

October 29, 2009

SUBJECT: FAP Route 332/876 Project ACF-ACBRF-000S (688) Section 2002-113R Will County Contract No. 62542 Item No. 168, November 6, 2009 Letting Addendum A

# NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

- 1. Replaced the Schedule of Prices.
- 2. Revised page iv of the Table of Contents to the Special Provisions.
- 3. Added pages 281 296 to the Special Provisions.
- 4. Revised sheets 1 8, 11, 20 22, 77 & 78 of the Plans.
- 5. Added sheets 101A, 101B & 119A 119D to the Plans.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

Charles Ingersoll, Chief Bureau of Design and Environment

Tette aluchbyon DE.

By: Ted B. Walschleger, P. E. Engineer of Project Management

cc: Diane O'Keefe, Region 1, District 1; Bill Frey; R. E. Anderson; Estimates

TBW:MS:jc

 State Job # C-91-366-02

 PPS NBR 1-76352-0100

 County Name WILL- 

 Code 197 - 

 District 1 - 

Project Number ACF-ACBHF-000S/688/ Route FAP 332 FAP 876

\* REVISED : OCTOBER 29, 2009

Section Number - 2002-113R

ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
A2006514	T-QUERCUS BICOL 1-3/4	EACH	11.000				
A2006614	T-QUERCUS IMBR 1-3/4	EACH	10.000				
A2006714	T-QUERCUS MACR 1-3/4	EACH	26.000				
B2001616	T-CRAT CRU-I TF 2	EACH	19.000				
* C2C015G3	S-CORNUS OBLIQ CG 3G	EACH	100.000				
* C2C01524	S-CORNUS RACEMOSA 2'C	EACH	100.000				
C2C06024	S-RHUS TYPHINA 2'C	EACH	610.000				
D2002172	E-PICEA PUNGENS 6'	EACH	13.000				
E20200G1	V-PARTHEN QUINQ 1G	EACH	984.000				
K1005465	SELECT MOWING STAKES	EACH	7.000				
MX030199		SQ M	2,210.000				
MX030217	P CUL REM 375	METER	100.000				
MX030218	P CUL REM 450	METER	30.000		•		90010000000000000000000000000000000000
	NOISE AB WALL GRD MT	SQ M	2,210.000				
	A CBL 3-1C2 AL MESS W	METER	1,097.000				

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* MX032178	TEMP INFO SIGNING	SQ M	11.500				
MX032680	WEED CONTR PRE-EM GRN	KG	13.000				
MX032723	PREFORM DETECT LOOP	METER	197.800				
MX032819	ELCBL C TRACER 14 1C	METER	920.400				
MX032922	ELCBL C GND 6 1C	METER	458.800				
MX033189	WEED CONT N SEL/N RES	LITER	0.300				
MX033447	PIPE CULV REMOV 600	METER	170.000				
MX033693	STR REP CON DP > 125	SQ M	195.000				
MX033694	STR REP CON DP =< 125	SQ M	8.910				
MX033724	GROUND ROD 16X3	EACH	12.000				
MX033761	ANCHOR BOLTS M30	EACH	24.000				
MX033790	TEMP WD POLE 18.30 C4	EACH	1.000				
MX033791	TEMP WDPL 18.30 C4 MA	EACH	14.000				
MX033792	LP FN M381BC25.4X2.44	EACH	15.000				
MX281003	STONE RIPRAP CL C3	SQ M	87.000				

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ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
N/X0 4004 0							
WIX843U1U	REMOV EX CON ATT STR	METER	60.000				
MX871055	FOCC62.5/125 MM12SM12	METER	954.400				
MX873030	ELCBL C 20 3C TW SH	METER	224.300				
MX877020	STL COMB MAA&P 16.76	EACH	3.000				
MX877905	SC MAAP D 7.31&15.85	EACH	1.000				
MX877906	SC MAAP D 6.7 &15.24	EACH	1.000				
MX877907	SC MAAP D 9.14&16.47	EACH	1.000				
MX877908	SC MAAP D 10.36&16.47	EACH	1.000				
MX878030	CONC FDN TY E 900D	METER	36.800				
MZ001050	AGG SUBGRADE 300	SQ M	16,890.000				
MZ014800	CULVERT TO BE CLEANED	METER	17.000				
MZ064800	SELECTIVE CLEARING	UNIT	14.000				
M2010110	TREE REMOV 6-15	UNIT	400.000				
M2010210	TREE REMOV OVER 15	UNIT	42.000				
M2011000	TEMPORARY FENCE	METER	150.000				

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ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	II	Total Price
M2011300	TREE PRUN 25-250	EACH	10.000				
M2011350	TREE PRUN OVER 250	EACH	10.000				
M2020010	EARTH EXCAVATION	СИМ	21,348.500				
M2021200	REM & DISP UNS MATL	СИМ	7,491.000				
M2070400	POROUS GRAN EMB SPEC	CU M	225.000				
* M2080150	TRENCH BACKFILL	си м	1,500.000				
M2113100	TOPSOIL F & P 100	SQ M	10,877.000				
M2113300	TOPSOIL F & P 300	SQ M	2,037.000				
M2114100	COMPOST F & P 100	SQ M	12,877.000				
M2140100	GRADING & SHAP DITCH	METER	355.000				
* M2500210	SEEDING CL 2A	НА	1.300				
* M2500310	SEEDING CL 4	НА	1.700				
M2500400	NITROGEN FERT NUTR	KG	209.000				
M2500500	PHOSPHORUS FERT NUTR	KG	142.000				
M2500600	POTASSIUM FERT NUTR	KG	95.000		L		

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ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
* M2502024	SEEDING CL 4B MOD	НА	0.500				
M2503310	INTERSEED CL 4	НА	1.000				
M2510630	EROSION CONTR BLANKET	SQ M	27,221.000				
M2520110	SODDING SALT TOLERANT	SQ M	800.000				
M2800255	TEMP EROS CONTR SEED	НА	0.440				
* M2800305	TEMP DITCH CHECKS	METER	11.000				
M2800400	PERIMETER EROS BAR	METER	3,192.000				
* M2810105	STONE RIPRAP CL A3	SQ M	210.000				
* M2810107	STONE RIPRAP CL A4	SQ M	1,021.000				
* M2820200	FILTER FABRIC	SQ M	1,131.000				
M3111100	SUB GRAN MAT B 100	SQ M	4,040.000				
M3112010	SUB GRAN MAT C	M TON	2,015.000				
M3112300	SUB GRAN MAT C 300	SQ M	550.000				
M3120100	STAB SUB-BASE 100	SQ M	1,759.000				
* M3530245	PCC BSE CSE 245	SQ M	1,564.000				

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ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M3550450	HMA BASE CSE 150	SQ M	417.000				
M3550500	HMA BASE CSE 200	SQ M	1,013.000				
M4060200	BIT MATLS PR CT	M TON	9.000				
M4060300	AGG PR CT	M TON	36.000				
M4060400	MIX CR JTS FLANGEWYS	M TON	10.000				
M4060895	CONSTRUC TEST STRIP	EACH	3.000				
M4060982	HMA SURF REM BUTT JT	SQ M	352.000				
M4062135	LEV BIND MM N70	M TON	3,066.000				
* M4063085	HMA BC IL-19.0 N70	M TON	780.000				
M4063240	P HMA BC IL19.0 N90	M TON	10,420.000				
M4063310	HMA SC "C" N50	M TON	60.000				
M4063335	HMA SC "D" N50	M TON	521.000				
M4063340	HMA SC "D" N70	M TON	1,437.000				
M4063595	P HMA SC "F" N90	M TON	3,900.000				
* DELETED					L		

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M4206100		SQ M	42.000				
M4400725	HMA SURF REM 25	SQ M	7,860.000				
M4400740	HMA SURF REM 40	SQ M	6,700.000				
M4400750	HMA SURF REM 50	SQ M	3,330.000				
M4400760	HMA SURF REM 60	SQ M	6,745.000				
M4400765	HMA SURF REM 65	SQ M	21,150.000				
M4401165	HMA RM OV PATCH 65	SQ M	851.000				
M4402000	PAVEMENT REM	SQ M	4,930.000				
M4402010	DRIVE PAVEMENT REM	SQ M	320.000				
M4402060	APPROACH SLAB REM	SQ M	444.000				
M4402530	PAVED SHLD REMOVAL	SQ M	696.000				
M4428065	CL D PATCH T1 425	SQ M	80.000				
M4428085	CL D PATCH T1 525	SQ M	55.000				
M4428220	CL D PATCH T2 200	SQ M	540.000				
M4428265	CL D PATCH T2 425	SQ M	205.000		<u> </u>		

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ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M4428285	CL D PATCH T2 525	SQ M	850.000				
M4428385	CL D PATCH T3 525	SQ M	180.000				
M4428465	CL D PATCH T4 425	SQ M	50.000				
M4430020	STRIP REF CR CON TR	METER	468.000				
M4812000	AGGREGATE SHLDS B	M TON	141.000				
M4816000	AGG WEDGE SHLD TYPE B	M TON	657.000				
M4820550	HMA SHOULDERS 150	SQ M	720.000				
M4820600	HMA SHOULDERS 200	SQ M	712.000				
M4820655	HMA SHOULDERS 255	SQ M	5,380.000				
M5010240	CONC REM	си м	11.500				
M5010400	BRIDGE RAIL REMOVAL	METER	76.500				
M5010465	SLOPE WALL REMOV	SQ M	1,059.000				
M5010522	PIPE CULVERT REMOV	METER	335.000				
M5020100	STRUCTURE EXCAVATION	си м	147.000				
M5030280	CONCRETE ENCASEMENT	СИМ	3.210				

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M5030350	CONC STRUCT	си м	81.000				
M5030360	CONC SUP-STR	си м	449.000				
M5030390	BR DECK GROOVING	SQ M	868.000				
M5030450	PROTECTIVE COAT	SQ M	1,039.000				
M5050105	F & E STRUCT STEEL	L SUM	1.000				
M5050410	STRUCT STEEL REMOV	KG	6,505.000				
M5080205	REINF BARS, EPOXY CTD	KG	69,567.000				
	SLOPE WALL 150	SQ M	942.000				
M5120140	F STL PILE HP250X62	METER	111.300				
M5120335	DRIVING PILES	METER	111.300				
M5120440	TEST PIL ST HP250X62	EACH	2.000				
M5200225	PREF JT STRIP SEAL	METER	27.000				
	ANCHOR BOLTS M24	EACH	56.000				
M542E020		EACH	1.000				
	PRC FL-END SEC 375	EACH	3.000				

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ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
M542E128	PRC FL-END SEC 600	EACH	2.000				
M542E136	PRC FL-END SEC 750	EACH	2.000				
M542G020	GRAT-C FL END S 375	EACH	3.000				
M542G025	GRAT-C FL END S 450	EACH	1.000				
M542G035	GRAT-C FL END S 600	EACH	2.000				
* M542G045	GRAT-C FL END S 750	EACH	3.000				
* M5500030	STORM SEW CL A 1 300	METER	150.000				
	STORM SEW CL A 1 375	METER	131.000				
	STORM SEW CL A 1 450	METER	341.000				
	STORM SEW CL A 1 600	METER	204.000				
* M5500075		METER	97.000				
	CONCRETE SEALER	SQ M	45.000				
			94.000				
	GEOCOMPOSITE WALL DR	SQ M					
	P UNDR - STRUCT 100	METER	74.000				
M6020140	CB A 1.2M D T8G	EACH	2.000	<u> </u>		[	

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* M6020180	CB A 1.2M D T23F&G	EACH	8.000				
* M6020480	CB A 1.5M D T23F&G	EACH	4.000				
M6021610	MAN A 1.5D T1F CL	EACH	1.000				
* M6021612	MAN A 1.5D T1F CL RP	EACH	1.000				
M6060010	CLASS SI CONC OUTLET	СИМ	11.600				
M6060500	COMB CC&G TB15.30	METER	255.000				
M6061930	COMB CC&G TM10.30	METER	804.000				
M6300101	SPBGR TY A 1.83 POSTS	METER	96.000				
M6320020	SPBGR REM	METER	173.000				
M6320030	GUARDRAIL REMOV	METER	337.000				
M6420015	SHOULDER RUMBLE STRIP	METER	2,245.000				
M7030100	SHORT-TERM PAVT MKING	METER	750.000				
M7030210	TEMP PVT MK LTR & SYM	SQ M	74.000				
M7030220	TEMP PVT MK LINE 100	METER	8,388.000				
M7030240	TEMP PVT MK LINE 150	METER	773.000		<u> </u>		

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M7030260		METER	880.000				
M7030280	TEMP PVT MK LINE 600	METER	130.000				
M7030520	PAVT MARK TAPE T3 100	METER	15,075.000				
M7030580	PAVT MARK TAPE T3 600	METER	50.000				
M7031000	WORK ZONE PAVT MK REM	SQ M	1,425.000				
M7040100	TEMP CONC BARRIER	METER	120.000				
M7040200	REL TEMP CONC BARRIER	METER	120.000				
* M7200100	SIGN PANEL T1	SQ M	1.680				
M7200200	SIGN PANEL T2	SQ M	10.440				
M7800100	THPL PVT MK LTR & SYM	SQ M	78.000				
M7800105	THPL PVT MK LINE 100	METER	4,063.000				
M7800115	THPL PVT MK LINE 150	METER	1,283.000				
M7800125	THPL PVT MK LINE 300	METER	875.000				
M7800140	THPL PVT MK LINE 600	METER	115.000				
M7800405	PREF PL PM TB LN 100	METER	2,925.000				

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M7800415		METER	325.000				
M7800425		METER	75.000				
M7800440		METER	25.000				
		METER	129.000				
		METER	172.000				
M8100060		METER	1,247.000				
		METER	49.300				
M8100100		METER	6.000				
M8101050	CON P 50 GALVS	METER	85.200				
M8101070	CON P 75 GALVS	METER	118.000				
M8101090	CON P 100 GALVS	METER	264.900				
M8110160	CON AT ST 50 GALVS	METER	45.500				
M8160400	UD 3#4 #6G EPRRHW 30	METER	1,620.000				
M8160415	UD 3#2 #4G EPRRHW 40	METER	1,344.000				
M8170870	EC C EPR USE 3-1C 350	METER	15.000				

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M8190200	TR & BKFIL F ELECT WK	METER	2,392.000				
M8305050	LT P A 14.5MH 4.5MA	EACH	4.000				
M8380095	BKWY DEV TR B 381BC	EACH	13.000				
M8731220	ELCBL C SIGNAL 14 3C	METER	224.300				
M8731240	ELCBL C SIGNAL 14 5C	METER	1,830.500				
M8731250	ELCBL C SIGNAL 14 7C	METER	738.700				
M8731300	ELCBL C LEAD 14 1PR	METER	2,161.000				
M8731800	ELCBL C SERV 6 2C	METER	46.500				
M8750110	TS POST 4.85	EACH	3.000				
M8770777	STL COMB MAA&P 14.02	EACH	1.000				
M8780100	CONC FDN TY A	METER	36.000				
M8780150	CONC FDN TY C	METER	24.000				
M8860100	DET LOOP T1	METER	374.800				
X0322141	REM TEMP WOOD POLE	EACH	1.000				
X0322314	WEED CONT BROADLF TRF	GALLON	30.000				

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X0322323	WEED CONTROL TEASEL	GALLON	1.000				
X0323080	DRAINAGE SCUPPR DS-12	EACH	2.000				
X0323426	SED CONT DR ST INL CL	EACH	24.000				
X0323568	CHANNEL CLEANING	L SUM	1.000				
X0323574	MAINTAIN LIGHTING SYS	CAL MO	12.000				
X0323830	DRAINAGE SCUPPR DS-11	EACH	1.000				
X0324311	TMP WP18.30 4.5M IO	EACH	36.000				
X0324387	LUM SFTY CABLE ASMBLY	EACH	10.000				
X0325705	RE-OPTIMIZE SIG SYS 2	EACH	2.000				
X0325737		EACH	1.000				
X0326760		EACH	1.000				
X2800105		EACH	170.000				
X5020501	UNWAT STR EX PROT L1	EACH	1.000				
X5020502		EACH	1.000				
X8050015		EACH	2.000				

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					Ontrinee		
X8250110	LTG CT RCD C-TY SCADA	EACH	1.000				
X8620020	UNINTER POWER SUPPLY	EACH	2.000				
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000				
Z0076600	TRAINEES	HOUR	1,000.000		0.800		800.000
28000500	INLET & PIPE PROTECT	EACH	1.000				
28000510	INLET FILTERS	EACH	3.000				
50100100	REM EXIST STRUCT	EACH	1.000				
50101600	REM EXIST SUP-STR	L SUM	1.000				
50104720	REM EXIST CONC DECK	EACH	1.000				
50104900	REM EXIST SUB-STR	EACH	2.000				
50300100	FLOOR DRAINS	EACH	11.000				
50500505	STUD SHEAR CONNECTORS	EACH	5,808.000				
50500715	JACK & REM EX BEARING	EACH	12.000				
50501005	JACK & REPOS BEARINGS	EACH	12.000				
50600300	CLEAN PAINT STEEL BR	LSUM	1.000				

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50606400	C&D LEAD PT CL RES	LSUM	1.000				
50800515	BAR SPLICERS	EACH	136.000				
51500100	NAME PLATES	EACH	2.000				
52100010	ELAST BEARING ASSY T1	EACH	19.000				
52100020	ELAST BEARING ASSY T2	EACH	7.000				
* 60237460	INLETS TA T23F&G	EACH	7.000				
63100045	TRAF BAR TERM T2	EACH	7.000				
63100085	TRAF BAR TERM T6	EACH	10.000				
63100167	TR BAR TRM T1 SPL TAN	EACH	5.000				
67000400	ENGR FIELD OFFICE A	CAL MO	12.000				
67100100	MOBILIZATION	L SUM	1.000				
70101800	TRAF CONT & PROT SPL	L SUM	1.000				
78100100	RAISED REFL PAVT MKR	EACH	510.000				
78201000	TERMINAL MARKER - DA	EACH	5.000				
78300200	RAISED REF PVT MK REM	EACH	410.000				

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Project Number ACF-ACBHF-000S/688/ Route FAP 332 FAP 876

\* REVISED : OCTOBER 29, 2009

Section Number - 2002-113R

ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
80400100	ELECT SERV INSTALL	EACH	1.000				
80400200	ELECT UTIL SERV CONN	L SUM	1.000		6,000.000		6,000.000
81400100	HANDHOLE	EACH	3.000				
81400200	HD HANDHOLE	EACH	22.000				
81400300	DBL HANDHOLE	EACH	2.000				
82102310	LUM SV HOR MT 310W	EACH	25.000				
82102400	LUM SV HOR MT 400W	EACH	12.000				
84100110		EACH	14.000				
84200500		EACH	4.000				
84400105		EACH	14.000				
84500130		EACH	1.000				
	FAC T4 CAB	EACH	1.000				
	FAC T5 CAB	EACH	1.000				
86000100		EACH	1.000				
	TRANSCEIVER - FIB OPT	EACH	2.000				

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 State Job # C-91-366-02

 PPS NBR 1-76352-0100

 County Name WILL- 

 Code 197 - 

 District 1 - 

Project Number ACF-ACBHF-000S/688/ Route FAP 332 FAP 876

\* REVISED : OCTOBER 29, 2009

Section Number - 2002-113R

ltem Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
88000470	SH 2F 5S BM	EACH	1.000				
88000490	SH 2F 1-3S 1-5S BM	EACH	3.000				
88030020	SH LED 1F 3S MAM	EACH	23.000				
88030110	SH LED 1F 5S MAM	EACH	5.000				
88200210	TS BACKPLATE LOU ALUM	EACH	28.000				
88500100	INDUCTIVE LOOP DETECT	EACH	27.000				
88700200	LIGHT DETECTOR	EACH	6.000				
88700300	LIGHT DETECTOR AMP	EACH	2.000				
* 89000100	TEMP TR SIG INSTALL	EACH	2.000				
89502375	REMOV EX TS EQUIP	EACH	1.000				

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STEEL COST ADJUSTMENT (BDE) (RETURN FORM WITH BID) STORM WATER POLLUTION PREVENTION PLAN REVISED 10/29/2009

## STORM WATER POLLUTION PREVENTION PLAN



## Storm Water Pollution Prevention Plan

Route	FAP 332 / 876	Marked Rte.	IL 394 / IL 1	
Section	2002-113 R	Project No.	C-91-366-02	
County	Will	Contract No.	62542	

This plan has been prepared to comply with the provisions of the NPDES Permit Number ILR10, issued by the Illinois Environmental Protection Agency for storm water discharges from Construction Site Activities.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

 Diane O'Keefe
Print Name
Deputy Director of Highways, Regional Engineer
 Title
Illinois Department of Transportation
Agency

10-20-03

## I. Site Description:

A. The following is a description of the project location:

The intersection improvement at Goodenow Road begins at a point on the centerline of Goodenow Road at approximately 100 meter west from the centerline of IL 394 and extends east 411 meter in the Village of Crete. The intersection improvement at IL 1 begins at a point on the centerline of IL 1 at approximately 50 meter west from the centerline of IL 394 and extends easterly direction 110 meter in the Village of Crete. The resurfacing improvement begins at a point on the centerline of (FAP 332) IL 394 approximately 93 meter north of the centerline of Goodenow Road within the Village of Crete and extends in a northerly direction to a point 230 meter north of the centerline of IL 1 (Village Wood Dr.) for a net length of 599.3 meter.

B. The following is a description of the construction activity which is the subject of this plan:

This is intersection improvements of Goodenow Road and IL 1 on IL 394 and a resurfacing improvement on IL 394 from North of Goodenow Road to IL 1 (Village Wood Drive) in which the work to be performed under this contract includes resurfacing, widening and reconstruction of the intersections, demolition and reconstruct of bridges on IL 394, hot-mix asphalt surface removal, pavement patching, combination curb and gutter removal and replacement, detector loop replacement, structure adjustments and cleaning, resurfacing with hot-mix asphalt surface course and polymerized leveling binder, placement of thermoplastic pavement markings of IL 394 and construct a cul-de-sac on Old IL 1.

C. The following is a description of the intended sequence of major activities which will disturb soils for major portions of the construction site, such as grubbing, excavation and grading:

Prior to starting any work the contractor shall place perimeter barrier as shown in the erosion control plan.

Stage 1: Resurfacing and begin part construction of bridges, and drianing structures -West of IL 394

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Stage 2: Continue constructing roadway, traffic signals, lightings, prop. storm swers, drainage structures bridge and a noise wall -East of IL 394 -East of the intersection IL 394/Goodenow Rd.

Stage 3: Continue constructing roadway, traffic signals, lighting, prop storm swers, drainage structures and a cul-de-sac -Wast of the intersection IL 394/Goodenow Rd. -Cul-de-sac on IL 1 -Bridge removal on IL 1

D. The total area of the construction site is estimated to be 20.62 acres.

The total area of the site that is estimated will be disturbed by excavation, grading or other activities is <u>11.7</u> acres.

E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

Before Construction: 0.714 After Construction: 0.650

F. The following is a description of the soil types found at the project site followed by information regarding their erosivity:

Markham silt loam, 4 to 7 percent slopes, eroded Ashikum silty clay loam Beecher silt loam 2 to 4 percent slopes Peotone silty clay loam

G. The following is a description of potentially erosive areas associated with this project:

From Sta. 60 + 295 to Sta. 61 + 650 From Sta. 3 + 900 to Sta. 4 + 311

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H. The following is a description of soil disturbing activities, their locations, and their erosive factors (e.g. steepness of slopes, length of slopes, etc):

The embankment will be placed and ditches will be regraded through out the length of the project.

- I. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) and locations where storm water is discharged to surface water including wetlands.
- J. The following is a list of receiving water(s) and the ultimate receiving water(s), and areal extent of wetland acreage at the site. The location of the receiving waters can be found on the erosion and sediment control plans:

The nearest receiving water is Plum Creek. Wetlands are present in the vicinity of the project (see attached wetland delineation map) There are no threatened/endangered species within the project limit.

K. The following pollutants of concern will be associated with this construction project:

Soil Sediment	$\boxtimes$	Petroleum (gas, diesel,	oil, kerosene	, hydraulic oil / fluids)
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	Concrete	$\bowtie$	Antifreeze / Coolants
			Antineezer ooolanta
	Concrete Truck Waste		Waste water from cleaning construction equipment
$\boxtimes$	Concrete Curing Compounds		Other (specify)
	Solid Waste Debris		Other (specify)
	Paints		Other (specify)
	Solvents		Other (specify)
$\boxtimes$	Fertilizers / Pesticides		Other (specify)

### II. Controls:

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in I.C. above and for all use areas, borrow sites, and waste sites. For each measure discussed, the contractor will be responsible for its implementation as indicated. The contractor shall provide to the resident engineer a plan for the implementation of the measures indicated. The contractor, and subcontractors, will notify the resident engineer of any proposed changes, maintenance, or modifications to keep construction activities compliant with the permit. Each such contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

#### A. Erosion and Sediment Controls

- 1. Stabilized Practices: Provided below is a description of interim and permanent stabilization practices, including site specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(A)(1)(a) and II(A)(3), stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of 14 or more calendar days.
  - a. Where the initiation of stabilization measures by the 7<sup>th</sup> day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

The following Stabilization Practices will be used for this project:

		egetated Buffer Strips rotection of Trees emporary Erosion Control Seeding emporary Turf (Seeding, Class 7) emporary Mulching ermanent Seeding		Sodding Geotextiles Other (specify) Other (specify) Other (specify) Other (specify)
--	--	---	--	--

Describe how the Stabilization Practices listed above will be utilized:

(See attached plans)

 $\boxtimes$ 

 $\boxtimes$ 

2. Structural Practices: Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

The following Structural Practices will be used for this project:

- Perimeter Erosion Barrier
- Rock Outlet Protection
- Temporary Ditch Check

Storm Drain Inlet Protection

🖾 Riprap

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<ul> <li>Sediment Trap</li> <li>Temporary Pipe Slope Drain</li> <li>Temporary Sediment Basin</li> <li>Temporary Stream Crossing</li> <li>Stabilized Construction Exits</li> <li>Turf Reinforcement Mats</li> <li>Permanent Check Dams</li> <li>Permanent Sediment Basin</li> <li>Aggregate Ditch</li> <li>Paved Ditch</li> </ul>	<ul> <li>Slope Mattress</li> <li>Retaining Walls</li> <li>Slope Walls</li> <li>Concrete Revetment Mats</li> <li>Level Spreaders</li> <li>Other (specify) Stilling Basin</li> <li>Other (specify)</li> </ul>
--	---

Describe how the Structural Practices listed above will be utilized:

- 3. Storm Water Management: Provided below is a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.
  - a. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined on the basis of the technical guidance in Section 59-8 (Erosion and Sediment Control) in Chapter 59 (Landscape Design and Erosion Control) of the Illinois Department of Transportation Bureau of Design and Environment Manual. If practices other than those discussed in Section 59-8 are selected for implementation or if practices are applied to situations different from those covered in Section 59-8, the technical basis for such decisions will be explained below.

b. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of Storm Water Management Controls.

Sediment traps will be constructed and remain permanent water quality features where feasible.

A stilling basing will be placed north side of the west end of the job on Goodenow Rd. to prevent erosion of the soil and to improve quality of storm water discharged as well.

After final grading of the ditches permanent erosion measures shall be placed. Once topsoil has been palced, permanent seeding and erosion control blanket shall follow.

### 4. Other Controls:

 Vehicle Entrances and Exits – Stabilized construction entrances and exits must be constructed to prevent tracking of sediments onto roadways.

The contractor will provide the resident engineer with a written plan identifying the location of stabilized entrances and exits and the procedures (s)he will use to construct and maintain them.

- Material Delivery, Storage, and Use The following BMPs shall be implemented to help prevent discharges of construction materials during delivery, storage, and use:
  - All products delivered to the project site must be properly labeled.
  - Water tight shipping containers and/or semi trailers shall be used to store hand tools, small parts, and most construction materials that can be carried by hand, such as paint cans, solvents, and grease.

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- A storage/containment facility should be chosen for larger items such as drums and items shipped or stored on pallets. Such material is to be covered by a tin roof or large sheets of plastic to prevent precipitation from coming in contact with the products being stored.
- Large items such as light stands, framing materials and lumber shall be stored in the open in a
  general storage area. Such material shall be elevated with wood blocks to minimize contact with
  storm water runoff.
- Spill clean-up materials, material safety data sheets, an inventory of materials, and emergency
  contact numbers shall be maintained and stored in one designated area and each Contractor is
  to inform his/her employees and the resident engineer of this location.
- c. Stockpile Management BMPs shall be implemented to reduce or eliminate pollution of storm water from stockpiles of soil and paving materials such as but not limited to portland cement concrete rubble, asphalt concrete, asphalt concrete rubble, aggregate base, aggregate sub base, and pre-mixed aggregate. The following BMPs may be considered:
  - Perimeter Erosion Barrier
  - Temporary Seeding
  - Temporary Mulch
  - Plastic Covers
  - Soil Binders
  - Storm Drain Inlet Protection

The contractor will provide the resident engineer with a written plan of the procedures (s)he will use on the project and how they will be maintained.

- Waste Disposal. No materials, including building materials, shall be discharged into Waters of the State, except as authorized by a Section 404 permit.
- e. The provisions of this plan shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations.
- f. The contractor shall provide a written and graphic plan to the resident engineer identifying where each of the above areas will be located and how they are to be managed.

### 5. Approved State or Local Laws

The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual, 1995. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, to be authorized to discharge under permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

All management practices, controls, and other provisions provided in this plan are in accordance with"IDOT Standard Specifications for Road and Bridge Construction."

### III. Maintenance:

The following is a description of procedures that will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. The resident engineer will provide maintenance guides to the contractor for the practices associated with this project.

The Contractor will assign a trained inspector for erosion and sediment control. His duties will be to supervise the maintenance of erosion and sediment control measures and implementation of this plan. Twenty-four hours after every storm event with precipitation greater than 0.5 inches, all silt fence shall be checked for sediment, and if sediment reaches a height of 50 percent of the device, the device shall be cleansed of sediment.

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All maintenance inspection report will be made after each inspection.

All erosion control measures shall be inspected at least once a week.

All erosion control systems shall be maintained in good working order, if a repair is necessary, it will be initiated within 24 hours of report.

The contractor will be required to implement and maintain erosion control measures immediately after stripping of existing vegetation.

No runoff from stripped areas will leave the site other than through filter barriers such as perimeter erosion barriers, ditch checks and outlet filter protections. The contractor will adjust his operations and implement erosion control measures accordingly.

The contractor shall surround all earth stockpiles with silt fence which shall be paid for as perimeter erosion barrier. Stockpiles shall have Temporary Erosion Control Seeding.

The Conctractor shall take all precautions to prevent pollution of strom water and shall follow IEPA and IDOT construction guidelines.

All disturbed areas shall be seeded as soon as practical after construction activities in that area have concluded, areas that have been stripped and will not receive permanent landscaping before the end of the fall seeding restrictions shall receive Temporary Erosion Control Seeding.

All slopes steeper than 1:3 on cut or embankment areas that are constructed to a height of 5 feet or more shall be seeded immediately. All flatter areas that do have a cover of vegetation and where no further work is to occur for one month or more shall be seeded within 7 calendar days, unless otherwise directed by the Engineer.

Built up sediment will be removed from silt fence when it has reached one-third the height of the fence. Silt fence will be inspectied for depth of sediment, tears, to see if the fabric is securely attached to the fence posts and to see that the posts are firmly set in the ground.

Sediment collected during construction by the various erosion control systems shall be disposed of on the site on a regular basis as directed by the Engineer. The const of this maintenance shall be included in the unit bid price for the temporary erosion control system. No additional conpensation will be allowed.

Temporary erosion control systems shall be left in place with proper maintenance until permanent erosion control is in place and working properly and all proposed turf areas seeded and established with a proper stand.

Once permanent erosion control systems as proposed in the plans are functional and established, temporary items shall be removed, cleaned up, and disturbed turf reseeded. Temporary ditch checks will be allowed in place where approved the Engineer.

#### IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site. Such inspections shall be conducted at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches or greater or equivalent snowfall.

A. Disturbed areas, use areas (storage of materials, stockpiles, machine maintenance, fueling, etc.), borrow sites, and waste sites shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the plan shall be observed to ensure that they are operating correctly. Discharge locations or points that are accessible, shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off site sediment tracking.

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- B. Based on the results of the inspection, the description of potential pollutant sources identified in section I above and pollution prevention measures identified in section II above shall be revised as appropriate as soon as practicable after such inspection. Any changes to this plan resulting from the required inspections shall be implemented within ½ hour to 1 week based on the urgency of the situation. The resident engineer will notify the contractor of the time required to implement such actions through the weekly inspection report.
- C. A report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of this storm water pollution prevention plan, and actions taken in accordance with section IV(B) shall be made and retained as part of the plan for at least three (3) years after the date of the inspection. The report shall be signed in accordance with Part VI. G of the general permit.
- D. If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the resident engineer shall notify the appropriate IEPA Field Operations Section office by email at: <u>epa.swnoncomp@illinois.gov</u>, telephone or fax within 24 hours of the incident. The resident Engineer shall then complete and submit an "Incidence of Noncompliance" (ION) report for the identified violation within 5 days of the incident. The resident engineer shall use forms provided by the Illinois Environmental Protection Agency and shall include specific information on the cause of noncompliance, actions which were taken to prevent any further causes of noncompliance, and a statement detailing any environmental impact which may have resulted from the noncompliance. All reports of noncompliance shall be signed by a responsible authority in accordance with Part VI. G of the general permit.

The Incidence of Non-Compliance shall be mailed to the following address:

Illinois Environmental Protection Agency Division of Water Pollution Control Attn: Compliance Assurance Section 1021 North Grand East Post Office Box 19276 Springfield, Illinois 62794-9276

### V. Non-Storm Water Discharges:

Except for flows from fire fighting activities, sources of non-storm water that is combined with storm water discharges associated with the industrial activity addressed in this plan must be described below. Appropriate pollution prevention measures, as described below, will be implemented for the non-storm water component(s) of the discharge.

- A. Spill Prevention and Control BMPs shall be implemented to contain and clean-up spills and prevent material discharges to the storm drain system. The contractor shall produce a written plan stating how his/her company will prevent, report, and clean up spills and provide a copy to all of his/her employees and the resident engineer. The contractor shall notify all of his/her employees on the proper protocol for reporting spills. The contractor shall notify the resident engineer of any spills immediately.
- B. Concrete Residuals and Washout Wastes The following BMPs shall be implemented to control residual concrete, concrete sediments, and rinse water:
  - Temporary Concrete Washout Facilities shall be constructed for rinsing out concrete trucks. Signs shall be installed directing concrete truck drivers where designated washout facilities are located.
  - The contractor shall have the location of temporary concrete washout facilities approved by the resident engineer.
  - All temporary concrete washout facilities are to be inspected by the contractor after each use and all spills must be reported to the resident engineer and cleaned up immediately.
  - Concrete waste solids/liquids shall be disposed of properly.
- C. Litter Management A proper number of dumpsters shall be provided on site to handle debris and litter associated with the project. The Contractor is responsible for ensuring his/her employees place all litter including marking paint cans, soda cans, food wrappers, wood lathe, marking ribbon, construction string, and all other construction related litter in the proper dumpsters.

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- D. Vehicle and Equipment Cleaning Vehicles and equipment are to be cleaned in designated areas only, preferably off site.
- E. Vehicle and Equipment Fueling A variety of BMPs can be implemented during fueling of vehicles and equipment to prevent pollution. The contractor shall inform the resident engineer as to which BMPs will be used on the project. The contractor shall inform the resident engineer how (s)he will be informing his/her employees of these BMPs (i.e. signs, training, etc.). Below are a few examples of these BMPs:
  - Containment
  - Spill Prevention and Control
  - Use of Drip Pans and Absorbents
  - Automatic Shut-Off Nozzles
  - Topping Off Restrictions
  - Leak Inspection and Repair
- F. Vehicle and Equipment Maintenance On site maintenance must be performed in accordance with all environmental laws such as proper storage and no dumping of old engine oil or other fluids on site.

### VI. Failure to Comply:

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the contractor and/or penalties under the NPDES permit which could be passed onto the contractor.

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**Contractor Certification Statement** 

The Resident Engineer is to make copies of this form and every contractor and sub-contractor will be required to complete their own separate form.

Route	FAP 332 / 876	Marked Rt.	IL 394 / IL 1	
Section	2002-113 R	Project No.	C-91-366-02	
County	Will	Contract No.	62542	·

This certification statement is part of the Storm Water Pollution Prevention Plan for the project described below, in accordance with General NPDES Permit No. ILR10 issued by the Illinois Environmental Protection Agency.

I certify under penalty of law that I understand the terms of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR 10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

In addition, I have read and understand all of the information and requirements stated in the Storm Water Pollution Prevention Plan for the above mentioned project; I have provided all documentation required to be in compliance with the ILR10 and Storm Water Pollution Prevention Plan and will provide timely updates to these documents as necessary.

Contractor

Sub-Contractor

Print Name

Title

Name of Firm

Street Address

Signature

Date

Telephone

City/State/ZIP

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Construction of a Sediment Trap A Best Management Practice Used for Jobsite Outfall Protection

This guide documents the implementation and use of the new preferred method of jobsite outfall protection. Silt fence is not an effective protection measure, because it is not permeable enough for a major outfall. A sediment trap is only effective with a suitable quantity of water in it. For this reason, it is encouraged that sediment traps be used to protect outfalls with a drainage area greater than 4,500 square feet (~.1 Acres) and less than 216,000 square feet (~5 Acres). Above 216,000 square feet, a sediment basin should be used to drain the area, or a diversion should be constructed to divert clean water from upstream around the construction site. On most IDOT projects, there isn't enough room on state right of way for a sediment basin, so a diversion is generally the solution for large drainage areas. In locations with drainage areas between .1 and 5 acres, sediment traps should be constructed on all current and new construction projects where practical, effective immediately. Remember, this is simply a new configuration of old pay items, so nothing should need to be added to the contract. For permanent sediment traps being constructed, contact Rick Wanner in the District One headquarters, Bureau of Maintenance office for evaluation and to ensure that maintenance is informed of the trap's existence.



Ditch Check (Stone, Triangular Silt Dike, Excelsior Roll)

Silt Fence

Water's path into the trap





Trap basin to allow sediment to settle

Erosion Control Blanket and seeding (on side slope)



Exterior flow protection (Protecting against shear stress)

## PURPOSE:

A sediment trap is a containment area where sediment-laden runoff is temporarily detained under stagnant conditions, allowing sediment to settle out before the runoff is discharged. Sediment traps are formed by excavation of a small, shallow, long basin in a low drainage area, with a ditch check on the upstream and downstream side of the trap basin. The sediment trap is an effective ditch outfall or inlet/pipe protection system for drainage areas no greater than 216,000 sq. ft. (~5 acres) and no less than 4,500 square feet (~.1 acres).

## **IMPLEMENTATION:**

- Construct prior to wet season and construction activities.
- Locate where sediment-laden runoff enters a storm drain or watercourse.
- Sediment traps are never to be located in live streams.
- Access to the sediment trap must be available for maintenance purposes.
- Consider whether the trap is needed as a long term or a temporary practice.
   Use permanent (stone) or temporary (excelsior rolls, triangular silt dikes) ditch checks accordingly.

## DESIGN:

- Sediment traps generally release a slow flow that may be directed into a culvert, a sewer inlet or may simply be released to another sediment trap if there is a large drainage area.
- Sediment traps must have silt fence surrounding the acceptor to ensure water does not flow into the pipe unfiltered unless the acceptor is a ditch, in which case, no additional silt fence is needed. This silt fence should be positioned such that the water may still flow from the sides of the trap into the trap basin, and if possible, the silt fence should direct water into the trap basin, on the upstream side of the second ditch check.
- A ditch check must be located on both the upstream and downstream ends of the holding trap basin. These ditch checks may be triangular silt dikes or excelsior rolls for temporary sediment traps, or stone for permanent sediment traps. The ditch check on the downstream side of the trap must be contained within the silt fence if the acceptor is a culvert. Otherwise, for outlets, the ditch check must be located on the downstream side of the perimeter barrier.
- Temporary sediment traps should be built with the timeframe of the construction job in mind, or a single construction season. Temporary traps should be constructed using either triangular silt dikes or excelsior rolls.
- If the sediment trap is to remain functional as a permanent water quality feature, it should be constructed using stone ditch checks. Permanent sediment traps must be constructed in locations out of the sub-grade of the road, and out of the clear zone. Ditch checks in permanent sediment traps must have a 2:1 slope or flatter on both the upstream and the downstream side of the ditch check.
- A sediment trap can also be a semi-permanent feature. If the ditch checks are
  made of excelsior rolls, they will function for a while, but will eventually break
  down. This allows for the construction of a trap that will remain in place after
  construction, but will not permanently remain in place. This may allow for
  establishment of vegetation as the primary filtration method in place of the
  ditch check without blocking water unnaturally or permanently.
- The top of ditch checks are to be at least 1-½' higher than the bottom of the holding trap basin, and should be no less than 1' higher than the water's normal flowing height. Also, ditch checks should be spaced such that the bottom of the upstream ditch check is no higher than the top of the downstream ditch check. This will depend on the slope of the ditch.

- The holding trap basin should be excavated so that the cross-section looks like a 'U' (instead of a 'V'). This U-shaped ditch discourages erosion in the middle crook of the ditch and increases the capacity of the trap.
- The trap basin shall have a capacity of no less than 3600 cubic feet per acre of drainage area. This is enough space to hold 1 inch of water per acre. See Figure 1 for standard dimensions. If the drainage area is less than 4,500 sq. ft. (.1 acre), consider using an inlet filter or another BMP in place of the sediment trap.
- Under no circumstance shall a sediment trap or series of sediment traps cover a total drainage area of more than 5 acres. If this is the case, or an appropriate amount of land is available, a sediment basin should be constructed in place of a sediment trap.
- Stabilize any exposed soil in the sediment trap that could be subject to erosion from the flow of water, including the trap basin. A Turf Reinforcement Mat and permanent seeding works well for long term installations, but temporary seeding and/or an erosion control blanket will suffice as a temporary measure.
- An armored overflow must be constructed.
- Regardless of the type of acceptor (with the sole exception of a ditch), leave approximately 5 feet between the final ditch check and the acceptor. This allows the water flow to settle, which lowers the risk of disturbing sediment that may be in the acceptor. This gap should be protected against the effects of shear stress from the flowing water.
- On particularly steep slopes, it may be most effective to place multiple smaller sediment traps in rapid succession to cover the drainage area. In this case, it would be most cost-efficient to allow sediment traps to share ditch checks.
- Shear stress can cause sediment to be picked up by flowing water. Attention should be paid to the shear stress to ensure that the soil in the ditch before and after the sediment trap does not get eroded. These areas must be protected. See the Shear Stress page (6) for formulas and more information.

PLANS AND SPECIFICATIONS:

- The plans and specifications for sediment traps will show the following requirements:
  - Location of the sediment trap(s).
  - o Size of the trap basin including width, length, and depth.
  - o Minimum cross section of embankment.
  - o Minimum profile through spillway.
  - o Location of emergency spillway, if used.
  - o Graduation and quality of stone.
  - The installation, inspection, and maintenance schedules with the responsible party identified.

## INSPECTION/MAINTENANCE:

- Sediment traps are to be inspected by the resident engineer and contractor every 7 calendar days and after a storm event of ½" or greater (including snowfall) on a temporary basis. On a permanent basis, traps should be checked at least once every 2 years.
- The trap should be cleaned of silt when the trap becomes 50% filled. The
  material removed must be disposed of in accordance with good
  housekeeping practices, incorporated into the fill material, or disposed of in
  accordance with IEPA regulations.
- Inspect the outlet for erosion and any needed stabilization.
- Inspect the outlet for any sediment discharge and discolored water.
- If sediment is discharged or other pollutants are identified at the discharge point, other BMPs, such as sand filters, may be required to filter pollutants.
- Note that the first ditch check is primarily used to slow the water, while the second is primarily used to catch remaining sediment. Inspection of the first ditch check, therefore, is primarily a structural inspection, while the second is primarily a check for sediment clogging.

## NOTES ON THE DIMENSIONS OF THE TRAP:

The volume of the trap may be calculated using the following formula (only applies on shallow slopes of 5% or less):

Depth	Length	Width	Capacity (cu. ft.)	Drainage Area Max.	Drainage Area Max.
				(sq. ft.)	(acres)
1-1/2'	125'	10'	1,875	22,500	.52
1-1/2'	100'	10'	1,500	18,000	.417
1-1/2'	75'	10'	1,125	13,500	.3125
1-1/2'	50'	10'	750	9,000	.21
1-1/2'	25'	10'	375	4,500	.1
2'	100'	10'	2,000	24,000	.55
2'	80'	10'	1,600	19,000	.44
2'	60'	10'	1,200	14,500	.33
2'	40'	10'	800	9,600	.22
2'	30'	10'	600	7,250	.17
2'	25'	10'	500	6,000	.14

Volume = (Depth of the trap)\*(Length between ditch checks)\*(Width of the ditch)

For reference, 1 Acre ~ 43200 sq. ft.

# Shear Stress

STRAIGHT SECTIONS OF DITCHES

 $au_d = \gamma(dS)$  where

 $T_d$  = maximum shear stress, lb/ft<sup>2</sup> (Pa)  $\gamma$  = unit weight of water, 62.4 lb/ft<sup>3</sup> (9810 N/m<sup>3</sup>) d = maximum depth of flow, ft (m) S = average bed slope or energy slope, ft/ft (m/m)

## BENDS IN DITCHES

Flow around a channel bend imposes higher shear stresses on the channel boundaries. The maximum shear stress in a bend is a function of the radius of curvature and the bottom width of the channel and is given by:

$$\begin{split} \tau_b &= K_b \tau_d \\ \text{where} \\ \tau_b &= \text{maximum shear stress in a bend, lb/ft}^2 (\text{Pa}) \\ K_b &= 2.38 - 0.206 \left(\frac{R_a}{B}\right) + 0.0073 \left(\frac{R_c}{B}\right)^2 \\ \text{where} \\ \text{K}_b &= \text{bend coefficient - function of Rc/B} \\ \text{R}_c &= \text{radius to centerline of channel, ft (m)} \end{split}$$

B = bottom width of channel, ft (m)

To determine which BMP to use to protect the ditch, calculate the Shear Stress and compare to the following values:

- < 3 psf (147 Pa) → Erosion Control Blanket and Seeding</li>
- < 8 psf (392 Pa) → Turf Reinforcement Mat and Seeding</li>
- > 8 psf (392 Pa) → Stone lining

## **RELEVANT PAY ITEMS:**

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- EARTH EXCAVATION
- PERIMETER EROSION BARRIER
- Stone size IDOT RR-4
- · ROCKFILL CAL
- TEMPORARY DITCH CHECKS
- TEMPORARY EROSION CONTROL SEEDING or SEEDING, CLASS 2A
- TEMPORARY EROSION CONTROL BLANKET