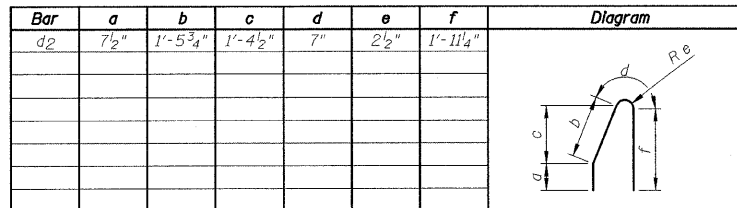
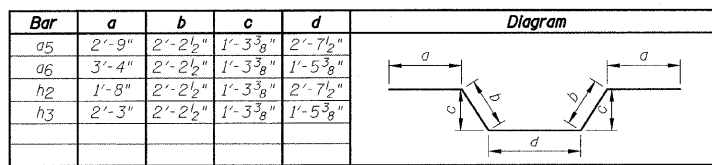
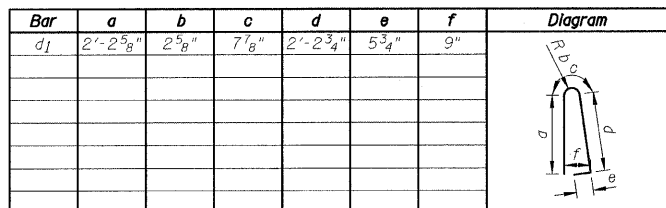
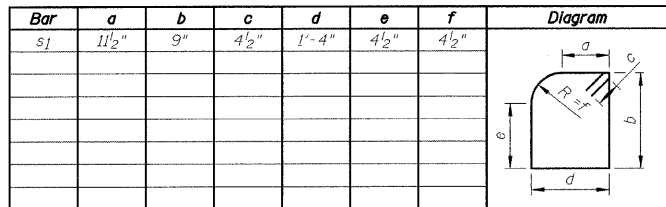
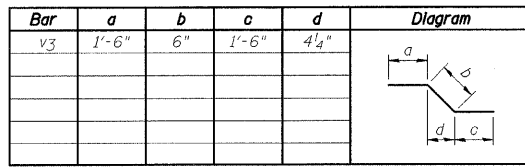
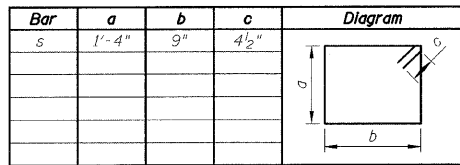
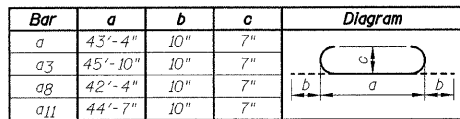
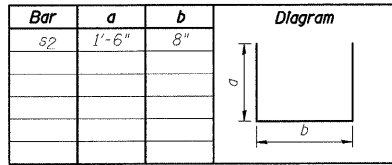
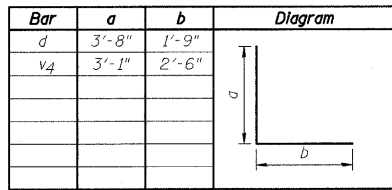


CULVERT BAR BENDING DIAGRAMS



CULVERT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	32	#7	45'-0"	
a1	66	#7	43'-4"	
a2	32	#7	24'-0"	
a3	82	#7	47'-6"	
a4	82	#7	45'-10"	
a5	63	#7	12'-7"	
a6	63	#7	12'-7"	
a7	66	#7	12'-4"	
a8	32	#7	44'-0"	
a9	32	#7	24'-0"	
a10	82	#7	44'-7"	
a11	82	#7	46'-3"	
d	88	#4	5'-5"	
d1	132	#5	5'-7"	
d2	132	#5	4'-8"	
e	32	#4	16'-2"	
e1	4	#8	16'-2"	
e2	32	#4	7'-0"	
e3	4	#8	7'-0"	
e4	16	#4	12'-3"	
e5	4	#8	12'-3"	
h	88	#5	32'-1"	
h1	88	#5	37'-7"	
h2	44	#5	10'-5"	
h3	44	#5	10'-5"	
h4	16	#5	30'-9"	
h5	532	#5	20'-4"	
h6	129	#5	26'-6"	
h7	16	#7	31'-4"	
h8	4	#5	5'-0"	
h9	4	#5	1'-6"	
s	61	#4	4'-11"	
s1	61	#4	4'-9"	
s2	154	#4	3'-8"	
v	466	#5	3'-9"	
v1	158	#5	5'-6"	
v2	308	#5	6'-9"	
v3	152	#4	3'-6"	
v4	152	#5	5'-7"	

Item	Unit	Quantity
Concrete Box Culverts	Cu. Yd.	311.9
Reinforcement Bars, Epoxy Coated	Pound	88,030
Bar Splicers	Each	132
Porous Granular Embankment, Special	Cu. Yd.	300

GENERAL NOTES

- At least 10'-0" of this culvert barrel shall be poured monolithically with the wingwalls.
- Exposed edges shall be beveled 3/4".
- Class SI Concrete shall be used throughout except Class BD Concrete shall be used for the top slab. Optional use of Precast Concrete Box Culverts is not allowed.
- Reinforcement Bars shall conform to the requirements of ASTM A706, Grade 60 (IL Modified). See Special Provision.
- For backfilling and embankment, see Standard Specifications and Roadway Plans.
- If shall be the responsibility of the Contractor to divert the stream flow and any storm sewer flow during construction in order to keep the construction areas free of water. The method of water diversion shall be subject to the approval of the Engineer and the cost shall be included with "Concrete Box Culverts".
- Contractor to field locate all utilities before starting construction and protect all utilities. Contractor to submit information regarding protecting utilities to the Engineer before starting construction.
- For field data, See Farnsworth Group field book No. 2337.
- The pay item "Removal and Disposal of Unsuitable Material" shall include the excavation of unsuitable material for a depth to 1'-6" below the structure for a width of 52'-10" within the limits of the toe walls as shown in the plans. The actual amount shall be determined in the field by the Engineer.
- The pay item "Porous Granular Embankment, Special" shall include the placement of CA-1 and CA-7 below the structure for a width of 52'-10" within the limits of the toe walls as shown on the plans. The actual amount shall be determined in the field by the Engineer.
- All Reinforcement Bars shall be epoxy coated.
- E.F. denotes Each Face I.F. denotes Inside Face O.F. denotes Outside Face B.F. denotes Back Face F.F. denotes Front Face
- There will be no additional compensation should any reinforcement need to be cut or bent in the field.
- Construction Joints shall be bonded in accordance with Section 503.09(b) of the Standard Specifications.
- The layout of the paved ditch may be varied in the field to suit ground conditions as directed by the Engineer.
- Minimum bar lap lengths are as follows, unless noted otherwise.

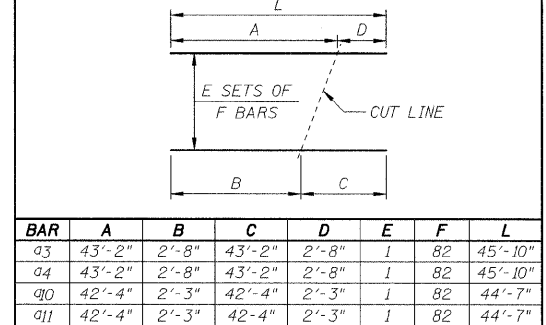
Barrels:	Bar Size	Min. Lap Length	Wingwalls:	Bar Size	Min. Lap Length
	#4	1'-4"		#4	1'-8"
	#5	1'-8"		#5	2'-2"
	#6	2'-0"		#6	2'-7"
	#7	2'-9"		#7	3'-5"
	#8	3'-8"		#8	4'-6"
	#9	4'-7"		#9	5'-9"
- The concrete for the culvert top slab finished according to Article 503.16(a) of the Standard Specifications shall be placed and compacted parallel to the skew in uniform increments along centerline of culvert. The machine used for finishing shall be set parallel to the skew for striking off and screeding the concrete.
- If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
- The concrete in the retaining walls shall be paid for as "Concrete Box Culverts".
- Contractor to protect the 60" sanitary sewer. Positive means will be required including sheet piling. Contractor to submit information regarding protecting utilities to the Engineer before starting construction. Price included with "Temporary Sheet Piling".
- "Parapet Railing" and "Pedestrian Railing" are equivalent for this plan set. Parapet Railing items are included in the pay item for Pedestrian Railing.
- All railing to be white to match railing on Apple Street bridge.
- Removal of the bituminous wearing surface on the existing bridge shall be included in the rest of Removal of Existing Structures.
- The Paved Ditch shall be paid for as "Slope Wall 6 Inch".

STRUCTURAL TOTAL BILL OF MATERIAL

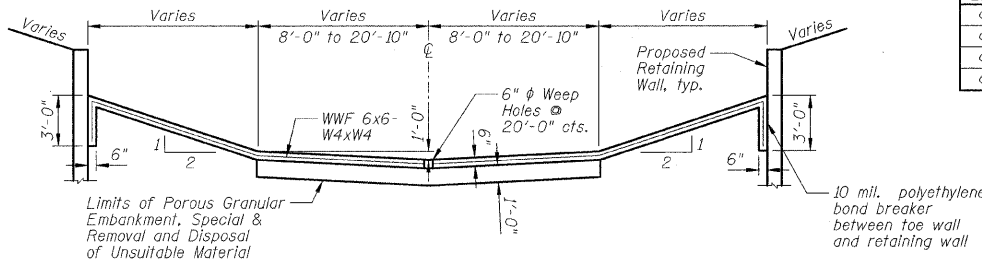
ITEMS	UNIT	TOTAL
Removal and Disposal of Unsuitable Material	Cu Yd	300
Porous Granular Embankment	Cu Yd	723
Porous Granular Embankment, Special	Cu Yd	300
Paved Ditch Removal	Foot	157
Removal of Existing Structures	Each	1
Concrete Structures	Cu Yd	77.1
Concrete Superstructure	Cu Yd	172.1
Bridge Deck Grooving	Sq Yd	494
*Protective Coat	Sq Yd	801
Furnishing and Erecting Structural Steel	Pound	1,680
Reinforcement Bars, Epoxy Coated	Pound	152,370
Bar Splicers	Each	132
Pedestrian Railing	Foot	118
Bicycle Railing	Foot	120
Temporary Sheet Piling	Sq Ft	2,860
Name Plates	Each	1
Concrete Box Culverts	Cu Yd	366.4
Controlled Low-Strength Material	Cu Yd	7
Chain Link Fence, 5'	Foot	93
Slope Wall 6"	Sq Yd	437

*Quantity is for top surface of deck, sidewalk, parapet, and approach slab.

BAR CUTTING DIAGRAM



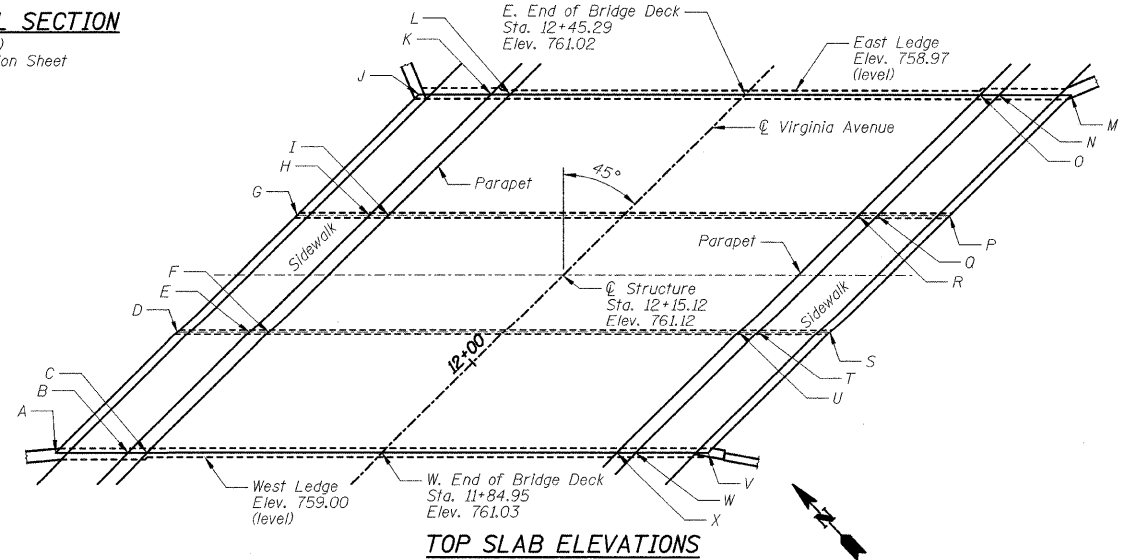
Note: "L" dimension does not take into account the hook length for the hooked bars a3 and a10.



PAVED DITCH TYPICAL SECTION

(Looking Northwest)
See General Plan & Elevation Sheet

Location	Station	Offset	Elevation
A	11+57.87	27.08' LT.	760.25
B	11+63.87	21.08' LT.	760.44
C	11+65.45	19.50' LT.	760.49
D	11+78.08	27.08' LT.	760.44
E	11+84.08	21.08' LT.	760.60
F	11+85.66	19.50' LT.	760.65
G	11+98.00	27.08' LT.	760.55
H	12+04.00	21.08' LT.	760.69
I	12+05.58	19.50' LT.	760.72
J	12+18.21	27.08' LT.	760.57
K	12+24.21	21.08' LT.	760.69
L	12+25.79	19.50' LT.	760.71
M	12+72.37	27.08' RT.	760.22
N	12+66.37	21.08' RT.	760.41
O	12+64.79	19.50' RT.	760.46
P	12+52.16	27.08' RT.	760.42
Q	12+46.16	21.08' RT.	760.59
R	12+44.58	19.50' RT.	760.63
S	12+32.24	27.08' RT.	760.54
T	12+26.24	21.08' RT.	760.68
U	12+24.66	19.50' RT.	760.72
V	12+12.03	27.08' RT.	760.58
W	12+06.03	21.08' RT.	760.69
X	12+04.45	19.50' RT.	760.72



DESIGNED - SDH	REVISED -
DRAWN - JWK	REVISED -
CHECKED - MSW	REVISED -
DATE - 07/22/2009	REVISED -

TOWN OF NORMAL

BILL OF MATERIAL GENERAL NOTES AND MISCELLANEOUS DETAILS

VIRGINIA AVENUE OVER SUGAR CREEK SECTION 04-00226-00-BR MCLEAN COUNTY

F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
6366	04-00226-00-BR	MCLEAN	52	23
S.N. 057-7834			CONTRACT NO. 91416	
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				