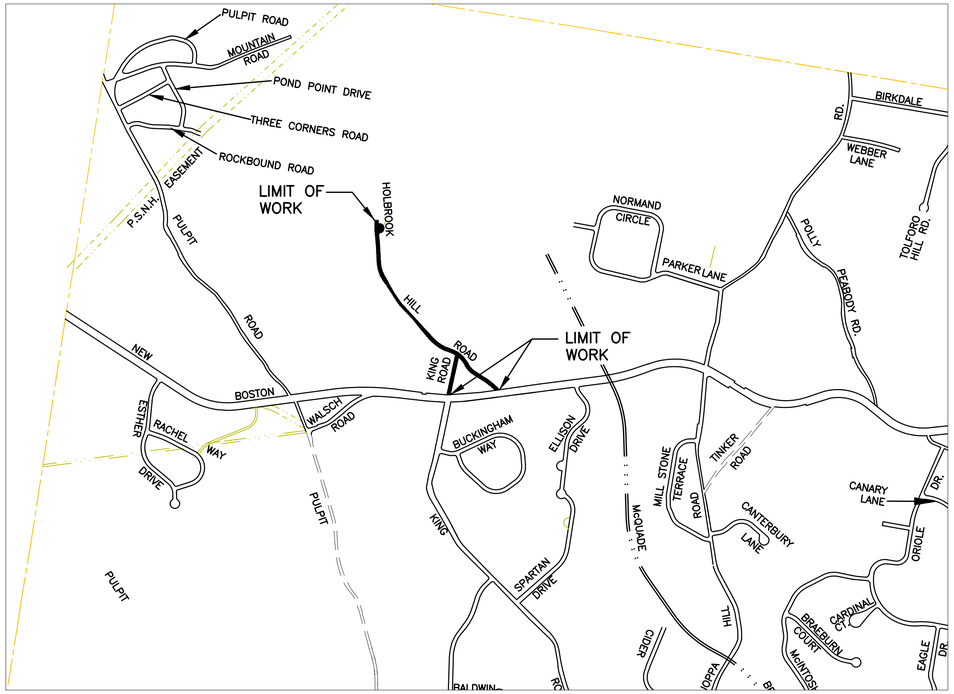
ROADWAY RECONSTRUCTION PLANS
HOLBROOK HILL ROAD
BEDFORD, NEW HAMPSHIRE



BEDFORD PUBLIC WORKS
55 CONSTITUTION DRIVE
BEDFORD, NH 03110

SHEET NO.	DESCRIPTION
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6	DRAINAGE NOTES
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TOWN OF BEDFORD
1750
NEW HAMPSHIRE

STATE OF NEW HAMPSHIRE
JEFFREY W. FOOTE
No. 10653
LICENSED
PROFESSIONAL ENGINEER
8-8-23

AUGUST 8, 2023

PLAN SET NO. _____

GENERAL CONSTRUCTION NOTES

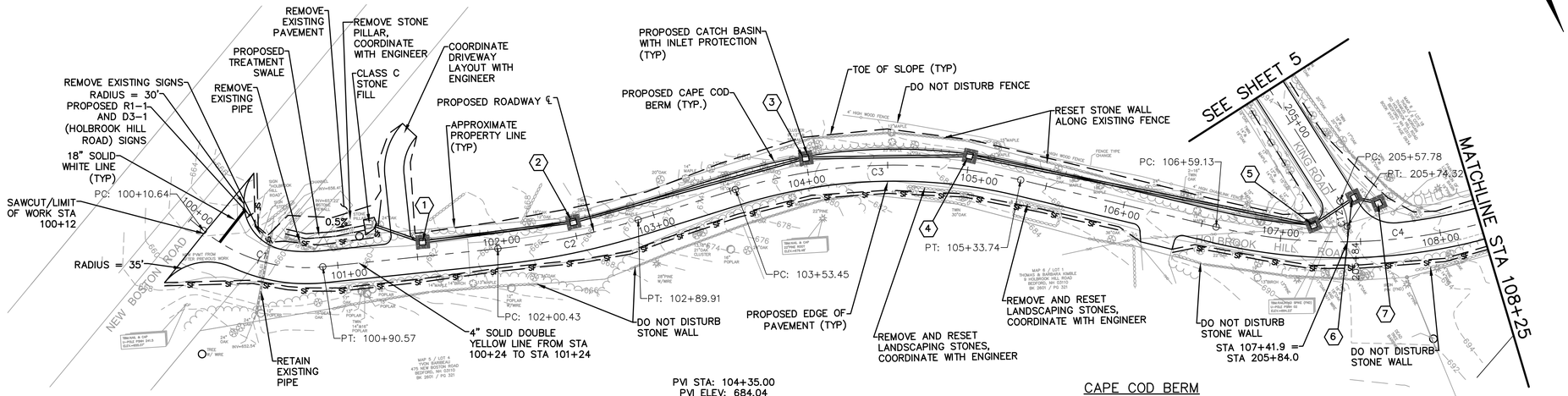
1. THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH NHDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, DATED 2016 AND "CONTRACT SPECIFICATIONS OF BEDFORD, NH – DEPARTMENT OF PUBLIC WORKS" OF WHICH THESE PLANS ARE A PART. IN THE EVENT ANY DISCREPANCIES EXIST BETWEEN THESE PLANS AND WRITTEN PORTIONS OF THE CONTRACT SPECIFICATIONS, THE CONTENT OF THE WRITTEN SPECIFICATIONS SHALL PREVAIL.
2. ALL WORK SHALL BE COMPLETED WITHIN THE RIGHT–OF–WAY UNLESS SPECIFIED BY THE PLANS OR THE TOWN ENGINEER. ANY WORK REQUIRED ON PRIVATE PROPERTY SHALL BE COORDINATED WITH THE HOMEOWNER AND THE TOWN ENGINEER TO MINIMIZE INCONVENIENCE AND PROVIDE ACCESS TO THE HOMEOWNER. CONTRACTOR SHALL CONTACT TOWN OF BEDFORD, TOWN ENGINEER, FOR LIMITS OF ALL PROPOSED EASEMENTS PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES PRIOR TO COMMENCEMENT OF THIS WORK.
4. NO EXISTING MONUMENTS, BOUNDS OR BENCHMARKS SHALL BE DISTURBED WITHOUT FIRST MAKING PROVISIONS FOR RELOCATION.
5. UNSUITABLE MATERIAL, ROOTS AND STUMPS WITHIN THE LIMITS OF ROADBED SHALL BE REMOVED AS ORDERED.
6. DIMENSIONS, ANGLES, BEARINGS, AND ELEVATIONS SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM LIMITED FIELD INVESTIGATIONS AND SURVEY AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY PROJECT WORK. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE ADVANCING THE WORK. SHOP DRAWINGS REQUIRED FOR VARIOUS ITEMS OF THE WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS AND SHALL BE SO NOTED.
7. REMOVE TOPSOIL FOR ITS TOTAL DEPTH WITHIN THE LIMITS OF THE SLOPE LINES. UNLESS OTHERWISE DIRECTED, STOCKPILE TOPSOIL AND USE IT ON THIS PROJECT AS NEEDED UNDER SECTION 646.
8. THE CONTRACTOR SHALL CONTACT DIGSAFE AT 811 A MINIMUM OF 72 HOURS PRIOR TO ANY EXCAVATION.
9. SHOULD ANY ALTERING, ADJUSTING, OR RELOCATING OF UTILITIES BE REQUIRED, THIS WORK SHALL BE COMPLETED BY THE APPROPRIATE UTILITY COMPANY AND IS NOT PART OF THIS CONTRACT. HOWEVER, THE CONTRACTOR SHALL FACILITATE THE UTILITY COMPANY IN THEIR PERFORMANCE OF THIS WORK.
10. ANY DITCHLINES THAT EXCEED 6 PERCENT IN GRADE SHALL BE LINED WITH RIP–RAP OR TURF REINFORCEMENT MATTING AS SPECIFIED ON THE PLANS.
11. ALL SIGNS, MAILBOXES, PROPERTY BOUNDS, ETC. DISTURBED BY THE CONSTRUCTION ACTIVITIES SHALL BE RESET BY THE CONTRACTOR OR HIS AGENT.
12. SAWCUT ALL EXISTING PAVEMENT AT LIMITS OF WORK.
13. CONTRACTOR SHALL COORDINATE WITH THE FIELD ENGINEER AND REMOVE TREES AS NECESSARY TO COMPLETE THE WORK AND/OR AS DIRECTED BY THE TOWN ENGINEER.
14. CONSTRUCT PAVED DRIVE APRON FOR ALL EXISTING DRIVEWAYS AS DIRECTED.
15. ALL NEW EMBANKMENT SLOPES SHALL BE LOAMED AND SEEDED. MULCH AS DIRECTED.
16. CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR TRAFFIC CONTROL AND ASSOCIATED SIGNAGE AND WARNING DEVICES DURING EXECUTION OF THIS CONTRACT.
17. CATCH BASIN RIM ELEVATIONS SHALL BE SET TO ASPHALT BINDER GRADE. FUTURE WEARING COURSE SHALL TAPER INTO THE GRATE.
18. GROUND SURVEY AND BASE PLAN PROVIDED BY SANDFORD SURVEYING AND ENGINEERING, BEDFORD, NH.
19. TYPICAL SECTIONS AND DETAILS PROVIDED BY TOWN OF BEDFORD, NH.
20. EXPOSED SOILS IN DELINEATED WETLANDS AT OUTFALLS AND ALONG SWALES WILL BE SEEDED WITH ERNMX–183, NATIVE DETENTION AREA SEED MIX, OR EQUIVALENT.
21. CONTRACTOR TO MAINTAIN EXISTING DRIVE PIPES UNLESS OTHERWISE NOTED.
22. INSTALL INLET PROTECTION IN ALL EXISTING AND PROPOSED CATCH BASINS (SEE EROSION CONTROL DETAILS). INLET PROTECTION SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT.
23. ASPHALT BERMS SHALL BE UTILIZED TO PREVENT CONCENTRATED CURB LINE FLOW FROM ENTERING PRIVATE PROPERTIES THROUGH THE BREAK IN PROPOSED CURB RUNS. COORDINATE WITH ENGINEER.

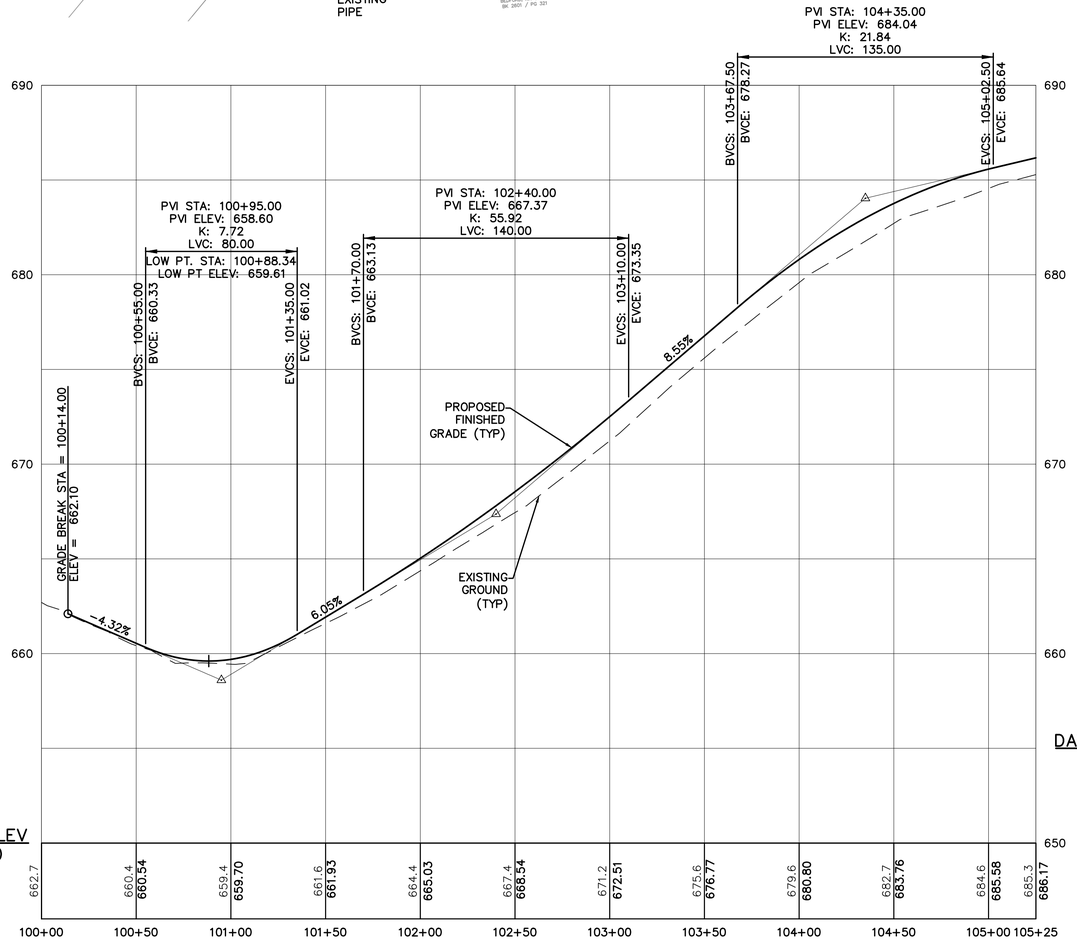
CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C1	STA 100+52.88	45° 47' 46"	100.00	42.24	79.93

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C2	STA 102+45.32	11° 23' 34"	450.00	44.89	89.48

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C3	STA 104+45.84	30° 50' 09"	335.00	92.39	180.29

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C4	STA 107+49.14	30° 04' 49"	335.00	90.01	175.88





CAPE COD BERM

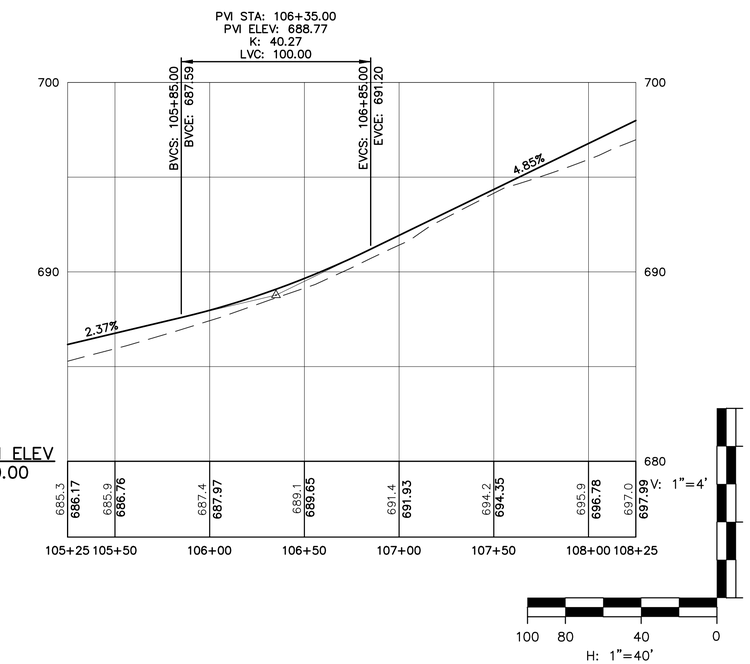
CONSTRUCT CAPE BERM AT THE FOLLOWING LOCATION:

1. STA 101+47, LT TO STA 202+02, RT
2. STA 202+02, LT TO STA 205+62, LT

STONE WALL

RECONSTRUCT STONE WALL MULTIPLE STONES WIDE (ITEM 572.2) AT RIGHT OF WAY LINE AT THE FOLLOWING LOCATIONS:

1. STA 102+17, LT TO STA 102+20, LT
2. STA 103+86, LT TO STA 105+17, LT
3. STA 105+34, LT TO STA 107+00, LT



NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL ROAD RECONSTRUCTION PLAN AND PROFILE 1

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD RECONSTRUCTION PLANS

BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

SHEET: 1 OF 23

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C5	STA 112+04.06	37° 59' 00"	560.00	192.73	371.24

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C6	STA 114+46.28	18° 25' 59"	335.00	54.36	107.78

CAPE COD BERM

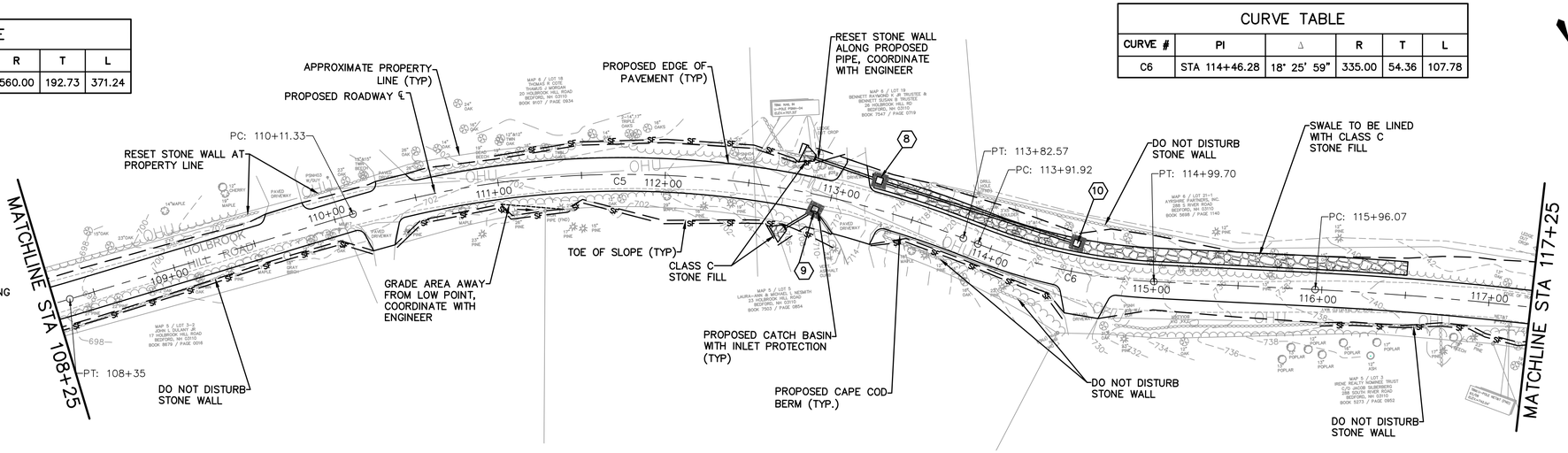
CONSTRUCT CAPE BERM AT THE FOLLOWING LOCATION:

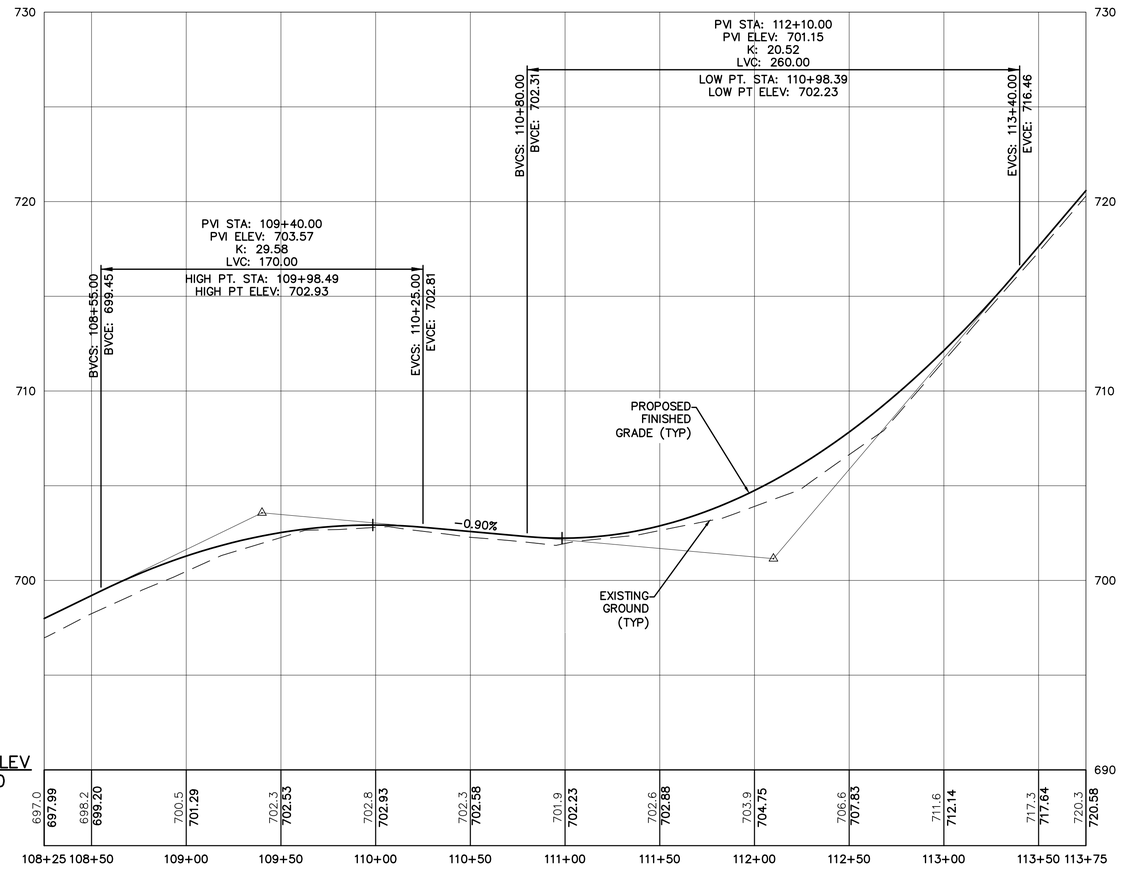
1. STA 112+91, RT TO STA 114+47, RT

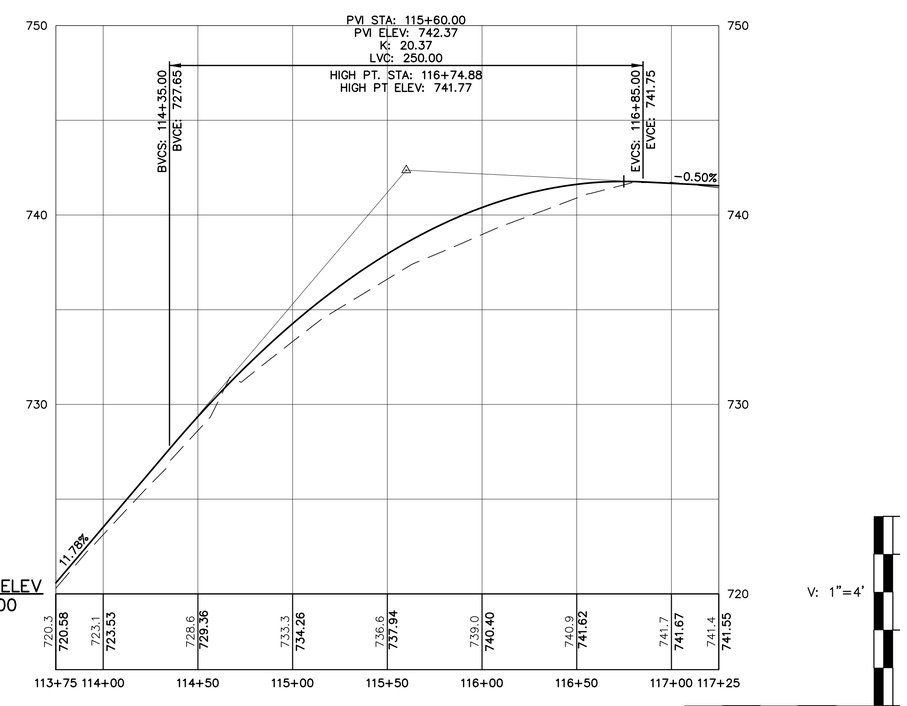
STONE WALL

RECONSTRUCT STONE WALL MULTIPLE STONES WIDE (ITEM 572.2)AT RIGHT OF WAY LINE AT THE FOLLOWING LOCATIONS:

1. STA 108+75, RT TO STA 109+27, RT
2. STA 109+29, LT TO STA 109+58, LT
3. STA 109+86, LT TO STA 110+24, LT
4. STA 112+66, LT TO STA 113+00, LT







NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL ROAD
PLAN AND PROFILE 2

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS
BEDFORD, NEW HAMPSHIRE

DATE: AUGUST 8, 2023
SCALE: AS SHOWN

SHEET: 2 OF 23

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C7	STA 117+07.76	6° 23' 35"	2000.00	111.70	223.16

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C8	STA 121+86.97	38° 19' 24"	775.00	269.30	518.37

CAPE COD BERM

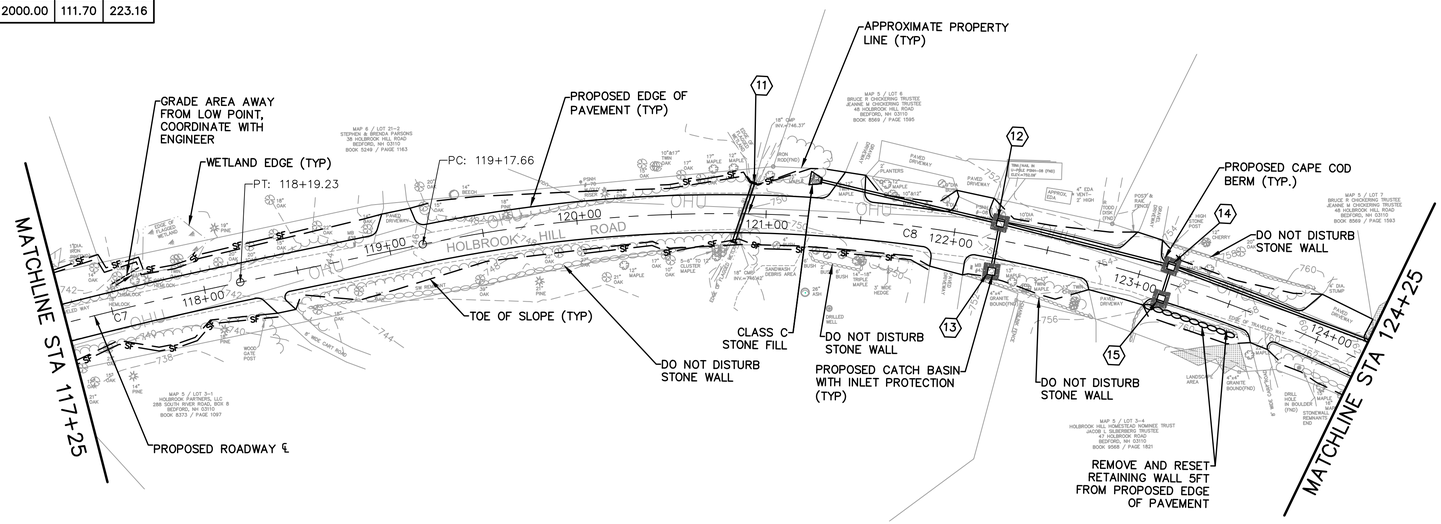
CONSTRUCT CAPE BERM AT THE FOLLOWING LOCATIONS:

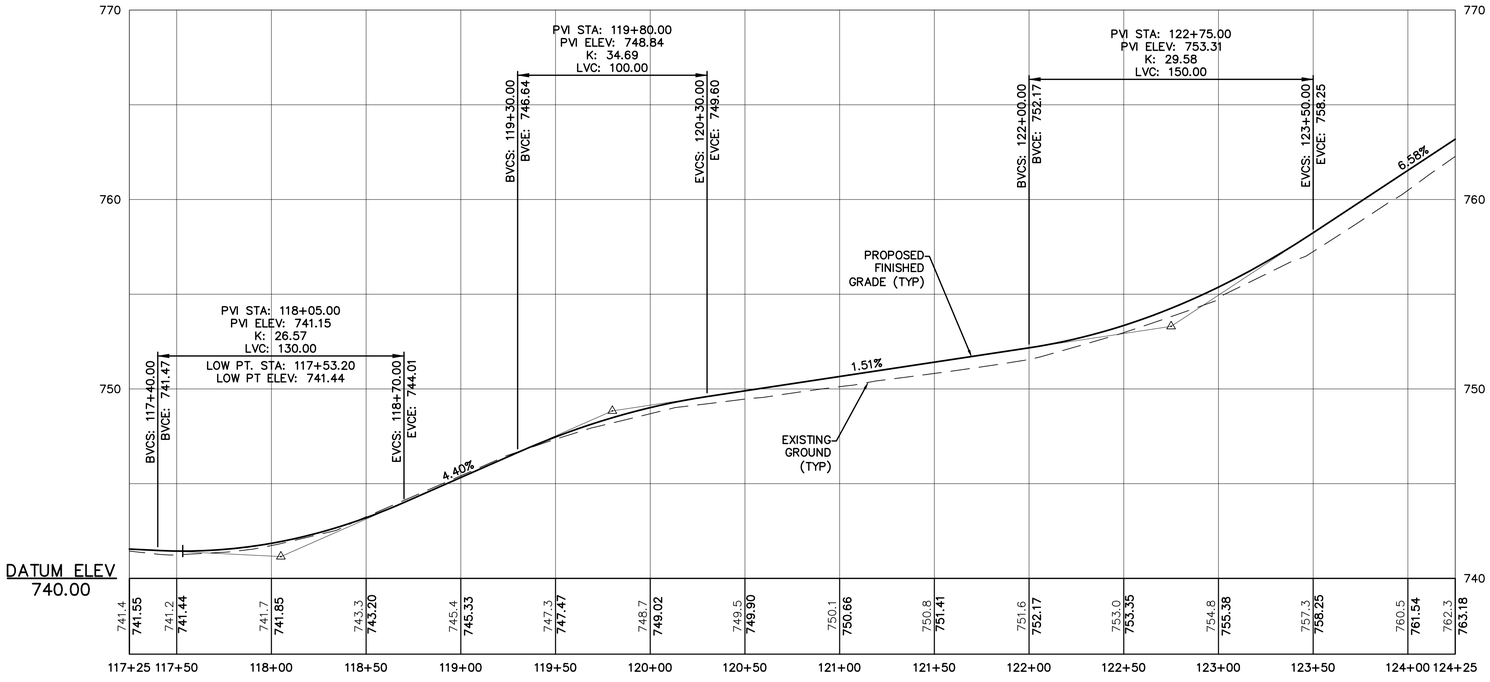
1. STA 122+16, LT TO STA 124+25, LT
2. STA 123+08, RT TO STA 124+25, RT

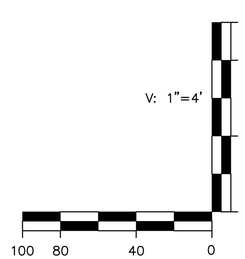
STONE WALL

RECONSTRUCT STONE WALL MULTIPLE STONES WIDE (ITEM 572.2)AT RIGHT OF WAY LINE AT THE FOLLOWING LOCATIONS:

1. STA 124+00, RT TO STA 124+25, RT







NO.	DATE	REVISION DESCRIPTION

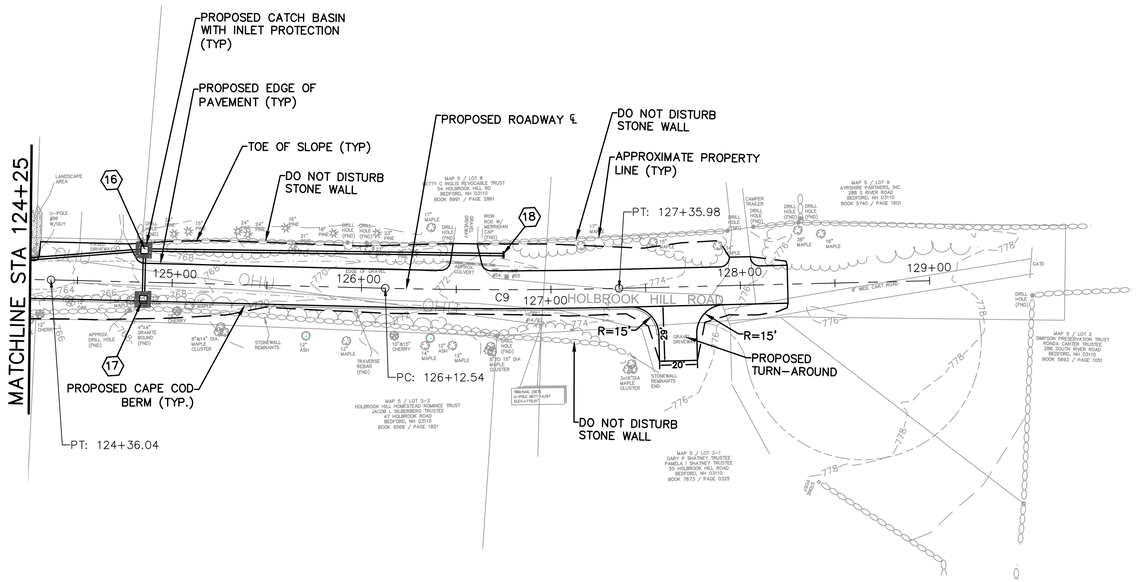
HOLBROOK HILL ROAD
PLAN AND PROFILE 3

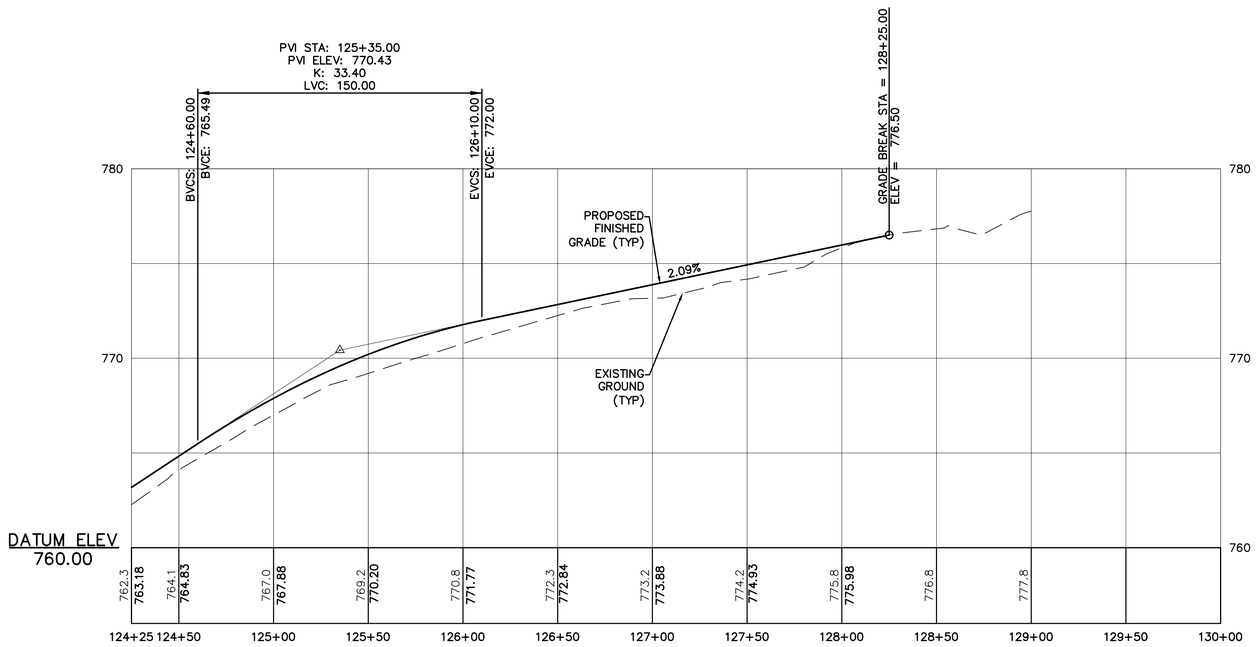
PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

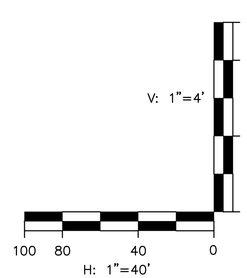
HOLBROOK HILL ROAD
RECONSTRUCTION PLANS
BEDFORD, NEW HAMPSHIRE

DATE: AUGUST 8, 2023
SCALE: AS SHOWN
SHEET: 3 OF 23

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C9	STA 126+74.27	2° 49' 45"	2500.00	61.73	123.44







CAPE COD BERM

CONSTRUCT CAPE BERM AT THE FOLLOWING LOCATION:

1. STA 124+25, LT TO STA 124+50, LT
2. STA 124+25, RT TO STA 127+57, RT

STONE WALL

RECONSTRUCT STONE WALL MULTIPLE STONES WIDE (ITEM 572.2)AT RIGHT OF WAY LINE AT THE FOLLOWING LOCATIONS:

1. STA 124+25, RT TO STA 125+35, RT

NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL ROAD
PLAN AND PROFILE 4

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

BEDFORD, NEW HAMPSHIRE

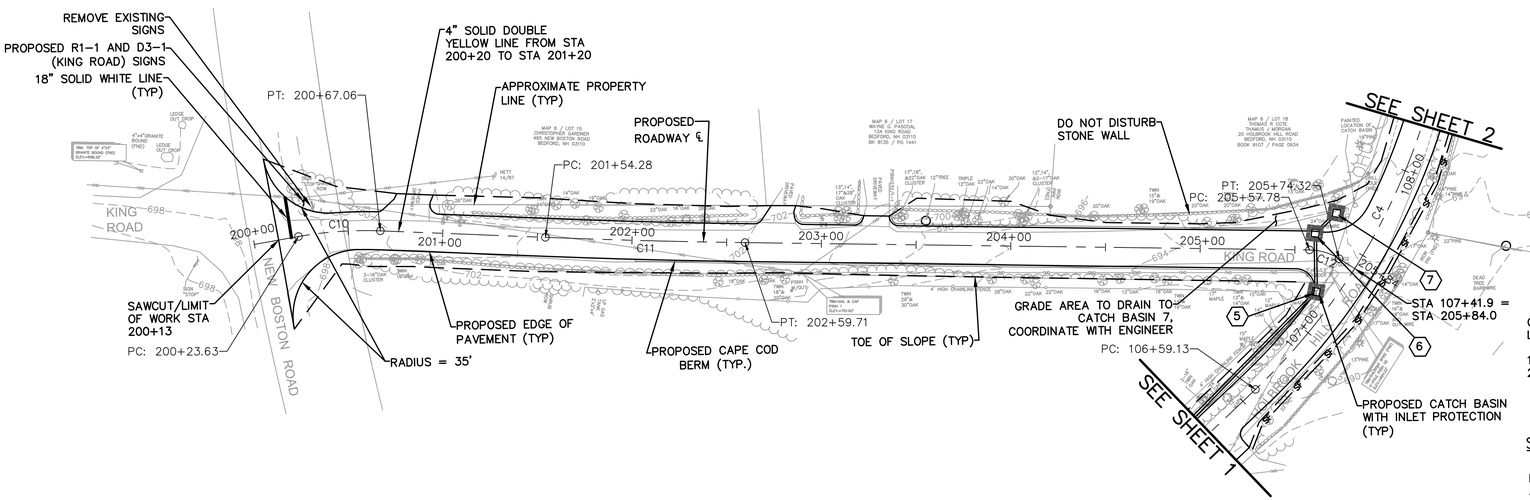
SCALE: AS SHOWN

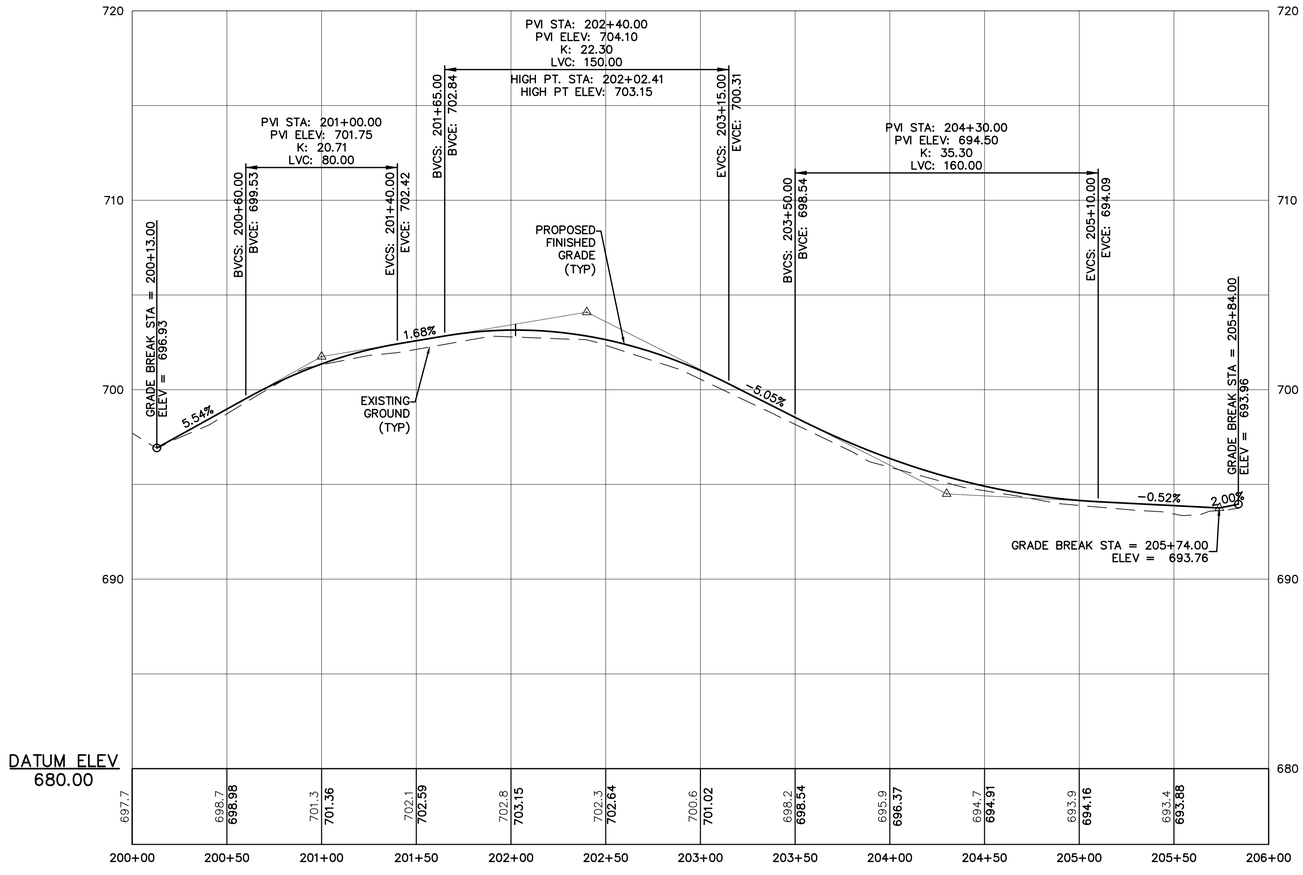
SHEET: 4 OF 23

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C10	STA 200+45.43	12° 26' 36"	200.00	21.80	43.44

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C11	STA 202+07.00	1° 30' 37"	4000.00	52.72	105.43

CURVE TABLE					
CURVE #	PI	Δ	R	T	L
C12	STA 205+66.26	31° 35' 11"	30.00	8.49	16.54





CAPE COD BERM

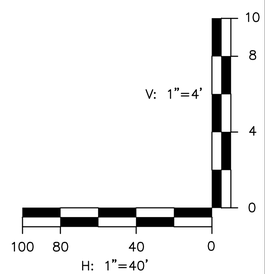
CONSTRUCT CAPE BERM AT THE FOLLOWING LOCATION:

1. STA 101+47, LT TO STA 202+02, RT
2. STA 202+02, LT TO STA 205+62, LT

STONE WALL

RECONSTRUCT STONE WALL MULTIPLE STONES WIDE (ITEM 572.2) AT RIGHT OF WAY LINE AT THE FOLLOWING LOCATIONS:

1. STA 201+15, LT TO STA 202+61, LT
2. STA 202+89, LT TO STA 203+18, LT
2. STA 203+43, LT TO STA 204+22, LT
3. STA 200+59, RT TO STA 202+07, RT



NO.	DATE	REVISION DESCRIPTION

KING ROAD PLAN AND PROFILE 1

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

SHEET: 5 OF 23

1. STA 101+26.0, LT 22.0' TO STA 101+54.0, LT 9.0'
CONSTRUCT 31 FT X 15 IN RCP, 2000D
CONSTRUCT SLAB TOP CB–F @ STA 101+54.0, LT 9.0'
15 IN INV. IN = 657.78
15 IN INV. OUT = 657.68
15 IN INV. @ OUTLET = 657.53
GRATE ELEV. = 661.85
CONSTRUCT MORTAR RUBBLE MASONRY HEADWALL @ OUTLET

2. STA 101+54.0, LT 9.0' TO STA 102+50.0, LT 9.0'
CONSTRUCT 95 FT X 15 IN RCP, 2000D
CONSTRUCT CB–F @ STA 102+50.0, LT 9.0'
15 IN INV. IN = 663.70
15 IN INV. OUT = 663.60
GRATE ELEV. = 668.20

3. STA 102+50.0, LT 9.0' TO STA 104+00.0, LT 9.0'
CONSTRUCT 150 FT X 15 IN RCP, 2000D
CONSTRUCT CB–F @ STA 104+00.0, LT 9.0'
15 IN INV. IN = 676.00
15 IN INV. OUT = 675.90
GRATE ELEV. = 680.50

4. STA 104+00.0, LT 9.0' TO STA 105+00.0, LT 9.0'
CONSTRUCT 102 FT X 15 IN RCP, 2000D
CONSTRUCT CB–F @ STA 105+00.0, LT 9.0'
15 IN INV. IN = 680.35
15 IN INV. OUT = 680.25
GRATE ELEV. = 685.25

5. STA 105+00.0, LT 9.0' TO STA 107+20.0, LT 10.0'
CONSTRUCT 219 FT X 15 IN RCP, 2000D
CONSTRUCT CB–F @ STA 107+20.0, LT 10.0'
15 IN INV. IN = 687.65
15 IN INV. OUT = 687.55
GRATE ELEV. = 692.55

6. STA 107+20.0, LT 10.0' TO STA 205+60.0, LT 9.0'
CONSTRUCT 31 FT X 15 IN RCP, 2000D
CONSTRUCT CB–B @ STA 205+60.0, LT 9.0'
15 IN INV. IN = 688.60
15 IN INV. OUT = 688.50
GRATE ELEV. = 693.50

7. STA 205+60.0, LT 9.0' TO STA 205+66.0, LT 21.5'
CONSTRUCT 15 FT X 15 IN RCP, 2000D
CONSTRUCT DEEP SUMP (SEE DETAIL) CB–E @ STA 205+66.0, LT 21.5'
15 IN INV. OUT = 688.70
GRATE ELEV. = 693.20

8. STA 112+86.0, LT 21.0' TO STA 113+25.0, LT 17.0'
CONSTRUCT 41 FT X 15 IN RCP, 2000D
CONSTRUCT CB–E @ STA 113+25.0, LT 17.0'
15 IN INV. IN = 708.90
15 IN INV. OUT = 708.80
15 IN INV. @ OUTLET = 706.90
GRATE ELEV. = 713.40
CONSTRUCT MORTAR RUBBLE MASONRY HEADWALL @ OUTLET

9. STA 112+76.0, RT 23.0' TO STA 112+92.0, RT 9.0'
CONSTRUCT 21 FT X 15 IN RCP, 2000D
CONSTRUCT DEEP SUMP (SEE DETAIL) CB–F @ STA 112+92.0, RT 9.0'
15 IN INV. OUT = 706.55
15 IN INV. @ OUTLET = 705.50
GRATE ELEV. = 711.05
CONSTRUCT MORTAR RUBBLE MASONRY HEADWALL @ OUTLET

10. STA 113+25.0, LT 17.0' TO STA 114+50.0, LT 17.0'
CONSTRUCT 124 FT X 15 IN RCP, 2000D
CONSTRUCT DEEP SUMP (SEE DETAIL) CB–E @ STA 114+50.0, LT 17.0'
15 IN INV. OUT = 723.50
GRATE ELEV. = 728.00

11. STA 120+83.0, RT 15.0' TO STA 120+93.0, LT 16.5'
CONSTRUCT 33 FT X 18 IN RCP, 3000D
18 IN INV. @ INLET = 746.60
18 IN INV. @ OUTLET = 746.44
CONSTRUCT MORTAR RUBBLE MASONRY HEADWALL @ INLET AND OUTLET
REMOVE EXISTING 25 FT X 18 IN CMP PIPE (SUBSIDIARY)

12. STA 121+28.0, LT 19.0' TO STA 122+23.0, LT 9.0'
CONSTRUCT 97 FT X 15 IN RCP, 2000D
CONSTRUCT CB–B @ STA 122+23.0, LT 9.0'
15 IN INV. IN (NW) = 747.90
15 IN INV. IN (NE) = 747.90
15 IN INV. OUT = 747.80
15 IN INV. @ OUTLET = 747.30
GRATE ELEV. = 752.30
CONSTRUCT MORTAR RUBBLE MASONRY HEADWALL @ OUTLET

13. STA 122+23.0, LT 9.0' TO STA 122+23.0, RT 17.0'
CONSTRUCT 26 FT X 15 IN RCP, 2000D
CONSTRUCT DEEP SUMP (SEE DETAIL) SLAB TOP CB–E @ STA 122+23.0, RT 17.0'
15 IN INV. OUT = 748.05
GRATE ELEV. = 751.35

14. STA 122+23.0, LT 9.0' TO STA 123+15.0, LT 9.0'
CONSTRUCT 93 FT X 15 IN RCP, 2000D
CONSTRUCT CB–F @ STA 123+15.0, LT 9.0'
15 IN INV. IN (NW) = 751.20
15 IN INV. IN (NE) = 751.20
15 IN INV. OUT = 751.10
GRATE ELEV. = 755.80

15. STA 123+15.0, LT 9.0' TO STA 123+15.0, RT 9.0'
CONSTRUCT 18 FT X 15 IN RCP, 2000D
CONSTRUCT DEEP SUMP (SEE DETAIL) CB–F @ STA 123+15.0, RT 9.0'
15 IN INV. OUT = 751.30
GRATE ELEV. = 755.80

16. STA 123+15.0, LT 9.0' TO STA 124+85.0, LT 17.0'
CONSTRUCT 172 FT X 15 IN RCP, 2000D
CONSTRUCT CB–E @ STA 124+85.0, LT 17.0'
15 IN INV. IN (N) = 760.20
15 IN INV. IN (E) = 760.20
15 IN INV. OUT = 760.10
GRATE ELEV. = 765.70

17. STA 124+85.0, LT 17.0' TO STA 124+85.0, RT 9.0'
CONSTRUCT 26 FT X 15 IN RCP, 2000D
CONSTRUCT DEEP SUMP (SEE DETAIL) CB–F @ STA 124+85.0, RT 9.0'
15 IN INV. OUT = 762.20
GRATE ELEV. = 766.70

18. STA 124+85.0, LT 17.0' TO STA 126+75.0, LT 18.5'
CONSTRUCT 190 FT X 15 IN RCP, 3000D
15 IN INV. @ INLET = 769.80
CONSTRUCT MORTAR RUBBLE MASONRY HEADWALL @ INLET
REMOVE EXISTING DRIVE PIPE (SUBSIDIARY)

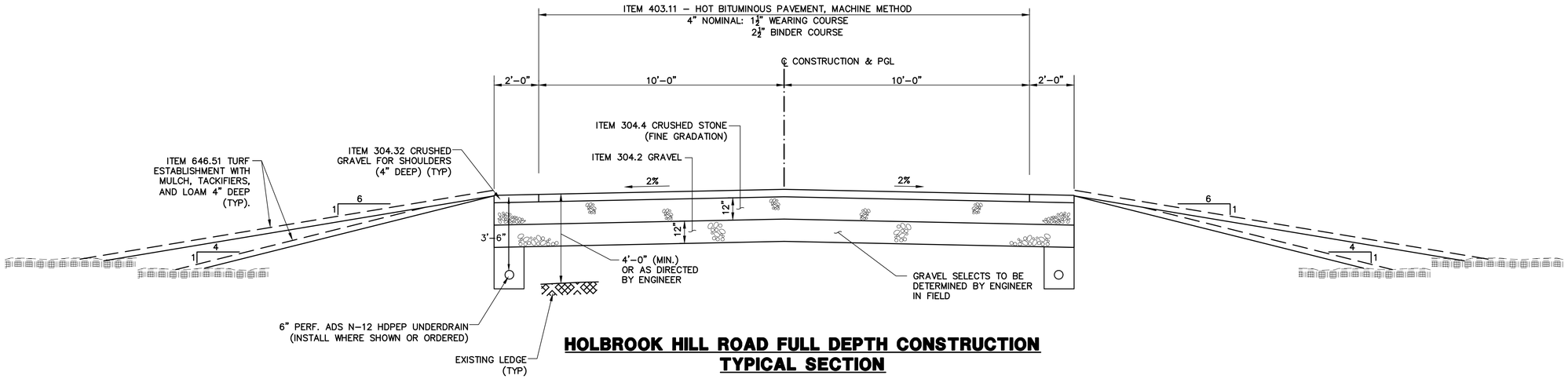
NO.	DATE	REVISION DESCRIPTION

DRAINAGE NOTES

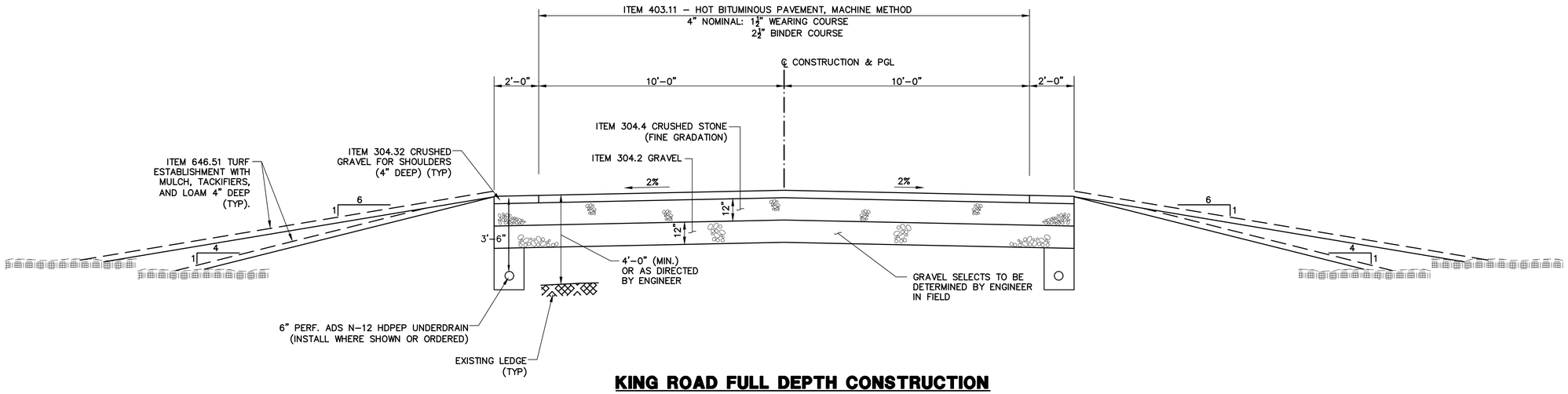
PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS
BEDFORD, NEW HAMPSHIRE

DATE: AUGUST 8, 2023
SCALE: AS SHOWN
SHEET: 6 OF 23



HOLBROOK HILL ROAD FULL DEPTH CONSTRUCTION
TYPICAL SECTION



KING ROAD FULL DEPTH CONSTRUCTION
TYPICAL SECTION

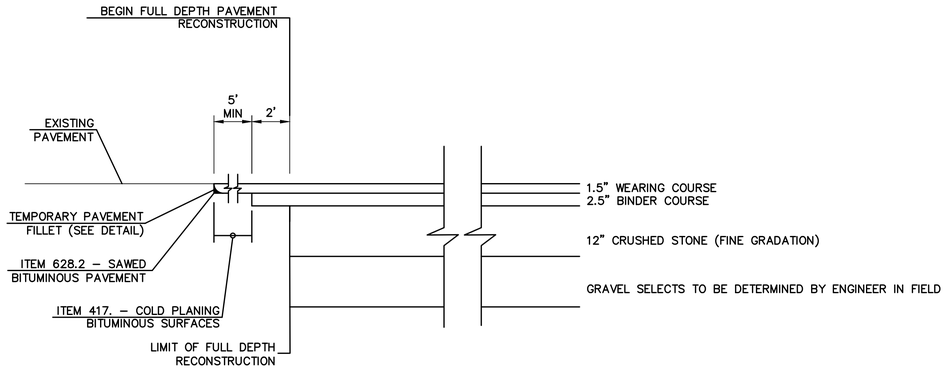
NO.	DATE	REVISION DESCRIPTION

TYPICAL SECTIONS

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

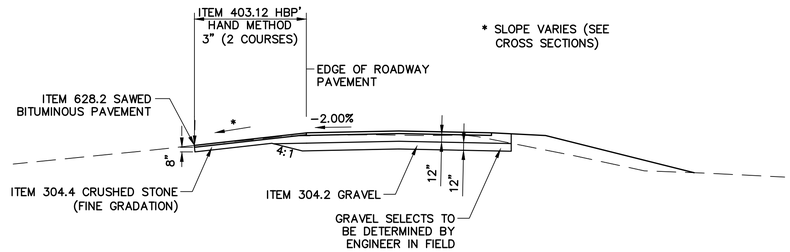
HOLBROOK HILL ROAD
RECONSTRUCTION PLANS
BEDFORD, NEW HAMPSHIRE

DATE: AUGUST 8, 2023
SCALE: AS SHOWN
SHEET: 7 OF 23



END PAVEMENT AND BASE COURSE TRANSITION

NOT TO SCALE



DRIVE DETAIL

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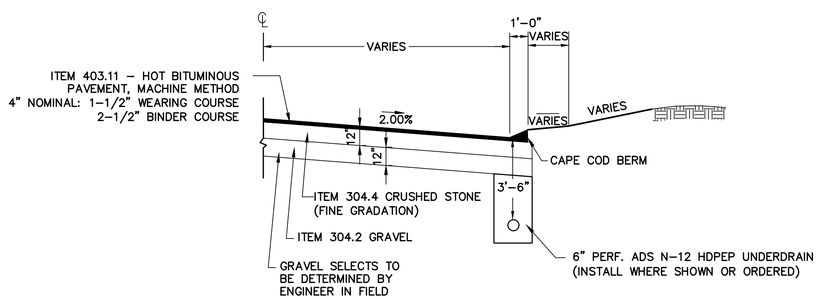

CAPE COD BERM SECTION

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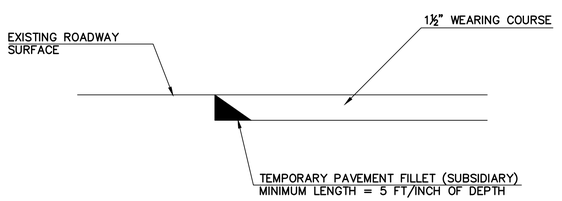

TEMPORARY PAVEMENT FILLET DETAIL

NOT TO SCALE

NO.	DATE	REVISION DESCRIPTION

ROADWAY DETAILS

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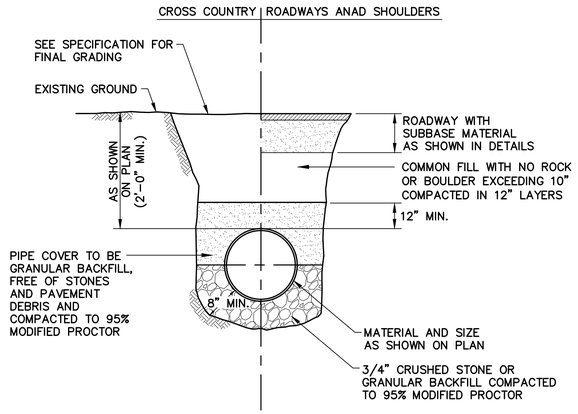
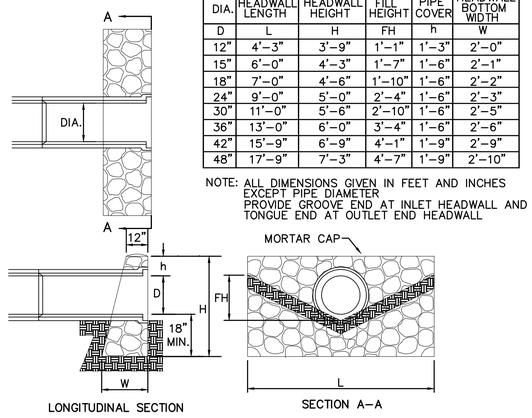


NOTES:
1. ALL EXCAVATION AND BACKFILL FOR TRENCH TO BE SUBSIDIARY TO PIPE CONSTRUCTION PAY ITEM.

DRAIN PIPE TRENCH

NOT TO SCALE

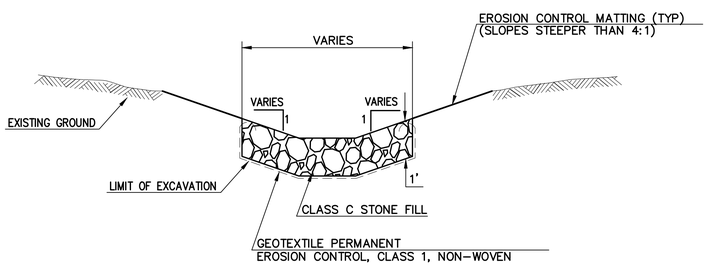


DIA.	HEADWALL LENGTH	HEADWALL HEIGHT	FILL HEIGHT	PIPE COVER	HEADWALL BOTTOM WIDTH
D	L	H	FH	h	W
12"	4'-3"	3'-9"	1'-1"	1'-3"	2'-0"
15"	6'-0"	4'-3"	1'-7"	1'-6"	2'-1"
18"	7'-0"	4'-6"	1'-10"	1'-6"	2'-2"
24"	9'-0"	5'-0"	2'-4"	1'-6"	2'-3"
30"	11'-0"	5'-6"	2'-10"	1'-6"	2'-5"
36"	13'-0"	6'-0"	3'-4"	1'-6"	2'-6"
42"	15'-9"	6'-9"	4'-1"	1'-9"	2'-9"
48"	17'-9"	7'-3"	4'-7"	1'-9"	2'-10"

NOTE: ALL DIMENSIONS GIVEN IN FEET AND INCHES EXCEPT PIPE DIAMETER
PROVIDE GROOVE END AT INLET HEADWALL AND TONGUE END AT OUTLET END HEADWALL

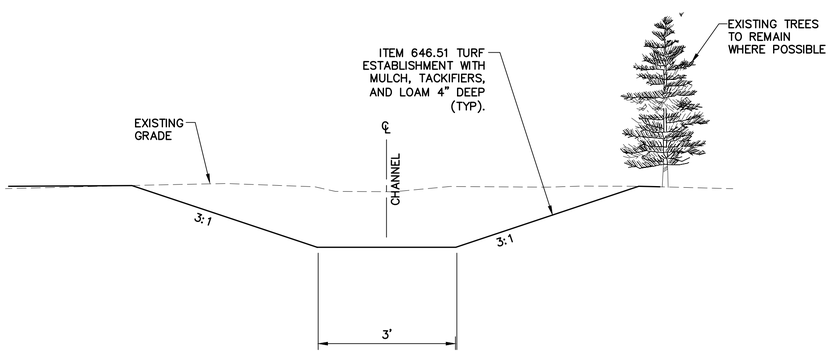
MORTAR RUBBLE MASONRY HEADWALL DETAIL

NOT TO SCALE



STONE FILL CHANNEL

NOT TO SCALE



TREATMENT SWALE

NOT TO SCALE

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DRAINAGE DETAILS 1

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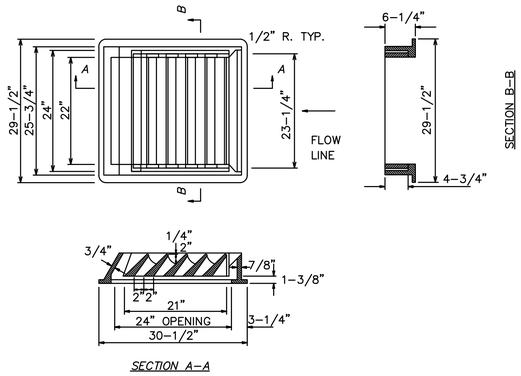
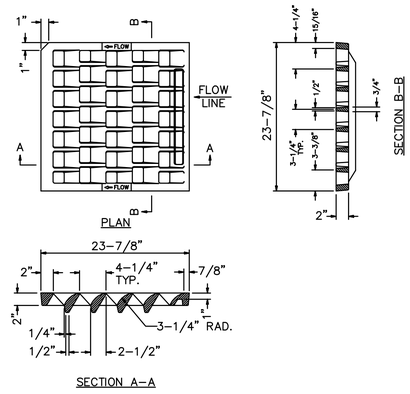


SECTION A-A

TYPE 'E' CATCH BASIN FRAME & GRATE DETAIL

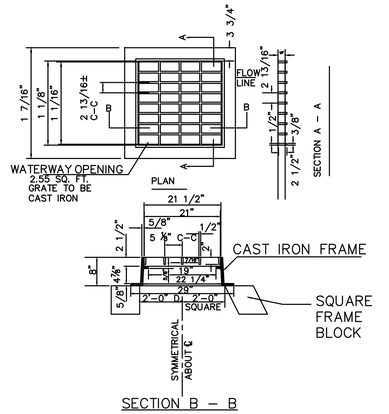
NOT TO SCALE



SECTION A-A

TYPE 'F' CATCH BASIN GRATE DETAIL

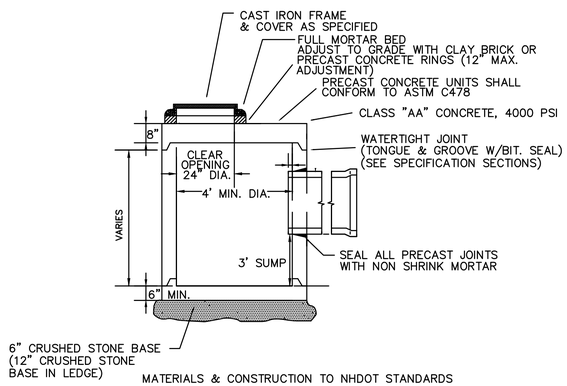
NOT TO SCALE



SECTION B - B

TYPE 'B' CATCH BASIN FRAME & GRATE DETAIL

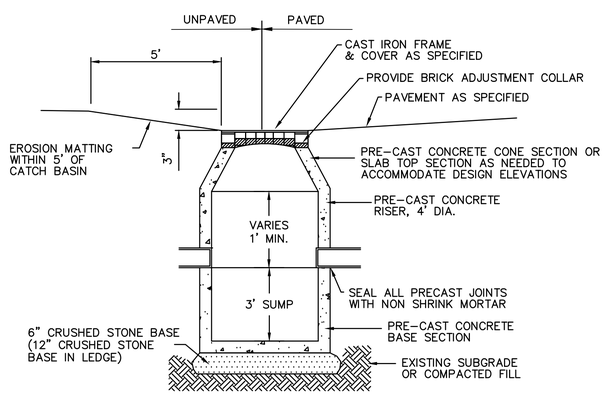
NOT TO SCALE



MATERIALS & CONSTRUCTION TO NHDOT STANDARDS

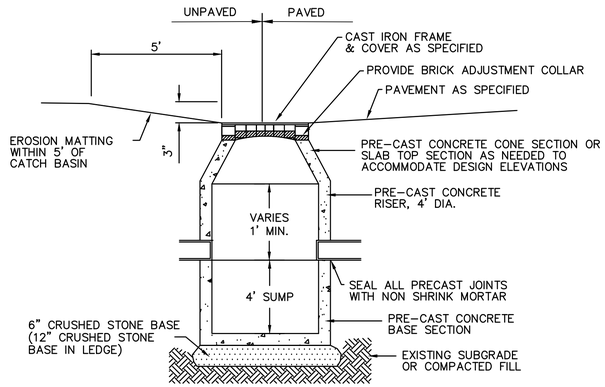
TYPICAL SLAB TOP CATCH BASIN DETAIL

NOT TO SCALE



CATCH BASIN DETAIL

NOT TO SCALE



TYPICAL DEEP SUMP CATCH BASIN DETAIL

NOT TO SCALE

NO.	DATE	REVISION DESCRIPTION

DRAINAGE DETAILS 2

PREPARED FOR:
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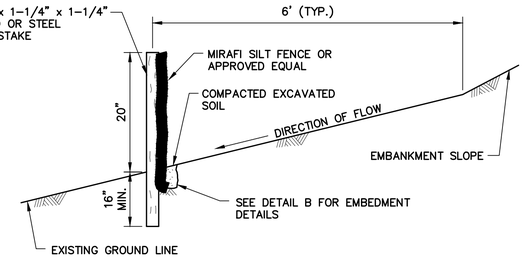
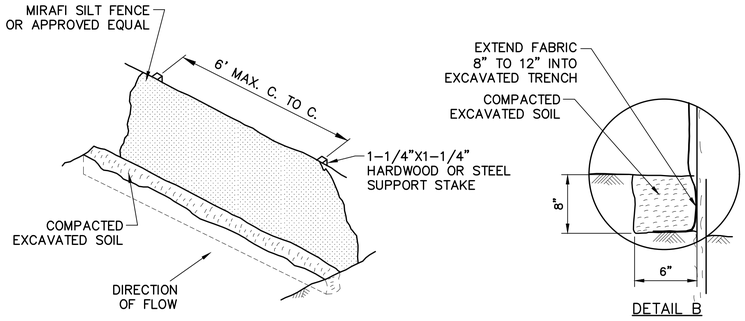


TOE OF SLOPE CONDITION



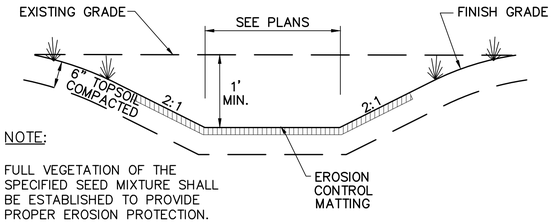
DETAIL B

NOTES:

1. FILTER FABRIC SILT FENCE MUST BE INSTALLED AT LEVEL GRADE. BOTH ENDS OF EACH FENCE SECTION MUST BE EXTENDED AT LEAST 8 FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.
2. SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH ONE-HALF (1/2) THE ABOVE GROUND HEIGHT OF THE FENCE.
3. ANY FENCE SECTION WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

FILTER FABRIC SILT FENCE

NOT TO SCALE

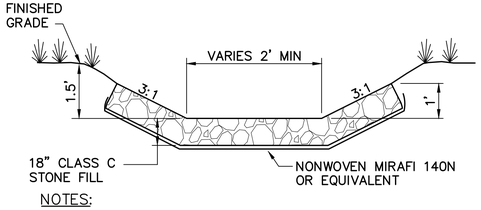


NOTE:

FULL VEGETATION OF THE SPECIFIED SEED MIXTURE SHALL BE ESTABLISHED TO PROVIDE PROPER EROSION PROTECTION.

GRASS-LINED SWALE

NOT TO SCALE

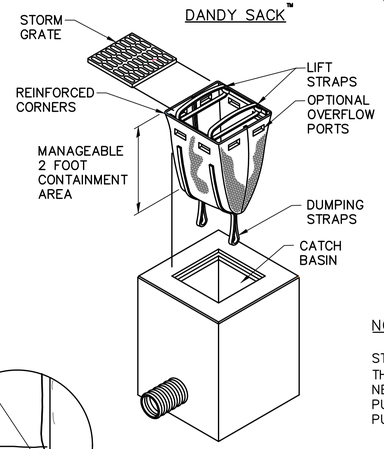


NOTES:

1. STONE APRONS USE SIMILAR DIMENSIONS (MIN. 10' LENGTH).
2. ALL STONE FILL SHALL MEET NHDOT STANDARDS.

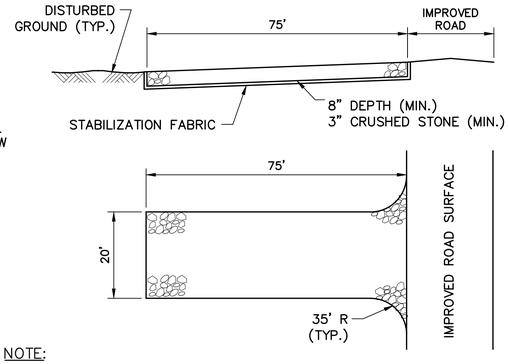
STONE-LINED SWALE

NOT TO SCALE



DANDY SACK

NOT TO SCALE

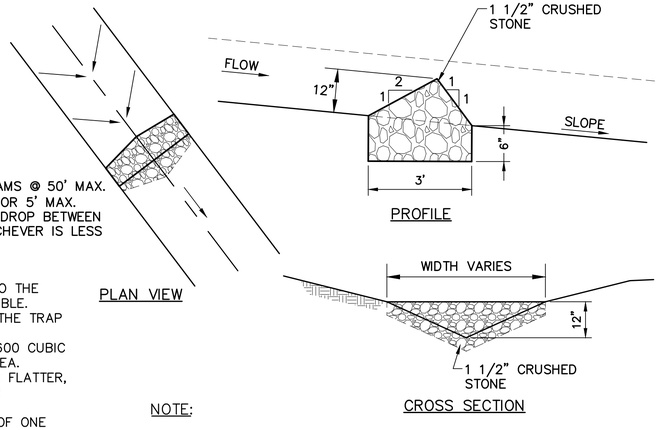


NOTE:

STABILIZED CONSTRUCTION ENTRANCE THICKNESS WILL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING NEW ROCK AND REMOVING "CLOGGED" ROCK AS NECESSARY. A STOCKPILE OF ROCK MATERIAL WILL BE STORED ON THE SITE FOR THIS PURPOSE. AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS WILL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



PLAN VIEW

NOTE:

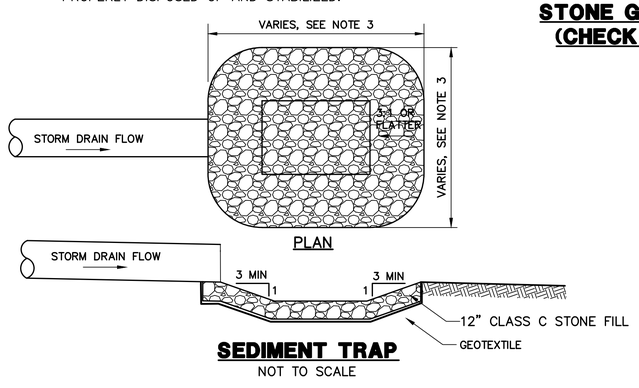
AN ALTERNATE MAY UTILIZE A PIECE OF SILT FENCE ON THE DOWNSTREAM END OF THE CHECK DAM AT THE DISCRETION OF THE EROSION CONTROL PLAN PREPARER.

STONE GRADE STABILIZATION (CHECK DAM) STRUCTURES

NOT TO SCALE

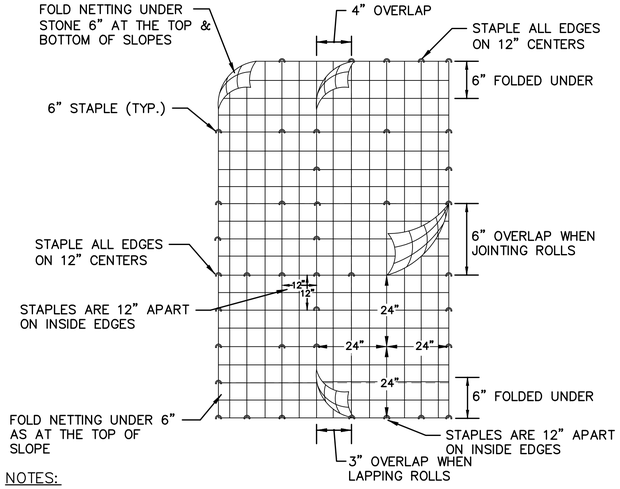
NOTES:

1. SEDIMENT TRAP SHALL BE INSTALLED AS CLOSE TO THE DISTURBED AREA OR SOURCE OF SEDIMENT AS POSSIBLE.
2. THE MAXIMUM CONTRIBUTING DRAINAGE AREA TO THE TRAP SHALL BE LESS THAN 5 ACRES.
3. THE MINIMUM VOLUME OF THE TRAP SHALL BE 3,600 CUBIC FEET OF STORAGE FOR EACH ACRE OF DRAINAGE AREA.
4. THE SIDE SLOPES OF THE TRAP SHALL BE 3:1 OR FLATTER, AND SHALL BE STABILIZED IMMEDIATELY AFTER THEIR CONSTRUCTION.
5. THE OUTLET OF THE TRAP SHALL BE A MINIMUM OF ONE FOOT BELOW THE CREST OF THE TRAP AND SHALL DISCHARGE TO A STABILIZED AREA.
6. THE TRAP SHALL BE CLEANED WHEN 50 PERCENT OF THE ORIGINAL VOLUME IS FILLED.
7. THE MATERIALS REMOVED FROM THE TRAP SHALL BE PROPERLY DISPOSED OF AND STABILIZED.



SEDIMENT TRAP

NOT TO SCALE

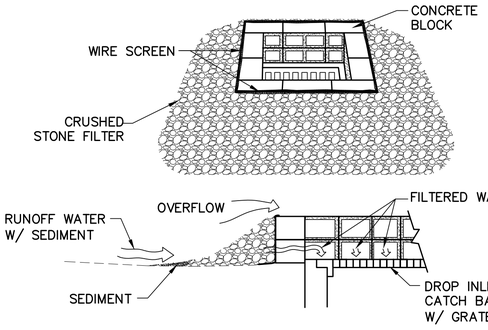


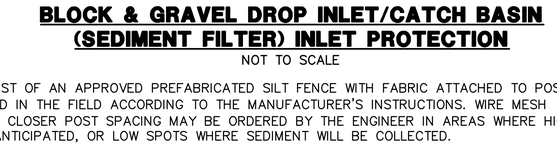
NOTES:

1. NO STAPLES TO BE OVER 24" APART CENTER TO CENTER
2. MATTING SHALL CONSIST OF "WILDLIFE FRIENDLY" OPTIONS SUCH AS NORTH AMERICAN GREEN SC150BN, AMERICAN EXCELSIOR COMPANY AEC PREMIER COCONUT FIBRENET, EAST COAST EROSION BLANKETS, LLC ECC-2B OR EQUIVALENT. WELDED PLASTIC AND PHOTO-BIODEGRADABLE PLASTIC SHALL NOT BE USED.

MULCH NETTING INSTALLATION

NOT TO SCALE





BLOCK & GRAVEL DROP INLET/CATCH BASIN (SEDIMENT FILTER) INLET PROTECTION

NOT TO SCALE

GENERAL NOTES:

1. SILT FENCE SHALL CONSIST OF AN APPROVED PREFABRICATED SILT FENCE WITH FABRIC ATTACHED TO POSTS AND HALL BE ASSEMBLED IN THE FIELD ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. WIRE MESH REINFORCEMENT AND/OR CLOSER POST SPACING MAY BE ORDERED BY THE ENGINEER IN AREAS WHERE HIGH RUNOFF VOLUMES ARE ANTICIPATED, OR LOW SPOTS WHERE SEDIMENT WILL BE COLLECTED.
2. PRIOR TO BEGINNING EARTHWORK OPERATIONS AT LOCATIONS DIRECTED BY THE ENGINEER, SILT FENCE SHALL BE CONSTRUCTED ALONG THE TOE OF PROPOSED EMBANKMENT AT THE LIMITS OF CLEARING.

NO.	DATE	REVISION DESCRIPTION

EROSION CONTROL DETAILS

PREPARED FOR:
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EROSION CONTROL SPECIFICATIONS:

1. SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH "NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3 – EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION" 2008. THE CONTRACTOR SHALL HAVE REFERENCE TO THIS BOOK.

2. RECOGNIZING THAT IMMEDIATE ATTENTION TO EROSION CONTROL PRACTICES DRAMATICALLY IMPROVES SOIL AND MOISTURE CONSERVATION AND REDUCES NEGATIVE IMPACTS ON WATER QUALITY, THE CONTRACTOR SHALL GIVE HIGH PRIORITY TO THE DAILY AND TIMELY INSTALLATION OF BOTH TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES. IMMEDIATE INSTALLATION OF PRACTICES USUALLY REDUCES LONG TERM COSTS TO THE CONTRACTOR AND PROVIDES BENEFITS TO THE DEVELOPER AND THE PUBLIC GOOD.

3. EROSION CONTROL PRACTICES ARE SHOWN ON THE PLANS WITH RESPECT TO LOCATION AS DETERMINED FROM EXISTING TOPOGRAPHY. CHANGES MAY BE INDICATED IN THE FIELD TO IMPROVE EROSION AND SEDIMENT CONTROL.

4. CONSTRUCTION SHALL PROCEED UNIT BY UNIT TO FACILITATE INSTALLATION OF EROSION CONTROL MEASURES AND THE COMPLETION OF GRADING, SEEDING, AND LANDSCAPING AS SOON AS POSSIBLE WITHIN A UNIT. THIS PROCEDURE SHOULD RESULT IN THE EXPOSURE OF THE SMALLEST PRACTICAL LAND AREA AT ANY ONE TIME.

5. AREAS ADJACENT TO STREAMS CALL FOR PARTICULAR ATTENTION WITH REGARD TO SILT INTERCEPTION. INSTALL SILT FENCES AS SHOWN ON PLAN AND IN DETAIL BEFORE EARTHWORK COMMENCES. ADDITIONAL FENCING MAY BE REQUIRED AS WORK CONTINUES.

6. ALL DISTURBED AREAS AND ALL PROPOSED GRASSED AREAS SHALL HAVE TOPSOIL SPREAD (4" MINIMUM) AND BE LIMED, FERTILIZED, TILLED, SEEDED AND MULCHED. ALL SLOPES 3:1 (1 RISE ON 3 RUN) AND STEEPER SHALL HAVE MULCH HELD IN PLACE WITH NETTING (OR OTHER APPROVED BIODEGRADABLE MATTING MATERIAL), STAPLED AND STAKED. EACH AREA SHALL BE LIMED, FERTILIZED, PREPARED, SEEDED AND MULCHED (WITH ANCHORED NETTING AS REQUIRED) WITHIN 3 DAYS OF FINAL GRADING OR TEMPORARILY STABILIZED WITHIN 21 DAYS OF INITIAL DISTURBANCE. WHEN PERMANENT SEEDING CANNOT BE INSTALLED BY SEPTEMBER 15, TEMPORARY SEEDING AND MULCHING OF ALL DISTURBED AREAS SHALL BE INSTALLED IMMEDIATELY AND MAINTAINED IN THAT CONDITION UNTIL PERMANENT PRACTICES CAN BE INSTALLED IN THE FOLLOWING PLANTING SEASON.

7. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY TIME BEFORE DISTURBED AREAS ARE STABILIZED.

8. ALL AREAS SHALL BE STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE (SEE NOTE 10).

9. TEMPORARY STABILIZATION OF DISTURBED AREAS:

   SEEDBED PREPARATION: TILL THREE INCHES DEEP MIXING IN FERTILIZER. APPLY LIME 2 TONS/ACRE (100#/1,000 SQ. FT.) FERTILIZE: UNIFORMLY APPLY NOT LESS THAN 300#/ACRE (7#/1,000 SQ. FT.) OF 10–20–20 OR EQUIVALENT.

   SEEDING: SELECT APPROPRIATE SEEDING MIXTURE FROM TABLE 1 BELOW. SPREAD SEED UNIFORMLY. FIRM SOIL BY ROLLING OR PACKING; IF NOT FEASIBLE, THEN RAKE LIGHTLY TO COVER SEEDS.

   MULCHING: MULCH ALL DISTURBED AREAS WITH 1–1/2 TO 2 TONS OF HAY OR STRAW PER ACRE (70–90#/1,000 SQ. FT.). ANCHOR ON ALL SLOPES 3:1 OR STEEPER AND FLATTER SLOPES SUBJECT TO WASH OR WIND BLOWN. USE JUTE (OR OTHER BIODEGRADABLE) NETTING. STAKING AND STAPLING MAY BE REQUIRED.

TABLE 1 – PLANT SELECTION AND SEEDING RATES

SPECIES	PER ACRE	PER 1000 SQ.FT.	REMARKS
WINTER RYE	2 BU OR 112 LBS.	2.5 LBS.	BEST FOR FALL SEEDING. SEED AUGUST 15 TO SEPTEMBER 15 FOR BEST COVER. SEED TO DEPTH OF ONE INCH.
OATS	2 1/2 BU OR 80 LBS.	2 LBS.	BEST FOR SPRING SEEDINGS. LATER THAN MAY 15 FOR SUMMER PROTECTION. SEED TO DEPTH OF ONE INCH.
ANNUAL RYE	40 LBS.	1 LB.	GROWS QUICKLY. BUT IS OF SHORT GRASS DURATION USE WHERE APPEARANCES ARE IMPORTANT. COVER SEED WITH NO MORE THAN 1/4 INCH OF SOIL. WITH MULCH, SEEDING MAY BE DONE THROUGHOUT GROWING SEASON. OTHERWISE SEED EARLY SPRING OR BETWEEN AUGUST 15 & SEPTEMBER 15.

10. PERMANENT STABILIZATION OF DISTURBED AREAS:

    SEED BED PREPARATION: TOPSOIL (SANDY LOAM, LOAM, OR SILT LOAM), FRIABLE, FREE OF TREE ROOTS, WEEDS, STONES MORE THAN 1–1/2 INCHES IN DIAMETER OR LENGTH SHALL BE PLACED OVER ALL DISTURBED AREAS IN A 4" (MINIMUM) THICK LAYER.

    TOPSOIL: TOPSOIL SHALL BE FREE OF HERBICIDES AND TOXIC MATERIALS. TILL THREE INCHES DEEP MIXING IN THE FERTILIZER AND LIME. APPLY LIME AT RATES INDICATED IN TABLE "A".

    SEEDING: SELECT APPROPRIATE SEEDING MIXTURE FROM TABLE "C". SPREAD SEED UNIFORMLY. FIRM SOIL BY ROLLING OR PACKING; IF NOT FEASIBLE, THEN RAKE LIGHTLY TO COVER SEEDS.

    MULCHING: MULCH ALL DISTURBED AREAS WITH 1–1/2 TO 2 TONS OF HAY OR STRAW PER ACRE (70 – 90#/1,000 SQ. FT.). ANCHOR MULCH ON ALL SLOPES 3:1 OR STEEPER AND ON FLATTER SLOPES SUBJECT TO WASH (WATERWAYS AND/OR WINDBLOWN) USING BIODEGRADABLE NETTING (OR OTHER APPROVED BIODEGRADABLE MATTING MATERIAL), WITH STAKING AND STAPLING.

TABLE "A"–LIME APPLICATION RATES

EXISTING SOIL pH	LIMESTONE TO BE ADDED	
	TONS/ACRE	POUNDS/CY
4.0–4.4	3	12
4.5–4.9	2	8
5.0–5.4	1	4
UNKNOWN	2	8

TABLE "C" – SEEDING GUIDE

USE	SEEDING MIXTURE 1/	SOIL DRAINAGE: DROUGHTY	WELL DRAINED	MODERATELY WELL DRAINED	POORLY DRAINED
STEEP CUTS AND FILLS, BORROW AND DISPOSAL AREAS	A	FAIR	GOOD	GOOD	FAIR
	B	POOR	GOOD	FAIR	FAIR
	C	POOR	GOOD	EXCELLENT	GOOD
	D	FAIR	FAIR	GOOD	EXCELLENT
	E	FAIR	EXCELLENT	EXCELLENT	POOR
WATERWAYS, EMERGENCY SPILLWAYS, AND OTHER CHANNEL WITH FLOWING WATER	A	GOOD	GOOD	GOOD	FAIR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	GOOD	EXCELLENT	EXCELLENT	FAIR
LIGHTLY USED PARKING LOTS, ODD AREAS, UNUSABLE LANDS, AND LOW INTENSITY USE RECREATION SITES	A	GOOD	GOOD	GOOD	FAIR
	B	GOOD	GOOD	FAIR	POOR
	C	GOOD	EXCELLENT	EXCELLENT	FAIR
	D	FAIR	GOOD	GOOD	EXCELLENT
PLAY AREAS AND ATHLETIC FIELDS. (TOPSOIL IS ESSENTIAL FOR GOOD TURF.)	F	FAIR	EXCELLENT	EXCELLENT	2/
	G	FAIR	EXCELLENT	EXCELLENT	2/

GRAVEL PIT – SEE PM–NH–24 RECOMMENDATIONS REGARDING RECLAMATION OF SAND AND GRAVEL PITS. *

1/ REFER TO SEEDING MIXTURES AND RATES IN TABLE "D".
2/ POORLY DRAINED SOILS ARE NOT DESIRABLE FOR USE AS PLAYING AREAS AND ATHLETIC FIELDS.

* SEE "VEGETATING NEW HAMPSHIRE SAND AND GRAVEL PITS; TECHNICAL NOTE PM–NH–24, UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, REVISION APRIL, 1991.

11. TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. 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 STONE OR RIPRAP HAS BEEN INSTALLED; OR
    D. EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.

    MAINTENANCE: DURING THE CONSTRUCTION PERIOD AND UNTIL SUCH TIME AS THE LONG TERM VEGETATION IS ESTABLISHED TO A 70% VEGETATIVE STAND.
    A. DISTURBED AREAS WILL BE FERTILIZED AND RESEEDED.
    B. CATCH BASINS WILL BE CHECKED AND CLEANED AS NECESSARY.
    C. DRAINAGE AND GRASS TREATMENT SWALES SHALL BE CHECKED FREQUENTLY AND CLEANED AS REQUIRED.
    D. THE SILT FENCES AND HAYABLE DIKES WILL BE CHECKED ON A REGULAR BASIS AND REPAIRED AS NECESSARY TO CORRECT ANY DAMAGE, DETERIORATION, AND SHORT–CIRCUITING.

12. REFER TO "EROSION AND SEDIMENT CONTROL PLAN" PRIOR TO ANY SITE DISTURBANCE. CONTACT ENGINEER FOR COPIES OF PLAN.

    INSPECTIONS: THE ENGINEER SHALL BE CONTACTED ON A REGULAR BASIS TO INSPECT ALL EROSION CONTROL PRACTICES AS WELL AS THE MAINTENANCE OF THE EROSION CONTROL COMPONENTS. REFER TO CONSTRUCTION SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. EROSION CONTROL PRACTICES SHALL BE IN STRICT ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.

13. ALL TREATMENT SWALES, DITCHES, AND LEVEL LIP SPREADERS SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.

14. FOR SPECIAL WINTER CONSTRUCTION CONSIDERATIONS, THE CONTRACTOR SHALL REFER TO THE "EROSION & SEDIMENT CONTROL PLAN".

15. THIS PROJECT SHALL BE MANAGED IN A MANNER THAT MEETS THE REQUIREMENTS AND INTENT OF RSA 430.53 AND CHAPTER AGR 3800 RELATIVE TO INVASIVE SPECIES.

16. RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMPS ARE STABILIZED.

17. CUT AND FILL SLOPES MUST BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.

TABLE "D" – MIXTURES & RATES

MIXTURE	POUNDS PER ACRE	POUNDS PER 1,000 SQ. FT.
A. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
REDTOP	2	0.05
TOTAL	42	0.95
B. TALL FESCUE	15	0.35
CREEPING RED FESCUE	10	0.25
CROWN VETCH OR	15	0.35
FLATPEA	30	0.75
TOTAL	40 or 55	0.95 or 1.35
C. TALL FESCUE	20	0.45
CREEPING RED FESCUE	20	0.45
BIRDSFOOT TREFOIL	8	0.20
TOTAL	48	1.10
D. BIRDSFOOT TREFOIL	20	0.50
REDTOP	10	0.20
TOTAL	30	0.70
E. TALL FESCUE	20	0.45
FLATPEA	30	0.75
TOTAL	50	1.20
F. CREEPING RED FESCUE 1/	50	1.15
KENTUCKY BLUEGRASS 1/	50	1.15
TOTAL	100	2.30
G. TALL FESCUE 1/	150	3.60

1/ FOR HEAVY USE ATHLETIC FIELDS CONSULT THE UNIVERSITY OF NEW HAMPSHIRE COOPERATIVE EXTENSION TURF SPECIALIST FOR CURRENT VARIETIES AND SEEDING RATES.

OTHER SEED MIXTURES AND SEEDING RATES AS RECOMMENDED BY THE USDA – NATURAL RESOURCES CONSERVATION SERVICE MAY BE USED WITH PRIOR WRITTEN PERMISSION FROM THE ENGINEER.

CONSTRUCTION SEQUENCE:

1. THE CONTRACTOR SHALL CONDUCT A PRE–CONSTRUCTION CONFERENCE WITH TOWN OFFICIALS PRIOR TO ANY WORK COMMENCING ON SITE.
2. FELL AND CLEAR TREES, AS REQUIRED. PLACE JOB TRAILER AT SPECIFIED LOCATION AND INSTALL CONSTRUCTION ENTRANCE(S). STABILIZE THE CONSTRUCTION ENTRANCE(S) WITH COARSE AGGREGATE 8 INCHES (MINIMUM) IN DEPTH, ON TOP OF A GEOTEXTILE, TO PREVENT OFF–SITE TRACKING BY VEHICLES AND EQUIPMENT.
3. INSTALL SILT FENCE AT ALL LOCATIONS INDICATED ON PLAN AND AT OTHER LOCATIONS AS DETERMINED BY THE ENGINEER. INSTALL OTHER TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO EARTHWORK COMMENCING.
4. GRUB SITE AND DISPOSE OF DEBRIS, AS NECESSARY; CONTRACTOR TO LEGALLY DISPOSE OF DEBRIS OFF THE SITE.
5. STOCKPILE TOPSOIL AND INSTALL ASSOCIATED EROSION CONTROL MEASURES, I.E., SILT FENCE, AND MULCH.
6. PONDS AND SWALES SHALL BE INSTALLED EARLY ON IN THE CONSTRUCTION SEQUENCE (BEFORE ROUGH GRADING THE SITE) AND SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
7. PLACE SELECT MATERIALS AND PAVEMENT FOR THE LIMITS OF THE PROPOSED ROADWAY IMPROVEMENTS. THE LIMITS OF THE ROADWAY IMPROVEMENTS SHALL BE STABILIZED WITHIN 72 HOURS AFTER GRADING.
8. INSPECT ALL DISTURBED AREAS ON A WEEKLY BASIS AND AFTER EVERY ONE–HALF INCH OF RAINFALL. FOLLOWING THESE INSPECTIONS, INSTALL ANY AND ALL TEMPORARY DRAINAGE, EROSION, AND SEDIMENT CONTROL PRACTICES AS INDICATED OR AS REQUIRED, I.E., DIVERSION CHANNELS, BERMS, DRAINS, DITCHES, SILT SACKS, SILT FENCES, SEED AND MULCH, OR ANY OTHER BEST MANAGEMENT PRACTICES AS RECOMMENDED AND SPECIFIED IN THE "STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS OF NEW HAMPSHIRE" (USDA – SOIL CONSERVATION SERVICE).
9. PLACE TOPSOIL, COMPLETE PERMANENT FERTILIZING, LIMING, SEEDING AND MULCHING, AND INSTALL LANDSCAPE PLANTING.
10. CLEAN AND RESTORE SILT DESTINATION SITES. REMOVE OTHER EROSION CONTROL PRACTICES ON A TIMELY BASIS AS PERMANENT MEASURES TAKE HOLD. SPOT FERTILIZE, SEED, AND MULCH AS REQUIRED. NO RUNOFF SHALL BE DIRECTED TO THE PERMANENT MEASURES UNTIL THEY ARE ESTABLISHED.
11. INSPECT AND MAINTAIN GRADING, EROSION CONTROL AND SEDIMENT CONTROL PRACTICES WEEKLY AND INSPECTION SHOULD OCCUR AFTER EVERY 0.5" OR GREATER RAINFALL WITHIN A 24 HOUR PERIOD.
12. MAINTENANCE OF ALL EROSION CONTROL COMPONENTS SHALL BE AN ONGOING PRACTICE AND IN STRICT ACCORDANCE WITH THE APPROVED PLAN.

SPECIAL WINTER CONSIDERATIONS

THE MAJOR FOCUS OF WINTER EROSION AND SEDIMENT CONTROL IS THE PERIODS OF INTENSE RUNOFF ASSOCIATED WITH MID–WINTER THAWS AND RAINSTORMS, AND THE SPRING MELT.

FROZEN GROUND MAKES THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES VERY DIFFICULT. INSTALLATION SHOULD TAKE PLACE WELL BEFORE THE GROUND FREEZES. MAINTENANCE IN WINTER WILL BE MUCH MORE TIME CONSUMING AND DIFFICULT THAN IN THE SUMMER. THE OVERALL CONSTRUCTION SCHEDULE AND THE WEEKLY WORK SCHEDULE WILL BE DEVELOPED TO INCREASE TIME, EFFORT, AND MANPOWER DEVOTED TO MAINTAINING THE EROSION AND SEDIMENT CONTROL MEASURES.

INTENSE RUNOFF IN MID–WINTER THAWS AND RAINSTORMS, AND THE SPRING MELT PERIOD, CAN RESULT IN MORE SEVERE EROSION AND SEDIMENTATION PROBLEMS THAN RUNOFF FROM SUMMER STORMS. THE SOIL IS OFTEN COMPLETELY SATURATED WITH WATER, AND IS ALSO OFTEN UNDERLAIN BY A FROST LAYER. BOTH OF THESE FACTORS RESULT IN A GREATER PERCENTAGE OF THE RAIN OR MELTWATER RUNNING OVER THE GROUND SURFACE. WINTER AND SPRING RAINSTORMS ARE OFTEN HEAVIER AND MORE INTENSE THAN SUMMER SHOWERS. FOR THESE REASONS, EROSION AND SEDIMENTATION CAN BE ESPECIALLY SEVERE IN MID–WINTER THAWS AND THE SPRING MELT.

1. CONTROL MEASURES FOR WINTER CONSTRUCTION:

   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; AND

   C. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NHDOT ITEM 304.2.

   D. MINIMIZE DISTURBED AREA AND TIME OF DISTURBANCE: DISTURBED AREA AND LENGTH OF DISTURBANCE SHALL BE MINIMIZED ESPECIALLY BETWEEN OCTOBER 15TH AND MAY 1ST.

   E. GRASSED OR RIP RAPPED SWALES AND DITCHES: INSTALLATION WILL OCCUR BEFORE GROUND FREEZES. CHANNELS ARE TO BE STABILIZED WITH STONE, RIPRAP, OR VEGETATION IMMEDIATELY. INSPECTIONS ARE TO BE FREQUENT WITH REMOVAL OF ANY FLOW BLOCKAGE CAUSED BY ICE OR SEDIMENT.

   F. MULCHING: MULCH ALONE SHOULD NOT BE CONSIDERED AN ADEQUATE EROSION AND SEDIMENT CONTROL TECHNIQUE FOR AREAS THAT ARE DISTURBED IN THE WINTER OR SPRING. MULCH IS EASILY WASHED AWAY BY INTENSE RUNOFF FLOWING OVER SATURATED OR FROZEN SOIL. IT IS ESSENTIAL THAT MULCH BE LAID DOWN IN SUCH A WAY THAT IT WILL NOT BLOW OR WASH AWAY.

   G. SILT FENCE: INSTALLATION IS REQUIRED BEFORE THE GROUND FREEZES, OTHERWISE STAKES WILL BE DIFFICULT TO DRIVE. INSPECT FREQUENTLY AND REMOVE ANY COLLECTED SEDIMENT PERIODS IN ORDER TO PROVIDE AS MUCH CAPACITY AS POSSIBLE.

   H. SNOW FENCE: INSTALLATION IS REQUIRED BEFORE THE GROUND FREEZES OTHERWISE STAKES WILL BE DIFFICULT TO DRIVE. FENCES MUST BE PLACED LIBERALLY AROUND THE WORK SITE TO KEEP SOIL DISTURBANCE TO AN ABSOLUTE MINIMUM.

   I. STONE CHECK DAMS: PER DETAIL THE PLACEMENT WILL OCCUR IN SWALES AND DITCHES AFTER FINAL GRADING AND IS TO BE MAINTAINED UNTIL THE SITE IS FULLY STABILIZED.

2. INSPECTION AND MAINTENANCE

   INSPECTION OF EROSION AND SEDIMENT CONTROL MEASURES IS REQUIRED MORE FREQUENTLY IN THE WINTER AND SPRING THAN IN THE SUMMER. CAREFUL ATTENTION MUST BE GIVEN TO WEATHER PREDICTIONS. INSPECTION OF ALL CONTROL MEASURES WILL BE ONGOING TO ENSURE THAT STRUCTURES WILL MANAGE THE POTENTIALLY HEAVY AND INTENSE RUNOFF. CONSTANT MAINTENANCE OF CRITICAL CONTROL MEASURES MAY BE NECESSARY DURING THE WINTER AND EARLY SPRING TO PREVENT FAILURE OR OVERLOADING OF CONTROL MEASURES. A SECOND LINE OF CONTROL WILL BE QUICKLY INSTALLED IF PROBLEMS OCCUR. A SUBSTANTIAL AMOUNT OF TIME, EQUIPMENT, AND MANPOWER SHALL BE DEVOTED TO EROSION AND SEDIMENT CONTROL.

3. FOLLOW–UP

   INSTALLATION OF PERMANENT VEGETATIVE CONTROLS WILL BE REQUIRED AS EARLY AS IS PRACTICAL AT THE BEGINNING OF THE GROWING SEASON.

NO.	DATE	REVISION DESCRIPTION

EROSION CONTROL NOTES

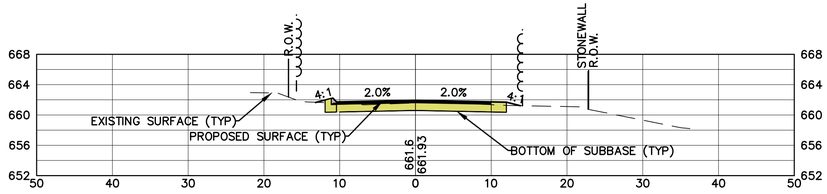
PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS
BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

SHEET: 12 OF 23



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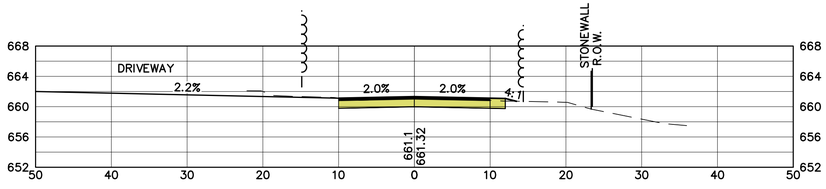

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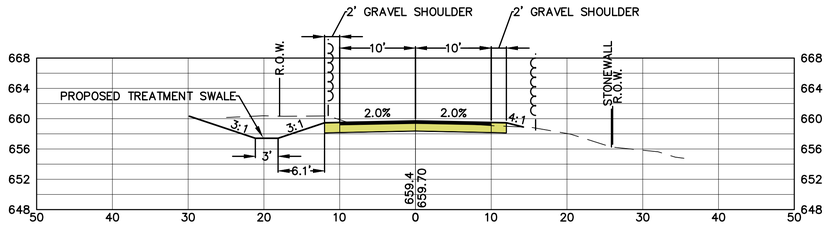

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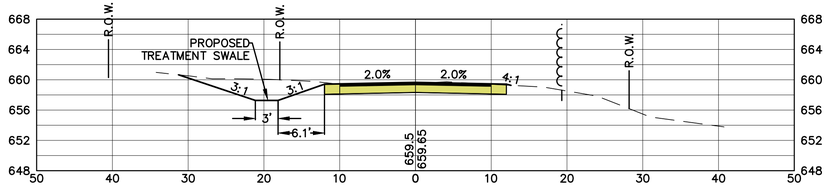

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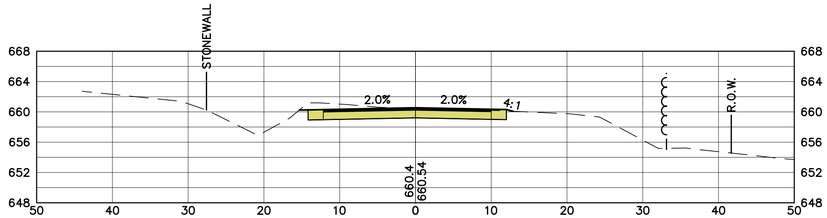

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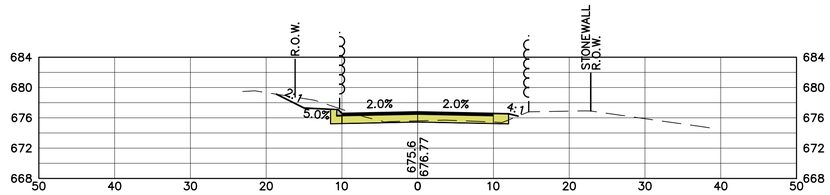

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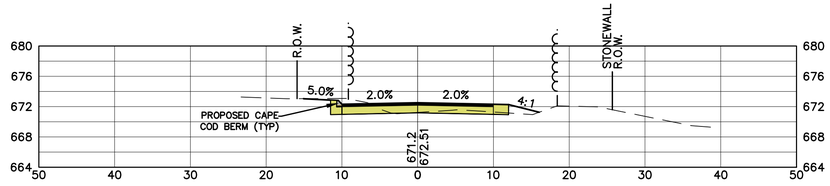

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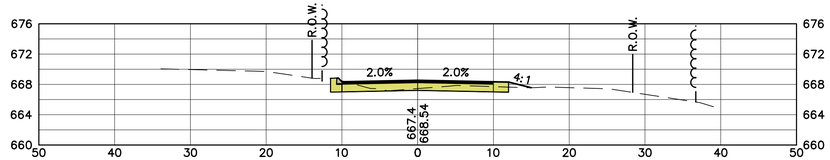

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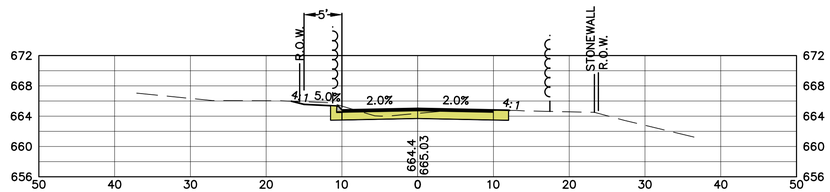

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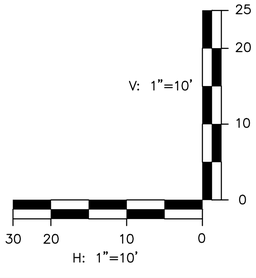


NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL
ROAD
CROSS SECTIONS
100+50 TO
103+50

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

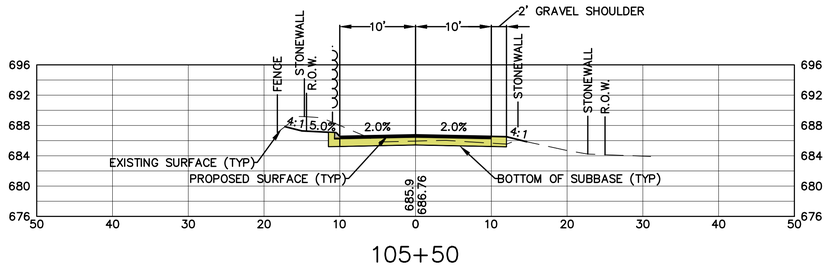
DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

SHEET: 13 OF 23



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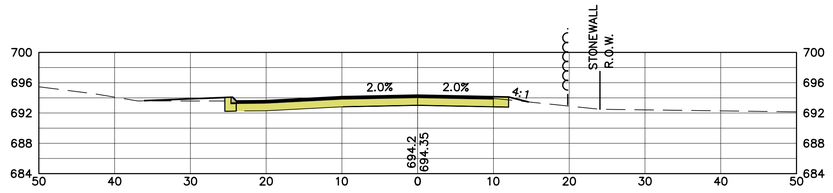

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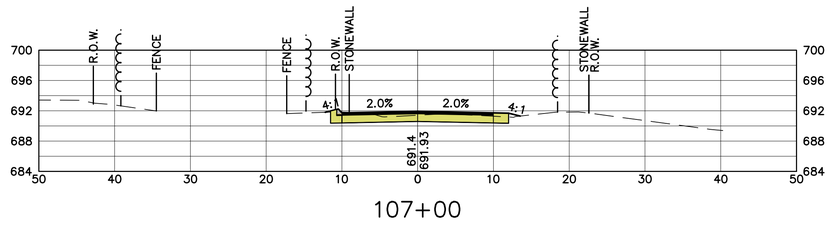

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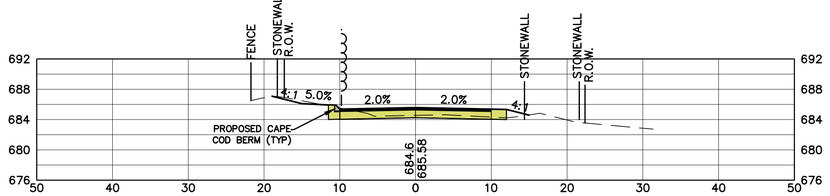

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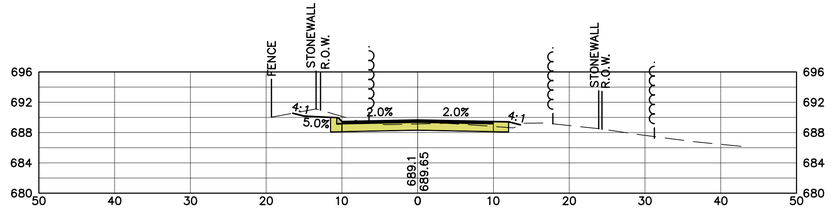

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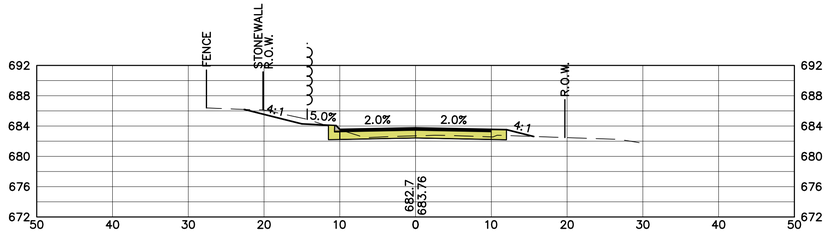

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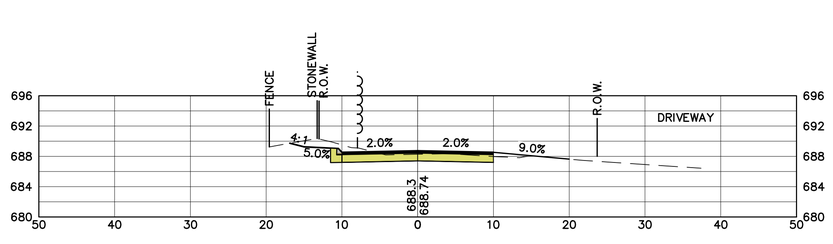

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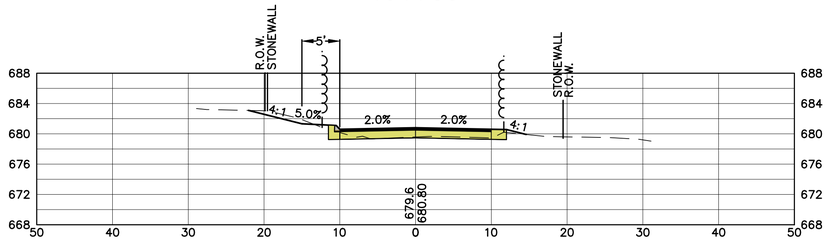

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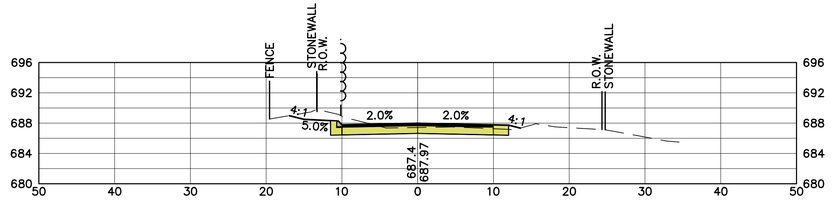

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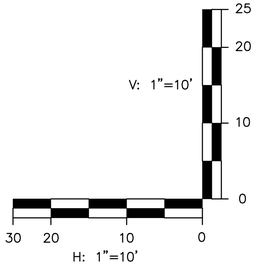


NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL ROAD
CROSS SECTIONS
104+00 TO 107+50

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

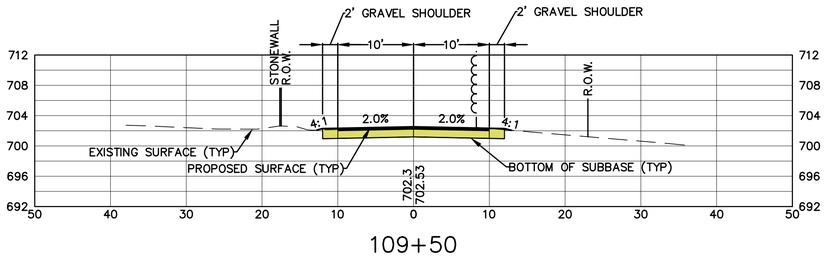
DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

SHEET: 14 OF 23



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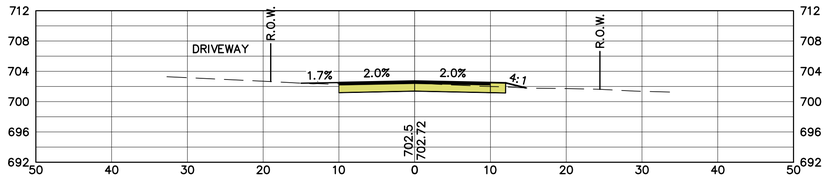

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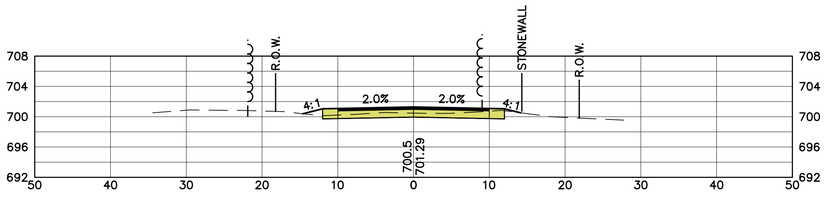

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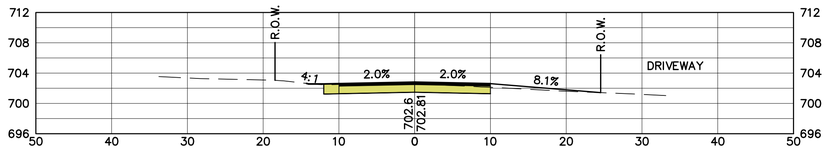

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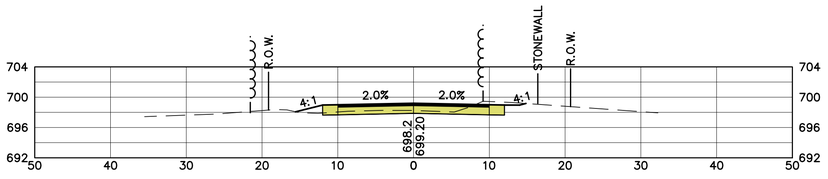

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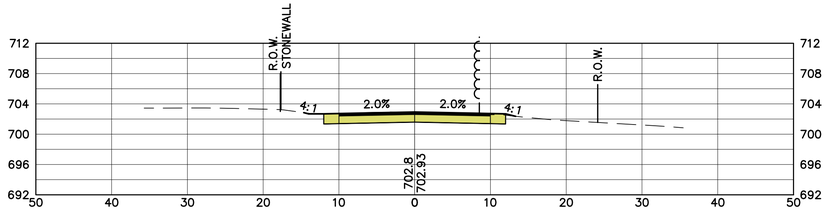

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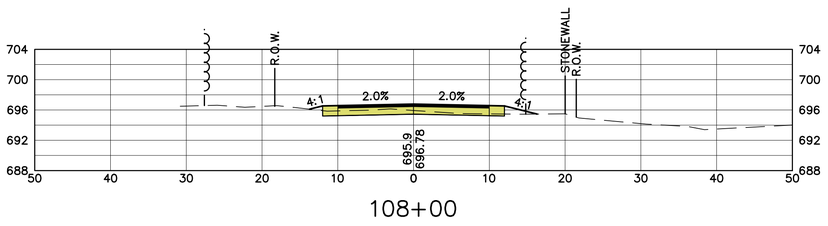

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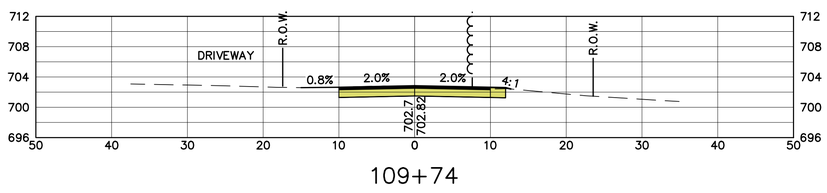

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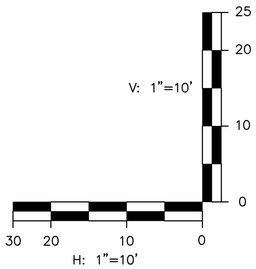


NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL
ROAD
CROSS SECTIONS
108+00 TO
110+35

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

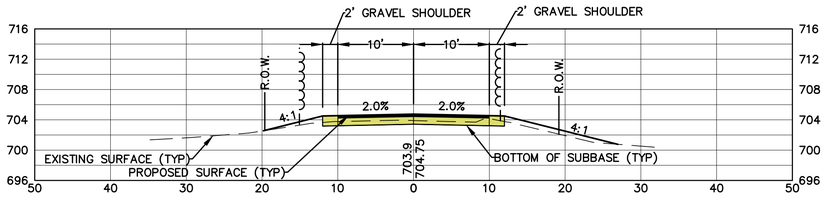
DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

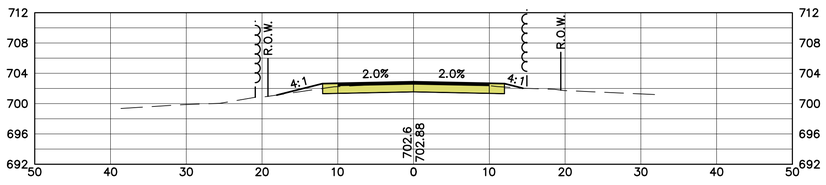
BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

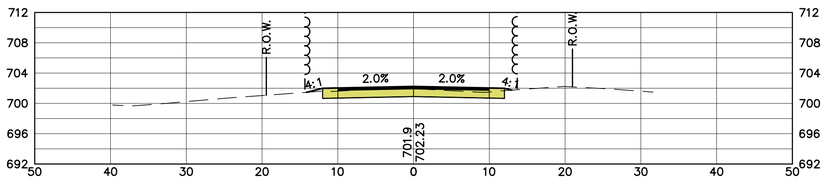
SHEET: 15 OF 23



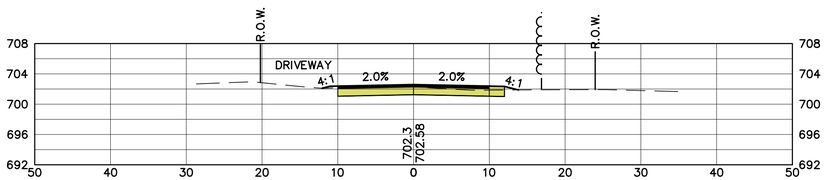
112+00



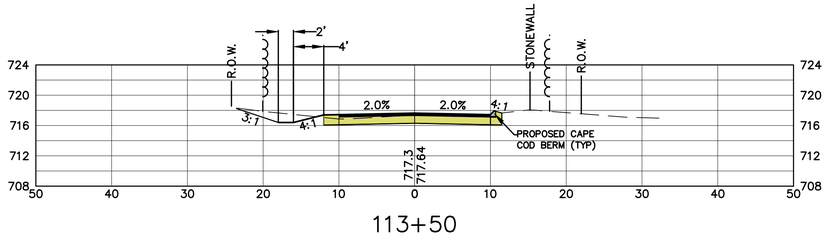
111+50



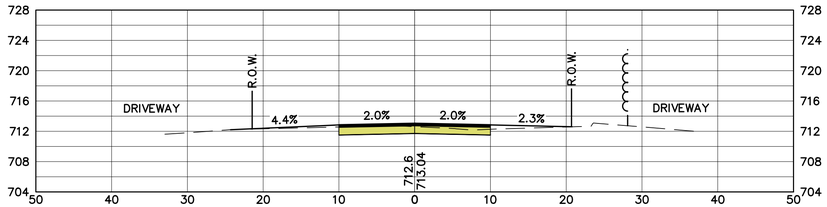
111+00



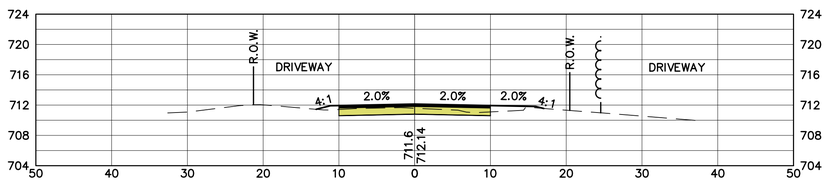
110+50



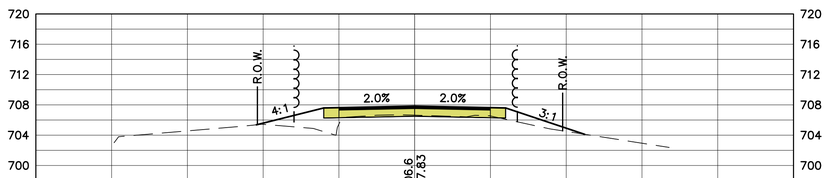
113+50



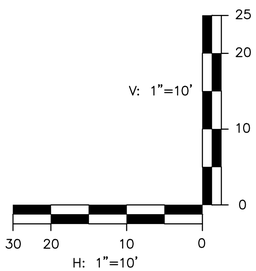
113+09



113+00



112+50



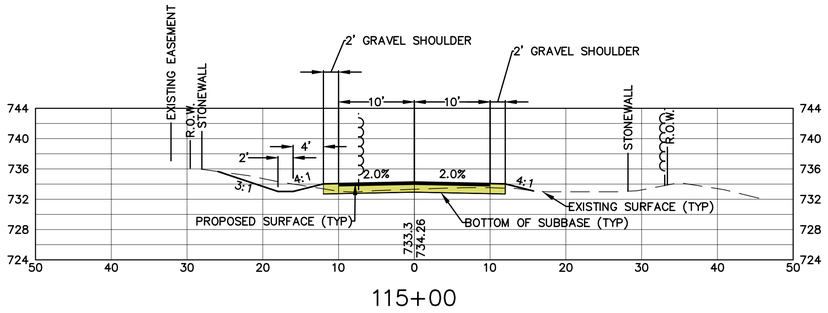
NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL ROAD
CROSS SECTIONS
110+50 TO
113+50

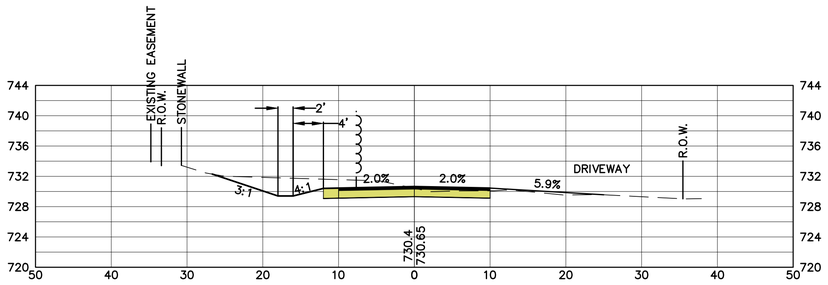
PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS
BEDFORD, NEW HAMPSHIRE

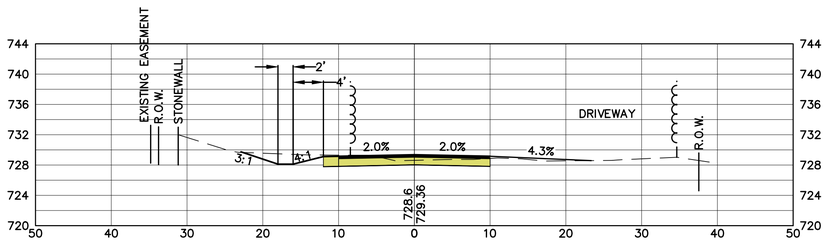
DATE: AUGUST 8, 2023
SCALE: AS SHOWN
SHEET: 16 OF 23



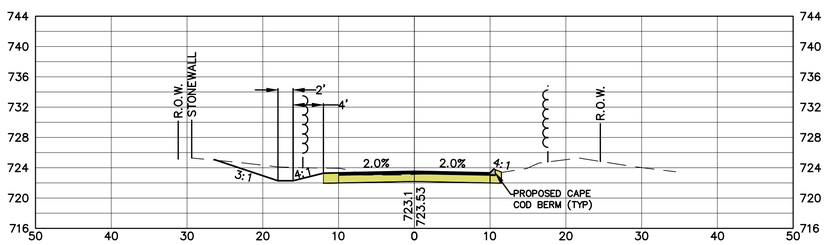
115+00



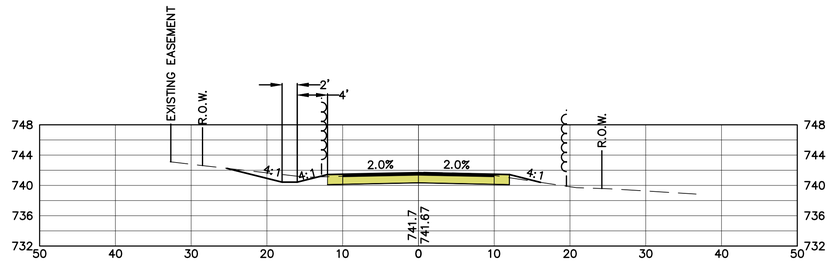
114+62



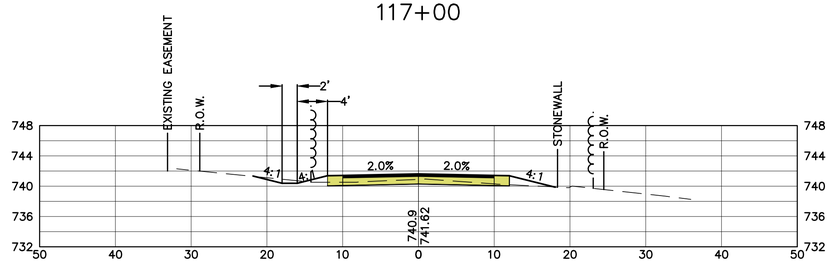
114+50



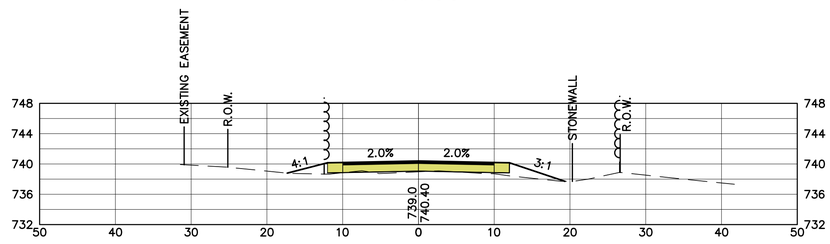
114+00



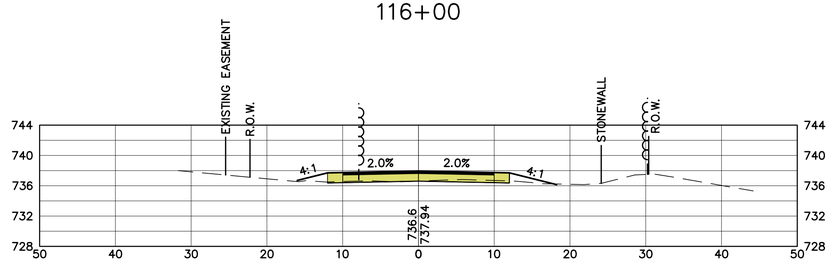
117+00



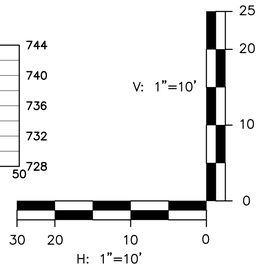
116+50



116+00



115+50



NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL
ROAD
CROSS SECTIONS
114+00 TO
117+00

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

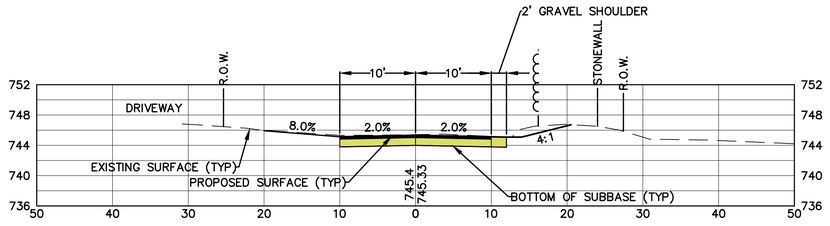
DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

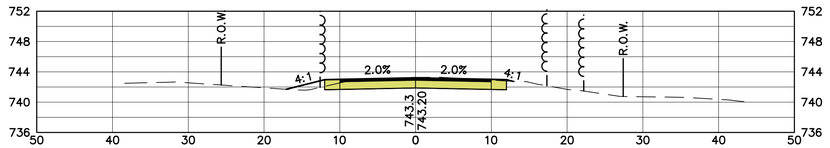
BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

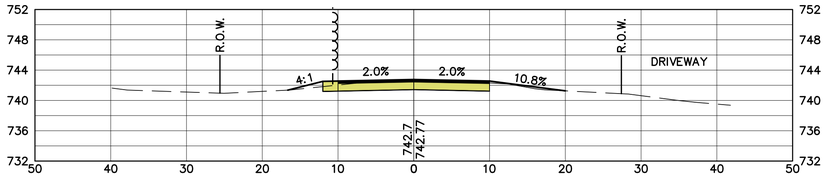
SHEET: 17 OF 23



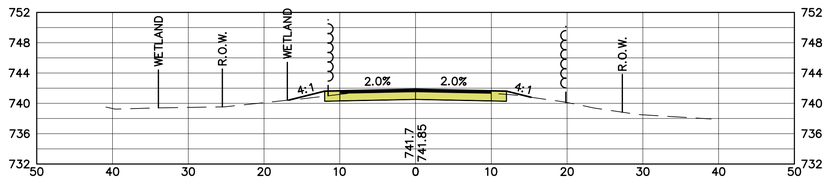
119+00



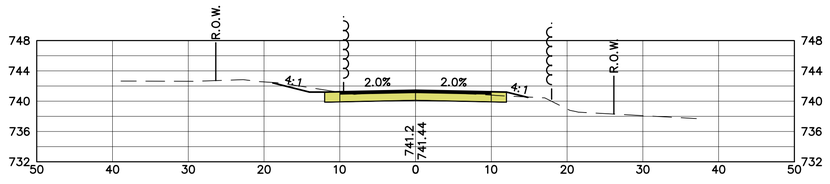
118+50



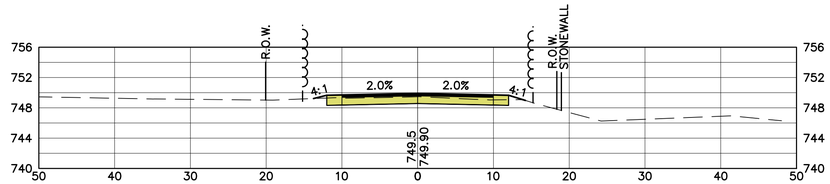
118+37



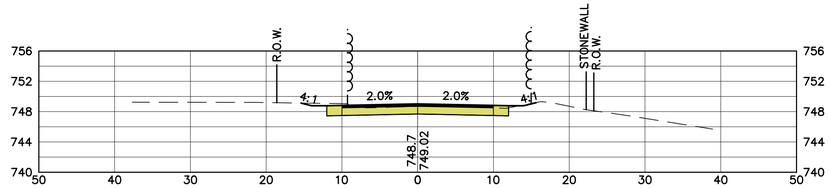
118+00



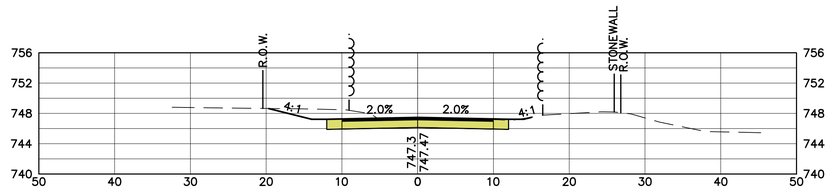
117+50



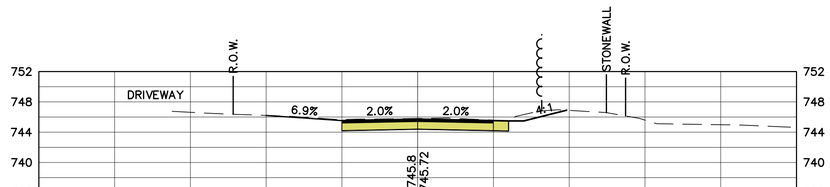
120+50



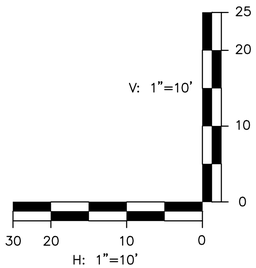
120+00



119+50



119+09



NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL
ROAD
CROSS SECTIONS
117+50 TO
120+50

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

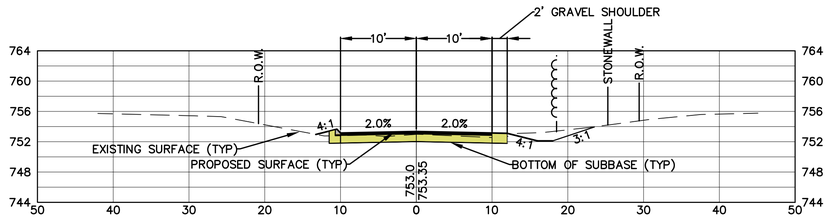
DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

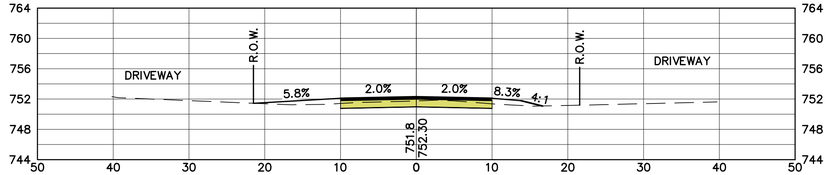
BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

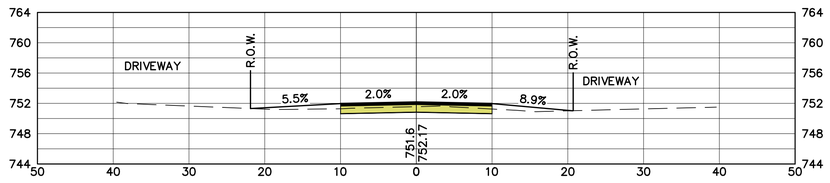
SHEET: 18 OF 23



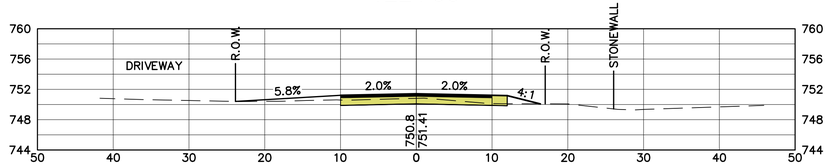
122+50



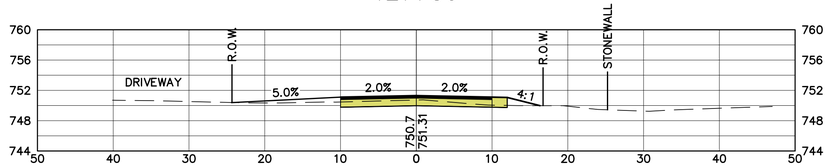
122+08



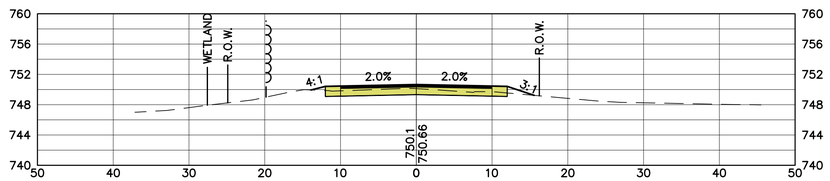
122+00



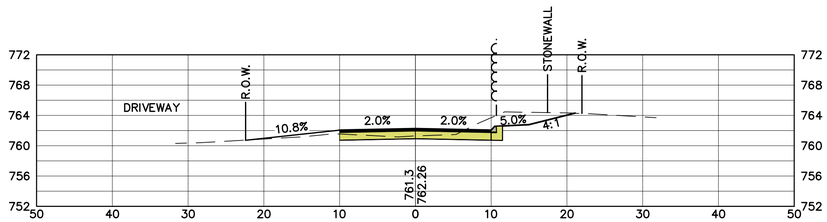
121+50



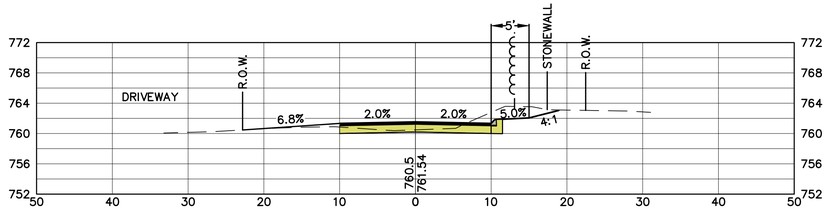
121+43



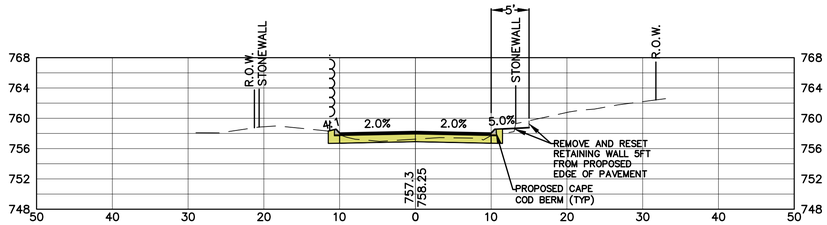
121+00



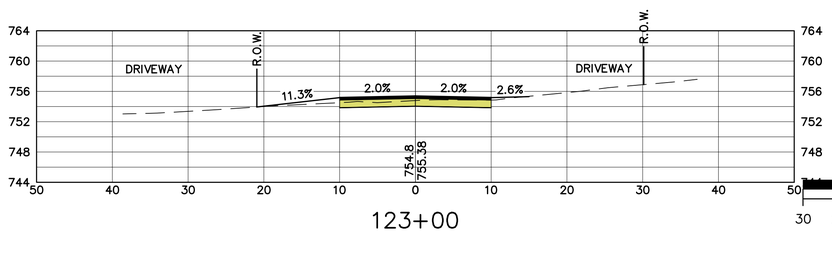
124+11



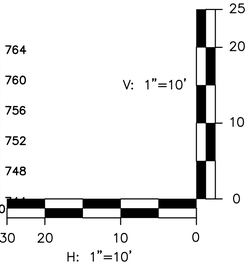
124+00



123+50



123+00



NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL
ROAD
CROSS SECTIONS
121+00 TO
124+11

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

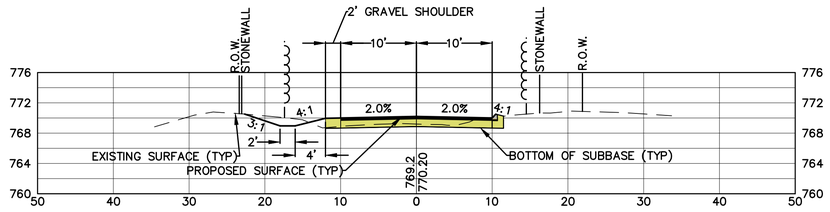
DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

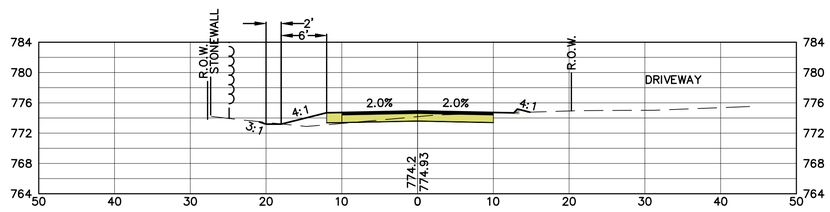
BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

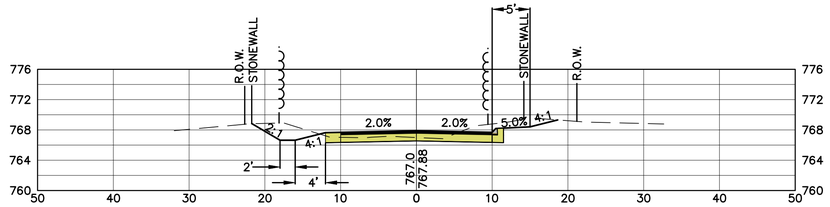
SHEET: 19 OF 23



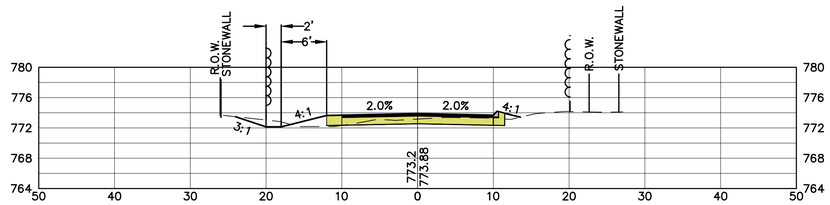
125+50



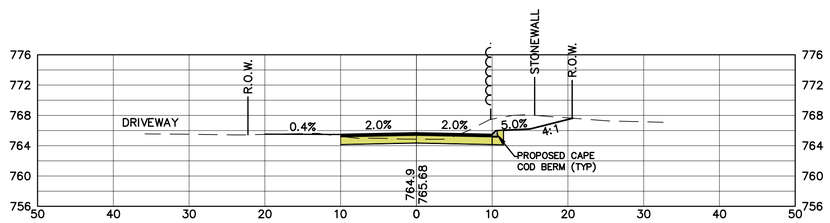
127+50



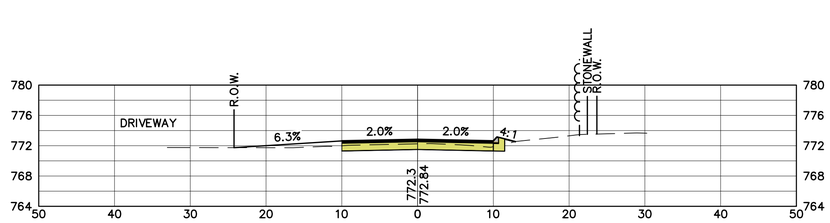
125+00



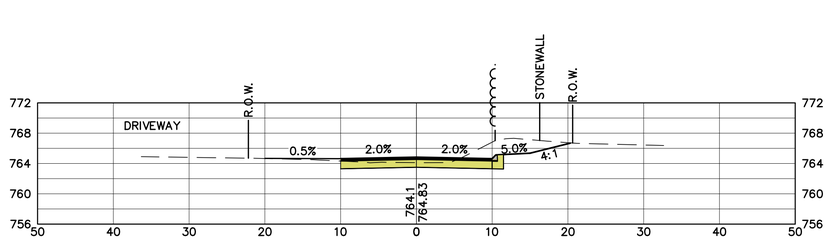
127+00



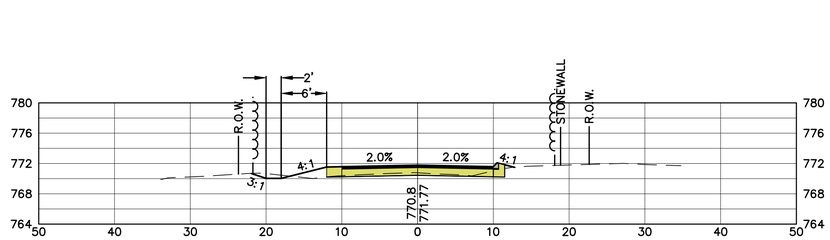
124+63



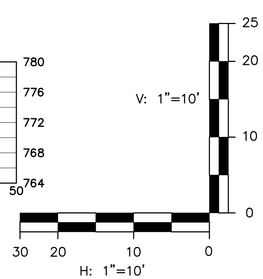
126+50



124+50



126+00



NO.	DATE	REVISION DESCRIPTION

HOLBROOK HILL ROAD
CROSS SECTIONS
124+50 TO 127+50

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

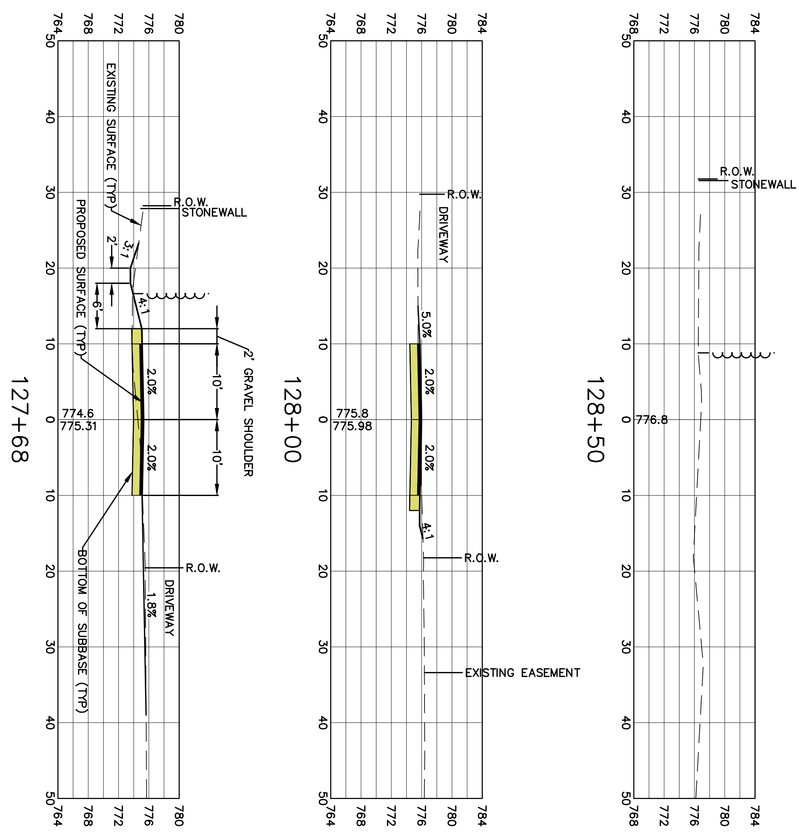
DATE: AUGUST 8, 2023

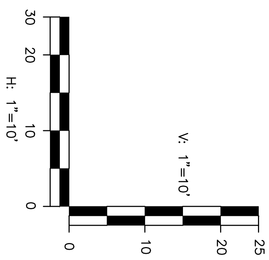
HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

BEDFORD, NEW HAMPSHIRE

SCALE: AS SHOWN

SHEET: 20 OF 23





HOLBROOK HILL ROAD
RECONSTRUCTION PLANS

BEDFORD, NEW HAMPSHIRE

SHEET: 21 OF 23 | SCALE: AS SHOWN

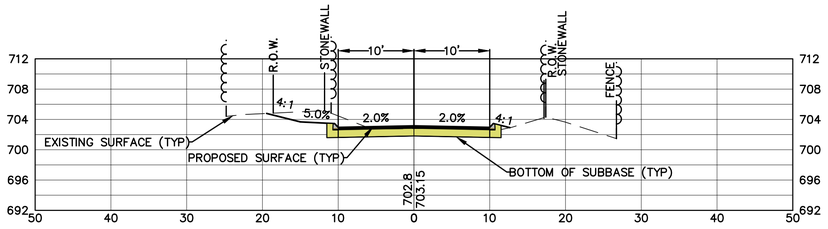
PREPARED FOR:

TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

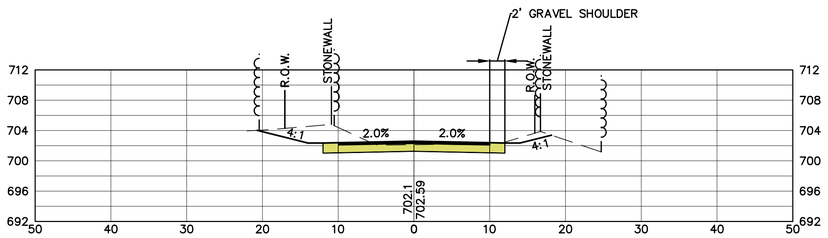
DATE: AUGUST 8, 2023

HOLBROOK HILL ROAD
CROSS SECTIONS
127+68 TO
128+50

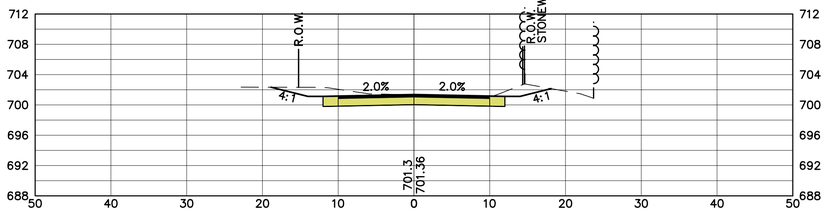
NO.	DATE	REVISION DESCRIPTION



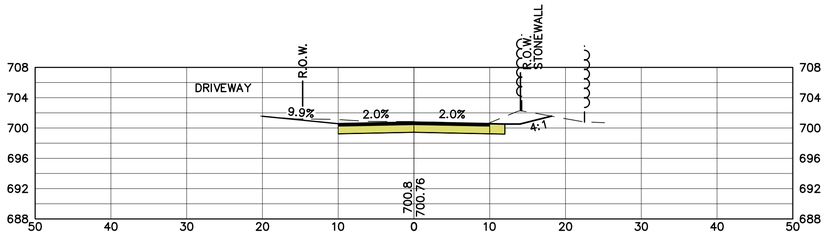
202+00



201+50



201+00



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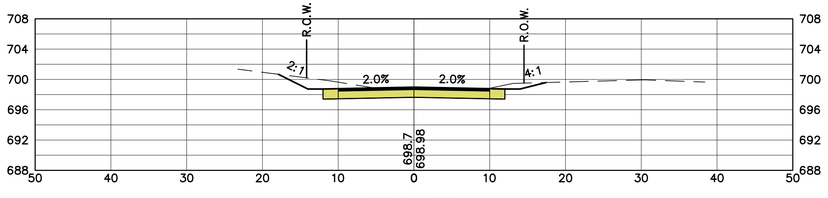

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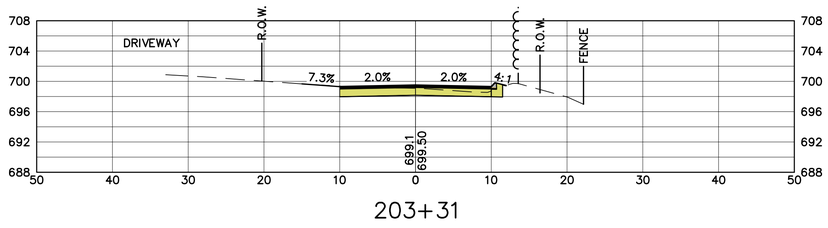

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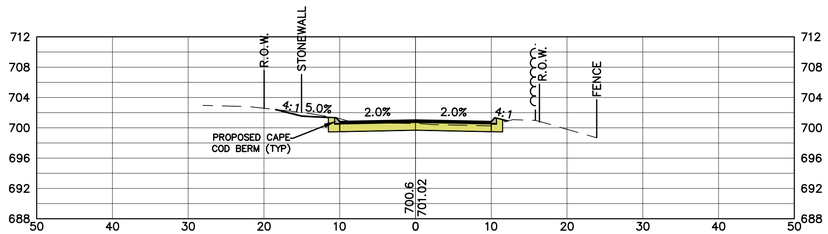

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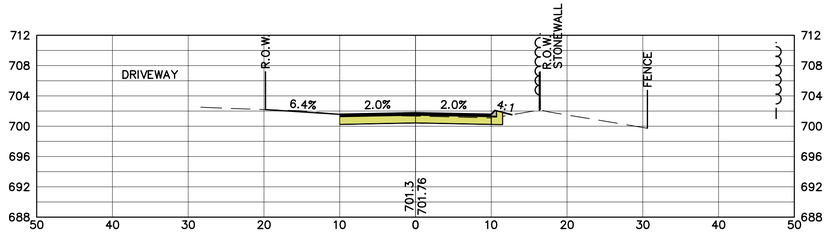

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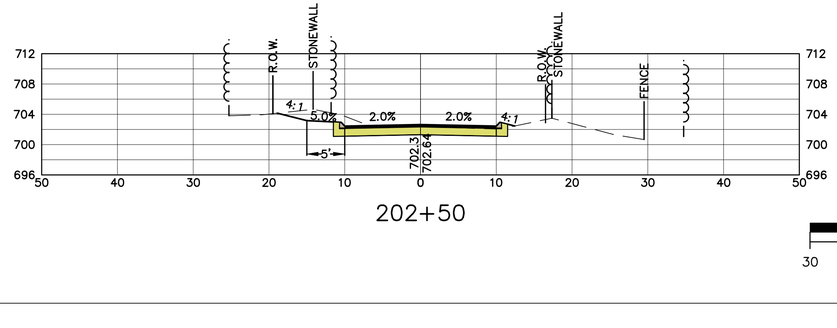

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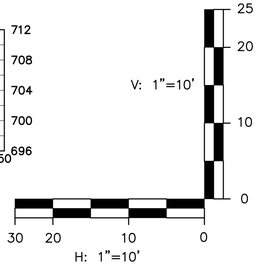


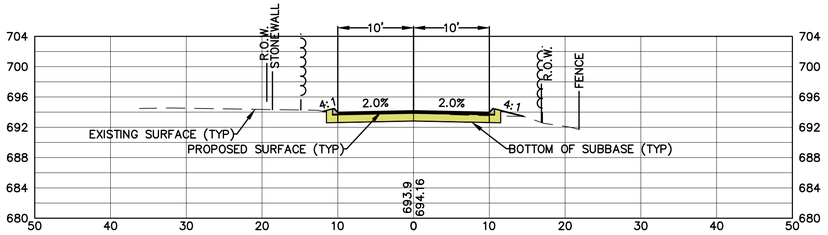
NO.	DATE	REVISION DESCRIPTION

KING ROAD
CROSS SECTIONS
200+50 TO
203+31

PREPARED FOR:
TOWN OF BEDFORD
55 CONSTITUTION DRIVE
BEDFORD, NEW HAMPSHIRE 03110

HOLBROOK HILL ROAD
RECONSTRUCTION PLANS
BEDFORD, NEW HAMPSHIRE

DATE: AUGUST 8, 2023
SCALE: AS SHOWN
SHEET: 22 OF 23



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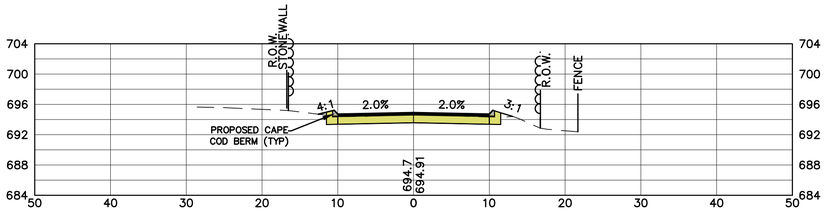

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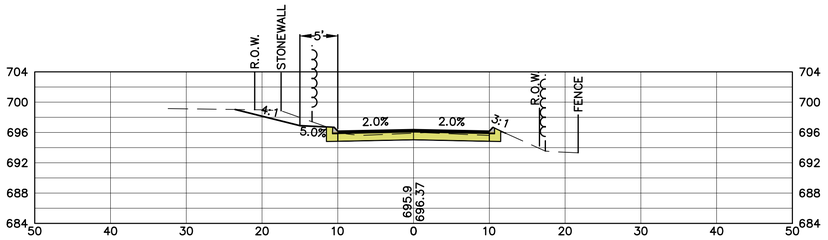

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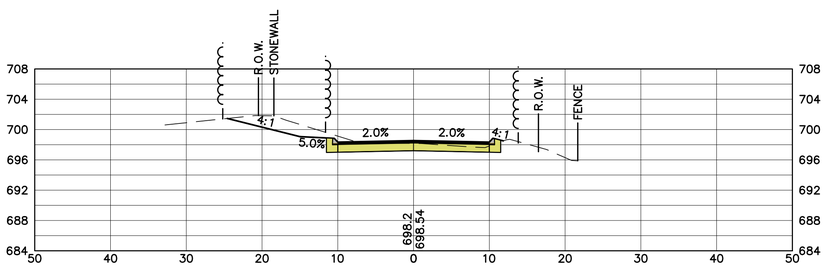

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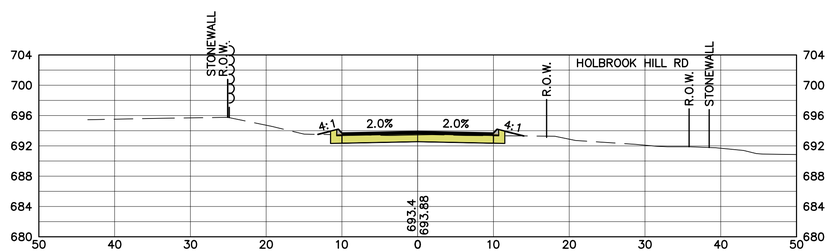

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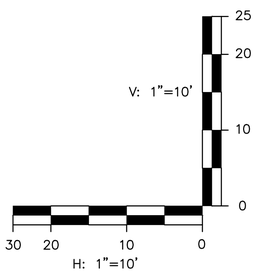

NO.	DATE	REVISION DESCRIPTION

KING ROAD
CROSS SECTIONS
203+50 TO
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