

RHI
PROJECT ID: 9000-05-60
COUNTY: LINCOLN

JUNE 2017

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
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 = 42

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

MEDFORD-MERRILL

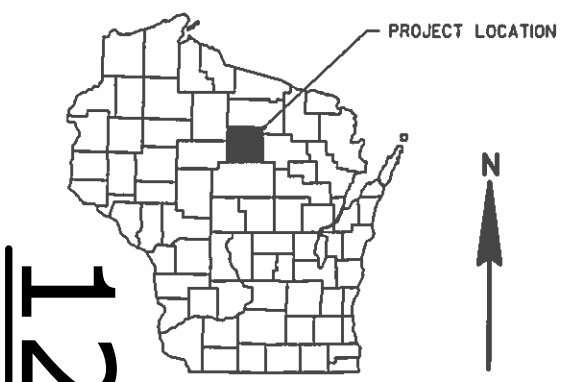
CULVERT REPLACEMENT C-35-19

STH 64

LINCOLN COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9000-05-60		

STATE PROJECT NUMBER
9000-05-60



DESIGN DESIGNATION

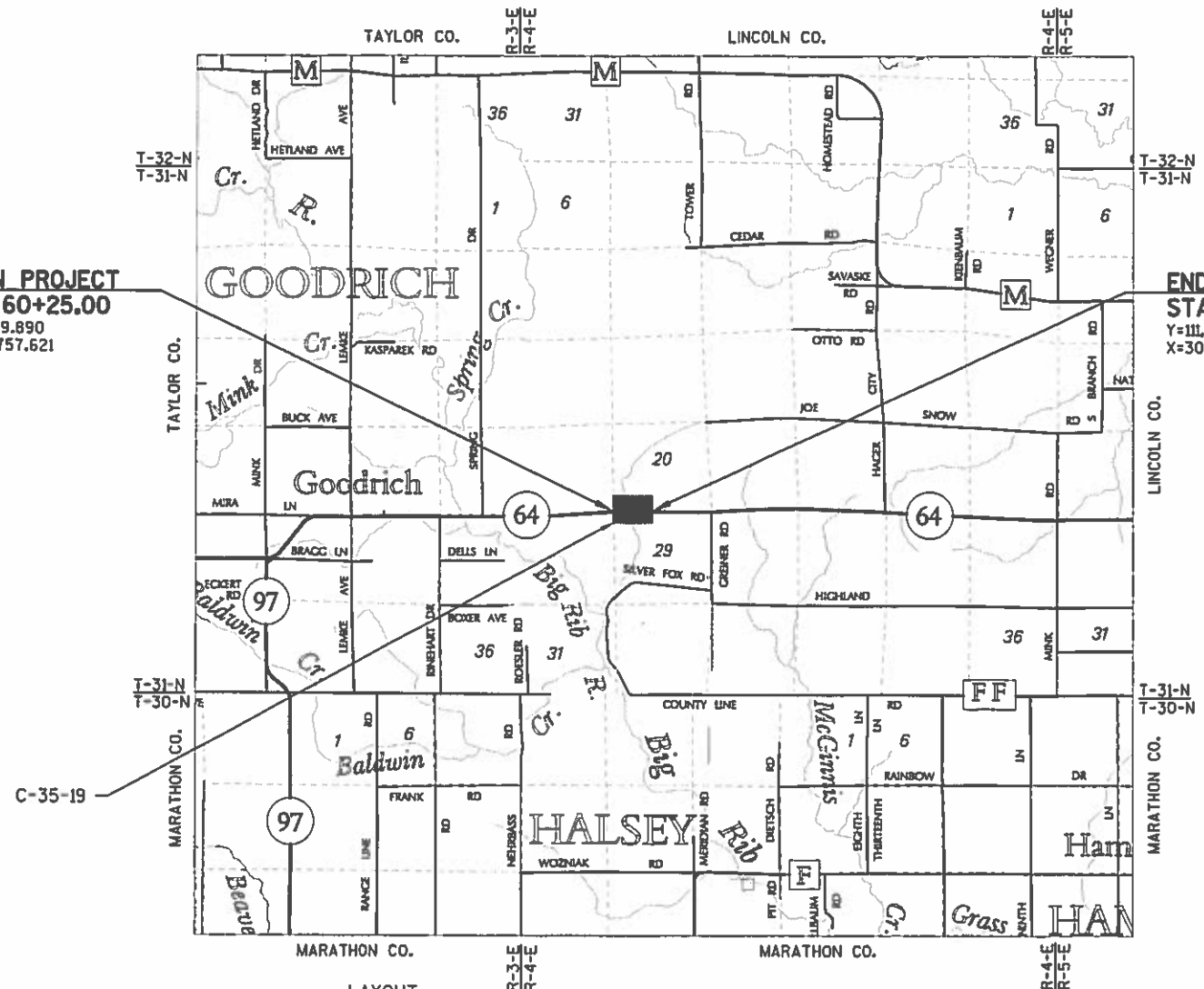
A.A.D.T.	2017	=	680
A.A.D.T.	2037	=	800
D.H.V.	2037	=	150
D.D.		=	61/39
T.(DHV)		=	19.8%
DESIGN SPEED		=	60 MPH
ESALS		=	262,800

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS		GRADE LINE	—
PROPERTY LINE	— · —	ORIGINAL GROUND	~
LOT LINE	— · — · —	MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT	— · — · — · —	SPECIAL DITCH	LABEL
EXISTING RIGHT OF WAY	— · — · — · — · —	GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE	— · — · — · — · — · —	CULVERT (Profile View)	□
SLOPE INTERCEPT	— · — · — · — · — · —	UTILITIES	— E —
REFERENCE LINE	— · — · — · — · — · —	ELECTRIC	— FO —
EXISTING CULVERT	— · — · — · — · — · —	FIBER OPTIC	— G —
PROPOSED CULVERT (Box or Pipe)	— · — · — · — · — · —	GAS	— SAN —
COMBUSTIBLE FLUIDS	CAUTION	SANITARY SEWER	— SS —
		STORM SEWER	— T —
MARSH AREA	— · — · — · — · — · —	TELEPHONE	— W —
		UTILITY PEDESTAL	⊗
WOODED OR SHRUB AREA	— · — · — · — · — · —	POWER POLE	⊕
		TELEPHONE POLE	⊖

BEGIN PROJECT
STA 60+25.00
Y=111,659.890
X=306,757.621

END PROJECT
STA 62+25.00
Y=111,657.980
X=306,957.612



LAYOUT
SCALE 0 2 MILE
TOTAL NET LENGTH OF CENTERLINE = 0.038 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATE SYSTEM, LINCOLN 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. VERTICAL DATUM IS NAVD 88.



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	OMNI ASSOCIATES
Designer	OMNI ASSOCIATES
Project Manager	JED P. PETERS
Regional Examiner	
Regional Supervisor	R. STAFFORD

APPROVED FOR THE DEPARTMENT
DATE: 1/19/17
(Signature)

2

GENERAL NOTES

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

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

<u>RUNOFF COEFFICIENT TABLE</u>												
	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	0.08	0.16	0.22	0.12	0.20	0.27	0.15	0.24	0.33	0.19	0.28	0.38
	0.22	0.30	0.38	0.26	0.34	0.44	0.30	0.37	0.50	0.34	0.41	0.56
MEDIAN STRIP - TURF	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
	0.24	0.26	0.30	0.25	0.28	0.33	0.26	0.30	0.37	0.27	0.32	0.40
SIDE SLOPE - TURF			0.25			0.27			0.28			0.30
			0.32			0.34			0.36			0.38
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 = 0.8 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.5 ACRES

OTHER CONTACTS

DNR LIAISON

DEPARTMENT OF NATURAL RESOURCES
NORTHERN REGION HEADQUARTERS
107 SUTLIFF
RHINELANDER, WI 54501
ATTN: JON SIMONSEN
TELEPHONE: 715-367-1936
E-MAIL: JONATHAN.SIMONSEN@WISCONSIN.GOV

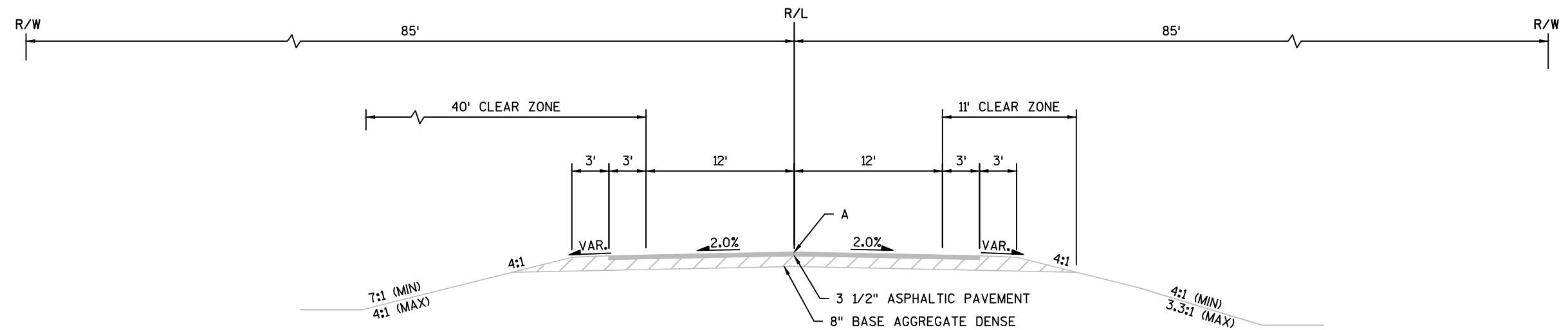


Dial 811 or (800) 242-8511

www.DiggersHotline.com

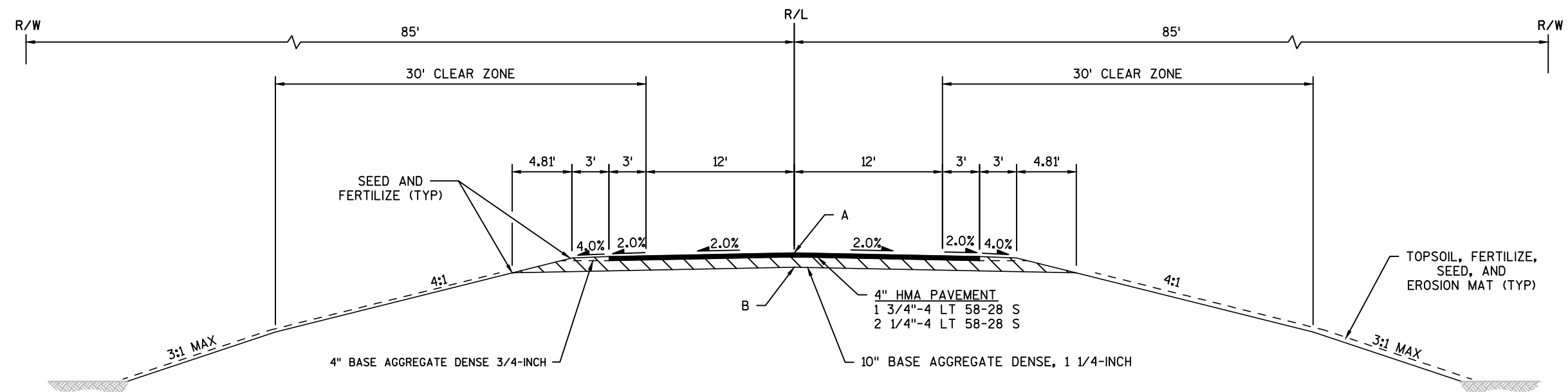
ORDER OF SECTION 2 SHEETS

GENERAL NOTES
TYPICAL SECTIONS
CONSTRUCTION DETAILS
TRAFFIC CONTROL PLAN
DETOUR PLAN



TYPICAL EXISTING SECTION STH 64

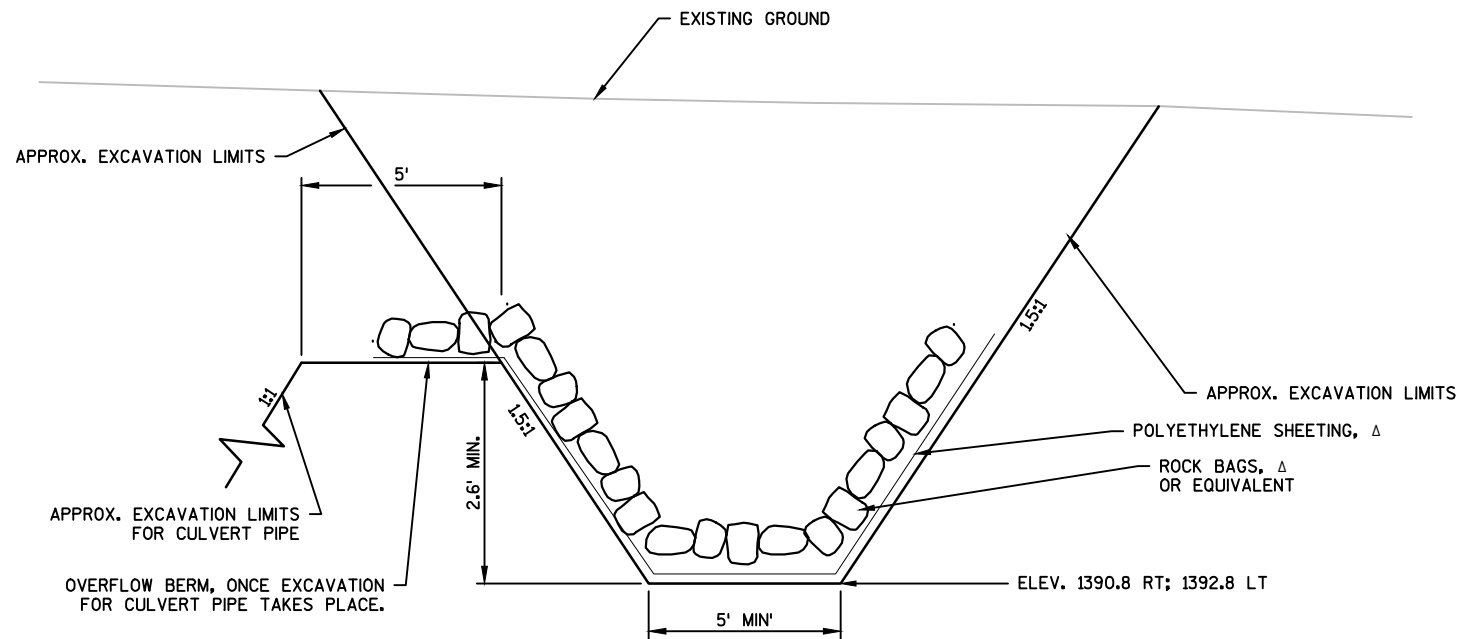
STA 60+25 TO STA 62+25



TYPICAL FINISHED SECTION STH 64

STA 60+25 TO STA 62+25

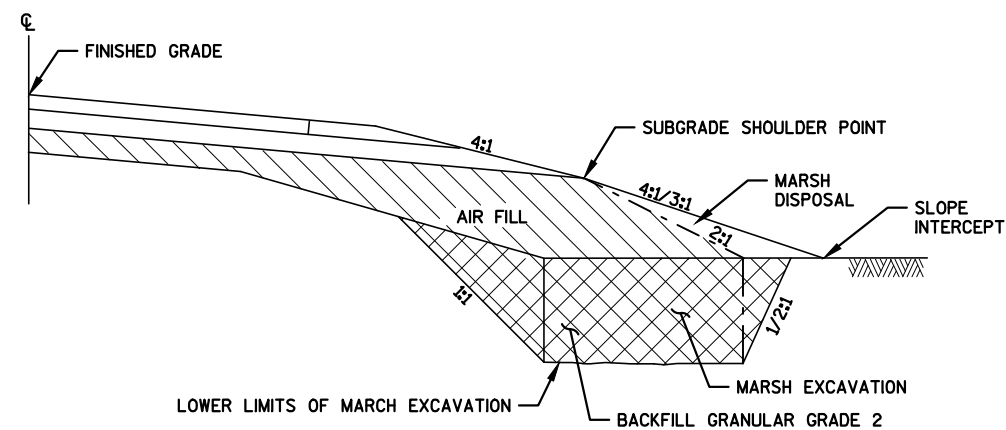
NOTE A; POINT REFERRED TO ON PROFILE.
NOTE B; POINT REFERRED TO ON CROSS SECTIONS.



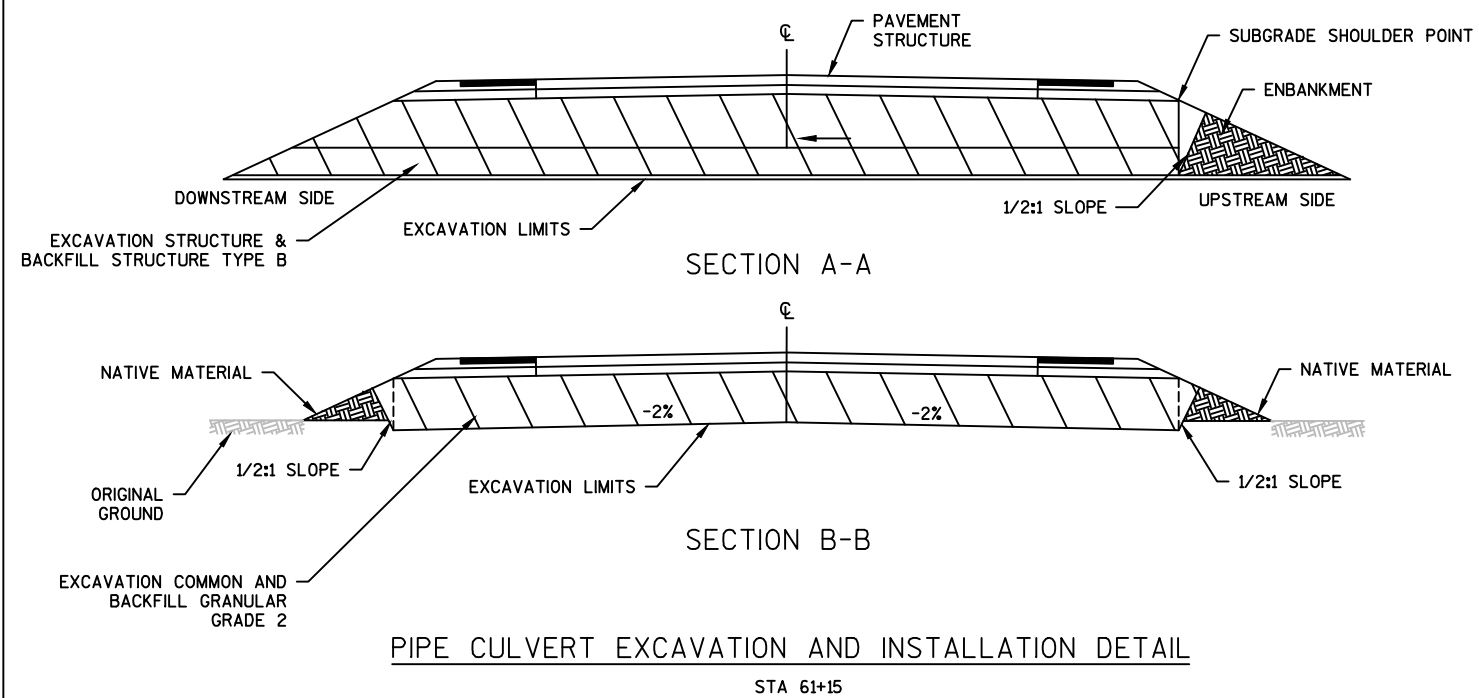
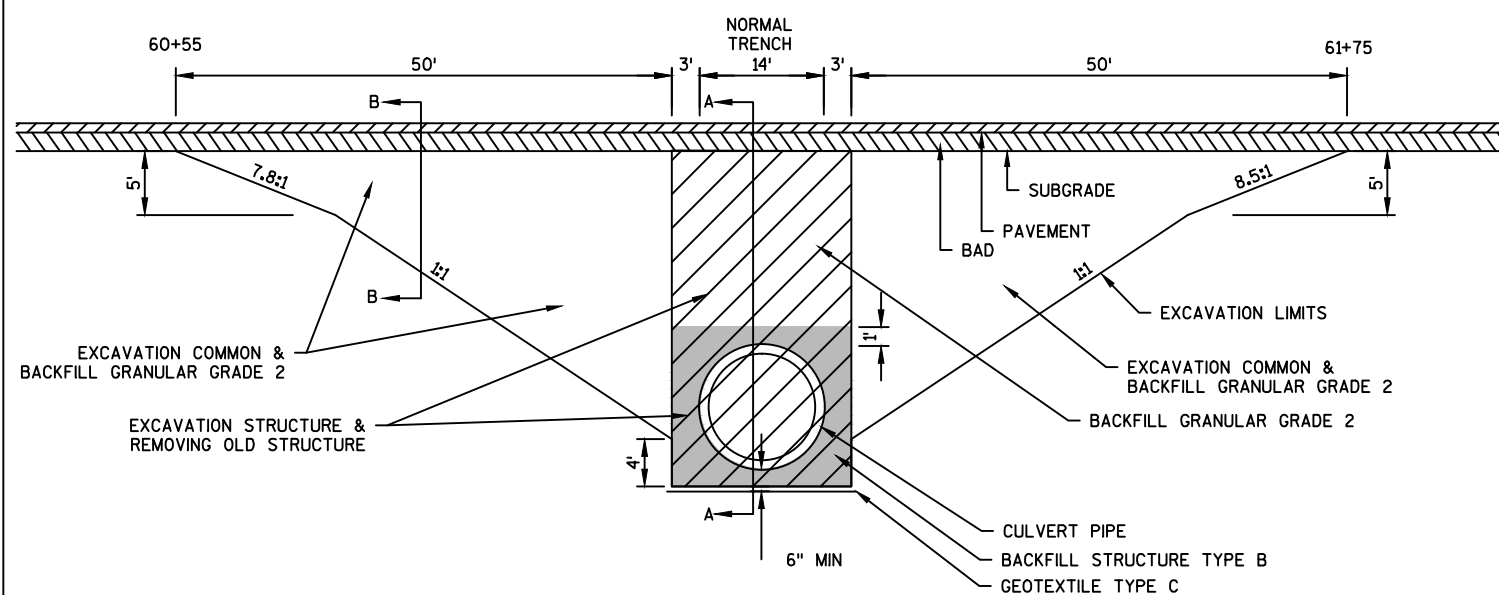
TEMPORARY WATER DIVERSION CHANNEL

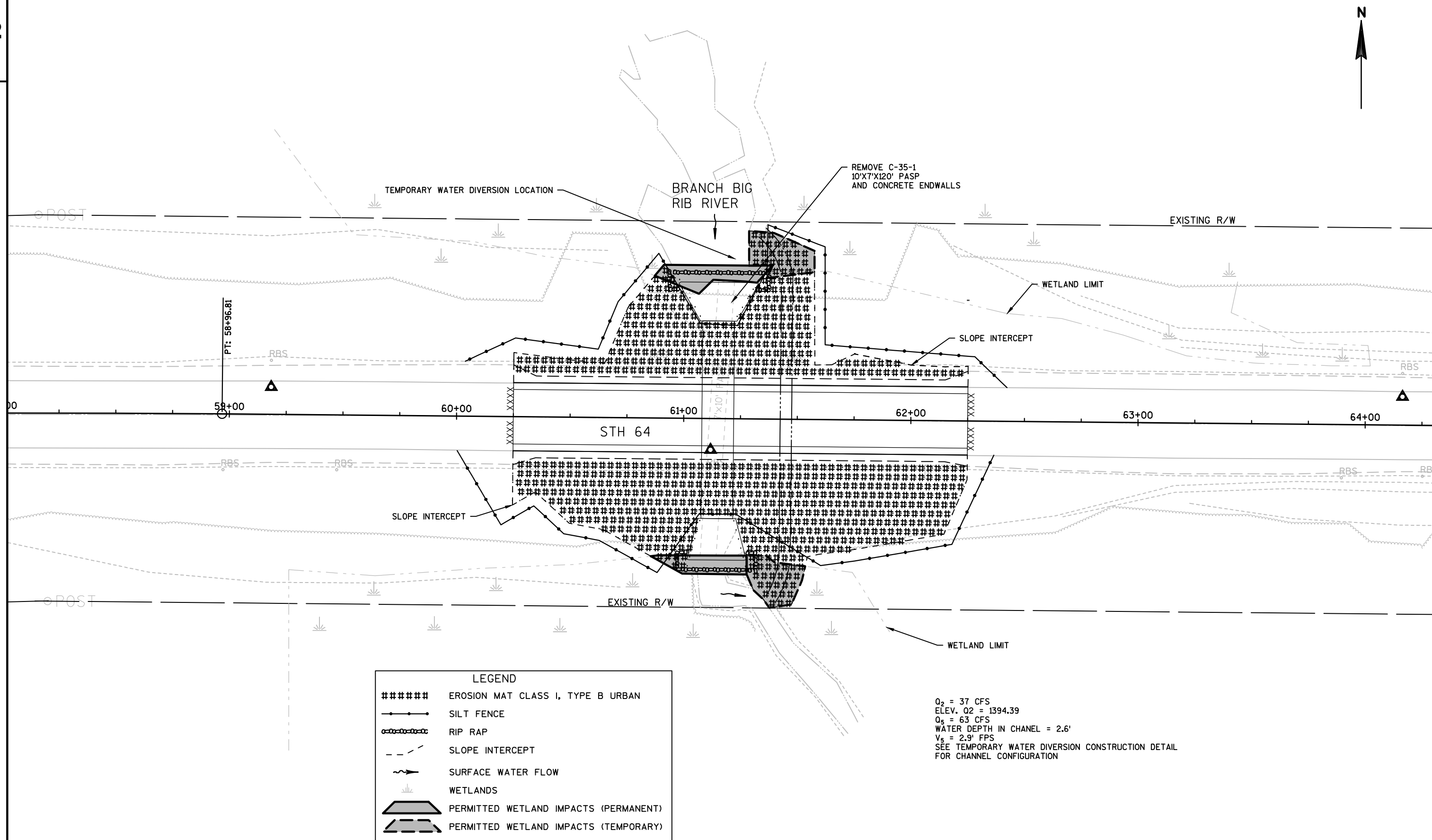
Δ INCIDENTAL TO TEMPORARY WATER DIVERSION

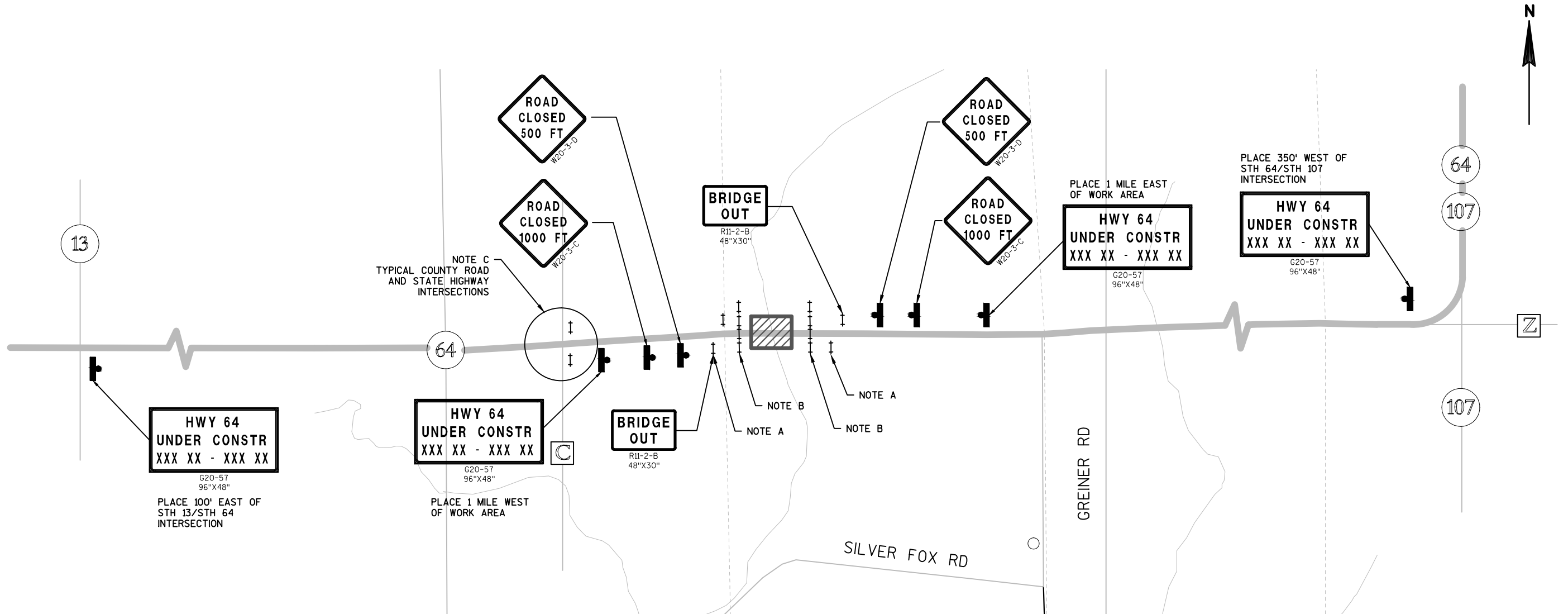
NOTE: EXCEPT FOR MARSH EXCAVATION AND MARSH BACKFILL, EXCAVATION AND BACKFILL FOR THE DIVERSION CHANNEL IS INCLUDED IN THE TEMPORARY WATER DIVERSION ITEM.



TYPICAL MARSH EXCAVATION







LEGEND

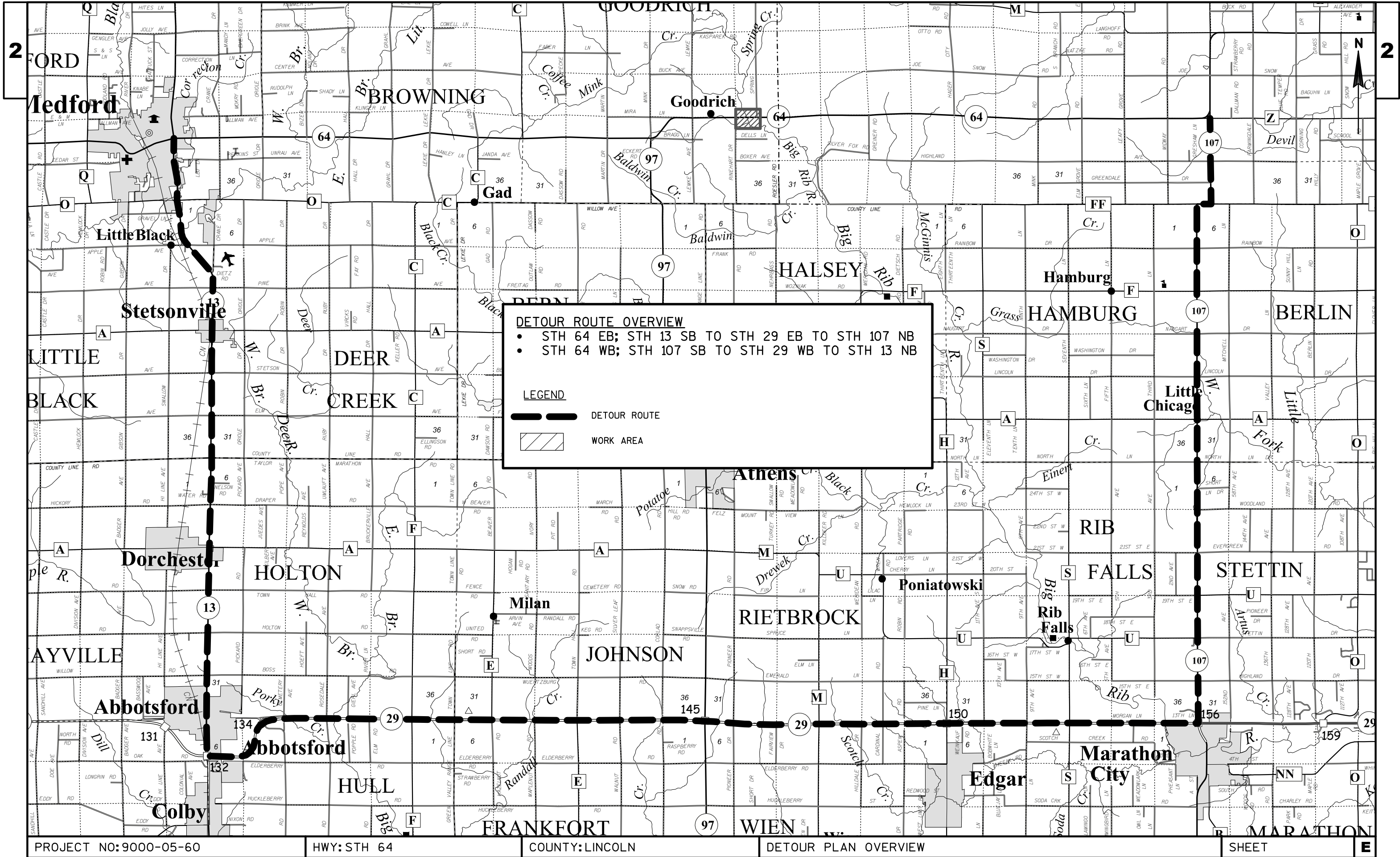
- ⊙ SIGN NUMBER
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ⌋ POST MOUNTED SIGN
- ↑ TYPE III BARRICADE
- ▨ WORK AREA

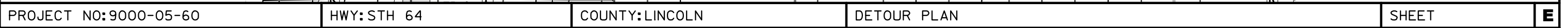
TRAFFIC CONTROL GENERAL NOTES

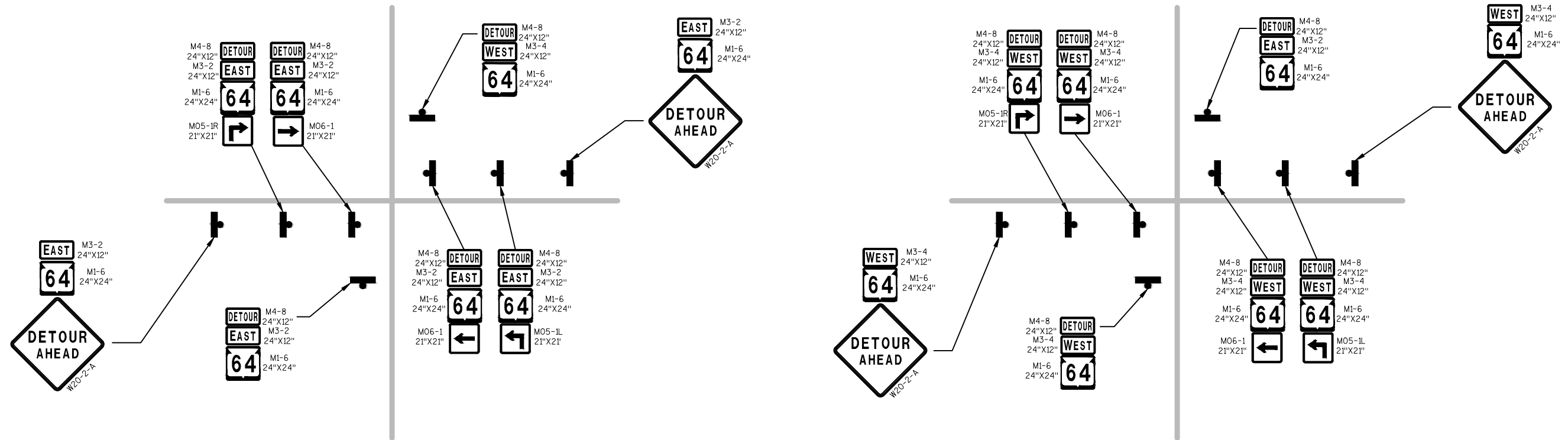
1. THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
2. THE SPACING BETWEEN PROPOSED SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) DISTANCE TO EXISTING SIGNS.
3. ALL SIGNS SHALL BE 48" x 48" UNLESS OTHERWISE NOTED.
4. "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
5. FIXED MESSAGE SIGNS SHALL BE PLACED ONE WEEK IN ADVANCE OF INITIAL LANE CLOSURE.
6. SEE ADDITIONAL TRAFFIC CONTROL DETAIL SHEETS, DETOUR DETAIL SHEETS AND STANDARD DETAIL DRAWINGS FOR ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

THIS TRAFFIC CONTROL PLAN IS APPLICABLE DURING THE CLOSURE OF STH 64 AND THE ASSOCIATED DETOUR.

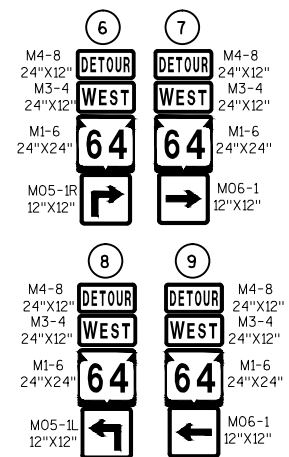
AFTER THE DETOUR IS REMOVED, DAYTIME LANE CLOSURES WITH FLAGGERS WILL BE UTILIZED. SDD "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)" WILL APPLY TO THE PROJECT. INCLUDE ADDITIONAL ROAD WORK 1/2 MILE SIGN FOR EASTBOUND TRAFFIC.



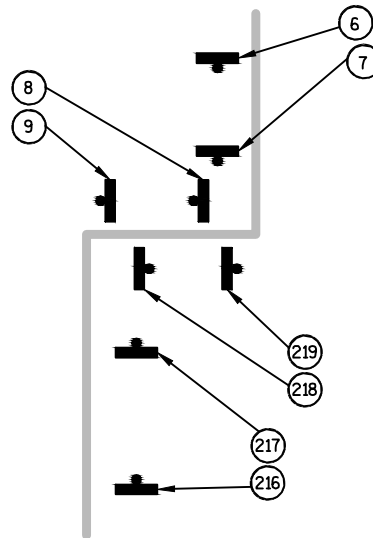
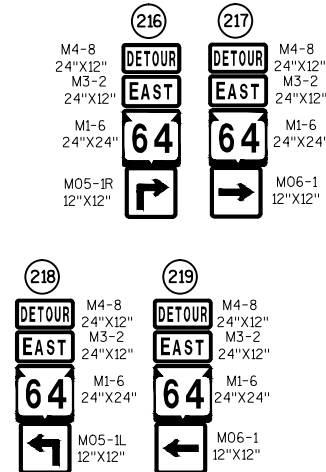




SIDEROAD TYPICAL A



SIDEROAD TYPICAL B



DETAIL C

LEGEND

- DETOUR ROUTE
- SIGN NUMBER
- TYPE "A" WARNING LIGHT (FLASHING)
- POST MOUNTED SIGN
- TYPE III BARRICADE
- WORK AREA

Estimate Of Quantities

9000-05-60

Line	Item	Item Description	Unit	Total	Qty
0010	201.0205	Grubbing	STA	1.000	1.000
0020	203.0200	Removing Old Structure (station) 01. 61+15	LS	1.000	1.000
0030	205.0100	Excavation Common	CY	1,207.000	1,207.000
0040	205.0400	Excavation Marsh	CY	106.000	106.000
0050	206.2000	Excavation for Structures Culverts (structure) 01. C-35-19	LS	1.000	1.000
0060	209.2500	Backfill Granular Grade 2	TON	1,900.000	1,900.000
0070	210.2500	Backfill Structure Type B	TON	1,040.000	1,040.000
0080	213.0100	Finishing Roadway (project) 01. 9000-05-60	EACH	1.000	1.000
0090	305.0110	Base Aggregate Dense 3/4-Inch	TON	35.000	35.000
0100	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	550.000	550.000
0110	455.0605	Tack Coat	GAL	50.000	50.000
0120	460.2000	Incentive Density HMA Pavement	DOL	100.000	100.000
0130	460.5224	HMA Pavement 4 LT 58-28 S	TON	155.000	155.000
0140	504.0100	Concrete Masonry Culverts	CY	77.000	77.000
0150	505.0400	Bar Steel Reinforcement HS Structures	LB	1,390.000	1,390.000
0160	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	6,080.000	6,080.000
0170	606.0300	Riprap Heavy	CY	33.000	33.000
0180	619.1000	Mobilization	EACH	1.000	1.000
0190	624.0100	Water	MGAL	3.000	3.000
0200	625.0100	Topsoil	SY	2,210.000	2,210.000
0210	628.1504	Silt Fence	LF	840.000	840.000
0220	628.1520	Silt Fence Maintenance	LF	840.000	840.000
0230	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0240	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0250	628.2008	Erosion Mat Urban Class I Type B	SY	2,210.000	2,210.000
0260	629.0210	Fertilizer Type B	CWT	1.400	1.400
0270	630.0120	Seeding Mixture No. 20	LB	60.000	60.000
0280	633.5200	Markers Culvert End	EACH	2.000	2.000
0290	642.5001	Field Office Type B	EACH	1.000	1.000
0300	643.0100	Traffic Control (project) 01. 9000-05-60	EACH	1.000	1.000
0310	643.0300	Traffic Control Drums	DAY	53.000	53.000
0320	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0330	643.0420	Traffic Control Barricades Type III	DAY	343.000	343.000
0340	643.0705	Traffic Control Warning Lights Type A	DAY	686.000	686.000
0350	643.0900	Traffic Control Signs	DAY	290.000	290.000
0360	643.1000	Traffic Control Signs Fixed Message	SF	128.000	128.000
0370	643.2000	Traffic Control Detour (project) 01. 9000-05-60	EACH	1.000	1.000
0380	643.3000	Traffic Control Detour Signs	DAY	4,090.000	4,090.000
0390	645.0105	Geotextile Type C	SY	90.000	90.000

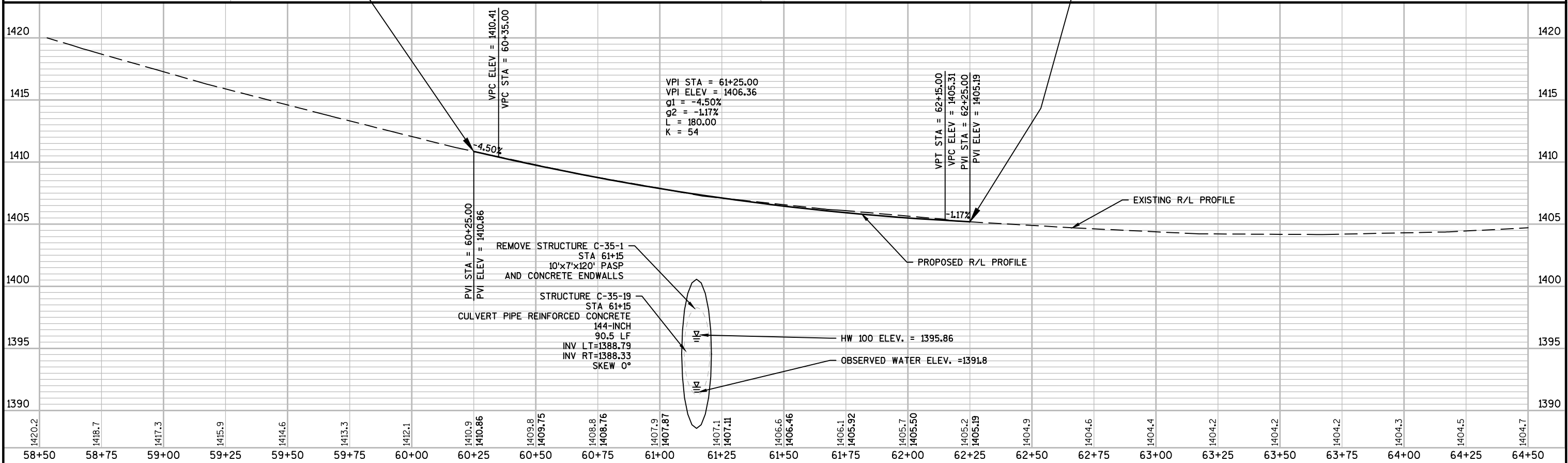
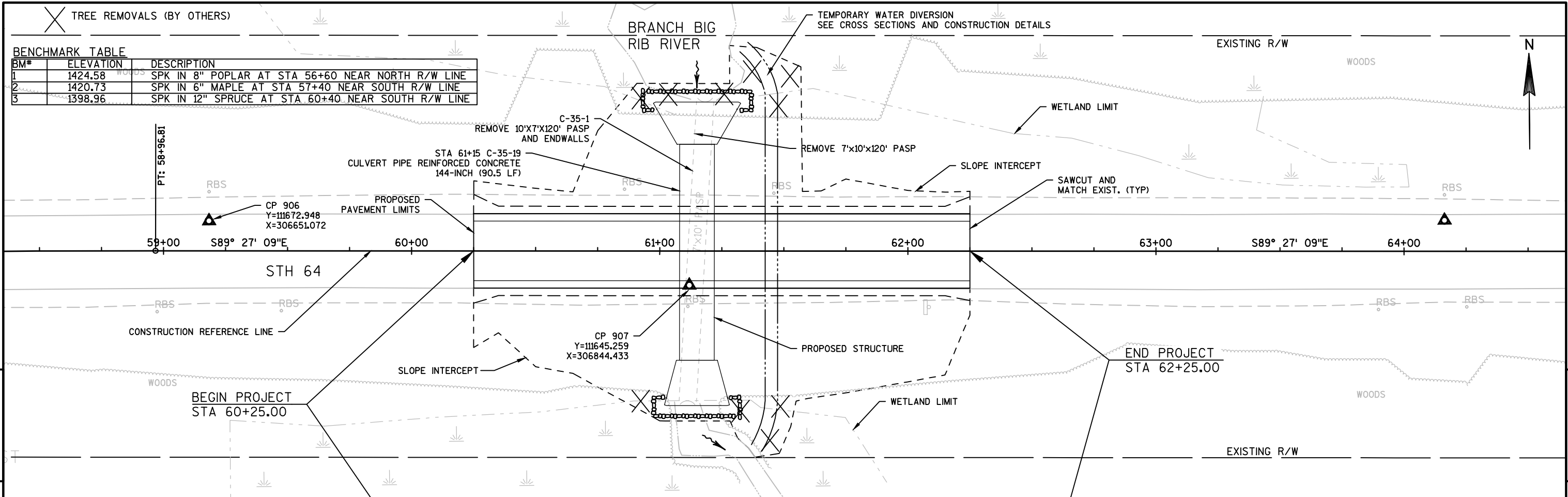
Estimate Of Quantities

9000-05-60					
Line	Item	Item Description	Unit	Total	Qty
0400	645.0120	Geotextile Type HR	SY	70.000	70.000
0410	646.0106	Pavement Marking Epoxy 4-Inch	LF	650.000	650.000
0420	650.4500	Construction Staking Subgrade	LF	200.000	200.000
0430	650.5000	Construction Staking Base	LF	200.000	200.000
0440	650.6500	Construction Staking Structure Layout (structure) 01. C-35-19	LS	1.000	1.000
0450	650.9910	Construction Staking Supplemental Control (project) 01. 9000-05-60	LS	1.000	1.000
0460	650.9920	Construction Staking Slope Stakes	LF	200.000	200.000
0470	690.0150	Sawing Asphalt	LF	60.000	60.000
0480	715.0502	Incentive Strength Concrete Structures	DOL	396.000	396.000
0490	SPV.0090	Special 01. Culvert Pipe Reinforced Concrete 144-Inch Installed	LF	90.500	90.500
0500	SPV.0105	Special 01. Temporary Water Diversion	LS	1.000	1.000

EARTHWORK SUMMARY												GRUBBING															
STATION		TO	STATION		LOCATION		205. 0100 EXCAVATION COMMON CY NOTE 1		AVAILI ABLE MATERI AL CY NOTE 1		205. 0400 EXCAVATION MARSH CY		EXPANDED MARSH BACKFI LL CY FACTOR 1. 50		UNEXPANDED FI LL CY		EXPANDED FI LL CY FACTOR 1. 25		MASS ORDI NATE CY NOTE 2		WASTE CY						
CATEGORY 0010																											
60+25		-	62+25		STH 64		347		347		106		159		222		277		70		70						
60+55		-	61+75		CULVERT		860		860		0		0		0		0		860		860						
PROJECT TOTALS							1, 207		1, 207		106		159		222		277		930		930						
NOTES:												1) ALL EXCAVATED ASPHALT MATERIAL ASSUMED USABLE AS FILL. 2) MASS ORDINATE = EXCAVATION COMMON - EXPANDED FILL															
BACKFILL GRANULAR GRADE 2							BASE AGGREGATE DENSE AND WATER																				
STATION TO STATION		LOCATION		209. 2500 BACKFILL GRANULAR GRADE 2 TON		STATION TO STATION		ROADWAY		305. 0110 3/4- INCH TON		305. 0120 1 1/4- INCH TON		624. 0100 WATER MGAL													
CATEGORY 0010						CATEGORY 0010						CATEGORY 0010															
60+55		-	61+75		STH 64		1740		60+25		-	62+25		STH 64		33		544		3							
60+90		-	61+60		WETLANDS		160		UNDI STRI BUTED			STH 64		2		6		---									
PROJECT TOTALS							1, 900		PROJECT TOTALS							35		550		3							
EROSION CONTROL AND RESTORATION												ASPHALTIC ITEMS															
STATION TO STATION		ROADWAY		625. 0100 TOPSOIL SY		628. 1504 SILT FENCE LF		628. 1520 SILT FENCE MAINTENANCE LF		628. 1905 MOBILIZATIONS EROSION CONTROL EA		628. 1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EA		628. 2008 EROSION MAT URBAN CLASS 1 TYPE B SY		629. 0210 FERTILIZER TYPE B CWT		630. 0120 SEEDING MIXTURE NO. 20 LB									
CATEGORY 0010												CATEGORY 0010															
60+25		-	62+25		STH 64		1, 770		675		675		2		---		1, 770		1. 1		48						
UNDI STRI BUTED				STH 64		440		165		165		---		2		440		0. 3		12							
PROJECT TOTALS							2, 210		840		840		2		2		2, 210		1. 4		60						
CONSTRUCTION STAKING												SAWING															
STA		TO	STA		LOCATION		650. 4500 SUBGRADE LF		650. 5000 BASE LF		CATEGORY 0020 650. 6500 STRUCTURE LAYOUT LS		650. 9910 SUPPLEMENTAL CONTROL LS		650. 9920 SLOPE STAKES LF												
CATEGORY 0010												CATEGORY 0010															
60+25		-	62+25		STH 64		200		200		---		---		200												
STRUCTURE C- 35- 19					STH 64		---		---		1		---		---												
PROJECT					STH 64		---		---		---		1		---												
PROJECT TOTALS							200		200		1		1		200												
PAVEMENT MARKING												GRUBBING															
STATION TO STATION		ROADWAY		646. 0106 EPOXY 4- INCH WHITE LF YELLOW LF																							
CATEGORY 0010												CATEGORY 0010															
60+25		-	62+25		STH 64		400		250																		
SUB TOTAL							400		250																		
PROJECT TOTALS							650																				
PROJECT NO: 9000-05-60							HWY: STH 64					COUNTY: LINCOLN					MISCELLANEOUS QUANTITIES					SHEET					E

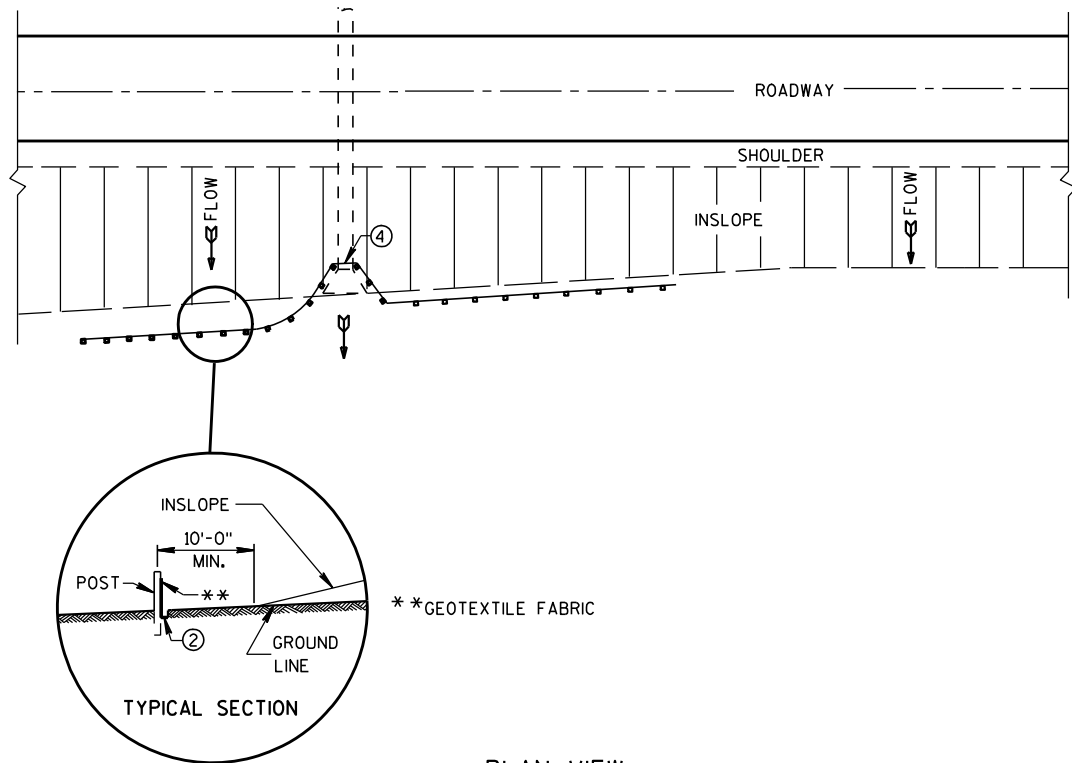
TRAFFIC CONTROL															
PHASE	LOCATION	APPROX. SERVI CE PERI OD 13 DAYS	643. 0300		643. 0310. S	643. 0420		643. 0705		643. 0900		643. 1000		643. 3000	
			TRAFFI C CONTROL DRUMS		TEMPORARY PORTABLE RUMBLE STRI PS LS	BARRI CADES TYPE I I I		WARNI NG LI GHT'S TYPE A		SI GNS		SI GNS FIXED MESSAGE**		DETOUR SI GNS	
			NO.	DAYS		NO.	DAYS	NO.	DAYS	NO.	DAYS	NO.	SF	NO.	DAYS
CATEGORY 0010															
1 (DETOUR)	STH 64 - 1 MILE WEST OF PROJECT	13	--	--	--	--	--	--	--	--	--	1	32	--	--
	STH 64 - 1 MILE EAST OF PROJECT	13	--	--	--	--	--	--	--	--	--	1	32	--	--
	STH 64 AT STH 13	13	--	--	--	2	26	4	52	--	--	1	32	8	104
	STH 13 AT STH 64	13	--	--	--	--	--	--	--	--	--	--	--	11	143
	STH 64 AT STH 107	13	--	--	--	2	26	4	52	--	--	1	32	2	26
	STH 64 AT PROJECT LOCATION	13	--	--	--	14	182	28	364	8	104	--	--	--	--
	STH 107 AT STH 64	13	--	--	--	--	--	--	--	--	--	--	--	14	182
	STH 107 AT CTH FF	13	--	--	--	--	--	--	--	--	--	--	--	32	416
	STH 107 AT STH 29	13	--	--	--	--	--	--	--	--	--	--	--	23	299
	STH 29 AT STH 13	13	--	--	--	--	--	--	--	--	--	--	--	26	338
	STH 64 SIDEROADS	13	--	--	--	6	78	12	156	12	156	--	--	--	--
	STH 107 SIDEROADS	13	--	--	--	--	--	--	--	--	--	--	--	84	1092
	STH 29 SIDEROADS	13	--	--	--	--	--	--	--	--	--	--	--	30	390
	STH 13 SIDEROADS	13	--	--	--	--	--	--	--	--	--	--	--	56	728
2 (NO DETOUR)	STH 64	3	16	48	1	--	--	--	--	1	3	--	--	--	--
	UNDI STRI BUTED		5		0	31		62		27				372	
TOTALS			53		1	343		686		290		128		4, 090	

** FIXED MESSAGE SIGNS TO BE PLACED 1 WEEK PRIOR TO CONSTRUCTION

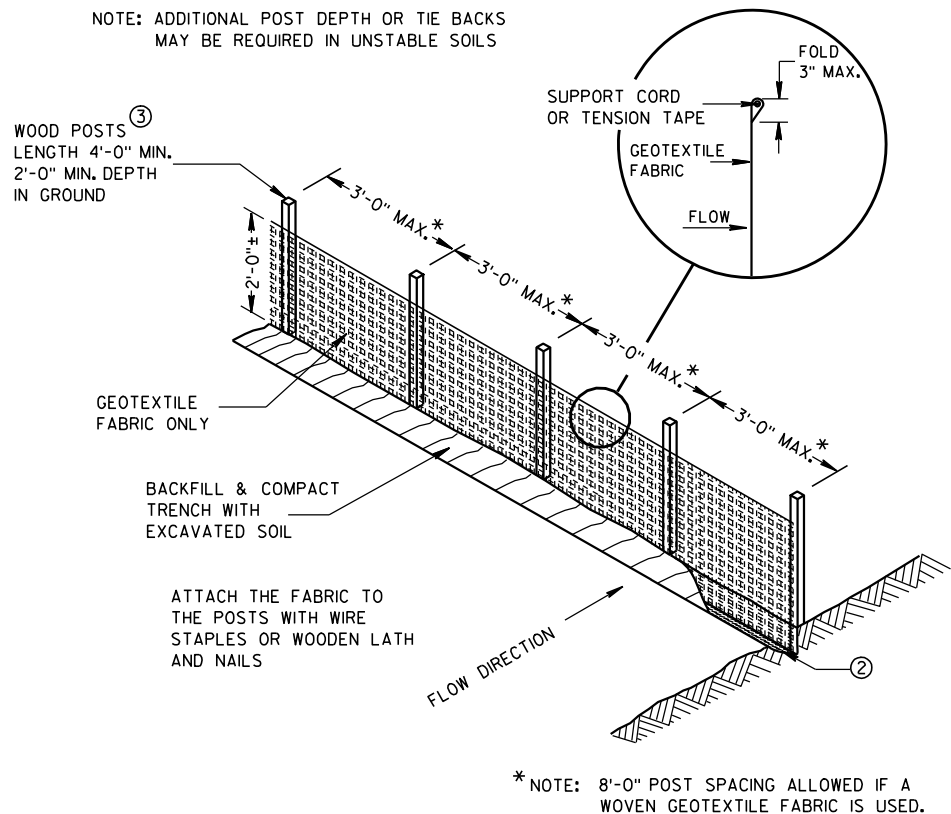


Standard Detail Drawing List

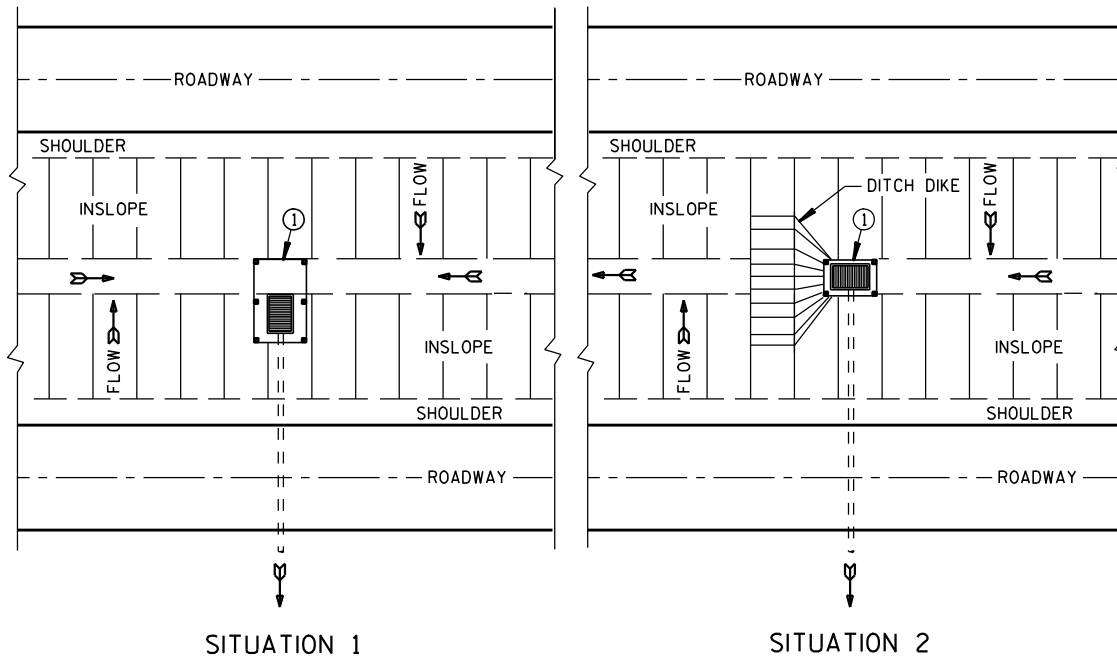
08E09-06	SILT FENCE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-03	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C12-05	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D38-01A	TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS
15D38-01B	ATTACHMENT OF SIGNS TO POSTS



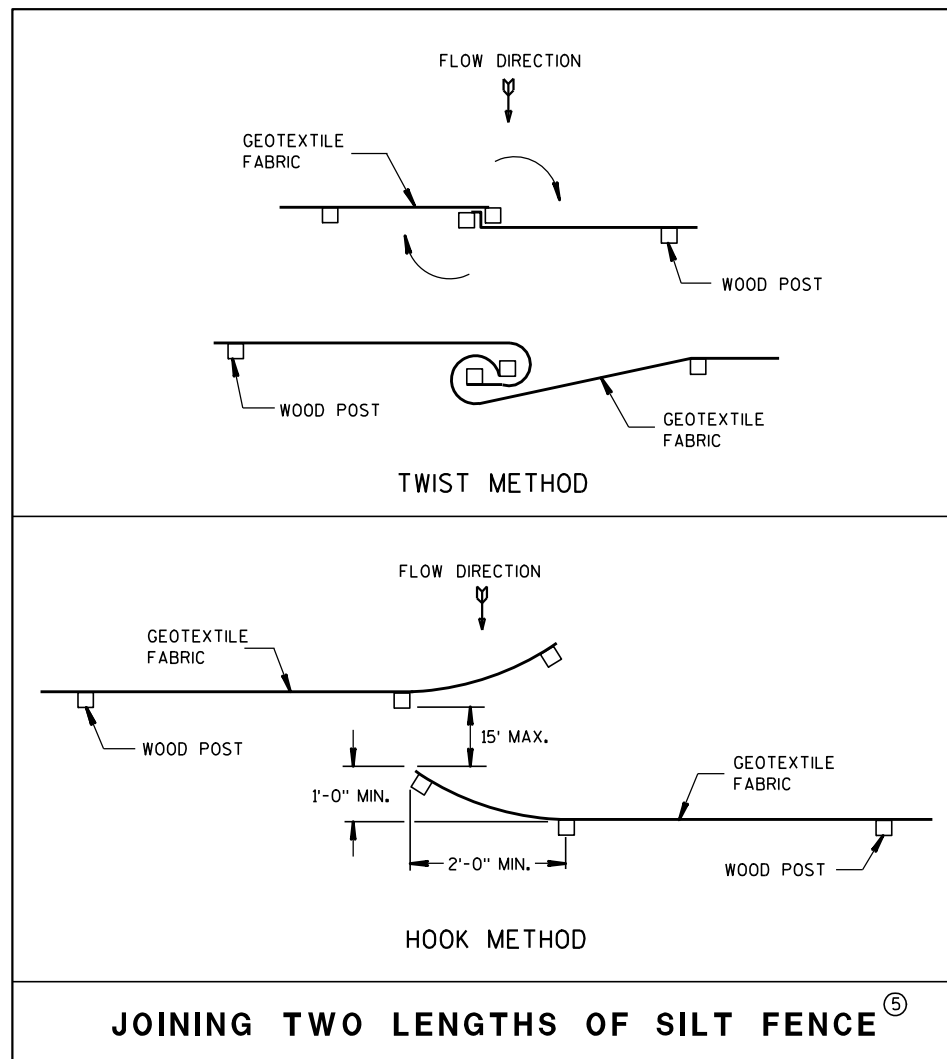
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

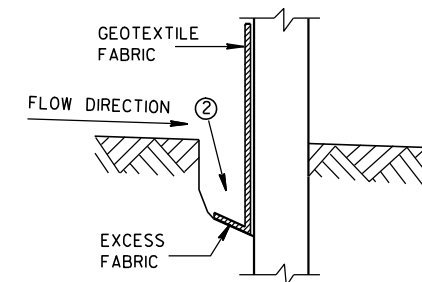


JOINING TWO LENGTHS OF SILT FENCE^⑤

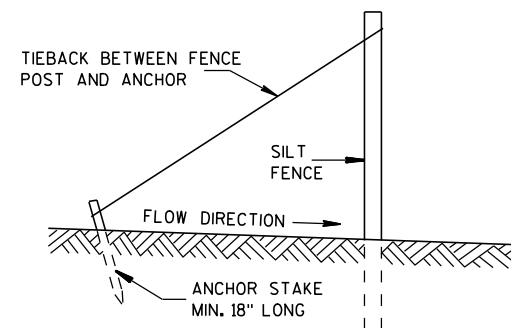
GENERAL NOTES

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.

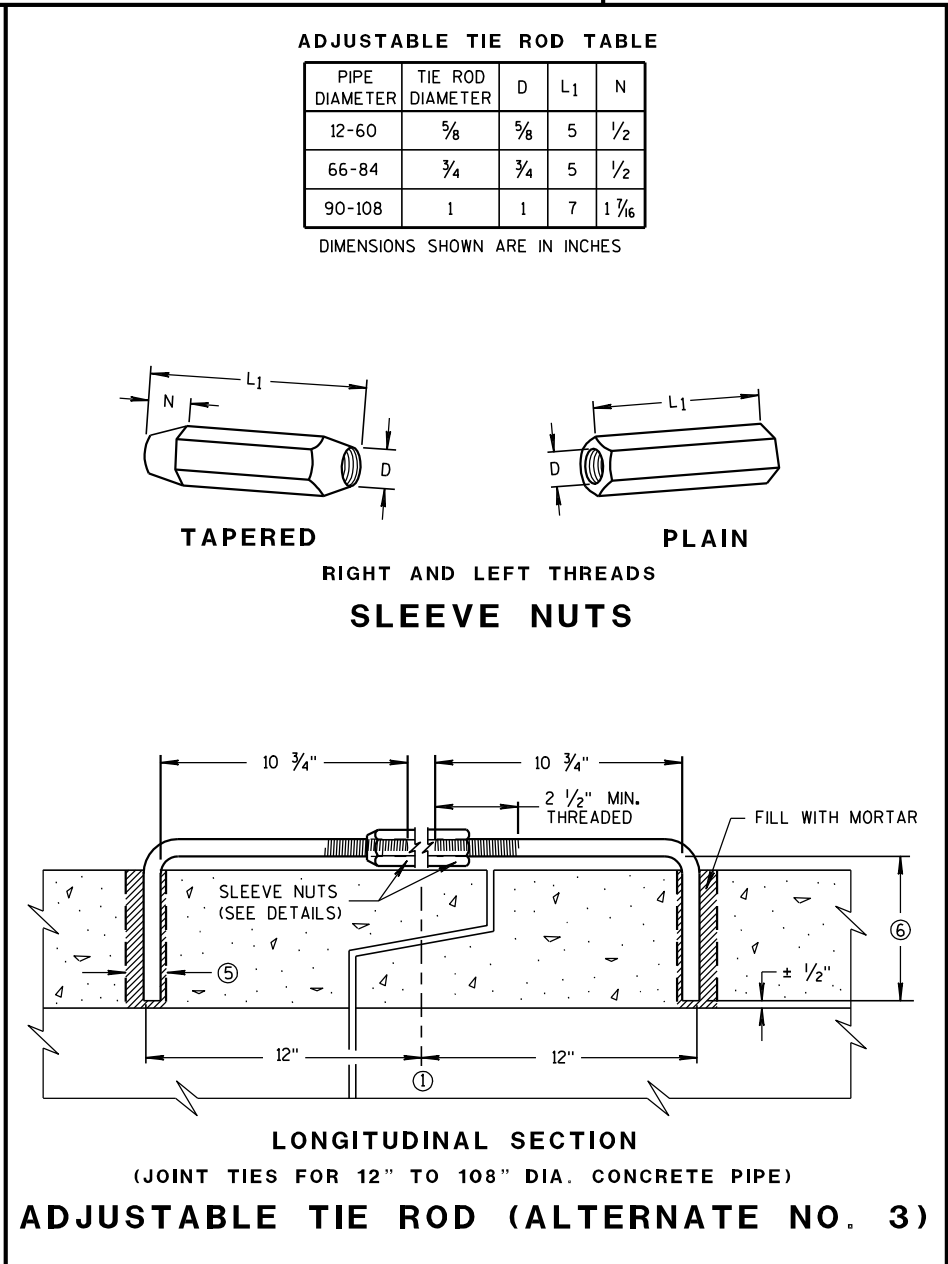
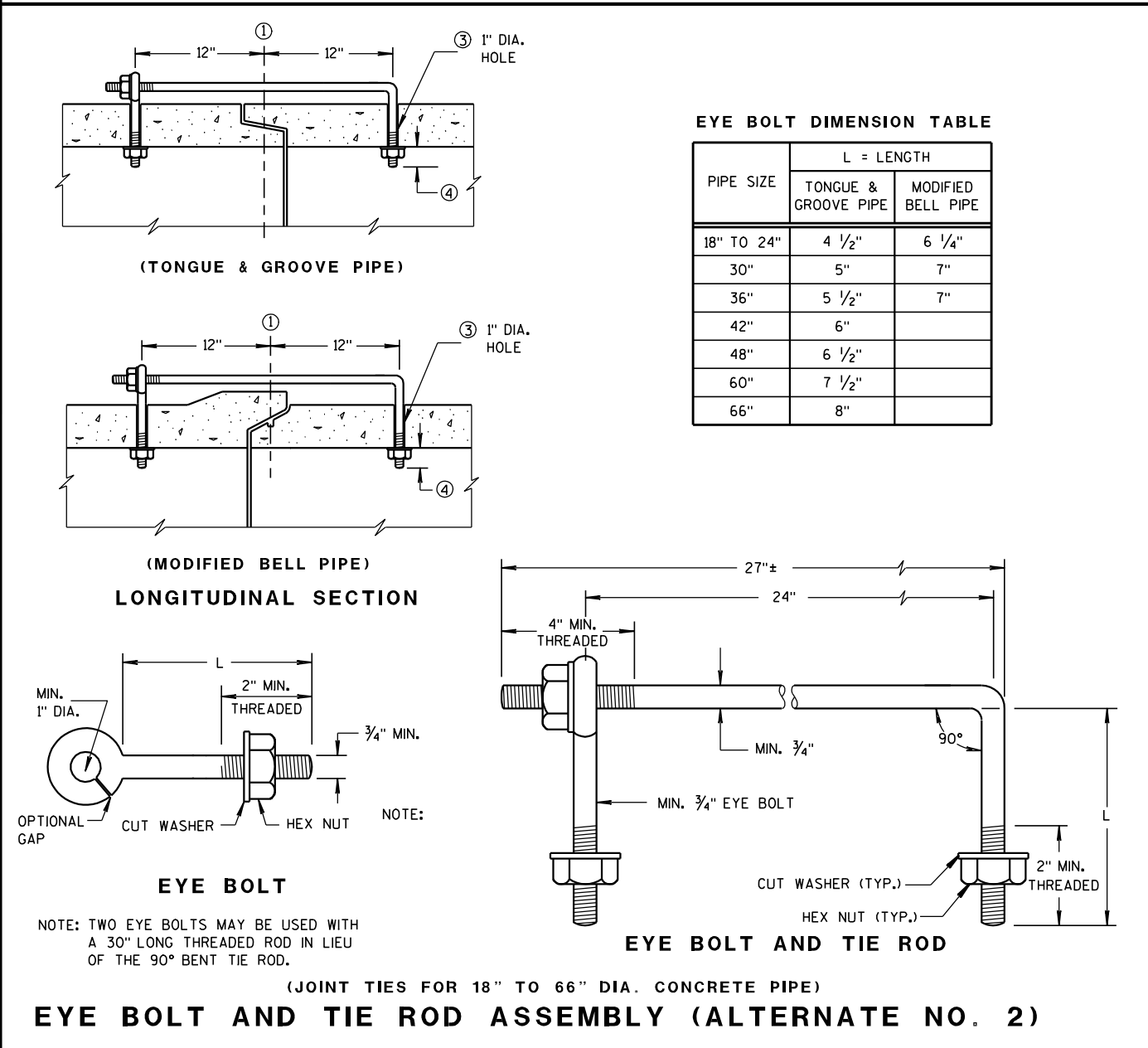
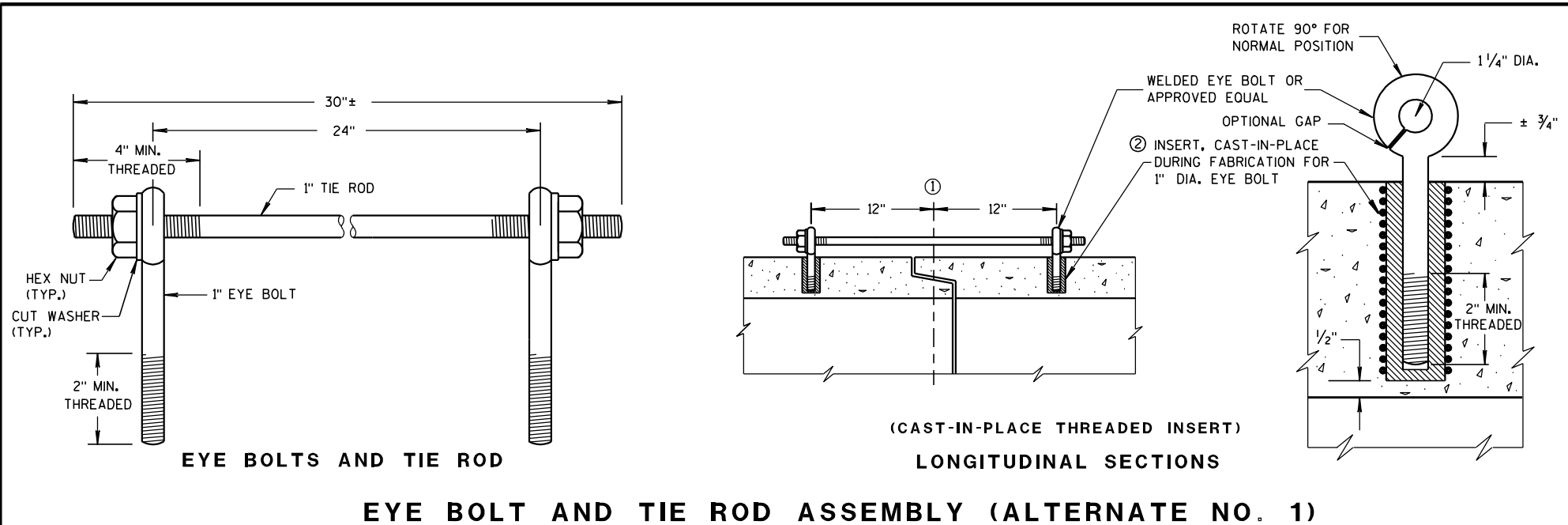


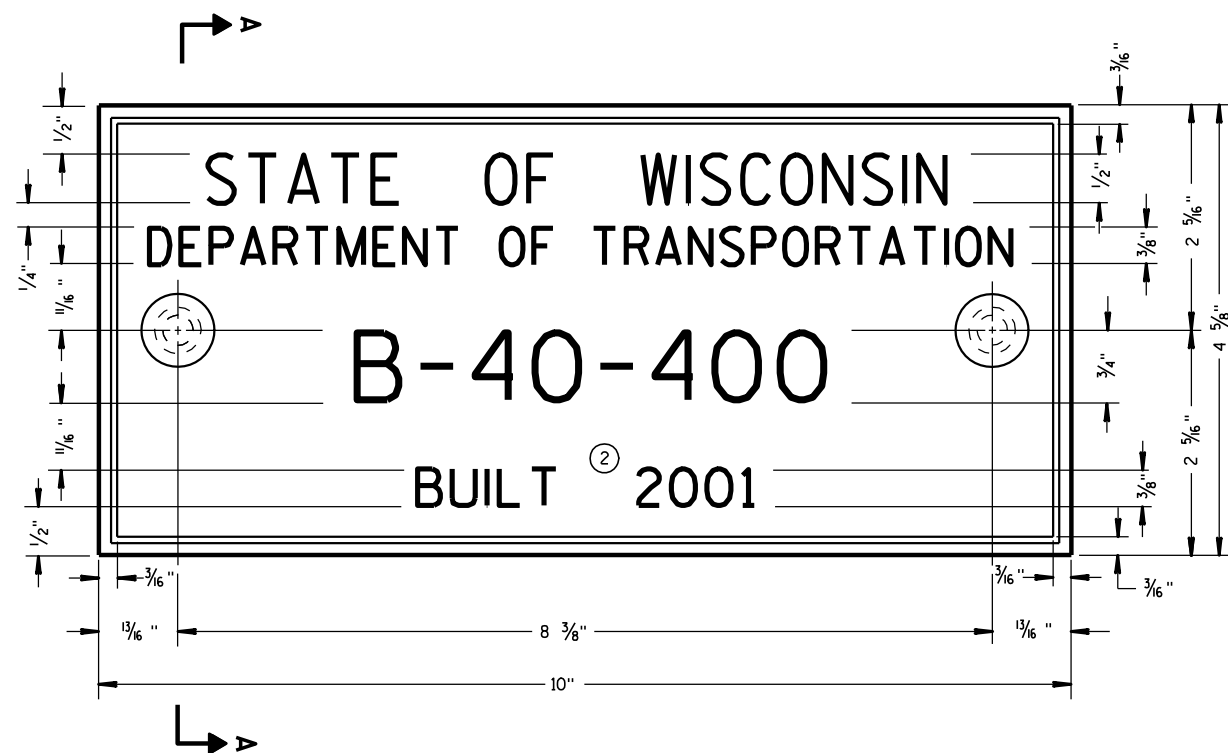
TRENCH DETAIL



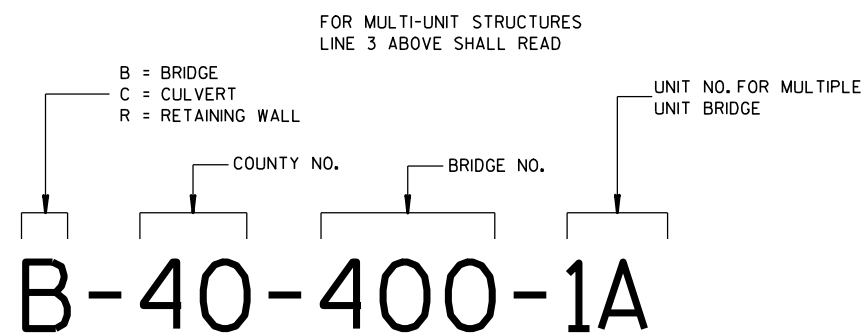
SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

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





TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)



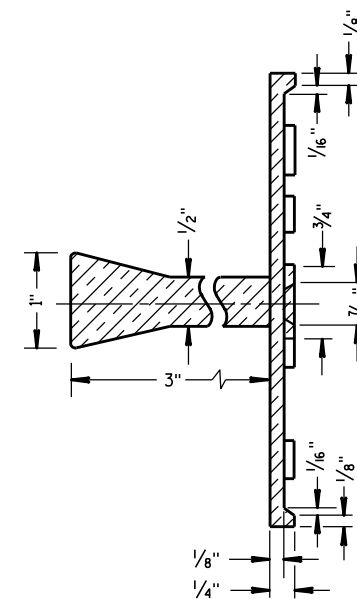
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

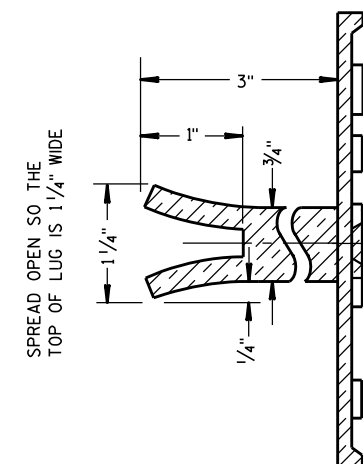
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

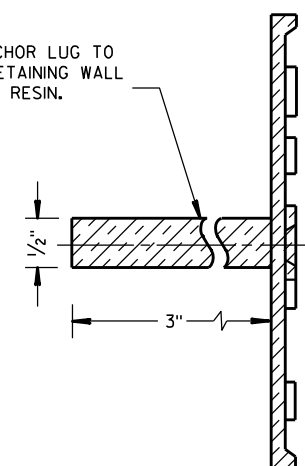


SECTION A-A



ALTERNATE LUG

- ① ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

**NAME PLATE
(STRUCTURES)**

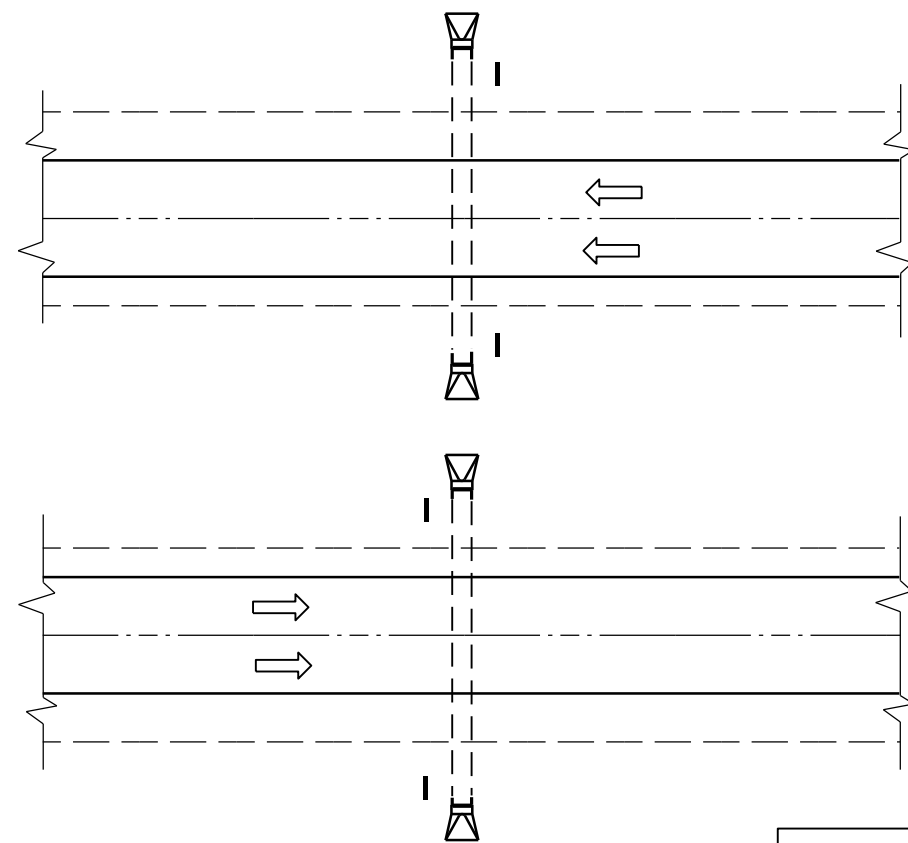
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

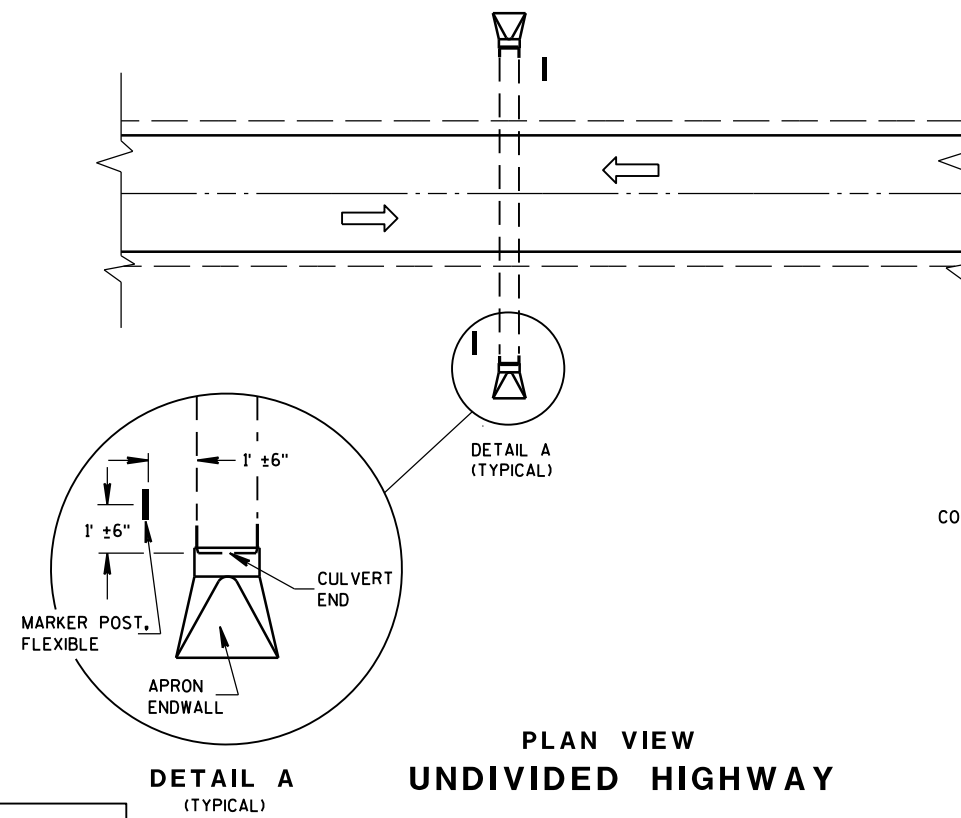
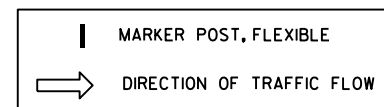
3/26/10
DATE

FHWA

/S/ Scot Becker
CHIEF STRUCTURAL DEVELOPMENT ENGINEER



PLAN VIEW
DIVIDED HIGHWAY

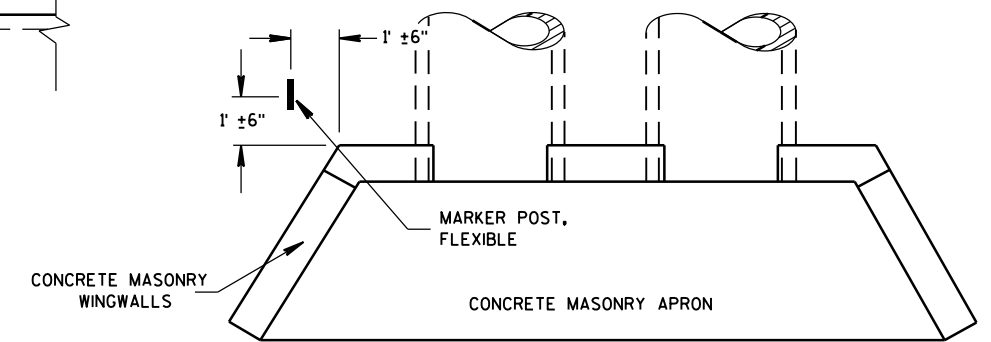


PLAN VIEW
UNDIVIDED HIGHWAY

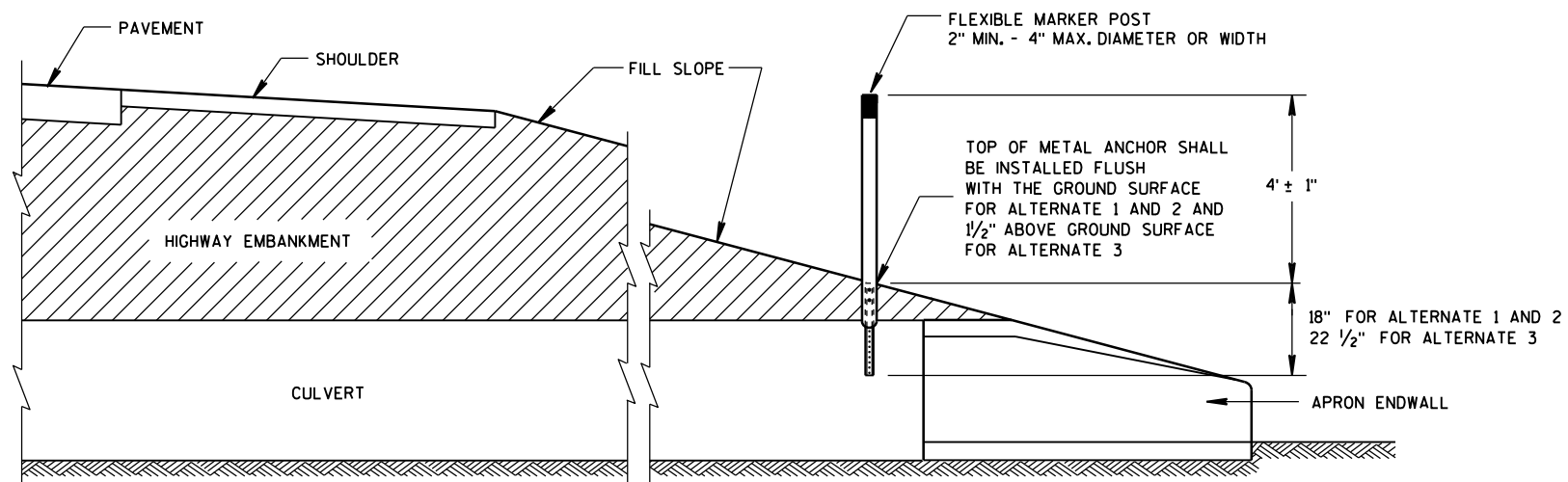
FLEXIBLE MARKER POST LOCATION

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.



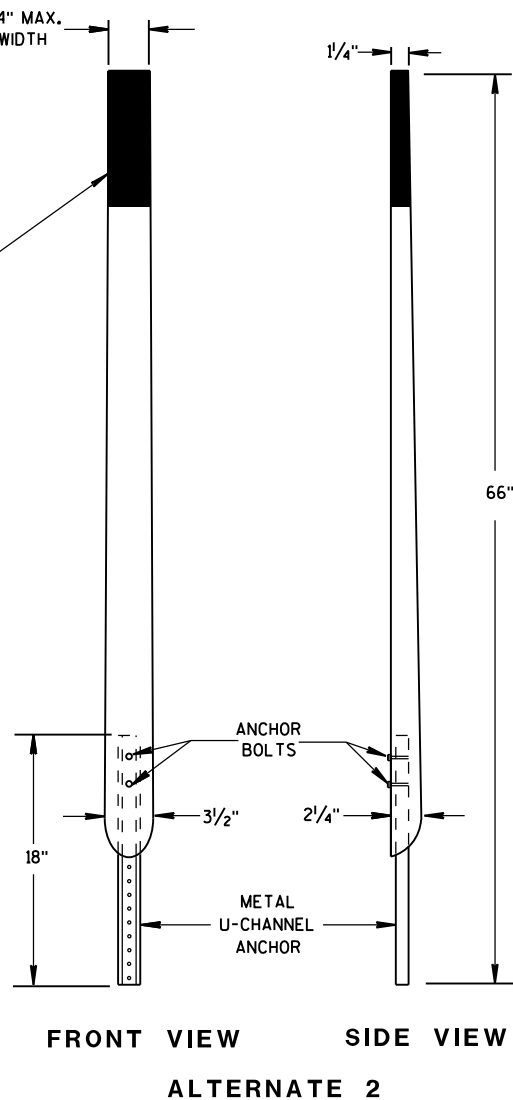
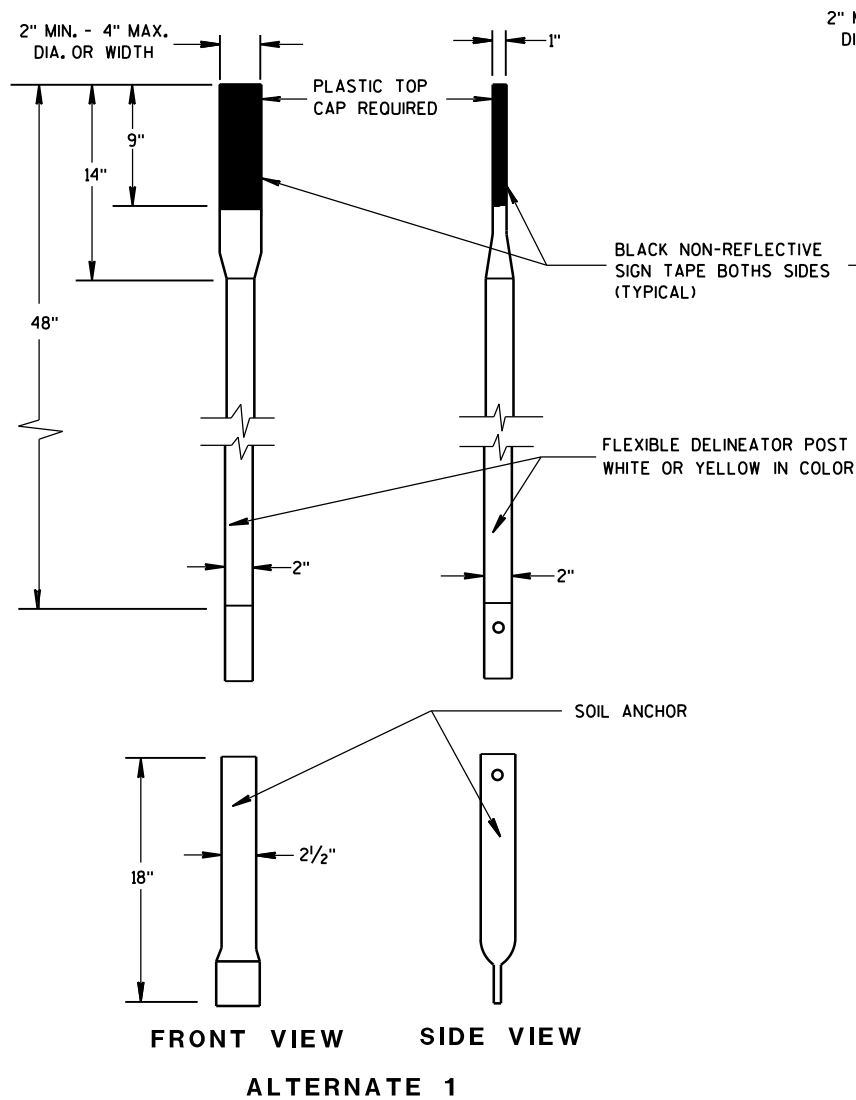
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



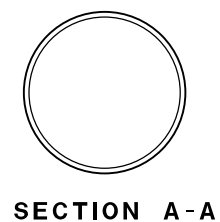
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

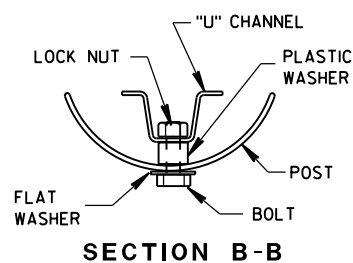
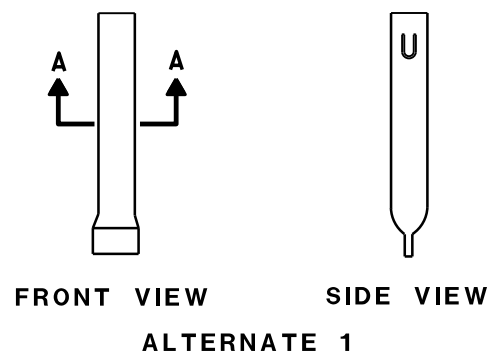
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



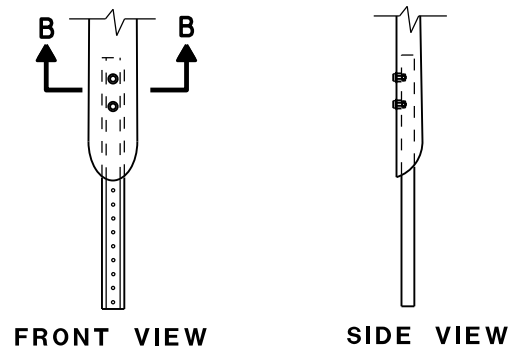
FLEXIBLE MARKER POSTS



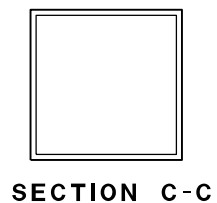
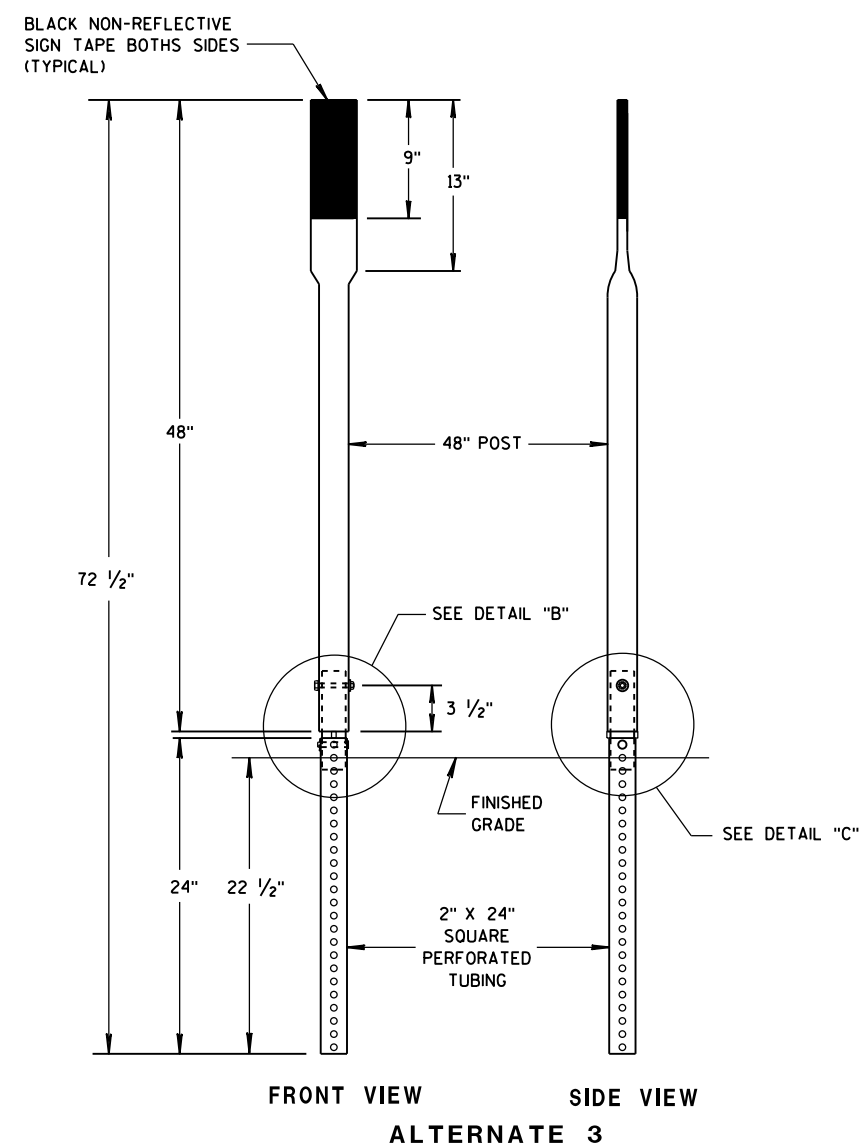
SECTION A-A



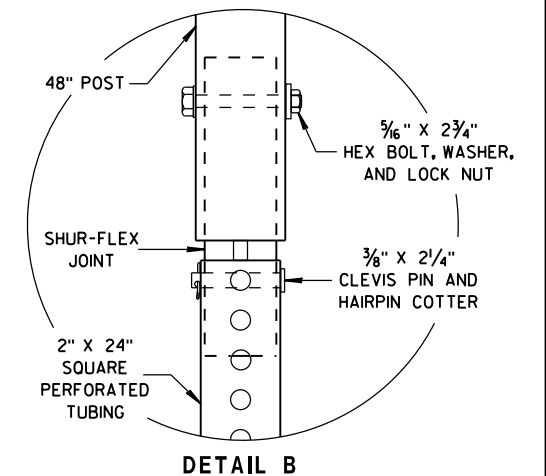
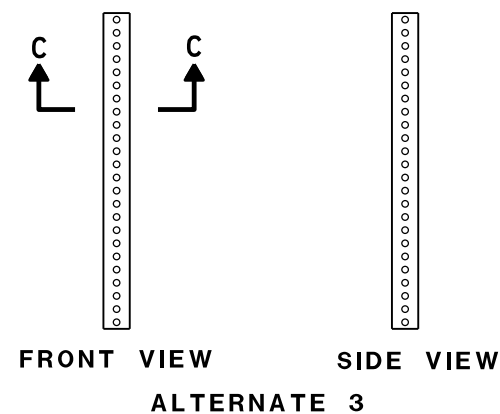
SECTION B-B



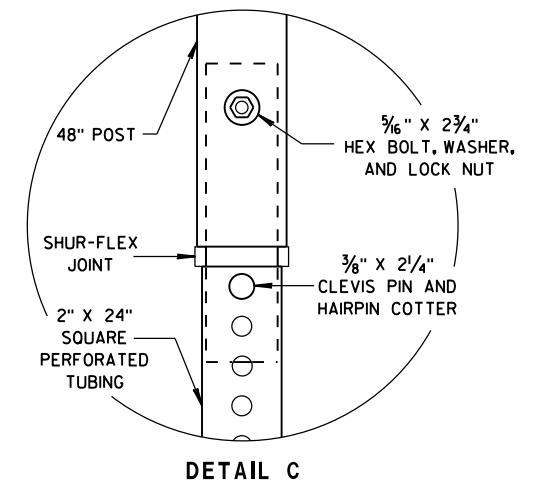
FLEXIBLE MARKER POST ANCHORS



SECTION C-C



DETAIL B

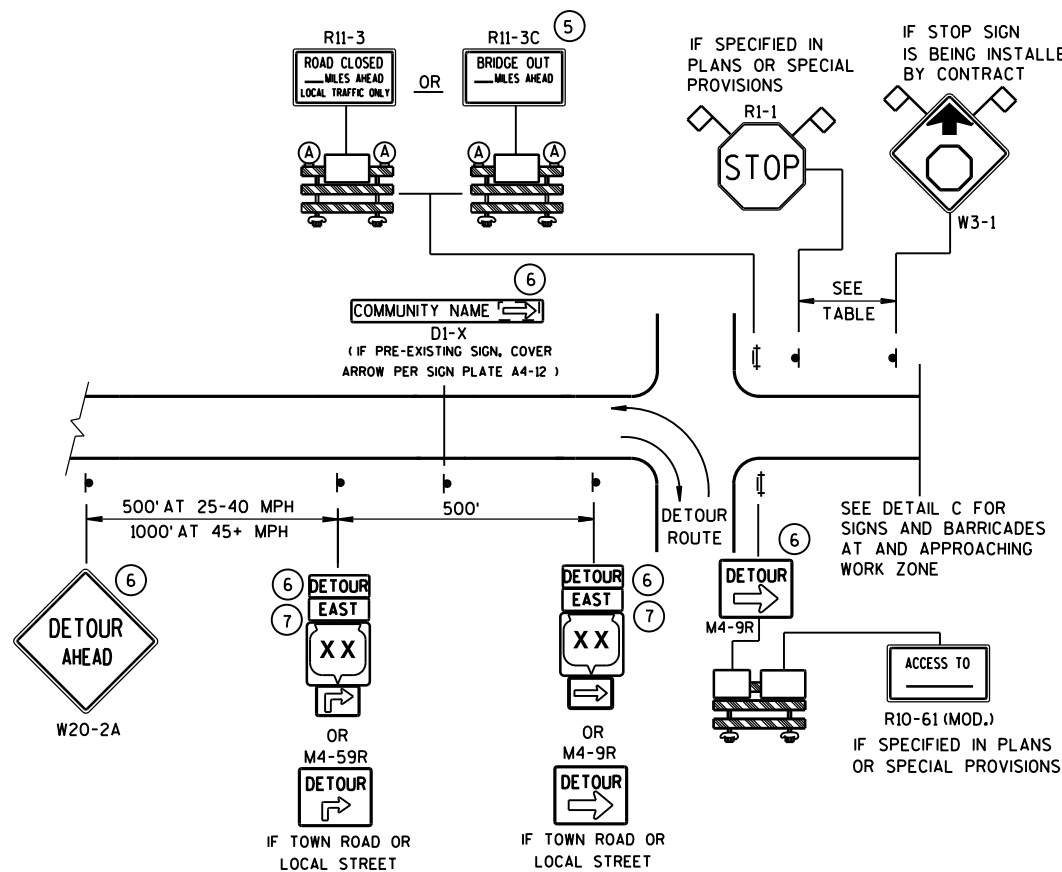


DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

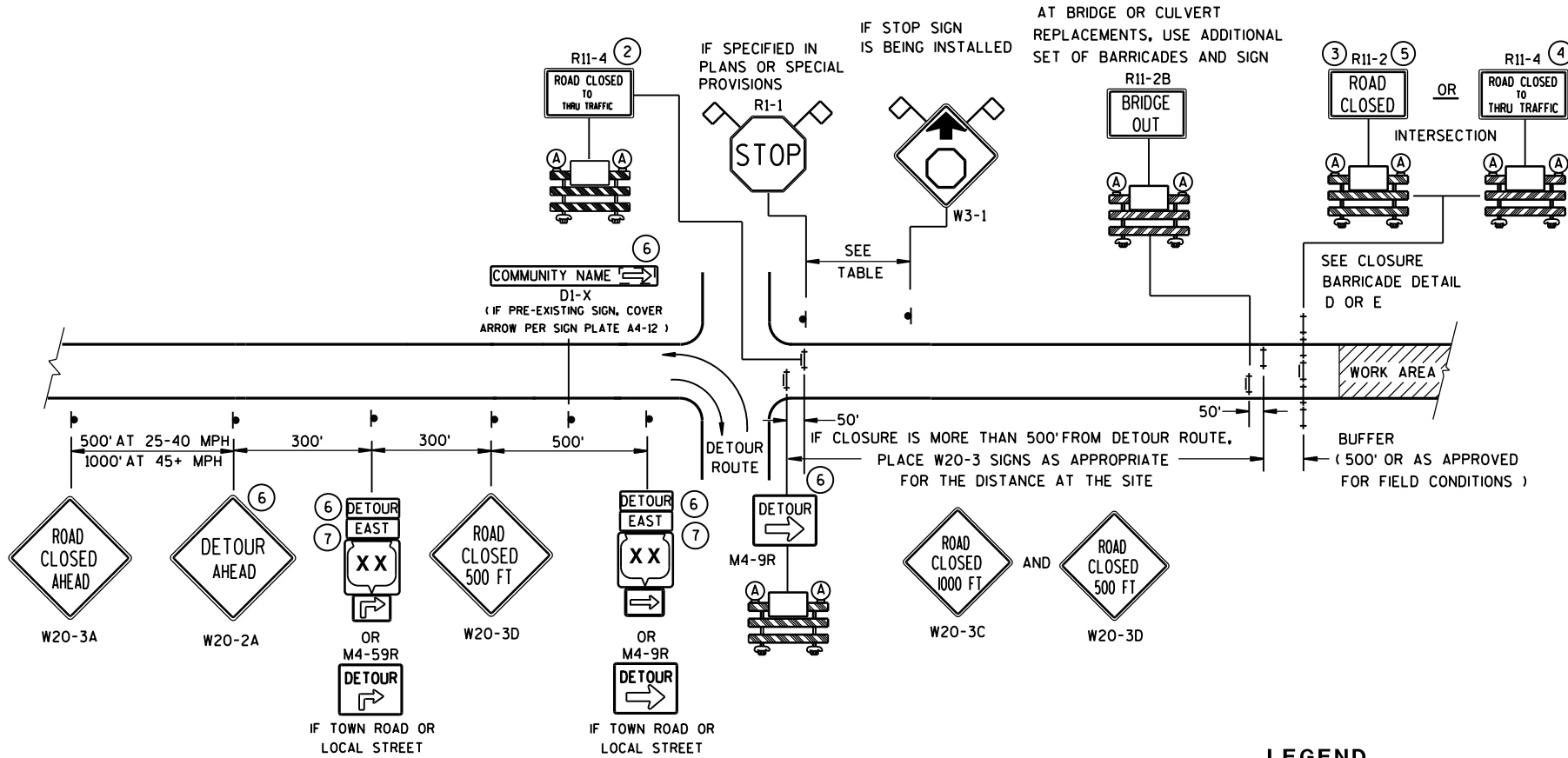
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 DATE /S/ Travis Feltes
STATE TRAFFIC ENGINEER OF DESIGN
FHWA



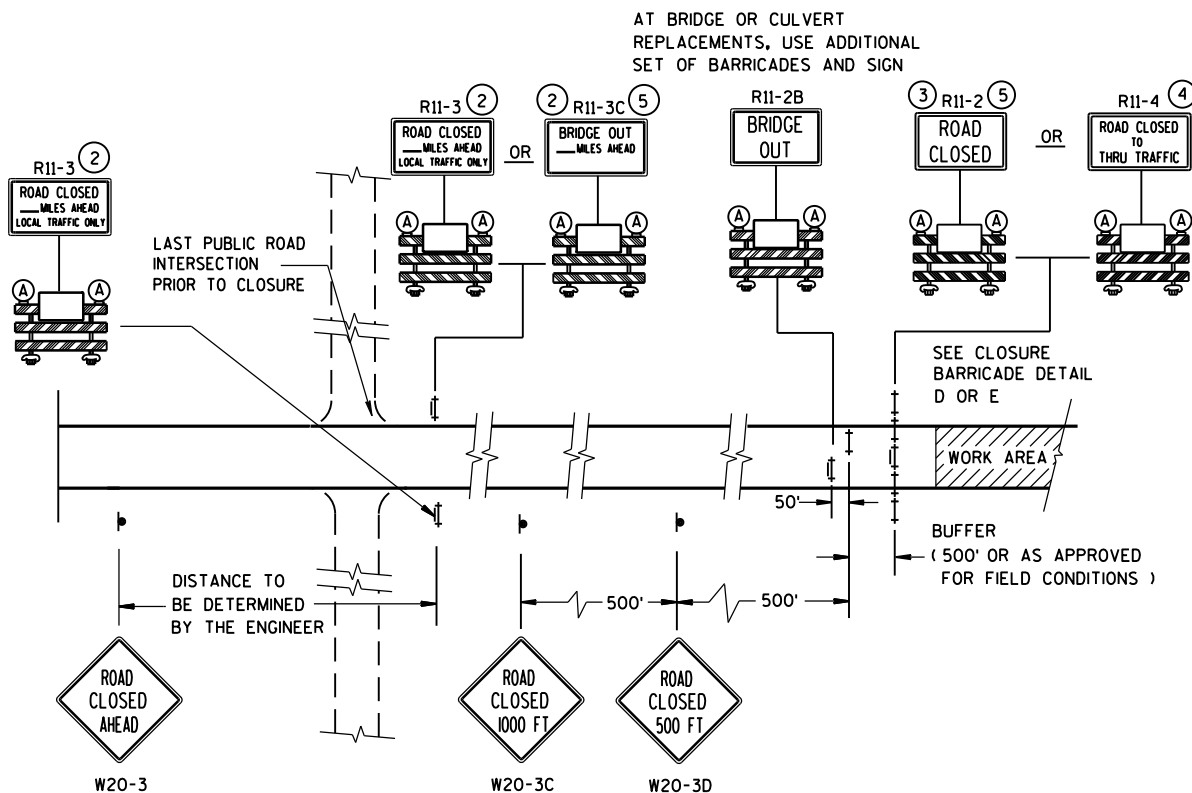
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

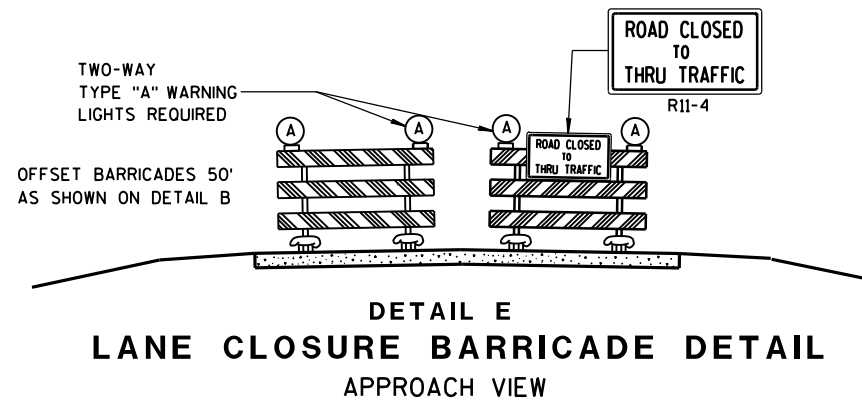
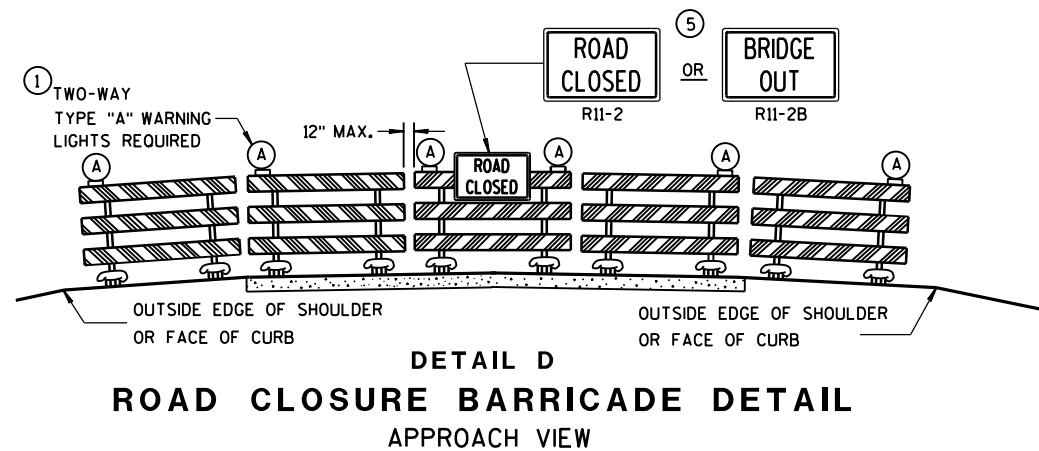
WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SEE SDD 15C2-SHEET "b"
FOR GENERAL NOTES
AND FOOTNOTES ① THROUGH ⑦

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	



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.

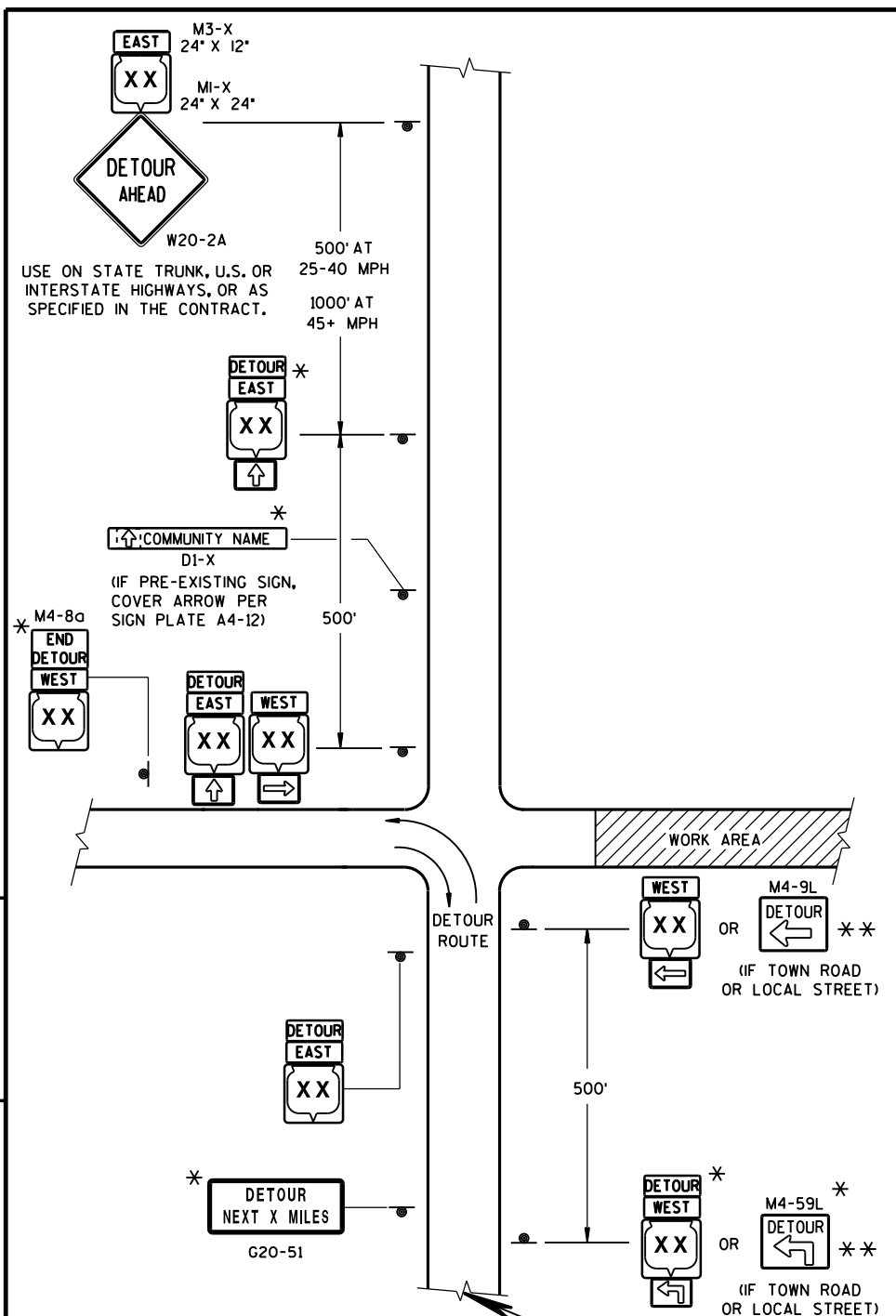
R1-1 SHALL BE 36" X 36".

- 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 /S/ Peter Amokobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER



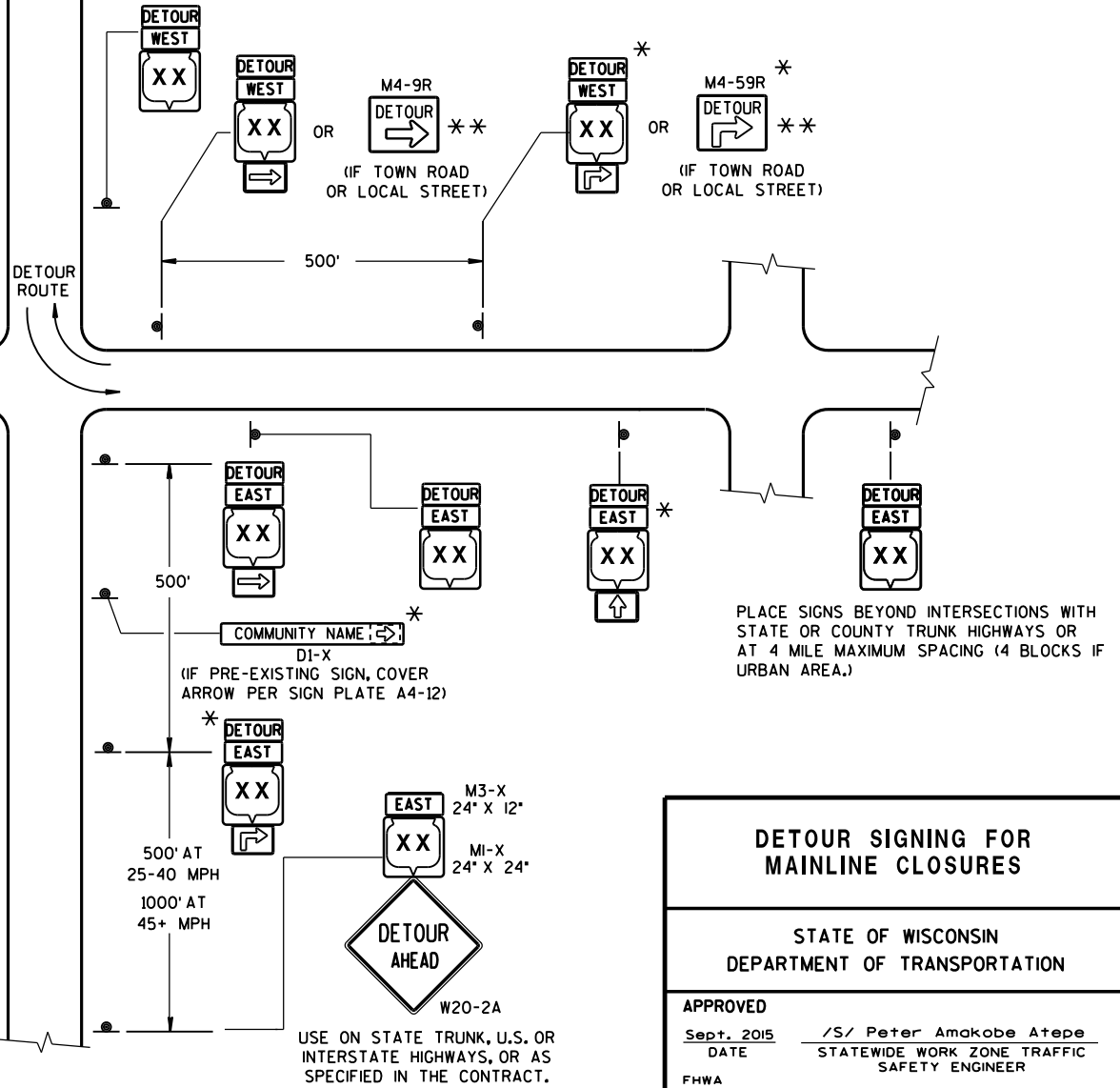
THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT

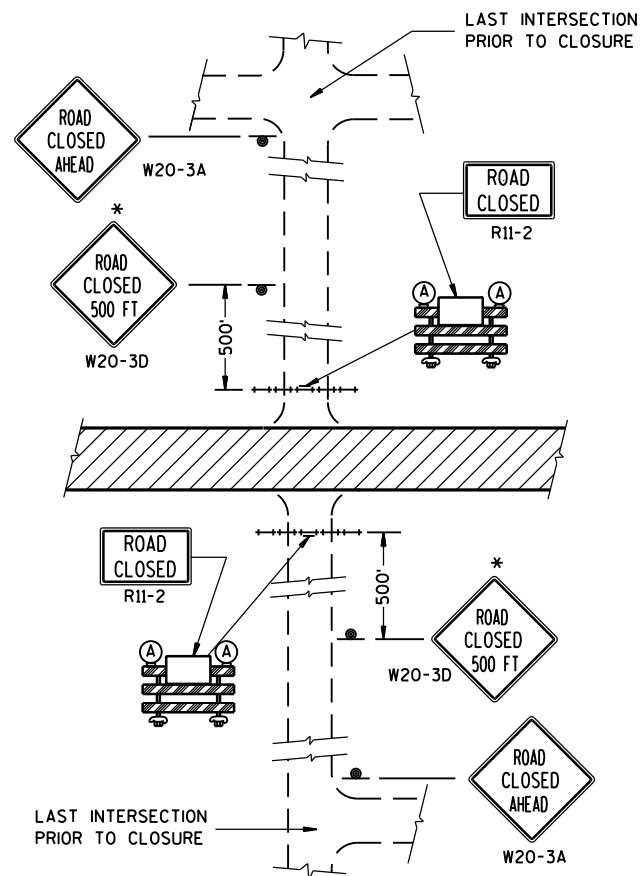
DETAIL F
DETOUR SIGNING

GENERAL NOTES

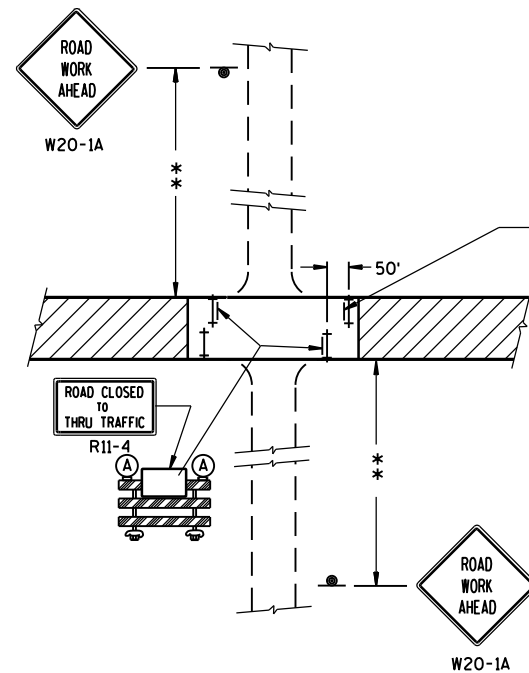
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC 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.)
 - 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.)
 - 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.



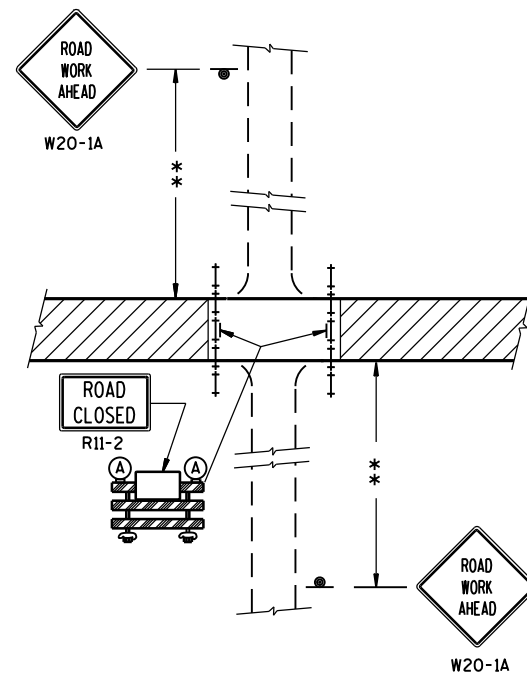
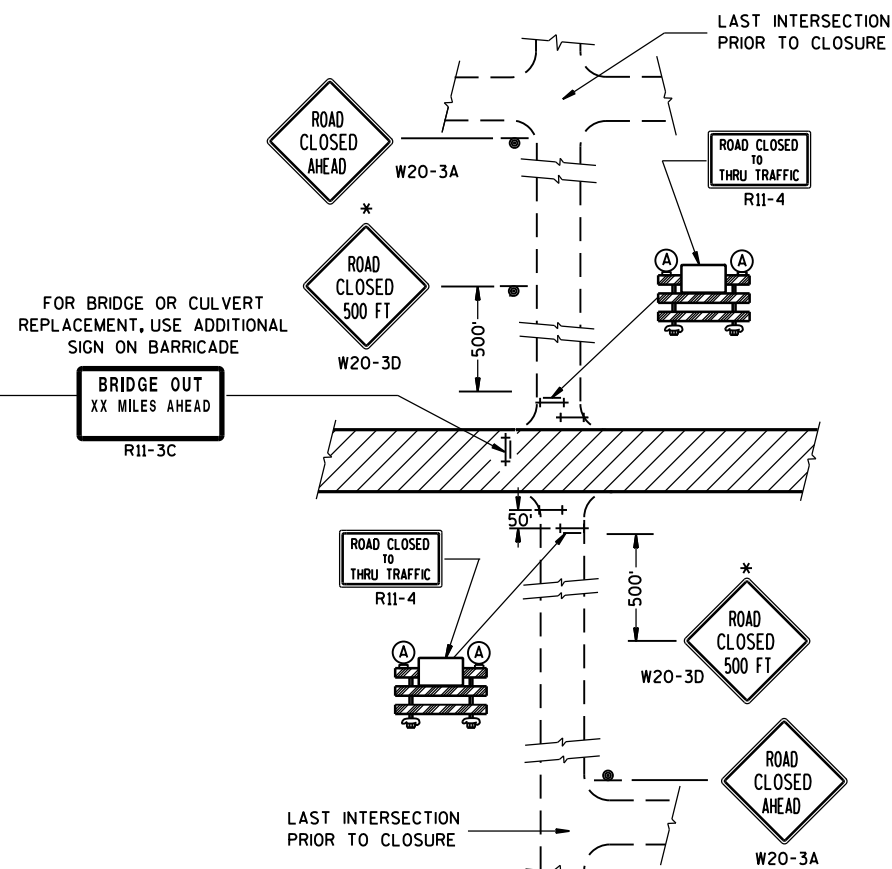
DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	

**DETAIL 1**

(NO ACCESS TO PROJECT)

**DETAIL 3**

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).

**DETAIL 2**(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).**DETAIL 4**(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)**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.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

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 AND R11-4 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.

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015

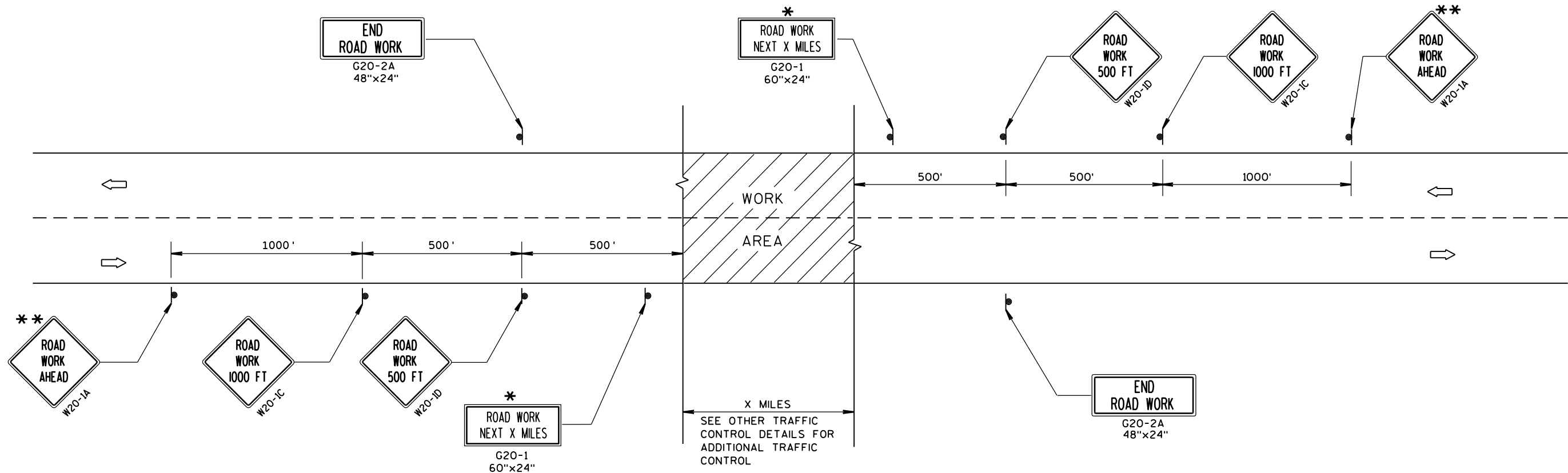
DATE

FHWA

/S/ Peter Amakobe Atepe

STATEWIDE WORK ZONE TRAFFIC

SAFETY ENGINEER



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

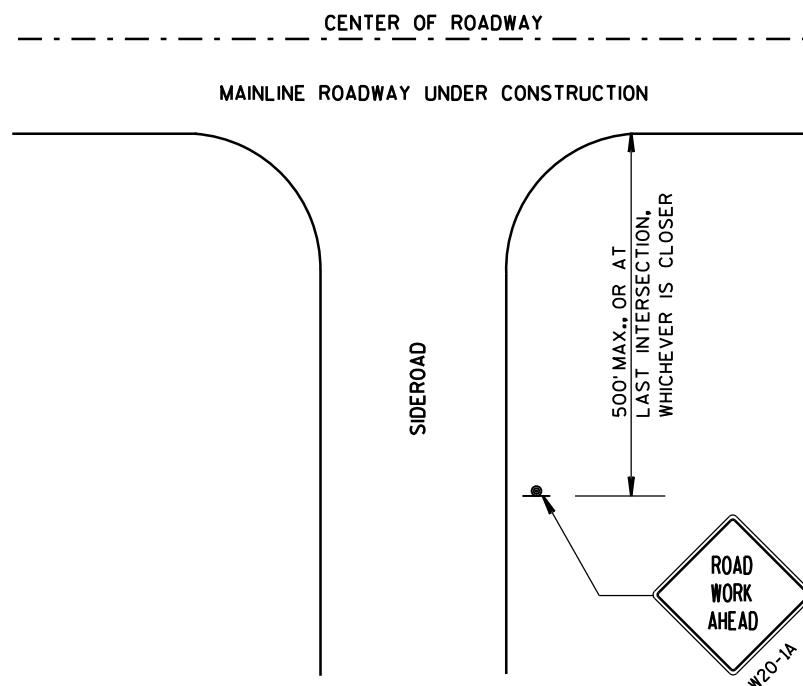
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



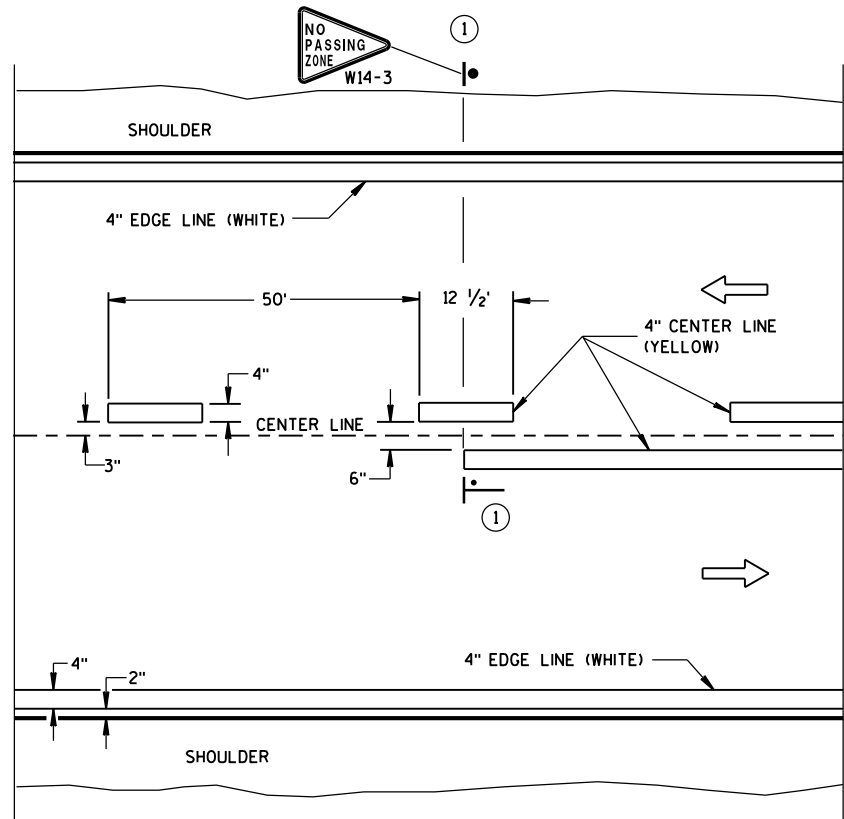
LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

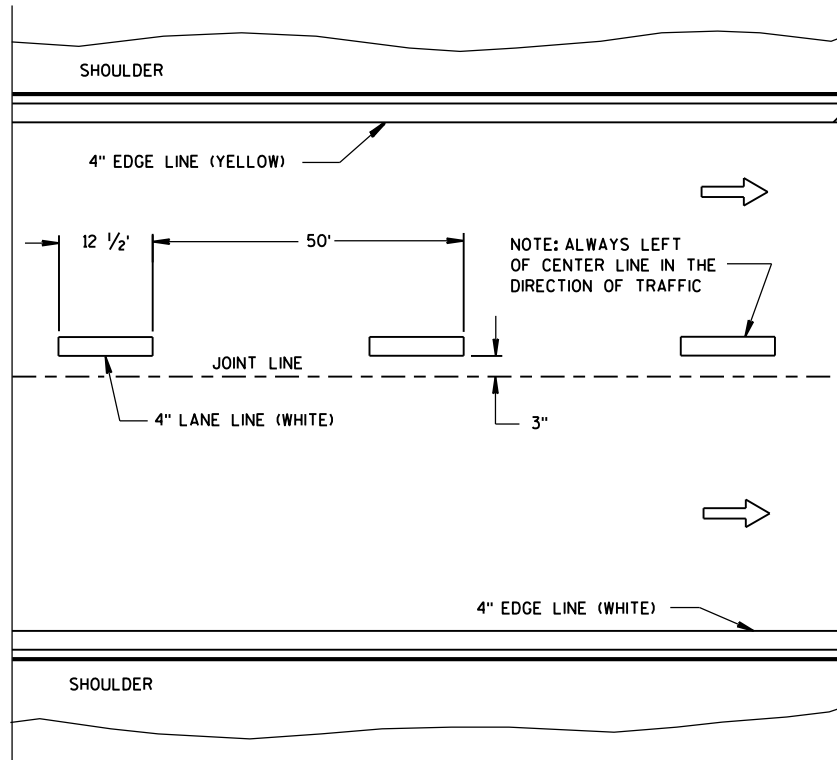
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

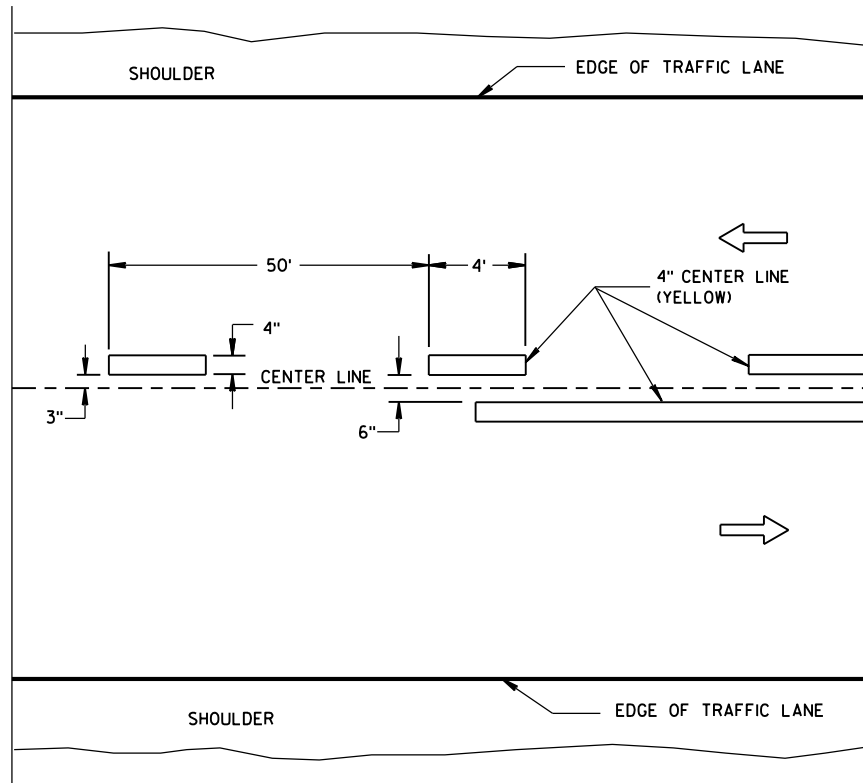


TWO WAY TRAFFIC

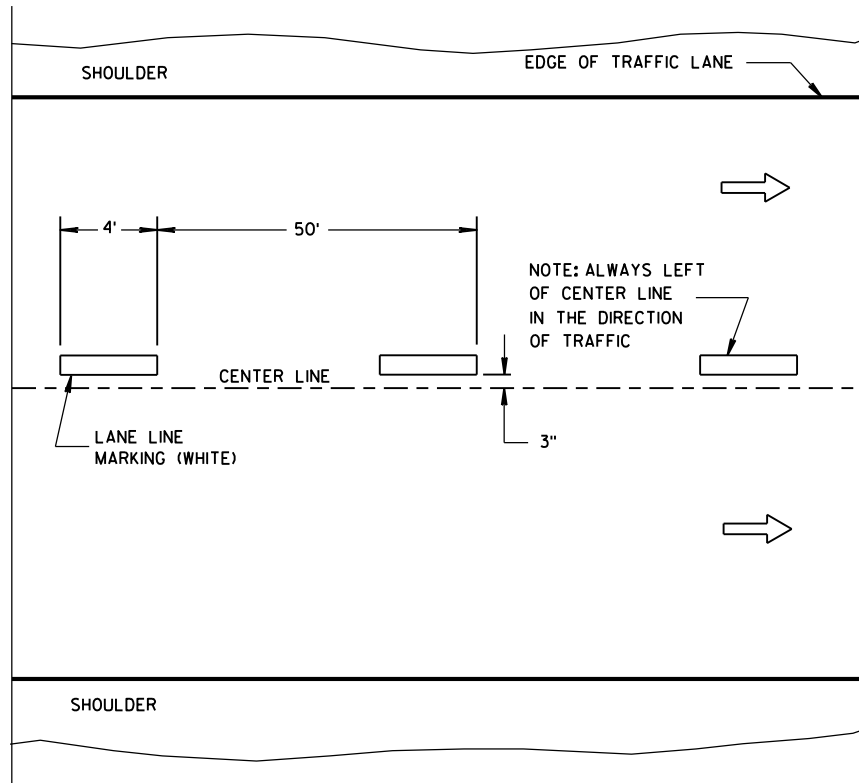


ONE WAY TRAFFIC

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

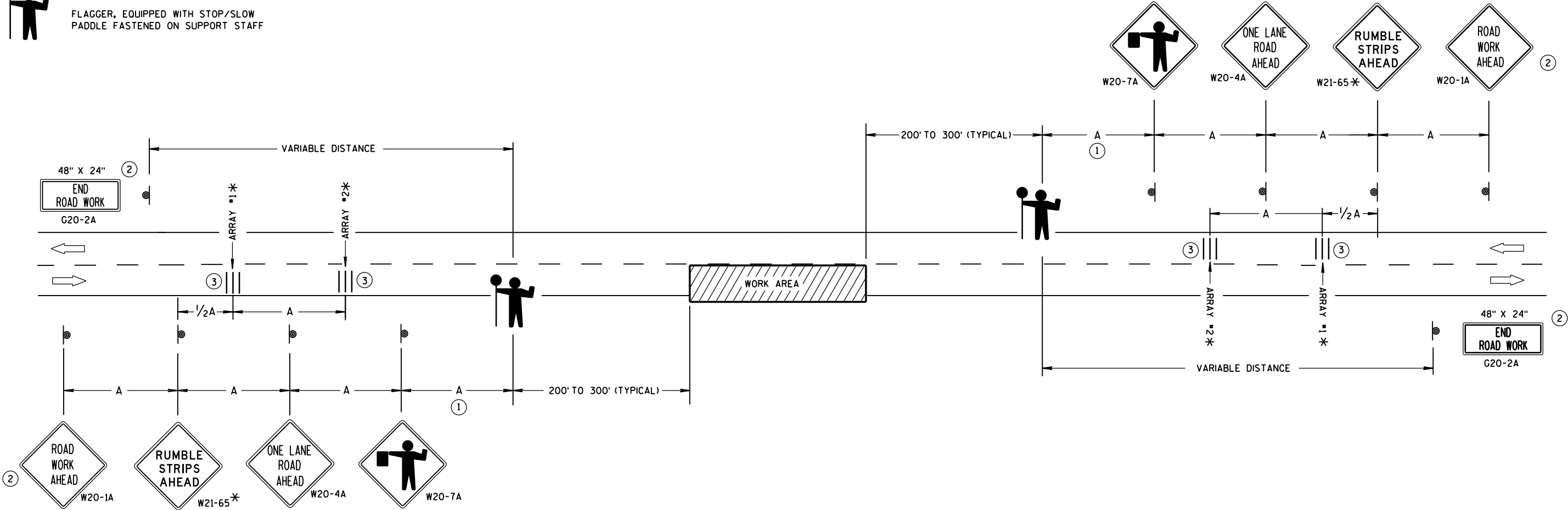
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
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 W20-4A SIGNS, USING SPACING A.



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
FHWA

GENERAL NOTES

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

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

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

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.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

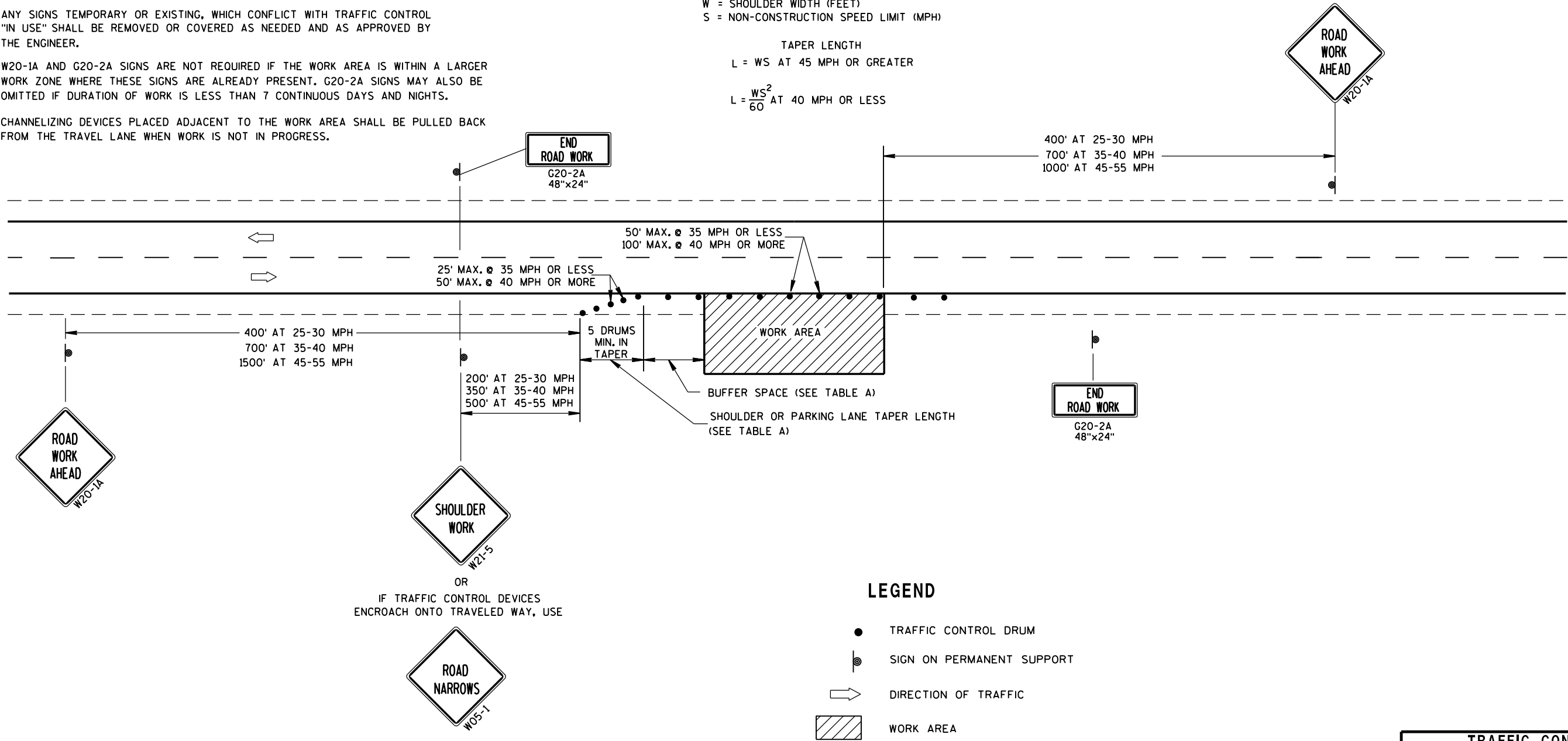
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

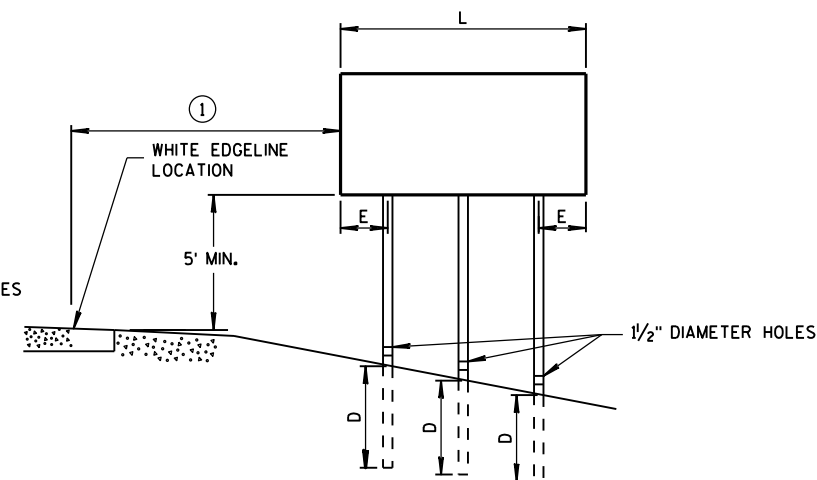
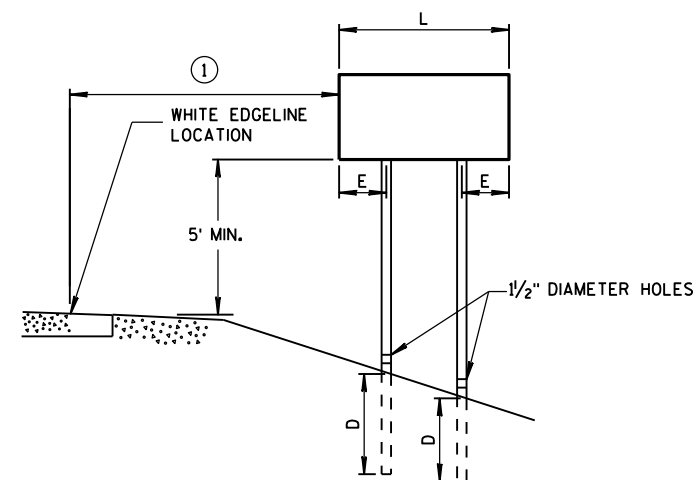
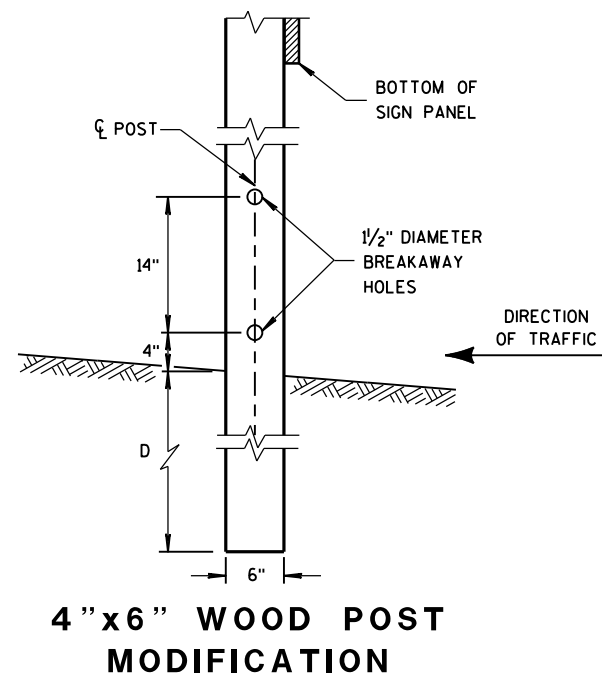
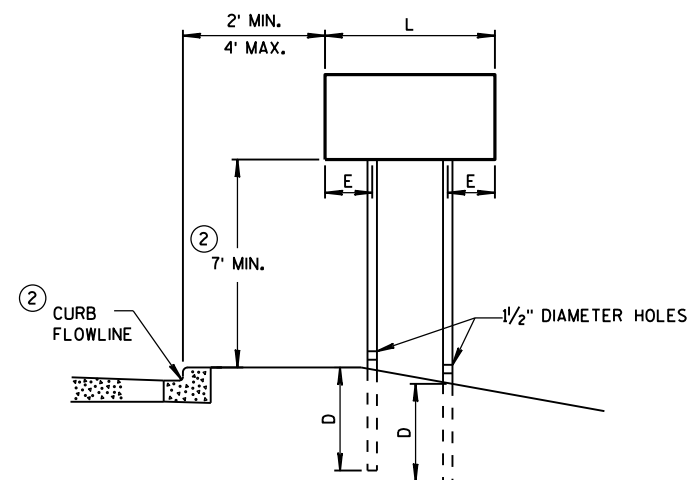
SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



- ## GENERAL NOTES
- 1 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
 - 2 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. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
 - 3 FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

TUBULAR STEEL POSTS	
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

URBAN AREA RURAL AREA POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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.

- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
 - MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

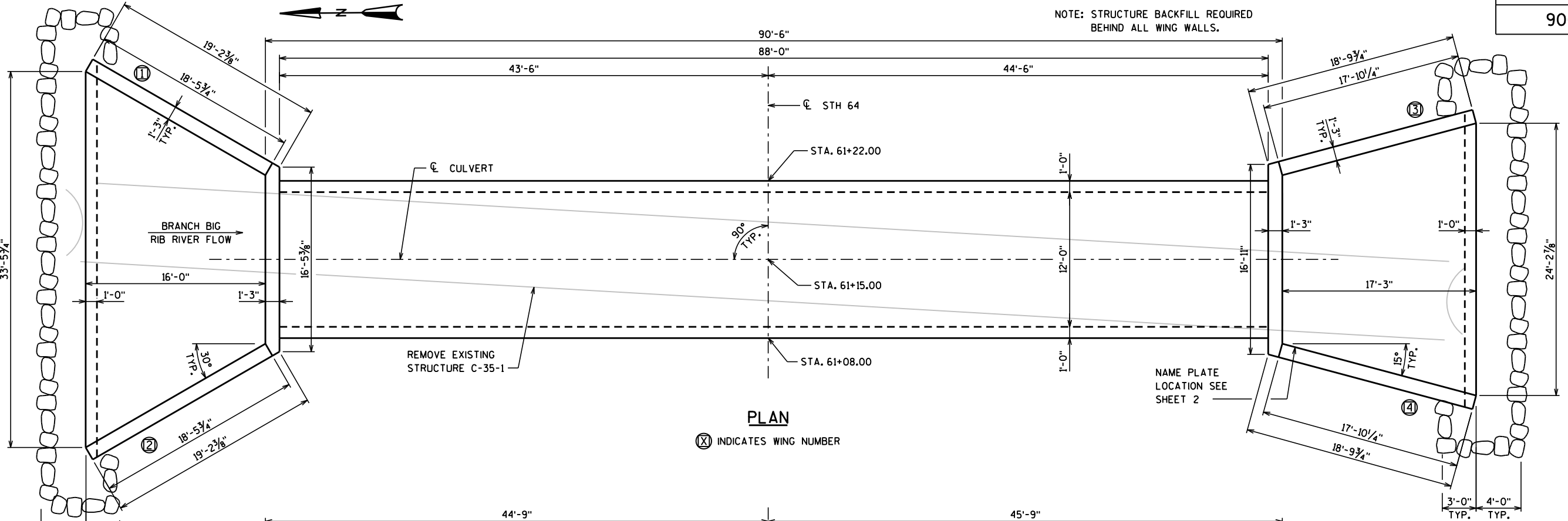
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" X 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- 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 FOR ALL TYPE H SIGNS

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

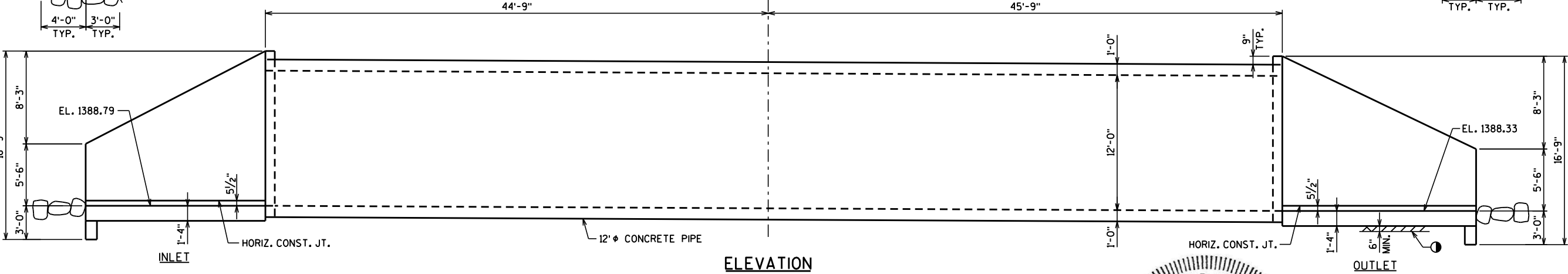
ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Feb. 2015 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	

NOTE: STRUCTURE BACKFILL REQUIRED
BEHIND ALL WING WALLS.



PLAN

(X) INDICATES WING NUMBER



ELEVATION

(LOOKING EAST)

HYDRAULIC DATA

100 YEAR FREQUENCY

Q₁₀₀ ————— 134 C.F.S.
VELOCITY ————— 7.25 F.P.S.
HIGH WATER — EL. 1395.86 (100 YEAR)
WATERWAY AREA — N/A S.F.
DRAINAGE AREA — 0.92 SQ. MILES
OVERTOPPING FREQUENCY = N/A
SCOUR CRITICAL CODE = 5

2 YEAR FREQUENCY

Q₂ ————— 37 C.F.S.
HIGH WATER — EL. 1394.31 (2 YEAR)

DESIGN DATA

MATERIAL PROPERTIES:

CONCRETE MASONRY
GRADE A-FA ————— f'_c = 3,500 PSI
HIGH STRENGTH BAR STEEL
REINFORCEMENT, GRADE 60 ————— f_y = 60,000 PSI

EARTH LOAD:

ENDWALL DESIGNED FOR 1' SURCHARGE.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE UPPER LIMITS OF THE "EXCAVATION FOR STRUCTURES CULVERTS C-35-19" SHALL BE THE EXISTING GROUND LINE.

ALL SPACES EXCAVATED AND NOT OCCUPIED BY THE NEW CULVERT AND APRONS SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TO THE TOP OF THE CULVERT AS SHOWN IN THE ROADWAY PLAN CONSTRUCTION DETAILS.

THE APRONS AND WINGWALLS SHALL BE CAST IN PLACE.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

① UNDERCUT CULVERT AND APRONS 6" (INCLUDED IN EXCAVATION FOR STRUCTURES), PLACE GEOTEXTILE FABRIC TYPE 'C', AND BACKFILL WITH STRUCTURE BACKFILL. EXTEND 3'-0" BEYOND THE FOOTPRINT OF THE APRON AND AS SHOWN IN THE ROADWAY PLAN CONSTRUCTION DETAILS.

LIST OF DRAWINGS

1. LAYOUT
2. SOUTH APRON DETAILS
3. NORTH APRON DETAILS
4. SUBSURFACE EXPLORATION

TRAFFIC DATA

ADT = 680 (2017)
800 (2037)
RDS = 60 M.P.H.

TOTAL ESTIMATED QUANTITIES

203.0200	REMOVING OLD STRUCTURE STA 61+15	1	LS
206.2000	EXCAVATION FOR STRUCTURES CULVERTS C-35-19	1	LS
210.2500	BACKFILL STRUCTURE TYPE B	1,040	TON
504.0100	CONCRETE MASONRY CULVERTS	77	CY
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	1,390	LB
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	6,080	LB
606.0300	RIPRAP HEAVY	33	SF
645.0105	GEOTEXTILE TYPE C	90	SY
645.0120	GEOTEXTILE TYPE HR	70	SY
SPV.0090.01	CULVERT PIPE REINFORCED CONCRETE 144-INCH INSTALLED	90.5	LF

CONSULTANT CONTACT

KRISTOFER OLSON
OMNI ASSOCIATES, INC.
(920) 735-6900

BRIDGE OFFICE CONTACT

WILLIAM DREHER
(608) 266-8489

NO.	DATE	REVISION	BY
ORIGINAL PLANS PREPARED BY			
Omni ASSOCIATES			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	William C. Dreher	03/31/17	DATE
CHIEF STRUCTURES DESIGN ENGINEER			
STRUCTURE C-35-19			
STH 64 OVER BRANCH BIG RIB RIVER			
COUNTY	LINCOLN	TOWN	CORNING
DESIGN SPEC.	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS	LOAD	HL-93
DESIGNED BY	BRE	CK'D.	KRO
DRAWN BY	BRE	CK'D.	KRO
LAYOUT			SHEET 1 OF 4

BILL OF BARS

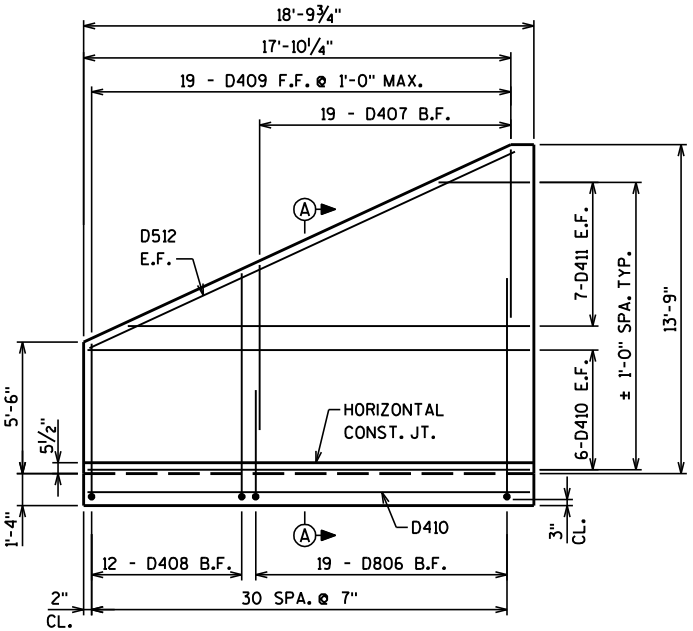
BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
D401		28	3'-6"		X	OUTLET CUTOFF WALL
D402		4	24'-2"			OUTLET CUTOFF WALL
D403		20	16'-11"			OUTLET APRON
D404		8	8'-2"	△		OUTLET APRON
D405		17	21'-6"	△		OUTLET APRON
D806	X	38	15'-2"	△	X	OUTLET WINGS CORNER B.F.
D407	X	38	7'-0"			OUTLET WINGS VERTICAL B.F.
D408	X	24	14'-7"	△	X	OUTLET WINGS CORNER B.F.
D409	X	38	10'-6"	△		OUTLET WINGS VERTICAL F.F.
D410	X	26	18'-6"			OUTLET WINGS HORIZONTAL
D411	X	28	10'-3"	△		OUTLET WINGS HORIZONTAL
D512	X	4	19'-4"			OUTLET WINGS HORIZONTAL, TOP
D413	X	4	3'-5"			OUTLET BACKWALL
D414	X	4	5'-5"			OUTLET BACKWALL
D415	X	4	7'-5"			OUTLET BACKWALL
D416	X	4	8'-1"			OUTLET BACKWALL
D417	X	4	6'-1"			OUTLET BACKWALL
D418	X	4	4'-1"			OUTLET BACKWALL
D419	X	8	14'-8"			OUTLET BACKWALL
D420	X	4	16'-7"			OUTLET BACKWALL

△ INDICATES BAR SERIES

NOTES:

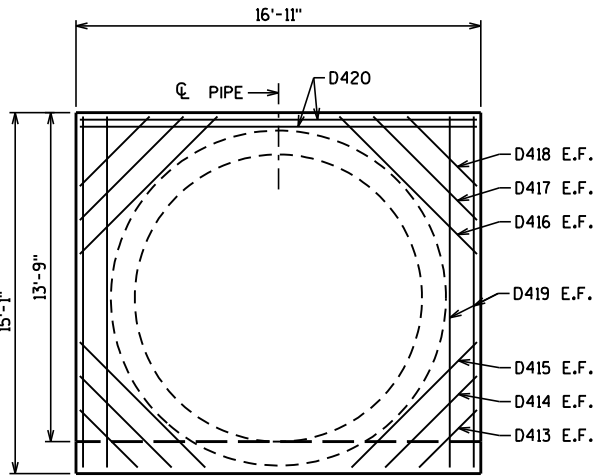
PLACE BARS AS SHOWN. SPACE AT 1'-0" ± UNLESS NOTED OTHERWISE.

ⓧ INDICATES WING NUMBER

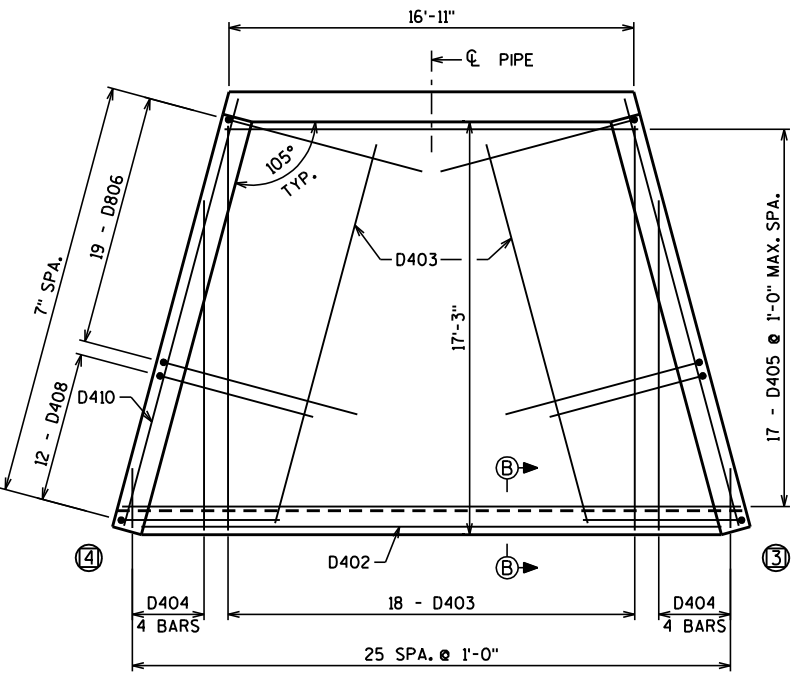


WING 4 ELEVATION

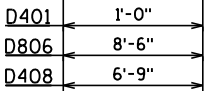
(WING 3 SIMILAR)



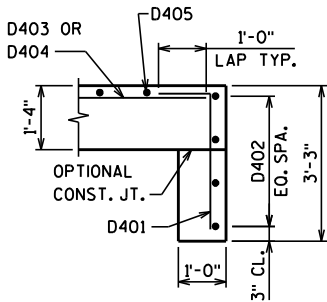
BACKWALL FRONT FACE ELEVATION



DOWNSTREAM APRON PLAN



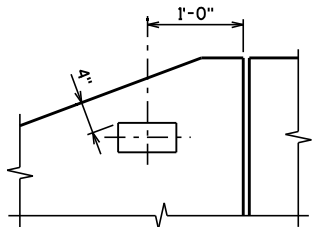
BAR BEND DIAGRAMS



SECTION B-B

BAR SERIES TABLE

BAR NO.	NO. REQ'D.	LENGTH
D404	2 SERIES OF 4	2'-6" TO 13'-10"
D405	1 SERIES OF 17	17'-3" TO 25'-9"
D806	2 SERIES OF 19	12'-10" TO 17'-6"
D408	2 SERIES OF 12	13'-1" TO 16'-1"
D409	2 SERIES OF 19	6'-5" TO 14'-7"
D411	4 SERIES OF 7	3'-9" TO 16'-9"



NAME PLATE
LOCATION WING 4

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-35-19			
DRAWN BY		BRE	PLANS CK'D. KRO
SOUTH APRON DETAILS		SHEET 2 OF 4	

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	SERIES	BENT	LOCATION
U401		34	3'-6"		X	INLET CUTOFF WALL
U402		4	33'-6"			INLET CUTOFF WALL
U403		20	15'-8"			INLET APRON
U404		16	8'-5"	△		INLET APRON
U405		16	25'-11"	△		INLET APRON
U806	X	38	15'-2"	△	X	INLET WINGS CORNER B.F.
U407	X	38	7'-0"			INLET WINGS VERTICAL B.F.
U408	X	26	14'-8"	△	X	INLET WINGS CORNER B.F.
U409	X	38	10'-6"	△		INLET WINGS VERTICAL F.F.
U410	X	26	18'-10"			INLET WINGS HORIZONTAL
U411	X	28	10'-5"	△		INLET WINGS HORIZONTAL
U512	X	4	20'-1"			INLET WINGS HORIZONTAL, TOP
U413	X	4	3'-1"			INLET BACKWALL
U414	X	4	5'-1"			INLET BACKWALL
U415	X	4	7'-1"			INLET BACKWALL
U416	X	4	7'-9"			INLET BACKWALL
U417	X	4	5'-9"			INLET BACKWALL
U418	X	4	3'-9"			INLET BACKWALL
U419	X	8	14'-8"			INLET BACKWALL
U420	X	4	16'-1"			INLET BACKWALL

△ INDICATES BAR SERIES

NOTES:

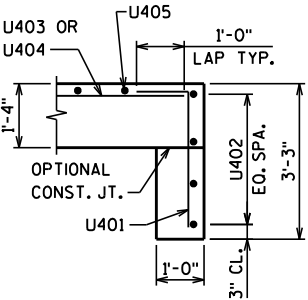
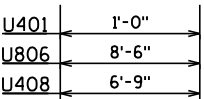
PLACE BARS AS SHOWN. SPACE AT 1'-0" ± UNLESS NOTED OTHERWISE.

ⓧ INDICATES WING NUMBER

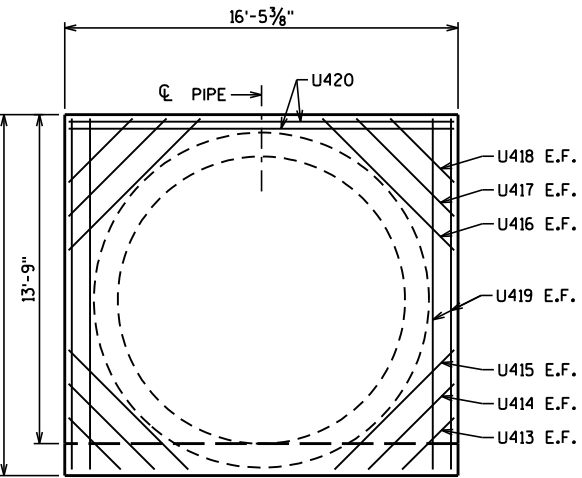
BAR SERIES TABLE

BAR NO.	NO. REQ'D.	LENGTH
U404	2 SERIES OF 8	2'-4" TO 14'-6"
U405	1 SERIES OF 16	17'-3" TO 34'-7"
U806	2 SERIES OF 19	12'-10" TO 17'-6"
U408	2 SERIES OF 13	13'-1" TO 16'-3"
U409	2 SERIES OF 19	6'-5" TO 14'-7"
U411	4 SERIES OF 7	3'-8" TO 17'-2"

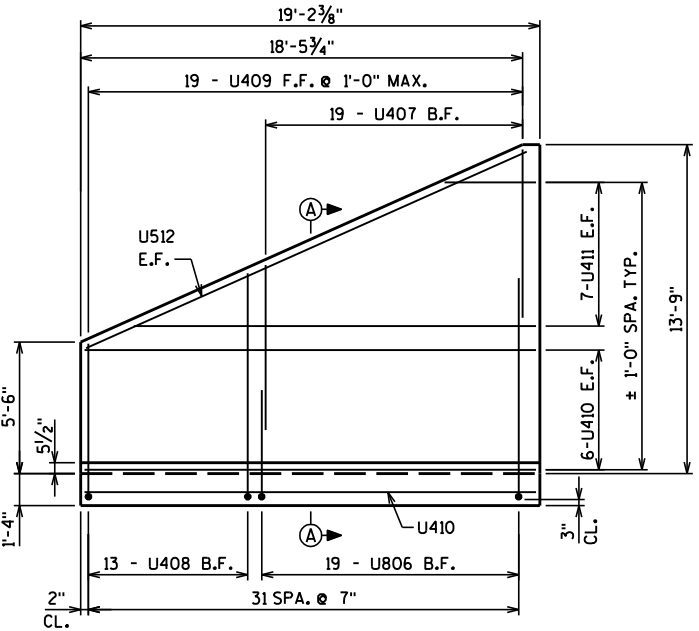
BAR BEND DIAGRAMS



SECTION B-B

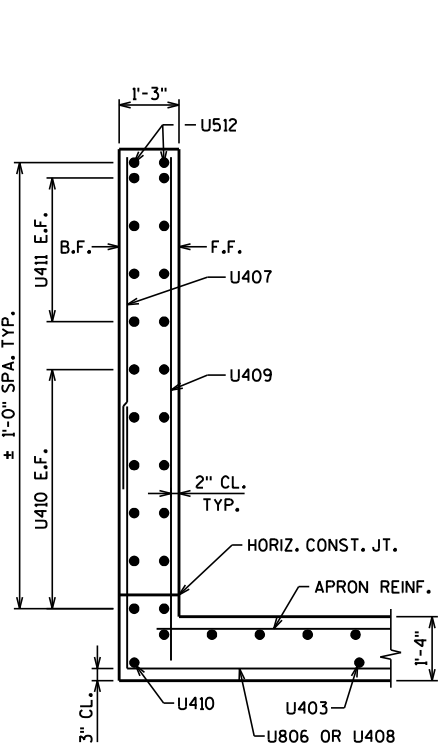


BACKWALL FRONT FACE ELEVATION



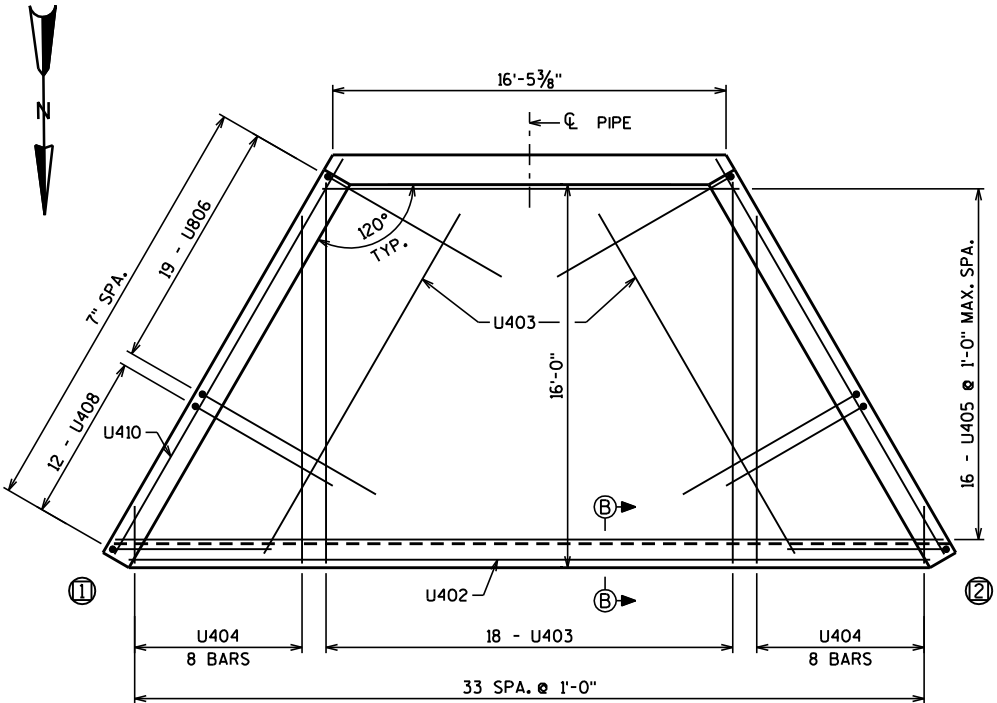
WING 1 ELEVATION

(WING 2 SIMILAR)



SECTION A-A

(WING 2 SIMILAR)



UPSTREAM APRON PLAN

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE C-35-19			
DRAWN BY		BRE	PLANS CK'D. KRO
NORTH APRON DETAILS		SHEET 3 OF 4	

ABBREVIATIONS
F—Fine M—Medium C—Coarse
Ws—Weathered So—Sound

MATERIAL SYMBOLS
Topsoil Silt Sandstone
Sand Peat Limestone
Gravel Clay Igneous Rock

LEGEND OF PROBING
Probing No.
Sta.
Elevation
95/6=95 Blows for 6" Penetration
Probing taken with a 350*wt. Falling 18" on a 2" O.D. Point.
7 Average Blows Per Foot
Refusal 95/6

LEGEND OF BORING
Boring No.
Sta.
Elev.
Unconfined Strength—7.7
Blows Per Ft. Using 140* Wt. Falling 30"
Wash Sample
Shelby Tube — S.T.
Ground Water Elevation
No Ground Water Observed Above This Elevation
Sandy Gravel
F.
Boulders or Cobbles
Sand
Silty Clay
So
Limestone

Unless otherwise specified, the blows per foot at the locations indicated are based on driving a 0.0.x1.4" I.D. split spoon sampler with a 140* hammer having a free fall of 30". The blow count is taken in undisturbed soil immediately below a cased or open hole eliminating side friction on the drive pipe.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

To obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing. The data presented herein represents the findings of the subsurface explorations made. However, because the depths investigated are limited and the area of the borings and/or soundings is very small in relation to the entire area, the Division of Highways does not warrant conditions below the depths investigated or that the classification of material encountered in these investigations is necessarily typical of the entire site.

NO.	DATE	REVISION	BY
-----	------	----------	----

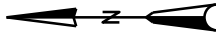
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-35-19

DRAWN BY BRE PLANS CK'D. KRO

SUBSURFACE EXPLORATION

SHEET 4 OF 4



BRANCH BIG
RIB RIVER FLOW

TEMPORARY
DIVERSION

PROPOSED
STRUCTURE
C-35-19

BORING B1

BORING B2

EXISTING
STRUCTURE

15+50
15+00
STH 64

BORING NUMBER B2
ELEV. 1406.9

BORING NUMBER B1
ELEV. 1406.1

END OF BORING B2
ELEV. 1380.4

END OF BORING B1
ELEV. 1379.6

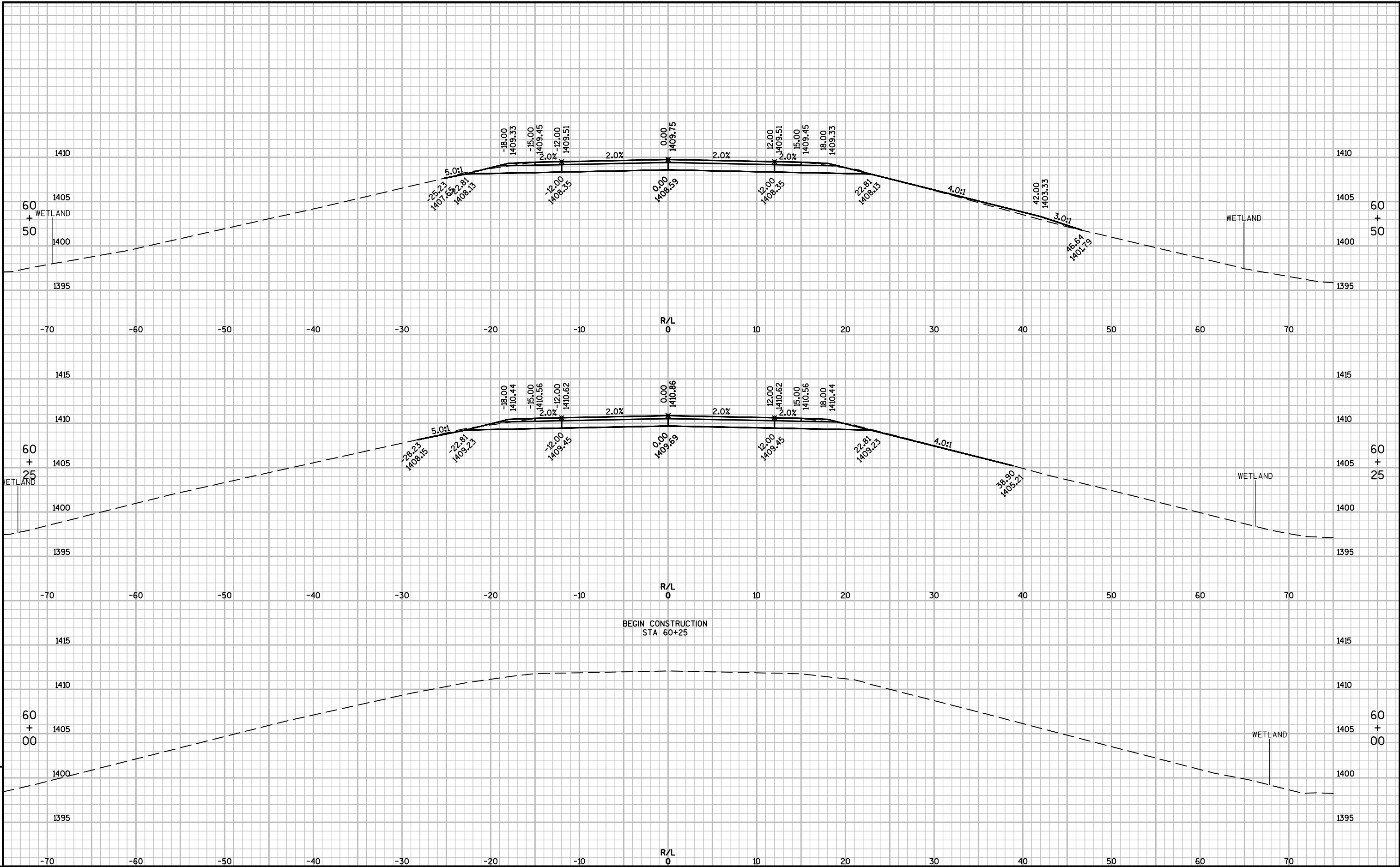
LEGEND

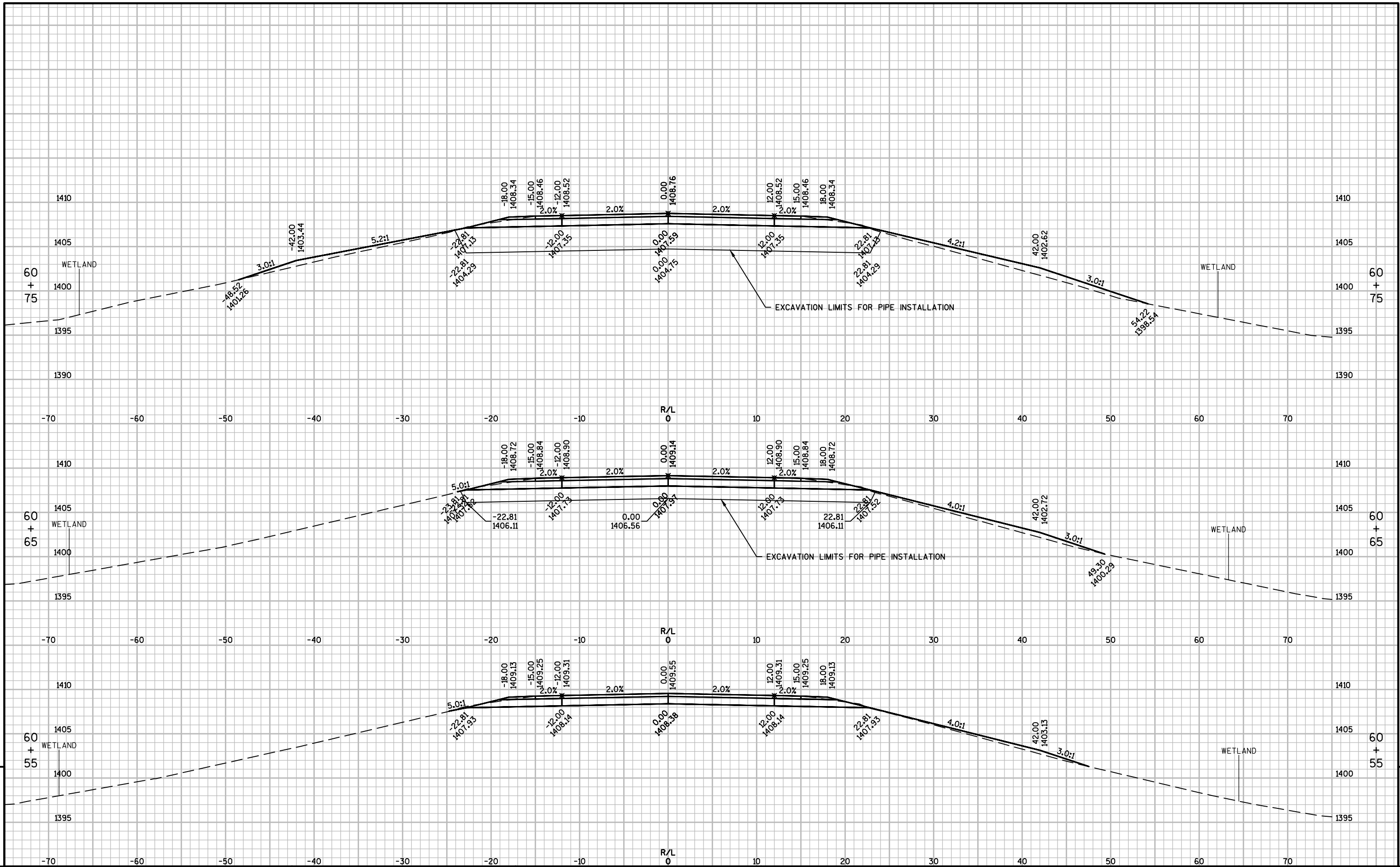
CAVE
FIRST WATER ENCOUNTERED
COMPLETION WATER ENCOUNTERED

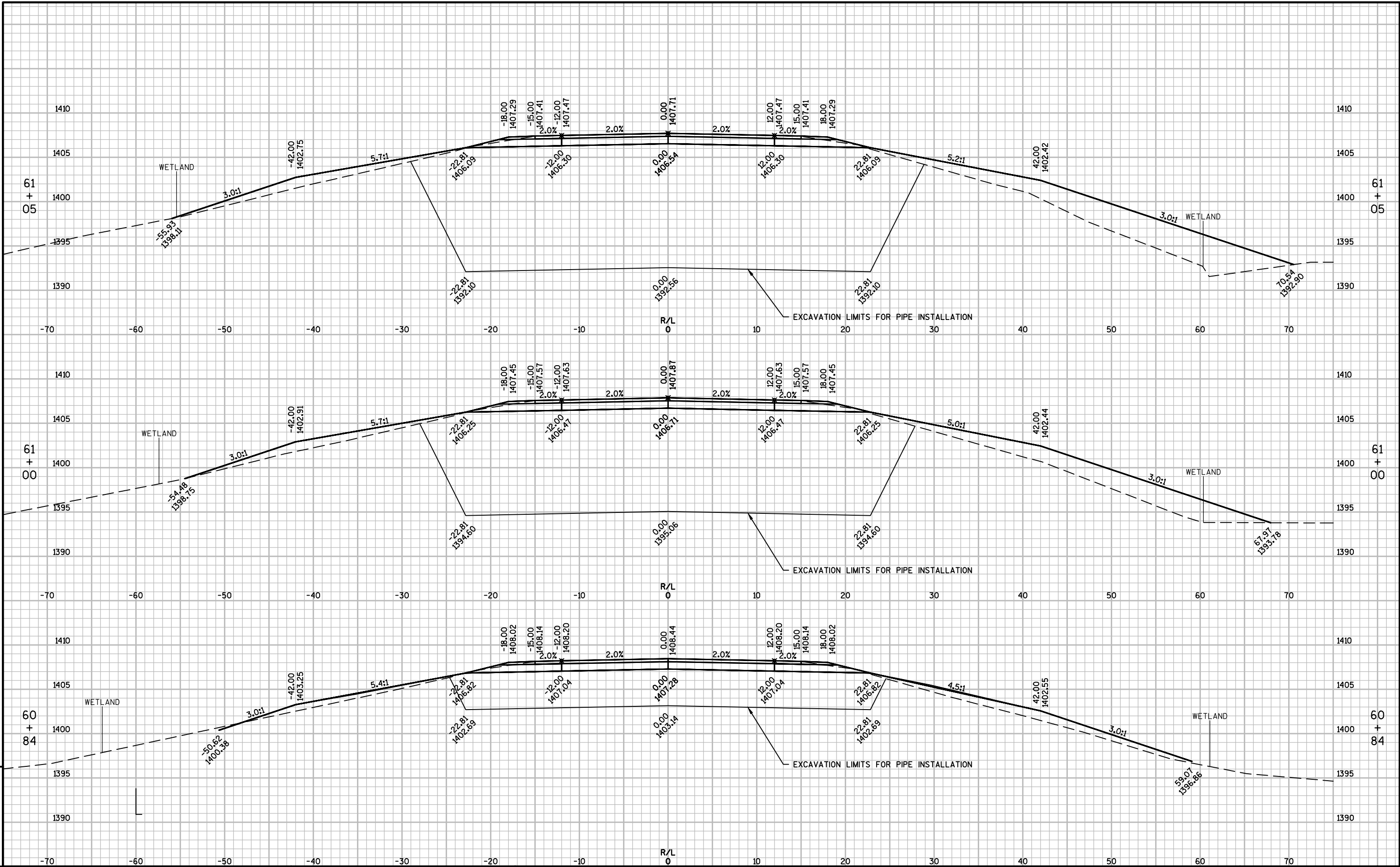
STH 64 EARTHWORK - CATEGORY 0010

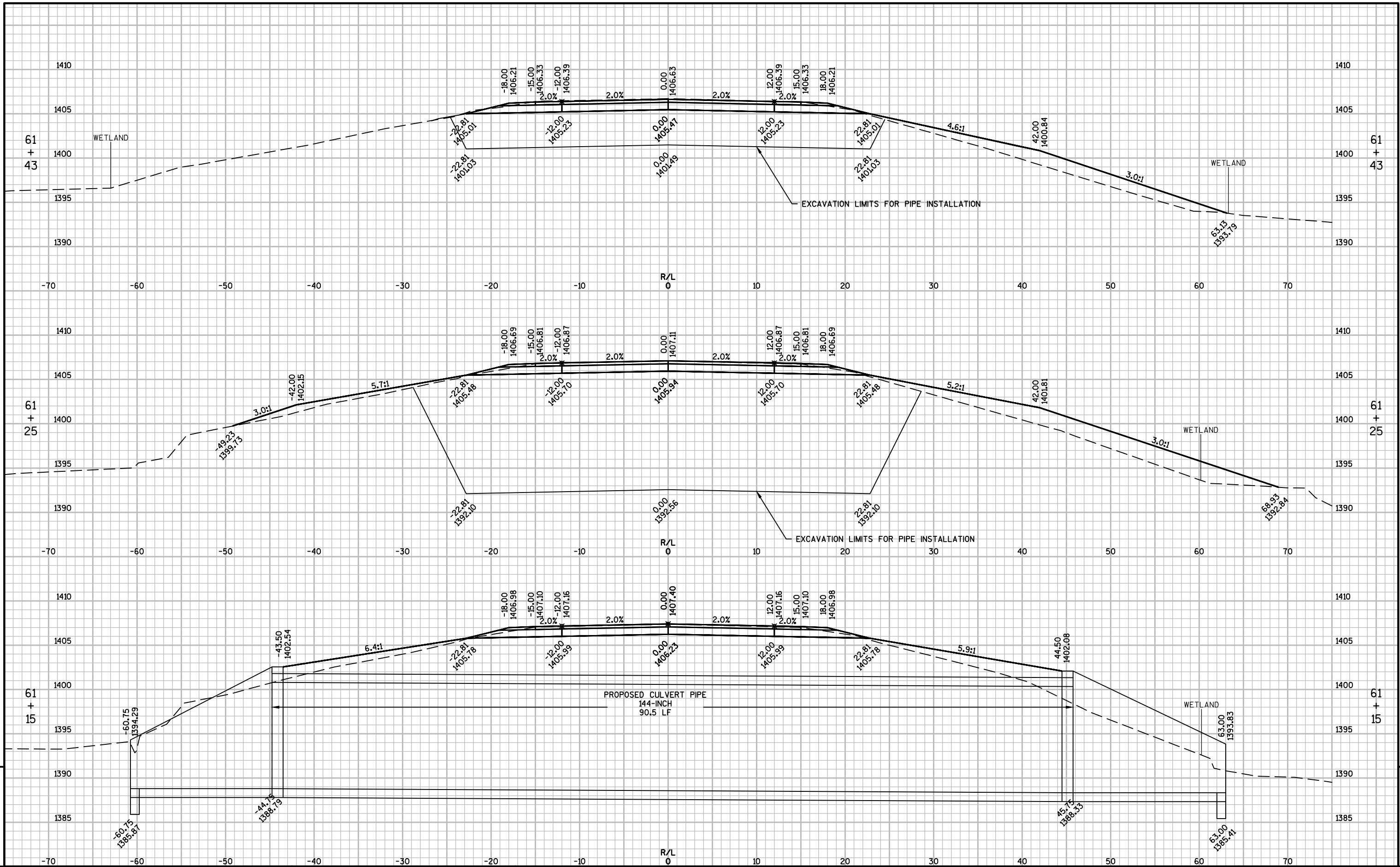
STATION	INCREMENTAL AREA (SF)				INCREMENTAL VOL (CY) (UNADJUSTED)				CUMULATIVE VOL (CY)			MASS ORDINATE NOTE 2
	CUT	FILL	MARSH EXC	PIPE EXC NOTE 3	CUT	FILL	MARSH EXC	PIPE EXC	CUT + PIPE EXC	EXPANDED FILL	EXPANDED MARSH BACKFILL	
	NOTE 1								FACTOR 1. 00	FACTOR 1. 25	FACTOR 1. 50	
START ABRUPTLY												
60+25	47. 0	0. 0	0. 0	0	0	0	0	0	0	0	0	0
60+50	47. 0	3. 7	0. 0	0	44	2	0	0	44	2	0	41
60+55	46. 4	5. 3	0. 0	0	9	1	0	0	52	3	0	49
60+65	45. 1	8. 8	0. 0	65	17	3	0	12	81	6	0	75
60+75	45. 3	24. 4	0. 0	133	17	6	0	37	135	14	0	120
60+84	45. 4	36. 0	10. 0	196	15	10	2	55	205	27	3	178
61+00	44. 5	87. 0	33. 4	591	27	36	13	233	464	72	22	392
61+05	43. 7	73. 3	40. 0	723	8	15	7	122	594	91	32	503
61+15	41. 4	37. 6	62. 4	NOTE 4	16	21	19	0	610	116	60	493
61+25	42. 9	78. 6	57. 7	688	16	22	22	0	625	143	94	482
61+43	47. 2	41. 1	35. 0	188	30	40	31	292	948	193	140	754
61+50	48. 6	35. 8	28. 4	144	12	10	8	43	1003	206	152	797
61+65	50. 0	24. 7	0. 0	56	27	17	8	56	1086	227	164	859
61+75	51. 3	24. 4	0. 0	0	19	9	0	10	1115	238	164	877
62+00	50. 8	21. 7	0. 0	0	47	21	0	0	1162	265	164	898
62+25	44. 9	0. 2	0. 0	0	44	10	0	0	1207	277	164	929
END ABRUPTLY												

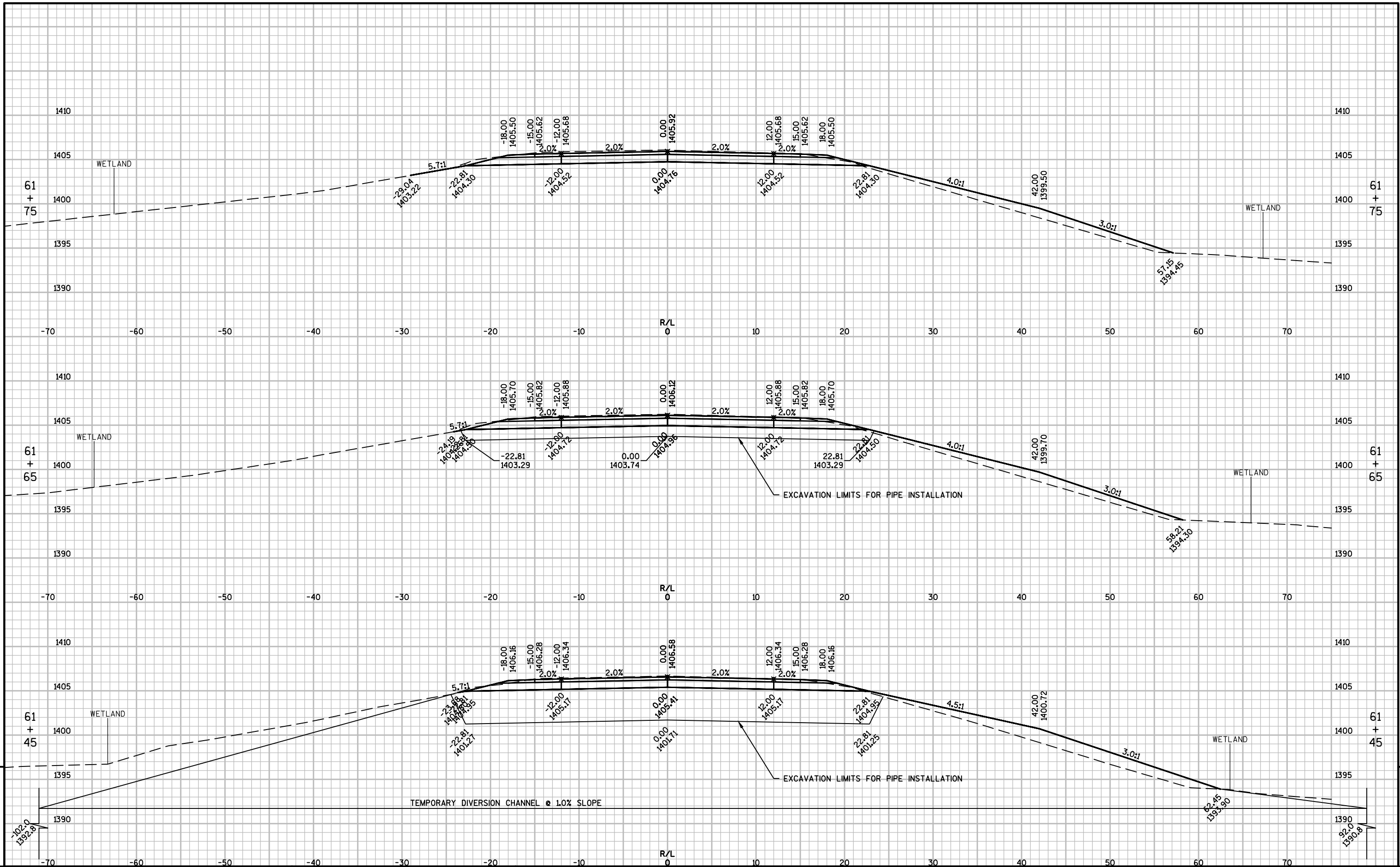
NOTES: 1) ALL EXCAVATED ASPHALT MATERIAL ASSUMED AVAILABLE AS FILL.
2) MASS ORDINATE = EXCAVATION COMMON - EXPANDED FILL
3) PIPE EXC. IS EXCAVATION COMMON REQUIRED FOR PIPE INSTALLATION. SEE CULVERT PIPE EXCAVATION AND INSTALLATION DETAIL.
4) END PIPE EXC ABRUPTLY STA 61+05 AND BEGIN PIPE EXC ABRUPTLY 61+25.

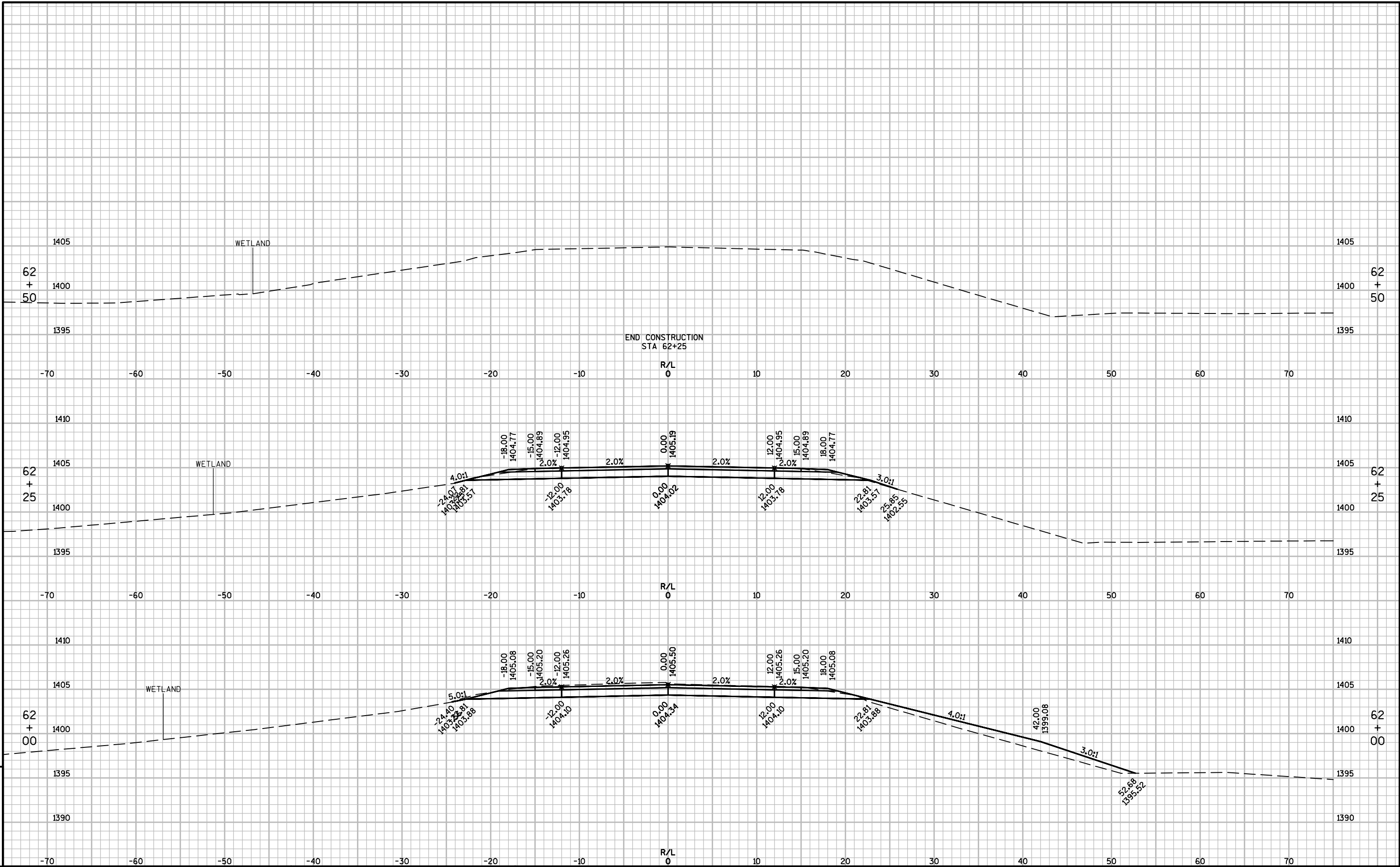














Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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