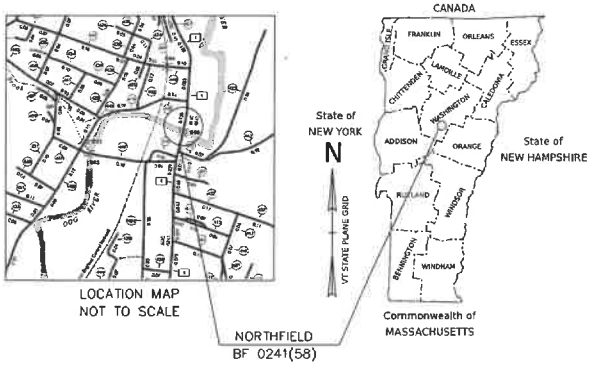
STATE OF VERMONT
AGENCY OF TRANSPORTATION



LOCATION MAP
NOT TO SCALE

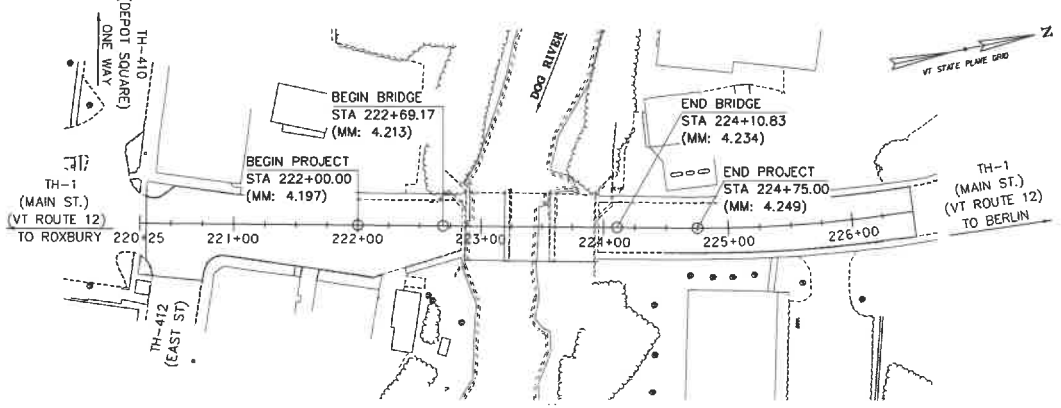
PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF NORTHFIELD
COUNTY OF WASHINGTON

ROUTE NO : VT ROUTE 12, TH-1 MAIN ST. (CLASS 1), MAJOR COLLECTOR, BRIDGE NO: 60

PROJECT LOCATION: LOCATED IN THE TOWN OF NORTHFIELD ON VT ROUTE 12, BRIDGE 60 OVER DOG RIVER, APPROXIMATELY 1.1 MILES NORTH OF THE JUNCTION WITH VT ROUTE 12A SOUTH.

PROJECT DESCRIPTION: REMOVAL AND REPLACEMENT OF BRIDGE NO. 60 WITH RELATED APPROACH ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE:	141.66	FEET
LENGTH OF ROADWAY:	133.34	FEET
LENGTH OF PROJECT:	275.00	FEET



80 0 80
SCALE 1" = 80'-0"

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 JUNE 27, 2023 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 :	DUBOIS & KING
SURVEYED DATE :	2019
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD 83 (2011)

H&H

HIGHWAY DIVISION, CHIEF ENGINEER	
APPROVED _____ DATE _____	
PROJECT MANAGER :	GARY LAROCHE, P.E.
PROJECT NAME :	NORTHFIELD
PROJECT NUMBER :	BF 0241(58)
SHEET 1 OF 102 SHEETS	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 2020.09.23.15

LRFD

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PLAN SHEETS

DETAIL SHEETS

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C-10	CURBING	02-17-2022
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T-42	BRIDGE NUMBER PLAQUE	04-09-2014

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 4/20/2022

DRAINAGE AREA: 59.6 sq. mi.
CHARACTER OF TERRAIN: Hilly to mountainous rural watershed
STREAM CHARACTERISTICS: Sinuous with wide floodplain
NATURE OF STREAMBED: Cobble

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% =	2,200 cfs	2% =	6,000 cfs
10% =	3,800 cfs	1% =	7,100 cfs
4% =	5,000 cfs	0.2% =	9,300 cfs

DATE OF FLOOD OF RECORD: 8/28/2011
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: 721.7 ft.
NATURAL STREAM VELOCITY: @ 2% AEP = 10.1 fps*
ICE CONDITIONS: Moderate
DEBRIS: Moderate to Heavy
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Unknown
IS ORDINARY RISE RAPID? Unknown
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: The stage is controlled by an uncontrolled dam directly downstream of the structure

WATERSHED STORAGE: 1.0% HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: 3-Span Concrete T-Beam Bridge
YEAR BUILT: 1926, Reconstructed in 1958
CLEAR SPAN(NORMAL TO STREAM): 105.0 ft.
VERTICAL CLEARANCE ABOVE STREAMBED: 20.3 ft.
WATERWAY OF FULL OPENING: 1,661.2 sq. ft.
DISPOSITION OF STRUCTURE: Full Replacement
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See Borings

WATER SURFACE ELEVATIONS AT:

43% AEP =	713.6 ft.	VELOCITY =	6.9 fps
10% AEP =	715.1 ft.	"	8.4 fps
4% AEP =	716.1 ft.	"	9.4 fps
2% AEP =	717.0 ft.	"	9.8 fps
1% AEP =	717.7 ft.	"	10.2 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: Northfield — DISTANCE: 350.0 ft.
HIGHWAY #: NE Central Railroad Roxbury — STRUCTURE #: Unknown
CLEAR SPAN: Unknown — CLEAR HEIGHT: Unknown
YEAR BUILT: Unknown — FULL WATERWAY: Unknown
STRUCTURE TYPE: Simple Span

DOWNSTREAM STRUCTURE

TOWN: Northfield — DISTANCE: 1.1 mi.
HIGHWAY #: VT-12 — STRUCTURE #: BR 61
CLEAR SPAN: 170. ft. — CLEAR HEIGHT: Unknown
YEAR BUILT: 1977 — FULL WATERWAY: Unknown
STRUCTURE TYPE: 2 Span Continuous Rolled Beam

LRFD LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	3-AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE	20	36	38	86	30	34.5	38
INVENTORY		1.14					
POSTING							
OPERATING		1.48	2.12	2.81	4.41	3.89	3.83
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span

CLEAR SPAN(NORMAL TO STREAM): 137.0 ft.
VERTICAL CLEARANCE ABOVE STREAMBED: 16.1 ft.
WATERWAY OF FULL OPENING: 1,384.0 sq. ft.

WATER SURFACE ELEVATIONS AT:

43% AEP =	713.4 ft.	VELOCITY =	7.5 fps
10% AEP =	714.7 ft.	"	9.1 fps
4% AEP =	715.7 ft.	"	9.9 fps
2% AEP =	716.5 ft.	"	10.6 fps
1% AEP =	717.2 ft.	"	11.1 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: 723.08 ft.
FREEBOARD: @ 2% AEP = 06.57 ft.

SCOUR: 7.0 ft.**

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: N/A
CLEAR SPAN (NORMAL TO STREAM): N/A
VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY AREA OF FULL OPENING: N/A

ADDITIONAL INFORMATION

* Natural velocity is slightly larger because deceleration occurs near bridge opening
** Assumes that existing abutments are fully exposed and scours similar to pier at abutments
***E-Stone Type IV is to 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 NECESSARY
4. BICYCLES AND PEDESTRIANS WILL BE ACCOMMODATED

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	2.5 INCH
3. DESIGN SPAN	L:	140 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	---
5. PRESTRESSING STRAND	f_{pu}:	---
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	---
8. S.P. (PERFORMANCE-BASED CONCRETE, CLASS PCD)	f'_c:	4.0 KSI
9. S.P. (PERFORMANCE-BASED CONCRETE, CLASS PCS)	f'_c:	3.5 KSI
10. S.P. (PERFORMANCE-BASED CONCRETE, CLASS PSS)	f'_c:	4.0 KSI
11. CONCRETE, CLASS C	f'_c:	3.0 KSI
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270, GR50W	f_y:	50 KSI
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:	
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	
18. PILE RESISTANCE FACTOR	ϕ:	0.65
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.		---

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADDT
2024	4300	530	52	5.5	280
2044	4800	580	52	8.2	470

20 year ESAL for flexible pavement from 2024 to 2044 : 571480
40 year ESAL for flexible pavement from 2024 to 2064 : 1361360
Design Speed: 30 mph

AS BUILT "REBAR"

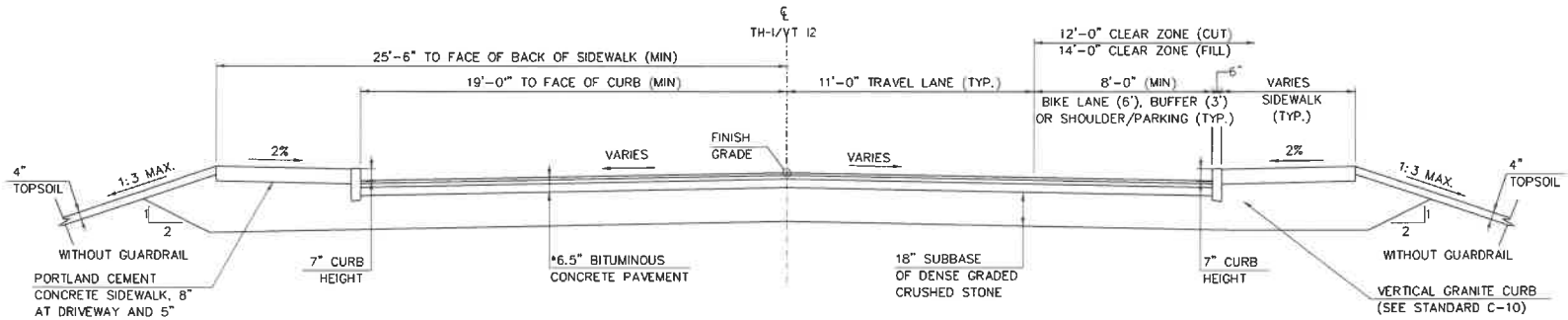
LEVEL	LEVEL	LEVEL
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: zl9j223forms.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: D. WELLS
PRELIMINARY INFORMATION SHEET

PLOT DATE: 5/29/2025
DRAWN BY: D. WELLS
CHECKED BY: K. SMITH
SHEET 2 OF 102

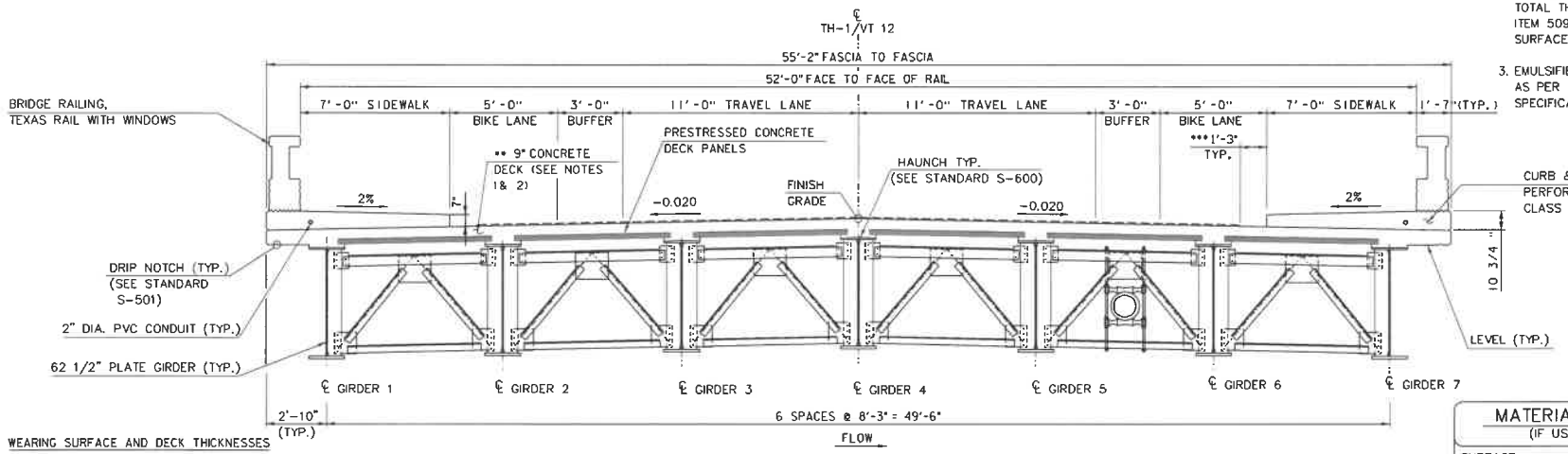


PROPOSED TH-1 (MAIN ST) / VT ROUTE 12 TYPICAL SECTION

STA 222+00.00 TO STA 222+69.17
STA 224+10.83 TO STA 224+75.00
SCALE 3/8" = 1'-0"

NOTES:

1. 6" INITIAL THICKNESS, ITEM 501.3700 "PERFORMANCE-BASED CONCRETE, CLASS PCD".
2. OVER POUR DECK TO 9¼" THICKNESS. PERFORM DECK GRINDING TO FINAL 9" TOTAL THICKNESS IN ACCORDANCE WITH ITEM 509.1500 "CONCRETE BRIDGE DECK SURFACE PREPARATION".
3. EMULSIFIED ASPHALT SHALL BE APPLIED AS PER TABLE 404.06A IN VTRANS SPECIFICATIONS



BRIDGE TYPICAL SECTION

SCALE 3/8" = 1'-0"

WEARING SURFACE AND DECK THICKNESSES

- * 1 1/2" BITUMINOUS CONCRETE PAVEMENT (TYPE IVS)
- * 2" BITUMINOUS CONCRETE PAVEMENT (TYPE IIIS)
- * 3" BITUMINOUS CONCRETE PAVEMENT (TYPE IIS)
- 18" SUBBASE OF DENSE GRADED CRUSHED STONE

**5 1/2" PERFORMANCE-BASED CONCRETE, CLASS PCD OVER 3 1/2" PRESTRESSED CONCRETE DECK PANELS

***FINISH DECK TO FINAL GRADE OR TRANSITION OVERPOUR TO 0" AT FACE OF CURB. IF OVERPOUR IS TRANSITIONED, IT SHALL BE COMPLETELY REMOVED BY GRINDING

SUPERPAVE BITUMINOUS CONCRETE PAVEMENT MIXTURE DESIGN CRITERIA	
DESIGN LANE/DESIGN LIFE ESALS	571,480
DESIGN NUMBER OF GYRATION	65
PERFORMANCE GRADE ASPHALT BINDER - PAVER PLACED	58E-28
PERFORMANCE GRADE ASPHALT BINDER - NON-PAVER PLACED	58S-28

MATERIAL TOLERANCES

(IF USED ON PROJECT)

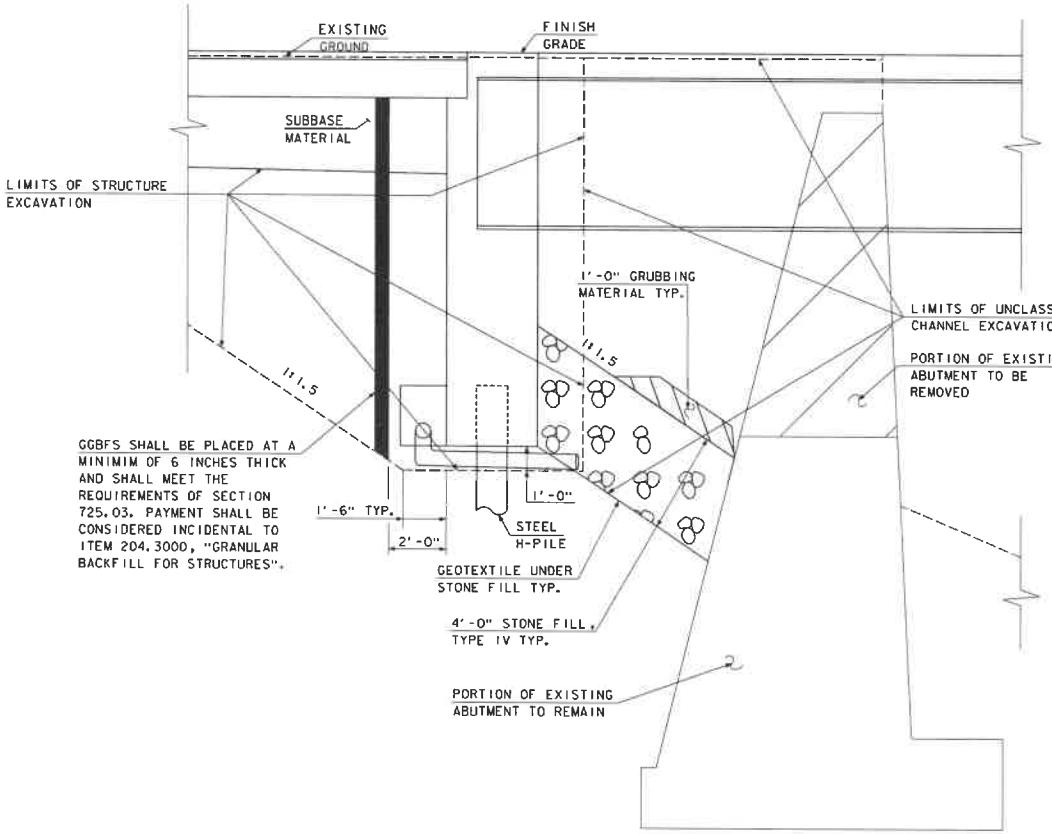
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/-¼"
- AGGREGATE SURFACE COURSE	+/-½"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

H&H

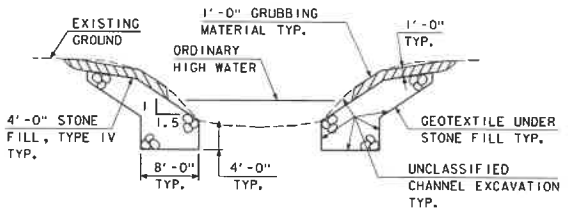
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19J223typ.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. SMITH
TYPICAL SECTIONS SHEET

PLOT DATE: 5/29/2025
DRAWN BY: C. SCHWARTZ
CHECKED BY: S. BROWN
SHEET 3 OF 102



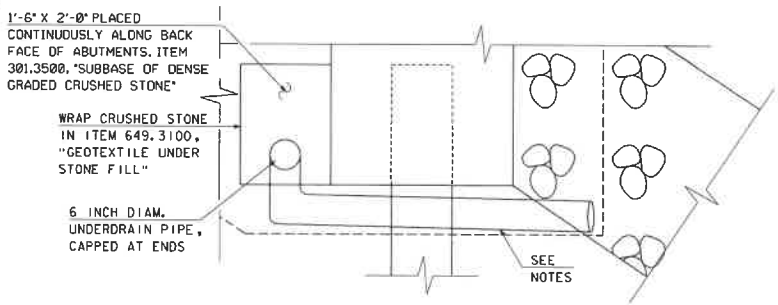
ABUTMENT EARTHWORK TYPICAL SECTION
(NOT TO SCALE)



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.



SUBSTRUCTURE DRAINAGE DETAIL
(NOT TO SCALE)

3) 6" UNDERDRAIN OUTLET PIPE CONNECTED TO UNDERDRAIN AT BACK FACE OF ABUTMENTS. OUTLET PIPE TO BE WRAPPED IN ITEM 649.3100, "GEOTEXTILE UNDER STONE FILL" AND PLACED TO AVOID PILES AND CUSHION SAND.

4) SLOPE UNDERDRAIN PIPE AT A MINIMUM OF 1/8" PER FOOT.

5) UNDERDRAIN OUTLET PIPE TO TERMINATE A MINIMUM OF 6" BEYOND GRANULAR BACKFILL FOR STRUCTURES. ENDS OF UNDERDRAIN OUTLET PIPE WILL BE PROTECTED FROM DAMAGE DURING PLACEMENT OF STONE FILL TYPE IV. ANY DAMAGED SECTIONS OF PIPE SHALL BE REPLACED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTORS EXPENSE.

6) PAYMENT FOR ALL UNDERDRAIN PIPES SHALL BE UNDER ITEM 605.1006, "UNDERDRAIN PIPE, 6 INCH".

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223ets.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
EARTHWORK TYPICAL SECTION

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 4 OF 102

GENERAL

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

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

3. THE REMOVAL OF EXISTING STRUCTURE WILL BE PAID FOR UNDER ITEM 529.2000, "PARTIAL REMOVAL OF STRUCTURE." THIS WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE REMOVAL OF:

   A. APPROACH SLABS
   B. APPROACH RAILING AND BRIDGE RAILING
   C. SIDEWALKS
   D. DECK AND SUPERSTRUCTURE
   E. PORTIONS OF EXISTING ABUTMENTS AND WINGWALLS AS SHOWN IN THE PLANS
   F. PORTIONS OF THE EXISTING WINGWALLS AND RETAINING WALLS WITHIN THE LIMITS OF THE PROPOSED SUBSTRUCTURE
   G. PIERS AND PIER FOOTINGS

4. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING ALL STAGES OF CONSTRUCTION. COSTS FOR UTILITY PROTECTION SHALL BE CONSIDERED INCIDENTAL TO ALL PROJECT ITEMS. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

5. THE EXISTING SIGN AT THE SOUTHEAST CORNER OF THE N/F WESCO REALTY, LLC. PROPERTY SHALL BE REMOVED AND RESET. THE PROPOSED LOCATION OF THE SIGN SHALL BE APPROVED BY THE ENGINEER. A TEMPORARY STANDALONE SIGN TO ADVERTISE FUEL PRICES SHALL BE INSTALLED FOR THE DURATION THAT A PERMANENT SIGN IS NOT IN PLACE. THE TEMPORARY SIGN SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. PAYMENT FOR THE TEMPORARY AND PERMANT SIGNS SHALL BE INCLUDED UNDER ITEM 675.6000002, "REMOVE AND RESET PRIVATE SIGN ASSEMBLY, LIGHTED".

TRAFFIC CONTROL

6. TRAFFIC MANAGEMENT WILL BE ACCOMPLISHED USING AN OFF-SITE LOCAL DETOUR ON WATER STREET AND WALL STREET, AND A TRUCK DETOUR ON VT-64/I-89/US-2 DURING A 12 WEEK BRIDGE CLOSURE PERIOD. A BICYCLE/PEDESTRIAN DETOUR VIA LOCAL ROADS WILL BE SIGNED AS SHOWN. REFER TO 'TRAFFIC CONTROL PLAN' SHEET FOR ADDITIONAL INFORMATION PERTAINING TO TRAFFIC CONTROL.

7. THE SIDEWALK AND CURB ADJACENT TO THE WESCO FUEL PUMP ISLAND WILL BE REMOVED TO MAINTAIN ACCESS TO THE FUEL PUMPS DURING THE BRIDGE CLOSURE PERIOD.

8. THE COST TO MAINTAIN ACCESS TO EACH PROPERTY WILL BE INCLUDED IN THE PAYMENT OF ITEM 641.1100, "TRAFFIC CONTROL, ALL-INCLUSIVE."

EPSC

9. FOR THE WET CROSSING, ALL CONSTRUCTION EQUIPMENT SHALL BE CLEAN AND WELL MAINTAINED, FREE OF FUEL, HYDRAULIC AND GEAR OIL LEAKS.

EARTHWORK AND RELATED ITEMS

10. THE "STONE FILL TYPE IV" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW STEEL GIRDERS ARE SET.

STRUCTURAL STEEL

11. ALL FIELD CONNECTIONS SHALL BE MADE USING 7/8" DIAMETER BOLTS IN 15/16" DIAMETER HOLES, PER SECTION 506.18, UNLESS OTHERWISE SPECIFIED.

12. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.

13. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURE ENGINEER FOR APPROVAL.

14. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.

15. END OF GIRDERS ARE TO BE VERTICAL IN THEIR FINAL POSITION.

16. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER, FOR USE IN DETERMINING THE HEIGHT OF DECK PANEL BEDDING STRIPS. AFTER THE DECK PANELS HAVE BEEN SET AND BEFORE THE HAUNCH POUR IS PLACED, THE CONTRACTOR SHALL RE-PROFILE THE TOP FLANGES OF THE GIRDER AS DIRECTED BY THE RESIDENT ENGINEER, FOR USE IN DETERMINING SCREED RAIL ELEVATIONS AND CHAIR HEIGHTS FOR REINFORCING STEEL.

17. FLEMING BRACKETS OR SIMILAR FALSE WORK SHALL BE SPACED AS REQUIRED BY DESIGN BUT SHALL BE LIMITED TO A MAXIMUM SPACING OF 4 FEET. THE DESIGN OF FALSE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL EXTEND AT LEAST 75% OF THE DEPTH OF THE WEB.

PAVEMENT

18. AT BEGIN AND END BRIDGE, PRIOR TO GRINDING, THE 9¾" DECK WILL BE ¾" HIGHER THAN THE WEARING COURSE. INSTALL A TEMPORARY TAPER OR WEDGE OF BITUMINOUS CONCRETE PAVEMENT AT A MINIMUM SLOPE OF 1:30 PRIOR TO ALLOWING TRAFFIC ON THE BRIDGE. TAPER AND/OR WEDGE SHALL BE REMOVED WHEN DECK GRINDING OCCURS.

CONCRETE

19. THE APPROACH SLABS AND PORTIONS OF THE ABUTMENT BELOW THE BRIDGE SEAT ELEVATION SHALL BE PERFORMANCE-BASED CONCRETE, CLASS PCS AND SHALL BE PAID UNDER ITEM 501.3800, "PERFORMANCE-BASED CONCRETE, CLASS PCS." DECK CONCRETE (INCLUDING THE ABUTMENT CONCRETE ABOVE BRIDGE SEAT OR CAP ELEVATION), THE SIDEWALKS, AND MOMENT SLABS SHALL BE PERFORMANCE-BASED CONCRETE, CLASS PCD AND SHALL BE PAID UNDER ITEM 501.3700, "PERFORMANCE-BASED CONCRETE, CLASS PCD."

20. THE DECK SHALL BE CAST TO AN INITIAL THICKNESS OF 9¾". AFTER THE DECK HAS CURED AND BRIDGE RAIL AND SIDEWALK ARE INSTALLED THE ENTIRE BRIDGE DECK SURFACE AND PORTIONS OF THE BRIDGE APPROACHES SHALL BE GROUND FOR A RESULTING DECK THICKNESS OF 9 INCHES. PAYMENT WILL BE MADE UNDER ITEM 509.1500, "CONCRETE BRIDGE DECK SURFACE PREPARATION."

21. THE DECK SHALL BE POURED IN ONE CONTINUOUS POUR WITH A MAXIMUM DURATION OF EIGHT HOURS, EXCEPT FOR THE CLOSURE POUR SECTIONS AT THE ABUTMENTS WHICH SHALL BE PLACED AT LEAST 72 HOURS AFTER THE DECK POUR HAS BEEN COMPLETED. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THE PLACEMENT IN ONE POUR, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED BETWEEN ADJACENT POURS. THE MINIMUM TIME DELAY BETWEEN ADJACENT DECK POURS SHALL BE INCLUDED IN THE CONTRACTOR'S PLACEMENT PLAN AND DISCUSSED DURING THE PRE-PLACEMENT MEETING.

22. WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES, EXCEPT THE UNDERSIDES OF THE DECK BETWEEN DRIP NOTCHES.

23. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

24. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".

REINFORCING STEEL

25. ALL REINFORCING STEEL IN THE APPROACH SLABS SHALL MEET THE REQUIREMENTS FOR LEVEL I EPOXY COATED, ITEM 507.1100, "REINFORCING STEEL, LEVEL I (EPOXY COATED)." ALL OTHER REINFORCING SHALL BE LEVEL II, IN ACCORDANCE WITH SECTION 507 OF THE STANDARD SPECIFICATIONS AND PAID FOR UNDER ITEM 507.1200, "REINFORCING STEEL, LEVEL II."

26. CUTTING AND REPAIRING DAMAGED AREAS OF COATED REINFORCING STEEL SHALL BE PERFORMED IN ACCORDANCE WITH SUBSECTION 507.04 OF THE STANDARD SPECIFICATIONS.

INTEGRAL ABUTMENT PILES

27. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS AND THE PROPOSED PILE SUMMARY TABLE. THE ACTUAL IN PLACE LENGTHS MAY VARY.

28. PROPOSED PILES SHALL BE IN ACCORDANCE WITH SUBSECTION 730.01 OF THE STANDARD SPECIFICATIONS.

29. PILES SHALL BE PRE-DRILLED PER THE REQUIREMENTS OF ITEM 546.1000, "PRE-EXCAVATION OF ABUTMENT PILES, EARTH," AND ITEM 546.2000, "PRE-EXCAVATION OF ABUTMENT PILES, ROCK" TO THE DEPTHS SHOWN ON THE PLANS. THE MINIMUM DIAMETER OF THE EXCAVATED HOLES FOR EACH PILE SHALL BE PER THE ABUTMENT PILE SUMMARY TABLE.

30. THE INTERIOR OF THE PRE-BORED HOLES SHOULD BE THOROUGHLY CLEANED OF SOIL AND DEBRIS PRIOR TO THE LOWERING OF THE PILE. A WEIGHTED TAPE SHOULD BE USED TO INSPECT THE BOTTOM OF THE HOLE FOR CLEANLINESS.

31. FOLLOWING THE PLACEMENT OF THE PILE, FILL THE ANNULUS BETWEEN THE PILE AND THE ROCK SOCKET WITH SELF-CONSOLIDATING CONCRETE (SCC) BY GRAVITY FROM THE LOWEST POINT OF THE SOCKET USING THE TREMIE METHOD. SCC PLACEMENT SHALL CONTINUE UNTIL UNCONTAMINATED CONCRETE SURPASSES THE LIMITS OF THE ROCK SOCKET, BUT DOES NOT EXTEND PAST THE LIMITS OF SCC SHOWN ON THE ABUTMENT PILE DETAIL SHEET. THE TEMPORARY CASING SHOULD BE EXTRACTED WHILE PLACING THE SCC SUCH THAT THE BOTTOM OF THE TEMPORARY CASING IS AT THE TOP OF THE CONCRETED SOCKET.

INTEGRAL ABUTMENT PILES (CONTINUED)

32. AFTER THE SCC HAS CURED, BACKFILL THE REMAINDER OF THE ANNULUS WITH CUSHION SAND AT ABUTMENT PILE LOCATIONS WHILE SIMULTANEOUSLY REMOVING THE TEMPORARY CASING. CUSHION SAND SHALL MEET THE REQUIREMENTS OF SECTION 703.03 OF THE STANDARD SPECIFICATIONS.

33. CONCRETE SHALL ACHIEVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI AND MEET THE MATERIAL REQUIREMENTS OF STANDARD SPECIFICATIONS SECTION 707.01(E).

34. ALLOW CONCRETED SOCKETS TO CURE FOR A MINIMUM OF 24 HOURS PRIOR TO PRE-EXCAVATING WITHIN 3 SOCKET DIAMETERS OR BACKFILLING THE REST OF THE PILE SOCKET.

35. TOLERANCES FOR THE TOPS OF THE PILES AFTER BATTER AND ROTATION SHALL MEET THE REQUIREMENTS OF SECTION 505.04(B). PILE PLACEMENT SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES.

36. THE COMPRESSION RESISTANCE FACTOR FOR THE PROPOSED ROCK SOCKETS IS 0.50 FOR THE STRENGTH LIMIT STATE LOAD COMBINATION.

SOLDIER PILE RETAINING WALLS

37. WINGWALLS 2 & 3 SHALL BE SOLDIER PILE WALLS. PAYMENT FOR THESE WINGWALLS SHALL BE UNDER ITEM 225.030000I, "SOLDIER PILE RETAINING WALLS".

38. CONTRACTOR SHALL SUBMIT THE ARCHITECTURAL CONCRETE FACING PATTERN TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTING.

WINGWALL PILES

39. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS AND THE PROPOSED PILE SUMMARY TABLE. THE ACTUAL IN PLACE LENGTHS MAY VARY.

40. PROPOSED PILES SHALL BE IN ACCORDANCE WITH SUBSECTION 730.01 OF THE STANDARD SPECIFICATIONS.

41. PILES SHALL BE PRE-DRILLED PER THE REQUIREMENTS OF ITEM 546.1000, "PRE-EXCAVATION OF ABUTMENT PILES, EARTH," AND ITEM 546.2000, "PRE-EXCAVATION OF ABUTMENT PILES, ROCK" TO THE DEPTHS SHOWN ON THE PLANS. THE MINIMUM DIAMETER OF THE EXCAVATED HOLES FOR EACH PILE SHALL BE PER THE WINGWALL PILE SUMMARY TABLE.

42. THE INTERIOR OF THE PRE-BORED HOLES SHOULD BE THOROUGHLY CLEANED OF SOIL AND DEBRIS PRIOR TO THE LOWERING OF THE PILE. A WEIGHTED TAPE SHOULD BE USED TO INSPECT THE BOTTOM OF THE HOLE FOR CLEANLINESS.

43. FOLLOWING THE PLACEMENT OF THE PILE, FILL THE ANNULUS BETWEEN THE PILE AND THE ROCK SOCKET WITH SELF-CONSOLIDATING CONCRETE (SCC) BY GRAVITY FROM THE LOWEST POINT OF THE SOCKET USING THE TREMIE METHOD. THE SCC PLACEMENT SHALL CONTINUE UNTIL THE BOTTOM OF THE CONCRETE WALL PANELS AS SHOWN ON THE WINGWALL PILE DETAIL SHEET. THE TEMPORARY CASING SHOULD BE EXTRACTED WHILE PLACING THE SCC SUCH THAT THE BOTTOM OF THE TEMPORARY CASING IS AT THE TOP OF THE CONCRETED SOCKET.

44. AFTER THE SCC HAS CURED, BACKFILL THE REMAINDER OF THE ANNULUS WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) AT PILE LOCATIONS WHILE SIMULTANEOUSLY REMOVING THE TEMPORARY CASING. CUSHION SAND SHALL MEET THE REQUIREMENTS OF SECTION 703.03 OF THE STANDARD SPECIFICATIONS.

45. CONCRETE SHALL ACHIEVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 5000 PSI AND MEET THE MATERIAL REQUIREMENTS OF STANDARD SPECIFICATIONS SECTION 707.01(E).

46. ALLOW CONCRETED SOCKETS TO CURE FOR A MINIMUM OF 24 HOURS PRIOR TO PRE-EXCAVATING WITHIN 3 SOCKET DIAMETERS OR BACKFILLING THE REST OF THE PILE SOCKET.

47. TOLERANCES FOR THE TOPS OF THE PILES AFTER BATTER AND ROTATION SHALL MEET THE REQUIREMENTS OF SECTION 505.04(B), TOLERANCES FOR THE PLACEMENT OF THE WINGWALL PILES SHALL ALSO MEET THE REQUIREMENTS OF SECTION 505.04(B).

48. THE COMPRESSION RESISTANCE FACTOR FOR THE PROPOSED ROCK SOCKETS IS 0.50 FOR THE STRENGTH LIMIT STATE LOAD COMBINATION.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223notes.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: S. BROWN
GENERAL NOTES SHEET

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 5 OF 102

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES						TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
1011 - ROADWAY	1031 - TRAINING	1051 - EROSION CONTROL	1211 - BRIDGE NO. 1	1999 - FULL C.E. ITEMS		GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
			80000			80000		DL	INCENTIVE OR DISINCENTIVE (N.A.B.I.)	199.8101				
1						1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.1000				
1200						1200		CY	COMMON EXCAVATION	203.1500				
5						5		CY	SOLID ROCK EXCAVATION	203.1600				
15						15		CY	UNCLASSIFIED EXCAVATION	203.1700				
1950						1950		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.2700				
900						900		CY	TRENCH EXCAVATION OF EARTH	204.2000				
1						1		CY	TRENCH EXCAVATION OF ROCK	204.2100				
1						1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.2200				
			748			748		CY	STRUCTURE EXCAVATION	204.2500				
			698			698		CY	GRANULAR BACKFILL FOR STRUCTURES	204.3000				
230						230		SY	COARSE-MILLING, BITUMINOUS PAVEMENT	210.1000				
			1			1		LS	RETAINING WALL, CAST-IN-PLACE CONCRETE (WINGWALL 2)	225.0300				
			1			1		LS	RETAINING WALL, CAST-IN-PLACE CONCRETE (WINGWALL 3)	225.0300				
			1			1		LS	RETAINING WALL, CONCRETE (WINGWALL 1)	225.0500				
			1			1		LS	RETAINING WALL, CONCRETE (WINGWALL 4)	225.0500				
500000						500000		DL	DISPOSAL OF CONTAMINATED MATERIALS (N.A.B.I.)	230.0010				
1						1		LS	PROJECT OPERATIONS PLAN	230.0030				
1						1		LS	PROJECT OPERATIONS COMPLETION REPORT	230.0040				
480						480		HR	ENVIRONMENTAL OVERSIGHT	230.0050				
1						1		LS	MANAGEMENT OF CONTAMINATED GROUNDWATER	230.0060				
848						848		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.3500				
100						100		CWT	TACK COAT, EMULSIFIED ASPHALT	404.1100				
155						155		TON	BITUMINOUS CONCRETE PAVEMENT, TYPE IIS, QA TIER II	406.0230				
136						136		TON	BITUMINOUS CONCRETE PAVEMENT, TYPE IIS, QA TIER II	406.0330				
220						220		TON	BITUMINOUS CONCRETE PAVEMENT, TYPE IVS, QA TIER II	406.0430				
310						310		SY	BITUMINOUS CONCRETE PAVEMENT, NON-PAVER PLACED, TYPE IVS	406.3400				
1						1		DL	PAY ADJUSTMENT, BCP, MIXTURE PROPERTIES (N.A.B.I.)	406.9100				
			355			355		CY	PERFORMANCE-BASED CONCRETE, CLASS PCD	501.3700				
			145			145		CY	PERFORMANCE-BASED CONCRETE, CLASS PCS	501.3800				
			1			1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.1000				
			384			384		LF	STEEL PILING, HP 12 x 84	505.1650				
			2			2		EACH	DYNAMIC PILE LOADING TEST	505.4500				
			327200			327200		LB	STRUCTURAL STEEL, PLATE GIRDER	506.5500				
			7800			7800		LB	REINFORCING STEEL, LEVEL I	507.1100				
			101100			101100		LB	REINFORCING STEEL, LEVEL II	507.1200				
			1			1		LS	SHEAR CONNECTORS (1974 - 7/8 X 7IN)	508.1500				
			5384			5384		SF	CONCRETE BRIDGE DECK SURFACE PREPARATION	509.1500				
			5568			5568		SF	PRESTRESSED CONCRETE DECK PANELS	510.4000				
			50			50		GAL	WATER REPELLENT, SILANE	514.1000				

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19j223quantities.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY:
QUANTITIES SHEET 1

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 6 OF 102

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES						TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
1011 - ROADWAY	1031 - TRAINING	1051 - EROSION CONTROL	1211 - BRIDGE NO. 1	1999 - FULL C.E. ITEMS		GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
			76			76		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.1000				
			76			76		LF	JOINT SEALER, HOT POURED	524.1100				
			329			329		LF	BRIDGE RAILING, TEXAS RAIL WITH WINDOWS	525.5200				
			1			1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.2000				
1						1		CY	FLOWABLE FILL, EXCAVATABLE	541.4600				
			224			224		LF	PRE-EXCAVATION OF ABUTMENT PILES, EARTH	546.1000				
			98			98		LF	PRE-EXCAVATION OF ABUTMENT PILES, ROCK	546.2000				
110						110		LF	24 INCH CPEP	601.0920				
70						70		LF	30 INCH CPEP(SL)	601.2625				
63						63		LF	36 INCH CPEP(SL)	601.2630				
1						1		EACH	30 INCH CPEPES	601.7025				
1						1		EACH	36 INCH CPEPES	601.7030				
2						2		EACH	PRECAST REINFORCED CONCRETE DI WITH CAST IRON GRATE	604.1800				
2						2		EACH	CHANGING ELEVATION OF DIS, CATCH BASINS, OR MANHOLES	604.4000				
3						3		EACH	CAST IRON GRATE WITH FRAME, TYPE D	604.4504				
156						156		LF	UNDERDRAIN PIPE, 6 INCH	605.1006				
180						180		CY	E-STONE FILL, TYPE I	613.0801				
900			910			1810		CY	STONE FILL, TYPE IV	613.1004				
		1				1		LS	IN-WATER SEDIMENT ISOLATION MEASURES	614.2000				
280						280		LF	VERTICAL GRANITE CURB	616.2100				
33						33		LF	REMOVING AND RESETTING CURB	616.4000				
37						37		LF	REMOVAL OF EXISTING CURB	616.4100				
170						170		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.1005				
61						61		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH	618.1008				
25						25		SF	DETECTABLE WARNING SURFACE	618.3000				
20						20		LF	CHAIN-LINK FENCE, 6 FOOT	620.1006				
20						20		LF	REMOVAL OF EXISTING FENCE	620.5500				
100						100		LF	REMOVAL OF GUARDRAIL	621.0100				
		1				1		LS	WATER MAIN ON BRIDGE, ALL-INCLUSIVE	629.1700002				
					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				
					3000	3000		DL	FIELD OFFICE COMMUNICATIONS (N.A.B.L)	631.2600				
14						14		EACH	CPM SCHEDULE	633.1000				
	520					520		HR	EMPLOYEE TRAINEESHIP	634.1000				
1						1		LS	MOBILIZATION/DEMOBILIZATION	635.1100				
1						1		LS	TRAFFIC CONTROL, ALL-INCLUSIVE	641.1100				
1						1		LS	MAINTENANCE OF PEDESTRIAN TRAFFIC	641.1200				
1850						1850		LF	DURABLE 4 INCH WHITE LINE, EPOXY PAINT	646.4030				
1120						1120		LF	DURABLE 4 INCH YELLOW LINE, EPOXY PAINT	646.4130				

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19j223quantities.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY:
QUANTITIES SHEET 2

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 7 OF 102

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES

1011 - ROADWAY	1031 - TRAINING	1051 - EROSION CONTROL	1211 - BRIDGE NO. 1	1999 - FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
1280					1280		LF	DURABLE 6 INCH WHITE LINE, EPOXY PAINT	646.4230	
12					12		EACH	DURABLE LETTER OR SYMBOL, EPOXY PAINT	646.4930	
80					80		LF	DURABLE CROSSWALK MARKING, THERMOPLASTIC	646.5020	
			685		685		SY	GEOTEXTILE UNDER STONE FILL	649.3100	
		1780			1780		SY	TURF ESTABLISHMENT, GENERAL SEED	651.1500	
		198			198		CY	TOPSOIL	651.3500	
		510			510		SY	GRUBBING MATERIAL	651.4000	
		1			1		LS	EPSC PLAN	653.0100	
		80			80		HR	MONITORING EPSC PLAN	653.0200	
		3000			3000		DL	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	653.0300	
		1			1		TON	HAY MULCH	653.1000	
		282			282		SY	ROLLED EROSION CONTROL PRODUCT, TYPE I	653.2001	
		120			120		CY	STABILIZED CONSTRUCTION ENTRANCE	653.3500	
		10			10		EACH	INLET PROTECTION DEVICE, TYPE II	653.4002	
		3			3		EACH	FILTER BAG	653.4500	
		260			260		LF	SILT FENCE, TYPE II	653.4702	
		600			600		LF	BARRIER FENCE	653.5000	
1					1		LS	TREE PROTECTION	656.8500	
45					45		SF	TRAFFIC SIGN, FLAT SHEET ALUMINUM	675.2000	
87					87		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.3410	
2					2		EACH	FOUNDATION FOR TUBULAR STEEL POST	675.4300	
3					3		EACH	SIGN REMOVAL, FLAT SHEET ALUMINUM	675.5000	
4					4		EACH	RESETTING SIGNS	675.6000	
1					1		EACH	REMOVE AND RESET PRIVATE SIGN ASSEMBLY, LIGHTED	675.6000002	
4					4		EACH	DELINEATOR WITH STEEL POST	676.1000	
1					1		EACH	REMOVE AND RESET LIGHT POLE	679.2500	
1					1		DL	PRICE ADJUSTMENT, ASPHALT (N.A.B.I.)	690.0300	
1					1		DL	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.0400	
20					20		LF	F-164.5.1 FENCE	699.5150	

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223quantities.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY:
QUANTITIES SHEET 3

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 8 OF 102

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EARTHWORKS

STATION	DIST	TOTAL EXCAVATION EARTH AREA	TOTAL EXCAVATION EARTH VOLUME	ROCK EXCAVATION AREA	ROCK EXCAVATION VOLUME	EMBANKMENT AREA	EMBANKMENT VOLUME	AREA	VOLUME
	FT.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.
N MAIN ST (VT 12)									
220+30		0.0				0.0			
	20		0.0				0.0		
220+50		0.0				0.0			
	25		0.0				0.0		
220+75		0.0				0.0			
	25		0.0				0.0		
221+00		0.0				0.0			
	25		4.4				0.0		
221+25		9.5				0.0			
	25		9.4				0.0		
221+50		10.9				0.0			
	25		39.3				0.0		
221+75		73.9				0.0			
	25		94.3				0.0		
222+00		129.8				0.0			
	50		278.3				0.0		
222+25		162.7				0.0			
	44		313.5				0.0		
222+50		170.8				0.0			
	19		139.0				0.0		
222+69		220.6				0.0			
			0.0				0.0		
BEGIN BRIDGE STA 222+89.17									
END BRIDGE STA 224+10.83									
224+11		212.9				0.0			
	14		132.6				0.0		
224+25		298.5				0.0			
	25		209.9				0.0		
224+50		154.9				0.0			
	25		115.0				0.0		
224+75		93.5				0.0			
	25		74.6				0.0		
225+00		67.7				0.0			
	25		53.2				0.0		
225+25		47.2				0.0			
	25		21.8				0.0		
225+50		0.0				0.0			
	25		0.0				0.0		
225+75		0.0				0.0			
	25		0.0				0.0		
226+00		0.0				0.0			
	25		0.0				0.0		
226+25		0.0				0.0			
	25		0.0				0.0		
226+50		0.0				0.0			

STATION	DIST	TOTAL EXCAVATION EARTH AREA	TOTAL EXCAVATION EARTH VOLUME	EMBANKMENT AREA	EMBANKMENT VOLUME	ROCK EXCAVATION AREA	ROCK EXCAVATION VOLUME	AREA	VOLUME
	FT.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.
DOG RIVER (CHANNEL)									
50+00		0.0		0.0					
	25		0.0						
50+25		0.0		0.0					
	25		0.0		0.0				
50+50		0.0		0.0					
	43		0.0		0.0				
50+93		0.0		0.0					
	7		29.6		0.0				
51+00		228.3		0.0					
	10		101.7		0.1				
51+10		320.7		0.5					
	10		174.4		0.4				
51+20		820.9		1.9					
	10		191.1		0.4				
51+30		411.2		0.0					
	10		153.8		0.0				
51+40		419.5		0.0					
	10		157.1		0.0				
51+50		428.6		0.0					
	10		160.1		0.0				
51+60		438.0		0.0					
	10		162.4		0.0				
51+70		441.0		0.0					
	10		195.5		1.1				
51+80		614.5		5.8					
	10		174.1		1.8				
51+90		325.8		3.7					
	10		103.4		3.1				
52+00		232.7		13.2					
	15		119.9		11.6				
52+15		199.0		28.7					
	10		69.5		11.6				
52+25		176.1		34.2					
	25		115.9		15.8				
52+50.0		74.3		0.0					
	9		12.4		0.0				
52+59		0.0		0.0					

SUMMARY AND BALANCES

STATION TO STATION	TOT EXC. EARTH C.Y.	ROCK EXCAV C.Y.	EMBANK C.Y.	EXCESSES CUT	EXCESSES FILL	ACUMULATIVE EXCESSES CUT	ACUMULATIVE EXCESSES FILL
N MAIN ST (VT 12)							
220+30 222+69	878	2.5	0	881			
224+11 226+50	607	2.5	0	610			
DOG RIVER (CHANNEL)							
50+00 52+59	1921	0	0	1921			
TOTAL	3406	5	0	3411	0	3411	

REMARKS

EARTH AND ROCK EXCAVATION	3411
SOLID ROCK EXCAVATION	5
EARTH EXCAVATION	3406
PLANIMETERED FILL	0
LESS FACTORED SOLID ROCK	0
LESS DISPLACEMENT OF ANY LARGE STRUCTURES	0
NET PLANIMETERED FILL	0
FACTOR	1.15
PLANIMETERED FILL INCLUDING FACTOR	0
MATERIALS AVAILABLE FOR FILLS	
EARTH EXCAVATION	1485
CHANNEL EXCAVATION	1921
UNDERDRAIN EXCAVATION	0
STRUCTURE EXCAVATION	43
TOTAL MATERIAL AVAILABLE FOR FILL	3449
TOTAL FILL INCLUDING FACTOR	0
TOTAL MATERIAL FOR FILL	3449
BORROW	0
EXCESS EXCAVATION	3449

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223ews.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
EARTHWORK SHEET

PLOT DATE: 5/29/2025
DRAWN BY: J. DIAZ
CHECKED BY: C. JENNE
SHEET 9 OF 102

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
	BF	BARRIER FENCE
	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
	PDF	PROJECT DEMARCATION FENCE
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	R.T.& I.	RIGHT, TITLE, AND INTEREST
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
◙	BNDNS	BOUND TO BE SET
◎	IPNF	IRON PIN FOUND
●	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
CB	CHORD BEARING

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+TELEPHONE
- 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+TELEPHONE
- 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 — PROJECT DEMARCATION FENCE
- 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

- FILTER CURTAIN
- SILT FENCE
- SILT FENCE WOVEN WIRE
- CHECK DAM
- DISTURBED AREAS REQUIRING RE-VEGETATION
- EROSION MATTING
- EROSION LOG

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
- Ⓗ — 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

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME: sl91223symlegend.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: VTRANS
DESIGNED BY: VTRANS	CHECKED BY: VTRANS
CONVENTIONAL SYMBOLOGY LEGEND	SHEET 10 OF 102

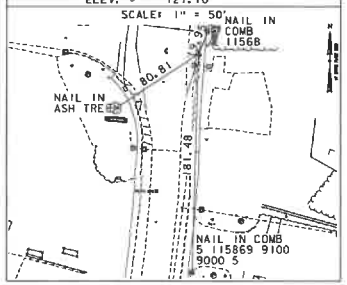
GPS CONTROL POINTS

STATE PLANE COORDINATES WERE DERIVED THROUGH THE USE OF RTK GPS UTILIZING THE VERMONT CORS SYSTEM
POINTS ONE AND TWO WERE OCCUPIED WITH LEICA GS15 GNSS UNITS, POINTS THREE, TEN, AND THIRTY ONE WERE CREATED WITH A
LEICA TS16
ROBOTIC TOTAL STATION

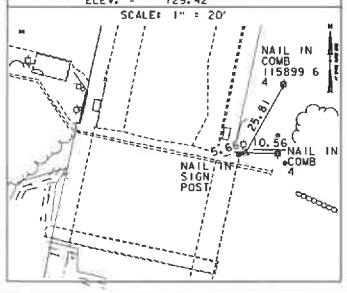
VCAP
NORTH = 642,229.41
EAST = 1,618,836.27
ORTHO HEIGHT = 617.5
This is a GPS Continuously Operating Reference Station.
VERMONT CAPITAL CORS ARP
CORS_ID - VTRU
PID - AF9563
STATE/COUNTY- VT/WASHINGTON
COUNTRY - US
USGS QUAD - MONTPELIER (1968)
U.S. NATIONAL GRID SPATIAL ADDRESS: 18TXQ9297703812
(NAD 83)
MARKER: STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA

TRAVERSE TIES

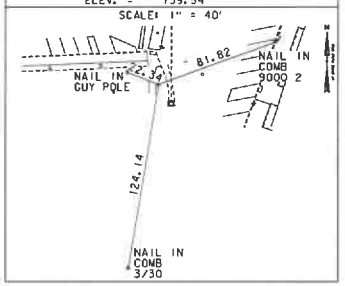
HVCTRL #1
NORTH = 601670.438
EAST = 1599570.008
ELEV. = 727.70



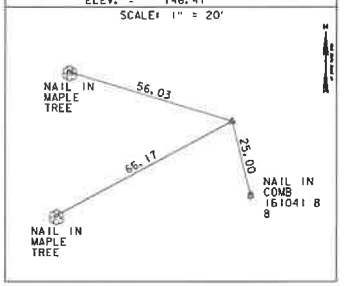
HVCTRL #2
NORTH = 601331.244
EAST = 1599536.458
ELEV. = 729.42



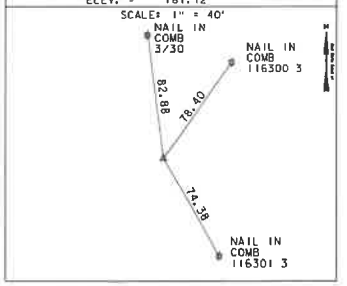
HVCTRL #3
NORTH = 600836.712
EAST = 1599371.534
ELEV. = 739.54



HVCTRL #10
NORTH = 601978.567
EAST = 1599597.003
ELEV. = 746.47

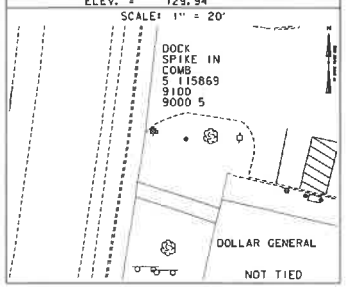


HVCTRL #31
NORTH = 600633.062
EAST = 1599361.671
ELEV. = 761.12



TRAVERSE TIES

BM #1429
NORTH = 601488.407
EAST = 1599565.674
ELEV. = 729.94



ALIGNMENT TIES

POB 220+25.00
NORTH = 600972.89
EAST = 1599429.98

NOT TIED

PC 224+70.83
NORTH = 601409.00
EAST = 1599522.55

NOT TIED

PT 226+33.41
NORTH = 601570.00
EAST = 1599544.00

NOT TIED

POE 228+04.68
NORTH = 601741.01
EAST = 1599553.55

NOT TIED

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (2011)
ADJUSTMENT	Least Sq.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223tl.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
SURVEY TIE SHEET

PLOT DATE: 5/29/2025
DRAWN BY: S.BROWN
CHECKED BY: K.HO
SHEET 11 OF 102

E-STONE, TYPE I
STA 223+17.9 - STA 223+26.4
STA 223+54.5 - STA 223+63.0

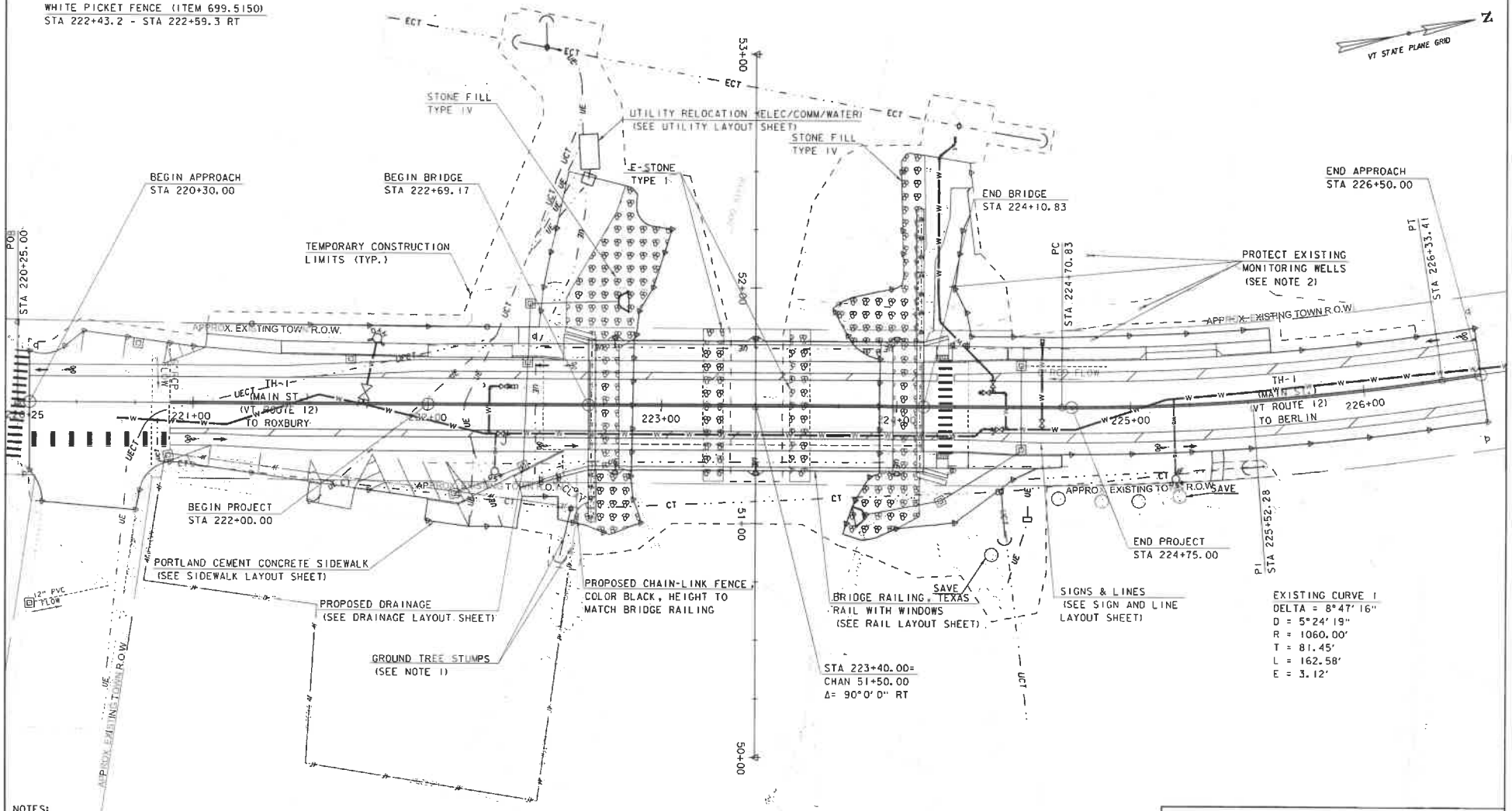
REMOVAL OF EXISTING FENCE
STA 222+43.2 - STA 222+59.3 RT

WHITE PICKET FENCE (ITEM 699.5150)
STA 222+43.2 - STA 222+59.3 RT

COARSE MILLING, BITUMINOUS CONCRETE
STA 220+30.0 - STA 221+07.0
STA 226+25.0 - STA 226+50.0

STONE FILL, TYPE IV
STA 222+59.1 - STA 223+4.4
STA 223+72.6 - STA 224+12.5

RETAINING WALL, PRECAST CONCRETE
STA 222+58.7 - STA 222+ 68.5 LT
STA 224+11.5 - STA 224+21.3 RT



NOTES:
1. PAYMENT FOR STUMP GRINDING SHALL BE INCLUDED IN THE PAYMENT FOR ITEM 201.1000, CLEARING AND GRUBBING INCLUDING INDIVIDUAL TREES AND STUMPS (LS).
2. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING MONITORING WELLS DURING CONSTRUCTION. COST SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

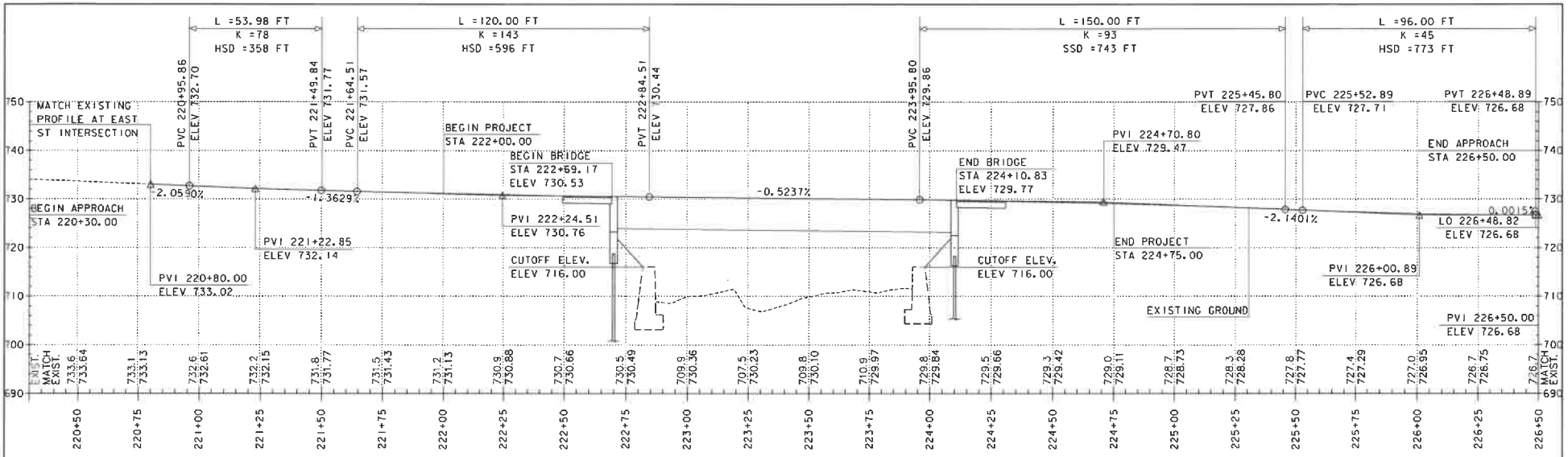
SCALE 1" = 20'-0"
20 0 20

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

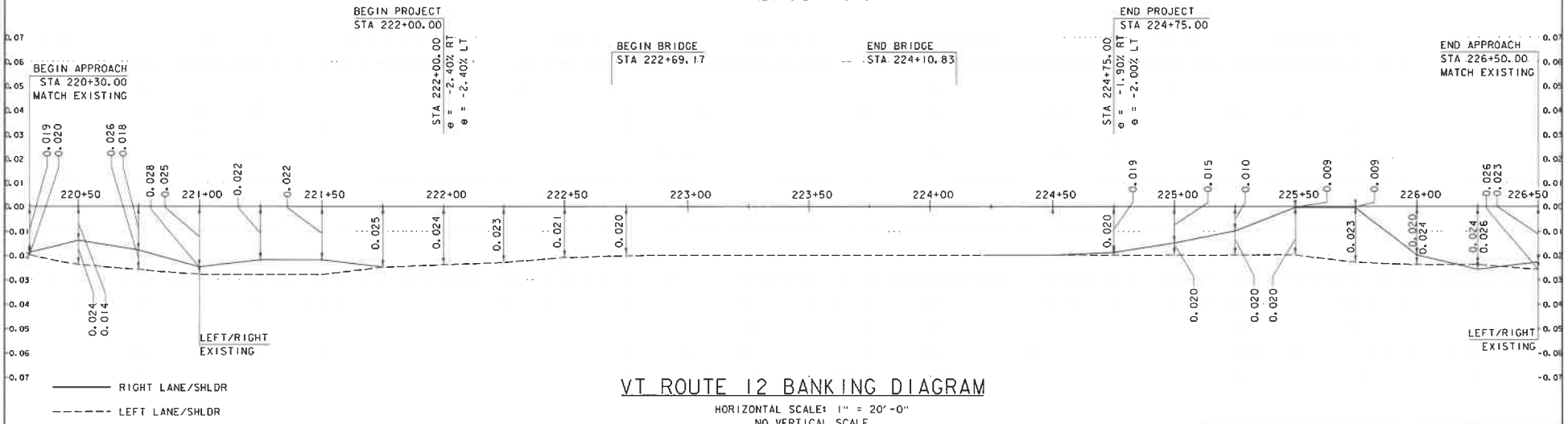
FILE NAME: z19J223bdr.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
LAYOUT SHEET

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 12 OF 102



TH-1 (VT ROUTE 12) PROFILE

SCALE: HORIZONTAL 1"=20'-0"
VERTICAL 1"=10'-0"



VT ROUTE 12 BANKING DIAGRAM

HORIZONTAL SCALE: 1" = 20'-0"
NO VERTICAL SCALE

NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223profile.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
PROFILE AND BANKING DIAGRAM

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 13 OF 102

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
STA 221+37.7 - STA 222+00.0 LT
STA 222+35.9 - STA 222+57.9 LT
STA 224+54.5 - STA 225+04.5 LT
STA 225+40.5 - STA 225+61.6 LT
STA 222+00.0 - STA 222+19.0 RT
STA 222+36.5 - STA 222+57.9 RT
STA 224+22.1 - STA 224+70.8 RT

PORTLAND CEMENT CONCRETE SIDEWALK, 8 INCH
STA 221+05.8 - STA 221+37.7 LT
STA 222+00.0 - STA 222+35.9 LT
STA 224+22.1 - STA 224+54.5 LT
STA 225+04.5 - STA 225+40.5 LT

VERTICAL GRANITE CURB
STA 221+37.7 - STA 222+00.0 LT
STA 222+35.9 - STA 222+57.9 LT
STA 222+13.0 - STA 222+19.0 RT
STA 222+36.5 - STA 222+57.9 RT
STA 224+22.1 - STA 225+61.6 LT
STA 224+22.1 - STA 224+50.8 RT

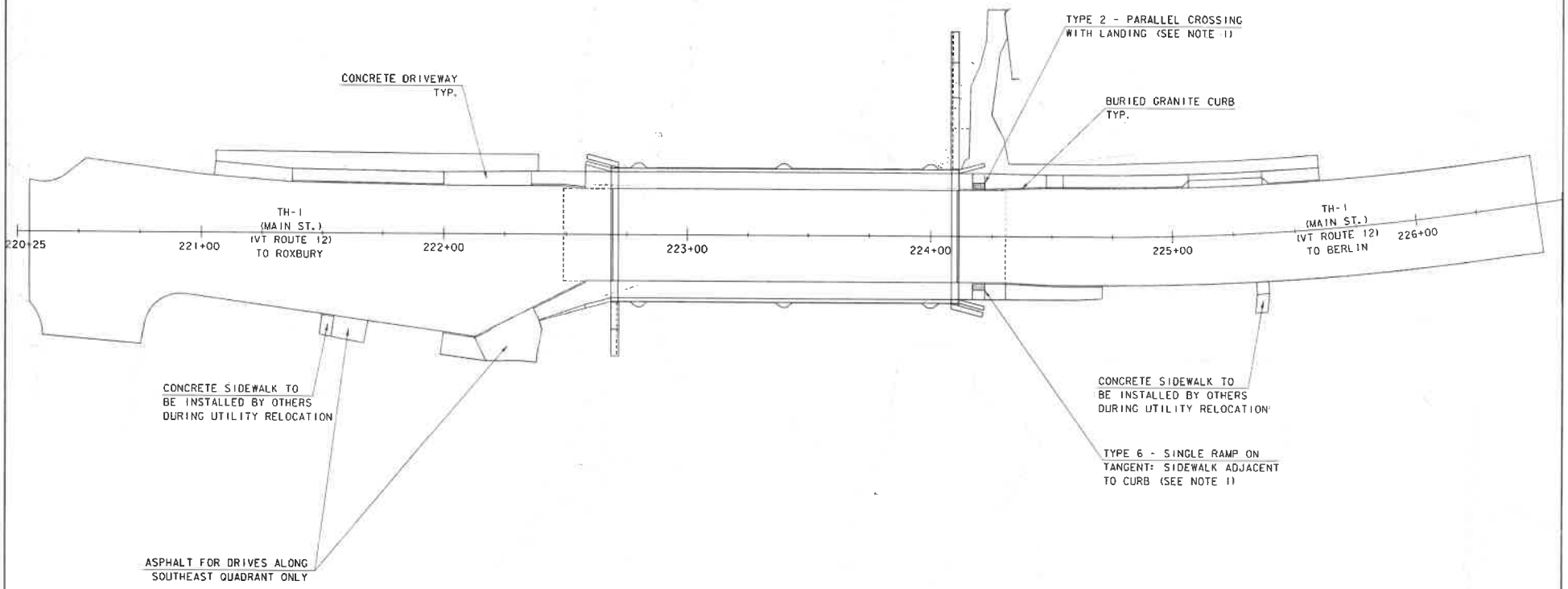
REMOVING AND RESETTING CURB
STA 222+00.0 - STA 222+13.0 RT
STA 224+50.8 - STA 224+70.8 RT

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH (BY OTHERS)
STA 221+49.4 - STA 221+54.9 RT
STA 225+33.4 - STA 225+38.2 RT

DETECTABLE WARNING SURFACE
STA 224+21.2 LT
STA 224+21.2 RT

BITUMINOUS CONCRETE PAVEMENT TYPE IVS, OA TIER III (DRIVES)
STA 221+05.8 - STA 222+35.9 LT
STA 224+15.0 - STA 225+61.6 LT
STA 221+54.9 - STA 221+69.0 RT
STA 222+12.8 - STA 222+40.3 RT

VT STATE PLANE GRID



NOTES:

1. ADA CURB RAMP TYPE 2 SHALL FOLLOW DETAIL SHOWN ON VTRANS STD. C-2A.
   ADA CURB RAMP TYPE 6 SHALL FOLLOW DETAIL SHOWN ON VTRANS STD. C-3B.

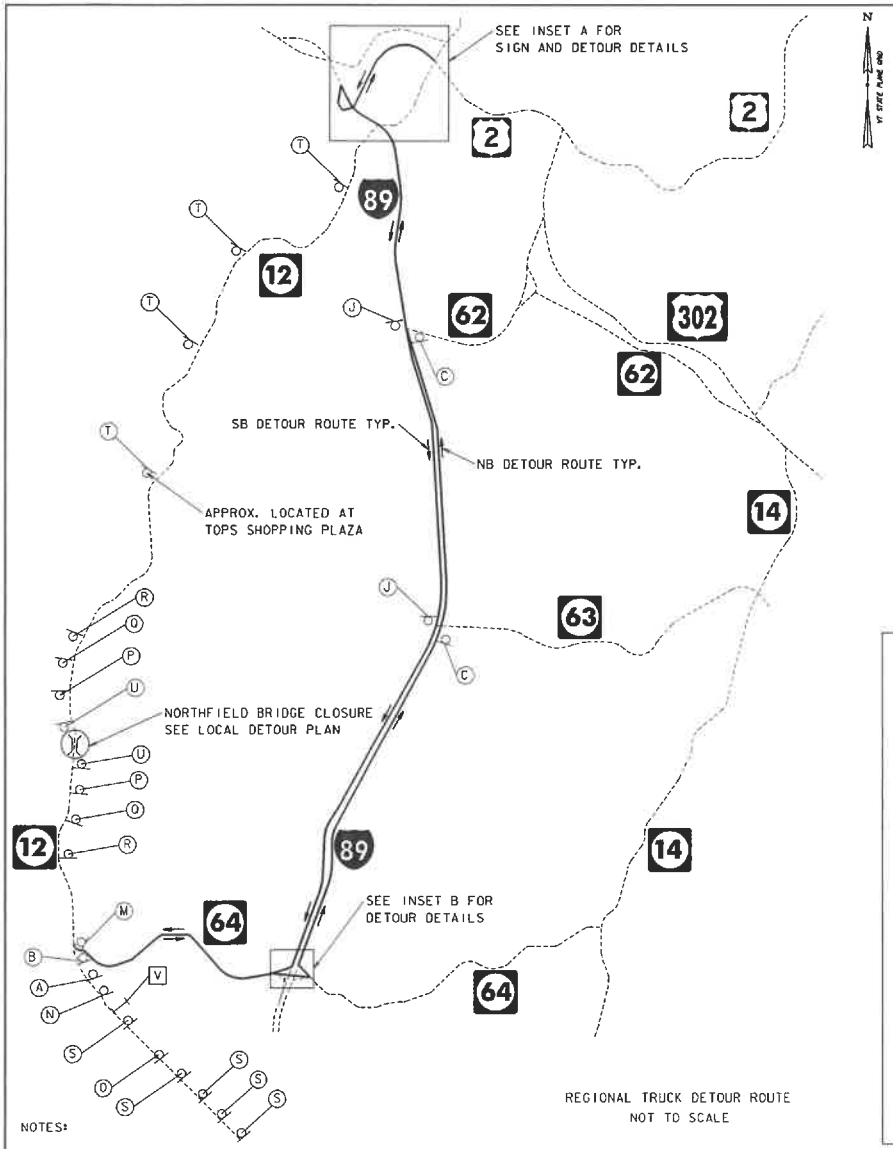
SCALE 1" = 20'-0"
20 0 20

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19J223bdr_sidewalk.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
SIDEWALK LAYOUT SHEET

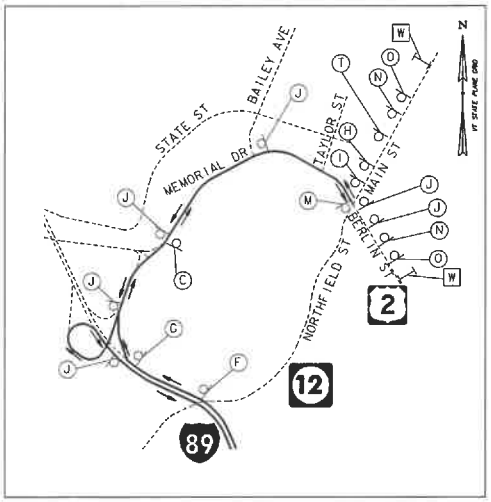
PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: K. HO
SHEET 14 OF 102



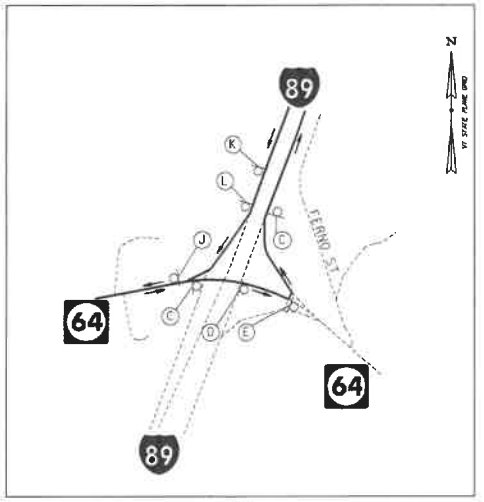
REGIONAL TRUCK DETOUR ROUTE
NOT TO SCALE

NOTES:

1. SIGNS INSTALLED ON I-89 SHALL BE FREEWAY SIZE PER 11TH EDITION MUTCD TABLE 6C-1.
2. SIGN S SHALL BE PLACED AT APPROXIMATELY 2, 4, 6, 8, AND 10 MILES LEADING UP TO BRIDGE CLOSURE.
3. SYMBOL V REFERS TO A PCMS DISPLAYING THE MESSAGE: "VT-12 NORTH CLOSED 7 PM MM/DD - 7 AM MM/DD".
4. SYMBOL W REFERS TO A PCMS DISPLAYING THE MESSAGE: "VT-12 SOUTH CLOSED 7 PM MM/DD - 7 AM MM/DD".

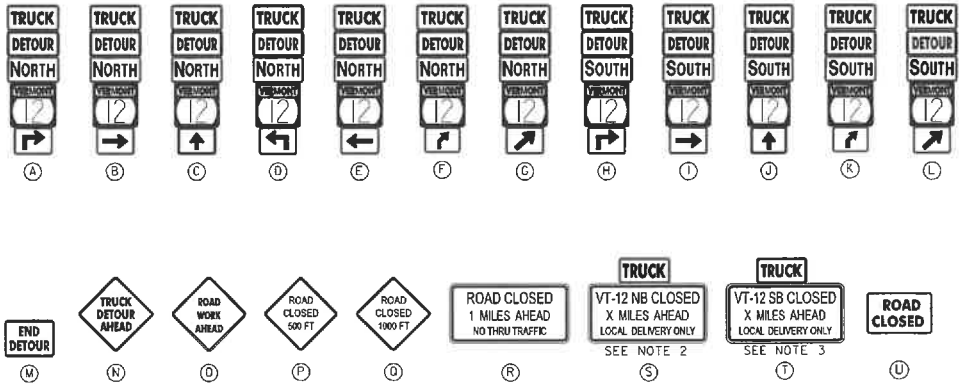


INSET A
NOT TO SCALE

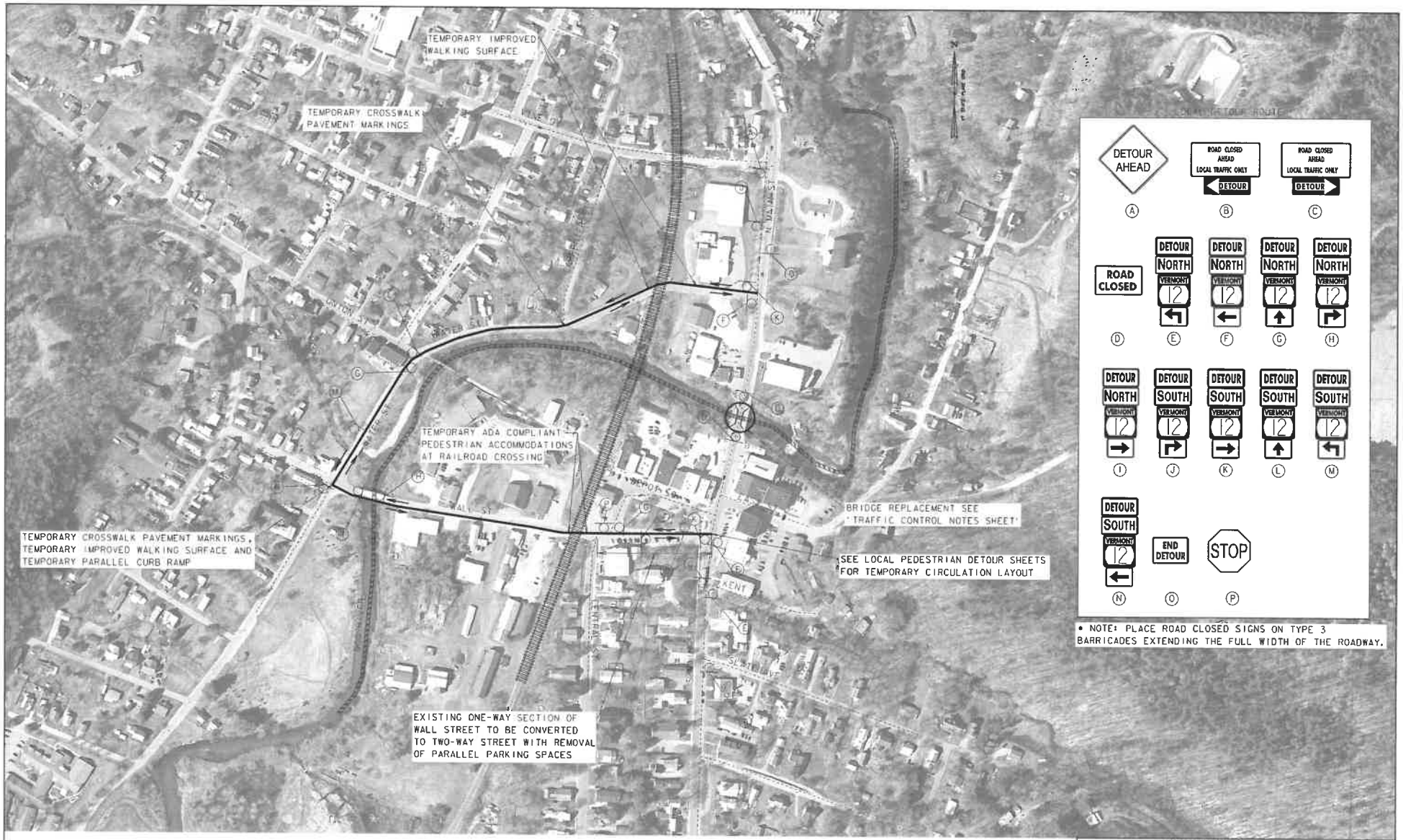


INSET B
NOT TO SCALE

DETOUR SIGN LEGEND



PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME: z19J223detour.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
TRUCK DETOUR ROUTE	SHEET 15 OF 102



NOTES:

1. REFER TO LOCAL PEDESTRIAN DETOUR SHEETS FOR ADDITIONAL DETAILS.
2. SIDEWALK AND DRIVEWAY ACCESS TO COMMERCIAL BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223detour.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
LOCAL DETOUR ROUTE

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 16 OF 102

TRAFFIC CONTROL NOTES

1. TRAFFIC MANAGEMENT WILL BE ACCOMPLISHED USING AN OFF-SITE LOCAL DETOUR ON WATER STREET AND WALL STREET, AND A TRUCK DETOUR ON VT-64/I-89/US-2 DURING A 12 WEEK BRIDGE CLOSURE PERIOD.
2. A BICYCLE/PEDESTRIAN DETOUR VIA LOCAL ROADS WILL BE SIGNED AS SHOWN.
3. SIDEWALK AND DRIVEWAY ACCESS TO COMMERCIAL BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.
4. TRAFFIC FROM GAS STATION ON NORTH SIDE OF BRIDGE TO USE PORTION OF DRIVEWAY AS EGRESS.
5. A PORTION OF THE GAS STATION DRIVEWAY WILL BE CLOSED WITH TEMPORARY CONCRETE BARRIERS FOR WORK ZONE PURPOSES.
6. EXISTING ONE-WAY SECTION OF WALL STREET TO BE CONVERTED TO TWO-WAY STREET WITH REMOVAL OF PARALLEL PARKING SPACES. SEE DWG FOR DETAILS.
7. PAYMENT FOR ALL ELEMENTS ASSOCIATED WITH WORK ZONE TRAFFIC CONTROL SHALL BE INCLUDED UNDER 'ITEM 641.1000 - TRAFFIC CONTROL'. UNLESS OTHERWISE NOTED ON THE PLANS.

PEDESTRIAN TEMPORARY TRAFFIC CONTROL NOTES

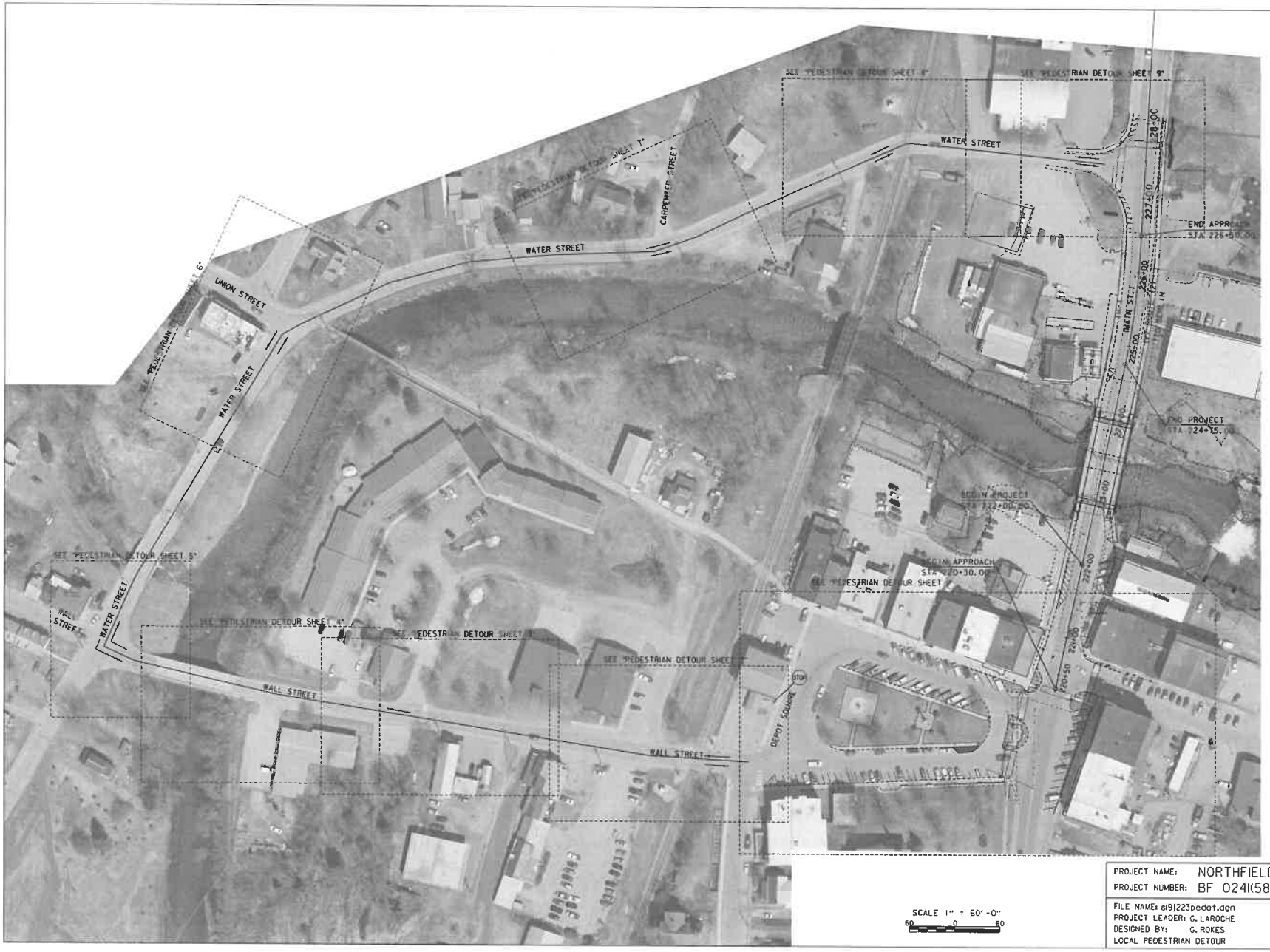
1. THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) FOR REVIEW AND WRITTEN APPROVAL BY THE RESIDENT ENGINEER A MINIMUM OF THREE WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN 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 8 INCHES WIDE PER 11TH EDITION MUTCD, 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 DROPOFFS, THEN CRASHWORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF THE 11TH EDITION 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 (ITEM 641.1000).
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.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

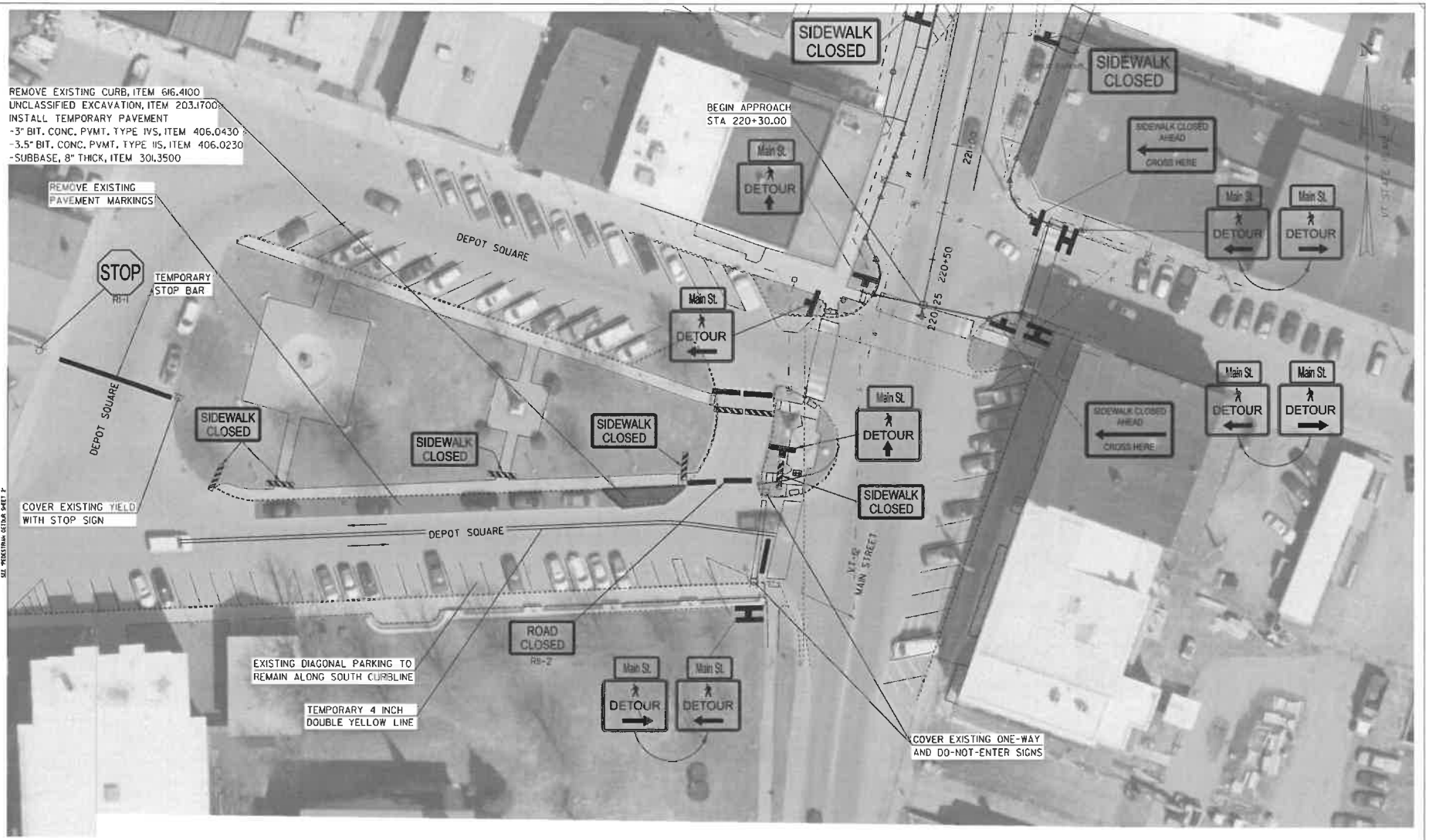
FILE NAME: z19J223trafficNotes.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
TRAFFIC CONTROL NOTES

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 17 OF 102



PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)

FILE NAME: sl9l223pedet.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: G. LAROCHE	DRAWN BY: G. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: G. LAROCHE
LOCAL PEDESTRIAN DETOUR	SHEET 18 OF 102



NOTES:

1. PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE".
2. SIDEWALK AND DRIVEWAY ACCESS TO COMMERCIAL BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.
3. ANY AREAS IMPACTED BY CONSTRUCTION SHALL BE RESTORED IN KIND TO PRE-CONSTRUCTION CONDITIONS PRIOR TO PROJECT COMPLETION.

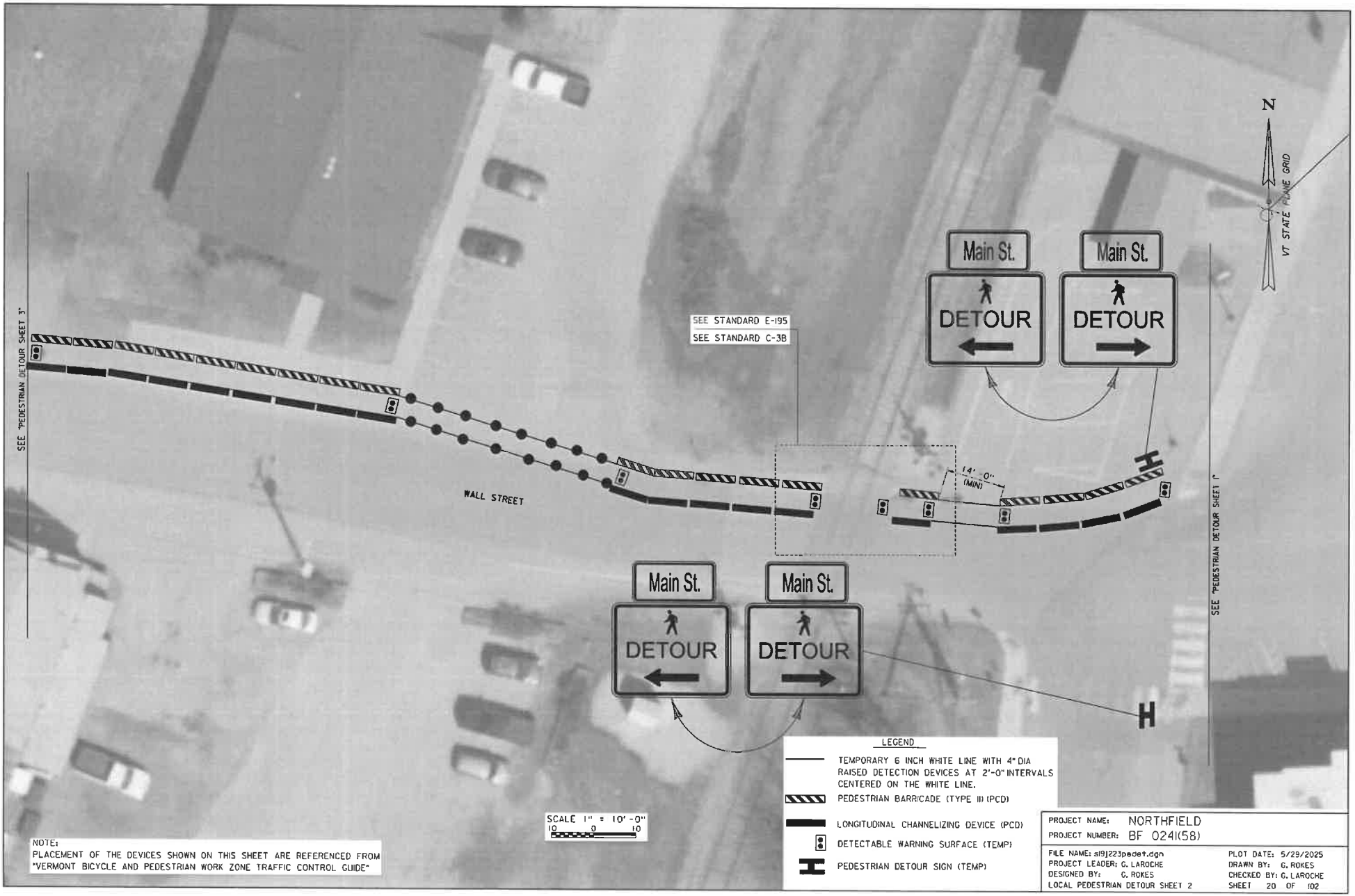
NOTE: SEE TPAR NOTES SHEET

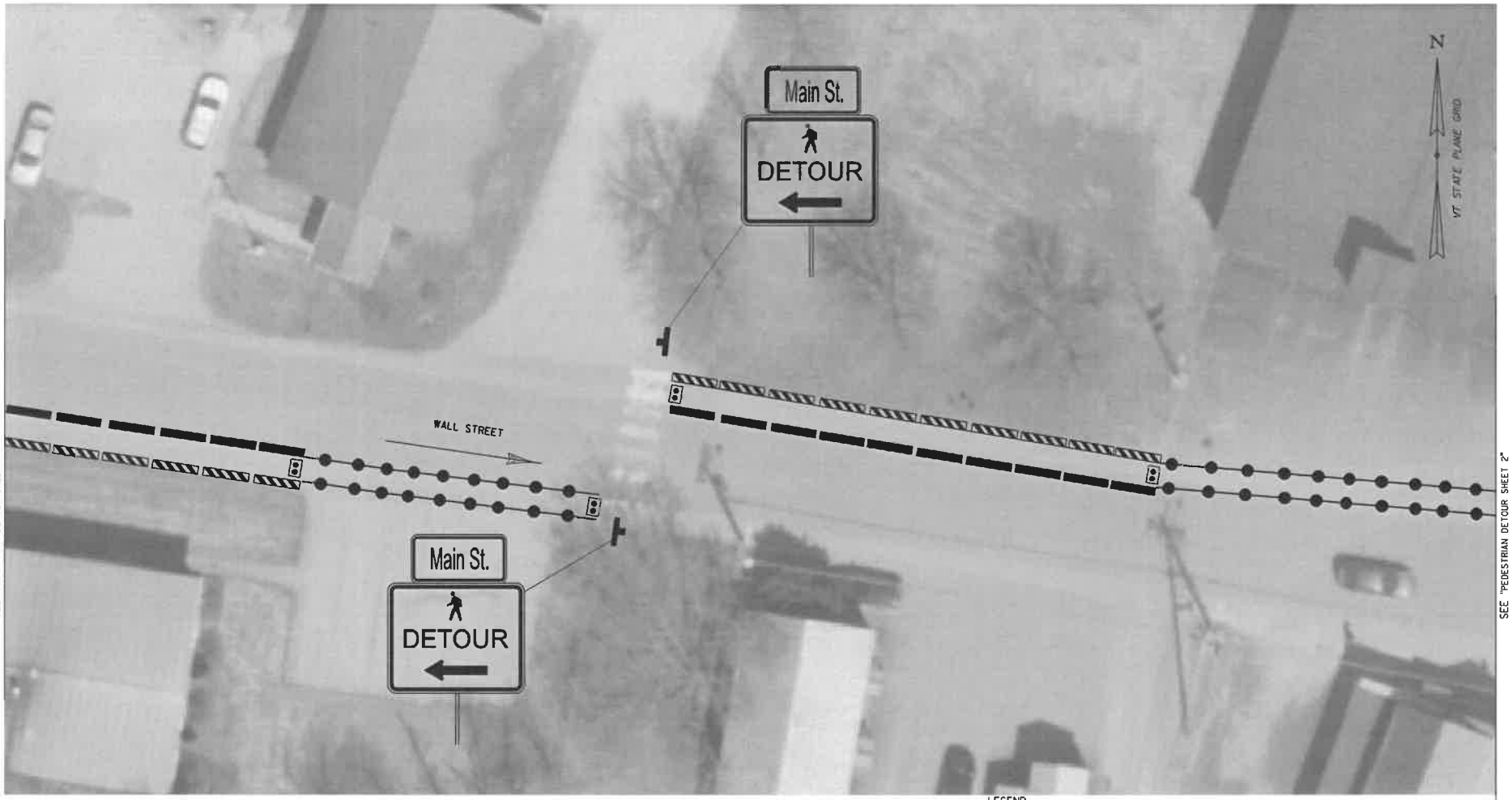
SCALE 1" = 20'-0"
20 0 20

LEGEND

- PEDESTRIAN DETOUR SIGN (TEMP)
- PEDESTRIAN DETOUR SIGN (TEMP) (BACK TO BACK)
- LONGITUDINAL CHANNELIZING DEVICE (PCD)
- PEDESTRIAN BARRICADE (TYPE II) (PCD)
- DETECTABLE WARNING SURFACE (TEMP)

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: st9j223pedet.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: G. LAROCHE	DRAWN BY: C. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: G. LAROCHE
LOCAL PEDESTRIAN DETOUR SHEET 1	SHEET 19 OF 102


N
VT STATE PLANE GRID
SEE "PEDESTRIAN DETOUR SHEET 3"
SEE STANDARD E-195
SEE STANDARD C-38
WALL STREET
Main St.
DETOUR
Main St.
DETOUR
14'-0" (MIN)
Main St.
DETOUR
Main St.
DETOUR
H
SEE "PEDESTRIAN DETOUR SHEET 1"
LEGEND
TEMPORARY 6 INCH WHITE LINE WITH 4" DIA RAISED DETECTION DEVICES AT 2'-0" INTERVALS CENTERED ON THE WHITE LINE.
PEDESTRIAN BARRICADE (TYPE III) (PCD)
LONGITUDINAL CHANNELIZING DEVICE (PCD)
DETECTABLE WARNING SURFACE (TEMP)
PEDESTRIAN DETOUR SIGN (TEMP)
SCALE 1" = 10'-0"
10 0 10
NOTE:
PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE"
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)
FILE NAME: sl91223pedet.dgn
PROJECT LEADER: G. LAROCHE
DESIGNED BY: G. ROKES
LOCAL PEDESTRIAN DETOUR SHEET 2
PLOT DATE: 5/29/2025
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 20 OF 102



LEGEND

TEMPORARY 6 INCH WHITE LINE WITH 4" DIA RAISED DETECTION DEVICES AT 2'-0" INTERVALS CENTERED ON THE WHITE LINE.

PEDESTRIAN BARRICADE (TYPE III) (PCD)

LONGITUDINAL CHANNELIZING DEVICE (PCD)

DETECTABLE WARNING SURFACE (TEMP)

PEDESTRIAN DETOUR SIGN (TEMP)

SCALE 1" = 10'-0"

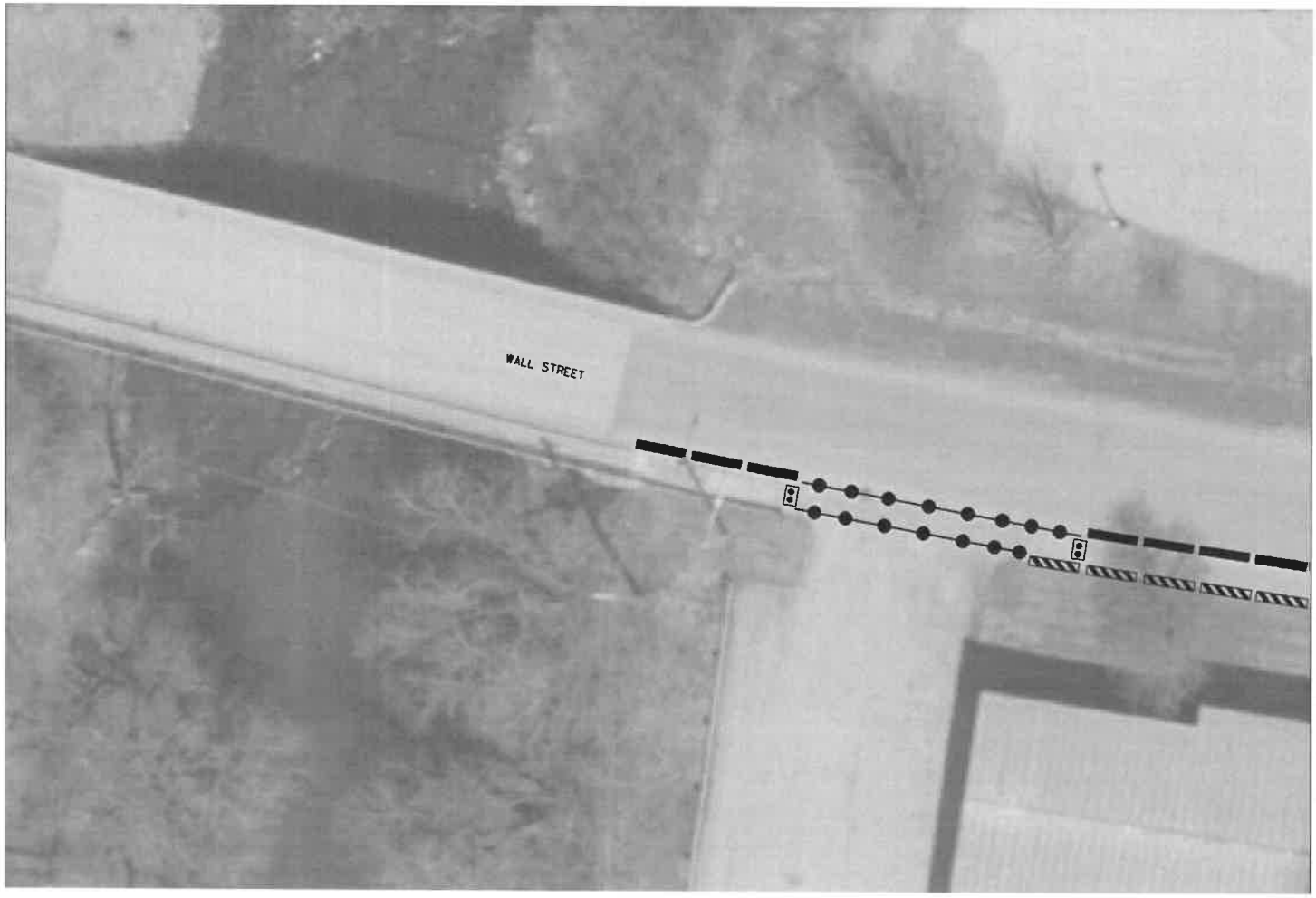
NOTE:
PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE"

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: sl9j223pedet.dgn
PROJECT LEADER: G. LAROCHE
DESIGNED BY: G. ROKES
LOCAL PEDESTRIAN DETOUR SHEET 3

PLOT DATE: 5/29/2025
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 21 OF 102

SEE "PEDESTRIAN DETOUR SHEET 5"



SEE "PEDESTRIAN DETOUR SHEET 3"

N

VT STATE PLANE GRID

LEGEND

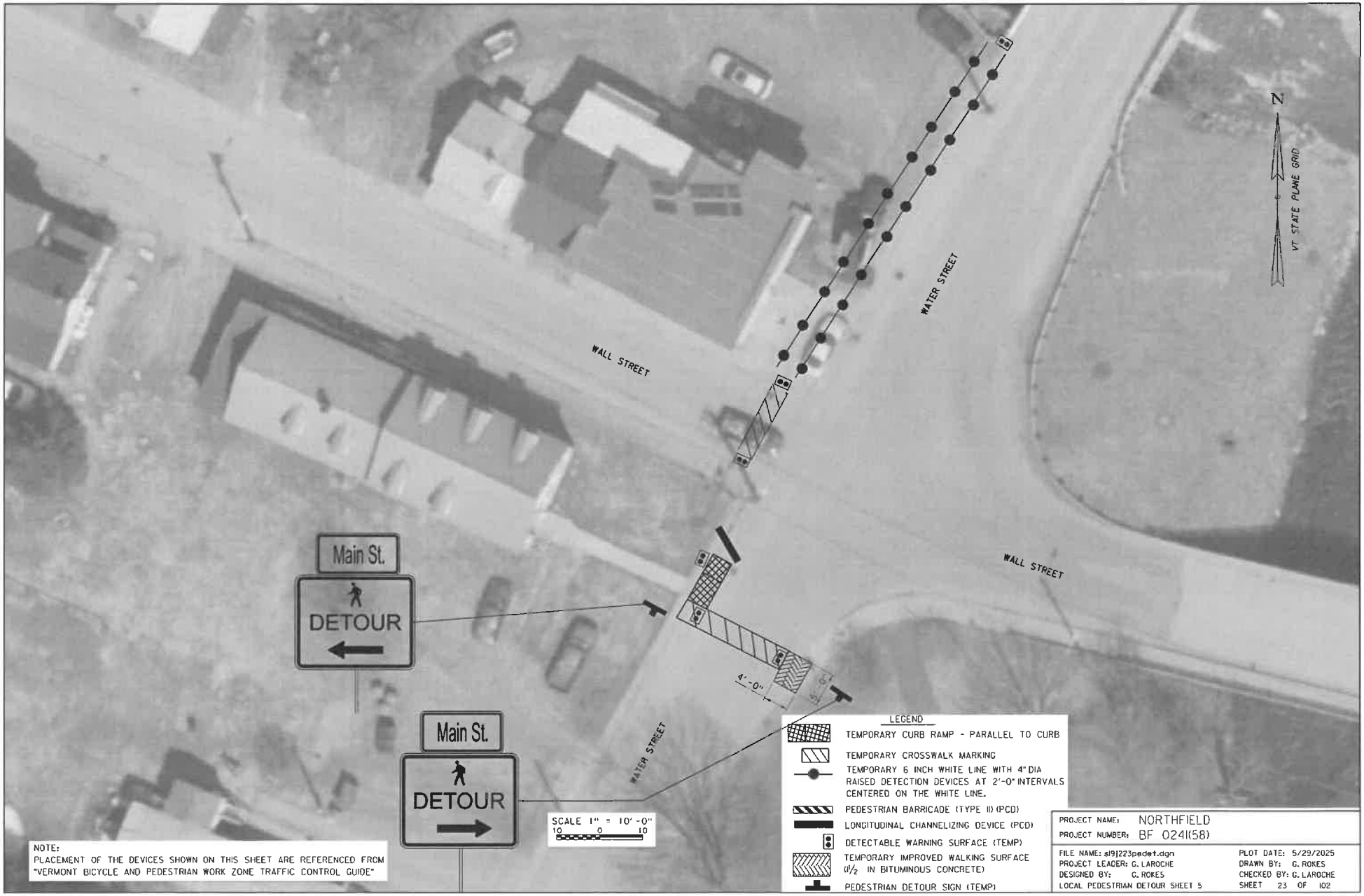
- TEMPORARY 6 INCH WHITE LINE WITH 4" DIA RAISED DETECTION DEVICES AT 2'-0" INTERVALS CENTERED ON THE WHITE LINE.
- PEDESTRIAN BARRICADE (TYPE II) (PCD)
- LONGITUDINAL CHANNELIZING DEVICE (PCD)
- DETECTABLE WARNING SURFACE (TEMP)

SCALE 1" = 10'-0"

10 0 10

NOTE:
PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE"

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: sl9j223pedet.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: G. LAROCHE	DRAWN BY: G. ROKES
DESIGNED BY: G. ROKES	CHECKED BY: G. LAROCHE
LOCAL PEDESTRIAN DETOUR SHEET 4	SHEET 22 OF 102

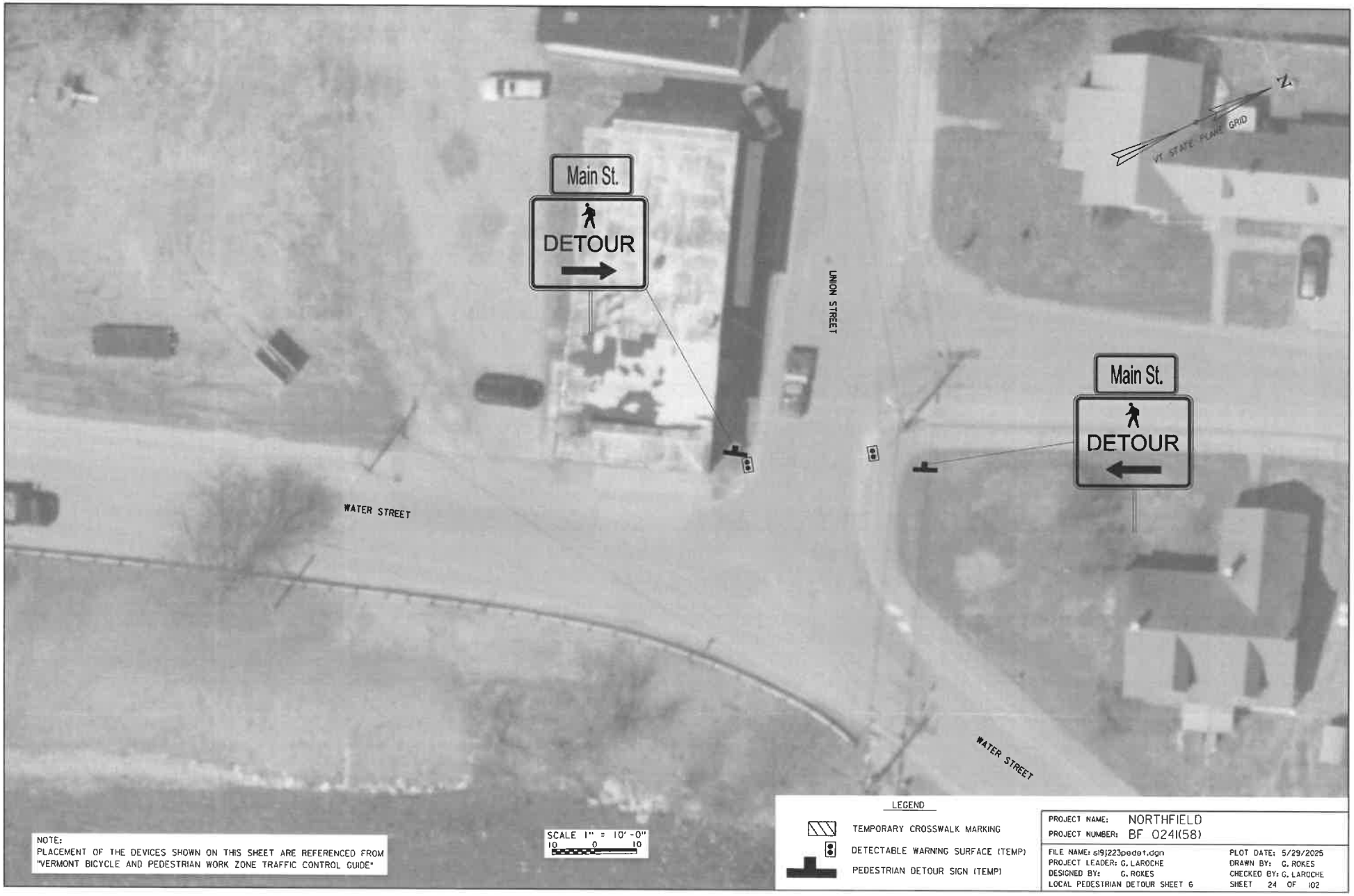


NOTE:
PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE"

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: sl9]223pedet.dgn
PROJECT LEADER: G. LAROCHE
DESIGNED BY: G. ROKES
LOCAL PEDESTRIAN DETOUR SHEET 5

PLOT DATE: 5/29/2025
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 23 OF 102



NOTE:
PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE"

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

LEGEND

TEMPORARY CROSSWALK MARKING

DETECTABLE WARNING SURFACE (TEMP)

PEDESTRIAN DETOUR SIGN (TEMP)

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: s191223pedet.dgn
PROJECT LEADER: G. LAROCHE
DESIGNED BY: G. ROKES
LOCAL PEDESTRIAN DETOUR SHEET 6

PLOT DATE: 5/29/2025
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 24 OF 102

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

NOTE:
PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE"

LEGEND

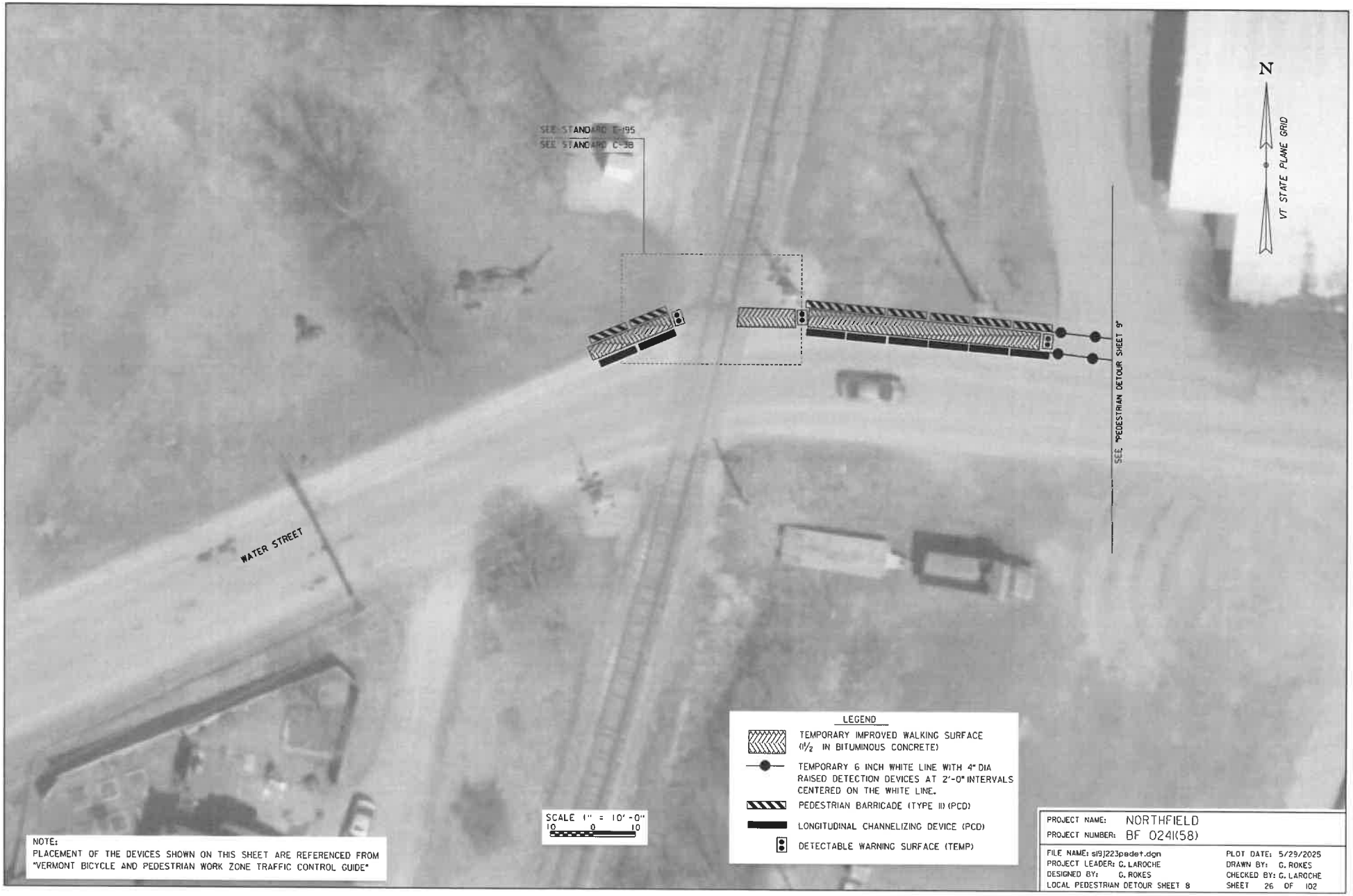
TEMPORARY CROSSWALK MARKING

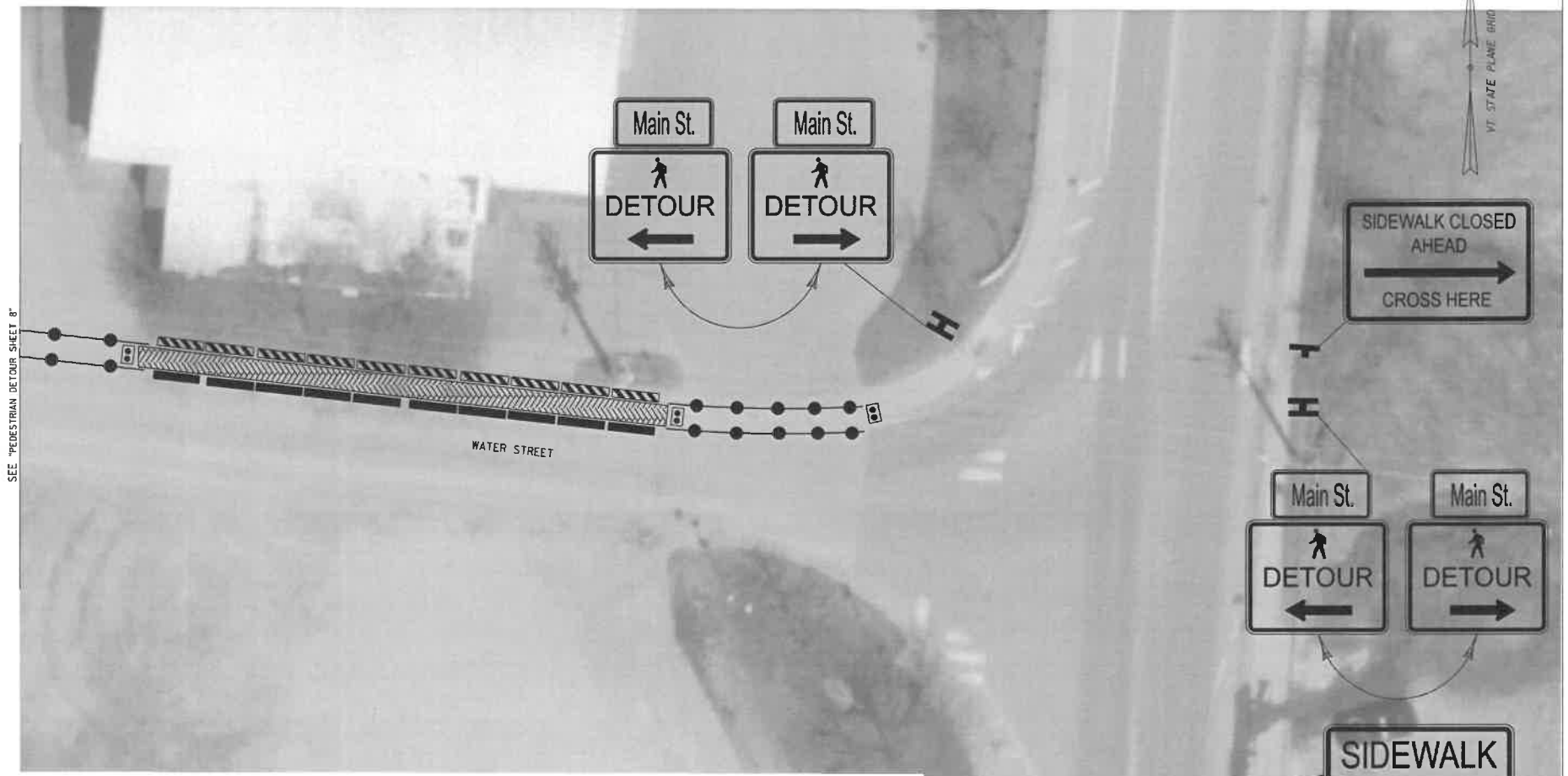
DETECTABLE WARNING SURFACE (TEMP)

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: el9j223pedet.dgn
PROJECT LEADER: G. LAROCHE
DESIGNED BY: C. ROKES
LOCAL PEDESTRIAN DETOUR SHEET 7

PLOT DATE: 5/29/2025
DRAWN BY: C. ROKES
CHECKED BY: G. LAROCHE
SHEET 25 OF 102


SEE STANDARD E-195
SEE STANDARD C-38
WATER STREET
SEE "PEDESTRIAN DETOUR SHEET 9"
N
VT STATE PLANE GRID
LEGEND
TEMPORARY IMPROVED WALKING SURFACE (1½ IN BITUMINOUS CONCRETE)
TEMPORARY 6 INCH WHITE LINE WITH 4" DIA RAISED DETECTION DEVICES AT 2'-0" INTERVALS CENTERED ON THE WHITE LINE.
PEDESTRIAN BARRICADE (TYPE II) (PCD)
LONGITUDINAL CHANNELIZING DEVICE (PCD)
DETECTABLE WARNING SURFACE (TEMP)
SCALE 1" = 10'-0"
10 0 10
NOTE:
PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE"
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)
FILE NAME: sl9J223psdet.dgn
PROJECT LEADER: G. LAROCHE
DESIGNED BY: G. ROKES
LOCAL PEDESTRIAN DETOUR SHEET 8
PLOT DATE: 5/29/2025
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 26 OF 102



NOTE: SEE TRAR NOTES SHEET

LEGEND

- TEMPORARY IMPROVED WALKING SURFACE (1½ IN BITUMINOUS CONCRETE)
- TEMPORARY 6 INCH WHITE LINE WITH 4" DIA RAISED DETECTION DEVICES AT 2'-0" INTERVALS CENTERED ON THE WHITE LINE.
- PEDESTRIAN BARRICADE (TYPE II) (PCD)
- LONGITUDINAL CHANNELIZING DEVICE (PCD)
- DETECTABLE WARNING SURFACE (TEMP)
- PEDESTRIAN DETOUR SIGN (TEMP)
- PEDESTRIAN DETOUR SIGN (TEMP) (BACK TO BACK)

NOTE:
PLACEMENT OF THE DEVICES SHOWN ON THIS SHEET ARE REFERENCED FROM "VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE"

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

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: sl9j223pedet.dgn
PROJECT LEADER: G. LAROCHE
DESIGNED BY: G. ROKES
LOCAL PEDESTRIAN DETOUR SHEET 9

PLOT DATE: 5/29/2025
DRAWN BY: G. ROKES
CHECKED BY: G. LAROCHE
SHEET 27 OF 102

(1) STA 220+76.5, 25.2' LT
NEW CI GRATE TYPE D (SEE NOTE 2)

(2) STA 220+89.2, 22.4' RT
NEW CI GRATE TYPE D (SEE NOTE 2)

(3) STA 221+51.1, 10.0' RT
CHANGE ELEVATION OF MH

(4) STA 221+67.1, 19.5' LT
NEW CI GRATE TYPE D (SEE NOTE 2)

(5) STA 222+11.0, 38.0' RT
NEW PRC DEEP SUMP CB, CI GRATE TYPE D

(6) STA 222+11.0, 38.0' RT - STA 222+40.6, 26.1' RT
NEW 32 LF 24" CPEP

(7) STA 222+40.6, 26.1' RT (CUT EX. PIPE)
NEW PRC DEEP SUMP CB, CI GRATE TYPE D

(8) STA 222+40.6, 26.1' RT - STA 222+42.5, 18.0' LT
NEW 44 LF 24" CPEP

(9) STA 222+42.5, 18.0' LT (CUT EX. PIPE)
NEW PRC DEEP SUMP CB, CI GRATE TYPE D

(10) STA 222+42.5, 18.0' LT - STA 222+43.6, 43.0' LT
NEW 25 LF 36" CPEP

(11) STA 222+43.6, 43.0' LT
NEW PRC DI, CI GRATE TYPE C

(12) STA 222+43.6, 43.0' LT - STA 222+81.3, 44.0' LT
NEW 38 LF 36" CPEP

(13) STA 222+81.3, 44.0'LT
NEW 36" CPEPES

(14) STA 222+11.0, 38.0' RT - STA 222+73.3, 51.3' RT
CONTRACTOR TO REMOVE PORTION OF 12" CMP ADJACENT TO OUTFALL TO HISTORIC PROPERTY BOUNDARY. PLUG REMAINDER OF PIPE, ABANDON IN PLACE, ADD FLOWABLE FILL.

(15) STA 223+89.3, 45.5' RT
NEW 30" CPEPES

(16) STA 223+89.3, 45.5' RT -
STA 224+18.8, 40.0' RT
NEW 30 LF 30" CPEP

(17) STA 224+18.8, 40.0' RT
NEW PRC DI, CI GRATE TYPE C

(18) STA 224+18.8, 40.0' RT -
STA 224+53.5, 18.0' RT
NEW 40 LF 30" CPEP

(19) STA 224+53.5, 18.0' RT
NEW PRC DEEP SUMP CB, CI GRATE TYPE D

(20) STA 224+53.5, 18.0' RT - STA 224+53.0, 17.7' LT
NEW 35 LF 24" CPEP

(21) STA 224+53.0, 17.7' LT
NEW PRC DEEP SUMP CB, CI GRATE TYPE D

(22) STA 226+07.5, 15.0' RT
CHANGE ELEVATION OF MH

[1] STA 222+11.0, 38.0' RT
REMOVE EXISTING CATCH BASIN

[2] STA 222+57.0, 24.5' RT
REMOVE EXISTING CATCH BASIN

[3] STA 222+54.9, 17.3' LT
REMOVE EXISTING CATCH BASIN

[4] STA 222+54.9, 17.3' LT - STA 222+81.8, 17.4' LT
REMOVE EXISTING 12" RCP

[5] STA 222+81.8, 17.4' LT
REMOVE EXISTING CATCH BASIN

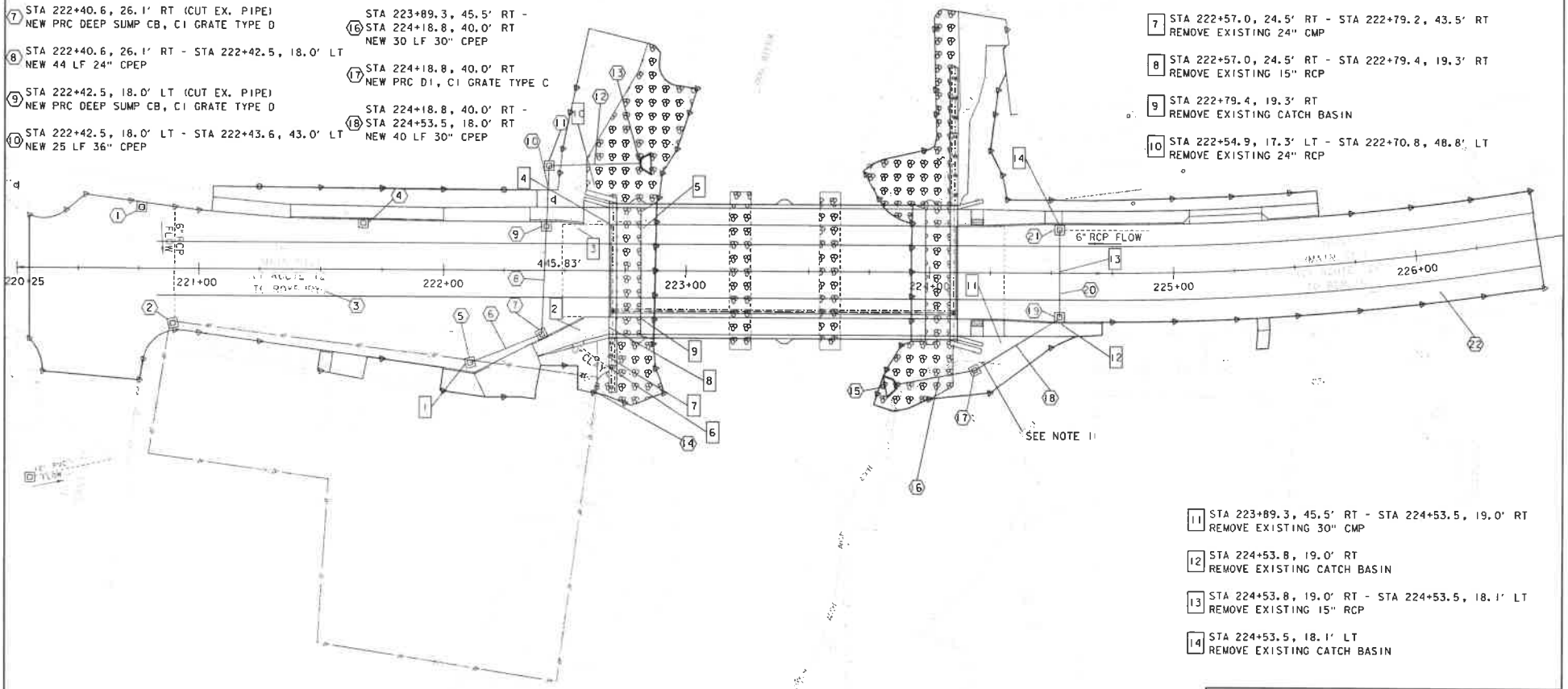
[6] STA 222+59.6, 29.4' RT - STA 222+67.9, 39.2' RT
REMOVE EXISTING 10" CLAY PIPE

[7] STA 222+57.0, 24.5' RT - STA 222+79.2, 43.5' RT
REMOVE EXISTING 24" CMP

[8] STA 222+57.0, 24.5' RT - STA 222+79.4, 19.3' RT
REMOVE EXISTING 15" RCP

[9] STA 222+79.4, 19.3' RT
REMOVE EXISTING CATCH BASIN

[10] STA 222+54.9, 17.3' LT - STA 222+70.8, 48.8' LT
REMOVE EXISTING 24" RCP



[11] STA 223+89.3, 45.5' RT - STA 224+53.5, 19.0' RT
REMOVE EXISTING 30" CMP

[12] STA 224+53.8, 19.0' RT
REMOVE EXISTING CATCH BASIN

[13] STA 224+53.8, 19.0' RT - STA 224+53.5, 18.1' LT
REMOVE EXISTING 15" RCP

[14] STA 224+53.5, 18.1' LT
REMOVE EXISTING CATCH BASIN

NOTES:
1. PAYMENT FOR PAVEMENT DAMAGE INCURRED DURING GRATE REPLACEMENT SHALL BE PAID FOR UNDER THE ITEMS ASSOCIATED WITH THE REUSE OF EXISTING CATCH BASIN DETAIL REFERENCED ON THE 'DRAINAGE DETAILS' SHEET.

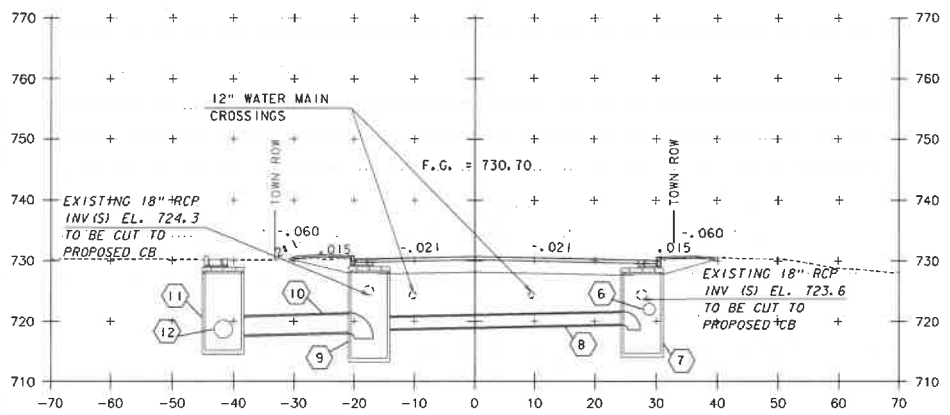
SCALE 1" = 20'-0"
20 0 20

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223bdr_drn.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
DRAINAGE LAYOUT SHEET

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 28 OF 102



DRAINAGE PROFILE @ STA 222+40.6

(6) STA 222+11.0, 38.0' RT - STA 222+40.6, 26.1' RT
NEW 32 LF 24" CPEP
INLET EL 721.2
OUTLET EL 721.0

(7) STA 222+40.6, 26.1' RT
NEW PRC DEEP SUMP CB, CI GRATE TYPE D
TOP OF GRATE EL 730.1
SUMP EL 718.6

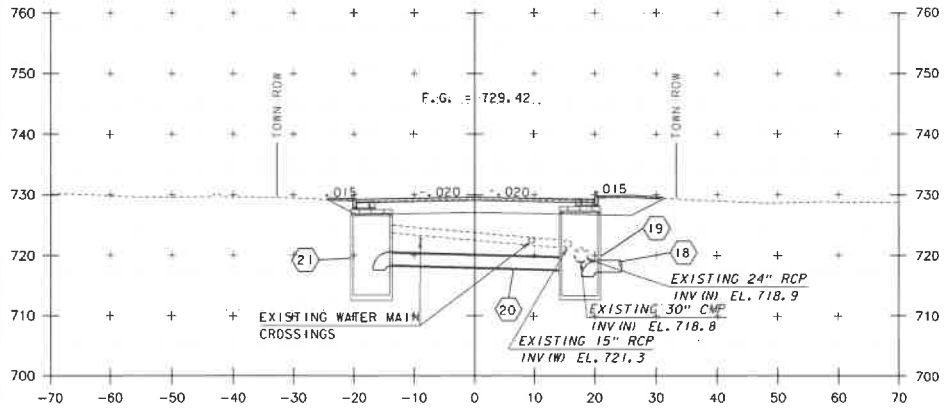
(8) STA 222+40.6, 26.1' RT - STA 222+42.5, 18.0' LT
NEW 44 LF 24" CPEP
INLET EL 719.4
OUTLET EL 718.7

(9) STA 222+42.5, 18.0' LT
NEW PRC DEEP SUMP CB, CI GRATE TYPE D
TOP OF GRATE EL 730.3
SUMP EL 717.2

(10) STA 222+42.5, 18.0' LT - STA 222+43.6, 43.0' LT
NEW 25 LF 36" CPEP
INLET EL 718.21
OUTLET EL 717.7

(11) STA 222+43.6, 43.0' LT
NEW PRC D1, CI GRATE TYPE C
TOP OF GRATE EL 730.2
OUTLET EL 717.18

(12) STA 222+43.6, 43.0' LT - STA 222+81.3, 44.0' LT
NEW 38 LF 36" CPEP
INLET EL 717.18
OUTLET EL 716.00



DRAINAGE PROFILE @ STA 224+53.5

(18) STA 224+18.8, 40.0' RT - STA 224+53.5, 18.0' RT
NEW 40 LF 30" CPEP
INLET EL 717.25
OUTLET EL 716.7
(SEE CHANNEL XS AT STA 51+10 FOR D1 INFO)

(19) STA 224+53.5, 18.0' RT
NEW PRC DEEP SUMP CB, CI GRATE TYPE D
TOP OF GRATE EL. 729.28
SUMP EL. 716.5

(20) STA 224+53.5, 18.0' RT - STA 224+53.0, 17.7' LT
NEW 35 LF 24" CPEP
INLET EL. 718.4
OUTLET EL. 717.6

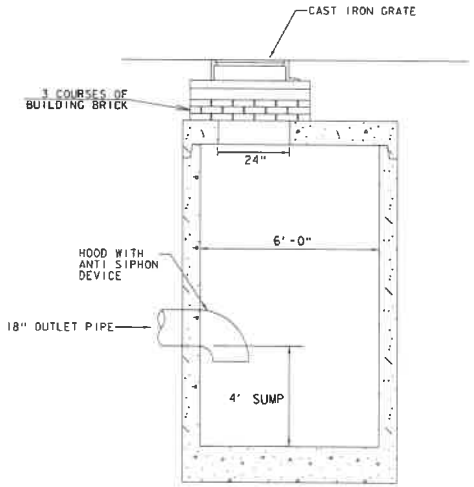
(21) STA 224+53.5, 17.7' LT
NEW PRC DEEP SUMP CB, CI GRATE TYPE D
TOP OF GRATE EL 728.81
SUMP EL 717.52

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

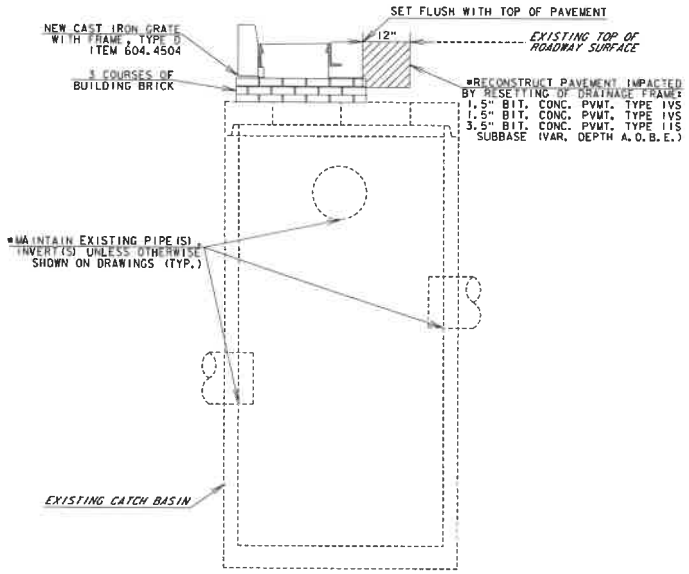
FILE NAME: z19J223xs.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
DRAINAGE PROFILE

PLOT DATE: 5/29/2025
DRAWN BY: J. DIAZ
CHECKED BY: C. JENNE
SHEET 29 OF 102

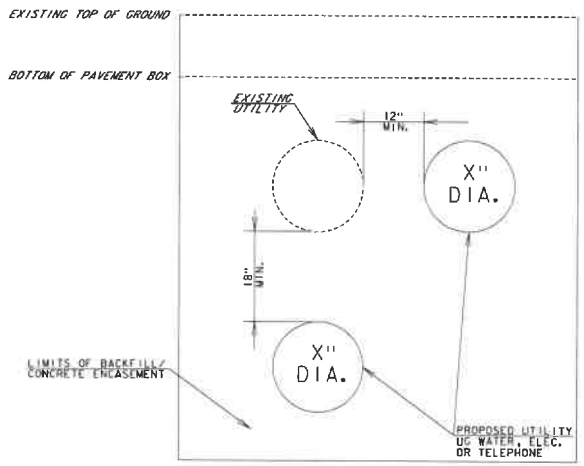


DEEP SUMP CATCH BASIN
NOT TO SCALE

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)



REUSE OF EXISTING CATCH BASINS



UNDERGROUND UTILITY CLEARANCE DIAGRAM

H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z191223drn_det.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: J. DIAZ
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
DRAINAGE DETAILS	SHEET 30 OF 102

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE DETAIL SHEET

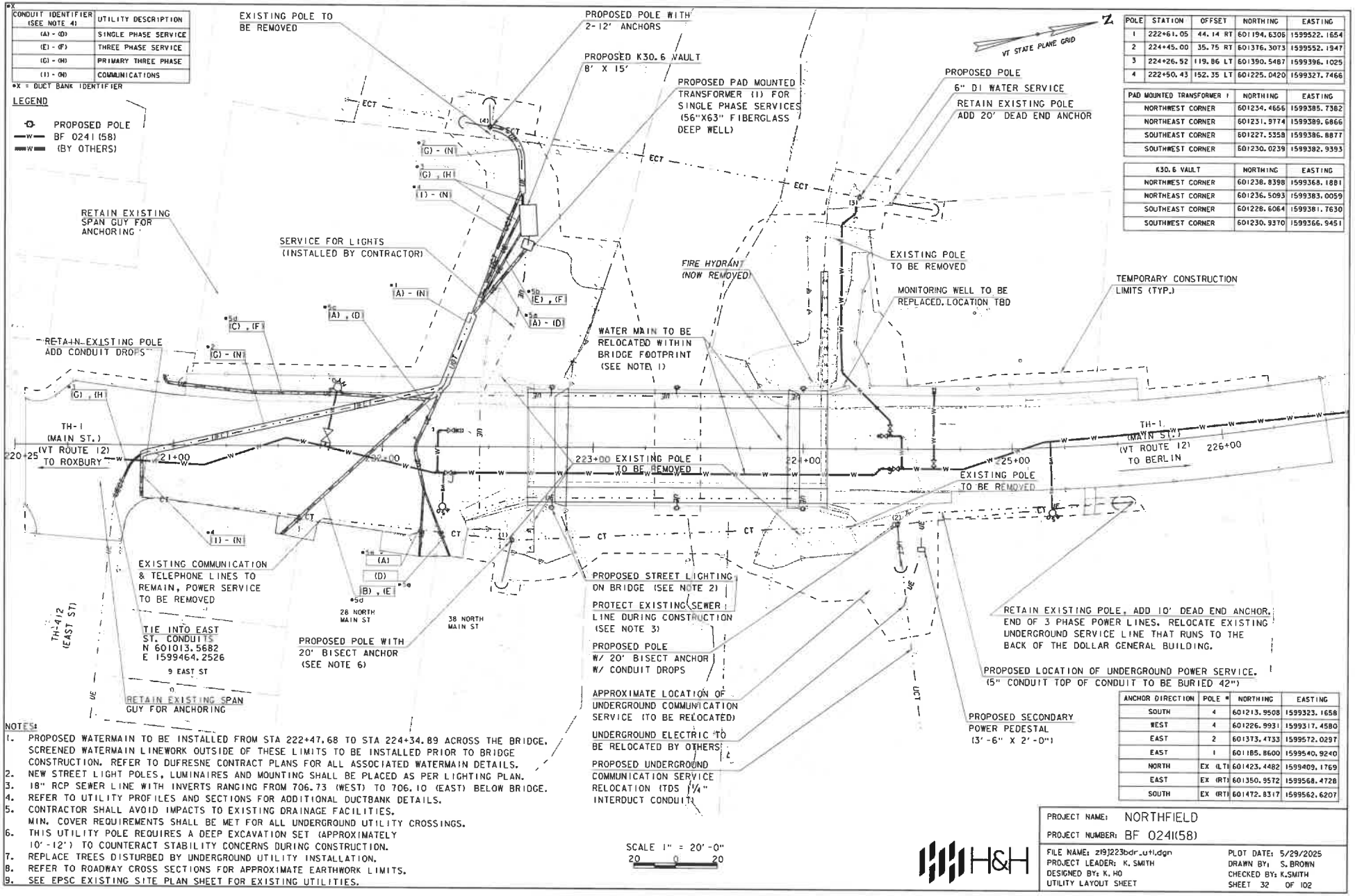
STATION	STATION	POS	ASKEW	INLET/OUTLET TYPE		DITCH		PIPE ARCH			PIPE		ALLOWABLE OPTIONS						PIPE ELBOW	ES	CB	RCDI	DEPTH DI	CONC CLASS B	REINF STEEL	DI GRATE	CHAN ELEV	CRM	EXCAVATION		COMM EXC	UNC CHAN EXC	STRUCT EXCAV	GRAN BKFILL STRUCT	GRAN BORR	EROS MATT	STONE FILL		MARKER POSTS		DRAINAGE ID		REMARKS
				INLET	OUTLET	IN	OUT	SPAN IN	RISE IN	L FT	D IN	L FT	PCCSP TH	CAAP TH	RCP CL	CSP TH	CPEP SL	PCCSP PI TH											EARTH CY	ROCK CY							CY	TYPE	LT EA	RT EA			
			NO	DEG															NO. DEG	EA	EA		FT	CY	LBS	TYPE	EA	CY	CY	CY	CY	CY	CY	SY	CY	TYPE	EA	EA	F		
220+78.5		26.2' LT																								D													1		NEW C1 GRATE TYPE D
220+89.2		22.4' RT																								D													2		NEW C1 GRATE TYPE D
221+51.1		10.6' RT																									1												3		CHANGE ELVATION OF MH
221+87.1		19.6' LT																								D													4		NEW C1 GRATE TYPE D
222+11.0		36.0' RT																			1					D							8.89							5		NEW PRC DEEP SUMP CB, C1 GRATE TYPE D
222+11.0	222+40.6	36.0' RT-26.1' RT		CB	CB						24	32					X												80.37				41.68							6		NEW 24" CPEP
222+40.6		26.1' RT																			1					D							28.67							7		NEW PRC DEEP SUMP CB, C1 GRATE TYPE D
222+40.6	222+42.6	26.1' RT - 19.0' LT		CB	CB						24	44					X												63.33				43.11							8		NEW 24" CPEP
222+42.5		19.0' LT																			1					D							30.2							9		NEW PRC DEEP SUMP CB, C1 GRATE TYPE D
222+42.5	222+43.6	19.0' LT-43.0' LT		CB	CB						36	25					X												45.42				37.4							10		NEW 36" CPEP
222+43.6		43.0' LT																			1					C							24.47							11		NEW PRC DI C1 GRATE TYPE C
222+43.6	222+81.3	43.0' LT - 44.0' LT		CB	OUTLET						36	38					X												106.61				91.57							12		NEW 36" CPEP
222+81.3		44.0' LT																		1													16.41							13		NEW 36" CPEPES
222+11.0	222+73.3	38.0' RT - 51.3' RT		CB	OUTLET						12																													14		REMOVE PORTION OF 12" CMP TO HISTORIC PROPERTY BOUNDARY, PLUG REMAINDER OF PIPE
223+89.3		46.9' RT																		1									14.97				14.97							15		NEW 30" CPEPES
223+89.3	224+19.8	45.9' RT - 40.0' RT		CB	OUTLET						30	30					X												148.21				122.23							16		NEW 30" CPEP
224+18.8		40.0' RT																				1				C														17		NEW PRC DI C1 GRATE TYPE C
224+18.8	224+53.5	40.0' RT - 19.0' RT		CB	CB						30	40																	81.33				65.77							18		NEW 30" CPEP
224+53.5		19.0' RT																			1					D							28.68							19		NEW PRC DEEP SUMP CB, C1 GRATE TYPE D
224+53.5	224+83.0	19.0' RT - 17.7' LT		CB	CB						24	36					X												19.95				15.39							20		NEW 24" CPEP
224+83.0		17.7' LT																			1					D							23.66							21		NEW PRC DEEP SUMP CB, C1 GRATE TYPE D
226+67.5		15.0' RT																									1													22		CHANGE ELEVATION OF MH
PROPOSED:								TOTAL CPEP (SINGL	24"	611	FT																																
								TOTAL CPEP (SINGL	30"	70	FT																																
								TOTAL CPEP (SINGL	36"	53	FT																																
222+11.0		36.0' RT																			X											8							1		REMOVE EXISTING CATCH BASIN
222+57.6		24.5' RT																			X											6							2		REMOVE EXISTING CATCH BASIN
222+54.9		17.3' LT																			X											5							3		REMOVE EXISTING CATCH BASIN
222+54.5	222+81.8	17.3' LT-17.4' LT									18	28			X														8.23											4		REMOVE EXISTING REINFORCED CONCRETE PIPE
222+81.8		17.4' LT																			X											5							5		REMOVE EXISTING CATCH BASIN
222+57.0	222+79.4	29.4' RT-35.2' RT									10	17																	4.89											6		REMOVE EXISTING CLAY PIPE
222+57.0	222+79.2	24.9' RT-43.9' RT									24	21																	13.18											7		REMOVE EXISTING CORRUGATED METAL PIPE
222+57.0	222+79.4	24.8' RT-19.3' RT									15	27			X														24											8		REMOVE EXISTING REINFORCED CONCRETE PIPE
222+79.4		19.3'RT																			X											5							9		REMOVE EXISTING CATCH BASIN
222+54.9	222+70.9	17.3' LT-46.8' LT									24	32			X														19.67											10		REMOVE EXISTING REINFORCED CONCRETE PIPE
223+89.3	224+63.5	46.6' RT-19.3' RT									30	68																	129.48											11		REMOVE EXISTING CORRUGATED METAL PIPE
224+53.6		19.0' RT																			X											5							12		REMOVE EXISTING CATCH BASIN
224+53.6	224+83.5	19.0' RT-18.1' LT									15	36			X														32.85											13		REMOVE EXISTING REINFORCED CONCRETE PIPE
	224+83.5	18.1' LT																			X											5							14		REMOVE EXISTING CATCH BASIN
EXISTING:								TOTAL RCP	12"	23	FT																														
								TOTAL RCP	15"	63	FT																														
								TOTAL RCP	24"	32	FT																														
								TOTAL CMP	12"	64	FT																														
								TOTAL CMP	30"	68	FT																														
								TOTAL CLAY	10"	17	FT																														

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z191223drn_det.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
DRAINAGE TABLES

PLOT DATE: 5/29/2025
DRAWN BY: J. DIAZ
CHECKED BY: C. JENNE
SHEET 31 OF 102



CONDUIT IDENTIFIER (SEE NOTE 4)	UTILITY DESCRIPTION
(A) - (D)	SINGLE PHASE SERVICE
(E) - (F)	THREE PHASE SERVICE
(G) - (H)	PRIMARY THREE PHASE
(I) - (N)	COMMUNICATIONS

•X = DUCT BANK IDENTIFIER

POLE	STATION	OFFSET	NORTHING	EASTING
1	222+61.05	44.14 RT	601194.6305	1599522.1654
2	224+45.00	35.75 RT	601376.3073	1599552.1947
3	224+26.52	119.86 LT	601390.5487	1599396.1025
4	222+50.43	152.35 LT	601225.0420	1599327.7466

PAD MOUNTED TRANSFORMER 1	NORTHING	EASTING
NORTHWEST CORNER	601234.4656	1599385.7382
NORTHEAST CORNER	601231.9774	1599389.6866
SOUTHEAST CORNER	601227.5358	1599386.8877
SOUTHWEST CORNER	601230.0239	1599382.9393

K30.6 VAULT	NORTHING	EASTING
NORTHWEST CORNER	601238.8398	1599368.1881
NORTHEAST CORNER	601236.5093	1599383.0059
SOUTHEAST CORNER	601228.6064	1599381.7630
SOUTHWEST CORNER	601230.9370	1599366.9451

ANCHOR DIRECTION	POLE #	NORTHING	EASTING
SOUTH	4	601213.9508	1599323.1658
WEST	4	601226.9931	1599317.4580
EAST	2	601373.4733	1599572.0297
EAST	1	601185.8600	1599540.9240
NORTH	EX (LT)	601423.4482	1599409.1769
EAST	EX (RT)	601350.9572	1599568.4728
SOUTH	EX (RT)	601472.8317	1599562.6207

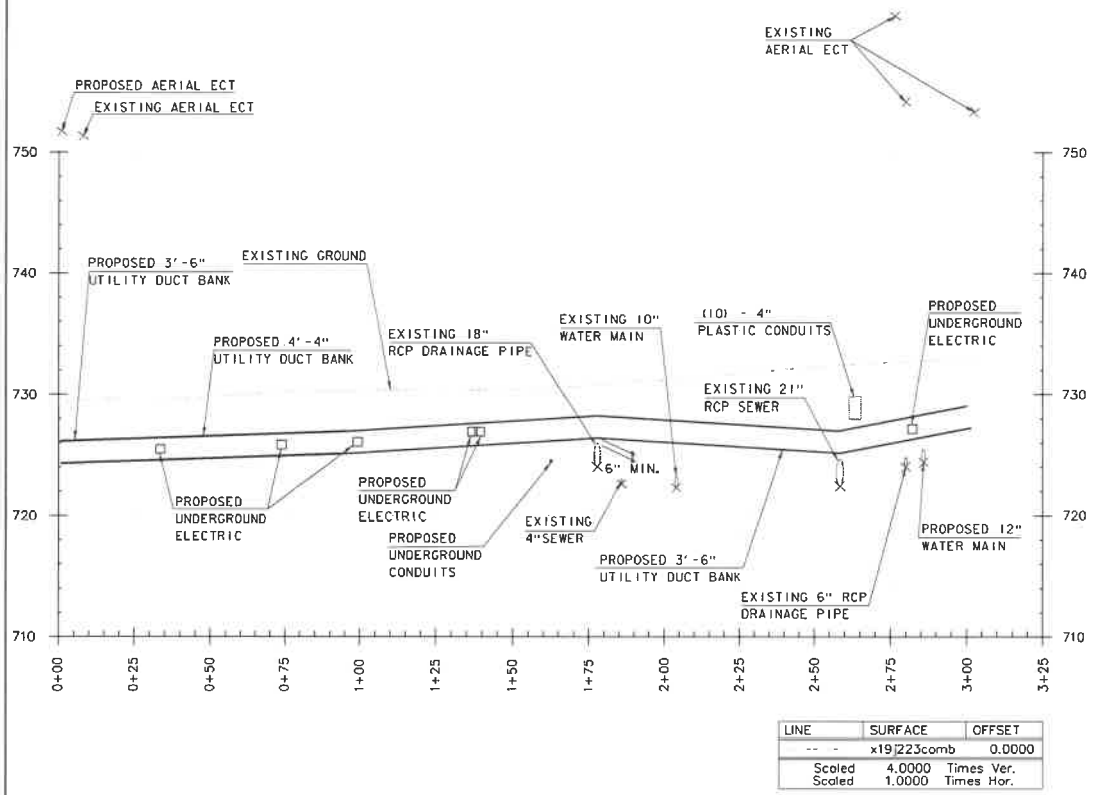
NOTES:
1. PROPOSED WATERMAIN TO BE INSTALLED FROM STA 222+47.68 TO STA 224+34.89 ACROSS THE BRIDGE. SCREENED WATERMAIN LINEWORK OUTSIDE OF THESE LIMITS TO BE INSTALLED PRIOR TO BRIDGE CONSTRUCTION. REFER TO DUFRESNE CONTRACT PLANS FOR ALL ASSOCIATED WATERMAIN DETAILS.
2. NEW STREET LIGHT POLES, LUMINAIRES AND MOUNTING SHALL BE PLACED AS PER LIGHTING PLAN.
3. 18" RCP SEWER LINE WITH INVERTS RANGING FROM 706.73 (WEST) TO 706.10 (EAST) BELOW BRIDGE.
4. REFER TO UTILITY PROFILES AND SECTIONS FOR ADDITIONAL DUCTBANK DETAILS.
5. CONTRACTOR SHALL AVOID IMPACTS TO EXISTING DRAINAGE FACILITIES. MIN. COVER REQUIREMENTS SHALL BE MET FOR ALL UNDERGROUND UTILITY CROSSINGS.
6. THIS UTILITY POLE REQUIRES A DEEP EXCAVATION SET (APPROXIMATELY 10'-12') TO COUNTERACT STABILITY CONCERNS DURING CONSTRUCTION.
7. REPLACE TREES DISTURBED BY UNDERGROUND UTILITY INSTALLATION.
8. REFER TO ROADWAY CROSS SECTIONS FOR APPROXIMATE EARTHWORK LIMITS.
9. SEE EPSC EXISTING SITE PLAN SHEET FOR EXISTING UTILITIES.

H&H

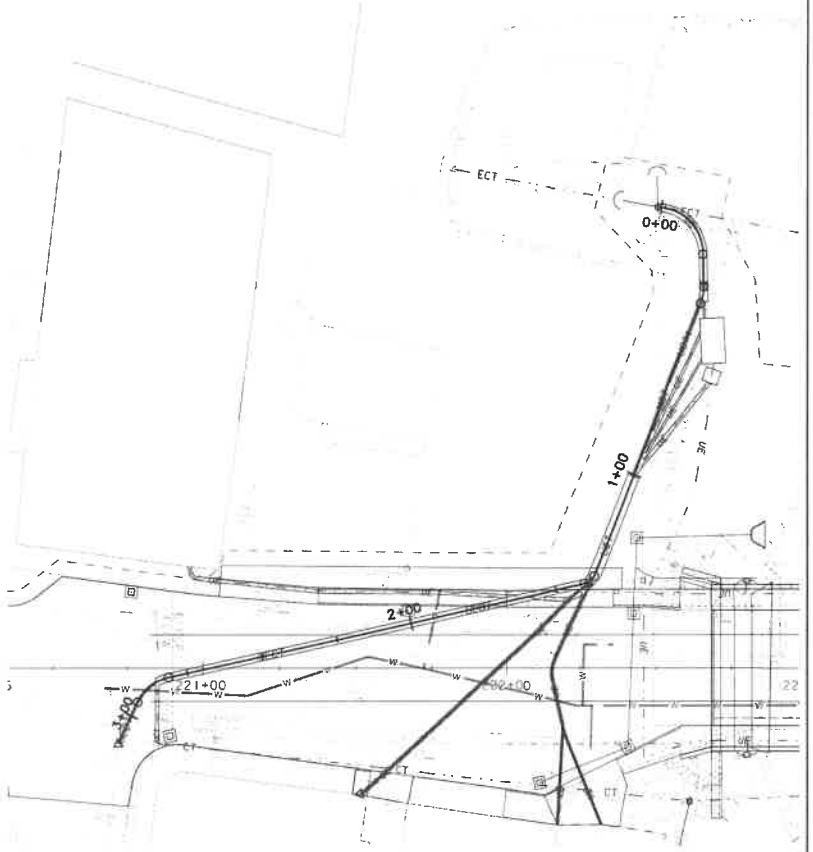
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223bdr_util.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
UTILITY LAYOUT SHEET

PLOT DATE: 5/29/2025
DRAWN BY: S. BROWN
CHECKED BY: K. SMITH
SHEET 32 OF 102



POWER, COMMS, AND POWER SERVICES DUCT BANK PROFILE



POWER, COMMS, AND POWER SERVICES DUCT BANK PLAN

NOTES:
1. INVERTS SHOWN FOR EXISTING UTILITIES ARE ASSUMED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE POSITION OF ALL EXISTING UTILITIES.

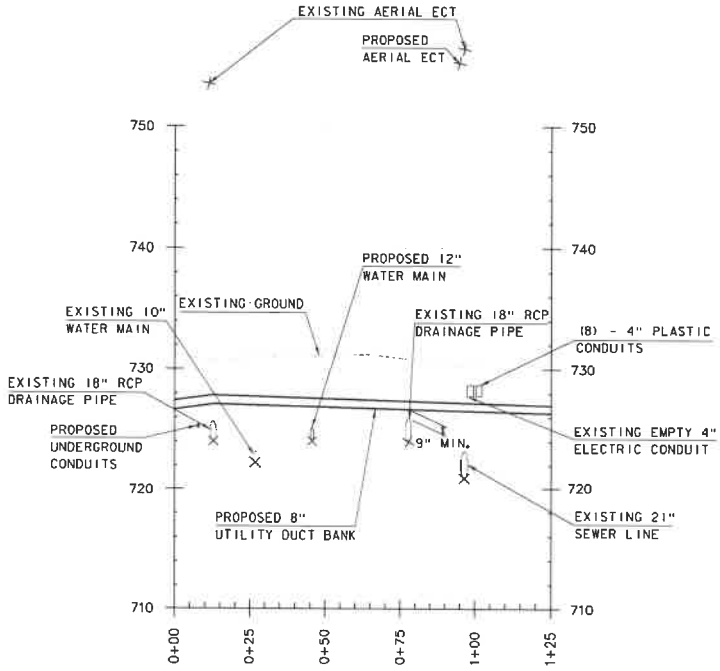
2. PROPOSED UTILITY DUCT BANKS SHALL MAINTAIN 18" MINIMUM VERTICAL CLEARANCE FROM EXISTING UNDERGROUND UTILITIES UNLESS OTHERWISE SHOWN. LOCATIONS WITH LESS THAN 18" VERTICAL CLEARANCE HAVE BEEN AGREED UPON BETWEEN VTRANS, GMP, NED AND THE TOWN OF NORTHFIELD.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

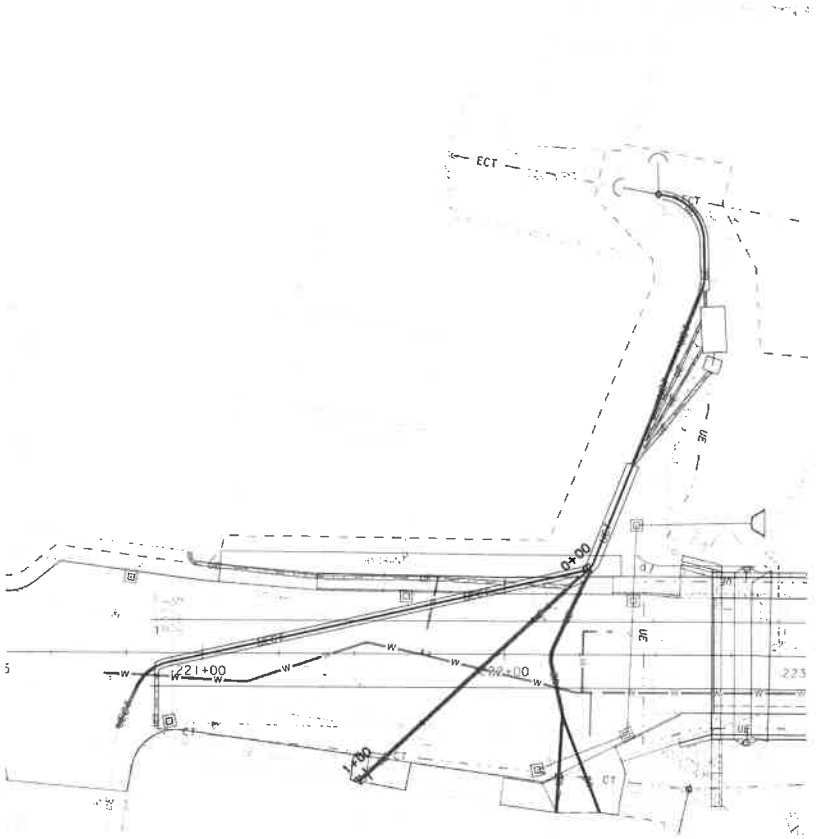
FILE NAME: z19223util_pro.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
UTILITY DUCT BANK PLAN & PROFILE - 1

PLOT DATE: 5/29/2025
DRAWN BY: J. DIAZ
CHECKED BY: C. JENNE
SHEET 33 OF 102



LINE	SURFACE	OFFSET
	x19\23comb	0.0000
Scaled	4.0000	Times Ver.
Scaled	1.0000	Times Hor.

2 - 4" POWER SERVICE DUCT BANK PROFILE



1 - 4" POWER SERVICE DUCT BANK PLAN

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

NOTES:
1. INVERTS SHOWN FOR EXISTING UTILITIES ARE ASSUMED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE POSITION OF ALL EXISTING UTILITIES.

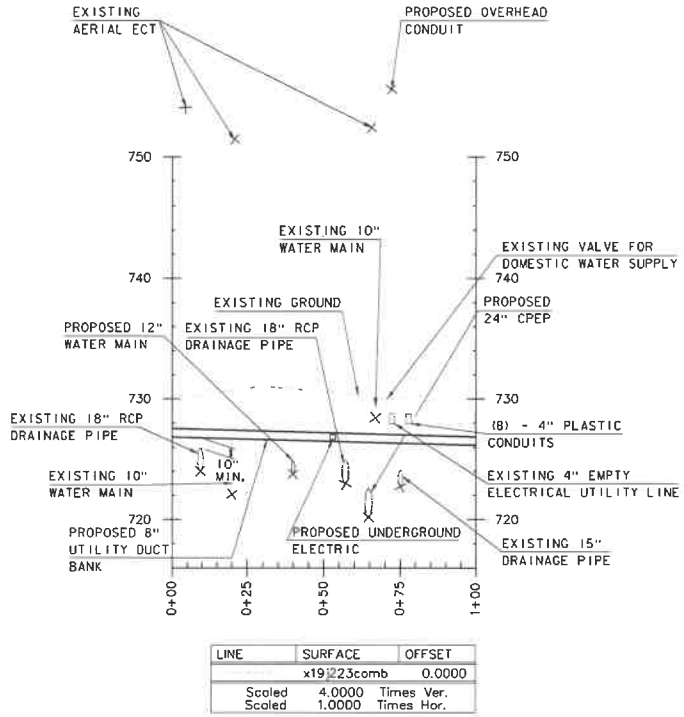
2. PROPOSED UTILITY DUCT BANKS SHALL MAINTAIN 18" MINIMUM VERTICAL CLEARANCE FROM EXISTING UNDERGROUND UTILITIES UNLESS OTHERWISE SHOWN. LOCATIONS WITH LESS THAN 18" VERTICAL CLEARANCE HAVE BEEN AGREED UPON BETWEEN VTRANS, GMP, NED AND THE TOWN OF NORTHFIELD.

H&H

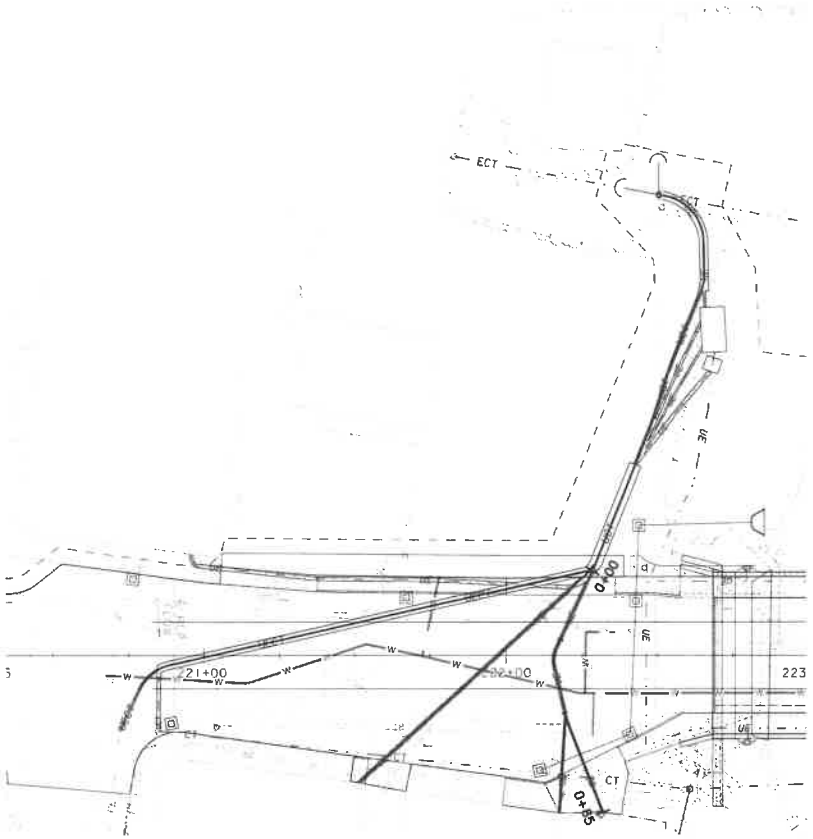
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223util_pro.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
UTILITY DUCT BANK PLAN & PROFILE - 2

PLOT DATE: 5/29/2025
DRAWN BY: J. DIAZ
CHECKED BY: C. JENNE
SHEET 34 OF 102



2 - 4" POWER SERVICES DUCT BANK PROFILE



2 - 4" POWER SERVICES DUCT BANK PLAN

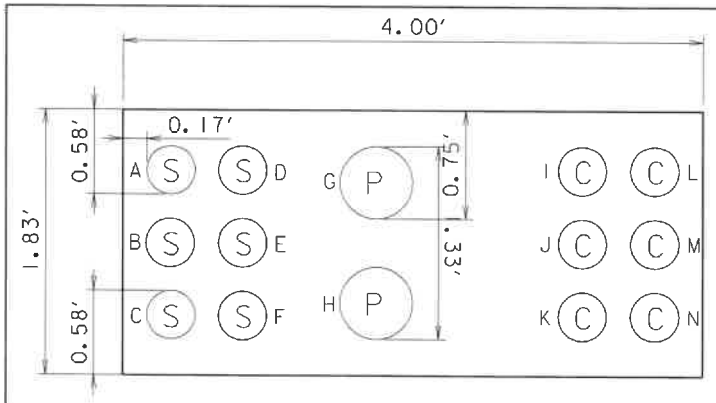
SCALE 1" = 20'-0"
20 0 20

NOTES:
1. INVERTS SHOWN FOR EXISTING UTILITIES ARE ASSUMED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE POSITION OF ALL EXISTING UTILITIES.

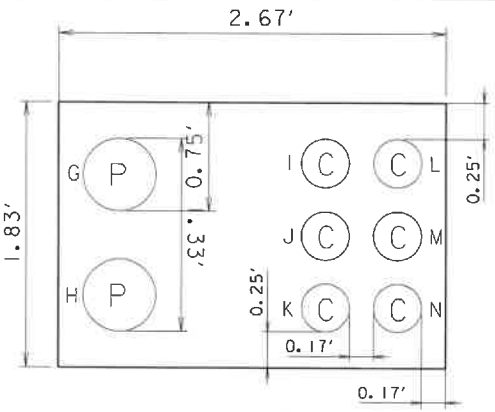
2. PROPOSED UTILITY DUCT BANKS SHALL MAINTAIN 18" MINIMUM VERTICAL CLEARANCE FROM EXISTING UNDERGROUND UTILITIES UNLESS OTHERWISE SHOWN. LOCATIONS WITH LESS THAN 18" VERTICAL CLEARANCE HAVE BEEN AGREED UPON BETWEEN VTRANS, GMP, NED AND THE TOWN OF NORTHFIELD.

H&H

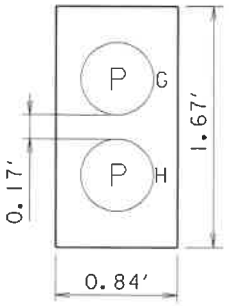
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)
FILE NAME: z19J223utl_pro.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
UTILITY DUCT BANK PLAN & PROFILE - 3
PLOT DATE: 5/29/2025
DRAWN BY: J. DIAZ
CHECKED BY: C. JENNE
SHEET 35 OF 102



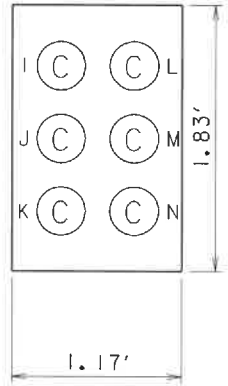
DUCT BANK *1
6 - 4" SERVICES
2 - 6" POWER
6 - 4" COMMUNICATIONS



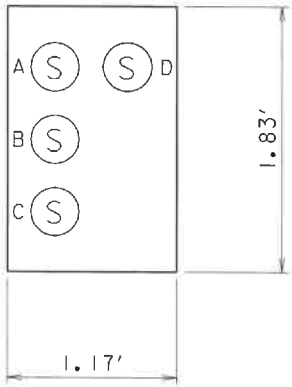
DUCT BANK *2
2 - 6" POWER
6 - 4" COMMUNICATIONS



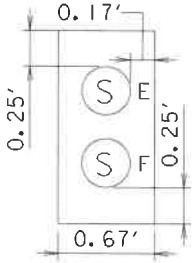
DUCT BANK *3
2 - 6" POWER
(PRIMARY THREE PHASE)



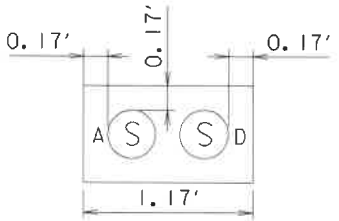
DUCT BANK *4
6 - 4" COMMUNICATIONS



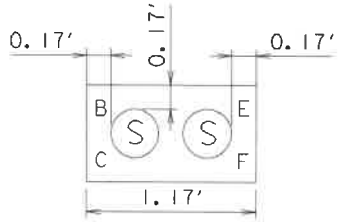
DUCT BANK *5a
4 - 4" SERVICES
(SINGLE PHASE)



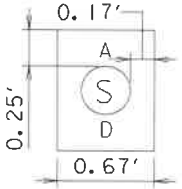
DUCT BANK *5b
2 - 4" SERVICES
(THREE PHASE)



DUCT BANK *5c
2 - 4" SERVICES
(SINGLE PHASE)



DUCT BANK *5d
2 - 4" SERVICES
(SINGLE PHASE, THREE PHASE)



DUCT BANK *5e
1 - 4" SERVICE
(SINGLE PHASE)

C 4" COMMUNICATIONS CONDUIT

P 6" POWER CONDUIT

S 4" SERVICE CONDUIT

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223utl_det.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
UTILITY DUCT BANK SECTIONS

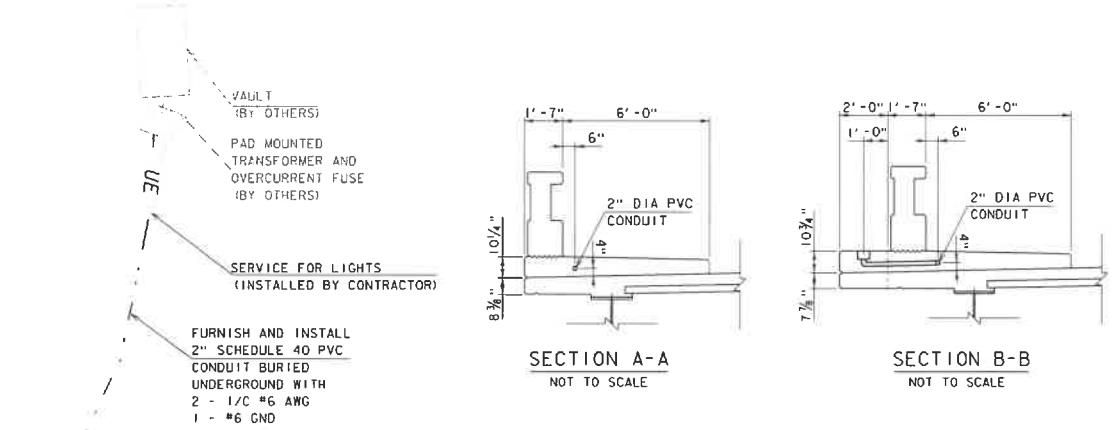
PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 36 OF 102

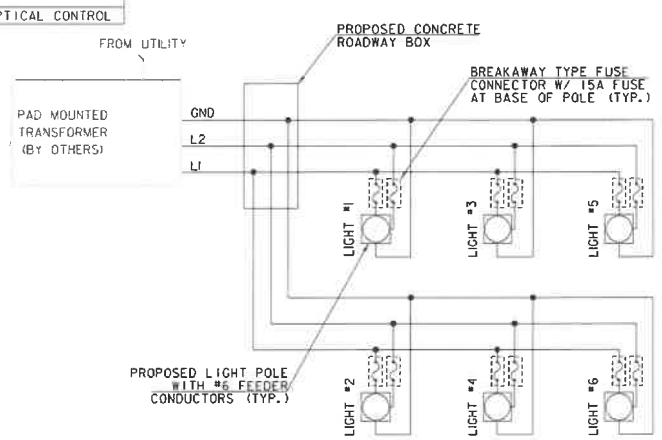
LIGHT POLE SPECIFICATIONS:

MANUFACTURER	POLE STYLE	POLE HEIGHT	SHAFT STYLE	POLE GUAGE	POLE FINISH	POLE ACCESSORY
STERNBERG	AUGUSTA	14'	5" STRAIGHT FLUTED	.250	VERDE GREEN	DOUBLE BANNER ARMS, "PM" POST MOUNT STYLE 15 AMP, DUPLEX GFCI RECEPTACLES WITH A LOW PROFILE IN USE COVER

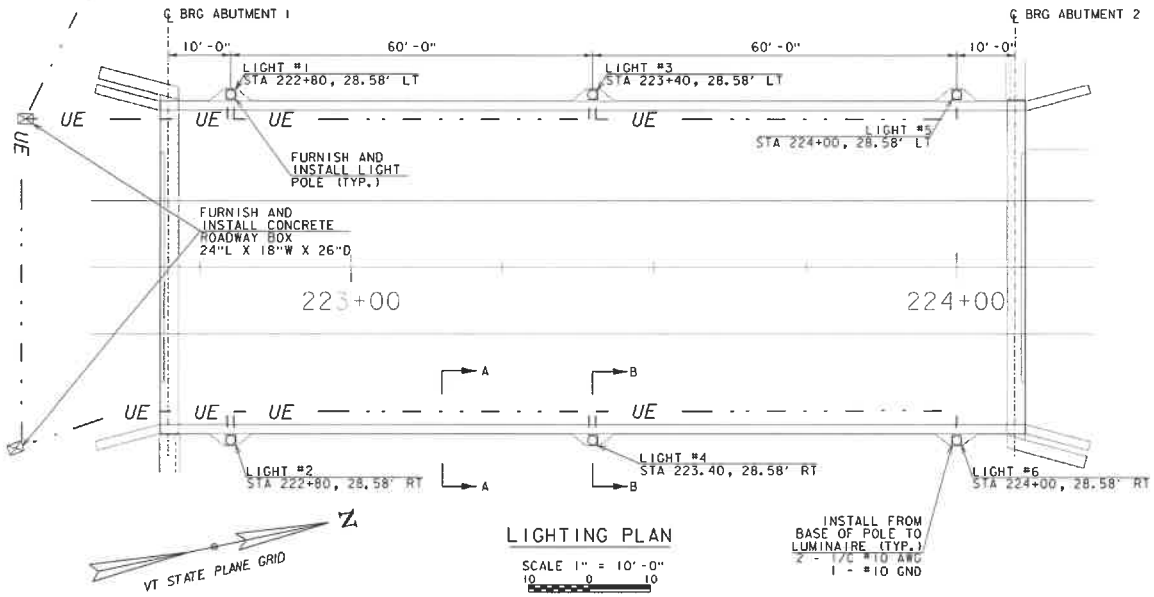
LIGHT FIXTURE SPECIFICATIONS:

MANUFACTURER	MOUNTING CONFIG	LUMINAIRE	FITTER	# OF LED	CCT - COLOR TEMPERATURE (K)	DISTRIBUTION TYPE	LENS TYPE	ELECTRICAL DRIVER	OPTION: HOUSE SIDE SHIELD
STERNBERG	PT	A850SRLED	5P-STANDARD	12	3000	TYPE 4	CLEAR TEXTURED ACRYLLIC ACORN	MDL014	BACK LIGHT OPTICAL CONTROL





PROPOSED LIGHTING WIRING DIAGRAM



LIGHTING PLAN

SCALE 1" = 10'-0"

10 0 10

INSTALL FROM
BASE OF POLE TO
LUMINAIRE (TYP.)
2 - 1/C #10 AWG
1 - #10 GND

ELECTRIC INSTALLATION NOTES:

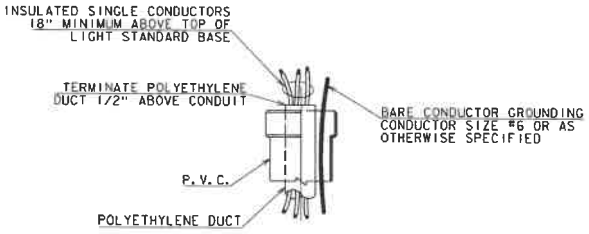
1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF TOWN OF NORTHFIELD, LATEST EDITION OF NATIONAL ELECTRICAL CODE (NEC), THE AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORATION OFFICIALS (AASHTO) SPECIFICATION FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS. WHERE THERE IS A CONFLICT BETWEEN CODES, THE MORE STRINGENT CODE SHALL PREVAIL.
2. IN-LINE FUSE HOLDER WITH 15A FUSE SHALL BE INSTALLED AT THE BASE OF ALL NEW LAMPPOST ASSEMBLIES.
3. THE 15 AMP. DUPLEX GFCI RECEPTACLES SHALL BE CONNECTED SUCH THAT THEY ARE CONTROLLED BY THE LIGHT SENSOR.
4. THERE SHALL BE FROST SLEEVES ON ALL CONDUITS AT THE TRANSITION FROM UNDERGROUND TO ABOVE GROUND, MINIMUM OF 16" ABOVE GRADE.
5. ALL CONDUCTORS SHALL BE 600V, 1/C COPPER TYPE "XHHW/XHHW-2", RATED FOR 90C. MINIMUM CONDUCTOR SIZE SHALL BE #10 AWG COPPER.
6. UNLESS OTHERWISE NOTED, FURNISH AND INSTALL #6 BARE COPPER, SOFT-DRAWN GROUNDING CONDUCTOR THROUGHOUT ALL LIGHTING CIRCUITS. THE GROUNDING CONDUCTOR SHALL BE BONDED TO ALL LIGHT STANDARDS, HANDHOLE COVERS, AND GROUND RODS. A #10 AWG GROUND WIRE SHALL BE INSTALLED IN EVERY LIGHT POLE AND SHALL CONNECT THE GROUNDING SYSTEM WITHIN THE POLE BASE TO THE GROUNDING TAB IN THE LUMINAIRE.
7. CONDUITS SHALL CROSS EXPANSION JOINTS IN STRUCTURES IN A DIRECTION PARALLEL TO THE STRUCTURE MOVEMENT. FURNISH AND INSTALL EXPANSION/DEFLECTION FITTINGS AT ALL EXPANSION JOINTS. DEFLECTION FITTINGS SHALL BE PROVIDED TO FOLLOW THE NATURAL CURVATURE OF THE STRUCTURE OR AT LOCATIONS WHEREVER ANGULAR MOVEMENT MAY BE ENCOUNTERED.
8. THE LIMITS OF INSTALLATION BY THE CONTRACTOR SHALL EXTEND TO THE TRANSFORMER.

H&H

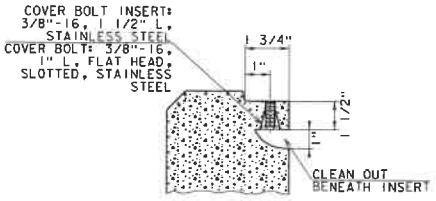
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223Electrical.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: R. ROSENFELD
LIGHTING PLAN SHEET 1

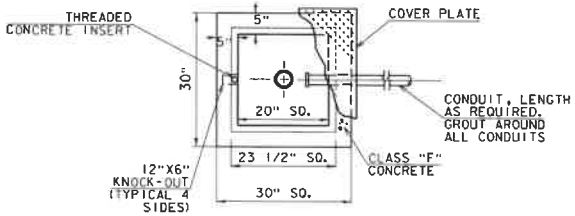
PLOT DATE: 5/29/2025
DRAWN BY: R. ROSENFELD
CHECKED BY: M. DHUNGEL
SHEET 37 OF 102



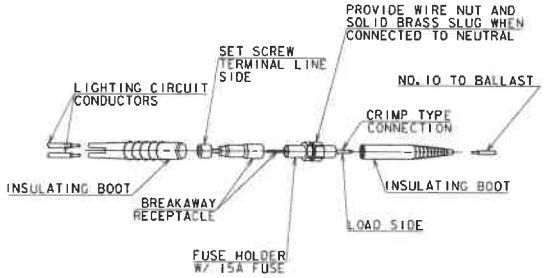
CABLE IN DUCT TERMINATION
AT LIGHT STANDARD BASE



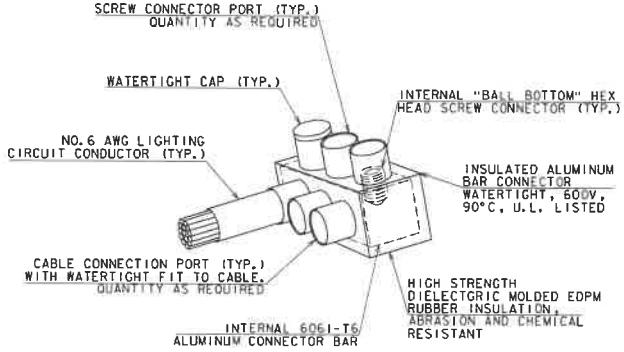
THREADED INSERT



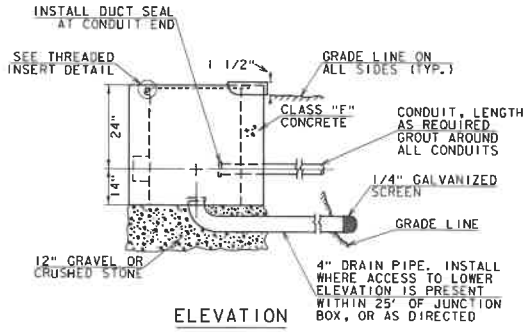
PLAN



BREAKAWAY FUSE CONNECTOR



WATERTIGHT CONNECTOR



ELEVATION

CONCRETE JUNCTION BOX

H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223Electrical.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: R. ROSENFELD
DESIGNED BY: R. ROSENFELD	CHECKED BY: M. DHUNGEL
LIGHTING PLAN SHEET 2	SHEET 38 OF 102

DURABLE 4 INCH YELLOW LINE (DOUBLE)

STA 220+90.0 - STA 226+50.0

DURABLE CROSSWALK MARKING

STA 220+25.0 LT - STA 220+25.0 RT
STA 224+21.0 LT - STA 224+21.0 RT

DURABLE 4 INCH WHITE LINE

STA 220+30.0 - STA 222+00.0 LT (BIKE LANE)
STA 220+90.0 - STA 222+57.5 RT (BIKE LANE
STA 220+30.0 - STA 224+17.5 LT (TRAVEL LANE)
STA 220+90.0 - STA 224+17.5 RT (TRAVEL LANE)
STA 224+24.5 - STA 226+50.0 LT (TRAVEL LANE)
STA 224+24.5 - STA 226+50.0 RT (TRAVEL LANE)
STA 220+48.0 - STA 220+53.0 LT (PARKING)
STA 220+69.7 - STA 220+71.0 LT (PARKING)
STA 221+22.7 - STA 221+29.0 RT (PARKING)
STA 221+87.0 - STA 221+94.7 RT (PARKING)
STA 221+97.7 - STA 222+05.3 RT (PARKING)

DURABLE 6 INCH WHITE LINE

STA 220+87.5 - STA 221+05.0 LT (ISLAND)
STA 220+87.5 - STA 221+07.5 RT (ISLAND)
STA 221+00.0 - STA 224+17.5 LT (BIKE LANE BUFFER)
STA 220+90.0 - STA 224+17.5 RT (BIKE LANE BUFFER)
STA 221+49.0 - STA 221+55.5 RT (ISLAND)
STA 221+55.7 - STA 221+84.0 RT (ISLAND)
STA 221+07.5 - STA 222+19.0 RT (ISLAND)
STA 224+24.5 - STA 226+50.0 LT (BIKE LANE BUFFER)
STA 224+24.5 - STA 226+50.0 RT (BIKE LANE BUFFER

DURABLE LETTER OR SYMBOLS

STA 220+35.0 LT (ARROW)
STA 220+47.0 LT (HELMETED BICYCLIST)
STA 221+00.0 RT (HELMETED BICYCLIST)
STA 221+12.0 RT (ARROW)
STA 222+50.0 LT (ARROW)
STA 222+62.0 LT (HELMETED BICYCLIST)
STA 222+50.0 RT (HELMETED BICYCLIST
STA 222+62.0 RT (ARROW)
STA 225+13.0 RT (HELMETED BICYCLIST)
STA 225+25.0 RT (ARROW)
STA 226+31.0 LT (ARROW)
STA 226+43.0 LT (HELMETED BICYCLIST

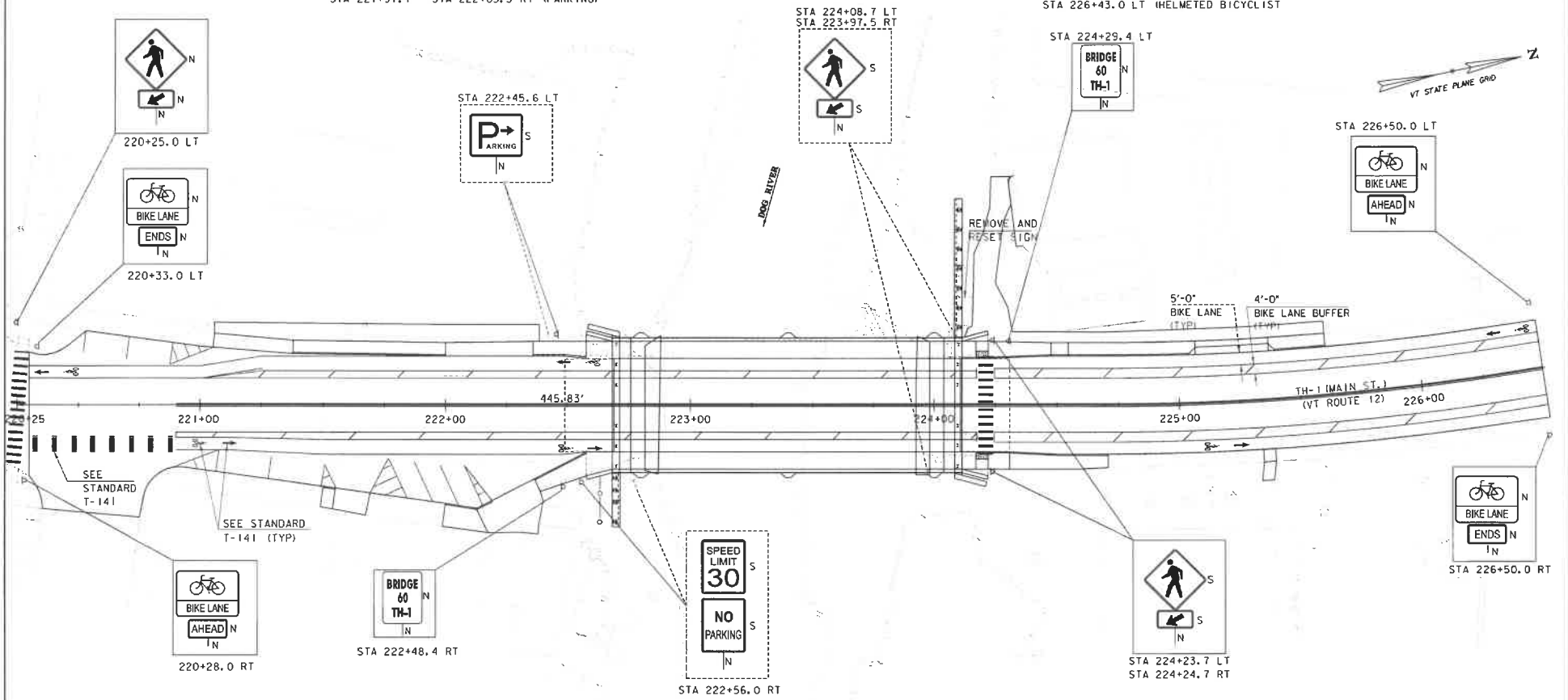
FOUNDATION FOR TUBULAR STEEL POST (GULF SIGN)

STA 224+12.0, 35' LT
STA 224+12.0, 42' LT

RESETTING SIGNS

REMOVE AND RESET LIGHT POLE

STA 224+12.0, 38.5' LT



SIGN LEGEND:
R = REMOVE
S = SALVAGE = REMOVE & RESET
N = NEW
RET = RETAIN
B-B = BACK TO BACK
----- = EXISTING
—— = PROPOSED

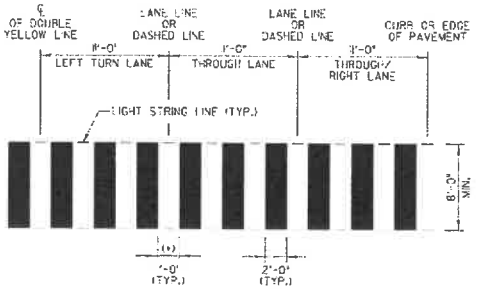
SCALE 1" = 20'-0"
20 0 20

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: sl9J2231nes.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: VTRANS
SIGN AND LINE LAYOUT SHEET

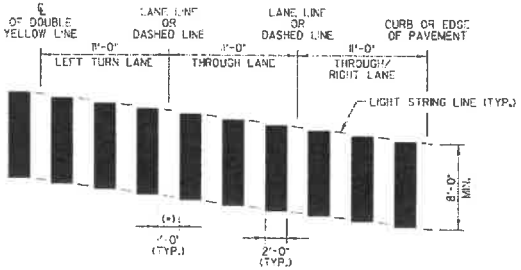
PLOT DATE: 5/29/2025
DRAWN BY: VTRANS
CHECKED BY: VTRANS
SHEET 39 OF 102

BLOCK PATTERN CROSWALK PAVEMENT MARKING DETAILS



BLOCK PATTERN CROSSWALK DETAIL

MAY VARY WITH 11'-0" OR 12'-0" LANE



SKEWED BLOCK PATTERN CROSSWALK DETAIL

MAY VARY WITH 11'-0" OR 12'-0" LANE

NOTES

1. THIS DETAIL IS CONFIGURED FOR AN 11'-0' LANE.
2. MARK LIGHT STRING LINE ON PAVEMENT ACROSS ROADWAY (CURB-TO-CURB).
3. ESTABLISH THE CENTER LINE OF THE ROADWAY (DOUBLE YELLOW LINE OR LANE LINE).
4. BLOCKS ARE PARALLEL TO THE CENTERLINE (DOUBLE YELLOW LINE OR LANE LINE). (OFFSET BLOCKS VERTICALLY TO ACHIEVE REQUIRED SKEW).
5. ALWAYS START MEASURING FROM THE CENTERLINE OR LANE LINE RIGHT WITH THE FLOW OF TRAFFIC.
6. PAINTED BLOCKS SHALL BE 2'-0" (TYPICAL). (OPTION ITEM)
(*) 7. THIS SPACING WILL INCREASE TO 2'-0" FOR A 12'-0" LANE.
(*) 8. ADJUST SPACING TO AVOID WHEEL PATHS AS DIRECTED BY THE ENGINEER.

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: sl9l223.DGN	PLOT DATE: 5/29/2025
PROJECT LEADER: C. BAKER	DRAWN BY: VTRANS
DESIGNED BY: VTRANS	CHECKED BY: VTRANS
CROSSWALK DETAILS	SHEET 40 OF 102

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST		NEW SIGN POSTS																						REMARKS	SIGN DETAIL	
											NO. OF	FLANGED CHANNEL			SQUARE STEEL (in)					TUBULAR ALUMINUM Ø (IN)			TUBULAR STEEL Ø (IN)				W-SHAPE STEEL									
															1.75	2.00	2.50			3.00	4.00	4.0 MOD					FTG. SIZE									
		EACH	WIDTH (in)	HEIGHT (in)	"A"	"B"	SALV SIGN	SALV TIS	RETAIN	SALVAGE	POST	(LB / FT)			(LB / FT)			ANCHOR	SLEEVE	(LB / FT)			FOUNDATION	(LB / FT)				24"	30"	WEIGHT	POST SIZE	SIGN FRAME REQUIRED		DETAIL ON SHEET NUMBER	VTrans STANDARD OR FHWA MUTCD-SHS NUMBER
												1.12	2.00	3.00	1.88	2.42	3.35			1.30	1.70	1.70		7.60	9.00	10.80	14.60								
OPTION ITEMS																																			
STA 220+25.0 LT		1	30.0	30.0	9.0						1.0					12.0		X																	MUTCD W11-2
STA 224+23.7 LT STA 224+23.7 RT		2	30.0	30.0	18.0						2.0					24.0		X														BLACK ON FLUORESCENT YELLOW-GREEN		
STA 220+25.0 LT		1	24.0	12.0	2.0						PAIRED WITH NEW W11-2 SIGN LISTED ABOVE																								MUTCD W16-7P
STA 224+23.7 LT STA 224+23.7 RT		2	24.0	12.0	4.0						PAIRED WITH EXISTING W11-2 SIGN LIST ABOVE																								
STA 222+45.6 LT		1	30.0	24.0	5.0						1.0					15.0		X														GREEN ON WHITE		MUTCD D4-1
STA 222+56.0 RT		1	24.0	30.0	5.0						1.0					12.0		X														BLACK ON WHITE		MUTCD R2-1
STA 222+56.0 RT		1	24.0	30.0	5.0						PAIRED WITH EXISTING R2-1 SIGN LISTED ABOVE																							RED ON WHITE		MUTCD R8-3a
222+48.4 RT		1	6.0	10.0	0.4						1.0					12.0		X														WHITE ON GREEN	T-42	
224+29.4 LT		1	6.0	10.0	0.4						1.0					12.0		X														WHITE ON GREEN	T-42	
												FT	FT	FT	FT	FT	FT		EA	LB	LB	LB		LB	LB	LB	LB							
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."																87.				-														
		TOTALS			SF 48 83	SF	EA.	SF				FT			FT 87.					LB			EA.	LB				EA.	EA.	LB					

SIGN LEGEND:
R = REMOVE
S = SALVAGE = REMOVE & RESET
N = NEW
RET = RETAIN
B-B = BACK TO BACK
----- = EXISTING
—— = PROPOSED

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: zt9j223sgn.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
SIGN AND LINE TABLE SHEET

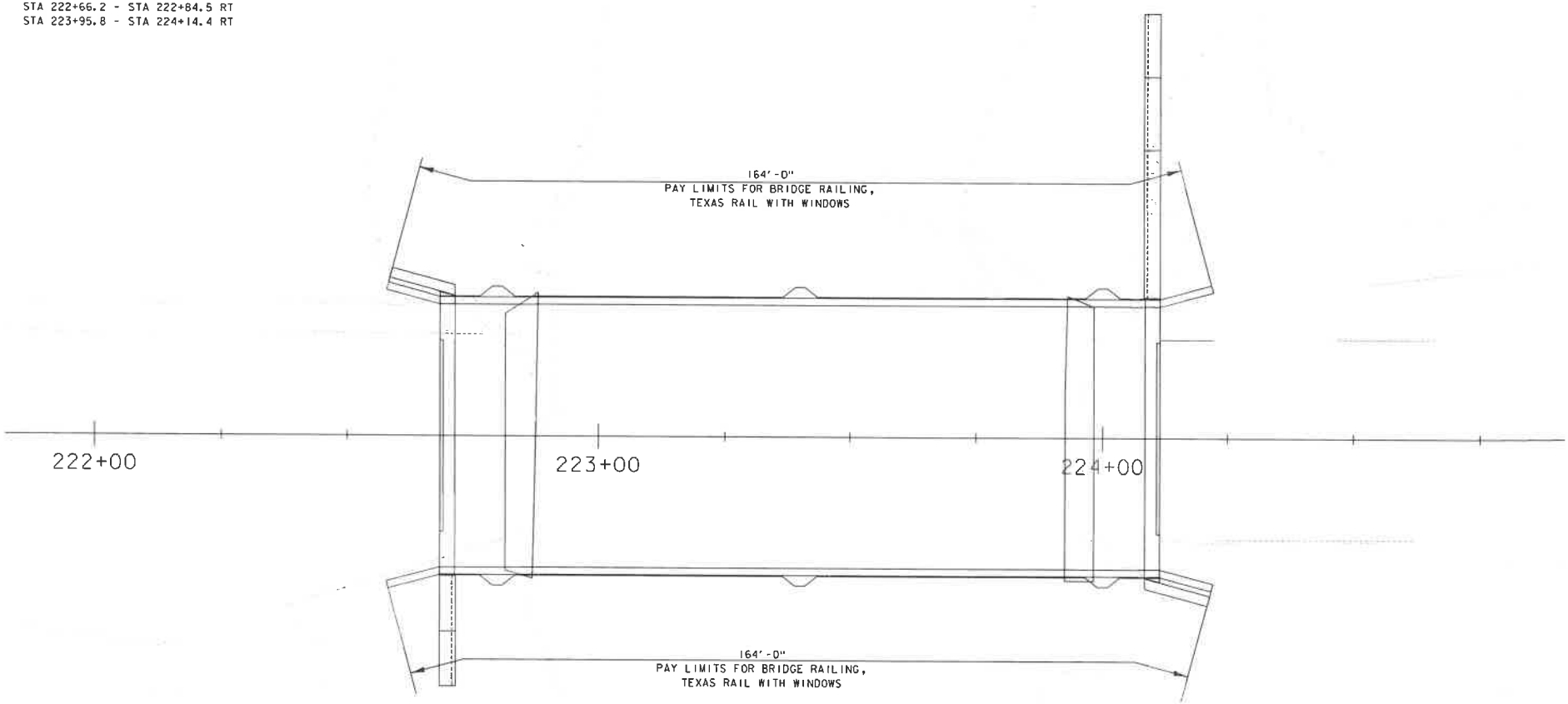
PLOT DATE: 5/29/2025
DRAWN BY: S. TANG
CHECKED BY: C. JENNE
SHEET 41 OF 102

BRIDGE RAILING, TEXAS RAIL WITH WINDOWS
STA 222+57.86 - STA 224+22.13 LT & RT

REMOVAL AND DISPOSAL OF GUARDRAIL
STA 222+41.1 - STA 222+84.5 LT
STA 223+95.8 - STA 224+12.4 LT
STA 222+66.2 - STA 222+84.5 RT
STA 223+95.8 - STA 224+14.4 RT

DELINEATOR WITH STEEL POST
STA 222+50 LT (GREEN)
STA 222+45 RT (BLUE)
STA 224+20 LT (BLUE)
STA 224+20 RT (GREEN)

N
VT STATE PLANE GRID



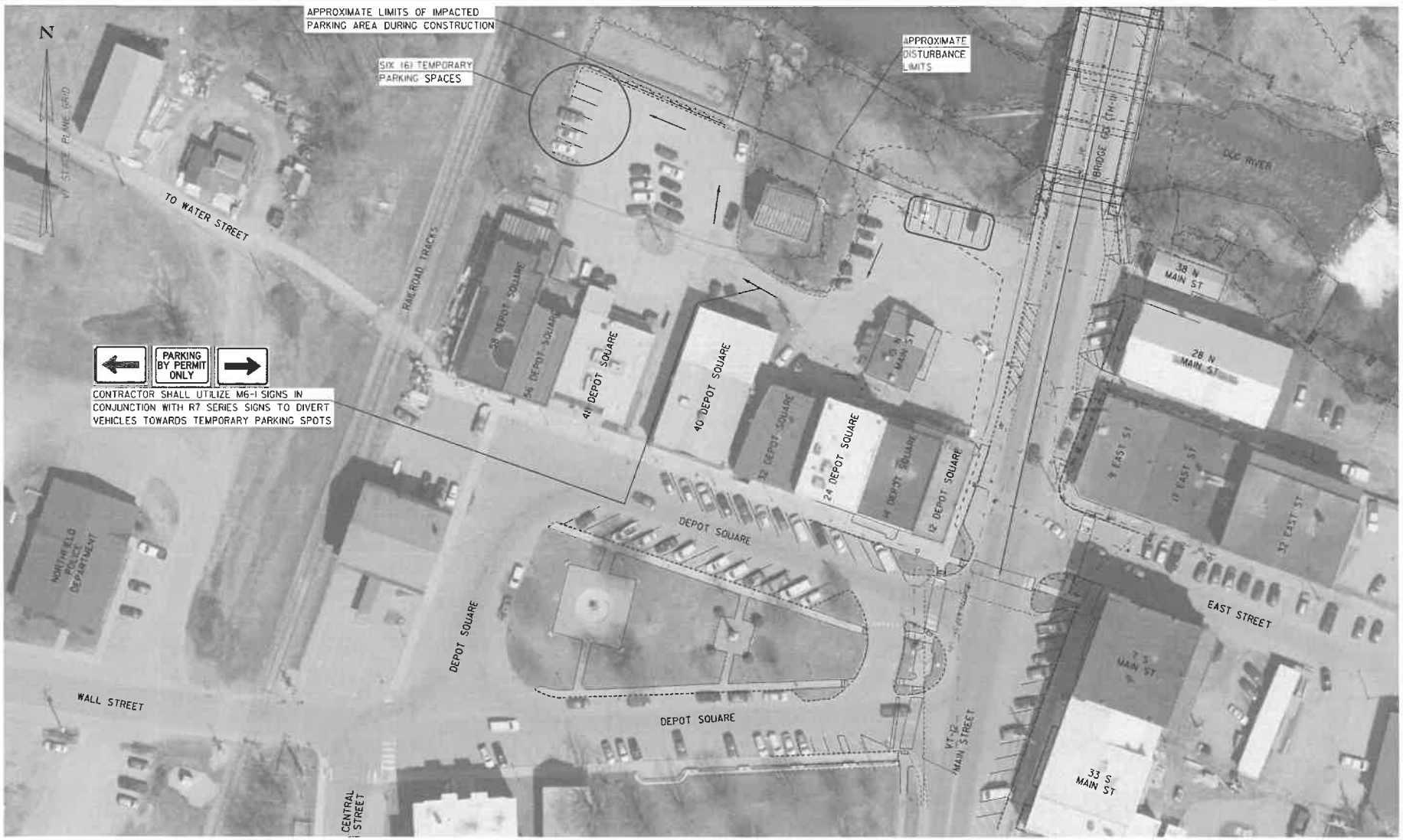
SCALE 1" = 10'-0"
10 0 10

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223bdr_rail.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: S. BROWN
RAIL LAYOUT SHEET

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 42 OF 102



NOTES:

1. TEMPORARY PARKING LAYOUT SHALL BE IN PLACE FOR DURATION OF WORK ASSOCIATED WITH UTILITIES RELOCATION AND BRIDGE REPLACEMENT.

2. LAYOUT OF SIGNAGE AND PERMIT PARKING AS SHOWN IS SCHEMATIC AND SHALL BE COORDINATED WITH THE TOWN OF NORTHFIELD.

3. COSTS FOR TEMPORARY SIGNING AND STRIPING AS SHOWN SHALL BE INCLUDED UNDER PAY ITEM 641.1000 - TRAFFIC CONTROL.

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

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: sl9j223tparking.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: J. DIAZ
DESIGNED BY: K. HD	CHECKED BY: C. JENNE
TEMPORARY PARKING LAYOUT	SHEET 43 OF 102

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

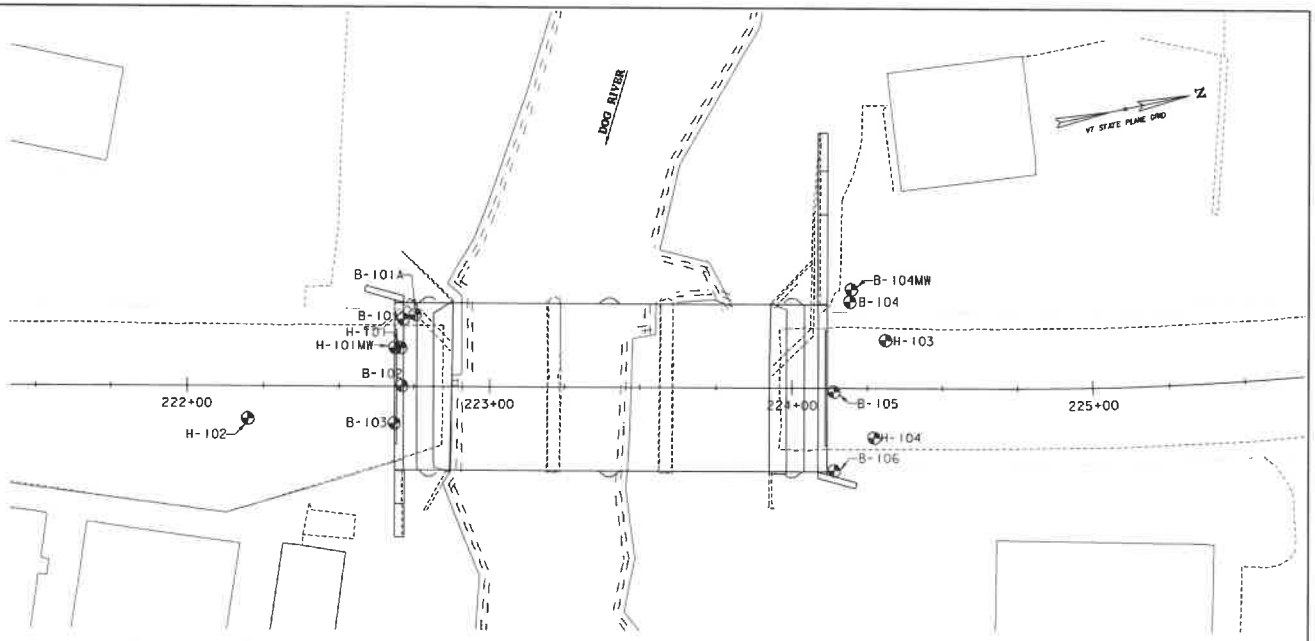
DENSITY (GRANULAR SOILS) N	DESCRIPTIVE TERM	CONSISTENCY (COHESIVE SOILS) N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

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 1⅜" 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 1⅛"
BX	Core Size 1⅝"
NX	Core Size 2⅛"
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		



BORING CHART

HOLE NO.	NORTHING	EASTING	STATION	OFFSET	ELEV TLOB
B-101	601218.43	1599459.36	222+71.29	22.2' LT	------
B-101A	601222.65	1599458.73	222+75.29	23.7' LT	------
B-102	601213.45	1599480.83	222+70.87	0.2' LT	698.5
B-103	601208.44	1599492.27	222+68.35	12.0' RT	700.3
B-104	601364.21	1599483.86	224+18.98	28.5' LT	701.6
B-104MW	601365.53	1599480.06	224+19.48	32.5' LT	------
B-105	601352.94	1599511.91	224+13.78	1.2' RT	704.7
B-106	601347.71	1599537.30	224+13.93	27.2' RT	706.0

HOLE NO.	NORTHING	EASTING	STATION	OFFSET
H-101	601215.68	1599468.47	222+70.49	12.8' LT
H-101MW	601213.73	1599468.06	222+68.49	12.8' LT
H-102	601161.44	1599480.88	222+20.01	10.6' RT
H-103	601373.36	1599498.83	224+31.03	15.8' LT
H-104	601363.07	1599529.46	224+27.33	16.3' RT

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.

GENERAL NOTES

1. The subsurface explorations shown herein were made between 9/20/2021 and 9/28/2021 by New England Boring Contractors.
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.

H&H

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223bor.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: S. BROWN
BORING LAYOUT SHEET

PLOT DATE: 5/29/2025
DRAWN BY: S. BROWN
CHECKED BY: K. SMITH
SHEET 44 OF 102

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: B-101
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/28/21 Date Finished: 9/28/21
VTSPG NAD83: N 601218.43 ft E 1599459.36 ft
Station: 222+71.29 Offset: 22.2' LT
Ground Elevation: 730.47 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	300	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations

Date	Depth (ft)	Notes

ABUTMENT 1
BOT PC
EL = 717.5'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt					
		S-1: Grey c(+)mf SAND, and mf Gravel, some (-) Silt, Rec. = 0.75 ft, 0.5 ft - 2.0 ft, Environmental Sample - No sample collected	5-7-7-8 (14)				
		S-2: Grey c(+)mf SAND, and mf Gravel, some (-) Silt, Rec. = 0.83 ft, 2.0 ft - 4.0 ft	7-6-7-6 (13)	4.5	39.0	39.0	22.0
5		S-3: Brown cmf SAND, some cmf Gravel (crushed rock), Rec. = 0.92 ft, 4.0 ft - 6.0 ft	8-9-11-9 (20)				
		S-4: No Recovery, Rec. = 0.0 ft, 6.0 ft - 8.0 ft	13-12-22-13 (34)				
		S-5: Brown cmf SAND, little Silt, little c(-)mf Gravel, Rec. = 0.75 ft, 8.0 ft - 10.0 ft	11-7-7-12 (14)				
10		S-6: Brown mf Gravel, and cm(-)f Sand, little Silt, Rec. = 1.08 ft, 10.0 ft - 12.0 ft	24-19-15-14 (34)	11.2	25.0	41.0	16.0
15		S-7: Top 6": Grey mf GRAVEL, and c(+)mf Sand, trace (+) Silt, Rec. = 0.67 ft, 15.0 ft - 16.5 ft, Small green glass fragments throughout	9-16-8-4 (24)	15.1	50.0	41.2	8.8
		S-7: Bott 2": Grey SILT, little mf Sand, 16.5 ft - 17.0 ft, Small green glass fragments throughout					
20		Hole stopped @ 17.0 ft Casing snapped at approximately 15ft. Hole abandoned with 5ft of casing left in the hole.					
25		Remarks: 1. Mud Rotary drill used. Groundwater not recorded. 2. Hole located 1ft North, 1ft East of survey-marked location. 3. Boulder 8ft - 13ft, very hard drilling					
30							
35							
40							
45							

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.

2016 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AOT.GDT 5/6/22

STATE OF VERMONT
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CENTRAL LABORATORY

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: B-101A
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/28/21 Date Finished: 9/28/21
VTSPG NAD83: N 601222.65 ft E 1599458.73 ft
Station: 222+75.29 Offset: 23.7' LT
Ground Elevation: 730.47 ft

	Casing	Sampler
Type:	AUGER	
I.D.:		
Hammer Wt:	N.A.	N.A.
Hammer Fall:	N.A.	N.A.
Hammer/Rod Type:	AWJ	
Rig:	MOBILE	C_E =

Groundwater Observations

Date	Depth (ft)	Notes

ABUTMENT 1
BOT PC
EL = 717.5'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt					
5		Visual Description:, Brown cmf SAND, little cmf Gravel, trace Silt, Solid-Stem Auger, no sample taken - spoils visually classified					
10							
15		Field Note:, Solid-Stem Auger, drilling becomes hard - no samples taken					
20		Field Note:, Mud Rotary, Very Hard drilling - no samples taken					
25		Hole stopped @ 25.0 ft					
30		Remarks: 1. Mud Rotary drill used. Groundwater not recorded. 2. Hole located 4ft North, 1.5ft West of B-101 as-drilled location. 3. For soil samples 0ft - 20ft, see B-101.					
35							
40							
45							

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.

2016 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AOT.GDT 5/6/22

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)
FILE NAME: z19J223bor.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: R. GURRIELL
BORING LOG SHEET 1
PLOT DATE: 5/29/2025
DRAWN BY: S. BROWN
CHECKED BY: K. SMITH
SHEET 45 OF 102

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: B-102
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/22/21 Date Finished: 9/23/21
VTSPG NAD83: N 601213.45 ft E 1599480.83 ft
Station: 222+70.87 Offset: 0.2' LT
Ground Elevation: 730.48 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	300	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations

Date	Depth (ft)	Notes

ABUTMENT 1
BOT PC
EL = 717.5'

EST. BOT PILE
EL = 691.5'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate min/ft	Blows/ft* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt 0.5 ft - 2.0 ft, Concrete/Rebar								
5		S-1: Brown cmf SAND, little mf Gravel, little (-) Silt, Rec. = 0.83 ft, 2.0 ft - 4.0 ft, Environmental Sample - No sample collected				10-10-11-11 (21)				
		S-2: Grey cmf SAND, little (+) cmf Gravel, Rec. = 0.67 ft, 4.0 ft - 6.0 ft				22-17-9-4 (26)				
		S-3: Brown cmf SAND, little c(-)mf Gravel, Rec. = 0.58 ft, 6.0 ft - 8.0 ft, Environmental Sample - No sample collected				3-3-3-4 (6)				
10		S-4: Brown/Grey cmf SAND, little cmf Gravel, Rec. = 1.0 ft, 8.0 ft - 10.0 ft, Environmental Sample - No sample collected				10-9-6-7 (15)				
		S-5: Black/Brown c(+)m(-)f SAND, some (-) Silt, little (+) mf(+) Gravel, Rec. = 1.0 ft, 10.0 ft - 12.0 ft				9-3-6-6 (9)	6.9	15.0	59.0	21.0
15		S-6: Dark Brown cmf SAND, some cm(+)f Gravel, Rec. = 0.5 ft, 15.0 ft - 17.0 ft, Wood fragments present in sample				3-3-4-7 (7)				
		18.0 ft - 20.0 ft, Drilled through large piece of wood (Confirmed by wood stuck to casing upon removal)								
20		S-7: Grey/Black cm SAND, Rec. = 0.17 ft, 20.0 ft - 21.0 ft, Wood in tip of spoon. S-8: SAME, Rec. = 0.58 ft, 21.0 ft - 23.0 ft				50/2" (100) 9-7-12-16 (19)				
25		S-9: Grey mf GRAVEL, little cmf Sand, Rec. = 1.33 ft, 25.0 ft - 27.0 ft, Wood fragments present in sample				6-6-3-4 (9)				
30		S-10: J1 (Top 8"): Grey-Brown mf(+) SAND, some Silt, Rec. = 1.17 ft, 30.0 ft - 31.0 ft				14-16-16-15 (32)	31.3	1.0	2.0	97.0
		S-10: J2 (Bott. 6"): Grey SILT trace (-), f Sand, trace (-) f Gravel [NP], 31.0 ft - 32.0 ft								
35		32.0 ft, Approximate Top of Rock 33.0 ft - 38.0 ft, Grey PHYLLITE, moderately to highly weathered, moderately to slightly fractured, moderately soft to moderately hard rock, cmf grains, 5+ pieces	C-1 (5-90)	91.7 (45)	6 4 4.5 12 3.5					
40		38.0 ft - 43.0 ft, Grey PHYLLITE, moderately weathered, intensely to moderately fractured, moderately soft to moderately hard rock, cmf grains, 7+ pieces	C-2 (5-90)	91.7 (33.3)	7 6 6 6 16					
45		Hole stopped @ 43.0 ft								
		Remarks: 1. Mud Rotary drill used. Groundwater not recorded. 2. Hole located 0.5ft South, 2.5ft West of survey-marked location. 3. Lost water in casing at approximately 14ft and 19ft.								

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.

2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AOT.GDT 5/9/22

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
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CENTRAL LABORATORY

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: B-103
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/21/21 Date Finished: 9/21/21
VTSPG NAD83: N 601208.44 ft E 1599492.27 ft
Station: 222+88.35 Offset: 12.0' RT
Ground Elevation: 730.3 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	300	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations

Date	Depth (ft)	Notes

ABUTMENT 1
BOT PC
EL = 717.5'

EST. BOT PILE
EL = 693.3'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate min/ft	Blows/ft* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt 0.5 ft - 2.0 ft, Concrete/Rebar								
		S-1: J1 (Top 7"): Brown mf SAND, little Silt, Rec. = 0.92 ft, 2.0 ft - 3.0 ft, Environmental Sample - No sample collected				14-12-10-9 (22)				
5		S-1: J2 (Bott. 4"): Grey cmf(-) SAND, little (+) Gravel, 3.0 ft - 4.0 ft				31-25-18-8 (43)				
		S-2: Grey-Brown cm GRAVEL, some (+) Sand, some Silt, Rec. = 0.92 ft, 4.0 ft - 6.0 ft				10-8-10-13 (18)	6.6	39.0	31.0	30.0
		S-3: Grey-Brown cm Gravel, some (+) Sand, some Silt, Rec. = 1.0 ft, 6.0 ft - 8.0 ft				1-14-5-5 (11)				
		S-4: Grey-Brown cmf SAND, some (+) cmf(+) Gravel, Rec. = 0.83 ft, 8.0 ft - 10.0 ft				12-18-40-50 (59)				
10		S-5: Grey-Brown cmf SAND, little (+) mf Gravel, Rec. = 1.17 ft, 10.0 ft - 12.0 ft, Highly decomposed shale/phyllite								
15		S-6: Brown cmf SAND, little c(-)mf Gravel, Rec. = 1.08 ft, 15.0 ft - 17.0 ft				4-6-7-7 (13)				
20		S-7: Dark Grey CLAY & SILT some (+), c(-)f Sand, trace (-) f Gravel [PI=15], Rec. = 2.0 ft, 20.0 ft - 22.0 ft, Wood fragments in top 6" of sample				3-4-4-4 (8)	91.8	1.0	34.0	65.0
25		S-8: Grey m(+)f Gravel and cm(-)f Sand, little Silt, Rec. = 0.83 ft, 25.0 ft - 27.0 ft				11-9-8-20 (17)	12.5	25.0	42.0	16.0
30		30.0 ft - 35.0 ft, Grey PHYLLITE, moderately to highly weathered, very intensely to intensely fractured, moderately soft to moderately hard rock, cmf grains, 3+ pieces	C-1 (0-30)	91.7 (13.3)	9.5 6 9 7 4.5					
35		35.0 ft - 40.0 ft, Grey PHYLLITE, moderately weathered, moderately fractured, moderately soft to moderately hard rock, cmf grains, 8 pieces	C-2 (30-90)	100 (56.7)	4 4 4.5 5 6					
40		Hole stopped @ 40.0 ft								
45		Remarks: 1. Mud Rotary drill used. Groundwater not recorded. 2. Hole located 0.5ft South, 0.5ft West of survey-marked location.								

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.

2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AOT.GDT 5/9/22

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223bor.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: R. GURRIELL
BORING LOG SHEET 2

PLOT DATE: 5/29/2025
DRAWN BY: S. BROWN
CHECKED BY: K. SMITH
SHEET 46 OF 102

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: B-104
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewske

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/24/21 Date Finished: 9/24/21
VTSPG NAD83: N 601364.21 ft E 1599483.86 ft
Station: 224+18.98 Offset: 28.5' LT
Ground Elevation: 729.56 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	300	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations

Date	Depth (ft)	Notes
09/28/21	18.6	B-104MW Reading

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blowsft* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0		0.0 ft - 0.5 ft, Asphalt								
		S-1: Brown cmf SAND, some cmf Gravel, Rec. = 1.0 ft, 0.5 ft - 2.0 ft, Environmental Sample - No sample collected				12-16-12-10 (28)				
		S-2: Brown cmf(+) SAND, little cmf Gravel, Rec. = 0.83 ft, 2.0 ft - 4.0 ft				10-12-15-8 (25)				
5		S-3: SAME, Rec. = 0.83 ft, 4.0 ft - 6.0 ft				5-7-8-5 (15)				
		S-4: Brown cmf SAND, some (+) cmf Gravel, Rec. = 0.75 ft, 6.0 ft - 8.0 ft				10-12-12-13 (24)				
		S-5: SAME, Rec. = 0.75 ft, 8.0 ft - 10.0 ft				9-10-12-28 (22)				
10		S-6: Brown/Grey mf Gravel, some (+) Silt, some (-) cm(-)f Sand, Rec. = 1.0 ft, 10.0 ft - 12.0 ft, crumbled rock				14-10-21-50 (31)	8.9	47.0	20.0	33.0
		12.0 ft - 15.0 ft, Cobbles								
15		S-7: Jar A (top 6"): Brown cmf GRAVEL, some cmf Sand, little Silt, Rec. = 0.75 ft, 15.0 ft - 16.5 ft, Partial Environmental Sample - very small sample collected				9-11-42-6 (53)				
		S-7: Jar B (Bot. 3"): Black CLAY & SILT, 16.5 ft - 17.0 ft								
20		S-8: Dark Brown c(-)mf SAND, some Silt, Rec. = 1.5 ft, 20.0 ft - 22.0 ft, Wood fragments throughout sample				2-4-5-8 (9)				
		S-9: Grey c(+)mf Sand, and (-) m(+)f Gravel, little (+) Silt, Rec. = 1.25 ft, 22.0 ft - 24.0 ft				9-9-11-9 (20)	12.2	39.0	43.0	18.0
25		S-10: White/Grey cmf SAND, some (+) c(-)mf Greavel, little Silt, Rec. = 0.83 ft, 25.0 ft - 27.0 ft, Decomposed Rock				15-26-33-50 (59)				
		28.0 ft, Approximate Top of Rock								
30		29.0 ft - 34.0 ft, Grey PHYLLITE, moderately to slightly weathered, slightly fractured, moderately soft rock, cmf grains, 7+ pieces	C-1 (5-80)	100 (95)	4.5 4.5 5 5 5					
35		34.0 ft - 39.0 ft, Grey PHYLLITE, slightly weathered, moderately to slightly fractured, moderately soft to moderately hard rock, cmf grains, 6+ pieces. Bottom 6": Large quartz pocket	C-2 (5-80)	86.7 (66.7)	5 4.5 6.5 7 9					
40		Hole stopped @ 39.0 ft								
45		Remarks: 1. Mud Rotary drill used. Groundwater not recorded. 2. Hole located 4ft North, 1ft West of survey-marked location. 3. B-104MW installed 0.5ft North, 4ft West of B-104 as-drilled location.								

ABUTMENT 2
BOT PC
EL = 716.5'

EST. BOT PILE
EL = 694.6'

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.

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: B-105
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/23/21 Date Finished: 9/23/21
VTSPG NAD83: N 601352.94 ft E 1599511.91 ft
Station: 224+13.78 Offset: 1.2' RT
Ground Elevation: 729.72 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	300	140 lb.
Hammer Fall:	30 in	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blowsft* (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0		0.0 ft - 0.5 ft, Asphalt								
		S-1: Grey/Brown mf Gravel, some (+) cm(-)f Sand, some Silt, Rec. = 1.17 ft, 0.5 ft - 2.0 ft				41-50-46-39 (96)	2.5	23.0	33.0	24.0
		S-2: SAME, Rec. = 0.92 ft, 2.0 ft - 4.0 ft				17-13-10-6 (23)				
5		S-3: SAME, Rec. = 0.58 ft, 4.0 ft - 6.0 ft				6-2-5-2 (7)				
		S-4: Grey cmf GRAVEL, little cmf Sand, Rec. = 0.33 ft, 6.0 ft - 8.0 ft				7-6-5-9 (11)				
		S-5: Dark Brown cmf SAND, little (+) cmf Gravel, Rec. = 0.42 ft, 8.0 ft - 10.0 ft				3-4-7-11 (11)				
10		S-6: Grey c(-)mf GRAVEL, trace cmf Sand, trace (-) Silt, Rec. = 1.08 ft, 10.0 ft - 12.0 ft, Crumbled Rock				11-11-11-16 (22)				
15		S-7: Grey cmf GRAVEL, little Silt, trace f Sand, Rec. = 0.5 ft, 15.0 ft - 17.0 ft, Crumbled Rock				3-5-8-20 (13)				
20		S-8: Grey cmf(+) SAND, trace cmf Gravel, Rec. = 0.67 ft, 20.0 ft - 22.0 ft, Environmental Sample - No sample collected				6-4-5-4 (9)				
		S-9: Grey-Black mf(+) Gravel, and (-) cm(-)f Sand, some (-) Silt, Rec. = 1.5 ft, 22.0 ft - 24.0 ft				3-10-16-23 (26)	12.4	44.0	35.0	21.0
25		25.0 ft - 30.0 ft, Grey PHYLLITE, moderately weathered, moderately to slightly fractured, moderately soft rock, cmf grains, 5+ pieces	C-1 (5-90)	91.7 (45)	3 3 3 6 5					
30		30.0 ft - 35.0 ft, Grey PHYLLITE, moderately weathered, moderately fractured, moderately soft rock, cmf grains, 5+ pieces	C-2 (5-90)	100 (56.3)	5.5 3.5 4 4 4.5					
35		Hole stopped @ 35.0 ft								
40		Remarks: 1. Mud Rotary drill used. Groundwater not recorded. 2. Hole located 3.5ft North of survey-marked location. 3. Could not maintain seal at bottom of casing, used approximately 750 gallons of water during rock coring.								
45										

ABUTMENT 2
BOT PC
EL = 716.5'

EST. BOT PILE
EL = 699.0'

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.

2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AOT.GDT 9/6/22

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)
FILE NAME: z19J223bor.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: R. GURRIELL
BORING LOG SHEET 3
PLOT DATE: 5/29/2025
DRAWN BY: S. BROWN
CHECKED BY: K. SMITH
SHEET 47 OF 102

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: B-106
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/20/21 Date Finished: 9/20/21
VTSPG NAD83: N 601347.71 ft E 1599537.30 ft
Station: 224+13.93 Offset: 27.2' RT
Ground Elevation: 729.97 ft

	Casing	Sampler
Type:	WASH BORE	SS
I.D.:	4 in	1.5 in
Hammer Wt:	300	140 lb.
Hammer Fall:	30 in.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations

Date	Depth (ft)	Notes

ABUTMENT 2
BOT PC
EL = 716.5'

EST. BOT PILE
EL = 699.0'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate min/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		S-1: Brown cmf SAND, little cmf Gravel, grass/organics, Rec. = 0.75 ft, 0.0 ft - 2.0 ft, Environmental Sample - no sample taken				4-6-13-17 (19)				
		S-2: Brown cmf SAND, little cmf Gravel, grass/organics, Rec. = 0.42 ft, 2.0 ft - 4.0 ft, Environmental Sample - no sample taken				15-12-9-7 (21)				
5		S-3: Grey cm(-)f SAND, some (+) f Gravel, little (+) Silt, Rec. = 1.0 ft, 4.0 ft - 6.0 ft				9-8-8-5 (12)				
		S-4: Grey cm(-)f SAND, some (+) f Gravel, little (+) Silt, Rec. = 1.17 ft, 6.0 ft - 8.0 ft				6-7-11-7 (18)	6.2	32.0	50.0	18.0
		S-5: Grey cm(-)f SAND, some (+) f Gravel, little (+) Silt, Rec. = 0.5 ft, 8.0 ft - 10.0 ft				9-8-10-16 (18)				
10		S-6: Tan/Dark Brown c(-)mf SAND, trace f Gravel, trace Silt, Rec. = 1.17 ft, 10.0 ft - 12.0 ft				8-10-10-10 (20)				
15		S-7: Brown f SAND, some Silt, trace (-) f Gravel, Rec. = 0.75 ft, 15.0 ft - 17.0 ft				6-8-9-11 (17)	17.4	1.0	73.0	26.0
20		S-8: Brown f SAND, some Silt, trace (-) f Gravel, Rec. = 0.75 ft, 20.0 ft - 22.0 ft, Large wood fragment in center of sample Environmental Sample - no sample taken				4-3-1-1 (4)				
		S-9: Grey mf(+) Gravel, some (+) cf Sand, some Silt, Rec. = 1.5 ft, 22.0 ft - 24.0 ft, Decomposed Rock				4-12-21-60/3" (33)	10.6	40.0	32.0	28.0
25		24.0 ft, Approximate Top of Rock 25.0 ft - 30.0 ft, Grey PHYLLITE, slightly weathered, moderately fractured, moderately soft rock, mf grains, 12 pieces	C-1 (30-90)	96.7 (63.3)	3.5 5.5 6.5 6 6.5					
30		30.0 ft - 35.0 ft, Grey PHYLLITE, slightly weathered, slightly fractured, moderately soft rock, mf grains, 3+ pieces	C-2 (60)	100 (91.7)	7.5 8 8 7 7.5					
35		Hole stopped @ 35.0 ft								
40										
45										

Remarks:
1. Mud Rotary drill used. Groundwater not recorded.
2. Hole located as surveyed.

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.

2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT.AGT.GDT 5/6/22

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: H-101
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/21/21 Date Finished: 9/21/21
VTSPG NAD83: N 601215.68 ft E 1599468.47 ft
Station: 222+70.49 Offset: 12.8' LT
Ground Elevation: 730.27 ft

	Casing	Sampler
Type:	AUGER	SS
I.D.:		1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations

Date	Depth (ft)	Notes
09/21/21	20.0	Moist Spoils Noted

ABUTMENT 2
BOT PC
EL = 716.5'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt	36-60-REF-REF (100)				
		S-1: Light Brown cmf SAND, some cmf Gravel, Rec. = 0.75 ft 0.5 ft - 2.0 ft					
		Visual Description:, Light Brown cmf SAND, some (-) cmf Gravel, Intermittant boulders/cobbles					
5							
10		Visual Description:, Dark Brown cmf SAND, and cmf Gravel					
		Visual Description:, Brown cmf SAND, some cmf Gravel					
15							
20		S-2: Grey cmf GRAVEL, trace cmf Sand, Rec. = 0.42 ft, 20.0 ft - 22.0 ft, Decomposed Rock	5-2-1-1 (3)				
		S-3: No Recovery, Rec. = 0.0 ft, 22.0 ft - 24.0 ft	2-1-2-WOH (3)				
25		S-4: Grey SILT, little mf Sand, Rec. = 0.83 ft, 25.0 ft - 27.0 ft, very soft sample	4-5-10-10 (15)				
		S-5: Grey-Brown mf SAND, trace Silt, trace (-) f Gravel, Rec. = 1.08 ft, 27.0 ft - 29.0 ft	15-35-30-65 (65)				
30		Hole stopped @ 29.0 ft					
35							
40							
45							

Remarks:
1. Hole located as surveyed.
2. Environmental Hole, no samples collected. Samples & auger spoils visually classified.
3. H-101MW installed 2ft South of H-101 as-drilled location.

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.

2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT.AGT.GDT 5/6/22

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19J223bor.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: R. GURRIELL
BORING LOG SHEET 4

PLOT DATE: 5/29/2025
DRAWN BY: S. BROWN
CHECKED BY: K. SMITH
SHEET 48 OF 102

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: H-102
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/22/21 Date Finished: 9/22/21
VTSPG NAD83: N 601161.44 ft E 1599480.88 ft
Station: 222+20.01 Offset: 10.6' RT
Ground Elevation: 730.78 ft

	Casing	Sampler
Type:	AUGER	SS
I.D.:		1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations		
Date	Depth (ft)	Notes
09/22/21	17.0	Moist Spoils Noted

ABUTMENT 2
BOT PC
EL = 716.5'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt					
		0.5 ft - 2.0 ft, Concrete					
		S-1: Grey/Brown cmf SAND, trace mf Gravel, Rec. = 1.25 ft, 2.0 ft - 4.0 ft	25-30-26-26 (56)				
5		S-2: Brown cmf SAND, little Silt, trace f Gravel, Rec. = 1.17 ft, 4.0 ft - 6.0 ft	11-21-23-25 (44)				
		Field Note:, Cobbles/Boulder					
		Visual Description:, Brown cmf SAND, little Silt, trace f Gravel					
10							
		Field Note:, Boulder					
15							
20		S-3: Grey-Brown mf SAND, trace Silt, Rec. = 1.25 ft, 20.0 ft - 22.0 ft	8-11-14-16 (25)				
		S-4: SAME, 22.0 ft - 25.0 ft, Spoon over-driven to collect extra soil for environmental sample. SPT values correlate to middle 2ft (22.5 - 24.5) Rec. = 2.0 ft	14-20-27-35 (47)				
25		Hole stopped @ 25.0 ft					
30							
35							
40							
45							

Remarks:
1. Hole located 0.5ft South of survey-marked location.
2. Environmental Hole, no samples collected. Samples & auger spoils visually classified.

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.

2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AOT.GDT 5/6/22

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: H-103
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St John (NEBC), R. Gurriell (H&H)
Date Started: 9/27/21 Date Finished: 9/27/21
VTSPG NAD83: N 601373.36 ft E 1599498.83 ft
Station: 224+31.03 Offset: 15.8' LT
Ground Elevation: 729.13 ft

	Casing	Sampler
Type:	AUGER	SS
I.D.:		1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations		
Date	Depth (ft)	Notes

ABUTMENT 2
BOT PC
EL = 716.5'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt					
		0.5 ft - 1.0 ft, Concrete	27-24-25-21 (49)				
		S-1: Grey/Brown cmf SAND, little cmf Gravel, trace Silt, Rec. = 1.33 ft, 1.0 ft - 3.0 ft					
		S-2: Brown cmf SAND, trace cmf(-) Gravel, Rec. = 0.67 ft, 3.0 ft - 5.0 ft	31-37-44-30 (81)				
5		Visual Description:, Brown mf SAND, little c(-)mf Gravel, little Silt, Boulders/Cobbles throughout					
10							
		Visual Description:, Grey cmf GRAVEL, some cmf Sand, little Silt					
15		S-3: Brown cmf SAND, little Silt, trace cmf Gravel, Rec. = 0.92 ft, 15.0 ft - 17.0 ft	18-7-9-9 (16)				
		S-4: Top 5": SAME, Rec. = 1.58 ft, 17.0 ft - 17.5 ft	6-3-5-6 (9)				
		S-4: Rest: Black mf SAND, some Silt, 17.5 ft - 19.0 ft					
		S-5: Top 6": Brown cmf SAND, little Silt, trace mf Gravel, Rec. = 1.92 ft, 19.0 ft - 19.5 ft	7-7-10-50/5" (17)				
20		S-5: Rest: Black mf SAND, some Silt, rock fragments, 19.5 ft - 21.0 ft					
		S-6: Black/Grey SILT, little, f Sand, little mf Gravel, Rec. = 0.83 ft, 21.0 ft - 23.0 ft, Decomposed Rock	8-9-12-10 (21)				
		S-7: Grey c(-)mf SAND, Rec. = 0.92 ft, 23.0 ft - 25.0 ft	8-10-13-15 (23)				
25		Hole stopped @ 25.0 ft					
30							
35							
40							
45							

Remarks:
1. Hole located 3ft North of survey-marked location.
2. Environmental Hole, no samples collected. Samples & auger spoils visually classified

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.

2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AOT.GDT 5/6/22

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19j223bor.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: R. GURRIELL
BORING LOG SHEET 5

PLOT DATE: 5/29/2025
DRAWN BY: S. BROWN
CHECKED BY: K. SMITH
SHEET 49 OF 102

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

BORING LOG

VTrans Northfield - VT-12 over Dog River
BF 0241(58)

Boring No.: H-104
Page No.: 1 of 1
Pin No.: 19J223
Checked By: A. Sajewska

Boring Crew: M. St.John (NEBC), R. Gurriell (H&H)
Date Started: 9/20/21 Date Finished: 9/20/21
VTSPG NAD83: N 601363.07 ft E 1599529.46 ft
Station: 224+27.33 Offset: 16.3' RT
Ground Elevation: 729.43 ft

	Casing	Sampler
Type:	AUGER	SS
I.D.:		1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Manual/AWJ	
Rig:	MOBILE	C_E = 1

Groundwater Observations		
Date	Depth (ft)	Notes
09/20/21	20.0	Moist Samples Noted

ABUTMENT 2
BOT PC
EL = 716.5'

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt					
		S-1: Brown cmf SAND, little cmf Gravel, trace Silt, Rec. = 0.75 ft, 0.5 ft - 2.0 ft	12-27-31-35 (58)				
		S-2: SAME, Rec. = 1.42 ft, 2.0 ft - 4.0 ft	26-50-36-28 (86)				
5		Visual Description:, Brown c(-)mf SAND, little (+) Silt, trace mf Gravel					
10							
15							
20		S-3: Brown cmf SAND, little Silt, Rec. = 1.67 ft, 20.0 ft - 22.0 ft	6-8-8-9 (14)				
		S-4: Grey cm(+)f SAND, little Silt, Rec. = 1.5 ft, 22.0 ft - 24.0 ft	6-10-22-33 (32)				
25		Hole stopped @ 24.0 ft					

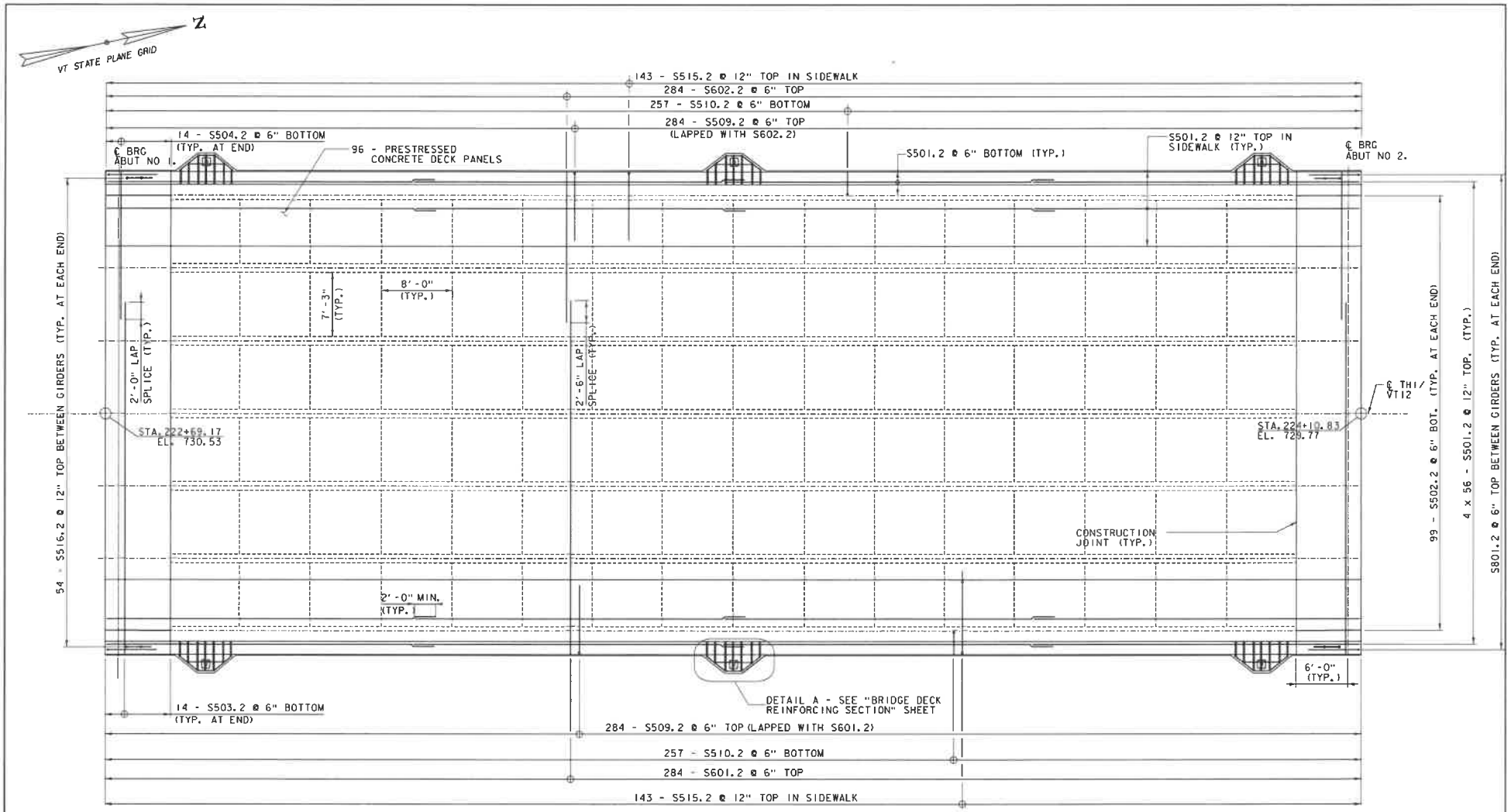
Remarks:
1. Hole located 0.5ft South of survey-marked location.
2. Environmental Hole, no samples collected. Samples & auger spoils visually classified.
3. ATLAS provided a separate report for environmental testing information.

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.

2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AOT.GDT 5/9/22

H&H

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 0241(58)
FILE NAME: z19J223bor.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: S. BROWN
DESIGNED BY: R. GURRIELL	CHECKED BY: K. SMITH
BORING LOG SHEET 6	SHEET 50 OF 102



DECK REINFORCEMENT PLAN

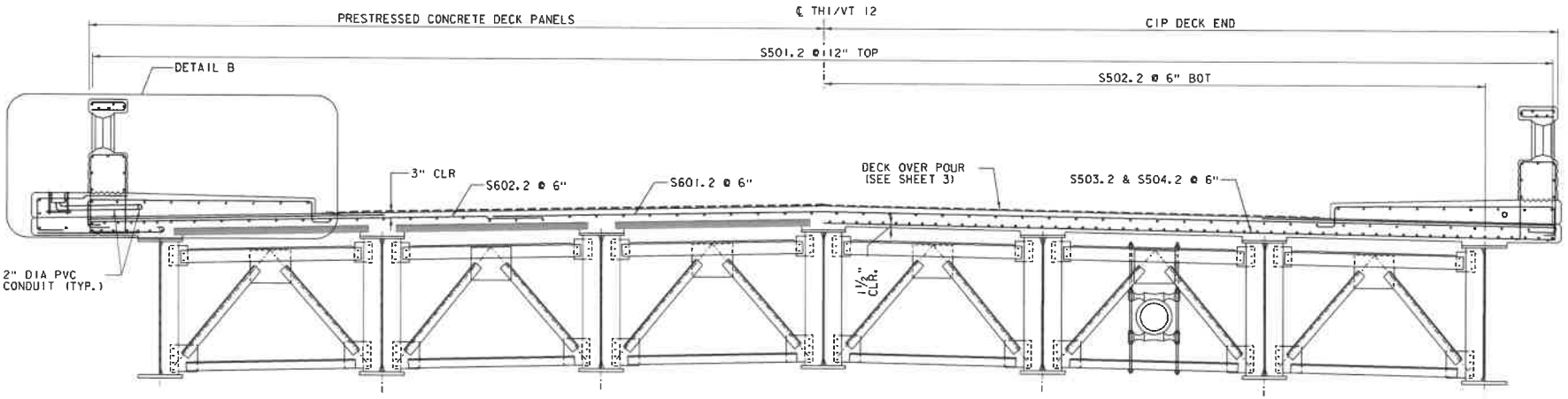
SCALE: 3/16"=1'0"

NOTES:

1. BRIDGE RAIL REINFORCEMENT NOT SHOWN FOR CLARITY. SEE "BRIDGE RAILING DETAILS 1" AND "BRIDGE RAILING DETAILS 2" FOR BRIDGE RAIL REINFORCEMENT DETAILS.
2. SEE "ABUTMENT 1 REINFORCEMENT" AND "ABUTMENT 2 REINFORCEMENT" FOR STEM REINFORCEMENT DETAILS.

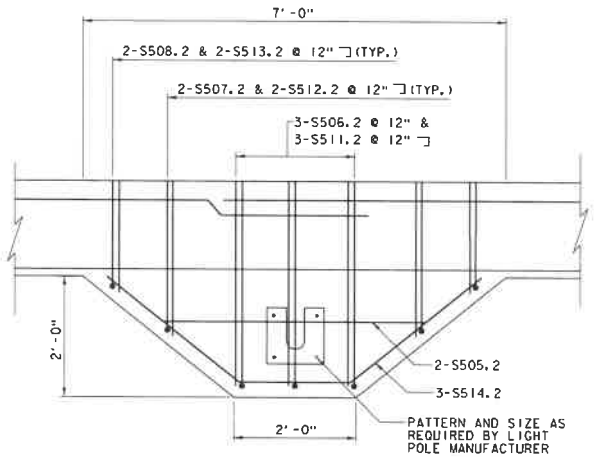
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223sup.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: N. BOB	CHECKED BY: K. SMITH
BRIDGE DECK PLAN	SHEET 51 OF 102



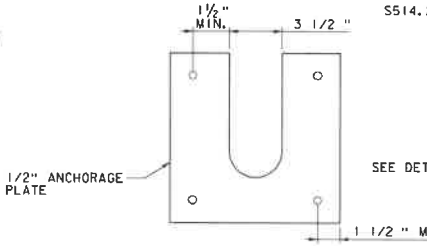
DECK REINFORCING SECTION

SCALE: ½"=1'0"



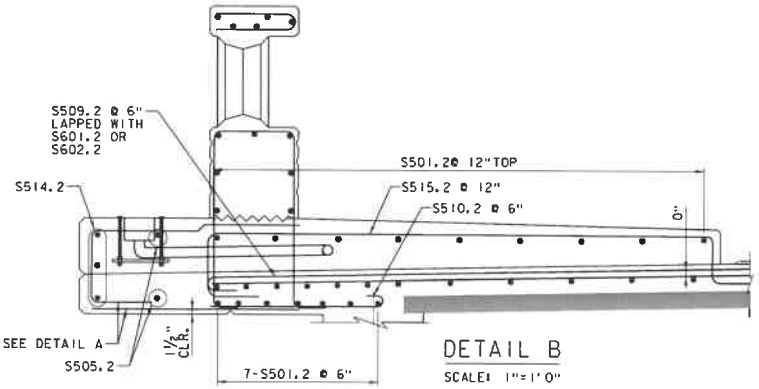
DETAIL A

SCALE: 1"=1'0"



EMBEDDED LIGHT POLE ANCHORAGE PLATE DETAIL

SCALE: 3"=1'0"



DETAIL B

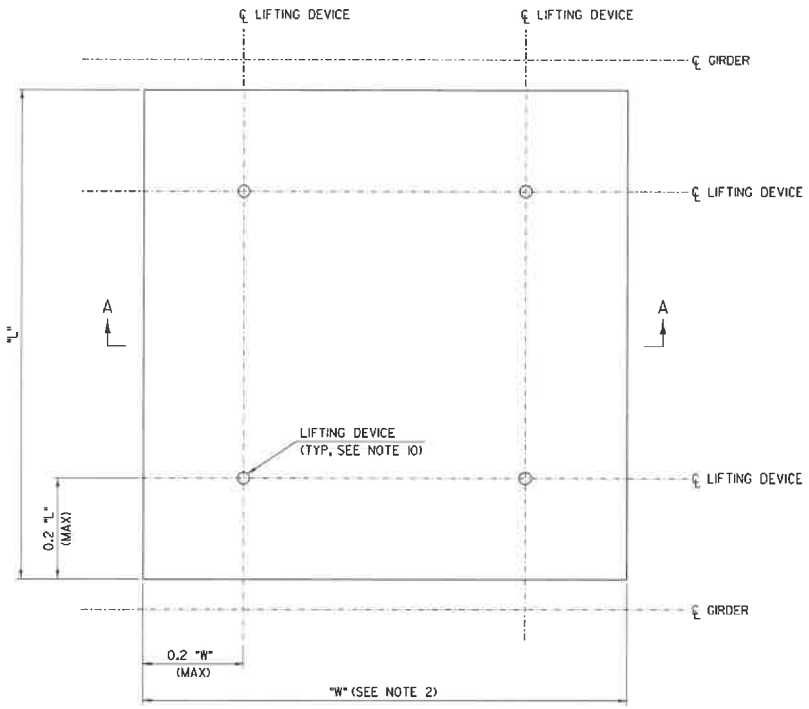
SCALE: 1"=1'0"

NOTES:

1. SEE DRAWING "BRIDGE RAILING DETAILS 1" AND "BRIDGE RAILING DETAILS 2" FOR BRIDGE RAILING REINFORCEMENT DETAILS.
2. CLEAR COVER TO REINFORCEMENT OF 3" UNLESS NOTED OTHERWISE.
3. SEE DRAWING "BRIDGE DECK PLAN" FOR LOCATION OF DETAIL A

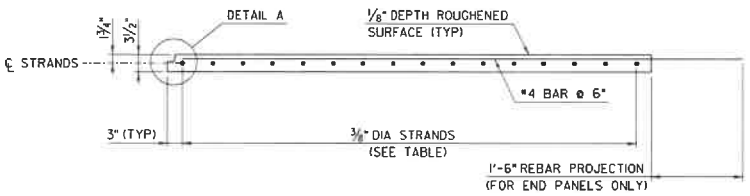
PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223sup.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: N. BOB	CHECKED BY: K. SMITH
BRIDGE DECK REINFORCING SECTION	SHEET 52 OF 102

H&H



PRECAST PRESTRESSED CONCRETE DECK PANEL PLAN

(REINFORCEMENT NOT SHOWN)
SCALE 1" = 1'-0"

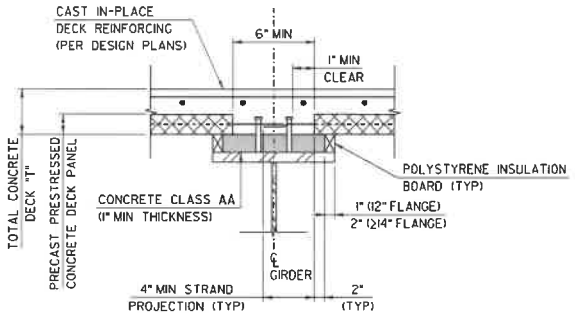


SECTION A-A

SCALE 1" = 1'-0"

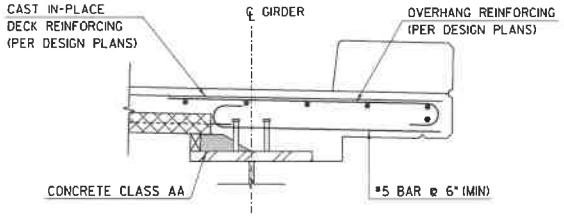
PRECAST PANELS ON STEEL GIRDERS			
MAXIMUM GIRDER SPACING	SLAB "T" *	NUMBER OF STRANDS FLANGE WIDTH ≤ 1'-6"	NUMBER OF STRANDS FLANGE WIDTH ≤ 2'-0"
7'-0"	8½"	9	9
7'-6"	8½"	11	10
8'-0"	8½"	12	12
8'-6"	8½"	14	13
9'-0"	8½"	16	15
9'-6"	8½"	18	17
10'-0"	8½"	20	19

* BARE DECKS WITH 9" THICKNESS AFTER GRINDING SHALL INCLUDE ONE ADDITIONAL STRAND.



BLOCKING DETAIL

SCALE 1" = 1'-0"



TYPICAL OVERHANG SECTION

SCALE 1" = 1'-0"

LEGEND

PRECAST PRESTRESSED CONCRETE DECK PANEL

CONCRETE CLASS AA WITH HIGH RANGE WATER REDUCING ADMIXTURE

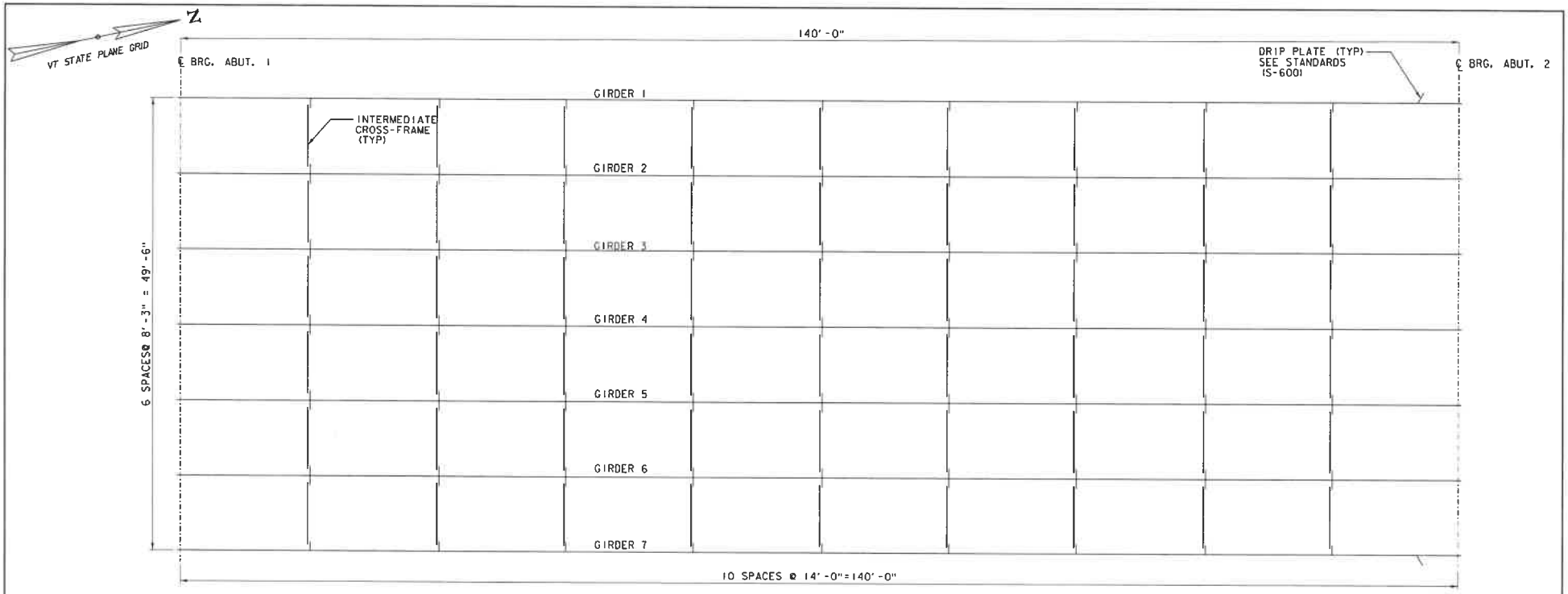
GENERAL NOTES:

1. PRECAST DECK PANELS SHALL CONFORM TO STANDARD SPECIFICATION SECTION 510 - PRESTRESSED CONCRETE. REINFORCING BARS SHALL MEET THE REQUIREMENTS OF SECTION 507 - REINFORCING STEEL.
2. THE TYPICAL PANEL WIDTH IS 8'-0". PANEL WIDTHS OF LESS THAN 8'-0" MAY BE USED. PROVIDE STRANDS IN THE RATIO OF THE SMALLER PANEL WIDTH TO 8'-0", MULTIPLIED BY THE NUMBER OF STRANDS SHOWN, ROUNDING UP TO THE NEXT EVEN NUMBER OF STRANDS. THE MINIMUM PANEL WIDTH IS 3'-0".
3. THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS SHOWING THE EXACT LAYOUT OF PANEL TYPES AND SIZES.
4. PRESTRESSING STRANDS SHALL BE ⅜" DIAMETER, GRADE 270 7 - WIRE LOW RELAXATION STRANDS CONFORMING TO THE REQUIREMENTS OF AASHTO M203 (ASTM A416). INITIAL TENSION SHALL BE 17.2 KIPS PER STRAND.
5. REINFORCING BARS SHALL HAVE THE SAME LEVEL OF CORROSION RESISTANCE AS THE REINFORCING BARS IN THE CAST-IN-PLACE PORTION OF THE DECK.
6. CONCRETE FOR PRECAST PRESTRESSED CONCRETE DECK PANELS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5,000 PSI AND A MINIMUM RELEASE STRENGTH OF 4,000 PSI.
7. DURING ERECTION, PRECAST PRESTRESSED CONCRETE DECK PANELS SHALL ALIGN VERTICALLY TO WITHIN ¼ INCH.
8. POLYSTYRENE INSULATION BOARD SHALL BE CONTINUOUS, HIGH-DENSITY AND SHALL BE CUT IN THE FIELD TO THE REQUIRED THICKNESS.
9. DECK PANELS ARE REQUIRED TO BE GROUTED IN PLACE PRIOR TO PLACEMENT OF THE CAST IN-PLACE DECK. TOP OF GROUT BED SHALL BE A MINIMUM OF 1" BELOW THE STRAND EXTENSIONS.
10. LIFTING DEVICE SELECTION AND DESIGN SHALL BE THE RESPONSIBILITY OF THE FABRICATOR. A MINIMUM OF FOUR DEVICES SHALL BE INSTALLED.
11. REGARDLESS OF THE CURING METHOD FOR THE HAUNCH POUR, FULLY SATURATE CONTINUOUSLY, THE TOP AND SIDE SURFACES OF THE PANELS FOR THREE DAYS AFTER THE HAUNCH POUR AND PRIOR TO THE OVER POUR. PROCEDURE OF THE WETTING METHOD SHALL BE DETERMINED BY THE CONTRACTOR AND SUBMITTED FOR APPROVAL TO THE RESIDENT ENGINEER.
12. TEMPORARY BRACING BETWEEN PANELS SHALL BE PROVIDED AS REQUIRED TO PREVENT PANEL MOVEMENT TRANSVERSE TO THE GIRDERS. TEMPORARY BRACING DETAILS SHALL BE PROVIDED IN THE PANEL FABRICATION DRAWINGS AND/OR ERECTION PLAN.

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

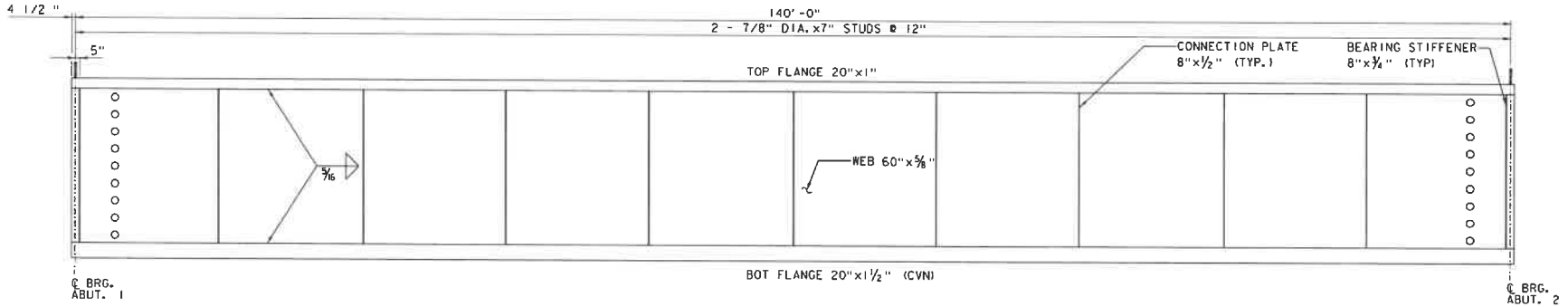
FILE NAME: z19)223sup.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: VTRANS
BRIDGE DECK DETAILS

PLOT DATE: 5/29/2025
DRAWN BY: VTRANS
CHECKED BY: VTRANS
SHEET 53 OF 102



FRAMING PLAN

SCALE: 3/16"=1'-0"

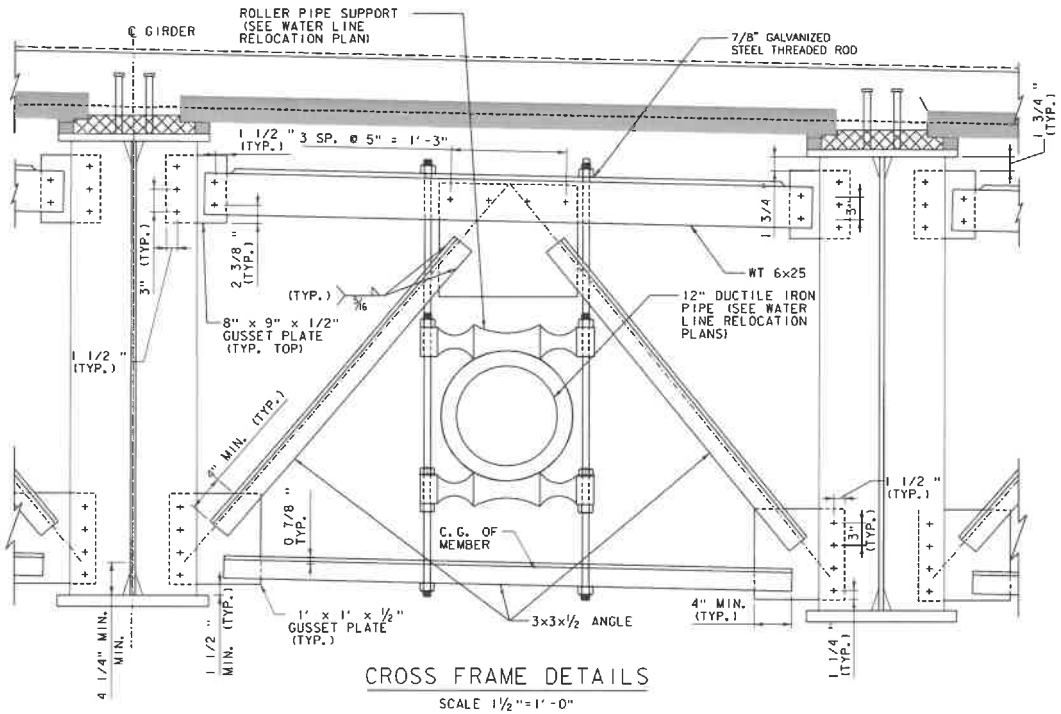


TYPICAL GIRDER ELEVATION

NOT TO SCALE

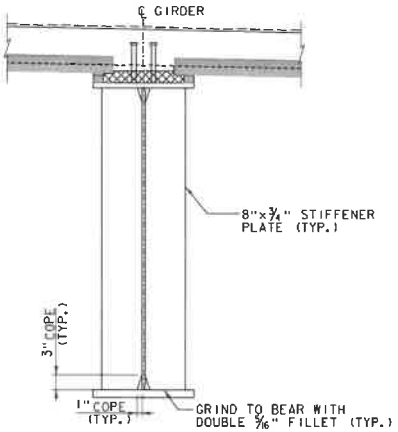
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z191223sup.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: N. BOB	CHECKED BY: K. SMITH
FRAMING PLAN	SHEET 54 OF 102



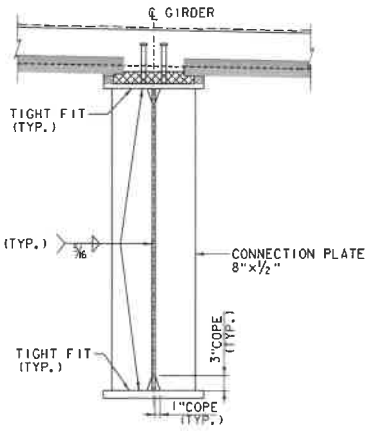
CROSS FRAME DETAILS

SCALE 1½"=1'-0"



ABUTMENT BEARING STIFFENER DETAIL

SCALE 1"=1'-0"



INTERMEDIATE CONNECTION PLATE DETAIL

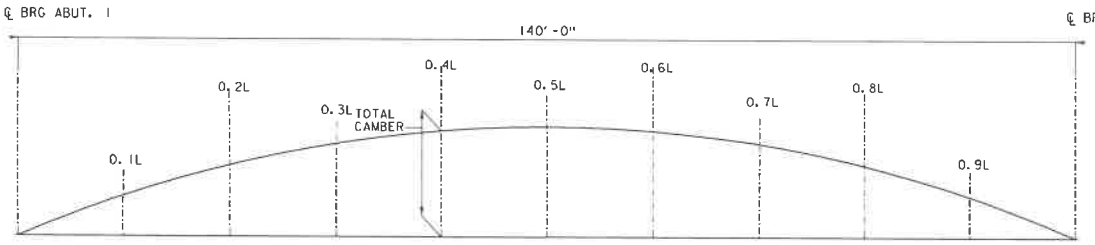
SCALE 1"=1'-0"

NOTES:

1. ALL CROSS FRAME GUSSET PLATES ARE TO ATTACH TO THE BACK OF CONNECTION PLATES

H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223sup.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: N. BOB	CHECKED BY: K. SMITH
GIRDER DETAILS	SHEET 55 OF 102



CAMBER DIAGRAM

NOT TO SCALE

CAMBER TABLE

GIRDER		CL OF BRG ABUT. 1	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	CL OF BRG ABUT. 2
1	I. STEEL DL (IN.)	0.00	-0.48	-0.90	-1.23	-1.45	-1.52	-1.45	-1.23	-0.90	-0.48	0.00
	II. CONCRETE DL (IN.)	0.00	-1.39	-2.62	-3.59	-4.21	-4.42	-4.21	-3.59	-2.62	-1.39	0.00
	III. SUPERIMPOSED DL (IN.)	0.00	-0.44	-0.83	-1.14	-1.33	-1.40	-1.33	-1.14	-0.83	-0.44	0.00
	TOTAL (IN.)	0.00	-2.30	-4.35	-5.96	-6.98	-7.33	-6.98	-5.96	-4.35	-2.30	0.00
2	I. STEEL DL (IN.)	0.00	-0.48	-0.90	-1.23	-1.45	-1.52	-1.45	-1.23	-0.90	-0.48	0.00
	II. CONCRETE DL (IN.)	0.00	-1.72	-3.26	-4.46	-5.22	-5.48	-5.22	-4.46	-3.26	-1.72	0.00
	III. SUPERIMPOSED DL (IN.)	0.00	-0.42	-0.79	-1.08	-1.27	-1.33	-1.27	-1.08	-0.79	-0.42	0.00
	TOTAL (IN.)	0.00	-2.62	-4.95	-6.78	-7.94	-8.33	-7.94	-6.78	-4.95	-2.62	0.00
3	I. STEEL DL (IN.)	0.00	-0.48	-0.90	-1.23	-1.45	-1.52	-1.45	-1.23	-0.90	-0.48	0.00
	II. CONCRETE DL (IN.)	0.00	-1.72	-3.26	-4.46	-5.22	-5.48	-5.22	-4.46	-3.26	-1.72	0.00
	III. SUPERIMPOSED DL (IN.)	0.00	-0.42	-0.79	-1.08	-1.27	-1.33	-1.27	-1.08	-0.79	-0.42	0.00
	TOTAL (IN.)	0.00	-2.62	-4.95	-6.78	-7.94	-8.33	-7.94	-6.78	-4.95	-2.62	0.00
4	I. STEEL DL (IN.)	0.00	-0.48	-0.90	-1.23	-1.45	-1.52	-1.45	-1.23	-0.90	-0.48	0.00
	II. CONCRETE DL (IN.)	0.00	-1.72	-3.26	-4.46	-5.22	-5.48	-5.22	-4.46	-3.26	-1.72	0.00
	III. SUPERIMPOSED DL (IN.)	0.00	-0.42	-0.79	-1.08	-1.27	-1.33	-1.27	-1.08	-0.79	-0.42	0.00
	TOTAL (IN.)	0.00	-2.62	-4.95	-6.78	-7.94	-8.33	-7.94	-6.78	-4.95	-2.62	0.00
5	I. STEEL DL (IN.)	0.00	-0.48	-0.90	-1.23	-1.45	-1.52	-1.45	-1.23	-0.90	-0.48	0.00
	II. CONCRETE DL (IN.)	0.00	-1.72	-3.26	-4.46	-5.22	-5.48	-5.22	-4.46	-3.26	-1.72	0.00
	III. SUPERIMPOSED DL (IN.)	0.00	-0.42	-0.79	-1.08	-1.27	-1.33	-1.27	-1.08	-0.79	-0.42	0.00
	TOTAL (IN.)	0.00	-2.62	-4.95	-6.78	-7.94	-8.33	-7.94	-6.78	-4.95	-2.62	0.00
6	I. STEEL DL (IN.)	0.00	-0.48	-0.90	-1.23	-1.45	-1.52	-1.45	-1.23	-0.90	-0.48	0.00
	II. CONCRETE DL (IN.)	0.00	-1.72	-3.26	-4.46	-5.22	-5.48	-5.22	-4.46	-3.26	-1.72	0.00
	III. SUPERIMPOSED DL (IN.)	0.00	-0.42	-0.79	-1.08	-1.27	-1.33	-1.27	-1.08	-0.79	-0.42	0.00
	TOTAL (IN.)	0.00	-2.62	-4.95	-6.78	-7.94	-8.33	-7.94	-6.78	-4.95	-2.62	0.00
7	I. STEEL DL (IN.)	0.00	-0.48	-0.90	-1.23	-1.45	-1.52	-1.45	-1.23	-0.90	-0.48	0.00
	II. CONCRETE DL (IN.)	0.00	-1.39	-2.62	-3.59	-4.21	-4.42	-4.21	-3.59	-2.62	-1.39	0.00
	III. SUPERIMPOSED DL (IN.)	0.00	-0.44	-0.83	-1.14	-1.33	-1.40	-1.33	-1.14	-0.83	-0.44	0.00
	TOTAL (IN.)	0.00	-2.30	-4.35	-5.96	-6.98	-7.33	-6.98	-5.96	-4.35	-2.30	0.00

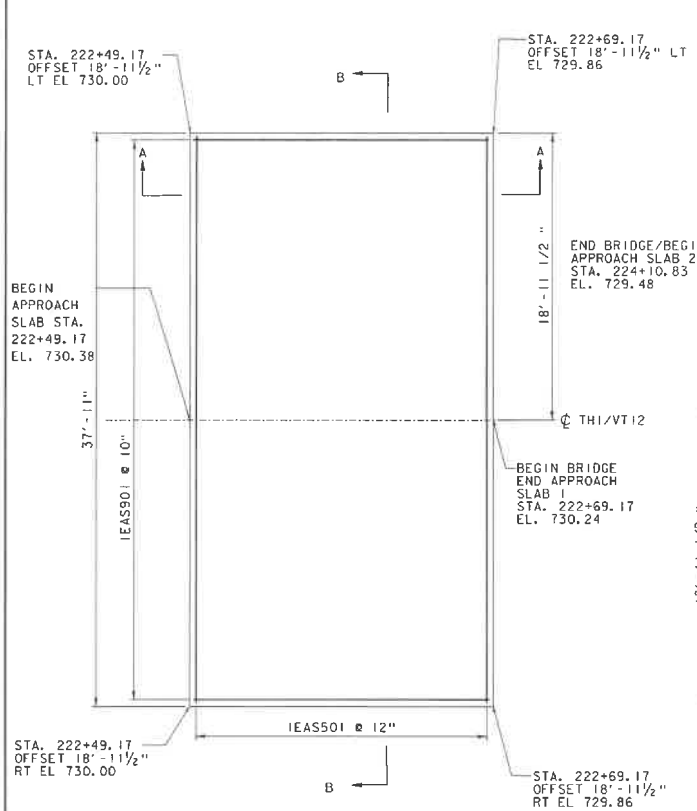
H&H

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 024I(58)

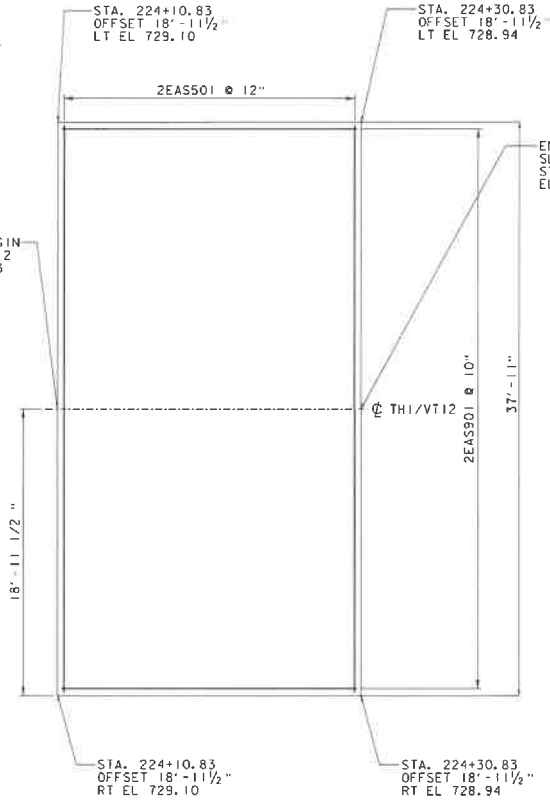
FILE NAME: z19J223sup.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: N. BOB
CAMBER TABLE

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 56 OF 102



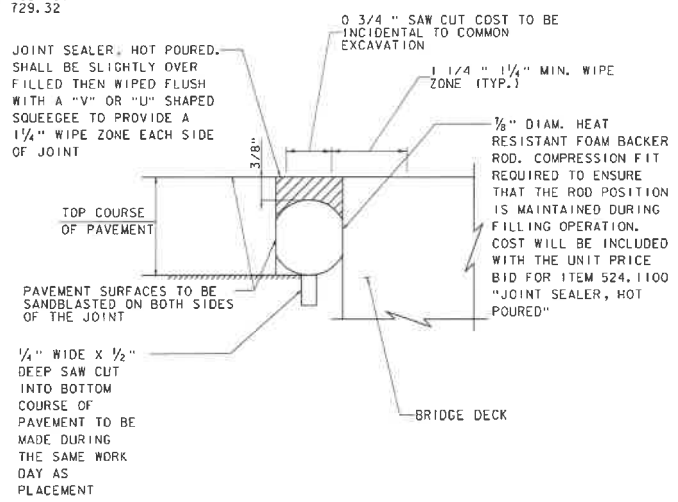
APPROACH SLAB 1 PLAN

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



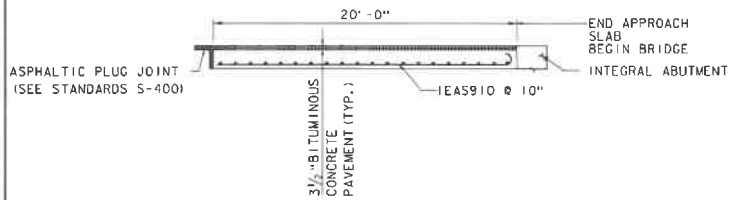
APPROACH SLAB 2 PLAN

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



SAW CUT PAVEMENT JOINT DETAIL

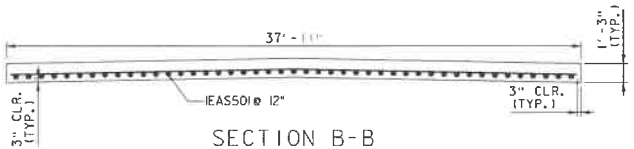
(NOT TO SCALE)



SECTION A-A

SCALE: ¼"=1'-0"

NOTE: APPROACH SLAB 1 SHOWN, APPROACH SLAB 2 SIMILAR



SECTION B-B

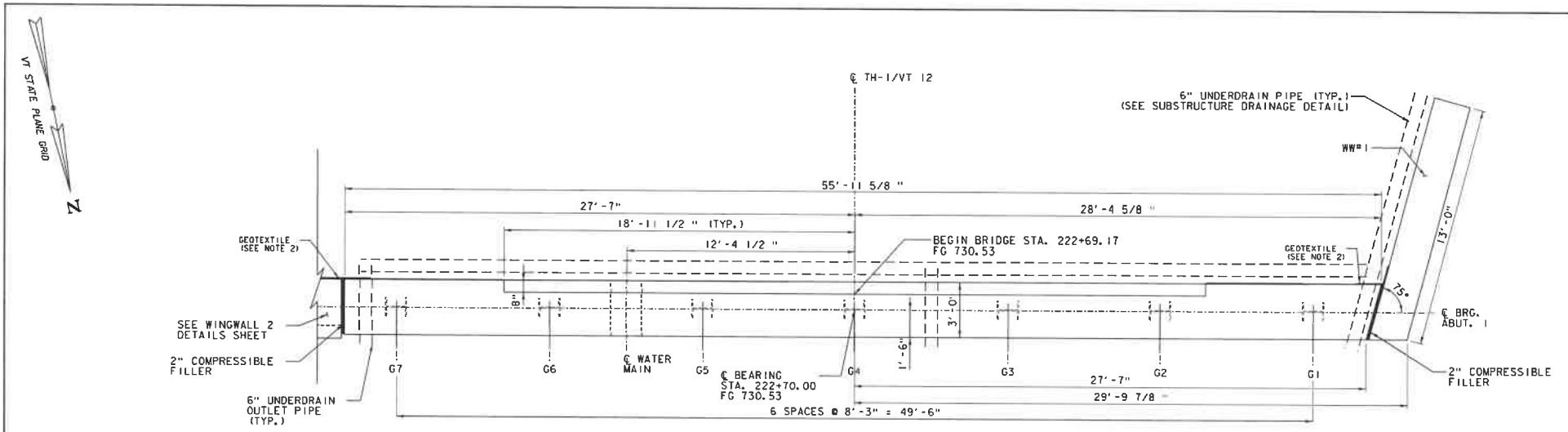
SCALE: ¼"=1'-0"

NOTE: APPROACH SLAB 1 SHOWN, APPROACH SLAB 2 SIMILAR. BITUMINOUS CONCRETE PAVEMENT NOT SHOWN FOR CLARITY.

NOTES:

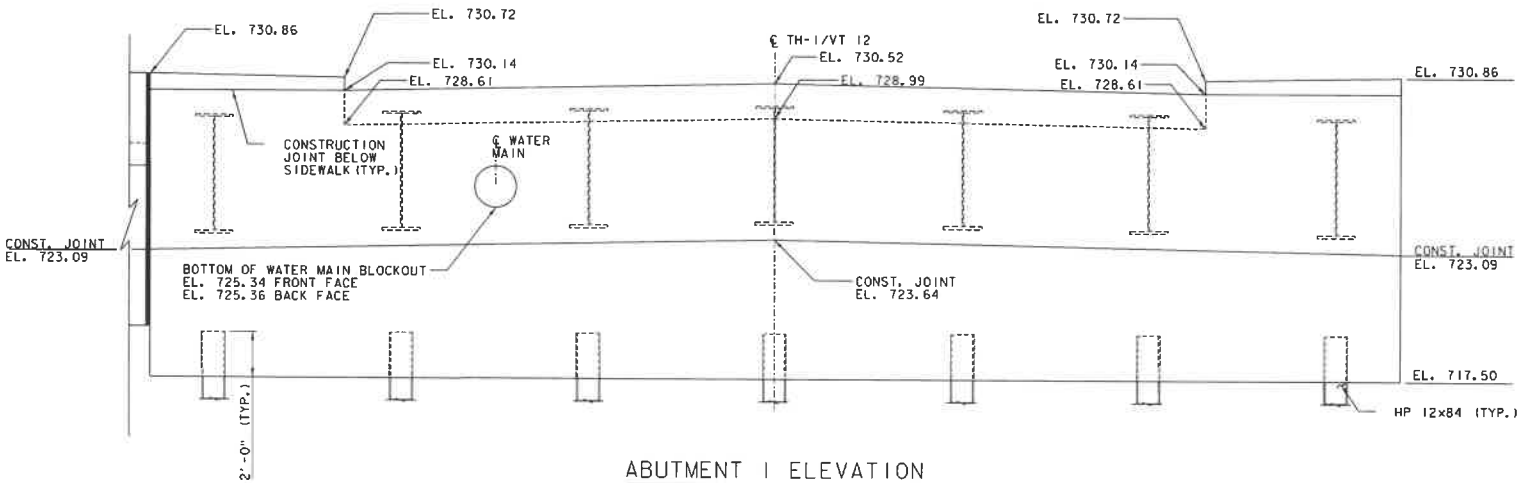
1. ALL ELEVATIONS ARE GIVEN AT THE TOP OF APPROACH SLABS.

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19]223sup_approach.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: C. JAMISON	CHECKED BY: K. SMITH
APPROACH SLAB DETAILS SHEET	SHEET 57 OF 102



ABUTMENT 1 PLAN

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



ABUTMENT 1 ELEVATION

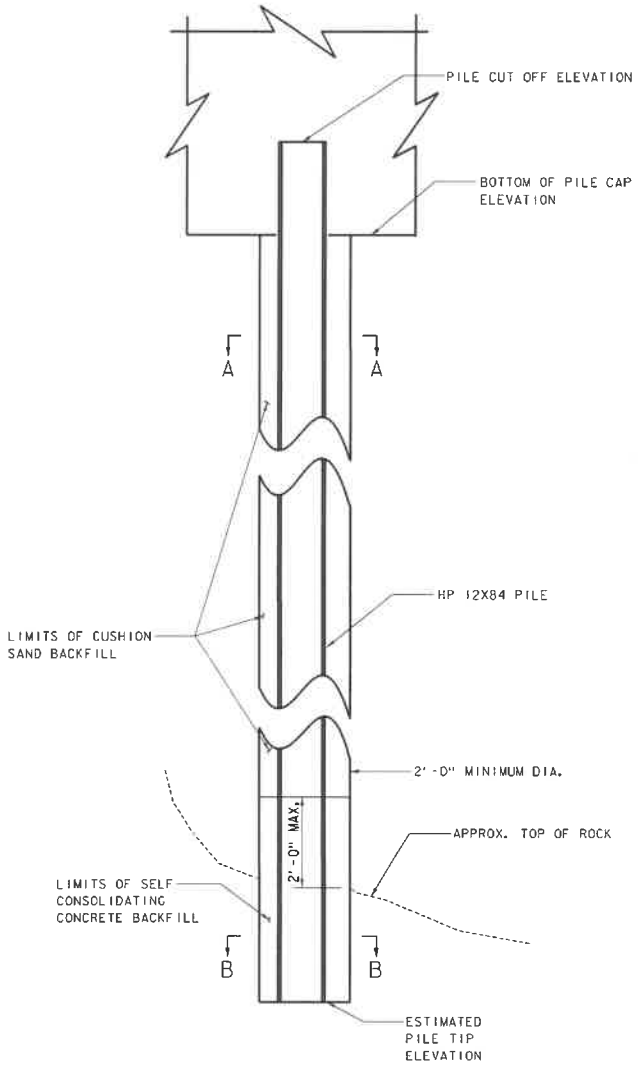
SCALE: 3/8"=1'-0"

NOTES:

1. ALL ELEVATIONS ARE TAKEN AT THE FRONT FACE OF THE ABUTMENT UNLESS INDICATED OTHERWISE.
2. PLACE 3' WIDE GEOTEXTILE FABRIC ON BACK FACE OF ABUTMENT, CENTERED AT 2" COMPRESSIBLE FILLER. PAYMENT FOR GEOTEXTILE TO BE SUBSIDIARY TO ITEM 501.3800, "PERFORMANCE-BASED CONCRETE, CLASS PCS".

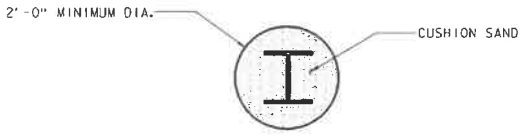
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19J223sub.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
ABUTMENT 1 PLAN SHEET	SHEET 58 OF 102



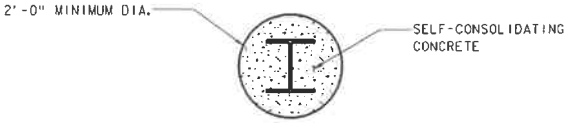
TYPICAL ABUTMENT PILE SOCKET DETAIL

SCALE: NOT TO SCALE



SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE

NOTES:

1. FOR WINGWALL PILE INFORMATION REFER TO WINGWALL PILE DETAIL SHEET.
2. SELF-CONSOLIDATING CONCRETE (SCC) SHALL BE PLACED UNTIL UNCONTAMINATED SCC SURPASSES THE LIMITS OF THE ROCK SOCKET, BUT DOES NOT EXTEND PAST THE LIMITS OF SCC SHOWN ON THE PLANS. THE REMAINDER OF THE DRILLED PILE SOCKET SHALL BE BACKFILLED WITH CUSHION SAND.
3. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IF ACTUAL TOP OF ROCK ELEVATIONS ARE OUTSIDE THE RANGES SHOWN IN THE ABUTMENT PILE SUMMARY TABLE.

ABUTMENT PILE SUMMARY TABLE

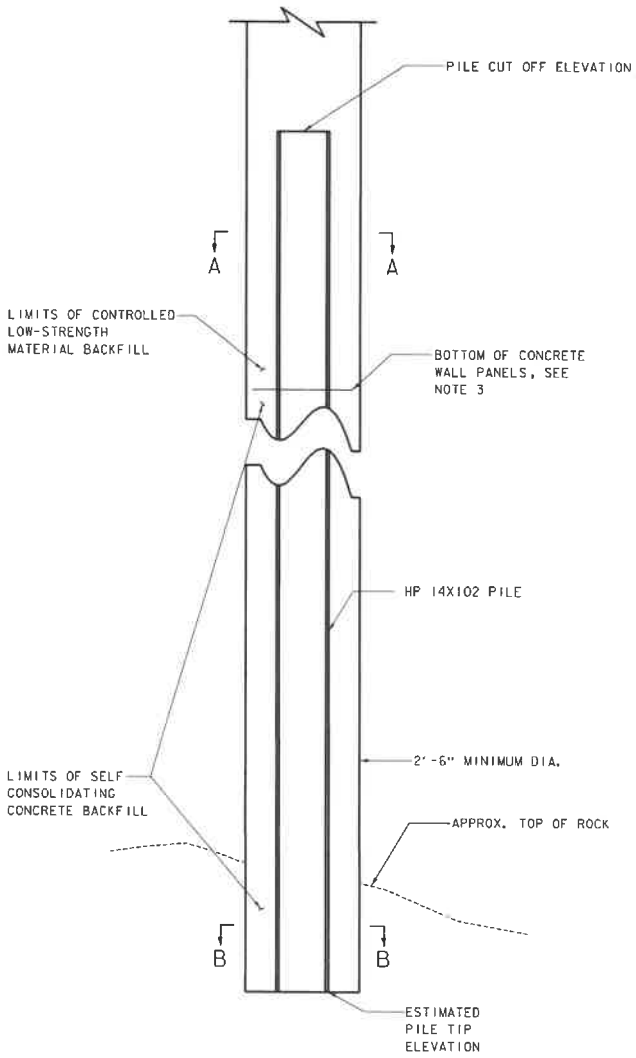
SUBSTRUCTURE UNIT	PILE SIZE	MIN. DRILL HOLE DIA. (FT)	ESTIMATED TOP OF ROCK ELEVATION (FT)		REQUIRED ROCK SOCKET LENGTH (FT)	ESTIMATED PILE TIP ELEVATION (FT)		PILE CUTOFF ELEVATION (FT)
			FROM	TO		FROM	TO	
ABUTMENT 1	HP 12x84	2	698.5	700.3	7	691.5	693.3	719.5
ABUTMENT 2	HP 12x84	2	701.6	706.0	7	694.6	699.0	718.5

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

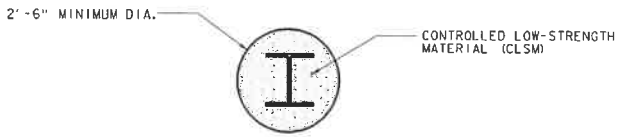
FILE NAME: z19J223h_pile_grouting.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: S. BROWN
ABUTMENT PILE DETAIL SHEET

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 59 OF 102



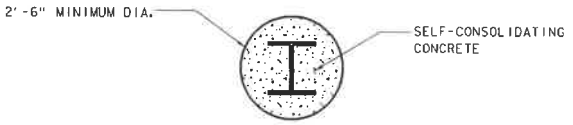
TYPICAL WINGWALL PILE SOCKET DETAIL

SCALE: NOT TO SCALE



SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE

NOTES:

1. FOR ABUTMENT PILE INFORMATION REFER TO ABUTMENT PILE DETAIL SHEET.
2. SELF-CONSOLIDATING CONCRETE SHALL BE PLACED TO THE BOTTOM OF THE CONCRETE WALL PANELS. THE REMAINDER OF THE DRILLED PILE SOCKET SHALL BE BACKFILLED WITH CONTROLLED LOW-STRENGTH MATERIAL (CLSM).
3. CONCRETE WALL PANELS NOT SHOWN FOR CLARITY.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF ROCK IS NOT ENCOUNTERED 5'-0" BELOW THE ESTIMATED TOP OF ROCK ELEVATION SHOWN IN THE WINGWALL PILE SUMMARY TABLE. DRILLING OPERATIONS SHALL CEASE AND THE ENGINEER SHALL BE NOTIFIED IF ROCK IS NOT ENCOUNTERED UPON REACHING THE MAXIMUM PILE TIP ELEVATION IN SOIL SHOWN IN THE WINGWALL PILE SUMMARY TABLE.

WINGWALL PILE SUMMARY TABLE

SUBSTRUCTURE UNIT	PILE SIZE	MIN. DRILL HOLE DIA. (FT)	ESTIMATED TOP OF ROCK ELEVATION (FT)	REQUIRED ROCK SOCKET LENGTH (FT)	ESTIMATED PILE TIP ELEVATION IN ROCK (FT)	MAXIMUM PILE TIP ELEVATION IN SOIL (FT)
WINGWALL 2	HP 14X102	2.5	700.3	7	693.3	690.0
WINGWALL 3	HP 14X102	2.5	701.6	7	694.6	690.0

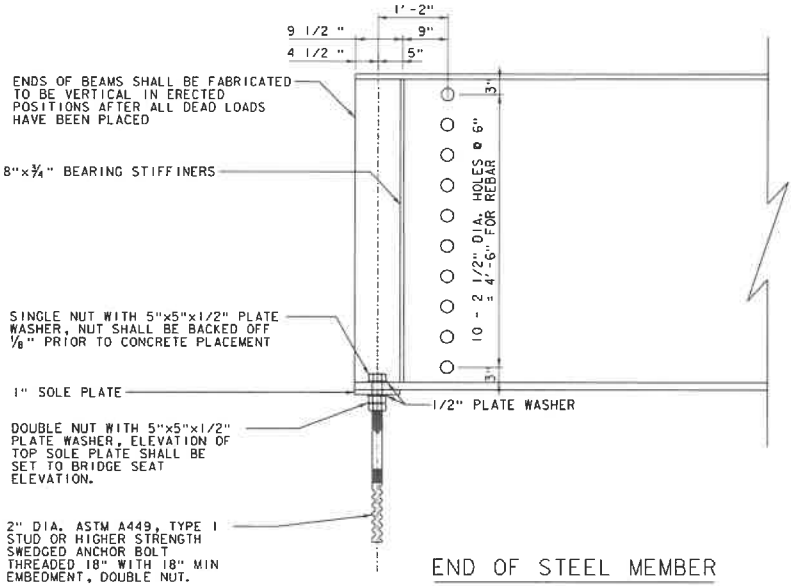
H&H

PROJECT NAME: NORTHFIELD

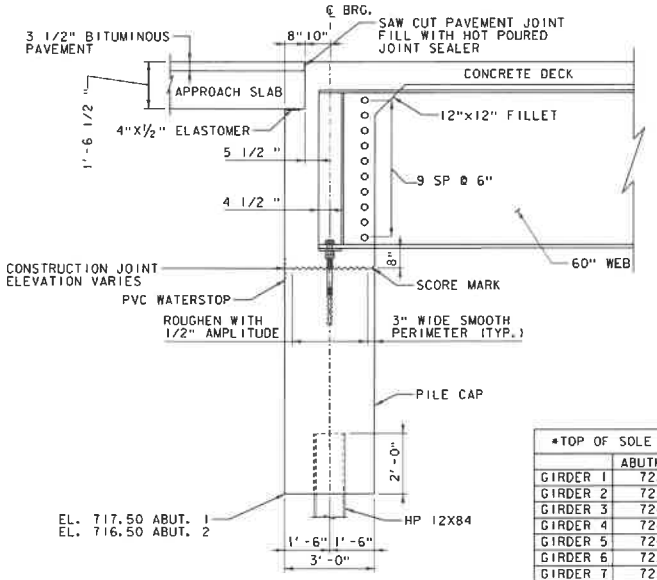
PROJECT NUMBER: BF 024I(58)

FILE NAME: z191223h_pile_grouting.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: S. BROWN
WINGWALL PILE DETAIL SHEET

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 60 OF 102



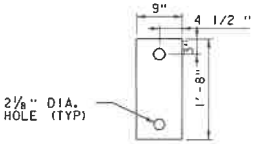
END OF STEEL MEMBER
ELEVATION VIEW AT ABUTMENT
SCALE: 1"=1'-0"



ABUTMENT SECTION
SCALE: ½"=1'-0"

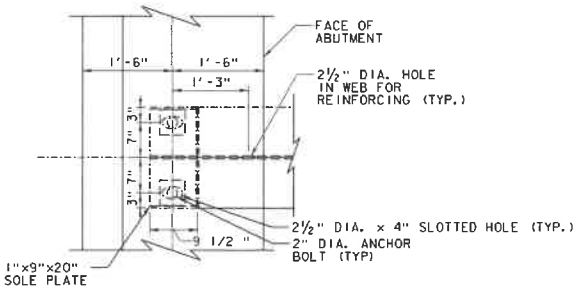
*TOP OF SOLE PLATE ELEVATIONS		
	ABUTMENT 1	ABUTMENT 2
GIRDER 1	723.83	723.07
GIRDER 2	723.99	723.24
GIRDER 3	724.16	723.40
GIRDER 4	724.32	723.57
GIRDER 5	724.16	723.40
GIRDER 6	723.99	723.24
GIRDER 7	723.83	723.07

*SEE NOTE 7.



1" SOLE PLATE DETAIL
SCALE: 1"=1'-0"

1/2" PLATE WASHER DETAIL
SCALE: 1"=1'-0"



END OF STEEL MEMBER
PLAN VIEW AT ABUTMENT
SCALE: 1"=1'-0"

NOTES:

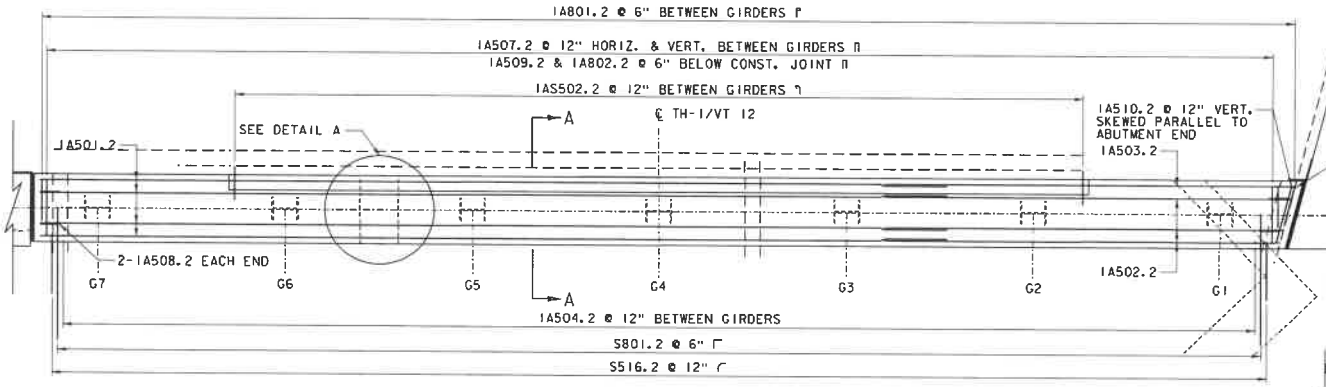
1. PAYMENT FOR THE SOLE PLATES, ANCHOR BOLTS, WASHERS AND NUTS SHALL BE INCIDENTAL TO ITEM 506.5500, STRUCTURAL STEEL, PLATE GIRDER.
2. ANCHOR BOLTS SHALL BE 2" DIAMETER, TYPE 1 BOLTS MEETING ASTM F 1554, GR 55. NUTS SHALL MEET ASTM A563.
3. ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE CONCRETE IS PLACED. NO DRILLING WIL BE ALLOWED. ALL ASSOCIATED COSTS SHALL BE INCIDENTAL TO ITEM 501.3700, "PERFORMANCE-BASED CONCRETE, CLASS PCD".
4. ALL STEEL IN BEARING DEVICE ASSEMBLY SHALL BE AASHTO M270M/M270 GR 50.
5. SUBSTITUTIONS FOR BEARING DEVICE ASSEMBLY COMPONENT MATERIALS AND SIZES SHALL BE DETAILED ON THE FABRICATION DRAWINGS. ALL SUBSTITUTIONS SHALL BE APPROVED BY THE PROJECT MANAGER PRIOR TO FABRICATION AS PER SECTION 506.04.
6. THE CONTRACTOR SHALL GREASE THE TOP SURFACE OF THE SOLE PLATES PRIOR TO PLACEMENT OF THE GIRDERS. FOLLOWING GIRDER ERECTION ALL EXCESS GREASE SHALL BE WIPED FROM THE SOLE PLATES.
7. THE CONTRACTOR SHALL VERIFY THAT ALL ANCHOR BOLTS ARE INSTALLED PLUMB AND REMAIN PLUMB FOLLOWING GIRDER ERECTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

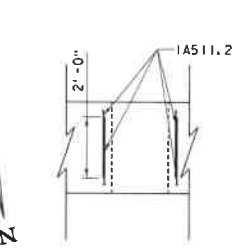
FILE NAME: z19J223sub.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: S. BROWN
ABUTMENT CONNECTION DETAIL

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 61 OF 102



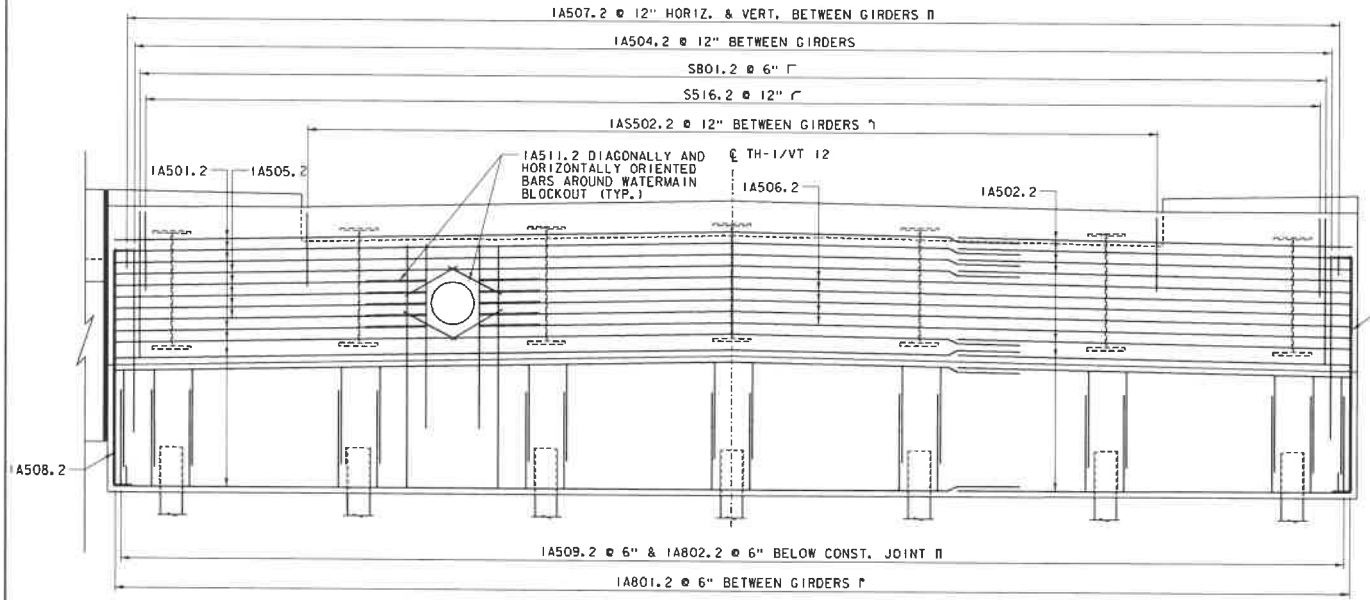
ABUTMENT 1 REINFORCEMENT PLAN

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



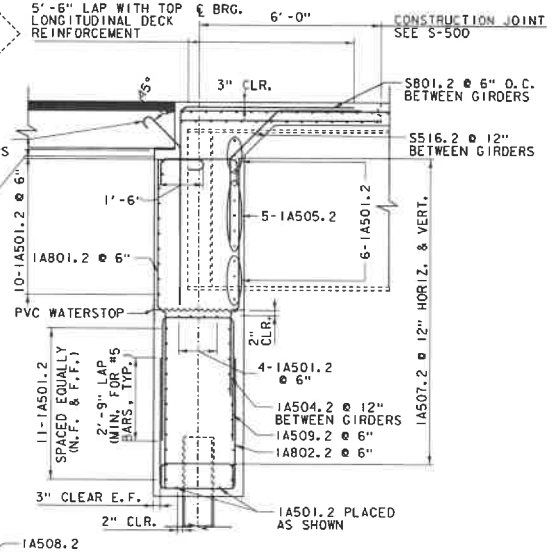
DETAIL A

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



ABUTMENT 1 REINFORCEMENT ELEVATION

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



SECTION A-A

ABUTMENT REINFORCING

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

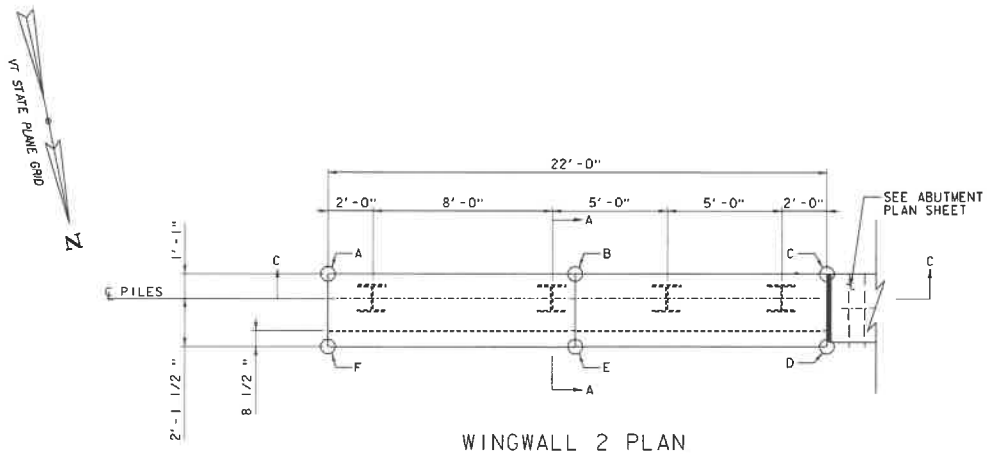
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE

1. TYPICAL SECTION SHOWN FOR ABUTMENT 1, ABUTMENT 2 REINFORCING IS SIMILAR
2. SIDEWALK AND CURB REINFORCEMENT NOT SHOWN FOR CLARITY, SEE DECK REINFORCING DRAWINGS

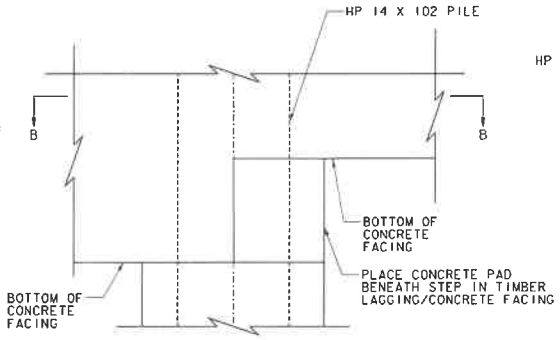
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19I223sub.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
ABUTMENT 1 REINFORCEMENT	SHEET 62 OF 102



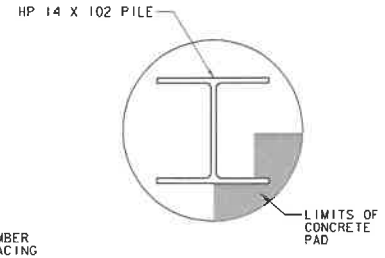
WINGWALL 2 PLAN

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



DETAIL A

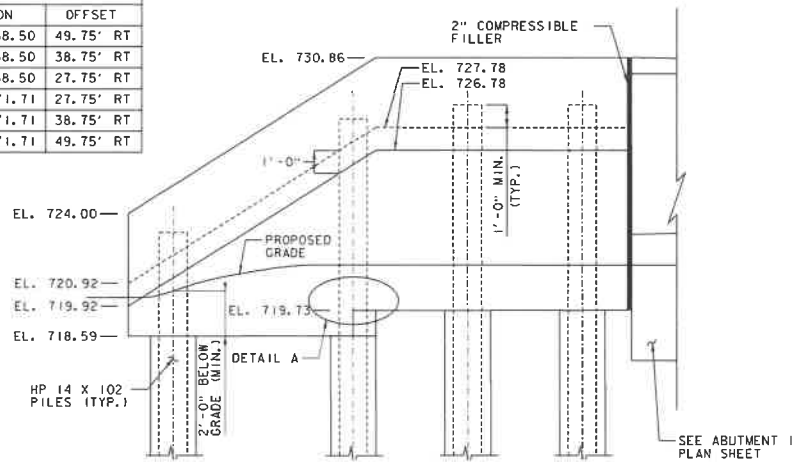
SCALE: 1½"=1'-0"



SECTION B-B

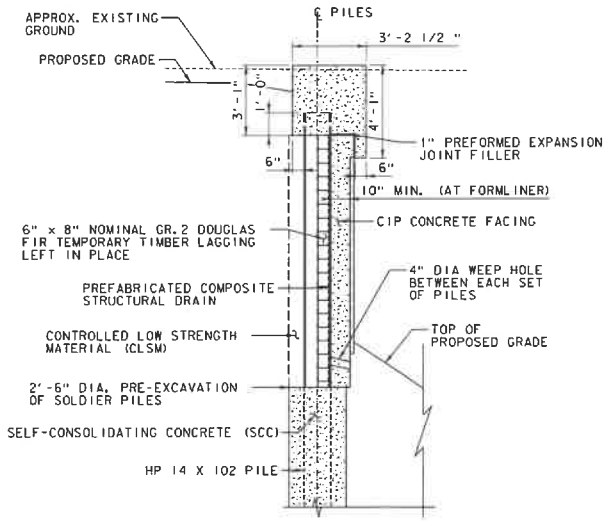
SCALE: 1½"=1'-0"

WINGWALL 2 GEOMETRY		
POINT	STATION	OFFSET
A	STA 222+68.50	49.75' RT
B	STA 222+68.50	38.75' RT
C	STA 222+68.50	27.75' RT
D	STA 222+71.71	27.75' RT
E	STA 222+71.71	38.75' RT
F	STA 222+71.71	49.75' RT



WINGWALL 2 ELEVATION

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



SECTION A-A

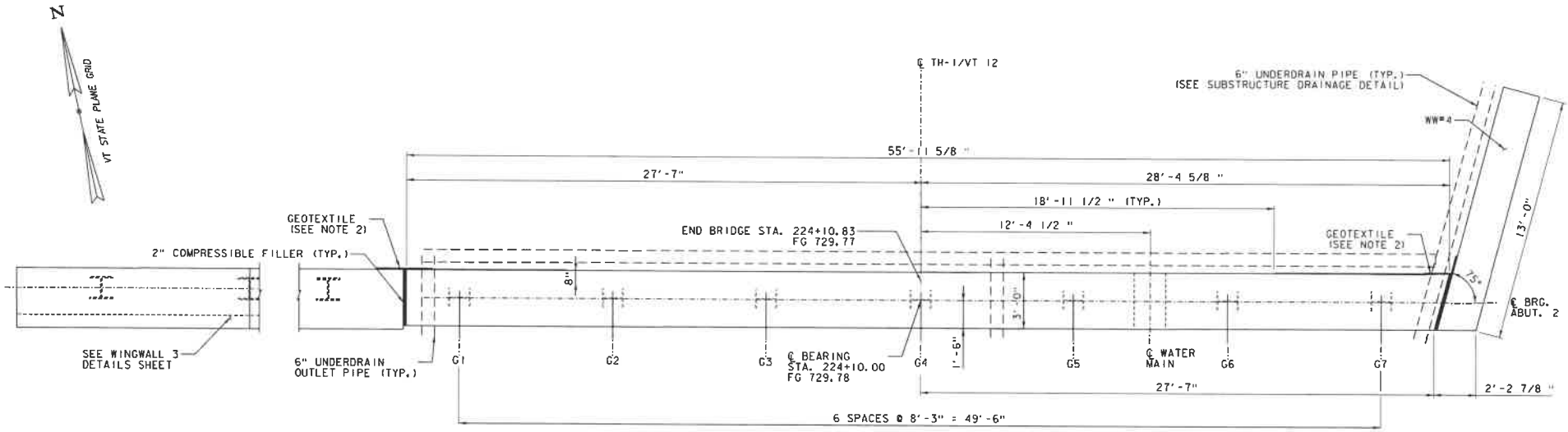
SCALE: 3/8"=1'-0"

NOTE

1. SEE "SOLDIER PILE WALL DETAILS 3" SHEET FOR SECTION C-C VIEW

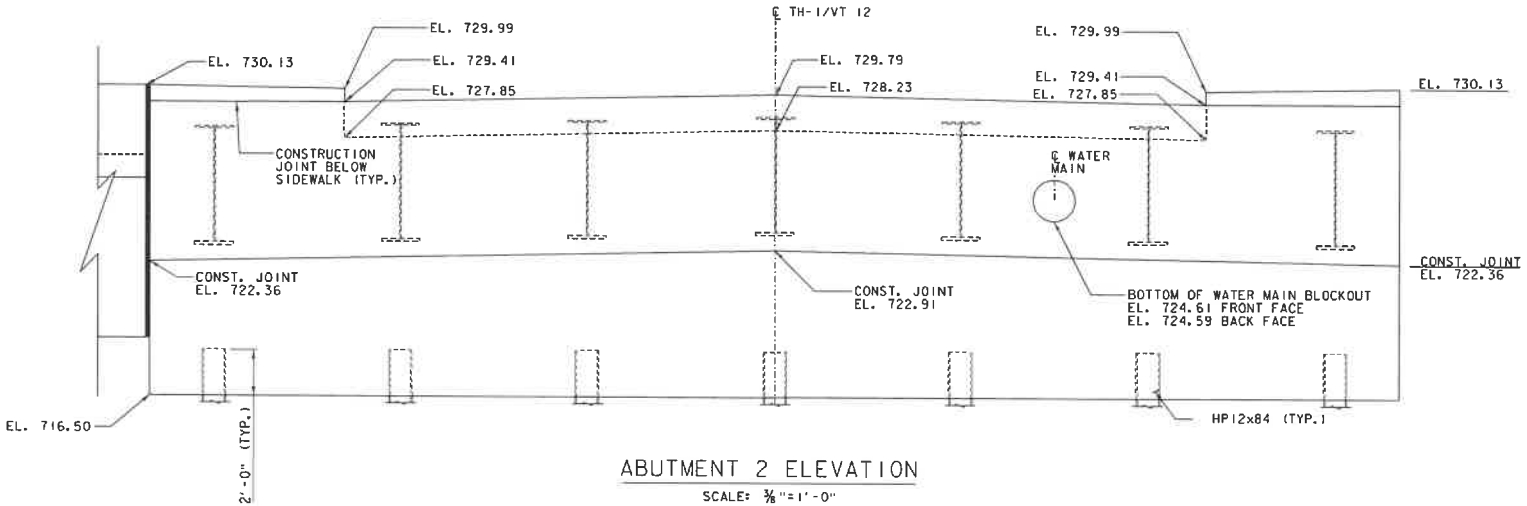
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223sub.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
WINGWALL 2 DETAILS	SHEET 63 OF 102



ABUTMENT 2 PLAN

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



ABUTMENT 2 ELEVATION

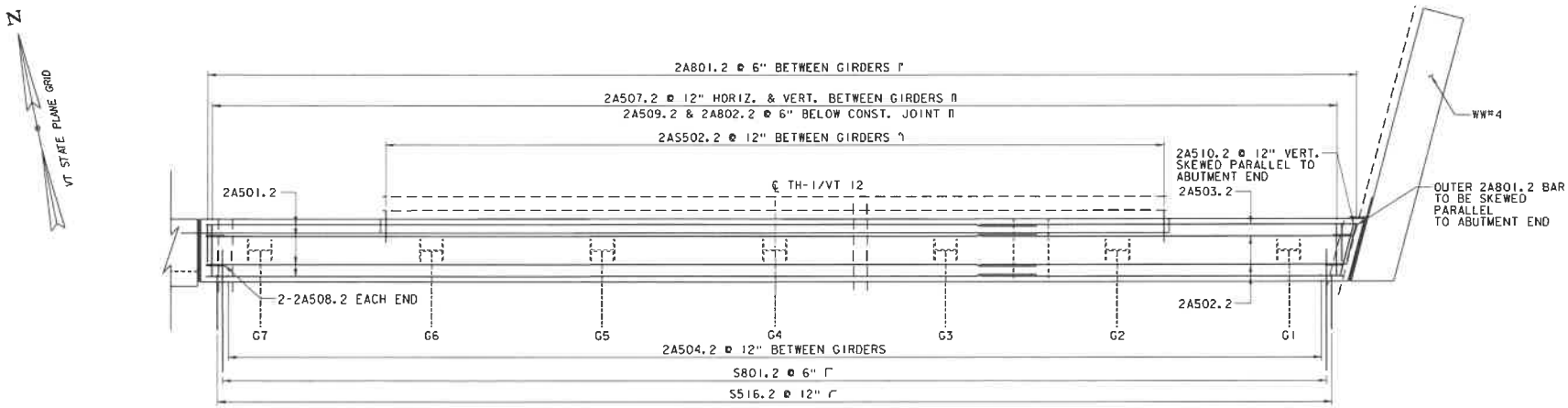
SCALE: 3/8"=1'-0"

NOTES:

1. ALL ELEVATIONS ARE TAKEN AT THE FRONT FACE OF THE ABUTMENT UNLESS INDICATED OTHERWISE.
2. PLACE 3' WIDE GEOTEXTILE FABRIC ON BACK FACE OF ABUTMENT, CENTERED AT 2" COMPRESSIBLE FILLER. PAYMENT FOR GEOTEXTILE TO BE SUBSIDIARY TO ITEM 501.3800, "PERFORMANCE-BASED CONCRETE, CLASS PCS".

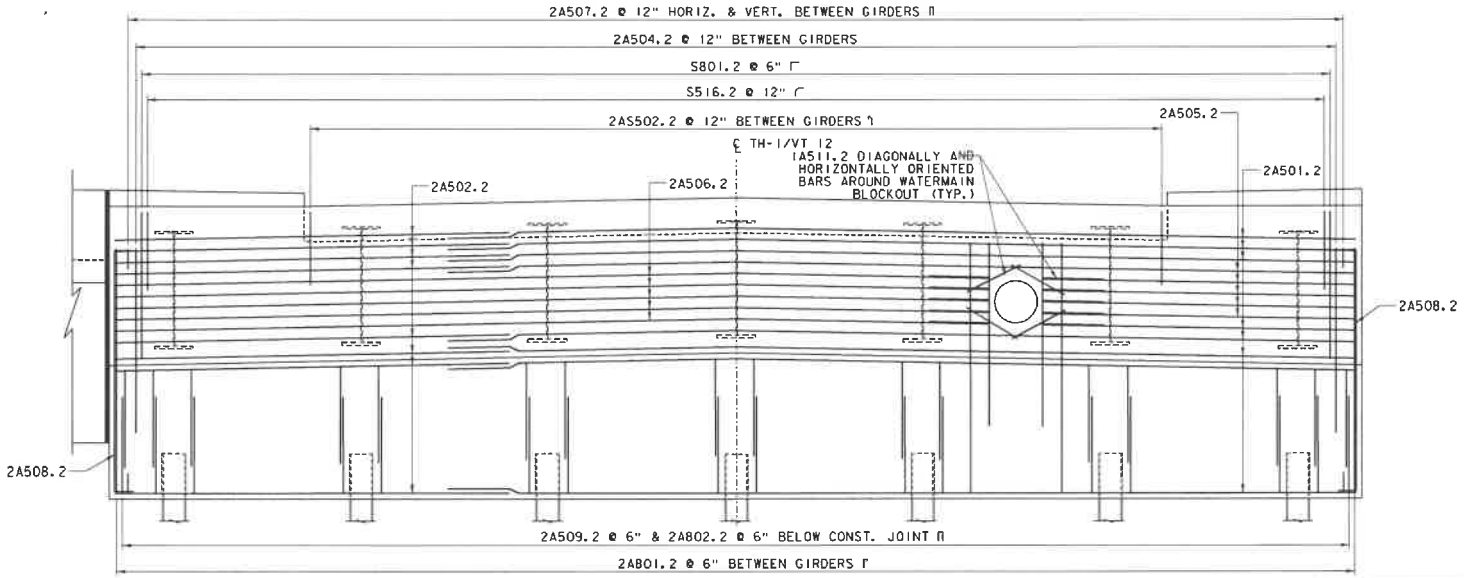
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223sub.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
ABUTMENT 2 PLAN SHEET	SHEET 64 OF 102



ABUTMENT 2 REINFORCEMENT PLAN

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



ABUTMENT 2 REINFORCEMENT ELEVATION

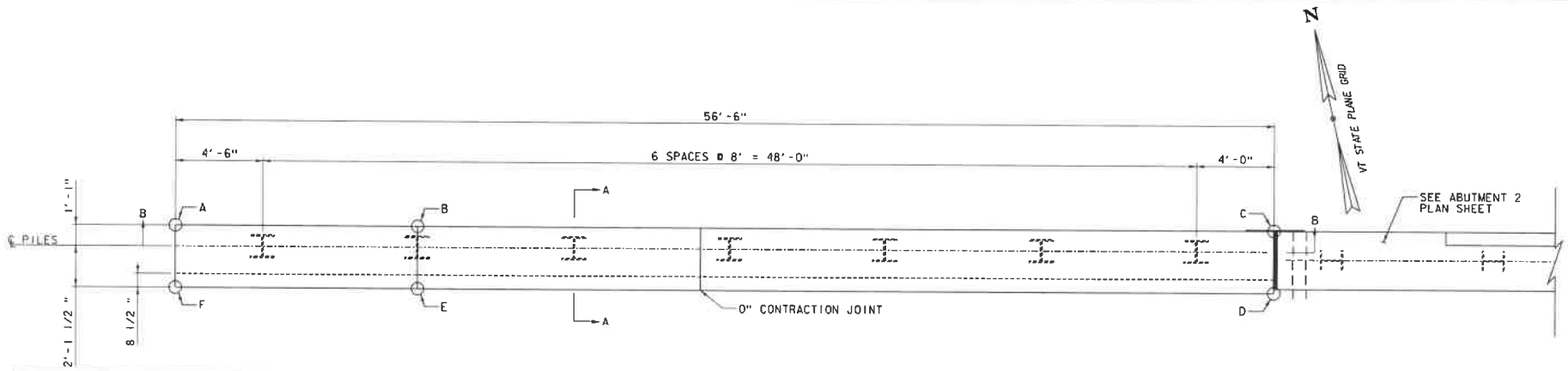
SCALE: 3/8"=1'-0"

NOTES:

1. SIDEWALK AND CURB REINFORCEMENT NOT SHOWN FOR CLARITY, SEE DECK REINFORCING DRAWINGS

H&H

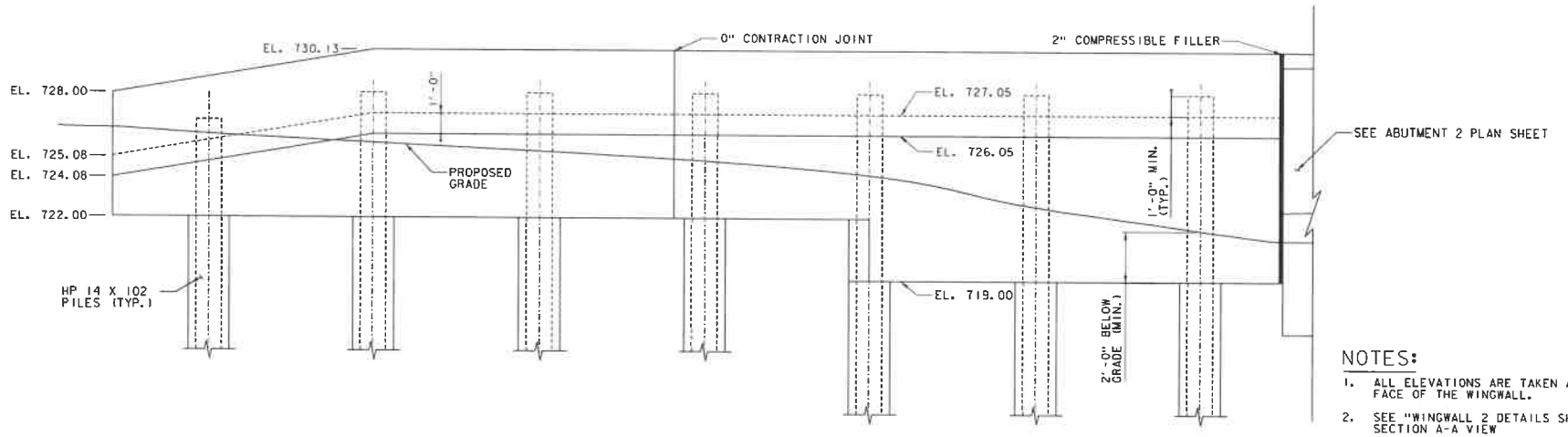
PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223sub.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
ABUTMENT 2 REINFORCEMENT	SHEET 65 OF 102



WINGWALL 3 GEOMETRY			
POINT	STATION	OFFSET	ELEV
A	STA 224+11.50	84.25' LT	728.00
B	STA 224+11.50	71.58' LT	730.13
C	STA 224+11.50	27.75' LT	730.13
D	STA 224+08.29	27.75' LT	730.13
E	STA 224+08.29	71.58' LT	730.13
F	STA 224+08.29	84.25' LT	728.00

WINGWALL 3 PLAN

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



WINGWALL 3 ELEVATION

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

NOTES:

1. ALL ELEVATIONS ARE TAKEN AT THE FRONT FACE OF THE WINGWALL.
2. SEE "WINGWALL 2 DETAILS SHEET" FOR SECTION A-A VIEW
3. SEE "SOLDIER PILE DETAILS 1" SHEET FOR SECTION B-B VIEW

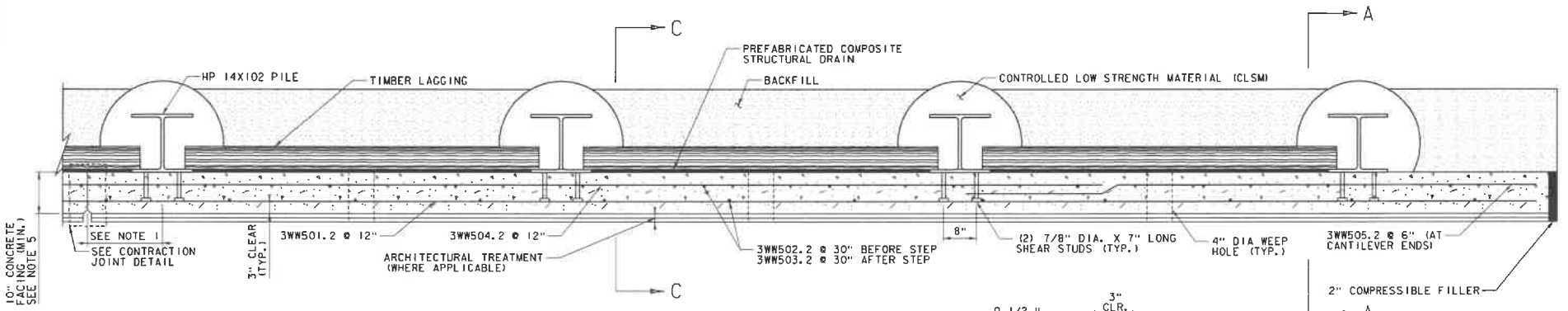
H&H

PROJECT NAME: NORTHFIELD

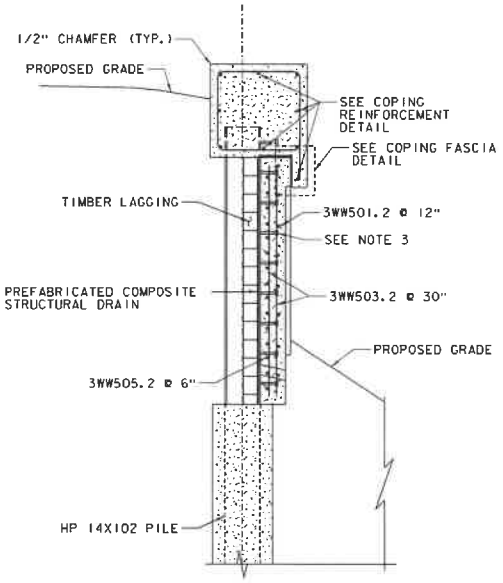
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19I223sub.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: S. BROWN
WINGWALL 3 DETAILS

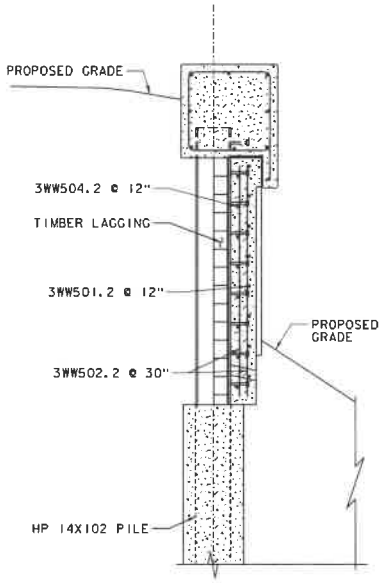
PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 66 OF 102



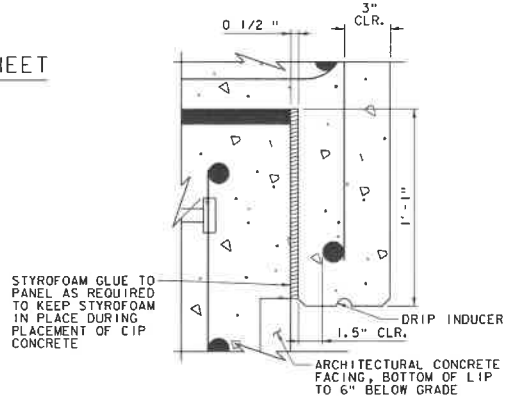
SECTION B-B
WINGWALL 3 DETAILS SHEET
SCALE: 1"=1'-0"



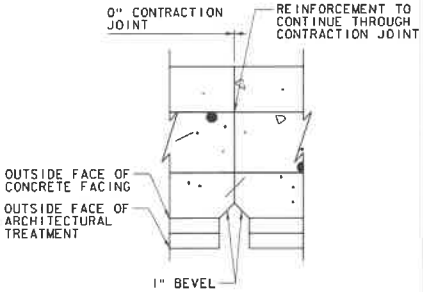
SECTION A-A
SCALE: ½"=1'-0"



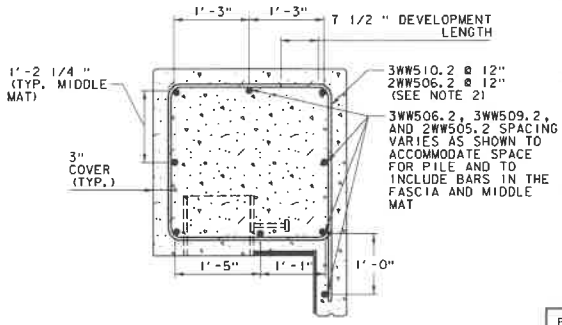
SECTION C-C
SCALE: ½"=1'-0"



COPING FASCIA DETAIL
SCALE: 3"=1'-0"



CONTRACTION JOINT DETAIL
SCALE: 3"=1'-0"



COPING REINFORCEMENT DETAIL
SCALE: 1"=1'-0"

SOLDIER PILE NOTES:

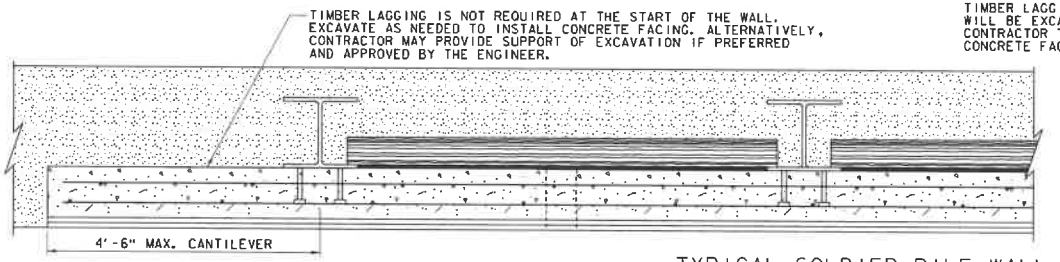
1. THE 0" CONTRACTION JOINT ON WINGWALL 3 SHALL BE LOCATED 1'-6" AWAY FROM THE FOURTH PILE WEST OF THE ABUTMENT. NO CONTRACTION JOINT IS NEEDED IN WINGWALL 2.
2. COPING STIRRUPS SHALL BE SPACED AT 12" MAX. SPACING MAY BE MODIFIED AS NEEDED SURROUNDING PILES.
3. SHEAR STUDS SHALL BE SPACED AT A 12" PITCH WITHIN THE LIMITS OF THE WINGWALL. PLACE STUDS BETWEEN 6" FROM THE TOP OF THE PILE AND 6" FROM THE BOTTOM OF WINGWALL.
4. FACING TO BE 10" AT PILE OR AT PREFORMED COMPOSITE STRUCTURAL DRAINS, WHICHEVER CONTROLS, AND GREATER THAN 10" OTHERWISE AS NEEDED.
5. COVER SHALL BE MEASURED FROM THE IMPRINT OF AESTHETIC TREATMENT, SUCH THAT THE FACING WILL BE GREATER THAN 10" IN THICKNESS PRIOR TO APPLYING AESTHETIC TREATMENT.

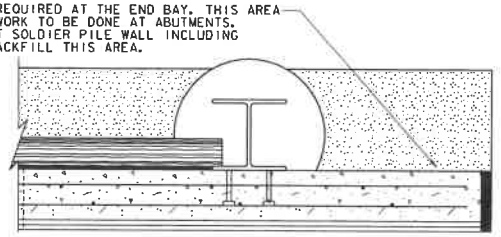
H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: 219223sub.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: D. WELLS
SOLDIER PILE WALL DETAILS 1

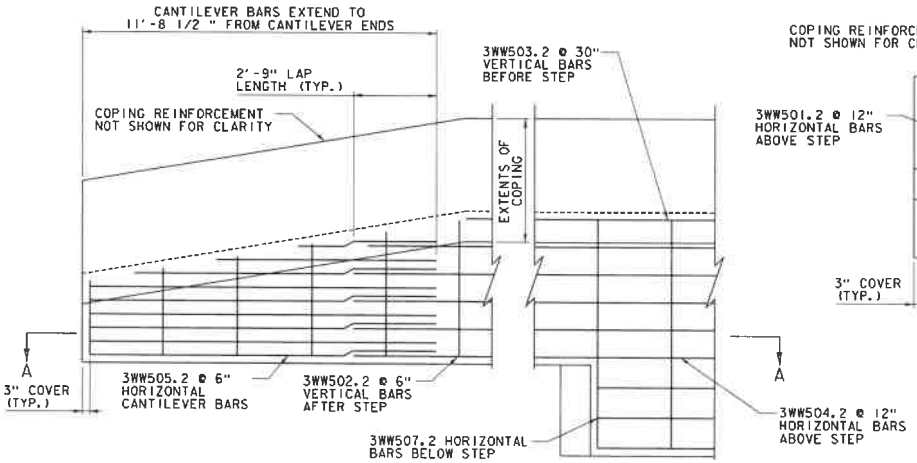
PLOT DATE: 5/29/2025
DRAWN BY: D. WELLS
CHECKED BY: K. SMITH
SHEET 67 OF 102





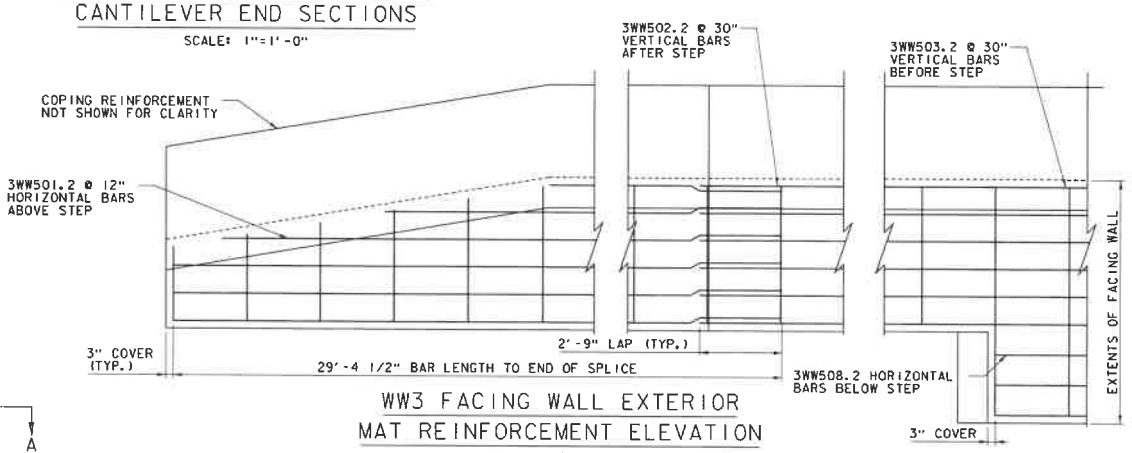
TYPICAL SOLDIER PILE WALL CANTILEVER END SECTIONS

SCALE: 1"=1'-0"



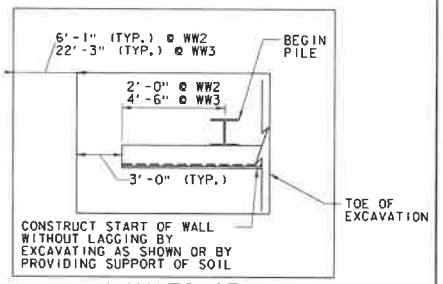
WW3 FACING WALL INTERIOR MAT REINFORCEMENT ELEVATION

SCALE: ½"=1'-0"



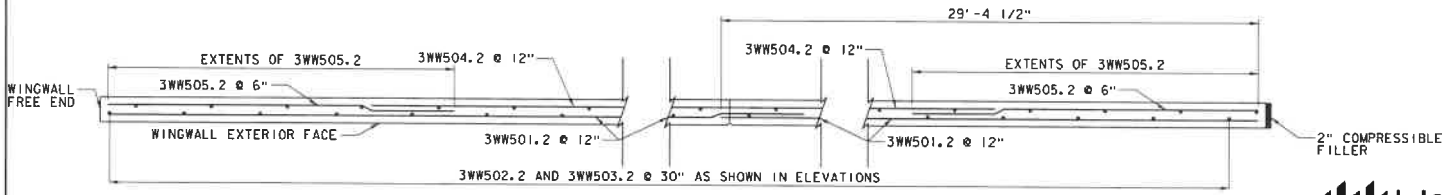
WW3 FACING WALL EXTERIOR MAT REINFORCEMENT ELEVATION

SCALE: ½"=1'-0"



LIMITS OF EXCAVATION AT BEGIN WALL

N.T.S.



SECTION A-A

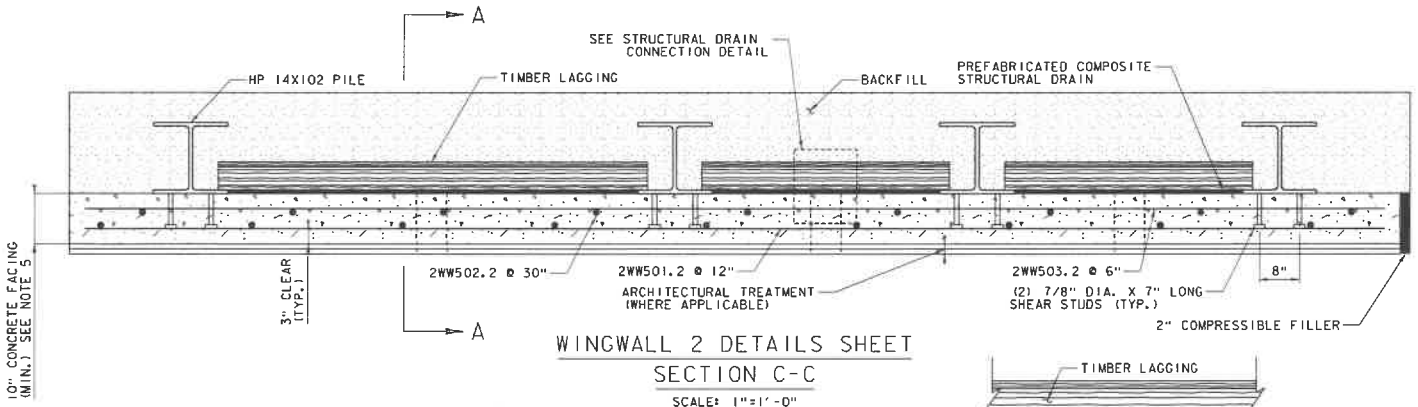
SCALE: ½"=1'-0"

H&H

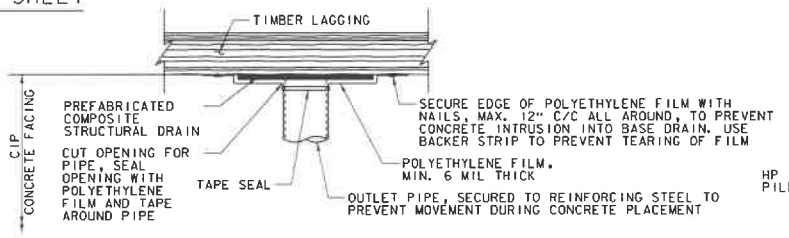
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19J223sub.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: D. WELLS
SOLDIER PILE WALL DETAILS 2

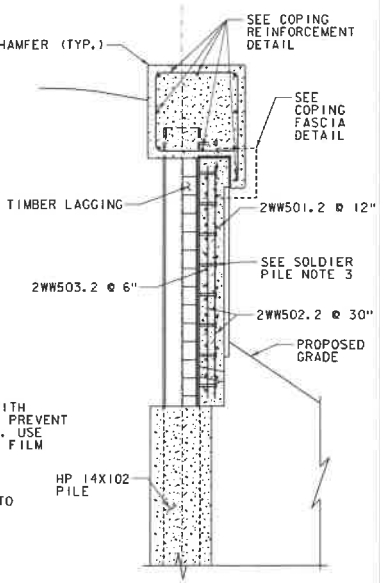
PLOT DATE: 5/29/2025
DRAWN BY: D. WELLS
CHECKED BY: K. SMITH
SHEET 68 OF 102



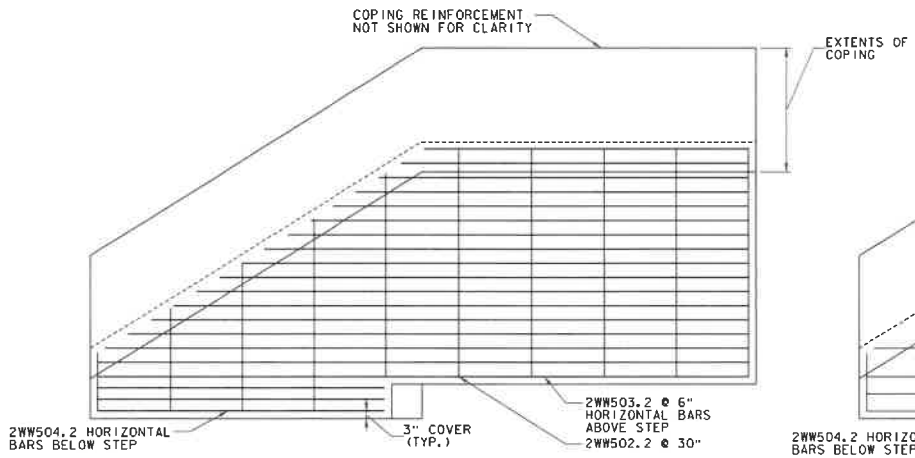
WINGWALL 2 DETAILS SHEET
SECTION C-C
SCALE: 1"=1'-0"



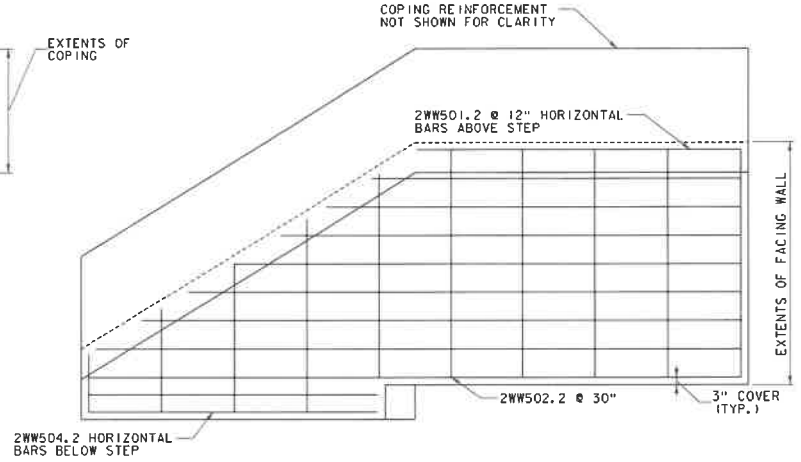
STRUCTURAL DRAIN CONNECTION DETAIL
SCALE: 1½"=1'-0"



SECTION A-A
SCALE: ½"=1'-0"



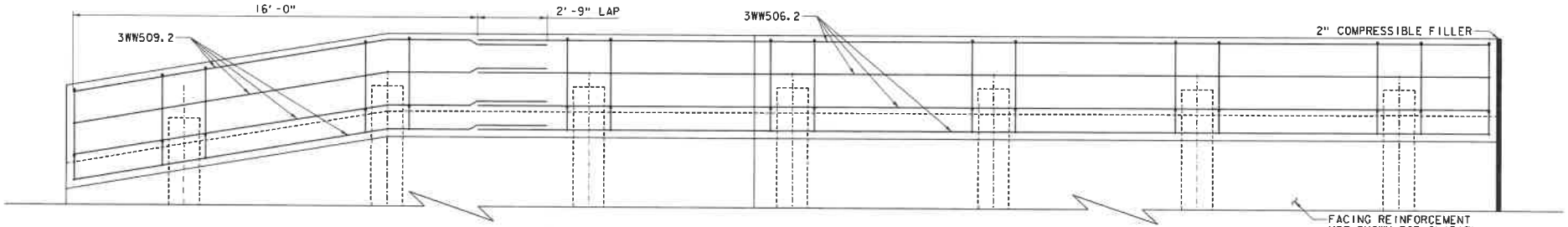
WW2 FACING WALL INTERIOR MAT END REINFORCEMENT ELEVATION
SCALE: ½"=1'-0"



WW2 FACING WALL EXTERIOR MAT END REINFORCEMENT ELEVATION
SCALE: ½"=1'-0"

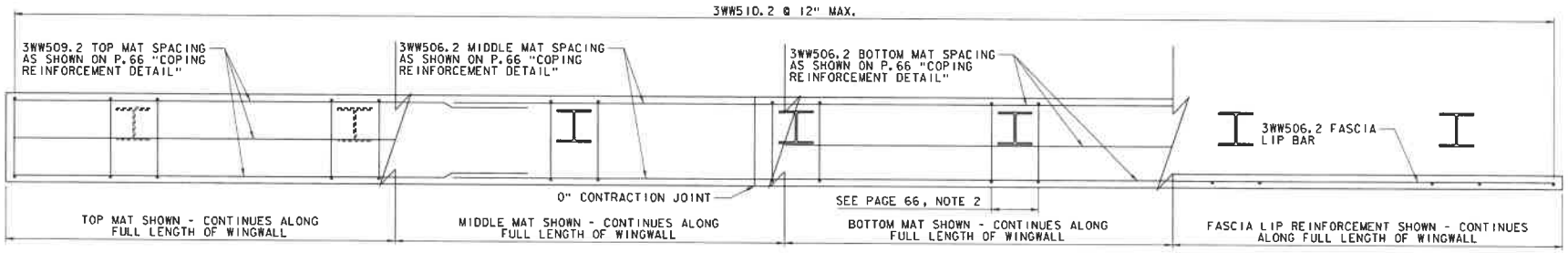
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223sub.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: D. WELLS
DESIGNED BY: D. WELLS	CHECKED BY: K. SMITH
SOLDIER PILE WALL DETAILS 3	SHEET 69 OF 102



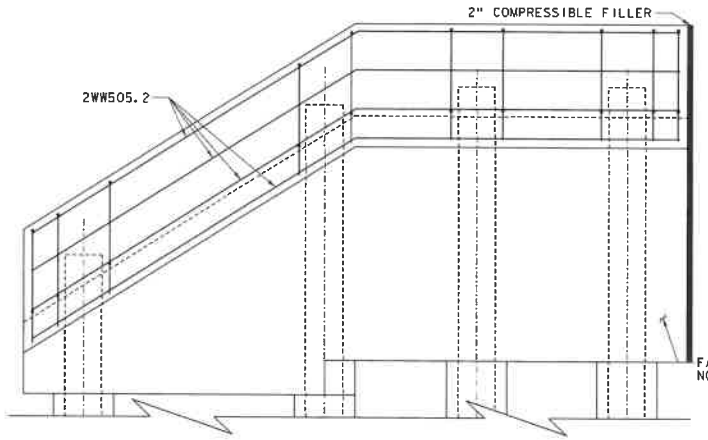
WINGWALL 3 COPING REINFORCEMENT ELEVATION

SCALE: ½"=1'-0"



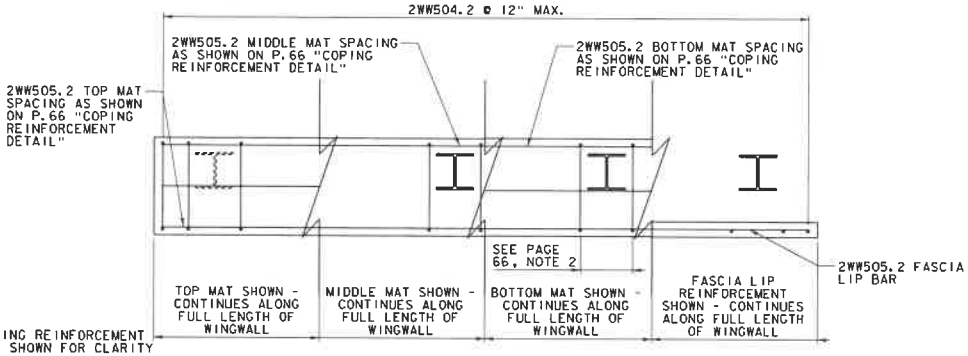
WINGWALL 3 REINFORCING SECTIONS
THROUGH COPING MATS

SCALE: ½"=1'-0"



WINGWALL 2 COPING REINFORCEMENT ELEVATION

SCALE: ½"=1'-0"



WINGWALL 3 REINFORCING SECTIONS
THROUGH COPING MATS

SCALE: ½"=1'-0"

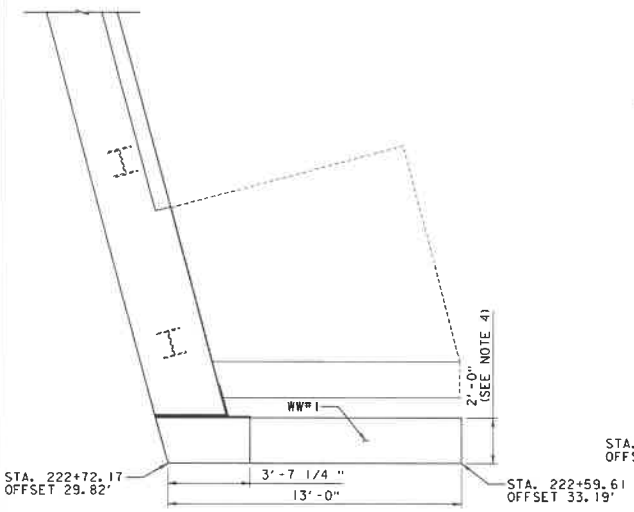
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: zI9I223sub.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: D. WELLS
SOLDIER PILE WALL DETAILS 4

PLOT DATE: 5/29/2025
DRAWN BY: D. WELLS
CHECKED BY: K. SMITH
SHEET 70 OF 102

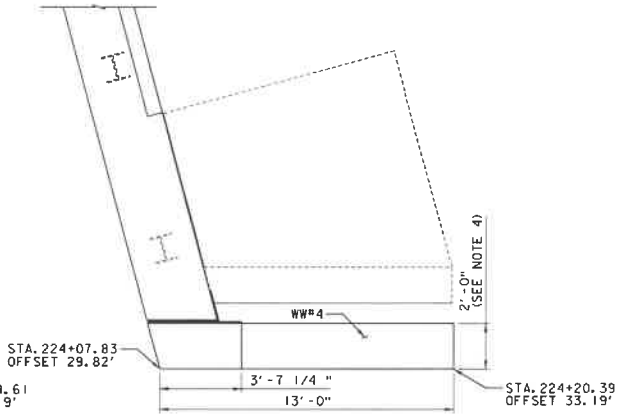
NOTES:

1. FOUNDATION DESIGN VALUES GIVEN IN THESE NOTES ARE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 9TH EDITION
2. THE FOLLOWING SOIL PROPERTIES SHALL BE USED IN THE DESIGN OF THE WINGWALLS:
   A. FOUNDATION BEARING DESIGN VALUES:
      FACTORED BEARING RESISTANCE (Phi=0.45)=8KSF
   B. FOUNDATION SOIL PARAMETERS
      UNIT WEIGHT: 125PCF
      FRICTION ANGLE: 34DEG
   C. BACKFILL SOIL PARAMETERS
      UNIT WEIGHT: 120PCF
      FRICTION ANGLE: 30DEG
3. THE INTERFACE BETWEEN THE WINGWALL AND THE ABUTMENT CAP SHALL BE DESIGNED TO ALLOW 0.5 INCHES OF MOVEMENT. A JOINT DETAIL SHALL BE SUBMITTED FOR REVIEW AND APPROVAL. JOINT SHALL PROVIDE A FLEXIBLE WATER TIGHT SEAL IN ORDER TO PREVENT MIGRATION OF BACKFILL MATERIAL THROUGH THE JOINT. ALL COMPONENTS WILL BE INCLUDED IN THE UNIT PRICE FOR ITEM 225.0500."RETAINING WALL, CONCRETE." DIMENSIONS AND STATION SHOWN INCLUDE AN ASSUMED JOINT THICKNESS OF 2". IF A DIFFERENT THICKNESS IS USED THE GEOMETRY WILL NEED TO BE MODIFIED BY THE CONTRACTOR.
4. DIMENSION ARE BASED ON A WINGWALL THICKNESS AND EFFECTIVE FOOTING WIDTH AS SHOWN ON THE PLANS. IF A DIFFERENT THICKNESS IS USED, GEOMETRY WILL NEED TO BE MODIFIED BY THE CONTRACTOR.



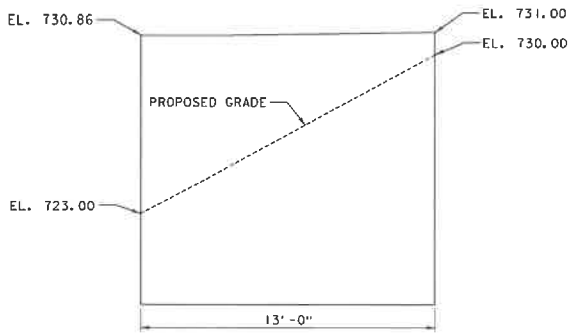
WINGWALL 1 PLAN

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



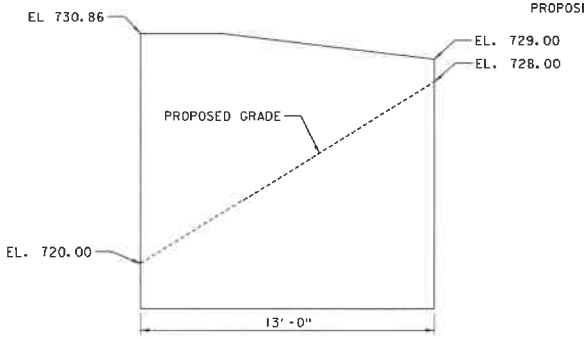
WINGWALL 4 PLAN

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



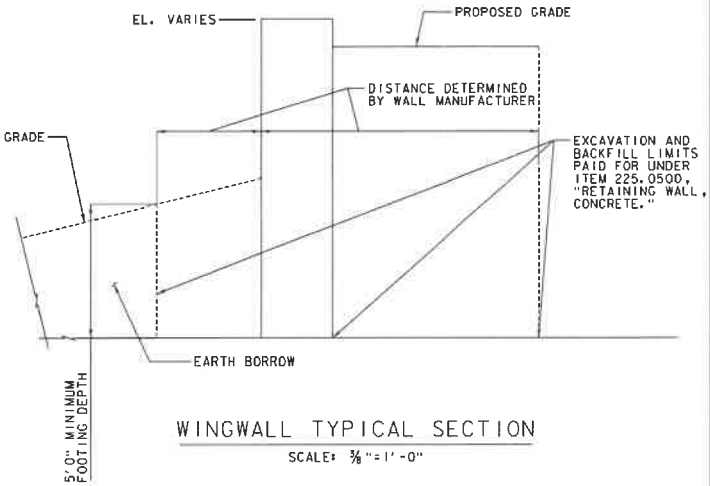
WINGWALL 1 ELEVATION

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



WINGWALL 4 ELEVATION

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

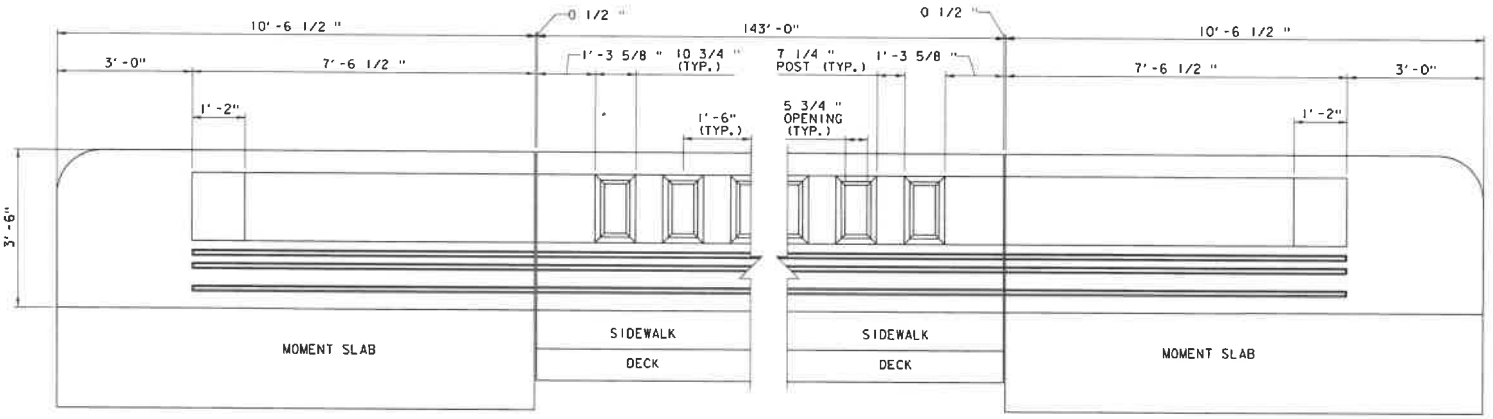


WINGWALL TYPICAL SECTION

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

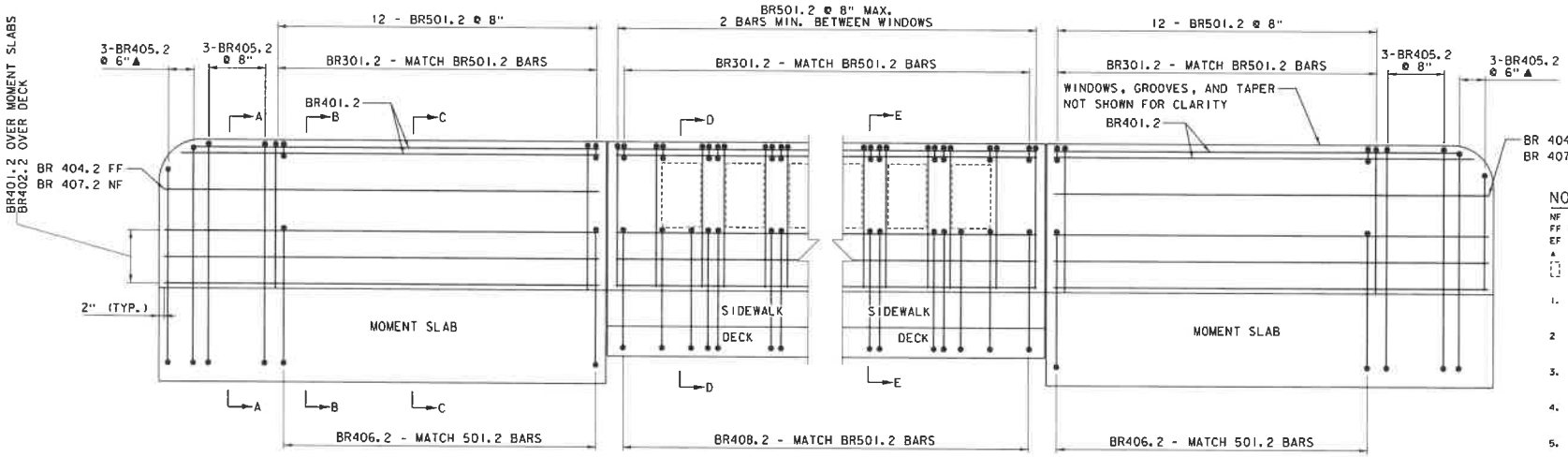
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z191223sub.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: S. BROWN	CHECKED BY: K. SMITH
WINGWALLS 1 AND 4	SHEET 71 OF 102



BRIDGE RAILING ELEVATION

SCALE 3/4" = 1'-0"
(DIMENSIONS GIVEN AT TRAFFIC SIDE OF RAILING)



BRIDGE RAILING REINFORCEMENT

SCALE 3/4" = 1'-0"

NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
[ ] = OUTLINE OF WINDOW FOR REBAR PLACEMENT CONTEXT

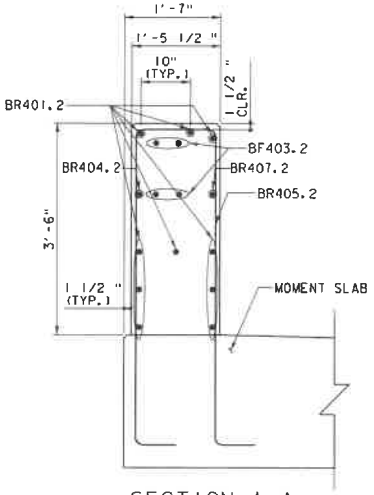
1. 1 3/4" CLEAR AND 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED.
2. ALL CHAMFERS ARE 3/4" x 3/4" UNLESS OTHERWISE SPECIFIED.
3. SIDEWALK, DECK, AND MOMENT SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
4. ALL WORK AND MATERIALS SHALL CONFORM TO SECTION 525.
5. THE BRIDGE RAILING SHALL BE CONSTRUCTED NORMAL TO GRADE AND THE BACK OF THE RAILING SHALL BE VERTICAL.
6. THIS RAILING MEETS THE REQUIREMENTS OF NCHRP REPORT 350 TL-4 CRITERIA.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

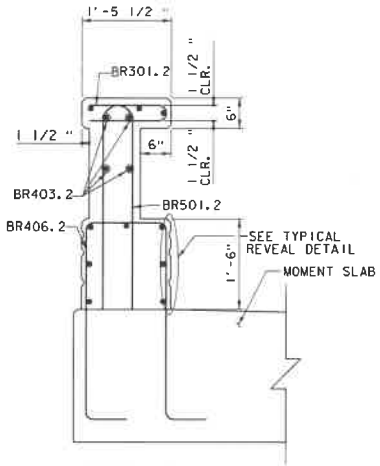
FILE NAME: z19J223rail.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: N. BOB
BRIDGE RAILING DETAILS SHEET 1

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 72 OF 102



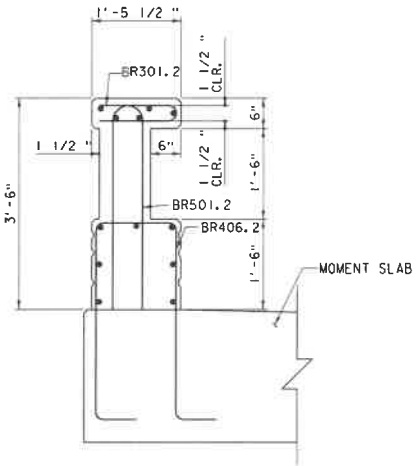
SECTION A-A

SCALE: 1"=1'-0"



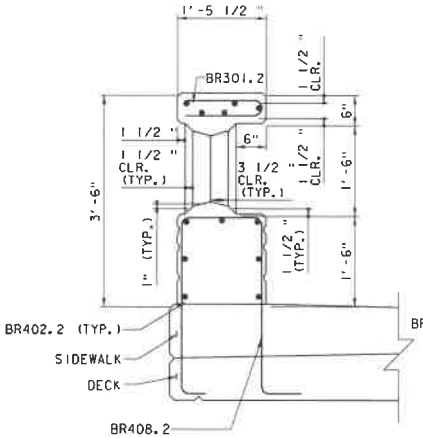
SECTION B-B

SCALE: 1"=1'-0"



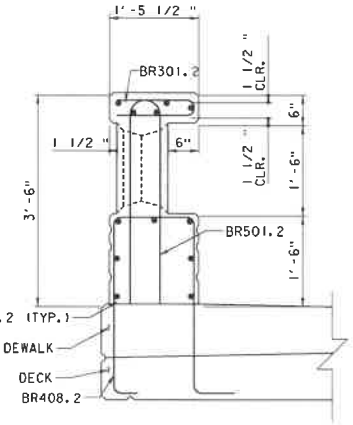
SECTION C-C

SCALE: 1"=1'-0"



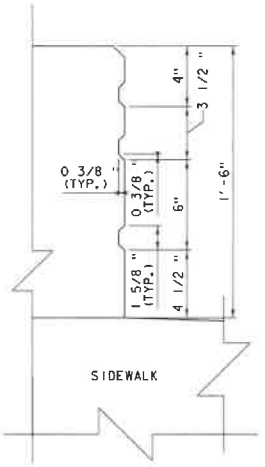
SECTION D-D

SCALE: 1"=1'-0"



SECTION E-E

SCALE: 1"=1'-0"



TYPICAL REVEAL DETAIL

SCALE: 3"=1'-0"

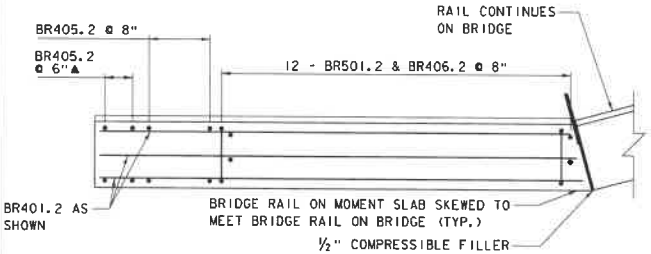
NOTES:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

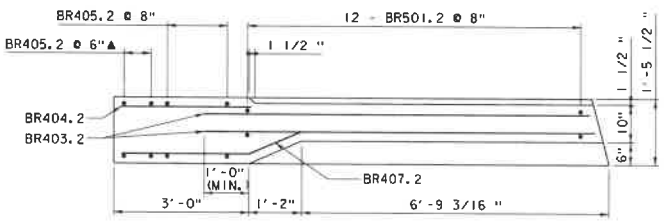
1. 1½" CLEAR AND 2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED.
2. ALL CHAMFERS ARE ¾" x ¾".
3. SIDEWALK, DECK, AND MOMENT SLAB REINFORCEMENT NOT SHOWN FOR CLARITY.
4. SEE DRAWING "BRIDGE RAILING DETAILS SHEET 1" FOR LOCATION OF SECTIONS.

H&H

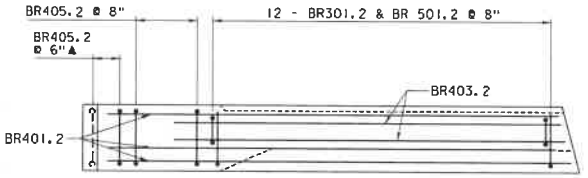
PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223rail.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: N. BOB	CHECKED BY: K. SMITH
BRIDGE RAILING DETAILS SHEET 2	SHEET 73 OF 102



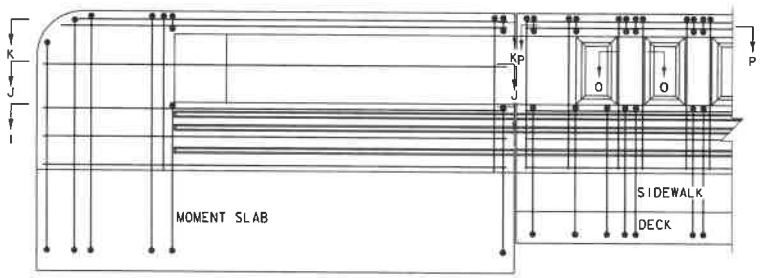
SECTION I-I
SCALE ¾" = 1'-0"



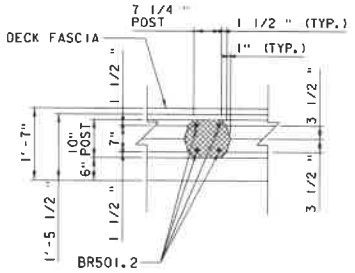
SECTION J-J
SCALE ¾" = 1'-0"



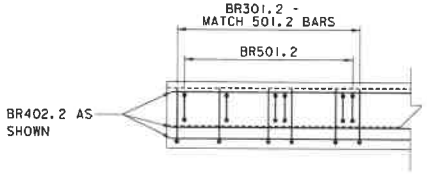
SECTION K-K
SCALE ¾" = 1'-0"



END OF BRIDGE RAILING
ELEVATION ON MOMENT SLAB
SCALE ¾" = 1'-0"



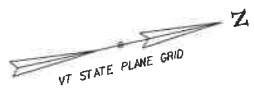
SECTION O-O
SCALE ¾" = 1'-0"

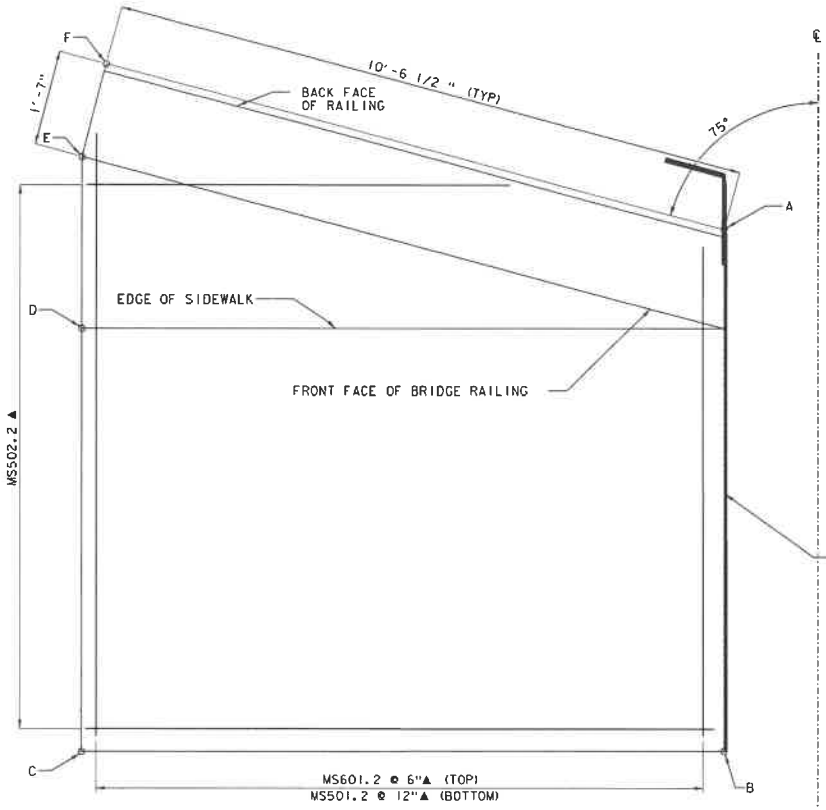


SECTION P-P
SCALE ¾" = 1'-0"

H&H

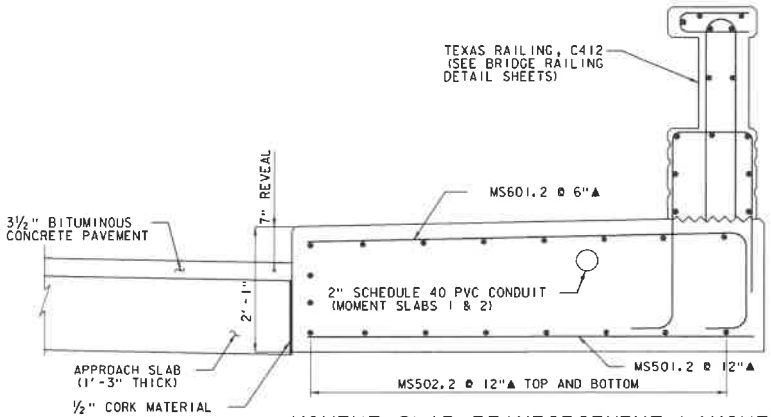
PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223rail.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: C. JAMISON
DESIGNED BY: N. BOB	CHECKED BY: K. SMITH
BRIDGE RAILING DETAILS SHEET 3	SHEET 74 OF 102





MOMENT SLAB PLAN

SCALE: 1"=1'-0"



MOMENT SLAB REINFORCEMENT LAYOUT

SCALE: 1"=1'-0"

MOMENT SLAB	MOMENT SLAB WORKING POINTS					
	A	B	C	D	E	F
1	OFFSET: 27.64 ELEV: 730.46 STA: 222+68.46	OFFSET: 19.00 ELEV: 730.32 STA: 222+68.46	OFFSET: 19.00 ELEV: 730.39 STA: 222+57.87	OFFSET: 26.00 ELEV: 730.53 STA: 222+57.87	OFFSET: 28.84 ELEV: 730.53 STA: 222+57.87	OFFSET: 30.37 ELEV: 730.53 STA: 222+58.28
2	OFFSET: 27.64 ELEV: 730.46 STA: 222+68.46	OFFSET: 19.00 ELEV: 730.32 STA: 222+68.46	OFFSET: 19.00 ELEV: 730.39 STA: 222+57.87	OFFSET: 26.00 ELEV: 730.53 STA: 222+57.87	OFFSET: 28.84 ELEV: 730.53 STA: 222+57.87	OFFSET: 30.37 ELEV: 730.53 STA: 222+58.28
3	OFFSET: 27.64 ELEV: 729.69 STA: 224+11.54	OFFSET: 19.00 ELEV: 729.55 STA: 224+11.54	OFFSET: 19.00 ELEV: 729.47 STA: 224+22.13	OFFSET: 26.00 ELEV: 729.61 STA: 224+22.13	OFFSET: 28.84 ELEV: 729.61 STA: 224+22.13	OFFSET: 30.37 ELEV: 729.61 STA: 224+21.72
4	OFFSET: 27.64 ELEV: 729.69 STA: 224+11.54	OFFSET: 19.00 ELEV: 729.55 STA: 224+11.54	OFFSET: 19.00 ELEV: 729.47 STA: 224+22.13	OFFSET: 26.00 ELEV: 729.61 STA: 224+22.13	OFFSET: 28.84 ELEV: 729.61 STA: 224+22.13	OFFSET: 30.37 ELEV: 729.61 STA: 224+21.72

LEGEND:

▲ DENOTES CUT IN FIELD

H&H

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223sub.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: N. BOB
MOMENT SLAB DETAILS SHEET

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 75 OF 102

STATE OF VERMONT
AGENCY OF TRANSPORTATION

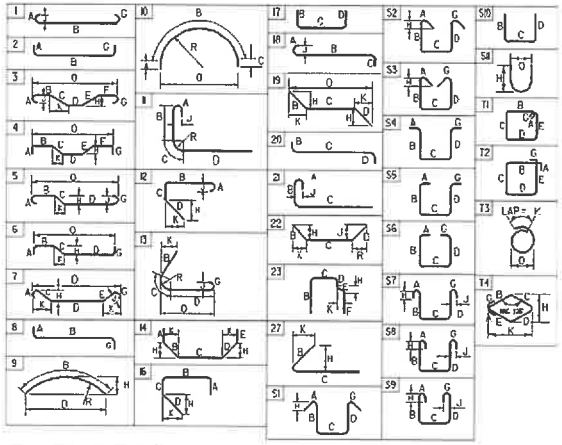
REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
DECK																	
	362	5	36'-10"	S501.2	STR												
	198	5	6'-7"	S502.2	STR												
	28	5	40'-0"	S503.2	STR												
	26	5	16'-8"	S504.2	STR												
	12	5	4'-3"	S505.2	STR												
	18	5	31'-4"	S506.2	STR												
	12	5	2'-6"	S507.2	STR												
*	3	5	1'-9"	S509.2	STR												
	568	5	11'-11"	S509.2	1	0'-11"	11'-0"					0'-0"		0'-0"			
	514	5	3'-4"	S510.2	1	0'-11"	2'-5"					0'-0"		0'-0"			
	16	5	5'-2"	S511.2	17		3'-4"	1'-2"	0'-8"								
	12	5	4'-4"	S512.2	17		2'-5"	1'-2"	0'-8"								
	12	5	3'-7"	S513.2	17		1'-9"	1'-2"	0'-8"								
	18	5	8'-6"	S514.2	22		2'-10"	1'-10"	2'-10"				1'-9"	1'-9"	2'-2"	2'-2"	
	286	5	11'-2"	S515.2	S5	0'-8"	1'-2"	8'-1"	0'-7"			0'-8"					
	108	5	7'-7"	S516.2	22		2'-9"	2'-1"	2'-9"				1'-11"	1'-11"	1'-11"	1'-11"	
	284	6	40'-0"	S601.2	STR												
*	286	7	16'-8"	S602.2	STR												
	222	8	12'-5"	S801.2	S10		6'-0"	6'-5"	0'-0"								
BRIDGE RAIL																	
*	429	3	2'-7"	BR501.2	S11								1'-2"				0'-3"
	40	4	10'-8"	BR401.2	STR												
	120	4	30'-8"	BR402.2	STR												
	16	4	8'-9"	BR403.2	STR												
*	5	4	2'-10"	BR404.2	STR												
	24	4	12'-10"	BR405.2	S5	0'-6"	5'-4"	1'-2"	5'-4"			0'-6"					
	48	4	5'-10"	BR406.2	S5	0'-6"	3'-4"	1'-2"	3'-4"			0'-6"					
	4	4	4'-1"	BR407.2	S4		0'-0"	2'-10"	1'-5"				0'-0"	0'-6"	0'-0"	1'-2"	
	380	4	7'-7"	BR408.2	S6	0'-6"	2'-6"	1'-2"	2'-9"			0'-6"					
	429	5	7'-3"	BR501.2	S11								3'-4"				0'-7"
WINGWALL 2																	
	9	5	21'-6"	2WW501.2	STR												
	20	5	7'-7"	3WW502.2	STR												
	17	5	21'-6"	3WW503.2	STR												
	5	5	9'-6"	3WW504.2	STR												
	9	5	23'-5"	2WW505.2	22		12'-9"	10'-9"	0'-0"				6'-10"	0'-6"	10'-9"	0'-0"	
	20	5	15'-6"	2WW506.2	T2	4'-0"	2'-9"	2'-7"	2'-9"	2'-7"		0'-10"					
WINGWALL 3																	
	6	5	29'-5"	3WW501.2	STR												
	30	5	4'-7"	3WW502.2	STR												
	18	5	7'-7"	3WW503.2	STR												
	5	5	36'-7"	3WW504.2	STR												
	26	5	11'-5"	3WW505.2	STR												
	9	5	40'-0"	3WW506.2	STR												
	3	5	10'-8"	3WW507.2	STR												
	3	5	19'-4"	3WW508.2	STR												
	9	5	18'-8"	3WW509.2	22		12'-7"	6'-1"	0'-0"				2'-2"	0'-0"	12'-5"	0'-0"	
	56	5	15'-6"	3WW510.2	T2	4'-0"	2'-9"	2'-7"	2'-9"	2'-7"		0'-10"					
ABUTMENT 1																	
	44	5	40'-0"	1A501.2	STR												
	23	5	17'-5"	1A502.2	STR												
	21	5	18'-3"	1A503.2	STR												
	54	5	8'-1"	1A504.2	STR												
	5	5	13'-9"	1A505.2	STR												
	5	5	38'-6"	1A506.2	STR												
	702	5	4'-6"	1A507.2	2	1'-0"	2'-6"					1'-0"					
	4	8	12'-5"	1A508.2	2	1'-0"	10'-5"					1'-0"					
	102	5	11'-0"	1A509.2	S10		4'-3"	2'-6"	4'-3"								
	13	5	5'-1"	1A510.2	2	1'-0"	3'-1"					1'-0"					
	28	5	5'-9"	1A511.2	2	1'-6"	2'-9"					1'-6"					
	106	8	13'-5"	1A801.2	21	1'-5"	1'-6"	10'-5"									
*	103	8	12'-8"	1A802.2	S10		5'-1"	2'-6"	5'-1"								

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
ABUTMENT 2																	
	44	5	40'-0"	2A501.2	STR												
	23	5	17'-5"	2A502.2	STR												
	21	5	18'-3"	2A503.2	STR												
	54	5	8'-0"	2A504.2	STR												
	5	5	13'-9"	2A505.2	STR												
	5	5	38'-6"	2A506.2	STR												
	702	5	4'-6"	2A507.2	2	1'-0"	2'-6"									1'-0"	
	4	5	12'-8"	2A508.2	2	1'-0"	10'-7"									1'-0"	
	102	5	11'-4"	2A509.2	S10		4'-4"	2'-6"	4'-4"							1'-0"	
	13	5	5'-1'	2A510.2	2	1'-0"	3'-1"									1'-0"	
	28	5	5'-9"	2A511.2	2	1'-6"	2'-9"									1'-6"	
	106	8	13'-8"	2A801.2	21	1'-5"	1'-6"	10'-8"									
	102	8	13'-0"	2A802.2	S10		5'-2"	2'-6"	5'-2"								
APPROACH SLAB 1																	
*	22	5	37'-6"	1EAS501	STR												
	54	5	5'-7"	1AS502.2	11	0'-11"	1'-5"	0'-6"	2'-0"							0'-3"	
*	46	9	19'-9"	1EAS901	1	1'-2"	18'-7"										
APPROACH SLAB 2																	
	21	5	37'-6"	2EAS501	STR												
	54	5	5'-7"	2AS502.2	11	0'-11"	1'-5"	0'-6"	2'-0"							0'-3"	
	45	9	19'-9"	2EAS901	1	1'-2"	18'-7"										
MOMENT SLAB																	
▲	44	5	10'-10"	MS501.2	STR												
▲	100	5	10'-0"	MS502.2	STR												
▲	66	6	12'-5"	MS601.2	S10		0'-8"	1'-8"	10'-1"								

~ NOTES ~

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



ASTM STANDARD REINFORCING BARS

BAR DESIGNATION NO.	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTIONS DIAMETER INCHES	AREA SQUARE INCHES	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

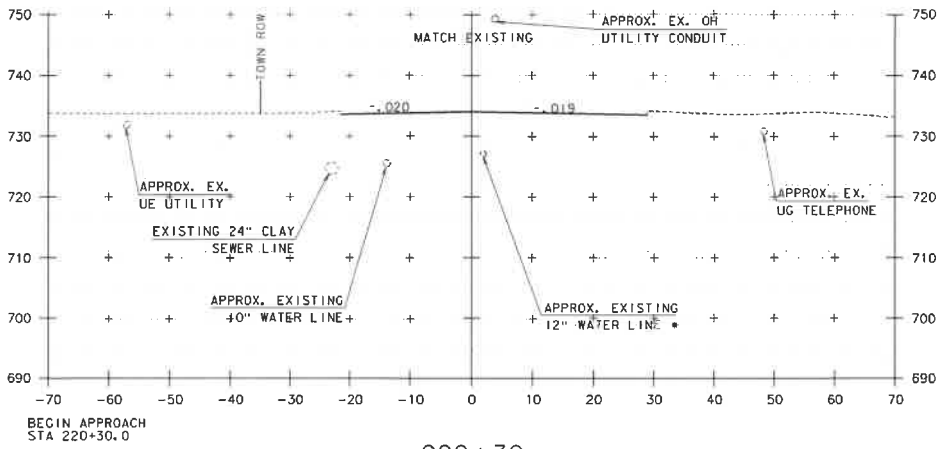
- REINFORCING STEEL CORROSION RESISTANCE LEVEL -

THE REINFORCING STEEL MARKS IN THIS SCHEDULE INDICATE THE REQUIRED BAR CORROSION RESISTANCE LEVEL. CORROSION RESISTANCE LEVEL IS DENOTED WITH A .2 FOR LEVEL TWO SUFFIX OR .3 FOR LEVEL THREE SUFFIX. .1 FOR LEVEL ONE IS TO BE OMITTED. THE BAR MATERIAL TYPE AND BAR STEEL GRADE PROVIDED FOR EACH CORROSION LEVEL WILL BE RECORDED ON THE PLANSET PI SHEET FOR AS-BUILT RECORD PLAN ARCHIVES

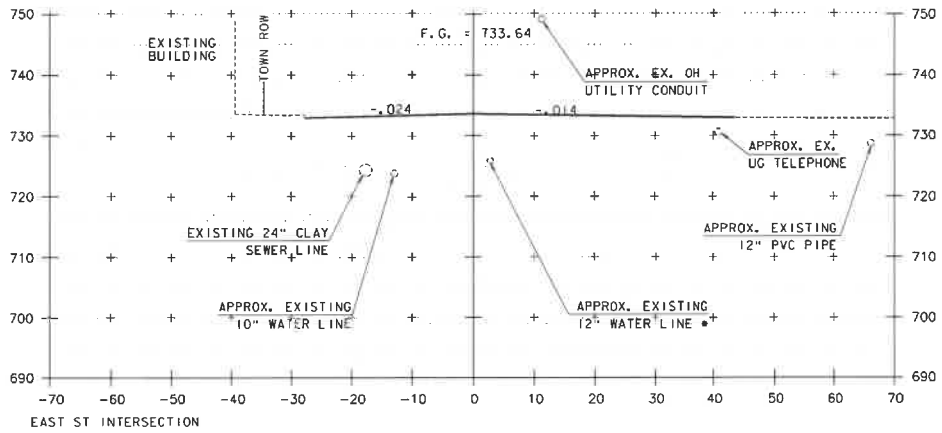
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223rebar.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY:
REINFORCING STEEL SCHEDULE

PLOT DATE: 5/29/2025
DRAWN BY: C. JAMISON
CHECKED BY: K. SMITH
SHEET 76 OF 102



220+30



220+50

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED UNDERGROUND UTILITIES INSTALLATION BY OTHERS IS NOT PART OF THE SCOPE OF THIS PROJECT UNLESS OTHERWISE SHOWN.
2. APPROXIMATE LOCATION OF WATER UTILITY BUILT UNDER SEPARATE CONTRACT ASSUMED TO BE IN PLACE AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

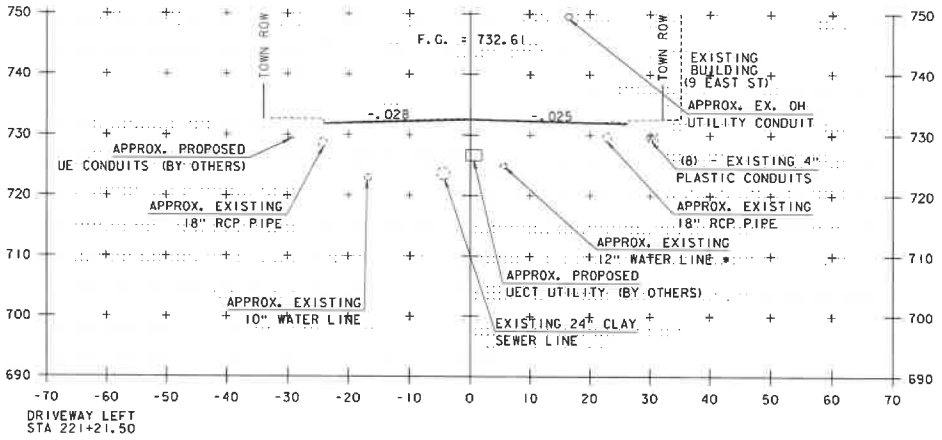
STA 220+30 TO STA 220+50

H&H

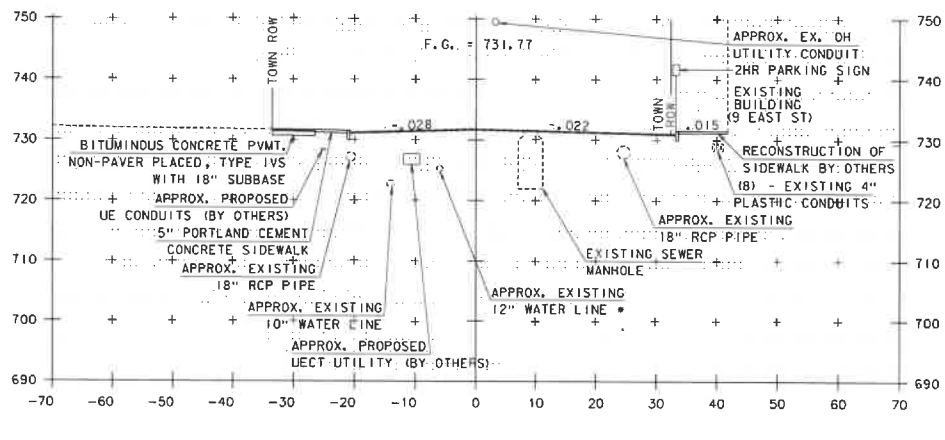
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223xs.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
ROADWAY CROSS SECTIONS SHEET 1

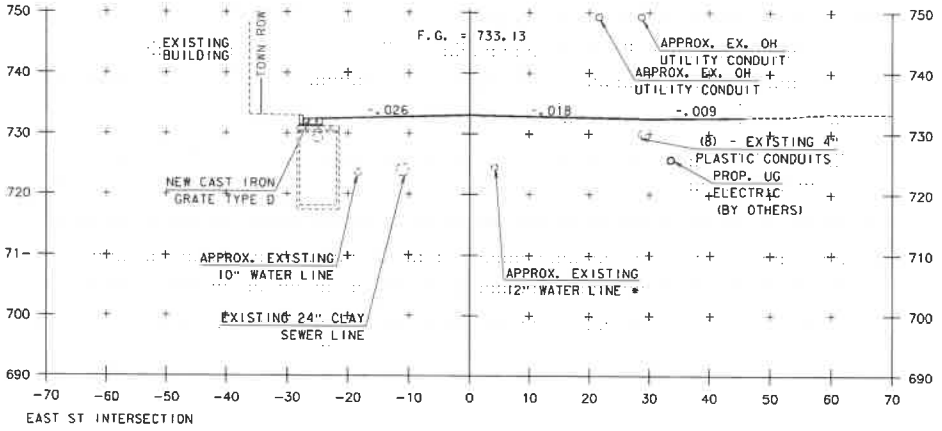
PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 77 OF 102



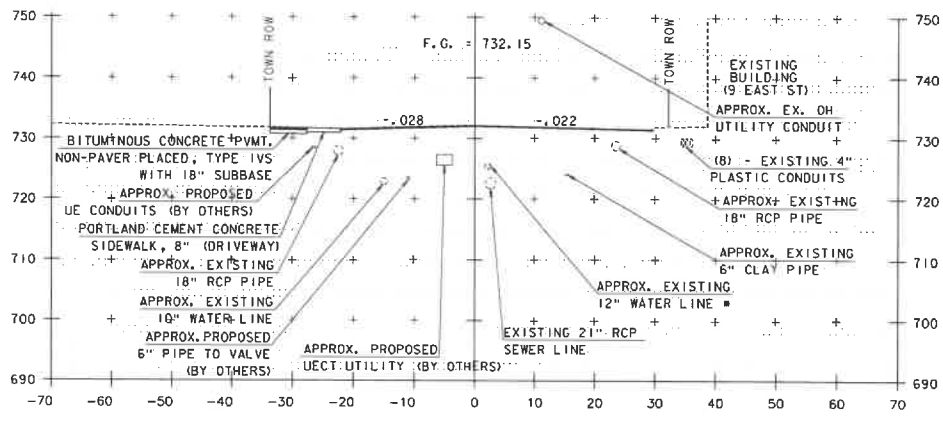
221+00



221+50



220+75



221+25

NOTE:

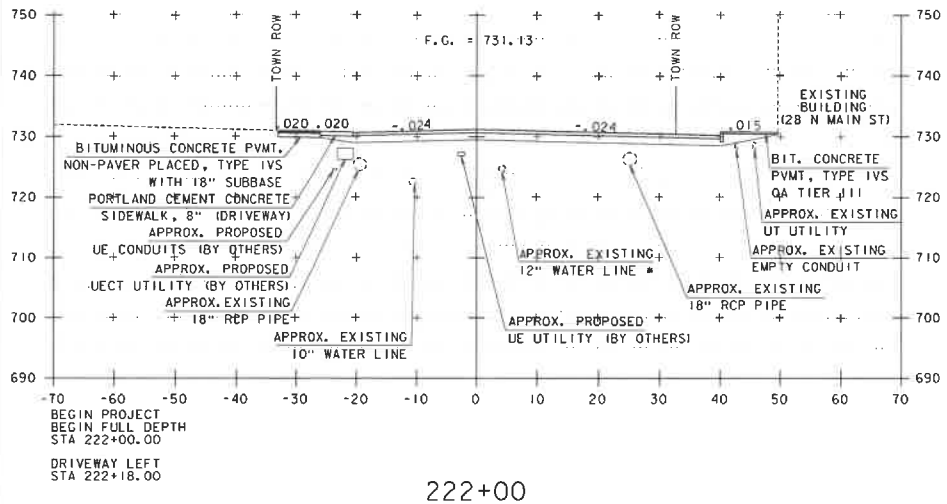
1. EARTHWORK ASSOCIATED WITH PROPOSED UNDERGROUND UTILITIES INSTALLATION BY OTHERS IS NOT PART OF THE SCOPE OF THIS PROJECT UNLESS OTHERWISE SHOWN.
2. APPROXIMATE LOCATION OF WATER UTILITY BUILT UNDER SEPARATE CONTRACT ASSUMED TO BE IN PLACE AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

STA 220+75 TO STA 221+50

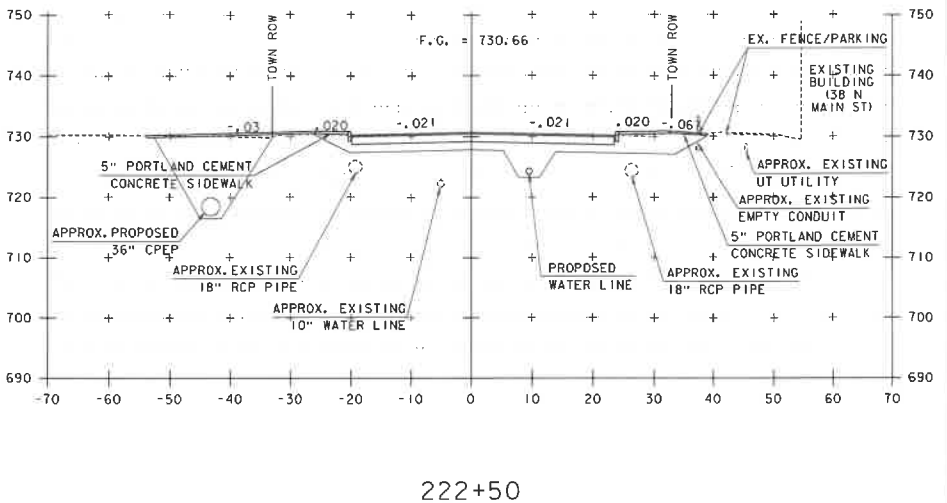
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223xs.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
ROADWAY CROSS SECTIONS SHEET 2

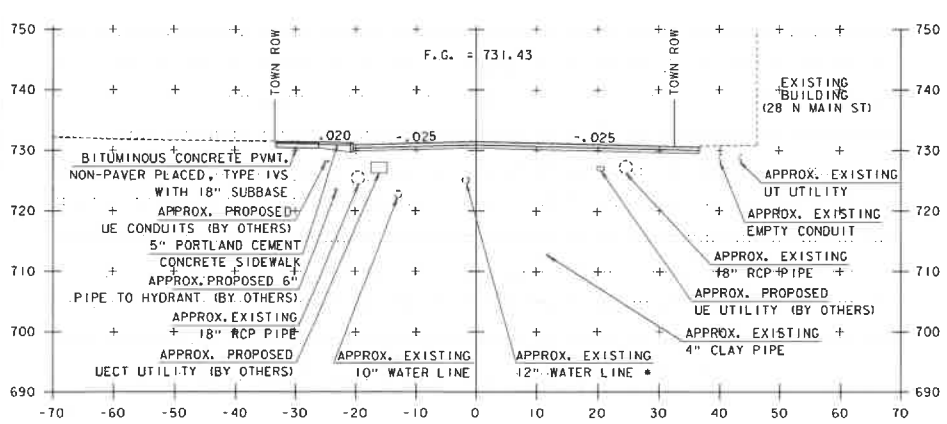
PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 78 OF 102



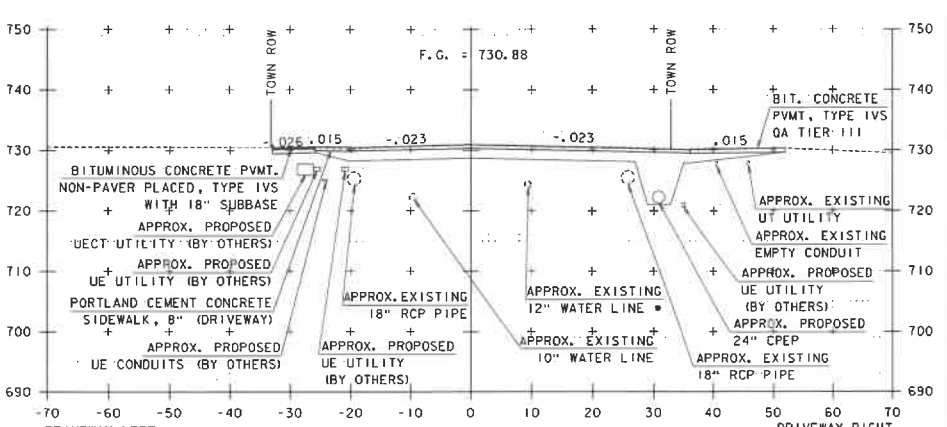
222+00



222+50



221+75



222+25

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED UNDERGROUND UTILITIES INSTALLATION BY OTHERS IS NOT PART OF THE SCOPE OF THIS PROJECT UNLESS OTHERWISE SHOWN.
2. APPROXIMATE LOCATION OF WATER UTILITY BUILT UNDER SEPARATE CONTRACT ASSUMED TO BE IN PLACE AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

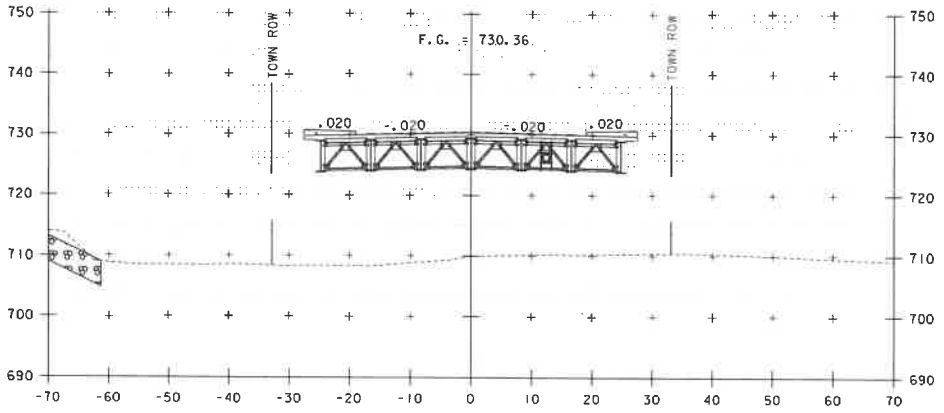
STA 221+75 TO STA 222+50

H&H

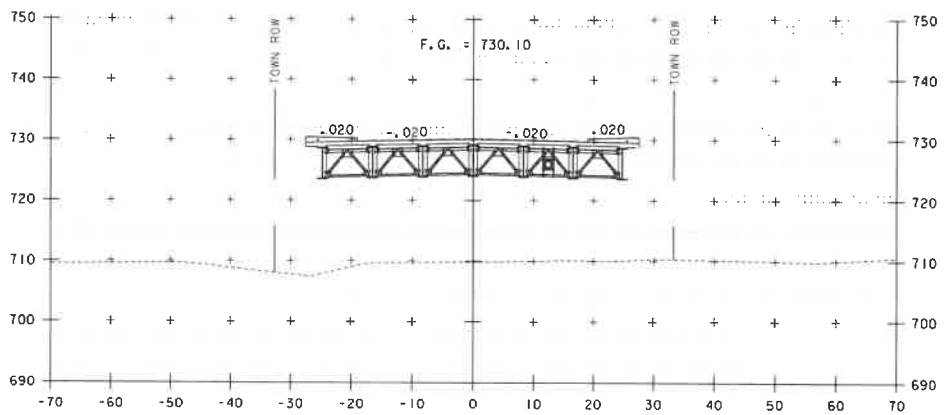
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223xs.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
ROADWAY CROSS SECTIONS SHEET 3

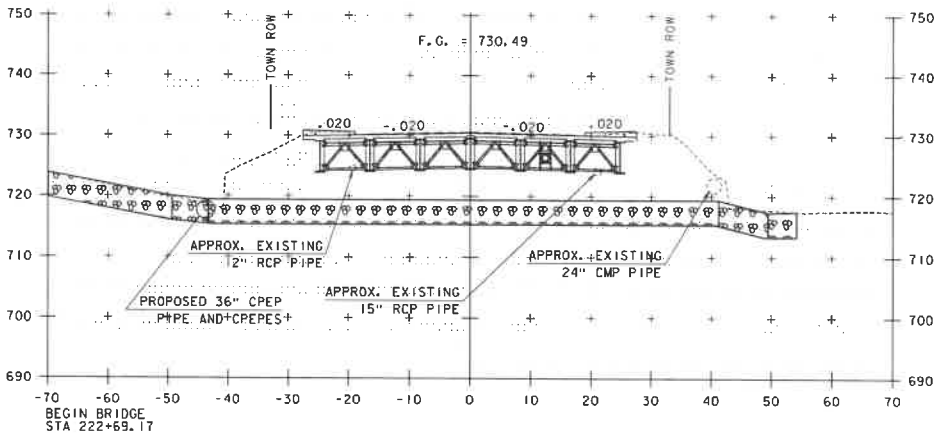
PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 79 OF 102



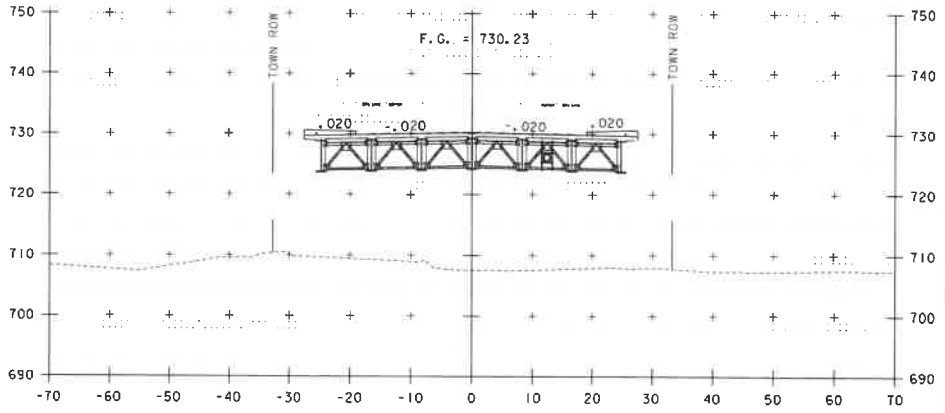
223+00



223+50



222+75



223+25

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED UNDERGROUND UTILITIES INSTALLATION BY OTHERS IS NOT PART OF THE SCOPE OF THIS PROJECT UNLESS OTHERWISE SHOWN.
2. APPROXIMATE LOCATION OF WATER UTILITY BUILT UNDER SEPARATE CONTRACT ASSUMED TO BE IN PLACE AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

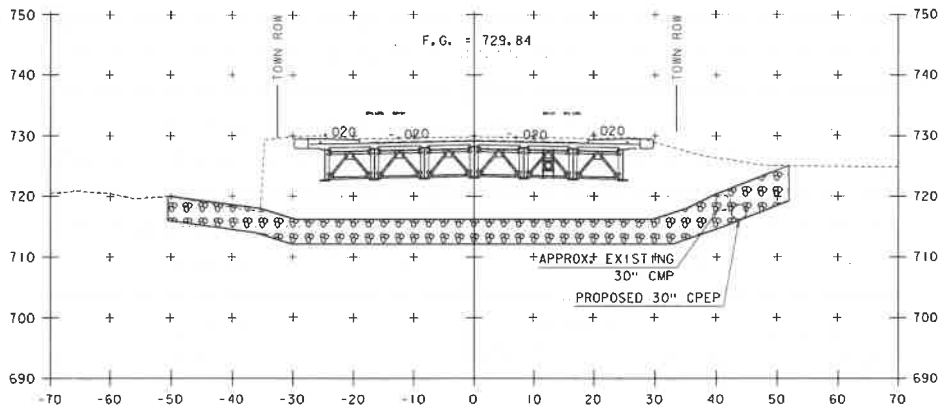
STA 222+75 TO STA 223+50

H&H

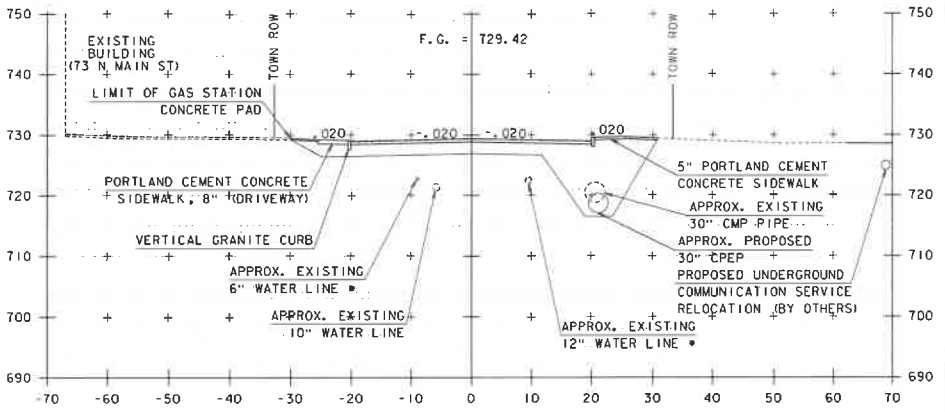
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223xs.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
ROADWAY CROSS SECTIONS SHEET 4

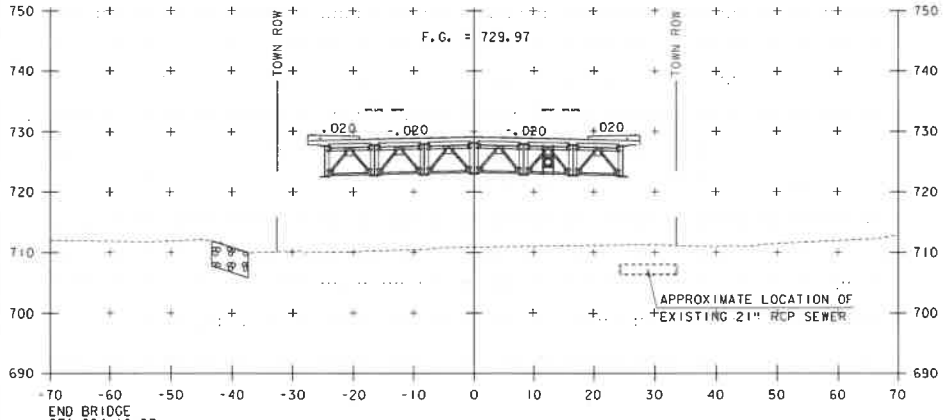
PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 80 OF 102



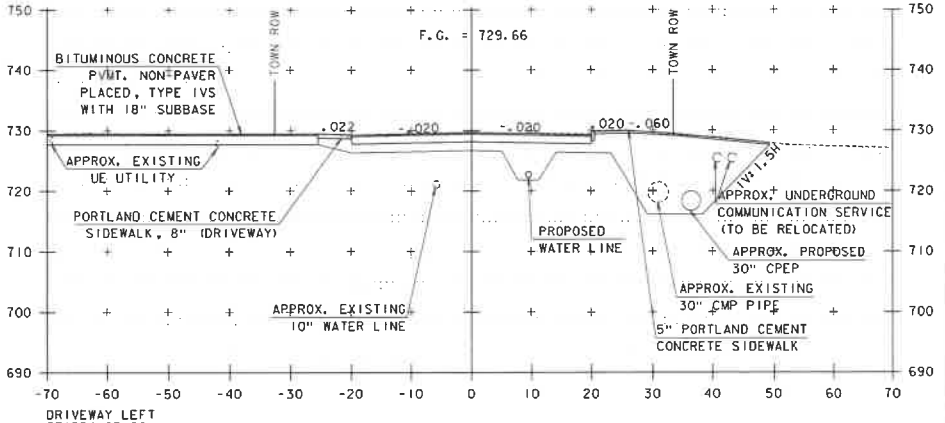
224+00



224+50



223+75



224+25

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED UNDERGROUND UTILITIES INSTALLATION BY OTHERS IS NOT PART OF THE SCOPE OF THIS PROJECT UNLESS OTHERWISE SHOWN.
2. APPROXIMATE LOCATION OF WATER UTILITY BUILT UNDER SEPARATE CONTRACT ASSUMED TO BE IN PLACE AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

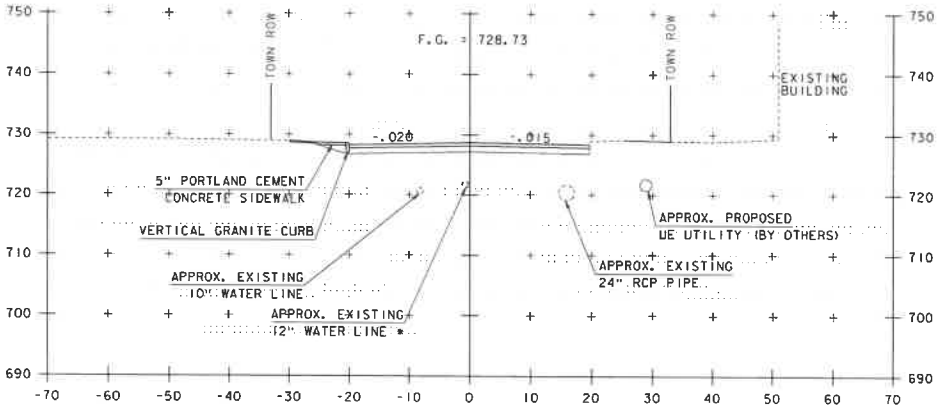
STA 223+75 TO STA 224+50

H&H

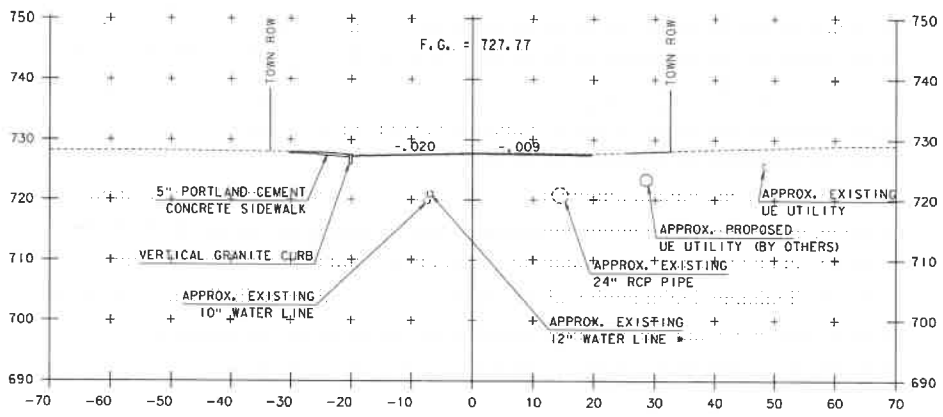
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: zt9J223xs.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
ROADWAY CROSS SECTIONS SHEET 5

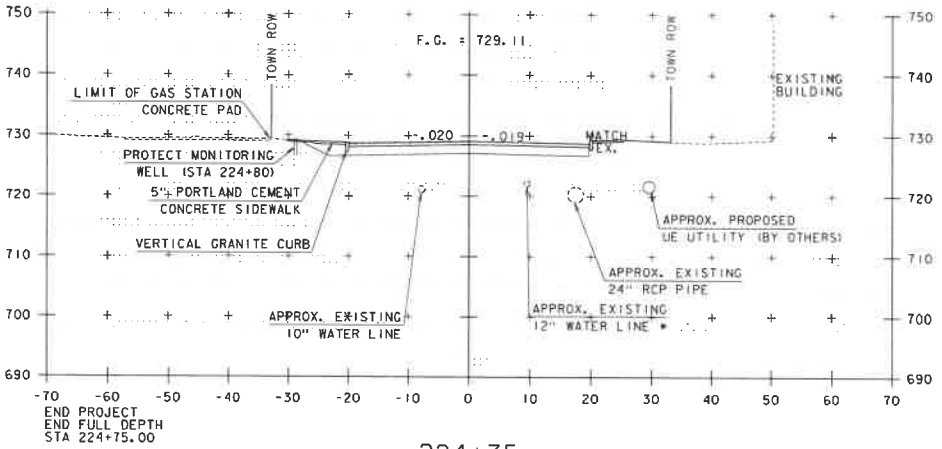
PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 81 OF 102



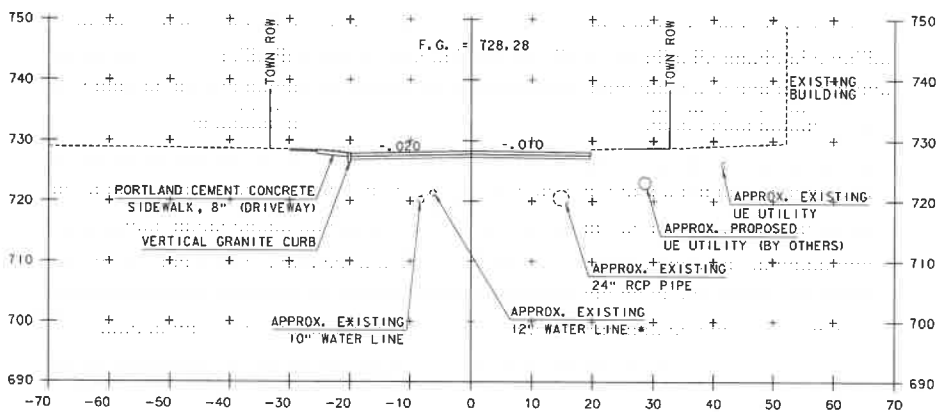
225+00



225+50



224+75



225+25

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED UNDERGROUND UTILITIES INSTALLATION BY OTHERS IS NOT PART OF THE SCOPE OF THIS PROJECT UNLESS OTHERWISE SHOWN.
2. APPROXIMATE LOCATION OF WATER UTILITY BUILT UNDER SEPARATE CONTRACT ASSUMED TO BE IN PLACE AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

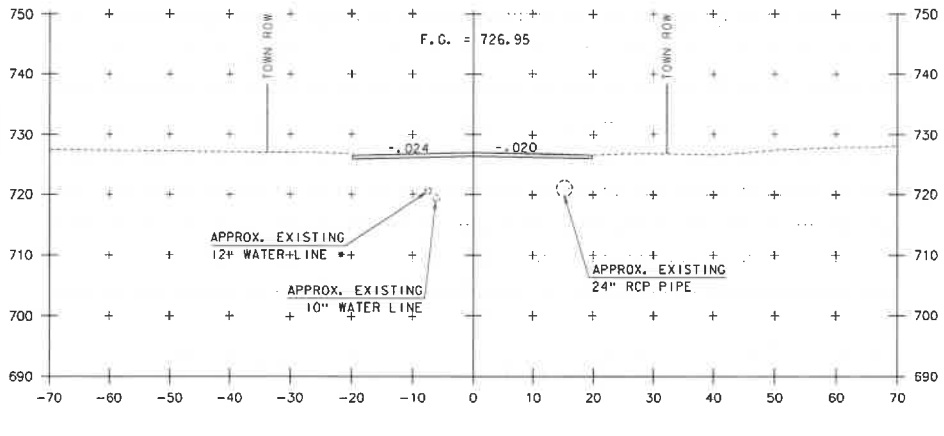
STA 224+75 TO STA 225+50

H&H

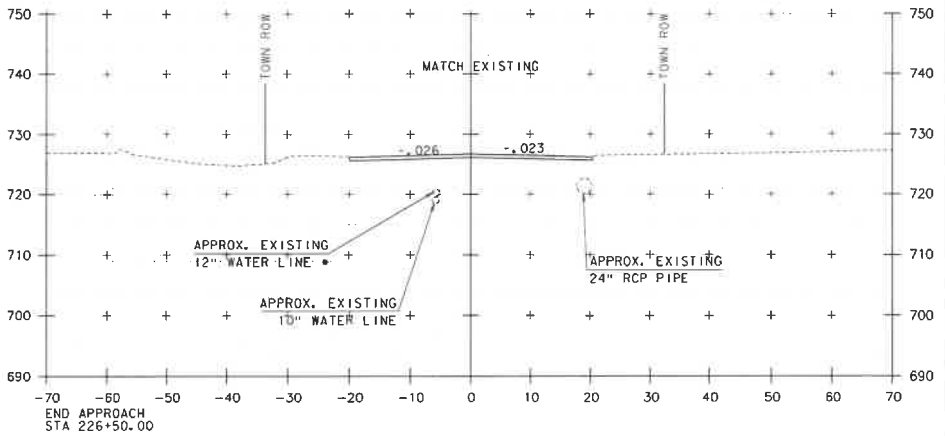
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223xs.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
ROADWAY CROSS SECTIONS SHEET 6

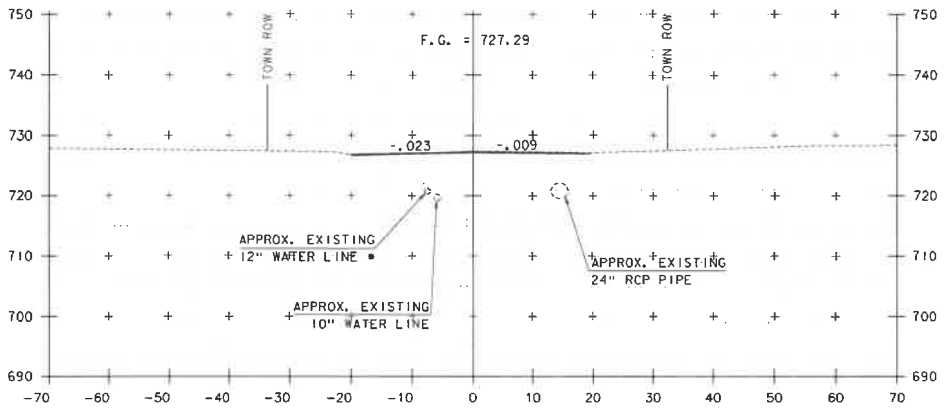
PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 82 OF 102



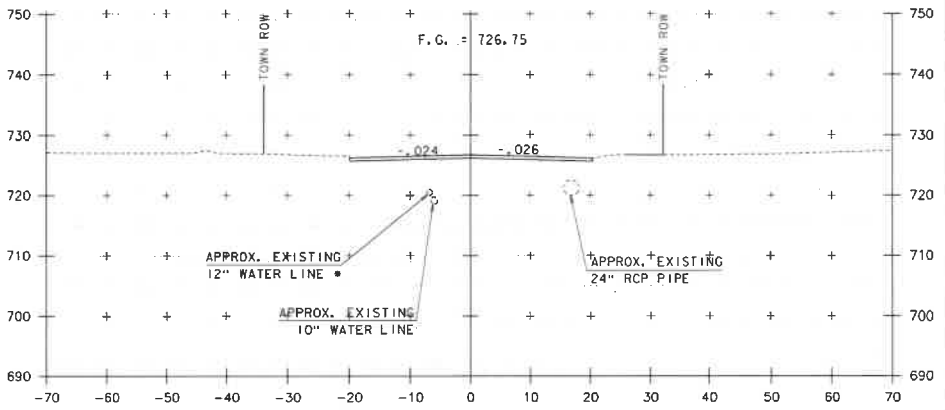
226+00



226+50



225+75



226+25

NOTE:

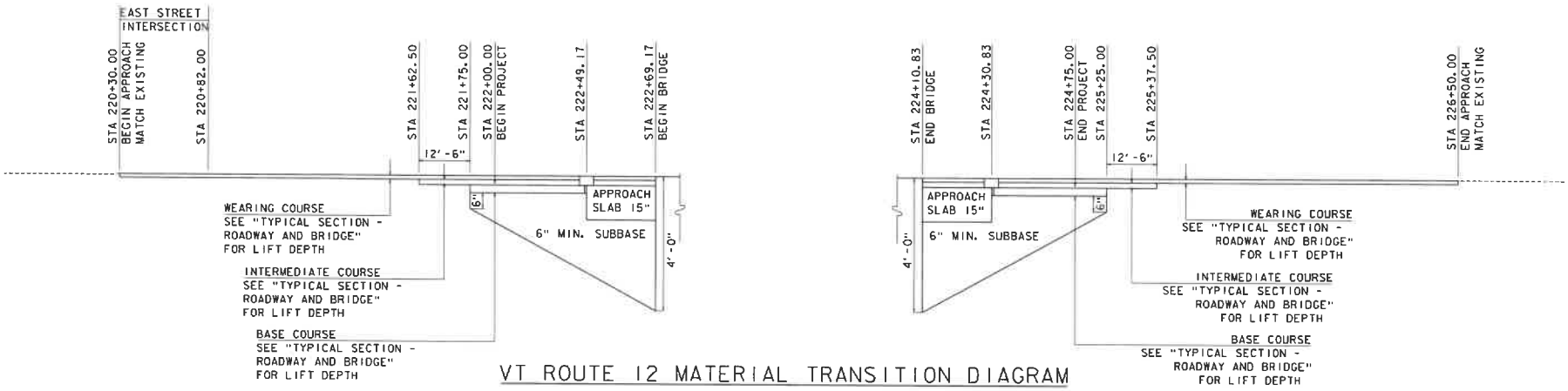
1. EARTHWORK ASSOCIATED WITH PROPOSED UNDERGROUND UTILITIES INSTALLATION BY OTHERS IS NOT PART OF THE SCOPE OF THIS PROJECT UNLESS OTHERWISE SHOWN.
2. APPROXIMATE LOCATION OF WATER UTILITY BUILT UNDER SEPARATE CONTRACT ASSUMED TO BE IN PLACE AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

STA 225+75 TO STA 226+50

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

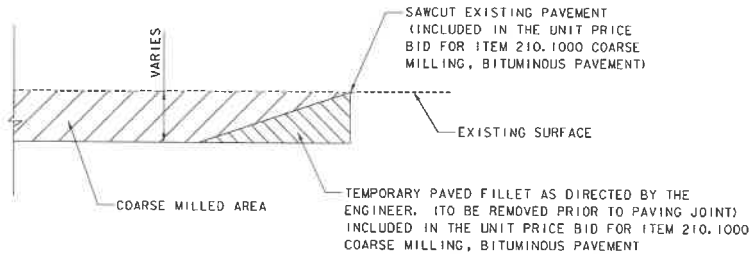
FILE NAME: z19J223xs.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
ROADWAY CROSS SECTIONS SHEET 7

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 83 OF 102



VT ROUTE 12 MATERIAL TRANSITION DIAGRAM

(NOT TO SCALE)

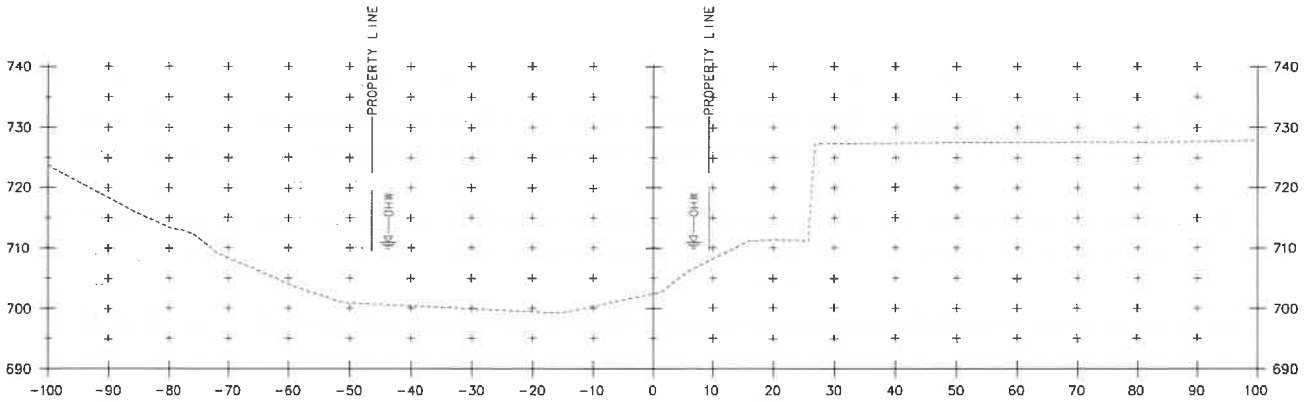


DETAIL AT VERTICAL COARSE MILLING JOINTS

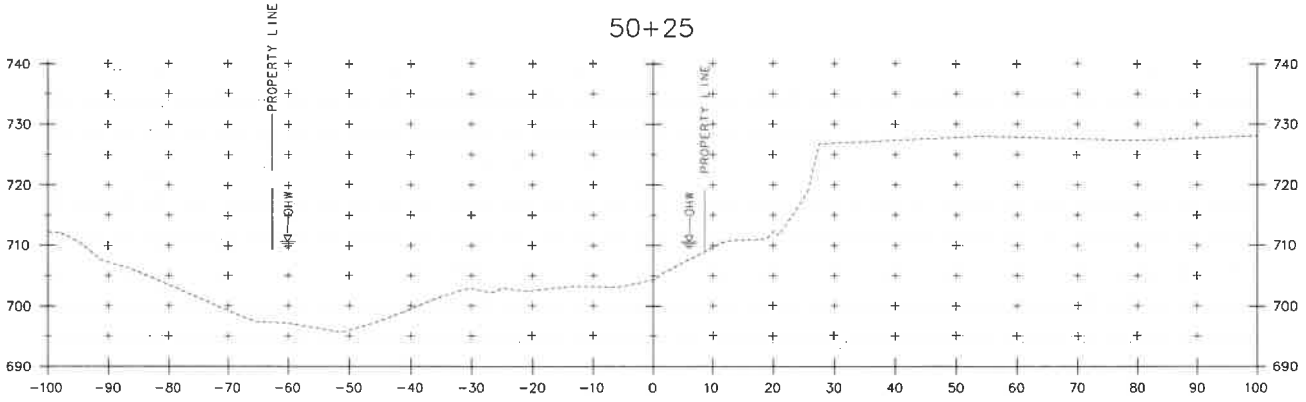
NOTE: THIS DETAIL SHALL BE USED AT THE LOCATIONS SHOWN ABOVE AS DIRECTED BY THE ENGINEER.

H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223m+d.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
MATERIAL TRANSITION DIAGRAM	SHEET 84 OF 102



50+25



50+00

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

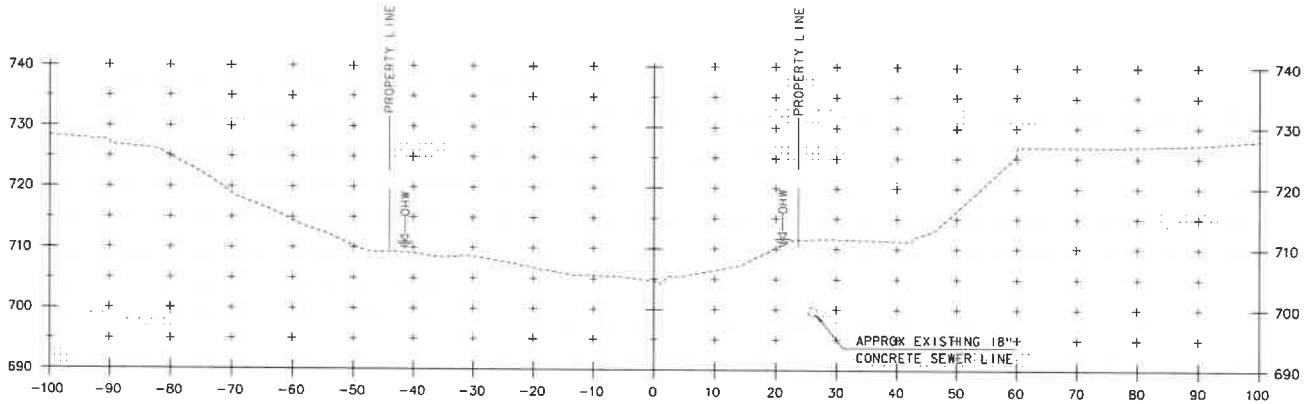
STA 50+00.00 TO STA 50+25.00

PROJECT NAME: NORTHFIELD

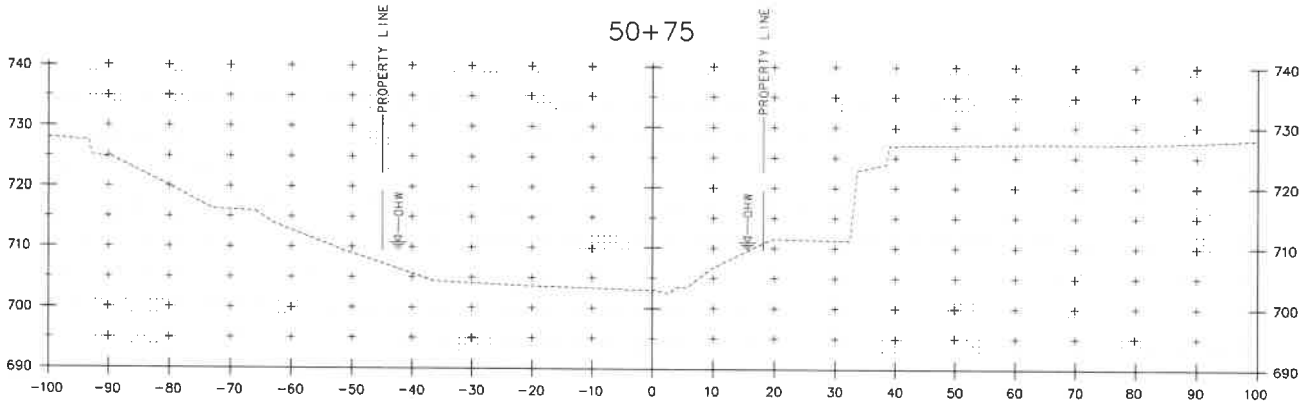
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 1

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 85 OF 102



50+75



50+50

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

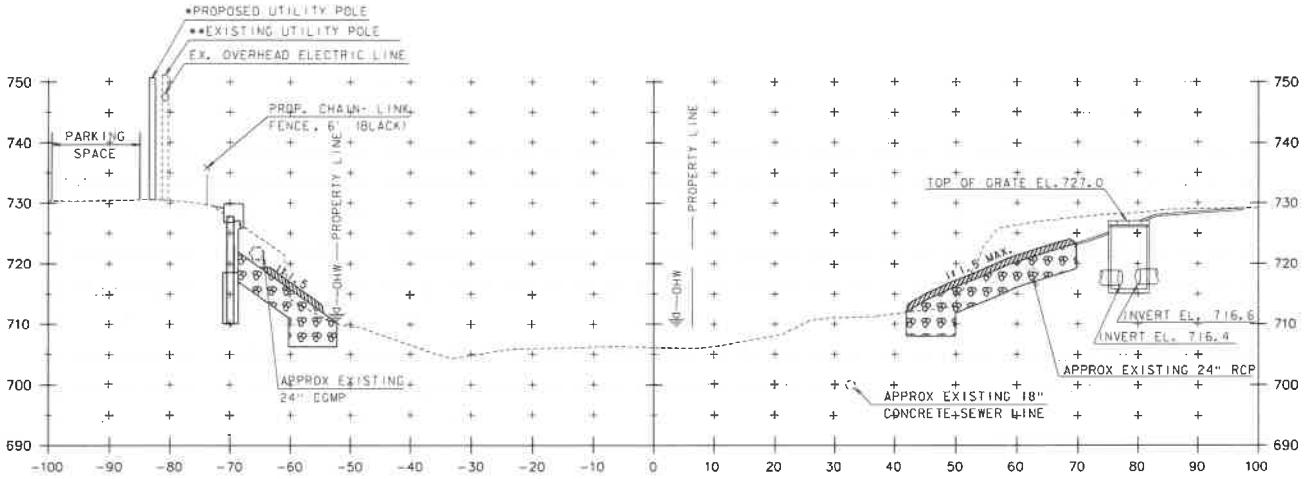
STA 50+50.00 TO STA 50+75.00

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

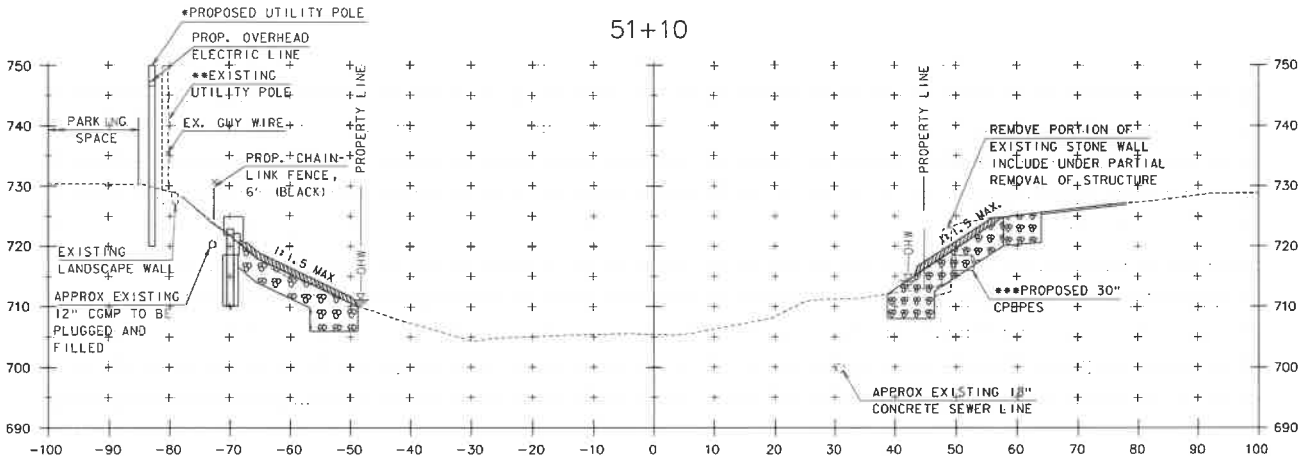
FILE NAME: z19j223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 2

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 86 OF 102



* PROJECTED (ACTUAL STA. 51+05.68)
**PROJECTED (ACTUAL STA. 51+05.75)

51+10



* PROJECTED (ACTUAL STA. 51+05.68)
** PROJECTED (ACTUAL STA. 51+05.75)
*** PROJECTED (ACTUAL STA. 51+04.81)

STA 50+95.0 LT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN STONE FILL, TYPE IV
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN GRUBBING MATERIAL

51+00

STA 50+93.0 RT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION, EX. STONE WALL REMOVAL
BEGIN STONE FILL, TYPE IV
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN GRUBBING MATERIAL

NOTE:

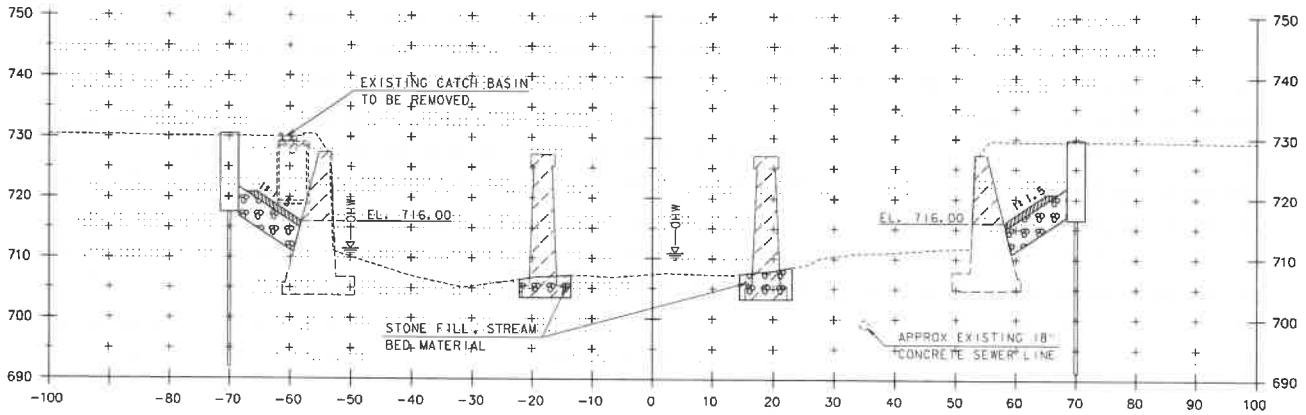
1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY. BACK STATION FOR STONE FILL ASSUMED TO BE STA. 50+93 FOR CONSERVATIVE PURPOSES.

STA 51+00.0000 TO STA 51+10.0000

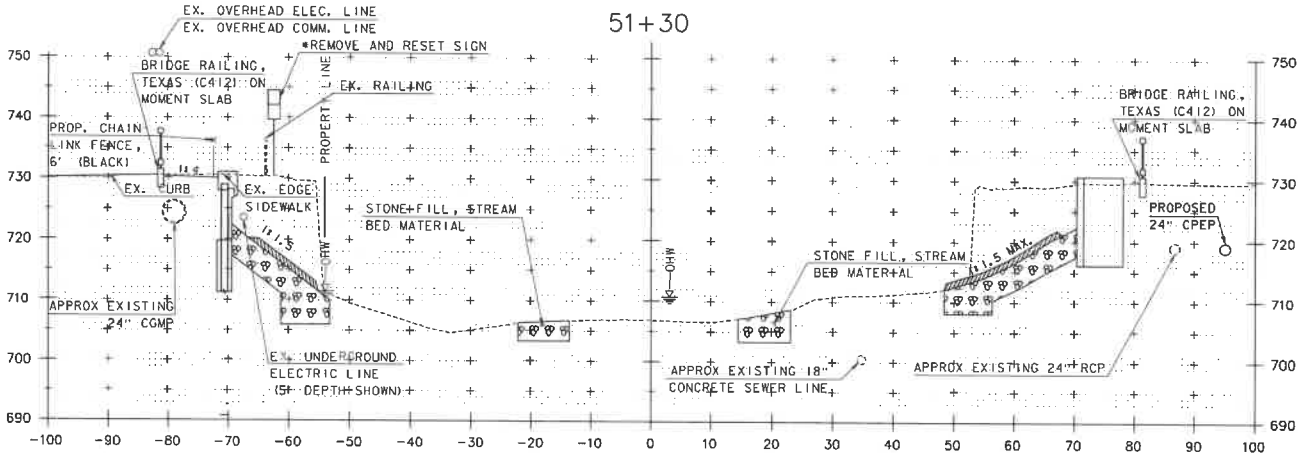
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19j223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 3

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 87 OF 102



51+30



51+20

* SEE SIGN AND LINE TABLE SHEET FOR DETAIL

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

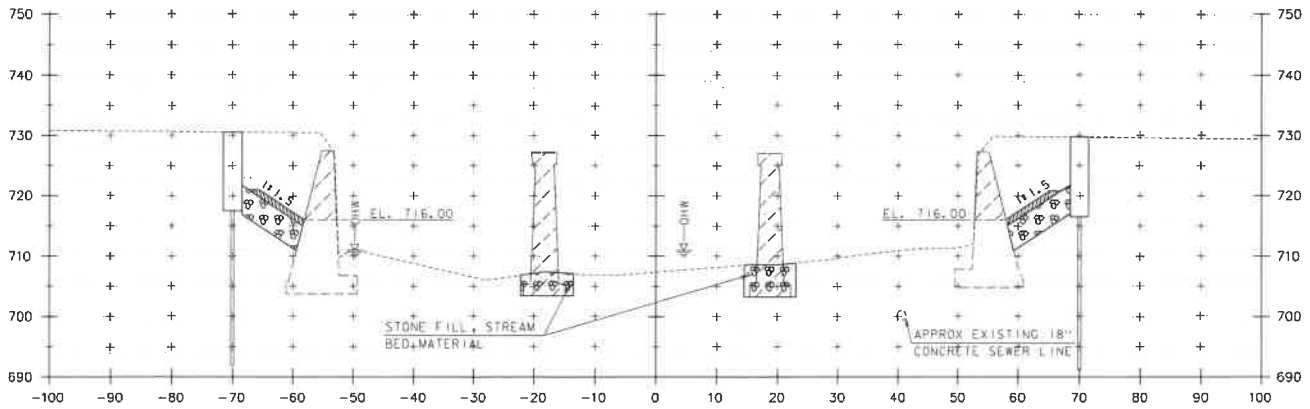
STA 51+20.0000 TO STA 51+30.0000

PROJECT NAME: NORTHFIELD

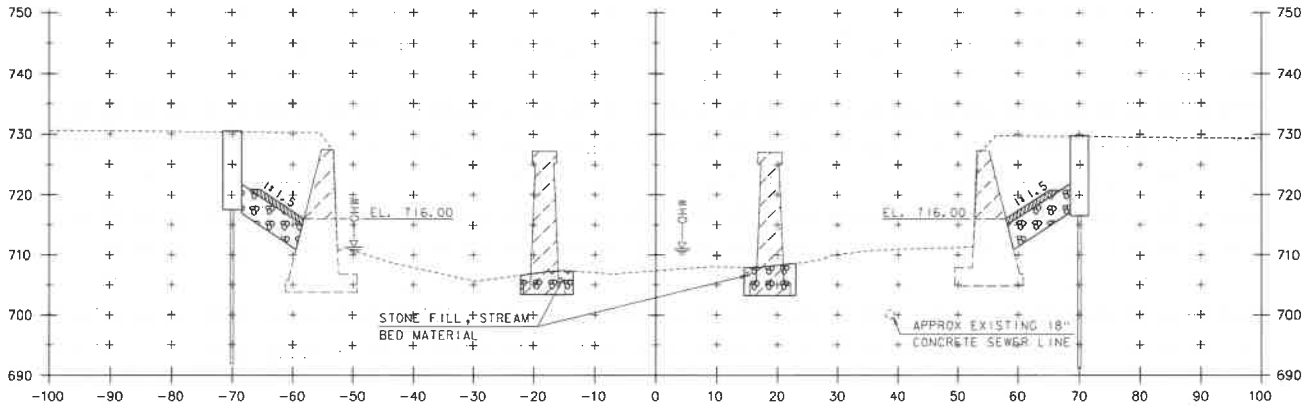
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19j223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 4

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 88 OF 102



51+50



51+40

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

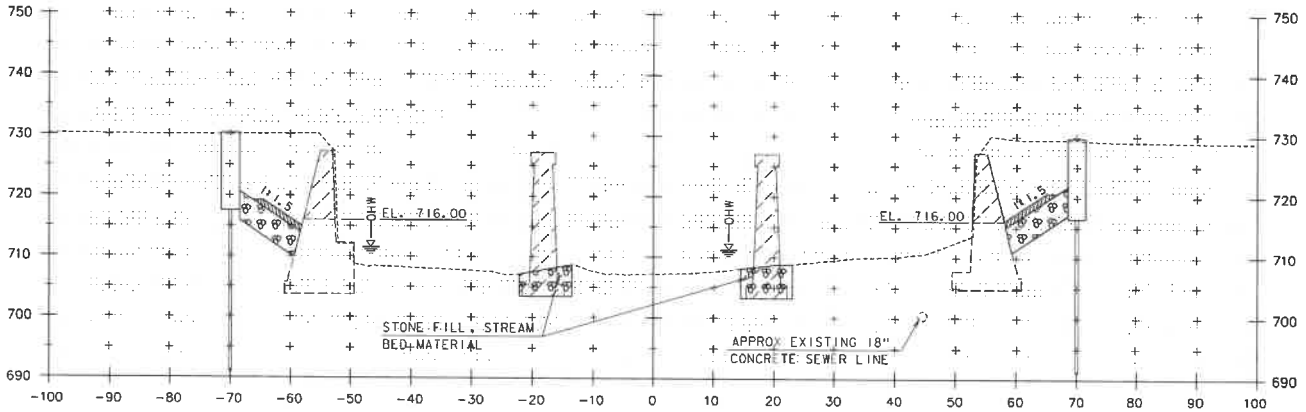
STA 51+40.0000 TO STA 51+50.0000

PROJECT NAME: NORTHFIELD

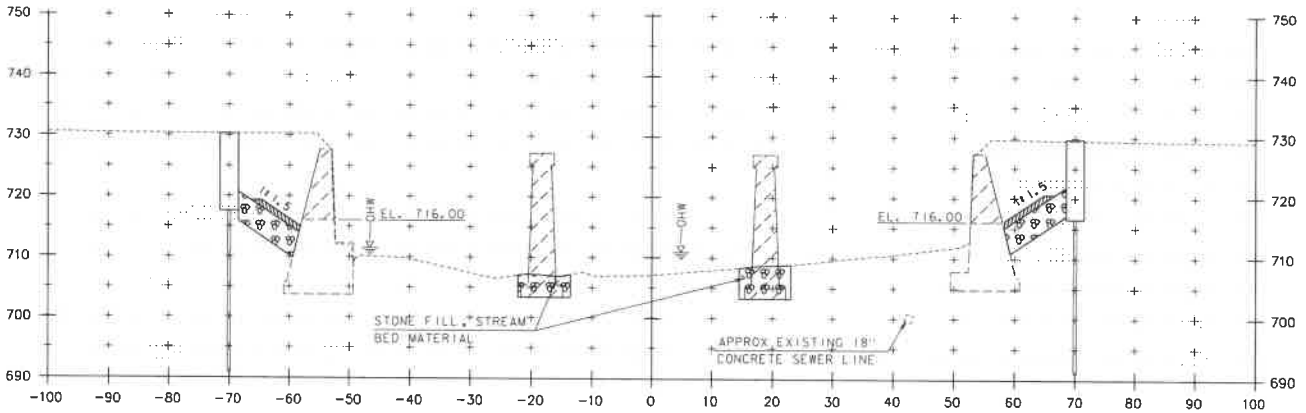
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 5

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 89 OF 102



51+70



51+60

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

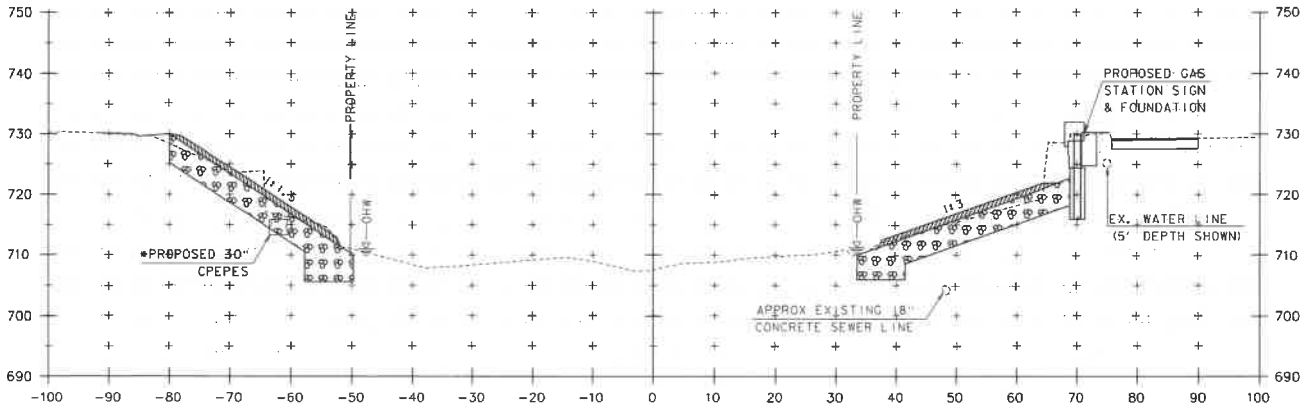
STA 51+60.0000 TO STA 51+70.0000

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 024I(58)

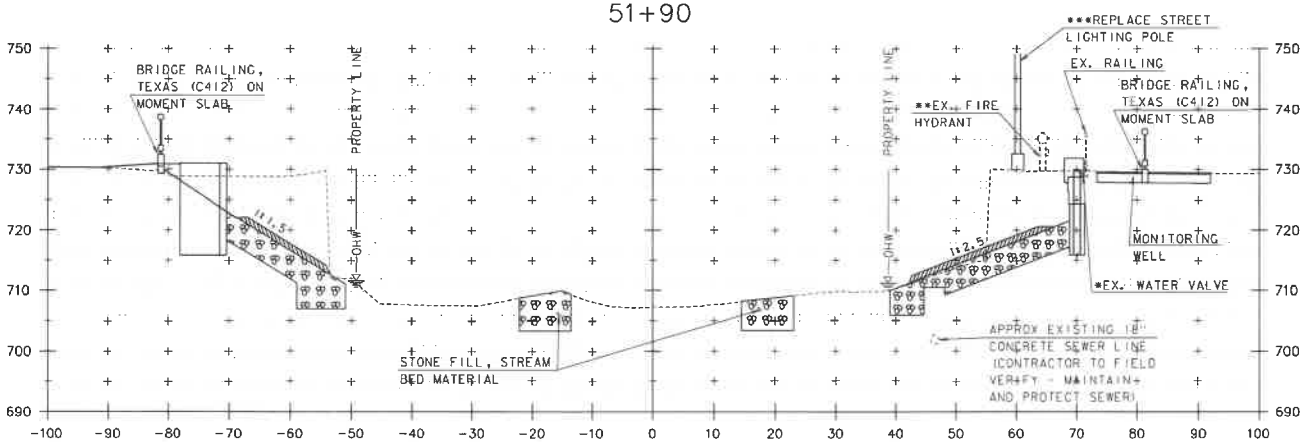
FILE NAME: z19J223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 6

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 90 OF 102



51+90

* PROJECTED (ACTUAL STA. 51+94.2)



51+80

* PROJECTED (ACTUAL STA. 51+82.0)
** PROJECTED (ACTUAL STA. 51+81.4)
***SEE LIGHTING PLAN SHEET FOR DETAIL

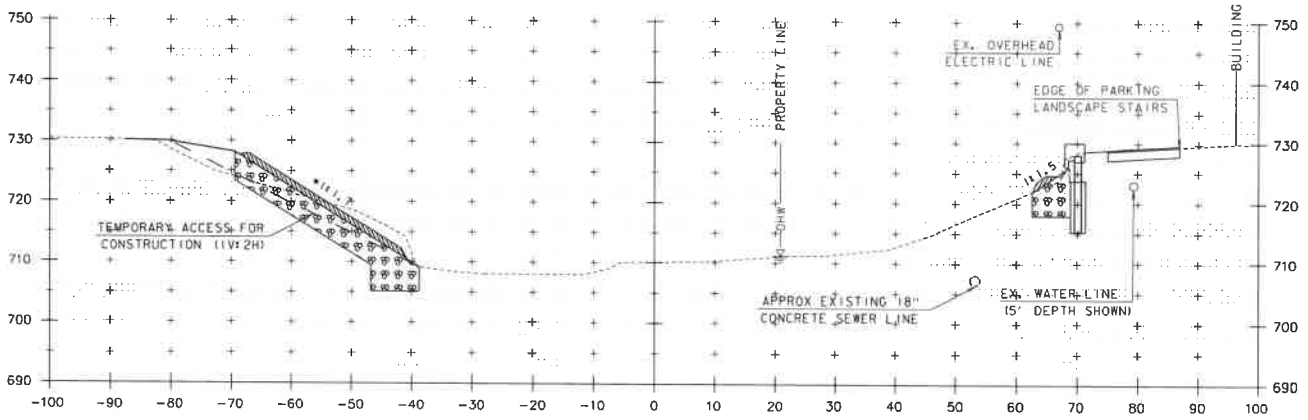
NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

STA 51+80.0000 TO STA 51+90.0000

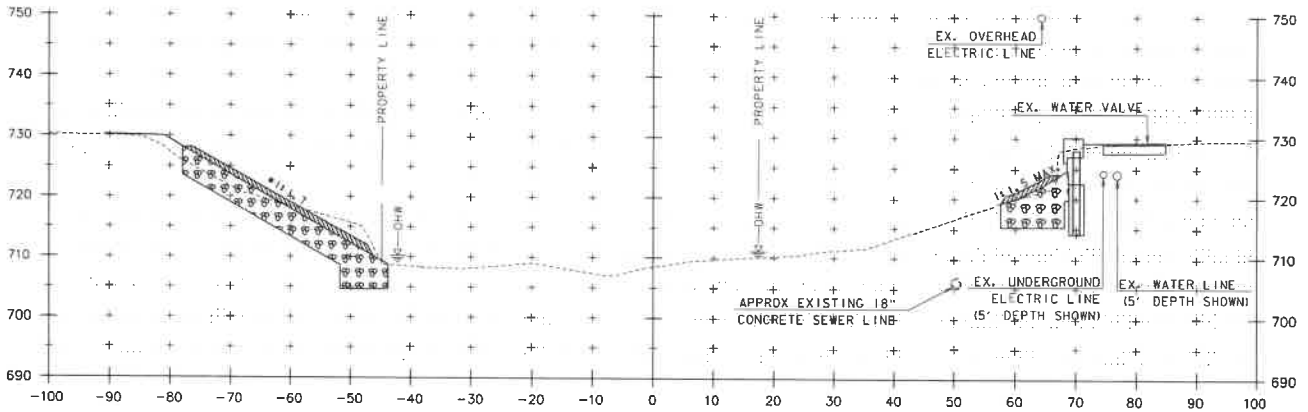
H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223xs_channel.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
CHANNEL CROSS SECTIONS SHEET 7	SHEET 91 OF 102



52+15

* 1:1.5 SLOPE MEASURED NORMAL TO CONTOUR



52+00

* 1:1.5 SLOPE MEASURED NORMAL TO CONTOUR

STA 52+00.00 TO STA 52+15.00

NOTE:

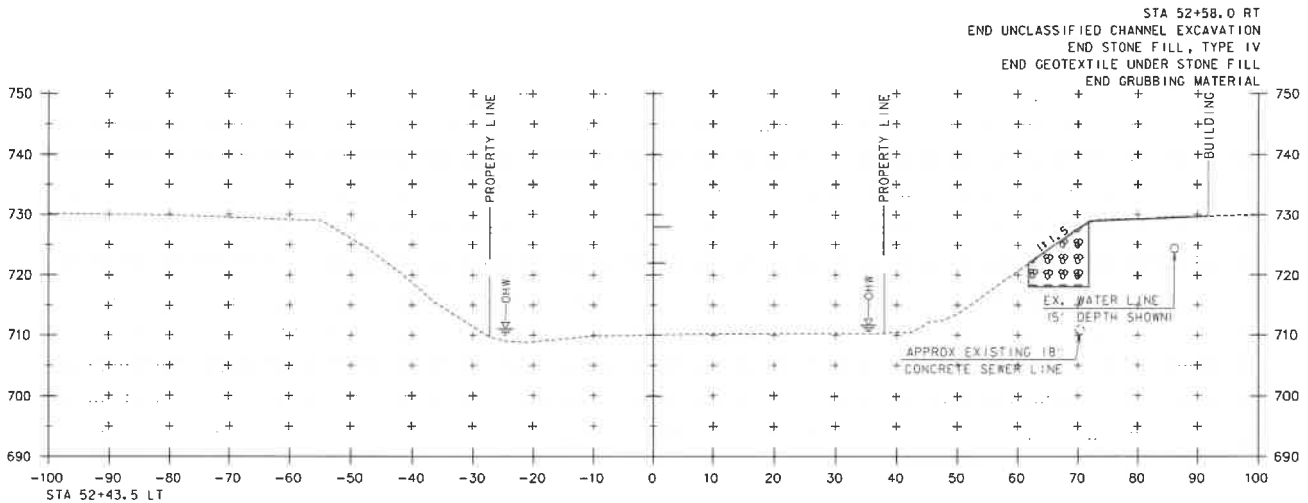
1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

H&H

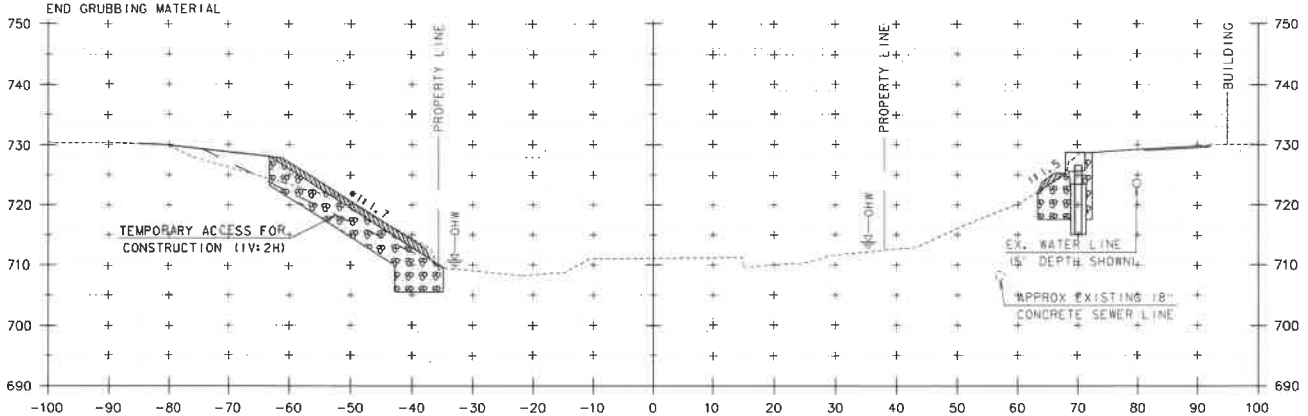
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 8

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 92 OF 102



52+50



52+25

* 1:1.5 SLOPE MEASURED NORMAL TO CONTOUR

NOTE:

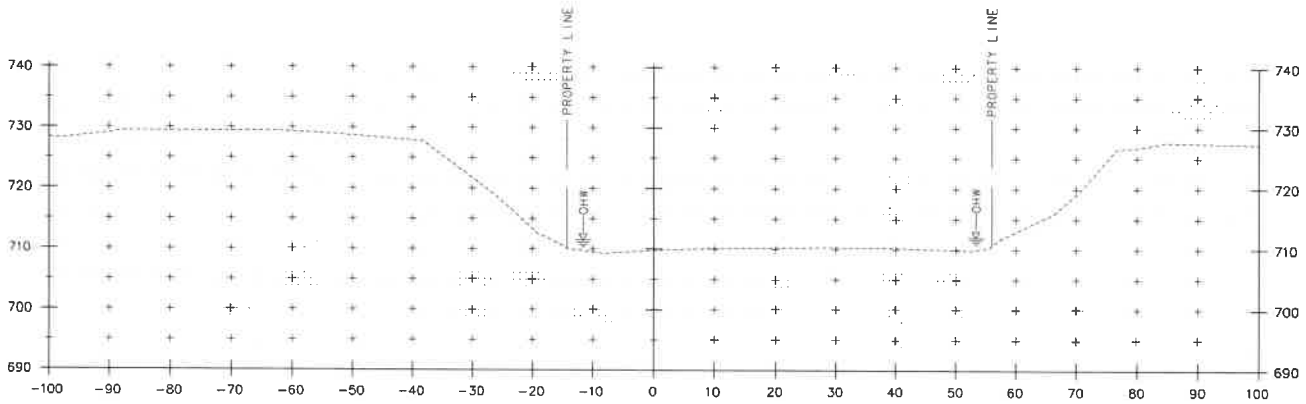
1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

STA 52+25.00 TO STA 52+50.00

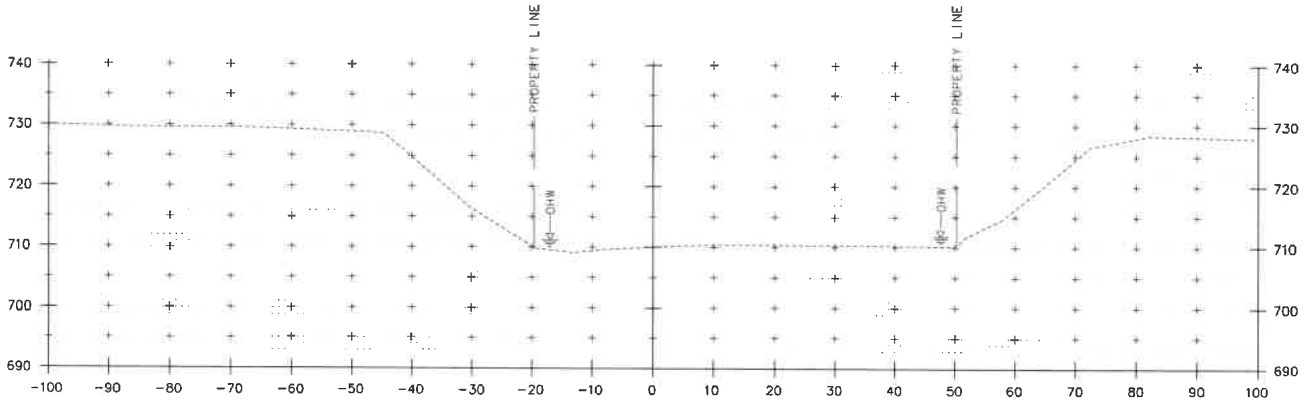
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19]223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 9

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 93 OF 102



53+00



52+75

NOTE:

1. EARTHWORK ASSOCIATED WITH PROPOSED WALLS, BRIDGE AND DRAINAGE ELEMENTS ARE SHOWN SCHEMATICALLY AND FOR REFERENCE PURPOSES ONLY.

STA 52+75.00 TO STA 53+00.00

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223xs_channel.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
CHANNEL CROSS SECTIONS SHEET 10

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 94 OF 102

EPSC PLAN NARRATIVE

1. PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 60 WITH RELATED ROADWAY APPROACH WORK. BRIDGE 60 OVER DOG RIVER IS LOCATED IN THE TOWN OF NORTHFIELD, ON VT ROUTE 12, APPROXIMATELY 1.1 MILES NORTH OF THE JUNCTION WITH VT ROUTE 12A SOUTH. THE PROJECT LOCATION BEGINS AT MILE POST 4.197 (STA 222+00.00) AND ENDS AT MILE POST 4.249 (STA 224+75.00).

THE NEW STRUCTURE WILL BE APPROXIMATELY 141.66 FEET IN LENGTH WITH 133.34 FEET OF ROADWAY WORK, CONSTRUCTED ON NEW FOOTINGS ALONG THE SAME ALIGNMENT.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

IT IS ANTICIPATED THAT CONSTRUCTION WILL LAST ONE CONSTRUCTION SEASON.

2. AMOUNT OF DISTURBANCE & RISK EVALUATION

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.92 ACRES.

THE MAXIMUM CONCURRENT EARTH DISTURBANCE USED TO SCORE THIS PROJECT IN APPENDIX A RISK ASSESSMENT IS 2.00 ACRES.

ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

3. MAJOR COMPONENTS & SEQUENCING

THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION ACTIVITIES TO MINIMIZE THE EXTENT OF DISTURBED SOILS LEFT OPEN TO EROSION AT ANY GIVEN TIME. PROJECT DEMARCATION FENCING WILL BE INSTALLED AT THE PROJECT LIMITS. EROSION PREVENTION AND SEDIMENT CONTROLS WILL BE UTILIZED, AS SHOWN IN THE PLANS, THROUGHOUT THE DURATION OF CONSTRUCTION. THE EXISTING SUPERSTRUCTURE AND PORTIONS OF THE EXISTING ABUTMENTS AND PIERS WILL BE REMOVED. EXCAVATION AND GRADING WILL TAKE PLACE AT THE PROPOSED ABUTMENTS. WATER DIVERSION AND DEWATERING WILL BE UTILIZED BY THE CONTRACTOR TO ACCESS THE EXISTING PIERS. EXISTING PAVEMENT AND ROADWAY BASE WILL BE EXCAVATED AND REPLACED WITH THE PROPOSED ROADWAY AT THE APPROACHES. PROPOSED UTILITIES WILL BE PLACED CONCURRENTLY WITH THE PROPOSED ROADWAY AT THE APPROACHES. PILES AND PILECAPS WILL BE INSTALLED, FOLLOWED BY THE STEEL BEAMS, DECK, AND APPROACH SLABS. FOLLOWING FINAL GRADING, TURF WILL BE ESTABLISHED ON DISTRUBED AREAS, PROPOSED SIDEWALKS WILL BE INSTALLED, AND PAVEMENT WILL BE PLACED. LASTLY, ALL EROSION PREVENTION AND SEDIMENT CONTROL ITEMS WILL BE REMOVED.

4. SITE DESCRIPTION
4.1 VEGETATED BUFFERS

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

THIS PROJECT DOES NOT RELY ON VEGETATED BUFFERS AS A MITIGATING RISK FACTOR.

4.2 STREAM CROSSINGS

THIS PROJECT INCLUDES (1) STREAM CROSSINGS, AS DESCRIBED IN SECTION 5.1 BELOW. WORK WITHIN THE WATER IS BEING AUTHORIZED THROUGH THE VANR DEC RIVER MANAGEMENT PROGRAM AND THE US ARMY CORPS OF ENGINEERS.

4.3 WETLANDS

THERE ARE NO WETLANDS OR WETLAND BUFFERS BEING IMPACTED WITHIN THE PROJECT LIMITS.

4.4 TOPOGRAPHY

THE TOPOGRAPHY OF THE PROJECT AREA IS GENERALLY FLAT. THE BRIDGE IS LOCATED IN A DOWNTOWN VILLAGE SETTING, WITH A CROSSWALK LOCATED AT THE NORTH OF THE BRIDGE AND ON-STREET PARKING LOCATED JUST OFF THE SOUTH END OF THE BRIDGE NESTLED BETWEEN DRIVEWAYS. COMMERCIAL BUSINESSES WITH PAVED PARKING LOTS ARE LOCATED ALONG THE SOUTHWEST AND NORTHWEST QUADRANTS. THERE IS A COMMERCIAL BUSINESS WITH CORRESPONDING DRIVEWAY LOCATED JUST OUTSIDE OF THE PROJECT LIMITS IN THE NORTHEAST QUADRANT.

4.5 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF INTENTIONALLY PLANTED AND NATURALLY OCCURING DECIDUOUS TREES, SHRUBS, AND HERBACEOUS GROWTH. THERE IS MOWED GRASS FRONTAGE ALONG THE SOUTHEAST AND NORTHEAST QUADRANTS. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE PROJECT. UPON COMPLETION, THE DISTURBED VEGETATION SHALL BE REESTABLISHED WITH LIVE STAKES, DECIDUOUS TREES AND SHRUBS, SEED, AND MULCH PER THE LANDSCAPE PLAN.

4.6 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE. SOILS ON THE PROJECT SITE INCLUDE:
MACHIAS FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES, "K FACTOR" = 0.20
COLTON GRAVELLY SANDY LOAM, 3 TO 8 PERCENT SLOPES, "K FACTOR" = 0.17

ADDITIONALLY, THERE ARE CONTAMINATED SOILS AND POTENTIAL HAZARDOUS WASTE WITHIN THE PROJECT LIMITS. PER VANR HAZARDOUS SITES LIST, HAZARDOUS SITES ARE LOCATED IN THE NORTHWEST AND SOUTHWEST QUADRANTS OF THE PROJECT, AND A HAZARDOUS WASTE GENERATOR IS LOCATED IN THE NORTHEAST QUADRANT. THERE IS ALSO AN UNDERGROUND STORAGE TANK LOCATED IN THE NORTHWEST QUADRANT. IN ADDITION, THE ENTIRE PROJECT SITE IS LOCATED WITHIN A MAPPED URBAN SOILS BACKGROUND AREA. THE DISTURBANCE OF SOILS WITHIN THE PROJECT AND THE METHOD BY WHICH THEY ARE HANDLED, TRANSPORTED, AND DISPOED OF WILL BE IN COMPLIANCE WITH THE SOIL MANAGEMENT PLAN THAT HAS BEEN PREPARED FOR THIS PROJECT.

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

4.7 OTHER SENSITIVE RESOURCES

WHILE BRIDGE 60 IS NOT A HISTORICALLY SIGNIFICANT STRUCTURE, IT IS LOCATED WITHIN THE VERMONT STATE REGISTER-LISTED DEPOT SQUARE HISTORIC DISTRICT. THREE CONTRIBUTING BUILDINGS TO THE DEPOT SQUARE HISTORIC DISTRICT ARE LOCATED AT THE SOUTHEASTERN CORNER OF THE BRIDGE: 38 NORTH MAIN STREET, 28 NORTH MAIN STREET, AND 9 EAST STREET. THE CONTRACTOR SHALL NOT TEMPORARILY OR PERMANENTLY IMPACT ANY OF THESE PROPERTIES DURING CONSTRUCTION OF THIS PROJECT. IF ANY OF THE AFOREMENTIONED PROPERTIES ARE AFFECTED, SECTION 4(F) REVIEW WILL BE NECESSARY UNDER FHWA REGULATION 23 CFR 774. THE NEW STRUCTURE'S DESIGN, MATERIALS, MASSING, RAILING AND ANY OTHER PERMANENT FEATURES SHALL BE COMPATIBLE WITH THE HISTORIC DISTRICT.

5. DRAINAGE
5.1 RECEIVING WATERS

DOG RIVER, A WATERCOURSE REGULATED BY THE US ARMY CORPS OF ENGINEERS, IS A NORTH-FLOWING TRIBUTARY OF THE WINOOSKI RIVER, AND IS THE ONLY WATER SOURCE ON THE PROJECT SITE. MUNICIPAL WATER SUPPLIES WATER TO RESIDENCES AND BUSINESSES IN THE IMMEDIATE VICINITY OF THE BRIDGE. THE DOG RIVER IS PRONE TO A MODERATE TO HIGH DEBRIS LOAD, AND THE STREAM BED CONSISTS OF GRAVEL, COBBLES AND BOULDERS. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 59.6 $MILES^2$.

5.2 DISCHARGE POINTS

THIS PROJECT HAS THREE DISCRETE DISCHARGE POINTS WHICH CONVEY RUNOFF FROM WITHIN THE CURBED AREAS OF THE ROADWAY INTO THE RECEIVING WATER FROM DRAINGE OUTFALLS. OUTSIDE OF THE CURBED AREAS, ALL WATER FROM THE PROJECT AREA DRAINS TOWARD THE RIVER AND ENTERS THE RECEIVING WATER IN MULTIPLE LOCATIONS IN THE AREAS DIRECTLY ADJACENT TO THE BRIDGE.

5.3 CONVEYANCE/FLOW PATH FROM PROJECT TO WATERS

A PORTION OF THE PROJECT IS NOT CURBED AND RUNOFF DRAINS OVERLAND ACROSS ADJACENT VEGETATED SIDE SLOPES BEFORE REACHING THE DOG RIVER. FOR THE REMAINING CURBED SEGMENTS, THERE EXIST A NUMBER OF DROP INLETS THAT COLLECT ROADWAY RUNOFF WHICH DRAIN TO OUTFALLS IN THE SOUTHWEST, NORTHEAST AND SOUTHEAST QUADRANTS VIA 24" DRAINAGE PIPES THAT EXTEND TOWARDS THE DOG RIVER STREAMBANK.

6. EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

THE MEASURES INCLUDED IN THIS PLAN ARE PROVIDED AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. IT IS EXPECTED THAT THE CONTRACTOR MAY USE THIS PLAN, WITH ADJUSTMENTS AS NECESSARY, BASED ON THEIR SPECIFIC MEANS AND METHODS OF CONSTRUCTION.

APPLYING THESE MEASURES THROUGHOUT CONSTRUCTION IS CRITICAL TO THEIR SUCCESS IN MINIMIZING SEDIMENT TRANSPORT TO THE RECEIVING WATERS. REFER TO THE DETAILS INCLUDED IN THESE PLANS AND THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION'S VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL FOR SPECIFIC GUIDANCE.

6.1 IDENTIFY LIMITS OF DISTURBANCE

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

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES. BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC).

6.2 LIMIT CONCURRENT DISTURBANCE

LIMITING THE AMOUNT OF SOIL EXPOSED AT ONE TIME REDUCES THE POTENTIAL EROSION ON SITE. CONCURRENT EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY AND EMPLOYING STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE.

6.3 STABILIZE DISTURBED AREAS
6.3.1 ACCESS POINTS/ENTRANCE/EXITS

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES ARE ANTICIPATED ON THIS PROJECT AND SHALL BE LOCATED AS SHOWN ON THIS EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

6.3.2 TEMPORARY MEASURES FOR EXPOSED AREAS DURING CONSTRUCTION

ALL AREAS OF EARTH DISTURBANCE MUST HAVE STABILIZATION IN PLACE WITHIN 14 DAYS OF INITIAL DISTURBANCE. AFTER THIS TIME, DISTURBED AREAS MUST BE STABILIZED IN ADVANCE OF ANY RUNOFF PRODUCING EVENT.

SURFACE ROUGHENING OF EXPOSED SLOPES, SEEDING OF TEMPORARY SLOPES AND STOCKPILES, AND STANDARD MULCHING PRACTICES DESCRIBED IN SPECIFICATION SECTION 653.07 SHALL BE UTILIZED TO TEMPORARILY STABILIZE DISTURBED AREAS.

6.3.3 PERMANENT STABILIZATION AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, ROLLED EROSION CONTROL PRODUCT, TYPE I SHALL BE USED INSTEAD OF MULCH.

CONTRACT ITEM 613.13 - STONE FILL, TYPE IV SHALL BE USED TO ARMOR THE CHANNEL BANK IN THE VICINITY OF BRIDGE ABUTMENTS AND WINGWALL SLOPES.

6.4 DIVERT UPLAND RUNOFF

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

THE PROJECT AREA IS RELATIVELY FLAT; HOWEVER, VT ROUTE 12 SOUTH OF THE PROJECT AREA DRAINS TOWARD THE PROJECT AREA. RUNOFF FROM THESE AREAS MAY NEED TO BE DIVERTED AWAY FROM THE PROJECT AREA. THE CONTRACTOR SHALL REFER TO THE LOW RISK HANDBOOK FOR GUIDANCE.

6.5 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED ON THE DOWNHILL SIDE OF CONSTRUCTION ACTIVITIES, PRIOR TO ANY UP-SLOPE WORK.

IN-WATER SEDIMENT ISOLATION DEVICE SHALL BE ANY MEASURE WHICH EFFECTIVELY SEPARATES SEDIMENTS OR POLLUTANTS FROM WATERS OF THE STATE AS DEFINED IN THE VERMONT WATER QUALITY STANDARDS.

SILT FENCE WILL BE INSTALLED ALONG THE CONTOURS AND AS PROPOSED ON THE EPSC PLAN. WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223epsc_narrative.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
EPSC NARRATIVE SHEET 1

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 95 OF 102

6.6 SLOW DOWN CHANNELIZED RUNOFF

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

TEMPORARY STONE CHECK DAMS ARE NOT ANTICIPATED TO BE NEEDED AS DESIGNED SINCE THE STREAMBED WITHIN THE PROJECT AREA IS RELATIVELY FLAT, AND THE CHANNEL'S FLOW VELOCITY DOES NOT WARRANT THEIR USE.

7. CONSTRUCT PERMANENT CONTROLS

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

PERMANENT STORMWATER TREATMENT DEVICES ARE NOT ANTICIPATED TO BE NEEDED AS DESIGNED.

8. DEWATERING

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS. DEWATERED STORMWATER OR GROUNDWATER MUST BE FILTERED AND ROUTED IN A MANNER THAT DOES NOT RESULT IN VISIBLY TURBID DISCHARGES TO WATERS.

DEWATERING OF SURFACE WATER WITHIN THE COFFERDAM IS ANTICIPATED. THE FILTER BAG DETAIL AND PAY ITEM HAVE BEEN INCLUDED AS A POTENTIAL TREATMENT MEASURE FOR THIS PURPOSE, HOWEVER THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR. ALL COSTS FOR TREATMENT OF DISCHARGE SHALL BE PAID FOR UNDER CONTRACT ITEM 653.45.

9. OFF-SITE AREAS

OFF-SITE WASTE AND BORROW AREAS HAVE NOT BEEN IDENTIFIED FOR THIS PROJECT. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PERMIT, AS NECESSARY, ANY OFF-SITE AREAS THAT ARE NEEDED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 105.25 - 105.28. ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES NECESSARY FOR WASTE, BORROW, AND STAGING AREAS OUTSIDE THE PROJECT LIMITS SHALL BE PAID FOR PER 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

VEHICLE AND EQUIPMENT STORAGE AREAS OR AREAS ADJACENT TO CONSTRUCTION TRAILERS OR OTHER HIGH TRAFFIC AREAS SHALL BE COVERED WITH GEOTEXTILE FABRIC AND 12" OF GRAVEL. FOLLOWING COMPLETION OF CONSTRUCTION, ALL NON-NATIVE MATERIALS SHALL BE REMOVED FROM THE STAGING AREA. COMPACTED, RUTTED, OR OTHERWISE DISTURBED SOILS SHALL BE TILLED, RAKED, SEEDED AND MULCHED.

ERODIBLE MATERIALS STOCKPILED WITHIN THE MATERIAL STORAGE AREAS SHALL BE ISOLATED WITH SILT FENCE OR OTHER ACCEPTABLE SEDIMENT BARRIER. SOIL STOCKPILED ON THE SITE SHALL BE SEEDED AND MULCHED.

10. WINTER CONSTRUCTION

CONSTRUCTION ACTIVITIES MAY CONTINUE INTO THE WINTER CONSTRUCTION SEASON, DEPENDING ON ACTUAL FIELD AND WEATHER CONDITIONS. IF ACTIVITIES ARE ON-GOING BETWEEN OCTOBER 15 AND APRIL 15, THE CONTRACTOR SHALL FOLLOW REQUIREMENTS FOR WINTER CONSTRUCTION, AS DEFINED IN SPECIFIC PERMIT CONDITIONS AND AS FOLLOWS:

- ENLARGED ACCESS POINTS, STABILIZED TO PROVIDE FOR SNOW STOCKPILING.
- LIMITS OF DISTURBANCE MOVED OR REPLACED TO REFLECT BOUNDARY OF WINTER WORK.
- DEVELOPMENT OF A SNOW MANAGEMENT PLAN THAT INCLUDES:
  - ADEQUATE STORAGE AND CONTROL OF MELT-WATER
  - STORAGE OF CLEARED SNOW TO BE PLACED DOWN SLOPE OF DISTURBED AREAS AND OUT OF STORMWATER TREATMENT STRUCTURES
- AREAS OF DISTURBANCE WITHIN 100 FT OF A WATERBODY MUST HAVE REINFORCED (WOVEN WIRE) SILT FENCE INSTALLED ACROSS THE SLOPE, DOWNGRADIENT OF THE EARTH DISTURBANCE. ALTERNATIVELY, REGULAR, NON-WOVEN WIRE SILT FENCE MAY BE USED IF COMBINED WITH EROSION CONTROL BERM, EROSION LOG, OR STRAW WATTLE.
- DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS.
- SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED AHEAD OF FROZEN GROUND.
- MULCH TO BE APPLIED AT A MINIMUM OF 2 INCHES DEPTH WITH 80-90% COVERAGE.
- AREAS OF DISTURBED SOILS MUST BE STABILIZED PRIOR TO ANY RUNOFF-PRODUCING EVENT, WITH THE FOLLOWING EXCEPTION:
  - STABILIZATION IS NOT REQUIRED IF THE WORK IS OCCURRING IN A SELF-CONTAINED EXCAVATION WITH NO OUTLET AND A DEPTH OF 2 FT OR GREATER (OPEN UTILITY TRENCHES), PROVIDED THAT ANY DEWATERING, IF NECESSARY, IS CONDUCTED AS REQUIRED.
- PRIOR TO STABILIZATION, SNOW OR ICE MUST BE REMOVED TO LESS THAN 1" THICKNESS.
- USE STONE TO STABILIZE AREAS WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED.

11. INSPECTION & MAINTENANCE

INSPECTION AND MONITORING OF THE PROJECT'S EPSC MEASURES SHALL BE CONDUCTED IN ACCORDANCE WITH STANDARD SPECIFICATION 653.04 MONITORING EROSION PREVENTION AND SEDIMENT CONTROL PLAN, ALONG WITH PERMIT SPECIFIC INSPECTION REQUIREMENTS.

THE CONTRACTOR SHALL PROVIDE A COPY OF THEIR INSPECTION FORM AS PART OF THEIR EPSC PLAN.

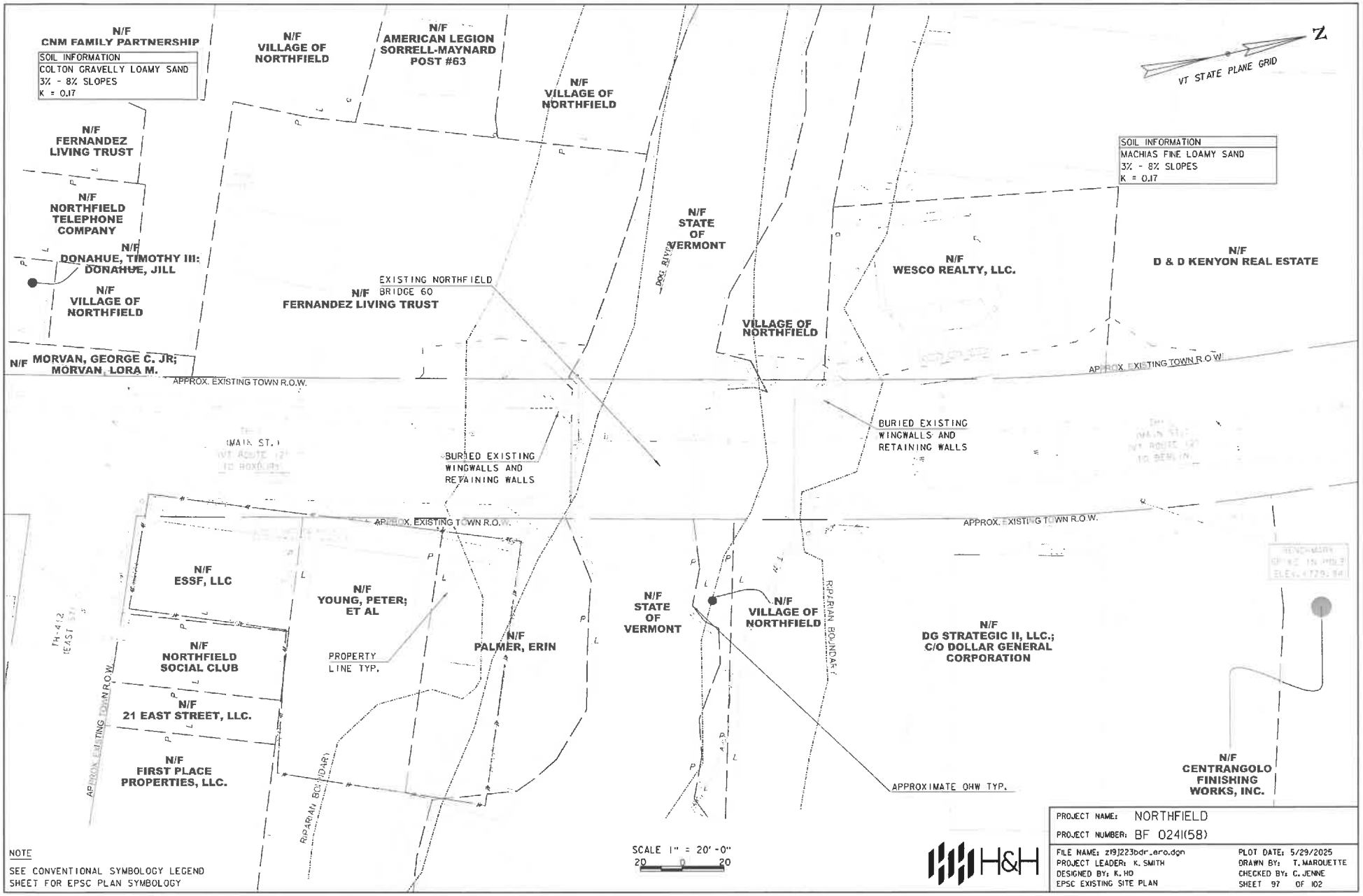
ALL EPSC MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223epsc_narrative.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
EPSC NARRATIVE SHEET 2

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE

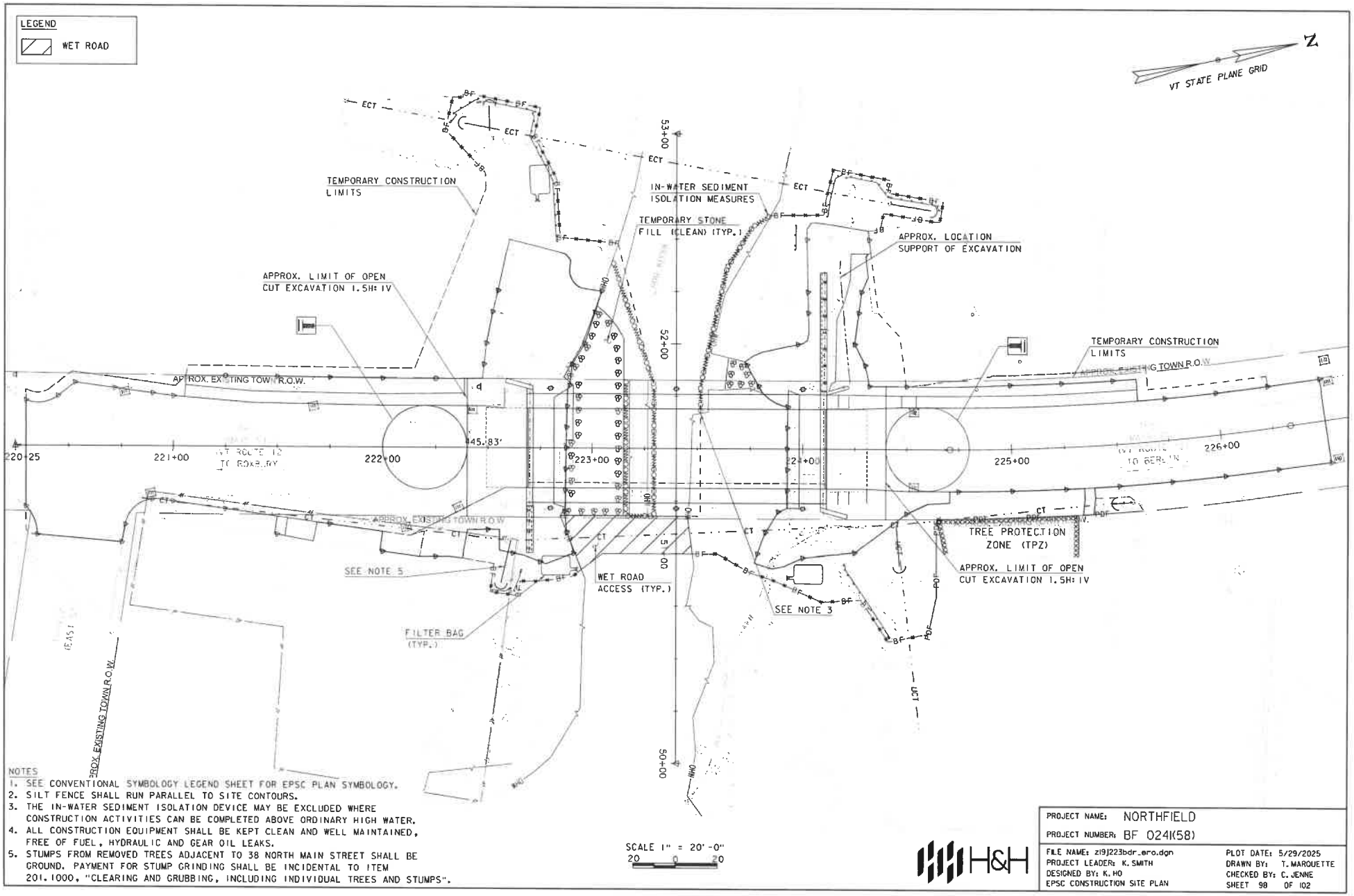


NOTE

SEE CONVENTIONAL SYMBOLOGY LEGEND SHEET FOR EPSC PLAN SYMBOLOGY

H&H

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 024I(58)
FILE NAME: z19J223bdr_ero.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
EPSC EXISTING SITE PLAN	SHEET 97 OF 102



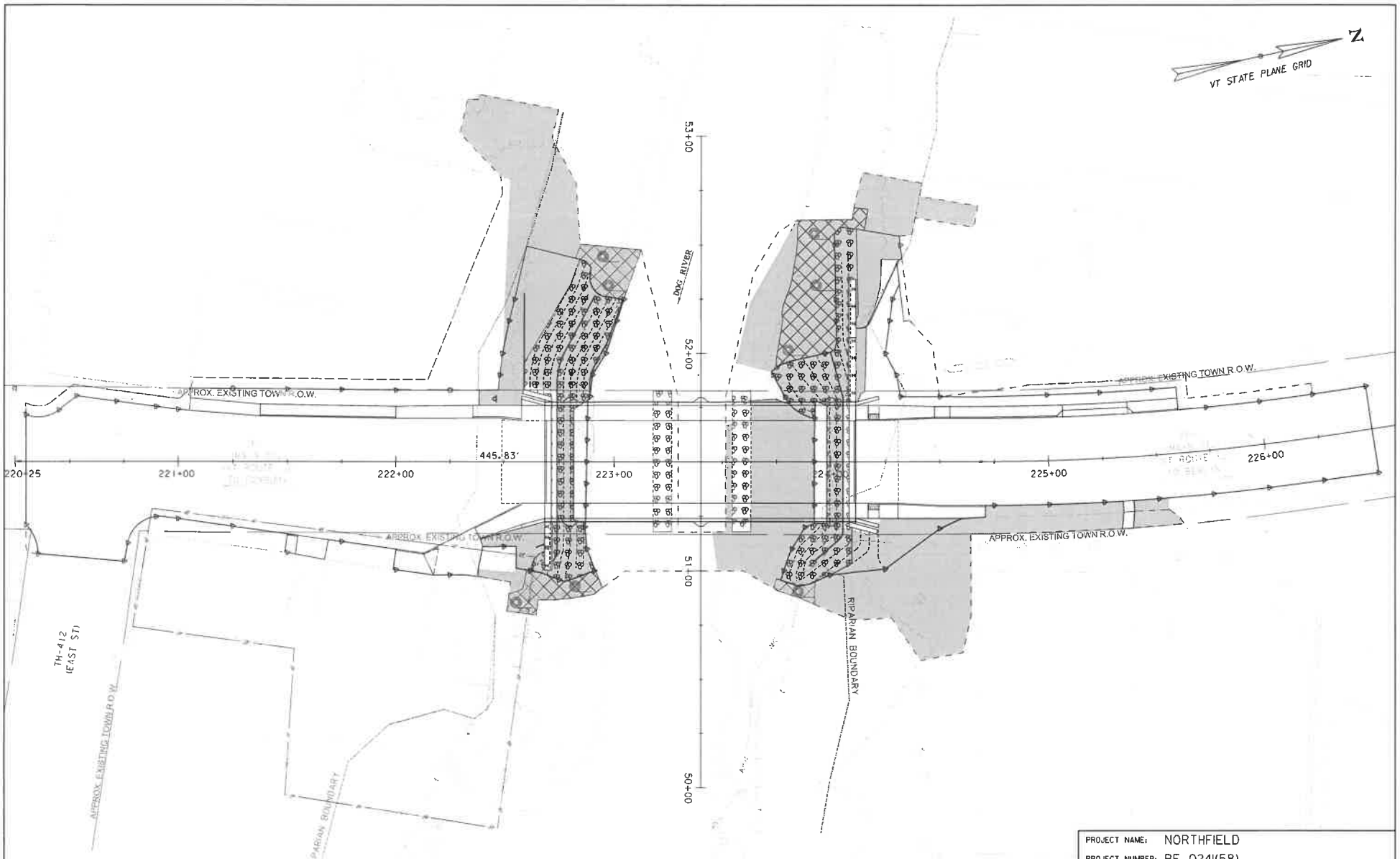
NOTES

1. SEE CONVENTIONAL SYMBOLOGY LEGEND SHEET FOR EPSC PLAN SYMBOLOGY.
2. SILT FENCE SHALL RUN PARALLEL TO SITE CONTOURS.
3. THE IN-WATER SEDIMENT ISOLATION DEVICE MAY BE EXCLUDED WHERE CONSTRUCTION ACTIVITIES CAN BE COMPLETED ABOVE ORDINARY HIGH WATER.
4. ALL CONSTRUCTION EQUIPMENT SHALL BE KEPT CLEAN AND WELL MAINTAINED, FREE OF FUEL, HYDRAULIC AND GEAR OIL LEAKS.
5. STUMPS FROM REMOVED TREES ADJACENT TO 38 NORTH MAIN STREET SHALL BE GROUND. PAYMENT FOR STUMP GRINDING SHALL BE INCIDENTAL TO ITEM 201.1000, "CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS".

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

H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 024I(58)	
FILE NAME: z19J223bdr_ero.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
EPSC CONSTRUCTION SITE PLAN	SHEET 98 OF 102



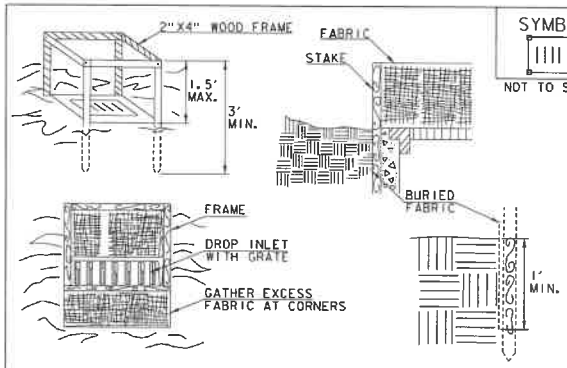
NOTES

1. SEE CONVENTIONAL SYMBOLOGY LEGEND SHEET FOR EPSC PLAN SYMBOLOGY.
2. SEE CROSS SECTIONS FOR PROPOSED CONTOURS.
3. TOTAL AREA OF DISTURBANCE IS 1.42 ACRES.

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

H&H

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19j223bdr_ero.dgn	PLOT DATE: 5/29/2025
PROJECT LEADER: K. SMITH	DRAWN BY: T. MAROUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
EPSC FINAL SITE PLAN	SHEET 99 OF 102



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2"x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3'.
4. SPACE STAKES EVENLY AROUND INLET 3' APART AND DRIVE A MINIMUM 18" DEEP. SPANS GREATER THAN 3' MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1' MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE

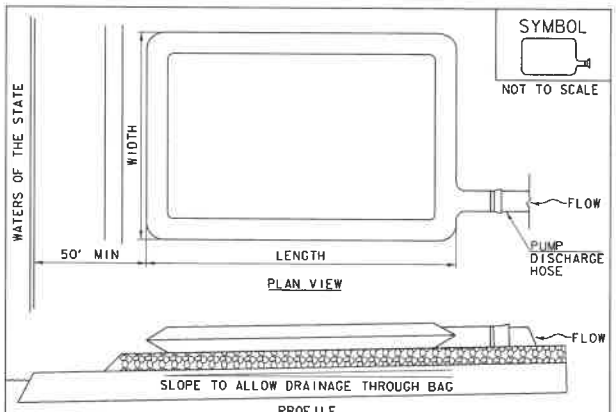
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FILTER FABRIC DROP INLET PROTECTION

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 INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.4000).

REVISIONS	
MARCH 7, 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

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 SEED (PAY ITEM 651.1500)

REVISIONS	
JANUARY 22, 2015	WHF

H&H

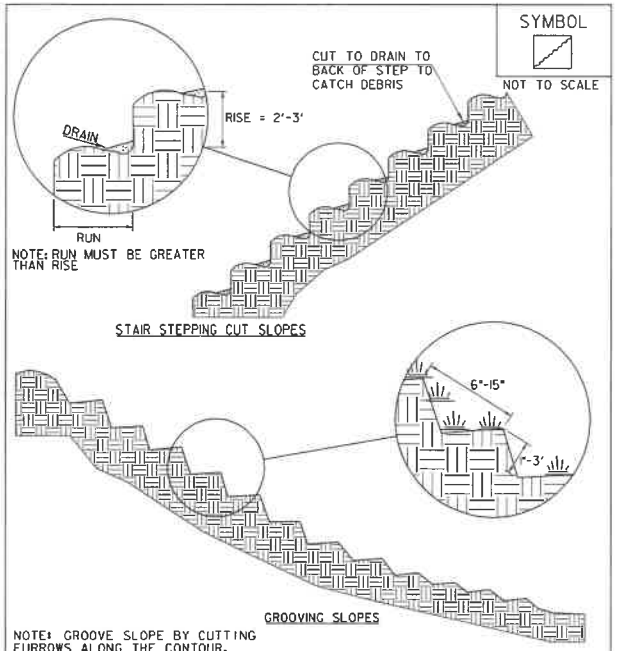
PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223epsc_det.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. MO
EPSC DETAILS - 1

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 100 OF 102

SYMBOL

NOT TO SCALE



NOTE: GROOVE SLOPE BY CUTTING FURROWS ALONG THE CONTOUR. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND RETAIN LIME, FERTILIZER AND SEED.

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

SURFACE ROUGHENING

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 CONSIDERED INCIDENTAL TO THE CONTRACT

REVISIONS		
APRIL 1, 2008		WHF
JANUARY 13, 2009		WHF

SYMBOL

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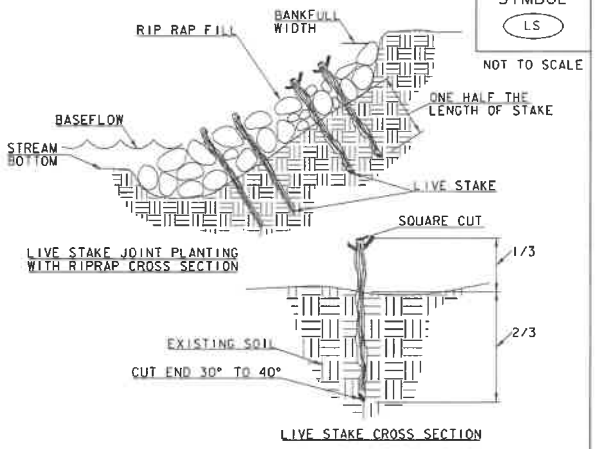
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. LENGTH OF STAKE DEPENDS UPON APPLICATION
2. LIVE STAKES SHALL BE CUT TO A POINT ON THE BASAL END FOR INSERTION IN THE GROUND.
3. A DIBBLE, IRON BAR, OR SIMILAR TOOL SHALL BE USED TO MAKE A PILOT HOLE PRIOR TO INSERTING STAKE IN GROUND.
4. A MINIMUM OF 2" TO 4" AS WELL AS 2 LIVE BUDS SHALL BE EXPOSED ABOVE THE GROUND OR RIP RAP.
5. TAMP SOIL AROUND STAKE.
6. CARE SHALL BE TAKEN TO MINIMIZE DAMAGE TO STAKE. ANY DAMAGE SHALL BE TRIMMED BACK TO AN UNDAMAGED CONDITION.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DECORIGINALLY DEVELOPED BY USDA-NRCSVERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LIVE STAKE

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 656 FOR LIVE STAKE (PAY ITEM 656.1100)

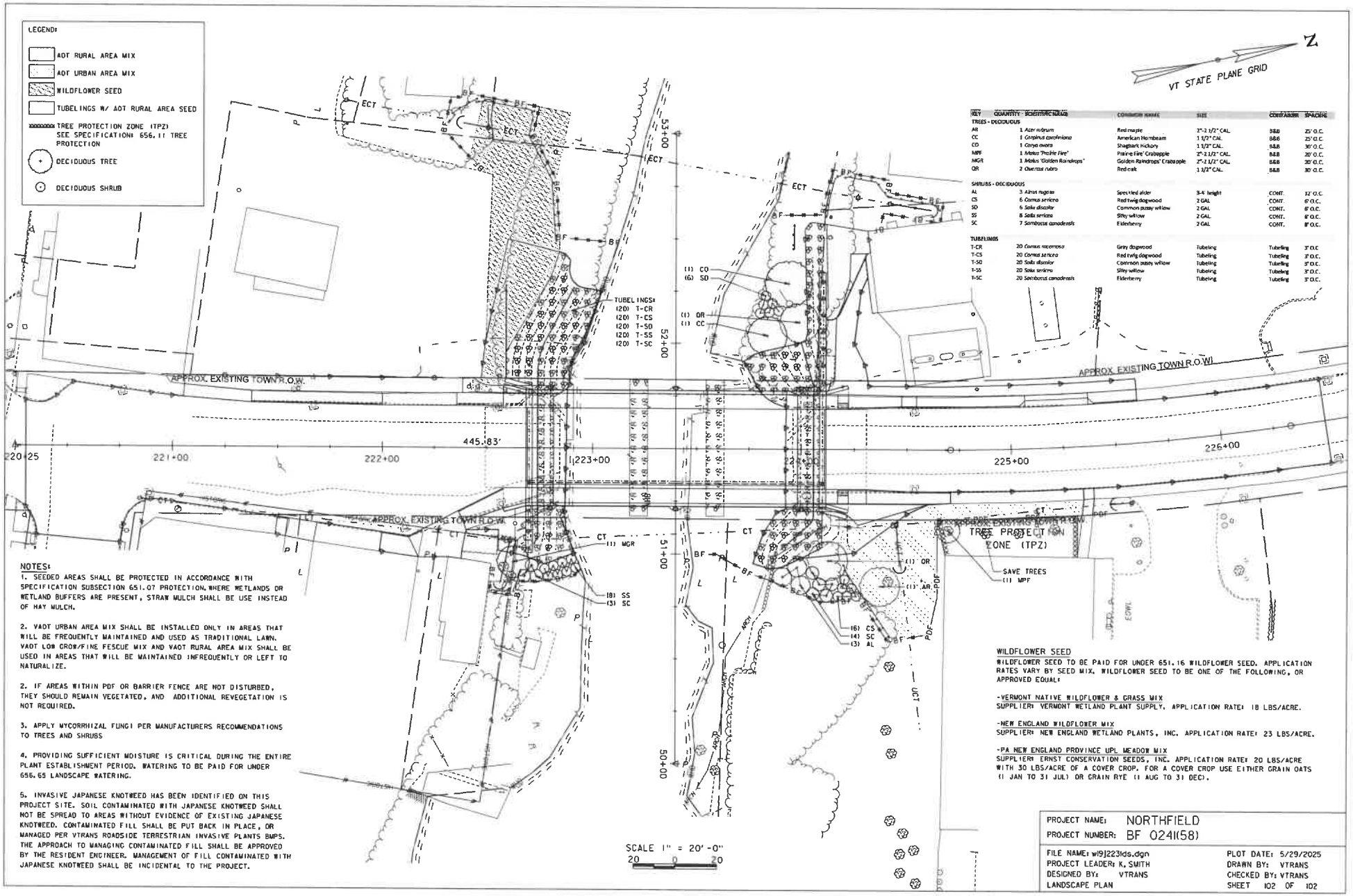
REVISIONS		
MARCH 21, 2008		WHF
JANUARY 27, 2009		WHF

H&H

PROJECT NAME: NORTHFIELD
PROJECT NUMBER: BF 024I(58)

FILE NAME: z19J223epsc_det.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: K. HO
EPSC DETAILS - 2

PLOT DATE: 5/29/2025
DRAWN BY: T. MARQUETTE
CHECKED BY: C. JENNE
SHEET 101 OF 102



KEY	QUANTITY	SCIENTIFIC NAME	COMMON NAME	SIZE	CONTAINER	SPACING
TREES - DECIDUOUS						
AR	1	*Acer rubrum*	Red maple	2"-2 1/2" CAL.	B&B	25' O.C.
CC	1	*Carpinus caroliniana*	American Hornbeam	1 1/2" CAL.	B&B	25' O.C.
CO	1	*Carya ovata*	Shagbark Hickory	1 1/2" CAL.	B&B	30' O.C.
MPF	1	*Malus 'Prairie Fire'*	Prairie Fire' Crabapple	2"-2 1/2" CAL.	B&B	20' O.C.
MGR	1	*Malus 'Golden Raindrops'*	Golden Raindrops' Crabapple	2"-2 1/2" CAL.	B&B	20' O.C.
OR	2	*Quercus rubra*	Red oak	1 1/2" CAL.	B&B	30' O.C.
SHRUBS - DECIDUOUS						
AL	3	*Alnus rugosa*	Speckled alder	3-4' height	CONT.	12' O.C.
CS	6	*Cornus sericea*	Red twig dogwood	2 GAL	CONT.	6' O.C.
SD	6	*Salix discolor*	Common pussy willow	2 GAL	CONT.	6' O.C.
SS	8	*Salix sericea*	Silky willow	2 GAL	CONT.	6' O.C.
SC	7	*Sambucus canadensis*	Elderberry	2 GAL	CONT.	8' O.C.
TUBELINGS						
T-CR	20	*Cornus racemosa*	Gray dogwood	Tubeling	Tubeling	3' O.C.
T-CS	20	*Cornus sericea*	Red twig dogwood	Tubeling	Tubeling	3' O.C.
T-SD	20	*Salix discolor*	Common pussy willow	Tubeling	Tubeling	3' O.C.
T-SS	20	*Salix sericea*	Silky willow	Tubeling	Tubeling	3' O.C.
T-SC	20	*Sambucus canadensis*	Elderberry	Tubeling	Tubeling	3' O.C.

NOTES:

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

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

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

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

5. INVASIVE JAPANESE KNOTWEED HAS BEEN IDENTIFIED ON THIS PROJECT SITE. SOIL CONTAMINATED WITH JAPANESE KNOTWEED SHALL NOT BE SPREAD TO AREAS WITHOUT EVIDENCE OF EXISTING JAPANESE KNOTWEED. CONTAMINATED FILL SHALL BE PUT BACK IN PLACE, OR MANAGED PER VTRANS ROADSIDE TERRESTRIAN INVASIVE PLANTS BMPS. THE APPROACH TO MANAGING CONTAMINATED FILL SHALL BE APPROVED BY THE RESIDENT ENGINEER. MANAGEMENT OF FILL CONTAMINATED WITH JAPANESE KNOTWEED SHALL BE INCIDENTAL TO THE PROJECT.

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: NORTHFIELD
PROJECT NUMBER: BF 0241(58)

FILE NAME: wl9j223lds.dgn
PROJECT LEADER: K. SMITH
DESIGNED BY: VTRANS
LANDSCAPE PLAN

PLOT DATE: 5/29/2025
DRAWN BY: VTRANS
CHECKED BY: VTRANS
SHEET 102 OF 102