F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2578	532B-1	DUPAGE	117	56

FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT

CONTRACT NO. 62881

PLAN

SECTION A-A
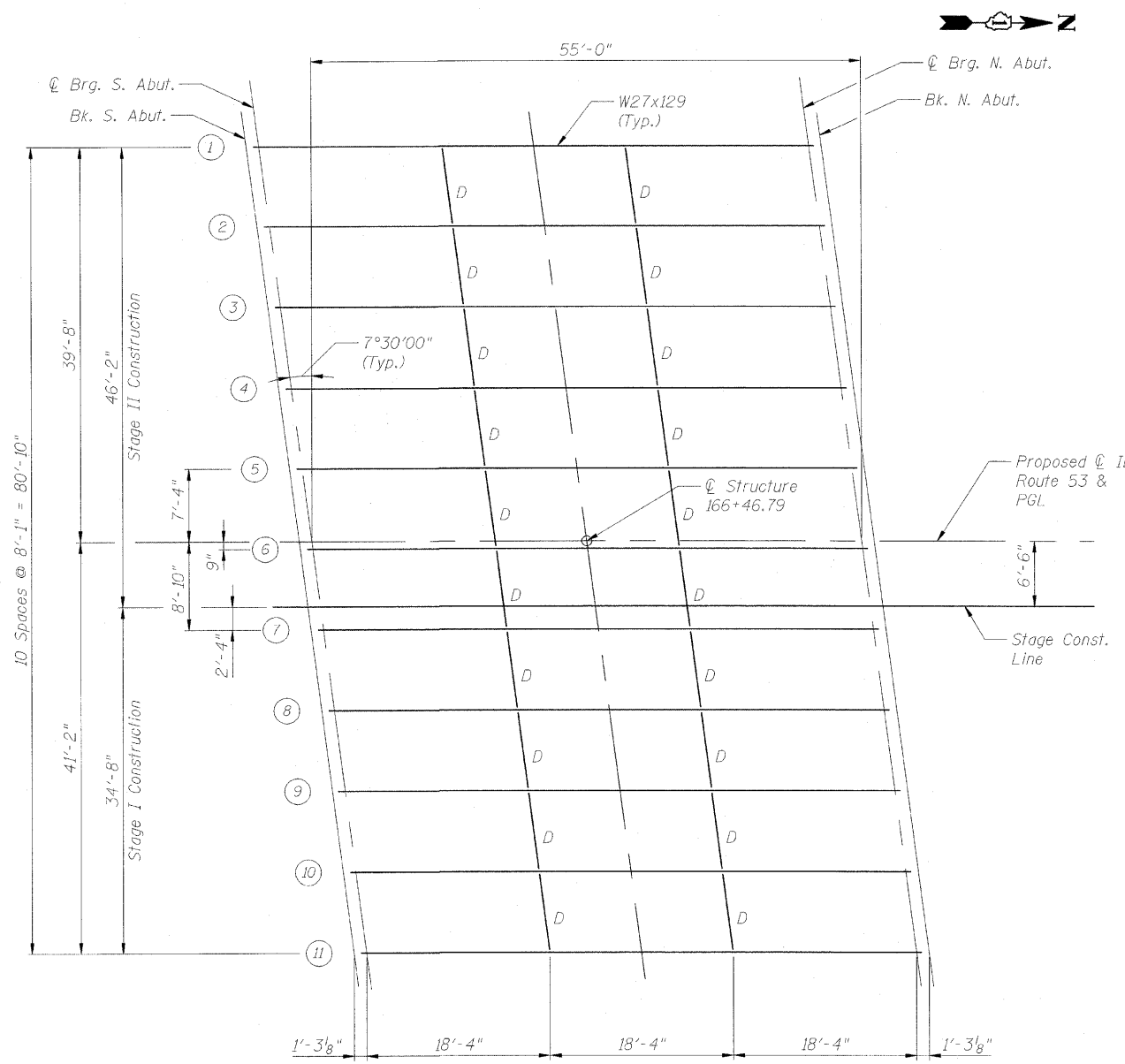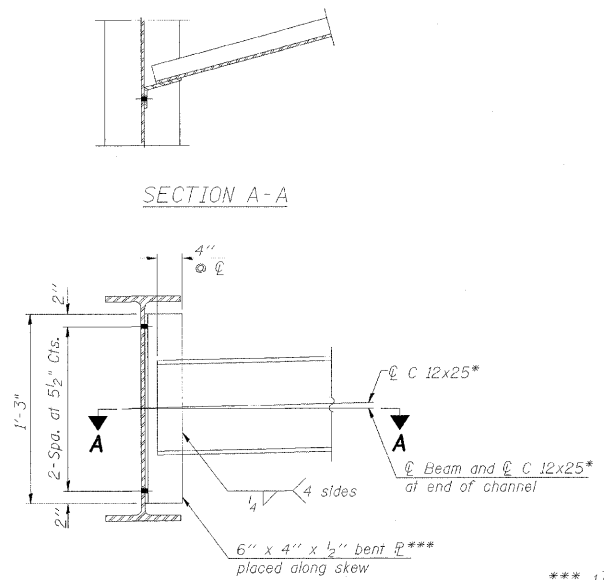
DIAPHRAGM D
(20 Required)

*** $1\frac{7}{8}$" long-slotted vertical holes on connecting bent plates of adjacent beams along the stage construction line. See Notes 1 and 5.

INTERIOR GIRDER MOMENT TABLE

		0.5 Span
Is	(in⁴)	4,760
Ic (n)	(in⁴)	12,772
Ic (3n)	(in⁴)	9,462
Ss	(in³)	345
Sc (n)	(in³)	503
Sc (3n)	(in³)	456
Q	(k/')	0.92
MQ	('k)	348
sQ	(k/')	0.54
MsQ	('k)	203
ML	('k)	522
M (Imp)	('k)	145
$\frac{5}{3}[ML+M(Imp)]$	('k)	1,111
Ma	('k)	2,161
Mu	('k)	2,497
fsQ non-comp	(ksi)	12.1
fsQ (comp)	(ksi)	5.3
$fs\frac{5}{3}[ML+M(Imp)]$	(ksi)	26.5
fs (Overload)	(ksi)	44.0
fs (Total)	(ksi)	
VR	(k)	62

INTERIOR GIRDER REACTION TABLE

		Abutments
RQ	(k)	73.1 **
RL	(k)	48.6
Imp.	(k)	13.5
R (Total)	(k)	135.3

** - Includes weight of concrete Diaphragms and Approach Slab

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Structural Steel	L. Sum	1

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to live load.
Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads.
VR is the maximum Live Load + Impact Shear range in span.
Ma (Applied Moment) = 1.3[M Q + 5/3 (M L + M(Imp.)].
The Plastic Moment capacity (Mu) is computed according to AASHTO 10.48.1 & 10.50.1.1.
fs (Overload) is the sum of the stresses due to M Q + Ms Q + 5/3 (M L + M(Imp.)].
fs(Total) is the sum of teh stresses due to 1.3[M Q + ms Q + 5/3 (M L + M(Imp.)].
M Q - Moment due to dead loads on non-composite section.
Ms Q - Moment due to dead loads on composite section.
M L - Moment due to live load on composite section.
M(Imp)- Moment ue to live load impact on composite section.

NOTES:

1. Two hardened washers shall be required over all oversized holes for diaphragms.

2. *Alternate channels C12x30 are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department. 3-$\frac{3}{4}$" ϕ HS bolts, $\frac{13}{16}$" ϕ holes

3. Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

4. All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as noted otherwise.

5. Bolts for slotted holes shall only be finger tightened prior to pouring of deck slab and shall be fully tightened after completion of deck pour.

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

FRAMING PLAN

ILLINOIS ROUTE 53 OVER
SPRING BROOK CREEK
FAU 2578   SECTION 532B-1
STRUCTURE NO. 022-0189
DUPAGE COUNTY   STATION 166+46.79

SCALE: NONE	DRAWN BY: E. MROCZEK
DATE: 6/12/09	CHECKED BY: G. HATLESTAD

PATRICK
ENGINEERING INC.
LISLE, ILLINOIS