Benchmark: CP#6-Iron Rod with Cap on IL Rte. 72 (Higgins Road) at Sta. 146+04.04, Offset 18.41' Lt. Elevation 919.33

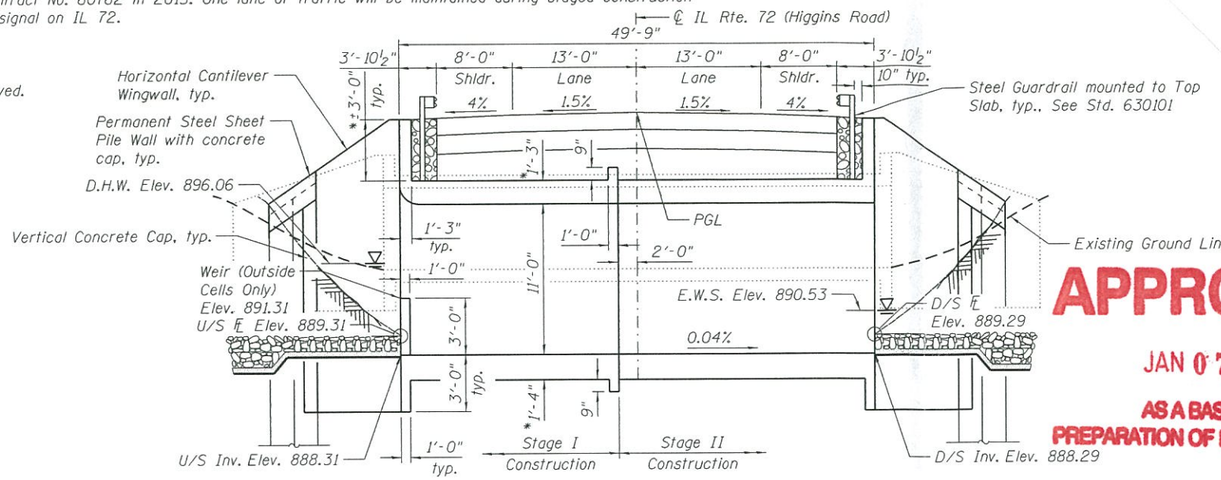
Existing Structure: S.N. 045-0080 was originally built in 1935 as S.A. Route 31, Section 109-NRS. The structure is a double cell 10'-0" wide x 6'-0" high cast-in-place reinforced concrete box culvert with vertical cantilever wingwalls on each side. The length of the culvert from out to out of headwall is 53'-4" and width is 22'-0". The low flow culvert section 3'-0" wide x 3'-0" high below the east cell has an approximate 4' sloped extension at the south side and an approximate 6'-6" flat extension at the north side. The west cell has a 3-sided structure floor extension at the south end. The L-Type wingwalls are approximately 14'-0" long and 7'-6" tall. Existing Structure 045-0244 was originally built as 6'-0" wide x 6'-0" high cast-in-place culvert to convey Tyler Creek overflow. The length of the culvert from out to out of headwall is approximately 43'-0". This culvert is located approximately 500'-0" west of S.N. 045-0080. IL 72 was resurfaced in Contract No. 60Y62 in 2015. One lane of traffic will be maintained during staged construction utilizing a temporary traffic signal on IL 72.

No Salvage.

Precast alternate is not allowed.

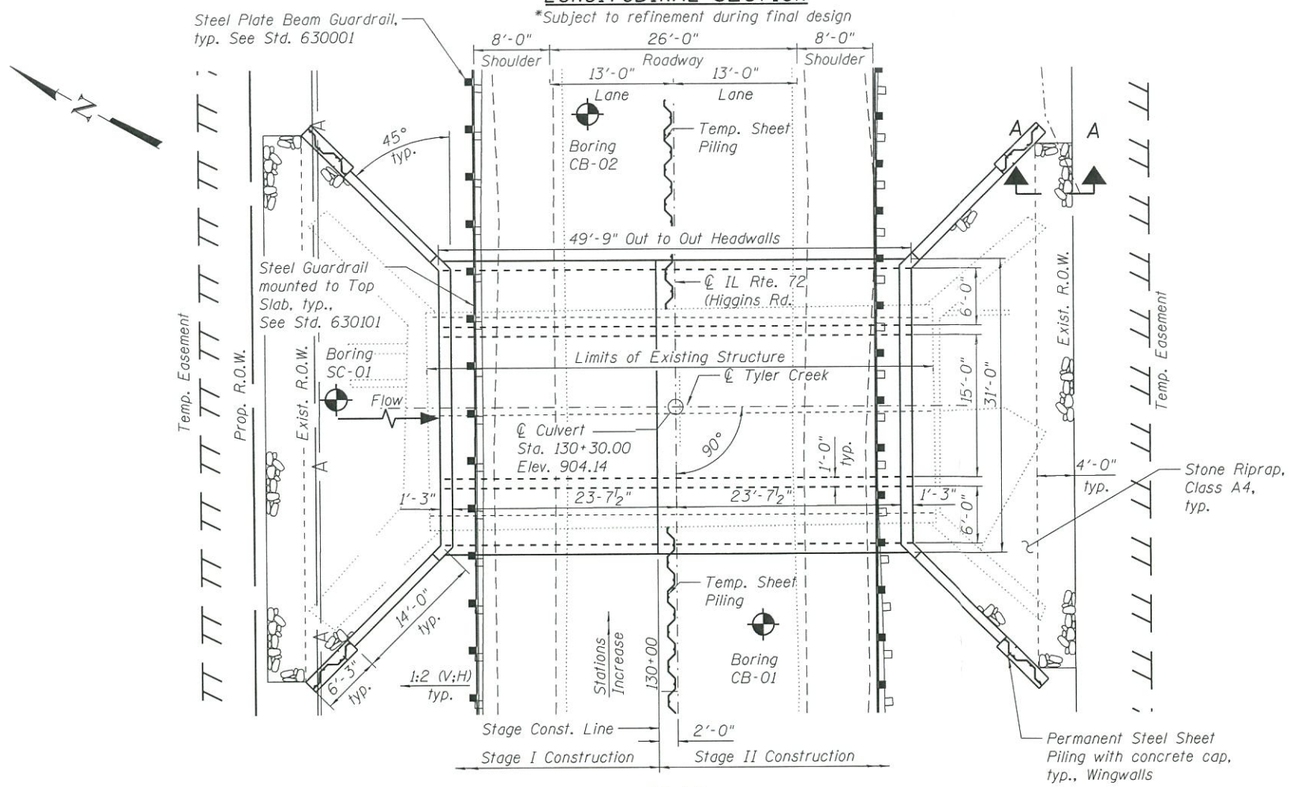
SCOPE OF WORK

1. Install temporary traffic signal and shift traffic to the south.
2. Install temporary sheet piling at location shown on the plans and as directed by the Engineer.
3. Remove existing roadway and culvert for Stage I Removal.
4. Construct proposed culvert for Stage I Construction.
5. Shift traffic to the north over newly constructed portion of culvert for Stage II Removal.
6. Remove remaining roadway and culvert for Stage II Removal.
7. Construct proposed culvert for Stage II Construction.
8. Re-establish the flow through proposed culvert. Remove temporary traffic signal and open the roadway to traffic.



LONGITUDINAL SECTION

*Subject to refinement during final design



PLAN

WATERWAY INFORMATION

Drainage Area = 5.3 Sq. Mi.

Existing Overtopping Elev. 903.97 at Sta. 129+99.43
Proposed Overtopping Elev. 904.08 at Sta. 125+00.00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Peak	2	148	11	94	893.69	1.81	0.00	895.50	893.69
	10	305	26	128	894.94	1.89	0.05	896.83	894.99
Design	50	455	48	158	896.06	1.71	0.10	897.77	896.16
Base	100	547	61	175	896.69	1.59	0.13	898.28	896.82
Scour Design Check									
Overtopping-Exist.									
Overtopping-Prop.									
Max. Calc.	500	684	79	200	897.59	1.38	0.20	898.97	897.79

10 Year Velocity Through Existing Culvert = 11.7 ft/s
10 Year Velocity Through Proposed Structure = 3.0 ft/s

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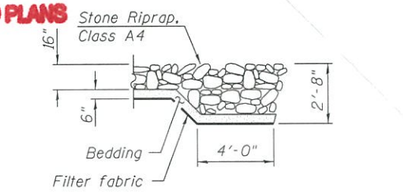
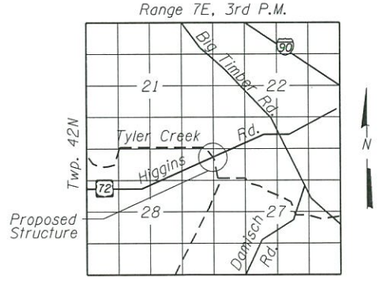
AS A BASIS FOR PREPARATION OF DETAILED PLANS



SECTION A-A

PROFILE GRADE

(Along ℄ IL Rte. 72)



LOCATION SKETCH

HIGHWAY CLASSIFICATION

F.A.P. Rte. 341 - IL Rte. 72
Functional Class: Other Principal Arterial
ADT: 9650 (2013); 14,000 (2040)
ADTT: 7% (2013); 7% (2040)
DHV: 910
Design Speed: 55 m.p.h.
Posted Speed: 55 m.p.h.
Two-Way Traffic
Directional Distribution: 50/50

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 Interims

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Permanent Steel Sheet Piling)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

GENERAL PLAN
IL RTE. 72 (HIGGINS ROAD)
OVER TYLER CREEK
F.A.P. RTE. 341-SEC. 2014-089B-R
KANE COUNTY
STATION 130+30.00
STRUCTURE NO. 045-0279

FILE NAME = O:\Engineering\LiveProjects\13003 IDOT DUR\13003h - WO 8 IWO 11 Contract No 62A41\CADD\CADD Sheets\Structural\TSL\045-0279-62A41-00-GPE.dgn

Accurate GROUP, INC.

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	CHECKED - SAT	REVISED
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PLOT DATE = 12/18/2015	CHECKED - JMT	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 3 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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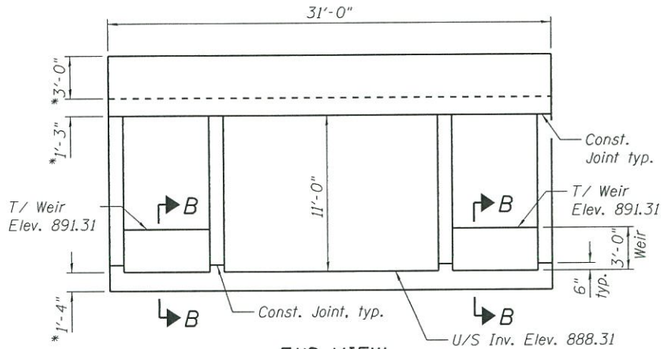
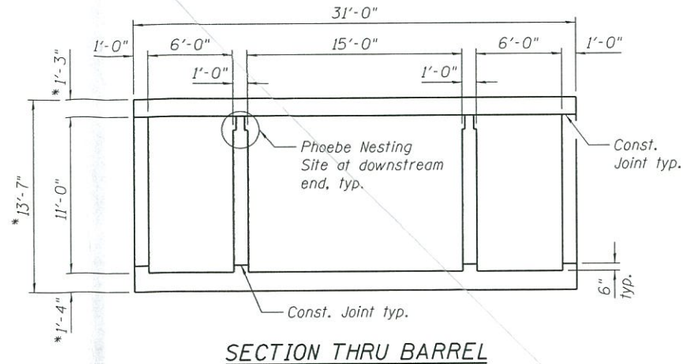
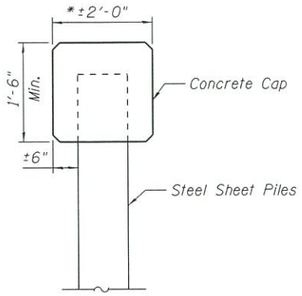
		CONTRACT NO. 62A41		
		ILLINOIS FED. AID PROJECT		



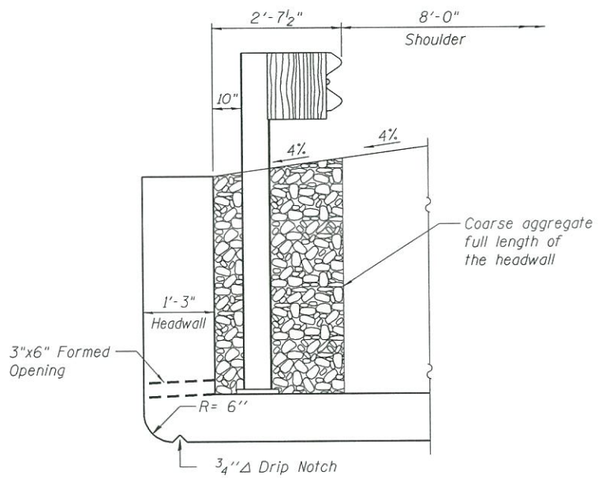
END VIEW
(Upstream End)



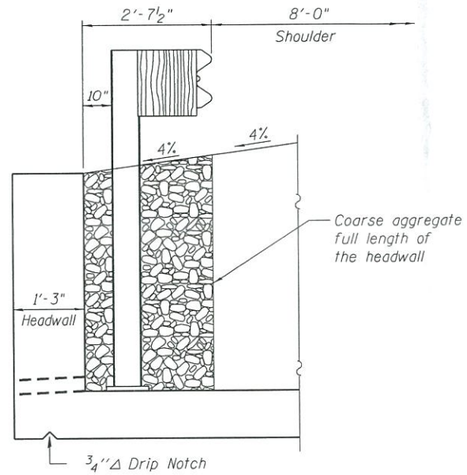
SECTION THRU BARREL
(Looking North)
*Subject to refinement during final design



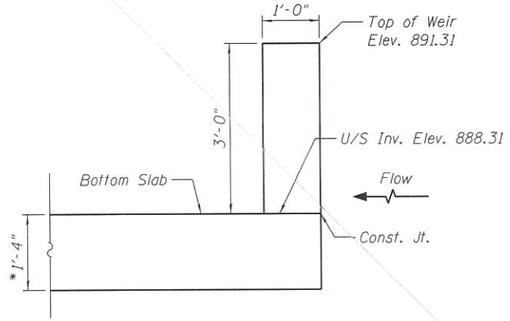
CONCRETE CAP DETAIL
*Subject to refinement during final design



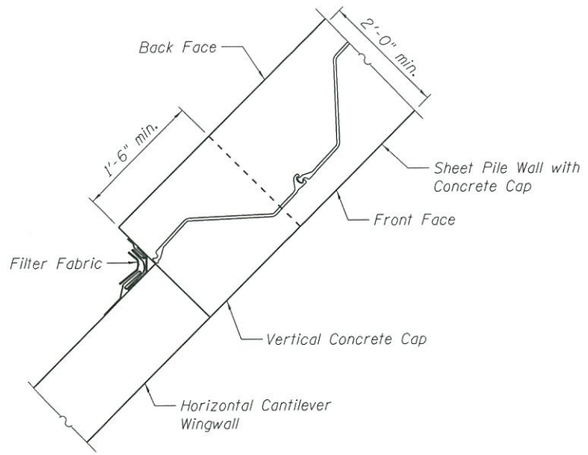
AT UPSTREAM END



AT DOWNSTREAM END



SECTION B-B
*Subject to refinement during final design



WINGWALL PLAN

APPROVED
JAN 07 2016
AS A BASIS FOR PREPARATION OF DETAILED PLANS

GENERAL DETAILS
IL RTE. 72 (HIGGINS ROAD)
OVER TYLER CREEK
F.A.P. RTE. 341 SEC. 2014-089B-R
KANE COUNTY
STATION 130+30.00
STRUCTURE NO. 045-0279

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 2 OF 3 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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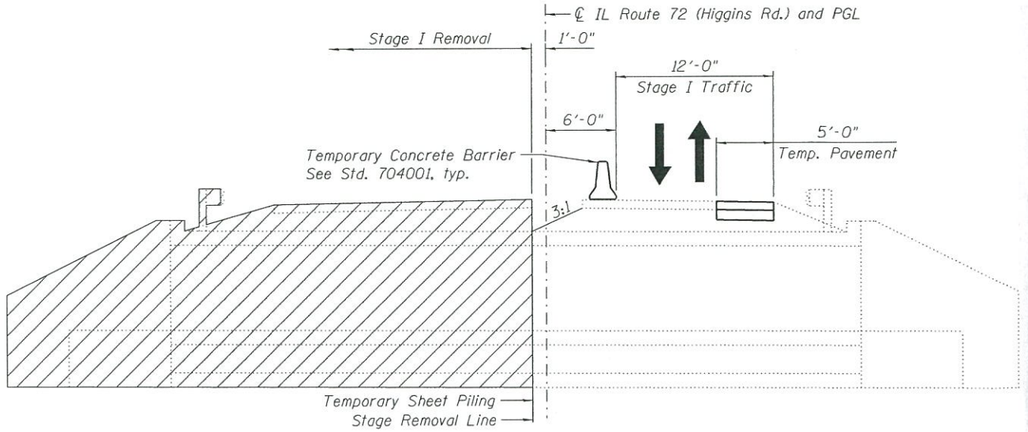
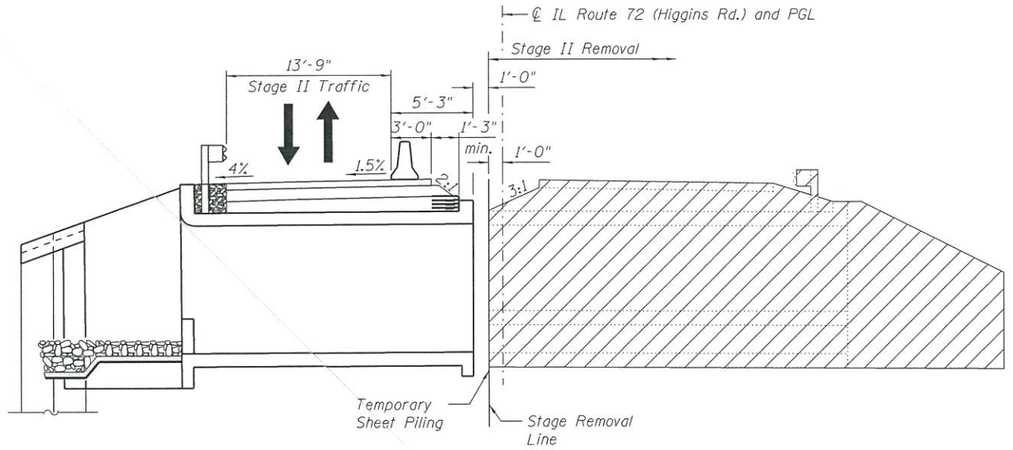
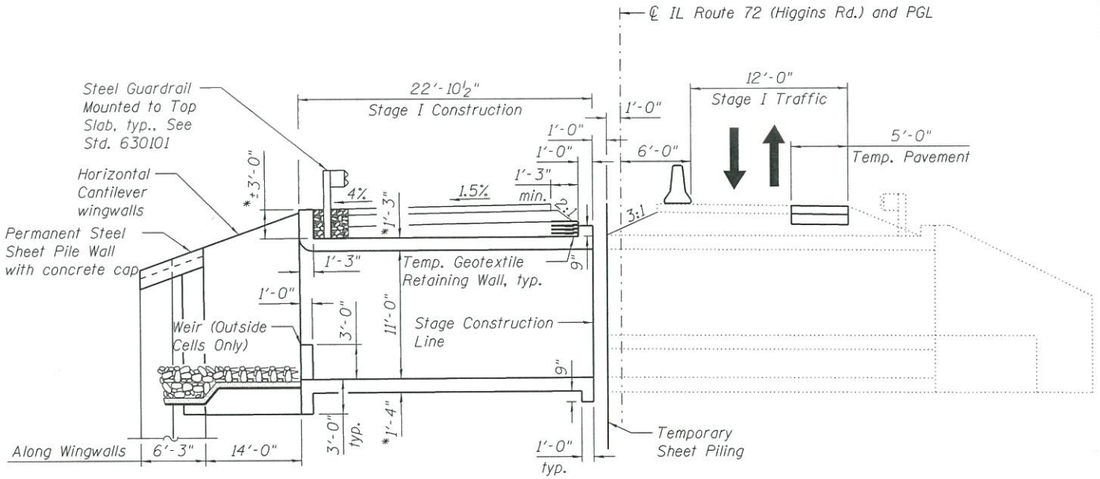


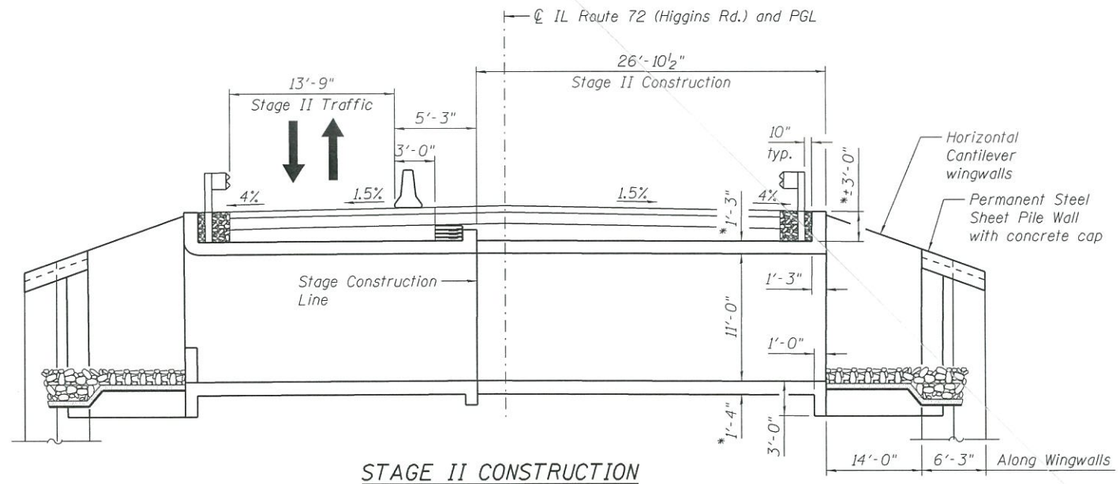
STAGE I REMOVAL



STAGE II REMOVAL



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION

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JAN 0 7 2016

AS A BASIS FOR
PREPARATION OF DETAILED PLANS

NOTES:

1. All sections are looking East.
2. One lane of traffic will be maintained during each stage utilizing a temporary traffic signal.

*Subject to refinement during final design

LEGEND

Removal of Existing Structure and Roadway

STAGE CONSTRUCTION DETAILS
IL RTE. 72 (HIGGINS ROAD)
OVER TYLER CREEK
F.A.P. RTE. 341 SEC. 2014-089B-R
KANE COUNTY
STATION 130+30.00
STRUCTURE NO. 045-0279

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 3 OF 3 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 62A41		
	ILLINOIS FED. AID PROJECT			