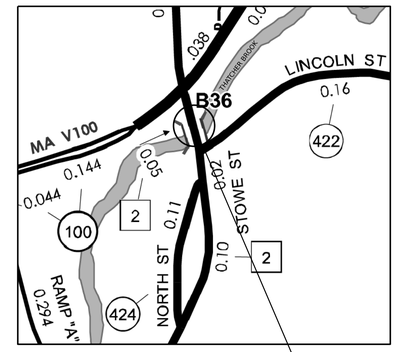
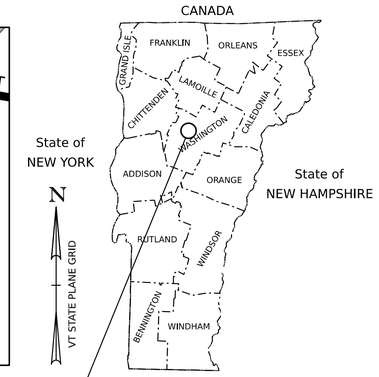
STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT

BRIDGE PROJECT
TOWN OF WATERBURY
COUNTY OF WASHINGTON
LOCAL ROAD
BRIDGE NO. 36



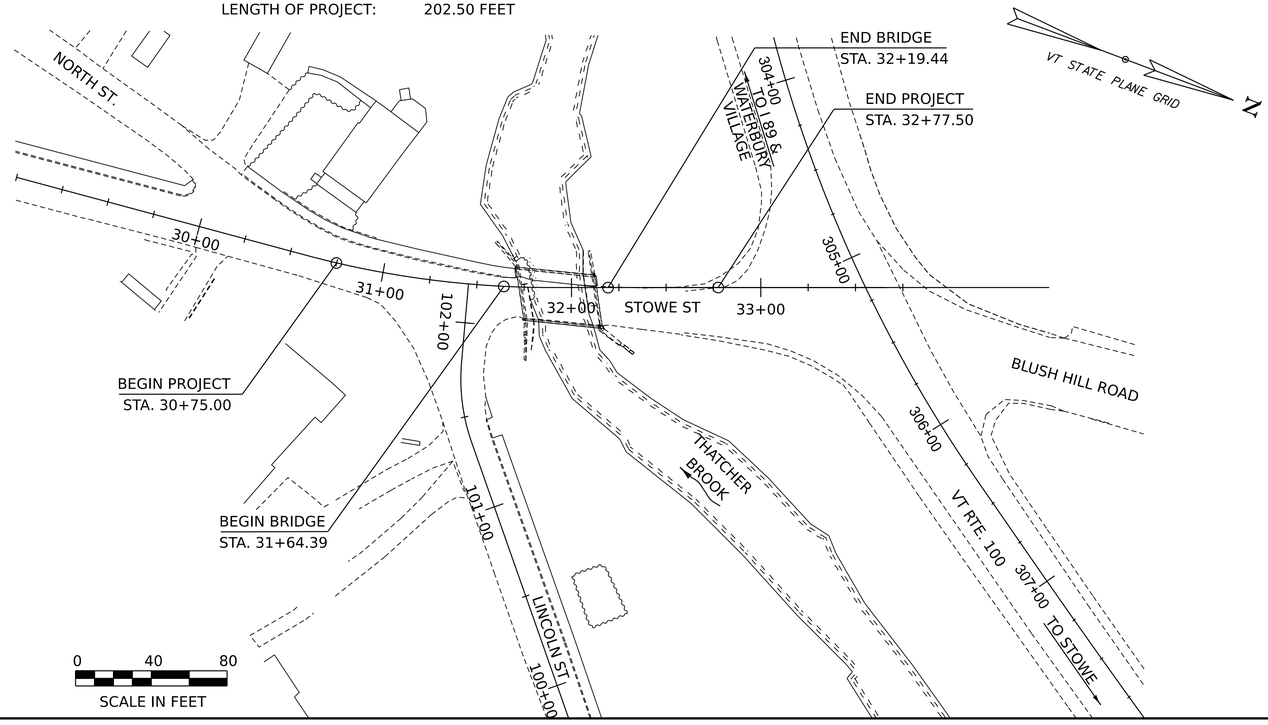
LOCATION MAP



PROJECT LOCATION: THE BRIDGE IS LOCATED IN THE TOWN OF WATERBURY ON TOWN HIGHWAY 2 (STOWE STREET), APPROXIMATELY 150 FEET SOUTH OF THE INTERSECTION OF STOWE STREET, ROUTE 100 AND BLUSH HILL ROAD.

PROJECT DESCRIPTION: REPLACEMENT OF THE EXISTING BRIDGE WITH A PRECAST CONCRETE FRAME STRUCTURE ALONG WITH RELATED ROADWAY, SIDEWALK, CHANNEL WORK AND SEWER RELOCATION.

LENGTH OF STRUCTURE: 55.05 FEET
LENGTH OF ROADWAY: 147.45 FEET
LENGTH OF PROJECT: 202.50 FEET



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2024, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL	2
SURVEYED BY :	VSE
SURVEYED DATE :	10/2020
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD83 (2011)

FINAL PLANS

30-MAY-2024

Stantec

Stantec Consulting Services Inc.
193 Tilley Drive, Suite 1
South Burlington VT U.S.A. 05403
Phone: (802) 864-0223
www.stantec.com

HIGHWAY DIVISION, CHIEF ENGINEER	
APPROVED _____ DATE _____	
PROJECT MANAGER :	MAHENDRA THILLIYAR, P.E.
PROJECT NAME :	WATERBURY
PROJECT NUMBER :	BO 1446(40)
SHEET 1 OF 66 SHEETS	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (CULVERT)

Version
LRFD

PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3 - 5	ROADWAY TYPICAL SECTION SHEETS
6	ROADWAY DETAIL SHEET
7	BRIDGE TYPICAL SECTION
8	BRIDGE EARTHWORK DETAILS
9	PROJECT NOTES
10 - 13	QUANTITY SUMMARY SHEETS 1-4
14	CONVENTIONAL SYMBOLOGY LEGEND SHEET
15 - 16	TIE SHEETS
17	EXISTING CONDITIONS SITE PLAN
18	EXISTING CONDITIONS INFORMATION
19	ALIGNMENT LAYOUT SHEET
20	GENERAL PLAN SHEET
21	LAYOUT PLAN SHEET
22	ROADWAY PROFILES
23	DRAINAGE PLAN SHEET
24	SIGNING AND PAVEMENT MARKING PLAN SHEET
25 - 26	TRAFFIC SIGN SUMMARY SHEETS
27	TRAFFIC SIGN DETAIL SHEETS
28	LANDSCAPE PLAN SHEET
29	PROPOSED UTILITY RELOCATION PLAN SHEET
30	SEWER RELOCATION PLAN SHEET
31 - 32	SEWER PROFILE SHEETS
33 - 36	SEWER DETAIL SHEETS
37	BORING PLAN
38 - 43	BORING LOGS 1-6
44	STRUCTURE LAYOUT
45	STRUCTURE DETAILS
46 - 47	MOMENT SLAB REINFORCING DETAILS 1-2
48 - 49	EROSION CONTROL DETAILS
50 - 52	STOWE STREET CROSS SECTION SHEET 1-3
53 - 54	VT ROUTE 100 CROSS SECTION SHEET 1-2
55 - 56	LINCOLN STREET CROSS SECTION SHEET 1-2
57 - 61	CHANNEL CROSS SECTIONS 1-5
62	TEMPORARY WAYFINDING SIGNAGE PLAN
63	TEMPORARY PARK AND RIDE PLAN
64	TRAFFIC CONTROL NOTES
65	R.O.W. DETAIL SHEET
66	R.O.W. LAYOUT SHEET

DETAIL SHEETS

HSD 400.01	SAFETY EDGE DETAIL	1/5/2018

STANDARDS LIST

B-71a	STANDARD FOR RESIDENTIAL DRIVES	04-07-2020
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK A	10-14-2005
C-3A	SIDEWALK RAMPS	04-07-2020
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	04-07-2020
C-10	CURBING	02-11-2008
D-4	VARIOUS DRAINAGE DETAILS	08-13-2007
D-13	CONCRETE CATCH BASIN	01-03-2000
D-15	PRECAST REINF CONC. MH-GRATES, CAST IRON GRATE WITH FRAME, TYPE D & E	06-01-1994
D-22	SANITARY SEWER SYSTEMS	03-10-1995
E-1	TREE PLANTING	07-11-2017
E-2	SHRUB PLANTING	07-11-2017
E-3	PERENNIAL GROUND COVERS AND VINES	07-11-2017
E-10	ROLLED EROSION CONTROL PRODUCT, TYPE I	04-07-2020
E-12	STABILIZED CONSTRUCTION ENTRANCE	04-07-2020
E-15	SILT FENCE	04-07-2020
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-145A	REGULATORY SIGN DETAILS - LANE USE CONTROL SIGNS	12-23-1994
E-191	PAVEMENT MARKING DETAILS	02-01-1999
E-192	PAVEMENT MARKING DETAILS	10-12-2000
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	03-10-2017
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	03-10-2017
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	10-02-2018
S-352A	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	04-07-2020
S-352B	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	04-07-2020
S-352C	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	04-07-2020
S-352D	GUARDRAIL APPROACH SECTION TO CONCRETE COMBINATION BRIDGE RAILING, T	04-07-2020
S-500	CONCRETE DETAILS AND NOTES	04-07-2020
S-501	CONCRETE DETAILS AND NOTES	04-07-2020
T-1	TRAFFIC CONTROL GENERAL NOTES	04-25-2016
T-2	TRAFFIC SIGN GENERAL NOTES	04-07-2020
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-06-2012
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	08-06-2012
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013
T-56	STANDARD SIGN PLACEMENT	10-26-2015

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2024	2900	410	66	3	100
2044	3200	450	66	4.8	180

20 year ESAL for flexible pavement from 2024 to 2044 : 376000

40 year ESAL for flexible pavement from 2024 to 2064 : 86800

Design Speed : 25 mph

SUPERPAVE BITUMINOUS CONCRETE PAVEMENT DESIGN
SUPERPAVE GYRATIONS = 50
PG ASPHAULT GRADE = "SEE TABLE 406.03F"

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 07/28/2022

DRAINAGE AREA : 18.3 sq. mi.
CHARACTER OF TERRAIN : Hilly to Mountainous Rural Watershed
STREAM CHARACTERISTICS : Straight to Sinuous Channel with Narrow Floodplains
NATURE OF STREAMBED : Boulders and Cobles with Exposed Bedrock

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% =	840 cfs	2% =	2,400 cfs
10% =	1,500 cfs	1% =	2,900 cfs
4% =	2,000 cfs	0.2% =	4,200 cfs

DATE OF FLOOD OF RECORD : Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ 2% AEF = 6.7 fps upstream and 11.3 fps downstream
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Unknown
IS ORDINARY RISE RAPID? Unknown
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: 0.4%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single Span T-Beam
YEAR BUILT: 1928
CLEAR SPAN(NORMAL TO STREAM): 37 ft. +/-
VERTICAL CLEARANCE ABOVE STREAMBED: 16.8 ft.
WATERWAY OF FULL OPENING: 578.0 sq. ft.
DISPOSITION OF STRUCTURE: Full Replacement
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See Borings

WATER SURFACE ELEVATIONS AT:

43% AEP =	494.6 ft.	VELOCITY =	10.5 fps
10% AEP =	496.5 ft.	"	12.5 fps
4% AEP =	497.6 ft.	"	13.7 fps
2% AEP =	498.5 ft.	"	14.5 fps
1% AEP =	499.5 ft.	"	15.5 fps

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @ 1% AEP: N/A

UPSTREAM STRUCTURE

TOWN: Waterbury
HIGHWAY # : TH-21
CLEAR SPAN: 62. ft.
YEAR BUILT: 1959
STRUCTURE TYPE: Rolled Beam
DISTANCE: 4000 ft.
STRUCTURE #: 16
CLEAR HEIGHT: Unknown
FULL WATERWAY: Unknown

DOWNSTRUCTURE STRUCTURE

TOWN: Waterbury
HIGHWAY # : I89
CLEAR SPAN: 434. ft.
YEAR BUILT: 2016
STRUCTURE TYPE: Three Span Welded Girder
DISTANCE: 1200 ft.
STRUCTURE #: 46A
CLEAR HEIGHT: Unknown
FULL WATERWAY: Unknown

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:	TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER						

PRECAST CONCRETE STRUCTURE DESIGN CRITERIA

1. PROPOSED STRUCTURE IS A RIGID FRAME TYPE STRUCTURE.
2. SEE PRECAST DETAILS SHEET FOR PROPOSED SKEWS.
3. PROPOSED STRUCTURE WILL BE SET AT A SLOPE OF 0.00 IN. ON 0 FT.
4. PROPOSED STRUCTURE WILL NOT REQUIRE FISH PASSAGE ACCOMODATIONS
5. CONSTRUCTION WILL REQUIRE STREAM DIVERSION

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span

CLEAR SPAN(NORMAL TO STREAM): 50.0 ft.
VERTICAL CLEARANCE ABOVE STREAMBED: See Plans and Specifications
WATERWAY OF FULL OPENING: See Plans and Specifications

WATER SURFACE ELEVATIONS AT:

43% AEP =	494.6 ft.	VELOCITY=	10.5 fps
10% AEP =	496.3 ft.	"	12.5 fps
4% AEP =	497.4 ft.	"	13.7 fps
2% AEP =	498.3 ft.	"	14.5 fps
1% AEP =	499.3 ft.	"	15.3 fps

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: No
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @ 1% AEP: N/A

BRIDGE LOW CHORD ELEVATION: See plans and specifications
FREEBOARD: @ 4% AEP = 4.1 ft.*

SCOUR: Abutments are to be founded on non-erodible bedrock

REQUIRED CHANNEL PROTECTION: Stone Fill Type IV**

PERMIT INFORMATION

AVERAGE DAILY FLOW:	-	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	-	-
ORDINARY HIGH WATER:	-	-

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE:
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

*Freeboard was determined using a low chord elevation of 501.5 ft.
**E-stone Type IV should be used for all in channel work.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

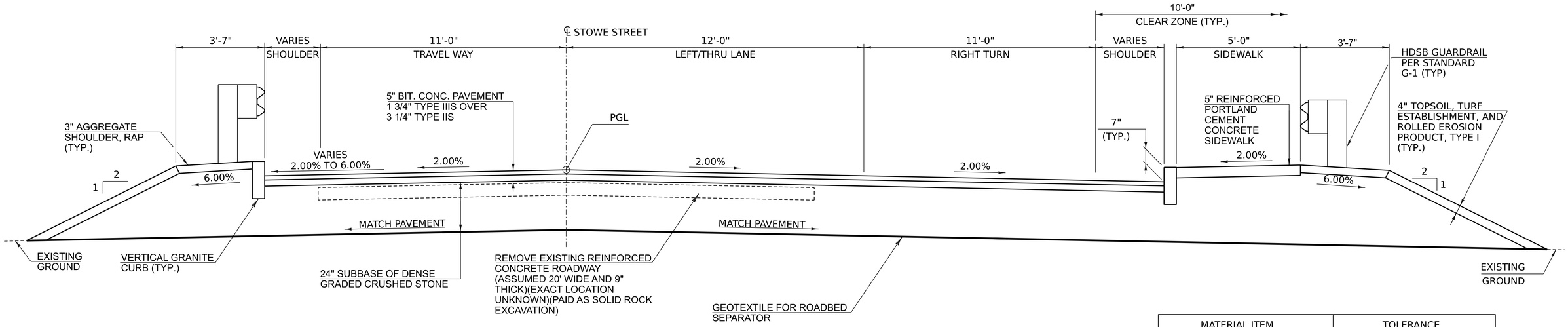
1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	0.0 INCH
3. CULVERT OPENING	D:	50.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	
5. PRESTRESSING STRAND	f_y:	---
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8. HIGH PERFORMANCE CONCRETE, CLASS PCD	f'_c:	---
9. HIGH PERFORMANCE CONCRETE, CLASS PCS	f'_c:	3.5 KSI
10. CONCRETE HIGH PERFORMANCE, CLASS SCC	f'_c:	---
11. CONCRETE, CLASS B	f'_c:	3.5 KSI
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y:	---
14. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	---
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
16. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	150
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	0.45
18. PILE RESISTANCE FACTOR	ϕ:	---
19. LATERAL PILE DEFLECTION	Δ:	---
20. BASIC WIND SPEED	V_{3s}:	---
21. MINIMUM GROUND SNOW LOAD	p_g:	---
22. SEISMIC DATA	PGA: --- S_s:	---
	S_1:	---
23.		
24.		---
25.		---
26.		---

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040pi.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. YOULEN
PRELIMINARY INFORMATION SHEET

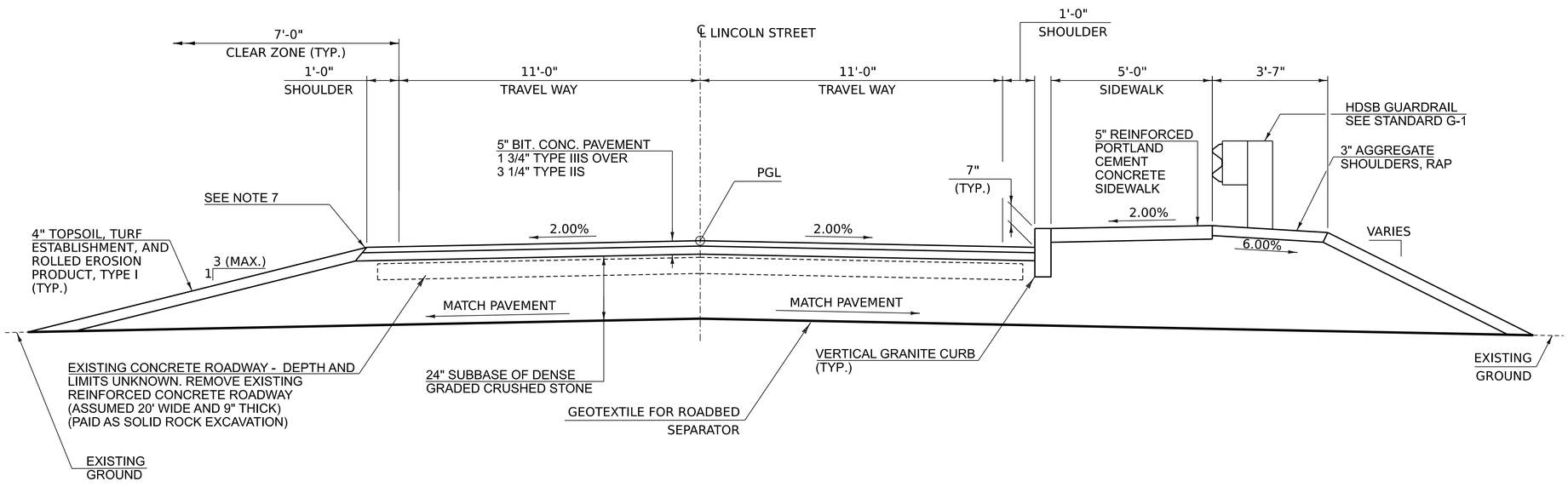
PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 2 OF 66



PROPOSED STOWE STREET TYPICAL SECTION

N.T.S.
STA. 30+75.00 - 31+64.39
STA. 32+19.44 - 32+77.50

MATERIAL ITEM	TOLERANCE
PAVEMENT	¼" TOTAL THICKNESS
AGGREGATE SURFACE COURSE	± ½"
SUBBASE	± 1"



PROPOSED LINCOLN STREET TYPICAL SECTION

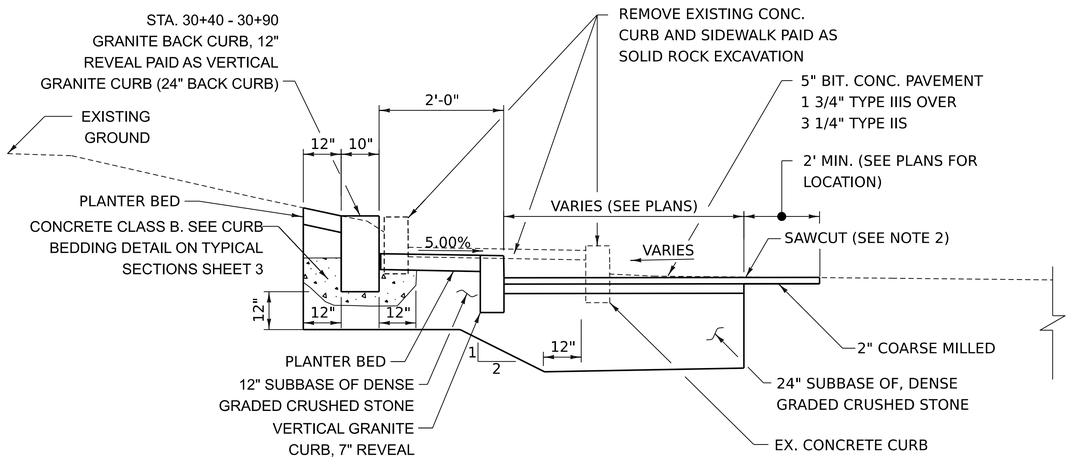
N.T.S.
STA. 101+37.50 - 102+00.00 +/-

GENERAL NOTES:

1. TACK COAT: TACK COAT, EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF BETWEEN 0.025 TO 0.040 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT. A RATE OF 0.08 GAL/SY ON COARSE MILLED AND EXISTING SURFACES AS DIRECTED BY THE ENGINEER.
2. DELINEATOR WITH FLEXIBLE POSTS: TO BE PLACED AT GUARDRAIL ENDS OR AS DIRECTED BY THE ENGINEER.
3. SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD B-5.
4. SHOULDER WIDTH VARIES - SEE CONSTRUCTION PLAN SHEETS.
5. FORESLOPE VARIES, SEE ROADWAY CROSS SECTIONS FOR ADDITIONAL INFORMATION.
6. COSTS ASSOCIATED WITH SAWCUTTING AND EXCAVATION OF EXISTING BITUMINOUS CONCRETE PAVEMENT ARE INCIDENTAL TO COMMON EXCAVATION; ITEM 203.1500
7. EDGE OF PAVEMENT TREATMENT SHALL FOLLOW VTRANS SAFETY EDGE DETAIL HSD-400.01.

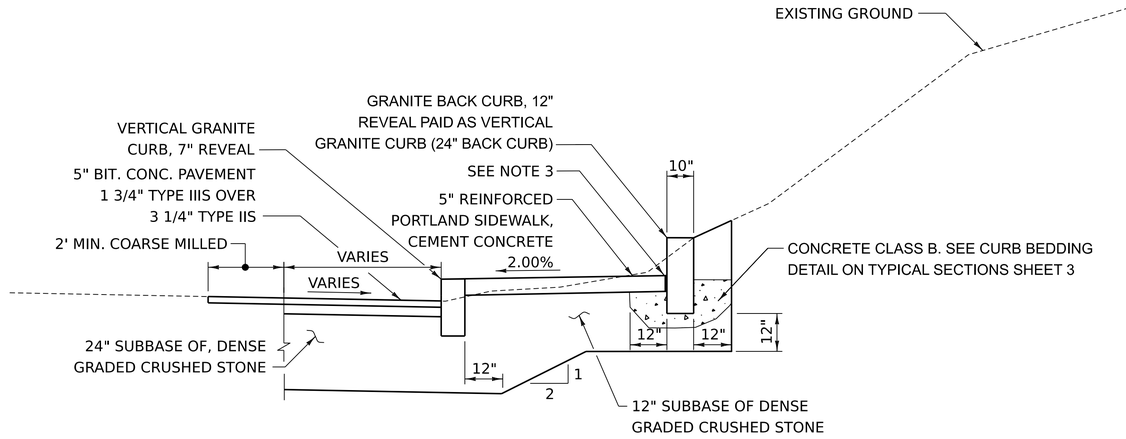
Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040typ.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: T. LUTHER	CHECKED BY: T. KNIGHT
ROADWAY TYPICAL SECTIONS SHEET 1	SHEET 3 OF 66



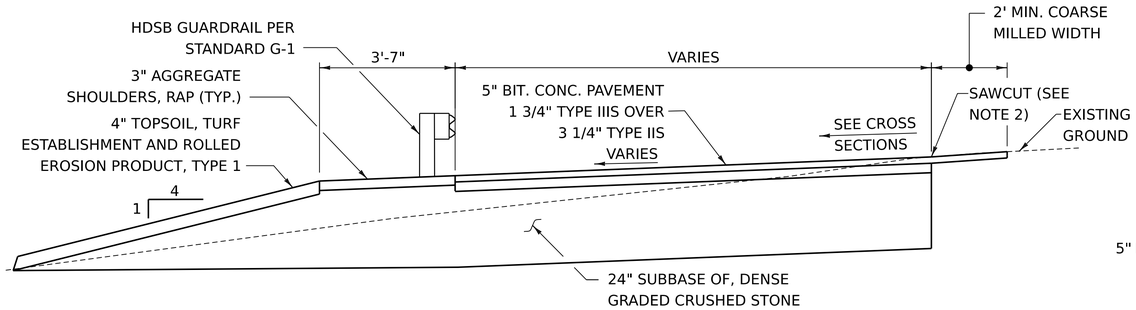
STOWE STREET LT

NOT TO SCALE
STA. 30+10 - 31+00



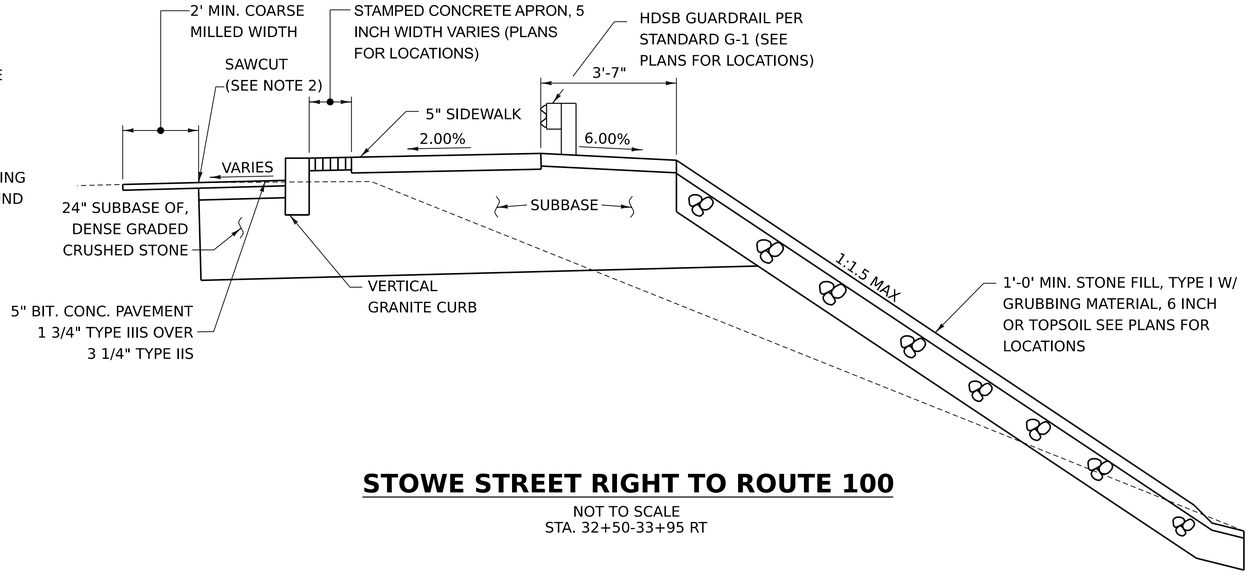
STOWE STREET RT

NOT TO SCALE
STA. 30+16 - 30+88 RT



STOWE STREET LEFT TO ROUTE 100

NOT TO SCALE
STA. 32+19 - 32+95 LT



STOWE STREET RIGHT TO ROUTE 100

NOT TO SCALE
STA. 32+50-33+95 RT

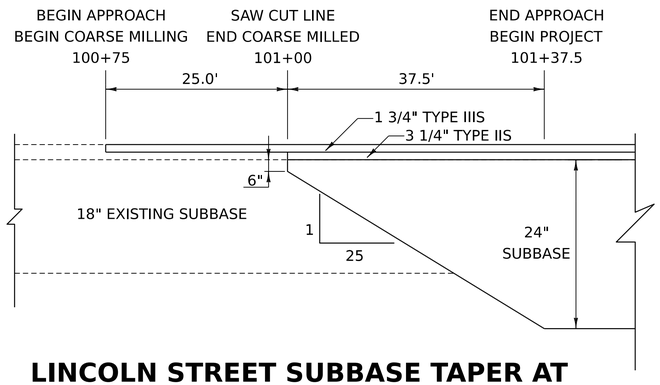
NOTES:

1. SEE TYPICAL SECTIONS SHEET 1 & 3 FOR ADDITIONAL INFORMATION.
2. SAWCUT IS INCIDENTAL TO COMMON EXCAVATION.
3. EXPANSION JOINT INCIDENTAL TO GRANITE BACK CURB.
4. SIDEWALK SHALL BE REINFORCED AND DOWELED PER DETAIL ON DETAIL SHEET 1.

Stantec

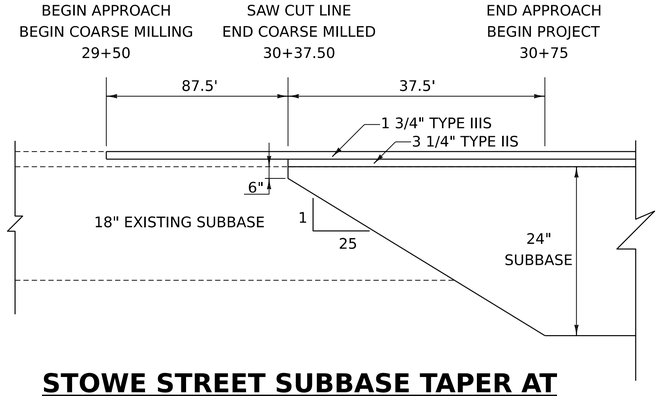
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

FILE NAME:	z93j040typ.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	S. VERITY
DESIGNED BY:	T. LUTHER	CHECKED BY:	T. KNIGHT
ROADWAY TYPICAL SECTIONS SHEET 2		SHEET	4 OF 66



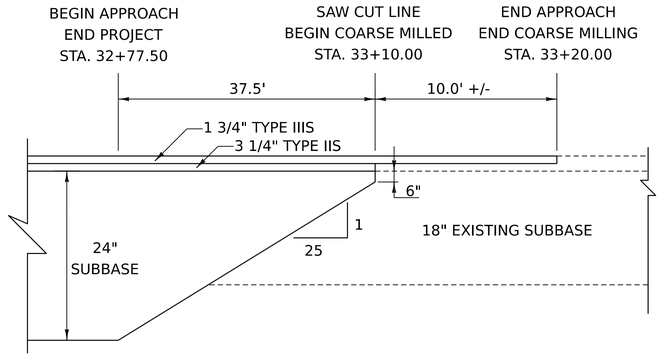
LINCOLN STREET SUBBASE TAPER AT BEGIN PROJECT

NOT TO SCALE



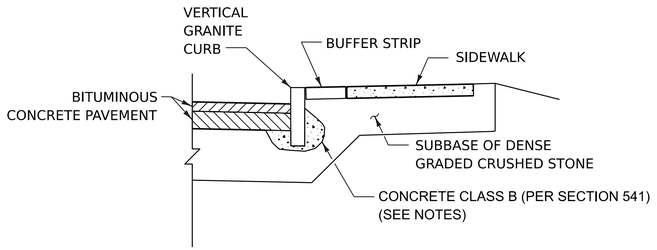
STOWE STREET SUBBASE TAPER AT BEGIN PROJECT

NOT TO SCALE



STOWE STREET SUBBASE TAPER AT END PROJECT

NOT TO SCALE



NOTES:

1. UNREINFORCED CONCRETE FOR THE PURPOSE OF STABILIZING THE CURB DURING BACKFILLING AND PAVING OPERATIONS.

2. CONCRETE SHALL NOT EXCEED THE ELEVATION OF THE TOP OF THE SUBBASE AND SHALL ALLOW FOR FULL DEPTH OF BITUMINOUS PAVEMENT OVER THE TOP OF THE CONCRETE TO THE FACE OF CURB.

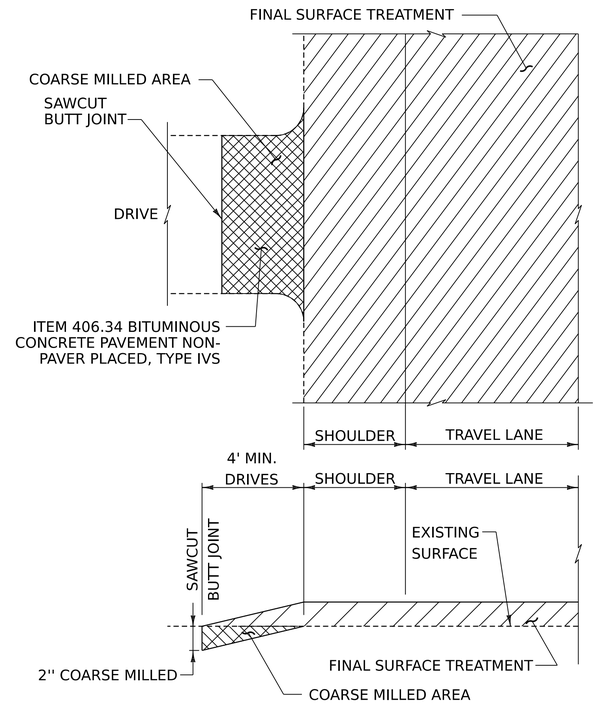
3. CONCRETE CLASS B FOR CURB BEDDING SHALL BE EXEMPT FROM ALL TESTING REQUIREMENTS.

4. CONCRETE CLASS B FOR CURB BEDDING SHALL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR VERTICAL GRANITE CURB.

5. PROVIDE A MINIMUM 12" HORIZONTAL WIDTH OF CONCRETE ON BOTH THE FRONT AND BACK SIDES OF THE CURB FOR THE ENTIRE LENGTH OF CURB (OR AS DIRECTED BY THE ENGINEER).

CURB BEDDING DETAIL

NOT TO SCALE

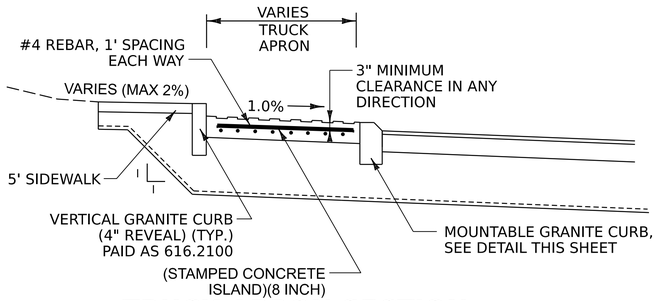


COARSE MILLED DETAILS AT DRIVES & TOWN HIGHWAYS

NOT TO SCALE

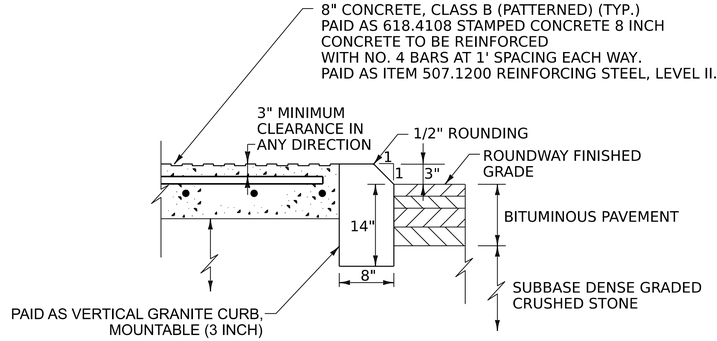
Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040typ.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: T. LUTHER	CHECKED BY: T. KNIGHT
ROADWAY TYPICAL SECTIONS SHEET 3	SHEET 5 OF 66



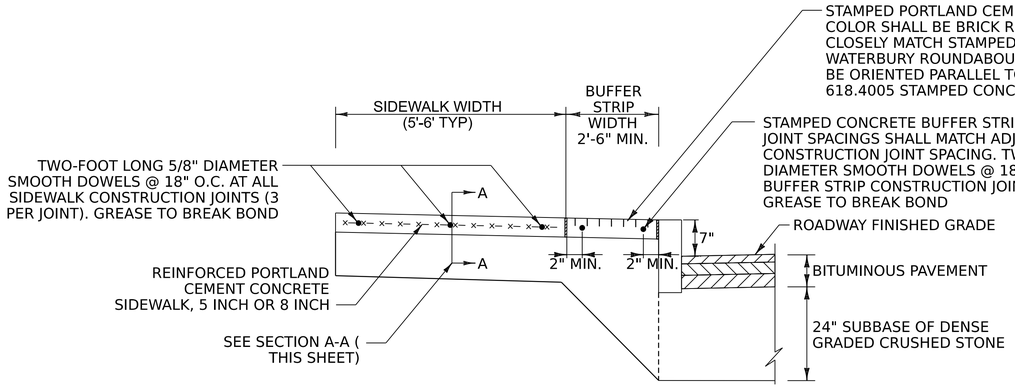
TRUCK APRON SECTION

NOT TO SCALE



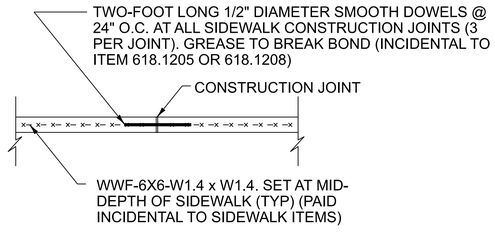
VERTICAL GRANITE CURB, MOUNTABLE (3 INCH) DETAIL

NOT TO SCALE



SIDEWALK REINFORCING & STAMPED CONCRETE APRON, DETAIL

NOT TO SCALE

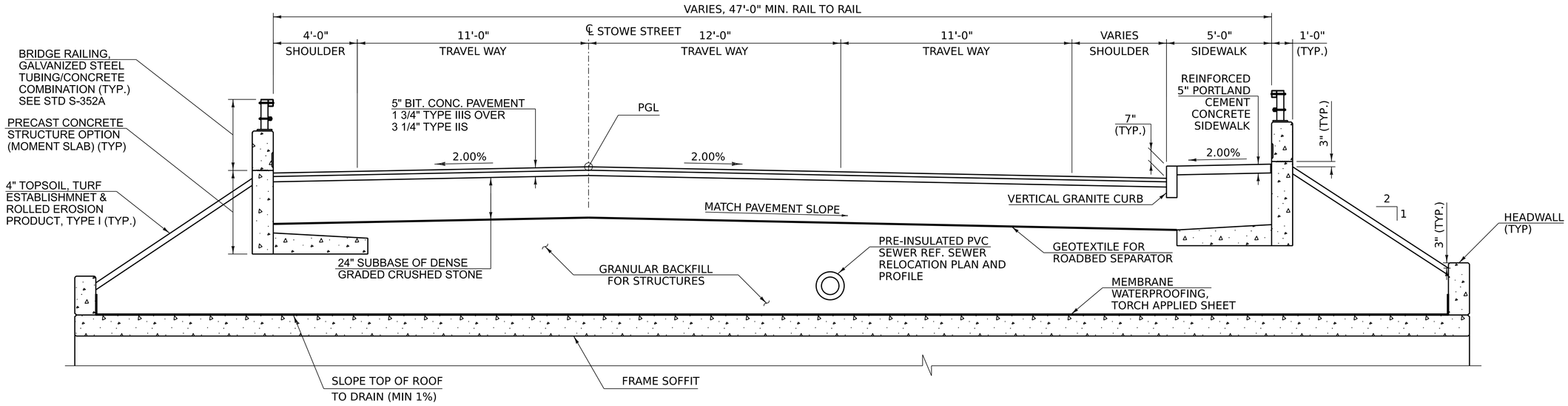


SECTION A-A

NOT TO SCALE

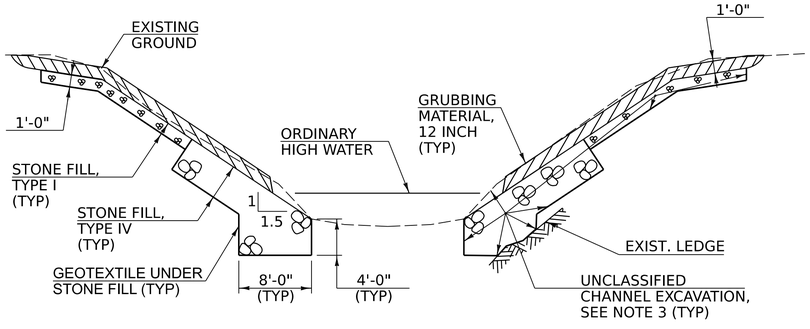
Stantec

PROJECT NAME:	WATERBURY		
PROJECT NUMBER:	BO 1446(40)		
FILE NAME:	z93j040det_stowe.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	P. ARMATA
DESIGNED BY:	K. RICHARDSON	CHECKED BY:	D. YOULEN
DETAIL SHEET 1		SHEET	6 OF 66



PROPOSED BRIDGE TYPICAL SECTION

SCALE: 3/8" = 1'-0"



TYPICAL CHANNEL SECTION

NOT TO SCALE

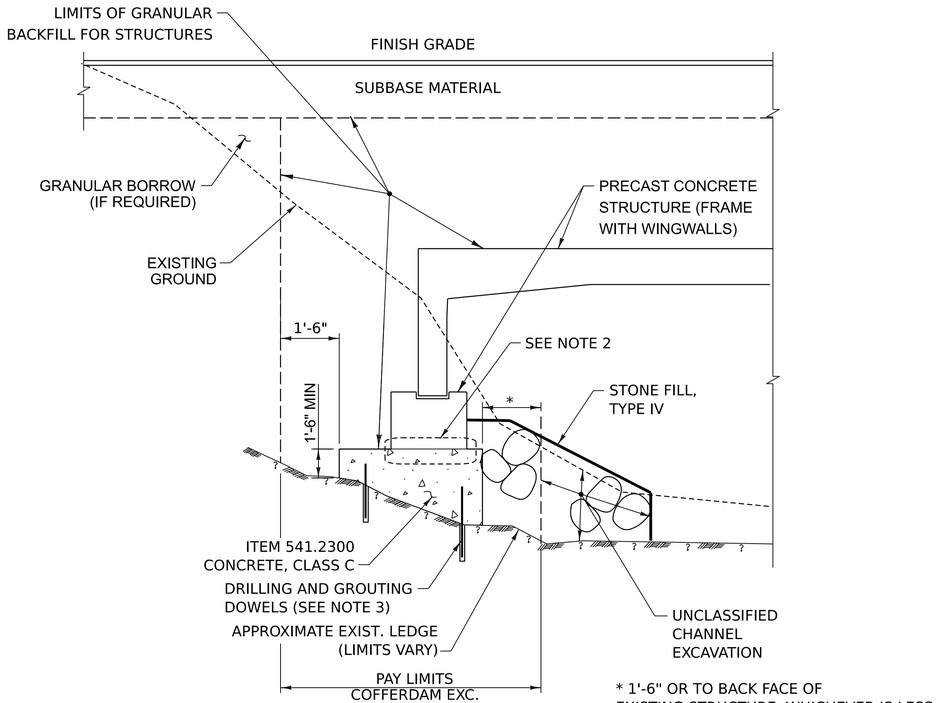
1) GRUBBING MATERIAL SHALL BE PLACED UNDERNEATH STRUCTURES WHERE THERE IS MORE THAN 6 FEET VERTICALLY FROM ORDINARY HIGH WATER (OHW) TO THE BOTTOM OF SUPERSTRUCTURE AND MORE THAN 6 FEET HORIZONTALLY FROM OHW LINE TO FRONT FACE OF ABUTMENT. THIS MATERIAL SHALL START JUST ABOVE THE OHW ELEVATION AND TERMINATE 3 FEET HORIZONTALLY FROM THE FRONT FACE OF THE ABUTMENT. THIS MATERIAL SHALL NOT BE PLACED UNDERNEATH DOWNSPOUTS. SEE THE CHANNEL SECTIONS FOR ADDITIONAL DETAILING.

2) WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

3) THE INTENT OF THE DESIGN IS TO NOT REMOVE EXISTING LEDGE IN ORDER TO CREATE THE STONE FILL KEYWAY. WHEN LEDGE IS ENCOUNTERED WITHIN THE STONE FILL KEYWAY, LARGE STONES SHALL BE PLACED AT THE BASE OF THE SLOPE. LOCALIZED AREAS OF LEDGE MAY NEED TO BE REMOVED AT THE DIRECTION OF THE ENGINEER.

Stantec

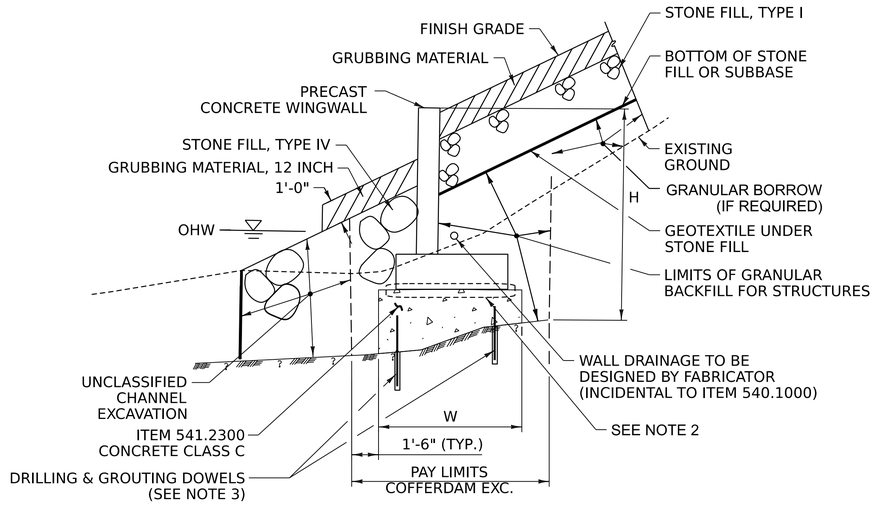
PROJECT NAME:	WATERBURY		
PROJECT NUMBER:	BO 1446(40)		
FILE NAME: z93j040typ.dgn		PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	P. ARMATA
DESIGNED BY:	T. LUTHER	CHECKED BY:	T. KNIGHT
BRIDGE TYPICAL SECTION		SHEET 7	OF 66



* 1'-6" OR TO BACK FACE OF
EXISTING STRUCTURE, WHICHEVER IS LESS

PRECAST FRAME EARTHWORK SECTION

N.T.S.



WINGWALL EARTHWORK SECTION

N.T.S.

NOTES:

1. FOR THE PURPOSES OF ESTIMATING EARTHWORK QUANTITES IT HAS BEEN ASSUMED THAT W = 0.6 X H.
2. CONNECTION TO SUBFOOTING TO BE DESIGNED BY THE FABRICATOR.
3. DRILL AND GROUT #7 AT 3'-0" SPACING AROUND PERIMETER OF SUBFOOTING, WITH 1'-6" EMBEDMENT INTO LEDGE AND SUBFOOTING.

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040typ.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: S. WINES	CHECKED BY: T. KNIGHT
BRIDGE EARTHWORK DETAILS	SHEET 8 OF 66

GENERAL:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2024 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, DATED 2020 AND ITS LATEST REVISIONS.

2. ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

3. THE CONTRACTOR SHALL PROVIDE A SITE-SPECIFIC EROSION PREVENTION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH SECTION 653 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. ESTIMATED QUANTITIES FOR EPSC WORK HAVE BEEN INCLUDED IN THE CONTRACT FOR BIDDING PURPOSES. IF THE CONTRACTOR'S EPSC PLAN REQUIRES ITEMS OF WORK THAT ARE NOT INCLUDED IN THE PLANS IT SHALL BE PAID FOR AS PART OF ITEM 653.0300, MAINTENANCE OF EPSC PLAN (N.A.B.I.).

EARTHWORKS

1. THE REMOVAL OF THE EXISTING STRUCTURE WILL BE PAID FOR UNDER ITEM 529.1500, REMOVAL OF STRUCTURE. THIS WORK SHALL INCLUDE REMOVAL OF THE ENTIRE BRIDGE SUPERSTRUCTURE AND PORTIONS OF THE BRIDGE SUBSTRUCTURE WITHIN THE LIMITS OF COFFERDAM EXCAVATION.

SUBSTRUCTURES ON BEDROCK

1. THE FOOTING/SUBFOOTING CONCRETE SHALL BE PLACED ON BEDROCK CLEANED OF ALL WEATHERED ROCK, LOOSE FRACTURED ROCK AND SOIL. PRIOR TO PLACING THE FOOTING/SUBFOOTING CONCRETE, THE BEDROCK SUBGRADE SHALL BE WASHED WITH HIGH-PRESSURE WATER AND AIR.

2. THE BEDROCK SUBGRADE SHALL BE CONFIRMED TO BE RELATIVELY LEVEL. WHERE THE BEDROCK SLOPE EXCEEDS 4H:1V, THE BEDROCK SURFACE SHALL BE BENCHED TO CREATE LEVEL STEPS OR MADE COMPLETELY LEVEL. THE ENGINEER SHALL APPROVE THE BEDROCK SUBGRADE PRIOR TO THE PLACEMENT OF THE FOOTING CONCRETE.

3. WHERE BEDROCK REMOVAL IS NEEDED FOR CONSTRUCTION, THE REMOVAL METHOD SHALL BE LIMITED TO MECHANICAL METHODS ONLY. BLASTING WILL NOT BE ALLOWED.

4. ANY BEDROCK THAT NEEDS TO BE REMOVED WILL BE PAID FOR WITH THE CORRESPONDING EXCAVATION ITEM INCLUDED IN THE CONTRACT. OVERBREAKAGE EXCEEDING THE AVERAGE MAXIMUM ALLOWANCE SPECIFIED IN SUBSECTION 208.10 (c) (1) WILL BE AT THE CONTRACTOR'S EXPENSE. ALL OVERBREAKAGE SHALL BE REPLACED WITH "CONCRETE, CLASS C". A MAXIMUM OF 6 INCHES AVERAGE OVERBREAKAGE DEPTH WILL BE PAID FOR. ANY ADDITIONAL CONCRETE SHALL BE AT THE CONTRACTOR'S EXPENSE.

CONCRETE AND REINFORCING STEEL

1. ITEM 514.1000, "WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT FOR THE UNDERSIDE OF THE PRECAST FRAME.

2. ALL CAST-IN-PLACE CONCRETE SHALL BE PLACED IN THE DRY. DEWATERING SHALL BE CONTINUOUS UNTIL THE FOOTINGS ARE BACKFILLED TO THE WATER ELEVATION.

3. THE REINFORCING STEEL FOR THE BRIDGE RAILING SHALL MEET THE REQUIREMENTS OF 507.1200, REINFORCING STEEL, LEVEL II AND WILL BE CONSIDERED INCIDENTAL TO ITEM 525.5000, BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION.

PRECAST CONCRETE

1. THE LUMP SUM COST FOR ITEM 540.1000, PRECAST CONCRETE STRUCTURE (FRAME WITH WINGWALLS) SHALL INCLUDE THE PRECAST FRAME, PRECAST HEADWALLS, PRECAST WINGWALLS. THESE ELEMENTS ARE TO BE DESIGNED BY THE CONTRACTOR.

2. PRECAST FRAME AND WINGWALL DESIGN PARAMETERS:

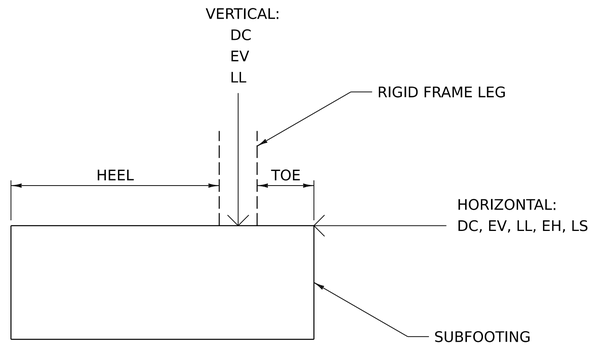
DESIGN LIVE LOAD:	HL-93
RETAINED SOIL PARAMETERS	
UNIT WEIGHT:	140 PCF
FRICTION ANGLE:	34 DEGREES

3. THE CAST-IN-PLACE CONCRETE SUBFOOTING WAS DESIGNED ASSUMING THE FOLLOWING FRAME LEG REACTIONS AT THE SERVICE I LIMIT STATE. IF THE CONTRACTOR'S PRECAST OPTION EXCEEDS THESE VALUES THEN THE CONTRACTOR SHALL REDESIGN THE SUBFOOTING AT NO ADDITIONAL COSTS TO THE STATE IN ACCORDANCE WITH SUBSECTION 540.04. ANY ADDITIONAL REINFORCING OR CONCRETE WILL BE PAID FOR AT THEIR RESPECTIVE UNIT PRICES.

SUBFOOTING DESIGN REACTIONS (KIPS / FOOT):

	HORIZONTAL	VERTICAL
DC	6	9
EV	18	26
LL	2.5	2
EH	-1.5	-
LS	-0.7	-

SUBFOOTING LOADING DIAGRAM:



4. THE CONTRACTOR OR FABRICATOR MAY NEED TO PROVIDE ADDITIONAL DETAILS OR ALTER EXISTING DETAILS IN THESE PLANS TO ACCOMMODATE THEIR SPECIFIC OPERATION. ANY NEW OR ALTERED DETAILS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER FOR APPROVAL IN ACCORDANCE WITH SUBSECTION 540.04. ALL ASSOCIATED COSTS WITH PROVIDING NEW DETAILS OR ALTERING EXISTING DETAILS WILL BE CONSIDERED INCIDENTAL TO THE APPROPRIATE PRECAST ITEM.

5. THE CONTRACTOR SHALL FOLLOW THE FABRICATOR'S RECOMMENDATIONS AND TAKE CARE WHEN BACKFILLING THE RIGID FRAME SUCH THAT THE BACKFILL ELEVATION BETWEEN SIDES DOES NOT VARY BY MORE THAN 2 FEET, UNLESS OTHERWISE APPROVED BY THE FABRICATOR.

6. ITEM 529.2000, MEMBRANE WATERPROOFING, TORCH APPLIED SHEET SHALL BE APPLIED ACROSS THE ENTIRETY OF THE ROOF AND 2'-0" DOWN THE LEGS ACROSS THE ENTIRE WIDTH OF THE FRAME.

7. A WATERPROOFING MEMBRANE SYSTEM, TYPE III SHALL BE APPLIED IN A 2'-0" WIDE STRIP AT ALL VERTICAL CONSTRUCTION JOINTS IN THE FRAME IN ACCORDANCE WITH SECTION 540 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. PAYMENT FOR THE WATERPROOFING SYSTEM, TYPE III WILL BE CONSIDERED INCIDENTAL TO ITEM 540.1000, "PRECAST CONCRETE STRUCTURE (FRAME WITH WINGWALLS).

8. AFTER THE UNITS ARE IN THEIR FINAL LOCATIONS, ALL HOLES OR BLOCKOUTS USED FOR LIFTING THE PRECAST ELEMENTS SHALL HAVE A BONDING AGENT APPLIED TO THE CONCRETE SURFACE AND SHALL BE FILLED WITH A MORTAR, TYPE IV.

9. REINFORCING STEEL IN THE PRECAST FRAME AND WINGWALLS SHALL MEET THE REQUIREMENTS OF SECTION 507, "REINFORCING STEEL, LEVEL I" AND SHALL BE UNCOATED.

10. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

UNDERSIDE OF FRAME	1 1/2 INCH
FRAME (EXCEPT UNDERSIDE), WINGWALLS, AND HEADWALLS	2 INCH

11. THE PRECAST CONCRETE MOMENT SLAB 28 DAY MINIMUM CONCRETE COMPRESSIVE STRENGTH, f'c = 4,000 PSI.

12. ALL REINFORCING STEEL IN THE PRECAST CONCRETE MOMENT SLAB SHALL MEET SECTION 507 FOR REINFORCING STEEL, LEVEL II.

13. THE CONTRACTOR MAY ELECT TO PRECAST THE BRIDGE RAIL WITH THE PRECAST MOMENT SLAB OR CONSTRUCT THE CONCRETE PORTION OF THE BRIDGE RAIL AS A CAST-IN-PLACE COMPONENT FOLLOWING THE BRIDGE CLOSURE PERIOD.

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME:z93j040notes.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: J. GRIGAS
PROJECT NOTES

PLOT DATE: 30-MAY-2024
DRAWN BY: J. GRIGAS
CHECKED BY: T. KNIGHT

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES

1011 - ROADWAY	1041 - LANDSCAPING	1051 - EROSION CONTROL	1081 - UTILITIES - BID ITEMS	1211 - BRIDGE NO. 1	1999 - FULL C.E. ITEMS
1					
1425					
270					
				550	
260					
1					
				1415	
				1200	
				120	
				1	
				1	
500					
1700					
40					
20					
320					
245					
15					
50					
1					
1					
500				1010	
				250	
				25	
				530	
				124	
				1	
			2		
				1	
				250	
				1	
				1	
150					
2					
1					
2					
			5		
1					
2					
20					

TOTALS

GRAND TOTAL	FINAL
1	
1425	
270	
550	
260	
1	
1415	
1200	
120	
1	
1	
500	
1700	
40	
20	
320	
245	
15	
50	
1	
1	
1510	
250	
25	
530	
124	
1	
2	
1	
250	
1	
1	
150	
2	
1	
2	
5	
1	
2	
20	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER	ROUND
LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.1000	
CY	COMMON EXCAVATION	203.1500	
CY	SOLID ROCK EXCAVATION	203.1600	
CY	UNCLASSIFIED CHANNEL EXCAVATION	203.2700	
CY	TRENCH EXCAVATION OF EARTH	204.2000	
CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.2200	
CY	GRANULAR BACKFILL FOR STRUCTURES	204.3000	
CY	COFFERDAM EXCAVATION, EARTH	208.3000	
CY	COFFERDAM EXCAVATION, ROCK	208.3500	
LS	COFFERDAM (FRAME LEG 1)	208.4000	
LS	COFFERDAM (FRAME LEG 2)	208.4000	
SY	COARSE-MILLING, BITUMINOUS PAVEMENT	210.1000	
CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.3500	
TON	AGGREGATE SHOULDERS, RAP	402.1300	
CWT	TACK COAT, EMULSIFIED ASPHALT	404.1100	
TON	BITUMINOUS CONCRETE PAVEMENT, TYPE IIS, QA TIER III	406.0230	
TON	BITUMINOUS CONCRETE PAVEMENT, TYPE IIIS, QA TIER III	406.0330	
TON	BITUMINOUS CONCRETE PAVEMENT, TYPE IVS, QA TIER III	406.0430	
SY	BITUMINOUS CONCRETE PAVEMENT, NON-PAVER PLACED, TYPE IVS	406.3400	
DL	PAY ADJUSTMENT, BCP, MIXTURE PROPERTIES (N.A.B.I.)	406.9100	
DL	PAY ADJUSTMENT, BCP, MAT DENSITY (N.A.B.I.)	406.9200	
LB	REINFORCING STEEL, LEVEL II	507.1200	
LF	DRILLING AND GROUTING DOWELS	507.1600	
GAL	WATER REPELLENT, SILANE	514.1000	
SY	MEMBRANE WATERPROOFING, TORCH APPLIED SHEET	519.2000	
LF	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	525.5000	
EACH	REMOVAL OF STRUCTURE (REMOVAL OF BRIDGE NO.36)(1110 SF - EST)	529.1500	
EACH	REMOVAL OF STRUCTURE (SANITARY SEWER MANHOLE)	529.1500	
LS	PRECAST CONCRETE STRUCTURE (FRAME WITH WINGWALLS)	540.1000	
CY	CONCRETE, CLASS C	541.2300	
LS	CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE (MOMENT SLAB 1)	543.1000	
LS	CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE (MOMENT SLAB 2)	543.1000	
LF	18 INCH CPEP(SL)	601.2615	
EACH	18 INCH CPEPES	601.7015	
EACH	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE	604.2000	
EACH	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE ((DEEP SU	604.2000	
EACH	SANITARY SEWER MANHOLE	604.2200	
EACH	CHANGING ELEVATION OF DIS, CATCH BASINS, OR MANHOLES	604.4000	
EACH	CHANGING ELEVATION OF SEWER MANHOLES	604.4200	
HR	POWER BROOM RENTAL, TYPE II	608.3002	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		EARTHWORKS SUMMARY
		FILL AVAILABLE
1425	CY	COMMON EXCAVATION
550	CY	UNCLASSIFIED CHANNEL EXCAVATION
1200	CY	COFFERDAM EXCAVATION, EARTH
180	CY	TRENCH EXCAVATION OF EARTH
3355	**CY**	**TOTAL FILL AVAILABLE**
		FILL REQUIRED
205	CY	FACTORED FILL
205	**CY**	**TOTAL FILL REQUIRED**
3150	**CY**	**TOTAL WASTE**
		SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)
310	TON	BASE COURSE
230	TON	WEARING COURSE
11	TON	CURBLINES
9	TON	ROUNDING
560	**TON**	**TOTAL**

N.A.B.I. = NOT A BID ITEM

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040det_stowe.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: D. YOULEN	CHECKED BY: T. KNIGHT
QUANTITY SUMMARY SHEET 1	SHEET 10 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES

1011 - ROADWAY	1041 - LANDSCAPING	1051 - EROSION CONTROL	1081 - UTILITIES - BID ITEMS	1211 - BRIDGE NO. 1	1999 - FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
				65		65		CY	STONE FILL, TYPE I	613.1001	
				700		700		CY	STONE FILL, TYPE IV	613.1004	
		1				1		LS	IN-WATER SEDIMENT ISOLATION MEASURES (IN-WATER SEDIMENT ISOLATION DEVICE	614.2000	
720						720		LF	VERTICAL GRANITE CURB	616.2100	
140						140		LF	VERTICAL GRANITE CURB (24" GRANITE BACK CURB)	616.2100	
90						90		LF	VERTICAL GRANITE CURB, MOUNTABLE	616.2150	
290						290		SY	REINFORCED PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.1205	
15						15		SY	REINFORCED PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	618.1208	
50						50		SF	DETECTABLE WARNING SURFACE	618.3000	
75						75		SY	STAMPED CONCRETE APRON, 5 INCH	618.4005	
30						30		SY	STAMPED CONCRETE ISLAND, 8 INCH	618.4108	
3						3		EACH	BOLLARDS	619.1400	
2						2		EACH	YIELDING MARKER POSTS	619.1700	
475						475		LF	REMOVAL OF GUARDRAIL	621.0100	
310						310		LF	HD STEEL BEAM GUARDRAIL	621.1260	
5						5		EACH	ANCHOR FOR STEEL BEAM GUARDRAIL	621.1520	
4						4		EACH	GUARDRAIL APPROACH SECTION TO CONCRETE BRIDGE RAIL, TL-3	621.8330	
			190			190		LF	PVC SEWER PIPE, ALL-INCLUSIVE, 8 INCH	628.1532	
			100			100		LF	PVC SEWER PIPE, ALL-INCLUSIVE, 10 INCH (PRE-INSULATED)	628.1540	
			1			1		EACH	SEWER CLEANOUT, ALL-INCLUSIVE	628.3100	
			1			1		LS	TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL-INCLUSIVE	628.4300	
4						4		EACH	ADJUST ELEVATION OF VALVE BOX	629.2800	
200						200		HR	UNIFORMED TRAFFIC OFFICERS	630.1000	
1200						1200		HR	FLAGGERS	630.1500	
					1	1		LS	FIELD OFFICE, ENGINEER'S	631.1000	
					1	1		LS	TESTING EQUIPMENT, CONCRETE	631.1600	
					1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.1700	
					1	1		LS	TESTING EQUIPMENT, GROUT	631.1900	
					3000	3000		DL	FIELD OFFICE COMMUNICATIONS (N.A.B.I.)	631.2600	
6						6		EACH	CPM SCHEDULE	633.1000	
1						1		LS	MOBILIZATION/DEMOBILIZATION	635.1100	
1						1		LS	TRAFFIC CONTROL, ALL-INCLUSIVE	641.1100	
4						4		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.1500	
1200						1200		LF	DURABLE 4 INCH WHITE LINE, EPOXY PAINT	646.4030	
700						700		LF	DURABLE 4 INCH YELLOW LINE, EPOXY PAINT	646.4130	
45						45		LF	DURABLE 24 INCH STOP BAR, EPOXY PAINT	646.4830	
6						6		EACH	DURABLE LETTER OR SYMBOL, EPOXY PAINT	646.4930	
70						70		LF	DURABLE CROSSWALK MARKING, EPOXY PAINT	646.5030	
260						260		EACH	LINE STRIPING TARGETS	646.7600	
1660						1660		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.1100	

TOTALS

DESCRIPTIONS

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

N.A.B.I. = NOT A BID ITEM

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_stowe.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. YOULEN
QUANTITY SUMMARY SHEET 2

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 11 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES

1011 - ROADWAY	1041 - LANDSCAPING	1051 - EROSION CONTROL	1081 - UTILITIES - BID ITEMS	1211 - BRIDGE NO. 1	1999 - FULL C.E. ITEMS
				900	
		2225			
		200			
		420			
		90			
		1			
		10			
		1			
		2210			
		45			
		3			
		4			
		300			
		700			
		400			
	32				
	32				
	32				
	2				
	8				
	1				
	1				
	4				
	3				
	2				
	18				
	11				
	3				
	9				
	13				
	18				
	10				
	5				
	5				
	5				
	15				
	40				
	1				
91					
180					

TOTALS

GRAND TOTAL	FINAL
900	
2225	
200	
420	
90	
1	
10	
1	
2210	
45	
3	
4	
300	
700	
400	
32	
32	
32	
2	
8	
1	
1	
4	
3	
2	
18	
11	
3	
9	
13	
18	
10	
5	
5	
5	
15	
40	
1	
91	
180	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER	ROUND
SY	GEOTEXTILE UNDER STONE FILL	649.3100	
SY	TURF ESTABLISHMENT, SPECIALTY SEED	651.1600	
CY	TOPSOIL	651.3500	
SY	GRUBBING MATERIAL, 6 INCH	651.4006	
SY	GRUBBING MATERIAL, 12 INCH	651.4012	
LS	EPSC PLAN	653.0100	
HR	MONITORING EPSC PLAN	653.0200	
DL	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	653.0300	
SY	ROLLED EROSION CONTROL PRODUCT, TYPE I	653.2001	
CY	STABILIZED CONSTRUCTION ENTRANCE	653.3500	
EACH	INLET PROTECTION DEVICE, TYPE II	653.4002	
EACH	FILTER BAG	653.4500	
LF	SILT FENCE, TYPE II	653.4702	
LF	BARRIER FENCE	653.5000	
LF	EROSION LOG	653.6000	
EACH	TUBELINGS (SALIX BEBBIANA) (12-18 INCH HEIGHT)	656.1200	
EACH	TUBELINGS (SALIX DISCOLOR) (12-18 INCH HEIGHT)	656.1200	
EACH	TUBELINGS (SALIX SERICEA) (12-18 INCH HEIGHT)	656.1200	
EACH	EVERGREEN TREES, MEDIUM (TSUGA CANADENSIS) (B&B) (5' -6' HEIGHT, NATURAL)	656.2002	
EACH	EVERGREEN TREES, LARGE (PICEA GLAUCA) (B&B) (6' - 7' HEIGHT)	656.2003	
EACH	DECIDUOUS TREES, MEDIUM (MALUS 'HARALRED') (B&B) (5' - 6' HEIGHT)	656.3002	
EACH	DECIDUOUS TREES, MEDIUM (MALUS 'LIBERTY') (B&B) (5' - 6' HEIGHT)	656.3002	
EACH	DECIDUOUS TREES, MEDIUM (SYRINGA MEYERI 'PALIBIN') (CONT.) (5 GAL.)	656.3002	
EACH	DECIDUOUS TREES, LARGE (QUERCUS BICOLOR) (B&B) (2"-2.5" CAL.)	656.3003	
EACH	DECIDUOUS TREES, LARGE (QUERCUS RUBRA) (B&B) (2" - 2.5" CAL.)	656.3003	
EACH	DECIDUOUS SHRUBS (CORNUS SERICEA)(CONT.)(2 GAL.)	656.3500	
EACH	DECIDUOUS SHRUBS (ALNUS RUGOSA) (CONT.) (3 GAL.)	656.3500	
EACH	DECIDUOUS SHRUBS (VIBURNUM LENTAGO) (CONT.) (2 GAL.)	656.3500	
EACH	DECIDUOUS SHRUBS (CORNUS SERICEA 'KELSEYI') (CONT.) (3 GAL.)	656.3500	
EACH	DECIDUOUS SHRUBS (SALIX SERICEA) (CONT.) (2 GAL.)	656.3500	
EACH	DECIDUOUS SHRUBS (RHUS AROMATICA 'GRO-LOW') (CONT.) (2 GAL.)	656.3500	
EACH	DECIDUOUS SHRUBS (VIBURNUM OPULUS VAR. AMERICANUM) (CONT.) (2 GAL.)	656.3500	
EACH	PERENNIALS (HEMEROCALLIS 'HAPPY RETURNS') (CONT.) (1 GAL.)	656.4100	
EACH	PERENNIALS (HEMEROCALLIS 'STELLA D'ORO') (CONT.) (1 GAL.)	656.4100	
EACH	PERENNIALS (HEMEROCALLIS 'ROSY RETURNS') (CONT.) (1 GAL.)	656.4100	
MGAL	LANDSCAPE WATERING	656.6500	
CY	LANDSCAPE BACKFILL, TRUCK MEASUREMENT	656.8000	
LS	TREE PROTECTION	656.8500	
SF	TRAFFIC SIGN, FLAT SHEET ALUMINUM	675.2000	
LF	SQUARE TUBE SIGN POST AND ANCHOR	675.3410	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

N.A.B.I. = NOT A BID ITEM

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_stowe.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. YOULEN
QUANTITY SUMMARY SHEET 3

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 12 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 4

SUMMARY OF ESTIMATED QUANTITIES

1011 - ROADWAY	1041 - LANDSCAPING	1051 - EROSION CONTROL	1081 - UTILITIES - BID ITEMS	1211 - BRIDGE NO. 1	1999 - FULL C.E. ITEMS
15					
2					
1					
1					

TOTALS

GRAND TOTAL	FINAL
15	
2	
1	
1	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER	ROUND
EACH	SIGN REMOVAL, FLAT SHEET ALUMINUM	675.5000	
EACH	RESETTING SIGNS	675.6000	
EACH	REMOVAL OF EXISTING TRAFFIC CONTROL SIGNAL SYSTEM	678.1000	
EACH	TRAFFIC SIGNAL HEAD ASSEMBLY	678.2030	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		N.A.B.I. = NOT A BID ITEM

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

FILE NAME:	z93j040det_stowe.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	P. ARMATA
DESIGNED BY:	D. YOULEN	CHECKED BY:	T. KNIGHT
QUANTITY SUMMARY SHEET 4		SHEET	13 OF 66

GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
⧈	BNDNS	BOUND TO BE SET
●	IPNS	IRON PIN SET
◎	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
	APL	BOUND APPARENT LOCATION
	BM	BENCHMARK
	BND	BOUND
	CB	CATCH BASIN
	COMB	COMBINATION POLE
	DITHR	DROP INLET THROATED DNC
	EL	ELECTRIC POWER POLE
	FPOLE	FLAGPOLE
	GASFIL	GAS FILLER
	GP	GUIDE POST
	GSO	GAS SHUT OFF
	GUY	GUY POLE
	GUYW	GUY WIRE
	GV	GATE VALVE
	H	TREE HARDWOOD
	HCTRL	CONTROL HORIZONTAL
	HVCTRL	CONTROL HORIZ. & VERTICAL
	HYD	HYDRANT
	IP	IRON PIN
	IPIPE	IRON PIPE
	LI	LIGHT - STREET OR YARD
	MB	MAILBOX
	MH	MANHOLE (MH)
	MM	MILE MARKER
	PM	PARKING METER
	PMK	PROJECT MARKER
	POST	POST STONE/WOOD
	RRSIG	RAILROAD SIGNAL
	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
	SAT	SATELLITE DISH
	SHRUB	SHRUB
	SIGN	SIGN
	STUMP	STUMP
	TEL	TELEPHONE POLE
	TIE	TIE
	TSIGN	SIGN W/DOUBLE POST
	VCTRL	CONTROL VERTICAL
	WELL	WELL
	WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADIUS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLOGY

UNDERGROUND UTILITIES

- UGU — UTILITY (GENERIC-UNKNOWN)
- UT — TELEPHONE
- UE — ELECTRIC
- UC — CABLE (TV)
- UEC — ELECTRIC+CABLE
- UET — ELECTRIC+TELEPHONE
- UCT — CABLE+TELEPHONE
- UECT — ELECTRIC+CABLE+TELEP.
- G — GAS LINE
- W — WATER LINE
- S — SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

- AGU — UTILITY (GENERIC-UNKNOWN)
- T — TELEPHONE
- E — ELECTRIC
- C — CABLE (TV)
- EC — ELECTRIC+CABLE
- ET — ELECTRIC+TELEPHONE
- AER E&T — ELECTRIC+TELEPHONE
- CT — CABLE+TELEPHONE
- ECT — ELECTRIC+CABLE+TELEP.
- UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

- CZ — CLEAR ZONE
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

- TOP OF CUT SLOPE
- TOE OF FILL SLOPE
- STONE FILL
- BOTTOM OF DITCH ℄
- CULVERT PROPOSED
- STRUCTURE SUBSURFACE
- PDF — PDF — PROJECT DEMARCATION FENCE
- BF — BF — BARRIER FENCE
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

- TOWN LINE — TOWN BOUNDARY LINE
- COUNTY LINE — COUNTY BOUNDARY LINE
- STATE LINE — STATE BOUNDARY LINE
- PROPOSED STATE R.O.W. (LIMITED ACCESS)
- PROPOSED STATE R.O.W.
- STATE ROW (LIMITED ACCESS)
- STATE ROW
- TOWN ROW
- PERMANENT EASEMENT LINE (P)
- TEMPORARY EASEMENT LINE (T)
- SURVEY LINE
- P / L — PROPERTY LINE (P/L)
- SR SR SR — SLOPE RIGHTS
- 6f — 6F PROPERTY BOUNDARY
- 4f — 4F PROPERTY BOUNDARY
- HAZ — HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

- ISOLATION BARRIER
- SILT FENCE
- SILT FENCE WOVEN WIRE
- CHECK DAM
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

- WETLAND BOUNDARY
- RIPARIAN BUFFER ZONE
- WETLAND BUFFER ZONE
- SOIL TYPE BOUNDARY
- T&E — THREATENED & ENDANGERED SPECIES
- HAZ — HAZ — HAZARDOUS WASTE AREA
- AG — AGRICULTURAL LAND
- HABITAT — FISH & WILDLIFE HABITAT
- FLOOD PLAIN — FLOOD PLAIN
- OHW — ORDINARY HIGH WATER (OHW)
- STORM WATER
- USDA FOREST SERVICE LANDS
- WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

- ARCH — ARCHEOLOGICAL BOUNDARY
- HISTORIC DIST — HISTORIC DISTRICT BOUNDARY
- HISTORIC — HISTORIC AREA
- (H) — HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

- ROAD EDGE PAVEMENT
- ROAD EDGE GRAVEL
- DRIVEWAY EDGE
- DITCH
- FOUNDATION
- FENCE (EXISTING)
- FENCE WOOD POST
- FENCE STEEL POST
- GARDEN
- ROAD GUARDRAIL
- RAILROAD TRACKS
- CULVERT (EXISTING)
- STONE WALL
- WALL
- WOOD LINE
- BRUSH LINE
- HEDGE
- BODY OF WATER EDGE
- LEDGE EXPOSED

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040legend.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: VTRANS
DESIGNED BY: VTRANS	CHECKED BY: T. KNIGHT
CONVENTIONAL SYMBOLOGY LEGEND SHEET	SHEET 14 OF 66

GPS CONTROL POINTS

A94002 (#4)

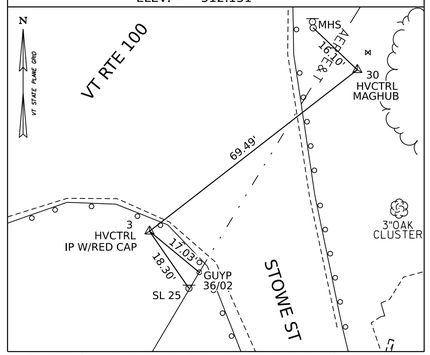
PID AA8266
NORTH = 672507.410
EAST = 1575701.350
ELEV. = 513.580

DESCRIBED BY VERMONT AGENCY OF TRANSPORTATION 1994 (CHR). GENERAL LOCATION, WATERBURY. TO REACH FROM THE INTERSECTION OF U.S. ROUTE 2 AND VT. ROUTE 100 NORTH IN WATERBURY, GO NORTHEAST ALONG ROUTE 100 FOR 0.6 MI (1.0 KM) TO THE INTRSECTION OF BLUSH HILL ROAD LEFT AND SITE OF THE MARK ON THE LEFT. THE MARK IS 12.3 M (40.4 FT) NORTHWEST OF AND ABOUT 1 M (3.3 FT) HIGHER THAN THE CENTERLINE OF ROUTE 100, 25.3 M (83.0 FT) SOUTHWEST OF THE CENTERLINE OF BLUSH HILL ROAD, 4.2 M (13.8 FT) NORTHEAST OF POLE NO. 03, 9.4 M (30.8 FT) SOUTH OF THE SOUTH CORNER OF THE STONE MASONRY HOLIDAY INN SIGN, 6.1 M (20.0 FT) EAST NORTHEAST OF A FIBERGLASS WITNESS POST AT THE NORTHEAST END OF A CHAINLINK FENCE.

TRAVERSE TIES

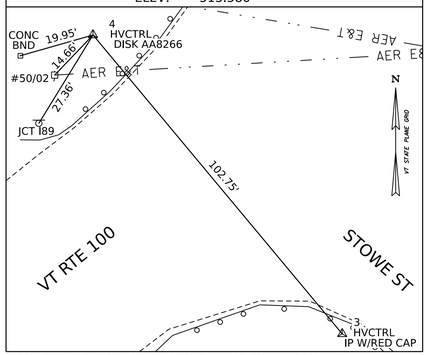
HVCTRL #3

NORTH = 672428.497
EAST = 1575767.159
ELEV. = 512.131



HVCTRL #4

NORTH = 672507.410
EAST = 1575701.350
ELEV. = 513.580



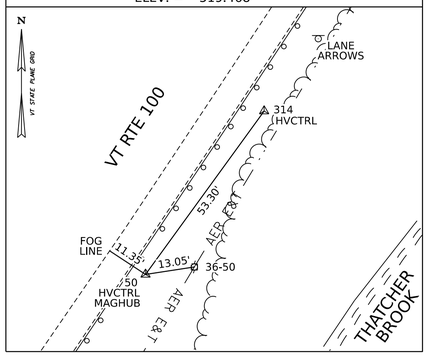
HVCTRL #30

NORTH = 672471.126
EAST = 1575822.039
ELEV. = 513.849

SEE SKETCH FOR
HVCTRL #3

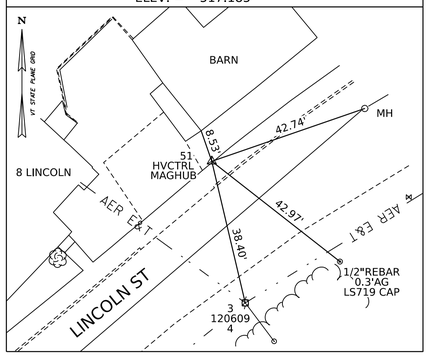
HVCTRL #50

NORTH = 672636.003
EAST = 1575900.138
ELEV. = 519.468



HVCTRL #51

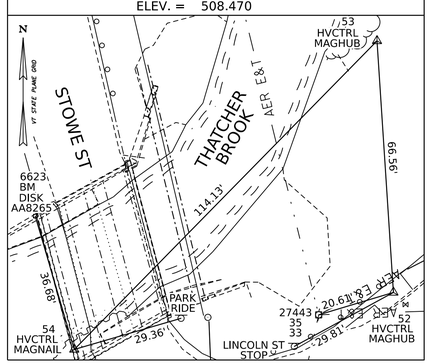
NORTH = 672507.041
EAST = 1576083.235
ELEV. = 517.185



* VSE PORTION OF SURVEY FOR WATERBURY STP BP17(11) COMPLETED: APRIL 18, 2018 BY VSE, A. SCARZELLO-PC, M. BACKMAN

HVCTRL #52

NORTH = 672345.334
EAST = 1575893.966
ELEV. = 508.470



HVCTRL #53

NORTH = 672411.755
EAST = 1575889.617
ELEV. = 494.881

SEE SKETCH FOR
HVCTRL #52

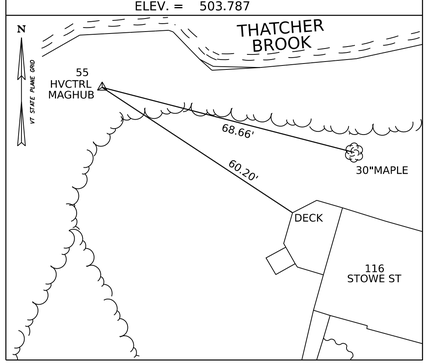
HVCTRL #54

NORTH = 672330.287
EAST = 1575809.690
ELEV. = 491.327

SEE SKETCH FOR
HVCTRL #52

HVCTRL #55

NORTH = 672284.430
EAST = 1575698.560
ELEV. = 503.787



HVCTRL #56

NORTH = 672229.260
EAST = 1575609.301
ELEV. = 487.509

NOT TIED

DATUM

VERTICAL NAVD88
HORIZONTAL NAD83(2011)
ADJUSTMENT LSQ

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040tie.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: VSE
TIE SHEET 1

PLOT DATE: 30-MAY-2024
DRAWN BY: VSE
CHECKED BY: VSE
SHEET 15 OF 66

GPS CONTROL POINTS

64 HBC (#6623)

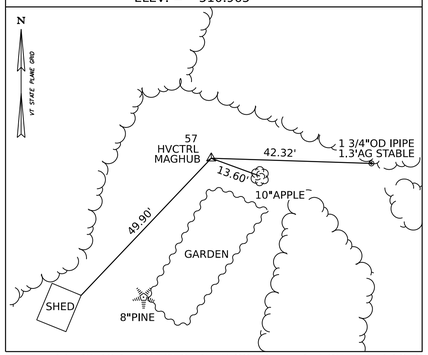
PID AA8265
NORTH = 672365.490
EAST = 1575799.372
ELEV. = 508.132

DESCRIBED BY VERMONT AGENCY OF TRANSPORTATION 1994 (CHR). GENERAL LOCATION, WATERBURY. TO REACH FROM THE INTERSECTION OF U.S. ROUTE 2 AND VT. ROUTE 100 NORTH IN WATERBURY GO NORTHEAST ALONG VT ROUTE 100 FOR 0.6 MI (1.0 KM) TO THE INTERSECTION OF STOWE STREET, TURN RIGHT AND GO SOUTH ALONG STOWE STREET FOR 40 M (131.2 FT) TO THE NORTH END OF THE STOWE STREET BRIDGE OVER THATCHER BROOK AND THE MARK ON THE RIGHT, IN THE TOP OF THE ABUTMENT AT THE NORTHWEST CORNER OF THE BRIDGE. THE MARK IS 4.9 M (16.1 FT) WEST OF THE CENTERLINE OF STOWE ST, 16.8 M (55.1 FT) SOUTHWEST OF POLE NO. 01, 0.2 M (0.7 FT) WEST OF THE WEST FACE OF THE CONCRETE PARAPET WALL OF THE BRIDGE.

TRAVERSE TIES

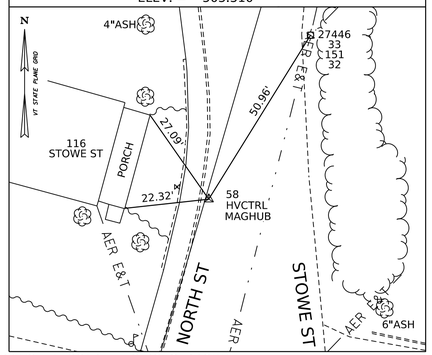
HVCTRL #57

NORTH = 672145.409
EAST = 1575654.792
ELEV. = 510.965



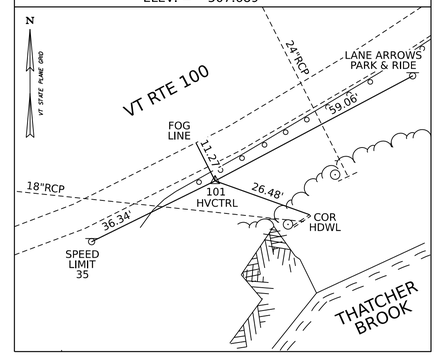
HVCTRL #58

NORTH = 672214.215
EAST = 1575828.705
ELEV. = 503.310



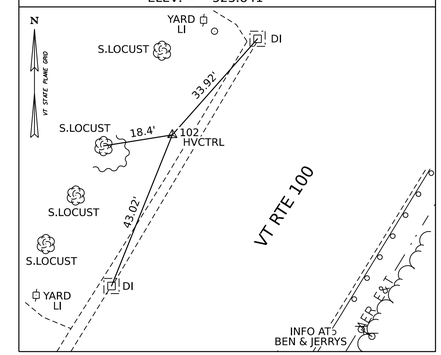
HVCTRL #101

NORTH = 672319.461
EAST = 1575567.662
ELEV. = 507.689



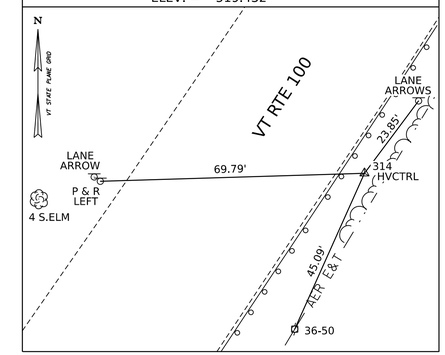
HVCTRL #102

NORTH = 672863.862
EAST = 1575969.079
ELEV. = 523.841



HVCTRL #314

NORTH = 672679.135
EAST = 1575931.458
ELEV. = 519.432



* WATERBURY BO 1446(40) SURVEY COMPLETED: NOVEMBER 12, 2019 BY VSE, A. SCARZELLO-PC, C. BROWN

ALIGNMENT TIES

NORTH =	NORTH =	NORTH =	NORTH =	NORTH =
EAST =	EAST =	EAST =	EAST =	EAST =
ELEV. =	ELEV. =	ELEV. =	ELEV. =	ELEV. =

DATUM

VERTICAL NAVD88
HORIZONTAL NAD83(2011)
ADJUSTMENT LSQ

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040tie.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: VSE
TIE SHEET 2

PLOT DATE: 30-MAY-2024
DRAWN BY: VSE
CHECKED BY: VSE
SHEET 16 OF 66

NOTE:
SEE NEXT SHEET EC-2 FOR EXISTING
SANITARY SEWER MANHOLE INFORMATION.

41E
Buxton silt loam
25 to 45 percent slopes

43C
Salmon very fine
sandy loam
8 to 15 percent slopes

41D
Buxton silt loam
15 to 25 percent slopes

EXISTING BRIDGE INFO
BUILT 1928, SINGLE 44' SPAN
CONCRETE T-BEAM
CIP CONCRETE DECK

0 20 40
SCALE IN FEET

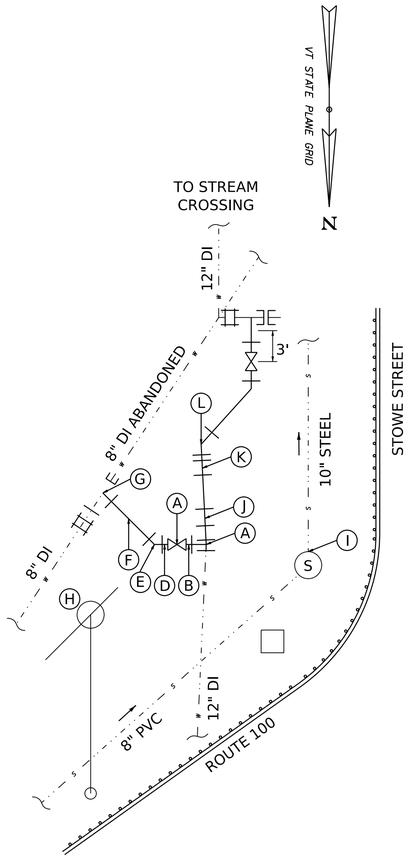
Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

FILE NAME:	z93j040bdr_excond.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	G. BARRETT
DESIGNED BY:	D. CAMPBELL	CHECKED BY:	T. KNIGHT
EXISTING CONDITIONS SITE PLAN (EC-1)		SHEET	17 OF 66

EXISTING SANITARY SEWER MANHOLE SUMMARY TABLE

SMH #199 RIM = 506.4 EXISTING 8" PVC INV. IN = 501.4 (N) EXISTING 8" PVC INV. IN = 498.9 (E) EXISTING 8" PVC INV. OUT = 498.7 (S)
SMH #200 RIM = 517.4 EXISTING 8" PVC INV. IN = 509.0 (E) EXISTING 8" PVC INV. OUT = 508.9 (W)
SMH #208 RIM = 508.5 EXISTING 10" STEEL INV. IN = 505.2 (N) EXISTING 8" PVC INV. OUT = 505.0 (S) (OUTLET PIPE MAY BE CAPPED) EXISTING 8" PVC INV. OUT = 503.0 (S)
SMH #209 RIM = 514.4 EXISTING 8" PVC INV. IN = 506.2 (E) EXISTING 10" STEEL INV. OUT = 506.2 (S)
SMH #210 RIM = 512.6 EXISTING 8" PVC INV. IN = 506.3 (N) EXISTING 8" PVC INV. OUT = 506.2 (W)



TIE INFO

AC = 1'
CE = 1'
CI = 15'-4"
CH = 30'-8"
EI = 17'
EH = 28'
EG = 4'
JI = 19'
JH = 36'
AI = 14'
AH = 32'
KI = 28'-8"
LI = 33'-4"

TIE INFO

A = 12" X 8" TEE, MJ W/ RG
B = 8" NIPPLE. 1 FOOT LONG
C = 8" GATE VALVE, MJ W/ RG
D = 8" NIPPLE, 1 FOOT LONG
E = 8"-90° ELBOW, MJ W/ RG
F = 8" NIPPLE, 4 FEET LONG
G = 8"-90° ELBOW, MJ W/ RG
H = POWER POLE
I = MANHOLE (SMH #209)
J = 12"-22.5° ELBOW, MJ W/ RG
(VERTICAL ELBOW ONLY)
K = 12"-22.5° ELBOW, MJ W/ RG
(VERTICAL ELBOW ONLY)
L = 12"-45° ELBOW, MJ W/ RG

EXISTING WATER MAIN INTERCONNECTION DETAIL

NOT TO SCALE

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_water.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. CAMPBELL
EXISTING CONDITIONS INFORMATION (EC-2)

PLOT DATE: 30-MAY-2024
DRAWN BY: G. BARRETT
CHECKED BY: J. MYERS
SHEET 18 OF 66


CURVE DATA #1
DELTA = 15°03'38"
D = 11°27'33"
R = 500.00'
T = 66.09'
L = 131.43'
E = 4.35'
C = 131.05
PC
N 672219.2002
E 1575843.6485
PT
N 672346.8076
E 1575813.8095
CURVE DATA #2
DELTA = 24°23'40"
D = 57°17'45"
R = 100.00'
T = 21.62'
L = 42.58'
E = 2.31'
C = 42.26'
PC
N 672336.2847
E 1575905.0063
PT
N 672316.5287
E 1575867.6535
CURVE DATA #3
DELTA = 11°16'36"
D = 36°02'06"
R = 159.00'
T = 15.70'
L = 31.29'
E = 0.77'
C = 31.24'
PC
N 672384.5174
E 1575856.5584
PT
N 672363.8841
E 1575833.0982
POB
N 672062.0954
E 1575859.1385
POB 29+00.00
PC 30+57.87
STOWE ST.
TO WATERBURY VILLIAGE
NORTH ST
N05°37'52"W
29+00
30+00
31+00
32+00
33+00
34+00
STOWE STREET STA. 31+45.54
= LINCOLN STREET STA. 102+20.58
N 672305.2483
E 1575827.4609
POE
N 672305.2483
E 1575827.4609
POE 102+20.58
CURVE #1
CURVE #2
CURVE #3
PI 31+23.96
N 672284.9761
E 1575837.1632
S74°19'22"W
102+00
101+00
100+00
PT 101.78.84
PI 101+57.88
N 672322.3697
E 1575888.4651
PC 101+36.26
S49°55'57"W
LINCOLN ST
POB STA. 99+50.00
N 672456.1900
E 1576047.5413
POE
N 672305.4539
E 1575751.7648
POE 2+89.40
PT 31+89.29
S54°18'23"W
MAINLINE STA. 31+92.00
= CHANNEL STA. 1+14.18
N 672349.3399
E 1575812.8531
2+00
1+00
PT 1+89.25
PC 1+57.96
PI 1+73.65
N 672373.0427
E 1575845.8468
S16°06'32"W
POB 1+00.00
POB
N 672440.1992
E 1575872.6394
THATCHER BROOK
6623 BM DISK AA8265
HVCTRL MAGNAIL
3 HVCTRL IP W/RED CAP
N20°41'29"W
VT ROUTE 100
TO INTERSTATE 89
304+00
305+00
306+00
307+00
TO STOWE
N34°39'54"E
MAINLINE STA. 33+55.33
= ROUTE 100 STA. 305+17.47
N 672502.1319
E 1575755.1437
POE 34+52.30
POE
N 672592.8494
E 1575720.8798
BLUSH HILL RD
VT STATE PLANE GRID
N
55 HVCTRL MAGHUB
58 HVCTRL MAGHUB
52 HVCTRL MAGHUB
53 HVCTRL MAGHUB
30 HVCTRL MAGHUB
50 HVCTRL MAGHUB
4 HVCTRL
54
0 20 40
SCALE IN FEET

DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD83(2011)
ADJUSTMENT	LSQ

NOTE:
1. SEE TIE SHEET FOR HORIZONTAL AND VERTICAL CONTROL INFORMATION.

Stantec

PROJECT NAME:	WATERBURY		
PROJECT NUMBER:	BO 1446(40)		
FILE NAME:	z93j040bdr_alg.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	P.ARMATA
DESIGNED BY:	S. WINES	CHECKED BY:	K.RICHARDSON
ALIGNMENT LAYOUT SHEET		SHEET	19 OF 66

HD STEEL BEAM GUARDRAIL, GALVANIZED

32+33, LT - 32+88.5, LT
305+69, RT - 306+50, RT
32+56, RT - 33+05, RT
31+69, RT - 101+04, RT

ANCHOR FOR STEEL BEAM GUARDRAIL

101+04 RT
31+25 LT
32+88 LT
33+05 RT
305+69 RT

GUARDRAIL APPROACH SECTION TO CONCETE BRIDGE RAILING TL-3

31+26.7 LT - 31+45.2 LT
31+70.0 RT - 31+83.3 RT
32+14.8 LT - 32+32.8 LT
32+37.8 RT - 32+55.8 RT

PRECAST CONCRETE STRUCTURE FRAME WITH WINGWALLS

1+58.00 - 2+44.00

BRIDGE RAILING, GALVINAZED STEEL TUBING / CONCRETE COMBINIATION

31+45.2 LT - 32+14.8 LT
31+83.3 RT - 32+37.8 RT

REMOVAL OF GUARDRAIL

32+14, LT - 32+90, LT
32+29, RT - 33+98, RT
31+33, LT - 31+68, LT
101+31, RT - 31+68, RT

BOLLARDS

305+54, RT
305+57, RT
305+60, RT

NOTE: BARRIER FENCE DEFINES THE LIMITS OF EARTH DISTURBANCE FOR THE PROJECT. TOTAL AREA = 0.94 ACRES

CALCULATION IS ENTIRE AREA WITHIN BARRIER FENCE, LESS UNIMPACTED RIVER AND COURSE MILLING ROADWAY APPROACHES

VT STATE PLANE GRID

N

APPROX. LOCATION OF EXISTING STAIRS DO NOT DISTURB

BEGIN BRIDGE
STA. 31+64.39

END BRIDGE
STA. 32+19.44

END PROJECT
STA. 32+77.50

END APPROACH
STA. 33+20.00

BEGIN APPROACH
STA. 29+50.00

BEGIN PROJECT
STA. 30+75.00

END SIDE ROAD APPROACH
STA. 101+37.50

BEGIN SIDE ROAD APPROACH
STA. 100+75.00

STOWE ST

NORTH ST

LINCOLN ST

BLUSH HILL RD

THATCHER BROOK

VT ROUTE 100

TO WATERBURY VILLIAGE

TO INTERSTATE 89

TO STOWE

APPROX. EXISTING TOWN R.O.W.

APPROX. EXISTING R.O.W.

SAW CUT LINE (TYP)

ABANDONED WATER MAIN

WSO APPROXIMATE LOCATION

APPROXIMATE LOCATION

CONSTRUCT DRIVE

STATION	TYPE	WIDTH
30+09, RT	GRAV. W/ 8' PAVED APRON	13.5'
101+20, LT	GRAV. W/ 7' PAVED APRON	18'
101+38, LT	PAVED	15.5'

VERTICAL GRANITE CURB

30+14, LT - 31+46, LT
29+84, RT - 101+66, LT
100+75 RT - 33+93, RT (VT 100)

VERTICAL GRANITE CURB (24 INCH BACK CURB)

30+40, LT - 30+90, LT
30+18, RT - 31+05, RT
29+84, RT - 30+01, RT

STAMPED CONCRETE APRON 5 INCH

32+71 - 305+87, RT-LT

STAMPED CONCRETE ISLAND 8 INCH

30+94 - 101+60, RT-LT

VERTICAL GRANITE CURB, MOUNTABLE 3 INCH

30+87 - 101+53, RT-LT

DETECTABLE WARNING SURFACE

29+82, LT
29+87, RT
101+88, LT
101+85, RT
306+33, RT (VT 100)

BARRIER FENCE

29+75 - 30+01, RT
30+13 - 31+35, RT
30+15 - 31+15, LT
32+09 - 32+90, LT
101+07 - 100+75, LT
100+71 - 100+66, RT
305+72 - 306+18, RT

REINFORCED PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH

29+71, LT - 29+80, LT
29+84, RT - 30+01, RT
30+17, RT - 101+85, LT
100+75, RT - 33+93, RT (VT 100)

REINFORCED PORTLAND CEMENT CONCRETE SIDEWALK 8 INCH

30+01, RT - 30+17, RT

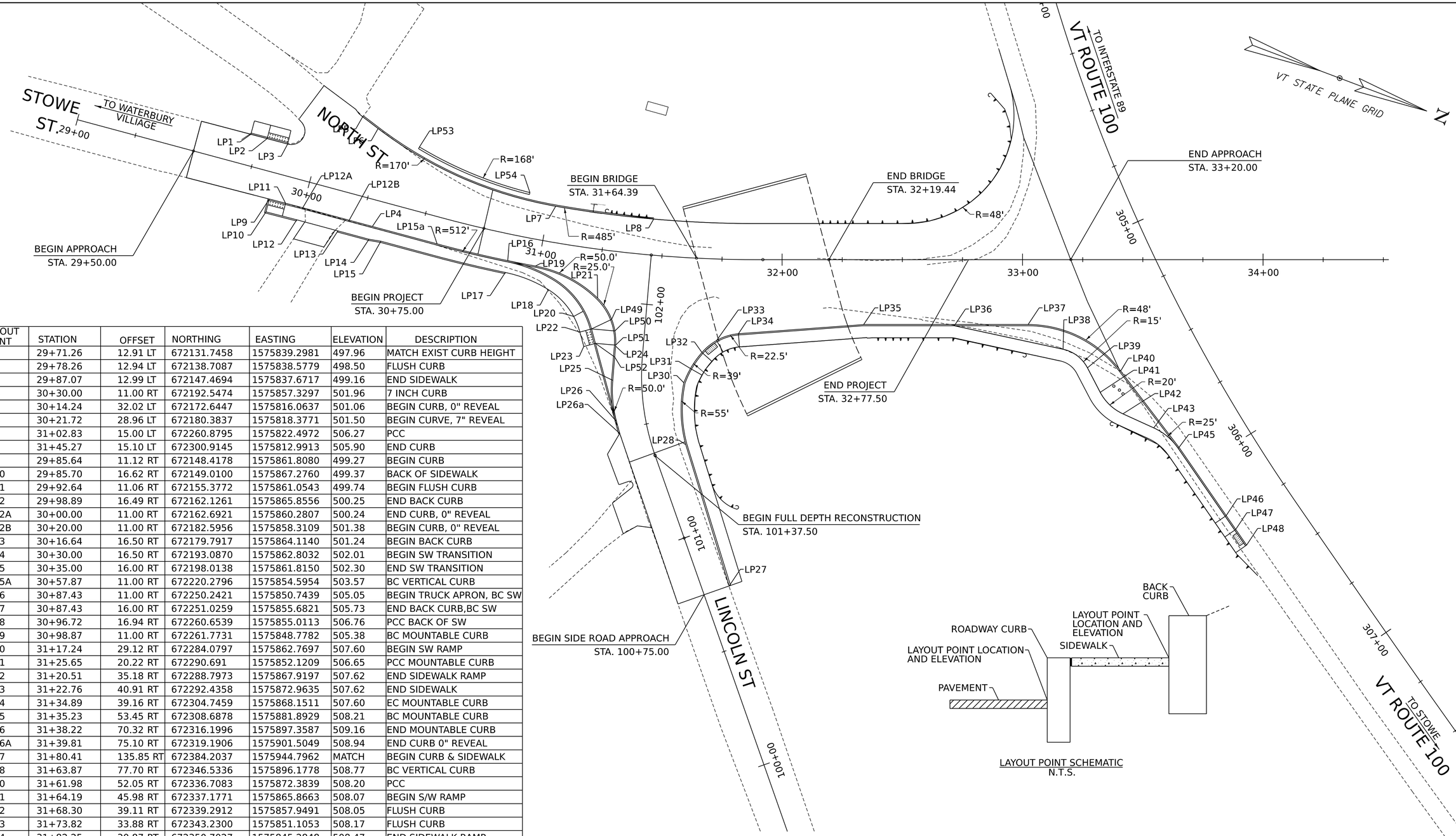
LEGEND

- STONE FILL, TYPE I
- STONE FILL, TYPE IV
- STONE FILL, TYPE IV (UNDER STRUCTURE)

0 20 40
SCALE IN FEET

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME:	z93j040bdr_gen.dgn
PROJECT LEADER:	T. KNIGHT
DESIGNED BY:	T. LUTHER
GENERAL PLAN SHEET 1	
PLOT DATE:	30-MAY-2024
DRAWN BY:	P. ARMATA
CHECKED BY:	T. KNIGHT
SHEET	20 OF 66



LAYOUT POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
LP1	29+71.26	12.91 LT	672131.7458	1575839.2981	497.96	MATCH EXIST CURB HEIGHT
LP2	29+78.26	12.94 LT	672138.7087	1575838.5779	498.50	FLUSH CURB
LP3	29+87.07	12.99 LT	672147.4694	1575837.6717	499.16	END SIDEWALK
LP4	30+30.00	11.00 RT	672192.5474	1575857.3297	501.96	7 INCH CURB
LP5	30+14.24	32.02 LT	672172.6447	1575816.0637	501.06	BEGIN CURB, 0" REVEAL
LP6	30+21.72	28.96 LT	672180.3837	1575818.3771	501.50	BEGIN CURVE, 7" REVEAL
LP7	31+02.83	15.00 LT	672260.8795	1575822.4972	506.27	PCC
LP8	31+45.27	15.10 LT	672300.9145	1575812.9913	505.90	END CURB
LP9	29+85.64	11.12 RT	672148.4178	1575861.8080	499.27	BEGIN CURB
LP10	29+85.70	16.62 RT	672149.0100	1575867.2760	499.37	BACK OF SIDEWALK
LP11	29+92.64	11.06 RT	672155.3772	1575861.0543	499.74	BEGIN FLUSH CURB
LP12	29+98.89	16.49 RT	672162.1261	1575865.8556	500.25	END BACK CURB
LP12A	30+00.00	11.00 RT	672162.6921	1575860.2807	500.24	END CURB, 0" REVEAL
LP12B	30+20.00	11.00 RT	672182.5956	1575858.3109	501.38	BEGIN CURB, 0" REVEAL
LP13	30+16.64	16.50 RT	672179.7917	1575864.1140	501.24	BEGIN BACK CURB
LP14	30+30.00	16.50 RT	672193.0870	1575862.8032	502.01	BEGIN SW TRANSITION
LP15	30+35.00	16.00 RT	672198.0138	1575861.8150	502.30	END SW TRANSITION
LP15A	30+57.87	11.00 RT	672220.2796	1575854.5954	503.57	BC VERTICAL CURB
LP16	30+87.43	11.00 RT	672250.2421	1575850.7439	505.05	BEGIN TRUCK APRON, BC SW
LP17	30+87.43	16.00 RT	672251.0259	1575855.6821	505.73	END BACK CURB,BC SW
LP18	30+96.72	16.94 RT	672260.6539	1575855.0113	506.76	PCC BACK OF SW
LP19	30+98.87	11.00 RT	672261.7731	1575848.7782	505.38	BC MOUNTABLE CURB
LP20	31+17.24	29.12 RT	672284.0797	1575862.7697	507.60	BEGIN SW RAMP
LP21	31+25.65	20.22 RT	672290.691	1575852.1209	506.65	PCC MOUNTABLE CURB
LP22	31+20.51	35.18 RT	672288.7973	1575867.9197	507.62	END SIDEWALK RAMP
LP23	31+22.76	40.91 RT	672292.4358	1575872.9635	507.62	END SIDEWALK
LP24	31+34.89	39.16 RT	672304.7459	1575868.1511	507.60	EC MOUNTABLE CURB
LP25	31+35.23	53.45 RT	672308.6878	1575881.8929	508.21	BC MOUNTABLE CURB
LP26	31+38.22	70.32 RT	672316.1996	1575897.3587	509.16	END MOUNTABLE CURB
LP26A	31+39.81	75.10 RT	672319.1906	1575901.5049	508.94	END CURB 0" REVEAL
LP27	31+80.41	135.85 RT	672384.2037	1575944.7962	MATCH	BEGIN CURB & SIDEWALK
LP28	31+63.87	77.70 RT	672346.5336	1575896.1778	508.77	BC VERTICAL CURB
LP30	31+61.98	52.05 RT	672336.7083	1575872.3839	508.20	PCC
LP31	31+64.19	45.98 RT	672337.1771	1575865.8663	508.07	BEGIN S/W RAMP
LP32	31+68.30	39.11 RT	672339.2912	1575857.9491	508.05	FLUSH CURB
LP33	31+73.82	33.88 RT	672343.2300	1575851.1053	508.17	FLUSH CURB
LP34	31+82.25	30.87 RT	672350.7027	1575845.2848	508.47	END SIDEWALK RAMP
LP35	32+33.93	27.00 RT	672398.1009	1575823.2978	510.53	CURB ANGLE POINT
LP36	32+71.63	27.50 RT	672433.5537	1575810.4421	512.08	S/W ANGLE POINT
LP37	33+02.29	27.00 RT	672462.0571	1575799.1416	513.47	BEGIN CURVE
LP38	33+16.84	37.27 RT	672479.2979	1575803.6117	515.33	BEGIN S/W CURVE
LP39	33+26.97	44.99 RT	672491.4999	1575807.2550	516.25	END S/W CURVE
LP40	33+40.79	46.33 RT	672504.8971	1575803.6198	515.86	END CURVE
LP41	33+32.29	55.19 RT	672500.0832	1575814.9138	516.80	BEGIN S/W CURVE
LP42	33+41.73	64.14 RT	672512.0766	1575819.9471	517.20	END S/W CURVE
LP43	33+54.53	69.96 RT	672526.1031	1575820.8763	517.45	BEGIN S/W CURVE
LP45	33+64.74	78.50 RT	672538.6699	1575825.2593	517.12	END S/W CURVE
LP 46	33+84.65	106.47 RT	672567.1793	1575844.3906	518.04	BEGIN S/W RAMP
LP 47	33+88.64	112.22 RT	672572.9480	1575848.3557	518.20	END CURB, 0" REVEAL

LAYOUT POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
LP48	33+93.15	118.74 RT	672579.4690	1575852.8651	518.36	END S/W
LP49	101+92.49	14.07 LT	672299.2884	1575858.3102	507.12	BEGIN 3" CURB TRANSITION
LP50	101+87.81	12.31 LT	672302.2470	1575862.3409	507.33	FLUSH CURB
LP51	101+81.97	11.49 LT	672304.6245	1575867.7409	507.58	FLUSH CURB
LP52	101+77.16	11.47 LT	672306.0066	1575872.5461	507.79	END 3" CURB TRANSITION
LP53	30+40.00	26.03 LT	672199.1668	1575819.4605	XXX	BEGIN BACK CURB
LP54	30+90.00	18.59 LT	672248.8464	1575820.9887	XX.XX	END BACK CURB

NOTE:
1. ELEVATIONS ARE FINSHED SURFACE AT FACE OF CURB. SEE LAYOUT POINT SCHEMATIC ON THIS SHEET

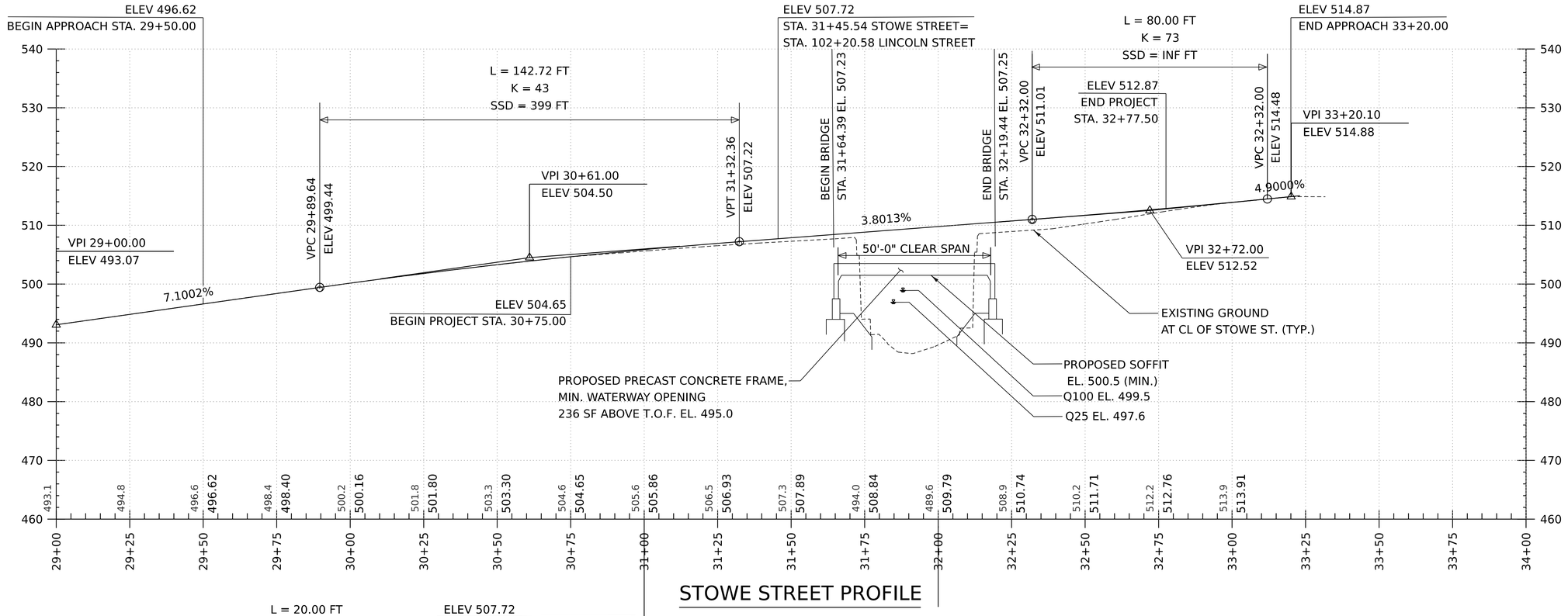
0 20 40
SCALE IN FEET

Stantec

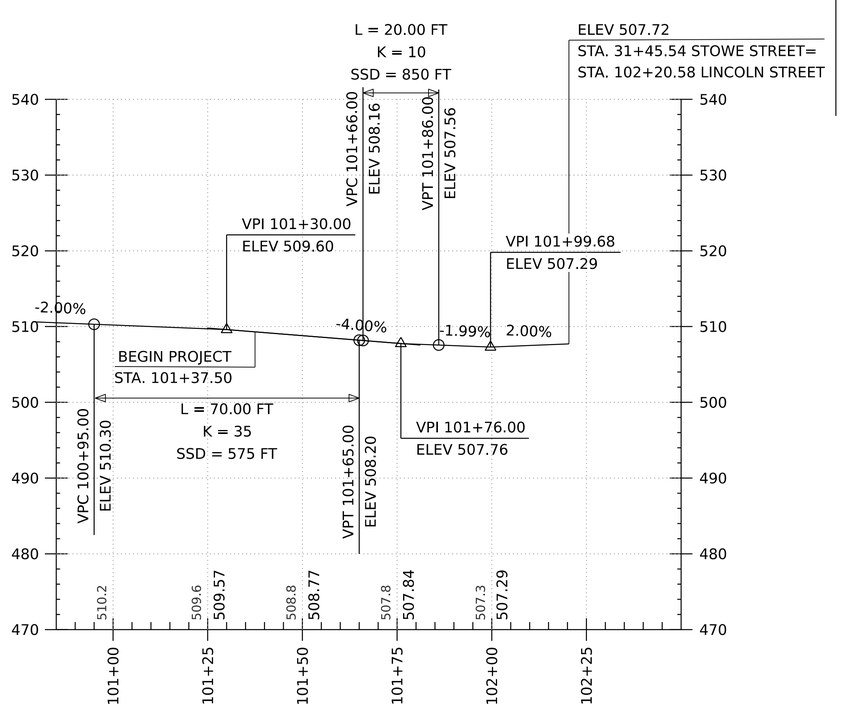
PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040bdr_layout.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: T. LUTHER
LAYOUT PLAN SHEET 1

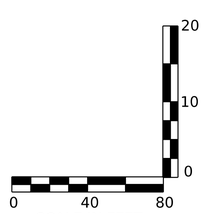
PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: K. RICHARDSON
SHEET 21 OF 66



STOWE STREET PROFILE



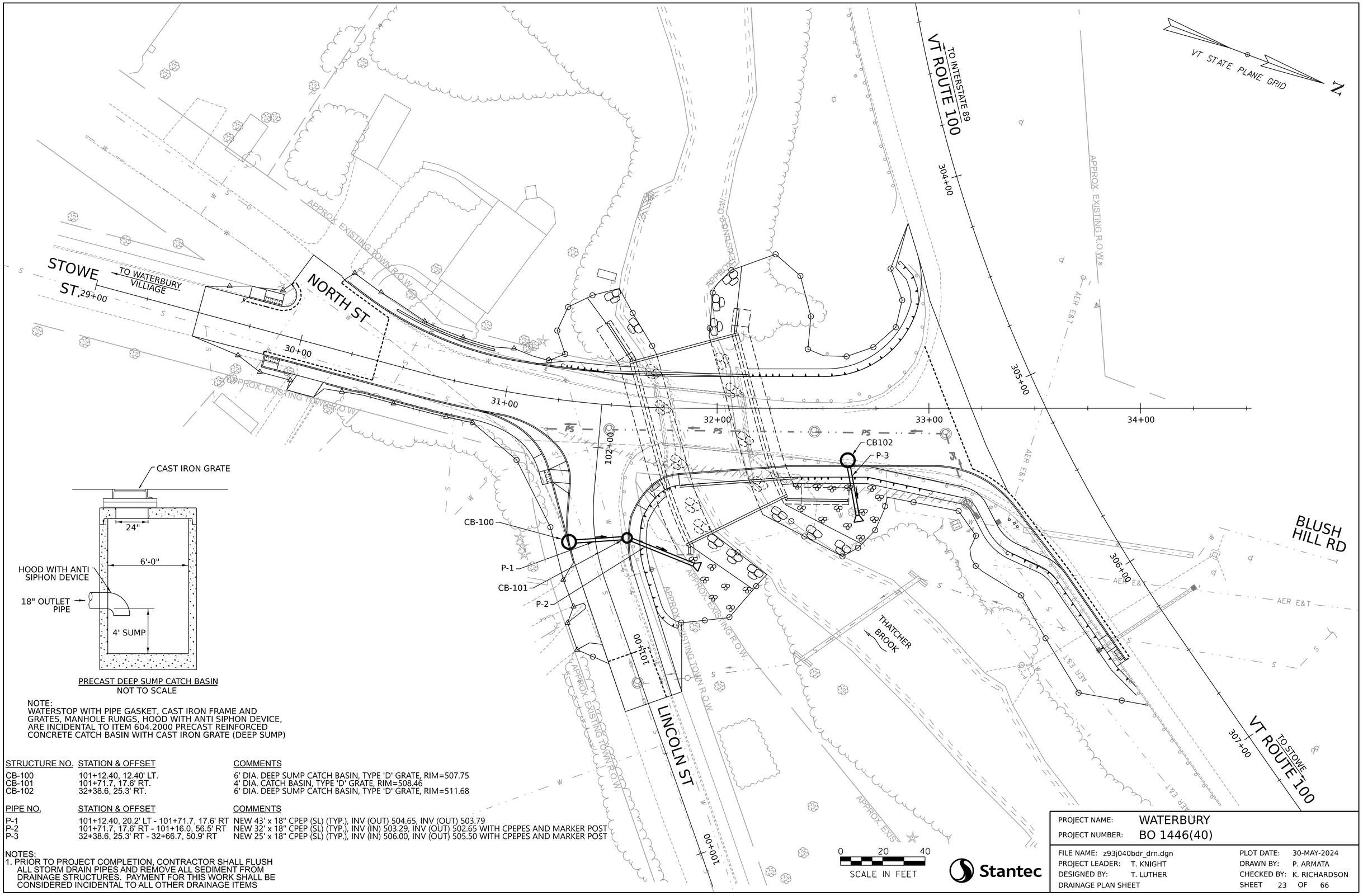
LINCOLN STREET PROFILE



NOTE:
1. EXISTING GRADES ARE SHOWN TO THE NEAREST TENTH. PROPOSED GRADES ARE SHOWN TO THE NEAREST HUNDREDTH.

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

FILE NAME:	z93j040_pro.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	T. LUTHER
DESIGNED BY:	T.LUTHER	CHECKED BY:	S. WINES
ROADWAY PROFILES		SHEET	22 OF 66



PRECAST DEEP SUMP CATCH BASIN
NOT TO SCALE

NOTE:
WATERSTOP WITH PIPE GASKET, CAST IRON FRAME AND GRATES, MANHOLE RUNGS, HOOD WITH ANTI SIPHON DEVICE, ARE INCIDENTAL TO ITEM 604.2000 PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE (DEEP SUMP)

STRUCTURE NO.	STATION & OFFSET	COMMENTS
CB-100	101+12.40, 12.40' LT.	6' DIA. DEEP SUMP CATCH BASIN, TYPE 'D' GRATE, RIM=507.75
CB-101	101+71.7, 17.6' RT.	4' DIA. CATCH BASIN, TYPE 'D' GRATE, RIM=508.46
CB-102	32+38.6, 25.3' RT.	6' DIA. DEEP SUMP CATCH BASIN, TYPE 'D' GRATE, RIM=511.68

PIPE NO.	STATION & OFFSET	COMMENTS
P-1	101+12.40, 20.2' LT - 101+71.7, 17.6' RT	NEW 43' x 18" CPEP (SL) (TYP.), INV (OUT) 504.65, INV (OUT) 503.79
P-2	101+71.7, 17.6' RT - 101+16.0, 56.5' RT	NEW 32' x 18" CPEP (SL) (TYP.), INV (IN) 503.29, INV (OUT) 502.65 WITH CPEPES AND MARKER POST
P-3	32+38.6, 25.3' RT - 32+66.7, 50.9' RT	NEW 25' x 18" CPEP (SL) (TYP.), INV (IN) 506.00, INV (OUT) 505.50 WITH CPEPES AND MARKER POST

NOTES:
1. PRIOR TO PROJECT COMPLETION, CONTRACTOR SHALL FLUSH ALL STORM DRAIN PIPES AND REMOVE ALL SEDIMENT FROM DRAINAGE STRUCTURES. PAYMENT FOR THIS WORK SHALL BE CONSIDERED INCIDENTAL TO ALL OTHER DRAINAGE ITEMS

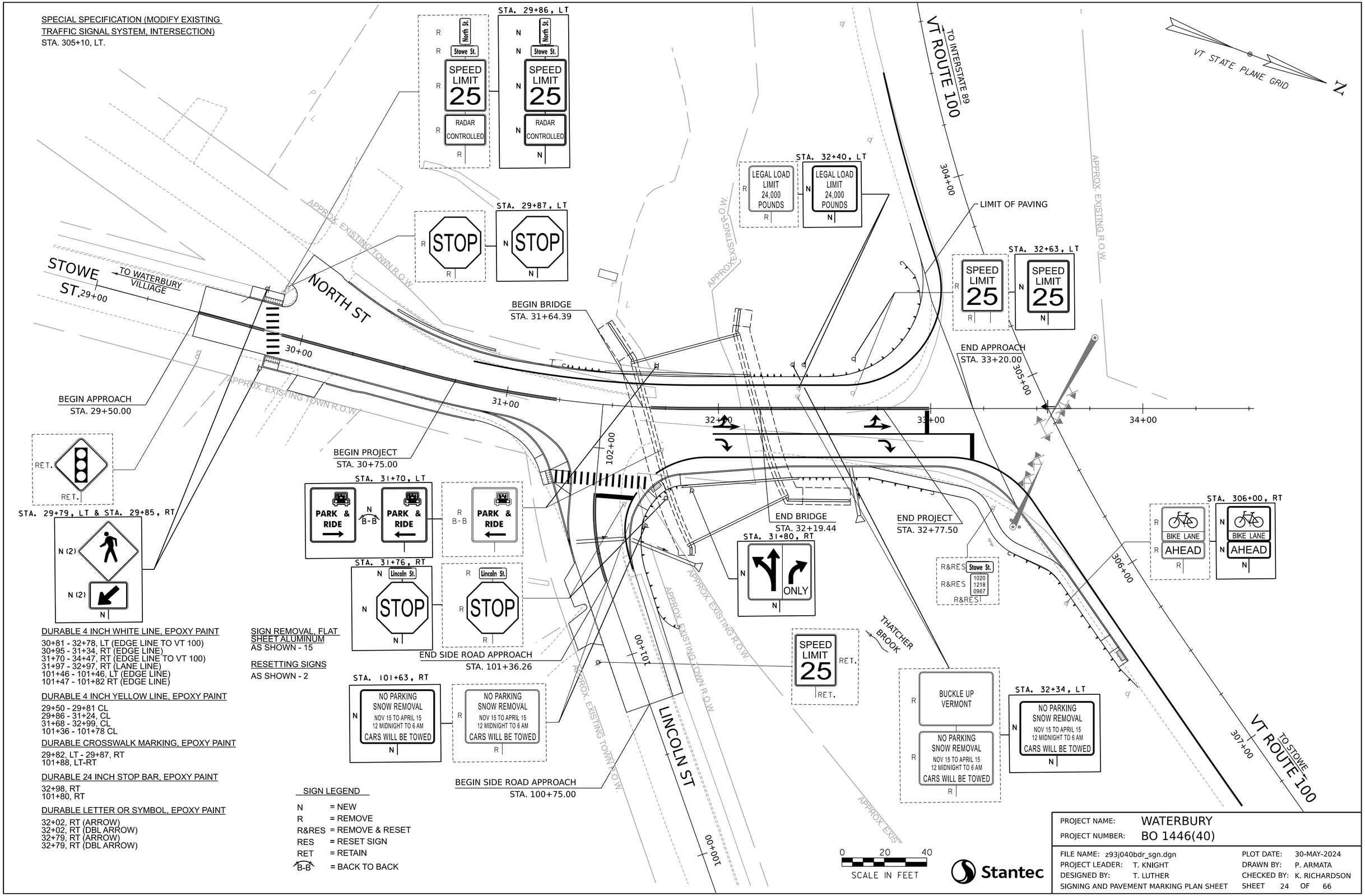
Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040bdr_drn.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: T. LUTHER
DRAINAGE PLAN SHEET

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: K. RICHARDSON
SHEET 23 OF 66

SPECIAL SPECIFICATION (MODIFY EXISTING TRAFFIC SIGNAL SYSTEM, INTERSECTION)
STA. 305+10, LT.



DURABLE 4 INCH WHITE LINE, EPOXY PAINT

30+81 - 32+78, LT (EDGE LINE TO VT 100)
30+95 - 31+34, RT (EDGE LINE)
31+70 - 34+47, RT (EDGE LINE TO VT 100)
31+97 - 32+97, RT (LANE LINE)
101+46 - 101+46, LT (EDGE LINE)
101+47 - 101+82 RT (EDGE LINE)

DURABLE 4 INCH YELLOW LINE, EPOXY PAINT

29+50 - 29+81 CL
29+86 - 31+24, CL
31+68 - 32+99, CL
101+36 - 101+78 CL

DURABLE CROSSWALK MARKING, EPOXY PAINT

29+82, LT - 29+87, RT
101+88, LT-RT

DURABLE 24 INCH STOP BAR, EPOXY PAINT

32+98, RT
101+80, RT

DURABLE LETTER OR SYMBOL, EPOXY PAINT

32+02, RT (ARROW)
32+02, RT (DBL ARROW)
32+79, RT (ARROW)
32+79, RT (DBL ARROW)

SIGN REMOVAL, FLAT SHEET ALUMINUM
AS SHOWN - 15

RESETTING SIGNS
AS SHOWN - 2

SIGN LEGEND

N	= NEW
R	= REMOVE
R&RES	= REMOVE & RESET
RES	= RESET SIGN
RET	= RETAIN
B-B	= BACK TO BACK

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040bdr_sgn.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: T. LUTHER	CHECKED BY: K. RICHARDSON
SIGNING AND PAVEMENT MARKING PLAN SHEET	SHEET 24 OF 66

Stantec

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET 1

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST		NEW SIGN POSTS																				REMARKS	SIGN DETAIL		
												FLANGED CHANNEL			SQUARE STEEL (in)					TUBULAR ALUMINUM /O (in)			TUBULAR STEEL /O (in)					W-SHAPE STEEL								
		EA	WIDTH (in)	HEIGHT (in)	"A"	"B"	SALV SIGN	SALV TIS	BE IN PLACE	SALVAGE	NO. OF POSTS	lb/ft			1.75	2.0	2.5	ANCHOR	STEEL	3.0	4.0	4.0 MOD	FOUND-ATION	3.0	3.5	4.0	5.0	FTG. SIZE		WEIGHT	POST SIZE	SIGN ERECTED BY STATE		DETAIL IN SHSM BOOK	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
												lb/ft			lb/ft					lb/ft				lb/ft				24"	30"						
												1.12	2.0	3.0	1.88	2.42	3.35			1.3	1.7	1.7		7.6	9.0	10.8	14.6								
29+86, LT.	North St.	1	42"	12"	3.50																											D3-1(3)		22	
	Stowe St.	1	42"	12"	3.50																											D3-1(3)		22	
	SPEED LIMIT 25	1	24"	30"	5.00						1				15			1														R2-1	X		
	RADAR CONTROLLED	1	24"	18"	3.00																											X	X		
29+87, LT	STOP	1	30"	30"	6.25						1				15			1															R1-1	X		
29+79, LT		1	30"	30"	6.25						1				15			1															W11-2	X		
		1	24"	12"	2.00																											W16-7P	X		
29+85, RT		1	30"	30"	6.25						1				15			1															W11-2	X		
		1	24"	12"	2.00																											W16-7P	X		
31+70, LT	PARK & RIDE	1	30"	36"	7.50						1				15			1															SIGN IN CODE D4-2		X	
	& PARK RIDE	1	30"	36"	7.50																														
31+76, RT	Lincoln St.	1	42"	12"	3.50						1				15			1															D3-1(3)		22	
	STOP	1	30"	30"	6.25																											R1-1			
31+80, RT	ONLY	1	30"	36"	7.50						1				15			1															VAOT: VR-922	X		E-145A
												FT	FT	FT	FT	FT 105	FT		EA	LB	LB	LB		LB	LB	LB	LB								
SUB TOTAL		SF	SF	EA.	SF							FT			FT 105					LB			EA.	LB				EA.	EA.	LB				
		70.00																																	

"SHSM"-STANDARD HIGHWAY SIGNS AND MARKINGS BOOK
"FYG"-FLOURESCENT YELLOW-GREEN

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040bdr_sgn.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: P. ARMATA
TRAFFIC SIGN SUMMARY SHEET 1

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: K. RICHARDSON
SHEET 25 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET 2

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST		NEW SIGN POSTS																			SIGN DETAIL			REMARKS
		EA	WIDTH (in)	HEIGHT (in)	"A"	"B"	SALV SIGN	SALV TIS	BE IN PLACE	SALVAGE	NO. OF POSTS	FLANGED CHANNEL lb/ft			SQUARE STEEL (in) lb/ft			ANCHOR	STEVE	TUBULAR ALUMINUM /O (in) lb/ft			TUBULAR STEEL /O (in) FOUND-ATION	lb/ft				W-SHAPE STEEL FTG. SIZE		WEIGHT	POST SIZE	SIGN TO BE REMOVED		DETAIL IN SHSM BOOK	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER	
												1.12	2.0	3.0	1.75	2.0	2.5			3.0	4.0	4.0 MOD		3.0	3.5	4.0	5.0	24"	30"							
															1.88	2.42	3.35			1.3	1.7	1.7		7.6	9.0	10.8	14.6									
32+34, LT.	NO PARKING SNOW REMOVAL NOV 15 TO APRIL 15 12 MIDNIGHT TO 6 AM CARS WILL BE TOWED	1	31"	15"	3.23						1					15		1																22	
32+40, LT.	LEGAL LOAD LIMIT 24,000 POUNDS	1	24"	30"	5.00						1					15		1																VAOT: VR-017	X		T-70
32+63, LT.	SPEED LIMIT 25	1	24"	30"	5.00						1					15		1																R2-1	X		
306+00, LT.	BIKE LANE	1	24"	18"	3.00						1					15		1																R3-17	X		
	AHEAD	1	24"	8"	1.33																													R3-17aP	X		
101+63, LT.	NO PARKING SNOW REMOVAL NOV 15 TO APRIL 15 12 MIDNIGHT TO 6 AM CARS WILL BE TOWED	1	31"	15"	3.23						1					15		1																22	
SUB TOTAL		SF 20.79	SF	EA.	SF		FT	FT	FT	FT	FT 75	FT		EA	LB	LB	LB		LB	LB	LB	LB		EA.	EA.	LB									

"SHSM"-STANDARD HIGHWAY SIGNS AND MARKINGS BOOK
"FYG"-FLOURESCENT YELLOW-GREEN

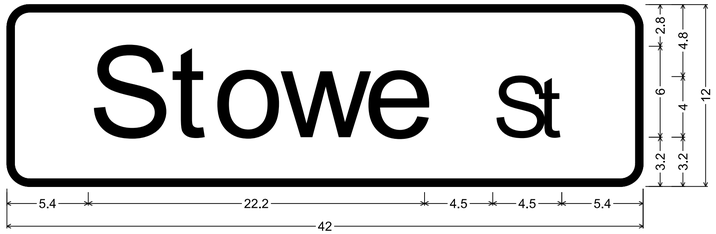
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."

Stantec

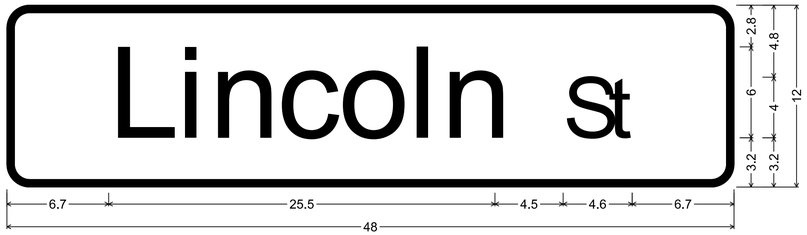
PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040bdr_sgn.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: P. ARMATA
TRAFFIC SIGN SUMMARY SHEET 2

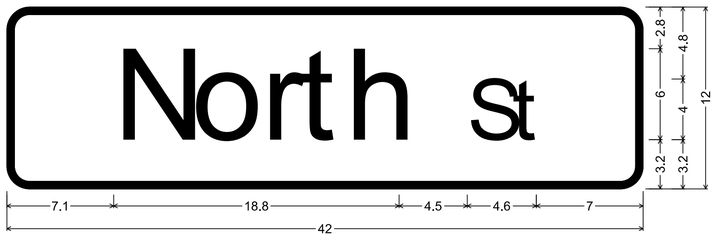
PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: K. RICHARDSON
SHEET 26 OF 66



D3-1(3)_VARx12;
1.5" Radius, 0.5" Border, White on, Green;
"Stowe", D 2K; "St", D 2K;



D3-1(3)_VARx12;
1.5" Radius, 0.5" Border, White on, Green;
"Lincoln", D 2K; "St", D 2K;



D3-1(3)_VARx12;
1.5" Radius, 0.5" Border, White on, Green;
"North", D 2K; "St", D 2K;

0.5" Radius, 0.3" Border, Red on, White;
"NO PARKING", Highway E Mod Plus;
"SNOW REMOVAL", Highway E Mod Plus;
"NOV 15 TO APRIL 15", Highway E Mod Plus;
"12 MIDNIGHT TO 6 AM", Highway E Mod Plus;
"CARS WILL BE TOWED", Highway E Mod Plus;

Stantec

PROJECT NAME:	WATERBURY		
PROJECT NUMBER:	BO 1446(40)		
FILE NAME: z93j040bdr_sgn.dgn		PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	P. ARMATA
DESIGNED BY:	T. LUTHER	CHECKED BY:	K. RICHARDSON
SIGN DETAIL PLAN SHEET		SHEET 27	OF 66

LEGEND:

- AOT RURAL AREA MIX
- AOT URBAN AREA MIX
- WILDFLOWER SEED
- PERENNIAL BED
- TUBELINGS WITH RURAL AREA MIX
- xxxxxxxx TREE PROTECTION ZONE (TPZ)
- 12" LANDSCAPE BACKFILL, GEOTEXTILE FABRIC, BARK MULCH. GEOTEXTILE TO MEET THE REQUIREMENTS FOR UNDERDRAIN TRENCH LINING, COST INCIDENTAL TO LANDSACPE BACKFILL.
- DECIDUOUS TREE
- EVERGREEN TREE
- DECIDUOUS SHRUB

VT STATE PLANE GRID

N

STOWE ST.

TO WATERBURY VILLIAGE

NORTH ST

LINCOLN ST

BLUSH HILL RD

THATCHER BROOK

MIX EVENLY IN BED. TRIANGULATE PATTERN:
(10) HH
(10) HS
(10) HR

SAVE TREE

SAVE TREE & PLANT BED

SAVE TREES

SAVE TREE

SAVE TREE

(1) AL
(2) VO
(2) CS

(4) T-B
(4) T-D
(4) T-S

(3) AB

(18) RA

(4) SM
(9) CK

(1) PG
(1) TC
(1) ML

(4) CS
(2) QR

(3) VO
(3) CS

(12) T-B
(12) T-D
(12) T-S

(5) SS
(1) QB

(1) QB
(4) AL

(4) VO
(3) VL

(3) SS

(2) AL
(7) CS

(1) PG
(1) TC
(1) MH
(1) PG

(3) PG
(3) AL
(1) QB
(5) SS

APPROX. EXISTING TOWN R.O.W.

AER E&T

BF

0 20 40
SCALE IN FEET

KEY	QUANTITY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONTAINER	SPACING (ON CENTER)
TREES - EVERGREEN						
AB	3	*Abies balsamea 'Tyler Blue'*	'Tyler Blue' Balsam Fir	6-7' height	B&B	12' O.C.
PG	5	*Picea glauca*	White spruce	6-7' height	B&B	8' O.C.
TC	2	*Tsuga canadensis*	Eastern Hemlock	5-6' height, natural	B&B	12' O.C.
TREES - DECIDUOUS						
QB	3	*Quercus bicolor*	Swamp White Oak	2"-2 1/2" CAL.	B&B	25' O.C.
QR	2	*Quercus rubra*	Red oak	2"-2 1/2" CAL.	B&B	30' O.C.
MH	1	*Malus* 'Haralred'	'Crimson Topaz' Apple	5-6' height	B&B	SEE PLAN
ML	1	*Malus* 'Liberty'	'Liberty' Apple	5-6' height	B&B	SEE PLAN
SM	4	*Syringa meyeri* 'Palibin'	Meyer lilac	5 GAL.	CONT.	5' O.C.
SHRUBS - DECIDUOUS						
AL	10	*Alnus rugosa*	Speckled Alder	3 GAL.	CONT.	12' O.C.
CS	18	*Cornus sericea*	Red twig dogwood	2 GAL.	CONT.	6' O.C.
CK	7	*Cornus sericea* 'Kelseyi'	'Kelseyi' red twig dogwood	3 GAL.	CONT.	6' O.C.
RA	18	*Rhus aromatica* 'Gro-low'	'Gro-low' fragrant sumac	2 GAL.	CONT.	4' O.C.
SS	13	*Salix sericea*	Silky willow	2 GAL.	CONT.	6' O.C.
VL	3	*Viburnum lentago*	Nannyberry	2 GAL.	CONT.	8' O.C.
VO	9	*Viburnum opulus var. americanum*	Highbush cranberry	2 GAL.	CONT.	8' O.C.
PERENNIALS						
HH	10	Hemerocallis 'Happy Returns'	'Happy Returns' Daylily	1 GAL.	CONT.	24" O.C.
HS	10	Hemerocallis 'Stella de Oro'	'Stella de Oro' Daylily	1 GAL.	CONT.	24" O.C.
HR	10	Hemerocallis 'Rosy Returns'	'Rosy Returns' Daylily	1 GAL.	CONT.	24" O.C.
TUBELINGS						
T-B	32	Salix bebbiana	Bebb's willow	12-18" height	Tubeling	5' O.C.
T-D	32	Salix discolor	Pussy willow	12-18" height	Tubeling	5' O.C.
T-S	32	Salix sericea	Silky willow	12-18" height	Tubeling	5' O.C.

NOTES:

1. VAOT URBAN AREA MIX SHALL BE INSTALLED ONLY IN AREAS THAT WILL BE FREQUENTLY MAINTAINED AND USED AS TRADITIONAL LAWN. VAOT LOW GROW/FINE FESCUE MIX AND VAOT RURAL AREA MIX SHALL BE USED IN AREAS THAT WILL BE MAINTAINED INFREQUENTLY OR LEFT TO NATURALIZE.

2. SEEDED AREAS SHALL BE PROTECTED IN ACCORDANCE WITH SPECIFICATION SUBSECTION 651.07 PROTECTION. IF WETLANDS OR WETLAND BUFFERS ARE PRESENT, STRAW MULCH SHALL BE USE INSTEAD OF HAY MULCH.

3. IF AREAS WITHIN PDF OR BARRIER FENCE ARE NOT DISTURBED, THEY SHOULD REMAIN VEGETATED, AND ADDITIONAL REVEGETATION IS NOT REQUIRED.

4. PROVIDING SUFFICIENT MOISTURE IS CRITICAL DURING THE ENTIRE PLANT ESTABLISHMENT PERIOD. WATERING TO BE PAID FOR UNDER 656.65 LANDSCAPE WATERING.

5. TUBELING SPECIES TO BE EVENLY MIXED.

6. APPLY MYCORRHIZAL FUNGI PER MANUFACTURERS RECOMMENDATIONS TO TREES AND SHRUBS.

WILDFLOWER SEED:
WILDFLOWER SEED TO BE PAID FOR UNDER 651.16 WILDFLOWER SEED. APPLICATION RATES VARY BY SEED MIX. WILDFLOWER SEED TO BE ONE OF THE FOLLOWING, OR APPROVED EQUAL:

-VERMONT NATIVE WILDFLOWER & GRASS MIX
SUPPLIER: VERMONT WETLAND PLANT SUPPLY. APPLICATION RATE: 18 LBS/ACRE.

-NEW ENGLAND WILDFLOWER MIX
SUPPLIER: NEW ENGLAND WETLAND PLANTS, INC. APPLICATION RATE: 23 LBS/ACRE.

-PA NEW ENGLAND PROVINCE UPL MEADOW MIX
SUPPLIER: ERNST CONSERVATION SEEDS, INC. APPLICATION RATE: 20 LBS/ACRE WITH 30 LBS/ACRE OF A COVER CROP. FOR A COVER CROP USE EITHER GRAIN OATS (1 JAN TO 31 JUL) OR GRAIN RYE (1 AUG TO 31 DEC).

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: w93j040bdr_lds.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: B. DONAHUE
LANDSCAPE PLAN

PLOT DATE: 30-MAY-2024
DRAWN BY: B. DONANUE
CHECKED BY: B. DONAHUE
SHEET 28 OF 66


PROPOSED POLE WITH 15' ANCHOR (POST CONSTRUCTION)(BY OTHERS) SEE NOTE 2
PROPOSED SPAN GUY, POLE AND 20' ANCHOR TO BE INSTALLED BY UTILITY AFTER CONSTRUCTION IS COMPLETE (BY OTHERS)
VT STATE PLANE GRID
N
RELOCATE AERIAL & TELECOMMUNUICATIONS (BY OTHERS)
EXISTING POLE TO BE REMOVED (BY OTHERS)
RELOCATE AERIAL & TELECOMMUNUICATIONS (BY OTHERS)
APPROX. EXISTING TOWN R.O.W.
APPROX. EXISTING R.O.W.
APPROX. EXISTING R.O.W.
TO WATERBURY VILLIAGE
29+00
30+00
31+00
32+00
33+00
34+00
304+00
305+00
306+00
307+00
N05°37'52"W
N20°41'29"W
S74°19'22"W
S16°06'32"W
N34°39'54"E
102+00
101+00
100+00
2+00
1+00
REMOVE OVERHEAD STRAND, POLE AND GUY (BY OTHERS)
APPROX. EXISTING TOWN R.O.W.
APPROX. EXISTING TOWN R.O.W.
PROPOSED POLE WITH TEMPORARY 22' PUSH BRACE (BY OTHERS)(SEE NOTE 2)
EXISTING POLE TO BE REMOVED (BY OTHERS)
ADJUST ANCHORS (BY OTHERS)
RELOCATE AERIAL & TELECOMMUNUICATIONS (BY OTHERS)
RELOCATE SERVICE (BY OTHERS)
THATCHER BROOK
APPROX. EXISTING R.O.W.
EXISTING POLE TO BE REMOVED (BY OTHERS)
PROPOSED POLE WITH TWO, 20' DEAD END ANCHORS (BY OTHERS)
PROPOSED POLE WITH 20' DEAD END ANCHOR (BY OTHERS)
PROPOSED POLE WITH 3 DEAD END ANCHORS (20', 23 & 26') (BY OTHERS)
RELOCATE SERVICE (BY OTHERS)
APPROX. EXISTING TOWN R.O.W.
RELOCATE AERIAL ELECTRIC & TELECOMMUNUICATIONS (TYP) (BY OTHERS)
PROPOSED POLE WITH 20' DEAD ANCHOR (BY OTHERS)
ASSUMED LOCATION PROPOSED TEMPORARY SEWER FORCE MAIN (SEE SEWER RELOCATION PLAN)
APPROX. EXISTING R.O.W.
PROPOSED SEWER MANHOLE
RELOCATE AERIAL & TELECOMMUNUICATIONS
ADJUST BISECT ANCHOR
AER E&T
BF
0
20
40
SCALE IN FEET

1. AERIAL RELOCATING SHALL BE DONE BY OTHERS AND IS SHOWN ON THIS SHEET FOR INFORMATIONAL PURPOSES ONLY.
2. CONTRACTOR SHALL COORDINATE WITH THE ELECTRIC COMPANY. INSTALLATION OF THE GUY POLE AND ANCHOR AND THE REMOVAL OF THE TEMPORARY PUSH BRACE AT THE SE CORNER OF STOWE STREET AND LINCOLN STREET. LANDSCAPING AROUND THIS POLE SHALL OCCUR AFTER THE PUSH BRACE IS REMOVED.

Stantec

PROJECT NAME:	WATERBURY		
PROJECT NUMBER:	BO 1446(40)		
FILE NAME:	z93j040bdr_util.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	P. ARMATA
DESIGNED BY:	T. KNIGHT	CHECKED BY:	K. RICHARDSON
PROPOSED UTILITY RELOC. PLAN		SHEET	29 OF 66

ITEM 604.2200 SANITARY SEWER MANHOLE

1. STA. 31+50, 11.5′ RT. (SMH #1)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE (4' I.D.) WITH NEW CAST IRON FRAME AND COVER

2. STA. 32+46, 11.0′ RT. (SMH #2)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE (4' I.D.) WITH NEW CAST IRON FRAME AND COVER

3. STA. 33+08, 12.0′ RT. (SMH #3)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE (4' I.D.) WITH NEW CAST IRON FRAME AND COVER

4. STA. 33+17, 45′ RT. (SMH #4)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE (4' I.D.) WITH NEW CAST IRON FRAME AND COVER

5. STA. 100+86, 1.5′ LT. (SMH #5)
CONSTRUCT NEW PRECAST CONCRETE SANITARY SEWER MANHOLE (4' I.D.) WITH NEW CAST IRON FRAME AND COVER

ITEM 628.1532 PVC SEWER PIPE, ALL-INCLUSIVE, 8 INCH

6. STA. 31+22, 14′ RT. TO STA. 31+50, 11.5′ RT.
INSTALL 30 LF X 8″SDR 35 PVC SEWER PIPE (SMH #199 TO SMH #1)

7. STA. 32+46, 11.0′ RT. TO STA. 33+08, 12.0′ RT.
INSTALL 62 LF X 8″SDR 35 PVC SEWER PIPE (SMH #2 TO SMH #3)

8. STA. 33+08, 12.0′ RT. TO STA. 33+17, 45′ RT.
INSTALL 34 LF X 8″SDR 35 PVC SEWER PIPE (SMH #3 TO SMH #4)

9. STA. 33+17, 45′ RT. TO STA. 33+23, 52' RT.
INSTALL 10 LF X 8″ SDR 35 PVC SEWER PIPE STUB. CONNECT TO EXISTING 8" PVC SEWER MAIN WITH 8" FLEXIBLE RUBBER TRANSITION COUPLING

10. STA. 100+86, 1.5′ LT. TO STA. 100+80, 21.5′ RT.
INSTALL 23 LF X 8″ SDR 35 PVC SEWER PIPE (SMH #4 TO NEW SEWER CLEANOUT)

11. STA. 100+76, 1.5′ LT. TO STA. 100+86, 1.5' LT.
INSTALL 10 LF X 8″SDR 35 PVC SEWER PIPE STUB CONNECT TO EXISTING 8" PVC SEWER MAIN WITH 8" FLEXIBLE RUBBER TRANSITION COUPLING

12. STA. 100+86, 1.5′ LT. TO STA. 100+96, 1.5' LT.
INSTALL 10 LF X 8″SDR 35 PVC SEWER PIPE STUB CONNECT TO EXISTING 8" PVC SEWER MAIN WITH 8" FLEXIBLE RUBBER TRANSITION COUPLING

ITEM 628.1540 PVC SEWER PIPE, ALL-INCLUSIVE, 10 INCH (PRE-INSULATED)

13. STA. 31+50, 11.5′ RT. TO STA. 32+46, 11.0′ RT.
INSTALL 97 LF X 10″PRE-INSULATED DR 25 C900 PVC SEWER PIPE (SMH #1 TO SMH #2). SEE SHEET SD-4, SEWER DETAILS, FOR ADDITIONAL INFORMATION.

ITEM 628.3100 SEWER CLEANOUT, ALL-INCLUSIVE

14. STA. 100+80, 21.5′ RT.
CONSTRUCT NEW 6″SANITARY SEWER CLEANOUT

ITEM 628.4300 TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL-INCLUSIVE

15. STA. 100+80, 21.5′ RT. TO STA. 33+63, 104′ RT.
(NEW SEWER CLEANOUT TO SMH #210) CONTRACTOR SHALL MAINTAIN EXISTING SEWAGE SYSTEM FLOWS DURING CONSTRUCTION OF THE RELOCATED SANITARY SEWER MAINS AND SANITARY SEWER MANHOLES. SEE SPECIFICATIONS AND SHEET SD-1, SEWER DETAILS, FOR DETAILS. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 628.4300 TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL-INCLUSIVE.

16. STA. 100+80, 21.5′ RT. TO STA. 33+63, 104′ RT.
INSTALL TEMPORARY SEWER BYPASS FORCE MAIN AS REQUIRED BETWEEN NEW SEWER CLEANOUT AND SMH #210. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 628.4300 TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL-INCLUSIVE.

ITEM 628.4300 TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL-INCLUSIVE

17. STA. 31+22, 14′ RT. TO STA. 31+71, 26′ RT.
SMH #199 TO SMH #208 REMOVE EXISTING 8″ PVC SEWER PIPING

18. STA. 31+71, 26′ RT. TO STA. 33+17, 45′ RT.
SMH #208 TO SMH #209
REMOVE EXISTING UTILTY BRIDGE AND 10″ STEEL SEWER PIPING

19. STA. 33+17, 45′ RT. TO STA. 33+23, 52′ RT.
SMH #209 TO CONNECTION TIE-IN
REMOVE EXISTING 8″ PVC SEWER PIPING

20. STA. 20+79 +/- TO STA. 21+47 +/-
INSTALL TEMPORARY UTILITY SUPPORT BRIDGE AND TEMPORARY ABUTMENTS TO SUPPORT TEMPORARY SEWER BYPASS FORCE MAIN. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 628.4300, TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL-INCLUSIVE.

GENERAL NOTE:

REMOVE EXISTING REINFORCED CONCRETE ROADWAY (ASSUMED 20' X 9" THICK, EXACT LOCATION UNKNOWN). REMOVAL TO BE PAID AS SOLID ROCK EXCAVATION. SEE PROPOSED STOWE STREET AND LINCOLN STREET TYPICAL SECTIONS FOR DETAILS.

ITEM 604.4000
CHANGING ELEVATION OF DROP INLETS, CATH BASINS, OR MANHOLES

STA. 101+34, 23′ RT.
(WATER MAIN ISOLATION VALVE MANHOLE)
EXISTING RIM ELEV. = 507.8
NEW RIM ELEV. = 509.50

ITEM 604.4200
CHANGING ELEVATION OF SEWER MANHOLES

STA. 31+22, 14′ RT. (SMH #199)
EXISTING RIM ELEV. = 506.4
NEW RIM ELEV. = 506.53

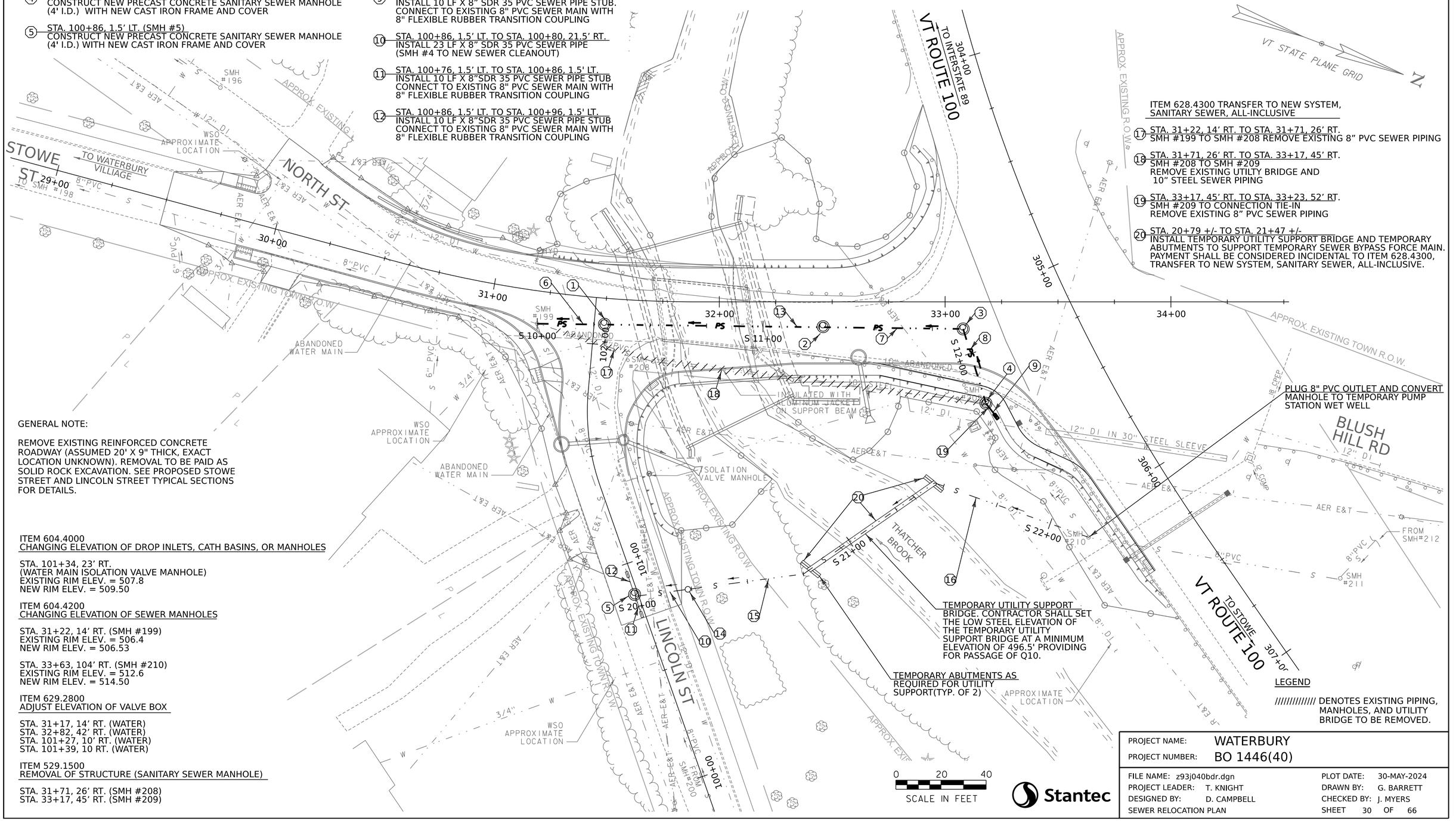
STA. 33+63, 104′ RT. (SMH #210)
EXISTING RIM ELEV. = 512.6
NEW RIM ELEV. = 514.50

ITEM 629.2800
ADJUST ELEVATION OF VALVE BOX

STA. 31+17, 14′ RT. (WATER)
STA. 32+82, 42′ RT. (WATER)
STA. 101+27, 10′ RT. (WATER)
STA. 101+39, 10 RT. (WATER)

ITEM 529.1500
REMOVAL OF STRUCTURE (SANITARY SEWER MANHOLE)

STA. 31+71, 26′ RT. (SMH #208)
STA. 33+17, 45′ RT. (SMH #209)



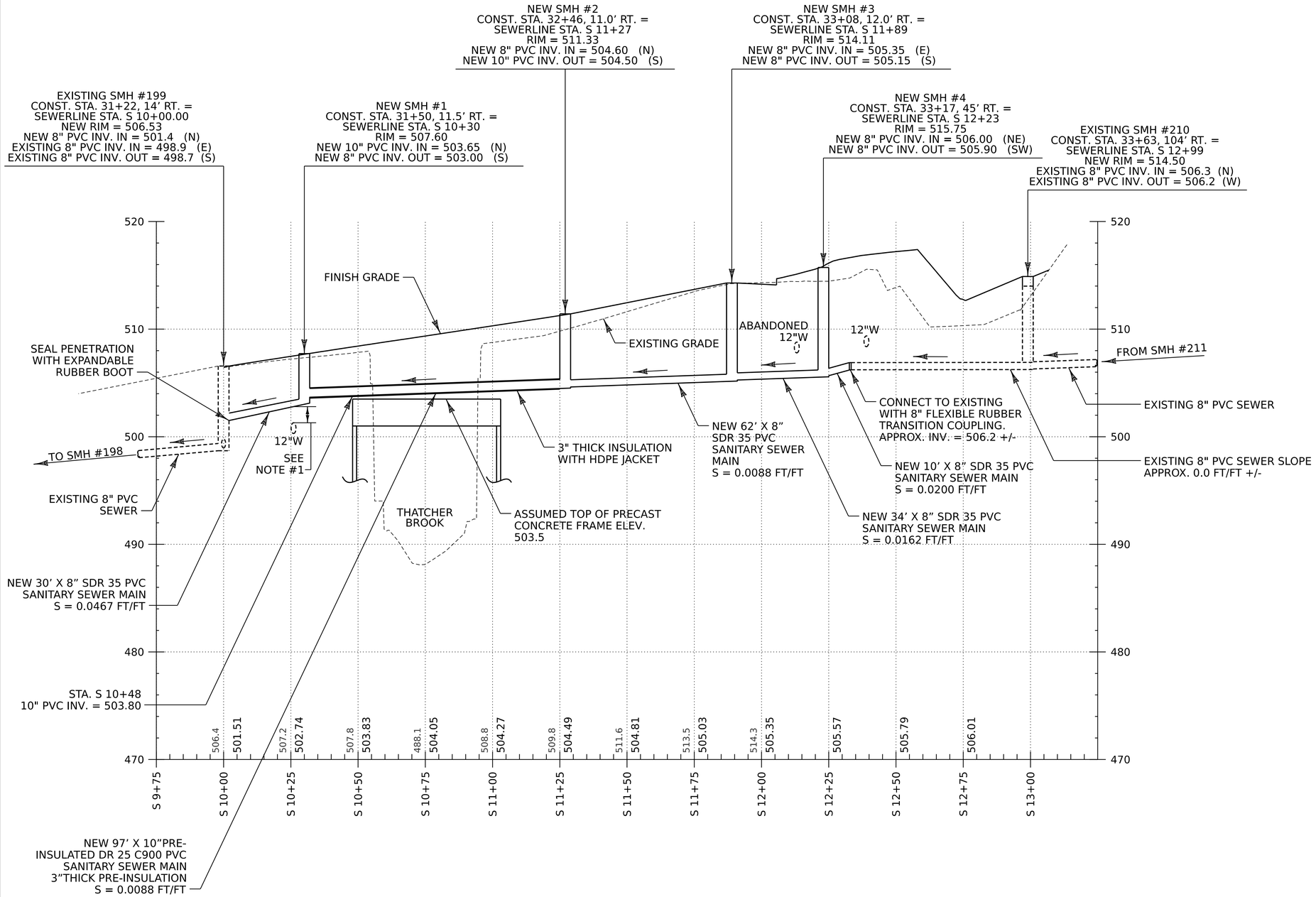
LEGEND

//////////// DENOTES EXISTING PIPING, MANHOLES, AND UTILITY BRIDGE TO BE REMOVED.

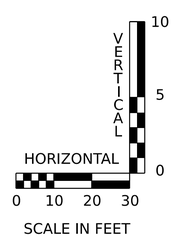
Stantec

PROJECT NAME:	WATERBURY		
PROJECT NUMBER:	BO 1446(40)		
FILE NAME:	z93j040bdr.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	G. BARRETT
DESIGNED BY:	D. CAMPBELL	CHECKED BY:	J. MYERS
SEWER RELOCATION PLAN		SHEET	30 OF 66

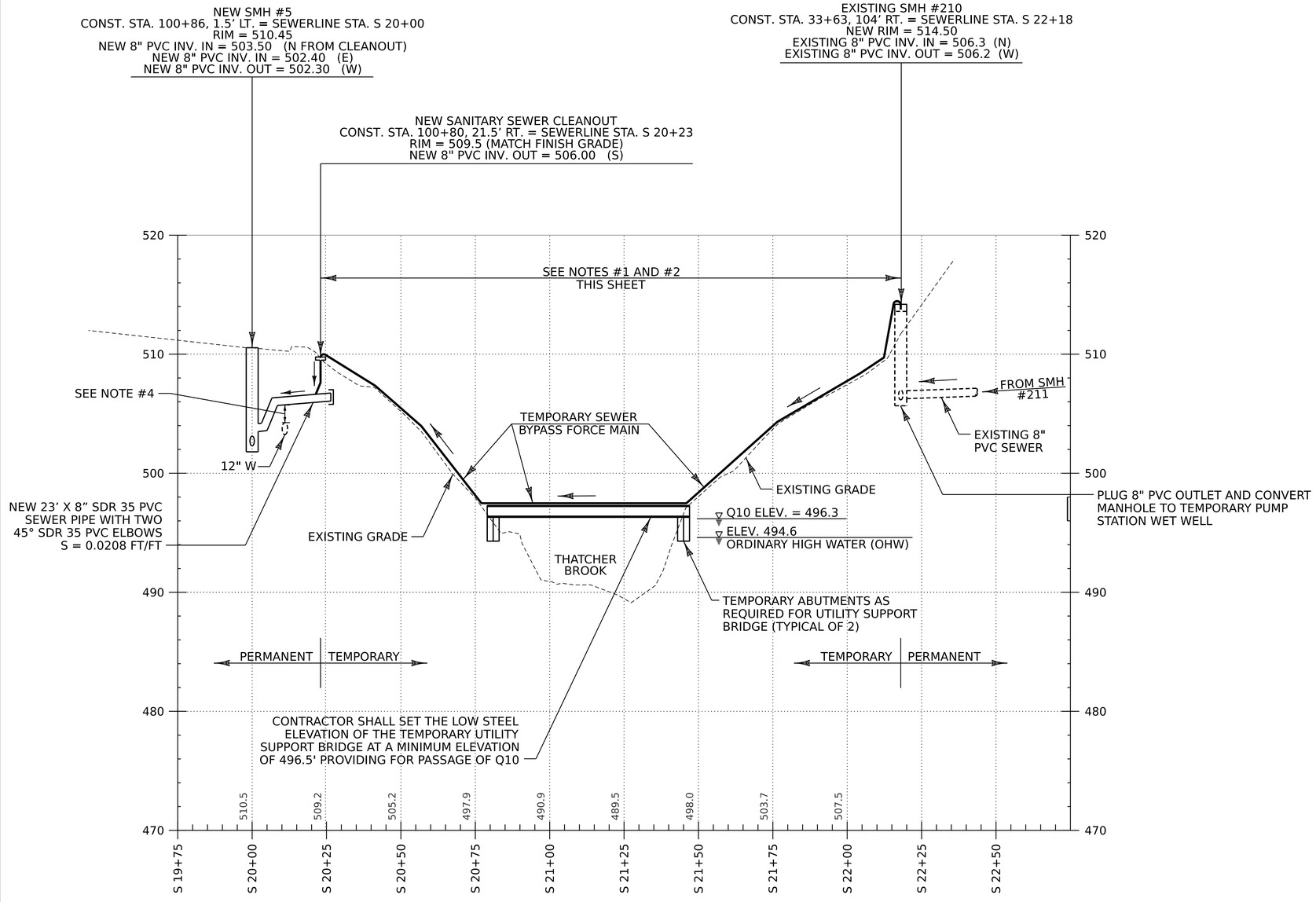
NOTE:
1. MAINTAIN 18" MINIMUM VERTICAL SEPARATION.



NEW SEWER MAIN PROFILE
SMH #199 - SMH #210



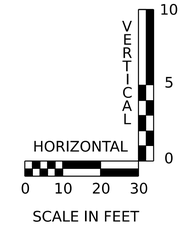
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040_Utility Geometry.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: G. BARRETT
DESIGNED BY: D. CAMPBELL	CHECKED BY: J. MYERS
SEWER PROFILE (SP-1)	SHEET 31 OF 66



NEW SEWER MAIN PROFILE
WITH SUGGESTED TEMPORARY SEWER
BYPASS FORCE MAIN

NOTES:

1. CONTRACTOR SHALL MAINTAIN EXISTING SEWAGE SYSTEM FLOWS DURING CONSTRUCTION OF THE RELOCATED SANITARY SEWER MAINS AND SANITARY SEWER MANHOLES. SEE SPECIFICATIONS AND SHEET SD-1, SEWER DETAILS, FOR DETAILS. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 628.4300 TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL INCLUSIVE.
2. INSTALL TEMPORARY SEWER BYPASS FORCE MAIN AS REQUIRED BETWEEN NEW SEWER CLEANOUT AND SMH #210. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 628.4300 TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL INCLUSIVE.
3. INSTALL TEMPORARY UTILITY SUPPORT BRIDGE AND TEMPORARY ABUTMENTS TO SUPPORT TEMPORARY SEWER BYPASS FORCE MAIN. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 628.4300, TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL-INCLUSIVE.
4. MAINTAIN 18" MINIMUM VERTICAL SEPARATION.



PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040_Utility Geometry.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: G. BARRETT
DESIGNED BY: D. CAMPBELL	CHECKED BY: J. MYERS
SEWER PROFILE (SP-2)	SHEET 32 OF 66

ADDITIONAL CONSTRUCTION REQUIREMENTS FOR
ITEM 628.4300, TRANSFER TO NEW SYSTEM, SANITARY SEWER, ALL-INCLUSIVE

THE CONTRACTOR SHALL MAINTAIN EXISTING SEWAGE FLOWS DURING CONSTRUCTION OF THE NEW SANITARY SEWER SYSTEMS, INCLUDING BOTH GRAVITY PIPING AND FORCE MAIN PIPING, AND DURING TRANSFER OF THE NEW SYSTEMS TO THE EXISTING SYSTEMS. THE CONTRACTOR SHALL SUBMIT AND RECEIVE APPROVAL OF A DETAILED PLAN FOR MAINTENANCE OF EXISTING SEWAGE FLOWS PRIOR TO BEGINNING WORK ON THE SYSTEMS.

(A) MAINTENANCE OF EXISTING SANITARY SEWAGE FLOWS
THE CONTRACTOR'S MAINTENANCE OF EXISTING SEWAGE FLOW PLAN SHALL DETAIL HIS/HER PROPOSED CONSTRUCTION SCHEDULE AND PROCEDURE FOR MAINTAINING SEWAGE FLOWS BETWEEN EXISTING SMH #210 AND SMH #199, AND SMH #200 AND SMH #199 DURING THE FOLLOWING CONSTRUCTION ACTIVITIES, RESPECTIVELY:

(1) CONSTRUCTION OF THE NEW PRECAST CONCRETE ARCH/FRAME BRIDGE INCLUDING NEW RELOCATED PVC SEWER MAIN INCLUDING REMOVAL OF EXISTING SEWER MANHOLES AND SEWER MAIN PIPING AS NOTED ON THE PLANS BETWEEN EXISTING SMH #210 AND SMH #199.

(2) CONSTRUCTION OF NEW SMH #5 INCLUDING NEW SEWER MAIN PIPING TIE-IN'S TO EXISTING SEWER MAIN PIPING ON LINCOLN STREET.

(3) TRANSFERRING SERVICE FROM THE EXISTING SYSTEM TO THE NEW SYSTEM INCLUDING CONSTRUCTION AND TESTING OF ALL NEW SANITARY SEWER PIPING AND MANHOLES.

MAINTENANCE OF SEWAGE FLOWS SHALL ALSO BE MAINTAINED DURING CONSTRUCTION AND TESTING OF ALL PROPOSED SANITARY SEWER PIPING AND MANHOLES, INCLUDING INTERCONNECTIONS FOR MAINTENANCE OF SEWER SERVICE TO USERS AT ALL TIMES DURING CONSTRUCTION. THE PLAN SHALL INCLUDE ALL ITEMS NOTED.

(B) MAINTENANCE OF EXISTING SEWAGE FLOW PLAN

THE MAINTENANCE OF EXISTING SEWAGE FLOW PLAN SHALL BE SUBMITTED AFTER CONTRACT AWARD AND AT LEAST 14 DAYS PRIOR TO STARTING CONSTRUCTION OF THE NEW SEWER SYSTEM, THE CONTRACTOR SHALL SUBMIT A FLOW MAINTENANCE PLAN TO THE ENGINEER INDICATING THE SEQUENCE OF ALL PROCEDURES AND WORK THAT HE/SHE WILL TAKE TO ENSURE FLOW WILL BE DIRECTED TO THE WASTEWATER TREATMENT FACILITY. UPON REVIEW, THE PLAN SHALL BE REVISED, IF REQUIRED, TO THE SATISFACTION OF VTRANS, THE TOWN OF WATERBURY, AND THE ENGINEER.

THE MAINTENANCE OF EXISTING SEWAGE FLOW PLAN SHALL INCLUDE THE FOLLOWING ITEMS:

(1) A DETAILED PLAN AND DESCRIPTION OF PROPOSED PUMPING SYSTEMS. INDICATE NUMBER, SIZE, MATERIAL, LOCATION AND METHOD OF INSTALLATION OF SUCTION AND DISCHARGE PIPING, SIZE OF PIPELINE OR CONVEYANCE SYSTEM TO BE BYPASSED, STAGING AREA FOR PUMPS, SITE ACCESS POINT, AND EXPECTED FLOW.

(2) SIZE AND LOCATION OF MANHOLE OR ACCESS POINTS FOR SUCTION AND DISCHARGE HOSE OR PIPING.

(3) SECTIONS SHOWING SUCTION AND DISCHARGE PIPE DEPTH, EMBEDMENT, SELECT FILL AND SPECIAL BACKFILL, IF BURIED.

(4) TEMPORARY PIPE SUPPORTS AND ANCHORING REQUIRED INCLUDING DESIGN CALCULATIONS FOR TEMPORARY UTILITY SUPPORT BRIDGE, ABUTMENTS, AND PIPING RESTRAINTS.

(5) THRUST AND RESTRAINT BLOCK SIZES AND LOCATIONS.

(6) SEWER PLUGGING METHOD AND TYPE OF PLUGS.

(7) BYPASS PUMP SIZES, CAPACITY, NUMBER OF EACH SIZE TO BE ON SITE AND POWER REQUIREMENTS.

(8) BACKUP PUMP, POWER, AND PIPING EQUIPMENT.

(9) CALCULATIONS OF STATIC LIFT, FRICTION LOSSES, AND FLOW VELOCITY. PUMP CURVES SHOWING PUMP OPERATING RANGE.

(10) DESIGN PLANS AND COMPUTATION FOR ACCESS TO BYPASS PUMPING LOCATIONS INDICATED ON DRAWINGS.

(11) CALCULATIONS FOR SELECTION OF BYPASS PUMPING PIPE SIZE.

(12) METHOD OF NOISE CONTROL FOR EACH PUMP AND/OR GENERATOR.

(13) METHOD OF PROTECTING DISCHARGE MANHOLES OR STRUCTURES FROM EROSION AND DAMAGE.

(14) SCHEDULE FOR INSTALLATION AND MAINTENANCE OF BYPASS PUMPING LINES.

(15) PROCEDURES TO MONITOR UPSTREAM MAINS FOR BACKUP IMPACTS.

(16) PROCEDURES FOR SETUP AND BREAKDOWN OF PUMPING OPERATIONS.

(17) PROCEDURES FOR MAINTAINING VEHICULAR AND PEDESTRIAN TRAFFIC DURING BYPASS OPERATIONS.

(18) EMERGENCY PLAN DETAILING PROCEDURES TO BE FOLLOWED IN EVENT OF PUMP FAILURES, SEWER OVERFLOWS, SERVICE BACKUPS, AND SEWAGE SPILLAGE. MAINTAIN COPY OF THE EMERGENCY PLAN ON SITE FOR DURATION OF BYPASS OPERATIONS.

(C) SANITARY SEWAGE SYSTEM MAINTENANCE OF FLOW

(1) THE METHOD OF FLOW MAINTENANCE SHALL BE DETERMINED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF VTRANS, THE TOWN OF WATERBURY, AND THE ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE LOCATIONS OF THE TEMPORARY FACILITIES AND/OR WORK SHALL BE SUCH THAT THEY WILL NOT INTERFERE WITH VEHICULAR AND/OR PEDESTRIAN TRAFFIC IN THE AREA.

(2) EXISTING PIPELINES MAY BE AVAILABLE FOR USE BY THE CONTRACTOR FOR BYPASS OPERATIONS. CARE SHALL ALWAYS BE TAKEN TO PREVENT THE SURCHARGING OF SEWERS, PROCESS PIPING OR TREATMENT SYSTEM.

(3) THE CONTRACTOR SHALL DISCHARGE TEMPORARY BYPASSES TO SANITARY SEWERS OR TREATMENT WORKS ONLY. THE CONTRACTOR SHALL NOT BYPASS UNTREATED SEWAGE TO STORM DRAINS, EXCAVATIONS, ONTO STREETS OR THOROUGHFARES, SURFACE WATERS (DIRECTLY OR BY RUNOFF), ETC., EXCEPT IN AN EMERGENCY TO AVOID PERSONAL INJURY OR LOSS OF LIFE.

(4) IN ORDER TO MAINTAIN THE FLOW OF SEWAGE AT THE REQUIRED LEVEL, THE CONTRACTOR, VTRANS, AND THE TOWN OF WATERBURY WILL WORK CLOSELY TOGETHER. THE TOWN OF WATERBURY CAN OFFER INSIGHT INTO HISTORICAL FLOW TRENDS, CAPACITY OF ADJACENT SEWERS AND ESTIMATE OF VOLUMES. HOWEVER, THE CONTRACTOR SHALL BE REQUIRED TO SUPERVISE THE OPERATION OF THE FLOW MAINTENANCE PLAN THAT NEEDS TO BE OPERATED TO ENSURE THAT SEWAGE COLLECTED IN THE SERVICE AREA IS TREATED AT THE WATERBURY WASTEWATER TREATMENT FACILITY.

(5) ALL TEMPORARY UTILITIES INCLUDING POWER, LIGHT, GAS, DRAINAGE, WATER, PROCESS PIPING, PUMPS, VALVES, PIPING, FITTINGS AND APPURTENANCES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR INCLUDING INSULATION AND/OR PIPE HEAT TRACING AS NECESSARY TO ACHIEVE THE OBJECTIVES OF THE SEQUENCE OF WORK.

(6) WHERE DEPICTED ON THE PLANS, NEW SANITARY SEWER PIPING SHALL BE CONNECTED TO EXISTING SANITARY SEWER PIPE WITH AN APPROVED TRANSITION COUPLING.

(7) PRIOR TO MAKING CONNECTIONS INTO THE EXISTING SANITARY SEWER SYSTEM PIPING, THE CONTRACTOR SHALL NOTIFY VTRANS, THE TOWN OF WATERBURY, AND THE ENGINEER THREE DAYS IN ADVANCE IN WRITING OF THE DATE WHEN THE CONTRACTOR WILL BE READY TO COMPLETE THE WORK.

(8) AFTER THE CONNECTIONS ARE MADE, THE CONTRACTOR SHALL DIVERT THE SEWAGE FLOW TO THE NEW SEWER PIPING.

(9) UPON SUCCESSFUL TRANSFER TO NEW SYSTEM, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SANITARY SEWER PIPING, UTILITY SUPPORT BRIDGE AND ABUTMENTS, PUMPS, POWER SUPPLIES, CONTROLS, AND CAP ALL TEMPORARY FITTINGS INSTALLED FOR THE PURPOSES OF MAINTAINING EXISTING SEWAGE FLOWS.

(D) TEMPORARY BYPASS PUMPING SYSTEM

(1) CONTRACTOR'S RESPONSIBILITY: SCHEDULE AND PERFORM WORK IN MANNER THAT DOES NOT CAUSE OR CONTRIBUTE TO INCIDENCE OF OVERFLOWS, RELEASES OR SPILLS OF SEWAGE FROM SANITARY SEWER SYSTEM OR BYPASS OPERATION.

(2) REQUIRED EQUIPMENT:

A. PUMPS:

1. DUPLEX PUMPS WITH ONE PUMP BEING OPERATIONAL AT ALL TIMES, AND ONE PUMP ON OPERATIONAL STANDBY STATUS AT ALL TIMES FOR PURPOSES OF PROVIDING REDUNDANCY.

2. FULLY AUTOMATIC SELF-PRIMING UNITS THAT DO NOT REQUIRETHE USE OF FOOT-VALVES OR VACUUM PUMPS IN PRIMING SYSTEM.

3. ELECTRIC OR DIESEL POWERED. TRAILER MOUNTED OR SKID MOUNTED.

4. CONSTRUCTED TO ALLOW DRY RUNNING FOR LONG PERIODS OF TIME TO ACCOMMODATE CYCLICAL NATURE OF EFFLUENT FLOWS.

5. CONTRACTOR SHALL PROVIDE THE FOLLOWING:

I. NECESSARY STOP/START CONTROLS FOR EACH PUMP INCLUDING HIGH LIQUID LEVEL AND LOW LIQUID LEVEL FLOATS.

II. ONE OPERATIONAL STANDBY PUMP AS NOTED ABOVE.

III. ISOLATION AND CHECK VALVE(S) AS NEEDED.

IV. QUIET FLOW PUMPS DUE TO NEARBY RESIDENTIAL NEIGHBORHOOD.

V. AUDIBLE ALARMS AND RED VISUAL ALARM BEACONS.

6. ELECTRICAL REQUIREMENTS FOR ELECTRIC POWERED PUMPS:

I. CONTRACTOR SHALL INSTALL TEMPORARY POWER SUPPLY FROM GREEN MOUNTAIN POWER (GMP) POLE #114713 LOCATED AT THE SOUTHEAST CORNER OF ROUTE 100 AND STOWE STREET INTERSECTION. AVAILABLE VOLTAGE IS UNKNOWN. EXISTING VOLTAGE TO BE DETERMINED BY THE CONTRACTOR PRIOR TO SPECIFYING TEMPORARY BYPASS PUMPS.

II. FURNISH AND INSTALL TEMPORARY ELECTRICAL MAST HEAD WITH NEMA 4X STAINLESS STEEL LOCKABLE ENCLOSURES FOR SERVICE BREAKERS, TRANSIENT VOLTAGE SURGE PROTECTORS, PUMP CONTROLLERS, PANELBOARDS, AND A MINIMUM OF TWO (2) GFCI CONVENIENCE OUTLETS.

III. AUTOMATIC TRANSFER SWITCHES (ATS'S) WITH STANDBY GENERATORS.

B. BYPASS PUMPING DESIGN REQUIREMENTS:

1. EXISTING SEWAGE FLOWS UPSTREAM OF SMH #210 ARE ESTIMATED TO BE AS FOLLOWS:

I. AVERAGE DAILY FLOW = 86,400 GPD = 60 GPM`

II. PEAK HOURLY FLOW = 15,000 GALLONS/HOUR = 250 GPM

III. PEAKING FACTOR = 4.2 FOR FLOWS OF 10,000 GPD TO LESS THAN 100,000 GPD PER VT. EPR'S.

IV. TOTAL DYNAMIC HEAD (TDH) TO BE DETERMINED BY CONTRACTOR.

2. BYPASS PUMPING SYSTEM SHALL CONTINUOUSLY OPERATE 24 HOURS PER DAY UNTIL SUCH TIME AS THE TRANSFER TO THE NEW SEWER PIPING IS COMPLETE.

3. SUFFICIENT CAPACITY TO PUMP PEAK HOURLY FLOW OF 250 GPM UP TO A MAXIMUM DEMAND OF 500 GPM AT DESIGN TDH.

4. PUMP SHALL HAVE THE CAPACITY TO OPERATE AT A MINIMUM OF 0 GPM.

5. PROVIDE PIPELINE PLUGS AND PUMPS OF ADEQUATE SIZE TO HANDLE PEAK FLOW, AND TEMPORARY DISCHARGE PIPING TO ENSURE TOTAL FLOW OF EXISTING SEWER MAIN CAN BE SAFELY DIVERTED AROUND THE NEW SEWER MAIN SECTION TO BE CONSTRUCTED.

(E) SUGGESTED MAINTENANCE OF EXISTING SEWAGE FLOW PLAN

(1) THE SUGGESTED TEMPORARY MAINTENANCE OF EXISTING SEWAGE FLOW PLAN CONFIGURATION DOES NOT, AND IS NOT INTENDED TO, COVER ALL REQUIREMENTS FOR THE TEMPORARY MAINTENANCE OF SEWAGE FLOWS AND IS PROVIDED TO ASSIST THE CONTRACTOR IN DEVELOPING HIS/HERS COMPREHENSIVE MAINTENANCE OF EXISTING FLOW PLAN. THE SUGGESTED TEMPORARY MAINTENANCE OF EXISTING SEWAGE FLOW PLAN IS PRESENTED ON THE SEWER RELOCATION PLAN AND THE SEWER PROFILE (SP-2) SHEET AS CONTAINED IN THE PLANS.

(2) AS PART OF THE TEMPORARY MAINTENANCE OF EXISTING SEWAGE FLOW PLAN, THE CONTRACTOR SHALL PROVIDE FOR PASSAGE OF Q_{ss} BENEATH THE TEMPORARY UTILITY SUPPORT BRIDGE AS DEPICTED ON THE SEWER PROFILE (SP-2) SHEET.

(3) THE CONTRACTOR SHALL DETAIL A CONTINGENCY PLAN FOR THE OCCURRENCE OF A HIGH-WATER EVENT ABOVE Q_{ss}.

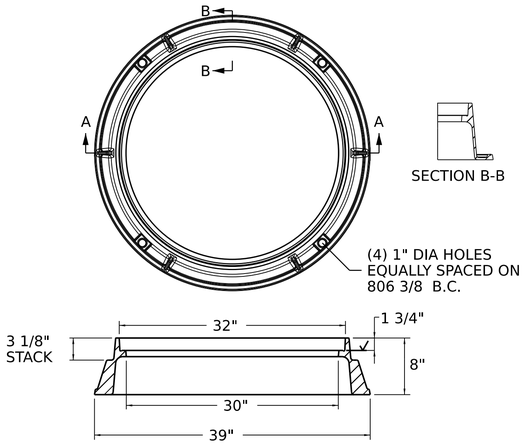
(4) AS NOTED ABOVE, THE CONTRACTOR'S MAINTENANCE OF EXISTING SEWAGE FLOW PLAN SHALL BE SUBMITTED TO THE TOWN OF WATERBURY, VTRANS, AND THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_sewer.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. CAMPBELL
SEWER DETAILS SD-1

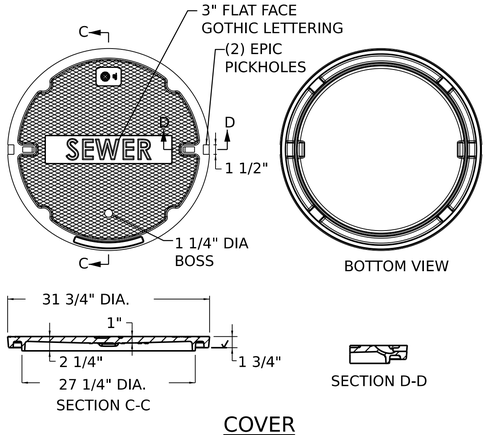
PLOT DATE: 30-MAY-2024
DRAWN BY: G. BARRETT
CHECKED BY: J. MYERS
SHEET 33 OF 66



FRAME

NOT TO SCALE

MIN. WEIGHT = 148 LBS



COVER

NOT TO SCALE

MIN. WEIGHT = 198 LBS

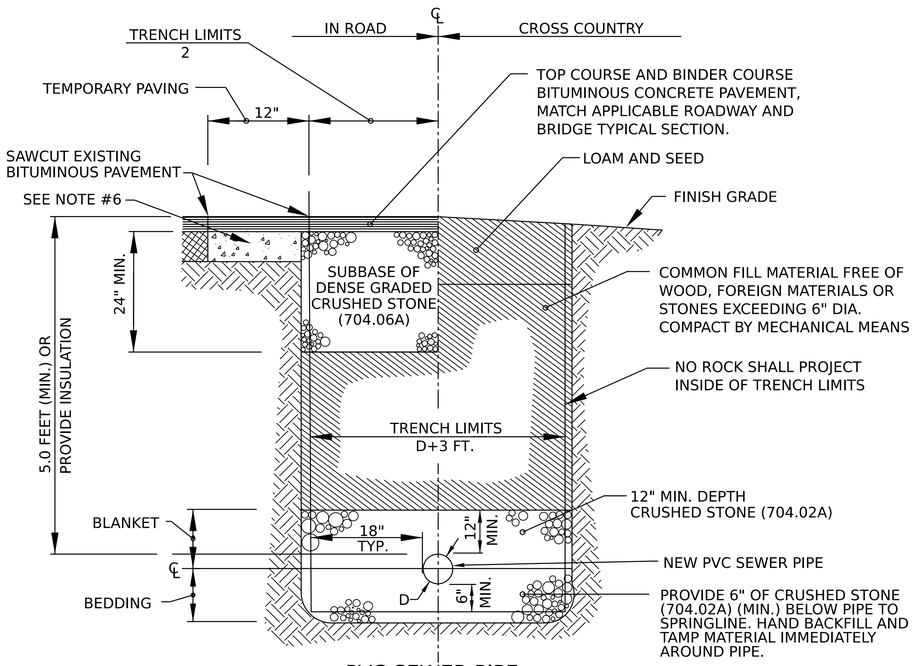
SANITARY SEWER MANHOLE FRAME AND COVER DETAIL

NOT TO SCALE

NOTES:

1. SANITARY SEWER MANHOLE CAST IRON FRAMES AND COVERS SHALL BE GRAY IRON (CL35B), HEAVY DUTY H-20 LOAD RATED, AND MEETING ASTM A48 WITH EPIC PICKHOLES IN THE COVER. THE WORD "SEWER" SHALL BE CAST INTO A DIAMOND DESIGN ON THE TOP SURFACE OF THE COVER. SANITARY SEWER MANHOLE FRAME AND COVER SHALL BE EJ GROUP (FORMERLY EAST JORDAN IRON WORKS), PRODUCT NO. 00200811 (FRAME) AND 00200628 (SEWER COVER), OR FORMERLY LEBARON FOUNDRY, NO. LA328-5 (FRAME) AND NO. L32C22 (SEWER COVER). SEE CONTRACT PUBLIC INTEREST FINDING (CPIF) FOR SANITARY SEWER MANHOLE FRAME AND COVER FOR ADDITIONAL DETAIL.

2. PAYMENT FOR SANITARY SEWER MANHOLE FRAME AND COVER SHALL BE CONSIDERED INCIDENTAL TO ITEM 604.2200 SANITARY SEWER MANHOLE.



PVC SEWER PIPE TYPICAL TRENCH DETAIL

NOT TO SCALE

PAYMENT FOR NEW PVC SEWER PIPE WILL BE MADE UNDER ITEM 628.1532 PVC SEWER PIPE, ALL-INCLUSIVE, 8 INCH OR ITEM 628.1540 PVC SEWER PIPE, ALL-INCLUSIVE, 10 INCH (PRE-INSULATED) RESPECTIVE OF THE PVC SEWER PIPE INSTALLED.

NOTES:

1. PAYMENT FOR SAWCUTTING OF EXISTING BITUMINOUS PAVEMENT SHALL BE CONSIDERED INCIDENTAL TO PVC SEWER PIPE, ALL-INCLUSIVE, ITEMS NOTED BELOW LEFT.

2. PAYMENT FOR FURNISHING AND INSTALLING FOUR INCH THICK POLYSTYRENE INSULATION IN CASES WHERE THE SEWER PIPE DEPTH IS LESS THAN 5'-0", SHALL BE CONSIDERED INCIDENTAL TO PVC SEWER PIPE, ALL-INCLUSIVE, ITEMS NOTED BELOW LEFT.

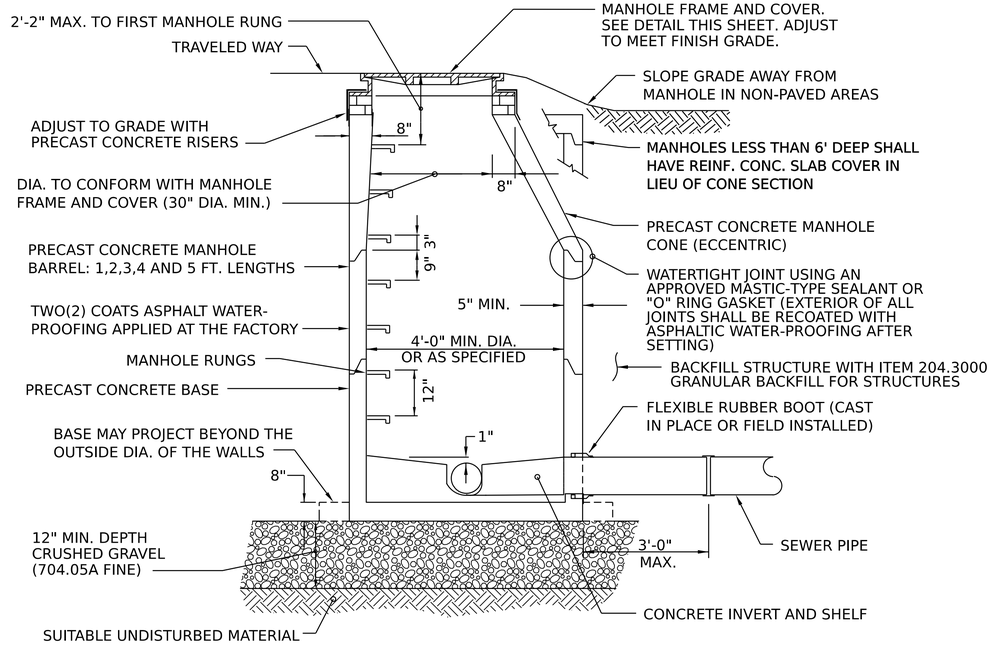
3. PAYMENT FOR TRENCH EXCAVATION SHALL BE CONSIDERED INCIDENTAL TO PVC SEWER PIPE, ALL-INCLUSIVE, ITEMS NOTED BELOW LEFT.

4. PAYMENT FOR REMOVAL OF SOLID ROCK OR BOULDERS GREATER THAN 1 CY WILL BE MADE UNDER ITEM 203.1600, SOLID ROCK EXCAVATION.

5. COMPACTION TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

6. REMOVE EXISTING REINFORCED CONCRETE ROADWAY (ASSUMED 20' WIDE X 9" THICK, EXACT LOCATION UNKNOWN). REMOVAL TO BE PAID AS SOLID ROCK EXCAVATION. SEE PROPOSED STOWE STREET AND LINCOLN STREET TYPICAL SECTIONS FOR DETAILS.

7. SEE BELOW GRADE PRE-INSULATED PVC SEWER PIPE DETAIL FOR ADDITIONAL DR 25 C900 PVC SEWER PIPE REQUIREMENTS.



PRECAST CONCRETE SANITARY SEWER MANHOLE

NOT TO SCALE

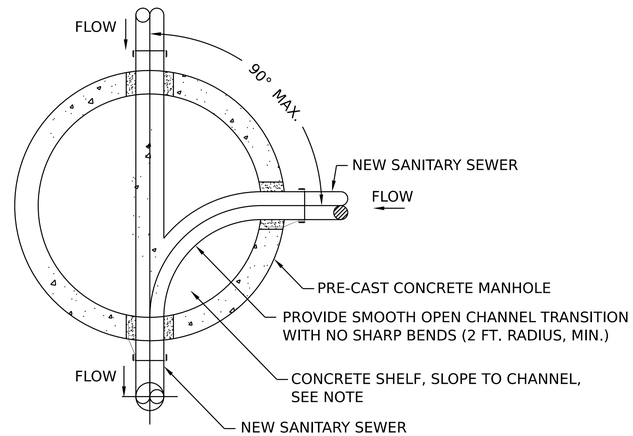
PAYMENT FOR NEW PRECAST CONCRETE SANITARY SEWER MANHOLE WILL BE MADE UNDER ITEM 604.2200 SANITARY SEWER MANHOLE.

NOTES:

1. MANHOLE STRUCTURE TO BE CAPABLE OF SUPPORTING AASHTO H-20 LOADING.

2. PAYMENT FOR EXCAVATION WILL BE MADE UNDER ITEM 204.2000 TRENCH EXCAVATION OF EARTH.

3. PAYMENT FOR BACKFILL WILL BE MADE UNDER ITEM 204.3000 GRANULAR BACKFILL FOR STRUCTURES.



TYPICAL SANITARY SEWER MANHOLE CHANNEL

NOT TO SCALE

NOTE:

SHELVES SHALL BE CONSTRUCTED OF CLASS B CONCRETE, IN ACCORDANCE WITH SECTION 541 OF THE STANDARD SPECIFICATIONS. INVERTS FOR SEWER MANHOLES SHALL BE AS SHOWN ON THE PLANS AND DETAILS, AND SHALL BE CONSTRUCTED OF CLASS B CONCRETE. OR FOR STRAIGHT RUNS, THE INVERT SHALL BE SEGMENTS OF PIPE CUT IN HALF LONGITUDINALLY. INVERTS SHALL HAVE THE EXACT SHAPE AND SLOPE TO THAT OF THE SEWER TO WHICH THEY ARE CONNECTED. ANY CHANGE IN SIZE OR DIRECTION SHALL BE GRADUAL AND EVEN.

Stantec

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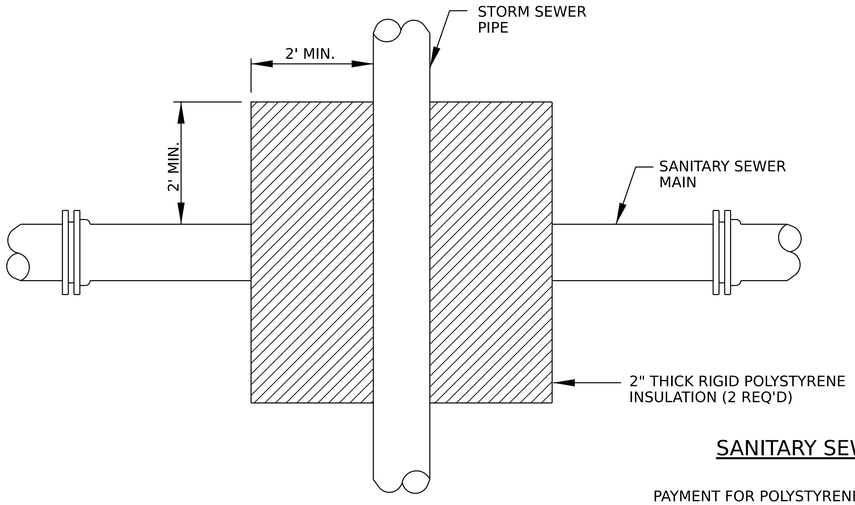
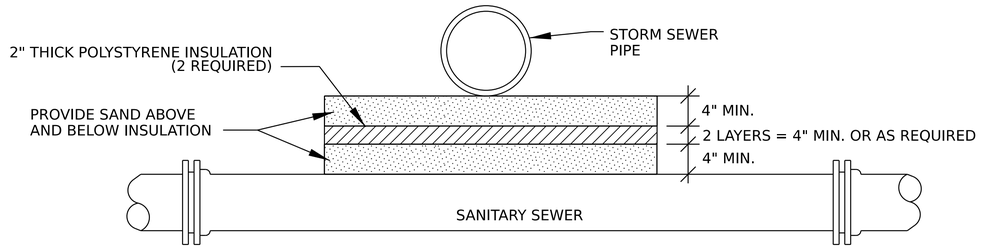
DESIGNED BY: D. CAMPBELL	CHECKED BY: J. MYERS
SEWER DETAILS SD-2	SHEET 34 OF 66



PLAN



SECTION

SANITARY SEWER INSULATION DETAIL

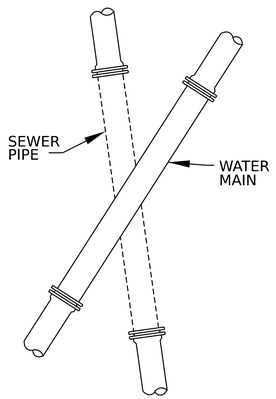
NOT TO SCALE

PAYMENT FOR POLYSTYRENE INSULATION AND SAND BLANKET ARE TO BE INCIDENTAL TO PVC SEWER PIPE, ALL-INCLUSIVE, ITEMS.

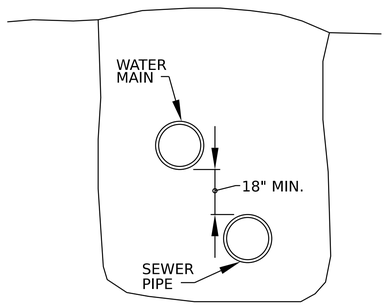
NOTES:

1. SAND BLANKET MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 703.03 AND POLYSTYRENE INSULATION BOARD SHALL MEET THE REQUIREMENTS OF SUBSECTION 735.01 AS STATED IN THE VTRANS STANDARD SPECIFICATIONS FOR CONSTRUCTION.

2. INSTALL TWO INCH THICK INSULATION (TWO LAYERS REQ. D=FOUR INCH) WHERE FIVE FOOT OF COVER OVER GRAVITY SEWER CAN NOT BE MAINTAINED, AND SEWER MAIN/STORM PIPE CROSSINGS WITH LESS THAN TWO FOOT VERTICAL CLEARANCE AND WHERE SPECIFIED ON PLANS OR PROFILES.



PLAN



SECTION

NOTE:

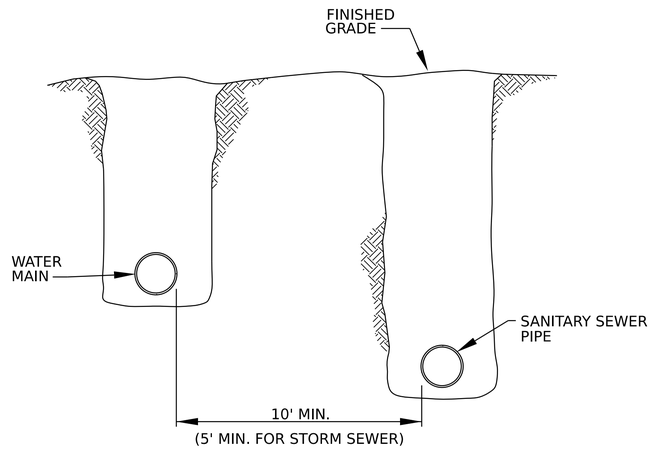
SEWERS CROSSING WATER MAINS SHALL BE LAID BENEATH THE WATER MAIN WITH AT LEAST 18 INCHES VERTICAL CLEARANCE BETWEEN THE OUTSIDE OF THE SEWER AND THE OUTSIDE OF THE WATER MAIN. WHEN IT IS IMPOSSIBLE TO MAINTAIN THE 18" VERTICAL SEPARATION:

1. THE CROSSING SHALL BE ARRANGED SO THAT ONE FULL LENGTH OF SEWER PIPE IS CENTERED ABOVE OR BELOW THE WATER LINE WITH SEWER JOINTS AS FAR AS POSSIBLE FROM WATER JOINTS;

2. THE SEWER PIPE MUST BE CONSTRUCTED TO WATER MAIN STANDARDS FOR A MINIMUM DISTANCE OF 20 FEET EITHER SIDE OF THE CROSSING OR A TOTAL OF THREE PIPE LENGTHS, WHICHEVER IS GREATER;

3. THE SECTION CONSTRUCTED TO WATER MAIN STANDARDS MUST BE PRESSURE TESTED TO MAINTAIN 50 PSI FOR 15 MINUTES WITHOUT LEAKAGE PRIOR TO BACKFILLING BEYOND ONE FOOT ABOVE THE PIPE TO ASSURE WATER TIGHTNESS;

4. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT DAMAGE TO THE WATER MAIN.



SEWER-WATER PARALLEL INSTALLATION

NOT TO SCALE

SEWER PIPE AND WATER MAIN CROSSING

NOT TO SCALE

NOTE:

SEWER PIPE SHALL MEAN SANITARY SEWER PIPE OR STORM SEWER PIPE.

Stantec

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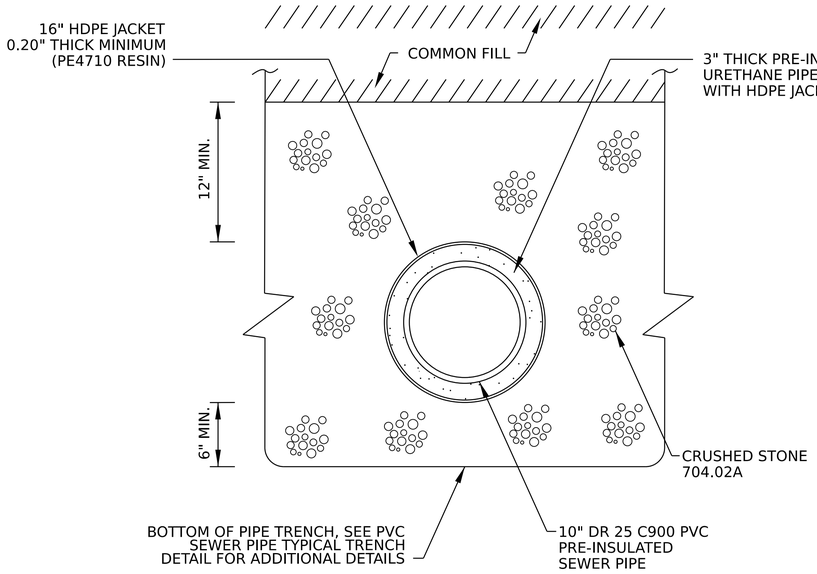
SEWER DETAILS SD-3		SHEET 35 OF	66



BELOW GRADE PRE-INSULATED PVC SEWER PIPE DETAIL

NOT TO SCALE

NOTE:

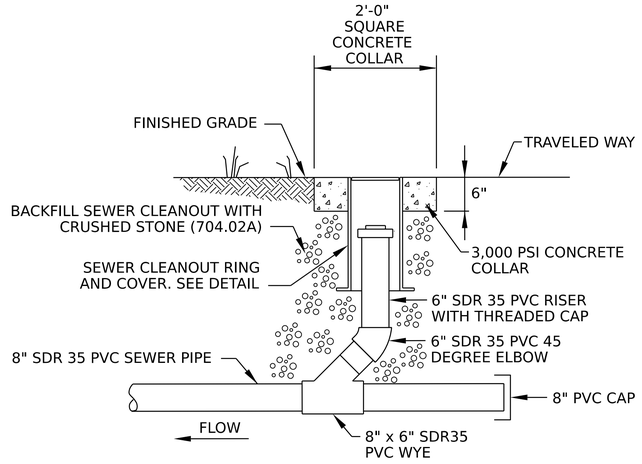
PRE-INSULATED DR 25 C900 PVC PIPE

A. C900 PVC PIPE

1. ALL C900 PVC SEWER PIPE SHALL BE DR 25.
2. C900 PVC SEWER PIPE SHALL MEET ANSI/AWWA C900 STANDARDS (LATEST EDITION).
3. PIPE COMPOUND SHALL MEET ASTM D1784 CELLS CLASS 12454 ASTM, WITH GASKETS MEETING ASTM F477.
4. INTEGRAL BELL JOINT MEETING ASTM D3139.
5. CERTIFICATIONS SHALL INCLUDE ANSI/NSF STANDARD 61, UL STANDARD 1285.
6. PIPE LENGTHS SHALL BE 20 FEET (+/- 1 INCH) LAYING LENGTH.

B. URETHANE INSULATION AND HDPE OUTER JACKET

1. THE WATER PIPES SHALL BE PRE-INSULATED WITH A FACTORY INSTALLED, VOID FREE, POLYURETHANE FOAM INSULATION.
2. PIPE INSULATION SHALL BE 3-INCH THICK POLYURETHANE FOAM INSULATION WITH A MINIMUM K VALUE OF 0.14 BTU INCH / FT' HR - °F.
3. FORM FITTING INSULATION AND JACKET KITS SHALL BE USED TO FIELD INSULATE JACKET BENDS AND OTHER FITTINGS, ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
4. INSULATED PIPE JOINTS SHALL BE COMPLETED WITH THE USE OF PREFABRICATED URETHANE HALF SHELLS AND A PRE- ROLLED SHEET STOCK OF THE SAME MATERIAL AND GAUGE AS THE OUTER JACKET. OVERLAP LENGTH SHALL BE 12"MINIMUM EACH SIDE OF INSULATED PIPE JOINTS. OUTER JACKET JOINTS AND ENDS SHALL BE INSTALLED TO PREVENT WATER AND MOISTURE INFILTRATION.
5. INSULATED PIPE SHALL BE INSTALLED WITH AN HDPE OUTER JACKET. OUTER JACKET SHALL BE AS SUPPLIED AND INSTALLED BY THE INSULATION MANUFACTURER.
6. SEAL OUTER JACKET AT MANHOLE PENETRATIONS TO PREVENT WATER AND MOISTURE INFILTRATION WITH RUBBER CASING END SEALS OR PER INSULATION MANUFACTURER'S RECOMMENDATIONS.
7. OUTER JACKET SHALL 0.20-INCH MINIMUM THICKNESS AND MANUFACTURED FROM HDPE 4710 RESIN.
8. URETHANE INSULATION AND OUTER JACKET SHALL BE MANUFACTURED AND APPLIED BY URECON, THE EQUIVALENT MANUFACTURED BY INSUL-TEK, ROVANCO, OR APPROVED EQUAL.



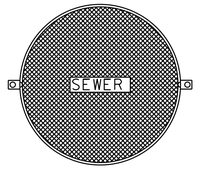
CLEANOUT DETAIL

NOT TO SCALE

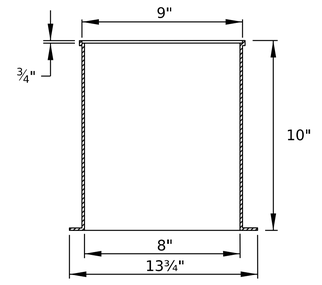
PAYMENT FOR SEWER CLEANOUT INCLUDING PVC WYE, SEWER PIPE, FITTINGS INCLUDING ELBOWS AND CAP, CONCRETE, AND CAST IRON CLEANOUT COVER WILL BE MADE UNDER ITEM 628.3100 SEWER CLEANOUT, ALL-INCLUSIVE.

NOTES:

1. INSTALL CLEANOUT AT LOCATIONS DEPICTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
2. CAST IRON SEWER CLEANOUT RING AND COVER SHALL BE GRAY IRON (CL35B), HEAVY DUTY H-20 LOAD RATED, AND MEETING ASTM A48 . THE WORD 'SEWER' SHALL BE CAST INTO A DIAMOND DESIGN ON THE TOP SURFACE OF THE COVER. SEWER CLEANOUT RING AND COVER SHALL BE EJ GROUP (FORMERLY EAST JORDAN IRON WORKS), PRODUCT NO. 00157322C01, OR LEBARON FOUNDRY, NO. LA0910, OR APPROVED EQUAL.



COVER PLATE



FRAME SECTION

SEWER CLEANOUT COVER PLATE DETAIL

NOT TO SCALE

Stantec

PROJECT NAME:	WATERBURY		
PROJECT NUMBER:	BO 1446(40)		
FILE NAME:	z93j040det_sewer.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	G. BARRETT
DESIGNED BY:	D. CAMPBELL	CHECKED BY:	J. MYERS
SEWER DETAILS SD-4		SHEET 36 OF	66

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 ⅜" 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 ⅛"
BX	Core Size 1 ⅝"
NX	Core Size 2 ⅛"
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	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N 100)>
VTSPG	NAD83 - See Note 7

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.

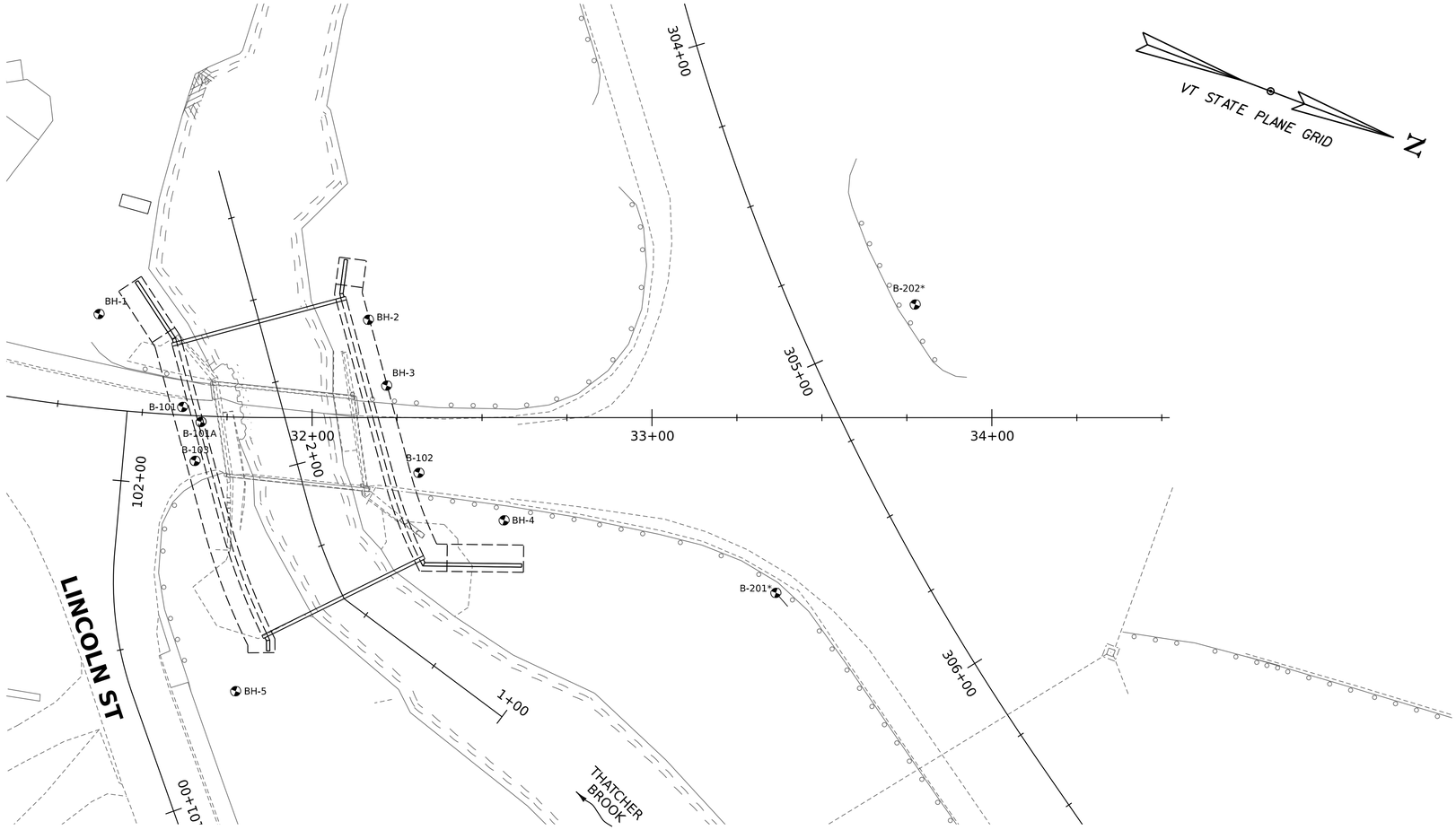
MUCK - Soft organic soil (containing > 10% organic material.

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

0 20 40

SCALE

BORING CHART

BORING NUMBER	SURVEY STATION	OFFSET	NORTHING	EASTING	GROUND ELEVATION	TOP OF BEDROCK EL.
B-101	31+72.49	2.4	672320.08	1575820.54	507.6	492.3
B-101A	31+78.13	1.8	672326.74	1575822.76	507.8	
B-102	32+31.46	16.2	672391.97	1575814.11	509.0	490.7
B-103	31+76.94	13.3	672329.16	1575834.09	507.7	492.7
*B-201	33+11.46	51.5	672502.70	1575810.04	515.8	500.4
*B-202	33+52.45	33.3	672522.82	1575747.33		
BH-1	31+34.19	27.6	672287.43	1575803.65	504.24	489
BH-2	32+16.59	9.4	672362.16	1575777.21	501.9	492
BH-3	32+21.96	28.8	672374.04	1575793.45	506.76	489

GENERAL NOTES

1. The subsurface explorations shown herein were made between November 18, 2021 and May 3, 2022 by WSP and VTrans.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency 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 judgment 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 judgment 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.
7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

* OBTAINED THOUGH PREVIOUS PROJECT

LEGEND:

BORING

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040borplan.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: VTRANS
BORING PLAN

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 37 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36 GAU 21497656

Boring No.: **B-101**
Page No.: 1 of 1
Pin No.: 93J040
Checked By: BK

Boring Crew: Platform - Michael Jordan, GAU Begum Kurtoglu
Date Started: 11/18/21 Date Finished: 11/18/21
VTSPG NAD83: N 672320.08 ft E 1575820.54 ft
Station: Offset:
Ground Elevation: 507.6 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	Geoprobe 7822DT	C_r = 1.68

Groundwater Observations

Date	Depth (ft)	Notes
11/18/21	14.4	Dry, after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.3 ft, Asphalt								
		S1: 0.3 ft - 0.75 ft, A-1-b, Rec. = 0.7 ft, Top 0.45 ft: Brown, damp, very dense, fine to coarse SAND, some gravel, trace silt, well-graded (SW-SM)				8-21-50/(3") (R)	8.8 13.0	44.5 43.6	45.7 46.9	9.8 9.5
2.5		0.75 ft - 1.55 ft, A-1-b, Bottom 0.25 ft: White, dry, very dense, fine to coarse SAND, some gravel, trace silt, well-graded (SW-SM)				7-5-4-3 (9)	4.8 11.5	58.1 1.1	33.5 62.9	8.4 36.0
		1.55 ft - 2.0 ft, Driller Notes: Drilled through a thin concrete obstruction								
5.0		S2: 2.0 ft - 2.5 ft, A-1-a, Rec. = 1.2 ft, Top 0.50 ft: Grayish brown, damp, loose, sandy fine to coarse GRAVEL, trace silt, poorly-graded (GP-GM)								
		2.5 ft - 4.0 ft, A-4, Bottom 0.70 ft: Brown, damp, loose, silty fine to medium SAND, trace gravel, well-graded (SM)								
7.5		4.0 ft - 8.0 ft, Driller Notes: Brown, damp, fine to medium SAND, little silt								
		S3: 8.0 ft - 8.4 ft, A-1-a, Rec. = 0.7 ft, Top 0.40 ft: Brown, damp, medium dense, fine to coarse GRAVEL, some sand, trace silt, well-graded (GW-GM)				5-8-16-14 (24)	5.6 0.7	69.5 82.2	21.8 12.8	8.7 5.0
10.0		8.4 ft - 10.0 ft, A-1-a, Bottom 0.30 ft: Greenish gray, dry, medium dense, fine to coarse GRAVEL, little sand, trace silt, trace weathered rock, poorly-graded (GP-GM)								
		10.0 ft - 14.0 ft, Driller Notes: Grayish brown, damp, fine to coarse GRAVEL, some sand, trace silt, rock fragments								
12.5										
SUBFOOTING 2 TOP OF FOOTING ELEV. 494.00		S4: 14.0 ft - 14.3 ft, A-1-b, Rec. = 1.1 ft, Top 0.30 ft: Brown, wet, very dense, fine to coarse SAND, little gravel, little silt, poorly-graded (SM)				29-40-50/(3") (R)	10.4 5.4	29.0 46.3	53.4 40.9	17.6 12.8
15.0		14.3 ft - 15.3 ft, A-1-b, Bottom 0.80 ft: Gray, dry, very dense, fine to coarse SAND, some gravel, little silt, poorly-graded (SM)	1	70 (0)	11.7	(R)				
		Top of Bedrock @ 15.3 ft								
17.5		15.5 ft - 16.5 ft, NQ, Greenish gray, fine grained, fresh (W1), very strong (R5), SCHIST and PHYLLITE; discontinuities horizontal to moderately dipping (0 to 30°), very closely spaced (0.2 ft) [Carbonaceous Phyllite Member, Ottauquechee Formation]								
		Hole stopped @ 16.5 ft								
20.0		Remarks: - AASHTO and USCS classifications are based on the results of sieve analyses of the samples - Boring backfilled with all purpose gravel to ground surface by the Town of Waterbury Highway Department								
22.5										

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_r is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36 GAU 21497656

Boring No.: **B-101A**
Page No.: 1 of 1
Pin No.: 93J040
Checked By: BK

Boring Crew: Platform - Michael Jordan, GAU Andrew Martin
Date Started: 12/10/21 Date Finished: 12/10/21
VTSPG NAD83: N 672326.74 ft E 157822.76 ft
Station: Offset:
Ground Elevation: 507.8 ft

	Casing	Sampler
Type:	WASH BORE	N.A.
I.D.:	3 in	
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	Auto/NWJ	
Rig:	Geoprobe 7822DT	C_r = 1.68

Groundwater Observations

Date	Depth (ft)	Notes
12/10/21	7.4	Taken after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.3 ft, ASPHALT					
		1.0 ft - 2.5 ft, Driller Notes: Drilled through a concrete obstruction					
2.5							
5.0		4.5 ft - 6.0 ft, Driller Notes: Drilling dificulty increased. Wood present in the drill cuttings					
7.5							
10.0							
12.5		11.0 ft - 11.1 ft, Driller Notes: Casing refusal at 11 ft bgs. Apparent cement chips in the drill cuttings					
		Hole stopped @ 11.1 ft Terminated due to time constraints					
15.0		Remarks: - After termination of the boring, when the casing was removed from the boring it was observed that the bottom of the casing had been crimped due to the obstruction at 11 ft bgs which prevented further advancement of the boring - Boring backfilled with all purpose gravel to ground surface by the Town of Waterbury Highway Department					
17.5							
20.0							
22.5							

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_r is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040det_stowe.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: T. LUTHER	CHECKED BY: T. KNIGHT
BORING LOG PLAN SHEET 1	SHEET 38 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36 GAU 21497656

Boring No.: **B-102**
Page No.: 1 of 2
Pin No.: 93J040
Checked By: BK

Boring Crew: Platform - Michael Jordan, GAU Andrew Martin
Date Started: 11/19/21 Date Finished: 11/19/21
VTSPG NAD83: N 672391.97 ft E 1575814.11 ft
Station: Offset:
Ground Elevation: 509.0 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	Geoprobe 7822DT	C_r = 1.68

Groundwater Observations

Date	Depth (ft)	Notes
11/19/21	15.5	When casing in
11/19/21	7.1	Before rock coring

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.9 ft, Asphalt								
		S1: 0.9 ft - 1.6 ft, A-1-a, Rec. = 0.5 ft, Gray, dry, very dense, sandy fine to coarse GRAVEL, trace silt, well-graded (GW-GM)				40-50/(2") (R)	3.4	64.3	25.2	10.5
2.5		1.6 ft - 3.9 ft, Driller Notes: Suspected Boulder								
		S2: 4.0 ft - 6.0 ft, A-2-4, Rec. = 0.8 ft, Brown, moist, loose, fine to coarse SAND, some silt, little gravel, poorly-graded (SM)				6-4-3-6 (7)	13.6	26.6	42.4	31.0
5.0										
7.5										
		9.0 ft - 11.0 ft, Rec. = 0.0 ft				2-2-3-4 (5)				
10.0										
		S3: 11.0 ft - 13.0 ft, A-1-b, Rec. = 1.0 ft, Brown, wet, medium dense, fine to coarse SAND, little silt, trace gravel, wood chips in the top 3", well-graded (SM)				2-5-9-8 (14)	46.3	18.1	67.0	14.9
12.5										
		S4: 14.0 ft - 16.0 ft, A-4, Rec. = 1.0 ft, Gray, wet, very loose, SILT, some sand, trace gravel, poorly-graded (ML)				1-WOH-WOH-WOH (WOH)	45.5	5.1	34.1	60.8
15.0										
17.5										
		18.5 ft - 23.5 ft, NQ, Green, fine-grained, fresh (W1), very strong (R5), SCHIST and PHYLLITE; discontinuities low angle to steep (15 to 75°), very close to moderately closely spaced (0.15 to 2.0 ft) [Carbonaceous Phyllite Member, Ottauquechee Formation]	1	86 (77)	5.3 5.9 5.9 4.3 5.5	(R) (R) (R) (R) (R)	Top of Bedrock @ 18.3 ft			
20.0										
22.5										
		Hole stopped @ 23.5 ft								

SUBFOOTING 1
TOP OF
FOOTING
ELEV. 494.00

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_r is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36 GAU 21497656

Boring No.: **B-102**
Page No.: 2 of 2
Pin No.: 93J040
Checked By: BK

Boring Crew: Platform - Michael Jordan, GAU Andrew Martin
Date Started: 11/19/21 Date Finished: 11/19/21
VTSPG NAD83: N 672391.97 ft E 1575814.11 ft
Station: Offset:
Ground Elevation: 509.0 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	2 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/NWJ	
Rig:	Geoprobe 7822DT	C_r = 1.68

Groundwater Observations

Date	Depth (ft)	Notes
11/19/21	15.5	When casing in
11/19/21	7.1	Before rock coring

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
27.5		Remarks: - AASHTO and USCS classifications are based on the results of sieve analyses of the samples - Boring backfilled with all purpose gravel to ground surface by the Town of Waterbury Highway Department								
30.0										
32.5										
35.0										
37.5										
40.0										
42.5										
45.0										
47.5										

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_r is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_stowe.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: T. LUTHER
BORING LOG PLAN SHEET 2

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 39 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36 GAU 21497656

Boring No.: **B-103**
Page No.: 1 of 1
Pin No.: 93J040
Checked By: BK

Boring Crew: Platform - Michael Jordan, GAU Andrew Martin
Date Started: 12/10/21 Date Finished: 12/10/21
VTSPG NAD83: N 672329.16 ft E 157834.09 ft
Station: Offset:
Ground Elevation: 507.7 ft

	Casing	Sampler
Type:	WASH BORE	N.A.
I.D.:	3 in	
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	Auto/NWJ	
Rig:	Geoprobe 7822DT	C_e = 1.68

Groundwater Observations		
Date	Depth (ft)	Notes
12/10/21	12.6	Taken after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.3 ft, ASPHALT								
		1.0 ft - 2.0 ft, Driller Notes: Drilled through concrete obstruction								
2.5										
5.0										
7.5		7.0 ft - 8.0 ft, Driller Notes: Drilling difficulty increased. Possible cobbles								
		8.0 ft - 14.0 ft								
10.0										
12.5										
		14.0 ft - 15.0 ft, CONCRETE								
15.0		15.0 ft - 19.0 ft, NX, Gray, fine-grained, fresh (W1), very strong (R5), SCHIST and PHYLLITE; discontinuities low angle to steep (20 - 60°), very close to closely spaced (0.1 - 0.8 ft) [Carbonaceous Phyllite Member, Ottauquechee Formation]	1	55 (29)	6.5 7.9 9.3 9.5	(R) (R) (R) (R)				
		Top of Bedrock @ 15.0 ft								
		Hole stopped @ 19.0 ft								
20.0										
22.5										

SUBFOOTING 2
TOP OF
FOOTING
ELEV. 494.00

Remarks:
- Boring backfilled with all purpose gravel to ground surface by the Town of Waterbury Highway Department

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_e is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG VTRANS WATERBURY BRIDGE NO. 36.GPJ VERMONT AOT.GDT 6/16/22

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury-Stowe
STP 2945(1)
VT-100 Mast Arms

Boring No.: **B-201**
Page No.: 1 of 1
Pin No.: 11b342
Checked By: END

Boring Crew: Gonyaw, Garrow, Mazzei
Date Started: 7/19/17 Date Finished: 7/19/17
VTSPG NAD83: N 672502.70 ft E 1575810.04 ft
Station: Offset:
Ground Elevation: 515.8 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	3 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Diedrich D25	CE = Unknown

Groundwater Observations		
Date	Depth (ft)	Notes
07/19/17	5.4	W.T. during drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-1-b, GrSa, brn, Moist, Rec. = 1.4 ft				2-2-2-2 (4)	10.0	35.9	44.2	19.9
		A-1-b, SaGr, brn, Moist, Rec. = 0.6 ft				3-3-3-4 (6)	8.0	48.6	33.3	18.1
5		A-4, GrSaSi, brn, Moist, Rec. = 1.4 ft				3-2-5-8 (7)	14.2	23.1	34.3	42.6
		A-1-b, SaSiGr, gry, Moist, Rec. = 1.6 ft, Lab Note: Broken and weathered rock was within sample Field Note:, BXDC, cleaned out casing				8-5-17-7 (22)	7.0	54.3	22.8	22.9
		A-1-b, GrSa, brn-gry, Moist, Rec. = 1.1 ft				8-8-R@2.5" (R)	14.2	36.6	43.7	19.7
		Field Note:, BXDC, roller cone cleaned out casing								
10		A-1-b, GrSa, gry, Moist, Rec. = 0.5 ft				R@5" (R)	19.2	35.3	49.3	15.4
		Field Note:, BXDC, roller cone cleaned out casing								
15		Field Note:, No Recovery				R@5"				
		15.4 ft - 18.4 ft, Light gray-green, PHYLLITE, consisting of "sandy" quartz-muscovite-chlorite and thinly veined CaCO3 bearing quartz strewn throughout. Joints are rough with light orange oxidation. Moderately hard, Slightly weathered, Poor rock, BX, RMR=41	1 (75)	77 (26)	5 6 6	(R)top of Bedrock @ 15.4 ft				
20		18.4 ft - 23.4 ft, Interbedded light gray-green and black, PHYLLITE, containing distinct cm wide zones of quartz-muscovite-chlorite and fine grained graphitic minerals. Both zones have CaCO3 bearing quartz strewn throughout. Joints are rough with light orange oxidation. Moderately hard, Slightly weathered, Fair rock, BX, RMR=49	2 (80)	48 (63)	6 5 8 8 5					
		23.4 ft - 25.4 ft, White, Pinstriped black PHYLLITE, with black cm wide zones of fine-grained, graphitic minerals and are sulfide bearing. White pinstripes are CaCO3 bearing quartzite. Low RQD value due in part to mechanical breking by drill. Moderately hard, Moderately weathered, Poor rock, RMR=29 BX	3 (75)	65 (0)	6 4					
25		Hole stopped @ 25.4 ft								

Remarks:
Hole collapsed at 8.5 feet.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
<<SUB>><<SUB>> is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 WATERBURY-STOWE STP2945(1).GPJ VERMONT AOT.GDT 8/3/17

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040det_stowe.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: T. LUTHER	CHECKED BY: T. KNIGHT
BORING LOG PLAN SHEET 3	SHEET 40 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury-Stowe
STP 2945(1)
VT-100 Mast Arms

Boring No.: **B-202**
Page No.: 1 of 1
Pin No.: 11b342
Checked By: END

Boring Crew: Emerson, Garrow, Mazzei
Date Started: 7/13/17 Date Finished: 7/18/17
VTSPG NAD83: N 672511.05 ft E 1575716.16 ft
Station: Offset:
Ground Elevation: 511.2 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	3 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Diedrich D25	CE = Unknown

Groundwater Observations		
Date	Depth (ft)	Notes
07/18/17	5.5	W.T. during drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0		A-1-b, GrSa, brn, Moist, Rec. = 0.5 ft				WH-3-2-2 (5)	6.9	39.8	47.6	12.6
2.5		A-1-b, GrSa, brn, Moist, Rec. = 1.1 ft				3-4-3-4 (7)	9.3	36.6	49.5	13.9
5.0		A-1-b, SaGr, brn, Wet, Rec. = 0.5 ft				3-3-2-3 (5)	11.2	47.6	40.5	11.9
7.5		A-1-b, GrSa, brn, Wet, Rec. = 0.65 ft				5-2-3-3 (5)	14.2	41.5	47.7	10.8
		A-1-b, GrSa, brn, Moist, Rec. = 1.5 ft				2-2-8-25 (10)	11.9	42.5	42.7	14.8
10.0		10.1 ft - 15.1 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. Moderately hard, Moderately weathered, Poor rock, BX, RMR=34	1 (80)	90 (16)	4 4 5 5 5	Top of Bedrock @ 10.1 ft				
12.5										
15.0		15.1 ft - 17.6 ft, Black-light gray, Graphitic PHYLLITE, consisting of zones with very fine-grained black minerals that are graphitic and host sulfides, interbedded with "sandy" light gray-green zones of muscovite-biotite-chlorite-quartz. Joints are moderately rough with bright orange oxidation. BX 17.6 ft - 20.1 ft, Light gray-green, Muscovite-biotite-chlorite-quartz PHYLLITE, with erratic veining and cm thick banding of CaCO3 bearing quartz disrupts the contacts between different zones. Joints are smooth with bright orange oxidation. Moderately hard, Moderately weathered, Fair rock, RMR=58	2 (50-90)	96 (85)	9 12 7 7 6					
17.5										
20.0		Hole stopped @ 20.1 ft								
22.5		Remarks: Hole collapsed at 5.2 feet.								

1. Driller switched from 4 inch to 3 inch casing at 8 feet.

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
<<SUB>><<SUB>> is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 WATERBURY-STOWE STP2945(1).GPJ VERMONT AOT.GDT 8/3/17

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36

Boring No.: BH-1
Page No.: 1 of 1
Pin No.: 93J040
Checked By: SPM

Boring Crew: Monette, McGinley, Zottola
Date Started: 5/04/22 Date Finished: 5/04/22
VTSPG NAD83: N 672287.43 ft E 1575803.65 ft
Station: 32+07.0 Offset: 31.7 ft L
Ground Elevation: 504.24 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Diedrich 25	CE = 1.45

Groundwater Observations		
Date	Depth (ft)	Notes
05/04/22	14.0	Measured after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Field Note:, No sampling - boring advanced to bedrock								
5										
10										
15		15.0 ft - 20.0 ft, Gray-black & white graphitic PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Little discoloration of sulfides. Quartz contains some CaCO3, ranges from 1-10 mm wide, & some is aligned with foliation.. NX, Close to moderately close joint spacing. Rough to slightly smooth. Moderately hard. Fresh to very slightly weathered. RMR = 60 (FAIR ROCK)	R-1 (70-75)	100 (68)	5 7 5 6 6	Top of Bedrock @ 15.0 ft				
20		20.0 ft - 25.0 ft, Gray-black & white graphitic PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Little discoloration of sulfides. Quartz contains some CaCO3, ranges from 1-15 mm wide, & some is aligned with foliation.. NX, Close to moderately joint spacing. Slighty rough. Hard. Fresh to very slightly weathered. RMR = 60 (FAIR ROCK)	R-2 (70-75)	96 (61)	5 5 5 4 5					
25		Hole stopped @ 25.0 ft								
30		Remarks: Hole collapse at 20.3 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG WATERBURY BO 1446(40).GPJ VERMONT AOT.GDT 6/17/22

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_stowe.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: T. LUTHER
BORING LOG PLAN SHEET 4

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 41 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36

Boring No.: BH-2
Page No.: 1 of 1
Pin No.: 93J040
Checked By: SPM

Boring Crew: Monette, McGinley, Zottola
Date Started: 4/27/22 Date Finished: 4/27/22
VTSPG NAD83: N 672362.16 ft E 1575777.21 ft
Station: 32+90.5 Offset: 38.9 ft R
Ground Elevation: 501.9 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Diedrich 25	CE = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
04/27/22	6.5	Measured after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Field Note:, No sampling – boring advanced to bedrock								
10		10.0 ft – 15.0 ft, Silver-gray & white graphitic PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Little discoloration of sulfides. Quartz contains CaCO3, ranges from 1–10 mm wide, & is primarily aligned along foliation.. NX, Close joint spacing. Rough to slightly smooth. Moderately hard. Fresh to very slightly weathered. RMR = 50 (FAIR ROCK)	R-1 (75-85)	88 (31)	10 9 6 5 5	Top of Bedrock @ 10.0 ft				
15		15.0 ft – 20.0 ft, Silver-gray & white graphitic PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Little discoloration of sulfides. Quartz contains CaCO3, ranges from 1–10 mm wide, & is primarily aligned along foliation.. NX, Close to moderately joint spacing. Rough to slightly smooth. Hard. Fresh to very slightly weathered. RMR = 50 (FAIR ROCK)	R-2 (75-80)	90 (65)	6 6 5 4 4					
20		Hole stopped @ 20.0 ft								

Remarks:
Hole collapse at 12.3 ft

SUBFOOTING 1
TOP OF
FOOTING
ELEV. 494.00

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG WATERBURY BO 1446(40).GPJ VERMONT AOT.GDT 6/17/22

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36

Boring No.: BH-3
Page No.: 1 of 1
Pin No.: 93J040
Checked By: SPM

Boring Crew: Monette, McGinley, Zottola
Date Started: 4/26/22 Date Finished: 4/26/22
VTSPG NAD83: N 672374.04 ft E 1575793.45 ft
Station: 32+97.8 Offset: 20.0 ft L
Ground Elevation: 506.76 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Diedrich 25	CE = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
04/26/22	10.9	Measured after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Field Note:, No sampling – boring advanced to bedrock								
10		Field Note:, RC cleanout 11.0'–14.0'. Wood from 12.5'–14.0'. RC cleanout 17.0'–18.0'.								
20		18.0 ft – 23.0 ft, Silver-gray & white graphitic PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Little discoloration of sulfides. Quartz contains CaCO3, ranges from 1–10 mm wide, & is primarily aligned along foliation.. NX, Close joint spacing. Rough to slightly smooth. Moderately hard. Fresh to very slightly weathered. RMR = 50 (FAIR ROCK)	R-1 (85)	100 (42)	10 13 6 6 6	Top of Bedrock @ 18.0 ft				
25		23.0 ft – 28.0 ft, Silver-gray & white graphitic PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Little discoloration of sulfides. Quartz contains CaCO3, ranges from 1–10 mm wide, & is primarily aligned along foliation.. NX, Close to moderately joint spacing. Rough to slightly smooth. Hard. Fresh to very slightly weathered. RMR = 55 (FAIR ROCK)	R-2 (75-85)	100 (72)	5 4 6 4 4					
30		Hole stopped @ 28.0 ft								

Remarks:
Hole collapse at 14.2 ft

SUBFOOTING 1
TOP OF
FOOTING
ELEV. 494.00

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG WATERBURY BO 1446(40).GPJ VERMONT AOT.GDT 6/17/22

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_stowe.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: T. LUTHER
BORING LOG PLAN SHEET 5

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 42 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36

Boring No.: BH-4
Page No.: 1 of 1
Pin No.: 93J040
Checked By: SPM

Boring Crew: Monette, McGinley, Zottola
Date Started: 5/03/22 Date Finished: 5/03/22
VTSPG NAD83: N 672420.36 ft E 1575818.33 ft
Station: 33+34.7 Offset: 17.5 ft R
Ground Elevation: 509.98 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Diedrich 25	CE = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
05/03/22	8.0	Measured after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Field Note:, No sampling – boring advanced to bedrock								
15		15.0 ft – 20.0 ft, Green-gray & white PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Discoloration and some weathering out of sulfides and quartz. Quartz contains CaCO3, ranges from 1–15 mm wide, & is primarily aligned with foliation.. NX, Very close to close joint spacing. Rough. Moderately hard. Slightly weathered to moderately weathered. RMR = 34 (POOR ROCK)	R-1 (85)	90 (21)	6 6 12 11 4	Top of Bedrock @ 15.0 ft				
20		20.0 ft – 25.0 ft, Green-gray & white PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Quartz contains CaCO3, ranges from 1–15 mm wide, & is primarily aligned with foliation.. NX, Moderately close joint spacing. Rough. Moderately hard. Fresh. RMR = 65 (GOOD ROCK)	R-2 (75–85)	100 (63)	4 4 4 4 5					
25		Hole stopped @ 25.0 ft								
30		Remarks: Hole collapse at 11.2 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG WATERBURY BO 1446(40).GPJ VERMONT AOT.GDT 6/17/22

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

Waterbury
BO 1446(40)
TH2, Br #36

Boring No.: BH-5
Page No.: 1 of 1
Pin No.: 93J040
Checked By: SPM

Boring Crew: Monette, McGinley, Zottola
Date Started: 5/03/22 Date Finished: 5/03/22
VTSPG NAD83: N 672364.25 ft E 1575893.29 ft
Station: Offset:
Ground Elevation: 506.24 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	Auto/AWJ	
Rig:	Diedrich 25	CE = 1.45

Groundwater Observations

Date	Depth (ft)	Notes
05/03/22	4.2	Measured after drilling

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Field Note:, No sampling – boring advanced to bedrock								
15		12.8 ft – 17.8 ft, Gray & White PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Discoloration of sulfides. Quartz ranges from 1–10 mm wide.. NX, Close to moderately close joint spacing. Slightly rough. Moderately hard. Slightly weathered. RMR = 55 (FAIR ROCK)	R-1 (65–75)	100 (35)	5 5 4 5 5	Top of Bedrock @ 12.8 ft				
20		17.8 ft – 22.8 ft, Dark-gray & white to white & green-gray PHYLLITE with some sulfides and abundant quartz veining. Fine grained. Little discoloration of sulfides. At 0' – 1.9' of recovered portion, quartz ranges from 1–5 mm wide, with inclusions up to 30 mm wide.. NX, At 1.9' – 5.0' of recovered portion, primarily quartz with 1–5 mm wide phyllite pinstripes. Close to moderately close joint spacing. Slightly rough. Moderately hard. Very slightly weathered. RMR = 55 (FAIR ROCK)	R-2 (65–80)	100 (31)	4 5 6 7 8					
25		Hole stopped @ 22.8 ft								
30		Remarks: Hole collapse at 9.9 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

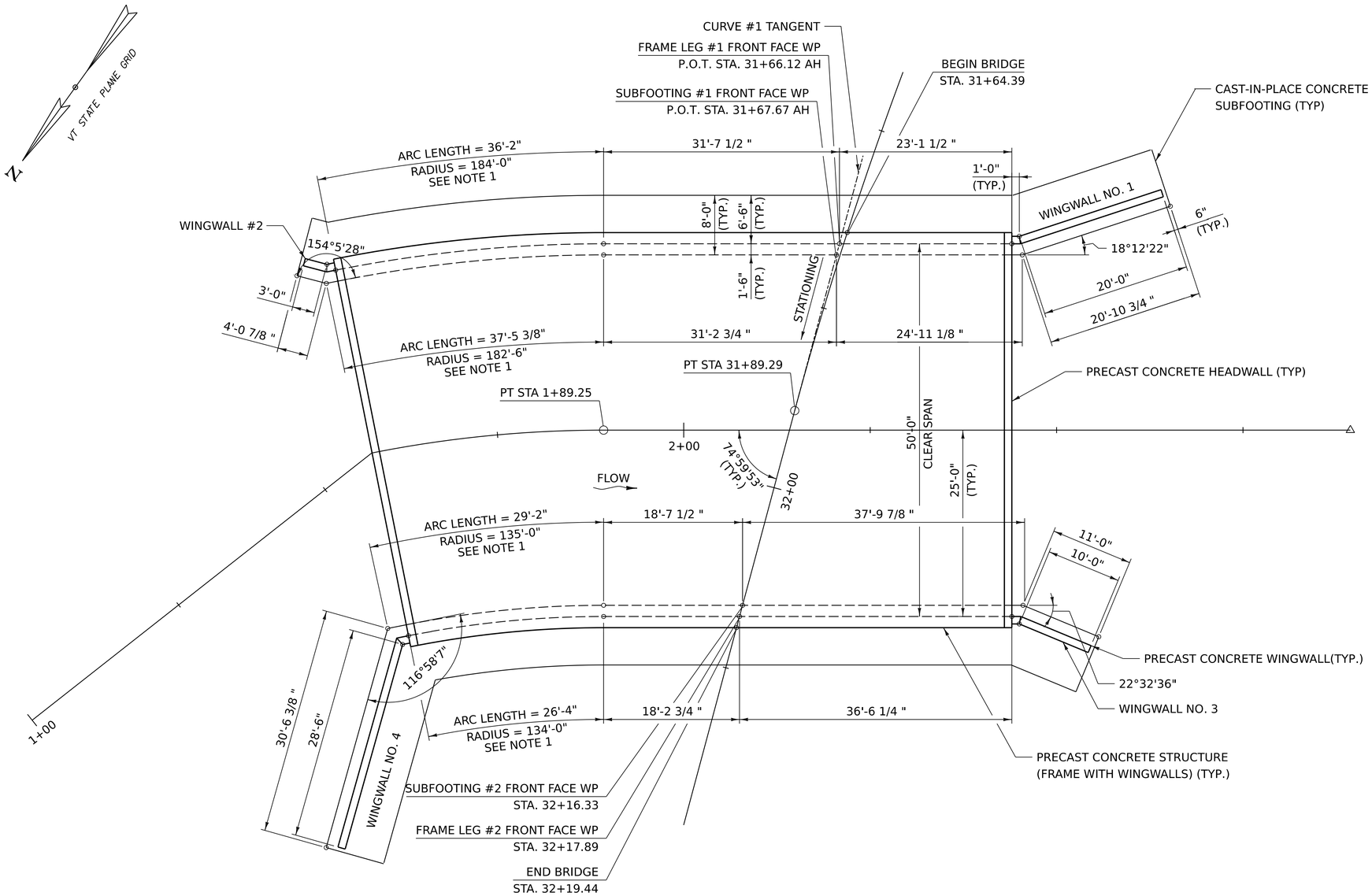
BORING LOG WATERBURY BO 1446(40).GPJ VERMONT AOT.GDT 6/17/22

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_stowe.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: T. LUTHER
BORING LOG PLAN SHEET 6

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: T. KNIGHT
SHEET 43 OF 66



STRUCTURE LAYOUT

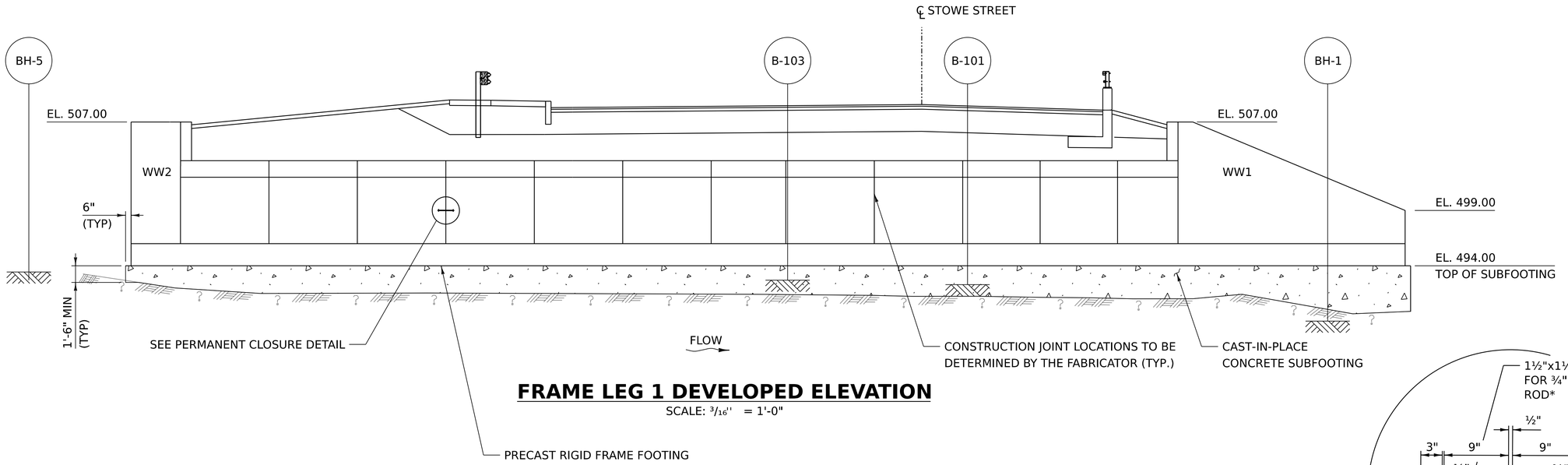
SCALE: ⅛" = 1'-0"

NOTES:

1. CURVATURE IN THE SUBFOOTING AND FRAME STRUCTURE MAY BE CHORDED TO FACILITATE FABRICATION. CHORD SEGMENTS TO BE DETERMINED BY THE FABRICATOR AND CONTRACTOR.

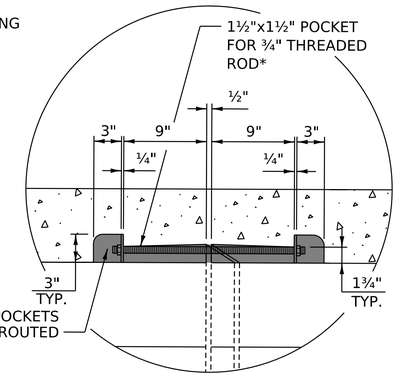
Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME:z93j040sub.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: J. GRIGAS
DESIGNED BY: S. WINES	CHECKED BY: T. KNIGHT
STRUCTURE LAYOUT	SHEET 44 OF 66



FRAME LEG 1 DEVELOPED ELEVATION

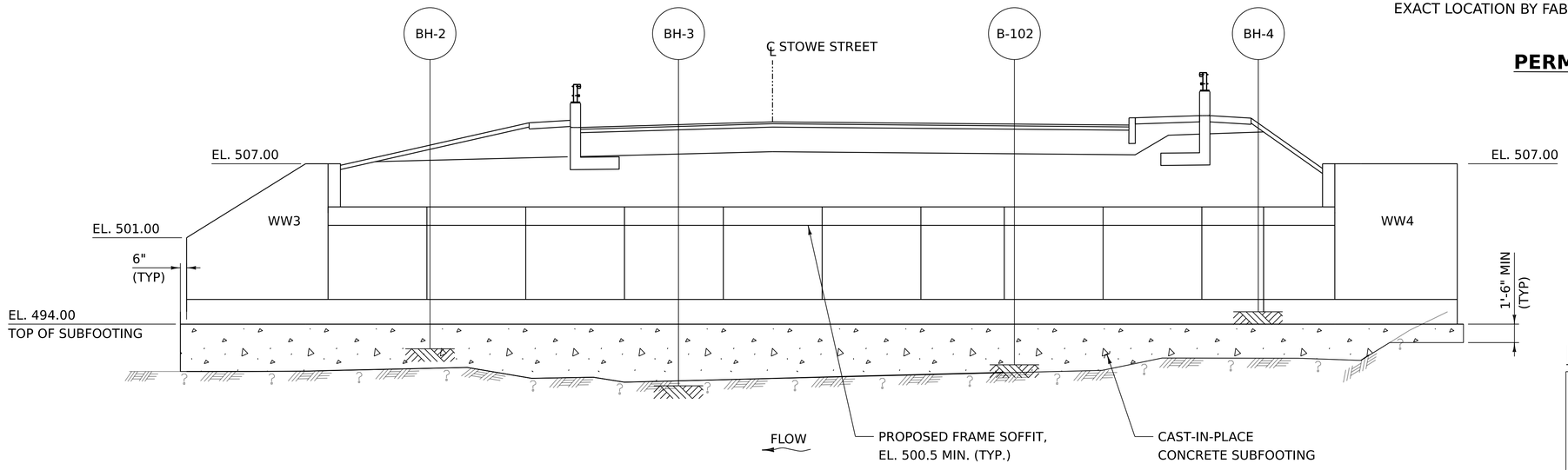
SCALE: $^{3}/_{16}$'' = 1'-0"



MINIMUM 5 LOCATIONS PER JOINT
(1 PER EACH WALL, 3 PER ROOF)
EXACT LOCATION BY FABRICATOR

PERMANENT CLOSURE DETAIL

NOT TO SCALE



FRAME LEG 2 DEVELOPED ELEVATION

SCALE: $^{3}/_{16}$'' = 1'-0"

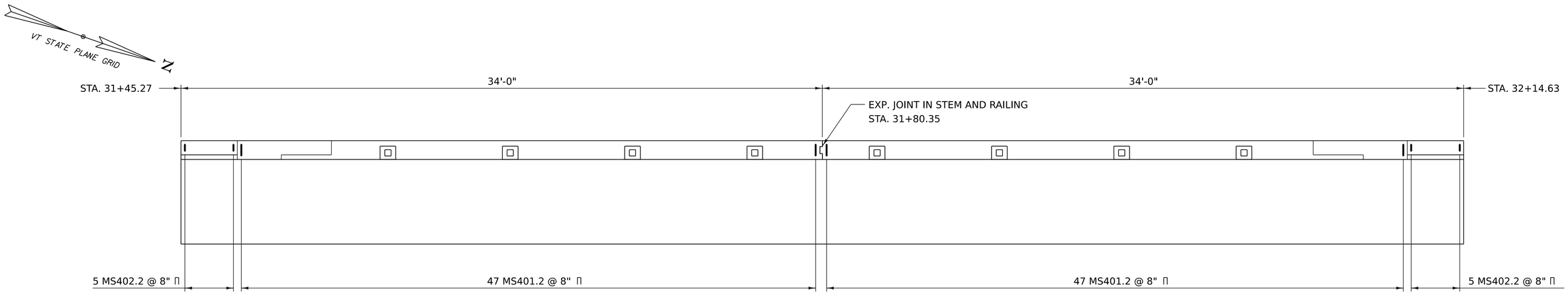
∗ HARDWARE SHALL MEET THE REQUIREMENTS OF SUBSECTION 714.04 AND BE GALVANIZED IN ACCORDANCE WITH SUBSECTION 726.06, COST CONSIDERED INCIDENTAL TO ITEM 540.1000 PRECAST CONCRETE STRUCTURE (FRAME WITH WINGWALLS).

LEGEND

?	ESTIMATED TOP OF LEDGE
B-XX	BORING OR PROBE I.D.

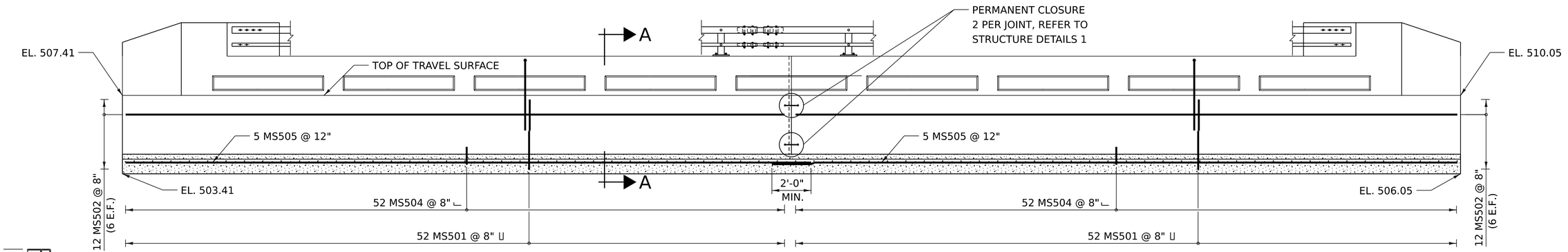
Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME:z93j040sub.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: J. GRIGAS
DESIGNED BY: S. WINES	CHECKED BY: xxx
STRUCTURE DETAILS 1	SHEET 45 OF 66



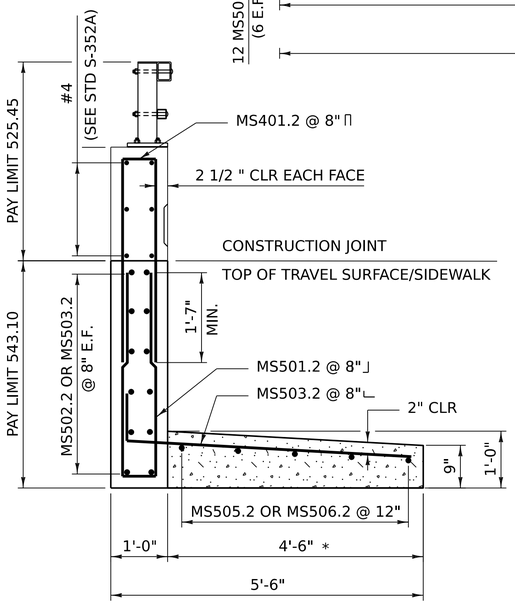
MOMENT SLAB 1 PLAN

SCALE: ⅜" = 1'-0"



MOMENT SLAB 1 ELEVATION

SCALE: ⅜" = 1'-0"



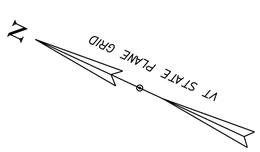
* CAST-IN-PLACE CONCRETE INCIDENTAL TO ITEM 543.1000

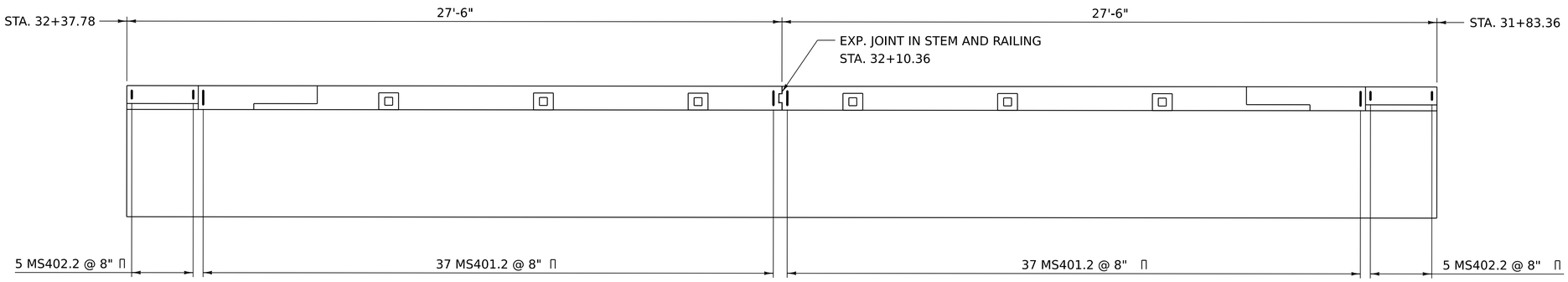
SECTION A-A

SCALE: ¾" = 1'-0"

Stantec

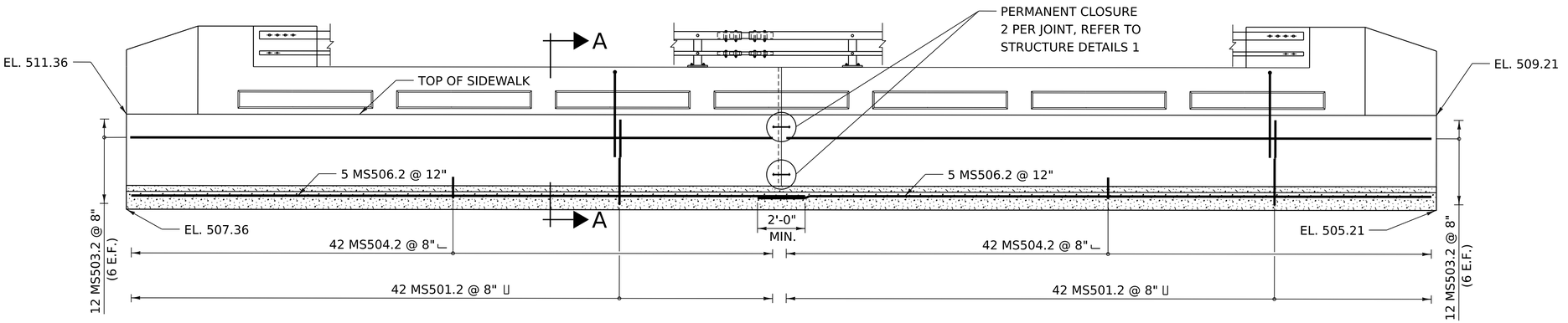
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040bridge_typ.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: S. VERITY
DESIGNED BY: P. GREENBERG	CHECKED BY: T. KNIGHT
MOMENT SLAB DETAILS 1	SHEET 46 OF 66





MOMENT SLAB 2 PLAN

SCALE: ⅜" = 1'-0"

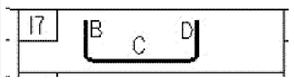


MOMENT SLAB 2 ELEVATION

SCALE: ⅜" = 1'-0"

REINFORCING SCHEDULE

EACH	SIZE	LENGTH	MARK	TYPE	B	C	D	WEIGHT
MOMENT SLAB 1								
94	4	7'- 9"	MS401.2	17	3'- 7"	0'- 7"	3'- 7"	487
10	4	7'- 6"	MS402.2	17	3'- 7"	0'- 4"	3'- 7"	50
104	5	7'- 11"	MS501.2	17	3'- 8"	0'- 7"	3'- 8"	859
24	5	33'- 8"	MS502.2	STR				843
104	5	5'- 11"	MS504.2	17	0'- 10"	5'- 1"	---	642
10	5	34'- 11"	MS505.2	STR				364
MOMENT SLAB 2								
74	4	7'- 9"	MS401.2	17	3'- 7"	0'- 7"	3'- 7"	383
10	4	7'- 6"	MS402.2	17	3'- 7"	0'- 4"	3'- 7"	50
84	5	7'- 11	MS501.2	17	3'- 8"	0'- 7"	3'- 8"	694
24	5	27'- 2"	MS503.2	STR				680
84	5	5'- 11"	MS504.2	17	0'- 10"	5'- 1"	---	518
10	5	28'- 5"	MS506.2	STR				296



NOTES:

1. SEE MOMENT SLABS DETAILS SHEET 1 FOR SECTION A-A
2. SEE SHEET 45 FOR SECTION A-A

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040bridge_typ.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: S. VERITY
DESIGNED BY: P. GREENBERG	CHECKED BY: T. KNIGHT
MOMENT SLAB DETAILS 2	SHEET 47 OF 66

VAOT RURAL AREA MIX

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

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

CONSTRUCTION GUIDANCE

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

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES	TURF ESTABLISHMENT
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR TURF ESTABLISHMENT ITEM 651.1500; 651.600 OR 651.700)	REVISIONS JANUARY 12, 2015 WHF

VAOT URBAN LAWN MIX

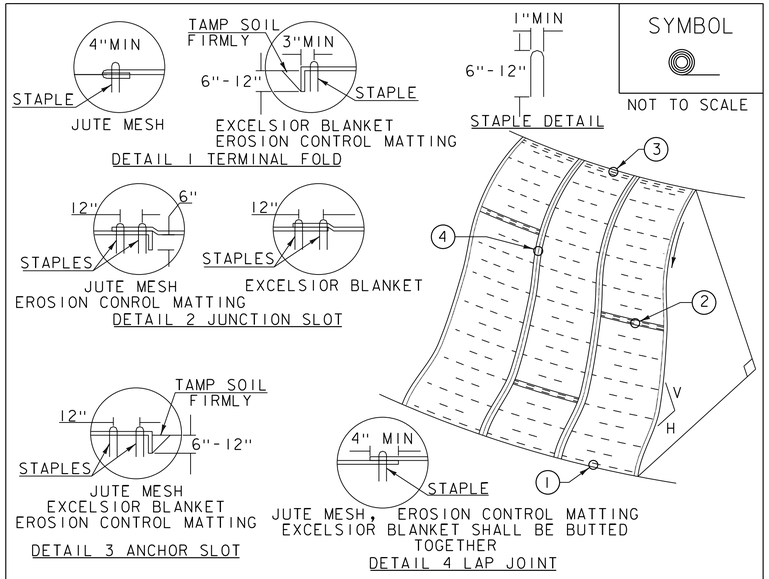
LBS/AC						
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
42.5%	34	68	CREEPING RED FESCUE	FESTUCA RUBRA X RUBRA	85%	98%
20.0%	16	32	PERENNIAL RYE GRASS	LOLIUM PERENNE	90%	95%
32.5%	26	52	KENTUCKY BLUE GRASS	POA PRATENSIS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	80	160				

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

CONSTRUCTION GUIDANCE

1. SEED MIX: THE URBAN AREA MIX SHALL NOT BE USED IN WETLANDS OR ANY WATERS OF THE STATE OF VERMONT.
2. SEED MIX: USE ONLY AS INDICATED IN THE PLANS.
3. SEED MIX: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES	TURF ESTABLISHMENT
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR TURF ESTABLISHMENT ITEM 651.1500; 651.600 OR 651.700)	REVISIONS JANUARY 22, 2015 WHF



CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.2001 OR 653.2002) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

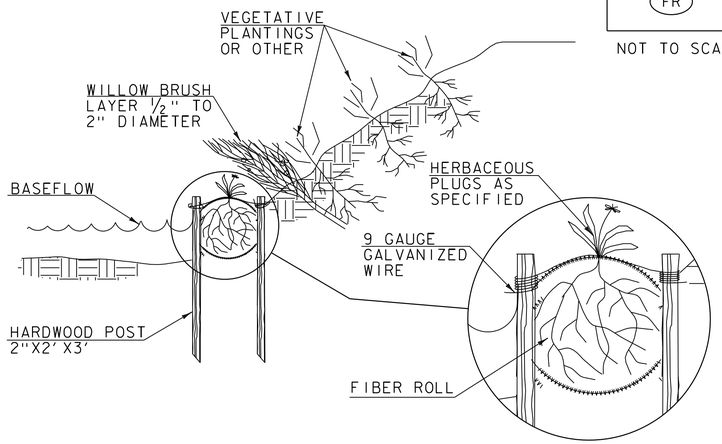
Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040det_stowe.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: VTRANS	CHECKED BY: K.RICHARDSON
EROSION CONTROL DETAIL SHEET 2	SHEET 48 OF 66

SYMBOL

FR

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. EXCAVATE A SHALLOW TRENCH SLIGHTLY BELOW BASEFLOW OR A 4" TRENCH ON SLOPE CONTOURS
2. PLACE THE ROLL IN THE TRENCH AND ANCHOR WITH 2"X2" POSTS PLACED ON BOTH SIDES FO THE ROLL AND SPACED LATERALLY ON 2' TO 4' CENTERS. TRIM THE TOP OF THE POSTS EVEN WITH THE EDGE OF THE ROLL, IF NECESSARY.
3. NOTCH THE POSTS AND TIE TOGETHER, ACROSS THE ROLL, WITH 9 GAUGE GALVANIZED WIRE OR 1/8" DIAMETER BRAIDED NYLON ROPE.
4. PLACE SOIL EXCAVATED FROM THE TRENCH BEHIND THE ROLL AND HAND TAMP. PLANTWITH SUITABLE HERBACEOUS OR WOODY VEGETATION AS SPECIFIED ELSEWHERE IN THE CONTRACT DOCUMENTS. VEGETATION SHALL BE PLACED IMMEDIATELY ADJACENT TO THE ROLL TO PROMOTE ROOT GROWTH INTO THE FIBER. HERBACEOUS VEGETATION, IF SPECIFIED, SHALL BE PLANTED INTO THE FIBER ROLL.

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

FIBER ROLL (EROSION LOG)

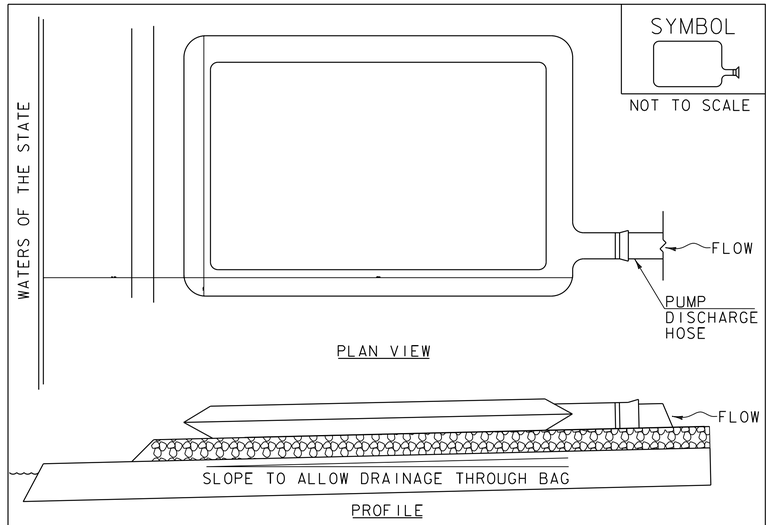
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR EROSION LOG (PAY ITEM 653.6000)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 13, 2009	WHF

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

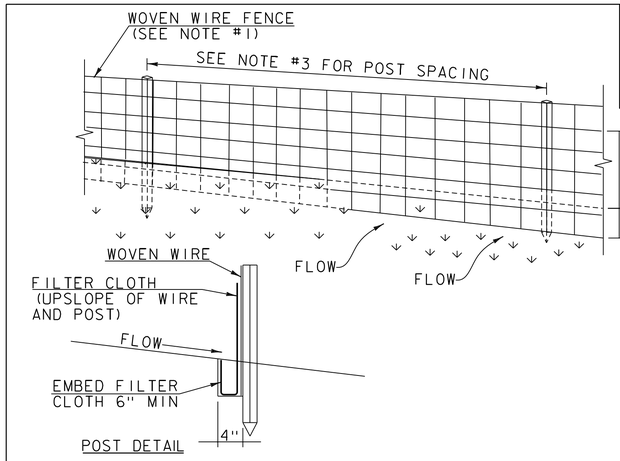
1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

FILTER BAG

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR FILTER BAG (PAY ITEM 653.4500) AND AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



SYMBOL

SILT FENCE

SILT FENCE WOVEN WIRE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

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

SILT FENCE

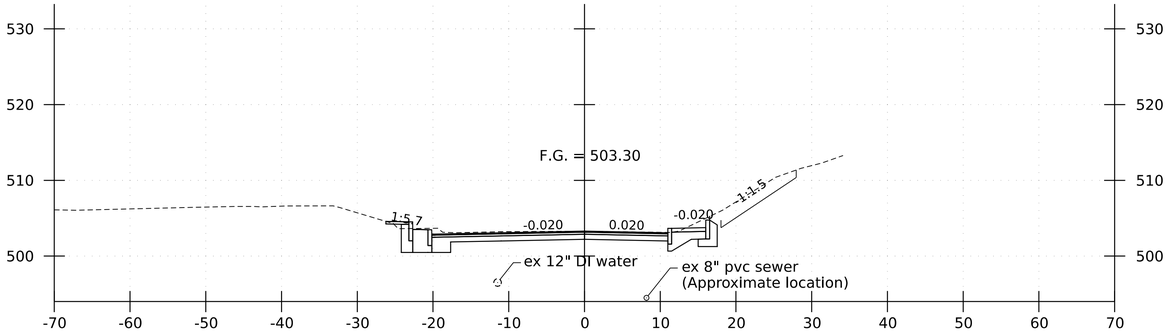
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 653.4701 OR 653.4702) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

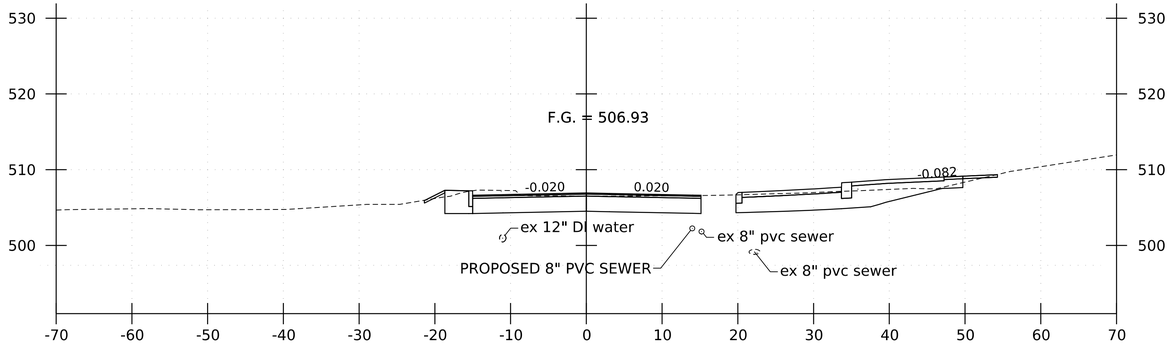
REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF

Stantec

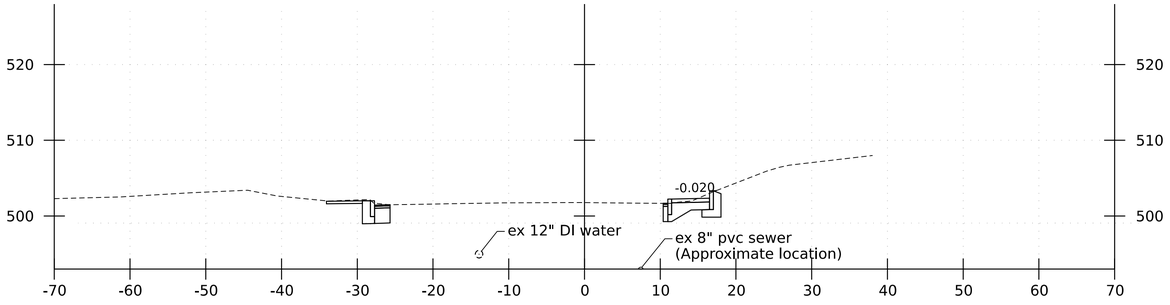
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040det_stowe.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: VTRANS	CHECKED BY: K.RICHARDSON
EROSION CONTROL DETAIL SHEET 1	SHEET 49 OF 66



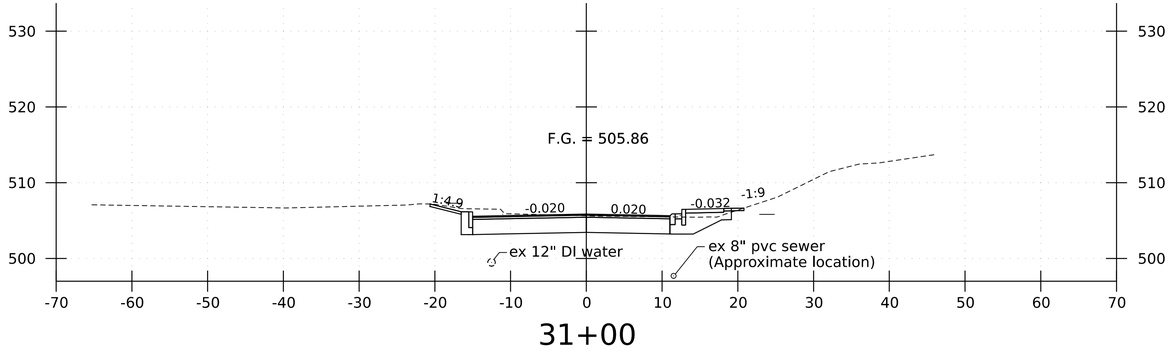
30+50



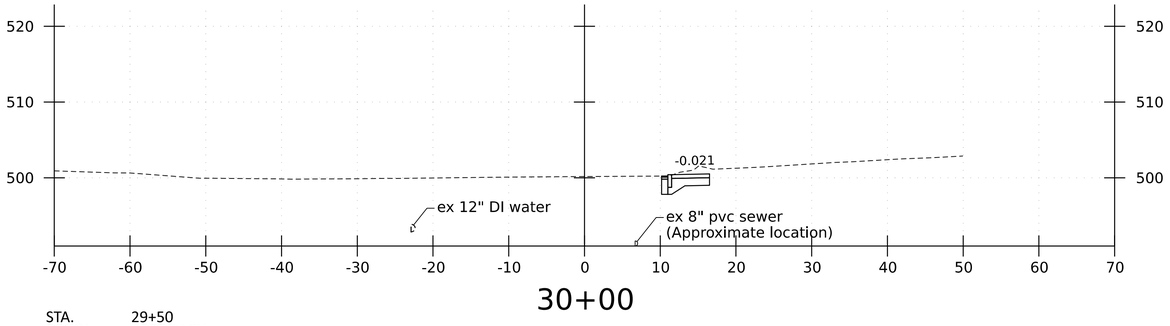
31+25



30+25

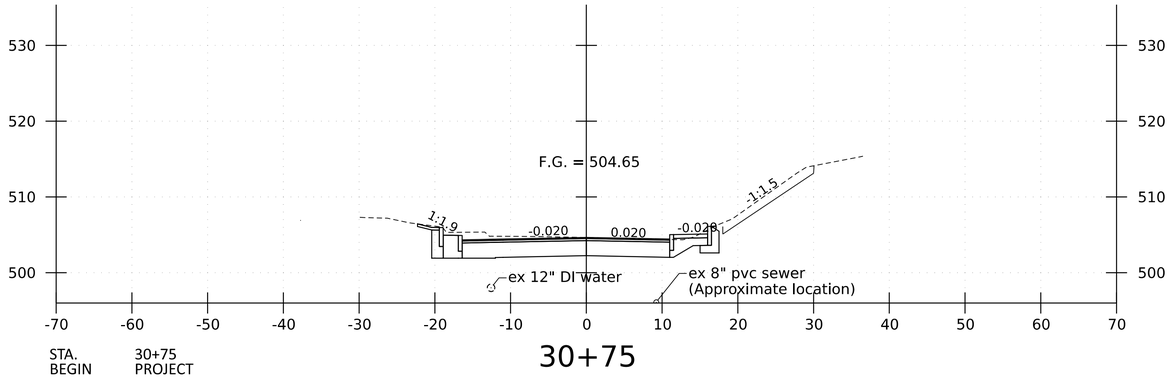


31+00



30+00

STA. 29+50
BEGIN APPROACH



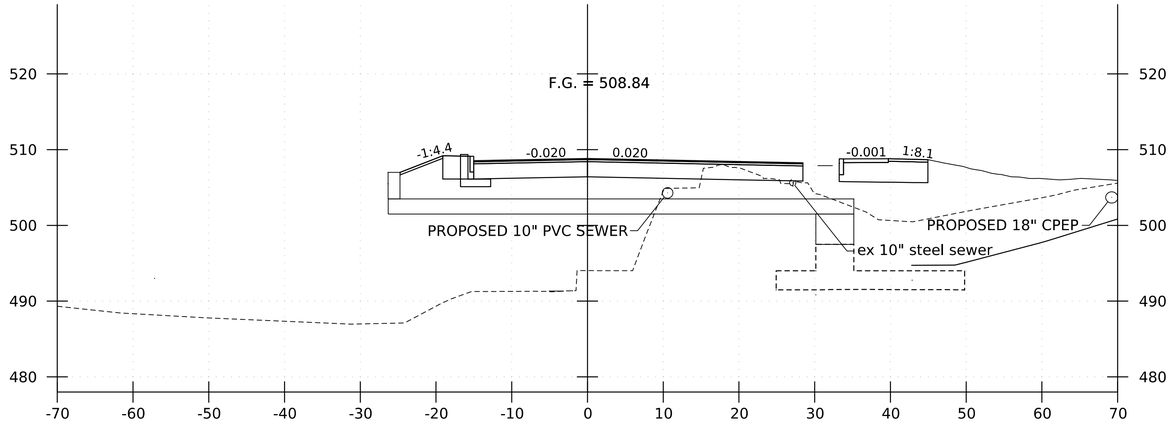
30+75

STA. 30+75
BEGIN PROJECT

Stantec

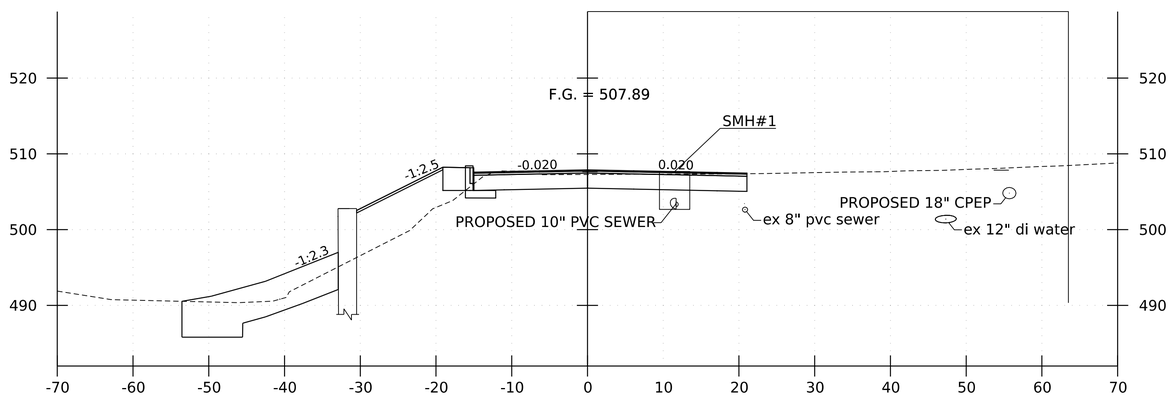
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

FILE NAME:	z93j040xs ord.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	S. WINES
DESIGNED BY:	S. WINES	CHECKED BY:	K. RICHARDSON
STOWE STREET CROSS SECTION SHEET 1		SHEET	50 OF 66

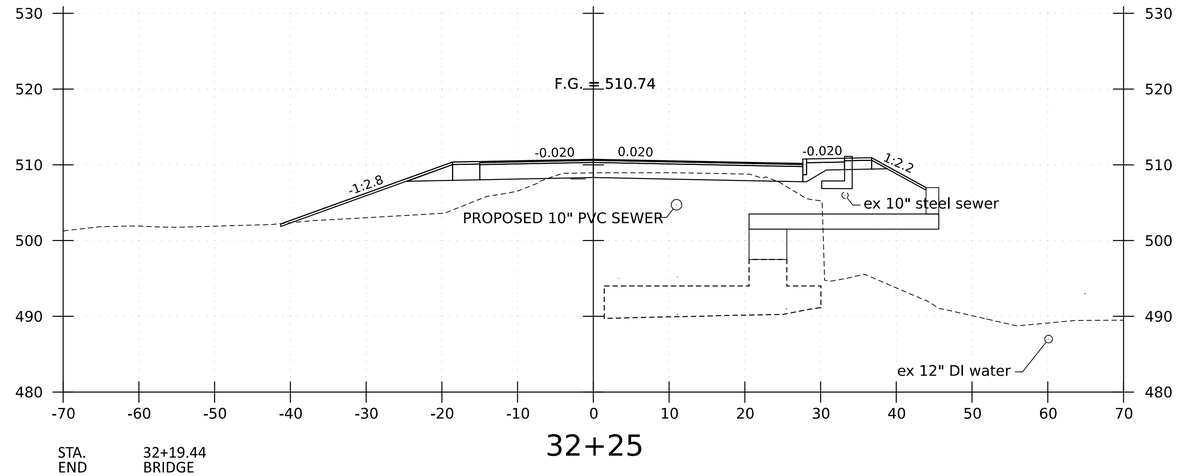


31+75

STA. 31+64.39
BEGIN BRIDGE

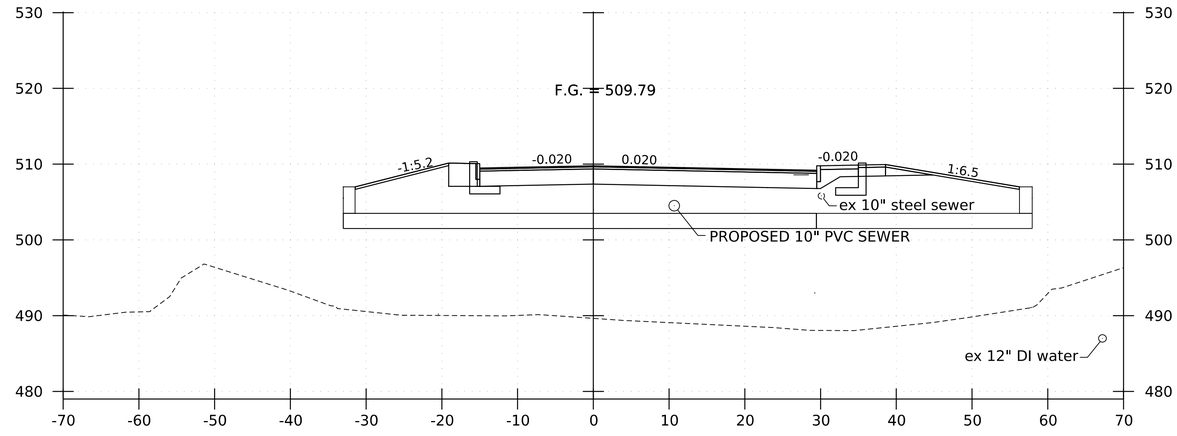


31+50



32+25

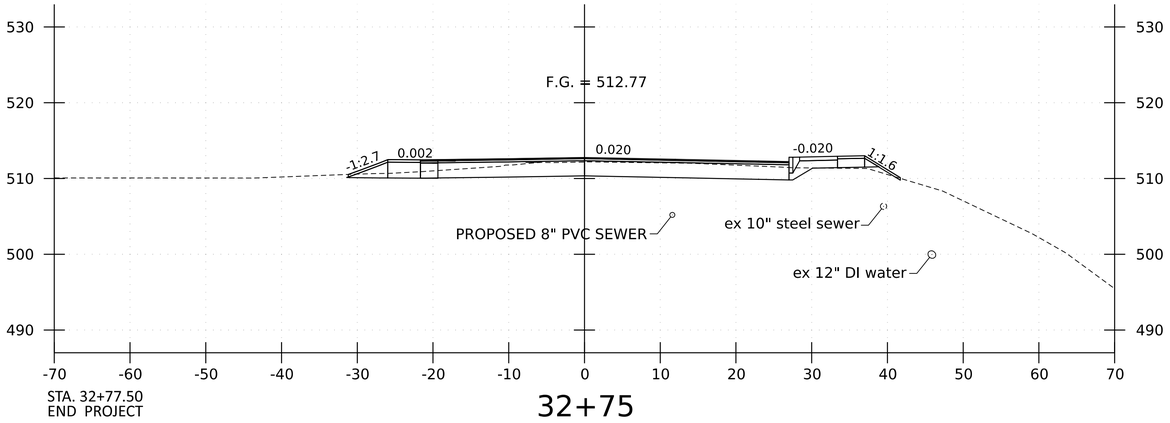
STA. 32+19.44
END BRIDGE



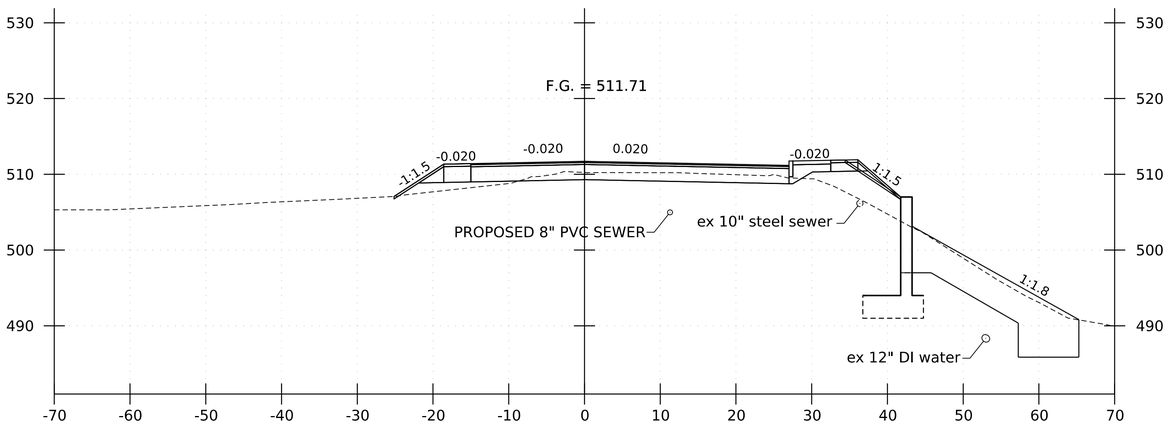
32+00

Stantec

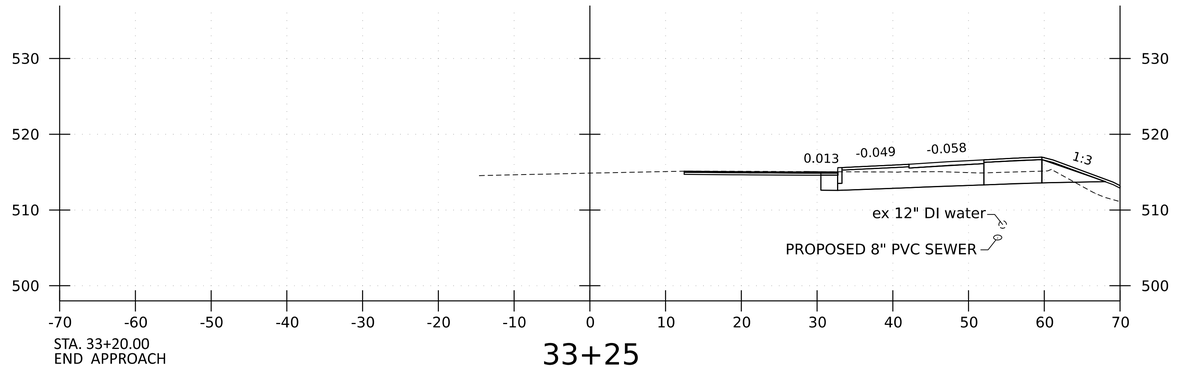
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040xs ord.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: S. WINES
DESIGNED BY: S. WINES	CHECKED BY: K. RICHARDSON
STOWE STREET CROSS SECTION SHEET 2	SHEET 51 OF 66



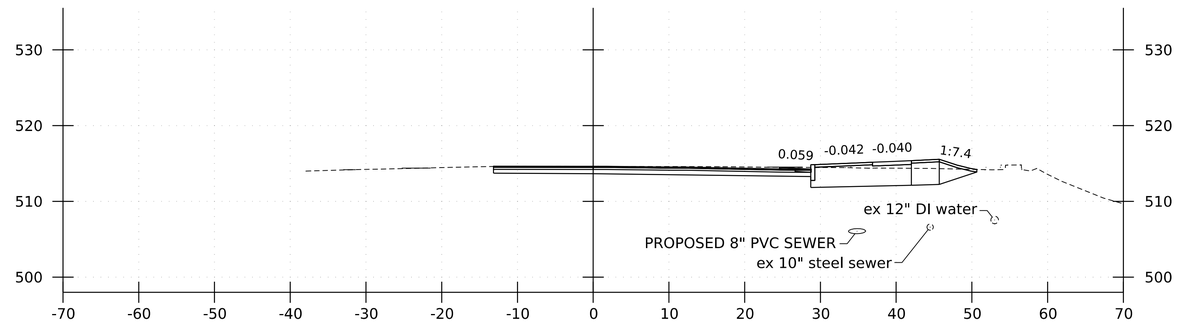
32+75



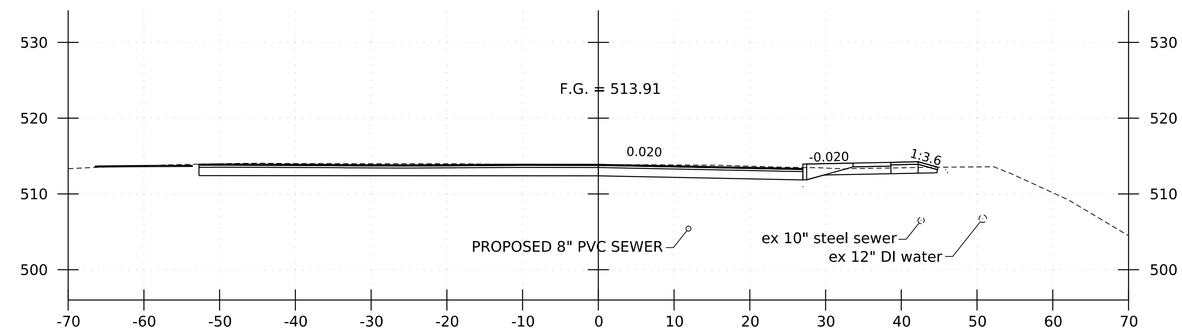
32+50



33+25



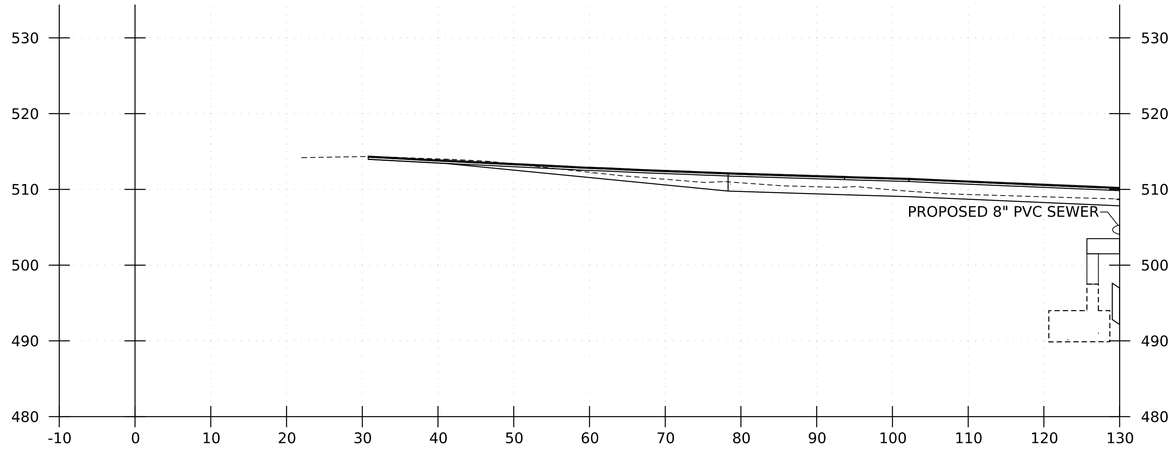
33+15



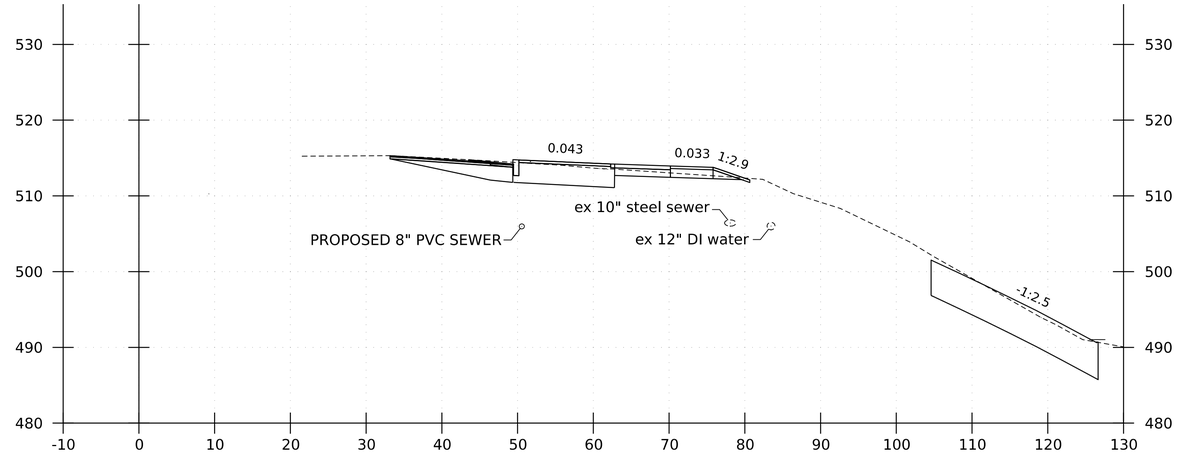
33+00

Stantec

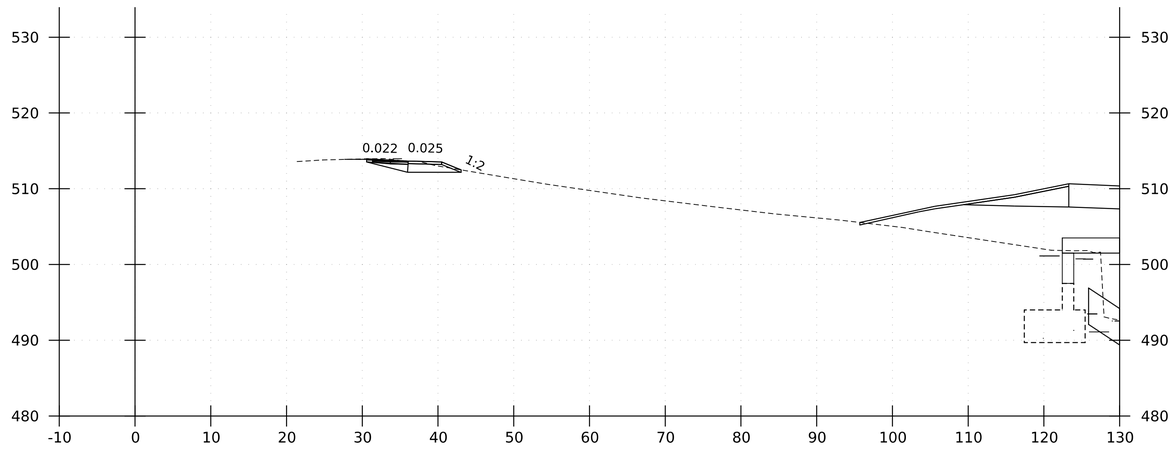
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040xs ord.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: S. WINES
DESIGNED BY: S. WINES	CHECKED BY: K. RICHARDSON
STOWE STREET CROSS SECTION SHEET 3	SHEET 52 OF 66



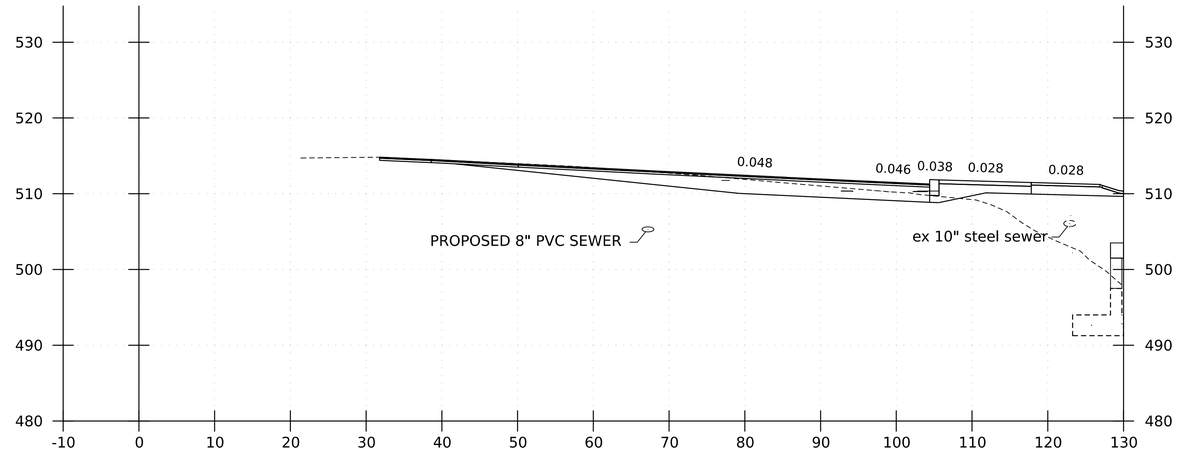
304+75



305+25



304+50

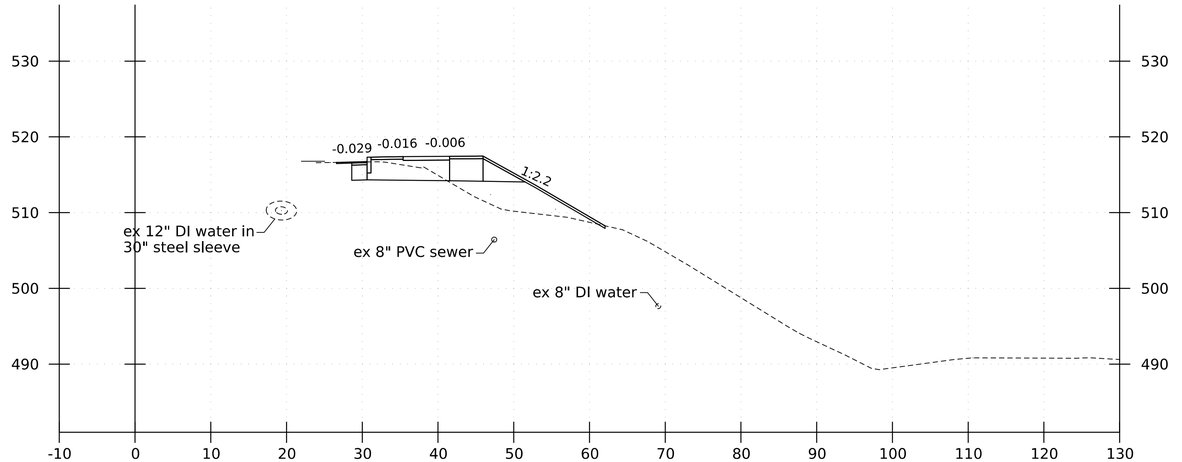


305+00

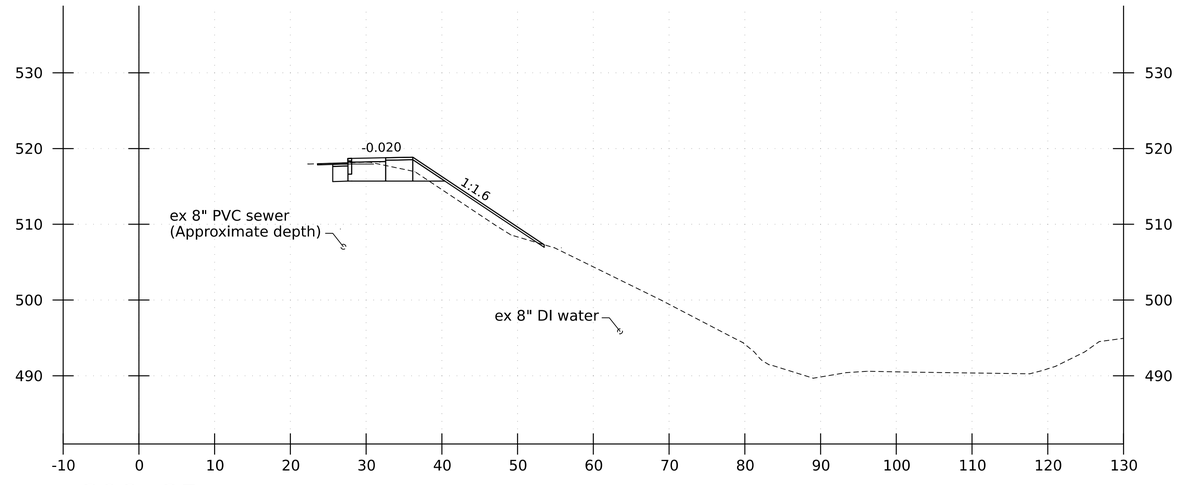
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

Stantec

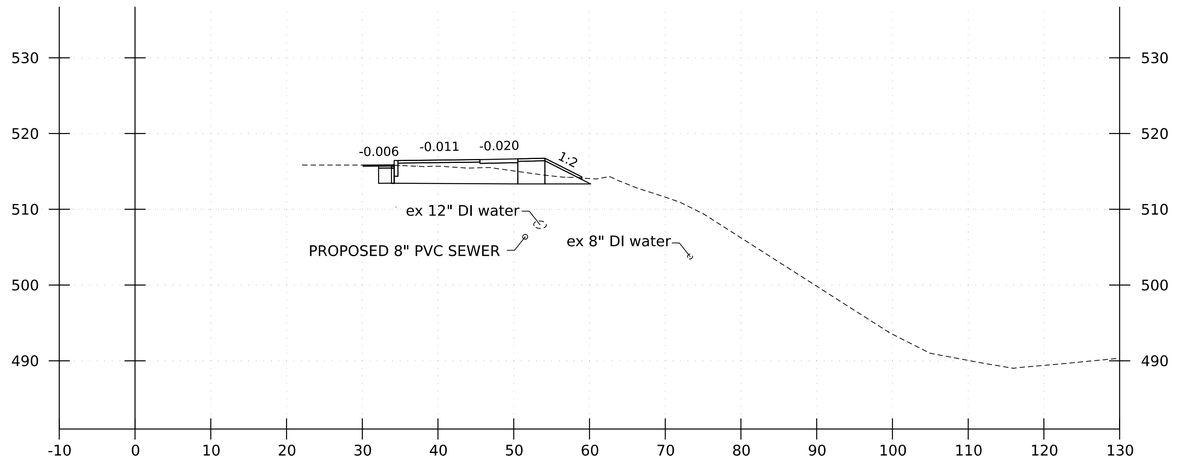
FILE NAME:	z93j040xs ord.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	S. WINES
DESIGNED BY:	S. WINES	CHECKED BY:	K. RICHARDSON
VT ROUTE 100 CROSS SECTION SHEET 1		SHEET	53 OF 66



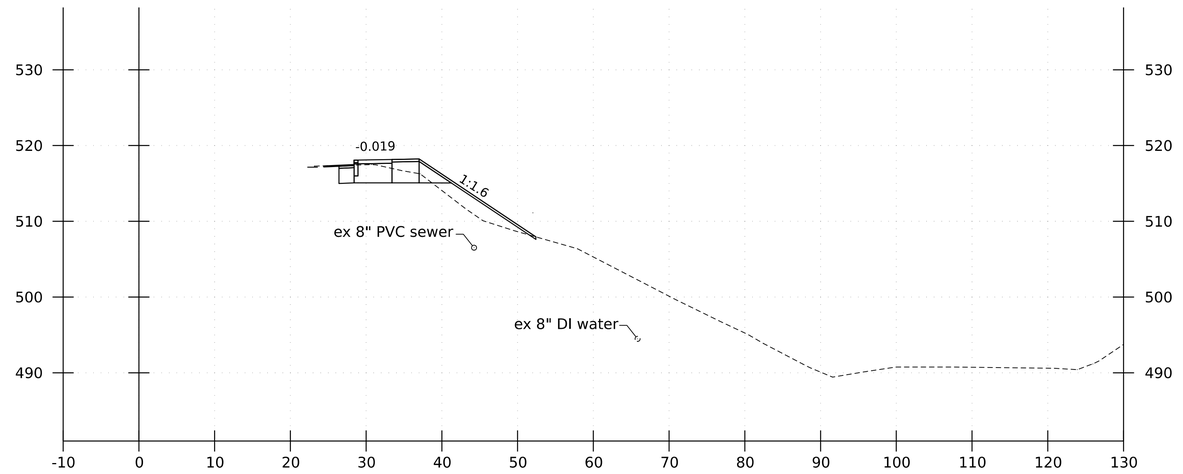
305+75



306+25



305+50

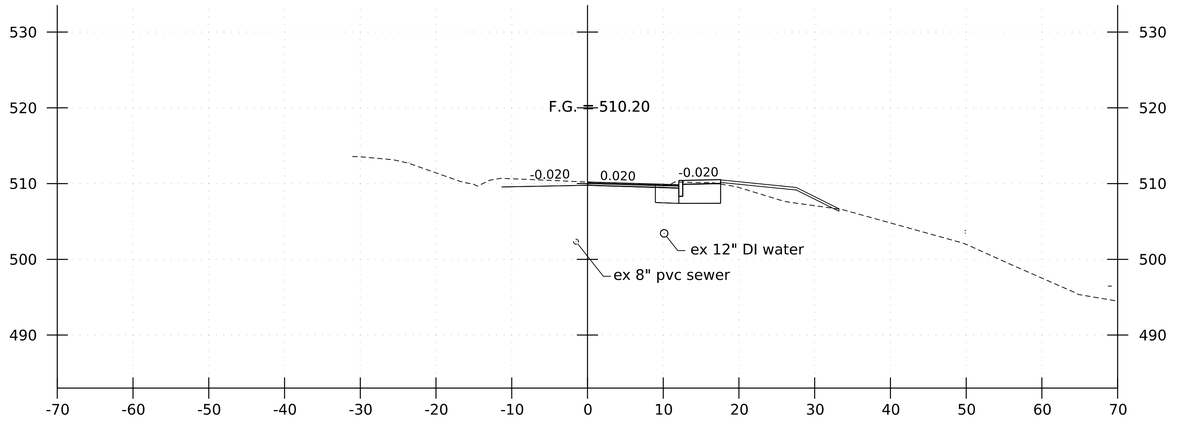


306+00

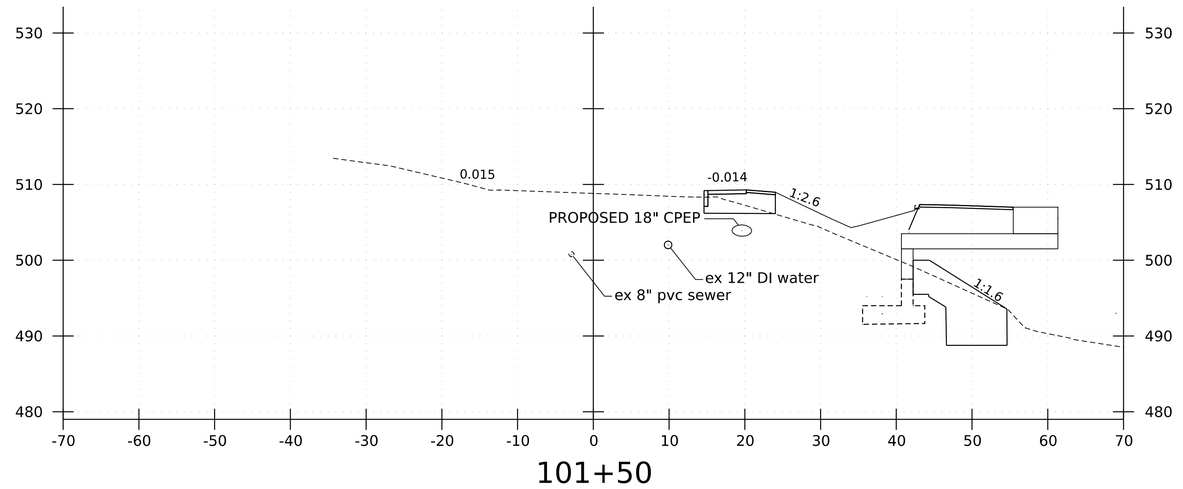
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

FILE NAME:	z93j040xs ord.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	S. WINES
DESIGNED BY:	S. WINES	CHECKED BY:	K. RICHARDSON
VT ROUTE 100 CROSS SECTION SHEET 2		SHEET	54 OF 66

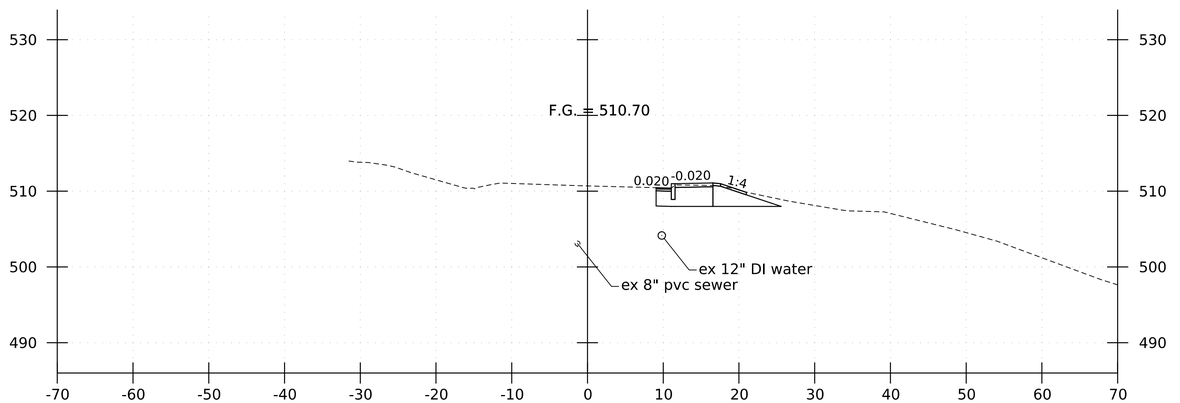
Stantec



101+00

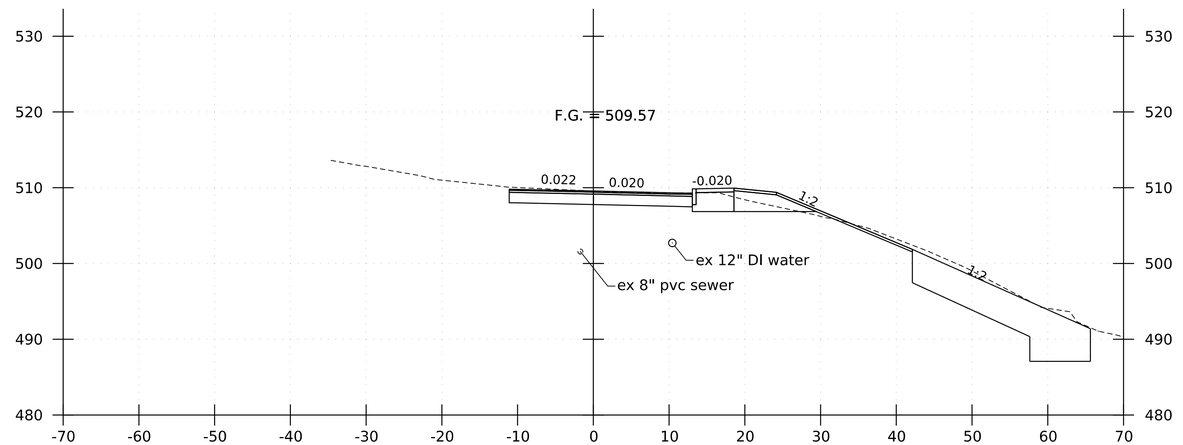


101+50



100+75

STA. 100+75
BEGIN SIDE ROAD APPROACH

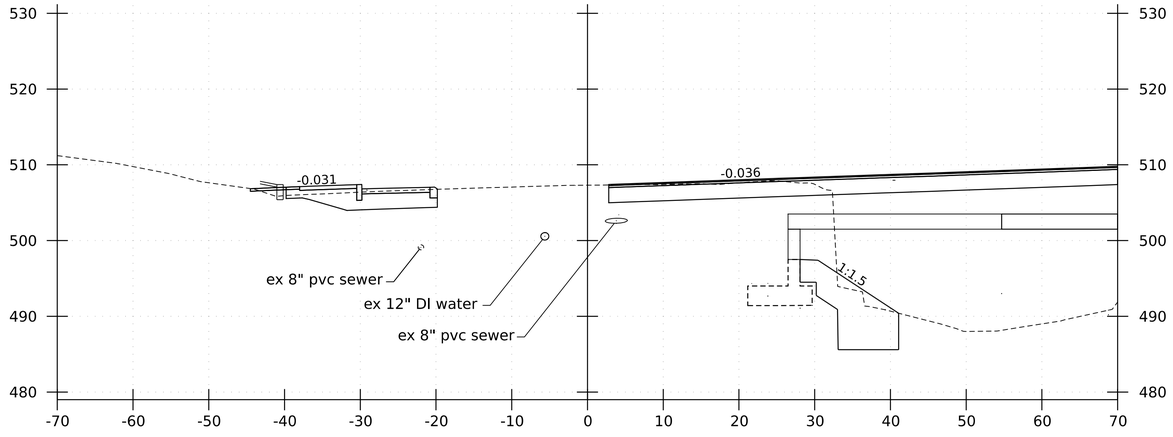


101+25

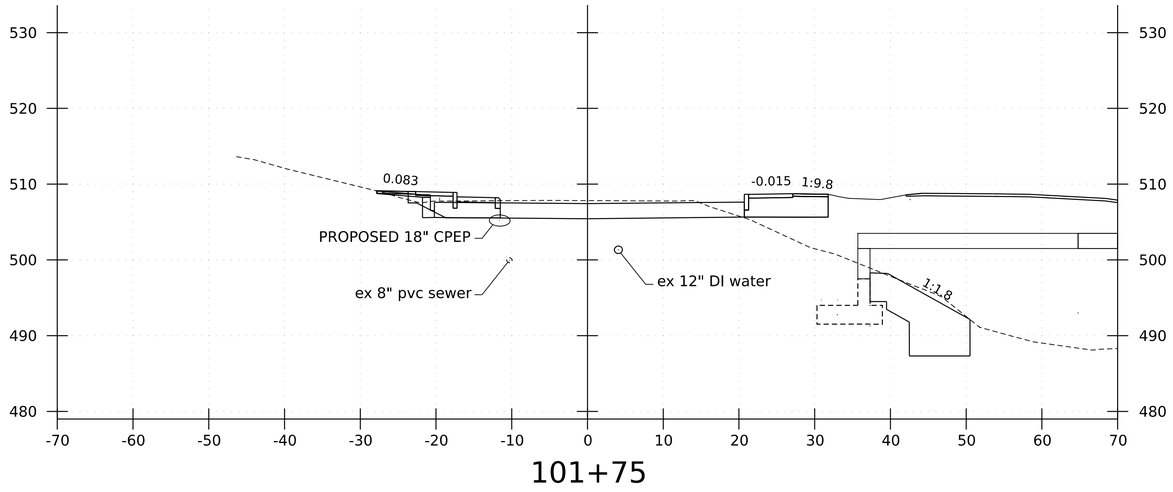
Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

FILE NAME:	z93j040xs ord.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	S. WINES
DESIGNED BY:	S. WINES	CHECKED BY:	K. RICHARDSON
LINCOLN STREET CROSS SECTION SHEET 1		SHEET	55 OF 66



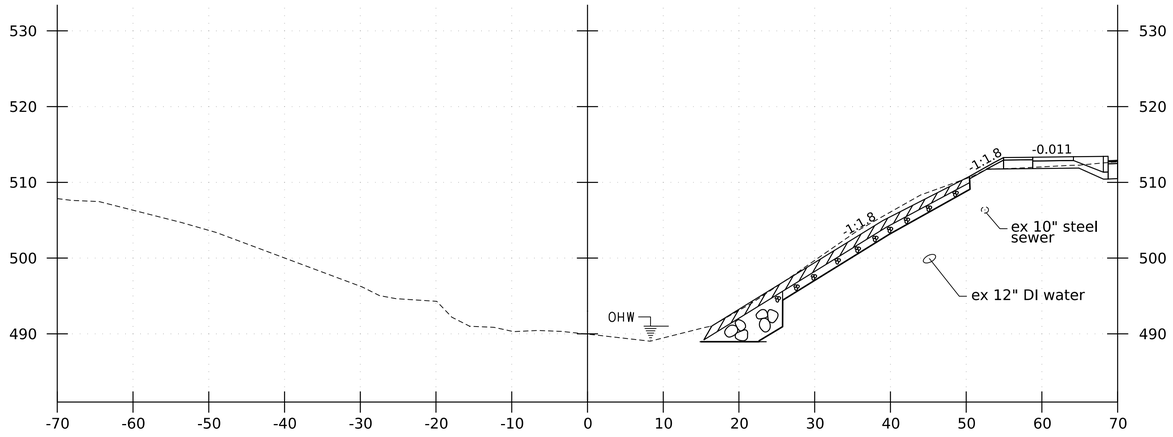
102+00



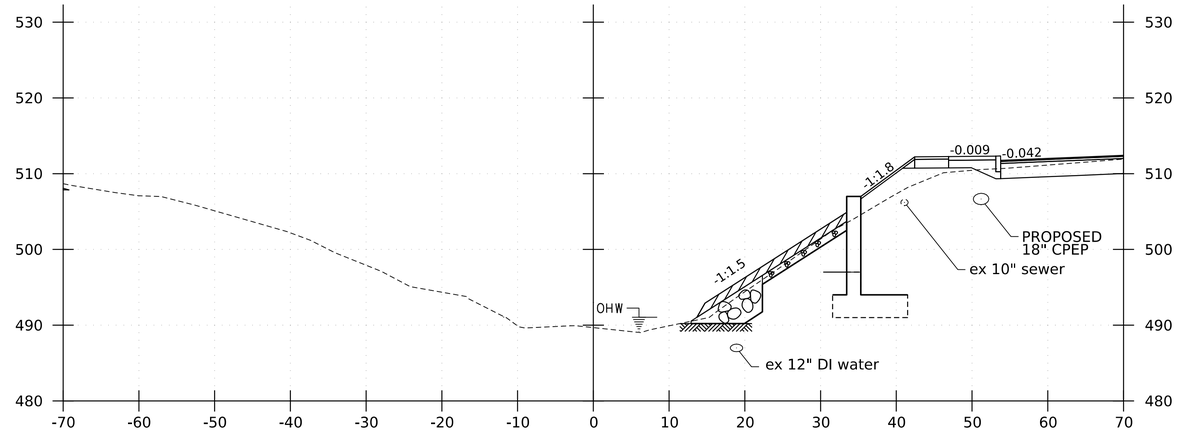
101+75

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040xs ord.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: S. WINES
DESIGNED BY: S. WINES	CHECKED BY: K. RICHARDSON
LINCOLN STREET CROSS SECTION SHEET 2	SHEET 56 OF 66

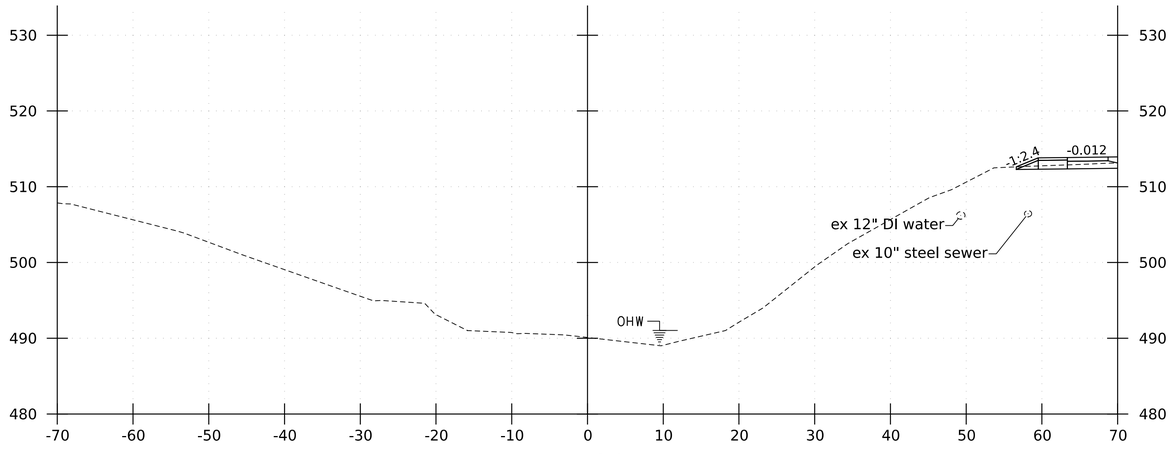


1+10

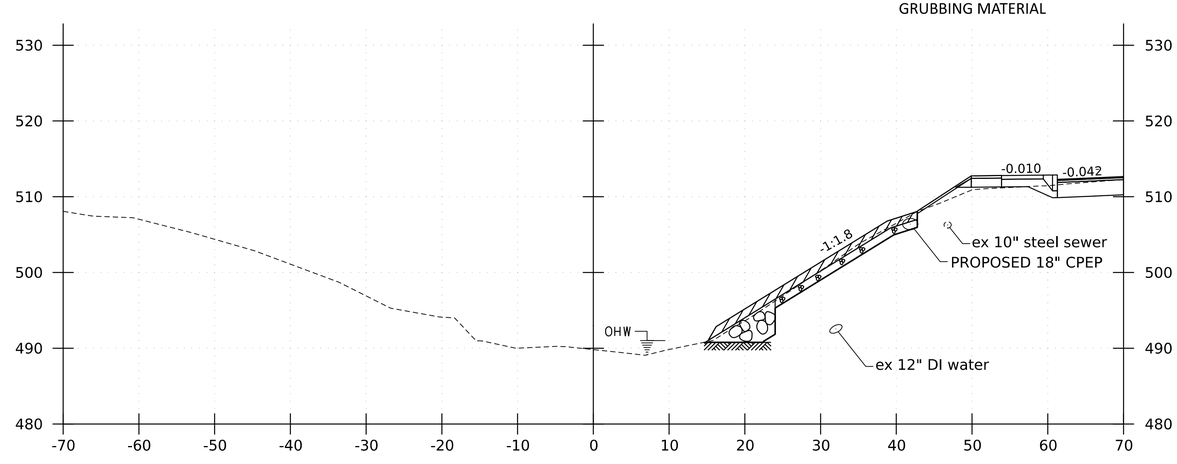


1+30

STA. 1+04 RT
BEGIN
UNCLASSIFIED CHANNEL EXC.
STONE FILL, TYPE IV
STONE FILL TYPE I
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



1+00



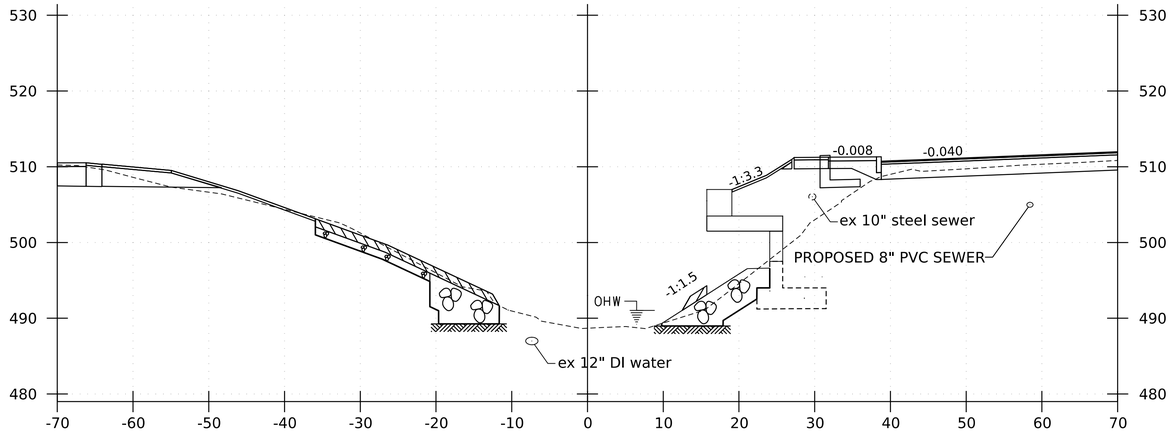
1+20

NOTE: LEDGE SHOWN IN THE CROSS SECTIONS IS APPROXIMATE AND MAY NOT BE REPRESENTATIVE OF ACTUAL CONDITIONS. REFER TO THE BORING PLAN AND BORING LOGS FOR DEPTH TO LEDGE.

Stantec

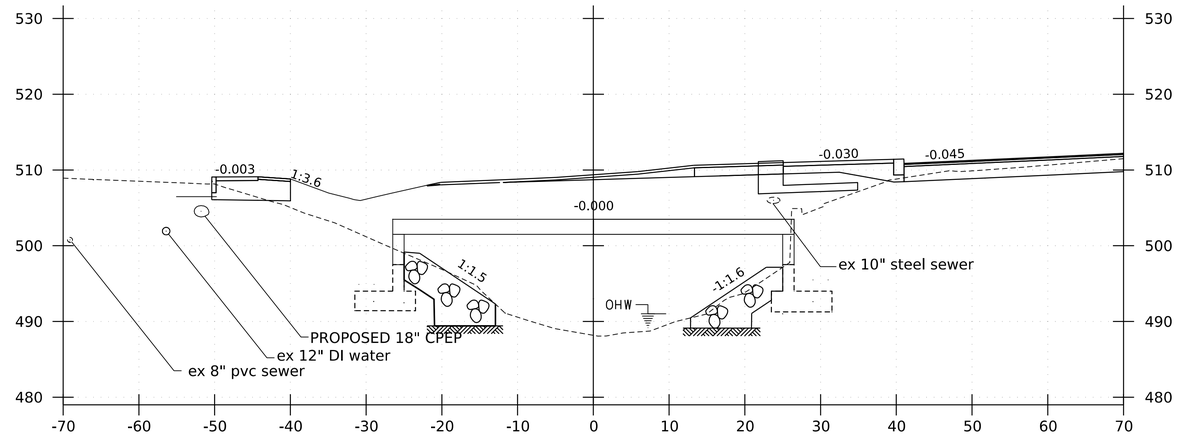
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040xs ord.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: S. WINES
DESIGNED BY: S. WINES	CHECKED BY: K. RICHARDSON
CHANNEL CROSS SECTION SHEET 1	SHEET 57 OF 66

STA. 1+51 RT
END GRUBBING MATERIAL



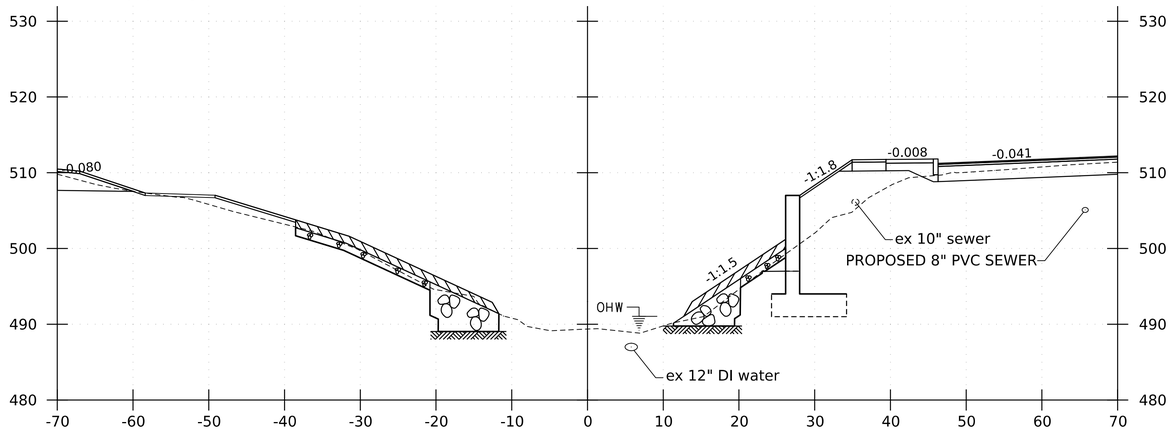
1+50

STA. 1+68 RT
END STONE FILL, TYPE I
GEOTEXTILE UNDER STONE FILL



1+70

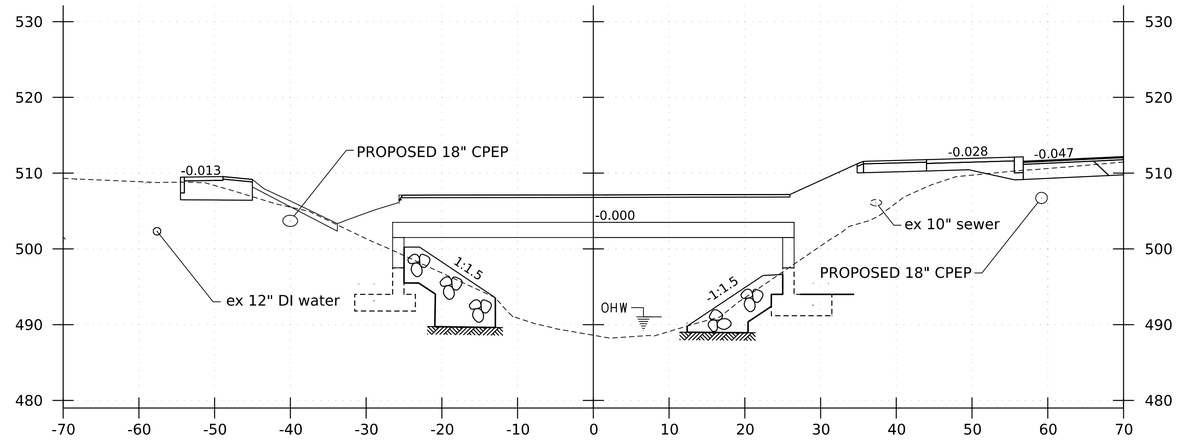
STA. 1+25 LT
BEGIN UNCLASSIFIED CHANNEL EXC.
STONE FILL, TYPE IV
STONE FILL TYPE I
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



1+40

NOTE: LEDGE SHOWN IN THE CROSS SECTIONS IS APPROXIMATE AND MAY NOT BE REPRESENTATIVE OF ACTUAL CONDITIONS. REFER TO THE BORING PLAN AND BORING LOGS FOR DEPTH TO LEDGE.

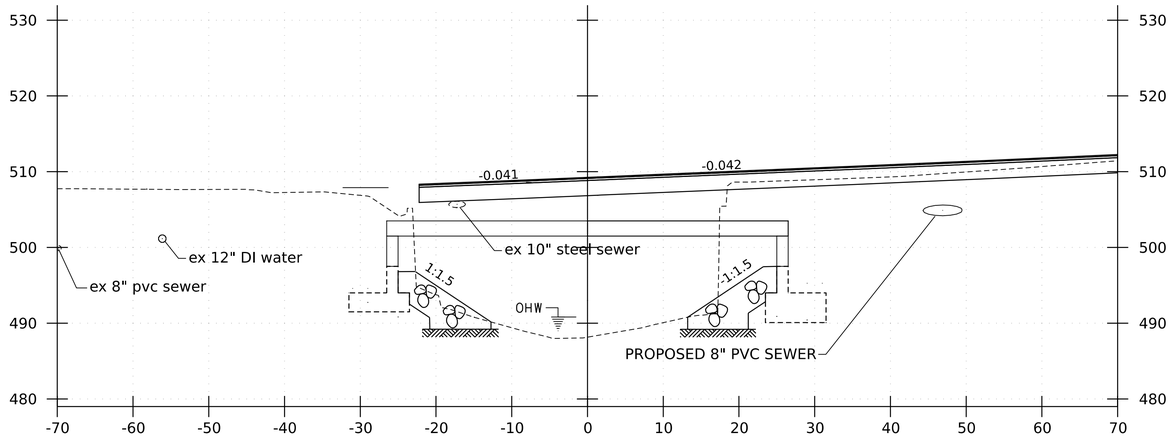
STA. 1+58 LT
END GRUBBING MATERIAL



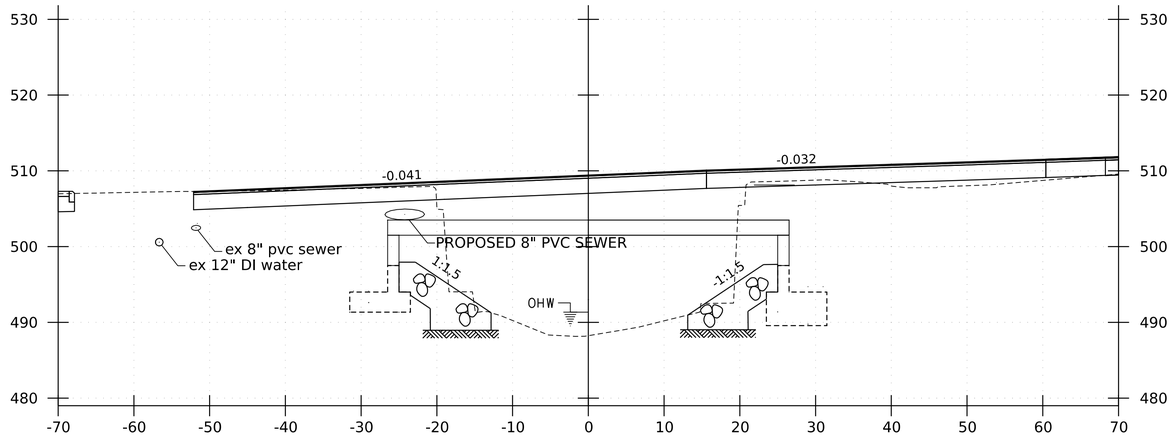
1+60

Stantec

PROJECT NAME:	WATERBURY		
PROJECT NUMBER:	BO 1446(40)		
FILE NAME: z93j040xs ord.dgn		PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	S. WINES
DESIGNED BY:	S. WINES	CHECKED BY:	K. RICHARDSON
CHANNEL CROSS SECTION SHEET 2		SHEET	58 OF 66

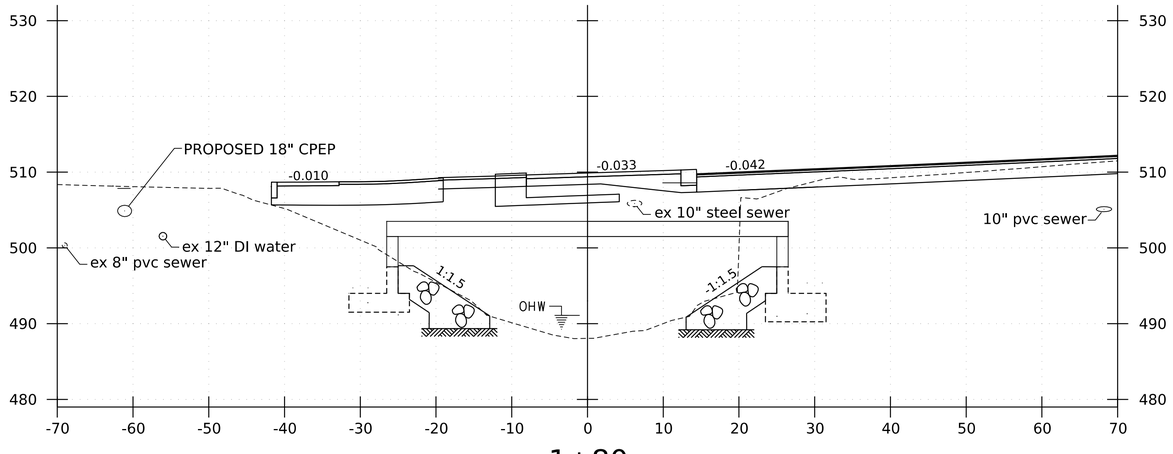


1+90

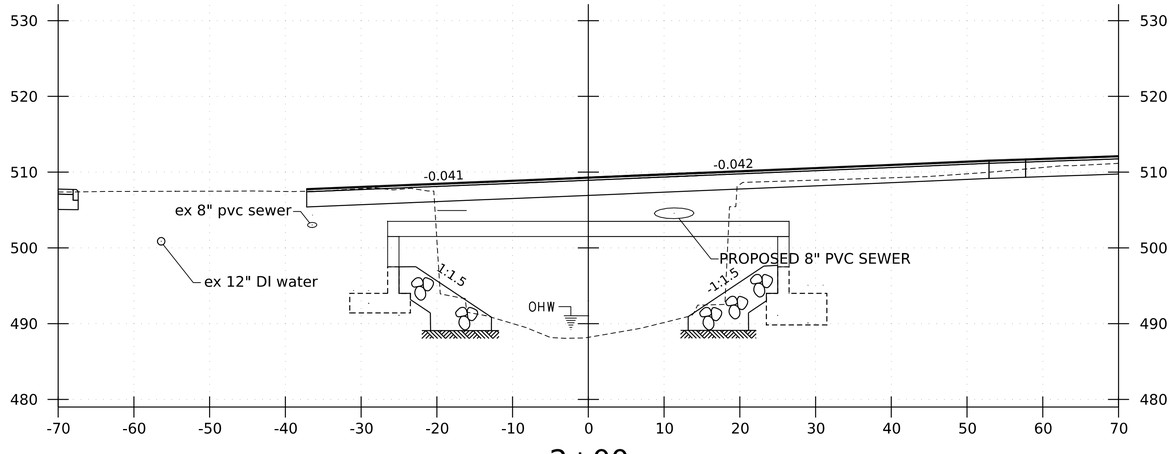


2+10

STA. 1+80 LT
END STONE FILL, TYPE I
GEOTEXTILE UNDER STONE FILL



1+80

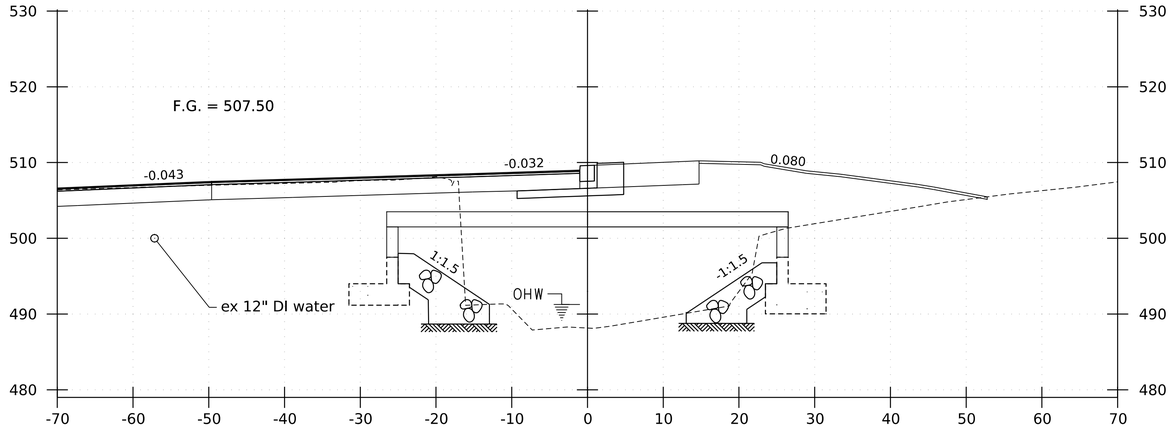


2+00

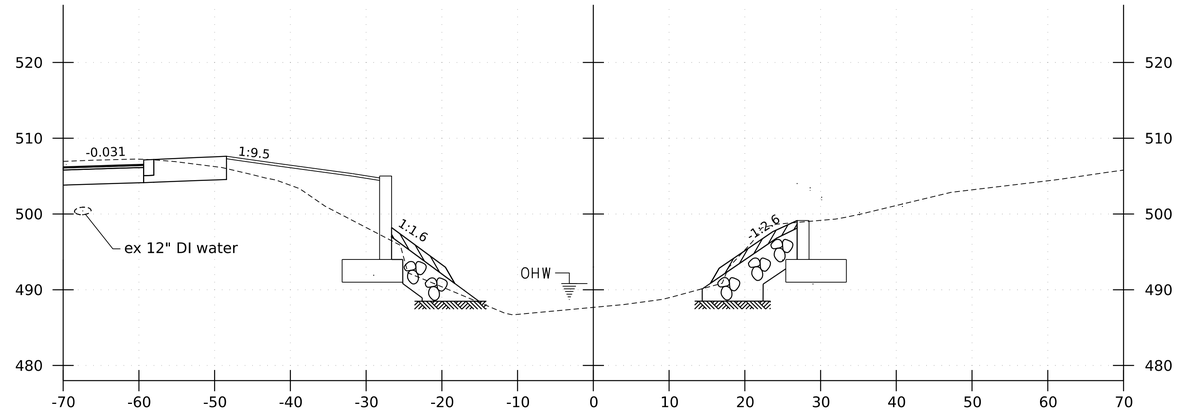
NOTE: LEDGE SHOWN IN THE CROSS SECTIONS IS APPROXIMATE AND MAY NOT BE REPRESENTATIVE OF ACTUAL CONDITIONS. REFER TO THE BORING PLAN AND BORING LOGS FOR DEPTH TO LEDGE.

Stantec

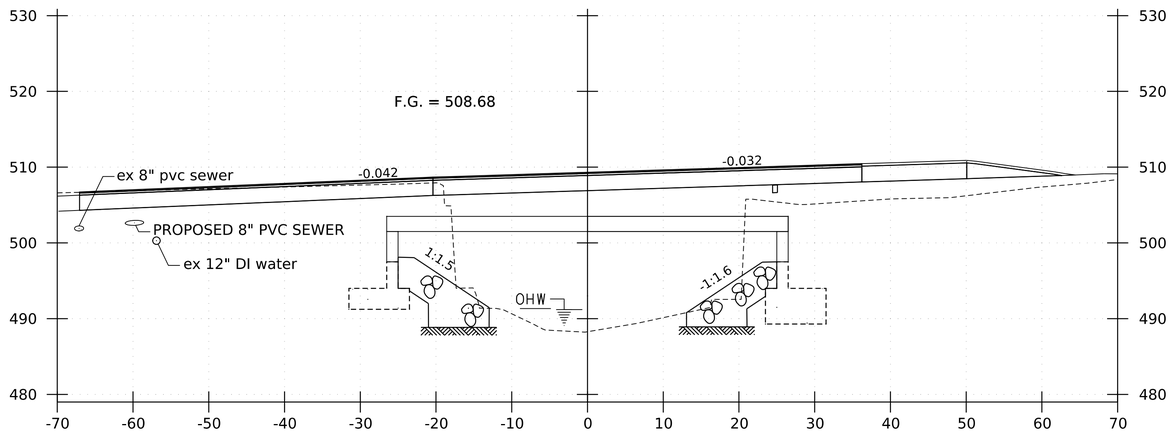
PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040xs ord.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: S. WINES
DESIGNED BY: S. WINES	CHECKED BY: K. RICHARDSON
CHANNEL CROSS SECTION SHEET 3	SHEET 59 OF 66



2+30



2+50

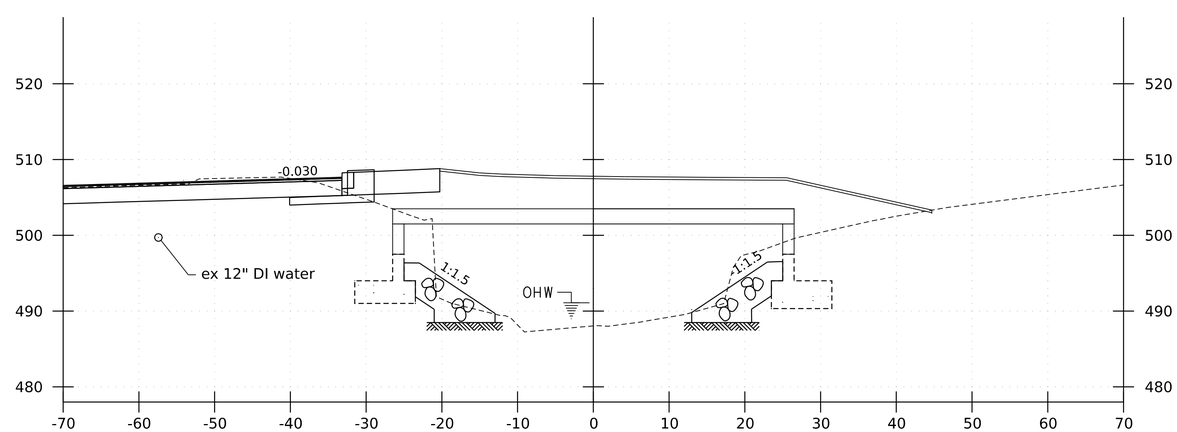


2+20

NOTE: LEDGE SHOWN IN THE CROSS SECTIONS IS APPROXIMATE AND MAY NOT BE REPRESENTATIVE OF ACTUAL CONDITIONS. REFER TO THE BORING PLAN AND BORING LOGS FOR DEPTH TO LEDGE.

STA. BEGIN 2+44 LT GRUBBING MATERIAL

STA. BEGIN 2+44 RT GRUBBING MATERIAL



2+40

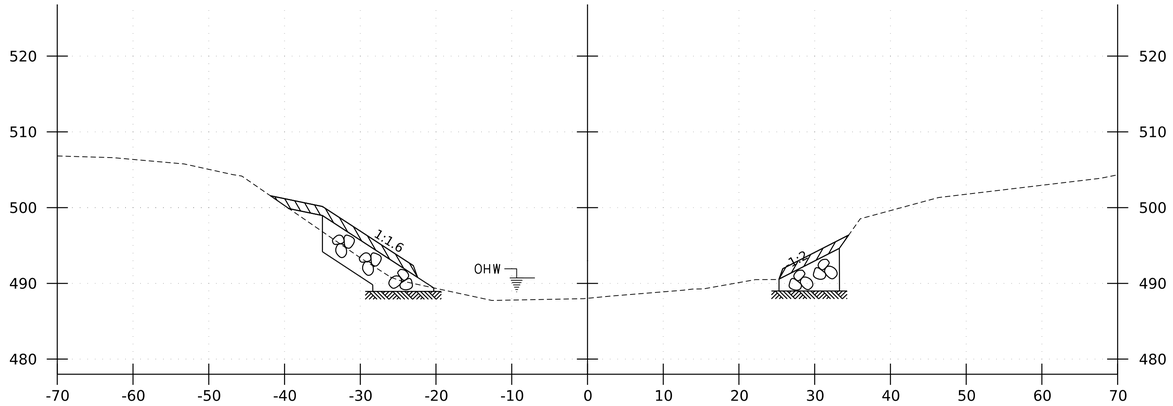
Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)

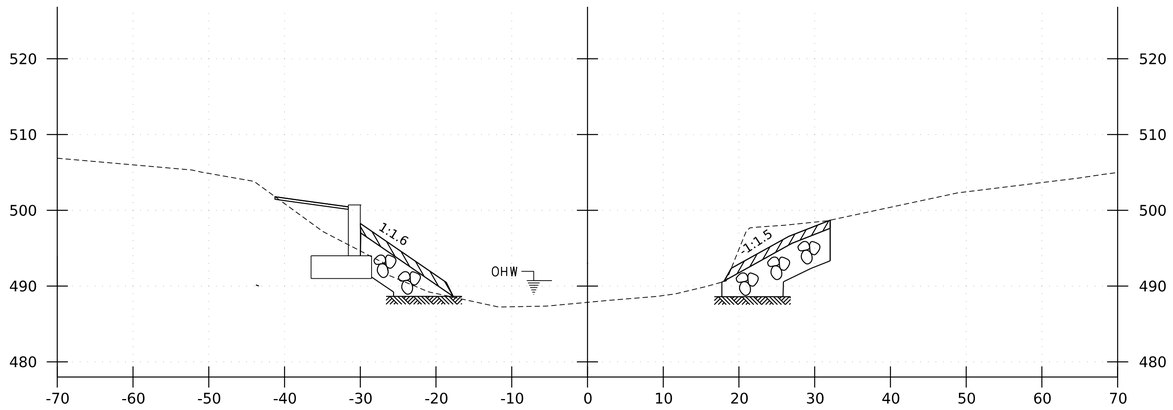
FILE NAME:	z93j040xs ord.dgn	PLOT DATE:	30-MAY-2024
PROJECT LEADER:	T. KNIGHT	DRAWN BY:	S. WINES
DESIGNED BY:	S. WINES	CHECKED BY:	K. RICHARDSON
CHANNEL CROSS SECTION SHEET 4		SHEET	60 OF 66

STA. 2+78 LT
END STONE FILL, TYPE IV
UNCLASSIFIED CHANNEL EXC.

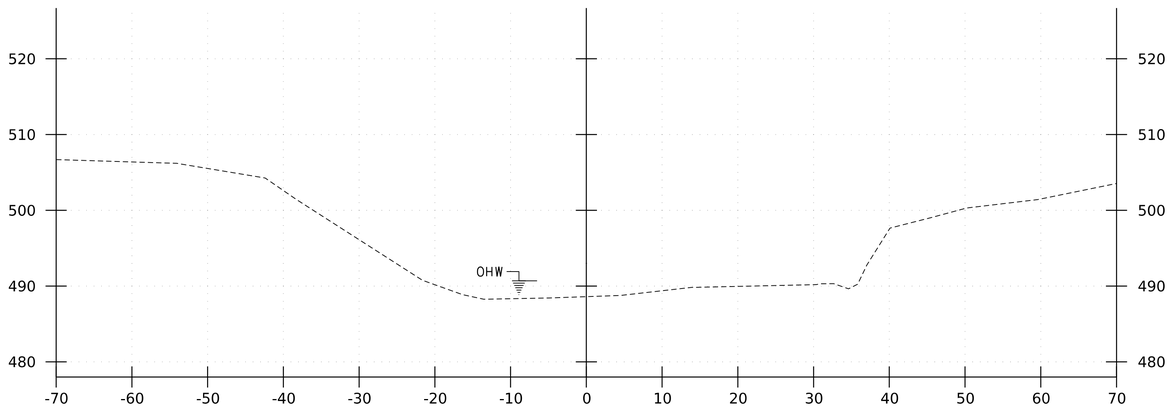
STA. 2+75 RT
END STONE FILL TYPE IV
UNCLASSIFIED CHANNEL EXC.



2+70



2+60



2+80

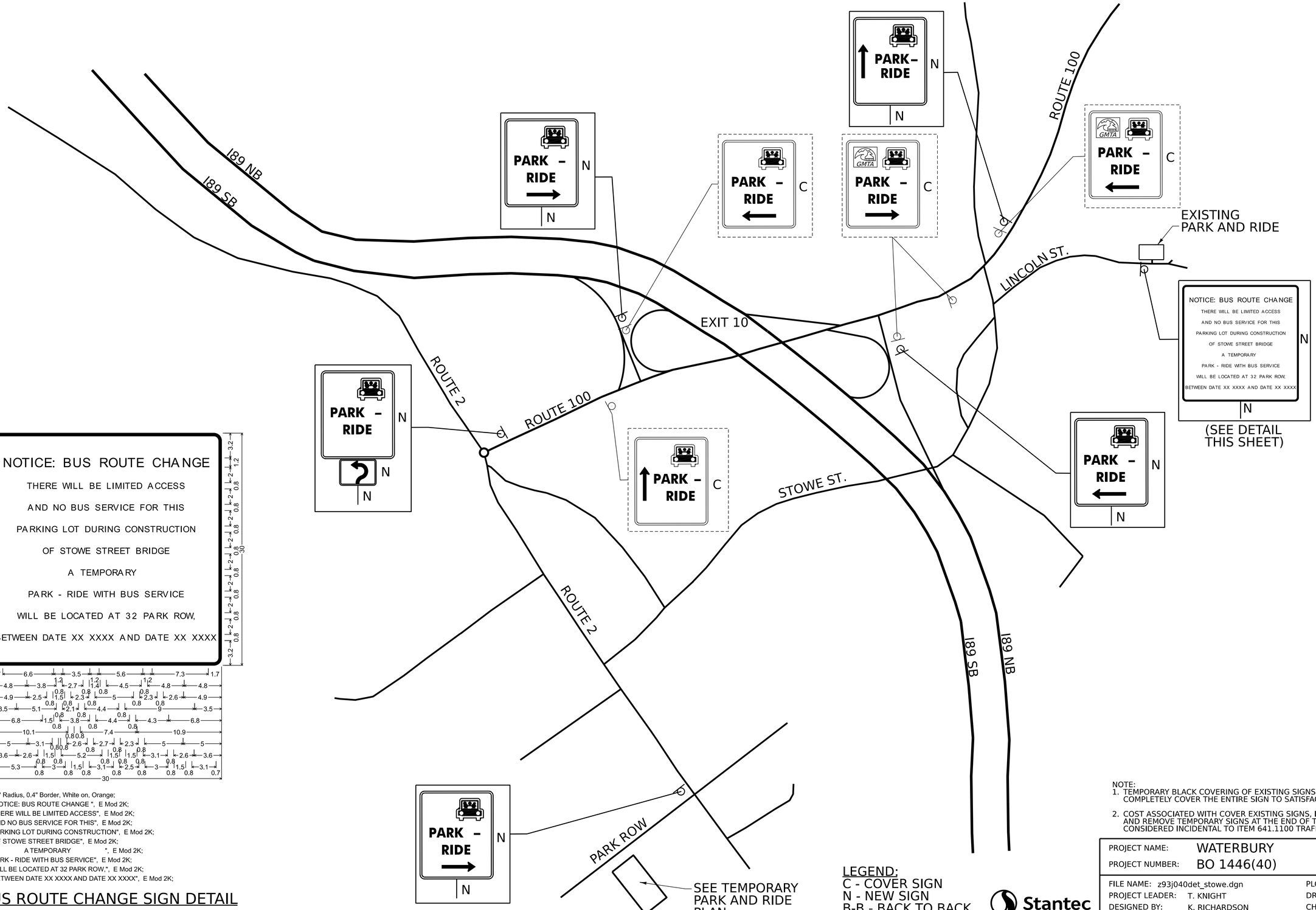
NOTE: LEDGE SHOWN IN THE CROSS SECTIONS IS APPROXIMATE AND MAY NOT BE REPRESENTATIVE OF ACTUAL CONDITIONS. REFER TO THE BORING PLAN AND BORING LOGS FOR DEPTH TO LEDGE.

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040xs ord.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: S. WINES
DESIGNED BY: S. WINES	CHECKED BY: K. RICHARDSON
CHANNEL CROSS SECTION SHEET 5	SHEET 61 OF 66

1.0" Radius, 0.4" Border, White on, Orange;
" NOTICE: BUS ROUTE CHANGE ", E Mod 2K;
"THERE WILL BE LIMITED ACCESS", E Mod 2K;
"AND NO BUS SERVICE FOR THIS", E Mod 2K;
"PARKING LOT DURING CONSTRUCTION", E Mod 2K;
"OF STOWE STREET BRIDGE", E Mod 2K;
" A TEMPORARY ", E Mod 2K;
"PARK - RIDE WITH BUS SERVICE", E Mod 2K;
"WILL BE LOCATED AT 32 PARK ROW,", E Mod 2K;
"BETWEEN DATE XX XXXX AND DATE XX XXXX", E Mod 2K;

BUS ROUTE CHANGE SIGN DETAIL

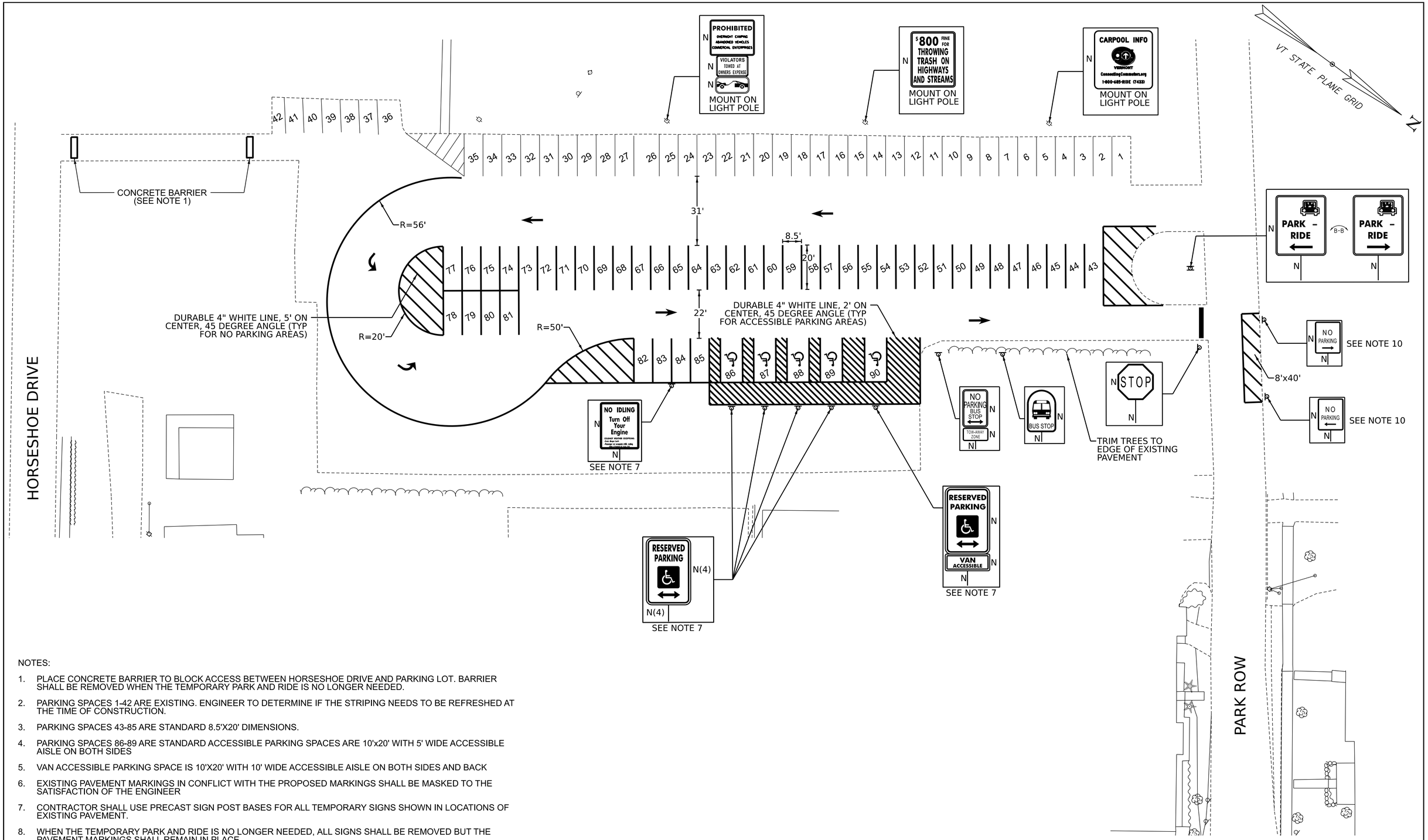


LEGEND:
C - COVER SIGN
N - NEW SIGN
B-B - BACK TO BACK

NOTE:
1. TEMPORARY BLACK COVERING OF EXISTING SIGNS SHALL BE SECURE AND COMPLETELY COVER THE ENTIRE SIGN TO SATISFACTION OF THE ENGINEER.
2. COST ASSOCIATED WITH COVER EXISTING SIGNS, INSTALL TEMPORARY SIGNS AND REMOVE TEMPORARY SIGNS AT THE END OF THE PROJECT WILL BE CONSIDERED INCIDENTAL TO ITEM 641.1100 TRAFFIC CONTROL, ALL INCLUSIVE.

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040det_stowe.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: K. RICHARDSON	CHECKED BY: T. KNIGHT
TEMPORARY WAYFINDING SIGNAGE PLAN	SHEET 62 OF 66



NOTES:

1. PLACE CONCRETE BARRIER TO BLOCK ACCESS BETWEEN HORSESHOE DRIVE AND PARKING LOT. BARRIER SHALL BE REMOVED WHEN THE TEMPORARY PARK AND RIDE IS NO LONGER NEEDED.
2. PARKING SPACES 1-42 ARE EXISTING. ENGINEER TO DETERMINE IF THE STRIPING NEEDS TO BE REFRESHED AT THE TIME OF CONSTRUCTION.
3. PARKING SPACES 43-85 ARE STANDARD 8.5'X20' DIMENSIONS.
4. PARKING SPACES 86-89 ARE STANDARD ACCESSIBLE PARKING SPACES ARE 10'x20' WITH 5' WIDE ACCESSIBLE AISLE ON BOTH SIDES
5. VAN ACCESSIBLE PARKING SPACE IS 10'X20' WITH 10' WIDE ACCESSIBLE AISLE ON BOTH SIDES AND BACK
6. EXISTING PAVEMENT MARKINGS IN CONFLICT WITH THE PROPOSED MARKINGS SHALL BE MASKED TO THE SATISFACTION OF THE ENGINEER
7. CONTRACTOR SHALL USE PRECAST SIGN POST BASES FOR ALL TEMPORARY SIGNS SHOWN IN LOCATIONS OF EXISTING PAVEMENT.
8. WHEN THE TEMPORARY PARK AND RIDE IS NO LONGER NEEDED, ALL SIGNS SHALL BE REMOVED BUT THE PAVEMENT MARKINGS SHALL REMAIN IN PLACE.
9. ALL WORK AND MATERIALS NECESSARY TO INSTALL AND REMOVE THE TEMPORARY PARK AND RIDE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR TRAFFIC CONTROL, ALL-INCLUSIVE.
10. PARKING IS NOT ALLOWED ON THIS PORTION OF PARK ROW PER TOWN ORDINANCE. IF SUFFICIENT SIGNING EXISTS AT THE TIME OF CONSTRUCTION, THEN THE 'NO PARKING' SIGNS SHOWN ON PARK ROW ARE NOT NECESSARY.
11. PARKING SPACE NUMBERING IS SHOWN FOR REFERENCE ONLY. NUMBERS SHOWN ARE NOT INTENDED TO BE PAINT MARKINGS.

0 20 40
SCALE IN FEET

Stantec

PROJECT NAME:	WATERBURY
PROJECT NUMBER:	BO 1446(40)
FILE NAME: z93j040bdr_park&ride.dgn	PLOT DATE: 30-MAY-2024
PROJECT LEADER: T. KNIGHT	DRAWN BY: P. ARMATA
DESIGNED BY: K. RICHARDSON	CHECKED BY: T. KNIGHT
TEMPORARY PARK AND RIDE PLAN	SHEET 63 OF 66

TRAFFIC CONTROL NOTES:

1. THE OBJECTIVE OF THIS PLAN IS TO MINIMIZE IMPACT ON THE TRAFFIC FLOW WHILE PROVIDING A SAFE ASSAGE FOR VEHICLES, BICYCLIST AND PEDESTRIANS DURING AND AFTER CONSTRUCTION WORK HOURS.

2. THE FOLLOWING TRAFFIC CONTROL INFORMATION IS INTENDED TO BE A GENERAL OUTLINE FOR HOW THE WORK COULD PROCEED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITE SPECIFIC DETAILS TO ADDRESS SPECIFIC SITUATIONS. THIS RESPONSIBILITY INCLUDES PROVIDING A PLAN DETAILING THE USE AND PLACEMENT OF SIGNS, CHANNELING DEVICES, ARROW PANELS, FLAGGERS, AND UNIFORMED TRAFFIC OFFICERS (UTO'S) DURING LANE CLOSURES. IF THE CONTRACTOR DOES NOT WISH TO FOLLOW THIS OUTLINE, THE CONTRACTOR SHALL SUBMIT AN ALTERNATE PROPOSAL TO THE PAVEMENT DESIGN UNIT VIA THE ENGINEER. THE CONTRACTOR MUST ALLOW AT LEAST FOUR WEEKS FOR REVIEW AND APPROVAL OF THE COMPREHENSIVE PLAN AND TWO WEEKS FOR REVIEW AND APPROVAL OF MINOR CHANGES/DETAILS. ALL TRAFFIC CONTROL DETAILS MUST BE DESIGNED AND IMPLEMENTED IN ACCORDANCE WITH THE MUTCD AND VTRANS STANDARDS T-1, T-10, T-17, T-24, T-28, T-29, T-30, T-31, T-35 AND T-36. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN.

3. THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND LATEST REVISIONS SHALL BE THE STANDARD FOR ALL TRAFFIC CONTROL DEVICES. EXISTING SIGNS AND MARKINGS SHALL BE VALID UNTIL SUCH TIME AS THEY ARE REPLACED OR RECONSTRUCTED. WHEN NEW TRAFFIC DEVICES ARE ERECTED OR PLACED, OR EXISTING TRAFFIC CONTROL DEVICES ARE REPLACED OR REPAIRED, THE EQUIPMENT, DESIGN, METHOD OF INSTALLATION, PLACEMENT OR REPAIR SHALL CONFORM WITH SUCH STANDARDS.

4. CONSTRUCTION ZONE SIGN LAYOUT SHALL BE IN ACCORDANCE WITH SECTION 6 OF THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ITS LATEST REVISIONS AND CURRENT STATE STANDARDS.

5. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN FOR APPROVAL BY THE PROJECT MANAGER 14 DAYS PRIOR TO THE START OF CONSTRUCTION. THE COST OF PREPARING THIS PLAN (AND MAKING CHANGES IF NECESSARY) WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.11 TRAFFIC CONTROL, ALL-INCLUSIVE. THE TRAFFIC CONTROL PLAN SHALL BE IN COMPLIANCE WITH VTRANS STANDARDS AND THE LATEST EDITION OF THE MUTCD. WHERE CONFLICTS EXIST, THE MUTCD SHALL GOVERN.

6. THE BID PRICE FOR ITEM 641.1100 TRAFFIC CONTROL, ALL-INCLUSIVE SHALL INCLUDE ALL OF THE FOLLOWING, AS NEEDED: APPROACH, ON AND OFF PROJECT CONSTRUCTION SIGNING, PORTABLE FLASHING ARROW BOARDS, BARRIERS, BARRELS, CONES, BARRICADES, TEMPORARY REGULATORY AND WARNING SIGNS, AND POSTS AS DETAILED IN VTRANS STANDARDS. ALL ADJUSTING, RELOCATING AND REMOVING OF THESE DEVICES AS DIRECTED BY THE ENGINEER SHALL ALSO BE INCLUDED.

7. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) WILL BE PROVIDED FOR USE ALONG THIS PROJECT AND ARE TO BE USED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL POSITION PORTABLE CHANGEABLE MESSAGE SIGNS WARNING MOTORISTS OF THE EXPECTED ROADWAY CONDITIONS AHEAD. THE MESSAGE TO BE DISPLAYED SHALL BE SUBMITTED TO THE ENGINEER IN ADVANCE FOR APPROVAL. MESSAGES SHOULD AVOID REPEATING THOSE COVERED BY STATIC SIGNS AND SHOULD BE UPDATED PERIODICALLY TO DESCRIBE THE WORK ACTIVITY OCCURRING SO THAT THE PCMS CONTINUES TO COMMAND THE ATTENTION OF MOTORISTS. THE COST OF PROVIDING THESE MESSAGE SIGNS SHALL BE PAID UNDER ITEM 641.1500 PORTABLE CHANGEABLE MESSAGE SIGN.

8. CONSTRUCTION SIGNS SHALL BE IN NEW OR LIKE NEW CONDITION PER VTRANS STANDARDS.

9. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES, STOPPING SIGHT DISTANCE, AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS. ALL VEGETATION THAT INTERFERES WITH THE VISIBILITY OF THE SIGNS SHALL BE REMOVED.

10. ALL PERMANENT SIGNS THAT CONFLICT WITH TEMPORARY TRAFFIC CONTROL SHALL BE COMPLETELY COVERED, THE PAYMENT FOR WHICH WILL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.1100 TRAFFIC CONTROL, ALL-INCLUSIVE. SIGN COVERING SHALL NOT DAMAGE THE RETRO-REFLECTIVITY OF THE SIGN FACE AND THE SIGN COVER SHALL NOT BE ALLOWED TO DETERIORATE FOR THE DURATION THAT THE SIGN NEEDS COVERING.

11. DIAMOND SHAPED SIGNS SHALL BE 48" X 48" WITH BLACK TEXT AND BORDER ON A RETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND.

12. SEE VTRANS STANDARDS T-1, T-10, AND T-17 FOR ADDITIONAL SIGN PLACEMENT DETAILS.

13. AT NO TIME SHOULD THE FLAGGER SYMBOL SIGN BE MORE THAN 500 FEET FROM THE FLAGGER STATION. FLAGGER SIGNS SHALL BE COVERED OR TURNED AWAY FROM TRAFFIC WHEN FLAGGING OPERATIONS CEASE FOR LONGER THAN 15 MINUTES.

14. THE CONTRACTOR SHALL PROVIDE ACCESS THROUGH THE WORK ZONE FOR EMERGENCY VEHICLES AT ALL TIMES OR COORDINATE EMERGENCY ROUTES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL COMMERCIAL AND MUNICIPAL PROPERTIES DURING BUSINESS HOURS AND COORDINATE MAJOR WORK ON COMMERCIAL OR MUNICIPAL ACCESSES WITH THE OWNER AT LEAST ONE WEEK PRIOR TO STARTING THE WORK. ALL COMMERCIAL AND MUNICIPAL ACCESSES SHALL BE KEPT FREE OF WORK AND TRAFFIC CONTROLLED BY UNIFORMED TRAFFIC OFFICERS OR FLAGGERS AS REQUIRED BY THE ENGINEER. ACCESS TO ALL PROPERTIES MAY BE RESTRICTED FOR A SHORT DURATION (A FEW HOURS). THIS WORK WILL BE COORDINATED WITH THE OWNER.

15. ACCOMODATIONS FOR POSTAL DELIVERS, NEWSPAPER ROUTES, TRASH SERVICES, AND/OR OTHER DELIVERY SERVICES INTERRUPTED BY THE PROJECT OR DETOUR SHOULD BE COMMUNICATED WITH THE PROPER CONTACTS.

16. CONES SHALL BE USED TO CLEARLY DEFINE THE TRAVEL SPACE AND PROVIDE SEPARATION FROM THE WORKSPACE ALONG ITS ENTIRE LENGTH.

17. WHEN LANE WIDTHS ARE REDUCED TO 10 FEET DMV SHALL BE NOTIFIED TO REROUTE SUPER LOADS PERMITS. IT SHOULD BE NOTED THAT ONCE A PERMIT IS ISSUED, THE APPLICANT/HAULER HAS 10 DAYS TO MOVE THEIR LOAD. THIS REQUIRES ADDITIONAL NOTICE TIME TO CAPTURE THAT 10-DAY WINDOW. WITH THE NARROWING OF LANES TO 10 FEET IT IS RECOMMENDED THAT FLAGGER PERSONNEL HOLD RIDERS TO THE END OF THE QUEUE, SO THEY ARE NOT COMPETING FOR LANE SPACE TO ENSURE THEIR SAFETY.

18. IF LONGITUDINAL DROP-OFFS ARE TO BE LEFT DURING THE OVERNIGHT HOURS, THEY SHALL BE CONSTRUCTED USING THE HSD-400.01 SAFETY EDGE DETAIL AND CONFORM TO VTRANS STANDARD T-36.

19. WHEN MILLED BITUMINOUS PAVEMENT IS OPEN TO TRAFFIC, A "MOTORCYCLES USE CAUTION" SIGN, AS PER VTRANS STANDARD T-17, SHALL BE PROVIDED.

20. THIS PROJECT TAKES PLACE WHEN SCHOOL IS IN SESSION; SCHOOL BUS STOP AND PEDESTRIAN ACCOMODATIONS ARE REQUIRED. BUS STOP AND PEDESTRIAN LOCATIONS SHALL BE COORDINATED WITH THE LOCAL SCHOOL TRANSPORTATION COORDINATOR. ADDITIONAL FLAGGERS WILL BE STATIONED AT THESE LOCATIONS DURING TYPICAL MORNING PICK-UP AND AFTERNOON DROP-OFF TIME PERIODS WHILE WORK IS BEING PERFORMED IN THESE AREAS.

21. SIGNS SHALL ONLY BE VISIBLE TO MOTORISTS AT THE TIMES WHEN THE MESSAGE IS PERTINENT, I.E. A "FLAGGER AHEAD" SIGN SHALL ONLY BE VISIBLE TO MOTORISTS WHEN THE FLAGGER IS ACTUALLY PRESENT AND PERFORMING THEIR DUTIES.

22. RETROREFLECTIVE SHEETING SHALL BE AS NOTED ON VTRANS STANDARD T-1 AND IN SUBSECTION 750.04.

23. WHERE TEMPORARY SIGNS ARE PLACED BEHIND GUARDRAIL, THEY SHALL BE ADJUSTED SUCH THAT THE BOTTOMS OF THE SIGNS ARE ABOVE THE TOP OF GUARDRAIL.

24. TRAFFIC SHALL NOT BE CHANGED FROM ONE TRAFFIC PATTERN TO THE NEXT TRAFFIC PATTERN UNTIL ALL TEMPORARY MARKINGS, SIGNING AND SIGNAL WORK ARE COMPLETED. ANY CONFLICTING MARKINGS SHALL BE REMOVED.

25. ALL NON-OPERATING SIGNAL HEADS AND PEDESTRIAN SIGNAL HEADS SHALL BE REMOVED OR COMPLETELY COVERED AS DIRECTED BY THE ENGINEER.

26. CONSTRUCTION OPERATIONS SHALL BE ADJUSTED OR SUSPENDED DURING PEAK HOUR TRAFFIC AND SPECIAL EVENTS AS DETERMINED BY THE ENGINEER.

27. PLEASE NOTE THAT THE UNIFORMED TRAFFIC OFFICER (UTO'S), UNDER AUTHORITY GRANTED BY LAW (TITLE 23 VSA) MAY DIRECT AND CONTROL TRAFFIC. SUITABLE EXAMPLES IN WORK MIGHT INCLUDE THE DIRECTION AND CONTROLS OF TRAFFIC AT INTERSECTIONS WHERE SIGNALS ARE NOT FUNCTIONING OR ARE MALFUNCTIONING. IN THESE CASES, THE PRESENCE OF A VEHICLE WITH A BLUE LIGHT MAY NOT BE SUITABLE OR NECESSARY. THE WEARING OF DEPARTMENTALLY REQUIRED AND APPROVED REFLECTIVE GARMENTS IS REQUIRED. UTO VEHICLE TO BE PARKED WHERE IT DOES NOT PROMOTE BACK LIGHTING OF THE FLAGGER/UTO STATION BLINDING APPROACHING TRAFFIC AND WASHING OUT THE VISIBILITY OF THE UTO/FLAGGER STANDING THERE. FOR LANE CLOSURE WITH WORK ACTIVITY AREA LESS THAN 1 MILE FROM THE MERGING TAPER THE POLICE VEHICLE SHOULD BE POSITIONED UPSTREAM OF THE LAST ADVANCE WARNING SIGN. VEHICLE SHOULD FACE IN THE DIRECTION MUTUALLY AGREED UPON BY THE HIGHWAY AND ENFORCMENT AGENCY.

28. SIGNALIZED INTERSECTIONS SHALL EITHER BE TURNED OFF OR PROGRAMMED TO BE IN RED FLASH MODE AND MUST BE CONTROLLED BY UNIFORMED TRAFFIC OFFICERS WHEN LANES ARE NOT IN NORMAL OPERATION.

29. WHEN NIGHT WORK OCCURS, A LIGHTING PLAN THAT MEETS THE REQUIREMENTS OF NCHRP REPORT 476 IS REQUIRED AND SHALL INCLUDE THE FOLLOWING:
    - LAYOUT SHOWING LOCATION OF LIGHT TOWERS, INCLUDING SPACING, LATERAL PLACEMENT AND MOUNTING HEIGHT, AND CLEARLY SHOW THE LOCATION OF ALL LIGHTS NECESSARY FOR ALL WORK TO BE DONE AT NIGHT.
    - DESCRIPTION OF LIGHT TOWERS TO BE USED AND ELECTRICAL POWER SOURCE.
    - SPECIFIC TECHNICAL DATA ON ALL LIGHTING EQUIPMENT, INCLUDING BRAND NAMES, MODEL NUMBERS, POWER RATING, AND PHOTOMETRIC DATA.
    - DETAILS OF ANY HOODS, LOUVERS, SHIELDS, OR OTHER MEANS TO BE USED TO CONTROL GLARE.
    - ATTACHMENT AND MOUNTING DETAILS FOR LIGHTING TO BE ATTACHED TO EQUIPMENT.
    - LIGHTING CALCULATIONS CONFIRMING THAT THE ILLUMINATION REQUIREMENTS WILL BE MET BY THE LAYOUT.
    - THE PLAN SHOULD CONSIDER HOW THOSE LIGHT SOURCES ARE GOING TO BE POWERED (SITE POWER FROM THE GRID OR FROM GENERATORS). IF THEY ARE LIGHT TOWERS, IS THERE A CLEAR PATH TO REACH THEM FOR REFUELING? CONSIDERATIONS SHOULD ALSO BE FACTORED IN FOR OVERLAPPING THE BEAMS FROM DIFFERENT LIGHT SOURCES TO ELIMINATE SHADOWING FROM THE WORKERS THEMSELVES.

30. STOWE STREET AND LINCOLN STREET ROAD CLOSURES: THE CONTRACTOR SHALL INSTALL OF ALL APPROACH SIGNAGE AND SIGNAGE ON-SITE FOR ROAD CLOSURES OF STOWE STREET AND LINCOLN STREET PRIOR TO THE BRIDGE CLOSURE PERIOD. SIGNAGE SHALL BE INSTALLED PER THE CURRENT VERSION OF THE MANUAL ON UNIFORM TEMPORARY TRAFFIC CONTROL DEVICES (MUTCD) AND ITS LATEST REVISIONS. SIGNS SHALL BE COVERED UNTIL THE BRIDGE CLOSURE PERIOD AND THE SIGNS ARE APPLICABLE. THE CONTRACTOR WILL BE RESPONSIBLE FOR BARRICADES, BARRELS, AND ANY OTHER TRAFFIC CONTROL DEVICES REQUIRED FOR THE BRIDGE CLOSURE PERIOD ON-SITE, INCLUDING CLOSING ANY EXISTING TURN LANES ON VT 100. THE CONTRACTOR SHALL COORDINATE WITH THE VTRANS TRAFFIC SIGNAL OPERATIONS ENGINEER ANY SIGNAL TIMING ADJUSTMENTS THAT MAY BE REQUIRED TO THE VT 100 AND STOWE STREET INTERSECTION DURING THE CLOSURE PERIOD, AS DIRECTED BY THE RESIDENT ENGINEER.

31. BRIDGE CLOSURE PERIOD DETOUR SIGNAGE: THE CONTRACTOR SHALL COORDINATE WITH THE TOWN OF WATERBURY A MINIMUM OF FOURTEEN DAYS PRIOR TO ANY ROAD/BRIDGE CLOSURE PERIODS TO GIVE THE TOWN NOTICE OF WHEN THE BRIDGE CLOSURE PERIOD WILL BEGIN. THE TOWN OF WATERBURY WILL INSTALL ALL DETOUR SIGNAGE ALONG DETOUR ROUTES DETERMINED BY THE TOWN PRIOR TO THE BRIDGE CLOSURE PERIOD.

PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) FOR REVIEW AND WRITTEN APPROVAL BY THE RESIDENT ENGINEER A MINIMUM OF THREE WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARS AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC.

2. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), PART 6.

3. PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES, COMMERCIAL PROPERTIES AND TRANSIT STOPS. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA.

4. IF SIDEWALKS ARE CLOSED, A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK, IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE TPAR SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4 FEET. IF THE TPAR IS LESS THAN 5 FEET IN WIDTH, A 5 FOOT BY 5 FOOT PASSING SPACE MUST BE PROVIDED AT LEAST EVERY 200 FEET. THE SURFACE OF THE TPAR SHALL BE FIRM, STABLE AND SLIP-RESISTANT AND CONTINUOUS WITH A MINIMUM 80 INCHES OVERHEAD CLEARANCE FOR THE LENGTH OF THE TPAR. THE TPAR SHALL MAINTAIN THE SAME LEVEL OF ACCESSIBILITY AND DETECTABILITY AS THE FACILITY THAT IS BEING CLOSED. THE TPAR SHALL NOT LEAD PEDESTRIANS INTO CONFLICTS WITH VEHICLES, EQUIPMENT, OR CONSTRUCTION OPERATIONS.

5. WHEN TEMPORARY CROSSWALKS ARE UTILIZED FOR THE TPAR, TEMPORARY DETECTABLE WARNINGS SHALL BE PLACED AT EACH END OF THE TEMPORARY CROSSWALKS. THE TEMPORARY CROSSWALK SHALL BE DELINEATED WITH TEMPORARY PAVEMENT MARKINGS OR TAPE. THE MARKINGS SHALL BE PARALLEL 12-INCH-WIDE WHITE LINES PLACE 7 FEET ON CENTER APART. IT SHOULD BE NOTED THAT CURB PARKING SHALL BE PROHIBITED FOR AT LEAST 20 FEET IN ADVANCE OF MIDBLOCK CROSSWALKS. TEMPORARY CROSSWALK SIGNS SHALL BE PROVIDED FOR THE CROSSWALK.

6. IF THERE IS WORK OCCURRING OVER AN OPEN SIDEWALK, PROTECTIVE OVERHEAD COVERING MUST BE PROVIDED AS NECESSARY TO ENSURE PROTECTION FROM FALLING OBJECTS AND DRIPPING FROM OVERHEAD STRUCTURES. COVERED WALKWAYS SHOULD BE STURDILY CONSTRUCTED AND ADEQUATELY LIGHTED FOR NIGHTTIME USE.

7. INDIVIDUAL CHANNELIZING DEVICES, TAPE, OR ROPE USED TO CONNECT INDIVIDUAL DEVICES AND OTHER DISCONTINUOUS BARRIERS AND DEVICES, PAVEMENT MARKINGS ARE NOT DETECTABLE BY PERSONS WITH VISUAL DISABILITIES. THESE MEASURES DO NOT PROVIDE ACCEPTABLE PATH GUIDANCE ON TEMPORARY OR RE-ALIGNED SIDEWALKS OR OTHER PEDESTRIAN FACILITIES. PEDESTRIAN CHANNELIZING DEVICES SHALL INCLUDE A CONTINUOUSLY DETECTABLE BOTTOM AND TOP EDGE THROUGHOUT THE LENGTH OF THE FACILITY SUCH THAT IT CAN BE FOLLOWED BY PEDESTRIANS USING LONG CANES FOR GUIDANCE.

8. CHANNELIZING DEVICES ON BOTH SIDES OF THE TPAR SHALL INCLUDE A CONTINUOUS SOLID TOP AND BOTTOM RAILS. THE TOP EDGE OF THE TOP RAIL SHALL BE BETWEEN 32 INCHES AND 38 INCHES ABOVE THE GROUND LEVEL. THE BOTTOM RAIL SHALL BE AT LEAST 6 INCHES WIDE, WITH THE BOTTOM EDGE OF THE BOTTOM RAIL SURFACE NO HIGHER THAN 2 INCHES ABOVE THE GROUND.

9. IF THE TPAR IS ADJACENT TO MOVING TRAFFIC, CONSTRUCTION OPERATIONS/EQUIPMENT, OR DROP- OFFS, THEN CRASHWORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF THE MUTCD SHALL BE USED.

10. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS, EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.

11. PROVISION OF THE TPAR AND ALL ITS ELEMENTS, INCLUDING BUT NOT LIMITED TO SIGNS, CHANNELIZING DEVICES, BARRICADES, TEMPORARY CURB RAMPS, TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES IS TO BE PAID FOR INCIDENTAL TO TRAFFIC CONTROL, ALL INCLUSIVE.

12. THE CONTRACTOR SHALL REVIEW AND USE THE "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE", AVAILABLE ON VTRANS WEBSITE TO DESIGN AND IMPLEMENT TRAFFIC CONTROL FOR BICYCLE AND PEDESTRIAN INTO THEIR SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION.

13. DURING THE BRIDGE CLOSURE PERIOD, THE CONTRACTOR IS NOT REQUIRED TO PROVIDE PEDESTRIAN ACCESS OVER THATCHER BROOK. THE CONTRACTOR SHALL PROVIDE A PEDESTRIAN ACCESS ROUTE OVER THATCHER BROOK DURING ALL OTHER PHASES OF THE PROJECT.

Stantec

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: z93j040det_stowe.dgn
PROJECT LEADER: T. KNIGHT
DESIGNED BY: D. YOULEN
TRAFFIC CONTROL NOTES

PLOT DATE: 30-MAY-2024
DRAWN BY: P. ARMATA
CHECKED BY: K.RICHARDSON
SHEET 64 OF 66

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	ROW LAYOUT NO.	BEGINNING STATION	ENDING STATION	FEE ACQUISITION AREA±	REMAINDER AREA±	RIGHT TYPE	T / P	AREA ±	RECORDING DATA TITLE	DATE	TOWN / CITY	BOOK	PAGE	REMARKS
1	PARKS, TIMOTHY P. & LAURA M.	1	30+74 RT	30+98 LT			INSTALL	T		WDOE	05/06/24	WATERBURY	528	234-236	TPZ
			30+75.68 RT	LS 101+68.03 LT			UTILITY	P	425 SF						
			30+89 RT	LS 101+56 LT			CONSTRUCTION	T	320 SF						INCL. BF & REVEGETATION
			LS 101+81 LT				INSTALL	T							PUSH BRACE
			31+02 RT	LS 101+79 LT			SLOPE	T	58 SF						INCL. EC
			LS 101+44 LT	LS 101+55 LT			INSTALL	T							TPZ
2	ATCHINSON, JAMES K. &	1	31+19.25 LT	31+67± LT			HWY	P	986 SF						
	ROSS ATCHINSON, JEANNE E.		30+93 LT	31+52 ± LT			CONSTRUCTION	T	751 SF						INCL BF & REVEGETATION
			31+25 LT				INSTALL	T							TPZ
3	MAC, BRIAN J. & MICHELSEN, BROOKE J.	1	LS 99+98.84 LT				INSTALL & MAINTAIN	P		WDOE	02/02/24	WATERBURY	526	270-271	GUY WIRE & ANCHORS
			LS 100+95.50 LT	LS 101+22 ± LT			UTILITY	P	211 SF						
			LS 100+98.64 LT				INSTALL & MAINTAIN	P							GUY WIRE & ANCHORS
4	HADLEY, JUSTIN F.	1	LS 101+01.10 RT	LS 101+85.66 RT			HWY	P	909 SF						
			LS 100+37.80 RT	LS 101+03.19 RT			UTILITY	P	1,213 SF						
			LS 100+42 RT	LS 100-75 RT			CONSTRUCTION	T	562 SF						INCL. BF & REVEGETATION
			LS 100+67 RT	LS 100+85 RT			UTILITY	T	311 SF						TEMPORARY SEWER LINE
			LS 100+78 RT	LS 101+03.19 RT			CONSTRUCTION	T	504 SF						
5	TIMBERLAKE ASSOCIATES	1	VT-100 306+61.69 LT				INSTALL & MAINTAIN	P		QCDE	01/05/24	WATERBURY	526	116-117	INCL. GUY WIRE & ANCHORS
			VT-100 306+81.33 LT				INSTALL & MAINTAIN	P							INCL. GUY WIRE & ANCHORS
	GREEN MOUNTAIN POWER CORPORATION														
	CONSOLIDATED COMMUNICATIONS OF VERMONT COMPANY, INC.														
	COMCAST OF CONNECTICUT/ GEORGIA/ MASSACHUSETTS/ NEW HAMPSHIRE/ NEW YORK/ NORTH CAROLINA/ VIRGINIA/ VERMONT, LLC														
	FIRSTLIGHT FIBER, INC.														
	TOWN OF WATERBURY														

LS = LINCOLN STREET

TABLE OF REVISIONS

REVISION NO.	ROW SET SHEET #	DESCRIPTION	DATE
1	3, 4	PO 5 - TIMBERLAKE ASSOCIATES	05/04/23
		CHANGE REMARKS ON THREE I&M(P)	
		FROM PUSH BRACE TO GUY WIRE &	
		ANCHORS.	
	GEN	ADDED UTILITY SHEET TO PLAN SET	
		REV BY: MT CO 10690 APPR BY: AP	
2	3, 4	PO 5 - TIMBERLAKE ASSOCIATES	08/24/23
		ELIMINATED GUY WIRE & ANCHORS AT	
		STA. VT-100 306+89.40 LT.	
	GEN	ADJUST END OF PROJECT STATIONING	
		FROM STA VT-100 306+89.40, 93.47' LT	
		TO STA VT-100 306+81.33, 92.06' LT AND	
		LEGNTH OF R.O.W. PROJECT FROM	
		684.91 FEET TO 676.84 FEET.	
		REV BY: MT CO 10702 APPR BY: AP	

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: r93j040detail.dgn
PROJECT LEADER: M. THILLIYAR
DESIGNED BY: F. DALL
R.O.W. DETAIL SHEET

PLOT DATE: 5/22/2024
DRAWN BY: M. TROTTIER
CHECKED BY: A. PROULX
SHEET 65 OF 66

STATE R.O.W.					
I-J	N20°47'1"W	175.38'	N-O	S30°19'11"W	109.21'
J-K	N0°0'47"E	52.96'	O-Q	S36°15'15"W	96.42'
K-L	N36°2'5"E	84.17'	Q-R	S74°29'45"W	4.16'
L-M	N36°2'5"E	55.43'	R-S	N15°9'13"W	55.87'
M-N	S40°8'30"E	240.16'	S-I	S58°24'47"W	51.61'

R.O.W. POINTS					
A	30+62.67	24.82' LT	O	LS 100+82.20	51.93' RT
B	30+96.42	23.48' LT	P	LS 101+01.10	47.33' RT
C	31+19.25	21.83' LT	Q	LS 101+85.66	19.10' RT
D	31+20.42	41.66' LT	R	LS 101+89.82	19.11' RT
E	31+33.07	49.90' LT	S	32+17.57	35.80' RT
F	31+49±	55.16' LT	T	LS 101+03.19	24.82' RT
G	31+67.30	18.24' LT	U	LS 99+89.87	24.29' RT
H	32+07.58	15.46' LT	V	LS 99+90.10	25.21' LT
I	32+07.81	14.88' LT	W	LS 101+31.77	24.54' LT
J	VT-100 305+15.75	31.68' LT	X	LS 101+74.90	29.05' LT
K	VT-100 305+57.72	67.30' LT	Y	31+13.24	27.36' RT
L	VT-100 306+49.05	69.03' LT	Z	30+92.88	25.89' RT
M	VT-100 307+04.82	67.64' LT	Aa	30+62.31	24.68' RT
N	VT-100 306+41.52	164.06' RT	LS = LINCOLN STREET		

PROPOSED TOWN R.OW.					
A-B	N5°44'27"W	32.14'	Q-P	N36°15'15"E	76.97'
B-C	CB: N7°0'48"W CL: 21.85'	R: 492 L: 21.86'	P-T	S34°45'14"E	22.60'
			T-U	N50°12'04"E	113.33'
C-D	S80°26'10"W	19.86'	U-V	S39°47'56"E	49.5'
D-E	N49°8'50"W	14.14'	V-W	S50°12'4"W	141.67'
E-F	N34°58'30"W	16.56'	W-X	CB: S55°18'14"W CL: 53.35'	R: 299.90 L:53.42'
F-G	N48°41'20"E	40.46'			
G-H	CB: N15°58'46"W CL: 39.60'	R: 492 L: 39.61'	X-Y	S60°24'25"W	21.19'
			Y-Z	CB: S6°52'39"E CL: 21.49'	R: 541.54 L: 21.49'
H-I	N46°50'27"E	0.65'			
I-S	N58°24'47"E	51.61'	Z-Aa	S5°44'27"E	32.14'
S-R	S15°09'13"E	55.89'	Aa-A	S84°15'33"W	49.5'
R-Q	N74°29'45"E	4.16'			

VT STATE PLANE GRID

N/F SCRIBNER, TARA

N/F ATCHINSON, JAMES K.

NORTH ST

APPROX. EXISTING TOWN R.O.W.

STOWE ST. 29+00

TO WATERBURY VILLIAGE

N05°37'52"W

30+00

N/F OVER-TIME MANAGEMNT, LLC.

APPROX. EXISTING TOWN R.O.W.

N/F CADWALLADER-STAUB, MARY R. & NICHOLSON, BRADLEY C.

N=672226.26
E=1575867.73

30+75.68
24.97' RT

UE(P)

INSTALL(T)

INSTALL(T)

CONST(T)

SR(T)

UE(P)

LS 101+68.03
24.41' LT

INSTALL(T)

BEGIN R.O.W. PROJECT
WATERBURY BO 1446(40)
STA. 30+74, 47.82' RT

1

PARKS, TIMOTHY P. & LAURA M.

LS 101+22±
31.68' LT

UE(P)

LS 101+12.49
24.64' LT

LS 101+20±
42.29' LT

UE(P)

I&M(P)

LS 100+95.50
24.71' LT

3

MAC, BRIAN J. & MICHELSON, BROOKE J.

I&M(P)

TIE LINE

N=672449.12
E=1576001.40

APPROX. EXISTING TOWN R.O.W.

LINCOLN ST

S49°55'57"W

100+00

101+00

102+00

S74°19'22"W

TIE LINE

31+00
31+01.34
36.63' RT

2

ATCHINSON, JAMES K. & ROSS ATCHINSON, JEANNE E.

DO NOT DISTURB
STONE STAIRS

INSTALL(T)

N=672293.670
E=1575773.40

HWY(P)

CONST(T)

TIE LINE

S55°18'23"W

STATE OF VERMONT

APPROX. EXISTING R.O.W.

APPROX. EXISTING R.O.W.

HWY(P)

UE(P)

CONST(T)

UE(T)

UE(T)

UE(P)

LS 100+57.86
60.60' RT

CONST(T)

LS 100+64.01
37.71' RT

UE(P)

LS 100+37.80
24.52' RT

4

HADLEY, JUSTIN F.

APPROX. EXISTING R.O.W.

N=672505.10
E=1575968.08

TIE LINE

N

0 20 40
SCALE IN FEET

END R.O.W. PROJECT
WATERBURY BO 1446(40)
STA. VT-100 306+81.33, 92.06' LT

304+00

VT ROUTE 100

TO INTERSTATE 89

VTHD
4X4 CONCRETE
BOUNDARY MARKER
N=672501.92
E=1575682.17

APPROX. EXISTING R.O.W.

305+00

TIE LINE

N20°41'29"W

33+00

34+00

N=672575.80
E=1575731.12

N0°0'47"E 96.53'

APPROX. EXISTING R.O.W.

APPROX. EXISTING R.O.W.

BLUSH HILL RD

N0°0'47"E 47.16'

I&M(P)

306+00

N34°39'54"E

THATCHER BROOK

TO STOWE

307+00

VT ROUTE 100

5

TIMBERLAKE ASSOCIATES

N/F HALL, CONRAD JR.; MORRIS, STEPHEN J.; MORRIS, GEORGE J. C/O BEST WESTERN

PROJECT NAME: WATERBURY
PROJECT NUMBER: BO 1446(40)

FILE NAME: r93j040lay.dgn
PROJECT LEADER: M. THILLIYAR
DESIGNED BY: STANTEC
R.O.W. LAYOUT SHEET

PLOT DATE: 15-APR-2024
DRAWN BY: F. DALL
CHECKED BY: A. PROULX
SHEET 66 OF 66