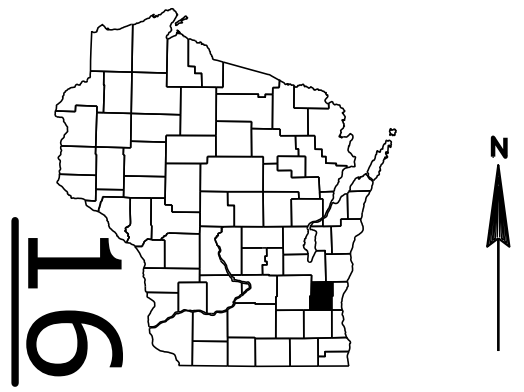


WKE
PROJECT ID: 2475-00-72
WITH: N/A
COUNTY: WASHINGTON

MAR 2015

ORDER OF SHEETS		
Section No.	1	Title
Section No.	2	Typical Sections and Details (Includes Erosion Control Plans)
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
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 = 52



DESIGN DESIGNATION	STH 145
A.A.D.T. (2016)	= N/A
A.A.D.T. (2036)	= N/A
D.H.V.	= N/A
D.D.	= N/A
T.	= N/A
DESIGN SPEED	= N/A
ESALS	= N/A

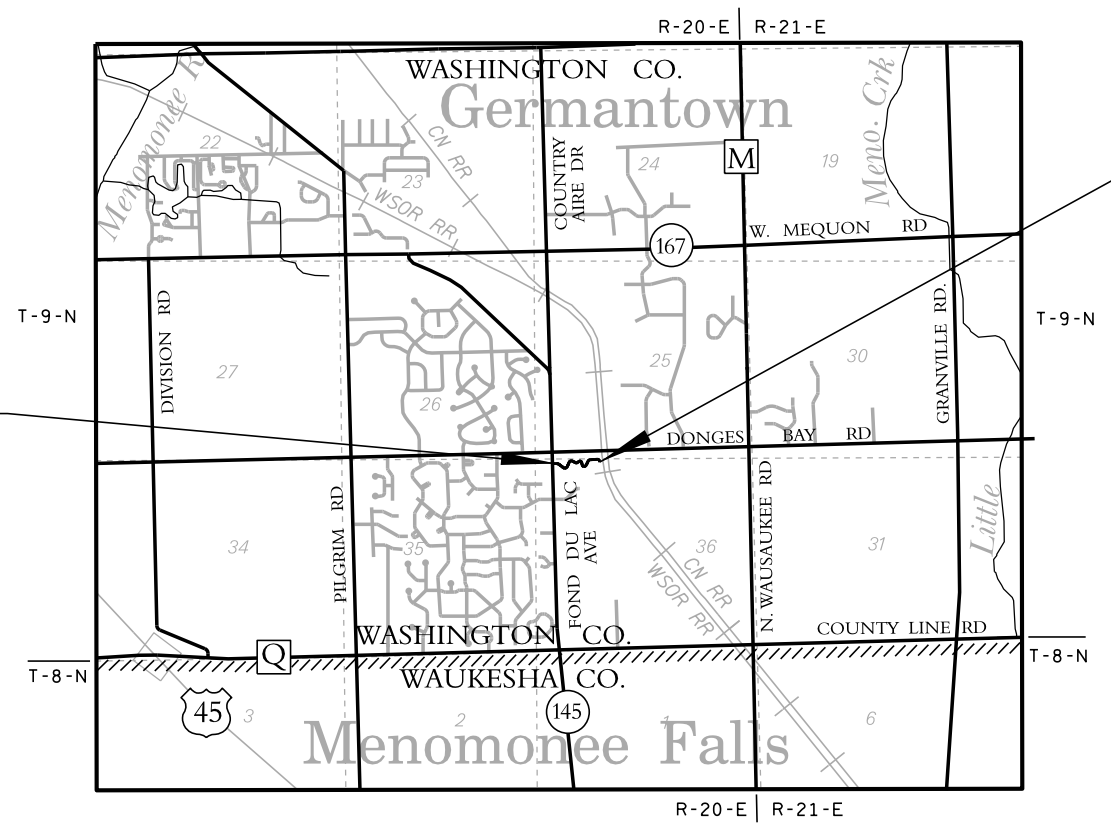
CONVENTIONAL SYMBOLS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PLAN OF PROPOSED IMPROVEMENT
ORCHARD ROAD,
VILLAGE OF GERMANTOWN
DONGES BAY ROAD INTERSECTION
STH 145
WASHINGTON COUNTY

STATE PROJECT NUMBER
2475-00-72

BEGIN PROJECT
I.D. 2475-00-72
STA. 100+03.74
Y = 105,059.20
X = 388,998.14



END PROJECT
STA. 104+06.47

LAYOUT
SCALE 0 1.0 MI
TOTAL NET LENGTH OF CENTERLINE = 0.000 MILES

COORDINATES ON THIS PLAN ARE REFERENCED
TO THE WISCONSIN COUNTY COORDINATE SYSTEM
(WCCS), WASHINGTON COUNTY, 83 (2007)
ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED
TO THE NORTH AMERICAN VERTICAL DATUM OF NAVD 88 (2007).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
2475-00-72		

ORIGINAL PLANS PREPARED BY

BLOOM COMPANIES, LLC
Infrastructure Innovation and Ingenuity

WISCONSIN
JEREMY L. HINDS
E-38775
FRANKSVILLE, WI
PROFESSIONAL ENGINEER

10/29/14 (Date) [Signature] (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	BLOOM COMPANIES, LLC
Designer	BLOOM COMPANIES, LLC
Project Manager	NGUYEN LY
Regional Examiner	STEVE CHOJNACKI
Regional Supervisor	BENEDICT ERUCHALU
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 10/28/14 [Signature] (Signature)

E

GENERAL NOTES

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

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY LOCAL MUNICIPAL UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER

ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES SHALL BE FILLED WITH GRANULAR BACKFILL, WHICH SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE ABANDONMENT OR REMOVAL ITEM.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS.

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR SHALL VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER. INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.

THE EROSION CONTROL FEATURES AS SHOWN IN THE PLANS ARE AT SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

REMOVAL OF EROSION CONTROL DEVICES IS INCLUDED IN THE COST OF THEIR RESPECTIVE BID ITEMS.

DISTURBED AREAS SHALL BE TOPSOILED AND SEEDED WITHIN 7 CALENDAR DAYS AFTER FINISHED GRADING IS COMPLETE AS DIRECTED BY THE ENGINEER IN THE FIELD.

FERTILIZER SHALL NOT BE USED, ON THIS PROJECT.

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

ALL SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED, COVERED OR PARTIALLY COVERED AS NEEDED AND/OR DIRECTED BY THE ENGINEER. NO WORKING LIGHTS SHALL BE VISIBLE ON A LAID DOWN SIGN. ANY RE-ERECTING AND UNCOVERING OF SIGNS IS INCLUDED IN THE COST OF BID ITEM "TRAFFIC CONTROL ID 2475-00-72". SEE STANDARD PROVISIONS FOR MORE GUIDANCE.

CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED. TOPSOIL SHALL BE PLACED WITH 6-INCH TYPICAL DEPTH.

STANDARD ABBREVIATIONS

AECPRC	APRON ENDWALL CULVERT PIPE REINFORCED CONCRETE
AECPRCHE	APRON ENDWALL CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
AEW	APRON END WALL
B/C	BACK OF CURB
BA	BEGIN ABRUPT
CPCM	CULVERT PIPE CORRUGATED METAL
Δ	DELTA
MIN	MINIMUM
PLE	PERMANENT LIMITED EASMENT
PRC	POINT OF REVERSE CURVATURE
R/W	RIGHT OF WAY
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SSPRCHE	STORM SEWER PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- EROSION CONTROL
- PLANTING PLAN
- TRAFFIC CONTROL
- ALIGNMENT PLAN

UTILITY CONTACTS



WE ENERGIES (ELEC. OPERATIONS)
SEND ALL CORRESPONDENCE TO:
MR. LATROY BRUMFIELD
333 W. EVERETT STREET, A299
MILWAUKEE, WI 53203
PHONE: (414) 221-5617
FAX: (414) 221-2336
Latroy.brumfield@we-energies.com

CONSTRUCTION FIELD CONTACT:
MR. AL SCHMITT
245 SAND DRIVE
WEST BEND, WI 53095
PHONE: (262) 338-7662
Alan.schmitt@we-energies.com

TIME WARNER CABLE
MR. STEVE CRAMER
1320 N. MARTIN LUTHER KING JR DRIVE
MILWAUKEE, WI 53212
PHONE: (414) 277-4045
FAX: (414) 277-0638
Steve.cramer@twcable.com

WE ENERGIES (GAS OPERATIONS)
SEND ALL CORRESPONDENCE TO:
MR. LATROY BRUMFIELD
333 W. EVERETT STREET, A299
MILWAUKEE, WI 53203
PHONE: (414) 221-5617
FAX: (414) 221-2336
Latroy.brumfield@we-energies.com

CONSTRUCTION FIELD CONTACT:
MR. DENNIS SINJAKOVIC
5400 N. GREEN BAY AVE.
MILWAUKEE, WI 53209
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Dennis.sinjakovic@we-energies.com

AT&T WISCONSIN
SEND ALL CORRESPONDENCE TO:
MR. RICK PODOLAK
304 S. DEWEY ST., 4TH FLOOR
EAU CLAIRE, WI 54701
PHONE: (715) 839-5565
Rick.t.podolak@att.com

CONSTRUCTION FIELD CONTACT:
MR. ALPER KOLCU
2005 PEWAUKEE ROAD
WAUKESHA, WI 53188
PHONE: (262) 970-8494
FAX: (262) 896-7435
AK308x@att.com

OTHER AGENCIES

BLOOM COMPANIES, LLC - DESIGNER
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10501 W. RESEARCH DRIVE
MILWAUKEE, WI 53226
PHONE: (414) 292-4552
FAX: (414) 771-4490
jhinds@bloomcos.com

CANADIAN NATIONAL RAILWAY COMPANY
MS. JACKIE MACEWICZ
1625 DEPOT STREET
STEVENS POINT, WI 54481
PHONE: (715) 345-2503
Jacki.macewicz@cn.ca

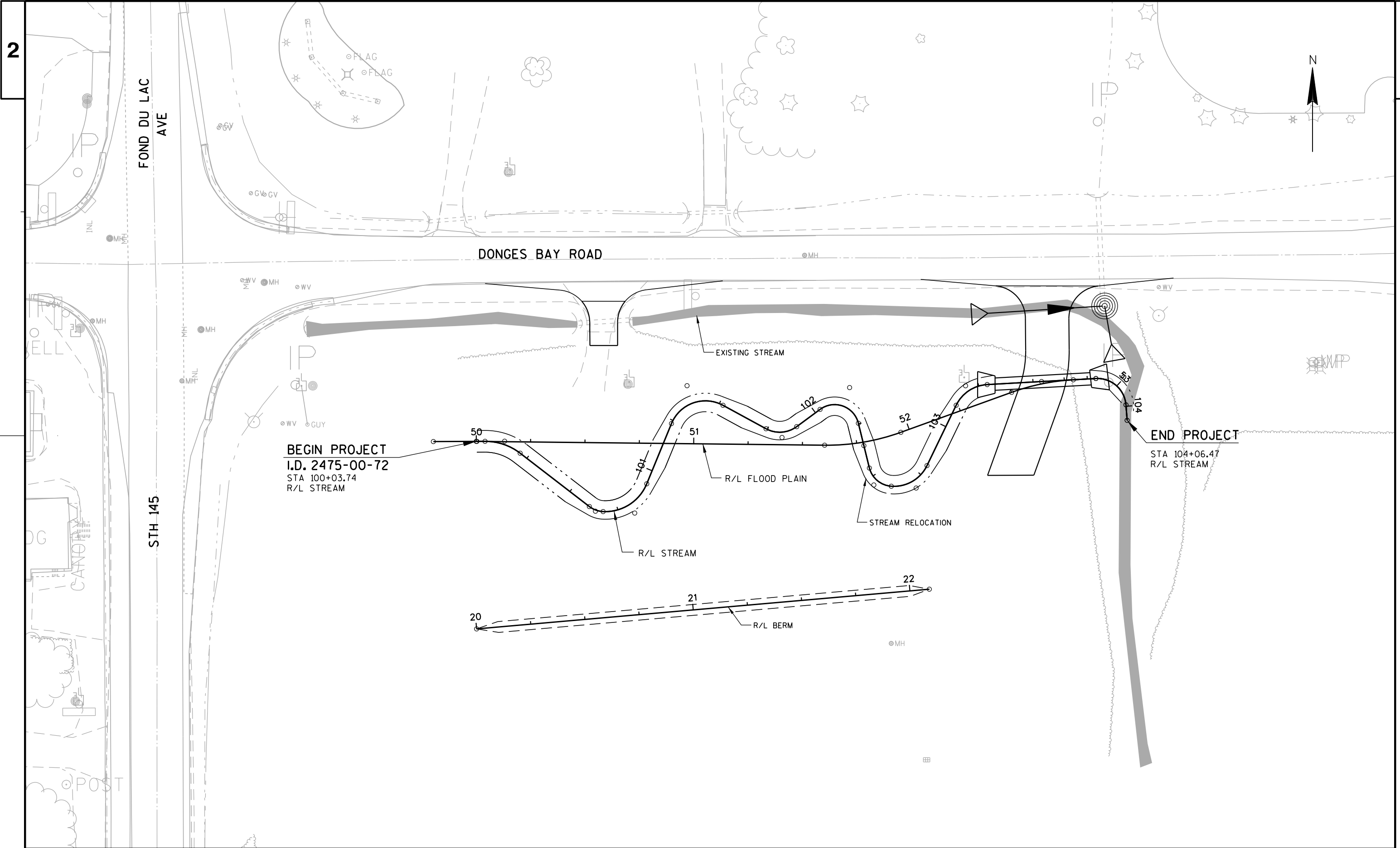
DEPARTMENT OF NATURAL RESOURCES
MS. KRISTINA BETZOLD
2300 N. DR. MARTIN LUTHER KING JR. DR.
P.O. BOX 12436
MILWAUKEE, WI 53212
PHONE: (414) 579-2112
FAX: (414) 263-8483
kristina.betzold@wisconsin.gov

VILLAGE OF GERMANTOWN
MR. DANIEL LUDWIG
N112 W17001 MEQUON ROAD
P.O. BOX 337
GERMANTOWN, WI 53022
PHONE: (262) 250-4721
FAX: (262) 253-8255
dludwig@village.germantown.wi.us

WASHINGTON HWY, COUNTY OF
MR. TOM WONDRA
900 LANG STREET
WEST BEND, WI 53090
PHONE: (262) 335-4435
FAX: (262) 335-4439
tom.wondra@co.washington.wi.us

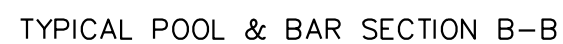
WISCONSIN & SOUTHERN RAILROAD COMPANY
MR. BEN MEIGHAN
1890 E JOHNSON STREET
MADISON, WI 53704
PHONE: (608) 243-9129
FAX: (608) 243-9225
bmeighan@wsorrrailroad.com

WISDOT PROJECT MANAGER
MR. NGUYEN LY
141 NW BARSTOW STREET
WAUKESHA, WI 53187
PHONE: (262) 548-8739
Nguyen.ly@dot.wi.gov



PROJECT NO: 2475-00-72	HWY: STH 145	COUNTY: WASHINGTON	PROJECT OVERVIEW	SHEET	E
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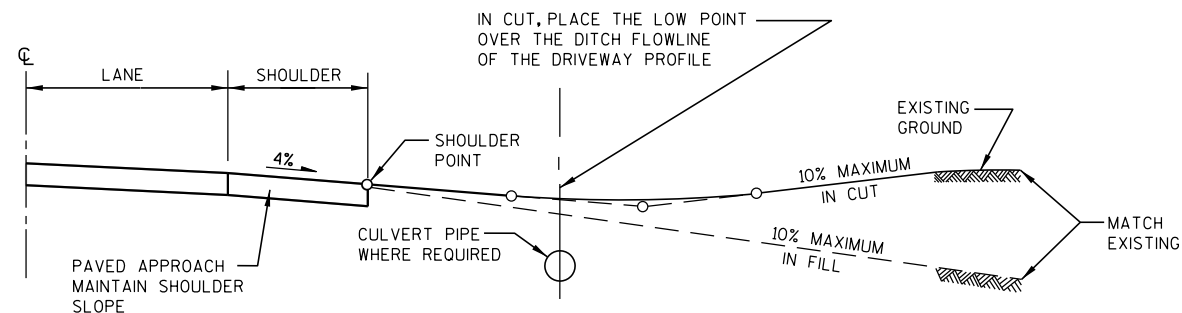
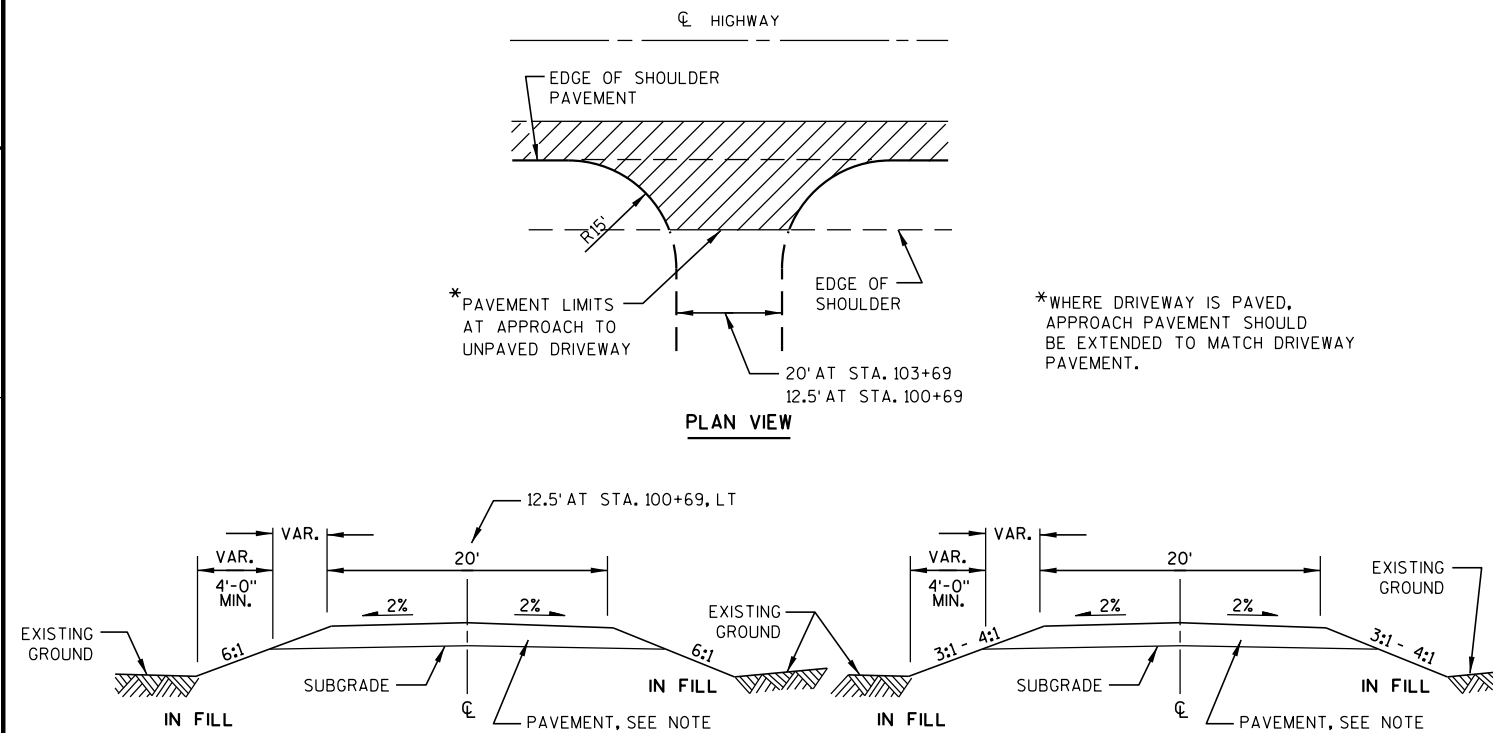
2



LEGEND

- (A) WETLAND SEEDING, EROSION MAT, AND MULCHING SPECIAL
- (B) UPLAND SEEDING, EROSION MAT, AND MUCHING SPECIAL
- (C) STREAMBANK SEEDING, EROSION MAT, AND MULCHING SPECIAL

"X" = POINT REFERRED TO ON CROSS SECTIONS
AND PROFILE



NOTES

- 1) WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.
- 2) DRIVEWAY SURFACE TO BE SAME AS EXISTING WITH MINIMUM SECTION OF:

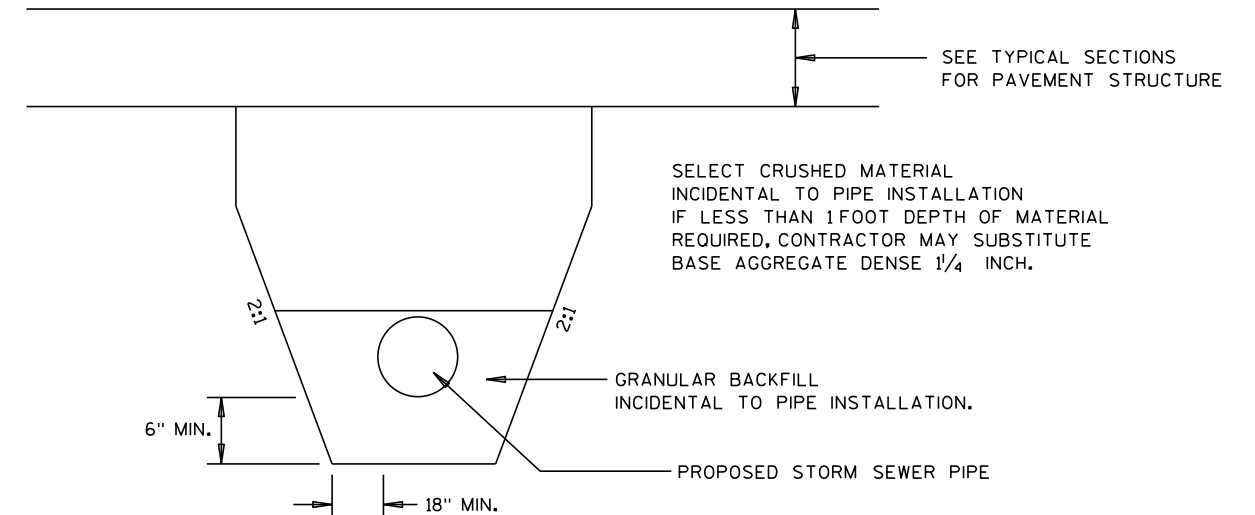
ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES
3-INCH OVER BASE AGGREGATE DENSE 3/4-INCH 4-INCH OR

CONCRETE DRIVEWAY 6-INCH OVER BASE AGGREGATE DENSE 3/4-INCH 4-INCH OR

BASE AGGREGATE DENSE 3/4-INCH 6-INCH

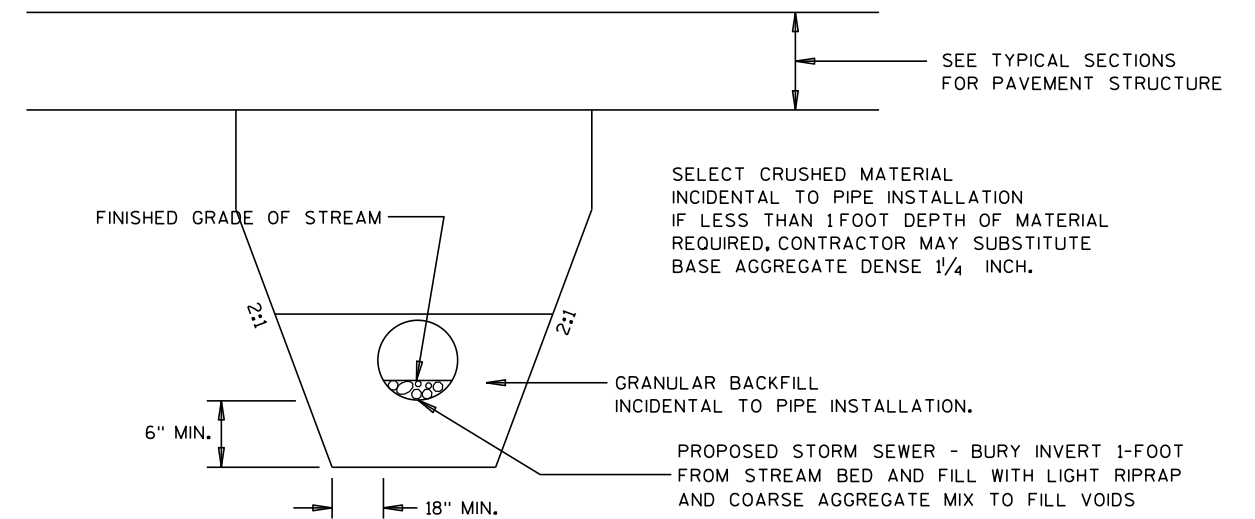
RURAL DRIVEWAY DETAIL

100+69, LT
103+69, 33' AND 0' LT



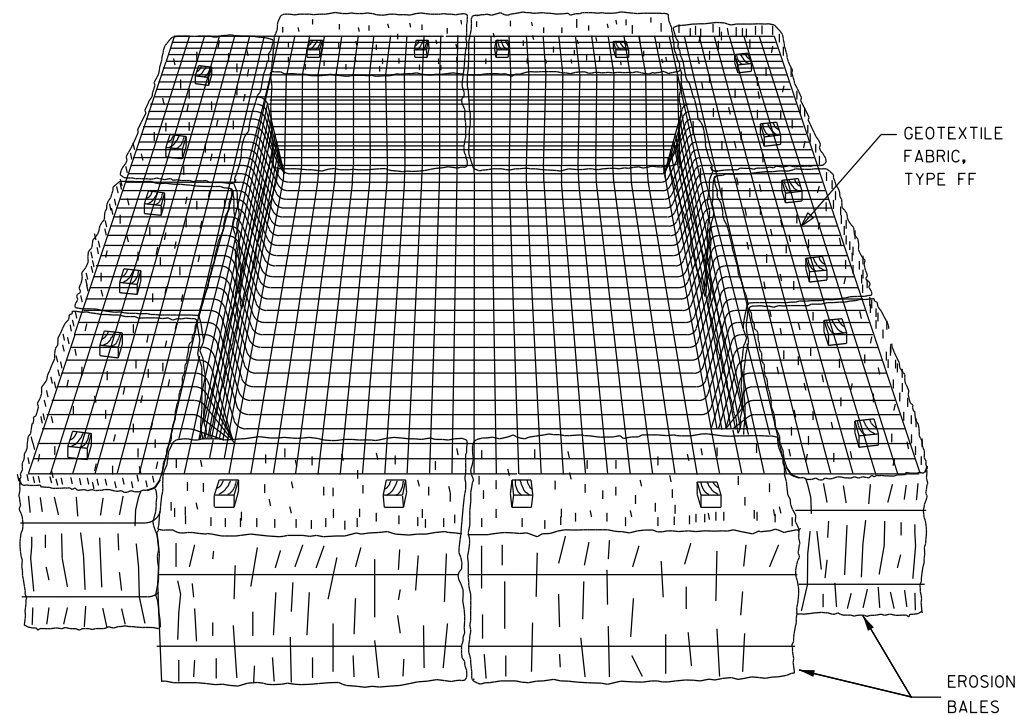
INSTALLATION OF PIPES DETAIL

103+69, CENTER OF EXISTING DITCH, NEAR ROADWAY



INSTALLATION OF PIPES DETAIL

103+69, 0' LT AT PROPOSED STREAM CENTERLINE



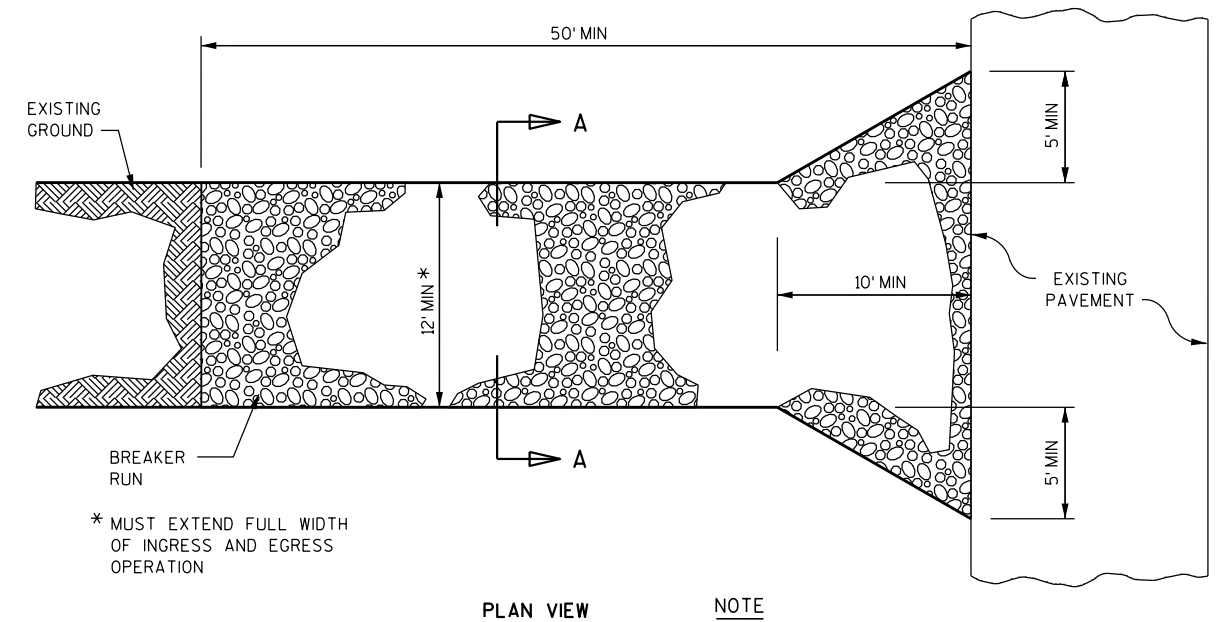
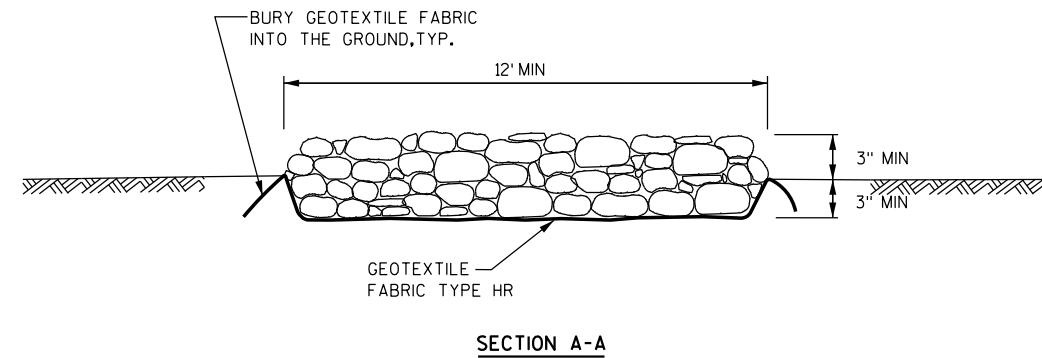
EXAMPLE:
CONTRACTOR INDICATES PUMP CAPABLE OF 50 GPM
HEIGHT OF BALES = 1.5 FT.
SOLUTION:
SV (C.F.) = 16 X 50
SV = 800 C.F.
 $\frac{800 \text{ C.F.}}{1.5 \text{ FT.}} = 533 \text{ S.F.}$
USE A 20 FT. X 27 FT. BASIN

NOTES

- 1) SEE EROSION CONTROL PLANS FOR LOCATION OF TEMPORARY SEDIMENT BASINS. ADDITIONALLY, THE CONTRACTOR SHALL PUMP WATER FROM DEWATERING OPERATIONS INTO TEMPORARY SEDIMENT BASINS PRIOR TO DISCHARGING INTO ROADSIDE DITCHES.
- 2) BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC AND SEDIMENTS SHALL BE DISPOSED BY THE CONTRACTOR OFF OF THE PROJECT SITE.
- 3) TEMPORARY SETTLING BASIN SHALL BE PAID FOR AS EROSION BALES AND GEOTEXTILE FABRIC TYPE FF.

TEMPORARY SEDIMENT BASIN DETAIL

UNDISTRIBUTED

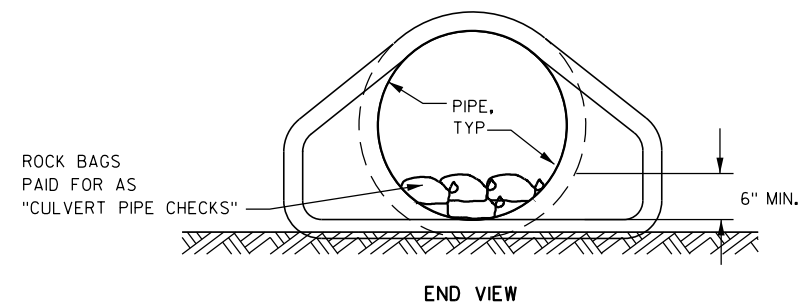
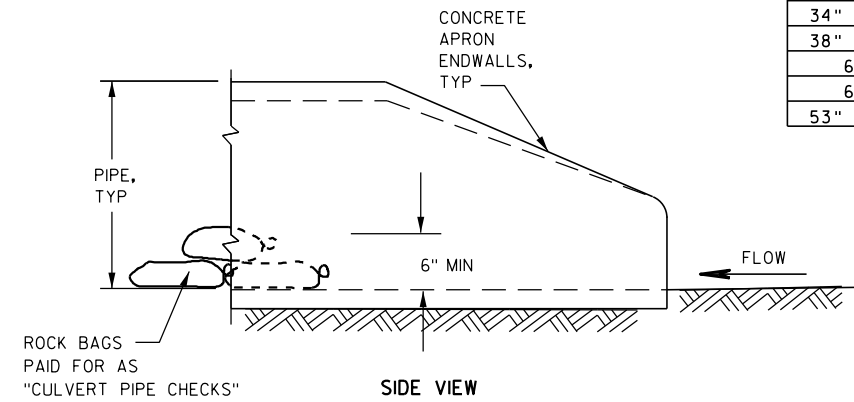


NOTE

- 1) TRACKING MATS SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

TRACKING PADS DETAIL

FOR CONSTRUCTION INGRESS/EGRESS POINTS

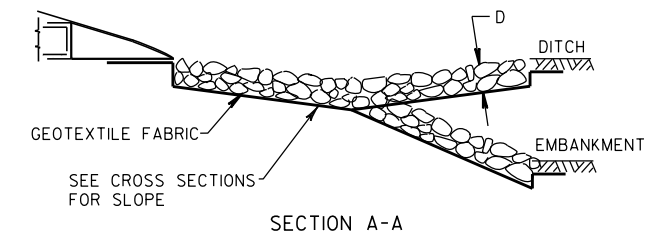
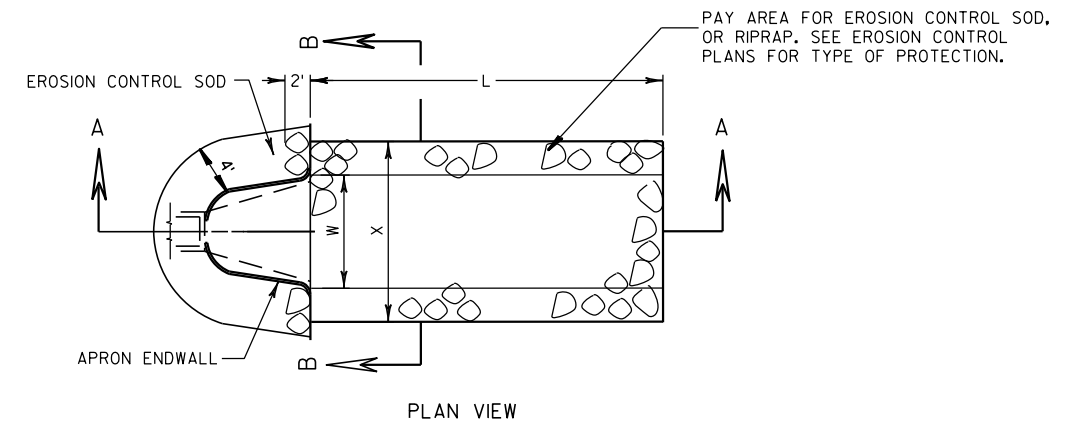


CULVERT PIPE CHECKS DETAIL

INSTALL AT INLET END ONLY

LOCATIONS SHOWN ON EROSION CONTROL PLANS

ESTIMATED BAG SIZE = 24" X 12" X 6"	
PIPE SIZE	ESTIMATED NO. OF BAGS
12"	1
15"	2
18"	2
21"	3
14" X 23"	3
24"	3
27"	4
30"	5
19" X 30"	5
36"	7
24" X 38"	8
42"	8
29" X 45"	10
48"	10
34" X 53"	10
38" X 60"	13
60"	13
66"	15
53" X 83"	19

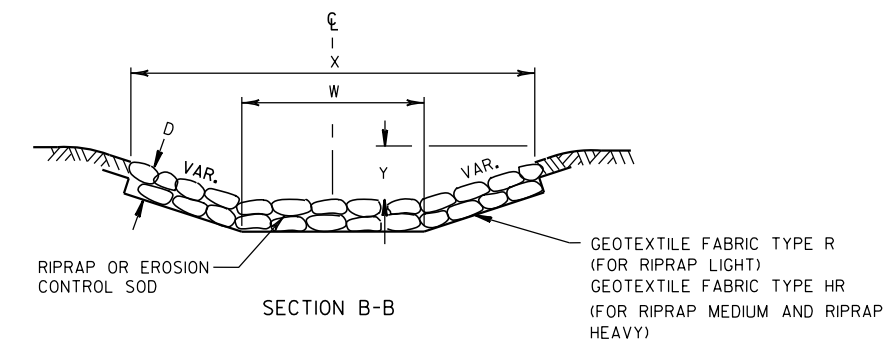


L = 2 x X NOR OR 10' MIN. OR
AS INDICATED IN THE PLANS OR AS
DIRECTED BY THE ENGINEER.

D = 12" FOR RIPRAP LIGHT
18" FOR RIPRAP MEDIUM
24" FOR RIPRAP HEAVY

X = W+2' FOR TYPICAL CULVERT
DISCHARGE INTO DITCH
W+5' FOR CULVERT DISCHARGE
DOWN EMBANKMENT SLOPE

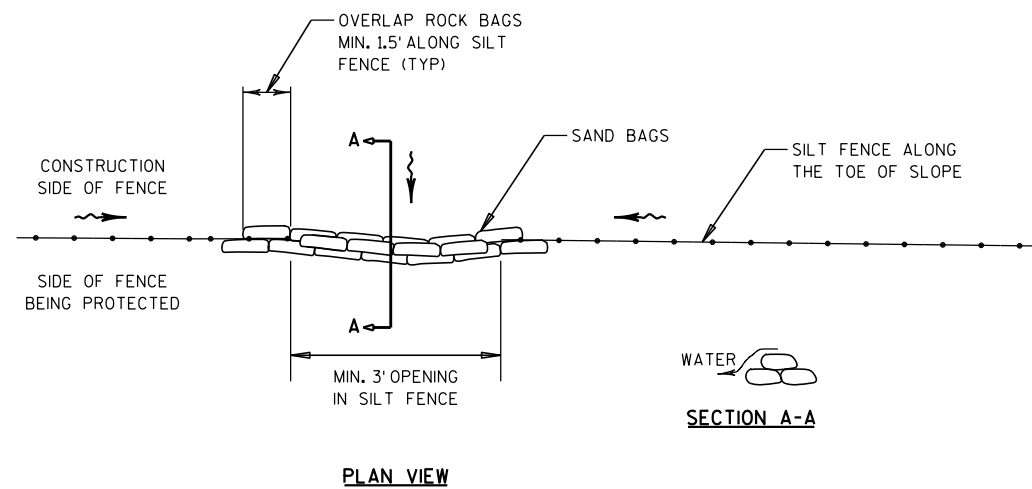
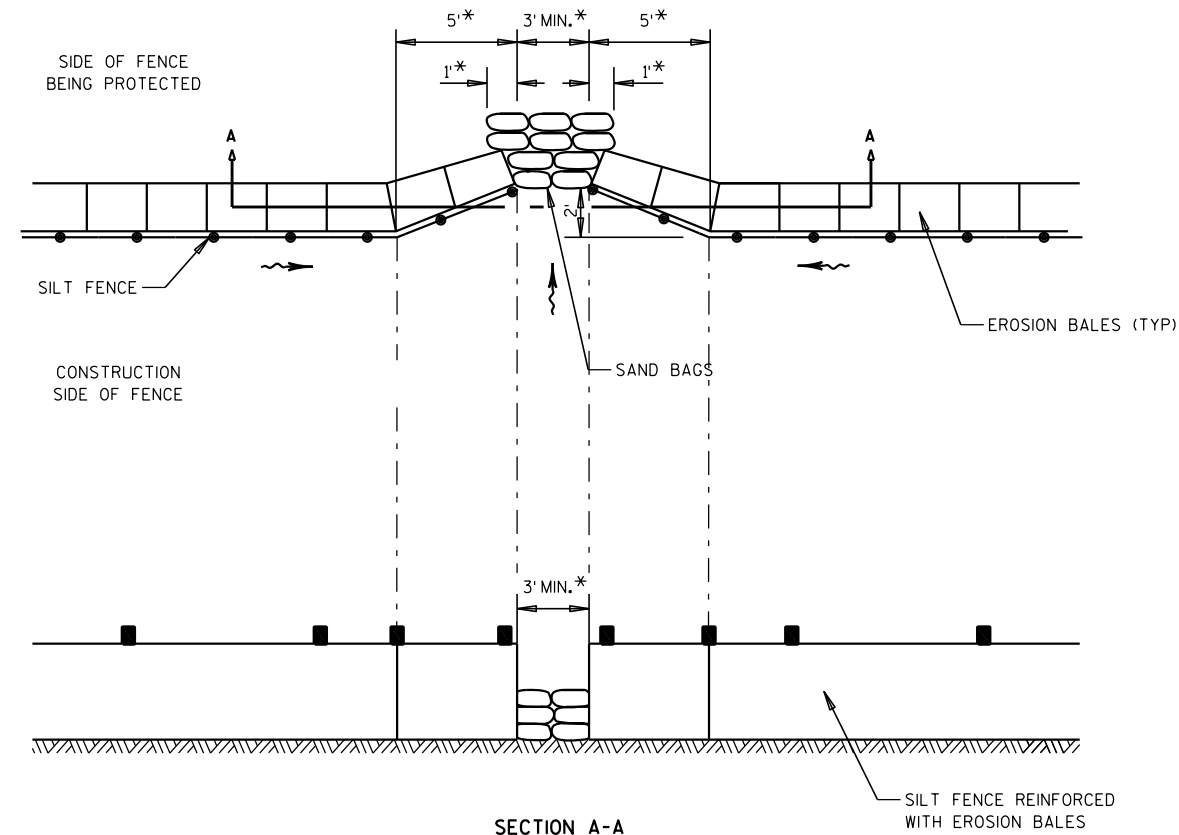
Y = 0' FOR TYPICAL CULVERT
DISCHARGE INTO DITCH
12" FOR CULVERT DISCHARGE
DOWN EMBANKMENT SLOPE



SOD, RIPRAP AND GEOTEXTILE FABRIC

AT APRON ENDWALLS DETAIL

SEE EROSION CONTROL PLAN FOR LOCATIONS



NOTE

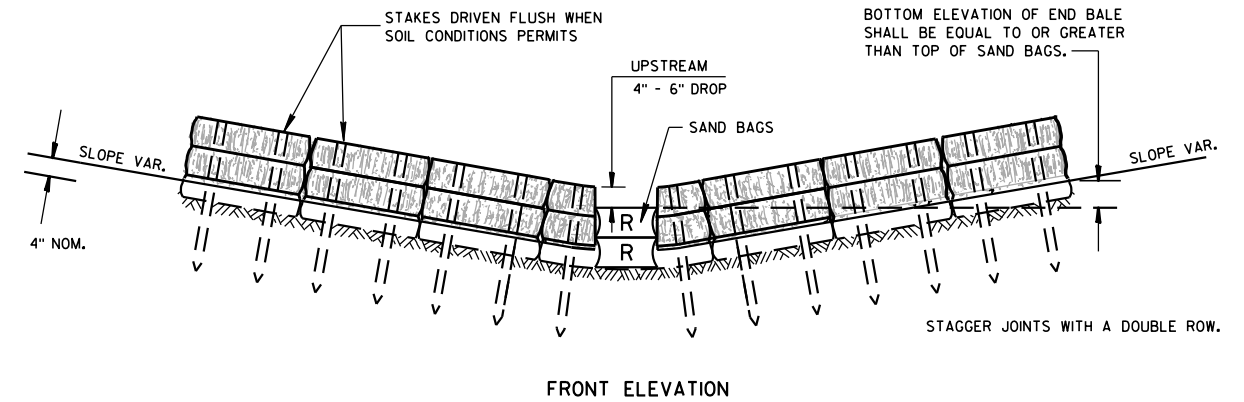
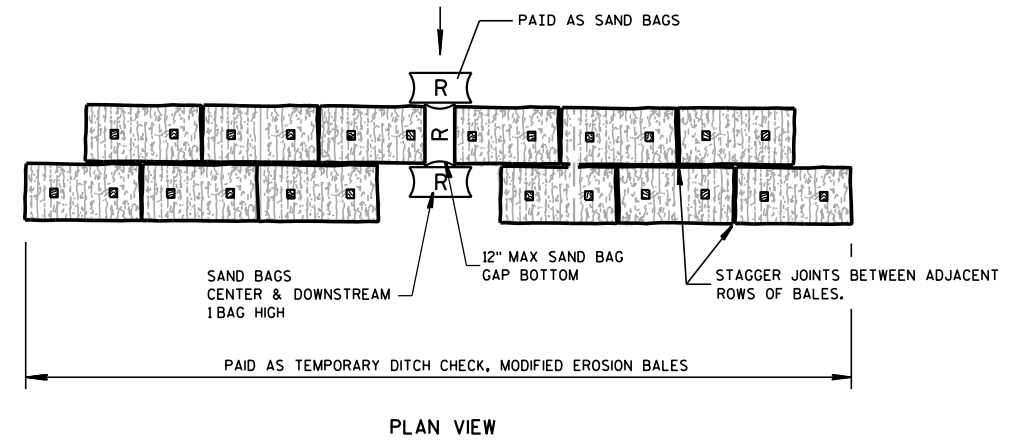
* DIMENSIONS MAY BE ADJUSTED
TO FIT FIELD CONDITIONS
AS DIRECTED BY ENGINEER

SILT FENCE DRAINAGE OUTLET DETAIL

(FOR USE IN ENVIRONMENTALLY SENSITIVE AREAS)

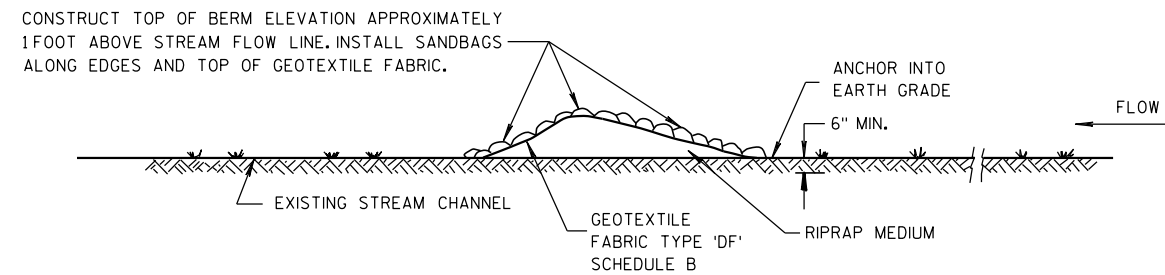
NOTE

1) 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.

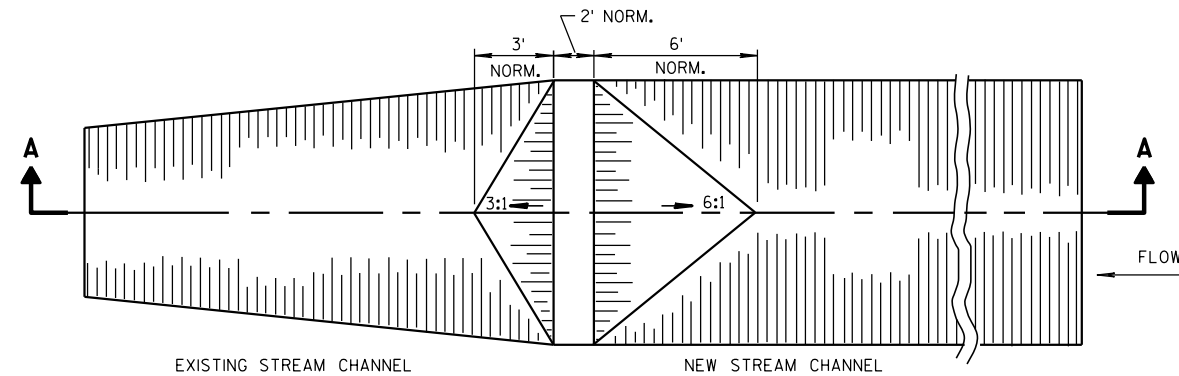


TEMPORARY DITCH CHECK DETAIL

LOCATIONS SHOWN ON EROSION CONTROL PLANS



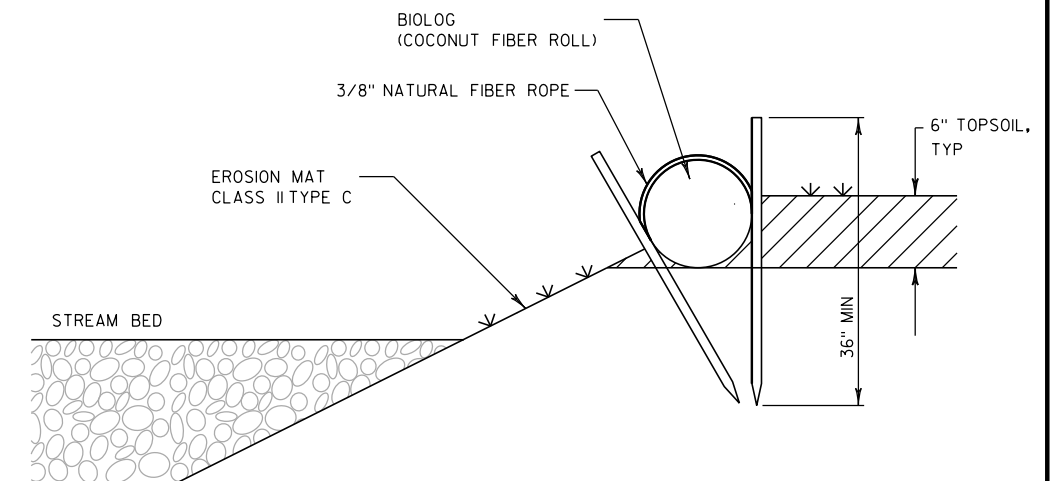
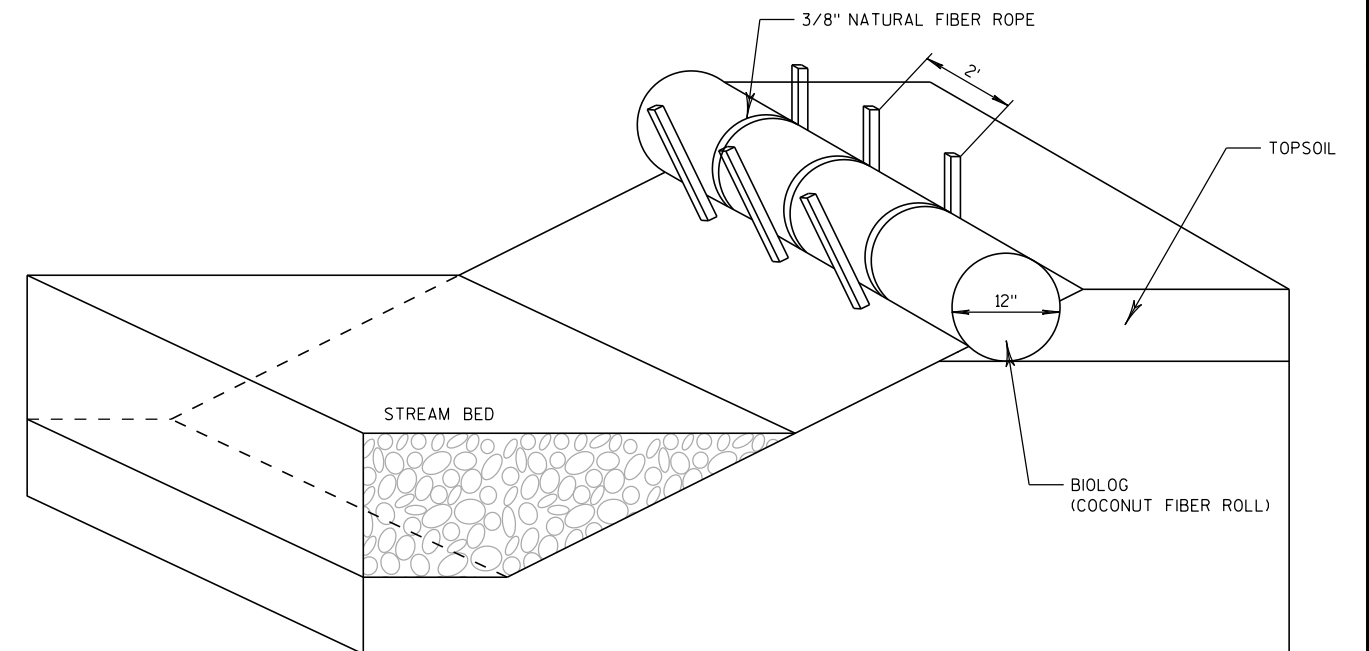
SECTION A-A



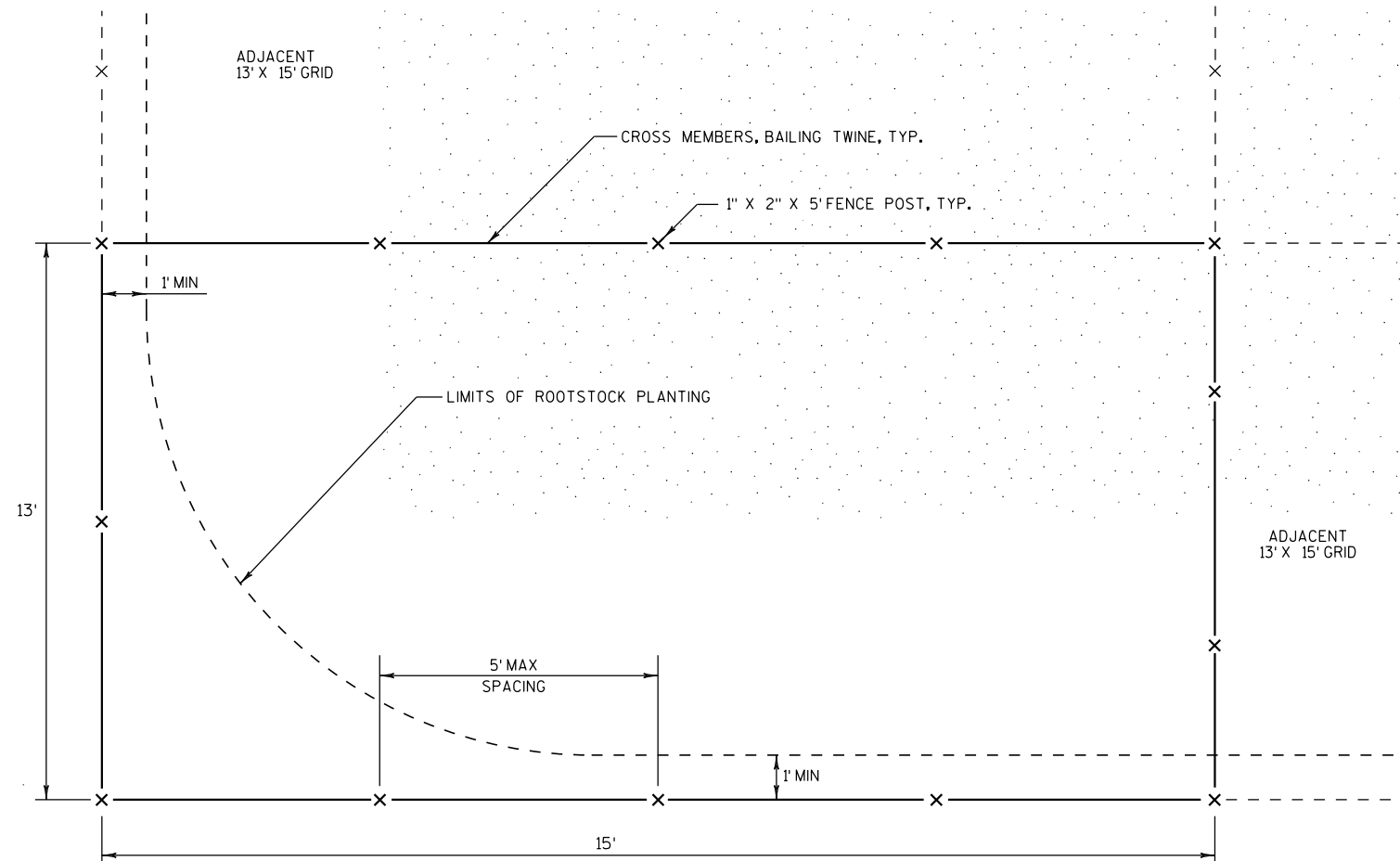
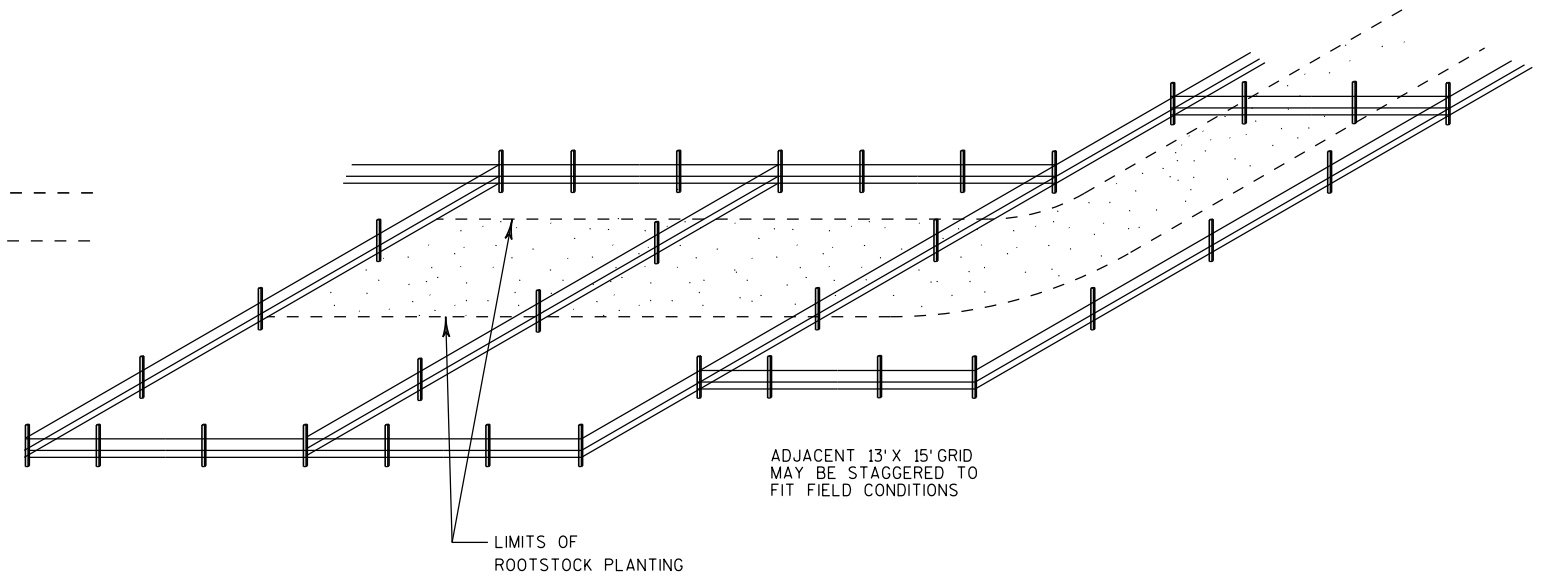
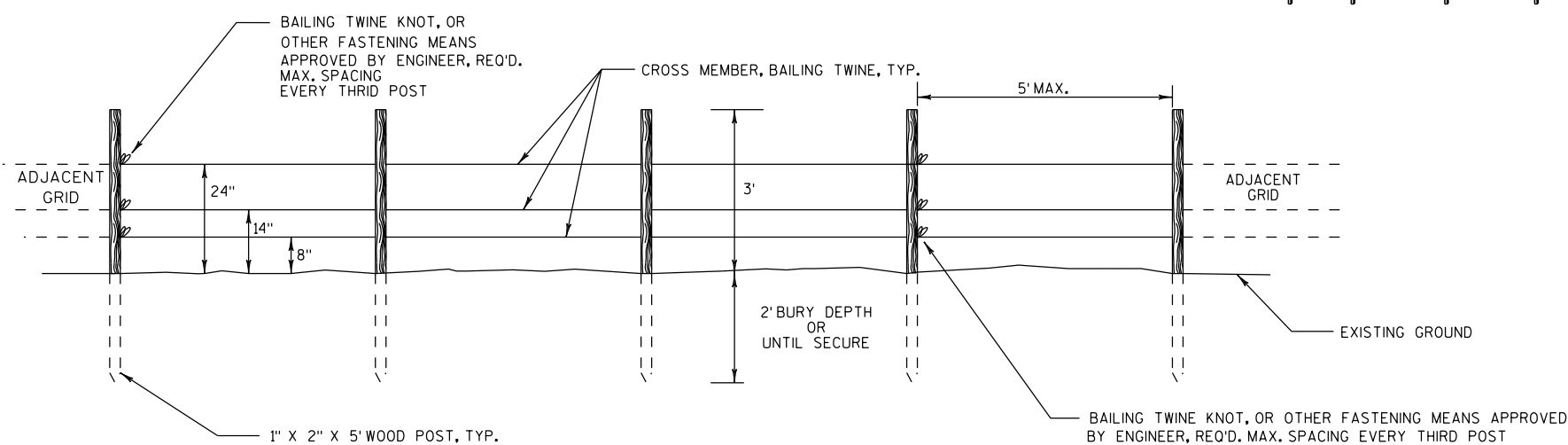
PLAN VIEW

FILTER BERM DETAIL

STA 103+97 LT/RT

BIOLOG INSTALLATION DETAIL

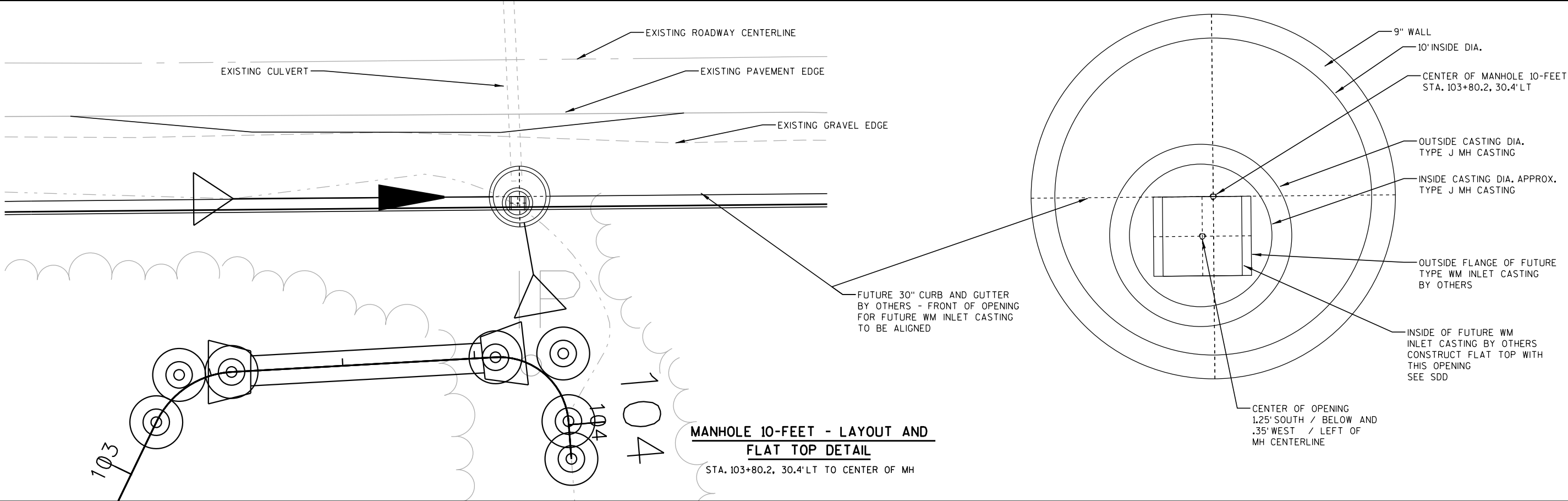
UNDISTRIBUTED

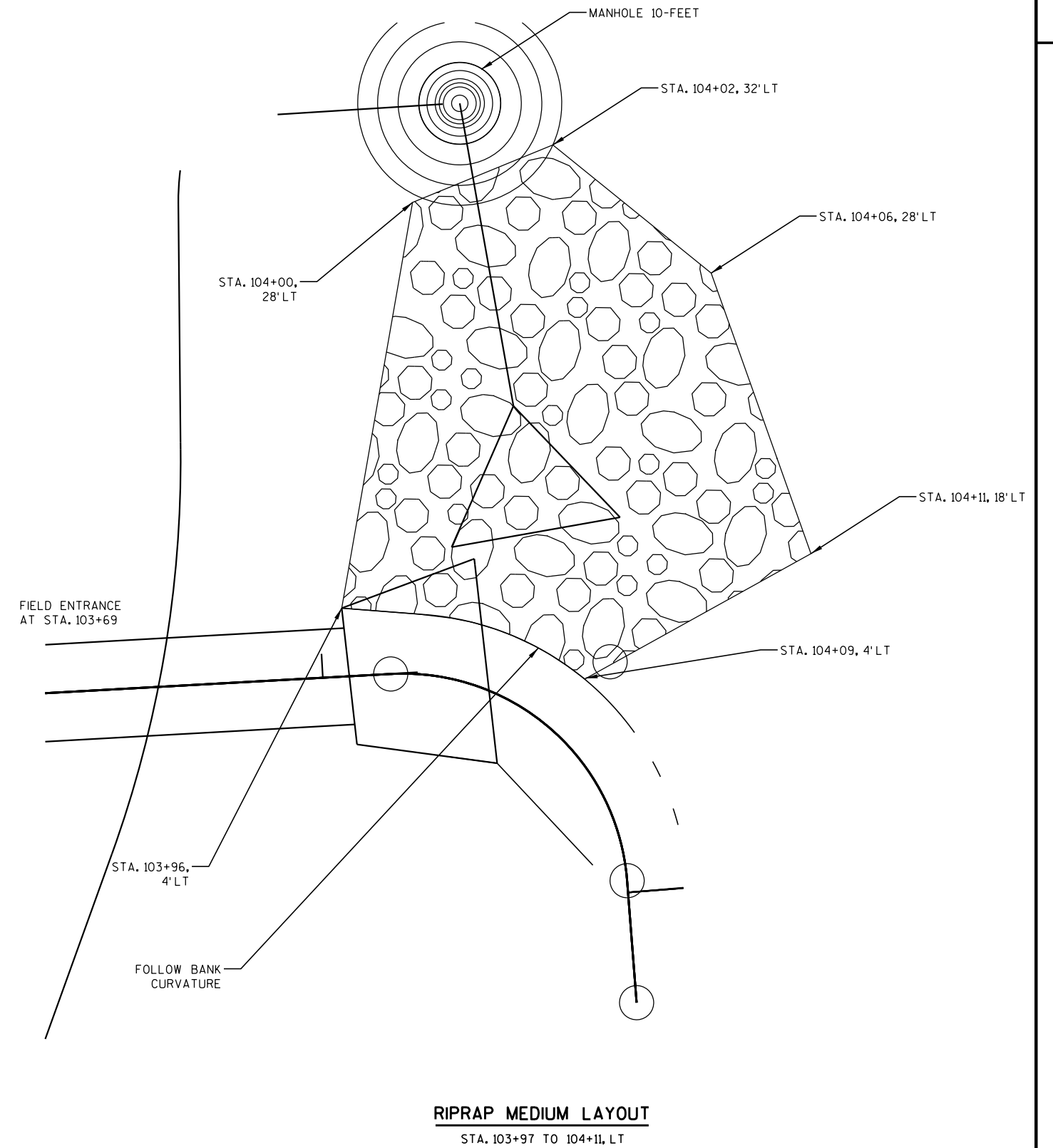
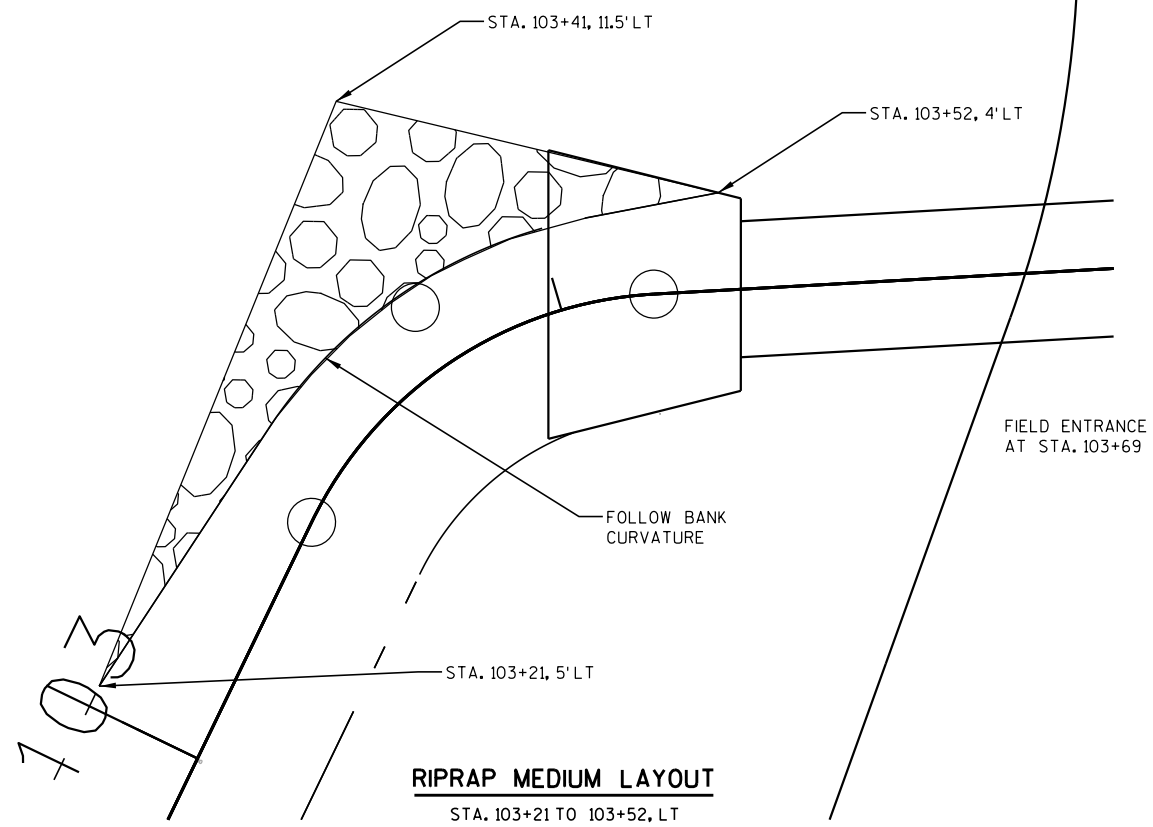
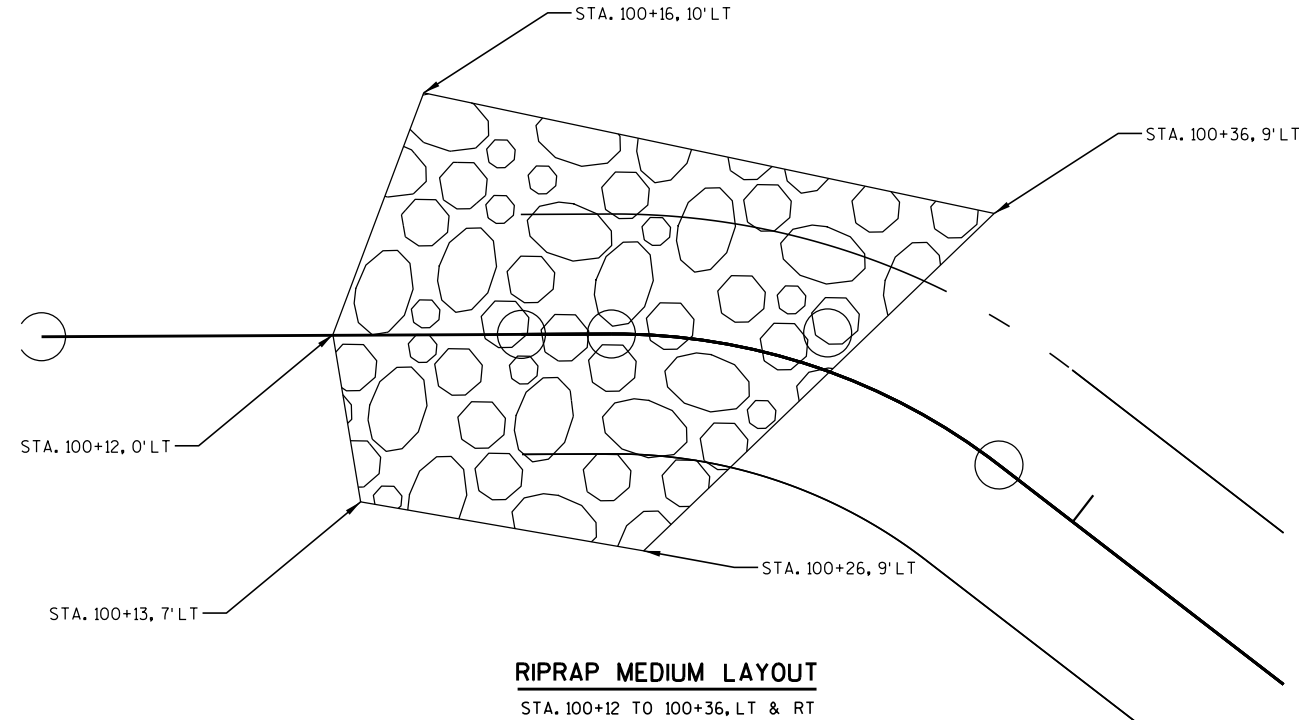
PLAN VIEWISOMETRIC VIEWPROFILE VIEWROOTSTOCK PROTECTION DETAIL

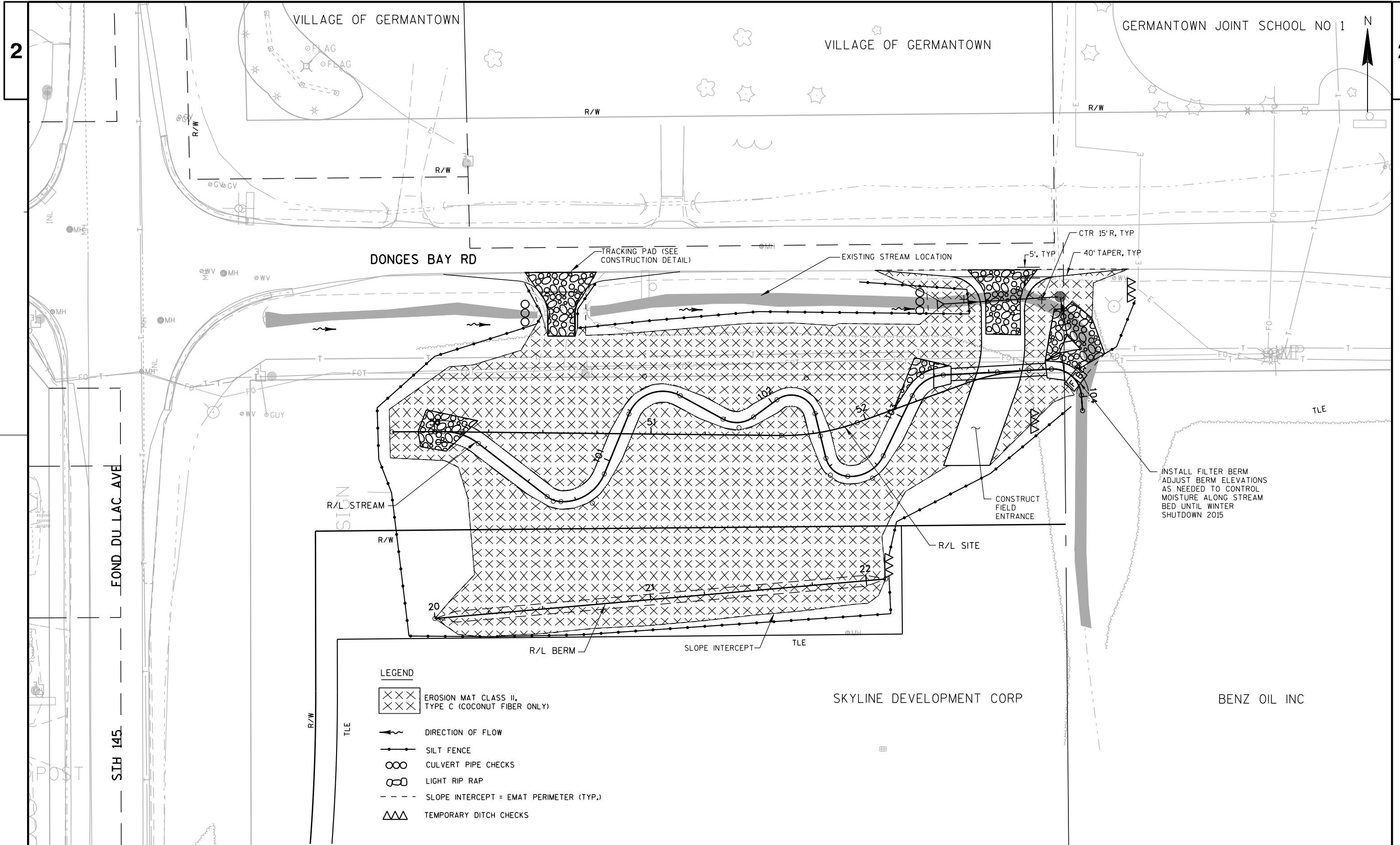
RUNOFF COEFFICIENT TABLE

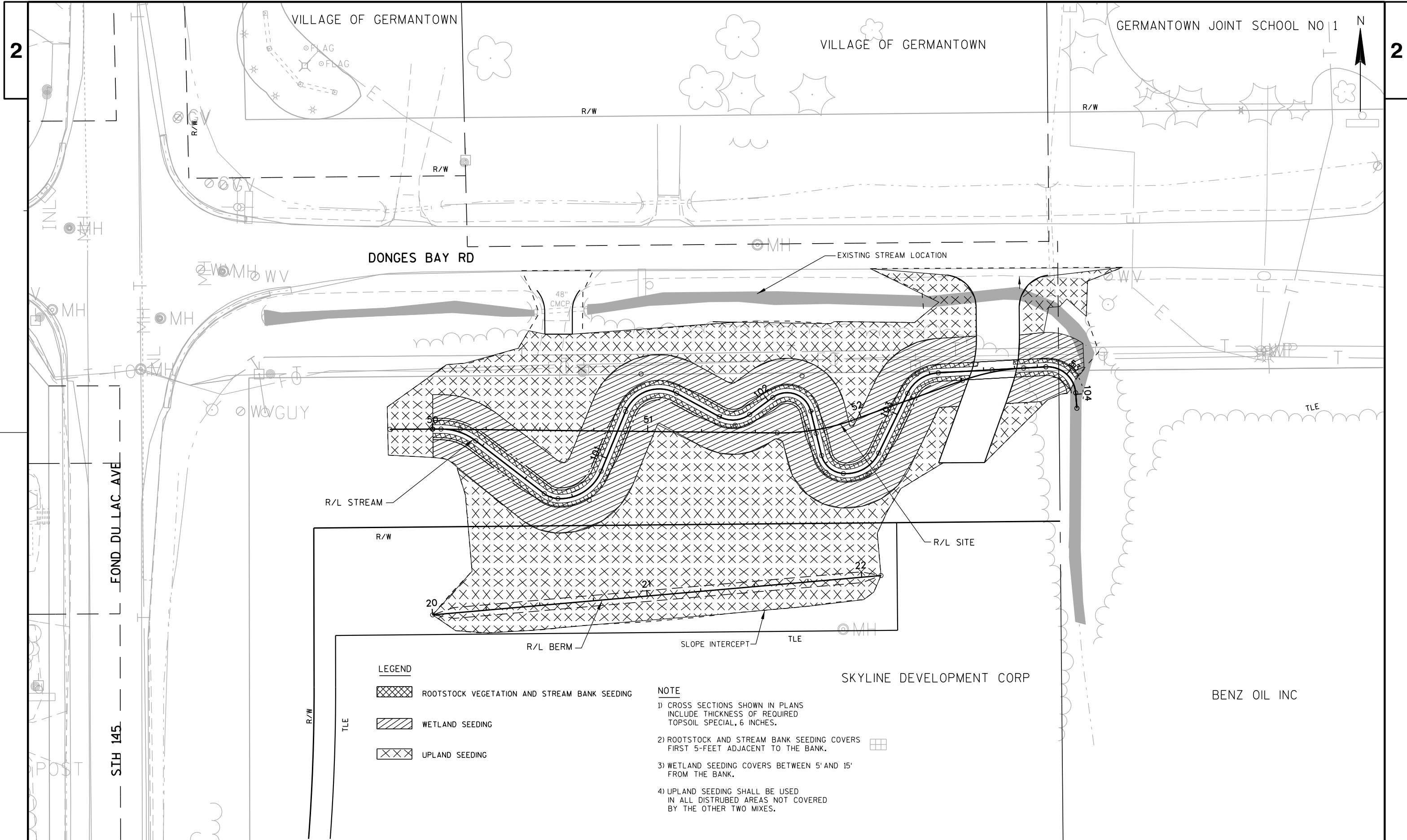
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.34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

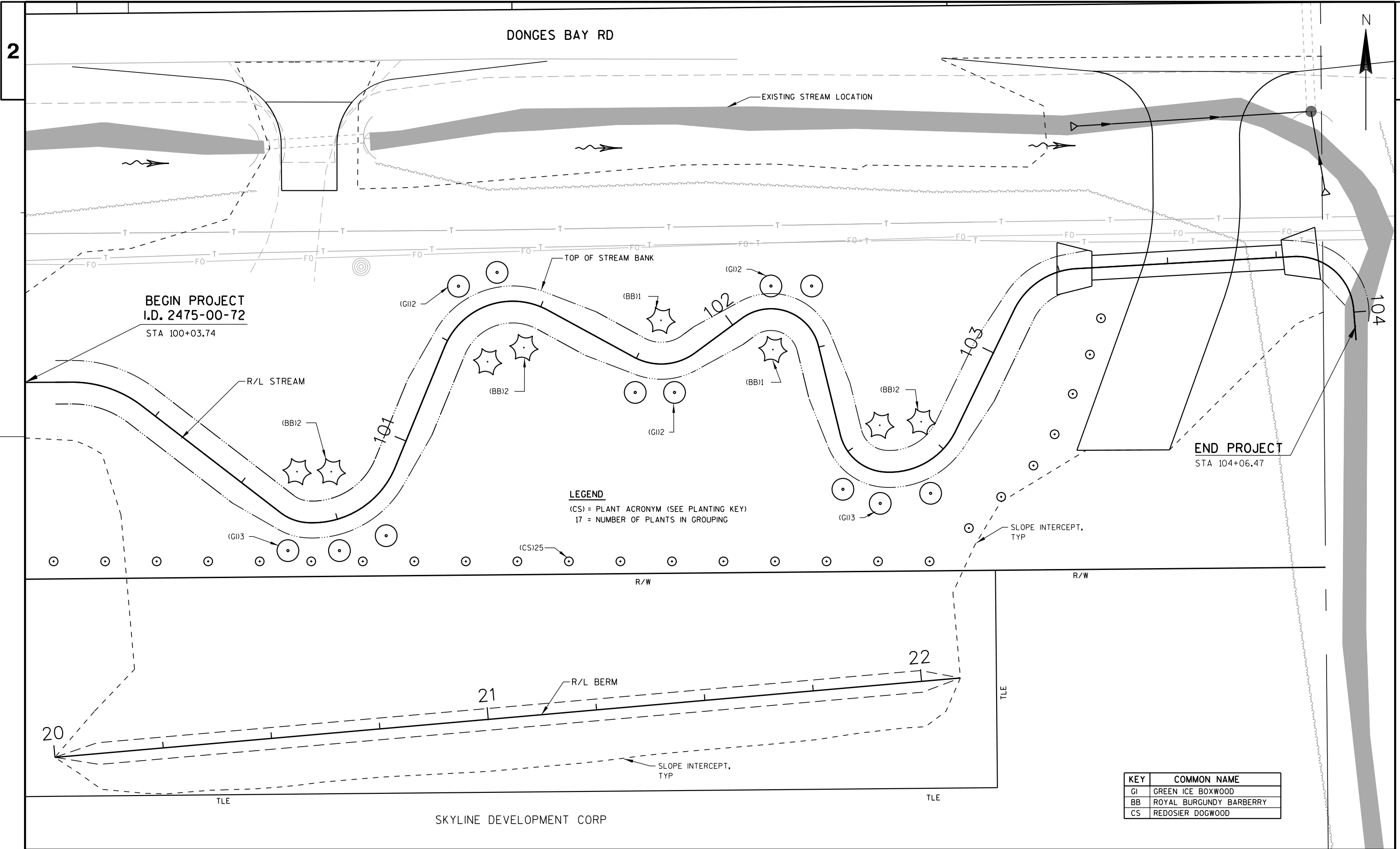
TOTAL PROJECT AREA = 1.155 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.815 ACRES











STREAM RELOCATION MASTER PLANT LIST			SIZE WHEN PLANTED	AVG. MATURE HEIGHT	ROOT ZONE MODE
KEY	BOTANICAL NAME	COMMON NAME			
GI	BUXUS KRAZGREEN	GREEN ICE BOXWOOD	*1 CONT.	2'-3'	CONTAINER
BB	BERBERIS THUNBERGII 'GENTRY'	ROYAL BURGUNDY BARBERRY	*1 CONT.	2'-3'	CONTAINER
CS	CORNUS SERICEA	REDOSIER DOGWOOD	*SP5	8'-12'	CONTAINER

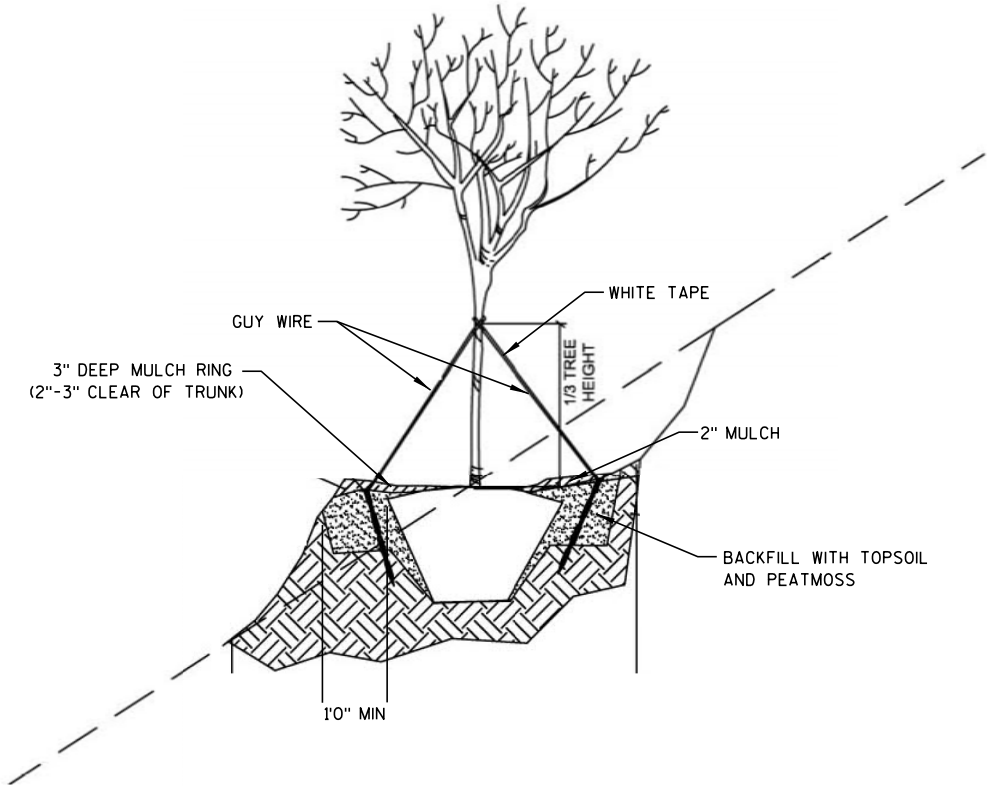
CAL. = CALIPER
B&B = BALLED AND BURLAPPED
GAL. = GALLON POT

GENERAL PLANTING NOTES

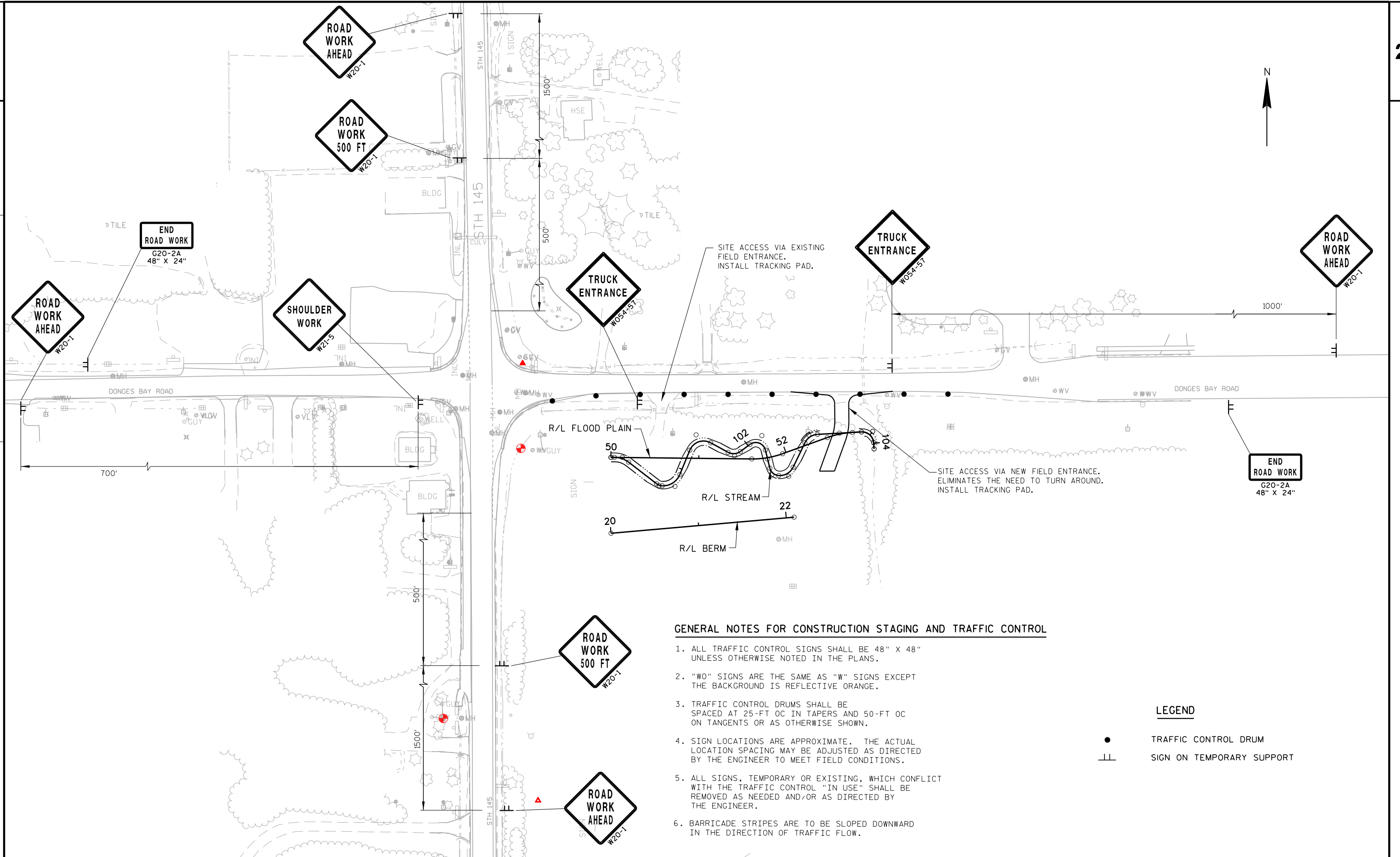
- 1. INSTALL SHREDDED BARK MULCH PER DETAILS AND SPECIFICATIONS WITH 3 INCH DEPTH FOR TREES AND SHRUBS.
- 2. IN CASE OF A CONFLICT BETWEEN THE DETAILS AND SPECIFICATIONS, THE WRITTEN PLANTING SPECIFICATION SHALL TAKE PRECEDENCE OVER THE PLANTING DETAILS.
- 3. ADJUST PLANTINGS ON THROUGHOUT SITE IF UTILITY CONFLICT EXISTS. CALL DIGGERS HOTLINE BEFORE LAYING OUT PLANTINGS.

DETAIL NOTES

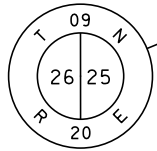
- 1. USE EXISTING SOIL REMOVED FROM PLANTING HOLE AS BACKFILL. USE PLANTING SOIL MIX AS NECESSARY. WATER PLANTINGS IN WELL.
- 2. SPREAD LAYER OF SHREDDED BARK MULCH OVER LOOSENED SOIL AREA BUT NOT TO TRUNKS OF PLANTS. MAINTAIN 2"-3" CLEAR FROM STEMS.
- 3. CUT OR REMOVE PLANTS FROM CONTAINER AND SET ROOTBALL ON UNDISTURBED FLOOR. IF ROOT COLLAR IS NOT VISIBLE, SCRAPE AWAY EXCESS SOIL FROM TRUNK UNTIL IT IS AND PLANT ACCORDINGLY WITH PLANT ROOT COLLAR 1-1/2" ABOVE GRADE.
- 4. FOR BALLED AND BURLAPPED PLANTS, REMOVE THE ROPE AROUND TRUNK. PEEL THE TOP OF BURLAPP BACK AND SCRAPE EXCESS SOIL TO FIND ROOT COLLAR AND PLANT WITH ROOT COLLAR 1-1/2" ABOVE GRADE. SNIP WIRE BASKET AND PEEL BURLAP OFF.



SHRUB / TREE PLANTING DETAIL - SLOPING GROUND
NTS

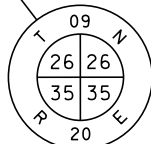


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SEC #920128
FND. D.O.T. MON

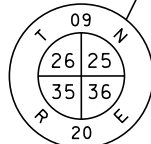


SE-SE 1/4

N01°23'27"W
2648.44'



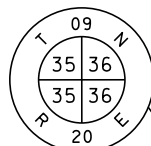
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SEC #920140
FND. D.O.T. MON



Y= 105142.609
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SEC #920141
FND. D.O.T. MON

NE-NE 1/4

N00°06'29"W
2644.72'



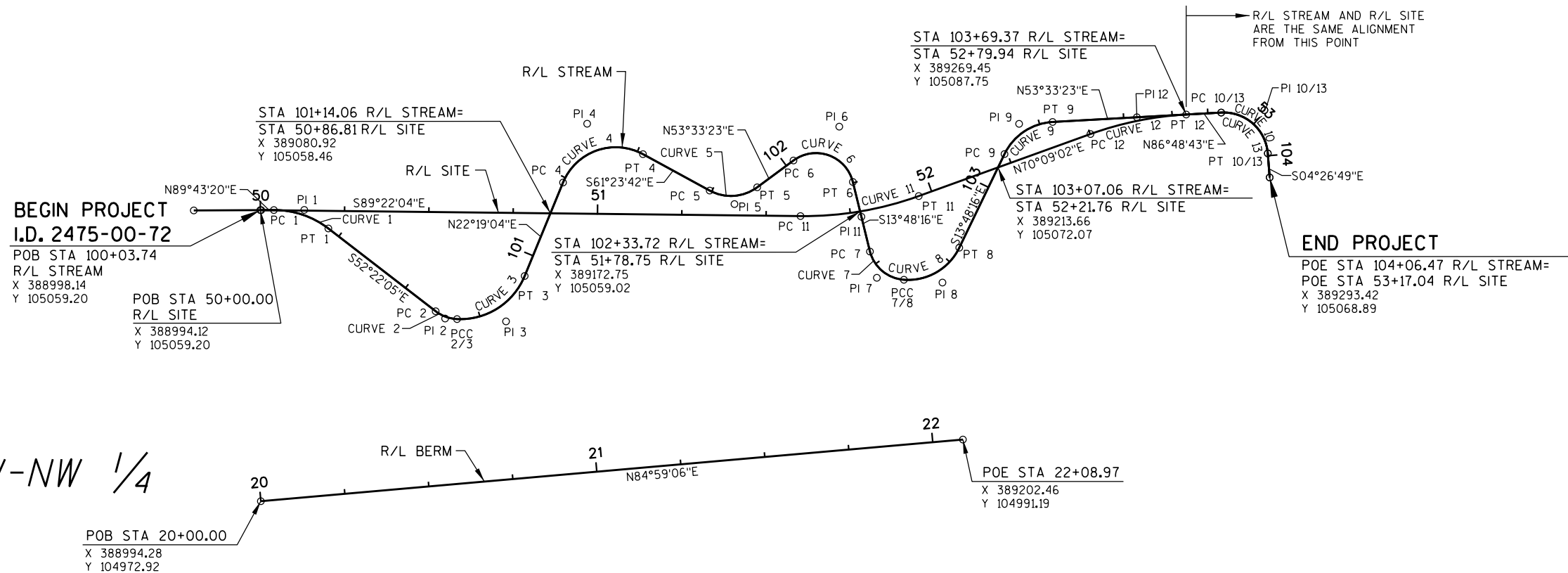
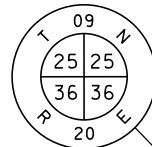
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FND. D.O.T. MON

SW-SW 1/4

SITE R/L DATA

CURVE NO.	PI	PI COORDINATES		Δ	D	T	L	E	R	PC	PC COORDINATES		PT	PT COORDINATES	
		X	Y								X	Y		X	Y
11	51+78.26	389172.36	105057.23	20°28'54"	57°17'45"	18.07	35.75	1.62	100.00	51+60.19	389154.30	105057.43	51+95.94	389189.36	105063.37
12	52+64.72	389254.05	105086.72	16°39'41"	57°17'45"	14.64	29.08	1.07	100.00	52+50.08	389240.28	105081.75	52+79.15	389268.67	105087.54
13	53+02.39	389291.87	105088.83	88°44'28"	436°22'23"	12.84	20.34	5.24	13.13	52+89.54	389279.04	105088.12	53+09.88	389292.86	105076.02

Y= 105166.642
X= 391462.547
SEC #920142
FND. D.O.T. MON



STREAM R/L DATA

CURVE NO.	PI	PI COORDINATES		Δ	D	T	L	E	R	PC	PC COORDINATES		PT	PT COORDINATES	
		X	Y								X	Y		X	Y
1	100+12.76	389007.17	105059.27	37°54'35"	218°16'1"	9.02	17.37	1.51	26.25	100+03.75	388998.15	105059.22	100+21.12	389014.31	105053.76
2	100+64.83	389048.92	105027.07	34°55'19"	509°17'45"	3.54	6.86	0.54	11.25	100+61.29	389046.12	105029.23	100+68.15	389052.46	105026.90
3	100+82.70	389066.99	105026.21	70°23'31"	277°43'49"	14.55	25.35	4.62	20.63	100+68.15	389052.46	105026.90	100+93.49	389072.52	105039.68
4	101+42.28	389091.05	105084.81	96°17'14"	339°25'48"	18.84	28.37	8.42	16.88	101+23.44	389083.89	105067.38	101+51.81	389107.59	105075.79
5	101+82.71	389134.72	105060.99	65°02'56"	436°22'23"	8.37	14.91	2.44	13.13	101+74.34	389127.37	105065.00	101+89.25	389141.46	105065.97
6	102+19.51	389165.80	105083.94	112°38'35"	509°17'45"	16.88	22.12	9.04	11.25	102+02.63	389152.22	105073.91	102+24.75	389169.83	105067.55
7	102+54.03	389176.94	105039.14	71°08'51"	509°17'45"	8.05	13.97	2.58	11.25	102+45.99	389174.90	105046.92	102+59.96	389184.97	105038.56
8	102+71.42	389196.40	105037.73	68°21'31"	339°25'48"	11.46	20.14	3.52	16.88	102+59.96	389184.97	105038.56	102+80.09	389201.39	105048.05
9	103+20.88	389219.12	105084.78	61°01'54"	339°25'48"	9.95	17.98	2.71	16.88	103+10.93	389214.80	105075.82	103+28.91	389229.06	105085.33
10	103+91.82	389291.87	105088.83	88°44'28"	436°22'23"	12.84	20.34	5.24	13.13	103+78.97	389279.04	105088.12	103+99.31	389292.86	105076.02

DATE 20JAN15		E S T I M A T E O F Q U A N T I T I E S			
LINE		2475-00-72			
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	201.0105	Clearing	STA	4.000	4.000
0020	201.0205	Grubbing	STA	4.000	4.000
0030	205.0100	Excavation Common **P**	CY	1,245.000	1,245.000
0040	305.0110	Base Aggregate Dense 3/4-Inch	TON	100.000	100.000
0050	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	15.000	15.000
0060	521.0148	Culvert Pipe Corrugated Steel 48-Inch	LF	62.000	62.000
0070	521.1548	Apron Endwalls for Culvert Pipe Sloped	EACH	1.000	1.000
0080	523.0543	Side Drains Steel 48-Inch 6 to 1 Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 43x68-Inch	EACH	3.000	3.000
0090	606.0100	Riprap Light	CY	15.000	15.000
0100	606.0200	Riprap Medium	CY	65.000	65.000
0110	610.0143	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-III 43x68-Inch	LF	68.000	68.000
0120	611.0530	Manhole Covers Type J	EACH	1.000	1.000
0130	619.1000	Mobilization	EACH	1.000	1.000
0140	624.0100	Water	MGAL	15.000	15.000
0150	628.1104	Erosion Bales	EACH	180.000	180.000
0160	628.1504	Silt Fence	LF	1,000.000	1,000.000
0170	628.1520	Silt Fence Maintenance	LF	1,000.000	1,000.000
0180	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0190	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0200	628.2027	Erosion Mat Class II Type C	SY	3,800.000	3,800.000
0210	628.7020	Inlet Protection Type D	EACH	3.000	3.000
0220	628.7504	Temporary Ditch Checks	LF	40.000	40.000
0230	628.7560	Tracking Pads	EACH	2.000	2.000
0240	632.0201	Shrubs (species) (size) (root) 01. Green Ice Boxwood CG #1 Cont	EACH	12.000	12.000
0250	632.0201	Shrubs (species) (size) (root) 02. Royal Burgandy Barberry CG #1 Cont	EACH	7.000	7.000
0260	632.0201	Shrubs (species) (size) (root) 03. Redosier Dogwood CG #SP5	EACH	25.000	25.000
0270	643.0100	Traffic Control (project) 01. 2475-00-72	EACH	1.000	1.000
0280	643.0300	Traffic Control Drums	DAY	420.000	420.000
0290	643.0900	Traffic Control Signs	DAY	510.000	510.000
0300	645.0120	Geotextile Fabric Type HR	SY	195.000	195.000
0310	645.0130	Geotextile Fabric Type R	SY	45.000	45.000
0320	650.4000	Construction Staking Storm Sewer	EACH	4.000	4.000
0330	650.9910	Construction Staking Supplemental Control (project) 01. 2475-00-72	LS	1.000	1.000
0340	650.9920	Construction Staking Slope Stakes	LF	400.000	400.000
0350	SPV.0005	Special 01. Seedbed Preparation	ACRE	0.022	0.022
0360	SPV.0035	Special 01. Topsoil Special	CY	600.000	600.000
0370	SPV.0060	Special 01. Sand Bags	EACH	60.000	60.000
0380	SPV.0060	Special 02. Rootstock Vegetation	EACH	435.000	435.000
0390	SPV.0060	Special 03. Manhole 10-Foot	EACH	1.000	1.000
0400	SPV.0085	Special 01. Stream Bank Seeding	LB	5.000	5.000
0410	SPV.0085	Special 02. Wetland Seeding	LB	10.000	10.000
0420	SPV.0085	Special 03. Upland Seeding	LB	10.000	10.000
0430	SPV.0090	Special 01. Biologs Delivered	LF	200.000	200.000
0440	SPV.0090	Special 02. Biologs Installed	LF	200.000	200.000
0450	SPV.0105	Special 01. Construction Staking Stream	LS	1.000	1.000

DATE 20JAN15			E S T I M A T E O F Q U A N T I T I E S		
LINE			2475-00-72		
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0460	SPV.0105	Special 02. Rootstock Protection	LS	1.000	1.000
0470	SPV.0180	Special 01. Geotextile Fabric Type FF	SY	60.000	60.000
0480	SPV.0180	Special 02. Mulching Special	SY	3,800.000	3,800.000
0490	SPV.0195	Special 01. Field Stone Boulders	TON	50.000	50.000
0500	SPV.0195	Special 02. Cobble Field Stone Mix	TON	35.000	35.000
0510	SPV.0195	Special 03. Course Aggregate Mix	TON	35.000	35.000

CLEARING AND GRUBBING ITEMS

CATEGORY	STATION	TO	STATION	OFFSET	201.0105	201.0205
					CLEARING STA	GRUBBING STA
0010	50+00	-	53+10	LT/RT	4	4
TOTALS					4	4

EARTHWORK

CATEGORY	ROADWAY	FROM / TO STATION	205.0100	(4)	(5)	(6)	(7)	(8)	
			EXCAVATION				MASS		
			COMMOM				ORDINATE		
			CY	AVAILABLE	UNEXPANDED	EXPANDED	+/-	WASTE	
				MATERIAL	FILL	FILL			
0010			EBS						
			CUT	EXCAVATION			FACTOR		
			(2)	(3)			1.20		
	STREAM	50+00 - 53+10	1,245	0	1,245	60	72	1,172	1,172
	BERM	50+10 - 51+80	0	0	0	159	191	(191)	(191)
	TOTALS		1,245	0	1,245	219	263	982	982
TOTAL EXCAVATION COMMON			1,245						

MOBILIZATION

CATEGORY	STAGE	LOCATION	619.1000
			EACH
0010	ALL	PROJECT ID 2475-00-72	1
TOTAL			1

- 1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
- 2) SALVAGED / UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT UNLESS EXISTING PAVEMENT IS BELOW SUBGRADE
- 3) EBS TO BE WASTED OUTSIDE OF THE DRIVEWAY CONSTRUCTION 1:1 SLOPES OR HAULED OFF-SITE
- 4) AVAILABLE MATERIAL = CUT - UNUSABLE MATERIAL
- 5) UNEXPANDED FILL - FILL FROM END AREA EARTHWORK VOLUMES
- 6) EXPANDED FILL FACTOR = 1.20 (EXPANDED FILL DOES NOT CONTAIN EBS)
- 7) MASS ORDINATE = AVAILABLE MATERIAL - EXPANDED FILL. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE STAGE
MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE STAGE
- 8) WASTE = MASS ORDINATE IF POSITIVE (FOR INFORMATION ONLY - BORROW = MASS ORDINATE IF NEGATIVE)

EROSION CONTROL ITEMS

CATEGORY	ROADWAY	628.1905	628.1910
		MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
0010	STREAM RELOCATION	1	--
	UNDISTRIBUTED	--	2
TOTALS		1	2

TRACKING PADS

CATEGORY	ROADWAY	628.7560
		TRACKING PADS EACH
0010	STREAM RELOCATION	
	WEST END	1
	EAST END	1
TOTAL		2

3

3

STORM SEWER STRUCTURE ITEMS

CATEGORY	STRUCTURE NO.	(1) STATION	STRUCTURE OFFSET	(2) GRATE ELEVATION	INVERT ELEVATION	STRUCTURE DEPTH	(1) 611.0530 MANHOLE COVERS TYPE J EACH	(4) SPV.0060.03 MANHOLE 10-FEET EACH
0010	1	103+80.2	30.4' LT	841.80	833.50	7.22	1	1
TOTALS							1	1

FOOTNOTES

(1) STRUCTURE LOCATIONS ARE SPECIFIED TO THE CENTER OF STRUCTURE.

(2) GRATE ELEVATION FOR INLETS IS ALONG THE FLANGE LINE AND FOR MANHOLES IS TO CENTER OF COVER.

(3) STRUCTURE DEPTH = RIM ELEV - INVERT ELEV - CASTING HEIGHT - ADJUSTMENT
CASTING HEIGHT = 9" FOR TYPE J COVERS
ADJUSTMENT = 4" TYPICAL

(4) THE MANHOLE WILL EVENTUALLY RECEIVE A TYPE WM CASTING WITH THE ROADWAY PROJECT IN 2016 AND MUST BE CONSTRUCTED WITH A FLAT TOP, RECTANGULAR OPENING TO ALIGN WITH THE WM CASTING. SEE CONSTRUCTION DETAIL.

BASE AGGREGATE ITEMS

CATEGORY	LOCATION	STA	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON
0010	FIELD ENTRANCE FINISHING (WITHIN DONGES BAY ROAD SHOULDER)			
	WEST ACCESS	100+70, LT	31	8
	EAST ACCESS	103+60, LT	69	7
TOTAL			100	15

3

EROSION CONTROL ITEMS

CATEGORY	ROADWAY	STATIONS	628.1104	628.1504	628.1520	628.2004	628.7020	628.7504	SPV.0060.01	SPV.0090.01	SPV.0090.02	SPV.0180.01	
			EROSION	SILT	SILT	EROSION	CULVERT	TEMPORARY					
			BALES	FENCE	FENCE	MAT	PIPE	DITCH					
			EACH	LF	LF	CLASS II TYPE C	CHECKS	CHECK		SAND	BIOLOGS	BIOLOGS	GEOTEXTILE FABRIC
						SY	EACH	LF	EACH	BAGS	DELIVERED	INSTALLED	TYPE FF
0010	STREAM RELOCATION	100+03 - 104+06	163	900	900	3,574	2	30	40	--	--	--	
		UNDISTRIBUTED	17	100	100	226	1	10	20	200	200	60	
		TOTALS	180	1,000	1,000	3,800	3	40	60	200	200	60	

3

CONSTRUCTION STAKING ITEMS

CATEGORY	650.4000	650.9910	650.9920	SPV.0105.01
	CONSTRUCTION STAKING STORM SEWER SYSTEM EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL LS	CONSTRUCTION STAKING SLOPE STAKES LF	CONSTRUCTION STAKING STREAM LS
0010	4	1	400	1
TOTALS				

TRAFFIC CONTROL ITEMS

CATEGORY	LOCATION	*	643.0300		643.0900	
		STAGE	TRAFFIC		TRAFFIC	
		DURATION	CONTROL		CONTROL	
		DAYS	DRUMS	SIGNS		
			EACH	DAY	EACH	DAY
0010	SE QUADRANT, STH 145 & DONGES BAY RD.	37	10	370	12	444
	UNDISTRIBUTED	--		50		66
	TOTALS			420		510

* FOR INFORMATION ONLY

RIPRAP AND FABRIC

CATEGORY	ROADWAY	STATIONS	606.0100	606.0200	645.0120	645.0130	COMMENTS
			RIPRAP LIGHT CY	RIPRAP MEDIUM CY	GOETEXTILE FABRIC TYPE HR SY	GOETEXTILE FABRIC TYPE R SY	
0010	STREAM RELOCATION	100+12 - 100+36	--	25	75	--	RIPRAP PAD FOR FUTURE SS
		103+21 - 103+52	--	10	30	--	BANK STABILIZER PRE-SS APRON
		103+97 - 104+11	--	30	90	--	SS APRON AREAS, EAST END
		103+44 - 104+05	15	--	--	--	INSIDE SS AT FIELD ENTRANCE
		100+03 - 104+06	--	--	--	45	UNDER 50/50 COBBLE / AGG MIX AT POOLS
		TOTALS	15	65	195	45	

TRAFFIC CONTROL PROJECT

CATEGORY	LOCATION	643.0100 TRAFFIC CONTROL ID 2475-00-72 LS
0010	SE QUADRANT, STH 145 & DONGES BAY RD.	1
TOTAL		1

3

3

3

3

3

3

3

3

3

3

3

3

3

SCHEDULE OF LANDS AND INTERESTS REQUIRED

PARCEL NUMBER	OWNER	INTEREST REQUIRED	R/W REQUIRED (ACRES)			TLE TEMP. ACRES	PLE PERM. ACRES
			NEW	EXISTING	TOTAL		
1	SKYLINE DEVELOPMENT CORP.	FEE, TLE	0.764	-----	0.764	0.391	0.000
---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---

NOTE: OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE DEPARTMENT OF TRANSPORTATION.

TRANSPORTATION PROJECT PLAT NO: 2475-00-22 - 4.01

THAT PART OF LOT 1 OF CSM #5464 IN THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 36, TOWNSHIP 9 NORTH, RANGE 20 EAST, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY, WISCONSIN.

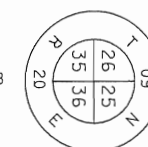
RELOCATION ORDER STH 145, ORCHARD ROAD STREAM RELOCATION, VILLAGE OF GERMANTOWN, WASHINGTON COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SEC 920141
Y= 105,142.609
X= 388,849.648
CONC MON W/
BRASS CAP



DOCUMENT#: 1358520
Date: 04-29-2014 Time: 08:47:00 AM Pages: 1
Fee: \$25.00 County: WASHINGTON State: WI

SHARON A MARTIN, REGISTER OF DEEDS
The above recording information verifies this document has been electronically recorded and returned to the submitter

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 2475-00-22 4.01
AMENDMENT NO: ---

SCALE, FEET 1:100
0 50 100

VILLAGE

STA 488+15.80
R STH 145=
STA 26+50.29
R DONGES BAY RD

END RELOCATION ORDER

STA 488+15.80 R STH 145

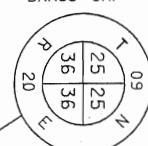
N01°23'27"W 2648.44' 490
N01°23'27"W 2648.44'

R STA 514+64.25
SEC 920128
Y= 107,790.273
X= 388,785.367
CONC MON W/
DOT CAP IN
HANDHOLE

CONVENTIONAL UTILITY SYMBOLS

- WATER
- GAS
- TELEPHONE
- OVERHEAD
- TRANSMISSION LINES
- ELECTRIC
- CABLE TELEVISION
- FIBER OPTIC
- SANITARY SEWER
- STORM SEWER
- NON COMPENSABLE
- POWER POLE
- TELEPHONE POLE
- TELEPHONE PEDESTAL
- ELECTRIC TOWER
- FIBER OPTIC WATERMAIN

R STA 52+63.30
SEC 920142
Y= 105,166.642
X= 391,462.547
CONC MON W/
BRASS CAP



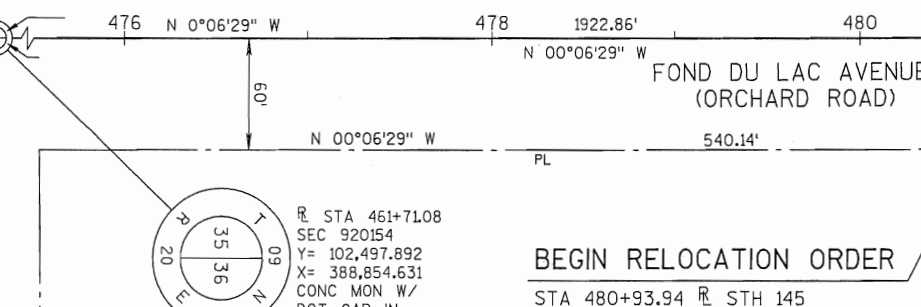
BLOOM COMPANIES, LLC
Infrastructure Design and Engineering

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS PLAT WAS PREPARED BY OR UNDER THE DIRECTION OF

TIMOTHY C. JOHNSON
R/S NUMBER S-2156
PRINTED NAME
DATE 04/03/14

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION

Robert C. O'Neil, Jr.
PRINTED NAME
SIGNATURE
DATE 4/28/14



BEGIN RELOCATION ORDER

STA 480+93.94 R STH 145

UTILITY SCHEDULE & INTERESTS REQUIRED

UTILITY NUMBER	OWNER	INTEREST REQUIRED
200	AT&T WISCONSIN	RELEASE OF RIGHTS
202	WE ENERGIES ELECTRIC	RELEASE OF RIGHTS
204	VILLAGE OF GERMANTOWN WATER	RELEASE OF RIGHTS
200	AT&T WISCONSIN PARCEL 1	NO RECORDED EASEMENT
202	WE ENERGIES ELECTRIC PARCEL 1	DOC. 1167726
204	VILLAGE OF GERMANTOWN WATER PARCEL 1	NO RECORDED EASEMENT

UTILITY AND ACCESS EASEMENT FOR PARCEL 1
PER C.S.M. #5464 V.39 P.66 DOC. 929976

RW POINT COORDINATES

POINT	Y	X
PRW110	104699.775	388910.481
PRW111	104751.828	388921.160
PRW112	104939.469	388940.031
PRW113	105013.434	388939.892
PRW114	105016.621	389286.425
TLE500	104625.817	388910.620
TLE501	104748.812	388935.854
TLE502	104749.818	388930.956
TLE503	104939.488	388950.031
TLE504	104963.524	388949.986
TLE505	104965.925	389211.002
TLE506	105015.923	389210.542

OF

C.S.M. #5464
GTVN 362-988

LOT 1

NW-NW
SEC 36

EXISTING PROPERTY PIPE

POINT	Y	X
301	105085.399	388911.673
302	105086.564	389285.758

GERMANTOWN

SLOPE INTERCEPTS

NOTES:

POSITIONS SHOWN ON THIS PLAT ARE REFERENCED TO WISCONSIN COUNTY COORDINATES, WASHINGTON COUNTY, NAD83 (2007) IN US SURVEY FEET. THE COORDINATES SHOWN ARE GROUND COORDINATES AND ARE TO BE USED AS GROUND VALUES ON THIS PLAT.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

RIGHT-OF-WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS REFERENCED TO THE U.S. PUBLIC LAND SURVEY SYSTEM OR OTHER "SURVEYS OF PUBLIC RECORD".

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES, EXCLUDING RIGHT-OF-WAY LINES, AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

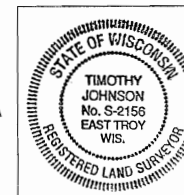
A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS, AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE, OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE. ALL TLES EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

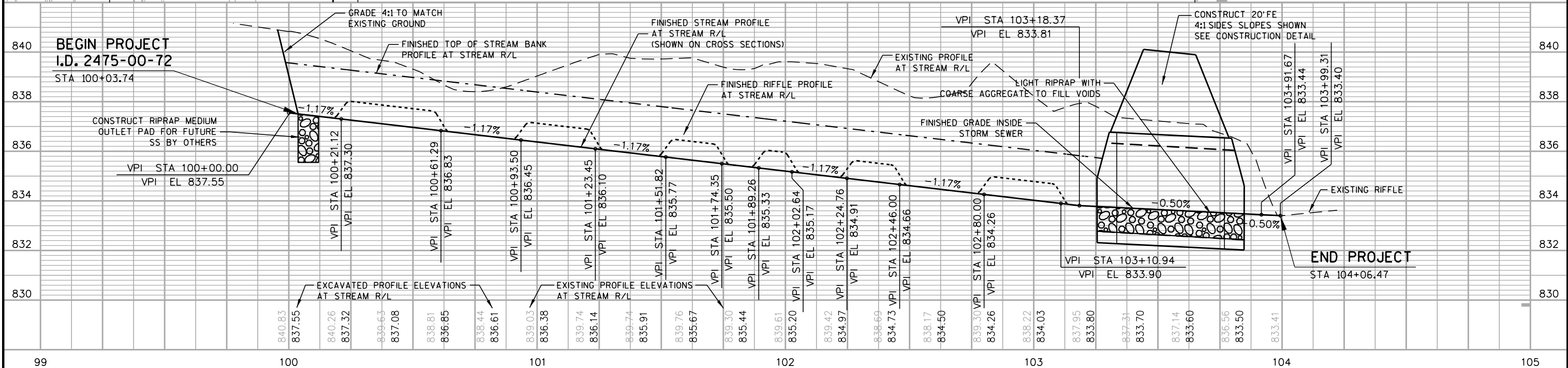
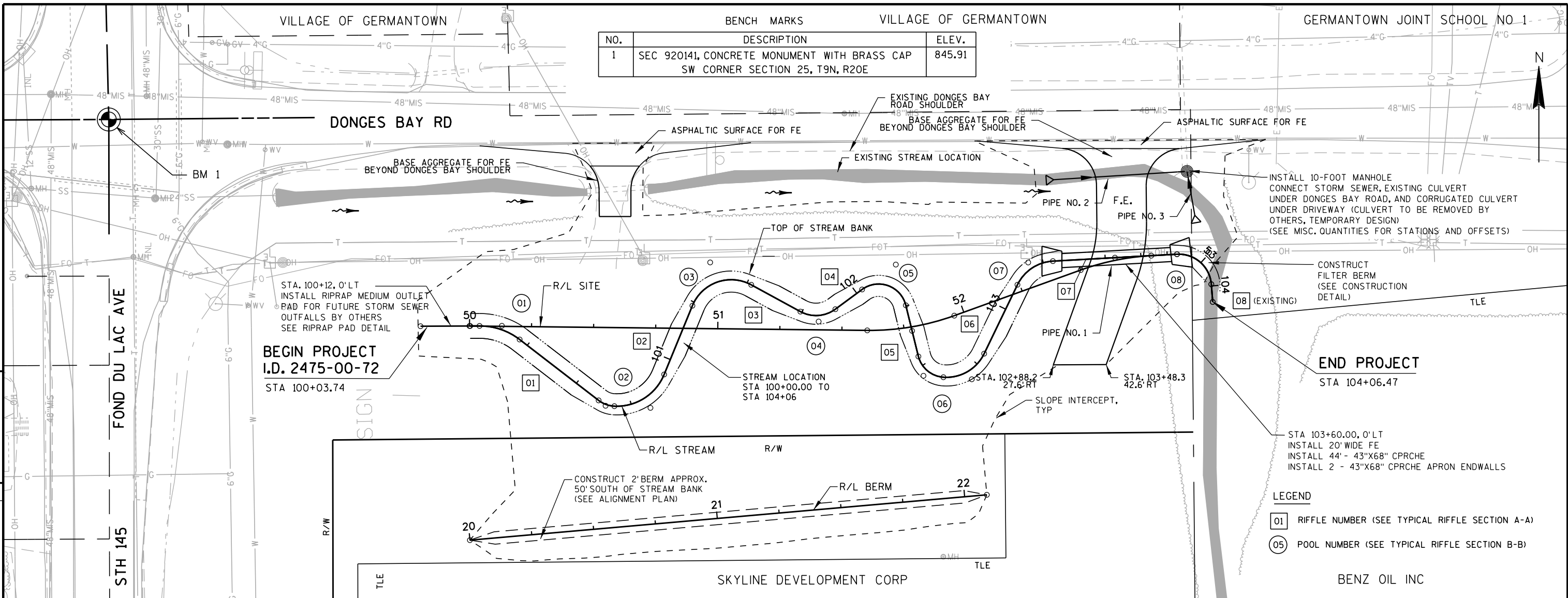
CONVENTIONAL SYMBOLS

- FOUND IRON PIPE/PIV
- R/W MONUMENT
- R/W STANDARD
- SIGN
- SECTION CORNER MONUMENT
- SECTION CORNER SYMBOL
- FEE (HATCH VARIES)
- TEMPORARY LIMITED EASEMENT
- PERMANENT LIMITED EASEMENT
- R/W BOUNDARY POINT
- PARCEL NUMBER
- UTILITY INTEREST
- SIGN NUMBER (OFF PREMISE)
- BUILDING

CONVENTIONAL ABBREVIATIONS

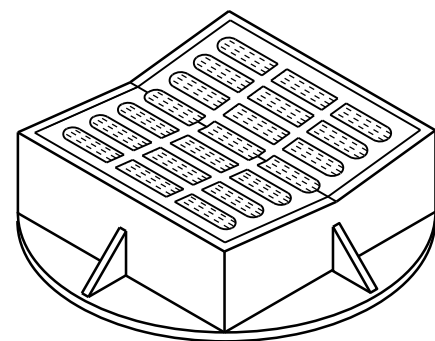
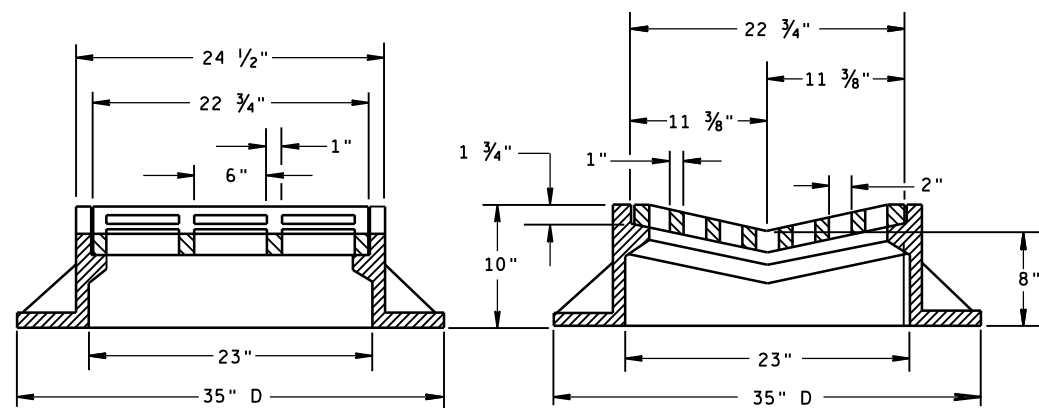
- ACCESS POINT/ DRIVEWAY CONNECTION
- ACCESS RIGHTS
- ACRES
- AND OTHERS
- CENTERLINE
- CERTIFIED SURVEY MAP
- CORNER
- DOCUMENT
- EASEMENT
- HIGHWAY EASEMENT
- LAND CONTRACT
- MONUMENT
- PAGE
- PERMANENT LIMITED EASEMENT
- PROPERTY LINE
- RECORDED AS
- REFERENCE LINE
- ROR
- REM.
- R/W
- SEC.
- STA.
- TLE
- V.
- RELEASE OF RIGHTS
- REMAINING
- RIGHT-OF-WAY
- SECTION
- STATION
- TEMPORARY LIMITED EASEMENT
- VOLUME
- LONG CHORD
- LONG CHORD BEARING
- RADIUS
- DEGREE OF CURVE
- CENTRAL ANGLE OR DELTA
- LENGTH OF CURVE
- TANGENT
- LCH
- LCB
- R
- D
- DELTA
- L
- TAN



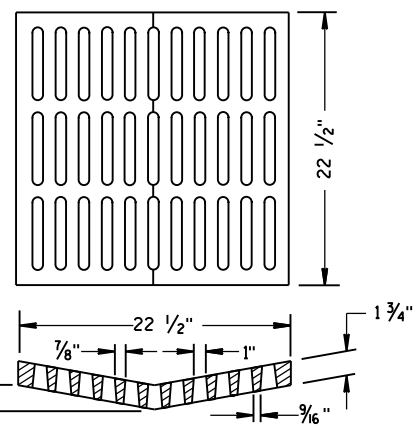


Standard Detail Drawing List

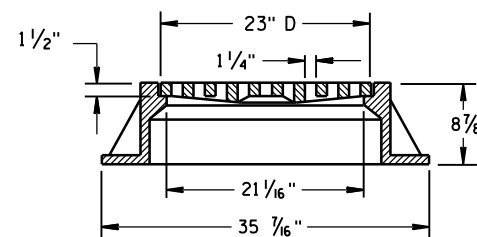
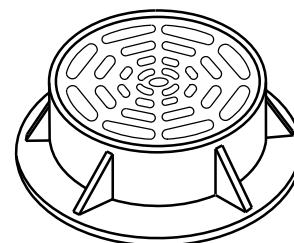
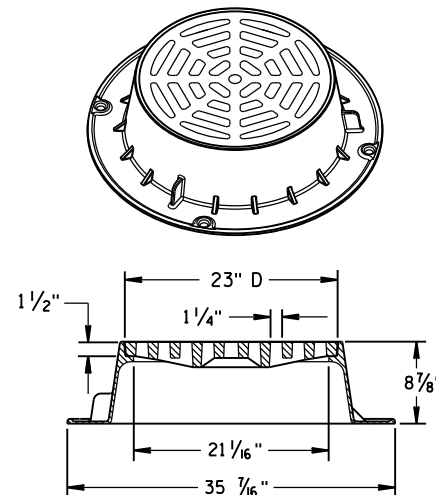
08A05-19B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-01	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E14-01	TRACKING PAD
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F05-01	CLASS "B" BEDDING FOR CULVERT PIPE OR STORM SEWER
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15D28-02	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D29-03	TRAFFIC CONTROL, VEHICLE ENTRANCE/EXIT OR HAUL ROAD



TYPE "B"

ALTERNATIVE GRATE FOR
TYPE "B" COVER

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.
 NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

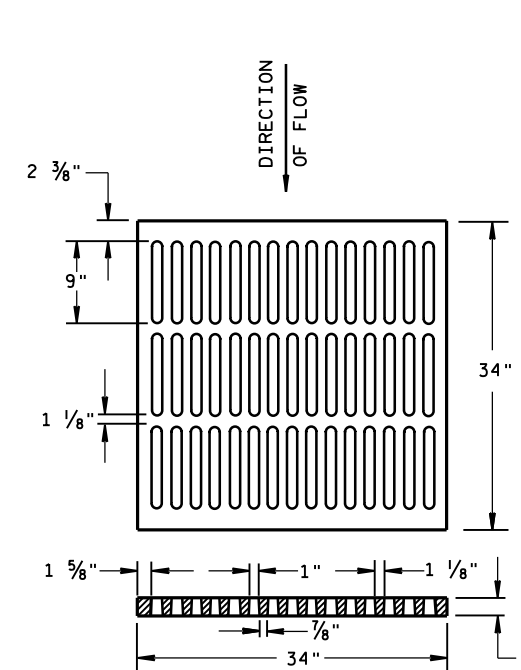
NOTE: EITHER CASTING IS ACCEPTABLE

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.

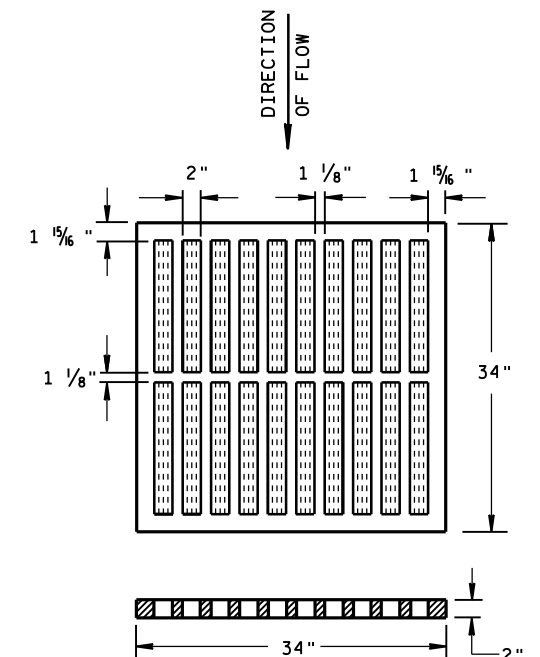
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.



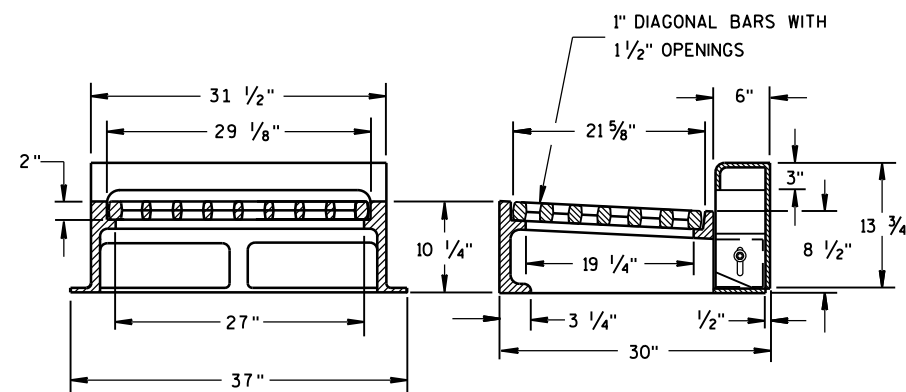
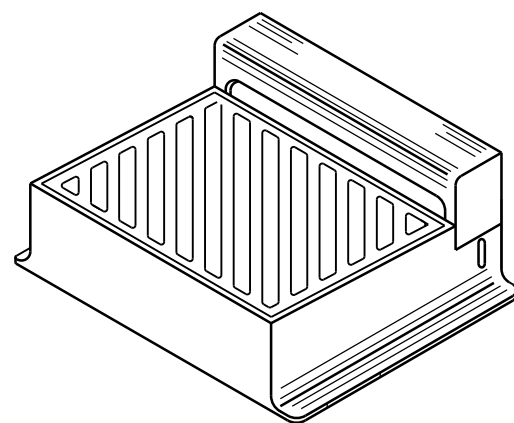
ALTERNATIVE TYPE "MS"

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED
 NOTED AS TYPE MS-A ON THE DRAINAGE TABLE



TYPE "MS"

USE ON FREEWAYS AND EXPRESSWAYS
 NOTED AS TYPE MS ON DRAINAGE TABLE



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

TYPE "WM"

DIAGONAL SLOTS, SHALL BE ORIENTED
 TO THE DIRECTION OF FLOW AS ILLUSTRATED.
 GRATES ARE MANUFACTURED TO BE REVERSIBLE.

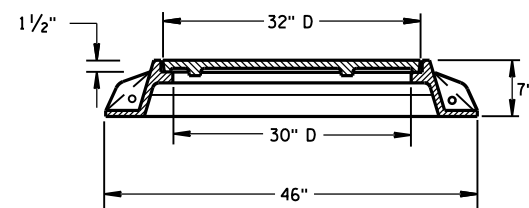
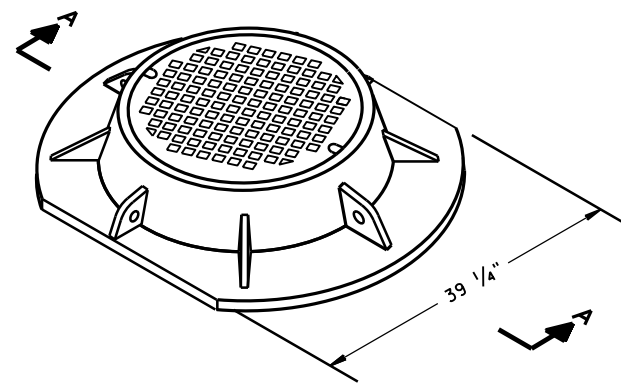
DIRECTION
OF FLOW

INLET COVERS
 TYPE B, B-A, C,
 MS, MS-A, & WM

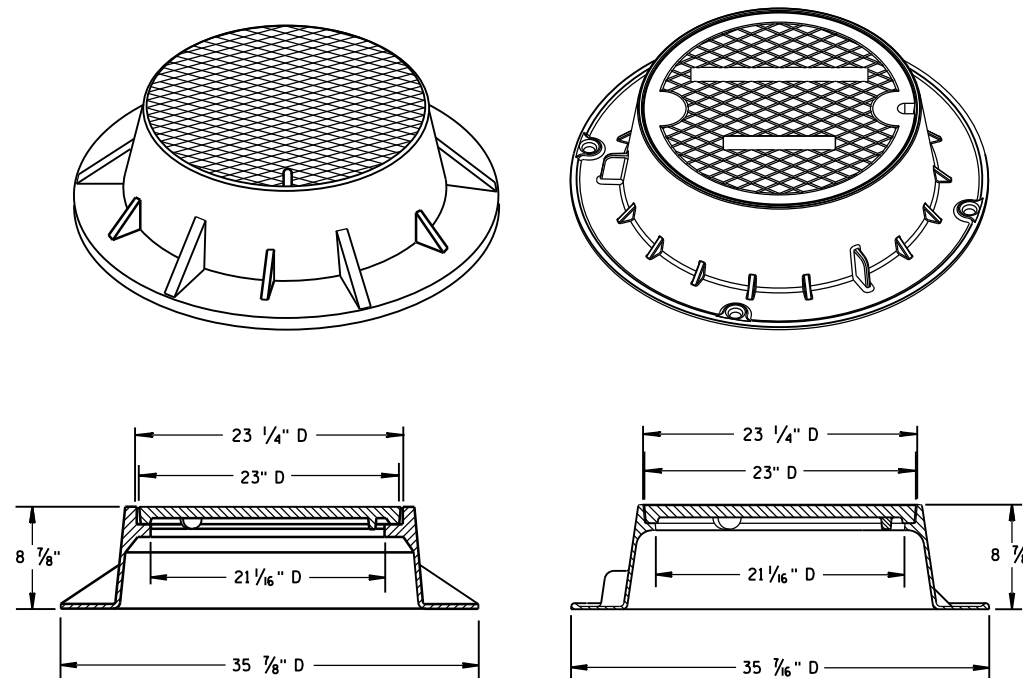
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED
 11/27/2013
 DATE
 FHWA

/S/ Jerry H. Zogg
 ROADWAY STANDARDS DEVELOPMENT
 ENGINEER

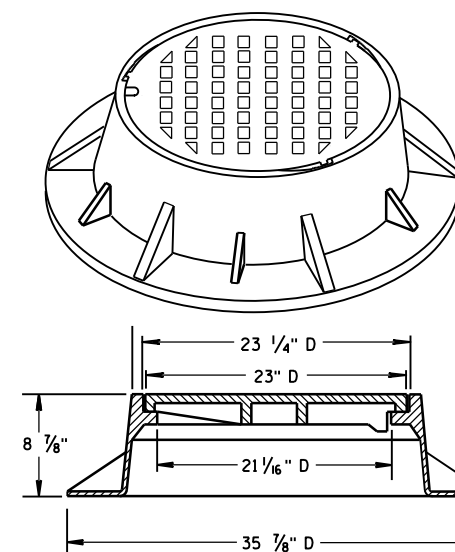
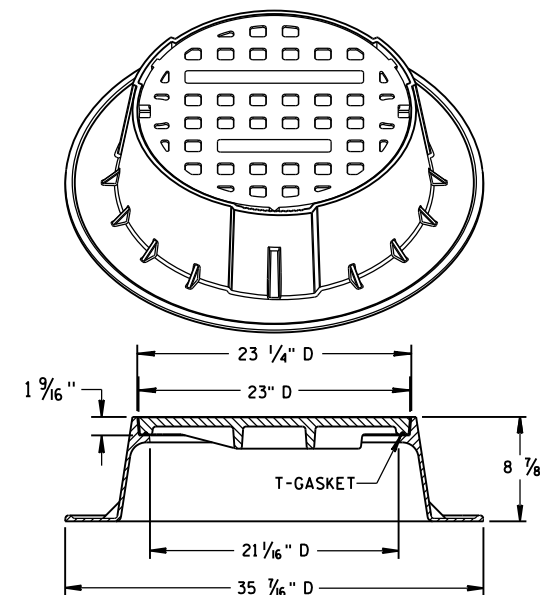


SECTION A-A
TYPE "K"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

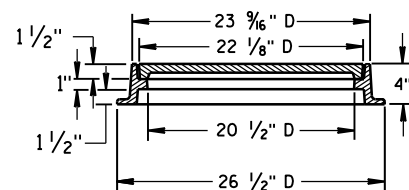
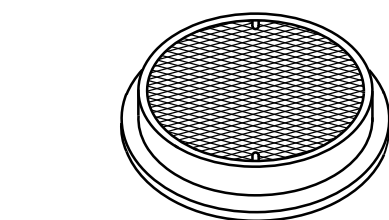


TYPE "J" SPECIAL

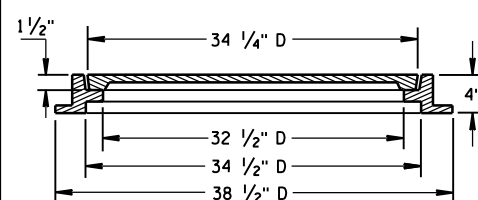
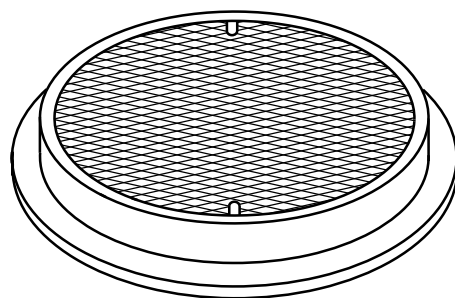
TYPE "B" NON-ROCKING SELF-SEAL LID

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

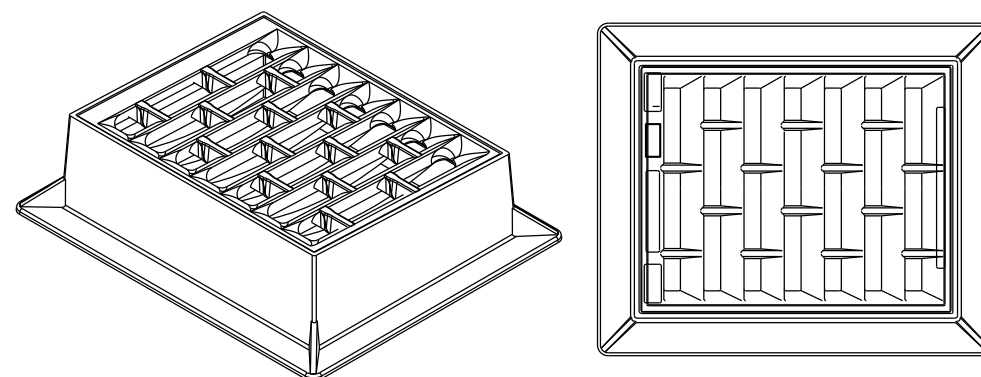
NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "L"



TYPE "M"



INLET COVER TYPE "BW"

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.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

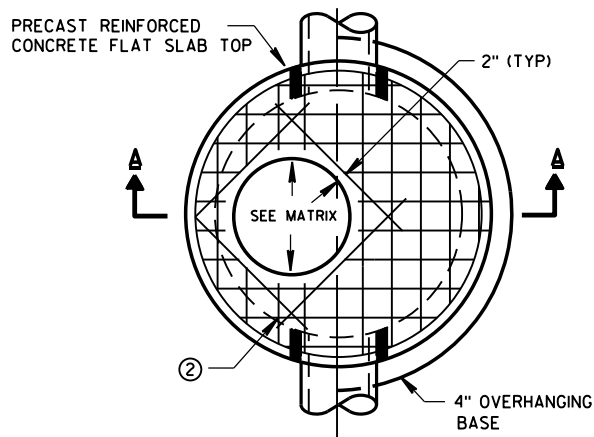
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K,
J, J-S, L & M

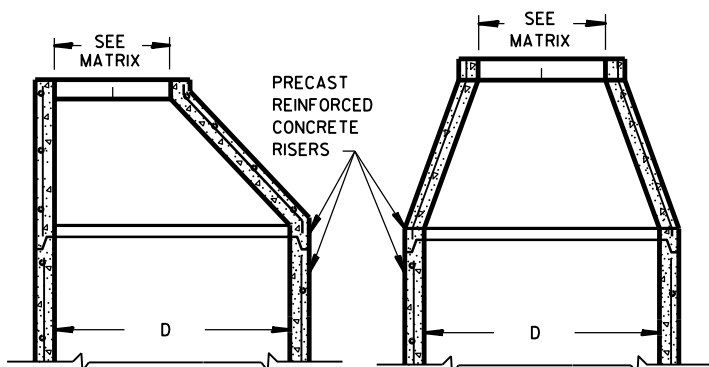
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

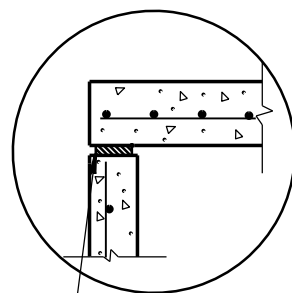


PLAN VIEW CIRCULAR OPENING

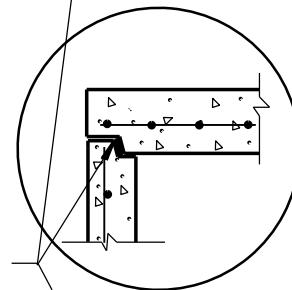


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

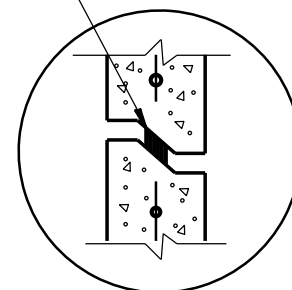
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT



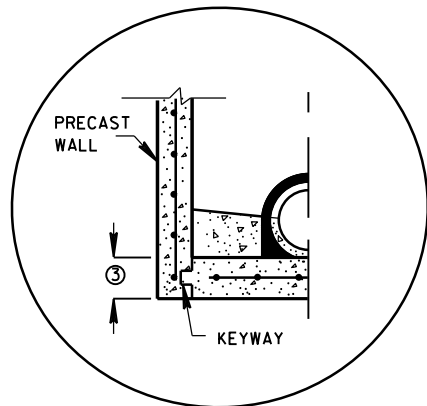
TOP WITH TONGUE AND GROOVE JOINT



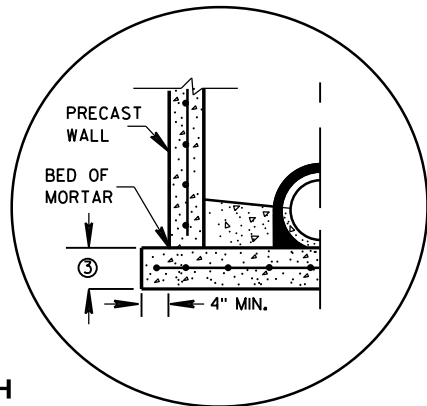
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

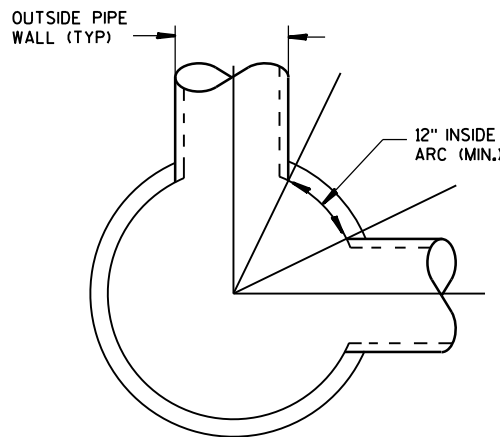


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

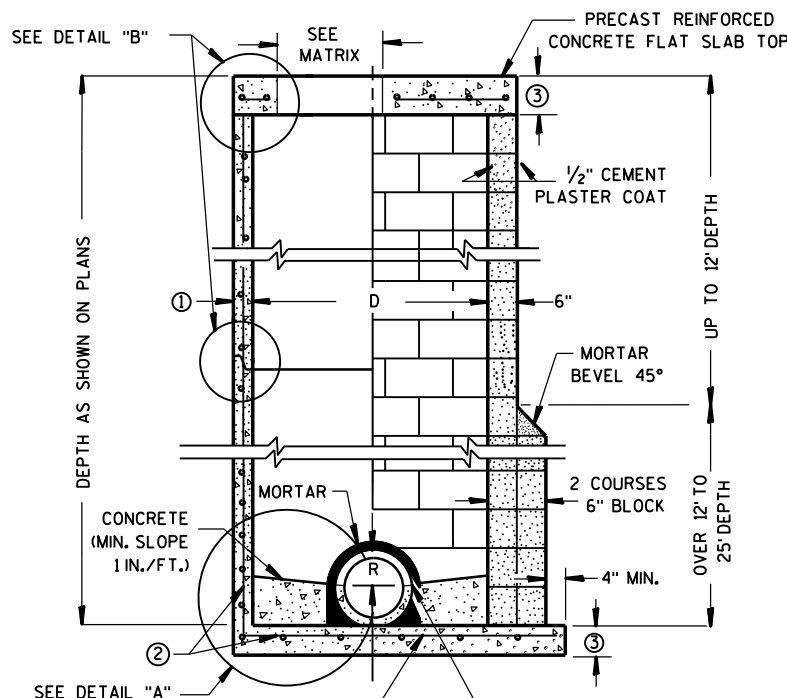


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



PRECAST REINFORCED CONCRETE BLOCK WITH CONCRETE WITH MONOLITHIC BASE CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

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. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED. CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.
- ② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

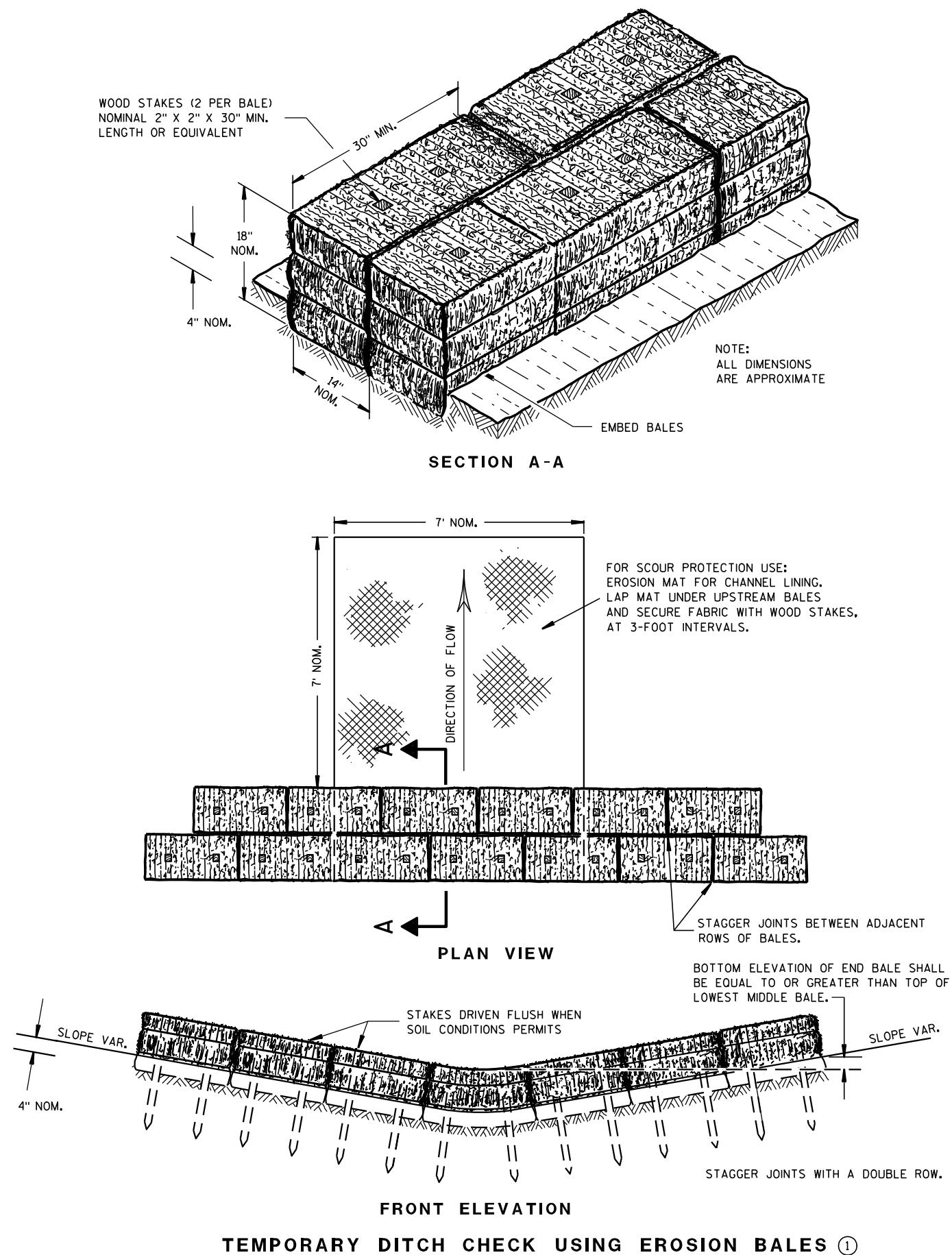
PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

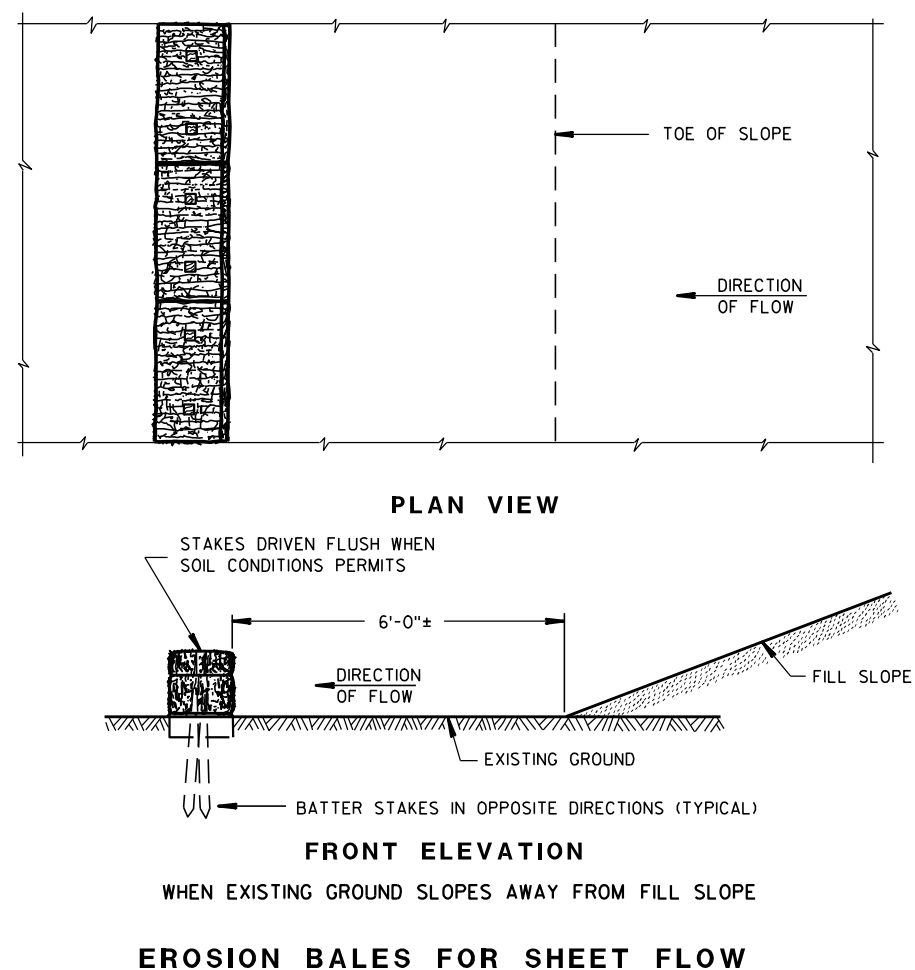
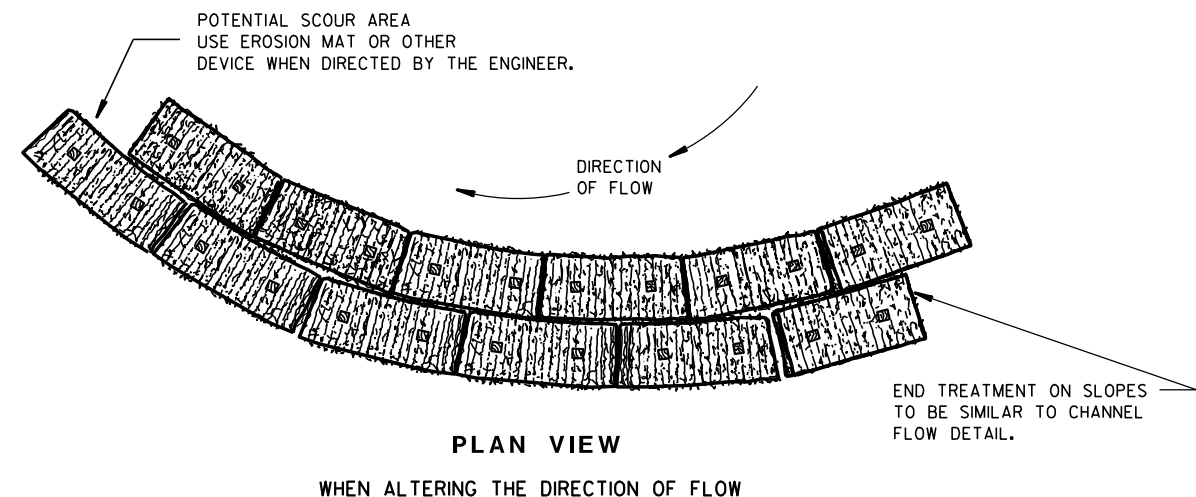
APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA ENGINEER



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

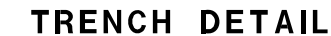
APPROVED

6/04/02
DATE/S/ Beth Canestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

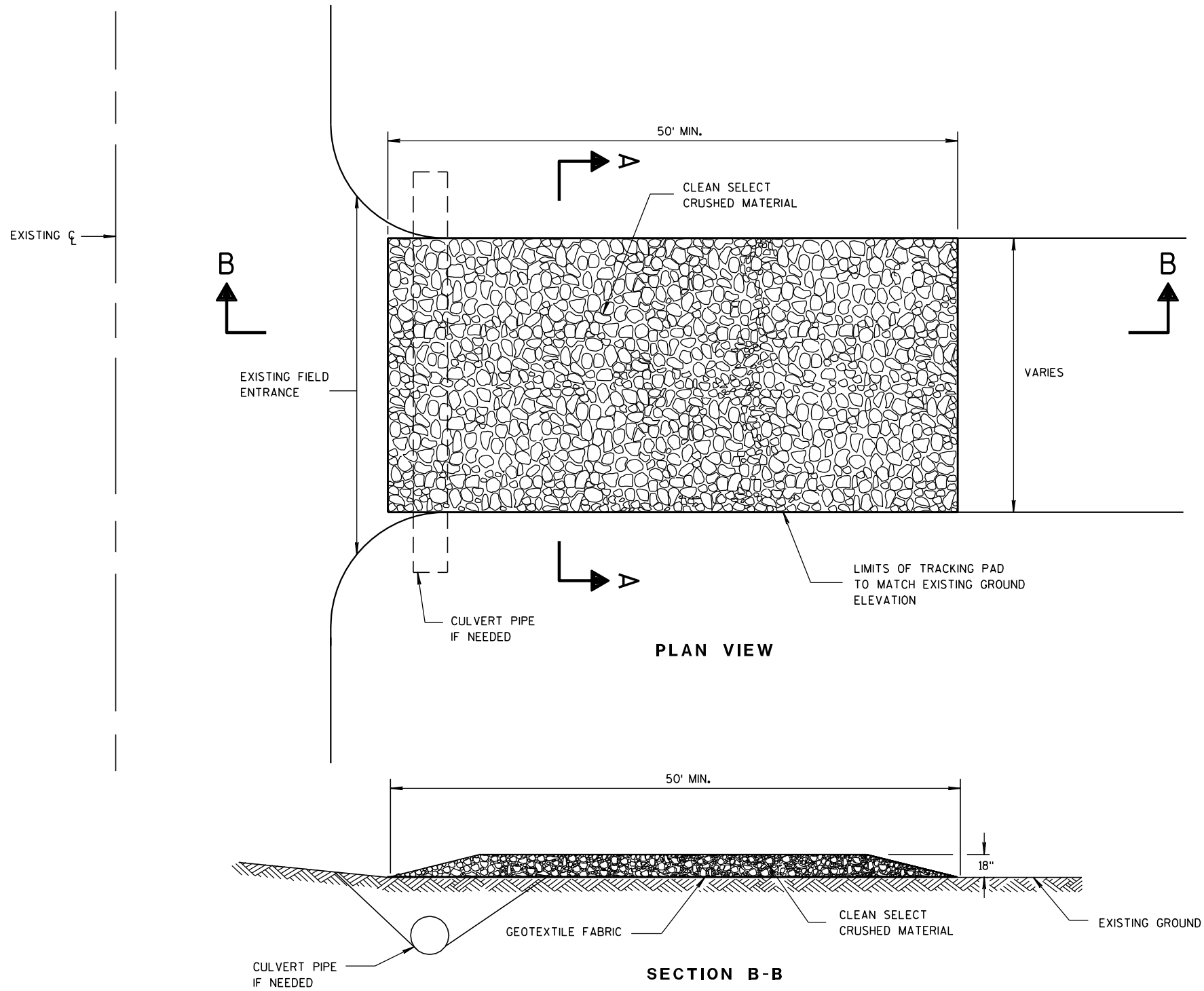
FHWA



- 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 1½" X 1½" 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.



SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	<u>/S/ Beth Cannestra</u> CHIEF ROADWAY DEVELOPMENT ENGINEER



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.

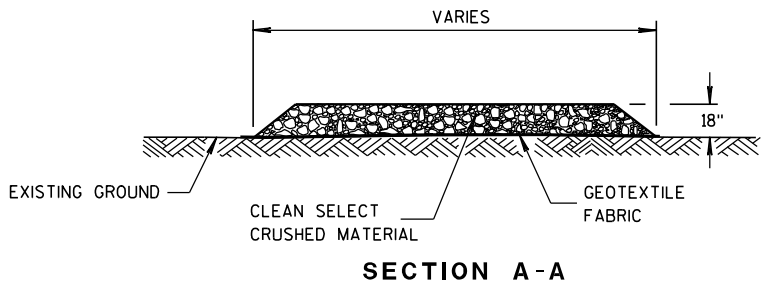
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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.

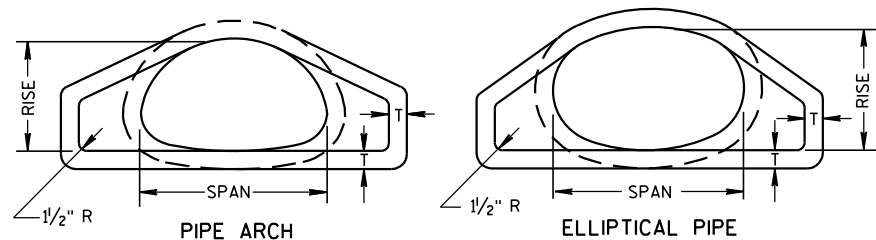
THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



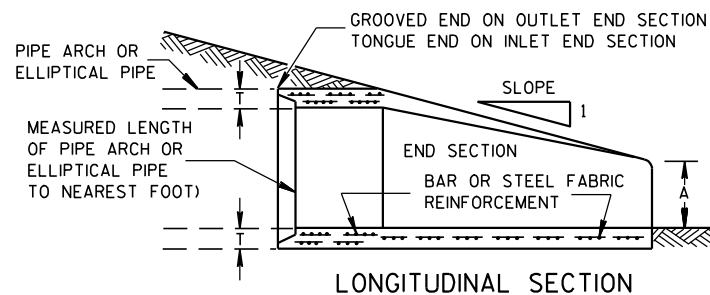
TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

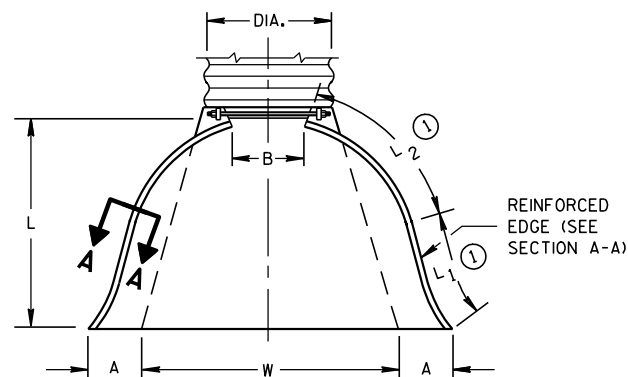


END VIEW



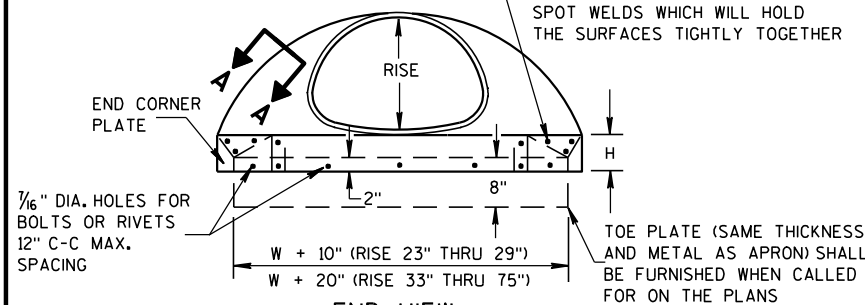
LONGITUDINAL SECTION

CONCRETE ENDWALLS

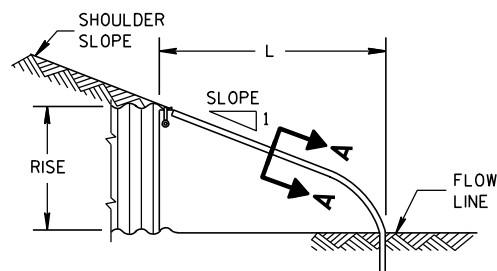
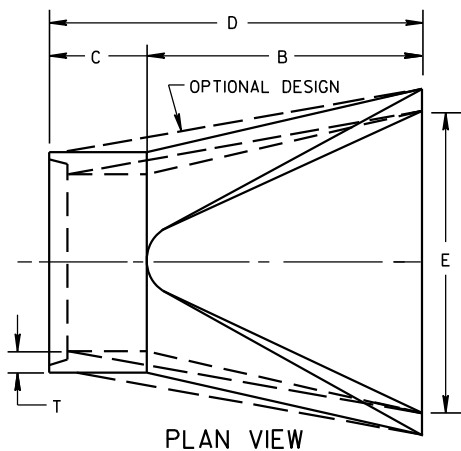


PLAN VIEW

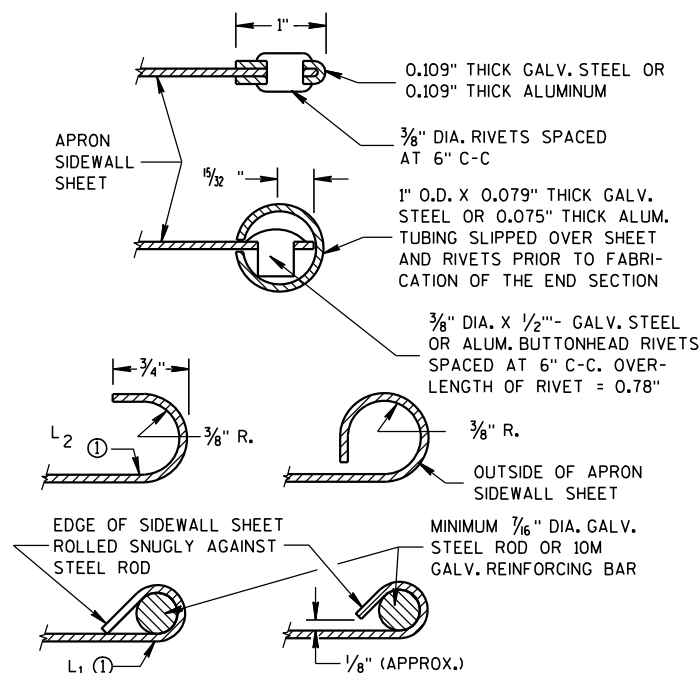
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW



SECTION A-A

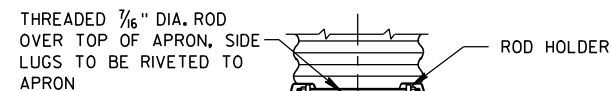
2- 2/3" X 1/2" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 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

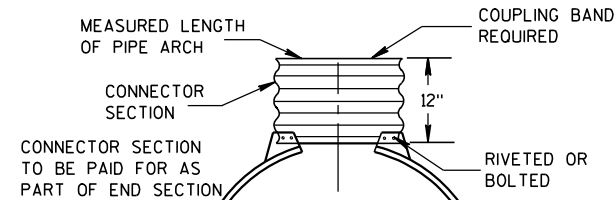
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	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

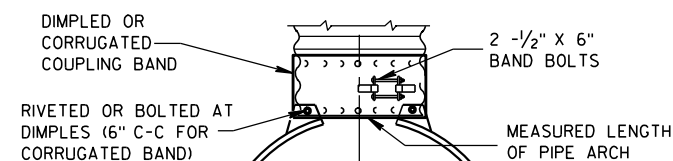
TYPE 2

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 ARCHESNOTE: 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 1/8	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.

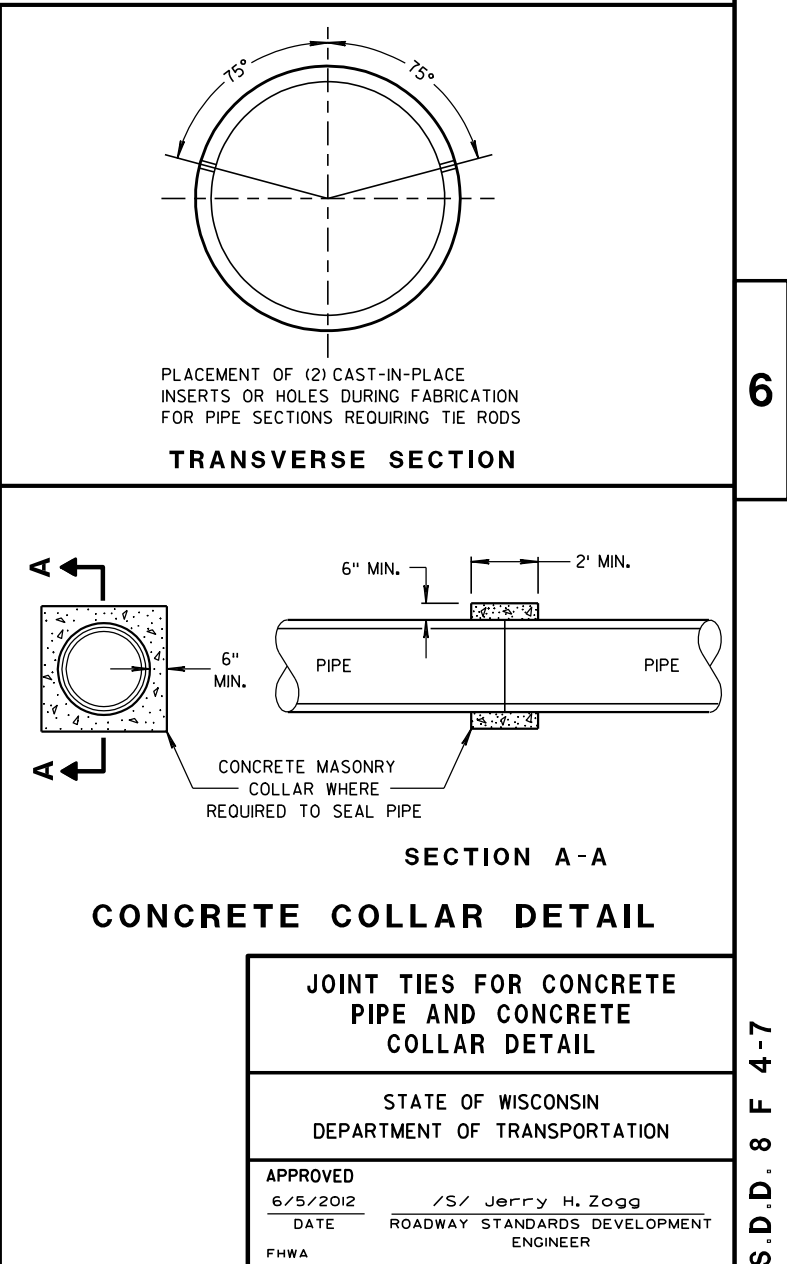
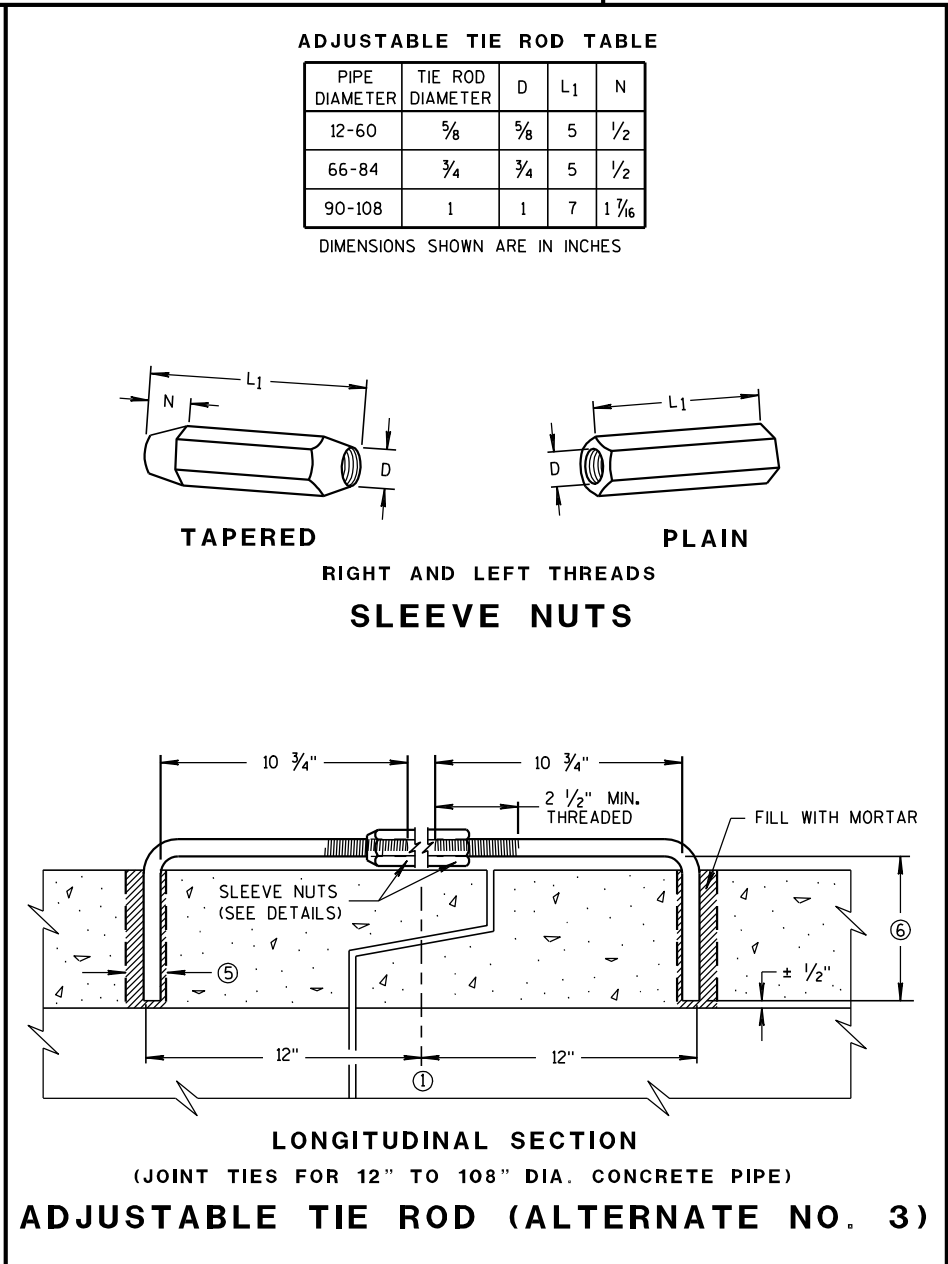
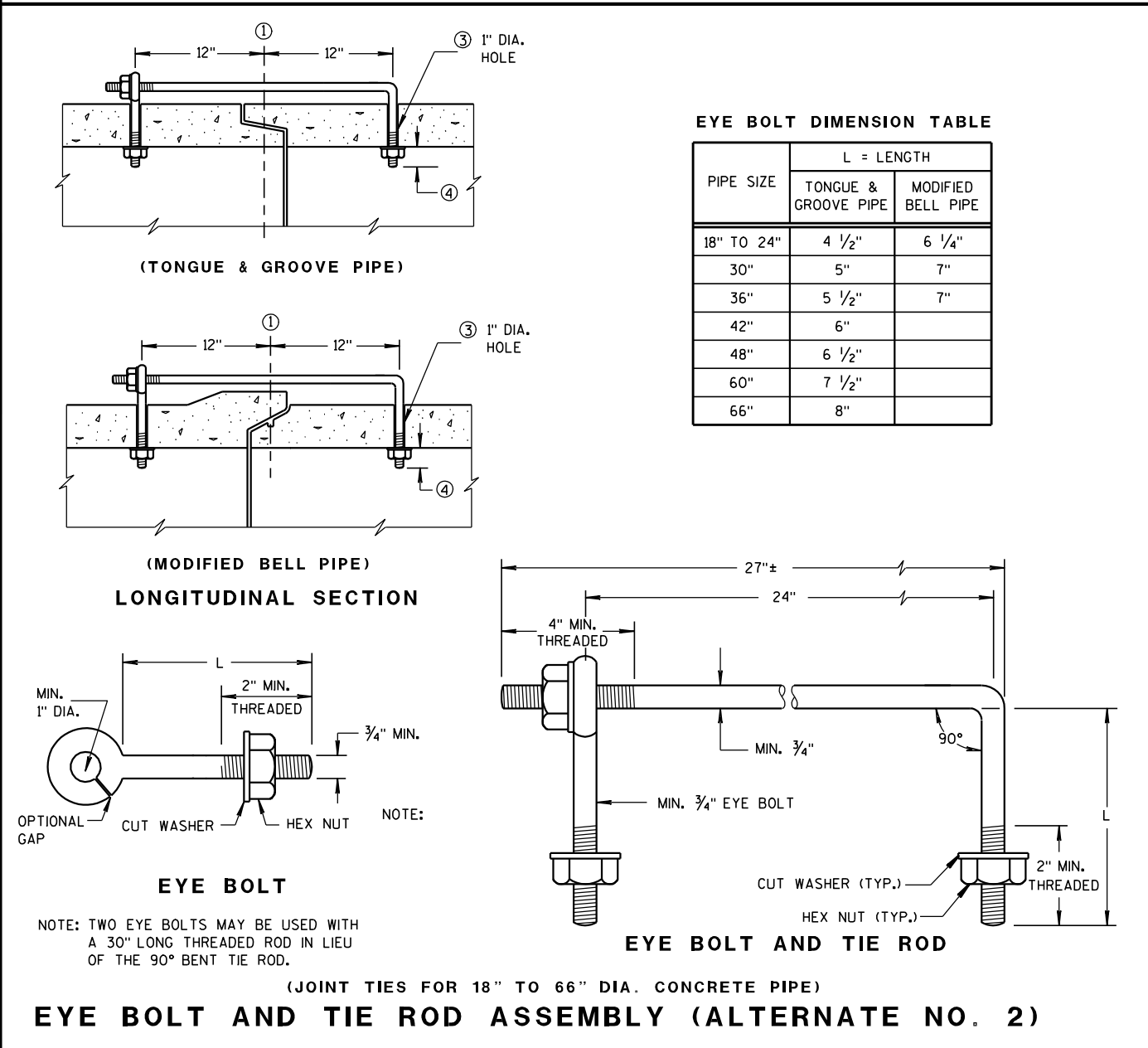
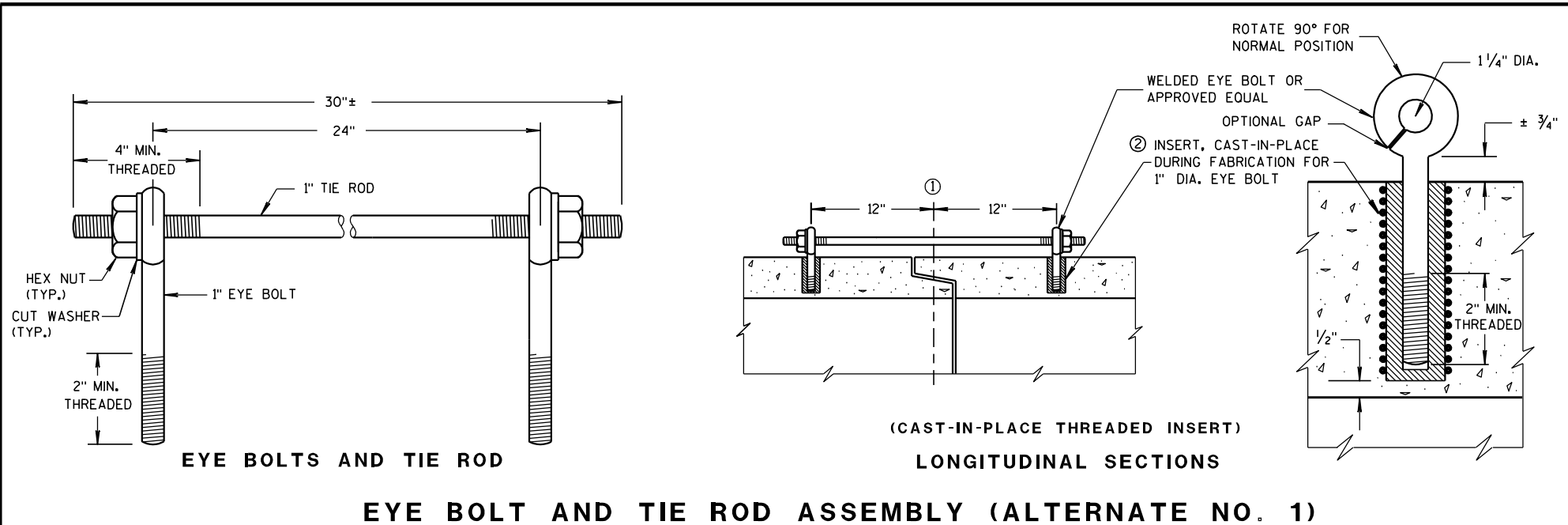
① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

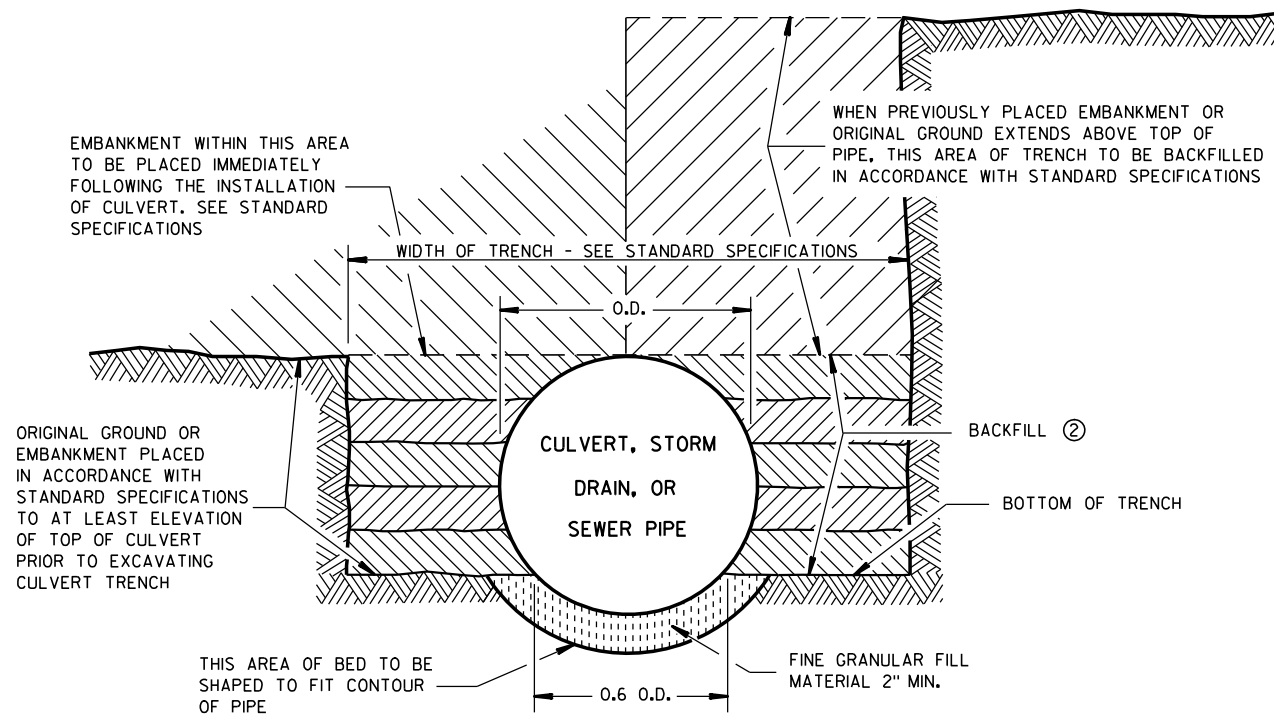
APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

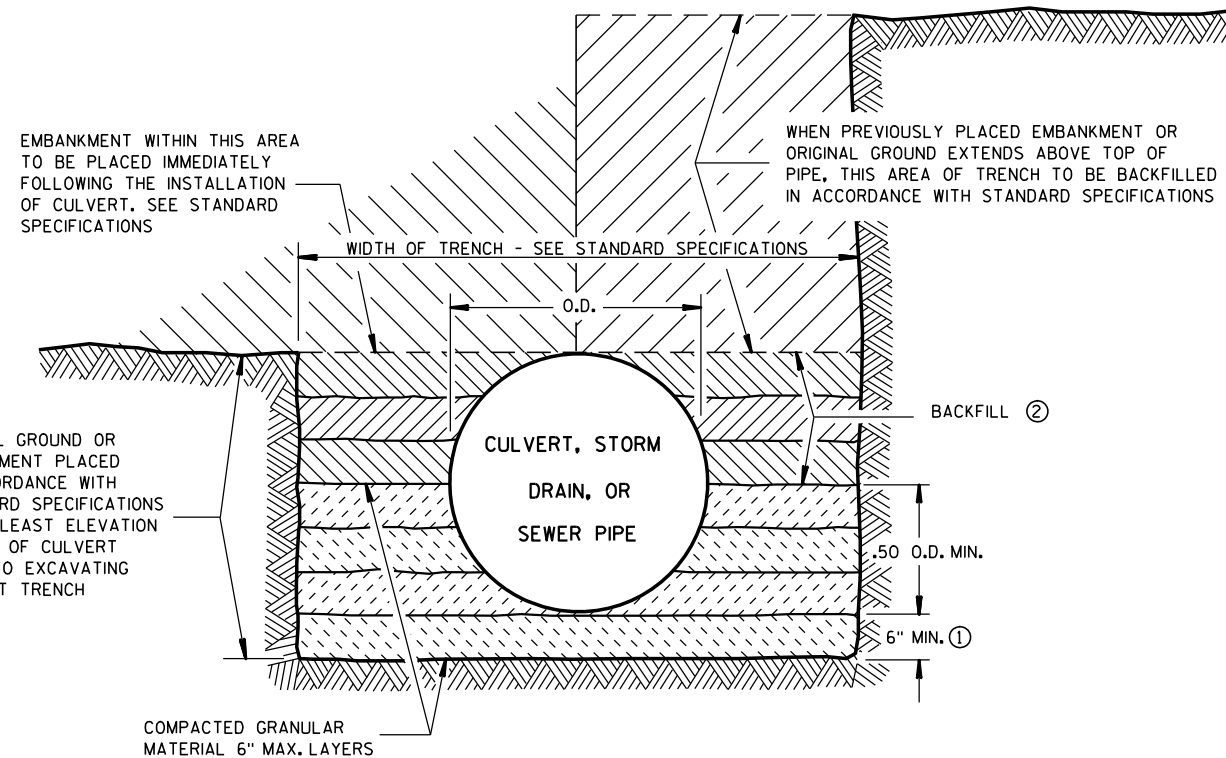
11/30/94
DATE/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA





SHAPED SUBGRADE WITH GRANULAR FOUNDATION



GRANULAR FOUNDATION

GENERAL NOTES

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

THE SHAPED SUBGRADE WITH GRANULAR FOUNDATION IS AN EQUAL ALTERNATE TO THE GRANULAR FOUNDATION EXCEPT WHERE ROCK IS ENCOUNTERED.

- ① WHERE ROCK, HARD PAN OR FRAGMENTED MATERIAL IS ENCOUNTERED, THE TRENCH SHALL BE EXCAVATED BELOW THE BOTTOM OF THE PIPE AN AMOUNT EQUAL TO $\frac{1}{2}$ INCH PER FOOT OF PROPOSED EMBANKMENT ABOVE THE TOP OF THE PIPE, BUT NOT LESS THAN 6 INCHES.
- ② TRENCH SHALL BE BACKFILLED AS REQUIRED BY STANDARD SPECIFICATIONS; SECTION 520 FOR PIPE CULVERTS AND SECTION 607 FOR STORM SEWERS.

CLASS "B" BEDDING FOR
CULVERT PIPE OR STORM SEWER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4/7/83
DATE

/S/ D.L. Strand
STATE DESIGN ENGINEER FOR HWYS

FHWA

LEGEND

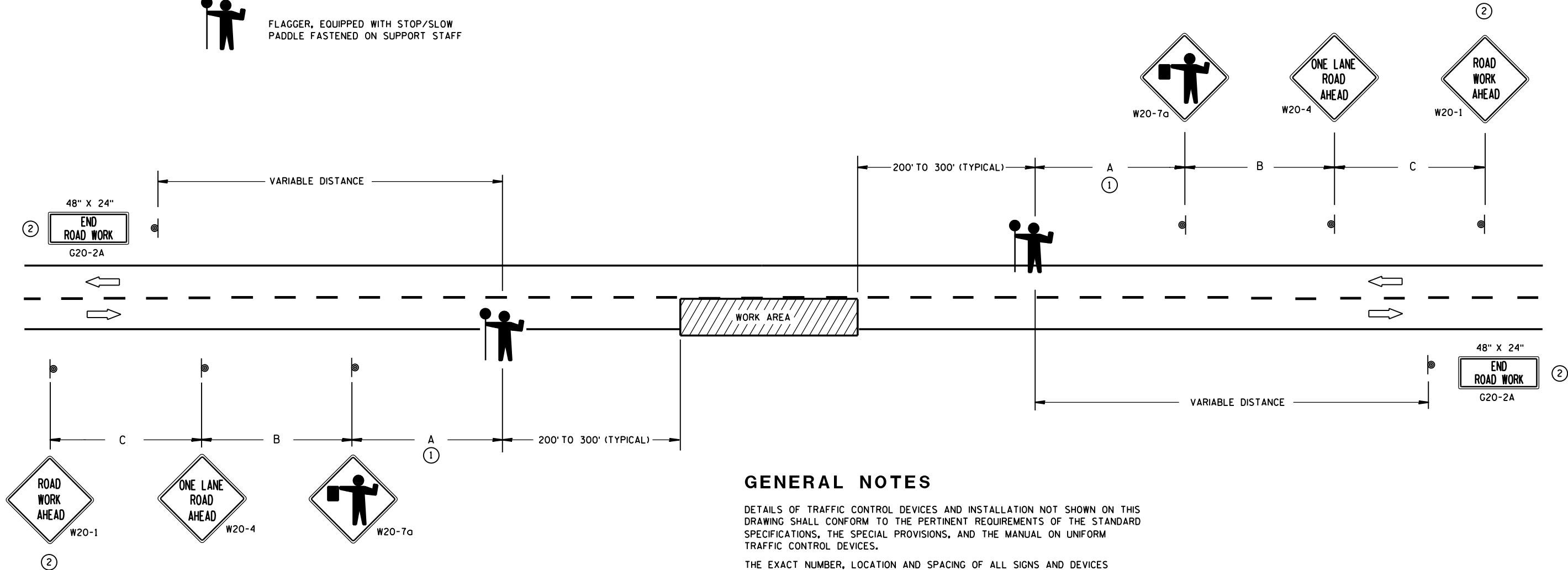
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

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



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



GENERAL NOTES

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

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

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

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

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

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

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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.

W20-1 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.

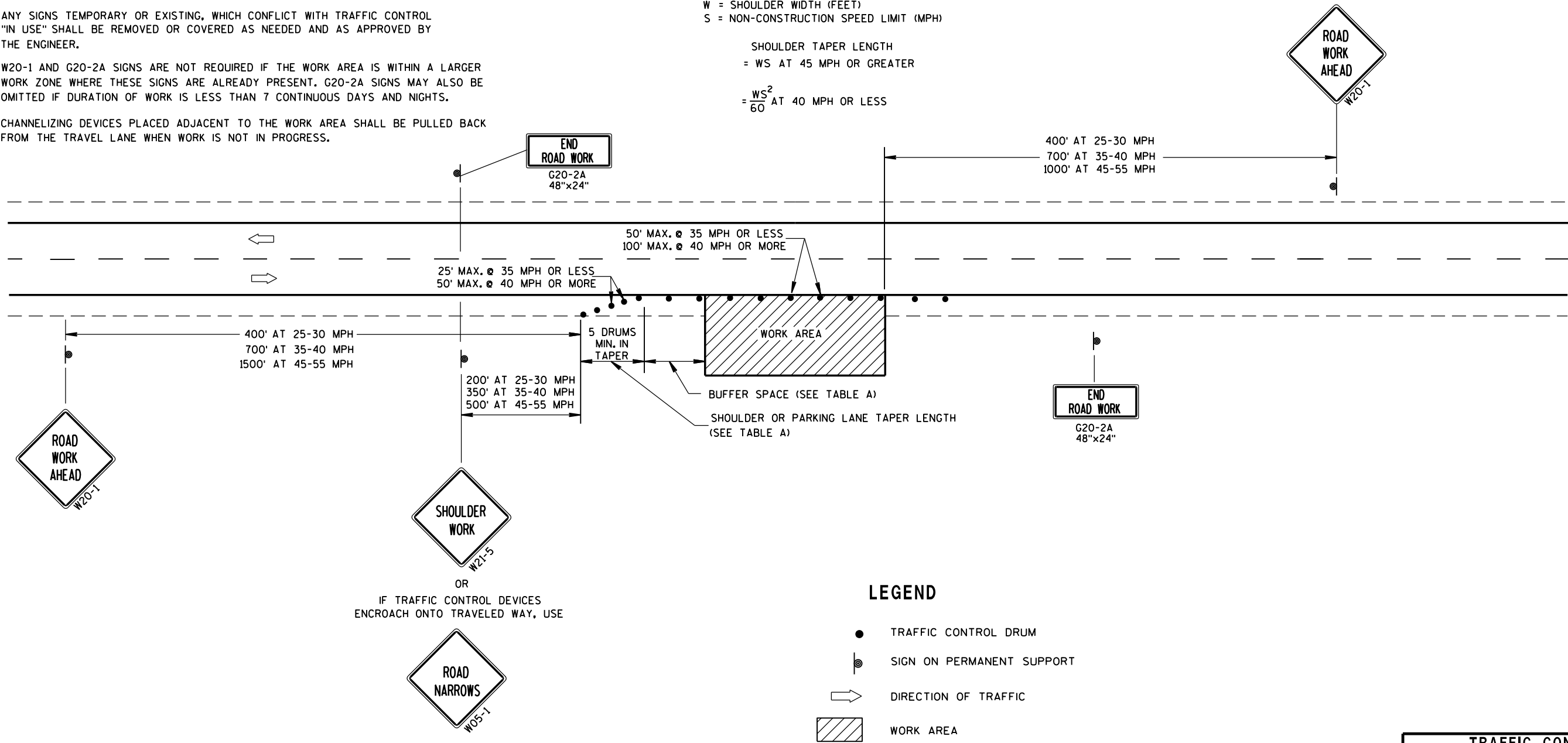
TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	85
35	30	45	55	70	120
40	40	55	75	90	170
45	60	90	120	150	220
50	70	100	135	170	280
55	75	110	150	185	335

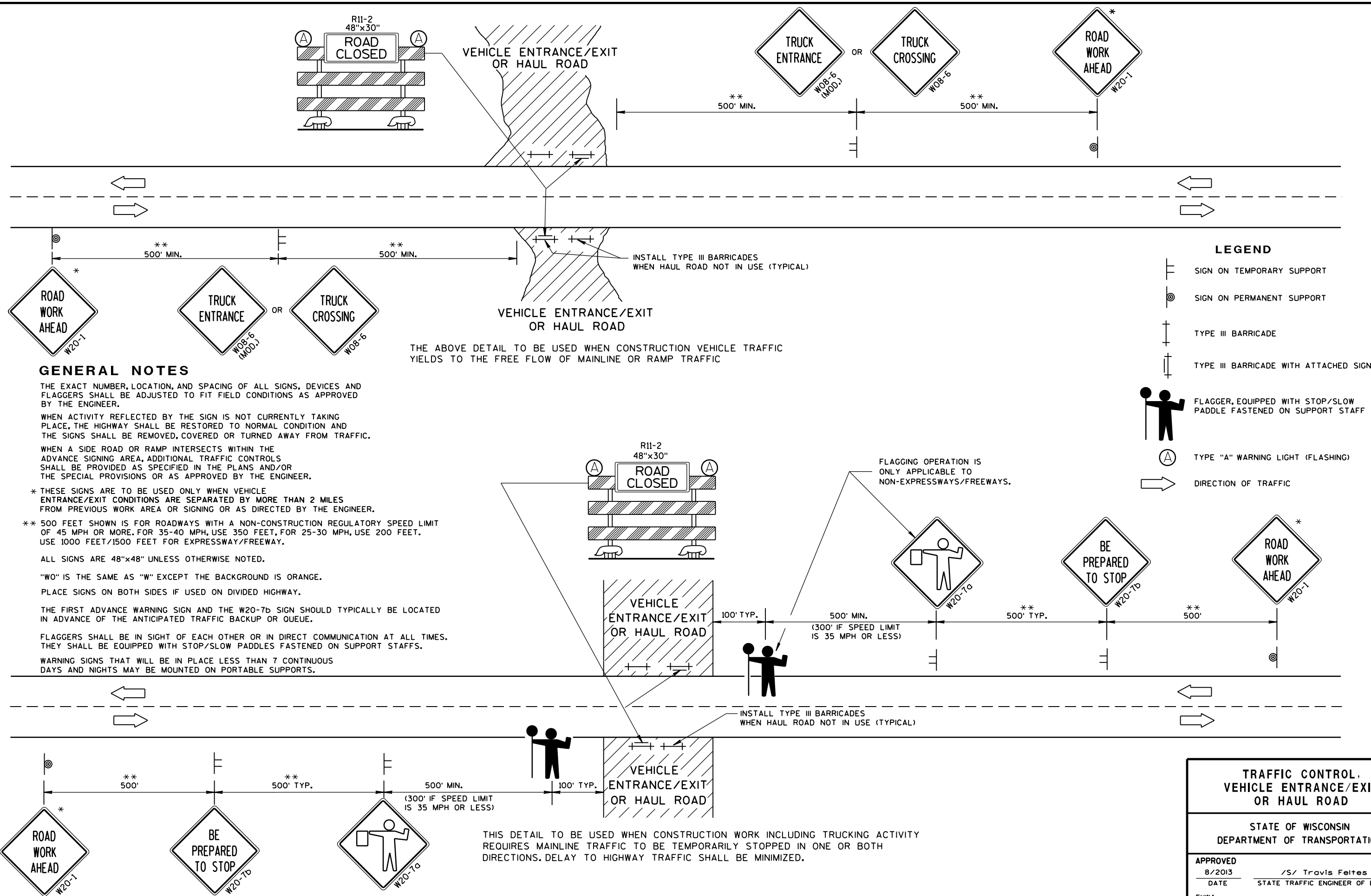
W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

SHOULDER TAPER LENGTH
= WS AT 45 MPH OR GREATER

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

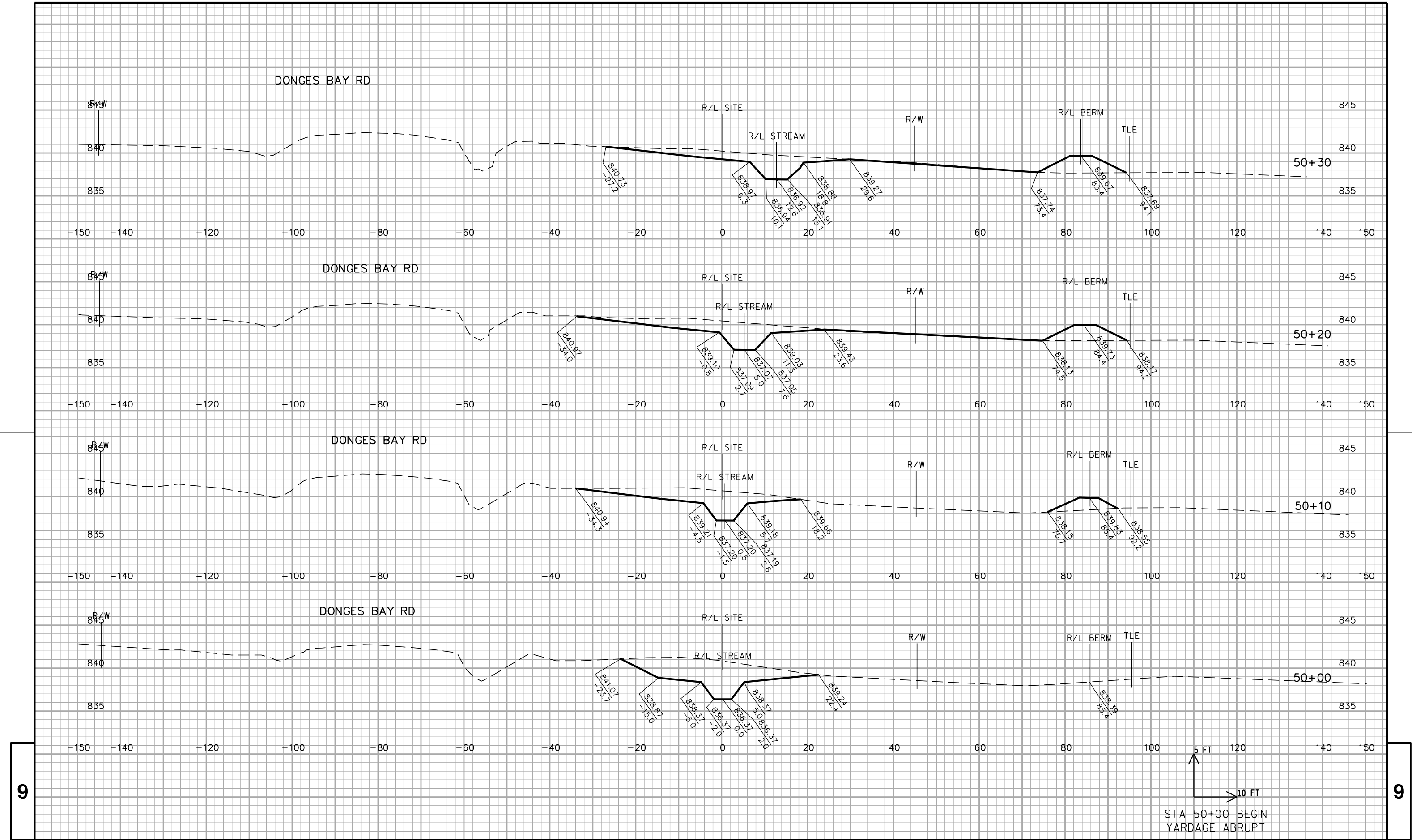


TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



		STREAM RELOCATION						
		AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY) (Unadjusted)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut 1.00	Fill 1.00	
STATION	Distance							
50+00 BA	0.00	91.9	0.0	0	0	0	0	0
50+10	10.00	63.9	0.0	29	0	29	0	29
50+20	10.00	87.6	0.0	28	0	57	0	57
50+30	10.00	74.7	0.0	30	0	87	0	87
50+40	0.00	61.7	0.0	0	0	87	0	87
50+50	10.00	53.3	0.0	21	0	108	0	108
50+60	10.00	58.4	0.0	21	0	129	0	129
50+70	10.00	84.6	0.0	26	0	155	0	155
50+80	10.00	140.5	0.0	42	0	197	0	197
50+90	10.00	141.1	0.0	52	0	249	0	249
51+00	10.00	123.3	0.0	49	0	298	0	298
51+10	10.00	122.6	0.0	46	0	344	0	344
51+20	10.00	126.1	0.0	46	0	390	0	390
51+30	10.00	123.1	0.0	46	0	436	0	436
51+40	10.00	120.3	0.0	45	0	481	0	481
51+50	10.00	156.3	0.0	51	0	532	0	532
51+60	10.00	169.0	0.0	60	0	592	0	592
51+70	10.00	179.1	0.0	64	0	657	0	657
51+80	10.00	245.3	0.0	79	0	735	0	735
51+90	10.00	200.5	0.0	83	0	818	0	818
52+00	10.00	225.3	0.0	79	0	897	0	897
52+10	10.00	182.2	0.0	75	0	972	0	972
52+20	10.00	119.6	0.0	56	0	1,028	0	1,028
52+30	10.00	98.1	0.0	40	0	1,068	0	1,068
52+40	10.00	82.5	0.0	33	0	1,102	0	1,102
52+50	10.00	71.4	0.0	29	0	1,130	0	1,130
52+60	10.00	71.6	75.0	26	14	1,157	14	1,143
52+70	10.00	68.8	87.9	26	30	1,183	44	1,139
52+80	10.00	66.3	0.0	25	16	1,208	60	1,148
52+90	10.00	42.1	0.0	20	0	1,228	60	1,168
53+00	10.00	21.5	0.0	12	0	1,240	60	1,179
53+10	10.00	0.0	0.0	5	0	1,245	60	1,184
STREAM RELOCATION				1,245	60	1,245	60	1,184

		BERM CONSTRUCTION						
		AREA (SF)		Incremental Vol (CY) (Unadjusted)		Cumulative Vol (CY) (Unadjusted)		Mass Ordinate
		Cut	Fill	Cut	Fill	Cut 1.00	Fill 1.00	
STATION	Distance							
50+00 BA	0.00	0.0	0.0	0	0	0	0	0
50+10	10.00	0.0	14.6	0	3	0	3	-3
50+20	10.00	0.0	22.4	0	7	0	10	-10
50+30	10.00	0.0	25.8	0	9	0	18	-18
50+40	0.00	0.0	25.8	0	0	0	18	-18
50+50	10.00	0.0	26.0	0	10	0	28	-28
50+60	10.00	0.0	25.8	0	10	0	38	-38
50+70	10.00	0.0	25.6	0	10	0	47	-47
50+80	10.00	0.0	26.0	0	10	0	57	-57
50+90	10.00	0.0	26.6	0	10	0	66	-66
51+00	10.00	0.0	26.6	0	10	0	76	-76
51+10	10.00	0.0	26.6	0	10	0	86	-86
51+20	10.00	0.0	26.6	0	10	0	96	-96
51+30	10.00	0.0	26.2	0	10	0	106	-106
51+40	10.00	0.0	26.2	0	10	0	115	-115
51+50	10.00	0.0	26.2	0	10	0	125	-125
51+60	10.00	0.0	26.4	0	10	0	135	-135
51+70	10.00	0.0	26.1	0	10	0	145	-145
51+80	10.00	0.0	25.4	0	10	0	154	-154
51+90	10.00	0.0	0.0	0	5	0	159	-159
52+00	10.00	0.0	0.0	0	0	0	159	-159
52+10	10.00	0.0	0.0	0	0	0	159	-159
52+20	10.00	0.0	0.0	0	0	0	159	-159
52+30	10.00	0.0	0.0	0	0	0	159	-159
52+40	10.00	0.0	0.0	0	0	0	159	-159
52+50	10.00	0.0	0.0	0	0	0	159	-159
52+60	10.00	0.0	0.0	0	0	0	159	-159
52+70	10.00	0.0	0.0	0	0	0	159	-159
52+80	10.00	0.0	0.0	0	0	0	159	-159
52+90	10.00	0.0	0.0	0	0	0	159	-159
53+00	10.00	0.0	0.0	0	0	0	159	-159
53+10	10.00	0.0	0.0	0	0	0	159	-159
BERM CONSTRUCTION				0	159	0	159	-159



PROJECT NO: 2475-00-72

HWY: STH 145

COUNTY: WASHINGTON

CROSS SECTIONS:

SHEET

E

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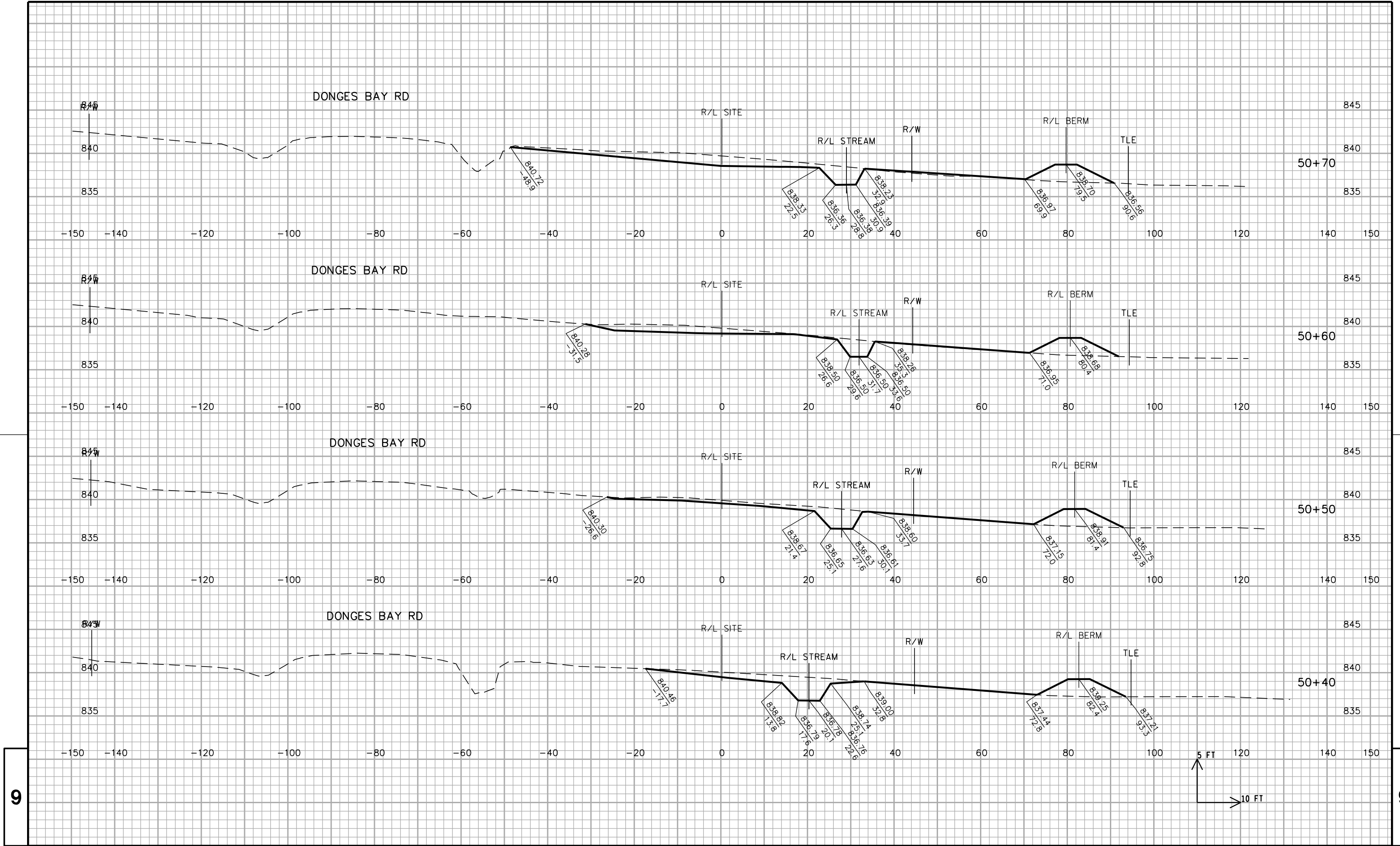
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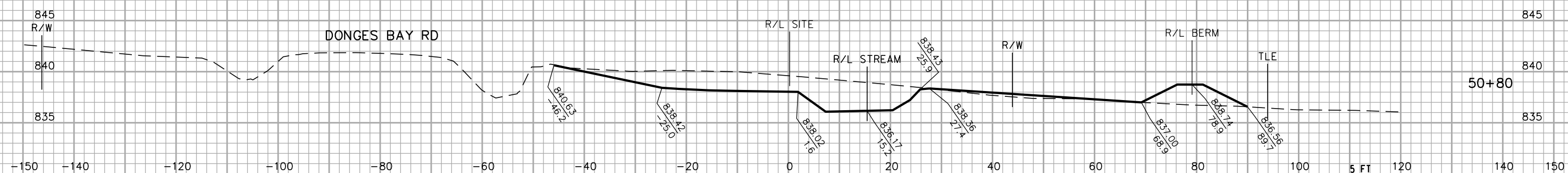
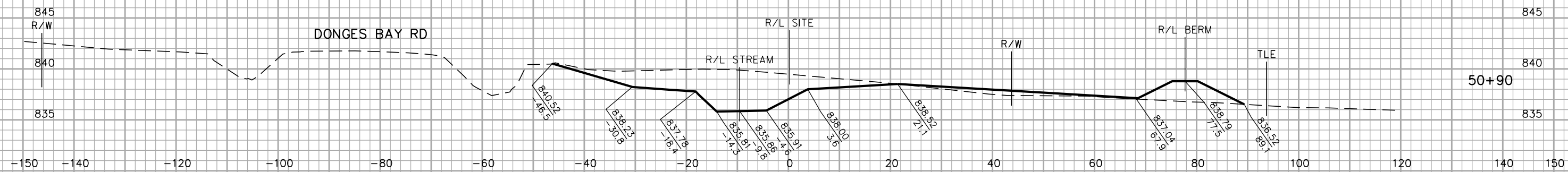
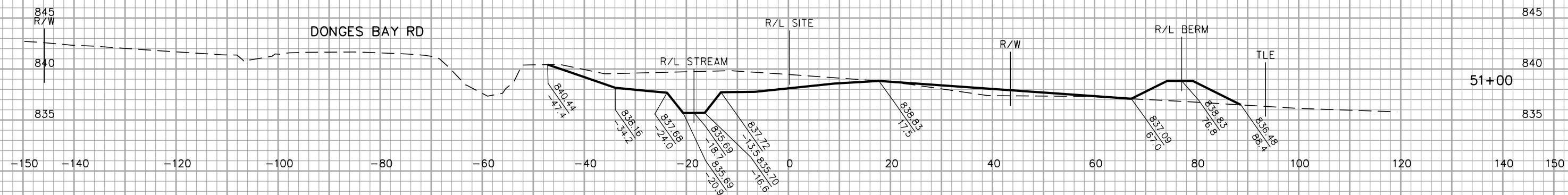
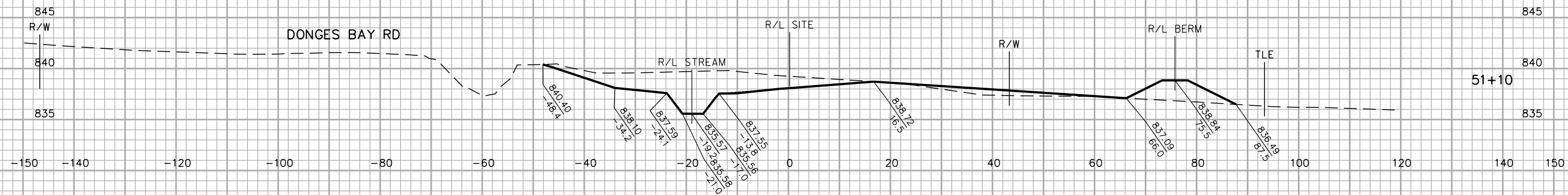
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PLOT NAME : \$FILE\$

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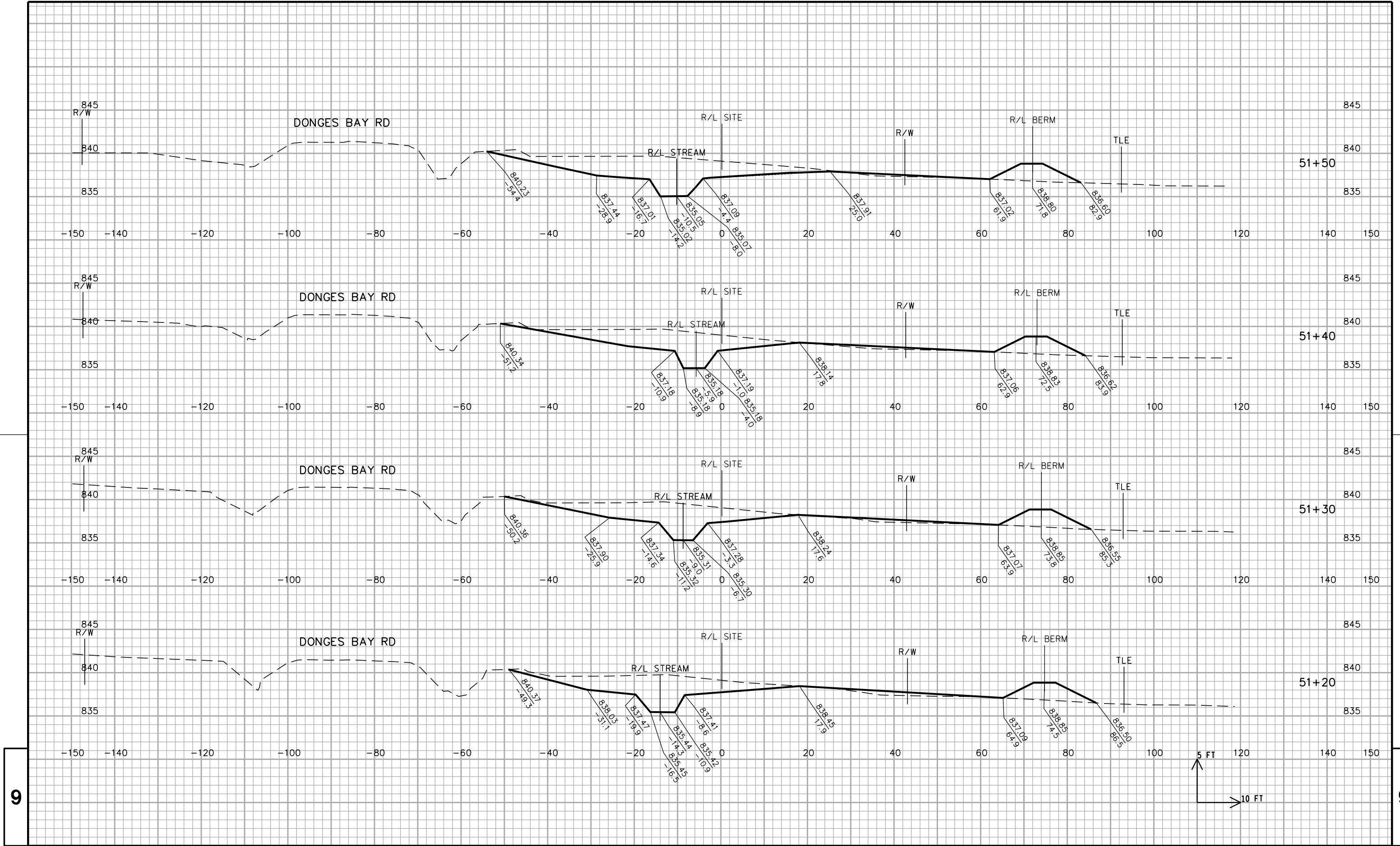
WISDOT/CADDs SHEET 21

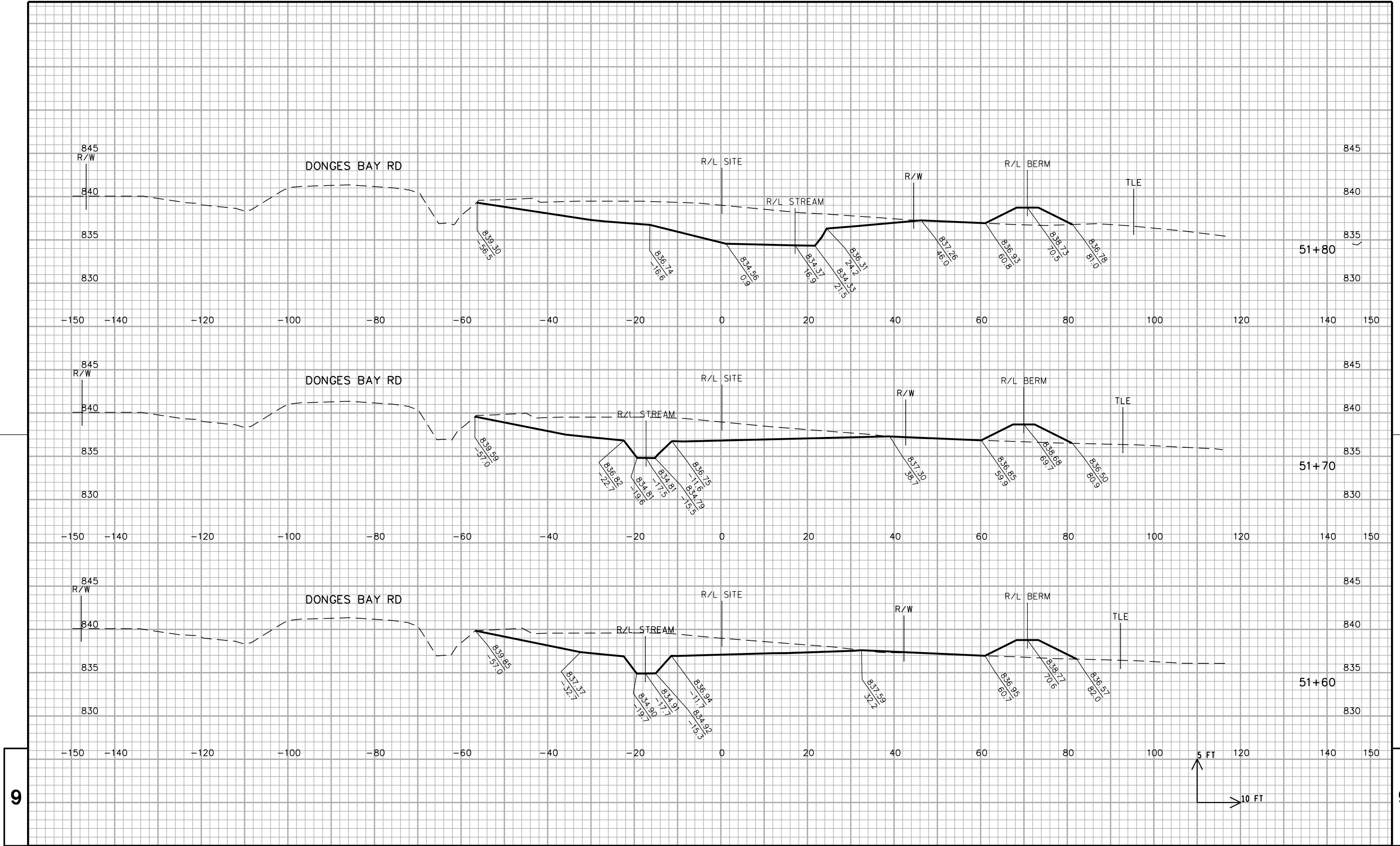


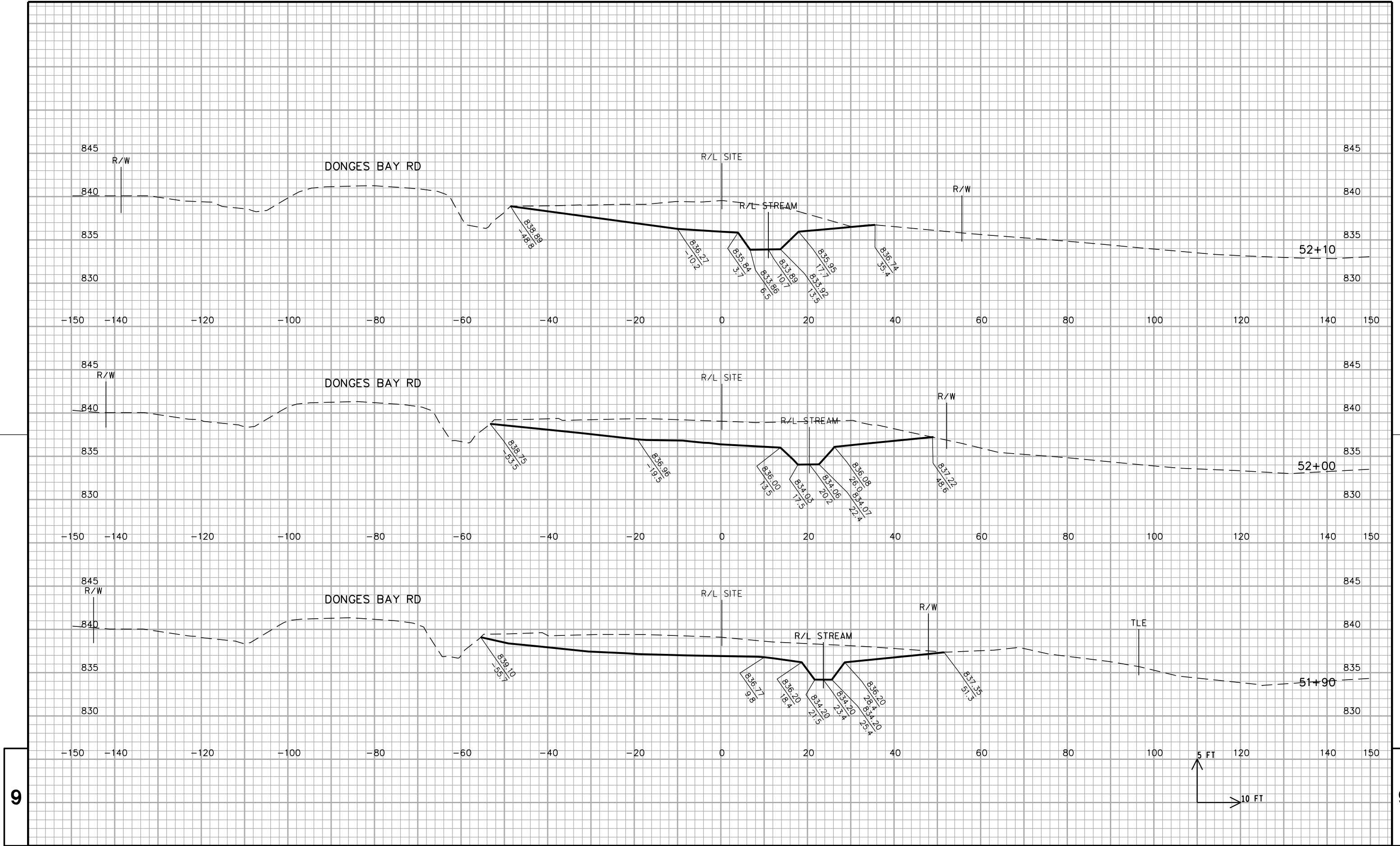


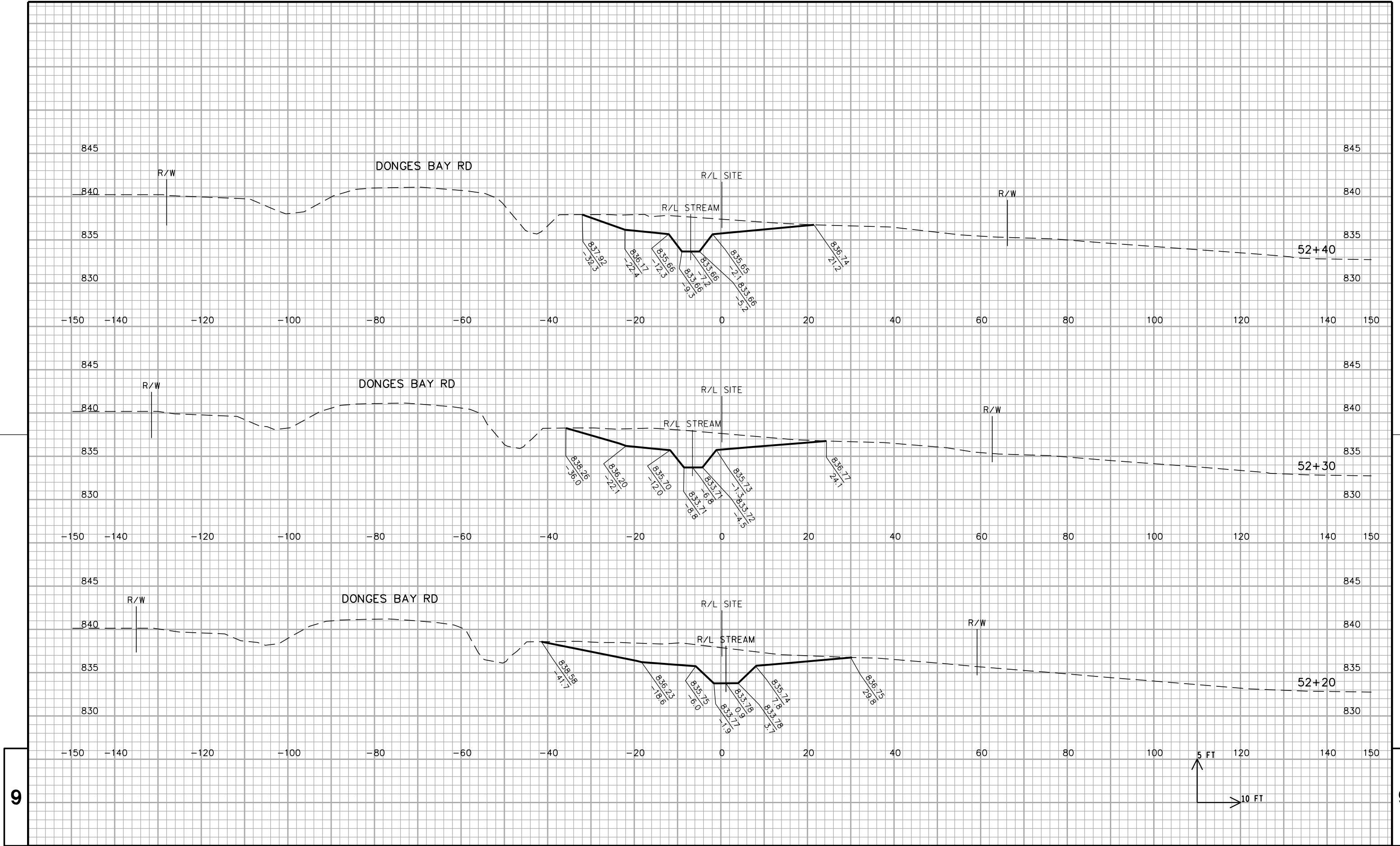
9

[illegible]









PROJECT NO: 2475-00-72

HWY: STH 145

COUNTY: WASHINGTON

CROSS SECTIONS:

SHEET

E

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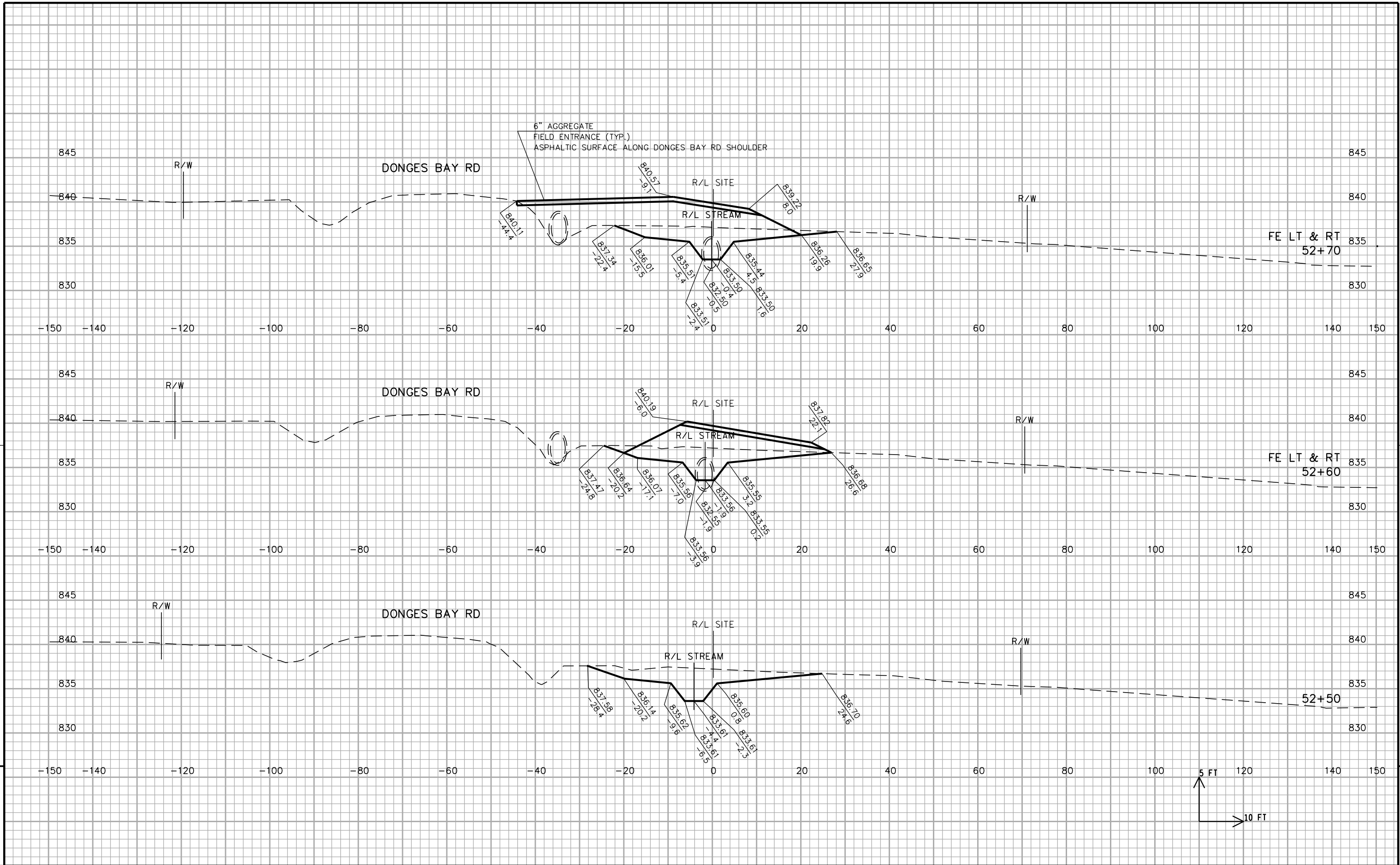
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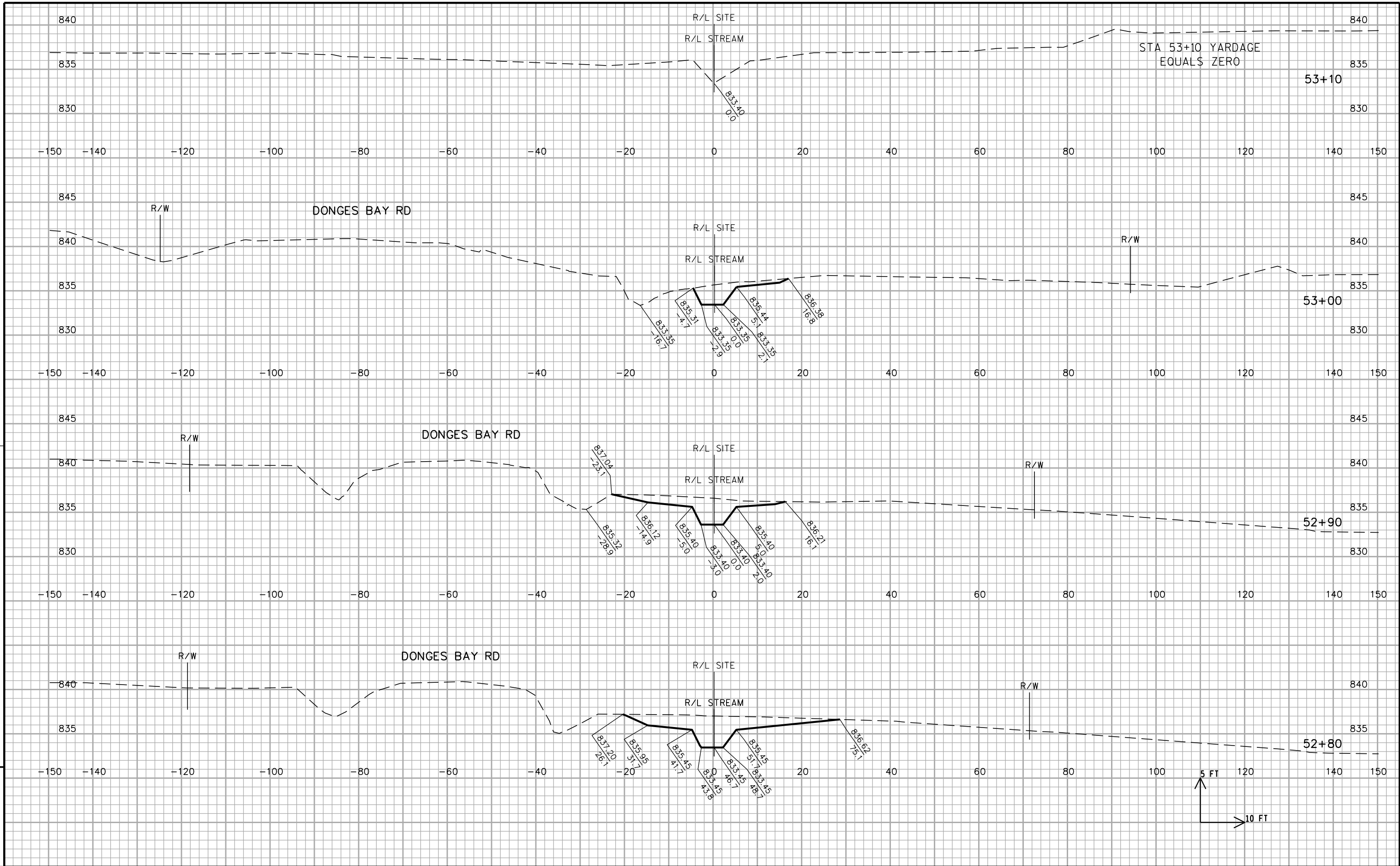
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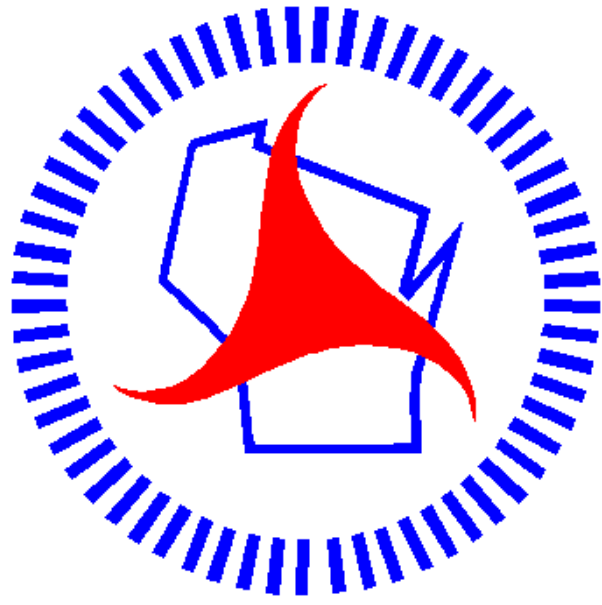
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WISDOT/CADDs SHEET 21







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