STATE OF VERMONT
AGENCY OF TRANSPORTATION

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LIST OF STANDARDS

B-5	06-01-1994
C-1	01-03-2000
C-2B	01-03-2000
C-3A	02-02-2004
D-2	06-01-1994
D-4	06-01-1994
D-8	01-03-2000
D-9	06-01-1994
D-11	06-01-1994
D-13	01-03-2000
D-15	06-01-1994
E-100	01-02-2004
E-101	05-30-2003
E-102	06-30-2003
E-102A	08-08-1995
E-106	03-01-2004
E-107	06-30-2003
E-107A	08-08-1995
E-121	08-08-1995
E-160	05-20-1999
E-191	02-01-1999
E-193	08-18-1995
G-4	06-01-1994
G-18	06-01-1994

PROPOSED IMPROVEMENT
SAFETY PROJECT

TOWN OF SPRINGFIELD

COUNTY OF WINDSOR

ROUTE NOS : TH 1/VT 11 (RIVER ST.) AND TH 325 (NORTH MAIN ST.)

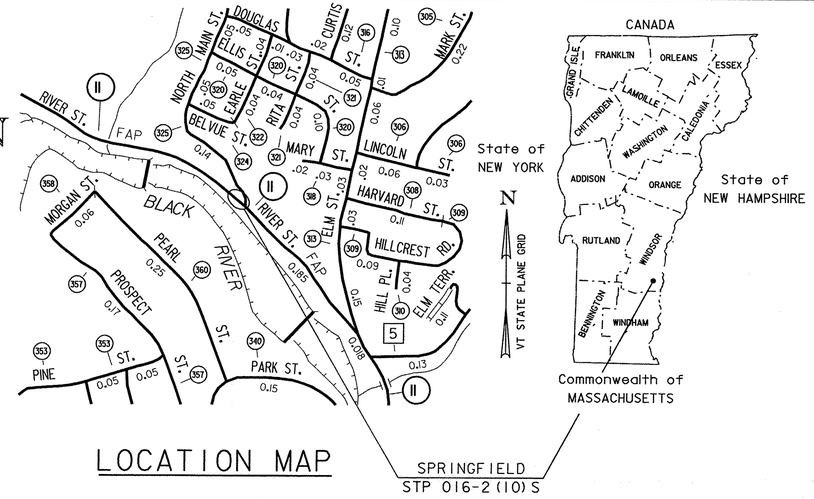
PROJECT LOCATION: ALONG THE NORTH SIDE OF TH 1, BEGINNING APPROXIMATELY AT MM 4.234 AND EXTENDING SOUTHEASTERLY TO THE INTERSECTION OF NORTH MAIN STREET, ALSO ALONG NORTH MAIN STREET BEGINNING AT THE INTERSECTION OF TH 1 AND EXTENDING NORTHWESTERLY APPROXIMATELY 387 FEET.

PROJECT DESCRIPTION: PARTICIPATION: REPAIR AND REHABILITATION OF EXISTING METAL BINWALL ALONG LEFT SIDE OF TH 1, INSTALLATION OF NEW DRAINAGE AND SIDEWALK ALONG LEFT SIDE OF TH 325, COLD PLANING AND PLACING NEW BITUMINOUS CONC. PAVEMENT ON TH 325 .

NON-PARTICIPATION: REMOVAL AND DISPOSAL OF EXISTING METAL BINWALL, CONSTRUCTING STONE LINED DITCH AND REGRADING OF SIDE SLOPE ALONG RIGHT SIDE OF TH 325.

LENGTH OF PARTICIPATION PROJECT ALONG TH 1/VT 11: 713.50 FEET.
LENGTH OF PARTICIPATION PROJECT ALONG TH 325: 386.44 FEET.

LENGTH OF NON-PARTICIPATION PROJECT ALONG TH 325: 170.00 FEET.



LOCATION MAP

STP 016-2(10)S
VT. RTE. 11

RECORD PLANS

CONTRACTOR: MILLER CONSTRUCTION, INC. – WINDSOR, VT

RESIDENT ENGINEER: BUTCH COLBY

CONSTRUCTION BEGAN: APRIL 11, 2005

CONSTRUCTION COMPLETE: SEPTEMBER 22, 2006

RECORD PLANS BY: BUTCH COLBY & AMOS KEMPTON

I HEREBY CERTIFY THAT ALL THE CONSTUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY _____ RESIDENT ENGINEER

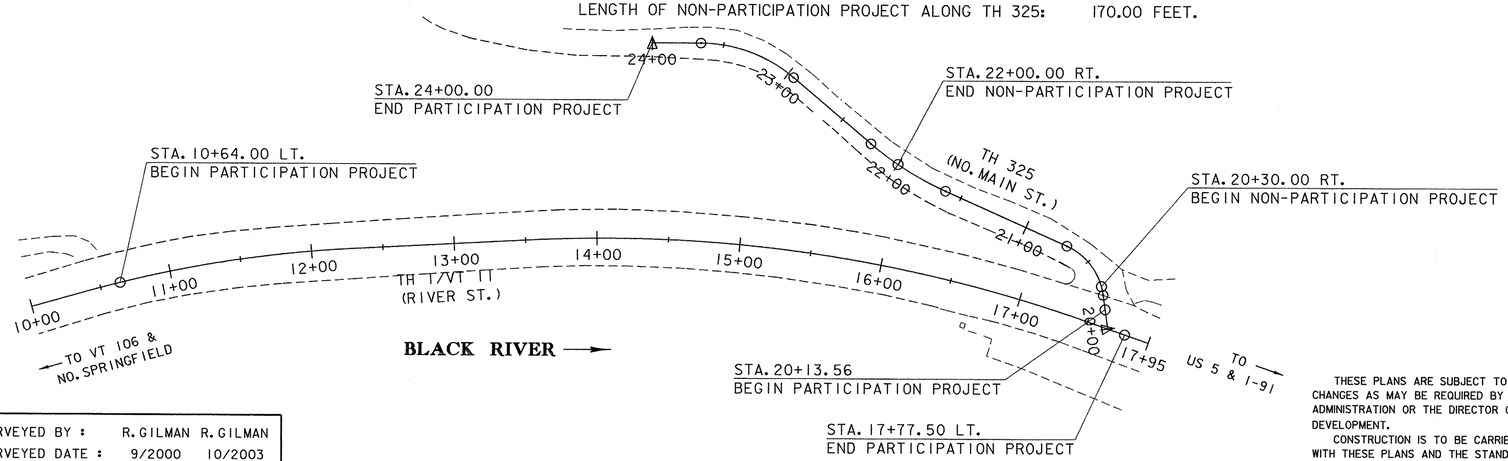
DATE 7/20/11

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2004	12,300	1300	51	5	600
2024	16,500	1700	51	7	1200

18 Kip ESAL for flexible pavement from 2004 to 2024: 5,146,000
18 Kip ESAL for flexible pavement from 2004 to 2044: 13,383,000
Design speed: 35 mph



N
VT STATE PLANE GRID

CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

SURVEYED BY :	R. GILMAN	R. GILMAN
SURVEYED DATE :	9/2000	10/2003

DATUM

VERTICAL	NAVD 88
HORIZONTAL	NAD83 (96)

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

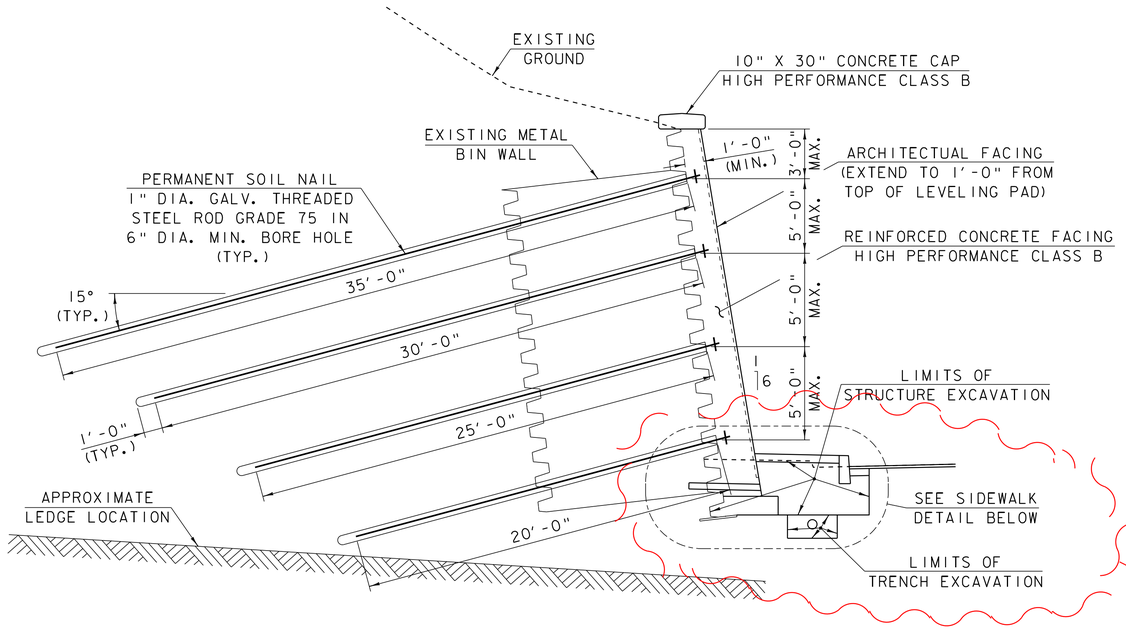
00b124\Structures\sb124bdr.dgn sb124tit.i 04-AUG-2004

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE 8/4/04

PROJECT MANAGER : R. WHITCOMB

PROJECT NAME : SPRINGFIELD
PROJECT NUMBER : STP 016-2(10)S

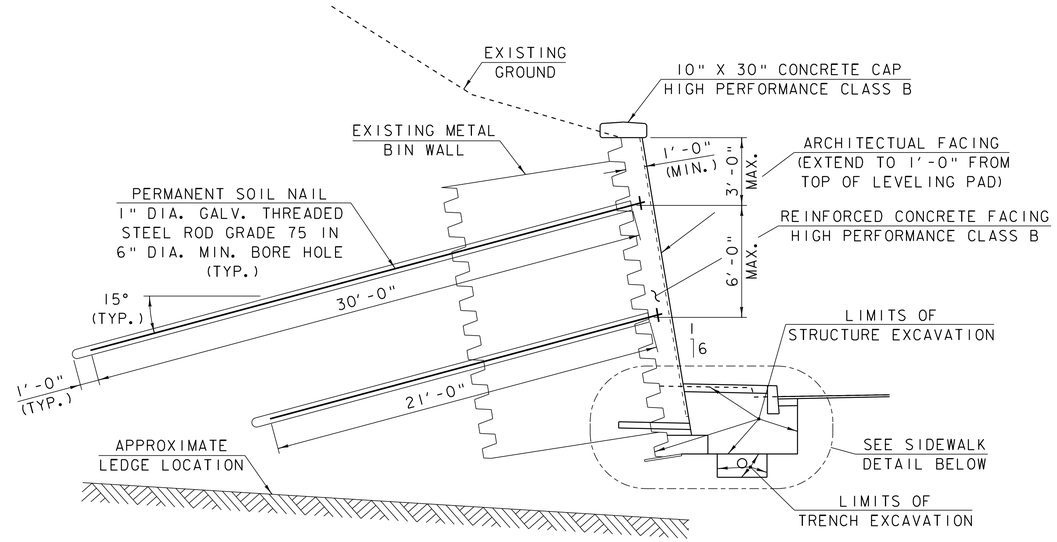
SHEET 1 OF 72 SHEETS



TYPICAL SOIL NAIL WALL SECTION
TALLER THAN 15'-0"

1 0 1 2 3 4 5 6

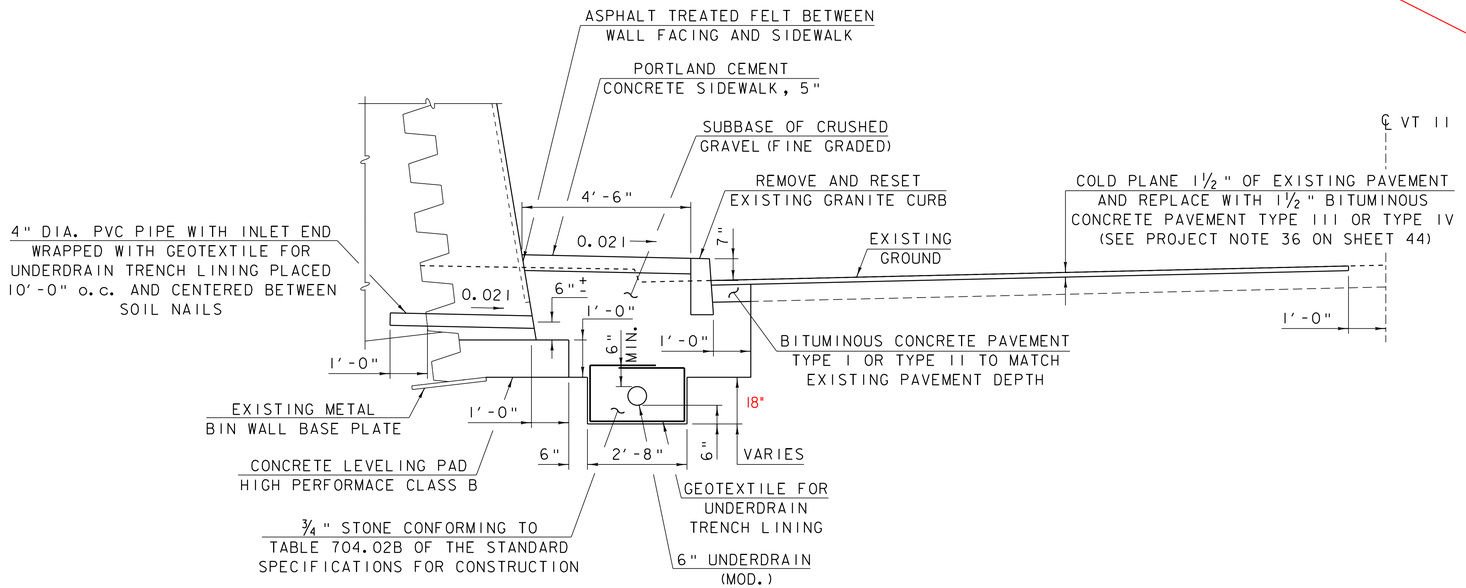
SCALE: 1/4" = 1'-0"



TYPICAL SOIL NAIL WALL SECTION
15'-0" OR SHORTER

1 0 1 2 3 4 5 6

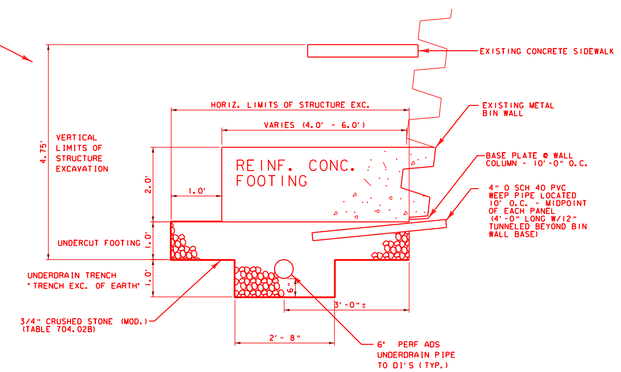
SCALE: 1/4" = 1'-0"



SIDEWALK DETAIL

1 0 1 2 3 4

SCALE: 1/2" = 1'-0"

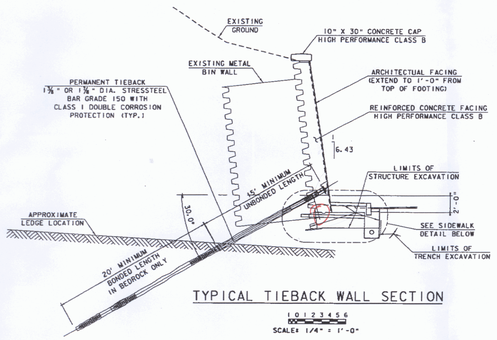


AS-BUILT FOOTING & UNDERDRAIN DETAIL
REHAB EXISTING METAL BINWALL (RTE 11)

N.T.S.

SOIL NAIL WALL TYPICAL SECTIONS

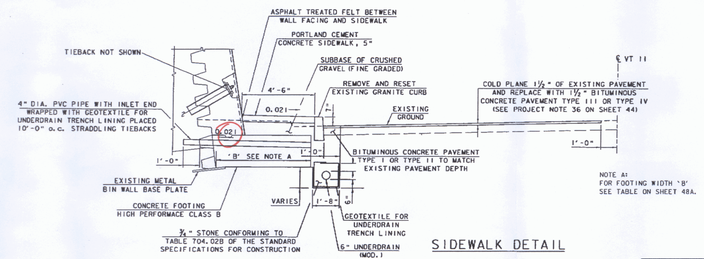
PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00bl24\structures\sbl24typl.i	PLOT DATE: 14-SEP-2011 08:52
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 2 OF 72



TYPICAL TIEBACK WALL SECTION

1 0 1 2 3 4 5 6

SCALE: 1/4" = 1'-0"



NOTE A:
FOR FOOTING WIDTH 'B' SEE TABLE ON SHEET 48A.

SIDEWALK DETAIL

1 0 1 2 3 4

SCALE: 1/2" = 1'-0"

TIEBACK WALL CONSTRUCTION SEQUENCE

1. ESTABLISH LANE CLOSURE PER CONTRACT PLANS.
2. SAWCUT EXISTING PAVEMENT, REMOVE EXISTING SIDEWALK, EXCAVATE AND INSTALL UNDERDRAIN.
3. CUT HOLES IN EXISTING BIN WALL AND INSTALL PVC PIPE WEEPHOLES.
4. CONSTRUCT NEW CONCRETE WALL FOOTING.
5. CONSTRUCT WALL STEM WITH POCKETS TO INSTALL TIEBACKS.
6. INSTALL TIEBACKS.
7. AFTER TIEBACK GROUT AND WALL PANELS HAVE REACHED DESIGN STRENGTH, PERFORM PROOF AND PERFORMANCE TESTS ON TIEBACKS.
8. COMPLETE GROUTING ANNULAR SPACE BETWEEN TIEBACKS AND PVC SLEEVE JUST UNDER THE ANCHOR PLATES.
9. GROUT POCKETS IN WALL FACE AT TIEBACKS TO ENCASE TIEBACK HEADS AND COMPLETE ARCHITECTURAL STAINING OF WALL FACE.
10. COMPLETE CONSTRUCTON PER CONTRACT PLANS.

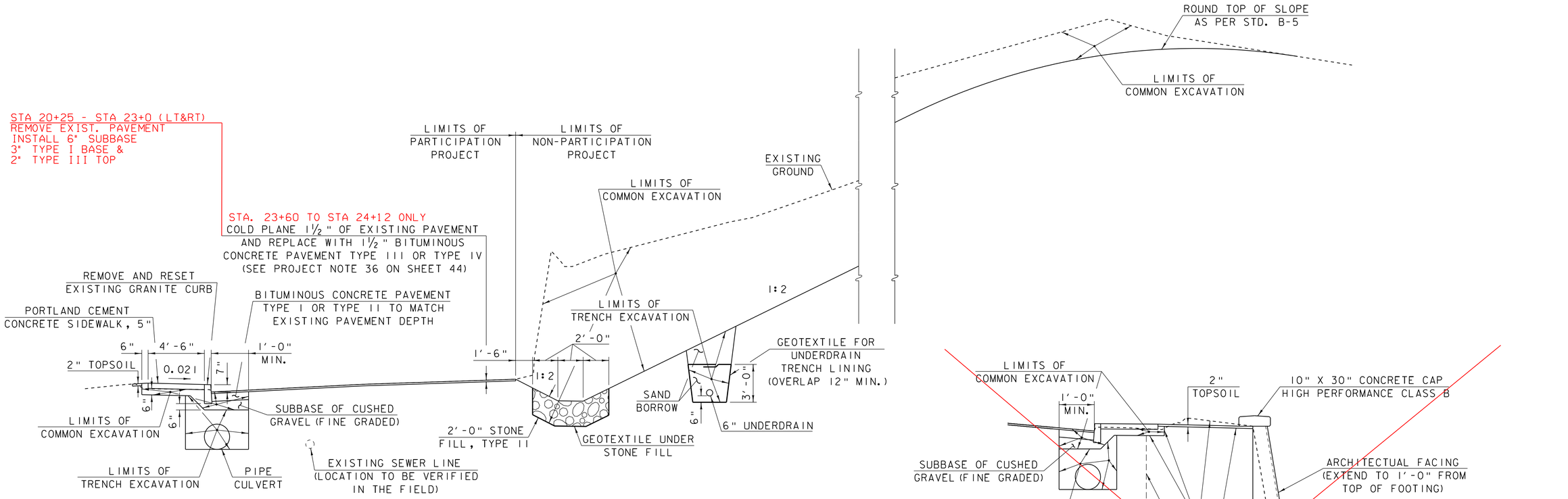
VALUE ENGINEERING REDESIGN OF WALL 2 PREPARED BY GEODESIGN, INC. 3-16-05

TIEBACK WALL TYPICAL SECTIONS

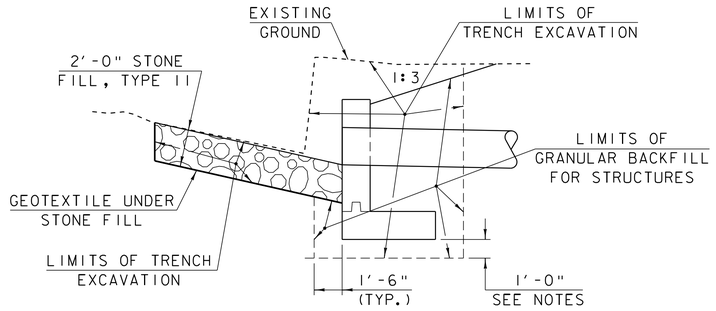
GEODESIGN INCORPORATED
ARCHITECTURAL, ENGINEERING, ENVIRONMENTAL CONSULTANTS
54 ALLEN STREET, SUITE 200, BURLINGTON, VERMONT 05401-4456
TELEPHONE: (802) 651-8910 FACSIMILE: (802) 651-8912
WASHINGTON, D.C. NEW YORK, NY BURLINGTON, VT.

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S
FILE NAME: 00b24\structures\sb24typU
PROJECT MANAGER: W. FRANK
DESIGNED BY: M. HARMARAN
PLOT DATE: 3/16/05
DRAWN BY: D. FRANK
CHECKED BY: W. FRANK
SHEET 2A OF 72

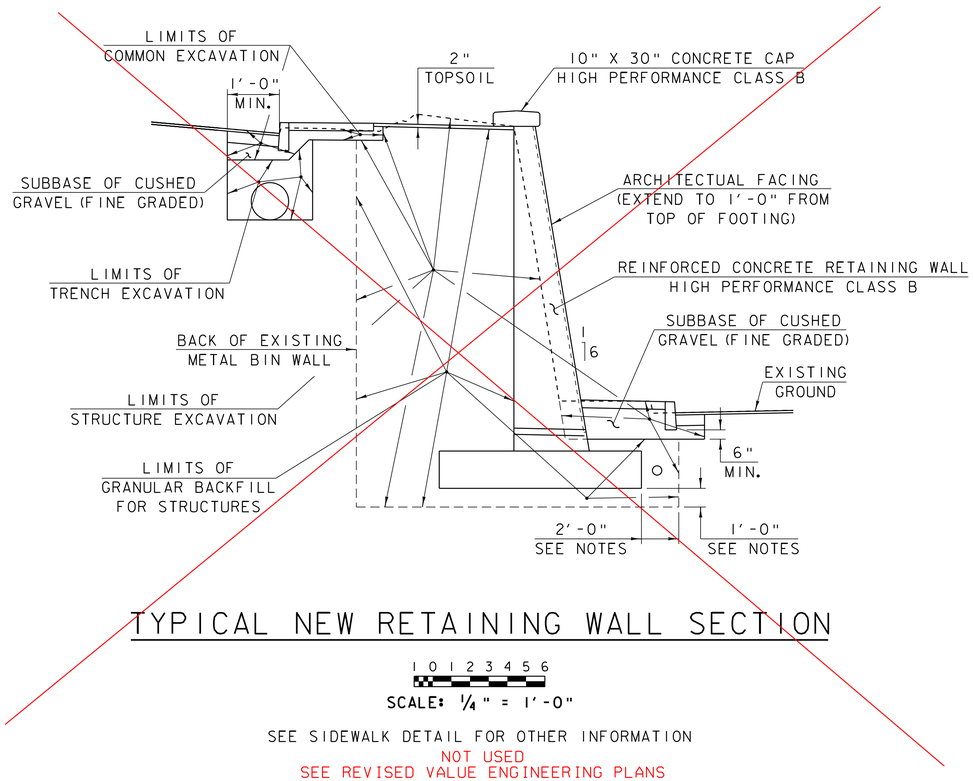
...\geodesign Sections-REVISED 3-16-05.dgn



TYPICAL ROADWAY SECTION NORTH MAIN ST.



TYPICAL HEADWALL SECTION AT 23+49 RT.



TYPICAL NEW RETAINING WALL SECTION

SEE SIDEWALK DETAIL FOR OTHER INFORMATION

NOT USED

SEE REVISED VALUE ENGINEERING PLANS

NOTES:

1. THE PAY LIMITS OF "STRUCTURE EXCAVATION" SHALL BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING OR AS SHOWN IN THE PLANS AND UP TO EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
2. 1'-0" UNDERCUT AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.

PROJECT TYPICAL SECTIONS

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00bl24\structures\sbl24typ2.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 14-SEP-2011 08:53
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 3 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES												TOTALS			DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
NON-PARTICIPATION					PARTICIPATION															
EROSION CONTROL		ROADWAY			FULL C.E. ITEMS		EROSION CONTROL		ROADWAY		RETAINING WALL	NON-PARTICIPATION	PARTICIPATION	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
		1										1			LS	CLEARING AND GRUBBING (INCLUDING INDIVIDUAL TREES AND STUMPS)	201.10			
									0.60				0.60		ACRE	THINNING AND TRIMMING	201.30			
		3060							210			3060	210		CY	COMMON EXCAVATION	203.15			
		260							510			260	510		CY	TRENCH EXCAVATION OF EARTH	204.20			
									30				30		CY	TRENCH EXCAVATION OF ROCK	204.21			
											720		720		CY	STRUCTURE EXCAVATION	204.25			
									30		130		160		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30			
									2450				2450		SY	COLD PLANING-BIT.PAVEMENT	210.10			
									470				470		CY	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	301.26			
									5				5		CWT	EMULSIFIED ASPHALT	404.65			
									280				280		TON	BITUMINOUS CONCRETE PAVEMENT (PG 64-28)	406.25			
									44				44		CY	CONCRETE, CLASS B	501.25			
									7		798		805		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34			
									4330		36230		40560		LB	REINFORCING STEEL	507.15			
											70		70		LF	DRILLING AND GROUTING DOWELS	507.16			
									2		101		103		GAL	WATER REPELLENT	514.10			
									25				25		LF	REMOVAL OF EXISTING RAILING	525.10			
									23				23		LF	METAL HAND RAILING	525.15			
		1										1			EACH	REMOVAL OF STRUCTURE (METAL BIN WALLS ON NO. MAIN ST. RT.)	529.15			
											0620		0620		LF	PERMANENT SOIL NAILS (GALVANIZED)	535.16			
											4		4		EACH	VERIFICATION TEST NAILS	535.20			
																*** BEGIN PIPE OPTIONS ***				
									310				310		LF	24" CAAP .105 (2-2/3X1/2)	601.0227			
									310				310		LF	24" PCCSP .109 (2-2/3 X 1/2)	601.0427			
									310				310		LF	24" RCP CLASS III	601.0825			
									310				310		LF	24" CPEP	601.0920			
									40				40		LF	30" CAAP .105 (2-2/3 X 1/2)	601.0237			
									40				40		LF	30" PCCSP .109 (2-2/3 X 1/2)	601.0437			
									40				40		LF	30" CPEP	601.0925			
									82				82		LF	48" CAAP .105 (2-2/3X1/2)	601.0257			
									82				82		LF	48" PCCSP .109 (2-2/3 X 1/2)	601.0457			
									82				82		LF	48" RCP CLASS III	601.0855			
																*** END PIPE OPTIONS ***				
											1090		1090		SY	STONE MASONRY FACING (MOD. FORM LINER)	602.25			
									2				2		EACH	CHANGING ELEVATION OF SEWER MANHOLE	604.42			
									6				6		EACH	CAST IRON GRATE WITH FRAME, TYPE D	604.47			
									5				5		EACH	CAST IRON GRATE WITH FRAME, TYPE E	604.48			
									1				1		EACH	CAST IRON COVER WITH FRAME	604.55			
		600										600			LF	6" UNDERDRAIN	605.10			
									430				430		LF	6" UNDERDRAIN (MOD. 3/4" STONE GRADED ACCORDING TO TABLE 704.02B)	605.10			
		40										40			LF	6" UNDERDRAIN CARRIER PIPE	605.20			
		6										6			EACH	UNDERDRAIN FLUSHING BASINS	605.95			
10												10			HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	609.25			
		50							10			50	10		CY	STONE FILL, TYPE I	613.10			

PROJECT NAME: **SPRINGFIELD**
PROJECT NUMBER: **STP 016-2 (10)S**

FILE NAME: **\00B124\structures\sb124qty.xls**
PROJECT MANAGER: **R. R. WHITCOMB**
DESIGNED BY: **G. ROY**
QUANTITY SHEET #1

PLOT DATE: **08/03/2004**
DRAWN BY: **G. ROY**
CHECKED BY: **R. R. WHITCOMB**
SHEET **4** OF **72**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

SUMMARY OF ESTIMATED QUANTITIES										TOTALS			DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
NON-PARTICIPATION		PARTICIPATION																
EROSION CONTROL	ROADWAY	FULL C.E. ITEMS	EROSION CONTROL	ROADWAY	RETAINING WALL	NON-PARTICIPATION	PARTICIPATION	FINAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
60						60			CY	STONE FILL, TYPE II	613.11			
				50			50		LF	VERTICAL GRANITE CURB - 964.6 LF PER STATIONING	616.21			
				1040			1040		LF	REMOVING AND RESETTING CURB	616.40			
				500			500		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10			
	380			735		380	735		LF	SNOW FENCE (MOD. PDF)	620.70			
				3			3		EACH	ENERGY ABSORPTION ATTENUATOR (SAND FILLED BARRELS)	621.56			
				270			270		LF	REMOVING AND RESET GUARD RAIL	621.75			
				620			620		LF	TEMPORARY TRAFFIC BARRIER	621.90			
				80			80		HR	UNIFORMED TRAFFIC OFFICERS	630.10			
				200			200		HR	FLAGGERS	630.15			
		1					1		LS	FIELD OFFICE-ENGINEERS	631.10			
		1					1		LS	TESTING EQUIPMENT - CONCRETE	631.16			
		1					1		LS	TESTING EQUIPMENT - BITUMINOUS (MOD.)	631.17			
		1					1		LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25			
				1			1		LS	MOBILIZATION	635.10			
				1			1		LS	TRAFFIC CONTROL	641.10			
				1530			1530		LF	DURABLE 4" WHITE LINE	646.40			
				1440			1440		LF	DURABLE 4" YELLOW LINE	646.41			
				13			13		LF	DURABLE 24" STOP BAR	646.46			
				8			8		EACH	DURABLE LETTER OR SYMBOL	646.50			
				50			50		LF	DURABLE CROSSWALK MARKING W/DIAGONAL LINES	646.51			
				1400			1400		LF	TEMPORARY 4" WHITE LINE	646.60			
				1340			1340		LF	TEMPORARY 4" YELLOW LINE	646.61			
				84			84		LF	TEMPORARY CROSSWALK MARKING W/DIAGONAL LINES	646.71			
				900			900		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85			
	160					160			SY	GEOTEXTILE UNDER STONE FILL	649.31			
	950			410		950	410		SY	GEOTEXTILE FOR UNDERDRAIN TRENCH LINING	649.41			
280			150			280	150		SY	GEOTEXTILE FOR SILT FENCE	649.51			
25			6			25	6		LB	SEED	651.15			
25			6			25	6		LB	SEED-WINTER RYE	651.17			
160			40			160	40		LB	FERTILIZER	651.18			
0.7			0.15			0.7	0.15		TON	AGRICULTURAL LIMESTONE	651.20			
0.7			0.15			0.7	0.15		TON	HAY MULCH	651.25			
40			20			40	20		CY	TOPSOIL	651.35			
0.5			0.5			0.5	0.5		LS	EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.10			
20			20			20	20		HR	MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.20			
0.5			0.5			0.5	0.5		LU	MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.I.)	652.30			
1300						1300			SY	EROSION MATTING	654.10			
				14			14		LF	FLANGED CHANNEL SIGN POST	675.301			
				6			6		EACH	REMOVING SIGNS	675.50			
				6			6		EACH	ERECTING SALVAGED SIGNS	675.60			
				4			4		EACH	SETTING SALVAGED POSTS	675.61			

PROJECT NAME: **SPRINGFIELD**
PROJECT NUMBER: **STP 016-2 (10)S**

FILE NAME: **\00B124\structures\sb124qty.xls**
PROJECT MANAGER: **R. R. WHITCOMB**
DESIGNED BY: **G. ROY**
QUANTITY SHEET #2

PLOT DATE: **07/12/2004**
DRAWN BY: **G. ROY**
CHECKED BY: **R. R. WHITCOMB**
SHEET **5** OF **72**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA±	AREA±	TYPE	(T)/(P)	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
1	O'NEIL, FRANCES W.	14	10+59.682 LT.	11+90.370 LT.			CONST.	(T)	575 S.F.						INCLUDES EROSION CONTROL & PDF
			10+64.438 LT.	11+90.370 LT.			INSTALL & MAINTAIN	(P)	.10A						SOIL NAILS & RETAINING WALL
															4485 S.F.±
2	BISHOP, THOMAS S. & MABEL E.	15	20+29.495 RT.	20+47.937 RT.			UTILITY EASE.	(T)							RELOCATE POWER LINES, INCL. GUY & POLE
			20+29.670 RT.	20+46.600 RT.			CONST.	(T)	120 S.F.						INCLUDES EROSION CONTROL & PDF
			20+35.644 RT.	20+45.323 RT.			DITCH	(P)	75 S.F.						
			20+25.000 RT.				DRIVE	(T)							GRAVEL 18'
3	CENTRAL VERMONT PUBLIC SERVICE CORPORATION														UTILITY
4	VERMONT TELEPHONE COMPANY														UTILITY

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION	DATE

PLAN LEGEND

- EXISTING RIGHT-OF-WAY
- TAKING WITH ACCESS
- TAKING WITHOUT ACCESS
- CLEAR ZONE (CZ)
- PROPERTY LINE (P L)
- TOE OF SLOPE
- TOP OF CUT
- SLOPE RIGHT (SR (P))
- CONSTRUCTION RIGHT (CONST. (T))

(P)	-PERMANENT
(T)	-TEMPORARY
DR.	-DRAINAGE RIGHT
DIT.	-DITCHING RIGHT
CH.	-CHANNEL RIGHT
DRIVE	-DRIVE RIGHT
CUL.	-CULVERT RIGHT
C&T	-CLEARING & TRIMMING RIGHT
SR	-SLOPE RIGHT
UE	-UTILITY EASEMENT

APPROVED: ROGER P. DUMAS DATE: 06-02-04
CHIEF, PLANS & TITLES

JUN 0 2 2004

06/01/04

PROJECT NAME: **SPRINGFIELD**
PROJECT NUMBER: **STP 016-2(10)S**

FILE NAME: 0
PROJECT LEADER: R. WHITCOMB
DESIGNED BY: GASTON ROY
R.O.W. DETAIL SHEET #1

PLOT DATE: 06/02/04
DRAWN BY: G. ROY
CHECKED BY:
SHEET 6 OF 72

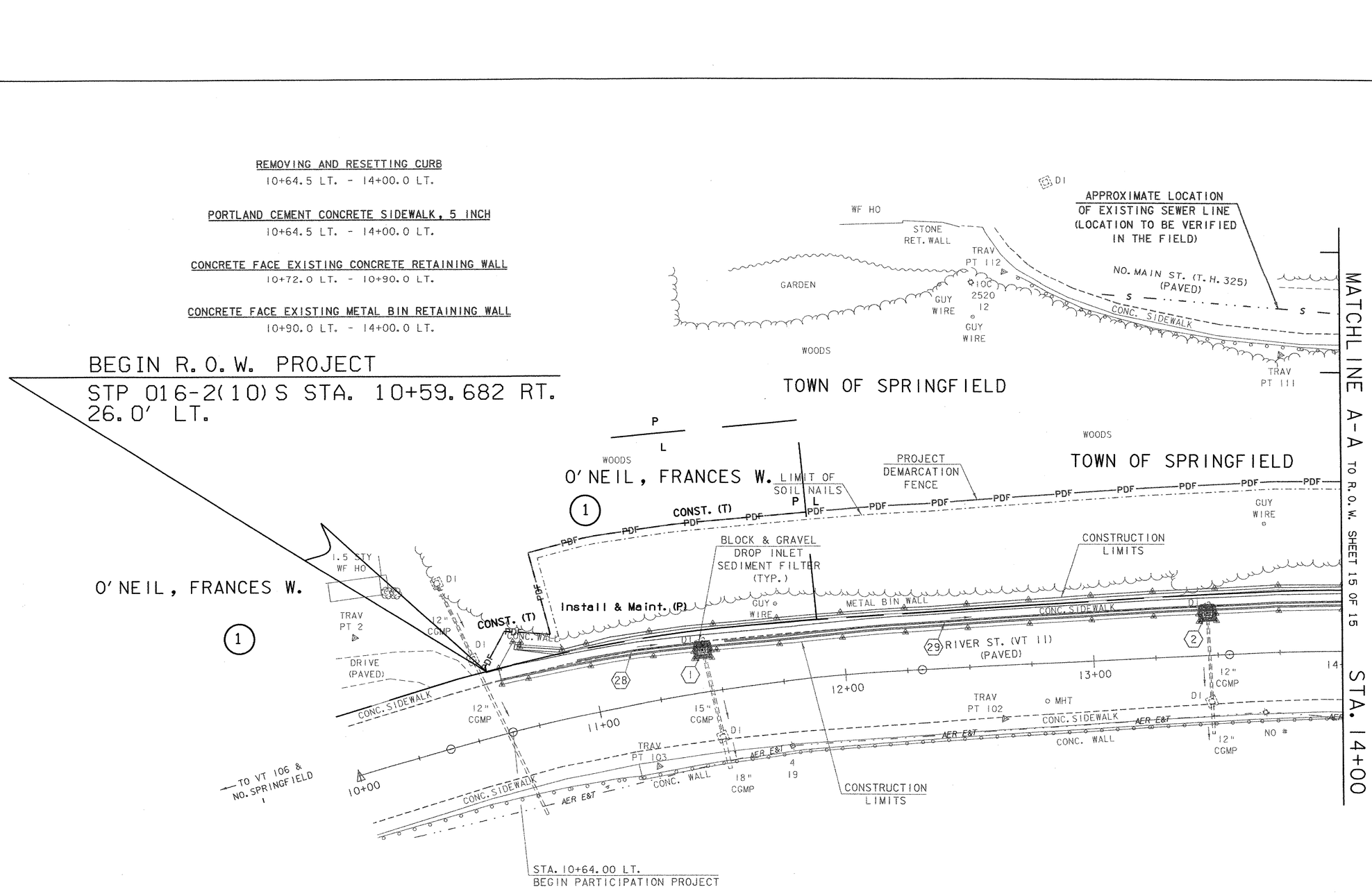
REMOVING AND RESETTING CURB
10+64.5 LT. - 14+00.0 LT.

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
10+64.5 LT. - 14+00.0 LT.

CONCRETE FACE EXISTING CONCRETE RETAINING WALL
10+72.0 LT. - 10+90.0 LT.

CONCRETE FACE EXISTING METAL BIN RETAINING WALL
10+90.0 LT. - 14+00.0 LT.

BEGIN R.O.W. PROJECT
STP 016-2(10)S STA. 10+59.682 RT. 26.0' LT.



SEE DRAINAGE DETAIL SHEET
FOR DRAINAGE PIPE INFORMATION

NOTE:
UNDERGROUND UTILITIES ARE NOT SHOWN.

JUN 02 2004

THIS SHEET IS FOR R.O.W. PURPOSES ONLY.

FOR DRAINAGE DETAILS:
SEE R.O.W. SHEET 6,9,10,11 OF 15

FOR EROSION CONTROL DETAILS:
SEE R.O.W. SHEET 11 OF 15

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE TOWN OF SPRINGFIELD'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

LAYOUT SHEET (1)

SCALE: 1" = 20'-0"
20 0 20

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124101.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 01-JUN-2004
DRAWN BY: G. ROY
CHECKED BY:

N

VT STATE PLANE GRID

MATCHLINE A-A

TO R.O.W. SHEET 14 OF 15

STA. 14+00

STA. 24+00.00
END PARTICIPATION PROJECT

PROJECT DEMARCATION FENCE

TOWN OF SPRINGFIELD

BM 2
RRSIT
ELEV. 478.753

GUY WIRE

EXISTING CONC./STONE HEADWALL

SILT FENCE

CONSTRUCTION LIMITS

STA. 22+00.00 RT.
END NON-PARTICIPATION PROJECT

EROSION MATTING

APPROXIMATE LOCATION OF EXISTING SEWER LINE (LOCATION TO BE VERIFIED IN THE FIELD)

PROJECT DEMARCATION FENCE

CONSTRUCTION LIMITS

DITCH LINED WITH STONE FILL, TYPE I

SILT FENCE (TYP.)

WOODS

24" CGMP

M. PINE

LIMIT OF SOIL NAILS

BLOCK & GRAVEL DROP INLET SEDIMENT FILTER (TYP.)

CONSTRUCTION LIMITS

TOWN OF SPRINGFIELD

NEW RIDGE LINE

TRAV PT 200

TRAV PT 201

SILT FENCE (TYP.)

NO. MAIN ST. (T.H. 325) (PAVED)

METAL BIN WALL

CONC. SIDEWALK

CONC. WALL

RIVER ST. (VT 11) (PAVED)

TRAV PT 101

TRAV PT 120

TRAV PT 100

TRAV PT. 3

CONSTRUCTION LIMITS

18" CGMP

MAILBOX BASE

PARKING AREA (PAVED)

CHAIN-LINK FENCE

TEMPORARY PUSH BRACE

BM 1
DISK IN CONC. ABUT.
ELEV. 434.880

P L

STA. 20+30.00 RT.
BEGIN NON-PARTICIPATION PROJECT

REMOVE AND REPLACE WITH NEW POLE AND GUY WIRE BY CVPS AFTER WALL REMOVAL

CONST. (T)

DITCH (P)

BISHOP, THOMAS S. & MABEL E.
(2)

Utility Ease. (T)

STA. 20+13.56
BEGIN PARTICIPATION PROJECT

WOOD STEPS

STONE WALL

TEMPORARY WIRE GUY

DRIVE GRAVEL

DRIVE (T)

TEMPORARY POLE

CONC. WALL

12" RCP

36" RCP

15" CGMP

MHS

MHT

APPROXIMATE TEMPORARY AERIAL RELOCATION ROUTE BY CVPS
STA. 17+71.00 LT.
END PARTICIPATION PROJECT

TO US 5 & I-91

JUN 02 2004

THIS SHEET IS FOR R.O.W. PURPOSES ONLY.

FOR DRAINAGE DETAILS:
SEE R.O.W. SHEET 7,8,9,10 OF 15

FOR EROSION CONTROL DETAILS:
SEE R.O.W. SHEET 12 OF 15

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES P/L ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE TOWN OF SPRINGFIELD'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

SEE DRAINAGE DETAIL SHEET FOR DRAINAGE PIPE INFORMATION

NOTE:
UNDERGROUND UTILITIES ARE NOT SHOWN.

CONCRETE FACE EXISTING METAL BIN RETAINING WALL
14+00.0 LT. - 16+75.0 LT.

DELETE THIS ITEM W/ APPROVED REDESIGN - VALUE ENGINEERING
~~CONSTRUCT REINFORCED CONCRETE RETAINING WALL~~
~~16+75.0 LT. - 16+94.3 LT.~~

CONCRETE FACE EXISTING CONCRETE RETAINING WALL
16+75.0 ~~16+94.3 LT.~~ - 17+27.1 LT.

CONSTRUCT REINFORCED CONCRETE STEPS
17+27.1 LT. - 17+32.5 LT.

CONSTRUCT DITCH WITH STONE FILL, TYPE I
20+35.6 RT. - 22+00.0 RT.

CONSTRUCT 10' PAVED APRON
20+25 RT.

COLD PLANING - BIT. PAVEMENT
20+13.56 - 24+00.00

REMOVAL OF EXISTING RAILING
20+54.6 LT. - 20+79.4 LT.

METAL HAND RAILING
20+54.6 LT. - 20+79.4 LT.

REMOVING AND RESETTING CURB
14+00.0 LT. - 17+31.1 LT.
20+55.7 LT. - 23+53.7 LT.

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
14+00.0 LT. - 17+32.4 LT.
20+54.2 LT. - 23+53.7 LT.

REMOVING AND RESET GUARD RAIL
20+87.5 LT. - 23+53.7 LT.

END R.O.W. PROJECT
STP 016-2(10)S STA. 17+85.079
29.9' LT.

SCALE: 1" = 20'-0"
20 0 20

LAYOUT SHEET (2)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124102.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 01-JUN-2004
DRAWN BY: G. ROY
CHECKED BY:

GPS CONTROL POINTS

HVCTRL # 1

STANDARD DISK STAMPED

HANDLY (NOT STAMPED)

N = 291658.068
E = 1644850.660
ELEV. = 0.000

TO REACH FROM THE INTERSECTION OF VT ROUTES 11 AND 106 IN SPRINGFIELD GO SOUTHEAST ALONG VT ROUTE 11 FOR 0.5 MI (0.8 KM) TO A CONCRETE SPILLWAY CARRYING THE BLACK RIVER AND THE MARK ON THE RIGHT.

THE STATION IS LOCATED 17.5 M (57.4 FT) WEST SOUTHWEST OF AND 2 M (6.6 FT) LOWER THAN THE SOUTHWEST EDGE OF PAVEMENT OF VT ROUTE 11, 7.2 M (23.6 FT) SOUTHWEST OF POLE 5A, 0.9 M (3.0 FT) WEST SOUTHWEST OF THE NORTHWEST CORNER OF A SINGLE STORY BUILDING, AND 1.2 M (3.9 FT) EAST OF THE WEST EDGE OF THE CONGRETE SPILLWAY FOR THE BLACK RIVER.

- DESCRIPTION PROVIDED BY VERMONT AGENCY OF TRANSPORTATION GEODETIC SURVEY UNIT
- TO ALLOW THE STATE PLANE COORDINATES TO FIT THE AGENCY DESIGN PLANE, SUBTRACT 200,000 FROM THE NORTHING AND 1,600,000 FROM THE EASTING

HVCTRL # 2

STANDARD DISK STAMPED

ONEILL

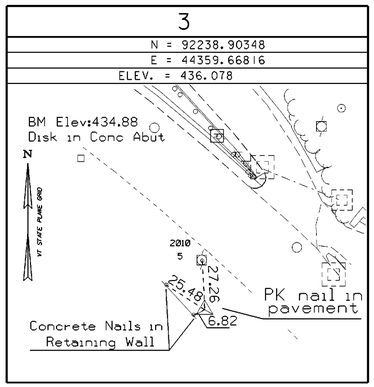
N = 292646.170
E = 1643742.513
ELEV. = 450.245

TO REACH FROM THE INTERSECTION OF VT ROUTES 11 AND 106 IN SPRINGFIELD GO SOUTHEAST ALONG VT ROUTE 11 FOR 0.25 MI (0.40 KM) TO THE MARK ON THE LEFT.

OWNERSHIP - FRANCES W. ONEILL 108 VT RT 11 RIVER STREET, SPRINGFIELD, VT

THE STATION IS LOCATED 10.0 M (32.8 FT) NORTH NORTHEAST OF AND 1.0 M (3.3 FT) HIGHER THAN THE NORTHEAST EDGE OF PAVEMENT OF VT ROUTE 11, 8.3 M (27.2 FT) EAST SOUTHEAST OF THE CENTERLINE OF A PAVED DRIVE, 5.5 METERS (18.0 FT) SOUTH OF THE SOUTHWEST CORNER OF A 1½ STORY HOUSE (#108) AND 6.2 M (20.3 FT) WEST SOUTHWEST OF THE SOUTHEAST CORNER OF HOUSE #108

TRAVERSE TIES



- MAIN TRAVERSE COMPLETED 9/29/00 surveyed by R. Gilman (P.C.) R. Bullock

ALIGNMENT TIES

VT 11 POB	VT 11 PC NO. 1	VT 11 PT NO. 1	VT 11 PC NO. 2	VT 11 PT NO. 2	VT 11 POE
STA. 10+00.00	STA. 10+38.11	STA. 12+30.89	STA. 13+54.63	STA. 17+51.08	STA. 17+95.00
N = 92595.4953	N = 92589.4251	N = 92537.7853	N = 92491.4761	N = 92275.9648	N = 92245.2574
E = 43721.0857	E = 43758.7085	E = 43944.0225	E = 44058.7760	E = 44388.5286	E = 44419.9332

T.H. 325 POB	T.H. 325 PC NO. 1	T.H. 325 PT NO. 1	T.H. 325 PC NO. 2	T.H. 325 PT NO. 2	T.H. 325 PC NO. 3	T.H. 325 PT NO. 3	T.H. 325 POE
STA. 20+00.00	STA. 20+23.84	STA. 20+68.57	STA. 21+61.80	STA. 22+23.89	STA. 22+95.24	STA. 23+65.92	STA. 24+00.00
N = 92266.2962	N = 92289.0690	N = 92330.9949	N = 92401.4787	N = 92453.4941	N = 92518.3064	N = 92567.4105	N = 92581.8504
E = 44398.4168	E = 44405.4722	E = 44396.6866	E = 44335.6660	E = 44302.1383	E = 44272.2929	E = 44223.4816	E = 44192.6113

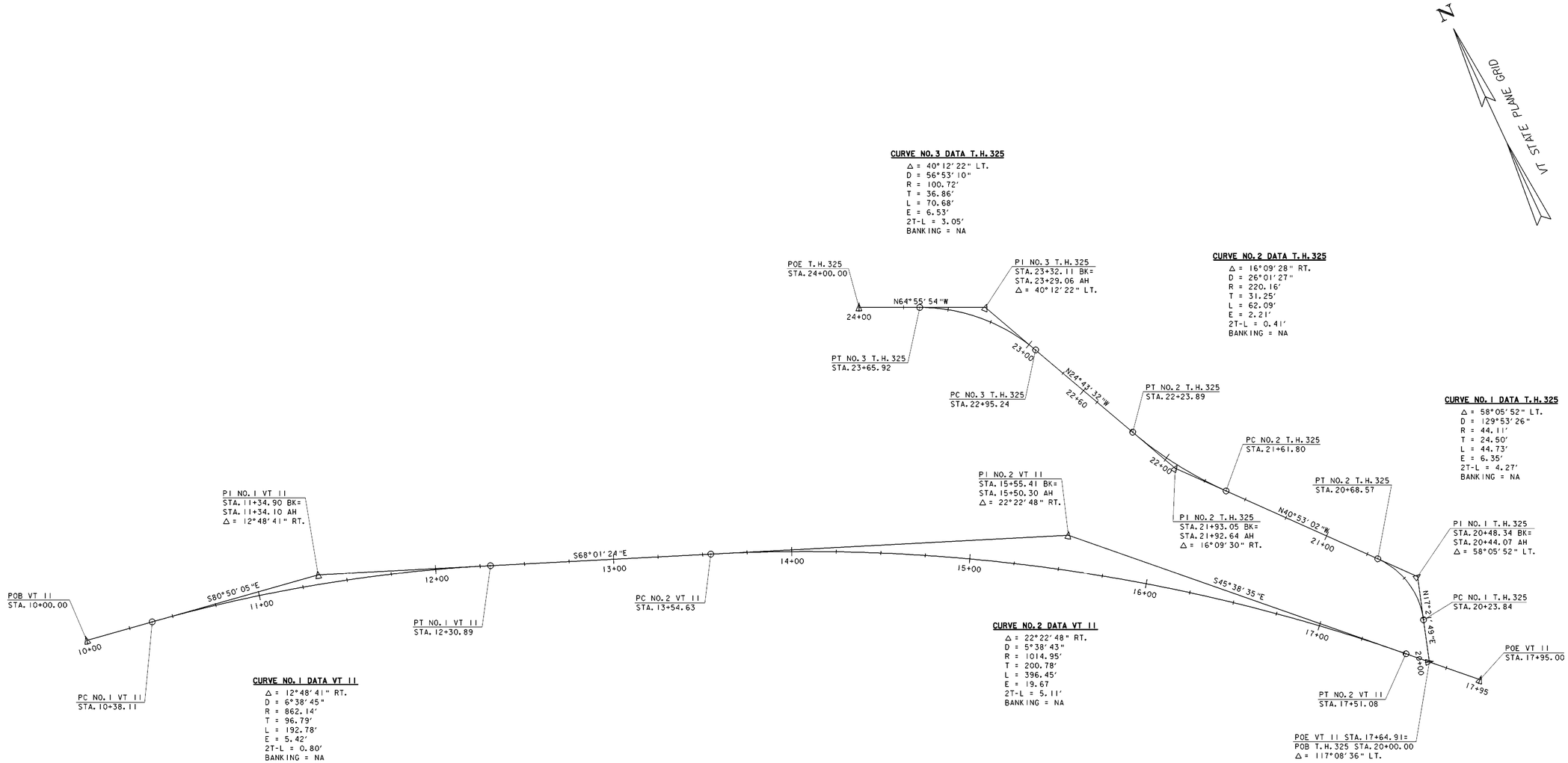
DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83/96
ADJUSTMENT NONE

TIE SHEET

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124tie.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: R. BULLOCK
CHECKED BY: G. ROY



SCALE: 1" = 30'-0"
30 0 30

ALIGNMENT SHEET

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124\Structures\sb124all.i	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 10 OF 72

COLD PLANING - BIT. CONC. PAVEMENT

10+64.5 LT. - 14+00.0 LT.

REMOVING ~~AND RESETTING CURB~~ INSTALLED NEW GRANITE CURB PER CO #4

10+13.5 RT. - 10+28.5 RT.
10+13.5 LT. - 10+28.5 LT.
10+64.5 LT. - 14+00.0 LT.

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH

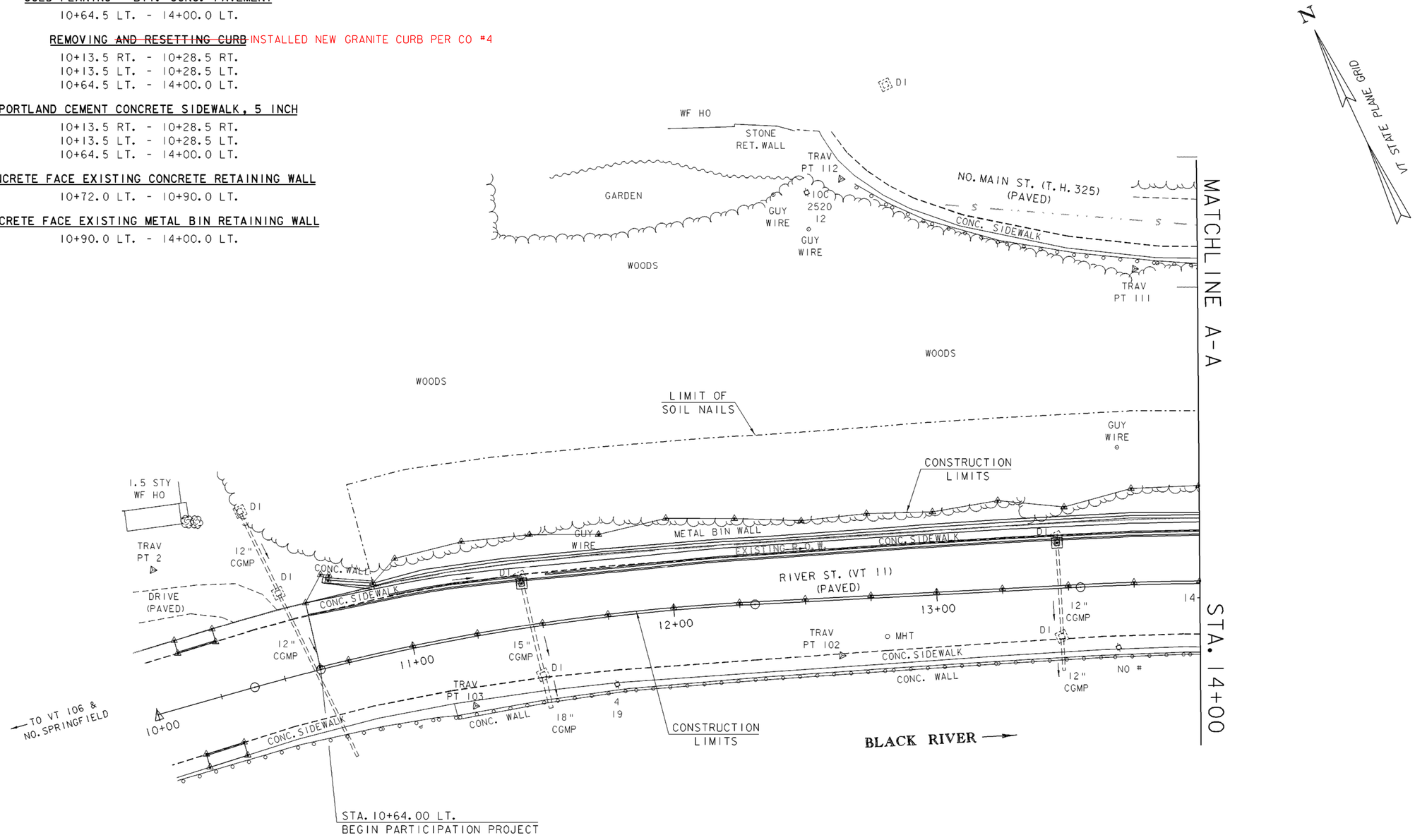
10+13.5 RT. - 10+28.5 RT.
10+13.5 LT. - 10+28.5 LT.
10+64.5 LT. - 14+00.0 LT.

CONCRETE FACE EXISTING CONCRETE RETAINING WALL

10+72.0 LT. - 10+90.0 LT.

CONCRETE FACE EXISTING METAL BIN RETAINING WALL

10+90.0 LT. - 14+00.0 LT.



LAYOUT SHEET (1)

SCALE: 1" = 20'-0"
20 0 20

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124\Structures\sb124101.1	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 11 OF 72

N

VT STATE PLANE GRID

MATCHLINE A-A

STA. 24+00.00
END PARTICIPATION PROJECT

BM 2
RRSIT
ELEV. 478.753

GUY WIRE

EXISTING CONC./STONE HEADWALL

421

24+00

TRAV PT 110

MHS

CONSTRUCTION LIMITS

EXISTING R.O.W.

DI 23+00

TRAV PT 120

WOODS

24" CGMP

M. PINE

TRAV PT 100

LIMIT OF SOIL NAILS

DI

22+00

STA. 22+00.00 RT.
END NON-PARTICIPATION PROJECT

CONSTRUCTION LIMITS

TRAV PT 200

WOODS

METAL BIN WALL

NO. MAIN ST. (T. H. 325) (PAVED)

21+00

CONC. SIDEWALK

CONC. WALL

TRAV PT 201

1-2

2'-0" STONE FILL, TYPE II

GUY WIRE

16A

STA. 20+30.00 RT.
BEGIN NON-PARTICIPATION PROJECT

WF HO

WOOD STEPS

STONE WALL

STA. 20+13.56
BEGIN PARTICIPATION PROJECT

DRIVE GRAVEL

12" RCP

MHS

36" RCP

CONC. WALL

DI

MHT

15" CGMP

17+95

TO US 5 & I-91

TRAV PT. 3

STA. 17+77.50 LT.
END PARTICIPATION PROJECT

CONC. SIDEWALK

DI

24" CGMP

15+00

TRAV PT 101

RIVER ST. (VT 11) (PAVED)

16+00

CONC. WALL

NO #

CONSTRUCTION LIMITS

18" CGMP

GV

17+00

MAILBOX BASE

CHAIN-LINK FENCE

PARKING AREA (PAVED) 2010

BLACK RIVER

BM 1
DISK IN CONC. ABUT.
ELEV. 434.880

REMOVED/RESET GRANITE CURB INSTALLED NEW SUBBASE AND CONCRETE SIDEWALK AT THIS LOCATION

STA. 14+00

CONCRETE FACE EXISTING METAL BIN RETAINING WALL
14+00.0 LT. - 16+75.0 LT.

CONSTRUCT REINFORCED CONCRETE RETAINING WALL
16+75.0 LT. - 16+94.3 LT.

CONCRETE FACE EXISTING CONCRETE RETAINING WALL
16+94.3 LT. - 17+27.1 LT.

CONSTRUCT REINFORCED CONCRETE STEPS -SEE DETAIL- SHEET #51
17+27.1 LT. - 17+32.5 LT.

THIS IS STATIONING FOR TYPE I STONE FILL @ DITCH ALONG NO. MAIN STREET - SHEET #8

CONSTRUCT DITCH WITH STONE FILL, TYPE II
20+35.6 RT. - 22+00.0 RT.?

CONSTRUCT 10' PAVED APRON
20+25 RT.

COLD PLANING - BIT. CONC. PAVEMENT
14+00.0 LT. - 17+77.5 LT.
20+23.0 - 24+00.0

REMOVAL OF EXISTING RAILING
20+54.6 LT. - 20+79.4 LT.

METAL HAND RAILING -SEE DETAIL- SHEET #51
20+54.6 LT. - 20+79.4 LT.

REMOVING AND RESETTING CURB
14+00.0 LT. - 17+31.1 LT.
17+54.7 RT. - 17+63.8 RT.
17+77.5 LT. - 17+92.5 LT.
17+77.5 RT. - 17+92.5 RT.
20+55.7 LT. - 23+53.7 LT.

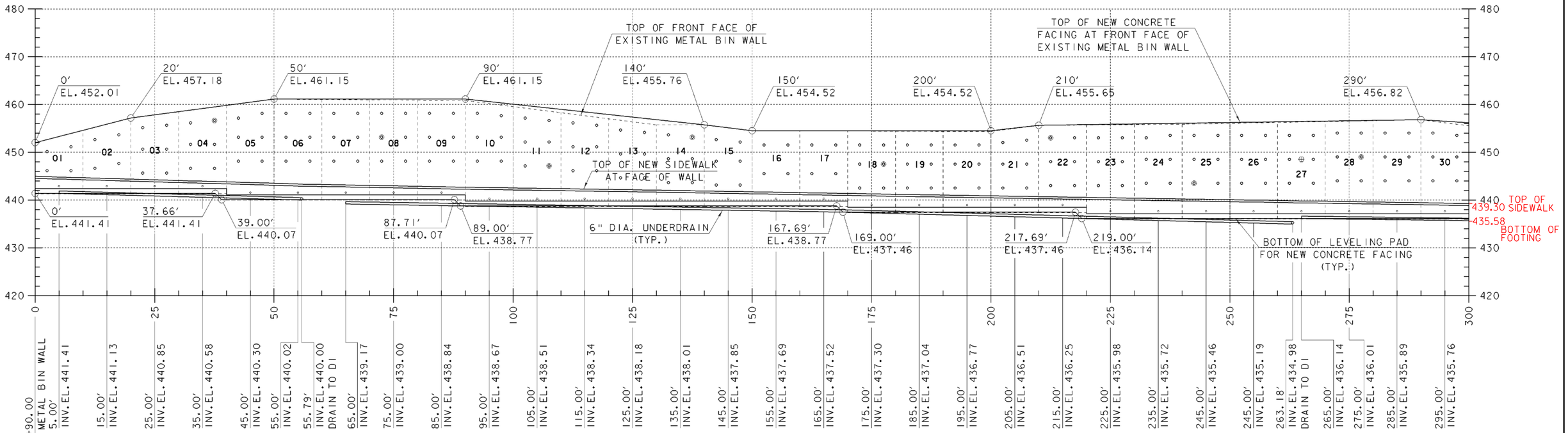
PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
14+00.0 LT. - 17+32.4 LT.
17+54.7 RT. - 17+63.8 RT.
17+77.5 LT. - 17+92.5 LT.
17+77.5 RT. - 17+92.5 RT.
20+54.2 LT. - 23+53.7 LT.

REMOVING AND RESET GUARD RAIL
20+87.5 LT. - 23+53.7 LT.

SCALE: 1" = 20'-0"
20 0 20

LAYOUT SHEET (2)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124\Structures\sb124102.1	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 12 OF 72



LEGEND

- ○ INDICATES SOIL NAIL
- ◎ INDICATES SOIL NAIL TO BE PROOF TESTED
- ⊕ INDICATES LOCATION OF VERIFICATION TEST OF SACRIFICIAL SOIL NAIL

NOTES:

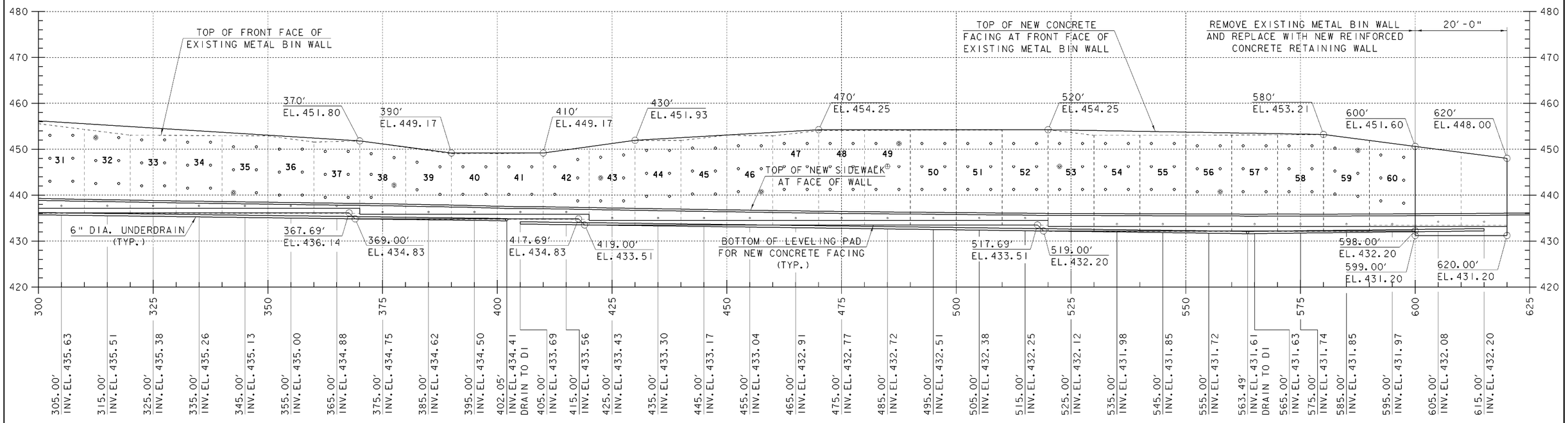
1. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND GIVEN TO THE FRONT FACE OF EXISTING METAL BIN WALLS UNLESS OTHERWISE NOTED ON THE PLANS.
2. INVERT ELEVATIONS ARE SHOWN FOR THE 6" DIA. PVC PIPE AT THE 4" DIA. PVC PIPE LOCATIONS.

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

VT 11 BIN WALL PROFILE (1)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00bl24/Structures/sbl24pfl.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 13 OF 72



LEGEND

- ○ INDICATES SOIL NAIL
- ◎ INDICATES SOIL NAIL TO BE PROOF TESTED
- ⊕ INDICATES LOCATION OF VERIFICATION TEST OF SACRIFICIAL SOIL NAIL

NOTES:

1. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND GIVEN TO THE FRONT FACE OF EXISTING METAL BIN WALLS UNLESS OTHERWISE NOTED ON THE PLANS.
2. INVERT ELEVATIONS ARE SHOWN FOR THE 6" DIA. PVC PIPE AT THE 4" DIA. PVC PIPE LOCATIONS.

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

VT 11 BIN WALL PROFILE (2)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124/Structures/sb124pf2.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 14 OF 72

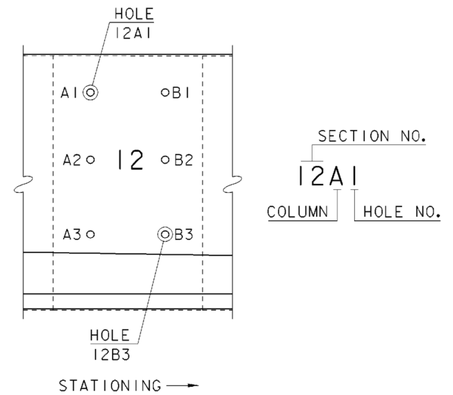
HOLE NO.	DISTANCE	ELEVATION	NAIL LENGTH	TEST HOLE
01A1	2.5	450.15	30	
01A2	2.5	446.15	21	
01B1	7.5	451.15	30	
01B2	7.5	446.15	21	
02A1	12.5	452.65	30	
02A2	12.5	446.65	21	
02B1	17.5	453.65	30	
02B2	17.5	447.65	21	
03A1	22.5	455.15	30	
03A2	22.5	450.65	25	
03A3	22.5	445.65	20	
03B1	27.5	455.65	30	
03B2	27.5	450.65	25	
03B3	27.5	445.65	20	
04A1	32.5	456.15	30	
04A2	32.5	451.65	25	
04A3	32.5	446.65	20	
04B1	37.5	456.65	30	X
04B2	37.5	451.65	25	
04B3	37.5	446.65	20	
05A1	42.5	457.15	30	
05A2	42.5	453.15	25	
05A3	42.5	448.15	20	
05B1	47.5	458.15	30	
05B2	47.5	453.15	25	
05B3	47.5	448.15	20	
06A1	52.5	458.15	30	
06A2	52.5	453.15	25	
06A3	52.5	448.15	20	
06B1	57.5	458.15	30	
06B2	57.5	453.15	25	
06B3	57.5	448.15	20	
07A1	62.5	458.15	30	
07A2	62.5	453.15	25	
07A3	62.5	448.15	20	
07B1	67.5	458.15	30	
07B2	67.5	453.15	25	
07B3	67.5	448.15	20	
08A1	72.5	458.15	30	
08A2	72.5	453.15	25	X
08A3	72.5	448.15	20	
08B1	77.5	458.15	30	
08B2	77.5	453.15	25	
08B3	77.5	448.15	20	
09A1	82.5	458.15	30	
09A2	82.5	453.15	25	
09A3	82.5	448.15	20	
09B1	87.5	458.15	30	
09B2	87.5	453.15	25	
09B3	87.5	448.15	20	
10A1	92.5	458.15	30	
10A2	92.5	453.15	25	
10A3	92.5	448.15	20	
10B1	97.5	457.65	30	
10B2	97.5	453.15	25	
10B3	97.5	448.15	20	
11A1	102.5	457.15	30	
11A2	102.5	452.15	25	
11A3	102.5	447.15	20	
11B1	107.5	456.65	30	
11B2	107.5	452.15	25	
11B3	107.5	447.15	20	X

HOLE NO.	DISTANCE	ELEVATION	NAIL LENGTH	TEST HOLE
12A1	112.5	456.15	30	
12A2	112.5	451.15	25	
12A3	112.5	446.15	20	
12B1	117.5	455.65	30	
12B2	117.5	451.15	25	
12B3	117.5	446.15	20	
13A1	122.5	454.65	30	
13A2	122.5	449.65	25	
13A3	122.5	444.65	20	
13B1	127.5	454.15	30	
13B2	127.5	449.65	25	
13B3	127.5	444.65	20	
14A1	132.5	453.65	30	
14A2	132.5	448.65	25	
14A3	132.5	443.65	20	
14B1	137.5	453.15	30	X
14B2	137.5	448.65	25	
14B3	137.5	443.65	20	
15A1	142.5	452.65	30	
15A2	142.5	448.15	25	
15A3	142.5	443.15	20	
15B1	147.5	452.15	30	
15B2	147.5	448.15	25	
15B3	147.5	443.15	20	
16A1	152.5	451.52	30	
16A2	152.5	445.52	21	
16B1	157.5	451.52	30	
16B2	157.5	445.52	21	
17A1	162.5	451.52	30	
17A2	162.5	445.52	21	
17B1	167.5	451.52	30	
17B2	167.5	445.52	21	
18A1	172.5	451.52	30	
18A2	172.5	447.52	25	
18A3	172.5	442.52	20	
18B1	177.5	451.52	30	
18B2	177.5	447.52	25	X
18B3	177.5	442.52	20	
19A1	182.5	451.52	30	
19A2	182.5	447.52	25	
19A3	182.5	442.52	20	
19B1	187.5	451.52	30	
19B2	187.5	447.52	25	
19B3	187.5	442.52	20	
20A1	192.5	451.52	30	
20A2	192.5	447.52	25	
20A3	192.5	442.52	20	
20B1	197.5	451.52	30	
20B2	197.5	447.52	25	
20B3	197.5	442.52	20	
21A1	202.5	452.02	30	
21A2	202.5	447.52	25	
21A3	202.5	442.52	20	
21B1	207.5	452.52	30	
21B2	207.5	447.52	25	
21B3	207.5	442.52	20	
22A1	212.5	453.02	30	X
22A2	212.5	448.02	25	
22A3	212.5	443.02	20	
22B1	217.5	453.02	30	
22B2	217.5	448.02	25	
22B3	217.5	443.02	20	

HOLE NO.	DISTANCE	ELEVATION	NAIL LENGTH	TEST HOLE
23A1	222.5	453.02	30	
23A2	222.5	448.02	25	
23A3	222.5	443.02	20	
23B1	227.5	453.02	30	
23B2	227.5	448.02	25	
23B3	227.5	443.02	20	
24A1	232.5	453.02	30	
24A2	232.5	448.52	25	
24A3	232.5	443.52	20	
24B1	237.5	453.52	30	
24B2	237.5	448.52	25	
24B3	237.5	443.52	20	
25A1	242.5	453.52	30	
25A2	242.5	448.52	25	
25A3	242.5	443.52	20	X
25B1	247.5	453.52	30	
25B2	247.5	448.52	25	
25B3	247.5	443.52	20	
26A1	252.5	453.52	30	
26A2	252.5	448.52	25	
26A3	252.5	443.52	20	
26B1	257.5	453.52	30	
26B2	257.5	448.52	25	
26B3	257.5	443.52	20	
27A1	262.5	453.52	30	
27A2	262.5	448.52	25	
27A3	262.5	443.52	20	
27B1	267.5	453.52	30	
27B2	267.5	448.52	25	
27B3	267.5	443.52	20	
28A1	272.5	454.02	30	
28A2	272.5	449.02	25	
28A3	272.5	444.02	20	
28B1	277.5	454.02	30	
28B2	277.5	449.02	25	X
28B3	277.5	444.02	20	
29A1	282.5	454.02	30	
29A2	282.5	449.02	25	
29A3	282.5	444.02	20	
29B1	287.5	454.02	30	
29B2	287.5	449.02	25	
29B3	287.5	444.02	20	
30A1	292.5	454.02	30	
30A2	292.5	449.02	25	
30A3	292.5	444.02	20	
30B1	297.5	453.52	30	
30B2	297.5	449.02	25	
30B3	297.5	444.02	20	
31A1	302.5	453.02	30	
31A2	302.5	448.02	25	
31A3	302.5	443.02	20	
31B1	307.5	453.02	30	
31B2	307.5	448.02	25	
31B3	307.5	443.02	20	
32A1	312.5	452.52	30	X
32A2	312.5	447.52	25	
32A3	312.5	442.52	20	
32B1	317.5	452.52	30	
32B2	317.5	447.52	25	
32B3	317.5	442.52	20	

HOLE NO.	DISTANCE	ELEVATION	NAIL LENGTH	TEST HOLE
33A1	322.5	452.02	30	
33A2	322.5	447.02	25	
33A3	322.5	442.02	20	
33B1	327.5	452.02	30	
33B2	327.5	447.02	25	
33B3	327.5	442.02	20	
34A1	332.5	451.52	30	
34A2	332.5	446.52	25	
34A3	332.5	441.52	20	
34B1	337.5	451.52	30	
34B2	337.5	446.52	25	
34B3	337.5	441.52	20	
35A1	342.5	450.52	30	
35A2	342.5	445.52	25	
35A3	342.5	440.52	20	X
35B1	347.5	450.52	30	
35B2	347.5	445.52	25	
35B3	347.5	440.52	20	
36A1	352.5	450.02	30	
36A2	352.5	445.02	25	
36A3	352.5	440.02	20	
36B1	357.5	450.02	30	
36B2	357.5	445.02	25	
36B3	357.5	440.02	20	
37A1	362.5	449.52	30	
37A2	362.5	444.52	25	
37A3	362.5	439.52	20	
37B1	367.5	449.52	30	
37B2	367.5	444.52	25	
37B3	367.5	439.52	20	
38A1	372.5	449.02	30	
38A2	372.5	444.52	25	
38A3	372.5	439.52	20	
38B1	377.5	448.17	30	
38B2	377.5	442.17	21	X
39A1	382.5	447.17	30	
39A2	382.5	441.17	21	
39B1	387.5	446.17	30	
39B2	387.5	440.17	21	
40A1	392.5	446.17	30	
40A2	392.5	440.17	21	
40B1	397.5	446.17	30	
40B2	397.5	440.17	21	
41A1	402.5	446.17	30	
41A2	402.5	440.17	21	
41B1	407.5	446.17	30	
41B2	407.5	440.17	21	
42A1	412.5	446.17	30	
42A2	412.5	440.17	21	
42B1	417.5	447.75	30	
42B2	417.5	443.75	25	
42B3	417.5	438.75	20	
43A1	422.5	448.25	30	
43A2	422.5	443.75	25	X
43A3	422.5	438.75	20	
43B1	427.5	448.75	30	
43B2	427.5	443.75	25	
43B3	427.5	438.75	20	
44A1	432.5	449.75	30	
44A2	432.5	444.75	25	
44A3	432.5	439.75	20	
44B1	437.5	449.75	30	
44B2	437.5	444.75	25	
44B3	437.5	439.75	20	

HOLE NO.	DISTANCE	ELEVATION	NAIL LENGTH	TEST HOLE
45A1	442.5	450.25	30	
45A2	442.5	445.25	25	
45A3	442.5	440.25	20	
45B1	447.5	450.25	30	
45B2	447.5	445.25	25	
45B3	447.5	440.25	20	
46A1	452.5	450.75	30	
46A2	452.5	445.75	25	
46A3	452.5	440.75	20	
46B1	457.5	450.75	30	
46B2	457.5	445.75	25	
46B3	457.5	440.75	20	X
47A1	462.5	451.25	30	
47A2	462.5	446.25	25	
47A3	462.5	441.25	20	
47B1	467.5	451.25	30	
47B2	467.5	446.25	25	
47B3	467.5	441.25	20	
48A1	472.5	451.25	30	
48A2	472.5	446.25	25	
48A3	472.5	441.25	20	
48B1	477.5	451.25	30	
48B2	477.5	446.25	25	
48B3	477.5	441.25	20	



HOLE NOMENCLATURE

NOTES:

DISTANCES ARE MEASURED FROM BEGINNING OF EXISTING METAL BIN WALL AT STATION 10+90.0 LT.

ELEVATIONS GIVEN ARE AT CENTER OF SOIL NAIL AT FRONT FACE OF EXISTING METAL BIN WALL.

HOLE STATIONS & ELEVATIONS (1)

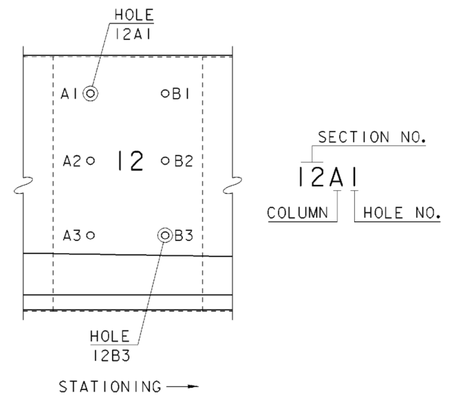
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00bl24/Structures/sbl24hsel.l
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 15 OF 72

NO SOIL NAILS INSTALLED DUE TO VALUE ENGINEERING CHANGE IN DESIGN-31ROCK ANCHORS INSTALLED

HOLE NO.	DISTANCE	ELEVATION	NAIL LENGTH	TEST HOLE
49A1	482.5	451.25	30	
49A2	482.5	446.25	25	
49A3	482.5	441.25	20	
49B1	487.5	451.25	30	X
49B2	487.5	446.25	25	
49B3	487.5	441.25	20	
50A1	492.5	451.25	30	
50A2	492.5	446.25	25	
50A3	492.5	441.25	20	
50B1	497.5	451.25	30	
50B2	497.5	446.25	25	
50B3	497.5	441.25	20	
51A1	502.5	451.25	30	
51A2	502.5	446.25	25	
51A3	502.5	441.25	20	
51B1	507.5	451.25	30	
51B2	507.5	446.25	25	
51B3	507.5	441.25	20	
52A1	512.5	451.25	30	
52A2	512.5	446.25	25	
52A3	512.5	441.25	20	
52B1	517.5	451.25	30	
52B2	517.5	446.25	25	
52B3	517.5	441.25	20	
53A1	522.5	451.25	30	
53A2	522.5	446.25	25	X
53A3	522.5	441.25	20	
53B1	527.5	451.25	30	
53B2	527.5	446.25	25	
53B3	527.5	441.25	20	
54A1	532.5	451.25	30	
54A2	532.5	446.25	25	
54A3	532.5	441.25	20	
54B1	537.5	451.25	30	
54B2	537.5	446.25	25	
54B3	537.5	441.25	20	
55A1	542.5	451.25	30	
55A2	542.5	446.25	25	
55A3	542.5	441.25	20	
55B1	547.5	451.25	30	
55B2	547.5	446.25	25	
55B3	547.5	441.25	20	
56A1	552.5	450.75	30	
56A2	552.5	445.75	25	
56A3	552.5	440.75	20	
56B1	557.5	450.75	30	
56B2	557.5	445.75	25	
56B3	557.5	440.75	20	X
57A1	562.5	450.75	30	
57A2	562.5	445.75	25	
57A3	562.5	440.75	20	
57B1	567.5	450.75	30	
57B2	567.5	445.75	25	
57B3	567.5	440.75	20	
58A1	572.5	450.75	30	
58A2	572.5	445.75	25	
58A3	572.5	440.75	20	
58B1	577.5	450.75	30	
58B2	577.5	445.75	25	
58B3	577.5	440.75	20	

HOLE NO.	DISTANCE	ELEVATION	NAIL LENGTH	TEST HOLE
59A1	582.5	450.25	30	
59A2	582.5	445.25	25	
59A3	582.5	440.25	20	
59B1	587.5	449.75	30	X
59B2	587.5	444.75	25	
59B3	587.5	439.75	20	
60A1	592.5	448.75	30	
60A2	592.5	443.75	25	
60A3	592.5	438.75	20	
60B1	597.5	448.25	30	
60B2	597.5	443.25	25	
60B3	597.5	438.25	20	



HOLE NOMENCLATURE

NOTES:

DISTANCES ARE MEASURED FROM BEGINNING OF EXISTING METAL BIN WALL AT STATION 10+90.0 LT.

ELEVATIONS GIVEN ARE AT CENTER OF SOIL NAIL AT FRONT FACE OF EXISTING METAL BIN WALL.

SEE NOTE ON PREVIOUS PAGE REGARDING SOIL NAILS

HOLE STATIONS & ELEVATIONS (2)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124/Structures/sb124hse2.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 16 OF 72

ENERGY ABSORPTION ATTENUATOR (SAND FILLED BARRELS)
10+79.7 LT. - 10+93.1 LT.

TEMPORARY TRAFFIC BARRIER
10+93.7 LT. - 14+00.0 LT.

TEMPORARY 4" YELLOW LINE
10+63.6 RT. - 14+00.0 RT. (DOUBLE)

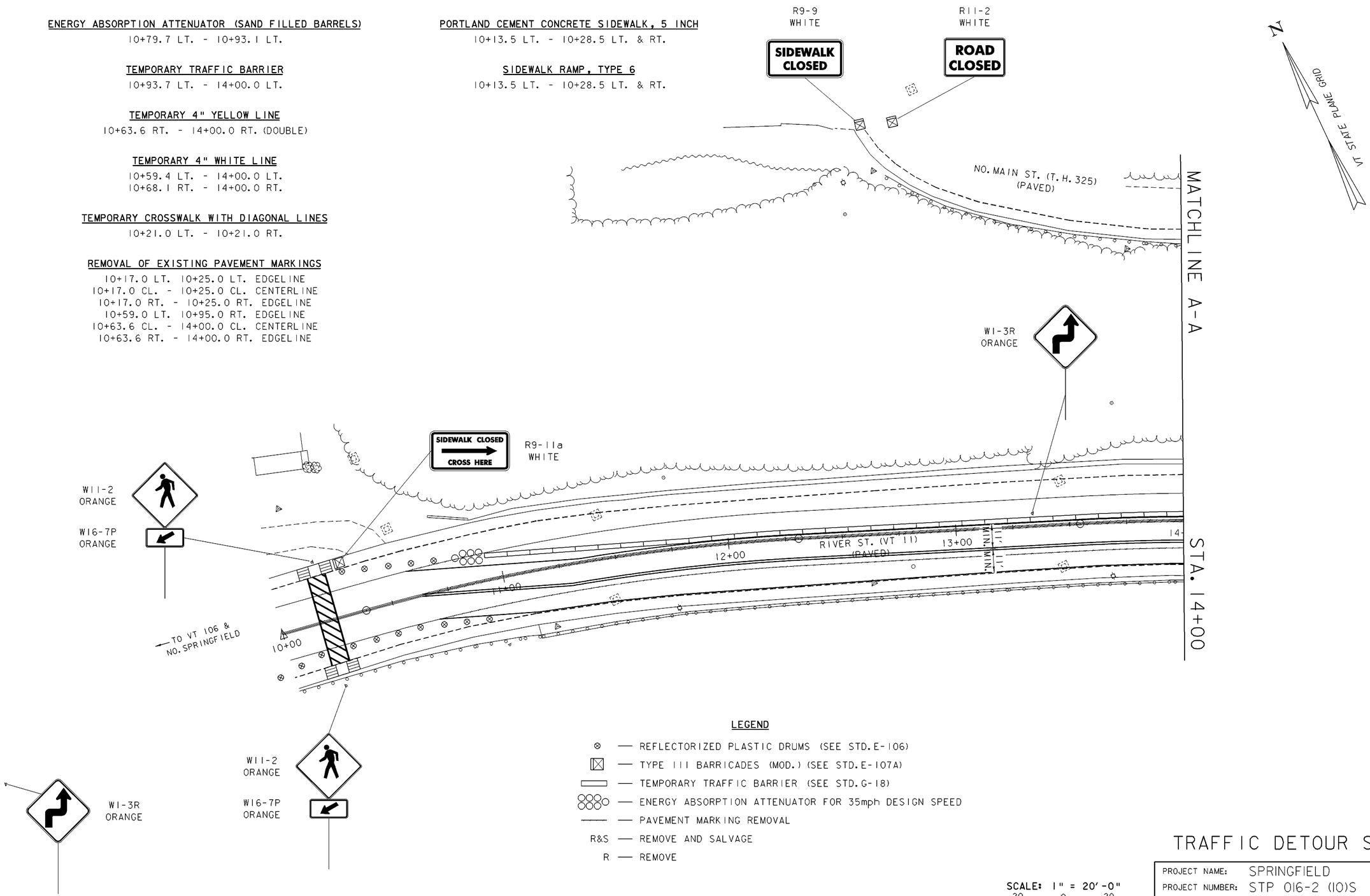
TEMPORARY 4" WHITE LINE
10+59.4 LT. - 14+00.0 LT.
10+68.1 RT. - 14+00.0 RT.

TEMPORARY CROSSWALK WITH DIAGONAL LINES
10+21.0 LT. - 10+21.0 RT.

REMOVAL OF EXISTING PAVEMENT MARKINGS
10+17.0 LT. 10+25.0 LT. EDGELINE
10+17.0 CL. - 10+25.0 CL. CENTERLINE
10+17.0 RT. - 10+25.0 RT. EDGELINE
10+59.0 LT. 10+95.0 RT. EDGELINE
10+63.6 CL. - 14+00.0 CL. CENTERLINE
10+63.6 RT. - 14+00.0 RT. EDGELINE

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
10+13.5 LT. - 10+28.5 LT. & RT.

SIDEWALK RAMP, TYPE 6
10+13.5 LT. - 10+28.5 LT. & RT.



LEGEND

⊗ — REFLECTORIZED PLASTIC DRUMS (SEE STD. E-106)
▨ — TYPE III BARRICADES (MOD.) (SEE STD. E-107A)
▭ — TEMPORARY TRAFFIC BARRIER (SEE STD. G-18)
○○○○ — ENERGY ABSORPTION ATTENUATOR FOR 35mph DESIGN SPEED
—— — PAVEMENT MARKING REMOVAL
R&S — REMOVE AND SALVAGE
R — REMOVE

SCALE: 1" = 20'-0"
20 0 20

TRAFFIC DETOUR SHEET (1)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124tdl.1		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	17 OF 72

ENERGY ABSORPTION ATTENUATOR (SAND FILLED BARRELS)
17+12.1 LT. - 17+25.6 LT.

TEMPORARY TRAFFIC BARRIER
14+00.0 LT. - 17+11.5 LT.

TEMPORARY 4" YELLOW LINE
14+00.0 RT. - 17+31.3 RT. (DOUBLE)

TEMPORARY 4" WHITE LINE
14+00.0 LT. - 17+31.3 LT.
14+00.0 RT. - 17+36.5 RT.

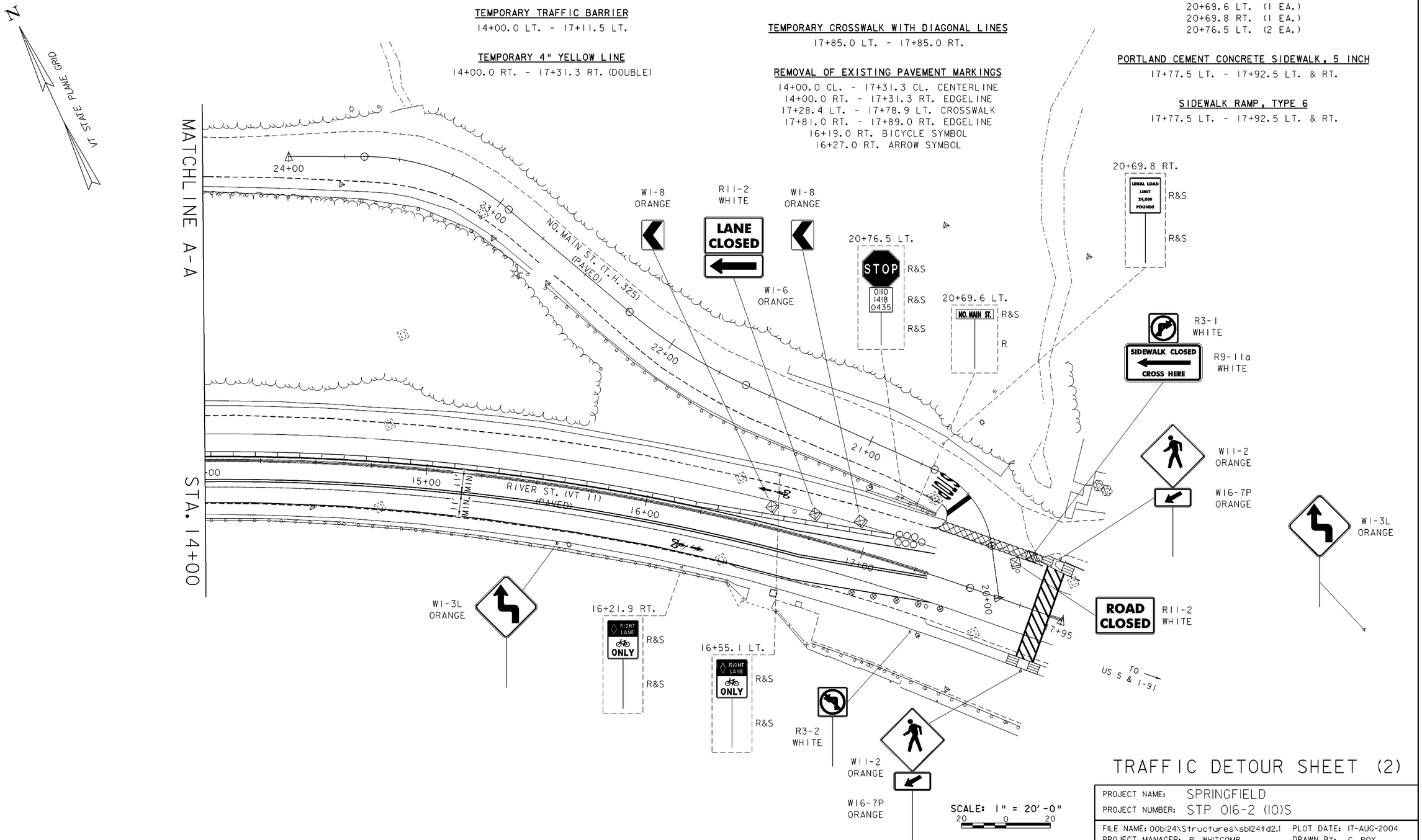
TEMPORARY CROSSWALK WITH DIAGONAL LINES
17+85.0 LT. - 17+85.0 RT.

REMOVAL OF EXISTING PAVEMENT MARKINGS
14+00.0 CL. - 17+31.3 CL. CENTERLINE
14+00.0 RT. - 17+31.3 RT. EDGELINE
17+28.4 LT. - 17+78.9 LT. CROSSWALK
17+81.0 RT. - 17+89.0 RT. EDGELINE
16+19.0 RT. BICYCLE SYMBOL
16+27.0 RT. ARROW SYMBOL

REMOVING SIGNS
16+21.9 RT. (1 EA.)
16+55.1 LT. (1 EA.)
20+69.6 LT. (1 EA.)
20+69.8 RT. (1 EA.)
20+76.5 LT. (2 EA.)

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
17+77.5 LT. - 17+92.5 LT. & RT.

SIDEWALK RAMP, TYPE 6
17+77.5 LT. - 17+92.5 LT. & RT.



SCALE: 1" = 20'-0"
20 0 20

TRAFFIC DETOUR SHEET (2)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124td2.1		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	18 OF 72

LEGEND

S — SALVAGE

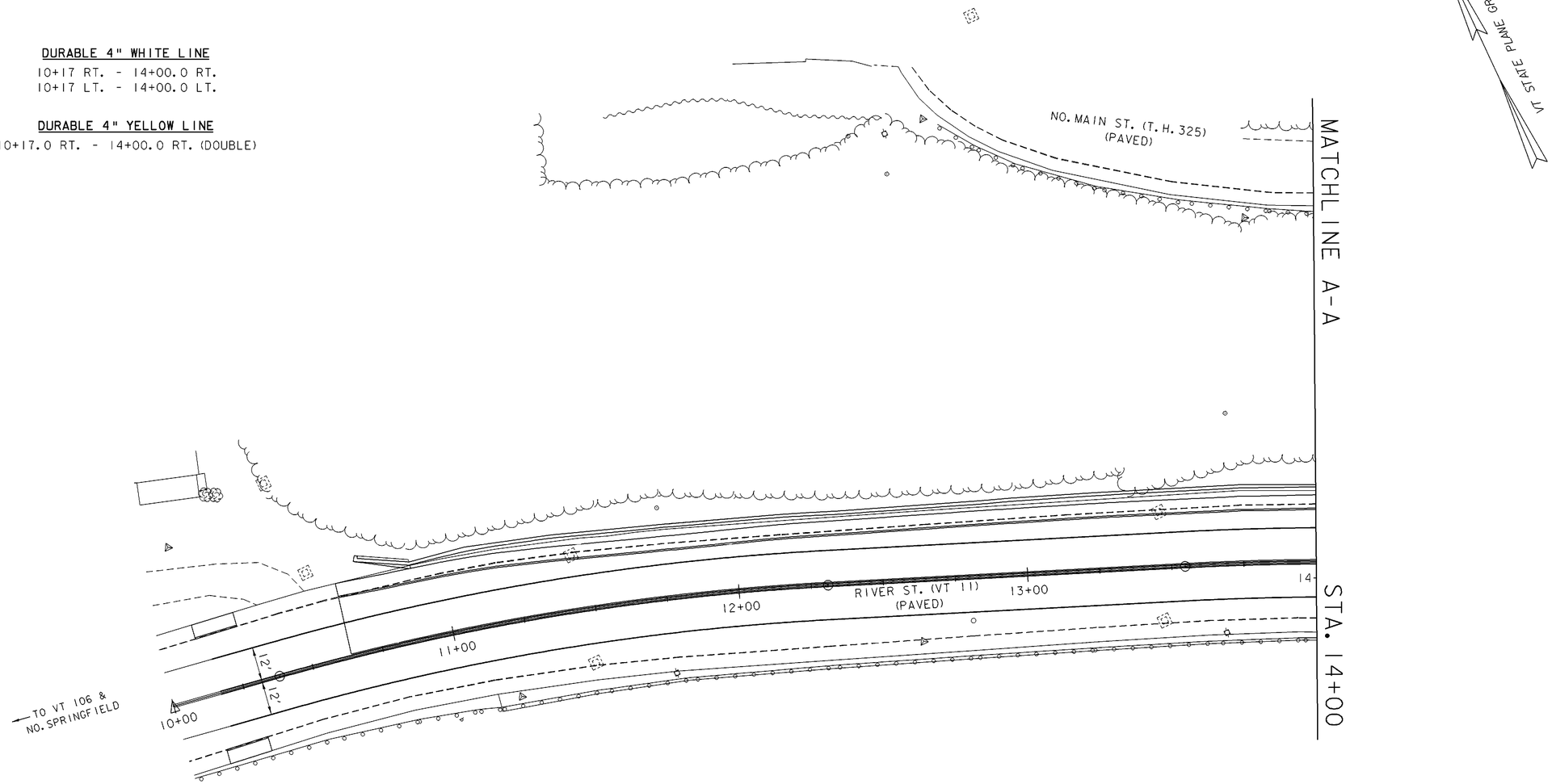
N — NEW

DURABLE 4" WHITE LINE

10+17 RT. - 14+00.0 RT.
10+17 LT. - 14+00.0 LT.

DURABLE 4" YELLOW LINE

10+17.0 RT. - 14+00.0 RT. (DOUBLE)

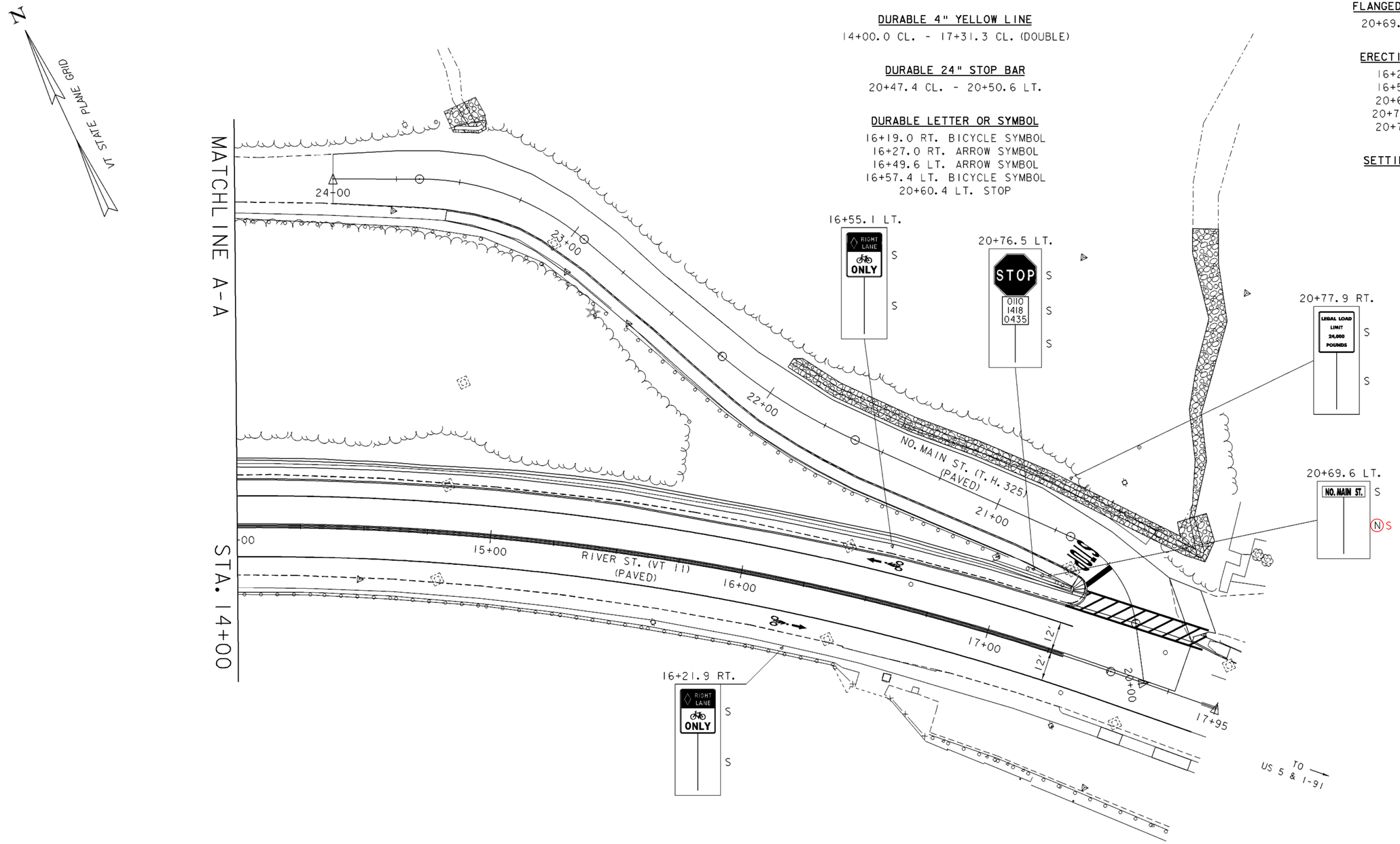


SCALE: 1" = 20'-0"
20 0 20

TRAFFIC CONTROL SHEET (1)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124t01.1		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	19 OF 72



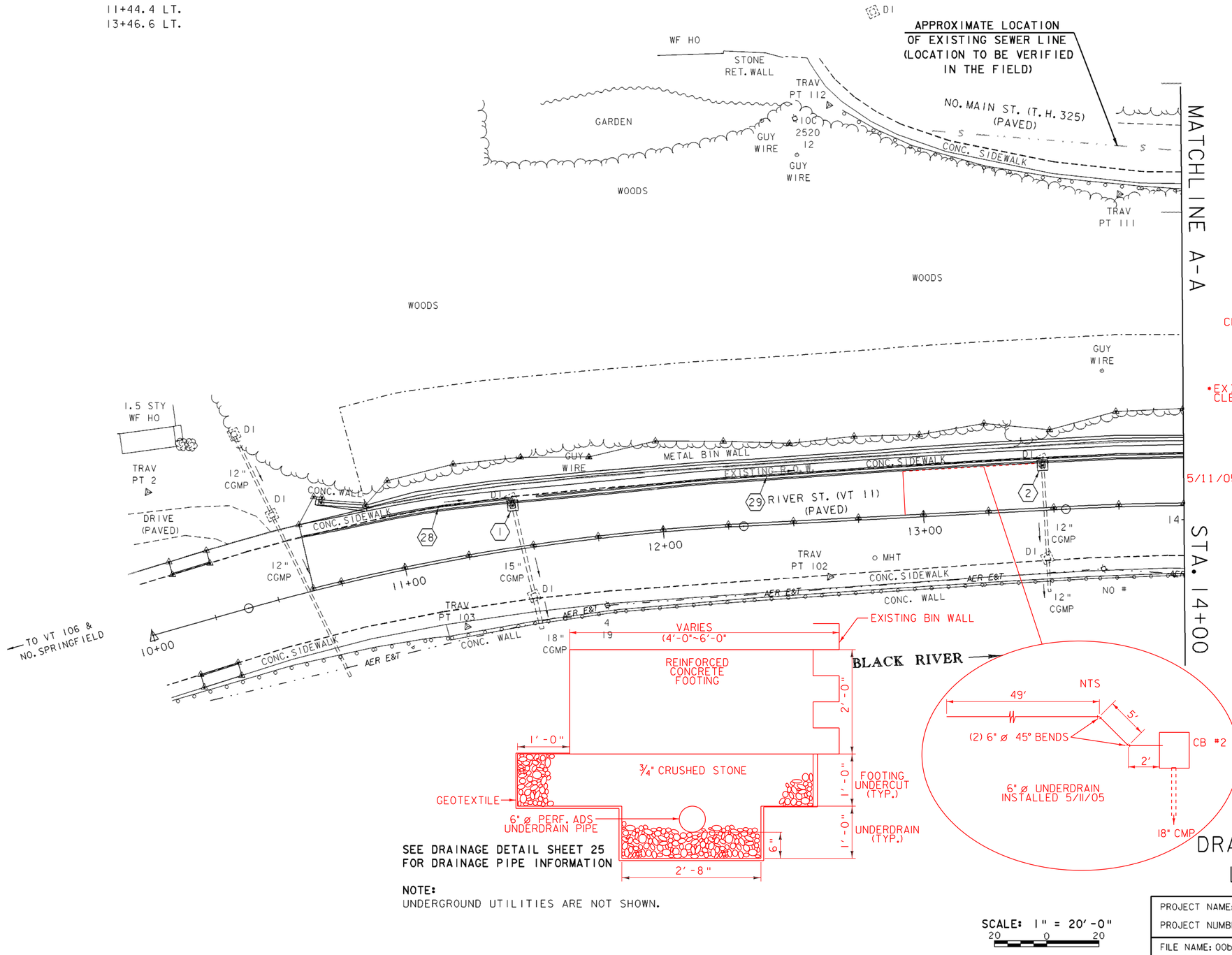
TRAFFIC CONTROL SHEET (2)

SCALE: 1" = 20'-0"
20 0 20

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124\Structures\sb124t02.1	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 20 OF 72

REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE, TYPE D

11+44.4 LT.
13+46.6 LT.



SEE DRAINAGE DETAIL SHEET 25 FOR DRAINAGE PIPE INFORMATION

NOTE:
UNDERGROUND UTILITIES ARE NOT SHOWN.

CB #2 -REMOVED EXISTING CB 4/28/05
-OLD BASE SITTING ON LEDGE
-15" CMP 100% FULL OF DEBRIS

*EXISTING CULVERT CROSSING PIPES @ CB #1-3 CLEANED BY JETTING/VAC. TRUCK ON 4/29/05 CHANGE ORDER TO FOLLOW

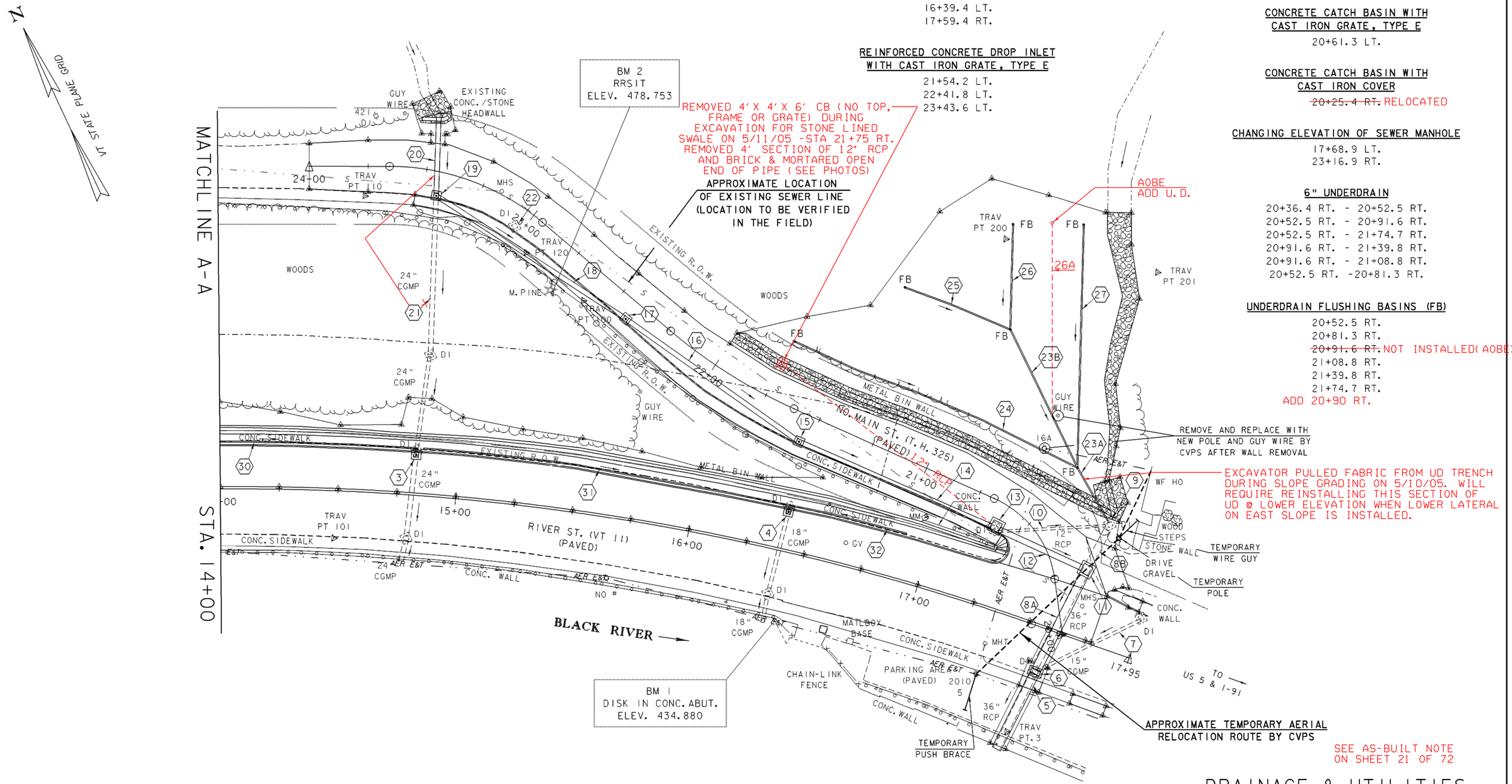
6" UNDERDRAIN INSTALLATION - MILLER 5/11/05 CB #2 (STA 13+46) TO STA 12+93 LT. =56 LF (SEE AS BUILT SKETCH)

NOTE: SEE AS-BUILT SKETCHES WITH ELEVATIONS IN FINALS COMPUTATION BINDER FOR ALL DRAINAGE STRUCTURES

SCALE: 1" = 20'-0"
20 0 20

DRAINAGE & UTILITIES LAYOUT SHEET (1)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124/Structures/sb124dll.1	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 21 OF 72



REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE, TYPE D

14+82.0 LT.
16+39.4 LT.
17+59.4 RT.

REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE, TYPE E

21+54.2 LT.
22+41.8 LT.
23+43.6 LT.

CONSTRUCT REINFORCED CONCRETE HEADWALL

23+49 RT. -SEE DETAIL- SHEET #52

CONCRETE CATCH BASIN WITH CAST IRON GRATE, TYPE E

20+61.3 LT.

CONCRETE CATCH BASIN WITH CAST IRON COVER

~~20+25.4 RT.~~ RELOCATED

CHANGING ELEVATION OF SEWER MANHOLE

17+68.9 LT.
23+16.9 RT.

6" UNDERDRAIN

20+36.4 RT. - 20+52.5 RT.
20+52.5 RT. - 20+91.6 RT.
20+52.5 RT. - 21+74.7 RT.
20+91.6 RT. - 21+39.8 RT.
20+91.6 RT. - 21+08.8 RT.
20+52.5 RT. -20+81.3 RT.

UNDERDRAIN FLUSHING BASINS (FB)

20+52.5 RT.
20+81.3 RT.
~~20+91.6 RT.~~ NOT INSTALLED(AOBE)
21+08.8 RT.
21+39.8 RT.
21+74.7 RT.
ADD 20+90 RT.

SEE DRAINAGE DETAIL SHEET 25
FOR DRAINAGE PIPE INFORMATION

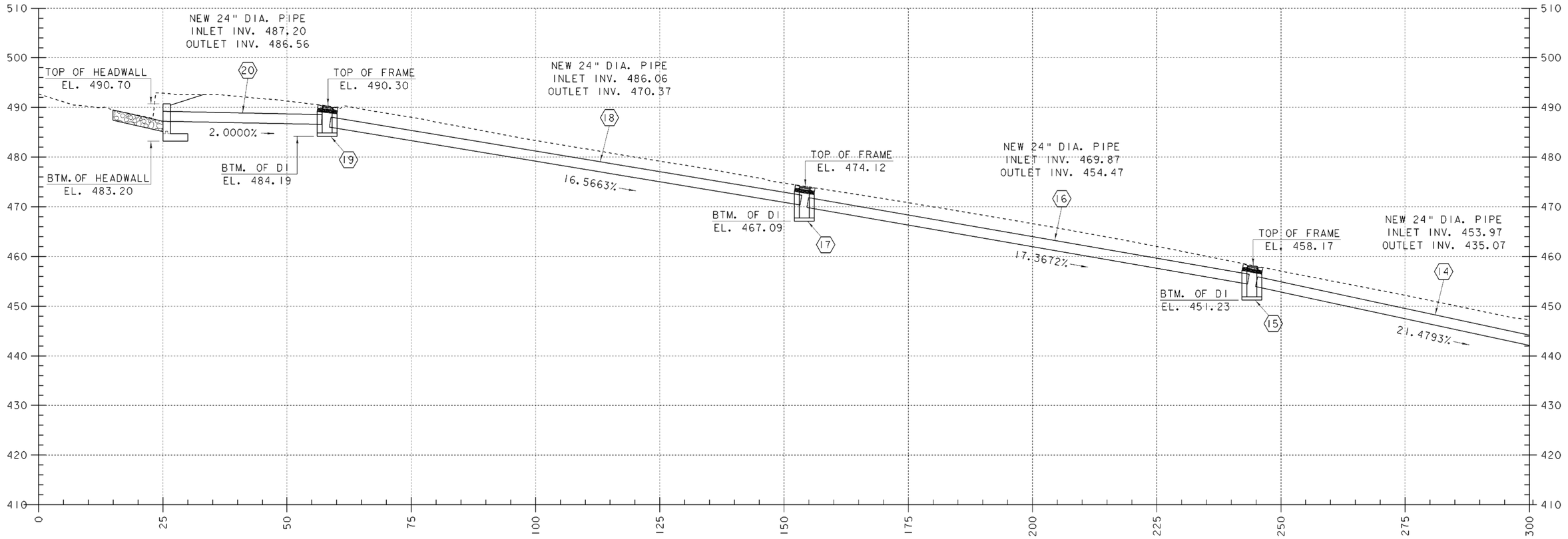
NOTE:
UNDERGROUND UTILITIES ARE NOT SHOWN.

SCALE: 1" = 20'-0"
20 0 20

DRAINAGE & UTILITIES LAYOUT SHEET (2)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124/Structures/sb124dl2.1	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 22 OF 72

DRAINAGE PROFILE ALONG T.H.325 (NORTH MAIN ST.)



SEE AS-BUILT NOTE
ON SHEET 21 OF 72

SEE DRAINAGE DETAIL SHEET 25
FOR DRAINAGE PIPE INFORMATION

10 0 10

SCALE: 1" = 10'-0"

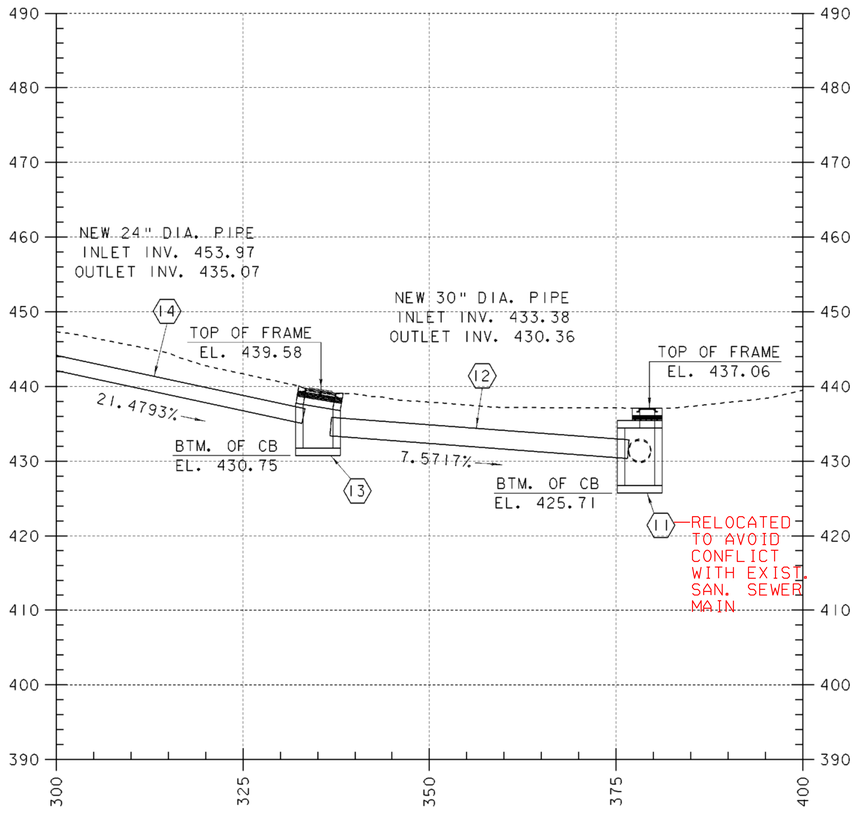
DRAINAGE PIPE PROFILES (1)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

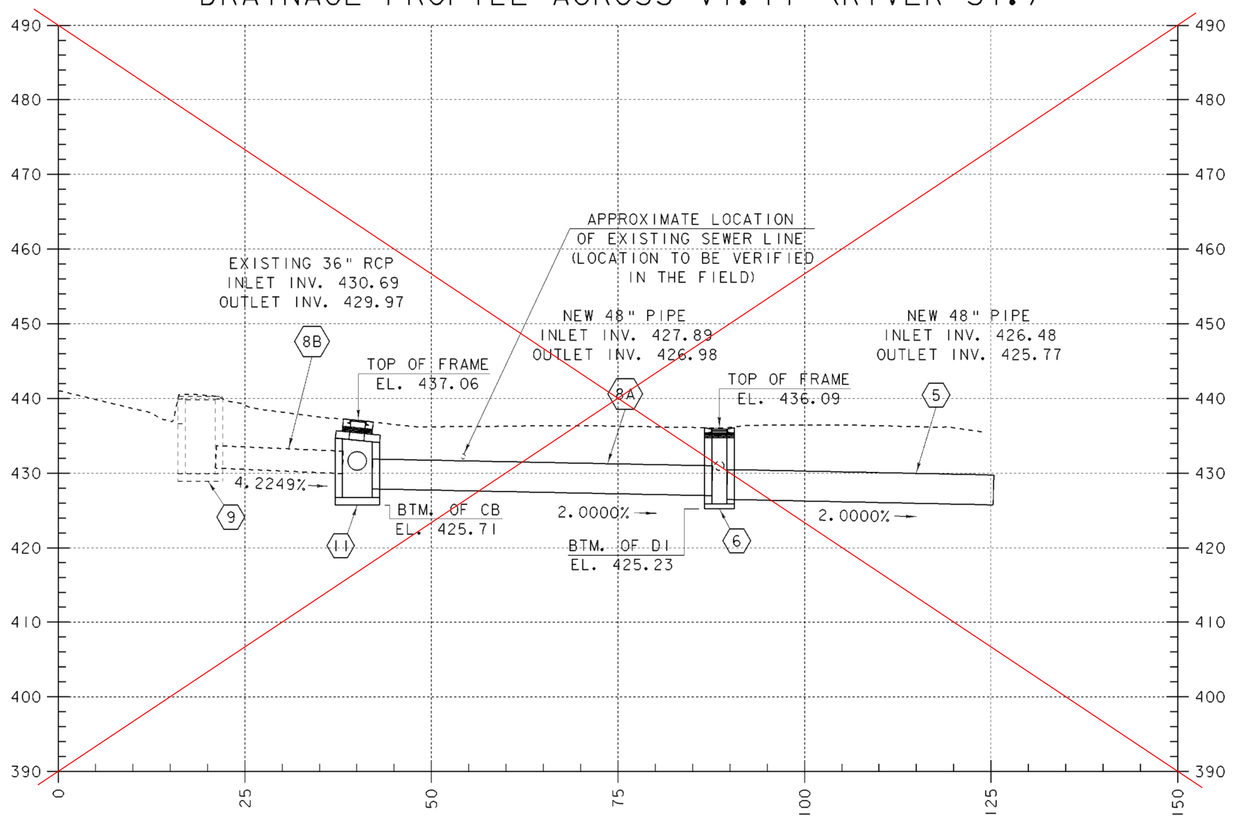
FILE NAME: 00b124/Structures/sb124dpl.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 23 OF 72

DRAINAGE PROFILE ALONG T.H. 325 (NORTH MAIN ST.)



DRAINAGE PROFILE ACROSS VT. 11 (RIVER ST.)



- NEW 48" Ø RCP NOT INSTALLED AS DIRECTED BY TOWN OF SPRINGFIELD DPW DUE TO POTENTIAL CONFLICTS WITH 12" SANITARY FORCE MAIN LOCATED ADJACENT TO EXISTING CONCRETE SIDEWALK ON SOUTH SIDE OF RIVER RD (RTE 11).
- SEE SKETCH ON 5/9/05 DWR -TEST HOLE DATA.
- SEE LETTER DATED 5/10/05, FROM ROBERT FORQUITES(TOWN MANAGER) DIRECTING VAOT TO LEAVE THE EXISTING 36" Ø RCP IN-PLACE.

SEE AS-BUILT NOTE ON SHEET 21 OF 72

SEE DRAINAGE DETAIL SHEET 25 FOR DRAINAGE PIPE INFORMATION

10 0 10

SCALE: 1" = 10'-0"

DRAINAGE PIPE PROFILES (2)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124/Structures/sb124dp2.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 24 OF 72

ITEM DETAIL AND DRAINAGE SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE STRUCTURES

DRAINAGE FLAG NO.	STATION	STATION	POS.	ASKEW	TYPE IN/OUT	DITCH IN	DITCH OUT	PIPE ARCH S IN	PIPE ARCH R IN	PIPE ARCH L FT	PIPE D IN	PIPE L FT	ALLOWABLE OPTIONS PCCSP TH	CAAP TH	RCP CL	CSP TH	CPEP	PCCSP PI TH	PIPE ELBOW NO-DEG	ES EA	CB	PROJECT	DEPTH DI	CONC CL B CY	REIN STEEL LBS	DI GRATE TYPE	CHAN ELEV	CRM CY	TR EXCAV EARTH CY	TR EXCAV ROCK CY	COMM EXC CY	UNC CHAN EXC CY	STRUC EXCAV CY	GRAN BKF STRUC CY	GRAN BORR CY	EROS MATT SY	STONE FILL CY	STONE FILL TYPE	MRKR POSTS LT	MRKR POSTS RT	REMARKS
1	11+44.4		LT																				3.5	2.3	180	I-D			2	2	2										REMOVE EXISTING DI AND SECTION OF EXISTING PIPE AND INSTALL NEW 4' X 4' DROP INLET
2	13+46.6		LT																				5.5	3.2	242	I-D			3	3	2										REMOVE EXISTING DI AND SECTION OF EXISTING PIPE AND INSTALL NEW 4' X 4' DROP INLET
3	14+82.0		LT																				7.0	3.8	296	I-D			4	4	2										REMOVE EXISTING DI AND SECTION OF EXISTING PIPE AND INSTALL NEW 4' X 4' DROP INLET
4	16+39.4		LT																				5.5	3.2	242	I-D			3	3	2										REMOVE EXISTING DI AND SECTION OF EXISTING PIPE AND INSTALL NEW 4' X 4' DROP INLET
~~5~~	~~17+54.6~~	~~17+58.9~~	~~RT/RT~~		~~DI/--~~		~~X~~				~~48~~	~~36~~	~~.109~~	~~.105~~	~~111~~														~~41~~		~~10~~									~~REMOVE EXISTING 36" RCP AND INSTALL NEW 48" PIPE OPTION~~
~~6~~	~~17+59.4~~		~~RT~~																				~~9.5~~	~~5.7~~	~~449~~	~~2-D~~			~~5~~	~~5~~	~~2~~									~~REMOVE EXISTING DI AND INSTALL NEW 4' X 6' DROP INLET~~
7	17+60.0	17+94.3	RT/LT																																					RETAIN
~~8A~~	~~17+58.5~~	~~17+65.5~~	~~RT/LT~~		~~CB/DI~~						~~48~~	~~46~~	~~.109~~	~~.105~~	~~111~~														~~45~~		~~14~~									~~REMOVE EXISTING 36" RCP AND INSTALL NEW 48" PIPE OPTION~~
8B	17+65.5	17+68.3	LT/LT																																					REMOVE SECTION FOR INSTALLATION OF NEW CATCH BASIN
9	20+35.8		RT																																					RETAIN
10	20+36.0	20+58.6	RT/LT																										6		2										REMOVED WITH TRENCH EXC. FOR DR #12 (END WAS PLUGGED @ EXIST. DI #9)
11	20+35 ~~20+25.4~~		~~LT~~RT																				8.0	8.4	756				24		2										NEW 6' X 6' CATCH BASIN WITH CAST IRON COVER
12	20+26.3	20+58.8	RT/LT		DI/CB						30	40	.109	.105			X												34		7										NEW 30" PIPE OPTION
13	20+61.3		~~RT~~LT																				6.0	7.0	654	2-E			10	10	2										NEW 6' X 6' CATCH BASIN
14	20+63.9	21+53.2	LT/LT		DI/DI						24	90	.109	.105			X												60		16										NEW 24" PIPE OPTION
15	21+54.2		~~RT~~LT																				6.0	3.4	265	I-E			8		1										NEW 4' X 4' DROP INLET
16	1 ~~20~~+55.2	22+40.8	LT/LT		DI/DI						24	90	.109	.105			X												54		15										NEW 24" PIPE OPTION
17	22+41.8		~~RT~~LT																				6.0	3.4	265	I-E			8		1										NEW 4' X 4' DROP INLET
18	22+42.8	23+42.6	LT/LT		DI/DI						24	96	.109	.105			X												53		16										NEW 24" PIPE OPTION
19	23+43.6		~~RT~~LT																				5.0	2.9	234	I-E			7		1										NEW 4' X 4' DROP INLET
20	23+43.9	23+48.8	LT/RT		--/DI	X					24	32	.109	.105	111		X												68		4										NEW 24" PIPE OPTION
21	22+95.6	23+49.0	LT/LT																																					REMOVE 38' FROM INLET & PLUG INLET END
22	23+03.9		LT																				4.0	1.4	104	I-E			4	4	1										REMOVE EXISTING DROP INLET
											24	276	.109	.105			X							43.3	3583	6-D			439	31	102									
					TOTALS						24	32	.109	.105	111		X									5-E															
											30	40	.109	.105			X																								
											48	82	.109	.105	111																										

GUARD RAIL

STA.	STA.	LT.	RT.	END TREATMENT
TOTALS				

UNDERDRAIN

DRAINAGE FLAG NO.	STATION	STATION	TYPE	POS.	D	L	TRENCH E	TRENCH R	GRAN BKF	FB		MKR PST
		BEGIN NON-PARTICIPATION										
23A	20+36.4	20+52.5	U	RT	6	27	17		11	X		
23B	20+52.5	20+91.6	U	RT	6	65	40		27	X		
24	20+52.5	21+74.7	U	RT	6	133	82		55	X		
25	20+91.6	21+39.8	U	RT	6	48	29		20	X		
26	20+91.6	21+08.8	U	RT	6	45	28		19	X		
26A	20+75		U	RT	6	96						
27	20+52.5	20+81.3	U	RT	6	103	63		42	X		
		END NON-PARTICIPATION										
		BEGIN PARTICIPATION										
28	10+95.2	11+44.4	U	LT	6	53	6					
29	11+53.6	13+46.6	U	LT	6	197	22					
30	13+48.2	14+82.0	U	LT	6	138	16					
31	14+85.2	16+39.4	U	LT	6	160	18					
32	16+39.4	16+89.6	U	LT	6	51	6					
		END PARTICIPATION										
TOTALS NON-PARTICIPATION					6	421	259		174	6		
TOTALS PARTICIPATION					6	599	68					

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00bl24/Structures/sbl24dds.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 25 OF 72

SOIL CLASSIFICATION

AASHTO

A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

▼	Water Elevation
⊕	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	To Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
ROD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)

COLOR

blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

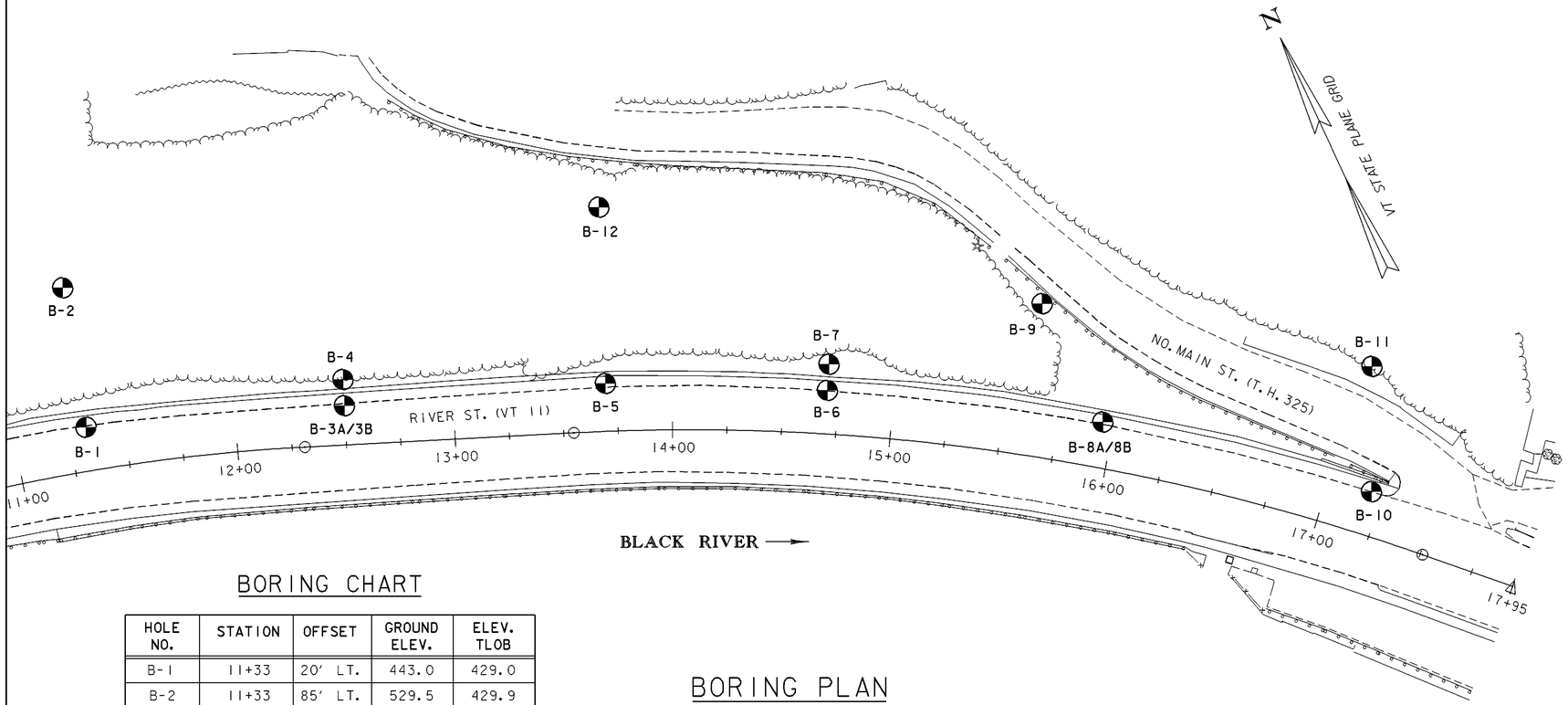
MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.



BORING PLAN

SCALE: 1" = 30'-0"

30 0 30

BORING CHART

HOLE NO.	STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-1	11+33	20' LT.	443.0	429.0
B-2	11+33	85' LT.	529.5	429.9
B-3A/3B	12+50	18' LT.	441.0	422.5
B-4	12+50	30' LT.	458.0	427.0
B-5	13+70	22' LT.	439.0	432.5
B-6	14+70	20' LT.	437.0	422.0
B-7	14+70	32' LT.	451.0	433.0
B-8A/8B	15+95	21' LT.	435.5	431.0
B-9	15+60	70' LT.	473.7	422.2
B-10	17+20	20' LT.	435.0	414.6
B-11	17+04	75' LT.	463.7	423.2
B-12	13+70	103' LT.	506.5	437.5

GENERAL NOTES

1. The subsurface explorations shown herein were made between 04/18/2001 and 05/05/2001 by M & W Soils Engineering.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by GeoDesign Inc. and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgement was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgement by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.

BORING INFORMATION SHEET (1)

PROJECT NAME: SPRINGFIELD

PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124/Structures/sb124b01.1 PLOT DATE: 17-AUG-2004

PROJECT MANAGER: R. WHITCOMB DRAWN BY: G. ROY

DESIGNED BY: G. ROY CHECKED BY: R. WHITCOMB

SHEET 26 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BORING LOG INFORMATION

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

BORING LOG

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-1
Page No.: 1 of 1
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 18, 2001 Date Finished: Apr 18, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 443.0
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. Hammer Wt.: NA Hammer Fall: NA
Sampler: SS 2.0 in. 140 lbs 30 in.
Rig Type: Acker Trark Mount
Other:

Groundwater Observations

Date and Time	Depth (ft)	Elevation (ft)	Notes
4/18/01 9:30 AM	5.0	438.0	Drilling

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0-6	6-12	12-18	18-24	Casing Time (min./ft.)	REC/ROD (%)	Sample Description	Symbol	Strata Description	Elevation & Depth (ft)	Well Log
													Classification System: Burmister				
															Asphalt 0.5 Sandy Fill	442.5	
		S1	SS	24.0	14.0	2.0	8	6	11	13			S1 Top 10" Medium Dense, light brown, fine to coarse SAND, little Silt, trace fine Gravel. Bottom 4" Green gray, fine to medium SAND, some Silt.				
5		S2	SS	20.0	14.0	4.0	19	19	26	50/2"			S2 Dense, Similar to above. Bottom 4" except trace Gravel.		Glacial Till	439.5	
		S3	SS	24.0	22.0	5.0	20	29	39	35			S3 Very dense, similar to SS sample S2.			435.0	
		S4	SS	18.0	12.0	8.0	54	69	75	--			S4 Very dense, light gray, SILT, little fine SAND and SILT, including dark, gray, silty partings.		Layered Silt, little fine Sand 8.0		
10		S5	SS	12.0	12.0	10.0	44	92	--	--			S5 Very dense, similar to SS sample S4 with fewer partings.				
		S6	SS	6.0	3.0	12.0	22	50/3"	--	--			S6 Very dense, layered SAND and SILT (SILT layers up to 2" thick).			429.0	
15		C1	C	59.0	51.0	14.0					12	98-91	C1 Light to dark steel gray, moderate to close fractured, slightly schistose metamorphic, containing pink to purple inclusions, some Quartz banding, slightly weathered.		Bedrock (Phyllite-Schist) 14.0	14.0	
											14						
											11						
											12						
											139"						
20		C2	C	60.0	60.0	18.8					10	100-75	C2 Similar rock type to Core sample C1, slightly more fractured near base of run, fresh.				
											9						
											10						
											15						
											16					419.2	
25																23.6	
																Bottom of Borehole at 23.8 ft	

Remarks: (0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(0-14.5'): HSA augered (3.25" I.D.) to 14.5' prior to installing NW casing.
(5.8'): Obstruction observed during SS sampling and HSA auger advance. (12.8'): SS refusal on possible cobble or boulder.
(14'): Hard resistance on probable bedrock. NW casing installed to 14.3'. Roller bit used to flush out hole prior to rock coring.
(14.5-23.8'): Rock cored using BX (1.42" diameter) core barrel sampler.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-1

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/2/01

BORING LOG

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-2
Page No.: 1 of 5
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 3, 2001 Date Finished: May 8, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 529.5
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. Hammer Wt.: NA Hammer Fall: NA
Sampler: SS 2.0 in. 140 lbs 30 in.
Rig Type: Mobile Drill B-47 Track
Other:

Groundwater Observations

Date and Time	Depth (ft)	Elevation (ft)	Notes
5/6/01 10:00 AM	60.0	469.5	Drilling
7/12/01 8:00 AM	33.5	496.0	DW

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0-6	6-12	12-18	18-24	Casing Time (min./ft.)	REC/ROD (%)	Sample Description	Symbol	Strata Description	Elevation & Depth (feet)	Well Log
													Classification System: Burmister				
															Gravelly Sand Fill with Cobbles		
5																	
10																	
15																	
																509.5	
20		S1	SS	24.0	24.0	20.0	5	6	7	9			S1 Medium dense, brown, fine SAND and Silt.				
															Glacial Till 20.0		
25																	

Remarks: (0'): Ground surface elevation was determined by survey. Location is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign.
(0-43'): HSA augered (3.25" I.D.) to 43' prior to installing NW casing.
(0-8.6'): Slight drilling resistance on possible cobble or boulder.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-2

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/2/01

BORING LOG

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-2
Page No.: 2 of 5
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 3, 2001 Date Finished: May 8, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 529.5
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. Hammer Wt.: NA Hammer Fall: NA
Sampler: SS 2.0 in. 140 lbs 30 in.
Rig Type: Mobile Drill B-47 Track
Other:

Groundwater Observations

Date and Time	Depth (ft)	Elevation (ft)	Notes
5/6/01 10:00 AM	60.0	469.5	Drilling
7/12/01 8:00 AM	33.5	496.0	DW

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0-6	6-12	12-18	18-24	Casing Time (min./ft.)	REC/ROD (%)	Sample Description	Symbol	Strata Description	Elevation & Depth (feet)	Well Log
													Classification System: Burmister				
															Glacial Till (Continued)		
30																	
		S2	SS	24.0	20.0	34.0	10	14	20	20			S2 Dense, gray SAND and Gravel, trace Silt (Cobbles inferred from drilling resistance).				
35																	
40		S3	SS	15.0	10.0	39.0	20	41	50/3"	--			S3 Very dense, similar to above, except higher moisture, little Silt.				
45																	
50		S4	SS	9.0	7.0	49.0	44	50/5"	--	--			S4 Very dense, similar to above				

Remarks: (43.1'): Installed NW casing 43.1'.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-2

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/2/01

BORING LOG

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-2
Page No.: 3 of 5
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 3, 2001 Date Finished: May 8, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 529.5
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. Hammer Wt.: NA Hammer Fall: NA
Sampler: SS 2.0 in. 140 lbs 30 in.
Rig Type: Mobile Drill B-47 Track
Other:

Groundwater Observations

Date and Time	Depth (ft)	Elevation (ft)	Notes
5/6/01 10:00 AM	60.0	469.5	Drilling
7/12/01 8:00 AM	33.5	496.0	DW

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0-6	6-12	12-18	18-24	Casing Time (min./ft.)	REC/ROD (%)	Sample Description	Symbol	Strata Description	Elevation & Depth (feet)	Well Log
													Classification System: Burmister				
															Glacial Till (Continued)		
55																	
60																	
65																	
70		S5	SS	12.0	10.0	69.0	45	53	--	--			S5 Very dense, gray green, layered SILT, some fine Sand, large quartz stone contained within.				
75																	

Remarks: (74-75'): Hard drilling resistance on possible boulder.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-2

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/2/01

PROJECT NAME:	**SPRINGFIELD**
PROJECT NUMBER:	**STP 016-2 (10)S**
FILE NAME:	**00b124\structures\sb124bor.xls**
PROJECT MANAGER:	**R. R. WHITCOMB**
DESIGNED BY:	**G. ROY**
BORING LOG INFORMATION SHEET #1	
PLOT DATE:	**6/18/2004**
DRAWN BY:	**L. ASHWORTH**
CHECKED BY:	**G. ROY**
SHEET	**27** OF **72**

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BORING LOG INFORMATION

BORING LOG — B-2

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-2 | Page No.: 4 of 5 | File No.: 750-03.3 | Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 3, 2001 Date Finished: May 8, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 529.5
Station: Offset: ft

Casing:	Sampler:	Groundwater Observations			
Type: NW	SS	Date and Time	Depth (ft)	Elevation (ft)	Notes
I.D./O.D.: 3.0 in.	2.0 in.				
Hammer Wt.: NA	140 lbs	5/8/01 10:00 AM	60.0	469.5	Drilling
Hammer Fall: NA	30 in.	7/12/01 8:00 AM	33.5	496.0	GW
Rig Type: Mobile Drill B-47 Track					
Other:					

Sample Information: Depth (ft) | Casing Blowsift | Sample Number | Type | Penetration (inches) | Recovery (inches) | Depth (ft) | Blows / 6 inch Interval: 0 - 6, 6 - 12, 12 - 18, 18 - 24 | Coring Time (min./ft) | REC/RQD (%/%)

Sample Description: Classification System: Burmister

Strata Description: Symbol | Elevation & Depth (feet) | Well Log

Depth (ft)	Sample Description	Strata Description
80		Glacial Till (Continued)
85		
90		
95		
100		429.9

Remarks: (89-94'): Hard drilling resistance on possible bedrock. Rock cored using BX (1.42" diameter). Core was Quartzite boulders to 94.1' with little Glacial Till between boulders.
(99.6'): Hard drilling resistance on probably bedrock.
(99.6-109.6'): Rock cored using BX (1.42" diameter) core barrel sampler.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-2

BORING LOG — B-2

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-2 | Page No.: 5 of 5 | File No.: 750-03.3 | Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 3, 2001 Date Finished: May 8, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 529.5
Station: Offset: ft

Casing:	Sampler:	Groundwater Observations			
Type: NW	SS	Date and Time	Depth (ft)	Elevation (ft)	Notes
I.D./O.D.: 3.0 in.	2.0 in.				
Hammer Wt.: NA	140 lbs	5/8/01 10:00 AM	60.0	469.5	Drilling
Hammer Fall: NA	30 in.	7/12/01 8:00 AM	33.5	496.0	GW
Rig Type: Mobile Drill B-47 Track					
Other:					

Sample Information: Depth (ft) | Casing Blowsift | Sample Number | Type | Penetration (inches) | Recovery (inches) | Depth (ft) | Blows / 6 inch Interval: 0 - 6, 6 - 12, 12 - 18, 18 - 24 | Coring Time (min./ft) | REC/RQD (%/%)

Sample Description: Classification System: Burmister

Strata Description: Symbol | Elevation & Depth (feet) | Well Log

Depth (ft)	Sample Description	Strata Description
100	C1 Hard, light to dark gray, moderate fractures, quartz veins 1" thick, slight weathering.	99.6 Bedrock (Quartzite and Schist) (Continued)
105	C2 Similar rock type to above, no quartz veining.	
110		419.5 110.0 Bottom of Borehole at 109.5 ft
115		
120		
125		

Remarks:

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-2

BORING LOG — B-3A/3B

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-3A/3B | Page No.: 1 of 2 | File No.: 750-03.3 | Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 19, 2001 Date Finished: Apr 19, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 441.6
Station: Offset: ft

Casing:	Sampler:	Groundwater Observations			
Type: NW	SS	Date and Time	Depth (ft)	Elevation (ft)	Notes
I.D./O.D.: 3.0 in.	2.0 in.				
Hammer Wt.: NA	140 lbs	4/14/01 8:15 AM	8.0	433.0	Drilling
Hammer Fall: NA	30 in.				
Rig Type: Acker Soil Max Track					
Other:					

Sample Information: Depth (ft) | Casing Blowsift | Sample Number | Type | Penetration (inches) | Recovery (inches) | Depth (ft) | Blows / 6 inch Interval: 0 - 6, 6 - 12, 12 - 18, 18 - 24 | Coring Time (min./ft) | REC/RQD (%/%)

Sample Description: Classification System: Burmister

Strata Description: Symbol | Elevation & Depth (feet)

Depth (ft)	Sample Description	Strata Description
0		441.6 Asphalt
		0.5 Sandy Fill
		438.5
	S1 Very dense, brown, fine to medium SAND, little Silt, trace fine Gravel	2.5 Boulder Fill
5	S2 Refusal, light brown, fine SAND, some Silt in spoon tip	437.5
	S3 Very dense, similar to SS sample S2, trace coarse SAND and oxidized partings	3.5 Glacial Till with Cobbles/Boulders
10	S4 Very dense, light brown to beige, fine SAND and SILT, trace fine Gravel, wet	
15	S5 Refusal, Top 2" Similar to SS sample S4. Bottom 6" Greenish gray, fine to medium SAND, some Silt, trace Gravel, wet. S6 Refusal, similar to Bottom 6" of SS sample S5	
		422.5
20	C1 Hard, dark gray (fresh) to light gray (slightly weathered), banded metasedimentary with quartz veinlets and sulphide mineralization, moderately fractured. Slight HCl reaction.	18.3 Bedrock (Quartzite-Schist)
25	C2 Similar rock type to above, fresh	

Remarks: (0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(0-18.6'): HSA augered (3.25" I.D.) to 18.6' prior to installing NW casing.
(4.0'): Very hard obstruction observed during HSA auger advance. HSA refusal at 4.0' on possible boulder. Boring B-3A moved approximately 3' west and continued. HSA to 4' at B-3B and continued sampling.
(4.5-18.3'): Obstructions on possible cobbles between 4.5' and 15.9' depth. Obstruction at 6' SS sample.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-3A/3B

BORING LOG — B-3A/3B

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-3A/3B | Page No.: 2 of 2 | File No.: 750-03.3 | Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 19, 2001 Date Finished: Apr 19, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 441.6
Station: Offset: ft

Casing:	Sampler:	Groundwater Observations			
Type: NW	SS	Date and Time	Depth (ft)	Elevation (ft)	Notes
I.D./O.D.: 3.0 in.	2.0 in.				
Hammer Wt.: NA	140 lbs	4/14/01 8:15 AM	8.0	433.0	Drilling
Hammer Fall: NA	30 in.				
Rig Type: Acker Soil Max Track					
Other:					

Sample Information: Depth (ft) | Casing Blowsift | Sample Number | Type | Penetration (inches) | Recovery (inches) | Depth (ft) | Blows / 6 inch Interval: 0 - 6, 6 - 12, 12 - 18, 18 - 24 | Coring Time (min./ft) | REC/RQD (%/%)

Sample Description: Classification System: Burmister

Strata Description: Symbol | Elevation & Depth (feet)

Depth (ft)	Sample Description	Strata Description
30		Bedrock (Quartzite-Schist) (Continued)
35		412.5 28.5 Bottom of Borehole at 28.6 ft
40		
45		
50		

Remarks: (18.5'): High drilling resistance on possible bedrock. NW casing installed to 18.6'. Roller bit used to flush out hole prior to rock coring.
(18.6'): Rock cored using BX (1.42" diameter) core barrel sampler.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-3A/3B

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME:	00b124\structures\sb124bor.xls
PROJECT MANAGER:	R. R. WHITCOMB
DESIGNED BY:	G. ROY
BORING LOG INFORMATION SHEET #2	
PLOT DATE:	6/18/2004
DRAWN BY:	L. ASHWORTH
CHECKED BY:	G. ROY
SHEET	28 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BORING LOG INFORMATION

BORING LOG — Boring No.: B-4

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Page No.: 1 of 2
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: May 7, 2001 Date Finished: May 7, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 458.0
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Acker Skid Other:
Sampler: Type: SS I.D./O.D.: 2.0 in.

Groundwater Observations			
Date and Time	Depth (ft)	Elevation (ft)	Notes
5/7/01 12:15 PM	20.0	438.0	Drilling

Depth (ft)	Casing Blowsft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Casing Time (min./ft)	RECORD (Y/N)	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (feet))
															458.5 Rooty Topsoil
		S1	SS	24.0	8.0	1.0	2	2	3	2			S1 Loose, light brown, fine to medium SAND, some Silt, trace Root Fibers		455.0
5		S2	SS	24.0	10.0	3.0	2	3	1	2			S2 Loose, light brown, fine to coarse SAND, trace Silt, trace Root Fibers		3.0 Sandy Fill with Gravel
		S3	SS	24.0	8.0	8.0	3	4	3	3			S3 Loose, similar to SS sample S2 with piece of highly weathered rock in spoon tip		
		S4	SS	24.0	12.0	7.0	11	8	11	11			S4 Medium dense, similar to SS sample S3 except trace to little Silt, micaceous		
10		S5	SS	24.0	8.0	8.0	6	6	10	9			S5 Medium dense, similar to SS sample S4		
		S6	SS	24.0	12.0	11.0	9	12	16	11			S6 Dense, similar to SS sample S5 except little Gravel		
		S7	SS	24.0	14.0	13.0	11	8	16	17			S7 Medium dense, similar to SS sample S6 with slight oxidation		
15		S8	SS	24.0	18.0	15.0	18	20	12	12			S8 Dense, similar to SS sample S7		
		S9	SS	24.0	18.0	17.0	12	10	14	20			S9 Medium dense, similar to SS sample S8 with dark brown Silt lenses		
20		S10	SS	24.0	6.0	19.0	20	17	14	8			S10 Dense, similar to SS sample S9 except some Gravel, wet		437.0
		S11	SS	18.0	12.0	21.0	17	40	59/4"	--			S11 Very dense, greenish gray, fine to medium SAND, some Silt, little fine Gravel		21.0 Glacial Till
25															

Remarks:
(0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(19'): Possibly pushing cobble or piece of gravel during SS sample attempt.

Notes:
1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-4

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

BORING LOG — Boring No.: B-4

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Page No.: 2 of 2
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: May 7, 2001 Date Finished: May 7, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 458.0
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Acker Skid Other:
Sampler: Type: SS I.D./O.D.: 2.0 in.

Groundwater Observations			
Date and Time	Depth (ft)	Elevation (ft)	Notes
5/7/01 12:15 PM	20.0	438.0	Drilling

Depth (ft)	Casing Blowsft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Casing Time (min./ft)	RECORD (Y/N)	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (feet))
															Glacial Till (Continued)
30															427.0
															31.0 Possible Bedrock
															31.1 Bottom of Borehole at 31.1 ft
35															
40															
45															
50															

Remarks:
(31'): High drilling restance on probable bedrock.
(31.1'): 30' of 2" I.D. inclinometer casing installed. 20 gallons of bentonite/cement (7:2 ratio) grout tremied from bottom of hole to a depth of 3'. Bentonite chips poured into hole from 3' depth to surface.

Notes:
1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-4

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

BORING LOG — Boring No.: B-5

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Page No.: 1 of 1
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 19, 2001 Date Finished: Apr 19, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 439.0
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Acker Soil Max Truck Other:
Sampler: Type: SS I.D./O.D.: 2.0 in.

Groundwater Observations			
Date and Time	Depth (ft)	Elevation (ft)	Notes
4/19/01 1:20 PM	2.0	437.0	Drilling

Depth (ft)	Casing Blowsft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Casing Time (min./ft)	RECORD (Y/N)	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (feet))
															438.5 Asphalt
															0.5 Sandy Fill
															436.0
															3.0 Glacial Till
		S1	SS	16.0	14.0	3.0	13	31	46	--			S1 Very dense, greenish gray, fine to medium SAND, some Silt, trace fine Gravel		
5		S2	SS	12.0	6.0	5.0	15	29	39/1"	--			S2 Very dense, similar to SS sample S1		432.5
															6.5 Bedrock (Phyllite-Schist)
		C1	C	60.0	51.0	7.7					9	85-83	C1 Moderately hard, light to dark steel gray, moderate to close fractures, slightly weathered.		
10											8				
											8				
											7				
											99*				
		C2	C	60.0	49.0	12.7					10	82-83	C2 Similar rock type to Core sample C1 with 2" thick quartz veins		
15											13				
											14				
											8				
											12				421.3
															17.7 Bottom of Borehole at 17.7 ft
20															
25															

Remarks:
(0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(0-3'): Soil classification based on visual observations of HSA cuttings.
(0-7.5'): HSA augured (3.25 I.D.) to 7.5' prior to installing NW casing.
(6.5'): Hard drilling on possible bedrock. Installed NW casing to 7.5' Roller bit used to flush out hole to 7.7' depth prior to rock coring.
(11-13'): Gradual loss of water (approximately 15 gallons) observed between 11-13' depth through possible rock fractures.

Notes:
1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-5

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

BORING LOG — Boring No.: B-6

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Page No.: 1 of 2
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 20, 2001 Date Finished: Apr 20, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 437.0
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Acker Soil Max Truck Other:
Sampler: Type: SS I.D./O.D.: 2.0 in.

Groundwater Observations			
Date and Time	Depth (ft)	Elevation (ft)	Notes
4/20/01 7:19 AM	5.0	432.0	Drilling

Depth (ft)	Casing Blowsft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Casing Time (min./ft)	RECORD (Y/N)	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (feet))
															436.5 Asphalt
															0.5 Sandy Fill
															435.0
															2.0 Layered Sands
		S1	SS	24.0	16.0	3.0	11	15	17	23			S1 Dense, greenish gray, layered, fine SAND and SILT (up to 1/2" thickness), trace coarse Sand. Bottom 2" wet.		
5		S2	SS	24.0	18.0	5.0	14	19	17	19			S2 Top 6" Dense, green gray, fine to medium SAND, little to some Silt Bottom 10" Similar layered fine SAND and Silt to SS sample S1		
		S3	SS	16.0	16.0	7.0	26	51	58.4*	--			S3 Top 14" Very dense, similar to Bottom 10" of SS sample S2 Bottom 2" Similar to Top above		
10		S4	SS	19.0	18.0	10.0	13	25	42	29/1"			S4 Very dense, greenish brown, fine to coarse SAND, little to some Silt, layered		425.0
															12.0 Glacial Till
		S5	SS	5.0	4.0	14.0	70/6"	--	--	--			S5 Very dense, fine to medium SAND, some Silt, trace fine Gravel		422.0
15															15.0 Bedrock (Phyllite/Schist and Quartzite)
		C1	C	60.0	54.0	15.6					11	83-83	C1 Moderately hard, light to dark gray, moderate to very close fracturing, schistose/slaty, metasedimentary.		
											10				
20											12				
											9				
											11				
		C2	C	60.0	60.0	20.6					10	100-92	C2 Top 4" Similar rock type to above with sulphide mineralization. Mid 42" light to dark gray, banded metasedimentary, few to moderate fracturing, fresh. Bottom 14" Similar to to Top 4"		
											8				
25											8				
											9				Bottom of Borehole at 25.6 ft

Remarks:
(0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(0-15.7'): HSA augured (3.25" I.D.) to 15.7' prior to installing NW casing.
(15'): Hard Grinding resistance observed during HSA auger advance on possible bedrock. HSA advanced to 15.7' prior to NW casing installation. Roller bit used to clean/flush out hole to 15.7' prior to installing casing.
(15.8-25.8'): Rock cored using BX (1.42" diameter) core barrel sampler. C1 sample stopped at 3' due to plugged bit.

Notes:
1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

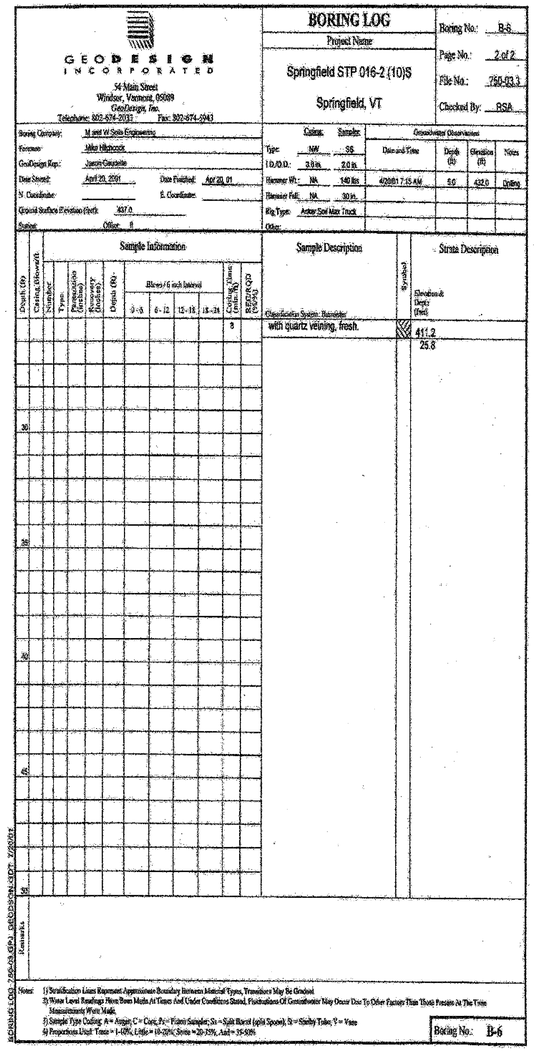
Boring No.: B-6

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME:	00b124\structures\sb124bor.xls
PROJECT MANAGER:	R. R. WHITCOMB
DESIGNED BY:	G. ROY
BORING LOG INFORMATION SHEET #3	
PLOT DATE:	6/18/2004
DRAWN BY:	L. ASHWORTH
CHECKED BY:	G. ROY
SHEET	29 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BORING LOG INFORMATION



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BORING LOG
Project Name
Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-6
Page No.: 2 of 2
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 20, 2001 Date Finished: Apr 20, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 437.0
Station: Offset: ft

Casing: NW Sampler: SS
I.D./O.D.: 3.9 in. 2.0 in.
Hammer Wt.: NA 140 lbs
Hammer Fall: NA 30 in.
Rig Type: Acker Soil Man Truck
Other:

Groundwater Observations: Date and Time | Depth (ft) | Elevation (ft) | Notes

Sample Information: Depth (ft) | Casing Blowcount | Sample Number | Type | Penetration (inches) | Recovery (inches) | Depth (ft) | Blows/6 inch Interval 0-6 6-12 12-18 18-24 | Casing Time (min./ft) | REC/RQD (%)

Sample Description: Classification System: Burmister

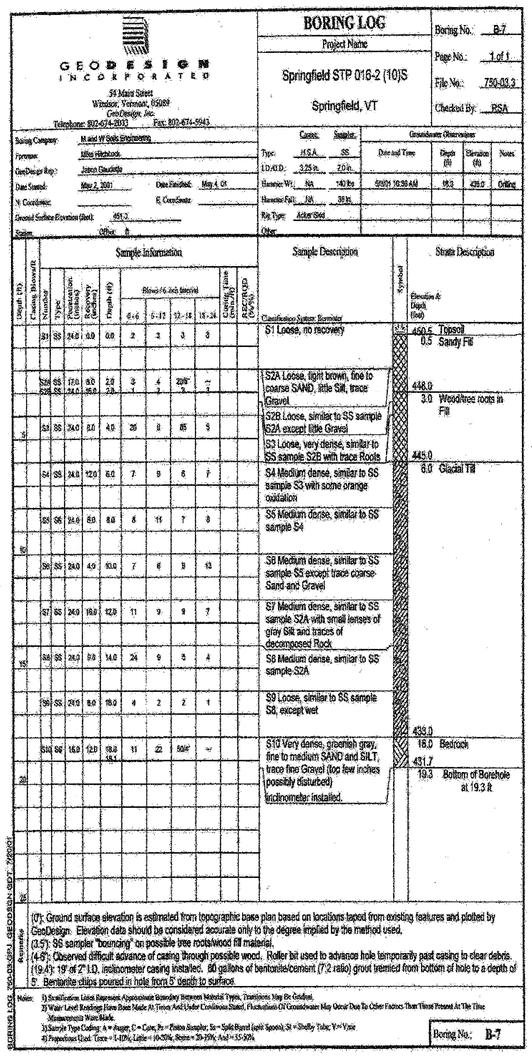
Strata Description: Symbol | Elevation & Depth (feet)

Sample Description	Strata Description
with quartz veining, fresh.	411.2 / 25.8

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Pi = Pitcher Sampler; Sh = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-6

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01



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BORING LOG
Project Name
Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-7
Page No.: 1 of 1
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: May 2, 2001 Date Finished: May 4, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 451.2
Station: Offset: ft

Casing: HSA Sampler: SS
I.D./O.D.: 3.25 in. 2.0 in.
Hammer Wt.: NA 140 lbs
Hammer Fall: NA 30 in.
Rig Type: Acker Steel
Other:

Groundwater Observations: Date and Time | Depth (ft) | Elevation (ft) | Notes
5/9/01 10:30 AM | 19.3 | 439.0 | Orbing

Sample Information: Depth (ft) | Casing Blowcount | Sample Number | Type | Penetration (inches) | Recovery (inches) | Depth (ft) | Blows/6 inch Interval 0-6 6-12 12-18 18-24 | Casing Time (min./ft) | REC/RQD (%)

Sample Description: Classification System: Burmister

Strata Description: Symbol | Elevation & Depth (feet)

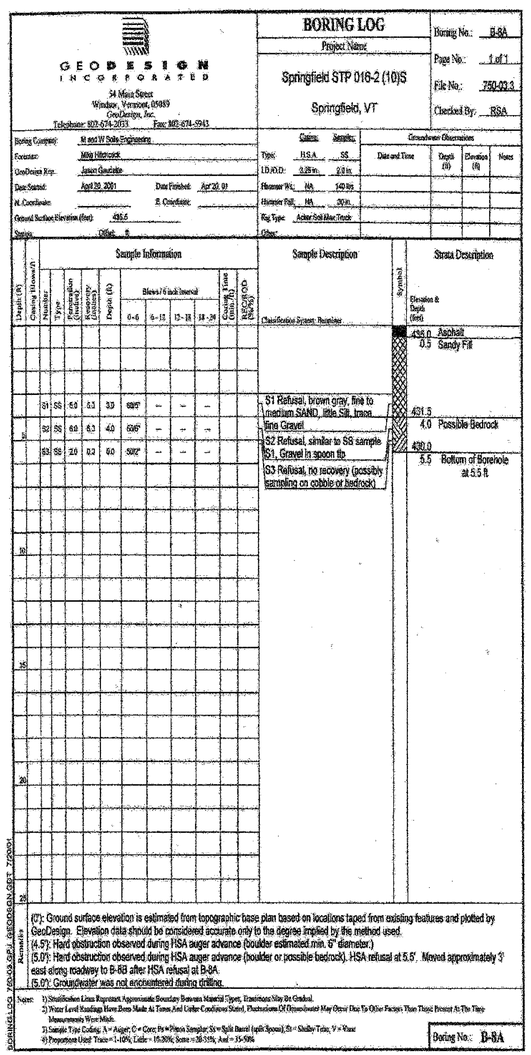
Sample Description	Strata Description
S1 Loose, no recovery	450.5 Topsoil / 0.5 Sandy Fill
S2A Loose, light brown, fine to coarse SAND, little Silt, trace Gravel	448.0 / 3.0 Wood/tree roots in Fill
S2B Loose, similar to SS sample S2A except little Gravel	
S3 Loose, very dense, similar to SS sample S2B with trace Roots	445.0 / 6.0 Glacial Till
S4 Medium dense, similar to SS sample S3 with some orange oxidation	
S5 Medium dense, similar to SS sample S4	
S6 Medium dense, similar to SS sample S5 except trace coarse-Sand and Gravel	
S7 Medium dense, similar to SS sample S2A with small lenses of gray Silt and traces of decomposed Rock	
S8 Medium dense, similar to SS sample S2A	
S9 Loose, similar to SS sample S8, except wet	
S10 Very dense, greenish gray, fine to medium SAND and SILT, trace fine Gravel (top few inches possibly disturbed) inclinometer installed.	438.0 / 16.0 Bedrock / 431.7 / 19.3 Bottom of Borehole at 19.3 ft

Remarks: (0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(3.5'): SS sampler "bouncing" on possible tree rootshood fill material.
(4.8'): Observed difficult advance of casing through possible wood. Roller bit used to advance hole temporarily past casing to clear debris.
(19.4'): 19' of 2" I.D. inclinometer casing installed. 80 gallons of bentonite/cement (7:2 ratio) grout tremied from bottom of hole to a depth of 5'. Bentonite chips poured in hole from 5' depth to surface.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Pi = Pitcher Sampler; Sa = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-7

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01



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BORING LOG
Project Name
Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-8A
Page No.: 1 of 1
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 20, 2001 Date Finished: April 20, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 435.5
Station: Offset: ft

Casing: HSA Sampler: SS
I.D./O.D.: 3.25 in. 2.0 in.
Hammer Wt.: NA 140 lbs
Hammer Fall: NA 30 in.
Rig Type: Acker Soil Man Truck
Other:

Groundwater Observations: Date and Time | Depth (ft) | Elevation (ft) | Notes

Sample Information: Depth (ft) | Casing Blowcount | Sample Number | Type | Penetration (inches) | Recovery (inches) | Depth (ft) | Blows/6 inch Interval 0-6 6-12 12-18 18-24 | Casing Time (min./ft) | REC/RQD (%)

Sample Description: Classification System: Burmister

Strata Description: Symbol | Elevation & Depth (feet)

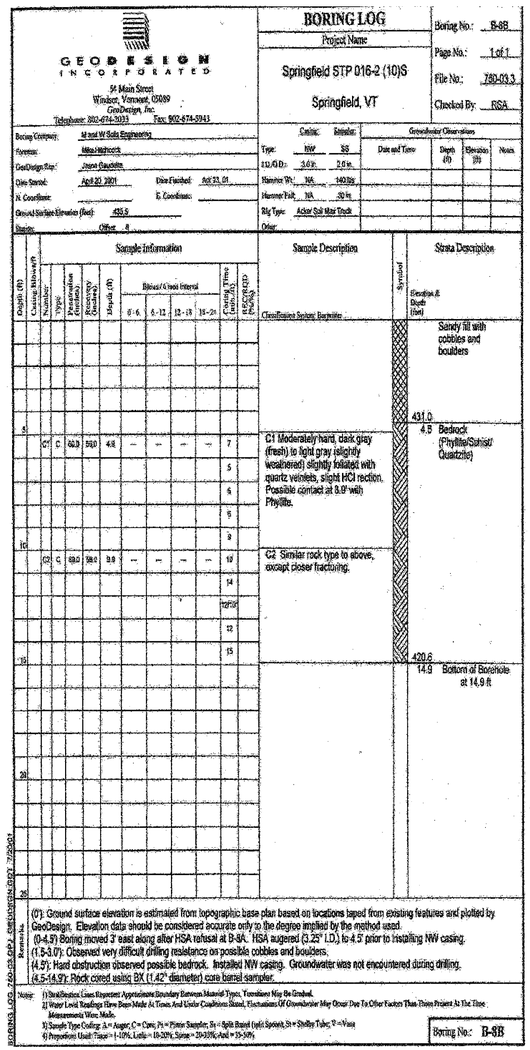
Sample Description	Strata Description
S1 Refusal, brown gray, fine to medium SAND, little Silt, trace fine Gravel	435.0 Asphalt / 0.5 Sandy Fill
S2 Refusal, similar to SS sample S1, Gravel in spoon tip	431.5 / 4.0 Possible Bedrock
S3 Refusal, no recovery (possibly sampling on cobble or bedrock)	430.0 / 5.5 Bottom of Borehole at 5.5 ft

Remarks: (0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(4.5'): Hard obstruction observed during HSA auger advance (boulder estimated min. 6" diameter.)
(5.0'): Hard obstruction observed during HSA auger advance (boulder or possible bedrock). HSA refusal at 5.5'. Moved approximately 3' east along roadway to B-8B after HSA refusal at B-8A.
(5.0'): Groundwater was not encountered during drilling.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Pi = Pitcher Sampler; Sa = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-8A

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01



GEODESIGN INCORPORATED
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BORING LOG
Project Name
Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-8B
Page No.: 1 of 1
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 20, 2001 Date Finished: April 23, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 435.9
Station: Offset: ft

Casing: HW Sampler: SS
I.D./O.D.: 3.6 in. 2.0 in.
Hammer Wt.: NA 140 lbs
Hammer Fall: NA 30 in.
Rig Type: Acker Soil Man Truck
Other:

Groundwater Observations: Date and Time | Depth (ft) | Elevation (ft) | Notes

Sample Information: Depth (ft) | Casing Blowcount | Sample Number | Type | Penetration (inches) | Recovery (inches) | Depth (ft) | Blows/6 inch Interval 0-6 6-12 12-18 18-24 | Casing Time (min./ft) | REC/RQD (%)

Sample Description: Classification System: Burmister

Strata Description: Symbol | Elevation & Depth (feet)

Sample Description	Strata Description
	Sandy fill with cobbles and boulders / 431.0
C1 Moderately hard, dark gray (fresh) to light gray (slightly weathered) slightly foliated with quartz veinlets, slight HCl rection. Possible contact at 9.9' with Phyllite.	4.9 Bedrock (Phyllite/Schist/ Quartzite)
C2 Similar rock type to above, except closer fracturing.	420.6 / 14.9 Bottom of Borehole at 14.9 ft

Remarks: (0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(0-4.5') Boring moved 3' east along after HSA refusal at B-8A. HSA augered (3.25" I.D.) to 4.5' prior to installing NW casing.
(1.5-3.0'): Observed very difficult drilling resistance on possible cobbles and boulders.
(4.5'): Hard obstruction observed possible bedrock. Installed NW casing. Groundwater was not encountered during drilling.
(4.5-14.9'): Rock cored using BX (1.42" diameter) core barrel sampler.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Pi = Pitcher Sampler; Sa = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-8B

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME:	00b124\structures\sb124bor.xls
PROJECT MANAGER:	R. R. WHITCOMB
DESIGNED BY:	G. ROY
BORING LOG INFORMATION SHEET #4	
PLOT DATE:	6/18/2004
DRAWN BY:	L. ASHWORTH
CHECKED BY:	G. ROY
SHEET	30 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BORING LOG INFORMATION

BORING LOG — B-9 — Page 1 of 3

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 23, 2001 Date Finished: Apr 25, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 473.7
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. 2.0 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Mobile Drill B-47 Track Other:
Sampler: SS

Groundwater Observations			
Date and Time	Depth (ft)	Elevation (ft)	Notes
4/25/01 10:45 AM	13.0	460.7	Drilling
7/12/01 8:15 AM	16.3	457.4	GW

Depth (ft)	Casing Blowsoft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	REC/RQD (%/%)	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (feet))	Well Log
		S1	SS	24.0	6.0	0.0	1	7	14	21			S1 Medium dense, Top 2" topsoil Bottom 4" Brown, fine to coarse SAND, trace Silt, trace Gravel		473.2 Topsoil 0.5 Sandy Fill with cobbles and boulders	
		S2	SS	24.0	0.0	2.0	6	8	8	6			S2 Medium dense, no recovery			
5		S3	SS	24.0	16.0	4.0	8	6	6	4			S3 Medium dense, brown, fine to coarse SAND, little Gravel, little Silt			
		S4	SS	24.0	8.0	6.0	3	3	2	2			S4 Loose, similar to SS sample S3 with decomposed, oxidized rock fragments			
		S5	SS	24.0	6.0	8.0	2	1	3	2			S5 Loose, similar to SS sample S4, layered with greenish brown, fine to medium SAND, some Silt			
10		S6	SS	24.0	0.0	10.0	4	2	2	2			S6 Loose, no recovery			
		S7	SS	24.0	4.0	12.0	2	4	11	11			S7 Medium dense, similar to SS sample S5 with piece of cobble in spoon tip, wet		460.7 13.0 Layered Sands with cobbles	
15		S8	SS	24.0	3.0	15.0	16	22	20	20			S8 Dense, greenish brown, fine to coarse SAND, little Gravel, trace Silt			
		S9	SS	24.0	18.0	17.0	18	12	18	38			S9 Medium dense, greenish brown SILT and fine to medium SAND, trace fine Gravel and decomposed rock pieces		455.7 18.0 Glacial Till with boulders	
20																
25																

(0'): Ground surface elevation was determined by survey. Location is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign.
(0-15'): HSA augered (3.25" I.D.) to 15' prior to installing NW casing.
(8-10'): Observed slight grinding resistance through possible gravel/cobbles during HSA auger advance.
(14-15'): Gravel/cobble obstruction. SS sample taken at 15'. Installed NW casing to 16'.
(24-25.5'): Hard grinding observed through boulders estimated 6-12" diameter at 24' and 25'. SS sample taken at 25.5'.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger, C = Core, Ps = Piston Sampler, Sa = Split Barrel (split Spoon), St = Shelby Tube, V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-9

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

BORING LOG — B-9 — Page 2 of 3

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
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Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 25, 2001 Date Finished: Apr 25, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 473.7
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. 2.0 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Mobile Drill B-47 Track Other:
Sampler: SS

Groundwater Observations			
Date and Time	Depth (ft)	Elevation (ft)	Notes
4/25/01 10:45 AM	13.0	460.7	Drilling
7/12/01 8:15 AM	16.3	457.4	GW

Depth (ft)	Casing Blowsoft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	REC/RQD (%/%)	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (feet))	Well Log
		S10	C	42.0	15.0	25.0	20	34	36	50/6"			S10 Very dense, similar to SS sample S9		Glacial Till with boulders (Continued)	
30		S11	SS	10.0	16.0	30.0	44	50/4"	--	--			S11 Very dense, similar to SS sample S9		446.2 27.5 Boulder 445.2 28.5 Glacial Till with boulders	
35		S12	SS	24.0	16.0	35.0	16	29	38	54			S12 Very dense, similar to SS sample S9			
40		S13	SS	12.0	10.0	40.0	28	52	--	--			S13 Very dense, similar to SS sample S9		423.7	
45																
50																

(27.5-28.5'): Roller bit advance through 1' diameter boulder. Advanced hole to 30' and continued SS sampling.
(30.8'): Hard resistance observed during roller bit advance. Boulder estimated 6" diameter.
(50-51.5'): High resistance observed probable bedrock. Roller bit refusal on probable bedrock.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger, C = Core, Ps = Piston Sampler, Sa = Split Barrel (split Spoon), St = Shelby Tube, V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-9

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

BORING LOG — B-9 — Page 3 of 3

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 25, 2001 Date Finished: Apr 25, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 473.7
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. 2.0 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Mobile Drill B-47 Track Other:
Sampler: SS

Groundwater Observations			
Date and Time	Depth (ft)	Elevation (ft)	Notes
4/25/01 10:45 AM	13.0	460.7	Drilling
7/12/01 8:15 AM	16.3	457.4	GW

Depth (ft)	Casing Blowsoft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	REC/RQD (%/%)	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (feet))	Well Log
		S14	SS	5.0	5.0	50.8	50/5"	--	--	--			S14 Very dense, greenish brown, oxidized, micaceous, highly weathered rock		50.0 Weathered Bedrock 422.2 51.5 Bedrock (Phyllite/Schist/ Quartzite)	
55		C1	C	60.0	41.0	50.8					21	79-89	C1 Fresh, medium hard, light gray, fine grained, metasedimentary, slight HCl reaction, thinly bedded with slightly weathered, interbedded, light to dark gray, fine grained metamorphic, intensely foliated with quartz and sulphide veining. Some chlorite alteration.			
											15	17				
											15	9				
60											14					
											9	68-89	C2 Similar to C Sample C1 with quartz veining at bottom, slight weathering.			
											8					
											9					
65											5					
											10					
70															412.2 61.5 Bottom of Borehole at 61.5 ft.	
75																

(51.5-61.5'): Cored using BX (1.42" diameter) core barrel sampler.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger, C = Core, Ps = Piston Sampler, Sa = Split Barrel (split Spoon), St = Shelby Tube, V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-9

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

BORING LOG — B-10 — Page 1 of 2

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 23, 2001 Date Finished: Apr 23, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 435.0
Station: Offset: ft

Casing: Type: NW I.D./O.D.: 3.0 in. 2.0 in. Hammer Wt.: NA 140 lbs Hammer Fall: NA 30 in. Rig Type: Mobile Drill B-47 Track Other:
Sampler: SS

Groundwater Observations			
Date and Time	Depth (ft)	Elevation (ft)	Notes
4/23/01 11:45 AM	4.0	431.0	Drilling

Depth (ft)	Casing Blowsoft	Sample Number	Sample Type	Sample Penetration (inches)	Sample Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	REC/RQD (%/%)	Sample Description (Classification System: Burmister)	Symbol	Strata Description (Elevation & Depth (feet))	Well Log
													Topsoil		433.0 Topsoil 2.0 Sandy Fill	
		S1	SS	16.0	16.0	3.0	10	6	14	30/1"			S1 Top 12" Medium dense, orange brown, fine to coarse SAND, little Silt, trace Gravel and Wood Splinters. Bottom 4" greenish grey SILT and fine to medium SAND.		430.5 4.5 Glacial Till	
5		S2	SS	11.0	8.0	8.0	28	50/5"	--	--			S2 Very dense, similar to bottom of SS sample S1 with decomposed schistose Rock Fragments			
		S3	SS	5.0	5.0	8.1	50/5"	--	--	--			S3 Very dense, similar to SS sample S2 except little Gravel			
10																
		S4	SS	13.0	11.0	13.8	47	45	30/1"	--			S4 Very dense, similar to SS sample S3			
15																
		S5	SS	9.0	8.0	18.0	41	50/3"	--	--			S5 Very dense, similar to SS sample S4 except trace to little fine Gravel			
20															414.6	
		C1	C	69.0	84.0	20.8	--	--	--	--	9	95-82	C1 Moderately hard, light to dark steel gray, very close to moderate fracturing, slight weathering.		20.4 Bedrock (Phyllite/Schist/ Quarzite)	
											8					
											9					
25											11					

(0'): Ground surface elevation is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign. Elevation data should be considered accurate only to the degree implied by the method used.
(0-3'): SS auger (4" O.D.) used to advance hole through asphalt to 3' depth. Hard obstruction observed at 1.5' depth.
(0-20.4'): HSA augered (3.25" I.D.) to 20.4' prior to installing NW casing.
(5-8.1'): Obstructions observed through 5-6' depth and 7.5-8.1' during HSA auger advance.
(20.4'): HSA refusal on probable bedrock. Installed NW casing to 20.4' depth. Roller bit used to flush out hole prior to rock coring.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger, C = Core, Ps = Piston Sampler, Sa = Split Barrel (split Spoon), St = Shelby Tube, V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-10

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/20/01

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME:	00b124\structures\sb124bor.xls
PROJECT MANAGER:	R. R. WHITCOMB
DESIGNED BY:	G. ROY
BORING LOG INFORMATION SHEET #5	
PLOT DATE:	6/18/2004
DRAWN BY:	L. ASHWORTH
CHECKED BY:	G. ROY
SHEET	31 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BORING LOG INFORMATION

BORING LOG — B-10

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-10 | Page No.: 2 of 2 | File No.: 750-03.3 | Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 23, 2001 Date Finished: Apr 23, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 435.0
Station: Offset: R

Casing: Type	Casing: Hammer Wt.	Casing: Hammer Fall	Sampler: Type	Sampler: L.D./O.D.	Sampler: Hammer Wt.	Sampler: Hammer Fall	Rig Type	Other
NW	NA	NA	SS	3.0 in.	NA	30 in.	Mobile Drill B-47 Track	

Groundwater Observations: Date and Time	Depth (ft)	Elevation (ft)	Notes
4/23/01 11:45 AM	4.0	431.0	Drilling

Depth (ft)	Casing Blowsft	Sample: Number	Sample: Type	Sample: Penetration (inches)	Sample: Recovery (inches)	Sample: Depth (ft)	Blows / 6 inch interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring: Time (min./ft)	Coring: REC/RQD (%/%)	Sample Description	Symbol	Strata Description: Elevation & Depth (feet)	Well Log
												7	Classification System: Burmister			
		C2	C	60.0	60.0	25.6	--	--	--	--	8	98-90	C2 Rock type similar to above, except moderate fracturing, fresh.		Bedrock (Phyllite/Schist/ Quarzite) (Continued)	
											8					
											8					
30											8				404.2	
											9				30.8 Bottom of Borehole at 30.8 ft	
35																
40																
45																
50																

Remarks: (20.4-30.8'): Rock cored using BX (1.42" diameter) core barrel sampler.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-10

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/2/01

BORING LOG — B-11

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-11 | Page No.: 1 of 2 | File No.: 750-03.3 | Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 24, 2001 Date Finished: Apr 25, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 463.7
Station: Offset: B

Casing: Type	Casing: Hammer Wt.	Casing: Hammer Fall	Sampler: Type	Sampler: L.D./O.D.	Sampler: Hammer Wt.	Sampler: Hammer Fall	Rig Type	Other
H.S.A.	NA	NA	SS	3.25 in.	NA	30 in.	Mobile Drill B-47 Track	

Groundwater Observations: Date and Time	Depth (ft)	Elevation (ft)	Notes
4/24/01 10:30 AM	13.0	450.7	Drilling
7/12/01 8:30 AM	13.0	450.7	CW

Depth (ft)	Casing Blowsft	Sample: Number	Sample: Type	Sample: Penetration (inches)	Sample: Recovery (inches)	Sample: Depth (ft)	Blows / 6 inch interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring: Time (min./ft)	Coring: REC/RQD (%/%)	Sample Description	Symbol	Strata Description: Elevation & Depth (feet)	Well Log
		S1	SS	24.0	6.0	0.0	1	2	2	2			Classification System: Burmister S1 Loose, brown, fine to medium SAND, some Silt, trace Roots		463.2 Top Soil 0.5 Fine to Coarse Sandy Fill	
		S2	SS	24.0	2.0	2.0	5	9	11	4			S2 Medium dense, light brown, fine to coarse SAND, little SILT, trace Gravel			
5		S3	SS	24.0	12.0	4.0	6	6	5	5			S3 Top 8" Medium dense, similar to SS sample S2 Bottom 4" Greenish gray, fine to medium SAND, some Silt with oxidized partings		458.2 5.5 Gravelly Sandy Fill	
		S4	SS	24.0	2.0	6.0	9	5	3	3			S4 Loose, no recovery			
		S5	SS	24.0	6.0	8.0	2	2	1	3			S5 Loose, brown, fine to coarse SAND, little Gravel, trace Silt			
10		S6	SS	24.0	6.0	10.0	3	1	1	5			S6 Loose, green brown, SILT and fine to medium SAND, trace woodfroot Fibers		451.7 12.0 Disturbed Glacial Till	
		S7	SS	24.0	15.0	12.0	4	4	7	8			S7 Medium dense, greenish brown, fine to medium SAND, some Silt, trace fine Gravel		450.7 13.0 Layered Silty Fine Sands	
15		S8	SS	24.0	18.6	14.0	8	18	23	32			S8 Dense, greenish brown, SILT, some fine Sand Bottom 2" layered (1/8" thick)			
20		S9	SS	5.0	5.0	30.0	50/5"	--	--	--			S9 Very dense, similar to above, layered with fine to medium SAND			
25																

Remarks: (0'): Ground surface elevation was determined by survey. Location is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign.
(5-8'): Observed slight grinding resistance through gravel/possible cobbles.
(17-18'): Obstructions observed during HSA auger advance (cobbles)

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-11

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/2/01

BORING LOG — B-11

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-11 | Page No.: 2 of 2 | File No.: 750-03.3 | Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Jason Gaudette
Date Started: April 24, 2001 Date Finished: Apr 25, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 463.7
Station: Offset: B

Casing: Type	Casing: Hammer Wt.	Casing: Hammer Fall	Sampler: Type	Sampler: L.D./O.D.	Sampler: Hammer Wt.	Sampler: Hammer Fall	Rig Type	Other
H.S.A.	NA	NA	SS	3.25 in.	NA	30 in.	Mobile Drill B-47 Track	

Groundwater Observations: Date and Time	Depth (ft)	Elevation (ft)	Notes
4/24/01 10:30 AM	13.0	450.7	Drilling
7/12/01 8:30 AM	13.0	450.7	CW

Depth (ft)	Casing Blowsft	Sample: Number	Sample: Type	Sample: Penetration (inches)	Sample: Recovery (inches)	Sample: Depth (ft)	Blows / 6 inch interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring: Time (min./ft)	Coring: REC/RQD (%/%)	Sample Description	Symbol	Strata Description: Elevation & Depth (feet)	Well Log
		S10	SS	9.0	9.0	25.0	50/5"	--	--	--			Classification System: Burmister S10 Very dense, green brown, fine to medium SAND, little to some Silt		Layered Silty Fine Sands (Continued)	
30		S11	SS	9.0	9.0	30.0	50/5"	--	--	--			S11 Very dense, greenish brown, fine to medium SAND, some Silt, trace fine Gravel		433.7 30.0 Glacial Till with cobbles and boulders.	
35		S12	SS	9.0	8.0	35.0	50/2"	--	--	--			S12 Very dense, similar to SS sample S11 except little Silt			
40		S13	SS	3.0	3.0	40.0	50/3"	--	--	--			S13 Very dense, similar to SS sample S12		423.2 40.5 Probable Bedrock 421.7 42.0 Bottom of Borehole at 41.0 ft	
45																
50																

Remarks: (34'): Grinding resistance observed through dense till layer on possible cobbles/gravel. (Through to 35' depth - attempted SS sample).
(39.5'): Hard drilling resistance during HSA auger advance on possible small boulder/cobble
(40.5'): Hard drilling resistance during HSA auger advance on possible bedrock. HSA refusal at 42'.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

Boring No.: B-11

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/2/01

BORING LOG — B-12

GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-12 | Page No.: 1 of 4 | File No.: 750-03.3 | Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 1, 2001 Date Finished: May 1, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 506.5
Station: Offset: B

Casing: Type	Casing: Hammer Wt.	Casing: Hammer Fall	Sampler: Type	Sampler: L.D./O.D.	Sampler: Hammer Wt.	Sampler: Hammer Fall	Rig Type	Other
NW	NA	NA	SS	3.0 lb.	140 lbs	30 in.	Mobile Drill	

Groundwater Observations: Date and Time	Depth (ft)	Elevation (ft)	Notes
5/1/01 12:00 AM	30.0	476.5	Drilling

Depth (ft)	Casing Blowsft	Sample: Number	Sample: Type	Sample: Penetration (inches)	Sample: Recovery (inches)	Sample: Depth (ft)	Blows / 6 inch interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring: Time (min./ft)	Coring: REC/RQD (%/%)	Sample Description	Symbol	Strata Description: Elevation & Depth (feet)	Well Log
													Classification System: Burmister		Sandy Fill with cobbles	
5																
															498.5	
						8.0							+/- 8' Brown, Sandy GRAVEL with Cobbles		8.0 Fine Sand and Silts	
10																
						12.0							+/- 12' Gray SILT and Fine Sand			
15		S1	SS	24.0	18.0	15.0	15	15	15	62			S1 Dense, brown, sandy GRAVEL, little gray Silt			
20		S2	SS	18.0	17.0	20.0	14	20	43	--			S2 Dense to very dense, similar as SS sample S1, except some cobbles			
25																

Remarks: (0'): Ground surface elevation was determined by survey. Location is estimated from topographic base plan based on locations taped from existing features and plotted by GeoDesign.
(0-15'): Soil classification is based on visual observation of HSA cuttings.
(0-19.5'): HSA augured (3.25" I.D.) to 19.5' prior to installing NW casing.
(0-19.5'): Installed NW casing to 19.5'. Roller bit used to flush out hole prior to advancement.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger; C = Core; Ps = Piston Sampler; Sx = Split Barrel (split Spoon); St = Shelby Tube; V = Vane
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

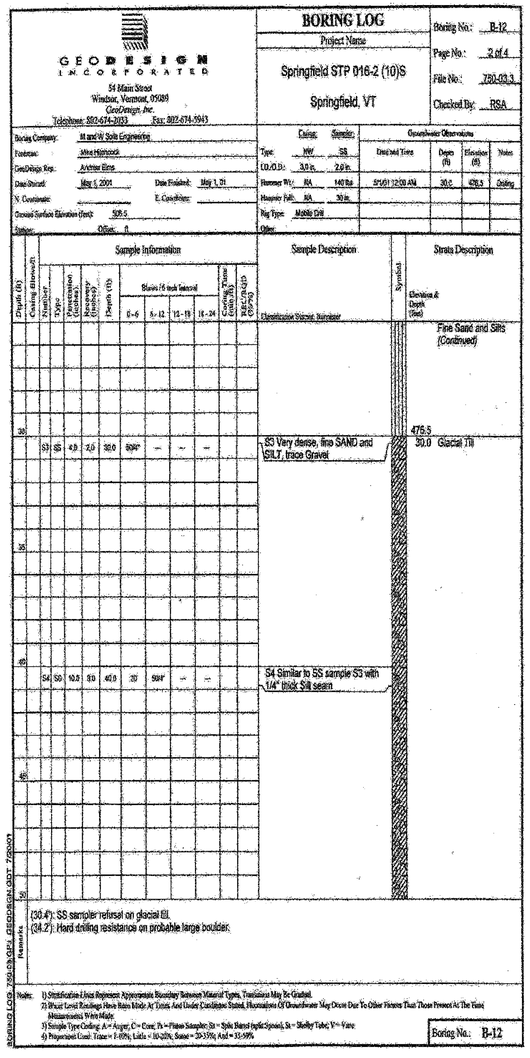
Boring No.: B-12

BORING LOG 750-03.GPJ GEODESIGN.GDT 7/2/01

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME:	00b124\structures\sb124bor.xls
PROJECT MANAGER:	R. R. WHITCOMB
DESIGNED BY:	G. ROY
BORING LOG INFORMATION SHEET #6	
PLOT DATE:	6/18/2004
DRAWN BY:	L. ASHWORTH
CHECKED BY:	G. ROY
SHEET	32 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BORING LOG INFORMATION



GEODESIGN INCORPORATED
54 Main Street
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BORING LOG
Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-12
Page No.: 2 of 4
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 1, 2001 Date Finished: May 1, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 505.5
Station: Offset: ft

Casing: Type: HW, I.D./O.D.: 3.0 in, 2.9 in, Hammer Wt.: NA, 140 lbs, Hammer Fall: NA, 30 in, Rig Type: Mobile Drill, Other:
Sampler: SS
Groundwater Observations: Date and Time: 5/1/01 12:00 AM, Depth (ft): 30.0, Elevation (ft): 476.5, Notes: Drilling

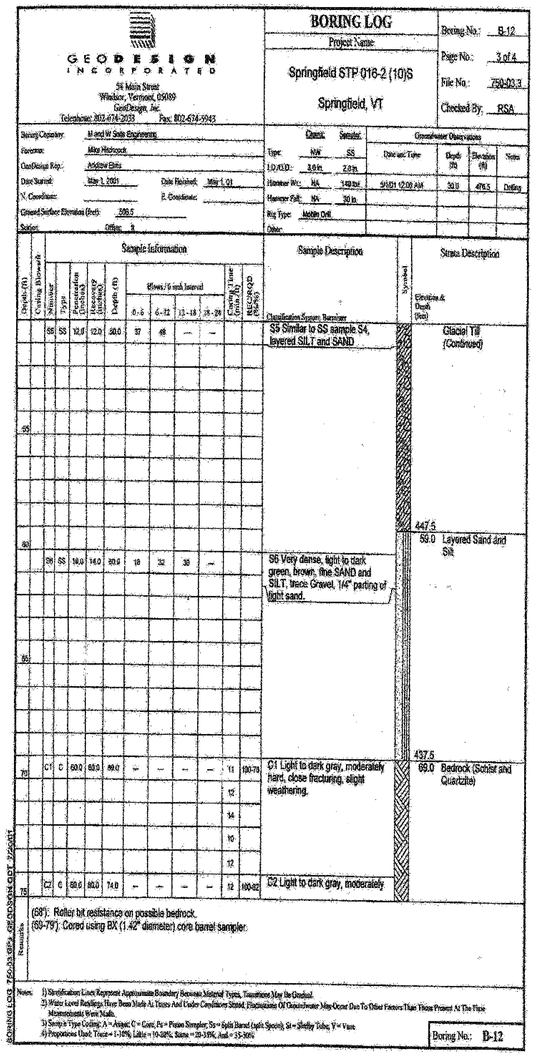
Sample Information: Depth (ft); Casing Blowcount; Number; Type; Penetration (inches); Recovery (inches); Depth (ft); Blows/6 inch Interval: 0-6, 6-12, 12-18, 18-24; Casing Time (min./ft); REC/PRO (%/%)
Sample Description: Classification System: Burmister
Symbols
Strata Description: Elevation & Depth (feet)

Depth (ft)	Sample Description	Strata Description
		Fine Sand and Silt (Continued)
30		475.5
	S3 Very dense, fine SAND and SILT, trace Gravel	30.0 Glacial Till
35		
40		
45	S4 Similar to SS sample S3 with 1/4" thick Silt seam	
50		

Remarks: (30.4'): SS sampler refusal on glacial till.
(34.2'): Hard drilling resistance on probable large boulder.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger, C = Core, Pi = Piston Sampler, Sr = Split Barrel (split Spoon), Si = Shelby Tube, V = Vane.
4) Proportional Used: Trace = 1-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Boring No.: B-12



GEODESIGN INCORPORATED
54 Main Street
Windsor, Vermont, 05089
GeoDesign, Inc.
Telephone: 802-674-2033 Fax: 802-674-5943

BORING LOG
Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-12
Page No.: 3 of 4
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 1, 2001 Date Finished: May 1, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 505.5
Station: Offset: ft

Casing: Type: HW, I.D./O.D.: 3.0 in, 2.9 in, Hammer Wt.: NA, 140 lbs, Hammer Fall: NA, 30 in, Rig Type: Mobile Drill, Other:
Sampler: SS
Groundwater Observations: Date and Time: 5/1/01 12:00 AM, Depth (ft): 30.0, Elevation (ft): 476.5, Notes: Drilling

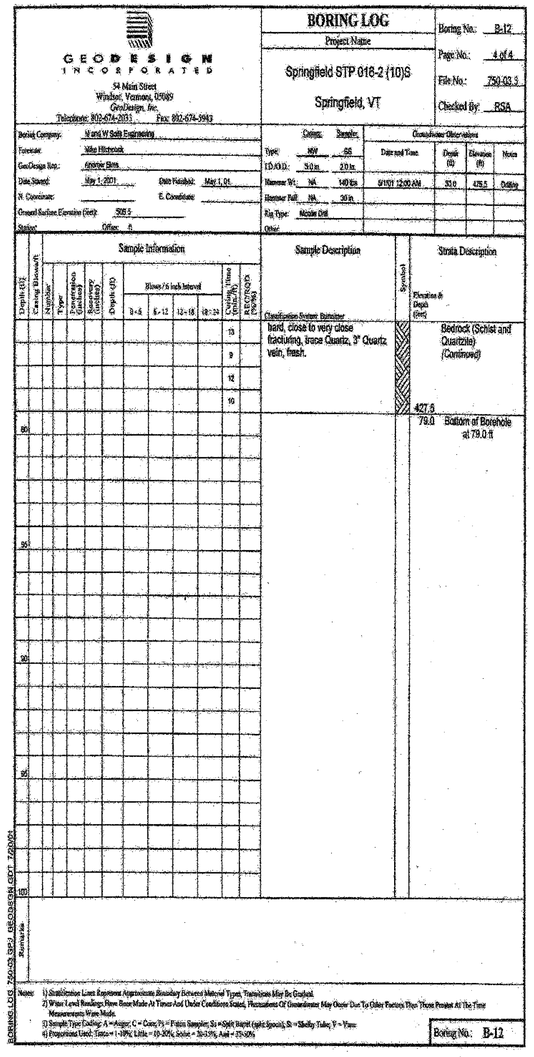
Sample Information: Depth (ft); Casing Blowcount; Number; Type; Penetration (inches); Recovery (inches); Depth (ft); Blows/6 inch Interval: 0-6, 6-12, 12-18, 18-24; Casing Time (min./ft); REC/PRO (%/%)
Sample Description: Classification System: Burmister
Symbols
Strata Description: Elevation & Depth (feet)

Depth (ft)	Sample Description	Strata Description
		Glacial Till (Continued)
55	S5 Similar to SS sample S4, layered SILT and SAND	
		447.5
60	S6 Very dense, light to dark, green, brown, fine SAND and SILT, trace Gravel, 1/4" parting of light sand.	59.0 Layered Sand and Silt
65		
70	C1 Light to dark gray, moderately hard, close fracturing, slight weathering.	437.5 69.0 Bedrock (Schist and Quartzite)
75	C2 Light to dark gray, moderately	

Remarks: (58'): Roller bit resistance on possible bedrock.
(60-79'): Cored using BX (1.42" diameter) core barrel sampler.

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger, C = Core, Pi = Piston Sampler, Sr = Split Barrel (split Spoon), Si = Shelby Tube, V = Vane.
4) Proportions Used: Trace = 1-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Boring No.: B-12



GEODESIGN INCORPORATED
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BORING LOG
Project Name: Springfield STP 016-2 (10)S
Springfield, VT

Boring No.: B-12
Page No.: 4 of 4
File No.: 750-03.3
Checked By: RSA

Boring Company: M and W Soils Engineering
Foreman: Mike Hitchcock
GeoDesign Rep.: Andrew Elms
Date Started: May 1, 2001 Date Finished: May 1, 01
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 505.5
Station: Offset: ft

Casing: Type: HW, I.D./O.D.: 3.0 in, 2.9 in, Hammer Wt.: NA, 140 lbs, Hammer Fall: NA, 30 in, Rig Type: Mobile Drill, Other:
Sampler: SS
Groundwater Observations: Date and Time: 5/1/01 12:00 AM, Depth (ft): 30.0, Elevation (ft): 476.5, Notes: Drilling

Sample Information: Depth (ft); Casing Blowcount; Number; Type; Penetration (inches); Recovery (inches); Depth (ft); Blows/6 inch Interval: 0-6, 6-12, 12-18, 18-24; Casing Time (min./ft); REC/PRO (%/%)
Sample Description: Classification System: Burmister
Symbols
Strata Description: Elevation & Depth (feet)

Depth (ft)	Sample Description	Strata Description
	hard, close to very close fracturing, trace Quartz, 3" Quartz vein, fresh.	Bedrock (Schist and Quartzite) (Continued)
80		427.5
		79.0 Bottom of Borehole at 79.0 ft
85		
90		
95		
100		

Remarks:

Notes: 1) Stratification Lines Represent Approximate Boundary Between Material Types, Transitions May Be Gradual.
2) Water Level Readings Have Been Made At Times And Under Conditions Stated, Fluctuations Of Groundwater May Occur Due To Other Factors Than Those Present At The Time Measurements Were Made.
3) Sample Type Coding: A = Auger, C = Core, Pi = Piston Sampler, Sr = Split Barrel (split Spoon), Si = Shelby Tube, V = Vane.
4) Proportions Used: Trace = 1-10%, Little = 10-20%, Some = 20-35%, And = 35-50%

Boring No.: B-12

PROJECT NAME:	SPRINGFIELD		
PROJECT NUMBER:	STP 016-2 (10)S		
FILE NAME:	00b124\structures\sb124bor.xls	PLOT DATE:	6/18/2004
PROJECT MANAGER:	R. R. WHITCOMB	DRAWN BY:	L. ASHWORTH
DESIGNED BY:	G. ROY	CHECKED BY:	G. ROY
BORING LOG INFORMATION SHEET #7		SHEET	33 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPAIR AND REHABILITATION OF AN EXISTING METAL BIN WALL AND THE INSTALLATION OF NEW DRAINAGE AND SIDEWALK. THE LIMITS OF CONSTRUCTION DO NOT APPROACH ANY BUILDINGS OR OTHER STRUCTURES. NATURAL RESOURCES WITHIN THE PROJECT AREA HAVE BEEN CLEARLY IDENTIFIED AND SHOWN IN THE EXISTING CONDITIONS.

IT IS ANTICIPATED THAT THIS WORK WILL START IN THE FALL OF 2004 AND BE COMPLETED IN THE FALL OF 2005.

TOTAL DISTURBED AREA (EXCLUDING WASTE, BORROW AND STAGING AREAS): 0.98 ACRES. IT HAS BEEN DETERMINED THAT THE PROJECT WILL DISTURB UNDER 5 ACRES OF LAND INCLUDING BOTH ON & OFF-SITE WASTE, BORROW, STAGING, HAUL ROADS, ETC. SHOULD THIS CHANGE AND RESULT IN 5 ACRES OR MORE OF EARTH DISTURBANCE, THEN ADDITIONAL PERMITTING WITH THE AGENCY OF NATURAL RESOURCES VIA THE FILING OF A NOTICE OF INTENT FOR COVERAGE UNDER THE APPROPRIATE GENERAL PERMIT OR INDIVIDUAL PERMIT WILL BE REQUIRED PRIOR TO INITIATING CONSTRUCTION. ALL WASTE, BORROW AND STAGING AREAS NEED PRIOR REVIEW AND APPROVAL PURSUANT TO VAOT STANDARD SPECIFICATIONS, SECTION 105.25.

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:
THE AREA SURROUNDING THE PROJECT CONSISTS MOSTLY OF MATURE DECIDUOUS TREES ON STEEP GRADE IN THE NORTHERN HALF OF THE PROJECT. THE SOUTHERN HALF OF THE PROJECT CONSISTS OF PAVED ROADWAYS THAT ARE GENERALLY FLAT IN GRADE.

DRAINAGE, WATERWAYS, BODIES OF WATER:
THERE ARE TWO INTERMITTENT STREAMS THAT RUN THROUGH THE PROJECT. THE BANKS ARE VERY STEEP AND THERE IS SOME EROSION ALONG THE BANKS OF THE EASTERLY STREAM. THERE IS ALSO MAN MADE DRAINAGE WITHIN THE AREA THAT WILL BE PROTECTED FROM SEDIMENT TRANSPORT DURING CONSTRUCTION. THE BLACK RIVER IS WITHIN THE VICINITY OF THE CONSTRUCTION LIMITS BUT WILL NOT BE DIRECTLY AFFECTED BY THE PROJECT.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:
THE TOPOGRAPHY OF THE SITE IS VERY STEEP AND HEAVILY VEGETATED. THE MAJOR RECONSTRUCTION OF THE METAL BIN WALL WILL TAKE PLACE ALONG VT 11, A PAVED HIGHWAY. A PAVED SIDE ROAD BISECTS THE PROJECT WHICH IS VEGETATED ALONG BOTH SIDES FOR THE LENGTH OF THE PROJECT.

VEGETATION:
THE VEGETATION WITHIN THE PROJECT AREA CONSISTS PRIMARILY OF MATURE DECIDUOUS TREES. THE VEGETATION RESIDES COMPLETELY WITHIN THE NORTHERN HALF OF THE PROJECT AREA.

SOILS:
THE SOIL WITHIN THE AREA IS CLASSIFIED AS WINDSOR FINE LOAMY SAND. IT OCCURS ON 25 TO 60% SLOPES AND IS CONSIDERED HIGHLY ERODIBLE. THE SOIL CONSISTS OF VERY DEEP, EXCESSIVELY DRAINED SOILS ON TERRACES ALONG ALLUVIAL STREAMS VALLEYS. THEY WERE FORMED IN SANDY GLACIOFLUVIAL DEPOSITS.

TYPICAL K-VALUE FOR THIS CLASSIFICATION: 0.32

SENSITIVE RESOURCE AREAS:
THERE ARE NO SENSITIVE RESOURCE AREAS IDENTIFIED WITHIN THE PROJECT AREA.

PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES:
THE BLACK RIVER IS WITHIN THE VICINITY OF THE PROJECT AREA BUT WILL NOT BE DIRECTLY AFFECTED BY CONSTRUCTION.

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES TO BE UTILIZED INCLUDE:

PROJECT DEMARCATION FENCING, DENOTED -PDF- ON THE PLANS, TO DELINEATE THE LIMITS THE CONTRACTOR CAN ACCESS WITH CONSTRUCTION EQUIPMENT. THIS MEASURE LIMITS THE AREA THAT CAN BE DISTURBED AND EXPOSED TO EROSION.

TRACKING OF ALL SLOPES, COMBINED WITH TEMPORARY MULCHING, WILL ALSO BE UTILIZED ON A REGULAR BASIS. ANY SLOPES TO BE EXPOSED FOR SEVERAL DAYS PRIOR TO FINAL GRADING SHALL BE TRACKED AND MULCHED. SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF FORECASTED RAIN.

SEEDING MULCHING AND BIODEGRADABLE EROSION CONTROL MATTING, OR AN EQUIVALENT, SHALL BE USED TO STABILIZE ALL SLOPES GREATER THAN 1:3. THESE SLOPES SHALL BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE OR DURING INTERMITTENT PHASES OF CONSTRUCTION.

SILT FENCE WILL BE INSTALLED ALONG SLOPES SO AS TO PREVENT SEDIMENT TRANSPORT TO DOWN GRADIENT AREAS. EACH LINE OF SILT FENCE WILL BE PLACED ALONG THE CONTOUR WITH THE LOWER EDGE BURIED 6 IN. TO PREVENT UNDERFLOW AND ENDS TURNED SLIGHTLY UP GRADE TO CREATE A PONDING EFFECT SHOULD WATER TRY TO RUN ALONG THE FENCING AND AROUND THE ENDS. SILT FENCE SHALL BE PLACED PRIOR TO ANY UPSLOPE EARTHWORK.

SAND BAGS FILLED WITH CLEAN, SMALL DIAMETER STONE, OR AN EQUIVALENT BARRIER WILL BE UTILIZED AROUND THE DROP INLET TO CREATE A TEMPORARY PONDING AREA FOR PARTICLES TO SETTLE OUT AS WATER DRAINS THROUGH BARRIER. INLET PROTECTION SHALL BE INSTALLED AS SOON AS THERE IS THE POSSIBILITY OF WATER FLOWING TO THE STRUCTURE. THE HEIGHT OF THE BARRIER SHALL BE LIMITED SUCH THAT THE PONDING AREA DOES NOT PRESENT A HAZARD TO THE TRAVELING PUBLIC. ALTERNATIVE INLET CONTROL MEASURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION.

TO MINIMIZE SEDIMENT TRANSFER TO THE BLACK RIVER, THE INSTALLATION OF DRAINAGE STRUCTURES SHOULD PROCEED FROM ITS FINAL OUTLET AT MAINLINE STA.17+60 RT. TO THE INLET AT NORTH MAIN ST. STA.23+49 RT. ADDITIONAL SUMP DEPTH HAS BEEN ADDED TO EACH DROP INLET AND CATCH BASIN TO HELP COLLECT ANY SEDIMENT THAT ESCAPES SURFACE CONTROLS. THE SEQUENCE OF THE DRAINAGE INSTALLATION AND FREQUENCY OF CLEANING OF THE SUMPS SHALL BE INCORPORATED INTO THE CONTRACTOR'S EROSION PREVENTION AND SEDIMENT CONTROL PLAN.

STABILIZED CONSTRUCTION ENTRANCES TO THE PROJECT SITE, STAGING AREAS, AS WELL AS TO WASTE AND BORROW AREAS SHALL BE ESTABLISHED. THE MINIMUM SIZE OF A STABILIZED CONSTRUCTION ENTRANCE IS 12' X 50'. ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARDS A CONSTRUCTION ENTRANCE SHALL BE PIPED UNDER THE STONE. PIPES SHALL BE APPROPRIATELY SIZED FOR THE CONTRIBUTING AREA, HOWEVER, NO PIPES SMALLER THAN 6 IN. DIAMETER SHALL BE USED. SEE TYPICAL DETAIL ON 'EROSION & SEDIMENT CONTROL PLAN' SHEET FOR MATERIALS AND CONSTRUCTION METHOD TO BE UTILIZED WHEN CONSTRUCTING A STABILIZED ENTRANCE.

PERMANENT EROSION CONTROL MEASURES

PERMANENT EROSION CONTROL MEASURES TO BE UTILIZED:

STONE LINING OF DITCHES WITH CLEAN, ANGULAR, STONE FILL, TYPE II WILL BE USED TO PREVENT EROSION DURING STORM EVENTS. STONE LINED DITCHES WILL BE CONSTRUCTED IMMEDIATELY FOLLOWING REMOVAL OF THE EXISTING WALL AND PRIOR TO ANY OTHER EXCAVATION OR CONSTRUCTION. SEE 'EROSION CONTROL DETAILS' SHEET FOR TYPICAL DITCH SECTION.

STONE FILL, TYPE I WILL BE UTILIZED AT THE EXISTING HEADWALL TO REDUCE FLOW VELOCITIES THEREFORE REDUCING EROSION POTENTIAL.

ALL DISTURBED AREAS WILL BE SEEDED AND MULCHED. SLOPES GREATER THAN 1:3 WILL UTILIZE EROSION CONTROL MATTING TO ALLOW VEGETATION TO BE ESTABLISHED.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE WORK OUTLINED IN THIS NARRATIVE CONSISTS OF APPLYING MEASURES THROUGHOUT THE LIFE OF THE PROJECT TO CONTROL EROSION AND MINIMIZE THE SEDIMENTATION OF RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION CONTROLS.

COORDINATE THE INSTALLATION, USE, AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES WITH CONSTRUCTION ACTIVITIES TO ENSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS EROSION AND SEDIMENT CONTROL. EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS. THE CONTRACTOR WILL USE ADDITIONAL EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION AND AS DIRECTED BY THE ENGINEER. SEE SECTION 105.23 OF THE VERMONT AOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001.

INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN IN THE EROSION CONTROL PLAN OR AS DIRECTED BY THE ENGINEER. DO NOT MODIFY THE TYPE, SIZE OR LOCATION OF ANY CONTROL OR PRACTICE WITHOUT APPROVAL OF THE ENGINEER. ANY CHANGES SHALL BE NOTED ON THE PLANS, IN THE WEEKLY INSPECTION REPORT, AND REPORTED TO THE APPROPRIATE AUTHORITY IN A TIMELY MANNER. INSPECT ALL CONTROL MEASURES WEEKLY AND AFTER EACH RAINFALL EVENT. REPAIR MEASURES PROMPTLY ONCE DAMAGE IS DISCOVERED.

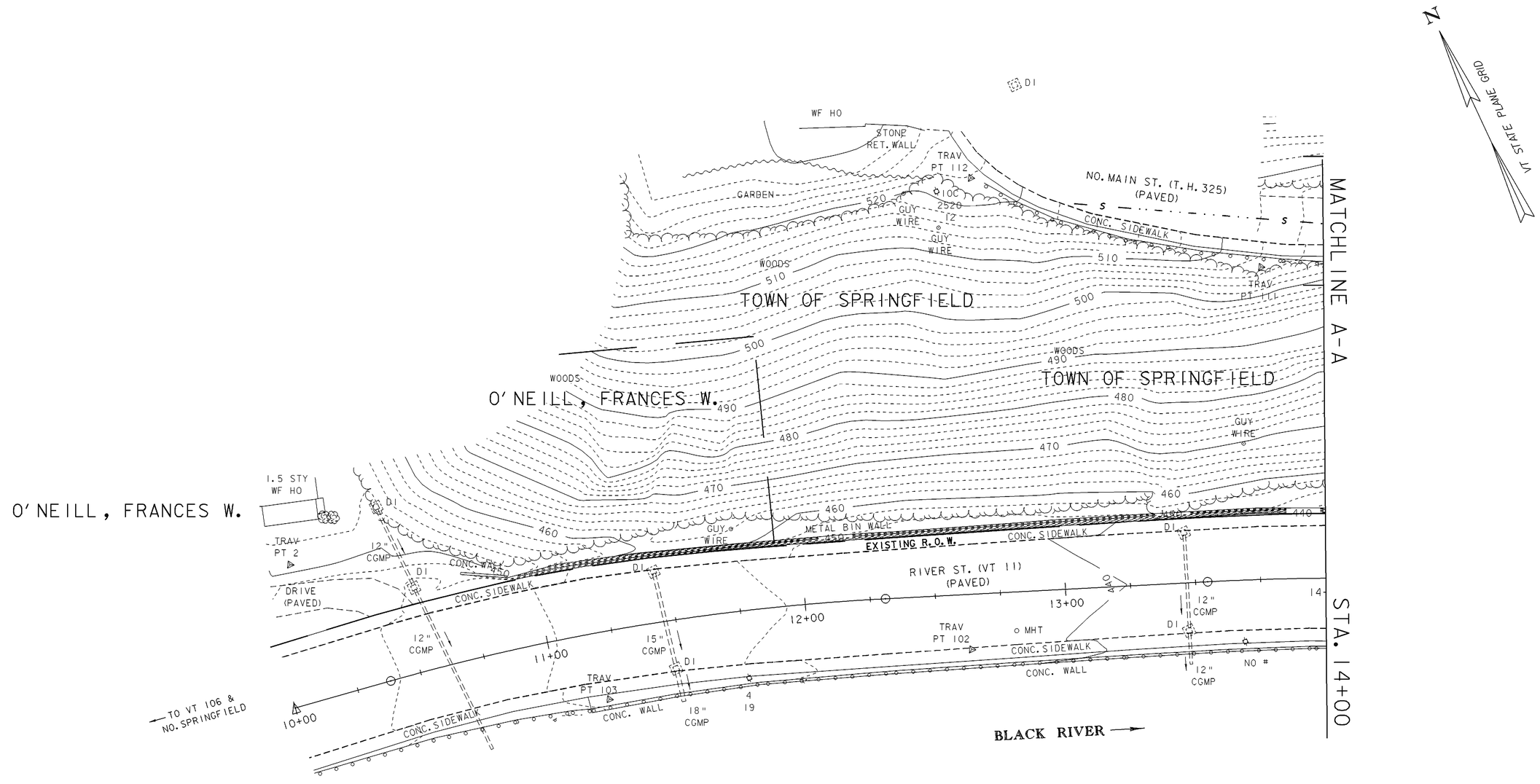
PREVENTING INITIAL SOIL EROSION IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. THEREFORE, STABILIZE ALL DISTURBED AREAS PROMPTLY AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY VEGETATION SHALL BE ESTABLISHED IF THE AREA TO BE WITHOUT CONSTRUCTION ACTIVITY FOR A PERIOD OF 14 DAYS. PERIMETER CONTROL MEASURES SHALL BE INSTALLED FOLLOWING CLEARING, BUT PRIOR TO THE START OF ANY GRUBBING OR GRADING ACTIVITY. INSTALL OTHER TEMPORARY CONTROLS IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS.

MAINTAINING VEGETATED BUFFERS ALONG THE STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

CONTROL ONLY SEDIMENT-LADEN RUNOFF GENERATED BY THE PROJECT SITE. COLLECT AND ROUTE CLEAN OFFSITE RUNOFF AROUND OR THROUGH THE PROJECT SITE USING DIVERSION BERMS, DIVERSION CHANNELS, CULVERTS AND/OR TEMPORARY PIPES.

DO NOT ALLOW CONSTRUCTION EQUIPMENT TO OPERATE ON THE DOWN SLOPE SIDE OF PERIMETER CONTROL MEASURES.

PROJECT NAME:	SPRINGFIELD		
PROJECT NUMBER:	STP 016-2 (10)S		
FILE NAME:	/00b124/Structures/sb124ecn.xls	PLOT DATE:	07/28/2004
PROJECT LEADER:	R.R. WHITCOMB	DRAWN BY:	J. PERRIGO
DESIGNED BY:	R.R. WHITCOMB	CHECKED BY:	G. ROY
EROSION CONTROL NARRATIVE		SHEET	34 OF 72



SCALE: 1" = 20'-0"
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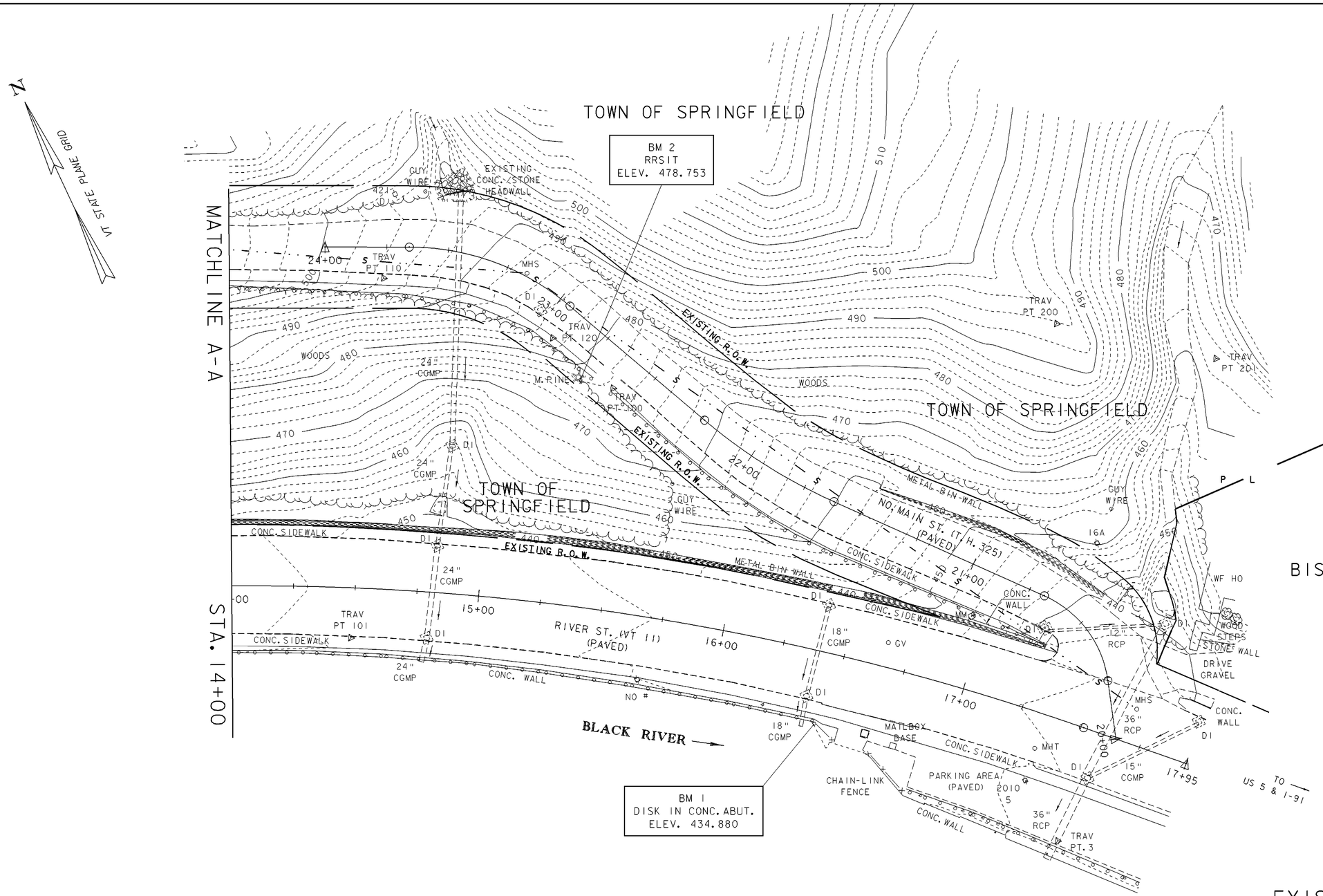
EXISTING CONDITIONS SITE PLAN (1)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00bl24\Structures\sbl24ecl.1		PLOT DATE: 17-AUG-2004	
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	35 OF 72



BISHOP, THOMAS S.
& MABEL E.

EXISTING CONDITIONS
SITE PLAN (2)

SCALE: 1" = 20'-0"
20 0 20

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124\Structures\sb124ec2.i	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 36 OF 72

SEEDING FORMULA
URBAN AREAS

% WT.	LBS./A.	NAME	PUR %	GERM %
42.5	34.0	CREEPING RED FESCUE	98	85
10.0	8.0	PERENNIAL RYE GRASS	95	90
42.5	34.0	KENTUCKY BLUE GRASS	85	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.00	80.0			

GENERAL NOTES

SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

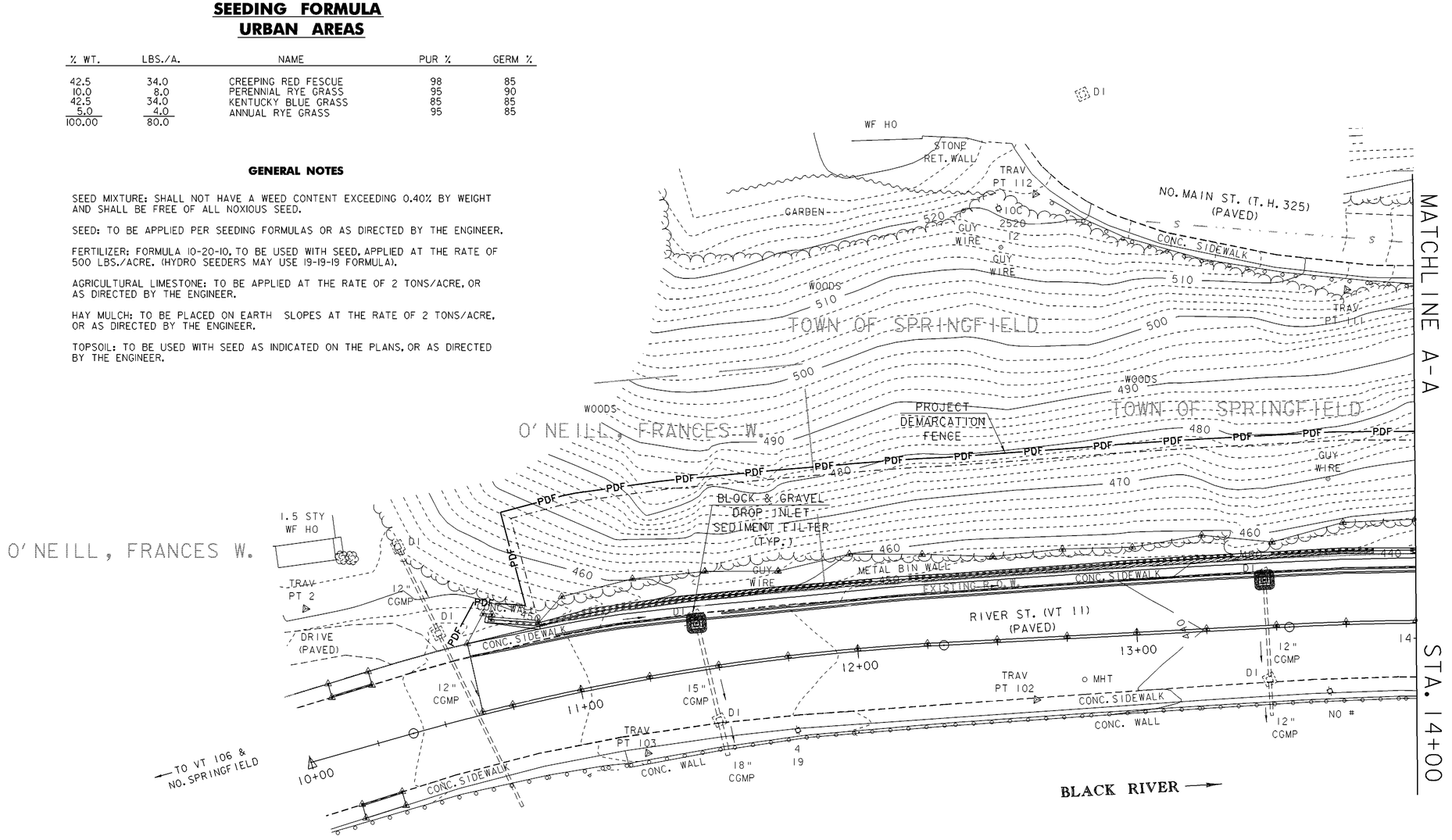
SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.



SCALE: 1" = 20'-0"
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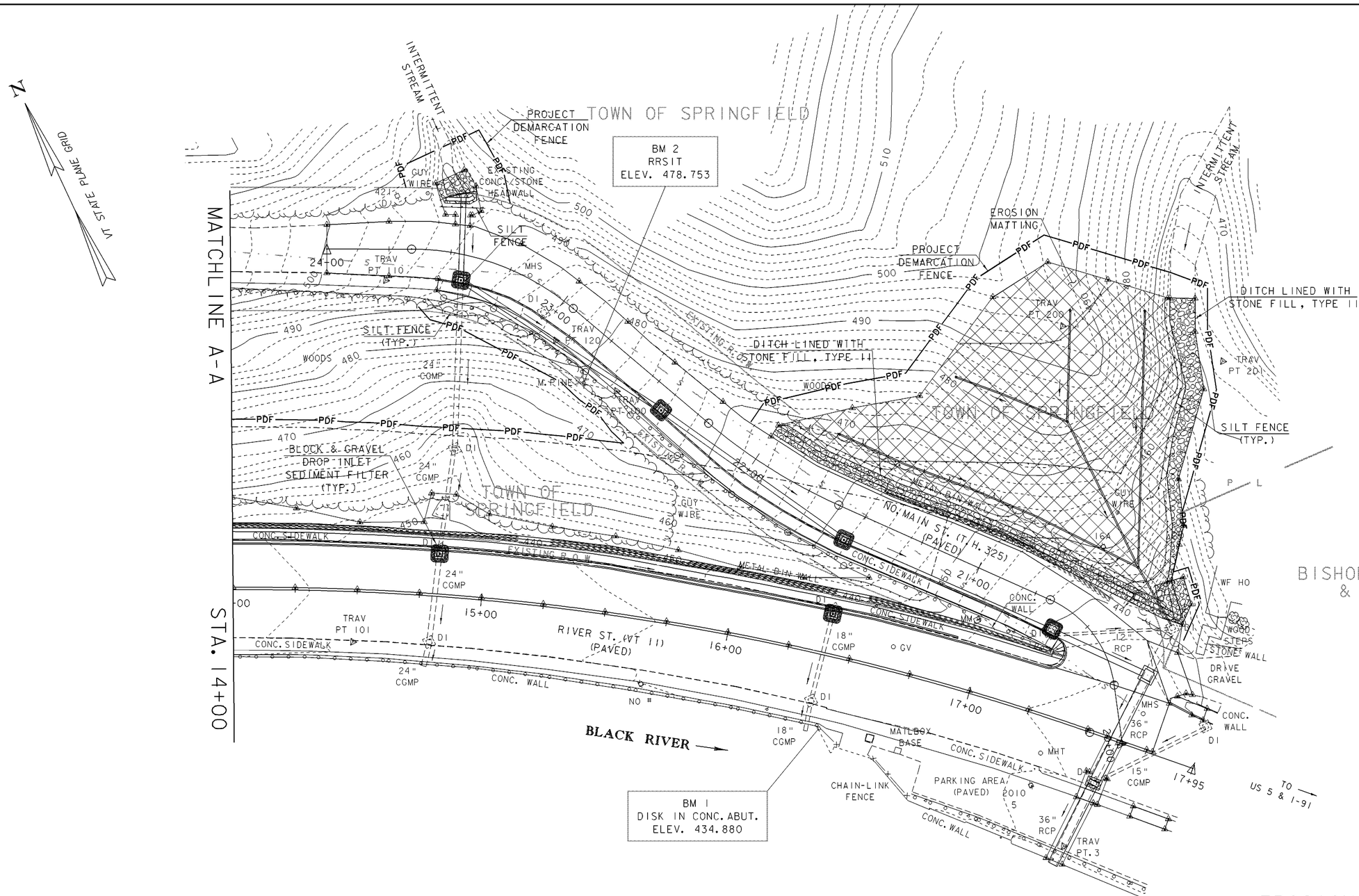
EROSION PREVENTION AND SEDIMENT CONTROL PLAN (1)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124e01.1		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	37 OF 72



EROSION PREVENTION AND SEDIMENT CONTROL PLAN (2)

SCALE: 1" = 20'-0"
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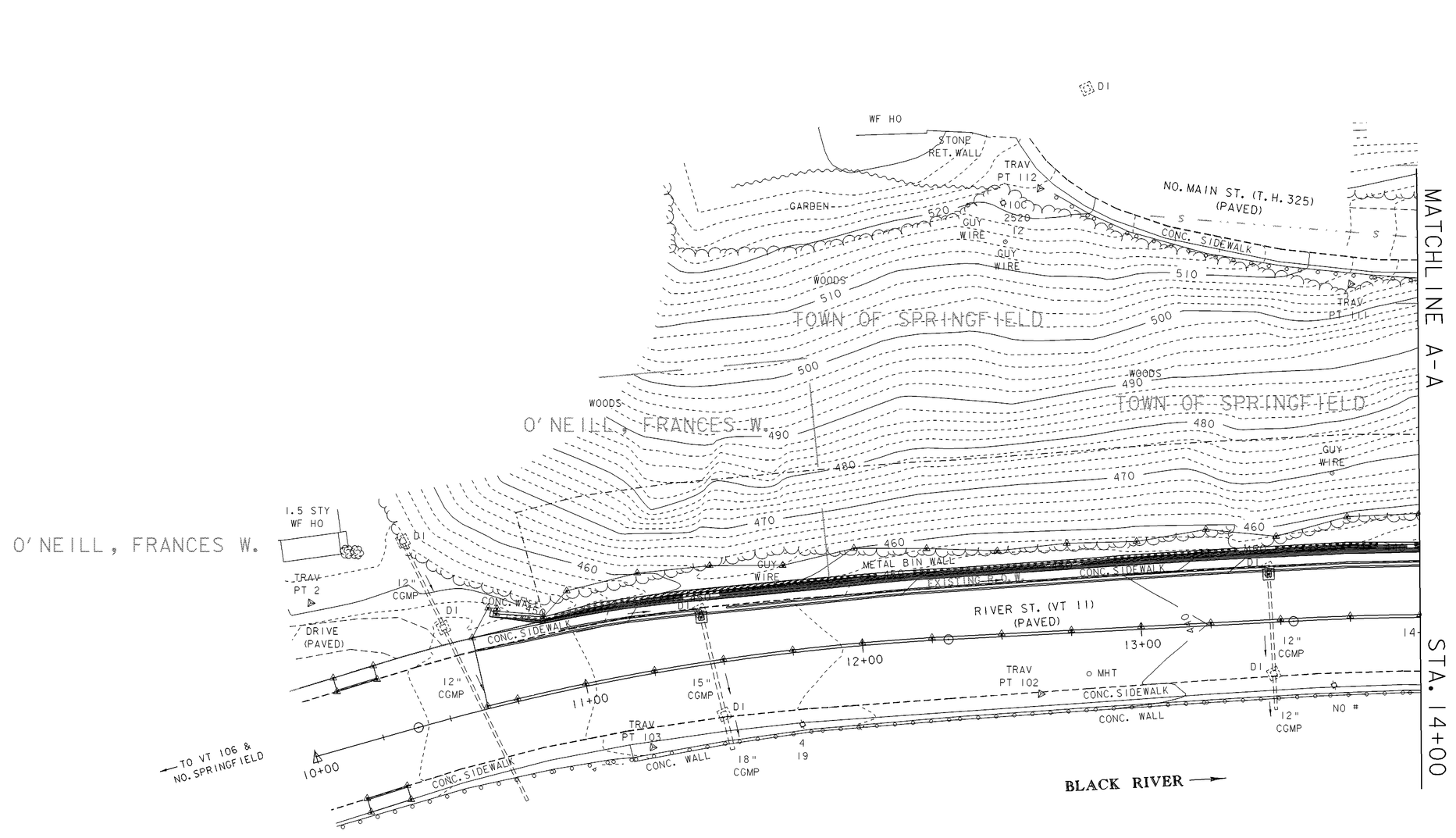
PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124\Structures\sb124e02.i	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 38 OF 72



SCALE: 1" = 20'-0"
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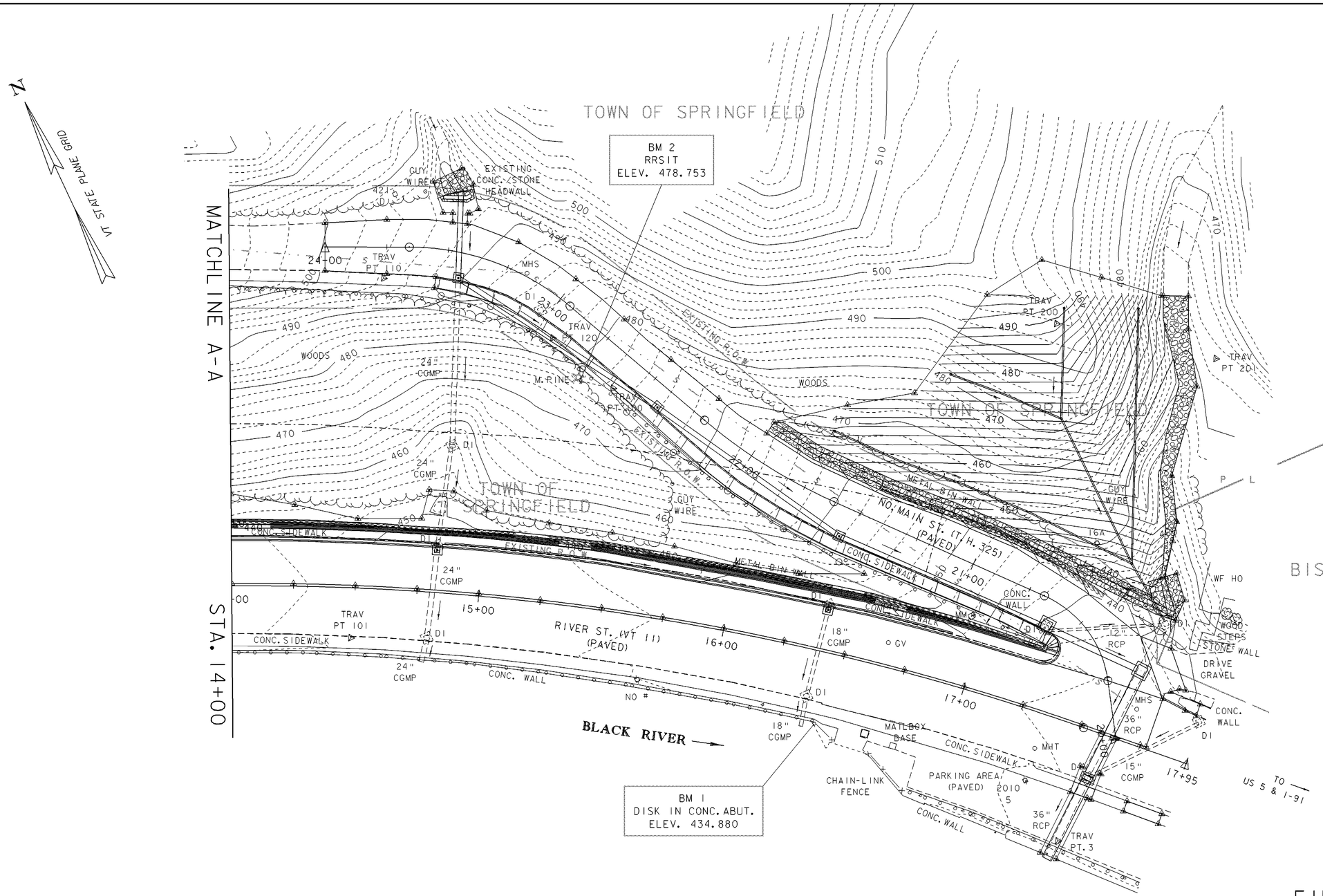
FINAL CONDITIONS
SITE PLAN (1)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00bl24\Structures\sbl24fc1.1		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	39 OF 72



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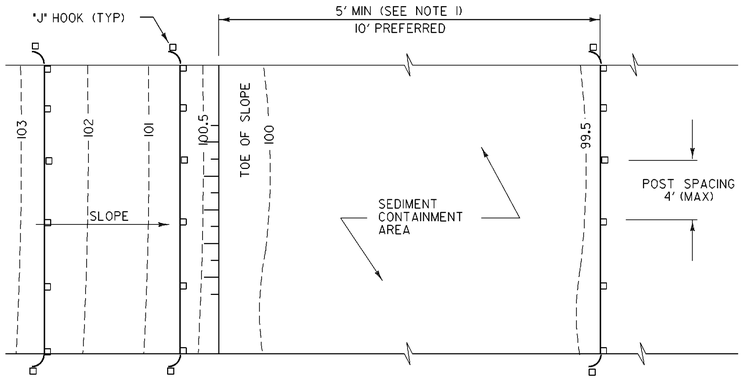
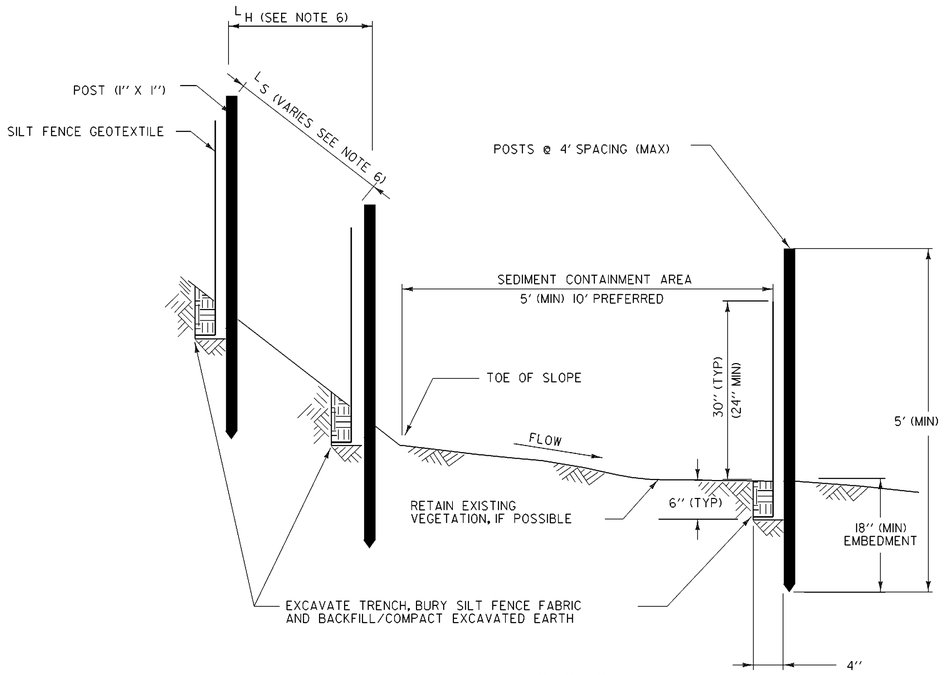
FINAL CONDITIONS
SITE PLAN (2)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124fc2.i		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	40 OF 72



PLAN



SECTION
SILT FENCE - TEMPORARY

SILT FENCE

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE, AND SEDIMENT FALLS OUT OF SUSPENSION.

B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM, AS SHOWN IN THE DETAIL.

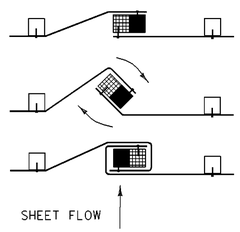
C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 5 FEET BEYOND TOE OF SLOPE, 10 FEET PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
3. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GROUND, AND KEYED IN 4 INCHES. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 100 FEET OF SILT FENCE SHALL BE 0.25 ACRES.
6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

CONSTRUCTED SLOPE	SLOPE LENGTH (LS) FT	HORIZONTAL LENGTH (LH) FT
3 : 1	80	75
4 : 1	130	125
5 : 1	200	200
> 5 : 1	250	250

7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
9. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
10. PAYMENT FOR INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER THE MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER THE MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



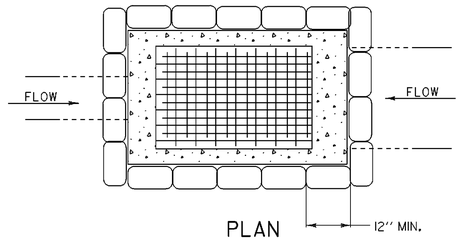
1. PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL
3. DRIVE BOTH POSTS 18 INCHES INTO THE GROUND AND BURY THE FLAP IN THE TRENCH.

SPLICING DETAIL

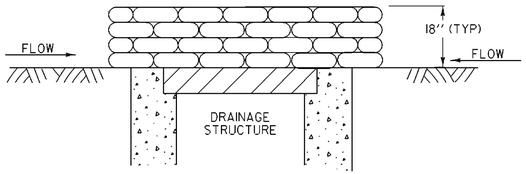
EROSION PREVENTION & SEDIMENT CONTROL DETAILS SILT FENCE

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124ecd1.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 41 OF 72

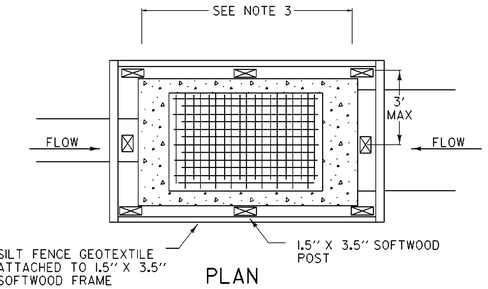


PLAN

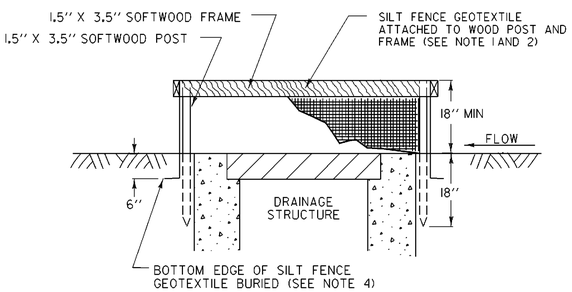


SECTION

GRAVEL BAG DROP INLET PROTECTION

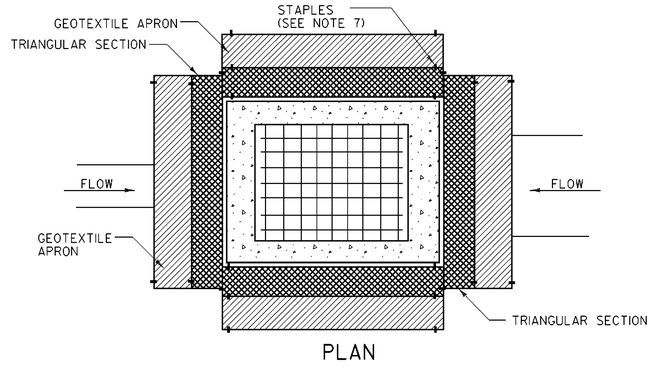


PLAN

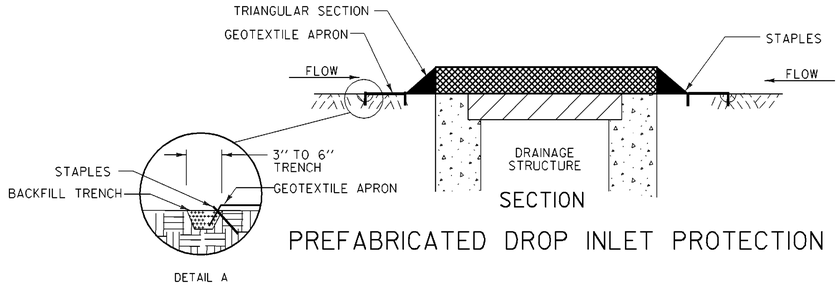


SECTION

SILT FENCE DROP INLET PROTECTION



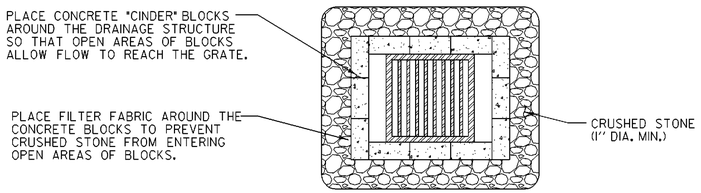
PLAN



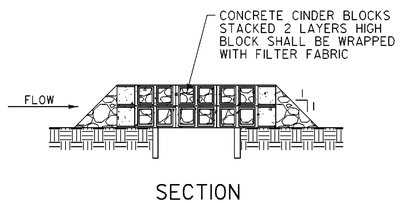
SECTION

DETAIL A

PREFABRICATED DROP INLET PROTECTION



PLAN



SECTION

ROCK BARRIER DROP INLET PROTECTION TEMPORARY PAVED AREAS

DROP INLET PROTECTION

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY PONDING WATER WHICH ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION.

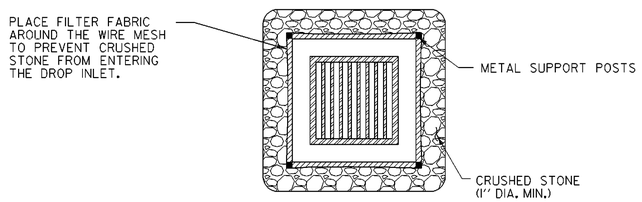
B. THESE EXAMPLES OF DROP INLET PROTECTION ARE NOT INTENDED FOR USE ON GRADES. ON GRADE THEY MAY CAUSE WATER TO BYPASS THE STRUCTURE, CREATING ADDITIONAL EROSION OR FLOODING.

C. POSSIBLE MODIFICATIONS FOR USE ON GRADE INCLUDE ADDING A BERM DOWNSTREAM OF THE INLET TO CREATE PONDING. CHECK DAMS MAY ALSO BE USED UPSTREAM OF THE INLET TO SLOW VELOCITIES.

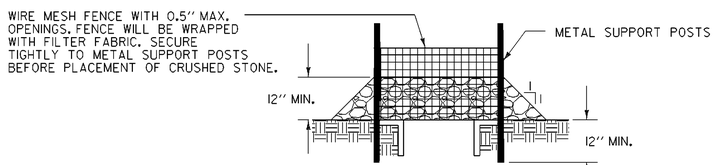
D. PREFABRICATED DROP INLET PROTECTION SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

GENERAL NOTES:

1. THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL, BASED ON FIELD LOCATION AND CONDITIONS.
2. SILT FENCE GEOTEXTILE SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.
3. SPACE SILT FENCE POSTS EVENLY AROUND INLET WITH A MAXIMUM SPACING OF 3 FEET. DRIVE POSTS A MINIMUM OF 18 INCHES INTO GROUND. WIRE MESH MAY BE REQUIRED BEHIND GEOTEXTILE TO PROVIDE SUPPORT.
4. SILT FENCE GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 6 INCHES AND BACKFILLED. GEOTEXTILE SHALL BE SECURELY FASTENED TO POSTS AND FRAME.
5. GRAVEL BAGS SHALL BE FILLED WITH CLEAN STONE, RATHER THAN SAND, TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM IF BAGS ARE DAMAGED DURING USE.
6. GRAVEL BAGS SHALL BE INDIVIDUALLY TIED, DOUBLE BAGGED AND INVERSELY INSERTED. GRAVEL BAGS SHALL LAP THE JOINTS BETWEEN THE BAGS IN THE LAYER BELOW.
7. SECURE THE ENDS OF THE APRON FOR THE PREFABRICATED DRAINAGE STRUCTURE INLET PROTECTION WITH STAPLES AS DETAILED IN THE PLAN VIEW OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED, SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
10. PAYMENT OF INLET PROTECTION SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MONITORING INLET PROTECTION SHALL BE MADE UNDER THE MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING INLET PROTECTION SHALL BE MADE UNDER THE MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



PLAN

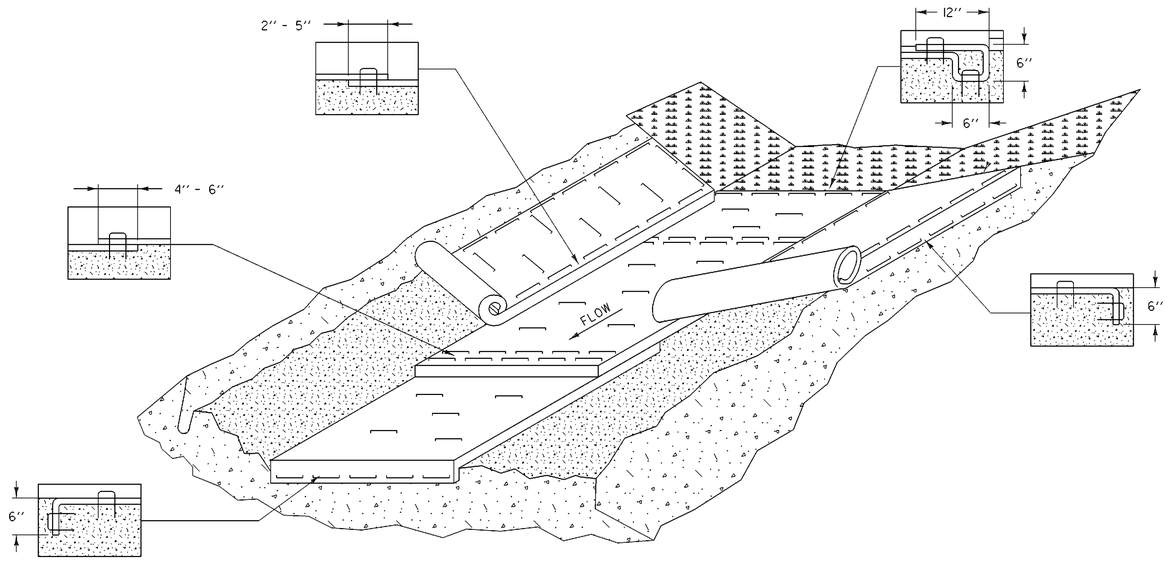


SECTION

ROCK BARRIER INLET PROTECTION TEMPORARY UNPAVED AREAS

EROSION PREVENTION & SEDIMENT CONTROL DETAILS DROP INLET PROTECTION

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124\Structures\sb124ecd2.i	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 42 OF 72



EROSION PROTECTION FOR DITCHES

APPLICATION NOTES:

A. THE PURPOSE OF LINING THE DITCH WITH EROSION MATTING IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION AT LOW VELOCITIES.

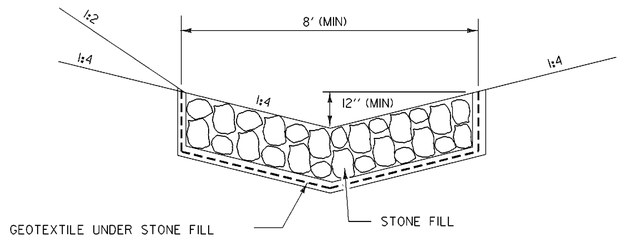
B. THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

DITCH AND CHANNEL PROTECTION	
SLOPE	LINING
< 1%	GRASS
1% TO 4 %	EROSION MATTING
4 % TO 10 %	STONE FILL, TYPE I
> 10 %	STONE FILL, TYPE II

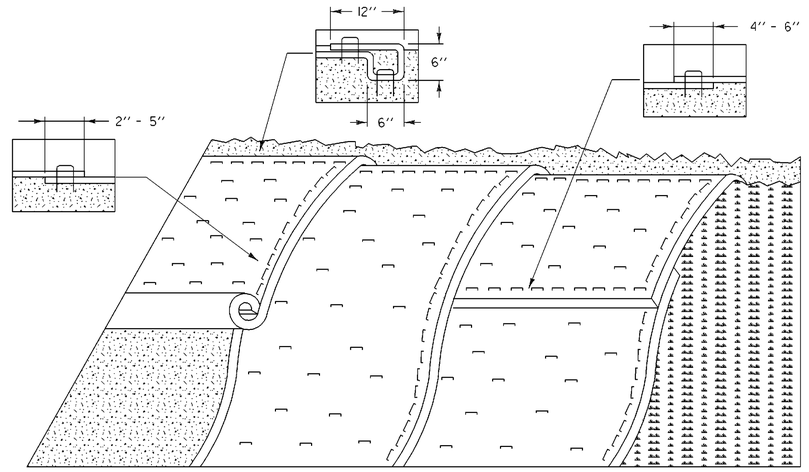
STONE FILL THICKNESS	
STONE FILL TYPE	THICKNESS
TYPE I	1 FT
TYPE II	2 FT

GENERAL NOTES:

1. WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
2. GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
3. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
4. INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
5. INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
6. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
9. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
10. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MAINTAINING DITCH PROTECTION SHALL BE MADE UNDER THE MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



TEMPORARY
STONE LINED
DITCH



EROSION PREVENTION FOR SIDE SLOPES

APPLICATION NOTES:

A. THE PURPOSE OF MATTING ON SIDE SLOPES IS TO REDUCE EROSION AND AID THE STABLISHMENT OF VEGETATION

B. EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:

- SIDE SLOPES > 3:1 (H:V)
- AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
- WHERE SEEDING IS OUTSIDE THE GROWING SEASON.

GENERAL NOTES:

1. GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
2. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
3. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
4. UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
5. OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
6. OVERLAP ADJACENT MATTING AS SHOWN.
7. CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
10. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
11. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SLOPE PROTECTION SHALL BE MADE UNDER THE MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH AND SLOPE PROTECTION

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124\Structures\sb124ecd3.i		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	43 OF 72

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AND ITS LATEST REVISIONS, AND THE 17TH EDITION OF AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.

2. THIS PROJECT INCLUDES ITEMS THAT ARE LISTED AS NON-PARTICIPATING. THESE DESIGNATE WORK IN WHICH THE COST IS NOT SHARED BY FEDERAL OR STATE GOVERNMENTS AND WILL BE BORNE ENTIRELY BY THE TOWN OF SPRINGFIELD.

3. THE CONTRACTOR IS CAUTIONED THAT WATER AND SEWER LINES ARE PRESENT WITHIN THE PROJECT AREA. THE PLANS SHOW THE APPROXIMATE LOCATION OF THE SEWER LINE ON NO. MAIN STREET. THE EXACT LOCATION AND ELEVATION OF THE LINE IS NOT KNOWN. THE SECTION OF NEW RETAINING WALL BETWEEN STA. 16+75 & 16+94 WAS ADDED SO SOIL NAILS WOULD NOT DAMAGE THE SEWER LINE. IT WAS ASSUMED THAT SOIL NAILS USED IN WALL FACING SECTIONS BEFORE STA. 16+75 WOULD PASS BENEATH THE SEWER LINE. IF IT IS DETERMINED IN THE FIELD THAT THE LOCATION OF THE LINE COULD STILL BE DAMAGED BY THE PRESENT DESIGN, THE PROJECT MANAGER SHALL BE CONTACTED ABOUT A POSSIBLE CHANGE IN DESIGN. IF A CHANGE IN DESIGN IS REQUIRED, THE CONTRACTOR SHALL ANTICIPATE A TWO WEEK TURN-A-ROUND TIME.

4. DURING CONSTRUCTION, TWO-WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES ON RIVER STREET AND SHALL BE CONTROLLED AS SHOWN ON THE TRAFFIC DETOUR SHEETS. CONCRETE BARRIER PLACED ON RIVER STREET IN THE FALL OF 2004 MUST BE REMOVED ONCE SNOW REMOVAL OPERATIONS COMMENCE. RE-INSTALLATION WILL NOT BE ALLOWED UNTIL THE CONTRACTOR IS GIVEN WRITTEN PERMISSION BY THE SPRINGFIELD PUBLIC WORKS DIRECTOR.

5. WHILE SLOPE EXCAVATION, DRAINAGE OR PAVING OPERATIONS ARE BEING CONDUCTED ON TH 325 (NORTH MAIN ST.), THE STREET MAY BE CLOSED TO THRU TRAFFIC. THE PUBLIC WORKS DIRECTOR SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO ANY CLOSING. THE STREET MUST BE PROPERLY BARRICADED AND SIGNED EACH TIME IT IS CLOSED. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL TEMPORARY ON AND OFF-PROJECT SIGNS AND BARRICADES AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER. PAYMENT FOR THIS WORK, EXCLUDING CONCRETE BARRIER, SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 641.10, "TRAFFIC CONTROL".

6. CONCRETE BARRIER SHALL BE PAID FOR UNDER ITEM 621.90, "TEMPORARY TRAFFIC BARRIER". SEE SPECIAL PROVISIONS FOR ITEM 621 FOR FURTHER INFORMATION ON TRAFFIC CONTROL AND PAYMENT FOR CONCRETE BARRIER.

7. EXISTING SIGNS NOT RE-USED SHALL REMAIN THE PROPERTY OF THE TOWN OF SPRINGFIELD. THE CONTRACTOR SHALL STOCKPILE THESE SIGNS AT THE PROJECT SITE FOR REMOVAL BY TOWN FORCES. THE CONTRACTOR SHALL CONTACT THE PUBLIC WORKS DIRECTOR AT (802) 886-2208 WHEN THE SIGNS ARE READY FOR REMOVAL FROM THE PROJECT SITE.

8. REFERENCE SHEETS FROM THE RECORD PLANS FOR THE EXISTING METAL BIN WALLS ARE INCLUDED IN THE PLANS FOR THE CONTRACTOR'S USE (SHEETS 68 - 72). WHERE NEEDED, THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING IN THE FIELD ANY DIMENSIONS OF EXISTING MATERIAL INCLUDED IN THESE REFERENCE SHEETS.

9. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION OF ALL WATERWAYS IN THE PROJECT AREA AS DIRECTED BY THE RESIDENT ENGINEER AND STANDARD SPECIFICATION SECTION 105.

10. FOR INFORMATION REGARDING UTILITIES, SEE THE SPECIAL PROVISIONS.

11. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT.

TH1/VT 11 WALL DESIGN AND CONSTRUCTION

12. THE EXISTING METAL BIN WALL SHALL BE REHABILITATED WITHIN THE LIMITS SHOWN ON THE PLANS. SEE SECTION 535 OF THE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS REGARDING THIS PORTION OF THE WORK.

13. AS SHOWN IN THE PLANS, THE REHABILITATED WALL SYSTEM SHALL CONSIST OF A CAST-IN-PLACE, REINFORCED CONCRETE WALL FACING PLACED DIRECTLY IN FRONT OF THE EXISTING METAL BIN WALL SECTIONS, SECURED TO THE EXISTING EMBANKMENT WITH SOIL NAILS DRILLED THROUGH THE EXISTING WALL. SOIL NAIL LENGTHS, SPACING AND INCLINATION SHALL BE AS SHOWN IN THE PLANS.

14. THE FOLLOWING PARAMETERS WERE USED IN DESIGN:

FRICTION ANGLE (EXISTING SLOPE MATERIAL)	34°
UNIT WEIGHT OF SOIL BEHIND EXISTING BINWALLS	125 PCF
COHESION	100 PCF
GLOBAL SLOPE STABILITY SAFETY FACTOR	1.35
INTERNAL STABILITY SAFETY FACTOR	1.35
FACING FLEXURE FACTOR OF SAFETY	1.5
FACING PUNCHING SHEAR FACTOR OF SAFETY	1.5
PULLOUT RESISTANCE FACTOR OF SAFETY	2.0
ULTIMATE BOND STRENGTH (GROUT AND SOIL)	1,220 PSF
BOREHOLE DIA. SIZE	6 IN
ULTIMATE BOND STRENGTH FOR 6 INCH HOLE	1,900 LB/FT
ALLOWABLE NAIL PULLOUT RESISTANCE=QD = 1900 LB/FT / 2.0 (FS) = 950 LB/FT	
ALLOWABLE STRESS (STEEL NAIL BAR) (FY = YIELD STRESS = 75 KSI MIN.)	0.6FY
CONCRETE F'C	3,500 PSI
NAIL GROUT F'C	3,000 PSI
ULTIMATE PLATE CAPACITY	33,000 LBS

15. SOIL NAILING MAY BE DONE DURING WINTER MONTHS PROVIDED ADEQUATE MEASURES ARE TAKEN TO PREVENT FREEZING OF THE GROUT. HOWEVER, COLD WEATHER CONCRETE OPERATIONS WILL NOT BE ALLOWED ON ANY PORTION OF THE REINFORCED CONCRETE FACING, NEW RETAINING WALL, SIDEWALKS OR STEPS.

16. FOR DESIGN PURPOSES, ANY POTENTIAL CONTRIBUTION OF THE EXISTING METAL BIN WALL TO PERMANENT WALL SUPPORT HAS BEEN IGNORED. FOR SOIL CHARACTERISTICS USED IN DESIGN, SEE NOTE 12 AND PROJECT BORINGS ON SHEETS 27 - 33 OF THE PLANS.

17. PROOF AND VERIFICATION TESTS WILL BE REQUIRED ON SOIL NAILS. A MINIMUM OF TWO SACRIFICIAL NAILS SHALL BE INSTALLED FOR VERIFICATION TESTS AT LOCATIONS AGREED UPON BY THE CONTRACTOR AND ENGINEER. THE LOCATIONS MUST BE SELECTED TO APPROXIMATE THE SAME SOIL CONDITIONS INTO WHICH THE PRODUCTION NAILS WILL BE INSERTED. APPROXIMATELY 5% OF THE PERMANENT NAILS SHALL BE PROOF LOAD TESTED TO 1.5 TIMES THE DESIGN LOAD. NAILS FAILING TO MEET THE REQUIRED PROOF LOADING SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. SEE SPECIAL PROVISION FOR ITEM 535 FOR INFORMATION ON THIS TESTING.

18. FORM LINERS SHALL BE USED FOR ALL EXPOSED WALL FACINGS TO SIMULATE A CEMENT RUBBLE MASONRY APPEARANCE. THE SIMULATED COLUMNS AT CONSTRUCTION AND EXPANSION JOINTS MAY HAVE THE HORIZONTAL SCORE MARKS PROVIDED BY CONVENTIONAL FORMING METHODS OR BY A FORM LINER PROCESS. THE METHOD SHALL BE INCLUDED IN THE PACKAGE SUBMITTED FOR APPROVAL AS DESCRIBED IN THE SPECIAL PROVISIONS. THE PAYMENT FOR ALL FORM LINER WORK SHALL BE UNDER ITEM 602.25, STONE MASONRY FACING (MODIFIED FORM LINER). SEE SPECIAL PROVISIONS FOR DETAILS CONCERNING THIS ITEM.

19. THE FORM LINER PATTERN SHALL BE "MINNEHAHA BLEND", CUSTOM ROCK DURA FORM PATTERN #12010, OR AN APPROVED EQUIVALENT. ANY PROPOSED SUBSTITUTIONS MUST BE APPROVED IN WRITING BY THE PROJECT MANAGER.

20. HORIZONTAL CONSTRUCTION JOINTS HAVE NOT BEEN SHOWN IN THE FACING DETAILS. THE CONTRACTOR MAY PROPOSE THE USE OF HORIZONTAL JOINTS BUT THE FORM LINER PATTERN SHALL BE CONTINUOUS THROUGH AND ACROSS ALL HORIZONTAL CONSTRUCTION JOINTS.

21. THE 1" PREMOULDED EXPANSION MATERIAL USED IN VERTICAL EXPANSION JOINTS SHALL BE A COLOR CLOSELY MATCHING THAT OF THE ADJACENT CONCRETE. PAYMENT FOR THE EXPANSION MATERIAL SHALL BE INCIDENTAL TO THE CONCRETE PAY ITEM.

22. ALL CONCRETE FORMED WITH LINERS SHALL BE COLORED. THE PIGMENT COLOR SHALL BE BAYFERROX 330 APPLIED AT 2 LBS. PER 94 LB. BAG OF CEMENT. THE CONCRETE CAP SHALL NOT BE COLORED.

23. PRIOR TO PLACING ANY PERMANENT FORM LINERS, THE CONTRACTOR SHALL CONSTRUCT A TEST PANEL UTILIZING THE FORM LINER SYSTEM. THE SIZE OF THE TEST PANEL SHALL BE AS ORDERED BY THE RESIDENT ENGINEER BUT SHALL BE A MINIMUM FACE SIZE OF 4' BY 8'. THE CONTRACTOR SHALL DEMONSTRATE FORM LINER APPLICATION AND COLORING OF CONCRETE FOR THE APPROVAL OF THE RESIDENT ENGINEER PRIOR TO PERFORMING ANY PERMANENT WORK ON THE WALL. ALL COSTS INVOLVED IN THE TEST PANEL SHALL BE INCIDENTAL TO ITEM 602.25, STONE MASONRY FACING (MODIFIED FORM LINER).

24. CONCRETE FOR WALL FACING AND FACING PAD SHALL BE HIGH PERFORMANCE CLASS B AND SHALL BE PAID FOR UNDER ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B".

25. MINIMUM COVER FOR REINFORCING STEEL SHALL BE AS INDICATED IN THE PLANS.

26. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
    SPACING: +/- ONE INCH
    CLEARANCE: +/- ONE QUARTER INCH

TH 325 WALL REMOVAL

27. THE EXISTING METAL BIN WALL SHALL BE REMOVED. THE EXISTING SLOPE SHALL BE CUT BACK AND GRADED AS SHOWN IN THE PLANS.

28. REMOVAL AND DISPOSAL OF ALL METAL PORTIONS OF THE EXISTING BIN WALL SHALL BE PAID FOR UNDER ITEM 529.15, "REMOVAL OF STRUCTURE".

EARTHWORK AND RELATED ITEMS

29. TO HELP PREVENT SOIL EROSION, THE STONE LINED DITCHES SHOWN PERPENDICULAR TO AND ALONG NORTH MAIN STREET SHALL BE CONSTRUCTED IMMEDIATELY AFTER THE BIN-WALL REMOVAL AND BEFORE ANY ADDITIONAL SLOPE EXCAVATION.

30. UNIT PRICE BID FOR ITEM 201.10, CLEARING AND GRUBBING, SHALL BE FULL PAYMENT FOR ALL CLEARING AND GRUBBING REQUIRED FOR SLOPE AND DRAINAGE WORK DONE ON THE RIGHT SIDE OF NORTH MAIN ST.

31. SUITABLE TOPSOIL FROM NORTH MAIN ST. SLOPE EXCAVATION SHALL BE STOCKPILED FOR USE ON AREAS DESIGNATED IN THE PLANS. PAYMENT FOR TRANSPORTING FROM STOCKPILES AND PLACING TOPSOIL WILL BE MADE UNDER ITEM 651.35, "TOPSOIL."

32. AREAS SEEDED AND MULCHED AFTER OCTOBER 15TH SHALL RECEIVE AN APPLICATION OF WINTER RYE SEED AT THE RATE OF 60 LBS/ACRE. IN ADDITION, THE URBAN SEED FORMULA SHALL BE APPLIED AS SPECIFIED IN THE PLANS AFTER MAY 1ST.

33. UNIT PRICE BID FOR ITEM 201.30, THINNING AND TRIMMING, SHALL BE FULL PAYMENT FOR REMOVING ALL TREES, STUMPS AND BRUSH WITHIN THE LIMITS DEFINED BY THE BACK OF BIN WALL ALONG TH 1 (VT 11) LEFT UP TO THE PDF LINE OR, IN AREAS WHERE PDF LINE IS NOT SHOWN, TO THE BACK OF SIDEWALK ON NO. MAIN STREET.

34. EXISTING SIDEWALK AND CURB SHALL BE REMOVED WITHIN THE LIMITS SHOWN ON THE PLANS. PAYMENT FOR SIDEWALK REMOVAL AND DISPOSAL SHALL BE MADE UNDER ITEM 204.25, STRUCTURE EXCAVATION. PAYMENT FOR REMOVAL OF EXISTING CURB SHALL BE MADE UNDER ITEM 616.40, REMOVING AND RESETTING CURB.

35. NEW CAST-IN-PLACE SIDEWALK SHALL BE CONSTRUCTED WITHIN THE LIMITS SHOWN ON THE PLANS. PAYMENT FOR NEW SIDEWALK SHALL BE MADE UNDER ITEM 618.10, PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH.

36. AFTER THE GRANITE CURBING ALONG VT 11 LEFT AND NORTH MAIN STREET LEFT IS RESET, THE EXCAVATED AREA ADJACENT TO THE CURB SHALL BE BACKFILLED WITH SUBBASE MATERIAL TO THE BOTTOM OF THE EXISTING PAVEMENT DEPTH AND NEW BITUMINOUS CONCRETE PAVEMENT PLACED AND COMPACTED IN APPROPRIATE LIFTS TO MATCH THE EXISTING PAVEMENT SURFACE. UPON COMPLETION OF ALL WORK THAT WOULD CAUSE DAMAGE TO PAVED SURFACES, THE FULL WIDTH OF NORTH MAIN STREET AND THE LEFT SIDE OF VT 11 SHALL BE COLD PLANED AND RESURFACED.

PROJECT NOTES

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00bl24\structures\sbl24pn.l
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB

14. THE FOLLOWING PARAMETERS WERE USED IN DESIGN:

FRICTION ANGLE (EXISTING SLOPE MATERIAL)	34°
UNIT WEIGHT OF SOIL BEHIND EXISTING BINWALLS	125 PCF
COHESION	100 PCF
GLOBAL SLOPE STABILITY SAFETY FACTOR	1.35
OVERTURNING STABILITY SAFETY FACTOR	2.0
SLIDING STABILITY FACTOR OF SAFETY	1.5
FACING FLEXURE FACTOR OF SAFETY	1.5
FACING PUNCHING SHEAR FACTOR OF SAFETY	1.5
ULTIMATE BOND STRENGTH (GROUT AND ROCK)	300 PSI
BOREHOLE DIA. SIZE	5 IN
ULTIMATE BOND STRENGTH FOR 5 INCH HOLE	56,550 LB/FT
ALLOWABLE TIEBACK PULLOUT RESISTANCE=QD = 56,550 LB/FT / 3.0 (FS) = 18,850 LB/FT	
ALLOWABLE STRESS (STEEL BAR) (FY = YIELD STRESS = 150 KSI)	0.6 f_{pu}
CONCRETE F'C	3,500 PSI
TIEBACK GROUT F'C	3,000 PSI MIN

15. TIEBACK INSTALLATION MAY BE DONE DURING WINTER MONTHS PROVIDED ADEQUATE MEASURES ARE TAKEN TO PREVENT FREEZING OF THE GROUT. HOWEVER, COLD WEATHER CONCRETE OPERATIONS WILL NOT BE ALLOWED ON ANY PORTION OF THE REINFORCED CONCRETE FACING, NEW RETAINING WALL, SIDEWALKS OR STEPS.

17. PROOF AND/OR PERFORMANCE TESTS WILL BE REQUIRED ON ALL TIEBACKS AND SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT EDITION OF "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS" AS PUBLISHED BY PTI (POST TENSIONING INSTITUTE). LOAD TESTING PROCEDURES SHALL BE SHOWN ON THE TIEBACK SHOP DRAWING. A MINIMUM OF TWO TIEBACKS SHALL BE PERFORMANCE TESTED. AT LEAST ONE TEST SHALL BE PERFORMED AT THE START OF THE PROJECT. TEST LOCATION SHALL BE SELECTED IN CONSULTATION WITH THE ENGINEER TO EVALUATE CONDITIONS ALONG THE LENGTH OF THE WALL.
ALL REMAINING TIEBACKS SHALL BE PROOF LOAD TESTED TO 1.33 TIMES THE DESIGN LOAD. TIEBACKS FAILING TO MEET THE REQUIRED PROOF LOADING SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

TH1/VT 11 WALL DESIGN AND CONSTRUCTION

12. THE EXISTING METAL BIN WALL SHALL BE REHABILITATED WITHIN THE LIMITS SHOWN ON THE PLANS.

13. AS SHOWN IN THE PLANS, THE REHABILITATED WALL SYSTEM SHALL CONSIST OF A CAST-IN-PLACE, REINFORCED CONCRETE WALL FACING PLACED DIRECTLY IN FRONT OF THE EXISTING METAL BIN WALL SECTIONS, SECURED TO THE EXISTING EMBANKMENT WITH PERMANENT TIEBACKS DRILLED THROUGH THE EXISTING WALL. TIEBACK LENGTHS, SPACING AND INCLINATION SHALL BE AS SHOWN IN THE PLANS.

24. CONCRETE FOR WALL FACING AND FOOTING SHALL BE HIGH PERFORMANCE CLASS B AND SHALL BE PAID FOR UNDER ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B".

VALUE ENGINEERING REDESIGN
OF WALL 2 PREPPARED BY
GEODESIGN, INC. 3-16-05

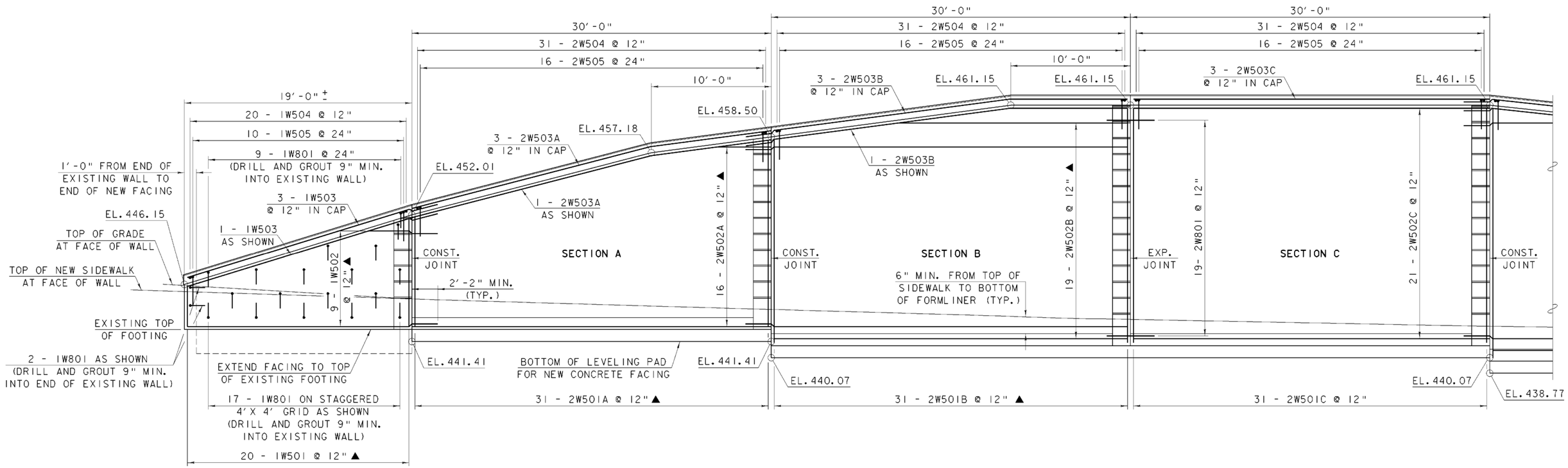
STATE OF VERMONT

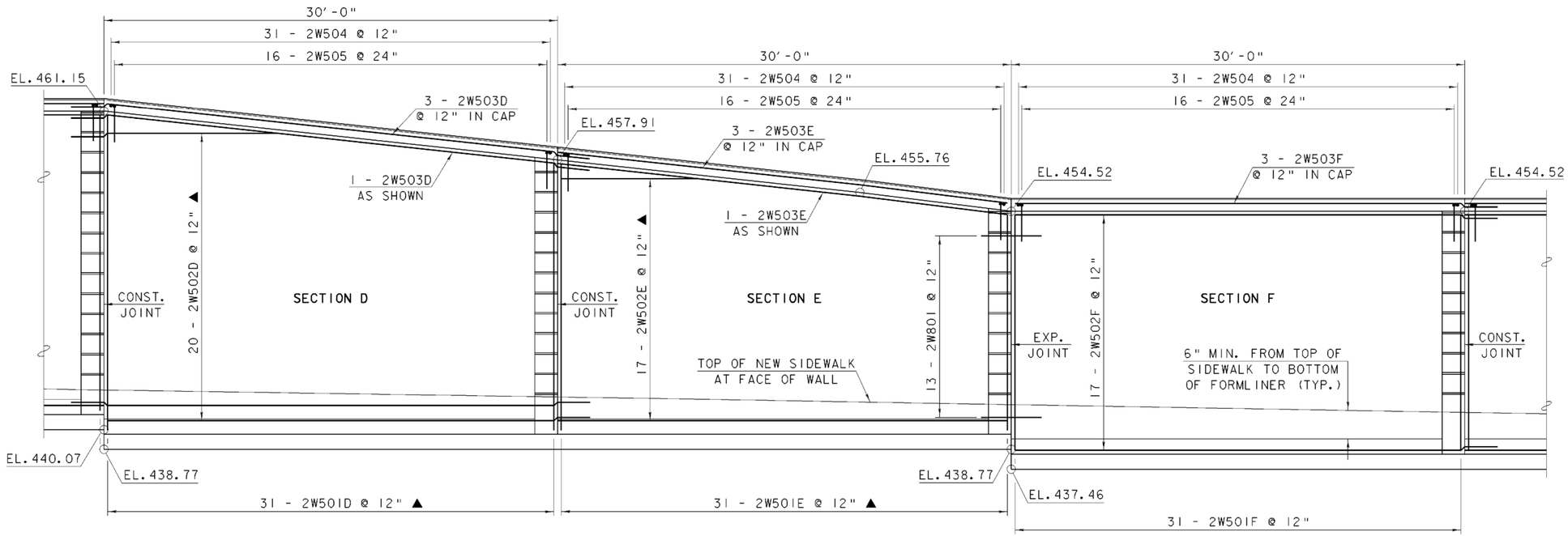
TIEBACK NOTES

GEODESIGN INCORPORATED
GEOTECHNICAL ENGINEERS · ENVIRONMENTAL CONSULTANTS
84 SHERMAN STREET, CAMBRIDGE, MASSACHUSETTS 02140
TELEPHONE: (617) 661-6900 FAX: (617) 661-6910
MANCHESTER, CT. · HARTFORD, CT. · BURLINGTON, VT.

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (103)
FILE NAME:	D:\02424\structures\sb24pnJ
PROJECT MANAGER:	M. FRANK
DESIGNED BY:	M. HARIHARAN
PLOT DATE:	3/16/05
DRAWN BY:	G. FRANK
CHECKED BY:	M. FRANK
SHEET	44A OF 72

...\752-22 notes REVISED 3-16-05.dgn





1 0 1 2 3 4 5 6

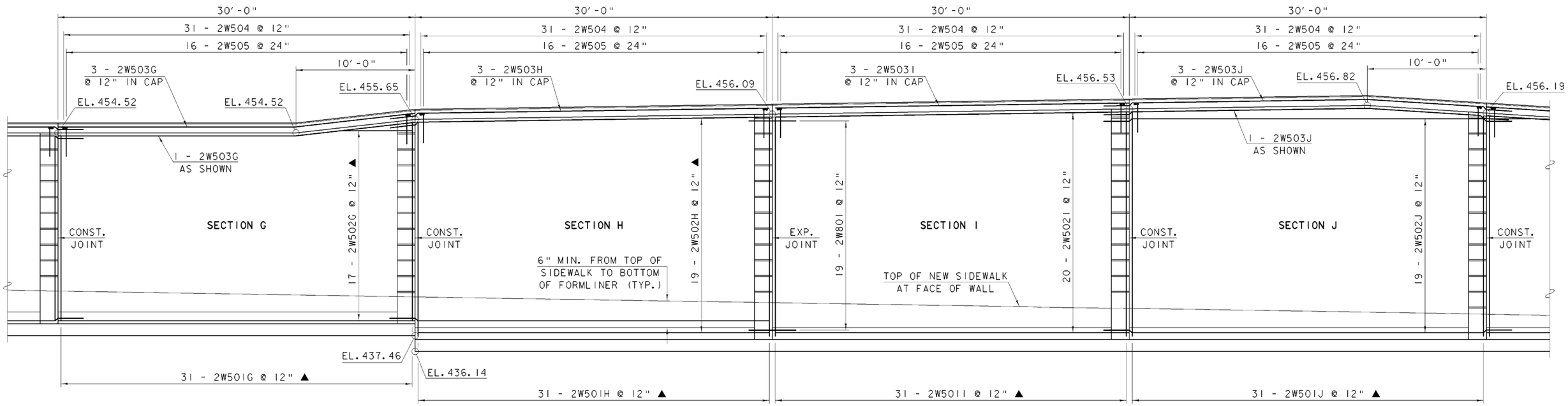
SCALE: 1/4" = 1'-0"

SEE REVISED ELEVATIONS IN VALUE ENGINEERING PLAN SET.

WALL ELEVATION (1)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124\structures\sb124wel1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 45 OF 72

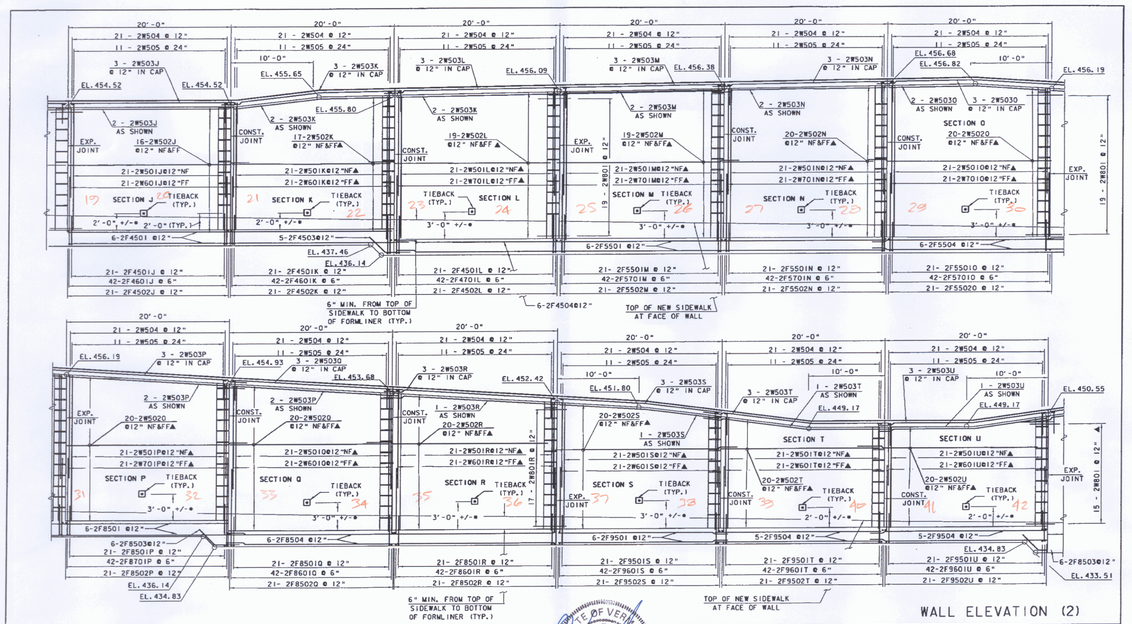


SEE REVISED ELEVATIONS IN VALUE ENGINEERING PLAN SET.

WALL ELEVATION (2)

SCALE: 1/4" = 1'-0"

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S
FILE NAME: 00b124\structures\sb124we2.i	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 46 OF 72



VALUE ENGINEERING REDESIGN OF WALL 2 PREPARED BY GEODESIGN, INC. 3-16-05

NOTE: SEE SHEET 48B FOR ADDITIONAL PUNCHING SHEAR REINFORCEMENT AROUND EACH TIEBACK BOXOUT.

SCALE: 1/4" = 1'-0"

STATE OF VERMONT — BROWN E. LIGHT — NO. 5284 — REGISTERED PROFESSIONAL ENGINEER

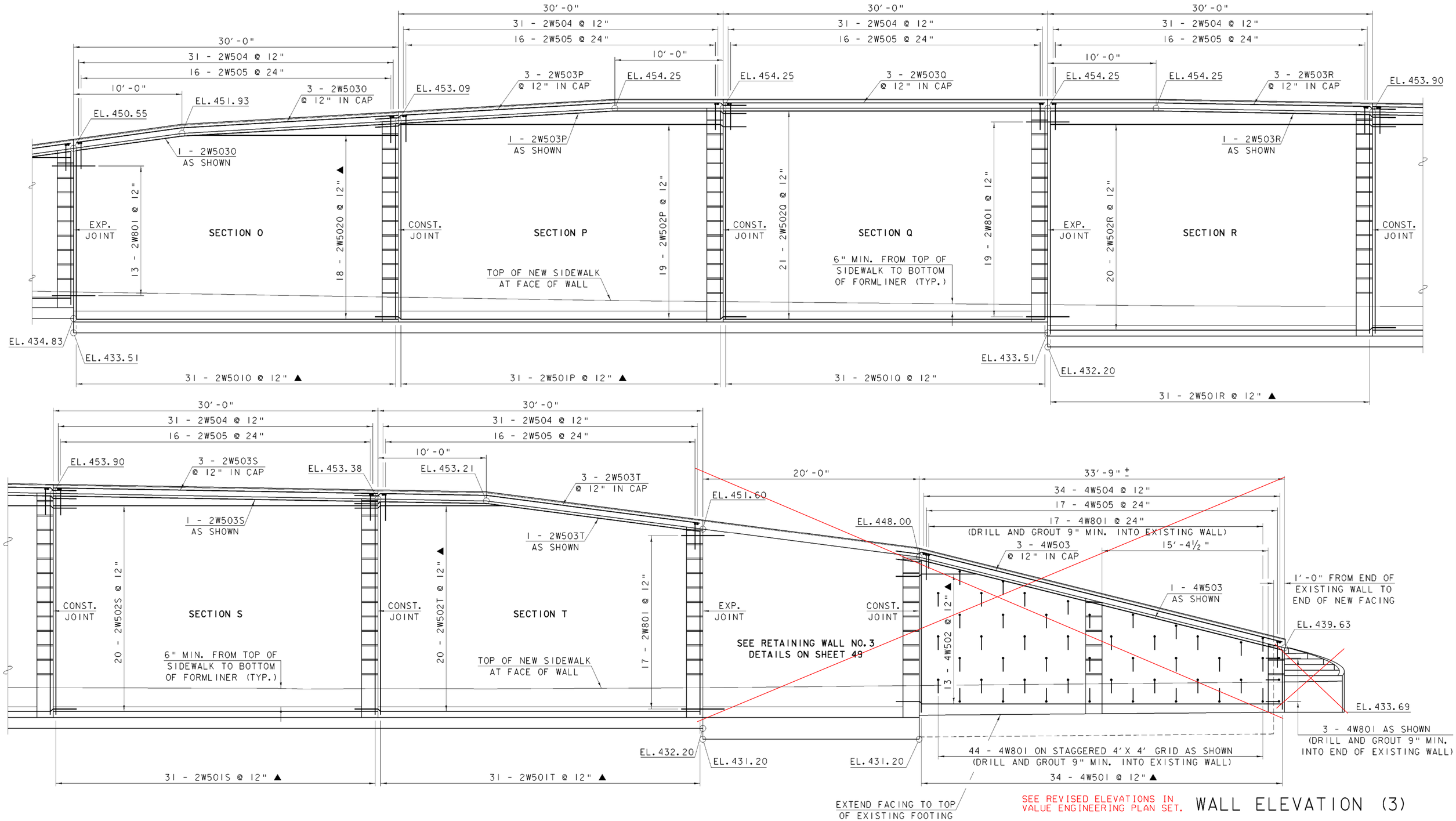
GEODESIGN INCORPORATED
GEOTECHNICAL ENGINEERS · CONSTRUCTION CONSULTANTS
14 MANSFIELD PLACE · SUITE 100 · POST OFFICE BOX 1
TELEPHONE: (802) 775-2860 · FACSIMILE: (802) 775-2953
HARDLEBURG, VT. · WWW.GEODESIGN.NET · BURLINGTON, VT.

WALL ELEVATION (2)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (103)

FILE NAME: c:\data\structures\sb024we2.dgn
PROJECT MANAGER: W. FRANK
DESIGNED BY: W. HARIHARAN
DRAWN BY: S. CATUCCIO
CHECKED BY: W. FRANK
PLOT DATE: 3-16-05
SHEET 46A OF 72

...\elevations-(Edited 3-3-05).dgn



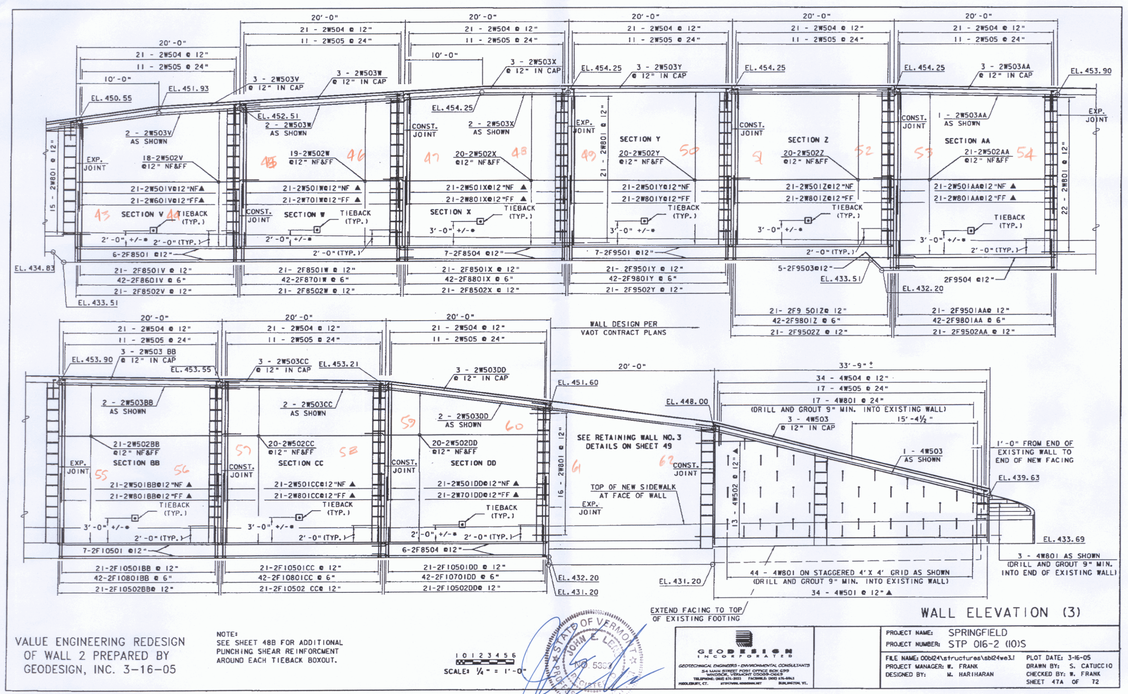
SEE REVISED ELEVATIONS IN VALUE ENGINEERING PLAN SET.

WALL ELEVATION (3)

SCALE: 1/4" = 1′-0"

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00bl24\structures\sbl24we3.1		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	47 OF 72



VALUE ENGINEERING REDESIGN OF WALL 2 PREPARED BY GEODESIGN, INC. 3-16-05

NOTE: SEE SHEET 48B FOR ADDITIONAL PUNCHING SHEAR REINFORCEMENT AROUND EACH TIEBACK BOXOUT.

SCALE: 1/4" = 1'-0"

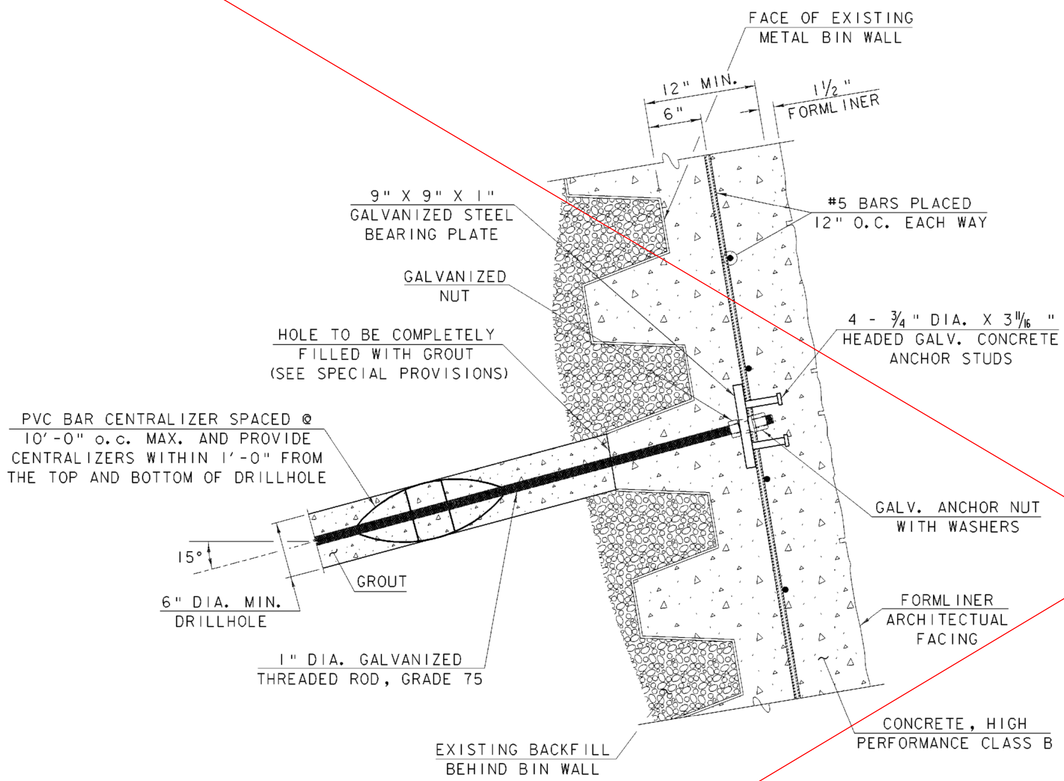
STATE OF VERMONT JOHN E. LOCKE JR. 10,653 REGISTERED PROFESSIONAL ENGINEER

GEODESIGN INCORPORATED
GEOTECHNICAL ENGINEERS · ENVIRONMENTAL CONSULTANTS
84 MARGUERITE DRIVE, COLCHESTER, VERMONT 05446
TELEPHONE: (802) 655-0933 FACSIMILE: (802) 655-0935
HANOVER, NH · BOSTON, MA · PORTLAND, ME · BURLINGTON, VT

WALL ELEVATION (3)

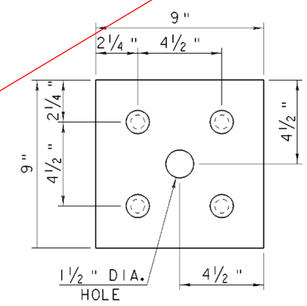
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S
FILE NAME: c:\0d24\structures\sb24we3.dgn
PROJECT MANAGER: W. FRANK
DESIGNED BY: W. HARIHARAN
PLOT DATE: 3-16-05
DRAWN BY: S. CATUCCIO
CHECKED BY: W. FRANK
SHEET 47A OF 72

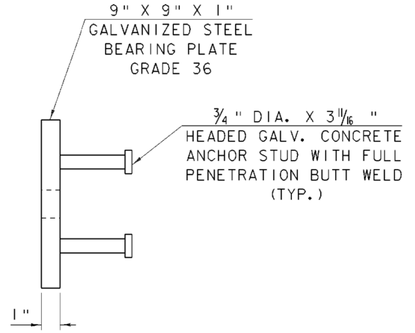
...\elevations-(Edited 3-3-05).dgn



SOIL NAIL HEAD AND BIN WALL FACING DETAIL

SCALE: 1½" = 1'-0"





GALVANIZED BEARING PLATE DETAIL

SCALE: 3" = 1'-0"

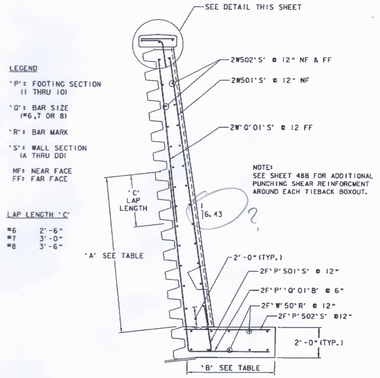
NOTES:

BEARING PLATE IS TO BE INSTALLED DIRECTLY BEHIND REBAR AND HELD IN PLACE BY A NUT LOCATED ON EACH SIDE OF THE BEARING PLATE.

SOIL NAIL WALL DETAILS

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124\structures\sb124snwd.i		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	48 OF 72



LEGEND

'P': FOOTING SECTION (1 THRU 10)

'Q': BAR SIZE (#6,7 OR 8)

'R': BAR MARK

'S': WALL SECTION (A THRU DD)

NF: NEAR FACE
FF: FAR FACE

LAP LENGTH 'C'

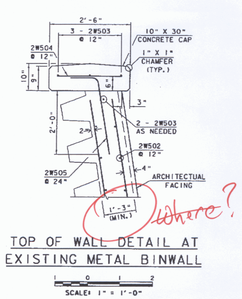
#6	2'-6"
#7	3'-0"
#8	3'-6"

TYPICAL SECTION REINFORCEMENT

N.T.S.

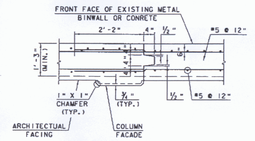
WALL SECTION	FOOTING WIDTH 'B'	TIEBACK DESIGN LOAD (KIPS)	TIEBACK BAR SIZE GRADE 150	DESIGN WALL HEIGHT (FT)	BAR LENGTH 'A'
A,T,U	4'-0"	124	1⅜"	16	3'-6"
G,H,I,J,K,L,Q,R,S,V	5'-0"	151	1⅜"	18	4'-0"
B,L,M,N,O,P,W,DD	5'-0"	238	1⅜"	20	4'-8"
C,D,E,F,X,Y,Z,AA,BB,CC	6'-0"	238	1⅜"	22	5'-4"

Is bottom of wall set @ 2'?



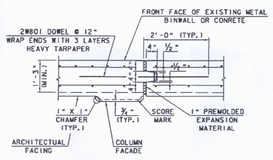
TOP OF WALL DETAIL AT EXISTING METAL BINWALL

SCALE: 1" = 1'-0"



CONSTRUCTION JOINT DETAIL

SCALE: 1" = 1'-0"



EXPANSION JOINT DETAIL

SCALE: 1" = 1'-0"

(PAINT SIDE OF KEY WITH BITUMEN TO PREVENT BONDING.)

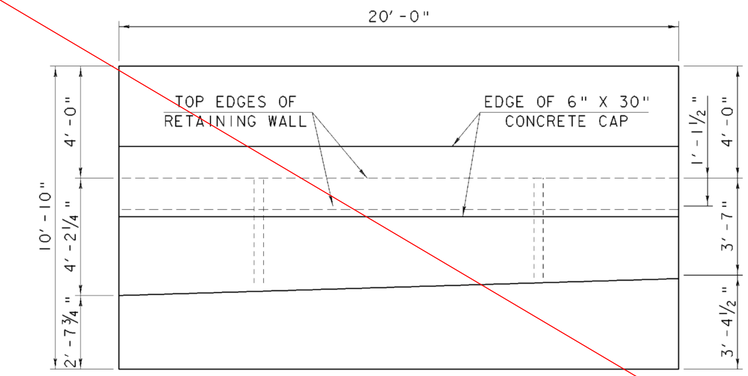
TIEBACK WALL DETAILS

VALUE ENGINEERING REDESIGN OF WALL 2 PREPARED BY GEODESIGN, INC. 3-16-05

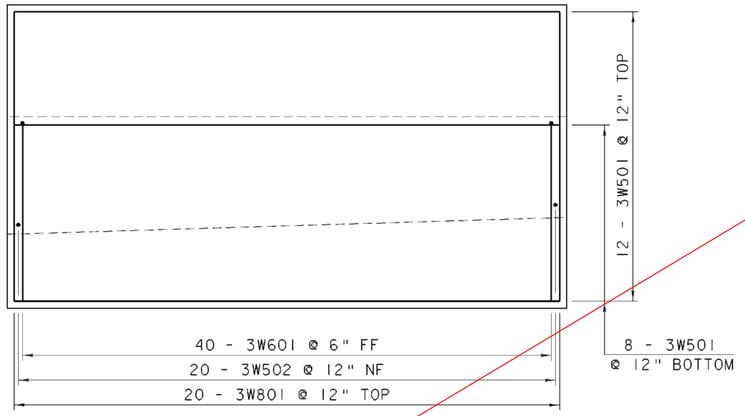
GEODESIGN INCORPORATED
GEOTECHNICAL ENGINEERS · ENVIRONMENTAL CONSULTANTS

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (103)
FILE NAME:	00DUCK\structure\tieback\tbmwd.dgn
PROJECT MANAGER:	W. FRANK
DESIGNED BY:	
PLOT DATE:	3/16/05
DRAWN BY:	D.FRANK/SMC
CHECKED BY:	W. FRANK
SHEET	48A OF 72

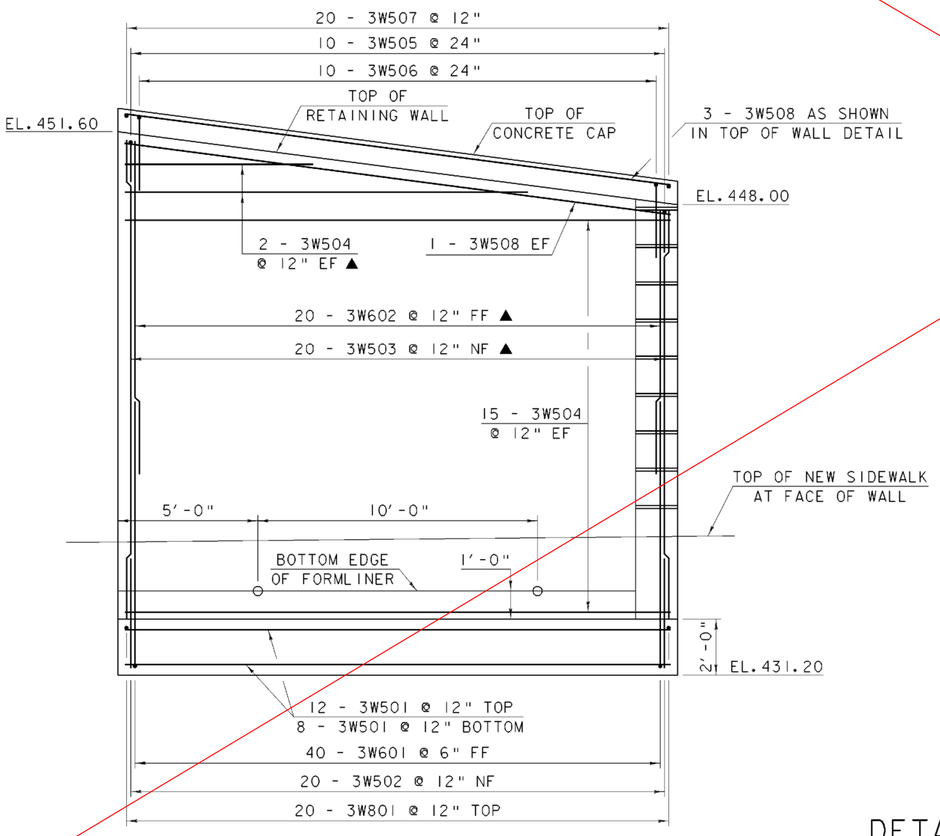
...\DETAILS FOR DIANE revised 3-15-05.dgn



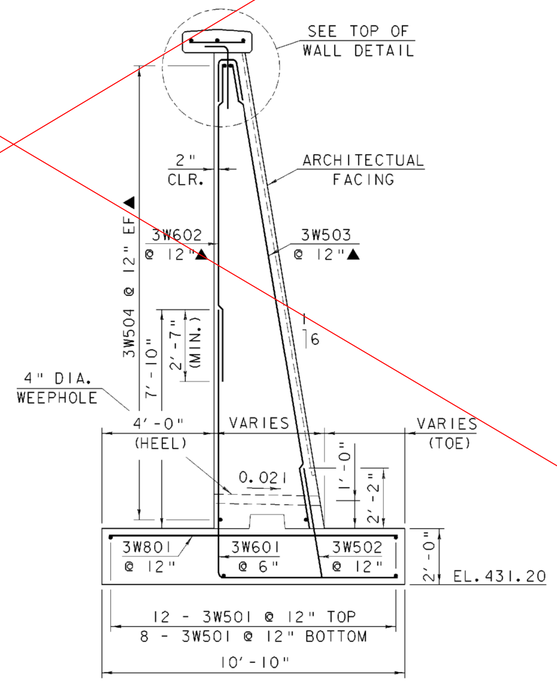
PLAN



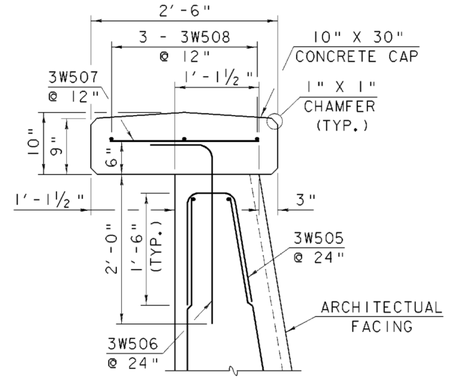
FOOTING REINFORCING



ELEVATION



TYPICAL SECTION



TOP OF WALL DETAIL

1 0 1 2

SCALE: 1" = 1'-0"

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLR. UNLESS OTHERWISE NOTED
2'-2" BAR LAP UNLESS OTHERWISE NOTED

DETAILS FOR RETAINING WALL NO. 3
STA. 16+75.0 LT. - STA. 16+94.3 LT.

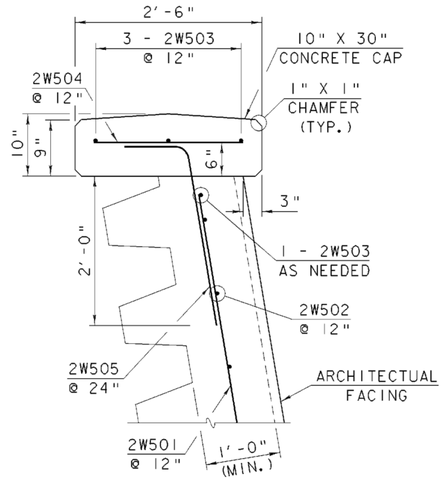
1 0 1 2 3 4 5

SCALE: ⅜" = 1'-0"

RETAINING WALL NO. 3 DETAILS

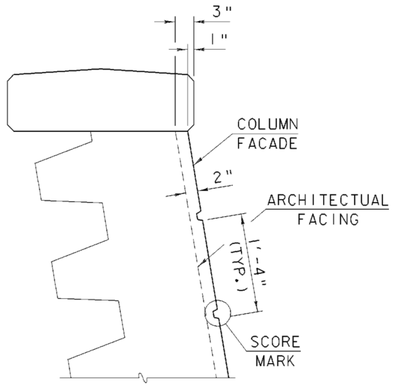
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124\structures\sb124rwd.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 49 OF 72

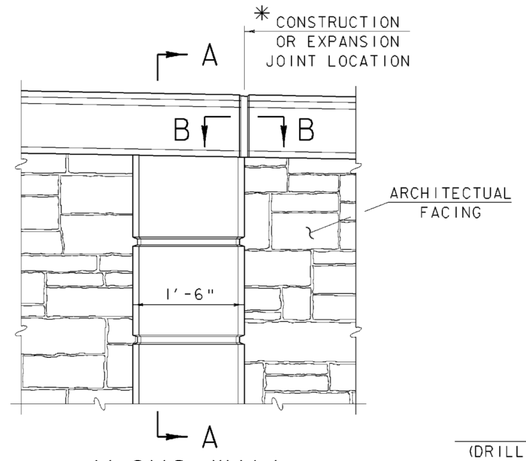


TOP OF WALL DETAIL AT EXISTING METAL BINWALL

SCALE: 1" = 1'-0"



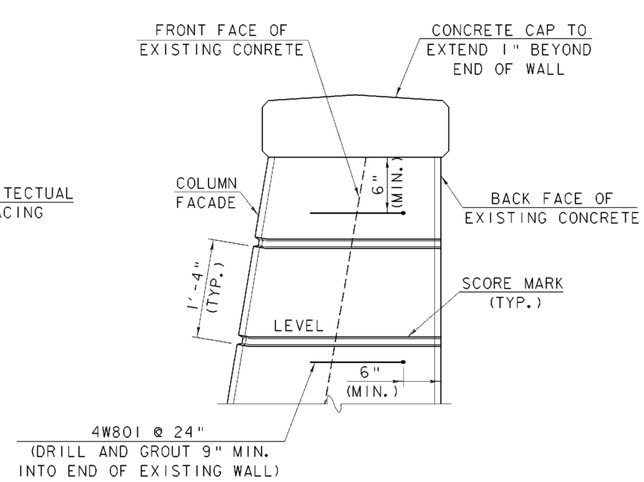
SECTION A-A



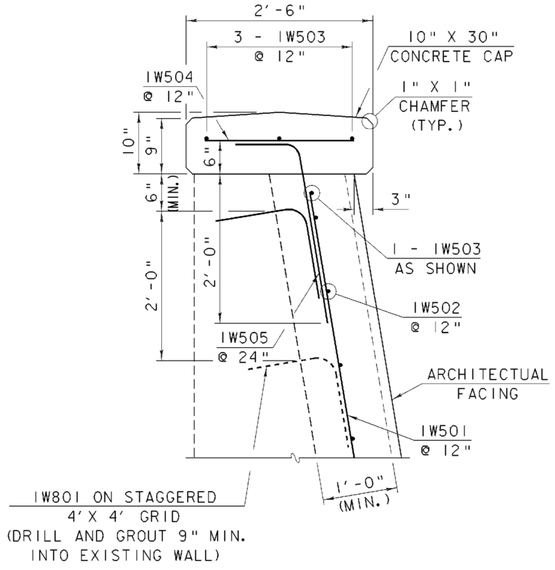
ALONG WALL

COLUMN FACADE DETAIL

SCALE: 1" = 1'-0"

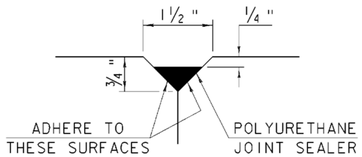


AT END OF WALL



TOP OF WALL DETAIL AT EXISTING CONCRETE WALL

SCALE: 1" = 1'-0"

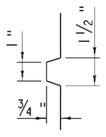


SECTION B-B

NOT TO SCALE

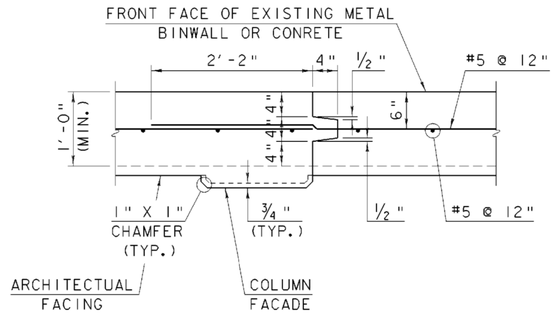
NOTE:

POLYURETHANE JOINT SEALER SHALL MEET THE REQUIREMENTS OF SUBSECTIONS 524.06(c) AND 707.05 OF THE STANDARD SPECIFICATIONS. COLOR TO MATCH CONCRETE. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B".



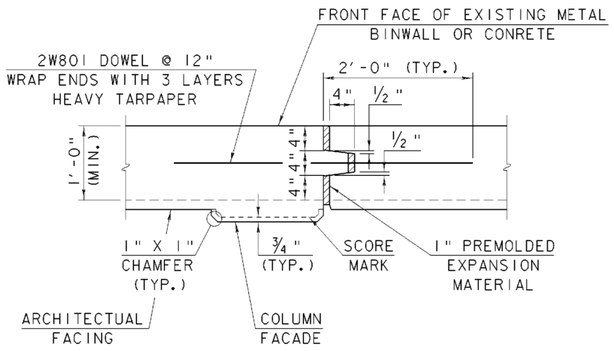
SCORE MARK DETAIL

SCALE: 3" = 1'-0"



CONSTRUCTION JOINT DETAIL

SCALE: 1" = 1'-0"



EXPANSION JOINT DETAIL

SCALE: 1" = 1'-0"

(PAINT SIDE OF KEY WITH BITUMEN TO PREVENT BONDING.)

NOTES:

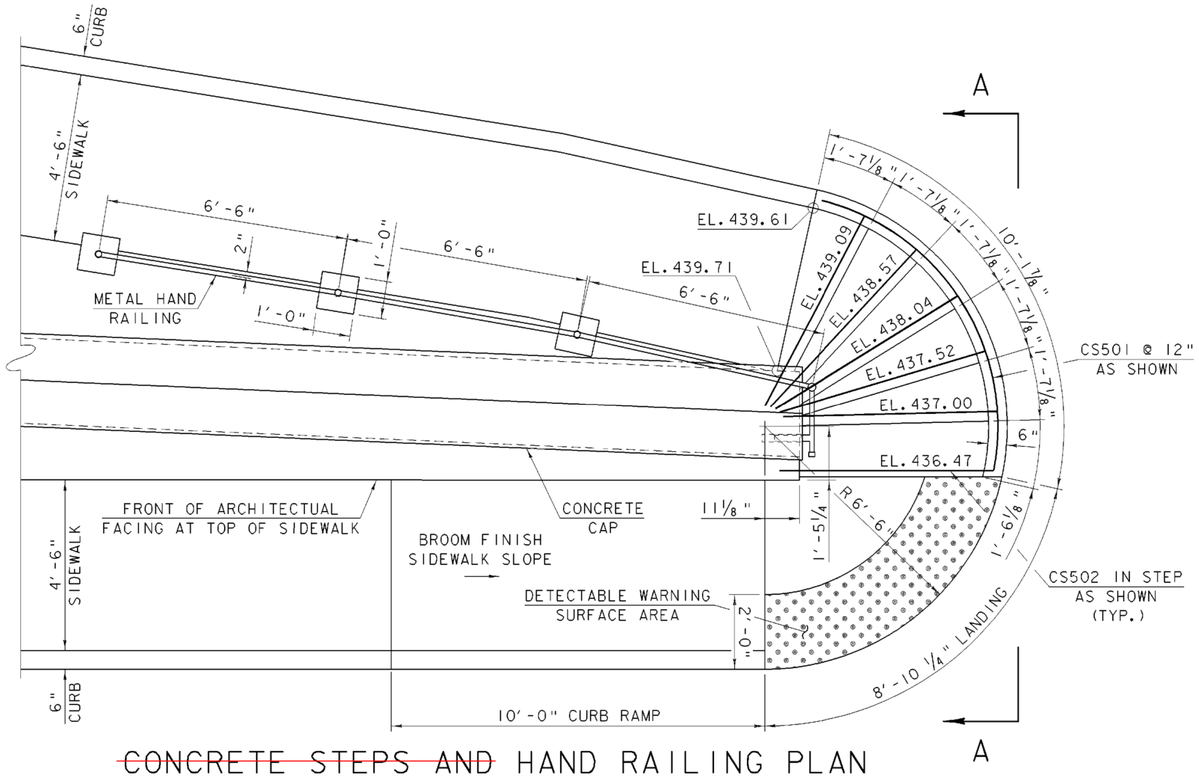
1. CONSTRUCTION JOINT FOR CONCRETE CAP SHALL BE SPACED ~~15'-0"~~ 20'-0" CENTER TO CENTER. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CAP CONSTRUCTION JOINTS.
3. EXPANSION JOINTS SHALL BE LOCATED AS SHOWN IN THE PLANS EXCEPT NO KEY AS SHOWN IN SECTION B-B, JUST EXPANSION JOINT MATERIAL.

SEE REVISED DETAILS IN VALUE ENGINEERING PLAN SET

WALL DETAILS

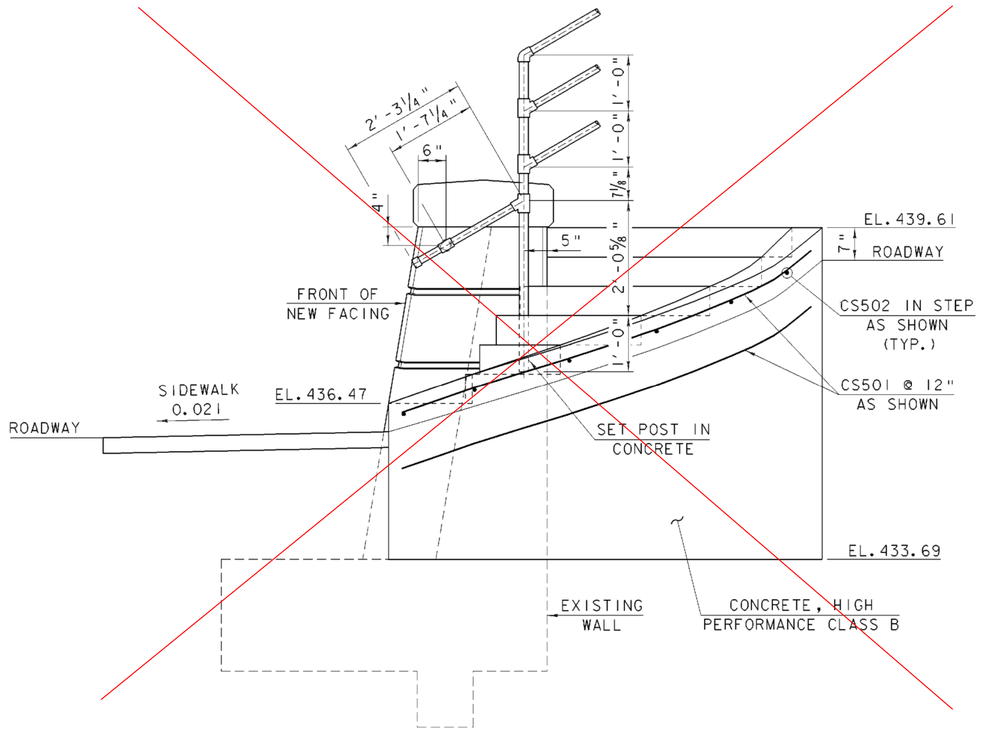
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00bl24\structures\sbl24wd.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 50 OF 72



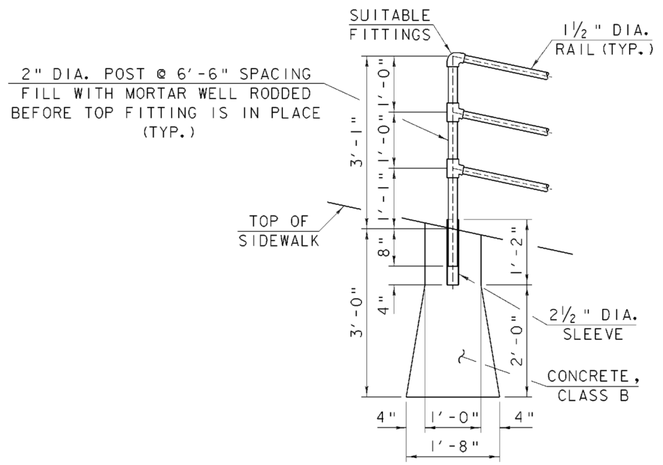
CONCRETE STEPS AND HAND RAILING PLAN

SCALE: ½" = 1'-0"



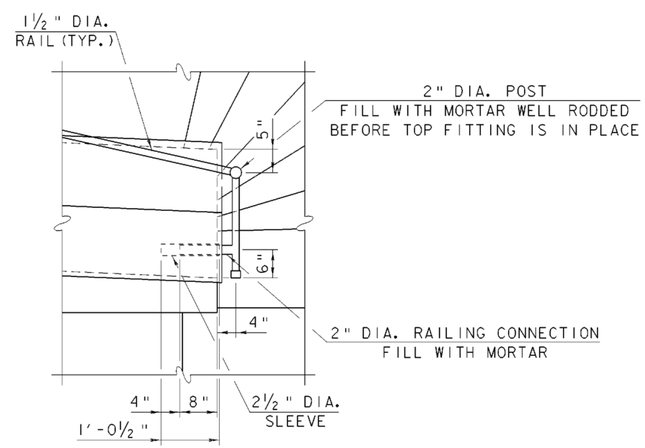
VIEW A-A

SCALE: ¾" = 1'-0"



POST ANCHOR DETAIL

SCALE: ¾" = 1'-0"



END CONNECTION DETAIL

SCALE: ¾" = 1'-0"

METAL HAND RAILING NOTES

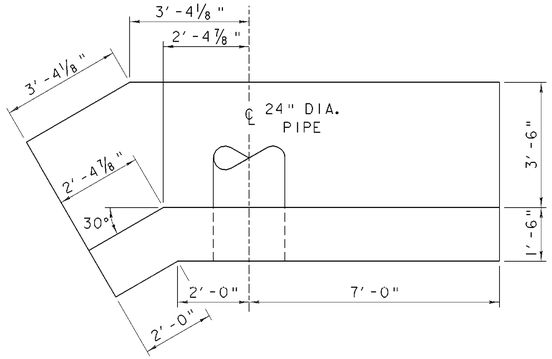
1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525 - RAILINGS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
2. METAL HAND RAILING SHALL MEET THE REQUIREMENTS OF SECTION 732 - RAILING MATERIALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.
3. RAIL POSTS SHALL BE SET PLUMB.
4. ALL RAILING PARTS SHALL BE GALVANIZED. NO PAINTING IS REQUIRED.
5. ITEM 525.15, "METAL HAND RAILING" SHALL INCLUDE RAILS, POSTS, FITTINGS, CAP, SLEEVES AND CONCRETE FOR POST ANCHORS.

NOTE: CONCRETE STEPS NOT BUILT DUE TO CONFLICT WITH EXISTING SANITARY SEWER MAIN. THE HANDRAIL WAS INSTALLED ALONG THE TOP OF THE WALL CAP.

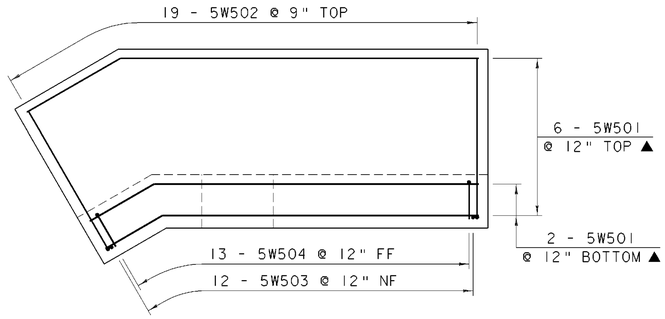
CONCRETE STEPS AND METAL HAND RAILING DETAILS

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

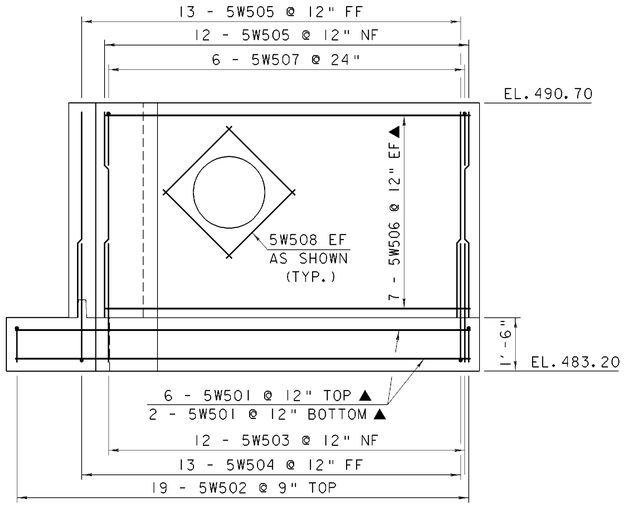
FILE NAME: 00bl24\structures\sbl24smrd.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 51 OF 72



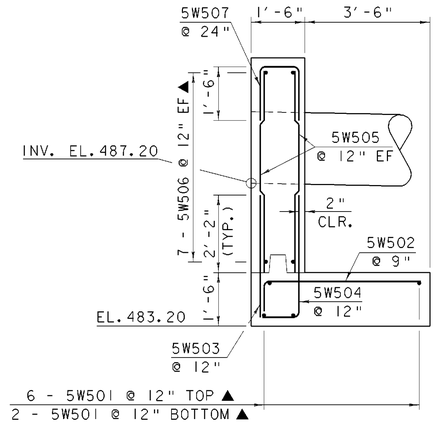
PLAN



FOOTING REINFORCING



ELEVATION



TYPICAL SECTION

NOTE:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
3" CLR. UNLESS OTHERWISE NOTED
2'-2" BAR LAP UNLESS OTHERWISE NOTED

CONCRETE IN HEADWALL SHALL BE HIGH PERFORMANCE CLASS B

DETAILS FOR HEADWALL AT 23+49 RT.

1 0 1 2 3 4
SCALE: ½" = 1'-0"

HEADWALL DETAILS

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124\structures\sbl24hwd.i
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 52 OF 72

STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

WALL NO.1

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
▲	20	5	9'- 2"	1W501	STR												
▲	9	5	20'- 11"	1W502	STR												
	4	5	21'- 9"	1W503	STR												
	20	5	2'- 0"	1W504	STR												
	10	5	3'- 4"	1W505	19		2'- 6"	0'- 10"	---				0'- 10"		0'- 2"		
	28	8	2'- 6"	1W801	17		1'- 3"	1'- 3"	---								

WALL NO. 2

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
▲	31	5	15'- 9"	2W501A	STR												
▲	31	5	19'- 10"	2W501B	STR												
	31	5	19'- 10"	2W501C	STR												
▲	31	5	21'- 2"	2W501D	STR												
▲	31	5	17'- 10"	2W501E	STR												
	31	5	15'- 9"	2W501F	STR												
▲	31	5	16'- 11"	2W501G	STR												
▲	31	5	18'- 9"	2W501H	STR												
▲	31	5	19'- 2"	2W501I	STR												
▲	31	5	19'- 2"	2W501J	STR												
▲	31	5	18'- 9"	2W501K	STR												
▲	31	5	16'- 10"	2W501L	STR												
▲	31	5	16'- 4"	2W501M	STR												
✳ ▲	32	5	14'- 4"	2W501N	STR												
▲	31	5	18'- 4"	2W501O	STR												
▲	31	5	19'- 6"	2W501P	STR												
	31	5	19'- 6"	2W501Q	STR												
▲	31	5	20'- 10"	2W501R	STR												
▲	31	5	20'- 6"	2W501S	STR												
▲	31	5	20'- 0"	2W501T	STR												
▲	16	5	30'- 0"	2W502A	STR												
▲	19	5	31'- 11"	2W502B	STR												
	21	5	29'- 9"	2W502C	STR												
▲	20	5	34'- 4"	2W502D	STR												
▲	17	5	29'- 9"	2W502E	STR												
	17	5	31'- 11"	2W502F	STR												
▲	17	5	30'- 0"	2W502G	STR												
▲	19	5	31'- 11"	2W502H	STR												
	20	5	29'- 9"	2W502I	STR												
	19	5	34'- 4"	2W502J	STR												
▲	19	5	29'- 9"	2W502K	STR												
▲	17	5	31'- 11"	2W502L	STR												
▲	16	5	30'- 0"	2W502M	STR												
▲	14	5	31'- 11"	2W502N	STR												
▲	18	5	29'- 9"	2W502O	STR												
	19	5	34'- 4"	2W502P	STR												
	21	5	29'- 9"	2W502Q	STR												
	20	5	31'- 11"	2W502R	STR												
	20	5	30'- 0"	2W502S	STR												
▲	20	5	31'- 11"	2W502T	STR												
	4	5	30'- 9"	2W503A	19		10'- 1"	20'- 8"	---				1'- 3"		10'- 0"		
	4	5	32'- 1"	2W503B	19		9'- 9"	22'- 4"	---				1'- 3"		9'- 11"		
	3	5	29'- 9"	2W503C	STR												
	4	5	34'- 6"	2W503D	19		2'- 2"	32'- 4"					0'- 3"		2'- 2"		
	4	5	29'- 11"	2W503E	STR												
	3	5	31'- 11"	2W503F	STR												
	4	5	30'- 1"	2W503G	19		10'- 1"	20'- 0"	---				1'- 2"		10'- 0"		
	3	5	31'- 11"	2W503H	19		2'- 2"	29'- 9"	---				0'- 3"		2'- 2"		
	3	5	29'- 9"	2W503I	STR												
	4	5	34'- 4"	2W503J	19		12'- 2"	22'- 2"	---				0'- 11"		11'- 10"		
	4	5	29'- 10"	2W503K	STR												
	4	5	32'- 0"	2W503L	STR												
	4	5	30'- 3"	2W503M	19		10'- 1"	20'- 2"	---				0'- 8"		10'- 0"		
	4	5	32'- 0"	2W503N	19		9'- 10"	22'- 2"	---				1'- 4"		9'- 9"		
	4	5	29'- 10"	2W503O	19		9'- 10"	20'- 0"	---				0'- 9"		9'- 10"		
	4	5	34'- 4"	2W503P	19		12'- 2"	22'- 2"	---				0'- 9"		12'- 1"		
	3	5	29'- 9"	2W503Q	STR												
	4	5	31'- 11"	2W503R	19		9'- 9"	22'- 2"	---				0'- 2"		9'- 9"		
	4	5	30'- 0"	2W503S	STR												
	4	5	32'- 1"	2W503T	19		12'- 2"	19'- 11"	---				1'- 4"		12'- 1"		
	620	5	2'- 0"	2W504	STR												
	320	5	3'- 4"	2W505	19		2'- 6"	0'- 10"	---				0'- 10"		0'- 2"		
	117	8	4'- 0"	2W801	STR												

WALL NO. 3

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	20	5	19'- 6"	3W501	STR												
	20	5	4'- 0"	3W502	STR												
▲	20	5	17'- 4"	3W503	STR												
✳ ▲	35	5	19'- 6"	3W504	STR												
	20	5	2'- 0"	3W507	STR												
	5	5	19'- 8"	3W508	STR												
	10	5	3'- 7"	3W505	22		1'- 6"	0'- 7"	1'- 6"								
	10	5	3'- 4"	3W506	17		2'- 6"	0'- 10"	---								
	40	6	16'- 0"	3W601	17		9'- 7"	6'- 5"	---								
✳ ▲	21	6	11'- 11"	3W602	STR												
✳	21	8	10'- 4"	3W801	STR												

WALL NO. 4

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
▲	34	5	14'- 3"	4W501	STR												
▲	13	5	35'- 8"	4W502	STR												
	4	5	36'- 9"	4W503	STR												
	34	5	2'- 0"	4W504	STR												
	17	5	3'- 4"	4W505	19		2'- 6"	0'- 10"	---				0'- 10"		0'- 2"		
	64	8	2'- 6"	4W801	17		1'- 3"	1'- 3"	---								

~~CONCRETE STEPS~~

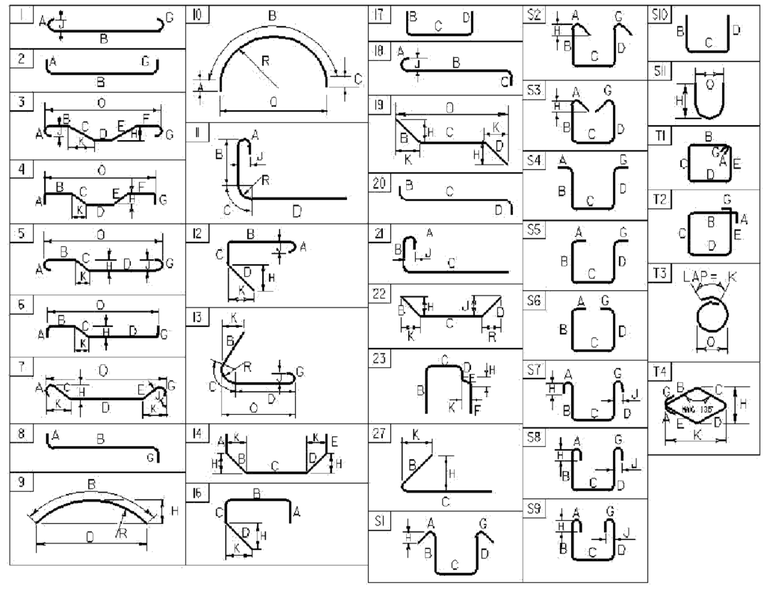
ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
~~2~~	~~5~~	~~10'- 0"~~	~~CS501~~	~~9~~		~~10'- 0"~~							~~1'- 11"~~		~~6'- 3"~~	~~8'- 11"~~	
~~6~~	~~5~~	~~5'- 9"~~	~~CS502~~	~~STR~~													

HEADWALL

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	12	5	3'- 5"	5W503	STR												
✳	26	5	5'- 9"	5W505	STR												
	8	5	2'- 9"	5W508	STR												
▲	8	5	13'- 0"	5W501	19		3'- 0"	10'- 0"	---				1'- 6"		2'- 7"		
	19	5	5'- 4"	5W502	17		0'- 10"	4'- 6"	---								
	13	5	4'- 6"	5W504	17		1'- 1"	3'- 5"	---								
▲	14	5	11'- 2"	5W506	19		2'- 1"	9'- 1"	---				1'- 1"		1'- 10"		
	6	5	4'- 1"	5W507	17		1'- 6"	1'- 1"	1'- 6"								

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



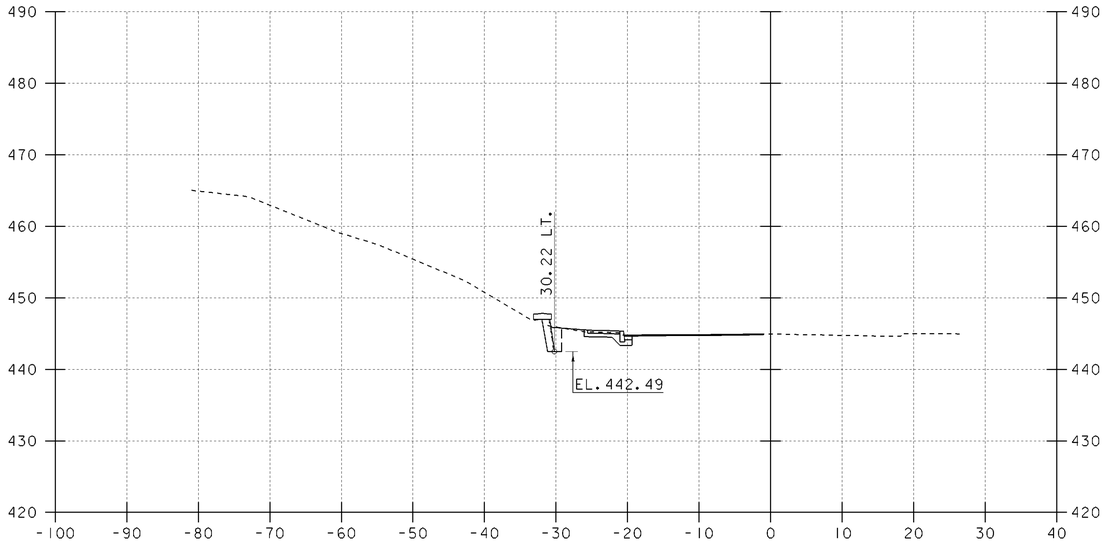
ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES ^{2}	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

PROJECT NAME: **SPRINGFIELD**
PROJECT NUMBER: **STP 016-2 (10)S**

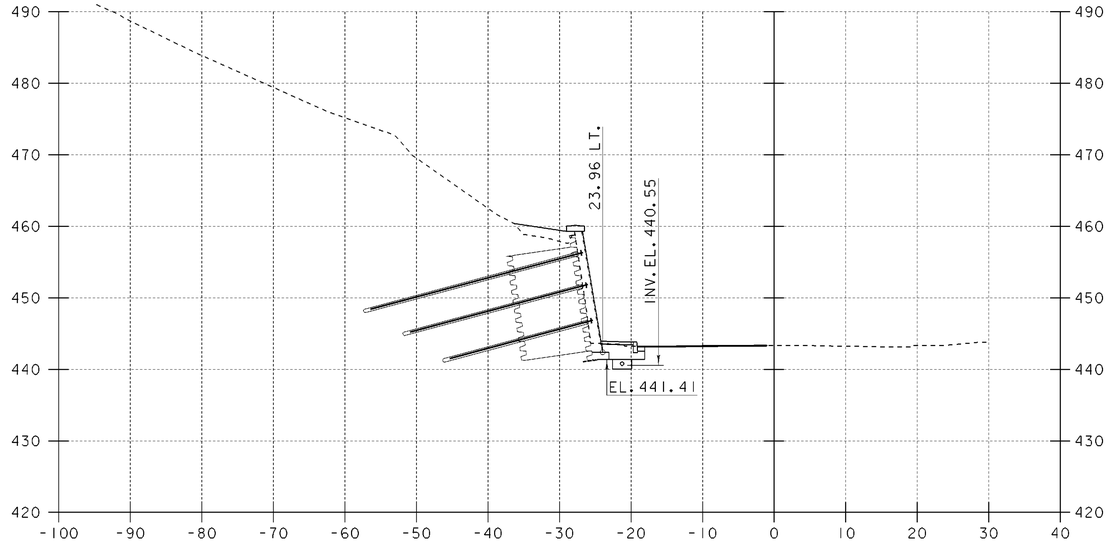
FILE NAME: **\00B124\structures\sb124rss.xls**
PROJECT MANAGER: **R. R. WHITCOMB**
DESIGNED BY: **G. ROY**
REINFORCING STEEL SCHEDULE SHEET #1

PLOT DATE: **07/08/2004**
DRAWN BY: **G. ROY**
CHECKED BY: **J. PERRIGO**
SHEET **53** OF **72**



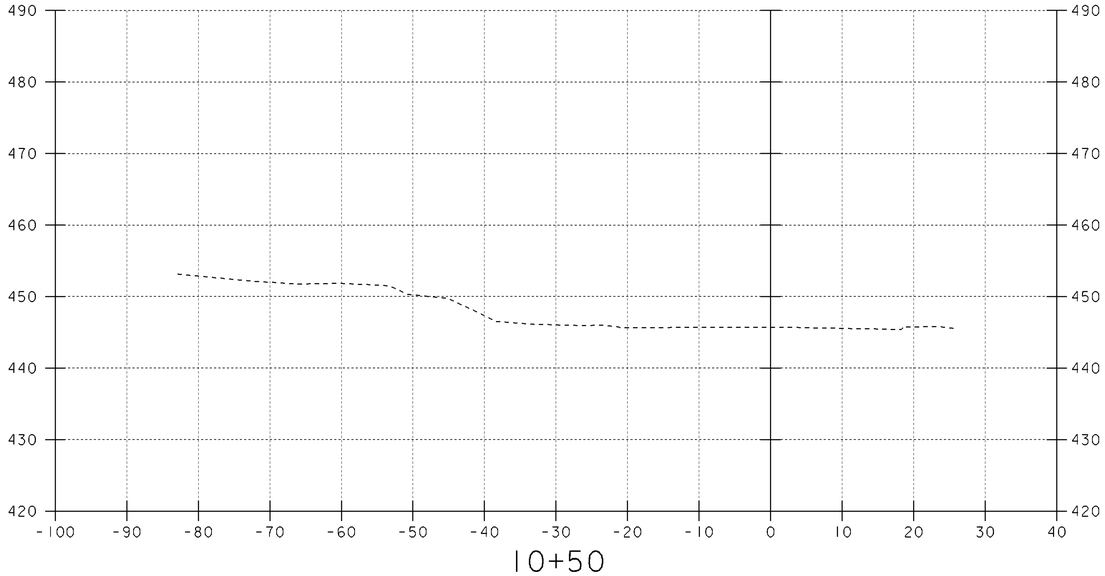
STA. 10+72.00 LT.
BEGIN PARTICIPATION PROJECT

10+75

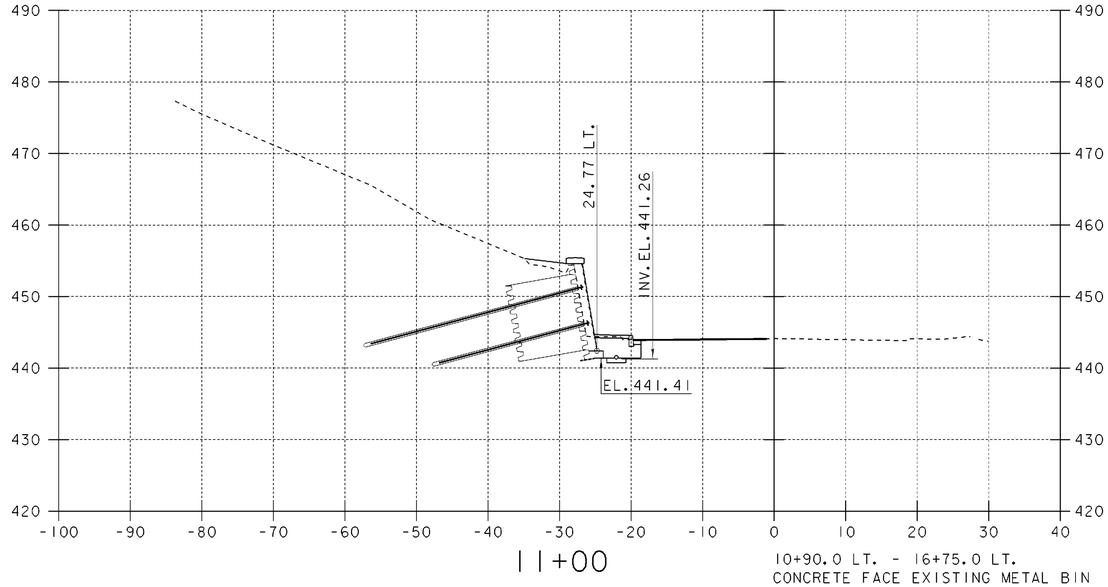


10+72.0 LT. - 10+90.0 LT.
CONCRETE FACE EXISTING CONCRETE
RETAINING WALL

11+25



10+50



11+00

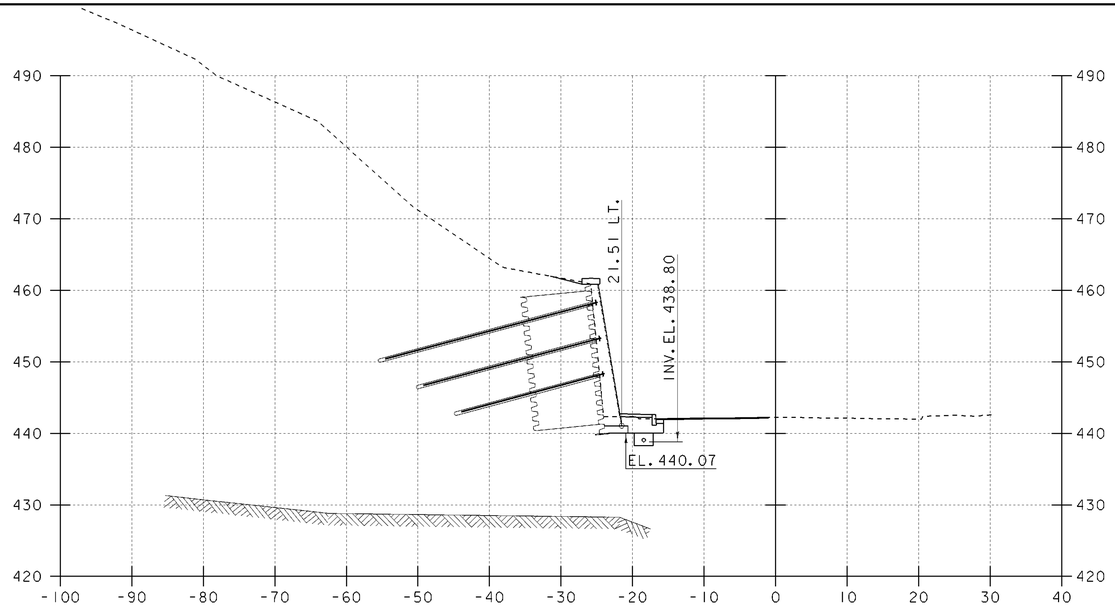
10+90.0 LT. - 16+75.0 LT.
CONCRETE FACE EXISTING METAL BIN
RETAINING WALL

VT 11 CROSS SECTIONS (1)

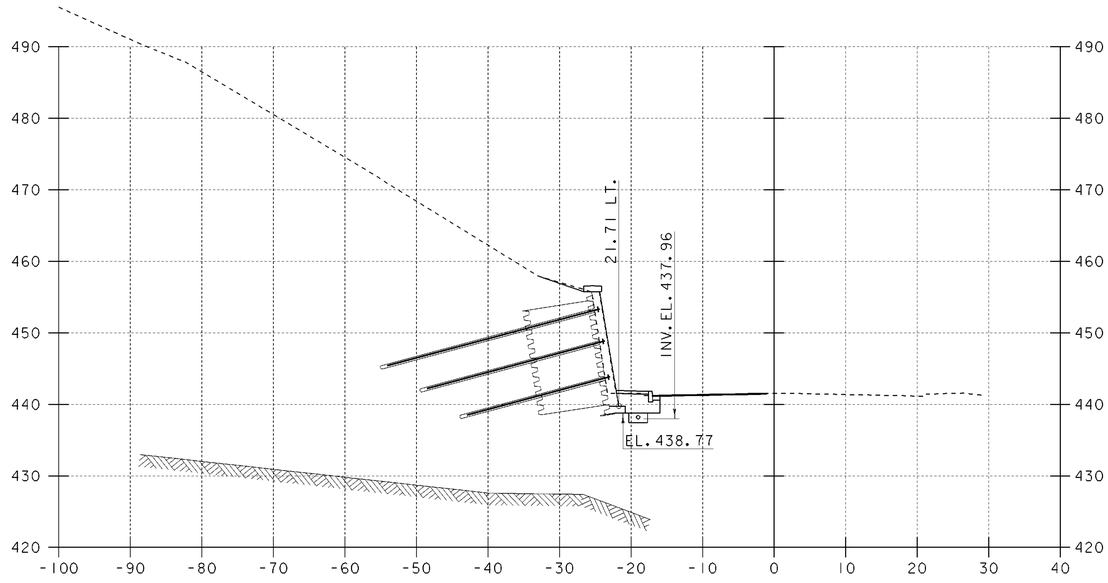
SCALE: 1" = 10'-0"
10 0 10

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

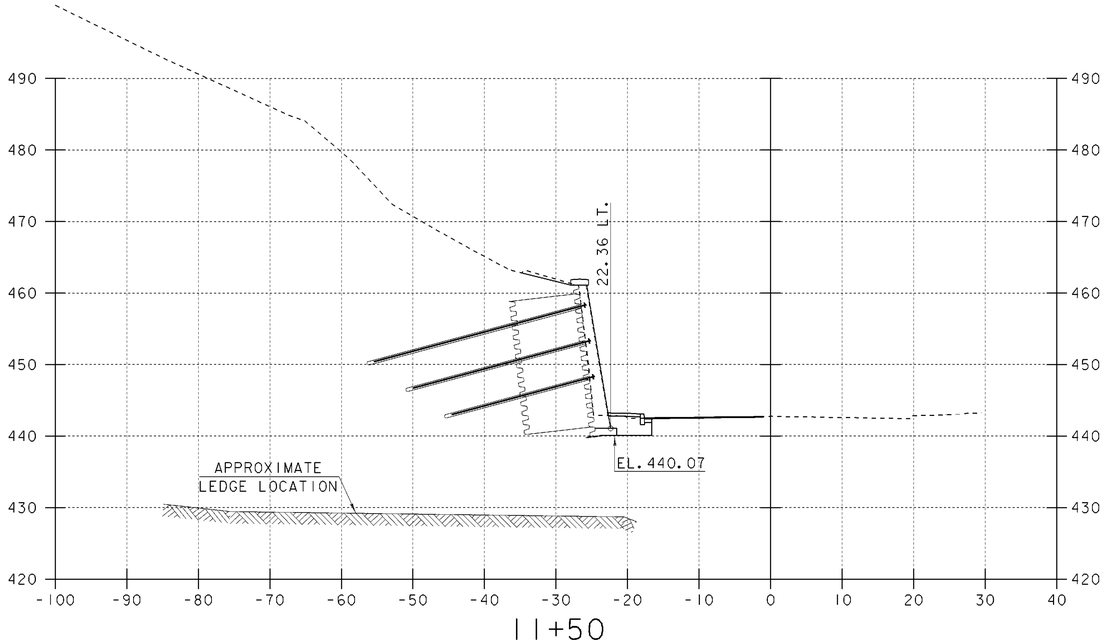
FILE NAME: 00b124/Structures/sb124m01.1	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 54 OF 72



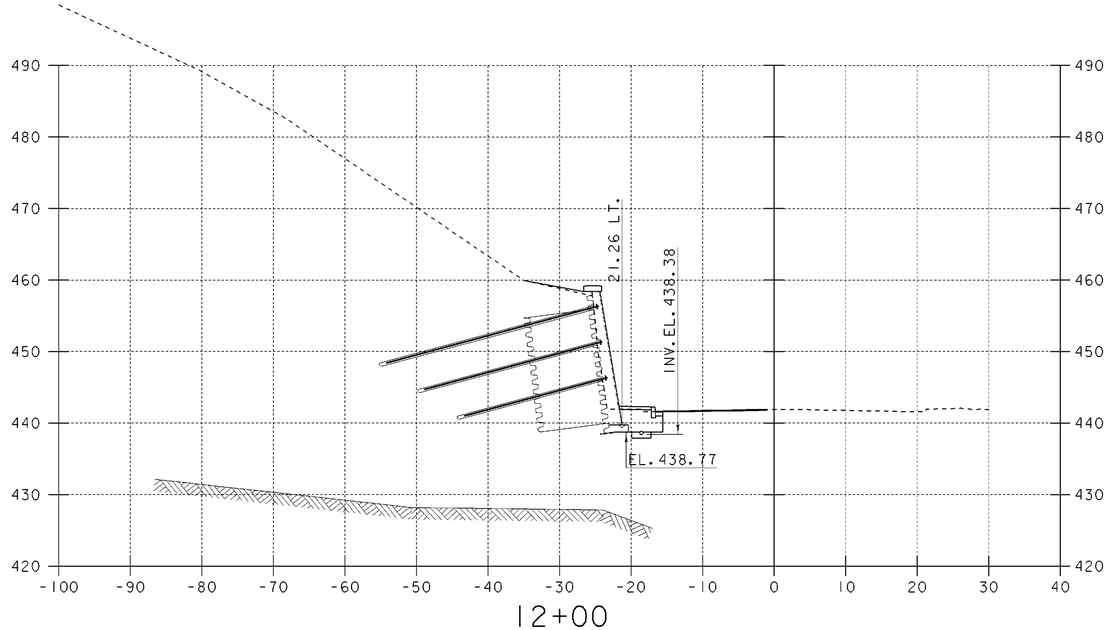
11+75



12+25



11+50



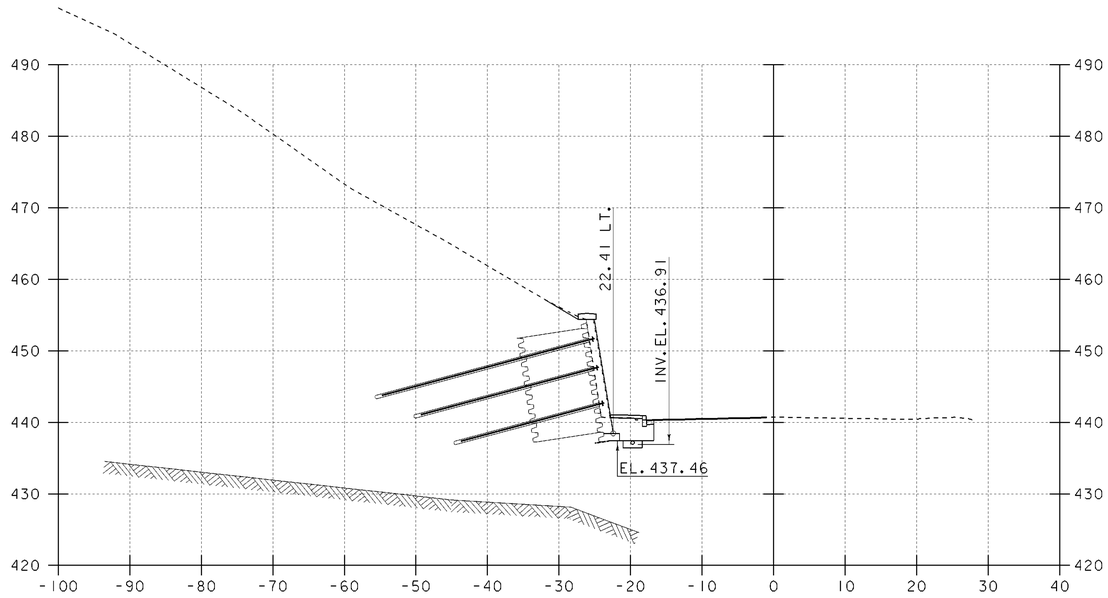
12+00

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

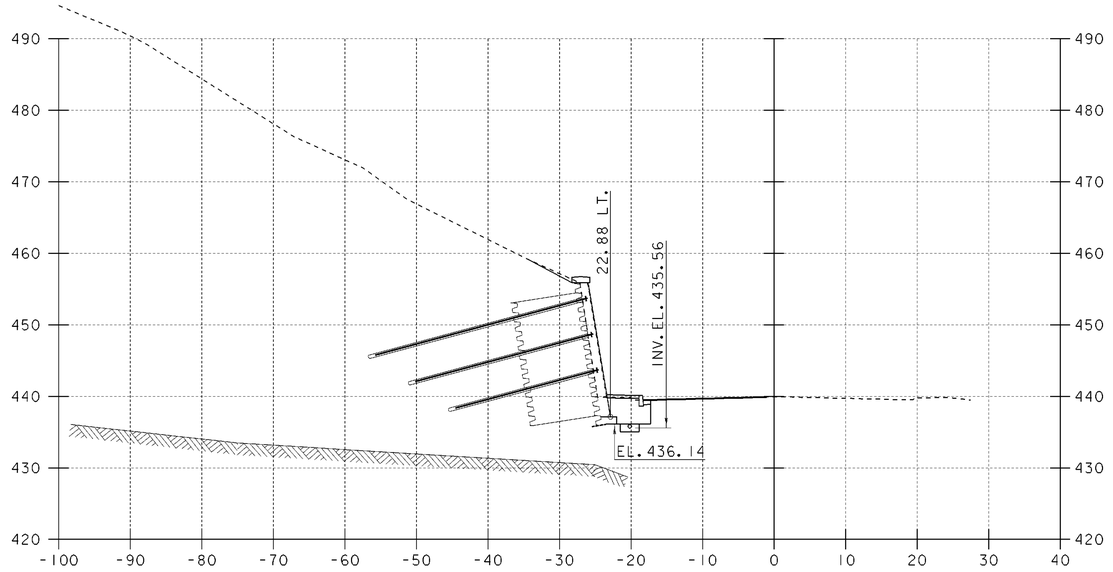
VT 11 CROSS SECTIONS (2)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

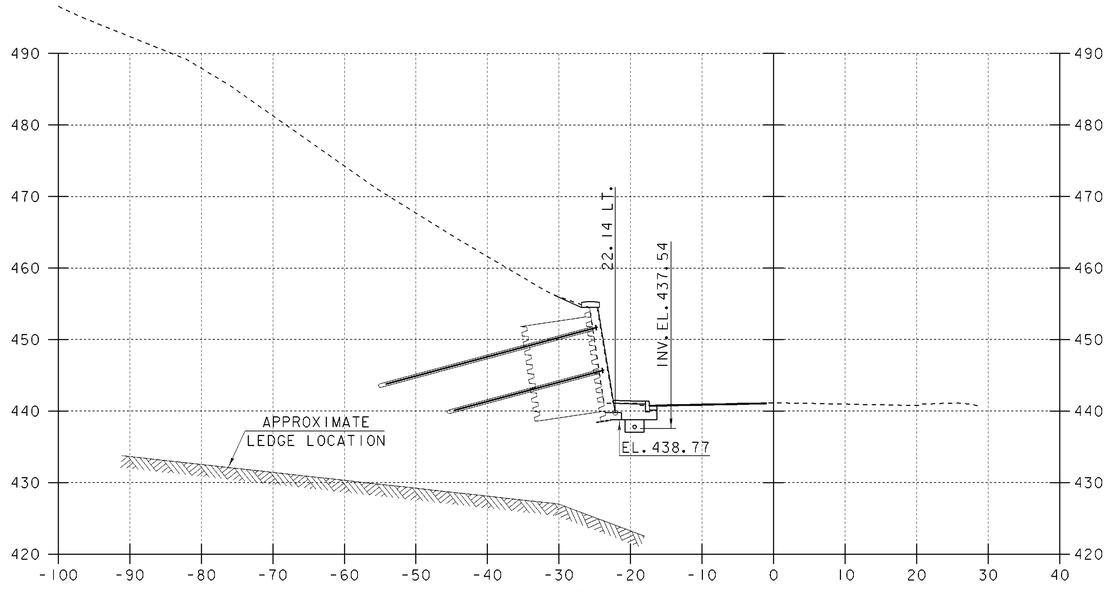
FILE NAME: 00b124/Structures/sb124m02.1		PLOT DATE: 17-AUG-2004	
PROJECT MANAGER: R. WHITCOMB		DRAWN BY: G. ROY	
DESIGNED BY: G. ROY		CHECKED BY: R. WHITCOMB	
		SHEET 55 OF 72	



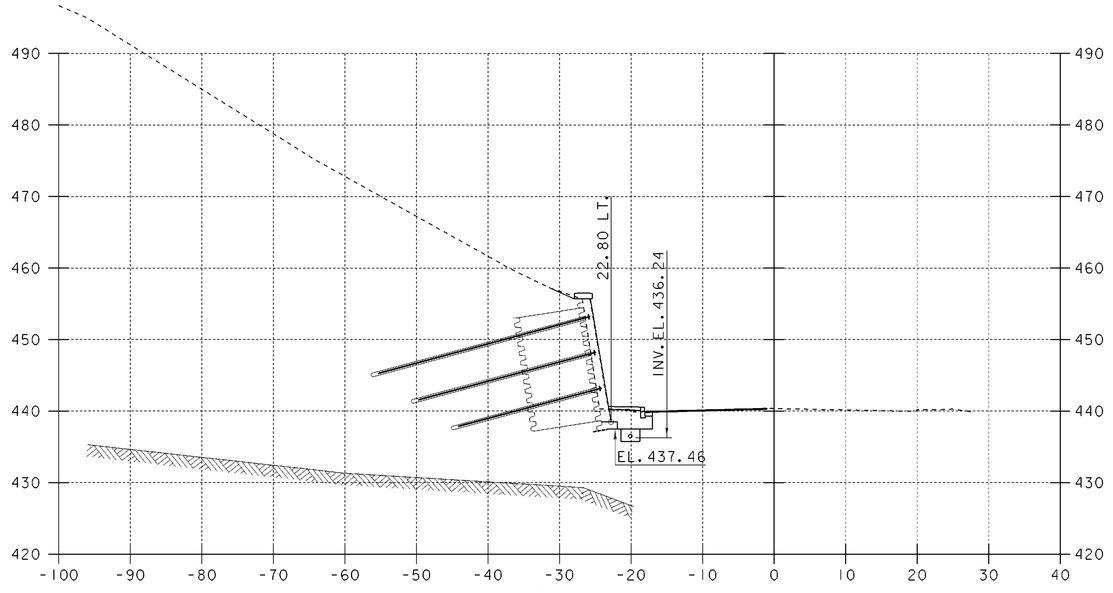
12+75



13+25



12+50



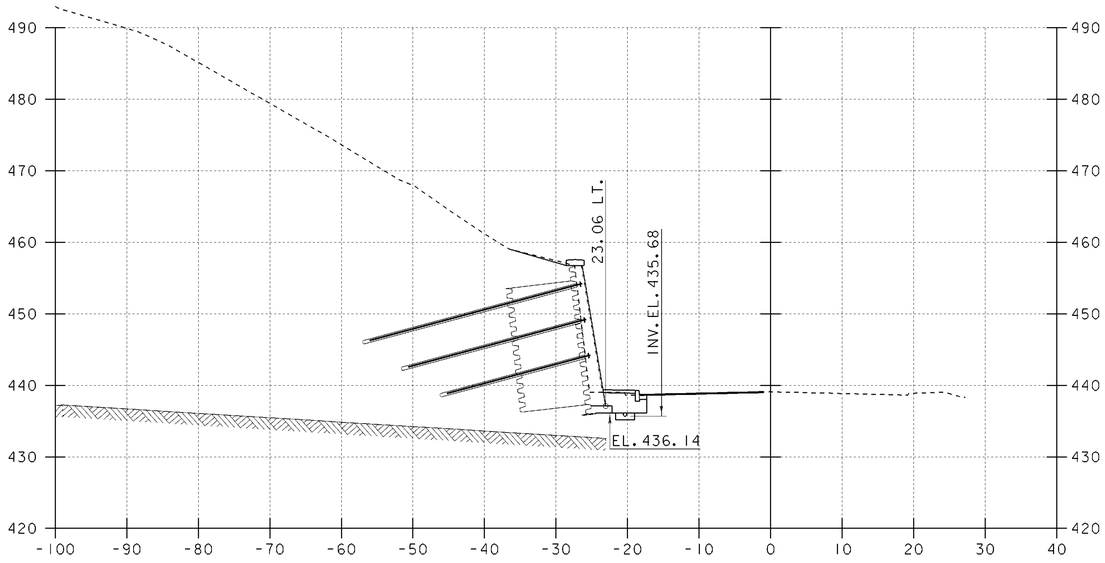
13+00

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

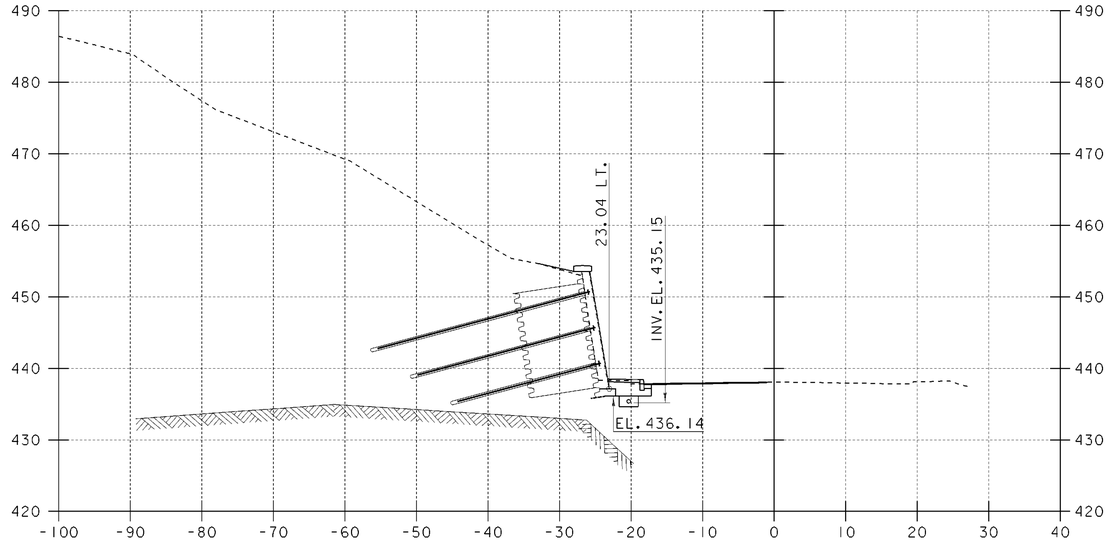
VT 11 CROSS SECTIONS (3)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

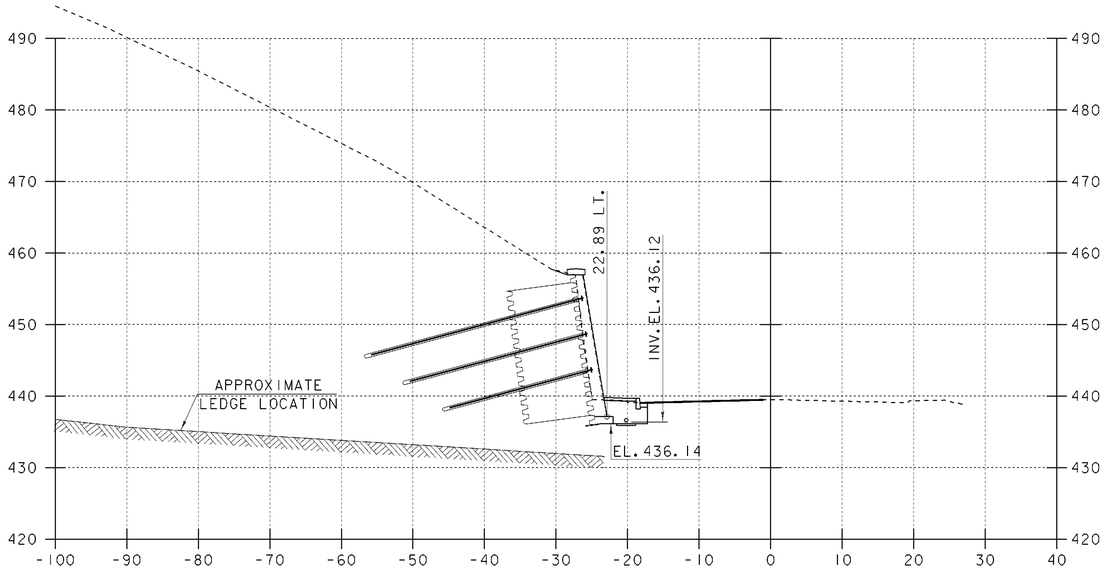
FILE NAME: 00bl24/Structures/sbl24m03.1	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 56 OF 72



13+75



14+25



13+50

14+00

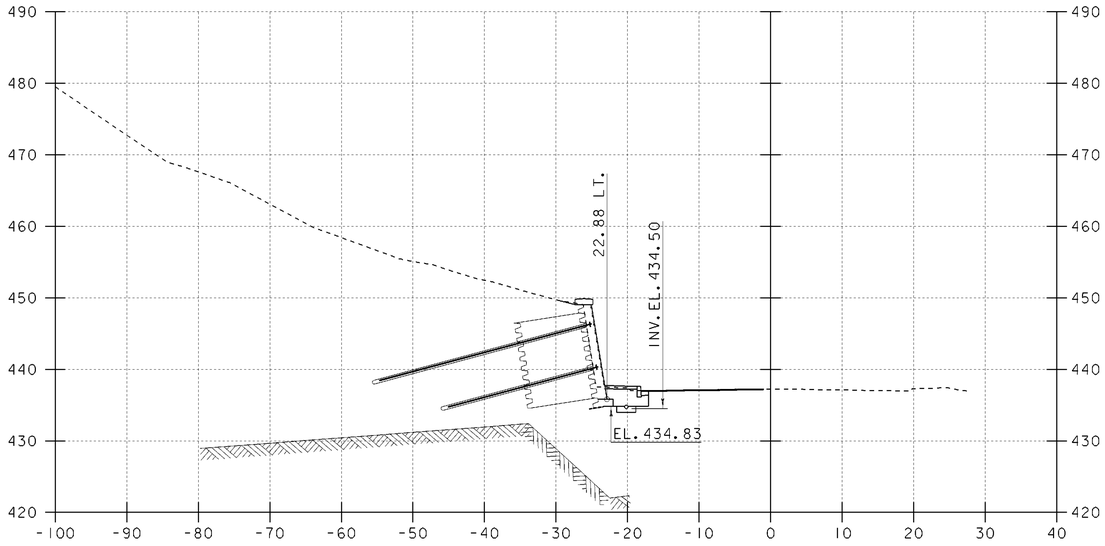
SCALE: 1" = 10'-0"

10 0 10

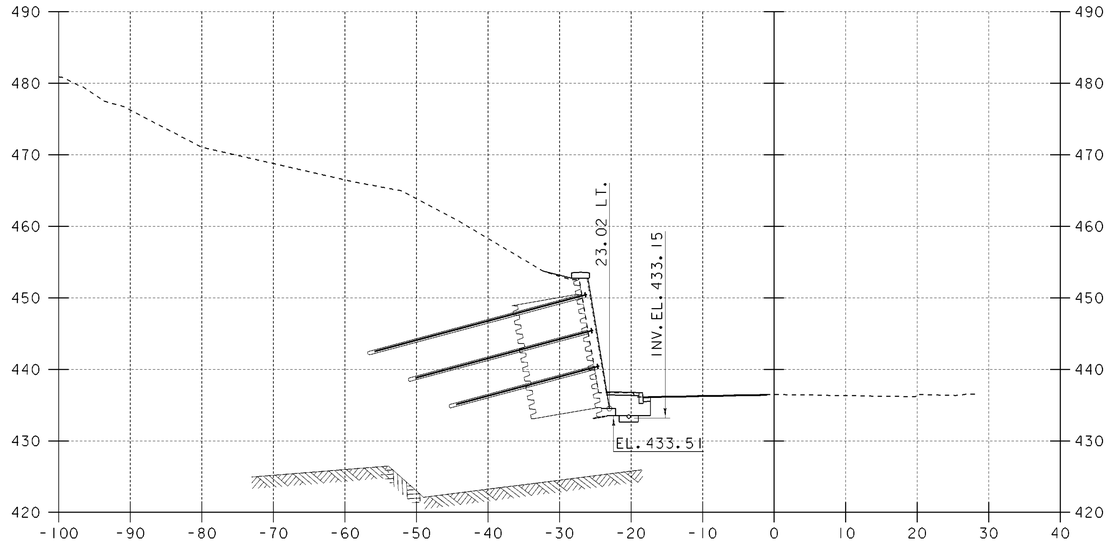
VT 11 CROSS SECTIONS (4)

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

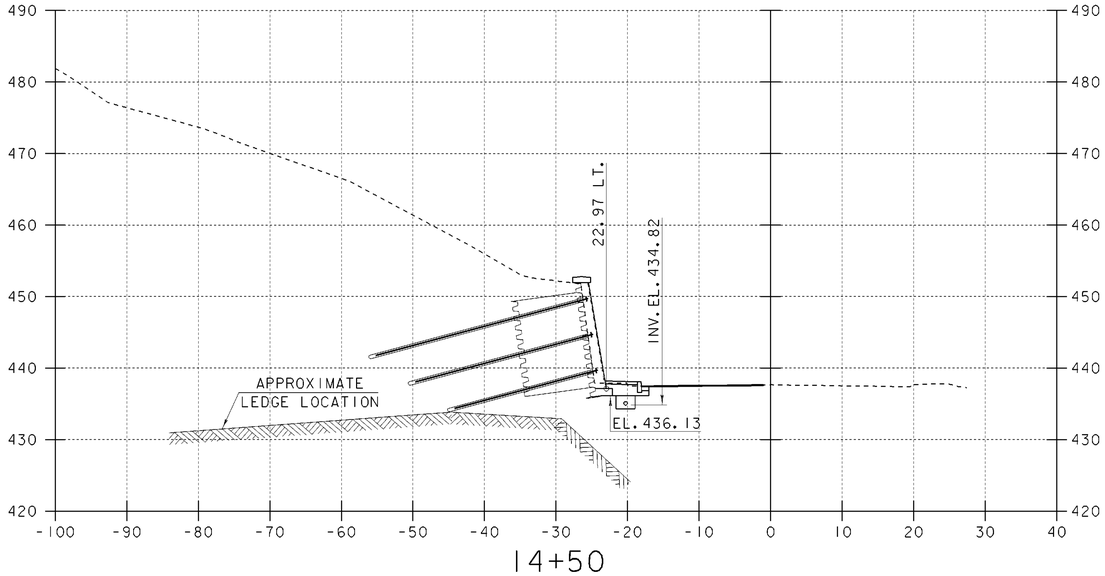
FILE NAME: 00b124/Structures/sb124m04.1		PLOT DATE: 17-AUG-2004	
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET 57 OF 72	



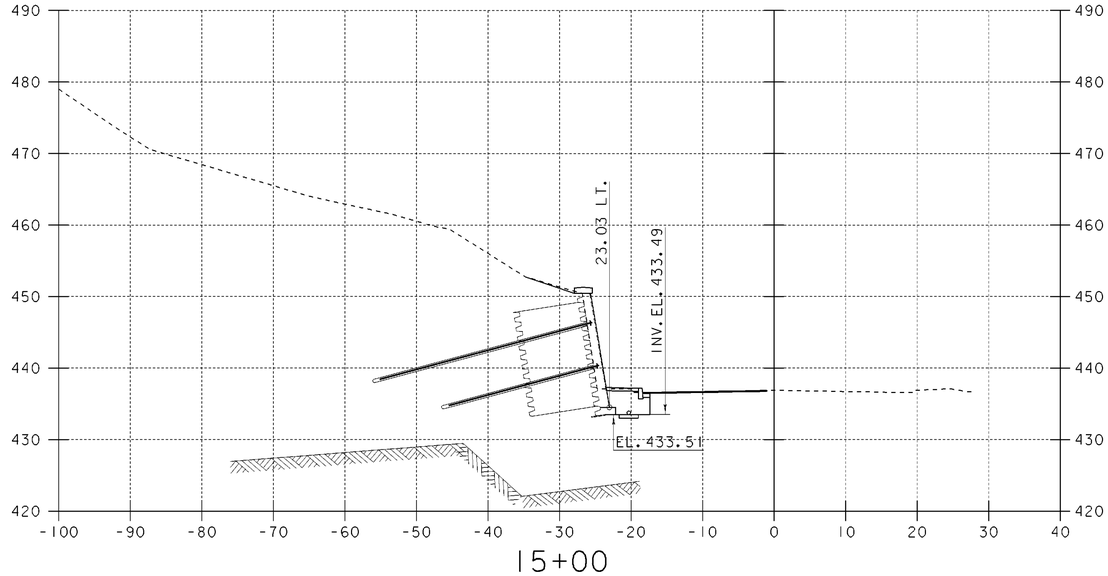
14+75



15+25



14+50



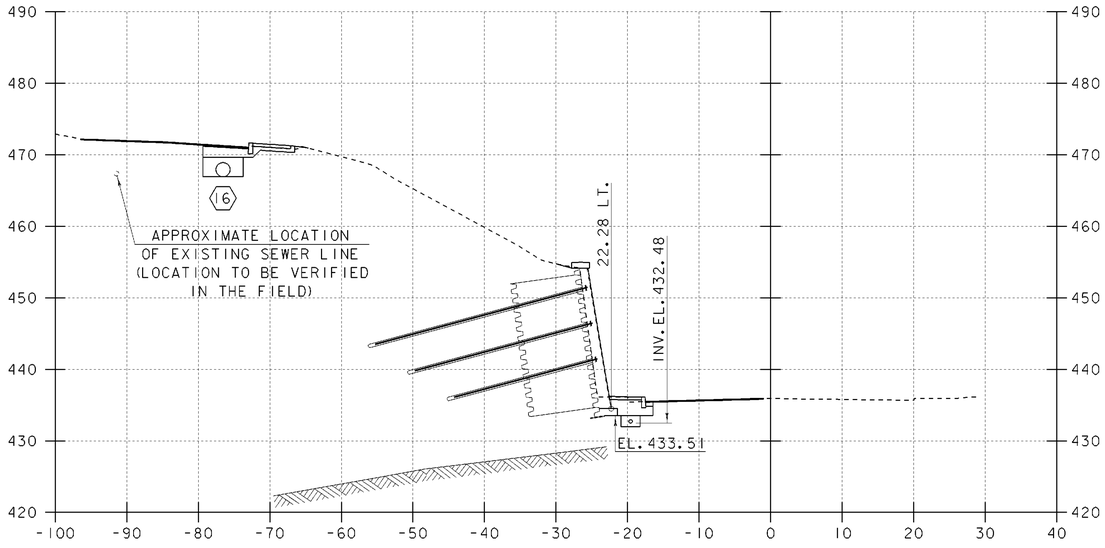
15+00

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

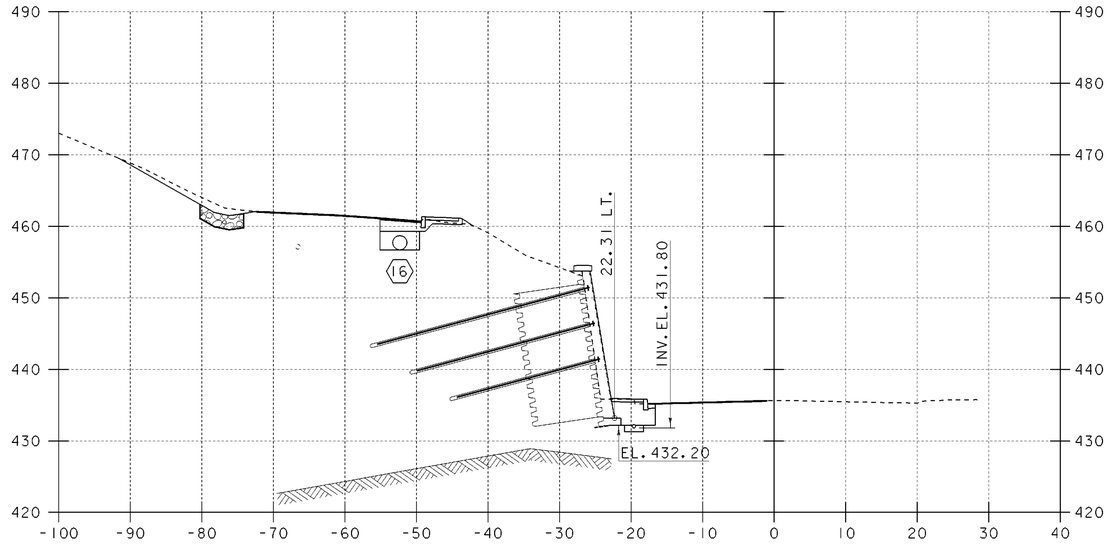
VT 11 CROSS SECTIONS (5)

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

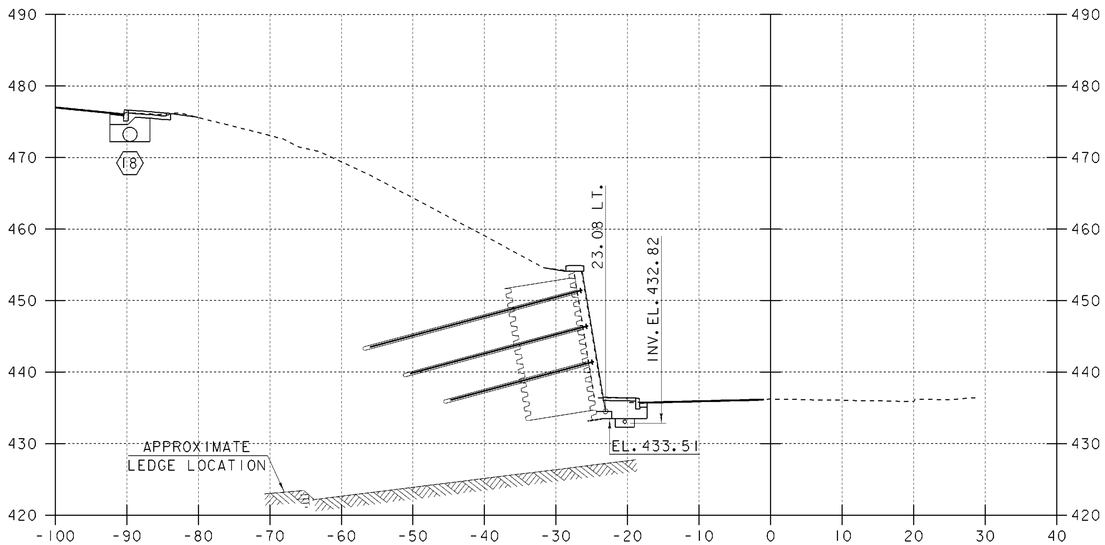
FILE NAME: 00b124/Structures/sb124m05.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 58 OF 72



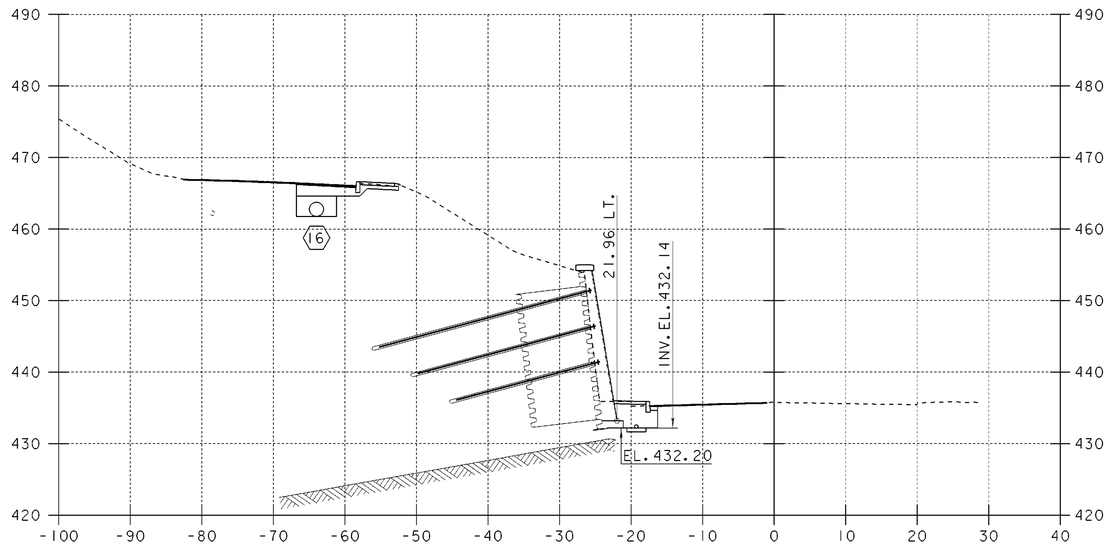
15+75



16+25



15+50



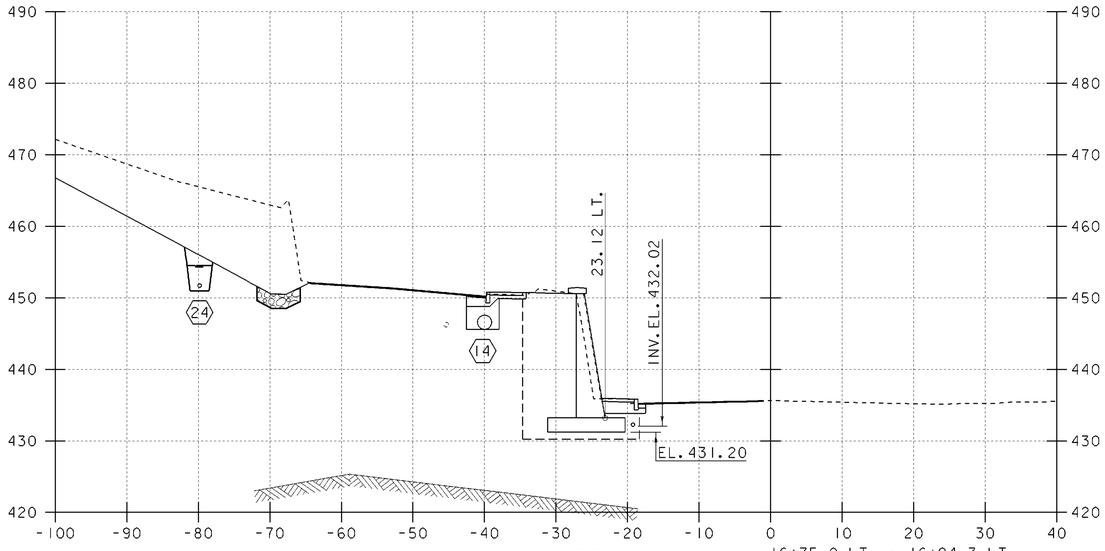
16+00

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

VT 11 CROSS SECTIONS (6)

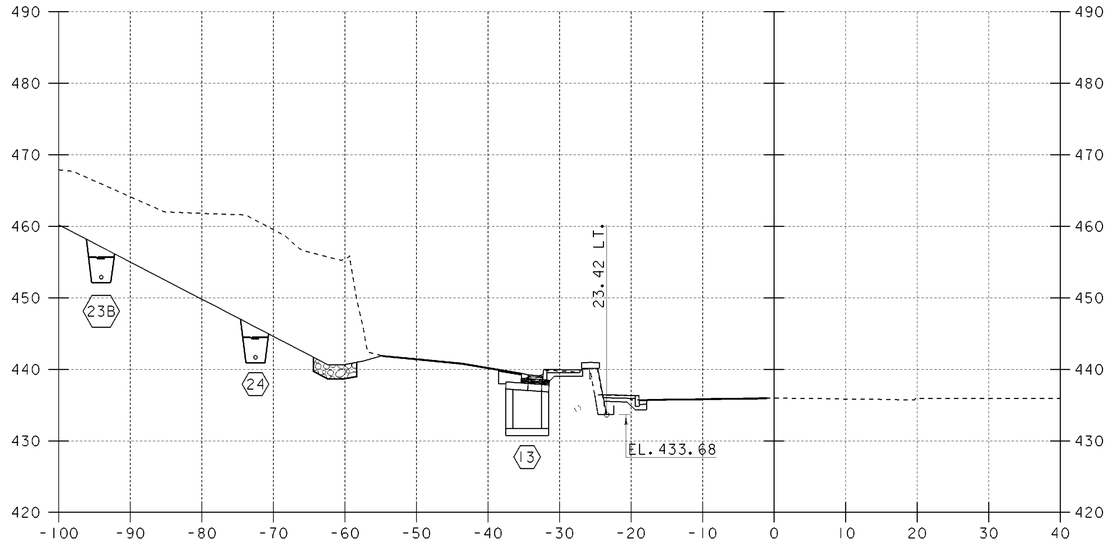
PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124/Structures/sb124m06.1		PLOT DATE: 17-AUG-2004	
PROJECT MANAGER: R. WHITCOMB		DRAWN BY: G. ROY	
DESIGNED BY: G. ROY		CHECKED BY: R. WHITCOMB	
		SHEET 59 OF 72	

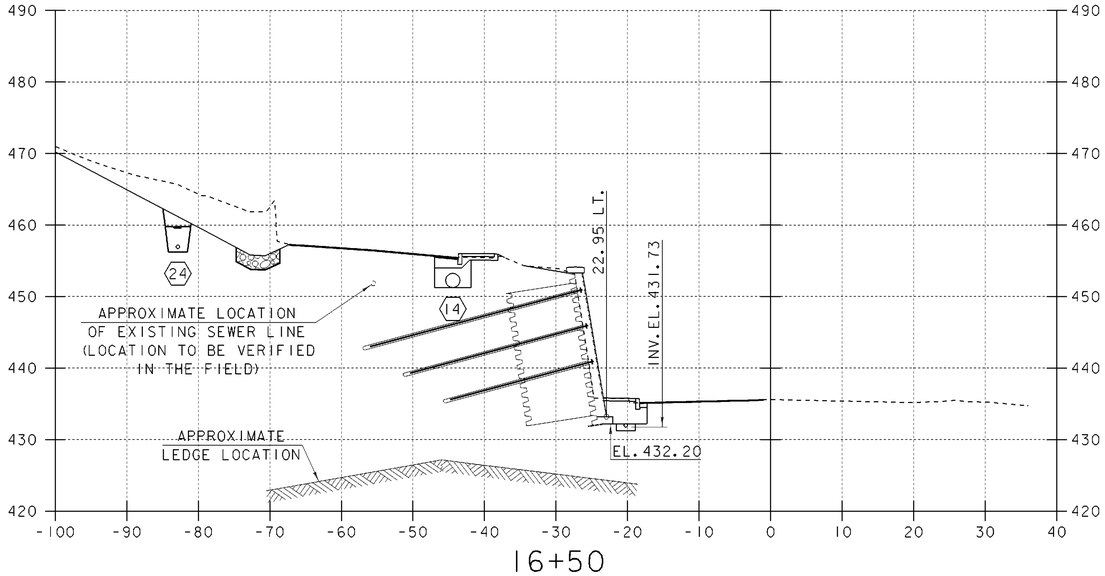


16+75

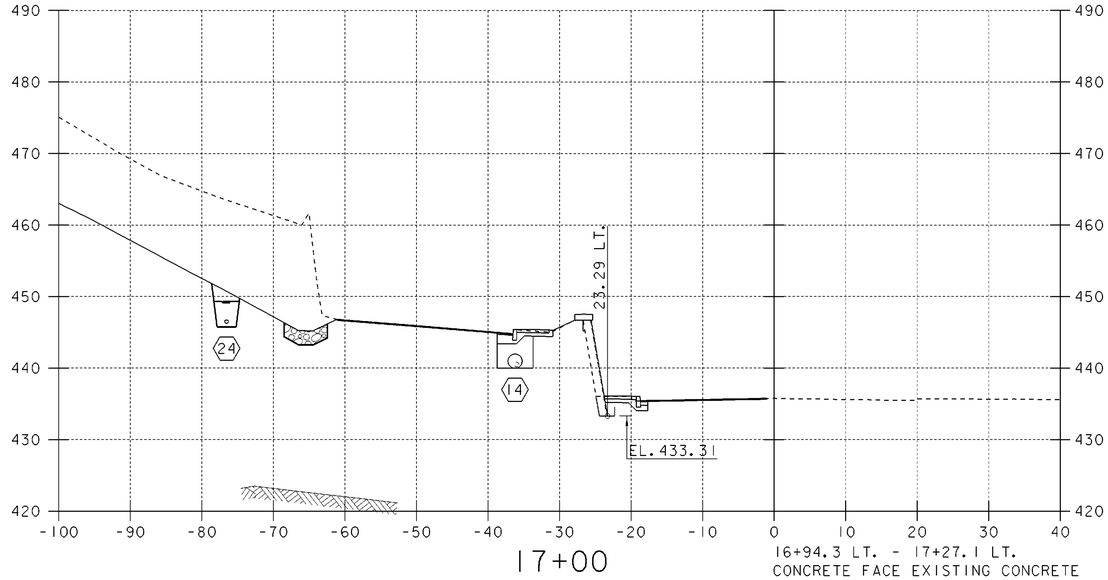
16+75.0 LT. - 16+94.3 LT.
CONSTRUCT REINFORCED CONCRETE
RETAINING WALL



17+25



16+50



17+00

16+94.3 LT. - 17+27.1 LT.
CONCRETE FACE EXISTING CONCRETE
RETAINING WALL

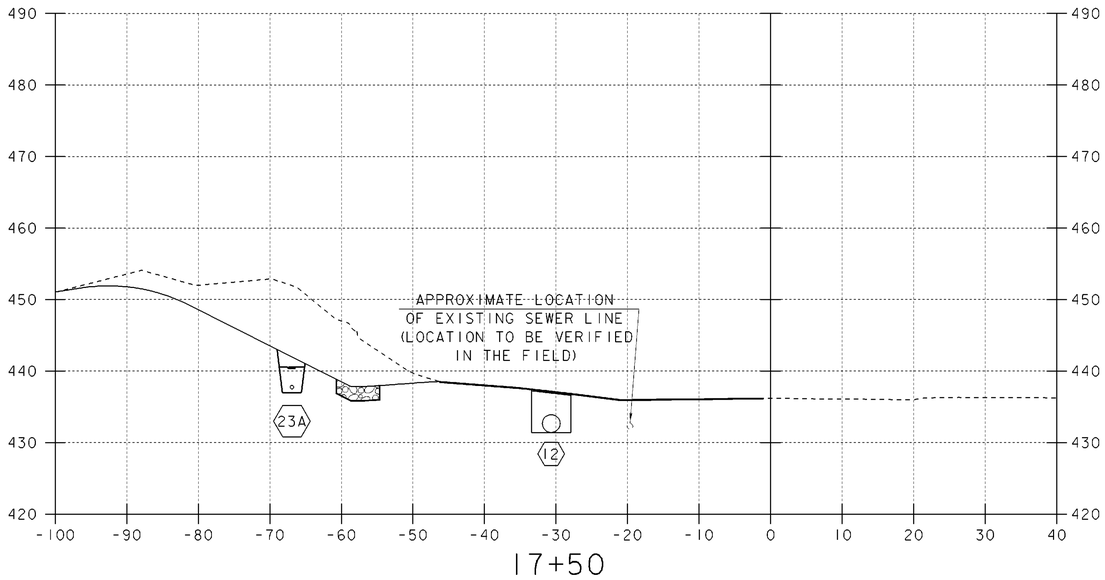
VT 11 CROSS SECTIONS (7)

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

PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00b124/Structures/sb124m07.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY
PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 60 OF 72

STA. 17+77.50 LT.
END PARTICIPATION PROJECT



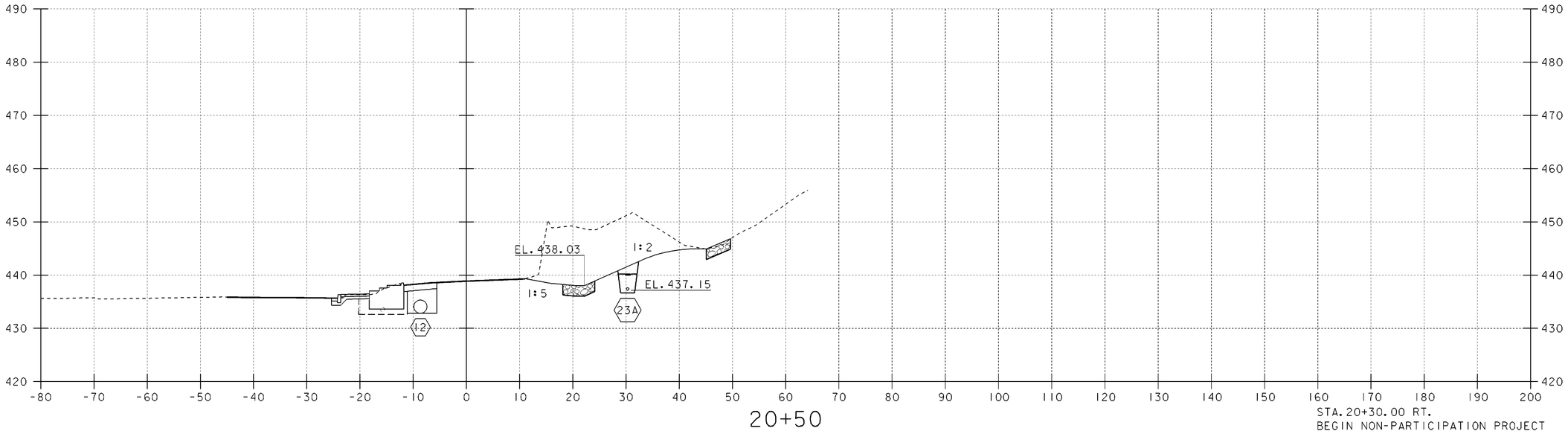
17+50

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

VT 11 CROSS SECTIONS (8)

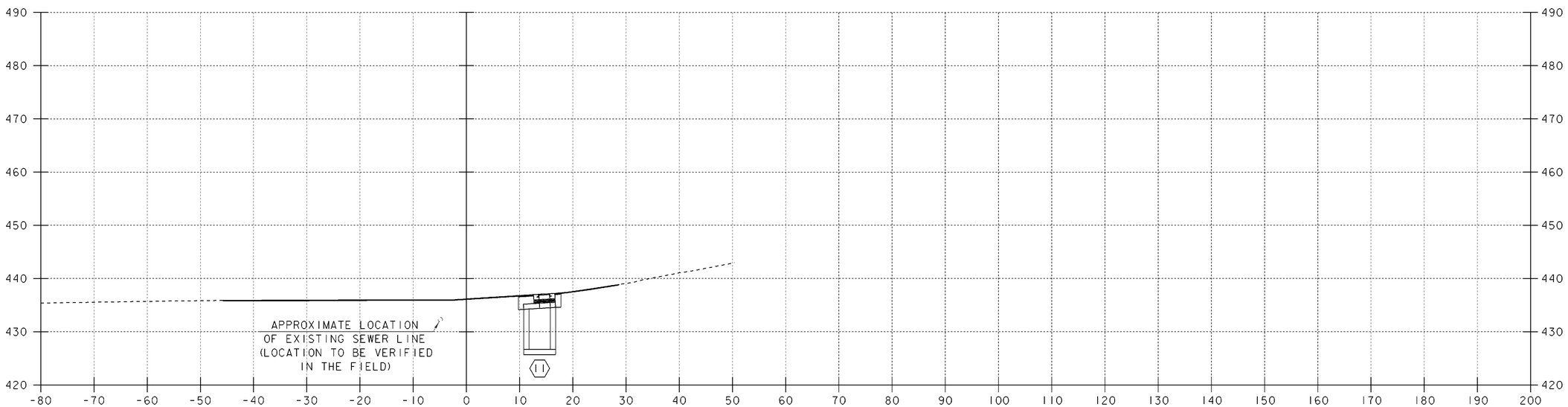
PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00b124/Structures/sb124m08.1		PLOT DATE: 17-AUG-2004	
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET 61 OF 72	



20+50

STA. 20+30.00 RT.
BEGIN NON-PARTICIPATION PROJECT



STA. 20+13.56
BEGIN PARTICIPATION PROJECT
MATCH EXISTING

20+25

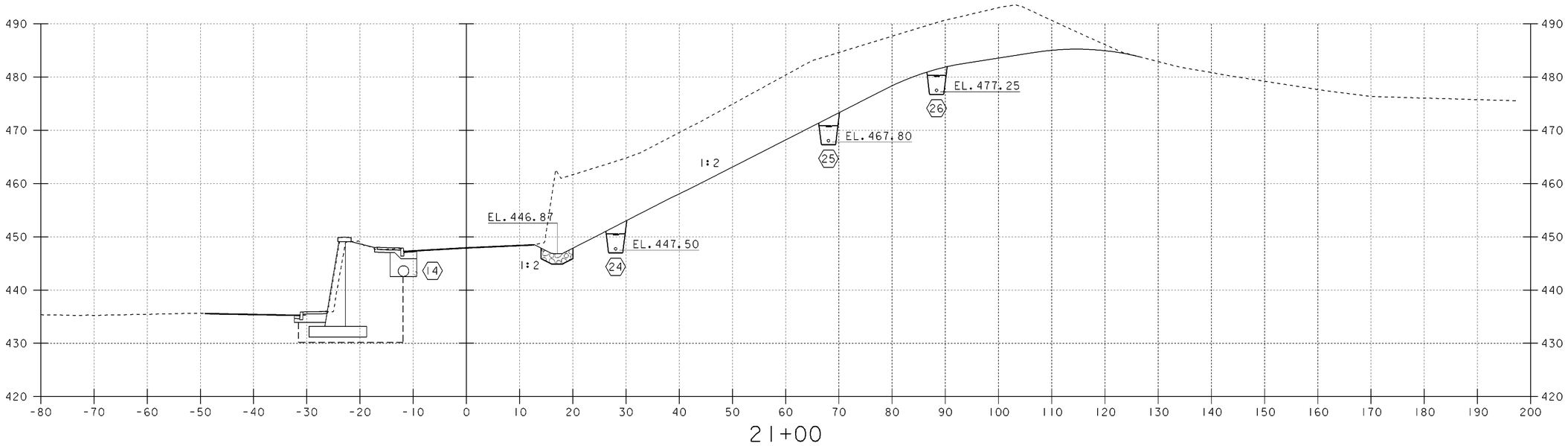
SCALE: 1" = 10'-0"
10 0 10

T.H. 325 CROSS SECTIONS (1)

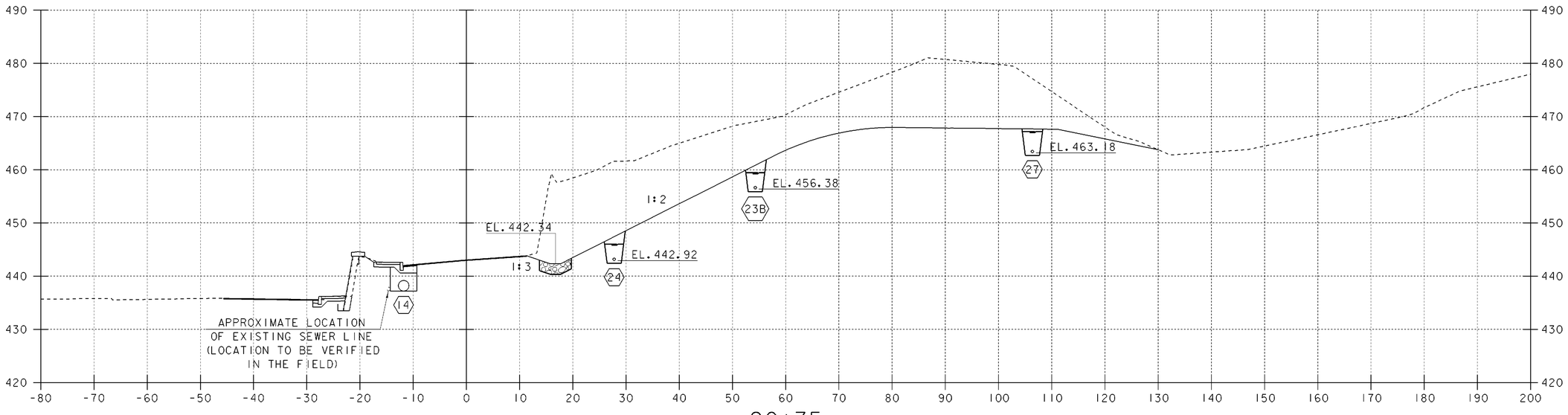
PROJECT NAME: SPRINGFIELD
PROJECT NUMBER: STP 016-2 (10)S

FILE NAME: 00bl24/Structures/sbl24s01.1
PROJECT MANAGER: R. WHITCOMB
DESIGNED BY: G. ROY

PLOT DATE: 17-AUG-2004
DRAWN BY: G. ROY
CHECKED BY: R. WHITCOMB
SHEET 62 OF 72



21+00



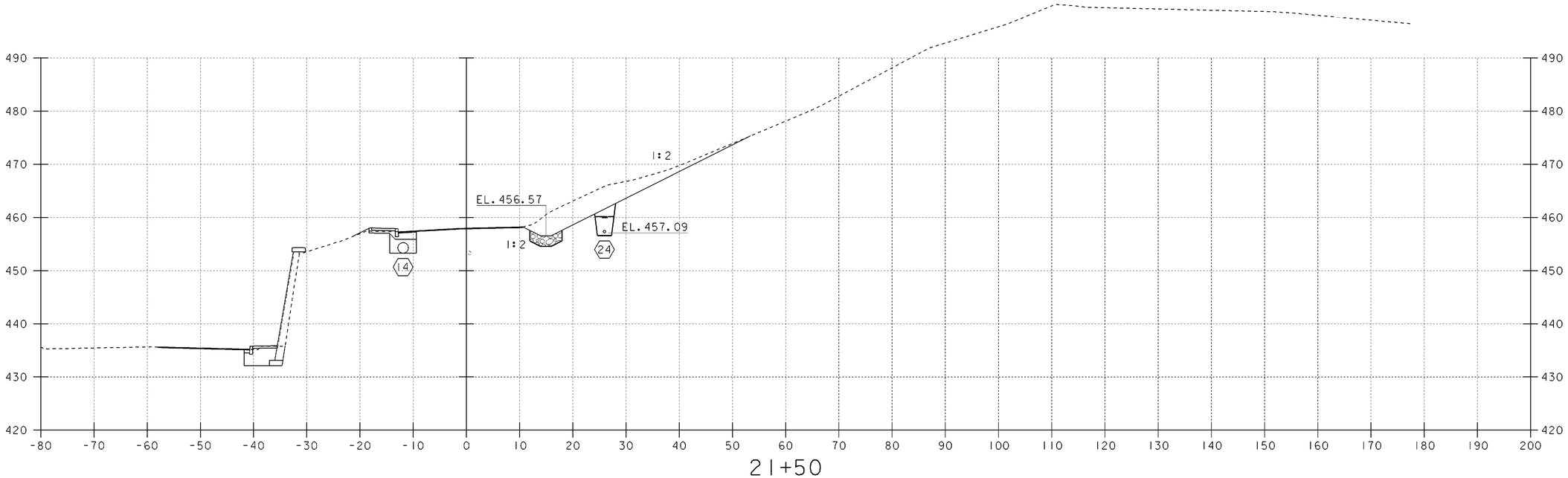
20+75

T.H. 325 CROSS SECTIONS (2)

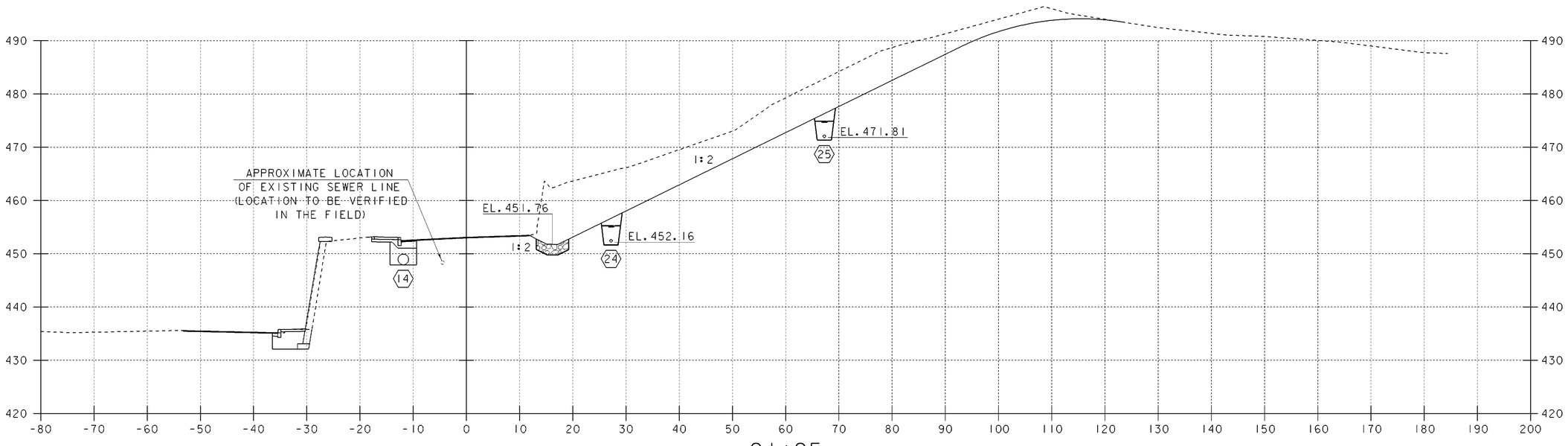
SCALE: 1" = 10'-0"
10 0 10

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00bl24/Structures/sbl24s02.1		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	63 OF 72



21+50



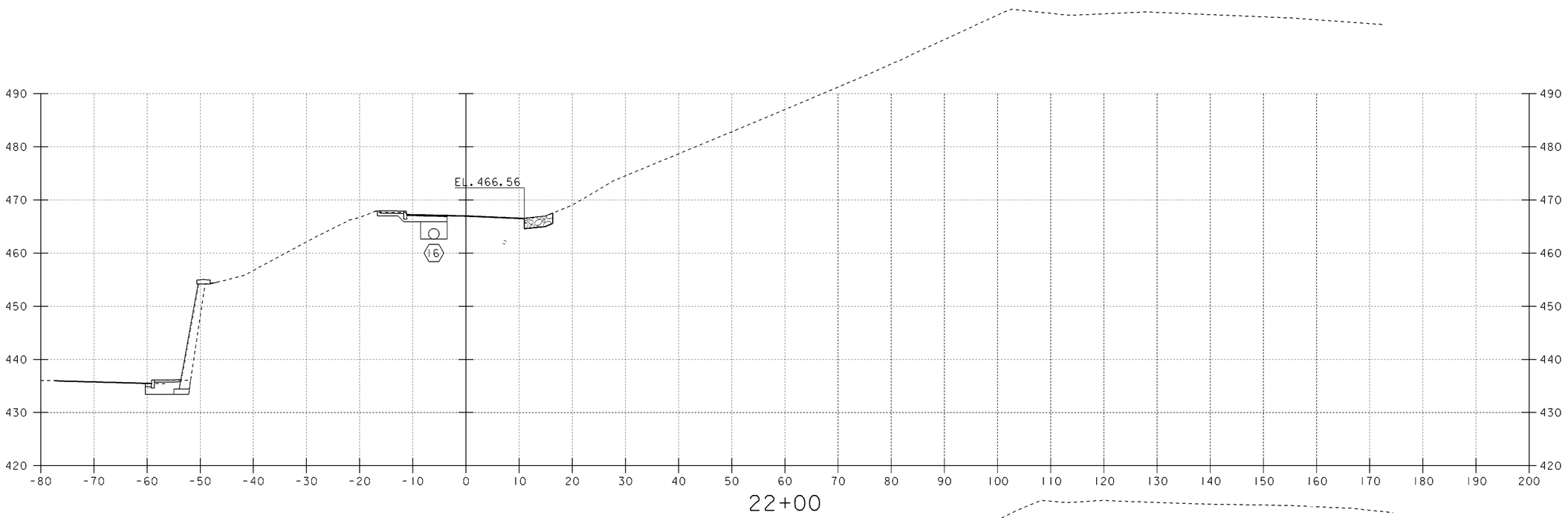
21+25

T.H. 325 CROSS SECTIONS (3)

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

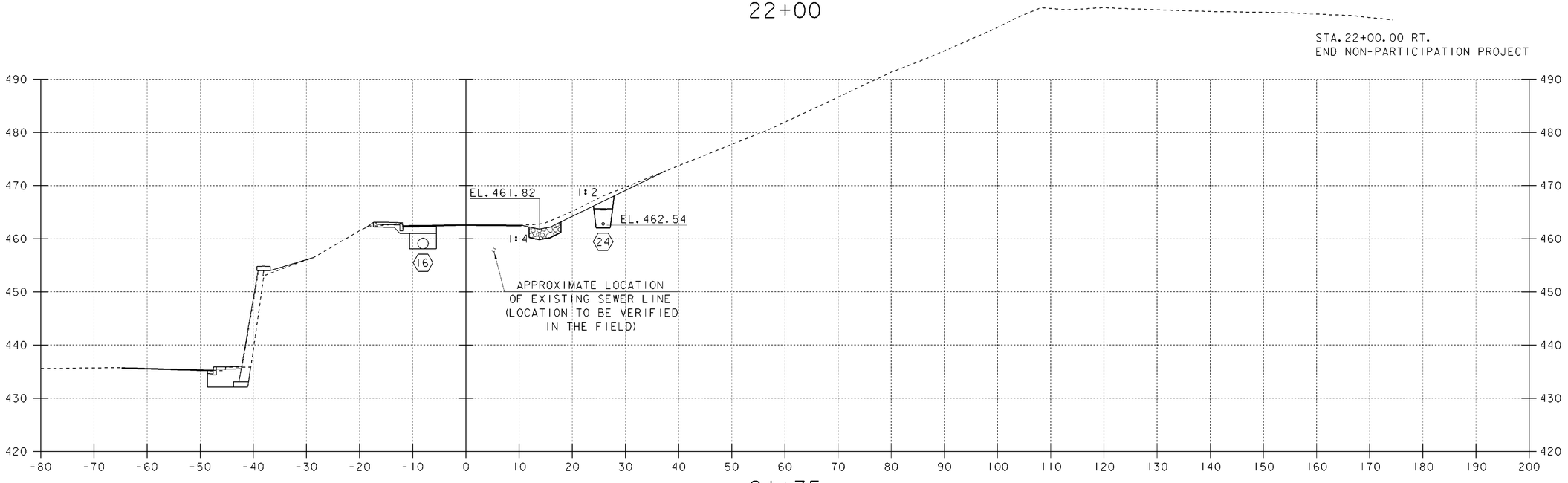
PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00bl24/Structures/sbl24s03.1	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 64 OF 72



22+00

STA. 22+00.00 RT.
END NON-PARTICIPATION PROJECT



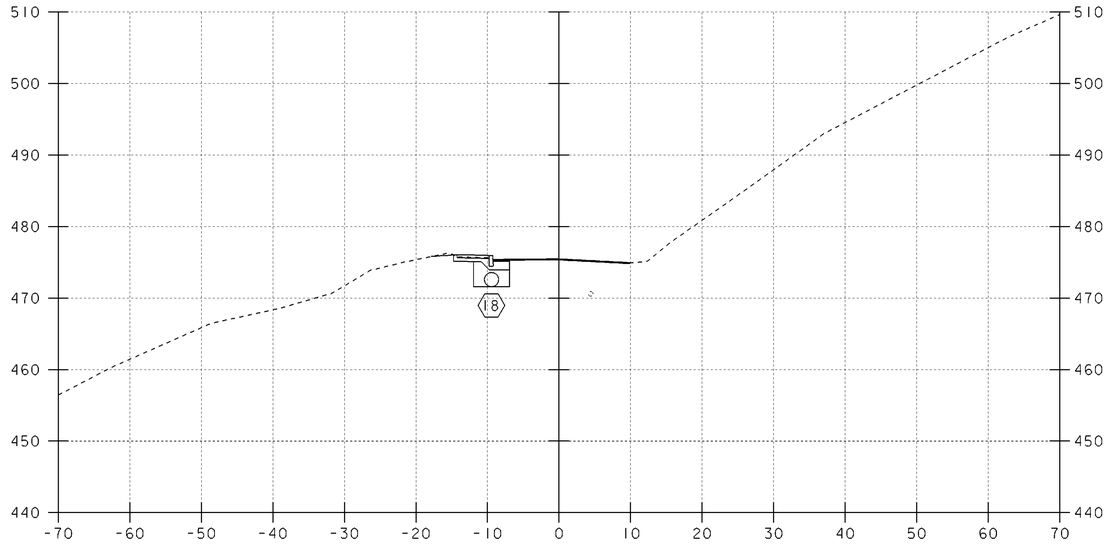
21+75

T.H. 325 CROSS SECTIONS (4)

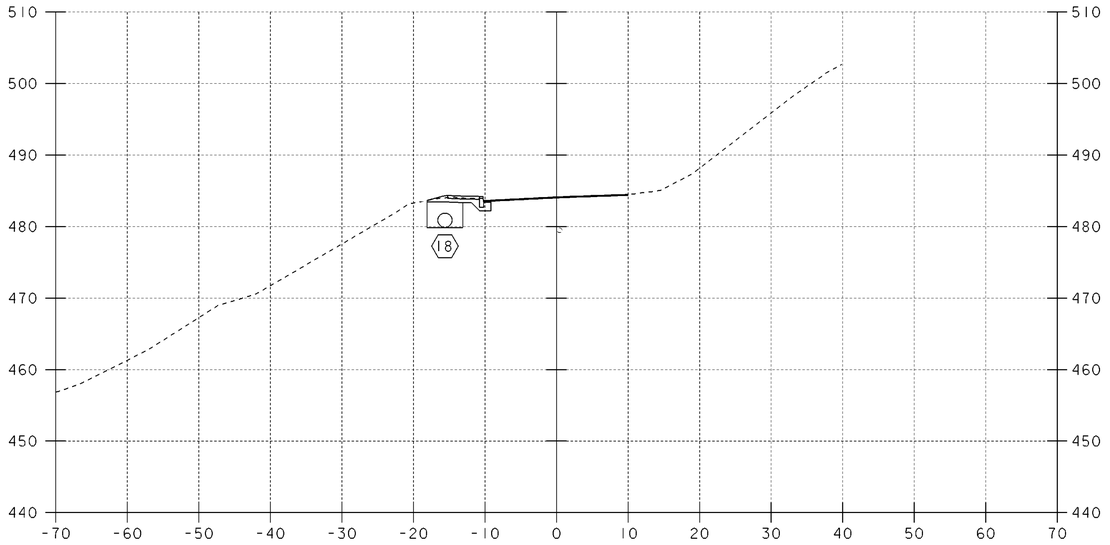
SCALE: 1" = 10'-0"
10 0 10

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

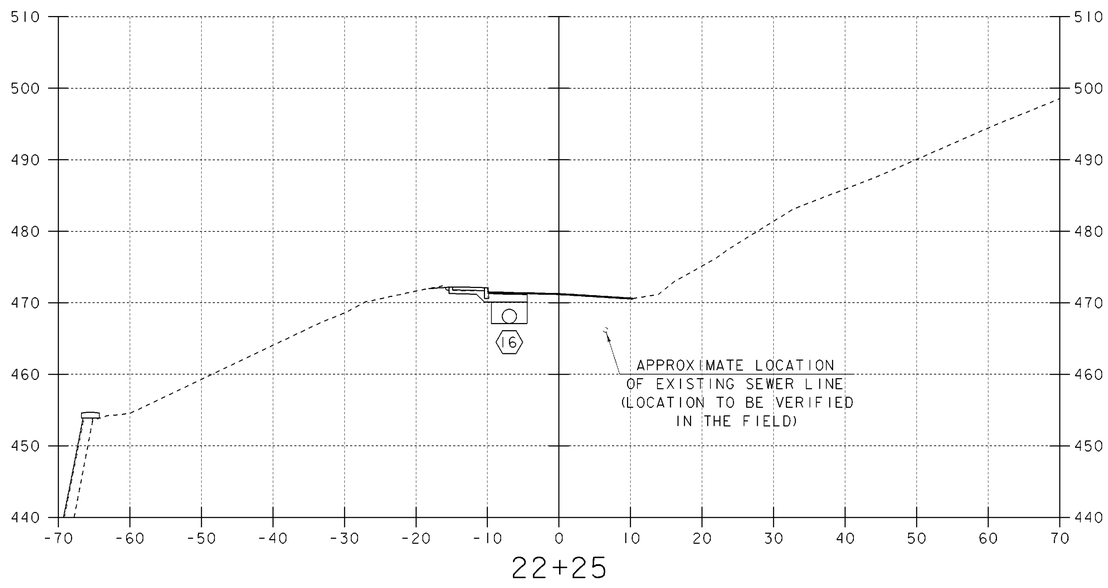
FILE NAME: 00b124/Structures/sb124s04.i	PLOT DATE: 17-AUG-2004
PROJECT MANAGER: R. WHITCOMB	DRAWN BY: G. ROY
DESIGNED BY: G. ROY	CHECKED BY: R. WHITCOMB
	SHEET 65 OF 72



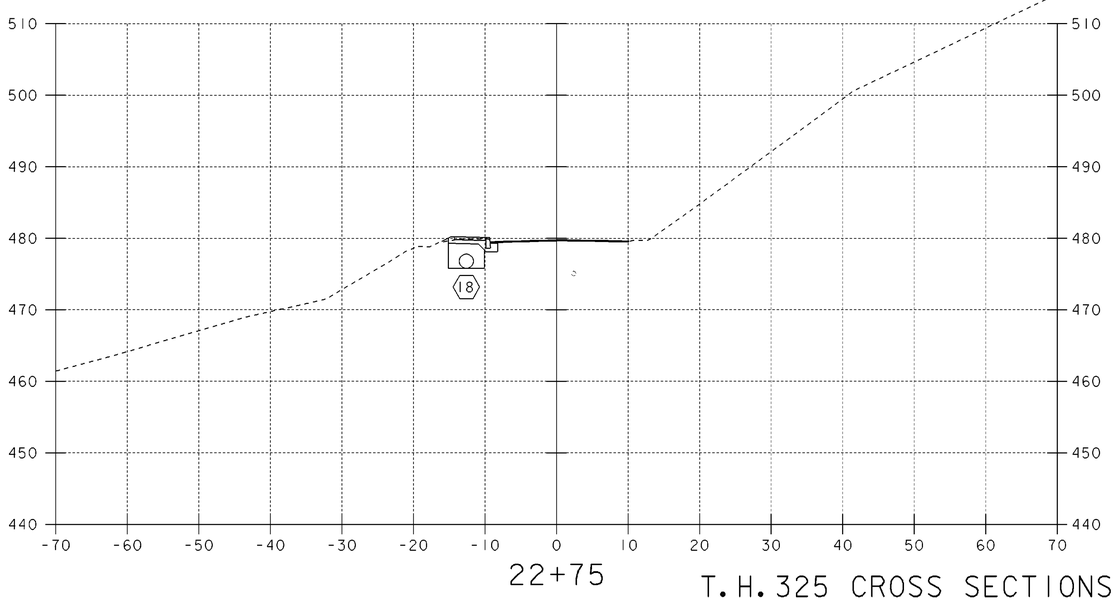
22+50



23+00



22+25



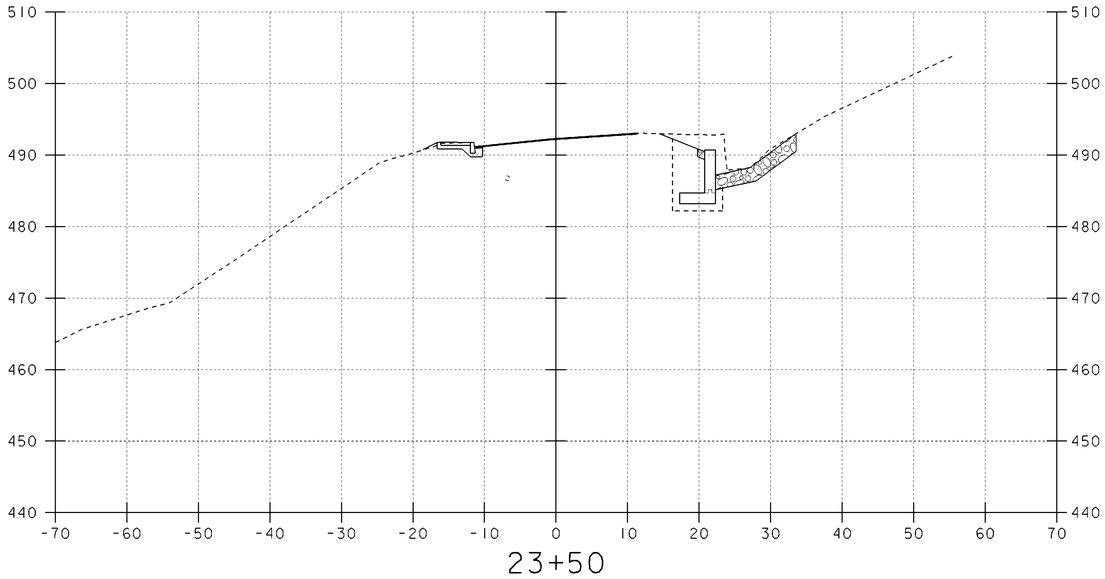
22+75

T.H. 325 CROSS SECTIONS (5)

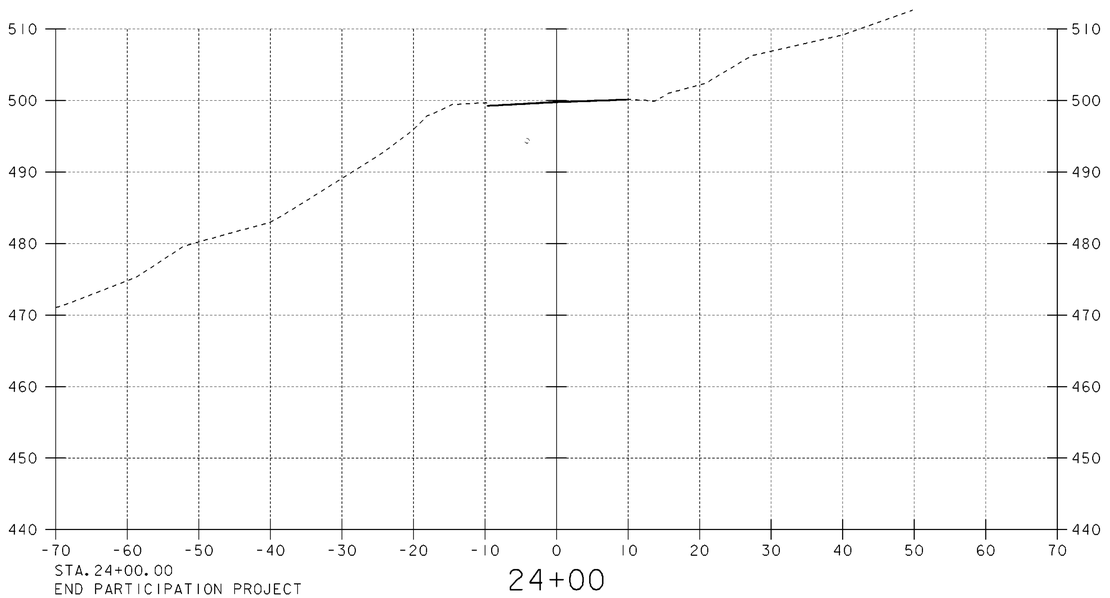
SCALE: 1" = 10'-0"
10 0 10

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00bl24/Structures/sbl24s05.1		PLOT DATE: 17-AUG-2004	
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET 66 OF 72	

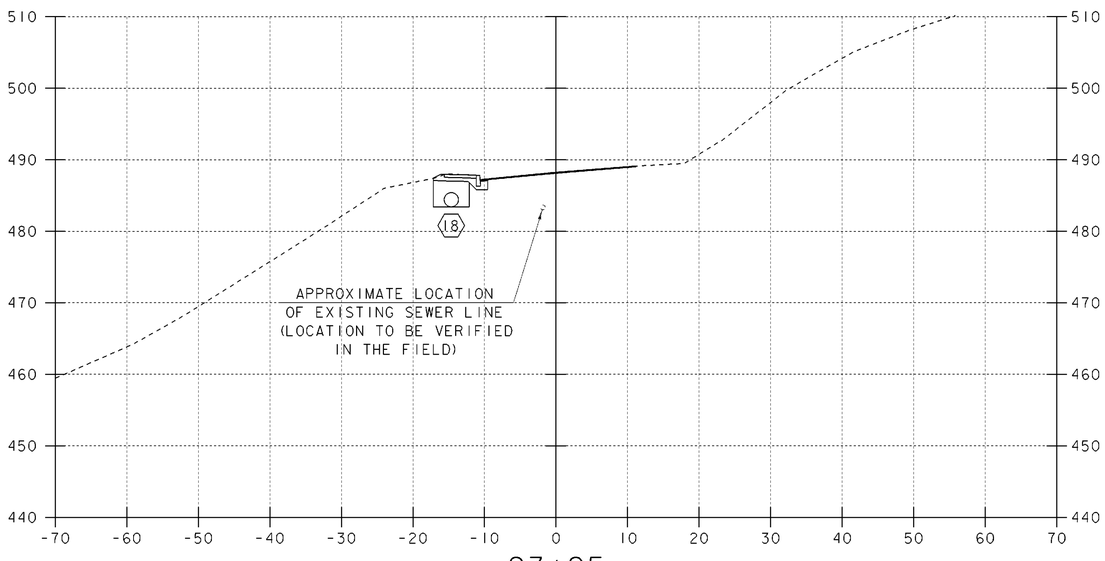


23+50

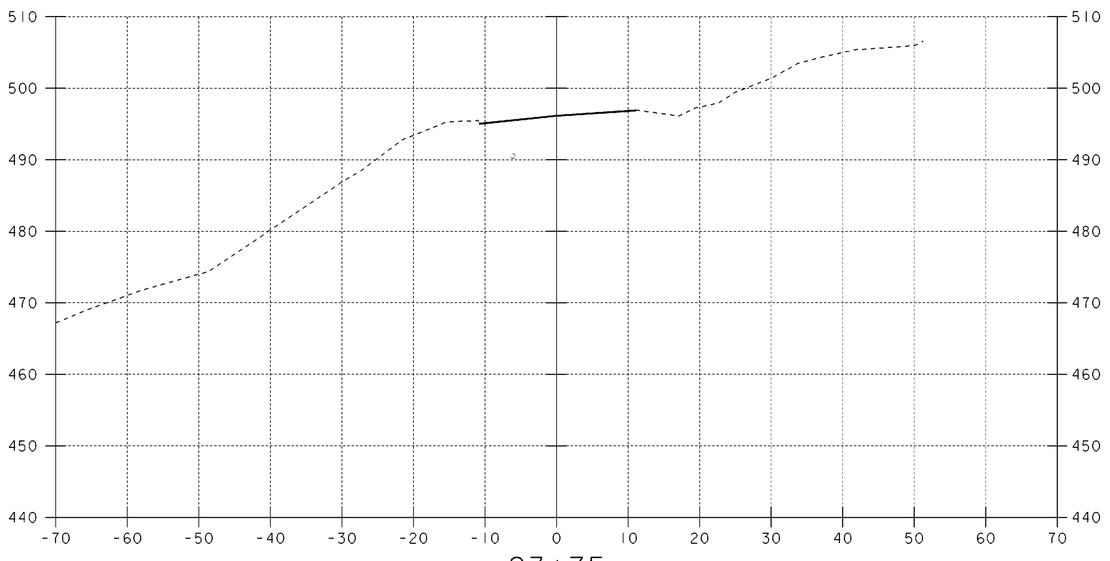


STA. 24+00.00
END PARTICIPATION PROJECT
MATCH EXISTING

24+00



23+25



23+75

T.H. 325 CROSS SECTIONS (6)

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

PROJECT NAME:	SPRINGFIELD
PROJECT NUMBER:	STP 016-2 (10)S

FILE NAME: 00bl24/Structures/sbl24s06.l		PLOT DATE:	17-AUG-2004
PROJECT MANAGER:	R. WHITCOMB	DRAWN BY:	G. ROY
DESIGNED BY:	G. ROY	CHECKED BY:	R. WHITCOMB
		SHEET	67 OF 72

REFERENCE SHEET 1 OF 5
SHEET 68 OF 72

PLAN: ACCEPTED / REJECTED / AS NOTED
DATE RIGHT OF CHECKED
NO. SP MAY CHECKED

NOTE: 100% GROUND CHECKED
NO. STRUCTURE ADDITIONS MADE

NO.	DATE	BY	REVISION
1	2-23		
2	2-23		

Profile of Metal Bin Type Retaining Wall

BM#11 Spot on concrete wall 7' Rt Rev. Sta 48+20 Elevation 437.78

TBM Spot on concrete wall 10' Lt. N. Main St. Sta. 31+09 Elevation 436.61

REFERENCE SHEET 2 OF 5
SHEET 69 OF 72

SPRINGFIELD
Sheet 15 of 96
U-123(8)

5" x 4.5' ONE COURSE CEMENT CONCRETE SIDEWALK
52+00 Lt. - 58+00 Lt. 54+88 Rt. - 55+04.5 Rt. (Ramp 5' wide)
52+00 Rt. - 58+00 Rt. 55+04 Rt. - 55+57.5 Rt.
55+57.5 Rt. - 55+86.5 Rt. (Ramp 5' wide)
55+86.5 Rt. - 58+00 Rt.

GRANITE CURB
52+00 Lt. - 58+00 Lt.
54+88 Rt. - 55+04.5 Rt.
52+00 Rt. - 55+60 Rt.
55+04.5 - 55+57.5
55+84 Rt. - 58+00 Rt.
55+86.5 Rt. - 58+00 Rt.

CONSTRUCT DRIVES
55+76 Rt.
54+92 Rt.

Rev. P.T. 52+14.2
Rev. Sta. 52+26.1
Surv. P.T. 52+26.0
Equa. 0.9'

Δ 12°45' Lt.
D 10°
R 573.7'
T 64.1'
L 127.5'
E 3.6'
Do Not Bank

BM #12
SPOT ON CONC. WALL
ELEV. 441.60

P.C. 53+11.6

53+98 Lt. 8" VCP CB & Grate New 15" x 12" RCP New D.I. with Sump & Grate ACCGMD

54+40 Lt. Begin Stone Fill for Slope Protection Item 52.1-C

Remove 2" Item 110

P.T. 54+99.1 Survey Line Rt. Δ 81.5' Rt.

54+40 - 55+75 Lt. Stone Fill

Remove 2" Item 110

SEEDING & TOPSOIL
Lt. 56+75 - 58+00
Rt. 52+00 - 55+68
55+84 - 58+00

THREE CABLE GUARD RAIL WITH STEEL POSTS
54+54 - 58+00

36" Pipe @ 85° Rt. REMOVE

56+42 Lt. New D.I. with grate

56+40 - 56+61 Lt. 12" CMP REMOVE

56+45 - 58+00 Lt. Clearing and Grubbing, Item 104

BLACK RIVER

PHYLLIS M. BURDITT

P.I. 57+50.0
57+41.6

SPRINGFIELD KILLAM'S POND

PHYLLIS M. BURDITT

FELLOWS GEAR SHAPER CO.

#5 B
0.24± ACRE
48+13 - 53+52 Rt.

P.I. 51+72.0
Δ 82°51' Rt.

52+00 - 54+10 Rt. Clearing and Grubbing, Item 104

New 18" x 36" ACCGMP with Sump & Grate

53+60 - 55+45 Rt. New 18" x 36" RCCP Underdrain

Cont. Board

Iron Pipe

Stake

#11
53+32 - 56+78
0.2± ACRE Rt.

ANTONY & STEPHANIA HEYNA

Cont. Board

Building to be removed by property owner by Aug 1, 1953

Shed

Shed

Radio Hospital

P.I. 64+26.7
54+35.0

+14.0 Rt. 8" VCP CB & Grate New D.I. with Grate

54+30 Rt. Four Metal Bin Type Retaining Walls 6'-6" x 10' Deep

54+89 Rt. 24" ACCGMP Remove Item 110 Dissipator Grate

New 24" ACCGMP Dissipator Grate

wet bank up

S toe of slope

2 S.F.H.D.

Remove Item 110

DC. 55+68.8

Remove Item 110

56+03 Rt. New D.I. & Grate

56+10 New 18" RCP @ 13.4% New 45° x 90° RCP Cradle Not 4 ft.

56+80 - 58+00 Rt. New 6'-6" x 9'-6" RCPCGM Underdrain

57+30 Rt. New 6'-6" x 9'-6" RCPCGM Underdrain

58+00 Rt. CGMUnd

56+38.0 VILLAGE LIMITS

#12
0.2± ACRE
56+76 - 61+30 Rt.

Δ 20°09'12"
D 5°
R 716.2
T 126.2
L 251.9
E 6.8
Do Not Bank

56+80 - 58+00 Rt. Clearing and Grubbing, Item 104

56+25 - 57+90 Rt. Brown Ditch

Pole Sign

L.G. THOMAS

Ho.

RIGHT OF WAY NOTE

Present Right-of-Way: To roadside face of wall 52+00 - 54+30 Lt., to Black River, 54+30 - 56+70 (Village Limit) Lt., Back of walls and Curb 52+00 - 56+74 (Village Limit) Rt.

New Right-of-Way: No change Lt.; back of proposed sidewalk 52+00 - 56+78 (Village Limit) Rt.

SPRINGFIELD

REFERENCE SHEET 3 OF 5
SHEET 70 OF 72

Scale - 1" = 20'

Surveyed by Pagar 2-53
Designed by
Drawn by MURRAY
Traced by SHULTS
Checked by
Series U No. 123(6) Filed
Sheet 16 of 96 Sheets

SPAULDING-MOSS CO., BOSTON, MASS. REORDER NO. 8579

Profile of 6" PACCGM Und. in Slope

Equa. -0.9

52+25.1
52+26.0

Profile of Metal Bin-Type Retaining Wall

+1.616%

54+00
100' VC
441.78

End Metal Bin Type Retaining Wall

54+70 Ft.
End Metal Bin Type Returning Wall

+3.793%

+1.805%

+1.956%

6" PACCGM Und. in Slope

Profile of present road

6" gradient of 6"×528' PACCGM Underdrain

gradient of 6"×752' PACCGM Underdrain

52+00
52+25.1
18" Base

52+26 - 58+00
18" Base

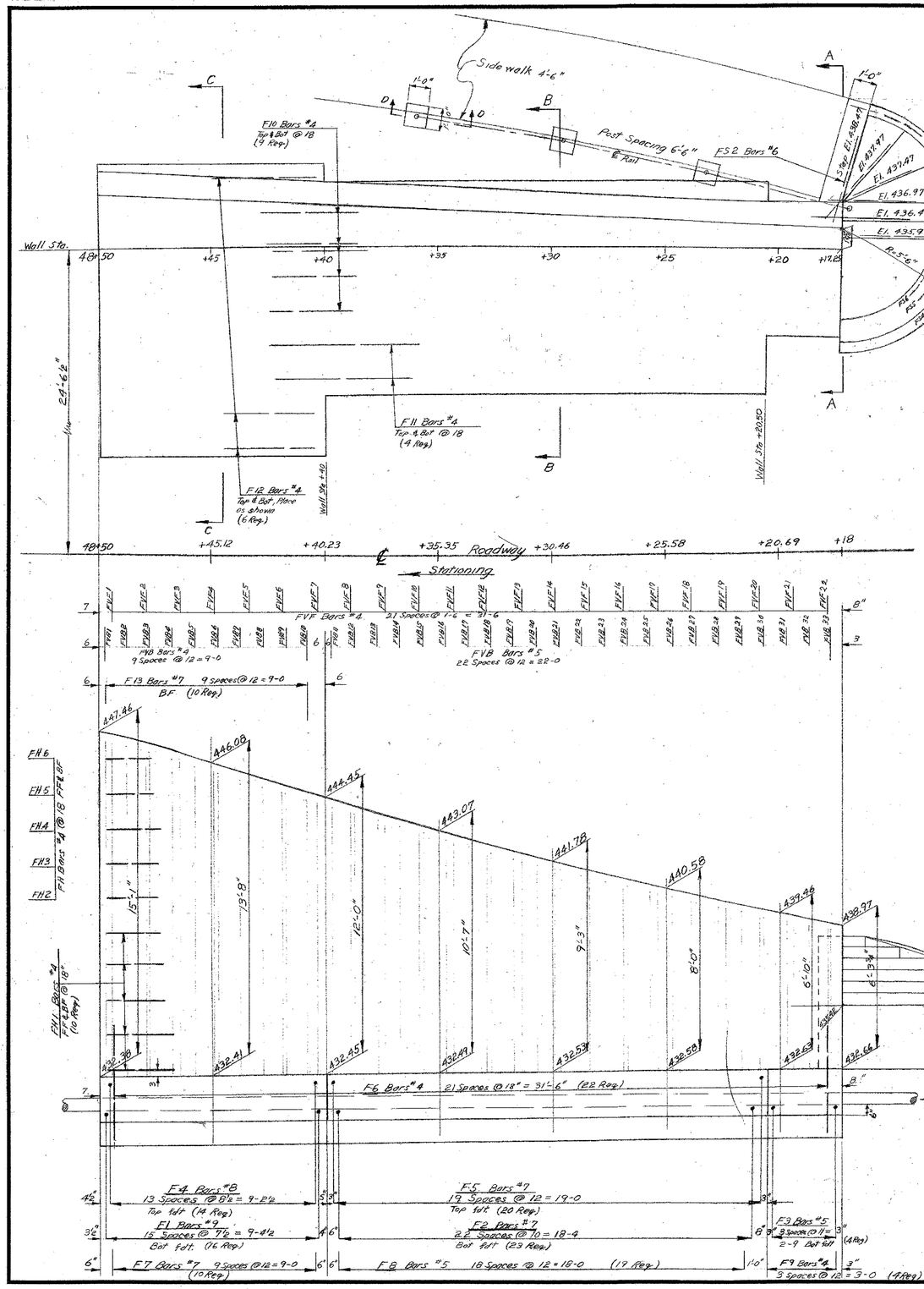
450
440
430
460
470
480
490
500

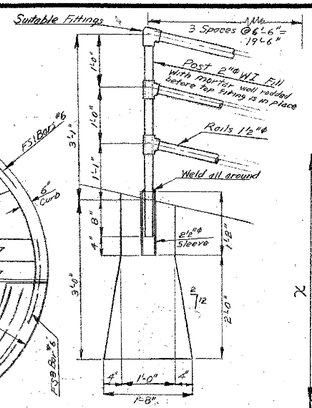
52 53 54 55 56 57 58

BM #12 Spot on concrete wall 2' Rt Sta. 53+10 Elevation 441.60

REFERENCE SHEET 4 OF 5
SHEET 71 OF 72

Sheet 17 of 36
SPRINGFIELD U-123(8)





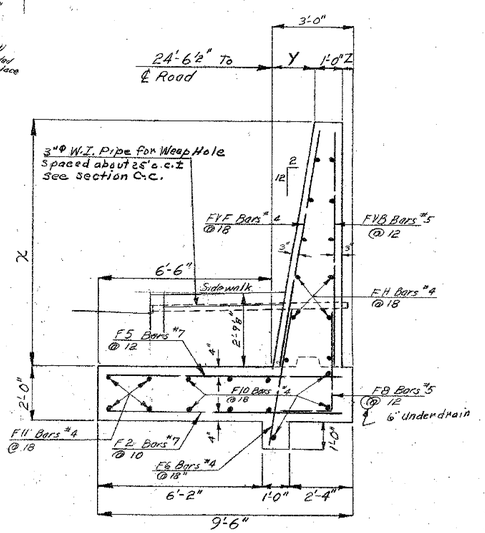
Section D-D
Scale ¾"=1'-0"

Table for typical Section B-B

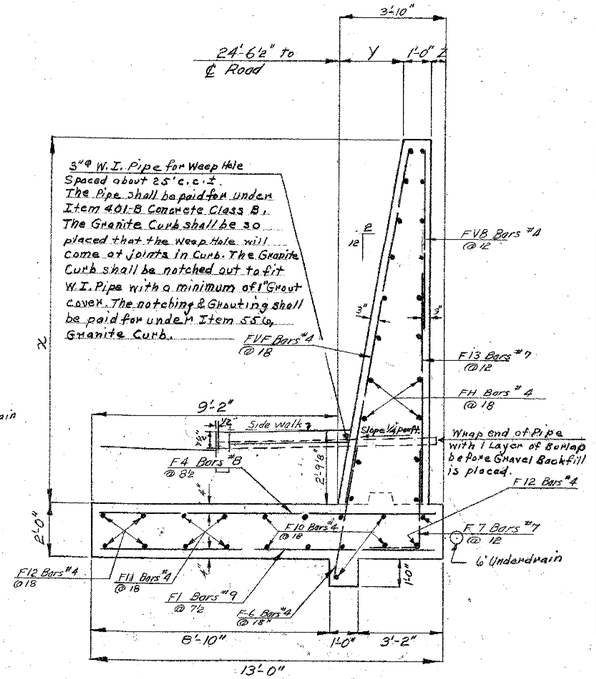
Wall Sta.	X	Y	Z
48+40	12'-0"	2'-0"	0"
48+35	10'-7"	1'-9⅝"	0'-2⅜"
48+30	9'-3"	1'-6½"	0'-5½"
48+25	8'-0"	1'-4"	0'-8"

Table for typical Section A-A

Wall Sta.	X	Y	A
48+20	6'-10"	1'-1⅝"	1'-0⅜"
48+17.25	6'-3⅜"	1'-0⅜"	1'-1⅜"



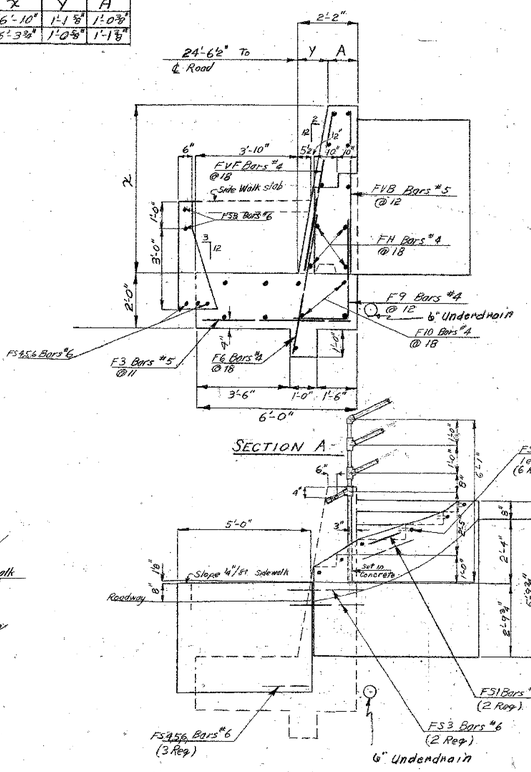
Section B-B



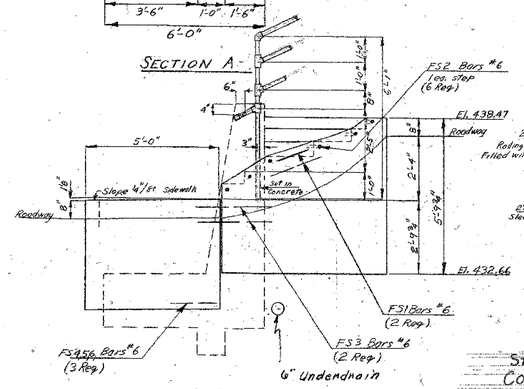
Section C-C

Table for Typical Section C-C

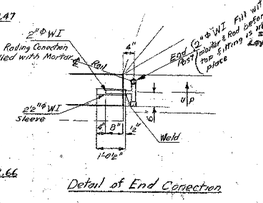
Wall Sta.	X	Y	Z
48+50	15'-1"	2'-6⅞"	0'-3⅜"
48+45	13'-8"	2'-3⅜"	0'-6⅝"
48+40	12'-0"	2'-0"	0'-10"



Section A-A



End View



Detail of End Connection

WALL G	ORIG.	FINAL
STRUCTURE EXCAV.	0	29
CONCRETE CLASS "B"	0	14.2
REINF. STEEL		453

FINAL

ESTIMATED QUANTITIES

233	107 Structure Excavation (med)	238	CY
	222 Gravel Backfill	16	CY
	401-B Concrete Class B (med)	71	CY
	402 Reinforcing Steel See Sh 37		
	531-A 6" ϕ PAEC&M Underdrain	40	LF
	403-A Structural Steel	300	Lbs

REFERENCE SHEET 5 OF 5
SHEET 72 OF 72

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Springfield
ROUTE NO. ____ LOG STA. ____
Details of Wall "F" Right
at Sta 48+18 to 48+50
SCALE 3/8" = 1'-0"
SURVEYED BY Pogar
DRAWN BY C.F.H. CHECKED BY C.T.B.
PROJECT NO. U 723 (B)
SHEET 35 OF 96