

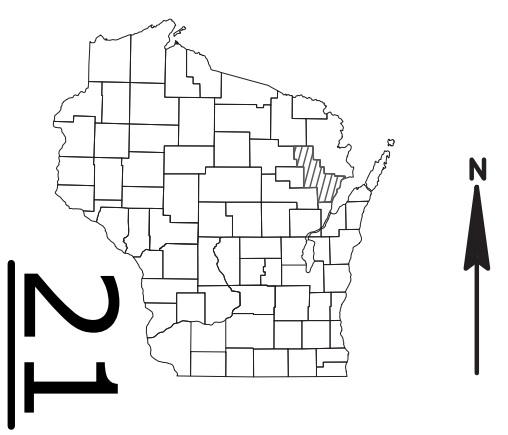
GRE MAY 2019

PROJECT ID: 1009-32-02

COUNTY: OCONTO COUNTY

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 = 82



DESIGN DESIGNATION	
A.A.D.T.	=
A.A.D.T.	=
D.H.V.	=
D.D.	=
T.	=
DESIGN SPEED	=
ESALS	=

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	
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	
OVERHEAD UTILITY	
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

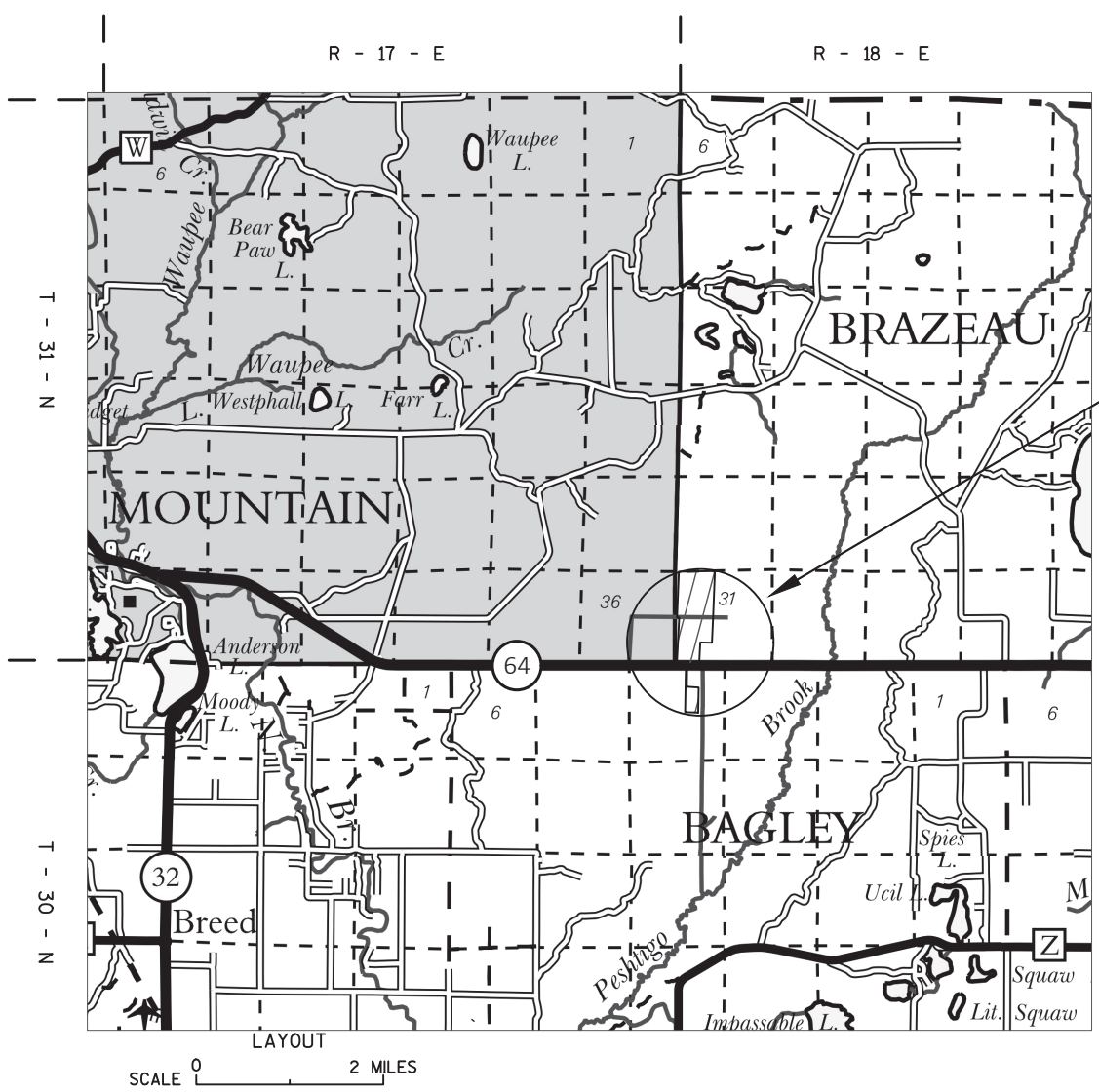
PESHTIGO BROOK PHASE 3

WETLAND BANK MITIGATION SITE FY2019

STH 64

OCONTO COUNTY

STATE PROJECT NUMBER
1009-32-02



TOTAL NET LENGTH OF CENTERLINE =

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, OCONTO COUNTY, NAD83 (1991), NGVD 29, IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1009-32-02		

PROJECT LOCATION

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	WISDOT NE REGION
Designer	Q. CREAPEAU
Project Manager	M. TERNES
Regional Examiner	REGIONAL EXAMINER
Regional Supervisor	D. SEGERSTROM
APPROVED FOR THE DEPARTMENT	
DATE: 2/1/19	

GENERAL NOTES

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

THERE MAY BE OTHER UTILITIES WITHIN PROJECT AREA NOT SHOWN ON PLANS.

DURING CONSTRUCTION OPERATIONS SHALL BE CONDUCTED THAT MINIMIZE DAMAGE TO EXISTING TREE AND SHRUB PLANTING LOCATIONS.

THE CONTRACTOR SHALL CONDUCT OPERATIONS THAT MINIMIZE IMPACT WITHIN NON-GRADING AREAS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASS SEEDED AREAS DISTURBED BY OPERATIONS OUTSIDE OF NORMAL CONSTRUCTION LIMITS AT THE CONTRACTORS EXPENSE.

TEMPORARY MATERIAL STORAGE WILL BE ALLOWED WITH THE APPROVAL OF THE ENGINEER.

FINISHED ALL GRADING AREAS WITH 6-INCHES OF SALVAGED TOPSOIL.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

SEE MISCELLANCE QUANTITIES FOR ITEMS NOT SHOWN ON PLAN SHEETS.

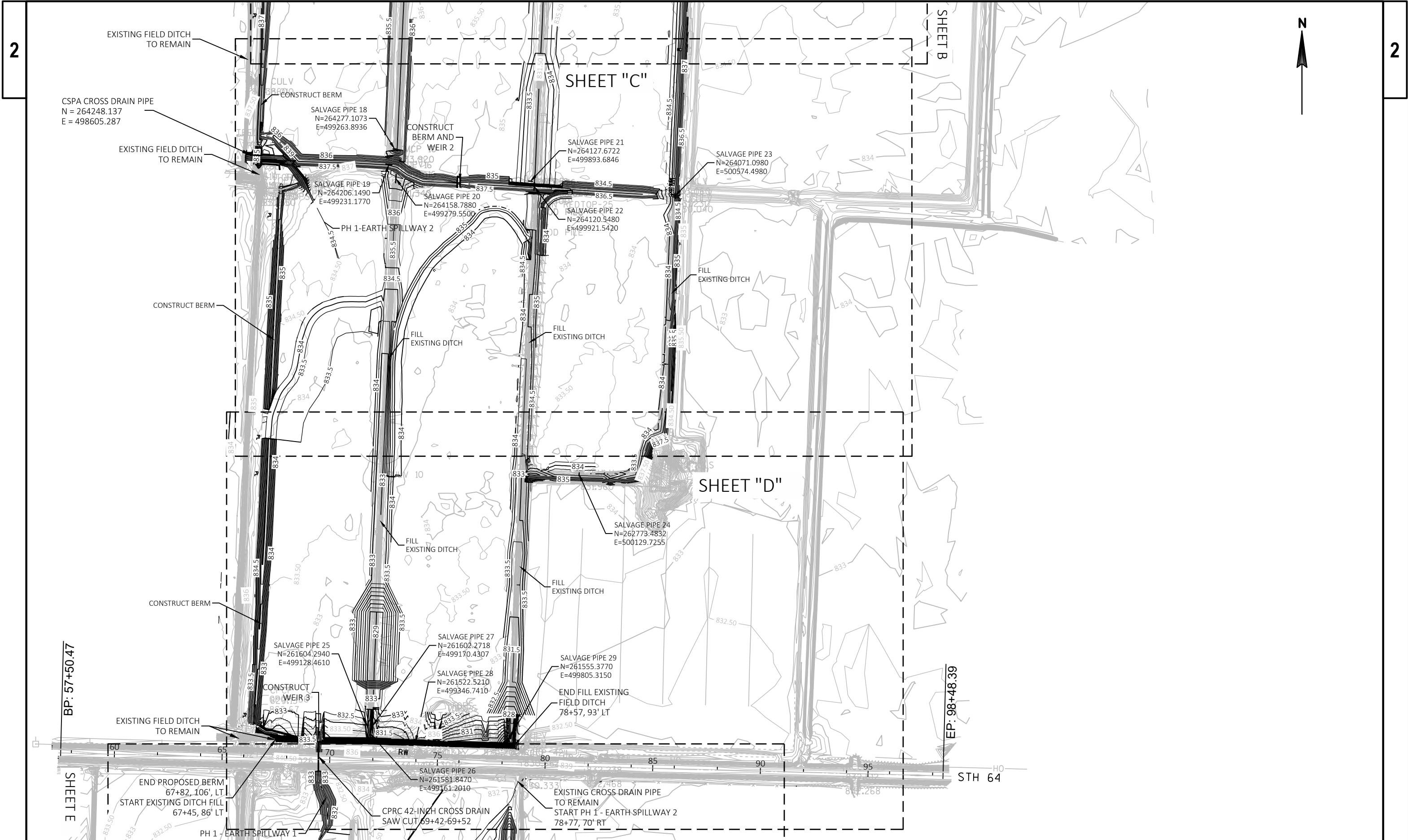
DNR AREA LIAISON

DEPARTMENT OF NATURAL RESOURCES

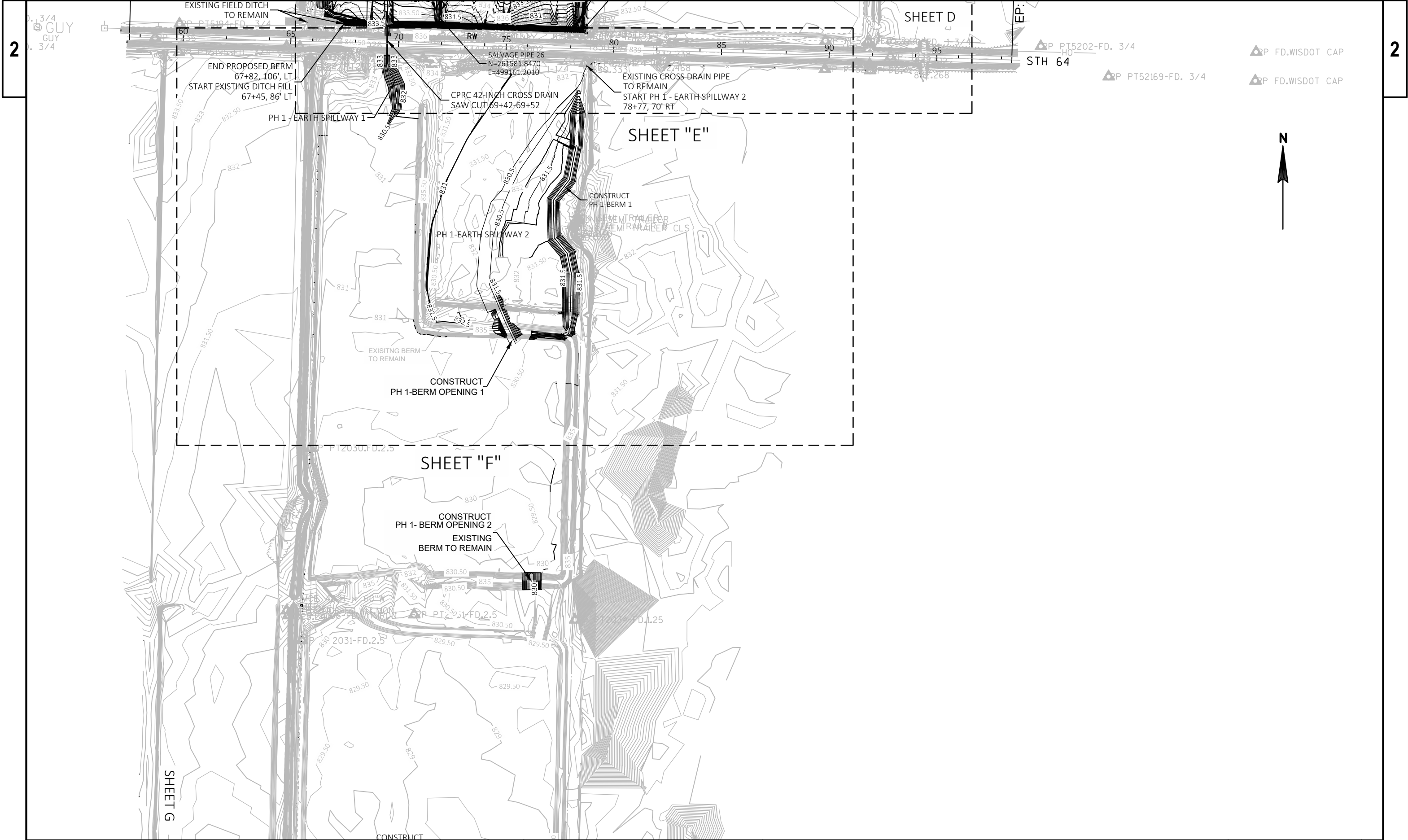
JIM DOPERALSKI
DNR NORTHEAST REGIONAL HEADQUARTERS
2984 SHAWANO AVE., GREEN BAY, WI 54313
PHONE: (920) 412-0165
EMAIL: James.Doperalski@wisconsin.gov



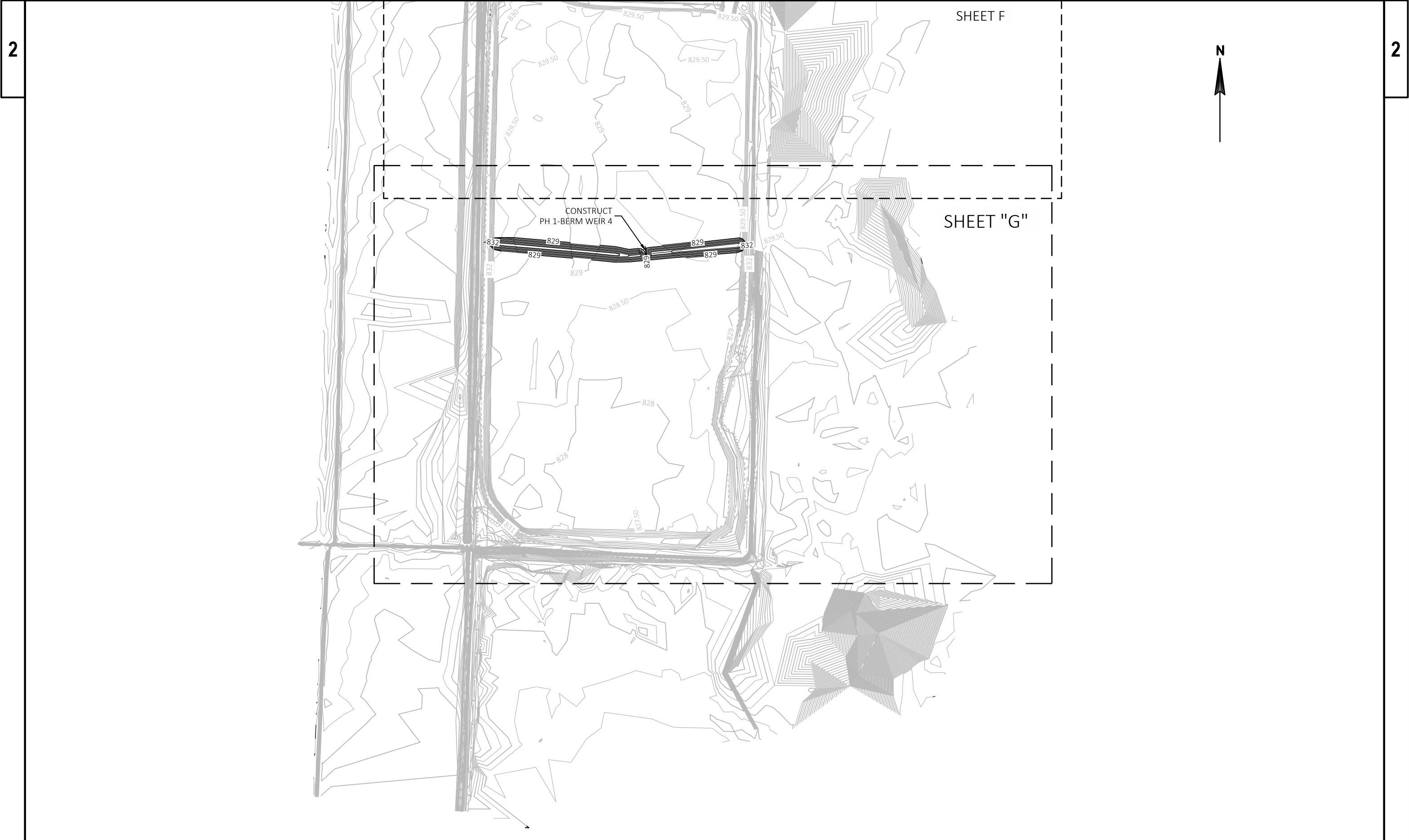
Dial  or (800)242-8511
www.DiggersHotline.com



PROJECT NO: 1009-32-02	HWY: NON-HIGHWAY	COUNTY: OCONTO	PROJECT OVERVIEW: CONTOUR & SALVAGE PIPE LOCATIONS, SHEET C & SHEET D	SHEET	E
------------------------	------------------	----------------	---	-------	---



PROJECT NO: 1009-32-02	HWY: NON-HIGHWAY	COUNTY: OCONTO	PROJECT OVERVIEW: CONTOUR & SALVAGE PIPE LOCATIONS, SHEET E & SHEET F	SHEET	E
------------------------	------------------	----------------	---	-------	---

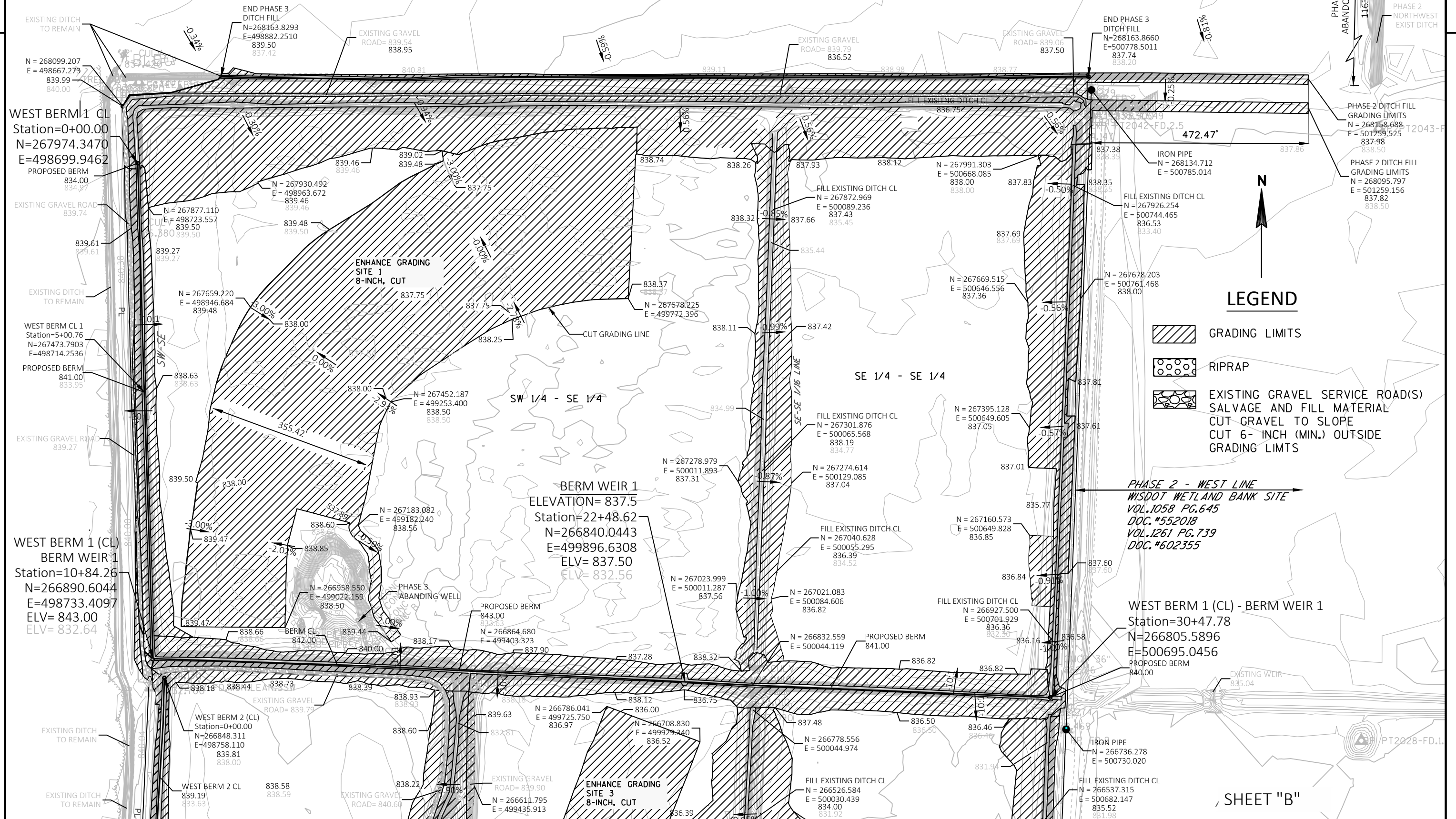


2

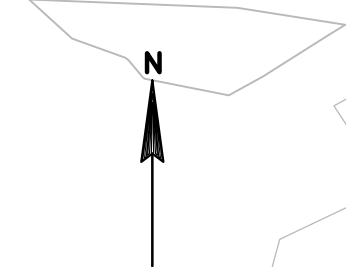
2

PROJECT NO: 1009-32-02	HWY: NON-HIGHWAY	COUNTY: OCONTO	PROJECT OVERVIEW: CONTOUR & SALVAGE PIPE LOCATIONS, SHEET G	SHEET	E
------------------------	------------------	----------------	---	-------	---

SHEET "B"



2



 GRADING LIMITS
 RIPRAP
 EXISTING GRAVEL SERVICE ROAD(S)
 SALVAGE AND FILL MATERIAL
 CUT GRAVEL TO SLOPE
 CUT 6- INCH (MIN.) OUTSIDE
 GRADING LIMITS

PHASE 2 - WEST LINE
WISDOT WETLAND BANK SITE
VOL.1058 PG.645
DOC.#552018
VOL.1261 PG.739
DOC.#602355

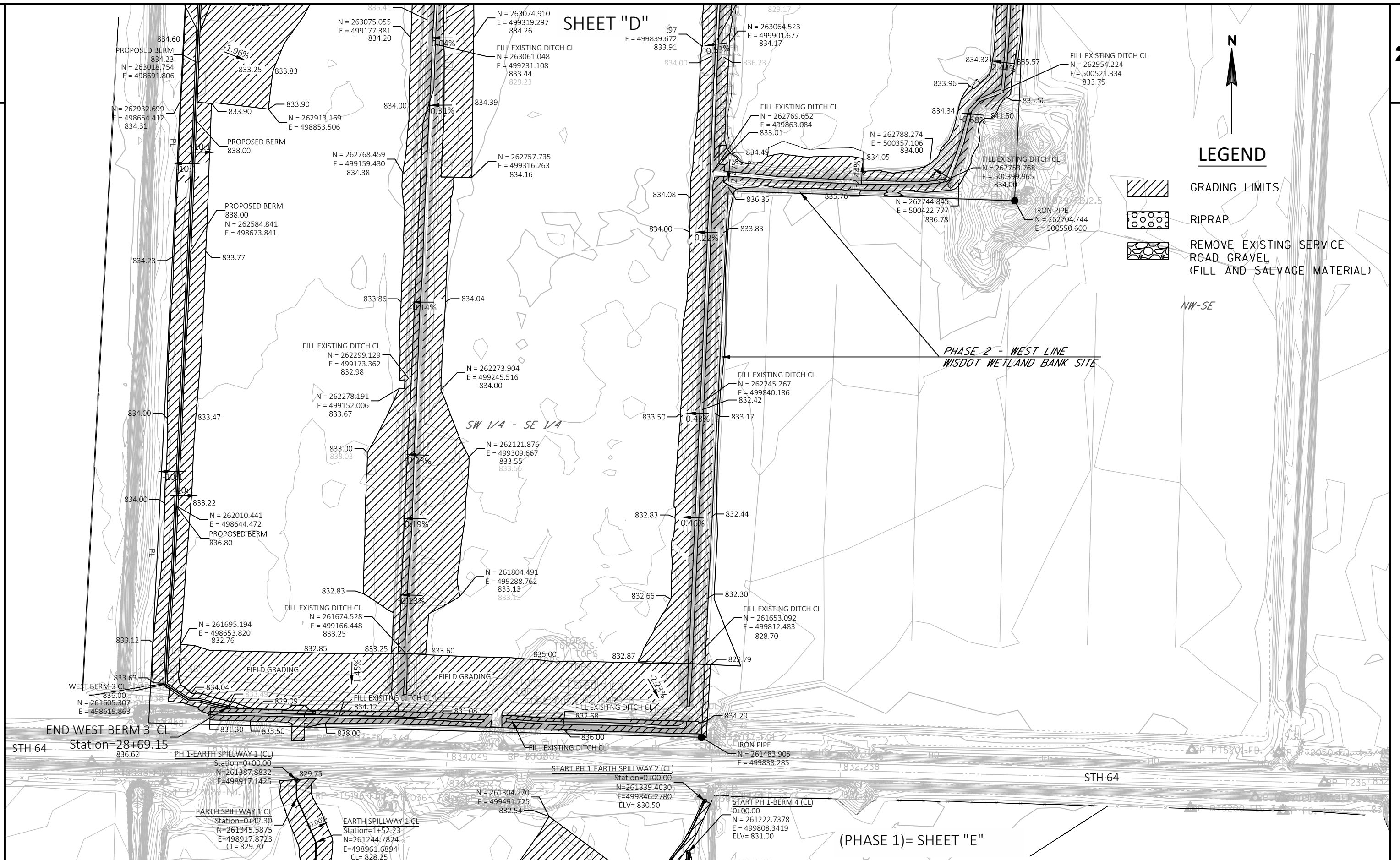
SHEET "C"

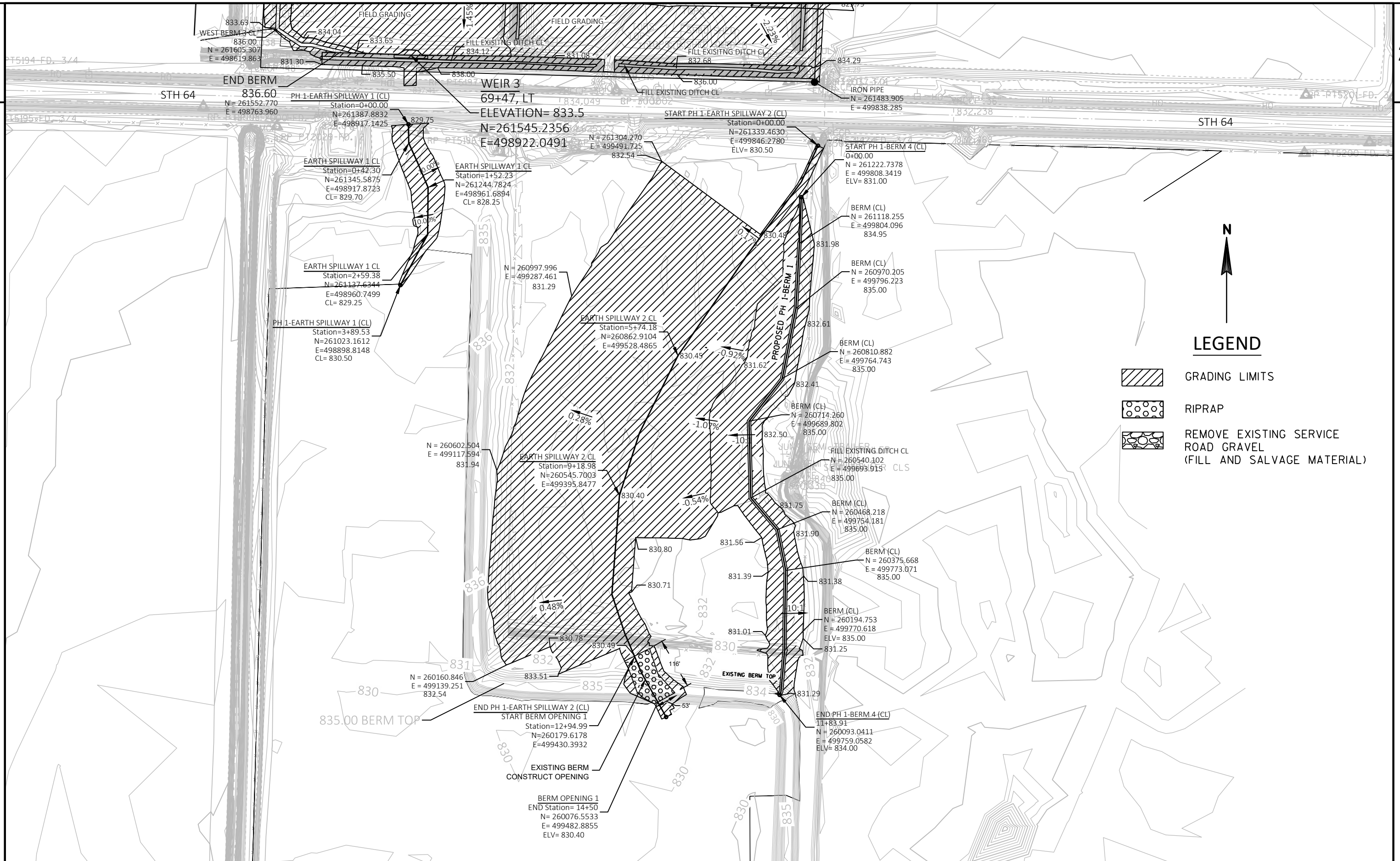
E

WISDOT/CADDS SHEET 42

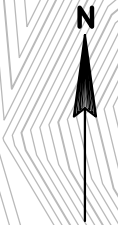
2



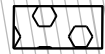




SHEET "F"



LEGEND



RIPRAP



GRADING LIMITS

EXISTING BERM
CONSTRUCT OPENINGBERM OPENING 2
N = 258985.712
E = 499588.781

835.00 BERM TOP

EXISTING BERM TOP

87'

78'

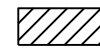
RP PT2031-FD.2.5

RP PT2034-FD.1.25

LEGEND



RIPRAP



GRADING LIMITS

BERM CL
Station=0+00.00
N=257606.4096
E=498516.5398

BERM CL
832.23

PROPOSED BERM TOP

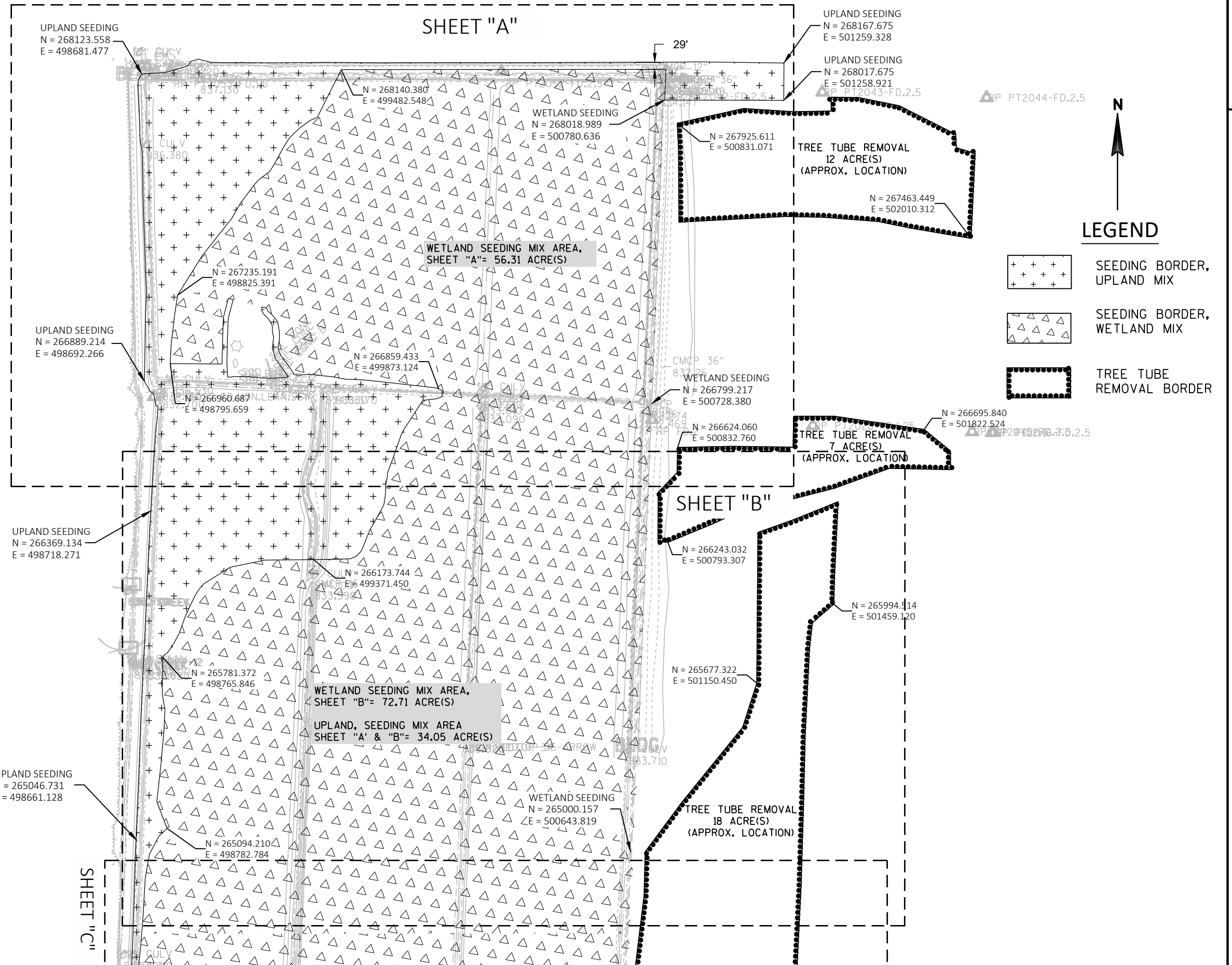
BERM CL
832.18

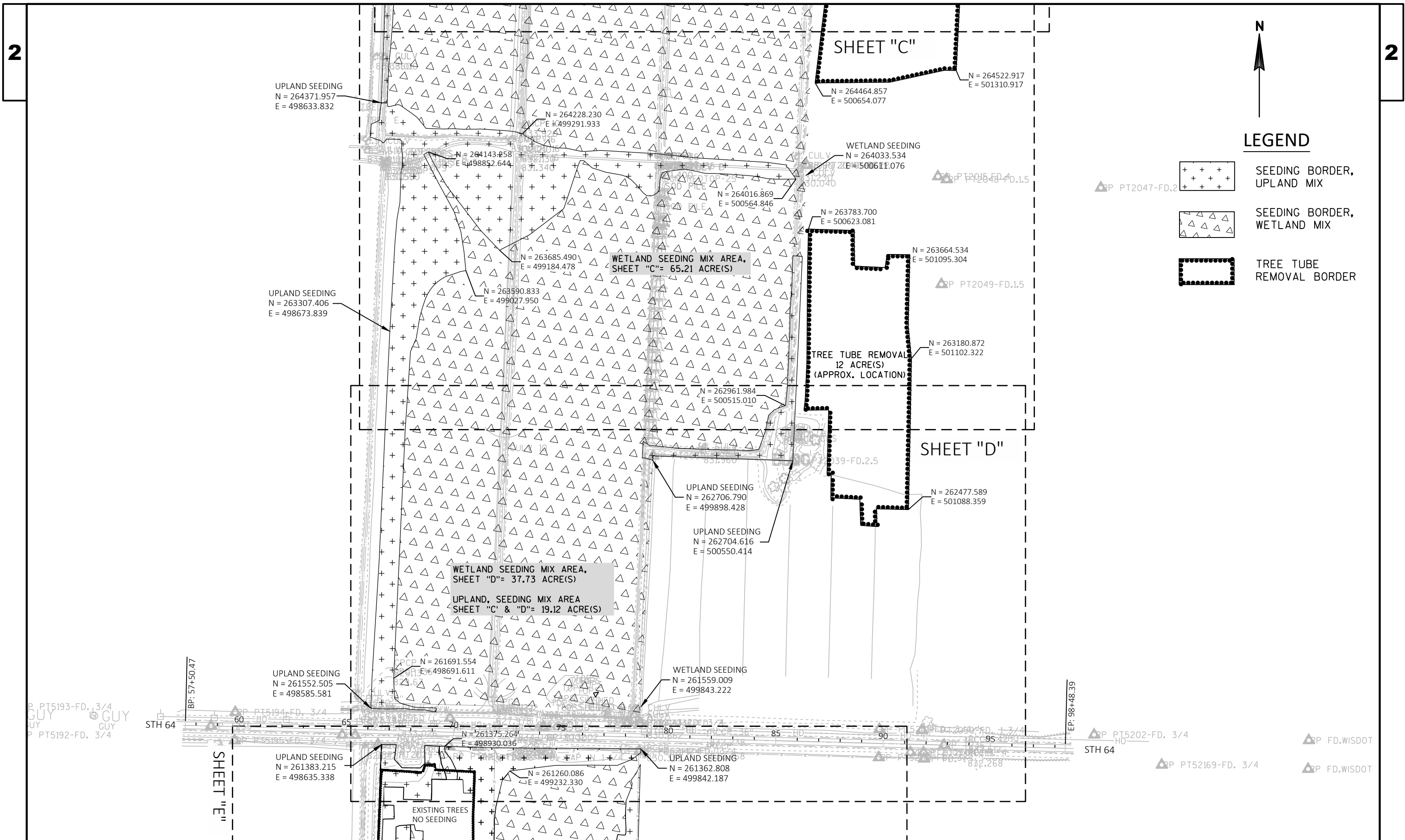
PH 1 BERM WEIR 4
ELEVATION= 829.5
Station=7+31.21
N=257556.1803
E=499244.8517
ELV = 829.50

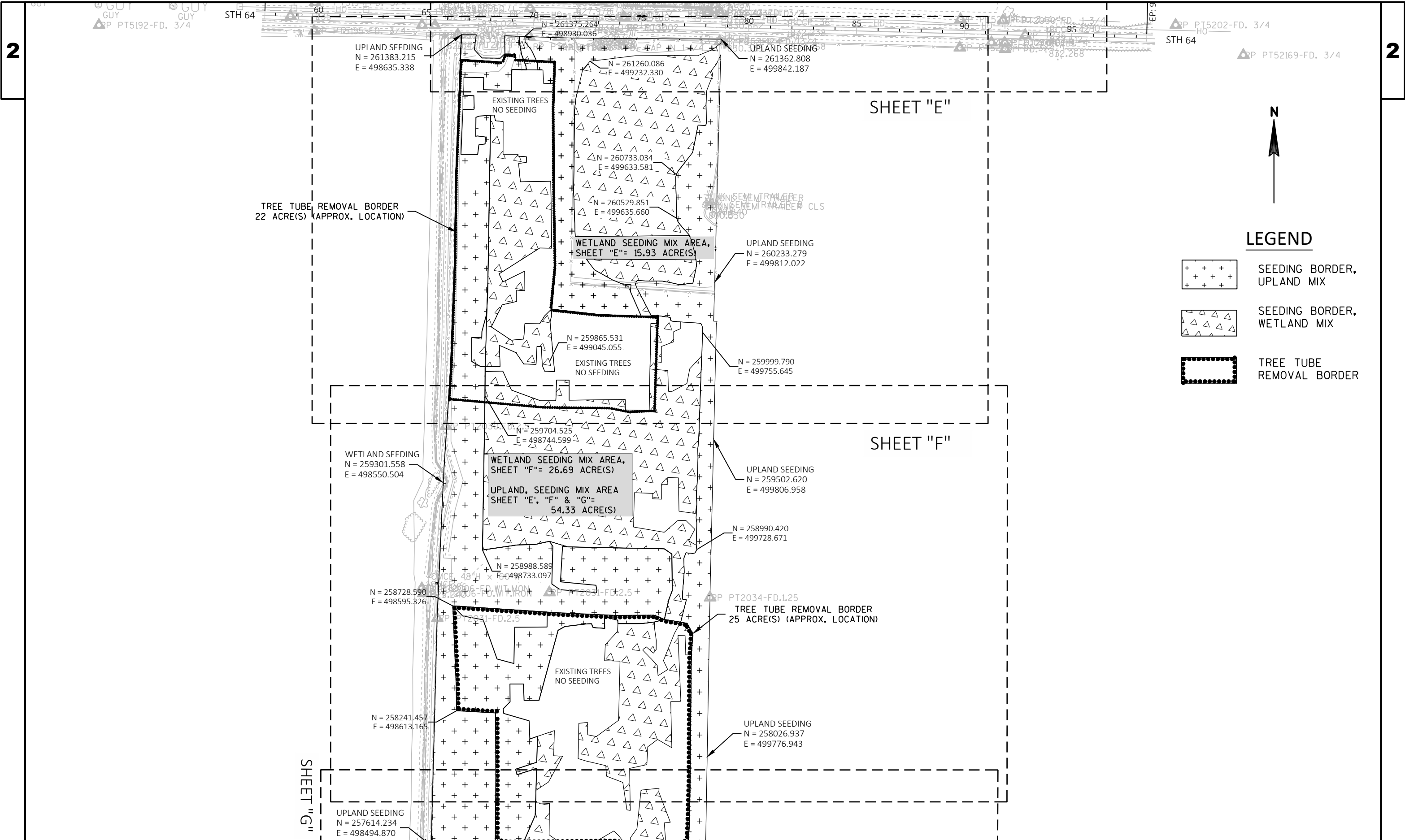
BERM CL
Station=6+47.24
N=257548.8056
E=499161.2041

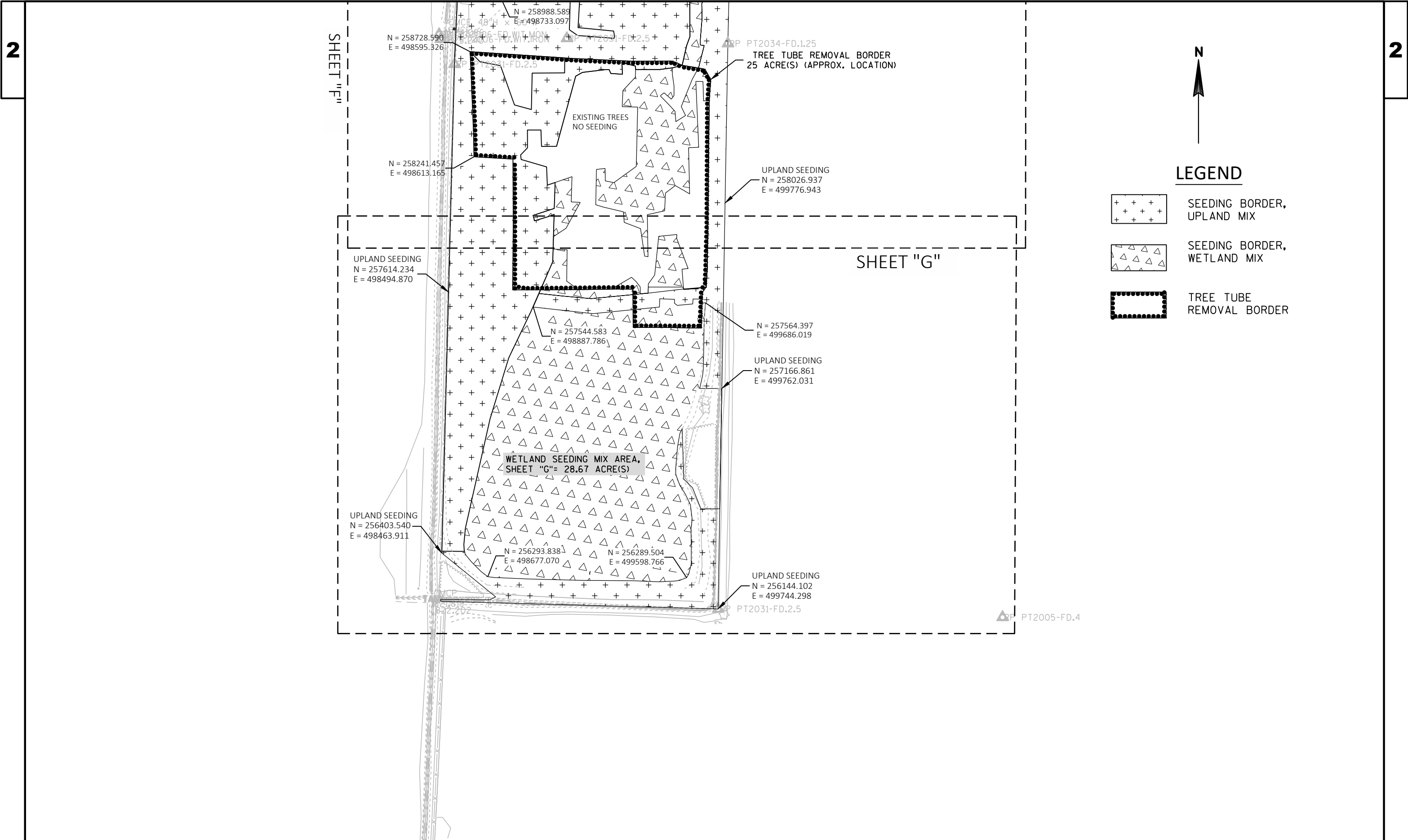
BERM CL
Station=11+99.27
N=257601.1056
E=499710.7598

BERM CL
832.00

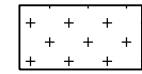




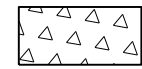




LEGEND



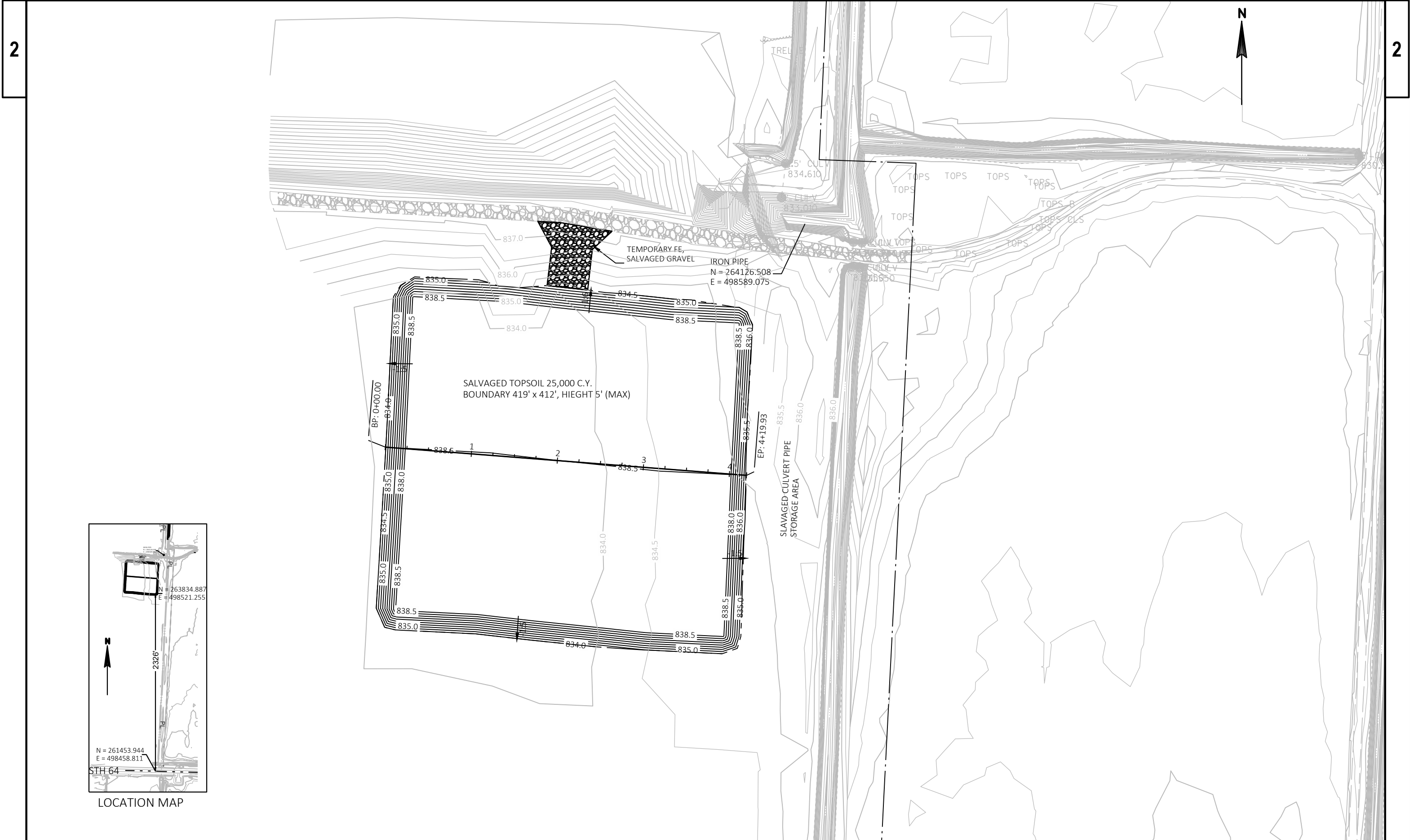
SEEDING BORDER,
UPLAND MIX



SEEDING BORDER,
WETLAND MIX

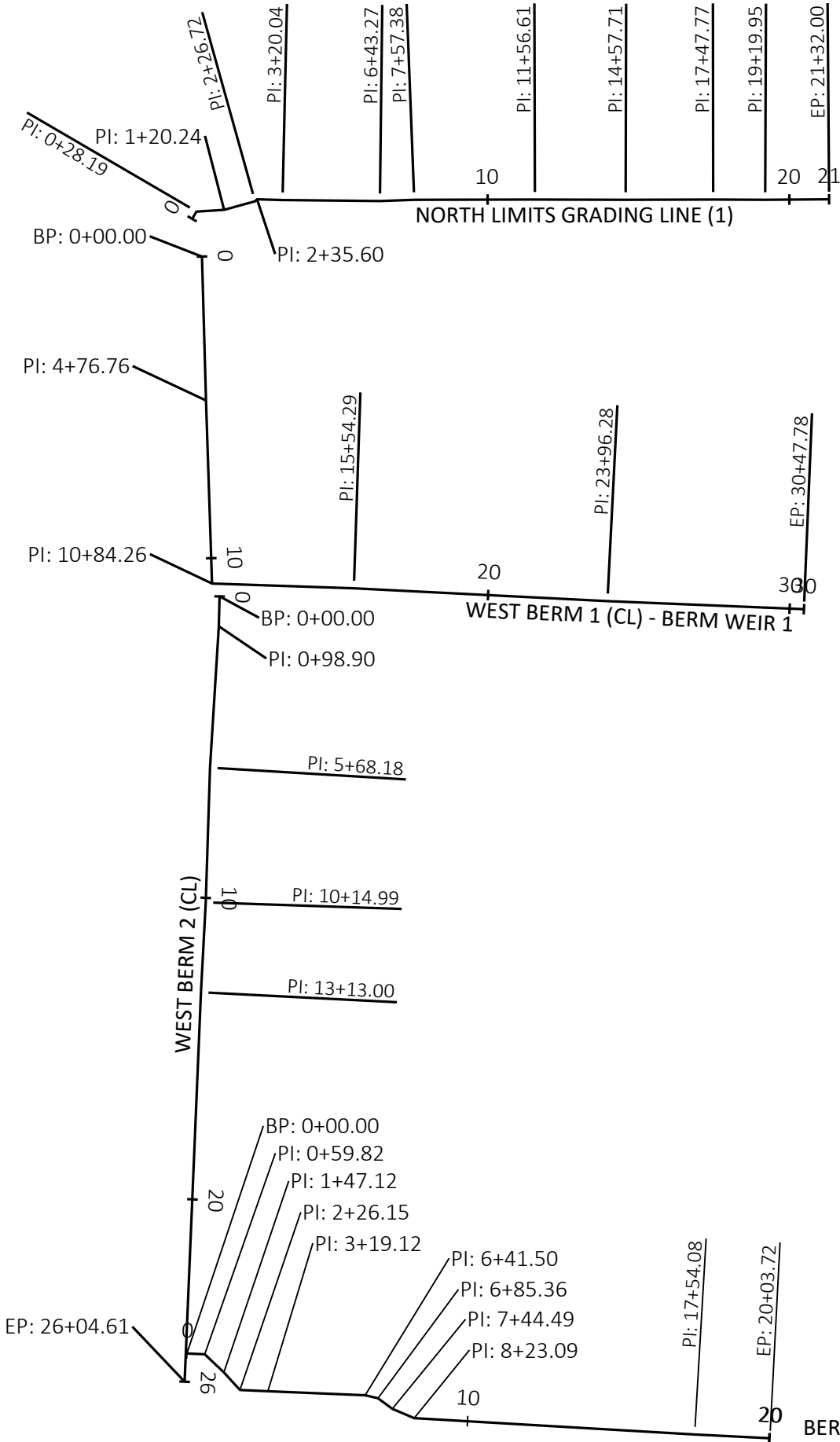


TREE TUBE
REMOVAL BORDER



NORTH LIMITS GRADING LINE (1)			
Station	Coordinate	Length	Line Direction
0+00.00 0+28.19	268099.2070 498667.2734	28.191	N30° 15' 16.82"E
0+28.19 1+20.24	268123.5584 498681.4774	92.048	N86° 38' 00.83"E
1+20.24 2+26.72	268128.9636 498773.3669	106.482	N74° 24' 17.27"E
2+26.72 2+35.60	268157.5902 498875.9291	8.882	N45° 22' 39.70"E
2+35.60 3+20.04	268163.8293 498882.2510	84.436	S88° 38' 32.06"E
3+20.04 6+43.27	268161.8285 498966.6629	323.235	S89° 17' 16.65"E
6+43.27 7+57.38	268157.8117 499289.8728	114.107	N87° 46' 47.30"E
7+57.38 11+56.61	268162.2322 499403.8941	399.225	N89° 50' 50.22"E
11+56.61 14+57.71	268163.2963 499803.1173	301.105	S89° 51' 41.26"E
14+57.71 17+47.77	268162.5682 500104.2217	290.062	N89° 53' 53.79"E
17+47.77 19+19.95	268163.0832 500394.2833	172.176	S89° 44' 43.83"E
19+19.95 21+32.00	268162.3184 500566.4577	212.049	N89° 34' 54.67"E

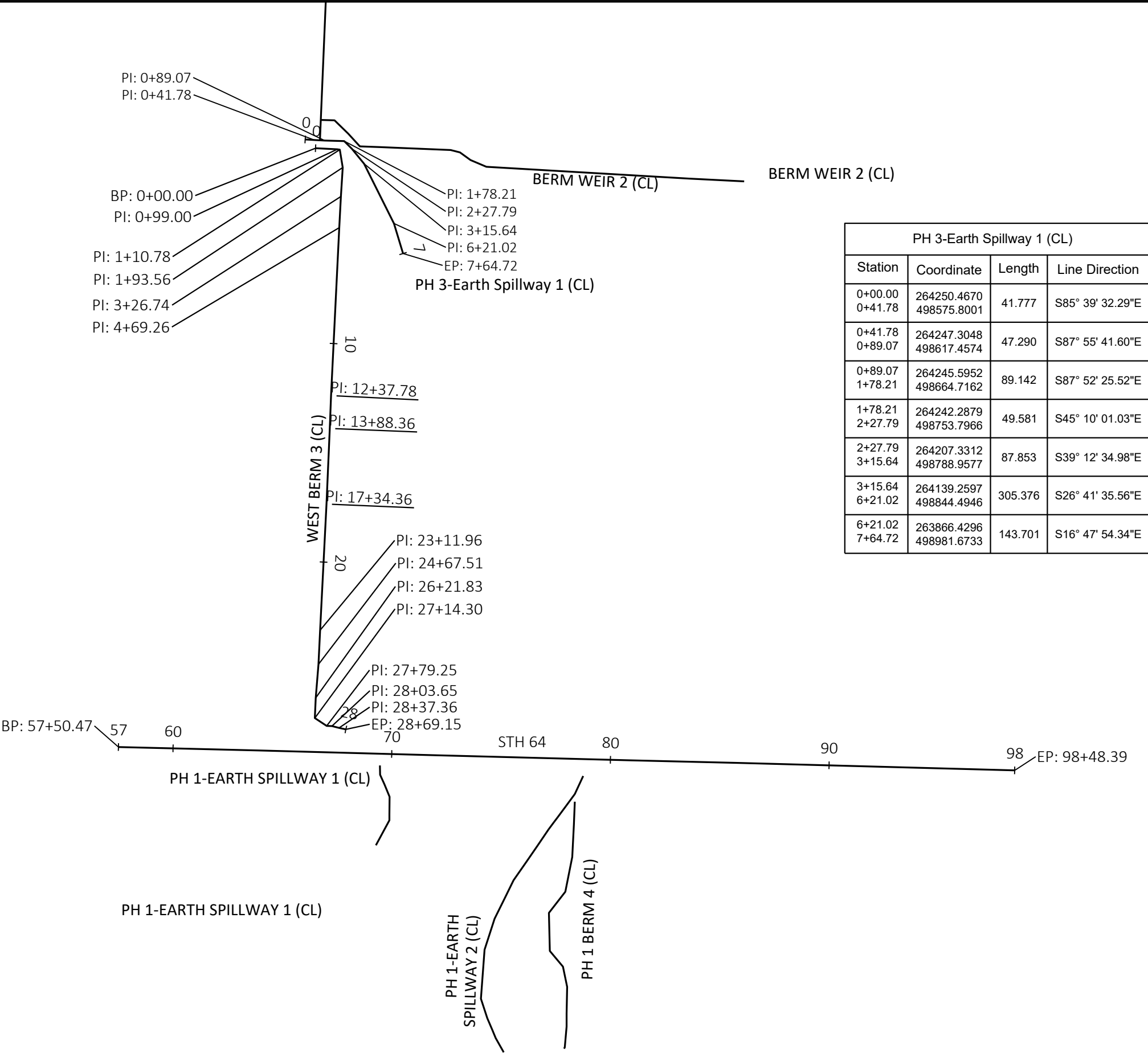
WEST BERM 1 (CL) - BERM WEIR 1			
Station	Coordinate	Length	Line Direction
0+00.00 4+76.76	267974.3470 498699.9462	476.761	S01° 38' 03.33"E
4+76.76 10+84.26	267497.7802 498713.5431	607.501	S01° 52' 26.52"E
10+84.26 15+54.29	266890.6044 498733.4097	470.028	S88° 04' 13.95"E
15+54.29 23+96.28	266874.7790 499203.1710	841.989	S87° 07' 15.47"E
23+96.28 30+47.78	266832.4880 500044.0970	651.504	S87° 38' 01.62"E



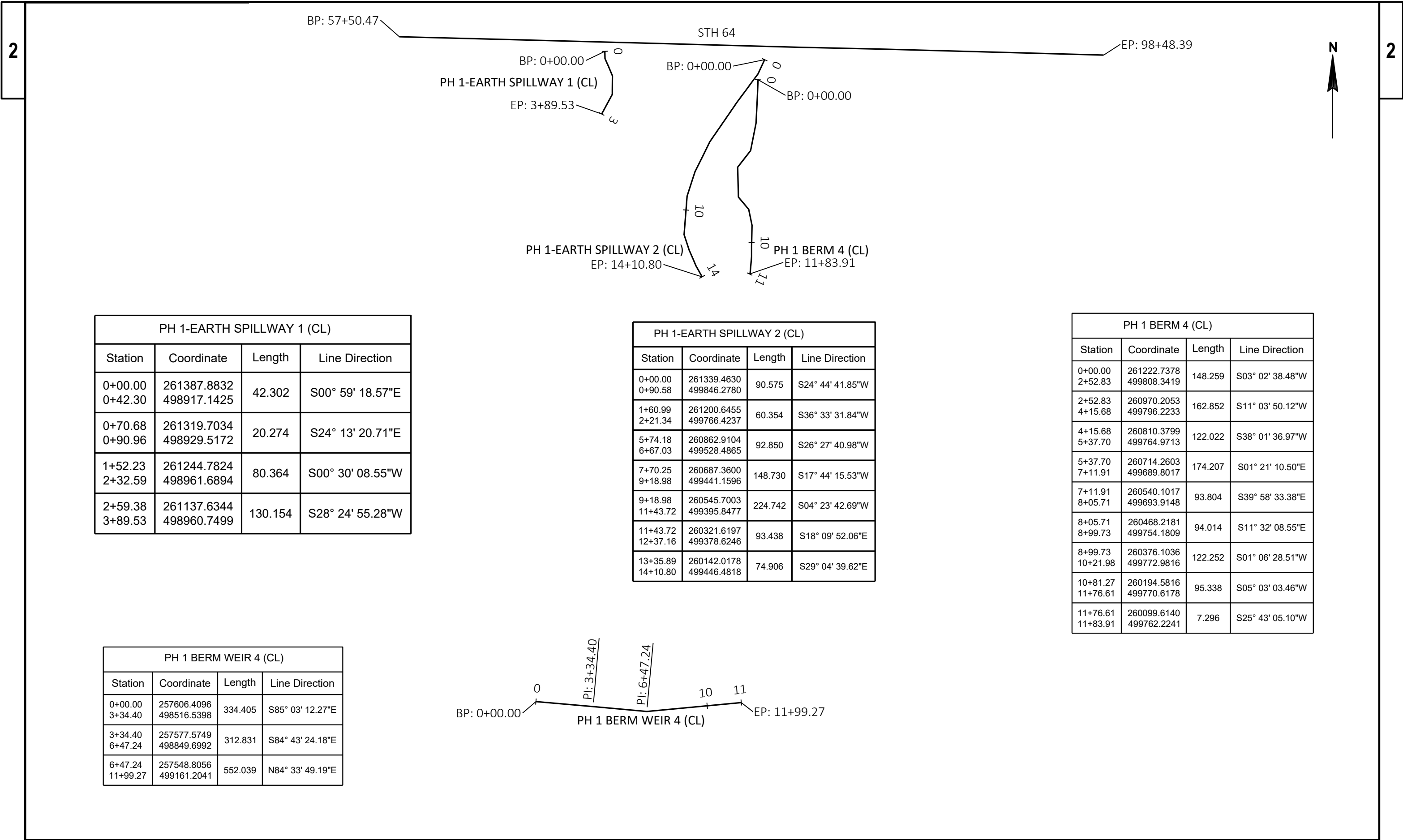
WEST BERM 2 (CL)			
Station	Coordinate	Length	Line Direction
0+00.00 0+98.90	266848.3113 498758.1098	98.897	S01° 28' 51.30"W
0+98.90 5+68.18	266749.4478 498755.5539	469.283	S03° 28' 42.52"W
5+68.18 10+14.99	266281.0289 498727.0808	446.807	S01° 54' 38.39"W
10+14.99 13+13.00	265834.4702 498712.1837	298.018	S02° 54' 42.00"W
13+13.00 26+04.61	265536.8372 498697.0455	1291.605	S02° 24' 36.45"W

BERM WEIR 2 (CL)			
Station	Coordinate	Length	Line Direction
0+00.00 0+59.82	264339.4719 498649.6700	59.821	S88° 05' 10.69"E
0+59.82 1+47.12	264337.4743 498709.4580	87.299	S46° 15' 46.41"E
1+47.12 2+26.15	264277.1202 498772.5331	79.029	S42° 18' 47.12"E
2+26.15 3+19.12	264218.6804 498825.7336	92.970	S87° 46' 03.34"E
3+19.12 6+41.50	264215.0590 498918.6327	322.383	S87° 36' 30.02"E
6+41.50 6+85.36	264201.6059 499240.7344	43.855	S75° 58' 32.93"E
6+85.36 7+44.49	264190.9784 499283.2825	59.132	S54° 12' 46.66"E
7+44.49 8+23.09	264156.3993 499331.2505	78.599	S66° 53' 00.33"E
8+23.09 17+54.08	264125.5410 499403.5388	930.994	S86° 40' 14.62"E
17+54.08 20+03.72	264071.4743 500332.9619	249.641	S87° 03' 14.70"E

WEST BERM 3 (CL)			
Station	Coordinate	Length	Line Direction
0+00.00	264210.3675	98.999	S87° 07' 11.05"E
0+99.00	498623.4439		
0+99.00	264205.3929	11.784	S81° 43' 13.94"E
1+10.78	498722.3180		
1+10.78	264203.6960	82.780	S09° 14' 27.62"E
1+93.56	498733.9793		
1+93.56	264121.9908	133.181	S03° 39' 23.37"W
3+26.74	498747.2727		
3+26.74	263989.0813	142.512	S03° 06' 29.43"W
4+69.26	498738.7791		
4+69.26	263846.7787	768.522	S02° 46' 47.34"W
12+37.78	498731.0520		
12+37.78	263079.1613	150.584	S02° 17' 17.64"W
13+88.36	498693.7803		
13+88.36	262928.6969	345.994	S02° 26' 02.43"W
17+34.36	498687.7679		
17+34.36	262583.0154	577.606	S02° 53' 32.73"W
23+11.96	498673.0740		
23+11.96	262006.1452	155.544	S02° 50' 55.45"W
24+67.51	498643.9275		
24+67.51	261850.7934	154.326	S04° 33' 54.79"W
26+21.83	498636.1971		
26+21.83	261696.9571	92.471	S02° 43' 56.34"W
27+14.30	498623.9137		
27+14.30	261604.5913	64.949	S56° 23' 52.77"E
27+79.25	498619.5056		
27+79.25	261568.6471	24.398	S88° 11' 33.71"E
28+03.65	498673.6019		
28+03.65	261567.8776	33.705	S75° 45' 06.27"E
28+37.36	498697.9881		
28+37.36	261559.5820	31.795	S77° 35' 14.11"E
28+69.15	498730.6566		



PH 3-Earth Spillway 1 (CL)			
Station	Coordinate	Length	Line Direction
0+00.00	264250.4670	41.777	S85° 39' 32.29"E
0+41.78	498575.8001		
0+41.78	264247.3048	47.290	S87° 55' 41.60"E
0+89.07	498617.4574		
0+89.07	264245.5952	89.142	S87° 52' 25.52"E
1+78.21	498664.7162		
1+78.21	264242.2879	49.581	S45° 10' 01.03"E
2+27.79	498753.7966		
2+27.79	264207.3312	87.853	S39° 12' 34.98"E
3+15.64	498788.9577		
3+15.64	264139.2597	305.376	S26° 41' 35.56"E
6+21.02	498844.4946		
6+21.02	263866.4296	143.701	S16° 47' 54.34"E
7+64.72	498981.6733		

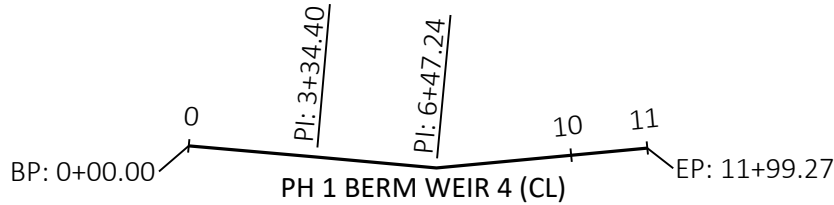


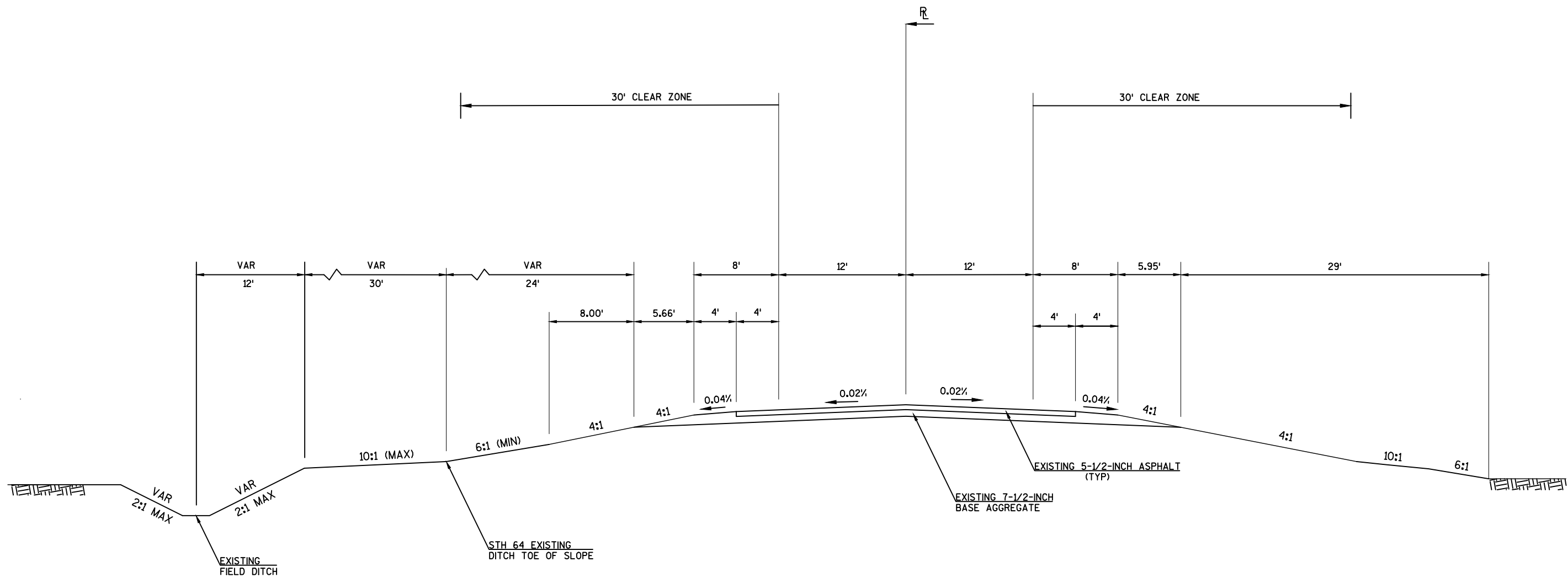
PH 1-EARTH SPILLWAY 1 (CL)			
Station	Coordinate	Length	Line Direction
0+00.00 0+42.30	261387.8832 498917.1425	42.302	S00° 59' 18.57"E
0+70.68 0+90.96	261319.7034 498929.5172	20.274	S24° 13' 20.71"E
1+52.23 2+32.59	261244.7824 498961.6894	80.364	S00° 30' 08.55"W
2+59.38 3+89.53	261137.6344 498960.7499	130.154	S28° 24' 55.28"W

PH 1-EARTH SPILLWAY 2 (CL)			
Station	Coordinate	Length	Line Direction
0+00.00 0+90.58	261339.4630 499846.2780	90.575	S24° 44' 41.85"W
1+60.99 2+21.34	261200.6455 499766.4237	60.354	S36° 33' 31.84"W
5+74.18 6+67.03	260862.9104 499528.4865	92.850	S26° 27' 40.98"W
7+70.25 9+18.98	260687.3600 499441.1596	148.730	S17° 44' 15.53"W
9+18.98 11+43.72	260545.7003 499395.8477	224.742	S04° 23' 42.69"W
11+43.72 12+37.16	260321.6197 499378.6246	93.438	S18° 09' 52.06"E
13+35.89 14+10.80	260142.0178 499446.4818	74.906	S29° 04' 39.62"E

PH 1 BERM 4 (CL)			
Station	Coordinate	Length	Line Direction
0+00.00 2+52.83	261222.7378 499808.3419	148.259	S03° 02' 38.48"W
2+52.83 4+15.68	260970.2053 499796.2233	162.852	S11° 03' 50.12"W
4+15.68 5+37.70	260810.3799 499764.9713	122.022	S38° 01' 36.97"W
5+37.70 7+11.91	260714.2603 499689.8017	174.207	S01° 21' 10.50"E
7+11.91 8+05.71	260540.1017 499693.9148	93.804	S39° 58' 33.38"E
8+05.71 8+99.73	260468.2181 499754.1809	94.014	S11° 32' 08.55"E
8+99.73 10+21.98	260376.1036 499772.9816	122.252	S01° 06' 28.51"W
10+21.98 11+76.61	260194.5816 499770.6178	95.338	S05° 03' 03.46"W
11+76.61 11+83.91	260099.6140 499762.2241	7.296	S25° 43' 05.10"W

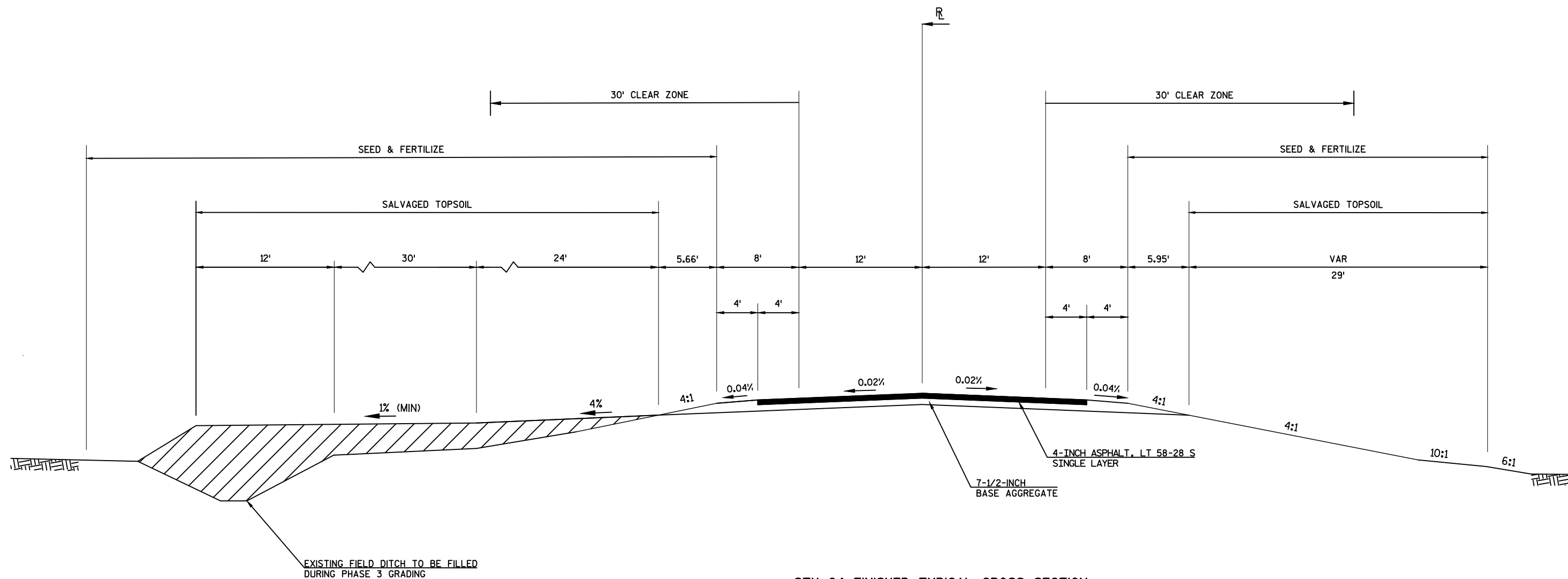
PH 1 BERM WEIR 4 (CL)			
Station	Coordinate	Length	Line Direction
0+00.00 3+34.40	257606.4096 498516.5398	334.405	S85° 03' 12.27"E
3+34.40 6+47.24	257577.5749 498849.6992	312.831	S84° 43' 24.18"E
6+47.24 11+99.27	257548.8056 499161.2041	552.039	N84° 33' 49.19"E





STH 64 EXISTING TYPICAL CROSS SECTION

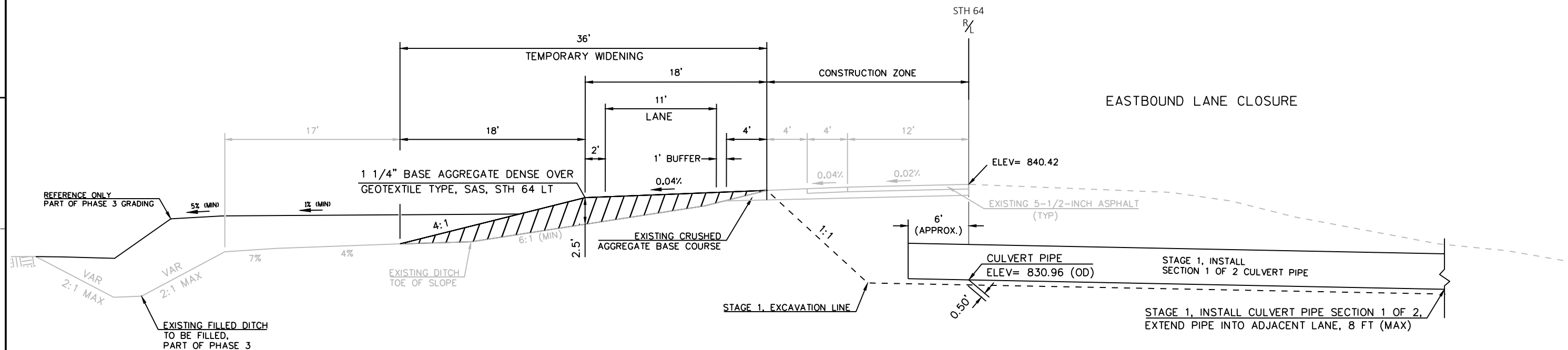
STA. 67+50 TO 78+33



STH 64 FINISHED TYPICAL CROSS SECTION

STA. 69+42 TO 69+52

NOTE: STH 64, LANE CLOSURE FOR CULVERT PIPE IS REQUIRED, SEE TEMPORARY LANE SHIFT DETAIL.
STH 64, STATION 78+91, 53' OFFSET RT, START PHASE 1 SWALE 2 GRADING, SHOWN ELSEWHERE.



NOTE:

FLAGGERS TO BE IN USE DURING CONSTRUCTION OF STH 64 CROSS PIPE INSTALLATION.
EXCAVATION OF STH 64 TO BE FILLED AT THE END OF EACH WORK DAY AND OPENED TO TRAFFIC ON TEMPORARY BASE AGGREGATE.

SHOULDER CLOSURE FOR THE STH 64, WESTBOUND LANE WILL BE NEEDED DURING TEMPORARY LANE SHIFT CONSTRUCTION, DUE TO CLOSE PROXIMITY OF WORK TO TRAVEL LANE.

STAGE 1, STH 64, EASTBOUND TRAFFIC TO BE DIRECTED ONTO THE STH 64 WESTBOUND TEMPORARY AGGREGATE LANE SHIFT.
STH 64 TRAFFIC TO BE SHIFTED BACK ONTO THE EASTBOUND TEMPORARY AGGREGATE LANE FOR OVERNIGHT TRAVEL.

STAGE 2, STH 64, WESTBOUND TRAFFIC TO BE DIRECTED ONTO THE STH 64 EASTBOUND TEMPORARY AGGREGATE LANE.
STH 64 TRAFFIC TO BE SHIFTED BACK ONTO THE WESTBOUND TEMPORARY AGGREGATE LANE FOR OVERNIGHT TRAVEL.

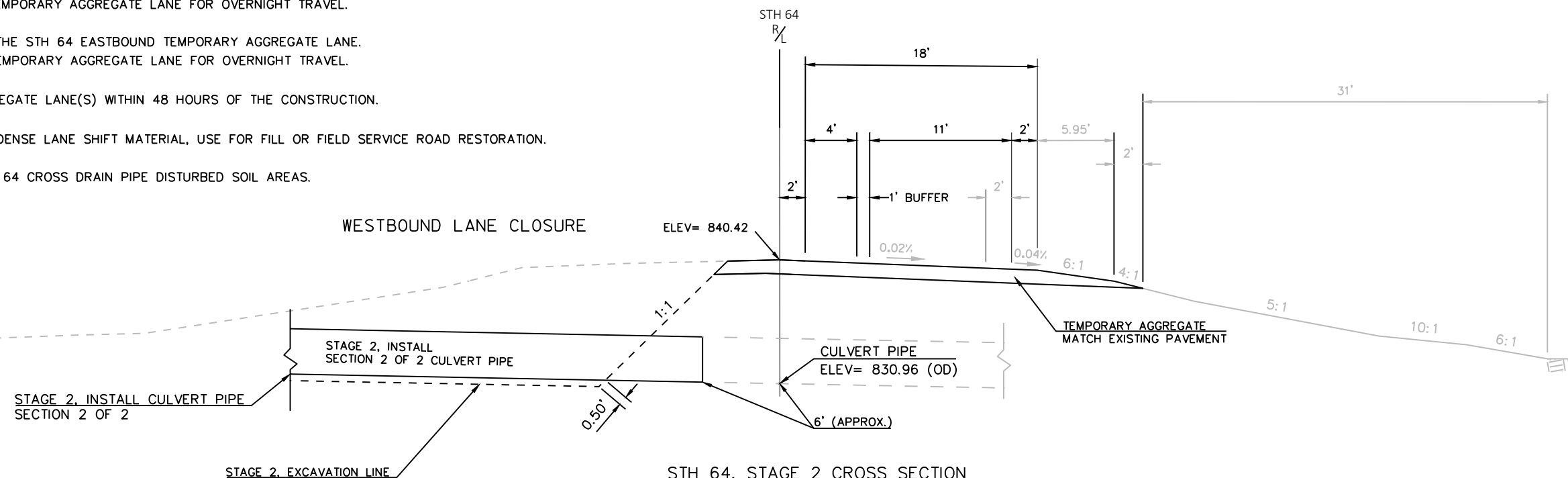
STAGE 3, STH 64 PAVEMENT PATCHING, PAVE TEMPORARY AGGREGATE LANE(S) WITHIN 48 HOURS OF THE CONSTRUCTION.

REMOVE THE STH 64 TEMPORAY 1 1/4-INCH BASE AGGREGATE DENSE LANE SHIFT MATERIAL, USE FOR FILL OR FIELD SERVICE ROAD RESTORATION.

PLACE SALVAGED TOPSOIL, FERTILIZE, SEED AND MULCH AT STH 64 CROSS DRAIN PIPE DISTURBED SOIL AREAS.

STH 64, STAGE 1 CROSS SECTION

STATION 68+23 - 71+00, CONSTRUCT LANE SHIFT.
STATION 68+92-70+03, STH 64 RT, CULVERT PIPE GRADING LIMITS
TRAFFIC TO USE WESTBOUND TEMPORARY AGGREGATE
LANE SHIFT, DURING NORMAL DAYLIGHT CONSTRUCTION HOURS.
STATION 69+47, INSTALL CULVERT PIPE RIGHT SECTION.



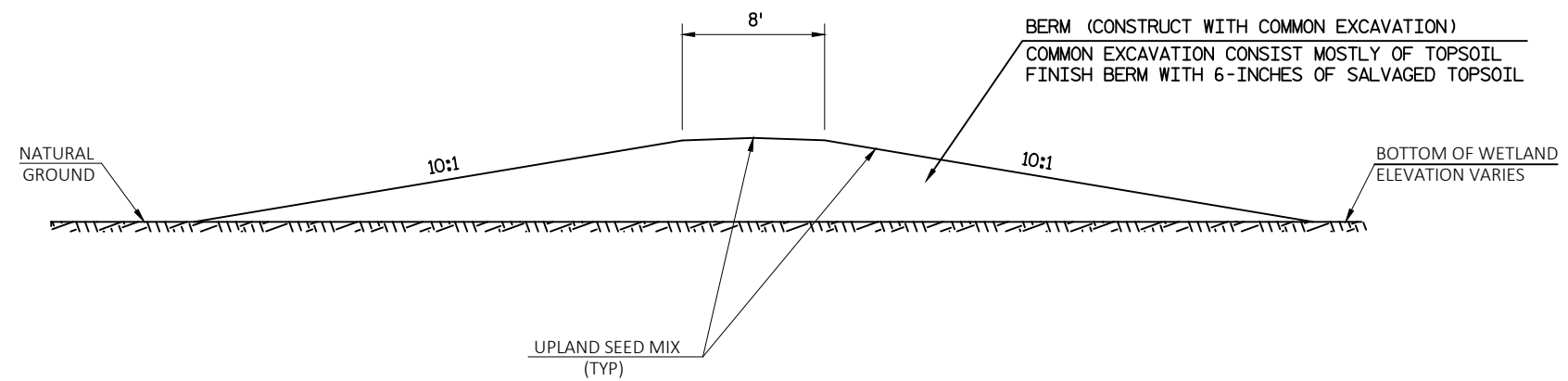
STH 64, STAGE 2 CROSS SECTION

STATION 67+88 - 71+00, CLOSE LEFT TRAVEL LANES.
STATION 68+92-70+03, STH 64 LT, CULVERT PIPE GRADING LIMITS
TRAFFIC TO USE EASTBOUND TEMPORARY AGGREGATE LANE.
STATION 69+47, INSTALL CULVERT PIPE LEFT SECTION.

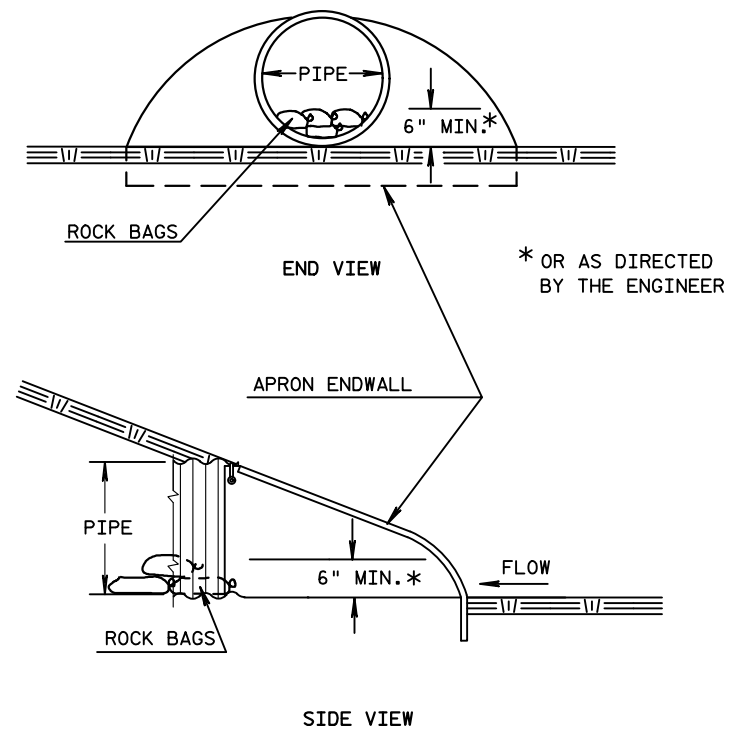
2



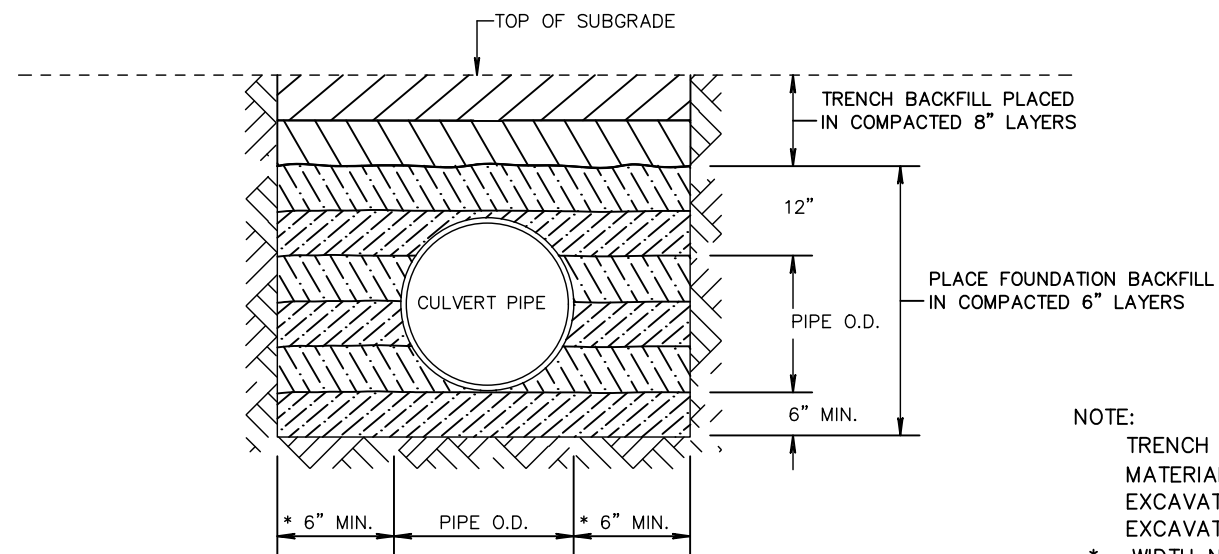
WISDOT/CADDS SHEET 42



BERM TYPICAL FINISHED CROSS SECTION



CULVERT PIPE DITCH CHECK



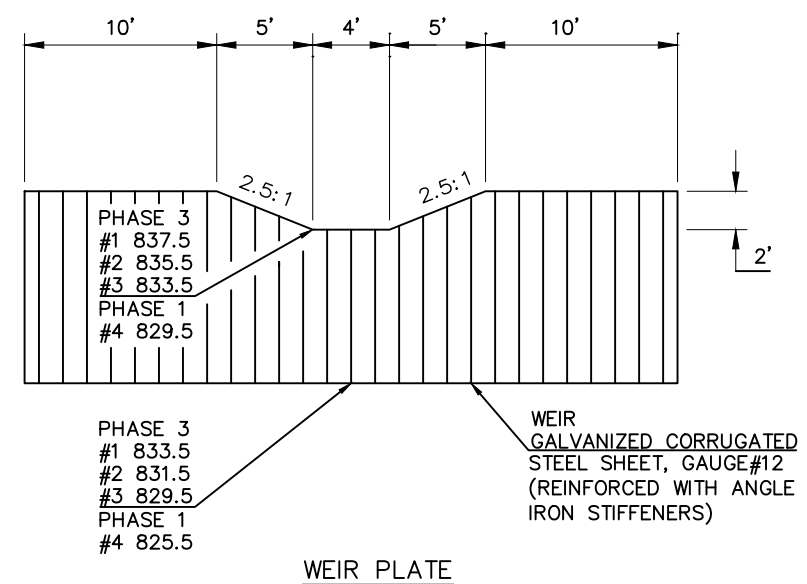
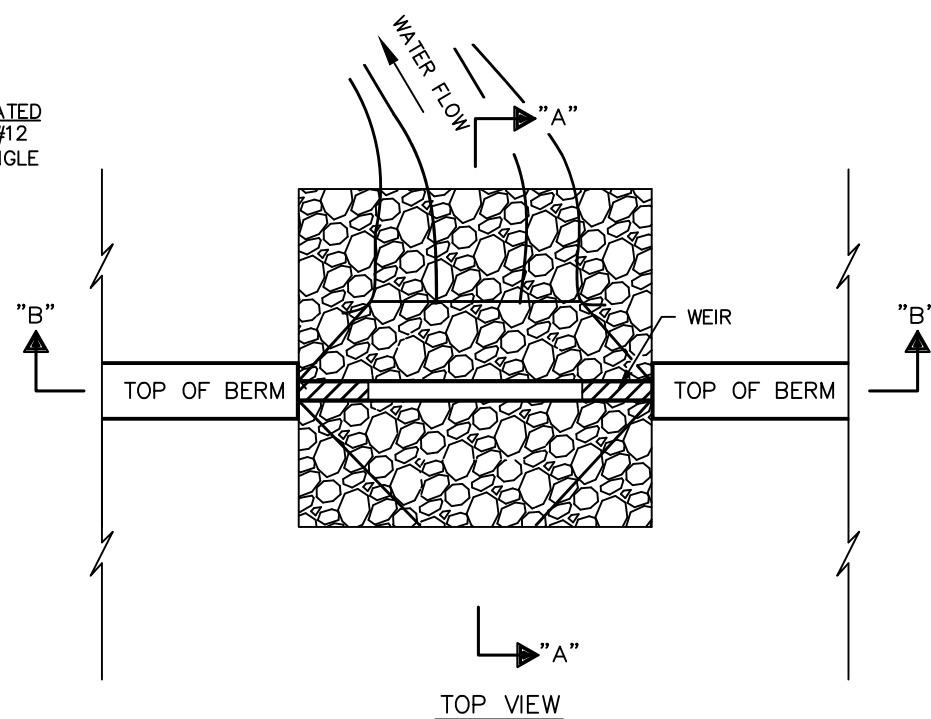
NOTE:

TRENCH WIDTH NOT TO EXCEED 1/2 THE NOMINAL DIAMETER OF PIPE.
 MATERIAL EXCAVATED FOR CULVERT PIPE INSTALLATION TO BE USED AS TRENCH BACKFILL.
 EXCAVATION FOR FROST HEAVE PREVENTION IS NOT REQUIRED.
 EXCAVATE AND PLACE FOUNDATION BACKFILL AT LEAST 6 INCHES BELOW PIPE BOTTOM.
 * WIDTH NOT TO EXCEED 1/2 O.D. OF PIPE

STH 64 CULVERT PIPE TRENCH, FOUNDATION AND BACKFILL DETAIL

STATION 69+47, STH 64
 PHASE 3, SERVICE ROAD

2



WEIR DETAIL FOR WETLAND MITIGATION SITE

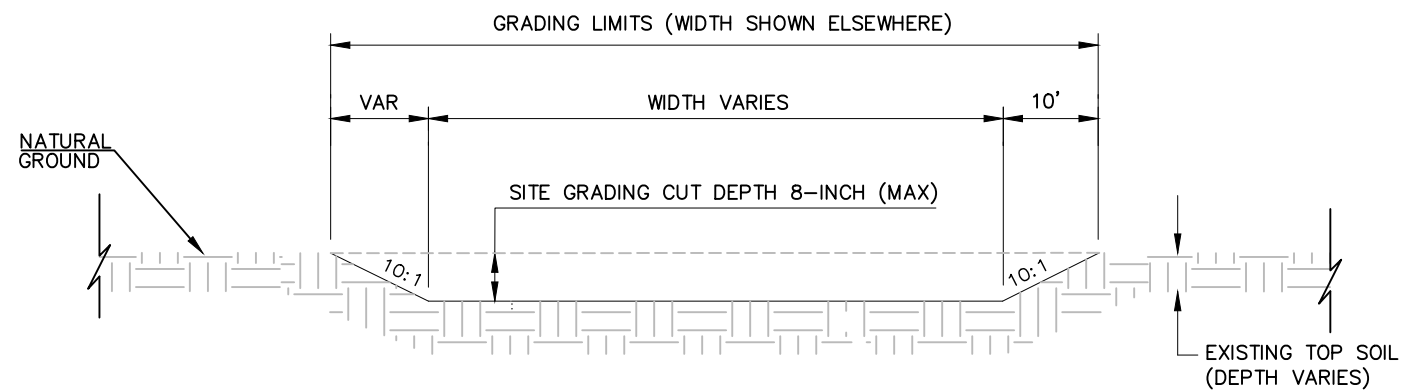
PROJECT NO:1009-32-01

HWY:PESHTIGO MITIGATION SITE

COUNTY: OCONTO

CONSTRUCTION DETAIL: WEIR (PHASE 3 AND 1)

SHEET	_____	E
-------	-------	---



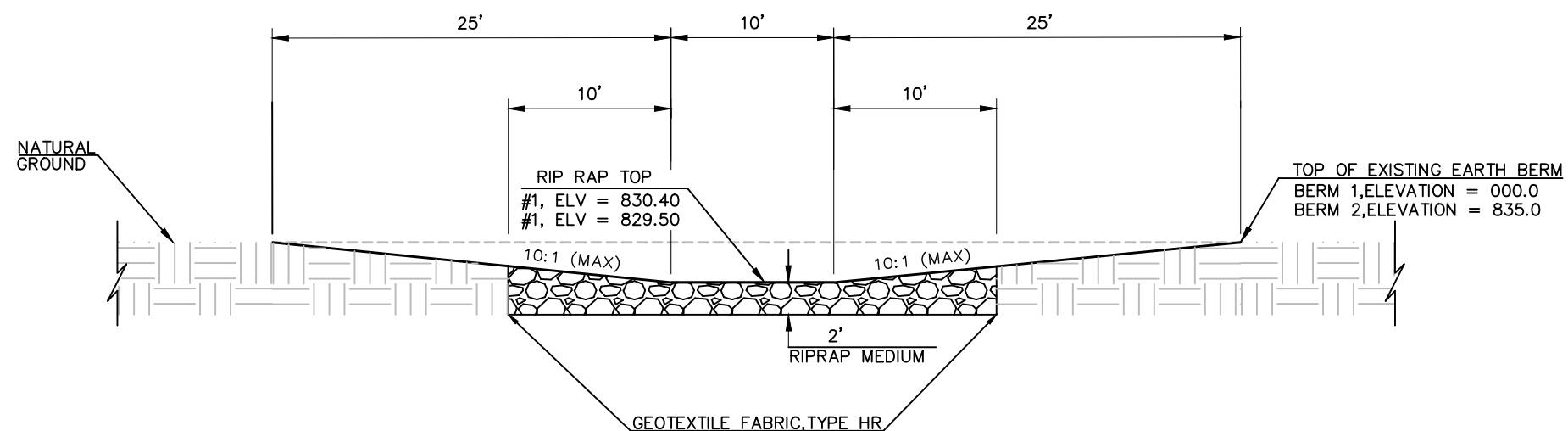
ENHANCEMENT SITE AND EARTH SPILLWAY GRADING

PHASE 3

- #1 ENHANCE WETLAND GRADING SITE
- #2 ENHANCE WETLAND GRADING SITE
- #3 ENHANCE WETLAND GRADING SITE
- #4 ENHANCE WETLAND GRADING SITE
- #5 ENHANCE WETLAND GRADING SITE

PHASE 1

- #1 SPILLWAY (STH 64, 69+47 RIGHT)
- #2 SPILLWAY (STH 64, 78+90 RIGHT)



CONSTRUCT BERM OPENING 1 AND 2 WITHIN PHASE 1 SITE EXISTING BERM(S)
(SEE GRADING PLAN OVERVIEW, SHEETS E & F)

Estimate Of Quantities

1009-32-02					
Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	373.000	373.000
0004	204.0265	Abandoning Wells	EACH	2.000	2.000
0006	204.9060.S	Removing (item description) 01. Screw Gate	EACH	1.000	1.000
0008	205.0100	Excavation Common	CY	150,758.000	150,758.000
0010	213.0100	Finishing Roadway (project) 01. 1009-32-02	EACH	1.000	1.000
0012	305.0110	Base Aggregate Dense 3/4-Inch	TON	31.000	31.000
0014	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	669.000	669.000
0016	460.2000	Incentive Density HMA Pavement	DOL	80.000	80.000
0018	460.5224	HMA Pavement 4 LT 58-28 S	TON	118.000	118.000
0020	521.1235	Apron Endwalls for Pipe Arch Steel 35x24-Inch	EACH	2.000	2.000
0022	521.3735	Pipe Arch Corrugated Steel 35x24-Inch	LF	48.000	48.000
0024	522.0142	Culvert Pipe Reinforced Concrete Class III 42-Inch	LF	129.000	129.000
0026	522.1042	Apron Endwalls for Culvert Pipe Reinforced Concrete 42-Inch	EACH	2.000	2.000
0028	524.0112	Culvert Pipe Salvaged 12-Inch	LF	379.000	379.000
0030	524.0118	Culvert Pipe Salvaged 18-Inch	LF	145.000	145.000
0032	524.0124	Culvert Pipe Salvaged 24-Inch	LF	156.000	156.000
0034	524.0136	Culvert Pipe Salvaged 36-Inch	LF	454.000	454.000
0036	524.0636	Apron Endwalls for Culvert Pipe Salvaged 36-Inch	EACH	1.000	1.000
0038	606.0200	Riprap Medium	CY	950.000	950.000
0040	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1009-32-02	EACH	1.000	1.000
0042	619.1000	Mobilization	EACH	1.000	1.000
0044	624.0100	Water	MGAL	7.000	7.000
0046	625.0500	Salvaged Topsoil	SY	2,116.000	2,116.000
0048	627.0200	Mulching	SY	816.000	816.000
0050	628.1504	Silt Fence	LF	690.000	690.000
0052	628.1520	Silt Fence Maintenance	LF	690.000	690.000
0054	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0056	628.2004	Erosion Mat Class I Type B	SY	816.000	816.000
0058	628.7555	Culvert Pipe Checks	EACH	8.000	8.000
0060	628.7560	Tracking Pads	EACH	2.000	2.000
0062	629.0210	Fertilizer Type B	CWT	1.000	1.000
0064	630.0120	Seeding Mixture No. 20	LB	4,683.000	4,683.000
0066	630.0200	Seeding Temporary	LB	4,661.000	4,661.000
0068	633.5200	Markers Culvert End	EACH	2.000	2.000
0070	642.5001	Field Office Type B	EACH	1.000	1.000
0072	643.0300	Traffic Control Drums	DAY	96.000	96.000
0074	643.0420	Traffic Control Barricades Type III	DAY	28.000	28.000
0076	643.0900	Traffic Control Signs	DAY	56.000	56.000

Estimate Of Quantities

1009-32-02					
Line	Item	Item Description	Unit	Total	Qty
0078	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0080	643.5000	Traffic Control	EACH	1.000	1.000
0082	645.0120	Geotextile Type HR	SY	622.000	622.000
0084	645.0140	Geotextile Type SAS	SY	377.000	377.000
0086	646.1020	Marking Line Epoxy 4-Inch	LF	275.000	275.000
0088	650.6000	Construction Staking Pipe Culverts	EACH	2.000	2.000
0090	650.9910	Construction Staking Supplemental Control (project) 01. 1009-32-02	LS	1.000	1.000
0092	690.0150	Sawing Asphalt	LF	64.000	64.000
0094	SPV.0035	Special 01. Salvage and Stockpile Topsoil	CY	25,000.000	25,000.000
0096	SPV.0085	Special 01. Seeding (Upland Mix)	LB	1,236.000	1,236.000
0098	SPV.0085	Special 02. Seeding (Wetland Mix)	LB	2,426.000	2,426.000
0100	SPV.0105	Special 01. Tree Tube Removal	LS	1.000	1.000
0102	SPV.0165	Special 01. Weir Plate	SF	744.000	744.000

EARTHWORK SUMMARY

Division	Station To Station	Location	205.0100	UNEXPANDED FILL	Expanded FILL	*Available Material Note (5)	Borrow Note (15)	Comment:
			Common Excavation					
			Note (1)					
			CUT 1.0					
CY	CY	CY	CY	CY	CY	CY		
STAGE 1 Culvert Pipe Lane Shift and Installation								
CONSTRUCT LANE SHIFT WIDENING	68+95 - 70+00	STH 64, LT	98	-	-	-	-	
TEMPORARY LANE SHIFT AGGREGATE	68+95 - 70+00	STH 64, LT	232	-	-	-	-	
STAGE 1 (Install First Section of Culvert Pipe)								
Culvert Pipe excavation	69+47	STH 64 , RT	176	-	-	-	-	
STAGE 2 Culvert Pipe (Excavation and Fill)								
Stage 2 (Install Second Section of Culvert Pipe)	68+95 - 70+00	STH 64, LT	175	-	-	-	-	
Peshtigo Brook Wetland Enhancement Site(s)								
Enhance Grading Site 1		PHASE 3	13,853	642	743	-	-	
Enhance Grading Site 2		PHASE 3	7,161	4	5	-	-	
Enhance Grading Site 3		PHASE 3	7,154	20	23	-	-	
Enhance Grading Site 4		PHASE 3	2,436	88	102	-	-	
Enhance Grading Site 5		PHASE 3	4,152	27	31	-	-	
Peshtigo Brook Earth Spillway Grading Site(s)								
PH 3 - Earth Spillway 1		PHASE 3	499	145	168	-	-	
PH 1 - Earth Spillway 1		PHASE 1	1,266	0.0	0.0	-	-	
PH 1 - Earth Spillway 2		PHASE 1	15,605	228	264	-	-	
Peshtigo Brook Mitigation Berm(s)								
West Berm 1		PHASE 3	2	5,676	6,569	-	-	Includes Ditch Fill
West Berm 2		PHASE 3	0	13,871	16,056	-	-	Includes Ditch Fill
West Berm 3		PHASE 3	4	11,535	13,352	-	-	
PH 1 Berm 4		PHASE 1	45	4,606	5,332	-	-	
Berm Weir 1		PHASE 3	0	17,500	20,256	-	-	Includes Ditch Fill
Berm Weir 2		PHASE 3	11	8,872	10,270	-	-	Includes Ditch Fill
Weir 3 - Field Grading & Ditch Fill		PHASE 3	7,574	5,282	6,114	-	-	Includes Berm End, Weir 3, Ditch Fill
PH 1 Berm Weir 4		PHASE 1	0	5,264	6,093	-	-	
Mitigation Site Grading, PHASE 3 & 1		-	90,312	34,409	39,829	-	-	Remaining Grading Sites
Mitigation Site(s) Total =			150,076	-	125,207	25,551	-	Use Waste for Mitigation Site Fill
Common Excavation =			150,758					

SEE PLAN FOR GENERAL LOCATION

- Notes:
- (1) Common Excavation is the sum of the Cut columns. Item number 205.0100
 - (5) Available Material/Waste Material = Cut - Expand Fill
25,000 CY for Salvaged and Stockpile Topsoil, SPV.0035.01.
550 CY of gravel within common exc. from and for remaining gravel service road, haul restoration
 - (15) No Borrow Required
 - * Available Material to be Mitigation Site(s) Fill

REMOVING ASPHALTIC SURFACE					
STATION	TO	STATION	LOCATION	<u>204.0110</u> SY	REMARKS
68+95	-	70+00	STH 64 (LT & RT)	373	
TOTAL				373	

ABANDONING WELLS			
	LOCATION	<u>204.0265</u> EACH	REMARKS
MITIGATION PHASE 3 SITE	PHASE 3 WEST OF WEIR 1	1	NORTH OF PHASE 3 GRADING LIMITS
MITIGATION PHASE 2 SITE	PHASE 2 NORTHWEST DITCH	1	NORTH END OF DITCH
TOTAL		2	

REMOVING SCREW GATE			
	LOCATION	<u>204.9060.S</u> EACH	REMARKS
MITIGATION PHASE 2 SITE	NORTHEAST PROJECT LIMIT	1	
TOTAL		1	
SEE PLAN FOR SCREW GATE LOCATION			

BASE AGGREGATE DENSE 3/4-INCH					
STATION	TO	STATION	LOCATION	<u>305.0110</u> TON	REMARKS
68+92	-	70+03	STH 64, LT	15.4	CULVERT CROSS DRAIN PIPE
68+92	-	70+03	STH 64, RT	15.4	CULVERT CROSS DRAIN PIPE
TOTAL				31	

BASE AGGREGATE DENSE 1 1/4-INCH					
STATION	TO	STATION	LOCATION	<u>305.0120</u> TON	REMARKS
68+92	-	70+03	STH 64, LT & RT	205	CULVERT CROSS DRAIN PIPE
68+23	-	71+00	STH 64, LEFT	464	*TEMPORARY LANE WIDENING
TOTAL				669	
*TEMPORARY AGGREGATE, REMOVE AND PLACE AT FIELD ENGINEER DIRECTION					

HMA PAVEMENT 4 LT 58-28 S					
STATION	TO	STATION	LOCATION	<u>460.5224</u> TON	REMARKS
68+92	-	71+03	STH 64	118	
TOTAL				118	

CULVERT PIPE SUMMARY								
STATION	LOCATION	<u>522.0142</u>	<u>521.3735</u>	<u>522.1042</u>	<u>521.1235</u>	<u>633.5200</u>	THICKNESS STEEL	COMMENTS
		CPRC CLASS III 42-INCH	PIPE ARCH CORR. STEEL 35x24-INCH	APRON ENDWALL CPRC 42-INCH	APRON ENDWALL FOR PIPE ARCH STEEL 35x24-INCH	CULVERT END MARKER		
		LF	LF	EACH	EACH	EACH	INCHES	
69+47	STH 64	129	-	2	-	2	-	CROSS DRAIN PIPE
PHASE 3	SWALE 1	-	48	-	2		0.079	SERVICE RD, CROSS DRAIN
TOTAL		129	48	2	2	2		
SEE PLAN FOR LOCATION								

SALVAGE CULVERT PIPE SUMMARY							
	LOCATION PHASE 3 SITE	<u>524.0112</u>	<u>524.0118</u>	<u>524.0124</u>	<u>524.0136</u>	<u>524.0642</u>	REMARKS
		CPCS 12-INCH LF	CPCS 18-INCH LF	CPCS 24-INCH LF	CPCS 36-INCH LF	ENDWALL 36-INCH EACH	
PIPE 1	-	42					
PIPE 2	-	40					
PIPE 3	-		31				
PIPE 4	-			26			
PIPE 5	-				29	1	
PIPE 6	-	22					
PIPE 7	-	8					
PIPE 8	-	34					
PIPE 9	-	27					
PIPE 10	-	40					
PIPE 11	-			26			
PIPE 12	-			34			
PIPE 13	-				30		
PIPE 14	-				31		
PIPE 15	-		60				
PIPE 16	-		54				
PIPE 17	-	40					
PIPE 18	-	16					
PIPE 19	-			30			
PIPE 20	-			40			
PIPE 21	-	19					
PIPE 22	-				36		
PIPE 23	-				26		
PIPE 24	-	16					
PIPE 25	-	25					
PIPE 26	-	42					
PIPE 27	-	8					
PIPE 28	-				45		
PIPE 29	-				30		
TOTAL		379	145	156	454	1	
SEE PLAN FOR EXACT PIPE LOCATIONS ALL SALVAGE PIPE LOCATIONS ARE WITHIN PHASE 3 SITE							

RIPRAP MEDIUM			
606.0200			
LOCATION		CY	REMARKS
BERM WEIR 1	PHASE 3 SITE	57	East-West Berm
BERM WEIR 2	PHASE 3 SITE	57	East-West Berm
WEIR 3, 69+47, LT	PHASE 3 SITE	57	START AT PROP CROSS DRAIN PIPE
PH 1-BERM OPENING 1	PHASE 1 SITE	344	CONSTRUCT RIPRAP OPENING
PH 1-BERM OPENING 2	PHASE 1 SITE	378	CONSTRUCT RIPRAP OPENING
PH 1-BERM2 WEIR 4	PHASE 1 SITE	57	CONSTRUCT BERM AND WEIR
SEE PLAN FOR LOCATION(S)		TOTAL	950

WATER					
624.0100					
STATION	TO	STATION	LOCATION	MGAL	REMARKS
68+95	-	70+00	STH 64, LT & RT	7	
TOTAL				7	

SALVAGED TOPSOIL			
625.0500			
STATION	LOCATION	SY	REMARKS
ENHANCE WETLAND GRADING SITE 1	PHASE 3	1300	ADJUSTED
68+39 - 70+75	STH 64, RT	242	CULVERT PIPE
68+95 - 70+00	STH 64, LT	573	CULVERT PIPE
TOTAL		2116	
SEE PLAN FOR SITE 1 LOCATION SALVAGED TOPSOIL TO BE USED WITHIN PHASE 3 & 1 FILL AREAS			

TRACKING PADS			
STATION	LOCATION	628.7560 EACH	REMARKS
STH 64, LT	PHASE 3, ENTRY	1	MATERIAL HAUL
STH 64, RT	PHASE 1, EXIT	1	MATERIAL HAUL
TOTAL		2	

EROSION CONTROL SUMMARY											
				627.0200 MULCH	628.1504 SILT FENCE	628.2004 EROSION MAT CLASS I TYPE B	628.7555 CULVERT PIPE CHECKS	629.0210 FERTILIZER TYPE B	630.0120 SEEDING MIXTURE NO. 20	630.0200 SEEDING TEMPORARY	
STATION	TO	STATION	LOCATION	SY	LF	SY	EACH	CWT	LB	LB	REMARKS
68+39	-	70+75	STH 64, LT	573		573		0.4	15		
68+96	-	70+75	STH 64, RT	242		242		0.2	7		
68+85	-	71+00	STH 64, LT		215						
67+50	-	70+25	STH 64, RT		275						
78+00	-	78+90	STH 64, RT		200						
-		95+48	STH 64, LT & RT				4				
-		69+49	STH 64, LT & RT				2				
-		78+90	STH 64, LT & RT				2				
SALVAGE TOPSOIL STORAGE SITE									4661	4661	
TOTAL				816	690	816	8	1	4683	4661	

GEOTEXTILE TYPE HR			
645.0120			
	LOCATION	SY	REMARKS
BERM WEIR 1	PHASE 3 SITE	114	
BERM WEIR 2	PHASE 3 SITE	114	
WEIR 3, STH 64 LEFT	PHASE 3 SITE	114	
BERM OPENING	PHASE 3 SITE	166	
BERM WEIR 4	PHASE 3 SITE	114	
TOTAL		622	

GEOTEXTILE TYPE SAS					
645.0140					
STATION	TO	STATION	LOCATION	SY	REMARKS
68+25	-	70+63	STH 64, LT	377	STAGE ,1 LANE SHIFT
TOTAL				377	

TRAFFIC CONTROL SUMMARY											
SIGN		SIGN CODE	SIZE W x H	TOTAL NUMBER IN	TOTAL SERVICE PERIOD	643.5000	643.0900	643.0300	643.0420	643.1050	COMMENTS
				SERVICE	DAY	TRAFFIC CONTROL SIGNS EACH	TRAFFIC CONTROL SIGNS DAYS	TRAFFIC CONTROL DRUMS DAYS	TRAFFIC CONTROL BARRICADES TYPE III DAYS	TRAFFIC CONTROL SIGNS PCMS DAYS	
	STH 64, CROSS DRAIN INSTALLATION	-	-			1					
	STH 64, WB TRAFFIC, PROJECT LIMITS	-	-	1	7					7	INSTALL PRIOR TO CULVERT WORK
	STH 64, EB TRAFFIC, PROJECT LIMITS	-	-	1	7					7	
1	END ROAD WORK	G20-2A	48" x 24"	2	3		6				
2	ROAD WORK AHEAD	W20-1A	48" x 48"	2	3		6				
3	ONE LANE ROAD AHEAD	W20-4A	48" x 48"	2	2		4				
4	FLAGGER SYMBOL	W20-7A	48" x 48"	2	2		4				
5	BE PREPARED TO STOP	W03-4	48" x 48"	2	2		4				
6	WORK WITHIN SHOULDERS	W21-5	48" x 48"	2	1		2				
7	ROAD NARROWS	W05-1	48" x 48"	2	1		2				
8	TRUCK ENTERING AND LEAVING SITES	W20-1A	48" x 48"	2	14		28				CROSS TRAFFIC MATERIAL HAUL
	DRUMS, STH64 (68+00 - 73+00)		-	32	3			96			CULVERT PIPE INSTALLATION
	TYPE III BARRICADES, MITIGATION SITE(S) ENTRY & EXIST		-	2	14				28		CROSS TRAFFIC MATERIAL HAUL
TOTAL						1	56	96	28	14	

MARKING LINE EPOXY 4-INCH						
646.1020						
STATION	TO	STATION	LOCATION	WHITE	YELLOW	REMARKS
				LT & RT	12.5'	
				SOLID	DASH	
69+00	-	70+00	STH 64	LF	LF	CULVERT CROSS DRAIN PIPE
TOTAL				200	75	
				275		

CONSTRUCTION STAKING PIPE CULVERTS			
650.6000			
STATION	LOCATION	EACH	REMARKS
69+46	STH 64	1	ONE CULVERT CROSS DRAIN PIPE
SERVICE ROAD	PHASE 3	1	CROSS DRAIN PIPE
TOTAL		2	

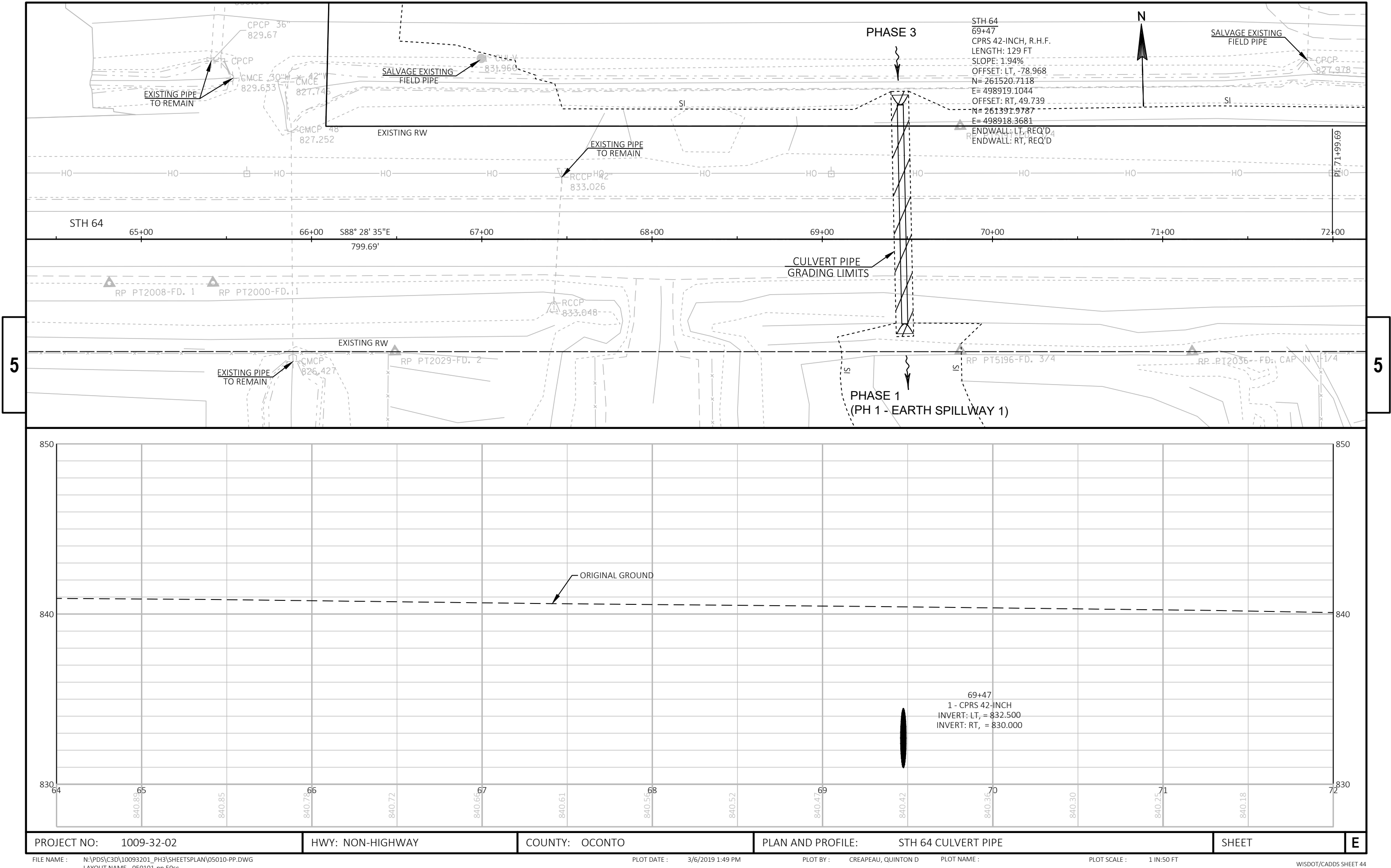
SAWING ASPHALT			
690.0150			
STATION	LOCATION	LF	REMARKS
68+92	STH 64	32	
70+03	STH 64	32	
TOTAL		64	

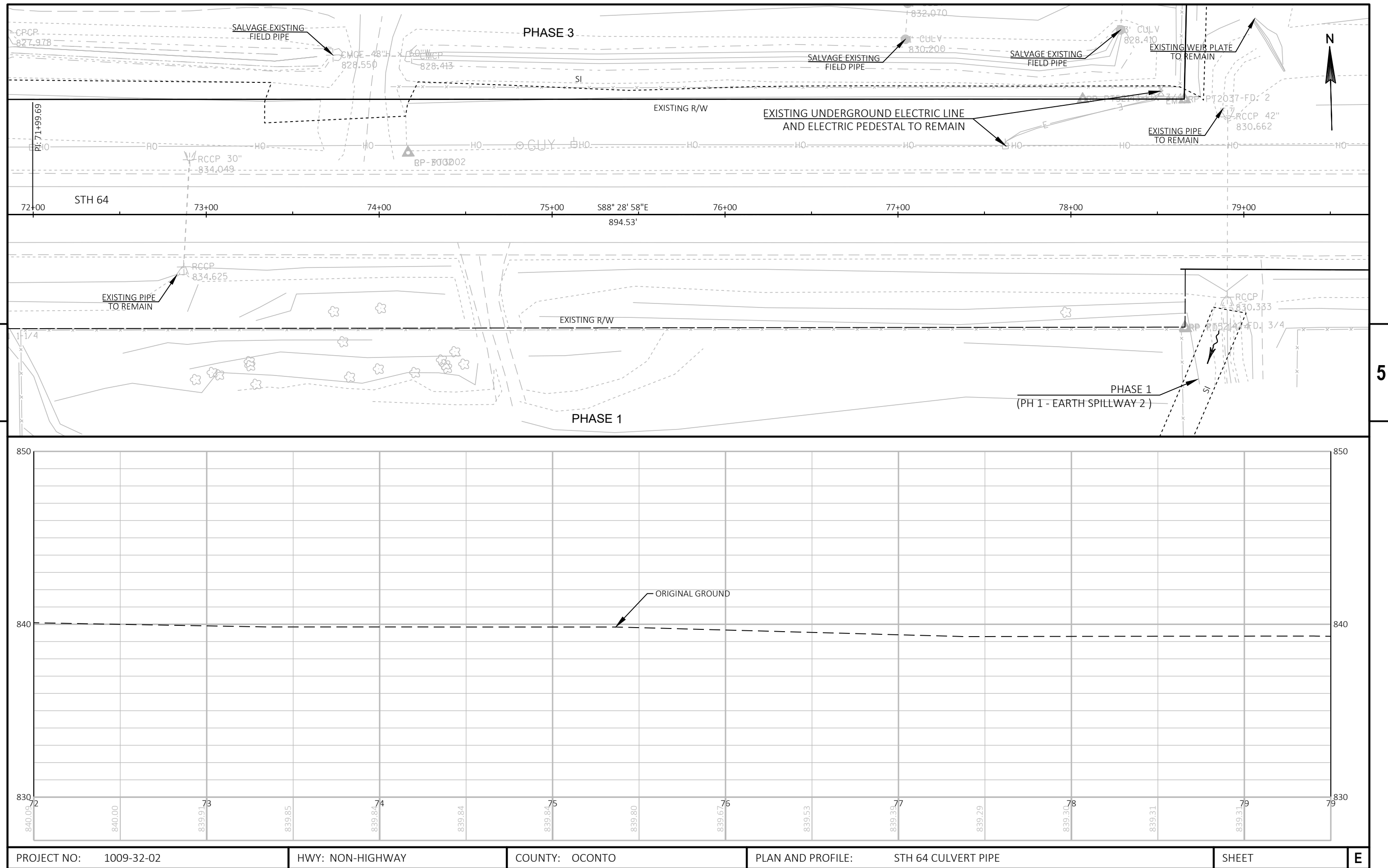
SALVAGE AND STOCKPILE TOPSOIL, ITEM SPV.0035.01.		
SPV.0035.01		
LOCATION	CY	REMARKS
ENHANCE WETLAND GRADING SITE 1	4235	PHASE 3
ENHANCE WETLAND GRADING SITE 2	7157	PHASE 3
ENHANCE WETLAND GRADING SITE 3	7135	PHASE 3
ENHANCE WETLAND GRADING SITE 4	2348	PHASE 3
ENHANCE WETLAND GRADING SITE 5	4125	PHASE 3
TOTAL		25000
SEE PLAN FOR STOCKPILE SITE LOCATION		

MITIGATION SITE SEEDING SUMMARY				
SEED MIX	LOCATION	SPV.0085.01	SPV.0085.02	
		LB/ACRE	LB/ACRE	
UPLAND MIX	PHASE 3 & 1	1236	-	
WETLAND MIX	PHASE 3 & 1	-	2426	
		1236	2426	
SEE PLAN FOR SEEDING BOUNDARIES				

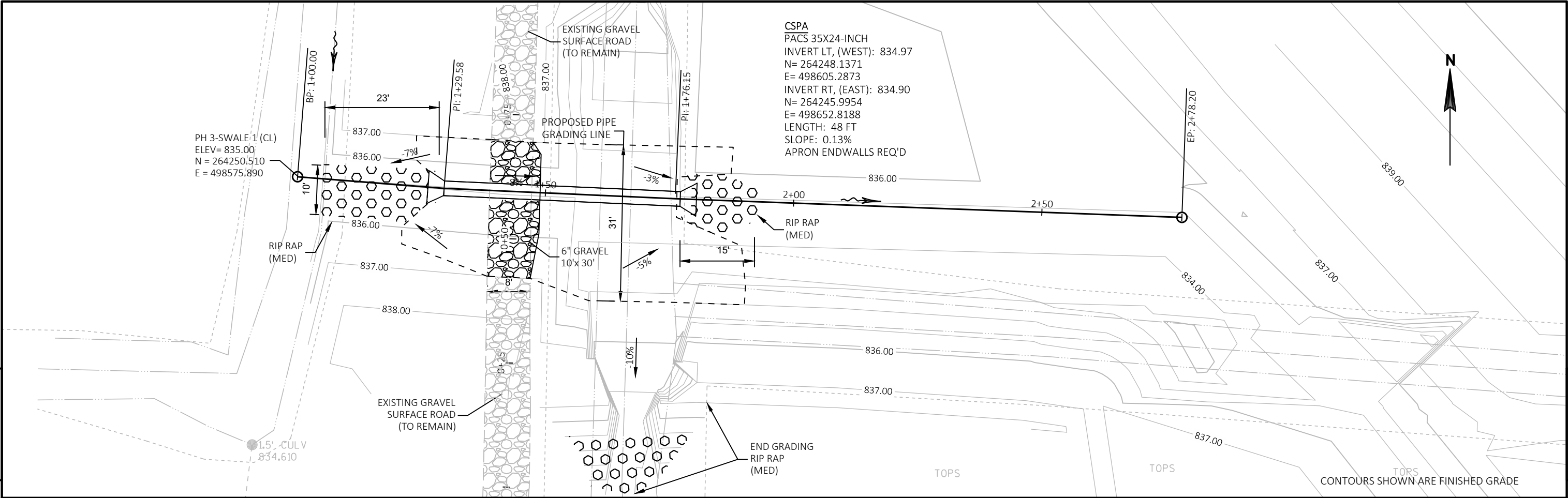
WEIR PLATE, SPV.0165.001			
SPV.0165.01			
	LOCATION	SF	REMARKS
WEIR PLATE 1	BERM 1, PHASE 3 SITE	186	WITHIN BERM
WEIR PLATE 2	BERM 2, PHASE 3 SITE	186	WITHIN BERM
WEIR PLATE 3	STH 64, LT FIELD DITCH	186	NO BERM
WEIR PLATE 4	BERM 3, PHASE 1 SITE	186	WITHIN BERM
TOTAL		744	
SEE PLAN FOR EXACT WEIR LOCATIONS			

TREE TUBE REMOVAL		
SPV.0105.01		
LOCATION	LS	REMARKS
PHASE 1 AND 2	1	
TOTAL		1
SEE PLAN FOR GENERAL LOCATIONS		

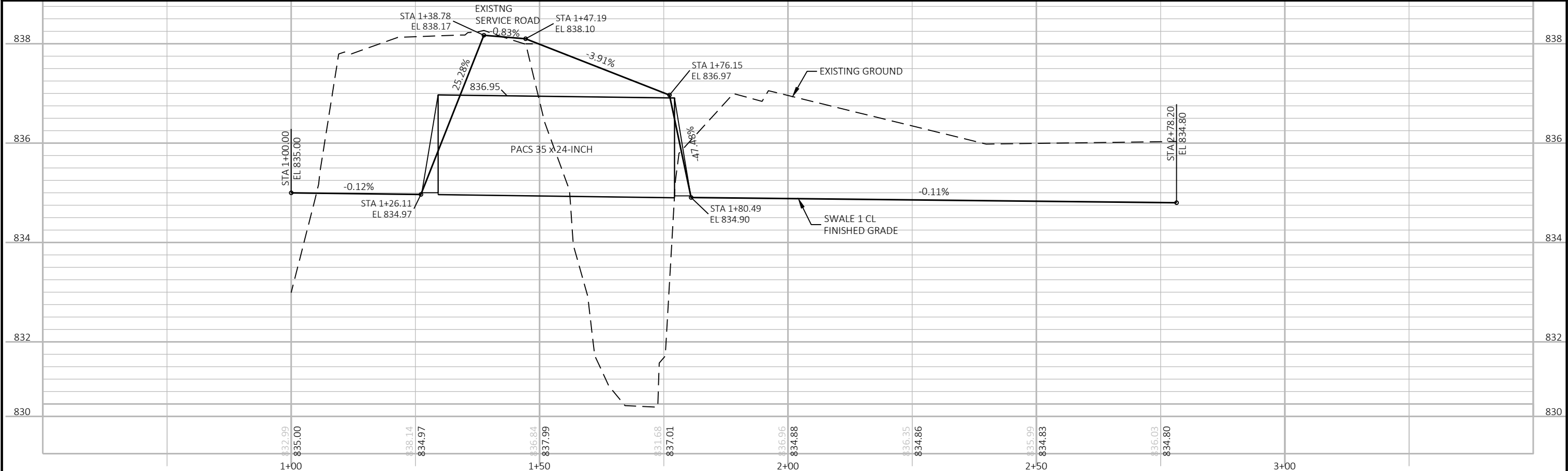




5



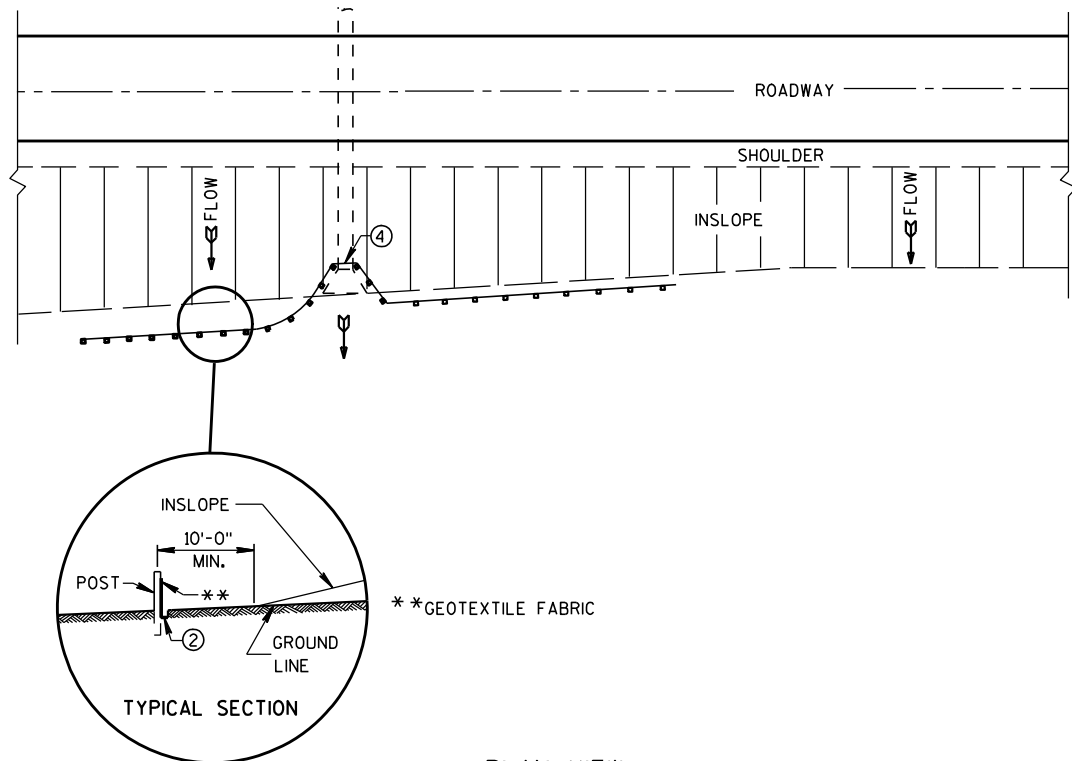
5



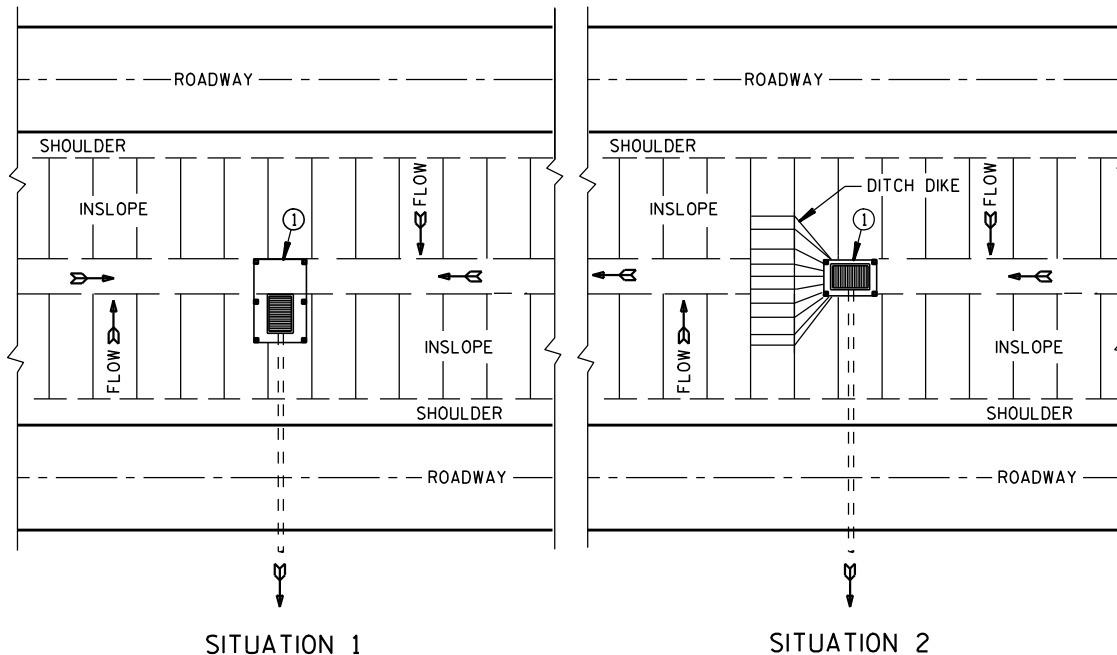
PROJECT NO: 1009-32-02	HWY: NON-HIGHWAY	COUNTY: OCONTO	PLAN AND PROFILE: SERVICE ROAD CROSS DRAIN CULVERT PIPE (PH 3 SWALE 1)	SHEET	E
------------------------	------------------	----------------	---	-------	---

Standard Detail Drawing List

08E09-06	SILT FENCE
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-19A	LONGITUDINAL MARKING (MAINLINE)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D29-05	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING



PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE

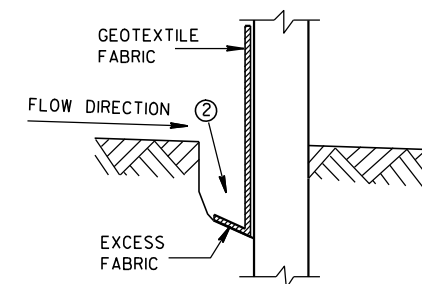


PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

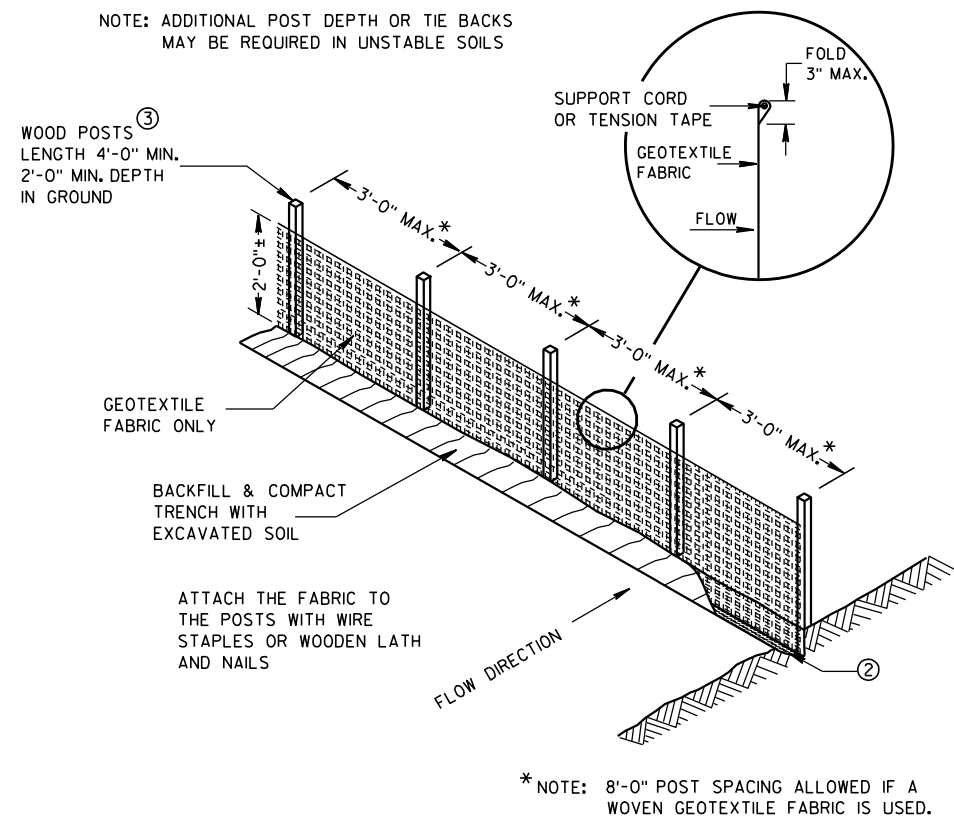
GENERAL NOTES

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

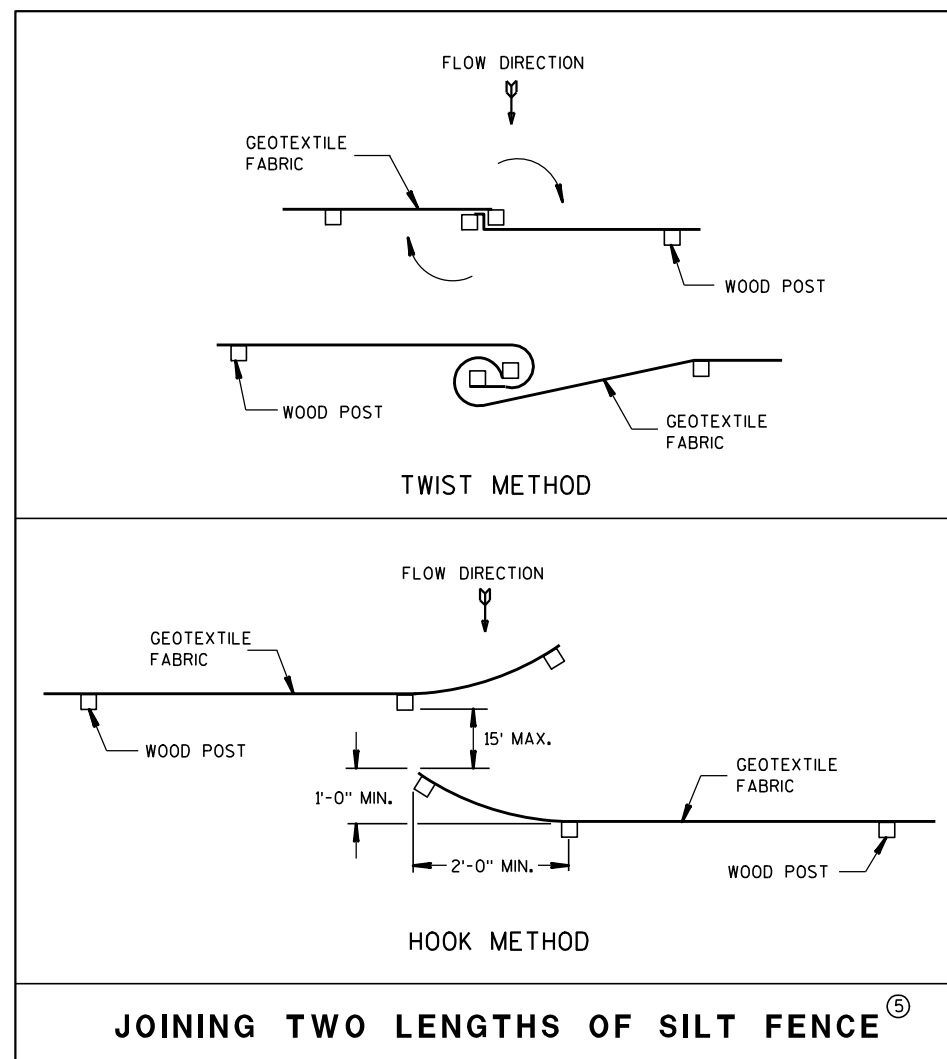
- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 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.



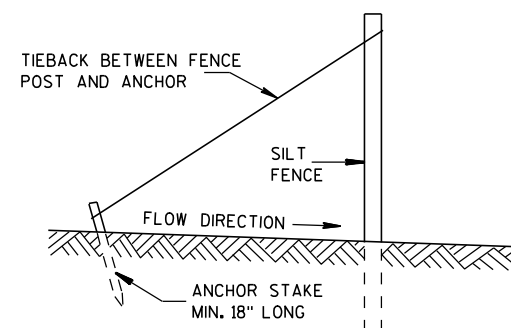
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE ⑤

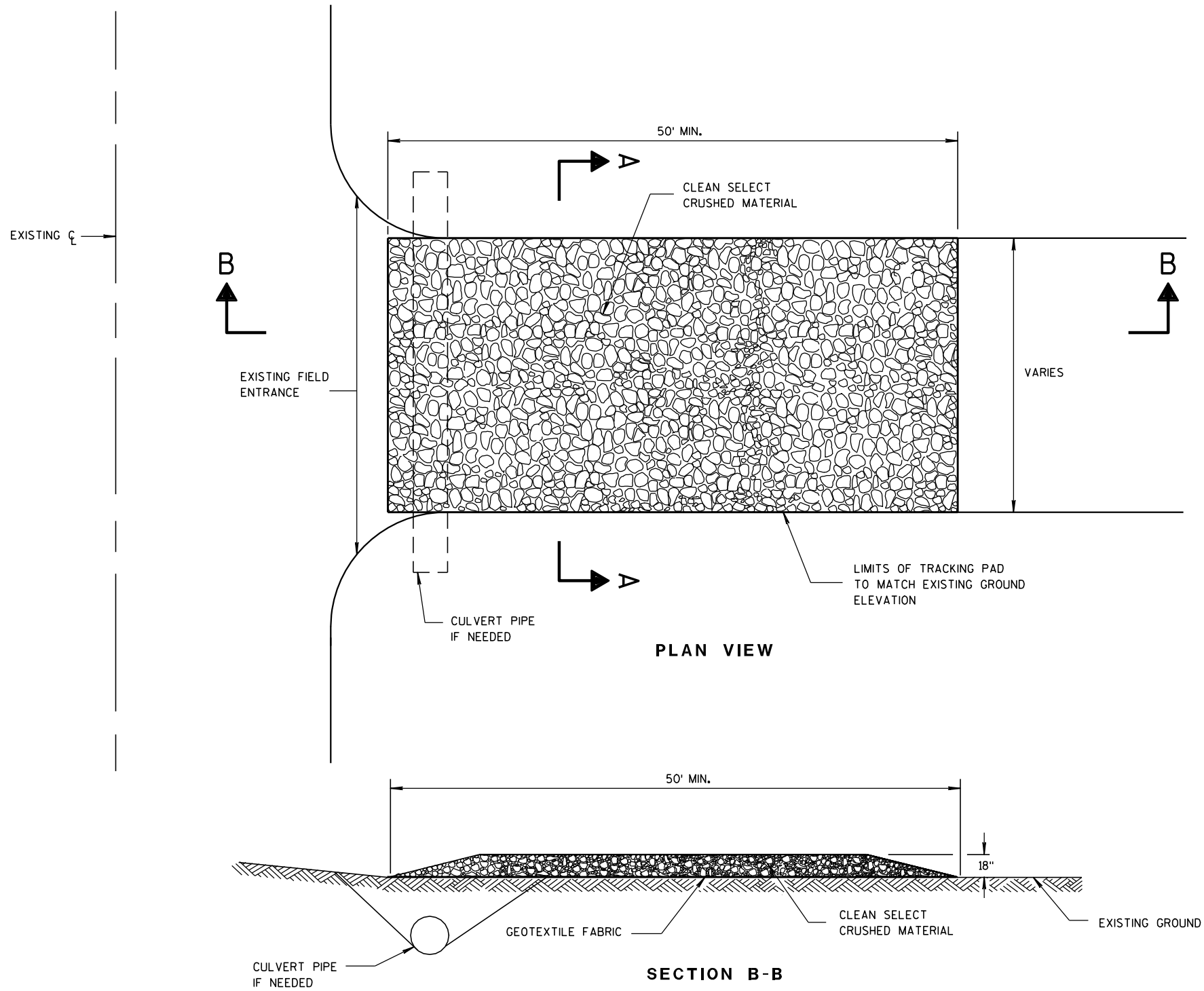


SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05 /S/ Beth Cannestra
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



TRACKING PAD

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.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

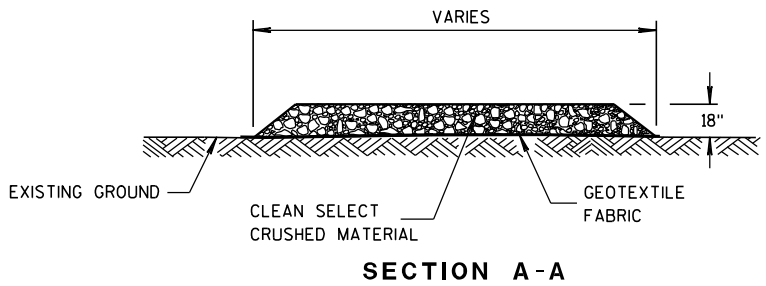
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



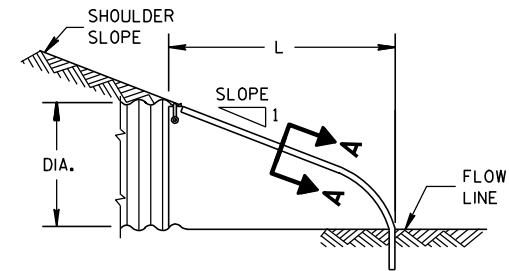
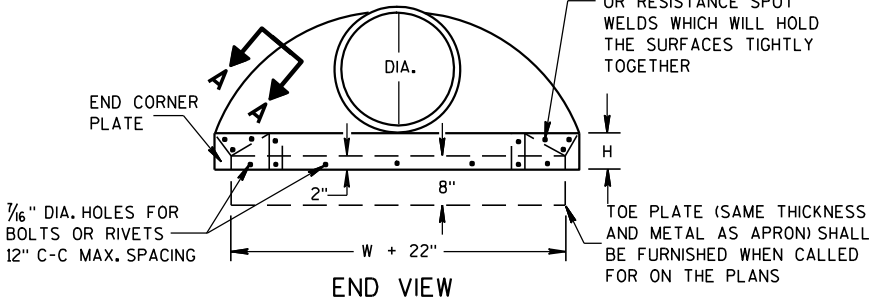
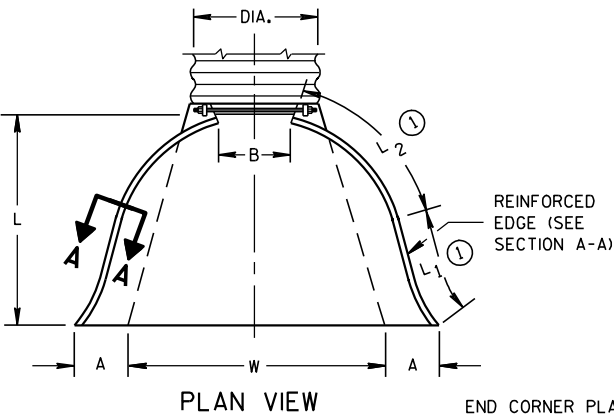
TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3/24/2011
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA

METAL APRON ENDWALLS												
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")			
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.	
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.	
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.	
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.	
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.	
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.	
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.	
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.	
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.	
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.	
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3 Pc.	
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3 Pc.	
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3 Pc.	
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.	
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.	
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.	
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.	

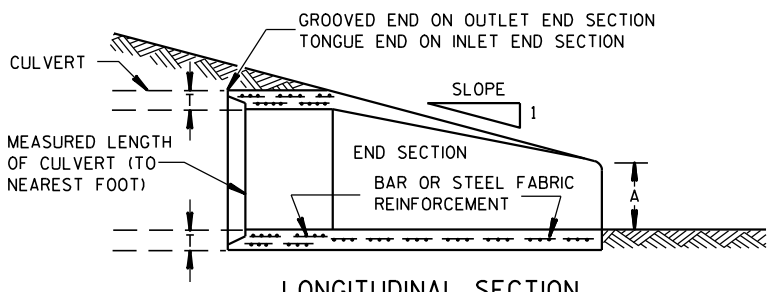
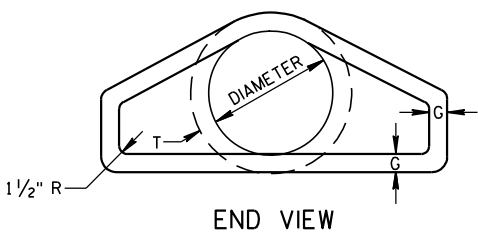
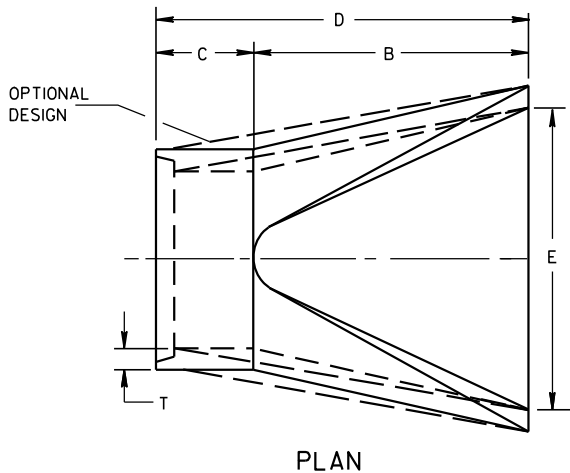
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

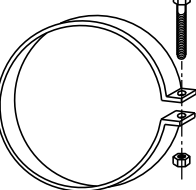
REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ² / ₂	9	27	46	73	36	2 ² / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	3 to 1
27	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	3 to 1
30	3 ¹ / ₂	12	54	19 ³ / ₄	73 ¹ / ₂	60	3 ¹ / ₂	3 to 1
36	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	3 to 1
42	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 ¹ / ₂	27	65	^{**} / ₃₃ 4- ^{**} / ₃₅	^{**} / ₉₈ 4- ^{**} / ₁₀₀	90	5 ¹ / ₂	2 ² / ₅ to 1
60	6	^{**} / ₃₀ - ^{**} / ₃₅	60	39	99	96	5	2 to 1
66	6 ¹ / ₂	^{**} / ₂₄ - ^{**} / ₃₀	^{**} / ₇₂ - ^{**} / ₇₈	^{**} / ₂₁ - ^{**} / ₂₇	99	102	5 ¹ / ₂	2 to 1
72	7	^{**} / ₂₄ - ^{**} / ₃₆	78	21	99	108	6	2 to 1
78	7 ¹ / ₂	^{**} / ₂₄ - ^{**} / ₃₆	78	21	99	114	6 ¹ / ₂	2 to 1
84	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂ to 1
90	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	1 ¹ / ₂ to 1

* MINIMUM
** MAXIMUM

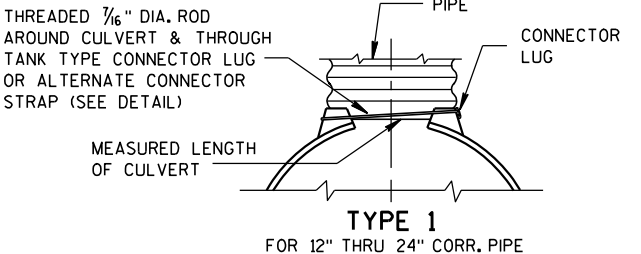


LONGITUDINAL SECTION
CONCRETE ENDWALLS

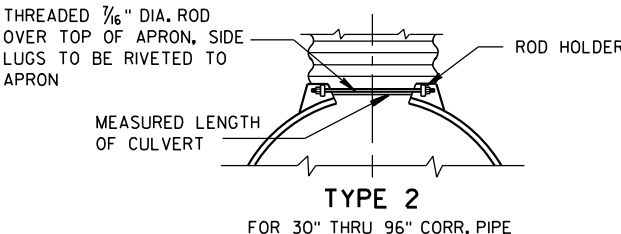
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



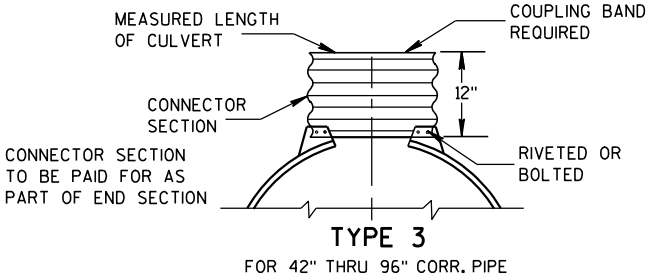
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



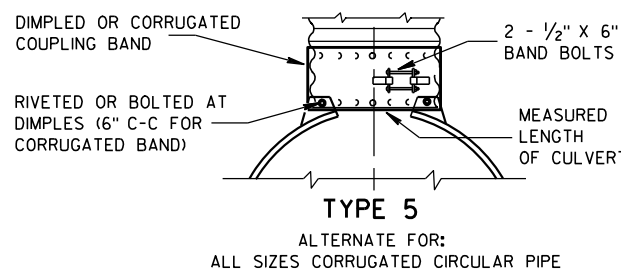
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

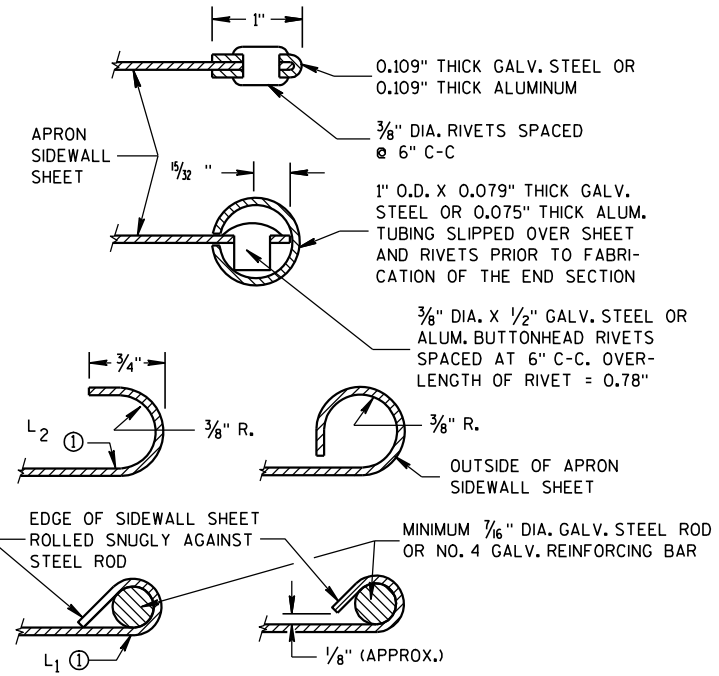
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

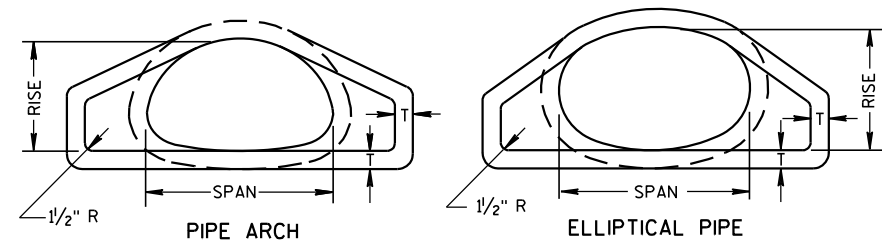
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

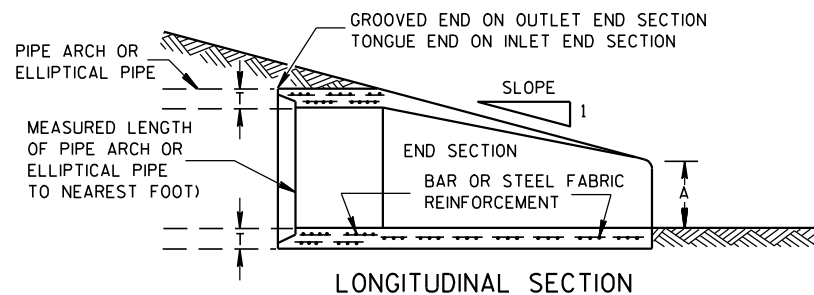
APRON ENDWALLS FOR
CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

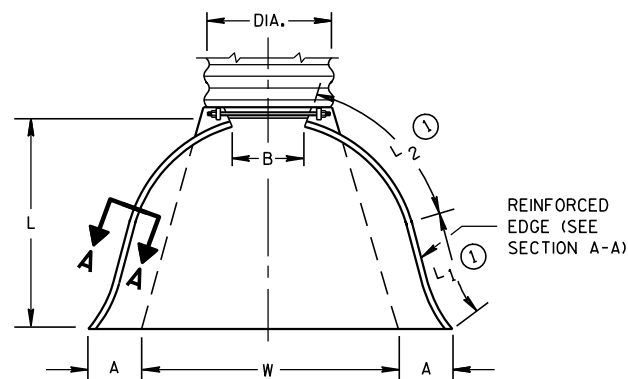


END VIEW

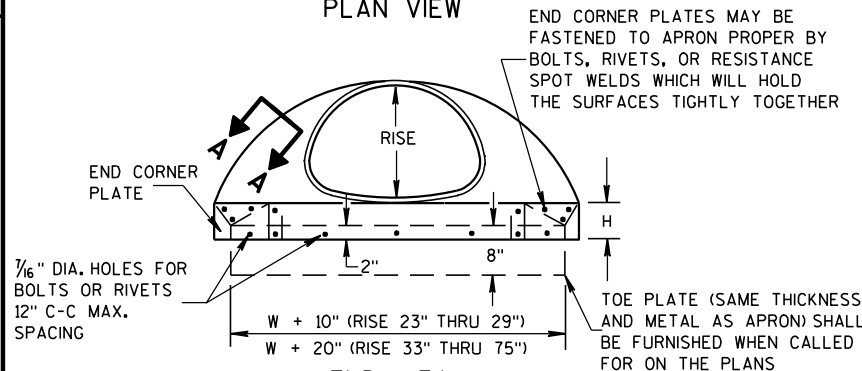


LONGITUDINAL SECTION

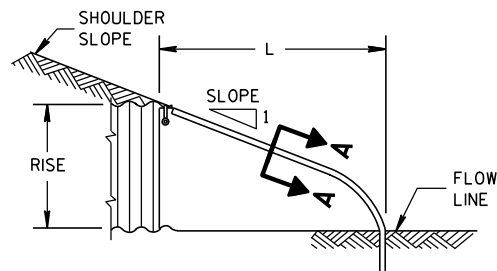
CONCRETE ENDWALLS



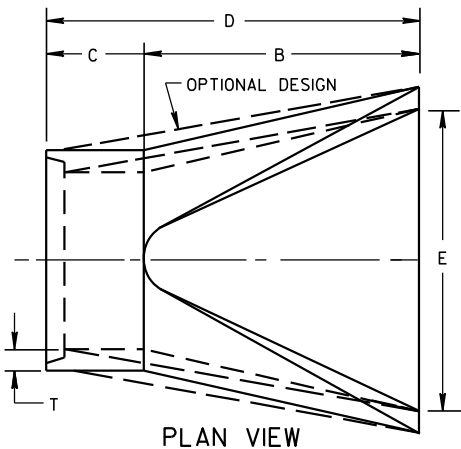
PLAN VIEW



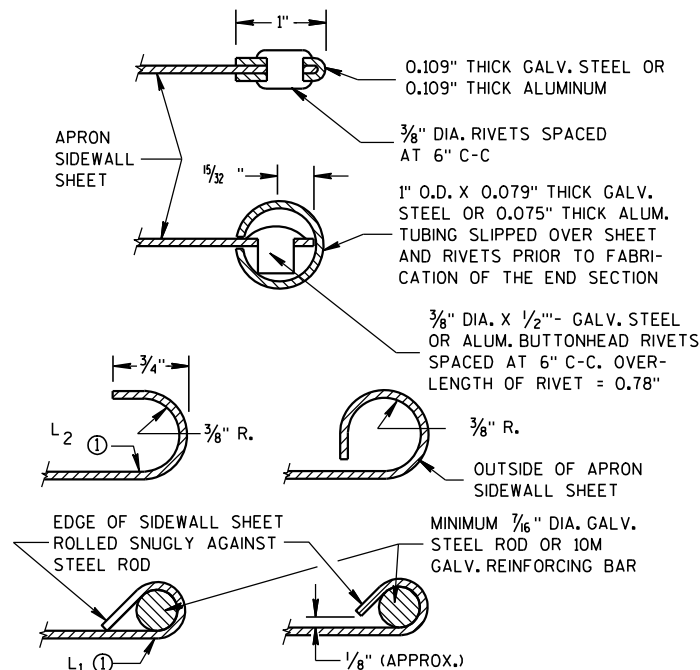
END VIEW



SIDE ELEVATION
METAL ENDWALLS



PLAN VIEW



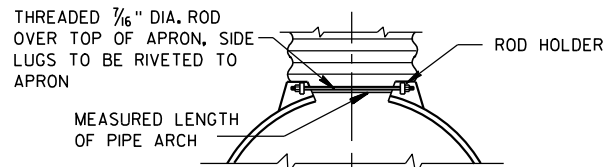
SECTION A-A

2- 2⅔" X ½" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A	B	H	L	L1	L 2	W		
					(±1")	(MAX.)	(±1")	(±1½")	①	①	(±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2½ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19⅜	36	2½ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21¾	42	2½ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27½	48	2½ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37⅝	60	2½ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45⅝	75	2½ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54¾	85	2½ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2½ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72¾	102	2¼ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82¼	114	2¼ to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A	B	H	L	L ₁	L ₂	W		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

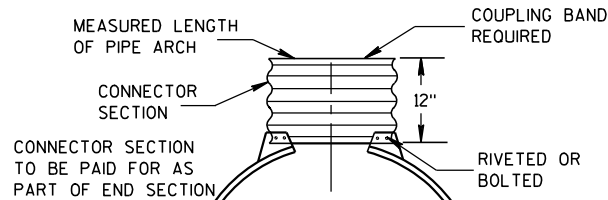
NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



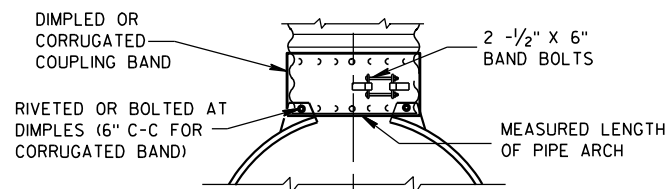
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE	
	** SPAN	** RISE	T	A	B	C	D	E		
24	29	18	3	8 1/2	39	33	72	48	3 to 1	
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1	
36	44	27	4	11 1/8	60	36	96	72	3 to 1	
42	51	31	4 1/2	15 1/16	60	36	96	78	3 to 1	
48	58	36	5	21	60	36	96	84	3 to 1	
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1	
60	73	45	6	31	60	36	96	96	3 to 1	
72	88	54	7	31	60	39	99	120	2 to 1	
84	102	62	8	28 1/2	83	19	102	144	2 to 1	

REINFORCED CONCRETE ELLIPTICAL PIPE										
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE	
	** SPAN	** RISE	T	A	B	C	D	E		
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1	
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1	
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1	
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1	
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1	
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1	
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1	

**NOMINAL SIZE

GENERAL NOTES

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

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

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

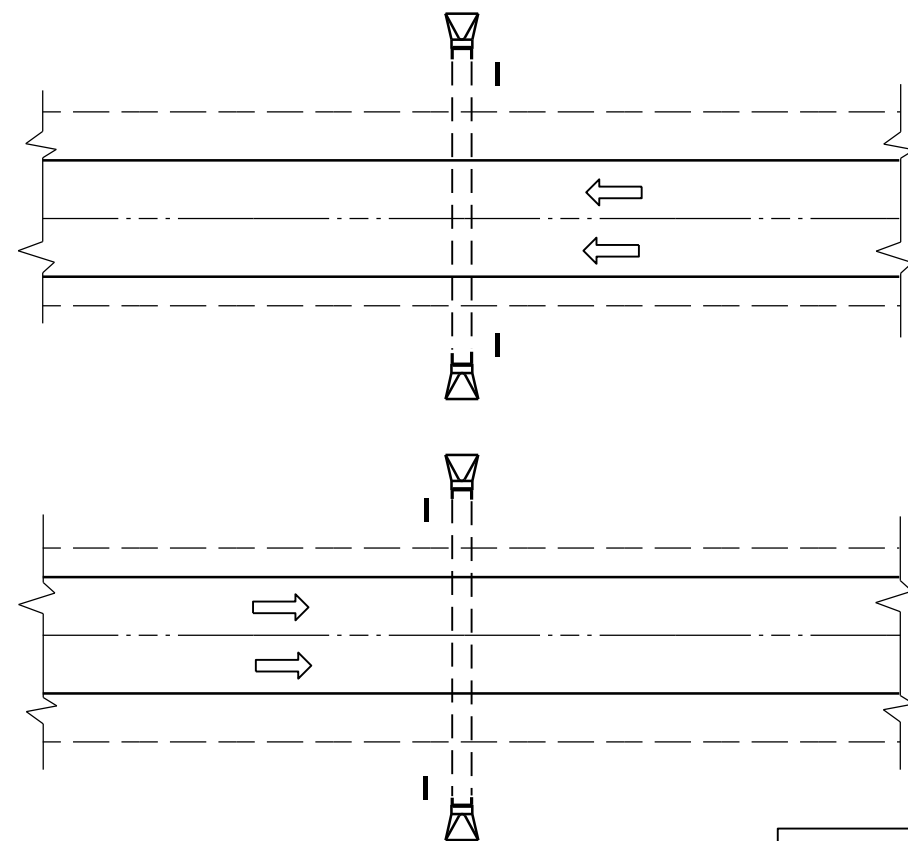
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

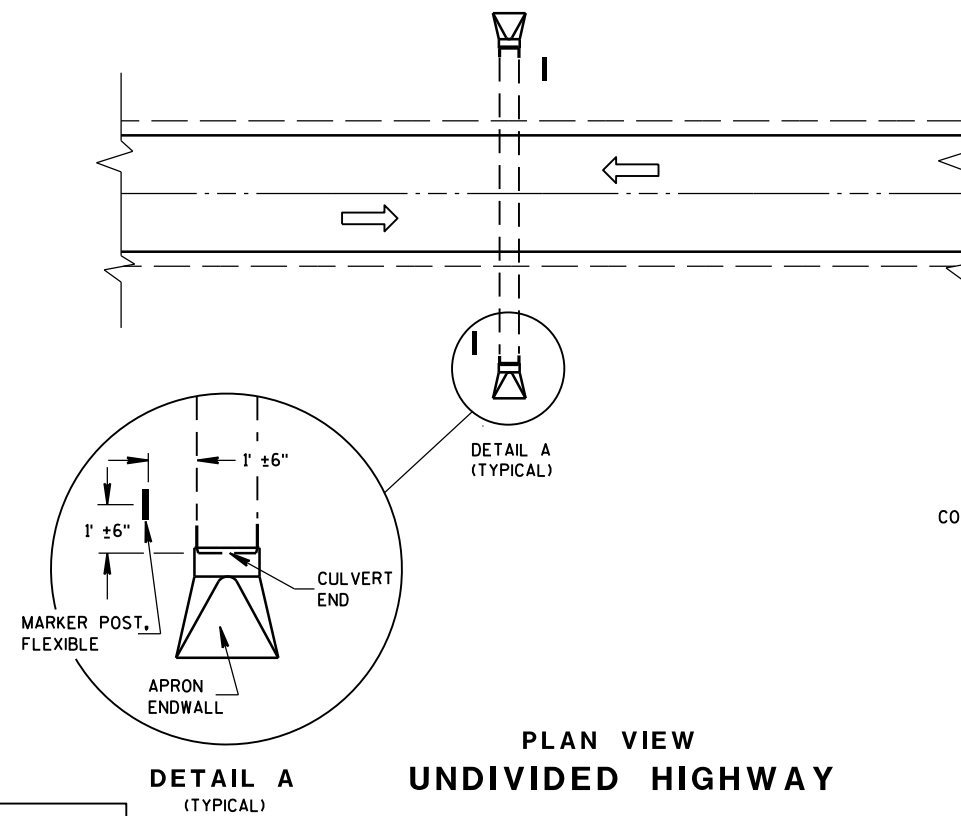
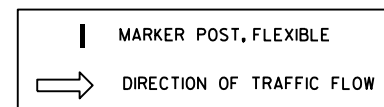
APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 /S/ Rory L. Rhinesmith
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



PLAN VIEW
DIVIDED HIGHWAY

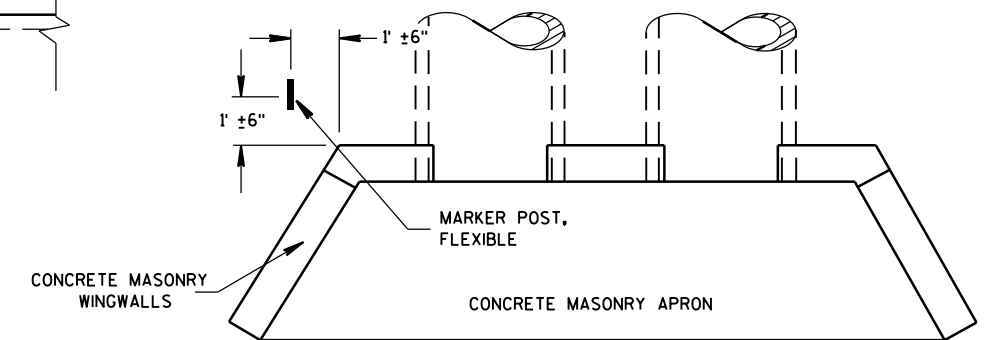


PLAN VIEW
UNDIVIDED HIGHWAY

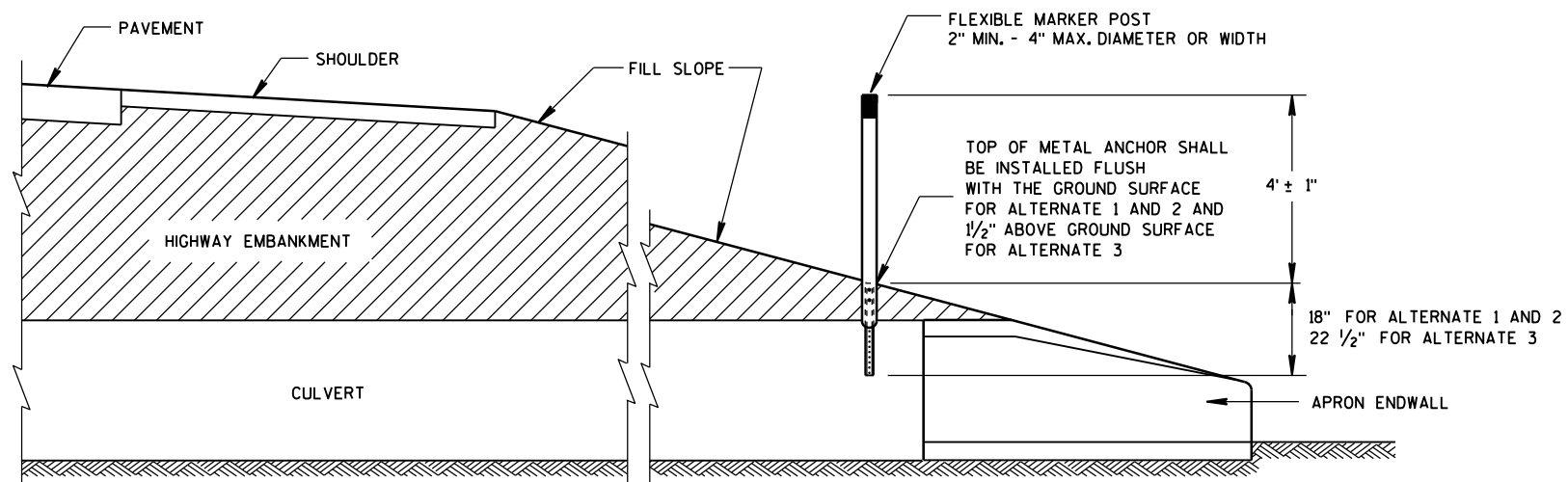
FLEXIBLE MARKER POST LOCATION

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.



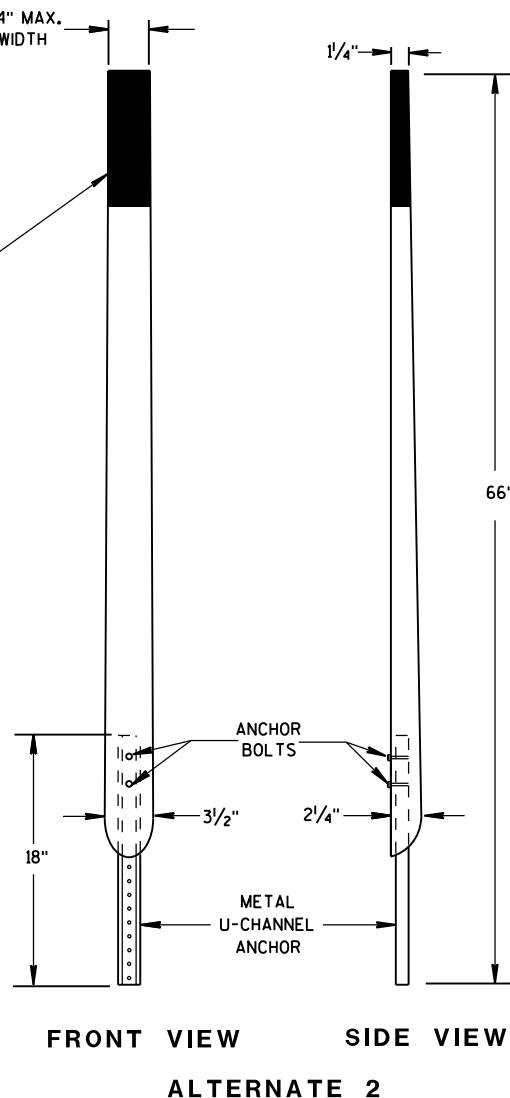
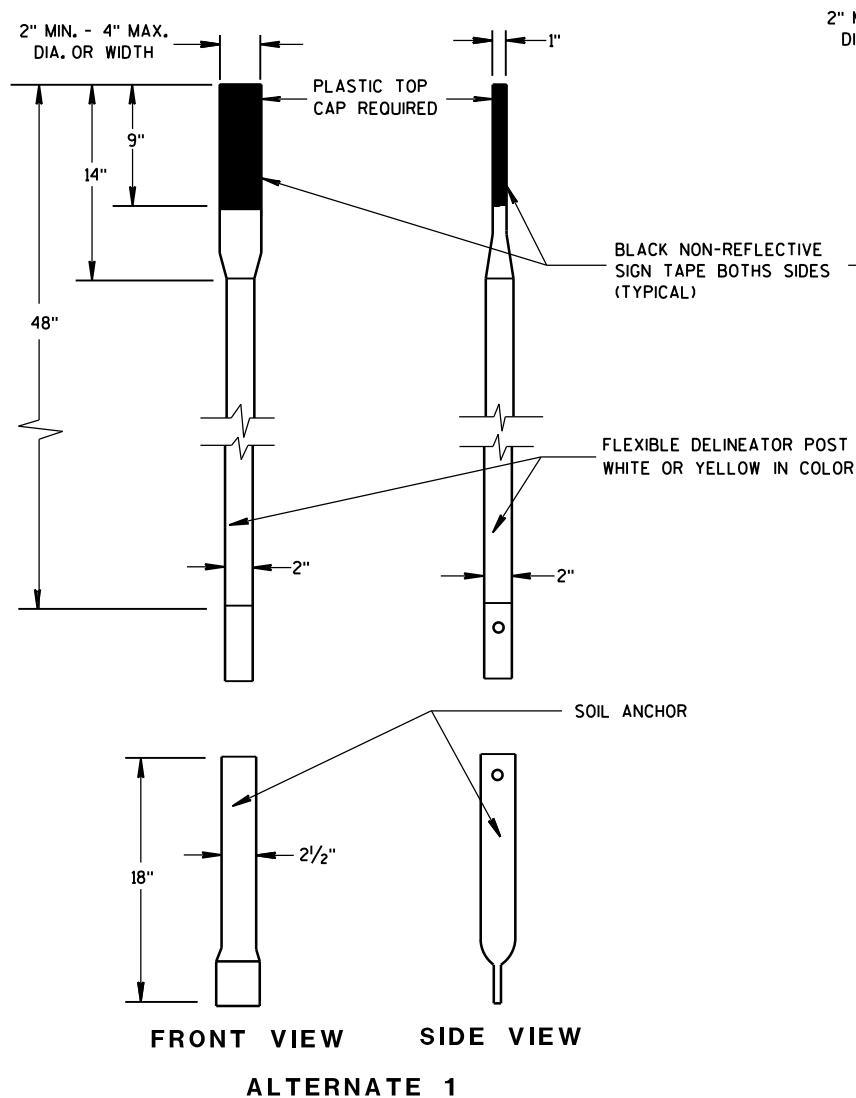
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



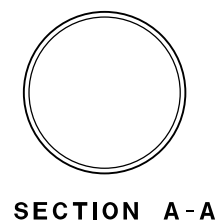
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

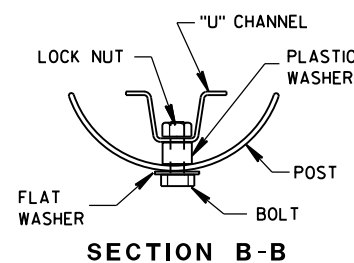
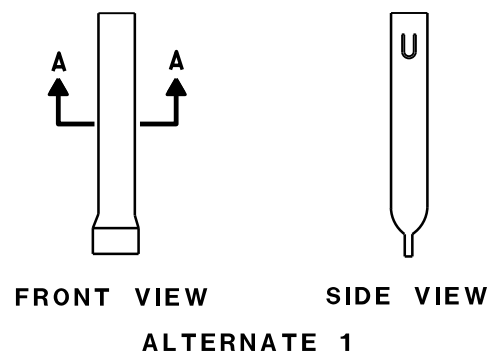
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



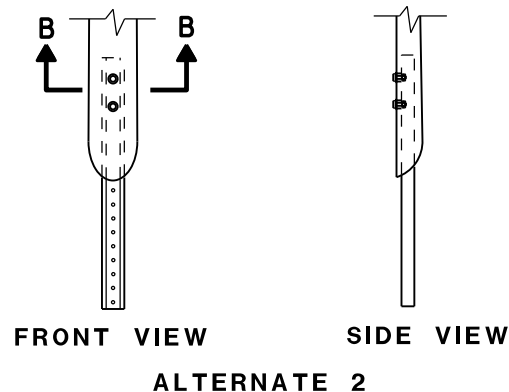
FLEXIBLE MARKER POSTS



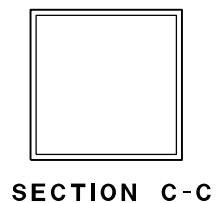
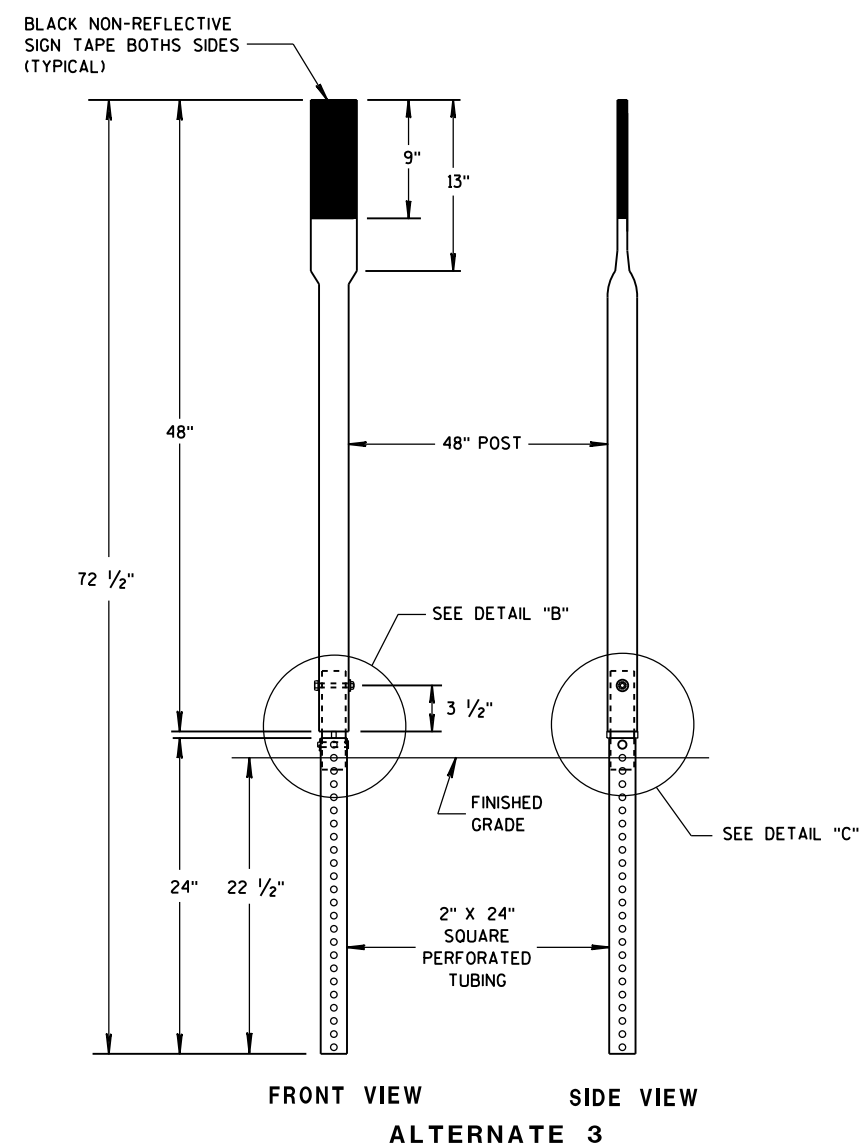
SECTION A-A



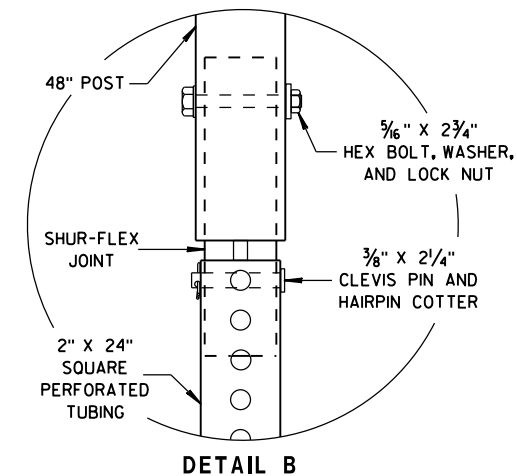
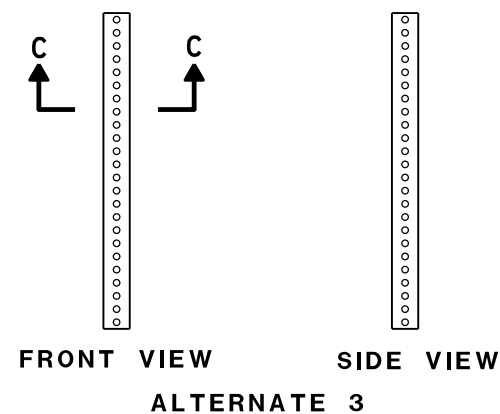
SECTION B-B



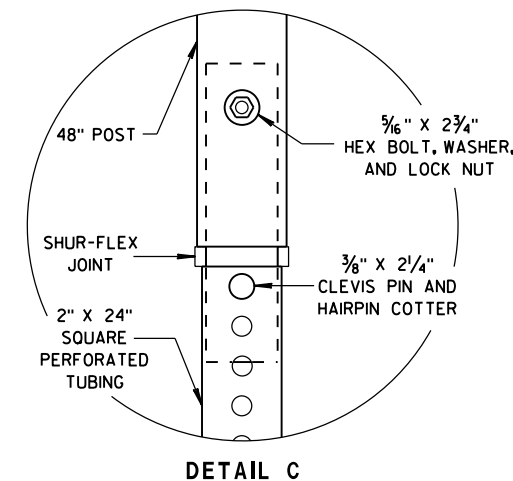
FLEXIBLE MARKER POST ANCHORS



SECTION C-C



DETAIL B

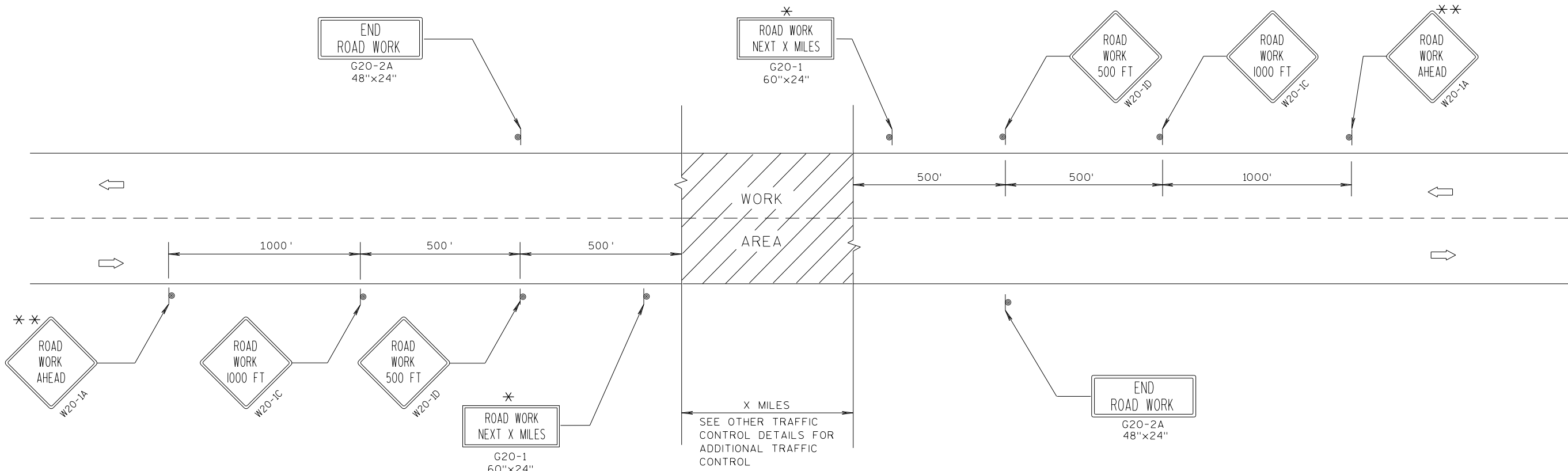


DETAIL C

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



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.

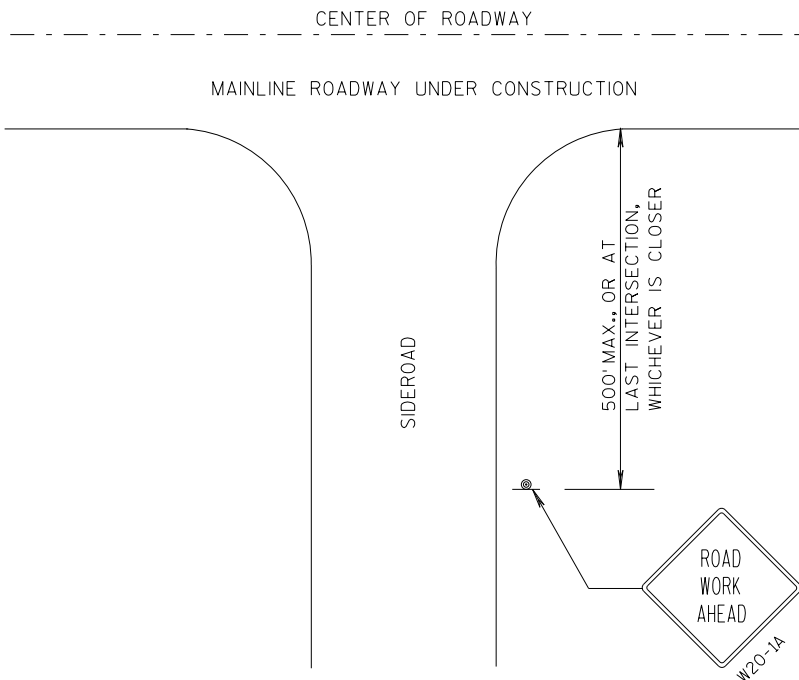
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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.



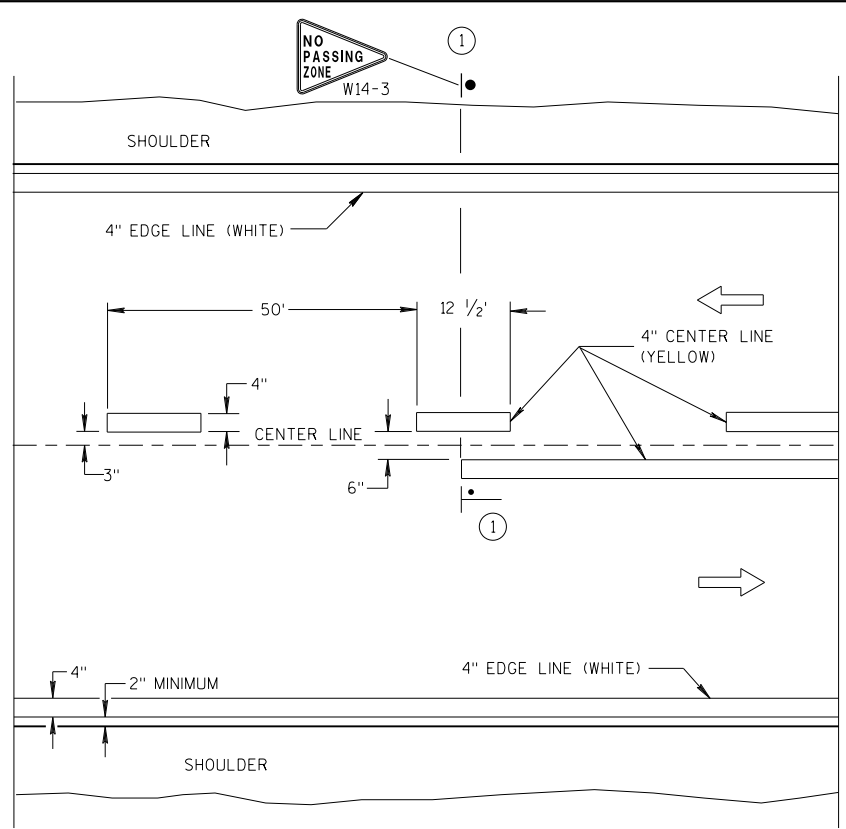
LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

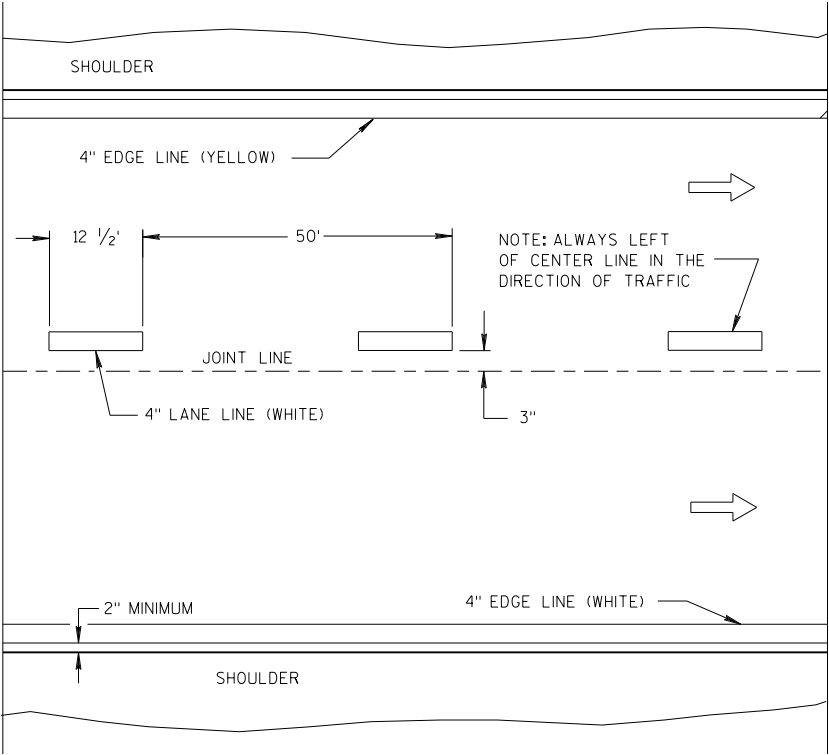
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

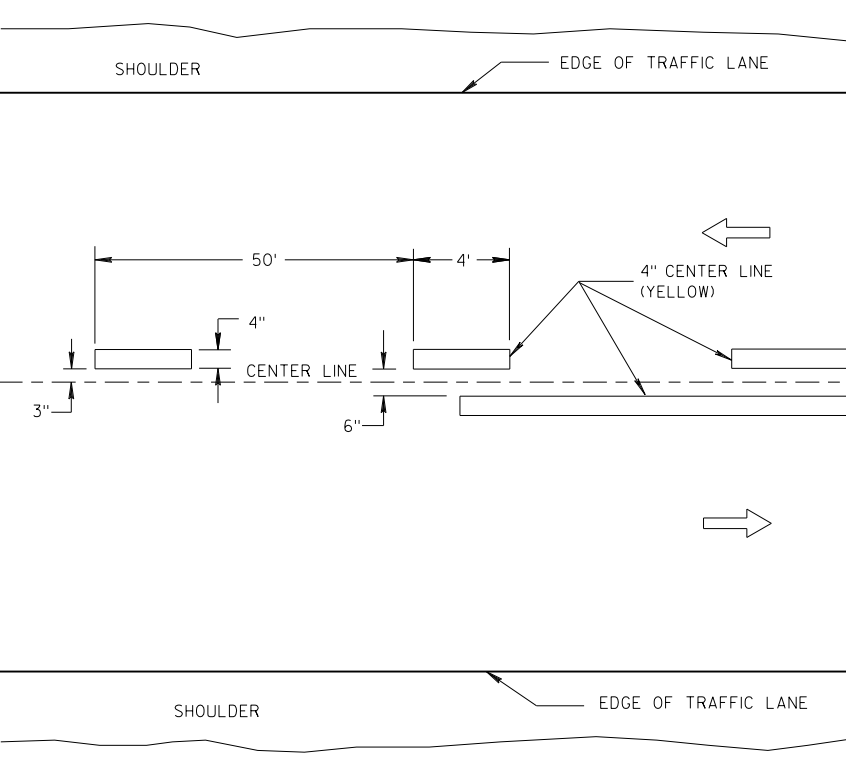


TWO WAY TRAFFIC

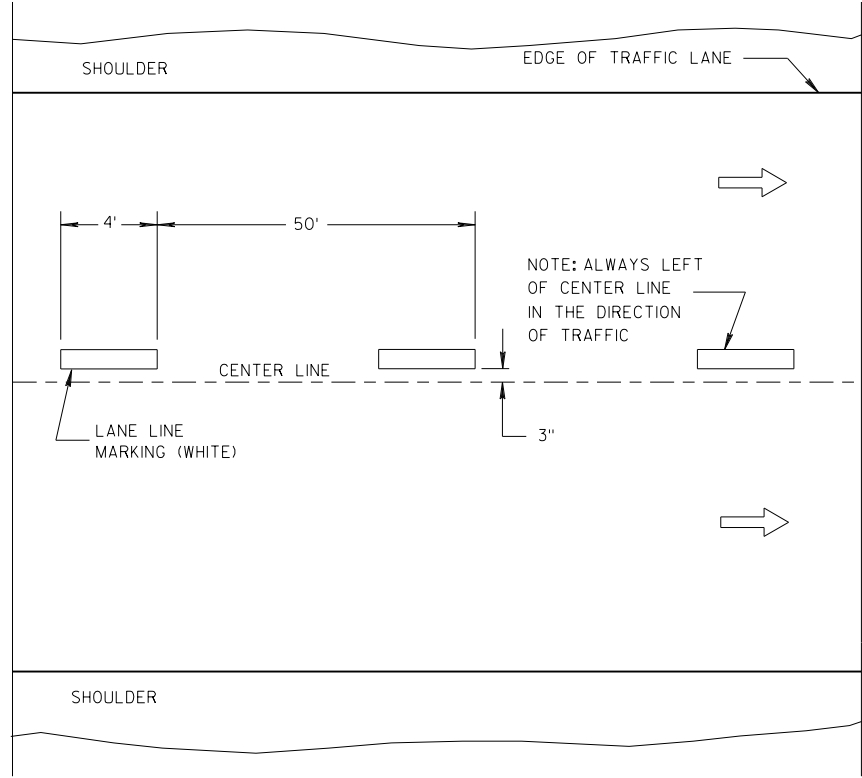


ONE WAY TRAFFIC

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 LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (➡) SHOWS DIRECTION OF TRAVEL

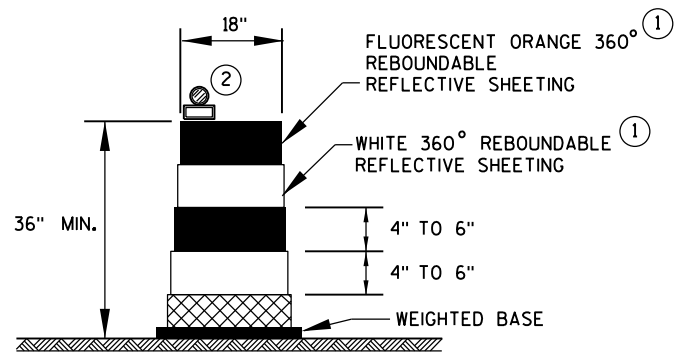
LEGEND

- "T" MARKING
- POST MOUNTED SIGN

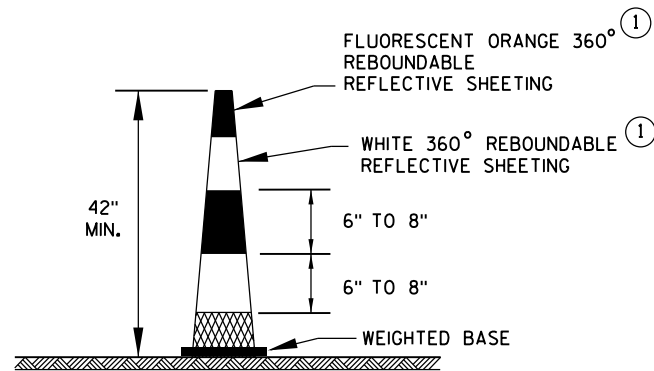
LONGITUDINAL MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA



DRUM

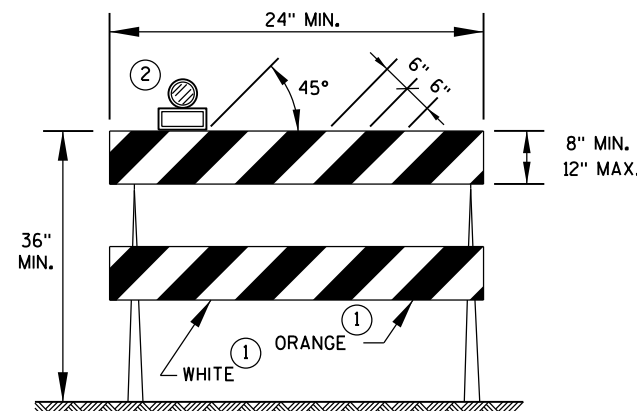


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

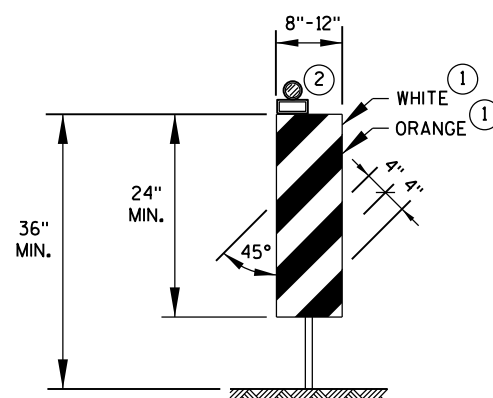
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



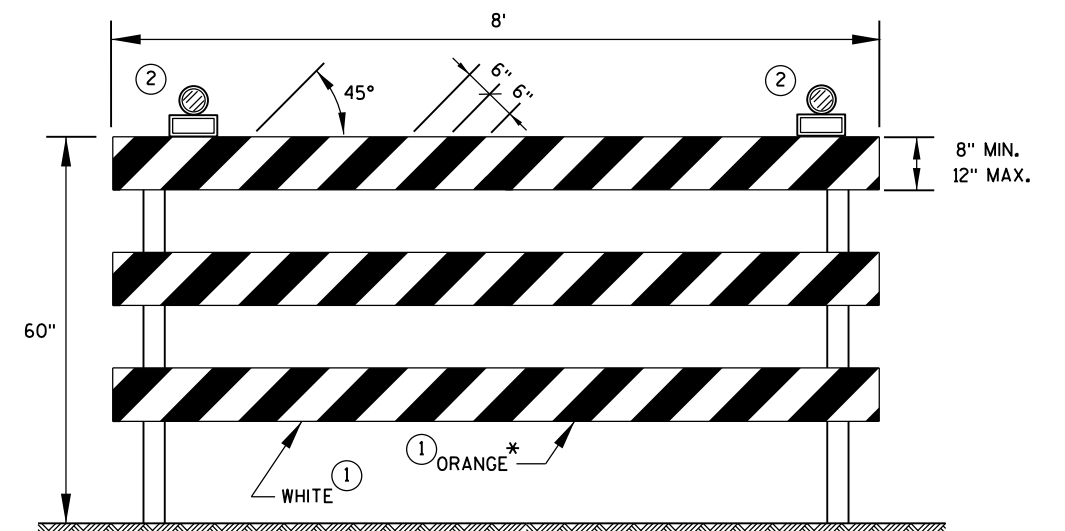
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

LEGEND

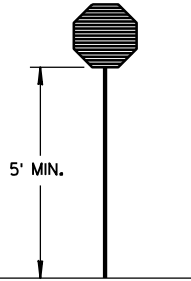
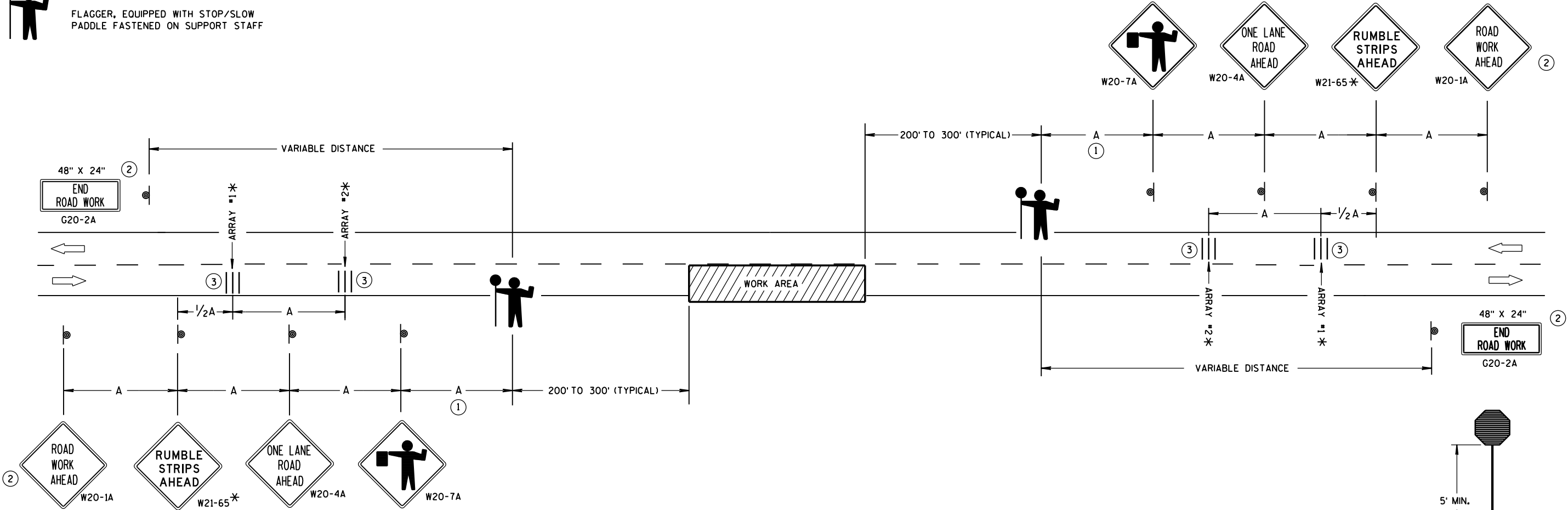
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

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.



STOP/SLOW PADDLE ON SUPPORT STAFF

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
June 2017 /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

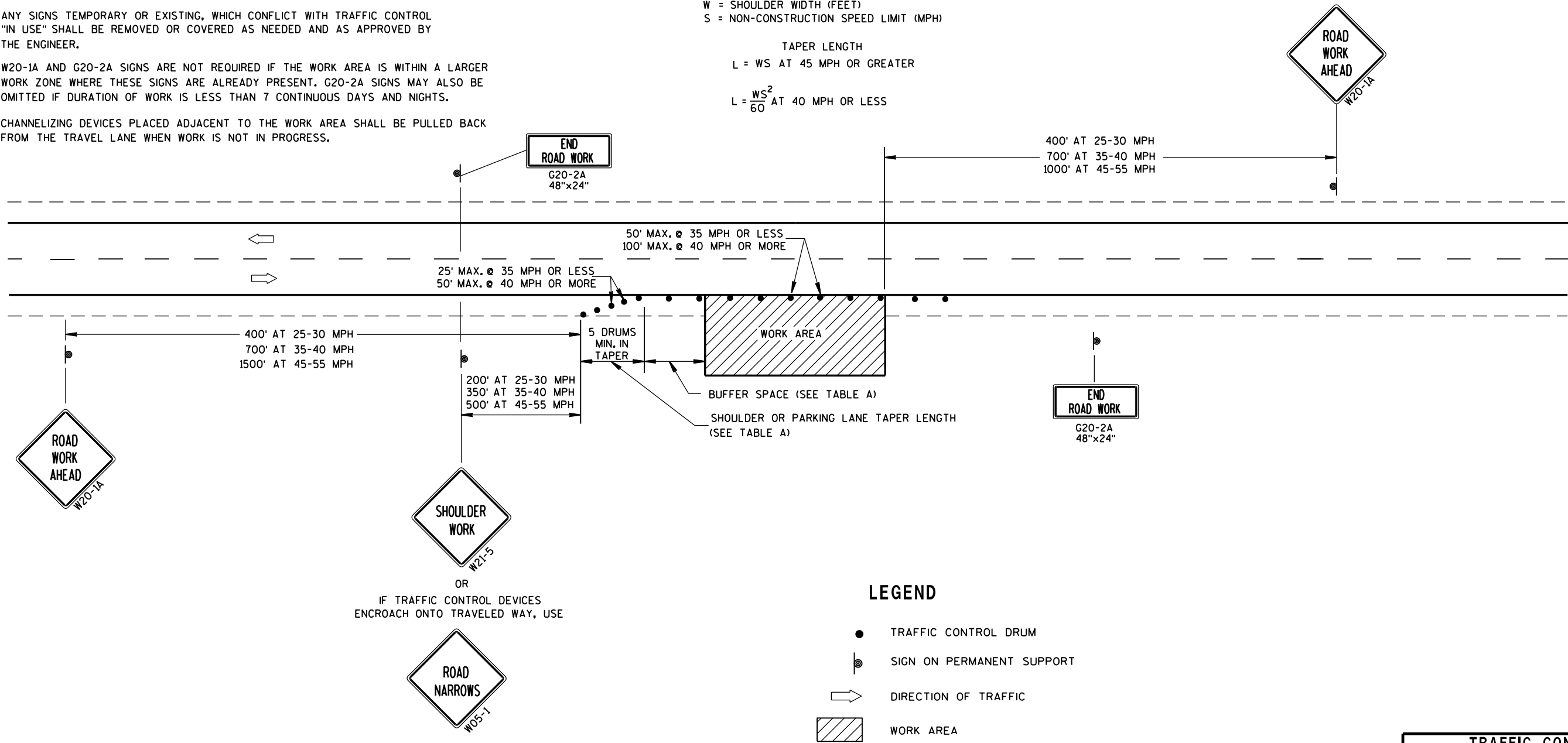
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

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

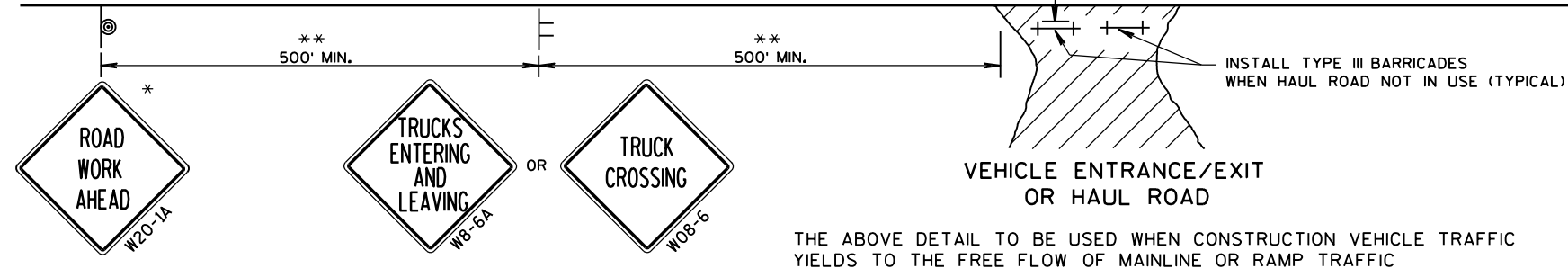
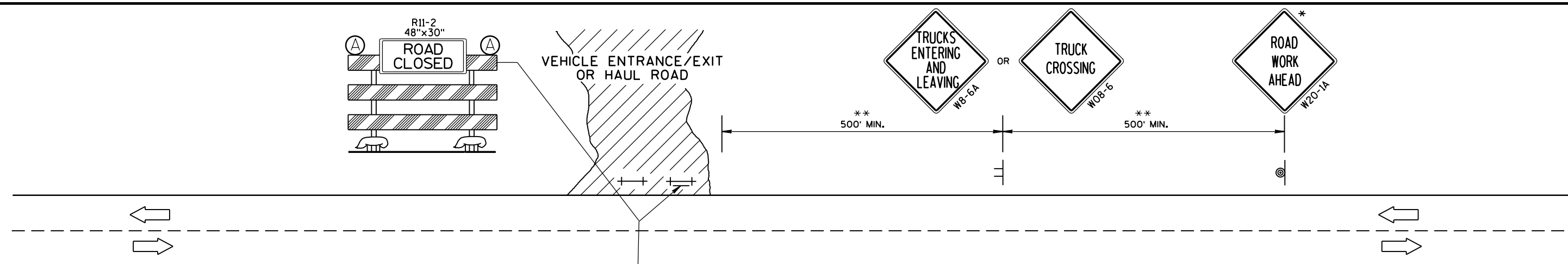
SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

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

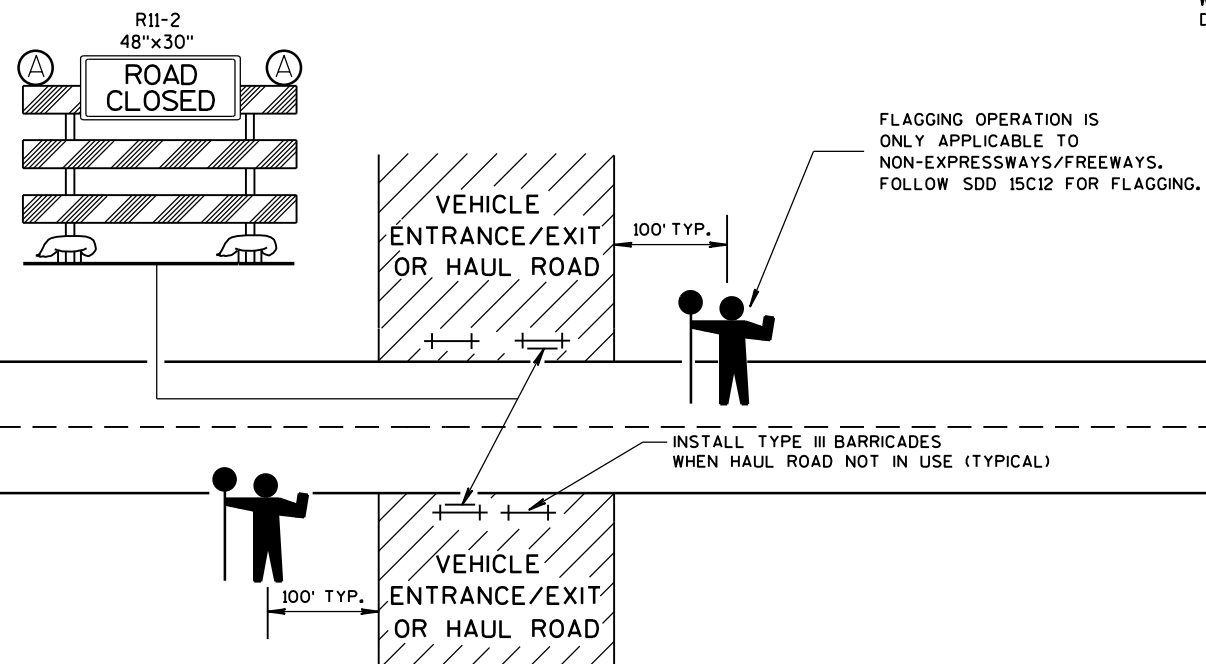
TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



THE ABOVE DETAIL TO BE USED WHEN CONSTRUCTION VEHICLE TRAFFIC YIELDS TO THE FREE FLOW OF MAINLINE OR RAMP TRAFFIC

LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC



THIS DETAIL TO BE USED WHEN CONSTRUCTION WORK INCLUDING TRUCKING ACTIVITY REQUIRES MAINLINE TRAFFIC TO BE TEMPORARILY STOPPED IN ONE OR BOTH DIRECTIONS. DELAY TO HIGHWAY TRAFFIC SHALL BE MINIMIZED.

GENERAL NOTES

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

WHEN ACTIVITY REFLECTED BY THE SIGN IS NOT CURRENTLY TAKING PLACE, THE HIGHWAY SHALL BE RESTORED TO NORMAL CONDITION AND THE SIGNS SHALL BE REMOVED, COVERED OR TURNED AWAY FROM TRAFFIC.

WHEN A SIDE ROAD OR RAMP INTERSECTS WITHIN THE ADVANCE SIGNING AREA, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

* THESE SIGNS ARE TO BE USED ONLY WHEN VEHICLE ENTRANCE/EXIT CONDITIONS ARE SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA OR SIGNING OR AS DIRECTED BY THE ENGINEER.

** 500 FEET SHOWN IS FOR ROADWAYS WITH A NON-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350 FEET, FOR 25-30 MPH, USE 200 FEET. USE 1000 FEET/1500 FEET FOR EXPRESSWAY/FREEWAY.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

PLACE SIGNS ON BOTH SIDES IF USED ON DIVIDED HIGHWAY.

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

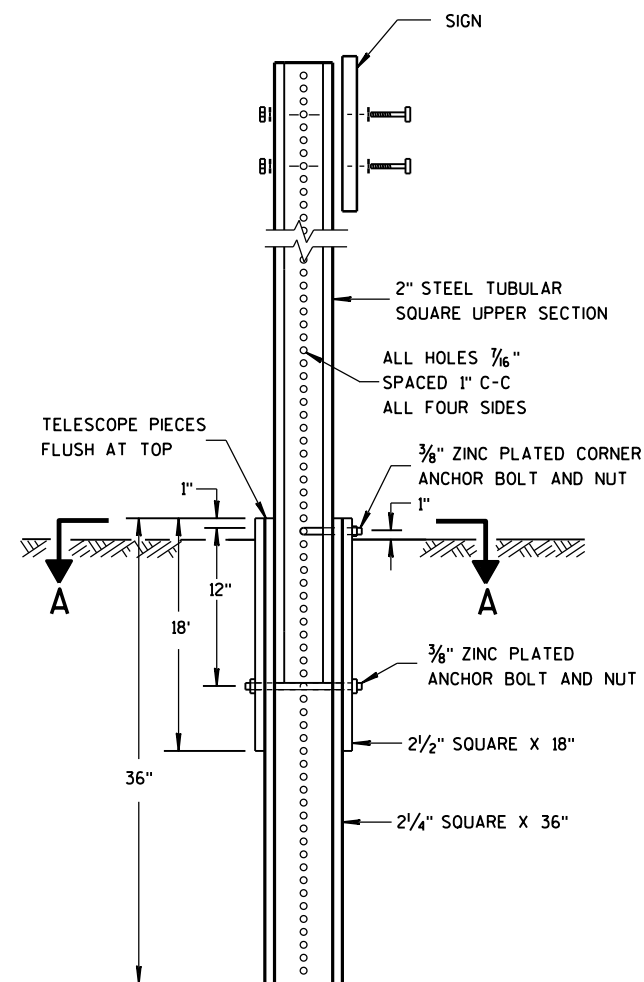
TRAFFIC CONTROL,
VEHICLE ENTRANCE/EXIT
OR HAUL ROAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA



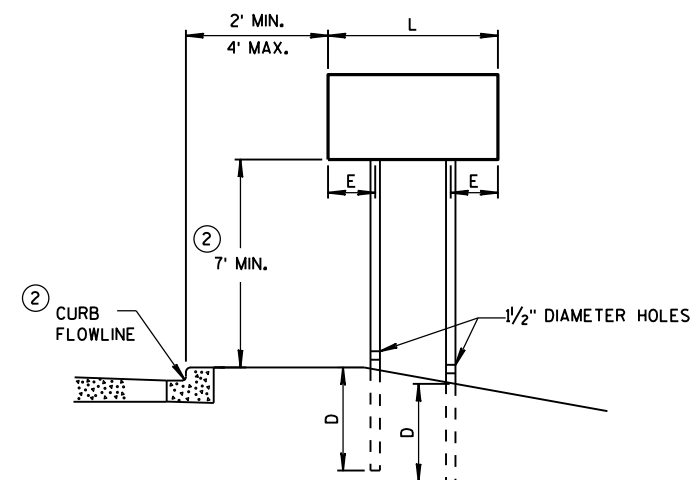
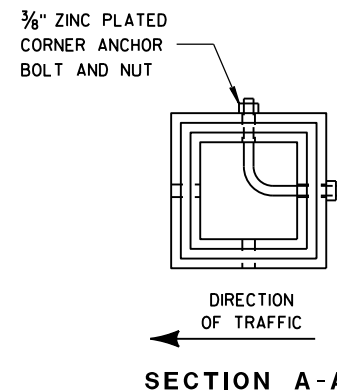
DETAIL OF TUBULAR
STEEL SIGN POST

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.

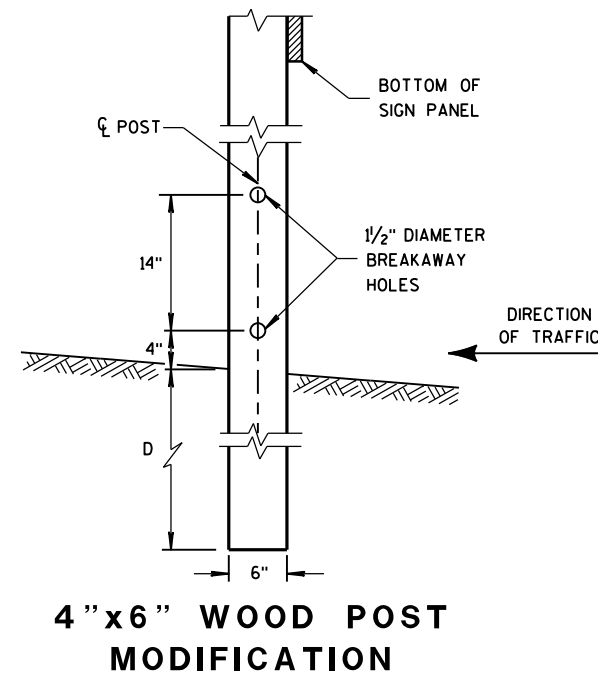


URBAN AREA

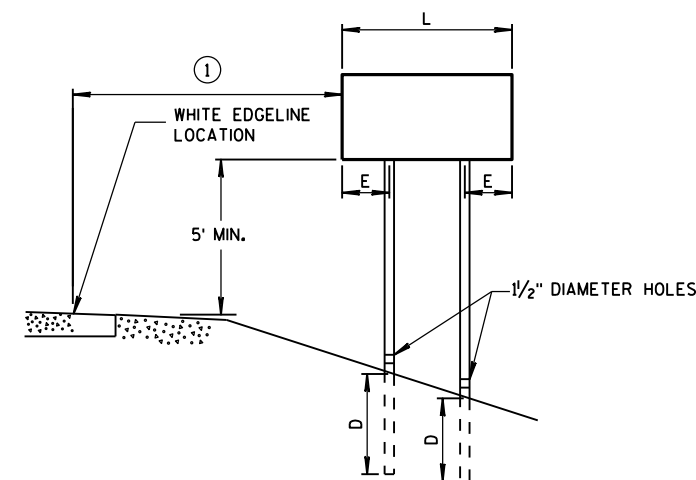
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

WOOD POST
EMBEDMENT DEPTH

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



4 "x6 " WOOD POST
MODIFICATION



RURAL AREA

4 " X 6 " WOOD POST

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

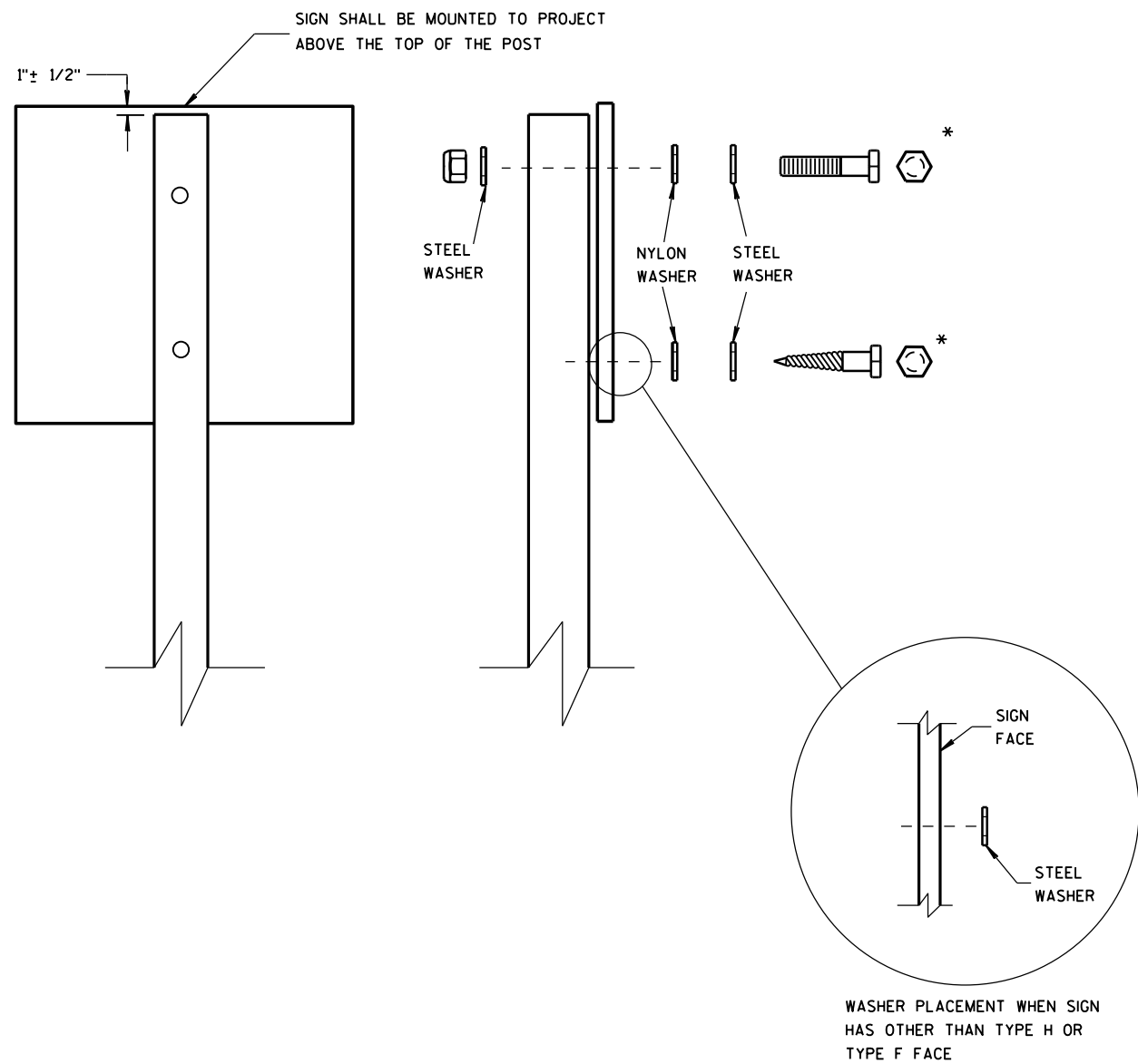
SEE NOTE ③

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.

TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING

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.

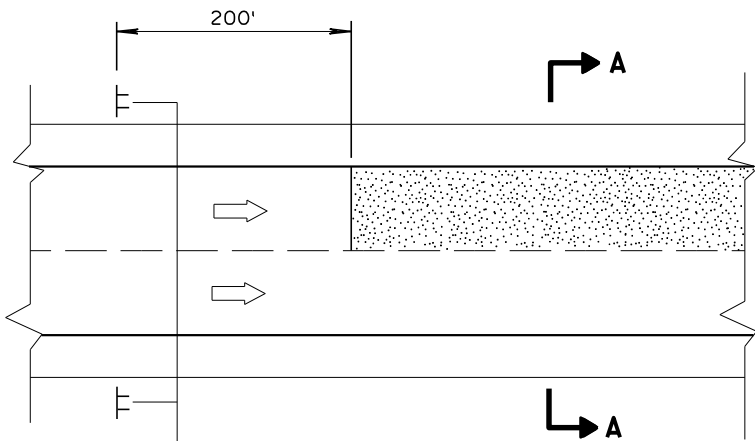
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" X 3"
 - MACHINE BOLTS - 5/16" X 6-1/2" OR 7" LENGTH W/ NUTS

- 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 June 2017 DATE	/S/ Andrew Heldtke WORK ZONE ENGINEER
FHWA	

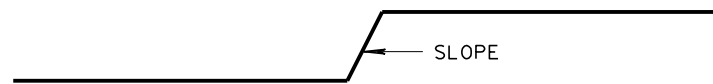


MULTI-LANE

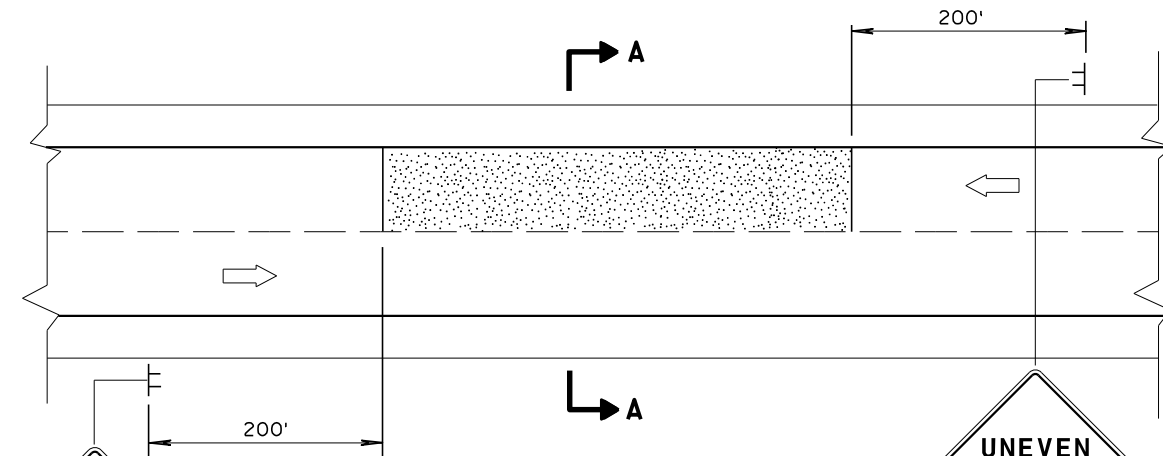


SECTION A-A

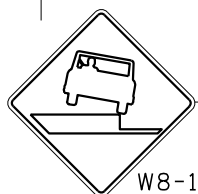
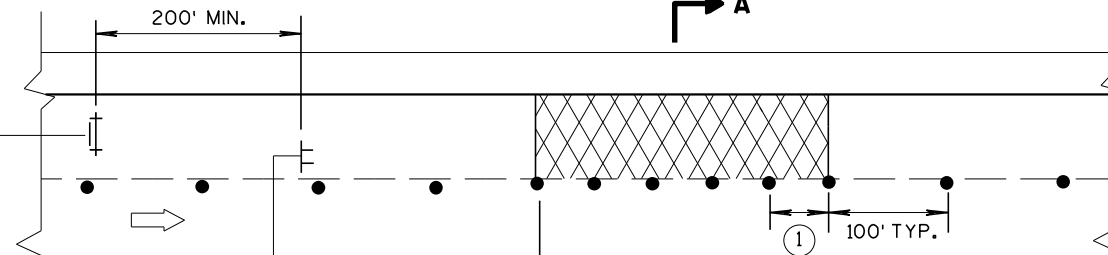
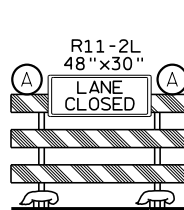
OR



SECTION A-A

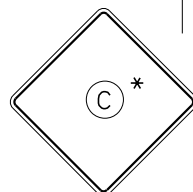
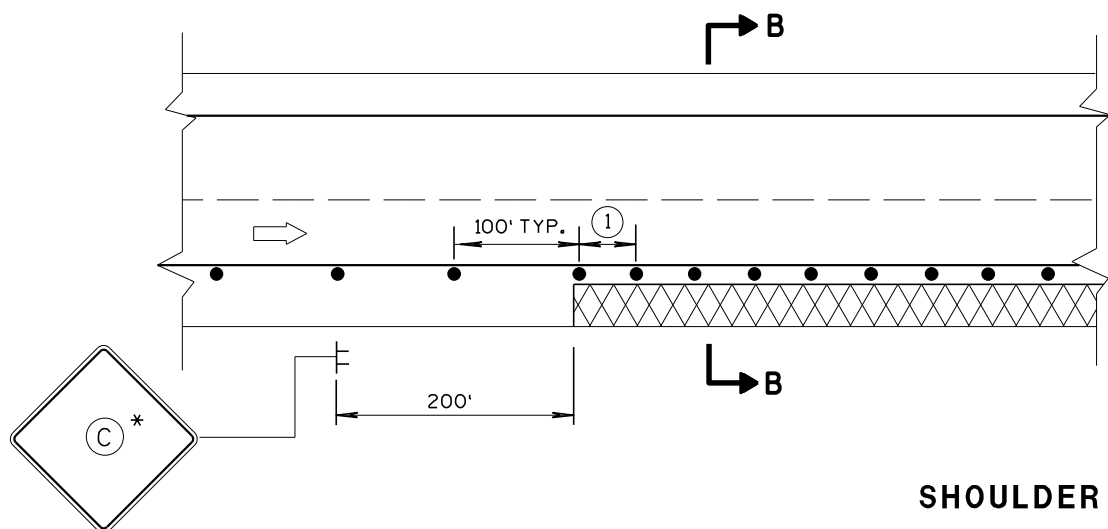


TWO-WAY TWO LANE

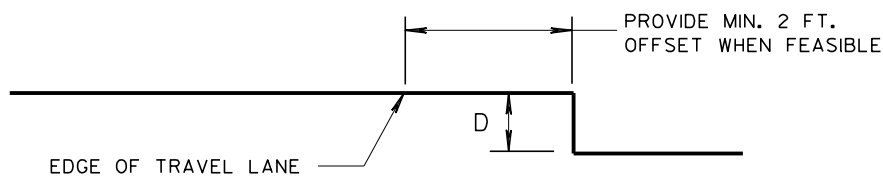


MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS



SHOULDER DROP-OFFS



SECTION B-B

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EACH ENTRANCE RAMP.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

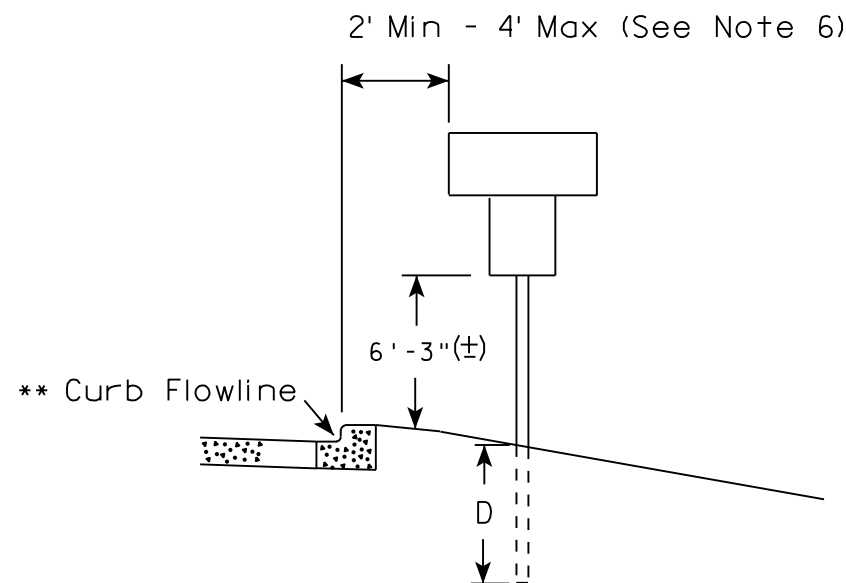
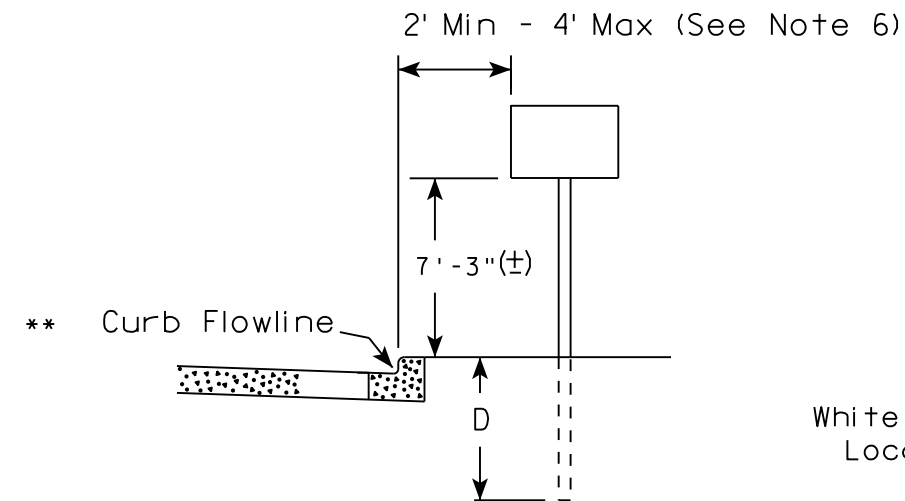
D	SIGN C
< 2" WITH A SLOPE STEEPER THAN 3:1	 W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	 W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

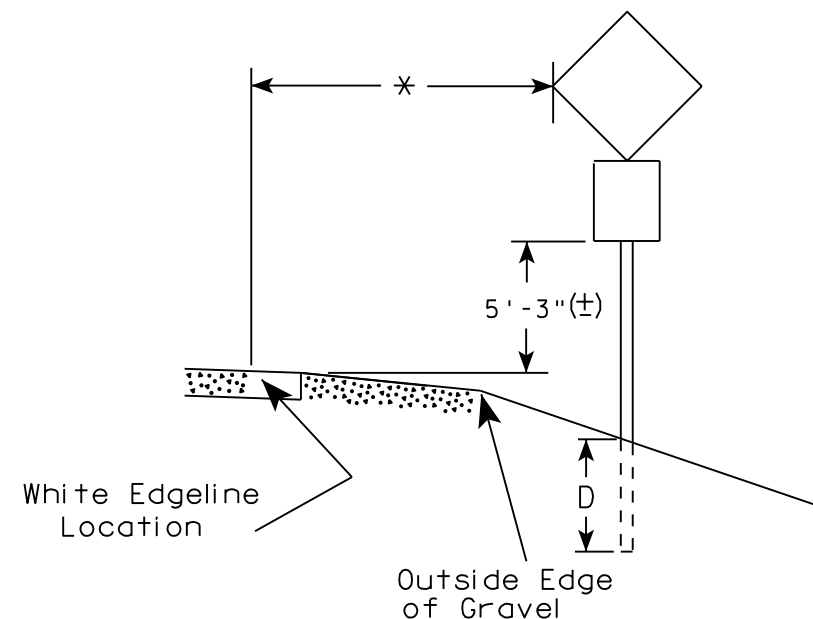
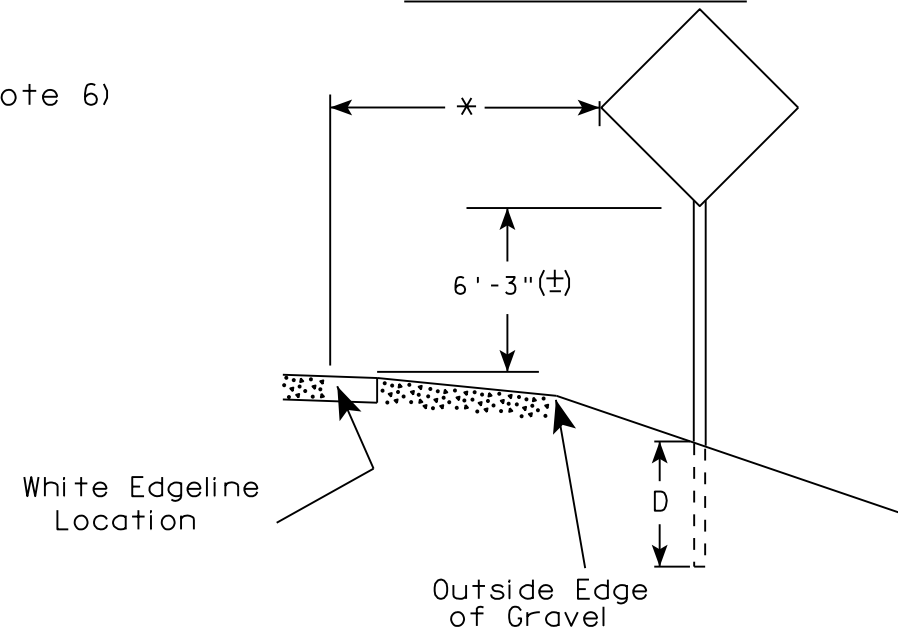
APPROVED
March 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA

URBAN AREA



✱✱ 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.

RURAL AREA (See Note 2)



* 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

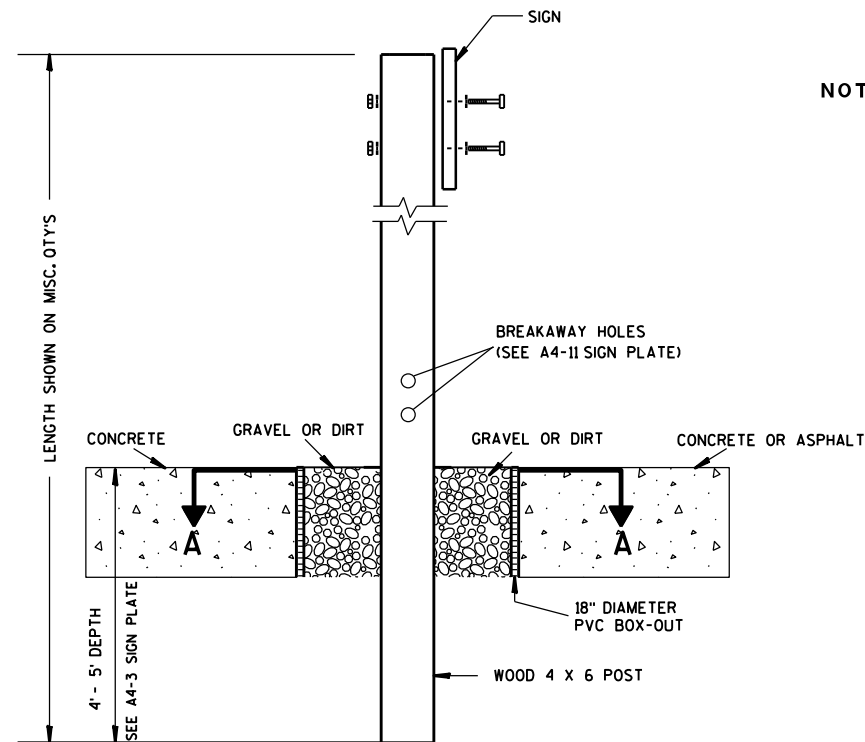
1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
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" (±).

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

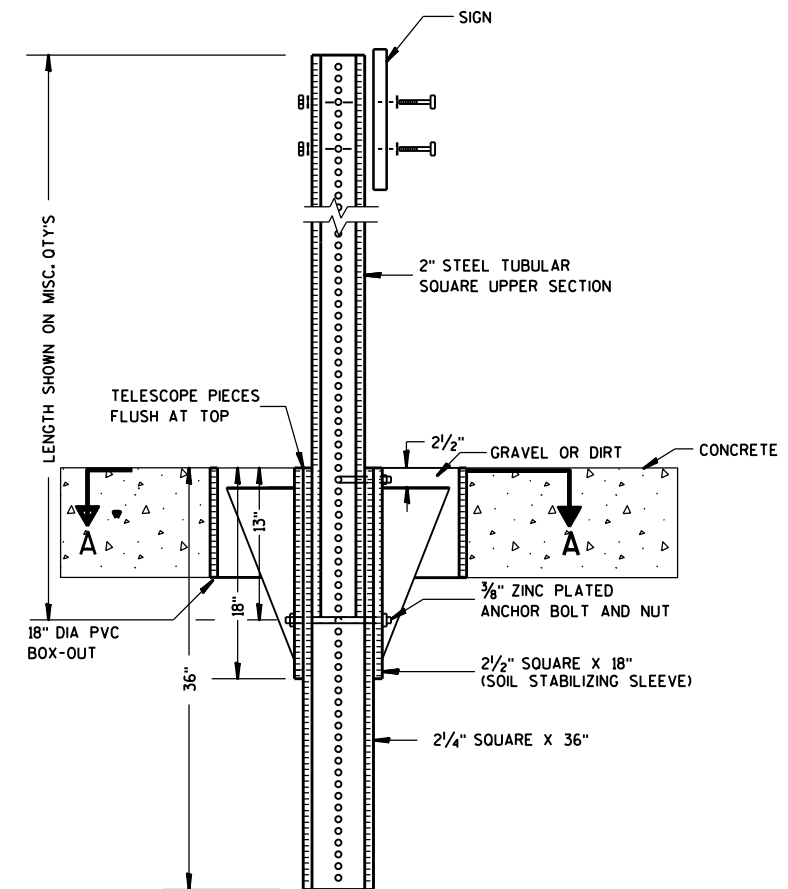
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

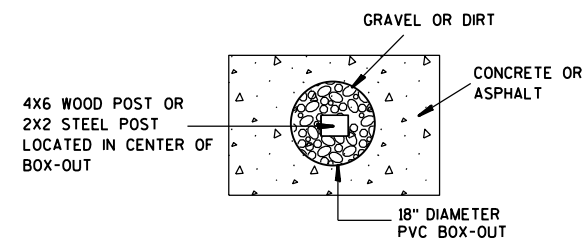
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- NOTES: 1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

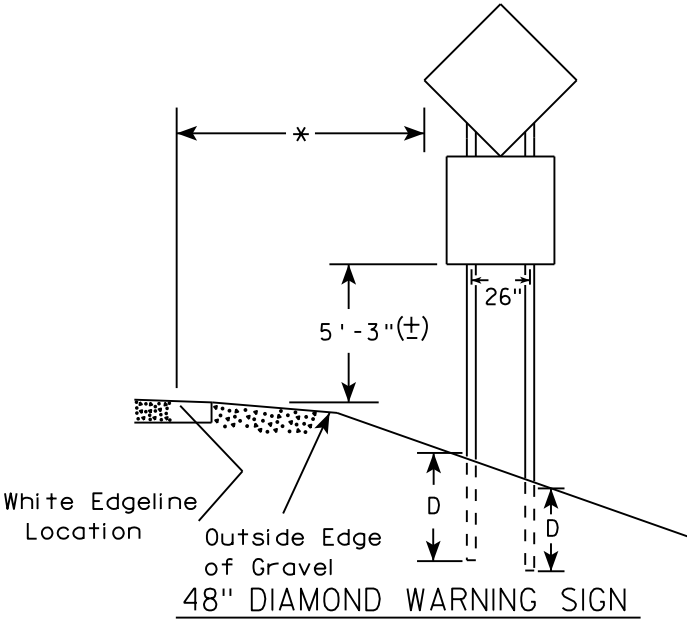
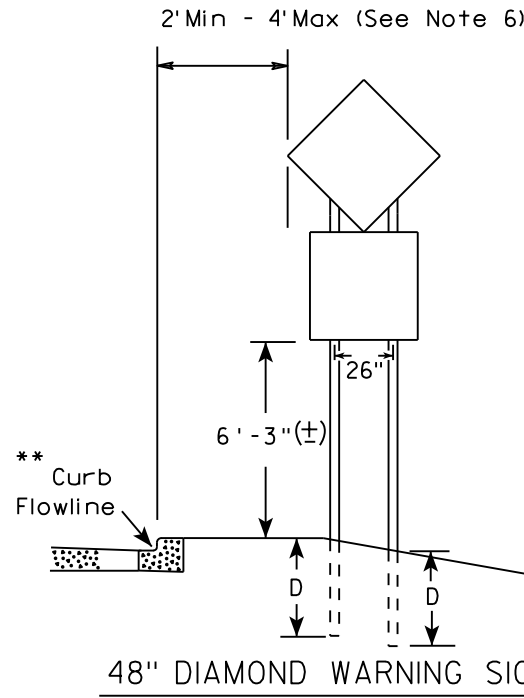
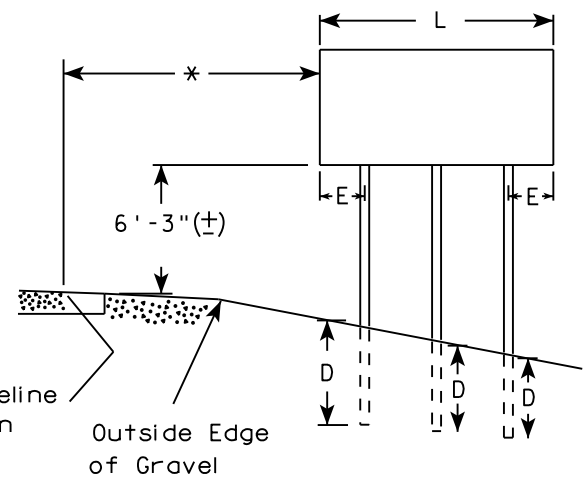
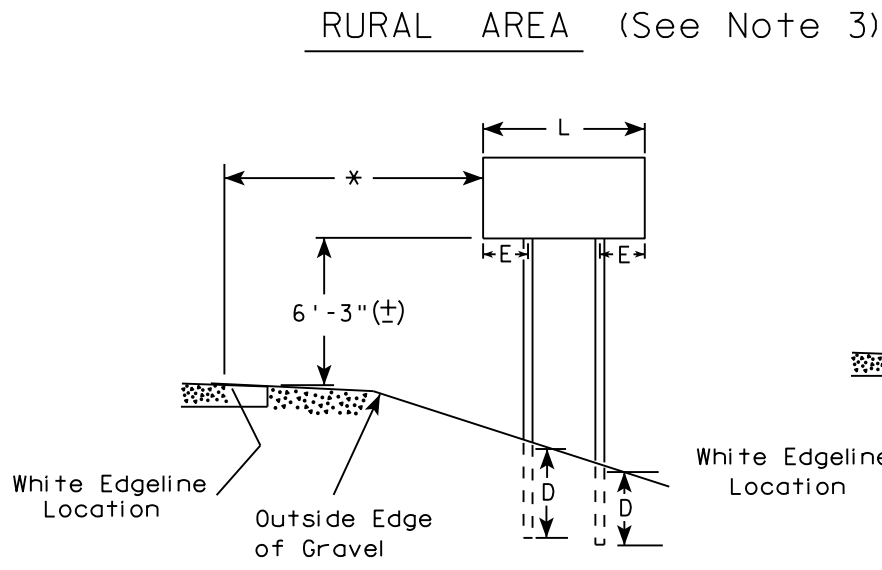
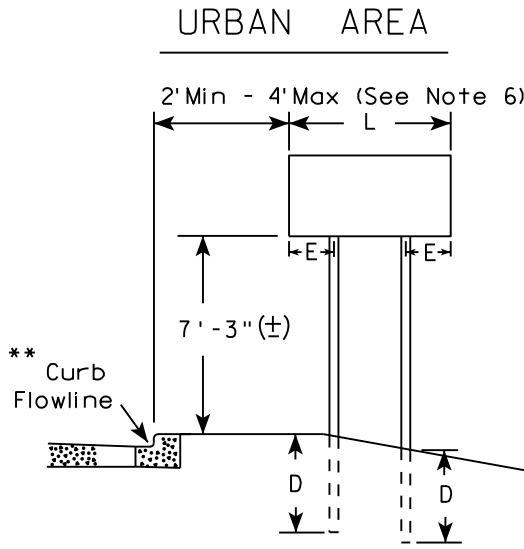
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



- 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. J-Assemblies are considered to be one sign for mounting height.
 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.

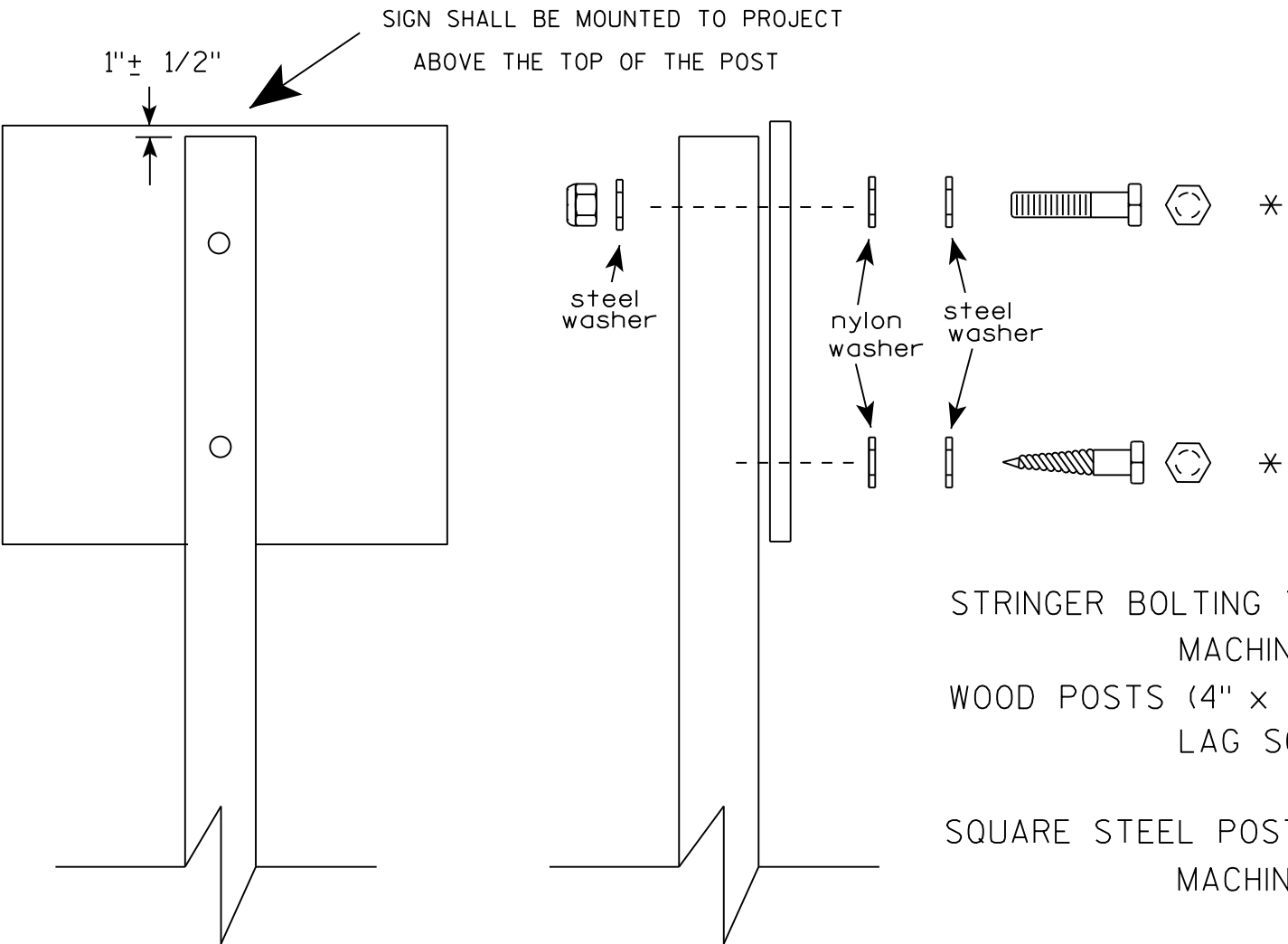
SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	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	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 8/21/17	PLATE NO. A4-4.15



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.

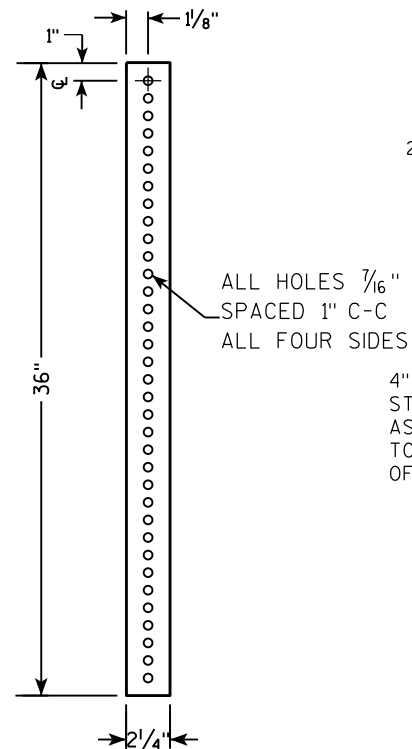
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

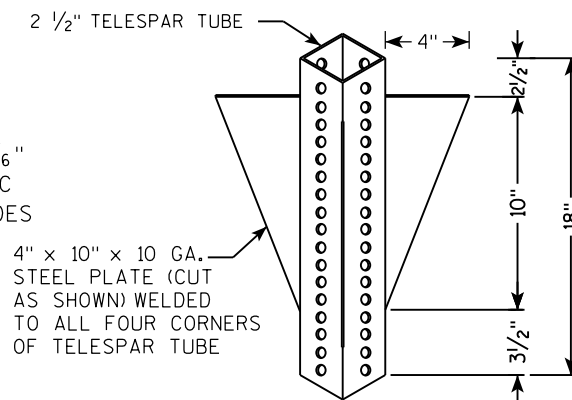
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 8/11/16	PLATE NO. A4-8.8

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**



**2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH**



LENGTH SHOWN ON MISC. Q'TYS

18" DIA SCHEDULE 40 PVC BOX-OUT

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

36"

13"

18"

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

LENGTH SHOWN ON MISC. QTY'S

SIGN

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

TELESCOPE PIECES FLUSH AT TOP

1"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 $\frac{1}{2}$ " SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 $\frac{1}{4}$ " SQUARE X 36"

36"

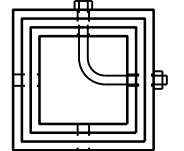
18"

12"

A

B

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT



DIRECTION
OF TRAFFIC

SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required 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).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

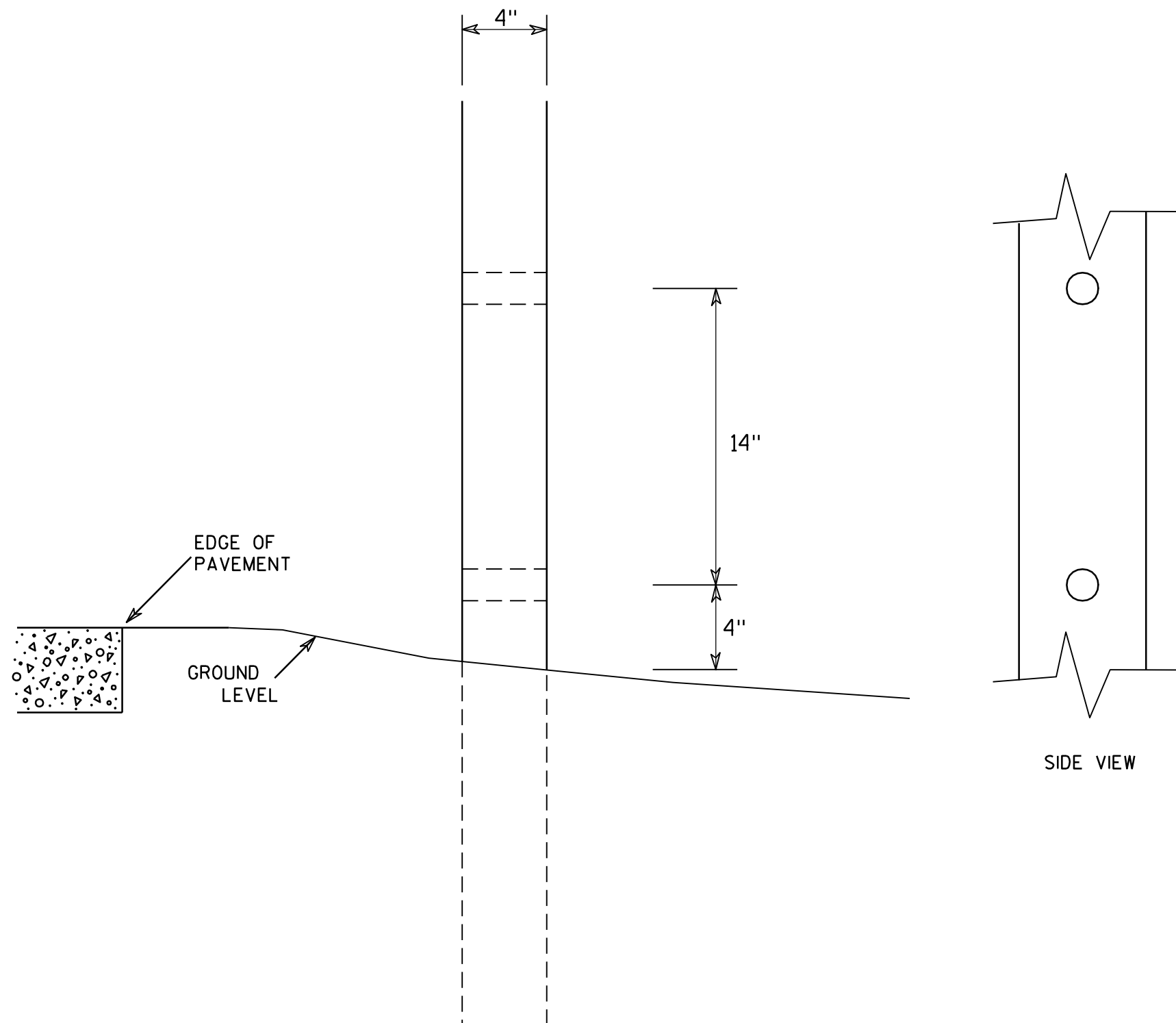
APPROVED Matthieu R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

PROJECT NO:	HWY:	COUNTY:	SHEET NO:	E
-------------	------	---------	-----------	---

7



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

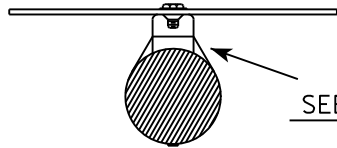
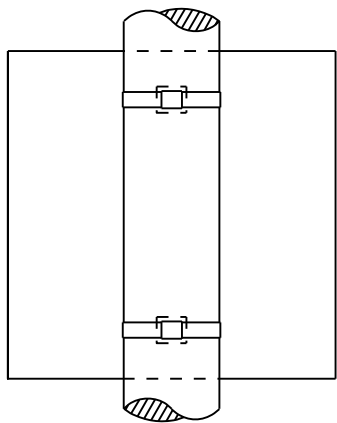
COUNTY:

SHEET NO:

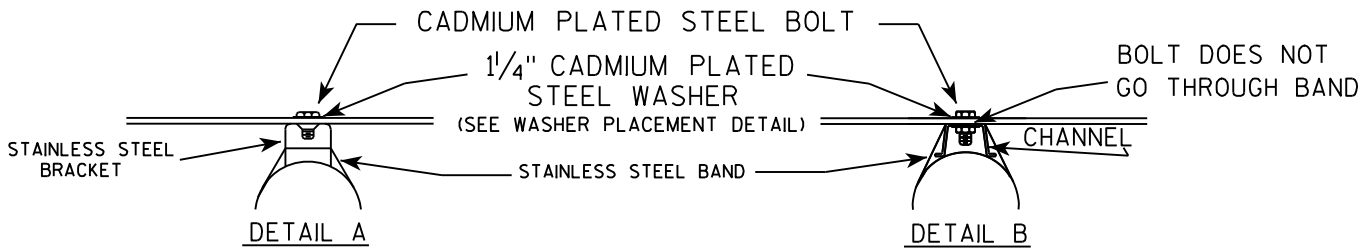
E

BANDING

SINGLE SIGN

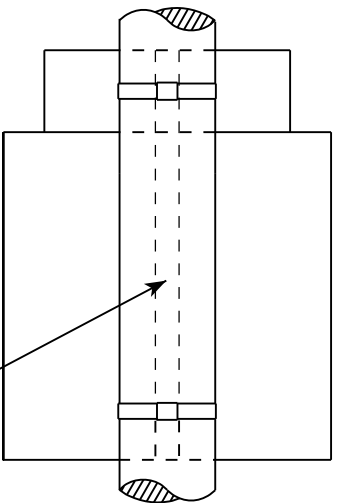


SEE DETAIL A



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

"J" ASSEMBLY

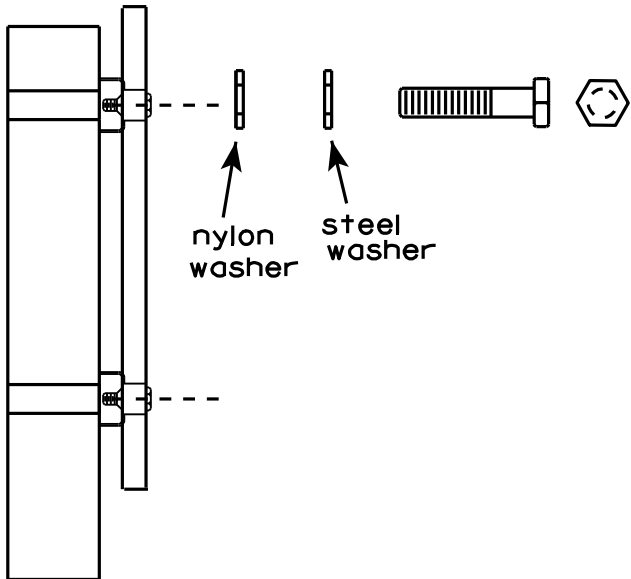


SEE DETAIL B

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.

WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 8/16/13

PLATE NO. A5-9.3

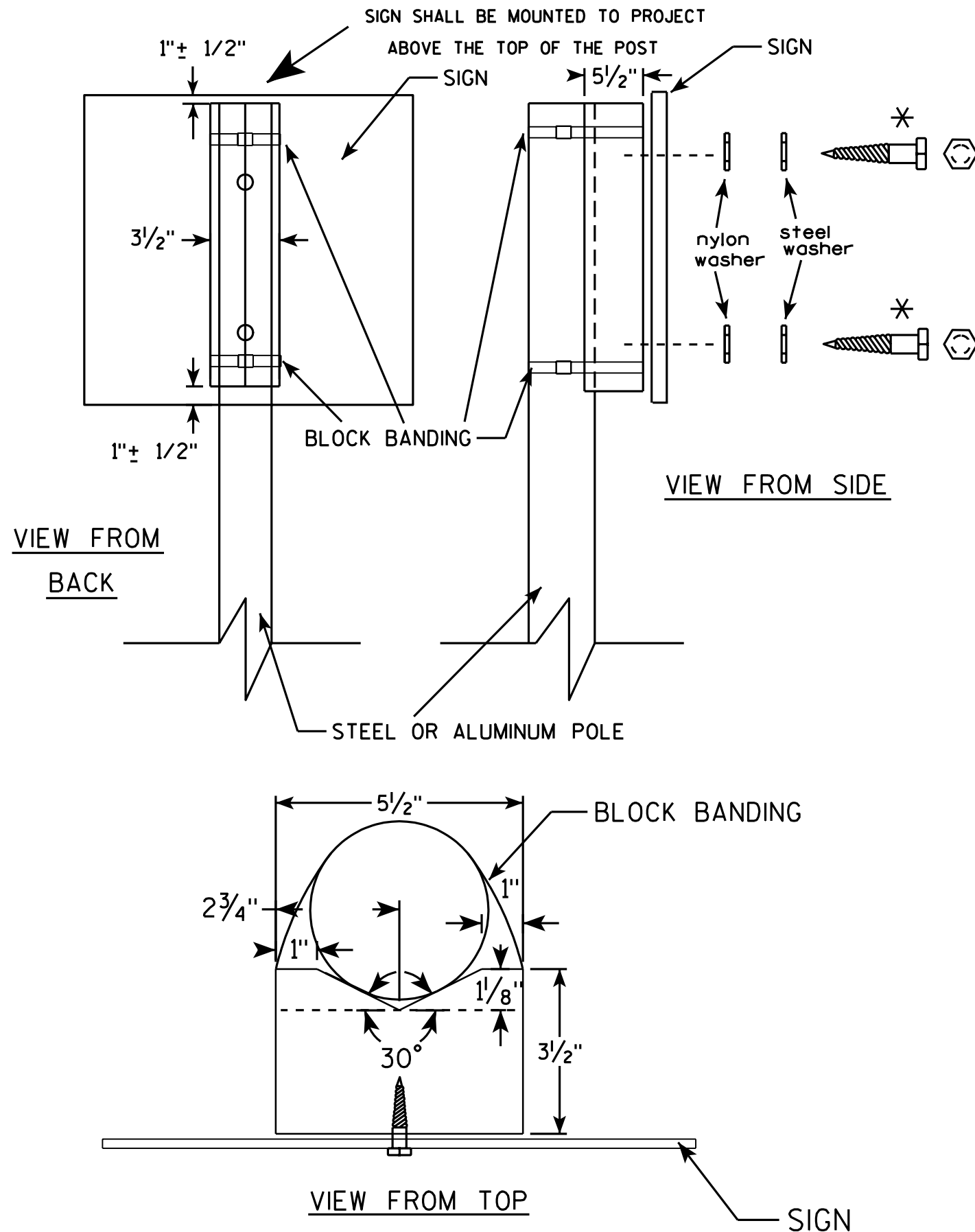
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

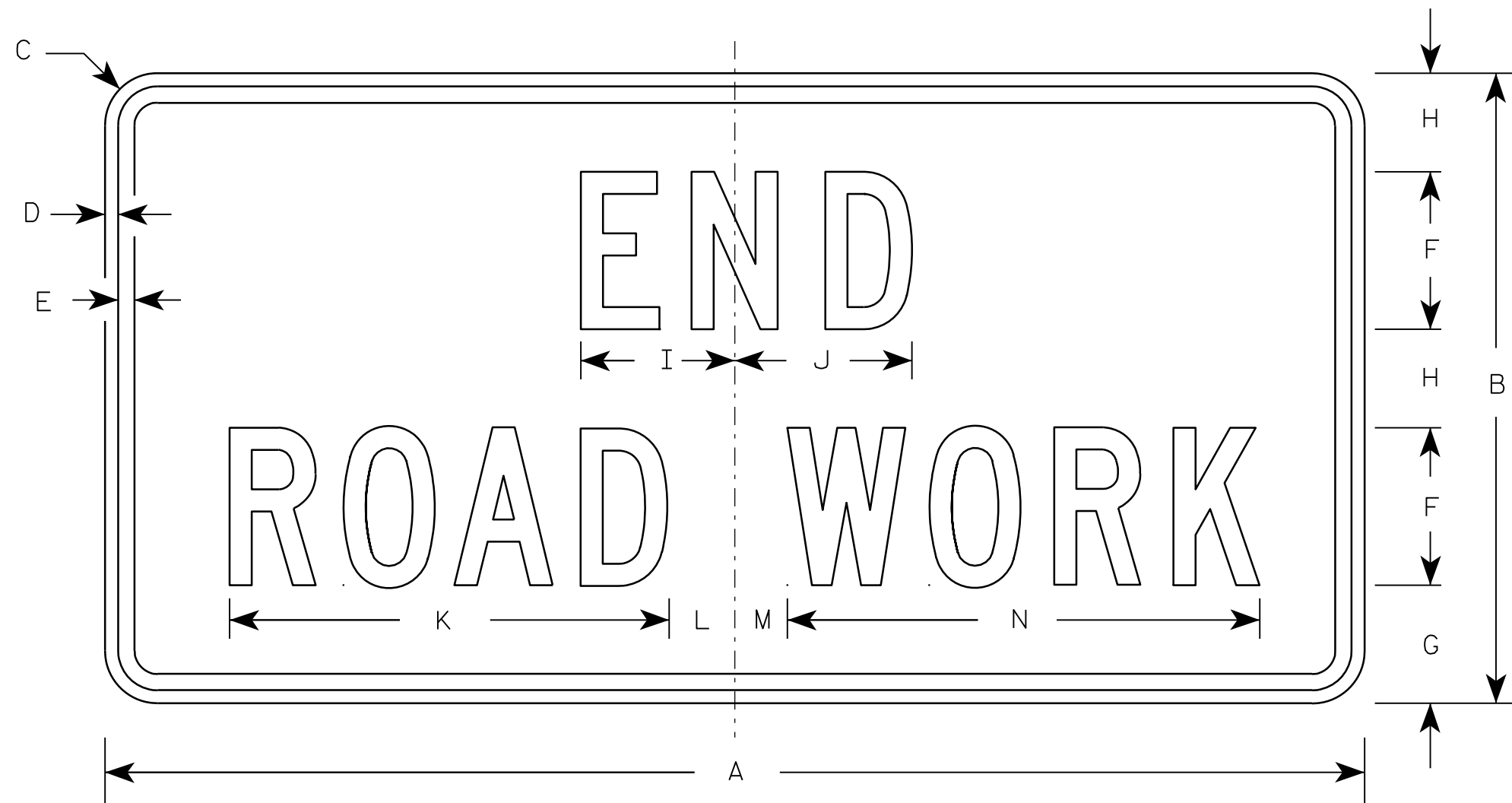
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO:

E

7



G20-2A

Metric equivalent
for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 mm

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.	Area sq. m.
1	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

NOTES

- Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Orange
Message - Black
- Message Series - C
- 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.

7

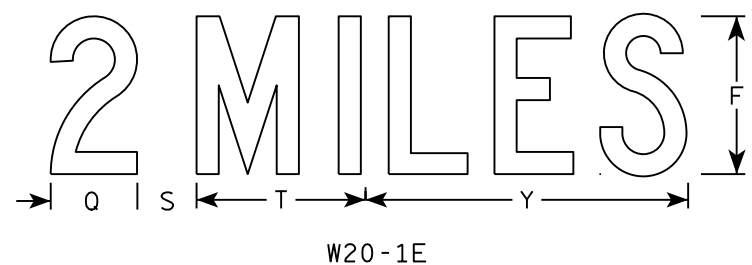
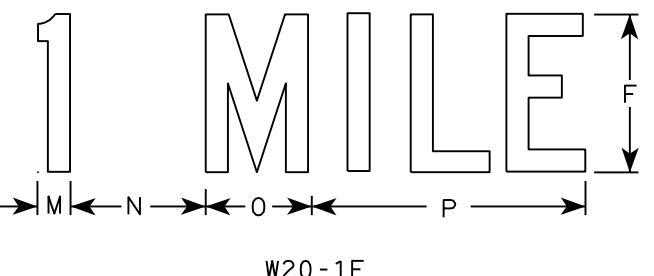
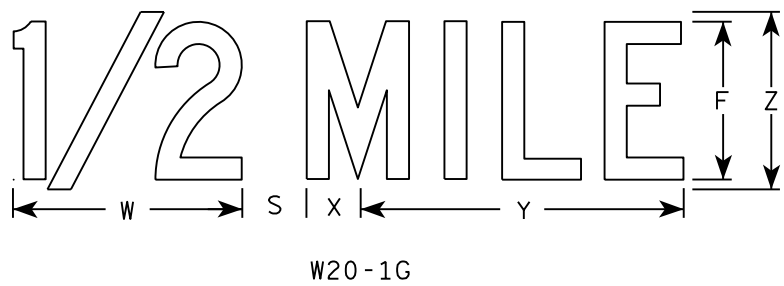
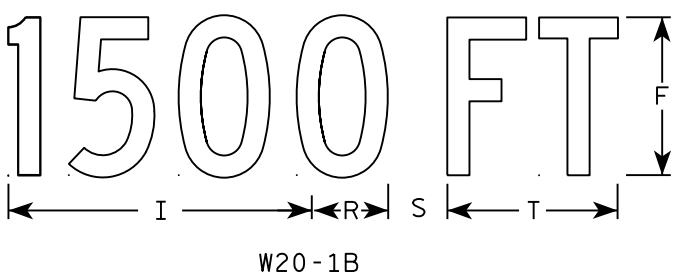
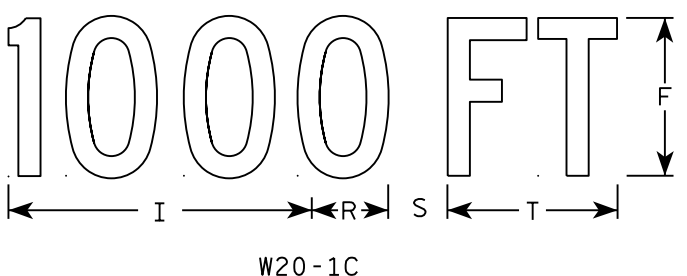
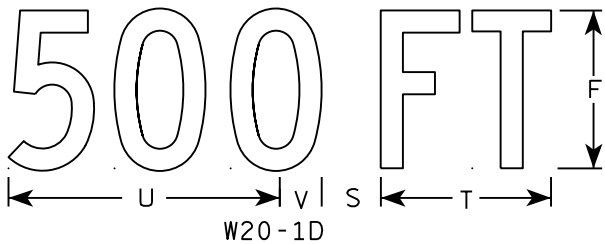
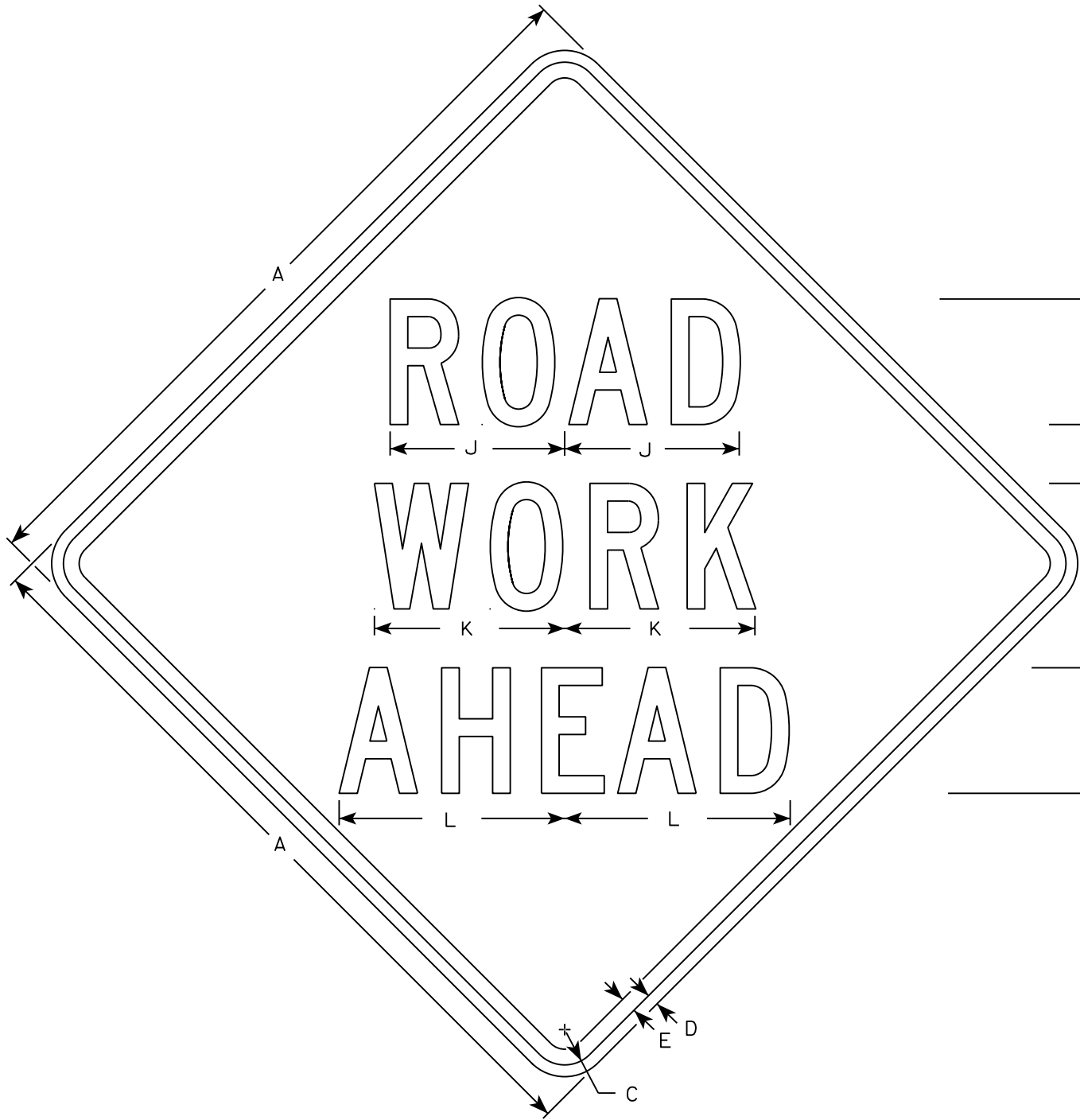
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - C
- 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.

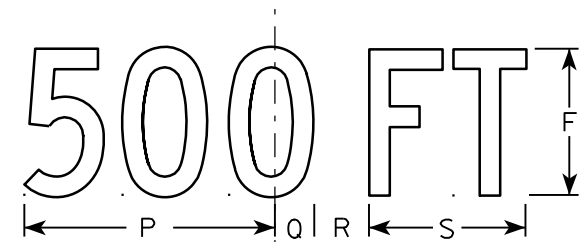
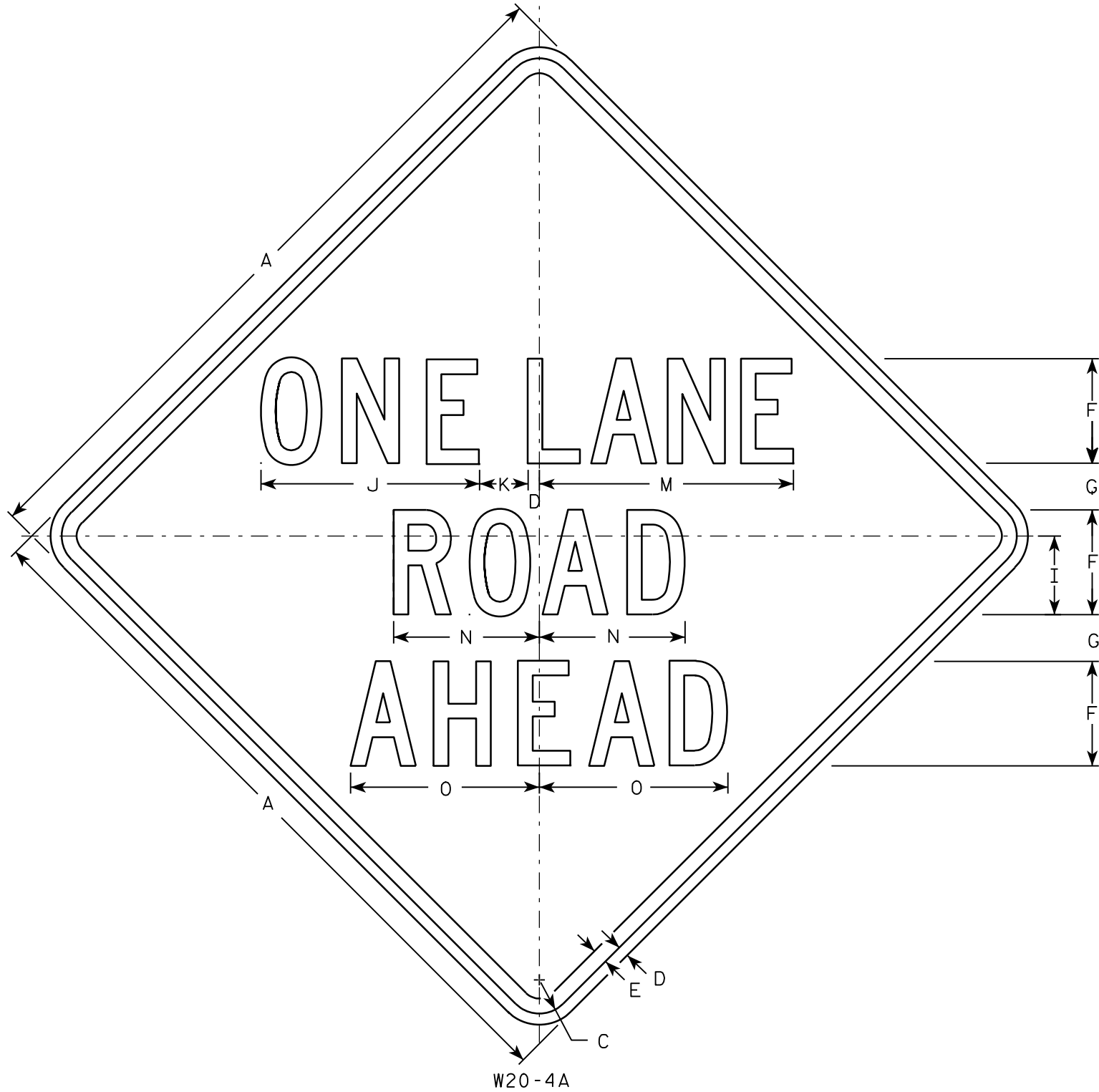
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

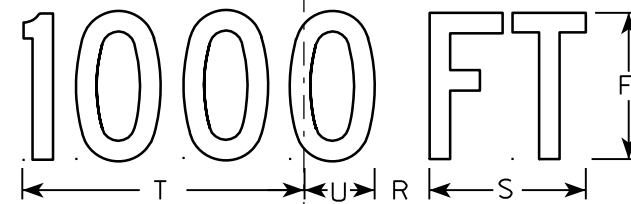
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

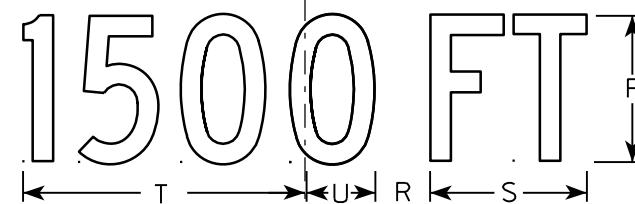
DATE 5/07/15 PLATE NO. W20-1.10



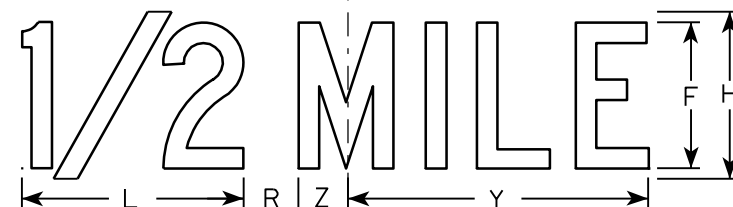
W20-4D



W20-4C



W20-4B



W20-4G



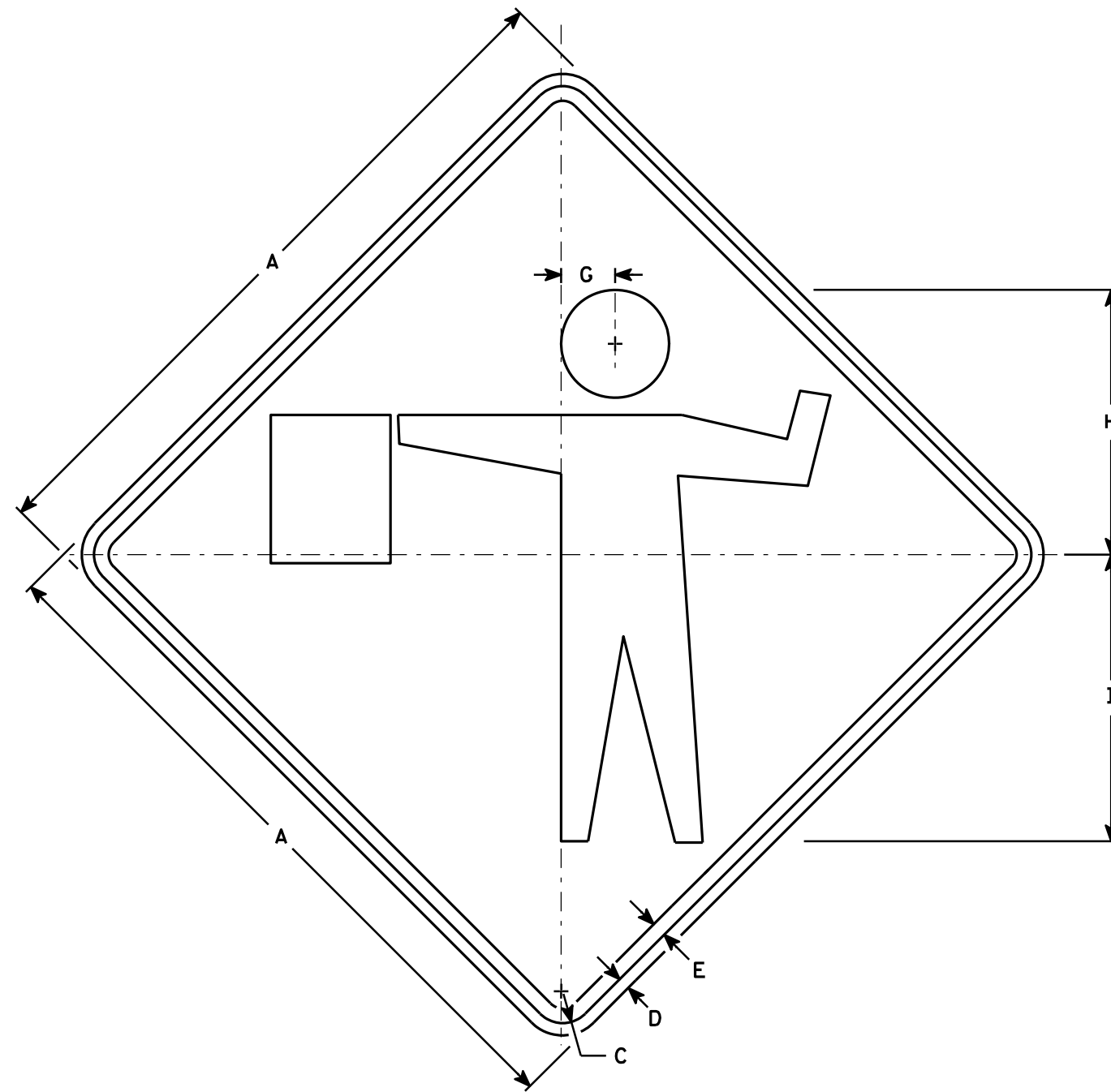
W20-4F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - C
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.

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	36		1 5/8	5/8	3/4	5	2 3/8	6	3 3/4	10 3/8	2 3/8	8	13 1/2	7	8 7/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	3 1/8	8	5 1/4	14 5/8	3 1/4	10 5/8	17 3/4	9 3/4	12 5/8	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN	
W20-4A, B, C, D, F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/18/11	PLATE NO. W20-4.9



W20-7A

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
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.

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	36		1 5/8	5/8	3/4		2 3/4	13 1/2	14 5/8																		9.00
2S	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
2M	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
3	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
4	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00
5	48		2 1/4	3/4	1		3 3/4	18	19 1/2																		16.00

STANDARD SIGN W20-7A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-7A.5

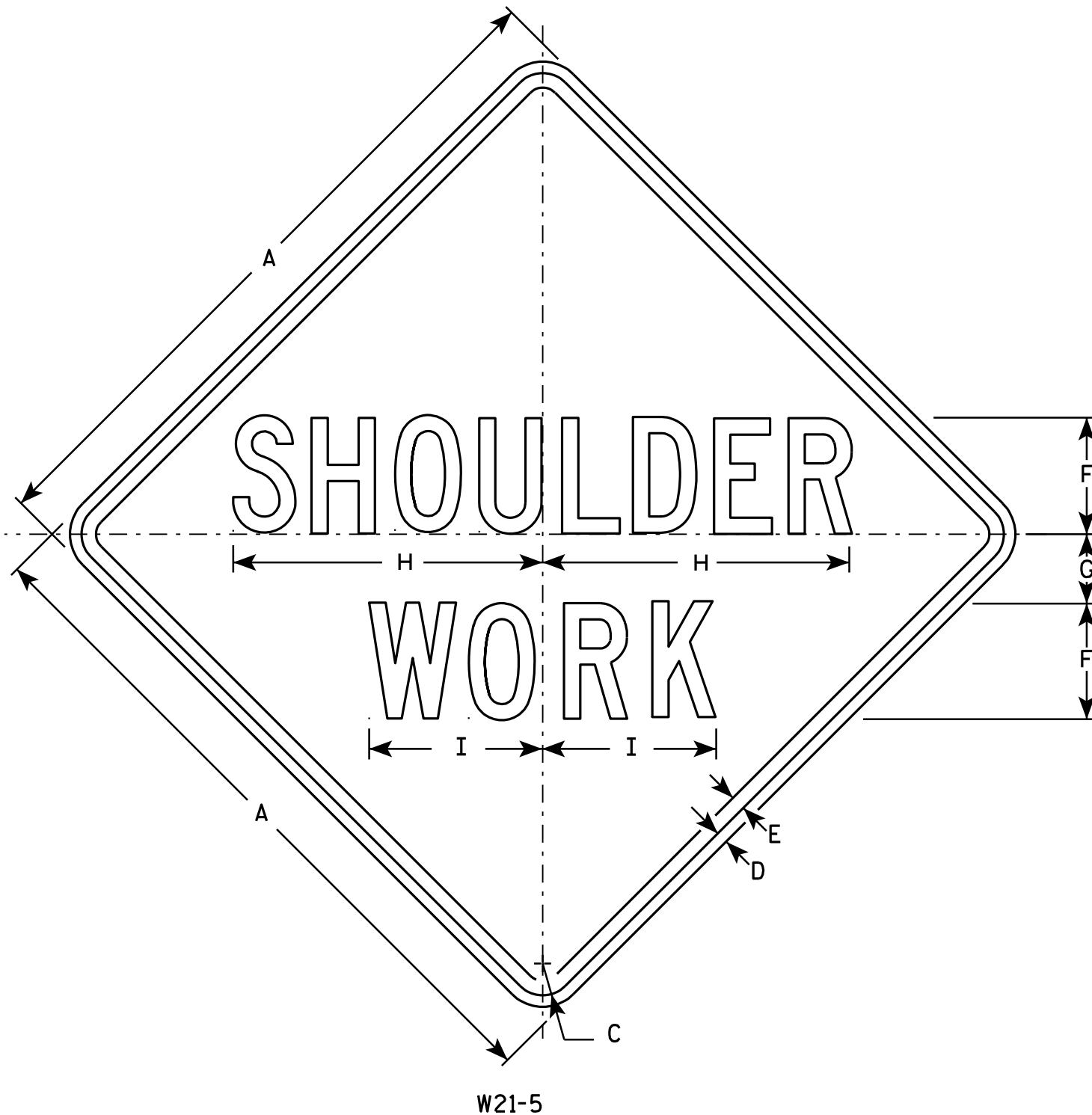
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - C
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.

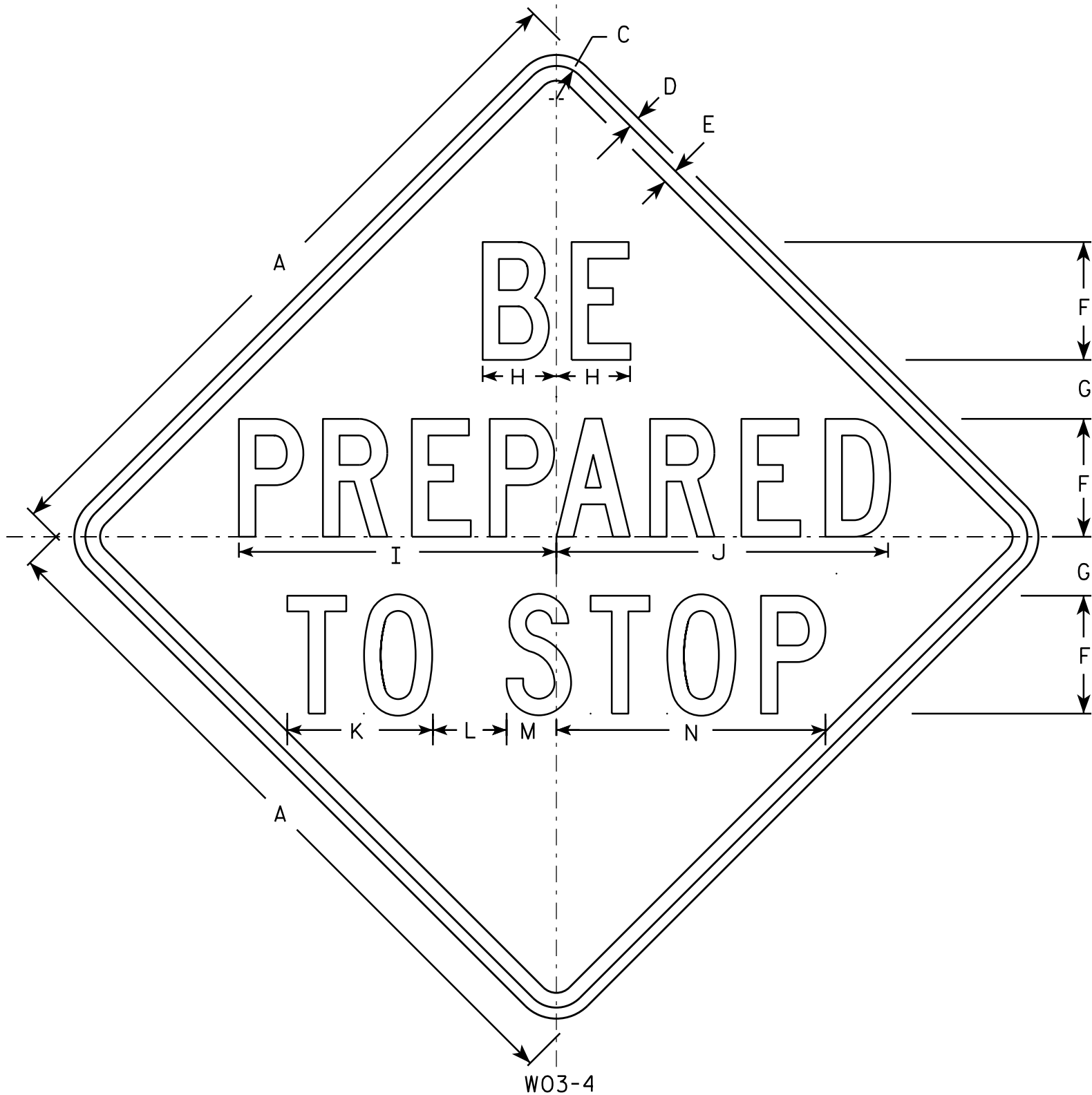
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2 1/2	10 3/4	6																		4.0
2S	30		1 3/8	1/2	5/8	5	3	13 3/8	7 1/2																		6.25
2M	30		1 3/8	1/2	5/8	5	3	13 3/8	7 1/2																		6.25
3	36		1 5/8	5/8	3/4	6	3 1/2	16	9																		9.0
4	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0
5	48		2 1/4	3/4	1	8	5	21 3/8	11 1/4																		16.0

STANDARD SIGN W21-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/21/11 PLATE NO. W21-5.5

PROJECT NO: HWY: COUNTY: SHEET NO: E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - C
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.

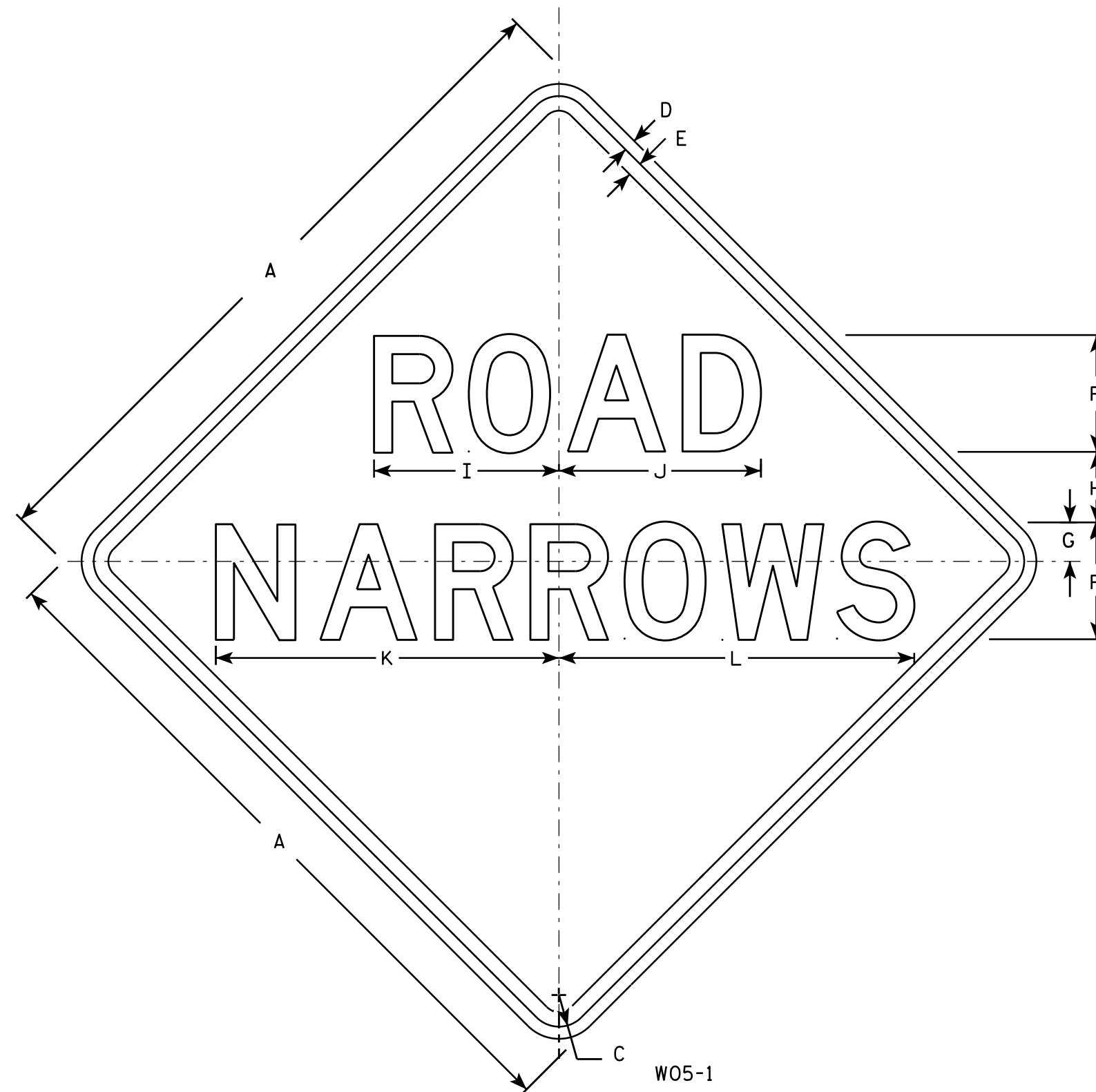
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 3⁄8	1⁄2	5⁄8	6	2 1⁄2	3 3⁄4	15 7⁄8	16 7⁄8	7 3⁄8	4	2 3⁄8	13 3⁄4													9.0
2S	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0
2M	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0
3	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0
4	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0
5	48		2 1⁄4	3⁄4	1	8	4	5	21 1⁄2	22 1⁄2	9 7⁄8	5	3 3⁄8	18 1⁄4													16.0

STANDARD SIGN
W03-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/02/13 PLATE NO. W03-4.1



W05-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Orange
Message - Black
3. Message Series - D
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.

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	36		1 5/8	5/8	3/4	6	2	3 1/2	9 1/2	10 3/8	17 5/8	18 1/4															9.0
2S	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
2M	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
3	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
4	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0
5	48		2 1/4	3/4	1	8	3	4	12 3/4	13 3/4	23 1/2	24 3/8															16.0

STANDARD SIGN W05-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 11/20/13

PLATE NO. W05-1.1

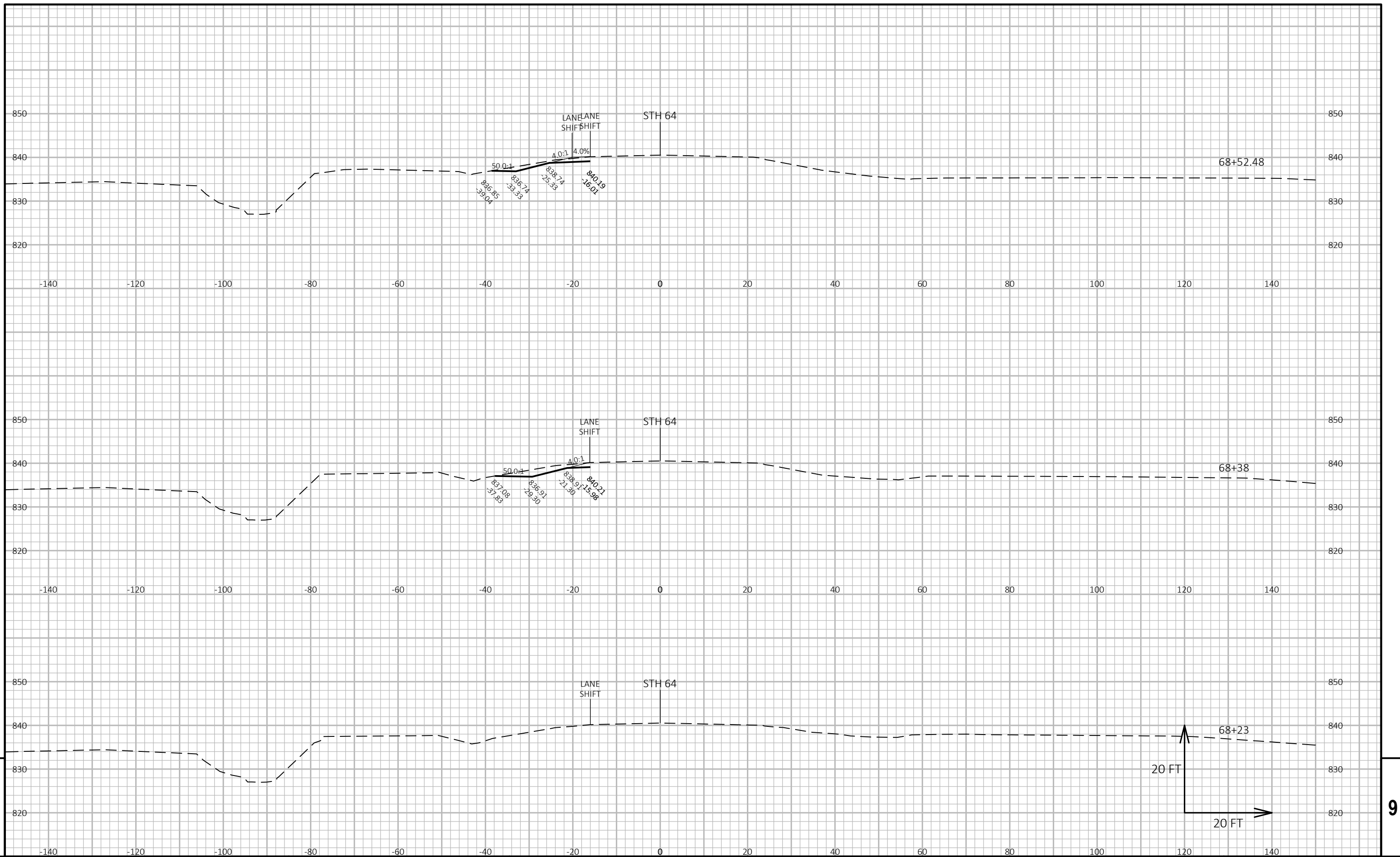
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



FILE NAME : N:\PDS\C3D\10093201_PH3\SHEETSPLAN\0902201-XS.DWG
LAYOUT NAME - 0902201 dwg-xs LANE SHIFT

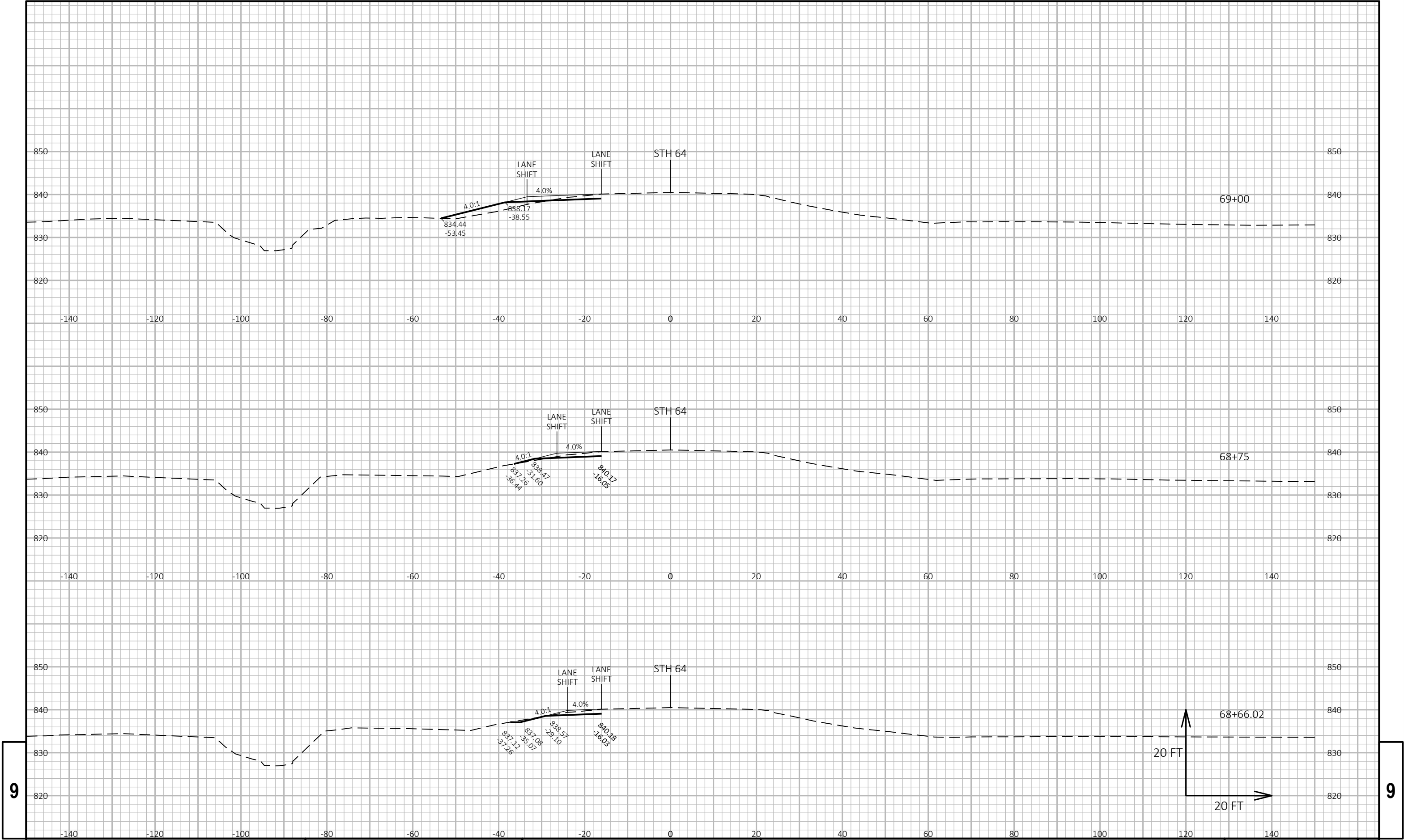
PLOT DATE : 12/7/2018 11:43 AM

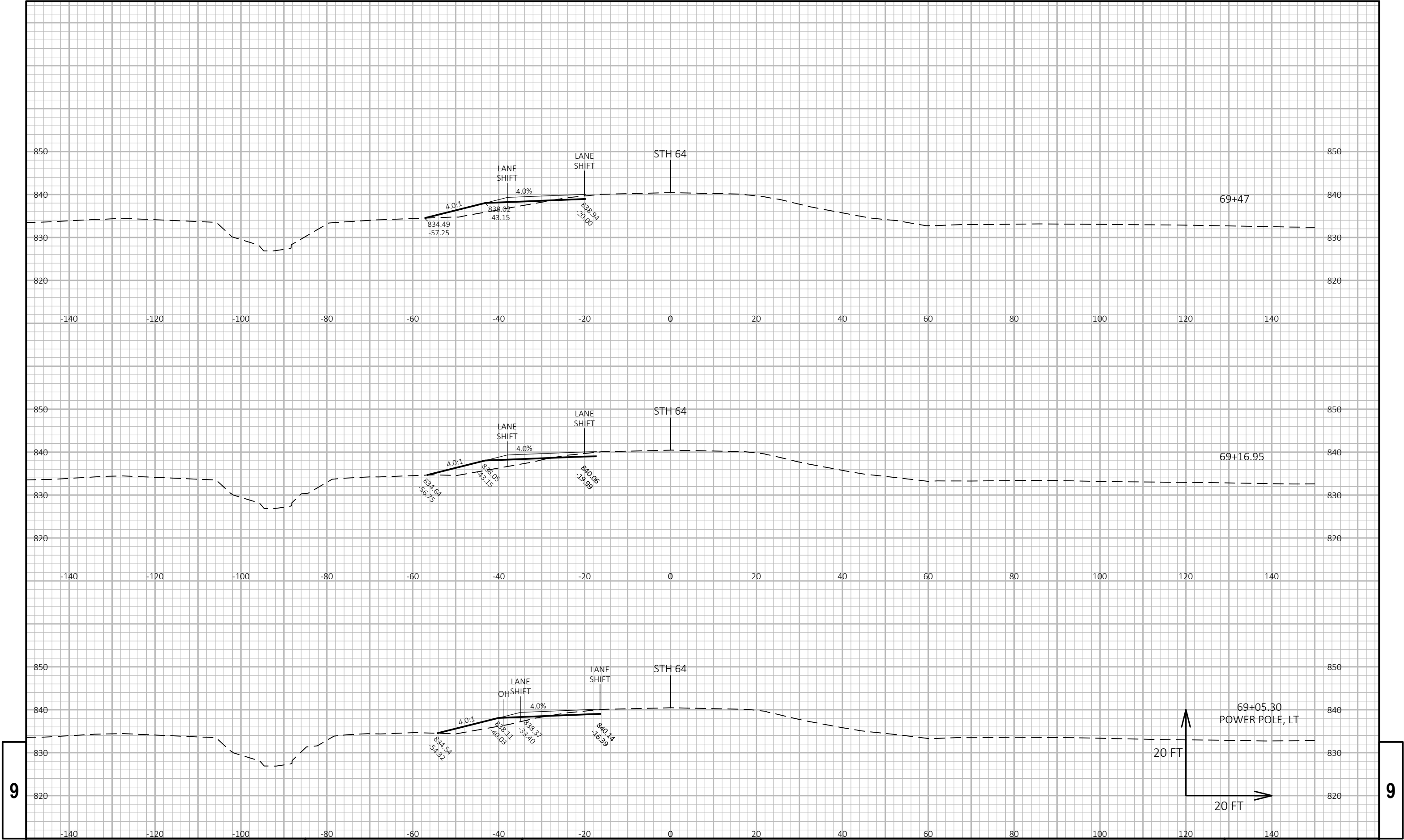
PLOT BY : CREAPEAU, QUINTON D

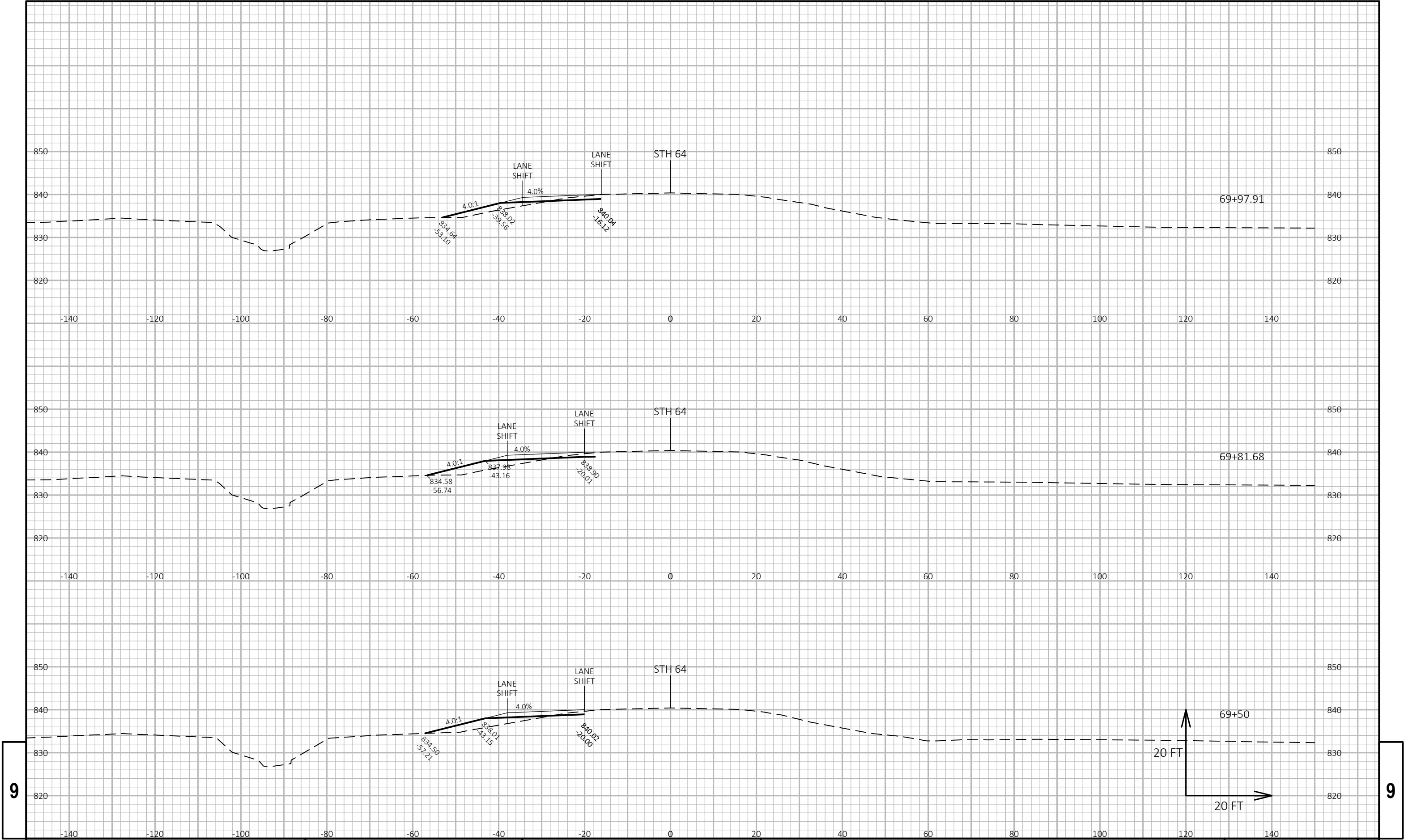
PLOT NAME :

PLOT SCALE : 1 IN:20 FT HORZ. / 1 IN:20 FT VERT.

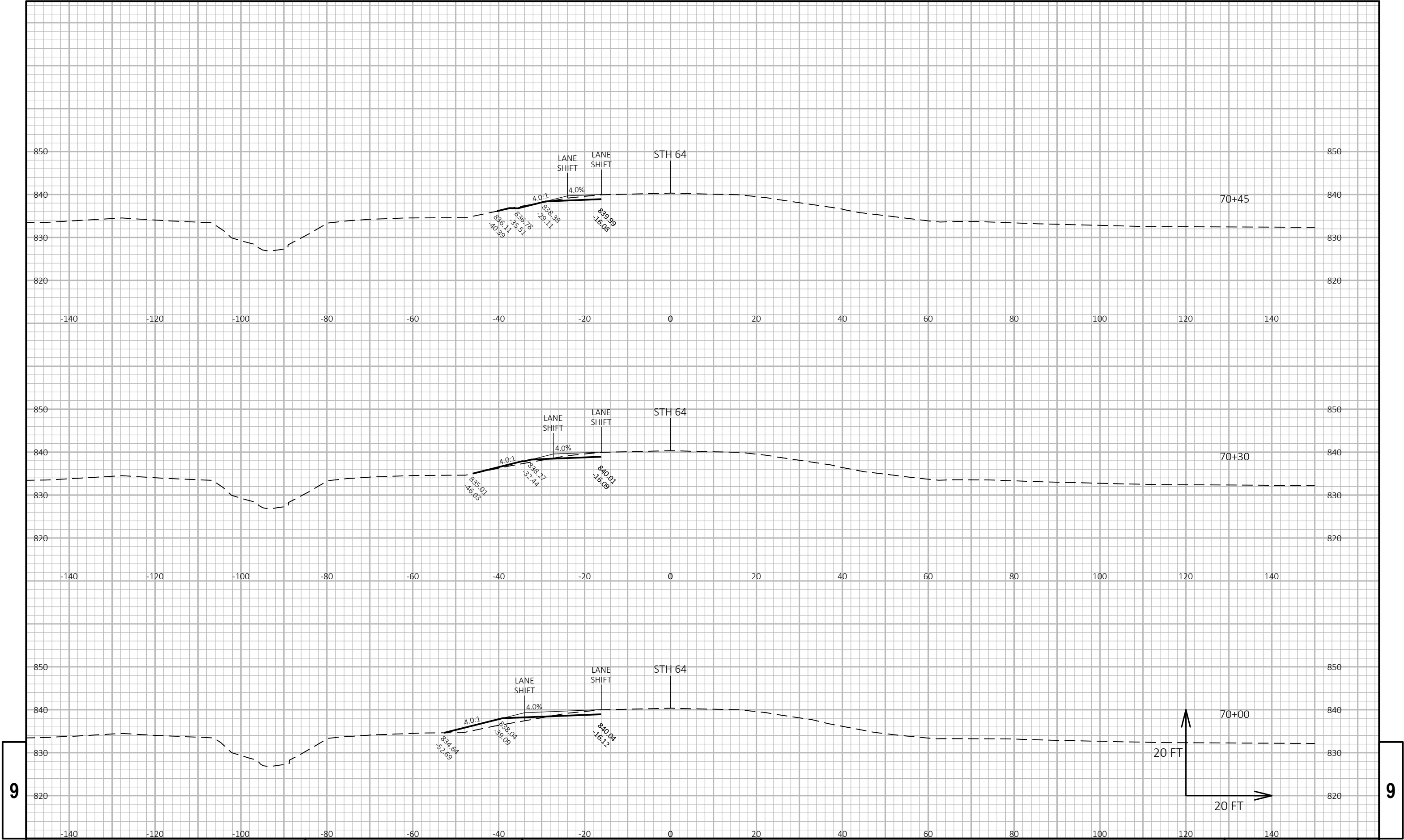
WISDOT/CADDS SHEET 49

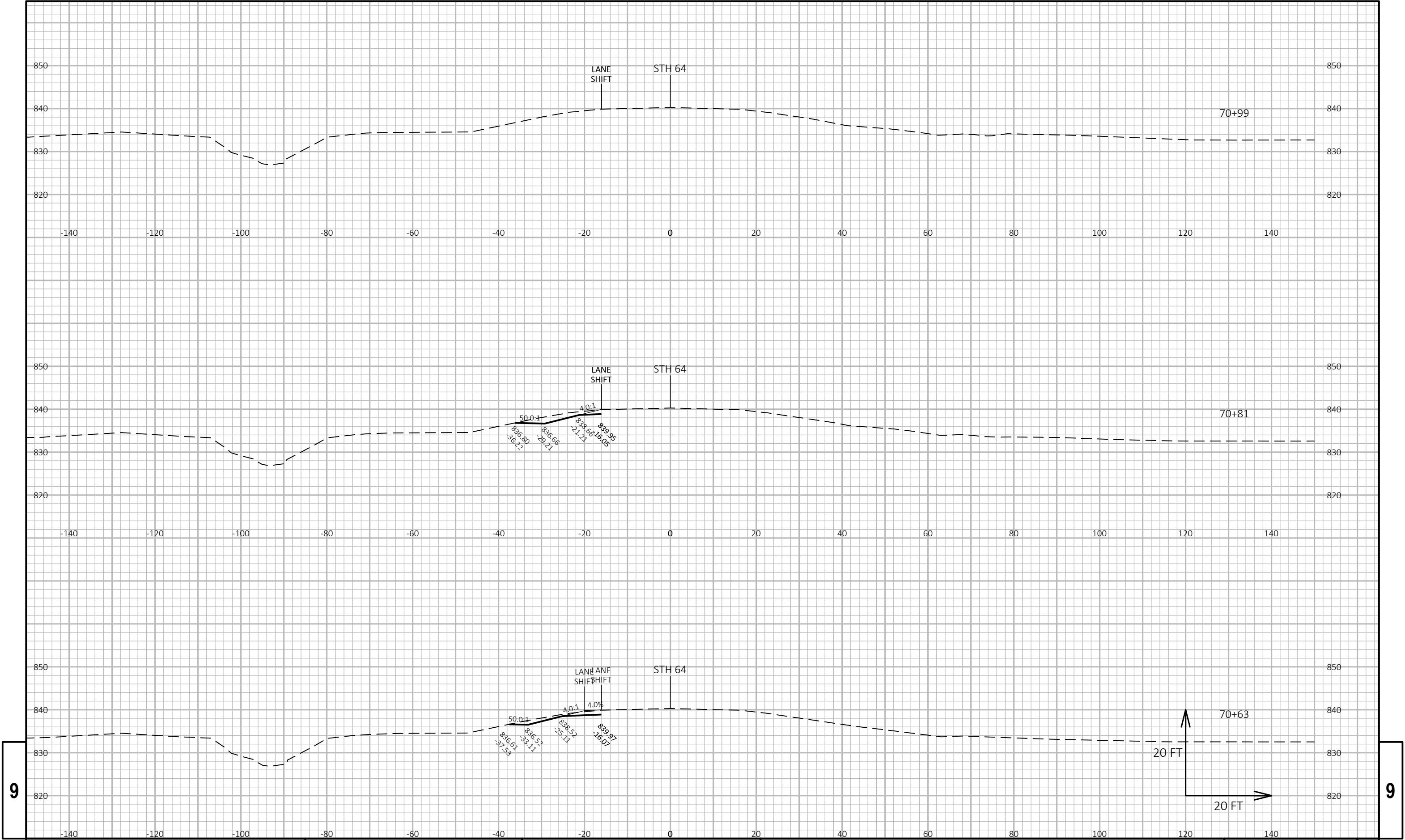




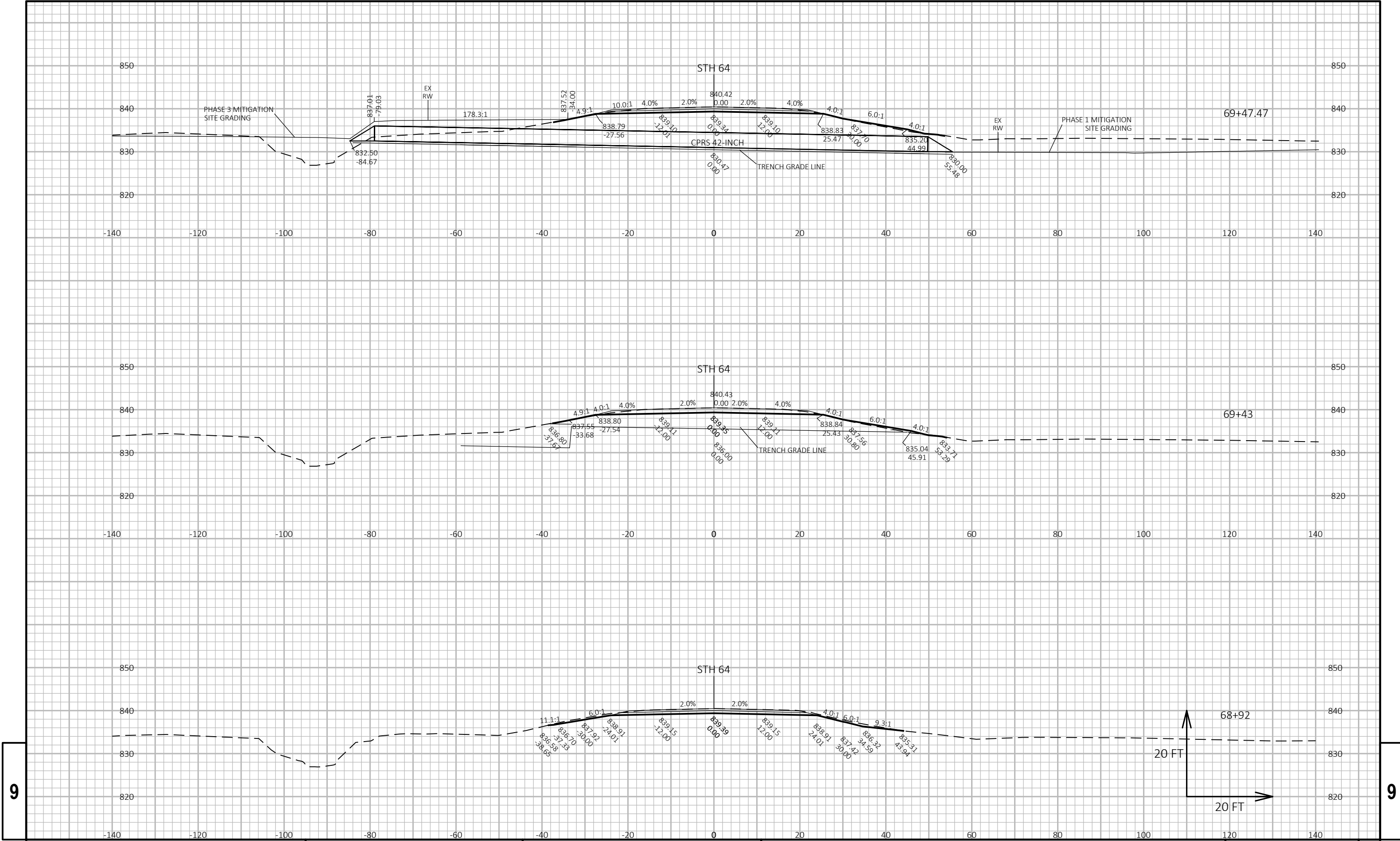


PROJECT NO: 1009-32-02	HWY: STH 64	COUNTY: OCONTO	CROSS SECTIONS: STH 64, LANE SHIFT WIDENING	SHEET	E
------------------------	-------------	----------------	---	-------	---



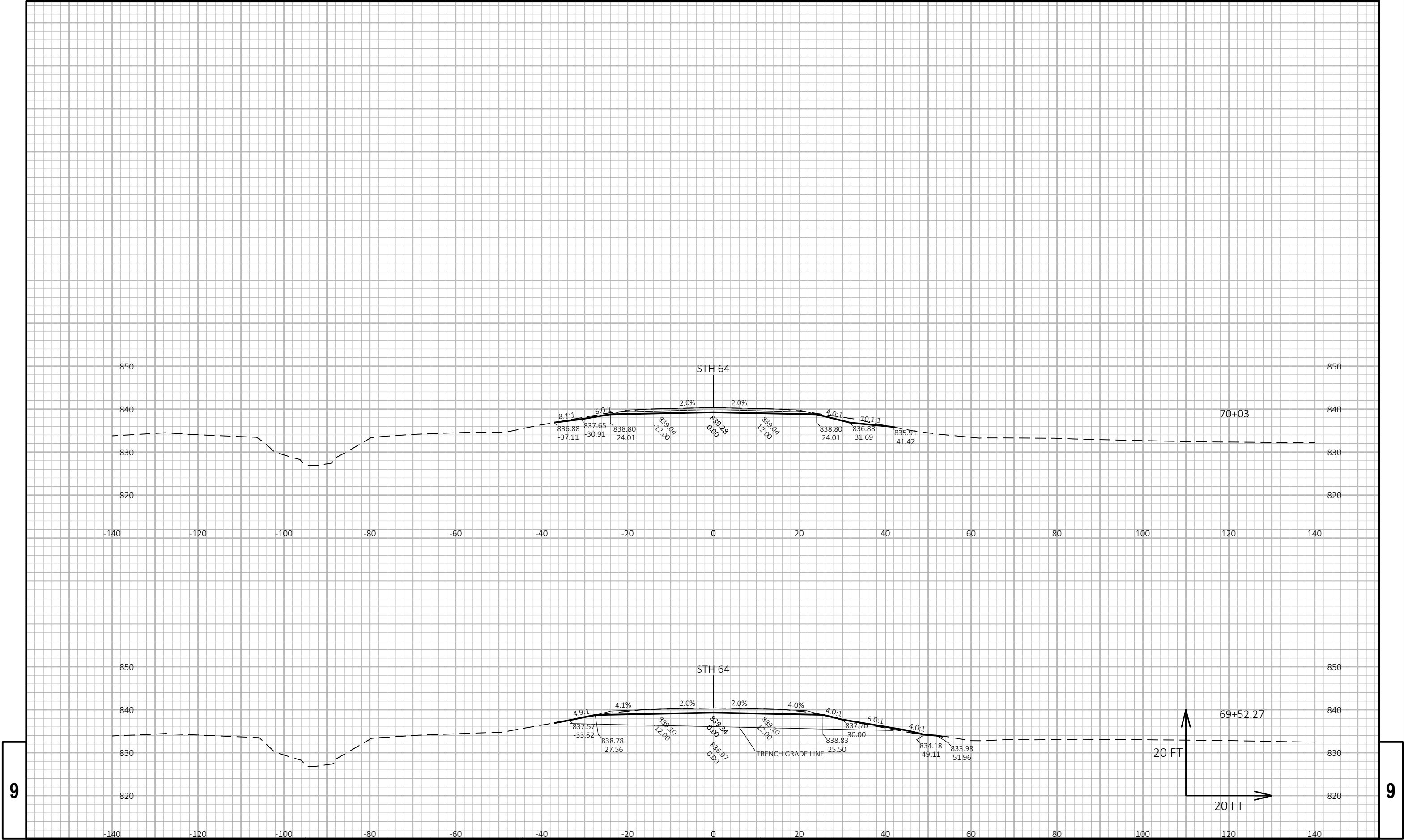


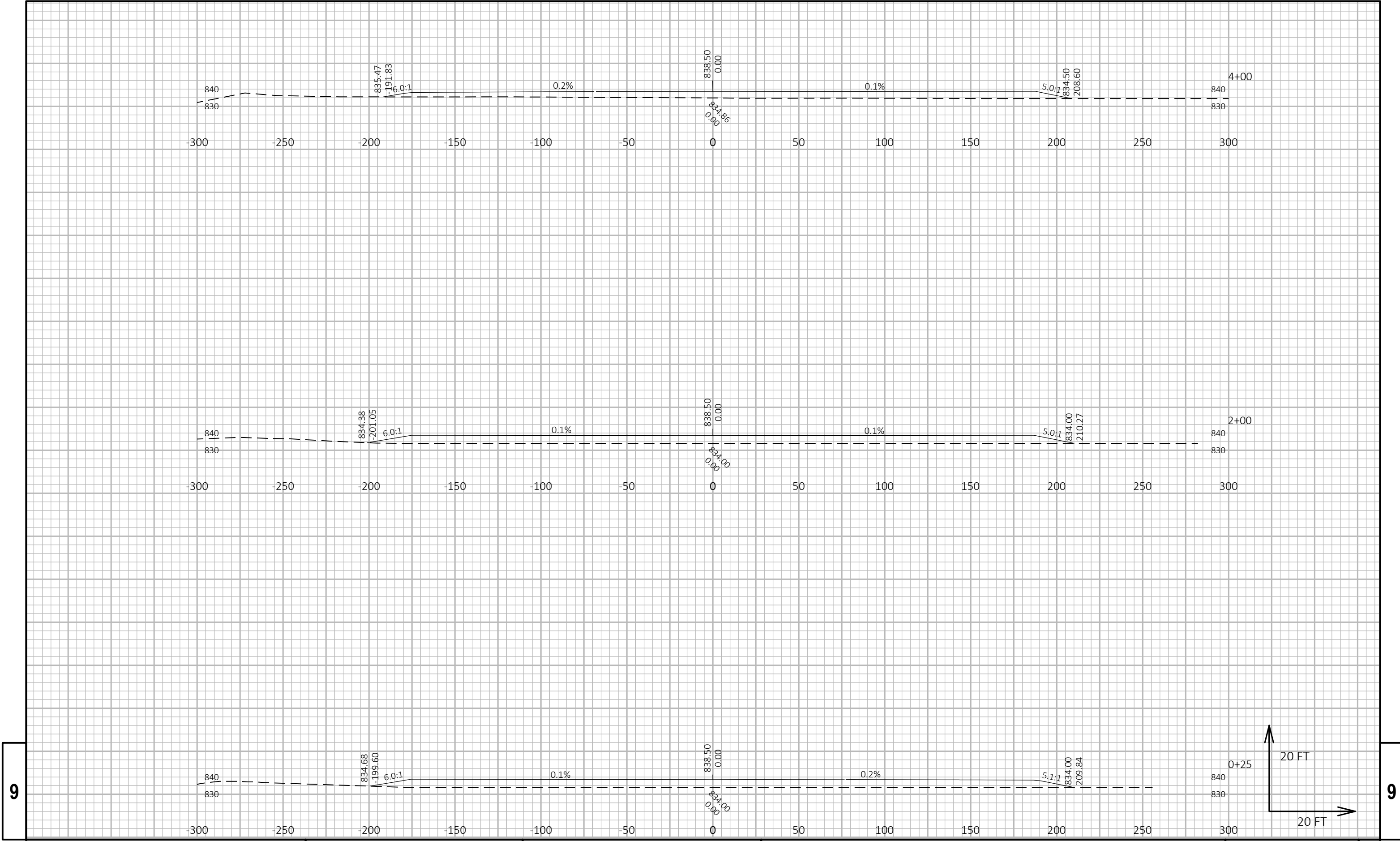
9		PROJECT NO: 1009-32-02	HWY: STH 64	COUNTY: OCONTO	CROSS SECTIONS: STH 64, LANE SHIFT WIDENING	SHEET	E
---	--	------------------------	-------------	----------------	---	-------	---



9

9

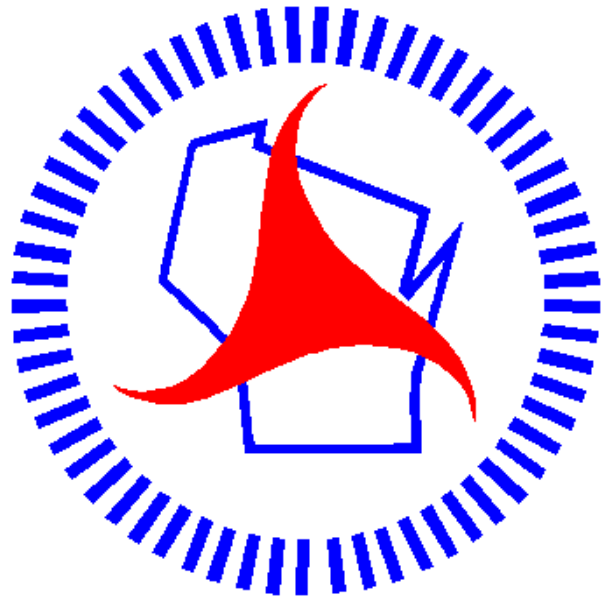




9

9

Notes



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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