PROJECT ID: MARIN14001

COUNTY: MARINETTE

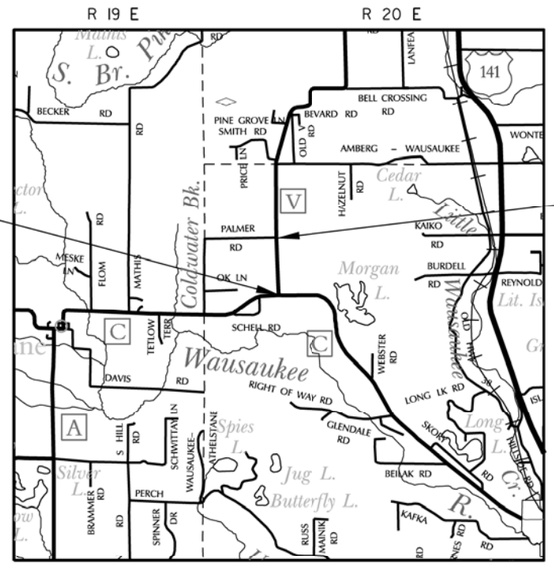
PLAN OF PROPOSED IMPROVEMENT

CTH V

CTH C - PALMER ROAD

MARINETTE COUNTY

N



CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.746 MI.

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MARINETTE COUNTY.

GENERAL NOTES

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOIL, FERTILIZED, SEEDED AND MULCHED OR EROSION MATTED.

ALL CURB AND GUTTER RADII, PAVEMENT DIMENSIONS, AND STATIONS ARE SHOWN TO THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

EROSION CONTROL ITEMS SHALL BE PLACED AS SHOWN IN THE PLAN OR AS DIRECTED BY THE ENGINEER. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

FILL AS SHOWN ON THE PLANS PERTAINS TO EMBANKMENT CONSTRUCTED FROM COMMON EXCAVATION. THE ALLOWANCE USED FOR EXPANDING THE FILLS TO COMPUTE THE VOLUME OF MATERIAL REQUIRED IS 20% COMMON EXCAVATION.

LOCATIONS OF EXCAVATION BELOW SUBGRADE (EBS) ARE TO BE DETERMINED BY THE ENGINEER IN THE FIELD AND SHALL BE PAID FOR AS "COMMON EXCAVATION".

DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION OF THE WISCONSIN DEPARTMENT OF TRANSPORTATION INCLUDING ANNUAL AND INTERIM SUPPLEMENTAL SPECIFICATIONS.

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT WILL BE WITHIN THE LIMITS OF CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGER'S HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA.

BEARINGS SHOWN ON THE PLANS ARE GRID BEARINGS TO THE NEAREST SECOND.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS.

ALIGNMENT WAS BASED ON CENTERLINE SHOTS, IF ADJUSTMENTS TO THE ALIGNMENT ARE NEEDED IN THE FIELD, THE ADJUSTMENTS WILL BE APPROVED BY THE ENGINEER.

PAVEMENT MARKINGS ARE NOT PART OF THIS CONTRACT.

UTILITY CONTACTS

WISCONSIN PUBLIC SERVICE CORPORATION - ELECTRIC
1717 10TH AVENUE
MENOMINEE, MI 49858-2503
TELEPHONE: 906.863.4319 (OFFICE)
TELEPHONE: 715.923.5718 (MOBILE)
ATTENTION: ROBERT J. FALASH
EMAIL: RJFALASH@WISCONSINPUBLICSERVICE.COM

CENTURYLINK - COMMUNICATION LINE
100 VICKIE DRIVE
PO BOX 260
WAUSAUKEE, WI 54177
TELEPHONE: 715.856.9138
ATTENTION: PAT TRACY
EMAIL: PATRICK.TRACY@CENTURYLINK.COM

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

WISCONSIN DNR LIASON

DEPARTMENT OF NATURAL RESOURCES
2984 SHAWANO AVENUE
GREEN BAY, WI 54313-6727
TELEPHONE: 920.662.5100
ATTENTION: SARAH ANDERSON
EMAIL: SARAH.ANDERSON@WISCONSIN.GOV

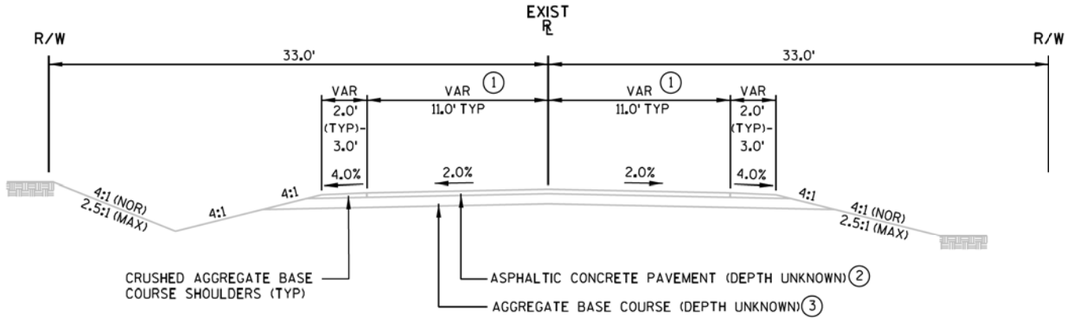
DESIGN CONTACT

CBS SQUARED INC.
200 E. WASHINGTON STREET, SUITE 2F
APPLETON, WI 54911
TELEPHONE: 920.574.3135
ATTENTION: JOE MALENOFSKI, PE
EMAIL: JMALENOFSKI@CBSSQUAREDINC.COM

2

NOTES:

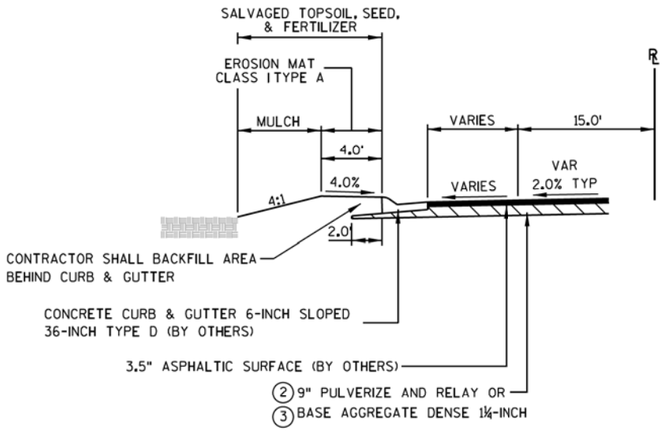
1. SIDE ROAD WIDTHS ARE MEASURED FROM THE EXISTING SIDE ROAD ALIGNMENTS UNLESS OTHERWISE NOTED.
2. DEPTH OF EXISTING ASPHALTIC CONCRETE PAVEMENT ASSUMED TO BE 3-INCHES FOR CALCULATING QUANTITY OF MATERIAL FOR PULVERIZING AND RELAYING. ACTUAL DEPTH MAY VARY.
3. DEPTH OF EXISTING AGGREGATE BASE COURSE ASSUMED TO BE 6-INCHES FOR CALCULATING QUANTITY OF MATERIAL FOR PULVERIZING AND RELAYING. ACTUAL DEPTH MAY VARY.



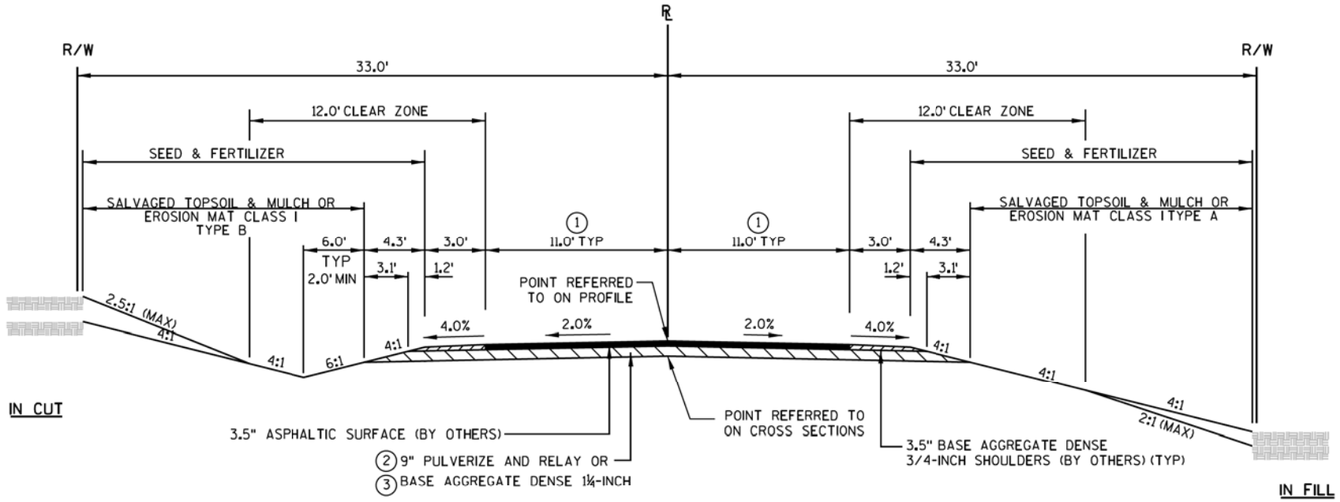
TYPICAL EXISTING SECTION
CTH V
CTH C

NOTES:

1. WIDTH VARIES FROM 11.0' TO 15.0' FROM STA 300+74.76 TO STA 301+53.20.
2. PULVERIZED MATERIAL SHALL BE STOCKPILED WITHIN PROJECT LIMITS PRIOR TO RE-LAYING (INCIDENTAL TO BID ITEM "PULVERIZE AND RELAY").
3. BASE AGGREGATE DENSE 1¼-INCH SHALL BE USED WHEN THE QUANTITY OF PULVERIZED AND RE-LAID MATERIAL IS INSUFFICIENT TO CONSTRUCT ENTIRETY OF BASE COURSE.



TYPICAL FINISHED SECTION - CURB & GUTTER
CTH V
STA 300+19.21 TO STA 300+74.76 RT
STA 300+24.80 TO STA 300+74.76 LT



TYPICAL FINISHED SECTION
CTH V
STA 300+11.07 TO STA 339+50.00

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	TYPICAL SECTIONS	SHEET	E

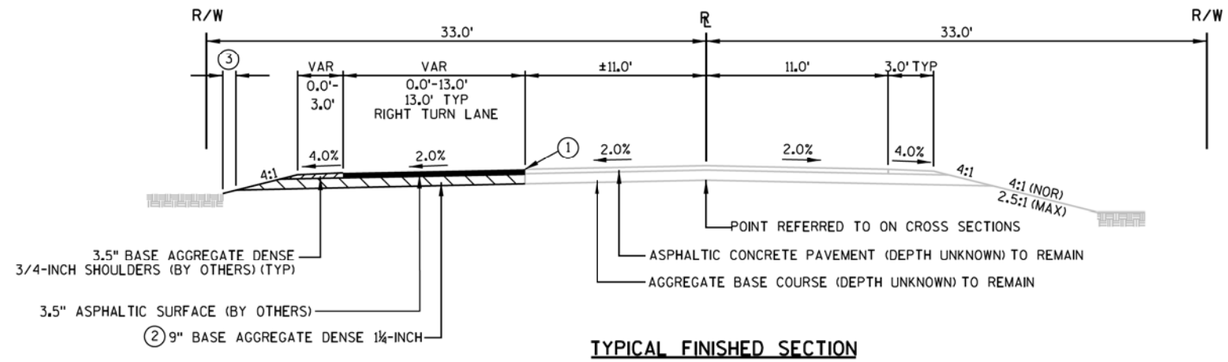
2

NOTES:

(1) STA 205+37.65 TO STA 207+14.72 LT - SAWCUT REQ'D

(2) BASE AGGREGATE DENSE 1¼-INCH SHALL BE USED WHEN THE QUANTITY OF PULVERIZED AND RE-LAID MATERIAL IS INSUFFICIENT TO CONSTRUCT ENTIRETY OF BASE COURSE.

(3) SALVAGED TOPSOIL, SEED, FERTILIZER, & MULCH DISTURBED AREAS.



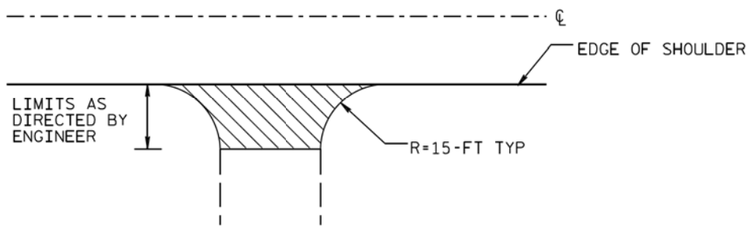
TYPICAL FINISHED SECTION

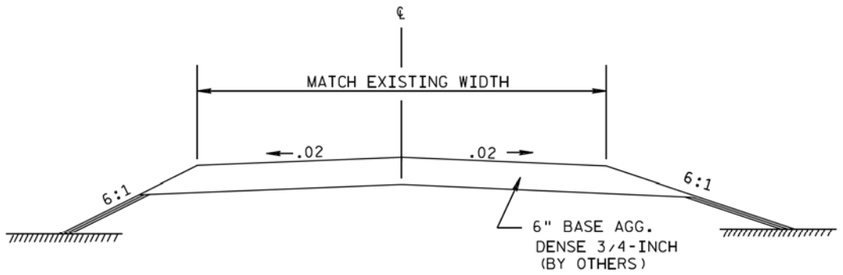
CTH C
STA 204+79.25 TO STA 210+64.16

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	TYPICAL SECTIONS	SHEET	E

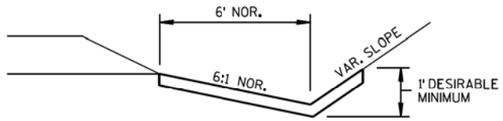
2

RURAL DRIVEWAY DETAIL

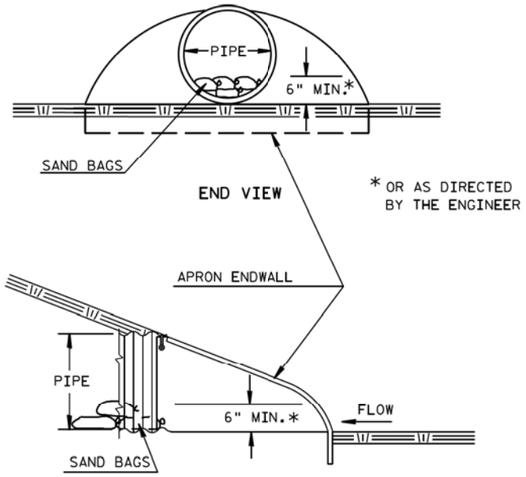




TYPICAL SECTION
FOR PRIVATE ENTRANCES

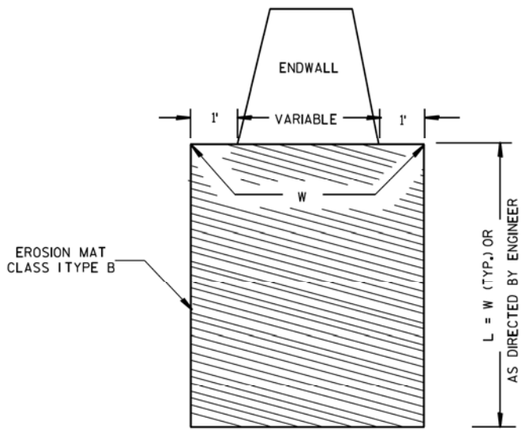


EROSION MAT DETAIL FOR DITCHES

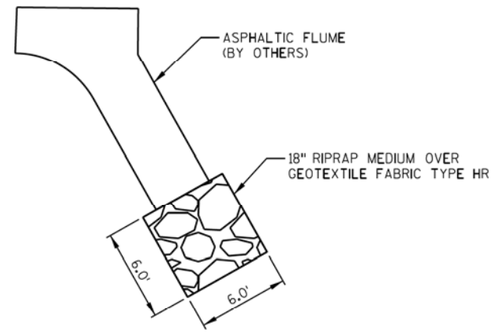


SIDE VIEW

CULVERT PIPE DITCH CHECK



EROSION MAT TREATMENT AT CULVERTS



RIPRAP MEDIUM AT ASPHALT FLUME

PROJECT NO: MARIN14001	HWY: CTH V	COUNTY: MARINETTE	CONSTRUCTION DETAILS	SHEET	E

REMOVING SMALL PIPE CULVERTS

LOCATION	203.0100 EACH	DESCRIPTION
STA 307+33 CTH V	1	12" DIAMETER CMP
STA 208+56 CTH C	1	24" DIAMETER CMP - AEW ONLY
TOTAL	**2**	

FINISHING ROADWAY (PROJECT)

LOCATION	213.0100 EACH
CTH V	1
TOTAL	**1**

PULVERIZE AND RELAY

STATION	LOCATION	325.0100 S.Y.
300+11 - 339+50	CTH V	11512
TOTAL		**11512**

EARTHWORK SUMMARY

LOCATION	EXCAVATION RAW CY		PAVEMENT/BASE REMOVAL* CY	205.0100 EXCAVATION COMMON CY	FILL CY	EXPANDED FILL CY	WASTE CY
CTH V	6630		2808	3822	2024	2429	1393
CTH C	242		70	172	217	260	-88
EBS (UNDISTRIBUTED)	100		0	100	0	0	100
TOTALS	**6972**	**0**	**2878**	**4094**	**2241**	**2689**	**1405**

* MATERIAL TO BE REMOVED UNDER BID ITEM "PULVERIZE AND RELAY". QUANTITY WAS ESTIMATED BASED ON EXISTING PAVEMENT DEPTH OF 3-INCHES AND EXISTING BASE DEPTH OF 6-INCHES. ACTUAL EXISTING DEPTHS MAY VARY.

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	TOTAL BASE COURSE REQ'D TONS	AVAILABLE RELAID MATERIAL* TONS	305.0120 1 1/4-INCH TONS	305.0110 3/4-INCH (SHOULDERS) (BY OTHERS) TONS	305.0110 3/4-INCH (DRIVEWAYS) (BY OTHERS) TONS
300+11 - 339+50	CTH V	6880	5580	1300	530	65
204+79 - 210+64	CTH C	400	0	400	20	0
UNDISTRIBUTED		-	-	170	55	10
SUBTOTAL					605	75
TOTALS		**7280**	**5580**	**1870**	**680**	

* QUANTITY WAS ESTIMATED BASED ON EXISTING PAVEMENT DEPTH OF 3-INCHES AND EXISTING BASE DEPTH OF 6-INCHES. ACTUAL EXISTING DEPTHS MAY VARY.

ASPHALTIC SURFACE (BY OTHERS)

STATION - STATION	LOCATION	455.0605 TACK COAT GAL	465.0105 ASPHALTIC SURFACE TON
300+11 - 339+50	CTH V	245	1925
204+79 - 210+64	CTH C	15	125
TOTALS		**260**	**2050**

ASPHALTIC FLUMES (BY OTHERS)

STATION	LOCATION	465.0315 S.Y.
	CTH V/CTH C NW	7
	CTH V/CTH C NE	8
TOTAL		**15**

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	MISCELLANEOUS QUANTITIES	SHEET NO:	E

FILE NAME : N:\pds\design_id\ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _Dec. 2003 ORIGINATOR : DIST 4_ PLOT SCALE : 1:1

CULVERT PIPE CORRUGATED STEEL

STATION	LOCATION	521.0112 12-INCH L.F.	521.0118 18-INCH L.F.	521.0124 24-INCH L.F.	THICKNESS STEEL INCH	APRON ENDWALLS 521.1012 12-INCH EACH	521.1018 18-INCH EACH	521.1024 24-INCH EACH
307+33	CTH V	50	-	-	0.064	2	-	-
322+00	CTH V	-	50	-	0.064	-	2	-
326+50	CTH V RT	30	-	-	0.064	2	-	-
208+56	CTH C LT	-	-	5	0.064	-	-	1
TOTALS		**80**	**50**	**5**		**4**	**2**	**1**

SALVAGED TOPSOIL, MULCHING, FERTILIZER, AND SEEDING

STATION-STATION	LOCATION	625.0500 SALVAGED TOPSOIL S.Y.	625.0100 TOPSOIL* S.Y.	627.0200 MULCHING S.Y.	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB
300+11 - 339+50	CTH V	13430	-	12120	8.5	242
204+79 - 210+64	CTH C	740	-	740	0.5	13
UNDISTRIBUTED		1415	1000	1285	1	26
TOTALS		**15585**	**1000**	**14145**	**10**	**281**

* TOPSOIL SHALL BE USED WHEN THE QUANTITY OF SALVAGED TOPSOIL IS INSUFFICIENT TO RESTORE DISTURBED AREAS.

CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D (BY OTHERS)

STATION	LOCATION	601.0557 L.F.
	CTH V/CTH C NW	77
	CTH V/CTH C NE	81
TOTAL		**158**

RIPRAP MEDIUM

STATION	LOCATION	606.0200 C.Y.	645.0120 GEO. FABRIC TYPE HR S.Y.
	CTH V/CTH C NW	2	8
	CTH V/CTH C NE	2	8
TOTALS		**4**	**16**

MOBILIZATION

LOCATION	619.1000 EACH
CTH V	1
TOTAL	**1**

SILT FENCE

STATION-STATION	LOCATION	628.1504 L.F.	628.2004 MAINTENANCE S.Y.
310+91 - 312+00	CTH V LT	109	109
315+00 - 317+50	CTH V LT/RT	500	500
319+00 - 320+50	CTH V LT	150	150
321+50 - 323+00	CTH V LT	150	150
326+59 - 328+50	CTH V RT	191	191
332+00 - 333+50	CTH V LT	150	150
335+00 - 337+00	CTH V RT	200	200
338+00 - 339+50	CTH V LT	150	150
208+20 - 208+74	CTH C LT	54	54
UNDISTRIBUTED		165	165
TOTALS		**1819**	**1819**

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	MISCELLANEOUS QUANTITIES	SHEET NO:	E

FILE NAME : N:\pds\design_id\ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _Dec. 2003 ORIGINATOR : DIST 4_ PLOT SCALE : 1:1

EROSION MAT

STATION-STATION	LOCATION	628.2002 CLASS I TYPE A S.Y.	628.2004 CLASS I TYPE B S.Y.
	CTH V/CTH C NW	32	-
	CTH V/CTH C NE	34	-
307+33	CTH V LT	-	2
312+50 - 314+25	CTH V LT	226	-
317+75 - 318+50	CTH V RT	87	-
322+00	CTH V LT	-	3
324+00 - 326+47	CTH V RT	272	-
326+73	CTH V RT	-	3
330+00 - 331+50	CTH V LT	173	-
332+07 - 333+00	CTH V RT	41	-
333+50 - 335+31	CTH V LT	44	161
333+50 - 334+26	CTH V RT	49	68
335+00 - 336+50	CTH V RT	114	-
UNDISTRIBUTED		107	24
TOTALS		**1179**	**261**

TEMPORARY DITCH CHECKS

STATION	LOCATION	628.7504 L.F.
307+00	CTH V LT/RT	20
307+50	CTH V LT/RT	20
310+00	CTH V RT	10
321+50	CTH V LT/RT	18
323+00	CTH V LT/RT	20
326+00	CTH V LT	8
327+00	CTH V LT	8
338+00	CTH V LT	10
339+00	CTH V RT	10
UNDISTRIBUTED		10
TOTAL		**134**

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
307+33	CTH V RT	1
322+00	CTH V RT	1
326+37	CTH V RT	1
208+57	CTH C LT	1
TOTAL		**4**

TRACKING PADS

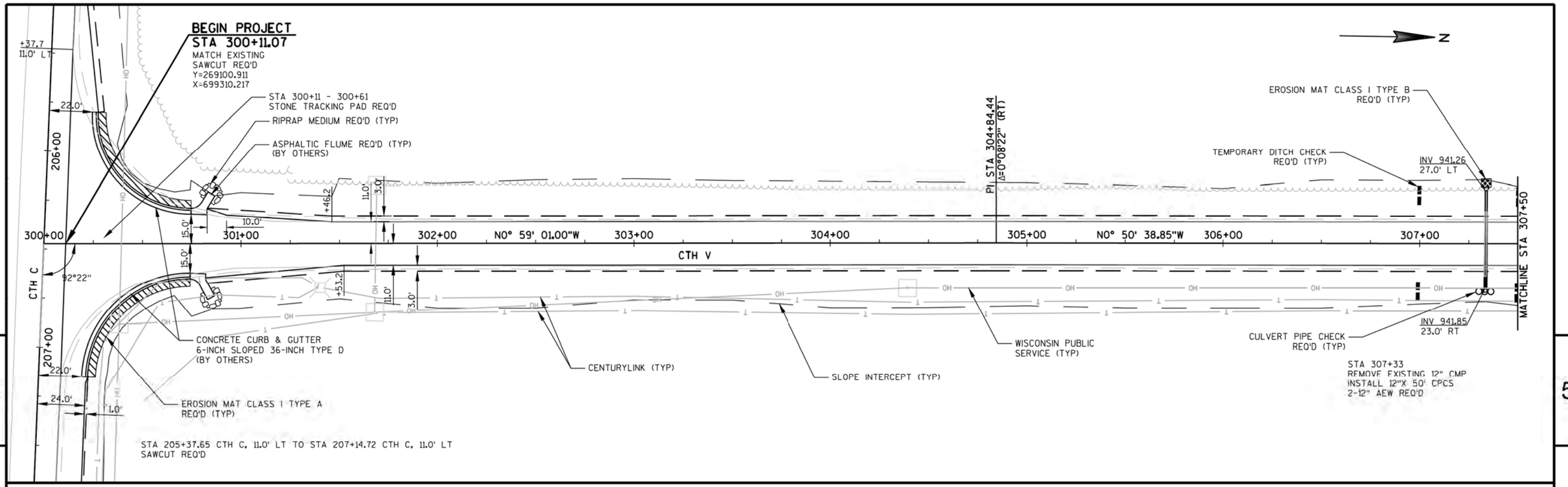
STATION-STATION	LOCATION	628.7560 EACH
300+11 - 300+61	CTH V	1
339+00 - 339+50	CTH V	1
TOTAL		**2**

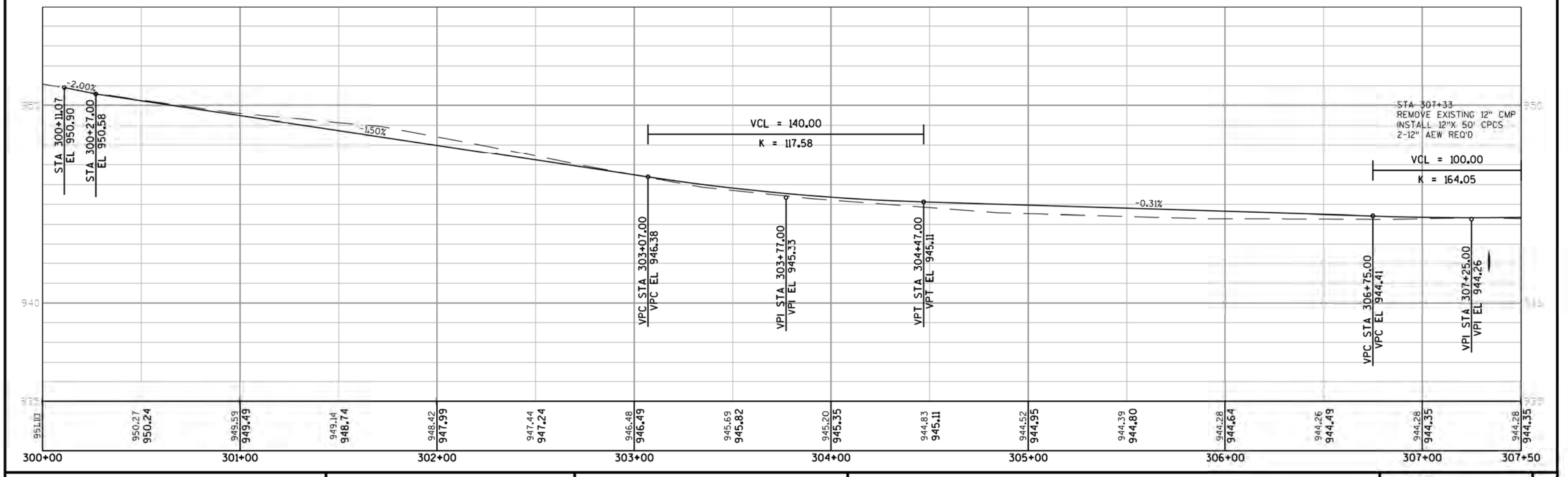
CONSTRUCTION STAKING

STATION-STATION	LOCATION	650.4500 SUBGRADE L.F.	650.5000 BASE L.F.	650.5500 CURB GUTTER CURB & GUTTER L.F.	650.6000 PIPE CULVERTS EACH	650.9920 SLOPE STAKES L.F.
300+11 - 339+50	CTH V	3939	3939	158	3	3939
204+79 - 210+64	CTH C	585	585	-	-	585
TOTALS		**4524**	**4524**	**158**	**3**	**4524**

SAWING ASPHALT

STATION-STATION	LOCATION	690.0150 L.F.
339+50	CTH V	21
205+38 - 207+15	CTH C LT	177
TOTAL		**198**



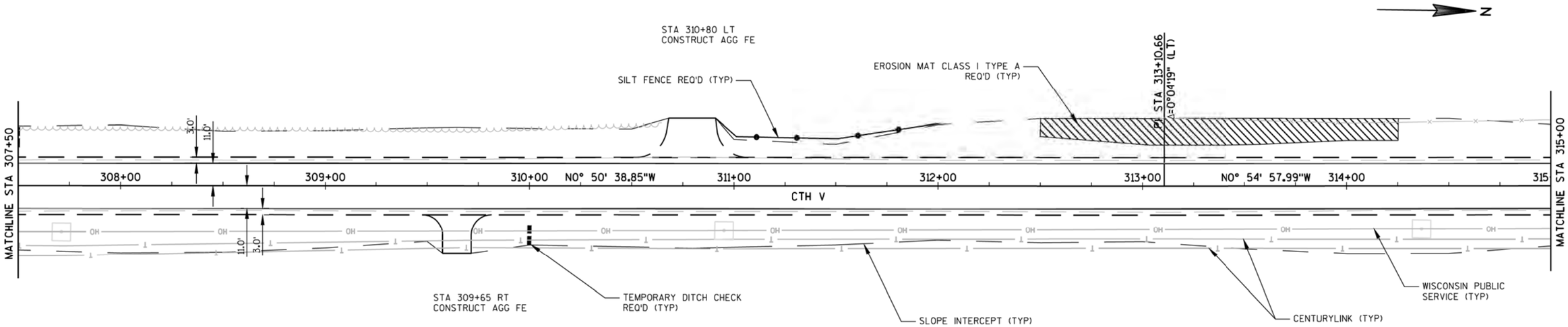


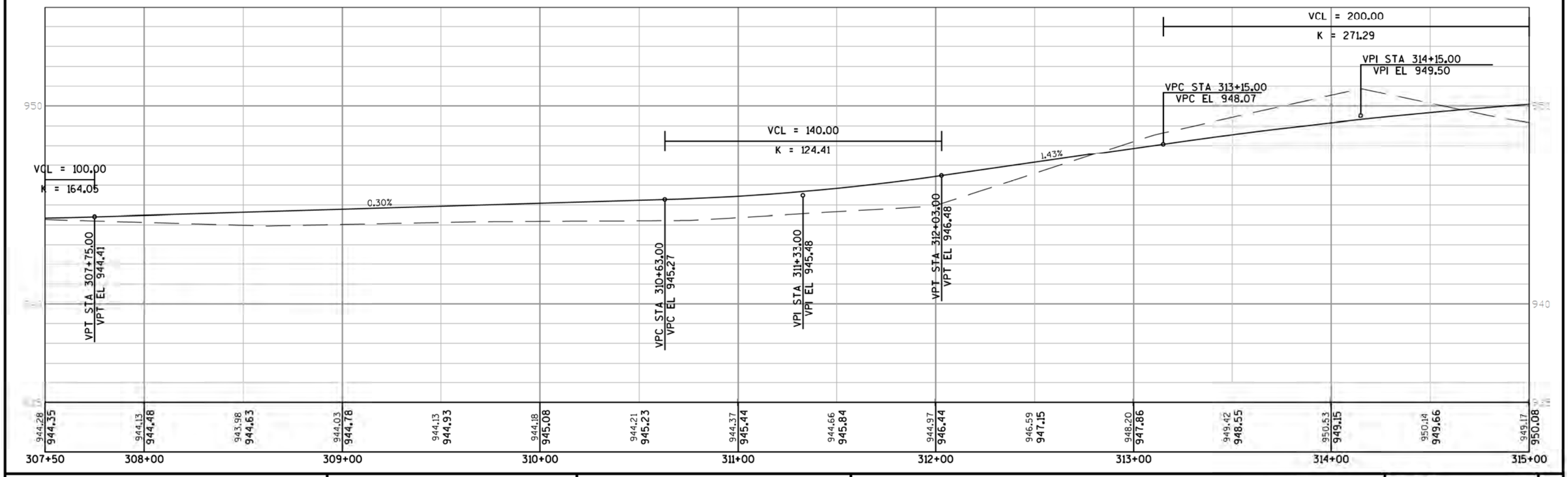
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	PLAN AND PROFILE	SHEET	E

FILE NAME : P:\MARIN\14001 - CTH C ATHELSTANE\C3D\ATHELSTANE\SHEETSPLAN\CTH V PP.DWG

SHEET NAME: 050101

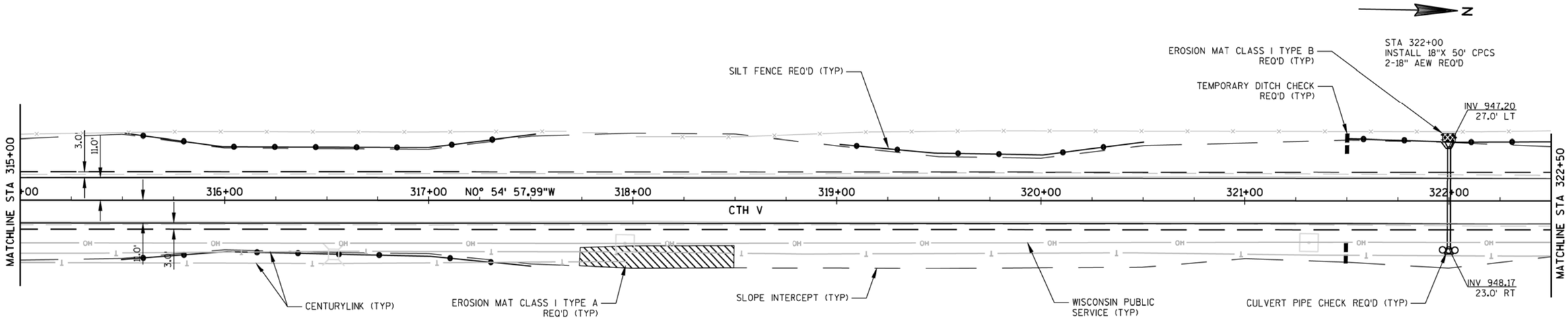
PLOT SCALE : 1" = 50'_XREF

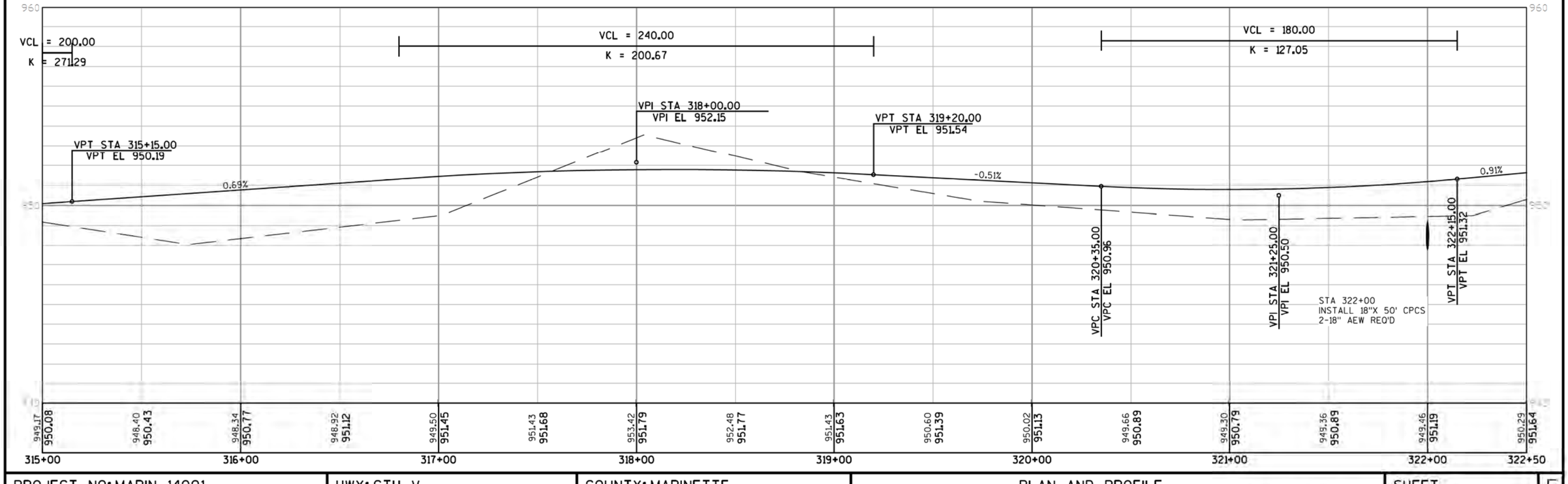




PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	PLAN AND PROFILE	SHEET	E

FILE NAME : P:\MARIN\14001 - CTH C ATHELSTANE\C3D\ATHELSTANE\SHEETSPLAN\CTH V PP.DWG
SHEET NAME: 050102
PLOT SCALE : 1" = 50'_XREF



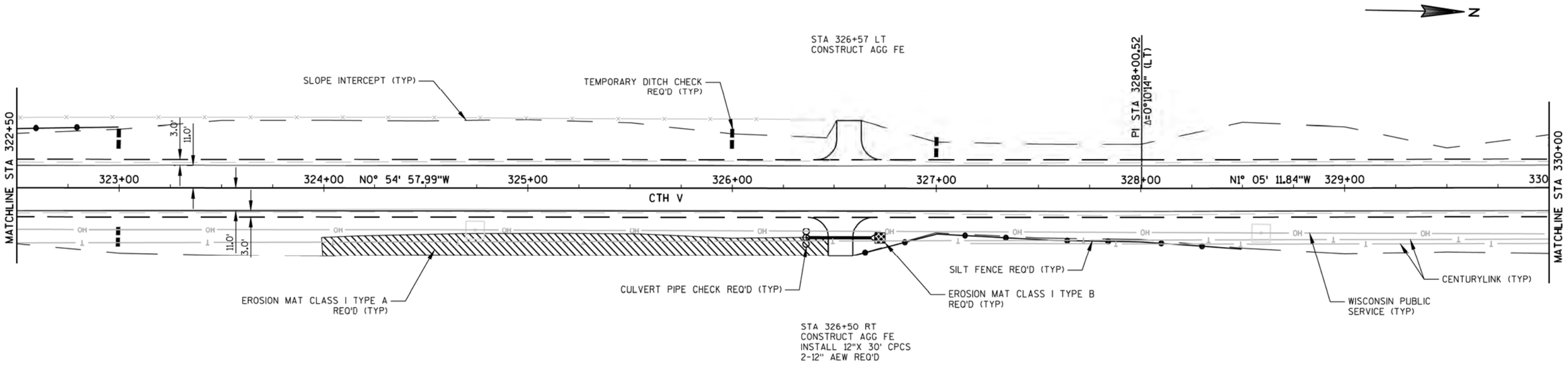


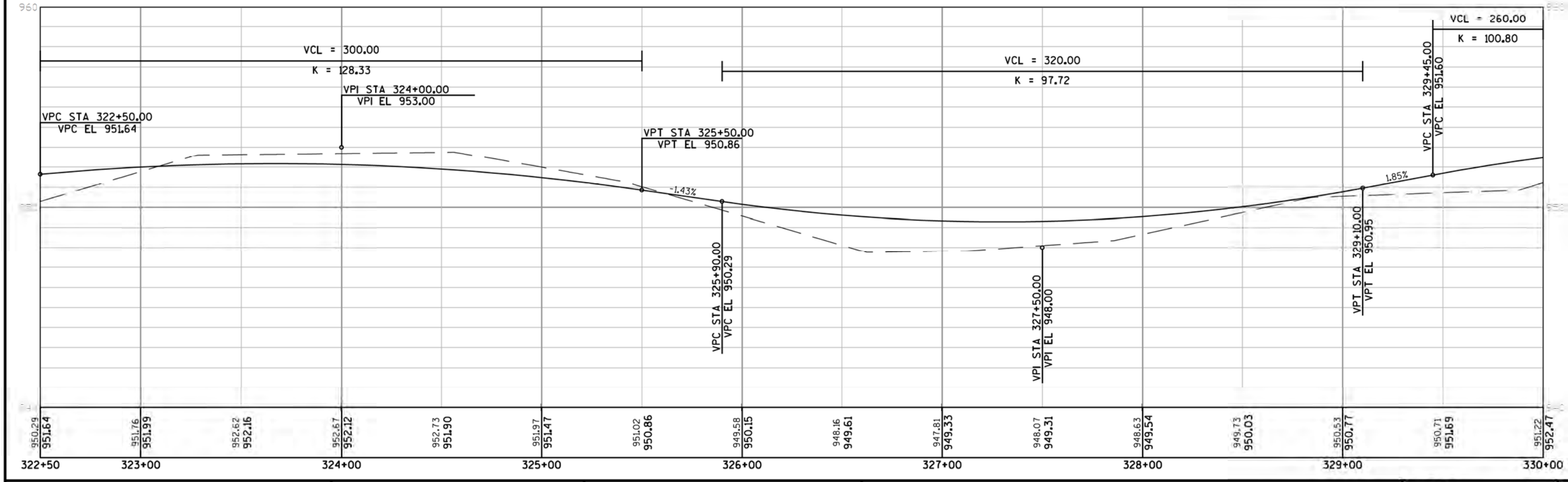
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	PLAN AND PROFILE	SHEET	E

FILE NAME : P:\MARIN\14001 - CTH C ATHELSTANE\C3D\ATHELSTANE\SHEETSPLAN\CTH V PP.DWG

SHEET NAME: 050103

PLOT SCALE : 1" = 50'_XREF



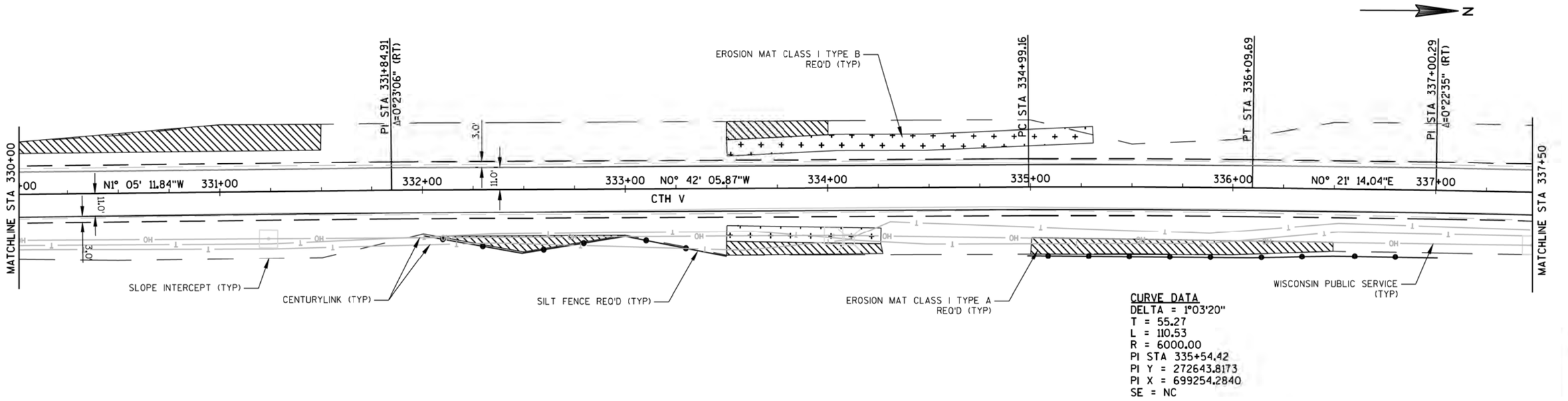


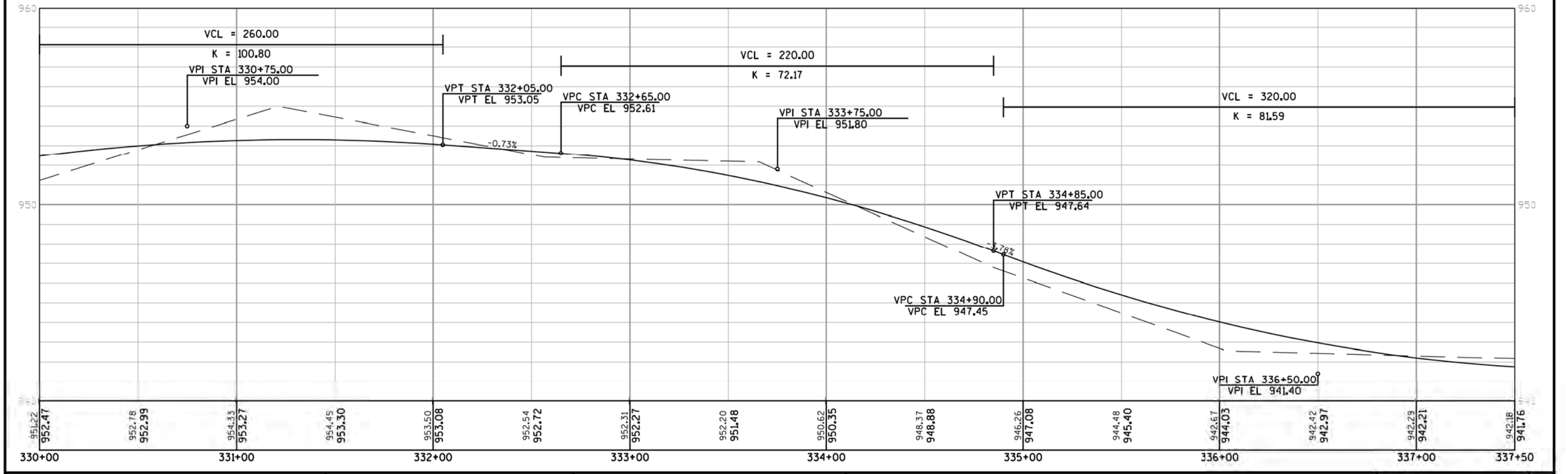
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	PLAN AND PROFILE	SHEET	E

FILE NAME : P:\MARIN\14001 - CTH C ATHELSTANE\C3D\ATHELSTANE\SHEETSPLAN\CTH V PP.DWG

SHEET NAME: 050104

PLOT SCALE : 1" = 50'_XREF



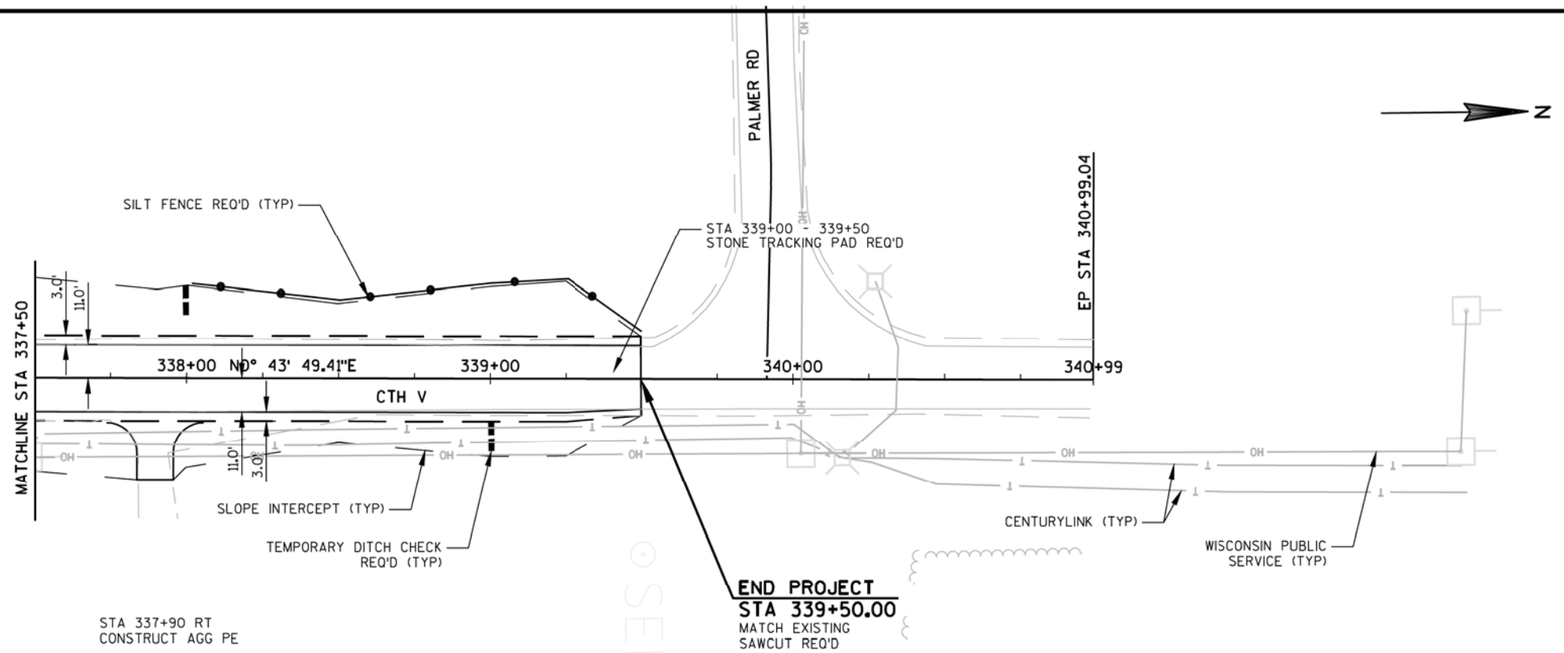


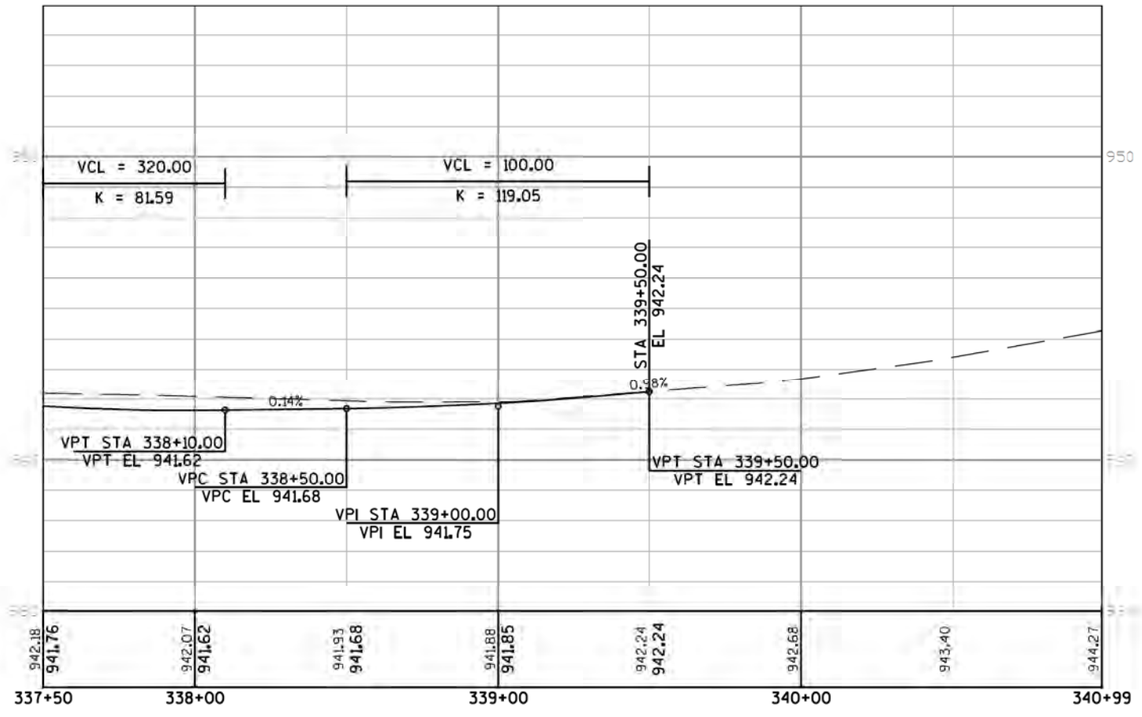
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	PLAN AND PROFILE	SHEET	E

FILE NAME : P:\MARIN\14001 - CTH C ATHELSTANE\C3D\ATHELSTANE\SHEETSPLAN\CTH V PP.DWG

SHEET NAME: 050105

PLOT SCALE : 1" = 50'_XREF

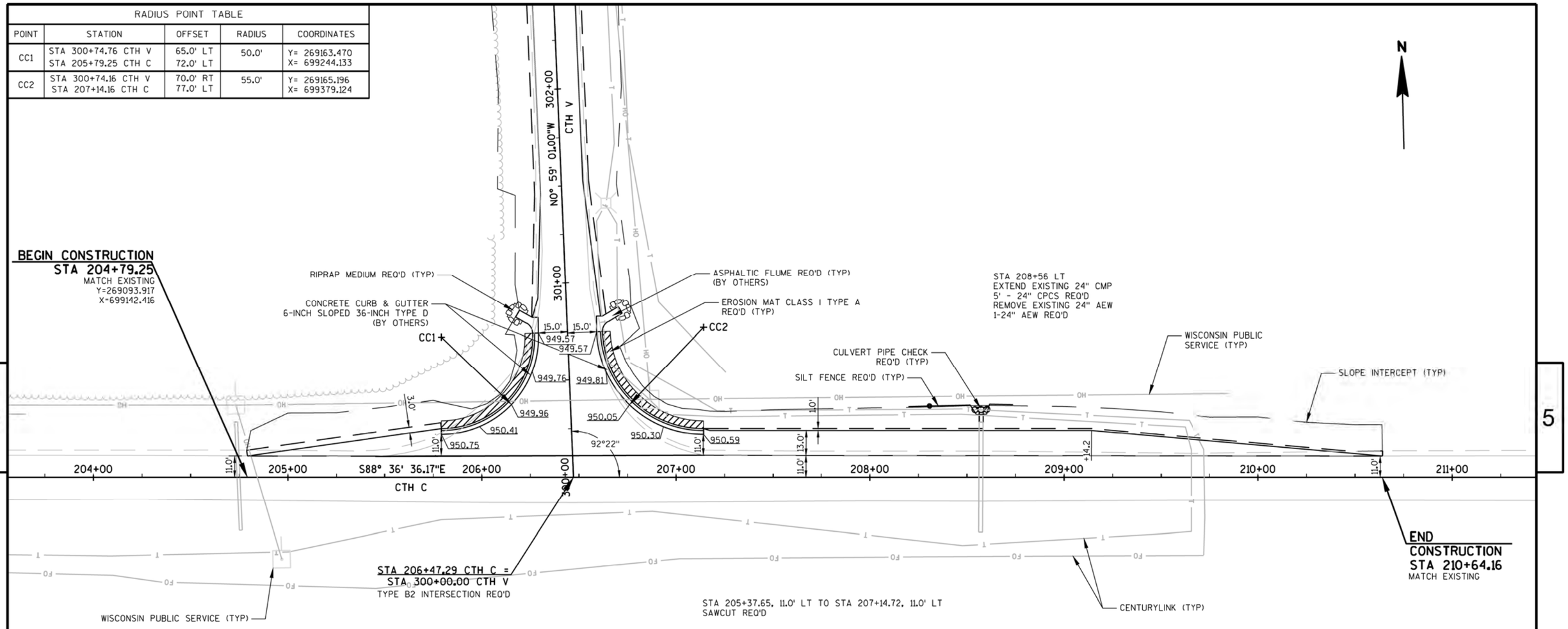




PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	PLAN AND PROFILE	SHEET	E

FILE NAME : P:\MARIN\14001 - CTH C ATHELSTANE\C3D\ATHELSTANE\SHEETSPLAN\CTH V PP.DWG
SHEET NAME: 050106
PLOT SCALE : 1" = 50'_XREF

RADIUS POINT TABLE				
POINT	STATION	OFFSET	RADIUS	COORDINATES
CC1	STA 300+74.76 CTH V STA 205+79.25 CTH C	65.0' LT 72.0' LT	50.0'	Y= 269163.470 X= 699244.133
CC2	STA 300+74.16 CTH V STA 207+14.16 CTH C	70.0' RT 77.0' LT	55.0'	Y= 269165.196 X= 699379.124



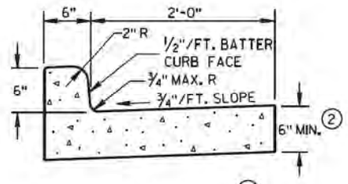
PROJECT NO: MARIN14001	HWY: CTH V	COUNTY: MARINETTE	PLAN - CTH C	SHEET	E

FILE NAME : P:\MARIN\14001 - CTH C ATHELSTANE\C3D\ATHELSTANE\SHEETSPLAN\CTH C2 PL.DWG

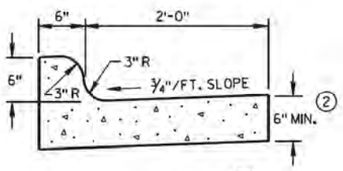
SHEET NAME: 050107

WISDOT/CADDS SHEET 44

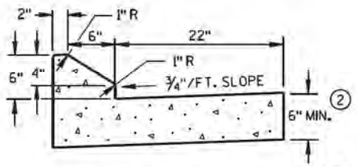
Concrete Curb, Concrete Curb & Gutter and Ties



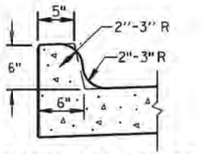
TYPES A & D (1)



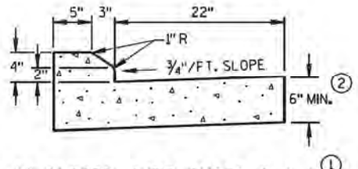
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

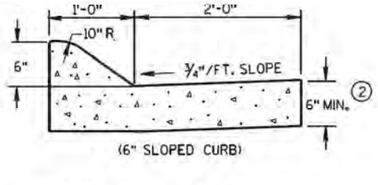


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

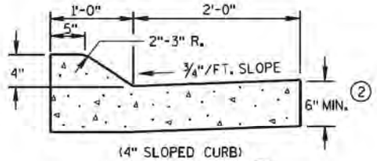


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

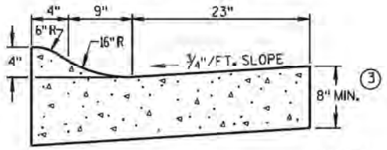


(6" SLOPED CURB)



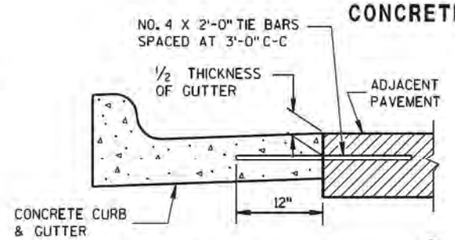
(4" SLOPED CURB)

TYPES A & D (1)

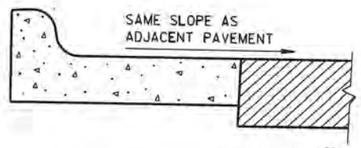


4" SLOPED CURB TYPES R & T (1) (4)

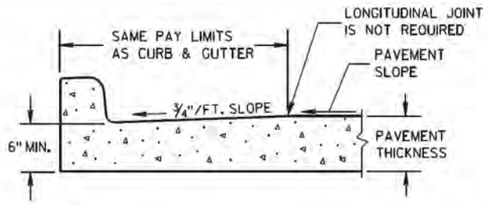
CONCRETE CURB & GUTTER 36"



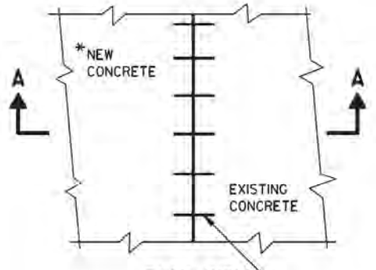
TYPICAL TIE BAR LOCATION (1)



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

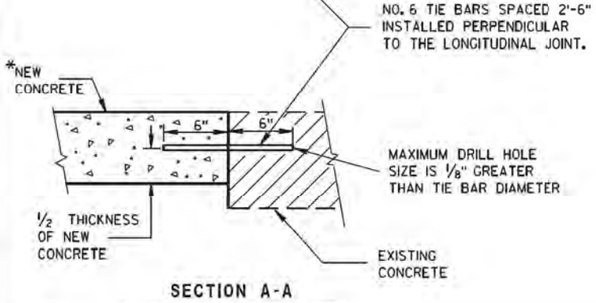


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



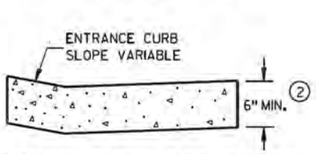
PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

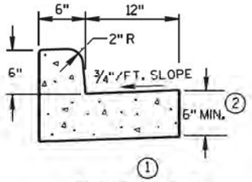


SECTION A-A

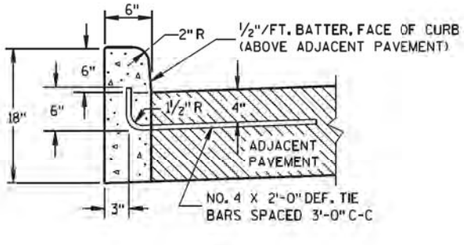
TIE BARS DRILLED INTO EXISTING PAVEMENT



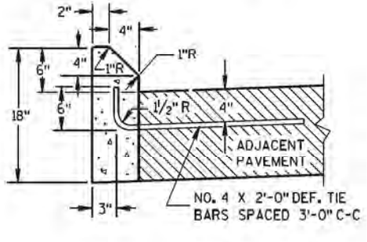
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"

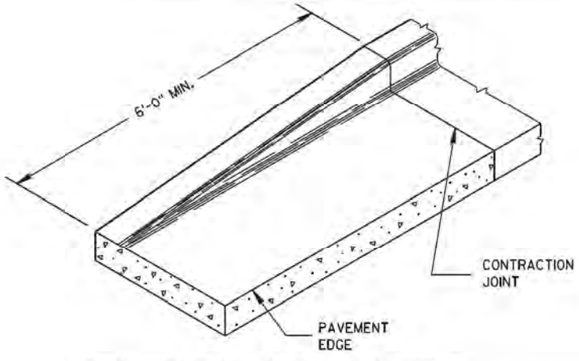


(1)
TYPES A & D



(1)
TYPES G & J

CONCRETE CURB



END SECTION CURB & GUTTER

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

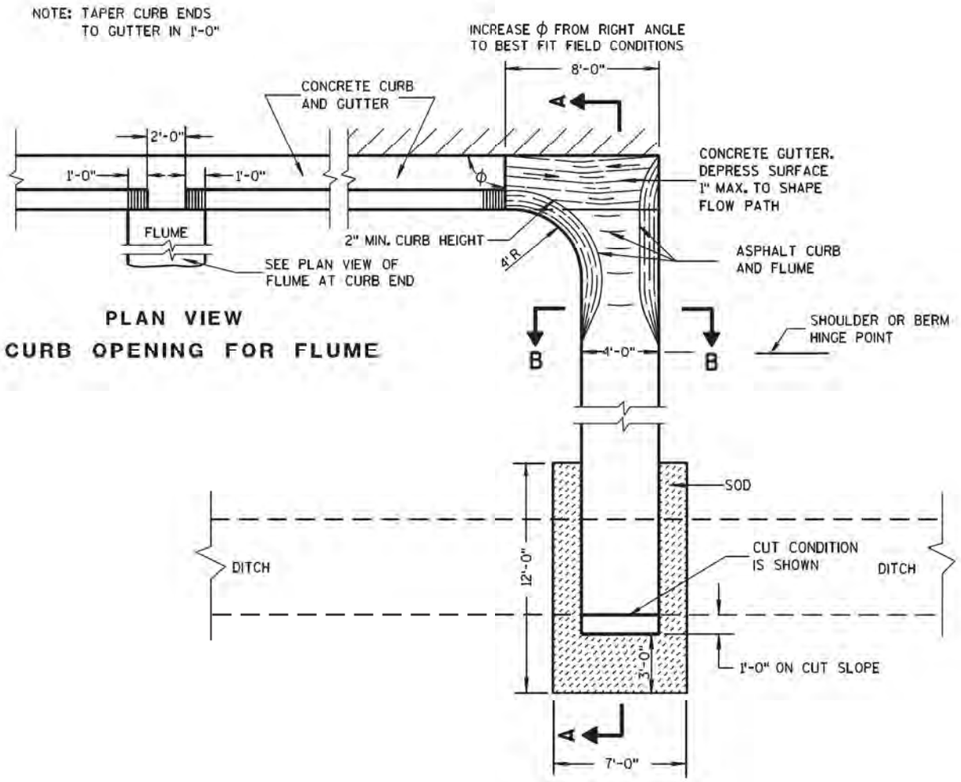
CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

6

S.D.D. 8 D 1-17

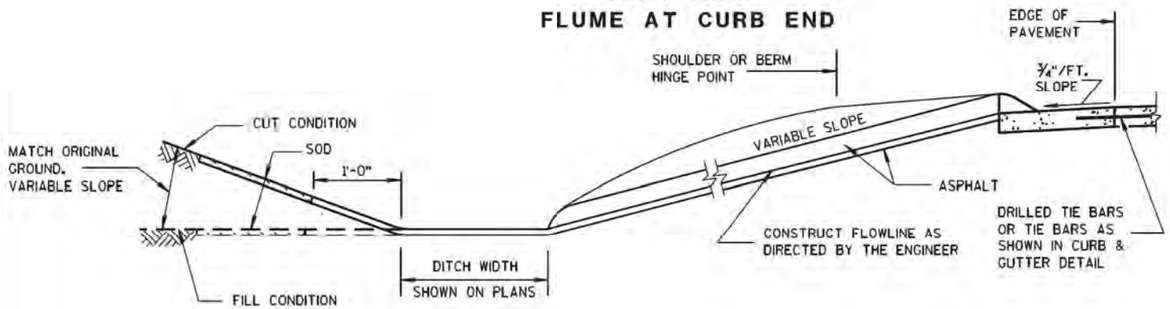
Concrete Surface Drains & Asphaltic Flumes

ASPHALTIC FLUME

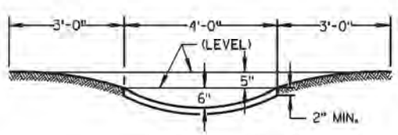


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

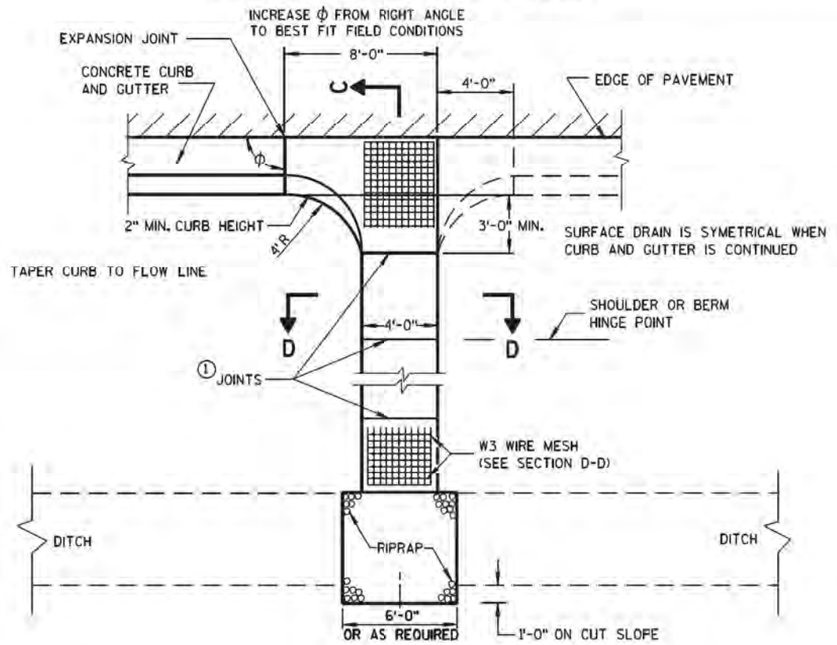
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE ⅛ TO ¼ INCH WIDE BY 1½ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

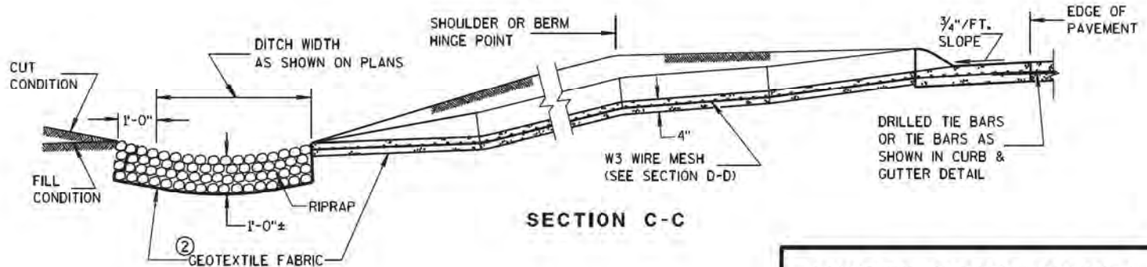
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

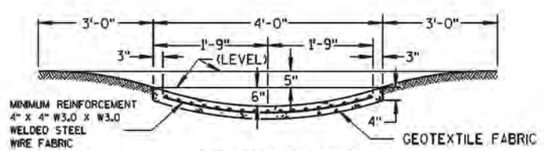
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

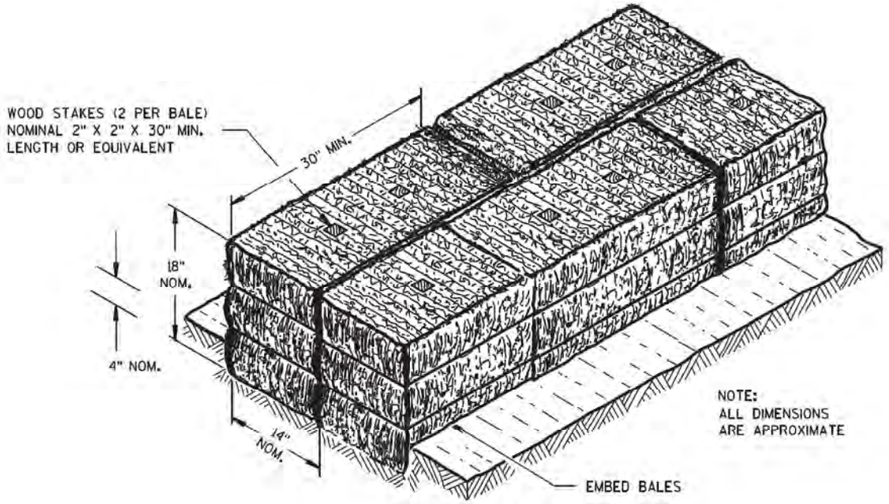
6

S.D.D. 8 D 4-5

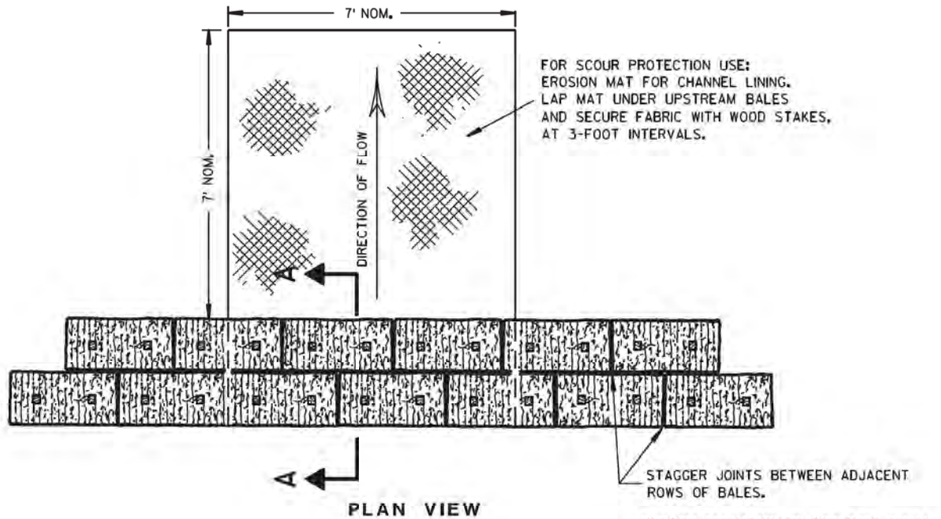
6

S.D.D. 8 D 4-5

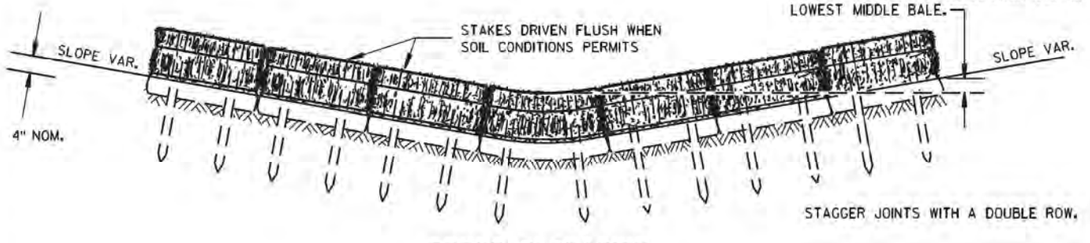
Typical Installations of Erosion Bales/Temporary Ditch Checks



SECTION A-A



PLAN VIEW



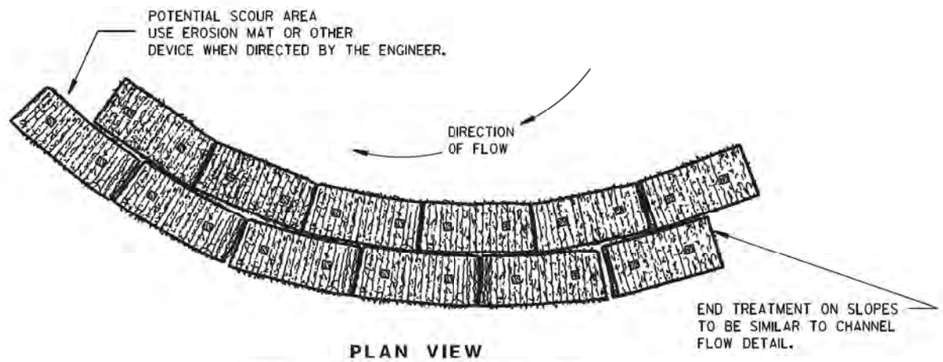
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

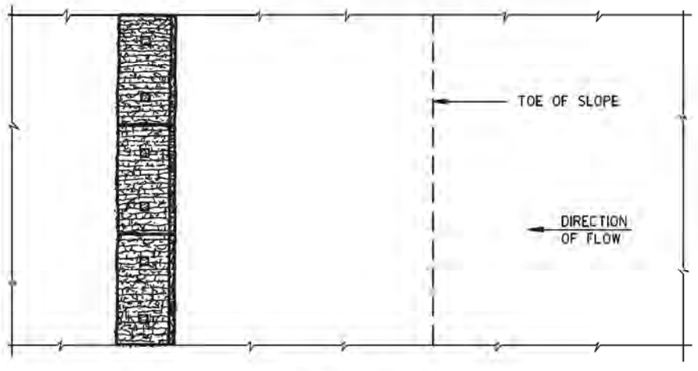
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

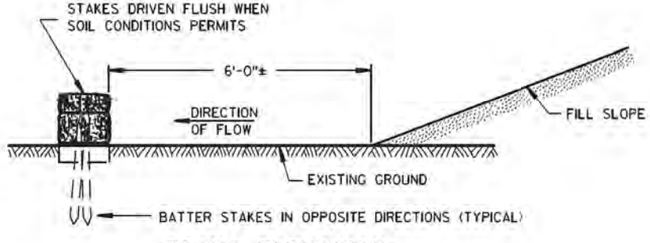


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



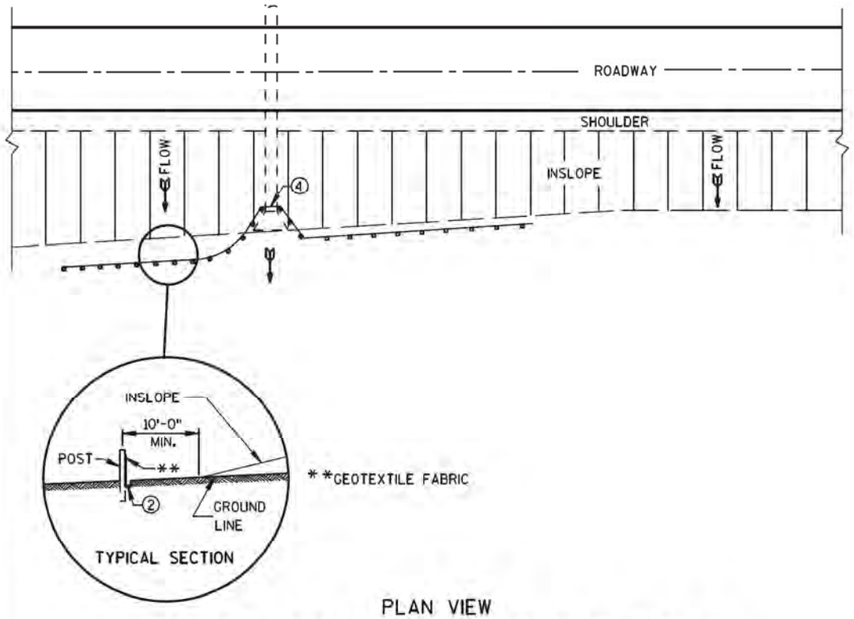
FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

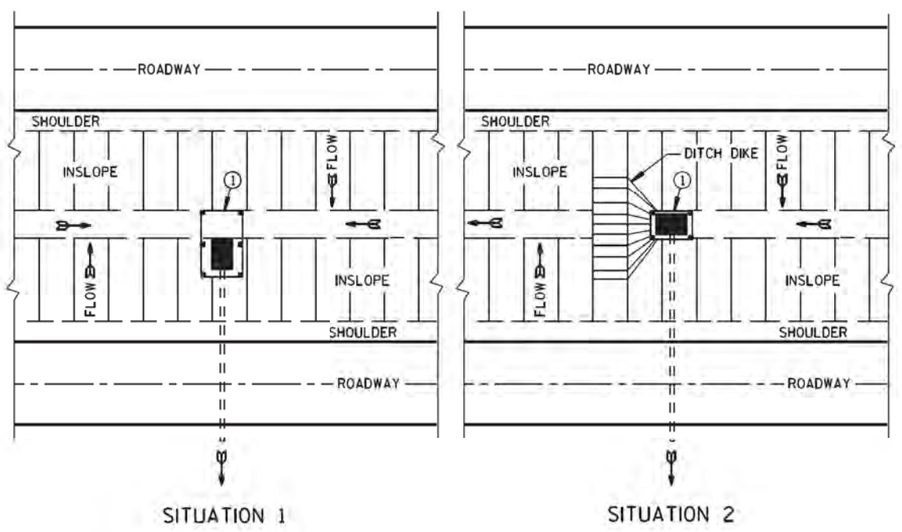
TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

Silt Fence



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

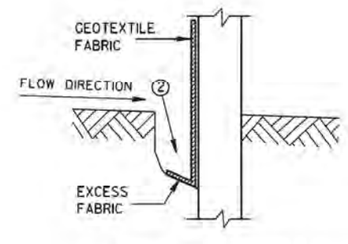
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

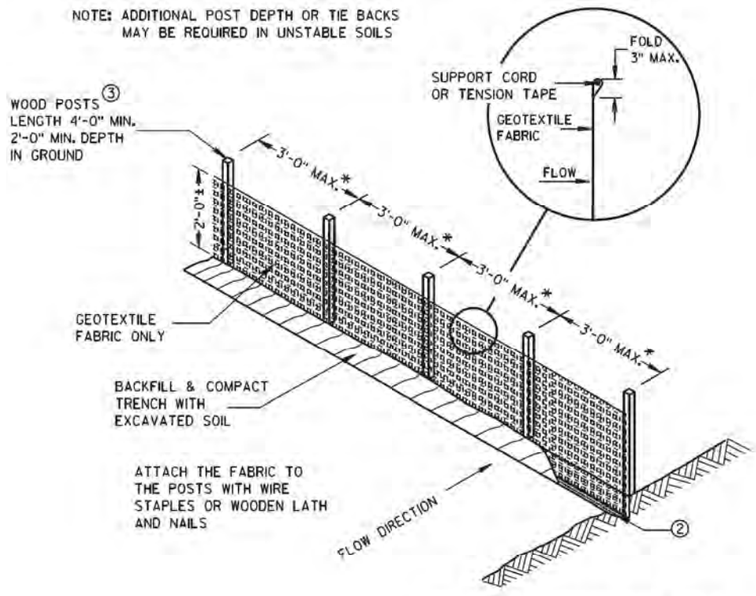
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

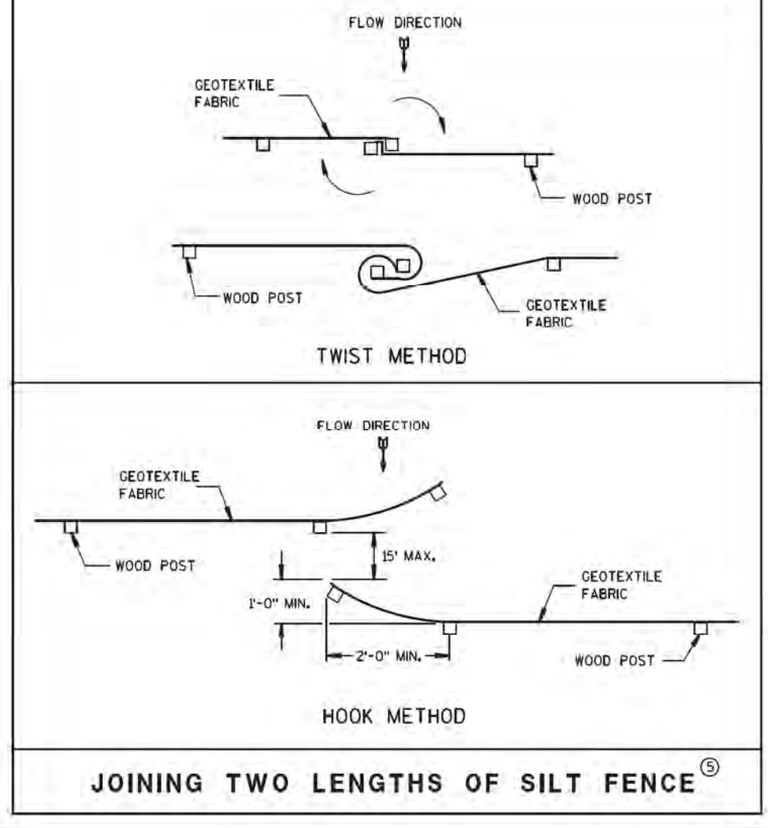
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS: A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



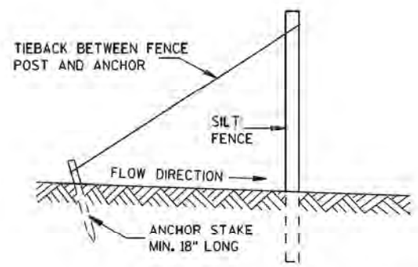
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

6

S.D.D. 8 E 9-6

6

S.D.D. 8 E 9-6

Apron Endwalls for Culvert Pipe

METAL APRON ENDWALLS

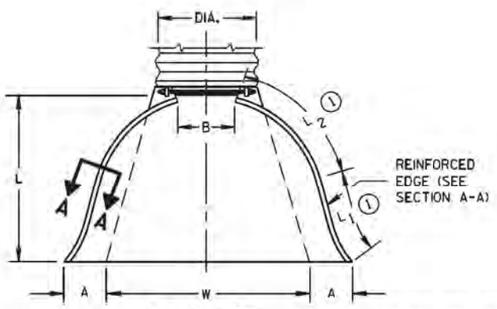
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1½")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28¼	36	2½ to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29⅝	42	2½ to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37¼	48	2½ to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75⅝	84	2½ to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2¼ to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85½	102	2¼ to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1½ to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1½ to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1½ to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1½ to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

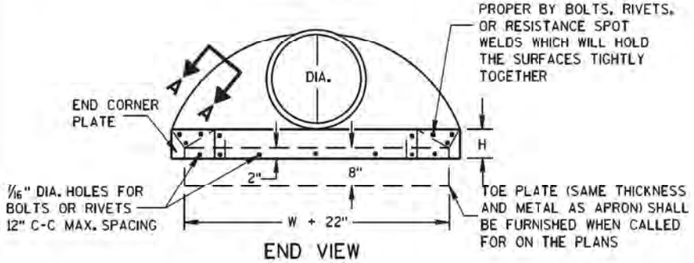
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48⅛	72⅛	24	2	3 to 1
15	2¼	6	27	46	73	30	2¼	3 to 1
18	2½	9	27	46	73	36	2½	3 to 1
21	2¾	9	36	37½	73½	42	2¾	3 to 1
24	3	9½	43½	30	73½	48	3	3 to 1
27	3¼	10½	49½	24	73½	54	3¼	3 to 1
30	3½	12	54	19¾	73½	60	3½	3 to 1
36	4	15	63	34¾	97¾	72	4	3 to 1
42	4½	21	63	35	98	78	4½	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5½	27	65	* 33¼ - ** 35	* 98¼ - ** 100	90	5½	2⅖ to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6½	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5½	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7½	* 24 - ** 36	78	21	99	114	6½	2 to 1
84	8	36	90½	21	111½	120	6½	1½ to 1
90	8½	41	87½	24	111½	132	6½	1½ to 1

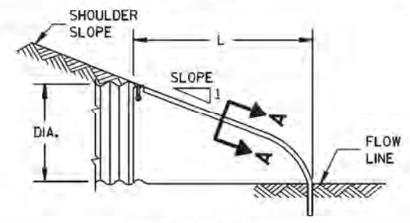
*MINIMUM
**MAXIMUM



PLAN VIEW

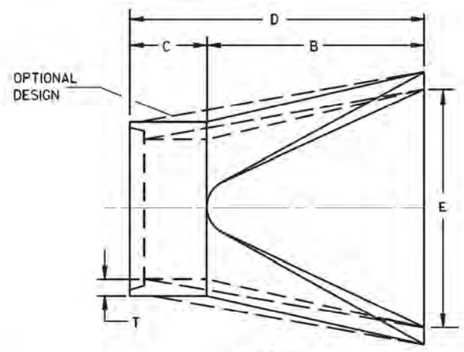


END VIEW

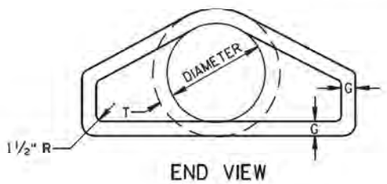


SIDE ELEVATION

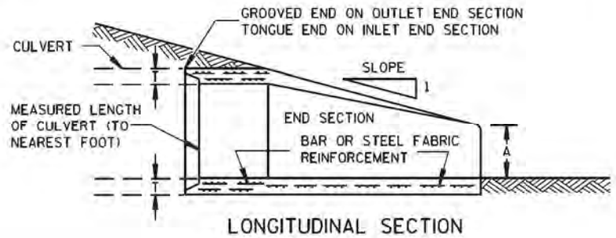
METAL ENDWALLS



PLAN

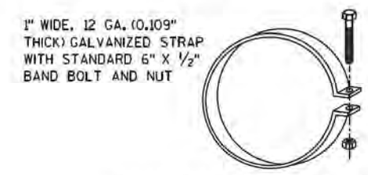


END VIEW



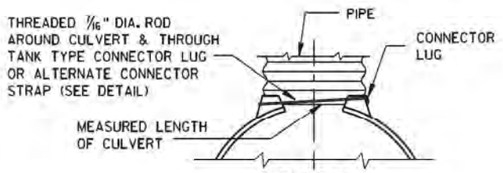
LONGITUDINAL SECTION

CONCRETE ENDWALLS

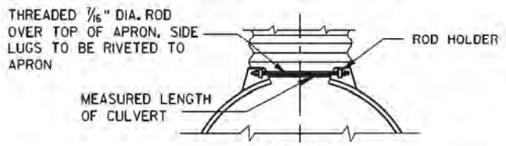


ALTERNATE FOR TYPE 1 CONNECTION

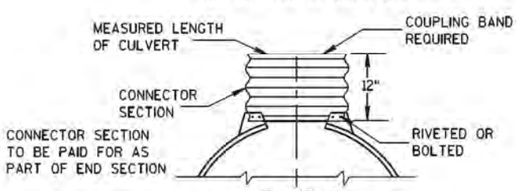
END SECTION CONNECTOR STRAP



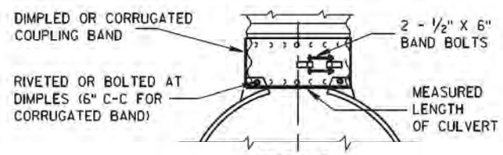
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

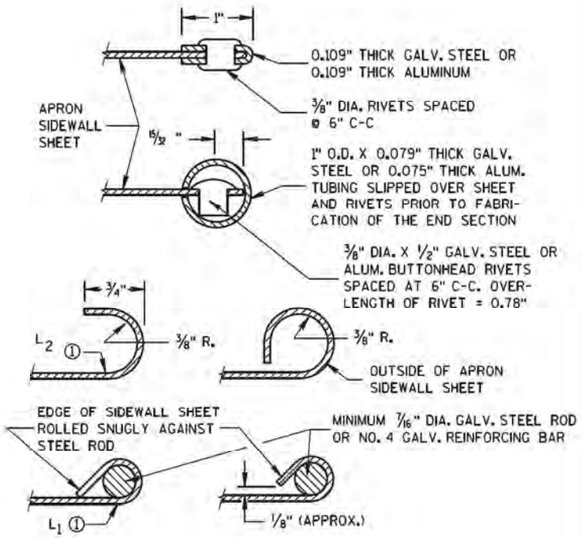
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

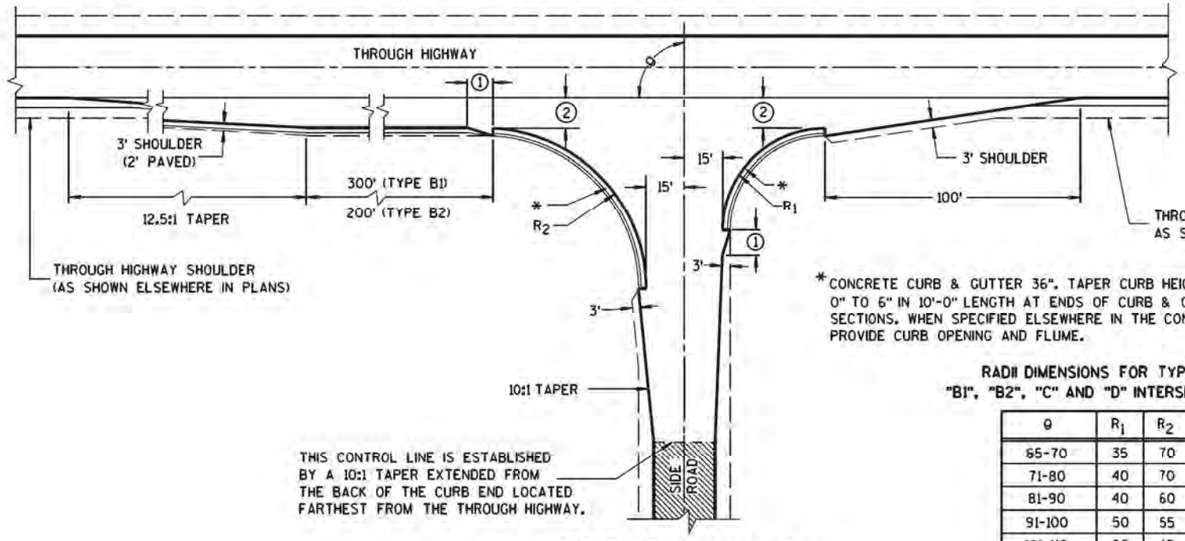
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

6

S.D.D. 8 F 1-11

At-Grade Side Road Intersection, Types 'B1', 'B2', 'C' and 'D' and Tee Intersection Bypass Lane

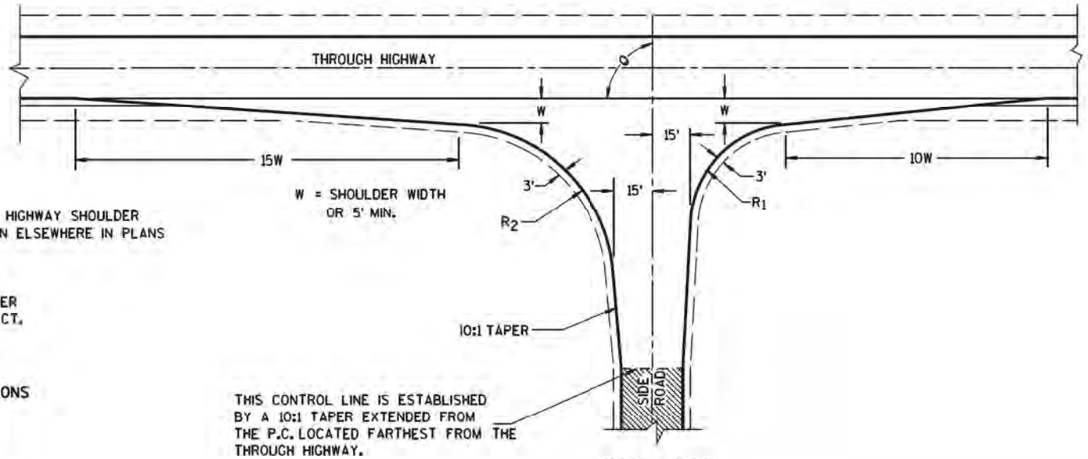


TYPE "B1" AND "B2"

*CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R_1	R_2
66-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45



W = SHOULDER WIDTH OR 5' MIN.

TYPE "C"

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

BYPASS LANE

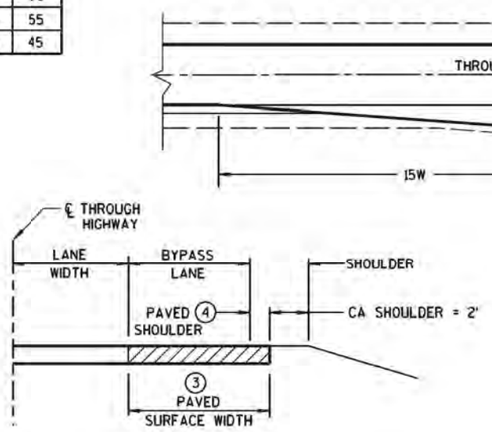
(1) 10-FT TYPICAL.

(2) 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

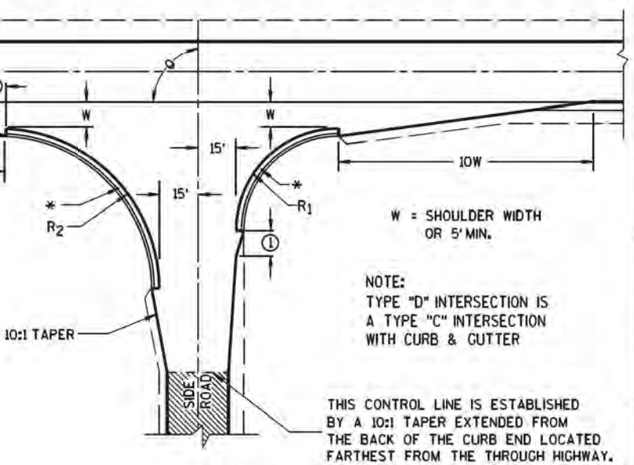
**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.

(3) BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CONCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.

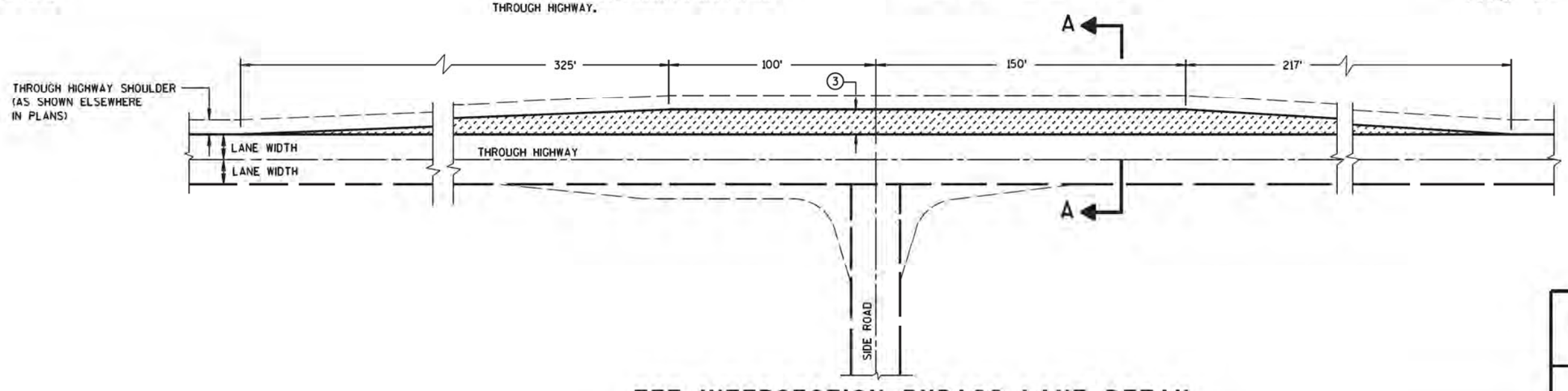
(4) BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



SECTION A-A
(SHOWING BYPASS LANE AND SHOULDER)



TYPE "D"



TEE INTERSECTION BYPASS LANE DETAIL

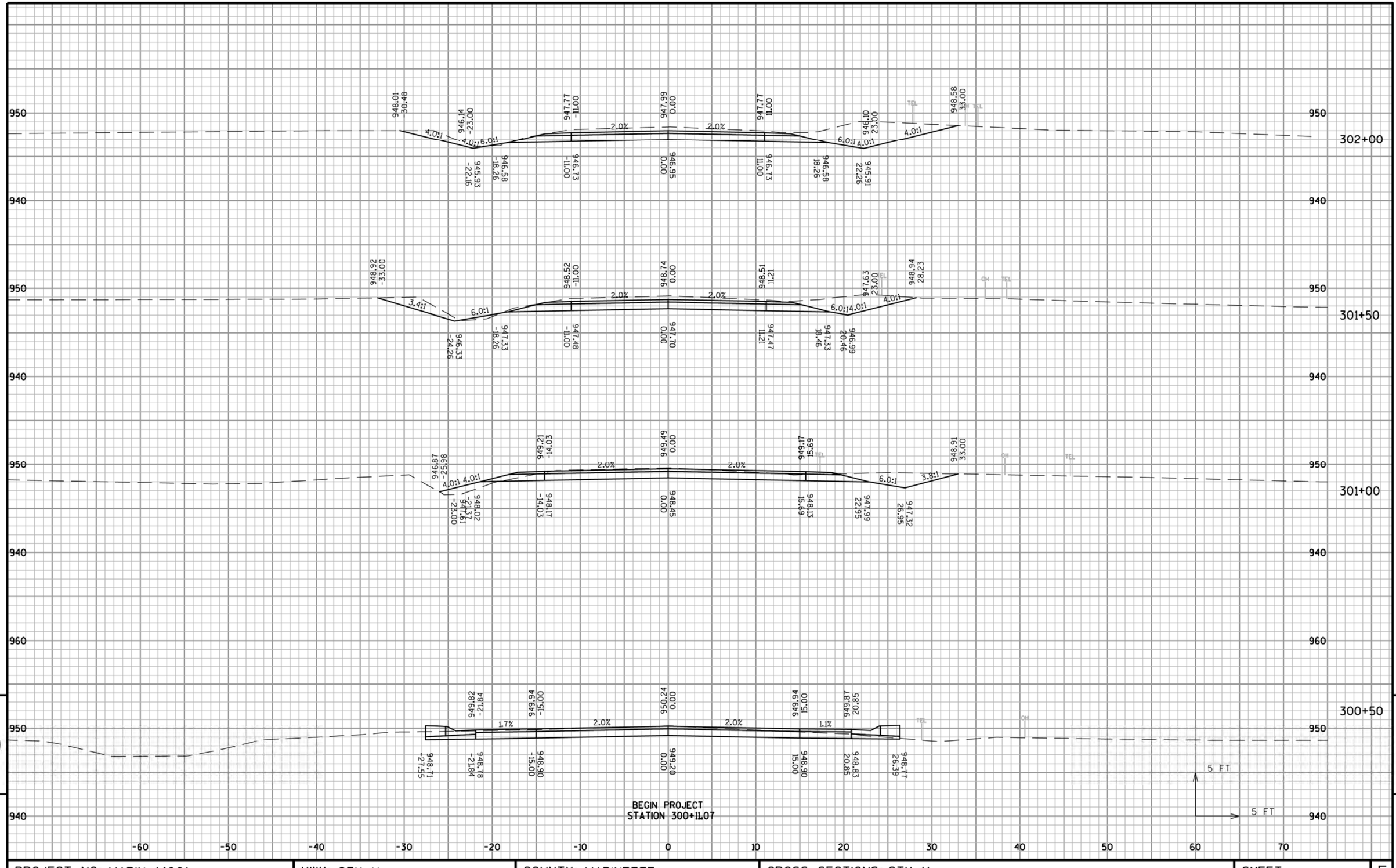
AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

6

S.D.D. 9 A 1-13a

6

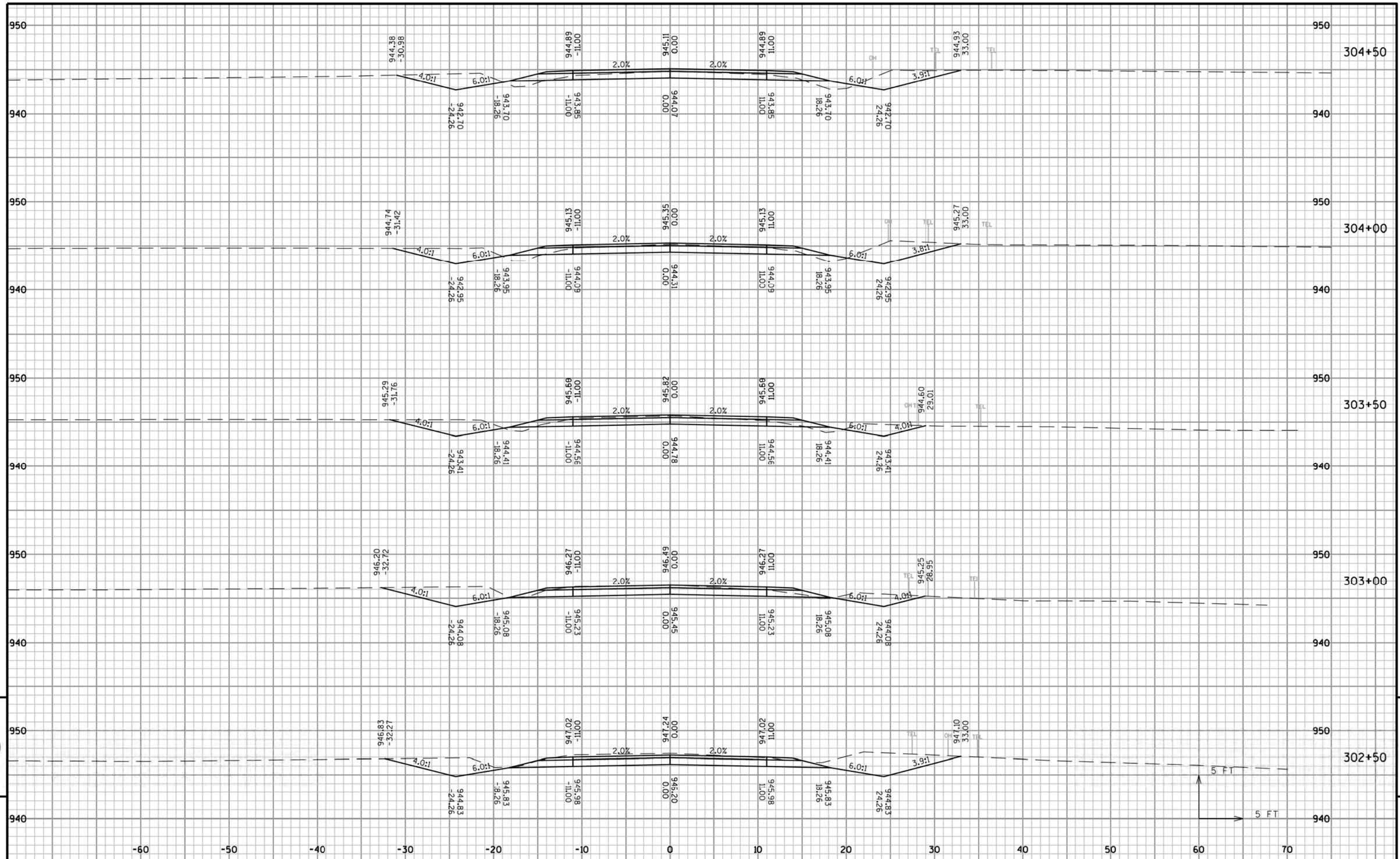
S.D.D. 9 A 1-13a



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (7)



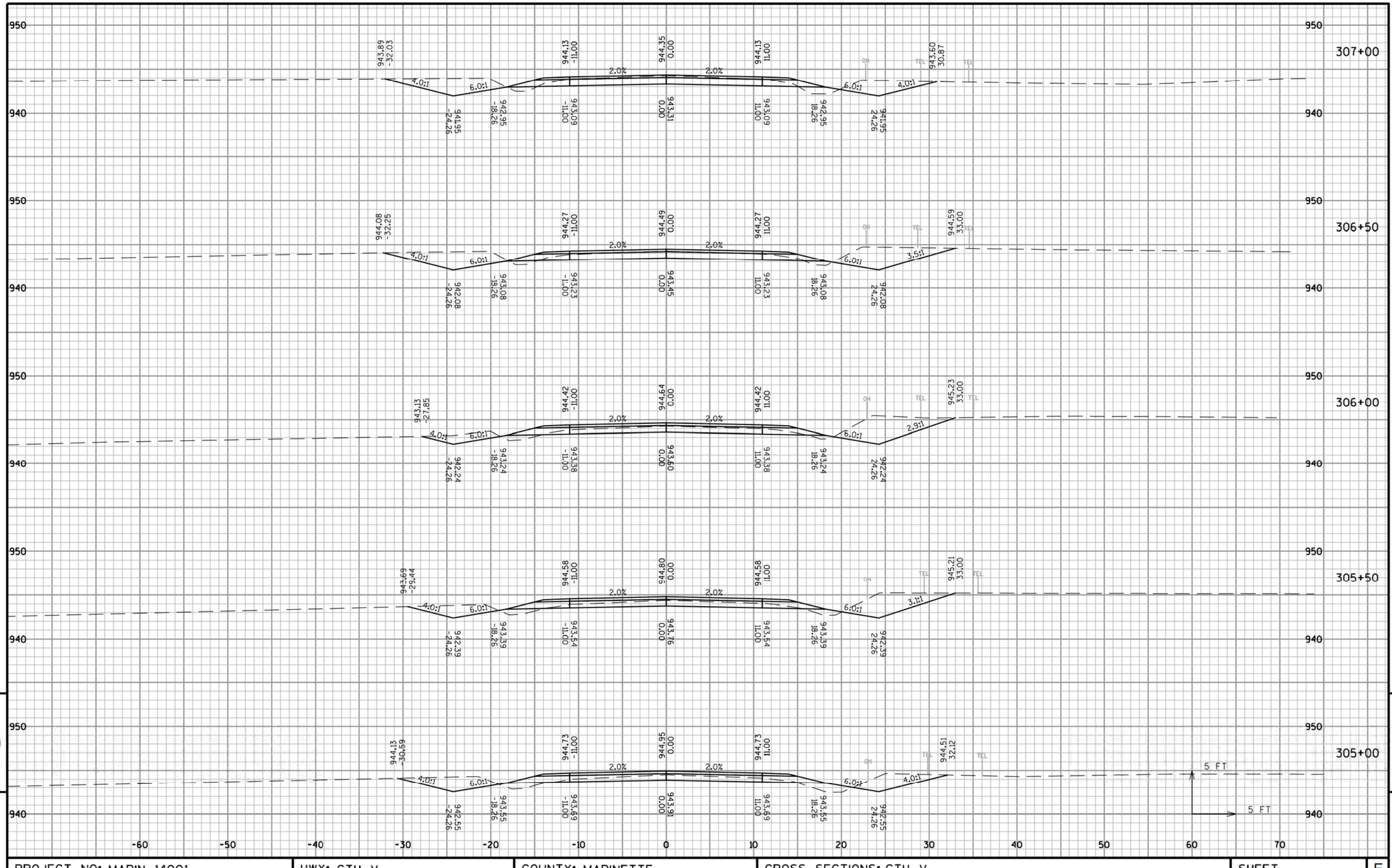
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (8)

9

9



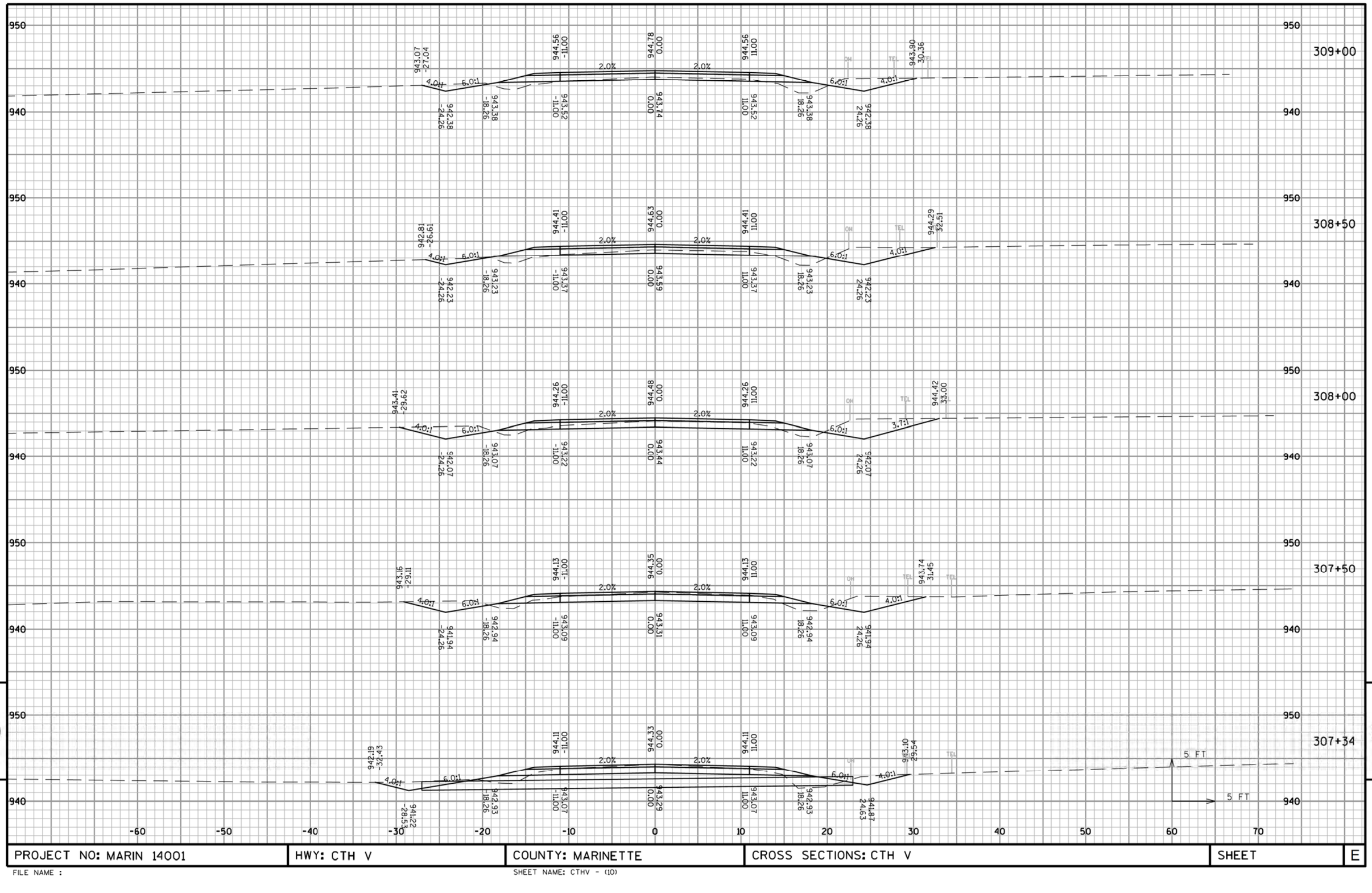
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (9)

9

9



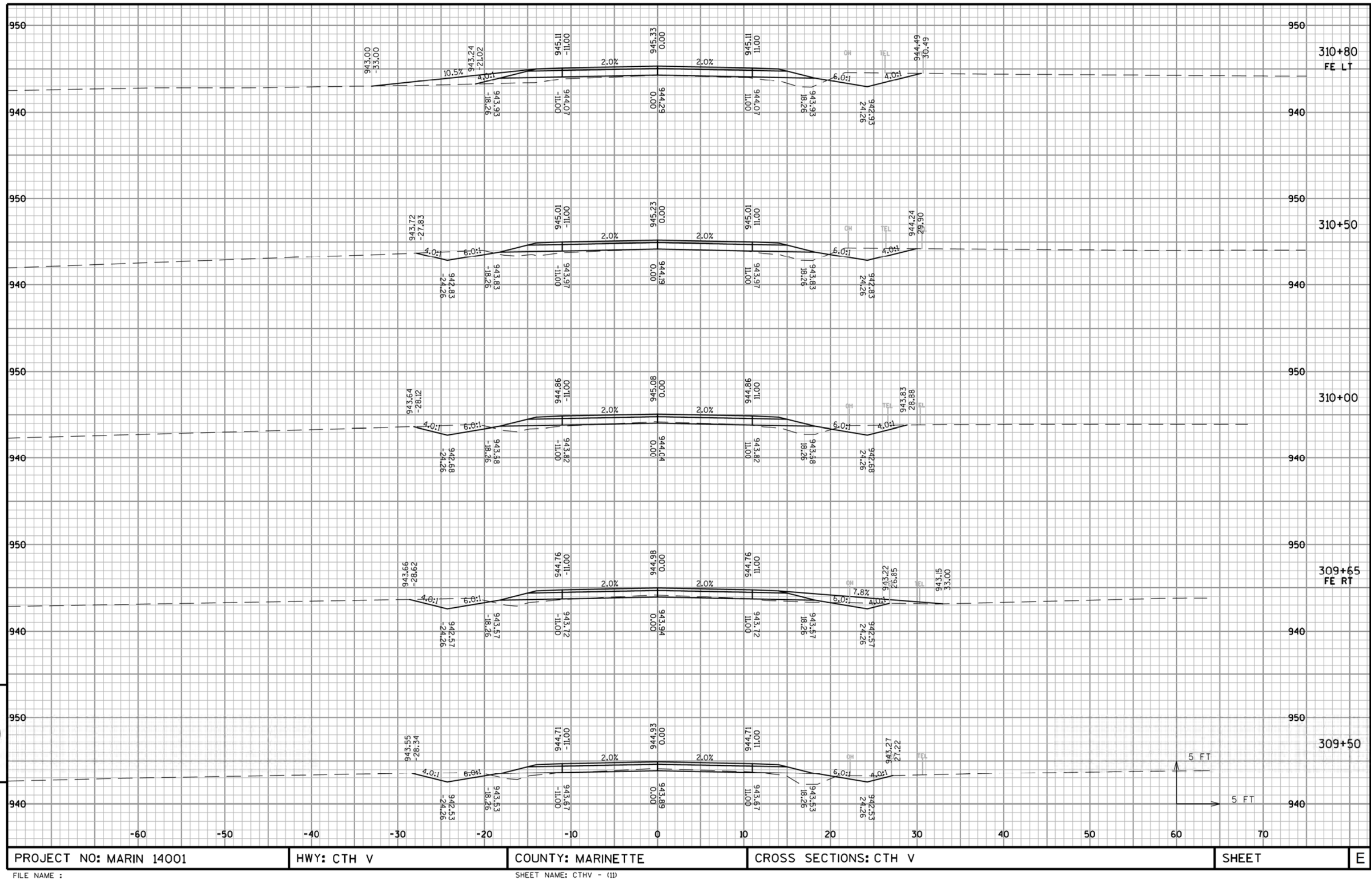
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (10)

9

9



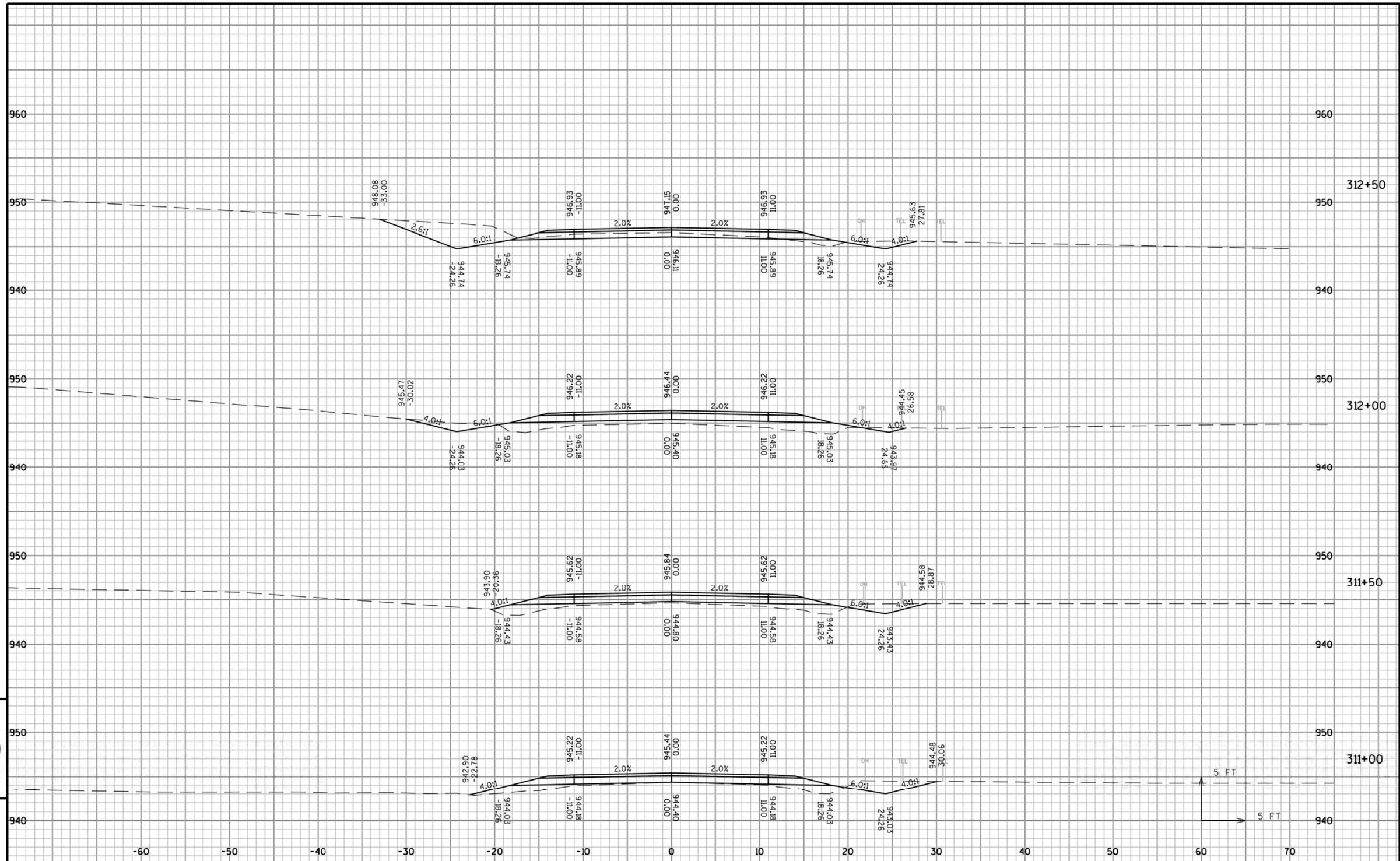
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (11)

9

9



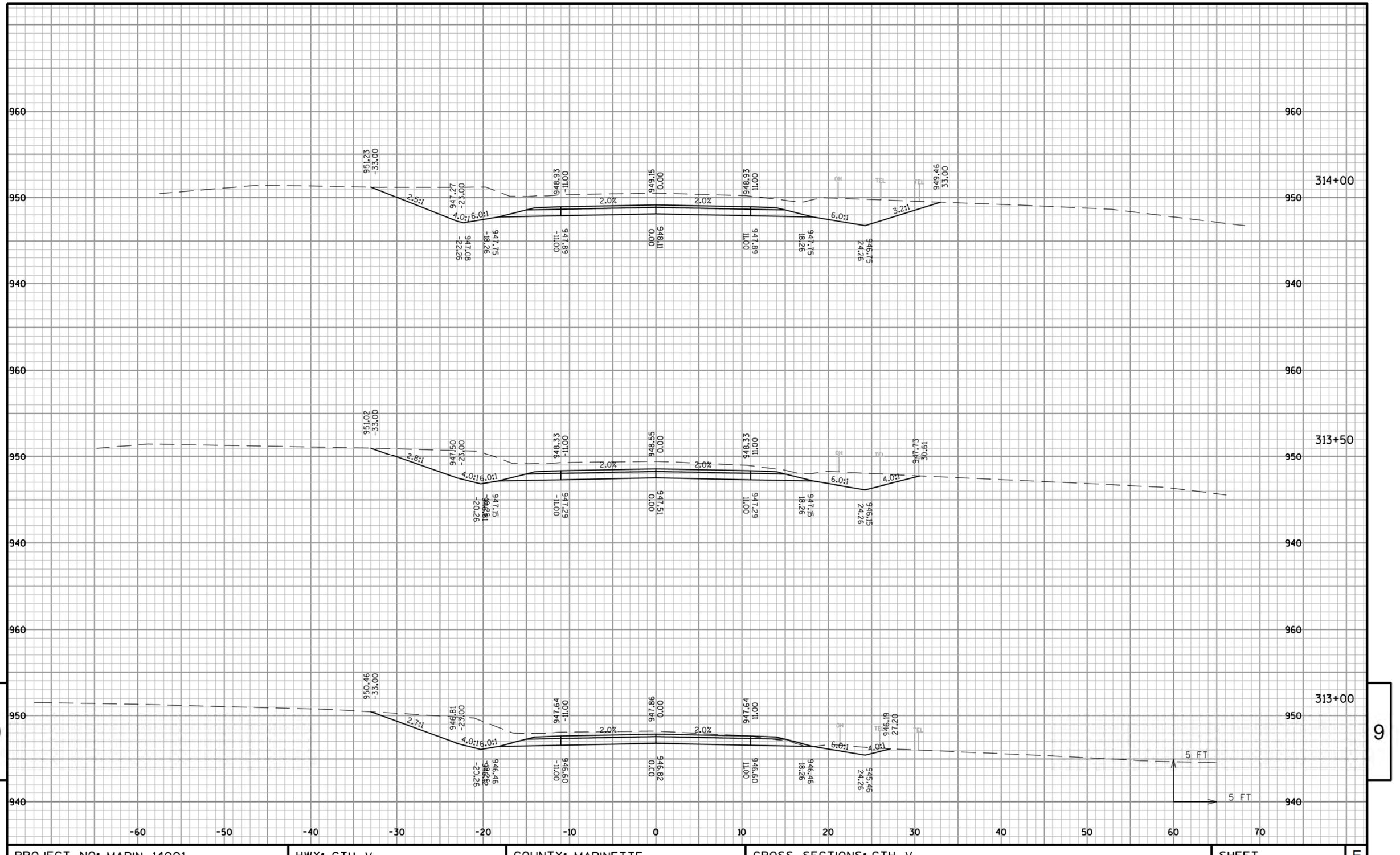
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (12)

9

9



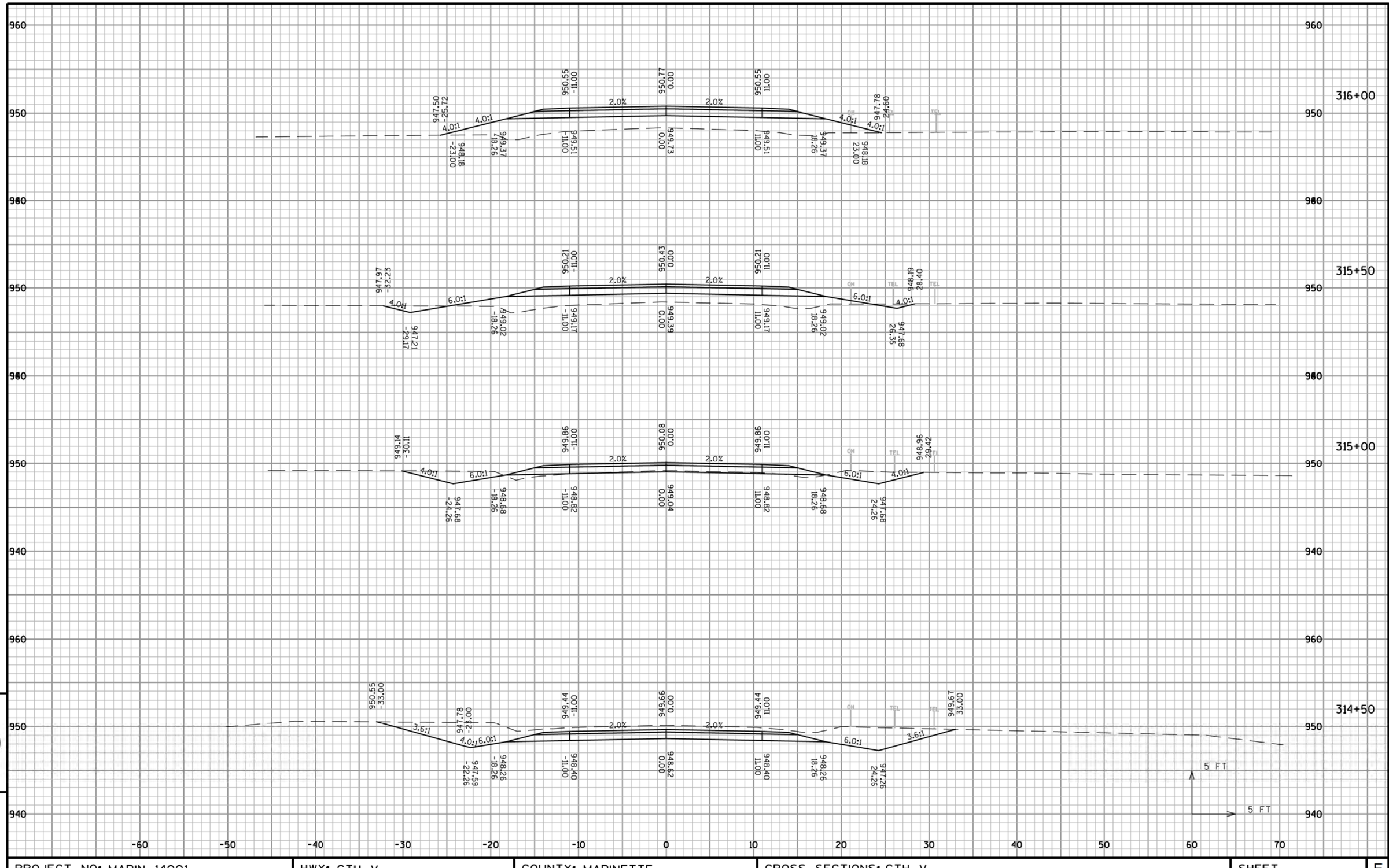
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (13)

9

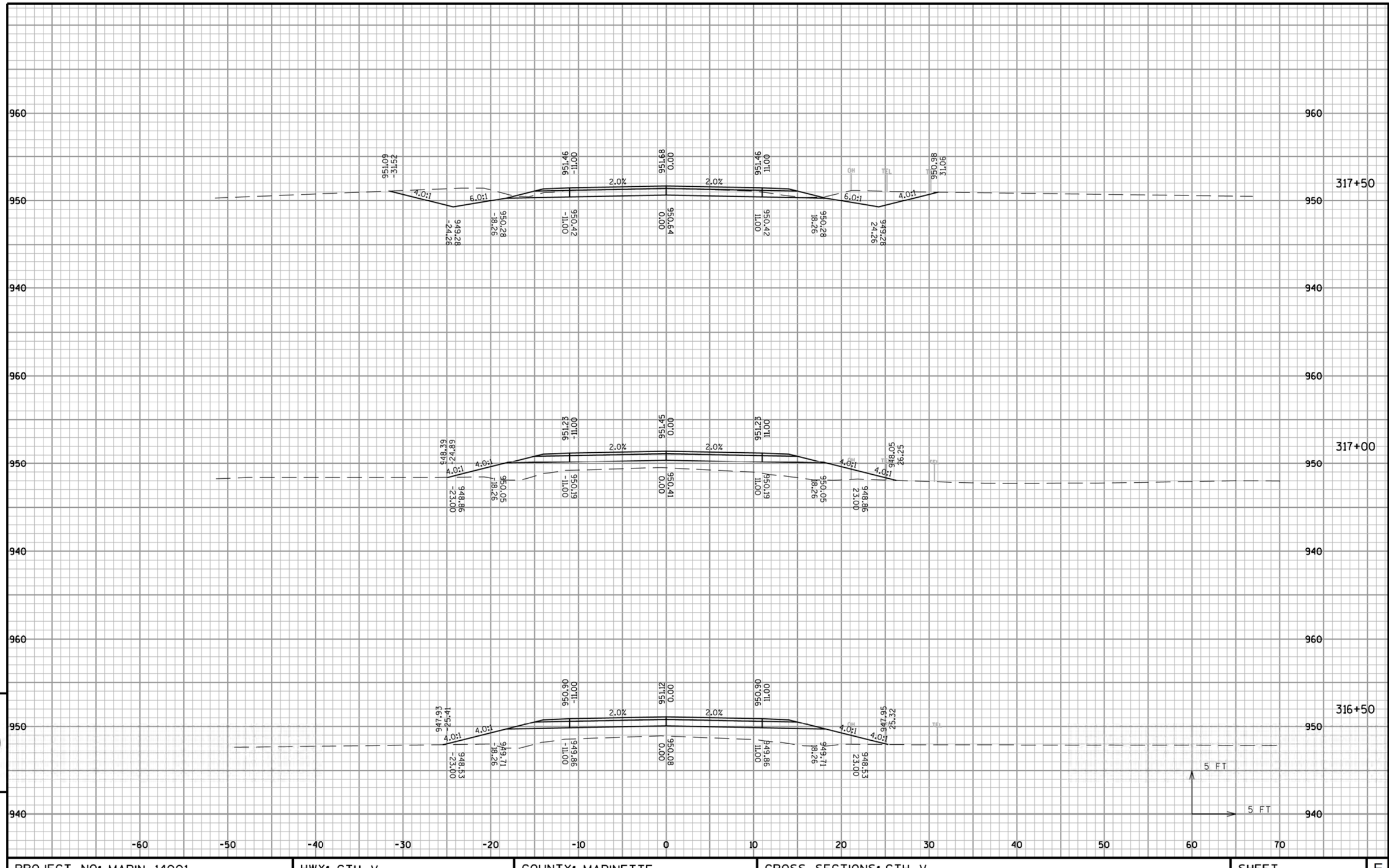
9



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (14)



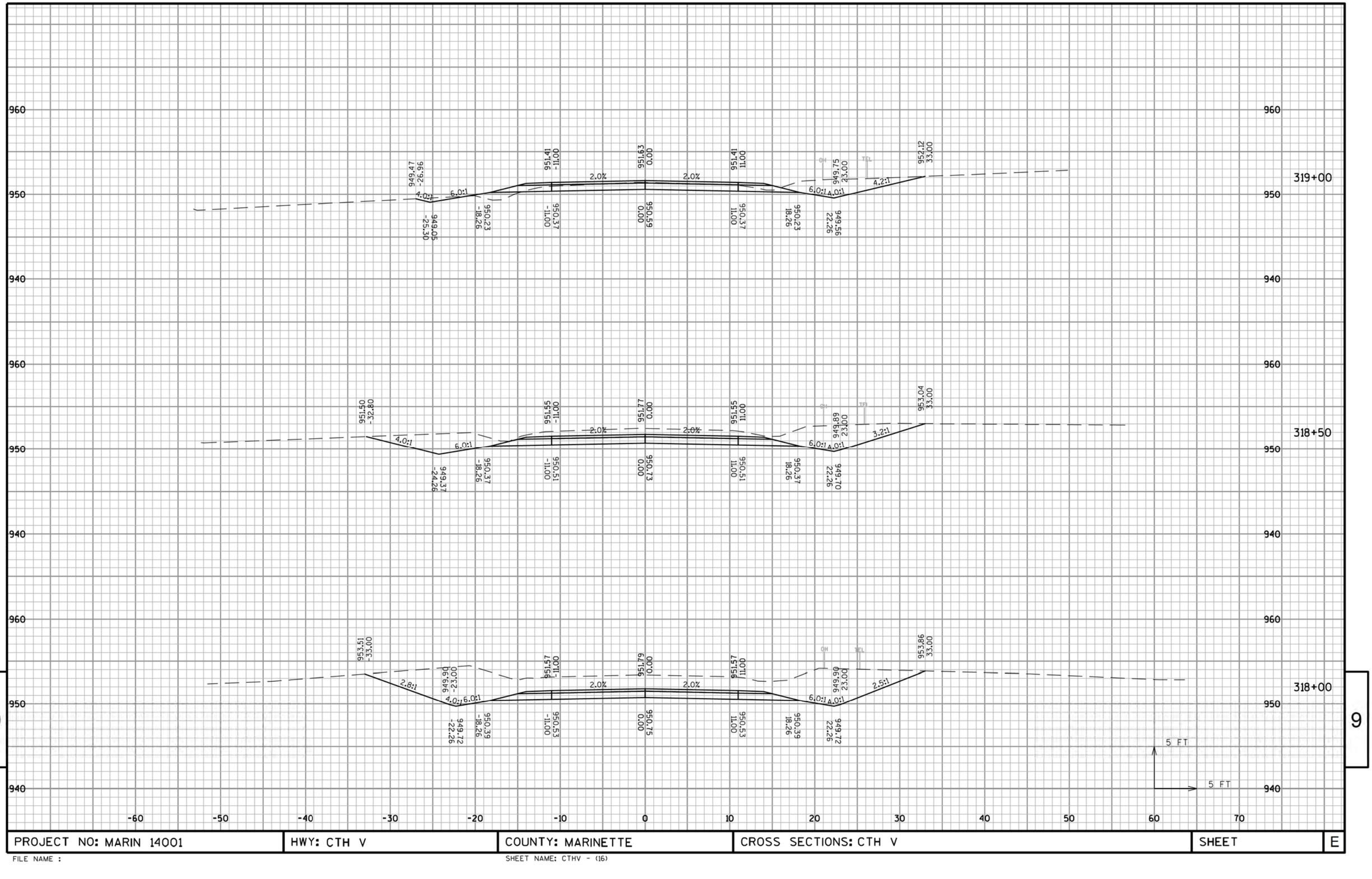
9

9

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

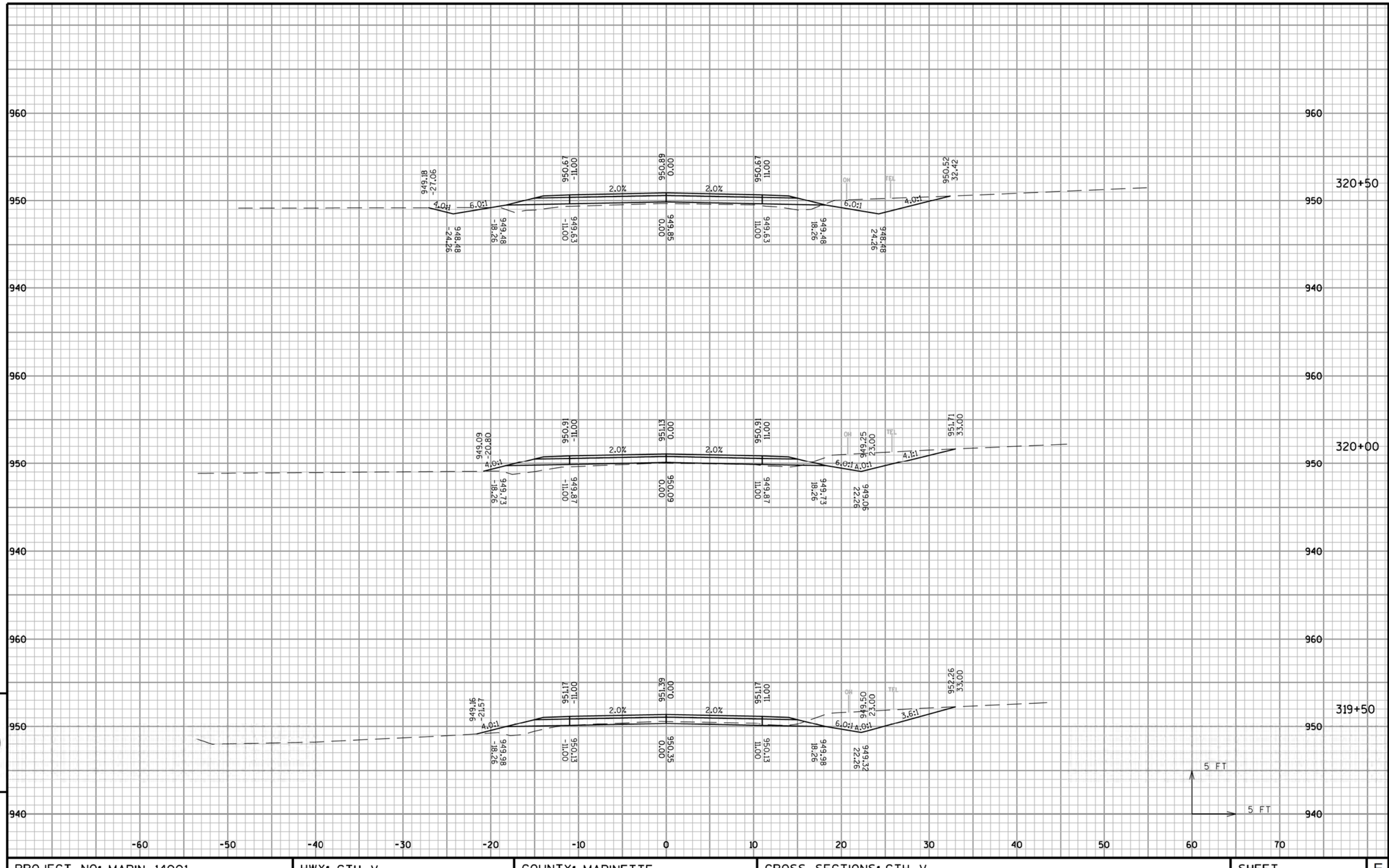
SHEET NAME: CTHV - (15)



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (16)



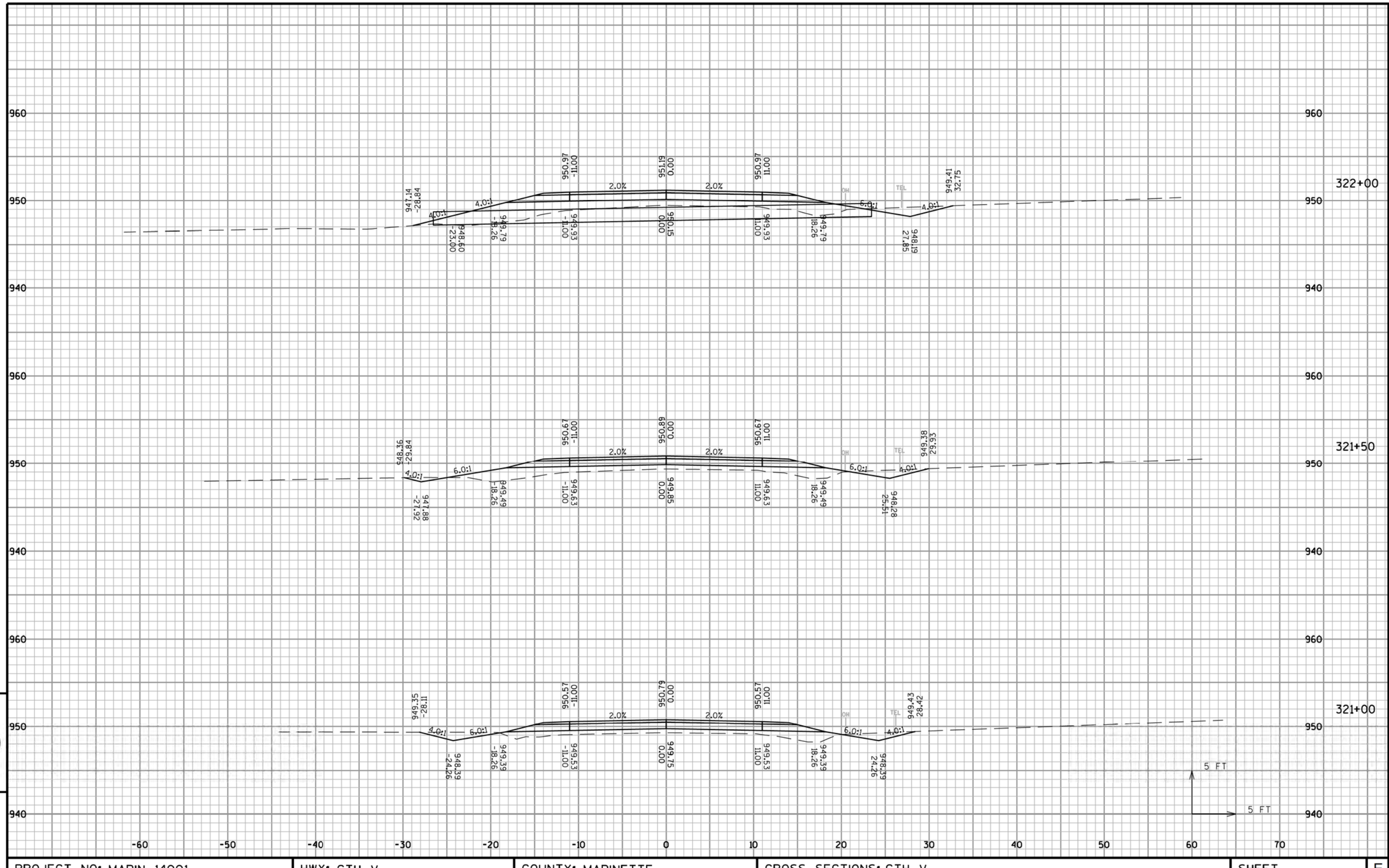
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (17)

9

9



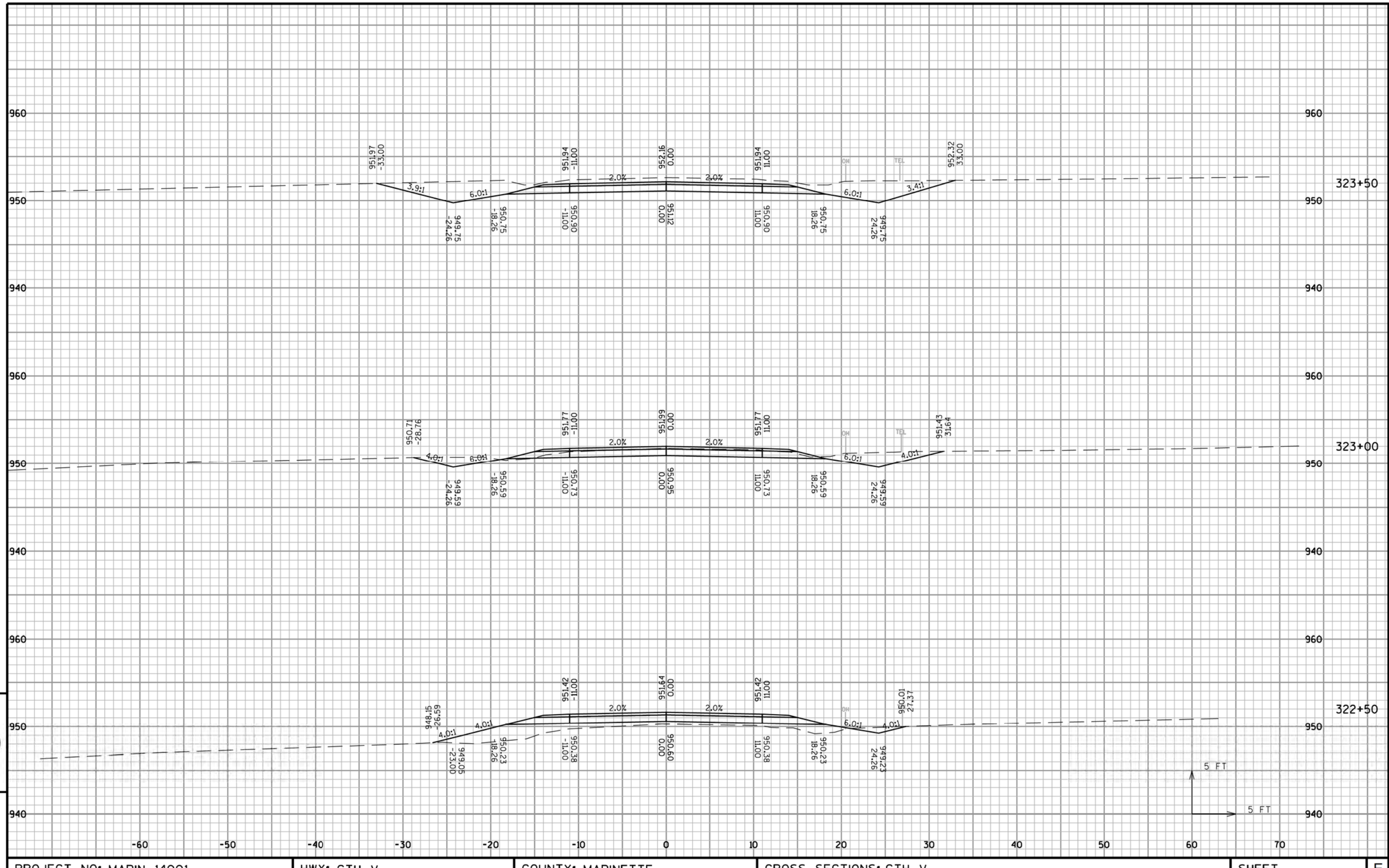
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (18)

9

9



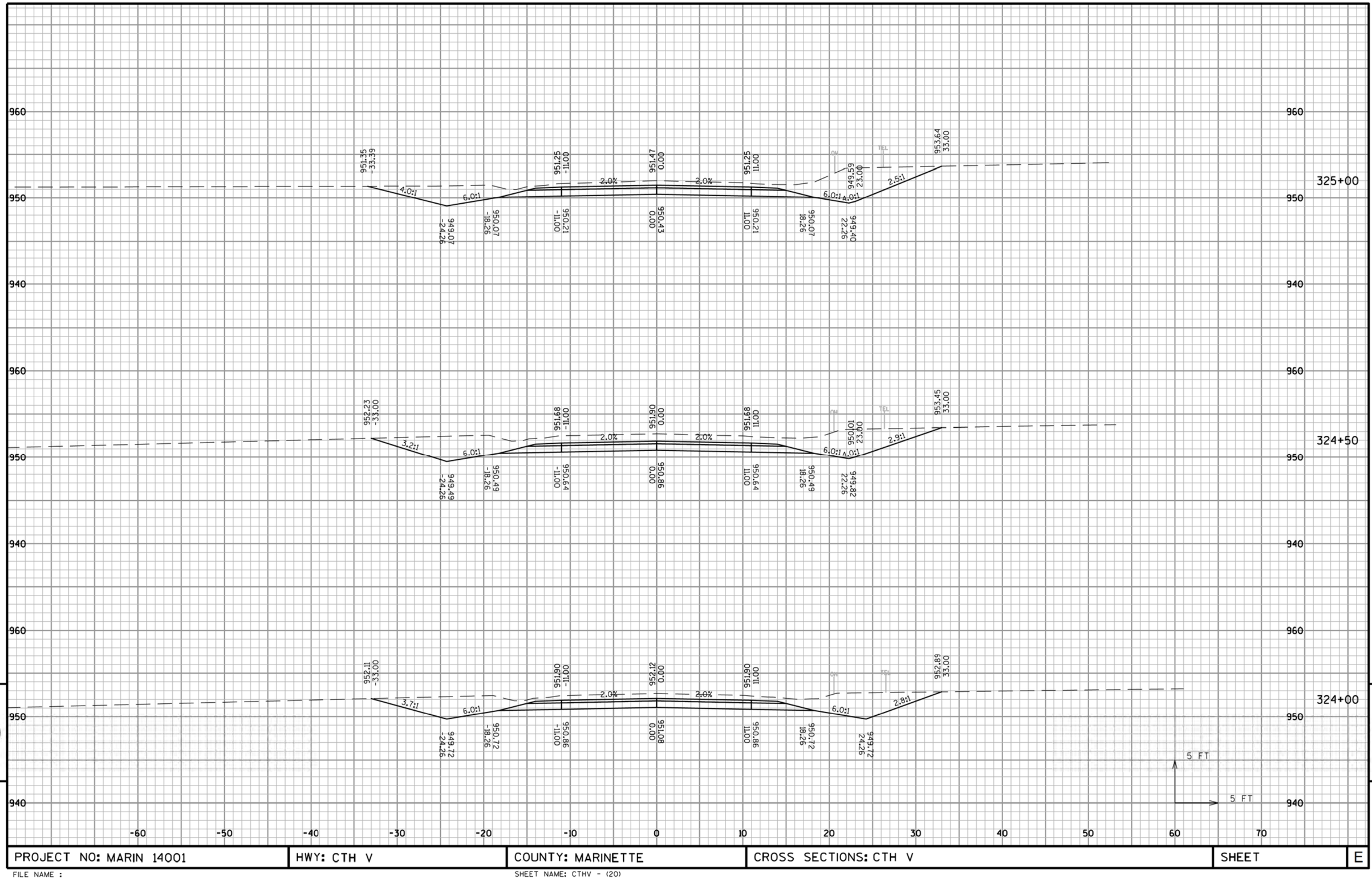
9

9

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (19)



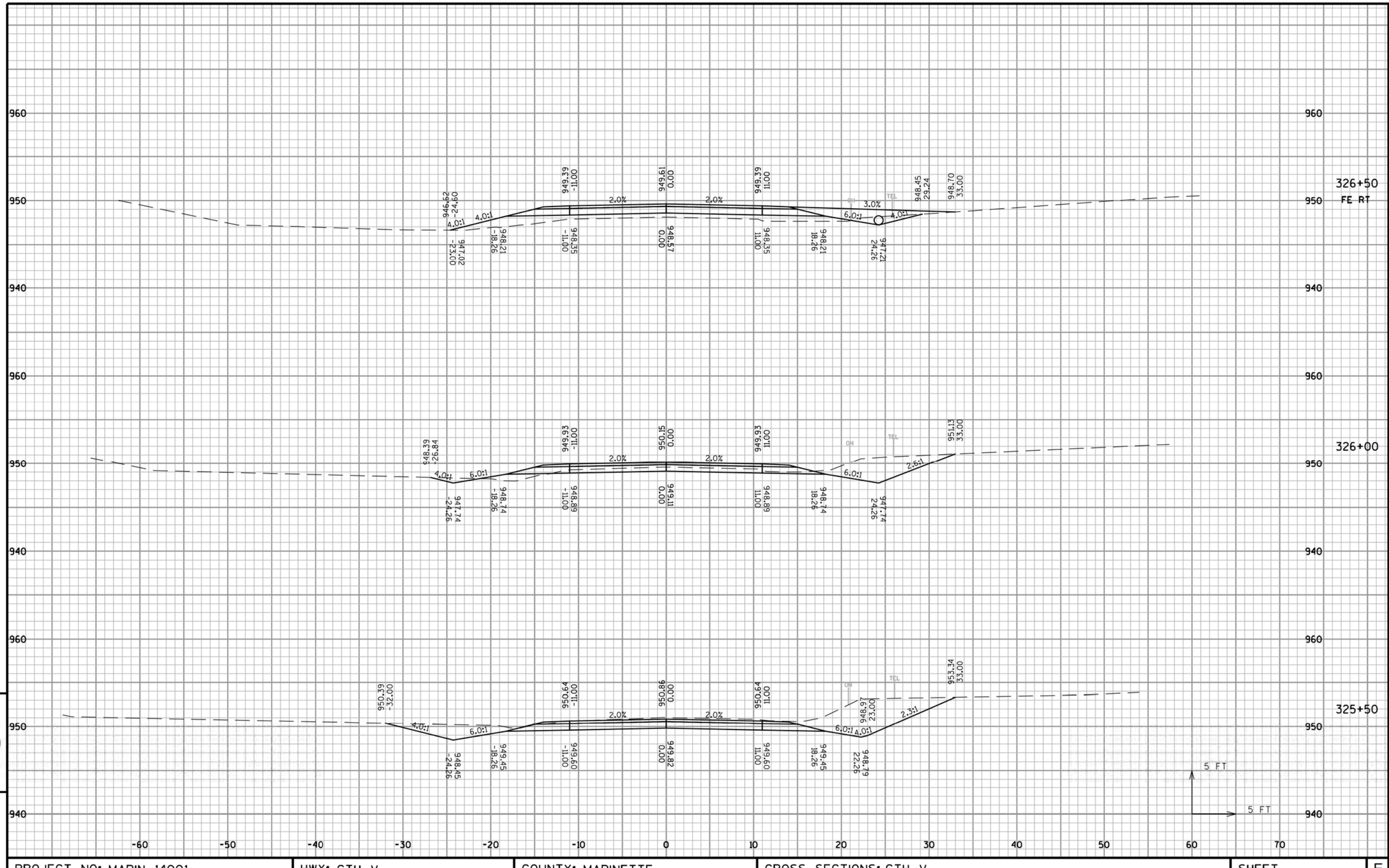
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (20)

9

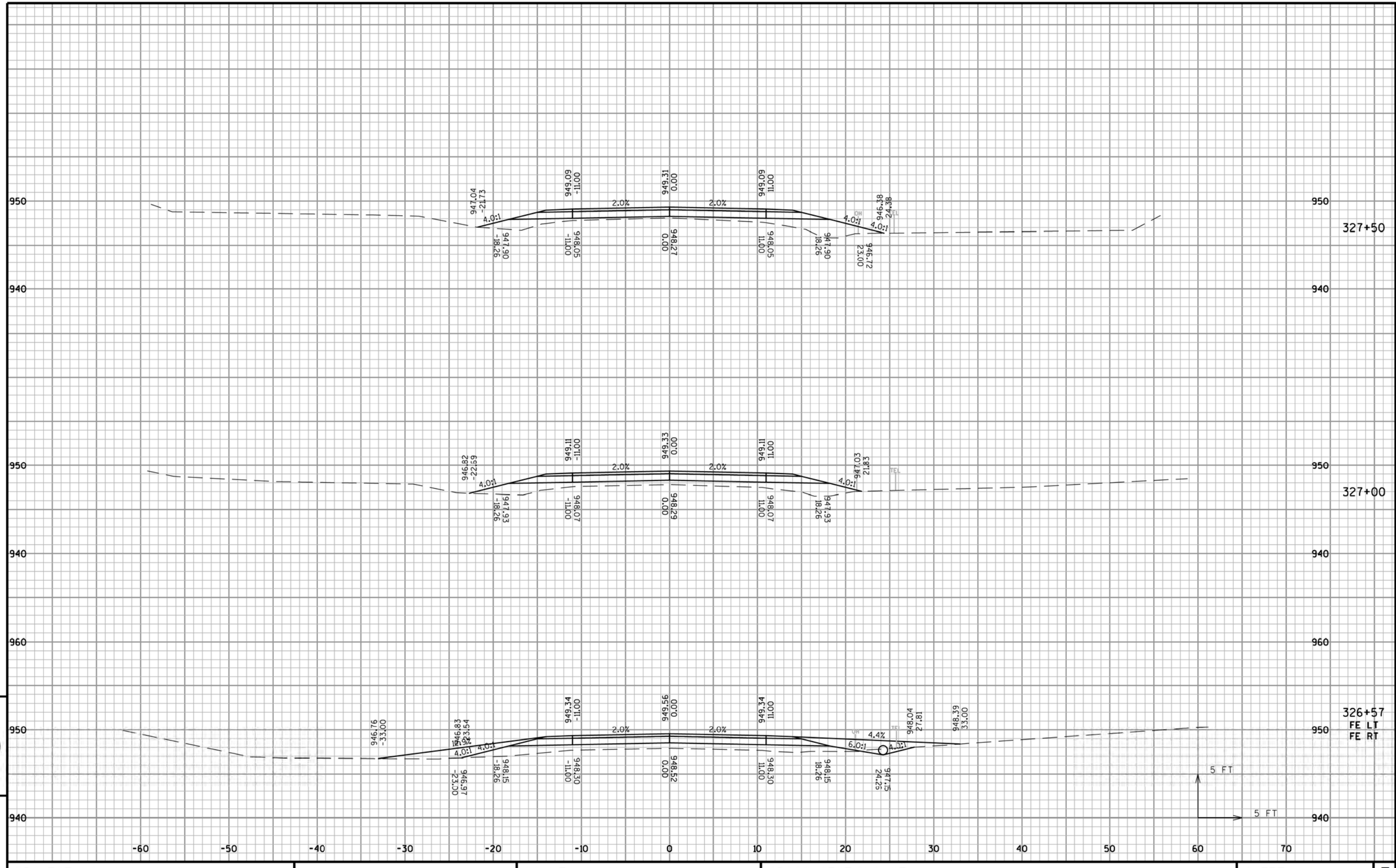
9



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

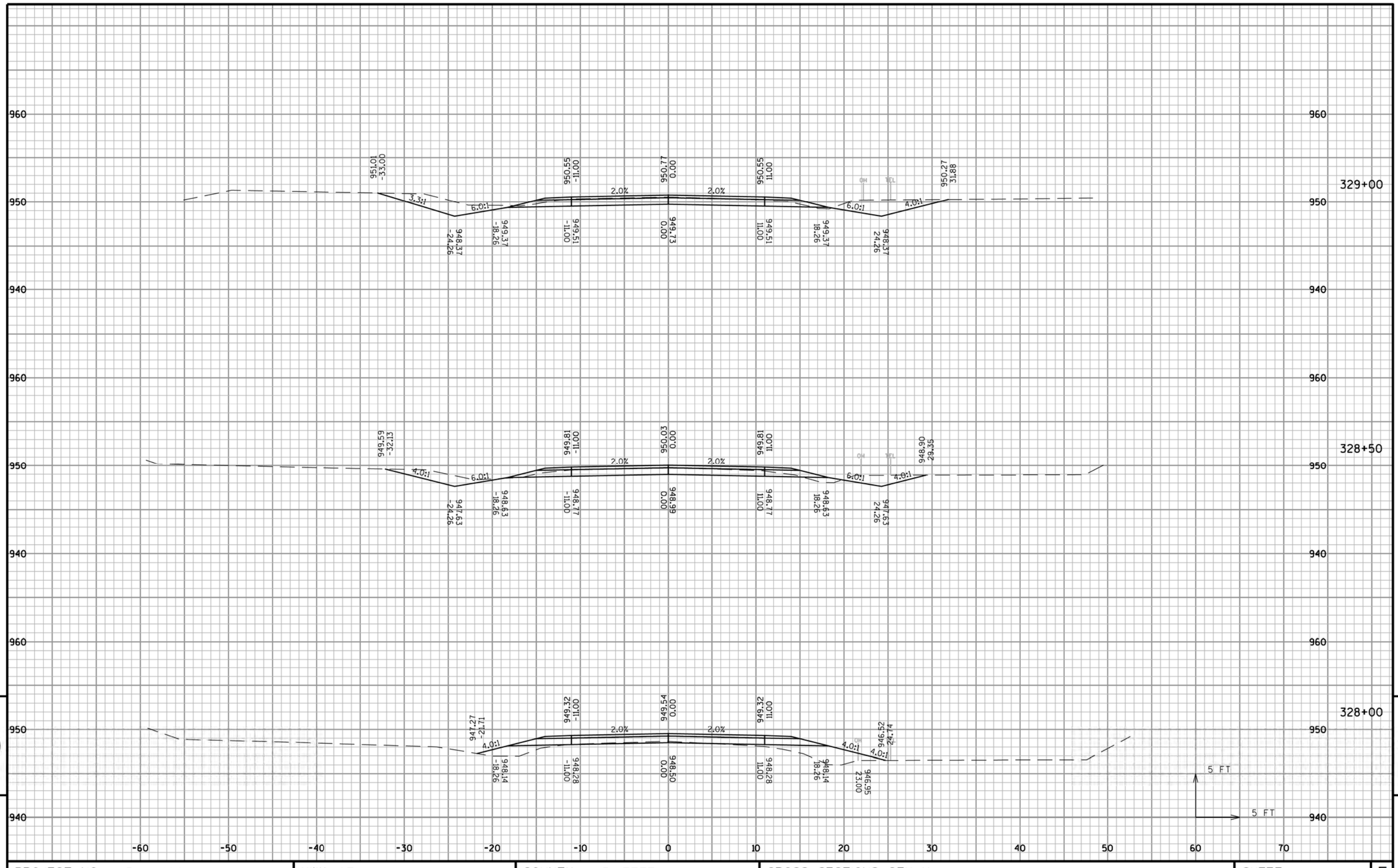
SHEET NAME: CTHV - (21)



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

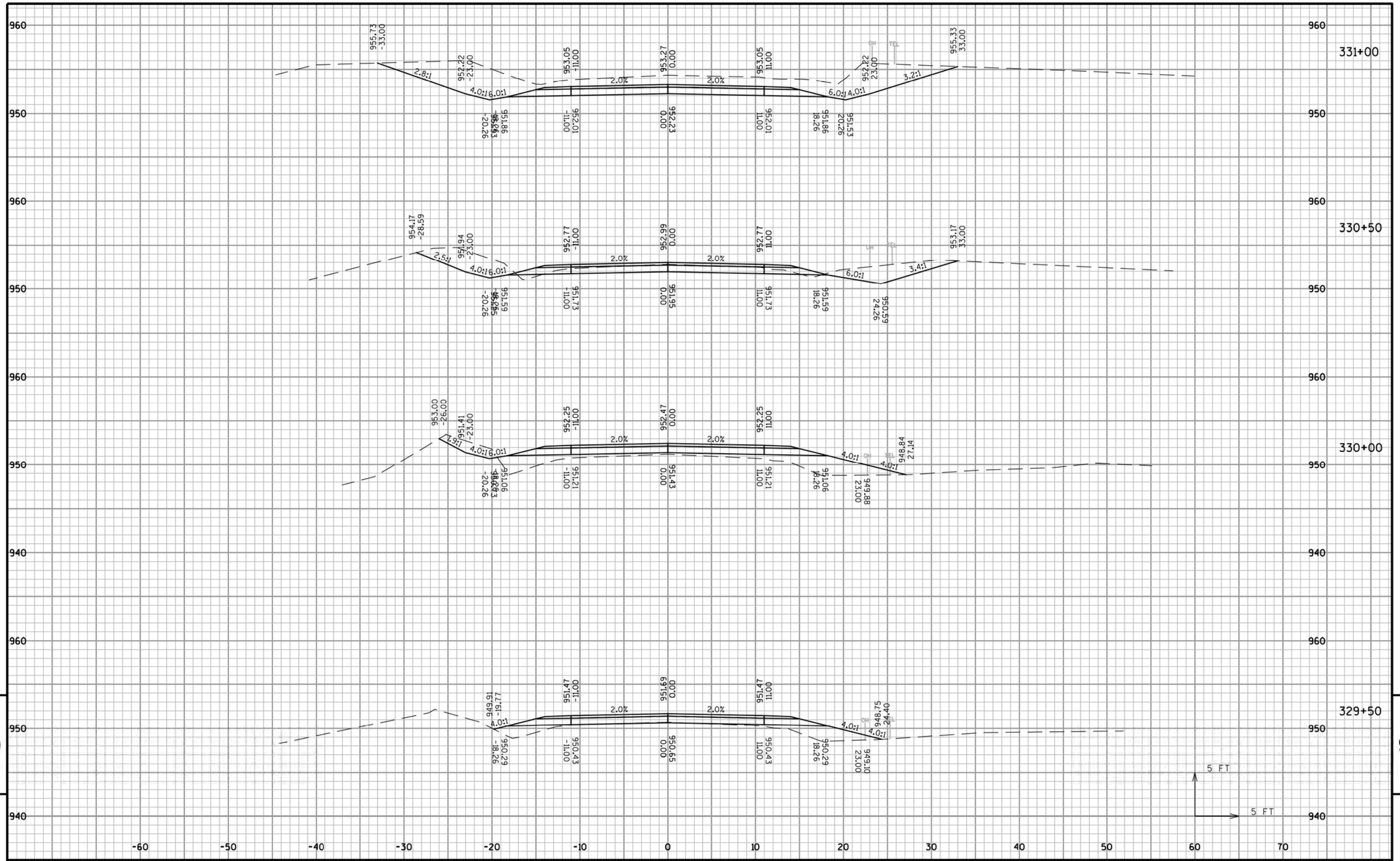
SHEET NAME: CTHV - (22)



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (23)



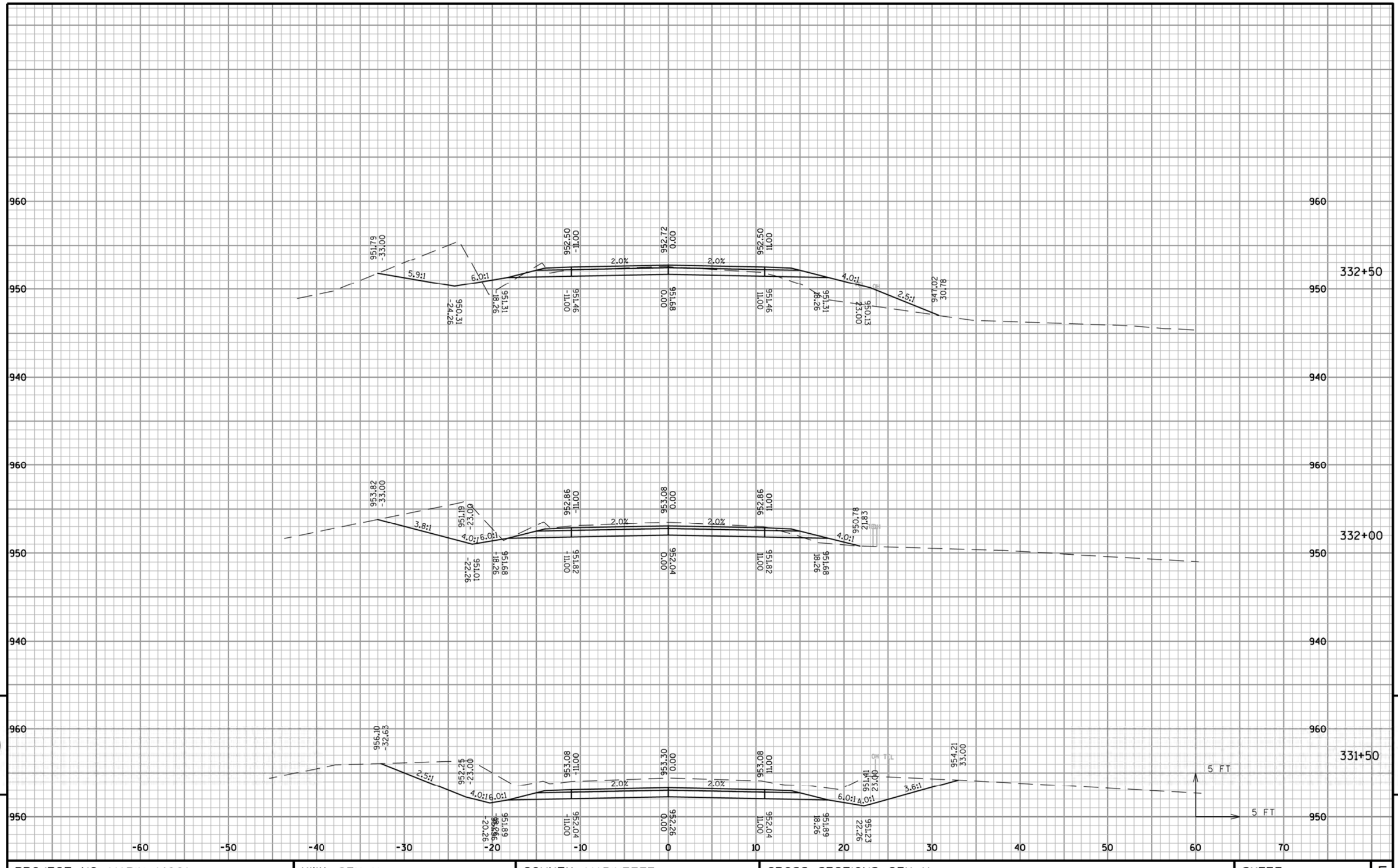
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (24)

9

9



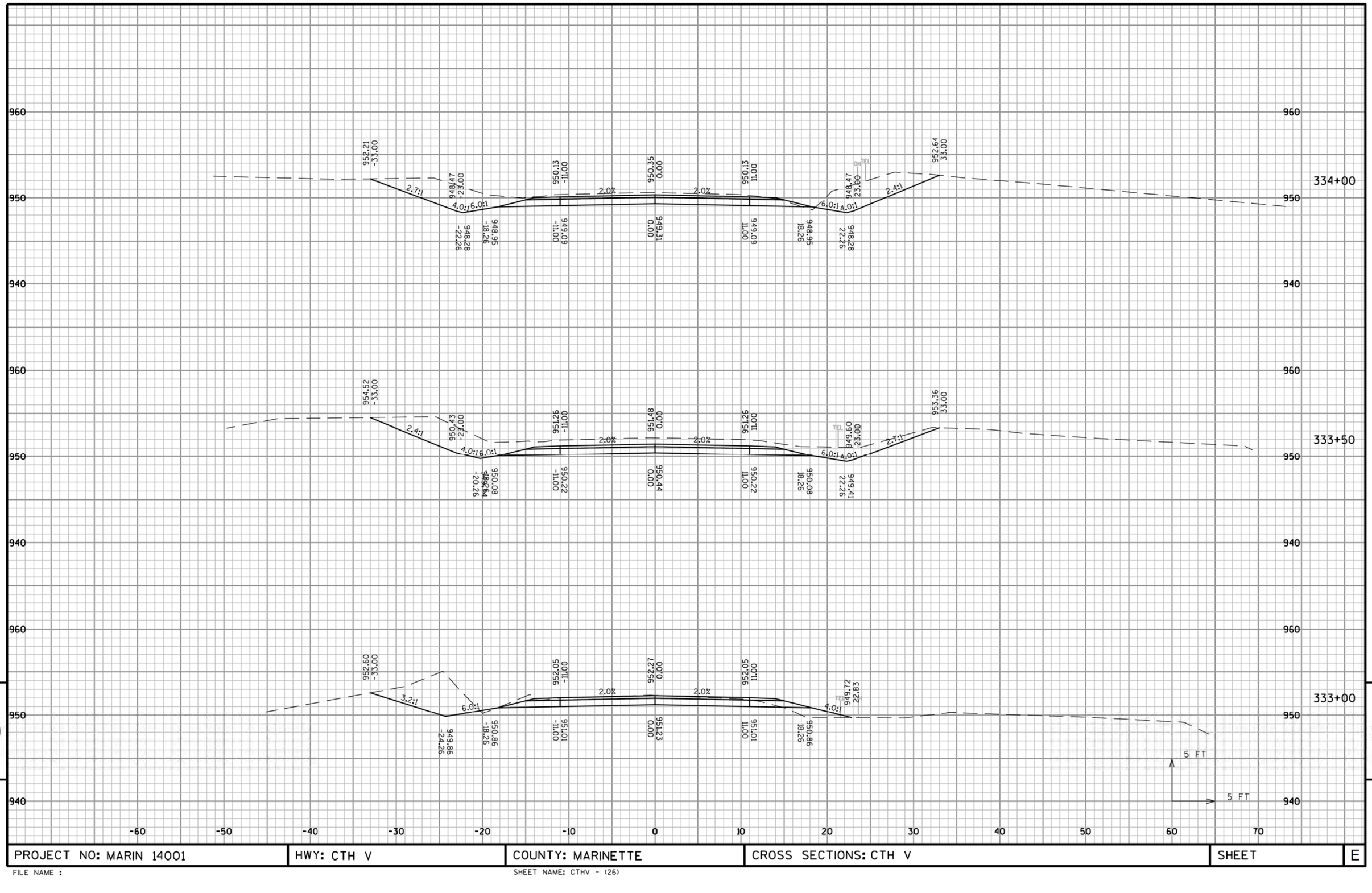
9

9

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

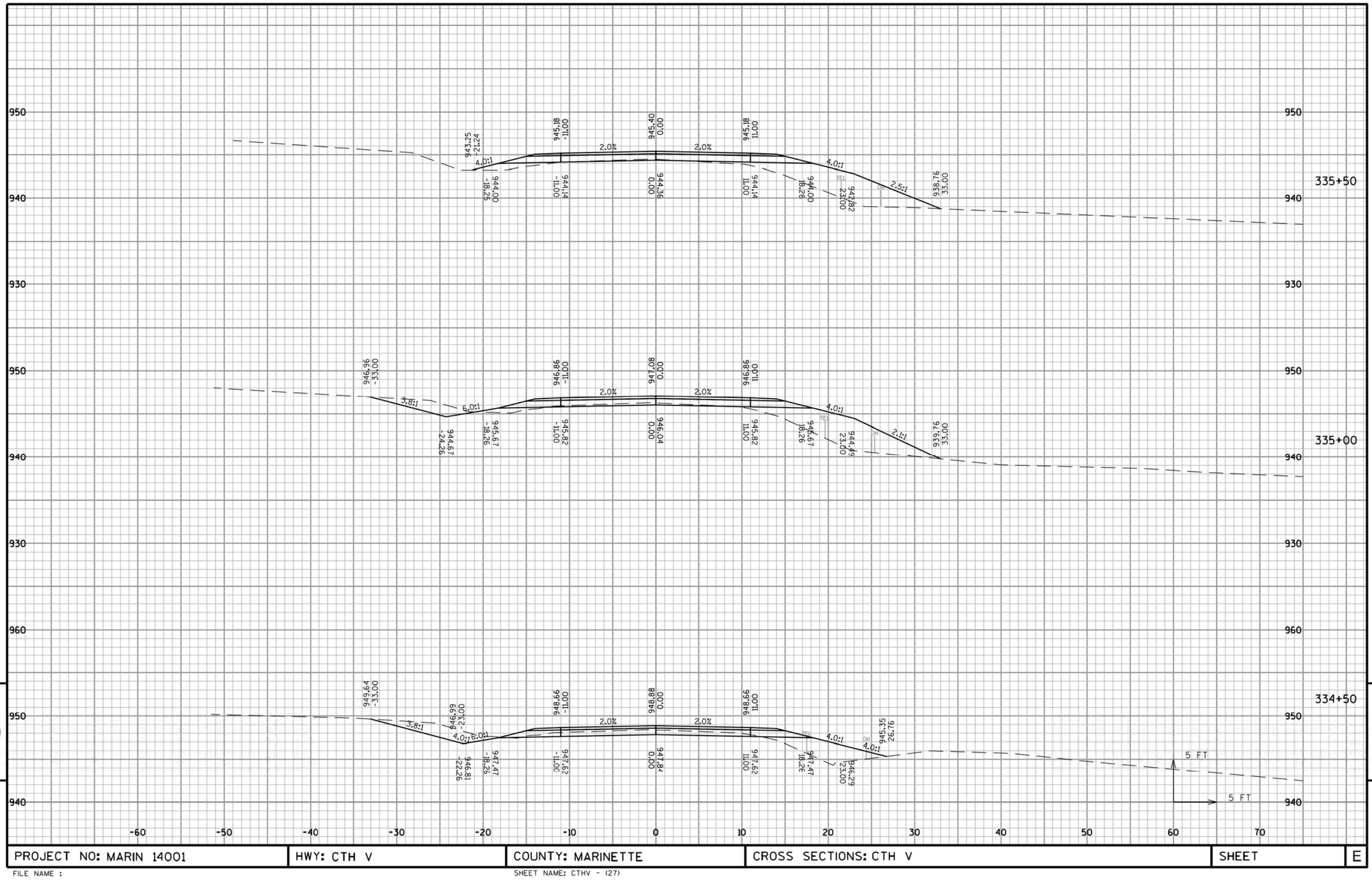
SHEET NAME: CTHV - (25)



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (26)



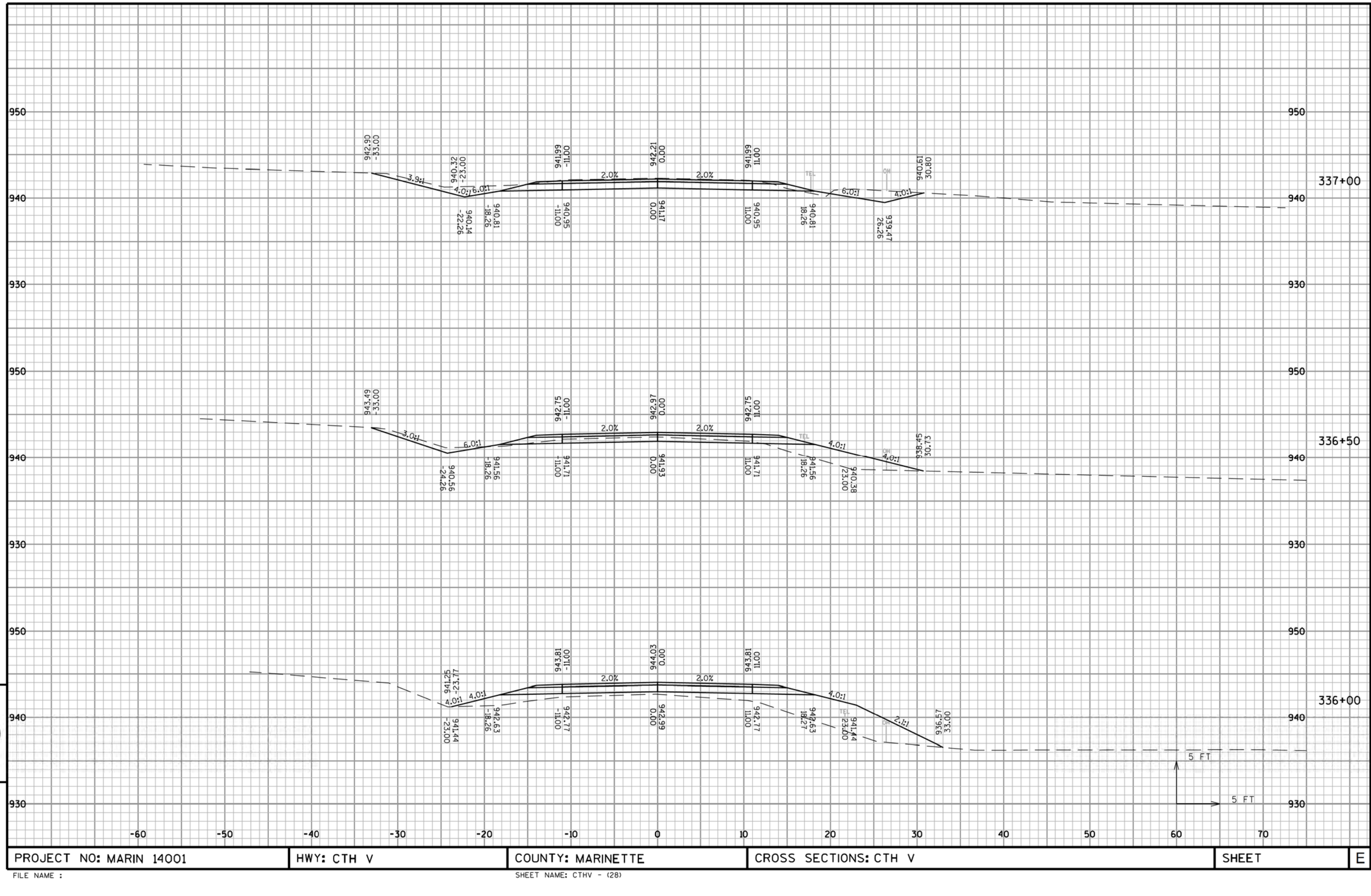
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (27)

9

9



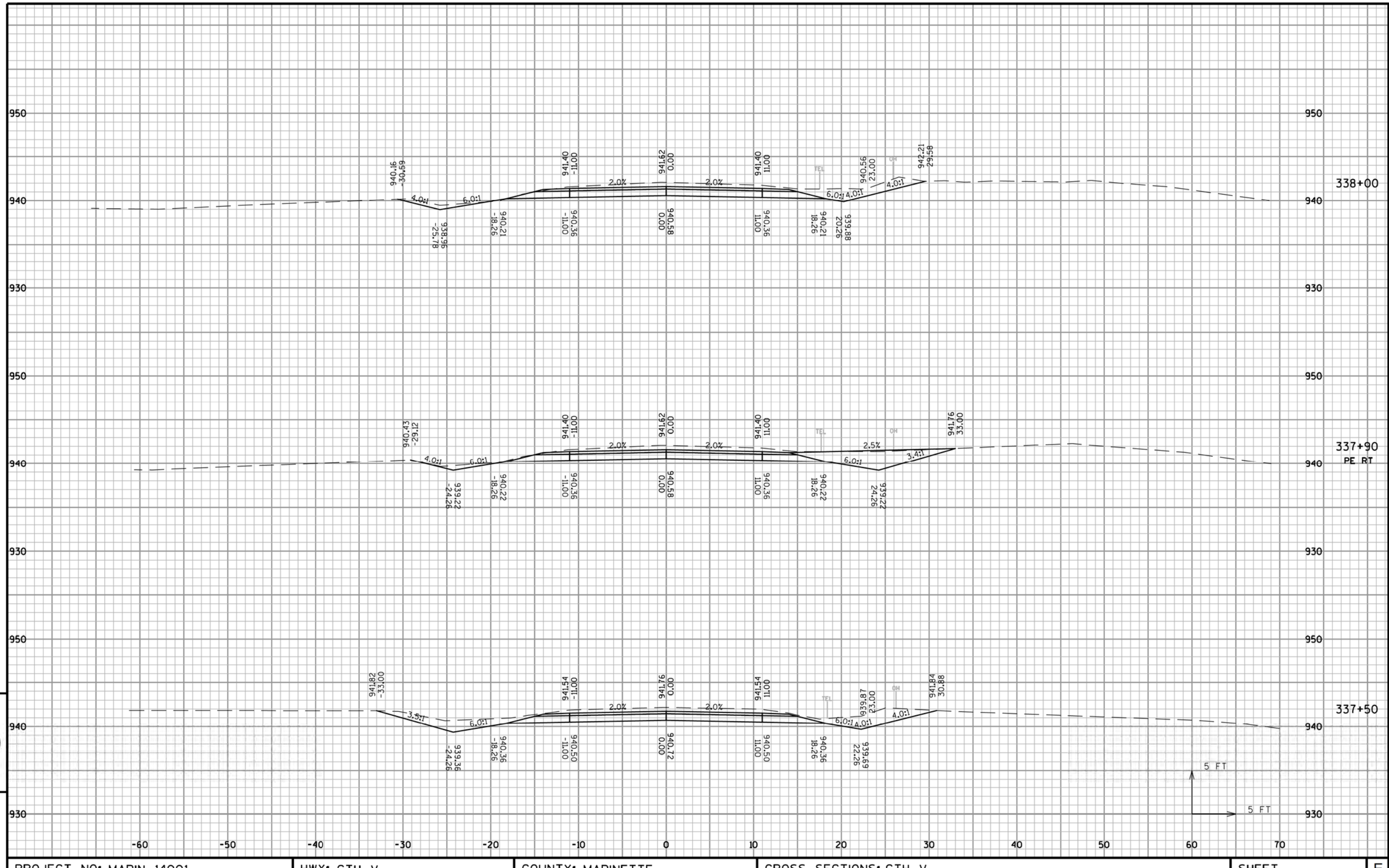
PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (28)

9

9



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (29)

9

9

END PROJECT
STATION 300+11.07

339+50

339+00

338+50

941.63
-11.00

941.85
0.00

941.63
11.00

937.43
-30.32

938.58
25.73

2.0%

2.0%

4.0:1

4.0:1

4.0:1

4.0:1

940.45
-18.26

940.60
-11.00

940.81
0.00

940.59
11.00

940.45
18.26

939.26
-23.00

939.26
23.00

941.96
-11.00

941.68
0.00

941.96
11.00

938.69
-24.62

939.55
21.15

940.27
-18.26

940.42
-11.00

940.64
0.00

940.42
11.00

940.27
18.26

939.09
-23.00

TEL

OH

950
940
930

-60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70

5 FT

5 FT

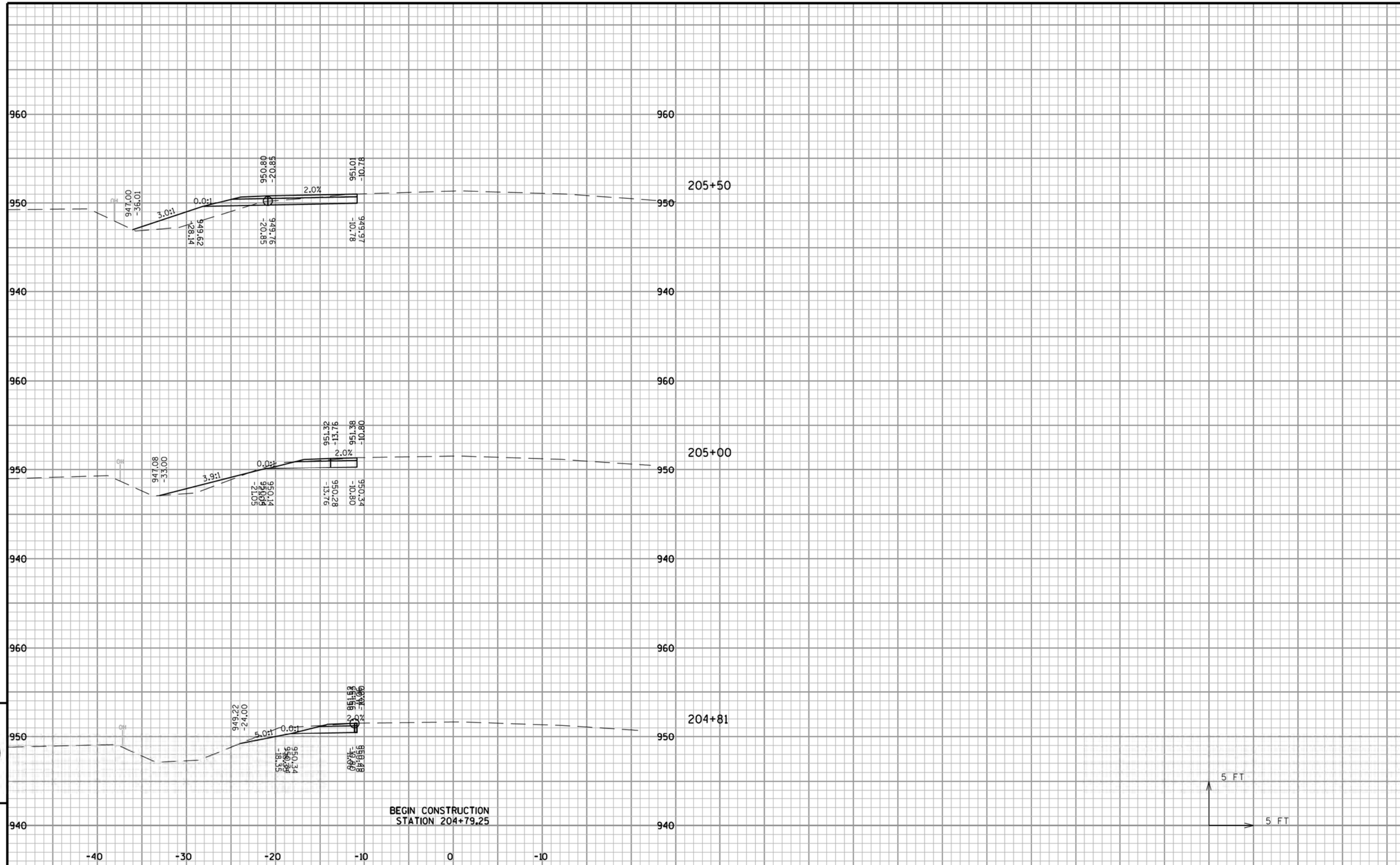
9

9

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH V	SHEET	E

FILE NAME :

SHEET NAME: CTHV - (30)



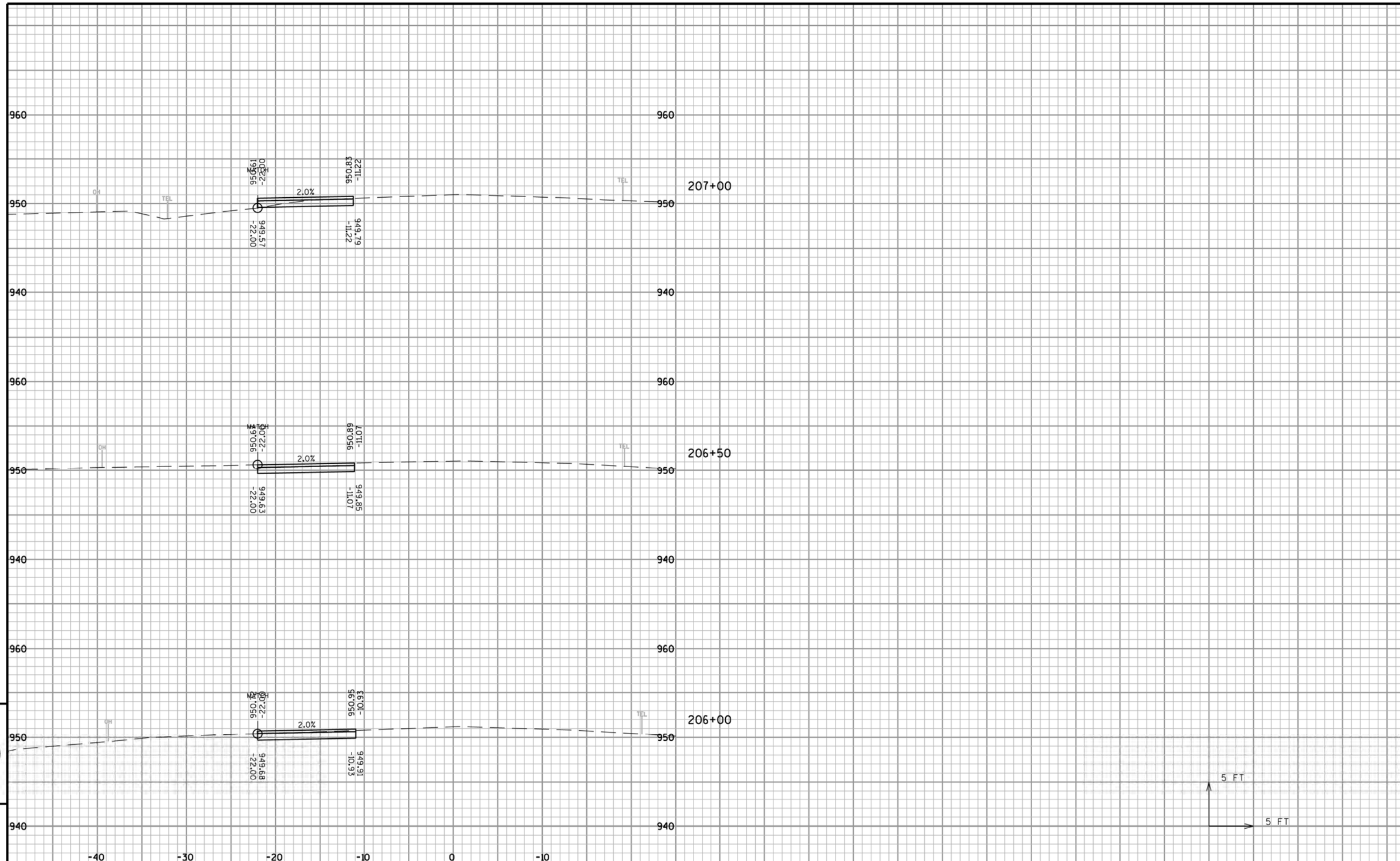
9

9

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH C	SHEET	E

FILE NAME :

SHEET NAME: CTHC2 - (1)



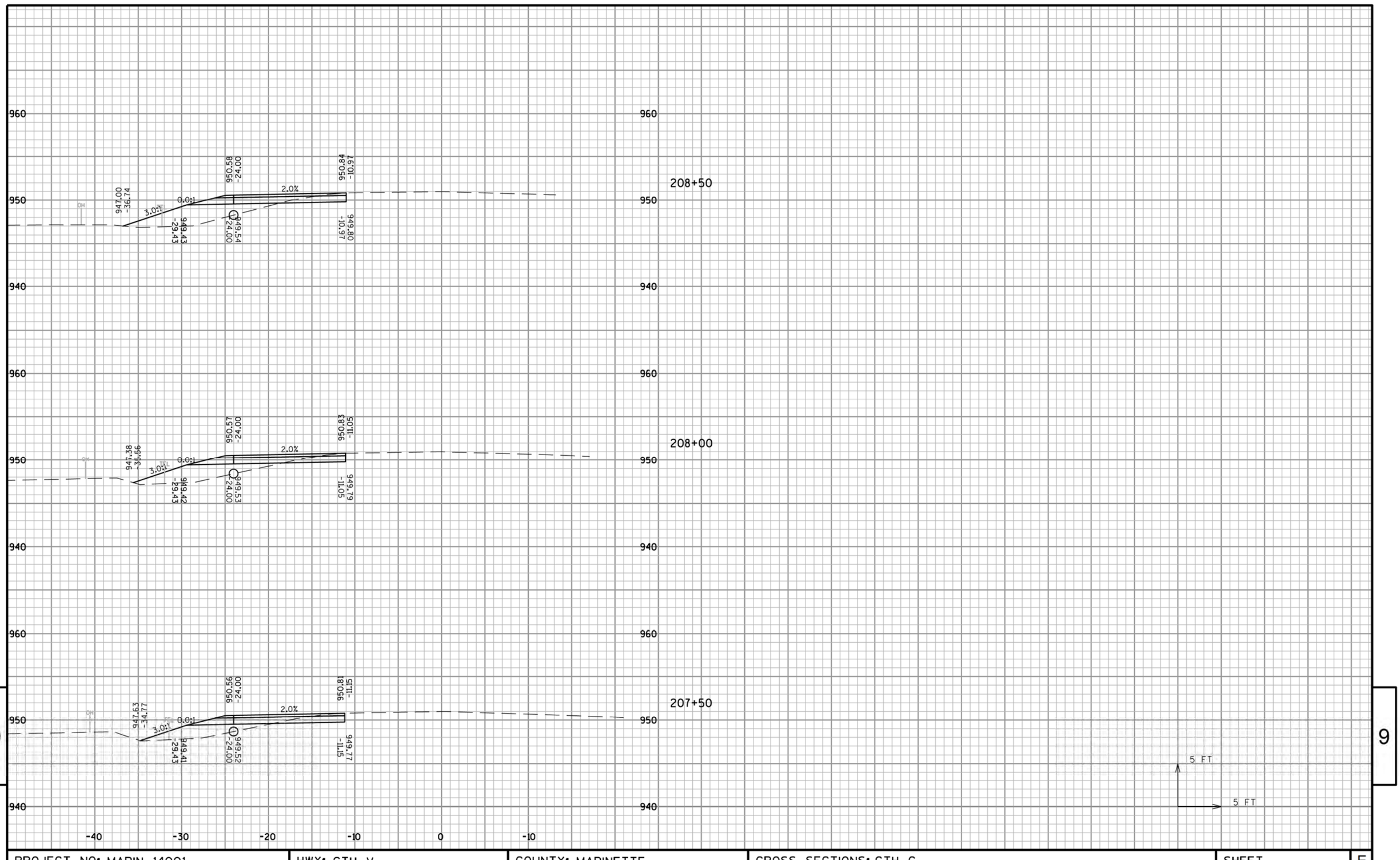
9

9

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH C	SHEET	E

FILE NAME :

SHEET NAME: CTHC2 - (2)



PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH C	SHEET	E

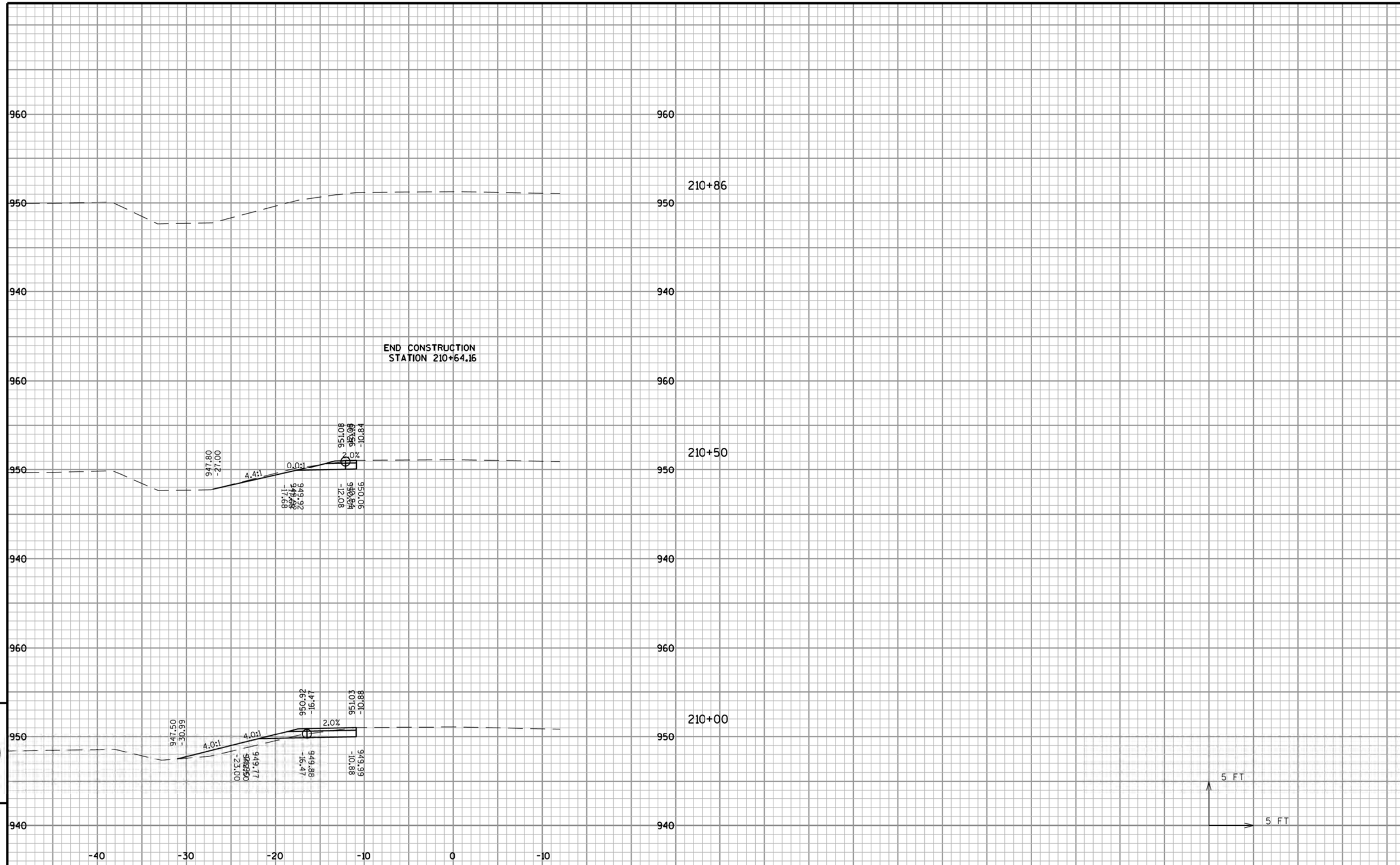
FILE NAME :

SHEET NAME: CTHC2 - (3)

9

9

960
950
940
960
950
940
960
950
940
960
950
940
209+50
209+00
208+57
947.18
-33.62
3.0:1
0.0:1
949.62
-26.29
950.77
-20.88
2.0%
949.73
-20.85
950.97
-10.91
949.63
-10.91
946.94
-35.92
950.58
-24.00
950.84
-10.96
949.44
-29.43
949.54
-24.00
949.80
-10.96
947.16
-36.43
950.64
-24.00
950.90
-10.94
949.49
-29.43
949.60
-24.00
949.86
-10.94
-40
-30
-20
-10
0
-10
5 FT
5 FT
9
9
PROJECT NO: MARIN 14001
HWY: CTH V
COUNTY: MARINETTE
CROSS SECTIONS: CTH C
SHEET
E
FILE NAME :
SHEET NAME: CTHC2 - (4)



9

9

PROJECT NO: MARIN 14001	HWY: CTH V	COUNTY: MARINETTE	CROSS SECTIONS: CTH C	SHEET	E

FILE NAME :

SHEET NAME: CTHC2 - (5)