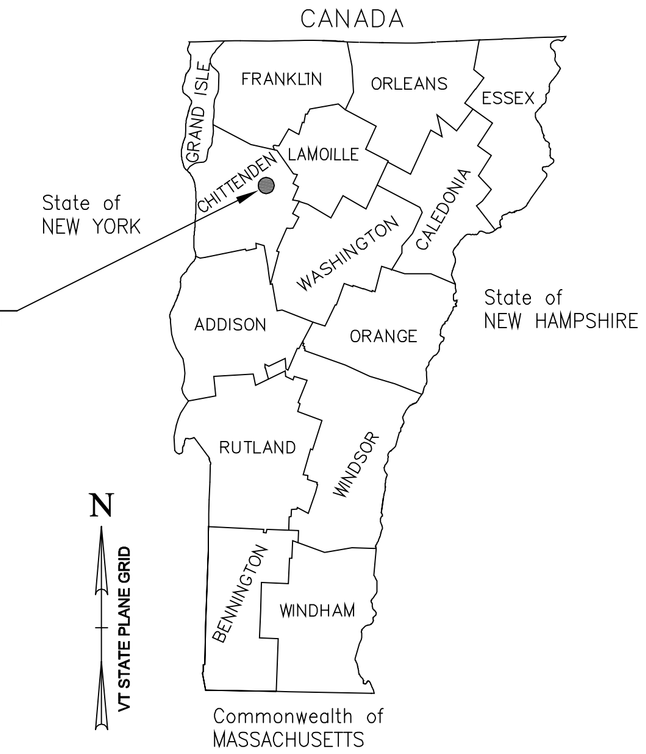
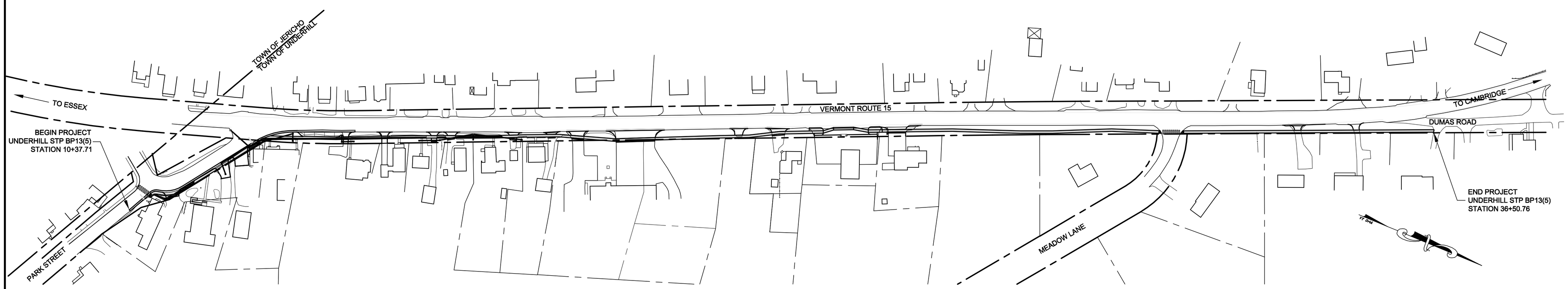
Town of Underhill
County of Chittenden
Underhill Flats, Route 15 Sidewalk
Underhill STP BP13(5)



PROJECT LOCATION: ALONG THE EASTERLY SIDE OF PARK STREET AND VT ROUTE 15, BEGINNING ON PARK STREET NEAR THE UNITED CHURCH OF UNDERHILL AND PROCEEDING NORTHWESTERLY APPROXIMATELY 360 FEET TO THE INTERSECTION WITH VT ROUTE 15, THEN PROCEEDING NORTHERLY FOR APPROXIMATELY 2,298 FEET, ENDING AT THE DRIVEWAY OF #2 DUMAS ROAD.

LENGTH OF SIDEWALK	2,658 FEET	0.50 MILES
LENGTH OF PROJECT	2,658 FEET	0.50 MILES

PROJECT DESCRIPTION: WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES GRADING, SUBBASE, PORTLAND CEMENT CONCRETE SIDEWALK, TEMPORARY CONSTRUCTION FENCING, SIGNAGE, GRANITE CURBING, DRAINAGE WORK AND RELATED ITEMS FOR A SIDEWALK.



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

INDEX OF SHEETS

1	TITLE SHEET
2-3	QUANTITY SHEETS
4	TYPICAL SECTIONS
5	TYPICAL DETAILS
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11-15	CROSS SECTIONS
16-17	EROSION PREVENTION & SEDIMENT CONTROL PLANS
18	EPSC NOTES, DETAILS AND SPECIFICATIONS
19	TRAFFIC CONTROL PLAN

STANDARD SHEETS

B-5	EMBANKMENT ON EARTH SLOPE	6-01-94 R
B-71	RESIDENTIAL AND COMMERCIAL DRIVES	7-08-05 R
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES	10-14-05
C-2B	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES	10-14-05 R
C-3A	SIDEWALK RAMPS	3-10-08
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	3-10-08
C-10	CURBING	2-11-08
D-15	PRECAST REINF CONC. MH-GRATES, CAST IRON GRATE WITH FRAME	6-01-94
J-3	MAIL BOX SUPPORT DETAILS	8-07-95
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T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	8-06-12
T-28	CONSTRUCTION SIGN DETAILS	8-06-12
T-30	CONSTRUCTION SIGN DETAILS	8-06-12
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	8-06-12
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	8-06-12
T-45	SQUARE TUBE SIGN POST AND ANCHOR	1-02-13

NOTES:

1. THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE VERMONT AGENCY OF TRANSPORTATION. CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE VTRANS 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 INCORPORATED IN THESE PLANS.

2. VT ROUTE 15 SIDELINES ARE BASED ON LIMITED FOUND EXISTING BOUNDARY EVIDENCE AND PLANS BY VTRANS. THE INDIVIDUAL PROPERTY LINES WERE LOCATED BASED ON FOUND EVIDENCE, THE ABOVE VTRANS PLANS, PROPERTY SURVEYS AND TOWN PARCEL MAPS.

3. LINES SHOWN ON THESE PLANS AS EXISTING PROPERTY LINES ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO UNDERHILL'S ACQUISITION OF LANDS AND RIGHTS FOR THIS PROJECT.

FUNDING ASSISTANCE FOR THIS PROJECT IS BEING FURNISHED BY FHWA, VTRANS AND THE TOWN OF UNDERHILL

QUALITY ASSURANCE PROGRAM: LEVEL 3

DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD 83(1996)

PRELIMINARY PLANS
DECEMBER, 2015

Lamoureux & Dickinson
Consulting Engineers, Inc.
14 Morse Drive, Essex, VT 05452
802-878-4450 www.LDengineering.com

TOWN OF UNDERHILL

APPROVED _____ DATE _____
TOWN ADMINISTRATOR

PROJECT NAME :UNDERHILL FLATS ROUTE 15 SIDEWALK
PROJECT NUMBER : UNDERHILL STP BP13(5)

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES / TOTALS / DESCRIPTIONS

Erosion Control	Landscape	Sidewalk	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
		1	1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	
		230	230		CY	COMMON EXCAVATION	203.15	
		20	20		CY	EXCAVATION OF SURFACES AND PAVEMENTS	203.28	
		5	5		CY	EARTH BORROW	203.30	
		30	30		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	
		20	20		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	
		145	145		CY	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	301.26	
		0.5	0.5		CWT	EMULSIFIED ASPHALT	404.65	
		230	230		TON	BITUMINOUS CONCRETE PAVEMENT	406.25	
		479	479		LF	12" CPEP	601.0905	
		7	7		EACH	CONCRETE CATCH BASIN WITH CAST IRON GRATE	604.10	
40			40		HR	POWER BROOM RENTAL, TYPE I	608.30	
		0.5	0.5		MGAL	DUST CONTROL WITH WATER	609.10	
		461	461		LF	VERTICAL GRANITE CURB	616.21	
		5	5		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10	
		1070	1070		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10	
		287	287		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	618.11	
		30	30		SF	DETECTABLE WARNING SURFACE	618.30	
		1	1		EACH	HYDRANT	629.28	
		1	1		EACH	REMOVE HYDRANT	629.30	
		50	50		HR	UNIFORMED TRAFFIC OFFICERS	630.10	
		200	200		HR	FLAGGERS	630.15	
		1	1		LS	MOBILIZATION/DEMOBILIZATION	635.11	
		1	1		LS	TRAFFIC CONTROL	641.10	
		150	150		LF	4 INCH WHITE LINE	646.20	
		24	24		LF	24 INCH STOP BAR	646.26	
		64	64		LF	CROSSWALK MARKING	646.31	
		2000	2000		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11	
330			330		SY	GEOTEXTILE FOR SILT FENCE	649.51	
	25		25		LB	SEED	651.15	
	210		210		LB	FERTILIZER	651.18	
	0.2		0.2		TON	AGRICULTURAL LIMESTONE	651.20	
	1		1		TON	HAY MULCH	651.25	
	220		220		CY	TOPSOIL	651.35	
1			1		LS	EPSC PLAN	652.10	
40			40		HR	MONITORING EPSC PLAN	652.20	
1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	
10			10		SY	TEMPORARY EROSION MATTING	653.20	
17			17		EACH	INLET PROTECTION DEVICE, TYPE II	653.41	
1352			1352		LF	PROJECT DEMARCATION FENCE	653.55	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: Underhill Flats, Route 15 Sidewalk
PROJECT NUMBER: Underhill STP BP13(5)

FILE NAME: 14032/Preliminary Quantity Sheet | PLOT DATE: 12/04/2015
PROJECT LEADER: ABR | DRAWN BY: DLH
DESIGNED BY: DLH | CHECKED BY: DJG
QUANTITY SHEET #1 | SHEET 2 OF 19

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

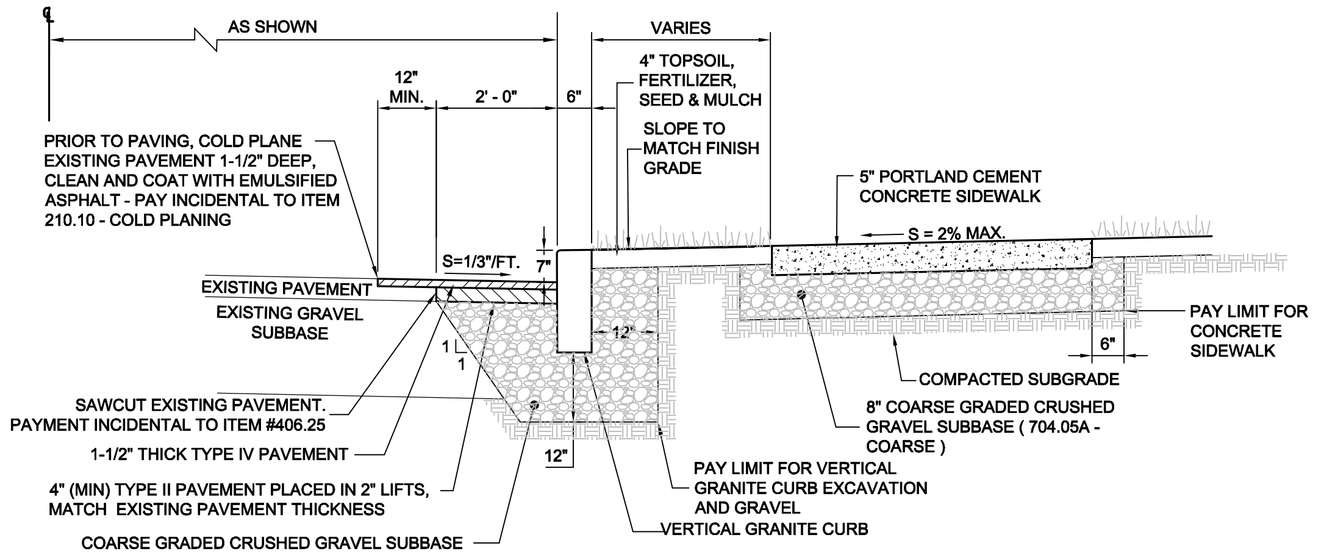
SUMMARY OF ESTIMATED QUANTITIES			TOTALS		DESCRIPTIONS			
Erosion Control	Landscape	Sidewalk	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
		3	3		EACH	REMOVING SIGNS	675.50	
		3	3		EACH	ERECTING SALVAGED SIGNS	675.60	
		3	3		EACH	SETTING SALVAGED POSTS	675.61	
		4	4		EACH	SPECIAL PROVISION (RELOCATE CURB STOP)	900.620	
		3	3		EACH	SPECIAL PROVISION (YARD INLET)	900.620	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: Underhill Flats, Route 15 Sidewalk
PROJECT NUMBER: Underhill STP BP13(5)

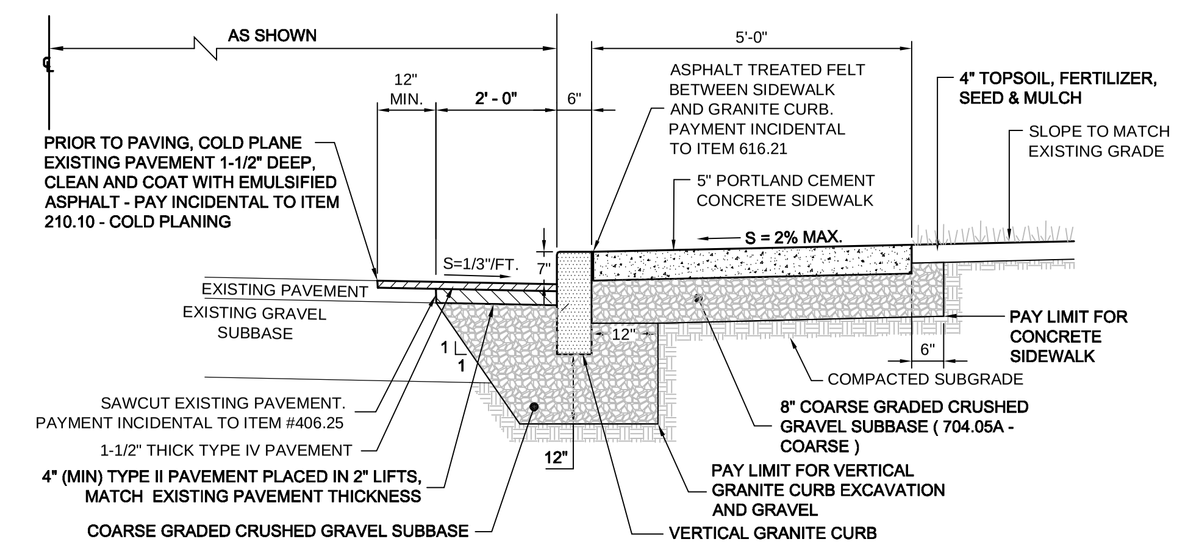
FILE NAME: 14032/Preliminary Quantity Sheet
PLOT DATE: 12/04/2015
PROJECT LEADER: ABR
DRAWN BY: DLH
DESIGNED BY: DLH
CHECKED BY: DJG
QUANTITY SHEET #2



SIDEWALK & CURB SECTION WITH GRASS STRIP

NTS

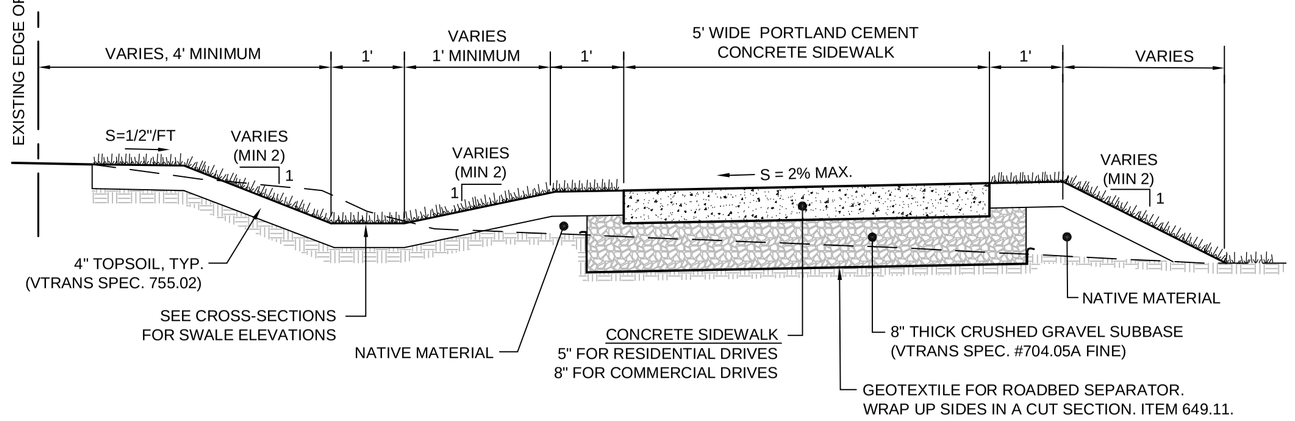
STA 13+22 TO STA 13+86
STA 14+52 TO STA 14+67



SIDEWALK & CURB SECTION WITH NO GRASS STRIP

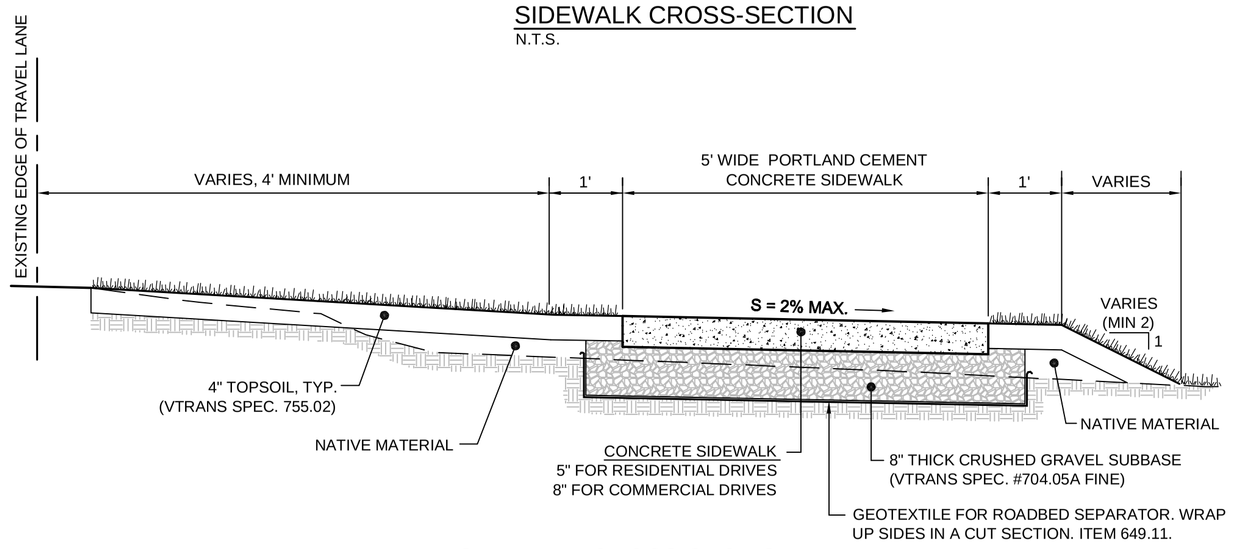
NTS

STA 10+00 TO STA 13+22
STA 13+86 TO STA 14+52



SIDEWALK CROSS-SECTION

N.T.S.

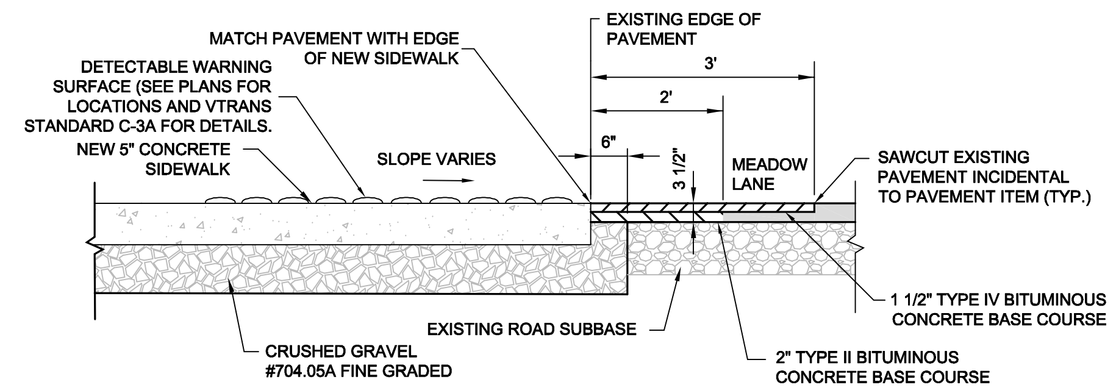


SIDEWALK CROSS-SECTION

N.T.S.

NOTE

PLACE TOPSOIL, SEED AND MULCH ON ALL DISTURBED AREAS (A MINIMUM OF 3' WIDE ON EACH SIDE OF THE NEW SIDEWALK EXCEPT WHERE THE SIDEWALK IS ADJACENT TO THE NEW CURB, EXISTING BUILDINGS OR OTHER STRUCTURES.)



TYPICAL 5" THICK CONCRETE SIDEWALK ENDING AT MEADOW LANE

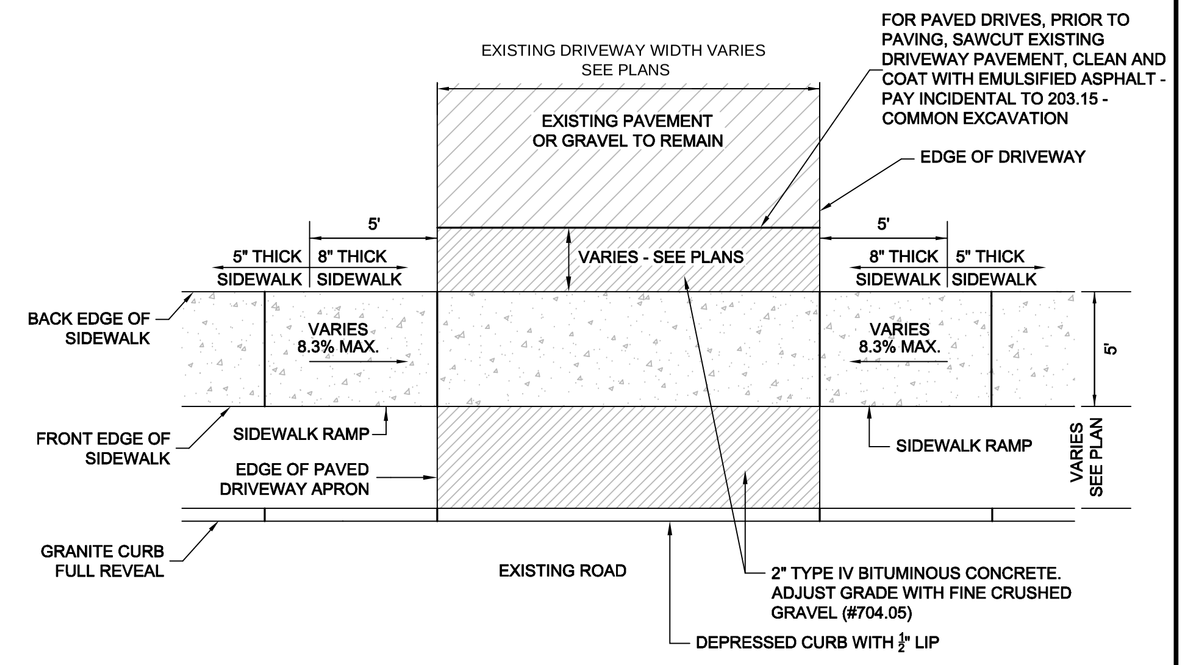
NTS

BITUMINOUS CONCRETE PAVEMENT NOTES

1. THE CONTRACTOR SHALL APPLY EMULSION TO THE FULL WIDTH OF THE BASE COURSE/EXISTING PAVEMENT BEFORE INSTALLING THE TYPE III PAVEMENT OVERLAY. EMULSION SHALL ALSO BE PLACED ON THE FACE OF THE CURB, THE EDGES OF EXISTING PAVEMENT AND THE EDGES OF NEW SIDEWALKS WHERE IT WILL BE IN CONTACT WITH THE PAVEMENT. EMULSIFIED ASPHALT TO BE APPLIED AT THE RATE OF 0.015 GAL./SQ YD.

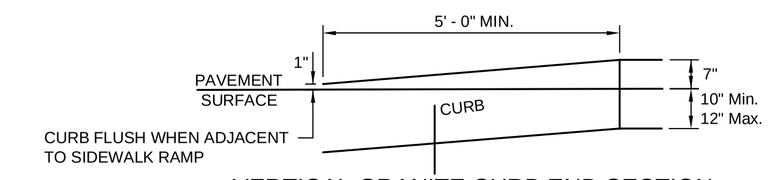
2. BITUMINOUS CONCRETE PAVEMENT TOLERANCE = 1/4" (FOR TOTAL THICKNESS OF BINDER AND/OR WEARING COURSE).

3. BITUMINOUS CONCRETE PAVEMENT SHALL BE 75 BLOW MARSHALL MIX AND PERFORMANCE GRADED BINDER SHALL BE PG 58-28.



TYPICAL BITUMINOUS CONCRETE DRIVEWAY APRON WITH SIDEWALK DETAIL

N.T.S.



VERTICAL GRANITE CURB END SECTION

NTS

GENERAL CONSTRUCTION SPECIFICATIONS

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 2011 AND ITS LATEST REVISIONS, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (2009 EDITION) AND THESE PLANS.

2. THE CONTRACTOR SHALL CONTACT ALL UTILITIES BEFORE EXCAVATION TO VERIFY THE LOCATION OF ANY UNDERGROUND LINES. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" AND THE TOWN OF UNDERHILL PRIOR TO ANY EXCAVATION.

3. UTILITY INFORMATION SHOWN HEREON WAS OBTAINED FROM THE BEST AVAILABLE SOURCES AND MAY OR MAY NOT BE EITHER ACCURATE OR COMPLETE. EXPLORATORY EXCAVATION SHALL BE COORDINATED WITH AND SUBJECT TO THE RESIDENT ENGINEER'S APPROVAL. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY UTILITY, PUBLIC OR PRIVATE, SHOWN OR NOT SHOWN HEREON. THE CONTRACTOR SHALL CONNECT OR RECONNECT ALL UTILITIES TO THE NEAREST SOURCE THROUGH COORDINATION WITH THE UTILITY OWNER.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE DUST CREATED AS A RESULT OF CONSTRUCTION DOES NOT CREATE A NUISANCE OR A SAFETY HAZARD. THE CONTRACTOR SHALL WET SECTIONS OF THE CONSTRUCTION AREA WITH WATER AND/OR SWEEP ASPHALT ROADS WITH A POWER BROOM (TYPE 1) OR A STREET SWEEPER (POWER BROOM TYPE II) AS DUST CONTROL ON A DAILY BASIS, OR AT MORE FREQUENT INTERVALS AS DIRECTED BY THE ENGINEER AND/OR OWNER.

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS ROUTE 15 SIDEWALK UNDERHILL STP BP13(5) ROUTE 15 UNDERHILL, VERMONT	Proj. no. 14032
	Survey JMR
	Design DLH / ABR
TYPICAL SECTIONS	Drawn L&D
	Checked DLH / RJD
	Date 6-3-14
LAMOUREUX & DICKINSON Consulting Engineers, Inc. 14 Morse Drive Essex Junction, VT 05452 Tel: 802-878-4450	Scale AS NOTED
	Sht. no. 4

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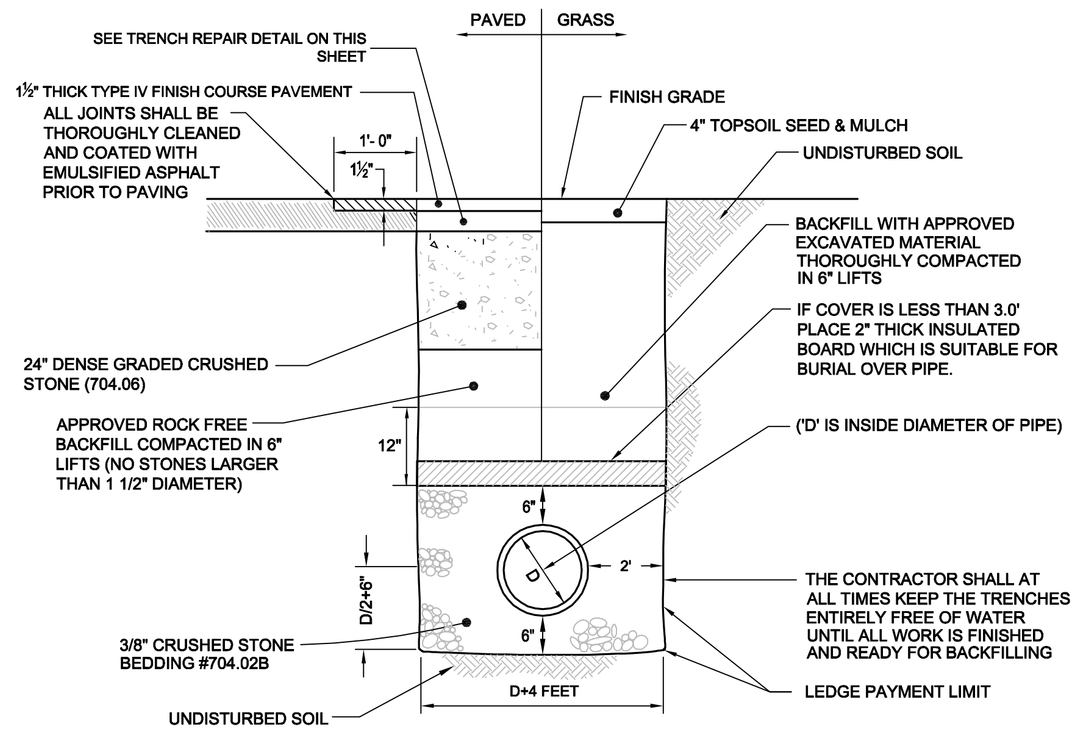


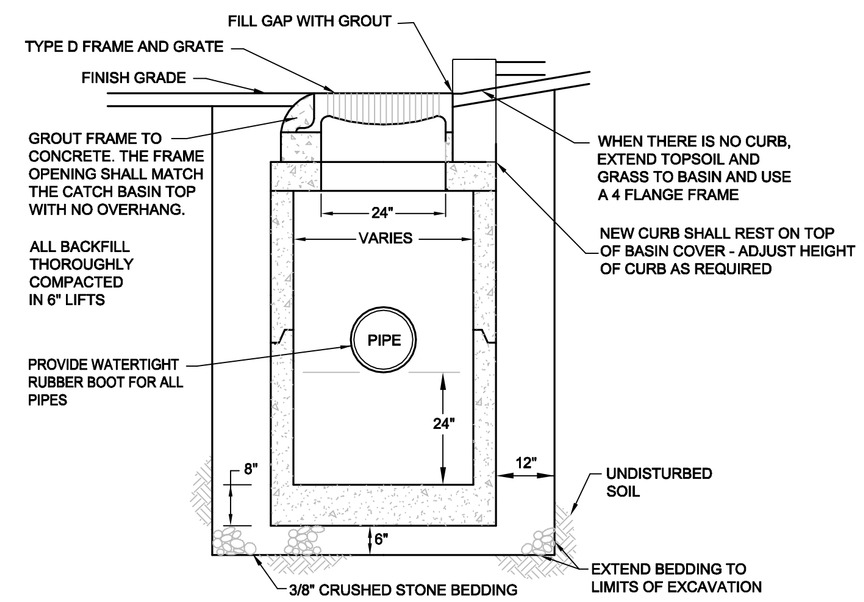
NOTES:

1. SEE OPTION PIPE SPECIAL PROVISION FOR A LIST OF WORK AND MATERIALS THAT ARE INCIDENTAL TO THE SPECIAL PROVISION OPTION PIPE ITEMS.

2. REMOVAL OF EXISTING CONCRETE IN ROADWAY PAID UNDER SOLID ROCK EXCAVATION (ITEM 203.16). LEDGE ENCOUNTERED WITHIN THE PAYMENT LIMIT FOR THE TRENCH SHALL BE PAID UNDER SOLID ROCK EXCAVATION (ITEM 203.16). REMOVAL OF EXISTING PAVEMENT PAID UNDER EXCAVATION OF SURFACES AND PAVEMENTS (ITEM 203.28). SAW CUTTING ASSOCIATED WITH THESE ITEMS IS INCIDENTAL TO PAY ITEMS 203.16 AND 203.28.

TYPICAL STORM TRENCH

NTS



NOTES:

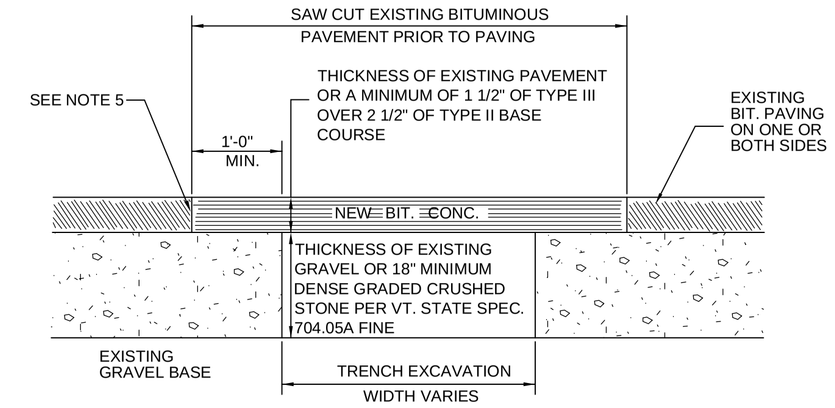
1. CATCH BASIN TOP ELEVATIONS SHALL BE ADJUSTED AS NEEDED SO THAT THE GRATE WILL BE SLIGHTLY DEPRESSED WITH THE PAVEMENT OVERLAY.

2. LEDGE PAYMENT LIMIT SHALL BE A MAXIMUM DISTANCE OF 24" FROM STRUCTURE.

3. ALL STRUCTURES TO BE DESIGNED BY A STRUCTURAL ENGINEER TO WITHSTAND AN H20 LOADING REQUIREMENT. INSIDE DIAMETER OF STRUCTURE WILL BE DETERMINED BY THE STRUCTURAL ENGINEER AND WILL VARY BASED ON SIZE AND ORIENTATION OF PIPES.

TYPICAL PRECAST CONCRETE CATCH BASIN WITH CAST IRON GRATE

NTS



NOTES :

1. SETUP AND MAINTAIN SIGNS AND OTHER SAFETY CONTROL DEVICES.

2. RESHAPE HOLE AND PATCH AREA BY CUTTING WITH CONCRETE SAW INTO A SQUARE OR RECTANGULAR SHAPE. CUT SIDE FACES VERTICALLY. RESHAPE DOWNWARD TO SOLID MATERIAL AND AROUND HOLE TO SOLID PAVEMENT.

3. BACKFILL TRENCH IN 6" LIFTS AND COMPACT EACH LIFT TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698 STANDARD PROCTOR.

4. REMOVE ALL LOOSE MATERIAL AND THOROUGHLY SWEEP THE HOLE AREA CLEAN OF MUD AND STANDING WATER.

5. APPLY LIQUID EMULSION (RS-1) TO VERTICAL FACES IN A UNIFORM MANNER. DO NOT PUDDLE EMULSION ON BOTTOM OF THE HOLE.

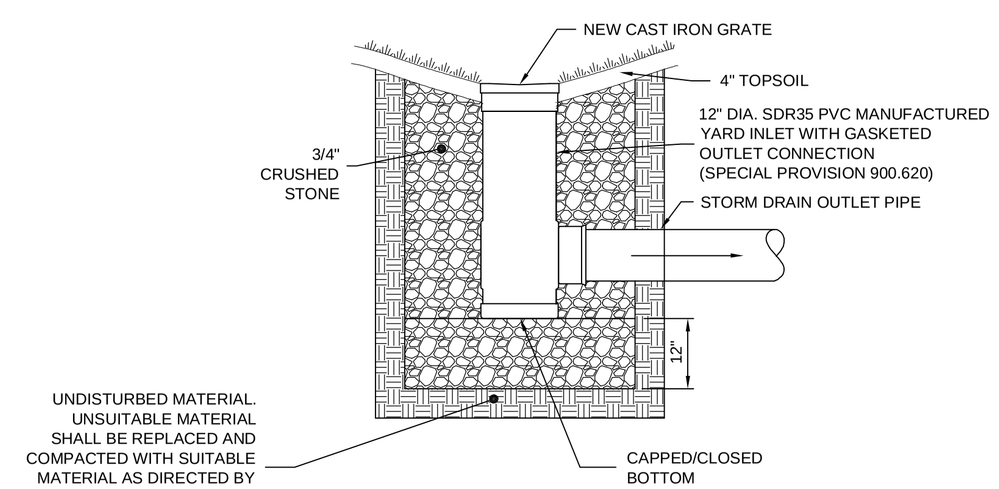
6. PLACE TYPE II BASE COURSE PAVEMENT A MINIMUM OF 2 1/2" THICK.

7. FILL TOP OF HOLE WITH TYPE III BITUMINOUS CONCRETE AND COMPACT IN LIFTS OF NO MORE THAN 2". THE FINAL LIFT SHOULD BE 1/2" TO 1" ABOVE ADJOINING PAVEMENT BEFORE COMPACTION SO THAT AFTER COMPACTION. THE PATCH IS LEVEL WITH THE EXISTING PAVEMENT. EACH LIFT SHOULD BE THOROUGHLY COMPACTED WITH A VIBRATORY PLATE COMPACTOR OR A VIBRATORY PORTABLE ROLLER. EXPERIENCE HAS SHOWN THAT 15 TO 20 PASSES ARE REQUIRED WITH A VIBRATORY ROLLER AND A MIX TEMPERATURE ABOVE 250 DEGREES F ARE NECESSARY TO ENSURE GOOD COMPACTION. HAND TAMPING SHOULD ONLY BE USES FOR SMALL AREAS (LESS THAN 1 S.F.).

8. CLEAN UP AREA. DO NOT LEAVE EXCESS FILL OR EXCAVATED MATERIAL ON THE PAVEMENT. REMOVE SAFETY SIGNS AND DEVICES.

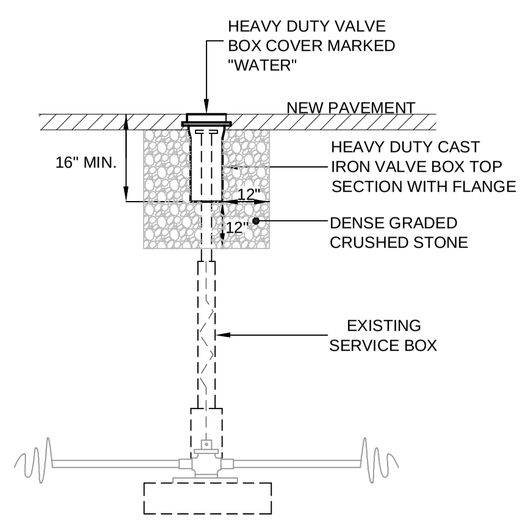
TRENCH REPAIR DETAIL

NTS



PAY ITEM 900.620
SPECIAL PROVISION (YARD INLET)

NTS



PAY ITEM 900.620
SPECIAL PROVISION (EXTENSION SERVICE BOX)

NTS

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS ROUTE 15 SIDEWALK UNDERHILL STP BP13(5) ROUTE 15 UNDERHILL, VERMONT	Proj. no. 14032
	Survey JMR
	Design DLH / ABR
TYPICAL DETAILS	Drawn L&D
	Checked DLH / RJD
	Date 6-3-14
LAMOUREUX & DICKINSON Consulting Engineers, Inc. 14 Morse Drive Essex Junction, VT 05452 Tel: 802-878-4450	Scale AS NOTED
	Sht. no. 5

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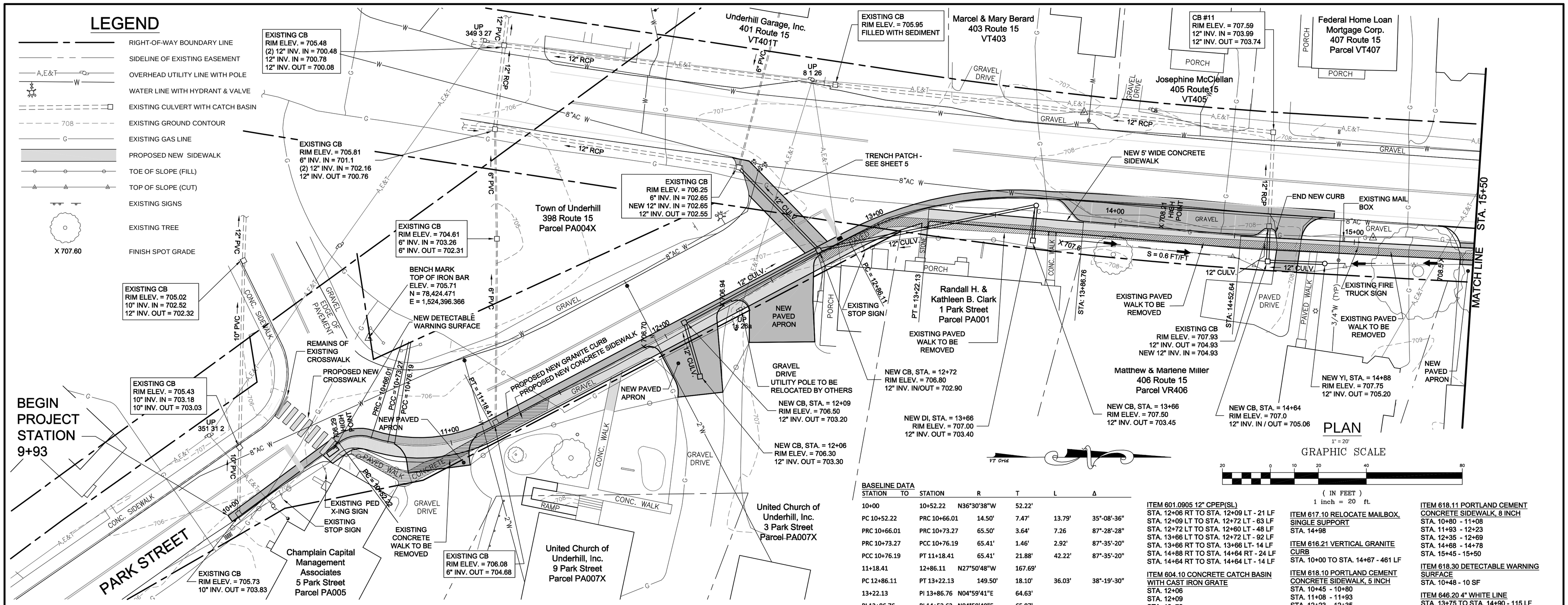
LEGEND

- RIGHT-OF-WAY BOUNDARY LINE
- SIDELINE OF EXISTING EASEMENT
- OVERHEAD UTILITY LINE WITH POLE
- WATER LINE WITH HYDRANT & VALVE
- EXISTING CULVERT WITH CATCH BASIN
- EXISTING GROUND CONTOUR
- EXISTING GAS LINE
- PROPOSED NEW SIDEWALK
- TOE OF SLOPE (FILL)
- TOP OF SLOPE (CUT)
- EXISTING SIGNS
- EXISTING TREE
- X 707.60 FINISH SPOT GRADE



BASELINE DATA

STATION	TO	STATION	R	T	L	Δ
10+00		10+52.22	N36°30'38"W	52.22'		
PC 10+52.22		PRC 10+66.01	14.50'	7.47'	13.79'	35°-08'-36"
PRC 10+66.01		PRC 10+73.27	65.50'	3.64'	7.26	87°-28'-28"
PRC 10+73.27		PCC 10+76.19	65.41'	1.46'	2.92'	87°-35'-20"
PCC 10+76.19		PT 11+18.41	65.41'	21.88'	42.22'	87°-35'-20"
11+18.41		12+86.11	N27°50'48"W	167.69'		
PC 12+86.11		PT 13+22.13	149.50'	18.10'	36.03'	38°-19'-30"
13+22.13		PI 13+86.76	N04°59'41"E	64.63'		
PI 13+86.76		PI 14+52.63	N04°59'40"E	65.97'		
PI 14+52.63		PI 15+94.09	N02°56'35"E	141.46'		

ITEM 601.0905 12" CPEP(SL)
STA. 12+06 RT TO STA. 12+09 LT - 21 LF
STA. 12+09 LT TO STA. 12+72 LT - 63 LF
STA. 12+72 LT TO STA. 12+60 LT - 48 LF
STA. 13+66 LT TO STA. 12+72 LT - 92 LF
STA. 13+66 RT TO STA. 13+66 LT- 14 LF
STA. 14+88 RT TO STA. 14+64 RT - 24 LF
STA. 14+64 RT TO STA. 14+64 LT - 14 LF

ITEM 604.10 CONCRETE CATCH BASIN WITH CAST IRON GRATE
STA. 12+06
STA. 12+09
STA. 12+72
STA. 13+66
STA. 14+64

ITEM 617.10 RELOCATE MAILBOX, SINGLE SUPPORT
STA. 14+98

ITEM 616.21 VERTICAL GRANITE CURB
STA. 10+00 TO STA. 14+67 - 461 LF

ITEM 618.10 PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA. 10+45 - 10+80
STA. 11+08 - 11+93
STA. 12+23 - 12+35
STA. 12+69 - 14+68
STA. 14+78 - 15+45

ITEM 618.11 PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH
STA. 10+80 - 11+08
STA. 11+93 - 12+23
STA. 12+35 - 12+69
STA. 14+68 - 14+78
STA. 15+45 - 15+50

ITEM 618.30 DETECTABLE WARNING SURFACE
STA. 10+48 - 10 SF

ITEM 646.20 4" WHITE LINE
STA. 13+75 TO STA. 14+90 - 115 LF
STA. 13+90 - 8 LF
STA. 14+10 - 8 LF
STA. 14+30 - 8 LF
STA 14+50 - 8LF

ITEM 646.26 24" STOP BAR
STA. 10+32 - 12 LF
STA. 12+83 - 12 LF

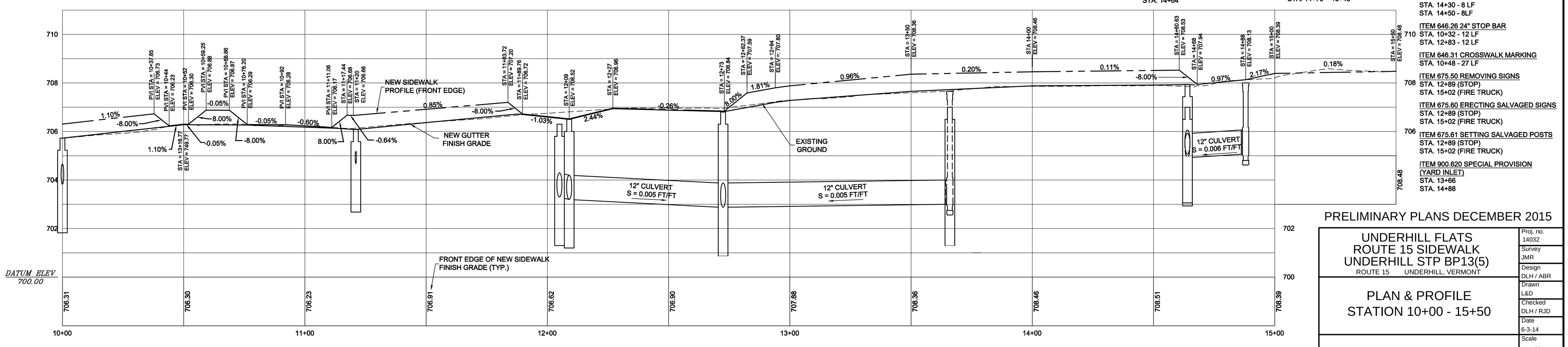
ITEM 646.31 CROSSWALK MARKING
STA. 10+48 - 27 LF

ITEM 675.50 REMOVING SIGNS
STA. 12+89 (STOP)
STA. 15+02 (FIRE TRUCK)

ITEM 675.60 ERECTING SALVAGED SIGNS
STA. 12+89 (STOP)
STA. 15+02 (FIRE TRUCK)

ITEM 675.61 SETTING SALVAGED POSTS
STA. 12+89 (STOP)
STA. 15+02 (FIRE TRUCK)

ITEM 900.620 SPECIAL PROVISION (YARD INLET)
STA. 13+66
STA. 14+88



PROFILE

1" = 20' HORIZONTAL
1" = 2' VERTICAL

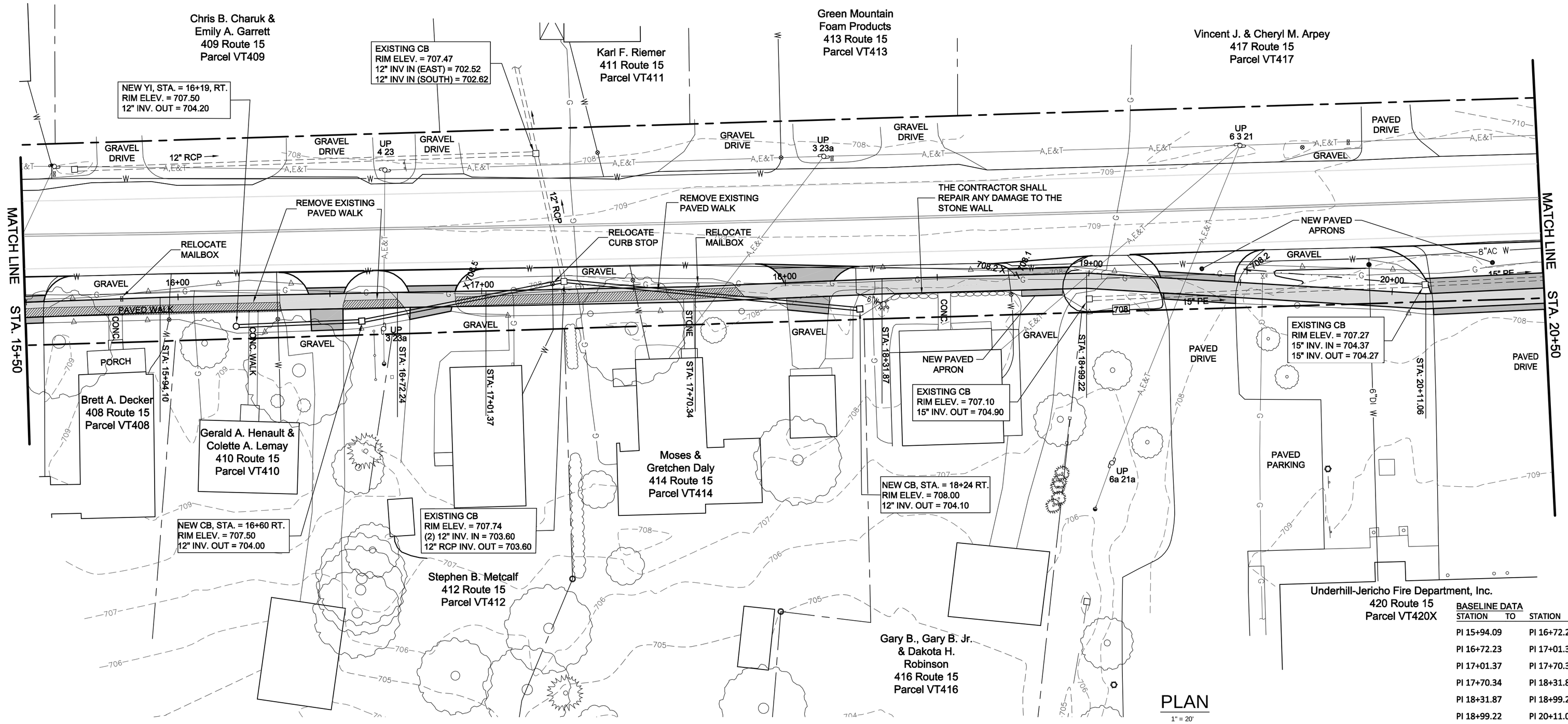
PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

PLAN & PROFILE
STATION 10+00 - 15+50

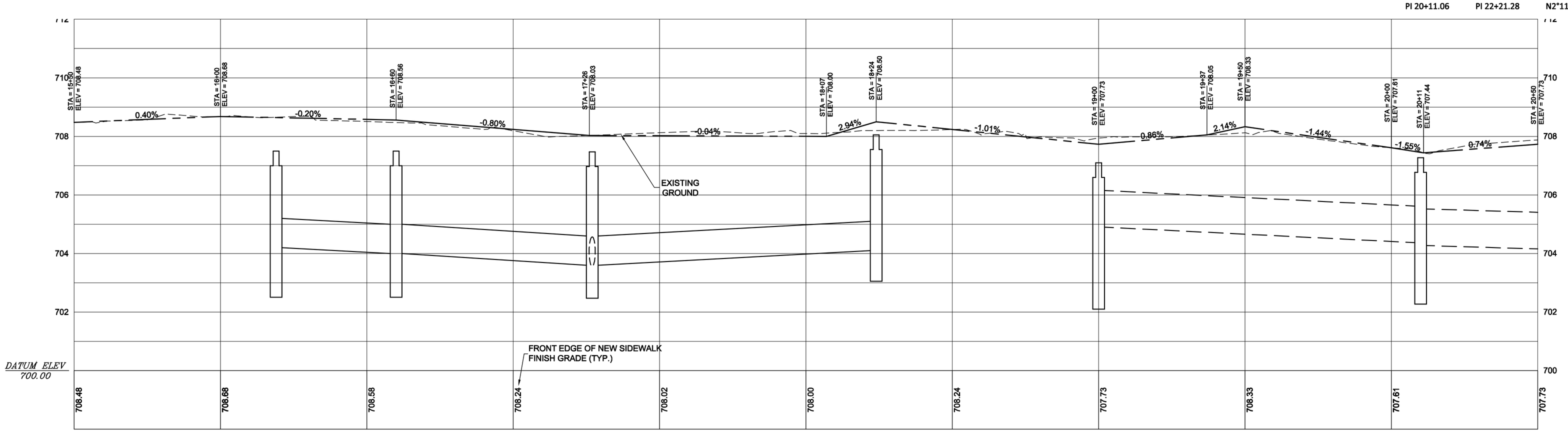
Proj. no.	14032
Survey	JMR
Design	DLH / ABR
Drawn	L&D
Checked	DLH / RJD
Date	6-3-14
Scale	1" = 20'
Sht. no.	6

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450



PLAN

1" = 20'



PROFILE

1" = 20' HORIZONTAL
1" = 2' VERTICAL

LEGEND

- RIGHT-OF-WAY BOUNDARY LINE
- SIDELINE OF EXISTING EASEMENT
- OVERHEAD UTILITY LINE WITH POLE
- WATER LINE WITH HYDRANT & VALVE
- EXISTING CULVERT WITH CATCH BASIN
- EXISTING GROUND CONTOUR
- EXISTING GAS LINE
- PROPOSED NEW SIDEWALK
- TOE OF SLOPE (FILL)
- TOP OF SLOPE (CUT)
- EXISTING SIGNS
- EXISTING TREE
- 707.0 X FINISH SPOT GRADE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BASELINE DATA

STATION	TO	STATION	BEARING	DISTANCE
PI 15+94.09		PI 16+72.23	N3°46'59"E	78.14'
PI 16+72.23		PI 17+01.37	N4°08'02"E	29.14'
PI 17+01.37		PI 17+70.34	N3°49'05"E	68.97'
PI 17+70.34		PI 18+31.87	N2°35'40"E	61.53'
PI 18+31.87		PI 18+99.22	N3°23'14"E	67.35'
PI 18+99.22		PI 20+11.06	N8°29'36"E	111.84'
PI 20+11.06		PI 22+21.28	N2°11'20"E	210.22'

ITEM 601.0905 12" CPEP(SL)
STA. 16+19 RT TO STA. 16+60 RT - 41 LF
STA. 16+60 RT TO STA. 17+27 LT - 67 LF
STA. 18+24 RT TO STA. 17+27 LT - 97 LF

ITEM 604.10 CONCRETE CATCH BASIN WITH CAST IRON GRATE
STA. 16+60
STA. 18+24

ITEM 617.10 RELOCATE MAILBOX, SINGLE SUPPORT
STA. 15+82
STA. 17+71

ITEM 618.10 PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA. 15+56 - 16+43
STA. 16+54 - 16+76
STA. 16+91 - 18+00
STA. 18+20 - 18+77
STA. 18+92 - 19+23
STA. 19+48 - 20+14

ITEM 618.11 PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH
STA. 15+50 - 15+56
STA. 16+43 - 16+54
STA. 16+76 - 16+91
STA. 18+00 - 18+20
STA. 18+77 - 18+92
STA. 19+23 - 19+48
STA. 20+14 - 20+50

ITEM 900.620 SPECIAL PROVISION (YARD INLET)
STA. 16+19

ITEM 900.620 SPECIAL PROVISION (RELOCATE CURB STOP)
STA. 17+28

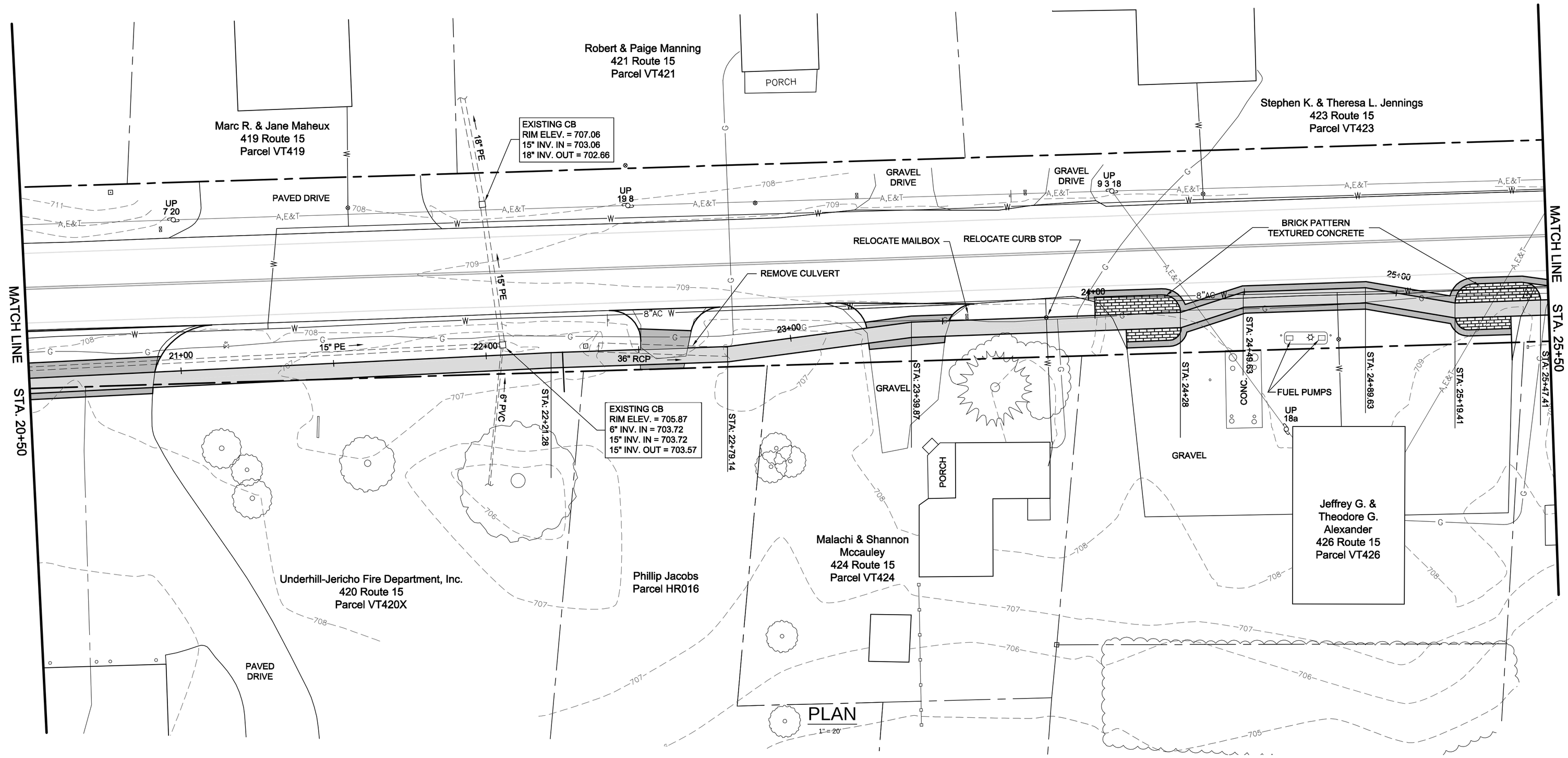
PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

PLAN & PROFILE
STATION 15+50 - 20+50

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

Proj. no.	14032
Survey	JMR
Design	DLH / ABR
Drawn	L&D
Checked	DLH / RJD
Date	6-3-14
Scale	1" = 20'
Sht. no.	7



PLAN
1" = 20'

LEGEND

- RIGHT-OF-WAY BOUNDARY LINE
- SIDELINE OF EXISTING EASEMENT
- OVERHEAD UTILITY LINE WITH POLE
- WATER LINE WITH HYDRANT & VALVE
- EXISTING CULVERT WITH CATCH BASIN
- EXISTING GROUND CONTOUR
- EXISTING GAS LINE
- PROPOSED NEW SIDEWALK
- TOE OF SLOPE (FILL)
- TOP OF SLOPE (CUT)
- EXISTING SIGNS
- EXISTING TREE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BASELINE DATA

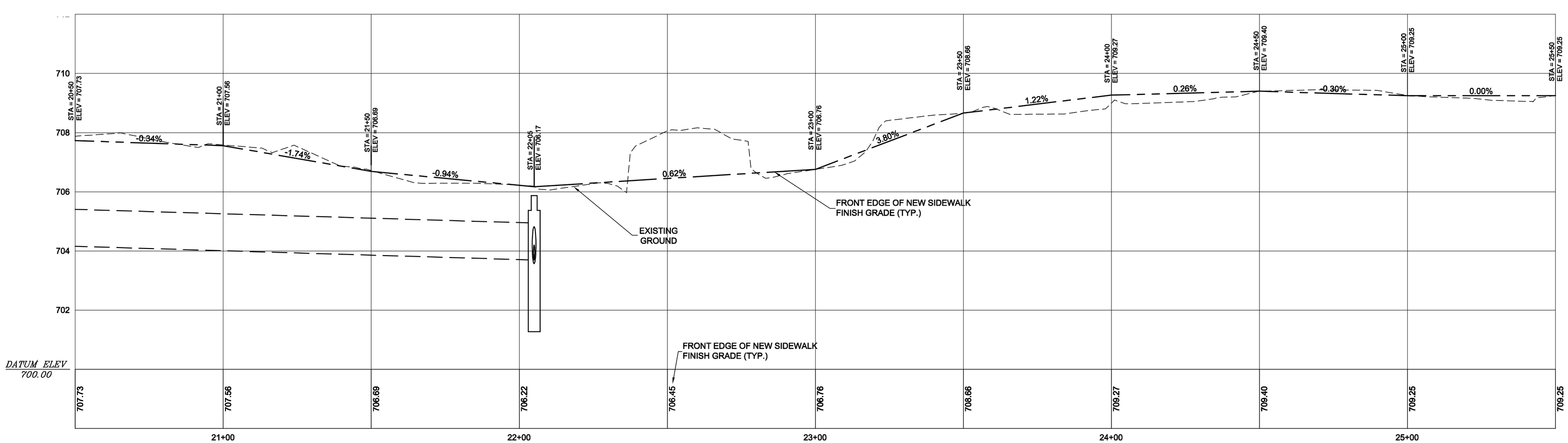
STATION	TO	STATION	BEARING	DISTANCE
PI 22+21.28		PI 22+79.14	N3°02'08"E	57.86'
PI 22+79.14		PI 23+39.87	N2°33'30"E	60.73'
PI 23+39.87		PI 24+27.99	N2°53'40"E	88.12'
PI 24+27.99		PI 24+49.62	N12°59'41"W	21.63'
PI 24+49.62		PI 24+89.62	N3°00'39"E	40.00'
PI 24+89.62		PI 25+19.40	N14°38'01"E	29.78'
PI 25+19.40		PI 25+47.40	N3°00'39"E	28.00'
PI 25+47.40		PI 25+66.01	N3°00'39"E	18.61'

ITEM 617.10 RELOCATE MAILBOX, SINGLE SUPPORT
STA. 23+58

ITEM 618.10 PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA. 20+91 - 22+51
STA. 22+66 - 23+25
STA. 23+51 - 24+28
STA. 25+20 - 25+50

ITEM 618.11 PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH
STA. 20+50 - 20+91
STA. 22+51 - 22+66
STA. 23+25 - 23+51
STA. 24+28 - 25+20

ITEM 900.620 SPECIAL PROVISION (CURB STOP)
STA. 23+84



PROFILE
1" = 20' HORIZONTAL
1" = 2' VERTICAL

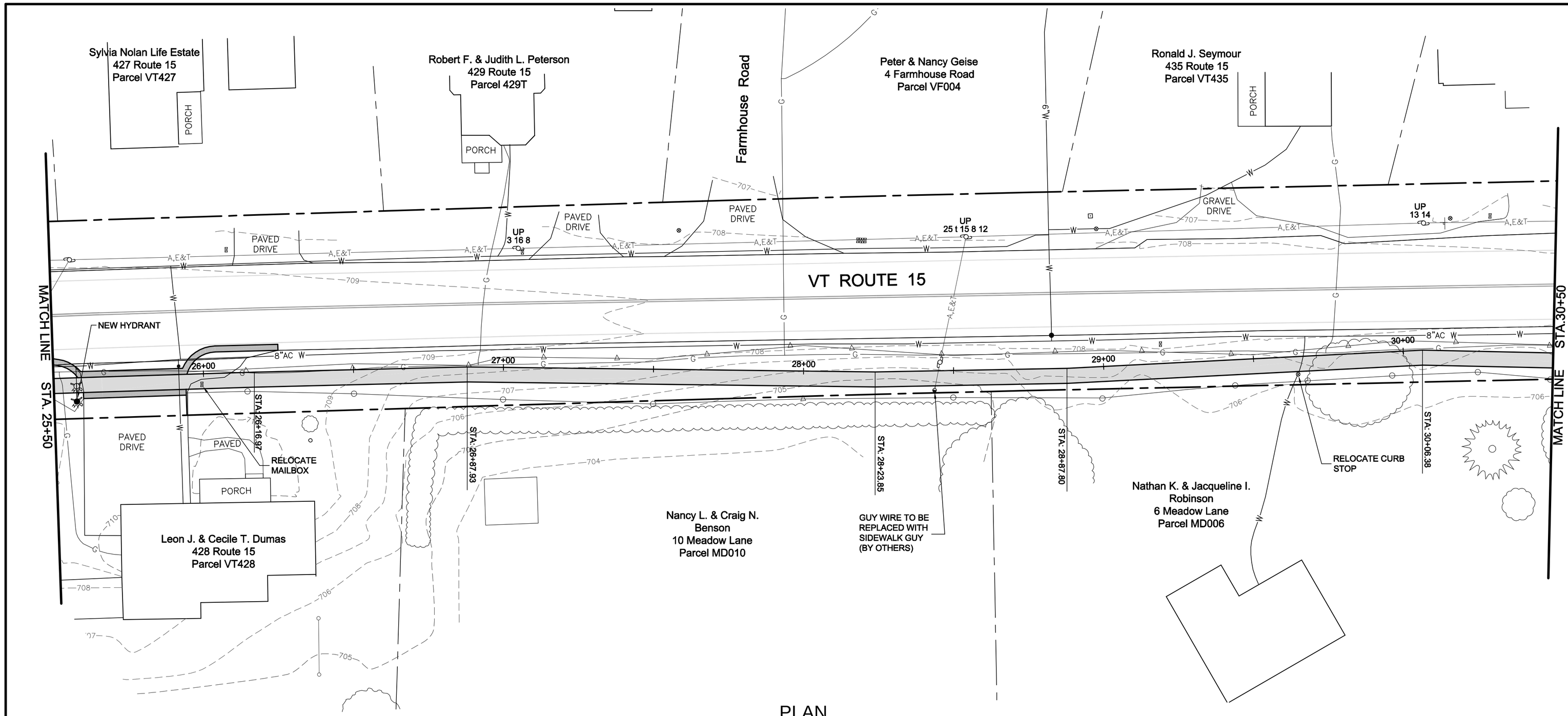
PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

PLAN & PROFILE
STATION 20+50 - 25+50

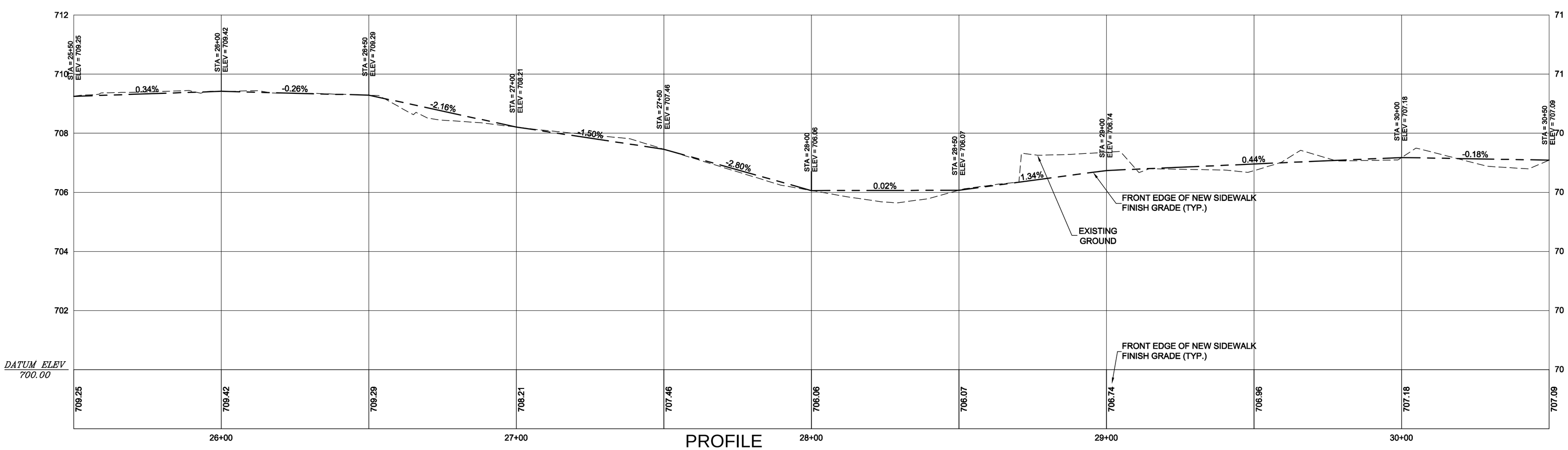
LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

Proj. no.	14032
Survey	JMR
Design	DLH / ABR
Drawn	L&D
Checked	DLH / RJD
Date	6-3-14
Scale	1" = 20'
Sht. no.	8



PLAN

1" = 20'



PROFILE

1" = 20' HORIZONTAL
1" = 2' VERTICAL

LEGEND

- RIGHT-OF-WAY BOUNDARY LINE
- SIDELINE OF EXISTING EASEMENT
- OVERHEAD UTILITY LINE WITH POLE
- WATER LINE WITH HYDRANT & VALVE
- EXISTING CULVERT WITH CATCH BASIN
- EXISTING GROUND CONTOUR
- EXISTING GAS LINE
- PROPOSED NEW SIDEWALK
- TOE OF SLOPE (FILL)
- TOP OF SLOPE (CUT)
- EXISTING SIGNS
- EXISTING TREE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BASELINE DATA

STATION	TO	STATION	BEARING	DISTANCE
PI 25+66.01		PI 26+16.97	N3°12'17"E	50.96'
PI 26+16.97		PI 26+87.93	N3°37'44"E	70.96'
PI 26+87.93		PI 28+23.84	N5°41'39"E	135.91'
PI 28+23.84		PI 28+87.80	N3°56'01"W	63.96'
PI 28+87.80		PI 30+06.37	N2°04'47"E	118.57'
PI 30+06.37		PI 31+02.89	N6°14'33"E	96.52'

ITEM 617.10 RELOCATE MAILBOX, SINGLE SUPPORT
STA. 25+99

ITEM 618.10 PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA. 25+50 - 25+59
STA. 25+99 - 30+50

ITEM 618.11 PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH
STA. 25+59 - 25+99

ITEM 629.28 HYDRANT
STA. 25+28

ITEM 900.620 SPECIAL PROVISION (CURB STOP)
STA. 29+64

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

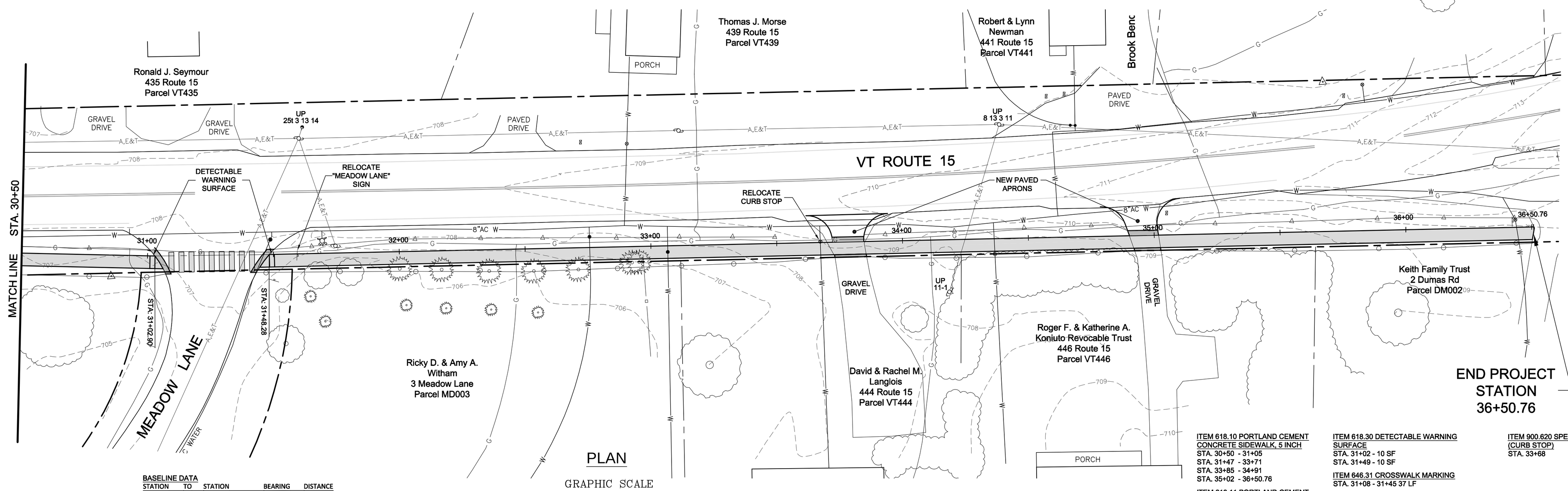
PLAN & PROFILE
STATION 25+50 - 30+50

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

Proj. no.	14032
Survey	JMR
Design	DLH / ABR
Drawn	L&D
Checked	DLH / RJD
Date	6-3-14
Scale	1" = 20'
Sht. no.	9

LEGEND

- RIGHT-OF-WAY BOUNDARY LINE
- SIDELINE OF EXISTING EASEMENT
- OVERHEAD UTILITY LINE WITH POLE
- WATER LINE WITH HYDRANT & VALVE
- EXISTING CULVERT WITH CATCH BASIN
- EXISTING GROUND CONTOUR
- EXISTING GAS LINE
- PROPOSED NEW SIDEWALK
- TOE OF SLOPE (FILL)
- TOP OF SLOPE (CUT)
- EXISTING SIGNS
- EXISTING TREE



PLAN

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BASELINE DATA

STATION	TO	STATION	BEARING	DISTANCE
PI 30+02.89		PI 31+02.89	N6°14'33"E	96.52'
PI 31+02.89		PI 31+48.27	N4°13'29"E	45.38'
PI 31+48.27		PI 36+50.76	N3°45'07"E	502.49'

ITEM 618.10 PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA. 30+50 - 31+05
STA. 31+47 - 33+71
STA. 33+85 - 34+91
STA. 35+02 - 36+50.76

ITEM 618.11 PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH
STA. 31+05 - 31+47
STA. 33+71 - 33+85
STA. 34+91 - 35+02

ITEM 618.30 DETECTABLE WARNING SURFACE
STA. 31+02 - 10 SF
STA. 31+49 - 10 SF

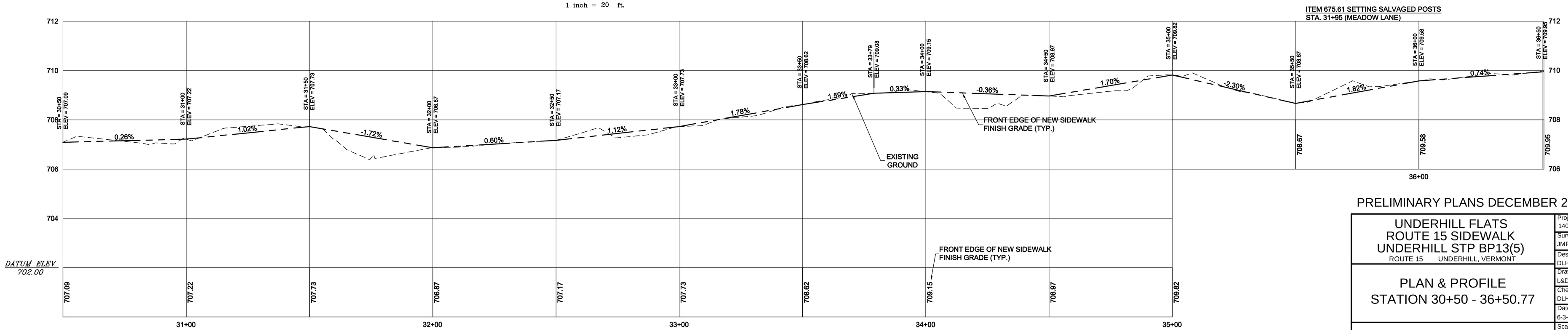
ITEM 646.31 CROSSWALK MARKING
STA. 31+08 - 31+45 37 LF

ITEM 675.50 REMOVING SIGNS
STA. 31+95 (MEADOW LANE)

ITEM 675.60 ERECTING SALVAGED SIGNS
STA. 31+95 (MEADOW LANE)

ITEM 675.61 SETTING SALVAGED POSTS
STA. 31+95 (MEADOW LANE)

ITEM 900.620 SPECIAL PROVISION (CURB STOP)
STA. 33+68



PROFILE

1" = 20' HORIZONTAL
1" = 2' VERTICAL

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS ROUTE 15 SIDEWALK UNDERHILL STP BP13(5) ROUTE 15 UNDERHILL, VERMONT	Proj. no. 14032
	Survey JMR
	Design DLH / ABR
PLAN & PROFILE STATION 30+50 - 36+50.77	Drawn L&D
	Checked DLH / RJD
	Date 6-3-14
LAMOUREUX & DICKINSON Consulting Engineers, Inc. 14 Morse Drive Essex Junction, VT 05452 Tel: 802-878-4450	Scale 1" = 20'
	Sht. no. 10

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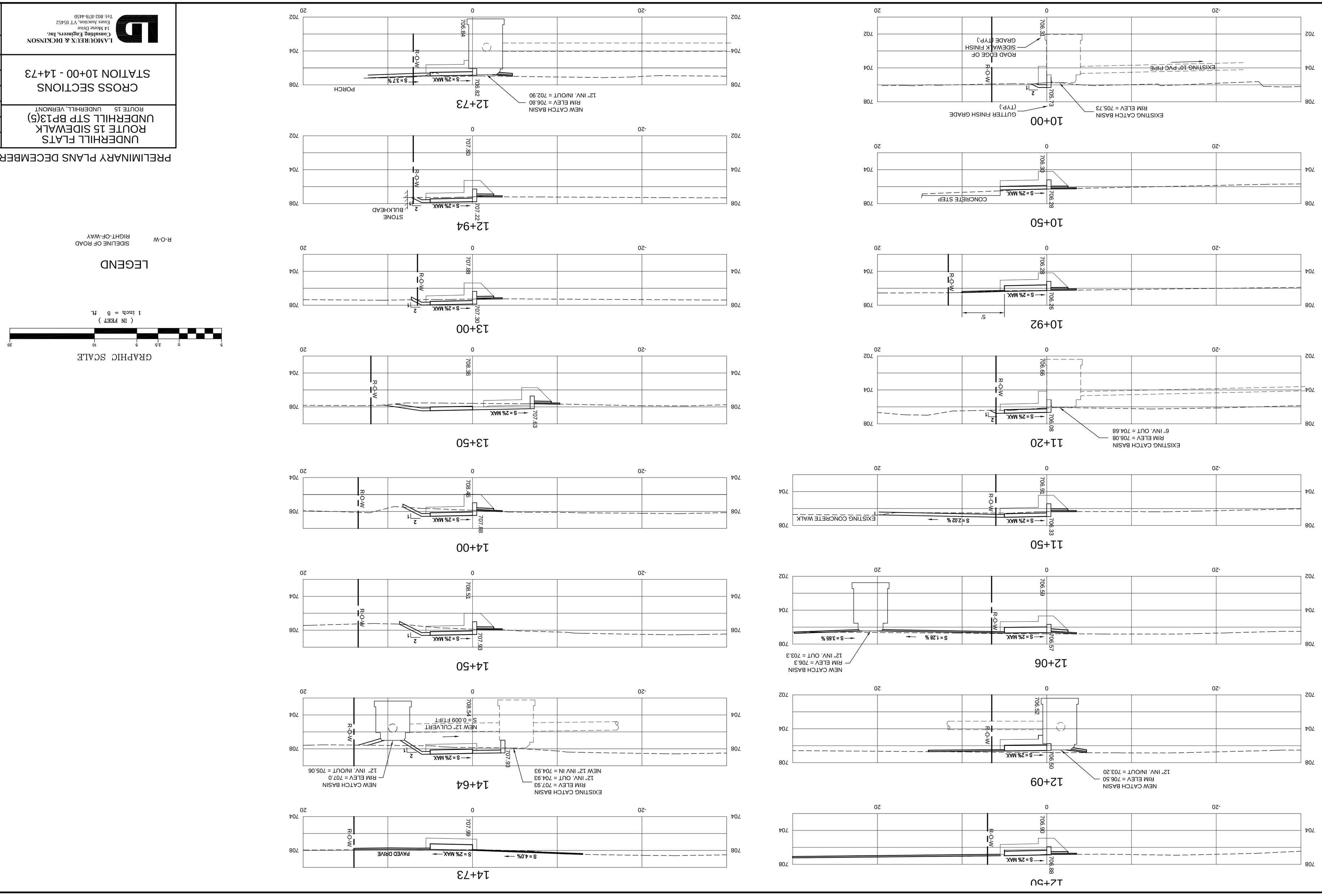

PRELIMINARY PLANS DECEMBER 2015

Proj. no.	14032
Survey	
Design	JMR
Drawn	DLH / ABR
Checked	
L&D	
Date	6-3-14
Scale	1" = 5'
Sht. no.	11

UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

CROSS SECTIONS
STATION 10+00 - 14+73

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Maple Drive
Essex Junction, VT 05452
Tel: 802-878-4450

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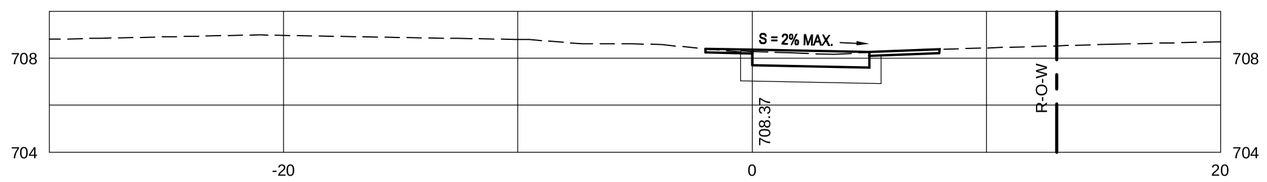
16+84



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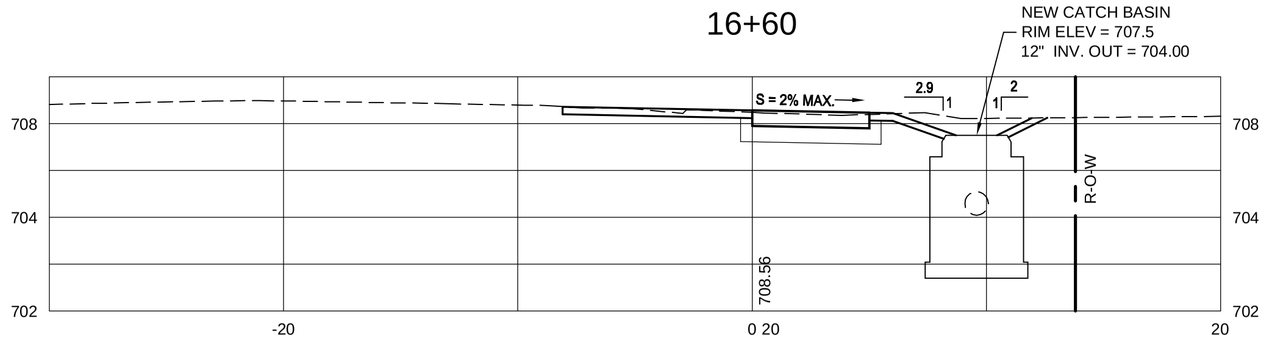

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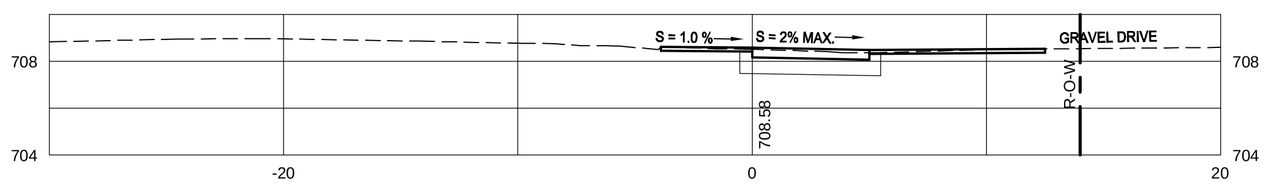

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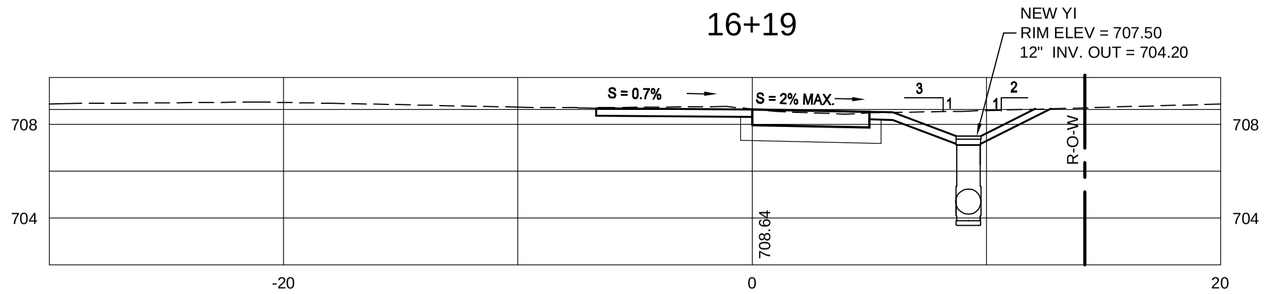

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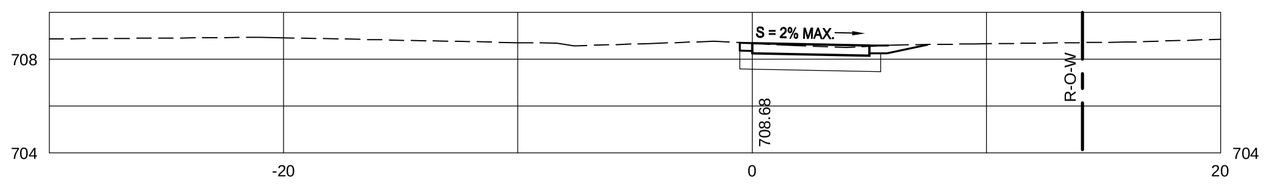

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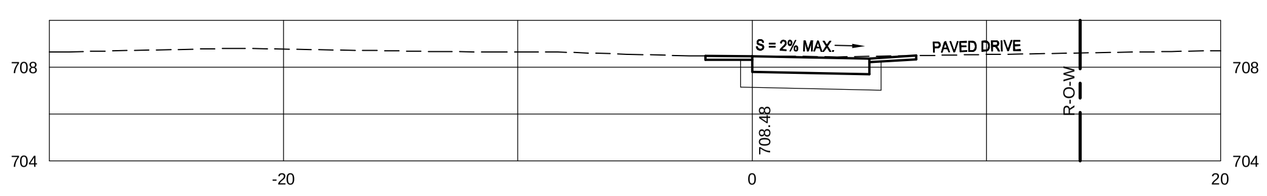

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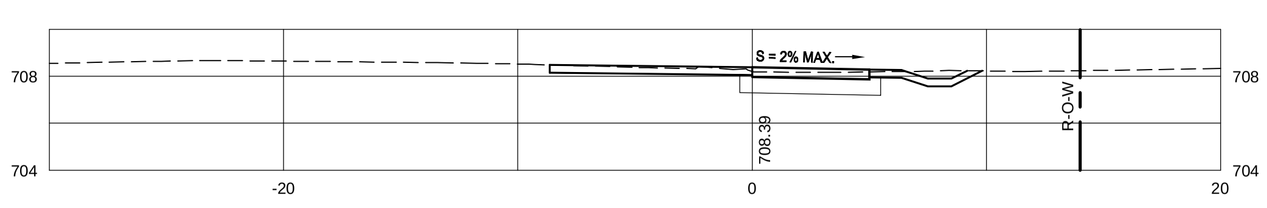
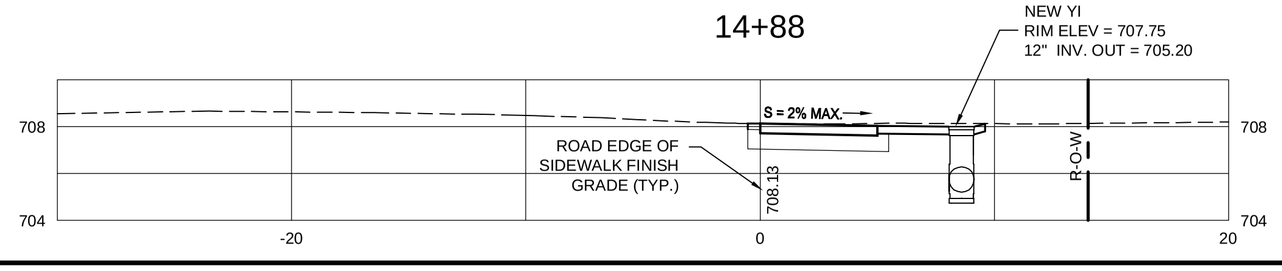
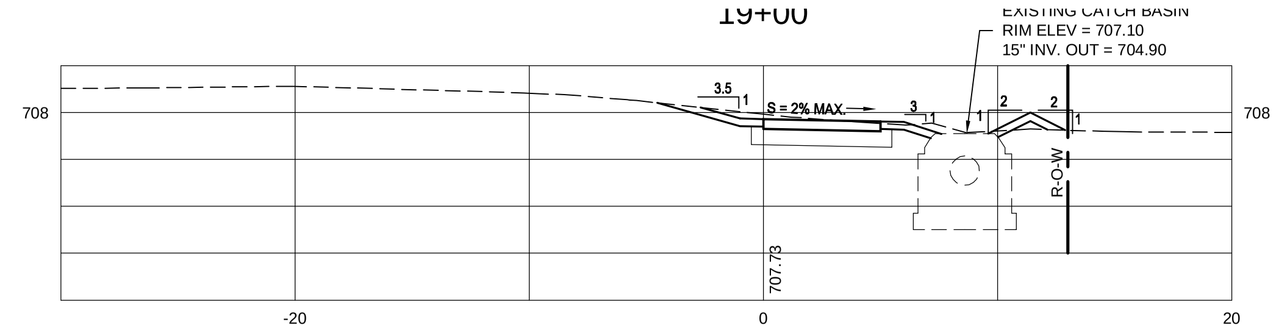


14+88



19+00



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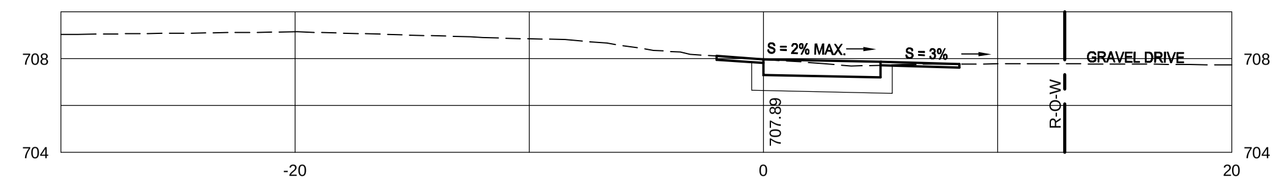

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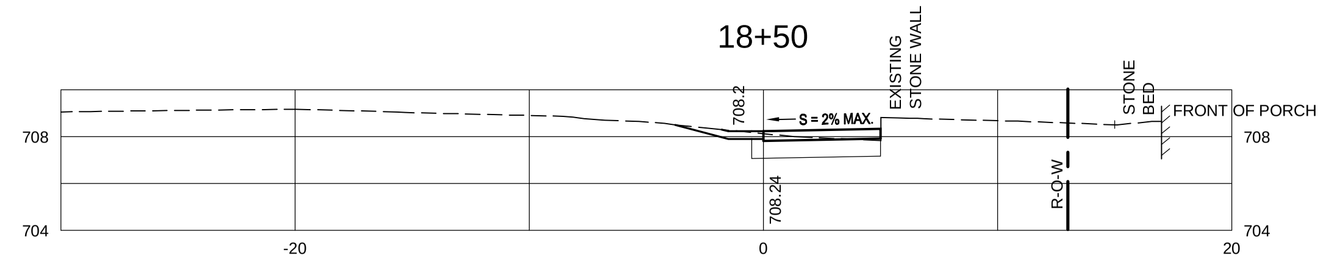

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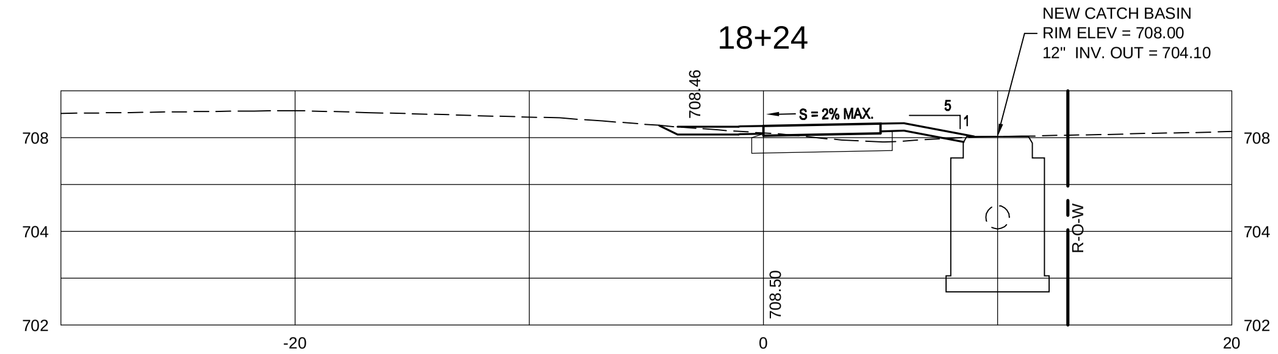

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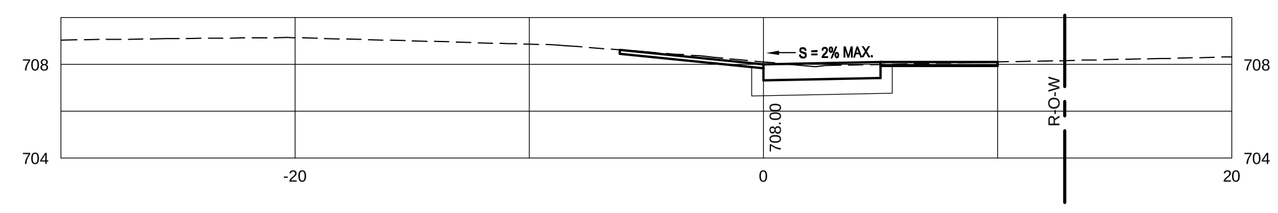

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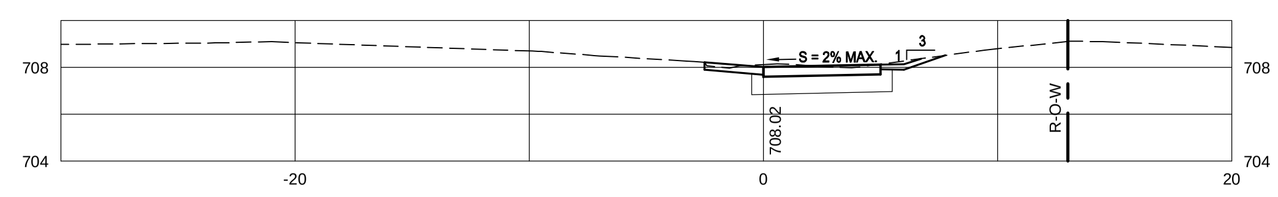

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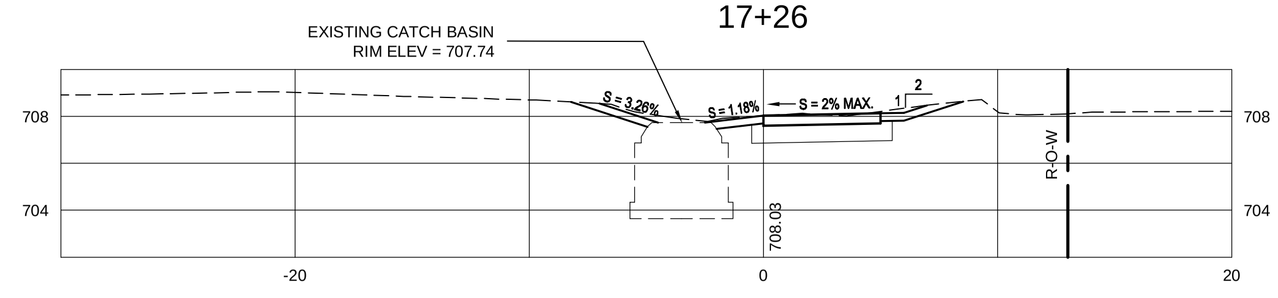

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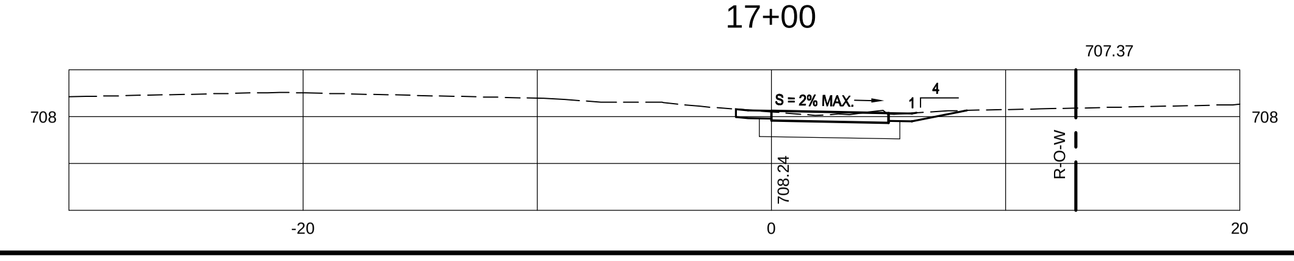
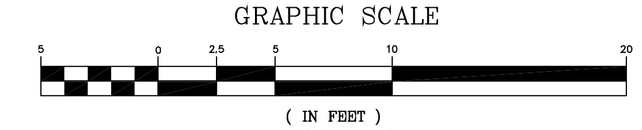


LEGEND

R-O-W — SIDELINE OF ROAD RIGHT-OF-WAY

GRAPHIC SCALE



(IN FEET)
1 inch = 5 ft.

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS ROUTE 15 SIDEWALK UNDERHILL STP BP13(5) ROUTE 15 UNDERHILL, VERMONT	Proj. no. 14032
	Survey JMR
	Design DLH / ABR
	Drawn L&D
CROSS SECTIONS STATION 14+88 - 19+00	Checked DLH / RJD
	Date 6-3-14
	Scale 1" = 5'
LAMOUREUX & DICKINSON Consulting Engineers, Inc. 14 Morse Drive Essex Junction, VT 05452 Tel: 802-878-4450	Sht. no. 12

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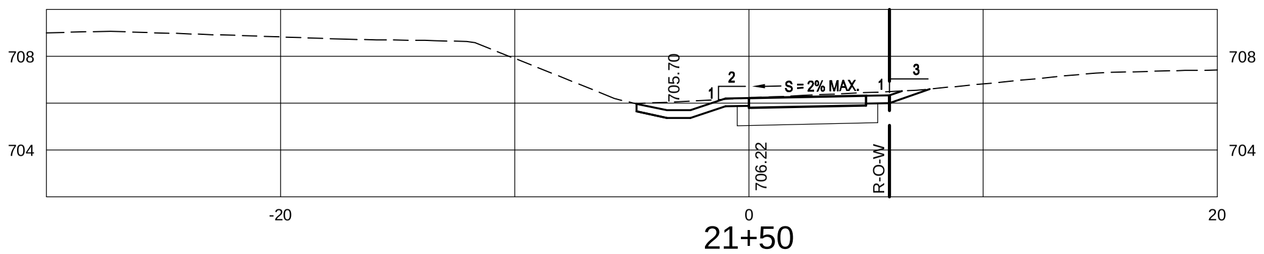
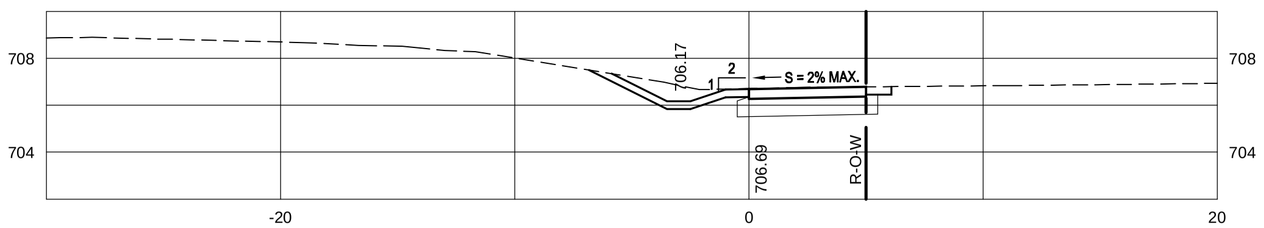
22+00



21+50



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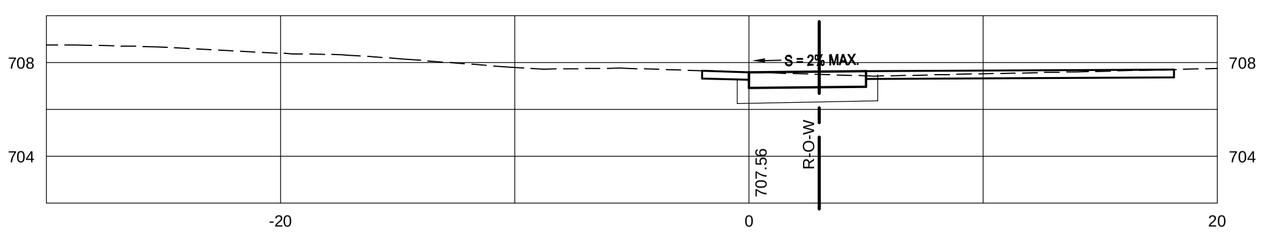

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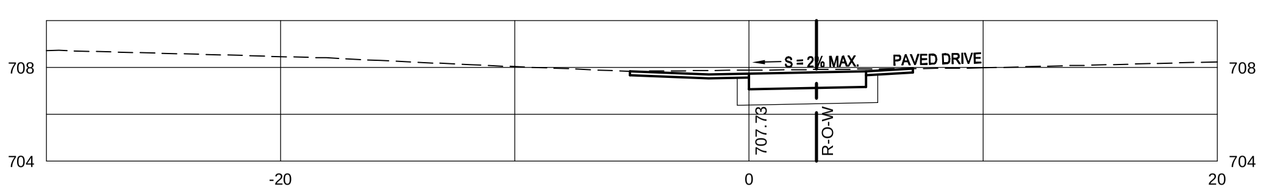
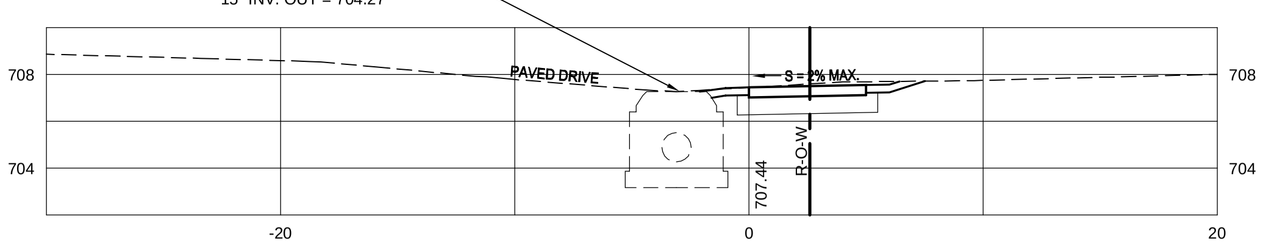


EXISTING CATCH BASIN
RIM ELEV = 707.27
15" INV. IN = 704.37
15" INV. OUT = 704.27

20+11



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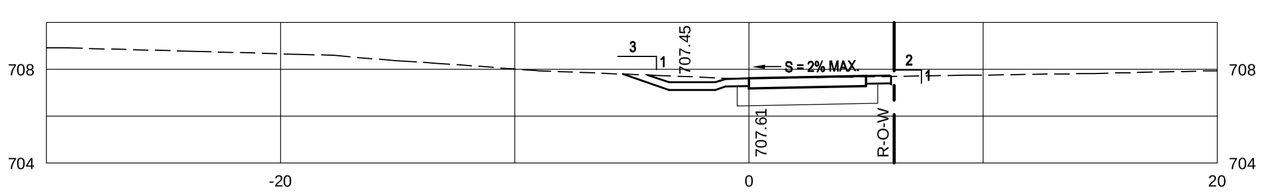
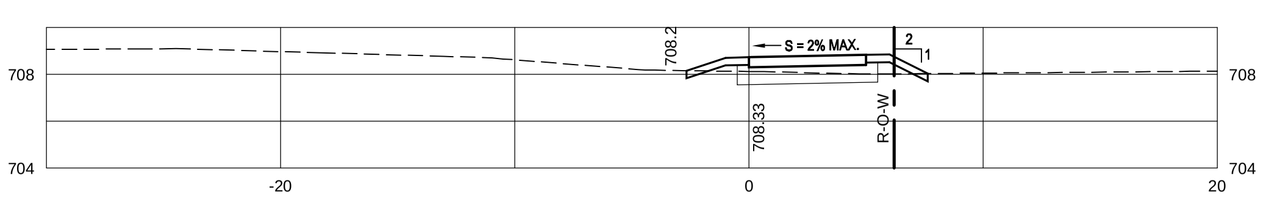
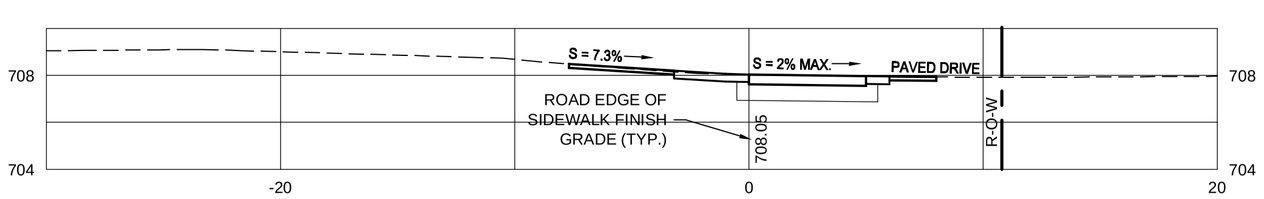


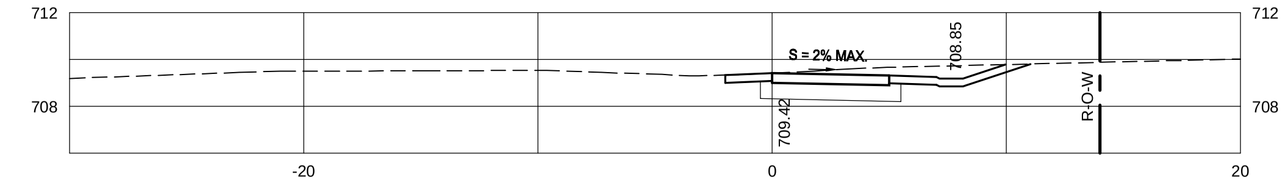
19+50



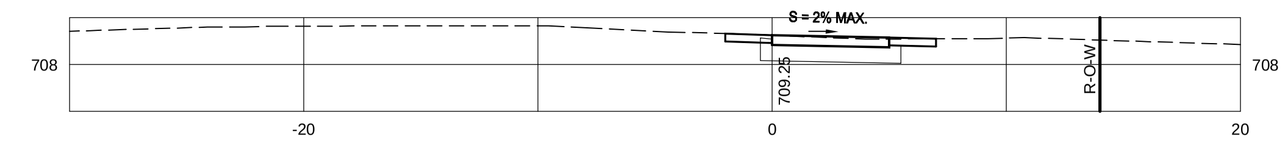
19+37



26+00



25+50



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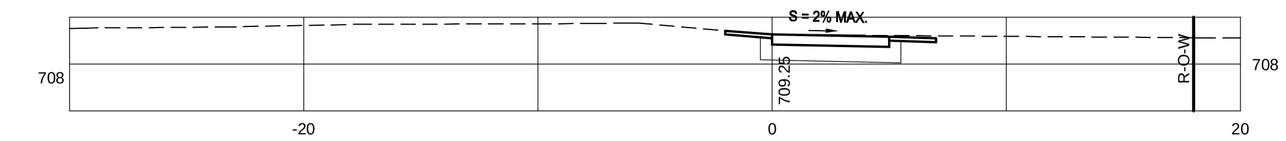

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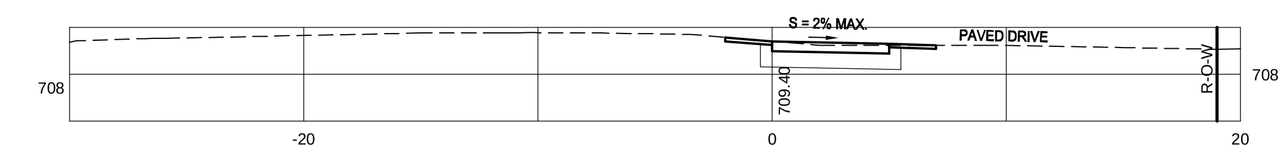

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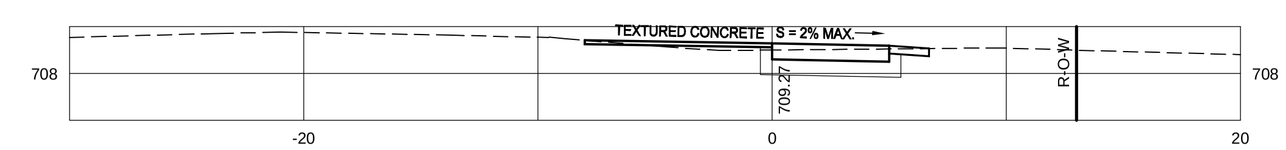

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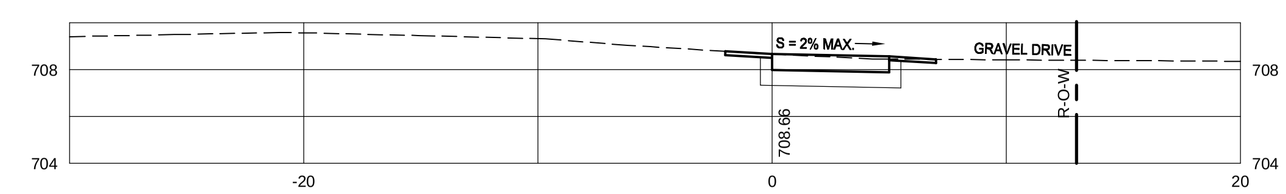

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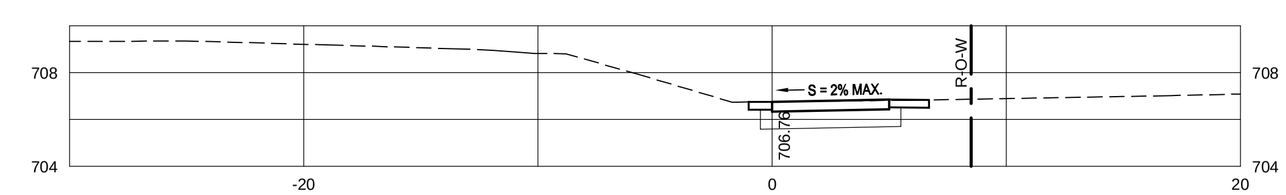

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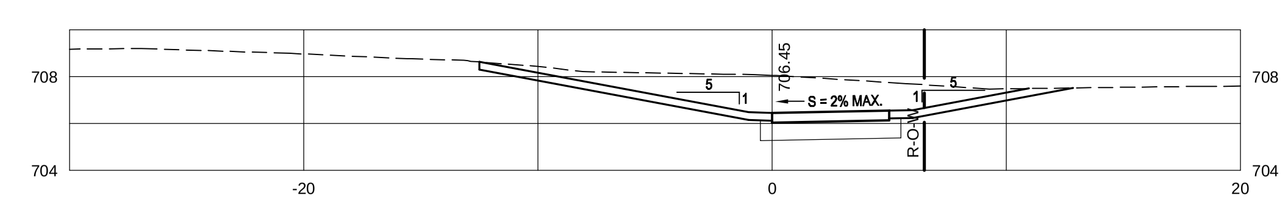
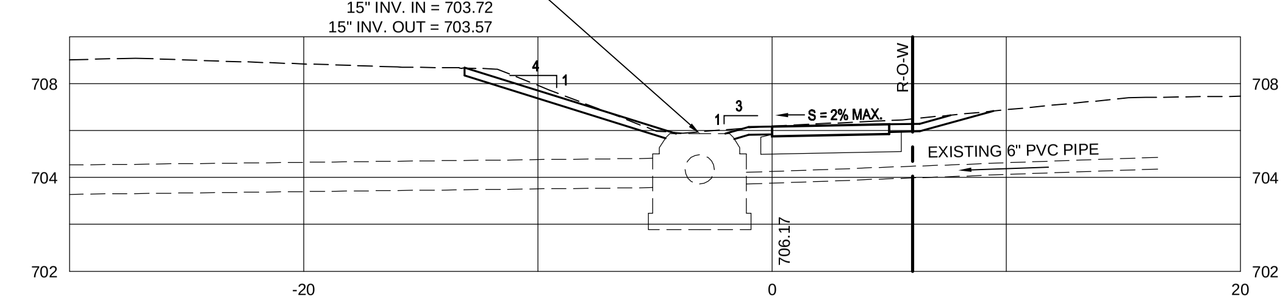


EXISTING CATCH BASIN
RIM ELEV = 705.87
6" INV. IN = 703.72
15" INV. IN = 703.72
15" INV. OUT = 703.57

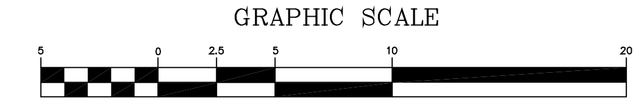
22+05



LEGEND

R-O-W	SIDELINE OF ROAD RIGHT-OF-WAY

GRAPHIC SCALE



(IN FEET)
1 inch = 5 ft.

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

CROSS SECTIONS
STATION 19+37 - 26+00

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

Proj. no.	14032
Survey	JMR
Design	DLH / ABR
Drawn	L&D
Checked	DLH / RJD
Date	6-3-14
Scale	1" = 5'
Sht. no.	13

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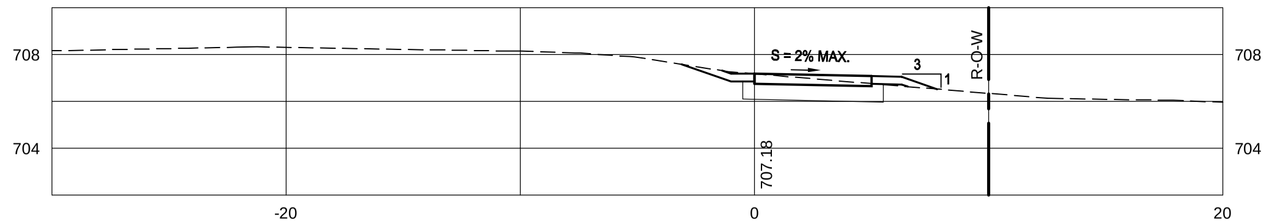
30+00



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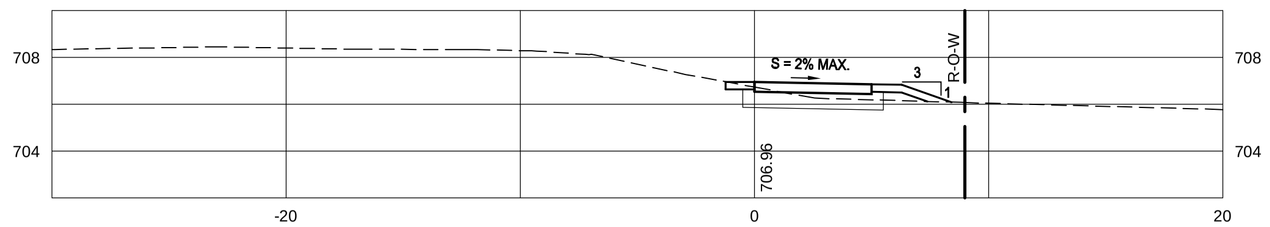

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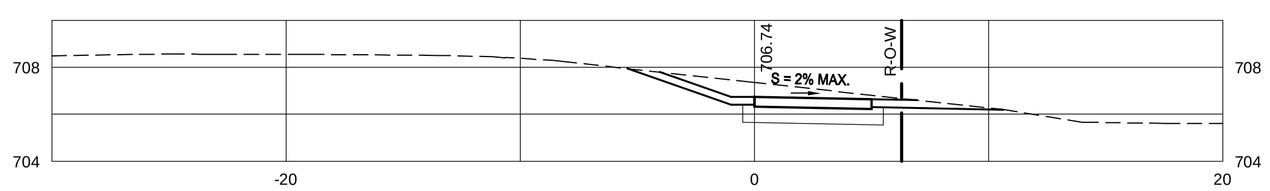

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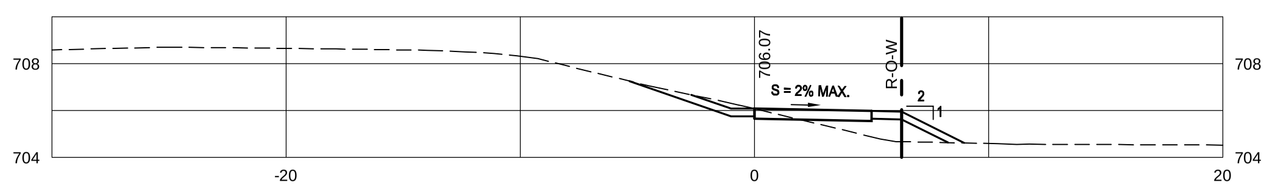

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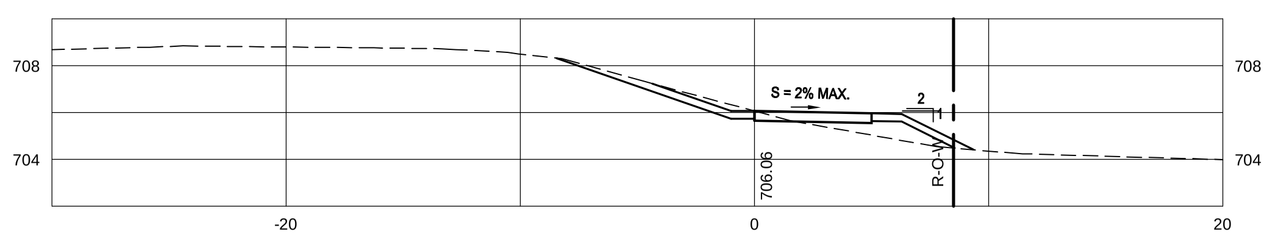

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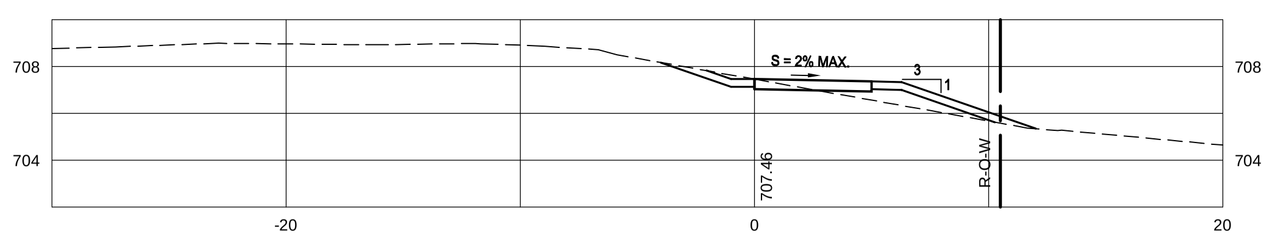

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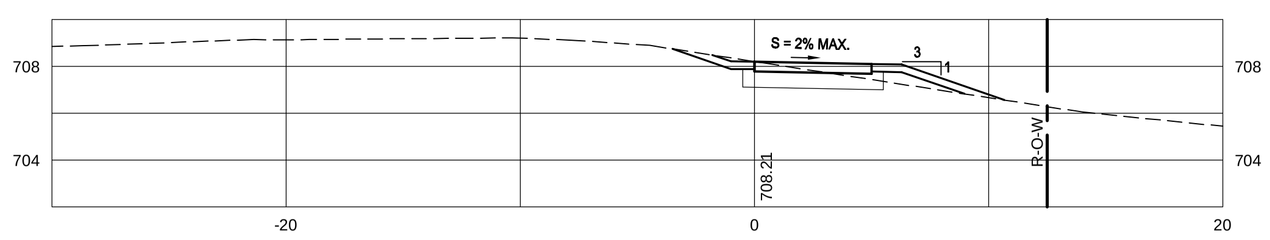
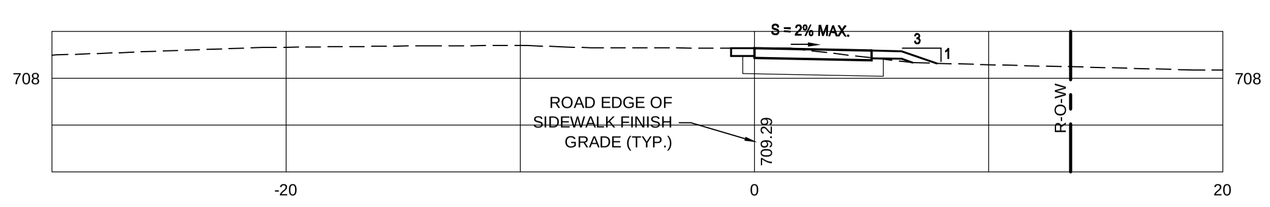


26+50



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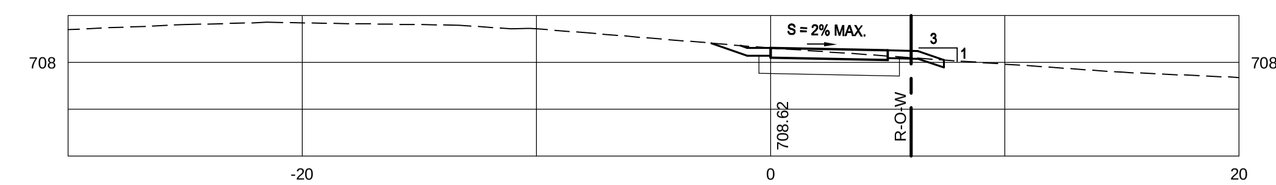

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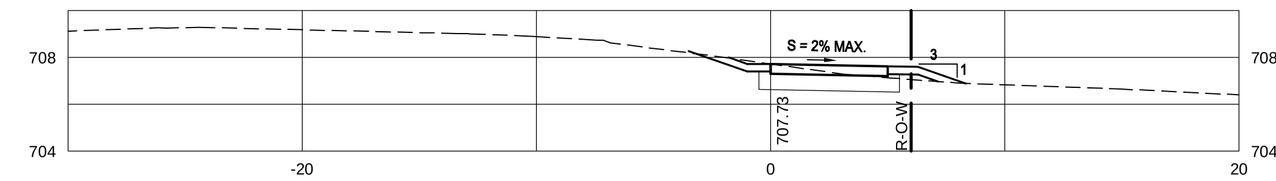

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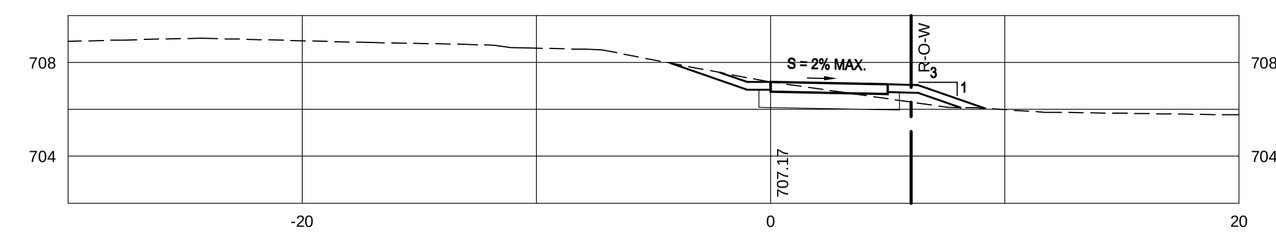

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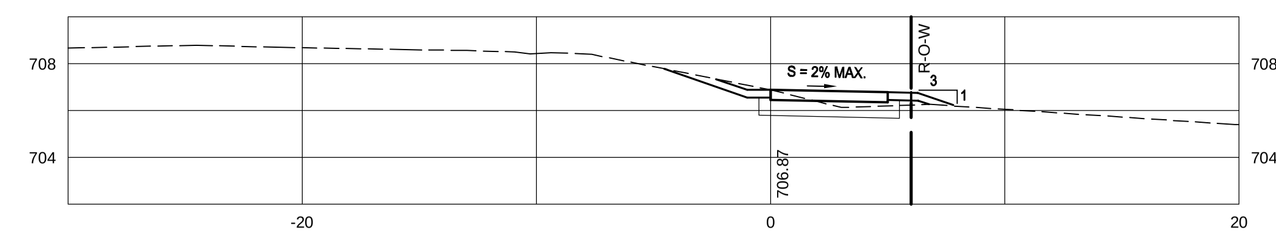

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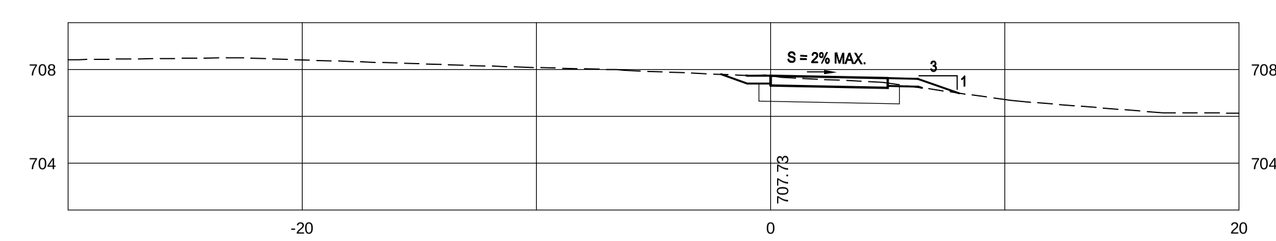

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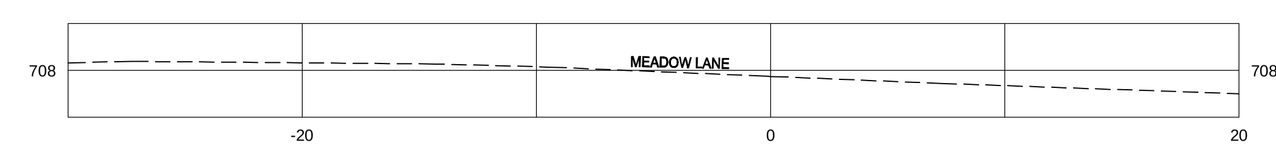

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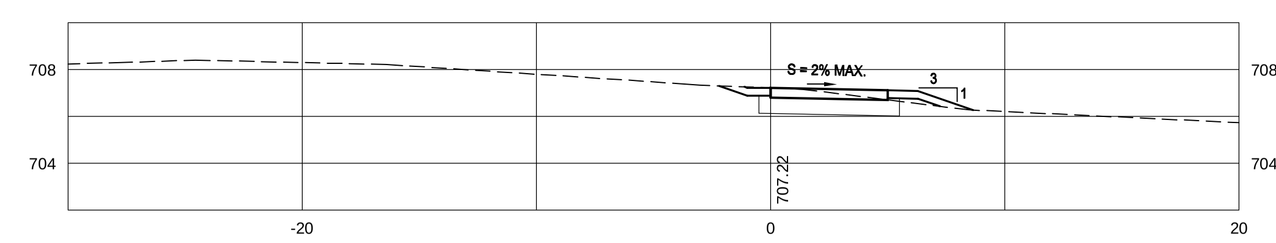

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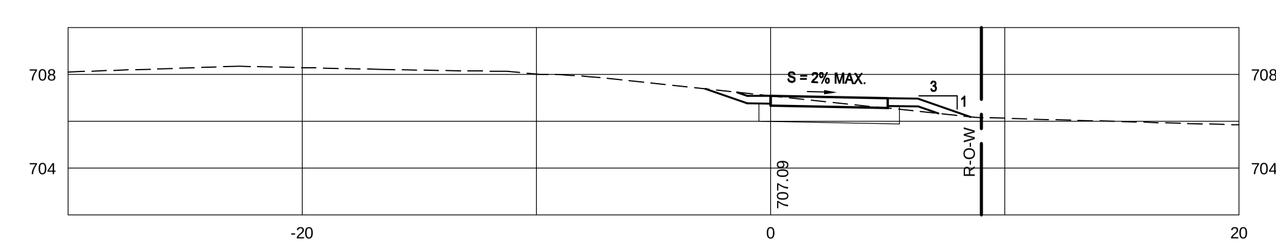
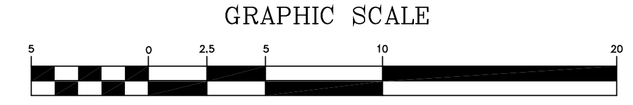


LEGEND

R-O-W	SIDELINE OF ROAD RIGHT-OF-WAY

GRAPHIC SCALE



(IN FEET)
1 inch = 5 ft.

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

CROSS SECTIONS
STATION 26+50 - 33+50

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

Proj. no.	14032
Survey	JMR
Design	DLH / ABR
Drawn	L&D
Checked	DLH / RJD
Date	6-3-14
Scale	1" = 5'
Sht. no.	14

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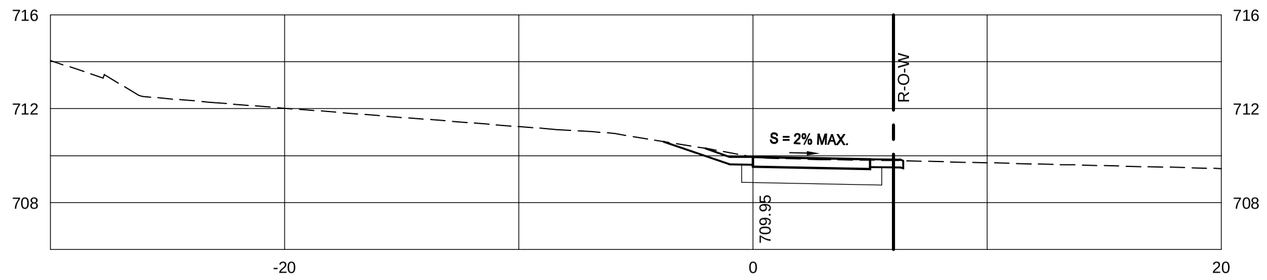
36+50



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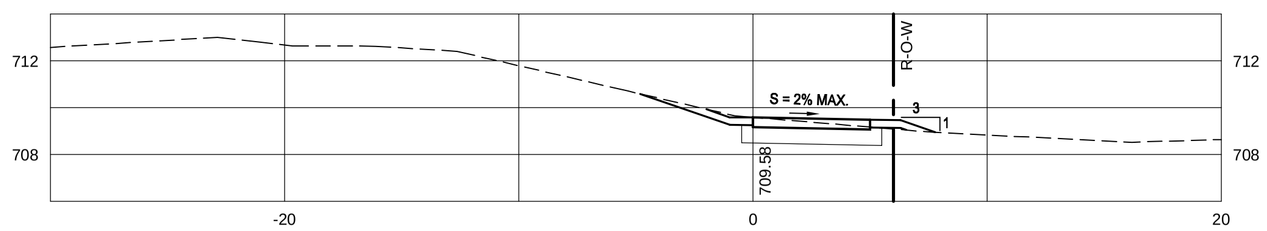
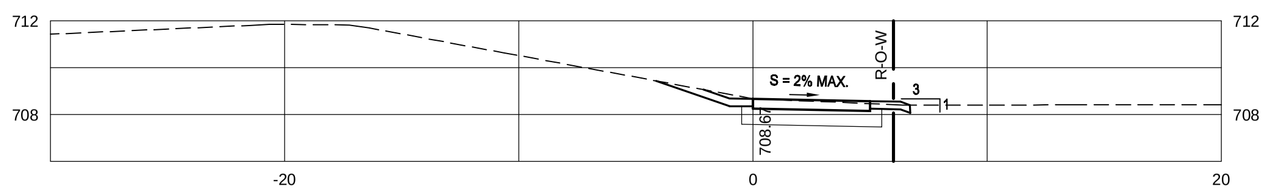


35+50



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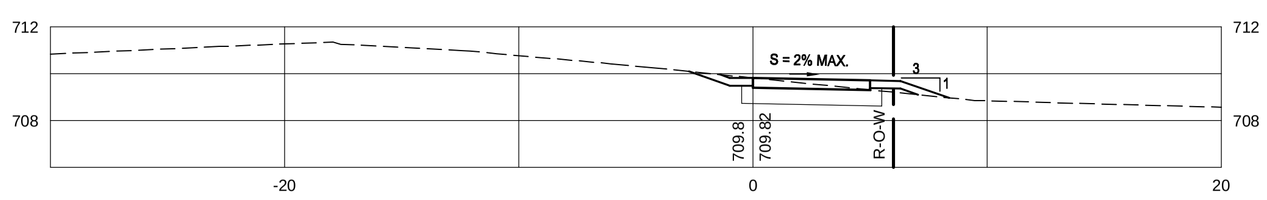

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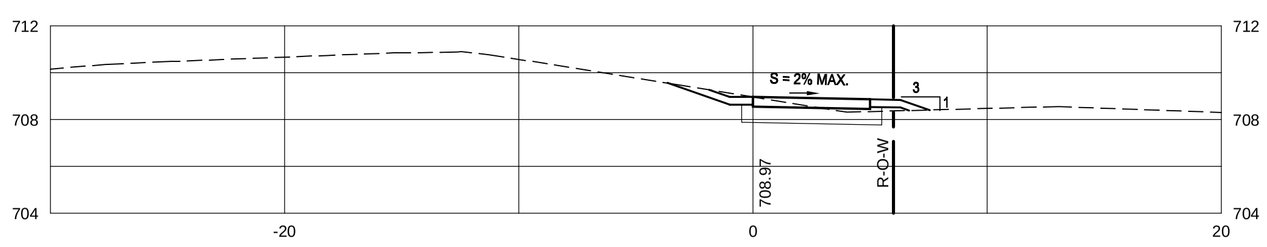

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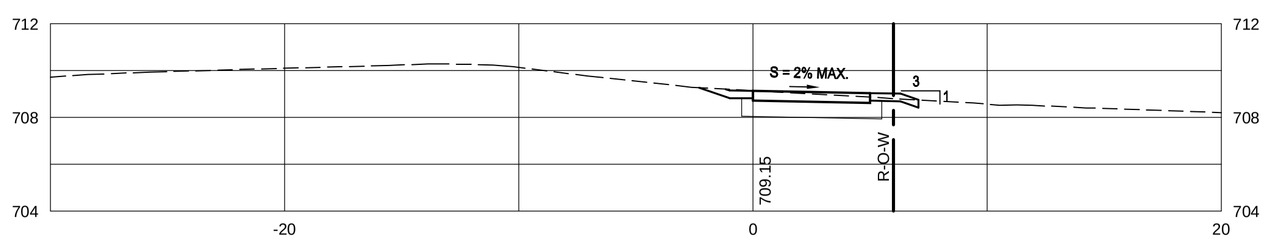

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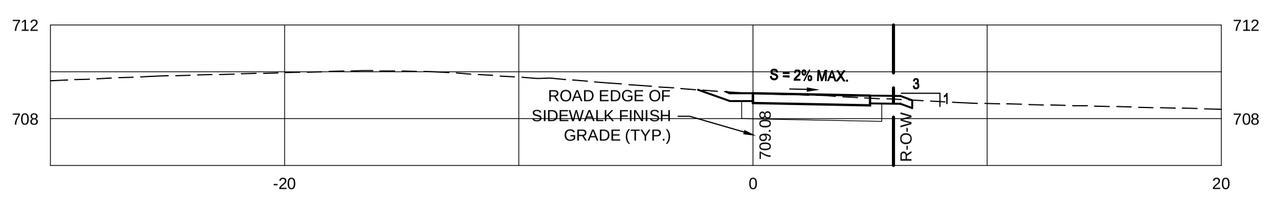
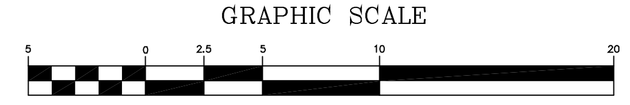


GRAPHIC SCALE

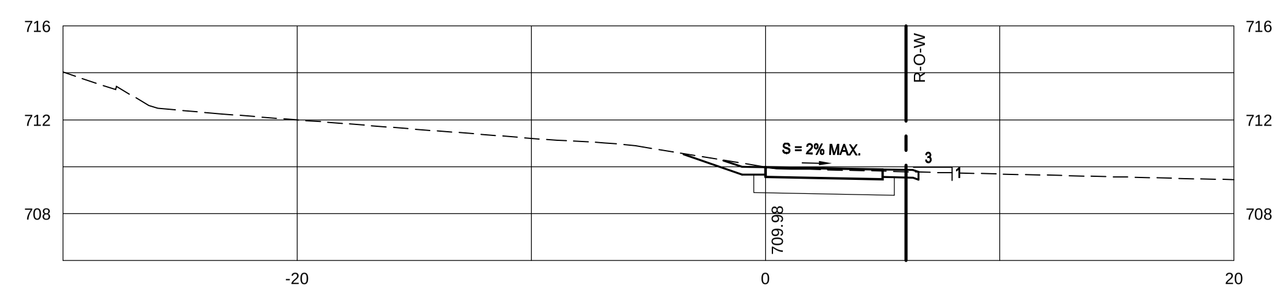


(IN FEET)
1 inch = 5 ft.

LEGEND

707.37	PROPOSED EDGE OF PAVEMENT GRADE
R-O-W	SIDELINE OF ROAD RIGHT-OF-WAY

36+50.76



PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS ROUTE 15 SIDEWALK UNDERHILL STP BP13(5) ROUTE 15 UNDERHILL, VERMONT	Proj. no. 14032
	Survey JMR
	Design DLH / ABR
CROSS SECTIONS STATION33+79 - 36+50.76	Drawn L&D
	Checked DLH / RJD
	Date 6-3-14
LAMOUREUX & DICKINSON Consulting Engineers, Inc. 14 Morse Drive Essex Junction, VT 05452 Tel: 802-878-4450	Scale 1" = 5'
	Sht. no. 15

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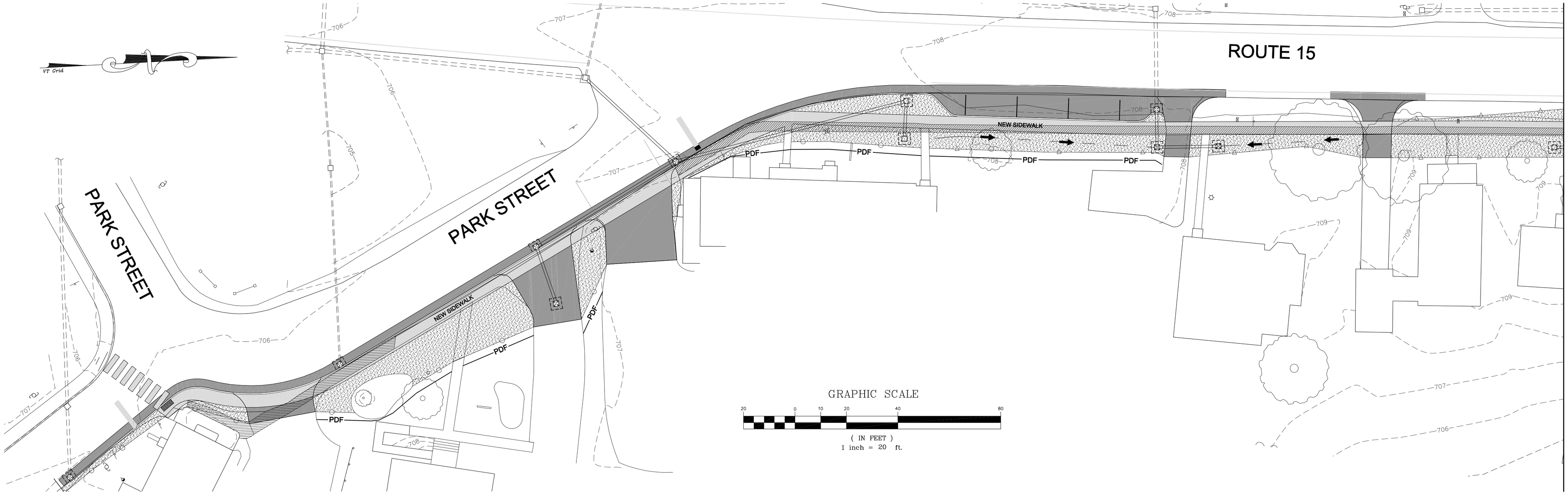
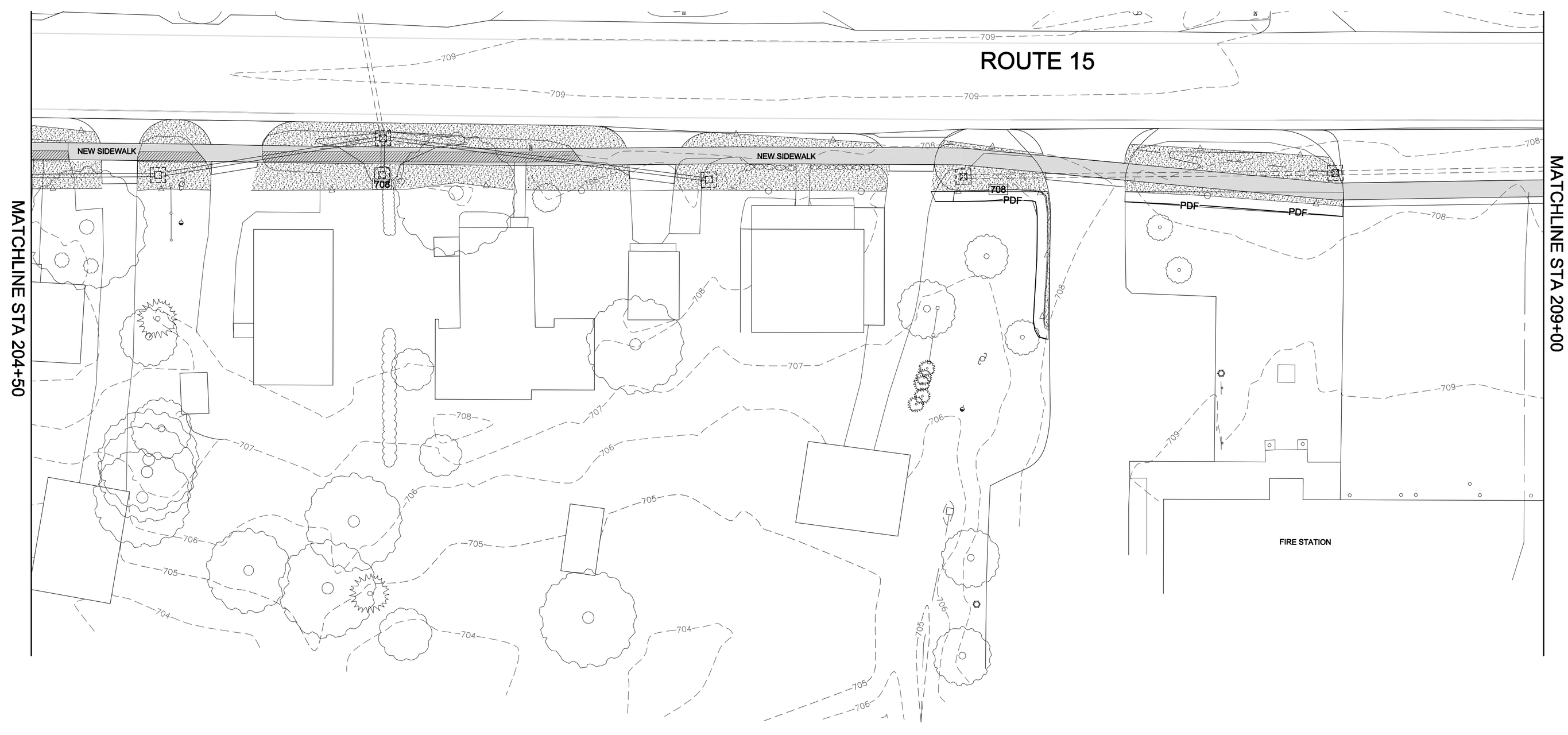




LEGEND

- PDF — PROJECT DEMARCATION FENCE
- NEW TOPSOIL, SEED & MULCH AREA
- TOE OF SLOPE (FILL)
- TOP OF SLOPE (CUT)
- INLET PROTECTION

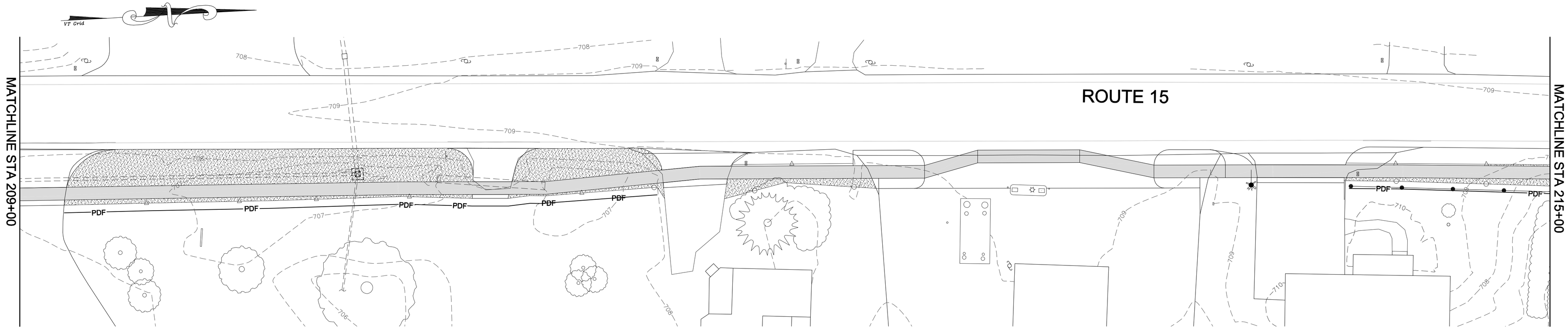
PRELIMINARY PLANS DECEMBER 2015

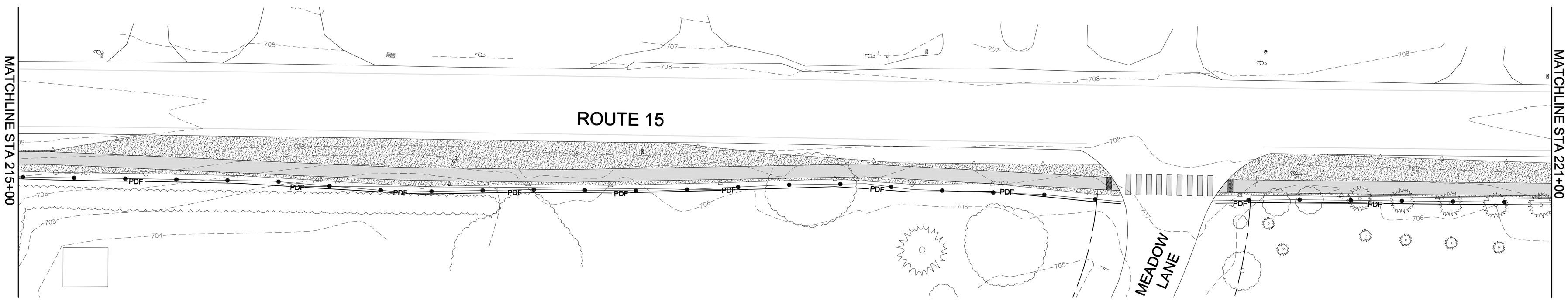
UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

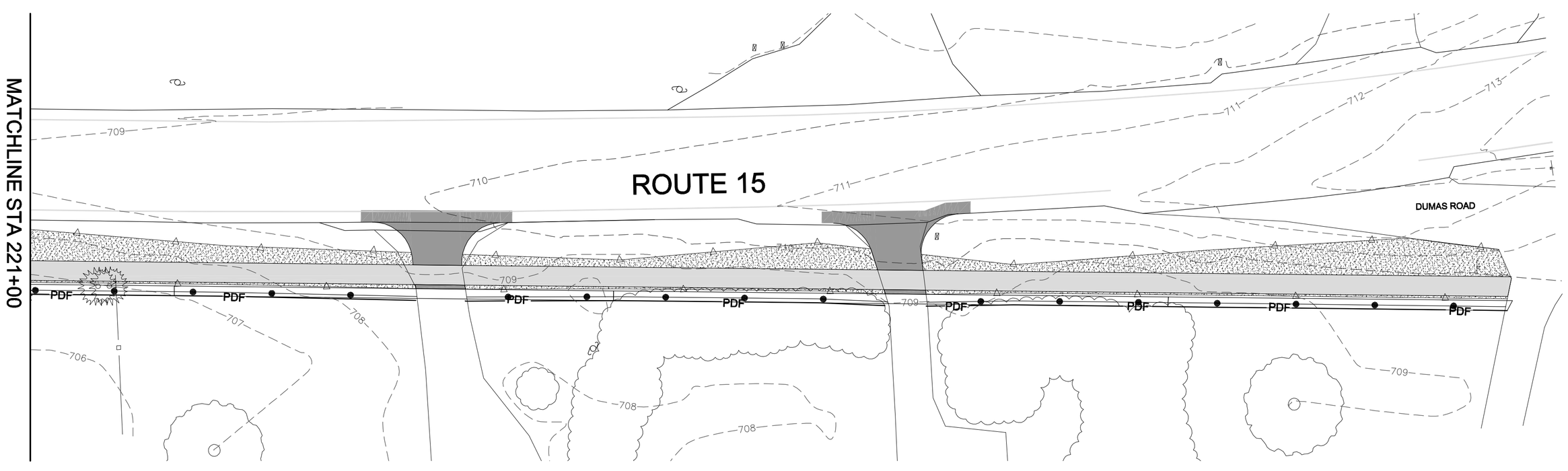
EROSION PREVENTION & SEDIMENT CONTROL PLAN

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
14 Morse Drive
Essex Junction, VT 05452
Tel: 802-878-4450

Proj. no.	14032
Survey	JMR
Design	DLH / ABR
Drawn	L&D
Checked	DLH / RJD
Date	6-3-14
Scale	1" = 20'
Sht. no.	16







GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

- TEMPORARY SILT FENCE
- PDF — PROJECT DEMARCATION FENCE
- NEW TOPSOIL, SEED & MULCH AREA
- TOE OF SLOPE (FILL)
- TOP OF SLOPE (CUT)
- INLET PROTECTION

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS ROUTE 15 SIDEWALK UNDERHILL STP BP13(5) ROUTE 15 UNDERHILL, VERMONT	Proj. no. 14032
	Survey JMR
	Design DLH / ABR
EROSION PREVENTION & SEDIMENT CONTROL PLAN	Drawn L&D
	Checked DLH / RJD
	Date 6-3-14
LAMOUREUX & DICKINSON Consulting Engineers, Inc. 14 Morse Drive Essex Junction, VT 05452 Tel: 802-878-4450	Scale 1" = 20'
	Sht. no. 17

1. **EPSC PLAN NARRATIVE**

1.1 PROJECT DESCRIPTION

THE WORK TO BE PERFORMED UNDER THIS CONTRACT INCLUDES SIDEWALKS, CURBS, DRAINAGE, PAVEMENT MARKINGS, SIGNS AND OTHER SIDEWALK RELATED ITEMS. THE AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 1.2 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA ALONG VT ROUTE 15 IN THE TOWN OF UNDERHILL IS CLASSIFIED AS RELATIVELY FLAT WITH MINOR GRADE CHANGES FOR THE PROPOSED SIDEWALK.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THERE IS NO MAJOR WATER SOURCE ON THE PROJECT SITE. 6 NEW CATCH BASINS AND 12" STORM PIPES WILL CONNECT TO EXISTING CATCH BASINS ON VT ROUTE 15.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF GRASSED LAWNS AND GRAVEL & PAVED DRIVES. THE IMPACT TO VEGETATION WILL BE MINOR. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF CHITTENDEN, VERMONT. SOILS ON THE PROJECT SITE ARE STETSON GRAVELY FINE SANDY LOAM , 0% TO 5% SLOPES, "K FACTOR" = 0.17 AND AGAWAM FINE SANDY LOAM , 0% TO 5% SLOPES, "K FACTOR" = 0.28. THE SOILS ARE CONSIDERED TO HAVE LOW TO MODERATE EROSION POTENTIAL.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0 - 0.23 = LOW EROSION POTENTIAL
0.24 - 0.36 = MODERATE EROSION POTENTIAL
0.37 - HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: YES - HISTORIC DISTRICT, NO ARCHEOLOGICAL
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: NONE
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA
PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. ONLY THE ACREAGE LISTED ON THE CONSTRUCTION GENERAL PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION
TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS.

1.4.4 INSTALL SEDIMENT BARRIERS
SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF
DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THEREFORE IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF
CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

1.4.7 CONSTRUCT PERMANENT CONTROLS
PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION
SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION
VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE
SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES
DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

1.4.12 INSPECT YOUR SITE
INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SPECIFICATION 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

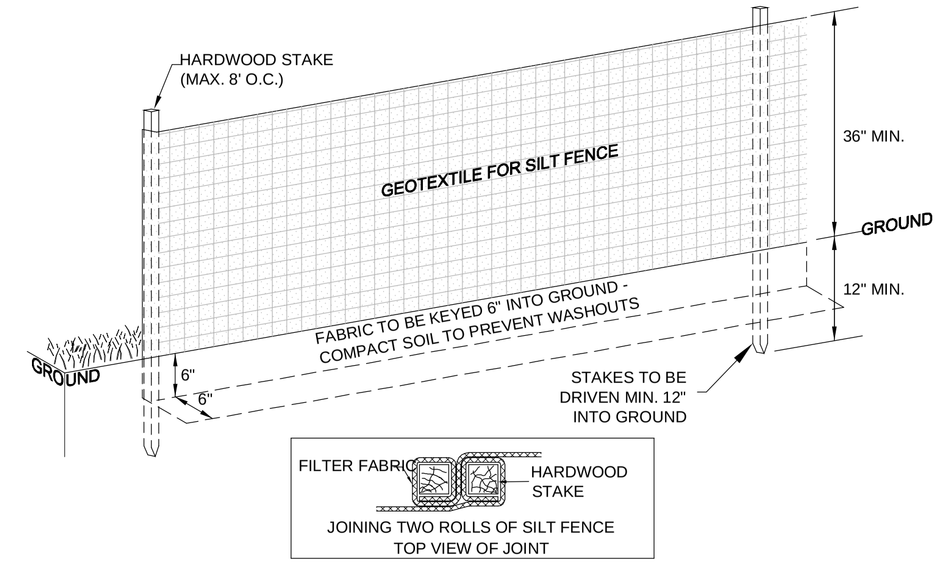
TURF ESTABLISHMENT

URBAN AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

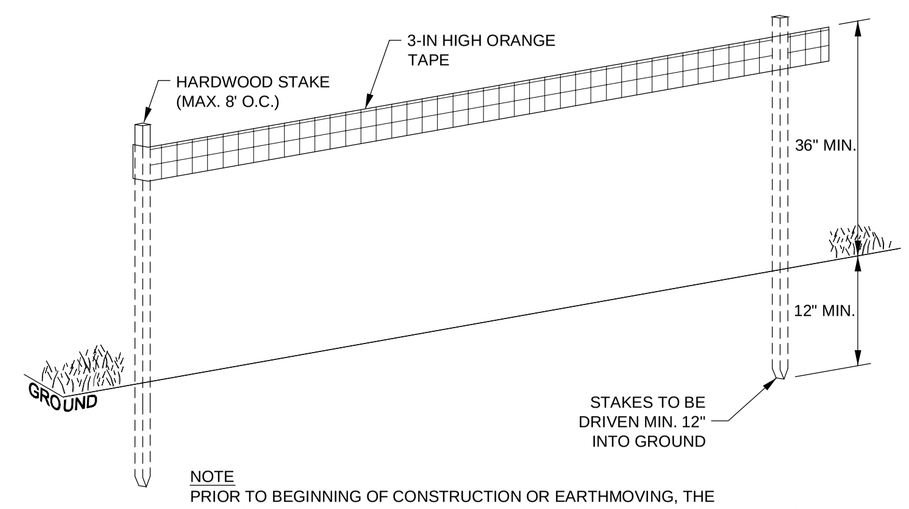
SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	*FOLLOW*	PELLETIZED	*FOLLOW*
500 LBS/AC	*MANUFACTURER*	2 TONS/AC	*MANUFACTURER*

CONSTRUCTION GUIDANCE

1. URBAN SEED MIX SHALL BE USED AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
2. NO SEED MIXTURE SHALL HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND IT SHALL BE FREE OF ALL NOXIOUS SEED.
3. FERTILIZER AND LIMESTONE APPLICATION SHALL FOLLOW THE RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
4. TOPSOIL SHALL BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
5. ALTHOUGH HYDROSEEDING GUIDANCE IS GIVEN ABOVE, THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
6. TURF ESTABLISHMENT SHALL CONSIST OF PLACING SEED, FERTILIZER, LIME AND MULCH. PERFORMING THIS WORK PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS. THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)

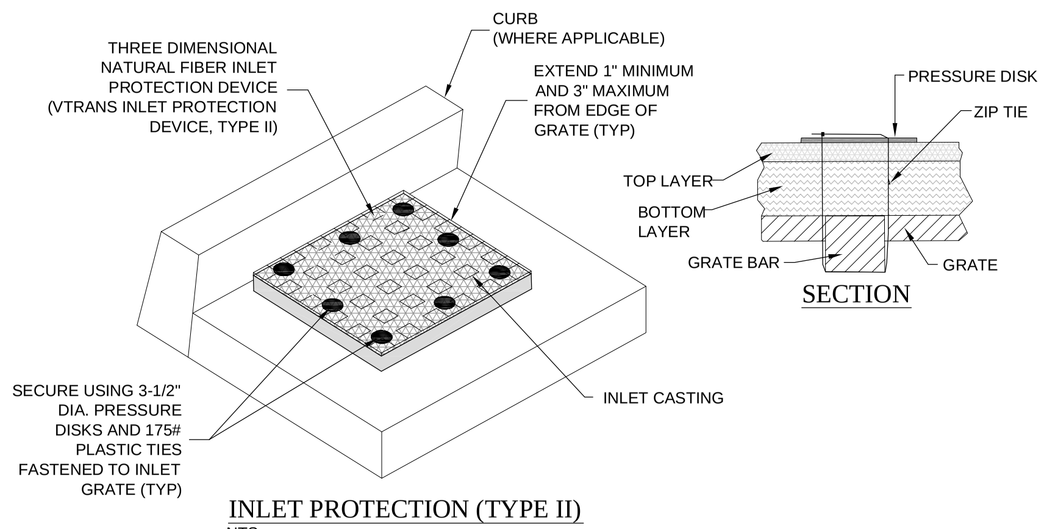


TEMPORARY EROSION CONTROL FENCE
NTS

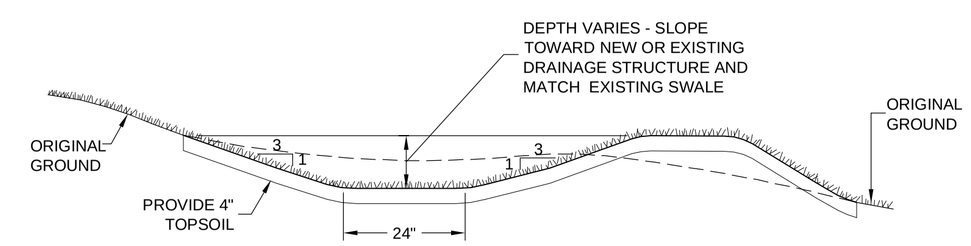


NOTE
PRIOR TO BEGINNING OF CONSTRUCTION OR EARTHMOVING, THE CONTRACTOR SHALL INSTALL A CONTINUOUS PROJECT DEMARCATION FENCE ON THE EPSC PLANS.

PROJECT DEMARCATION FENCE
NTS



INLET PROTECTION (TYPE II)
NTS



TYPICAL DRAINAGE SWALE SECTION
NTS

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS
ROUTE 15 SIDEWALK
UNDERHILL STP BP13(5)
ROUTE 15 UNDERHILL, VERMONT

EPSC NOTES, DETAILS AND SPECIFICATIONS

LAMOUREUX & DICKINSON
Consulting Engineers, Inc.
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Proj. no.	14032
Survey	JMR
Design	DLH / ABR
Drawn	L&D
Checked	DLH / RJD
Date	6-3-14
Scale	AS NOTED
Sht. no.	18

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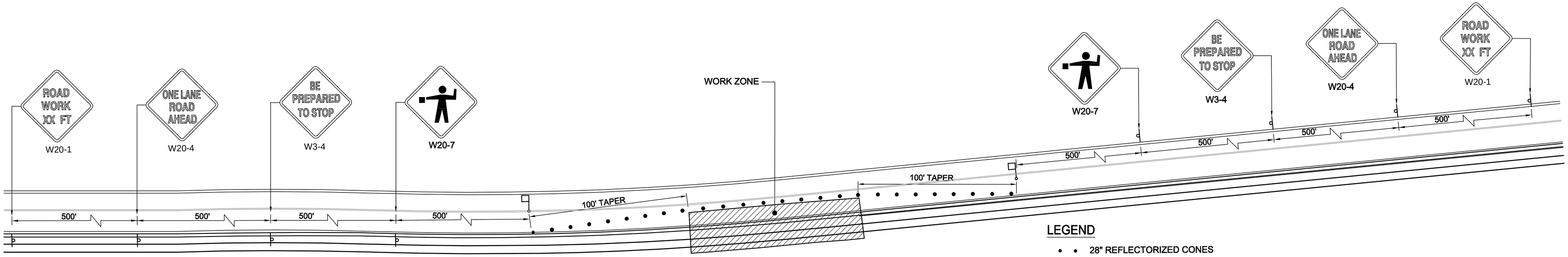
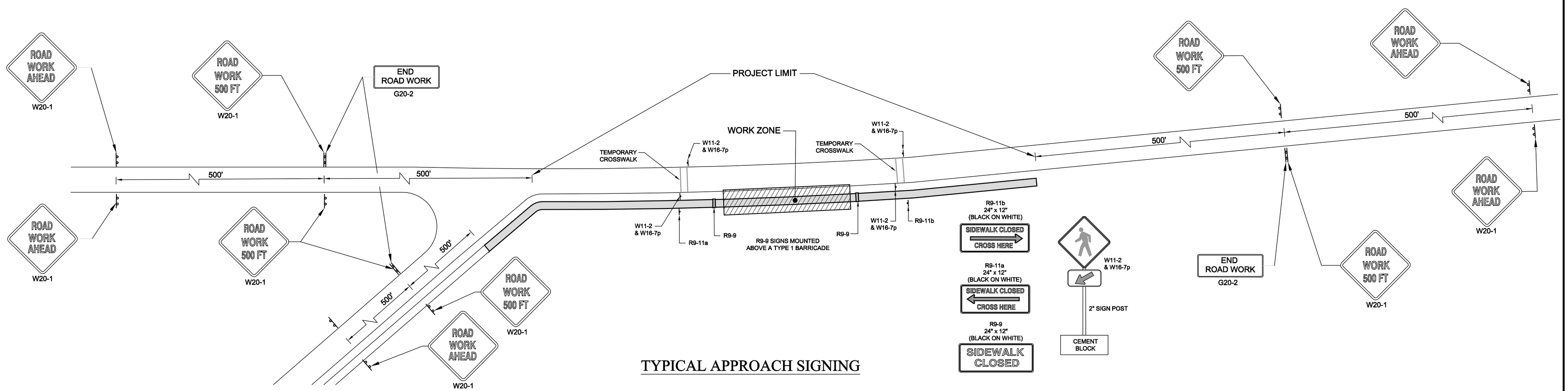


TYPICAL SHORT-TERM LANE CLOSURE DETAIL



TYPICAL APPROACH SIGNING

TEMPORARY TRAFFIC CONTROL NOTES

1. ALL TEMPORARY CONTROL DEVICES SHALL MEET OR EXCEED VTRANS STANDARD DETAILS. WHERE THE STANDARD DETAILS CONFLICT WITH THE MUTCD, THE MUTCD SHALL GOVERN.
2. FOR ANY WORK WITHIN THE HIGHWAY RIGHT-OF-WAY A MINIMUM OF ONE-WAY THRU TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. CONTINUOUS TWO-WAY TRAFFIC SHALL BE MAINTAINED AT NIGHT, ON WEEKENDS AND HOLIDAYS, DURING PEAK TRAFFIC AND WHENEVER POSSIBLE DURING CONSTRUCTION. THERE SHALL BE NO OPEN TRENCHES WITH THE ROUTE 15 RIGHT-OF-WAY OVER NIGHT. THERE SHALL BE NO WORK DONE WITHIN THE ROUTE 15 RIGHT-OF-WAY THE DAY BEFORE OR AFTER A STATE HOLIDAY.
3. SHORT DURATION TEMPORARY TRAFFIC CONTROL SIGNING AND CHANNELIZING DEVICES SHALL BE IN ACCORDANCE WITH THE APPROPRIATE MUTCD STANDARDS (PART 6). TYPICAL APPLICATIO NS 1 AND 3 ARE USEFUL EXAMPLES. VARIATIONS IN THE SIGNING PACKAGES MAY BE DICTATED BY UNIQUE GEOMETRY, SPECIFIC CONSTRUCTION ACTIVITIES, AND/OR TRAFFIC CONDITIONS.
4. APPROACH CONSTRUCTION SIGNING SHALL REMAIN IN PLACE DURING THE ENTIRE CONSTRUCTION PERIOD.
5. THE CONTRACTOR SHALL NOT WORK WITHIN THE HIGHWAY ROW WITHOUT THE APPROPRIATE CONSTRUCTION SIGNING AND TEMPORARY TRAFFIC CONTROL DEVICES IN PLACE.
6. TO FACILITATE THE FLOW OF TRAFFIC, THE TOWN SHALL HAVE AUTHORITY TO MODIFY THE CONTRACTOR'S ONGOING OPERATIONS OR PROPOSED METHODS OF CONSTRUCTION AS DEEMED NECESSARY FOR THE SAFETY, CONVENIENCE AND WELFARE OF THE TRAVELING PUBLIC. THE CONTRACTOR SHALL COMPLY WITH THE TOWN DIRECTIVES CONCERNING THIS MATTER.
7. THE MIXING OF TEMPORARY TRAFFIC CONTROL DEVICES (DRUMS, CONES, ETC.) ALONG A TANGENT HIGHWAY IS NOT ALLOWED. DRUMS SHOULD BE USED TO CHANNELIZE OR DELINEATE ROAD USER'S FLOW WHILE REFLECTORIZED CONES ARE BETTER SUITED TO DELINEATE DRIVES WITHIN THE WORK ZONE.
8. CONTRACTOR SHALL PROVIDE A MINIMUM 48 HOUR ADVANCE NOTICE TO PROPERTY OWNERS PRIOR TO COMMENCING WORK IN DRIVES. WHERE SIDEWALKS CROSS DRIVES, THEY SHALL BE CONSTRUCTED IN TWO PHASES, MAINTAINING ACCESS TO DRIVEWAYS AT ALL TIMES.
9. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS TO BUSINESSES AND RESIDENCES. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MUTCD PART 6 AND ADA ACCESSIBLE ROUTE REQUIREMENTS.
10. FLAGGERS AND/OR TRAFFIC CONTROL PERSONNEL SHALL DIRECT BICYCLISTS THROUGH THE CONSTRUCTION AREA IN THE SAME MANNER AS VEHICULAR TRAFFIC. PEDESTRIANS, WHEN PRESENT, SHALL BE DIRECTED ACROSS ROUTE 15 BY FLAGGERS ON EACH END OF THE WORK ZONE.
11. ANY SIDEWALK CLOSURES/PEDESTRIAN DETOURS THAT WILL BE LEFT IN PLACE OVERNIGHT MUST INCLUDE SIGNS THAT MEET THE MUTCD AND PEDESTRIAN CHANNELIZING DEVICES THAT MEET MUTCD AND ADA. CHANNELIZING DEVICES MUST HAVE A CONTINUOUS DETECTABLE BOTTOM EDGE PER MUTCD STANDARDS.
12. SIDEWALK CLOSED SIGNS (R9-9) SHALL BE REQUIRED IN ADVANCE OF THE WORK ZONE ON COMPLETED PORTIONS OF THE PROJECT TO PREVENT PEDESTRIANS FROM ENTERING THE WORK ZONE.
13. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.
14. SIDEWALK CLOSED SIGNS (R9-9) SHALL BE REQUIRED IN ADVANCE OF THE WORK AREA TO PREVENT PEDESTRIANS FROM ENTERING THE WORK ZONE. PEDESTRIANS USING THE EXISTING CROSSWALKS SHALL BE DIRECTED TO THE OPPOSITE SIDE OF ROUTE 15 AT DESIGNATED TEMPORARY CROSSWALKS. SIGNS SHALL BE PLACED AT LOGICAL CROSSING LOCATIONS THAT ARE ADA ACCESSIBLE. TEMPORARY ADA ACCESSIBLE CROSSINGS SHALL INCORPORATE THE FOLLOWING REQUIRED ELEMENTS:
   - PREFERRED WIDTH OF 5 FEET, 4 FEET MINIMUM
   - TEMPORARY RAMP AT 12H:1V MAXIMUM SLOPE, HAVING A STABLE, SMOOTH, NON-SLIP SURFACE
   - RAMP LANDING AREA HAVING MINIMUM AREA OF 4 FT BY 4 FT, AND 2% MAXIMUM CROSS SLOPE
   - TEMPORARY DETECTABLE WARNING SURFACE AT END OF RAMP, AS APPLICABLE
   - SURFACE DISCONTINUITIES MUST NOT EXCEED 1/2 INCH MAXIMUM
   - VERTICAL DISCONTINUITIES BETWEEN 1/4 INCH AND 1/2 INCH SHALL BE BEVELED AT 2H:1V OR FLATTER. NEW SURFACES MUST NOT HAVE VERTICAL DISCONTINUITIES.

TEMPORARY CONSTRUCTION SIGNS

1. ALL SIGN STANDS AND POST INSTALLATION SHALL BE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM 350 (NCHRP) COMPLIANT.
2. ALL ROLL-UP SIGN MATERIAL SHALL HAVE ASTM D 4956-01 TYPE VI OR TYPE VII FLUORESCENT ORANGE RETRO-REFLECTIVE SHEETING.
3. ALL POST MOUNTED SIGNS SHALL HAVE ASTM D 4956-01 TYPE VIII OR TYPE IX FLUORESCENT ORANGE RETRO-REFLECTIVE SHEETING.
4. ALL STATIONARY SIGNS SHALL BE MOUNTED ON TWO 3 LBS/FT FLANGED CHANNEL POSTS. NO SIGN POSTS SHALL EXTEND OVER THE TOP EDGE OF THE SIGN INSTALLED ON SAID POSTS.
5. PRIOR TO PLACING TEMPORARY WORK ZONE SIGNS ON THE PROJECT, THE CONTRACTOR MUST FURNISH FOR THE TOWN'S APPROVAL A DETAIL FOR TEMPORARY WORK ZONE SIGNS ON STEEL POSTS SHOWING STUBS PROJECTING A MAXIMUM OF 4 INCHES ABOVE GROUND LEVEL AND BOLTS FOR SIGN POST ATTACHMENT SHALL BE NCHRP 350 COMPLIANT, IF IN THE CLEAR ZONE.

FLAGGERS AND UNIFORM TRAFFIC OFFICERS

FLAGGERS SHALL BE REQUIRED TO ATTEND A 4 HOUR APPROVED TRAINING COURSE AND CARRY THEIR FLAGGER CERTIFICATION CARD WITH THEM. THE CONTRACTOR SHALL PROVIDE COPIES OF ALL DOCUMENTATION OF THE CERTIFICATION OBTAINED FOR EACH FLAGGER ON THE PROJECT.

ALL FLAGGERS OR UTO SERVING AS A TRAINED FLAGGER SHALL WEAR SAFETY APPAREL MEETING REQUIREMENTS OF ISEA "AMERICAN NATIONAL STANDARD OF HIGH-VISIBILITY APPAREL" AND LABELED AS MEETING THE ANSI 107-1999 STANDARD PERFORMANCE FOR CLASS 2 RISK EXPOSURE. INDIVIDUALS ENGAGED IN TRAFFIC CONTROL SHALL WEAR THE HIGH-VISIBILTY VEST.

PRELIMINARY PLANS DECEMBER 2015

UNDERHILL FLATS ROUTE 15 SIDEWALK UNDERHILL STP BP13(5) ROUTE 15 UNDERHILL, VERMONT	Proj. no. 14032 Survey JMR Design DLH / ABR
TRAFFIC CONTROL PLAN	Drawn L&D Checked DLH / RJD Date 6-3-14
LAMOUREUX & DICKINSON Consulting Engineers, Inc. 14 Morse Drive Essex Junction, VT 05452 Tel: 802-878-4450	Scale 1" = 100' Sht. no. 19