

REVIEWER NOTES:

1. A 12 WEEK BRIDGE CLOSURE PERIOD IS ANTICIPATED

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

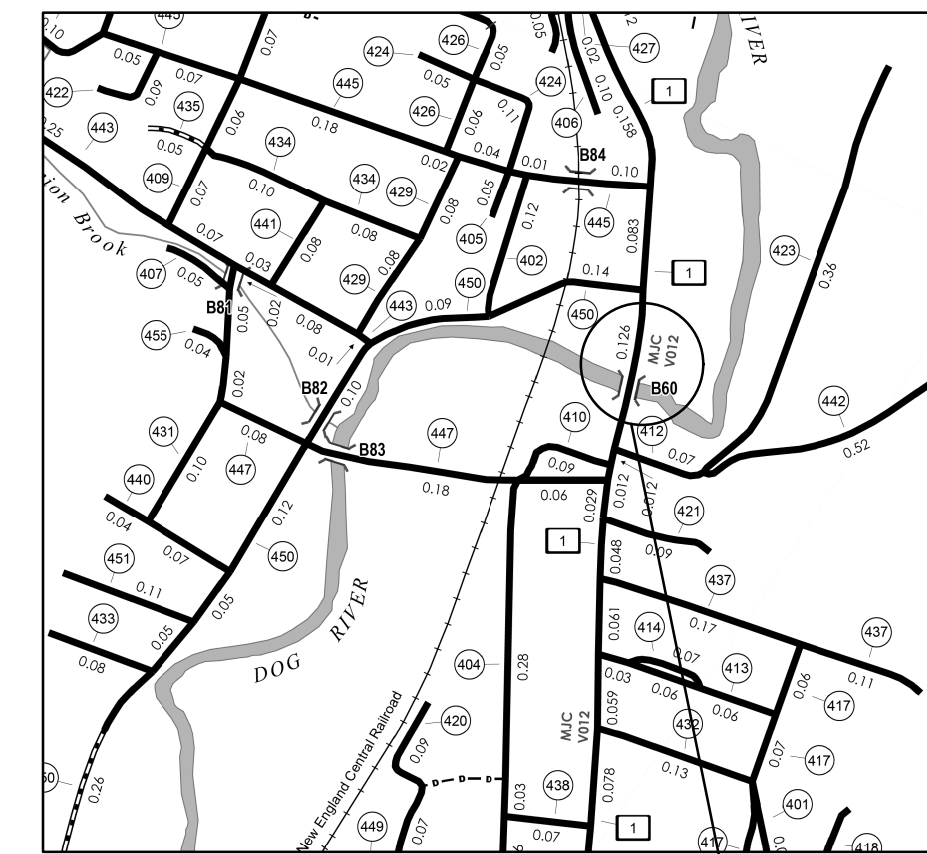
TOWN OF NORTHFIELD
COUNTY OF WASHINGTON

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

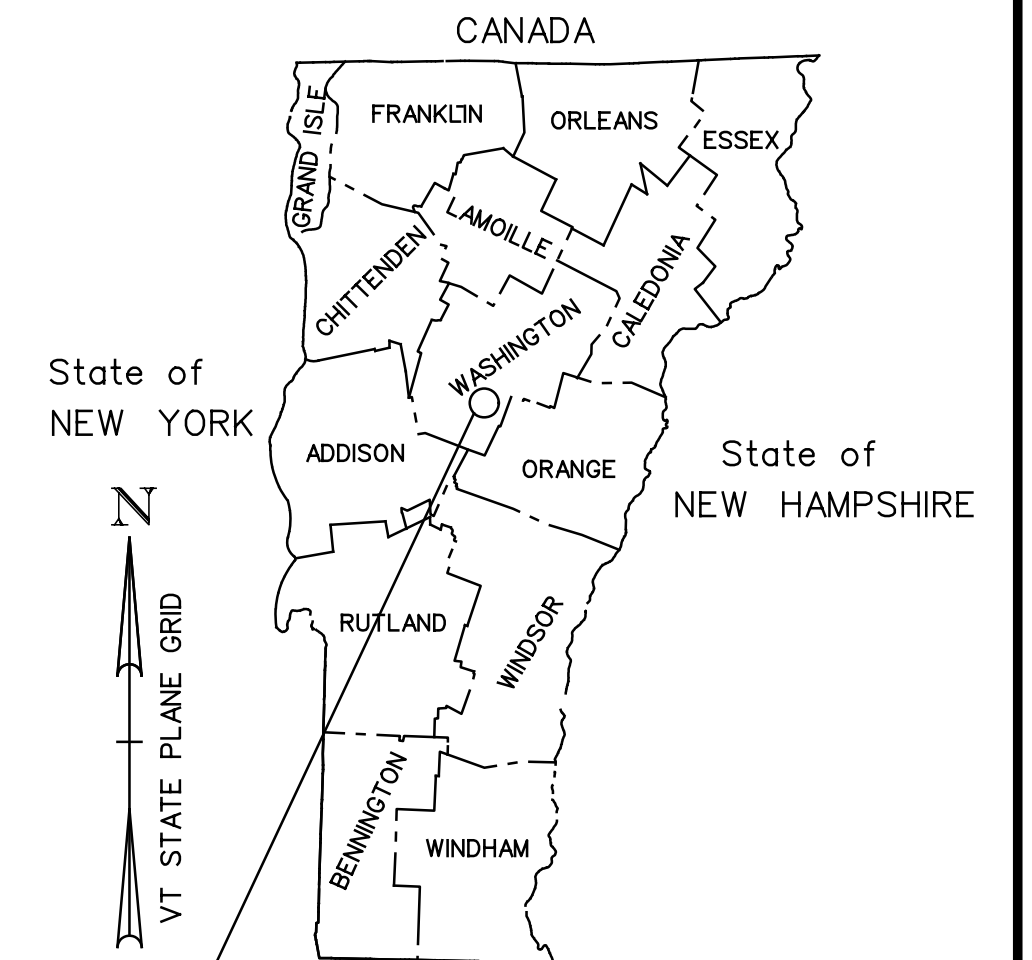
PROJECT DESCRIPTION: REPLACEMENT OF THE EXISTING BRIDGE, ALONG WITH RELATED ROADWAY APPROACH WORK.

LENGTH OF STRUCTURE: 114.78 FEET
LENGTH OF ROADWAY: 160.22 FEET
LENGTH OF PROJECT: 275.00 FEET

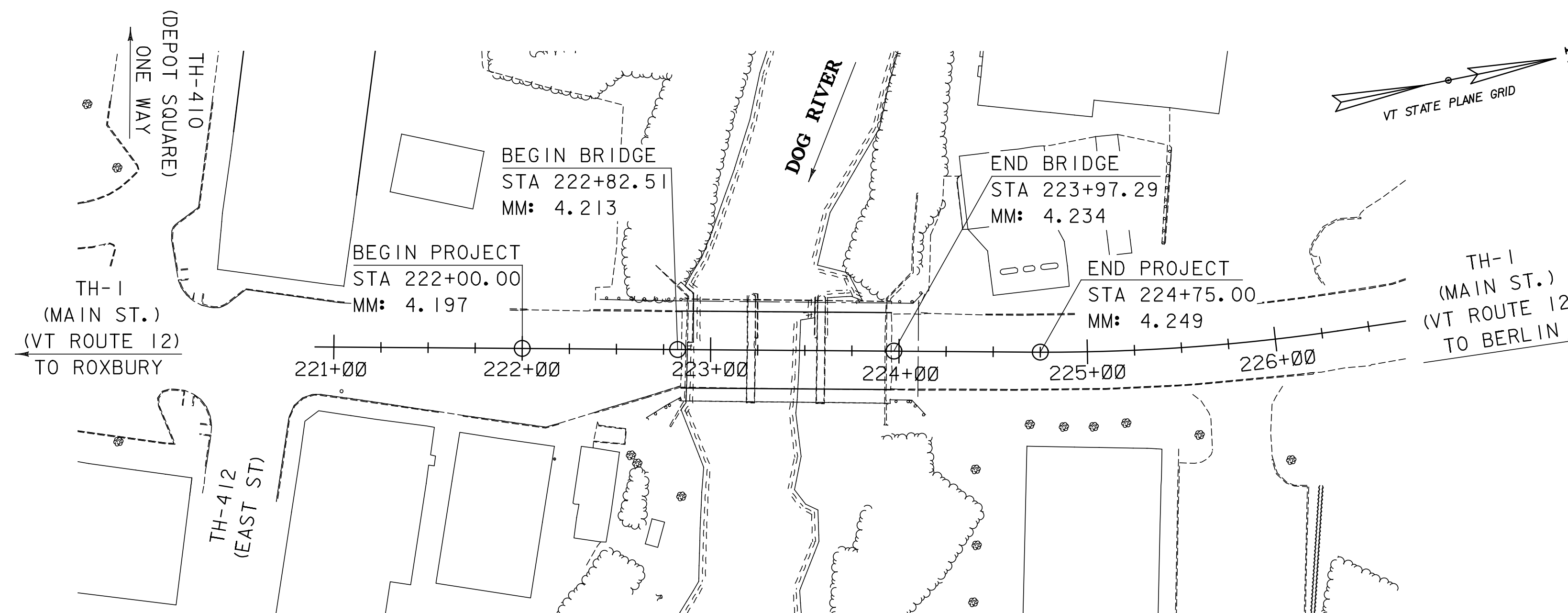


LOCATION MAP
NOT TO SCALE

NORTHFIELD
BF 0241 (58)



Commonwealth of
MASSACHUSETTS



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

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : DUBOIS & KING
SURVEYED DATE : 2019

DATUM
VERTICAL NAVD88
HORIZONTAL NAD 83(2011)



**CONCEPTUAL PLANS
18-NOV-2021**

HIGHWAY DIVISION, CHIEF ENGINEER	APPROVED _____ DATE _____
PROJECT MANAGER : G. LAROCHE	
PROJECT NAME : NORTHFIELD VILLAGE	PROJECT NUMBER : BF 0241 (58)
SHEET 1 OF 27 SHEETS	



INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

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- 24 - 27 CHANNEL CROSS SECTIONS

STANDARDS LIST

DETAIL SHEETS

HYDROLOGIC DATA

Date: 3/3/2021

DRAINAGE AREA : _____
 CHARACTER OF TERRAIN : _____
 STREAM CHARACTERISTICS : _____
 NATURE OF STREAMBED : _____

PEAK FLOW DATA - ANNUAL EXCEEDANCE PROBABILITY (AEP)

43% = _____ 2% = _____
 10% = _____ 1% = _____
 4% = _____ 0.2% = _____

DATE OF FLOOD OF RECORD : _____
 ESTIMATED DISCHARGE: _____
 WATER SURFACE ELEV.: _____
 NATURAL STREAM VELOCITY : _____
 ICE CONDITIONS : _____
 DEBRIS: _____
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? _____
 IS ORDINARY RISE RAPID? _____
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? _____
 IF YES, DESCRIBE: _____

WATERSHED STORAGE: _____ HEADWATERS: _____
 UNIFORM: _____
 IMMEDIATELY ABOVE SITE: _____

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: _____
 YEAR BUILT: _____
 CLEAR SPAN(NORMAL TO STREAM): _____
 VERTICAL CLEARANCE ABOVE STREAMBED: _____
 WATERWAY OF FULL OPENING: _____
 DISPOSITION OF STRUCTURE: _____
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: _____

WATER SURFACE ELEVATIONS AT:

43% AEP = _____ VELOCITY= _____
 10% AEP = _____ " _____
 4% AEP = _____ " _____
 2% AEP = _____ " _____
 1% AEP = _____ " _____

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: _____
 FREQUENCY: _____
 RELIEF ELEVATION: _____
 DISCHARGE OVER ROAD @ 1% AEP: _____

UPSTREAM STRUCTURE

TOWN: _____ DISTANCE: _____
 HIGHWAY # : _____ STRUCTURE # : _____
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____
 STRUCTURE TYPE: _____

DOWNSTREAM STRUCTURE

TOWN: _____ DISTANCE: _____
 HIGHWAY # : _____ STRUCTURE # : _____
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____
 STRUCTURE TYPE: _____

LRFD LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

PROPOSED STRUCTURE

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

WATER SURFACE ELEVATIONS AT:

43% AEP = _____ VELOCITY= _____
 10% AEP = _____ " _____
 4% AEP = _____ " _____
 2% AEP = _____ " _____
 1% AEP = _____ " _____

IS THE ROADWAY OVERTOPPED BELOW 1% AEP: _____
 FREQUENCY: _____
 RELIEF ELEVATION: _____
 DISCHARGE OVER ROAD @ 1% AEP: _____

BRIDGE LOW CHORD ELEVATION: _____
 FREEBOARD: _____

SCOUR:

REQUIRED CHANNEL PROTECTION: _____

PERMIT INFORMATION

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

TEMPORARY BRIDGE REQUIREMENTS

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

ADDITIONAL INFORMATION

*Tropical Storm Irene

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 ALONG DETOUR

DESIGN VALUES

1. DESIGN LIVE LOAD HL-93
2. FUTURE PAVEMENT dp : 3.0 INCH
3. DESIGN SPAN L : 110 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS) Δ : ---
5. PRESTRESSING STRAND f_y : ---
6. PRESTRESSED CONCRETE STRENGTH $f'c$: ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH $f'ci$: ---
8. HIGH PERFORMANCE CONCRETE, CLASS PCD $f'c$: 4.0 KSI
9. HIGH PERFORMANCE CONCRETE, CLASS PCS $f'c$: 3.5 KSI
10. CONCRETE HIGH PERFORMANCE, CLASS SCC $f'c$: 4.0 KSI
11. CONCRETE, CLASS C $f'c$: 3.0 KSI
12. REINFORCING STEEL f_y : 60 KSI
13. STRUCTURAL STEEL AASHTO M329/ASTM A1055/ASTM A1094 f_y : 50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL qn : _____
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : _____
16. NOMINAL BEARING RESISTANCE OF ROCK qn : _____
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 ps : ---
22. SEISMIC DATA PGA : --- S_s : --- S_1 : ---
23. _____
24. _____
25. _____
26. _____

TRAFFIC DATA

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

20 year ESAL for flexible pavement from 2024 to 2044 : 1099000
 40 year ESAL for flexible pavement from 2024 to 2064 : 2618000
 Design Speed: 30 mph

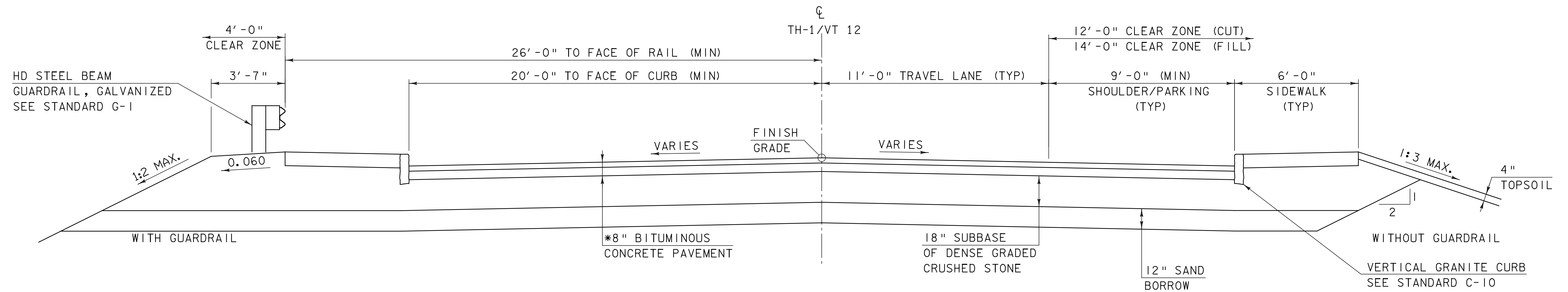
AS BUILT "REBAR" DETAIL

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

PROJECT NAME: NORTHFIELD

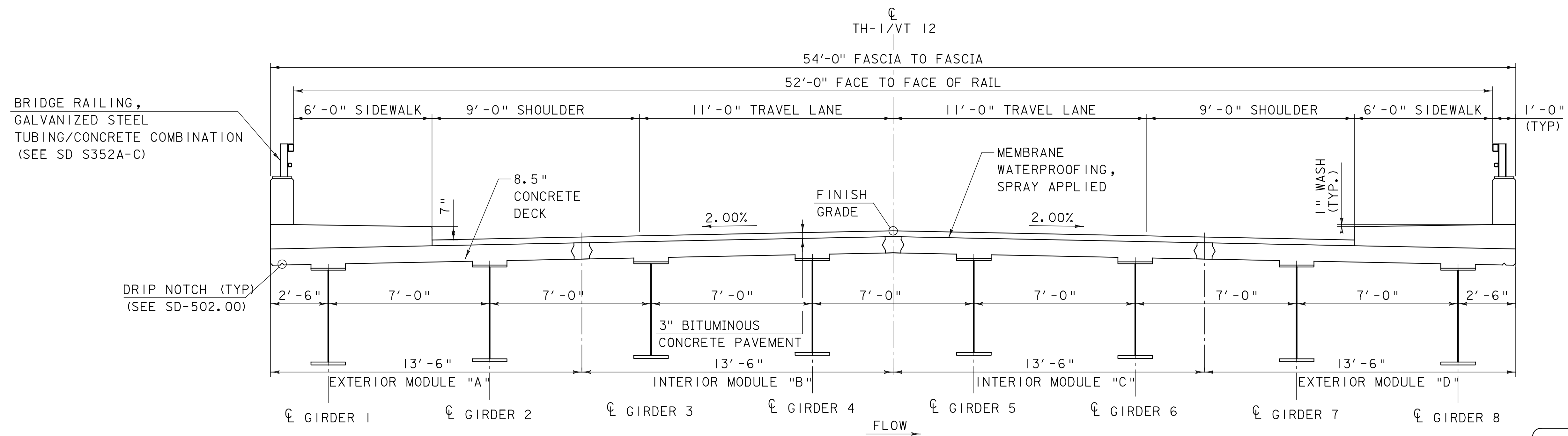
PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j233forms.dgn PLOT DATE: 11/18/2021
 PROJECT LEADER: C. BAKER DRAWN BY: S. BROWN
 DESIGNED BY: S. BROWN CHECKED BY: C. SCHWARTZ
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 27



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

STA. 222+00.00 TO STA. 222+82.51
 STA. 223+97.29 TO STA. 224+75.00
 SCALE 3/8" = 1'-0"



BRIDGE TYPICAL SECTION - PREFABRICATED BRIDGE UNIT SUPERSTRUCTURE

SCALE 3/8" = 1'-0"

MATERIAL TOLERANCES

(IF USED ON PROJECT)

SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	
	+/- 1"
SAND BORROW	
	+/- 1"

*2 - 1 1/2" LIFTS OF TYPE IVB OVER
 *2 - 2 1/2" LIFTS OF TYPE IIS



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

FILE NAME: z19j223typ.dgn
 PROJECT LEADER: C. BAKER
 DESIGNED BY: K. SMITH
 PLOT DATE: 11/18/2021
 DRAWN BY: C. SCHWARTZ
 CHECKED BY: S. BROWN
TYPICAL SECTIONS
 SHEET 3 OF 27

GENERAL INFORMATION

SYMBOLY LEGEND NOTE

THE SYMBOLY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLY. THE SYMBOLY 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. SYMBOLY 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 SYMBOLY

UNDERGROUND UTILITIES	
— UT —	UTILITY (GENERIC-UNKNOWN)
— UE —	TELEPHONE
— UTVE —	ELECTRIC
— UTVC —	CABLE (TV)
— E —	ELECTRIC+CABLE
— T —	ELECTRIC+TELEPHONE
— C —	CABLE+TELEPHONE
— ETC —	ELECTRIC+CABLE+TELEPHONE
— G —	GAS LINE
— W —	WATER LINE
— S —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

—	UTILITY (GENERIC-UNKNOWN)
—	TELEPHONE
— E —	ELECTRIC
—	CABLE (TV)
—	ELECTRIC+CABLE
—	ELECTRIC+TELEPHONE
— AER ET —	ELECTRIC+TELEPHONE
—	CABLE+TELEPHONE
—	ELECTRIC+CABLE+TELEPHONE
—	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLY

PROJECT DESIGN & LAYOUT SYMBOLY	
— 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
—	BARRIER FENCE
—	TREE PROTECTION ZONE (TPZ)
////	STRIPING LINE REMOVAL
~~~~	SHEET PILES

**CONVENTIONAL BOUNDARY SYMBOLY**

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 —	SLOPE RIGHTS
— 6F —	6F PROPERTY BOUNDARY
— 4F —	4F PROPERTY BOUNDARY
— HAZ —	HAZARDOUS WASTE

**EPSC LAYOUT PLAN SYMBOLY**

EPSC MEASURES	
○	FILTER CURTAIN
—	SILT FENCE
—	SILT FENCE WOVEN WIRE
—	CHECK DAM
▣	DISTURBED AREAS REQUIRING RE-VEGETATION
⊗	EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLY

**ENVIRONMENTAL RESOURCES**

—	WETLAND BOUNDARY
—	RIPARIAN BUFFER ZONE
—	WETLAND BUFFER ZONE
—	SOIL TYPE BOUNDARY
— T&E —	THREATENED & ENDANGERED SPECIES
— 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 SYMBOLY**

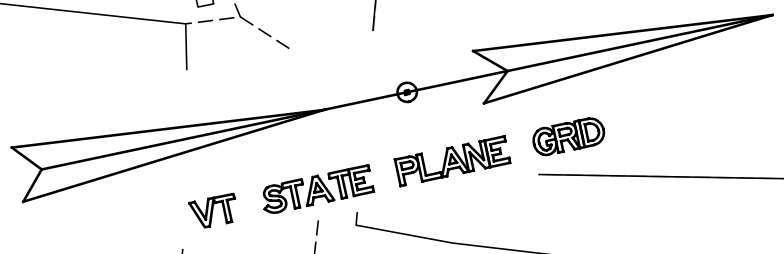
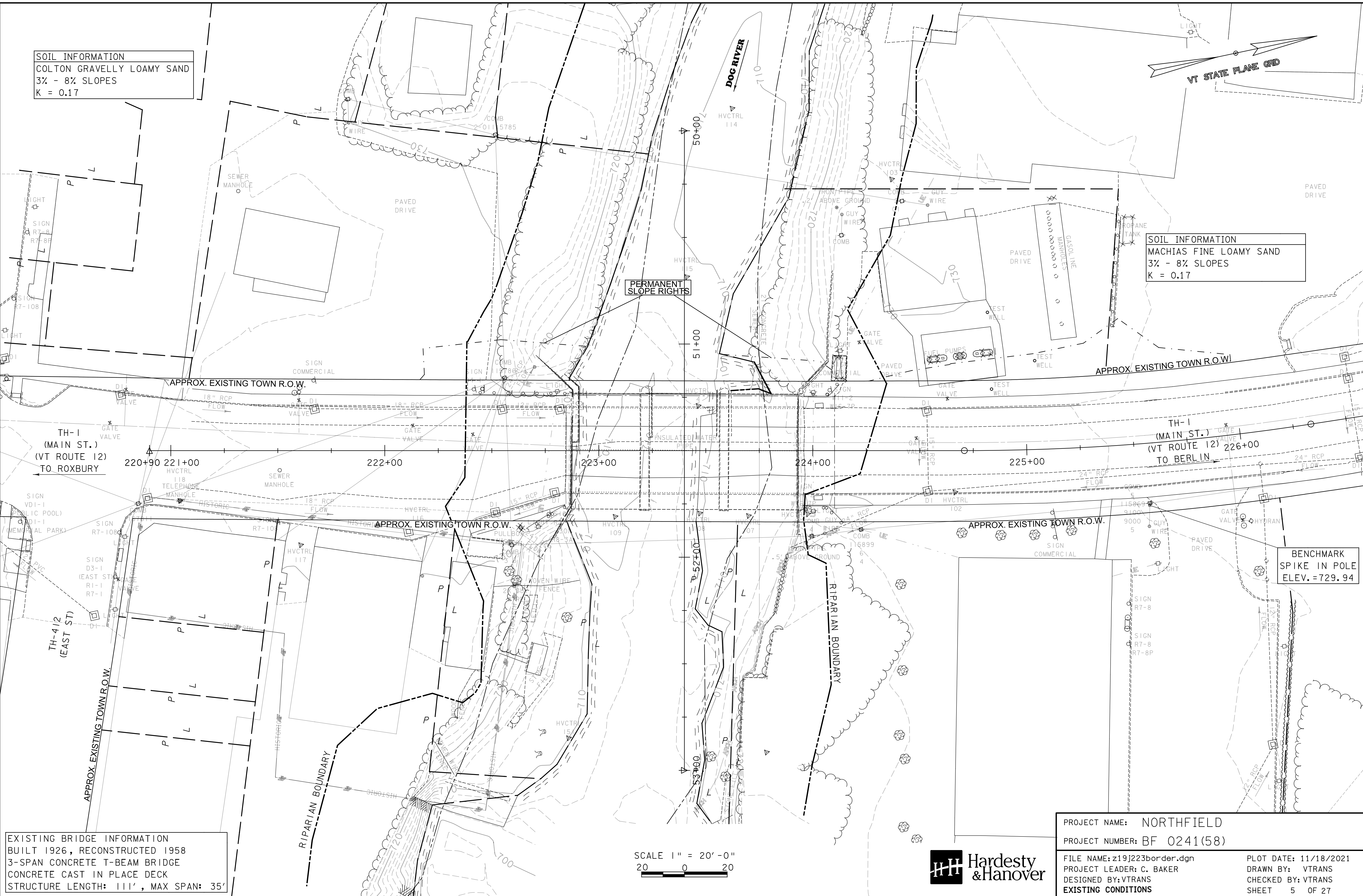
EXISTING FEATURES	
—	ROAD EDGE PAVEMENT
—	ROAD EDGE GRAVEL
—	DRIVEWAY EDGE
—	DITCH
—	FOUNDATION
—	FENCE (EXISTING)
—	FENCE WOOD POST
—	FENCE STEEL POST
—	GARDEN
—	ROAD GUARDRAIL
—	RAILROAD TRACKS
—	CULVERT (EXISTING)
—	STONE WALL
—	WALL
—	WOOD LINE
—	BRUSH LINE
—	HEDGE
—	BODY OF WATER EDGE
—	LEDGE EXPOSED

PROJECT NAME:	NORTHFIELD
PROJECT NUMBER:	BF 0241(58)
FILE NAME:	s19j223symlegend.dgn
PROJECT LEADER:	C. BAKER
DESIGNED BY:	VTRANS
CONVENTIONAL SYMBOLY LEGEND	
PLOT DATE:	11/18/2021
DRAWN BY:	VTRANS
CHECKED BY:	VTRANS
SHEET	4 OF 27



SOIL INFORMATION  
 COLTON GRAVELLY LOAMY SAND  
 3% - 8% SLOPES  
 K = 0.17

SOIL INFORMATION  
 MACHIAS FINE LOAMY SAND  
 3% - 8% SLOPES  
 K = 0.17

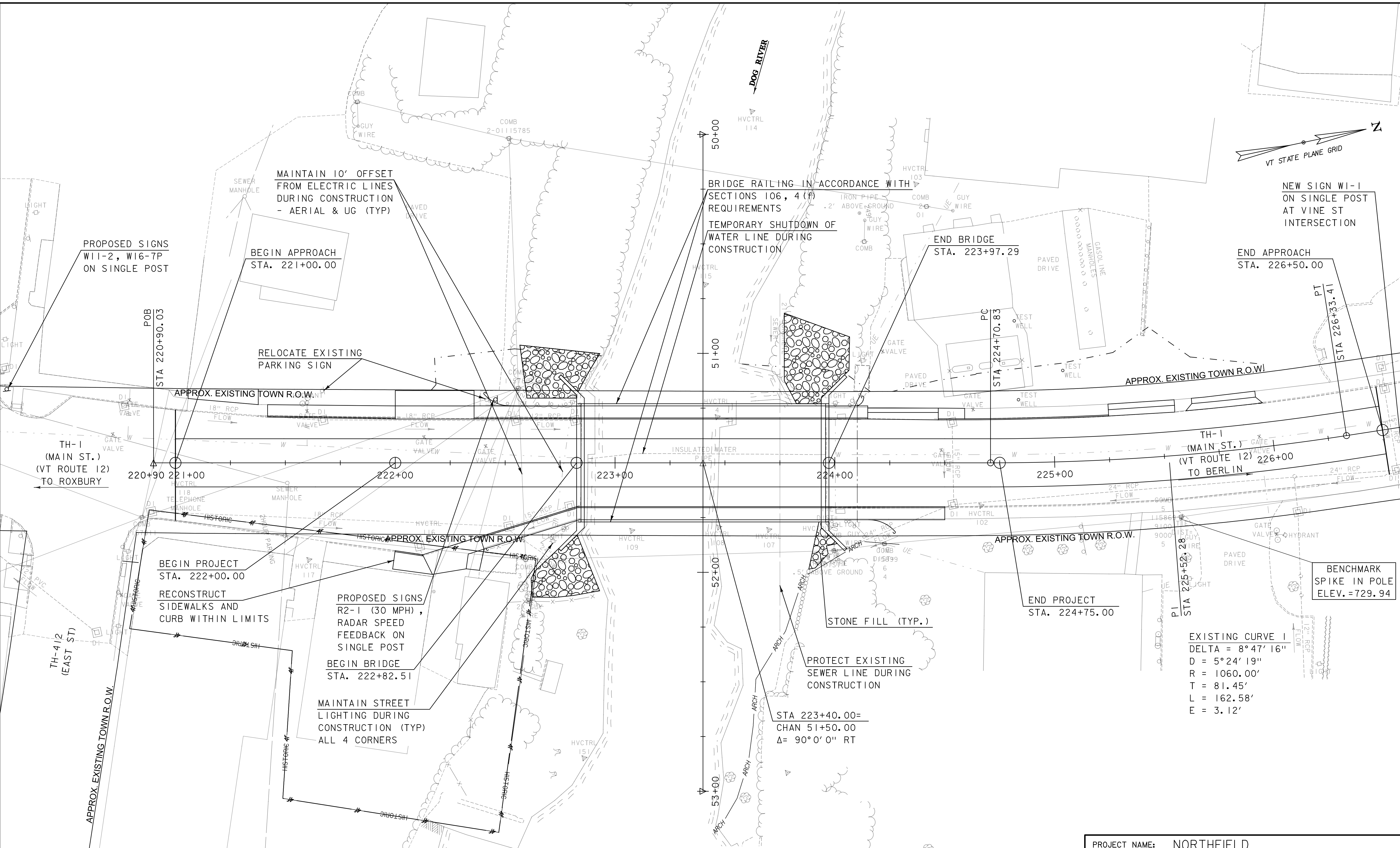
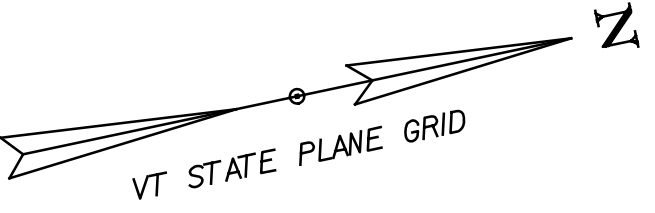


EXISTING BRIDGE INFORMATION  
 BUILT 1926, RECONSTRUCTED 1958  
 3-SPAN CONCRETE T-BEAM BRIDGE  
 CONCRETE CAST IN PLACE DECK  
 STRUCTURE LENGTH: 111', MAX SPAN: 35'

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



PROJECT NAME: NORTHFIELD  
 PROJECT NUMBER: BF 0241(58)  
 FILE NAME: z19j223border.dgn  
 PROJECT LEADER: C. BAKER  
 DESIGNED BY: VTRANS  
 EXISTING CONDITIONS  
 PLOT DATE: 11/18/2021  
 DRAWN BY: VTRANS  
 CHECKED BY: VTRANS  
 SHEET 5 OF 27



NEW SIGN W1-1  
ON SINGLE POST  
AT VINE ST  
INTERSECTION

END APPROACH  
STA. 226+50.00

PT  
STA 226+33.41

END PROJECT  
STA. 224+75.00

BENCHMARK  
SPIKE IN POLE  
ELEV. = 729.94

EXISTING CURVE 1  
DELTA = 8° 47' 16"  
D = 5° 24' 19"  
R = 1060.00'  
T = 81.45'  
L = 162.58'  
E = 3.12'

STA 223+40.00=  
CHAN 51+50.00  
Δ= 90° 0' 0" RT

MAINTAIN 10' OFFSET  
FROM ELECTRIC LINES  
DURING CONSTRUCTION  
- AERIAL & UG (TYP)

BRIDGE RAILING IN ACCORDANCE WITH  
SECTIONS 106, 4(f)  
REQUIREMENTS  
TEMPORARY SHUTDOWN OF  
WATER LINE DURING  
CONSTRUCTION

RELOCATE EXISTING  
PARKING SIGN

PROPOSED SIGNS  
W11-2, W16-7P  
ON SINGLE POST

BEGIN APPROACH  
STA. 221+00.00

APPROX. EXISTING TOWN R.O.W.

APPROX. EXISTING TOWN R.O.W.

APPROX. EXISTING TOWN R.O.W.

BEGIN PROJECT  
STA. 222+00.00

RECONSTRUCT  
SIDEWALKS AND  
CURB WITHIN LIMITS

PROPOSED SIGNS  
R2-1 (30 MPH),  
RADAR SPEED  
FEEDBACK ON  
SINGLE POST

BEGIN BRIDGE  
STA. 222+82.51

MAINTAIN STREET  
LIGHTING DURING  
CONSTRUCTION (TYP)  
ALL 4 CORNERS

TH-4 1/2  
(EAST ST)

APPROX. EXISTING TOWN R.O.W.

NOTE:

ABUTMENT CONFIGURATION AS SHOWN FOLLOWS VTRANS  
SCOPING REPORT FOR NORTHFIELD VILLAGE  
BF 0241 (58) DATED OCTOBER 23, 2020.

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



PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223layout.dgn

PROJECT LEADER: C. BAKER

DESIGNED BY: K. HO

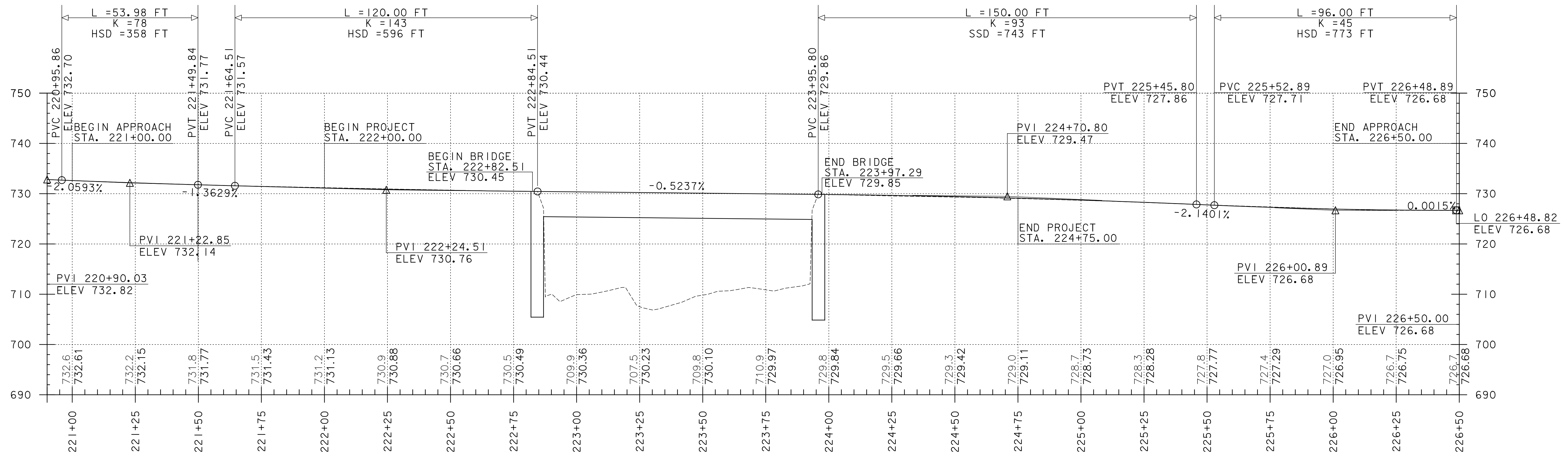
LAYOUT SHEET

PLOT DATE: 11/30/2021

DRAWN BY: T. MARQUETTE

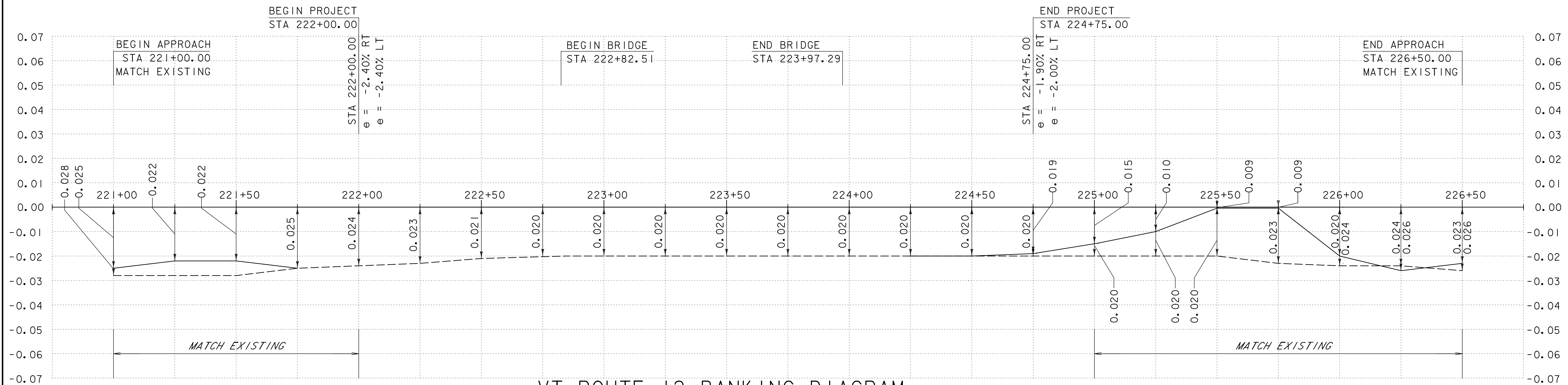
CHECKED BY: C. JENNE

SHEET 6 OF 27



**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

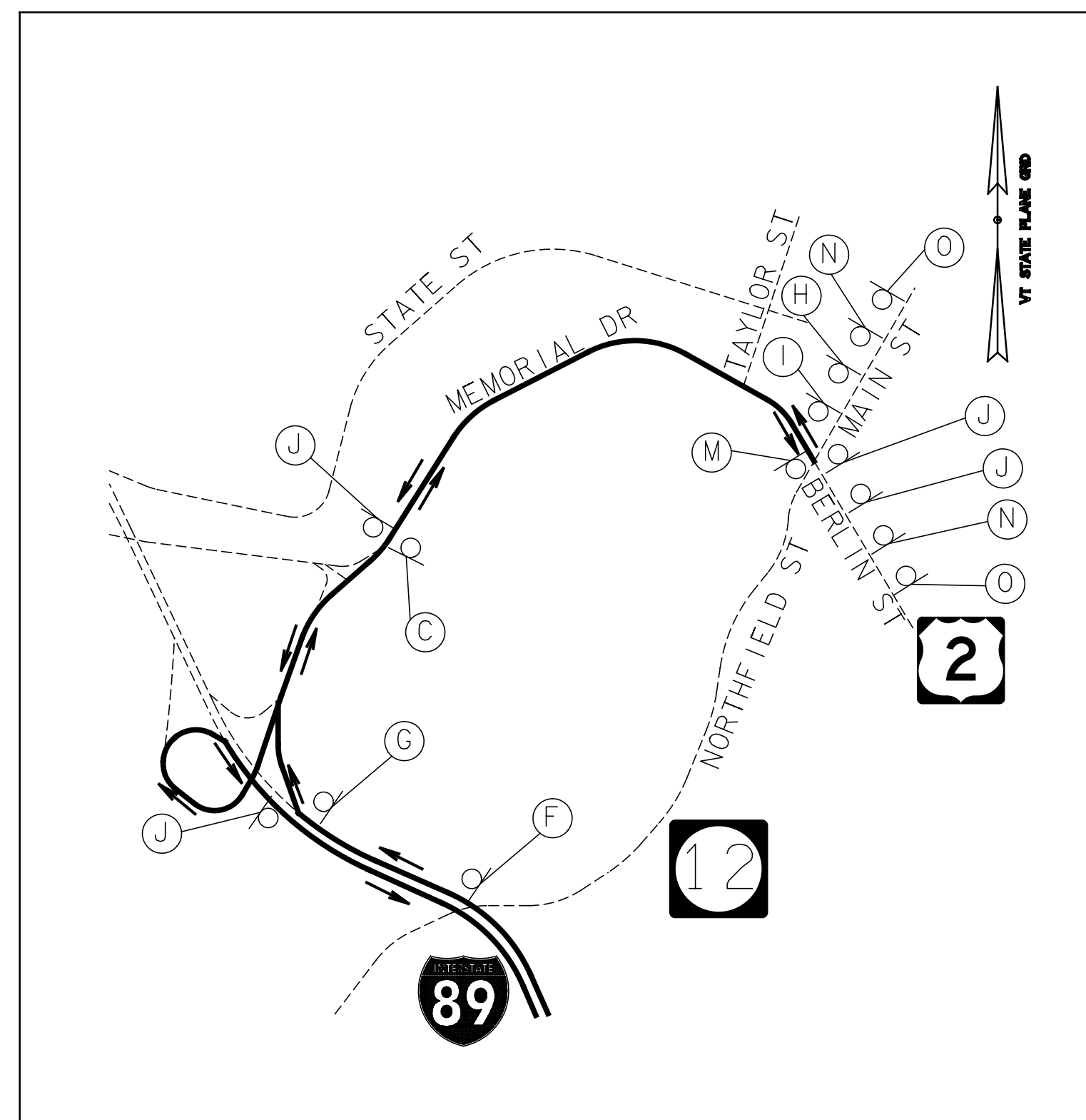
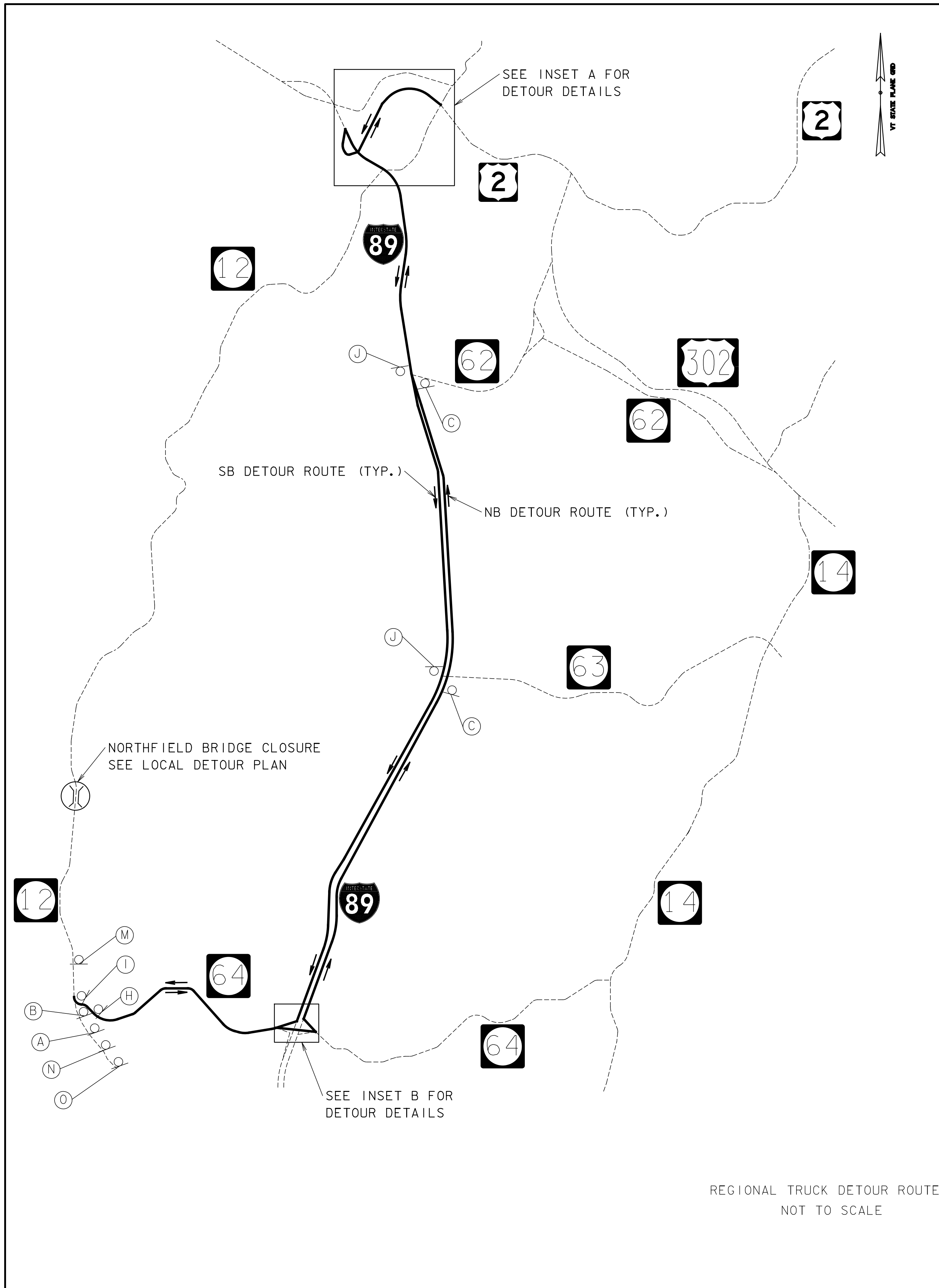
NOTE:  
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG CL  
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG CL



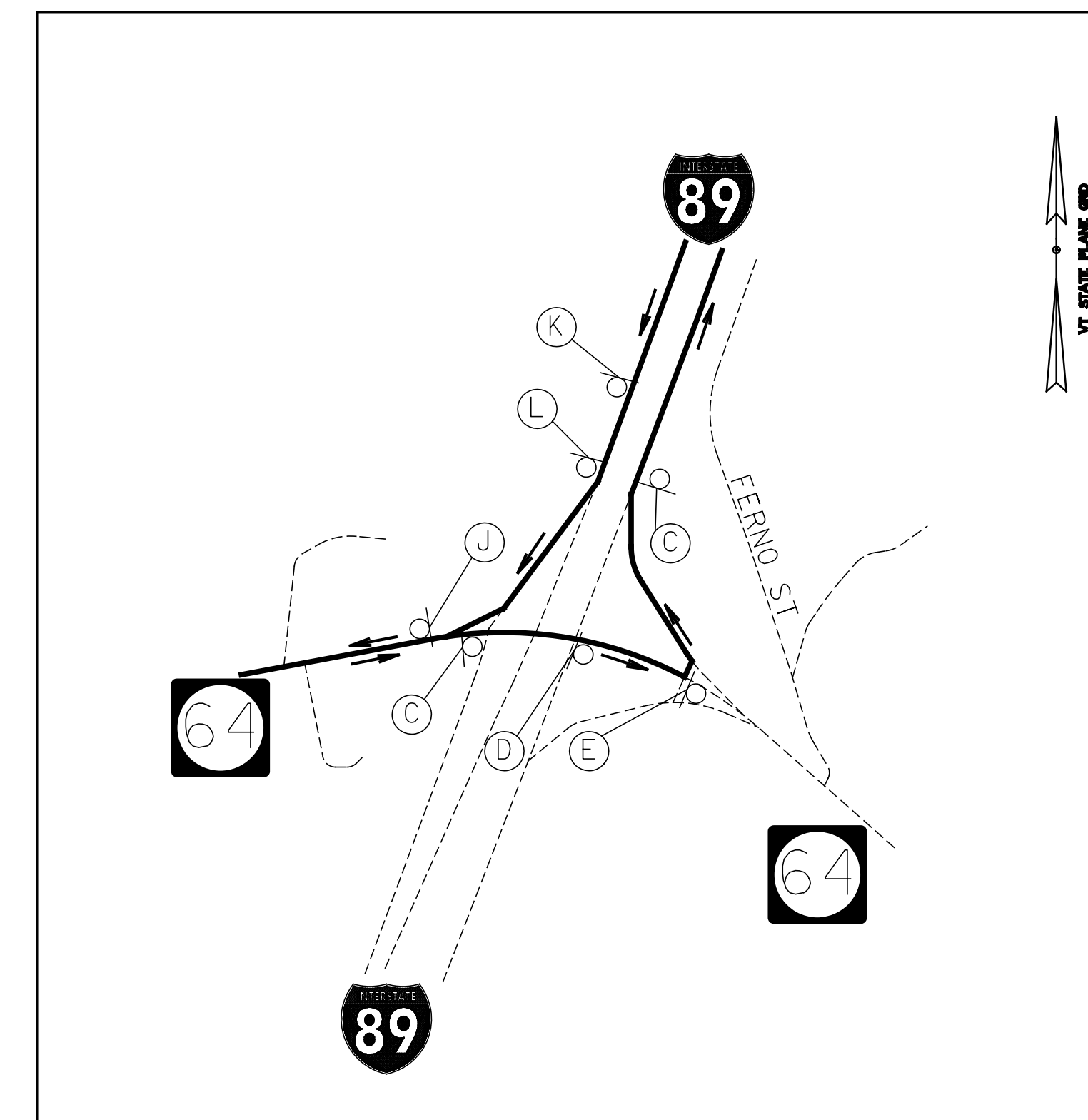
PROJECT NAME: NORTHFIELD  
PROJECT NUMBER: BF 0241(58)  
FILE NAME: z19j223profile.dgn  
PROJECT LEADER: C. BAKER  
DESIGNED BY: K. HO  
PROFILE AND BANKING DIAGRAM

PLOT DATE: 11/18/2021  
DRAWN BY: T. MARQUETTE  
CHECKED BY: C. JENNE  
SHEET 7 OF 27

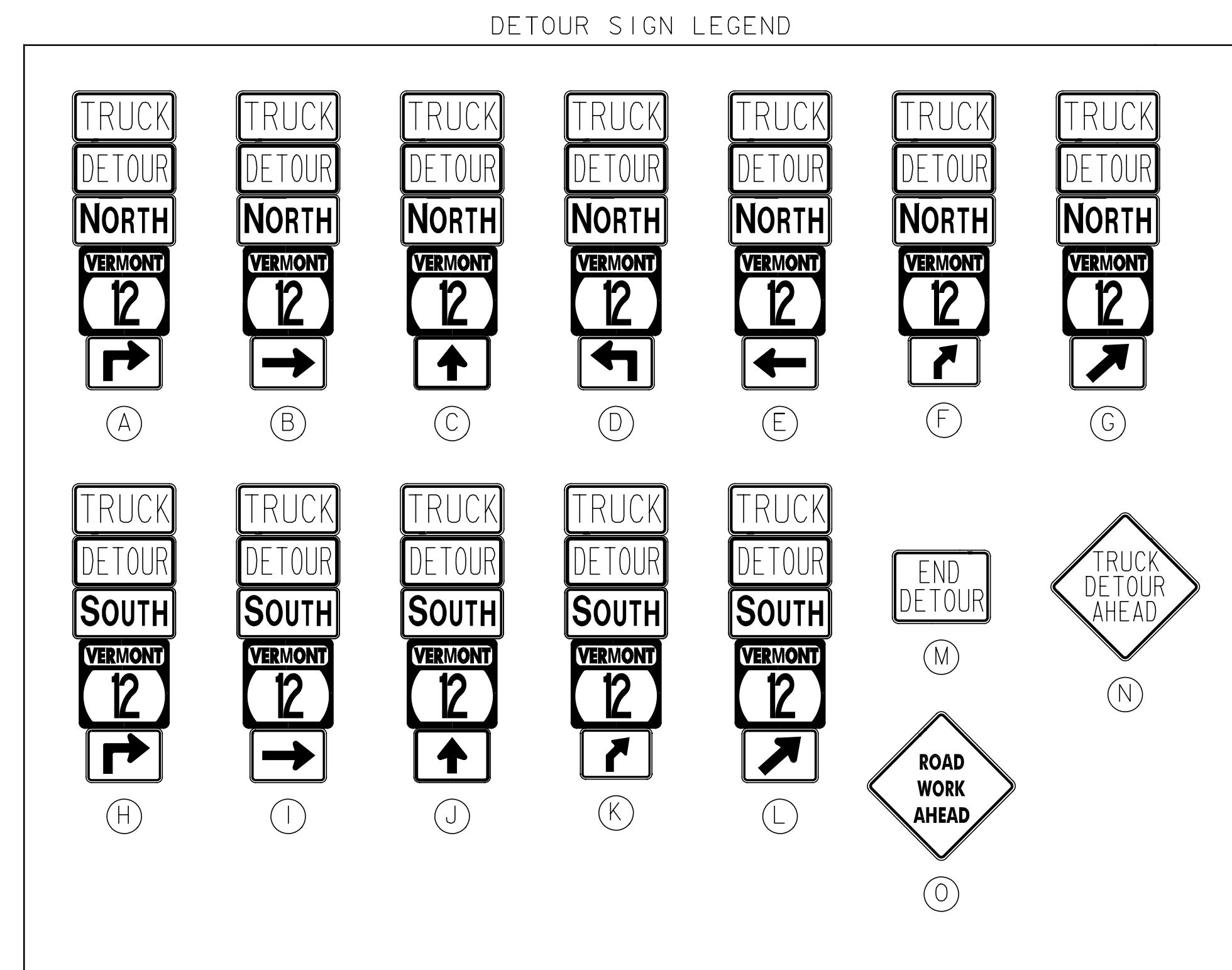




INSET A  
NOT TO SCALE



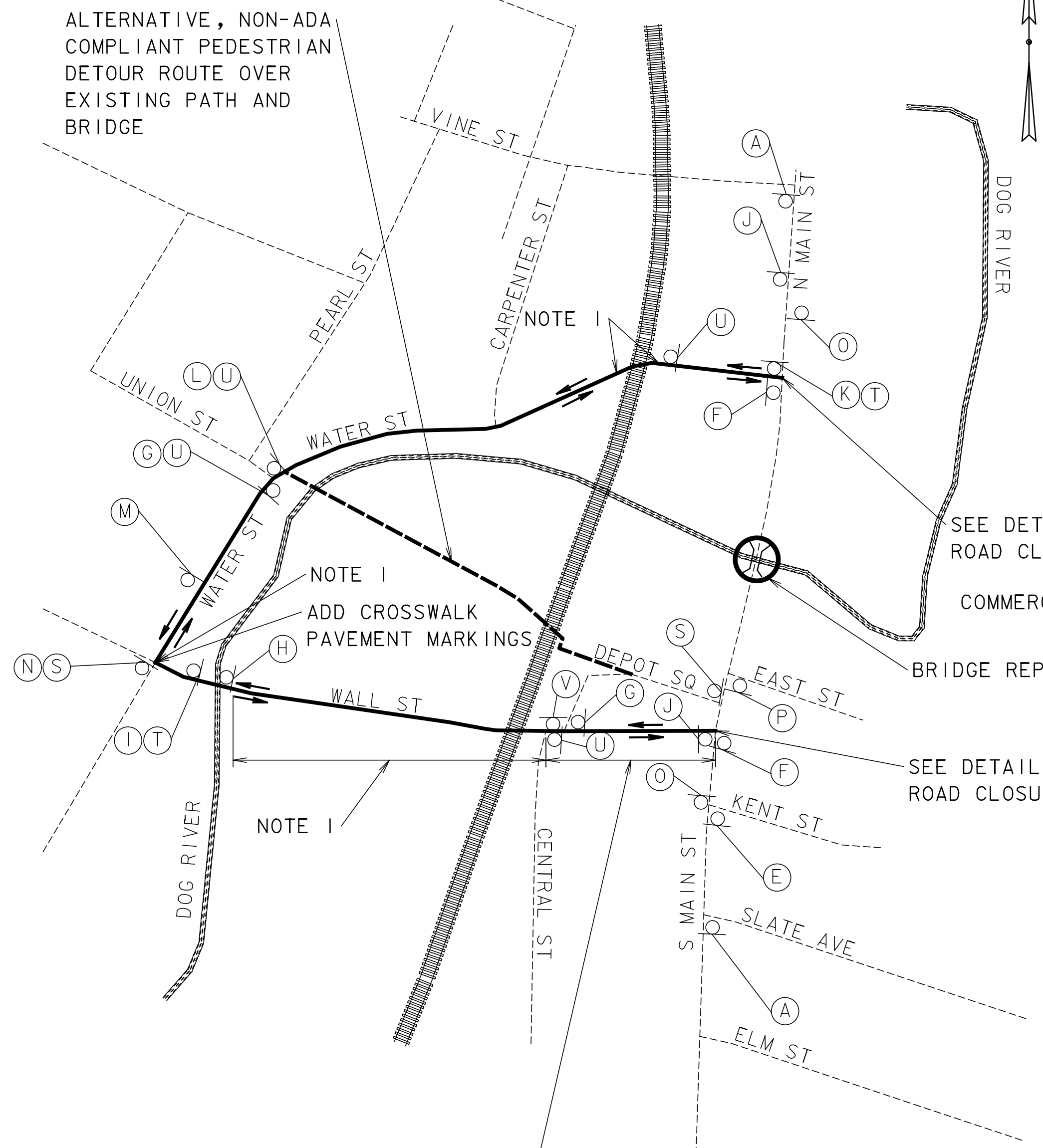
INSET B  
NOT TO SCALE



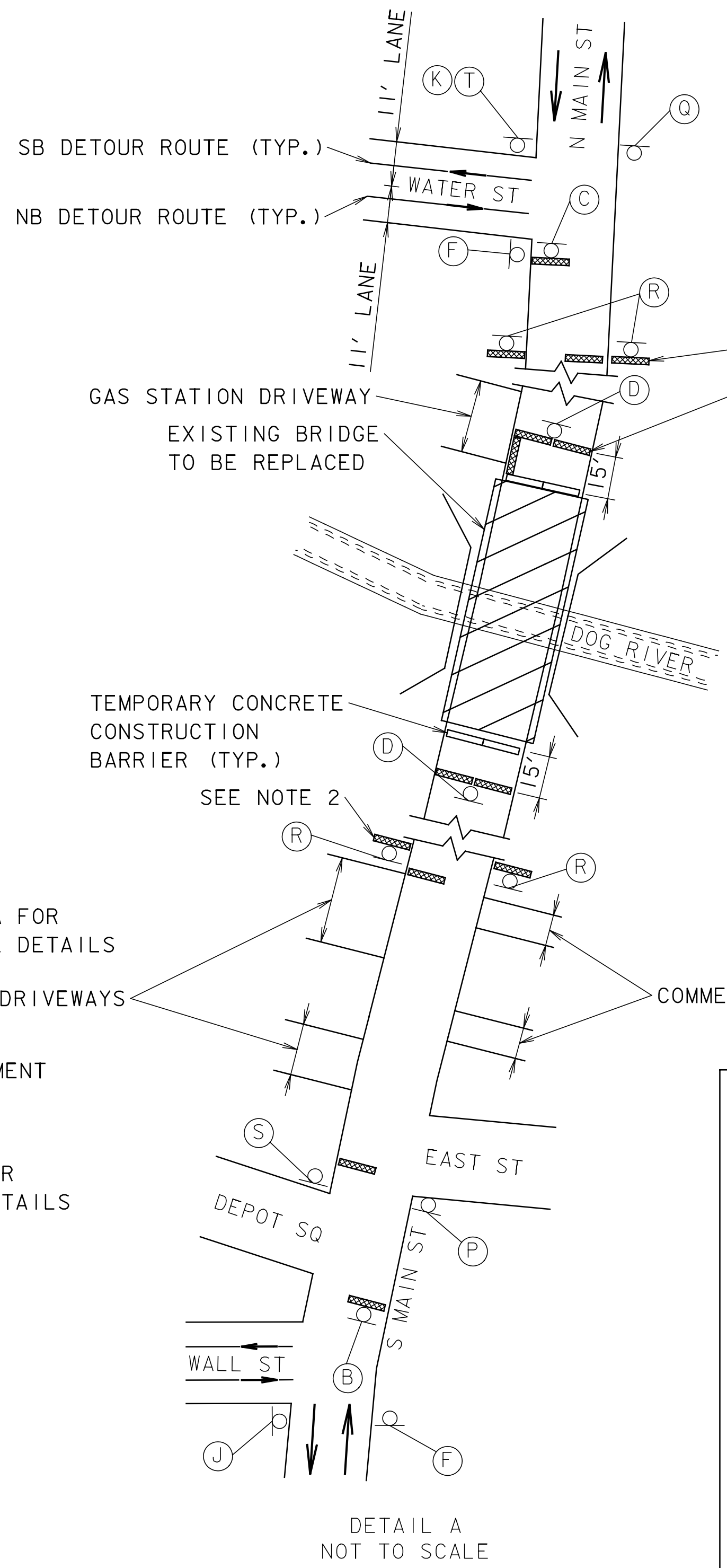
PROJECT NAME: NORTHFIELD  
 PROJECT NUMBER: BF 0241(58)  
 FILE NAME: z19j223detour.dgn  
 PROJECT LEADER: C. BAKER  
 DESIGNED BY: K. HO  
 TRUCK DETOUR ROUTE



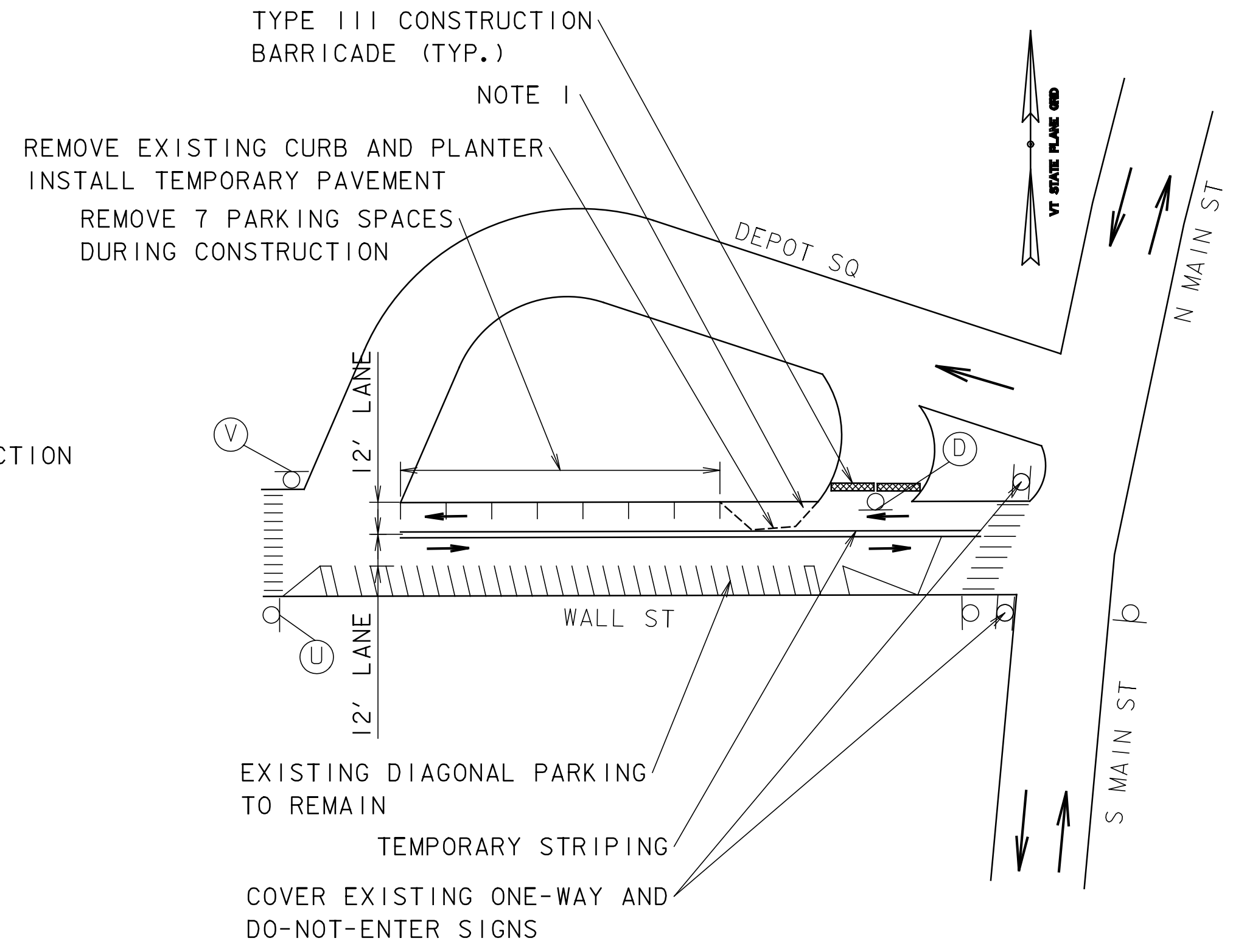
PLOT DATE: 11/18/2021  
 DRAWN BY: T. MARQUETTE  
 CHECKED BY: C. JENNE  
 SHEET 8 OF 27



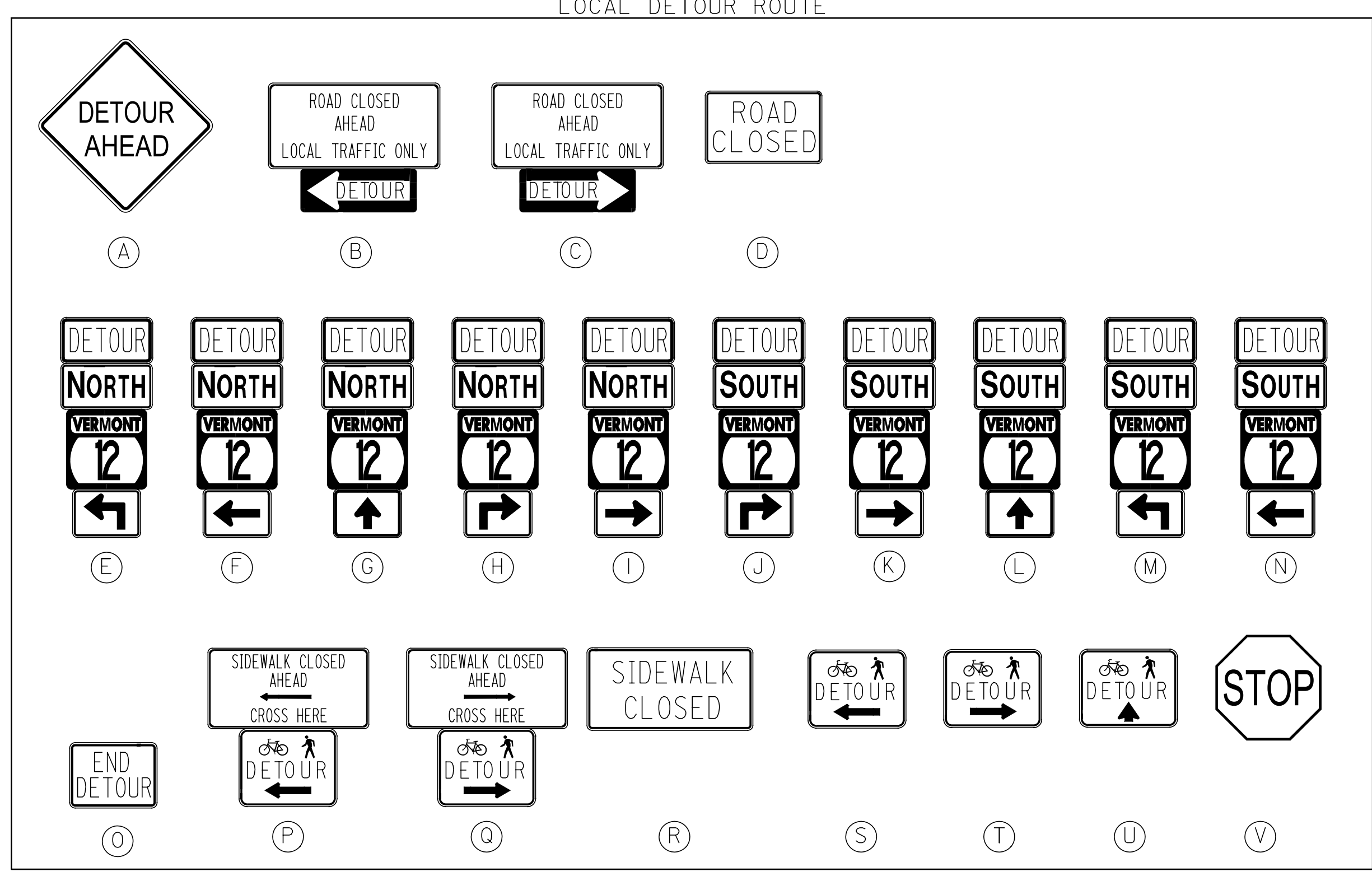
EXISTING ONE-WAY SECTION OF WALL STREET TO BE CONVERTED TO TWO-WAY STREET WITH REMOVAL OF PARALLEL PARKING SPACES. SEE DETAIL B FOR DETAILS.



LOCAL DETOUR ROUTE NOT TO SCALE



DETAIL B NOT TO SCALE



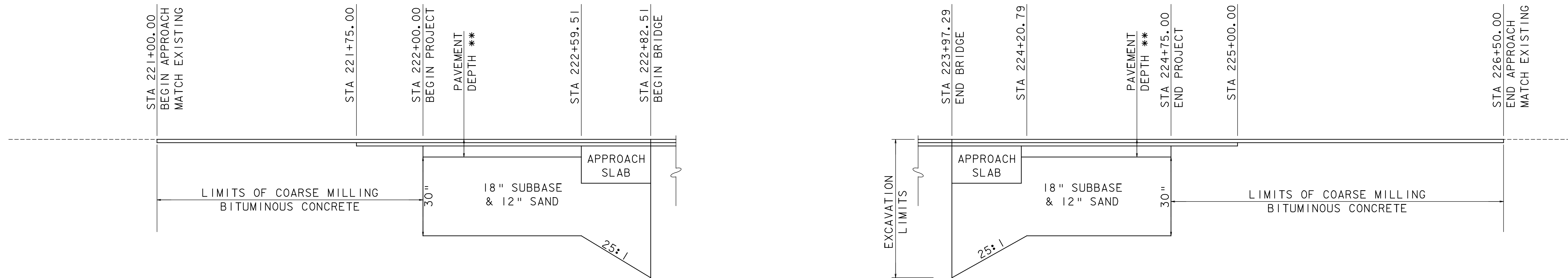
- NOTES:
- EXISTING SIDEWALKS AND CURB RAMPS SHALL BE RECONSTRUCTED TO A STATE OF GOOD REPAIR PRIOR TO IMPLEMENTATION OF LOCAL DETOUR IN ORDER TO PROVIDE CLEAR, ACCESSIBLE PEDESTRIAN PATH.
  - SIDEWALK AND DRIVEWAY ACCESS TO COMMERCIAL BUSINESSES SHALL BE MAINTAINED AT ALL TIMES.



PROJECT NAME: NORTHFIELD  
 PROJECT NUMBER: BF 0241(58)  
 FILE NAME: z19j223de+our.dgn  
 PROJECT LEADER: C. BAKER  
 DESIGNED BY: K. HO  
 LOCAL DETOUR ROUTE

PLOT DATE: 11/18/2021  
 DRAWN BY: T. MARQUETTE  
 CHECKED BY: C. JENNE  
 SHEET 9 OF 27

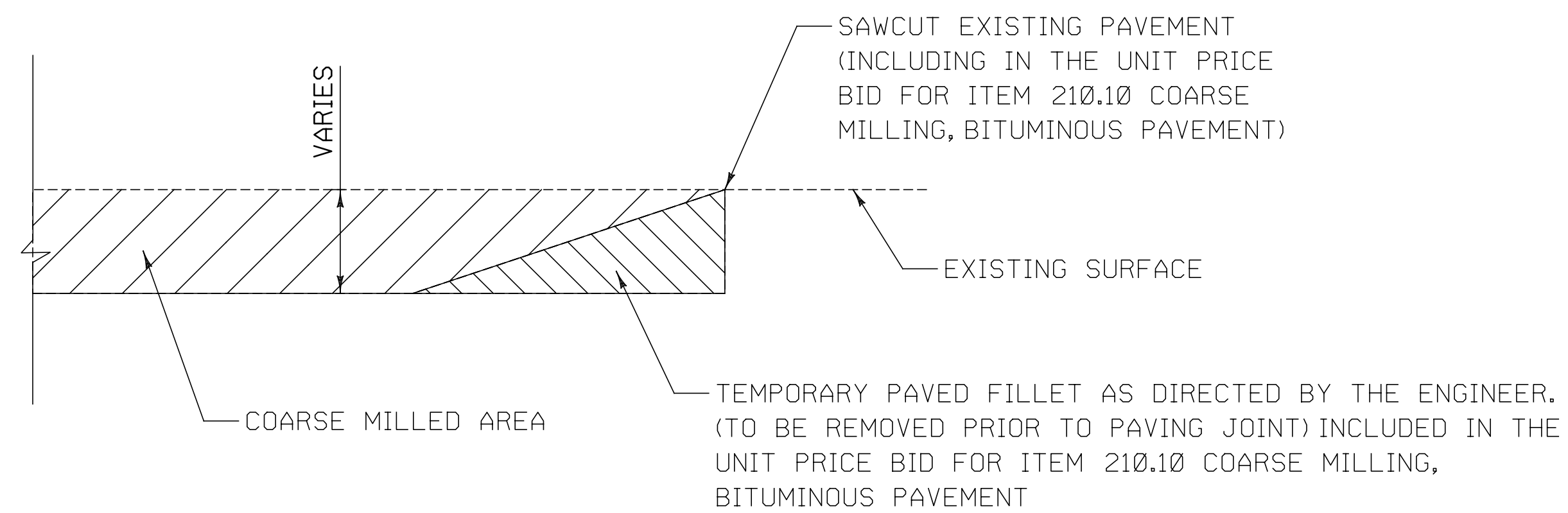




**VT ROUTE 12 MATERIAL TRANSITION DIAGRAM**

(NOT TO SCALE)

** SEE ROADWAY TYPICAL SECTIONS FOR PAVEMENT DESIGN



**DETAIL AT VERTICAL COARSE MILLING JOINTS**

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



PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223mtd.dgn

PROJECT LEADER: C. BAKER

DESIGNED BY: K. HO

MATERIAL TRANSITION DIAGRAM

PLOT DATE: 11/18/2021

DRAWN BY: T. MARQUETTE

CHECKED BY: C. JENNE

SHEET 11 OF 27

**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
0-25	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
0-250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
4000	Hard

**CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY**

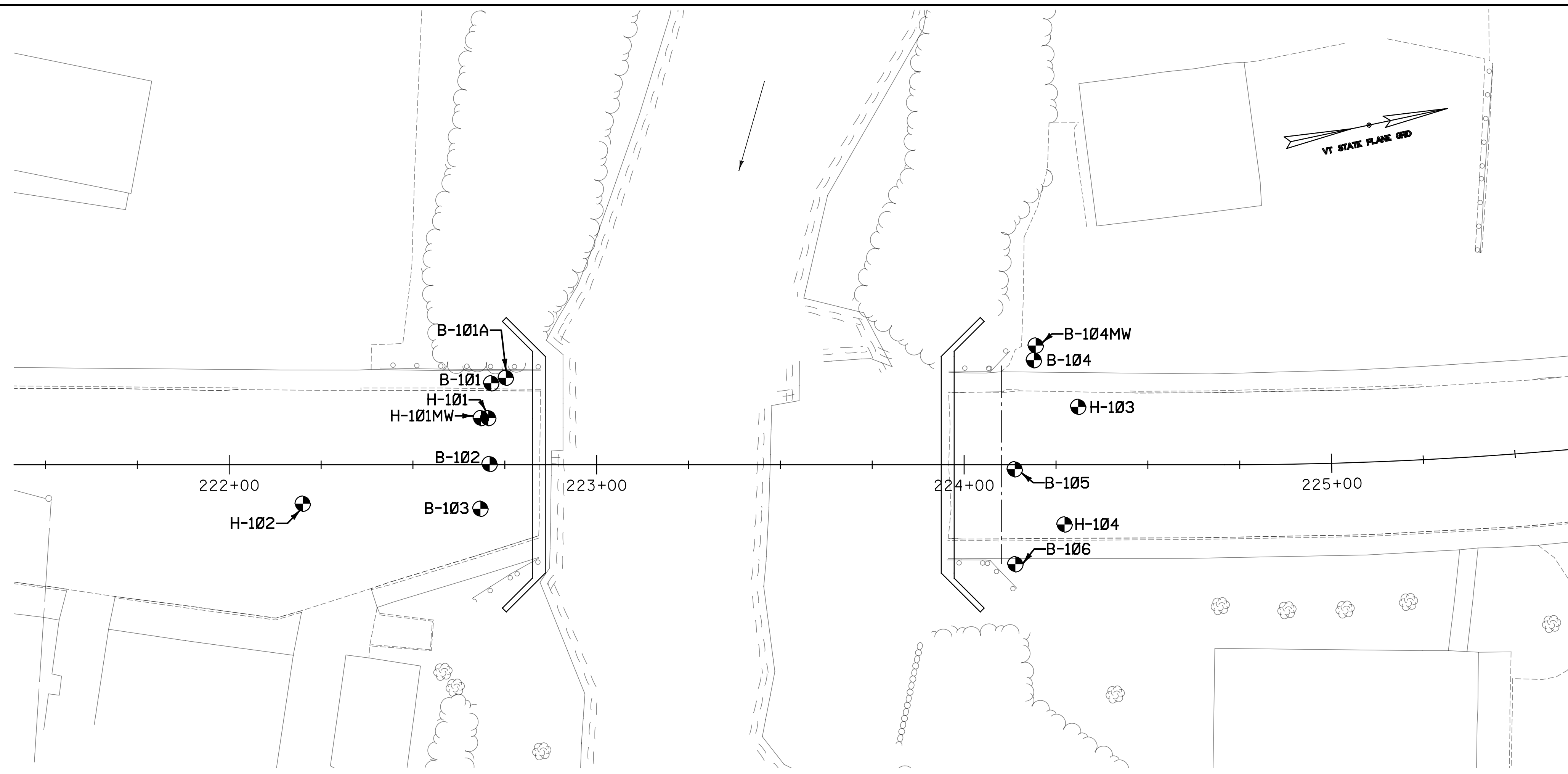
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
0-5	Very Loose	0-2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
50	Very Dense	16-30	Very Stiff
		31-60	Hard
		60	Very Hard

**COMMONLY USED SYMBOLS**

- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊕ Auger Boring
- ⊕ Rod Sounding
- ⊕ Sample
- N Standard Penetration Test
  - Blow Count Per Foot For:
  - 2" O. D. Sampler
  - 1 3/8" I. D. Sampler
  - Hammer Weight Of 140 Lbs.
  - Hammer Fall Of 30"
- VS Field Vane Shear Test
- US Undisturbed Soil Sample
- B Blast
- DC Diamond Core
- MD Mud Drill
- WA Wash Ahead
- HSA Hollow Stem Auger
  - Core Size 1 1/8"
  - Core Size 1 5/8"
  - Core Size 2 1/8"
- M Double Tube Core Barrel Used
- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index
- NP Non Plastic
- w Moisture Content (Dry Wgt. Basis)
  - D Dry
  - M Moist
  - MTW Moist To Wet
  - W Wet
- Sat Saturated
- Bo Boulder
- Gr Gravel
- Sa Sand
- Sl Silt
- Cl Clay
- HP Hardpan
- Le Ledge
- NLTD No Ledge To Depth
- CNPF Can Not Penetrate Further
- TL0B 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 (100)
- VTSPG NAD83 - See Note 7

**COLOR**

bk	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 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**


- The subsurface explorations shown herein were made between 9/20/2021 and 9/28/2021 by New England Boring Contractors.
- 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.
- 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.
- 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.
- 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.
- 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.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.




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

FILE NAME: z19j223bor.dgn  
PROJECT LEADER: C. BAKER  
DESIGNED BY: S. BROWN  
BORING LAYOUT SHEET

PLOT DATE: 11/18/2021  
DRAWN BY: S. BROWN  
CHECKED BY: K. SMITH  
SHEET 11 OF 27

 STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		<b>BORING LOG</b>		Boring No.: <b>B-101</b>			
		<b>VTTrans Northfield - VT-12 over Dog River BF 0241(58)</b>		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: _____ Station: _____ Offset: _____ Ground Elevation: 730.47 ft		Casing: WASH BORE 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 _F = 1	Groundwater Observations				
			Date	Depth (ft)	Notes		
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0-5		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 S-2: Grey c(+)mf SAND, and mf Gravel, some (-) Silt, Rec. = 0.83 ft, 2.0 ft - 4.0 ft S-3: Brown cmf SAND, some cmf Gravel (crushed rock), Rec. = 0.92 ft, 4.0 ft - 6.0 ft	5-7-7-8 (14) 7-6-7-6 (13)	4.5	39.0	39.0	22.0
5-10		S-4: No Recovery, Rec. = 0.0 ft, 6.0 ft - 8.0 ft S-5: Brown cmf SAND, little Silt, little c(-)mf Gravel, Rec. = 0.75 ft, 8.0 ft - 10.0 ft	8-9-11-9 (20) 13-12-22-13 (34)				
10-15		S-6: Brown mf Gravel, and cm(-)f Sand, little Silt, Rec. = 1.08 ft, 10.0 ft - 12.0 ft	11-7-7-12 (14) 24-19-15-14 (34)	11.2	25.0	41.0	16.0
15-20		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 S-7: Bott 2": Grey SILT, little mf Sand, 16.5 ft - 17.0 ft, Small green glass fragments throughout	9-16-8-4 (24)	15.1	50.0	41.2	8.8
20-25		Hole stopped @ 17.0 ft Casing snapped at approximately 15ft. Hole abandoned with 5ft of casing left in the hole. 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					
25-30		Hole stopped @ 25.0 ft 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.					
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 _F 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 11/18/21

 STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		<b>BORING LOG</b>		Boring No.: <b>B-101A</b>			
		<b>VTTrans Northfield - VT-12 over Dog River BF 0241(58)</b>		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: _____ Station: _____ Offset: _____ Ground Elevation: 730.47 ft		Casing: AUGER I.D.: _____ Hammer Wt: N.A. N.A. Hammer Fall: N.A. N.A. Hammer/Rod Type: AWJ Rig: MOBILE C _F =	Groundwater Observations				
			Date	Depth (ft)	Notes		
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0-5		0.0 ft - 0.5 ft, Asphalt					
5-10		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					
15-20		Field Note: Mud Rotary, Very Hard drilling - no samples taken					
20-25		Hole stopped @ 25.0 ft 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.					
25-30							
30-35							
35-40							
40-45							
45-50							
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 _F 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 11/18/21

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)



FILE NAME: z19j223bor.dgn  
 PROJECT LEADER: C. BAKER  
 DESIGNED BY: R. GURRIELL  
 BORING LOG SHEET 1

PLOT DATE: 11/18/2021  
 DRAWN BY: S. BROWN  
 CHECKED BY: K. SMITH  
 SHEET 12 OF 27

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

**BORING LOG**

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: _____  
Station: _____ Offset: _____  
Ground Elevation: 730.48 ft

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

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0 - 0.5		Asphalt								
0.5 - 2.0		Concrete/Rebar								
2.0 - 4.0		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)				
4.0 - 6.0		S-2: Grey cmf SAND, little (+) cmf Gravel, Rec. = 0.67 ft, 4.0 ft - 6.0 ft				22-17-9-4 (26)				
6.0 - 8.0		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)				
8.0 - 10.0		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)				
10.0 - 12.0		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
12.0 - 15.0		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)				
15.0 - 20.0		18.0 ft - 20.0 ft, Drilled through large piece of wood (Confirmed by wood stuck to casing upon removal)								
20.0 - 21.0		S-7: Grey/Black cm SAND, Rec. = 0.17 ft, 20.0 ft - 21.0 ft, Wood in tip of spoon.				50/2" (100)				
21.0 - 23.0		S-8: SAME, Rec. = 0.58 ft, 21.0 ft - 23.0 ft				9-7-12-16 (19)				
23.0 - 27.0		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)				
27.0 - 30.0		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
30.0 - 32.0		S-10: J2 (Bott. 6"): Grey SILT trace (-), f Sand, trace (-) f Gravel [NP], 31.0 ft - 32.0 ft								
32.0 - 33.0		32.0 ft, Approximate Top of Rock	C-1 (5-90)	91.7 (45)	6					
33.0 - 38.0		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			4					
38.0 - 43.0		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)	4.5					
43.0 - 44.0					12					
44.0 - 45.0					3.5					
45.0 - 46.0					7					
46.0 - 47.0					6					
47.0 - 48.0					6					
48.0 - 49.0					16					
49.0 - 50.0		Hole stopped @ 43.0 ft								
50.0 - 51.0		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_f 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 11/18/21

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

**BORING LOG**

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: _____  
Station: _____ Offset: _____  
Ground Elevation: 730.3 ft

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

Groundwater Observations

Date	Depth (ft)	Notes

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0 - 0.5		Asphalt								
0.5 - 2.0		Concrete/Rebar								
2.0 - 3.0		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)				
3.0 - 4.0		S-1: J2 (Bott. 4"): Grey cmf(-) SAND, little (+) Gravel, 3.0 ft - 4.0 ft				31-25-18-8 (43)				
4.0 - 6.0		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
6.0 - 8.0		S-3: Grey-Brown cm Gravel, some (+) Sand, some Silt, Rec. = 1.0 ft, 6.0 ft - 8.0 ft				14-6-5-5 (11)				
8.0 - 10.0		S-4: Grey-Brown cmf SAND, some (+) cmf(+) Gravel, Rec. = 0.83 ft, 8.0 ft - 10.0 ft				12-19-40-50 (59)				
10.0 - 12.0		S-5: Grey-Brown cmf SAND, little (+) mf Gravel, Rec. = 1.17 ft, 10.0 ft - 12.0 ft, Highly decomposed shale/phyllite								
12.0 - 17.0		S-6: Brown cmf SAND, little c(-)mf Gravel, Rec. = 1.08 ft, 15.0 ft - 17.0 ft				4-6-7-7 (13)				
17.0 - 20.0		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
20.0 - 25.0		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
25.0 - 30.0		S-9: Grey mf GRAVEL, little cmf Sand, Rec. = 1.33 ft, 25.0 ft - 27.0 ft, Wood fragments present in sample								
30.0 - 35.0		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					
35.0 - 36.0					6					
36.0 - 37.0					9					
37.0 - 38.0					7					
38.0 - 40.0		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					
40.0 - 41.0					4					
41.0 - 42.0					4.5					
42.0 - 43.0					5					
43.0 - 44.0					6					
44.0 - 45.0		Hole stopped @ 40.0 ft								
45.0 - 46.0		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_f 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 11/18/21

PROJECT NAME: NORTHFIELD  
PROJECT NUMBER: BF 0241(58)  
FILE NAME: z19j223bor.dgn  
PROJECT LEADER: C. BAKER  
DESIGNED BY: R. GURRIELL  
BORING LOG SHEET 2

PLOT DATE: 11/18/2021  
DRAWN BY: S. BROWN  
CHECKED BY: K. SMITH  
SHEET 13 OF 27





STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-104</b>						
VTTrans Northfield - VT-12 over Dog River BF 0241(58)		Page No.: 1 of 1		Pin No.: 19J223						
Checked By: A. Sajewska		Boring Crew: M. St John (NEBC), R. Gurriell (H&H)		Casing Sampler						
Date Started: 9/24/21 Date Finished: 9/24/21		Type: WASH BORE SS		Groundwater Observations						
VTSPG NAD83: _____		I.D.: 4 in 1.5 in		Date						
Station: _____ Offset: _____		Hammer Wt: 300 140 lb.		Depth (ft)						
Ground Elevation: 729.56 ft		Hammer Fall: 30 in. 30 in.		Notes						
		Hammer/Rod Type: Manual/AWJ								
		Rig: MOBILE C _e = 1								
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0		0.0 ft - 0.5 ft, Asphalt								
5		S-1: Brown cmf SAND, some cmf Gravel, Rec. = 1.0 ft, 0.5 ft - 2.0 ft, Environmental Sample - No sample collected S-2: Brown cmf(+) SAND, little cmf Gravel, Rec. = 0.83 ft, 2.0 ft - 4.0 ft S-3: SAME, Rec. = 0.83 ft, 4.0 ft - 6.0 ft  S-4: Brown cmf SAND, some (+) cmf Gravel, Rec. = 0.75 ft, 6.0 ft - 8.0 ft  S-5: SAME, Rec. = 0.75 ft, 8.0 ft - 10.0 ft				12-16-12-10 (28) 10-10-15-8 (25) 5-7-8-5 (15) 10-12-12-13 (24) 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 12.0 ft - 15.0 ft, Cobbles				14-10-21-50 (31)	8.9	47.0	20.0	33.0
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 S-7: Jar B (Bott. 3"): Black CLAY & SILT, 16.5 ft - 17.0 ft				9-11-42-6 (53)				
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)				
25		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
30		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)				
30		28.0 ft, Approximate Top of Rock 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					
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					
40		Hole stopped @ 39.0 ft				6.5 7 9				
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.								
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 11/18/21


STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-105</b>							
VTTrans Northfield - VT-12 over Dog River BF 0241(58)		Page No.: 1 of 1		Pin No.: 19J223							
Checked By: A. Sajewska		Boring Crew: M. St John (NEBC), R. Gurriell (H&H)		Casing Sampler							
Date Started: 9/23/21 Date Finished: 9/23/21		Type: WASH BORE SS		Groundwater Observations							
VTSPG NAD83: _____		I.D.: 4 in 1.5 in		Date							
Station: _____ Offset: _____		Hammer Wt: 300 140 lb.		Depth (ft)							
Ground Elevation: 729.72 ft		Hammer Fall: 30 in. 30 in.		Notes							
		Hammer/Rod Type: Manual/AWJ									
		Rig: MOBILE C _e = 1									
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %	
0.0		0.0 ft - 0.5 ft, Asphalt									
5		S-1: Grey/Brown mf Gravel, some (+) cm(-)f Sand, some Silt, Rec. = 1.17 ft, 0.5 ft - 2.0 ft S-2: SAME, Rec. = 0.92 ft, 2.0 ft - 4.0 ft S-3: SAME, Rec. = 0.58 ft, 4.0 ft - 6.0 ft  S-4: Grey cmf GRAVEL, little cmf Sand, Rec. = 0.33 ft, 6.0 ft - 8.0 ft  S-5: Dark Brown cmf SAND, little (+) cmf Gravel, Rec. = 0.42 ft, 8.0 ft - 10.0 ft				41-50-46-39 (96) 17-13-10-6 (23) 6-2-5-2 (7) 7-6-5-9 (11)		2.5	23.0	33.0	24.0
10		S-6: Grey c(-)mf GRAVEL, trace cmf Sand, trace (-) Silt, Rec. = 1.08 ft, 10.0 ft - 12.0 ft, Crumbled Rock				3-4-7-11 (11) 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)					
25		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	
30		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						
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 (58.3)	5.5						
35		Hole stopped @ 35.0 ft				3 3 6 4 4.5					
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											
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 11/18/21


PROJECT NAME: NORTHFIELD  
 PROJECT NUMBER: BF 0241(58)  
 FILE NAME: z19j223bor.dgn PLOT DATE: 11/18/2021  
 PROJECT LEADER: C. BAKER DRAWN BY: S. BROWN  
 DESIGNED BY: R. GURRIELL CHECKED BY: K. SMITH  
 BORING LOG SHEET 3 SHEET 14 OF 27





 STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		<b>BORING LOG</b>		Boring No.: <b>B-106</b>						
		VTTrans Northfield - VT-12 over Dog River BF 0241(58)		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: _____ Station: _____ Offset: _____ 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 _F = 1		Groundwater Observations Date Depth Notes _____						
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		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 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 S-3: Grey cm(-)f SAND, some (+) f Gravel, little (+) Silt, Rec. = 1.0 ft, 4.0 ft - 6.0 ft S-4: Grey cm(-)f SAND, some (+) f Gravel, little (+) Silt, Rec. = 1.17 ft, 6.0 ft - 8.0 ft S-5: Grey cm(-)f SAND, some (+) f Gravel, little (+) Silt, Rec. = 0.5 ft, 8.0 ft - 10.0 ft S-6: Tan/Dark Brown c(-)mf SAND, trace f Gravel, trace Silt, Rec. = 1.17 ft, 10.0 ft - 12.0 ft				4-6-13-17 (19) 15-12-9-7 (21) 9-6-6-5 (12) 6-7-11-7 (18) 9-8-10-16 (18) 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 S-9: Grey mf(+) Gravel, some (+) cf Sand, some Silt, Rec. = 1.5 ft, 22.0 ft - 24.0 ft, Decomposed Rock				4-3-1-1 (4) 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 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		Remarks: 1. Mud Rotary drill used. Groundwater not recorded. 2. Hole located as surveyed.								
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 _F 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		<b>BORING LOG</b>		Boring No.: <b>H-101</b>			
		VTTrans Northfield - VT-12 over Dog River BF 0241(58)		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: _____ Station: _____ Offset: _____ 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 _F = 1		Groundwater Observations Date Depth Notes 09/21/21 20.0 Moist Spoils Noted			
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
5		0.0 ft - 0.5 ft, Asphalt 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, intermittent boulders/cobbles	36-60-REF-REF (100)				
10		Visual Description: Dark Brown cmf SAND, and cmf Gravel					
15		Visual Description: Brown cmf SAND, some cmf Gravel					
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)				
25		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)				
25		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		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.					
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 _F 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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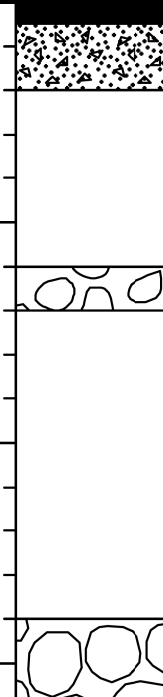
PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)


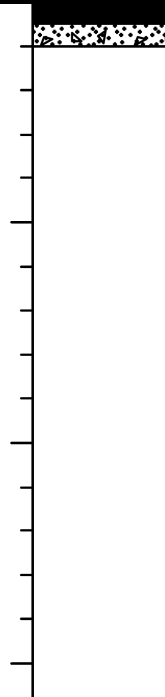


FILE NAME: z19j223bor.dgn  
 PROJECT LEADER: C. BAKER  
 DESIGNED BY: R. GURRIELL  
 BORING LOG SHEET 4

PLOT DATE: 11/18/2021  
 DRAWN BY: S. BROWN  
 CHECKED BY: K. SMITH  
 SHEET 15 OF 27

 STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		<b>BORING LOG</b>		Boring No.: <b>H-102</b>							
		VTTrans Northfield - VT-12 over Dog River BF 0241(58)		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: _____ Station: _____ Offset: _____ Ground Elevation: 730.78 ft		Casing Type: AUGER 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 _F = 1	Groundwater Observations <table border="1"> <thead> <tr> <th>Date</th> <th>Depth (ft)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>09/22/21</td> <td>17.0</td> <td>Moist Spoils Noted</td> </tr> </tbody> </table>			Date	Depth (ft)	Notes	09/22/21	17.0	Moist Spoils Noted
Date	Depth (ft)	Notes									
09/22/21	17.0	Moist Spoils Noted									
Depth (ft) 0 5 10 15 20 25 30 35 40 45	Strata (1) 	CLASSIFICATION OF MATERIALS (Description)			Blows/6" (N Value) 25-30-26-26 (56) 11-21-23-25 (44) 8-11-14-16 (25) 14-20-27-35 (47)	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 S-2: Brown cmf SAND, little Silt, trace f Gravel, Rec. = 1.17 ft, 4.0 ft - 6.0 ft Field Note: Cobble/Boulder Visual Description: Brown cmf SAND, little Silt, trace f Gravel Field Note: Boulder S-3: Grey-Brown mf SAND, trace Silt, Rec. = 1.25 ft, 20.0 ft - 22.0 ft 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 Hole stopped @ 25.0 ft 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 _F 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 11/18/21

 STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		<b>BORING LOG</b>		Boring No.: <b>H-103</b>					
		VTTrans Northfield - VT-12 over Dog River BF 0241(58)		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: _____ Station: _____ Offset: _____ Ground Elevation: 729.13 ft		Casing Type: AUGER 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 _F = 1	Groundwater Observations <table border="1"> <thead> <tr> <th>Date</th> <th>Depth (ft)</th> <th>Notes</th> </tr> </thead> <tbody> </tbody> </table>			Date	Depth (ft)	Notes	
Date	Depth (ft)	Notes							
Depth (ft) 0 5 10 15 20 25 30 35 40 45	Strata (1) 	CLASSIFICATION OF MATERIALS (Description)			Blows/6" (N Value) 27-24-25-21 (49) 31-37-44-30 (81) 18-7-9-8 (16) 6-3-6-6 (9) 7-7-10-50/5" (17) 8-9-12-10 (21) 8-10-13-15 (23)	Moisture Content %	Gravel %	Sand %	Fines %
		0.0 ft - 0.5 ft, Asphalt 0.5 ft - 1.0 ft, Concrete 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 Visual Description: Brown mf SAND, little c(-)mf Gravel, little Silt, Boulders/Cobbles throughout Visual Description: Grey cmf GRAVEL, some cmf Sand, little Silt S-3: Brown cmf SAND, little Silt, trace cmf Gravel, Rec. = 0.92 ft, 15.0 ft - 17.0 ft S-4: Top 5": SAME, Rec. = 1.58 ft, 17.0 ft - 17.5 ft 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 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 S-7: Grey c(-)mf SAND, Rec. = 0.92 ft, 23.0 ft - 25.0 ft Hole stopped @ 25.0 ft 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 _F 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 11/18/21


PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)



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

PLOT DATE: 11/18/2021  
 DRAWN BY: S. BROWN  
 CHECKED BY: K. SMITH  
 SHEET 16 OF 27

 STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY	BORING LOG		Boring No.: <b>H-104</b>
	<b>VTtrans Northfield - VT-12 over Dog River          BF 0241(58)</b>		Page No.: 1 of 1 Pin No.: 19J223 Checked By: A. Sajewska

Boring Crew: <u>M. St John (NEBC), R. Gurriell (H&amp;H)</u>	Type: <u>AUGER</u>	Casing: <u>SS</u>	Sampler: <u>1.5 in</u>	Groundwater Observations		
Date Started: <u>9/20/21</u> Date Finished: <u>9/20/21</u>	I.D.: <u>N.A.</u>	Hammer Wt: <u>140 lb.</u>	Hammer Fall: <u>30 in.</u>	Date	Depth (ft)	Notes
VTSPG NAD83: _____	Hammer/Rod Type: <u>Manual/AWJ</u>	Rig: <u>MOBILE</u>	C _F : <u>1</u>	09/20/21	20.0	Moist Samples Noted
Station: _____ Offset: _____						
Ground Elevation: <u>729.43 ft</u>						

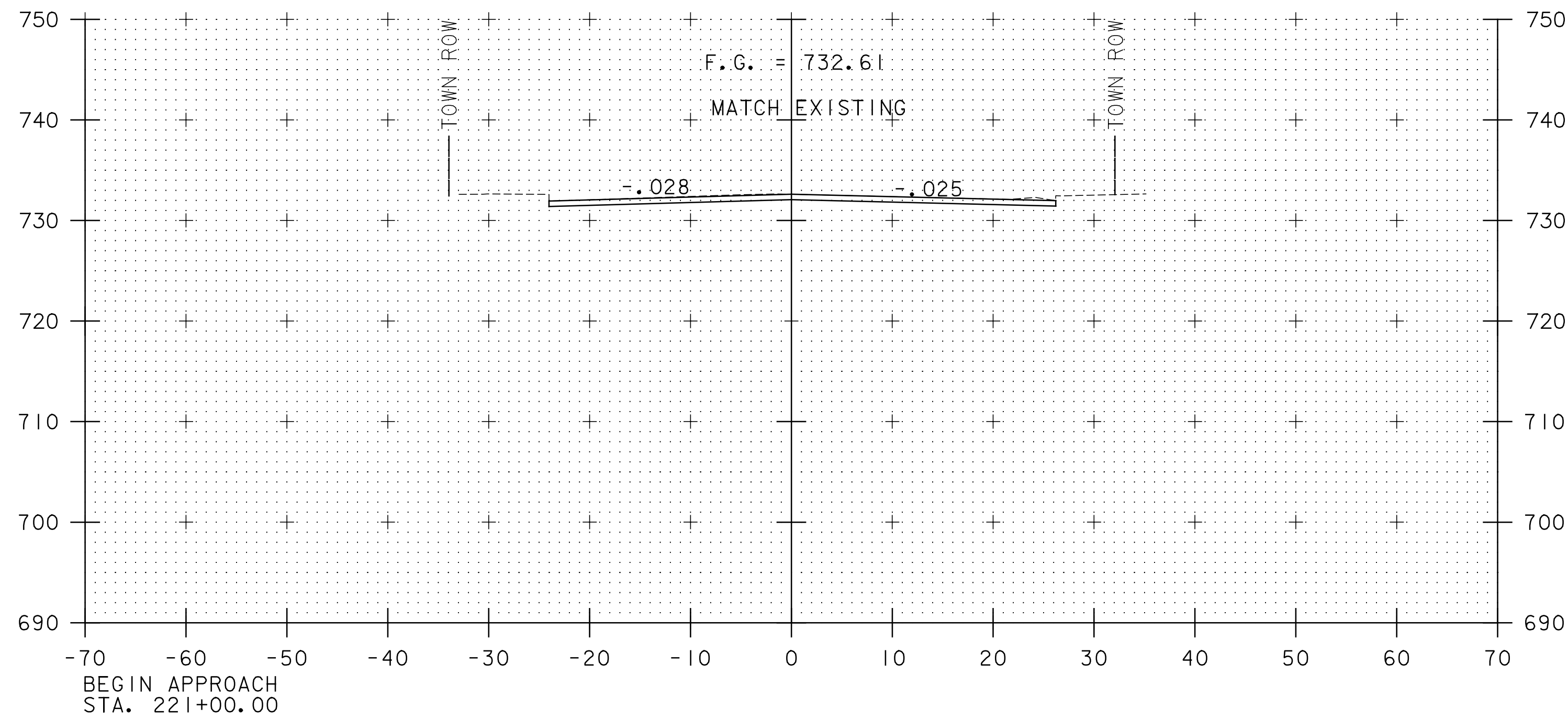
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
0.0		0.0 ft - 0.5 ft, Asphalt					
0.5		S-1: Brown cmf SAND, little cmf Gravel, trace Silt, Rec. = 0.75 ft, 0.5 ft - 2.0 ft	12-27-31-35 (58)				
2.0		S-2: SAME, Rec. = 1.42 ft,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

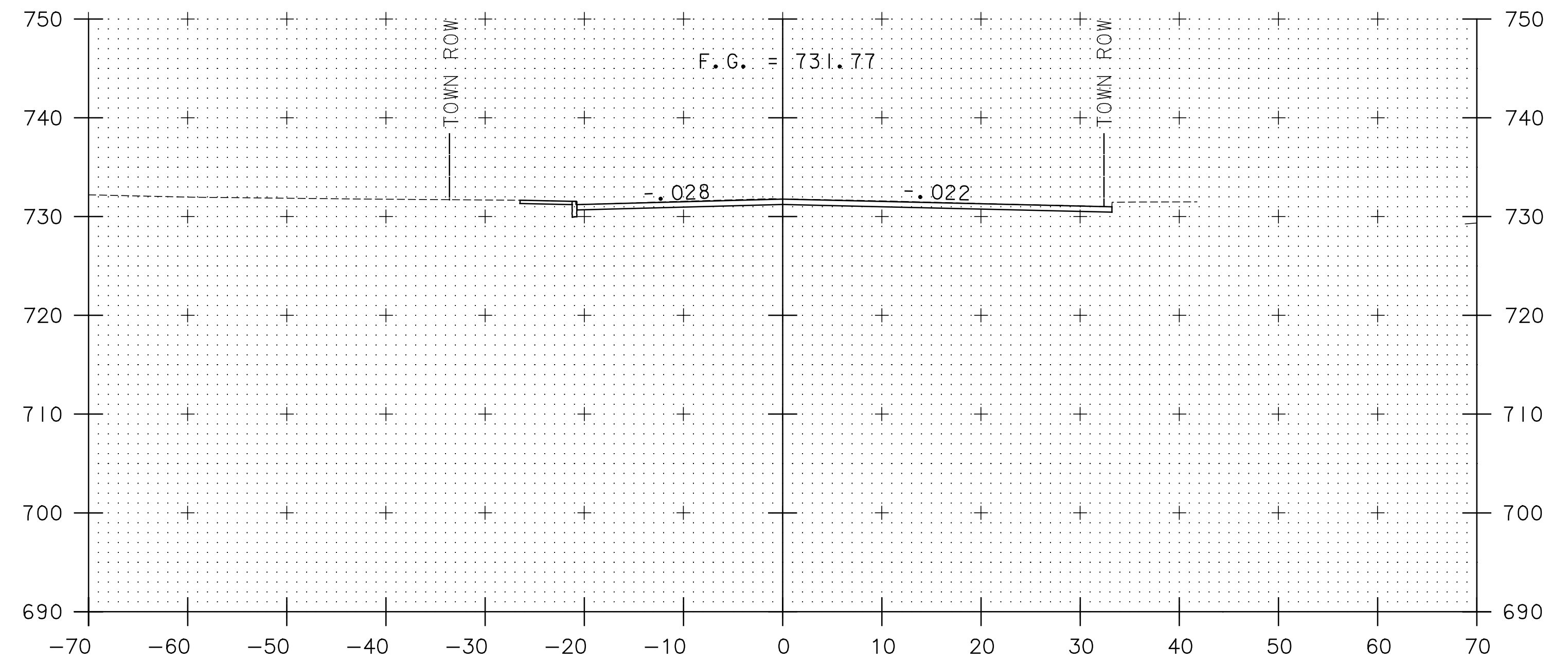
2010 COPY NORTHFIELD - VT-12 OVER DOG RIVER.GPJ VERMONT AGT.GDT 11/18/21

PROJECT NAME: NORTHFIELD	PLOT DATE: 11/18/2021
PROJECT NUMBER: BF 0241(58)	DRAWN BY: S. BROWN
FILE NAME: z19j223bor.dgn	CHECKED BY: K. SMITH
PROJECT LEADER: C. BAKER	SHEET 17 OF 27
DESIGNED BY: R. GURRIELL	
<b>BORING LOG SHEET 6</b>	

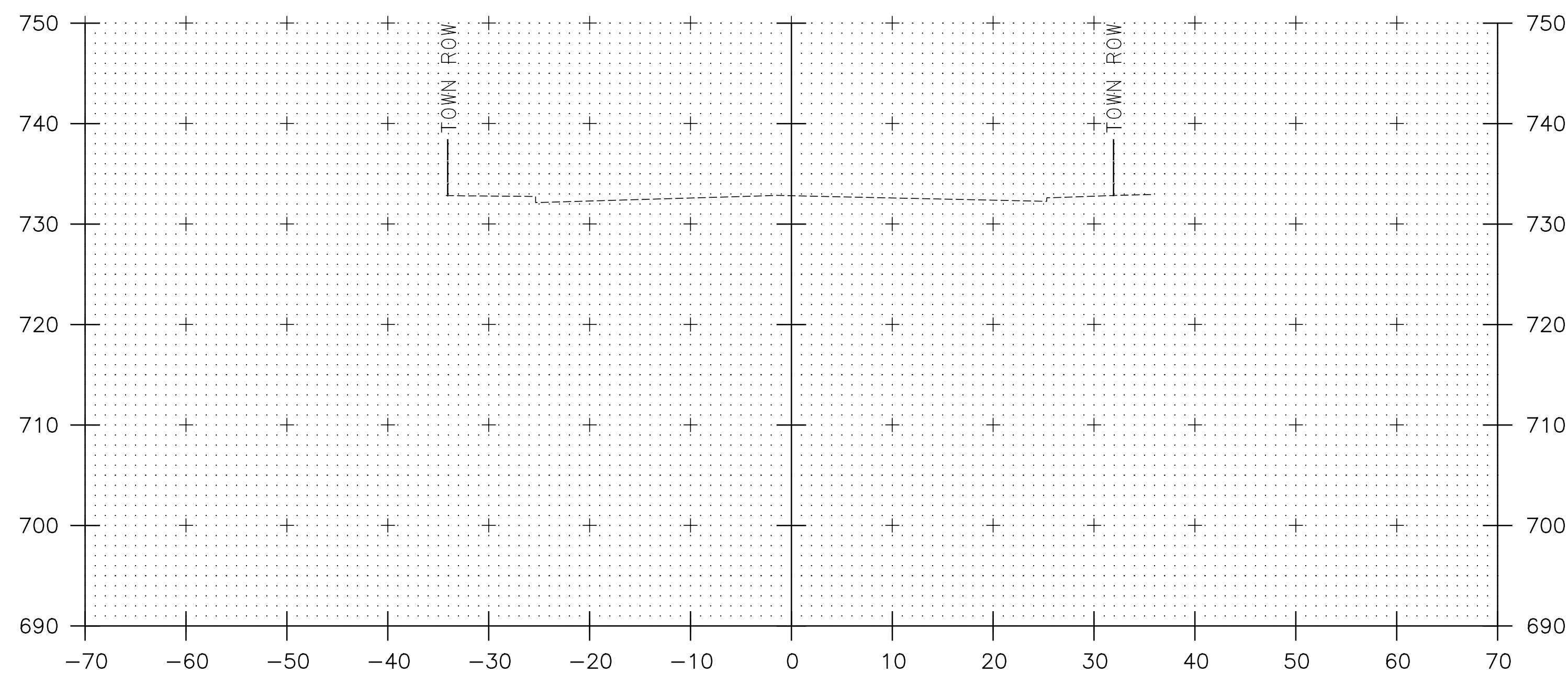




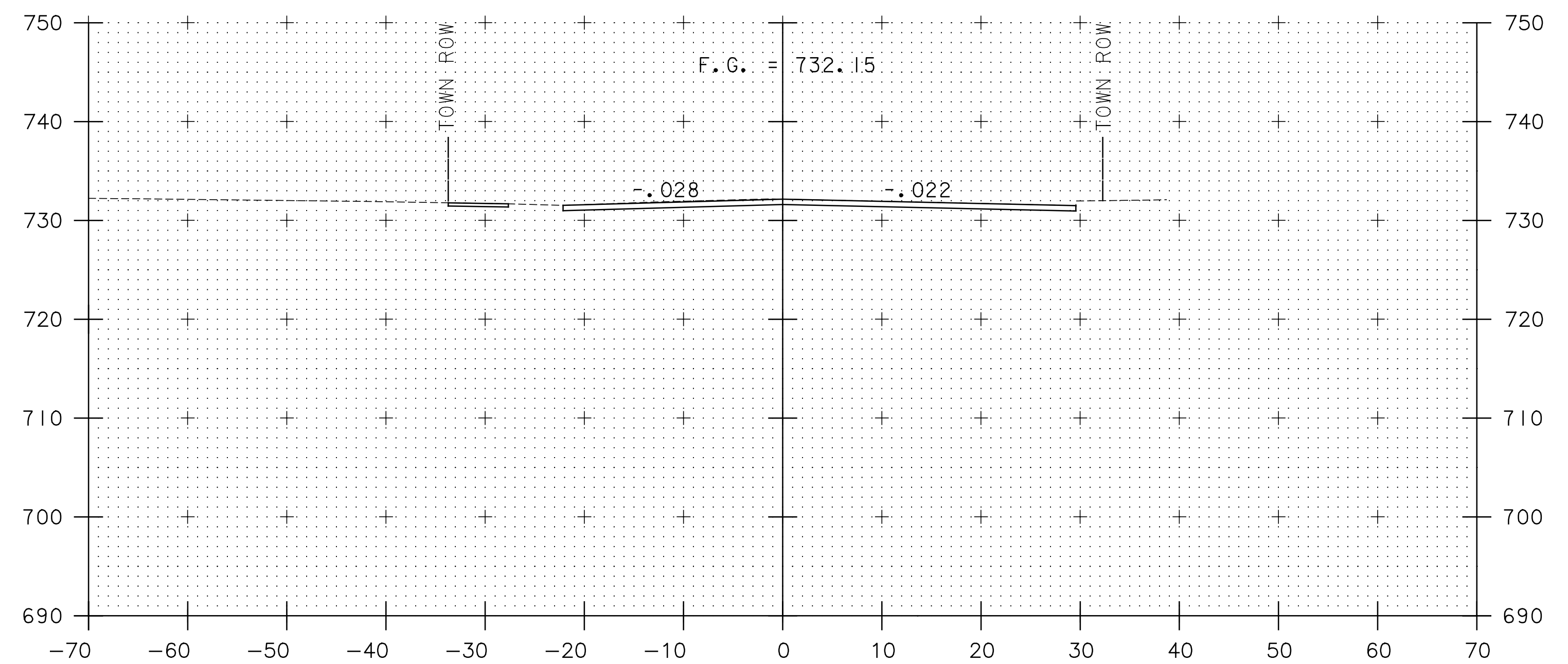
221+00



221+50



220+90



221+25

STA. 220+90 TO STA. 221+50

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223xs.dgn

PROJECT LEADER: C. BAKER

DESIGNED BY: K. HO

ROADWAY CROSS SECTIONS - 1

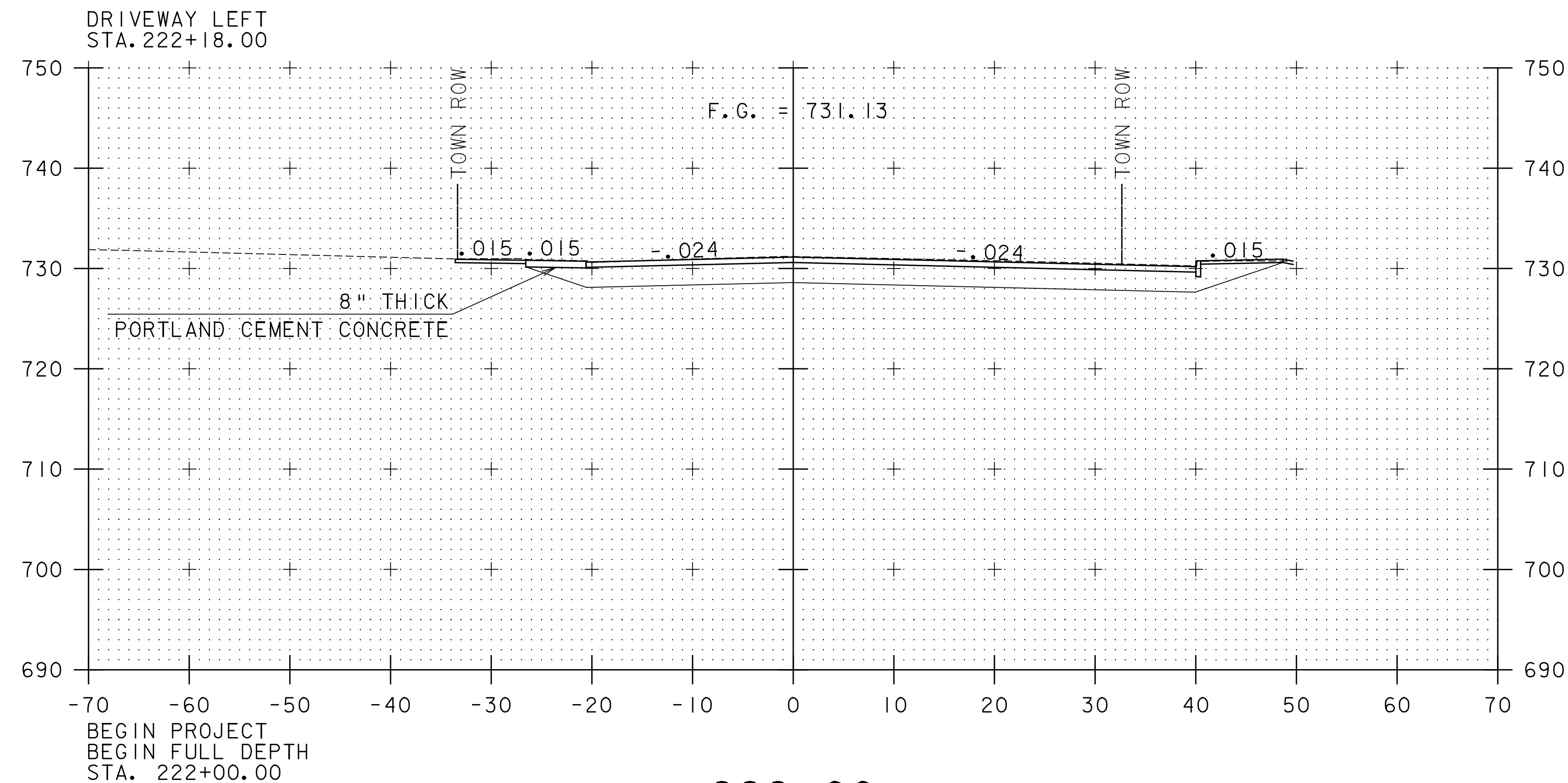
PLOT DATE: 11/18/2021

DRAWN BY: T. MARQUETTE

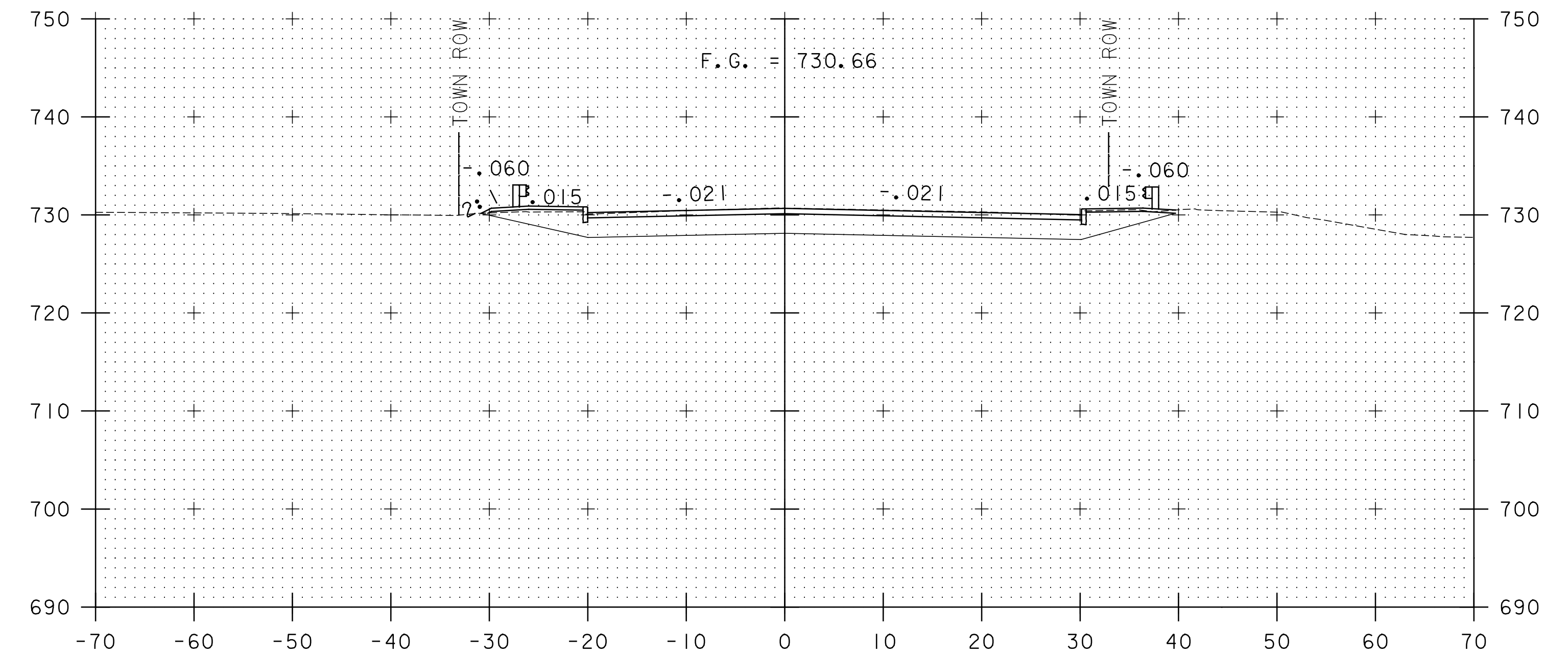
CHECKED BY: C. JENNE

SHEET 18 OF 27

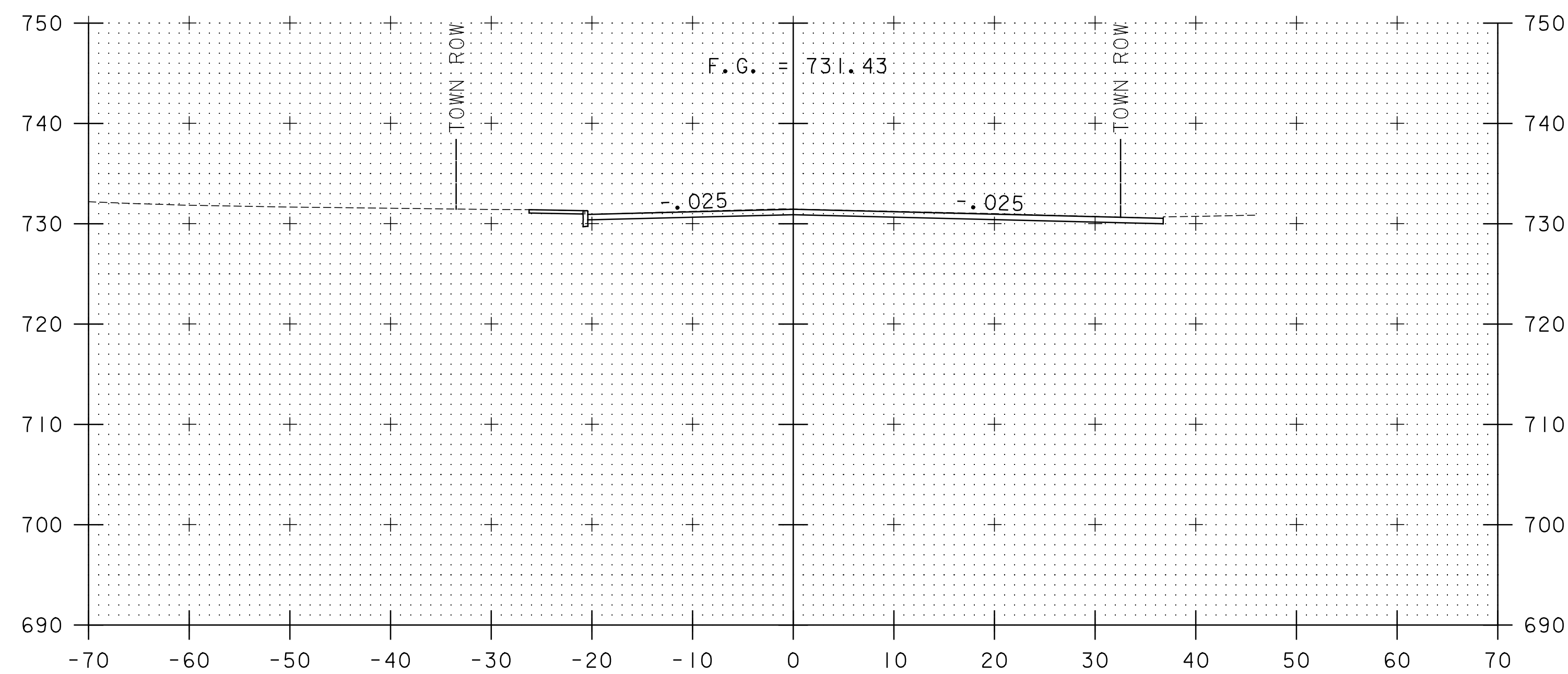




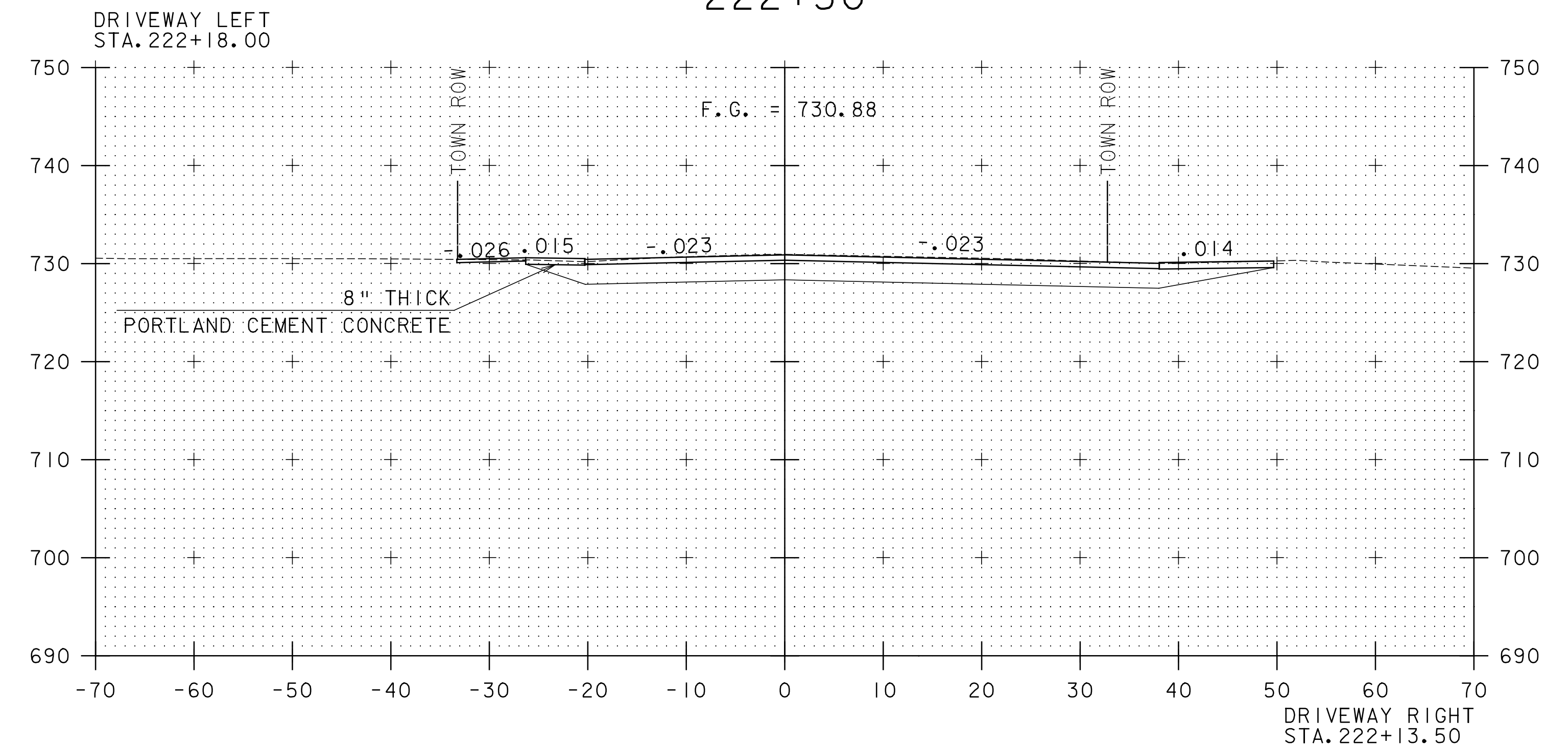
222+00



222+50



221+75



222+25

STA. 221+75 TO STA. 222+50



PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223xs.dgn

PROJECT LEADER: C. BAKER

DESIGNED BY: K. HO

ROADWAY CROSS SECTIONS - 2

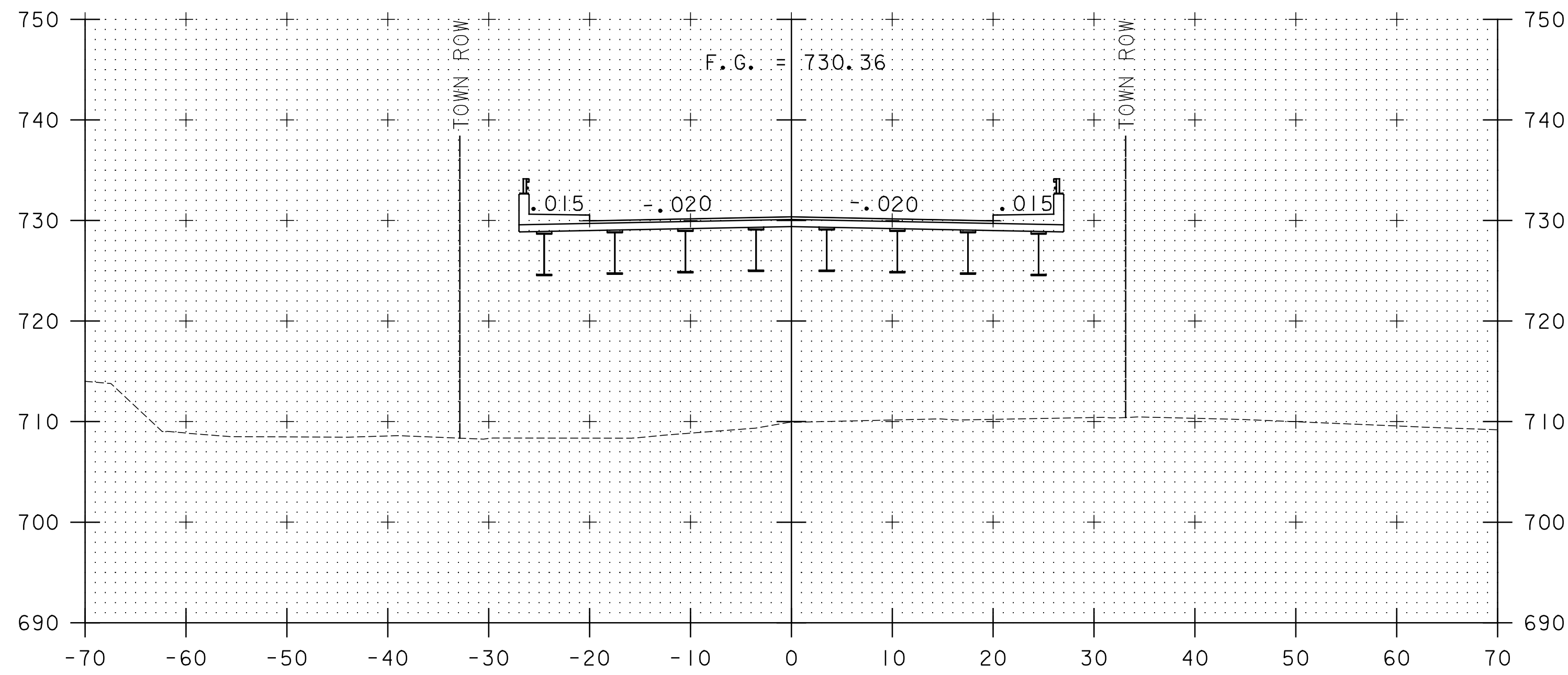
PLOT DATE: 11/18/2021

DRAWN BY: T. MARQUETTE

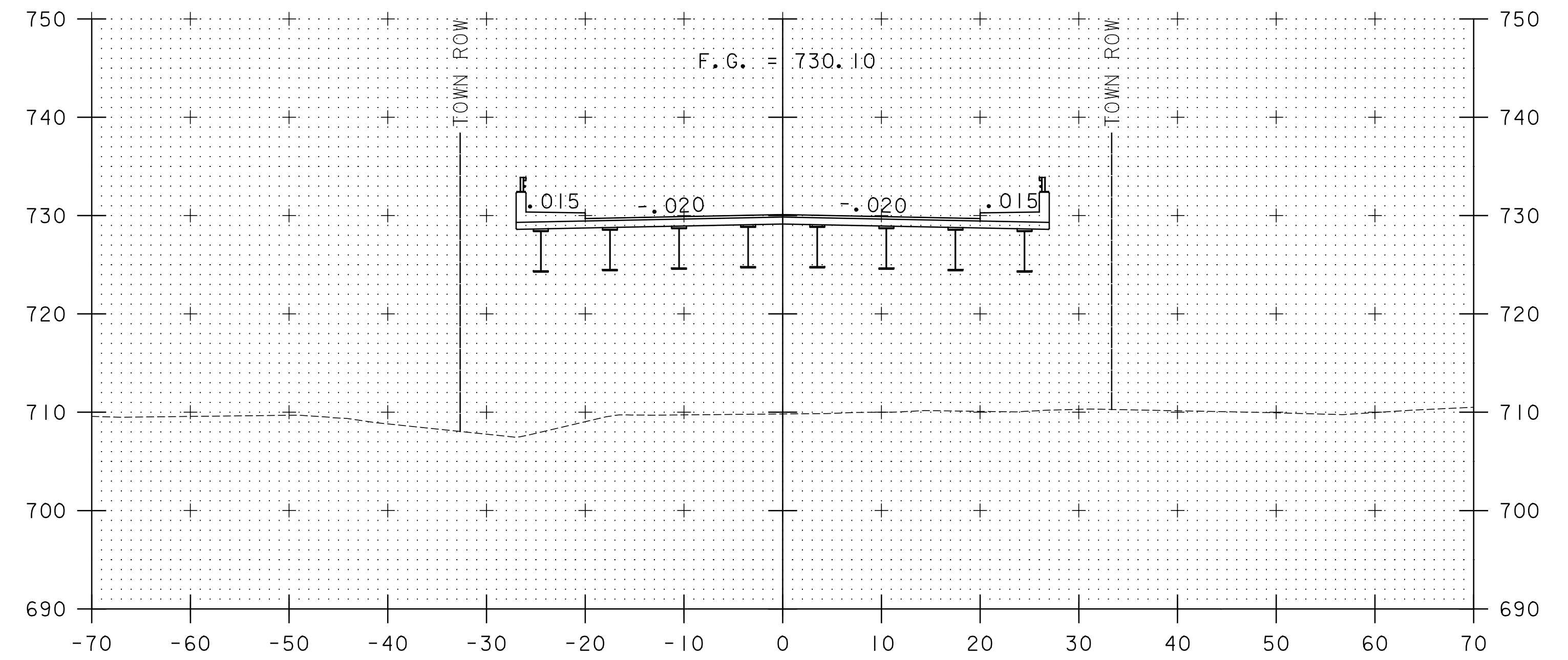
CHECKED BY: C. JENNE

SHEET 19 OF 27

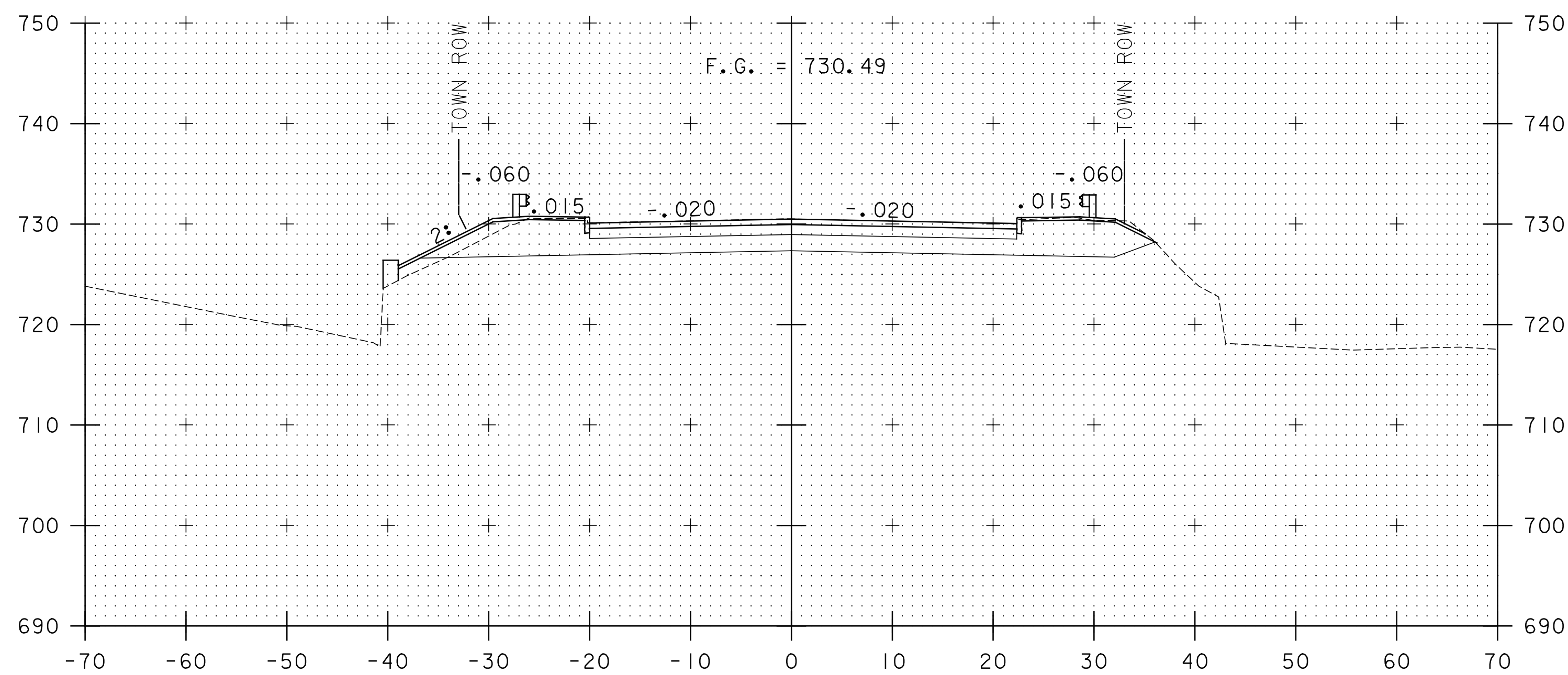




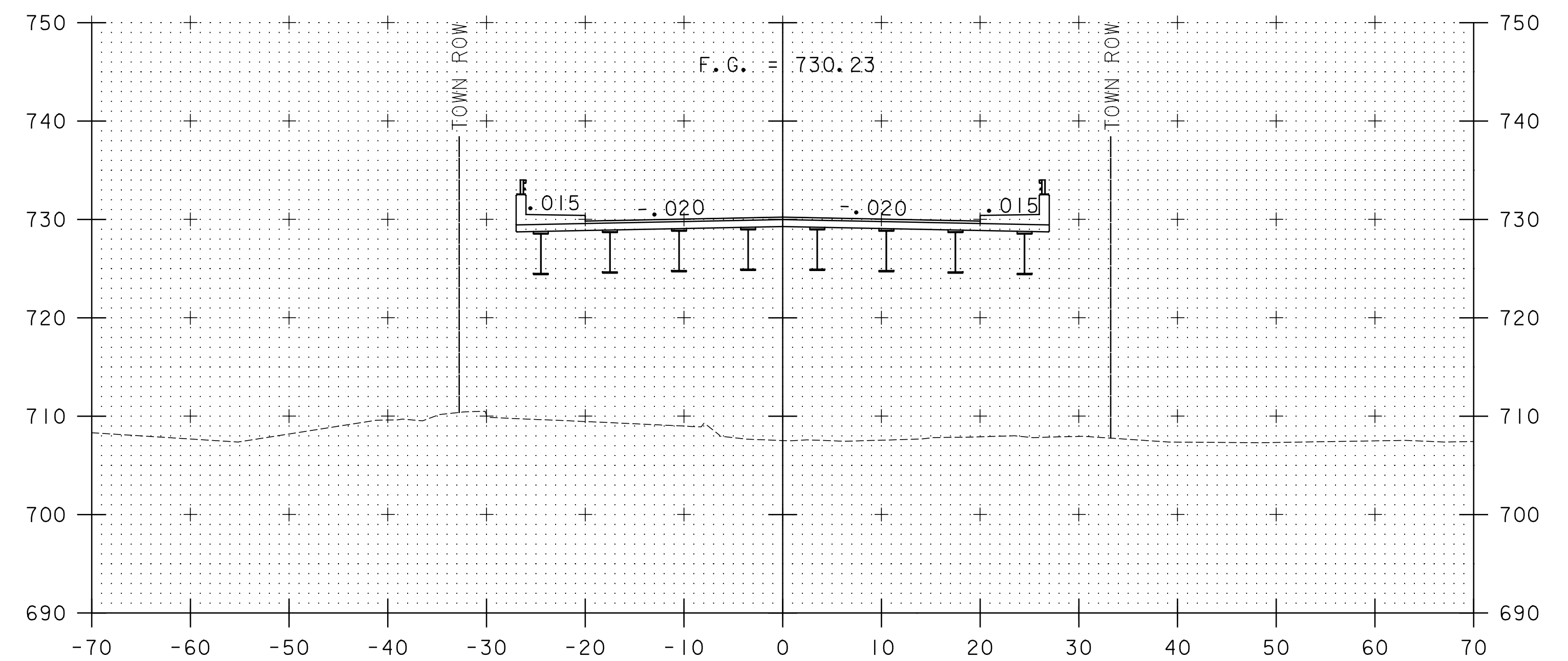
223+00



223+50



222+75

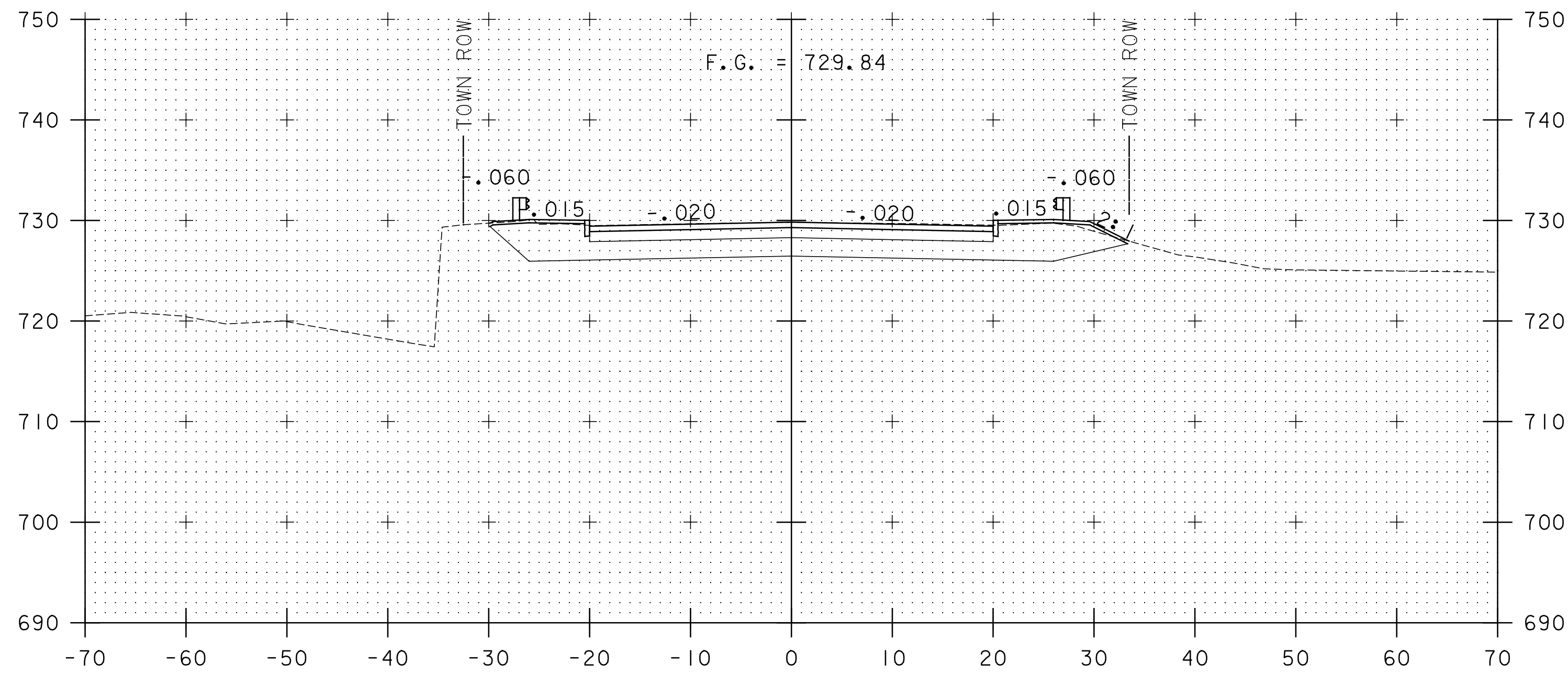


223+25

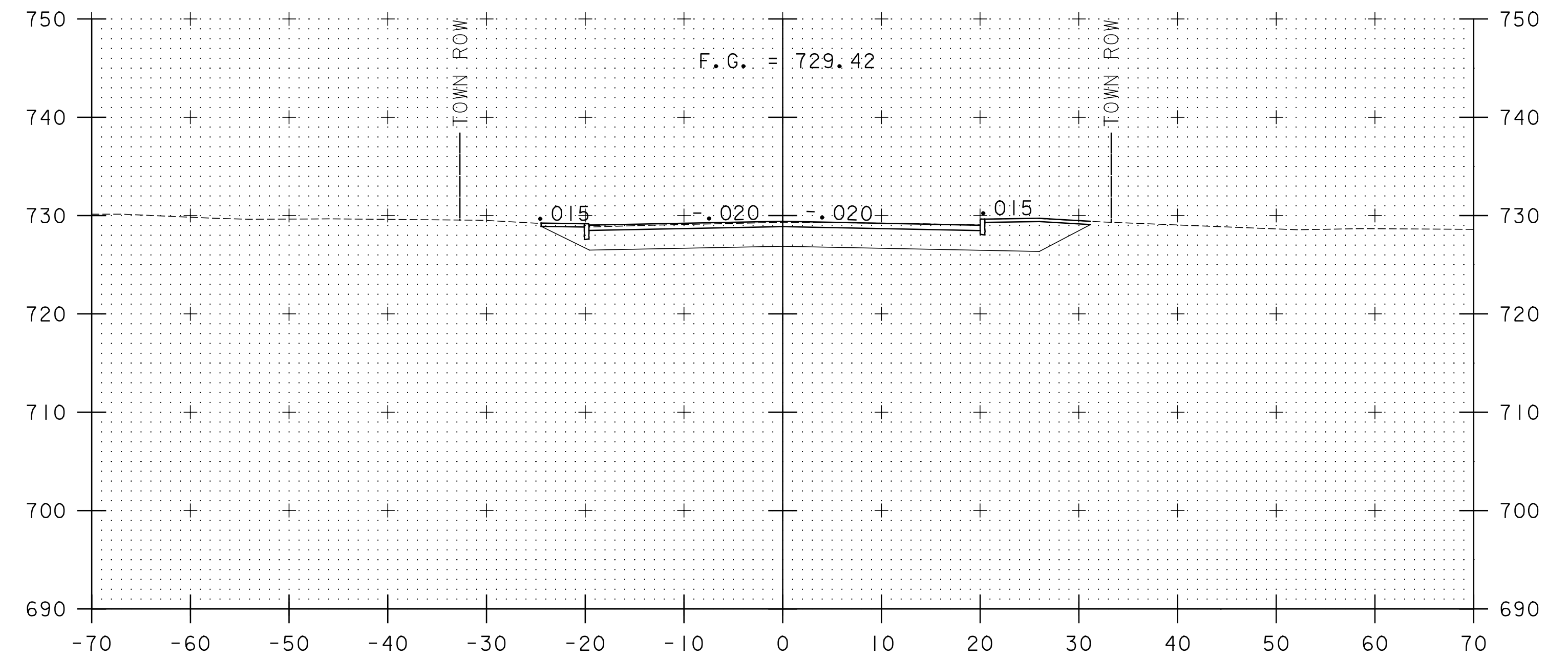
STA. 222+75 TO STA. 223+50

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19j223xs.dgn	PLOT DATE: 11/18/2021
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
ROADWAY CROSS SECTIONS - 3	SHEET 20 OF 27

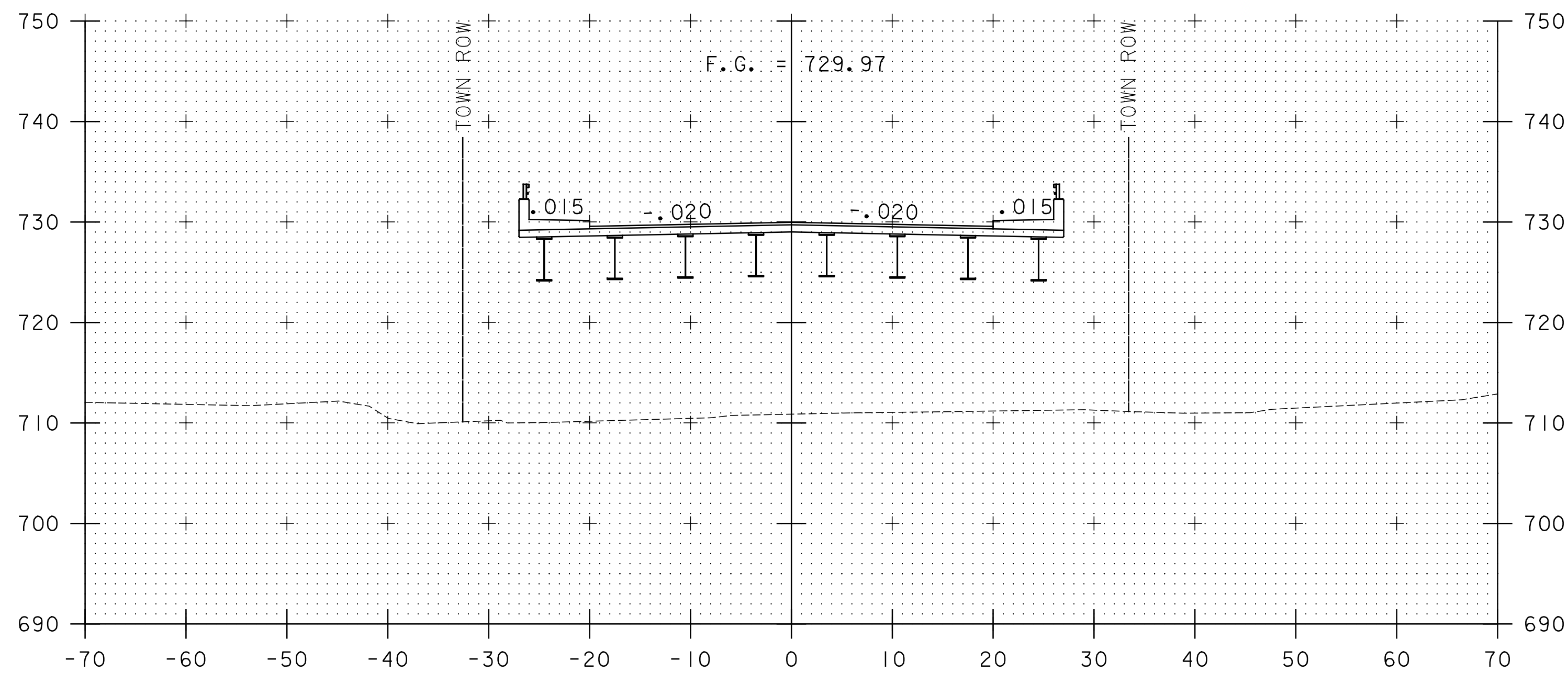




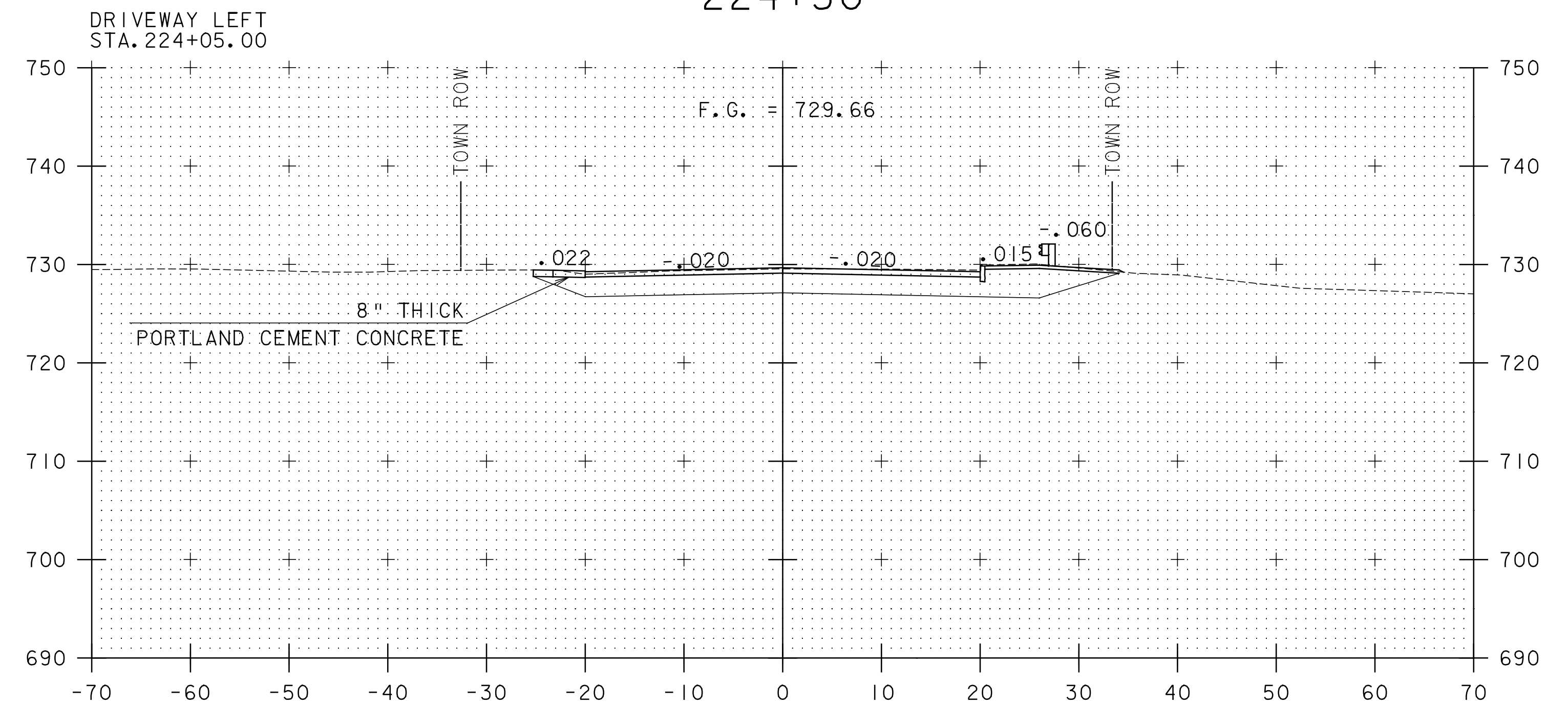
224+00



224+50



223+75



224+25

END BRIDGE  
STA. 223+97.29

DRIVEWAY LEFT  
STA. 224+05.00

STA. 223+75 TO STA. 224+50

PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223xs.dgn

PROJECT LEADER: C. BAKER

DESIGNED BY: K. HO

ROADWAY CROSS SECTIONS - 4

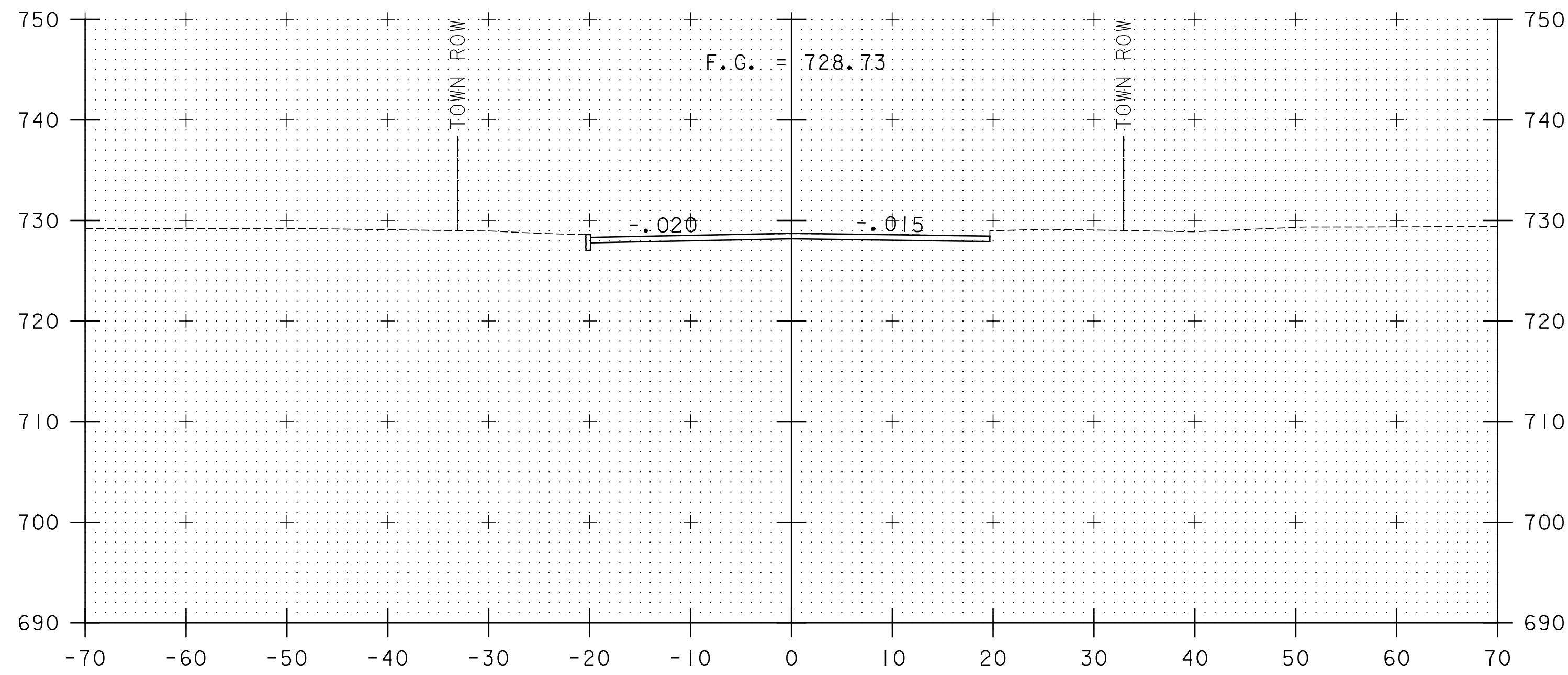
PLOT DATE: 11/18/2021

DRAWN BY: T. MARQUETTE

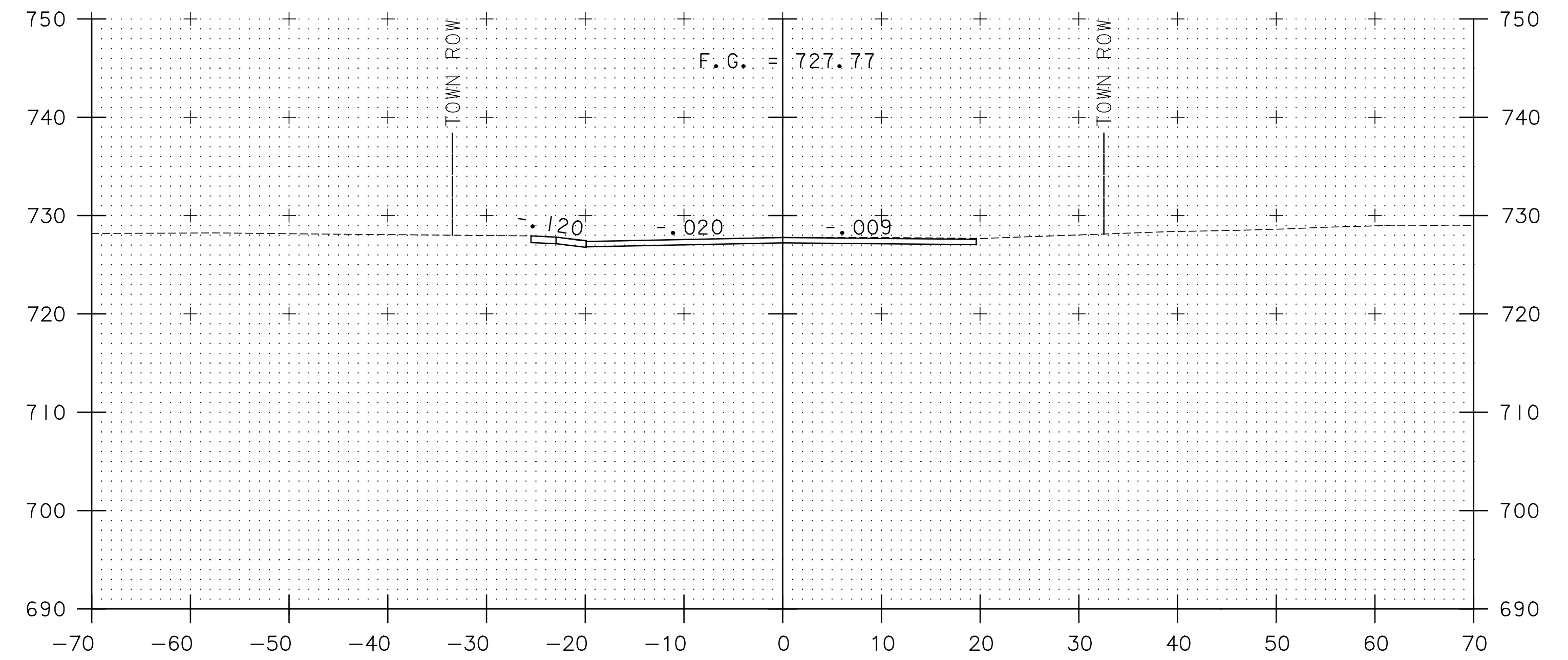
CHECKED BY: C. JENNE

SHEET 21 OF 27

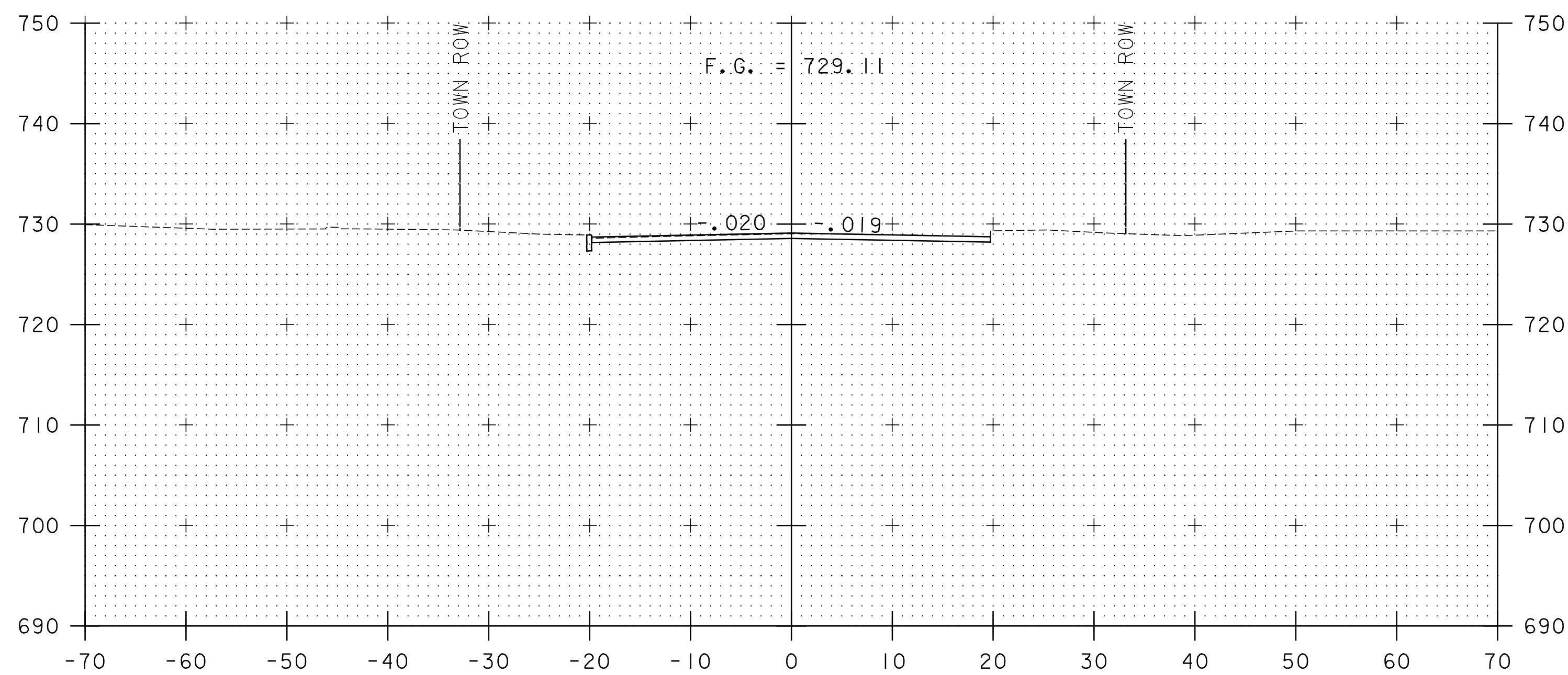




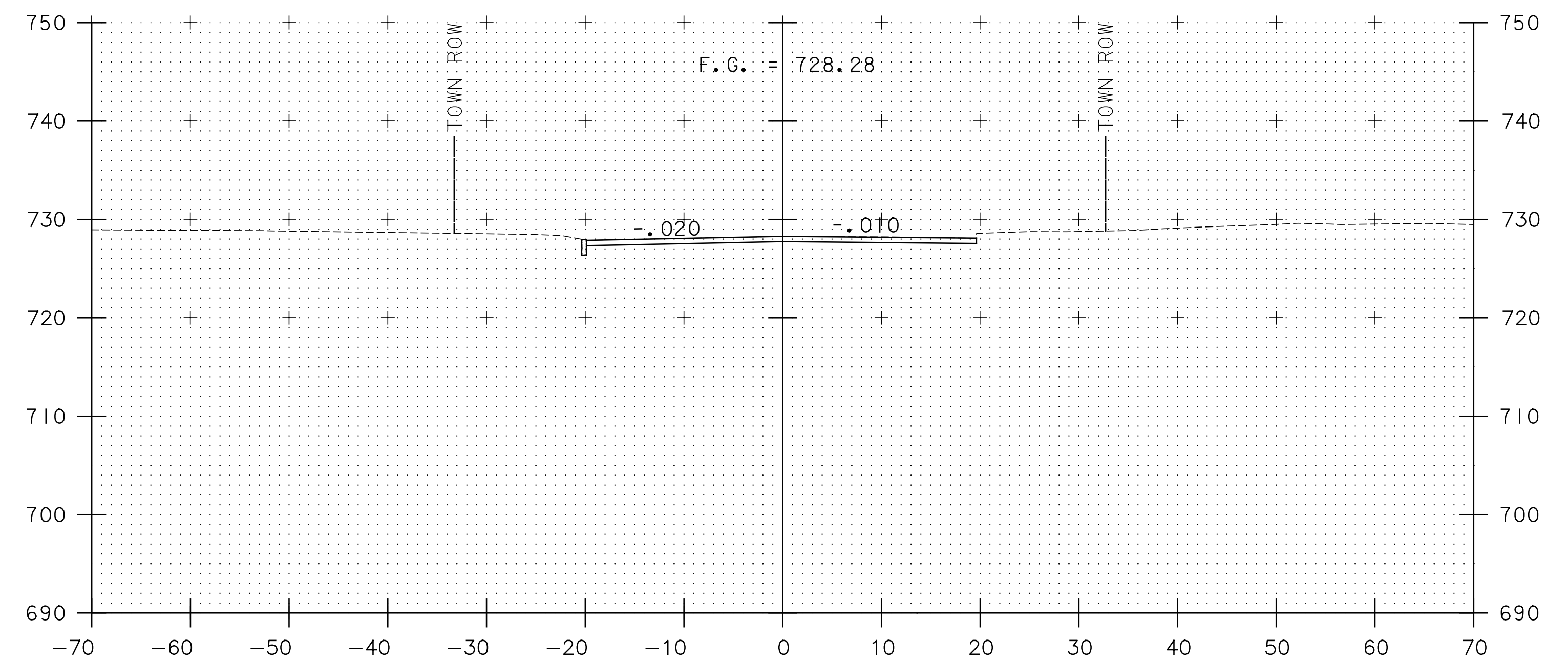
225+00



225+50



224+75



225+25

END PROJECT  
END FULL DEPTH  
STA. 224+75.00

STA. 224+75 TO STA. 225+50



PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223xs.dgn

PROJECT LEADER: C. BAKER

DESIGNED BY: K. HO

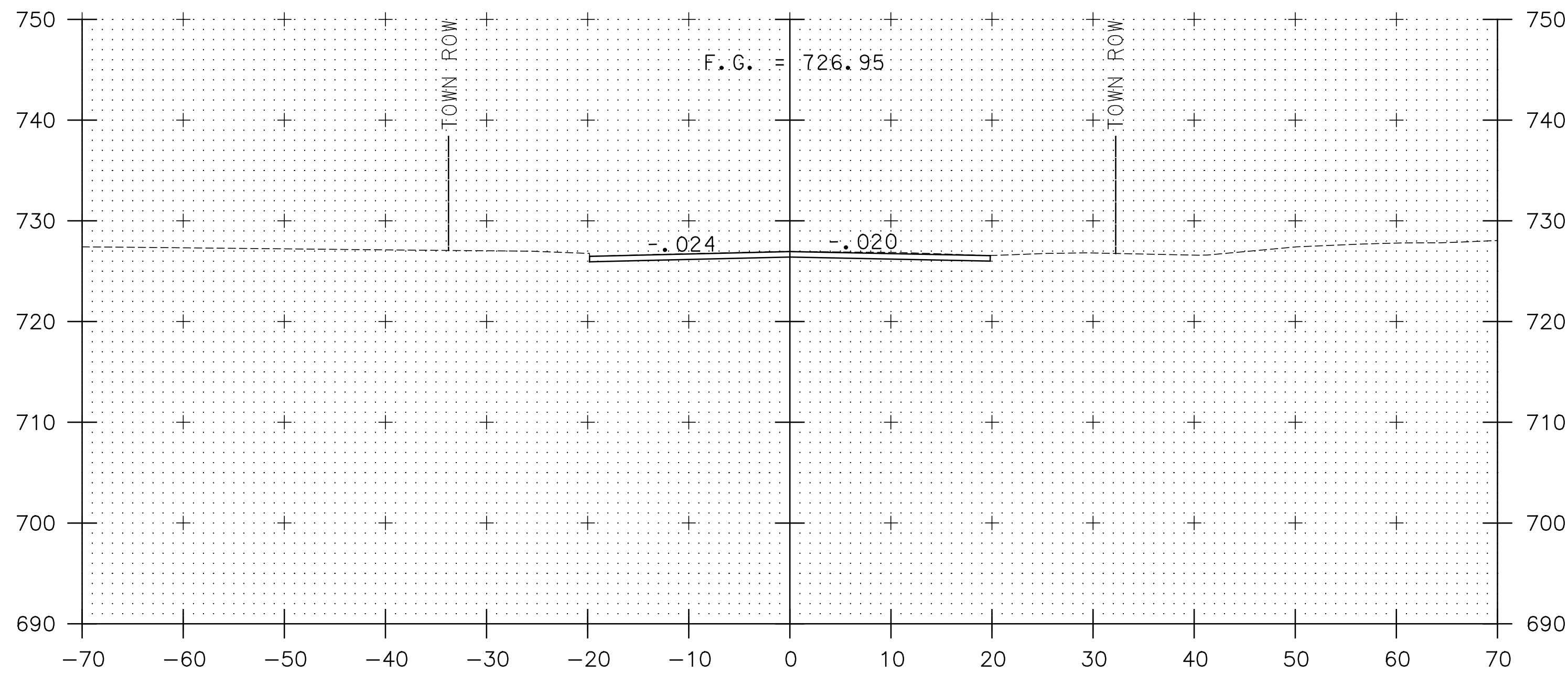
ROADWAY CROSS SECTIONS - 5

PLOT DATE: 11/18/2021

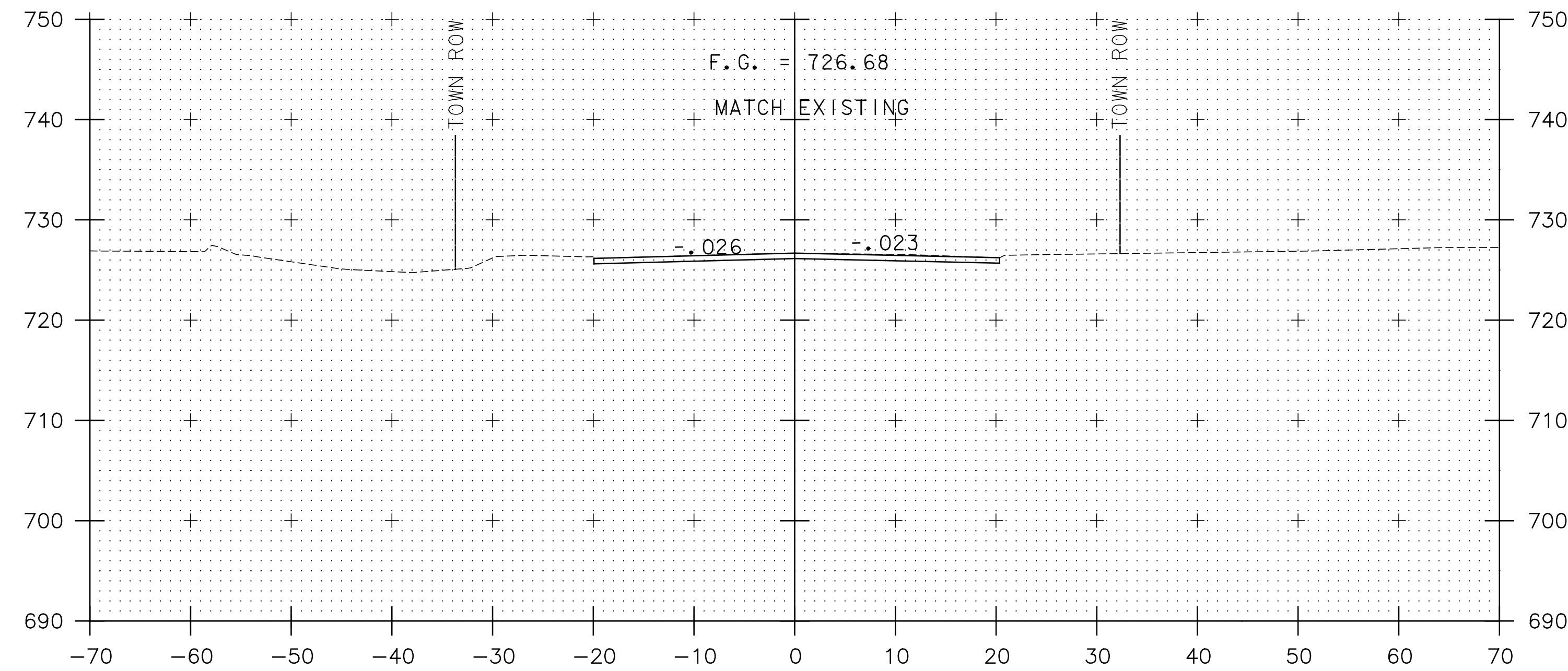
DRAWN BY: T. MARQUETTE

CHECKED BY: C. JENNE

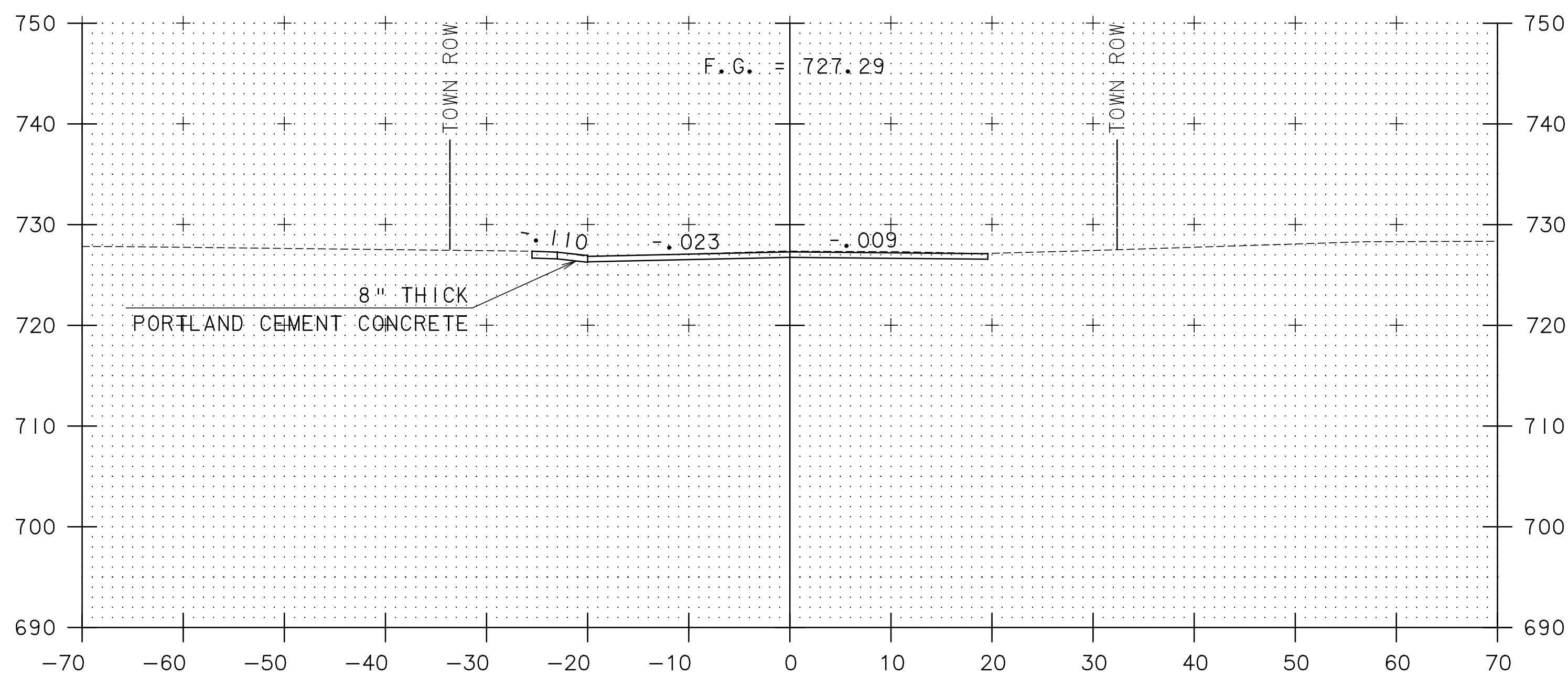
SHEET 22 OF 27



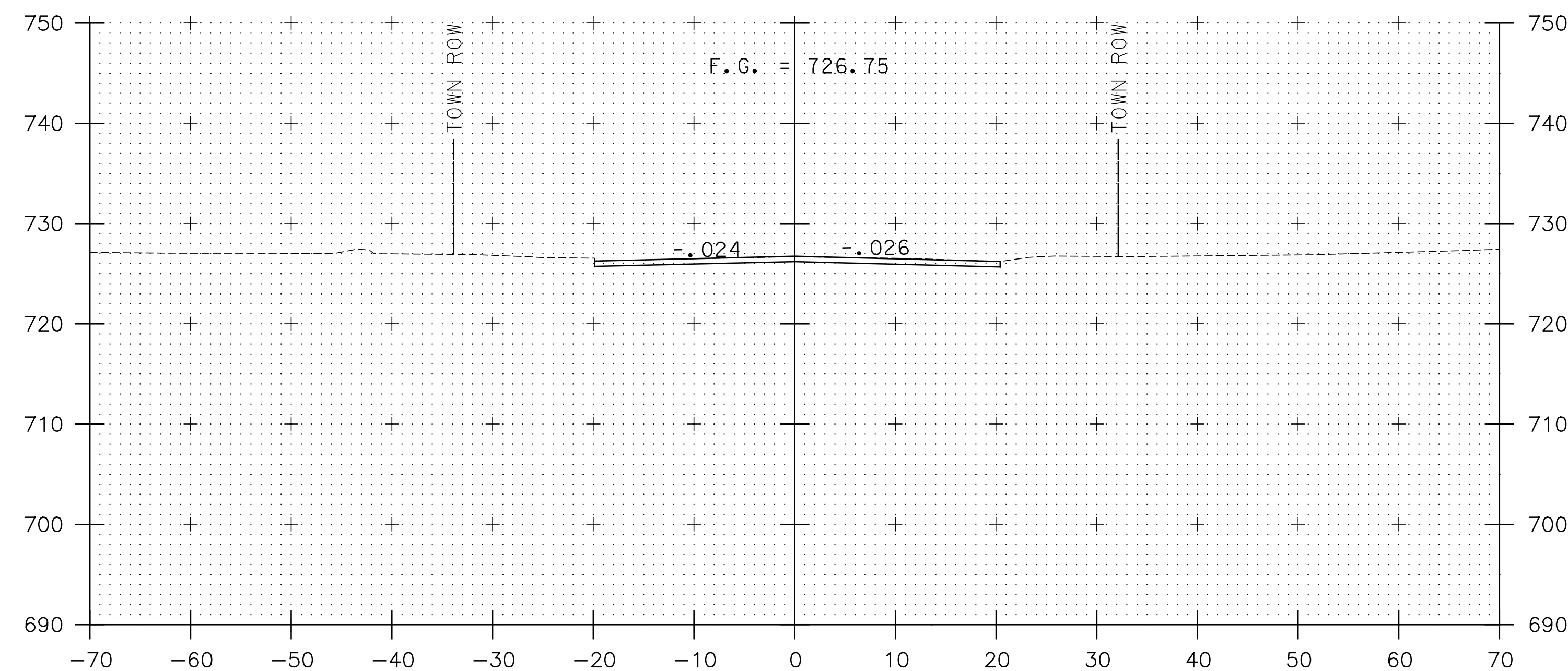
226+00



226+50



225+75



226+25

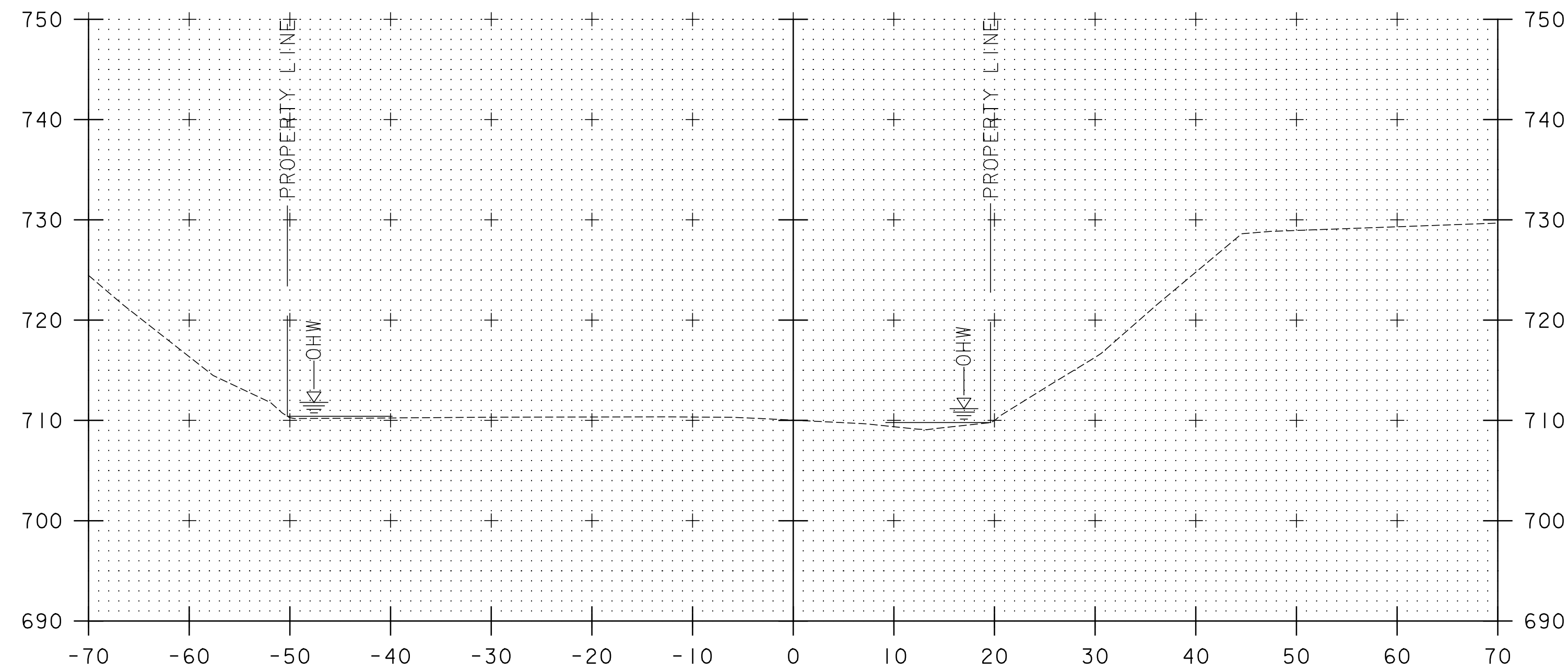
STA. 225+75 TO STA. 226+50

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19j223xs.dgn	PLOT DATE: 11/18/2021
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
ROADWAY CROSS SECTIONS - 6	SHEET 23 OF 27

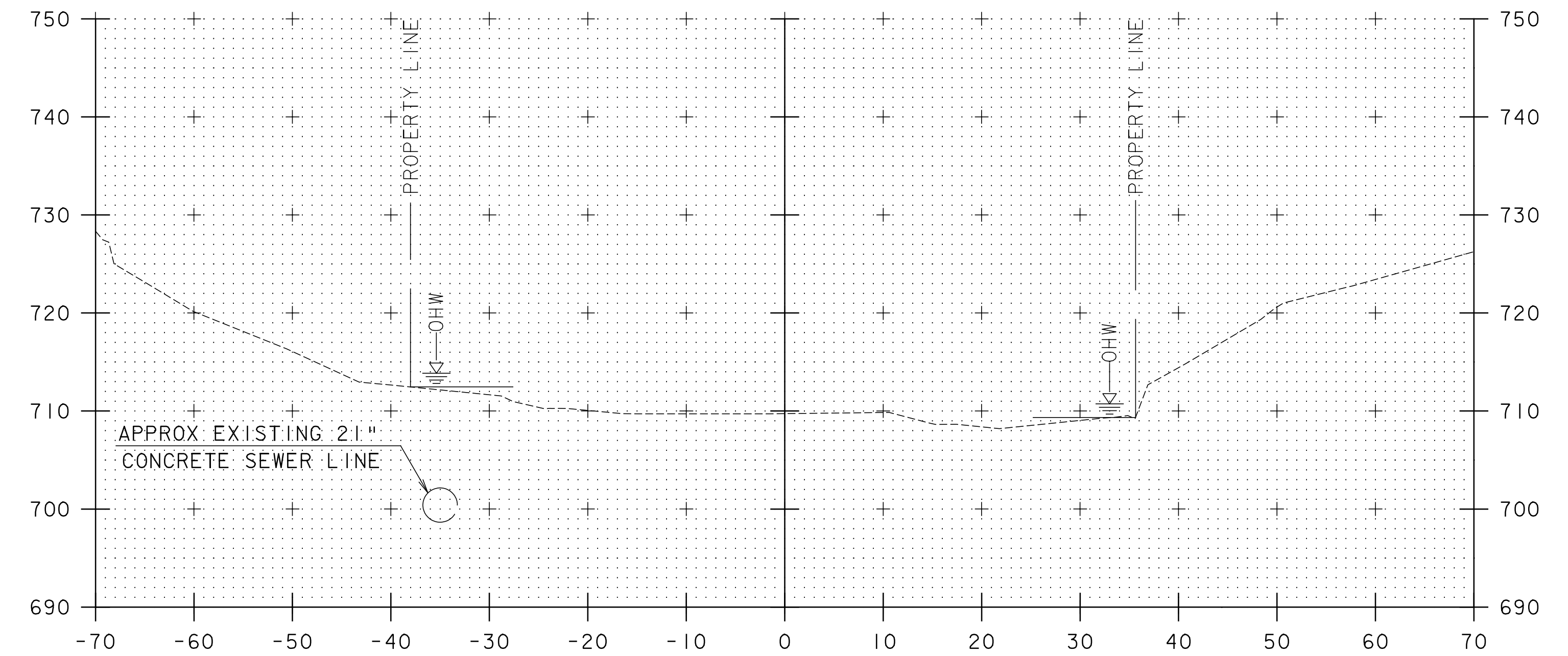


APPROX STA 50+81.60 LT  
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
 BEGIN STONE FILL, TYPE III  
 BEGIN GEOTEXTILE UNDER STONE FILL  
 BEGIN GRUBBING MATERIAL

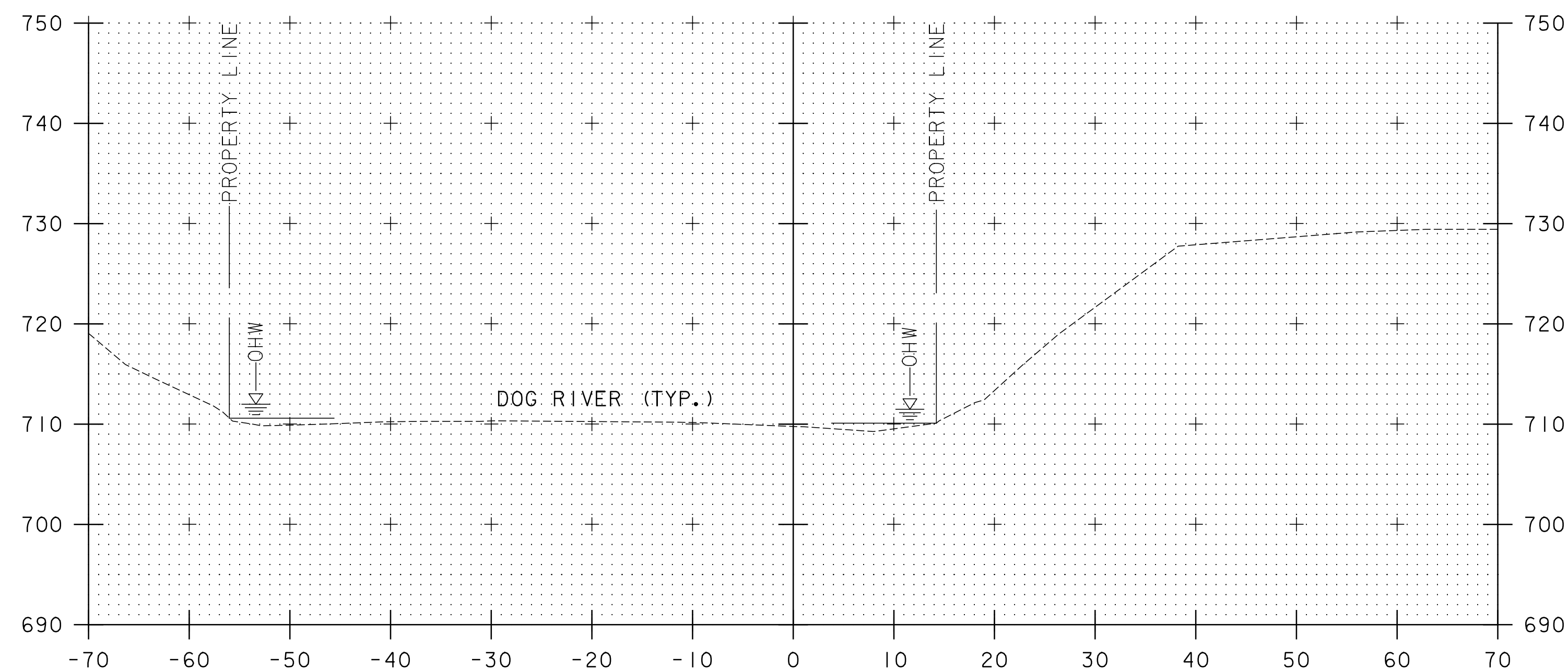
APPROX STA 50+96.25 RT  
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION  
 BEGIN STONE FILL, TYPE III  
 BEGIN GEOTEXTILE UNDER STONE FILL  
 BEGIN GRUBBING MATERIAL



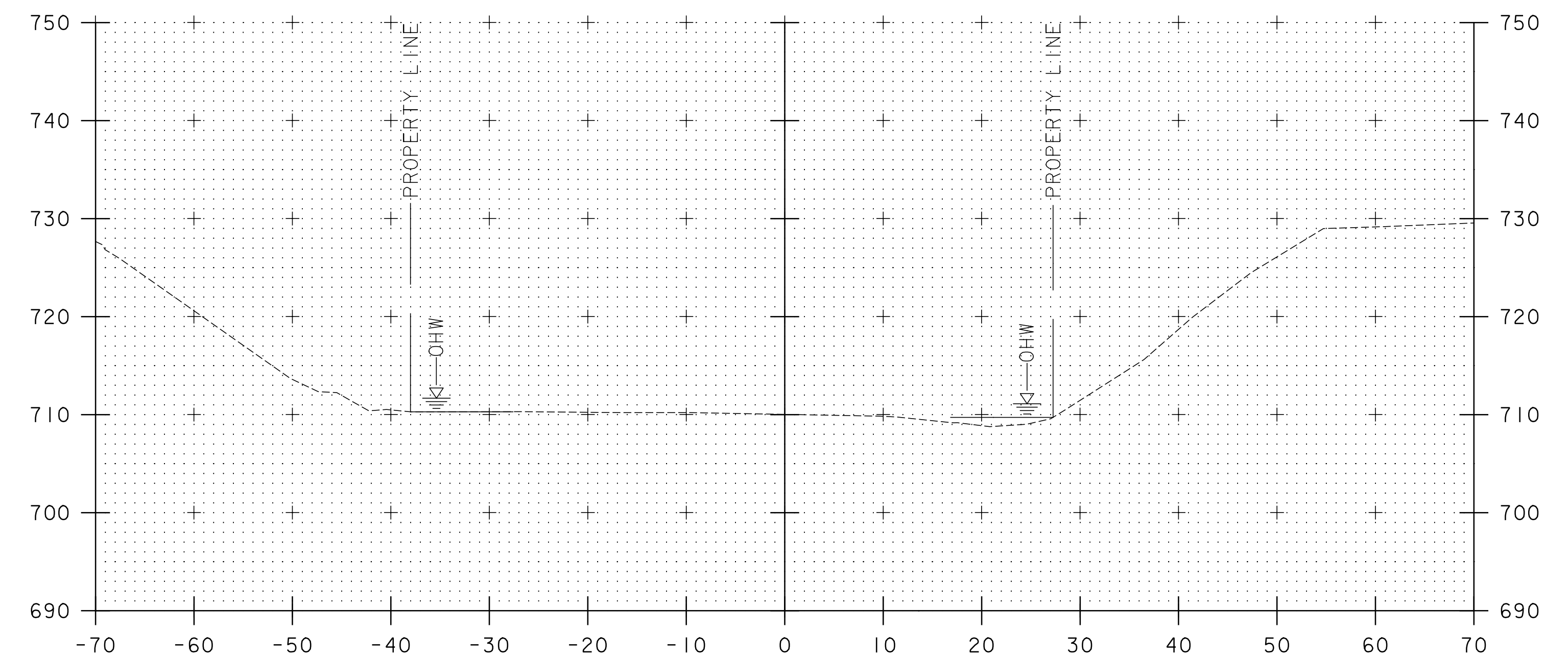
50+25



50+75



50+00



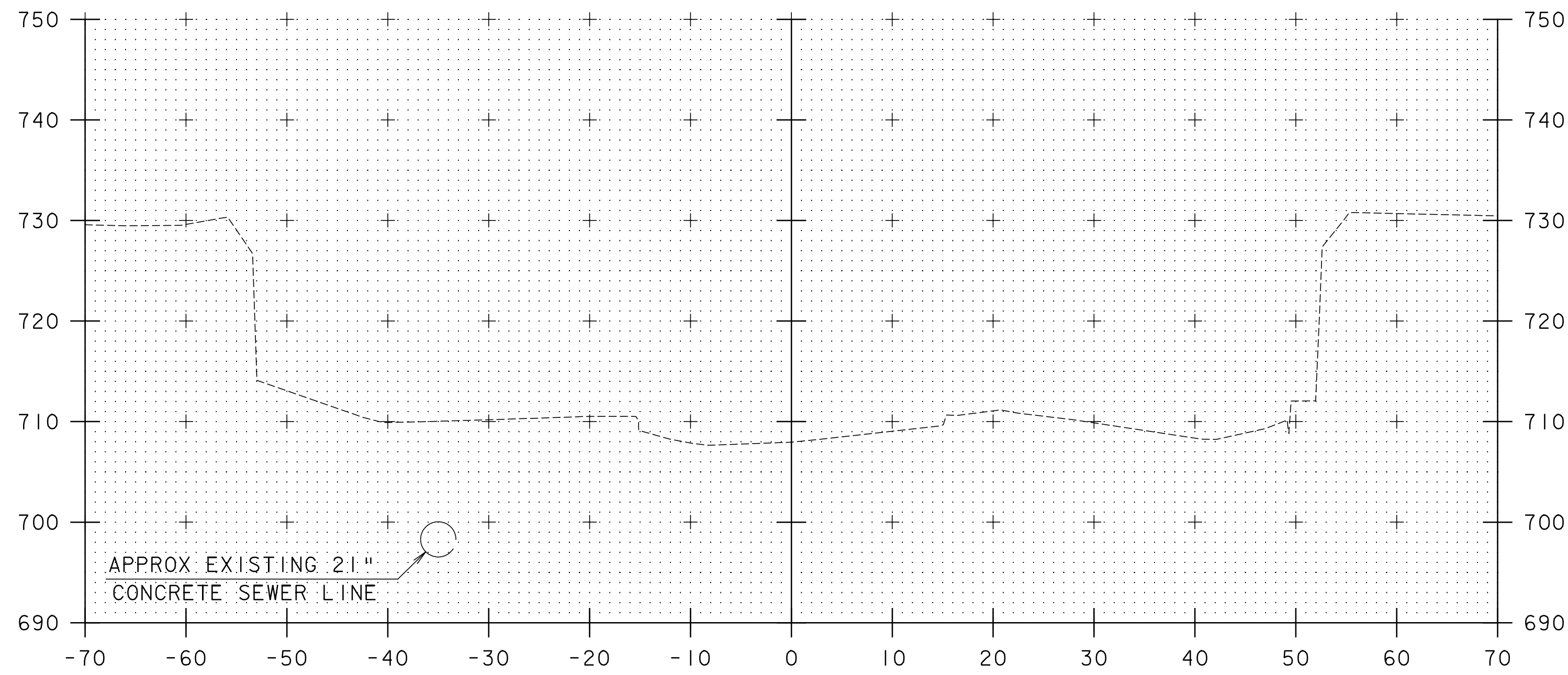
50+50

STA. 50+00 TO STA. 50+75

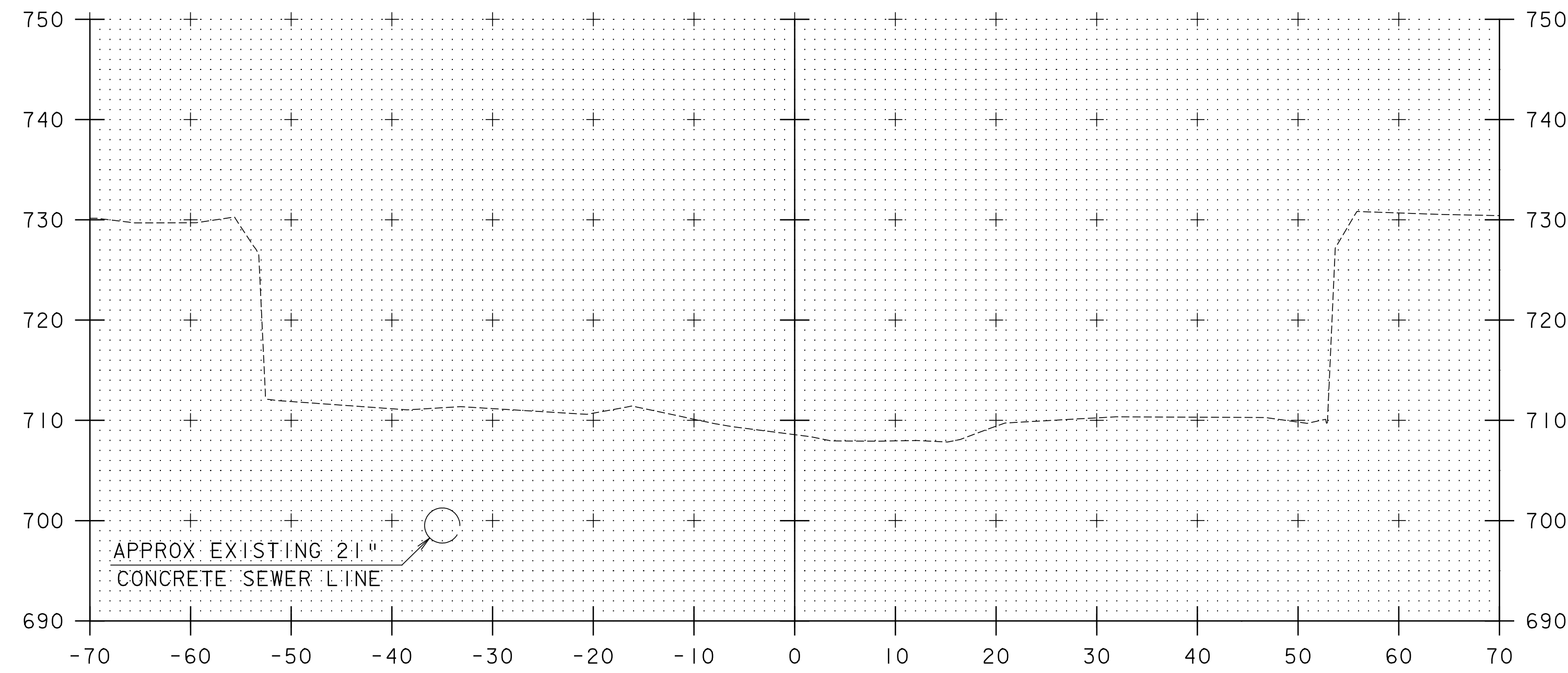
PROJECT NAME: NORTHFIELD	PLOT DATE: 11/18/2021
PROJECT NUMBER: BF 0241(58)	DRAWN BY: T. MARQUETTE
FILE NAME: z19j223xs.dgn	DESIGNED BY: K. HO
PROJECT LEADER: C. BAKER	CHECKED BY: C. JENNE
CHANNEL CROSS SECTIONS - 1	SHEET 24 OF 27



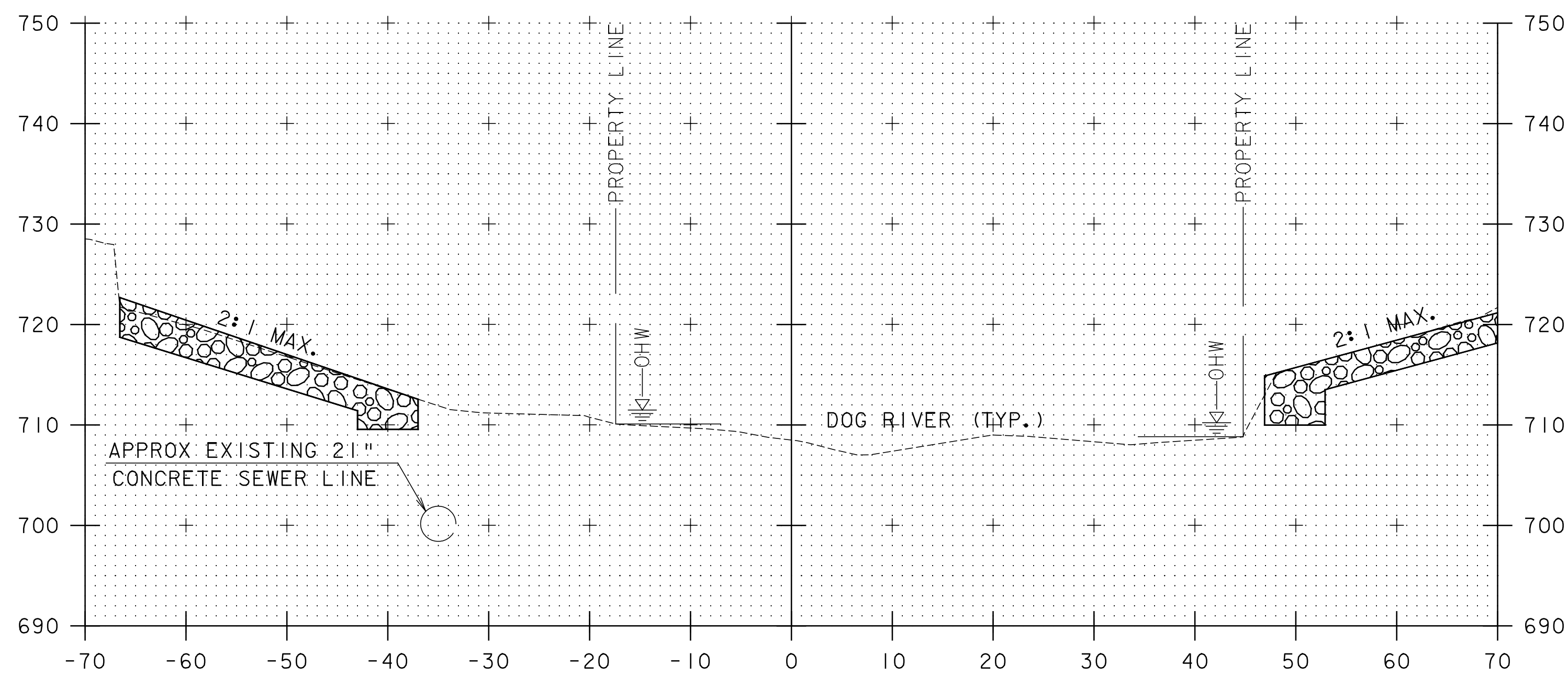




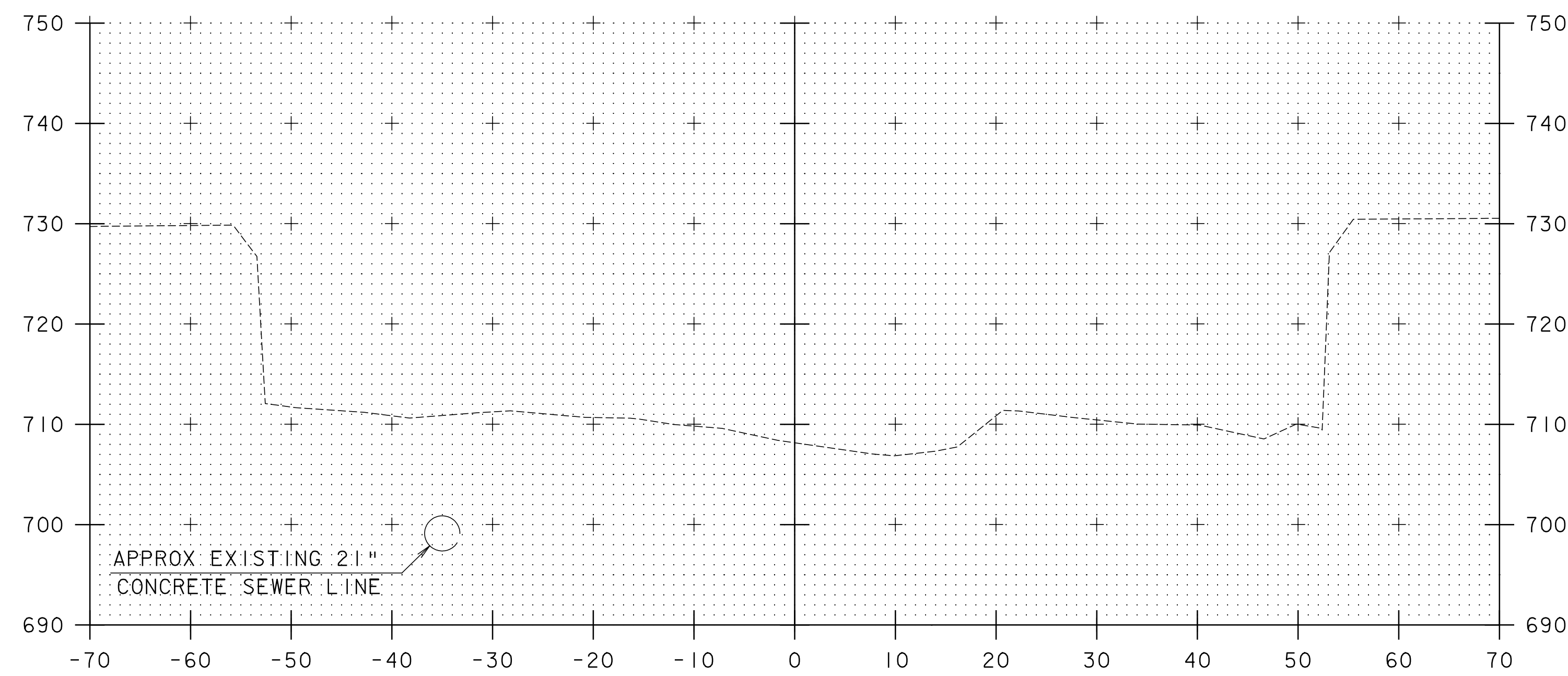
51+25



51+75



51+00

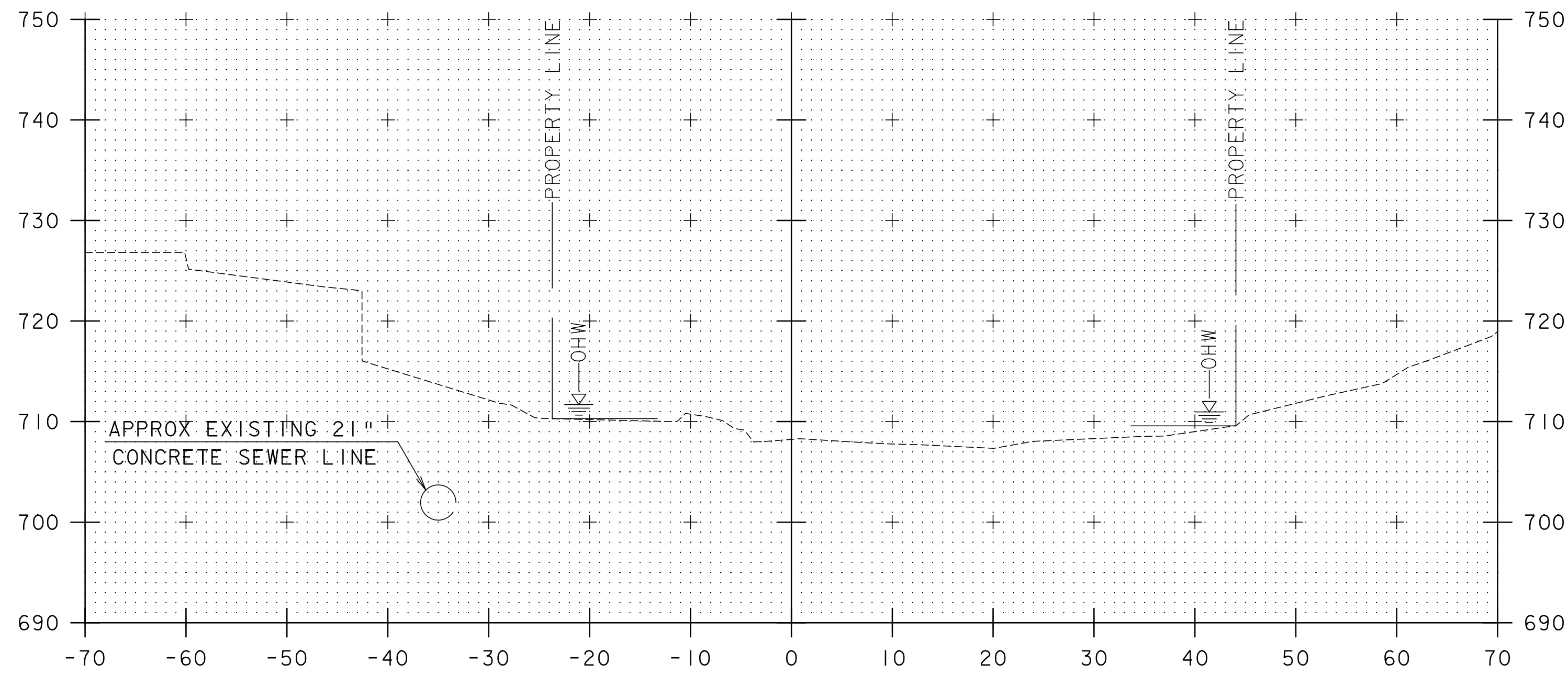


51+50

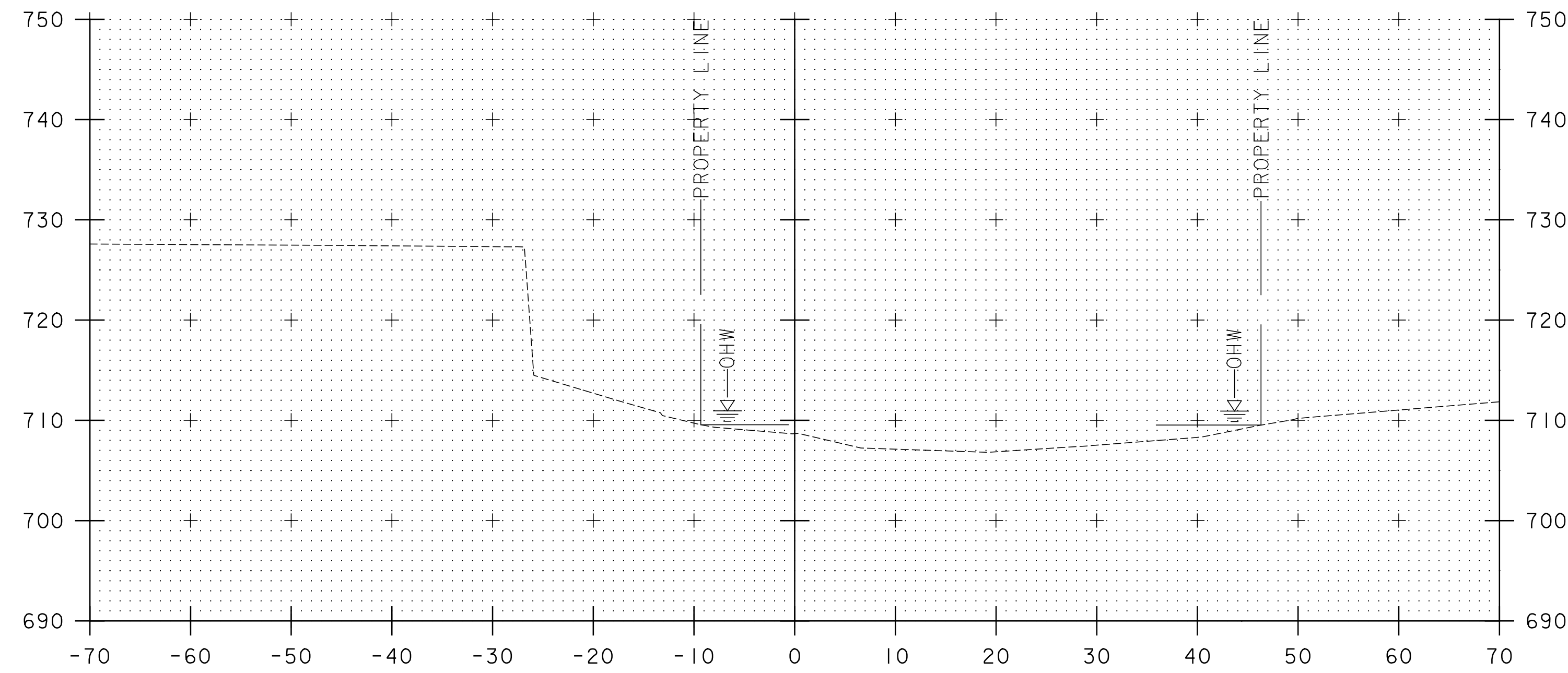
STA. 51+00 TO STA. 51+75

PROJECT NAME: NORTHFIELD	PLOT DATE: 11/18/2021
PROJECT NUMBER: BF 0241(58)	DRAWN BY: T. MARQUETTE
FILE NAME: z19j223xs.dgn	DESIGNED BY: K. HO
PROJECT LEADER: C. BAKER	CHECKED BY: C. JENNE
CHANNEL CROSS SECTIONS - 2	SHEET 25 OF 27

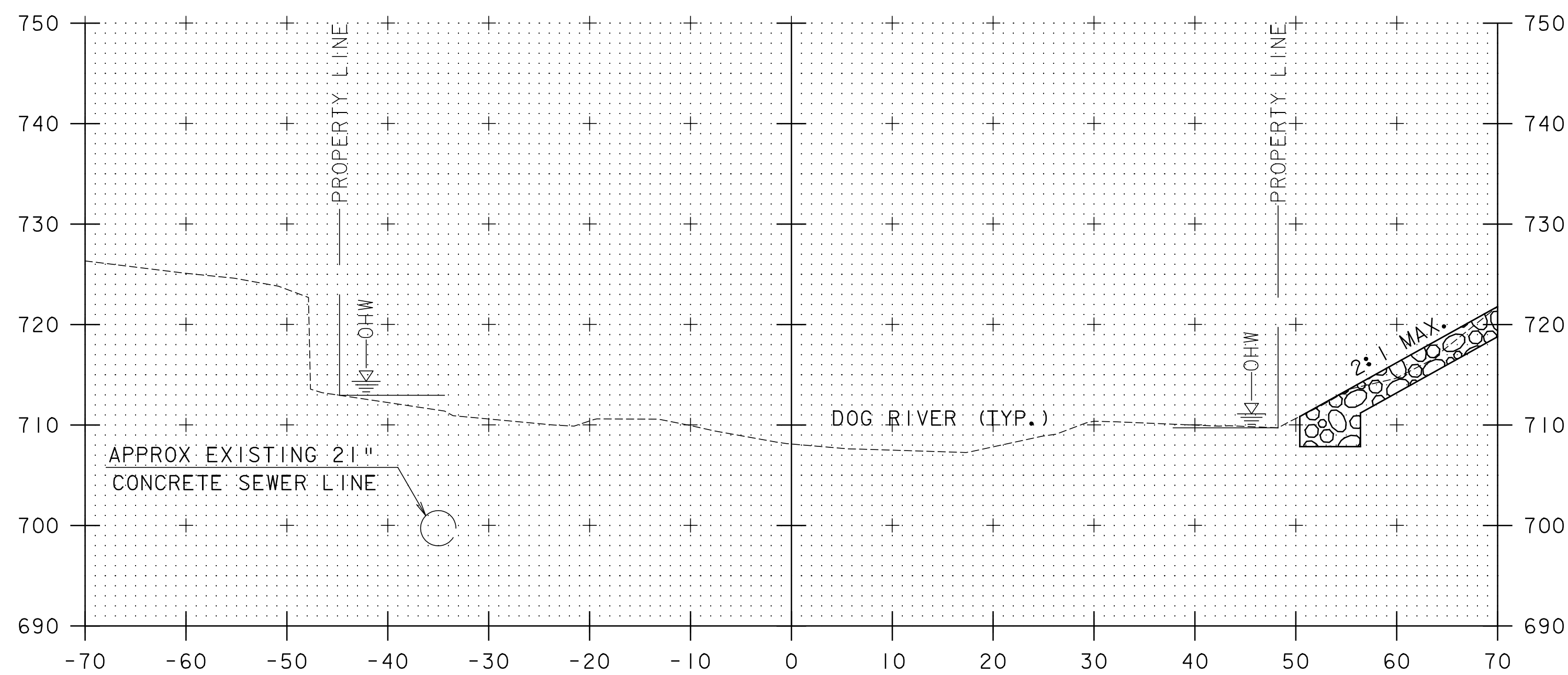




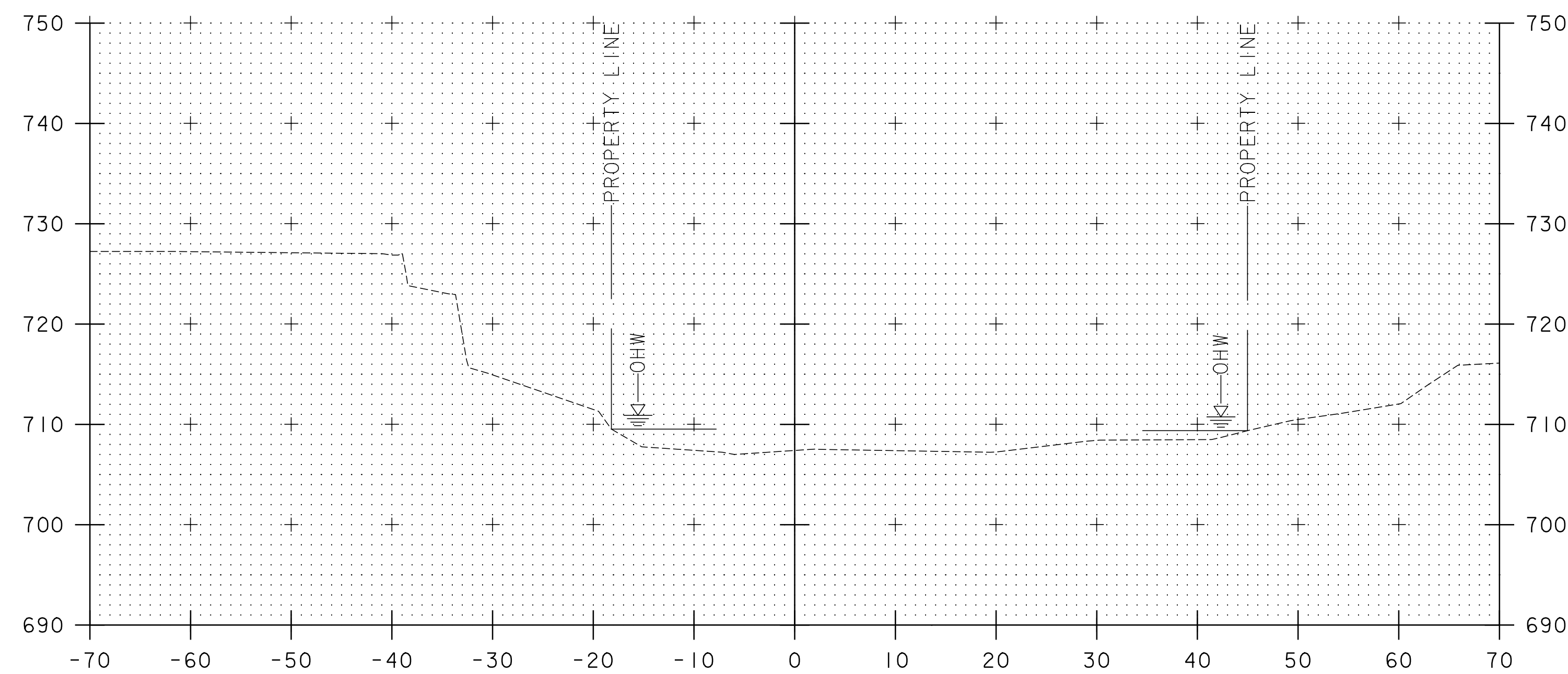
52+25



52+75



52+00



52+50

STA. 52+00 TO STA. 52+75

APPROX STA 51+98.60 LT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 END STONE FILL, TYPE III  
 END GEOTEXTILE UNDER STONE FILL  
 END GRUBBING MATERIAL

APPROX STA 52+11.50 RT  
 END UNCLASSIFIED CHANNEL EXCAVATION  
 END STONE FILL, TYPE III  
 END GEOTEXTILE UNDER STONE FILL  
 END GRUBBING MATERIAL



PROJECT NAME: NORTHFIELD

PROJECT NUMBER: BF 0241(58)

FILE NAME: z19j223xs.dgn

PROJECT LEADER: C. BAKER

DESIGNED BY: K. HO

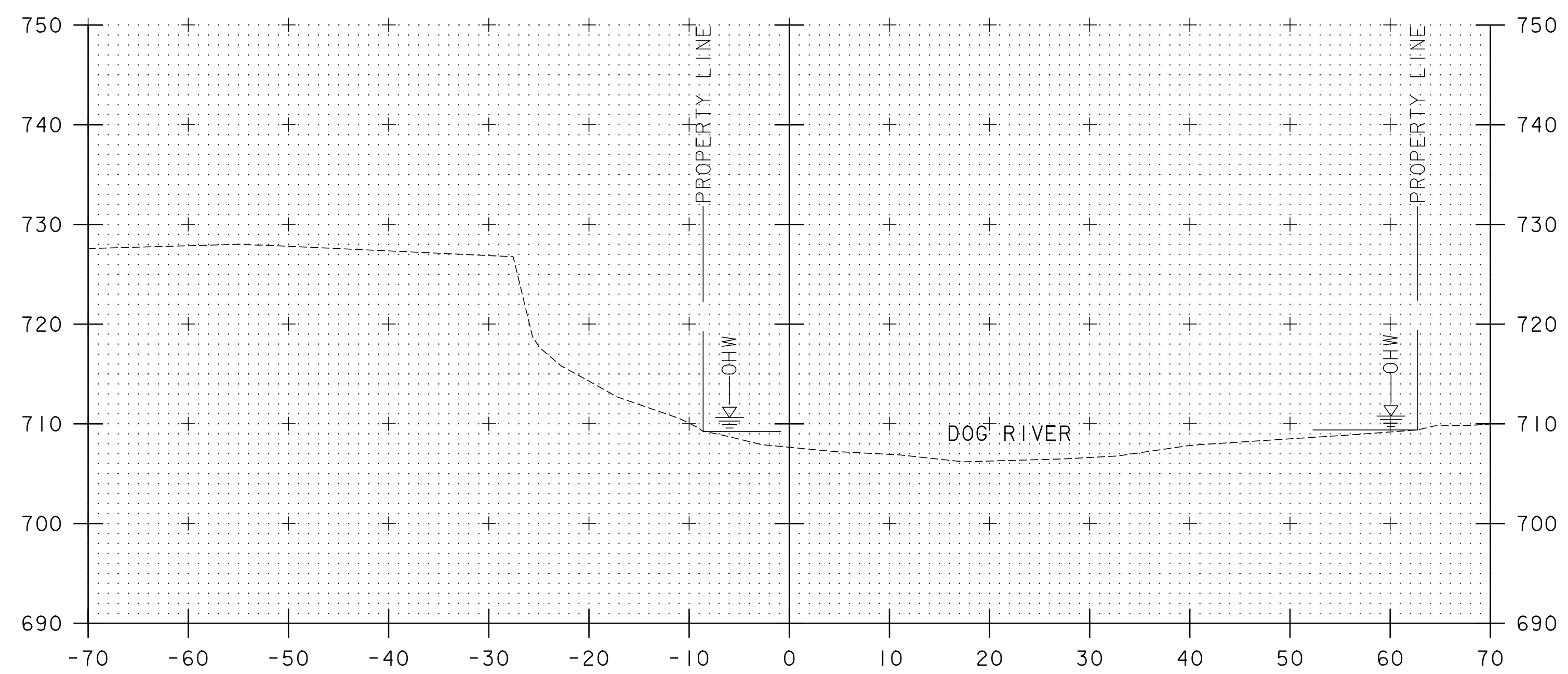
CHANNEL CROSS SECTIONS - 3

PLOT DATE: 11/18/2021

DRAWN BY: T. MARQUETTE

CHECKED BY: C. JENNE

SHEET 26 OF 27



53+00

STA. 53+00 TO STA. 53+00

PROJECT NAME: NORTHFIELD	
PROJECT NUMBER: BF 0241(58)	
FILE NAME: z19j223xs.dgn	PLOT DATE: 11/18/2021
PROJECT LEADER: C. BAKER	DRAWN BY: T. MARQUETTE
DESIGNED BY: K. HO	CHECKED BY: C. JENNE
CHANNEL CROSS SECTIONS - 4	SHEET 27 OF 27

