#### BENCHMARK: Chisled "" on South Wing Wall (Elev.=504.10) EXISTING STRUCTURE: S.N. 050-0085 originally constructed in 1932 & reconstructed in 1971. Single span RC slab bridge, 22'-0" Back-to-Back of vertical abutments. 34'-0" Out to Out deck. Structure is to be removed and replaced w/ 43'-4" x 32'-0" precast concrete structure. Stage construction is to be used to maintain one lane of traffic. No salvage 43'-4" Out to Out Headwalls -Ç IL 178 10" 1.5'-0" 16'-0" 16'-0" 2'-0" 2'-0" Design H.W. (50 yr.) P.G. Elev. 501.9 3<sub>16</sub>" per ft. 3<sub>16</sub>" per ft. -U.S. Stream Bed -D.S. Stream Red Elev. 495.65 · Elev. 495.75 0.2%

231-21

Stage I Construction

Boring

Limits of Existing

Stage Constr

**⊕**Boring 1

Prop. R.O.W. 55'

16'-0" Lane

36'-0" Shid

2'-0" Shidr

1'-0

**ELEVATION** 

(Dimensions @ Rt. L's to @ Roadway)

Cast-in-Place Wingwall, (typ.)

1'-6"

Curb

€ IL 178

1'-0"

Line

—Stage Removal

Structure

Sta. 151+38.00

Elev. 505.5

Cast-in-Place

—Temp. Soil

Retention

16'-0" Lane

2'-0" Shidr

Footings, (typ.)

System (typ.) rop. R.O.W. 55

20'-10"

Stage II Construction

(Looking North @ & Structure)

44'-0"

#### STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

**- £** Structure

-Elev. 503.20

Cast-in-Place -

Footings (typ.)

Conc. wearing

1'-4"\*

surface



Contract #66661

#### GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322 Grade 60.

All Cast-in-Place Construction joints shall be bonded.

Excavation behind existing abutment walls shall be done before removing the existing superstructure. The Contractor shall sawcut the existing abutments at the stage removal line before stage I removal.

The optional use of precast footings will not be allowed.

The optional use of precast winawalls will not be allowed.

The footing design is based on the following maximum service reactions applied at the top of the footing: 18.0 kips/ft. (vertical), 6.3 kips/ft. (horizontal). The Contractor shall verify that the selected structure meets these design parameters. If the design parameters are exceeded, a complete footing design with calculations, details, and the required seals shall be submitted for review and approval.

Portions of the footing set in rock shall be poured against in-place rock.

After the keyways have been grouted and cured, the joints on all three sides of the structure shall be externally sealed using 13" wide external sealing bands conforming the Article 1057.01. Cost included with THREE-SIDED PRECAST CONCRETE STRUCTURE, 32ft. x 9ft.

All details shown were developed assuming the use of a cast-in-place headwall. The Contractor has the option of using a precast headwall. If the precast option is used, details for the headwall shall be submitted to the Engineer for approval.

UNIT SUPER

181

58.2

6070

35

35

124

44.0

180

3600

700

388

26.4 26.4

180

11.2

181

58.2

3600

6770

35

140

388

Each

Cu. Yd.

Cu. Yd.

Sq. Yd.

Sq. Yd.

Cu. Yd.

Pound

Pound

Foot

Foot

Each

Sq. Ft.

Each

Foot

Cu. Yd.

TOTAL BILL OF MATERIAL

#### INDEX OF SHEETS

- 1. GENERAL PLAN
- 2. STAGE CONSTRUCTION DETAILS
- 3. TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
- 4. SUPERSTRUCTURE DETAILS
- 5. PEDESTRIAN RAILING
- 6. STEEL BRIDGE RAIL CURB MOUNTED
- 7. FOOTING DETAILS
- 8. WINGWALL DETAILS
- 9. BAR SPLICER ASSEMBLY DETAILS
- 10. BORING LOGS

#### SECTION THRU STRUCTURE

# (at Rt. L's to Structure)

Assumed dimensions for 3-sided precast structure are for a Hy-Span section. Con-Span, Tri-Span Bridge and BEBO

Arch System sections are also acceptable, but dimensions

32'-0" Člear Span

may vary.

3" Drains at

8'± ctrs. (typ.

each side)

Existing 16" Sanitary

Sewer w/ 24" steel

concrete, Elev. 490.65

Traffic Barrier Terminal

Type 6A (Std. 631032)

Existing 16" Sanitary

Sewer w/ 24" steel

casina encased in

concrete

CLARK

RUN

Traffic Barrier Terminal

Type 6A (Std. 631032)

Flow

casina encased in

#### LOADING HS20

Allow 50#/Sq. Ft. for future wearing surface.

**DESIGN SPECIFICATIONS** 2002 AASHTO

#### **DESIGN STRESSES**

FIELD UNITS = 3,500 psi

= 60,000 psi (reinforcement) PRECAST UNITS

5,000 psi

60,000 psi (reinforcement)

65,000 psi (welded wire fabric)

## 1.542% NORTH 415.00' VC

<u>PROPOSED PROFILE GRADE</u> (ALONG € IL. RTE. 178)

### See Std. 515001

STATION 151+38.00

BUILT 20 BY

STATE OF ILLINOIS

F.A.S. RTE. 1279

SECTION (P-10)BR



Date 9/25/06 Exp. Date 11/32/0/

#### LOADING HS20 STR. NO. 050-0238 NAME PLATE

#### APPROVED POR STRUCTURAL ADEQUACY ONLY

Ralph E Qudense (TID) ENGINEER OF EMPLES AND STRUCKERS



LOCATION SKETCH

Removal of Existing Structures

Rock Excavation for Structures

Reinforcement Bars, Epoxy Coated

Temporary Soil Retention System

hree-Sided Precast Concrete Structures, 32' x 9

Structure Excavation

Concrete Structures

Concrete Superstructure

Concrete Wearing Surface

Bridge Deck Grooving

Reinforcement Bars

Pedestrian Railing

Steel Bridge Rail

Name Plates

Bar Splicers

Protective Coat

GENERAL PLAN F.A.S. 1279 - ILLINOIS RTE. 178 OVER CLARK RUN SECTION (P-10)BR LaSALLE COUNTY STATION 151+38.00 STRUCTURE NO. 050-0238

#### WATERWAY INFORMATION

Exist. Low Grade Elev. 501.5 ft. @ Sta. 153+80

W.E. E	xist. P		Headwa	ter El.
		rop.	r1-4	
00.0			Exist.	Prop.
00.9	0.6	0.0	501.5	500.9
00.9	0.6		501.5	
01.4		0.1		501.5
01.9	2.5	0.2	504.4	502.1
02.1	2.7	0.4	504.8	502.5
03.0	2.8	0.5	505.8	503.5
	02.1 03.0	02.1 2.7	02.1 2.7 0.4	02.1 2.7 0.4 504.8

10 Year Velocity through Existing Bridge = 8.1 fps 10 Year Velocity through Proposed Bridge = 4.3 fps

AAG CHECKED DAF DRAWN BGCHECY

DESIGNEO-

McCLURE ■ ENGINEERING ASSOCIATES, INC. 4700 Kennedy (309) 792-935 East Moline, Illinois 61244 FAX (309) 792-8974

DESIGN FIRM JOENSE: ILLINOIS #184-000816 COPYRIGHT 2005 BY MGCLURE ENGINEERING ASSOC., INC

Shidr. <u>PLAN</u>

1010/76 Ca Box\Dwg 325 PM

-0"

DAF

Plate