

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
781	1YRS, 2ZRS-1	CRAWFORD	378	182
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

**GENERAL NOTES**

- Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- Expansion bolts shall consist of approved expansion anchors, providing minimum certified proof load = 18.15 kN, and 20 mm  $\phi$  hooked bolts shall extend a minimum of 250 mm into new concrete.
- Reinforcement bars shall conform to the requirements of AASHTO M-31M or M-322M, Grade 400.
- Reinforcement bars designated (E) shall be epoxy coated.
- All dimensions are in millimeters (mm) except as noted.
- Precast reinforced concrete box sections shall conform to AASHTO M-259M and M-273M.
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

**TOTAL BILL OF MATERIAL**

(Culverts E.C. 101, 105) (Box Culvert Nos. 1, 4, 8, 10, 11, 15, 16 & 17)

Item	Unit	Total
M5030350 Concrete Structures	cu. m.	4.9
M5080205 Reinforcement Bars, Epoxy Coated	kg	880
* M5401010 Precast Concrete Box Culvert (3000x1650)	m	10.9
* M5401010 Precast Concrete Box Culvert (900x600)	m	5.7
* Precast Concrete Box Culvert (900x450)	m	15.2
* M5401005 Precast Concrete Box Culvert (600x600)	m	15.6
* M5401002 Precast Concrete Box Culvert (600x450)	m	15.1
* 5401001 Box Culvert End Section, Culvert No. 1	Each	2
* 5401004 Box Culvert End Section, Culvert No. 4	Each	2
* 5401008 Box Culvert End Section, Culvert No. 8	Each	2
* 5401010 Box Culvert End Section, Culvert No. 10	Each	2
* 5401011 Box Culvert End Section, Culvert No. 11	Each	2
* 5401015 Box Culvert End Section, Culvert No. 15	Each	2
* 5401016 Box Culvert End Section, Culvert No. 16	Each	2
* 5401017 Box Culvert End Section, Culvert No. 17	Each	2
M5403220 Expansion Bolts (M20x250)	Each	206
M2810707 Stone Riprap, Class A4	sq. m.	See Plans
M5050405 Furnishing & Erecting Structural Steel	kg	260
MX033694 Structural Repair of Concrete (Depth Equal to or Less than 125mm)	sq. m.	3.2
M5900200 Epoxy Crack Injection	m	5
MX032196 Polymer Modified Portland Cement Mortar	sq. m.	25.9
M5930100 Controlled Low-Strength Material	cu. m.	7.0

\* Non-standard size.

**INDEX OF SHEETS**

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S18	Miscellaneous Details
S19	Plug & Fill Details, E.C. #101 And E.C. #105

**DESIGN SPECIFICATIONS**

2002 AASHTO Specifications

**DESIGN STRESSES (New Construction)**

Field Units	Precast Units
$f'_c = 24$ MPa	$f'_c = 35$ MPa
$f_y = 400$ MPa (Reinf.)	$f_y = 450$ MPa (Welded wire fabric)
$f_y = 250$ MPa (Str. Steel)	

**LOADING MS18**

Allow 1.2 kN/m<sup>2</sup> For future wearing surface

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION BOX CULVERT EXTENSIONS GEN. NOTES & BILL OF MATERIAL
NAME	DATE	
		SCALE NONE DATE DECEMBER 10, 2006 DRAWN BY MLB CHECKED BY MTH