THE STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION

WETLAND IMPACT PLANS

FEDERAL AID PROJECT
X-A004(156)
NH PROJECT NO. 29486
SOUTH BENNINGTON ROAD OVER RUSSELL BROOK

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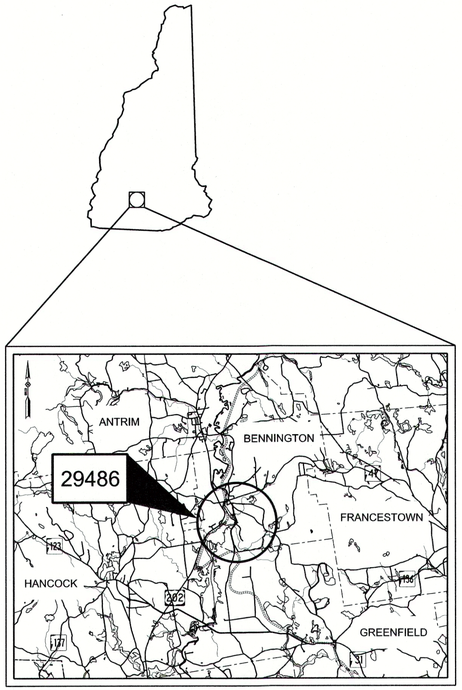
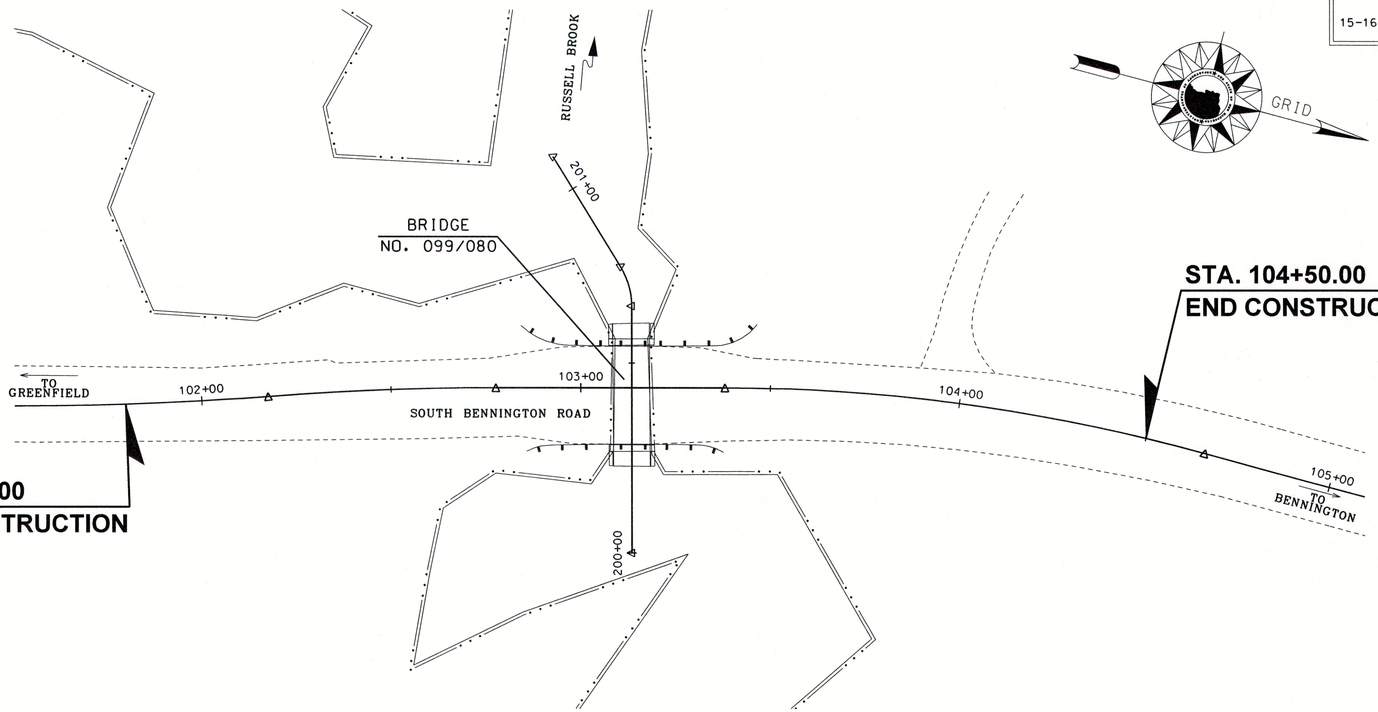


LOCATION MAP

2 0 2 4

GRAPHIC SCALE: 1"= 2 MILE



TOWN OF BENNINGTON

COUNTY OF HILLSBOROUGH

SCALE: 1" = 20'

DRAWN BY TJG DATE 04/2021

CHECKED BY DEM DATE 04/2021

PLANS PREPARED BY:

STANTEC CONSULTING SERVICES, INC

5 DARTMOUTH DR, SUITE 200, AUBURN, NH 03032
TEL (603) 669-8672 FAX (603) 669-7636

STAMP:

WETLANDS WERE DELINEATED BY STANTEC ON MAY 4, 2018. THE WETLAND DELINEATION WAS COMPLETED IN ACCORDANCE WITH THE CRITERIA DESCRIBED IN THE U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION MANUAL TECHNICAL REPORT Y-87-1 (JANUARY, 1987) AND THE REGIONAL SUPPLEMENT FOR THE NORTHCENTRAL AND NORTHEAST REGION (JANUARY, 2012) AND MEETS THE CRITERIA FOR WETLAND DELINEATION IN ACCORDANCE WITH THE NH DES ADMINISTRATIVE RULES ENV-WT 301.01.

NHDOT THE STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL:

DIRECTOR OF PROJECT DEVELOPMENT — DATE

APPROVED:

ASSISTANT COMMISSIONER AND CHIEF ENGINEER — DATE

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
-	29486	1	16

GENERAL

EDGE OF PAVEMENT — PROPOSED ROADWAY
TRAVELED WAY — existing roadway — (pavement removed outside slope lines)

DRIVEWAYS — (label surface type)

BUILDINGS — (building to be removed)
(label house or type of building)

FOUNDATION — (label type)

LEACH FIELD — leach field

BRIDGE CROSSINGS — STREAM — OVERPASS

STEPS AND WALK — (label type)

INTERMITTENT WATER COURSE

SHORE LINE — river/stream — pond — (label name of water body)

POTENTIAL WET AREA SYMBOL

BRUSH OR WOODS LINE

TREES (PLANS) — (deciduous) (coniferous) (stump)

TREE OR STUMP (CROSS-SECTIONS) — (show station, circumference in feet & type)

HEDGE — (label type)

MONITORING WELL — mon W

WELL — W

FLAG POLE — fp

ORIGINAL GROUND (TYPICALS)

ROCK OUTCROP

ROCK LINE (TYPICALS & SECTIONS ONLY)

GUARDRAIL (label type) — existing — PROPOSED — bgr — cgr

JERSEY BARRIER

CURB (LABEL TYPE)

STONE WALL

RETAINING WALL (LABEL TYPE) — (points toward retained ground)

FENCE (LABEL TYPE)

SIGNS — (single post) — (double post)

GAS PUMP — gp

FUEL TANK (ABOVE GROUND) — ft — (label size & type)

STORAGE TANK FILLER CAP — fc

SEPTIC TANK — S

GRAVE — gr

MAILBOX — mb

VENT PIPE — vp

SATELLITE DISH ANTENNA — da

PHONE — ph

GROUND LIGHT/LAMP POST — gl — lp

BORING LOCATION — B

TEST PIT — TP

INTERSTATE NUMBERED HIGHWAY — 293

UNITED STATES NUMBERED HIGHWAY — 3

STATE NUMBERED HIGHWAY — 102

SHORELAND - WETLAND

WETLAND DESIGNATION AND TYPE — 2 PUB2E

DELINEATED WETLAND — DW
ORDINARY HIGH WATER — OHW
TOP OF BANK — TOB
TOP OF BANK & ORDINARY HIGH WATER — TOBOHW
NORMAL HIGH WATER — NHW
WIDTH AT BANK FULL — WBF
PRIME WETLAND — PWET
PRIME WETLAND 100' BUFFER — PWET100
NON-JURISDICTIONAL DRAINAGE AREA — NJDA
COWARDIN DISTINCTION LINE — CDL
TIDAL BUFFER ZONE — TBZ
DEVELOPED TIDAL BUFFER ZONE — DTBZ
HIGHEST OBSERVABLE TIDE LINE — HOTL
MEAN HIGH WATER — MHW
MEAN LOW WATER — MLW
VERNAL POOL — VP
SPECIAL AQUATIC SITE — SAS
REFERENCE LINE — REF
WATER FRONT BUFFER — WB50
NATURAL WOODLAND BUFFER — NWB150
PROTECTED SHORELAND — PS250
INVASIVE SPECIES LABEL — I.S. I — I.S. II
INVASIVE SPECIES — INV

FLOODPLAIN / FLOODWAY

500 YEAR FLOODPLAIN BOUNDARY — FP500
100 YEAR FLOODPLAIN BOUNDARY — FP100
FLOODWAY — FW

ENGINEERING

CONSTRUCTION BASELINE — 30 31 32

PC. PT. POT (ON CONST BASELINE)

PI (IN CONSTRUCTION BASELINES)

INTERSECTION OR EQUATION OF TWO LINES

ORIGINAL GROUND LINE (PROFILES AND CROSS-SECTIONS)

PROFILE GRADE LINE (PROFILES AND CROSS-SECTIONS)

CLEARING LINE — SLOPE LINE

SLOPE LINE

SLOPE LINE (FILL)

SLOPE LINE (CUT)

PROFILES AND CROSS SECTIONS:
ORIGINAL GROUND ELEVATION (LEFT) — 72.5
FINISHED GRADE ELEVATION (RIGHT) — 79.14

SHEET 1 OF 2

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11-21-2014	29486sym01	29486	2	16

DRAINAGE

MANHOLE

CATCH BASIN — cb

DROP INLET — di

(existing) (PROPOSED)

DRAINAGE PIPE (existing) — (label size & type)

DRAINAGE PIPE (PROPOSED)

UNDERDRAIN (existing) W/ FLUSHING BASIN — fb — (label size & type)

UNDERDRAIN (PROPOSED) W/ FLUSHING BASIN

show direction of flow

HEADER (existing & PROPOSED) — (with stone outlet protection)

END SECTION (existing & PROPOSED) — METAL or PLASTIC — RCP

OPEN DITCH (PROPOSED)

EROSION CONTROL/ STONE SLOPE PROTECTION

BOUNDARIES / RIGHT-OF-WAY

RIGHT-OF-WAY LINE — (label type)

RR RIGHT-OF-WAY LINE

PROPERTY LINE

PROPERTY LINE (COMMON OWNER) — Z

TOWN LINE — BOW / CONCORD

COUNTY LINE — COOS / GRAFTON

STATE LINE — MAINE / NEW HAMPSHIRE

NATIONAL FOREST

CONSERVATION LAND — LC

BENCH MARK / SURVEY DISK

BOUND — bnd — (PROPOSED)

STATE LINE/ TOWN LINE MONUMENT — S/L — T/L

NHDOT PROJECT MARKER

IRON PIPE OR PIN — ip

DRILL HOLE IN ROCK — dh

TAX MAP AND LOT NUMBER — 156 14 — 1642/341 — 6.80 Ac.±

PROPERTY PARCEL NUMBER — 12

HISTORIC PROPERTY — H

UTILITIES

existing PROPOSED

TELEPHONE POLE

POWER POLE

JOINT OCCUPANCY

MISCELLANEOUS/UNKNOWN POLE

GUY POLE OR PUSH BRACE

(plot point at face not center of symbol)

LIGHT POLE

LIGHT ON POWER POLE

LIGHT ON JOINT POLE

POLE STATUS:
REMOVE, LEAVE, PROPOSED, OR TEMPORARY
AS APPLICABLE e.g.:

R L — P+04 25.0' — T+04 25.0'

RAILROAD — (label ownership)

RAILROAD SIGN

RAILROAD SIGNAL

UTILITY JUNCTION BOX — jb — JB

OVERHEAD WIRE — OW — (label type)

UNDERGROUND UTILITIES

WATER (on existing lines label size, type and note if abandoned) — W — PW

SEWER — S — PS

TELEPHONE — T — PT

ELECTRIC — E — PE

GAS — G — PG

LIGHTING — L — PL

INTELLIGENT TRANSPORTATION SYSTEM — ITS

FIBER OPTIC — FO — PFO

WATER SHUT OFF

GAS SHUT OFF

HYDRANT

MANHOLES

SEWER — MHS

TELEPHONE — MHT

ELECTRICAL — MHE

GAS — MHG

UNKNOWN — U

TRAFFIC SIGNALS / ITS

existing PROPOSED

MAST ARM (existing) — 30' MA (NOTE ANGLE FROM ℄)

OPTICOM RECEIVER

OPTICOM STROBE

TRAFFIC SIGNAL

PEDESTAL WITH PEDESTRIAN SIGNAL HEADS AND PUSH BUTTON UNIT

SIGNAL CONDUIT — C — PC

CONTROLLER CABINET — cc — CC

METER PEDESTAL — mp — MP

PULL BOX — pb — PB

LOOP DETECTOR (QUADRUPOLE) — (label size)

LOOP DETECTOR (RECTANGULAR) — (label size)

CAMERA POLE (CCTV)

FIBER OPTIC DELINEATOR — fod — FOD

FIBER OPTIC SPLICE VAULT — SVF

ITS EQUIPMENT CABINET — its — ITS

VARIABLE SPEED LIMIT SIGN

DYNAMIC MESSAGE SIGN

ROAD AND WEATHER INFO SYSTEM

CONSTRUCTION NOTES

CURB MARK NUMBER - BITUMINOUS — B-1

CURB MARK NUMBER - GRANITE — G-1

CLEARING AND GRUBBING AREA — A

DRAINAGE NOTE — 1

EROSION CONTROL NOTE — A

FENCING NOTE — A

GUARDRAIL NOTE — 1

ITS NOTE — 1

LIGHTING NOTE — A

TRAFFIC SIGNAL NOTE — 1

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

STANDARD SYMBOLS

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	29486sym02	29486	3	16

EROSION CONTROL STRATEGIES

1. ENVIRONMENTAL COMMITMENTS:
   - 1.1. THESE GUIDELINES DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH ANY CONTRACT PROVISIONS, OR APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
   - 1.2. THIS PROJECT WILL BE SUBJECT TO THE US EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER CONSTRUCTION GENERAL PERMIT AS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THIS PROJECT IS SUBJECT TO REQUIREMENTS IN THE MOST RECENT CONSTRUCTION GENERAL PERMIT (CGP).
   - 1.3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NHDES WETLAND PERMIT, THE US ARMY CORPS OF ENGINEERS PERMIT, WATER QUALITY CERTIFICATION AND THE SPECIAL ATTENTION ITEMS INCLUDED IN THE CONTRACT DOCUMENTS.
   - 1.4. ALL STORM WATER, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION (DECEMBER 2008) (BMP MANUAL) AVAILABLE FROM THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES).
   - 1.5. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17, AND ALL, PUBLISHED NHDES ALTERATION OF TERRAIN ENV-WQ 1500 REQUIREMENTS (HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/LEGAL/RULES/INDEX.HTM)
   - 1.6. THE CONTRACTOR IS DIRECTED TO REVIEW AND COMPLY WITH SECTION 107.1 OF THE CONTRACT AS IT REFERS TO SPILLAGE, AND ALSO WITH REGARDS TO EROSION, POLLUTION, AND TURBIDITY PRECAUTIONS.

2. STANDARD EROSION CONTROL SEQUENCING APPLICABLE TO ALL CONSTRUCTION PROJECTS:
   - 2.1. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. PERIMETER CONTROLS AND STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AS SHOWN IN THE BMP MANUAL AND AS DIRECTED BY THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARER.
   - 2.2. EROSION, SEDIMENTATION CONTROL MEASURES AND INFILTRATION BASINS SHALL BE CLEANED, REPLACED AND AUGMENTED AS NECESSARY TO PREVENT SEDIMENTATION BEYOND PROJECT LIMITS THROUGHOUT THE PROJECT DURATION.
   - 2.3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 645 OF THE NHDOT SPECIFICATIONS FOR ROAD AND BRIDGES CONSTRUCTION.
   - 2.4. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
     - (A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
     - (B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
     - (C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED;
     - (D) TEMPORARY SLOPE STABILIZATION CONFORMING TO TABLE 1 HAS BEEN PROPERLY INSTALLED
   - 2.5. ALL STOCKPILES SHALL BE CONTAINED WITH A PERIMETER CONTROL. IF THE STOCKPILE IS TO REMAIN UNDISTURBED FOR MORE THAN 14 DAYS, MULCHING WILL BE REQUIRED.
   - 2.6. A WATER TRUCK SHALL BE AVAILABLE TO CONTROL EXCESSIVE DUST AT THE DIRECTION OF THE CONTRACT ADMINISTRATOR.
   - 2.7. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN UNTIL THE AREA HAS BEEN PERMANENTLY STABILIZED.
   - 2.8. CONSTRUCTION PERFORMED ANY TIME BETWEEN NOVEMBER 30" AND MAY 1" OF ANY YEAR SHALL BE CONSIDERED WINTER CONSTRUCTION AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
     - (A) ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15", OR WHICH ARE DISTURBED AFTER OCTOBER 15", SHALL BE STABILIZED IN ACCORDANCE WITH TABLE 1.
     - (B) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15", OR WHICH ARE DISTURBED AFTER OCTOBER 15", SHALL BE STABILIZED TEMPORARILY WITH STONE OR IN ACCORDANCE WITH TABLE 1.
     - (C) AFTER NOVEMBER 30" INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE SEASON, SHALL BE PROTECTED IN ACCORDANCE WITH TABLE 1.
     - (D) WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE PROJECT IS WITHOUT STABILIZATION AT ONE TIME, UNLESS A WINTER CONSTRUCTION PLAN HAS BEEN APPROVED BY NHDOT THAT MEETS THE REQUIREMENTS OF ENV-WQ 1505.02 AND ENV-WQ 1505.05.
     - (E) A SWPPP AMENDMENT SHALL BE SUBMITTED TO THE DEPARTMENT, FOR APPROVAL, ADDRESSING COLD WEATHER STABILIZATION (ENV-WQ 1505.05) AND INCLUDING THE REQUIREMENTS OF NO LESS THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK SCHEDULED AFTER NOVEMBER 30".

GENERAL CONSTRUCTION PLANNING AND SELECTION OF STRATEGIES TO CONTROL EROSION AND SEDIMENT ON HIGHWAY CONSTRUCTION PROJECTS

3. PLAN ACTIVITIES TO ACCOUNT FOR SENSITIVE SITE CONDITIONS:
   - 3.1. CLEARLY FLAG AREAS TO BE PROTECTED IN THE FIELD AND PROVIDE CONSTRUCTION BARRIERS TO PREVENT TRAFFICKING OUTSIDE OF WORK AREAS.
   - 3.2. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS.
   - 3.3. PROTECT AND MAXIMIZE EXISTING NATIVE VEGETATION AND NATURAL FOREST BUFFERS BETWEEN CONSTRUCTION ACTIVITY AND SENSITIVE AREAS.
   - 3.4. WHEN WORK IS PERFORMED IN AND NEAR WATER COURSES, STREAM FLOW DIVERSION METHODS SHALL BE IMPLEMENTED PRIOR TO ANY EXCAVATION OR FILLING.
   - 3.5. WHEN WORK IS PERFORMED WITHIN 50 FEET OF SURFACE WATERS (WETLAND, OPEN WATER OR FLOWING WATER), PERIMETER CONTROL SHALL BE ENHANCED CONSISTENT WITH SECTION 2.1.2.1. OF THE 2012 NPDES CONSTRUCTION GENERAL PERMIT.

4. MINIMIZE THE AMOUNT OF EXPOSED SOIL:
   - 4.1. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS. MINIMIZE THE AREA OF EXPOSED SOIL AT ANY ONE TIME. PHASING SHALL BE USED TO REDUCE THE AMOUNT AND DURATION OF SOIL EXPOSED TO THE ELEMENTS AND VEHICLE TRACKING.
   - 4.2. UTILIZE TEMPORARY MULCHING OR PROVIDE ALTERNATE TEMPORARY STABILIZATION ON EXPOSED SOILS IN ACCORDANCE WITH TABLE 1.
   - 4.3. THE MAXIMUM AMOUNT OF DISTURBED EARTH SHALL NOT EXCEED A TOTAL OF 5 ACRES FROM MAY 1" THROUGH NOVEMBER 30", OR EXCEED ONE ACRE DURING WINTER MONTHS, UNLESS THE CONTRACTOR DEMONSTRATES TO THE DEPARTMENT THAT THE ADDITIONAL AREA OF DISTURBANCE IS NECESSARY TO MEET THE CONTRACTORS CRITICAL PATH METHOD SCHEDULE (CPM), AND THE CONTRACTOR HAS ADEQUATE RESOURCES AVAILABLE TO ENSURE THAT ENVIRONMENTAL COMMITMENTS WILL BE MET.

5. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT:
   - 5.1. DIVERT OFF SITE RUNOFF OR CLEAN WATER AWAY FROM THE CONSTRUCTION ACTIVITY TO REDUCE THE VOLUME THAT NEEDS TO BE TREATED ON SITE.
   - 5.2. DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM DISTURBED AREAS, SLOPES, AND AROUND ACTIVE WORK AREAS AND TO A STABILIZED OUTLET LOCATION.
   - 5.3. CONSTRUCT IMPERMEABLE BARRIERS AS NECESSARY TO COLLECT OR DIVERT CONCENTRATED FLOWS FROM WORK OR DISTURBED AREAS.
   - 5.4. STABILIZE, TO APPROPRIATE ANTICIPATED VELOCITIES, CONVEYANCE CHANNELS OR PUMPING SYSTEMS NEEDED TO CONVEY CONSTRUCTION STORMWATER TO BASINS AND DISCHARGE LOCATIONS PRIOR TO USE.
   - 5.5. DIVERT OFF-SITE WATER THROUGH THE PROJECT IN AN APPROPRIATE MANNER SO NOT TO DISTURB THE UPSTREAM OR DOWNSTREAM SOILS, VEGETATION OR HYDROLOGY BEYOND THE PERMITTED AREA.

6. PROTECT SLOPES:
   - 6.1. INTERCEPT AND DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED AND NEWLY ESTABLISHED AREAS AND SLOPES TO A STABILIZED OUTLET OR CONVEYANCE.
   - 6.2. CONSIDER HOW GROUNDWATER SEEPAGE ON CUT SLOPES MAY IMPACT SLOPE STABILITY AND INCORPORATE APPROPRIATE MEASURES TO MINIMIZE EROSION.
   - 6.3. CONVEY STORMWATER DOWN THE SLOPE IN A STABILIZED CHANNEL OR SLOPE DRAIN.
   - 6.4. THE OUTER FACE OF THE FILL SLOPE SHOULD BE IN A LOOSE RUFFLED CONDITION PRIOR TO TURF ESTABLISHMENT. TOPSOIL OR HUMUS LAYERS SHALL BE TRACKED UP AND DOWN THE SLOPE, DISKED, HARROWED, DRAGGED WITH A CHAIN OR MAT, MACHINE-RAKED, OR HAND-WORKED TO PRODUCE A RUFFLED SURFACE.

7. ESTABLISH STABILIZED CONSTRUCTION EXITS:
   - 7.1. INSTALL AND MAINTAIN CONSTRUCTION EXITS, ANYWHERE TRAFFIC LEAVES A CONSTRUCTION SITE ONTO A PUBLIC RIGHT-OF-WAY.
   - 7.2. SWEEP ALL CONSTRUCTION RELATED DEBRIS AND SOIL FROM THE ADJACENT PAVED ROADWAYS AS NECESSARY.

8. PROTECT STORM DRAIN INLETS:
   - 8.1. DIVERT SEDIMENT LADEN WATER AWAY FROM INLET STRUCTURES TO THE EXTENT POSSIBLE.
   - 8.2. INSTALL SEDIMENT BARRIERS AND SEDIMENT TRAPS AT INLETS TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
   - 8.3. CLEAN CATCH BASINS, DRAINAGE PIPES, AND CULVERTS IF SIGNIFICANT SEDIMENT IS DEPOSITED.
   - 8.4. DROP INLET SEDIMENT BARRIERS SHOULD NEVER BE USED AS THE PRIMARY MEANS OF SEDIMENT CONTROL AND SHOULD ONLY BE USED TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION TO STRUCTURES AND DOWN-GRADIENT SENSITIVE RECEPTORS.

9. SOIL STABILIZATION:
   - 9.1. WITHIN THREE DAYS OF THE LAST ACTIVITY IN AN AREA, ALL EXPOSED SOIL AREAS, WHERE CONSTRUCTION ACTIVITIES ARE COMPLETE, SHALL BE STABILIZED.
   - 9.2. IN ALL AREAS, TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED IN ACCORDANCE WITH THE STABILIZATION REQUIREMENTS (SECTION 2.2) OF THE 2012 CGP. (SEE TABLE 1 FOR GUIDANCE ON THE SELECTION OF TEMPORARY SOIL STABILIZATION MEASURES.)
   - 9.3. EROSION CONTROL SEED MIX SHALL BE SOWN IN ALL INACTIVE CONSTRUCTION AREAS THAT WILL NOT BE PERMANENTLY SEEDED WITHIN TWO WEEKS OF DISTURBANCE AND PRIOR TO SEPTEMBER 15, OF ANY GIVEN YEAR, IN ORDER TO ACHIEVE VEGETATIVE STABILIZATION PRIOR TO THE END OF THE GROWING SEASON.
   - 9.4. SOIL TACKIFIERS MAY BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND REAPPLIED AS NECESSARY TO MINIMIZE SOIL AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.

10. RETAIN SEDIMENT ON-SITE AND CONTROL DEWATERING PRACTICES:
    - 10.1. TEMPORARY SEDIMENT BASINS (CGP-SECTION 2.1.3.2) OR SEDIMENT TRAPS (ENV-WQ 1506.10) SHALL BE SIZED TO RETAIN, ON SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER. TEMPORARY SEDIMENT BASINS USED TO TREAT STORMWATER RUNOFF FROM AREAS GREATER THAN 5-ACRES OF DISTURBANCE SHALL BE SIZED TO ALSO CONTROL STORMWATER RUNOFF FROM A 10-YEAR 24 HOUR STORM EVENT. ON-SITE RETENTION OF THE 10-YEAR 24-HOUR EVENT IS NOT REQUIRED.
    - 10.2. CONSTRUCT AND STABILIZE DEWATERING INFILTRATION BASINS PRIOR TO ANY EXCAVATION THAT MAY REQUIRE DEWATERING.
    - 10.3. TEMPORARY SEDIMENT BASINS OR TRAPS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.

11. ADDITIONAL EROSION AND SEDIMENT CONTROL GENERAL PRACTICES:
    - 11.1. USE TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, AND PERMANENT VEGETATIVE COVER TO REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BUILDUP. APPLY WATER, OR OTHER DUST INHIBITING AGENTS OR TACKIFIERS, AS APPROVED BY THE NHDES.
    - 11.2. ALL STOCKPILES SHALL BE CONTAINED WITH TEMPORARY PERIMETER CONTROLS. INACTIVE SOIL STOCKPILES SHOULD BE PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY EROSION CONTROL SEED MIX AND MULCH, SOIL BINDER) OR COVERED WITH ANCHORED TARPS.
    - 11.3. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH SECTION 645 OF NHDOT SPECIFICATIONS, WEEKLY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.25 IN. OF RAIN PER 24-HOUR PERIOD. EROSION AND SEDIMENT CONTROL MEASURES WILL ALSO BE INSPECTED IN ACCORDANCE WITH THE GUIDANCE MEMO FROM THE NHDES CONTAINED WITHIN THE CONTRACT PROPOSAL AND THE EPA CONSTRUCTION GENERAL PERMIT.
    - 11.4. THE CONTRACTOR SHOULD UTILIZE STORM DRAIN INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO THE PERMANENT STABILIZATION OF THE CONTRIBUTING DISTURBED AREA.
    - 11.5. PERMANENT STABILIZATION MEASURES WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE CONSTRUCTION PLANS TO STABILIZE AREAS. VEGETATIVE STABILIZATION SHALL NOT BE CONSIDERED PERMANENTLY STABILIZED UNTIL VEGETATIVE GROWTH COVERS AT LEAST 85% OF THE DISTURBED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER PROJECT COMPLETION.
    - 11.6. CATCH BASINS: CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER ANY EXISTING CATCH BASINS DURING CONSTRUCTION. THE CONTRACTOR SHALL PLACE TEMPORARY STONE INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE THAT ARE SUBJECT TO SEDIMENT CONTAMINATION.
    - 11.7. TEMPORARY AND PERMANENT DITCHES SHALL BE CONSTRUCTED, STABILIZED AND MAINTAINED IN A MANNER THAT WILL MINIMIZE SCOUR. TEMPORARY AND PERMANENT DITCHES SHALL BE DIRECTED TO DRAIN TO SEDIMENT BASINS OR STORM WATER COLLECTION AREAS.
    - 11.8. WINTER EXCAVATION AND EARTHWORK ACTIVITIES NEED TO BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO ONE ACRE, OR THAT WHICH CAN BE STABILIZED AT THE END OF EACH DAY UNLESS A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY THE DEPARTMENT.
    - 11.9. CHANNEL PROTECTION MEASURES SHALL BE SUPPLEMENTED WITH PERIMETER CONTROL MEASURES WHEN THE DITCH LINES OCCUR AT THE BOTTOM OF LONG FILL SLOPES. THE PERIMETER CONTROLS SHALL BE INSTALLED ON THE FILL SLOPE TO MINIMIZE THE POTENTIAL FOR FILL SLOPE SEDIMENT DEPOSITS IN THE DITCH LINE.

BEST MANAGEMENT PRACTICES (BMP) BASED ON AMOUNT OF OPEN CONSTRUCTION AREA

12. STRATEGIES SPECIFIC TO OPEN AREAS LESS THAN 5 ACRES:
    - 12.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500; ALTERATION OF TERRAIN FOR CONSTRUCTION AND USE ALL CONVENTIONAL BMP STRATEGIES.
    - 12.2. SLOPES STEEPER THAN 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING.
    - 12.3. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT ALONE.
    - 12.4. AREAS WHERE HAUL ROADS ARE CONSTRUCTED AND STORMWATER CANNOT BE TREATED THE DEPARTMENT WILL CONSIDER INFILTRATION.
    - 12.5. FOR HAUL ROADS ADJACENT TO SENSITIVE ENVIRONMENTAL AREAS OR STEEPER THAN 5%, THE DEPARTMENT WILL CONSIDER USING EROSION STONE, CRUSHED GRAVEL, OR CRUSHED STONE BASE TO HELP MINIMIZE EROSION ISSUES.
    - 12.6. ALL AREAS THAT CAN BE STABILIZED SHALL BE STABILIZED PRIOR TO OPENING UP NEW TERRITORY.
    - 12.7. DETENTION BASINS SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE A 2 YEAR STORM EVENT.

13. STRATEGIES SPECIFIC TO OPEN AREAS BETWEEN 5 AND 10 ACRES:
    - 13.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES WILL BE UTILIZED.
    - 13.2. DETENTION BASINS WILL BE CONSTRUCTED TO ACCOMMODATE THE 2-YEAR 24-HOUR STORM EVENT AND CONTROL A 10-YEAR 24-HOUR STORM EVENT.
    - 13.3. SLOPES STEEPER THAN A 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS. OTHER ALTERNATIVE MEASURES, SUCH AS BONDED FIBER MATRIXES (BFMS) OR FLEXIBLE GROWTH MEDIUMS (FGMS) MAY BE UTILIZED, IF MEETING THE NHDES APPROVALS AND REGULATIONS.
    - 13.4. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS.

14. STRATEGIES SPECIFIC TO OPEN AREAS OVER 10 ACRES:
    - 14.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485:A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES AND BETWEEN 5 AND 10 ACRES WILL BE UTILIZED.
    - 14.2. THE DEPARTMENT ANTICIPATES THAT SOIL BINDERS WILL BE NEEDED ON ALL SLOPES STEEPER THAN 3:1, IN ORDER TO MINIMIZE EROSION AND REDUCE THE AMOUNT OF SEDIMENT IN THE STORMWATER TREATMENT BASINS.
    - 14.3. THE CONTRACTOR WILL BE REQUIRED TO HAVE AN APPROVED DESIGN IN ACCORDANCE WITH ENV-WQ 1506.12 FOR AN ACTIVE FLOCCULANT TREATMENT SYSTEM TO TREAT AND RELEASE WATER CAPTURED IN STORM WATER BASINS. THE CONTRACTOR SHALL ALSO RETAIN THE SERVICES OF AN ENVIRONMENTAL CONSULTANT WHO HAS DEMONSTRATED EXPERIENCE IN THE DESIGN OF FLOCCULANT TREATMENT SYSTEMS. THE CONSULTANT WILL ALSO BE RESPONSIBLE FOR THE IMPLEMENTATION AND MONITORING OF THE SYSTEM.

TABLE 1

GUIDANCE ON SELECTING TEMPORARY SOIL STABILIZATION MEASURES

APPLICATION AREAS	DRY MULCH METHODS				HYDRAULICALLY APPLIED MULCHES[2]				ROLLED EROSION CONTROL BLANKETS[3]			
	HMT	WC	SG	CB	HM	SMM	BFM	FRM	SNSB	DNSB	DNSCB	DNCB
SLOPES[1]												
STEEPER THAN 2:1	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES
2:1 SLOPE	YES'	YES'	YES	YES	NO	NO	YES	YES	NO	YES	YES	YES
3:1 SLOPE	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	NO
4:1 SLOPE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
WINTER STABILIZATION	4T/AC	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
CHANNELS												
LOW FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
HIGH FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE
HMT	HAY MULCH & TACK	HM	HYDRAULIC MULCH	SNSB	SINGLE NET STRAW BLANKET
WC	WOOD CHIPS	SMM	STABILIZED MULCH MATRIX	DNSB	DOUBLE NET STRAW BLANKET
SG	STUMP GRINDINGS	BFM	BONDED FIBER MATRIX	DNSCB	2 NET STRAW-COCONUT BLANKET
CB	COMPOST BLANKET	FRM	FIBER REINFORCED MEDIUM	DNCB	2 NET COCONUT BLANKET

NOTES:
1. ALL SLOPE STABILIZATION OPTIONS ASSUME A SLOPE LENGTH ≤10 TIMES THE HORIZONTAL DISTANCE COMPONENT OF THE SLOPE, IN FEET.
2. PRODUCTS CONTAINING POLYACRYLAMIDE (PAM) SHALL NOT BE APPLIED DIRECTLY TO OR WITHIN 100 FEET OF ANY SURFACE WATER WITHOUT PRIOR WRITTEN APPROVAL FROM THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
3. ALL EROSION CONTROL BLANKETS SHALL BE MADE WITH WILDLIFE FRIENDLY BIODEGRADABLE NETTING.

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BENNINGTON
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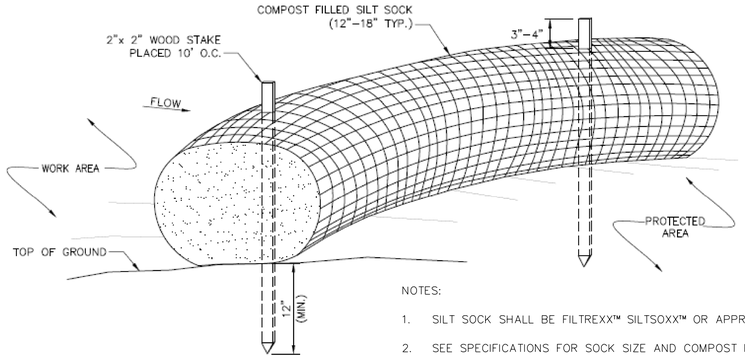
EROSION CONTROL STRATEGIES

REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
12-21-2015	29486ecs	29486	4	16

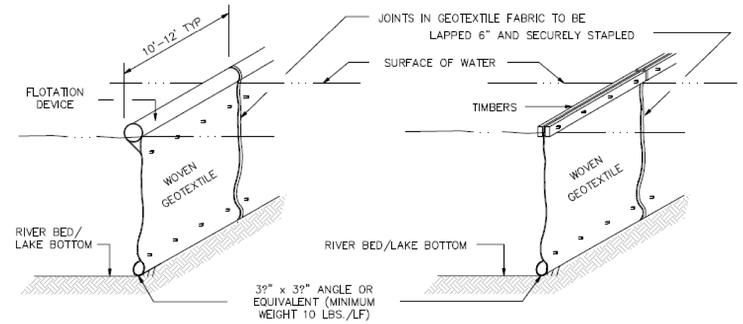


NOTES:

1. SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. AFTER IMPACT AREA HAS BEEN FULLY STABILIZED, THE COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

SILT SOCK DETAIL

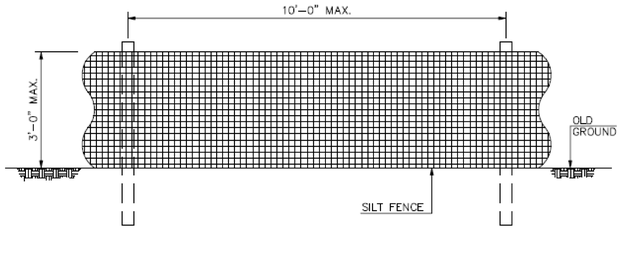
NOT TO SCALE



NOTE: THESE ARE SUGGESTED CONSTRUCTED METHODS. ACTUAL METHOD TO BE APPROVED BY THE ENGINEER.

SILT SCREEN DETAIL

NOT TO SCALE



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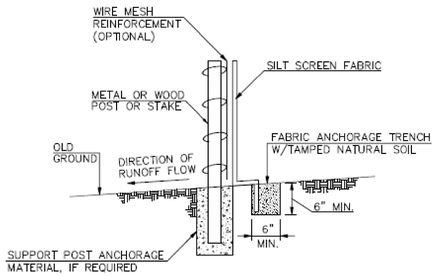
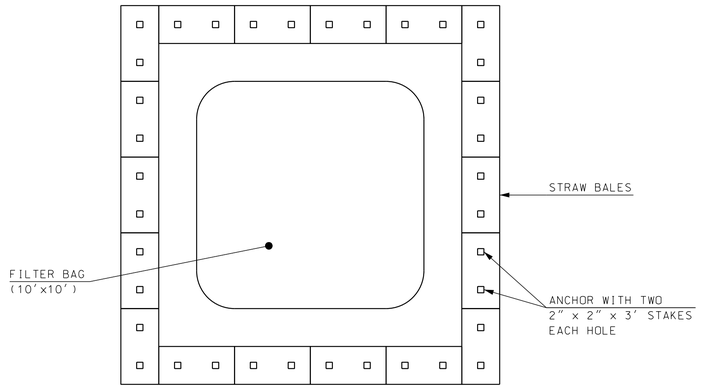


END VIEW

SILT FENCE DETAIL

NOT TO SCALE

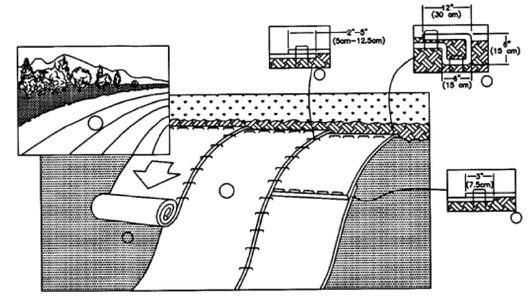


NOTES:

MAINTAIN EXISTING FILTERS FOR THE DURATION OF CONSTRUCTION.

TYPICAL STRAW BALE AT FILTER BAG

NOT TO SCALE



SLOPE INSTALLATION

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP's), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. (NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.)
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP's IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP's EXTENDED BEYOND THE IP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP's WITH A ROW OF STAPLES/ STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP's BACK OVER SEED AND COMPACTED SOIL. SECURE RECP's OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP's.
3. ROLL THE RECP's (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP's WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOILS SURFACE. RECP's MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATION AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM? , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL RECP's MUST BE STAPLED WITH APPROXIMATELY 2"–5" OVERLAP DEPENDING ON RECP's TYPE.
5. CONSECUTIVE RECP's SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP's WIDTH.
6. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.

EROSION CONTROL BLANKET DETAIL

NOT TO SCALE

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	STATION	DATE

SDR PROCESSED - DATE -
NEW DESIGN TJG DATE 04/21
SHEET CHECKED DEM DATE 04/21
AS BUILT DETAILS DATE

STATE OF NEW HAMPSHIRE
BENNINGTON
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

EROSION CONTROL DETAILS

Stantec

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
29486edet	29486	5	16

BRIDGE REMOVAL NOTES

1. SITE PREPARATION TO INCLUDE, BUT NOT LIMITED TO PAVEMENT AND DEBRIS REMOVAL, CLEARING AND GRUBBING, TREE REMOVAL AND STRIPPING AND STOCKPILING TOPSOIL. IN GENERAL, THE CONTRACTOR SHALL LIMIT THE AREA OF DISTURBANCE COMMENSURATE WITH THE CONTRACTOR'S CAPABILITY AND PROGRESS IN KEEPING GRADING, MULCHING, SEEDING AND UTILIZING TEMPORARY AND PERMANENT EROSION CONTROL MEASURES CONCURRENT WITH OPERATIONS. EARTH STOCKPILES ARE TO BE SEEDED AND MULCHED AND HAVE SILT FENCE INSTALLED ON THE DOWNSLOPE SIDE.

2. INSTALL DRAINAGE SYSTEMS, PIPES, CULVERTS, DITCHES AND TEMPORARY EROSION CONTROL PROTECTIONS IN A SEQUENCE FROM OUTLET TO INLET, IN ORDER TO STABILIZE OUTLET AREAS BEFORE RUNOFF IS DIRECTED TO THEM.

3. ROUGH GRADE DIVERSIONS TO APPROXIMATE SUBGRADES ENSURING APPROPRIATE COMPACTION WHERE REQUIRED. REMOVE UNSUITABLE SOILS AS REQUIRED.

4. ALL ROADWAYS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE. THESE AREAS SHALL BE CONSIDERED STABLE WHEN BASE COURSE MATERIALS HAVE BEEN INSTALLED.

5. WINTER NOTES:

   A. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.

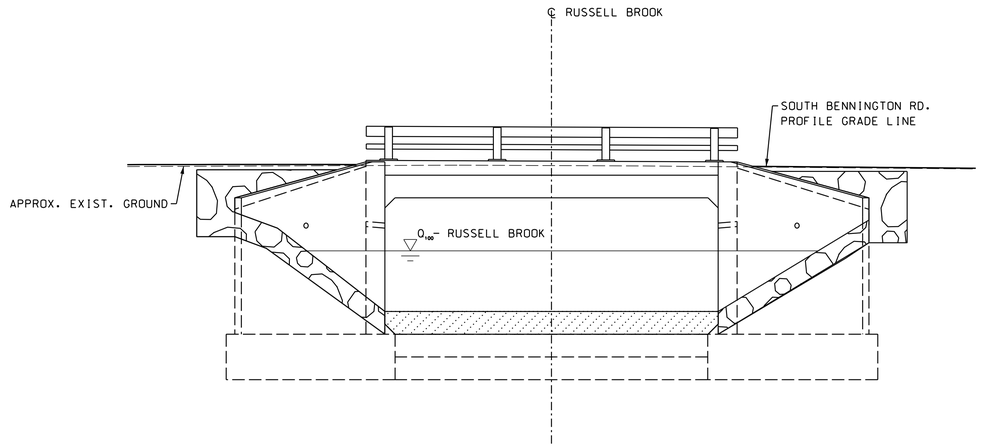
   B. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.

   C. AFTER NOVEMBER 15TH, INCOMPLETE ROAD WHERE WORK HAS STOPPED FOR THE WINTER SEASON SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.

   D. WINTER EXCAVATION AND EARTHWORK ACTIVITIES NEED TO BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO ONE ACRE, OR THAT WHICH CAN BE STABILIZED AT THE END OF EACH DAY UNLESS A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR CPESC SPECIALIST, IS REVIEWED AN APPROVED BY THE DEPARTMENT.

CONSTRUCTION SEQUENCE

1. CONSTRUCTION SURVEY AND LAYOUT.
2. INSTALL PERIMETER CONTROLS ALONG LIMITS OF WORK.
3. COMPLETE CLEARING AND GRUBBING.
4. ESTABLISH DETOUR AND CLOSE SOUTH BENNINGTON ROAD IN THE VICINITY OF THE CULVERT.
5. CONSTRUCT TEMPORARY STAGING AREAS.
6. INSTALL SEDIMENT CONTROL MEASURES AS APPROPRIATE AT STAGING AREAS.
7. INSTALL IN-WATER SEDIMENT CONTROL MEASURE AROUND THE BRIDGE.
8. ESTABLISH DEWATERING AREA.
9. CONSTRUCT WATER DIVERSION STRUCTURE.
10. REDIRECT FLOW TO WATER DIVERSION STRUCTURE.
11. REMOVE EXISTING CULVERT AND WING WALLS.
12. INSTALL NEW CULVERT FOUNDATION, WING WALLS, AND RIPRAP PROTECTION.
13. RESTORE STREAM BED. THIS WORK TO BE PHASED AND COMPLETED IN THE DRY.
14. CONSTRUCT APPROACH SLABS.
15. GRADE AND CONSTRUCT ROADWAY APPROACHES.
16. REMOVE ACCUMULATED SEDIMENTS FROM SEDIMENT CONTROL DEVICES.
17. APPLY EROSION CONTROLS.
18. REMOVE TEMPORARY SEDIMENT CONTROLS.



GENERAL BRIDGE ELEVATION

SCALE: 1" = 5'

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

SDR PROCESSED	-	DATE -
NEW DESIGN	TJG	DATE 11/19
SHEET CHECKED	DEM	DATE 11/19
AS BUILT DETAILS		DATE

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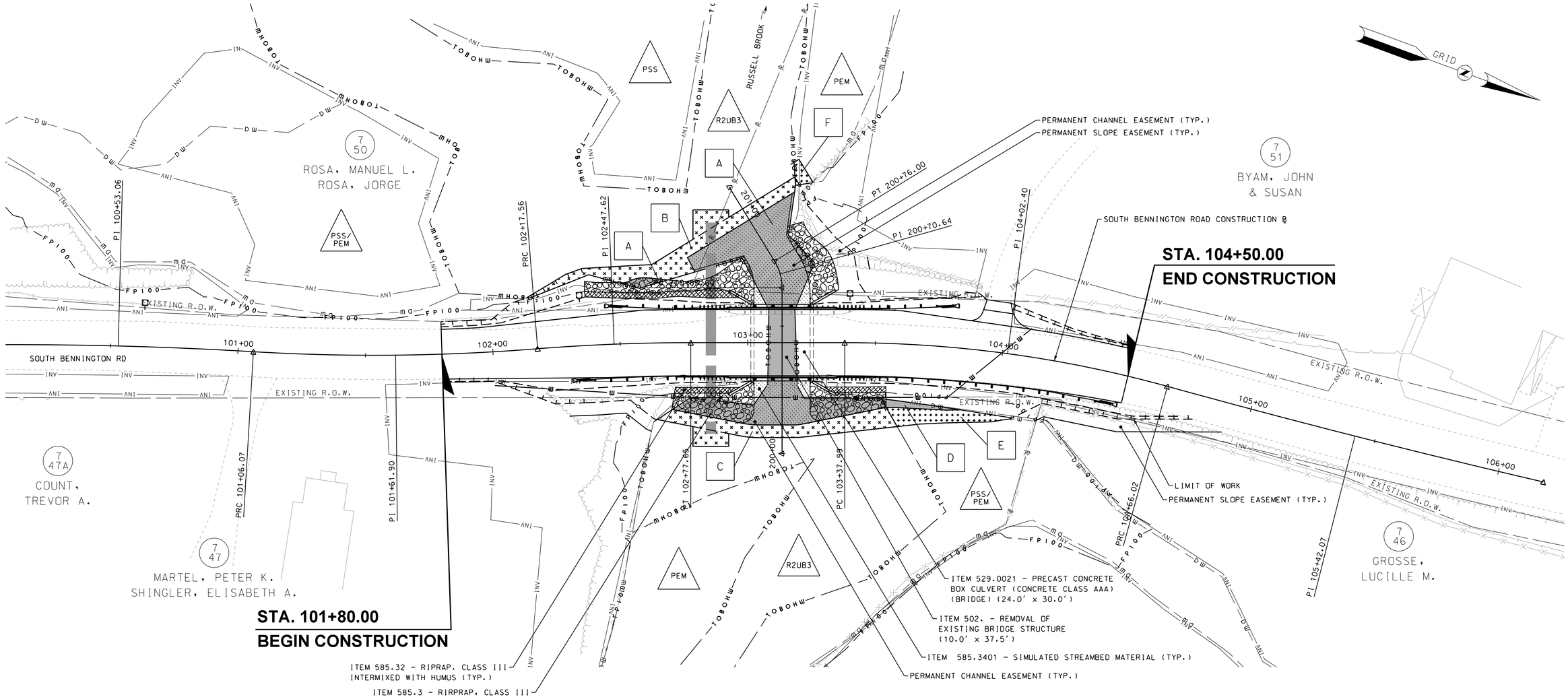
BENNINGTON
DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

CONSTRUCTION SEQUENCE & BRIDGE ELEVATION

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
29486cseq	29486	6	16

REVISIONS AFTER PROPOSAL	STATION	DATE	NUMBER

		DATE
SDR PROCESSED	-	-
NEW DESIGN	TJG	04/21
SHEET CHECKED	DEM	04/21
AS BUILT DETAILS		DATE



LEGEND

TYPE OF WETLAND IMPACT	SHADING/ HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

- # — WETLAND DESIGNATION NUMBER
- # — WETLAND IMPACT LOCATION
- # — WETLAND MITIGATION AREA
- MITIGATION

WETLAND CLASSIFICATION	LOCATION	AREA							COMMENTS
		PERMANENT IMPACTS				TEMPORARY			
		N.H.W.B. (NON-WETLAND)	N.H.W.B. & A.C.O.E. (WETLAND)	BANK	CHANNEL	PERENNIAL STREAM/RIVER		N.H.W.B. & A.C.O.E. (WETLAND)	
		SF	SF	LF	LF	SF	LF	SF	
R2UB3	A		2,045 SF	79 LF	84 LF				
R2UB3	B					682 SF	24 LF		
R2UB3	C					595 SF	10 LF		
PSS/PEM	D		54 SF						PRA
PSS/PEM	E							220 SF	
PEM	F							44 SF	
TOTAL IMPACTS			2,099 SF	79 LF	84 LF	1,277 SF	34 LF	264 SF	

PROJECT TOTALS: WETLAND IMAPCTS = 3,640 SF
BANK IMPACTS = 113 LF
CHANNEL IMPACTS = 84 LF

WETLAND CLASSIFICATION CODES	
PEM	PALUSTRINE EMERGENT
PSS	PALUSTRINE SCRUB-SHRUB
PSS/PEM	PALUSTRINE EMERGENT / PALUSTRINE SCRUB-SHRUB
R2UB3	PERENIAL STREAM - RUSSELL BROOK

NOTE:

THE FP-100-YEAR FLOODPLAIN SHOWN IS FOR RUSSELL BROOK ONLY. THE 100-YEAR FEMA FLOODPLAIN FOR CONTOOCOOK RIVER ENCOMPASSES ENTIRE PROJECT.

20 0 20 40
SCALE IN FEET

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DEPARTMENT OF TRANSPORTATION ∘ BUREAU OF HIGHWAY DESIGN

WETLAND IMPACT PLAN

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
29486wet	29486	7	16

REVISIONS AFTER PROPOSAL

NUMBER	DATE	STATION	DESCRIPTION

GRID

POTENTIAL SEDIMENT BASIN LOCATION

SOUTH BENNINGTON ROAD CONSTRUCTION ℄

7
51
BYAM, JOHN
& SUSAN

STA. 104+50.00
END CONSTRUCTION

7
50
ROSA, MANUEL L.
ROSA, JORGE

RUSSELL BROOK

PI 100+53.06

PRC 102+17.56

PI 102+47.92

PT 200+76.00

PI 200+70.64

PI 104+02.40

EXISTING R.O.W.

SOUTH BENNINGTON RD

101+00

102+00

103+00

104+00

105+00

106+00

LIMIT OF WORK

7
47A
COUNT,
TREVOR A.

PRC 101+06.07

PI 101+61.90

PC 103+37.99

PRC 104+66.02

PI 105+42.07

7
47
MARTEL, PETER K.
SHINGLER, ELISABETH A.

STA. 101+80.00
BEGIN CONSTRUCTION

POTENTIAL SEDIMENT BASIN LOCATION

APPROX. REFERENCE LINE
LIMIT OF SWOPA
ELEV. = 664.0

7
46
GROSSE,
LUCILLE M.

EROSION CONTROL PLAN LEGEND

PC	PERIMETER CONTROL
	SILT FENCE
	EROSION CONTROL MIX BERM
	EROSION CONTROL MIX SOX
	TURBIDITY CURTAIN
	SHEET PILE
	COFFER DAM
NB/PC	NATURAL BUFFER/PERIMETER CONTROL
	SILT FENCE
	EROSION CONTROL MIX BERM
	EROSION CONTROL MIX SOX
	TURBIDITY CURTAIN
	SHEET PILE
	COFFER DAM
CP CP	CHANNEL PROTECTION
CP CP	STONE CHECK DAMS
	STRAW WATTLES
	CHANNEL MATTING
	CLASS D EROSION STONE
	CLASS C STONE
CWB CWB	CLEAN WATER BYPASS
CWB CWB	PUMP THROUGH PIPE
	DRAIN THROUGH PIPE OR CHANNEL

SDR PROCESSED - DATE -
NEW DESIGN TJG DATE 09/19
SHEET CHECKED DEM DATE 09/19
AS BUILT DETAILS DATE

20 0 20 40
SCALE IN FEET

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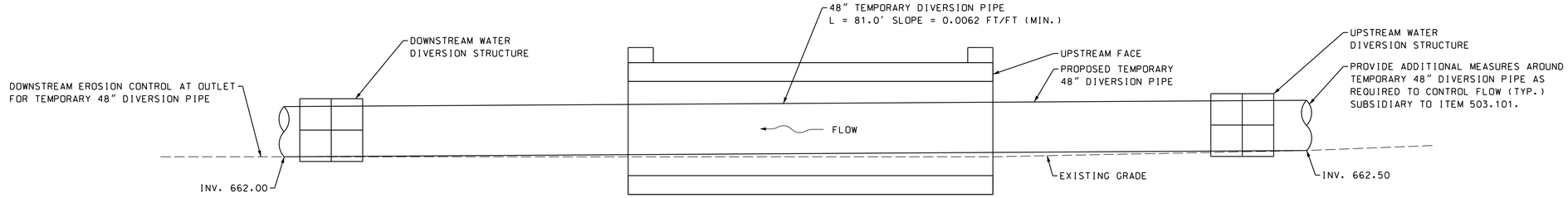
BENNINGTON
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

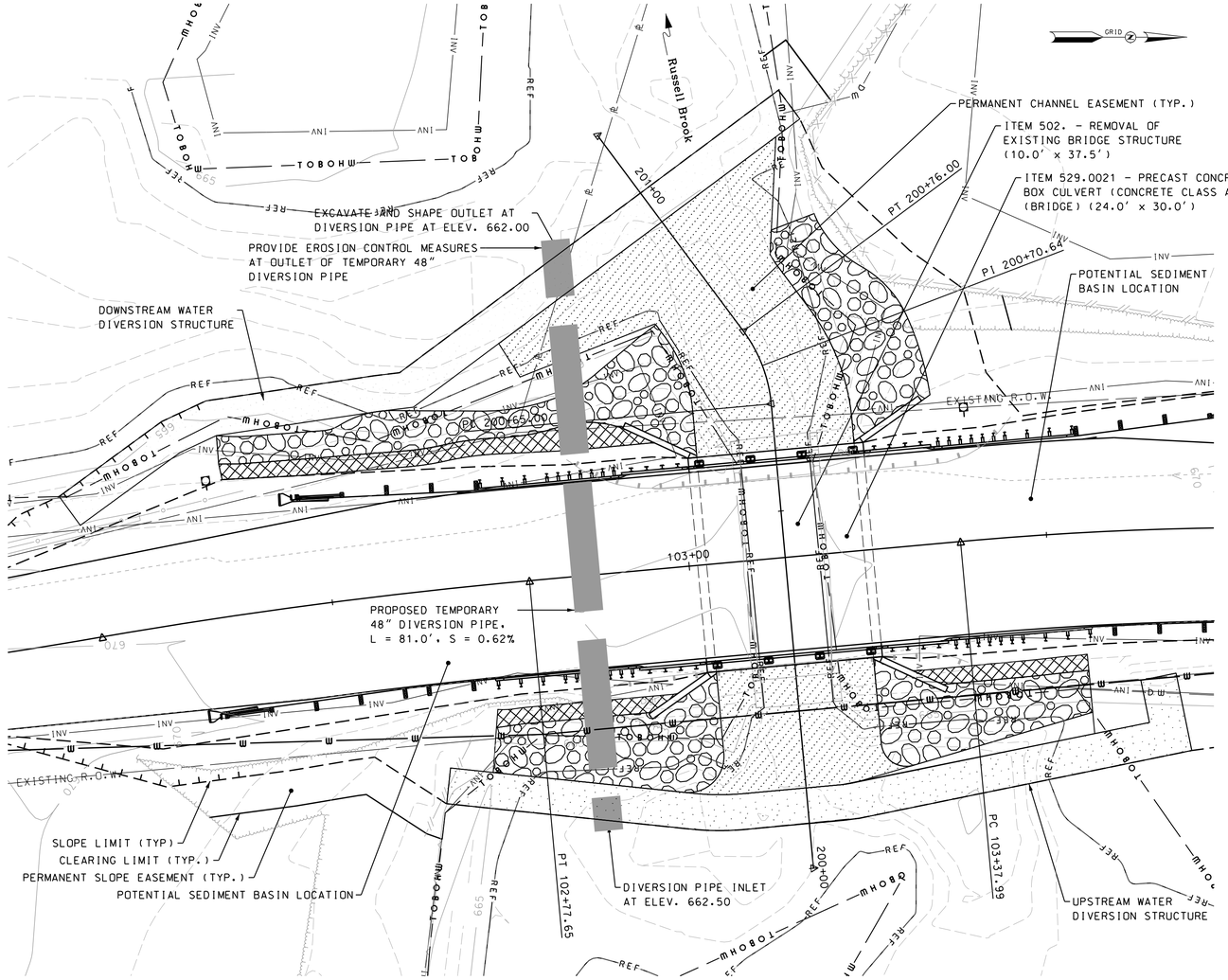
EROSION CONTROL PLAN

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
29486econ	29486	8	16



LONGITUDINAL SECTION ALONG STRUCTURE

NOT TO SCALE



WATER DIVERSION PLAN

SCALE: 1" = 10'

TYPICAL CONSTRUCTION SEQUENCE - STRUCTURE REPLACEMENT

1. STRUCTURE REPLACEMENT SHALL BE DONE DURING LOW FLOW PERIODS.
2. INSTALL PERIMETER CONTROL ALONG LIMIT OF WORK.
3. INSTALL TEMPORARY 48" DIVERSION PIPE SOUTH OF PROPOSED STRUCTURE. INVERTS TO BE AS SHOWN OR AS REQUIRED TO CONTROL FLOW.
4. CONSTRUCT UPSTREAM WATER DIVERSION STRUCTURE. WATER DIVERSION STRUCTURE SHALL BE OF SUFFICIENT SIZE TO RETAIN WATER AND PROVIDE ENCLOSURE FOR TEMPORARY 48" DIVERSION PIPE.
5. CONSTRUCT DOWNSTREAM WATER DIVERSION STRUCTURE.
6. DIRECT FLOW THROUGH TEMPORARY 48" DIVERSION PIPE.
7. REMOVE EXISTING STRUCTURE AND INSTALL NEW STRUCTURE.
8. THE CONTRACTOR SHALL PROVIDE FOR SUMPS AND WELL POINTS WITH TEMPORARY PUMPING AS REQUIRED TO INSTALL THE NEW STRUCTURE, CONSTRUCT FOOTINGS AND HEADWALLS FOR NEW STRUCTURE. THE CONTRACTOR SHALL PUMP TO SEDIMENT CONTROL BASINS, SEDIMENT BAGS, OR SIMILAR MEASURES DURING DEWATERING OPERATIONS.
9. GRADE AND CONSTRUCT UPSTREAM AND DOWNSTREAM STREAM BED AND EMBANKMENTS.
10. REMOVE DOWNSTREAM WATER DIVERSION STRUCTURE, REMOVE UPSTREAM WATER DIVERSION STRUCTURE, DIRECT FLOW THROUGH THE NEW STRUCTURE.
11. REMOVE WATER DIVERSION PIPE.
12. WATER DIVERSION STRUCTURE (PAID UNDER ITEM NO. 503.101) TO MEET REQUIREMENTS OF NHDOT FOR TEMPORARY WATER DIVERSION. INSTALLATION AND REMOVAL OF THE 48" DIVERSION PIPE IS SUBSIDIARY TO ITEM 503.101.

GENERAL NOTES

1. THIS SHEET PROVIDES A TYPICAL CONSTRUCTION DEWATERING AND FLOW CONTROL PLAN. THE CONTRACTOR SHALL SUBMIT DRAWINGS AND DETAILS SHOWING MATERIALS TO BE USED, PROPOSED METHOD OF CONSTRUCTION, AND OTHER DETAILS LEFT OPEN TO CHOICE OR NOT FULLY SHOWN ON THE PLANS. DRAWINGS SHALL BE SUBMITTED FOR DOCUMENTATION IN ACCORDANCE WITH SECTION 105.02 OF THE NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

REVISIONS AFTER PROPOSAL

NUMBER	DESCRIPTION	DATE	STATION

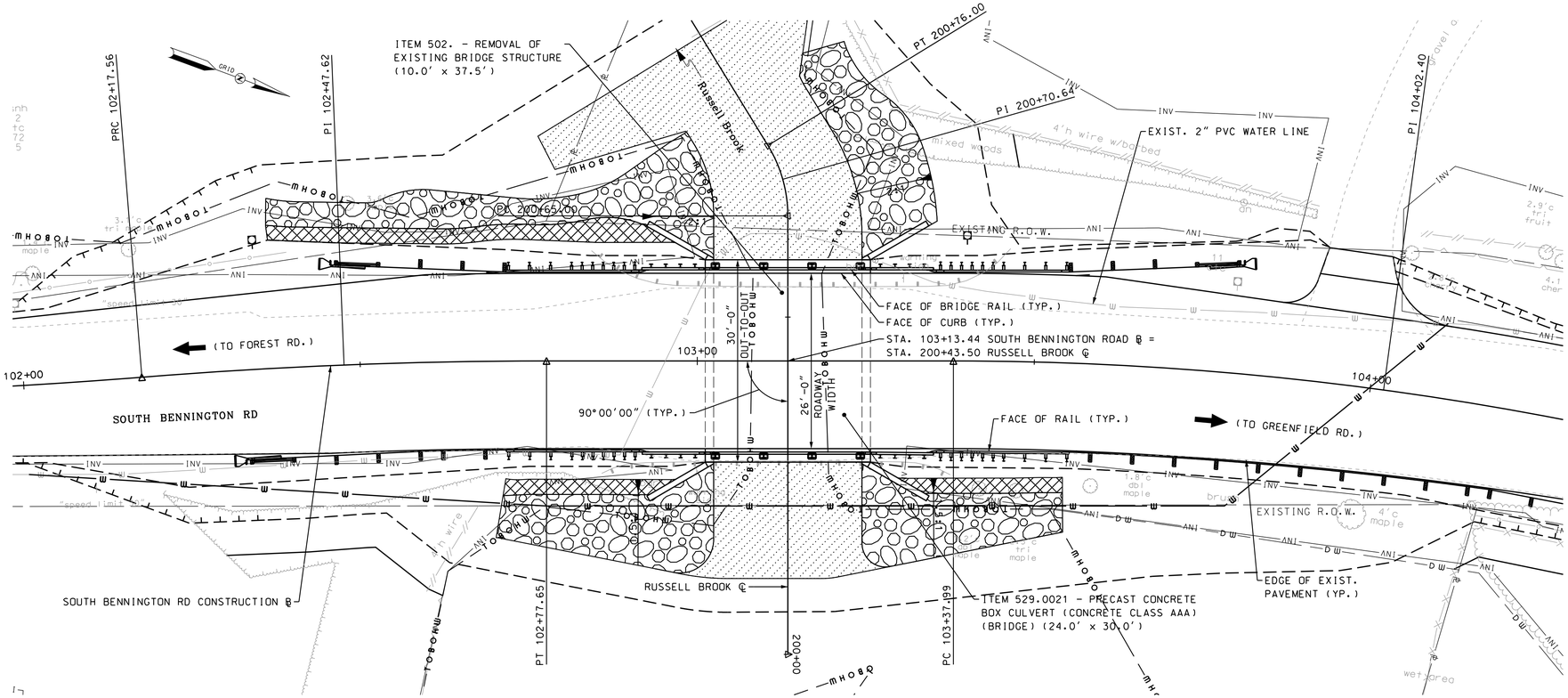
SDR PROCESSED - DATE -
NEW DESIGN TJG DATE 04/21
SHEET CHECKED DEM DATE 04/21
AS BUILT DETAILS DATE

STATE OF NEW HAMPSHIRE
BENNINGTON
DEPARTMENT OF TRANSPORTATION ◦ BUREAU OF HIGHWAY DESIGN

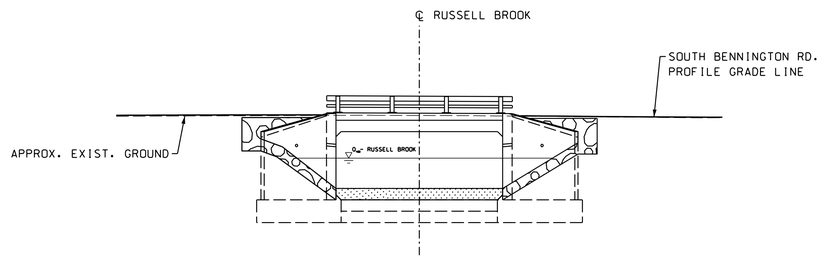
WATER DIVERSION PLAN

DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
29486wd	29486	9	16

Stantec



PLAN
SCALE: 1" = 10'



ELEVATION
SCALE: 1" = 10'

INDEX OF BRIDGE SHEETS	
ITEM NO.	SHEET TITLE
1	GENERAL PLAN AND ELEVATION
2	BRIDGE NOTES
3	SITE PLAN & PROFILE
4	PROPOSED STREAM PROFILE
5	SURVEY LAYOUT AND APPROACH SECTION
6	WATER DIVERSION PLAN
7	BORING PLAN
8	BOX CULVERT DETAILS
9	WINGWALL DETAILS
10	CULVERT AND CHANNEL DETAILS
11	T2 STEEL BRIDGE RAIL
12	T2 STEEL BRIDGE APPROACH RAIL (STEEL POSTS)

RUSSELL BROOK - HYDRAULIC DATA	
DRAINAGE AREA:	2.34 SQ. MI.
DESIGN FLOOD DISCHARGE (100 YR):	540 CFS
DESIGN FLOOD ELEVATION (100 YR):	667.5 FT
DESIGN FLOOD VELOCITY (100 YR):	6.9 FPS
SCOUR CHECK DISCHARGE (500 YR):	778 CFS
ANTICIPATED DEPTH OF SCOUR (100 YR):	14.5 FT
ANTICIPATED DEPTH OF SCOUR (500 YR):	15.7 FT
BRIDGE FULL WATERWAY OPENING TO RIVER:	130 SF

NOTE: BACKWATER ELEVATIONS FOR CONTOOCOOK RIVER: 50-YR BACKWATER ELEVATION IS 672.8 AND 100-YR BACKWATER ELEVATION IS 673.1.

NOTE:

1. SEE SHEETS 14-15 FOR STREAM, EMBANKMENT, AND CULVERT CONSTRUCTION DETAILS.
2. SEE SHEET 13 FOR STREAM PROFILE INFORMATION.

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SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
XX	29486gen	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN BENNINGTON BRIDGE NO. 099\080 STATE PROJECT 29486

LOCATION SOUTH BENNINGTON RD OVER RUSSELL BROOK

GENERAL PLAN AND ELEVATION

BRIDGE SHEET: 1 OF 12

FILE NUMBER: -

REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	-	07/20	CHECKED	-	-
	DRAWN	TJG	07/20	CHECKED	-	-
	QUANTITIES	-	07/20	CHECKED	-	-
	ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	TOTAL SHEETS
	REV. DATE		X-A004(156)		10	16

DESIGN LOADS, MATERIALS, AND SPECIFICATIONS

1. DESIGN LOADING: HL93

2. DESIGN METHOD: LOAD AND RESISTANCE FACTOR DESIGN (LRFD)

3. SPECIFICATIONS: AASHTO 2014 LRFD BRIDGE DESIGN SPECIFICATIONS, AS AMENDED
   NHDOT 2016 STANDARD SPECIFICATIONS AS AMENDED

4. FOUNDATION DATA: BOX CULVERT AND WINGWALLS SUPPORTED ON STRUCTURAL FILL OVER GLACIAL TILL
   - NOMINAL BEARING RESISTANCE OF 28 KSF
     - 0.45 RESISTANCE FACTOR FOR STRENGTH LIMIT
     - 1.00 RESISTANCE FACTOR FOR EXTREME EVENT LIMIT
   - SERVICE BEARING RESISTANCE OF 5.0 KSF
   - NOMINAL SLIDING RESISTANCE (TAN δ) EQUAL TO 0.80
     - 0.90 SHEAR RESISTANCE FACTOR

5. REINFORCING STEEL: AASHTO M31 (ASTM A615) GRADE 60

6. CONCRETE: PRECAST CONCRETE BOX CULVERT = 5000 psi

7. SEISMIC: PEAK GROUND ACCELERATION (PGA) = 0.11
   SITE CLASS = C
   ZONE = 1

8. FOR PRECAST BOX LAYOUT, SEE BRIDGE SHEET 8.

GENERAL BOX CULVERT NOTES

1. THE QUALITY OF MATERIALS, PROCESS OF MANUFACTURE, AND COMPLETED BOX CULVERT AND WINGWALLS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER (SEE SPECIAL PROVISIONS).

2. CONCRETE COVER REQUIREMENTS IN THE PRECAST UNITS SHALL BE AS DEFINED IN THE SPECIAL PROVISION.

3. FLEXINBLE WATERTIGHT GASKETS SHALL BE USED FOR SEALING JOINTS.

4. ITEM 538.2, BARRIER MEMBRANE, PEEL AND STICK - VERTICAL SURFACES (F). A 2'-0" WIDE STRIP SHALL BE INSTALLED AND CENTERED ALONG EVERY VERTICAL BOX CULVERT JOINT 6" FROM THE TOP OF THE WALL TO THE BOTTOM OF THE WALL. VERTICAL MEMBRANE SHALL BE PLACED SO THAT ITEM 538.1 LAPS OVER THE TOP 6" OF THE VERTICAL MEMBRANE.

5. ITEM 538.1, BARRIER MEMBRANE, PEEL AND STICK (F), SHALL BE INSTALLED AS DETAILED IN SPECIAL PROVISION 529.002 SECTION 3.9. PROTECTION BOARD SHALL BE USED TO PROTECT THE MEMBRANE FROM DAMAGE IN ACCORDANCE WITH 538.3.2.

6. ITEM 538.1, BARRIER MEMBRANE, PEEL AND STICK (F), SHALL ALSO BE PLACED IN A 1'-9" WIDE STRIP BETWEEN THE BOX CULVERT AND HEADWALL JOINTS. PROTECTION BOARD SHALL BE USED TO PROTECT THE MEMBRANE FROM DAMAGE IN ACCORDANCE WITH 538.3.2.

7. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED $^{3}/_{4}$" EXCEPT AS NOTED.

8. GALVANIZED STEEL ANGLES AND BOLTS, AS SHOWN IN BRIDGE DETAILS (BRIDGE SHEET 6), SHALL BE USED TO DRAW CULVERT SECTIONS TOGETHER. THESE HARDWARE ASSEMBLIES SHALL BE ATTACHED TO THE OUTSIDE SURFACE OF THE CULVERT SECTIONS AND SHALL BE LEFT IN PLACE. (COST INCLUDED IN ITEM 529.002).

9. EXPOSED SURFACES ON THE PRECAST CONCRETE BOX CULVERT, HEADWALLS, AND WING WALLS, EXCEPT INSIDE SURFACES OF THE BOX CULVERT SECTIONS, SHALL BE COATED WITH ITEM 534.3 WATER REPELLENT (SILANE-SILOXANE) TO 1'-0" BELOW FILL LINES.

10. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL IN ACCORDANCE WITH 105.02 FOR ALL PRECAST COMPONENTS. THESE DRAWINGS SHALL SHOW ANY JOINT DETAILS AS WELL AS REINFORCEMENT TYPE, SIZE, AND LOCATION. DRAWINGS SHALL BE STAMPED AND SIGNED BY A LICENSED PROFESSIONAL ENGINEER AND BE ACCOMPANIED BY ALL DESIGN CALCULATIONS (LOAD AND RESISTANCE FACTOR DESIGN SHALL BE APPLIED).

11. ITEM 529.002, PRECAST CONCRETE BOX CULVERT (BRIDGE), SHALL CONSIST OF UNITS TOTALING AN OUT-TO-OUT DIMENSION OF 30'-0" ALONG THE CENTERLINE AS WELL AS THE PRECAST HEADWALLS, CUT OFF WALLS CULVERT AND WING FOOTINGS, WING WALLS, AND ANCHORS.

BRIDGE REMOVAL NOTES

1. THE CONTRACTOR'S METHOD FOR REMOVAL OF THE EXISTING BOX CULVERT SHALL BE SUBMITTED FOR DOCUMENTATION IN ACCORDANCE WITH 105.02, PRIOR TO THE COMMENCEMENT OF ANY REMOVAL OPERATIONS.

2. ITEMS 502., REMOVAL OF EXISTING BRIDGE STRUCTURE, UNLESS OTHERWISE SHOWN ON THE PLANS, SHALL INCLUDE THE FOLLOWING:
   - REMOVAL OF BOX CULVERT.
   - REMOVAL OF BRIDGE RAIL AND BRIDGE APPROACH RAIL.
   - REMOVAL OF FOUNDATIONS.

3. EXCAVATION, TEMPORARY EARTH SUPPORT AND GRADING, AND BACKFILL NOT INCLUDED IN OTHER ITEMS, BUT REQUIRED FOR REMOVAL OF THE EXISTING STRUCTURE SHALL BE SUBSIDIARY TO ITEM 502.

WATER DIVERSION NOTES

1. THE WATER DIVERSION STRUCTURE ITEM IS INCLUDED IN THE CONTRACT FOR THE PURPOSE OF DIVERTING RUSSELL BROOK AND ANY SURFACE WATER AWAY FROM THE CULVERT AND WINGWALL EXCAVATIONS; AND FOR DEWATERING THE CULVERT AND WINGWALL EXCAVATIONS. ALL COSTS ASSOCIATED WITH THE DESIGN, INSTALLATION, DEWATERING, MAINTENANCE, AND REMOVAL OF THE WATER DIVERSION WILL BE PAID FOR UNDER WATER DIVERSION STRUCTURE ITEM 503.101. THE CONTRACTOR SHALL SUBMIT A WATER DIVERSION PLAN IN ACCORDANCE WITH 503.3.1.2.

2. THE WATER DIVERSION STRUCTURE SHALL BE DESIGNED TO ACCOMMODATE THE BOTTOM OF EXCAVATION GRADE INDICATED ON THE PLANS, AND SHALL BE CONSTRUCTED AND MAINTAINED IN A MANNER THAT MEETS THE REQUIREMENTS OF SECTION 503, 504, THE FOUNDATION NOTES, AND ALL APPLICABLE CONTRACT AND ENVIRONMENTAL REQUIREMENTS. THE ITEM 503.101 WORK SHALL INCLUDE THE COST OF EARTH DIKES, TEMPORARY PIPES, STEEL SHEETING, SANDBAGS, PUMPING, TREATMENT OF PUMPED WATER, AND ALL OTHER MEASURES SELECTED BY THE CONTRACTOR TO COMPLETE THE WORK.

FOUNDATION NOTES

1. THE CULVERT SLAB AND WINGWALL FOOTINGS SHALL BE FOUNDED ON THE STRUCTURAL FILL LAYER THAT IS INDICATED ON THE PLANS, PLACED OVER THE ACCEPTABLE BEARING MATERIALS DESCRIBED BELOW. THE CONTRACTOR MAY SUBSTITUTE UP TO 12 INCHES OF CLEAN STONE STRUCTURAL FILL FOR THE CRUSHED GRAVEL STRUCTURAL FILL FOR THE BOTTOM 12 INCHES OF STRUCTURAL FILL IN ACCORDANCE WITH 508.2.1.3 AT NO COST TO THE DEPARTMENT.

2. THE NATURAL GLACIAL TILL DEPOSIT IS EXPECTED AT THE DESIGN BOTTOM OF EXCAVATION GRADE AND IS ACCEPTABLE FOR SUPPORT OF THE PROPOSED CULVERT AND WINGWALLS. EXCAVATION OF THE GLACIAL TILL BELOW THE SPECIFIED STRUCTURAL FILL THICKNESS IS NOT REQUIRED. ANY UNSUITABLE MATERIALS ENCOUNTERED BELOW THE PROPOSED BOTTOM OF STRUCTURAL FILL GRADE SHALL BE EXCAVATED AND REPLACED WITH STRUCTURAL FILL, AS DIRECTED.

3. THE EXCAVATION TO FINAL GRADE AND THE CONTROL OF WATER SHALL BE CONDUCTED IN ACCORDANCE WITH SECTIONS 503 AND 504, AND IN A MANNER THAT PREVENTS DISTURBANCE OF THE FOUNDATION SUPPORT MATERIALS. PUMPING EQUIPMENT SHALL BE PROPERLY FILTERED TO PREVENT LOSS OF FINES. SUMP AREAS SHALL BE LOCATED OUTSIDE A 1H:2V SUPPORT LIMIT BELOW THE CULVERT AND WINGWALL FOOTINGS. ANY DISTURBED AREAS SHALL BE OVER-EXCAVATED AND REPLACED WITH STRUCTURAL FILL AT THE CONTRACTOR'S EXPENSE.

4. PROTRUDING COBBLES AND BOULDERS ENCOUNTERED AT THE FINAL EXCAVATION LEVEL SHOULD BE EITHER REMOVED AND REPLACED WITH STRUCTURAL FILL OR SPLIT TO PROVIDE A LEVEL SURFACE.

COFFERDAM NOTES

1. ALL COFFERDAM ITEMS COVERED UNDER SECTION 503 OF THE SPECIFICATIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF N.H. THE CONTRACTOR SHALL SUBMIT STAMPED WORKING DRAWINGS AND CALCULATIONS FOR REVIEW AND DOCUMENTATION IN ACCORDANCE WITH SECTION 105.102.

2. THE COFFERDAM ITEM IS INCLUDED IN THE CONTRACT FOR THE PURPOSE OF SUPPORTING EXCAVATIONS FOR CULVERT AND WINGWALL FOUNDATIONS. ALL COSTS ASSOCIATED WITH THE DESIGN, INSTALLATION, DEWATERING, MAINTENANCE, AND REMOVAL OF THE COFFERDAM WILL BE PAID UNDER ITEM 503.201.

3. THE LOCATION AND LIMITS OF THE COFFERDAM SHALL BE DETERMINED BY THE CONTRACTOR AND SHALL BE WITHIN THE LIMITS OF THE INDICATED WETLAND IMPACTS TO ACCOMMODATE THE CONTRACTOR'S MEANS AND METHODS OF CONSTRUCTION. A STEEL SHEETED COFFERDAM IS NOT REQUIRED FOR THIS ITEM. A CRIB OR DIKE STRUCTURE USED IN LIEU OF STEEL SHEETS WOULD BE PERMISSIBLE, ASSUMING THE CONSTRUCTION\ REQUIREMENTS OF SECTIONS 503 AND 504, THE FOUNDATION NOTES AND ALL ENVIRONMENTAL CONDITIONS ARE MET.

4. ANY EXCAVATION OF BOULDERS OR COBBLES BELOW THE BOTTOM OF STRUCTURAL FILL GRADE TO PERMIT INSTALLATION OF STEEL SHEETS SHALL BE SUBJECT TO APPROVAL. ANY OVER -EXCAVATION AND DISTURBED AREAS BELOW THE FOOTING SHALL BE REPLACED WITH STRUCTURAL FILL. ALL COSTS FOR THIS WORK SHALL BE INCLUDED IN ITEM 503.201.

5. THE WATER LEVEL WITHIN THE CULVERT AND WINGWALL EXCAVATIONS SHALL BE MAINTAINED BELOW THE BOTTOM OF THE CULVERT GRADE SO THAT WORK CAN BE CONDUCTED IN THE DRY. DEWATERING SHALL BE CONTINUOUS UNTIL THE SUBSTRUCTURES ARE BACKFILLED TO THE EXCAVATION OF THE SURROUNDING WATER TABLE. ALL MEANS AND METHODS ASSOCIATED WITH THE FOUNDATION DEWATERING SHALL BE LOCATED WITHIN THE PROJECT LIMITS OF WORK SHOWN ON THE WETLANDS PERMIT.

6. COFFERDAMS THAT ARE CUT OFF AND LEFT IN PLACE AT THE CONTRACTOR'S CHOICE SHALL BE CUTOFF A MINIMUM OF 3 FEET BELOW FINAL GRADE. NO ADDITIONAL PAYMENT WILL BE MADE FOR COFFERDAMS THAT ARE CUTOFF AND LEFT IN PLACE.

7. ALL COSTS ASSOCIATED WITH THE RE-DESIGN AND RE-INSTALLATION OF COFFERDAMS DUE TO SUBSURFACE CONDITIONS ENCOUNTERED DURING THE INSTALLATION THAT ARE DIFFERENT FROM WHAT THE COFFERDAM DESIGNER ASSUMED AND/OR INTERPRETED FROM THE AVAILABLE SUBSURFACE INFORMATION SHALL BE SUBSIDIARY TO THE ASSOCIATED COFFERDAM ITEM. SECTION 102.05 SHALL BE REFERENCED FOR ADDITIONAL INFORMATION REGARDING THE USE OF SUBSURFACE INFORMATION PROVIDED IN THE CONTRACT.

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STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN BENNINGTON BRIDGE NO. 099\080 STATE PROJECT 29486

LOCATION SOUTH BENNINGTON RD OVER RUSSELL BROOK

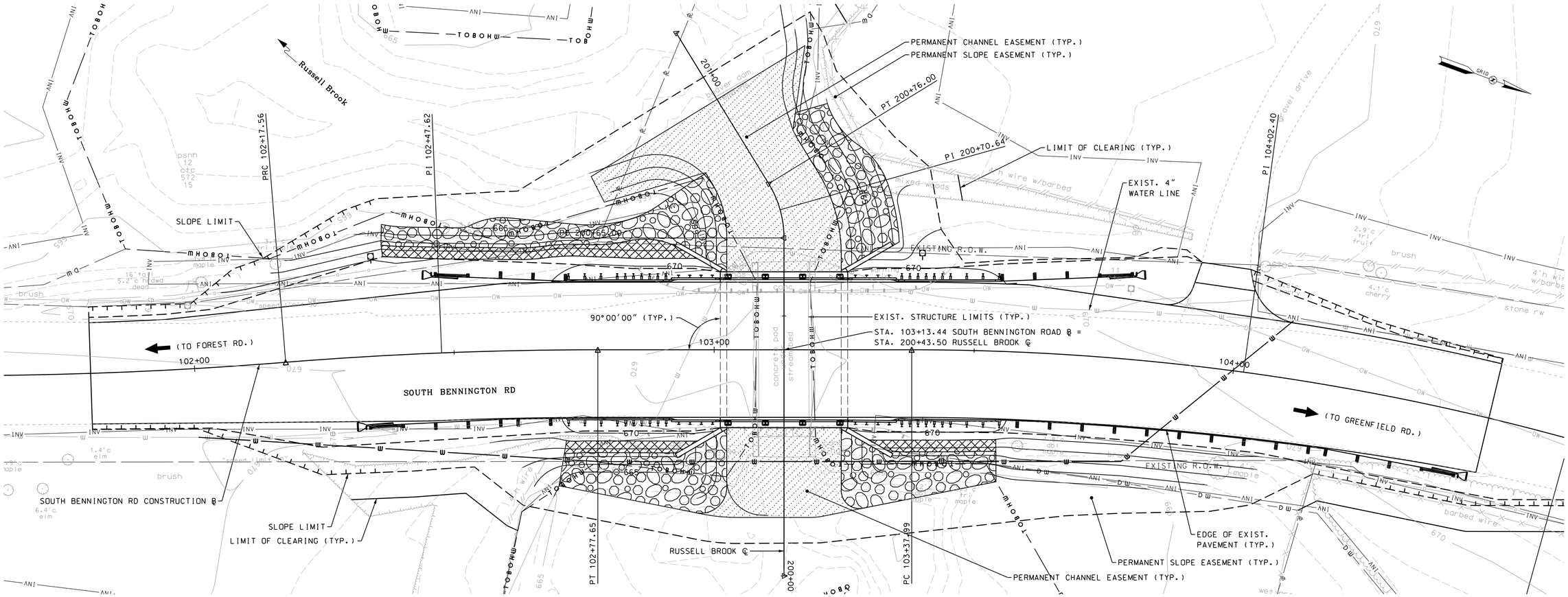
BRIDGE NOTES

BRIDGE SHEET 2 OF 12

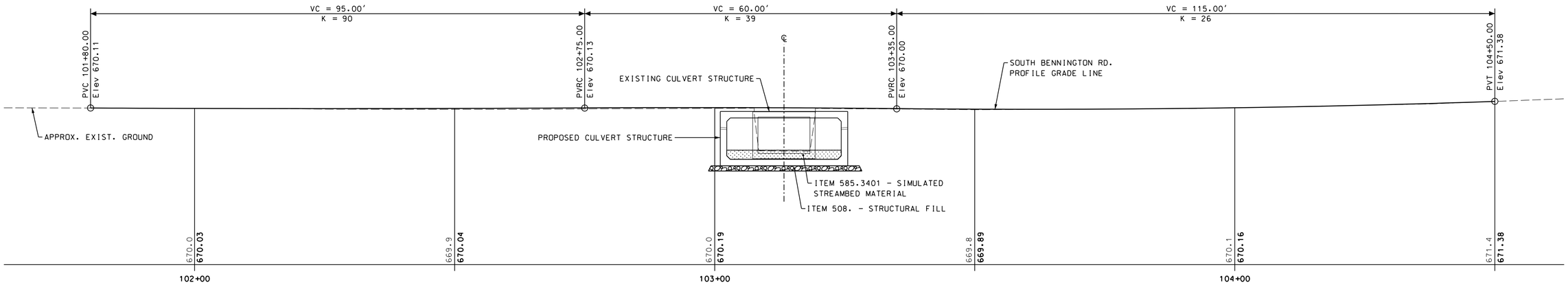
FILE NUMBER -

REVISIONS AFTER PROPOSAL	BY	DATE		BY	DATE
	DESIGNED -	07/20	CHECKED	-	-
	DRAWN TJG	07/20	CHECKED	-	-
	QUANTITIES -	07/20	CHECKED	-	-

SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE	ISSUE DATE	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
XX	29486bnotes01	AS NOTED	REV. DATE	X-A004(156)	11	16



PLAN
SCALE: 1" = 10'



PROPOSED ROADWAY PROFILE
SCALE: 1" = 10'

LEGEND

- PROPOSED TRAVEL LANE
- 665 PROPOSED CONTOUR
- EXISTING CONTOUR
- SOIL BORING

NOTE: SEE SHEET 13 OF 15 FOR PROPOSED STREAM PROFILE

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SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
XX	29486site	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN BENNINGTON BRIDGE NO. 099/080 STATE PROJECT 29486

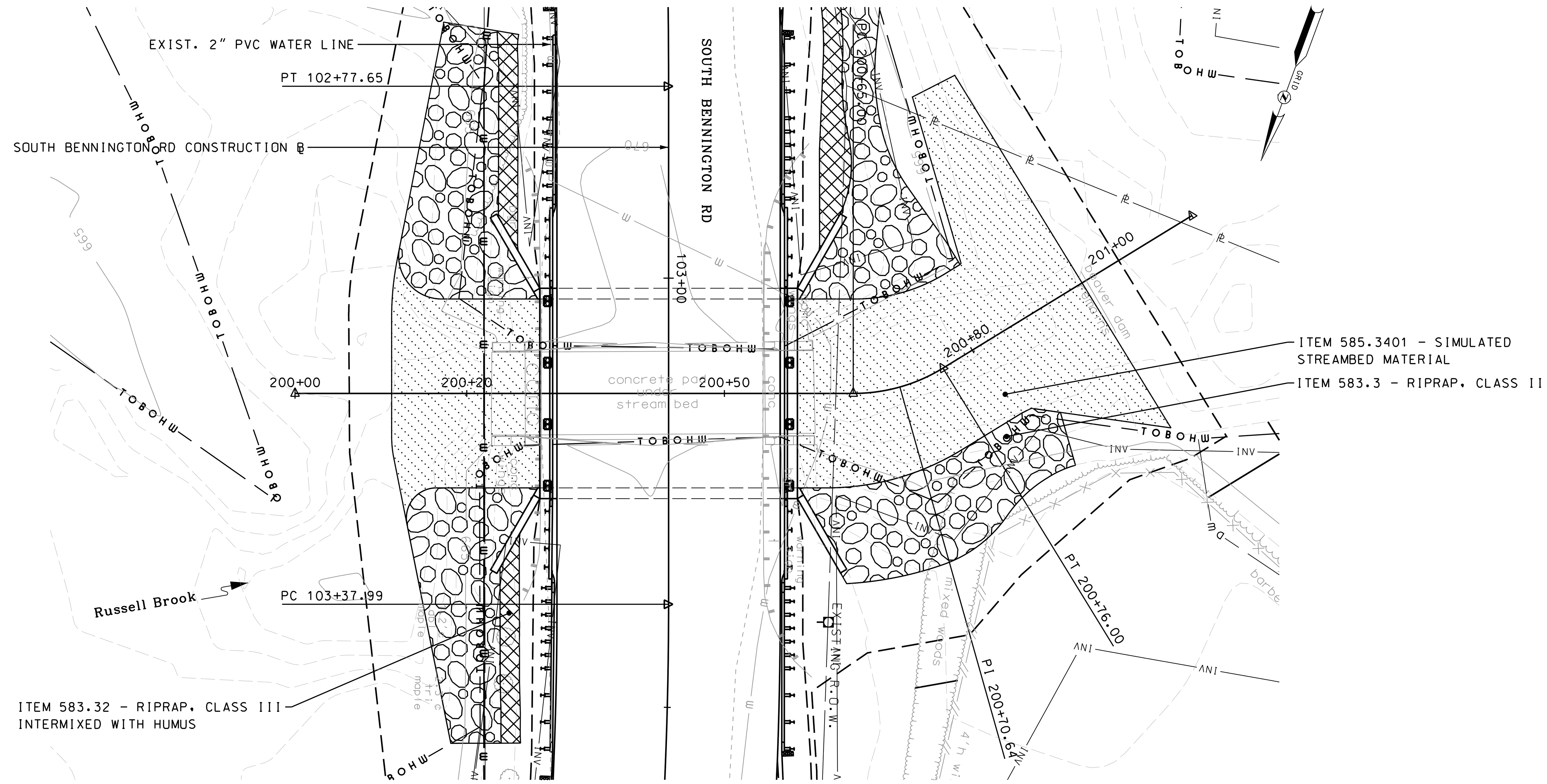
LOCATION SOUTH BENNINGTON RD OVER RUSSELL BROOK

SITE PLAN AND PROFILE

BRIDGE SHEET 3 OF 12

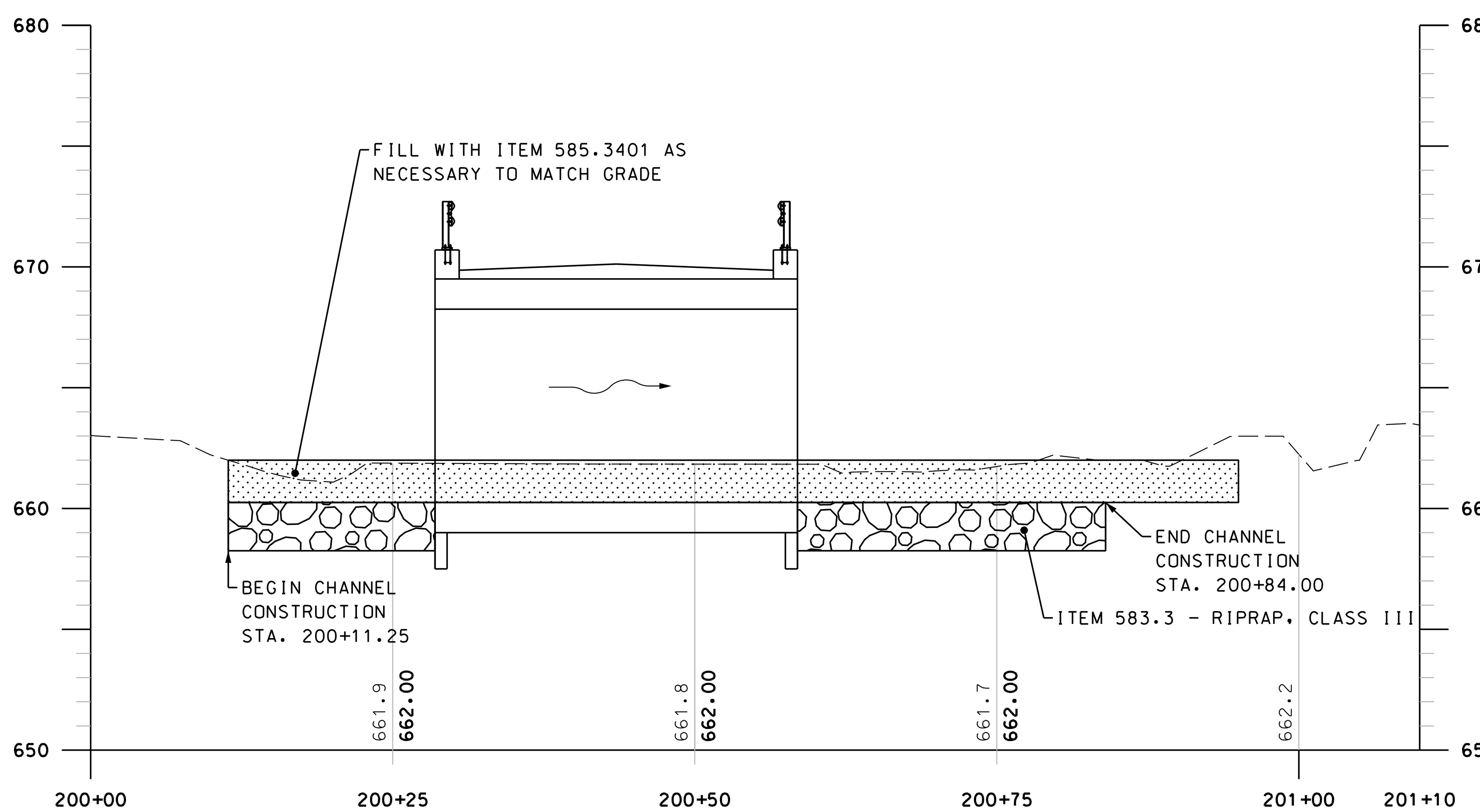
REVISIONS AFTER PROPOSAL		BY	DATE		BY	DATE
	DESIGNED	-	07/20	CHECKED	-	-
	DRAWN	TJG	07/20	CHECKED	-	-
	QUANTITIES	-	07/20	CHECKED	-	-
	ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	TOTAL SHEETS
	REV. DATE		X-A004(156)		12	16

FILE NUMBER -



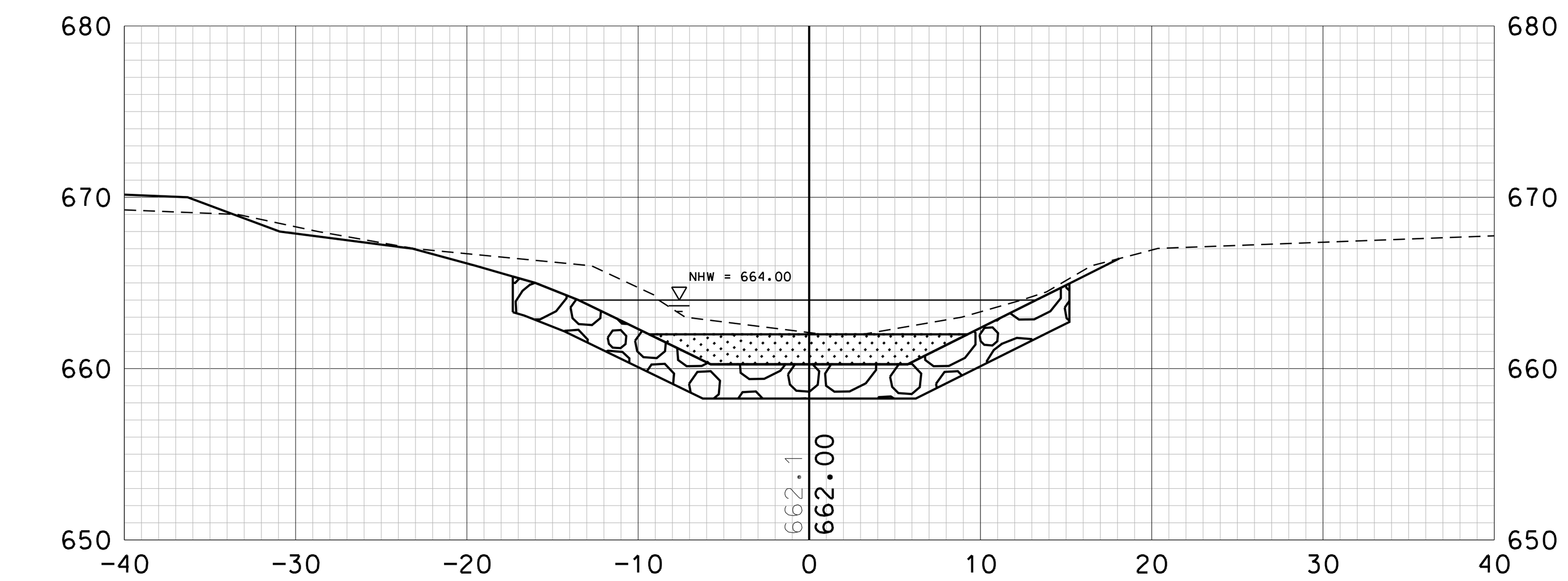
PLAN

SCALE: 1" = 10'

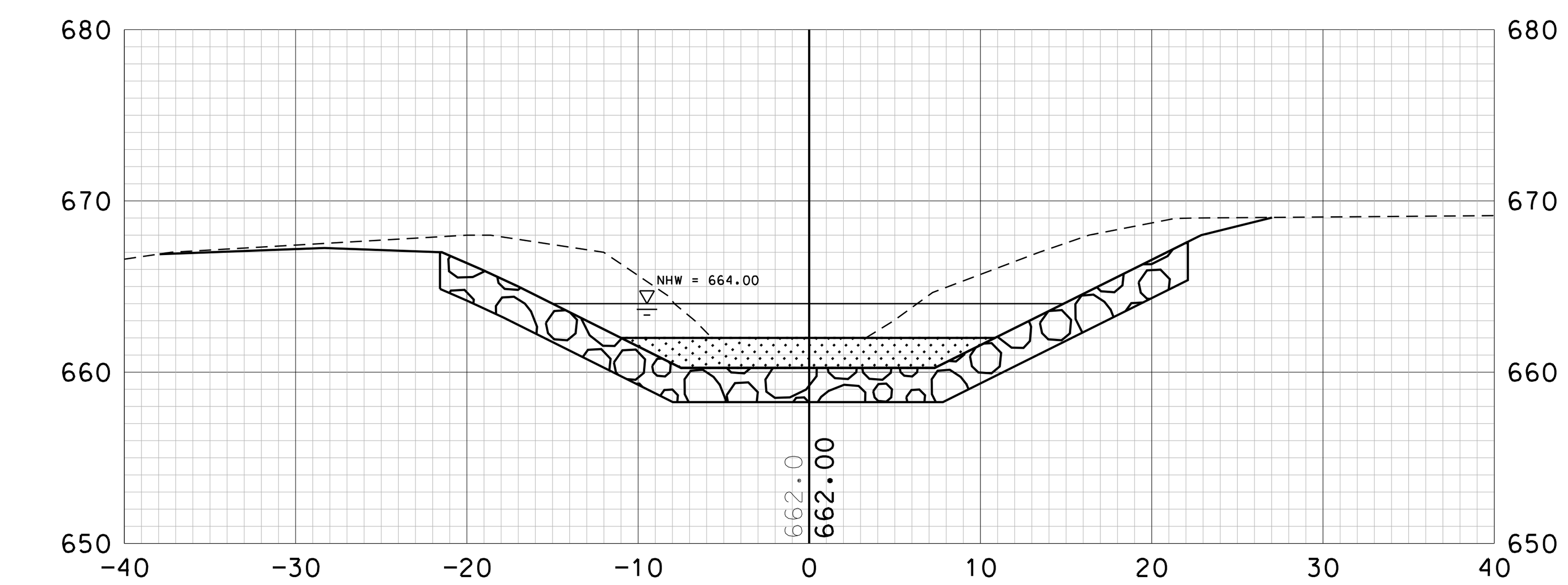


PROPOSED STREAM PROFILE

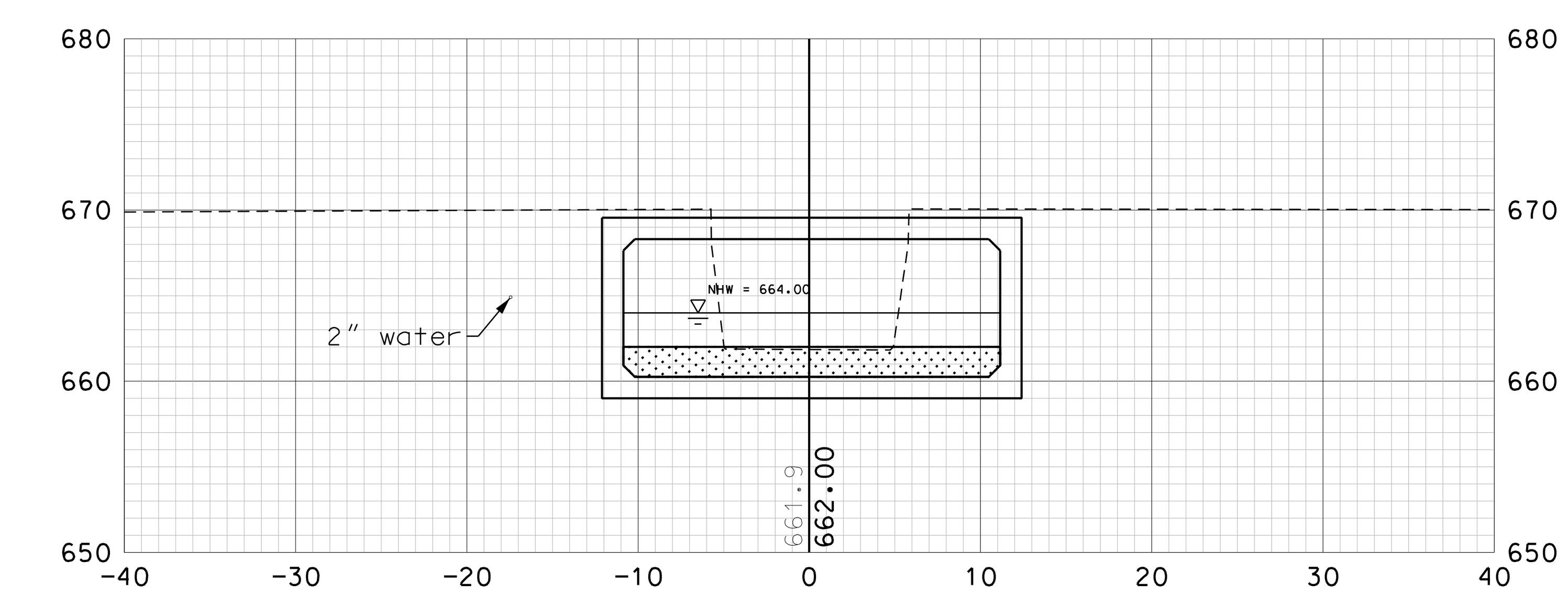
SCALE: HORIZ. - 1" = 10'
VERT. - 1" = 5'



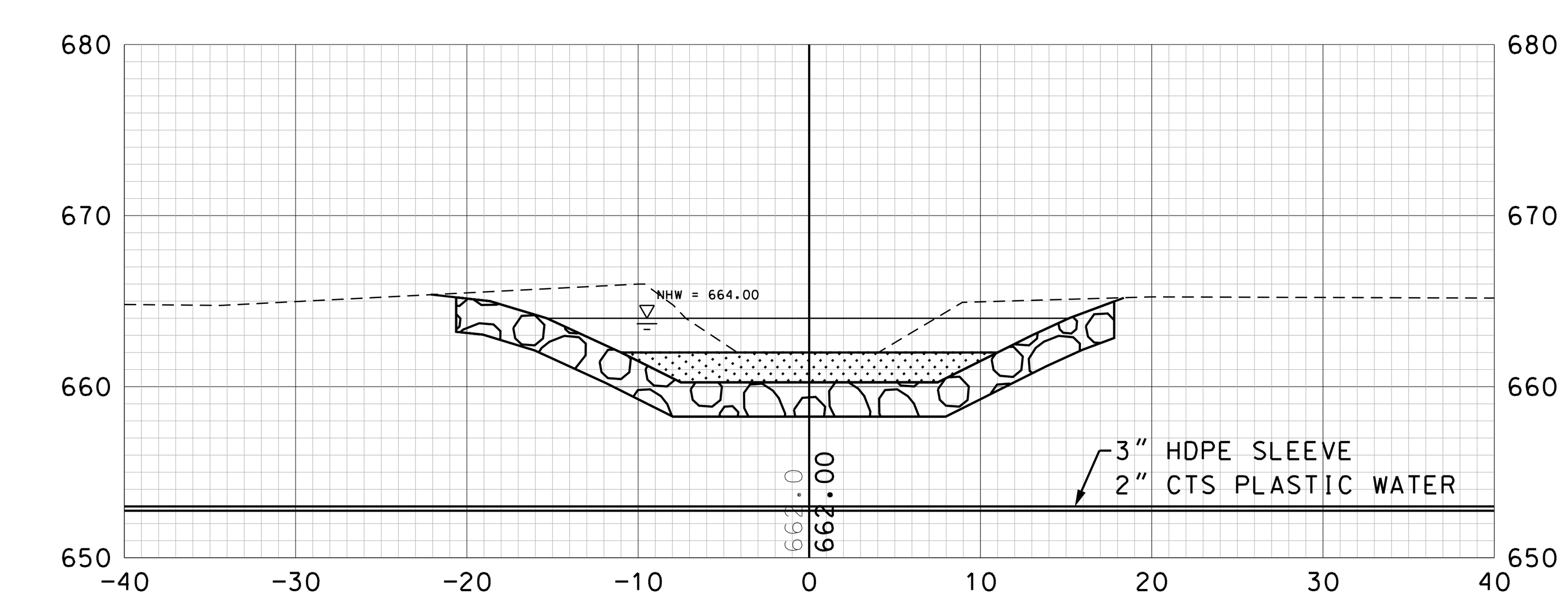
200+80



200+65



200+45



200+20

NHW = NORMAL HIGH WATER

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SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
XX	29486strm	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN BENNINGTON BRIDGE NO. 099\080 STATE PROJECT 29486

LOCATION SOUTH BENNINGTON RD OVER RUSSELL BROOK

PROPOSED STREAM PROFILE

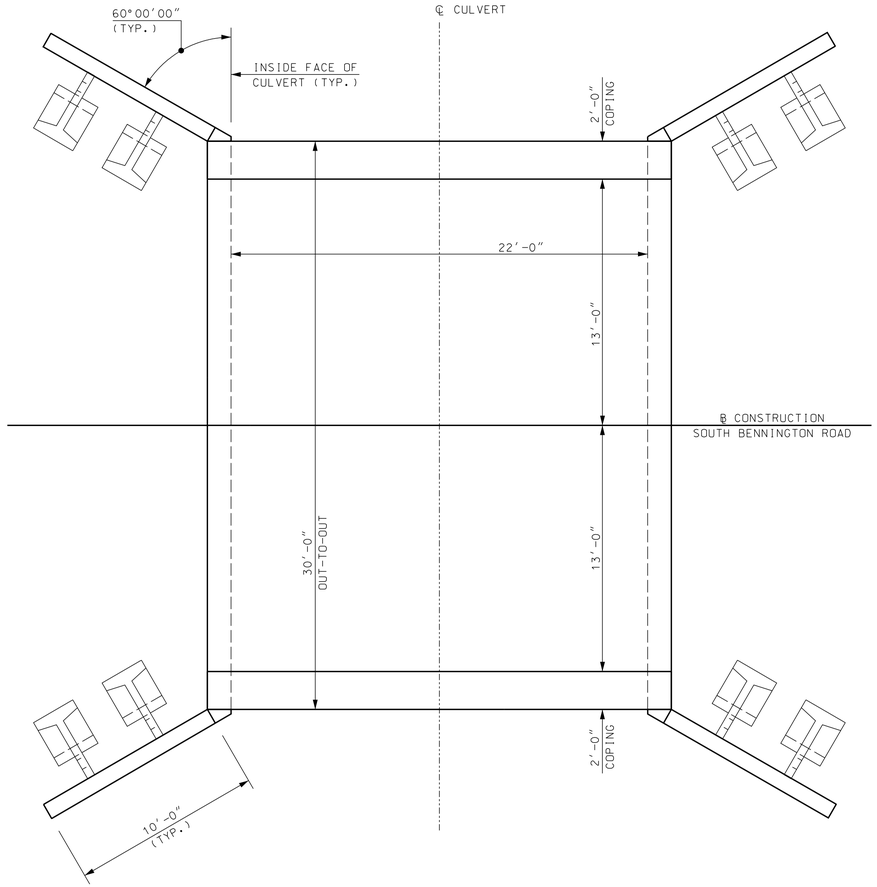
BRIDGE SHEET 4 OF 12

FILE NUMBER -

REVISIONS AFTER PROPOSAL

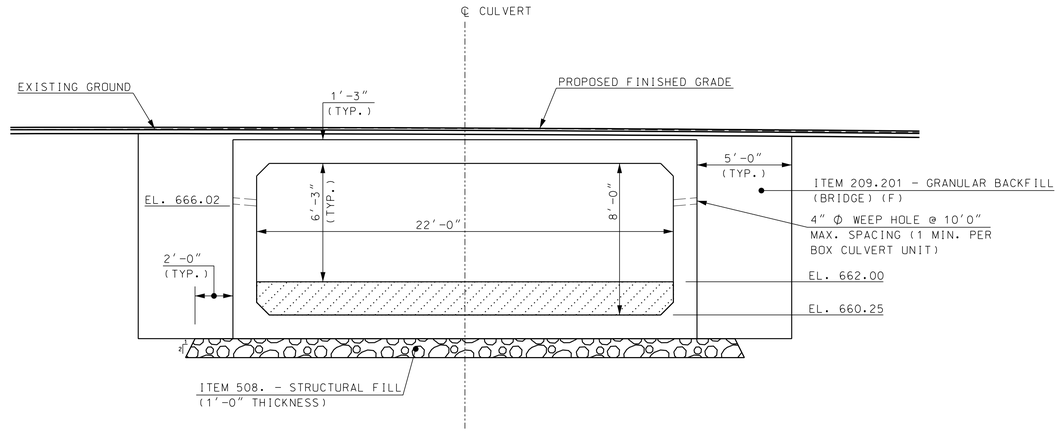
	BY	DATE		BY	DATE
DESIGNED	-	10/19	CHECKED	-	-
DRAWN	TJG	10/19	CHECKED	-	-
QUANTITIES	-	10/19	CHECKED	-	-

ISSUE DATE	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
REV. DATE	X-A004(156)	13	16



CULVERT LAYOUT

SCALE: ¼" = 1'-0"

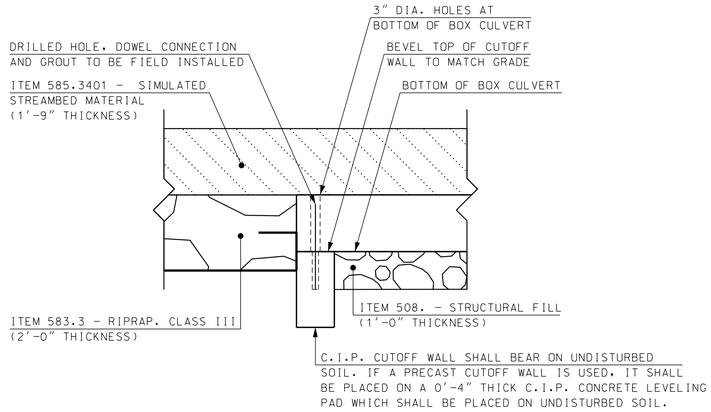


CULVERT SECTION

SCALE: ¼" = 1'-0"

INLET/OUTLET DETAIL

SCALE: ¼" = 1'-0"



CUTOFF WALL DETAIL

SCALE: ½" = 1'-0"

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SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
XX	29486det01	AS NOTED

STATE OF NEW HAMPSHIRE

DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN BENNINGTON BRIDGE NO. 099\080 STATE PROJECT 29486

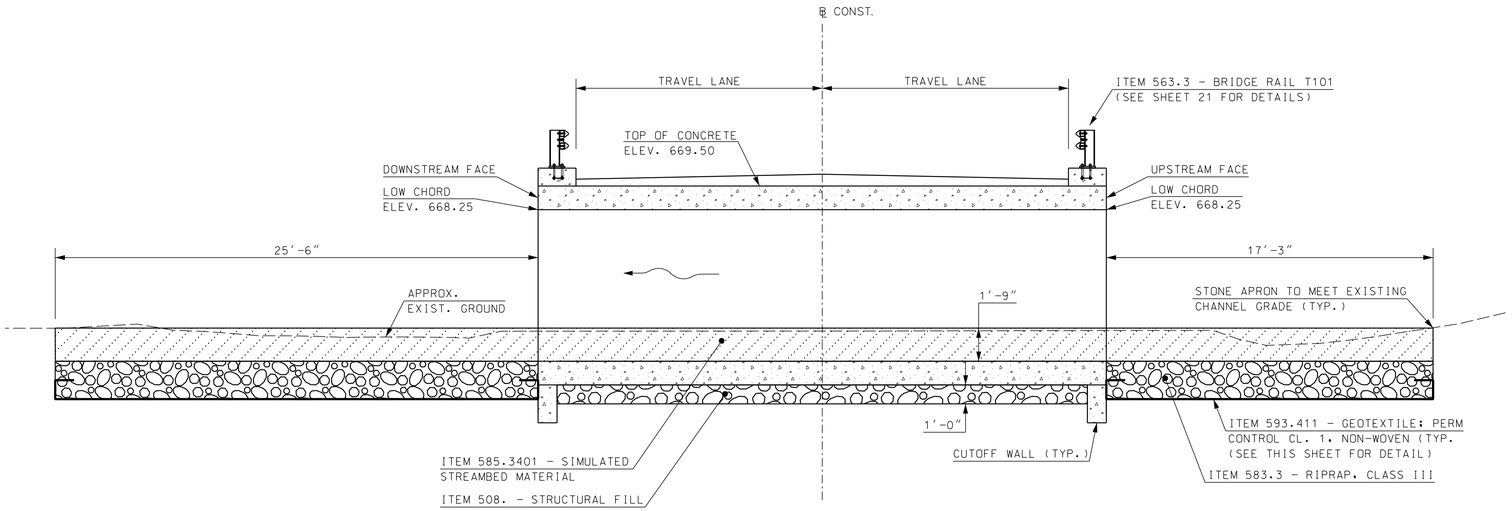
LOCATION SOUTH BENNINGTON RD OVER RUSSELL BROOK

BOX CULVERT DETAILS

BRIDGE SHEET 8 OF 12

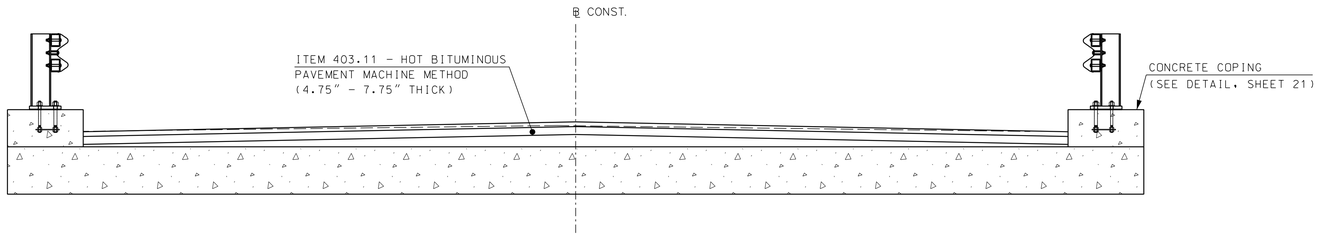
FILE NUMBER -

REVISIONS AFTER PROPOSAL			BY	DATE		BY	DATE
		DESIGNED	-	07/20	CHECKED	-	-
		DRAWN	TJG	07/20	CHECKED	-	-
		QUANTITIES	-	07/20	CHECKED	-	-
		ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	TOTAL SHEETS
		REV. DATE		X-A004(156)		14	16



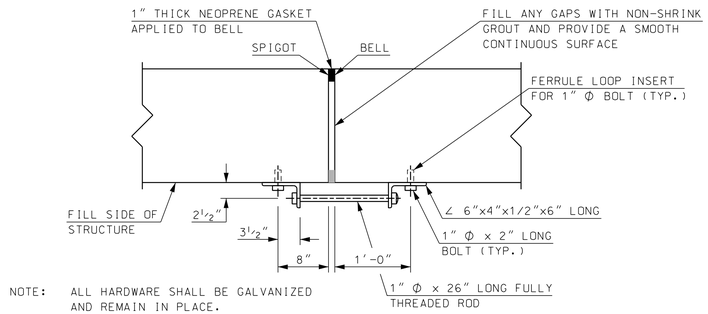
TYPICAL LONGITUDINAL SECTION ALONG PRECAST STRUCTURE

SCALE: ¼" = 1'-0"



BRIDGE PAVING DETAIL

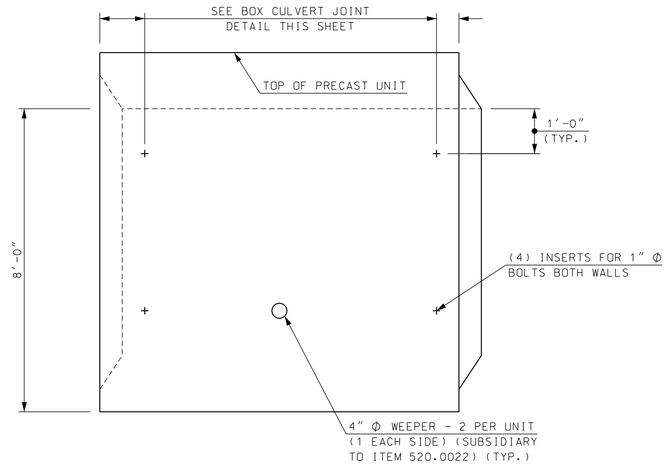
SCALE: ¼" = 1'-0"



NOTE: ALL HARDWARE SHALL BE GALVANIZED AND REMAIN IN PLACE.

STRUCTURE JOINT DETAIL

SCALE: 1" = 1'-0"



FERRULE LOOP INSERT LAYOUT

SCALE: ½" = 1'-0"

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SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
XX	29486det01	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN BENNINGTON BRIDGE NO. 099\080 STATE PROJECT 29486

LOCATION SOUTH BENNINGTON RD OVER RUSSELL BROOK

CULVERT AND CHANNEL DETAILS

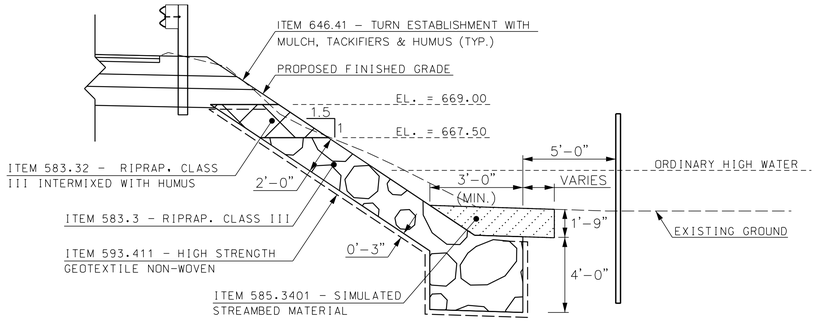
BRIDGE SHEET - OF -

REVISIONS AFTER PROPOSAL	BY	DATE

	BY	DATE		BY	DATE
DESIGNED	-	04/21	CHECKED	-	-
DRAWN	TJG	04/21	CHECKED	-	-
QUANTITIES	-	04/21	CHECKED	-	-

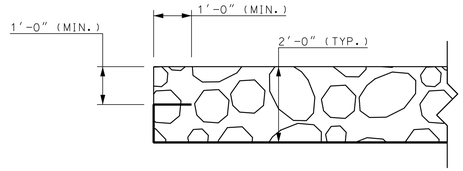
FILE NUMBER -

ISSUE DATE	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
REV. DATE	X-A004(156)	15	16



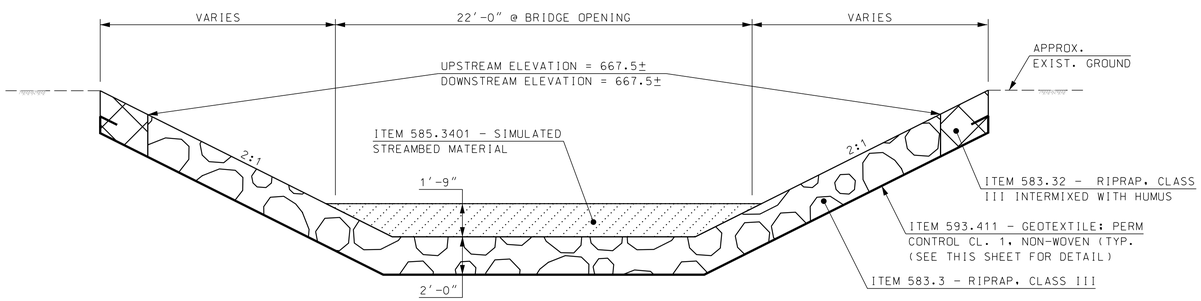
SLOPE RECONSTRUCTION DETAIL

NOT TO SCALE



RIPRAP, CLASS III – END GEOTEXTILE DETAIL

SCALE: ½" = 1'–0"



TYPICAL CHANNEL CROSS-SECTION

SCALE: ¼" = 1'–0"

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SUBDIRECTORY	.DGN LOCATOR	SHEET SCALE
XX	29486det02	AS NOTED

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION * BUREAU OF BRIDGE DESIGN

TOWN BENNINGTON BRIDGE NO. 099\080 STATE PROJECT 29486

LOCATION SOUTH BENNINGTON RD OVER RUSSELL BROOK

CULVERT AND CHANNEL DETAILS

BRIDGE SHEET - OF -

FILE NUMBER -

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	DESIGNED	-	04/21	CHECKED	-	-
	DRAWN	TJG	04/21	CHECKED	-	-
	QUANTITIES	-	04/21	CHECKED	-	-
	ISSUE DATE		FEDERAL PROJECT NO.		SHEET NO.	TOTAL SHEETS
	REV. DATE		X-A004(156)		16	16