VERMONT

Vermont Department of Environmental Conservation
Watershed Management Division
1 National Life Drive, Main 2
Montpelier VT 05620-3522
www.watershedmanagement.vt.gov

Agency of Natural Resources

[phone] 802-828-1535
[fax] 802-828-1544

AUTHORIZATION TO CONDUCT NEXT FLOOD MEASURES

Pursuant to Section F of the Vermont Stream Alteration General Permit

Project Number: **NFM-06-** 01 **-2016**

Applicant Name: Town of Bethel Phone: (802) 234-9722

Mailing Address: 134 So. Main St., Bethel, VT, 05032

Project Location: 320 old Route 12

Email: bethel town mgr@ Comcast.net

The Secretary of the Vermont Agency of Natural Resources (VT ANR) has determined that:

1. This project authorizes Removal of existing bridge and restoration of stream channel
2. The proposed activity is eligible for coverage under the VT ANR Stream Alteration General Permit – Next Flood Measures.
3. The proposed activity will meet the terms and conditions of Section F of the General Permit provided:
   a) The project will be completed and approved as shown on the plan dated 09/2015, prepared by Dubois & King, and approved by the Vermont Agency of Natural Resources.
   b) The project is proportional to the threat and conditioned to cease when the threat to life or to improved property has ended.
   c) The project will not result in a threat to life, public health or safety.
   d) The project will meet the standards detailed in subsection E.2.1 and E.2.2 of the General Permit.
   e) The project will meet Stream Alteration Standards to the greatest extent possible.
   f) A pre-construction meeting is held between the contractor, owner/applicant, and the ANR River Management Engineer.
   g) The River Management Engineer is notified by phone or email when construction begins and when the project is complete.

If there are any changes in the project plan or deviation in construction from the plan, the Permittee must notify the River Management Engineer immediately.

If the project is constructed as you have described, as shown on the above referenced approved plans and according to the above conditions, there is no reason to expect any violation of Vermont Water Quality Standards.

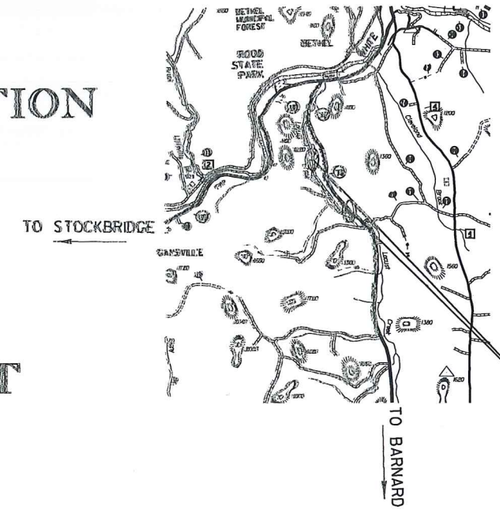
Signed this 15th day of March, 2015

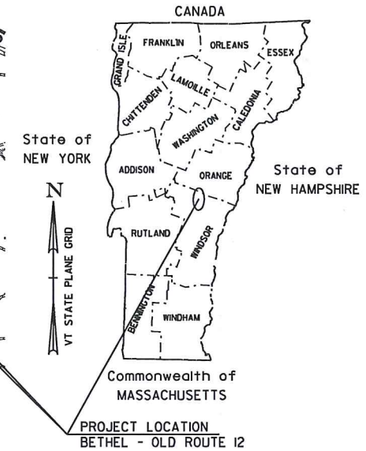
This permit expires October 1, 2016.

David K. Mears, Commissioner
Department of Environmental Conservation

by: _____
Jaron Borg, River Management Engineer

STATE OF VERMONT
AGENCY OF TRANSPORTATION





PROPOSED IMPROVEMENT
OLD ROUTE 12
TOWN OF BETHEL
COUNTY OF WINDSOR

APPROVAL
WATERSHED MANAGEMENT DIVISION
DATE 03/15/2016
BY
THIS APPROVAL IS SUBJECT TO THE TERMS AND CONDITIONS OF STREAM ALTERATION PERMIT # SA-06 ISSUED HEREWITH
NFM·06·01·2016

PROJECT LOCATION: (SITE 1) — BEGINNING IN THE TOWN OF BARNARD AT THE SOUTHERN INTERSECTION OF VERMONT ROUTE 12 AND OLD ROUTE 12 AND CONTINUING NORTHWARDS ALONG OLD ROUTE 12 FOR A DISTANCE OF APPROXIMATELY 230 FEET.

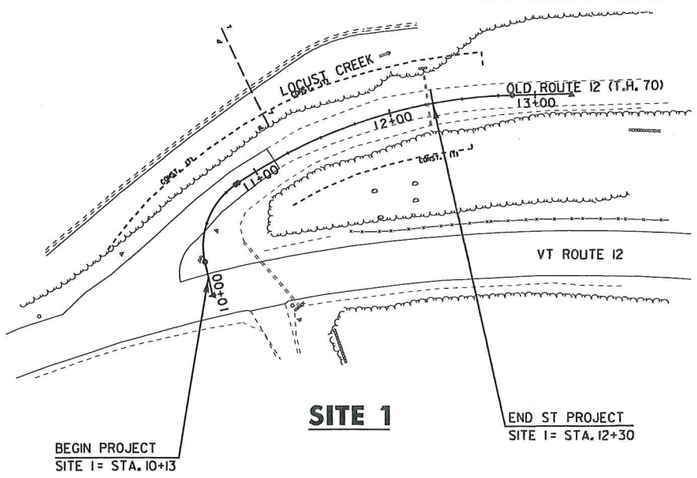
PROJECT LOCATION: (SITE 2) — BEGINNING IN THE TOWN OF BETHEL ON OLD ROUTE 12 AT A POINT APPROXIMATELY 175 FEET SOUTH OF TOWN BRIDGE 49 AND CONTINUING NORTHWARD FOR A DISTANCE OF APPROXIMATELY 522 FEET.

PROJECT DESCRIPTION: (SITE 1) — WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE RECONFIGURATION OF THE INTERSECTION OF OLD ROUTE 12 AND VT ROUTE 12, INCLUDING ROADWAY REALIGNMENT, SIGNAGE, STRIPING, DRAINAGE, GUARD RAIL RECONFIGURATION AND STONE FILL.

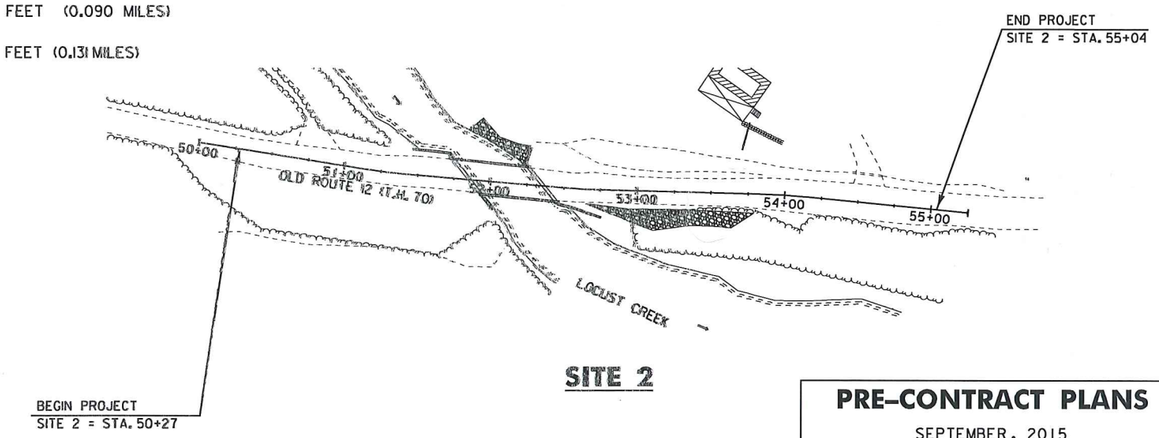
PROJECT DESCRIPTION: (SITE 2) — WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REMOVAL OF BRIDGE NO. 49, THE RESTORATION OF THE STREAM CHANNEL AND THE CREATION OF ROADWAY TURN-AROUNDS ON EITHER SIDE OF THE BRIDGE LOCATION.

SITE 1 PROJECT LENGTH = 217 FEET (0.041 MILES)
SITE 2 PROJECT LENGTH = 477 FEET (0.090 MILES)

TOTAL PROJECT LENGTH = 694 FEET (0.131 MILES)



SITE 1



SITE 2

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

SURVEYED BY : PHELPS ENGINEERING, INC.
SURVEYED DATE : UNKNOWN

DATUM
VERTICAL UNKNOWN (ASSUMED)
HORIZONTAL UNKNOWN (ASSUMED)

DuBois & King inc.

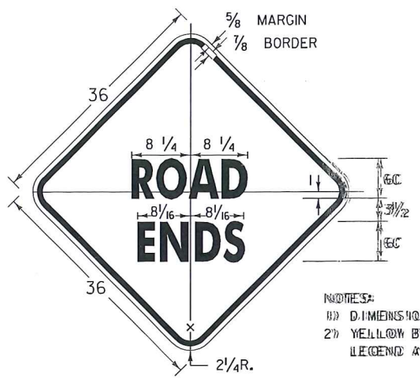
PRE-CONTRACT PLANS
SEPTEMBER, 2015
NOT FOR CONSTRUCTION

BETHEL TOWN MANAGER
APPROVED _____ DATE _____

PROJECT MANAGER : EVAN P. DETRICK, P.E.

PROJECT NAME : OLD ROUTE 12 IMPROVEMENTS
PROJECT NUMBER : 622906

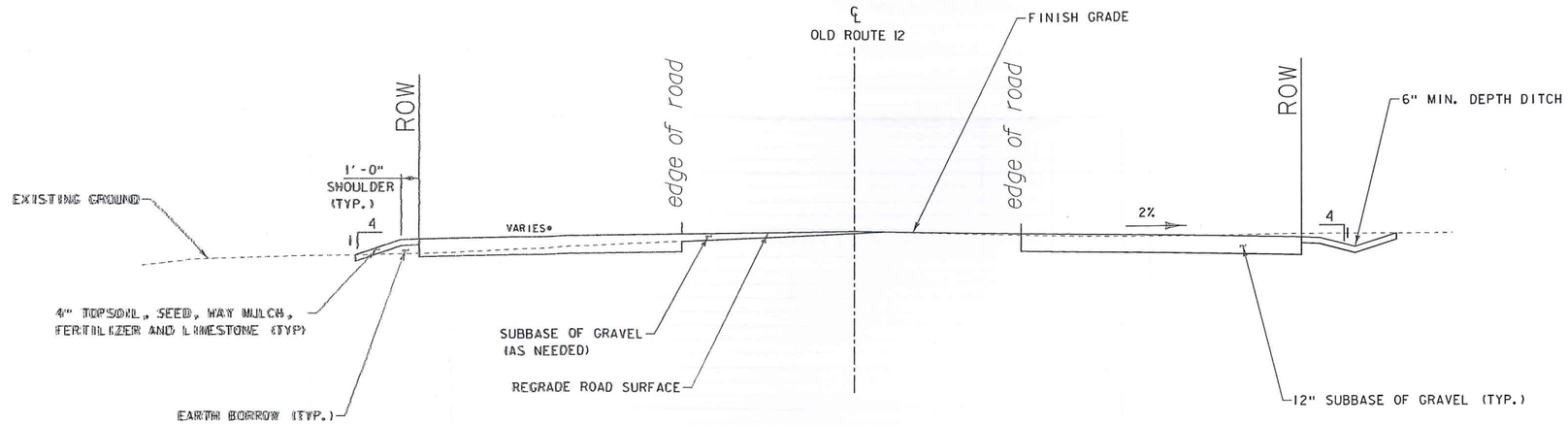
SHEET 1 OF 24 SHEETS



NOTES:
1) DIMENSIONS IN INCHES
2) YELLOW BACKGROUND WITH BLACK LEGEND AND BORDER

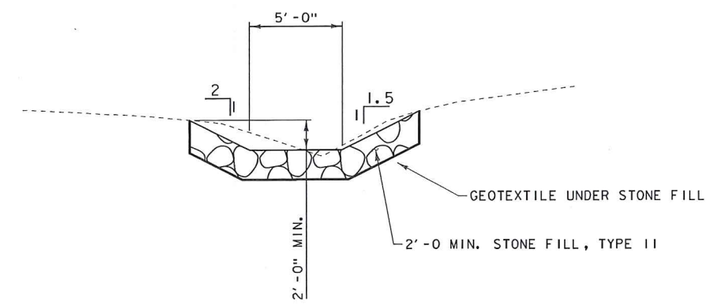
W8-3M FABRICATION DETAIL

NOT TO SCALE



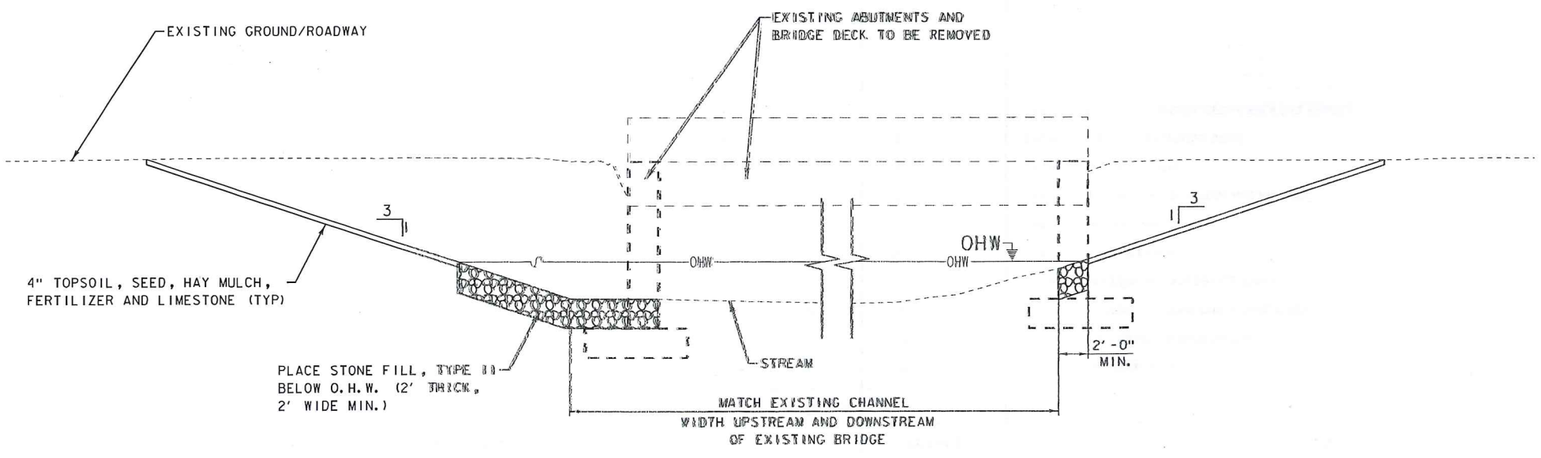
TURNAROUND TYPICAL SECTION

STA. 50+27 TO STA. 51+15
STA. 54+18 TO STA. 55+03
NOTE: * SEE CROSS SECTIONS FOR SLOPE
NOT TO SCALE



STONE-LINED SWALE TYPICAL SECTION

SCALE 1" = 10'-0"
10 0 10



ABUTMENT REMOVAL DETAIL

SCALE 1" = 10'-0"
10 0 10

APPROVAL
WATERSHED MANAGEMENT DIVISION
DATE 03/15/2016
BY
THIS APPROVAL IS SUBJECT TO THE TERMS AND CONDITIONS OF STREAM ALTERATION PERMIT #~~SA-6~~ NPM-06-01-2016 ISSUED HEREWITH

DuBois & King inc.
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FAX: (802) 728-4930
www.dubois-king.com
WILLISTON, VT
SPRINGFIELD, VT
BEDFORD, NH

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PROFESSIONAL SEAL

NOT FOR CONSTRUCTION PRE-CONTRACT PLANS

TOWN OF BETHEL, VERMONT

OLD ROUTE 12 IMPROVEMENTS

SHEET TITLE
TYPICAL SECTIONS AND DETAILS SHEET 2

DRAWN BY	DATE
RSD	SEP. 2015
CHECKED BY	D&K PROJECT #
EPD	622906
PROJ. ENG.	D&K ARCHIVE #
EPD	622906

SHEET NUMBER
8

I:\622906 - BethelBridge and Intersection\622906typ.dgn

(2) STA. 54+36.04 LT 24.00' TO
STA. 54+75.32 LT 22.54'
REMOVE EX. 12" CPEP
INSTALL NEW 15" CPEP
LENGTH = 40'-0"
INV. IN = 99.87'
INV. OUT = 99.19'

CURVE (1)	CURVE (2)	CURVE (3)
DELTA = 4°20'59"	DELTA = 3°24'58"	DELTA = 4°10'52"
D = 16°22'13"	D = 11°27'33"	D = 11°27'33"
R = 350.00'	R = 500.00'	R = 500.00'
T = 13.29'	T = 14.91'	T = 18.25'
L = 26.57'	L = 29.81'	L = 36.49'
E = 0.25'	E = 0.22'	E = 0.33'

STONE FILL, TYPE II
STA. 51+23 - STA. 52+21 RT
STA. 52+10 - STA. 52+46 LT

GEOTEXTILE UNDER STONE FILL
STA. 51+23 - STA. 52+21 RT
STA. 52+10 - STA. 52+46 LT

SPECIAL PROVISION (SPLIT RAIL FENCE)
STA. 51+34 LT - STA. 51+32 RT
STA. 53+96 LT - STA. 53+96 RT

APPROVAL
WATERSHED MANAGEMENT DIVISION
DATE 03/15/2016
BY
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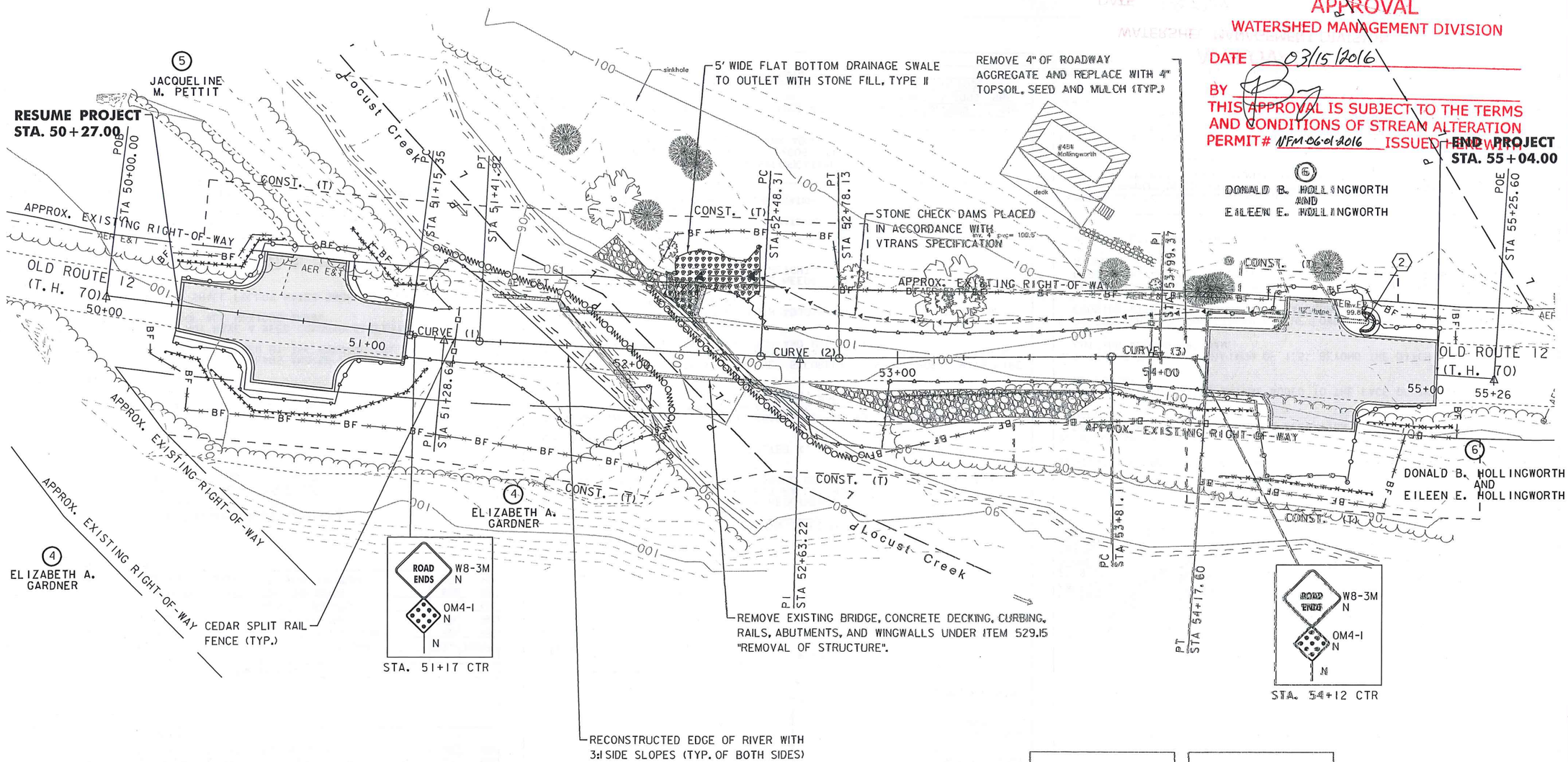


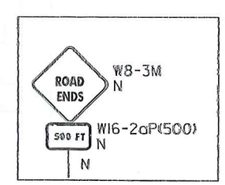
GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED
STA. 50+24 - STA. 50+42 RT
STA. 50+25 - STA. 50+63 LT
STA. 50+42 - STA. 51+23 RT
STA. 50+88 - STA. 51+18 LT
STA. 52+98 - STA. 54+35 RT
STA. 54+25 - STA. 54+82 LT
STA. 54+78 - STA. 55+10 RT

GEOTEXTILE FOR FILTER CURTAIN
STA. 51+20 LT - STA. 52+23 RT
STA. 52+04 LT - STA. 52+89 RT

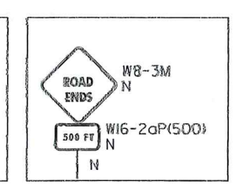
TEMPORARY STONE CHECK DAM, TYPE I
STA. 51+23 - STA. 52+21 RT
STA. 52+10 - STA. 52+46 LT
STA. 52+46 - STA. 54+36 LT

INLET PROTECTION, TYPE I
STA. 54+75 LT

BARRIER FENCE
STA. 50+18 - STA. 50+60 LT
STA. 50+18 - STA. 50+23 RT
STA. 50+77 - STA. 51+20 LT
STA. 52+04 - STA. 54+44 LT
STA. 52+89 - STA. 55+13 RT
STA. 54+61 - STA. 55+10 LT



500' S/O STA. 51+17
FACING NORTHBOUND
TRAFFIC ON RIGHT



500' N/O STA. 54+17
FACING SOUTHBOUND
TRAFFIC ON RIGHT

SCALE IN FEET
20 0 20

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PROFESSIONAL SEAL

NOT FOR CONSTRUCTION
CONTRACT PLANS

TOWN OF BETHEL, VERMONT

OLD ROUTE 12 IMPROVEMENTS

SHEET TITLE
LAYOUT SHEET SITE 2

DRAWN BY	DATE
RSD	SEP. 2015
CHECKED BY	D&K PROJECT #
EPD	622906
PROJ. ENG.	D&K ARCHIVE #
EPD	622906

SHEET NUMBER
11

I:\622906 - BethelBridge and Intersection\622906dgn.dgn

VAOT LOW GROW/FINE FESCUE MIX

	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
38%	57	95	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

VAOT RURAL AREA MIX

	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
37.5%	22.5	45	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	85%	98%
37.5%	22.5	45	TALL FESCUE	FESTUCA ARUNDINACEA	90%	95%
5.0%	3	6	RED TOP	AGROSTIS GIGANTEA	90%	95%
15.0%	9	18	WHITE FIELD CLOVER	TRIFOLIUM REPENS	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	60	120				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLETIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

CONSTRUCTION GUIDANCE

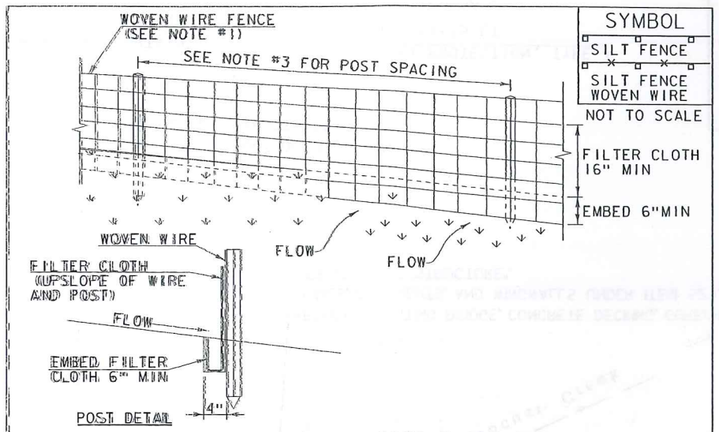
1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)

REVISIONS	
JANUARY 12, 2015	WHF



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

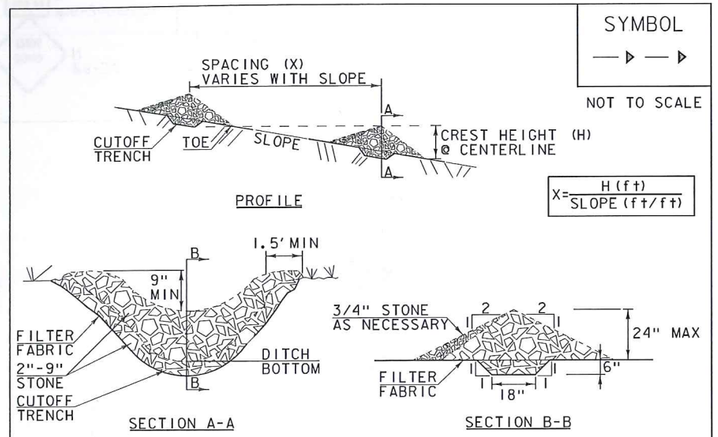
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 20, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS	
MARCH 20, 2008	WHF
JANUARY 8, 2009	WHF

APPROVAL
WATERSHED MANAGEMENT DIVISION
DATE 03/15/2016
BY
THIS APPROVAL IS SUBJECT TO THE TERMS AND CONDITIONS OF STREAM ALTERATION PERMIT# NFM.06.01.2016 ISSUED HEREWITH

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PROFESSIONAL SEAL

NOT FOR CONSTRUCTION PRE-CONTRACT PLANS

TOWN OF BETHEL, VERMONT

OLD ROUTE 12 IMPROVEMENTS

SHEET TITLE

EPSC DETAIL SHEET 1

DRAWN BY	DATE
RSD	AUG. 2015
CHECKED BY	D&K PROJECT #
EPD	622906
PROJ. ENG.	D&K ARCHIVE #
EPD	622906

SHEET NUMBER

13

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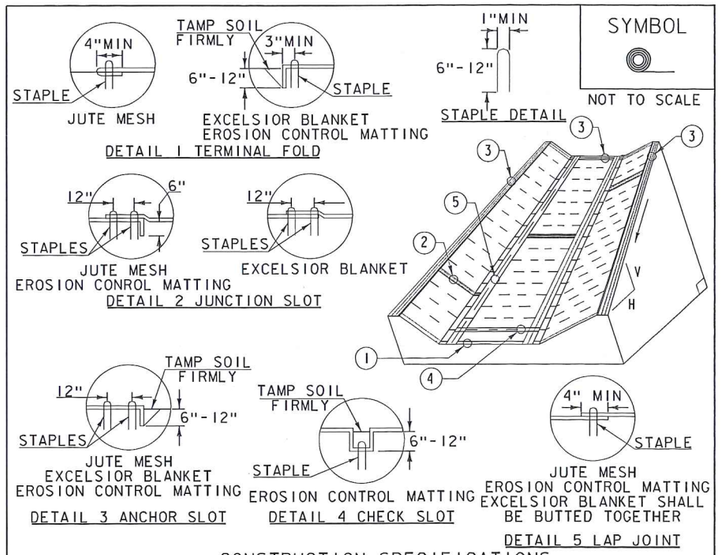


CONSTRUCTION SPECIFICATIONS

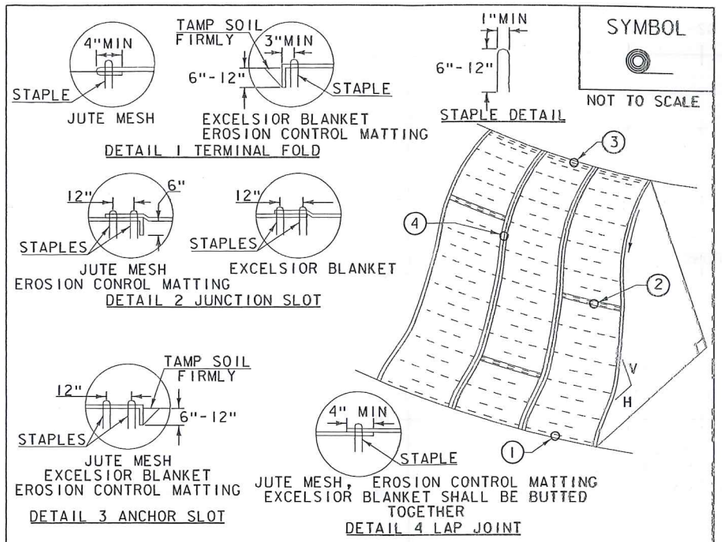
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X205' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) ~~OR PERMANENT EROSION MATTING (PAY ITEM 653.20).~~

REVISIONS	
MARCH 8, 2007	JMF
APRIL 16, 2007	WHF
JANUARY 13, 2009	WHF



CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X205' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) ~~OR PERMANENT EROSION MATTING (PAY ITEM 653.20).~~

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

APPROVAL
WATERSHED MANAGEMENT DIVISION
DATE 03/15/2016
BY
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TOWN OF BETHEL, VERMONT

OLD ROUTE 12 IMPROVEMENTS

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EPSC DETAIL SHEET 2

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EPD	622906
PROJ. ENG.	D&K ARCHIVE #
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SHEET NUMBER

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SHEET 14 OF 24

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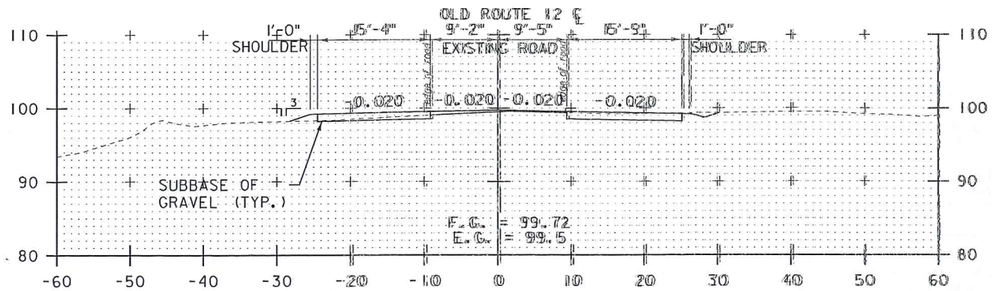

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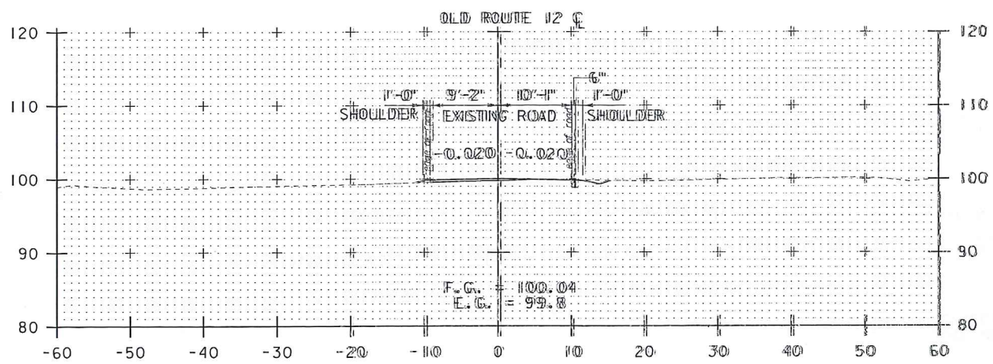

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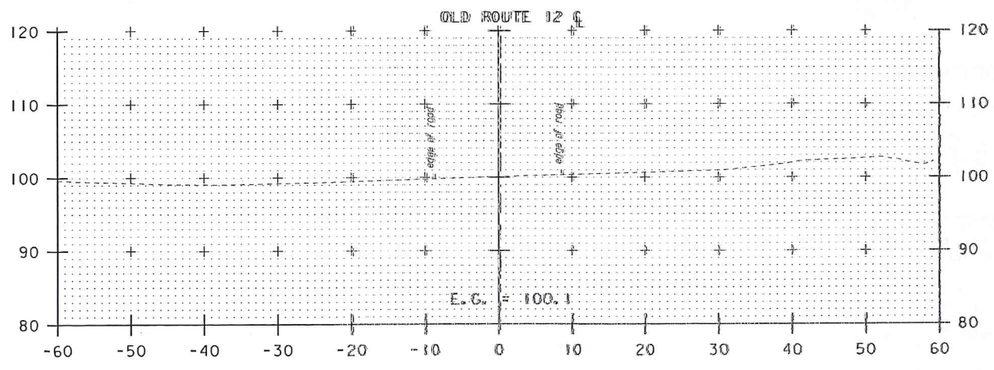

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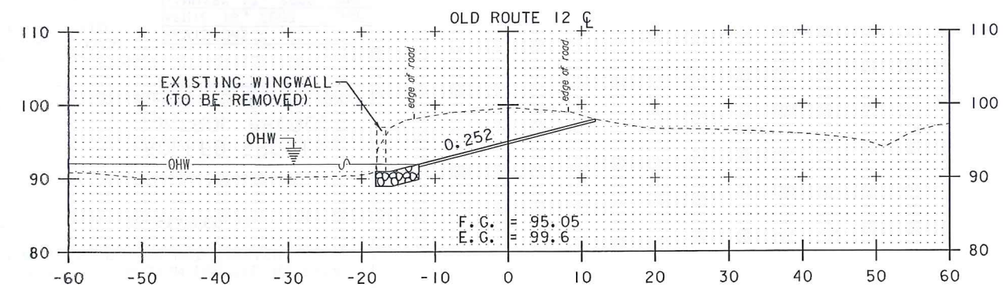

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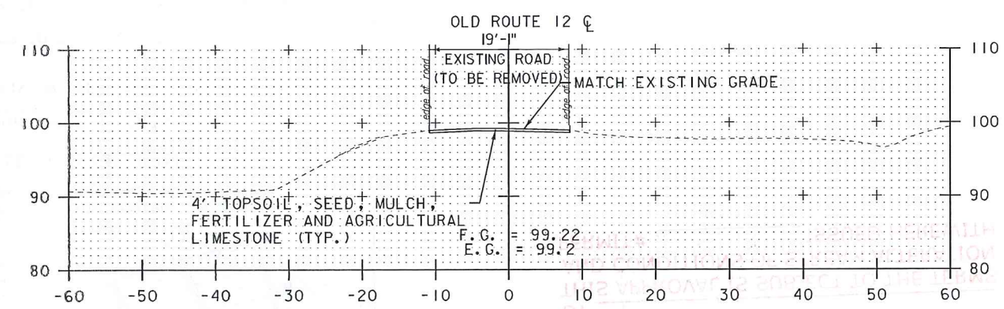

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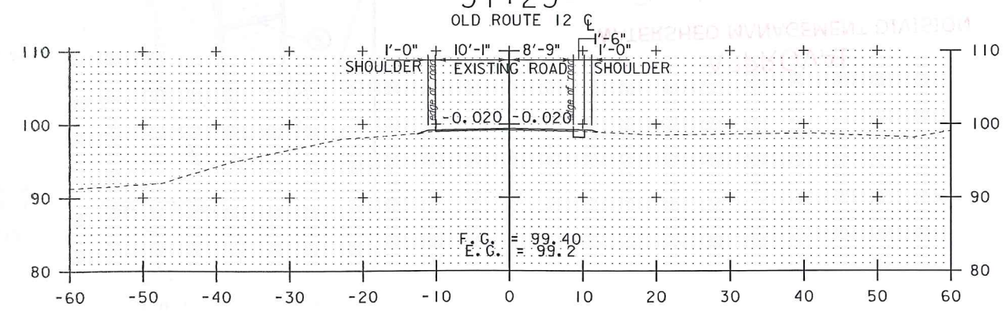

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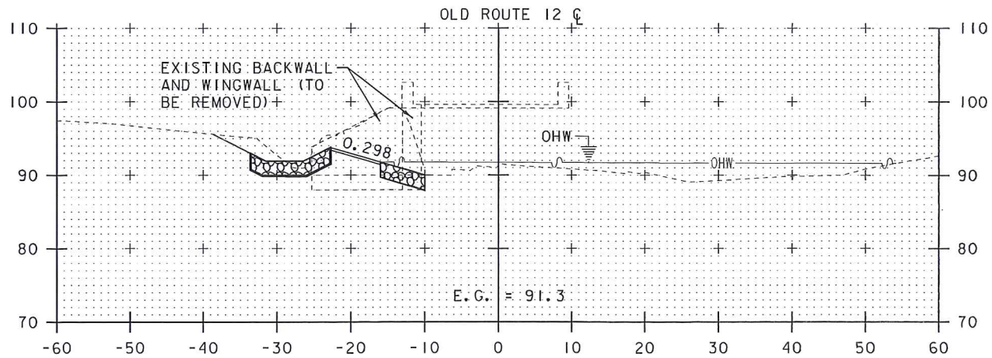

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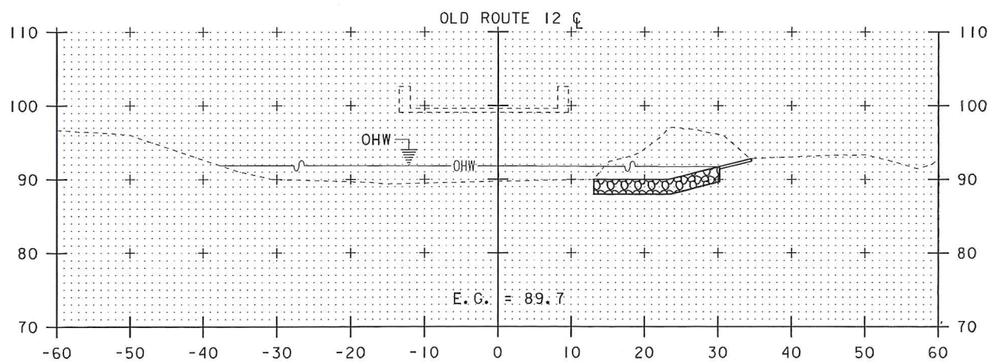

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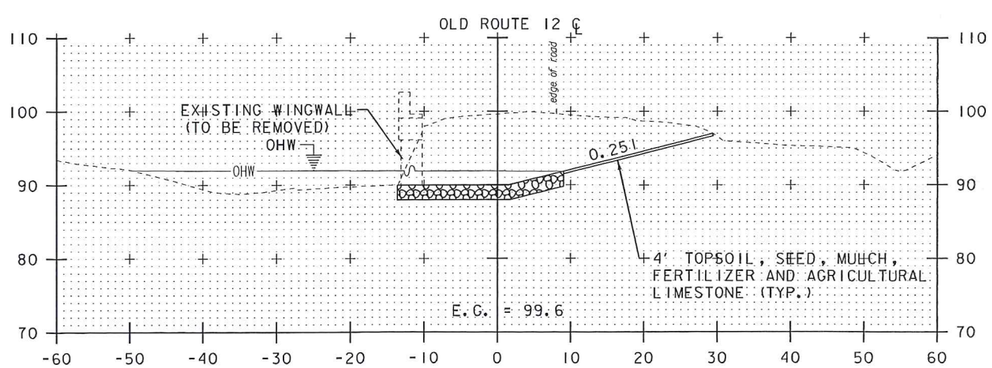

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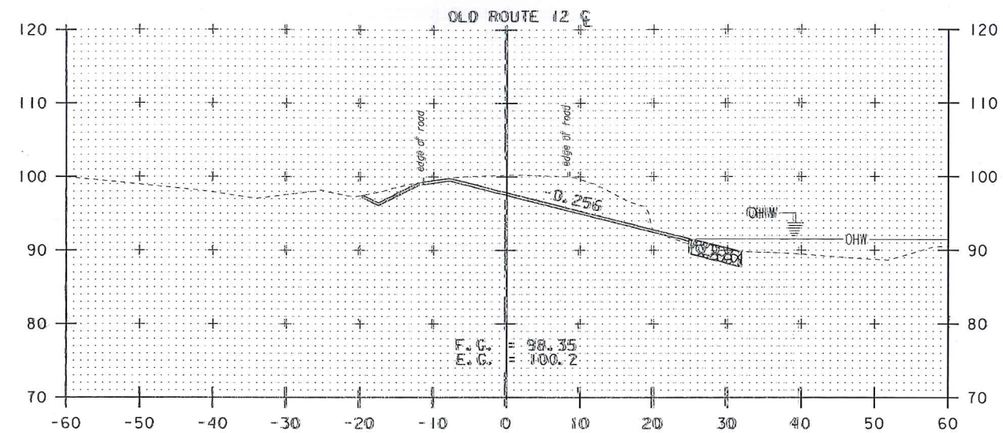

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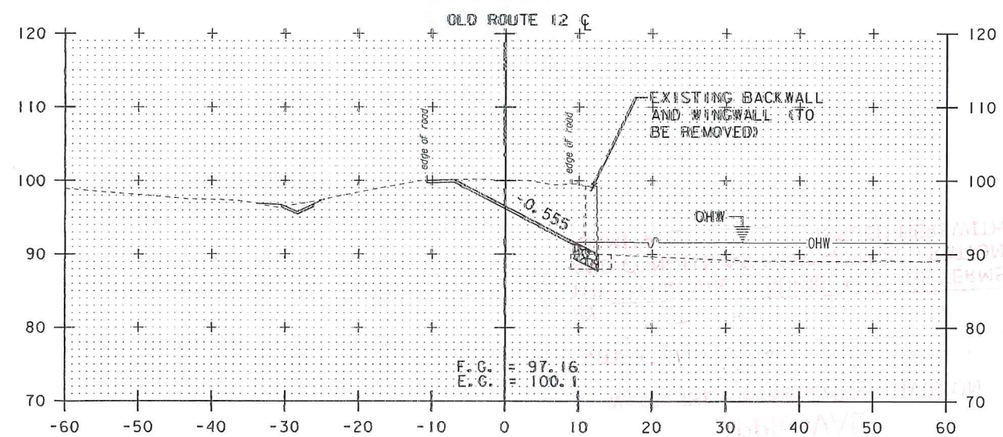

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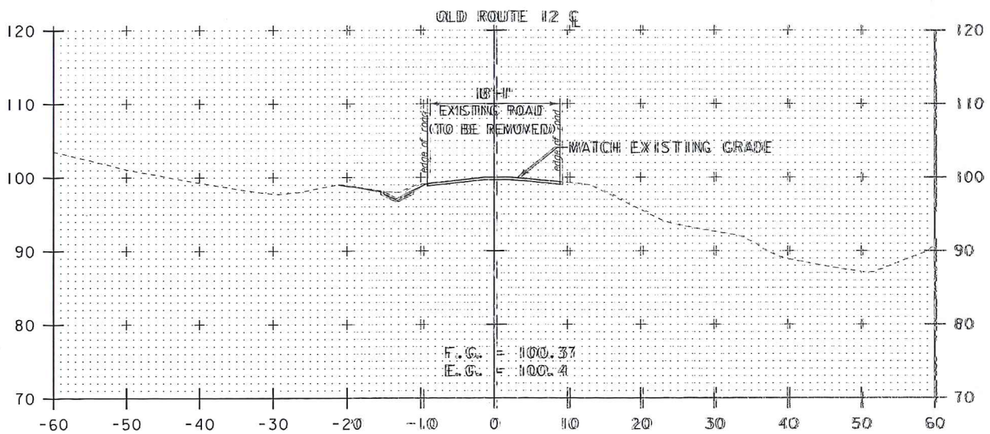

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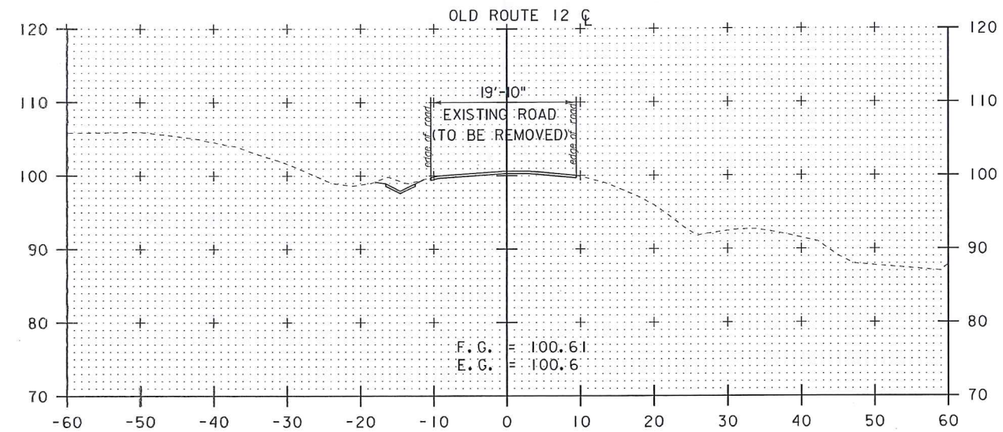

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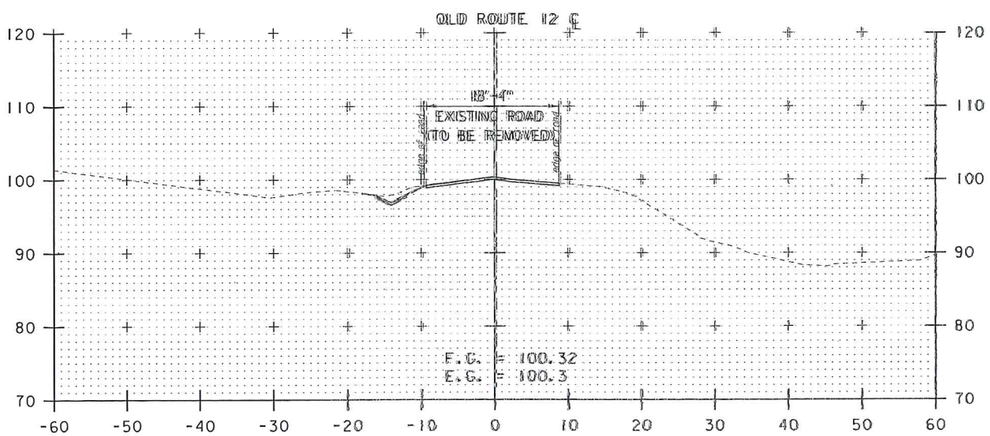

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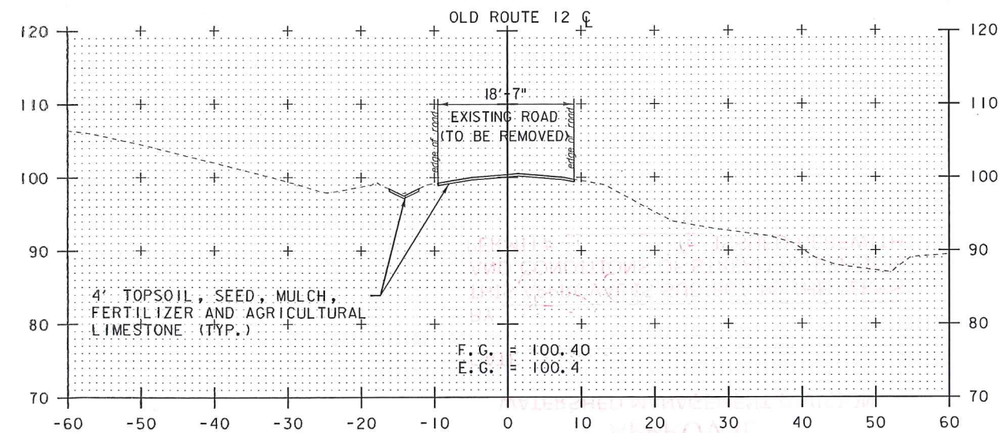

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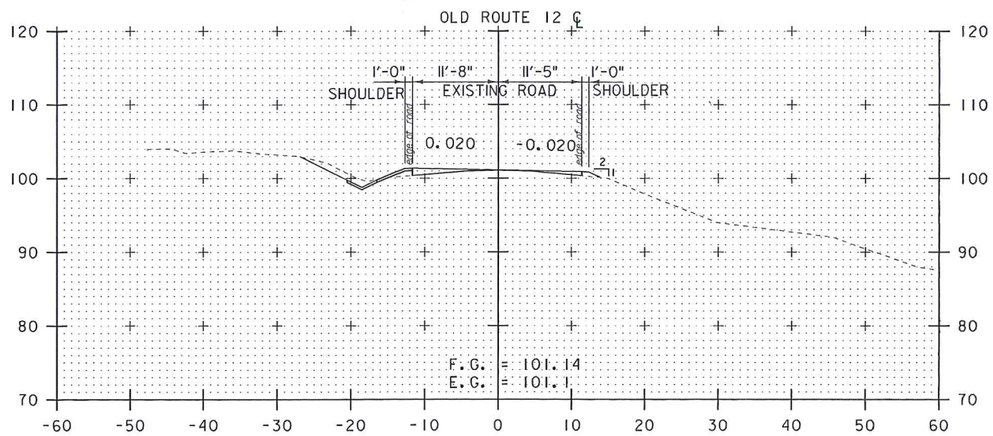

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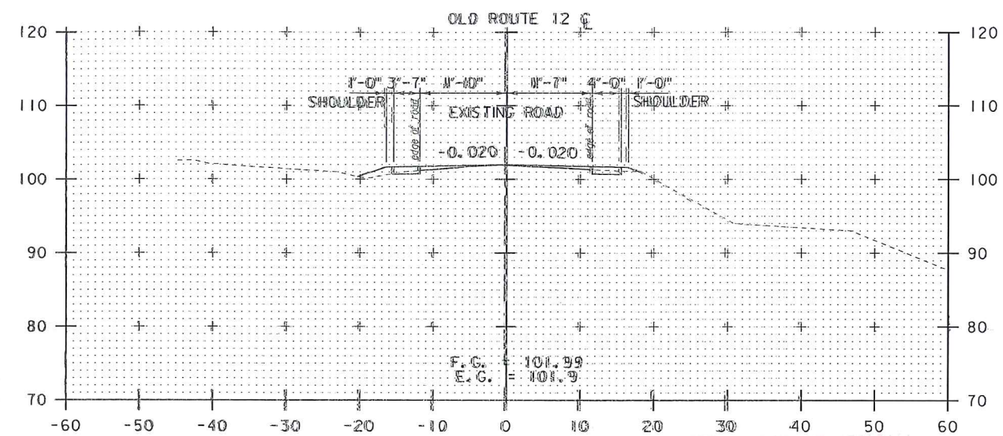

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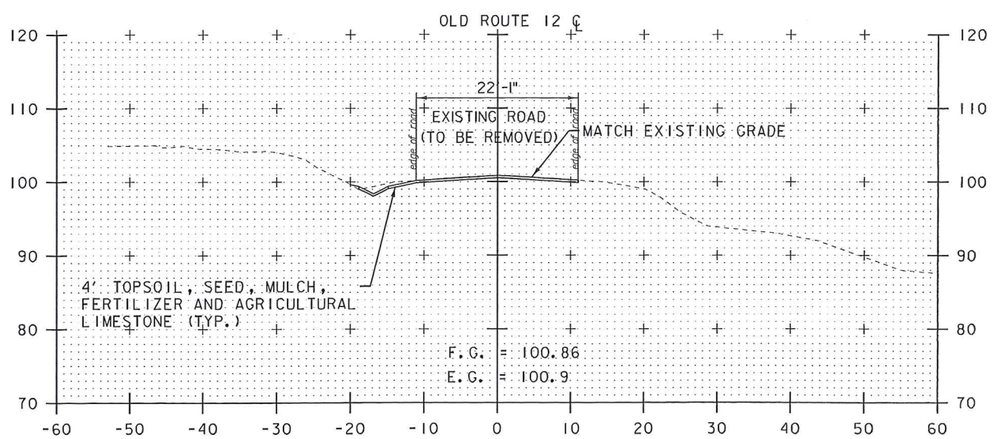

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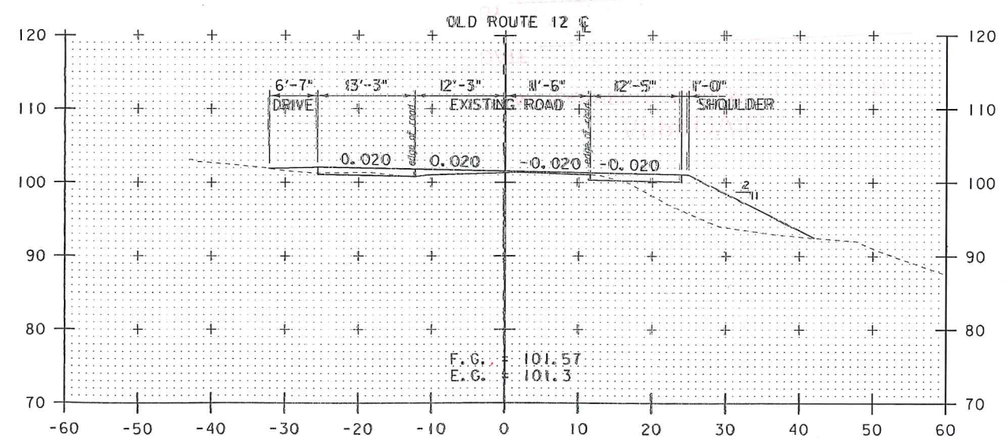

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SHEET 4

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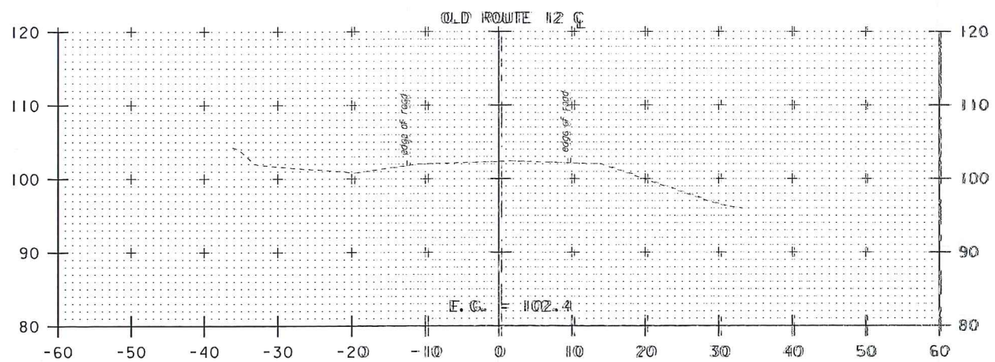

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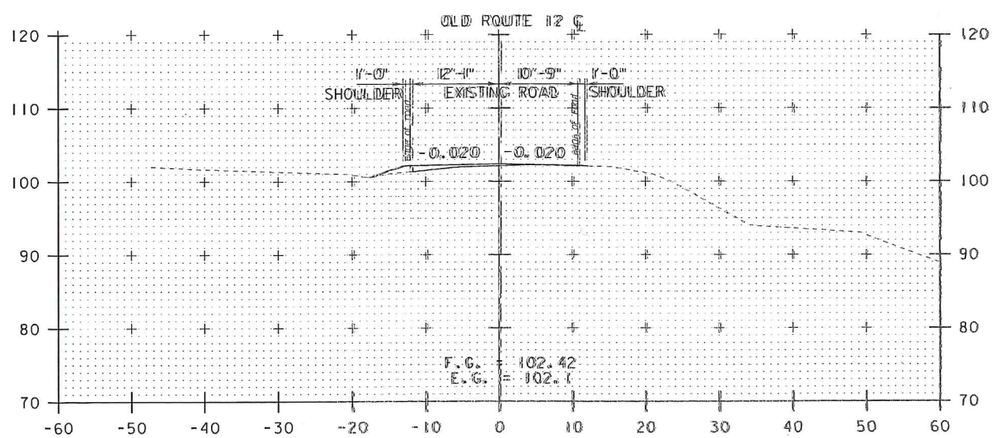

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24

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