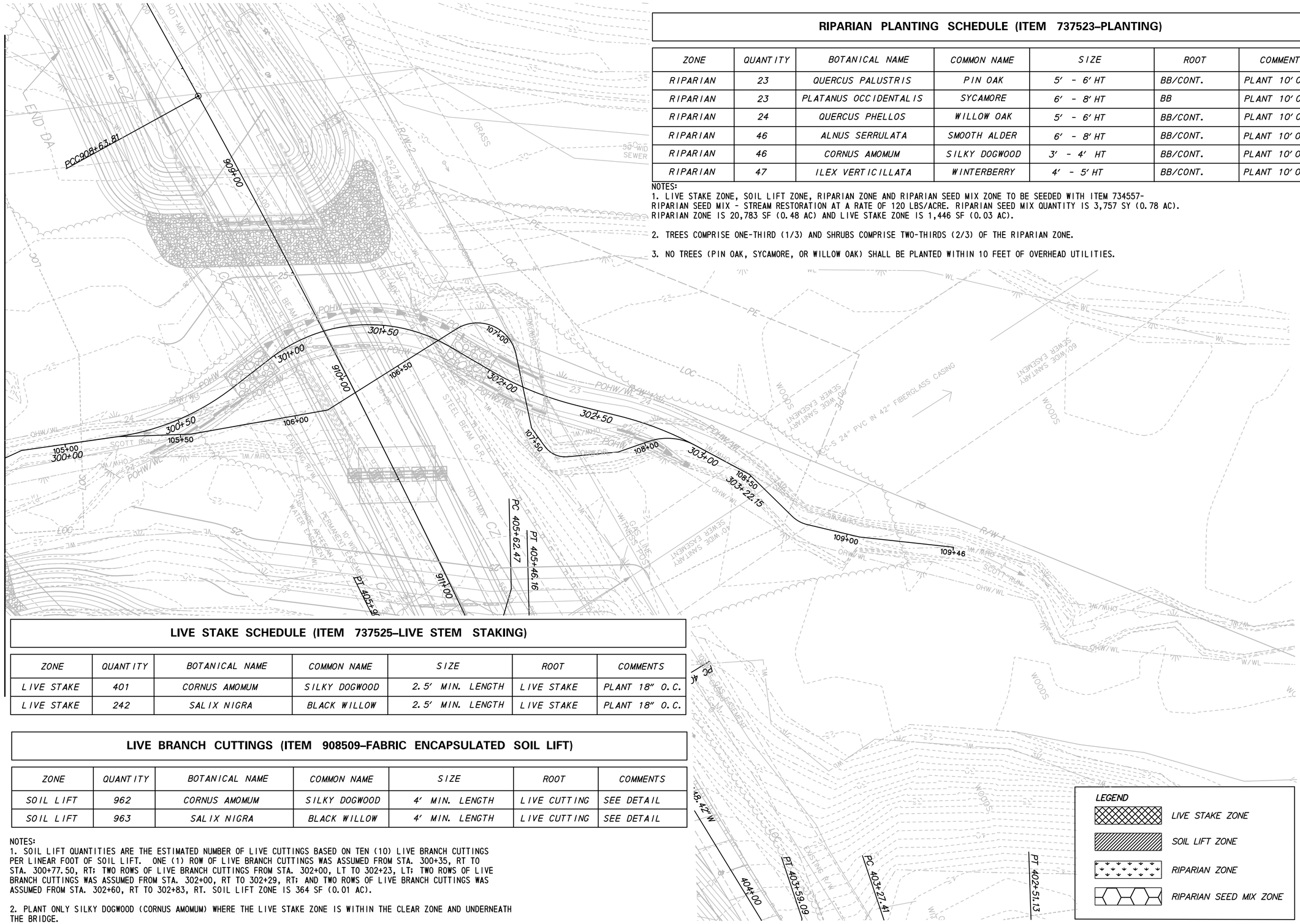
CHECKED BY: DJG

SCOTT RUN STREAM RESTORATION LANDSCAPE PLAN

SHEET NO. 620

TOTAL SHTS. 875

MATCH LINE STA. 104+73 (SHEET SR-016)



RIPARIAN PLANTING SCHEDULE (ITEM 737523–PLANTING)

ZONE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
RIPARIAN	23	QUERCUS PALUSTRIS	PIN OAK	5′ - 6′ HT	BB/CONT.	PLANT 10′ O.C.
RIPARIAN	23	PLATANUS OCCIDENTALIS	SYCAMORE	6′ - 8′ HT	BB	PLANT 10′ O.C.
RIPARIAN	24	QUERCUS PHELLOS	WILLOW OAK	5′ - 6′ HT	BB/CONT.	PLANT 10′ O.C.
RIPARIAN	46	ALNUS SERRULATA	SMOOTH ALDER	6′ - 8′ HT	BB/CONT.	PLANT 10′ O.C.
RIPARIAN	46	CORNUS AMOMUM	SILKY DOGWOOD	3′ - 4′ HT	BB/CONT.	PLANT 10′ O.C.
RIPARIAN	47	ILEX VERTICILLATA	WINTERBERRY	4′ - 5′ HT	BB/CONT.	PLANT 10′ O.C.

NOTES:
1. LIVE STAKE ZONE, SOIL LIFT ZONE, RIPARIAN ZONE AND RIPARIAN SEED MIX ZONE TO BE SEEDED WITH ITEM 734557-RIPARIAN SEED MIX - STREAM RESTORATION AT A RATE OF 120 LBS/ACRE. RIPARIAN SEED MIX QUANTITY IS 3,757 SY (0.78 AC). RIPARIAN ZONE IS 20,783 SF (0.48 AC) AND LIVE STAKE ZONE IS 1,446 SF (0.03 AC).

2. TREES COMPRISE ONE-THIRD (1/3) AND SHRUBS COMPRISE TWO-THIRDS (2/3) OF THE RIPARIAN ZONE.

3. NO TREES (PIN OAK, SYCAMORE, OR WILLOW OAK) SHALL BE PLANTED WITHIN 10 FEET OF OVERHEAD UTILITIES.

LIVE STAKE SCHEDULE (ITEM 737525–LIVE STEM STAKING)

ZONE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
LIVE STAKE	401	CORNUS AMOMUM	SILKY DOGWOOD	2.5′ MIN. LENGTH	LIVE STAKE	PLANT 18″ O.C.
LIVE STAKE	242	SALIX NIGRA	BLACK WILLOW	2.5′ MIN. LENGTH	LIVE STAKE	PLANT 18″ O.C.

LIVE BRANCH CUTTINGS (ITEM 908509–FABRIC ENCAPSULATED SOIL LIFT)

ZONE	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS
SOIL LIFT	962	CORNUS AMOMUM	SILKY DOGWOOD	4′ MIN. LENGTH	LIVE CUTTING	SEE DETAIL
SOIL LIFT	963	SALIX NIGRA	BLACK WILLOW	4′ MIN. LENGTH	LIVE CUTTING	SEE DETAIL

NOTES:
1. SOIL LIFT QUANTITIES ARE THE ESTIMATED NUMBER OF LIVE CUTTINGS BASED ON TEN (10) LIVE BRANCH CUTTINGS PER LINEAR FOOT OF SOIL LIFT. ONE (1) ROW OF LIVE BRANCH CUTTINGS WAS ASSUMED FROM STA. 300+35, RT TO STA. 300+77.50, RT; TWO ROWS OF LIVE BRANCH CUTTINGS FROM STA. 302+00, LT TO 302+23, LT; TWO ROWS OF LIVE BRANCH CUTTINGS WAS ASSUMED FROM STA. 302+00, RT TO 302+29, RT; AND TWO ROWS OF LIVE BRANCH CUTTINGS WAS ASSUMED FROM STA. 302+60, RT TO 302+83, RT. SOIL LIFT ZONE IS 364 SF (0.01 AC).

2. PLANT ONLY SILKY DOGWOOD (CORNUS AMOMUM) WHERE THE LIVE STAKE ZONE IS WITHIN THE CLEAR ZONE AND UNDERNEATH THE BRIDGE.

LEGEND
- LIVE STAKE ZONE
- SOIL LIFT ZONE
- RIPARIAN ZONE
- RIPARIAN SEED MIX ZONE

SR-017

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE 0 20 40 60 FEET

US 301, SR 896 TO SR 1

CONTRACT	BRIDGE NO.	BR1-458
T200911308	DESIGNED BY: MRM	
COUNTY		
NEW CASTLE	CHECKED BY: DJG	

SCOTT RUN STREAM RESTORATION LANDSCAPE PLAN

SHEET NO. 621
TOTAL SHTS. 875