Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

April 23, 2013

SUBJECT: FAP 361 (IL 25)
Project HPP-1527(037)
Section 06-00214-18-RP
Kane County
Contract No. 63598
Item 126
April 26, 2013 Letting
Addendum (A)

NOTICE TO PROSPECTIVE BIDDERS:

Due to clarify information necessary to revise the following:

1. **Revised pages 4 – 9 and 15 – 20 of the Schedule of Prices**
2. **Revised page 3 of the Table of Contents.**
3. **Revised pages 2 and 125 of the Special Provisions.**
4. **Added pages 125A and 295A – 295F to the Special Provisions.**
5. **Revised sheets 3, 5, 7, 14, 16, 22, 34, 35, 37, 38, 41, 58, 203, 212, 228, 240, 250, 404 – 422 of 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,

John Baranzelli, P.E.
Acting Engineer of Design and Environment

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

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS	TOTAL PRICE DOLLARS	TOTAL PRICE CTS
X5510100	STORM SEWER REMOVAL	FOOT	1,484.000 X		=		
X5537800	SS CLEANED 12	FOOT	279.000 X		=		
X5538000	SS CLEANED 18	FOOT	370.000 X		=		
X5538100	SS CLEANED 21	FOOT	197.000 X		=		
X5538200	SS CLEANED 24	FOOT	73.000 X		=		
X5538600	SS CLEANED 36	FOOT	218.000 X		=		
X5538700	SS CLEANED 42	FOOT	431.000 X		=		
X6012005	PIPE DRAINS 12 SPL *	FOOT	68.000 X		=		
X6013600	PIPE UNDERDRAIN 4 MOD	FOOT	90.000 X		=		
X6061100	CONC MED TSB SPL	SQ FT	5,206.000 X		=		
X7010216	TRAF CONT & PROT SPL	L SUM	1.000 X		=		
X7240311	REL EX SIGN PANEL SP	EACH	6.000 X		=		
X8570226	FAC T4 CAB SPL	EACH	2.000 X		=		
X8620200	UNINTER POWER SUP SPL	EACH	2.000 X		=		
X8710031	FIB OPT CBL 36F SM	FOOT	4,380.000 X		=		

* Revised 4/22/13

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
Z0002300	BALLAST	CU YD	40.000	X			=		
Z0013796	SED CON STAB CONST EN	SQ YD	4,896.000	X			=		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000	X			=		
Z0018500	DRAINAGE STR CLEANED	EACH	24.000	X			=		
Z0018905	DRILL-GROUT BARS	EACH	96.000	X			=		
Z0019600	DUST CONTROL WATERING	UNIT	300.000	X			=		
Z0022800	FENCE REMOVAL	FOOT	119.000	X			=		
Z0023202	SED CONT DR ST INL CL	EACH	113.000	X			=		
Z0028450	GEOTEX FAB/RR CROSS	SQ YD	476.000	X			=		
Z0030850	TEMP INFO SIGNING	SQ FT	226.000	X			=		
Z0033056	OPTIM TRAF SIGNAL SYS	EACH	1.000	X			=		
Z0033058	P MT FL BEAC INS SPL	EACH	4.000	X			=		
Z0046304	P UNDR FOR STRUCT 4	FOOT	130.000	X			=		
Z0048665	RR PROT LIABILITY INS	L SUM	1.000	X			=		
Z0056622	STORM SEW WM REQ 36	FOOT	326.000	X			=		

* Revised 4/22/13

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
Z0062456	TEMP PAVEMENT	SQ YD	3,111.000	X			=		
Z0062458	TEMP PAVEMT VAR DEPTH	TON	29.000	X			=		
Z0069700	SUB-BALLAST	CU YD	1,167.000	X			=		
Z0073002	TEMP SOIL RETEN SYSTM	SQ FT	9,451.000	X			=		
Z0073346	SLEEPER SLAB	SQ YD	62.000	X			=		
Z0073500	TEMP SUPPORT SYSTEM	L SUM	1.000	X			=		
Z0073510	TEMP TR SIGNAL TIMING	EACH	21.000	X			=		
Z0076100	TRACK REMOVAL	FOOT	766.000	X			=		
Z0076300	TRACK WORK	FOOT	766.000	X			=		
Z0076600	TRAINEES	HOUR	2,000.000	X	0	.80	=	1,600	.00
Z0076604	TRAINEES TPG	HOUR	2,000.000	X	10	.00	=	20,000	.00
Z0077900	WD POST & RAIL FENCE	FOOT	40.000	X			=		
20100110	TREE REMOV 6-15	UNIT	68.000	X			=		
20100210	TREE REMOV OVER 15	UNIT	183.000	X			=		
20101000	TEMPORARY FENCE	FOOT	2,498.000	X			=		

* Revised 4/22/13

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
20101100	TREE TRUNK PROTECTION	EACH	20.000	X			=		
20200100	EARTH EXCAVATION	CU YD	76,680.000	X			=		
20400800	FURNISHED EXCAVATION *	CU YD	10,520.000	X			=		
20800150	TRENCH BACKFILL	CU YD	2,274.000	X			=		
20900110	POROUS GRAN BACKFILL	CU YD	228.000	X			=		
21001000	GEOTECH FAB F/GR STAB	SQ YD	43,985.000	X			=		
21101505	TOPSOIL EXC & PLAC	CU YD	5,896.000	X			=		
25000210	SEEDING CL 2A	ACRE	5.750	X			=		
25000400	NITROGEN FERT NUTR	POUND	518.000	X			=		
25000600	POTASSIUM FERT NUTR	POUND	518.000	X			=		
25000700	AGR GROUND LIMESTONE	TON	12.000	X			=		
25000775	SELECT MOWING STAKES	EACH	11.000	X			=		
25100115	MULCH METHOD 2	ACRE	5.750	X			=		
25100630	EROSION CONTR BLANKET	SQ YD	14,398.000	X			=		
25200200	SUPPLE WATERING	UNIT	10.000	X			=		

* Revised 4/22/13

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
28000250	TEMP EROS CONTR SEED	POUND	1,056.000	X			=		
28000305	TEMP DITCH CHECKS	FOOT	578.000	X			=		
28000400	PERIMETER EROS BAR	FOOT	7,667.000	X			=		
28000500	INLET & PIPE PROTECT	EACH	9.000	X			=		
28000510	INLET FILTERS	EACH	113.000	X			=		
28001100	TEMP EROS CONTR BLANK	SQ YD	14,398.000	X			=		
28100105	STONE RIPRAP CL A3	SQ YD	108.000	X			=		
28100107	STONE RIPRAP CL A4	SQ YD	399.000	X			=		
28200200	FILTER FABRIC	SQ YD	565.000	X			=		
30300112	AGG SUBGRADE IMPR 12	SQ YD	43,985.000	X			=		
35101800	AGG BASE CSE B 6	SQ YD	5,513.000	X			=		
35501316	HMA BASE CSE 8	SQ YD	1,262.000	X			=		
40201000	AGGREGATE-TEMP ACCESS	TON	3,135.000	X			=		
40600100	BIT MATLS PR CT	GALLON	4,437.000	X			=		
40600300	AGG PR CT	TON	19.000	X			=		

* Revised 4/22/13

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
40600895	CONSTRUC TEST STRIP	EACH	5.000	X			=		
40601005	HMA REPL OVER PATCH	TON	3.000	X			=		
40603335	HMA SC "D" N50	TON	342.000	X			=		
40701901	HMA PAVT FD 11	SQ YD	2,606.000	X			=		
40701931	HMA PAVT FD 12 1/2	SQ YD	2,302.000	X			=		
42000501	PCC PVT 10 JOINTED	SQ YD	30,088.000	X			=		
42001300	PROTECTIVE COAT	SQ YD	73,258.000	X			=		
42400800	DETECTABLE WARNINGS	SQ FT	95.000	X			=		
44000100	PAVEMENT REM	SQ YD	29,967.000	X			=		
44000200	DRIVE PAVEMENT REM	SQ YD	2,188.000	X			=		
44000500	COMB CURB GUTTER REM	FOOT	1,761.000	X			=		
44003100	MEDIAN REMOVAL	SQ FT	10,423.000	X			=		
44004250	PAVED SHLD REMOVAL	SQ YD	4,167.000	X			=		
44201757	CL D PATCH T3 9	SQ YD	21.000	X			=		
44213100	PAVEMENT FABRIC	SQ YD	476.000	X			=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS	TOTAL PRICE DOLLARS	TOTAL PRICE CTS
70600240	IMP ATTN TEMP NRD TL2	EACH	8.000 X		=		
70600340	IMP ATTN REL NRD TL2	EACH	1.000 X		=		
72000100	SIGN PANEL T1 *	SQ FT	249.000 X		=		
72400310	REMOV SIGN PANEL T1	SQ FT	149.000 X		=		
72400710	RELOC SIGN PANEL T1	SQ FT	205.000 X		=		
72400720	RELOC SIGN PANEL T2	SQ FT	45.000 X		=		
72800100	TELES STL SIN SUPPORT	FOOT	198.000 X		=		
72900100	METAL POST TY A	FOOT	751.000 X		=		
72900200	METAL POST TY B *	FOOT	261.000 X		=		
73000100	WOOD SIN SUPPORT *	FOOT	56.000 X		=		
73100100	BASE TEL STL SIN SUPP	EACH	13.000 X		=		
73700100	REM GR MT SIN SUPPORT	EACH	57.000 X		=		
78000100	THPL PVT MK LTR & SYM	SQ FT	73.000 X		=		
78000200	THPL PVT MK LINE 4	FOOT	4,438.000 X		=		
78000400	THPL PVT MK LINE 6	FOOT	429.000 X		=		

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ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
78000600	THPL PVT MK LINE 12	FOOT	158.000	X			=		
78008200	POLYUREA PM T1 LTR-SY	SQ FT	1,231.000	X			=		
78008210	POLYUREA PM T1 LN 4	FOOT	2,085.000	X			=		
78008230	POLYUREA PM T1 LN 6	FOOT	5,390.000	X			=		
78008240	POLYUREA PM T1 LN 8	FOOT	1,513.000	X			=		
78008250	POLYUREA PM T1 LN 12	FOOT	831.000	X			=		
78008270	POLYUREA PM T1 LN 24	FOOT	567.000	X			=		
78100100	RAISED REFL PAVT MKR	EACH	194.000	X			=		
78100105	RAISED REF PVT MKR BR	EACH	6.000	X			=		
78100200	TEMP RAIS REF PVT MKR	EACH	738.000	X			=		
78200410	GUARDRAIL MKR TYPE A	EACH	17.000	X			=		
78200530	BAR WALL MKR TYPE C	EACH	6.000	X			=		
78201000	TERMINAL MARKER - DA	EACH	6.000	X			=		
78300100	PAVT MARKING REMOVAL	SQ FT	5,947.000	X			=		
78300200	RAISED REF PVT MK REM	EACH	200.000	X			=		

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ITEM NUMBER	PAY ITEM DESCRIPTION		UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
80500020	SERV INSTALL POLE MT		EACH	2.000	X			=		
81028200	UNDRGRD C GALVS 2		FOOT	2,762.000	X			=		
81028210	UNDRGRD C GALVS 2 1/2		FOOT	1,852.000	X			=		
81028220	UNDRGRD C GALVS 3		FOOT	118.000	X			=		
81028240	UNDRGRD C GALVS 4		FOOT	1,313.000	X			=		
81400100	HANDHOLE		EACH	21.000	X			=		
81400200	HD HANDHOLE		EACH	3.000	X			=		
81400300	DBL HANDHOLE		EACH	5.000	X			=		
86400100	TRANSCEIVER - FIB OPT		EACH	2.000	X			=		
87300925	ELCBL C TRACER 14 1C		FOOT	4,380.000	X			=		
87301215	ELCBL C SIGNAL 14 2C	*	FOOT	3,494.000	X			=		
87301225	ELCBL C SIGNAL 14 3C		FOOT	2,215.000	X			=		
87301245	ELCBL C SIGNAL 14 5C		FOOT	8,370.000	X			=		
87301255	ELCBL C SIGNAL 14 7C		FOOT	607.000	X			=		
87301305	ELCBL C LEAD 14 1PR	*	FOOT	9,229.000	X			=		

* Revised 4/22/13

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS	TOTAL PRICE DOLLARS	TOTAL PRICE CTS
87301805	ELCBL C SERV 6 2C	FOOT	77.000 X		=		
87301900	ELCBL C EGRDC 6 1C	FOOT	6,854.000 X		=		
87502480	TS POST GALVS 14	EACH	3.000 X		=		
87502500	TS POST GALVS 16	EACH	1.000 X		=		
87502520	TS POST GALVS 18	EACH	1.000 X		=		
87700230	S MAA & P 38	EACH	1.000 X		=		
87700250	S MAA & P 42	EACH	2.000 X		=		
87702910	STL COMB MAA&P 36	EACH	1.000 X		=		
87702990	STL COMB MAA&P 54	EACH	1.000 X		=		
87800100	CONC FDN TY A	FOOT	52.000 X		=		
87800150	CONC FDN TY C	FOOT	8.000 X		=		
87800415	CONC FDN TY E 36D	FOOT	74.000 X		=		
87900200	DRILL EX HANDHOLE	EACH	5.000 X		=		
88030020	SH LED 1F 3S MAM	EACH	15.000 X		=		
88030050	SH LED 1F 3S BM	EACH	9.000 X		=		

* Revised 4/22/13

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
88030110	SH LED 1F 5S MAM	EACH	1.000	X			=		
88030210	SH LED 2F 3S BM	EACH	3.000	X			=		
88030240	SH LED 2F 1-3 1-5 BM	EACH	1.000	X			=		
88102717	PED SH LED 1F BM CDT	EACH	2.000	X			=		
88200210	TS BACKPLATE LOU ALUM	EACH	34.000	X			=		
88500100	INDUCTIVE LOOP DETECT	EACH	19.000	X			=		
88600700	PREFORM DETECT LOOP	FOOT	1,339.000	X			=		
88700200	LIGHT DETECTOR	EACH	5.000	X			=		
88700300	LIGHT DETECTOR AMP	EACH	2.000	X			=		
88800100	PED PUSH-BUTTON	EACH	2.000	X			=		
89000100	TEMP TR SIG INSTALL	EACH	3.000	X			=		
89501150	RELOC EX TS POST	EACH	8.000	X			=		
89501300	RELOC EX MAA & POLE	EACH	1.000	X			=		
89502105	REBUILD EX SIG HD LED	EACH	2.000	X			=		
89502200	MOD EX CONTR	EACH	1.000	X			=		

* Revised 9/22/13

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
89502300	REM ELCBL FR CON	FOOT	5,362.000	X			=		
89502375	REMOV EX TS EQUIP	EACH	3.000	X			=		
89502376	REBUILD EX HANDHOLE	EACH	1.000	X			=		
89502380	REMOV EX HANDHOLE	EACH	19.000	X			=		
89502385	REMOV EX CONC FDN	EACH	20.000	X			=		
							TOTAL $		

NOTE:

1. EACH PAY ITEM SHOULD HAVE A UNIT PRICE AND A TOTAL PRICE.
2. THE UNIT PRICE SHALL GOVERN IF NO TOTAL PRICE IS SHOWN OR IF THERE IS A DISCREPANCY BETWEEN THE PRODUCT OF THE UNIT PRICE MULTIPLIED BY THE QUANTITY.
3. IF A UNIT PRICE IS OMITTED, THE TOTAL PRICE WILL BE DIVIDED BY THE QUANTITY IN ORDER TO ESTABLISH A UNIT PRICE.
4. A BID MAY BE DECLARED UNACCEPTABLE IF NEITHER A UNIT PRICE NOR A TOTAL PRICE IS SHOWN.

* Revised 4/22/13

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Revised 4/22/13

MAINTENANCE OF ROADWAYS
Effective: September 30, 1985
Revised: November 1, 1996

Beginning on the date that work begins on this project, the Contractor shall assume responsibility for normal maintenance of all existing roadways within the limits of the improvement. This normal maintenance shall include all repair work deemed necessary by the Engineer, but shall not include snow removal operations. Traffic control and protection for maintenance of roadways will be provided by the Contractor as required by the Engineer.

If items of work have not been provided in the contract, or otherwise specified for payment, such items, including the accompanying traffic control and protection required by the Engineer, will be paid for in accordance with Article 109.04 of the Standard Specifications.

STATUS OF UTILITIES TO BE ADJUSTED
Effective: January 30, 1987
Revised: January 24, 2013

Utilities companies involved in this project have provided the following estimated durations:

Name of Utility	Type	Location	Estimated Duration of Time for the Completion of Relocation or Adjustments
NICOR	Gas	- IL 25/Stearns Rd. Intersection - Il 25/Stearns Rd. Gilbert St. Intersection - IL 25/Stearns Rd. – Gilbert Street to E. Branch Brewster Creek	45 Working Days
ComEd	Electricity	- Various Pole Relocations - Aerial Line over UPRR	30 Working Days
AT&T	Telephone, fiber optic	-	105 Working Days
Fox River Water Reclamation District	Force Main	- UPRR over IL 25/Stearns Rd. South Side	62 Working Days

The above represents the best information available to the Department and is included for the convenience of the bidder. The applicable portions of Articles 105.07 and 107.31 of the Standard Specifications shall apply.

In accordance with 605 ILCS 5/9-113 of the Illinois Compiled Statutes, utility companies have 90 days to complete the relocation of their facilities after receipt of written notice from the Department. The 90-day written notice will be sent to the utility companies after the following occurs:

1) Proposed right of way is clear for contract award.

Revised 4/22/13

This work shall include making all timings and adjustments to the above intersections necessary from the first day of construction until the completion of construction on this contract.

The contractor shall make timing adjustments and prepare comment responses as directed by the Area Traffic Signal Operations Engineer.

Basis of Payment. This work shall be paid for at the contract unit price each for TEMPORARY TRAFFIC SIGNAL TIMING, which price shall be payment in full for performing all work described herein per intersection. When the temporary traffic signal installation is turned on, 50 percent of the bid price will be paid. All other listed intersections will be paid 50 percent of the bid price after 2 weeks from the start of construction on this contract. The remaining 50 percent of the bid price will be paid following the removal of the temporary traffic signal installation and/or after returning the traffic signal timing to its existing condition at all other intersections listed at the completion of construction on this contract.

POST MOUNTED FLASHING BEACON INSTALLATION (SPECIAL)

Description: This work shall consist of installing wooden post mounted yellow flashing beacons at the locations indicated in the plans. The beacons shall be interconnected with the traffic signal as noted in the plans.

Installation: The Contractor is required to coordinate with the Resident Engineer all aspects of the installation of the post mounted flashing beacons.

The Contractor shall coordinate the times the beacons turn on per the notes or sequence of operations noted on the plans.

Any proposed activity in the vicinity of a highway-rail grade crossing must adhere to the guidelines set forth in the Manual on Uniform Traffic Control Devices (MUTCD) under Section 6G.18: Work in the vicinity of a grade crossing which states: "When grade crossings exist either within or in the vicinity of a TTC zone, lane restrictions, flagging, or other operations shall not create conditions where vehicles can be queued across the tracks. If the queuing of vehicles across the tracks cannot be avoided, a uniformed law enforcement officer or flagger shall be provided at the crossing to prevent vehicles from stopping on the tracks, even if automatic warning devices are in place."

After installation, it shall be the responsibility of the Contractor to make sure that the post mounted flashing beacons are working properly.

Basis of Payment: This work will be paid for at the contract unit price per each for POST MOUNTED FLASHING BEACON INSTALLATION (SPECIAL). Payment for this item shall include the installation, 1-face, 1-section yellow signal head, connections / terminations in the traffic signal cabinet, and all necessary hardware required for mounting and installation.

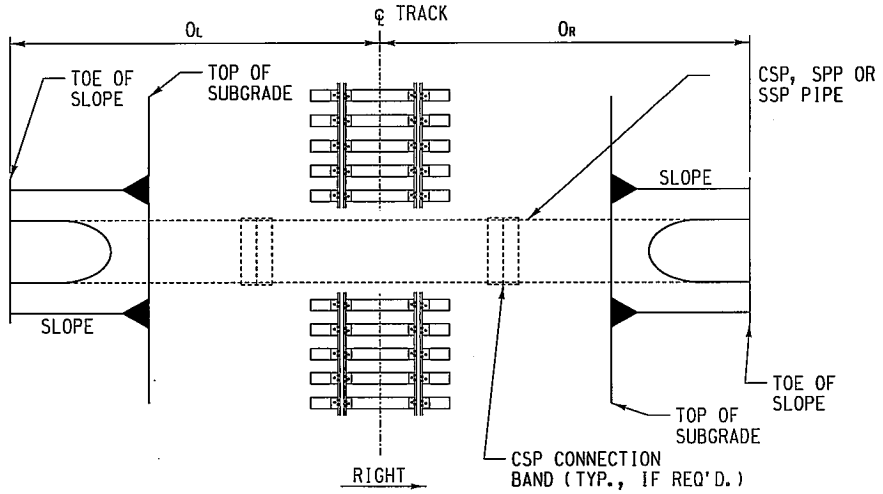
Revised 9/22/13

PIPE DRAINS 12" (SPECIAL)

Description: This work shall consist of installing corrugated metal pipe culverts under the UPRR temporary shoo-fly track at locations shown on the plans. The work shall be completed complying with the attached UPRR Bridge Standards.

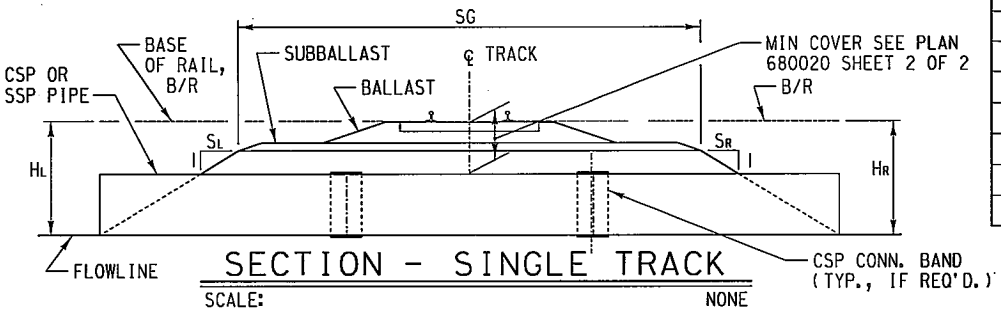
Basis of Payment: This work shall be paid for at the contract unit price per foot for PIPE DRAINS 12" (SPECIAL). Payment for this item shall include all labor, equipment, and material, including pipe bedding and riprap, required to complete the work as herein specified.

Added 4/22/13



PLAN - SINGLE TRACK

SCALE: NONE



SECTION - SINGLE TRACK

SCALE: NONE

CULVERT LENGTH EQUATION:

$$PL = O_L + O_R = SG + (H_L - 2.0')S_L + (H_R - 2.0')S_R$$

KEY:

H = AVERAGE HEIGHT - BASE OF RAIL TO FLOWLINE
H_L = HEIGHT - BASE OF RAIL TO FLOWLINE LEFT OF TRACK
H_R = HEIGHT - BASE OF RAIL TO FLOWLINE RIGHT OF TRACK
SG = WIDTH OF SUBGRADE = 2 SHOULDER + TRACK CENTER SPACING
S_L = SLOPE LEFT OF TRACK
S_R = SLOPE RIGHT OF TRACK
PL = PIPE LENGTH
O_L = OFFSET LEFT
O_R = OFFSET RIGHT

Assume SG = 30'

CULVERT PIPE LENGTH (PL) FOR STANDARD CROSS SECTIONS

H - B/R TO FLOWLINE (FT.)	SINGLE TRACK SLOPE			13' TRACK CENTERS SLOPE			20' TRACK CENTERS SLOPE		
	1.5:1	2:1	3:1	1.5:1	2:1	3:1	1.5:1	2:1	3:1
4	36	38	42	50	52	56	58	60	64
5	40	42	48	52	56	62	60	64	70
6	42	46	54	56	60	68	64	68	76
7	46	50	60	58	64	74	66	72	82
8	48	54	66	62	68	80	70	76	88
9	52	58	72	64	72	86	72	80	94
10	54	62	78	68	76	92	76	84	100
11	58	66	84	70	80	98	78	88	106
12	60	70	90	74	84	104	82	92	112
13	64	74	96	76	88	110	84	96	118
14	66	78	102	80	92	116	88	100	124
15	70	82	108	82	96	122	90	104	130
16	72	86	114	86	100	128	94	108	136
17	76	90	120	88	104	134	96	112	142
18	78	94	126	92	108	140	100	116	148
19	82	98	132	94	112	146	102	120	154
20	84	102	138	98	116	152	106	124	160
21	88	106	144	100	120	158	108	128	166
22	90	110	150	104	124	164	112	132	172
23	94	114	156	106	128	170	114	136	178
24	96	118	162	110	132	176	118	140	184
25	100	122	168	112	136	182	120	144	190
26	102	126	174	116	140	188	124	148	196

LENGTHS ARE ROUNDED TO THE NEAREST EVEN NUMBER OF FEET
TABLE ASSUMES 15'-0" SHOULDER FOR SINGLE TRACK AND 13' CENTERS,
15'-6" SHOULDER FOR 20' TRACK CENTERS,
ADD 10' FOR EACH ACESS ROAD,
LENGTHS SHOWN ARE FOR STANDARD CROSS SECTIONS FOR TANGENT TRACK,
ADD 2' TO PIPE LENGTH (TO OUTSIDE OF CURVE) IF SUPER ELEVATION IS 2" OR GREATER.

REVISIONS		
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DESIGN BY: CLJ | DRAWN BY: KDM | CHECKED BY: CLJ

APPROVED:

George J. Meyn 4/4/08

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BRIDGE STANDARDS

GENERAL NOTES AND DETAILS FOR ROUND STEEL PIPE CULVERTS

FILE OWNER: UPRR | DATE:
PLAN NO.: 680000 | SHEET: 1 OF 2

PLOTTED: 4/7/2008 10:10:03 AM

FILE NAME: p:\ustation\dgn\std\Pipe culvert\steelpip.dgn

295A

Added 4/22/13

GENERAL NOTES

CORROSION PROTECTION:

The engineer shall obtain site specific information on corrosiveness of the soil which may require an increase in material thickness or protective coatings based on local experience.

WELL COMPACTED FILL:

Well compacted fill shall be well graded granular soil free of any organic material, stones larger than 1½ inches, frozen lumps, debris or excessive moisture. Fill shall be compacted to 95% of maximum dry density as defined in ASTM International D1557 (Modified Proctor). Fill shall be placed and compacted in layers not to exceed 6 inches. Fill shall be placed simultaneously on both sides of the pipe and between multiple pipes. CLSM may be used in lieu of well compacted fill.

CONTROLLED LOW-STRENGTH MATERIAL (CLSM) FILL:

Controlled Low-Strength Material is a self-compacting, cementitious fill material with an unconfined compressive strength of 50 to 300 psi. The mixture shall consist of water, Portland cement, fly ash, and sound fine or coarse aggregate or both. The mix design shall allow adequate flowability without segregation of aggregates. Hardening time is of prime importance and CLSM should develop 50 psi in about one hour. The maximum layer of thickness for CLSM shall be 3 feet. Additional layers shall not be placed until the CLSM has lost sufficient moisture to be walked on without indenting more than two inches. Pipe spacing may be reduced with CLSM.

PIPE BEDDING:

Pipe bedding shall be granular material such as aggregates ordinarily specified and used in the construction of highway base and subbase. These aggregates include crushed stone, natural or crushed gravel, natural or manufactured sands, crushed slag or a homogeneous mixture of these materials. Pipe bedding shall be compacted to 95% of maximum dry density as defined in ASTM International D1557 (Modified Proctor). Recommended gradation is as follows:

SCREEN SIZE	% PASSING (BY WEIGHT)
1 inch	100
½ inch	60-90
⅜ inch	20-40
No. 4	10-20
No. 200	less than 5%

Union Pacific sealant ballast, item no. 562-5428, may be used.

FIBER OPTIC CABLE:

Contact the Union Pacific "Call Before You Dig" number 90 days (no less than 60 days) prior to the proposed construction start date. Prior to construction, confirm that all necessary relocations have been completed. The CBYD number is: 1-800-336-9193.

RIPRAP:

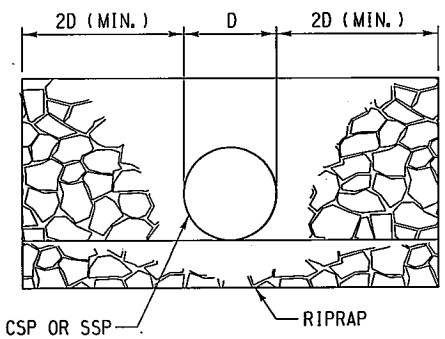
Class of riprap shall be specified by the engineer. Riprap shall be placed in such a manner as to avoid segregation of various sizes of rock, and distributed so that there will be no large accumulation of either the larger or smaller sizes of stone. Individual rocks shall be placed in tight contact with one another in such a way to produce the least amount of void spaces. Riprap shall be solid, unfractured rock or concrete, bulky in shape with sharp angular edges.

Individual rocks shall vary as shown:

RIPRAP CLASS	AVERAGE WEIGHT PER STONE (LBS.)	DIMENSION (INCHES)	ITEM NO.	UNIT OF MEASURE	LAYER THICKNESS	TYPICAL VELOCITIES
I	50 to 200	9 to 14	562-2764	Ton	1'-6"	6 - 8 fps
II	200 to 1,000	14 to 24	562-3430	Ton	2'-0"	8 - 12 fps
III	1,000 to 4,000	24 to 38	562-4096	Ton	3'-0"	> 12 fps
IV	> 4,000	> 38	562-4762	Ton	4'-0"	SPECIAL CASES

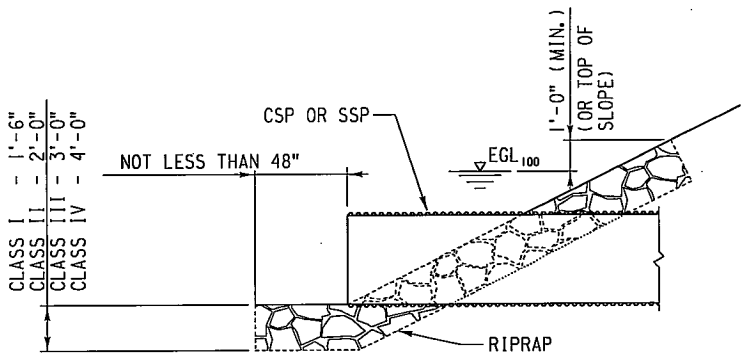
The entire mass of riprap shall well distributed within the limits specified. However, the following allowances shall be acceptable to produce the required riprap protection:

Riprap Class I - No allowances are permitted
Riprap Class II - 15% of Riprap Class I.
Riprap Class III - 15% of Riprap Class I and 15% of Riprap Class II.
Riprap Class IV - 15% of Riprap Class I, 15% of Riprap Class II, and 15% of Riprap Class III.



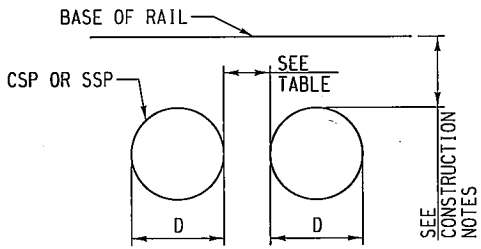
RIPRAP - ELEVATION

SCALE: NONE



RIPRAP - SECTION

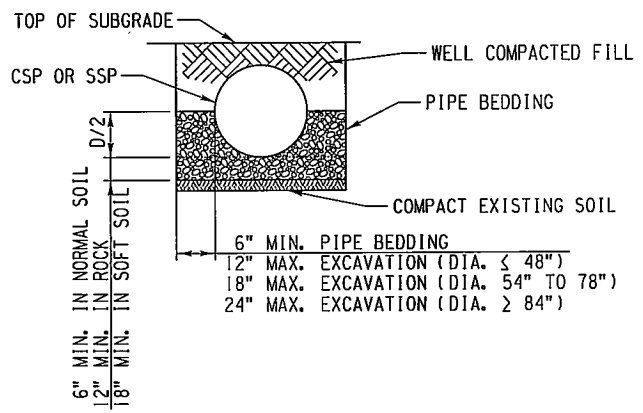
SCALE: NONE



MINIMUM PIPE SPACING AND COVER

SCALE: NONE

SPACING CHART	
PIPE DIAMETER	MIN. SPACING BETWEEN PIPES
12" to 24"	12"
24" to 96"	D/2
96" OR MORE	48"



EXCAVATION AND FILL LIMITS

SCALE: NONE

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DESIGN BY: CLJ | DRAWN BY: KDM | CHECKED BY: CLJ

APPROVED:

George J. Meyn 4/4/08

UPRR - MGR SPECIAL PROJECTS & STRUCTURES DESIGN

BRIDGE STANDARDS

GENERAL NOTES AND DETAILS FOR ROUND STEEL PIPE CULVERTS

FILE OWNER: UPRR | DATE:

PLAN NO.: 680000 | SHEET: 2 OF 2

PLOTTED: 4/7/2008 10:10:37 AM

FILE NAME: p:\ustation\dgn\std\Pipe culvert\steelpip.dgn

2958 Added 4/22/13

CONSTRUCTION NOTES

GENERAL:

These structures are designed for Cooper E80 live load with impact, and cover as shown in Table 1.

Generally, 30 inch diameter and larger Corrugated Steel Pipe (CSP) is preferred for mainline culverts. Smaller pipes are to be used for local drainage.

Table 1 indicates the minimum required gage thickness for structural stability.

INSTALLATION:

1. Installation of CSP shall conform to the current American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, Chapter 1, Part 4. Culvert lengths are to be based on standard mainline roadbed sections.
2. These standards are for installation in soil with a pH of 5-9 and resistivity ≥ 1,500 ohm-cm. Pipes located in soils outside this range shall have additional corrosion protection as specified by the engineer.
3. Wire or timber strutting used during installation must be removed immediately after installation and backfill are complete.
4. Pipe culverts will generally be joined using 2 foot wide locking corrugated metal connecting bands. The inside of corrugated connecting bands and the outside of pipe culverts to be joined by corrugated connecting bands shall be kept clean and free of all rust, dirt or gravel. The corrugations on the connecting bands and the pipe culvert shall fit snugly as the connecting bands are tightened.
5. Corrugated steel pipe culverts must be placed with the inside circumferential laps pointing downstream.
6. Culverts resting on rock foundation need not be cambered. Unless otherwise specified by the engineer all other CSP culverts shall be cambered in accordance with the following:
   - A. Embankments up to 8 feet high (measured base of rail to flowline) require a 1½ inch camber.
   - B. Embankments 8 feet to 12 feet high require a 2½ inch camber.
   - C. Embankments 12 feet to 18 feet high require a 4 inch camber.

In no case shall the culvert be cambered so high in the center that water will be pocketed at the inlet end of the pipe.

PIPE MATERIAL SPECIFICATIONS, FABRICATION AND TOLERANCE:

1. CSP material shall be in accordance with the current AREMA Manual for Railway Engineering, Chapter 1, Part 4, Section 3.
2. The pipe shall be fabricated, assembled into sections and furnished as follows:

   12", 18", 21", AND 24" DIAMETER ONLY:

   Class 1 with 2 2/3" x ½" annular corrugations.
   Shape 1, vertical elongation is not required.
   Single riveted longitudinal seams.

   30" DIAMETER AND GREATER:

   Class 1 with 3" x 1" annular corrugations (30 inch pipes may have 2 2/3" x ½" annular corrugations).
   Shape 2, factory elongated with vertical length 5% greater than the nominal diameter.
   Double riveted seams.

   ALL CSP DIAMETERS:

   Square cut ends.
   Two lifting lugs per preassembled section.
   Lifting hardware for erection and installation.
   Aluminized Type 2 per American Association of State Highway and Transportation Officials (AASHTO) M274 (96 inch diameter pipes shall be galvanized).
3. Permanently attach an identification plate inside the pipe near the end of the segment. The plate is to contain the following information in at least ¼ inch high letters:
   - Name of manufacturer and plant location
   - Date assembled
   - Gage
   - Diameter
   - Length

   The same information plus the lifting weight shall be stenciled on the outside face of the pipe.
4. The inside diameter of the circular pipe shall not vary more than ½ inch from the nominal diameter when measured on the inside crest of the corrugations for diameters through 48 inches, and 1% for diameters greater than 48 inches. In no case shall the difference in the diameter of the abutting pipe ends be more than ½ inch.
5. The minimum width of the longitudinal lap is 1½ inches for all pipes with nominal inside diameter of 12 to 21 inches, 2 inches for pipes with nominal inside diameter of 24 inches or 30 inches, and 3 inches for all pipes with nominal inside diameter of 36 inches or greater.
6. Riveted Seams:
   - A. All 14 gage pipe shall have at least 5/16 inch diameter rivets. All 12 gage and thicker pipe shall have at least 7/16 inch diameter rivets.
   - B. Longitudinal seams shall be riveted with one rivet in each corrugation valley for all pipes 24 inches in diameter and smaller. Longitudinal seams shall be riveted with two rivets in each corrugation valley for all pipes larger than 24 inches. Circumferential seams shall be riveted with a maximum rivet spacing of six inches.
   - C. All rivets shall be cold driven in such a manner that the metal shall be drawn tightly together throughout the entire lap. The center of each rivet shall not be closer than two rivet diameters from the edge of the sheet. All rivets shall have full hemispherical heads or heads of a form acceptable to the engineer. They shall be driven in a workmanlike manner to completely fill the hole without bending.
   - D. Rivets shall conform to the specifications of ASTM International A31, Grade A and shall be electroplated in accordance with the specifications of ASTM International A164, Type RS.
7. Pipes shall be jointed with locking coupling bands in accordance with the provisions of the AREMA Manual for Railway Engineering Chapter 1, Part 4, Section 4.3.4. Coupling bands shall be of the same base metal and finish as the pipe. Coupling bands shall be 24 inches wide for pipes 30 inch diameter and larger. Smaller pipes may use 7 inch wide bands. Coupling band thickness is shown in Table 1.

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DESIGN BY: CLJ | DRAWN BY: KDM | CHECKED BY: CLJ

APPROVED:

George J. Meyn 4/4/08

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BRIDGE STANDARDS

CONSTRUCTION NOTES AND TABLE FOR CORRUGATED STEEL PIPE CULVERTS

FILE OWNER: UPRR | DATE:

PLAN NO.: 680020 | SHEET: 1 OF 2

PLOTTED: 4/7/2008 10:11:24 AM

FILE NAME: p:\ustation\dgn\std\Pipe culvert\steelpip.dgn

295C

Added 4/22/13

TABLE 1 - ROUND CORRUGATED STEEL PIPE (CSP)

INSIDE PIPE DIAMETER	GAGE	THICKNESS (IN.)	WEIGHT (LB./FT.)	COVER * MIN. (FT.)	COVER * MAX. (FT.)	10'-0" LENGTH ITEM NO.	10'-0" LENGTH WEIGHT (LB.)	12'-0" LENGTH ITEM NO.	12'-0" LENGTH WEIGHT (LB.)	14'-0" LENGTH ITEM NO.	14'-0" LENGTH WEIGHT (LB.)	16'-0" LENGTH ITEM NO.	16'-0" LENGTH WEIGHT (LB.)	18'-0" LENGTH ITEM NO.	18'-0" LENGTH WEIGHT (LB.)	20'-0" LENGTH ITEM NO.	20'-0" LENGTH WEIGHT (LB.)	22'-0" LENGTH ITEM NO.	22'-0" LENGTH WEIGHT (LB.)	24'-0" LENGTH ITEM NO.	24'-0" LENGTH WEIGHT (LB.)	CONNECTING BANDS ITEM NO.	CONNECTING BANDS GAGE
12"	14	0.079	12	1'-6"	18'-0"	510-2975	120	510-2976	144	-	168	-	192	-	216	510-2977	240	-	264	510-2978	288	-	16
18"	14	0.079	18	1'-6"	18'-0"	510-2979	180	510-2980	216	-	252	-	288	-	324	510-2981	360	-	396	510-2982	432	-	16
21"	14	0.079	21	1'-6"	18'-0"	510-2983	210	510-2984	252	-	294	-	336	-	378	510-2985	420	-	462	510-2986	504	-	16
24"	14	0.079	24	1'-6"	18'-0"	510-2987	240	510-2988	288	-	336	-	384	-	432	510-2989	480	-	528	510-2990	576	510-3123	16
30"	14	0.079	30	1'-6"	18'-0"	-	300	-	360	510-3045	420	510-3046	480	510-3047	540	510-3048	600	510-3049	660	510-0345	720	510-3124	16
36"	14	0.079	41	2'-6"	18'-0"	-	410	-	492	510-3055	574	510-3065	656	510-3066	738	510-3067	820	510-3068	902	510-3069	984	510-3130	16
42"	14	0.079	47	2'-6"	18'-0"	-	470	-	564	510-3073	658	510-3074	752	510-3075	846	510-3077	940	510-3078	1,034	510-3079	1,128	510-3132	16
48"	12	0.109	74	2'-6"	18'-0"	-	740	-	888	510-3081	1,036	510-3082	1,184	510-3083	1,332	510-3084	1,480	510-3085	1,628	510-3086	1,776	510-3138	14
60"	12	0.109	92	2'-6"	18'-0"	-	920	-	1,104	510-3087	1,288	510-3088	1,472	510-3089	1,656	510-3091	1,840	510-3092	2,024	510-3093	2,208	510-3150	14
72"	10	0.138	140	3'-6"	18'-0"	-	1,400	-	1,680	510-3100	1,960	510-3101	2,240	510-3102	2,520	510-3103	2,800	510-3104	3,080	510-3105	3,360	510-3158	12
84"	10	0.138	164	3'-6"	18'-0"	-	1,640	-	1,968	510-3114	2,296	510-3115	2,624	510-3110	2,952	510-3117	3,280	510-3118	3,608	510-3113	3,936	510-3176	12
96"	8	0.168	228	3'-6"	18'-0"	-	2,280	-	2,736	510-3181	3,192	510-3182	3,648	510-3183	4,104	510-3184	4,560	510-3185	5,016	510-3186	5,472	510-3188	10

* COVER TO BE MEASURED FROM BASE OF RAIL TO TOP OF PIPE

295 D

Added 4/22/13

FILE NAME: pr\ustation\dgn\std\Pipe culvert\steelpip.dgn

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DESIGN BY: CLJ | DRAWN BY: KDM | CHECKED BY: CLJ

APPROVED:

George J. Meyn 4/4/08

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BRIDGE STANDARDS

CONSTRUCTION NOTES AND TABLE FOR CORRUGATED STEEL PIPE CULVERTS

FILE OWNER: UPRR | DATE:

PLAN NO.: 680020 | SHEET: 2 OF 2

PLOTTED: 4/7/2008 10:11:44 AM

CONSTRUCTION NOTES

GENERAL:

These structures are designed for Cooper E80 Live Load with Impact, and cover as shown in Table 1.

Table 1 indicates the minimum required thickness.

INSTALLATION:

Installation of Smooth Steel Pipe (SSP) shall conform to the current American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, Chapter 1, Part 4. Culvert lengths are to be based on standard mainline roadbed sections.

JACKING:

Where indicated, pipe to be bored and jacked into place. Bore hole diameter shall be essentially the same as the outside diameter of the pipe. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe by more than 1 inch, notify the Office of AVP Engineering Design. Boring operations shall not be stopped if such a stoppage would be detrimental to the railroad. A survey crew shall continually monitor the elevation and alignment of the railroad track(s) above during the jacking procedures. If track movement or loss of ballast exceeds ¼ inch during jacking or boring operations, all work must stop and the Railroad notified. The Railroad may take any action necessary to ensure safe passage of trains. The contractor must immediatley submit a corrective plan of action to the Railroad for review and aproval. The Railroad must review and approve the proposed repair proceedure. The finished repair must be inspected by the Railroad before the track can be placed back into service, and the construction proceed.

BORED AND JACKED TOLERANCE:

The permitted tolerance of a true line is +/- 2". Adjustment to the line and level should be gradual to ensure that the pipe manufacture's stated angular deflection is not exceeded at any joint.

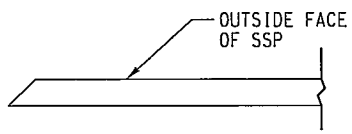
FIELD WELDING:

Welders must posses valid certification.

MATERIALS:

Pipe shall be in accordance with ASTM International A139. Pipe to be Grade B and steel shall have a minimum yield strength of 35 ksi. A hydrostatic test is not required.

Smooth steel pipe shall have a welded straight longitudinal seam. The ends of each section of pipe shall be square cut. One end shall be suitably beveled for field welding sections together.

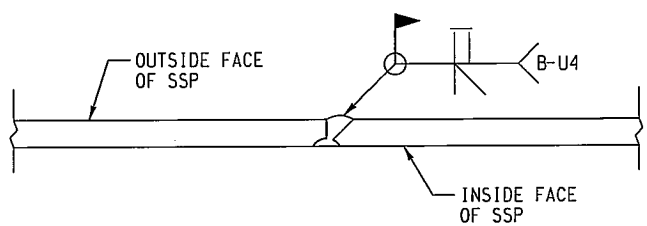


PIPE END BEVEL DETAIL

TABLE 1 - ROUND SMOOTH STEEL PIPE (SSP)

OUTSIDE PIPE DIAMETER	THICKNESS (IN.)	WEIGHT (LB./FT.)	COVER * MIN. (FT.)	COVER * MAX. (FT.)	20'-0" LENGTH STORE ITEM NUMBERS	20'-0" LENGTH WEIGHT (LB.)
12"	3/16	24	1'-6"	18'-0"	-	480
18"	1/4	48	1'-6"	18'-0"	-	960
21"	5/16	69	1'-6"	18'-0"	-	1,380
24"	5/16	80	1'-6"	18'-0"	-	1,600
30"	3/8	119	1'-6"	18'-0"	-	2,380
36"	1/2	190	1'-6"	18'-0"	510-3285	3,800
42"	1/2	222	1'-6"	18'-0"	-	4,440
48"	5/8	317	1'-6"	18'-0"	510-3293	6,340
60"	3/4	475	1'-6"	18'-0"	-	9,500
72"	7/8	666	1'-6"	18'-0"	-	13,320
84"	1	888	1'-6"	18'-0"	-	17,760
96"	1 1/4	1,267	1'-6"	18'-0"	-	25,340

* COVER TO BE MEASURED FROM BASE OF RAIL TO TOP OF PIPE



PIPE END WELD DETAIL

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DESIGN BY: CLJ | DRAWN BY: KDM | CHECKED BY: CLJ

APPROVED:

George J. Meyn 4/4/08

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BRIDGE STANDARDS

CONSTRUCTION NOTES AND TABLE FOR SMOOTH STEEL PIPE CULVERTS

FILE OWNER: UPRR | DATE:

PLAN NO.: 680010 | SHEET: 1 OF 1

PLOTTED: 4/7/2008 10:12:09 AM

FILE NAME: pr\ustation\dgn\std\Pipe culvert\steelpip.dgn

295 E

Added 4/22/13

CONSTRUCTION NOTES

GENERAL:

These structures are designed for Cooper E80 Live Load with impact, and cover as shown in Table I.

Table I indicates the minimum required thickness for structural stability based on the assumptions listed below. The required gage thickness for structural steel plate pipe includes an allowance for corrosion.

DESIGN ASSUMPTIONS:

Backfill Unit Weight = 120 pcf.
Factors of Safety: Seam Strength = 3, Wall Area = 2, Buckling = 2
Minimum Yield Point: Steel = 33 ksi.
Modulus of Elasticity: Steel = 29,000 ksi.
Minimum Tensil Strength: Steel = 45 ksi

INSTALLATION:

1. Installation of SPP shall conform to the current American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, Chapter 1, Part 4. Culvert lengths are to be based on standard mainline roadbed sections.
2. These standards are for installation in soil with a pH of 5-9 and resistivity ≥ 1,500 ohm-cm. Pipes located in soils outside this range shall have additional corrosion protection as specified by the engineer.
3. Wire or timber strutting used during installation must be removed immediately after installation and backfill are complete.
4. Structural plate pipe culverts must be placed with the inside circumferential laps pointing downstream.
5. Culverts resting on rock foundation need not be cambered. Unless otherwise specified by the engineer all other SPP culverts shall be cambered in accordance with the following:
   - A. Embankments up to 8 feet high (measured base of rail to flowline) require a 1½ inch camber.
   - B. Embankments 8 feet to 12 feet high require a 2½ inch camber.
   - C. Embankments 12 feet to 24 feet high require a 4 inch camber.
   - D. Embankments 24 feet to 36 feet high require a 6 inch camber.

In no case shall the culvert be cambered so high in the center that water will be pocketed at the inlet end of the pipe.

MATERIALS:

1. SPP material and connecting material shall be in accordance with the current AREMA Manual for Railway Engineering, Chapter 1, Part 4, Section 6.
2. The pipe shall be fabricated, assembled into sections and furnished as follows:
   6" x 2" annular corrugations.
   5% vertical elongation.
   A minimum of 4 steel bolts per foot
3. Permanently attach an identification plate inside the pipe near the end of each pipe run. The plate is to contain the following information in at least ¼ inch high letters:
   Name of manufacturer and plant location
   Date manufactured
   Gage
   Diameter
   Length

STRUCTURAL PLATE PIPE - STEEL GAGE TABLE FOR E-80 LOADS

DIA. (IN.)	HEIGHT OF COVER (FT.) - BASE OF RAIL TO TOP OF PIPE														
	3½-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75
60	10	10	10	10	10	10	10	10	10	8	8	8	8	7	7
66	10	10	10	10	10	10	10	10	8	8	8	8	7	7	7
72	10	10	10	10	10	10	10	8	8	8	8	7	7	7	5
78	10	10	10	10	10	10	10	8	8	8	7	7	7	5	5
84	10	10	10	10	10	10	8	8	8	7	7	7	5	5	3
90	8	10	10	10	10	10	8	8	8	7	7	5	5	3	3
96	8	10	10	10	10	8	8	8	7	7	7	5	3	3	1
102	8	10	10	10	10	8	8	8	7	7	5	5	3	1	1
108	8	10	10	10	8	8	8	7	7	5	5	3	1	1	
114	8	8	10	10	8	8	8	7	7	5	3	3	1	1	
120	8	8	10	10	8	8	7	7	5	5	3	1	1		
126	7	8	10	8	8	8	7	7	5	3	3	1			
132	7	8	10	8	8	8	7	7	5	3	1	1			
138	7	8	10	8	8	7	7	5	3	3	1				
144	7	8	8	8	8	7	7	5	3	1	1				
150	7	8	8	8	8	7	7	3	3	1					
156	7	8	8	8	7	7	5	3	1	1					
162	5	7	8	8	7	7	5	3	1						
168	5	7	8	8	7	5	3	3	1						
174	5	7	8	7	7	5	3	1	1						
180	5	7	8	7	7	5	3	1							
186	3	7	8	7	7	5	3	1							
192	3	7	8	7	7	3	3	1							
198	3	7	8	7	5	3	1								
204	1	5	7	7	5	3	1								
210	1	5	7	7	3	1									
216		3	7	5	3	1									
222		3	7	5	3	1									
228		3	5	3	1										
234		1	5	3	1										
240		1	3	1											

REVISIONS		
DATE	LTR.	DESCRIPTION
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/		

DESIGN BY: CLJ | DRAWN BY: CLJ | CHECKED BY: CLJ

APPROVED:

George J. Meyn 4/4/08

UPRR - MGR SPECIAL PROJECTS STRUCTURES DESIGN

BRIDGE STANDARDS

CONSTRUCTION NOTES AND TABLE FOR STRUCTURAL PLATE PIPE CULVERTS

FILE OWNER: UPRR | DATE:

PLAN NO.: 680030 | SHEET: 1 OF 1

PLOTTED: 4/7/2008 10:12:41 AM

FILE NAME: pr\ustation\dgn\std\Pipe culvert\steelpip.dgn

295 F

Added 4/22/13