

NCL

PROJECT ID:

6711-00-70

COUNTY:

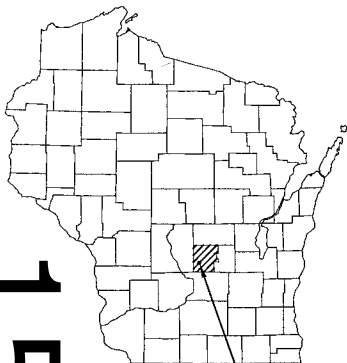
MARQUETTE

JULY 2017

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details (Includes Erosion Control Plans)
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile (Includes Right of Way Plat)
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS = 76



PROJECT LOCATION

DESIGN DESIGNATION

A.A.D.T.	2018	=	1400
A.A.D.T.	2038	=	1800
D.H.V.		=	234
D.D.		=	60/40
T.		=	6.4%
DESIGN SPEED		=	30 MPH
ESALS		=	314,192

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/HIGH
VOLTAGE

MARSH AREA

WOODED OR SHRUB AREA

PROFILE

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE
(To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

IH 39 - CTH K

(LAKE STREET TO FREEDOM ROAD)

CTH D

MARQUETTE COUNTY

STATE PROJECT NUMBER

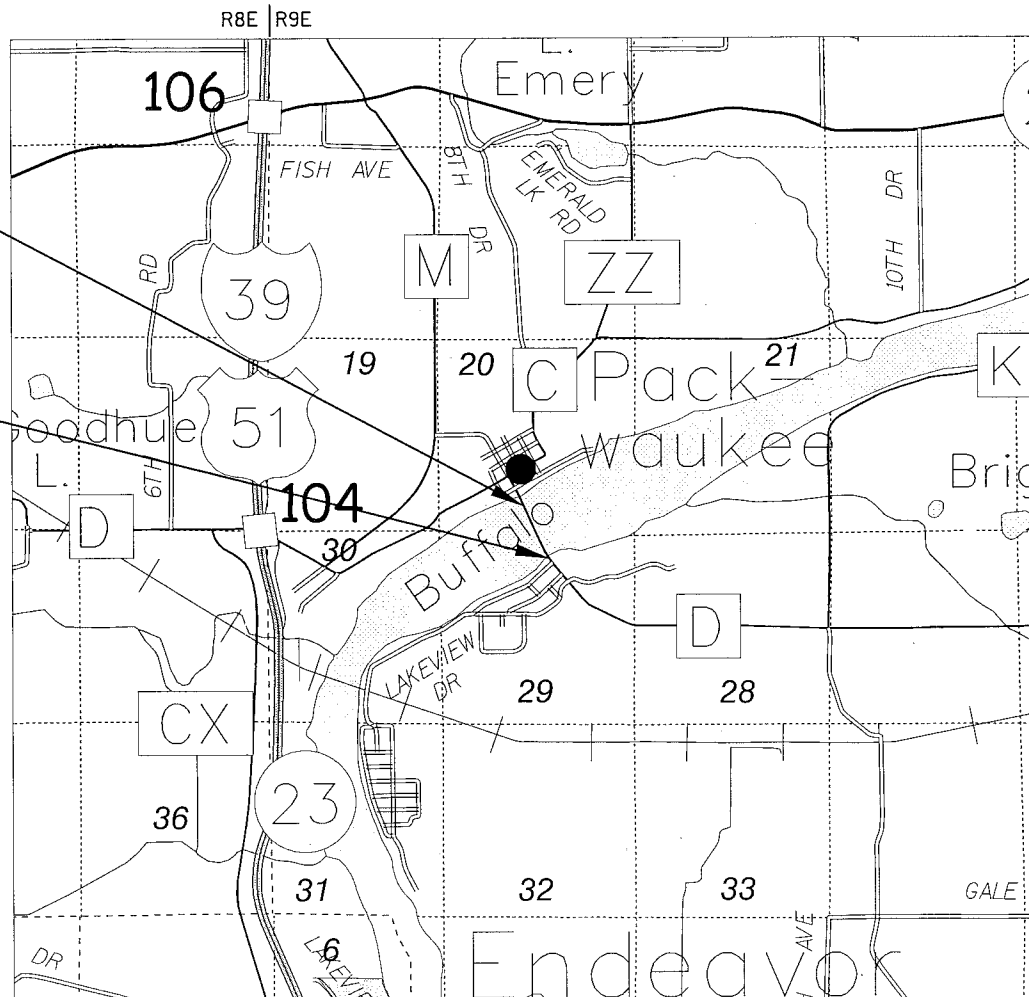
6711-00-70

BEGIN PROJECT 6711-00-70

STA 20+59.19
Y = 243,300.91
X = 438,111.04

END PROJECT 6711-00-70

STA 38+50.00
Y = 241,684.96
X = 438,879.79



TOTAL NET LENGTH OF CENTERLINE = 0.339

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, MARQUETTE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT

6711-00-70

FEDERAL PROJECT

PROJECT

WISC 2017349

CONTRACT

1

COUNTY OF MARQUETTE

DATE: 1-3-16

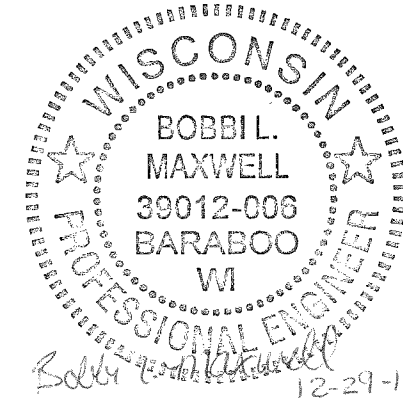
(SIGNATURE)

Highway Commissioner
TITLE OF OFFICIAL

MSA

PROFESSIONAL SERVICES

TRANSPORTATION • MUNICIPAL
DEVELOPMENT • HIGHWAY
1230 South Boulevard Baraboo, WI 53913
608-356-2771 1-800-362-4505 Fax: 608-356-2770



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor

MSA PROFESSIONAL SERVICES, INC.

Designer

MSA PROFESSIONAL SERVICES, INC.

Management
Consultant

CEDAR CORPORATION

APPROVED FOR THE DEPARTMENT

DATE: 1-31-2017

(Signature)

GENERAL NOTES

MISCELLANEOUS

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

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE U.S.G.S DATUM NAVD 88 (2007)

WHEN THE QUANTITY OF ITEMS OF BASE AGGREGATE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

REMOVALS

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

GRADING AND EROSION CONTROL

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, ARE TO BE FERTILIZED, PERMANENT SEEDED OR TEMPORARILY SEEDED AND EMAT PLACED AS DIRECTED BY THE ENGINEER.

EXCAVATION BELOW SUBGRADE (EBS) WHICH IS NOT INDICATED ON THE CROSS SECTIONS AND WHICH IS REQUIRED BY THE ENGINEER SHALL BE MEASURED AND PAID FOR AS COMMON EXCAVATION. EBS IS NOT USED TO BALANCE YARDAGE.

THE EROSION CONTROL ITEMS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. THE ENGINEER SHALL DETERMINE THE EXACT LOCATION OF EROSION CONTROL ITEMS. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. THE CONTRACTOR SHALL REMOVE ITEMS AT ENGINEER'S DIRECTION.

NO EQUIPMENT OR MATERIALS SHALL BE STORED ADJACENT TO, NOR IMPACT ANY WETLANDS OR WATERWAYS.

FILL EXPANSION IS ESTIMATED AT 1.25.

PAVING

CURVE DATA BASED ON ARC DEFINITION.

HMA WEIGHT CALCULATIONS BASED ON 110 LBS/SY/IN.

THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, BIKE, OR PARKING LANE.

ORDER OF TYPICAL SECTION
& DETAIL SHEETS

- 1. GENERAL NOTES
- 2. EXISTING TYPICAL SECTIONS
- 3. FINISHED TYPICAL SECTIONS
- 4. CONSTRUCTION DETAILS
- 5. EROSION CONTROL
- 6. TRAFFIC CONTROL, DETOUR
- 7. ALIGNMENT DIAGRAM
- 8. SUPERELEVATION DIAGRAM

UTILITIES

GAS:
WE ENERGIES
ATTN: TRAVIS KAHL
1921 8TH STREET SOUTH
WISCONSIN RAPIDS, WI 54494
715-421-7256
TRAVIS.KAHL@WE-ENERGIES.COM

FIBER OPTIC:
MARQUETTE-ADAMS TELEPHONE COOPERATIVE
ATTN: JASON SENGBUSCH
113 NORTH OXFORD STREET
OXFORD, WI 53952
608-586-7070
JSENGBUSCH@MAADTELCO.COM

* NOT A DIGGERS HOTLINE MEMBER



Dial  or (800) 242-8511

www.DiggersHotline.com

DNR LIAISON

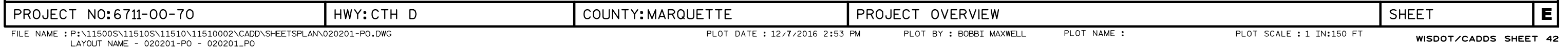
WISCONSIN DEPARTMENT OF
NATURAL RESOURCES
ATTN: BOBBI JO FISCHER
WAUTOMA SERVICE CENTER
427 EAST TOWER DRIVE, SUITE 100
WAUTOMA, WI 54982
920-787-3015
BOBBI.FISCHER@WISCONSIN.GOV

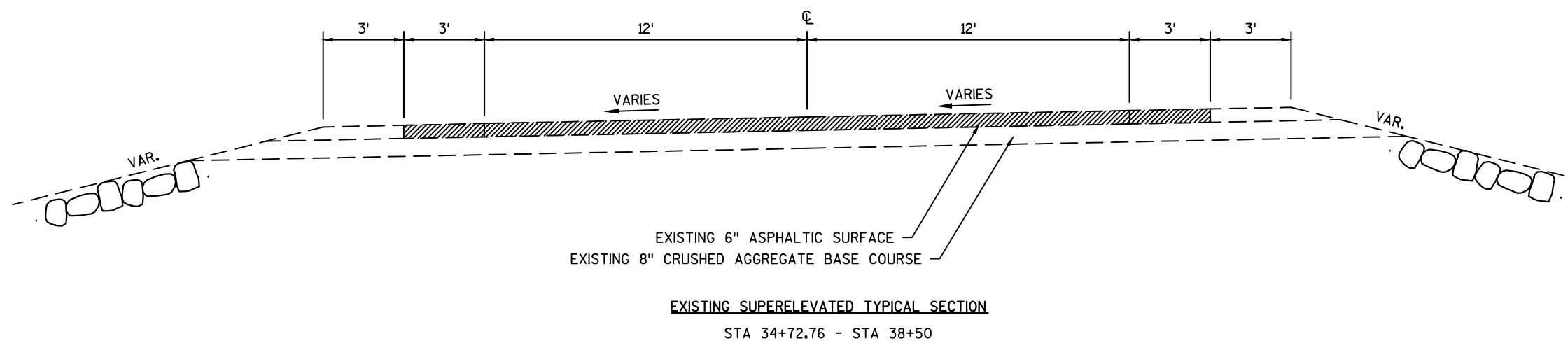
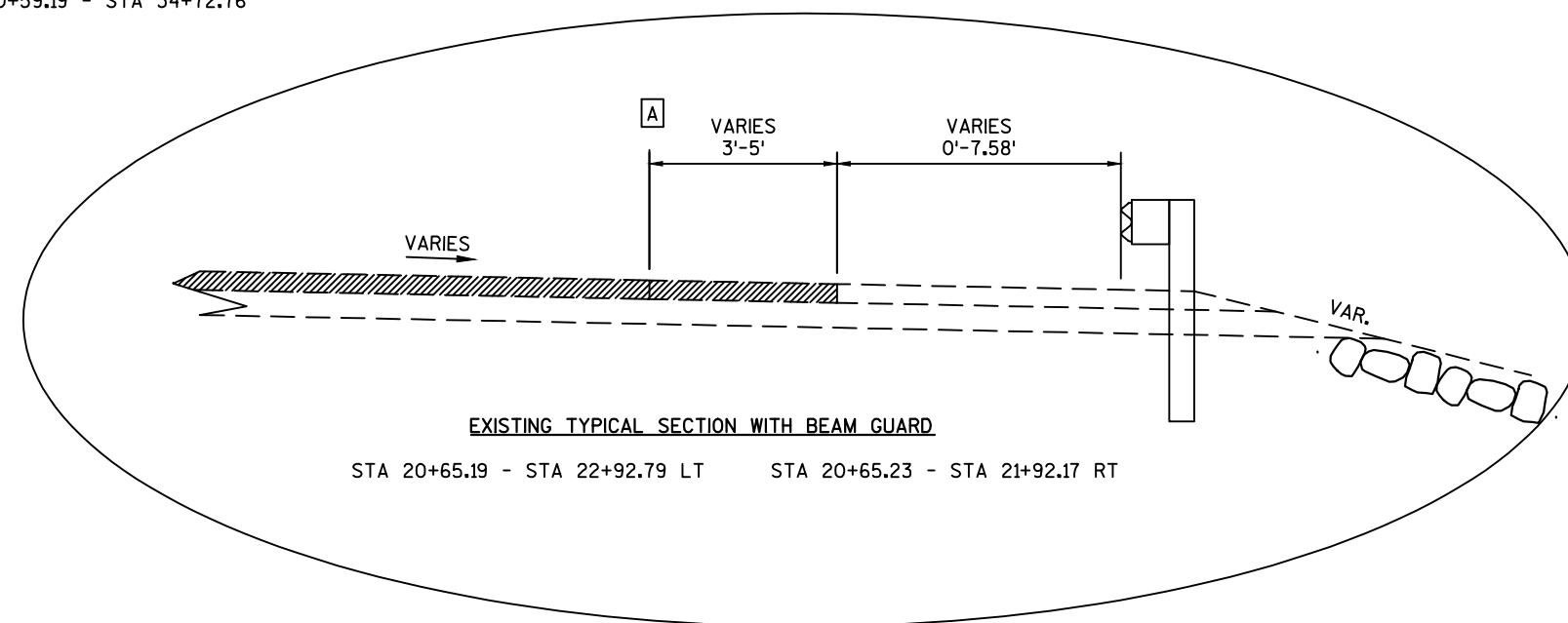
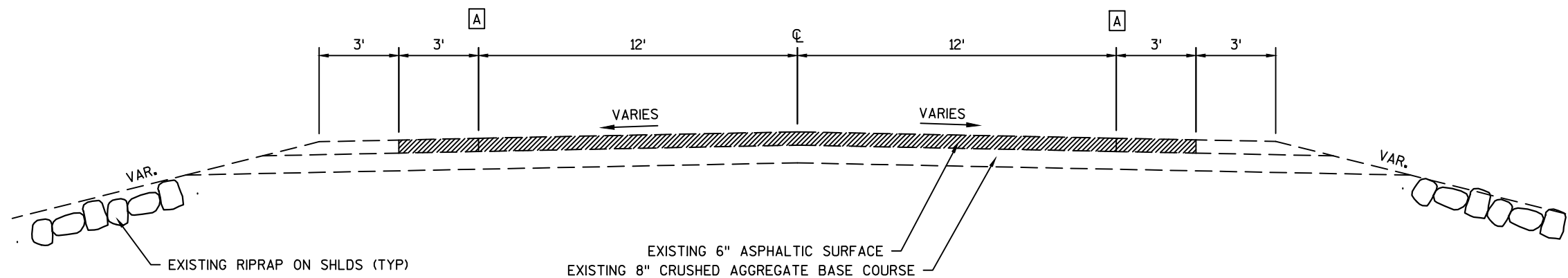
MSA DESIGN CONTACT

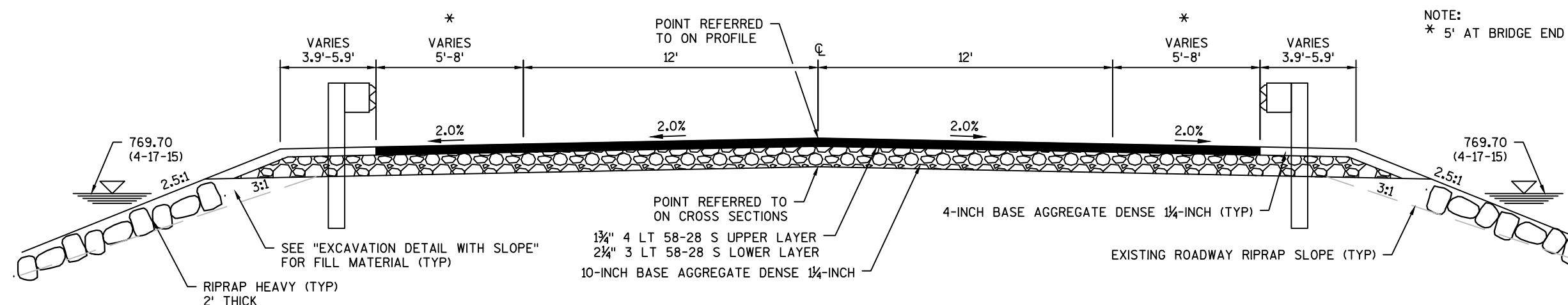
MSA PROFESSIONAL SERVICES, INC.
ATTN: QUIRIN KLINK, PE
1230 SOUTH BOULEVARD
BARABOO, WI 53919
608-355-8890
QKLINK@MSA-PS.COM

MARQUETTE COUNTY
HIGHWAY CONTACT

MARQUETTE COUNTY HIGHWAY
DEPARTMENT
ATTN: RANDY RAVENSCROFT,
HIGHWAY COMMISSIONER
328 UNDERWOOD AVE
MONTELLO, WI 53949
608-297-3071
RRAVENSCROFT@CO.MARQUETTE.WI.US





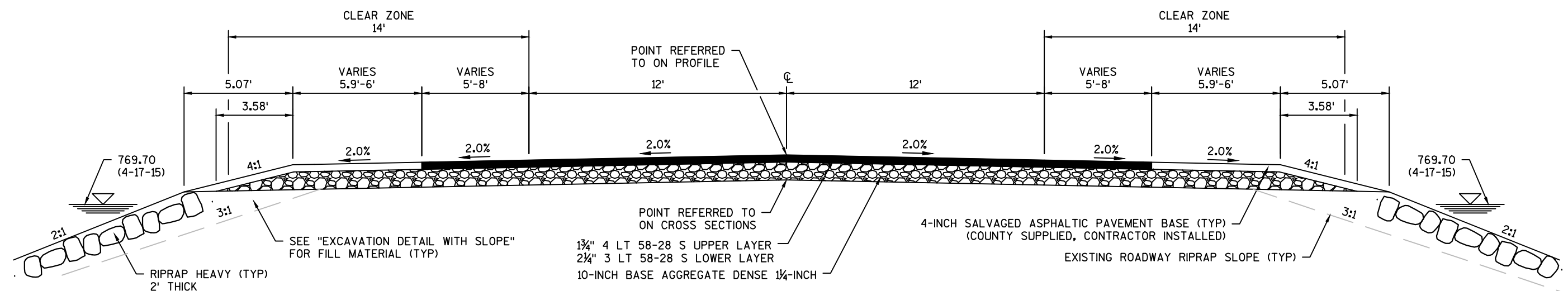


STA	OFFSET	POST
20+65.06	-17' LT	---
21+29.46	-17' LT	---
21+54.46	-18' LT	---
22+45.08	-18' LT	9
22+70.08	-19' LT	5
22+95.08	-20' LT	1

FINISHED TYPICAL SECTION WITH BEAMGUARD

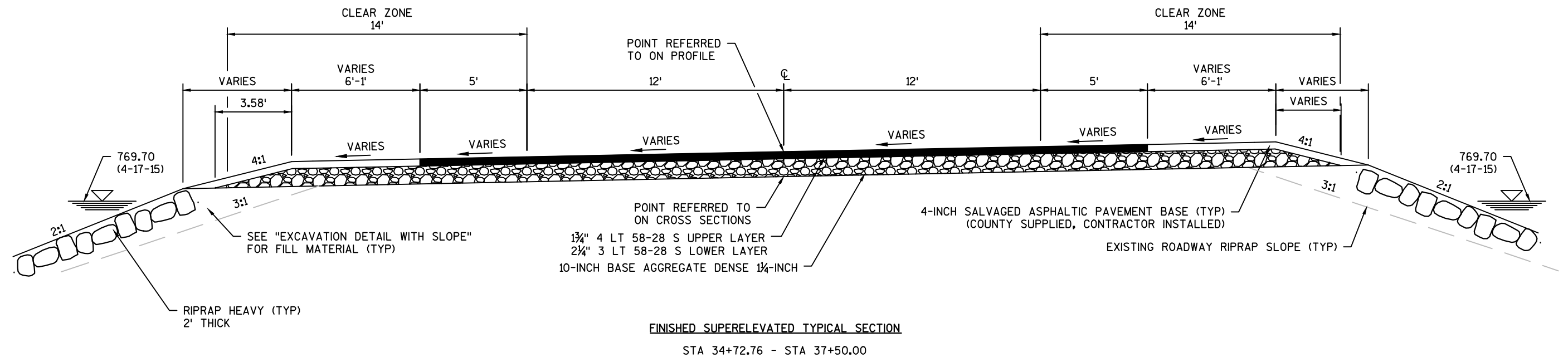
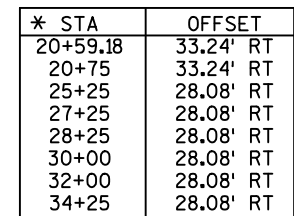
STA 20+59.19 - STA 22+07.64 RT
STA 20+59.19 - STA 22+95.08 LT

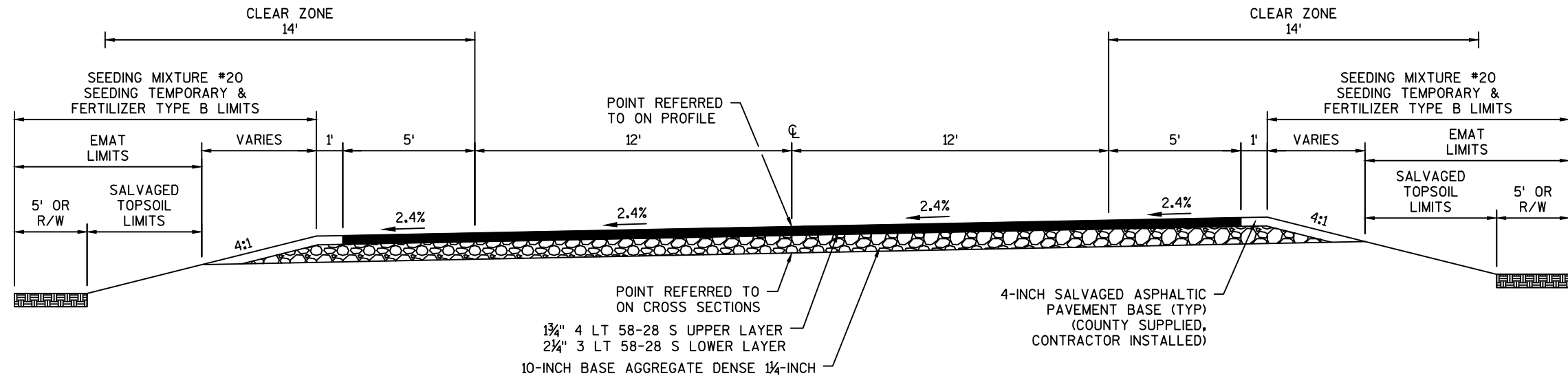
STA	OFFSET	POST
20+65.12	17' RT	---
21+29.51	17' RT	---
21+54.51	18' RT	---
21+57.64	18' RT	9
21+82.64	19' RT	5
22+07.64	20' RT	1



FINISHED TYPICAL SECTION

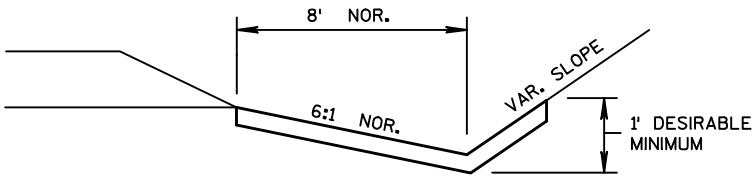
STA 22+07.64 - STA 25+25.00 RT
STA 22+95.08 - STA 25+25.00 LT
STA 27+25.00 - STA 28+25.00
STA 30+00.00 - STA 32+00.00
STA 34+25.00 - STA 34+72.76





FINISHED SUPERELEVATED TYPICAL SECTION

STA 37+50 - STA 38+50

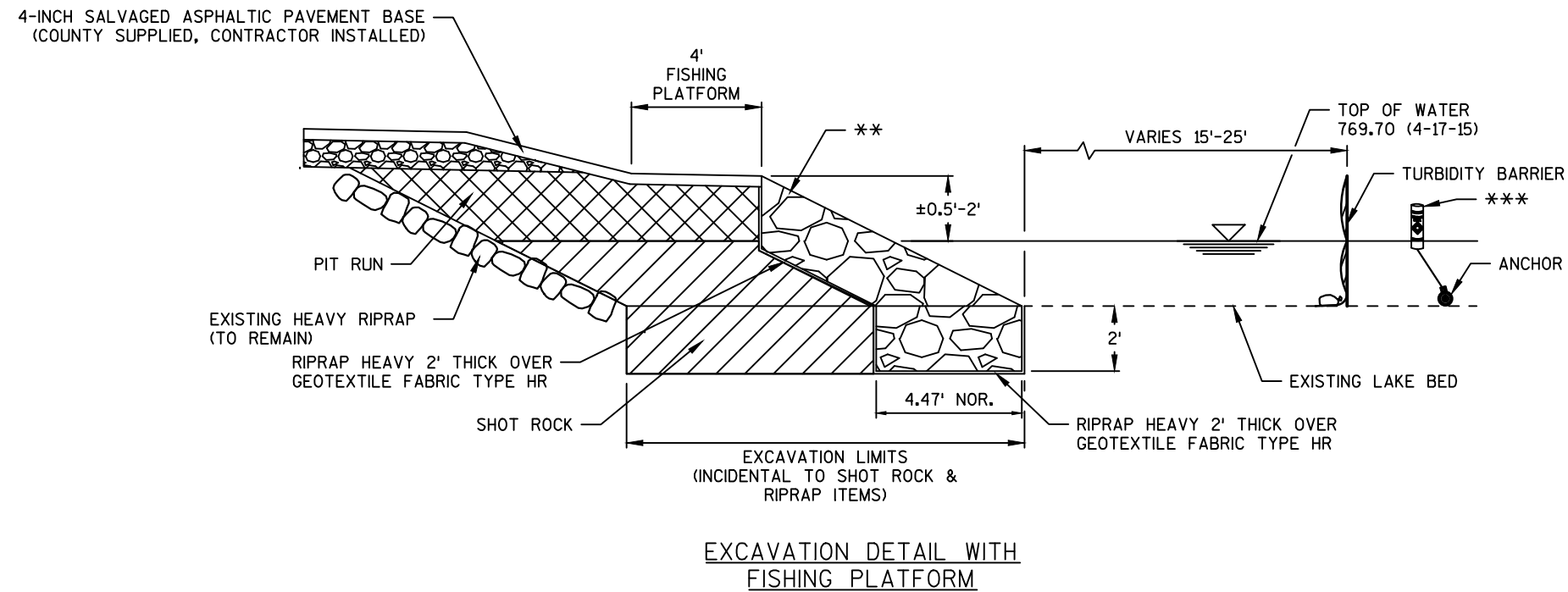


EROSION MAT DETAIL FOR DITCHES

RUNOFF COEFFICIENT TABLE

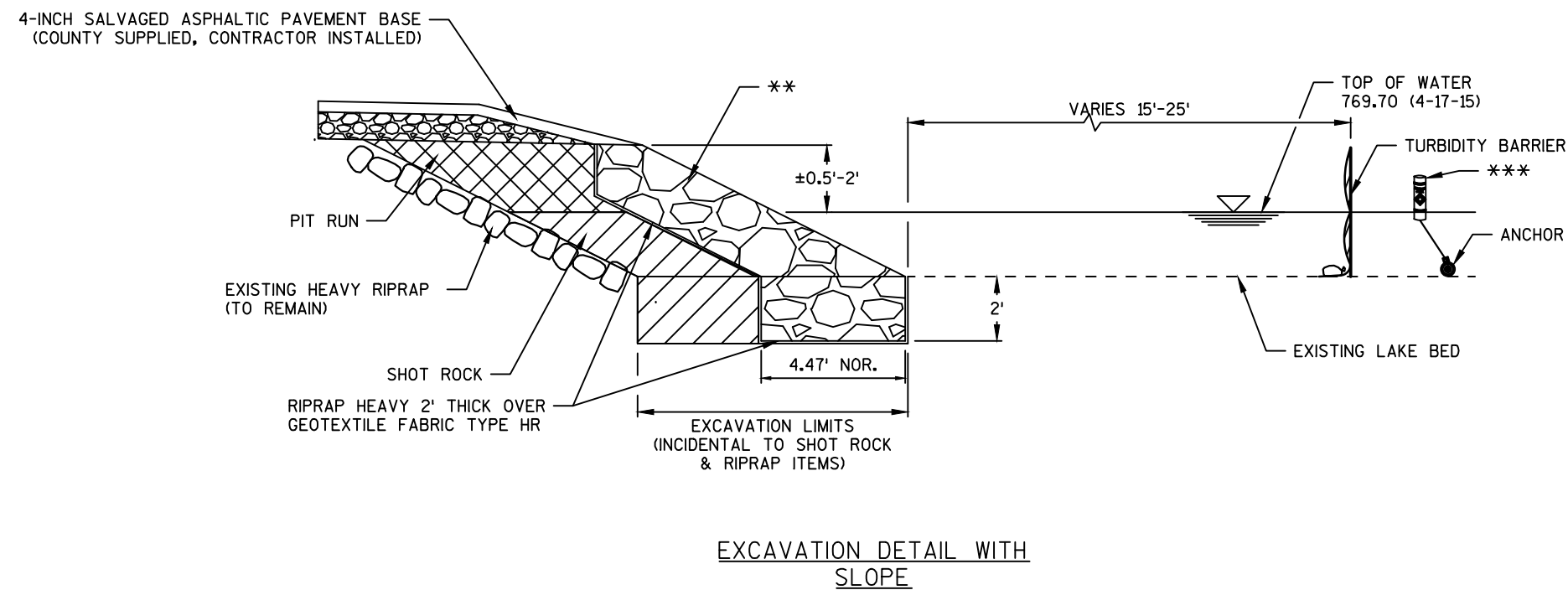
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34	.44	.30	.37	.50	.34	.41	.56
MEDIAN STRIP-TURF	.19	.20	.24	.19	.22	.26	.20	.23	.30	.20	.25	.30
	.24	.26	.30	.25	.28	.33	.26	.30	.37	.27	.32	.40
SIDE SLOPE-TURF			.25			.27			.28			.30
			.32			.34			.36			.38
PAVEMENT:												
ASPHALT						.70 - .95						
CONCRETE						.80 - .95						
BRICK						.70 - .80						
DRIVES, WALKS						.75 - .85						
ROOFS						.75 - .95						
GRAVEL ROADS, SHOULDERS						.40 - .60						

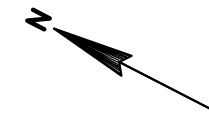
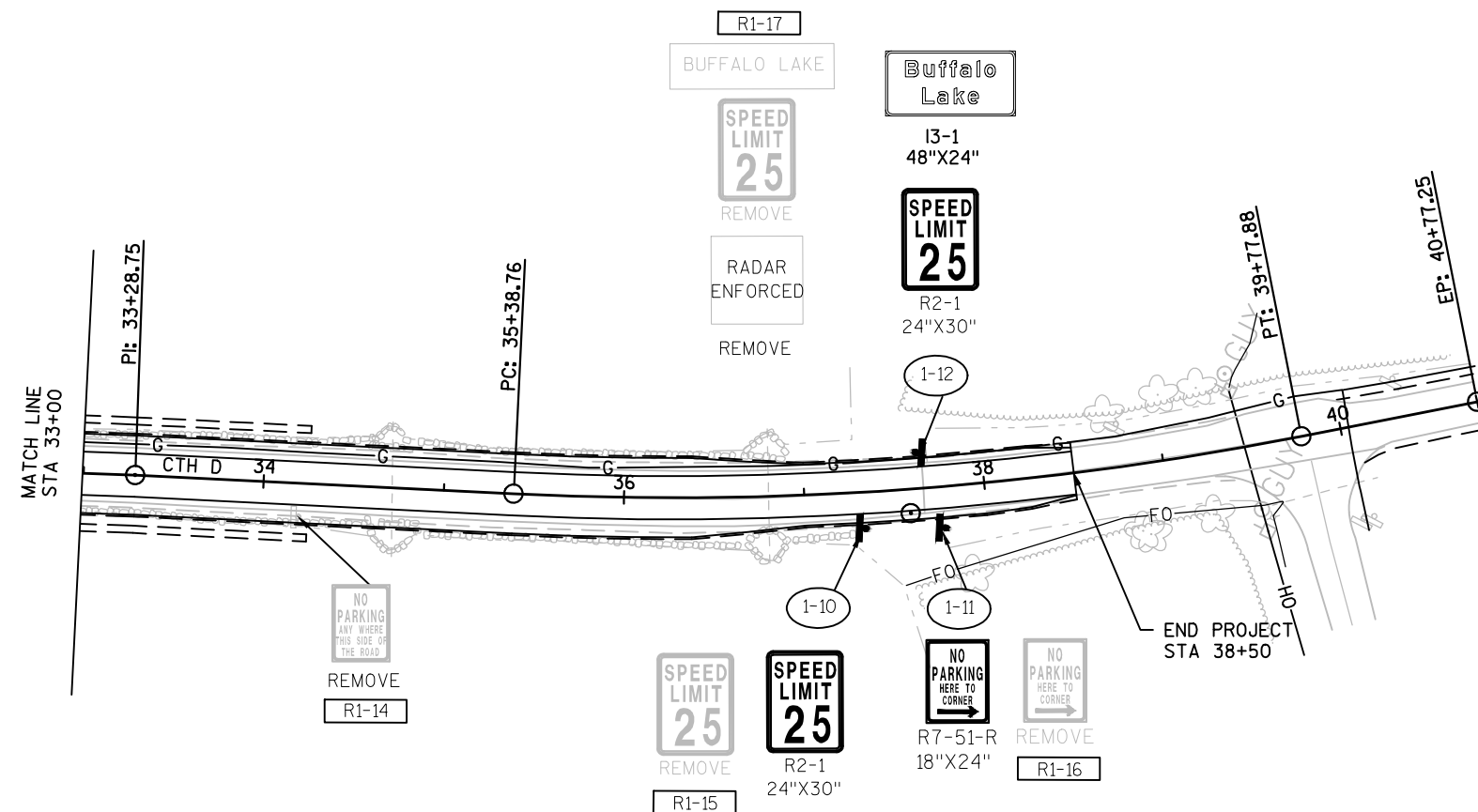
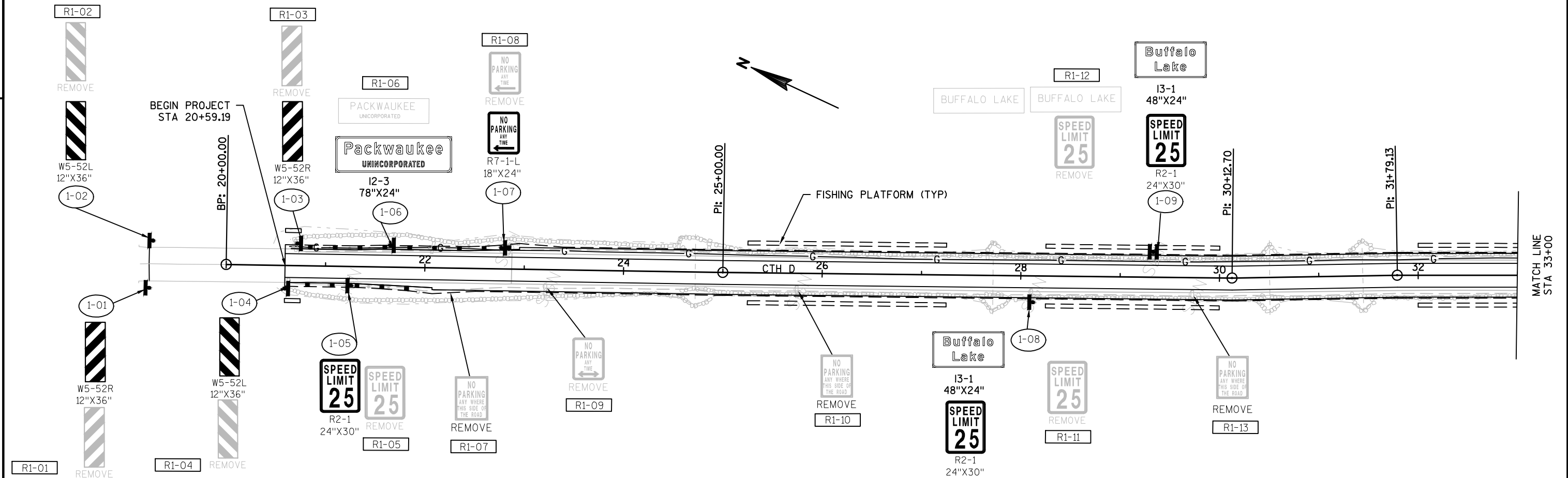
TOTAL PROJECT AREA = 3.05 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 3.05 ACRES



** FILL VOIDS IN RIPRAP HEAVY WITH STONE MATERIAL FOR TRAVEL CORRIDOR INTERSTITIAL SPACE, THEN COVER WITH BASE AGGREGATE DENSE 1¼-INCH. FILL & COVER ENTIRE SURFACE TO APROX. 6" BELOW WATER EDGE.

*** PLACE DANGER BUOYS ACCORDING TO SDD "TURBIDITY BARRIER" AT 100 FOOT SPACING OR AT THE FINAL SPACING NOTED IN THE APPROVED NAVIGATIONAL BUOY PERMIT, OUTSIDE OF THE TURBIDITY BARRIER ALONG EACH SIDE OF THE CAUSEWAY WORK AREA. ALL COSTS FOR CONSTRUCTING, INSTALLING, AND MAINTAINING THE BUOYS ARE INCIDENTAL TO THE "TRAFFIC CONTROL" BID ITEM. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE PERMIT PER 107.19.



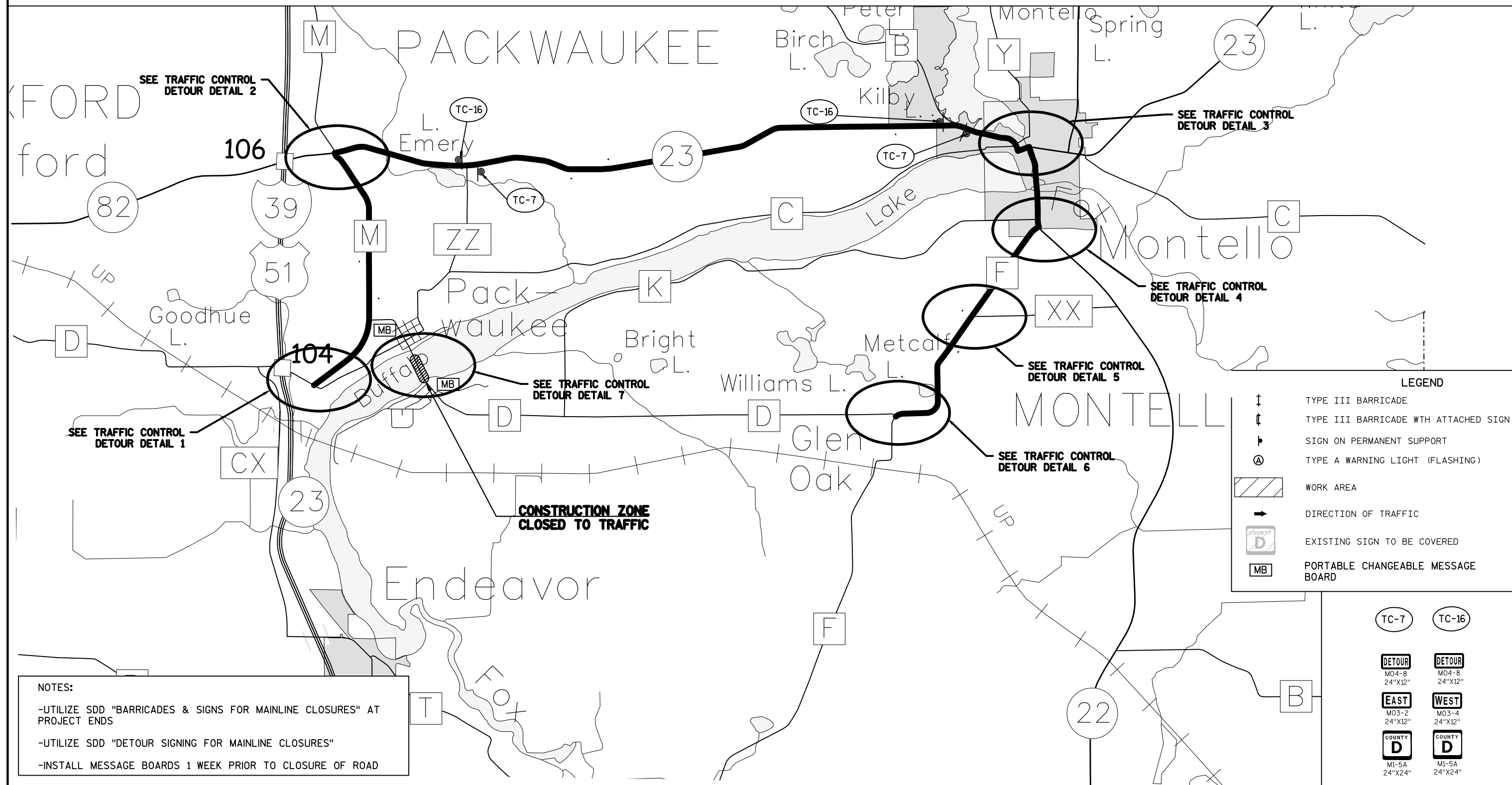


LEGEND	
	EXISTING SIGN MOUNTED ON POST
	SIGN MOUNTED ON POST
	SIGN TWO SIDES ON SINGLE POST
	DENOTES SIGN NUMBER
	INDICATES SIGN SIZE

DETOUR ROUTE



DETOUR ROUTE
CTH M - STH 23 - STH 22 - CTH F = 14 MILES



PROJECT NO: 6711-00-70

HWY: CTH D

COUNTY: MARQUETTE

TRAFFIC CONTROL DETOUR ROUTE

SHEET

E

FILE NAME : P:\11500S\11510S\11510\11510002\CADD\SHEETS\PLAN\027001.DT.DWG
LAYOUT NAME - 027001.DT

PLOT DATE : 12/7/2016 3:12 PM

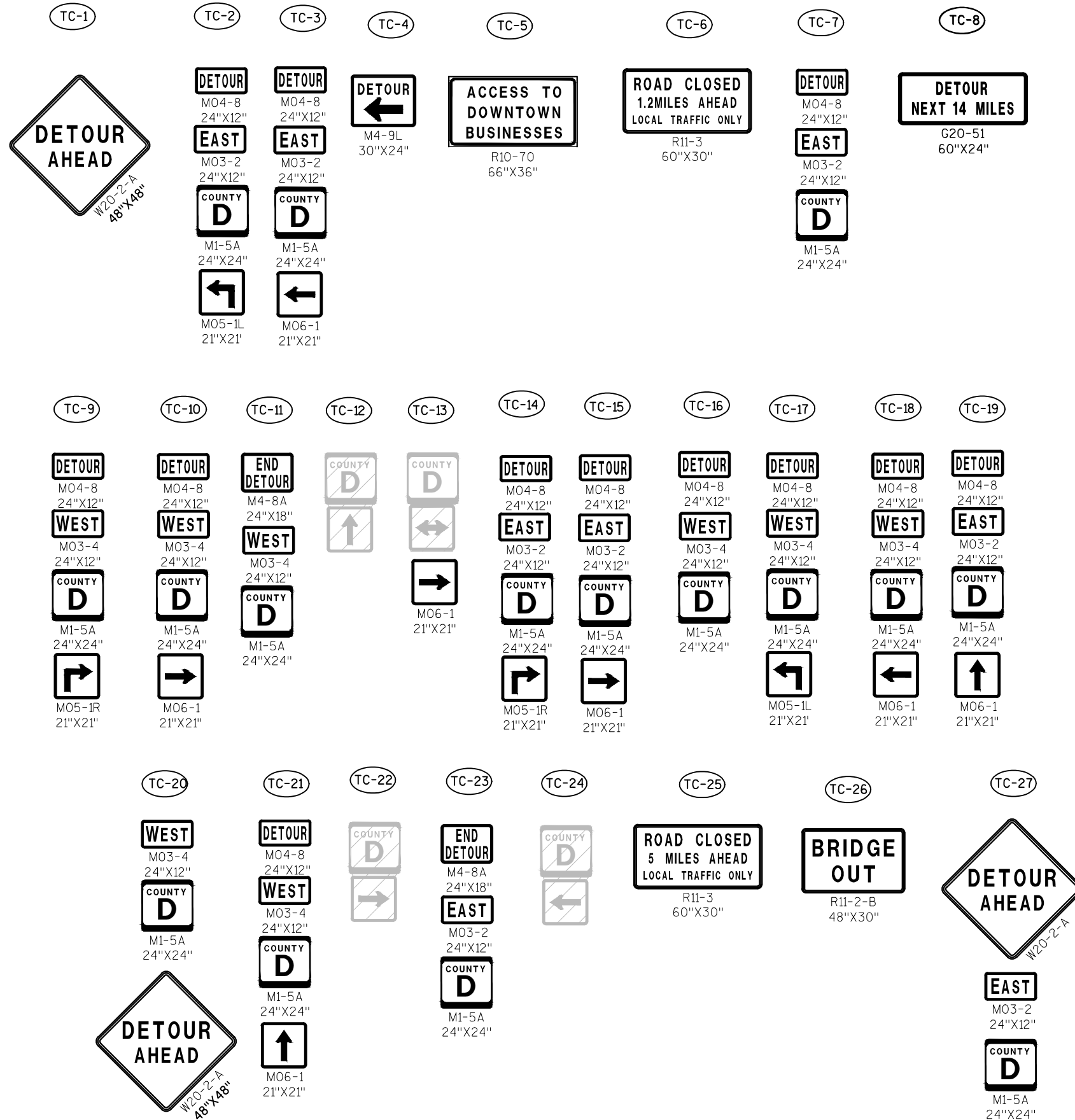
PLOT BY : BOBBI MAXWELL

PLOT NAME :

PLOT SCALE : 1 IN:1 MI

WISDOT/CADD SHEET 42

TRAFFIC CONTROL DETOUR SIGNS



TRAFFIC CONTROL SIGNING GENERAL NOTES

1. DRAWINGS SHOW TRAFFIC CONTROL DETOUR FOR A TYPICAL SITUATION. ADDITIONAL TRAFFIC CONTROL DEVICES MAY BE REQUIRED AND/OR LAYOUT DETAILS MODIFIED DEPENDING ON SITE CONDITIONS AS DIRECTED BY THE ENGINEER. ALL CHANGES TO THE TRAFFIC CONTROL DETOUR PLAN SHALL BE REVIEWED WITH THE PROJECT ENGINEER.
2. SIGN FACE LAYOUTS SHALL BE IN ACCORDANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION MANUAL OF STANDARD HIGHWAY SIGNS, UNLESS OTHERWISE NOTED.
3. TRAFFIC CONTROL PLANS ARE NOT TO SCALE.
4. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THAT THE BACKGROUND IS ORANGE.
5. COVER, REMOVE, OR ALTER ANY EXISTING SIGNS THAT DISPLAY A CONFLICTING MESSAGE WITH THE PROPOSED DETOUR ROUTE.

LEGEND

- ↓ TYPE III BARRICADE
- ↓ TYPE III BARRICADE WITH ATTACHED SIGN
- ↓ SIGN ON PERMANENT SUPPORT
- Ⓐ TYPE A WARNING LIGHT (FLASHING)
- ▨ WORK AREA
- DIRECTION OF TRAFFIC
- ↑ EXISTING SIGN TO BE COVERED

NOTE: SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES"

TRAFFIC CONTROL DETOUR DETAIL 1

LEGEND

TYPE III BARRICADE

TYPE III BARRICADE WTH ATTACHED SIGN

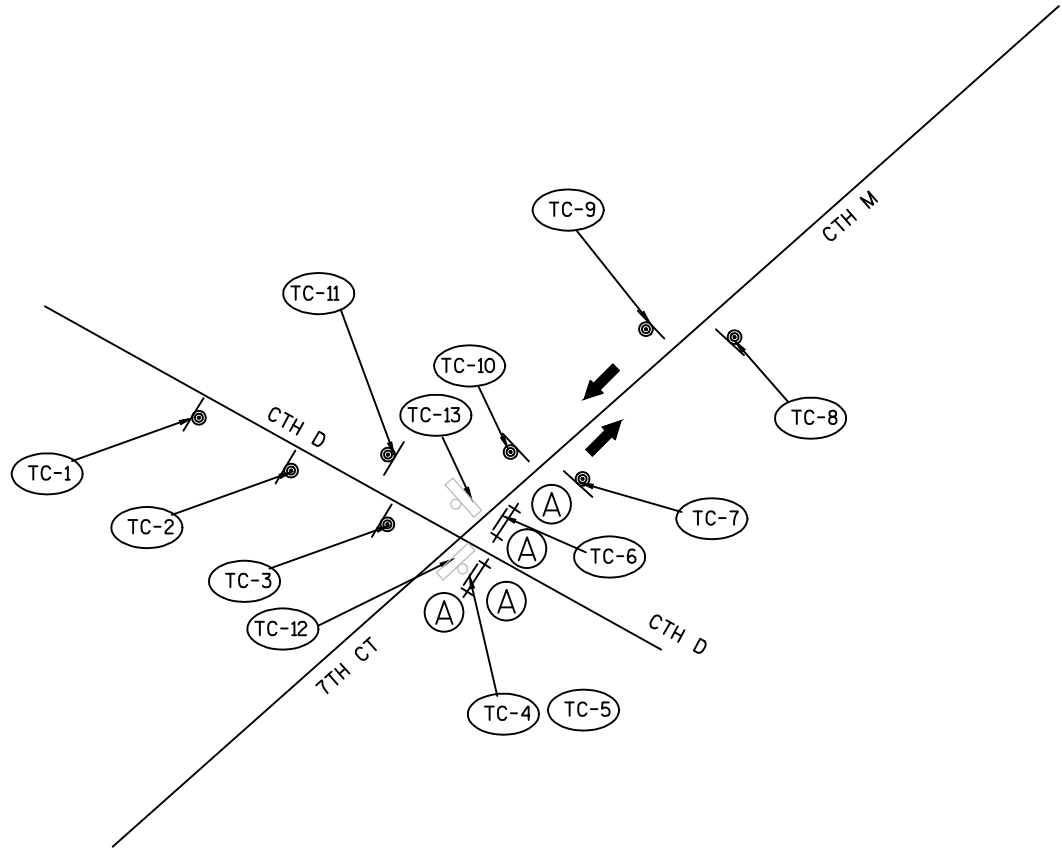
SIGN ON PERMANENT SUPPORT

TYPE A WARNING LIGHT (FLASHING)

WORK AREA

DIRECTION OF TRAFFIC

EXISTING SIGN TO BE COVERED



TC-1

W20-2-A
48"X48"

TC-2

DETOUR
M04-8
24"X12"

EAST
M03-2
24"X12"

COUNTY
D
M1-5A
24"X24"

M05-1L
21"X21"

TC-3

DETOUR
M04-8
24"X12"

EAST
M03-2
24"X12"

COUNTY
D
M1-5A
24"X24"

M06-1
21"X21"

TC-4

DETOUR
M4-9L
30"X24"

TC-5

ACCESS TO
DOWNTOWN
BUSINESSES
R10-70
66"X36"

TC-6

ROAD CLOSED
1.2MILES AHEAD
LOCAL TRAFFIC ONLY
R11-3
60"X30"

TC-7

DETOUR
M04-8
24"X12"

EAST
M03-2
24"X12"

COUNTY
D
M1-5A
24"X24"

TC-8

DETOUR
NEXT 14 MILES
G20-51
60"X24"

TC-9

DETOUR
M04-8
24"X12"

WEST
M03-4
24"X12"

COUNTY
D
M1-5A
24"X24"

M05-1R
21"X21"

TC-10

DETOUR
M04-8
24"X12"

WEST
M03-4
24"X12"

COUNTY
D
M1-5A
24"X24"

M06-1
21"X21"

TC-11

END
DETOUR
M4-8A
24"X18"

WEST
M03-4
24"X12"

COUNTY
D
M1-5A
24"X24"

TC-12

COUNTY
D

TC-13

COUNTY
D

M06-1
21"X21"

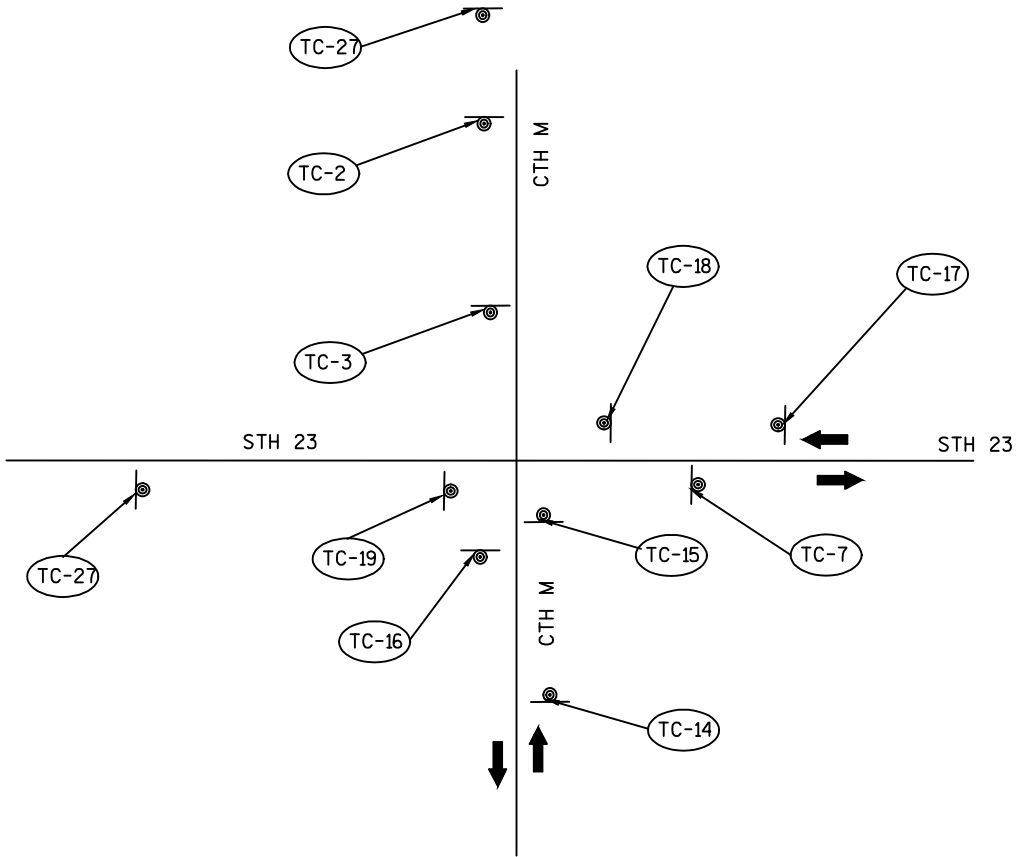
NOTE: SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES"

TRAFFIC CONTROL DETOUR DETAIL 2



LEGEND

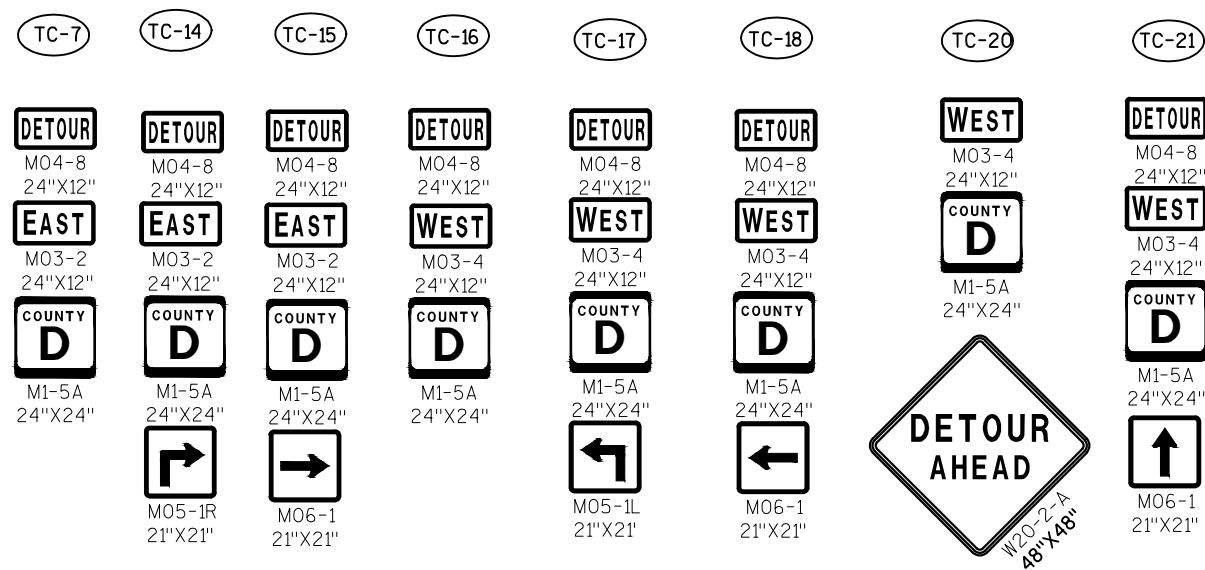
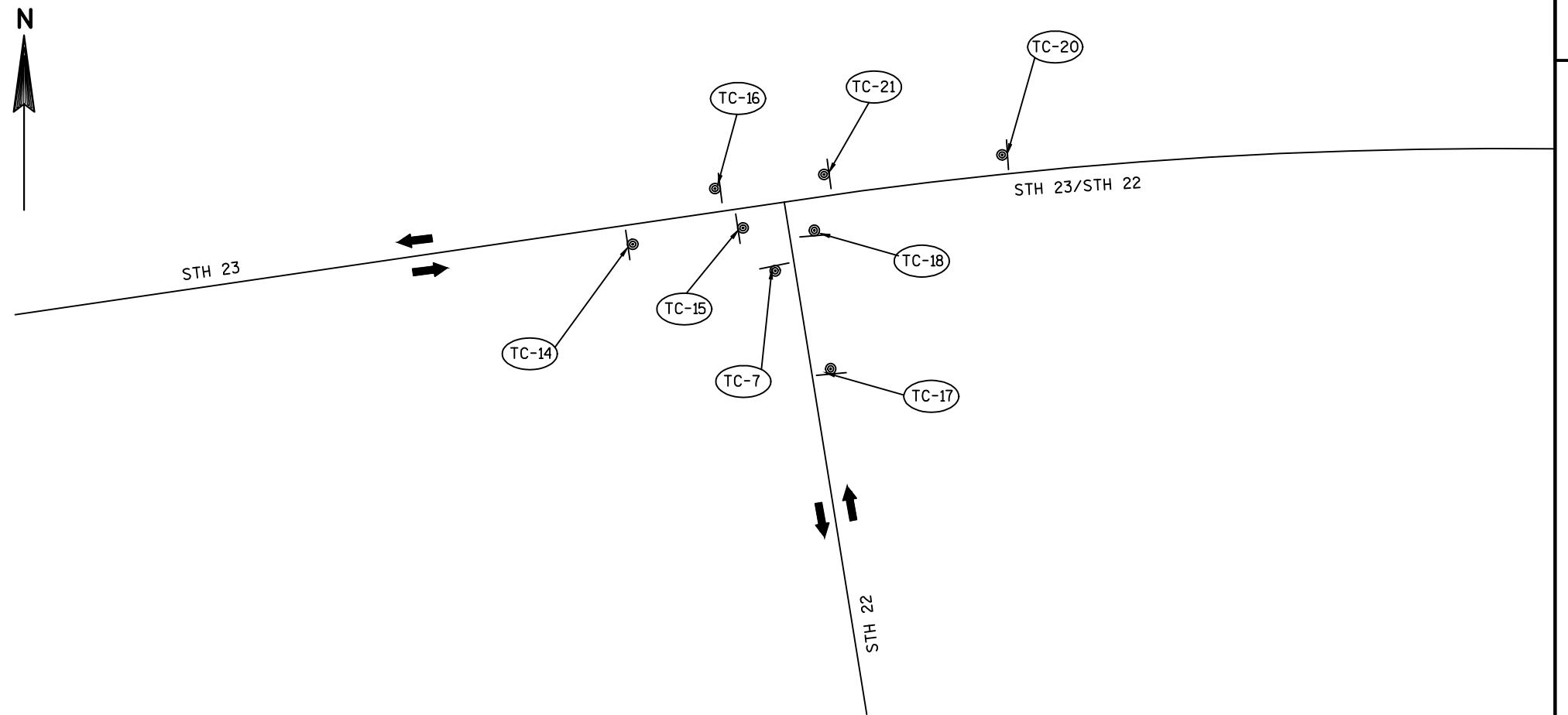
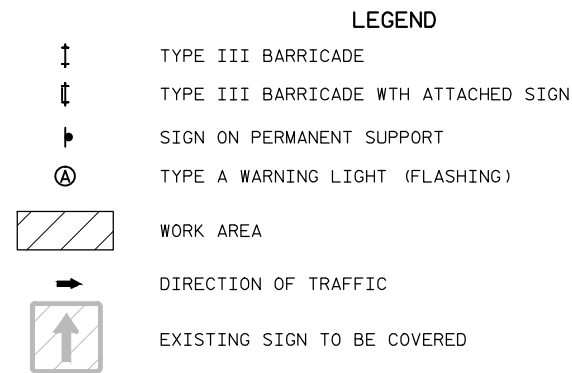
- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TYPE A WARNING LIGHT (FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC
- EXISTING SIGN TO BE COVERED



TC-2	TC-3	TC-14	TC-15	TC-16	TC-7	TC-17	TC-18	TC-19	TC-27

NOTE: SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES"

TRAFFIC CONTROL DETOUR DETAIL 3

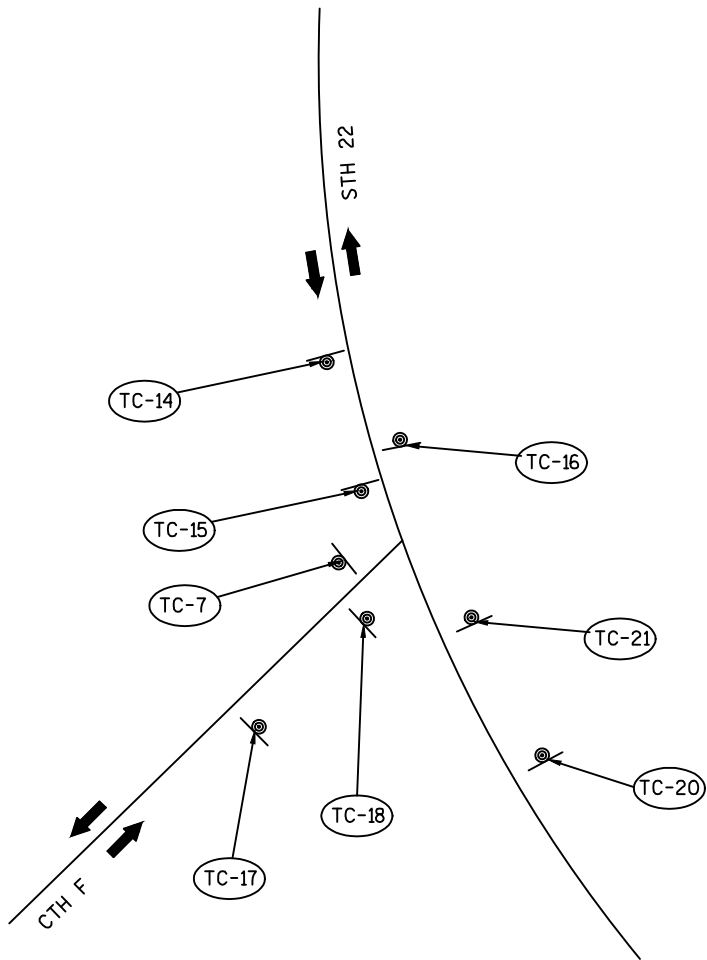


NOTE: SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES"

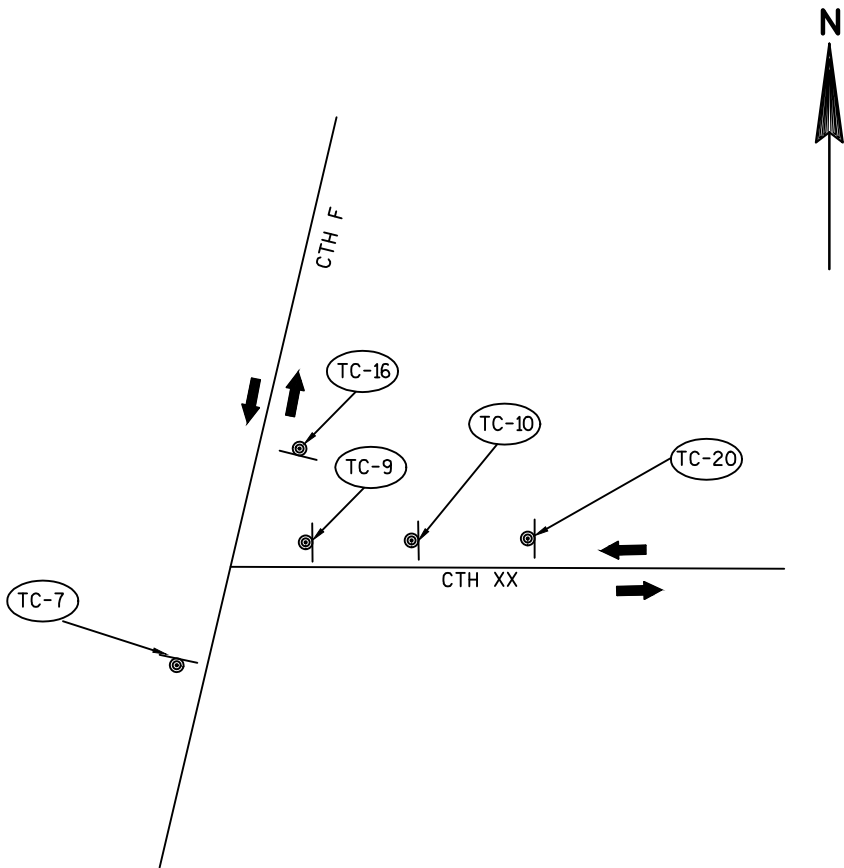
LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WTH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TYPE A WARNING LIGHT (FLASHING)
- WORK AREA
- DIRECTION OF TRAFFIC
- EXISTING SIGN TO BE COVERED

TRAFFIC CONTROL DETOUR DETAIL 4



TRAFFIC CONTROL DETOUR DETAIL 5




TC-7	TC-9	TC-10	TC-14	TC-15	TC-16	TC-17	TC-18	TC-21	TC-20
DETOUR M04-8 24"X12"	DETOUR M04-8 24"X12"	DETOUR M04-8 24"X12"	DETOUR M04-8 24"X12"	DETOUR M04-8 24"X12"	DETOUR M04-8 24"X12"	DETOUR M04-8 24"X12"	DETOUR M04-8 24"X12"	DETOUR M04-8 24"X12"	WEST M03-4 24"X12"
EAST M03-2 24"X12"	WEST M03-4 24"X12"	WEST M03-4 24"X12"	EAST M03-2 24"X12"	EAST M03-2 24"X12"	WEST M03-4 24"X12"	WEST M03-4 24"X12"	WEST M03-4 24"X12"	WEST M03-4 24"X12"	COUNTY D M1-5A 24"X24"
COUNTY D M1-5A 24"X24"	COUNTY D M1-5A 24"X24"	COUNTY D M1-5A 24"X24"	COUNTY D M1-5A 24"X24"	COUNTY D M1-5A 24"X24"	COUNTY D M1-5A 24"X24"	COUNTY D M1-5A 24"X24"	COUNTY D M1-5A 24"X24"	COUNTY D M1-5A 24"X24"	
	RIGHT TURN M05-1R 21"X21"	RIGHT TURN M06-1 21"X21"	RIGHT TURN M05-1R 21"X21"	RIGHT TURN M06-1 21"X21"		LEFT TURN M05-1L 21"X21"	LEFT TURN M06-1 21"X21"	UP M06-1 21"X21"	DETOUR AHEAD W20-2-A 48"X48"


NOTE: SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES"

TRAFFIC CONTROL DETOUR DETAIL 6


LEGEND




TYPE III BARRICADE




TYPE III BARRICADE WTH ATTACHED SIGN




SIGN ON PERMANENT SUPPORT




TYPE A WARNING LIGHT (FLASHING)



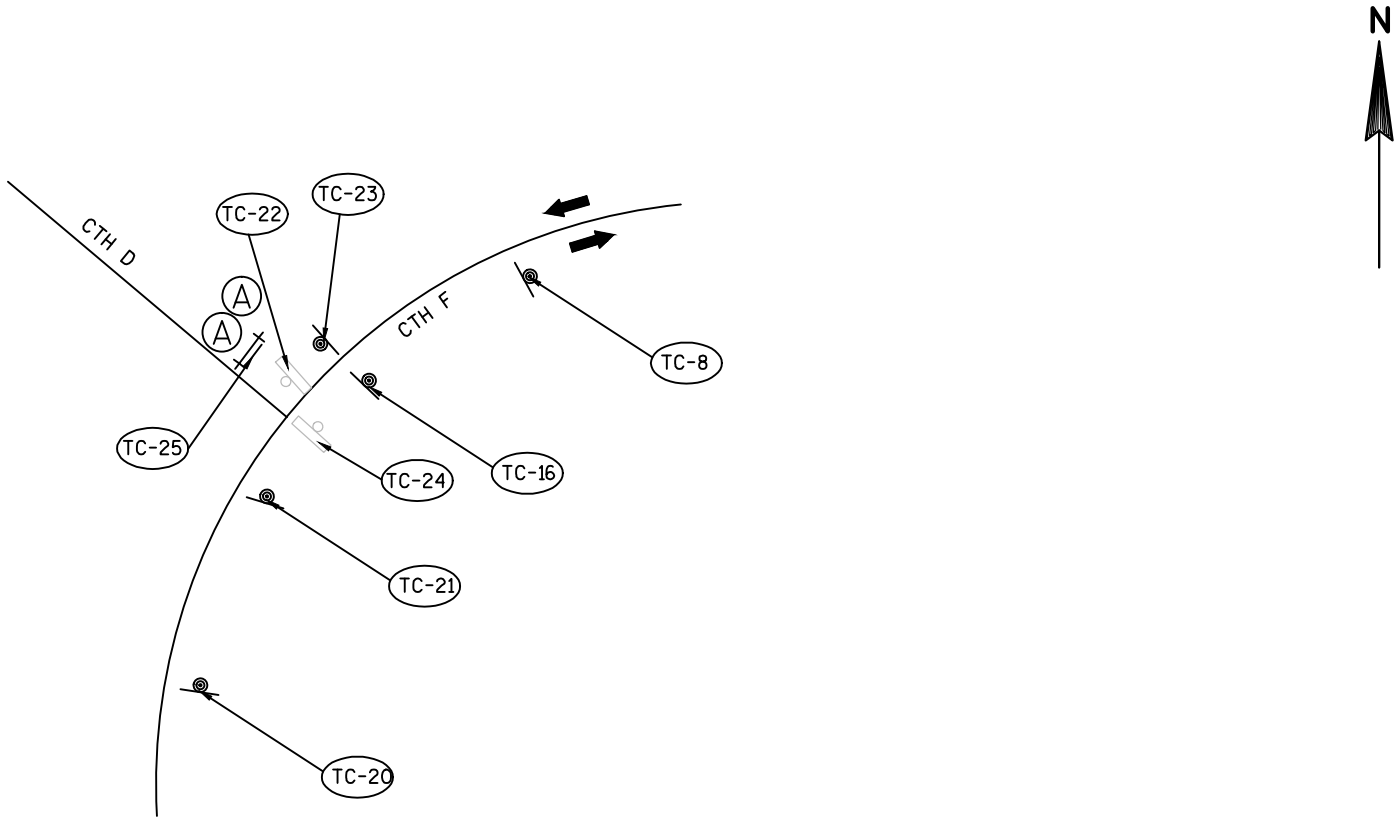
WORK AREA



DIRECTION OF TRAFFIC



EXISTING SIGN TO BE COVERED



TC-8

DETOUR

NEXT 14 MILES

G20-51

60"X24"

TC-16

DETOUR

M04-8

24"X12"

WEST

M03-4

24"X12"

COUNTY

D

M1-5A

24"X24"

DETOUR AHEAD

W20-2-A

48"X48"

TC-20

WEST

M03-4

24"X12"

COUNTY

D

M1-5A

24"X24"

TC-21

DETOUR

M04-8

24"X12"

WEST

M03-4

24"X12"

COUNTY

D

M1-5A

24"X24"

M06-1

21"X21"

TC-22

COUNTY

D

M04-8

24"X12"

WEST

M03-4

24"X12"

COUNTY

D

M1-5A

24"X24"

TC-23

END

DETOUR

M4-8A

24"X18"

EAST

M03-2

24"X12"

COUNTY

D

M1-5A

24"X24"

TC-24

COUNTY

D

M04-8

24"X12"

WEST

M03-4

24"X12"

COUNTY

D

M1-5A

24"X24"

TC-25

ROAD CLOSED

5 MILES AHEAD

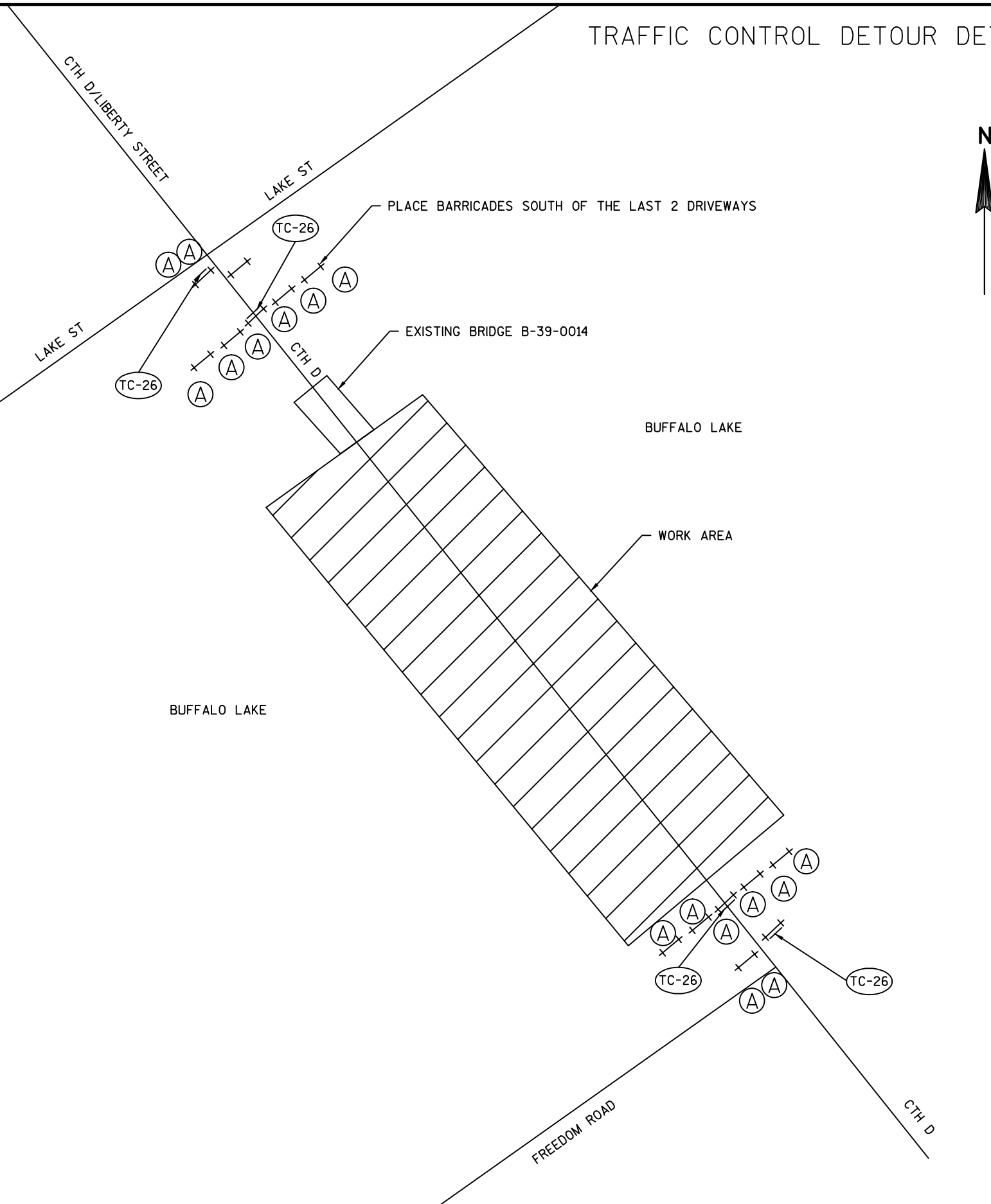
LOCAL TRAFFIC ONLY

R11-3

60"X30"

NOTE: SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES"

TRAFFIC CONTROL DETOUR DETAIL 7










TC-26

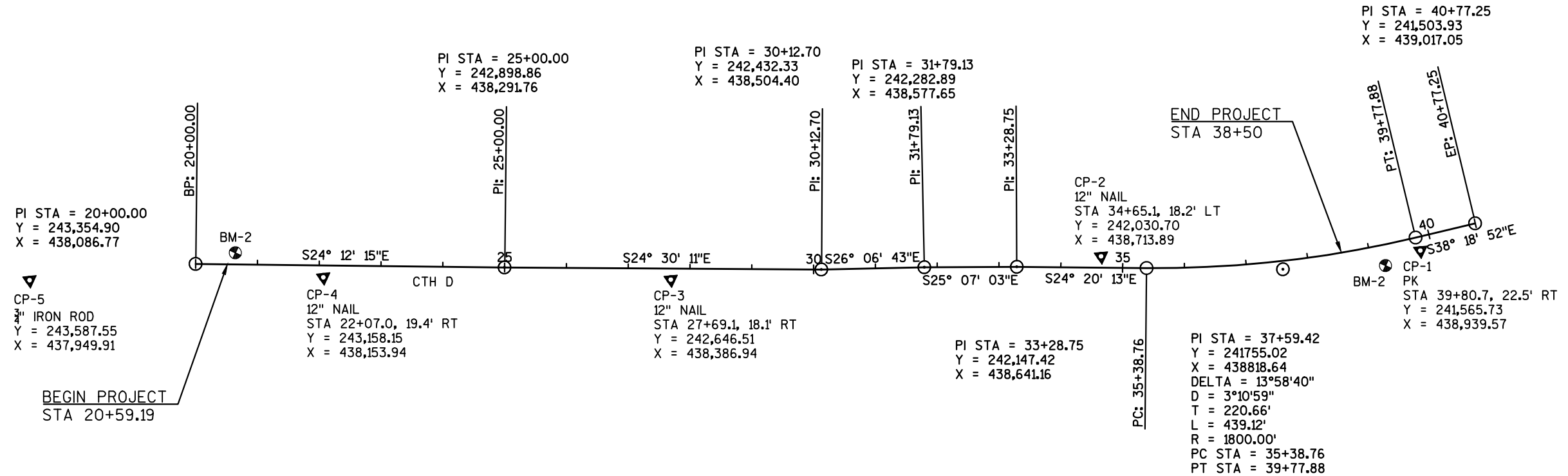
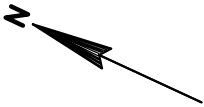
**BRIDGE
OUT**R11-2-B
48"X30"

NOTE: SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES"
SEE SDD "DETOUR SIGNING FOR MAINLINE CLOSURES"

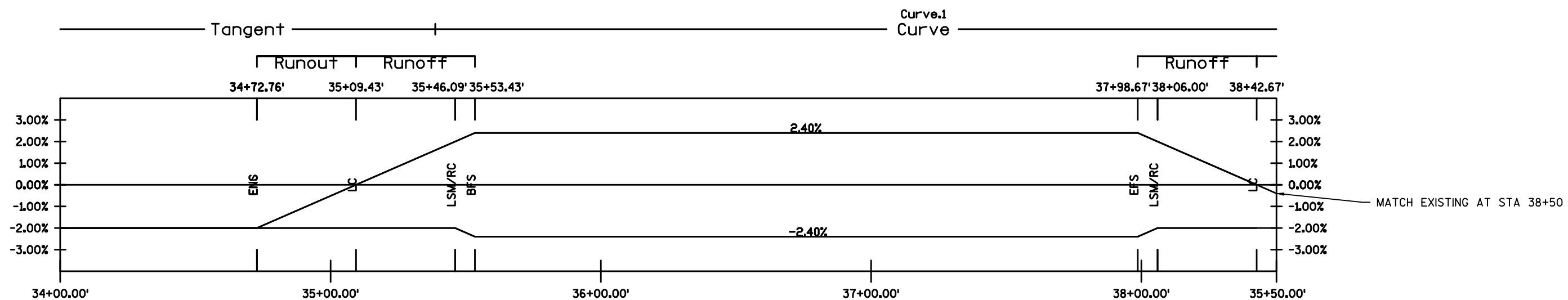
LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  SIGN ON PERMANENT SUPPORT
-  TYPE A WARNING LIGHT (FLASHING)
-  WORK AREA
-  DIRECTION OF TRAFFIC
-  EXISTING SIGN TO BE COVERED

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
1	39+21.3, 33.9' RT	2 POLE NAILS IN 24" ASH	774.46
2	20+64.2, 18.5' LT	DISK SE CORNER OF BRIDGE B39-14-75	780.08



Superelevation



Estimate Of Quantities

6711-00-70					
Line	Item	Item Description	Unit	Total	Qty
0010	205.0100	Excavation Common	CY	2,809.000	2,809.000
0020	213.0100	Finishing Roadway (project) 01. 6711-00-70	EACH	1.000	1.000
0030	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	5,682.000	5,682.000
0040	313.0110	Pit Run	TON	2,027.000	2,027.000
0050	440.4410	Incentive IRI Ride	DOL	1,356.000	1,356.000
0060	450.4000	HMA Cold Weather Paving	TON	841.000	841.000
0070	455.0605	Tack Coat	GAL	340.000	340.000
0080	460.2000	Incentive Density HMA Pavement	DOL	960.000	960.000
0090	460.5223	HMA Pavement 3 LT 58-28 S	TON	841.000	841.000
0100	460.5224	HMA Pavement 4 LT 58-28 S	TON	654.000	654.000
0110	606.0300	Riprap Heavy	CY	2,879.000	2,879.000
0120	614.0920	Salvaged Rail	LF	355.000	355.000
0130	614.2300	MGS Guardrail 3	LF	187.500	187.500
0140	614.2500	MGS Thrie Beam Transition	LF	78.800	78.800
0150	614.2610	MGS Guardrail Terminal EAT	EACH	2.000	2.000
0160	619.1000	Mobilization	EACH	1.000	1.000
0170	624.0100	Water	MGAL	141.000	141.000
0180	625.0500	Salvaged Topsoil	SY	205.000	205.000
0190	628.1504	Silt Fence	LF	283.000	283.000
0200	628.1520	Silt Fence Maintenance	LF	283.000	283.000
0210	628.1905	Mobilizations Erosion Control	EACH	3.000	3.000
0220	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0230	628.2004	Erosion Mat Class I Type B	SY	301.000	301.000
0240	628.6005	Turbidity Barriers	SY	1,900.000	1,900.000
0250	629.0210	Fertilizer Type B	CWT	0.200	0.200
0260	630.0120	Seeding Mixture No. 20	LB	7.000	7.000
0270	630.0200	Seeding Temporary	LB	7.000	7.000
0280	634.0612	Posts Wood 4x6-Inch X 12-FT	EACH	4.000	4.000
0290	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	5.000	5.000
0300	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	3.000	3.000
0310	637.2210	Signs Type II Reflective H	SF	68.000	68.000
0320	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0330	638.2602	Removing Signs Type II	EACH	17.000	17.000
0340	638.3000	Removing Small Sign Supports	EACH	17.000	17.000
0350	642.5001	Field Office Type B	EACH	1.000	1.000
0360	643.0100	Traffic Control (project) 01. 6711-00-70	EACH	1.000	1.000
0370	643.0300	Traffic Control Drums	DAY	1,080.000	1,080.000
0380	643.0420	Traffic Control Barricades Type III	DAY	1,512.000	1,512.000
0390	643.0705	Traffic Control Warning Lights Type A	DAY	2,160.000	2,160.000
0400	643.0900	Traffic Control Signs	DAY	584.000	584.000

Estimate Of Quantities

6711-00-70					
Line	Item	Item Description	Unit	Total	Qty
0410	643.0920	Traffic Control Covering Signs Type II	EACH	4.000	4.000
0420	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0430	643.2000	Traffic Control Detour (project) 01. 6711-00-70	EACH	1.000	1.000
0440	643.3000	Traffic Control Detour Signs	DAY	11,808.000	11,808.000
0450	645.0120	Geotextile Type HR	SY	6,232.000	6,232.000
0460	646.0106	Pavement Marking Epoxy 4-Inch	LF	7,164.000	7,164.000
0470	646.0900.S	Pavement Marking Late Season	LF	7,164.000	7,164.000
0480	650.4500	Construction Staking Subgrade	LF	1,791.000	1,791.000
0490	650.5000	Construction Staking Base	LF	1,791.000	1,791.000
0500	650.9910	Construction Staking Supplemental Control (project) 01. 6711-00-70	LS	1.000	1.000
0510	650.9920	Construction Staking Slope Stakes	LF	100.000	100.000
0520	690.0150	Sawing Asphalt	LF	27.000	27.000
0530	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	300.000	300.000
0540	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0550	SPV.0195	Special 01. Salvaged Asphaltic Pavement Shoulder	TON	1,138.000	1,138.000
0560	SPV.0195	Special 02. Stone Material for Travel Corridor Interstitial Space	TON	358.000	358.000
0570	SPV.0195	Special 03. Shot Rock	TON	5,059.000	5,059.000

EXCAVATION & BORROW

Division	From/To Station	Location	Common Excavation (1)	Salvaged/Unusable Pavement Material (3)	Available Material (4)	Marsh Excavation (5)	Unexpanded Fill	Expanded Fill (6)	Mass Ordinate +/- (7)	Waste	Comment:
			Cut (2)			(For information only)		Factor 1.25			
1	20+59.19 - 38+50	CTH D	2,809	1008	1801	2227	70	88	1713	1713	
Division 1 Subtotal			2809	1008	1801	2227	70	88	1713	1713	
Grand Total Project 6711-00-70			2809	1008	1801	2227	70	88	1713	1713	
PROJECT 6711-00-70 Total Common Exc			2809								

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 3) Salvaged/Unusable Pavement Material
- 4) Available Material = Cut - Salvaged/Unusable Pavement Material
- 5) Marsh Excavation is shown as information only. This is included in the Shot Rock and Riprap Heavy items.
- 6) Expanded Fill Factor = 1.25
- 7) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BASE AGGREGATE ITEMS

STATION - STATION	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH	313.0110 PIT RUN	SPV.0195.01 SALVAGED ASPHALTIC PAVEMENT SHOULDER	624.0100 WATER	650.5000 CONSTRUCTION STAKING BASE
	TON	TON	TON	MGAL	LF
20+59.19 - 38+50	5,331	1,843	463	115	1,791
SHOULDERS AT BEAM GUARD	71	—	—	1	—
5' SHOULDERS LT & RT	—	—	350	5	—
FILL FOR VOIDS ON RIPRAP	280	—	—	4	—
20+59 - 20+75 FISH PLATFORMS	—	—	3	0.05	—
25+25 - 27+25 FISH PLATFORMS	—	—	40	1	—
28+25 - 30+00 FISH PLATFORMS	—	—	35	1	—
32+00 - 34+25 FISH PLATFORMS	—	—	44	1	—
UNDISTRIBUTED FOR SPRING 2018	—	—	100	2	—
UNDISTRIBUTED	—	184	103	13	—
TOTAL PROJECT 6711-00-70	5,682	2,027	1,138	141	1,791

ASPHALT PAVEMENT ITEMS

STATION - STATION	LOCATION	DEPTH INCHES	455.0605 TACK COAT	460.5223 HMA PAVEMENT 3 LT 58-28 S	460.5224 HMA PAVEMENT 4 LT 58-28 S	450.4000 HMA COLD WEATHER PAVING
			GAL	TON	TON	TON
20+59.19 - 38+50	MAINLINE	1.75	340	—	654	—
20+59.19 - 38+50	MAINLINE	2.25	—	841	—	841
TOTAL PROJECT 6711-00-70			340	841	654	841

RIPRAP ITEMS

STATION - STATION		LOCATION	606.0300 RIPRAP HEAVY CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY	SPV.0195.02 STONE MATERIAL FOR TRAVEL CORRIDOR INTERSTITIAL SPACE TON	SPV.0195.03 SHOT ROCK TON
20+59.18 - 37+00.00		LT & RT	2,879	5,935	286	4047
UNDISTRIBUTED			—	297	72	1012
TOTAL PROJECT 6711-00-70			2,879	6,232	358	5059

NOTE: EXCAVATION FOR RIPRAP HEAVY AND SHOT ROCK IS INCIDENTAL TO THE RIPRAP HEAVY ITEM OR SHOT ROCK ITEM

SALVAGED RAIL

STATION	LOCATION	614.0920 SALVAGED RAIL LF
20+65.23 - 21+92.16	RT	127
20+65.19 - 22+92.79	LT	228
TOTAL PROJECT 6711-00-70		355

ROADWAY BARRIER ITEMS

STATION - STATION		LOCATION	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
20+65.12 - 21+04.51		RT	—	39.4	—
21+04.51 - 21+57.64		RT	50.0	—	—
21+54.51 - 22+07.64		RT	—	—	1.0
20+65.06 - 21+04.46		LT	—	39.4	—
21+04.46 - 22+41.96		LT	137.5	—	—
22+41.96 - 22+95.08		LT	—	—	1.0
TOTAL PROJECT 6711-00-70			187.5	78.8	2

RESTORATION ITEMS

STATION - STATION		LOCATION	625.0500 SALVAGED TOPSOIL SY	628.2004 EROSION MAT CLASS I TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE #20 LB	630.0200 SEEDING TEMPORARY LB
37+50 - 38+50		RT	115	159	0.1	4	4
37+50 - 38+50		LT	55	92	0.1	2	2
UNDISTRIBUTED			34	50	0.0	1	1
TOTAL PROJECT 6711-00-70			205	301	0.2	7	7

SILT FENCE ITEMS

STATION - STATION		LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF
37+42.83 - 38+51.41		RT	116	116
37+28.33 - 38+50.09		LT	120	120
UNDISTRIBUTED			47	47
TOTAL PROJECT 6711-00-70			283	283

TURBIDITY BARRIERS

STATION - STATION		LOCATION	628.6005 TURBIDITY BARRIERS SY
20+51.45 - 37+42.83		RT	962
20+52.15 - 37+28.33		LT	938
TOTAL PROJECT 6711-00-70			1,900

3

3

PERMANENT SIGNING											
SIGN NO.	STATION	SIGN CODE	SIGN SIZE IN X IN		637.2210	637.2230	634.0612	634.0614	634.0616	MESSAGE	
					SIGNS TYPE II REFLECTIVE H SF	SIGNS TYPE II REFLECTIVE F SF	4X6 INCH 12 FT EACH	4X6 INCH 14 FT EACH	4X6 INCH 16 FT EACH		
1-01	19+20	W5-52R	12	X	36	—	3	1	—	—	STRIPED MARKER
1-02	19+20	W5-52L	12	X	36	—	3	1	—	—	STRIPED MARKER
1-03	20+73	W5-52R	12	X	36	—	3	1	—	—	STRIPED MARKER
1-04	20+64	W5-52L	12	X	36	—	3	1	—	—	STRIPED MARKER
1-05	21+27	R2-1	24	X	30	5	—	—	1	—	SPEED LIMIT 25 MPH
1-06	21+67	I2-3	78	X	24	13	—	—	1	—	PACKWAUKEE
1-07	22+77	R7-1-L	18	X	24	3	—	—	1	—	NO PARKING
1-08	28+14	I3-1	48	X	24	8	—	—	—	1	BUFFALO LAKE
1-09	29+30	R2-1	24	X	30	5	—	—	—	—	SPEED LIMIT 25 MPH
		R2-1	24	X	30	5	—	—	1	—	SPEED LIMIT 25 MPH
1-10	37+32	I3-1	48	X	24	8	—	—	—	—	BUFFALO LAKE
		R2-1	24	X	30	5	—	—	1	—	SPEED LIMIT 25 MPH
1-11	37+77	R7-51-R	18	X	24	3	—	—	1	—	NO PARKING
1-12	37+64	R2-1	24	X	30	5	—	—	—	1	SPEED LIMIT 25 MPH
		I3-1	48	X	24	8	—	—	—	—	BUFFALO LAKE
TOTAL PROJECT 6711-00-70					68	12	4	5	3		

TRAFFIC CONTROL ITEMS							
STATION	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS
DETAIL 1	72	—	—	2	144	4	288
DETAIL 6	72	—	—	1	72	2	144
DETAIL 7	72	—	—	14	1,008	16	1,152
UNDISTRIBUTED	72	15	1,080	4	288	8	576
TOTAL PROJECT 6711-00-70			1,080		1,512		2,160

REMOVING SIGNS				
SIGN NO.	STATION	638.2602	638.3000	MESSAGE
		REMOVING SIGNS TYPE II EACH	REMOVING SMALL SIGN SUPPORTS EACH	
R1-01	19+20	1	1	BRIDGE HAZARD MARKERS
R1-02	19+20	1	1	BRIDGE HAZARD MARKERS
R1-03	20+73	1	1	BRIDGE HAZARD MARKERS
R1-04	20+64	1	1	BRIDGE HAZARD MARKERS
R1-05	21+27	1	1	SPEED LIMIT 25 MPH
R1-06	21+67	1	1	PACKWAUKEE
R1-07	22+27	1	1	NO PARKING
R1-08	22+77	1	1	NO PARKING
R1-09	23+25	1	1	NO PARKING
R1-10	25+79	1	1	NO PARKING
R1-11	28+12	1	1	SPEED LIMIT 25 MPH
R1-12	29+32	1	1	SPEED LIMIT 25 MPH, BUFFALO LAKE
R1-13	29+74	1	1	NO PARKING
R1-14	34+21	1	1	NO PARKING
R1-15	37+35	1	1	SPEED LIMIT 25 MPH
R1-16	37+77	1	1	NO PARKING
R1-17	37+66	1	1	SPEED LIMIT 25 MPH, BUFFALO LAKE
TOTAL PROJECT 6711-00-70		17	17	

TRAFFIC CONTROL SIGNS									
STATION	LOCATION	DAYS	EACH	DAYS	EACH	DAYS	EACH	DAYS	EACH
NORTH SIDE OF BUFFALO LAKE	LAKE STREET	7	—	—	—	—	—	1	7
SOUTH SIDE OF BUFFALO LAKE	FREEDOM ROAD	7	—	—	—	—	—	1	7
DETAIL 1		72	2	144	26	1,872	2	—	—
DETAIL 2		72	—	—	37	2,664	—	—	—
DETAIL 3		72	—	—	29	2,088	—	—	—
DETAIL 4		72	—	—	29	2,088	—	—	—
DETAIL 5		72	—	—	17	1,224	—	—	—
DETAIL 6		72	1	72	14	1,008	2	—	—
DETAIL 7		72	4	288	—	—	—	—	—
CTH ZZ INTERSECTION		72	—	—	6	432	—	—	—
CTH B INTERSECTION		72	—	—	6	432	—	—	—
NORTH SIDE OF BUFFALO LAKE	SPRING 2018	5	8	40	—	—	—	—	—
SOUTH SIDE OF BUFFALO LAKE	SPRING 2018	5	8	40	—	—	—	—	—
TOTAL PROJECT 6711-00-70				584		11,808		4	

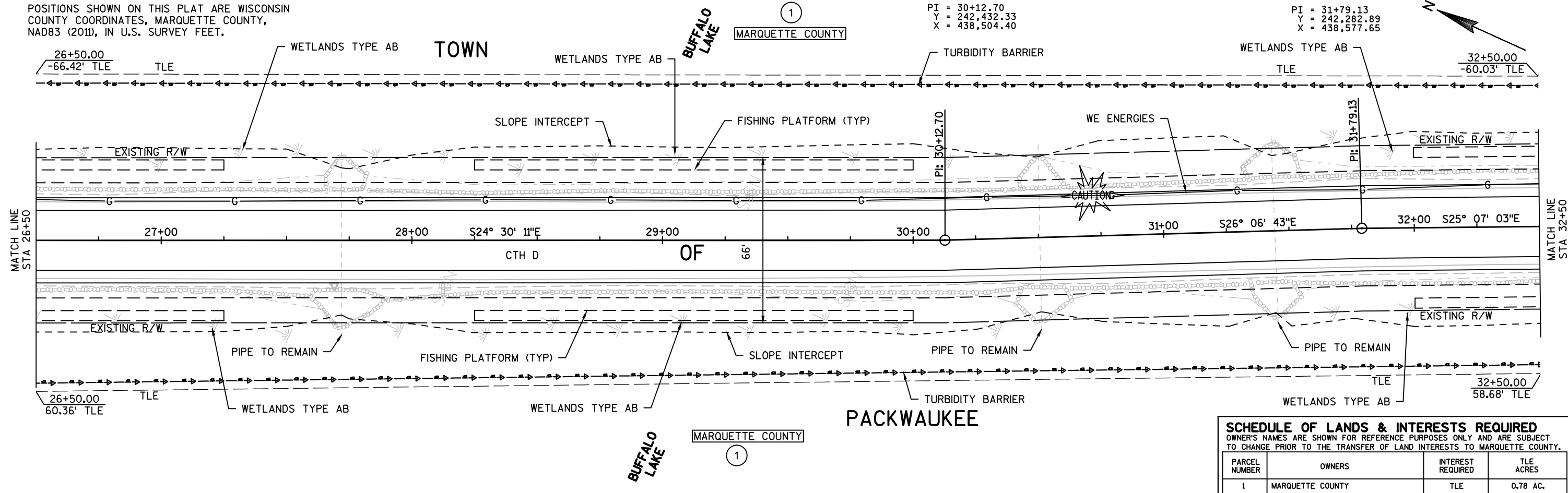
NOTE: THERE IS ONE CYCLE FOR COVERING SIGNS

PAVEMENT MARKING					
STATION - STATION	LOCATION	646.0106	646.0106	646.0900.S	646.0900.S
		PAVEMENT MARKING EPOXY 4-INCH WHITE LF	PAVEMENT MARKING EPOXY 4-INCH YELLOW LF	PAVEMENT MARKING LATE SEASON WHITE LF	PAVEMENT MARKING LATE SEASON YELLOW LF
20+59.19 - 38+50	CENTERLINE	--	3,582	--	--
20+59.19 - 38+50	EDGE LINE	3,582	--	--	--
20+59.19 - 38+50	2018 SPRING CENTERLINE	--	--	--	3,582
20+59.19 - 38+50	2018 SPRING EDGE LINE	--	--	3,582	--
SUB-TOTALS		3,582	3,582	3,582	3,582
TOTAL PROJECT 6711-00-70		7,164		7,164	

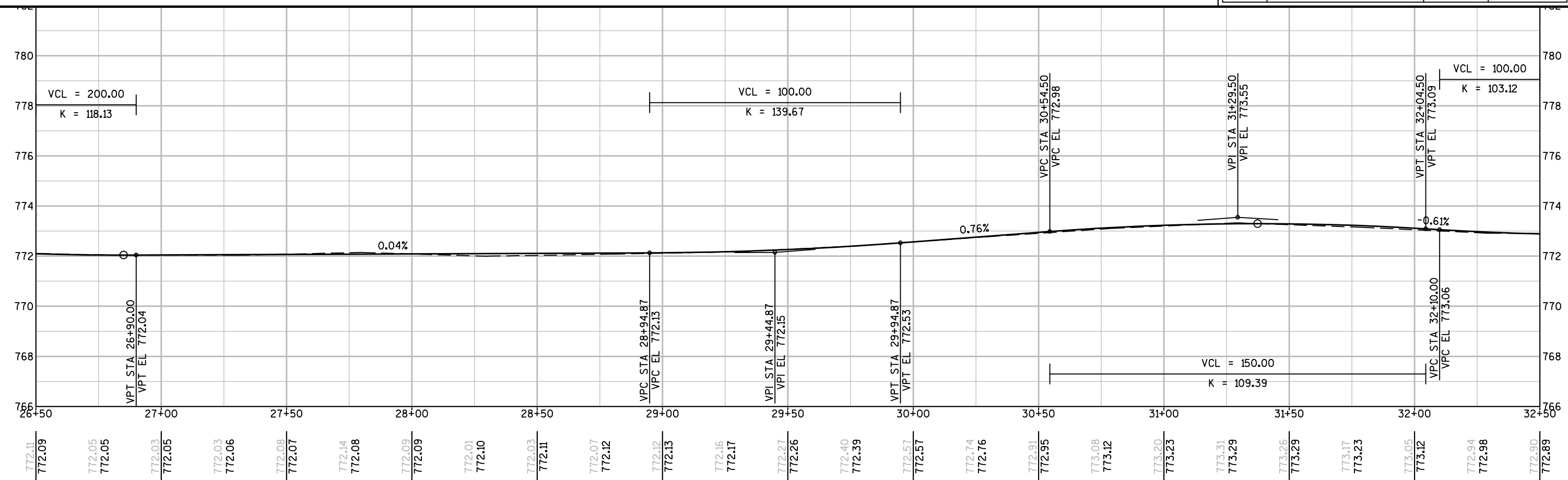
CONSTRUCTION STAKING		
STATION - STATION	650.4500	650.9920
	CONSTRUCTION STAKING SUBGRADE LF	CONSTRUCTION STAKING SLOPE STAKES LF
20+59.19 - 38+50	1,791	--
37+50 - 38+50	--	100
TOTAL PROJECT 6711-00-70		1,791 100

SAWING PAVEMENT ITEMS		
STATION	LOCATION	690.0150
		SAWING ASPHALT LF
38+50	MAINLINE	27
TOTAL PROJECT 6711-00-70		27

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN COUNTY COORDINATES, MARQUETTE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET.



SCHEDULE OF LANDS & INTERESTS REQUIRED			
OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO MARQUETTE COUNTY.			
PARCEL NUMBER	OWNERS	INTEREST REQUIRED	TLE ACRES
1	MARQUETTE COUNTY	TLE	0.78 AC.



R/W COURSE TABLE		
COURSE	BEARING	DISTANCE
103 - 104	S42° 44' 46"E	142.68'
104 - 105	N78° 24' 14"E	35.70'
203 - 204	S17° 50' 29"E	99.90'
204 - 105	S09° 06' 31"E	81.30'

PI = 33+28.75
Y = 242,147.42
X = 438,641.16

POSITIONS SHOWN ON THIS PLAT ARE WISCONSIN
COUNTY COORDINATES, MARQUETTE COUNTY,
NAD83 (2011), IN U.S. SURVEY FEET.

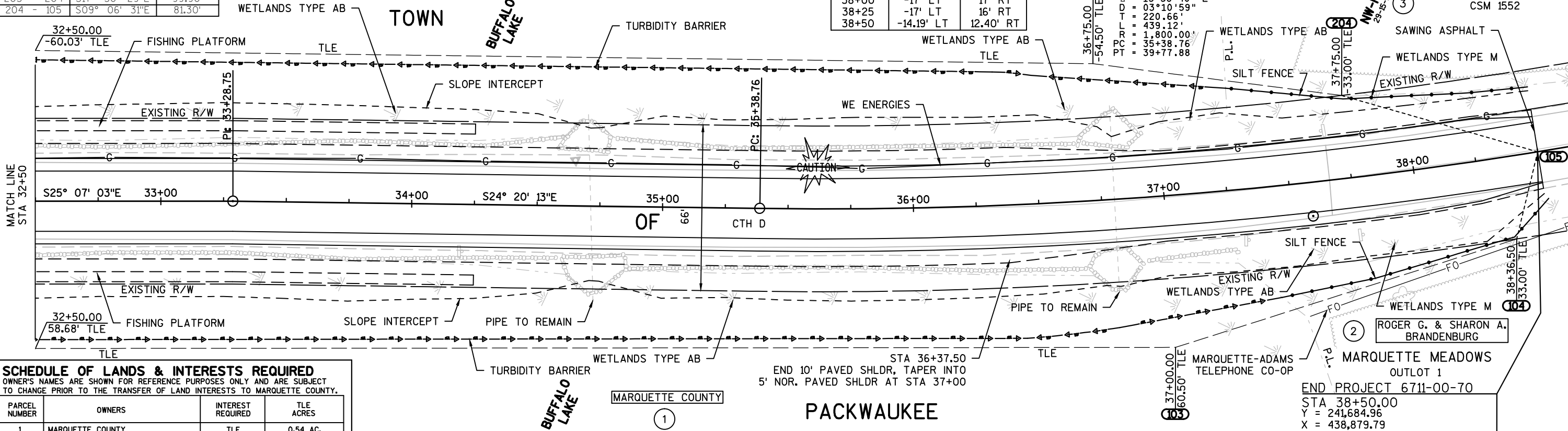
MARQUETTE COUNTY

PAVEMENT OFFSETS		
STA	OFFSETS	OFFSETS
36+37.50	-22' LT	22' RT
37+00	-17' LT	17' RT
38+00	-17' LT	17' RT
38+25	-17' LT	16' RT
38+50	-14.19' LT	12.40' RT

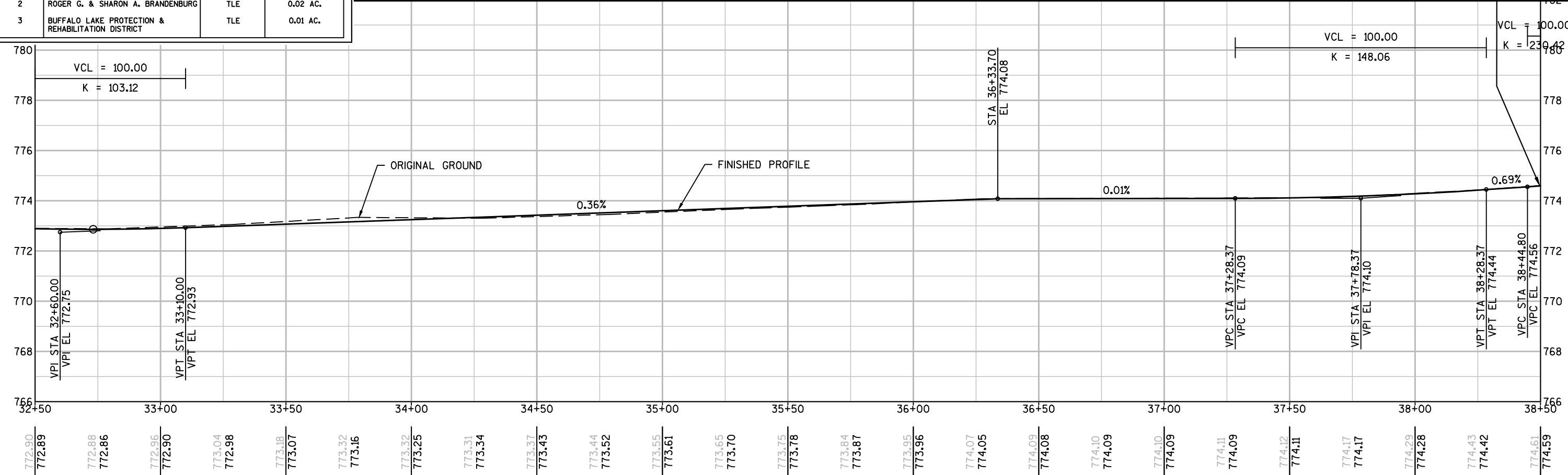
PI = 37+59.42
Y = 241,755.02
X = 438,818.64
Δ = 13°58'40" L
PC = 36+75.00
PT = 39+77.88
P.L. = 37+76.42

BUFFALO LAKE PROTECTION
& REHABILITATION DISTRICT

LOT 1
CSM 1552

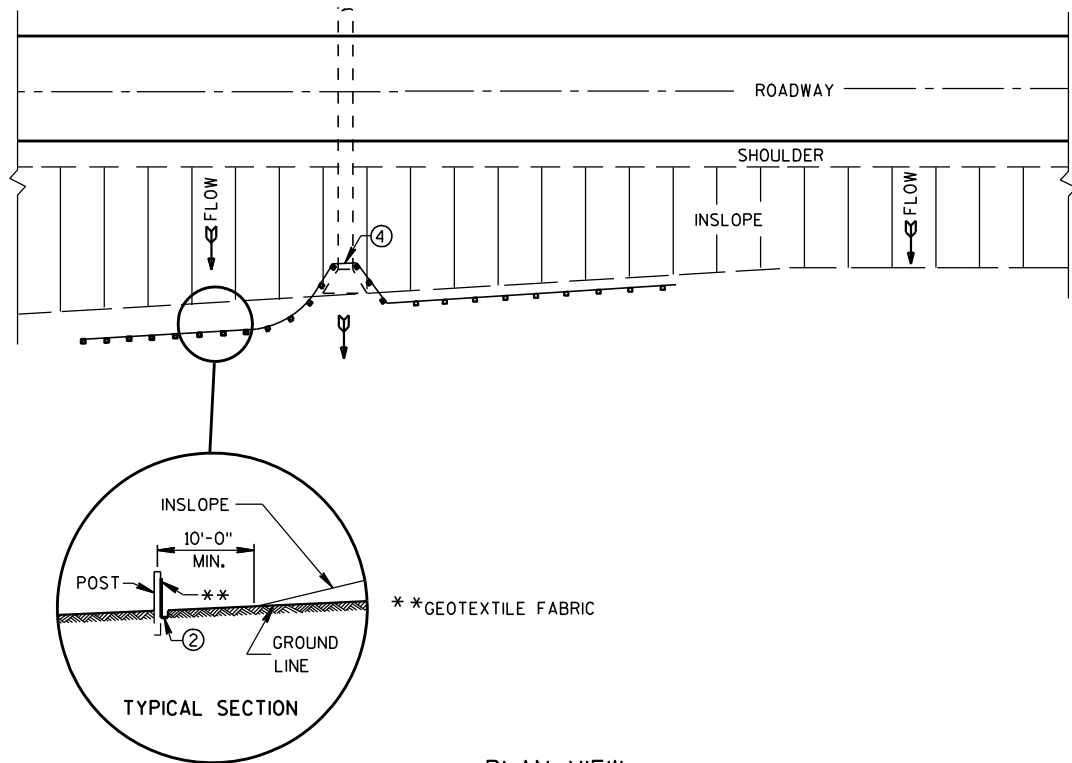


SCHEDULE OF LANDS & INTERESTS REQUIRED			
OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO THE TRANSFER OF LAND INTERESTS TO MARQUETTE COUNTY.			
PARCEL NUMBER	OWNERS	INTEREST REQUIRED	TLE ACRES
1	MARQUETTE COUNTY	TLE	0.54 AC.
2	ROGER G. & SHARON A. BRANDENBURG	TLE	0.02 AC.
3	BUFFALO LAKE PROTECTION & REHABILITATION DISTRICT	TLE	0.01 AC.

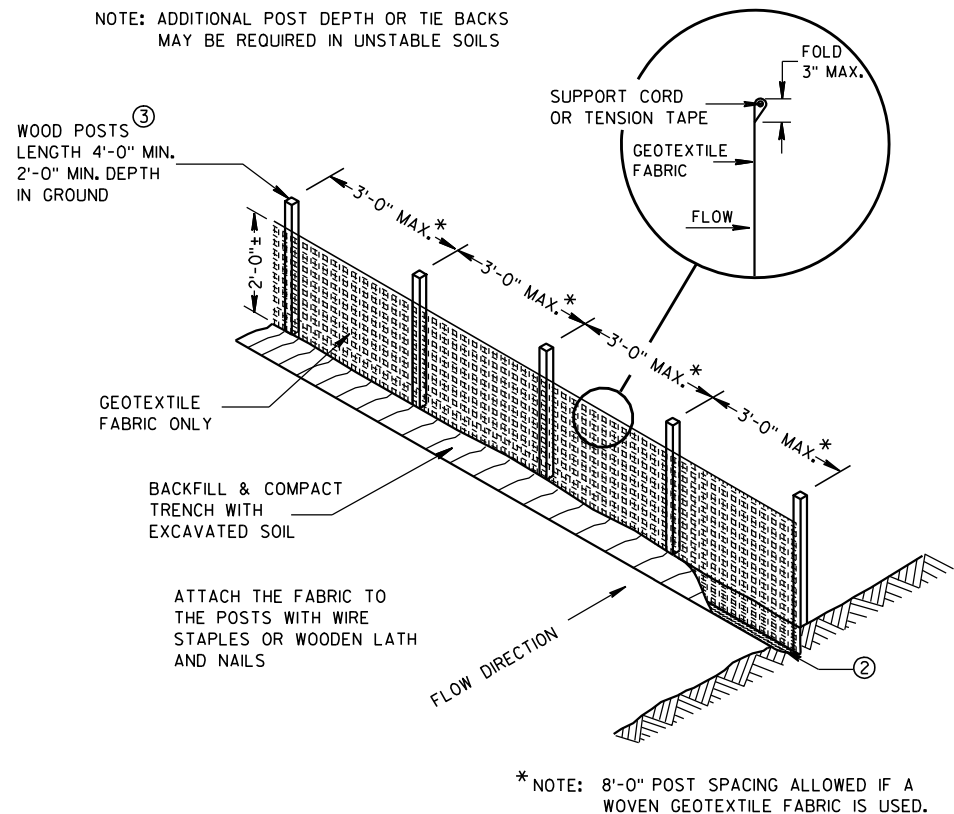


Standard Detail Drawing List

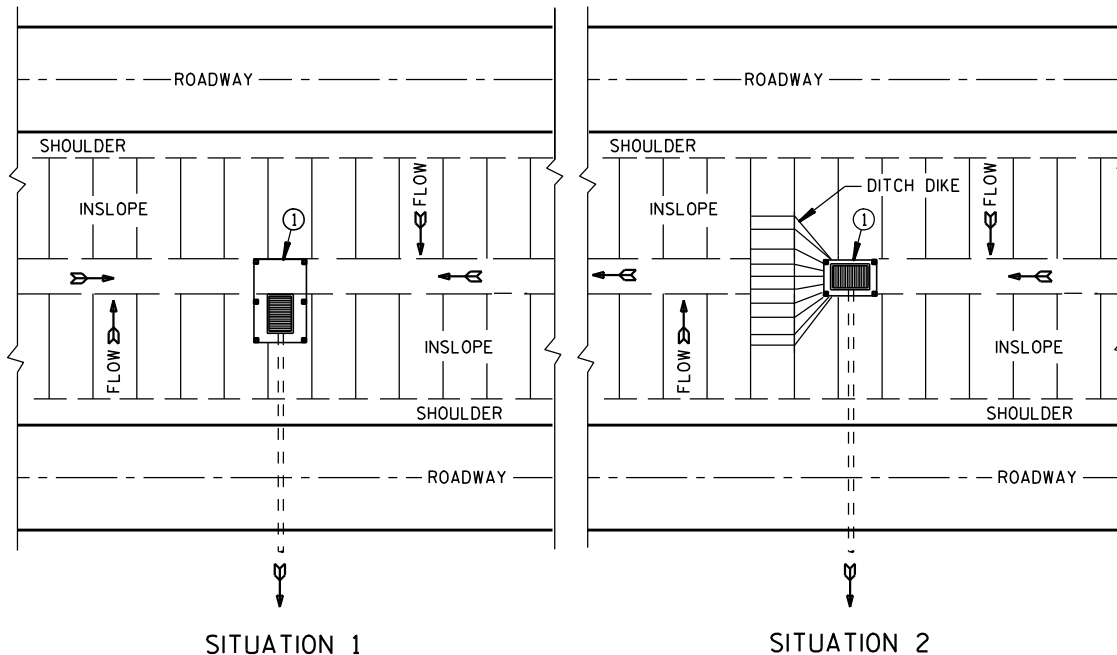
08E09-06	SILT FENCE
08E11-02	TURBIDITY BARRIER
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THREE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)



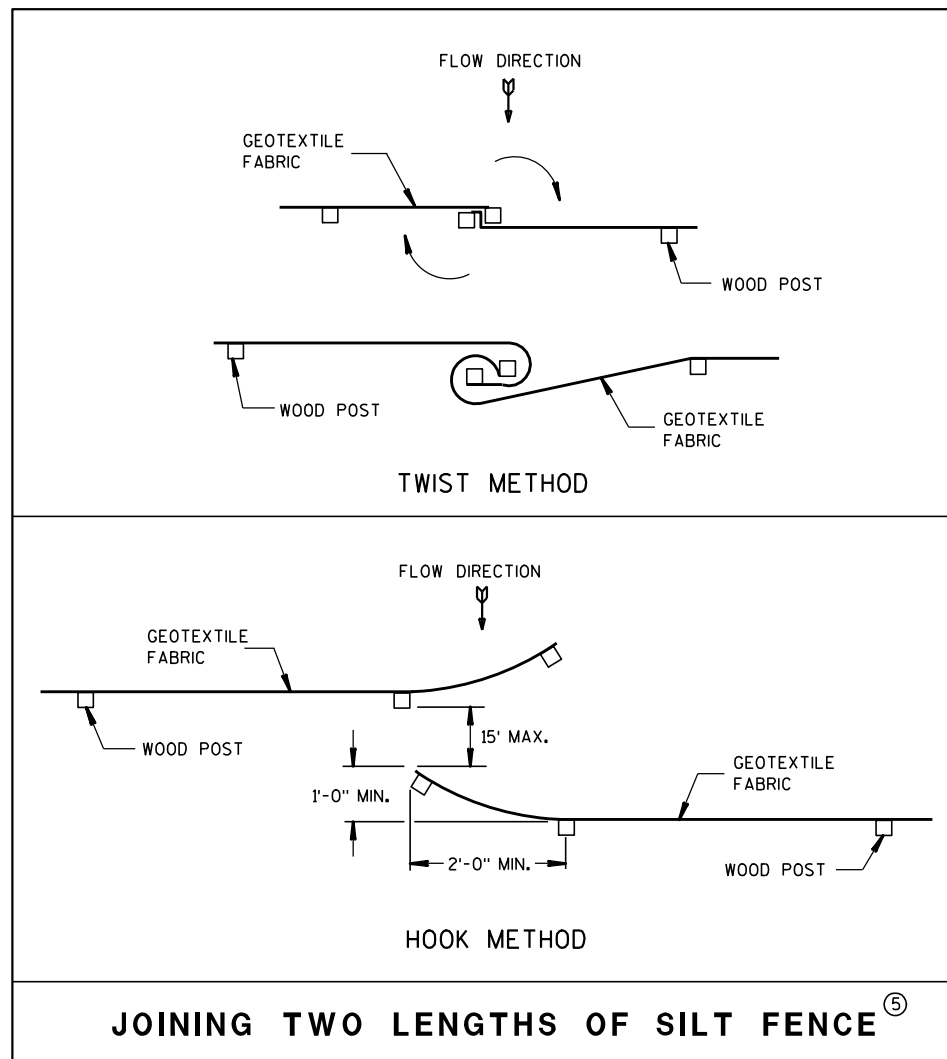
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

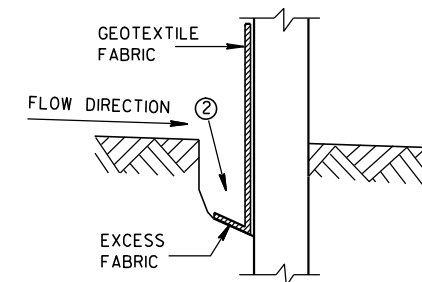


JOINING TWO LENGTHS OF SILT FENCE (5)

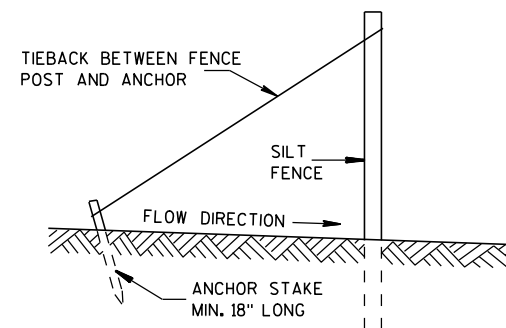
GENERAL NOTES

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 1 1/8" X 1 1/8" 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.

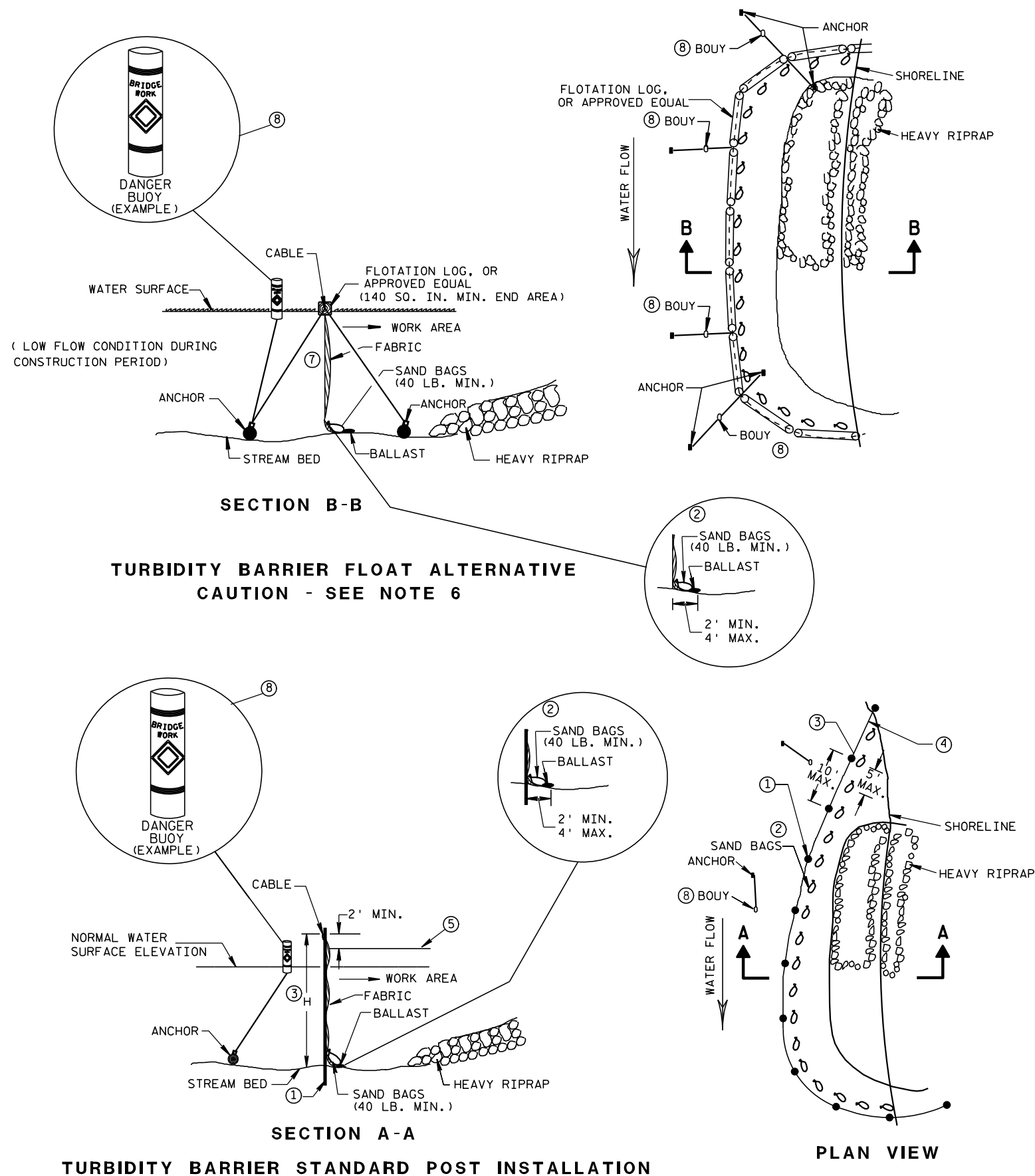


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

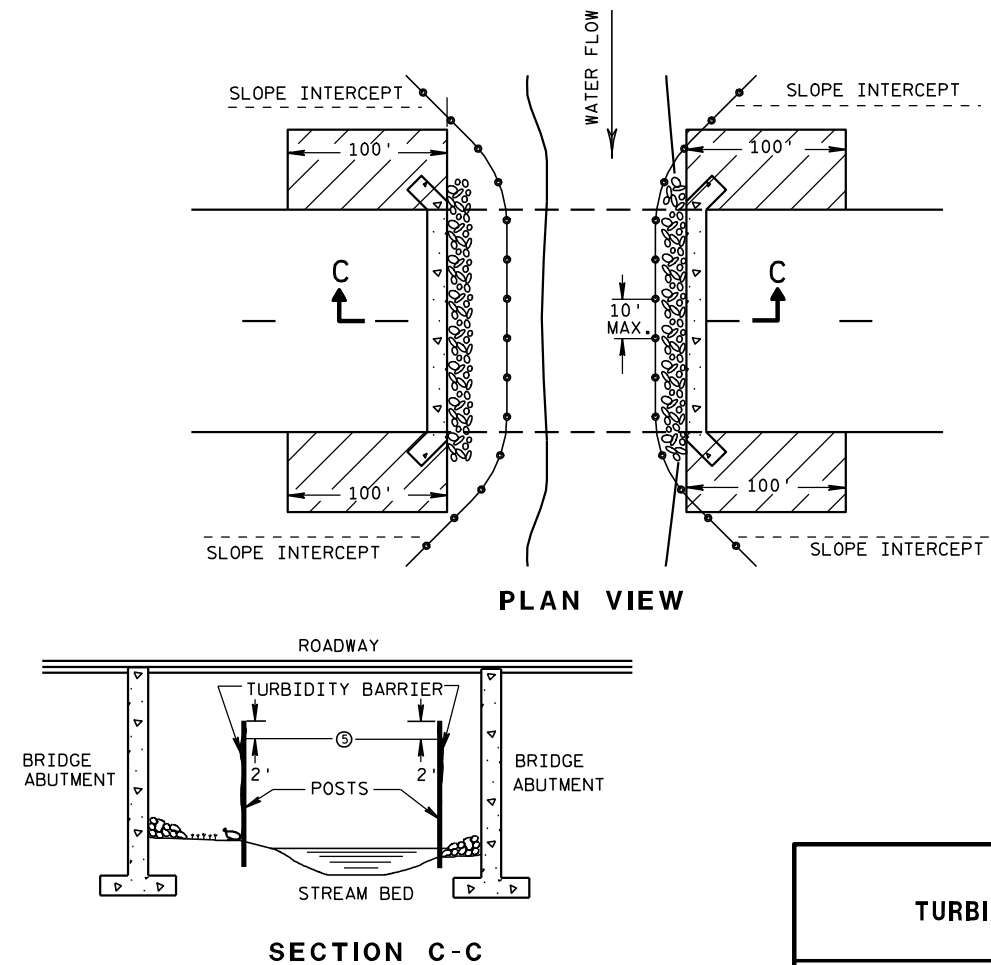


GENERAL NOTES

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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

- ① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.
- ② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.
- ③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.
- ④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.
- ⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2' GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.
- ⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.
- ⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.
- ⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

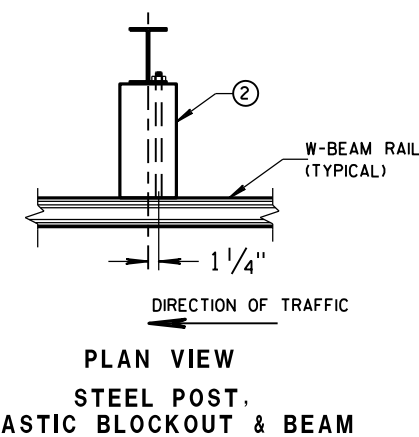
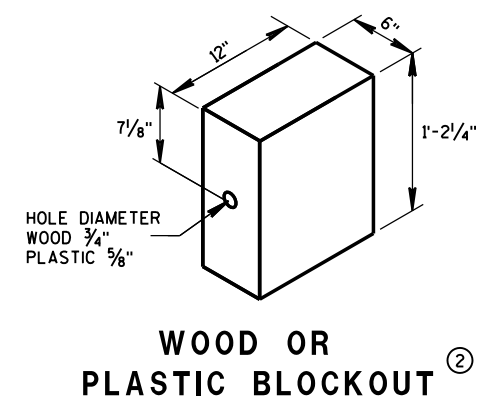
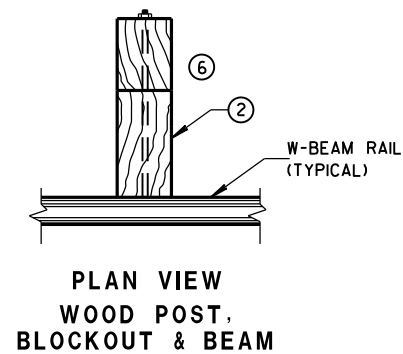
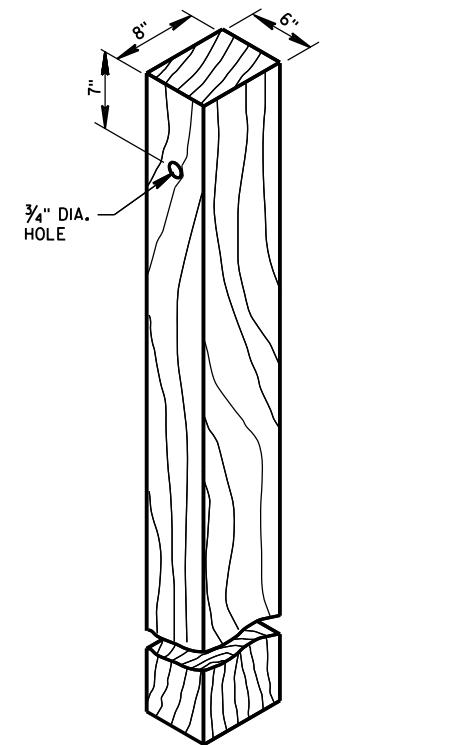
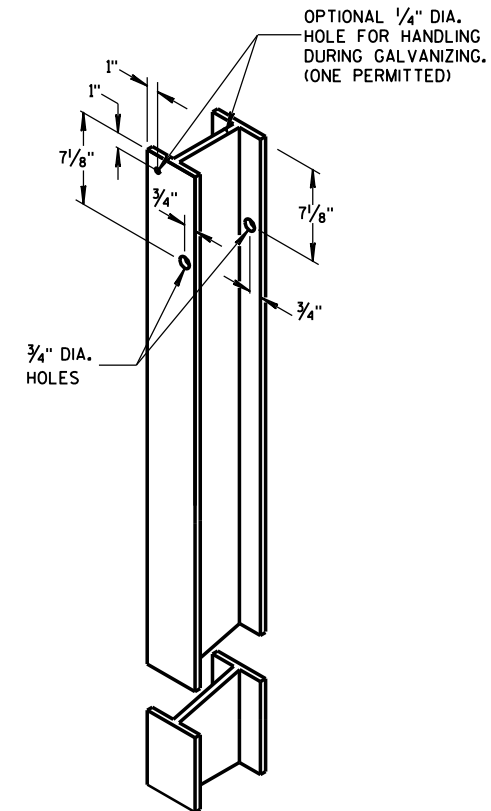
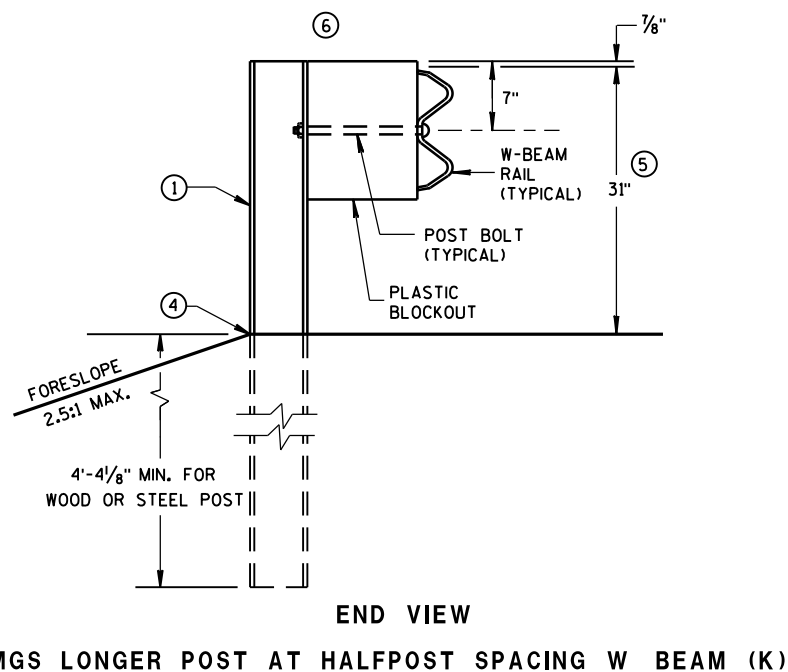
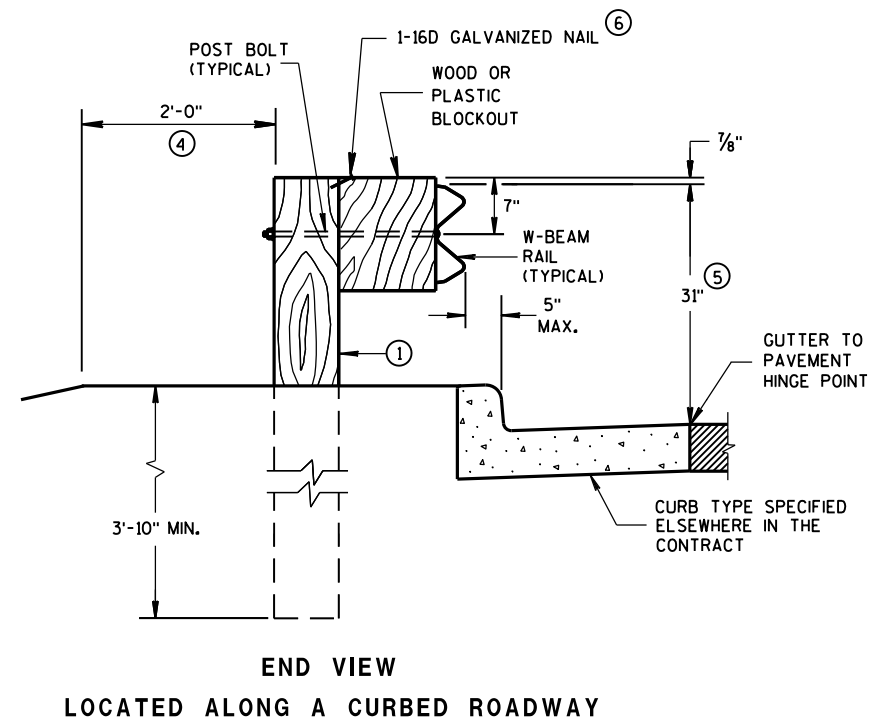
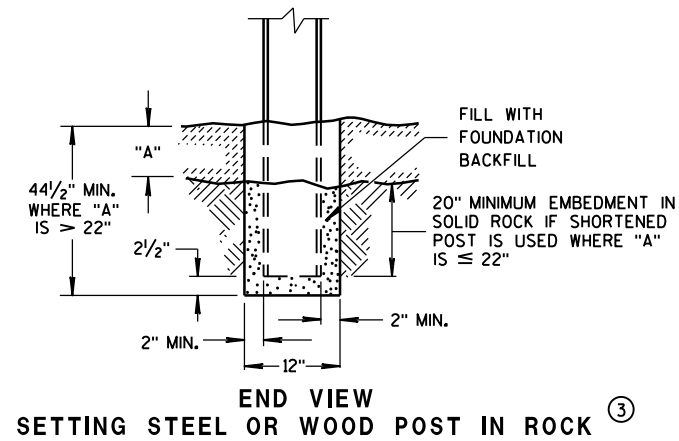
APPROVED

6/04/02
DATE

FHWA

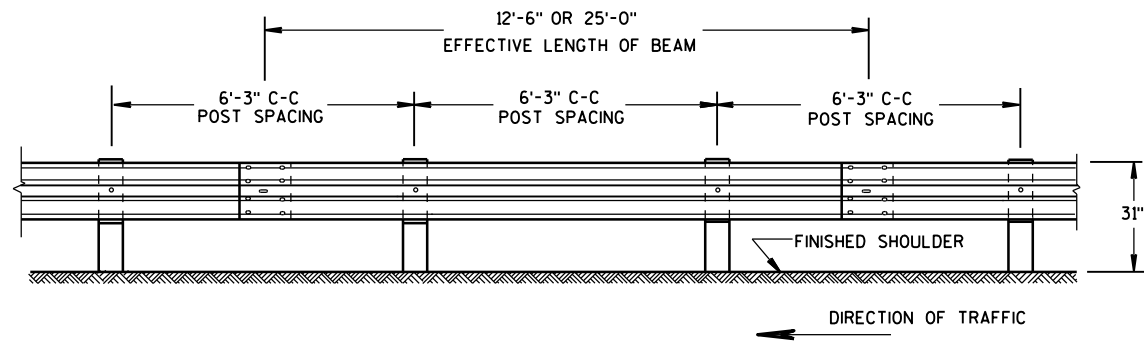
/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

- ① WOOD OR STEEL POSTS (W6X9 OR W6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



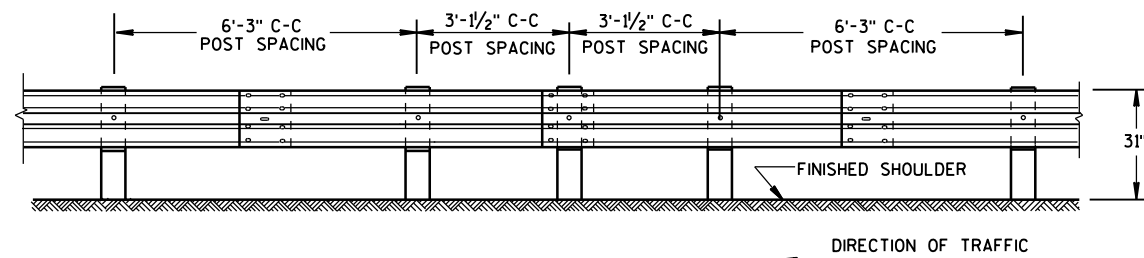
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



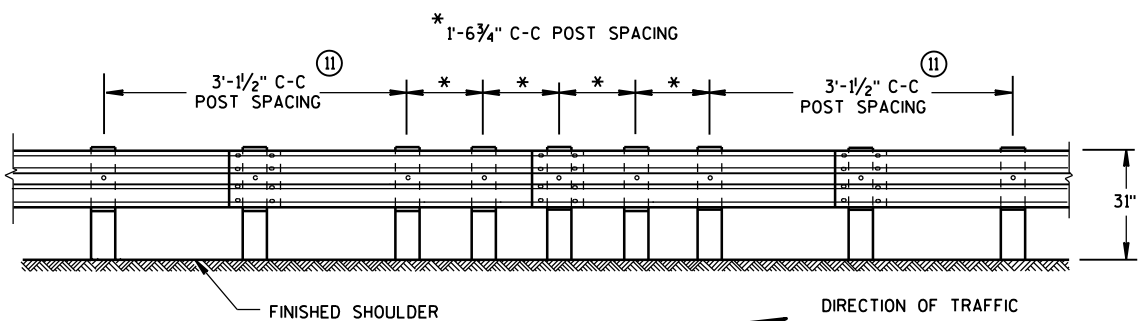
FRONT VIEW

POST SPACING STANDARD INSTALLATION



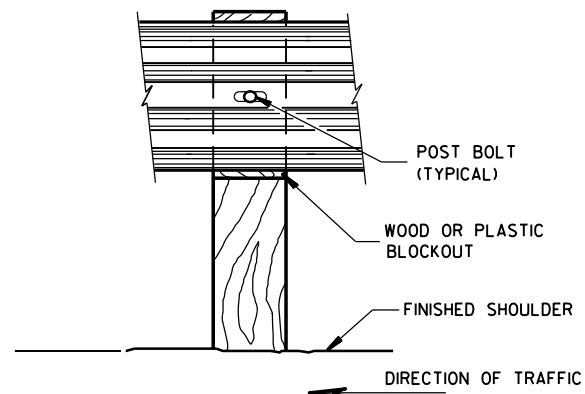
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

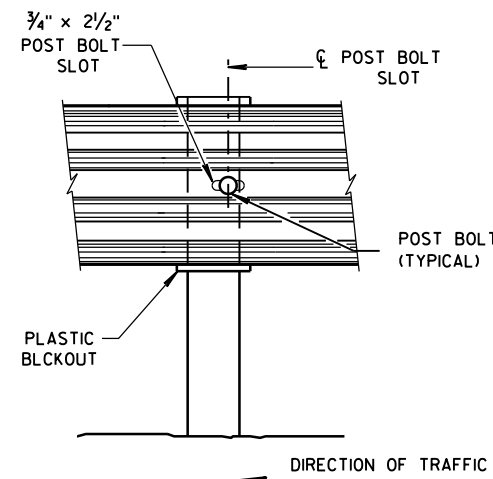


FRONT VIEW

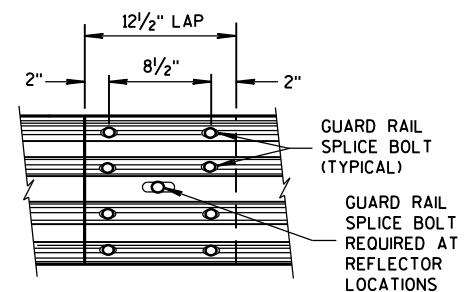
QUARTER POST SPACING (QS)



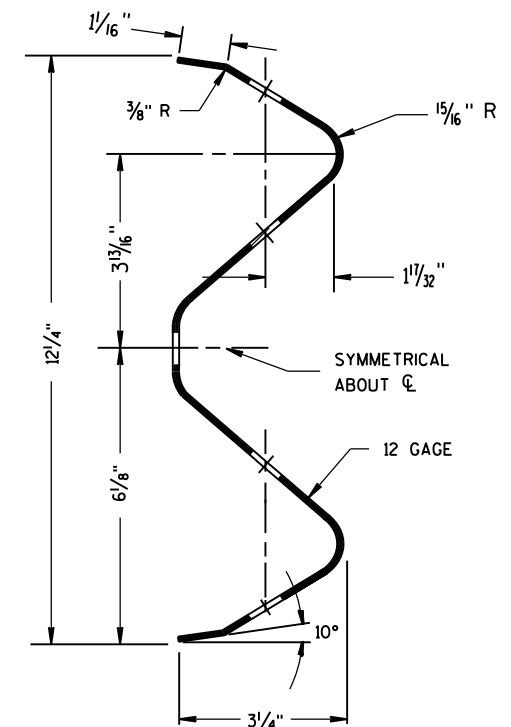
FRONT VIEW AT WOOD POST



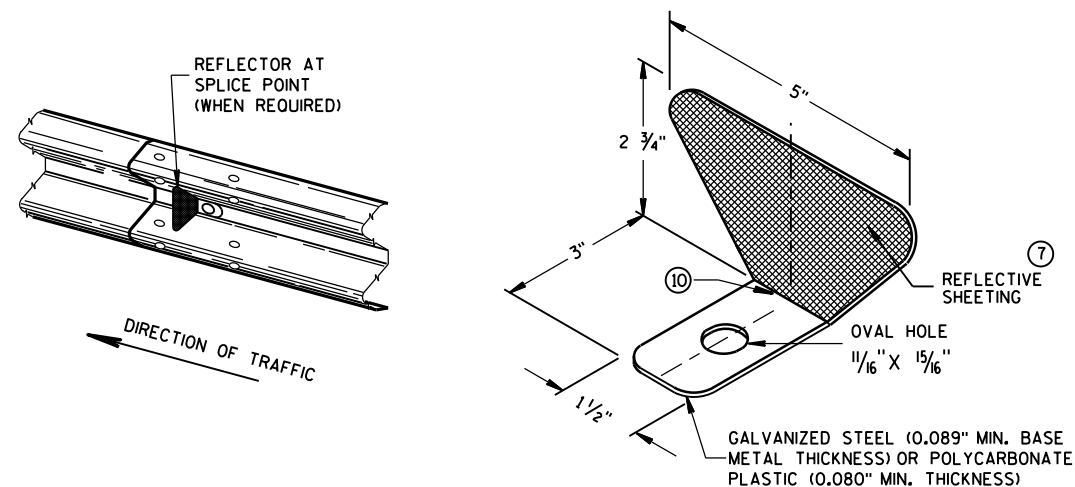
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

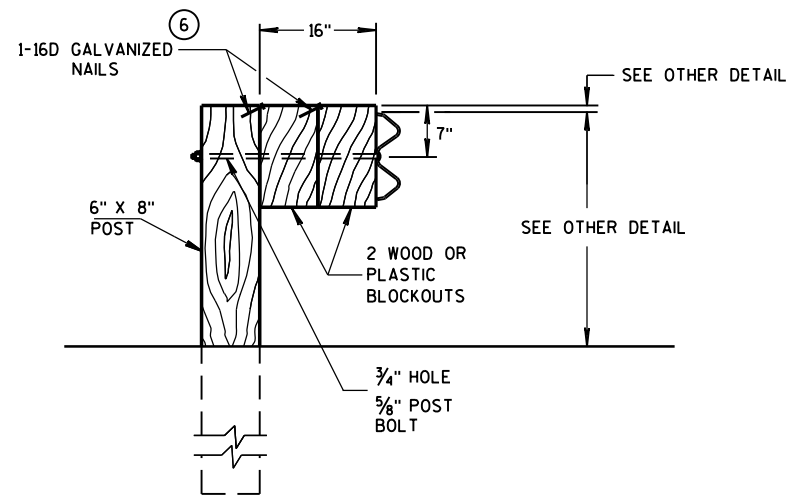
- ⑦ PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.
 - ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑨ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
 - ⑩ PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 ⑨	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 ⑩	3
	> 200'	100' C-C	2	

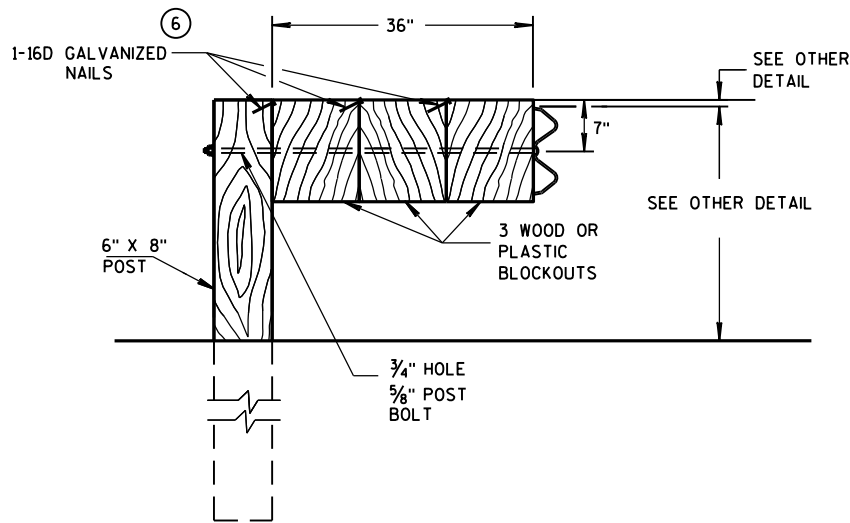
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL FOR 16" BLOCKOUT DEPTH

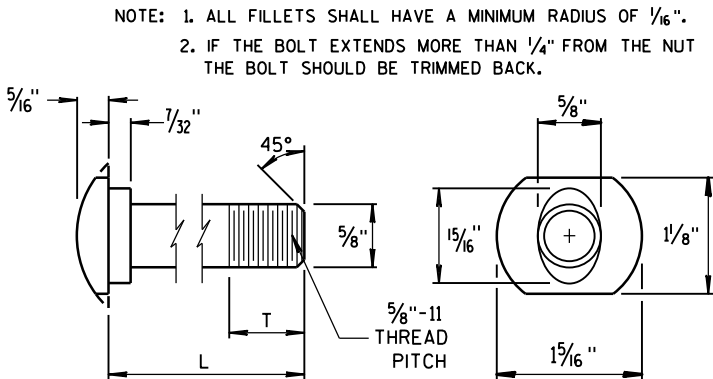
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

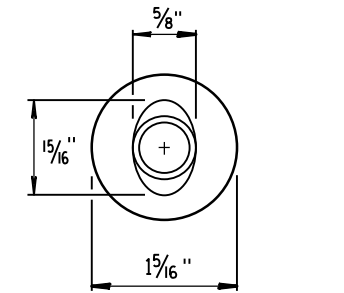
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

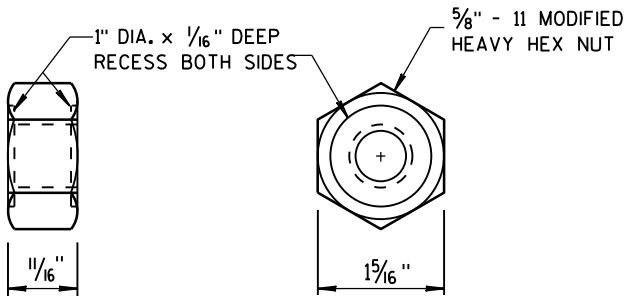


POST BOLT TABLE

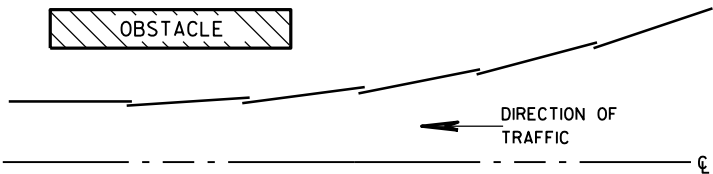
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



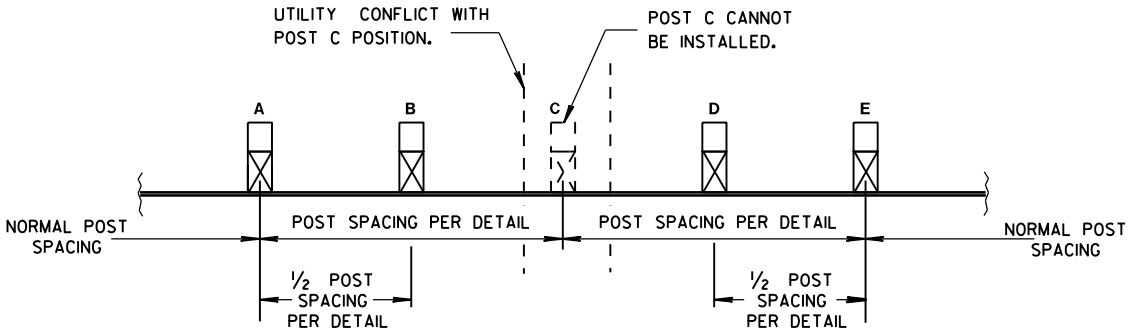
ALTERNATE BOLT HEAD



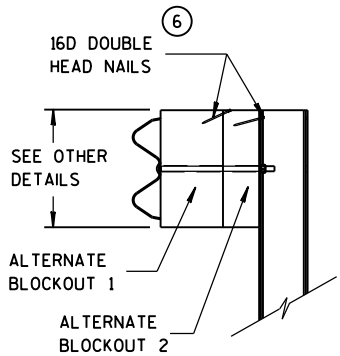
POST BOLT, SPLICE BOLT AND RECESS NUT



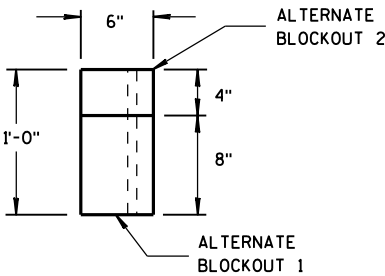
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.
- (E) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS, ONE SCREW PER CORNER.
- (G) 1/2" DIAMETER X 3" LONG LAG BOLT AND WASHER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.
- (I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

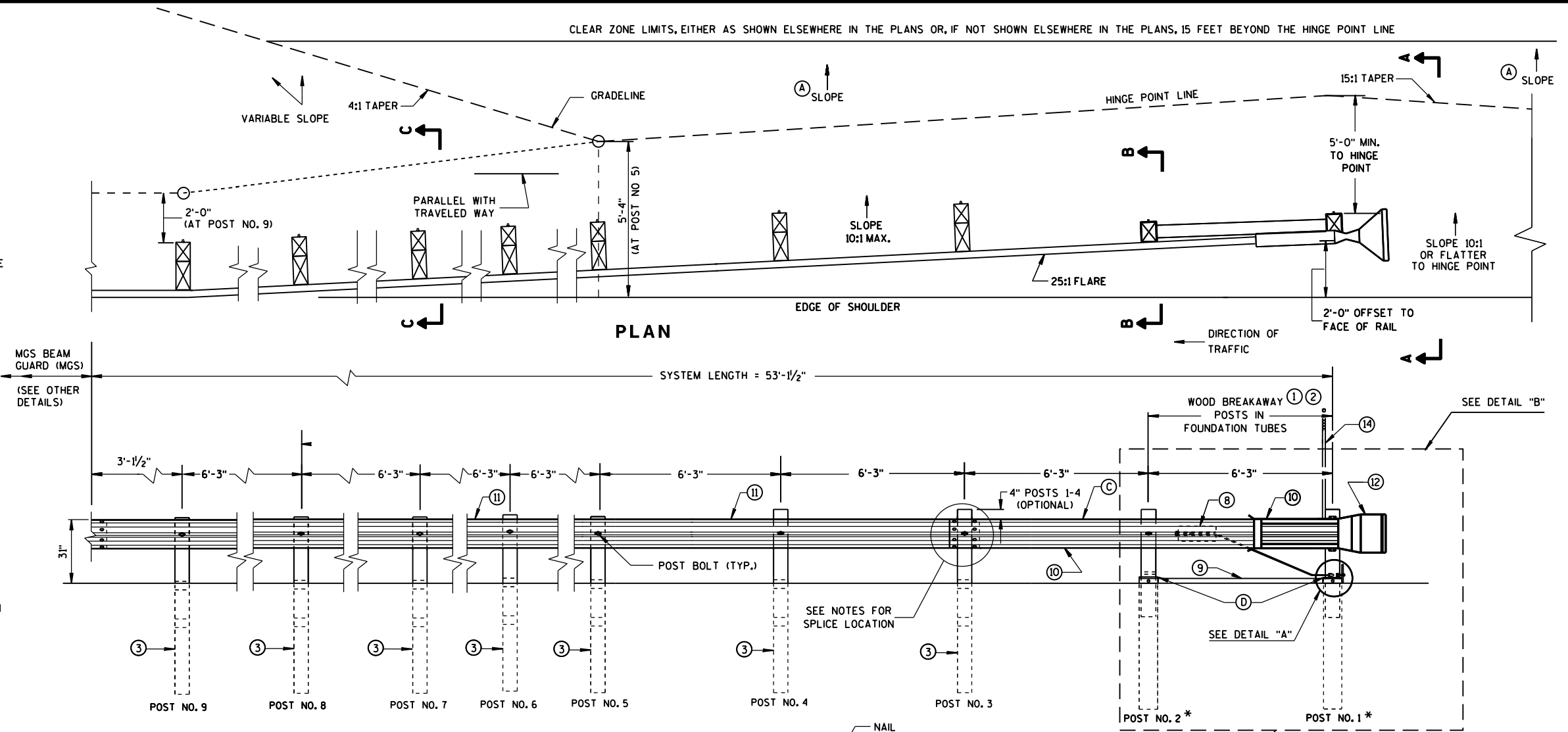
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

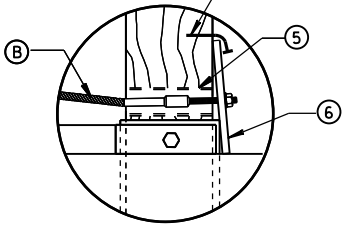
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

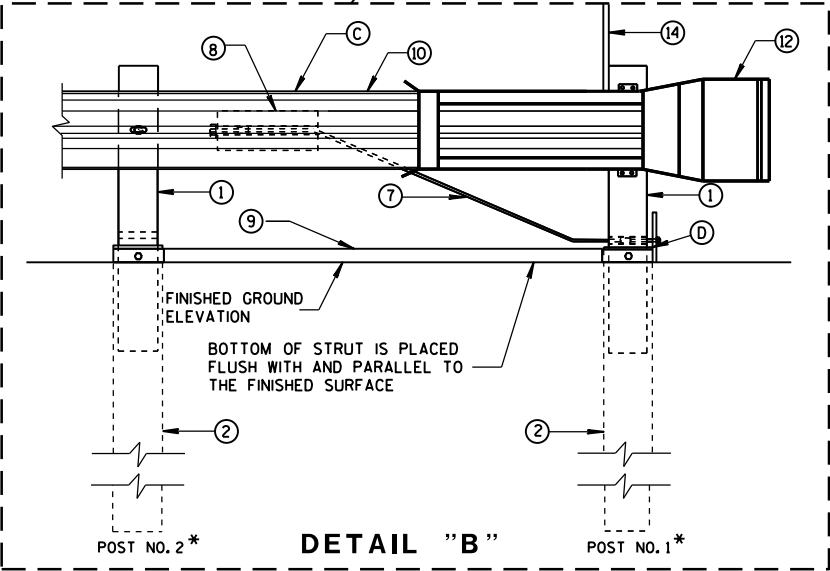
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



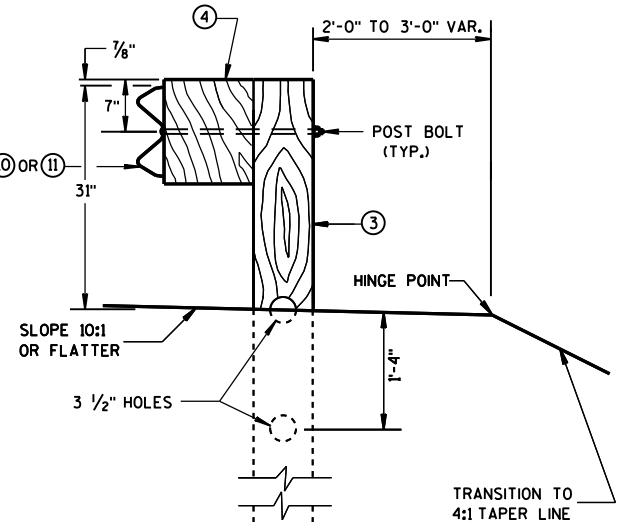
ELEVATION



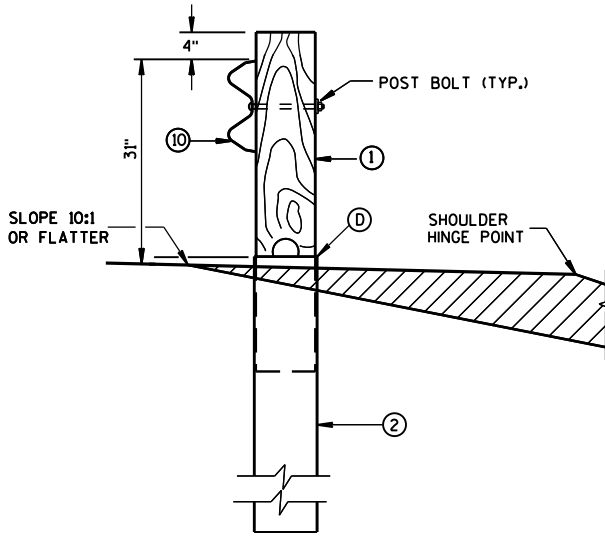
DETAIL "A"



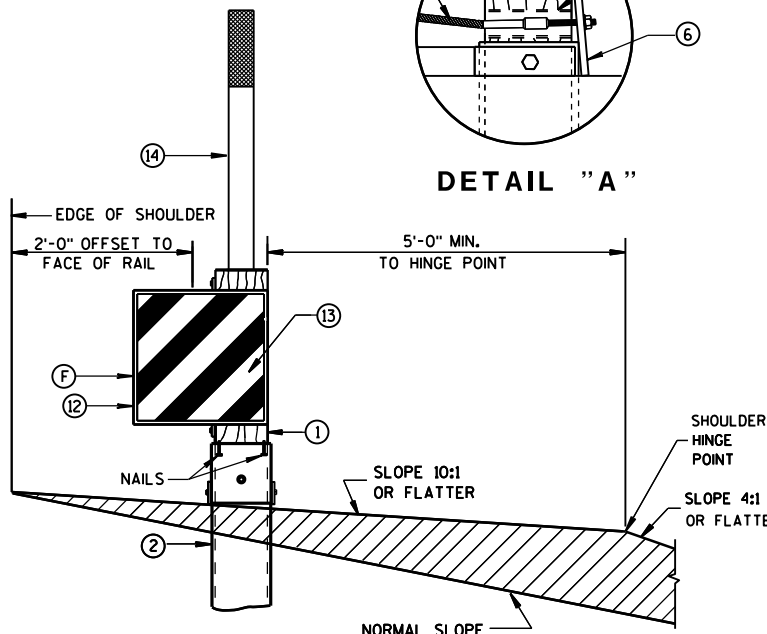
DETAIL "B"



SECTION C-C
TYPICAL AT POST NOS. 3-9



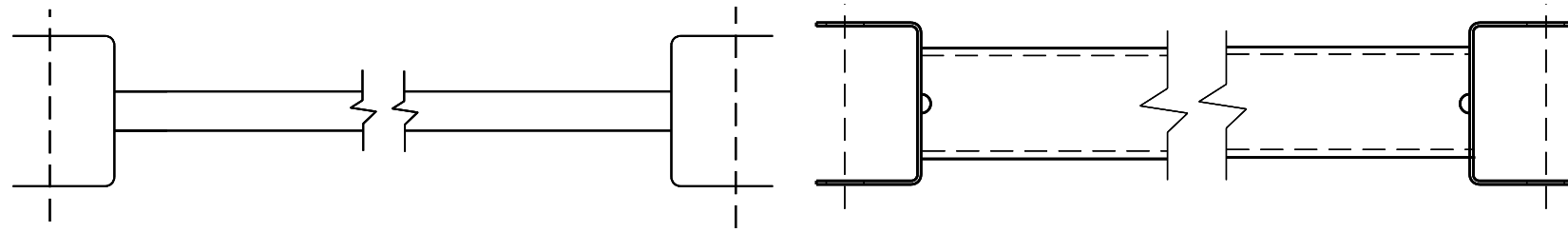
SECTION B-B
TYPICAL AT POST NO. 2*



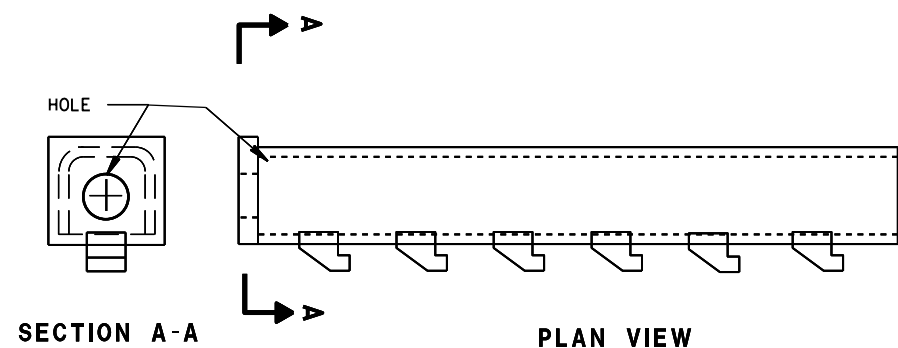
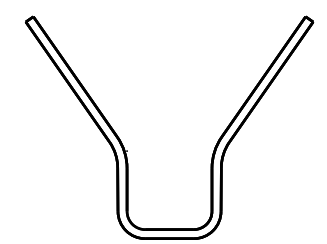
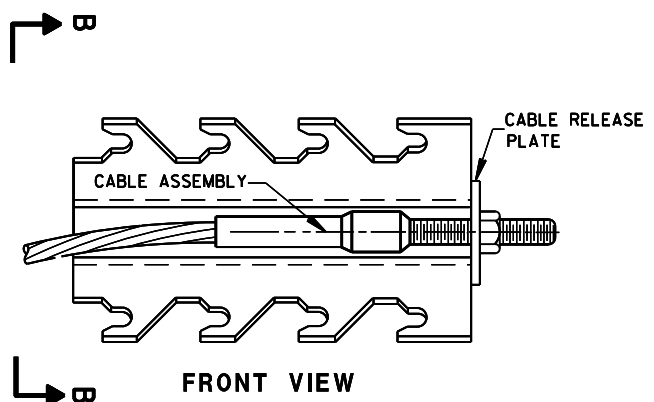
SECTION A-A
TYPICAL AT POST NO. 1*

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



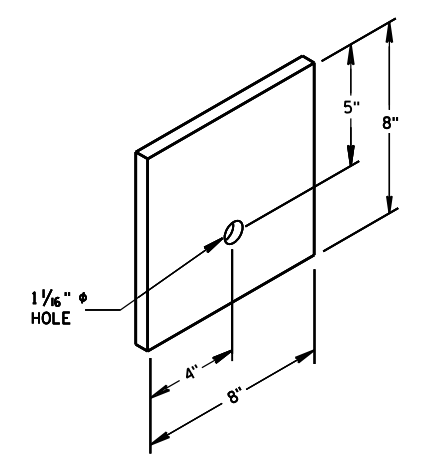
9 H
GENERIC GROUND STRUT



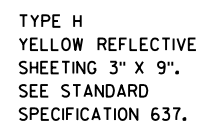
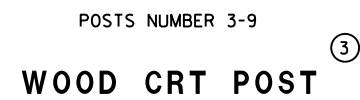
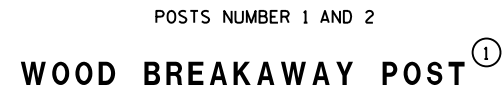
8 H
GENERIC ANCHOR CABLE BOX

BILL OF MATERIALS

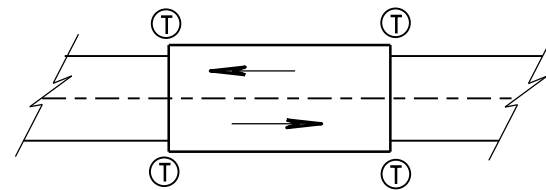
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	WOOD BREAKAWAY POST
②	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	END SECTION EAT
⑬	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
⑭	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



⑥
BEARING PLATE

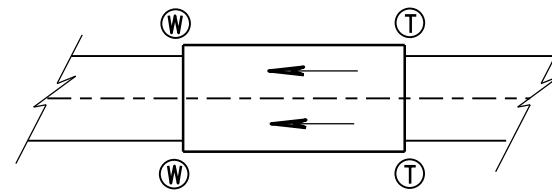


<p>MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)</p>	
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>	
<p>APPROVED June 2014</p>	<p>/S/ Jerry H. Zogg</p>
<p>DATE</p>	<p>ROADWAY STANDARDS DEVELOPMENT ENGINEER</p>
<p>FHWA</p>	



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

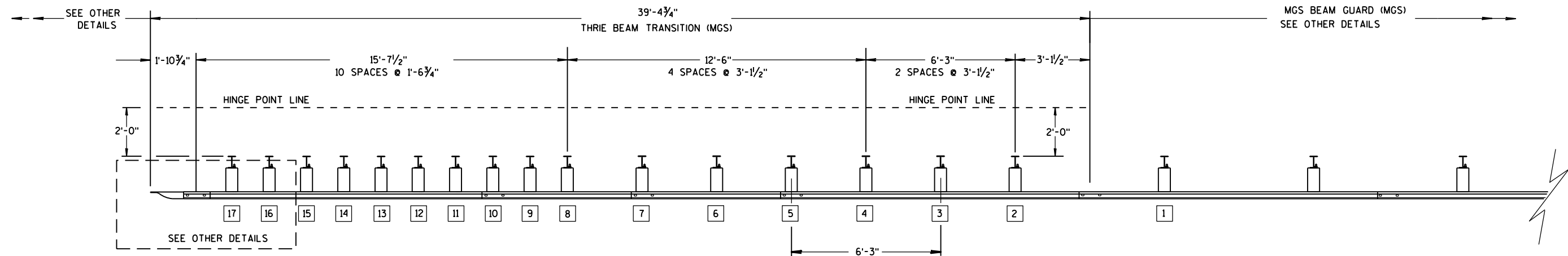
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

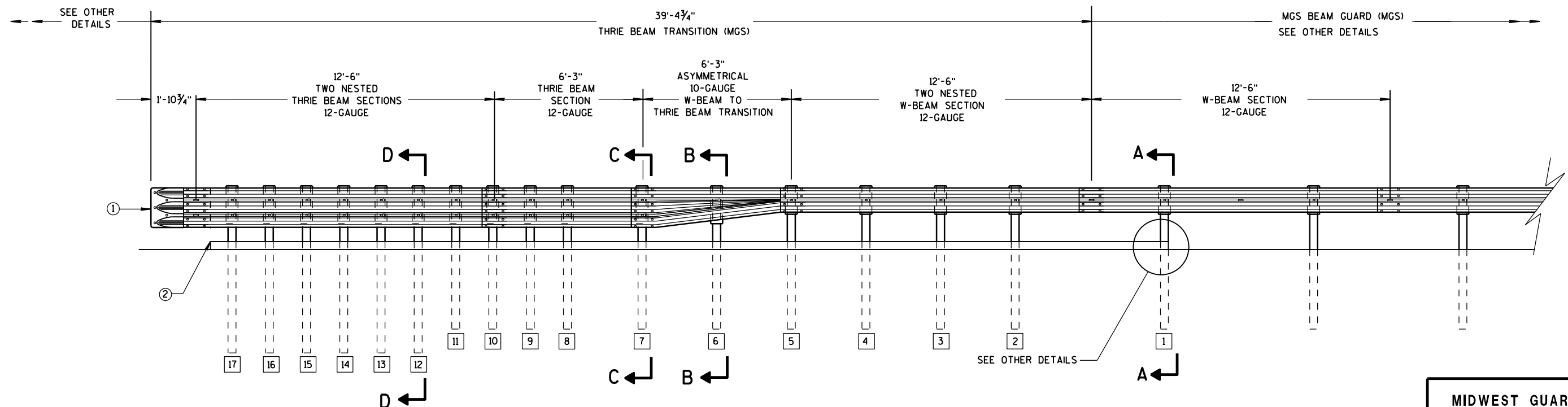
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE



PLAN VIEW



ELEVATION VIEW

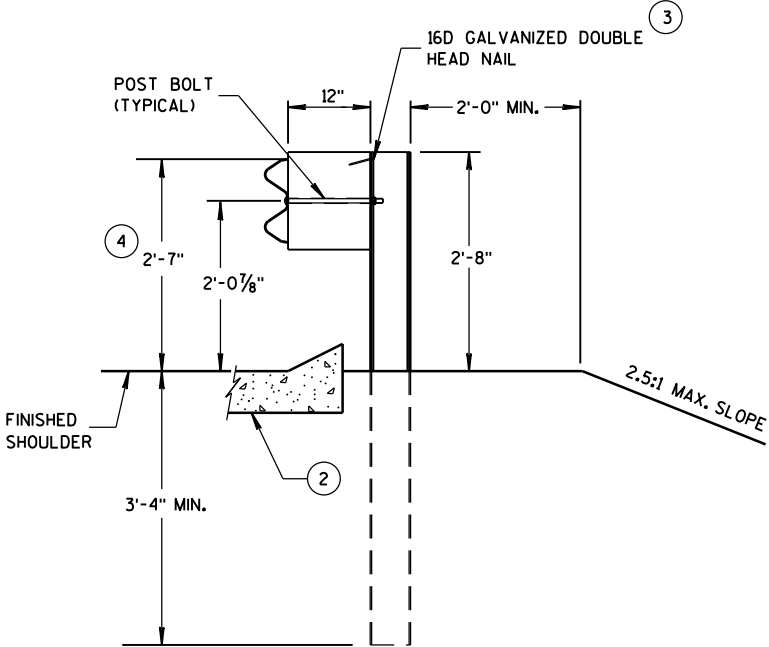
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

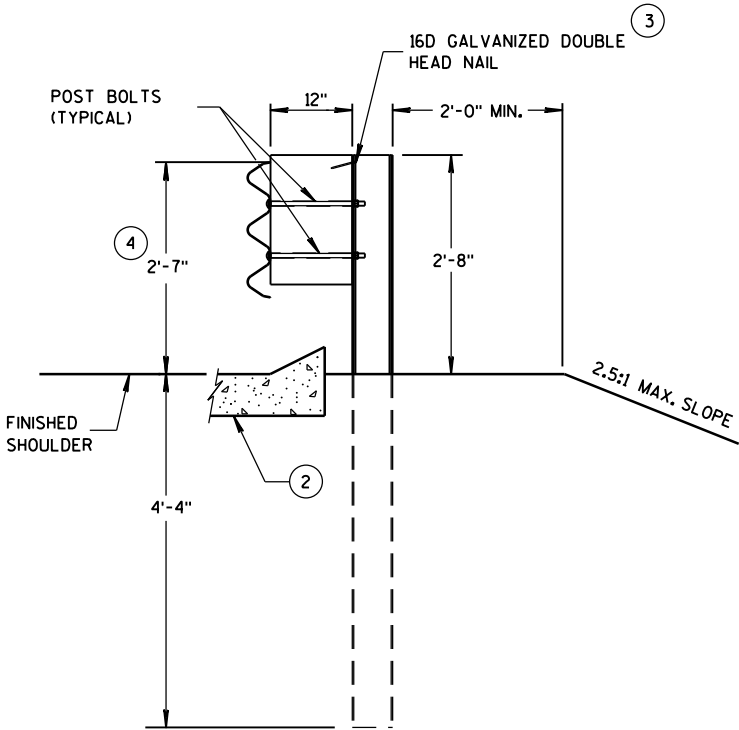
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

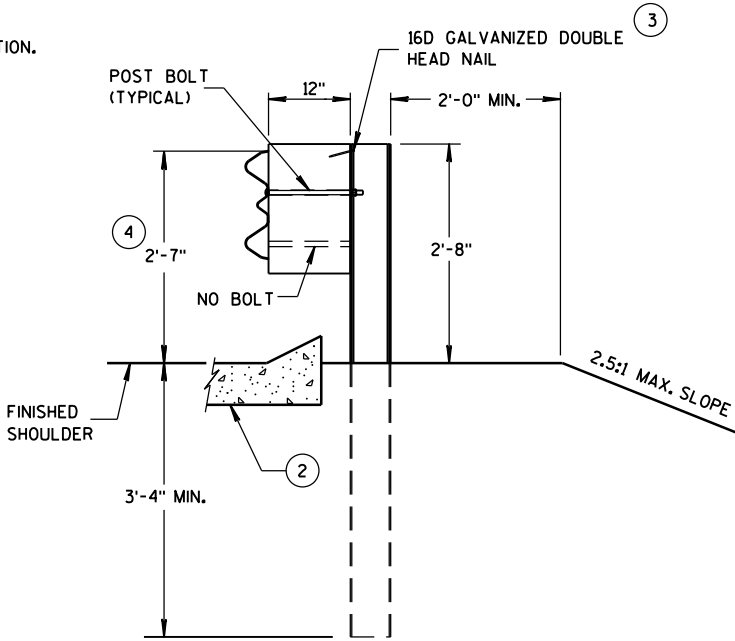
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



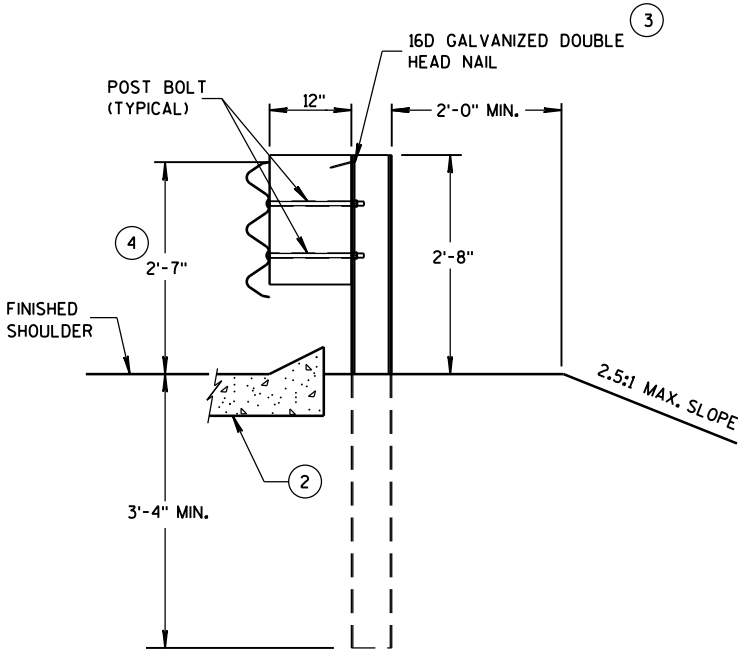
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

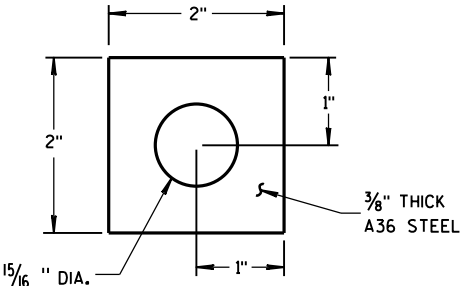
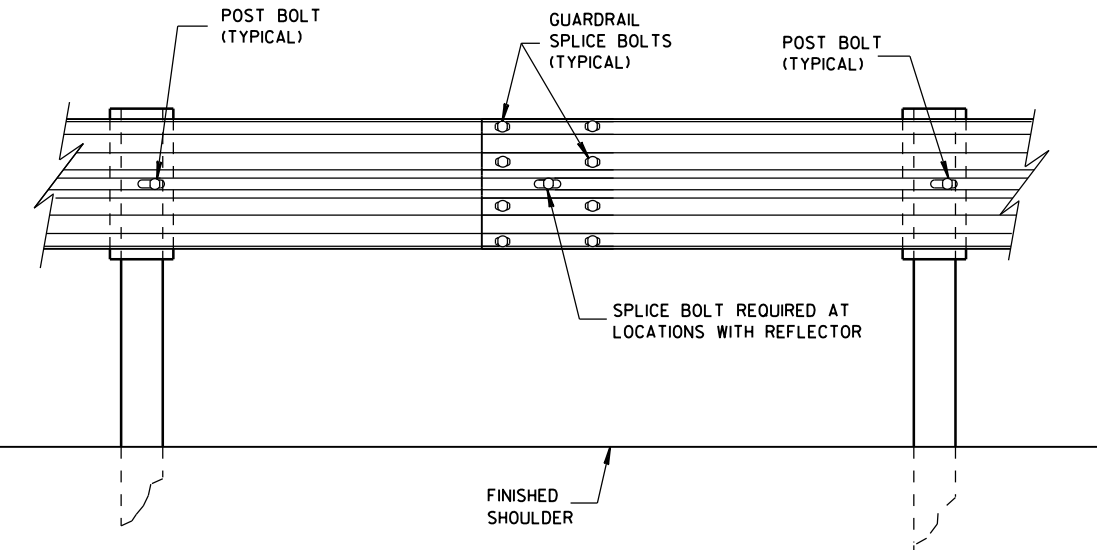
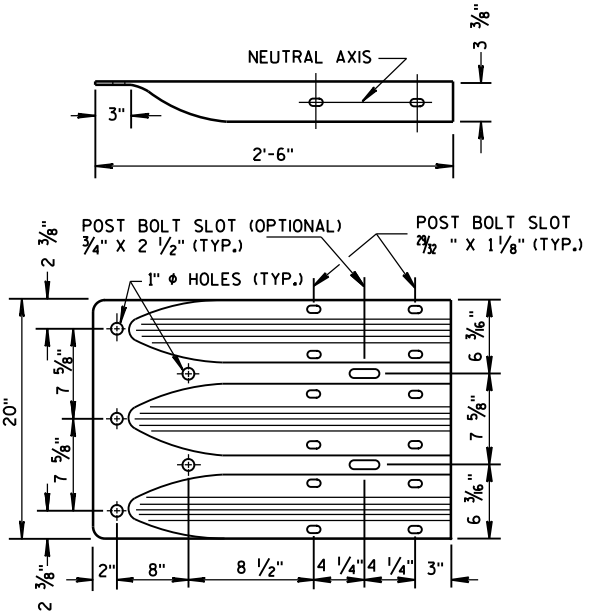


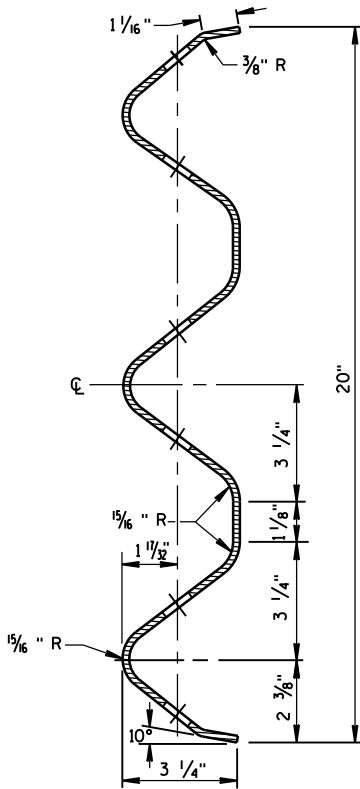
PLATE WASHER DETAIL



SPlice DETAIL



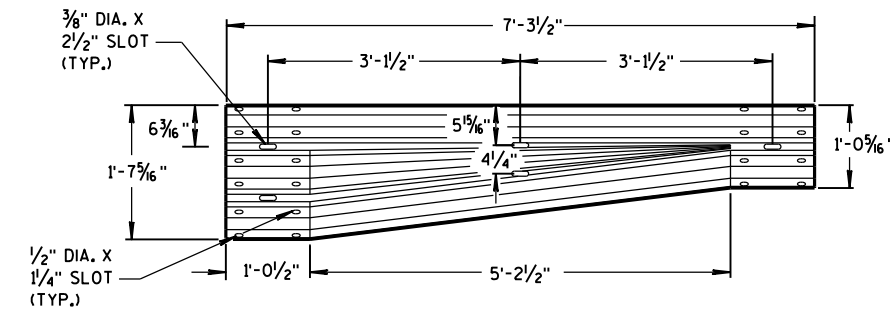
THRIE BEAM
TERMINAL CONNECTOR



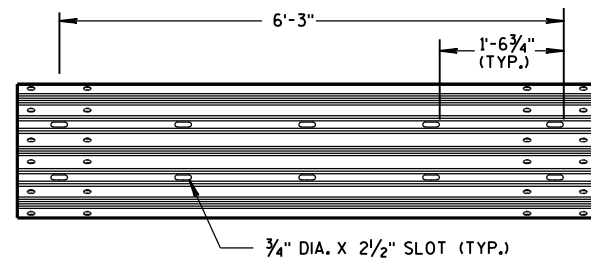
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

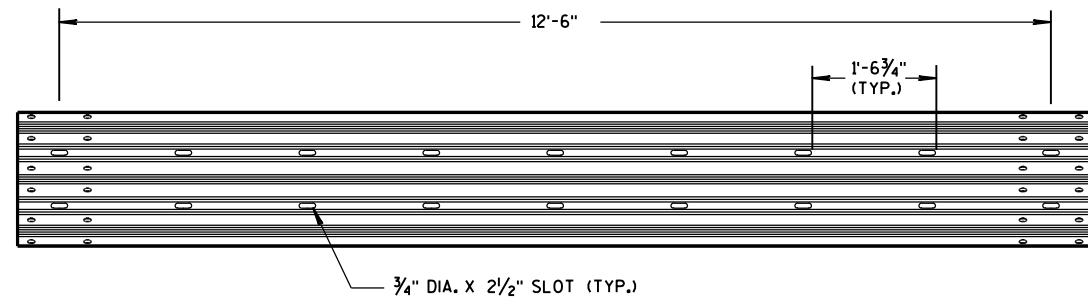
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



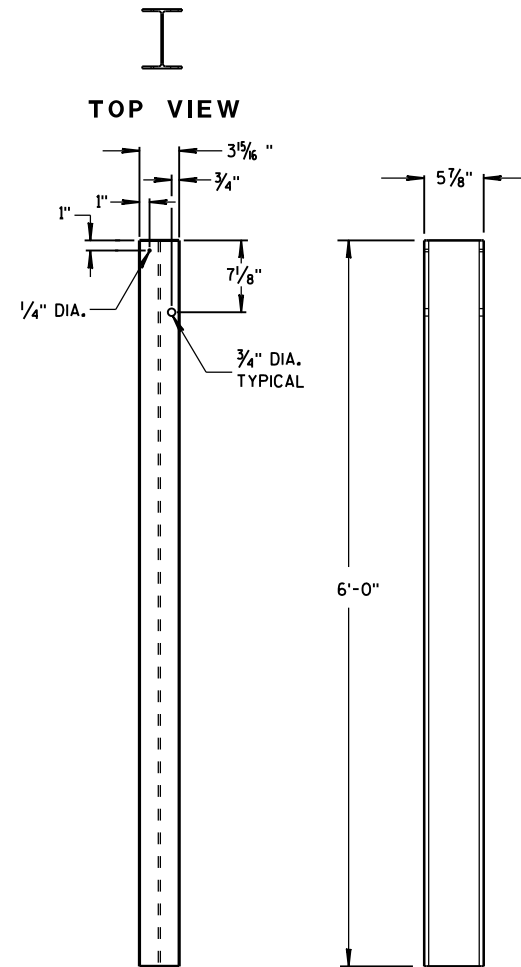
W-BEAM TO THRIE BEAM TRANSITION SECTION



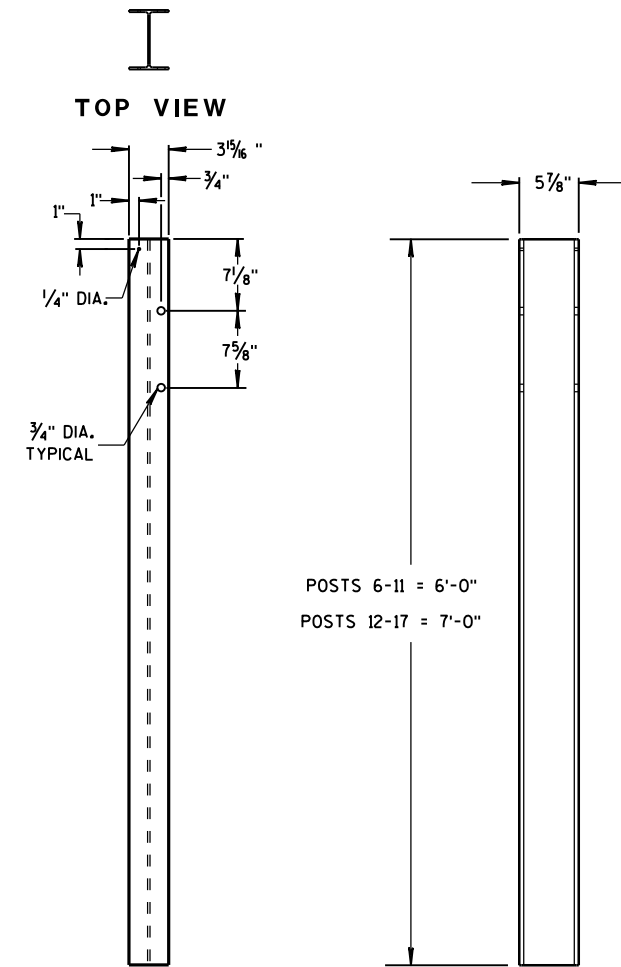
6'-3" THRIE BEAM SECTION



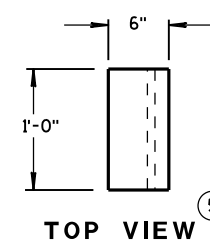
12'-6" THRIE BEAM SECTION



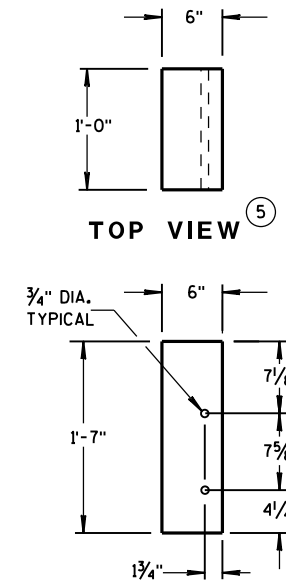
STEEL POSTS 1-5



STEEL POSTS 6-17



BLOCKOUT POSTS 1-5



BLOCKOUT POSTS 6-17

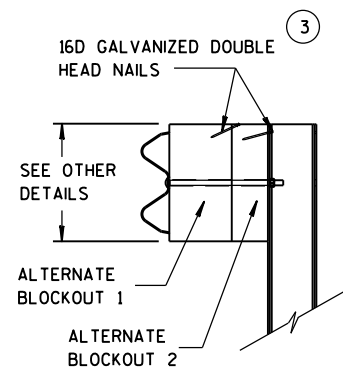
GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

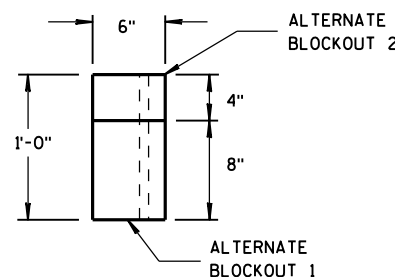
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

⑤ WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



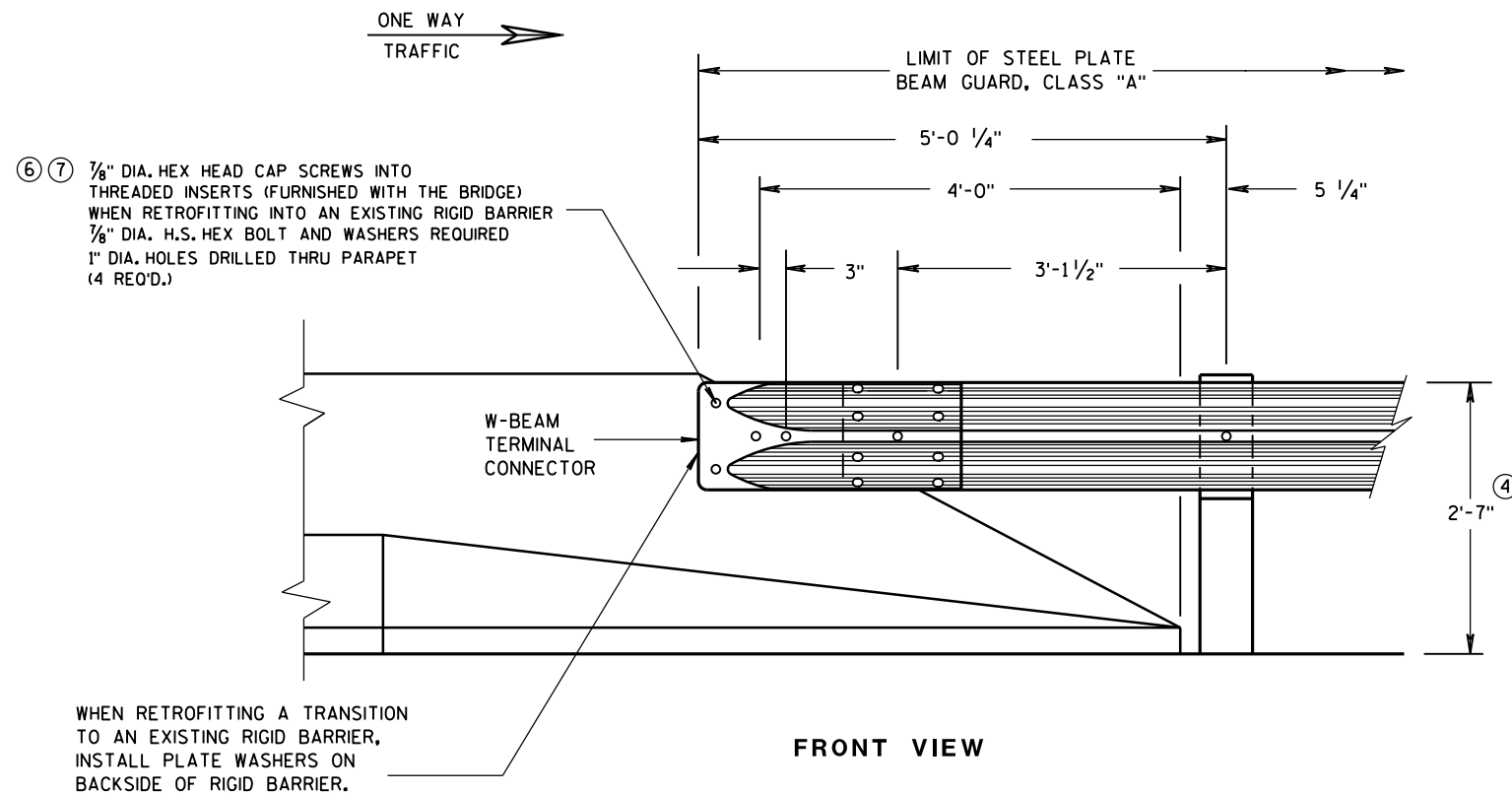
ALTERNATE WOOD BLOCKOUT DETAIL



TOP VIEW

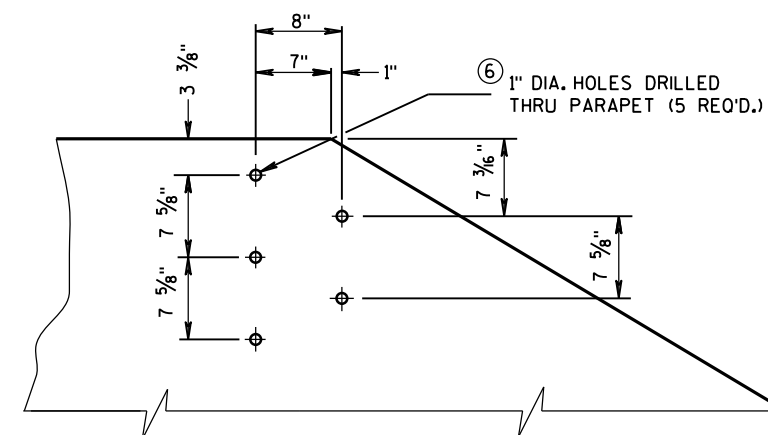
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

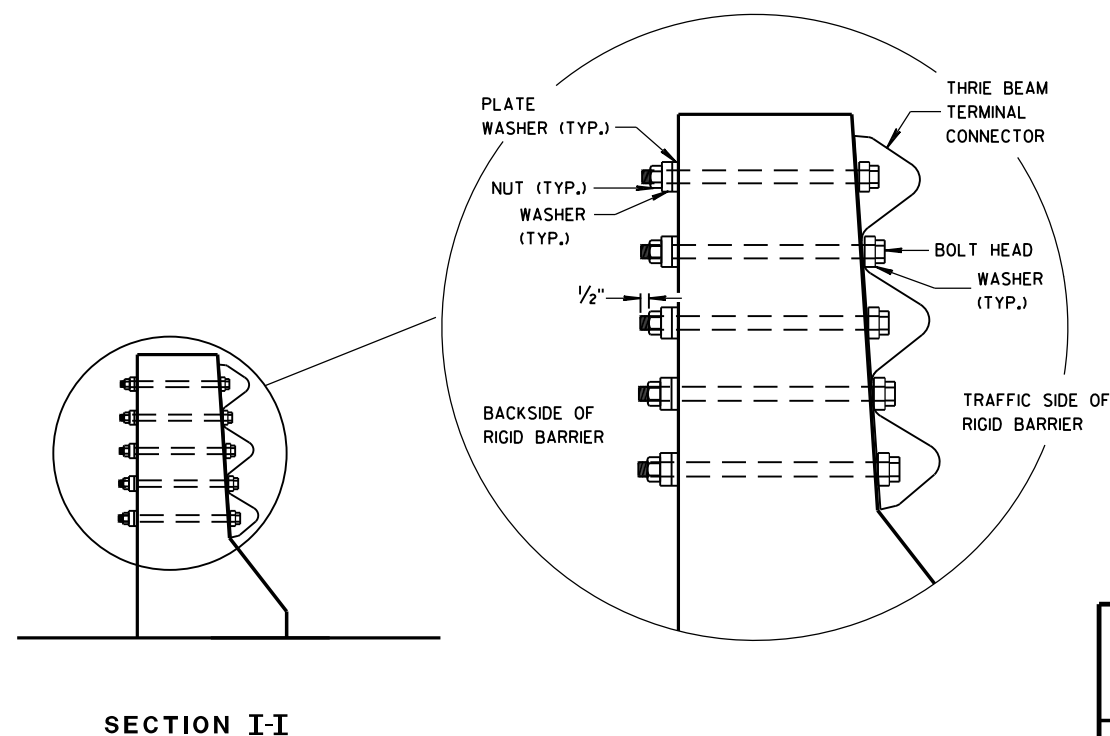
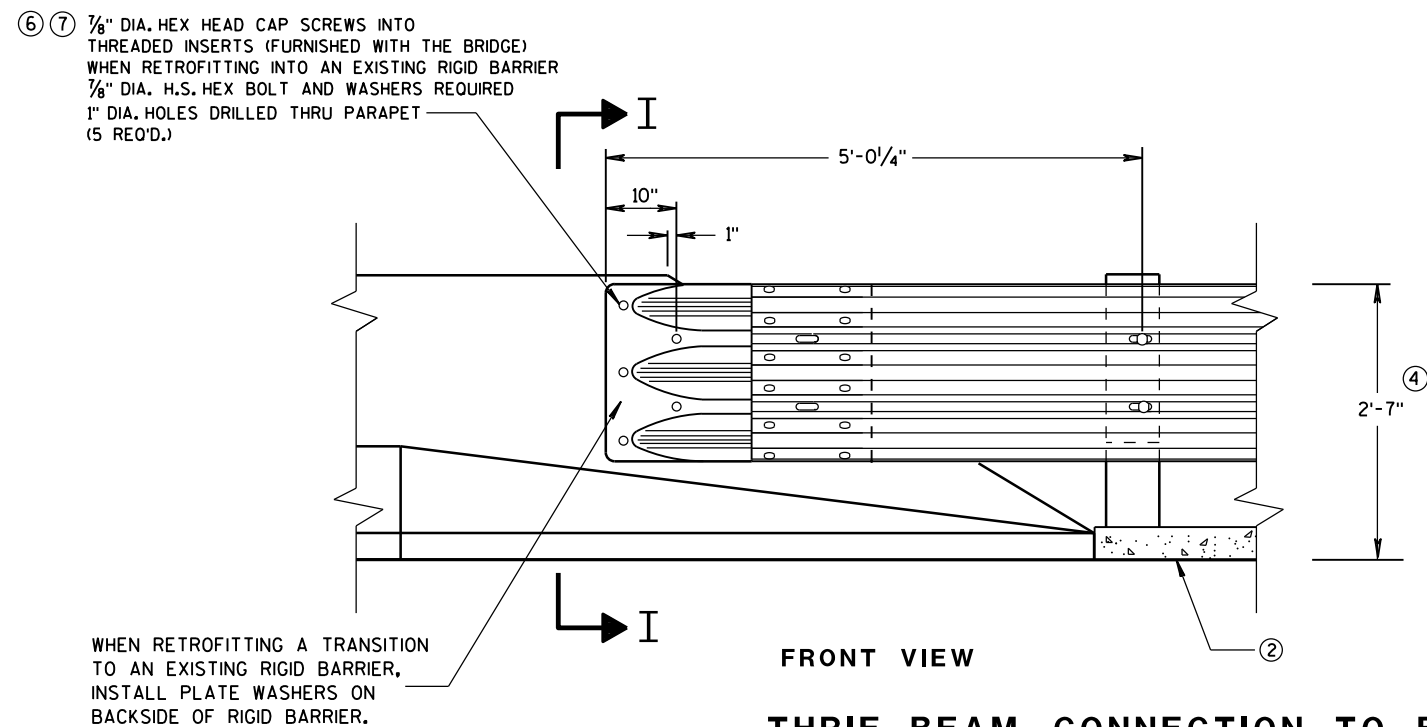


GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION

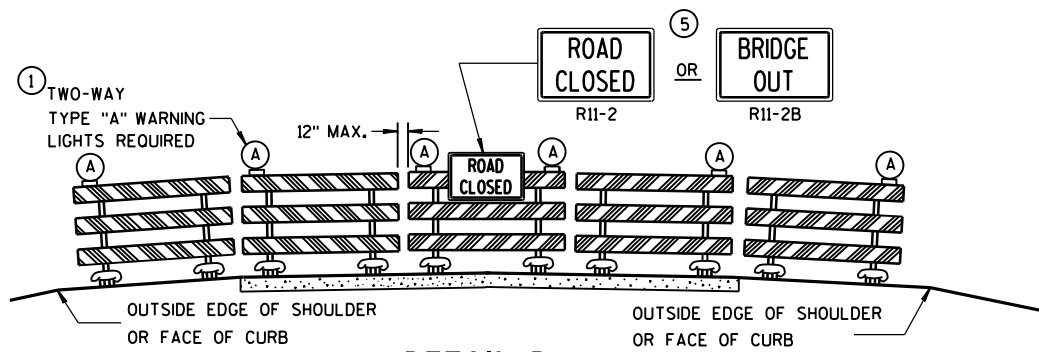


MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

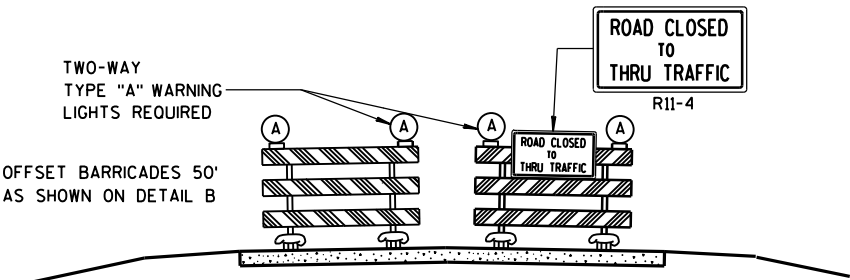
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

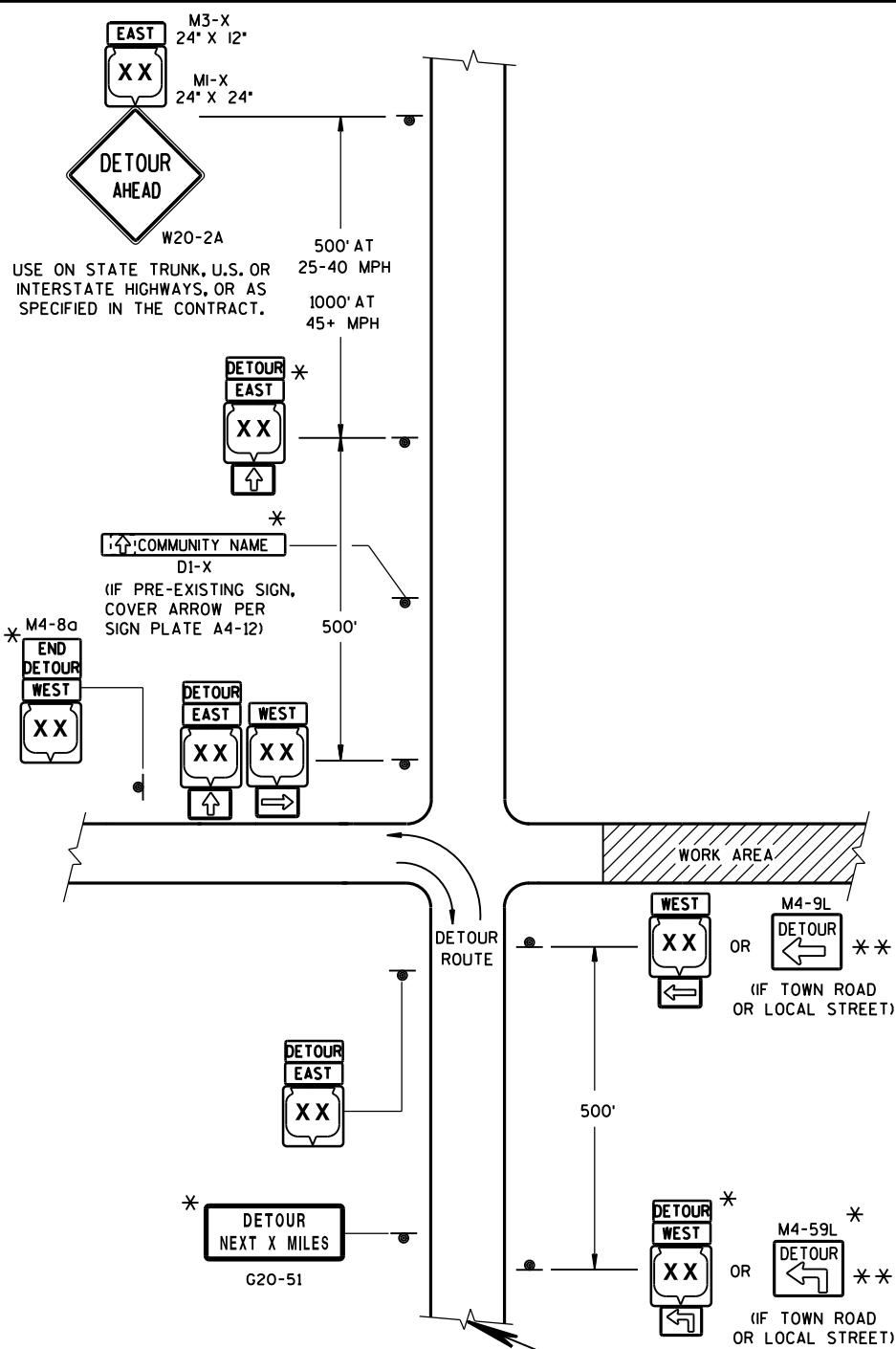
"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- 2 THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- 3 FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- 4 FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- 5 FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- 6 INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- 7 "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
Sept. 2015 DATE	/S/ Peter Amokobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



LEGEND

SIGN ON PERMANENT SUPPORT

WORK AREA

M4-8
M3-X

OR OR
MI-4 MI-5A MI-6

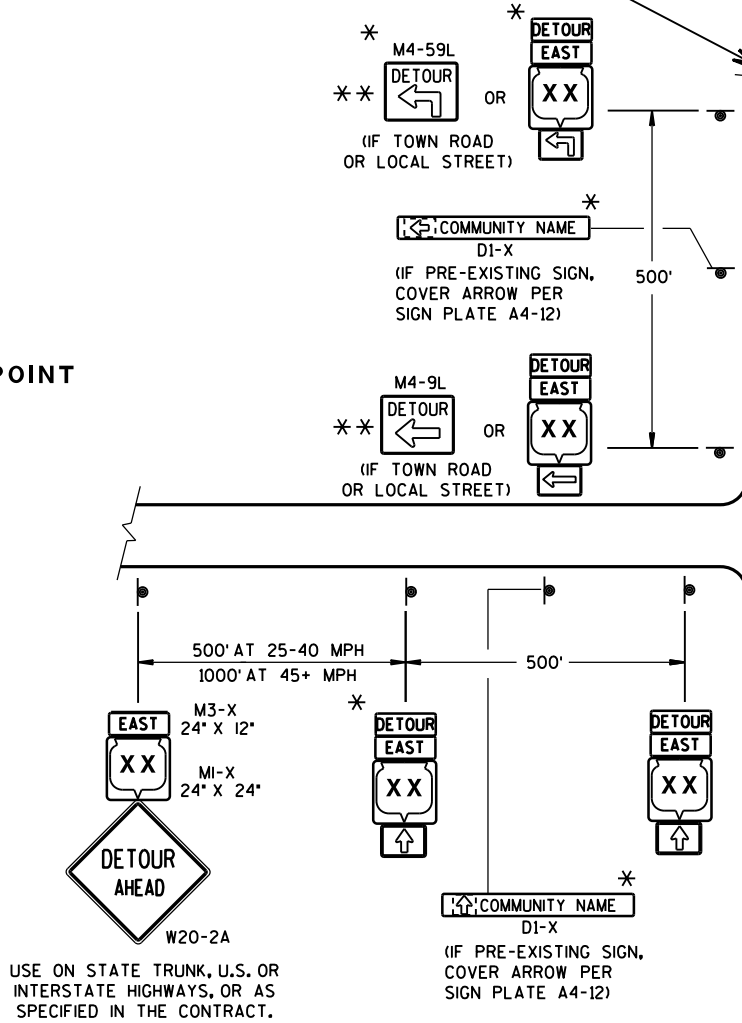
OR OR
M05-1 M06-1 M06-1

SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD 15C2-SHEET "a"

THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

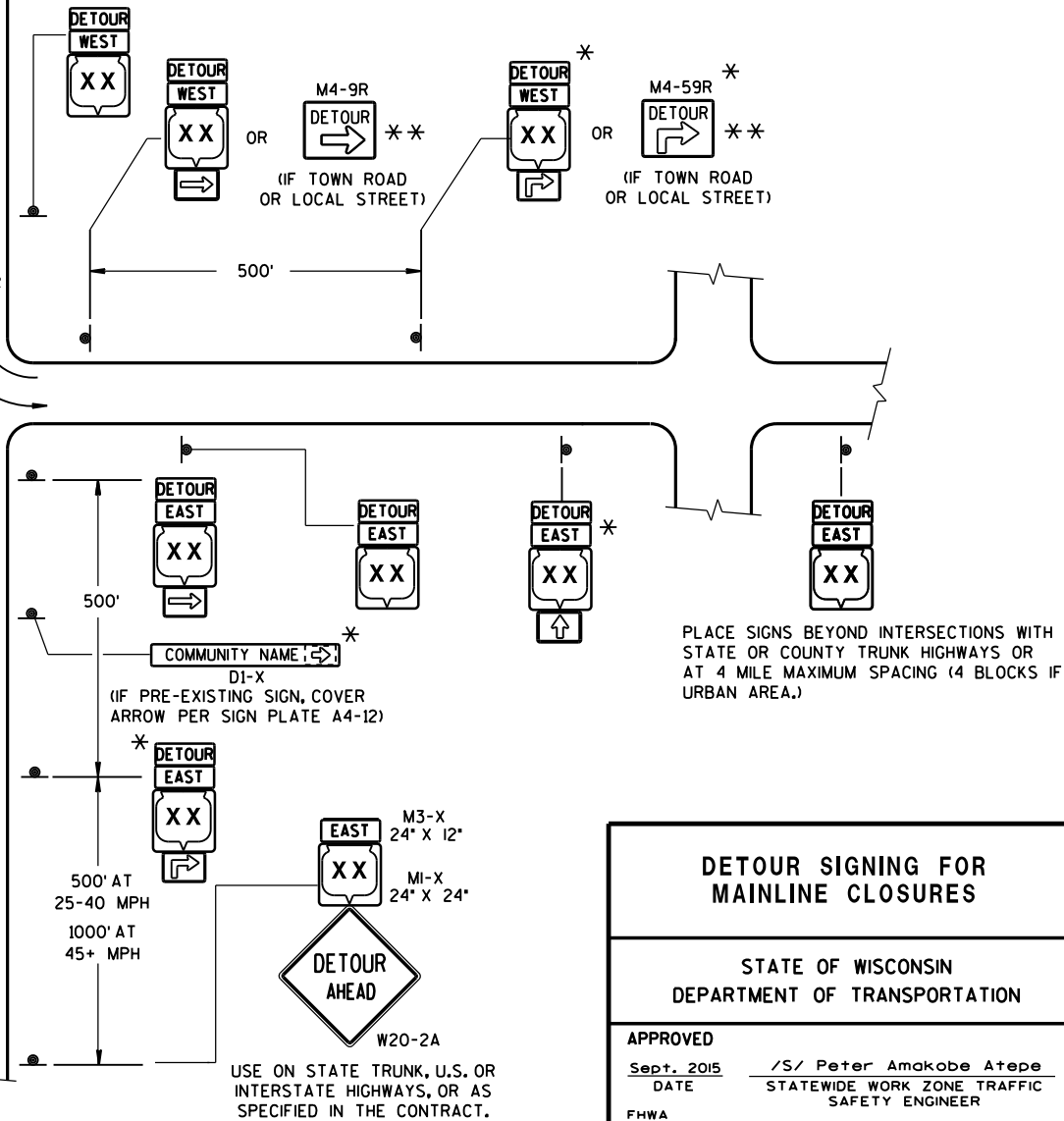
MATCH POINT

DETAIL F
DETOUR SIGNING



GENERAL NOTES

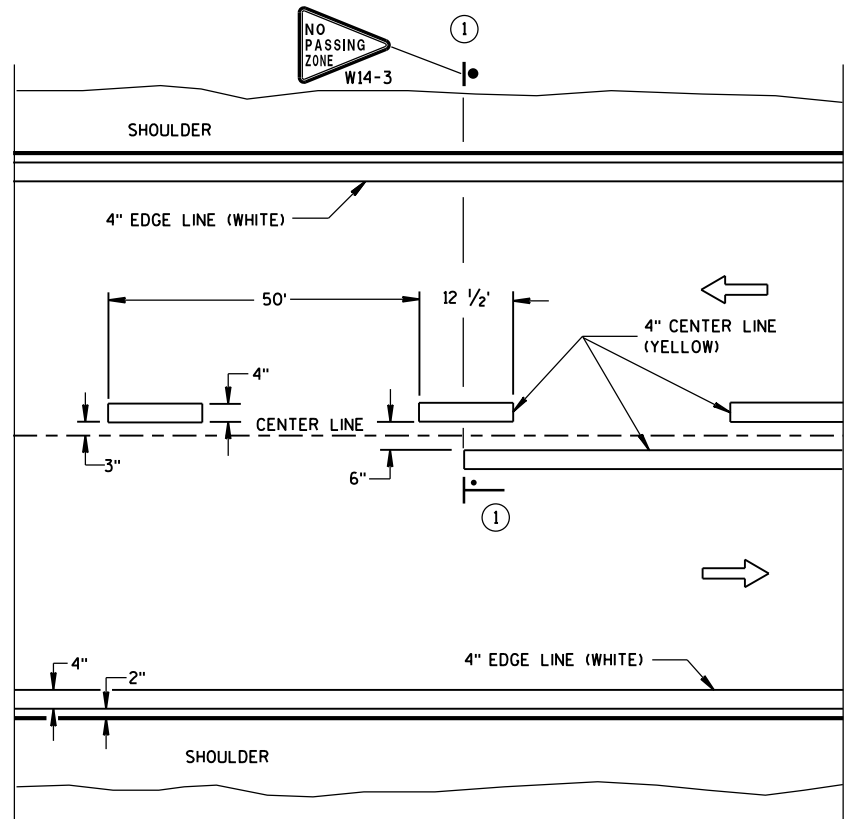
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS, MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOWS:
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
 - MI-4, MI-5A, AND MI-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M4-9 SHALL BE 30" X 24".
 - M4-8a SHALL BE 24" X 18".
 - G20-51 SHALL BE 60" X 24".
 - W20-2 SHALL BE 48" X 48".
 - D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



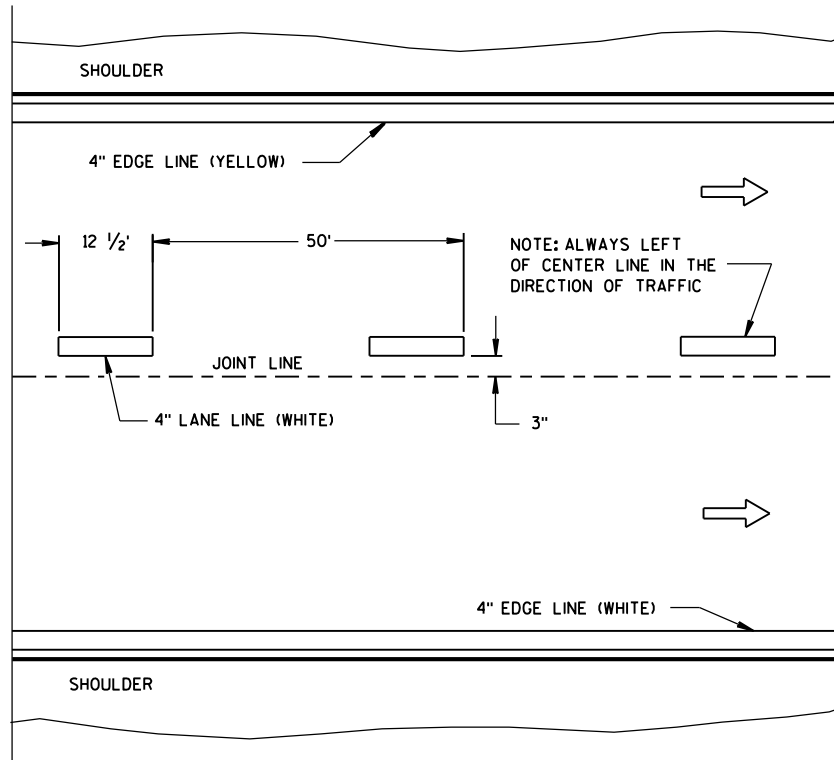
**DETOUR SIGNING FOR
MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER

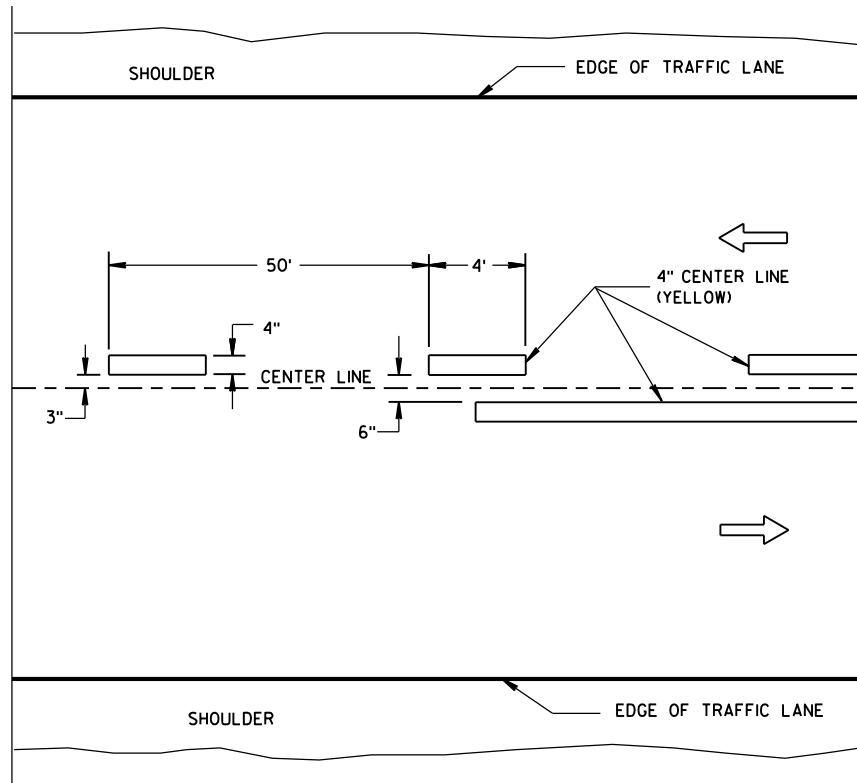


TWO WAY TRAFFIC

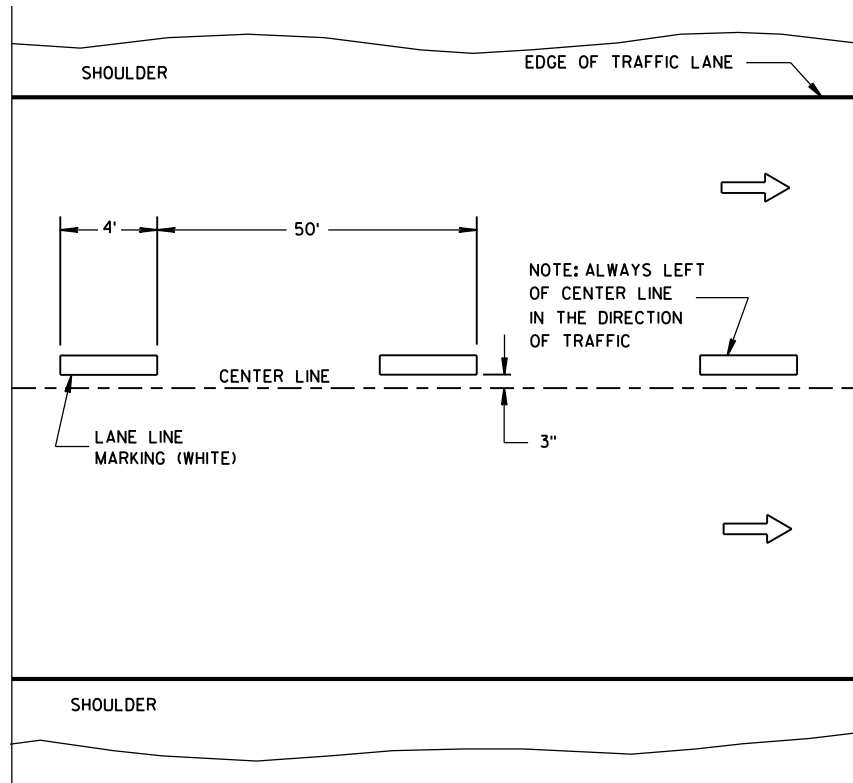


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

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

① NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

—●— "T" MARKING

● POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

LEGEND

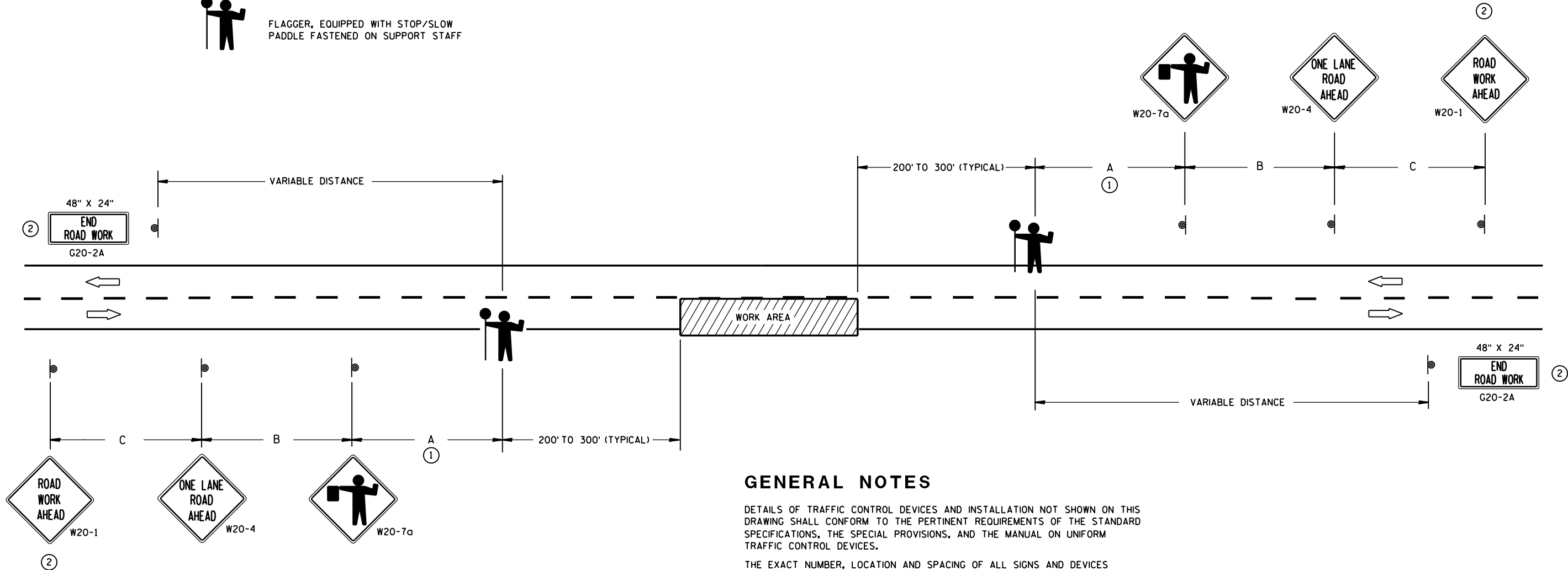
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7a AND W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE LOCATION OF ALL FLAGGERS) SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

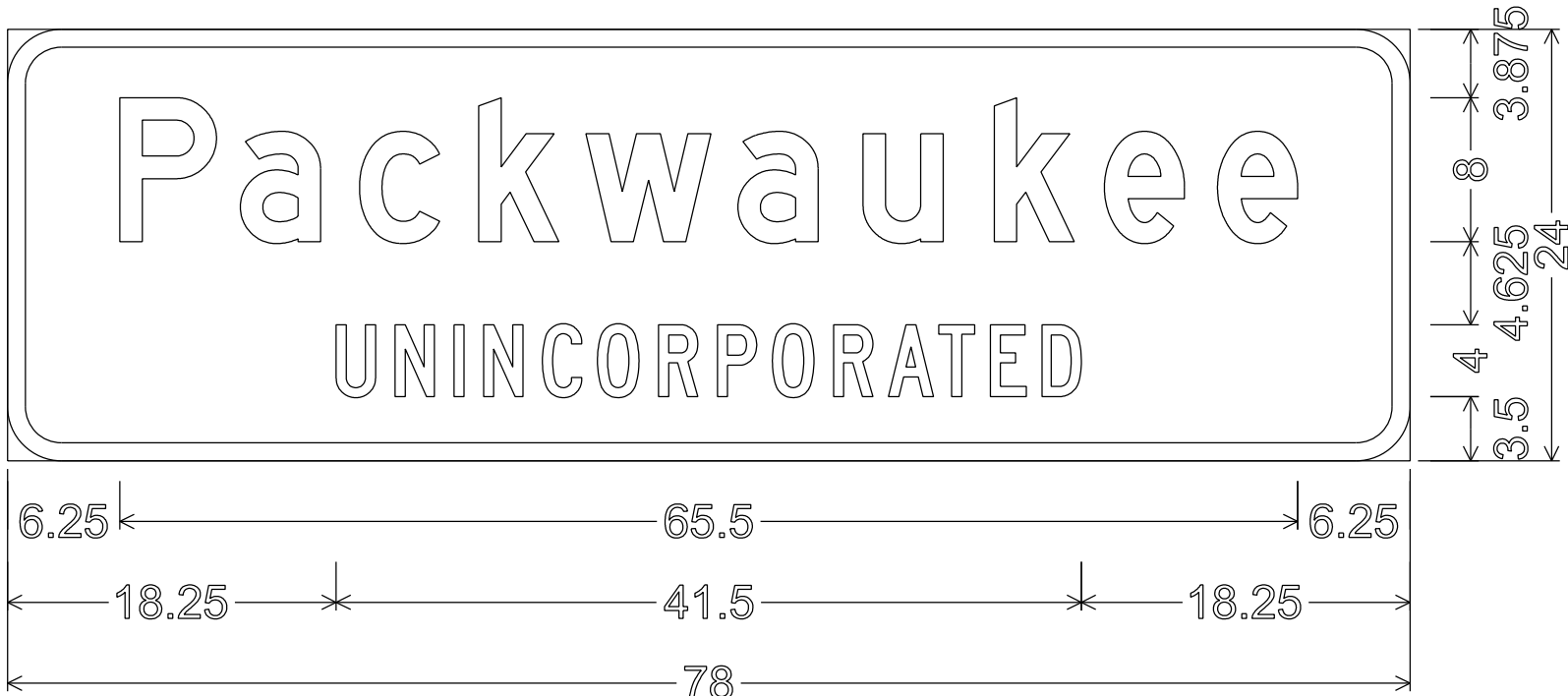
TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

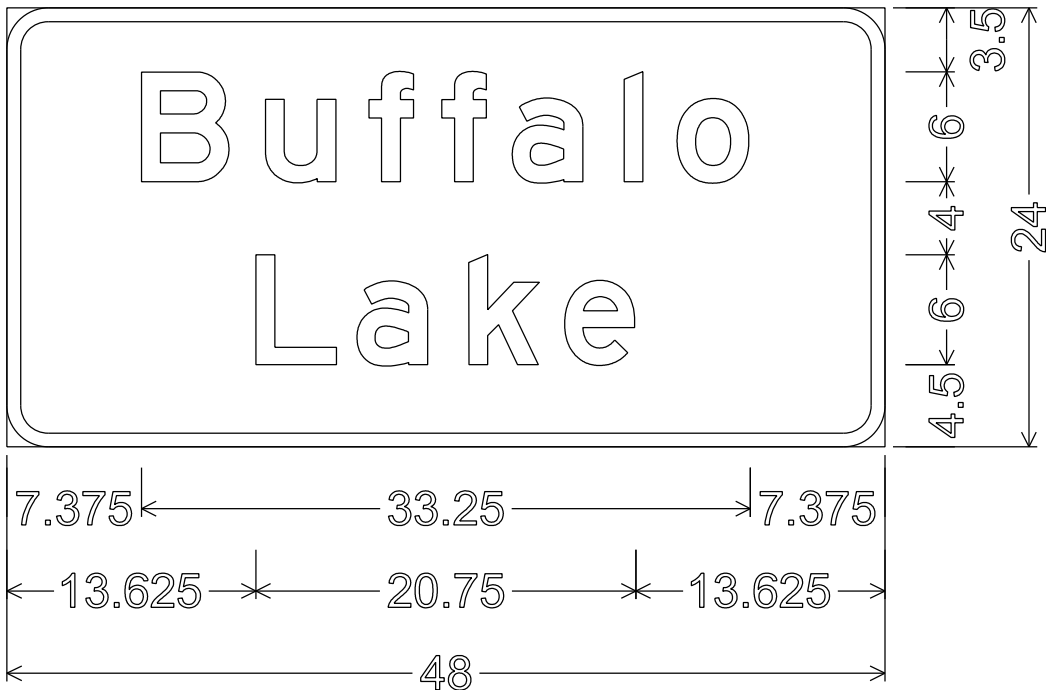
APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER OF DESIGN
FHWA

NOTES

- 1. All Signs Type II - Type H Reflective
- 2. Color:
 - Background - GREEN
 - Message - WHITE
- 3. Message Series - E except as noted



I2-3; 3.000" Radius, 1.000" Border,
"Packwaukee" D; "UNINCORPORATED" C

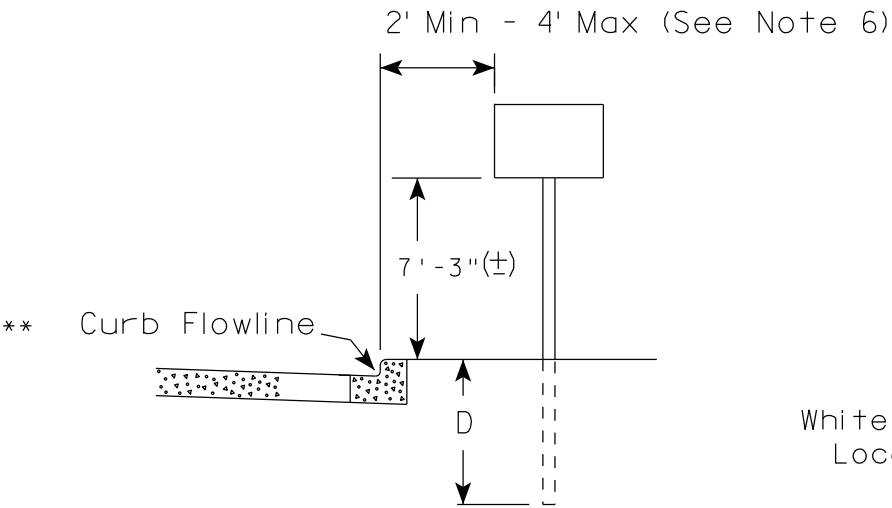


I3-1;
2.250" Radius, 0.750" Border

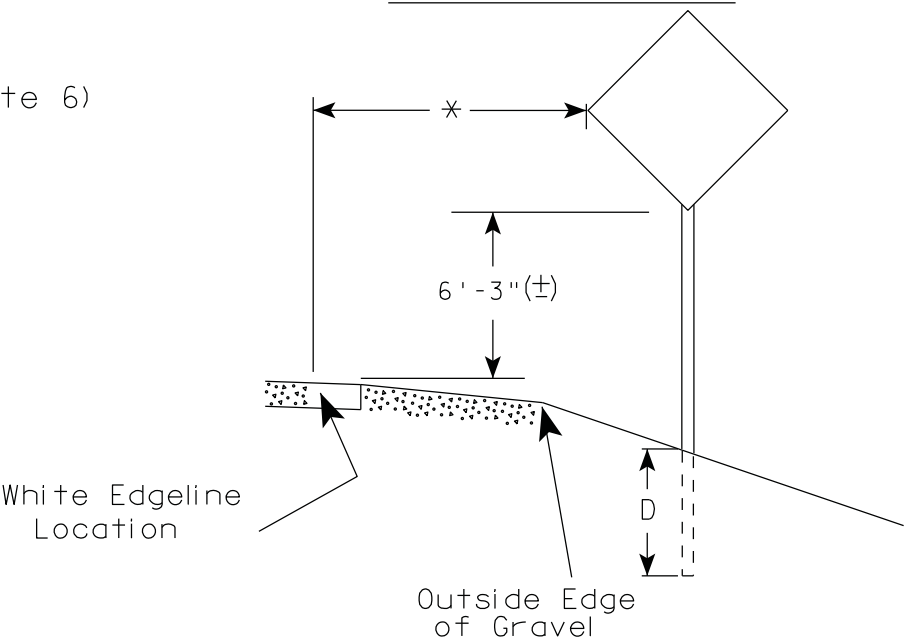
7

7

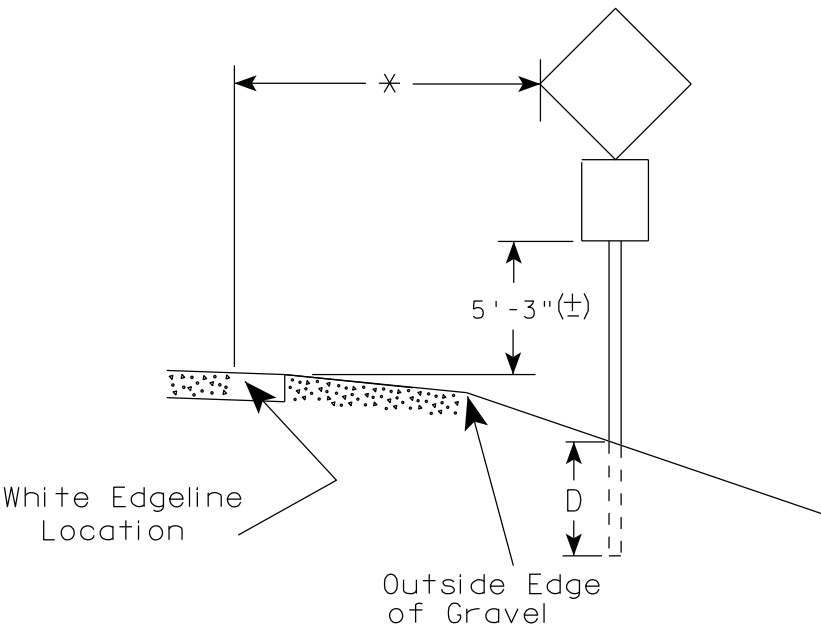
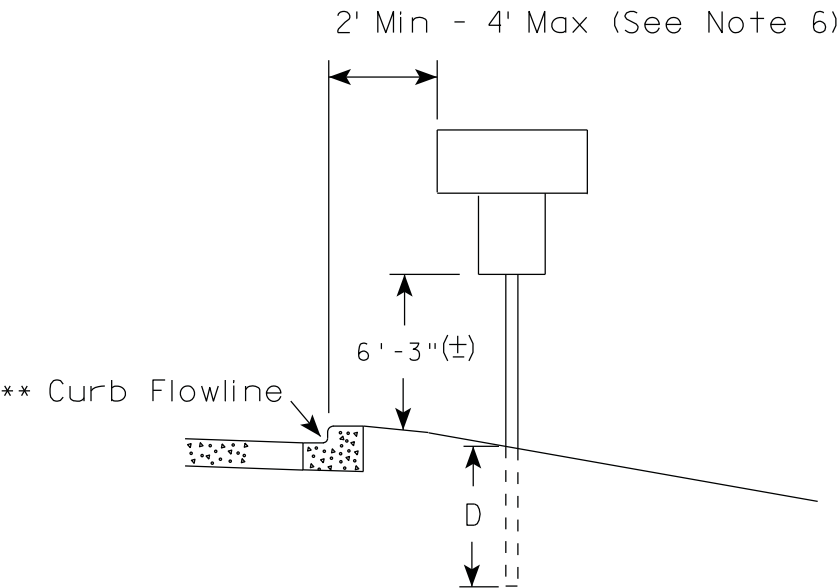
URBAN AREA



RURAL AREA (See Note 2)



- GENERAL NOTES
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
 2. If signs are mounted on barrier wall, see A4-10 sign plate.
 3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
 4. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. The (±) tolerance for mounting height is 3 inches.
 8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
 9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).



POST EMBEDMENT DEPTH

Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

* * The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

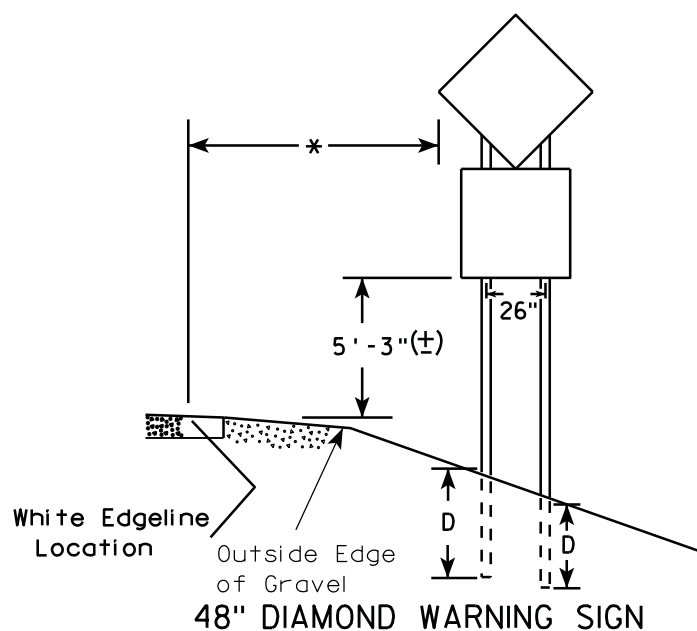
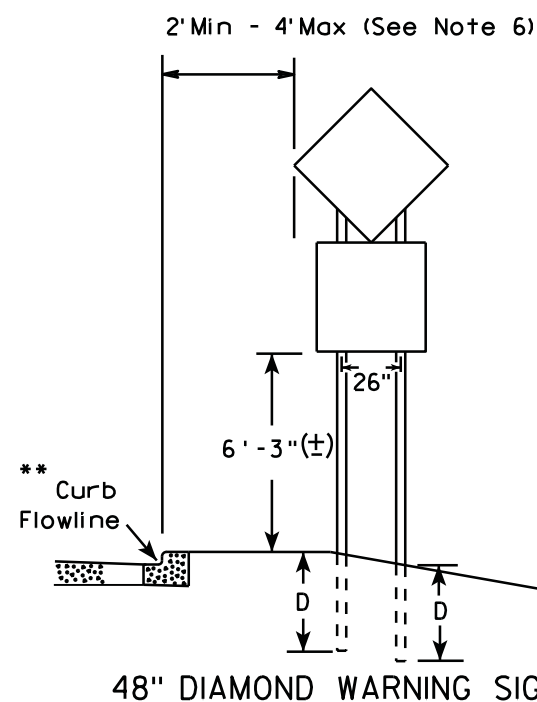
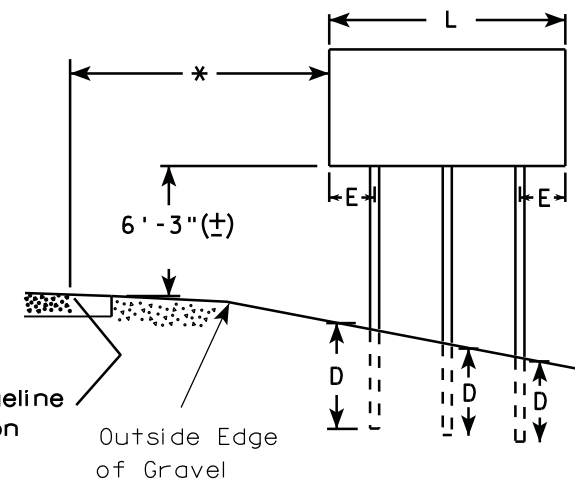
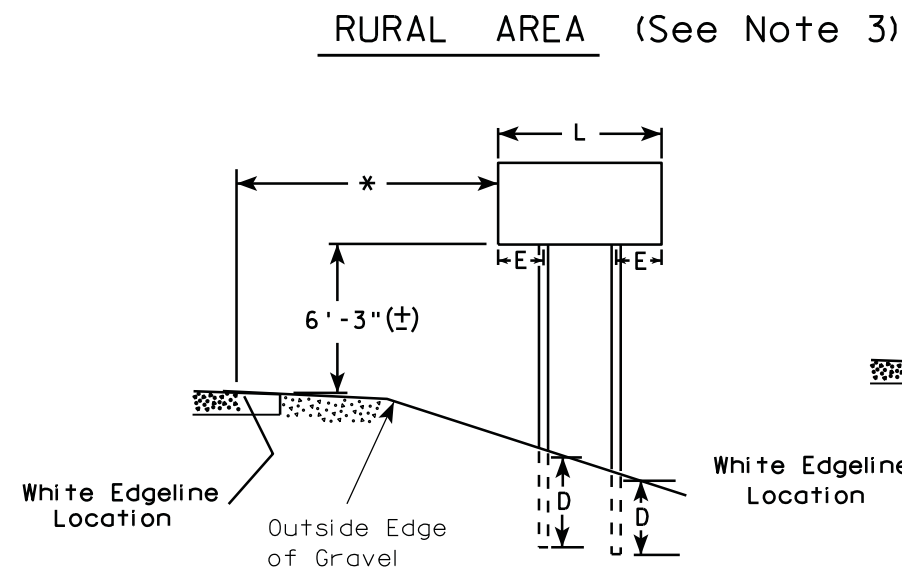
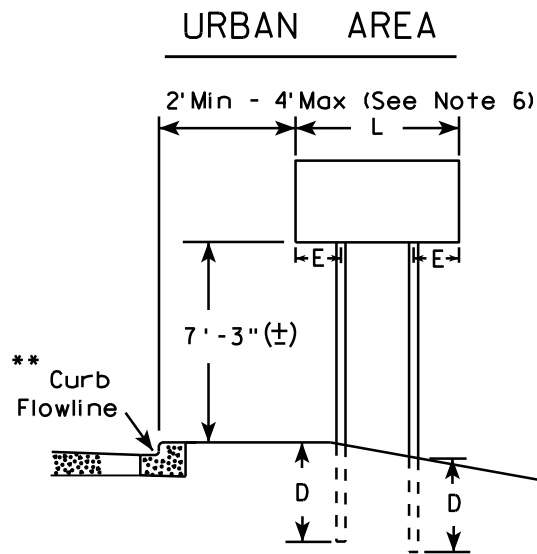
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20



- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

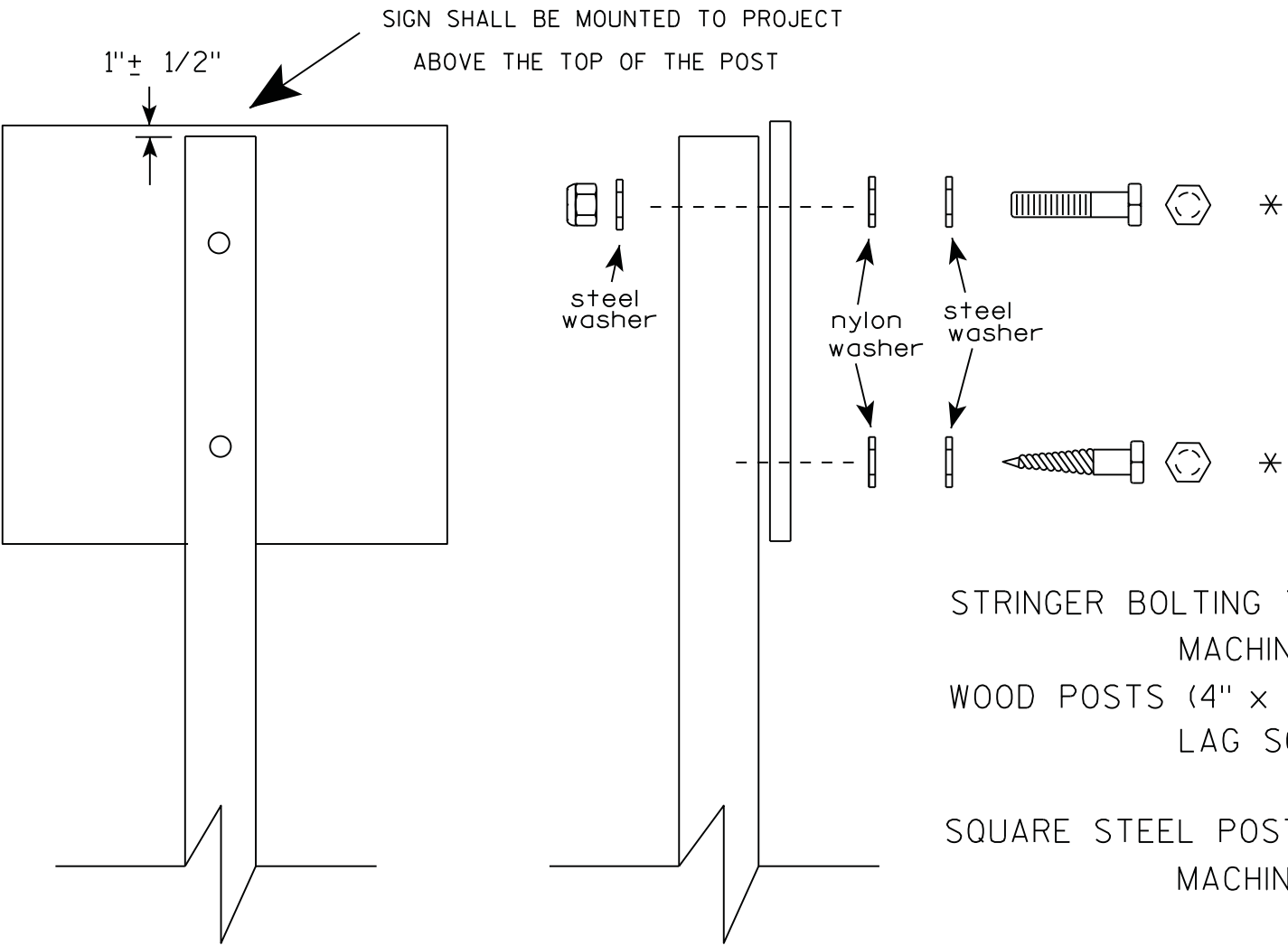
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4.14



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)
 - 3/8" X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 - 3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
- O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
 - 1-1/4" O.D. X 3/8" I.D. X .080 NYLON

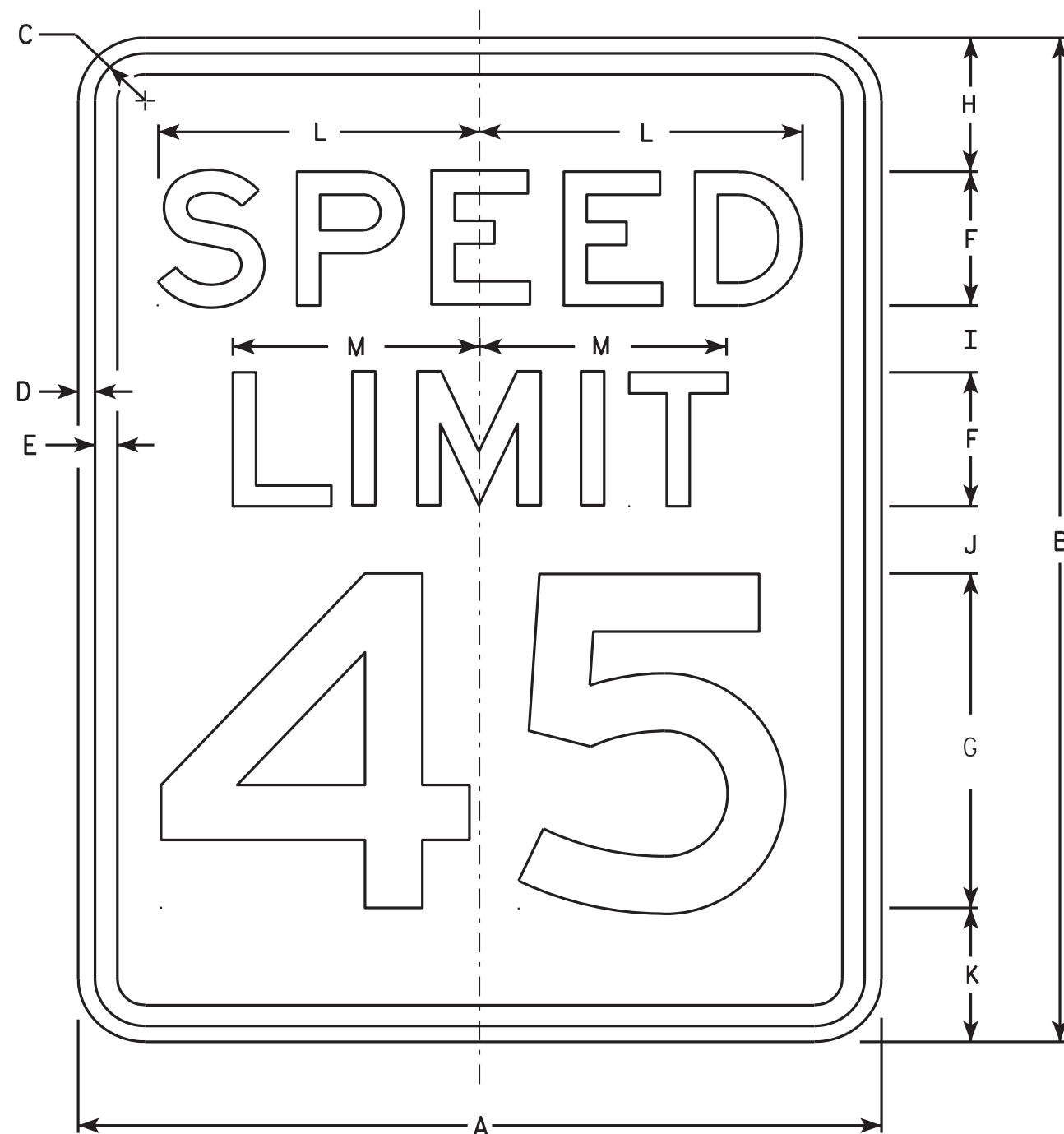
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS
TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 8/11/16 PLATE NO. A4-8.8



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN R2-1

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 5/26/10 PLATE NO. R2-1.13

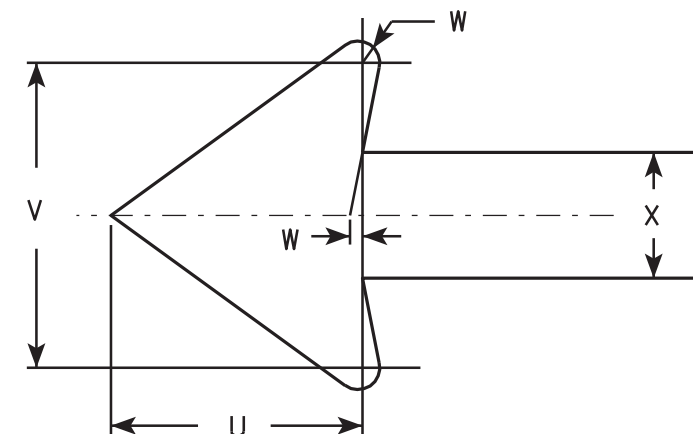
PROJECT NO: HWY: COUNTY: SHEET NO: E



R7-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

STANDARD SIGN
R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO: HWY: COUNTY: SHEET NO: E

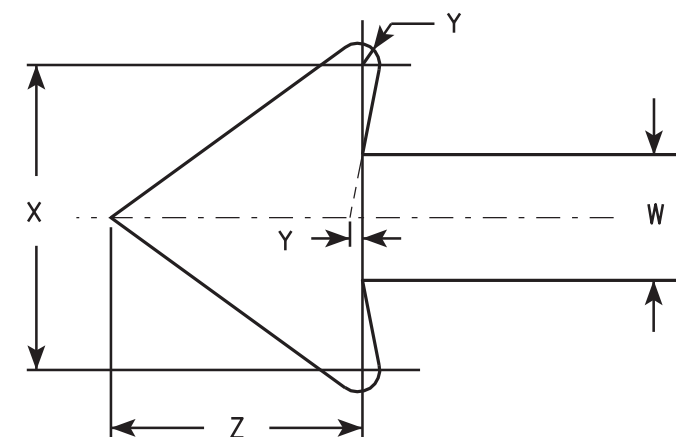
7



R7-51

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Red
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. R7-51D (double arrow)
R7-51R (right arrow)
R7-51L (left arrow)
6. Lines 1, 3 and 4 are Series C.
Line 2 is Series B.



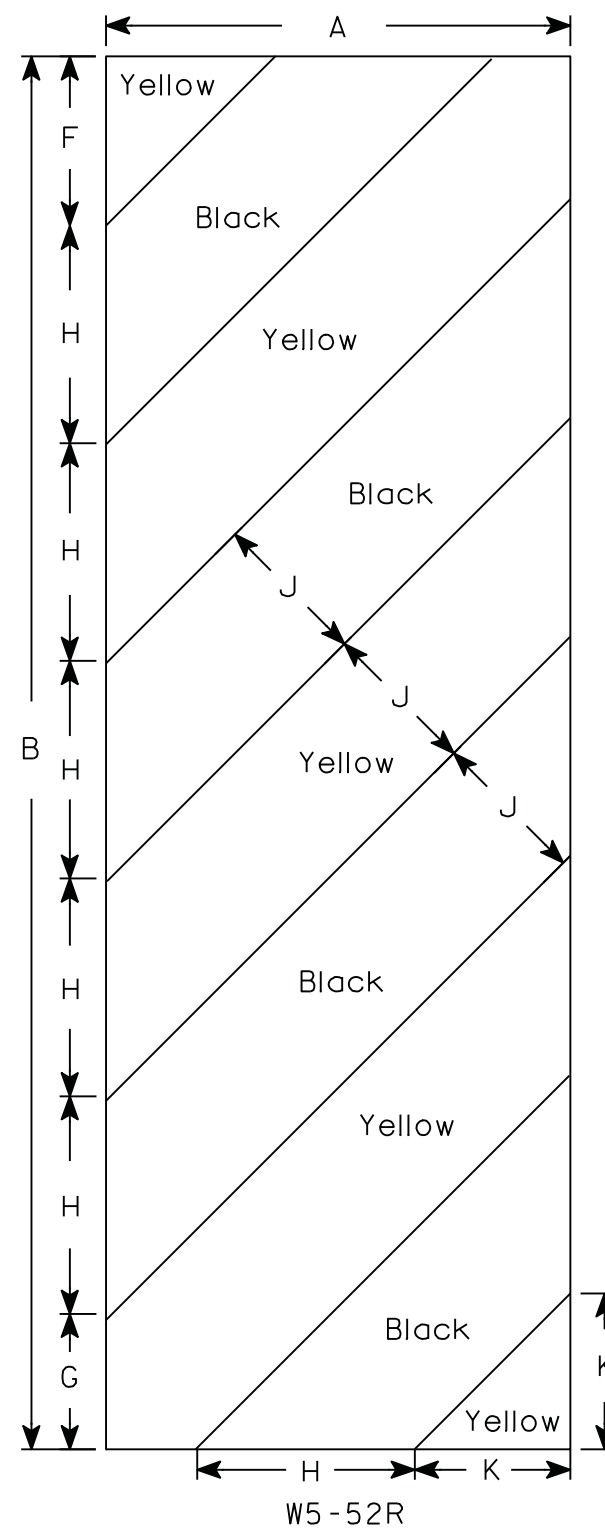
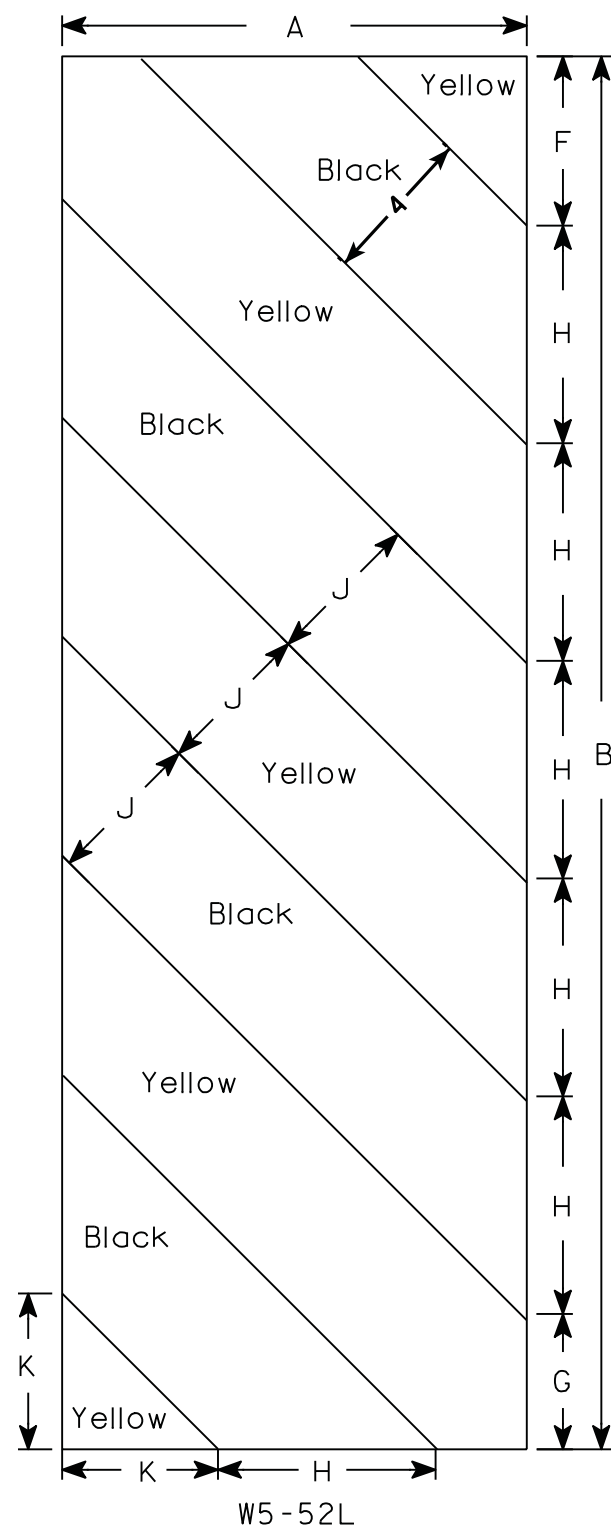
ARROW DETAIL

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	4 7/8	5/8	1 3/4	2 1/2	4 3/8	3 7/8	3/4	1 3/4	1/8	1 1/2	1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	5 3/4	1 1/8	1 1/2	3 1/8	5 1/2	5 7/8	1 1/8	2 5/8	1/4	2 1/4	3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	7 1/8	1 1/4	2	3 3/4	6 1/2	7 3/4	1 1/2	3 1/2	1/4	3	5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	7 1/8	1 1/4	2	3 3/4	6 1/2	7 3/4	1 1/2	3 1/2	1/4	3	5.0
4																											
5																											

STANDARD SIGN R7-51	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/31/2011	PLATE NO. R7-51.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E
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NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
 - Background - Yellow
 - Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

[illegible]

STANDARD SIGN
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer
DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

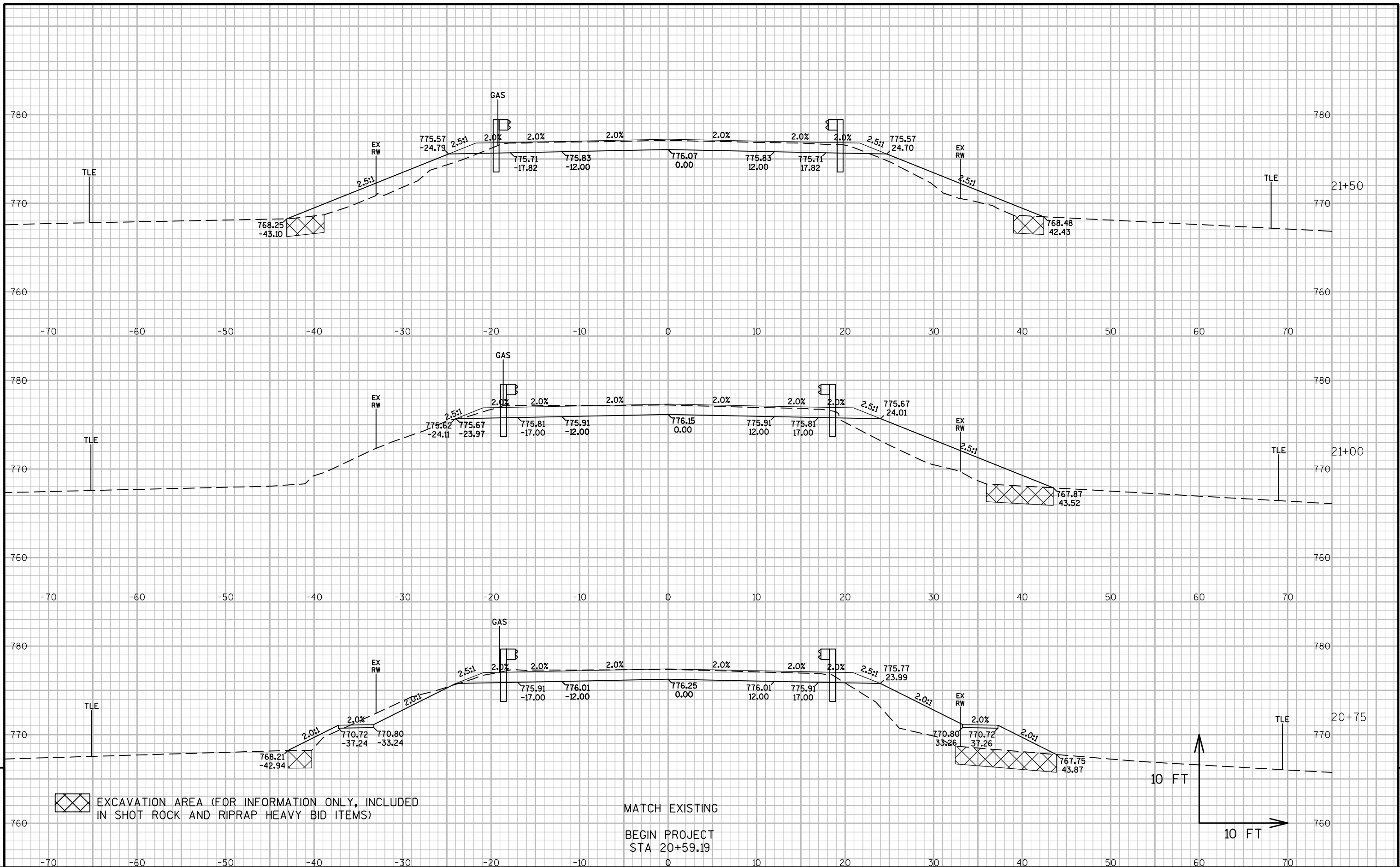
E

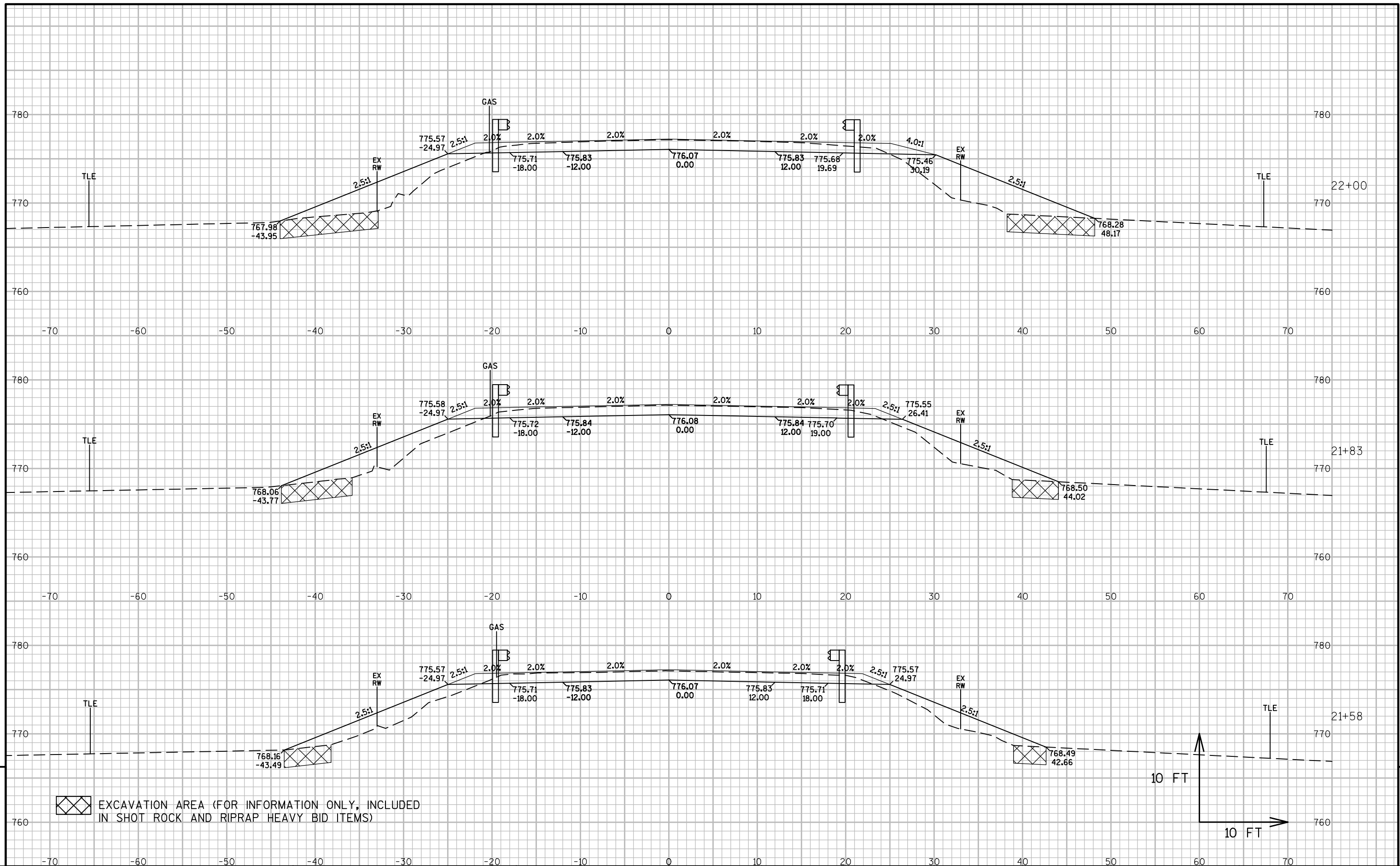
CTH D		AREA (SF)						INCREMENTAL VOL (CY)				CUMULATIVE VOL (CY)		
		DISTANCE FEET	COMMON	FILL	COMMON	FILL *	COMMON	FILL	COMMON	FILL	COMMON	FILL	COMMON	FILL
STATION														
20+59.19			56	0					33	0	33	0		33
20+75.00			56	0					47	0	47	0		47
21+00.00			45	0					81	0	81	0		81
21+50.00			43	0					12	0	12	0		12
21+57.64			43	0					40	0	40	0		40
21+82.64			44	0					28	0	28	0		28
22+00.00			44	0					12	0	12	0		12
22+07.64			44	0					61	0	61	0		61
22+45.08			44	0					8	0	8	0		8
22+50.00			43	0					32	0	32	0		32
22+70.08			43	0					40	0	40	0		40
22+95.08			42	0					8	0	8	0		8
23+00.00			42	0					77	0	77	0		77
23+50.00			41	0					76	0	76	0		76
24+00.00			41	0					78	0	78	0		78
24+50.00			43	0					38	0	38	0		38
24+72.03			50	0					48	0	48	0		48
25+00.00			43	0					38	0	38	0		38
25+25.00			40	0					39	0	39	0		39
25+50.00			44	0					84	0	84	0		84
26+00.00			46	0					83	0	83	0		83
26+50.00			44	0					80	0	80	0		80
27+00.00			43	0					40	0	40	0		40
27+25.00			43	0					41	0	41	0		41
27+50.00			46	0					42	0	42	0		42
27+72.03			58	0					53	0	53	0		53
28+00.00			44	0					38	0	38	0		38
28+25.00			38	0					35	0	35	0		35
28+50.00			37	0					71	0	71	0		71
29+00.00			40	0					76	0	76	0		76
29+50.00			42	0					78	0	78	0		78
30+00.00			42	0					78	0	78	0		78
30+50.00			43	0					1	0	1	0		1
30+50.89			43	0					75	0	75	0		75
31+00.00			40	0					68	0	68	0		68
31+43.93			43	0					10	0	10	0		10
31+50.00			43	0					78	0	78	0		78
32+00.00			41	0					78	0	78	0		78
32+50.00			44	0					82	0	82	0		82
33+00.00			45	0					84	0	84	0		84
33+50.00			46	0					85	0	85	0		85

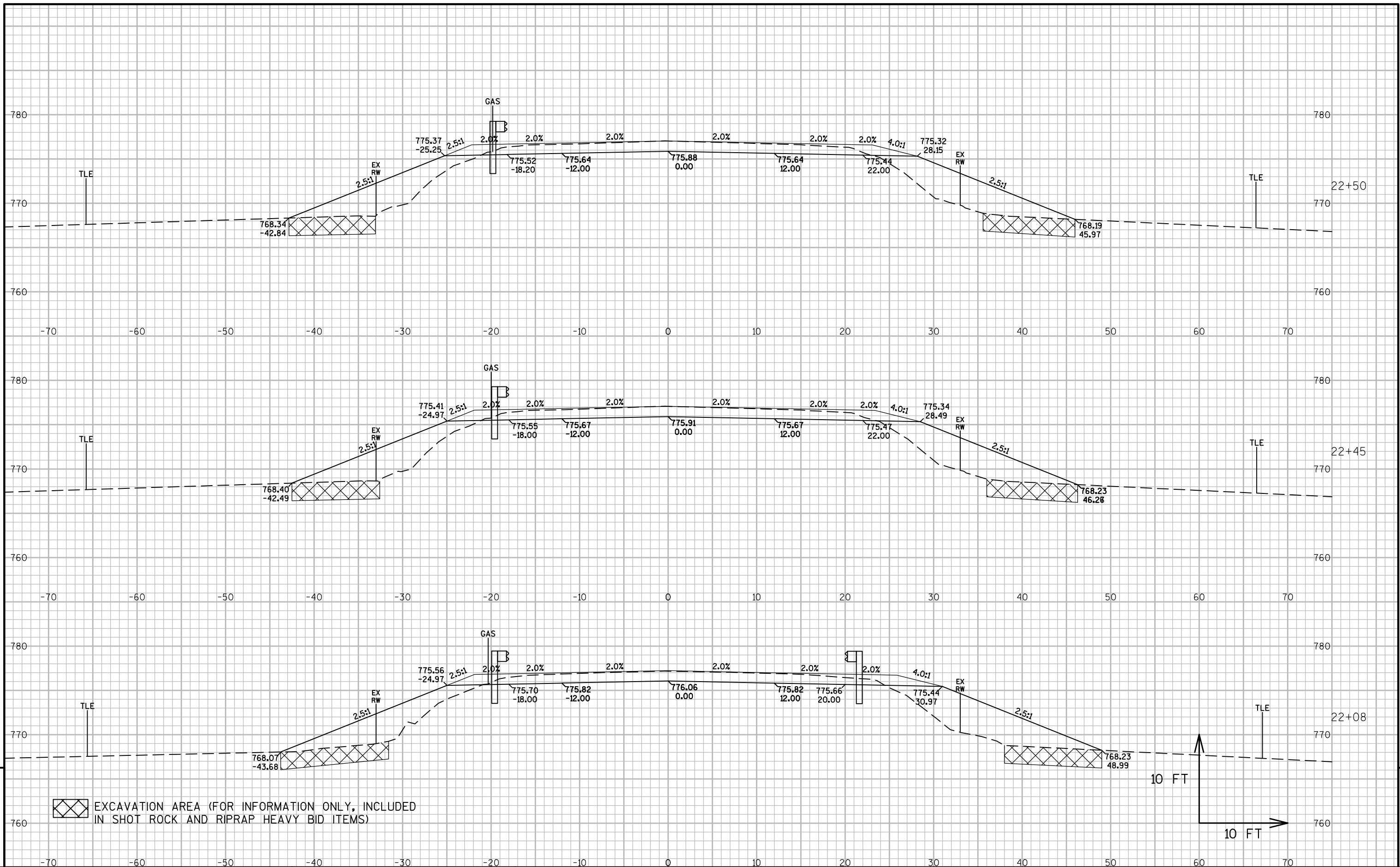
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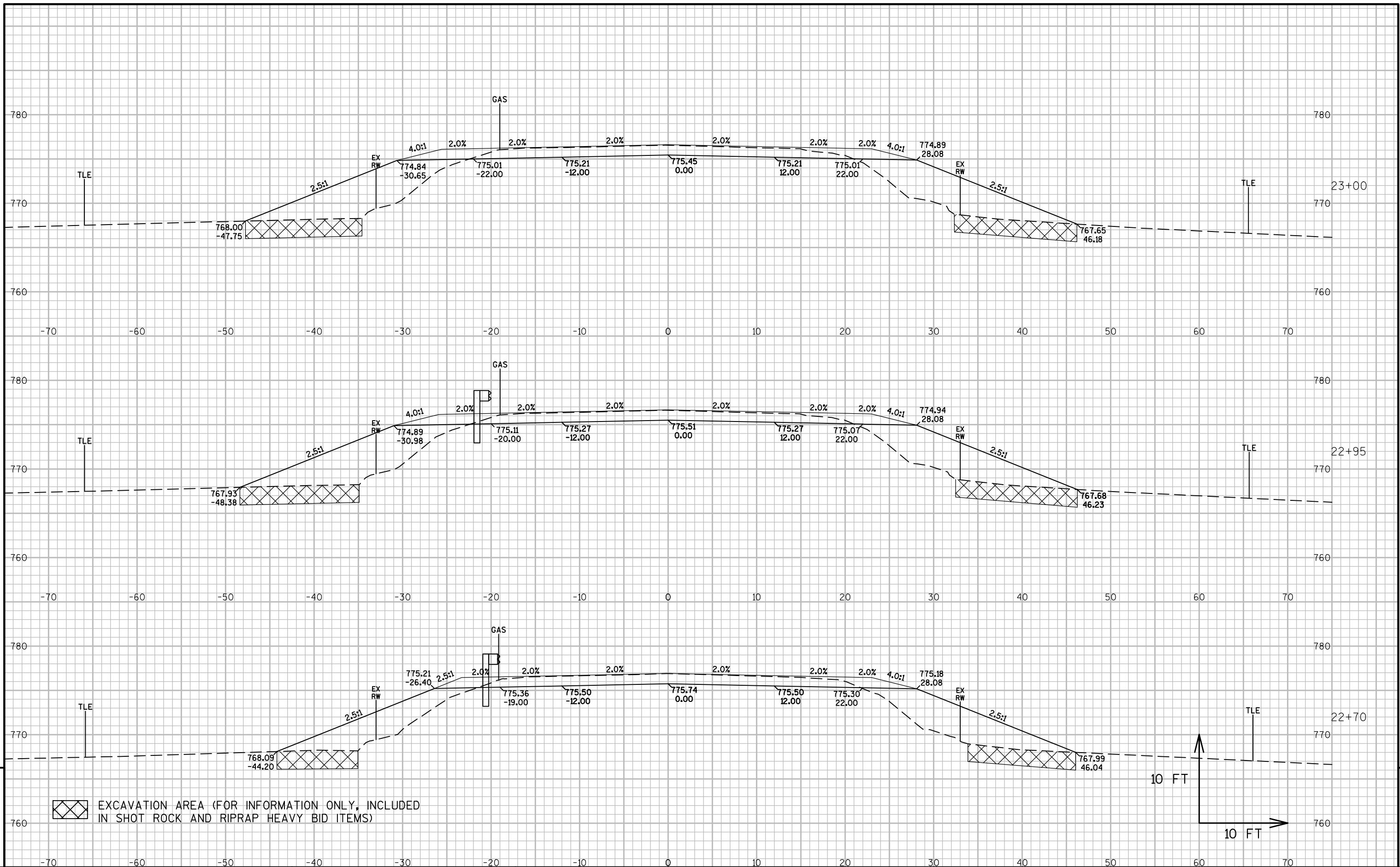
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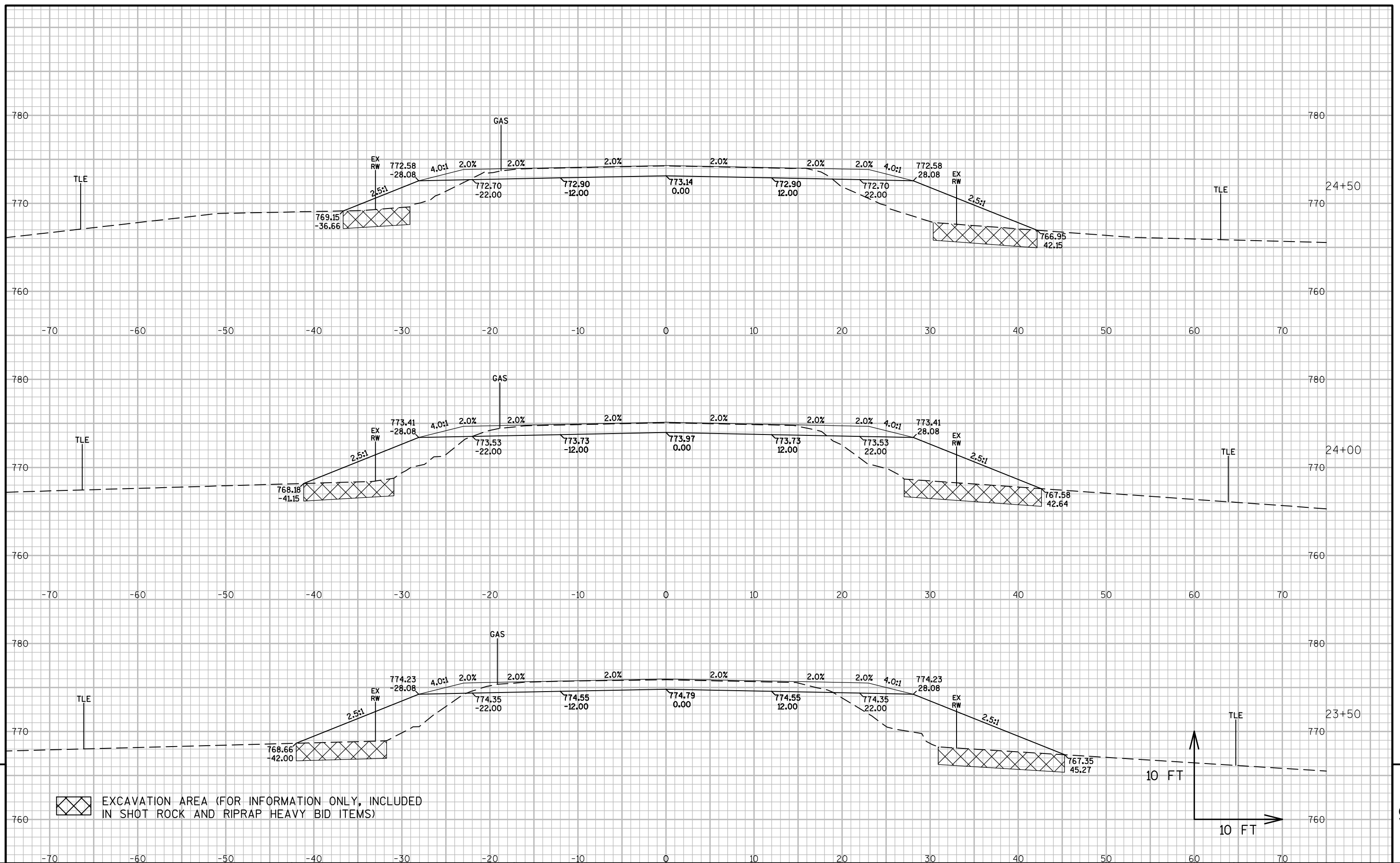
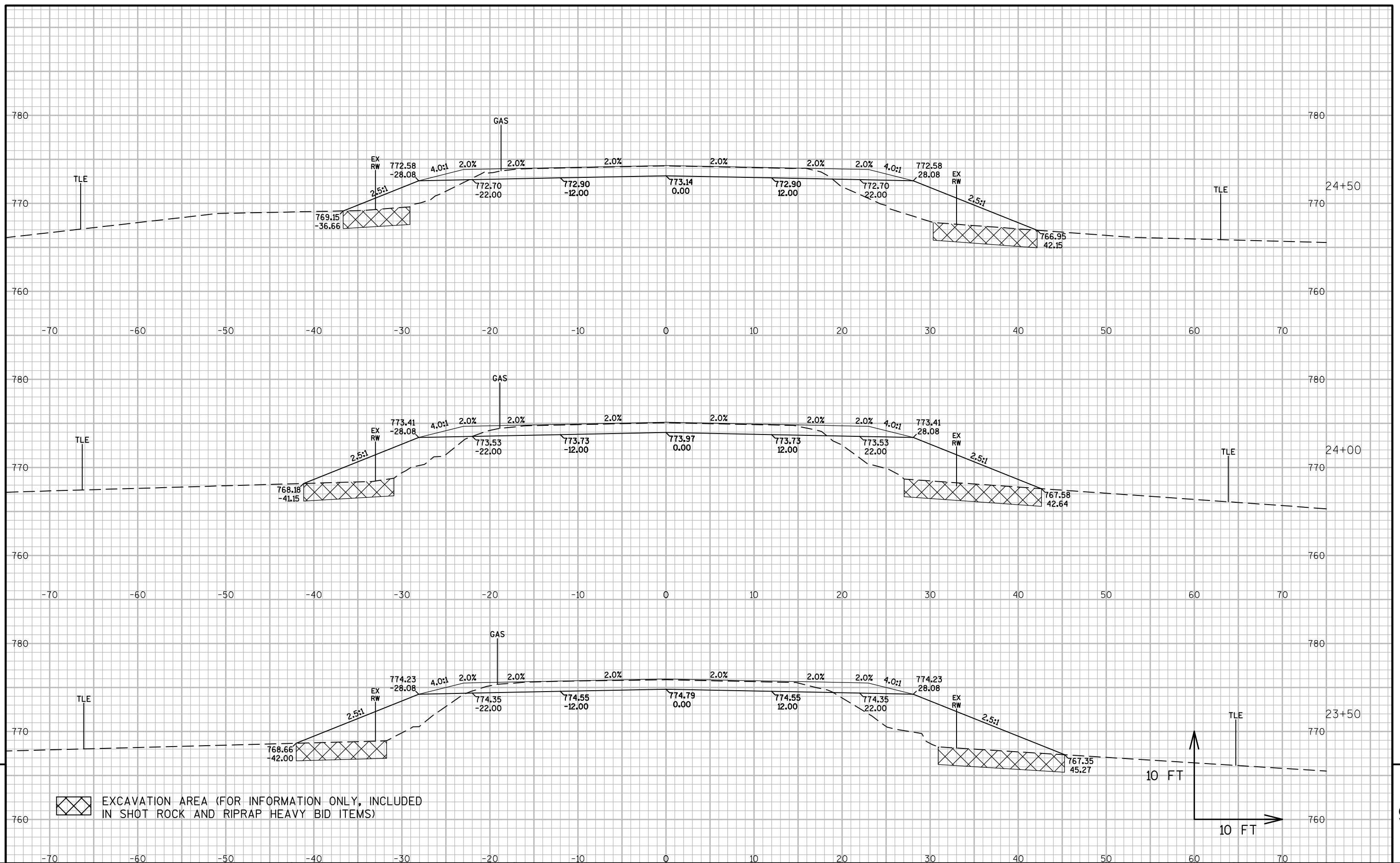
CTH D		AREA (SF)		INCREMENTAL VOL (CY)		CUMULATIVE VOL (CY)		MASS HAUL
STATION	DISTANCE FEET	COMMON	FILL	COMMON	FILL *	COMMON	FILL	
34+00.00		45	0					
	25.00			40	0	40	0	40
34+25.00		41	0					
	25.00			39	0	39	0	39
34+50.00		42	0					
	21.00			34	0	34	0	34
34+71.00		47	0					
	29.00			46	0	46	0	46
35+00.00		40	0					
	50.00			70	0	70	0	70
35+50.00		36	0					
	50.00			68	0	68	0	68
36+00.00		38	0					
	50.00			71	0	71	0	71
36+50.00		38	0					
	30.57			43	0	43	0	43
36+80.57		38	0					
	19.43			27	0	27	0	27
37+00.00		38	0					
	50.00			69	21	69	21	49
37+50.00		37	18					
	25.00			35	20	35	20	14
37+75.00		37	17					
	25.00			36	22	36	22	13
38+00.00		40	21					
	50.00			76	24	76	24	52
38+50.00		42	0					
	1791			2809	88			
* INCLUDES 1.25 EXPANSION FACTOR								

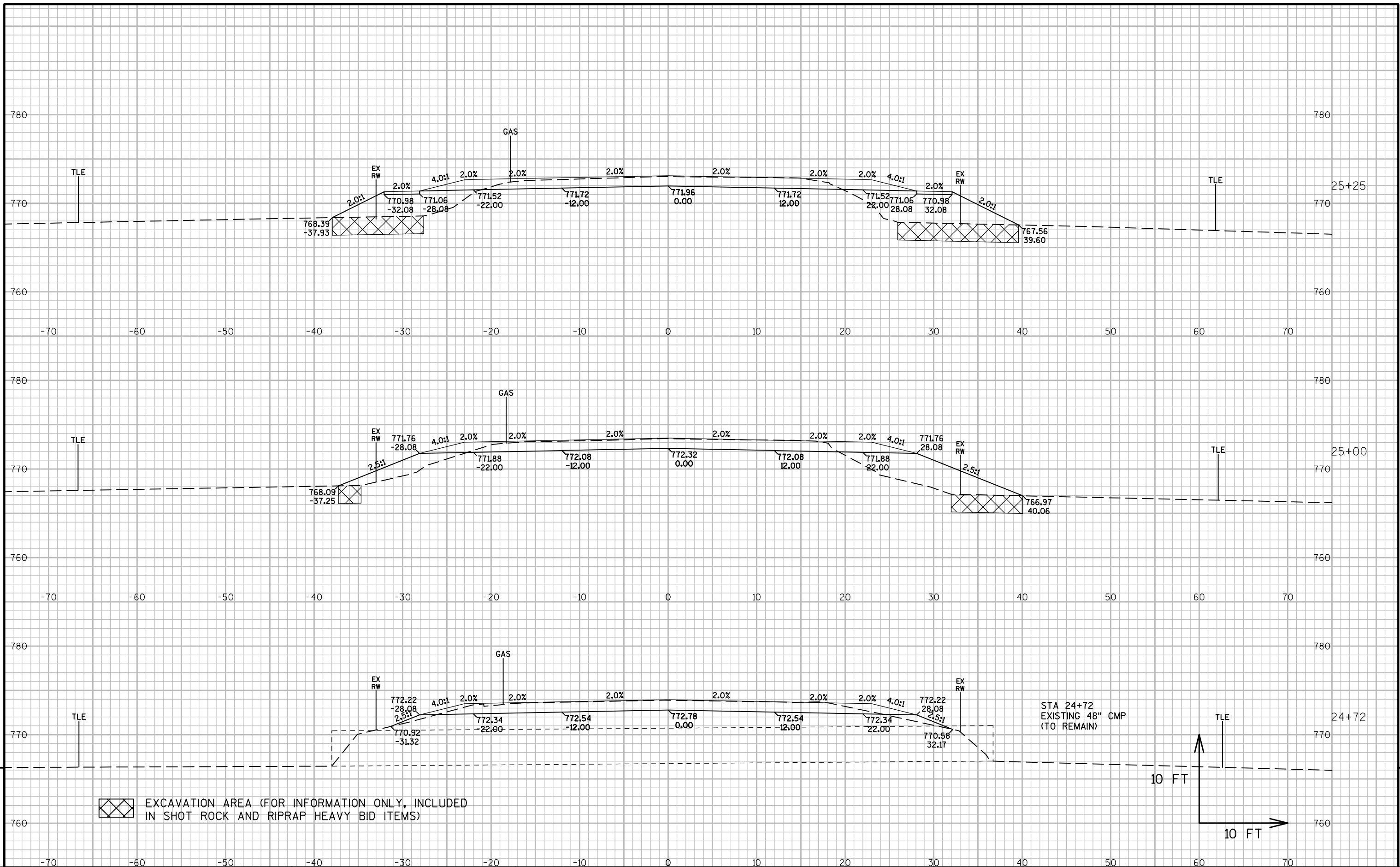


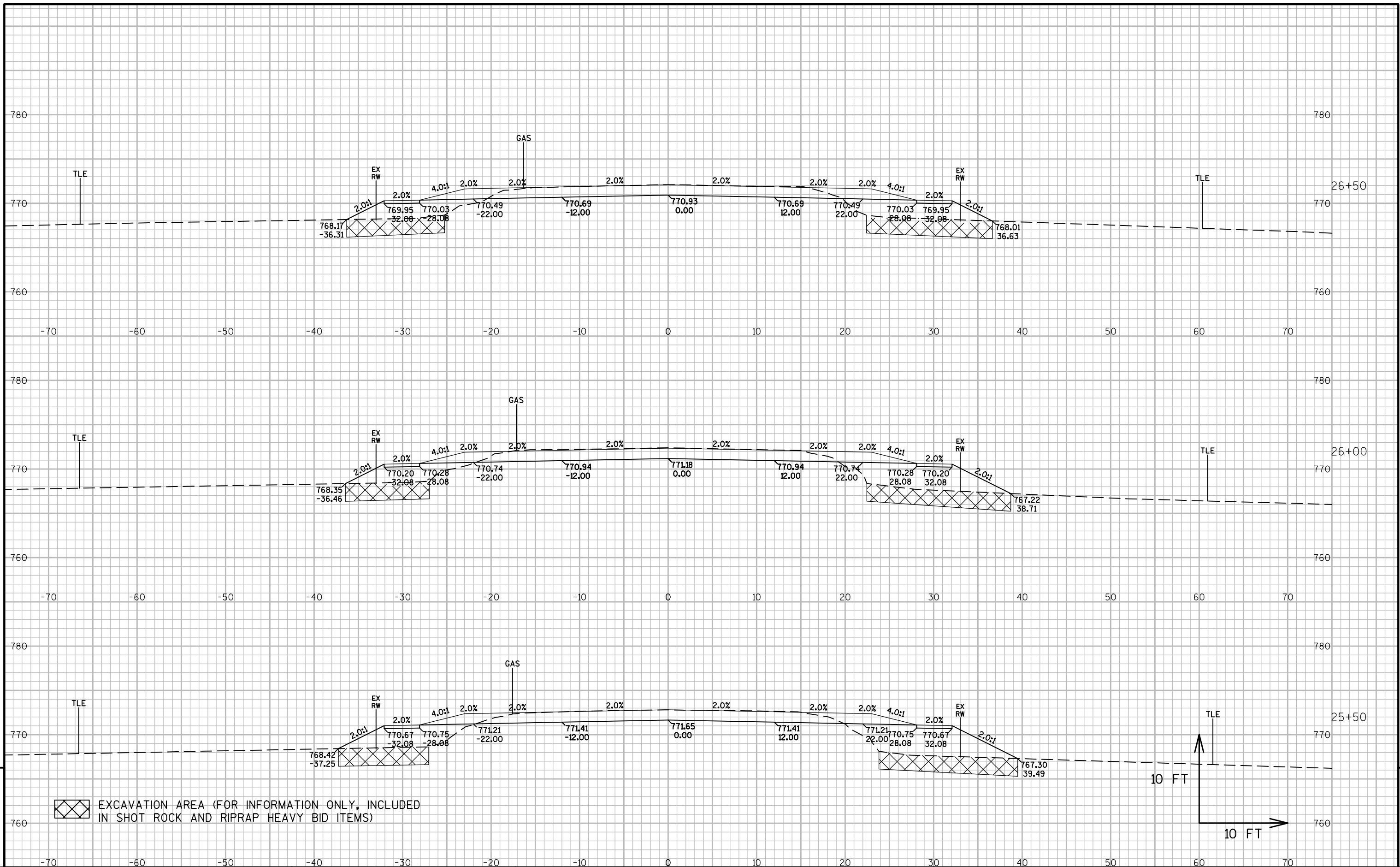


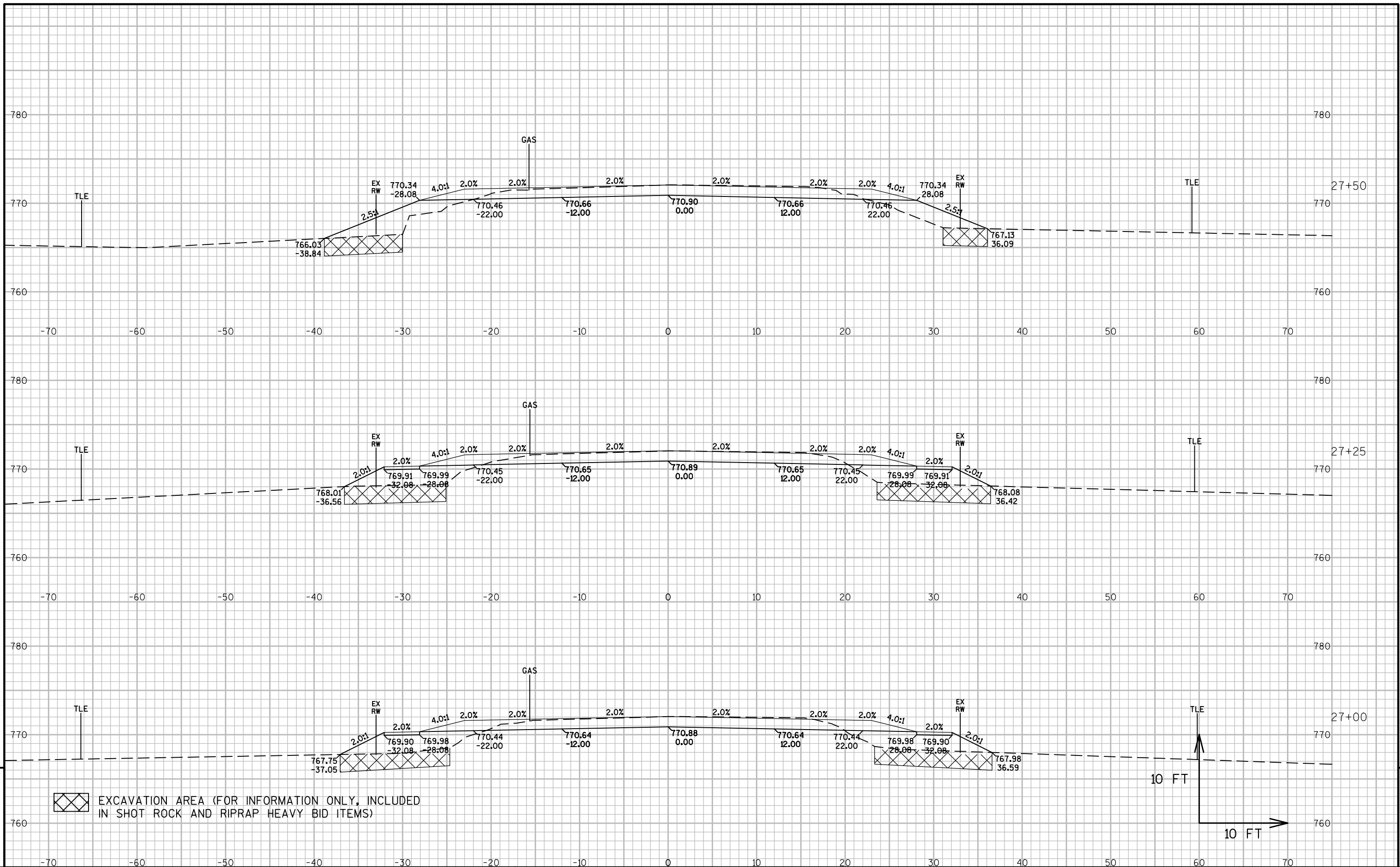


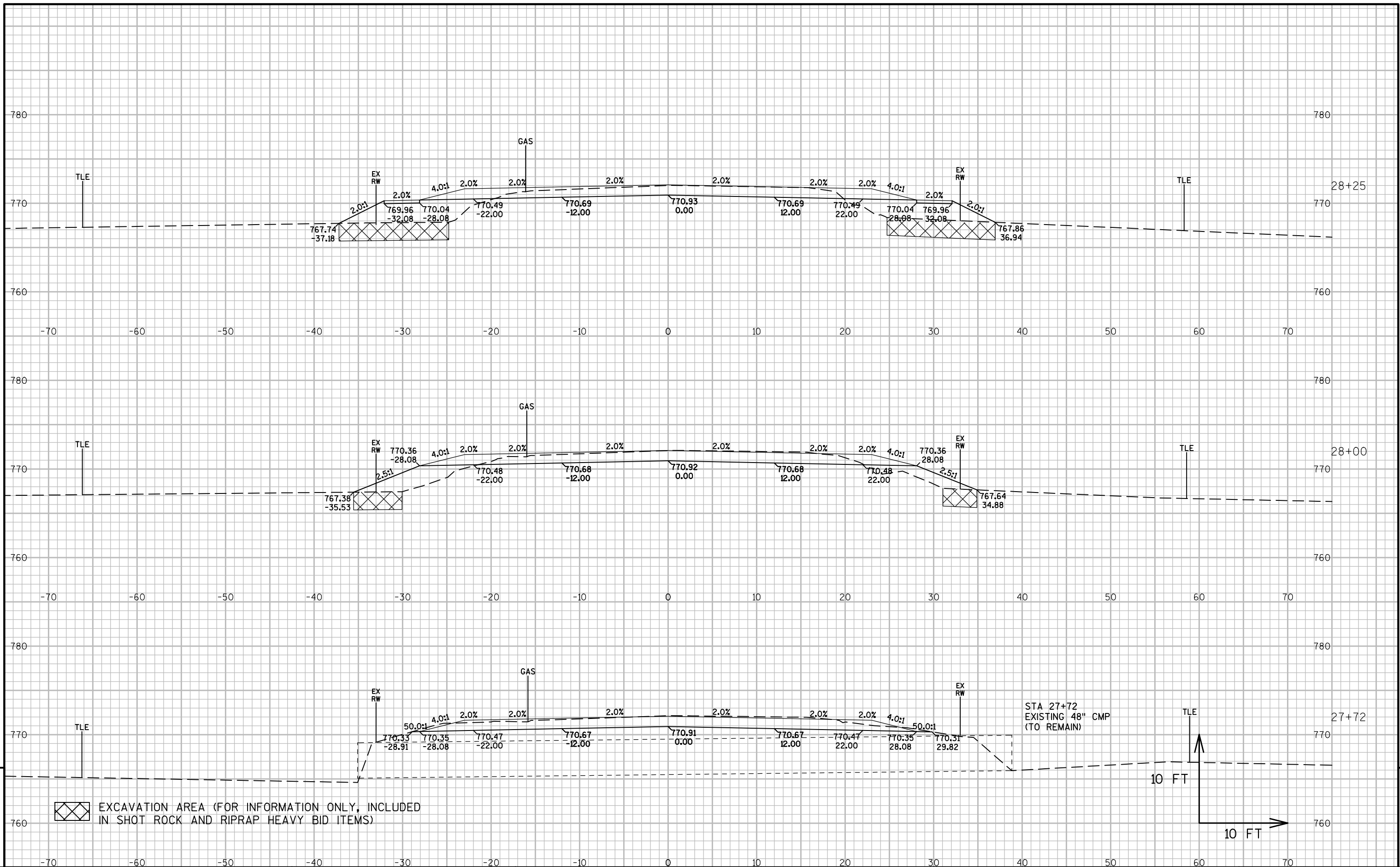


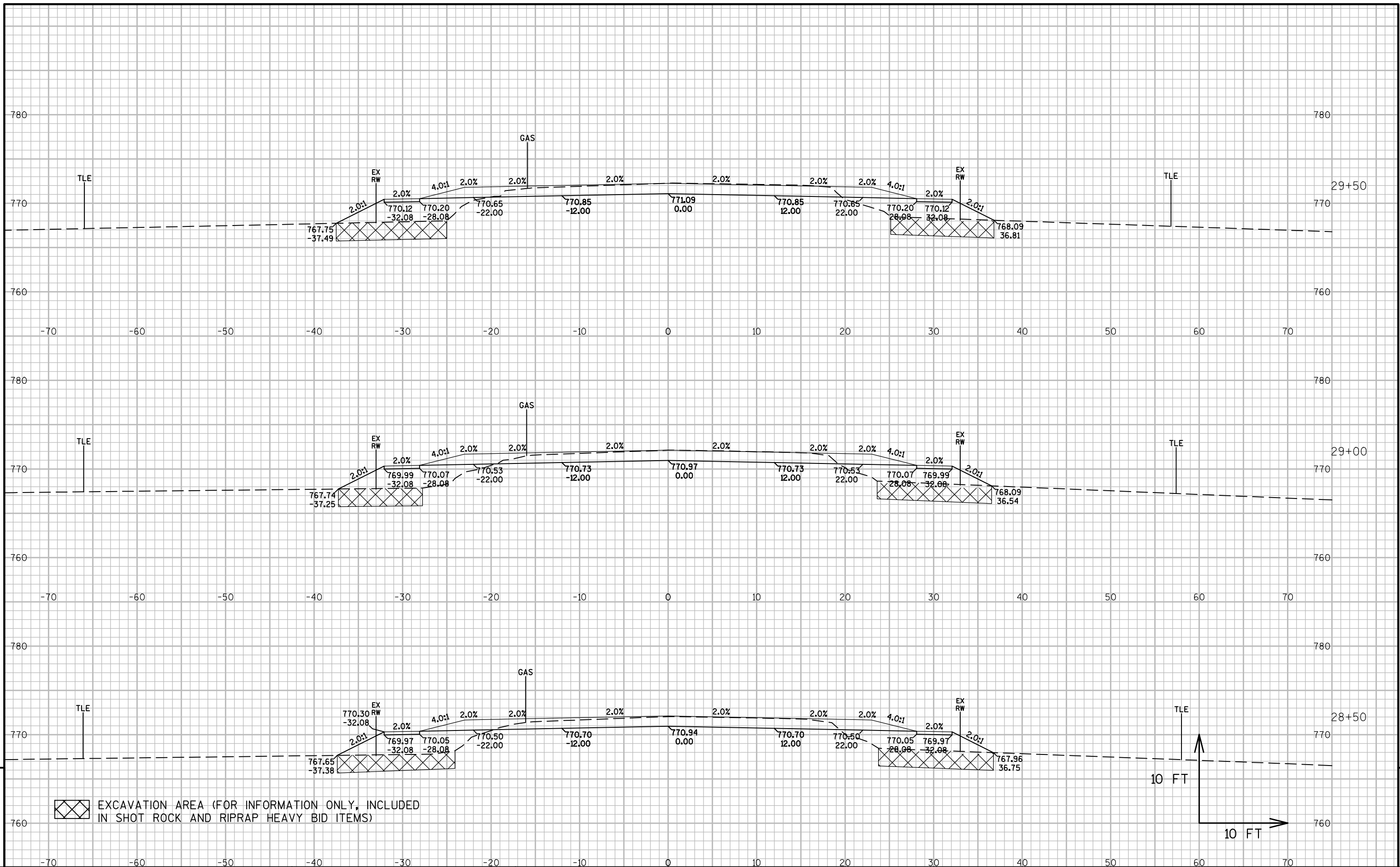


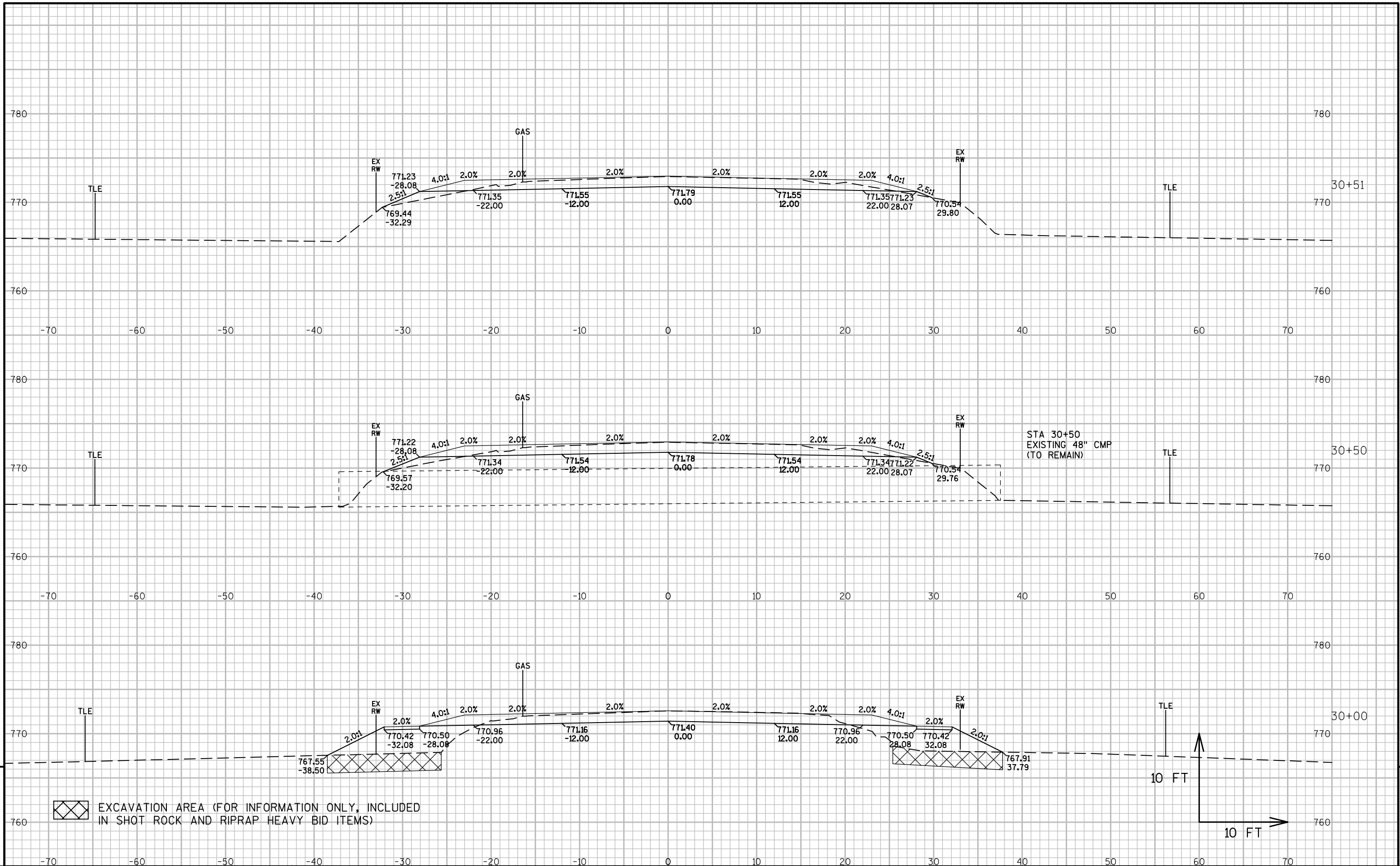


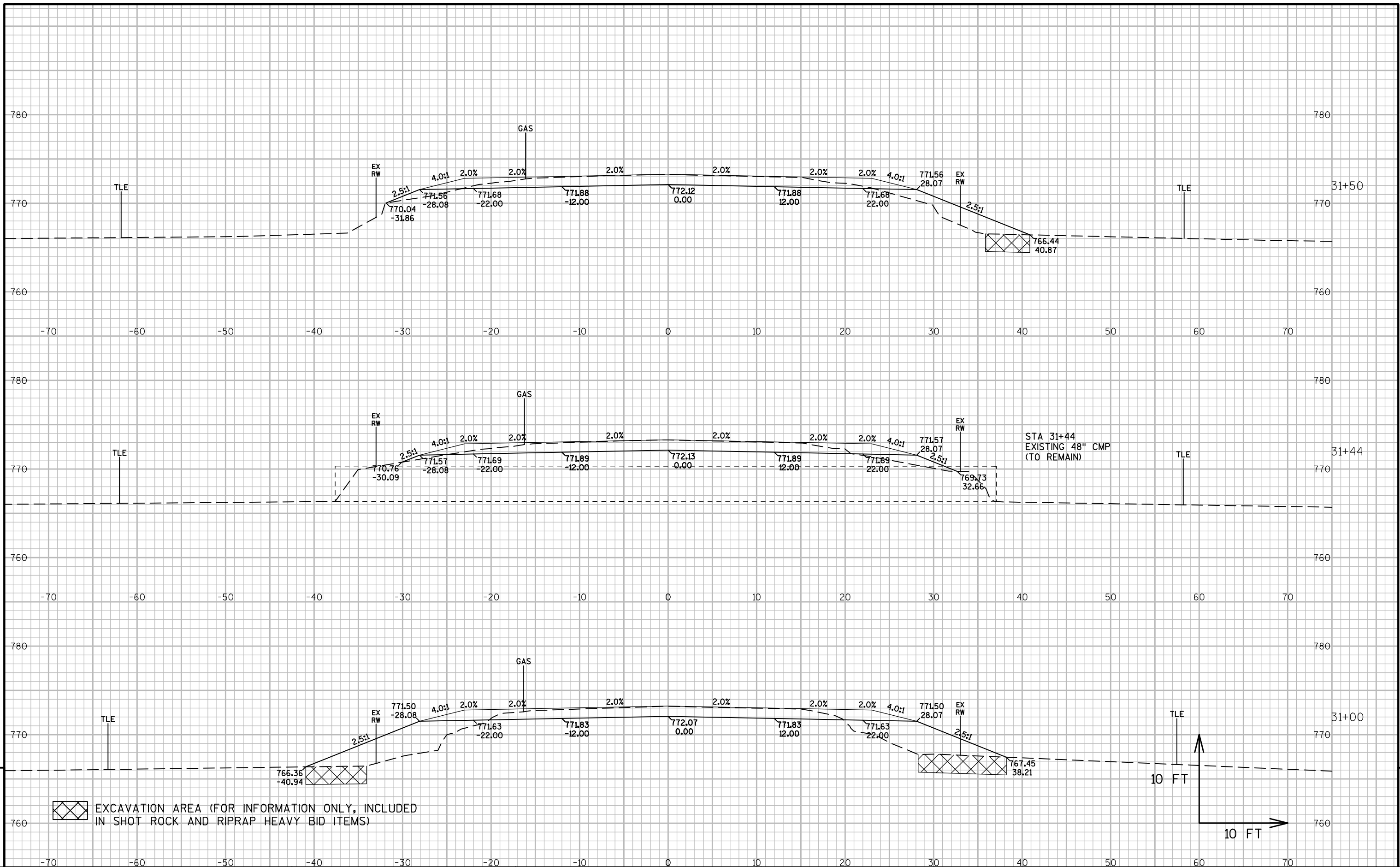


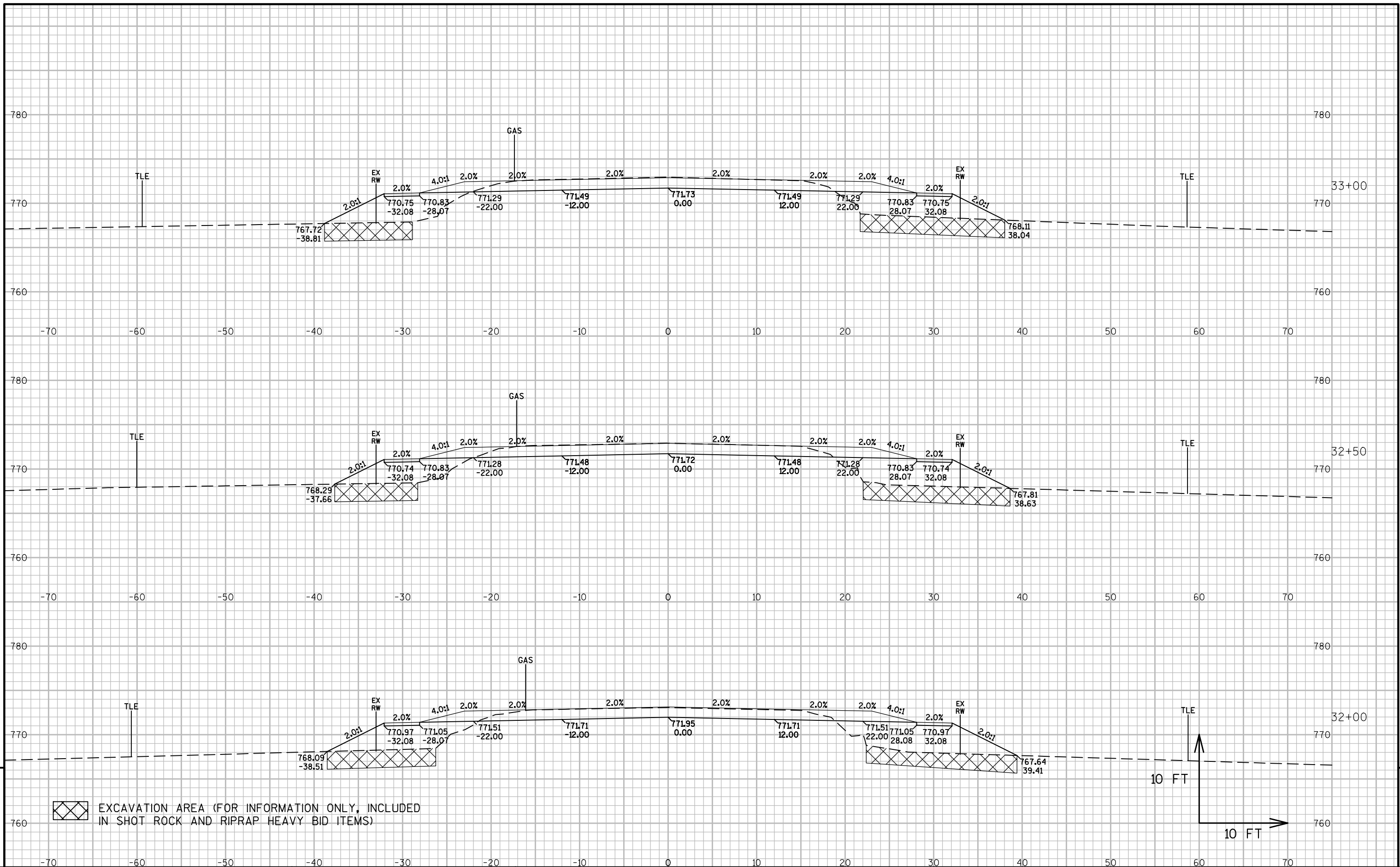


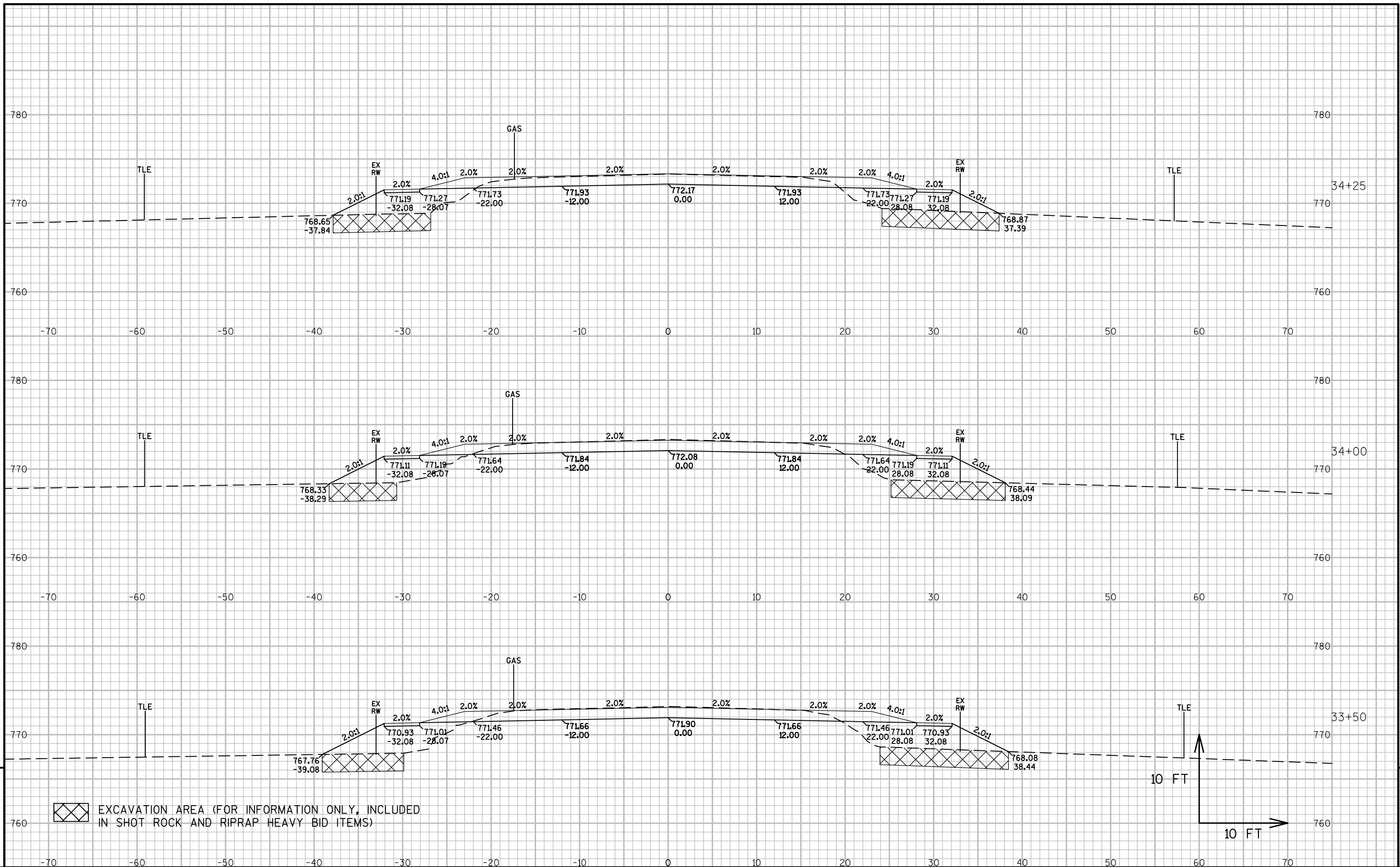


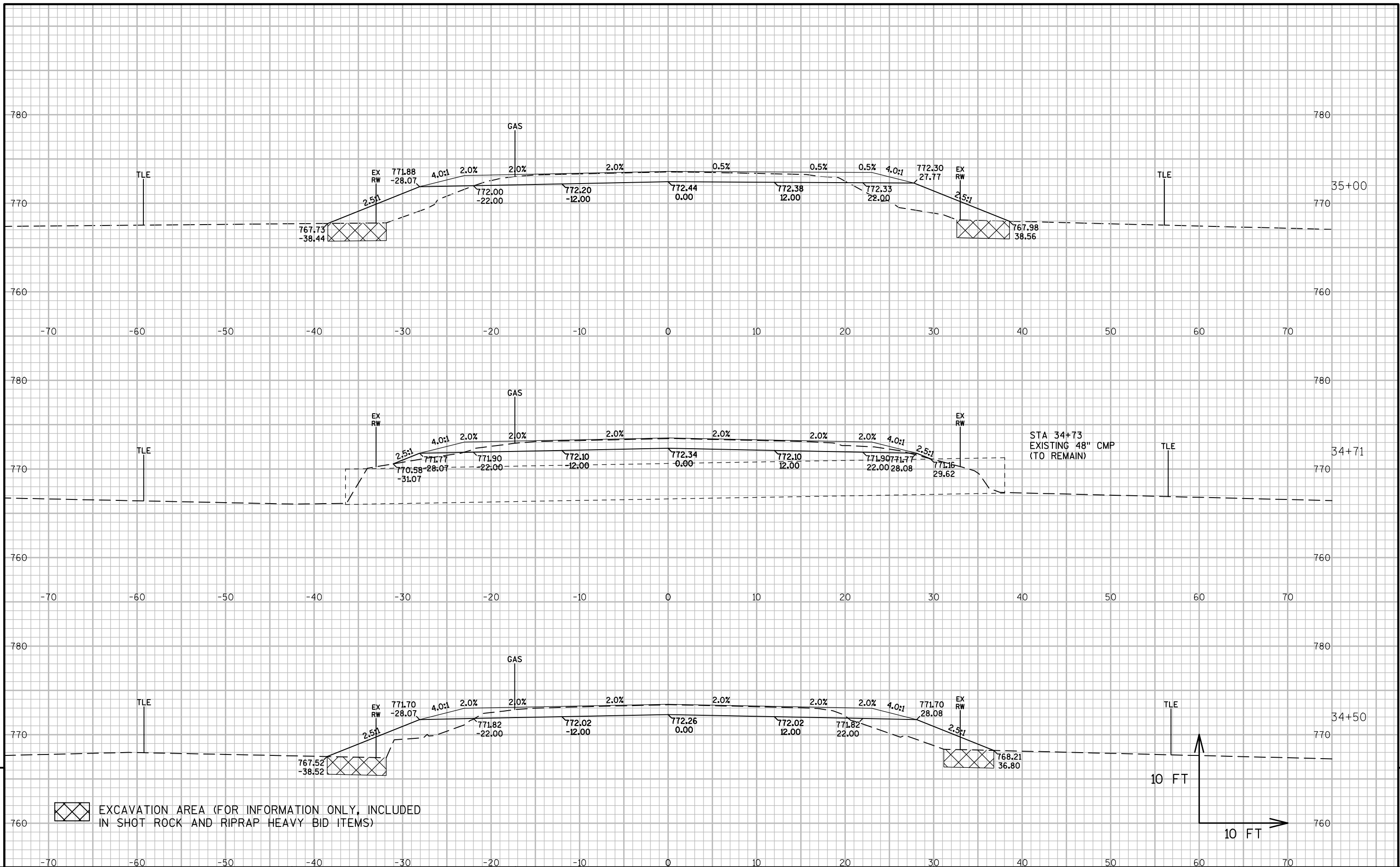


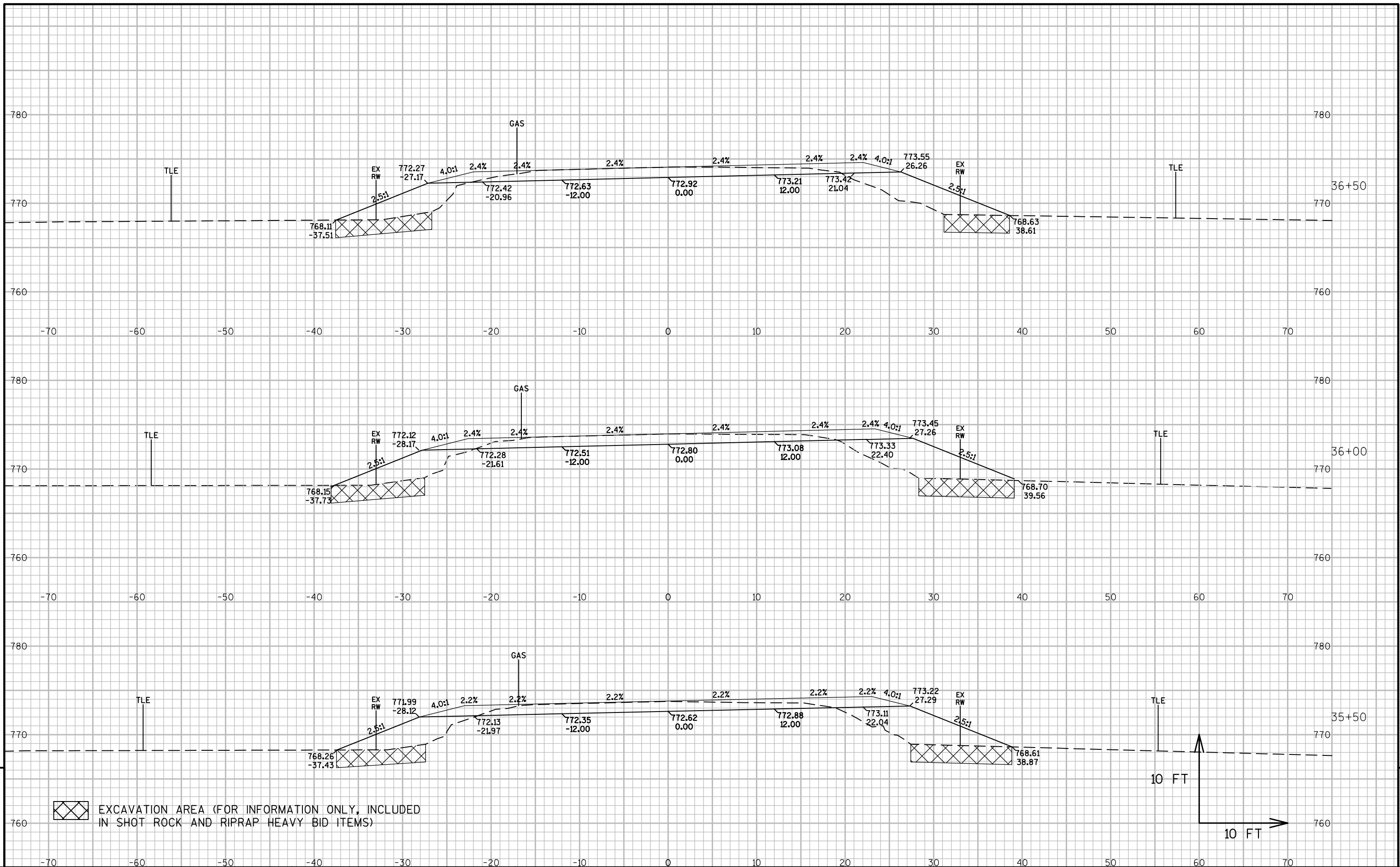


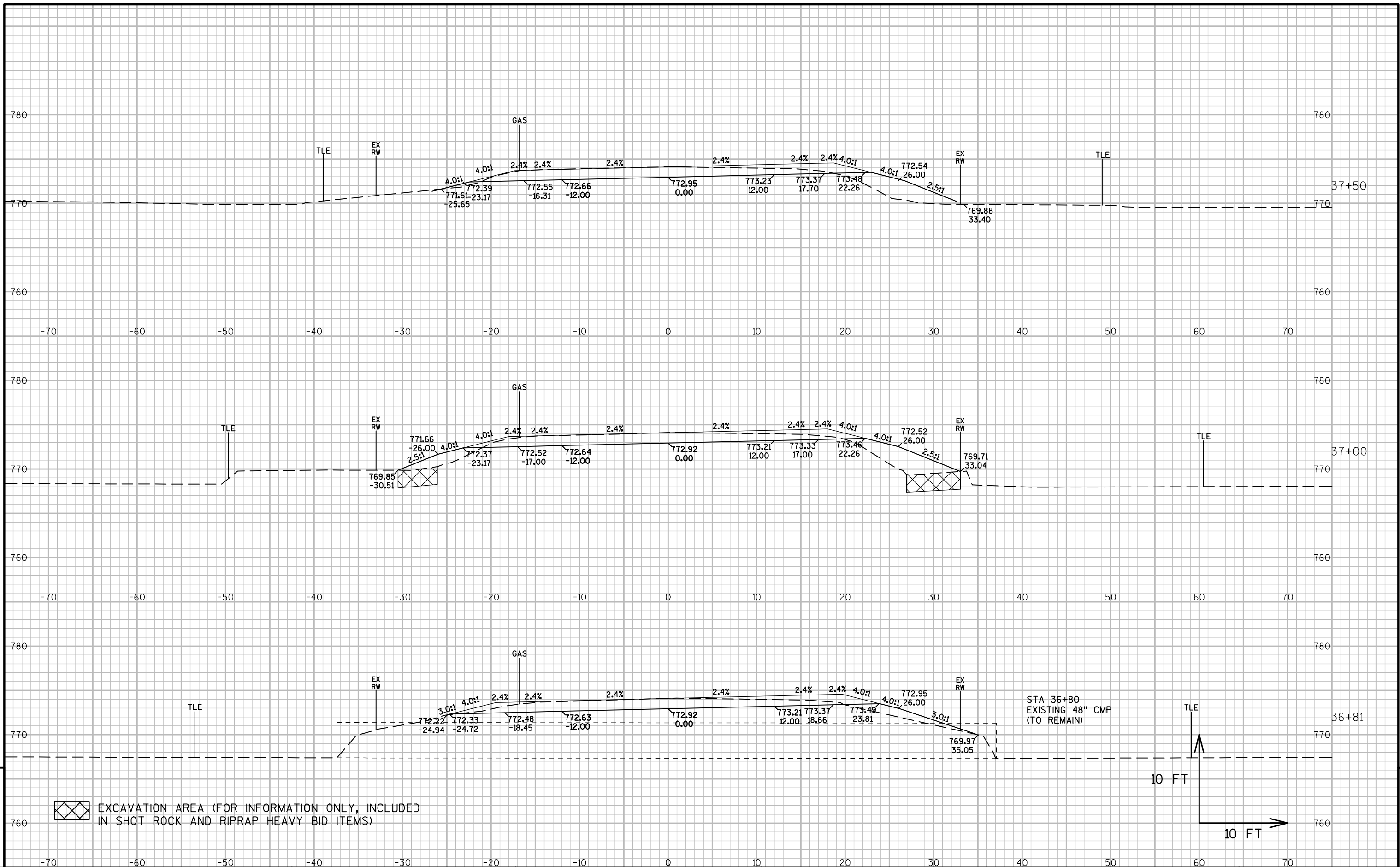












EXCAVATION AREA (FOR INFORMATION ONLY, INCLUDED IN SHOT ROCK AND RIPRAP HEAVY BID ITEMS)

PROJECT NO: 6711-00-70

HWY: CTH D

COUNTY: MARQUETTE

CROSS SECTIONS: CTH D

SHEET

E



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>