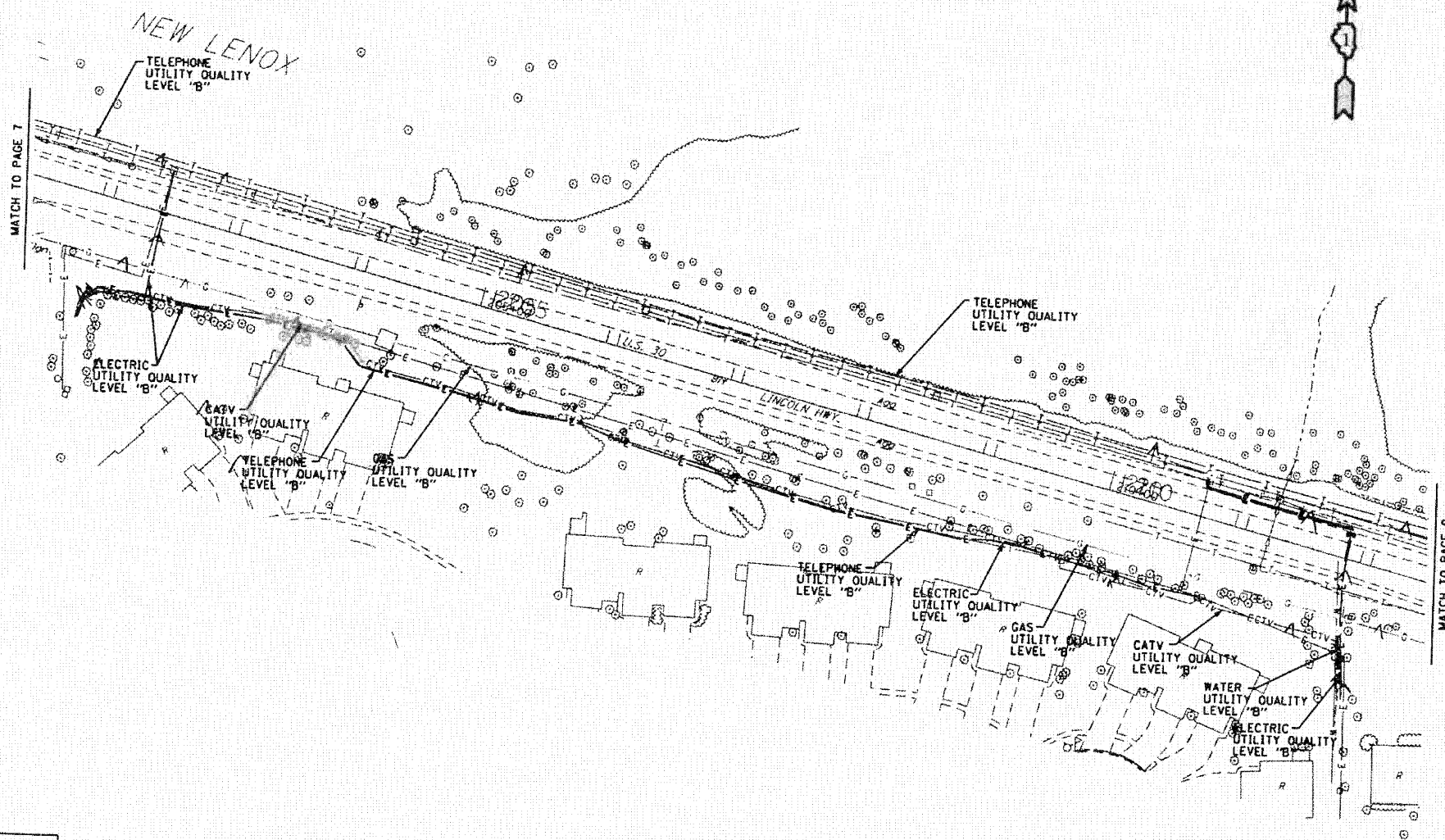


SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(12 & 13) WRS-3	WIL		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP**  
**TBE GROUP, INC.**  
 CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
 PLANNING • UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
 Checked by: *[Signature]*  
 PAGE 8 OF 25  
 Utility Quality Level "B" : Designating

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205 W. WACKER DRIVE  
 SUITE 1020  
 CHICAGO, IL 60606  
 (312) 704-1970

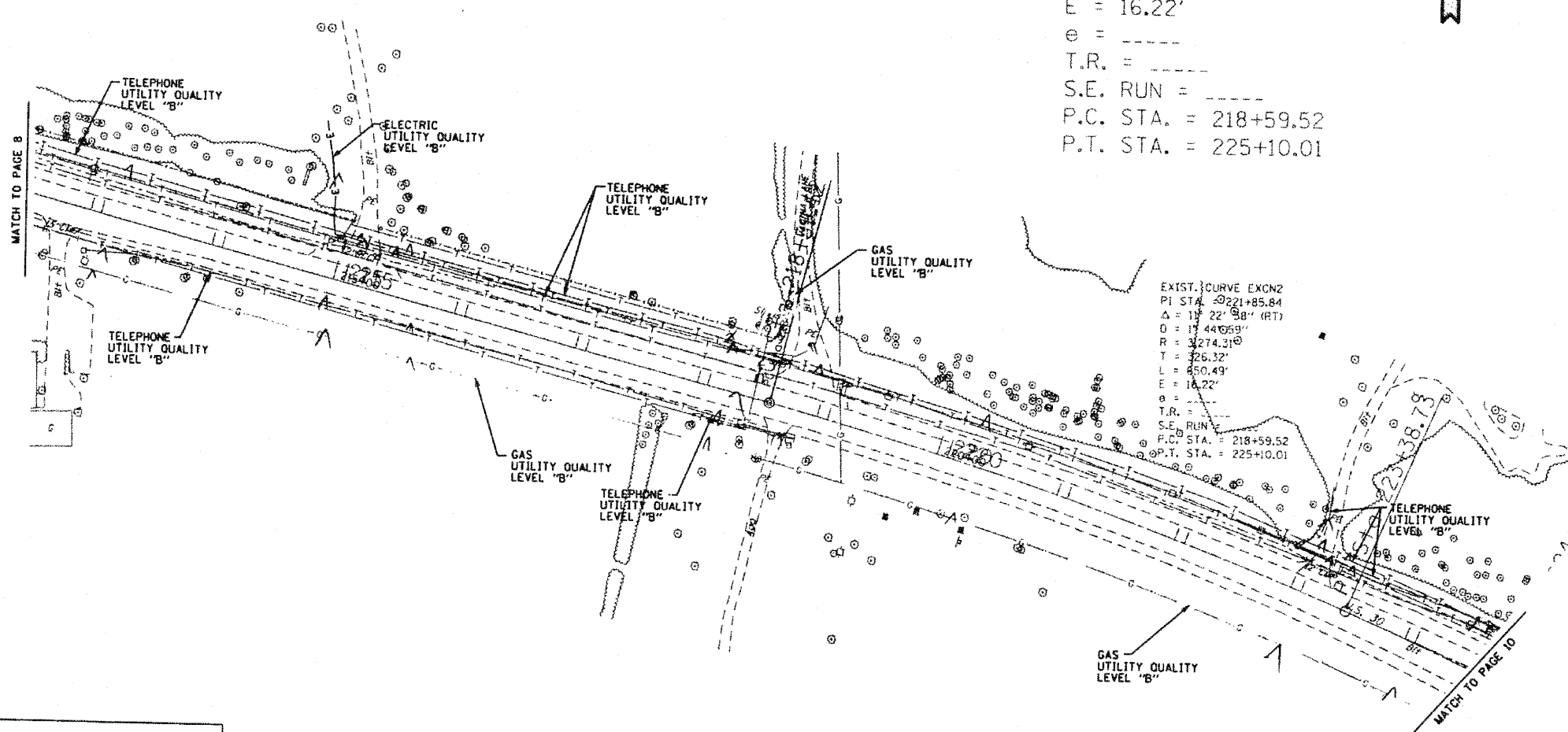
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 US RT. 30 from William Street to Wolf  
 Road and US RT. 30 from Wolf Road to US  
 RT. 45 in Frankfort, Illinois-  
 Will County  
 Contract No: 62479  
 Section No.: (12 & 13) WRS-4  
 DRAWN BY - KLC  
 SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
112 & 113 WRS-3	WIL		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



R = 3,274.31'  
 T = 326.32'  
 L = 650.49'  
 E = 16.22'  
 e = -----  
 T.R. = -----  
 S.E. RUN = -----  
 P.C. STA. = 218+59.52  
 P.T. STA. = 225+10.01



EXIST. CURVE EXCN2  
 PI STA. = 221+85.84  
 $\Delta = 117^\circ 22' 38''$  (RT)  
 O = 17' 44.059"  
 R = 3,274.31'  
 T = 326.32'  
 L = 650.49'  
 E = 16.22'  
 e = -----  
 T.R. = -----  
 S.E. RUN = -----  
 P.C. STA. = 218+59.52  
 P.T. STA. = 225+10.01

—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
 CIVIL ENGINEERING \* TRANSPORTATION \* ENVIRONMENTAL  
 PLANNING \* UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
 Checked by: *[Signature]*  
 PAGE 9 OF 25  
 Utility Quality Level "B" : Designating

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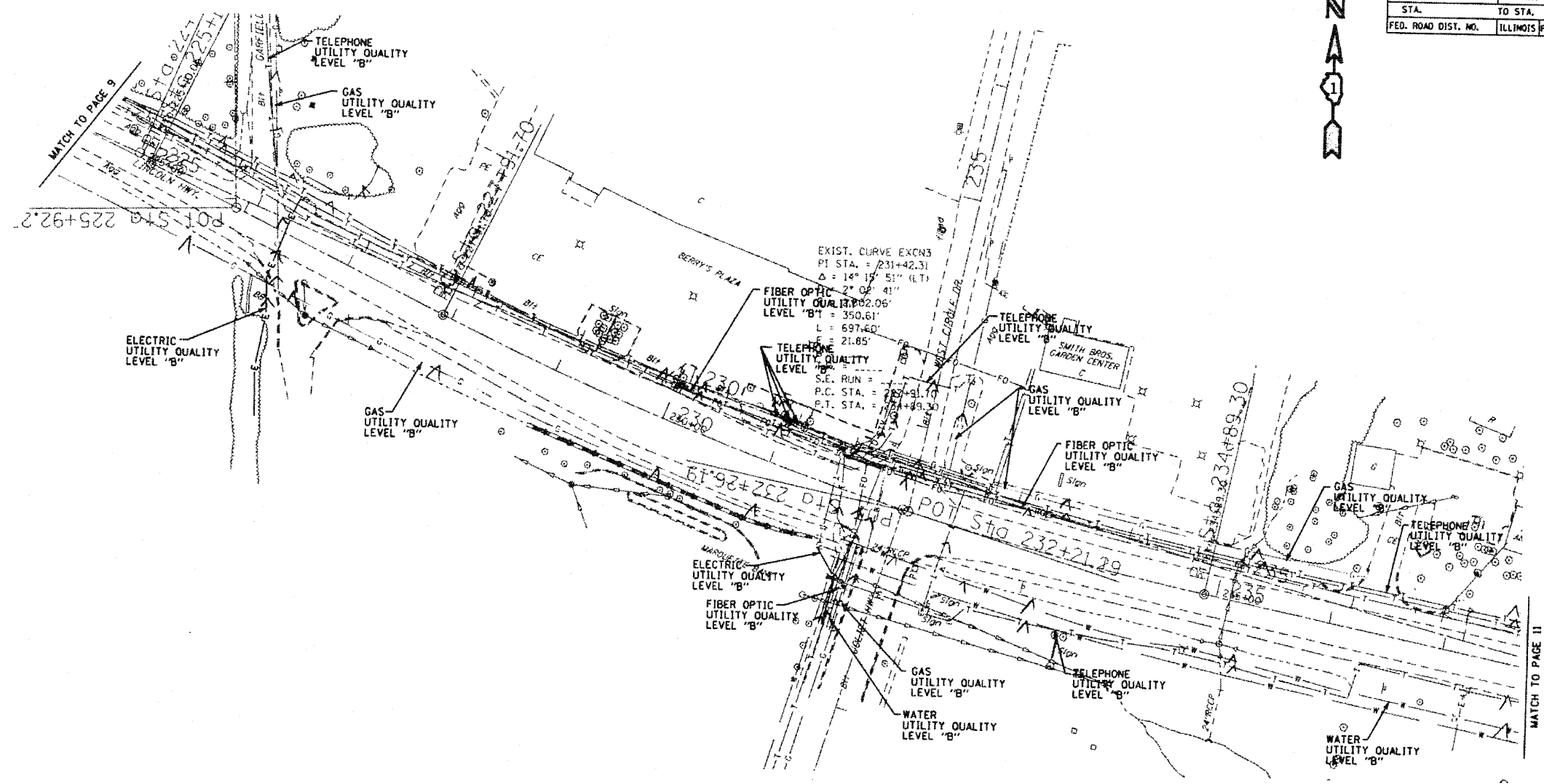
205 W. WACKER DRIVE  
 SUITE 1020  
 CHICAGO, IL 60606  
 (312) 704-1970

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 US RT. 30 from William Street to Wolf Road and US RT. 30 from Wolf Road to US RT. 45 in Frankfort, Illinois-Will County  
 Contract No: 62479  
 Section No.: 112 & 113 WRS-4

DRAWN BY - KLC  
 SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEET
112 & 113 WRS-3	WH	SHEETS NO.
STA.	TO STA.	
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	



—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
 CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
 PLANNING • UTILITY ENGINEERING • LOCATING

IL09500213, 222, 233  
 Checked by: *Sandra Jones PE*  
 PAGE 10 OF 25  
 Utility Quality Level "B" : Designating

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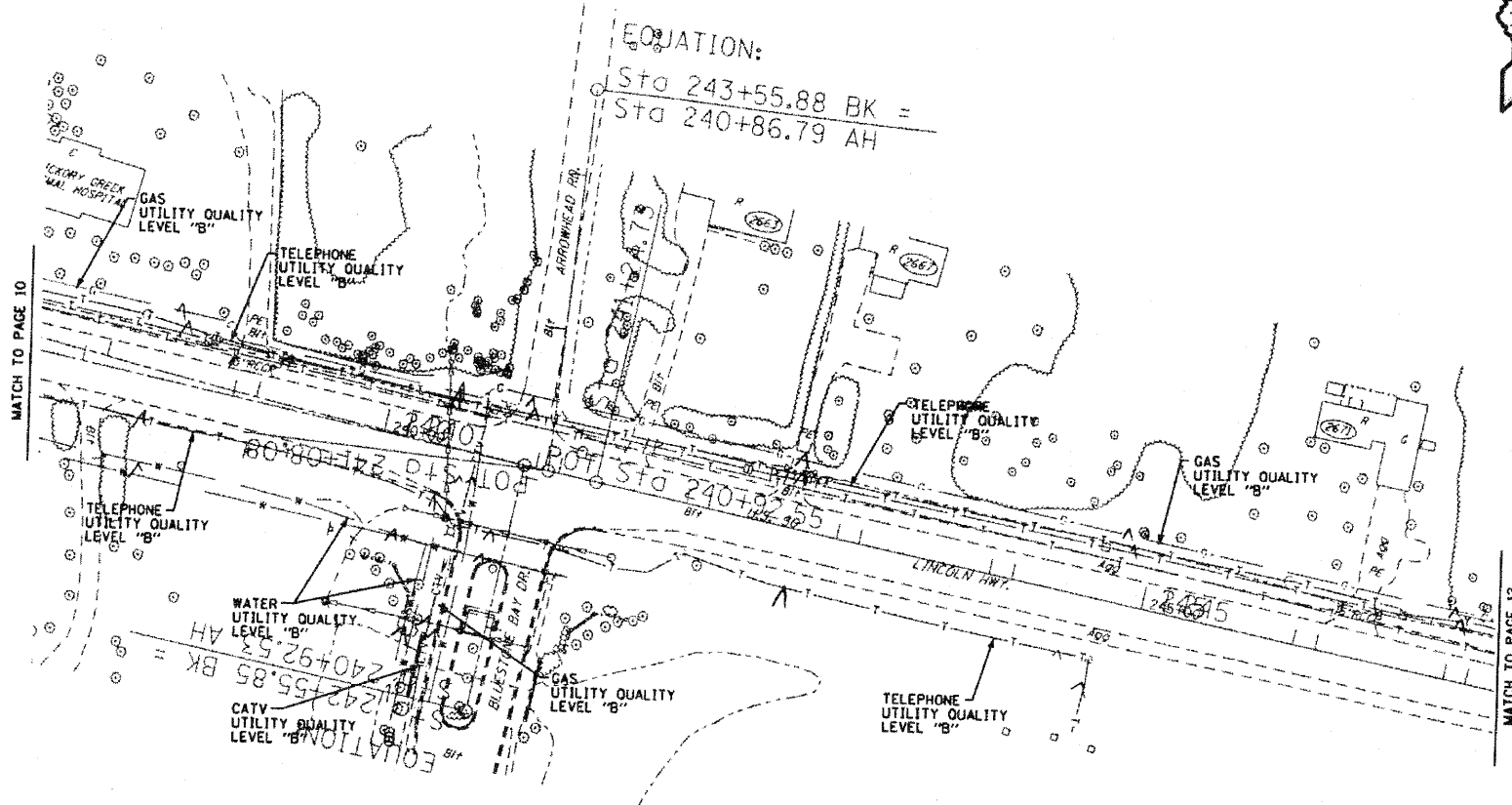


205 W. WACKER DRIVE  
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 (312) 704-1970

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 US RT. 30 from William Street to Wolf  
 Road and US RT. 30 from Wolf Road to US  
 RT. 45 in Frankfort, Illinois -  
 Will County  
 Contract No: 62479  
 Section No.: (12 & 13) WRS-4  
 DRAWN BY - KLC  
 SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(12 & 13) WRS-3	WIN		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



—T—T—T—T—	TELEPHONE
—W—W—W—W—	WATER
—G—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—FO—	FIBER OPTIC
—E—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
PLANNING • UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
Checked by: *Sandra Arnold*  
PAGE 11 OF 25  
Utility Quality Level "B" : Designating

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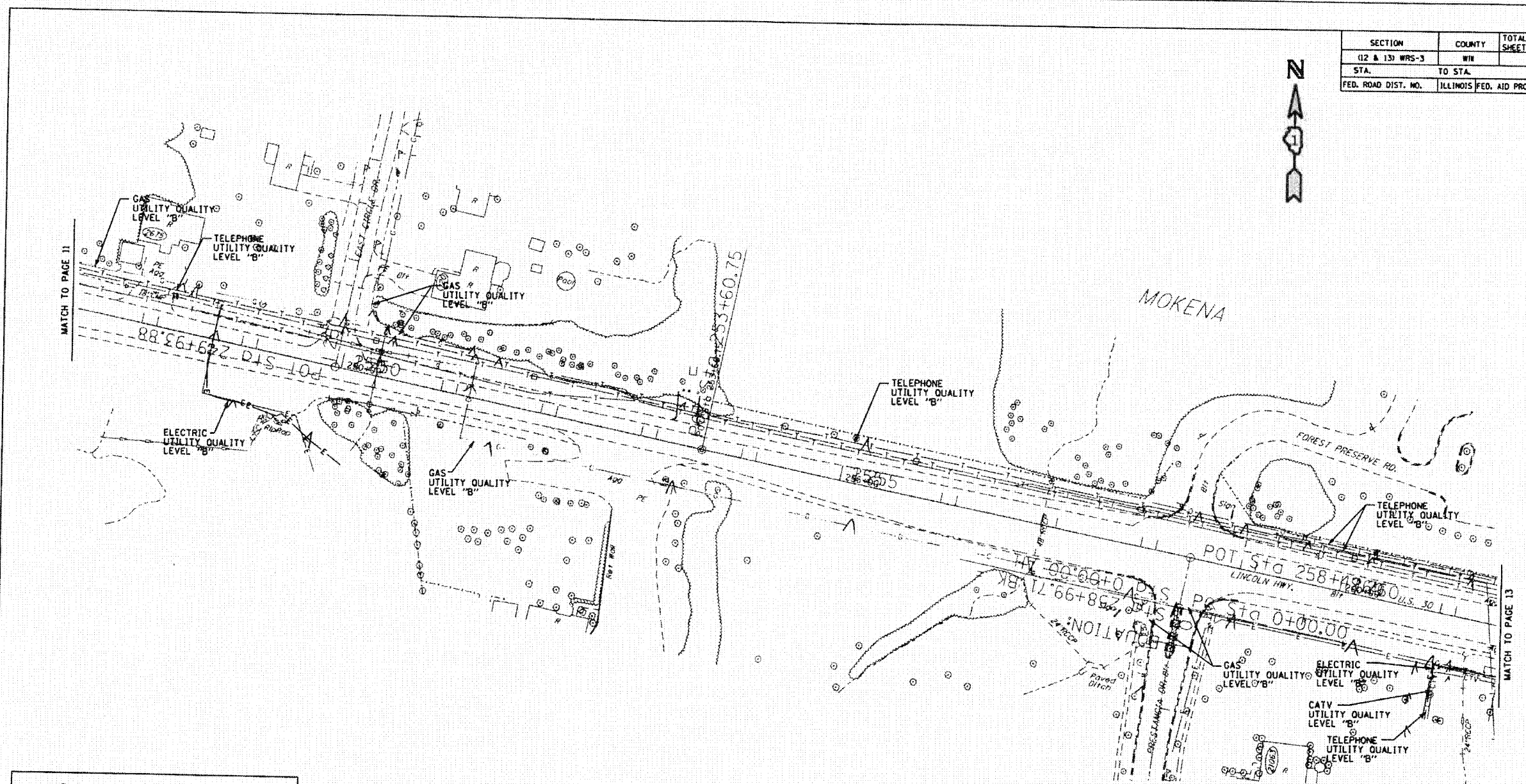


205 W. WACKER DRIVE  
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
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Contract No: 62479  
Section No.: (12 & 13) WRS-4  
DRAWN BY - KLC  
SCALE : 1" = 50'

SECTION (12 & 13) WRS-3	COUNTY WIN	TOTAL SHEETS NO.	SHEET NO.
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



—T—T—T	TELEPHONE
—W—W—W	WATER
—G—G—G	GAS
—CTV—CTV—CTV	CABLE TELEVISION
—FO—FO—FO	FIBER OPTIC
—E—E—E	ELECTRIC



**TBE GROUP, INC.**  
CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
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IL09500213, 222, 233  
Checked by: *Sandra A. ...*  
PAGE 12 OF 25  
Utility Quality Level "B" : Designating

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205 W. WACKER DRIVE  
SUITE 1020  
CHICAGO, IL 60606  
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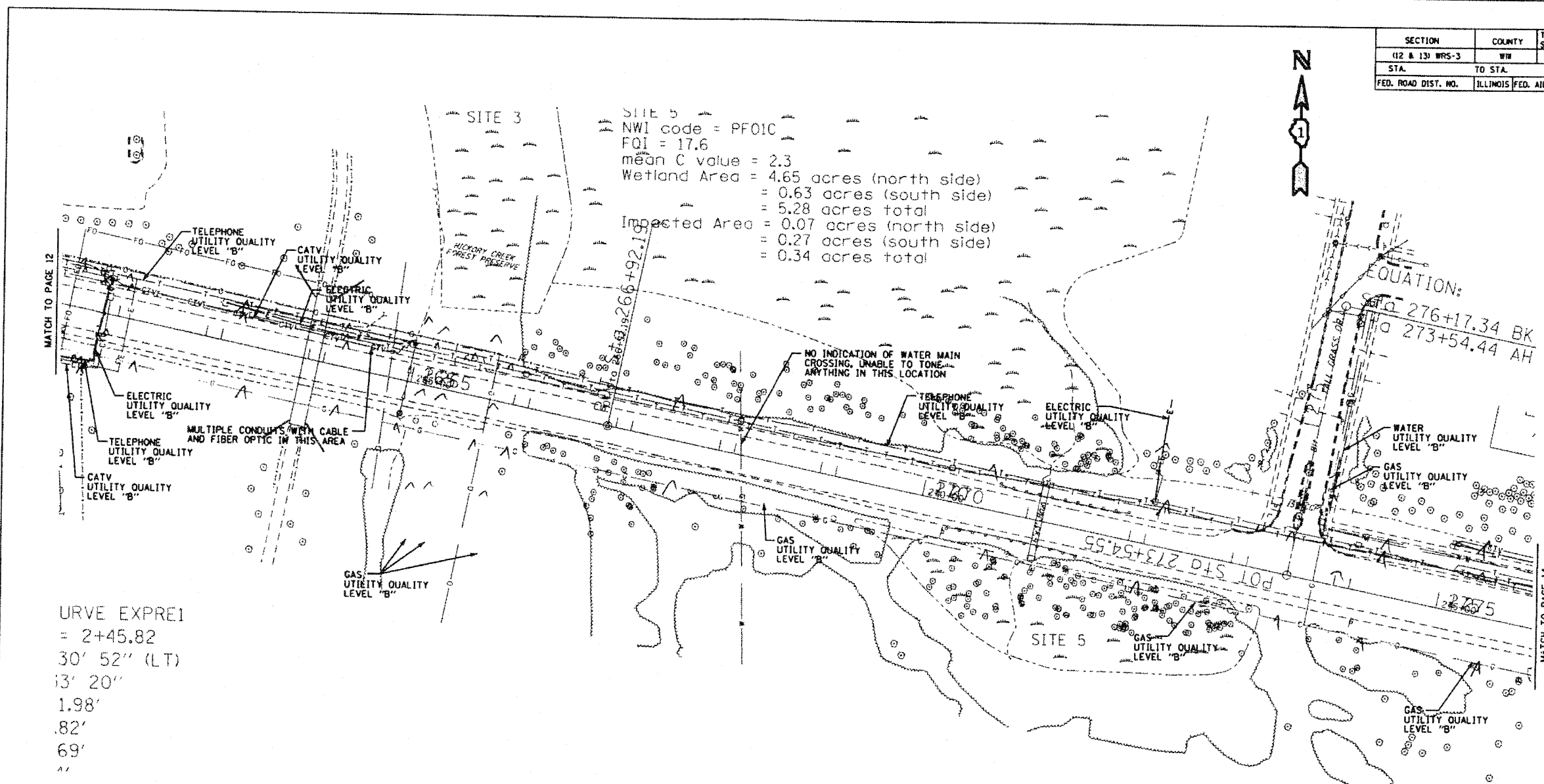
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
US RT. 30 from William Street to Wolf Road and US RT. 30 from Wolf Road to US RT. 45 in Frankfort, Illinois-Will County  
Contract No: 62479  
Section No.: (12 & 13) WRS-4

DRAWN BY - KLC  
SCALE : 1" = 50'

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SECTION (12 & 13) WRS-3	COUNTY WIN	TOTAL SHEETS NO.
STA.	TO STA.	
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	



URVE EXPRE1  
 = 2+45.82  
 30' 52" (LT)  
 13' 20"  
 1.98'  
 .82'  
 69'  
 4'

—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
 CIVIL ENGINEERING \* TRANSPORTATION \* ENVIRONMENTAL  
 \* PLANNING \* UTILITY ENGINEERING/LOCATING  
 IL09500213, 222, 233  
 Checked by: *Sandra Jones*  
 PAGE 13 OF 25  
 Utility Quality Level "B" : Designating

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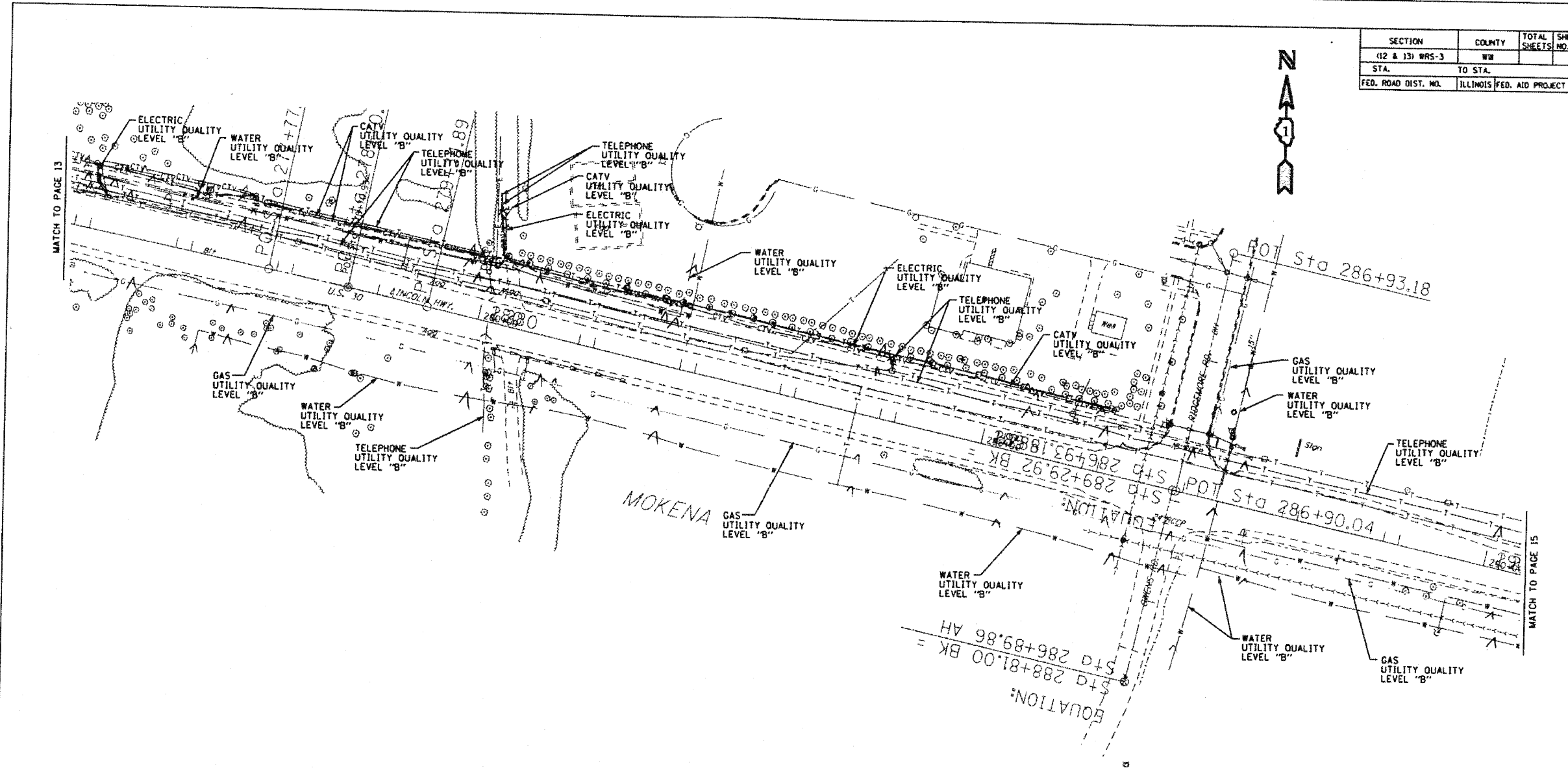
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REVISIONS	
NAME	DATE

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 Contract No: 62479  
 Section No.: (12 & 13) WRS-4  
 DRAWN BY - KLC  
 SCALE : 1" = 50'



SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(12 & 13) WRS-3	WM		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
PLANNING • UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
Checked by: *Sandra Amador*  
PAGE 14 OF 25  
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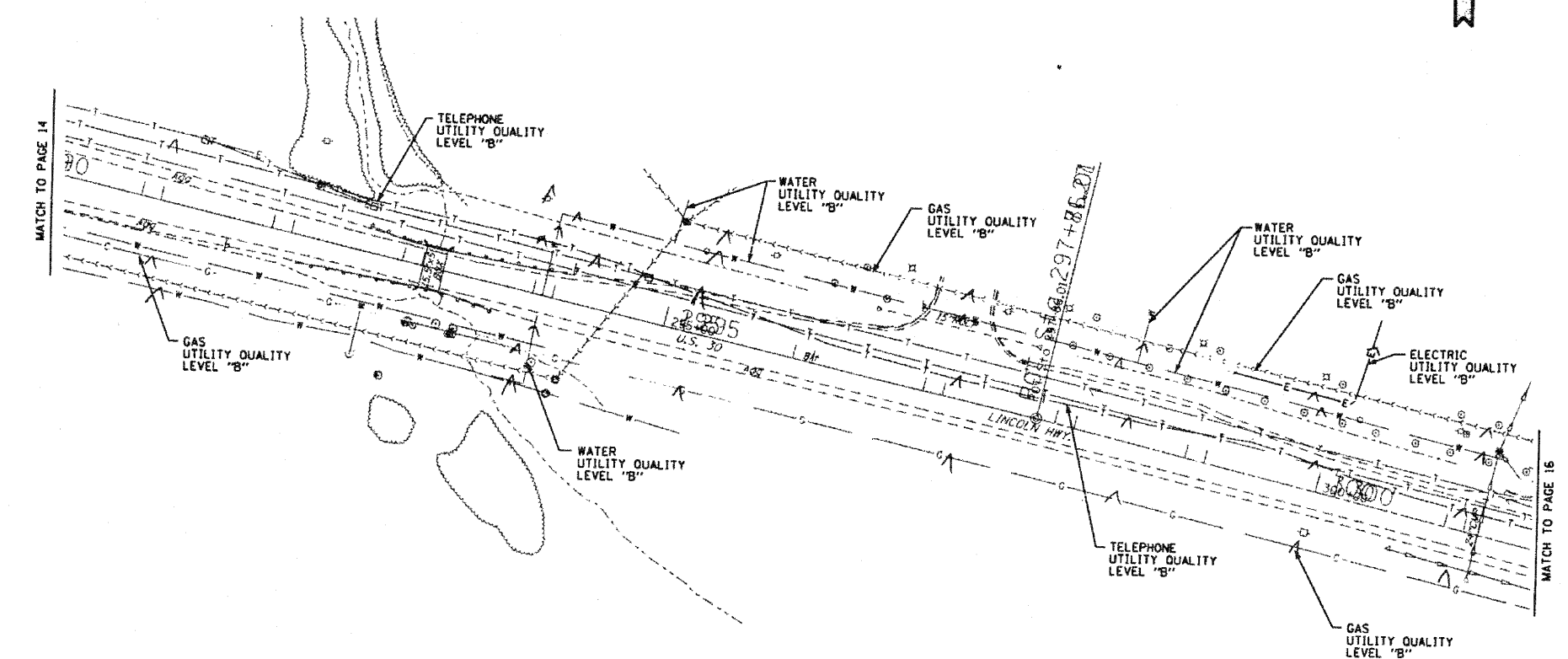


205 W. WACKER DRIVE  
SUITE 1020  
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(312) 704-1970

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
US RT. 30 from William Street to Wolf Road and US RT. 30 from Wolf Road to US RT. 45 in Frankfort, Illinois-Will County  
Contract No: 62479  
Section No.: (12 & 13) WRS-4  
DRAWN BY - KLC  
SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(12 & 13) WRS-3	WIL		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
PLANNING • UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
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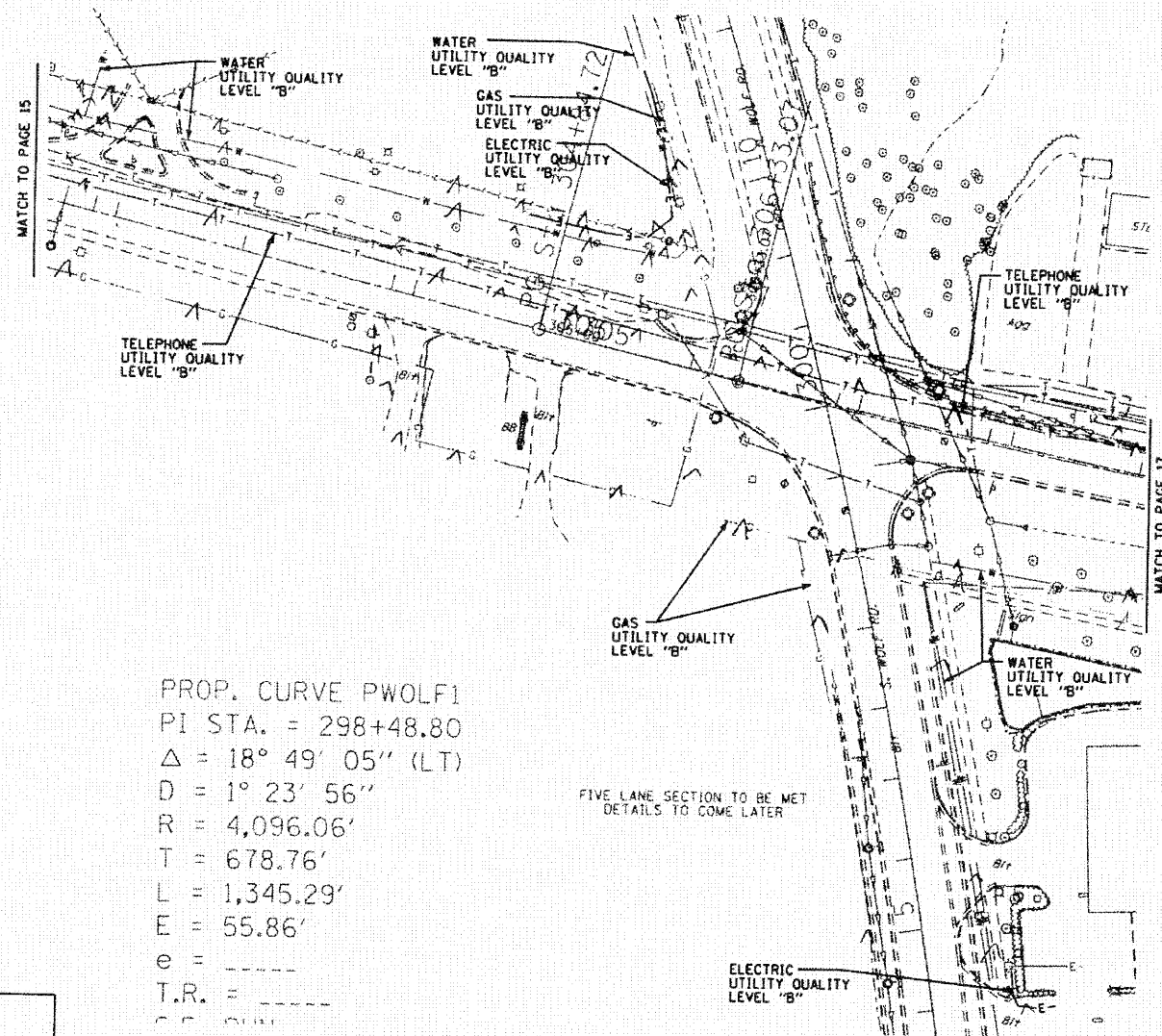
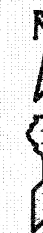
205 W. WACKER DRIVE  
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
US RT. 30 from William Street to Wolf  
Road and US RT. 30 from Wolf Road to US  
RT. 45 in Frankfort, Illinois-  
Wil County  
Contract No: 62479  
Section No.: (12 & 13) WRS-4  
DRAWN BY - KLC  
SCALE : 1" = 50'



SECTION (12 & 13) WRS-3	COUNTY WILL	TOTAL SHEETS NO.	SHEET NO.
STA. TO STA.			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT	



PROP. CURVE PWOLF1  
 PI STA. = 298+48.80  
 $\Delta = 18^\circ 49' 05''$  (LT)  
 $D = 1^\circ 23' 56''$   
 $R = 4,096.06'$   
 $T = 678.76'$   
 $L = 1,345.29'$   
 $E = 55.86'$   
 $e = \text{---}$   
 $T.R. = \text{---}$

FIVE LANE SECTION TO BE MET  
 DETAILS TO COME LATER

—T—T—T	TELEPHONE
—W—W—W	WATER
—G—G—G	GAS
—CTV—CTV—CTV	CABLE TELEVISION
—FO—FO—FO	FIBER OPTIC
—E—E—E	ELECTRIC

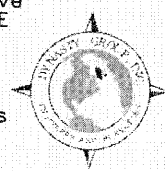


**TBE GROUP, INC.**  
 CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
 • PLANNING • UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
 Checked by: *[Signature]*  
 PAGE 16 OF 25  
 Utility Quality Level "B" : Designating

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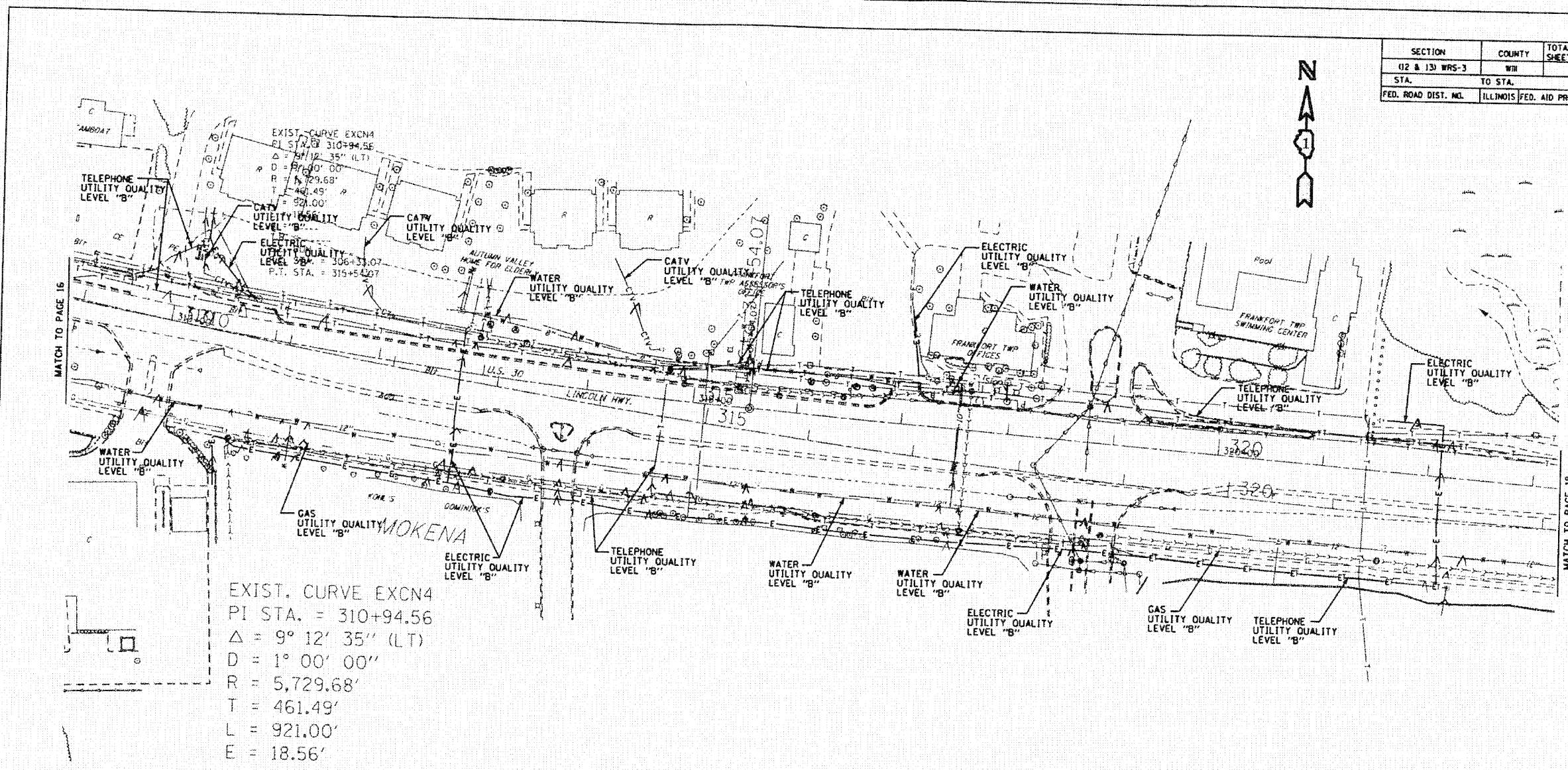


205 W. WACKER DRIVE  
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 US RT. 30 from William Street to Wolf  
 Road and US RT. 30 from Wolf Road to US  
 RT. 45 in Frankfort, Illinois-  
 Will County  
 Contract No: 62479  
 Section No.: (12 & 13) WRS-4  
 DRAWN BY - KLC  
 SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
02 & 131 WRS-3	WILL		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



—T—T—T	TELEPHONE
—W—W—W	WATER
—G—G—G	GAS
—CTV—CTV—CTV	CABLE TELEVISION
—FO—FO—FO	FIBER OPTIC
—E—E—E	ELECTRIC

**TBE GROUP, INC.**  
CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
PLANNING • UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
Checked by: *Sandra Jones*  
PAGE 17 OF 25  
Utility Quality Level "B" : Designating

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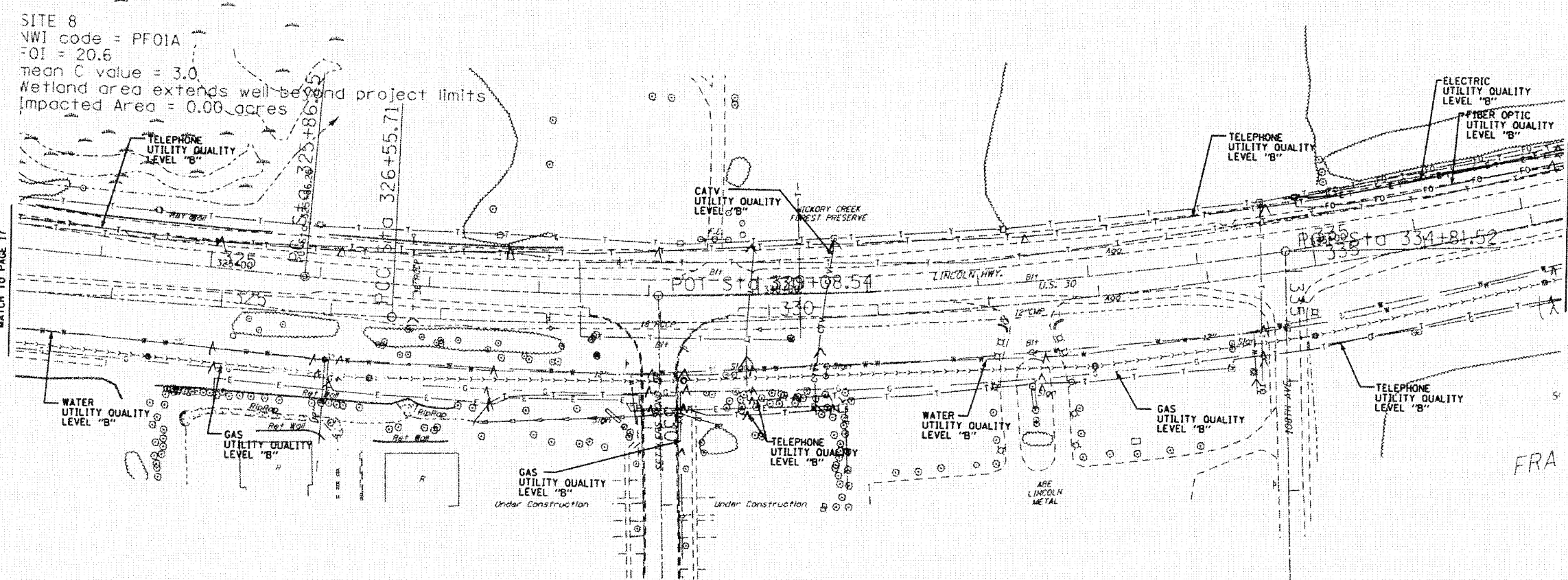
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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
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Contract No: 62479  
Section No.: (12 & 13) WRS-4  
DRAWN BY - KLC  
SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(12 & 13) WRS-3	WIB		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

P.C. STA = 321  
P.T. STA = 35



SITE 8  
WVI code = PF01A  
FOI = 20.6  
mean C value = 3.0  
Wetland area extends well beyond project limits  
Impacted Area = 0.00 acres

—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP**  
TBE GROUP, INC.  
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PLANNING • UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
Checked by: *Sarah Annett*  
PAGE 18 OF 25  
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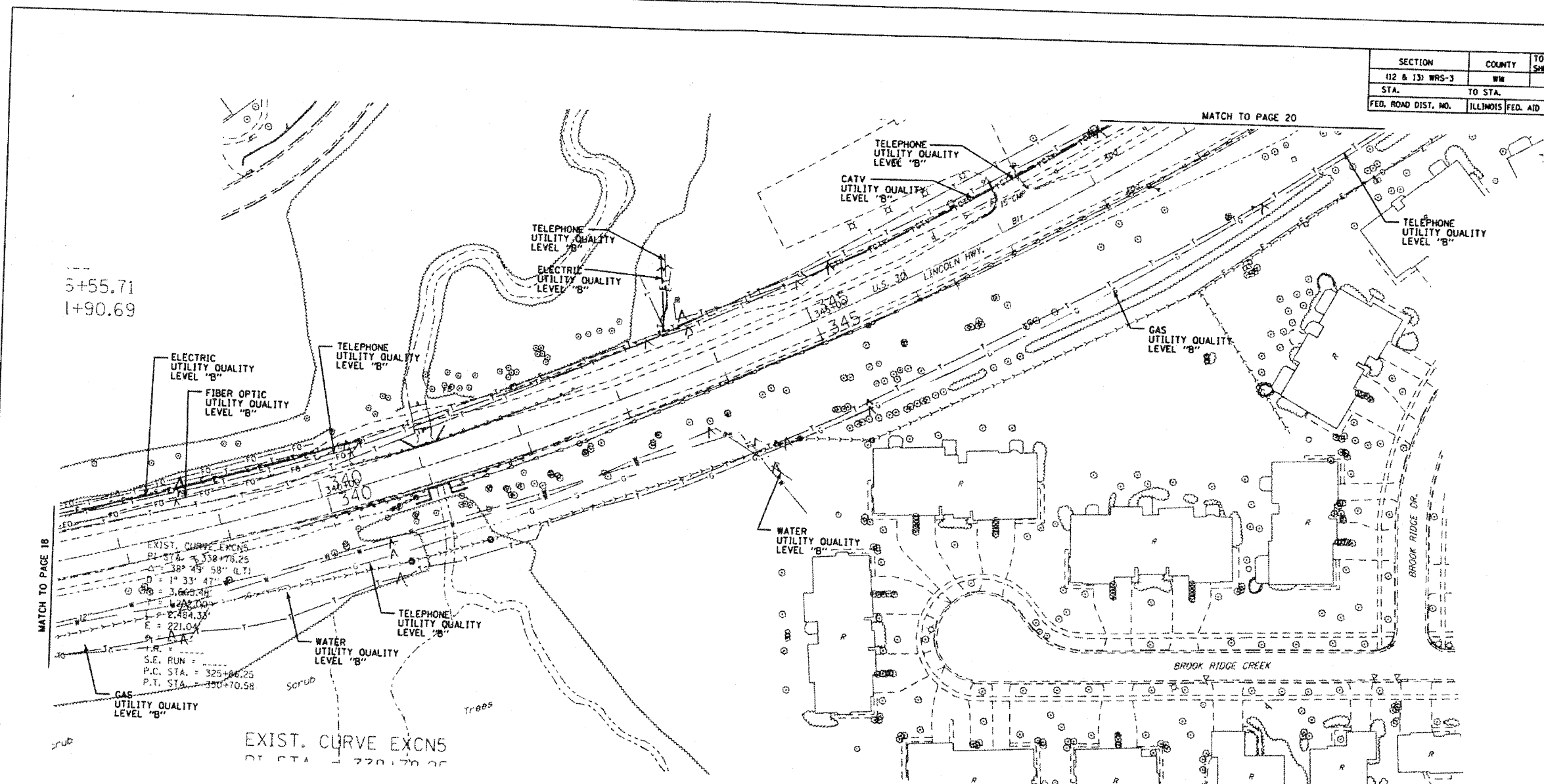


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REVISIONS	
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Contract No: 62479  
Section No. (12 & 13) WRS-4  
DRAWN BY - KLC  
SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(12 & 13) WRS-3	WV		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



EXIST. CURVE EXCNS  
 P.I. STA. = 338+76.25  
 Δ = 38° 49' 58" (LT)  
 D = 1° 33' 47"  
 R = 3,665.76'  
 S.E. RUN = 2,484.32'  
 P.C. STA. = 325+04.25  
 P.T. STA. = 330+70.58

—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
 CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
 PLANNING • UTILITY ENGINEERING LOCATING

IL09500213, 222, 233  
 Checked by: *Sandra [Signature]*  
 PAGE 19 OF 25  
 Utility Quality Level "B" : Designating

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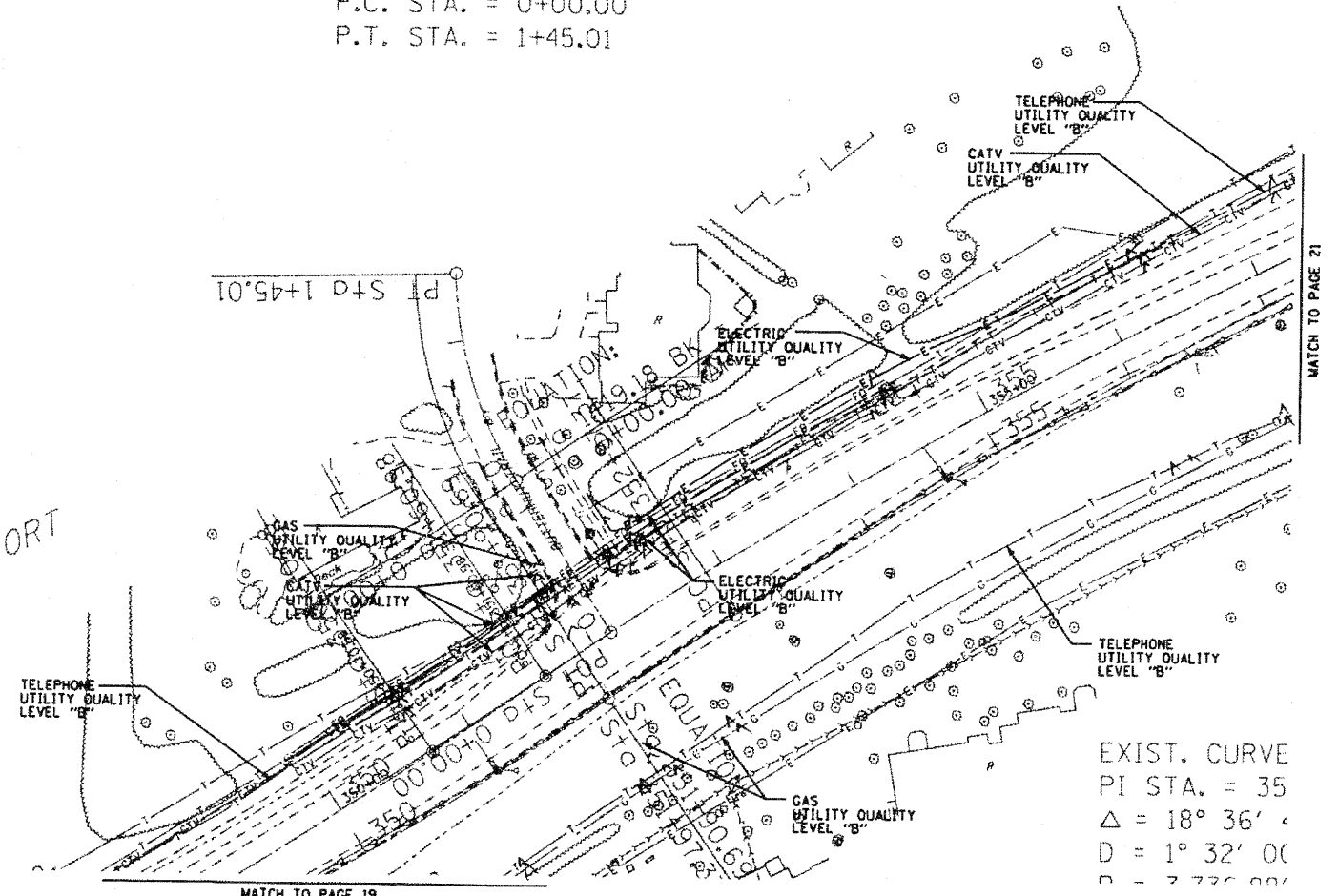
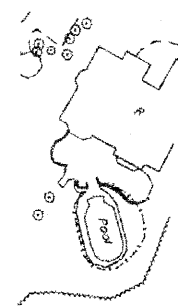
205 W. WACKER DRIVE  
 SUITE 1020  
 CHICAGO, IL 60606  
 (312) 704-1970

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 US RT. 30 from William Street to Wolf Road and US RT. 30 from Wolf Road to US RT. 45 in Frankfort, Illinois - Will County  
 Contract No: 62479  
 Section No.: (12 & 13) WRS-4  
 DRAWN BY - KLC  
 SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
02 & 131 WRS-3	WILL		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

T.R. = -----  
S.E. RUN = -----  
P.C. STA. = 0+00.00  
P.T. STA. = 1+45.01



EXIST. CURVE  
PI STA. = 35  
 $\Delta = 18^\circ 36'$   
 $D = 1^\circ 32' 00''$   
 $R = 7,770.00'$

—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
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PLANNING • UTILITY ENGINEERING • LOCATING

IL09500213, 222, 233  
Checked by: *[Signature]*  
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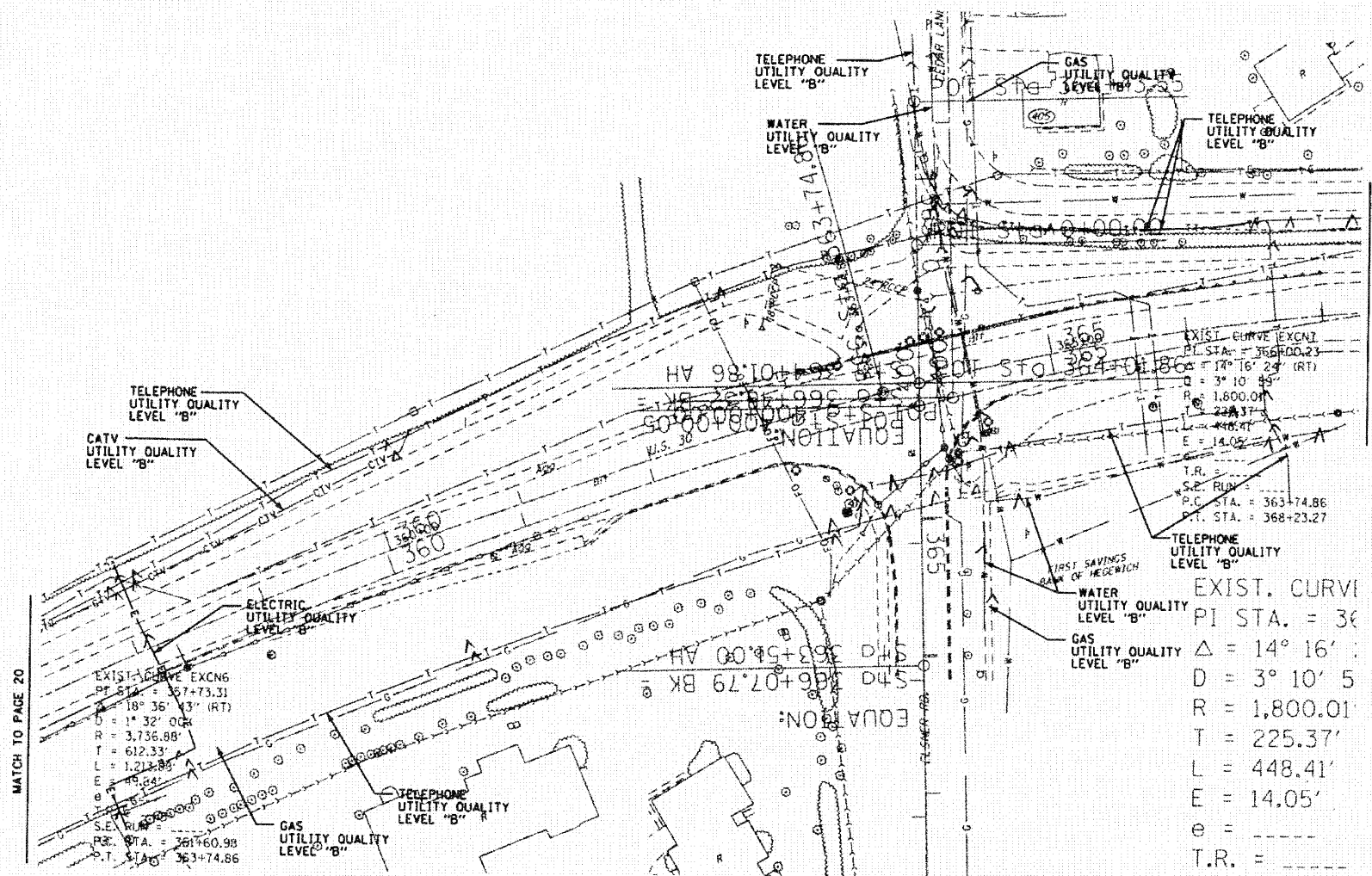


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SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEET
(12 & 13) WRS-3	WIH	SHEETS NO.
STA.	TO STA.	
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT	



— T — T — T	TELEPHONE
— W — W — W	WATER
— G — G — G	GAS
— CTV — CTV — CTV	CABLE TELEVISION
— FO — FO — FO	FIBER OPTIC
— E — E — E	ELECTRIC



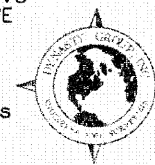
**TBE GROUP, INC.**

CIVIL ENGINEERING • TRANSPORTATION • ENVIRONMENTAL  
PLANNING • UTILITY ENGINEERING/LOCATING

IL09500213, 222, 233  
Checked by: *Sandra K...*  
PAGE 21 OF 25  
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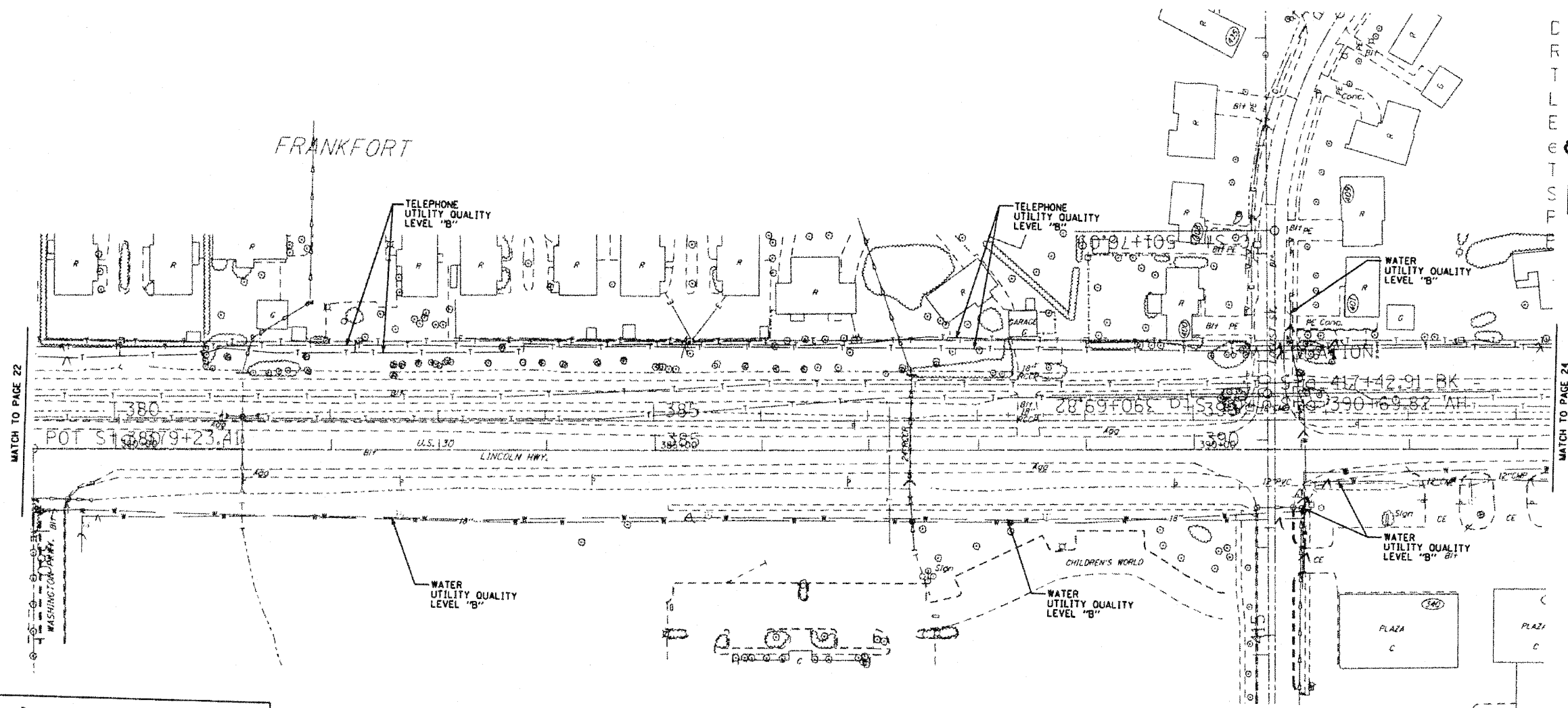
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REVISIONS	
NAME	DATE

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RT. 45 in Frankfort, Illinois-  
Will County  
Contract No: 62479  
Section No.: (12 & 13) WRS-4  
DRAWN BY - KLC  
SCALE : 1" = 50'



SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(12 & 13) WRS-3	WIN		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



—T—T—T—T—T—	TELEPHONE
—W—W—W—W—W—	WATER
—G—G—G—G—G—	GAS
—CTV—CTV—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—FO—FO—	FIBER OPTIC
—E—E—E—E—E—	ELECTRIC

**TBE GROUP, INC.**  
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 PLANNING • UTILITY ENGINEERING/LOCATING  
 IL09500213, 222, 233  
 Checked by: *[Signature]*  
 PAGE 23 OF 25  
 Utility Quality Level "B" : Designating

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205 W. WACKER DRIVE  
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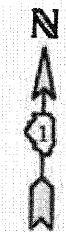
REVISIONS	
NAME	DATE

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 Section No: (12 & 13) WRS-4  
 DRAWN BY - KLC  
 SCALE : 1" = 50'

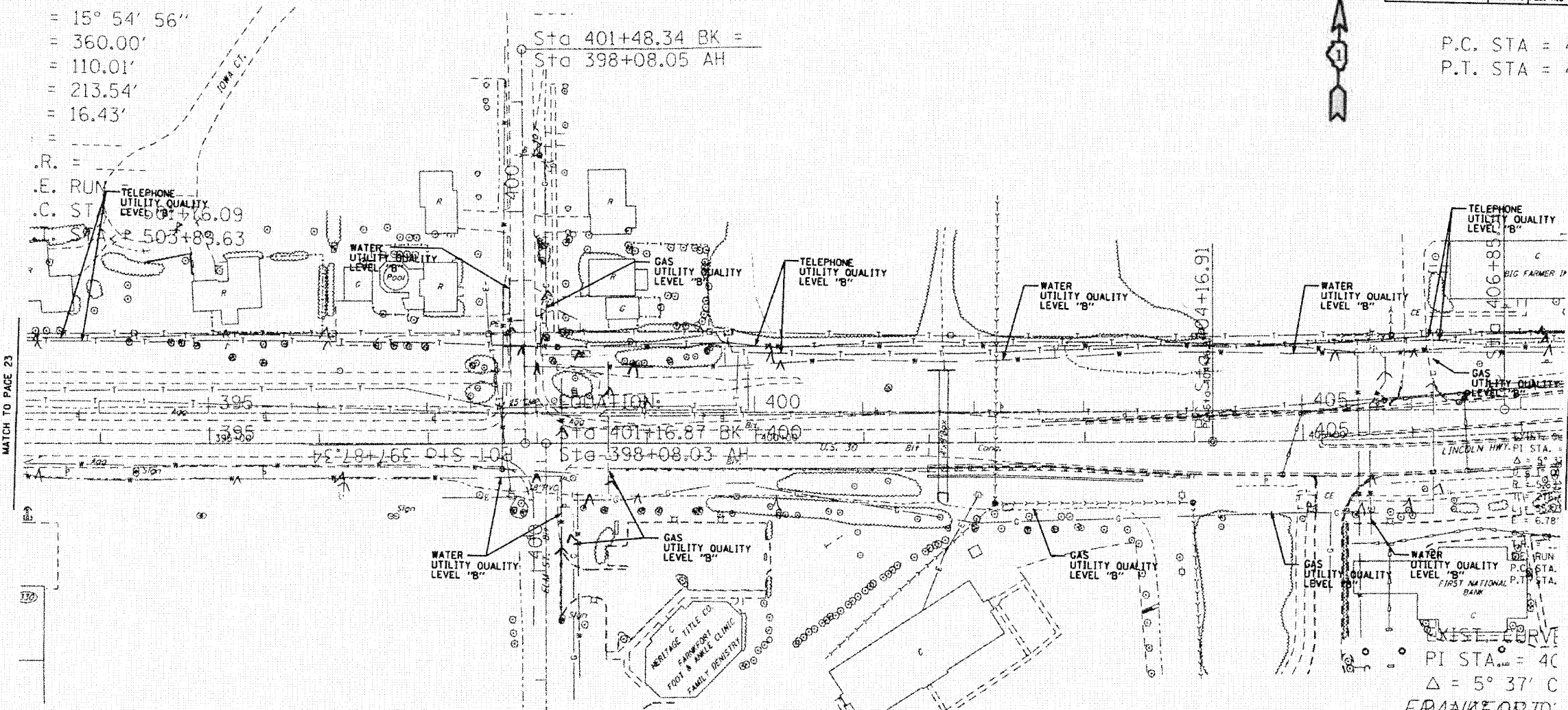
CR  
 L  
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SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(12 & 13) WRS-3	WH		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		



= 15° 54' 56"  
= 360.00'  
= 110.01'  
= 213.54'  
= 16.43'



—T—T—T—	TELEPHONE
—W—W—W—	WATER
—G—G—G—	GAS
—CTV—CTV—CTV—	CABLE TELEVISION
—FO—FO—FO—	FIBER OPTIC
—E—E—E—	ELECTRIC

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CIVIL ENGINEERING \* TRANSPORTATION \* ENVIRONMENTAL  
PLANNING \* UTILITY ENGINEERING/LOCATING

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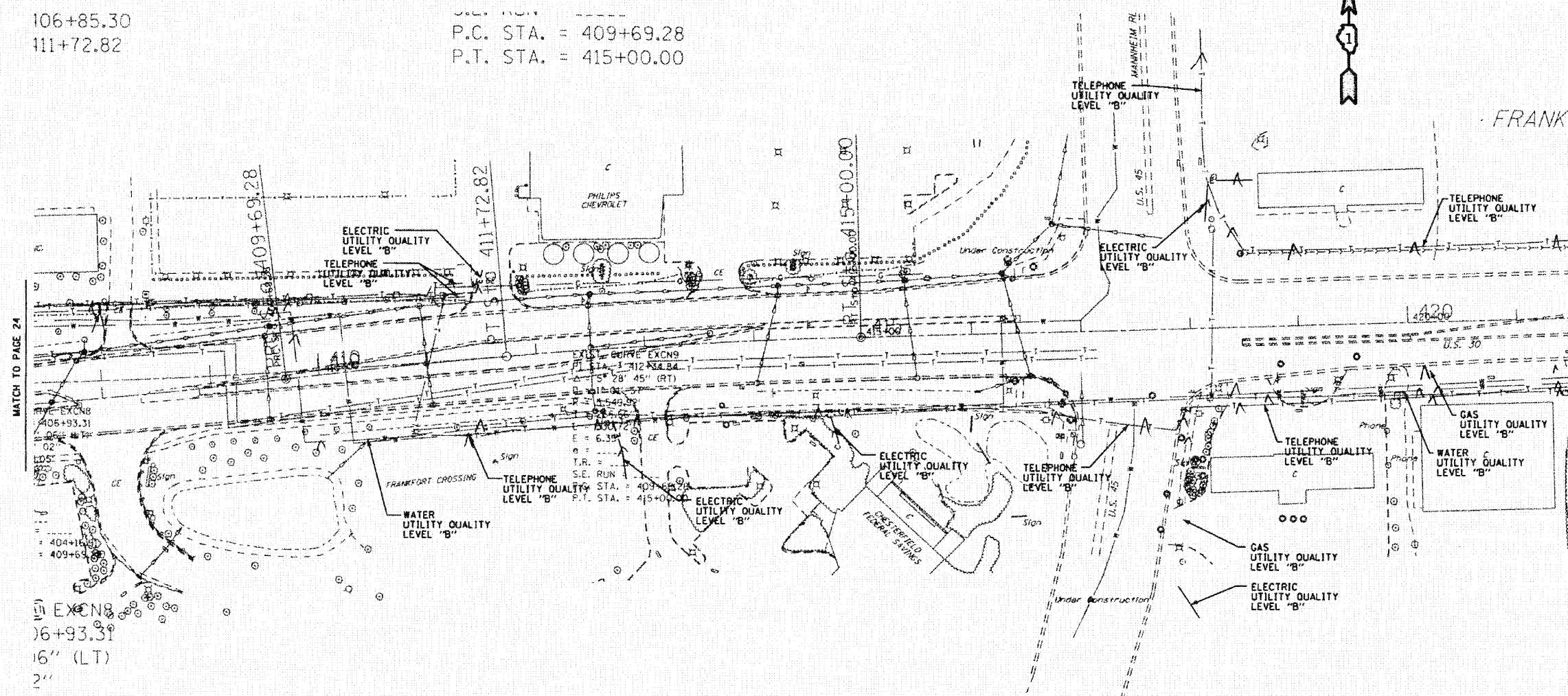
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Section No.: (12 & 13) WRS-4

DRAWN BY - KLC  
SCALE : 1" = 50'

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
02 & 13) WRS-3	WIN		
STA.	TO STA.		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT		

106+85.30  
111+72.82

P.C. STA. = 409+69.28  
P.T. STA. = 415+00.00



MATCH TO PAGE 24

EXCN8  
106+93.31  
16" (LT)  
2"

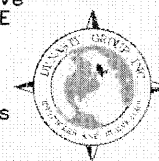
—T—T—T	TELEPHONE
—W—W—W	WATER
—G—G—G	GAS
—CTV—CTV—CTV	CABLE TELEVISION
—FO—FO—FO	FIBER OPTIC
—E—E—E	ELECTRIC

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Section No. 02 & 13) WRS-4  
DRAWN BY - KLC  
SCALE : 1" = 50'

BENCH MARK: BM 204  
 STA. 155+18.11, 54 1/4" RT., EL. 690.723  
 CHISELED SQUARE ON WESTERLY CURB OF  
 ENTRANCE TO CAR QUEST AUTOPARTS

EXISTING STRUCTURE:  
 2'-0" X 2'-0" REINFORCED CONCRETE BOX  
 CULVERT WITH 2" Ø CORRUGATED STEEL  
 PIPE EXTENSIONS, TOTAL LENGTH OF 79'-0".

NO SALVAGE.

PROPOSED IMPROVEMENTS:  
 EXISTING STRUCTURE TO BE REMOVED AND  
 REPLACED WITH A DOUBLE 4'-0" X 2'-0"  
 CONCRETE BOX CULVERT IN STAGES  
 MAINTAINING TWO LANES OF TRAFFIC.

STATION 158+00.00  
 BUILT BY  
 STATE OF ILLINOIS  
 FAP 353 SECT. (12 & 13) WRS-3  
 LOADING HS20  
 STR. NO. 099-C011

**NAME PLATE**  
 NOTE: SEE STANDARD DRAWING 515001  
 FOR NAME PLATE DETAILS.

**DESIGN SPECIFICATIONS**

AASHTO 2002 SPECIFICATIONS  
**LOADING HS20-44**  
 ALLOW 50\*/SQ.FT. FOR FUTURE WEARING SURFACE.  
**DESIGN STRESSES**

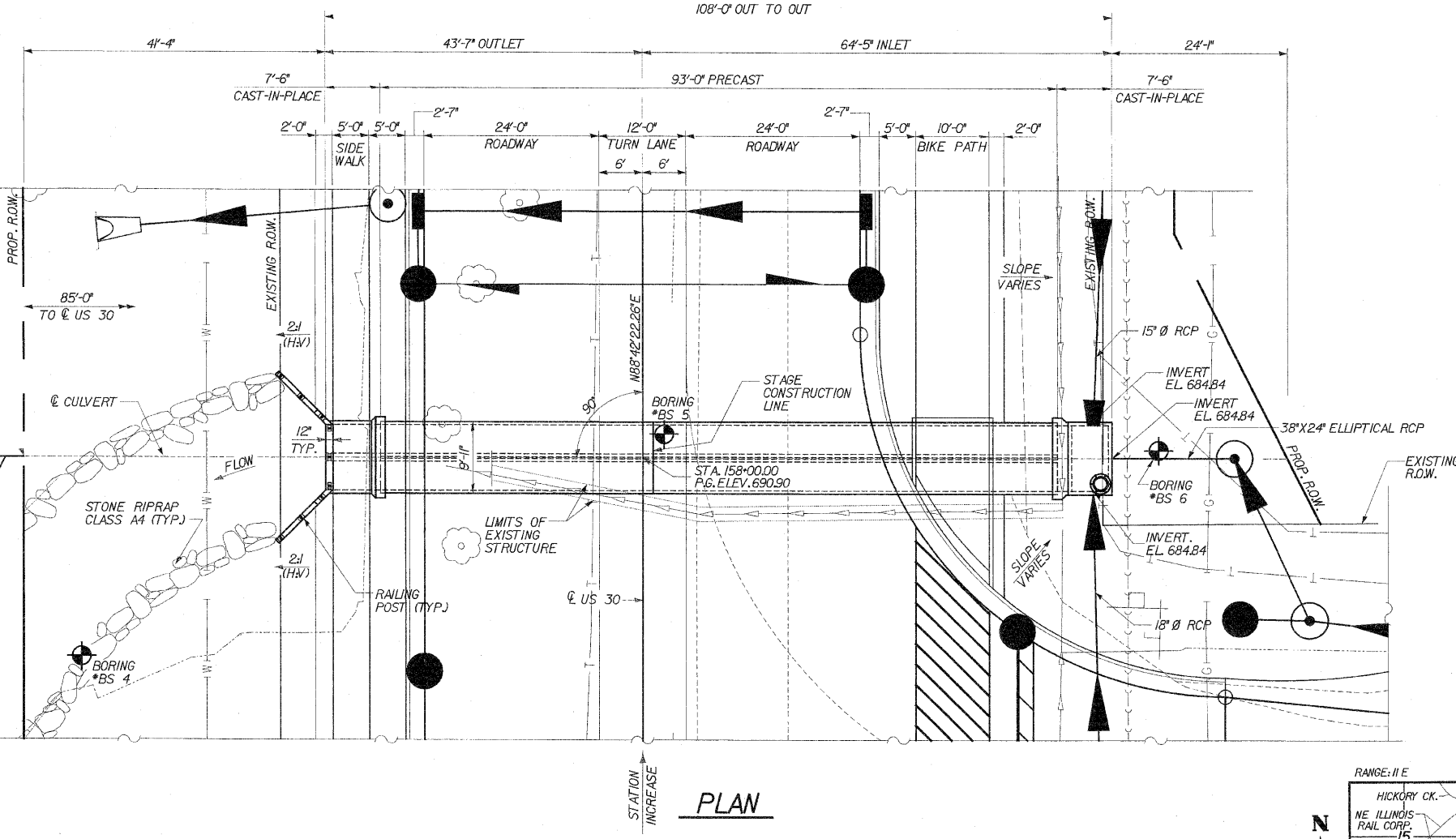
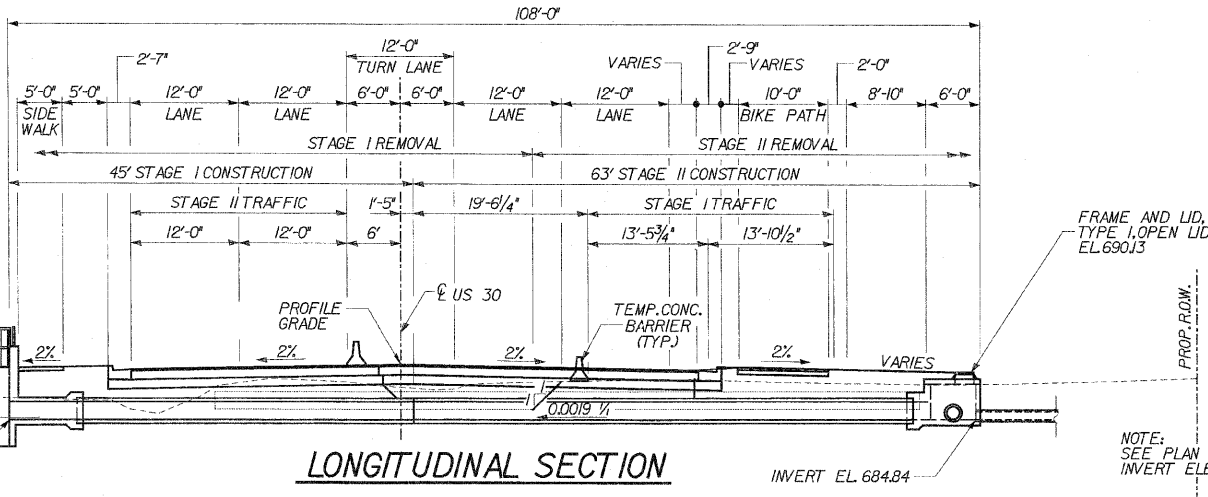
FIELD UNITS  
 f'c = 3,500 PSI  
 fy = 60,000 PSI (REINFORCEMENT)  
 PRECAST UNITS  
 f'c = 5,000 PSI  
 fy = 60,000 PSI (REINFORCEMENT)

**TOTAL BILL OF MATERIALS**

ITEM	UNIT	QUANTITY
STONE RIPRAP, CLASS A4	TON	95
FILTER FABRIC	SQ.YD.	130
REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1
REINFORCEMENT BARS	POUND	3,024
PARAPET RAILING	FOOT	29
NAME PLATES	EACH	1
CONCRETE BOX CULVERTS	CU. YD.	17.6
PRECAST CONCRETE BOX CULVERT 4' x 2'	FOOT	186.0
FRAMES AND LIDS, TYPE 1, OPEN LID	EACH	1

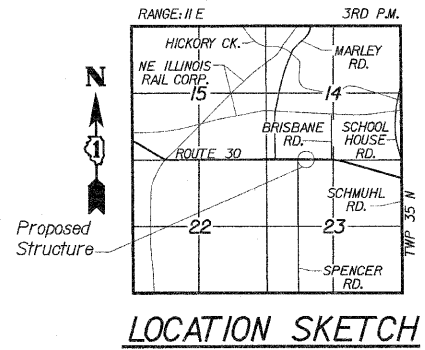
**GENERAL NOTES**

1. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR60, SEE SPECIAL PROVISIONS.
2. CAST-IN-PLACE BARREL SHALL BE POURED MONOLITHICALLY WITH WINGWALLS.
3. EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER.
4. IN ACCORDANCE WITH ARTICLE 540.04 OF THE STANDARD SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DIVERT STREAM 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 "REMOVAL OF EXISTING STRUCTURES NO. 2." CLEAN FILL (GRANULAR) MATERIAL WILL ONLY BE ALLOWED.
5. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M259 (DESIGN FILL HEIGHT - 3'-0").
6. THE CONTRACTOR SHALL PREPARE IN-STREAM WORK PLANS (ALL COFFERDAMS, WORK PADS, AND EROSION AND SEDIMENT CONTROL, ETC.) AND SUBMIT TO THE ENGINEER AND THE U.S. ARMY CORP OF ENGINEERS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHOULD EXPECT TO HAVE TO ATTEND MEETINGS AT THE USACE OFFICE TO DISCUSS THEIR WORK PLAN IN ORDER TO SECURE THEIR PERMIT. THE COST OF ALL IN-STREAM WORK ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



**WATERWAY INFORMATION**

DRAINAGE AREA (SQ. MI) = 0.068		LOW GRADE ELEV. (FEET) EXIST = 689J5 @ STA. 158-38		MAX. RECORDED H.W.E. =						
		PROPOSED = 69074 @ STA. 158-34								
FLOOD	FREQ. YR.	DISCHARGE C.F.S.	WATERWAY OPENING		NATURAL H.W.E.		CREATED HEAD		HEADWATER ELEVATION	
			EXISTING (square feet)	PROPOSED (square feet)	EXISTING U/S FACE	PROPOSED U/S FACE	EXISTING (feet)	PROPOSED (feet)	EXISTING	PROPOSED
OVERTOPPING (EX)	6	21	150	1016	686.97	686.11	2.18	0.24	689J5	686.35
	10	38	210	1016	687.27	686.11	2.04	0.24	689.31	686.35
DESIGN	50	74	2.87	13.76	687.72	686.56	1.70	0.58	689.42	687.14
BASE	100	92	3.07	15.12	687.89	686.73	1.57	0.83	689.46	687.56
OVERTOPPING (PP)	375	167		16.00	687.29	687.29	3.45		690.74	690.74
MAX. CALC.	500	202	3.14	16.00	688.66	687.50	1.00	3.52	689.66	691.02



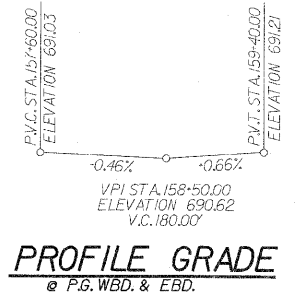
**DLZ** 85 W. Algonquin Rd., Ste. 220  
 Arlington Heights, IL 60005

**CULVERT 'B'**  
**GENERAL PLAN**  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 158+00.00  
 WILL COUNTY  
 STRUCTURE NUMBER 099-C011

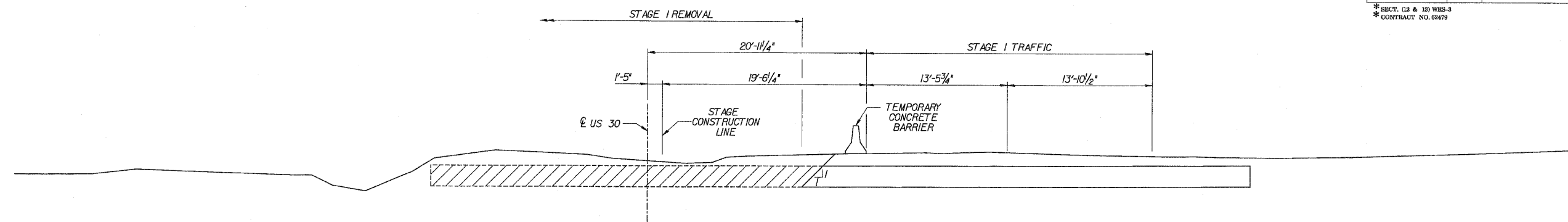
REVISIONS

NAME	DATE

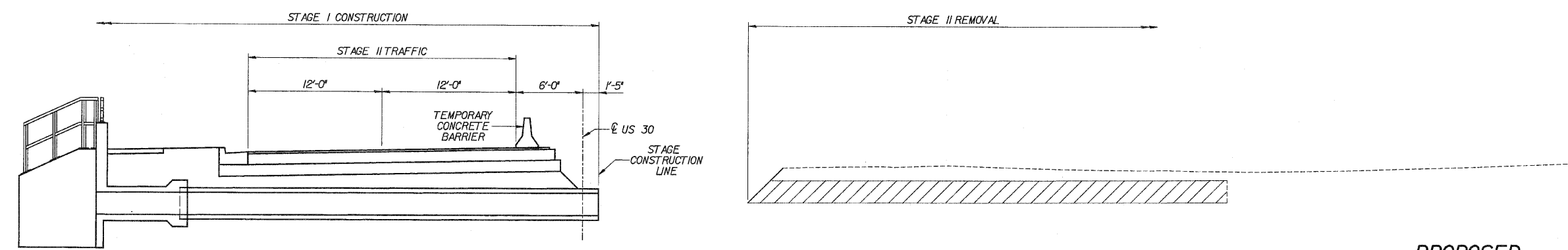
DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP



\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 68479



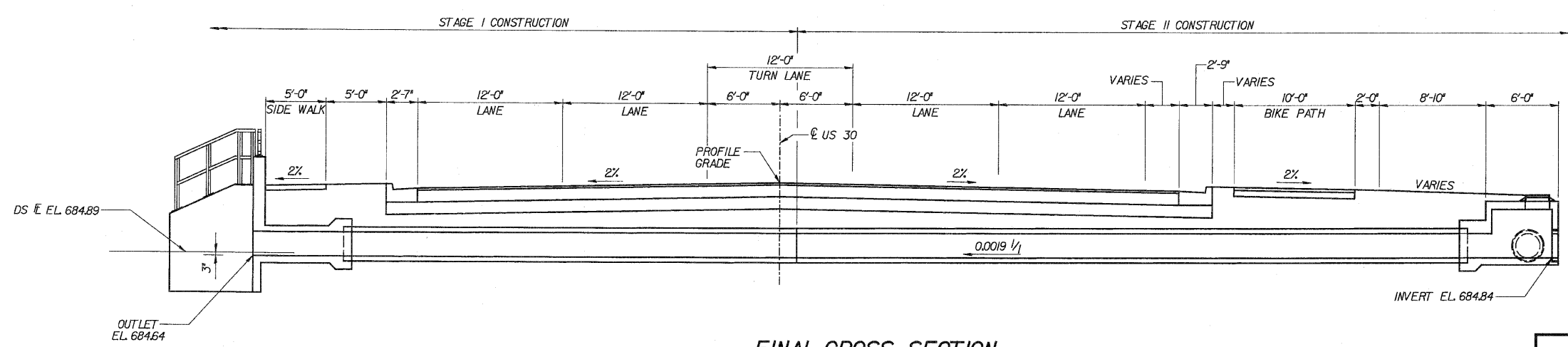
**STAGE I**



**STAGE II**

**PROPOSED  
STAGE PLANNING**

- STAGE I REMOVAL & CONSTRUCTION**
1. MAINTAIN TWO (2) LANES OF TRAFFIC.
  2. INSTALL TEMPORARY CONCRETE BARRIER.
  3. PERFORM STAGE I REMOVAL.
  4. CONSTRUCT STAGE I PORTION OF THE STRUCTURE.
  5. CONSTRUCT ROADWAY PAVEMENT.
- STAGE II REMOVAL & CONSTRUCTION**
1. INSTALL TEMPORARY CONCRETE BARRIER.
  2. PERFORM STAGE II REMOVAL.
  3. CONSTRUCT STAGE II PORTION OF THE STRUCTURE.
  4. CONSTRUCT ROADWAY PAVEMENT.



**FINAL CROSS SECTION**

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

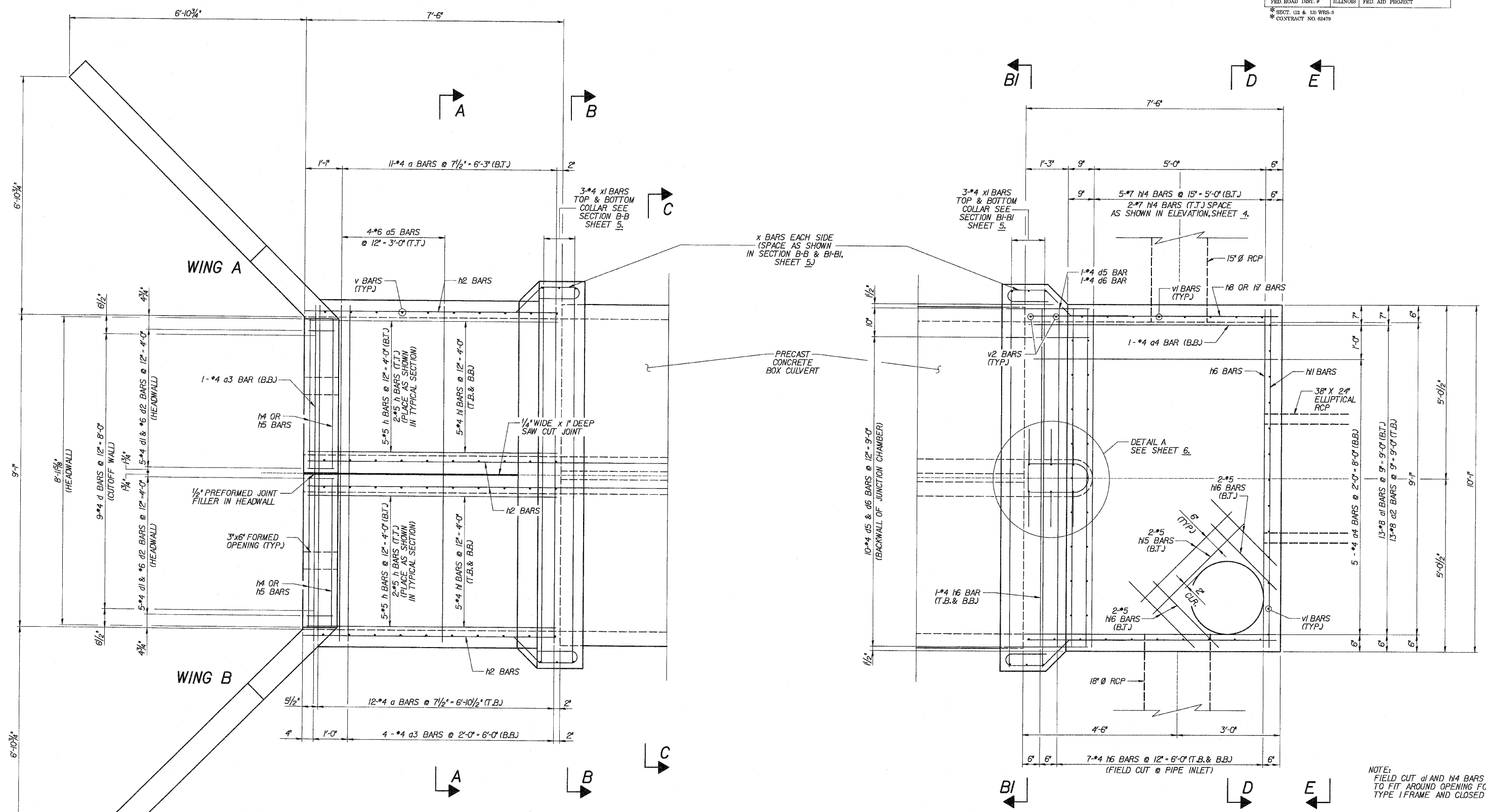
**LEGEND**  
 REMOVAL OF EXISTING STRUCTURES

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'B'**  
**PROPOSED STAGE PLANNING**  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 158+00.00  
 WILL COUNTY  
 STRUCTURE NUMBER 099-C011

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	621
FED. ROAD DIST. #	ILLINOIS	FED. AID PROJECT		
* SECT. 12 & 13 WRS-3				
* CONTRACT NO. 62479				



DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

PLAN

**LEGEND**

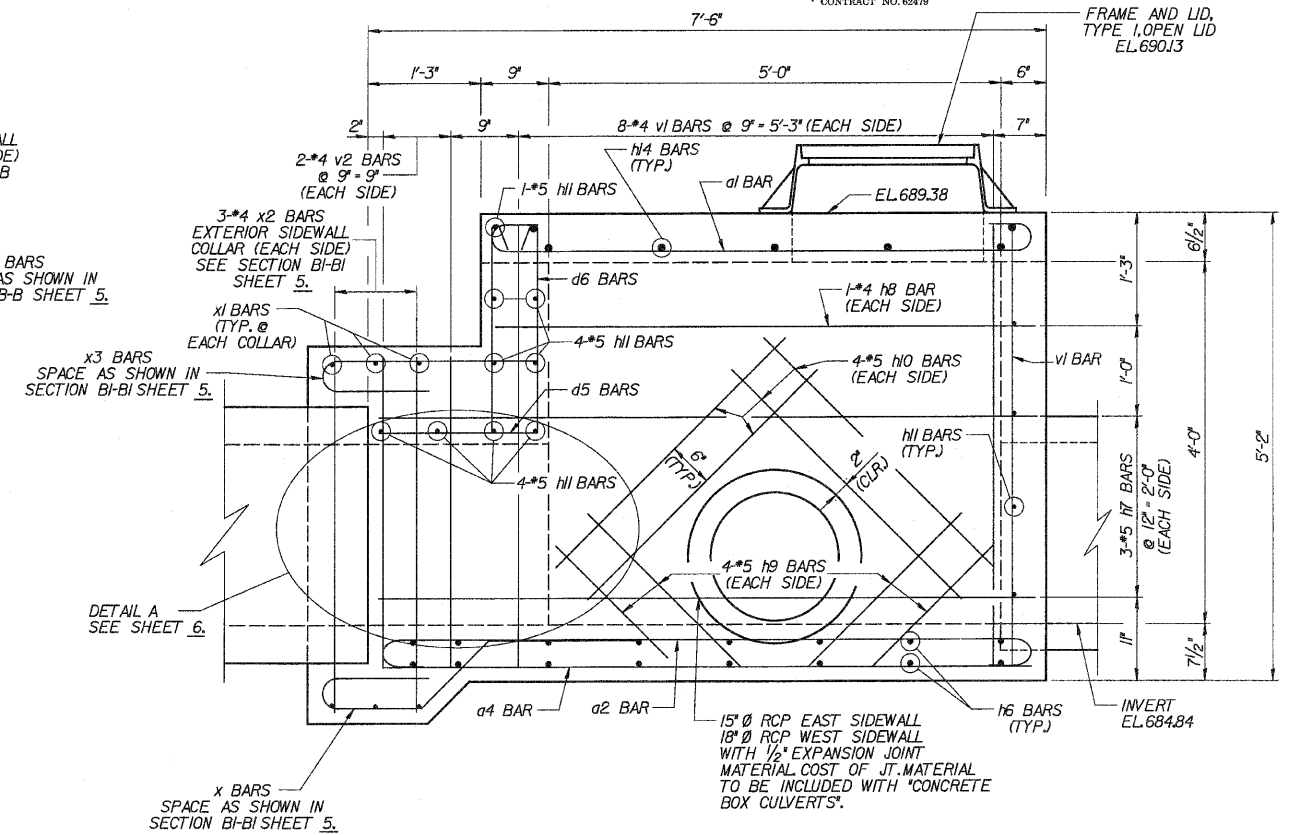
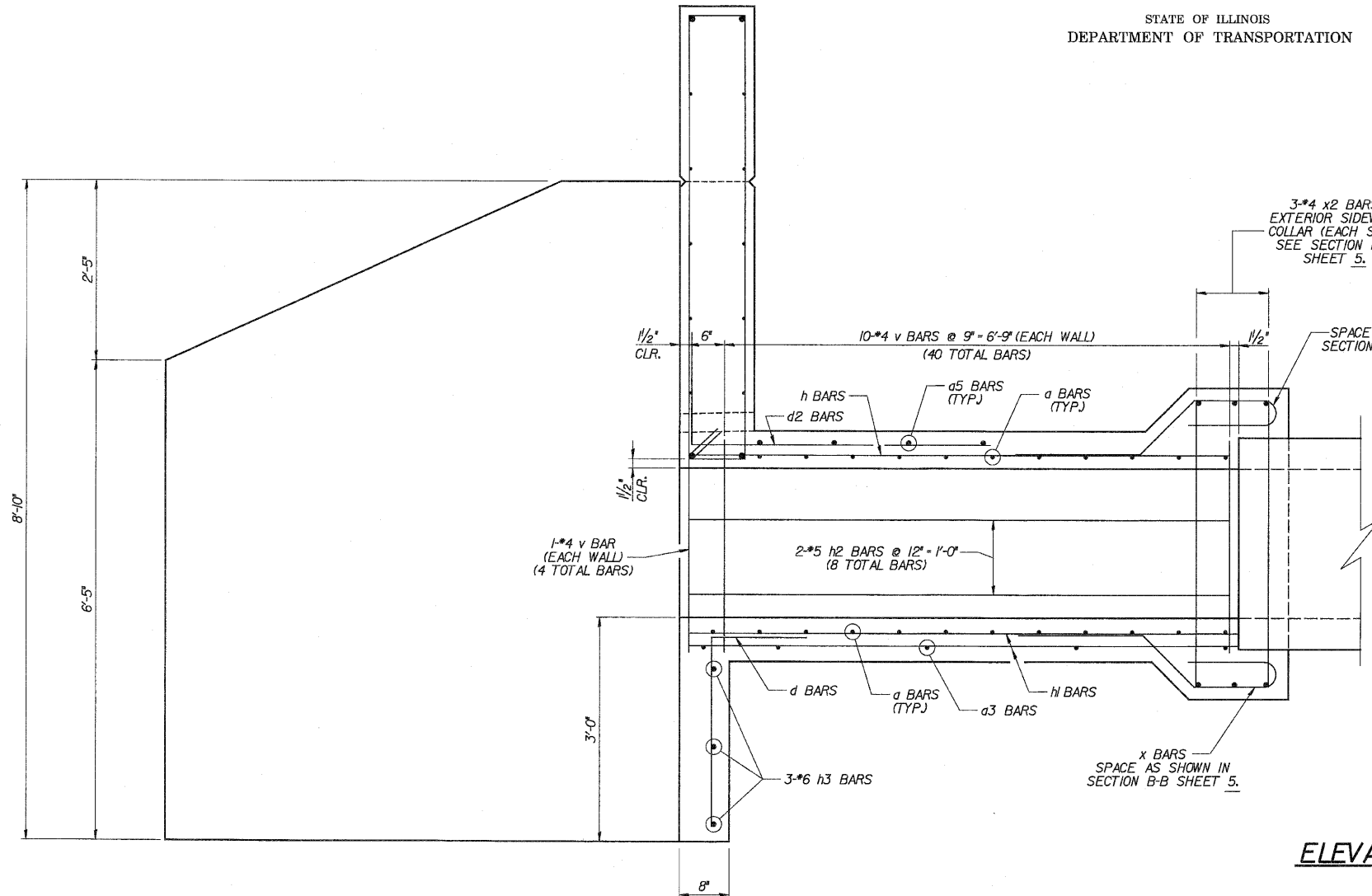
T.J. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

NOTE:  
FIELD CUT #1 AND #4 BARS  
TO FIT AROUND OPENING FOR  
TYPE I FRAME AND CLOSED LID.

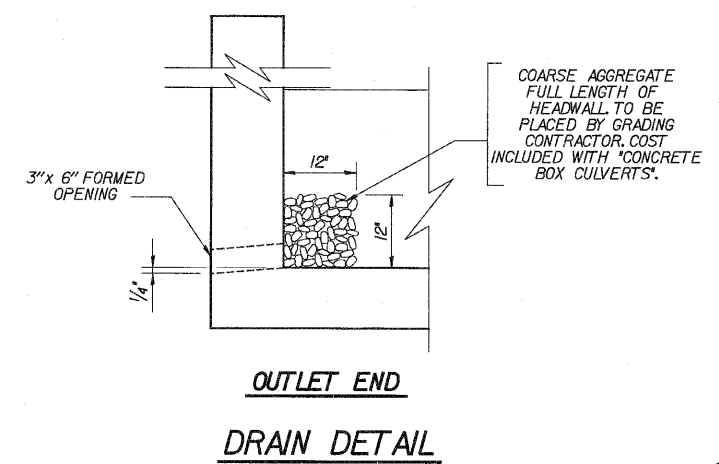
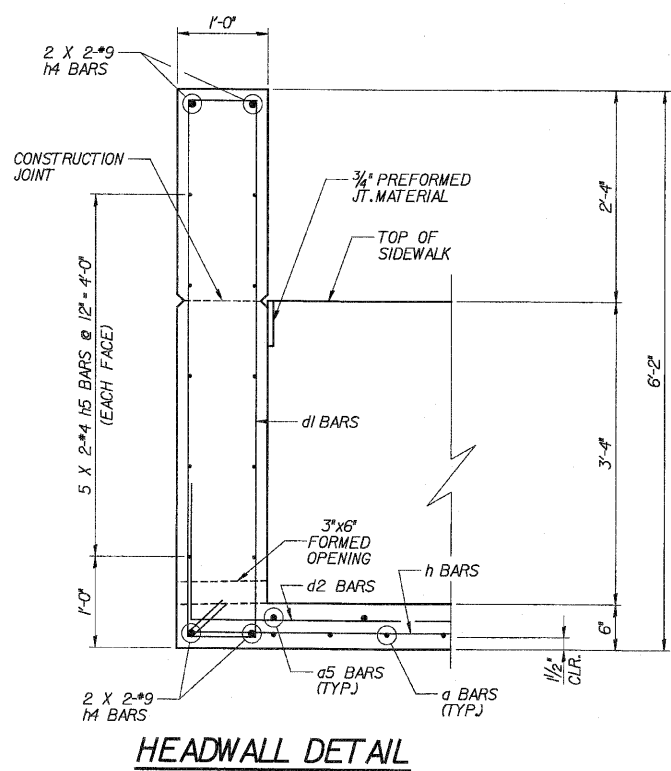
**CULVERT 'B'**  
**END SECTION PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 158+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C011

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ARLINGTON HEIGHTS, IL 60005  
DLZ Illinois, Inc.

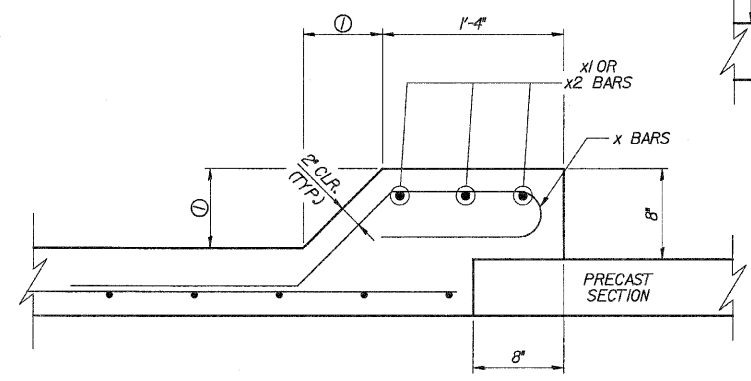
REVISIONS	
NAME	DATE



NOTE:  
FIELD CUT #6 AND #7 BARS  
TO FIT AROUND OPENING FOR PIPE.



COARSE AGGREGATE  
FULL LENGTH OF  
HEADWALL TO BE  
PLACED BY GRADING  
CONTRACTOR. COST  
INCLUDED WITH "CONCRETE  
BOX CULVERTS".



① TOP SLAB - 7"  
BOTTOM SLAB - 6"  
SIDEWALLS - 7"  
BOTTOM SLAB, JUNCTION CHAMBER - 5 1/2"

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

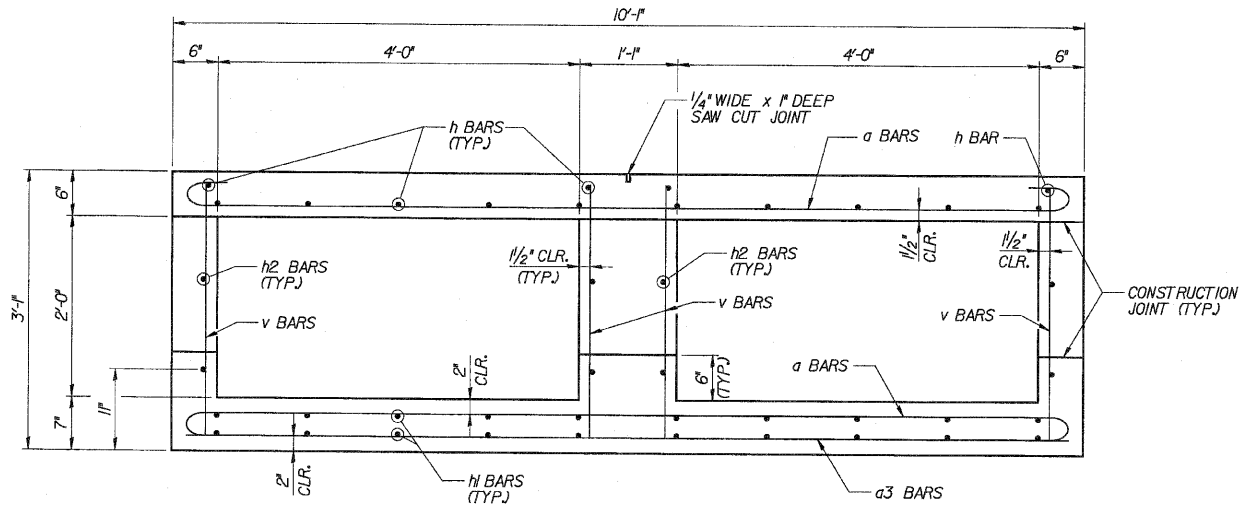
NOTE:  
BARS INDICATED THUS 5 X 2 - #4, etc.  
INDICATES 5 LINES OF BARS WITH 2  
LENGTHS PER LINE.

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

REVISIONS	
NAME	DATE

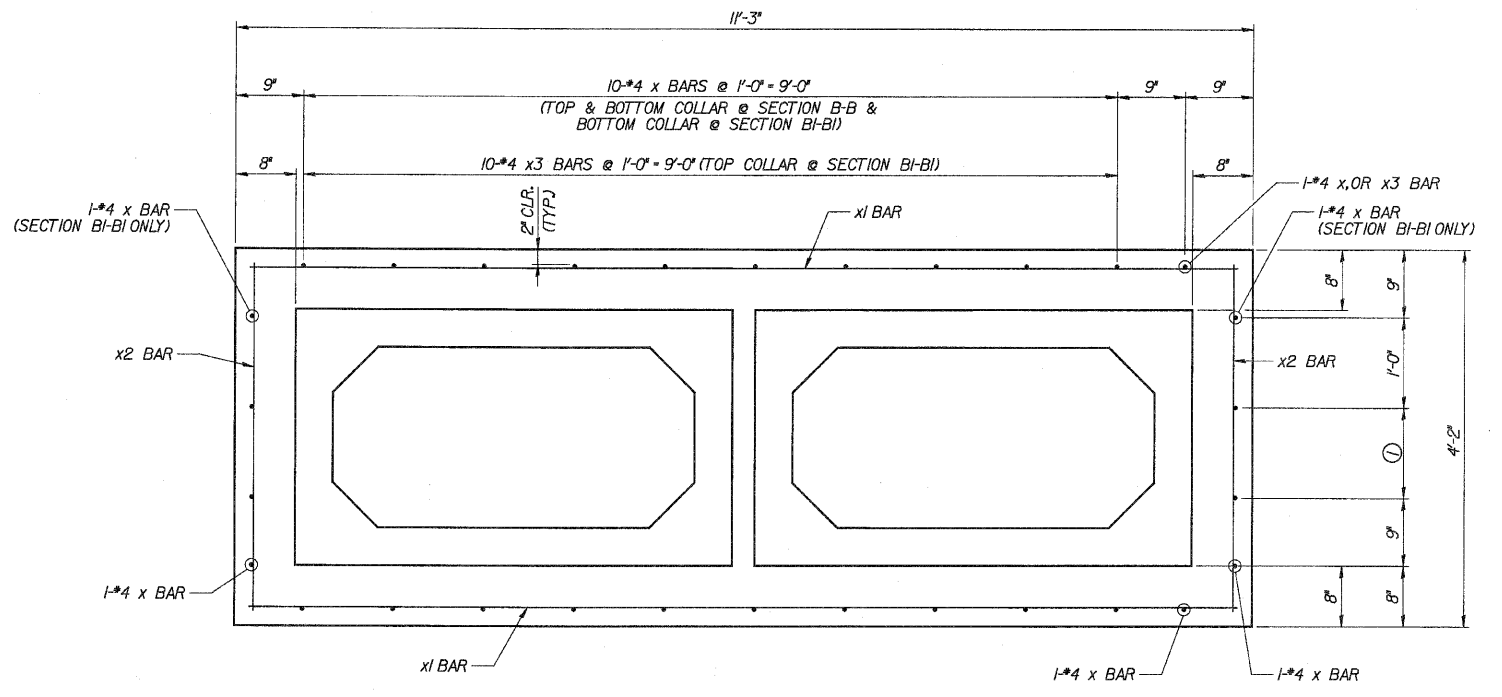
**CULVERT 'B'**  
**END SECTION ELEVATION**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 158+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C011

\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 62479



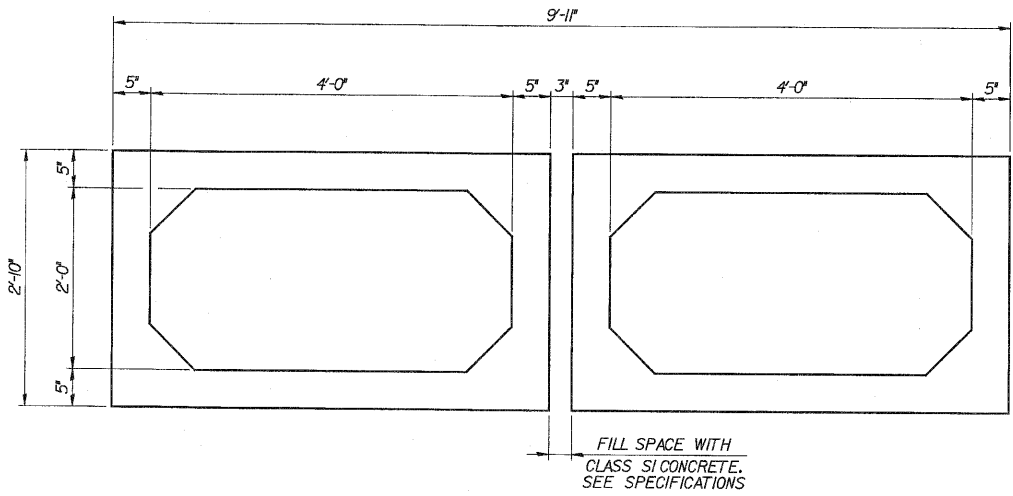
**CAST-IN-PLACE TYPICAL SECTION**  
**SECTION A-A**

NOTE:  
TILT HOOK BARS IN TOP AND BOTTOM SLAB TO PROVIDE REQUIRED CLEARANCE.



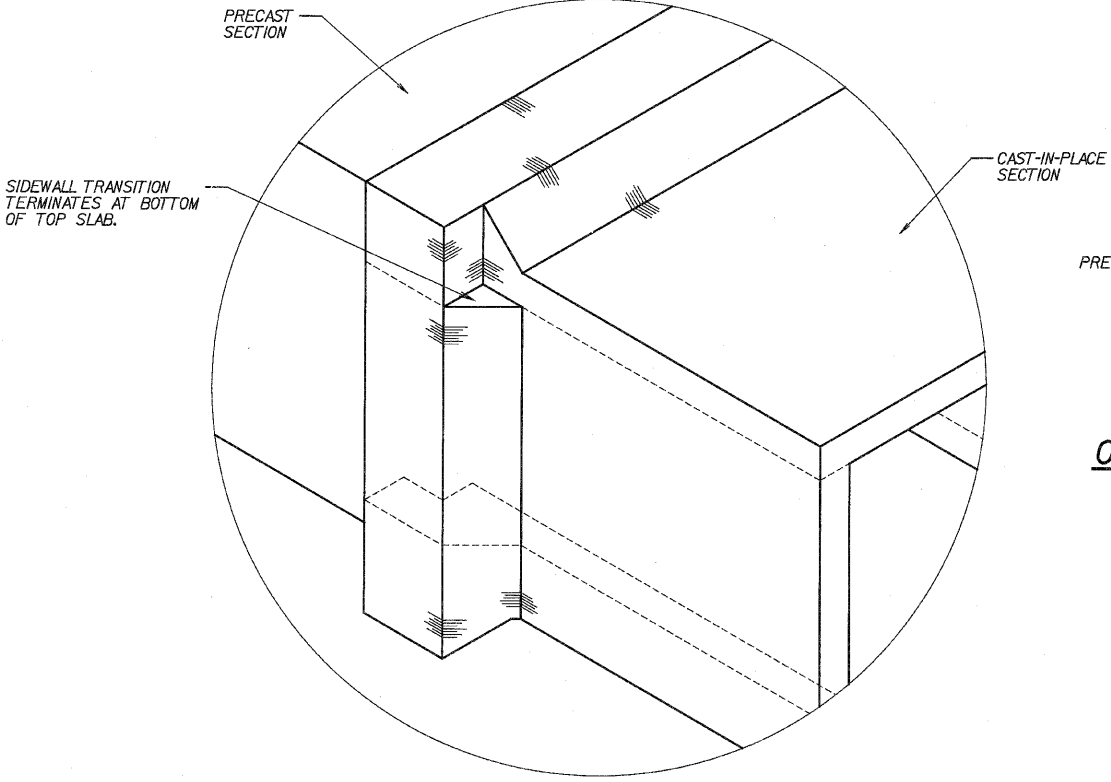
**PRECAST TO CAST-IN-PLACE CONNECTION COLLAR**  
**SECTION B-B & BI-BI**

① 2 #4 x BARS @ 1'-0" @ SECTION B-B & BI-BI.

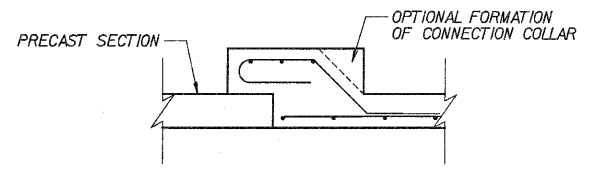


**PRECAST TYPICAL SECTION**  
**SECTION C-C**

NOTE:  
CLASS SI CONCRETE TO BE POURED BETWEEN PRECAST SECTIONS PRIOR TO FORMING AND POURING OF CAST-IN-PLACE END SECTIONS.



**ISOMETRIC VIEW OF CONNECTION COLLAR**



**OPTIONAL PRECAST TO CAST-IN-PLACE CONNECTION COLLAR**

NOTE:  
ADDITIONAL CONCRETE USED FOR THE OPTIONAL COLLAR FORMATION WILL BE PROVIDED AT THE CONTRACTOR'S EXPENSE.

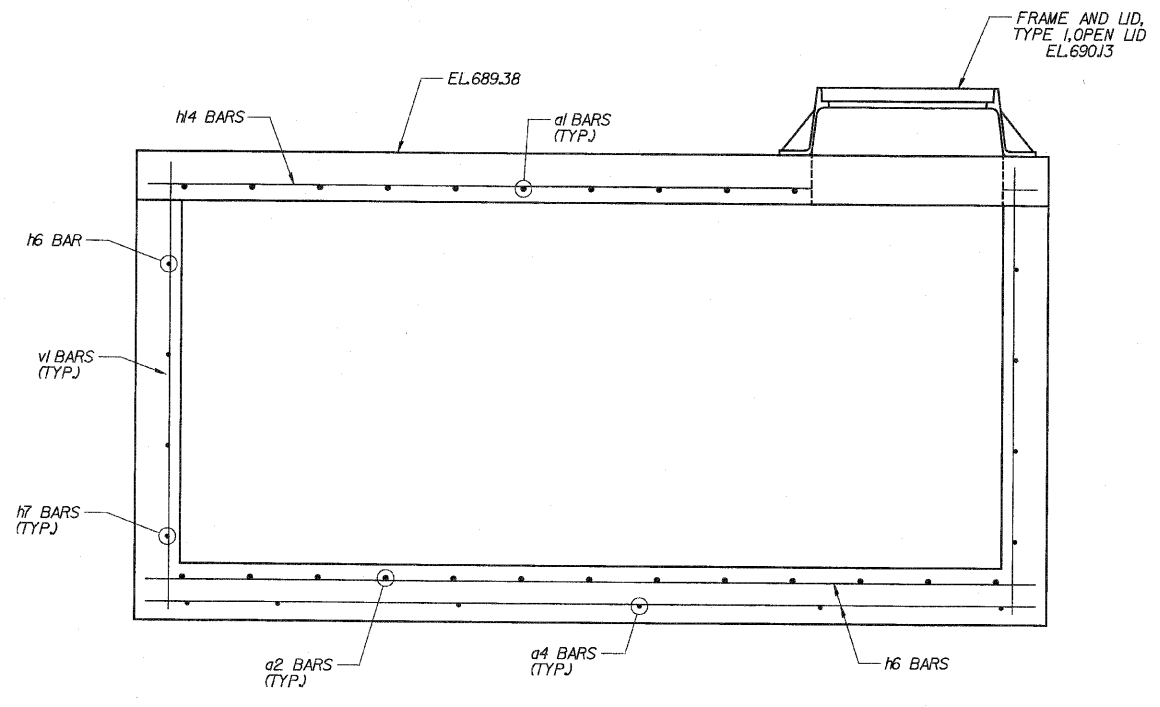
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

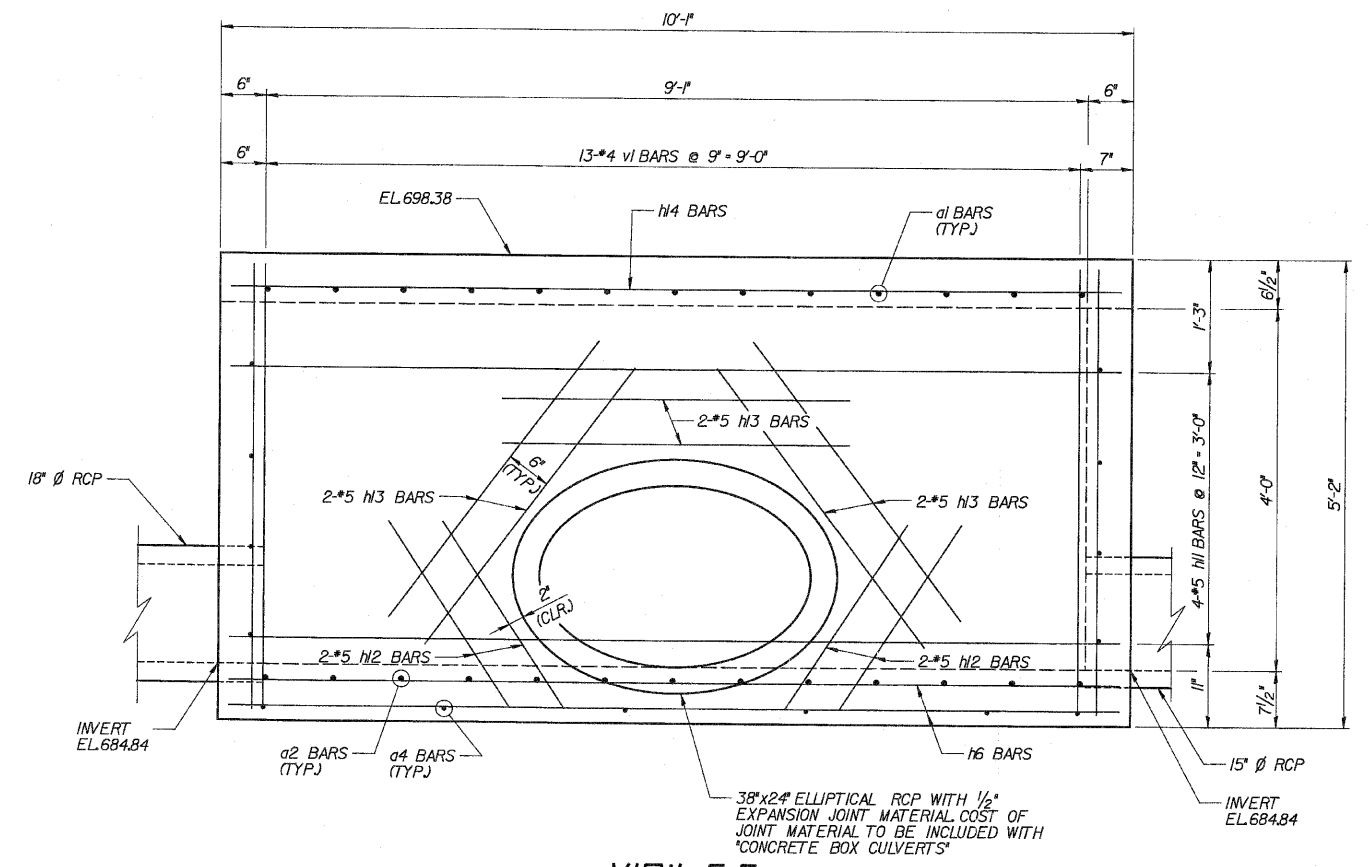
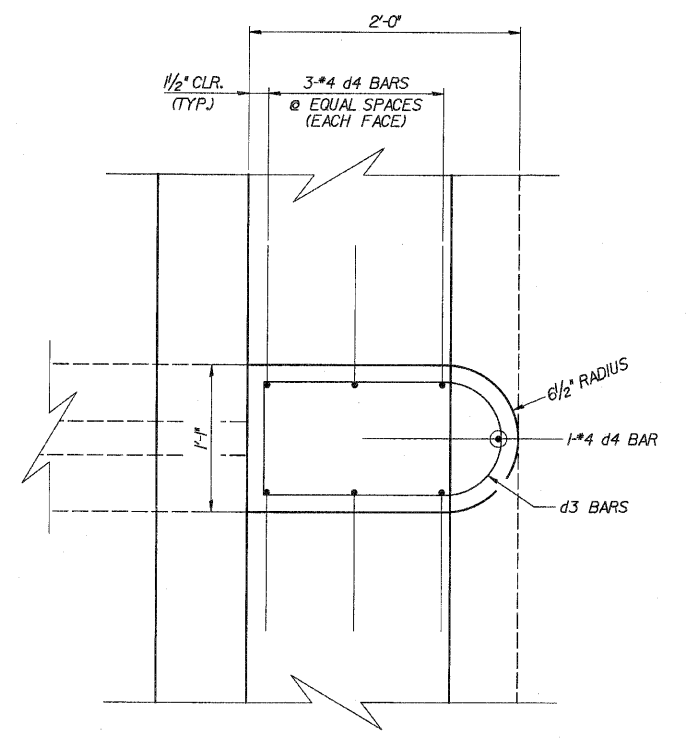
REVISIONS	
NAME	DATE

**CULVERT 'B'**  
**TYPICAL SECTION**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 158+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C011

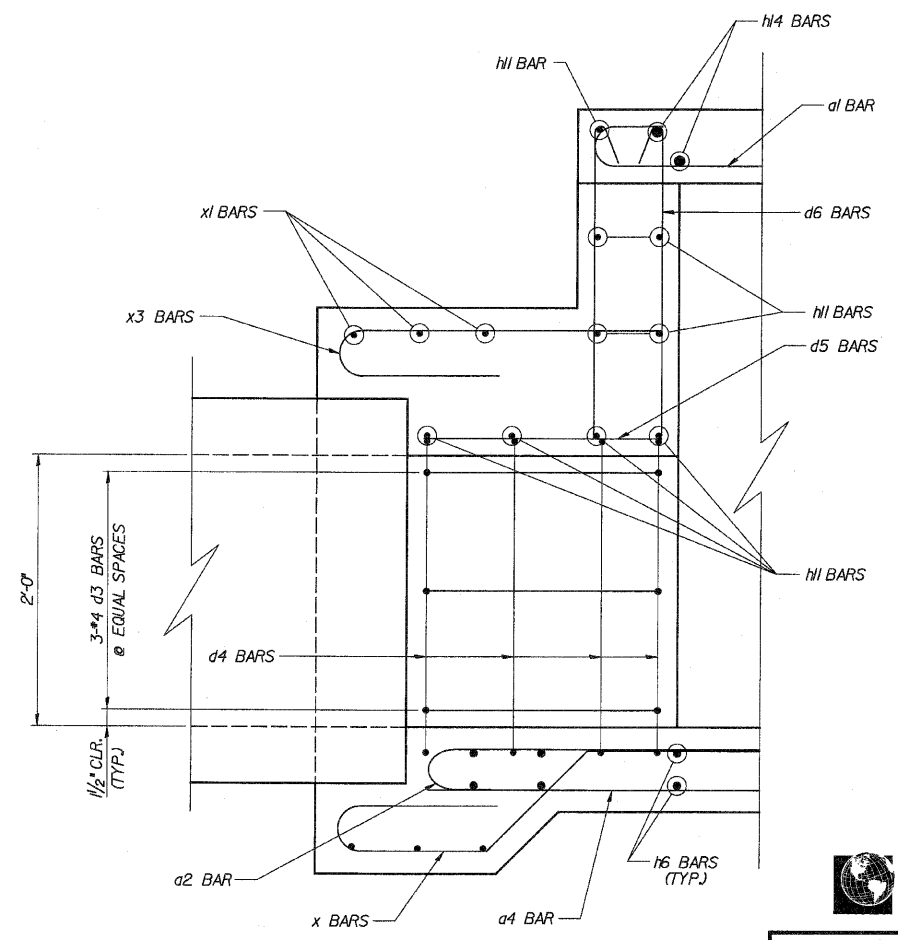
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	624
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	



**SECTION D-D**



**VIEW E-E**



**DETAIL A**

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

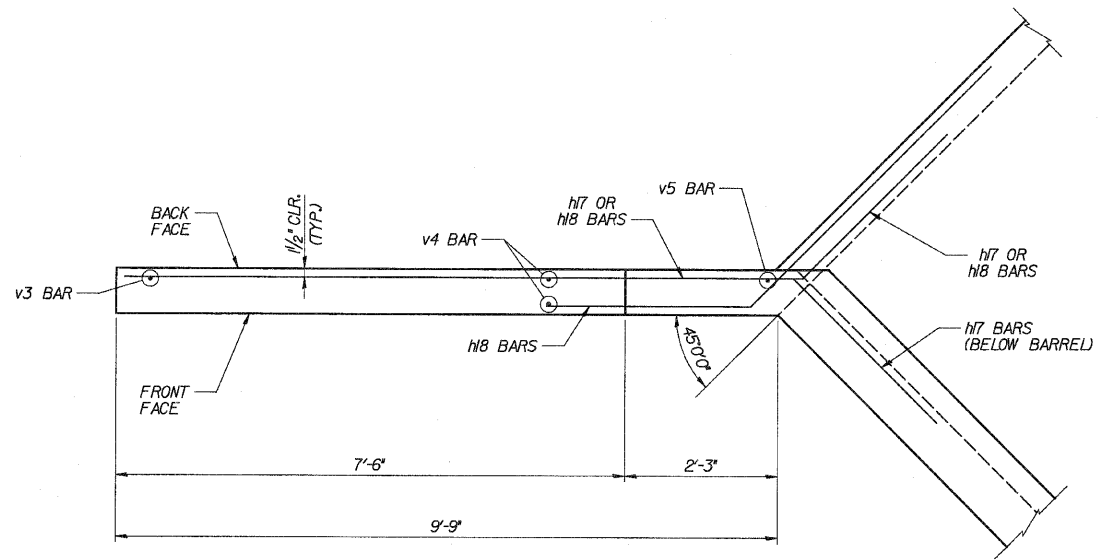
NOTE:  
FIELD CUT #11 AND #16 BARS  
TO FIT AROUND OPENING FOR PIPE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

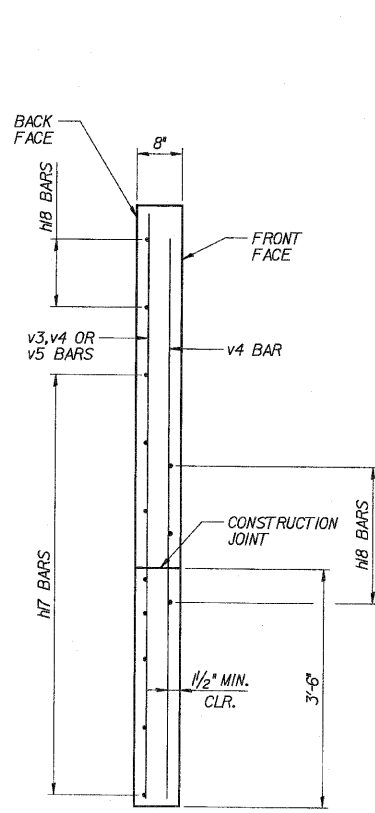
**CULVERT 'B'**  
**JUNCTION CHAMBER DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 158+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C011

REVISIONS	
NAME	DATE

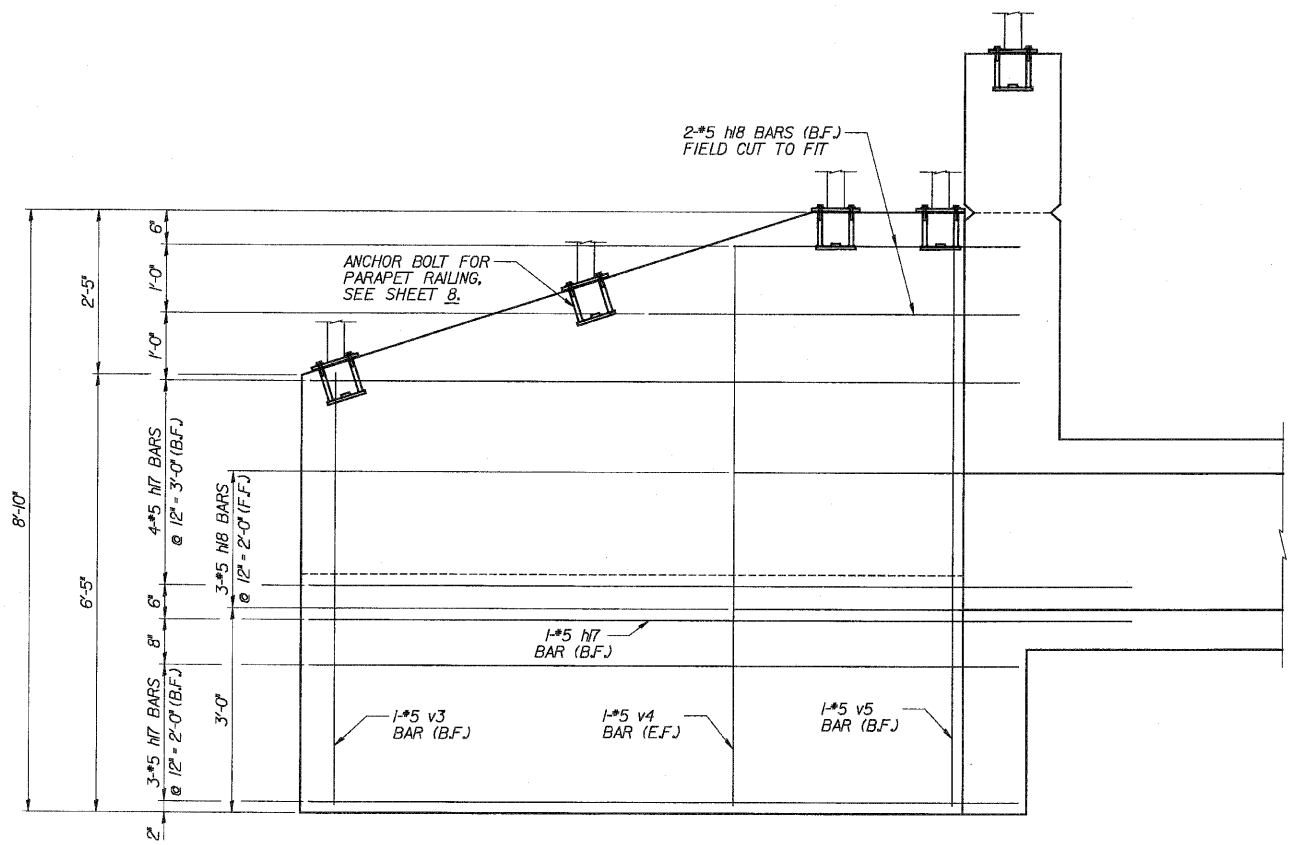




**WING A & B PLAN**



**WING A & B TYPICAL SECTION**



**WING A & B ELEVATION**

**LEGEND**

B.F. - BACK FACE  
F.F. - FRONT FACE  
E.F. - EACH FACE

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

REVISIONS	
NAME	DATE

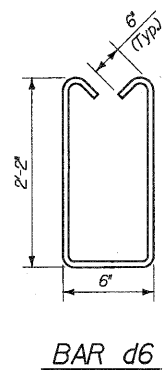
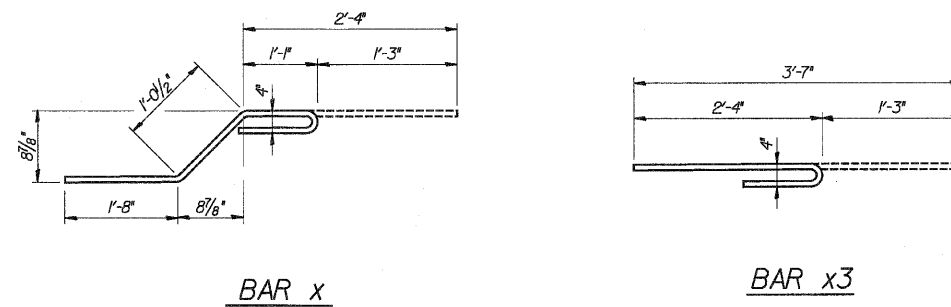
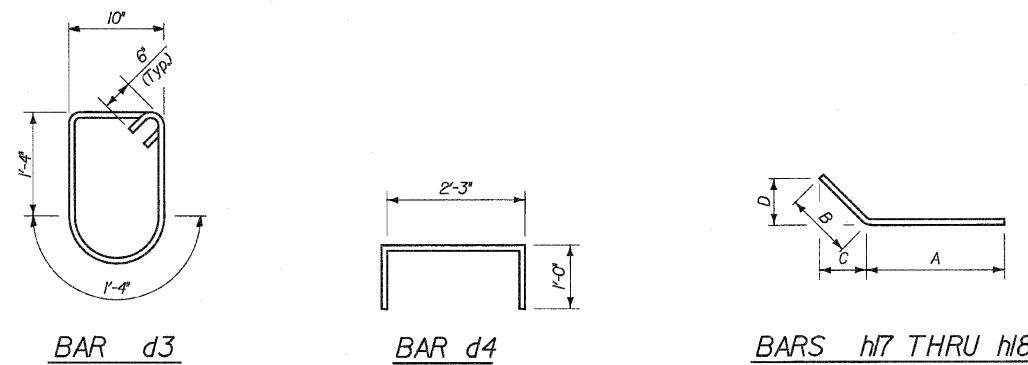
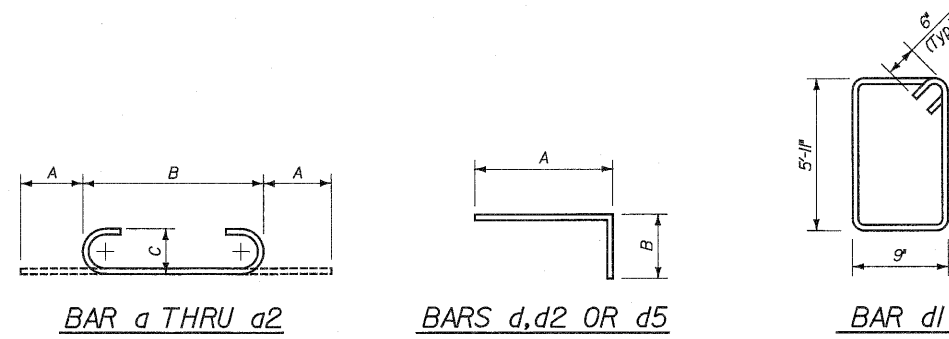
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

**CULVERT 'B'**  
**WINGS A & B**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 158+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C011



**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a	23	4	10'-9"	
a1	13	8	7'-9"	
a2	13	8	9'-0"	
a3	5	4	9'-9"	
a4	6	4	7'-2"	
a5	4	6	9'-9"	
d	9	4	4'-5"	
d1	10	4	14'-4"	
d2	10	6	5'-6"	
d3	3	4	5'-10"	
d4	7	4	4'-3"	
d5	11	4	2'-8"	
d6	11	4	5'-10"	
h	14	5	7'-3"	
h1	20	4	7'-3"	
h2	8	5	7'-3"	
h3	3	6	9'-9"	
h4	8	9	4'-2"	
h5	20	4	4'-2"	
h6	16	4	9'-9"	
h7	6	5	7'-3"	
h8	2	4	5'-9"	
h9	8	5	2'-5"	
h10	8	5	3'-7"	
h11	13	5	9'-9"	
h12	4	5	2'-6"	
h13	6	5	3'-10"	
h14	7	7	9'-9"	
h15	2	5	3'-9"	
h16	4	5	2'-9"	
h17	16	5	12'-10"	
h18	10	5	8'-0"	
v	44	4	2'-9"	
v1	29	4	4'-11"	
v2	4	4	3'-5"	
v3	2	5	6'-3"	
v4	4	5	8'-2"	
v5	2	5	8'-7"	
x	47	4	5'-0"	
x1	12	4	10'-11"	
x2	12	4	3'-10"	
x3	11	4	3'-7"	
CONCRETE BOX CULVERTS		CU. YD.	17.7	
REINFORCEMENT BARS		POUND	3,013	



**BAR BENDING DIAGRAMS**

Bar	A		B		C		D	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
a	0	6	9	9	0	4		
a1	0	11	5	11	0	8		
a2	0	11	7	2	0	8		
d	2	8	1	9				
d2	4	0	1	6				
d5	1	0	1	8				
h7	5	0	3	0	2	1/2	2	1/2
h8	9	10	3	0	2	1/2	2	1/2

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'B'**  
**BARBILL & DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 158+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C011

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

REVISIONS	
NAME	DATE

\* SBCS (12 & 13) WRS-3  
\* CONTRACT NO. 09479

**Wang Engineering, INC.**  
Consulting Geotechnical and Environmental Engineers  
wangeng3@wangeng.com  
100 Fairbank Street  
Addison, IL 60101  
Telephone: 630 458-0700  
Fax: 630 458-0900

**BORING LOG BS-004** Page 1 of 1

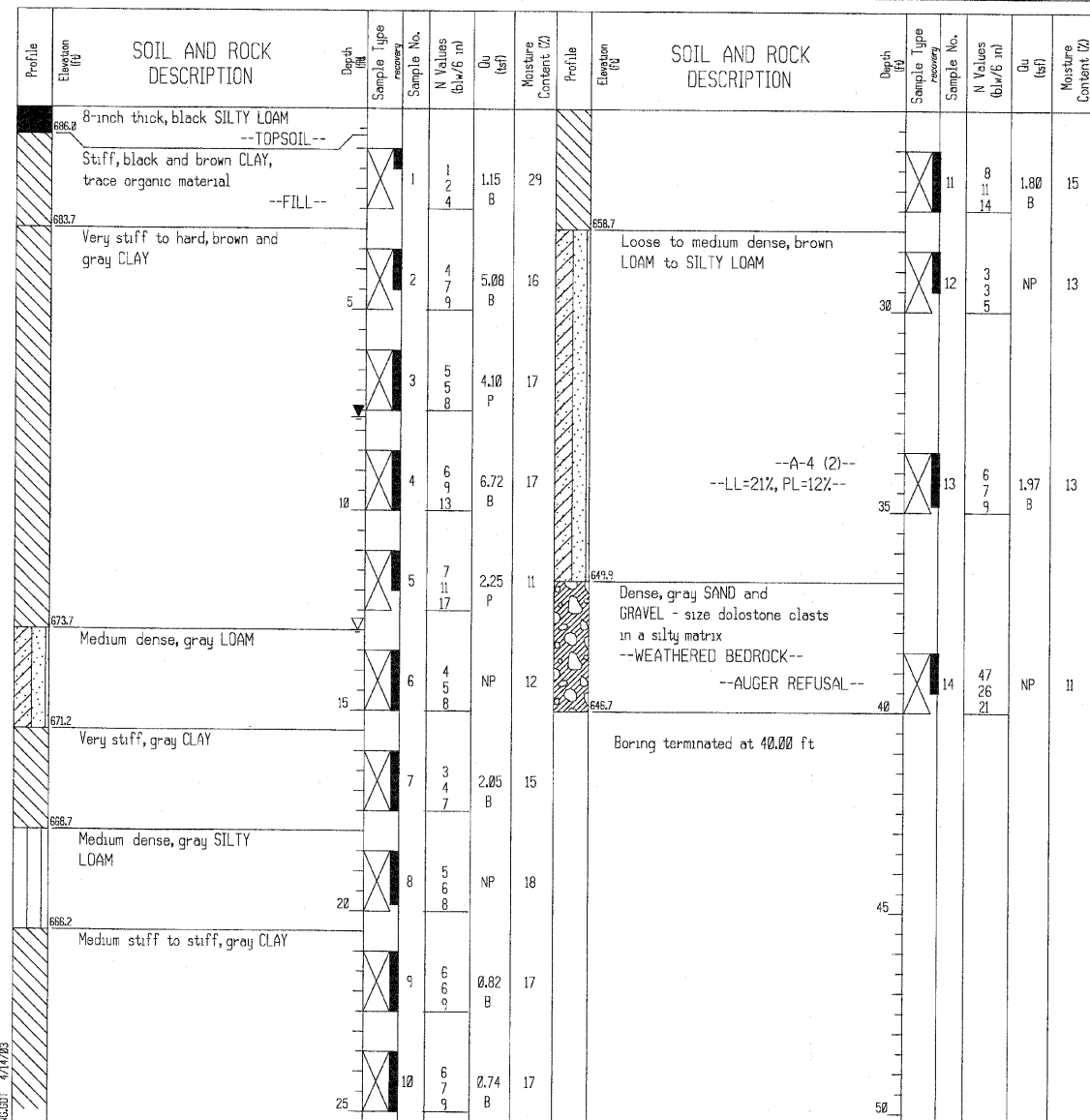
WEI Job No.: 301-01-01

Client: Brighton Engineering Company

Project: GEOT - US. 30, Will Co, IL, IDOT D-91-219-02

Location: SEC 22, 23, 24, 19 T35N, R11, 12E

Datum: NGVD  
Elevation: 686.69 ft  
North: 1765360.87 ft  
East: 1091502.85 ft  
Station: 157+72.48  
Offset: 77.09 LT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	01-27-2003	Complete Drilling	01-27-2003
Drilling Contractor	TSC	Drill Rig	CME 75 TMR
Driller	E&A	Logger	J. Kasnick
Checked by	S. Janowski	Time After Drilling	NA
Drilling Method	2.25' SSA; Boring backfilled with bentonite chips upon completion	Depth to Water	NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

**Wang Engineering, INC.**  
Consulting Geotechnical and Environmental Engineers  
wangeng3@wangeng.com  
100 Fairbank Street  
Addison, IL 60101  
Telephone: 630 458-0700  
Fax: 630 458-0900

**BORING LOG BS-005** Page 1 of 1

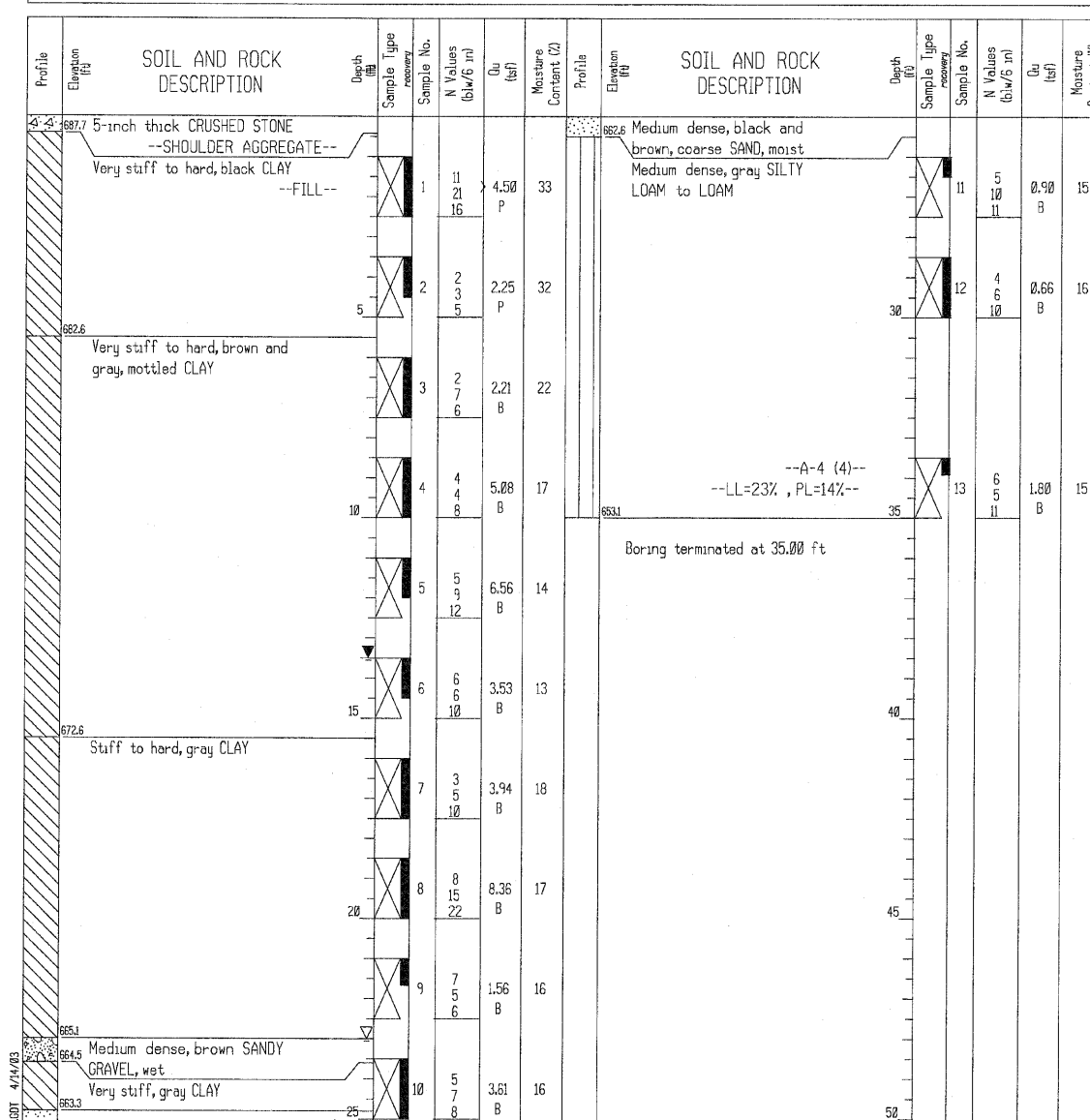
WEI Job No.: 301-01-01

Client: Brighton Engineering Company

Project: GEOT - US. 30, Will Co, IL, IDOT D-91-219-02

Location: SEC 22, 23, 24, 19 T35N, R11, 12E

Datum: NGVD  
Elevation: 688.10 ft  
North: 1765281.54 ft  
East: 1091615.45 ft  
Station: 158+3.28  
Offset: 2.95 RT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	01-27-2003	Complete Drilling	01-27-2003
Drilling Contractor	TSC	Drill Rig	CME 75 TMR
Driller	E&A	Logger	J. Kasnick
Checked by	S. Janowski	Time After Drilling	NA
Drilling Method	2.25' SSA; Boring backfilled with bentonite chips upon completion	Depth to Water	NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

REVISIONS	
NAME	DATE

**CULVERT 'B'**  
**BORING LOG**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 158+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C011

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	629
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	

**Wang Engineering, INC.**  
Consulting Geotechnical and Environmental Engineers  
wangeng3@wangeng.com  
100 Fairbank Street  
Addison, IL 60101  
Telephone: 630 458-0700  
Fax: 630 458-0900

## BORING LOG BS-006

WEI Job No.: 301-01-01

Client: Brighton Engineering Company

Project: GEOT - US. 30, Will Co, IL, IDOT D-91-219-02

Location: SEC 22, 23, 24, 19 T35N, R11, 12E

Datum: NGVD  
Elevations: 688.91 ft  
North: 1765213.62 ft  
East: 1091614.80 ft  
Station: 158+1.10  
Offsets: 70.83 RT

Page 1 of 1

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	N Values (blow/6 in)	Cu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	N Values (blow/6 in)	Cu (tsf)	Moisture Content (%)
	687.9	12-inch thick, black SILTY CLAY LOAM															
		--TOPSOIL-- Stiff to very stiff, black and brown CLAY	0-5		1	2 3 4	1.25 P	28						11	5 6 6	1.50 P	16
		--FILL--	5		2	3 4 8	2.38 B	25						12	3 3 8	1.56 B	13
	683.4	Hard, brown and gray CLAY to SILTY CLAY	5-10		3	6 9 15	8.20 B	15									
		--A-6 (16)-- --LL=34%, PL=18%-- --Possible water bearing layer--	10		4	5 10 13	7.54 B	15						13	5 3 5	NP	13
	675.9	Very stiff to hard, gray CLAY to SILTY CLAY	10-15		5	6 8 17	4.83 B	19									
			15		6	5 8 12	3.12 B	18						14	5 7 10	1.72 B	12
	672.9	Stiff, gray CLAY to SILTY CLAY	15-20		7	6 7 13	4.02 B	17									
	668.4	Medium dense, brown LOAM	20-25		8	4 5 7	1.34 B	16									
	665.9	Stiff, gray CLAY	25		9	4 5 7	NP	11									
					10	5 6 7	1.48 B	13									
GENERAL NOTES									WATER LEVEL DATA								
Begin Drilling: <u>01-28-2003</u> Complete Drilling: <u>01-28-2003</u>									While Drilling: <u>13.00</u> ft								
Drilling Contractor: <u>TSC</u> Drill Rig: <u>CME 75 TMR</u>									At Completion of Drilling: <u>13.00</u> ft								
Driller: <u>E&amp;A</u> Logger: <u>J. Kasnick</u> Checked by: <u>S. Janowski</u>									Time After Drilling: <u>NA</u>								
Drilling Method: <u>2.25' SSA; Boring backfilled with bentonite chips upon completion</u>									Depth to Water: <u>NA</u>								
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.																	

WANGENG INC. 301001010101 WANGENG.DOT 4/14/03

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'B'**  
**BORING LOG**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 158+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C011

BENCH MARK: BM 208  
STA. 173+49.760, 35.343' LT., ELEV. 658.542  
RAILROAD SPIKE IN NORTH FACE OF SECOND  
POWER POLE EAST OF ANDERSON ROAD,  
NORTH SIDE OF ROUTE 30.

EXISTING STRUCTURE: N/A  
PROPOSED IMPROVEMENTS:  
CONSTRUCTION OF A NEW 7'-0" X 5'-0" BOX CULVERT  
DURING STAGE 1 CONSTRUCTION OF US 30, WITH  
TEMPORARY CLOSURE OF BRISBANE ROAD.

STATION 170+61.58  
BUILT BY  
STATE OF ILLINOIS  
FAP 353 SECT. (12 & 13) WRS-3  
LOADING HS20  
STR. NO. 099-C012

**DESIGN SPECIFICATIONS**  
AASHTO 2002 SPECIFICATIONS.  
**LOADING HS20-44**  
ALLOW 50\*/SQ.FT. FOR FUTURE WEARING SURFACE.  
**DESIGN STRESSES**

**NAME PLATE**

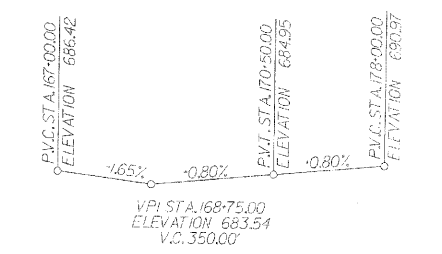
NOTE: SEE STANDARD DRAWING 515001  
FOR NAME PLATE DETAILS.

**GENERAL NOTES**

- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR60. SEE SPECIAL PROVISIONS.
- CAST-IN-PLACE BARREL SHALL BE POURED MONOLITHICALLY WITH WINGWALLS.
- EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER.
- IN ACCORDANCE WITH ARTICLE 540.04 OF THE STANDARD SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DIVERT STREAM 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 "PRECAST CONCRETE, BOX CULVERT 7'x5". CLEAN FILL (GRANULAR) MATERIAL WILL ONLY BE ALLOWED.
- THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M259 (DESIGN FILL HEIGHT- 3'-0")
- THE CONTRACTOR SHALL PREPARE IN-STREAM WORK PLANS (ALL COFFERDAMS, WORK PADS, AND EROSION AND SEDIMENT CONTROL, ETC.) AND SUBMIT TO THE ENGINEER AND THE U.S. ARMY CORP OF ENGINEERS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHOULD EXPECT TO HAVE TO ATTEND MEETINGS AT THE USACE OFFICE TO DISCUSS THEIR WORK PLAN IN ORDER TO SECURE THEIR PERMIT. THE COST OF ALL IN-STREAM WORK ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

**FIELD UNITS**  
f'c = 3,500 PSI  
fy = 60,000 PSI (REINFORCEMENT)

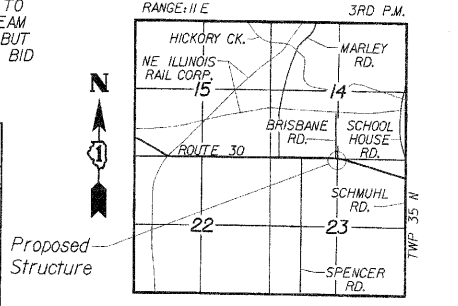
**PRECAST UNITS**  
f'c = 5,000 PSI  
fy = 60,000 PSI (REINFORCEMENT)



**PROFILE GRADE - US 30**  
@ P.G. W.B.D. & E.B.D.

**TOTAL BILL OF MATERIALS**

ITEM	UNIT	QUANTITY
REINFORCEMENT BARS	POUND	7,294
NAME PLATES	EACH	1
CONCRETE BOX CULVERTS	CU. YD.	37.2
PRECAST CONCRETE BOX CULVERT 7' x 5'	FOOT	126.0
FRAMES AND LIDS, TYPE I, CLOSED LID	EACH	2

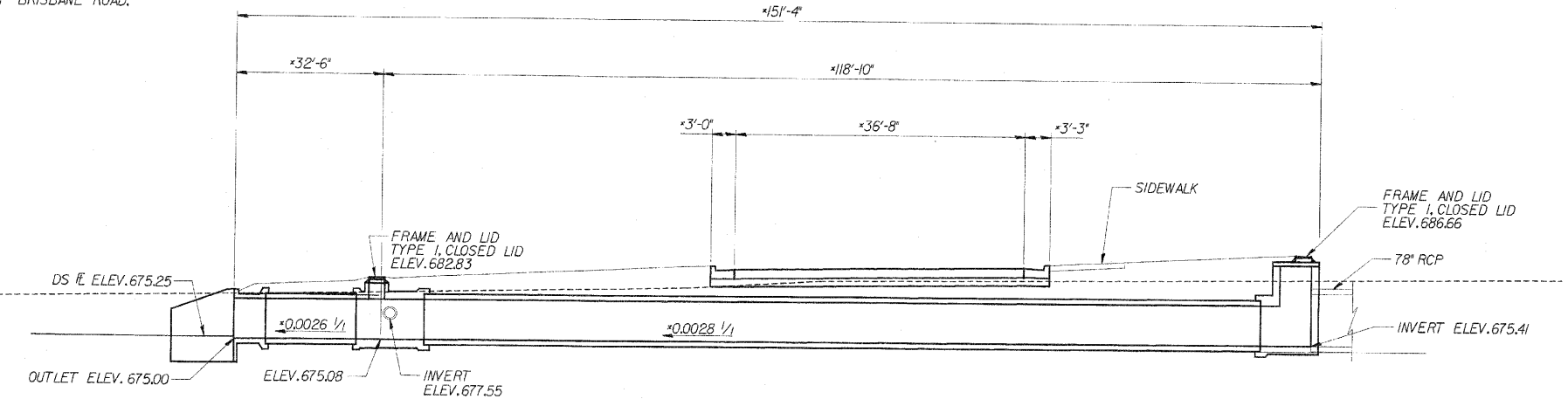


**LOCATION SKETCH**



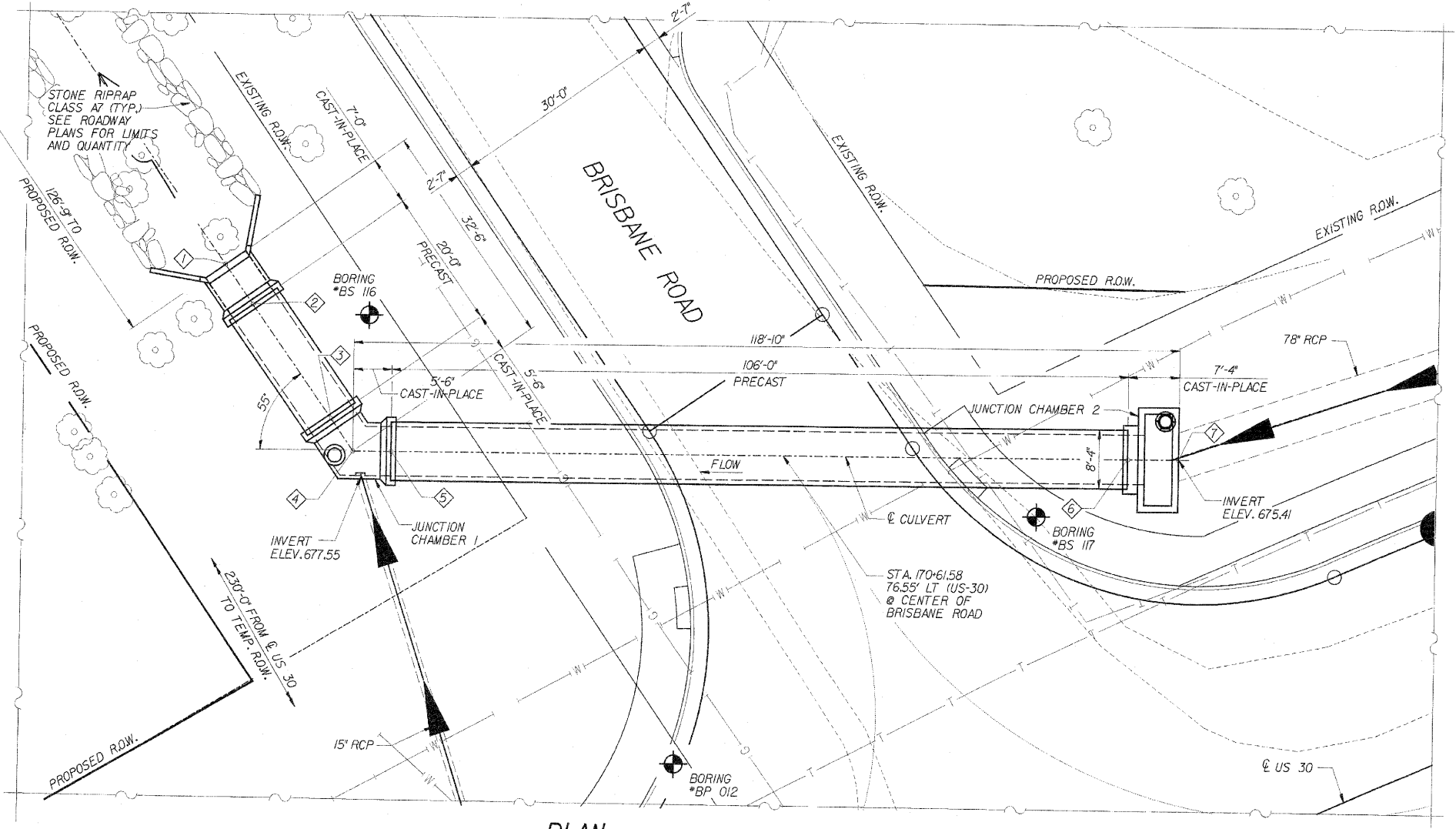
Wayne A. Truex 7-6-10  
Approved 11-30-10

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005



**LONGITUDINAL SECTION**

\* MEASURED ALONG CENTERLINE OF CULVERT



**PLAN**

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

PT.	STATION	OFFSET
1	170+01.04	135.42' LT.
2	170+02.12	128.51' LT.
3	170+05.22	108.77' LT.
4	170+06.09	103.34' LT.
5	170+10.88	100.97' LT.
6	171+04.67	56.82' LT.
7	171+11.26	53.89' LT.

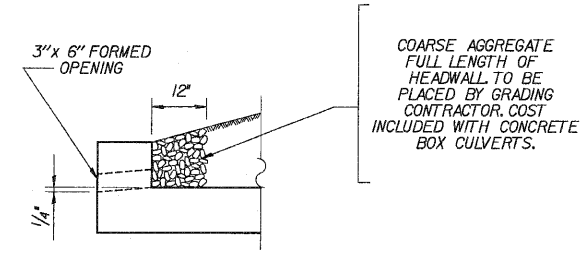
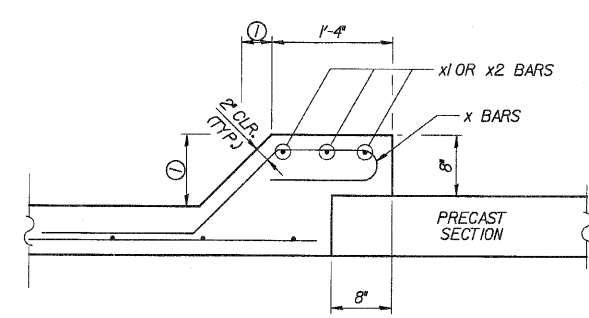
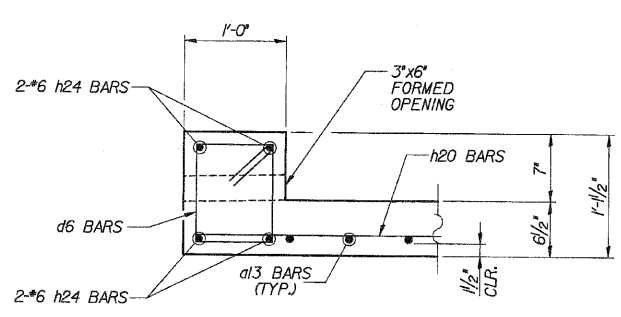
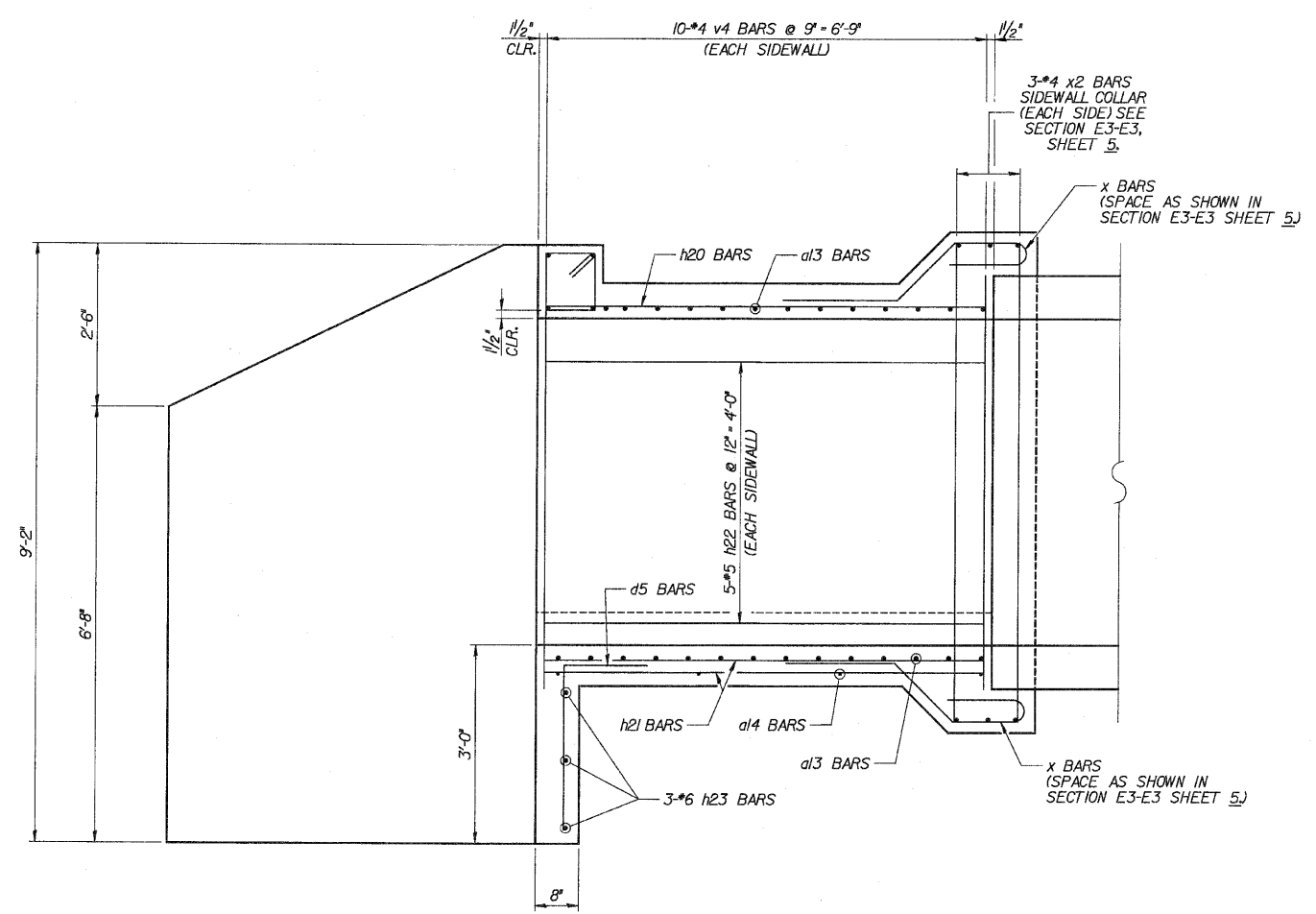
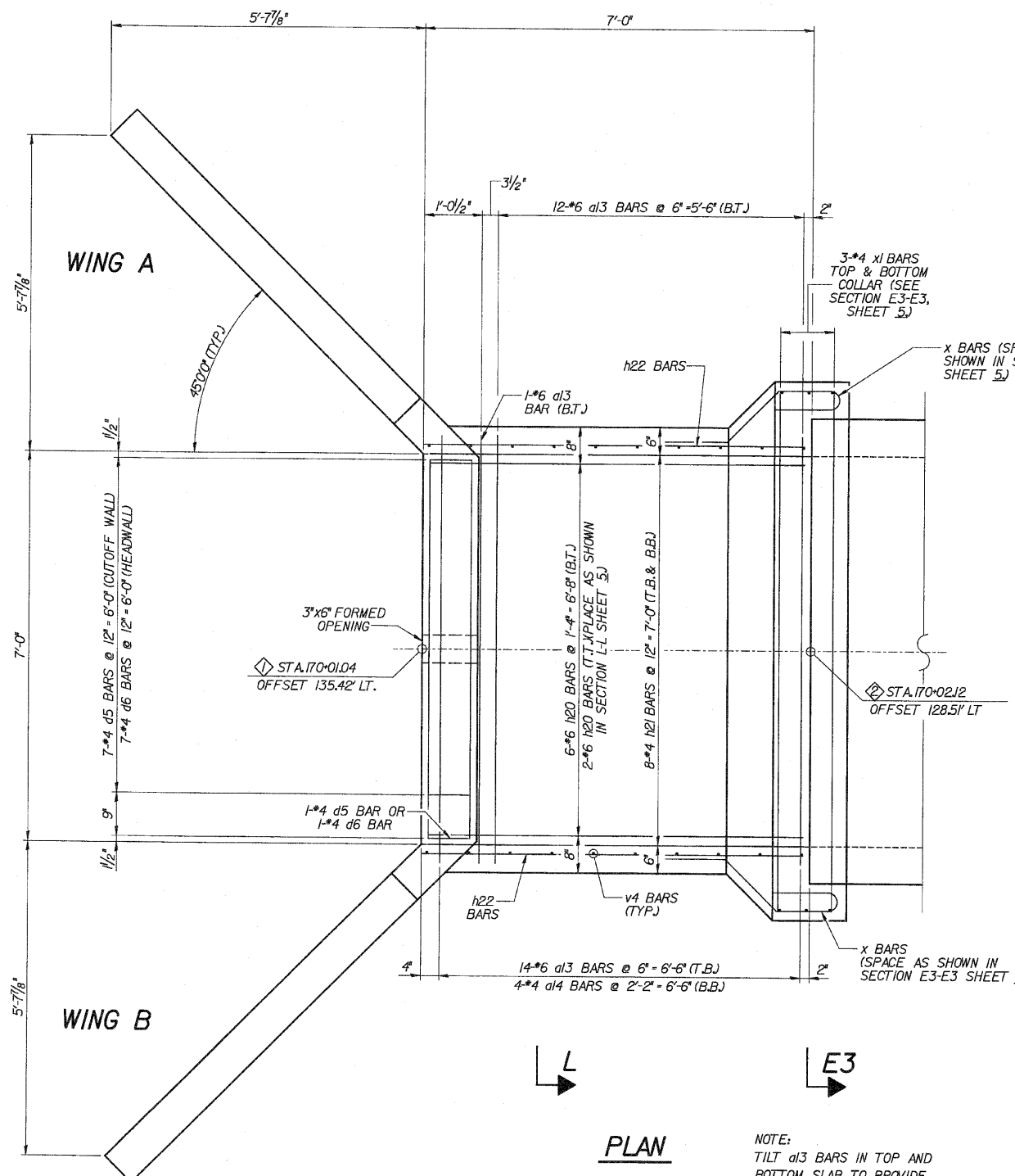
REVISIONS	
NAME	DATE

**CULVERT 'C'**  
**GENERAL PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 170+61.58, 76.55' LT.  
WILL COUNTY  
STRUCTURE NUMBER 099-C012

STATION INCREASE

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	631
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	

\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 62479



NOTE:  
TILT d13 BARS IN TOP AND  
BOTTOM SLAB TO PROVIDE  
REQUIRED CLEARANCE.

COARSE AGGREGATE  
FULL LENGTH OF  
HEADWALL TO BE  
PLACED BY GRADING  
CONTRACTOR. COST  
INCLUDED WITH CONCRETE  
BOX CULVERTS.

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

HEADWALL DETAIL

PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR

OUTLET END

DRAIN DETAIL

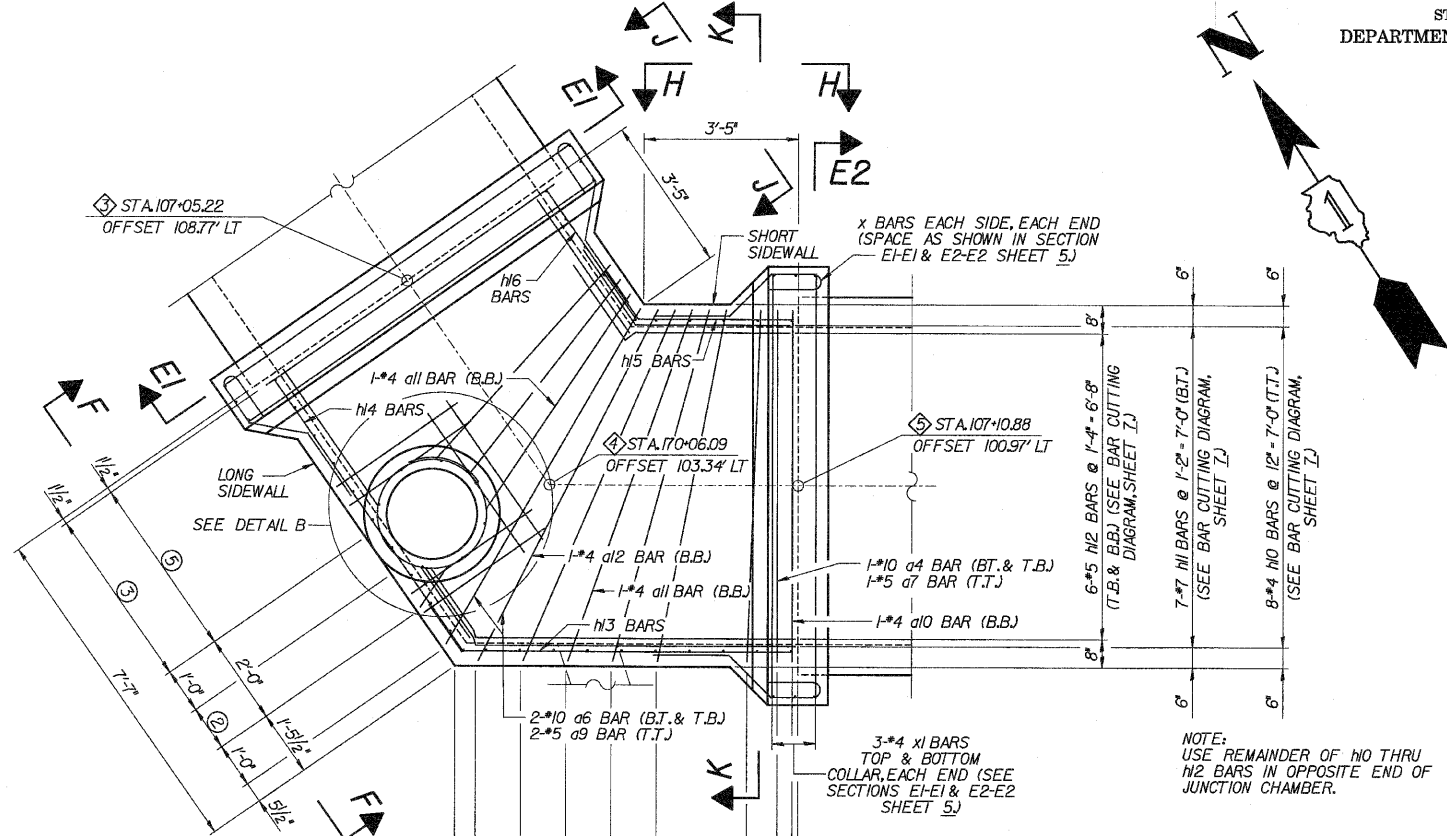
LEGEND

T.T. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

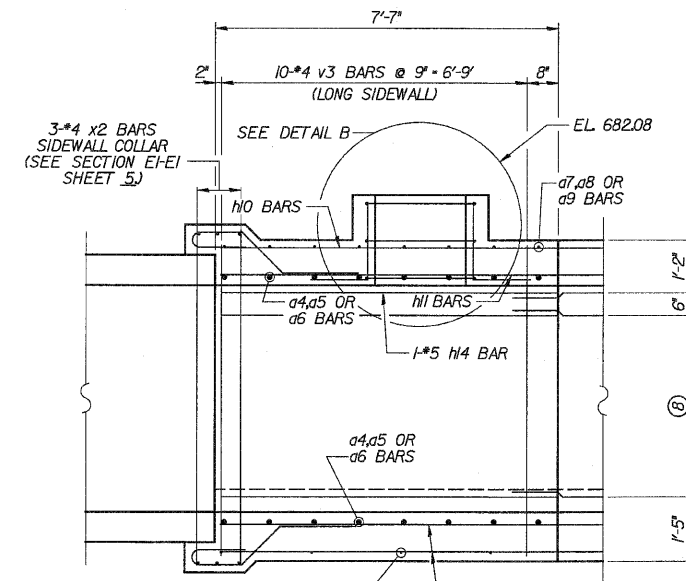
**CULVERT 'C'**  
**OUTLET PLAN & ELEVATION**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 170+61.58, 76.55' LT.  
WILL COUNTY  
STRUCTURE NUMBER 099-C012



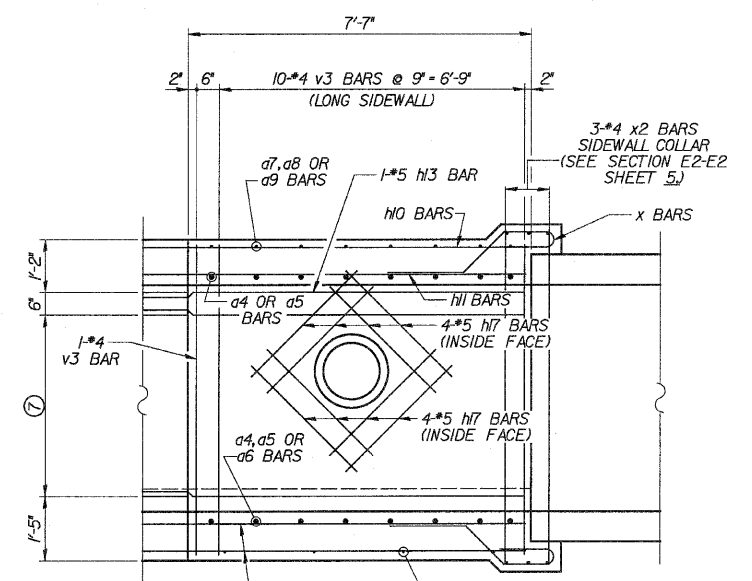
**PLAN**

NOTE:  
FIELD CUT a4,a5,a7,a8,N0 & N1 BARS  
TO FIT AROUND OPENING FOR FRAME  
& LID, WHEN NECESSARY.

- ① 4\*10 a4 BARS @ 12" - 3'-0" (B.T. & T.B.)  
4\*5 a7 BARS @ 12" - 3'-0" (T.T.)
- ② 2\*10 a5 BARS @ 12" - 1'-0" (B.T. & T.B.)  
2\*5 a8 BARS @ 12" - 1'-0" (T.T.)
- ③ 5\*10 a4 BARS @ 12" - 4'-0" (B.T. & T.B.)  
5\*5 a7 BARS @ 12" - 4'-0" (T.T.)
- ④ 2\*4 a10 BARS @ 2'-0" - 2'-0" (B.B.)
- ⑤ 3\*4 a10 BARS @ 2'-0" - 4'-0" (B.B.)
- ⑥ 5\*4 v3 BARS @ 9" - 3'-0" (SHORT SIDEWALL)
- ⑦ 5\*5 N3 BARS @ 12" - 4'-0" (LONG SIDEWALL)
- ⑧ 5\*5 N4 BARS @ 12" - 4'-0" (LONG SIDEWALL)
- ⑨ 5\*5 N5 BARS @ 12" - 4'-0" (SHORT SIDEWALL)
- ⑩ 5\*5 N6 BARS @ 12" - 4'-0" (SHORT SIDEWALL)

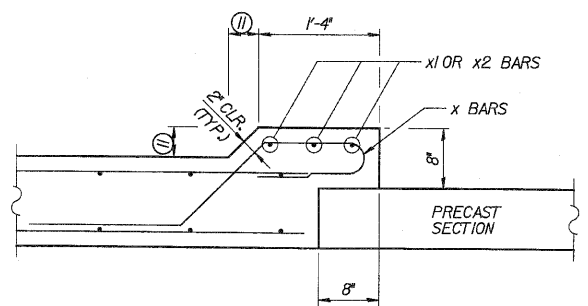


**VIEW F-F**



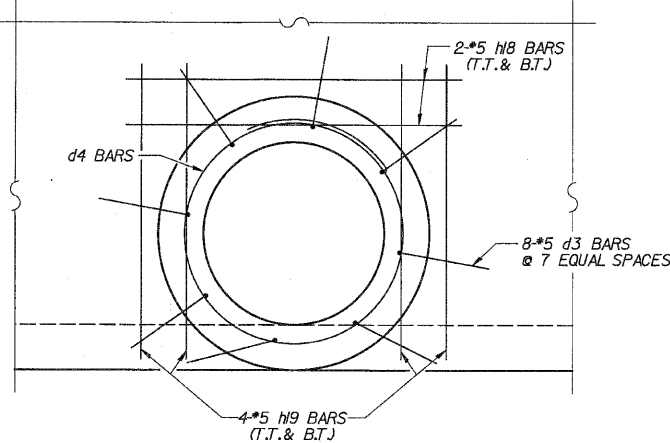
**VIEW G-G**

NOTE:  
FIELD CUT v3 & N3 BARS AROUND  
OPENING FOR PIPE, WHEN NECESSARY

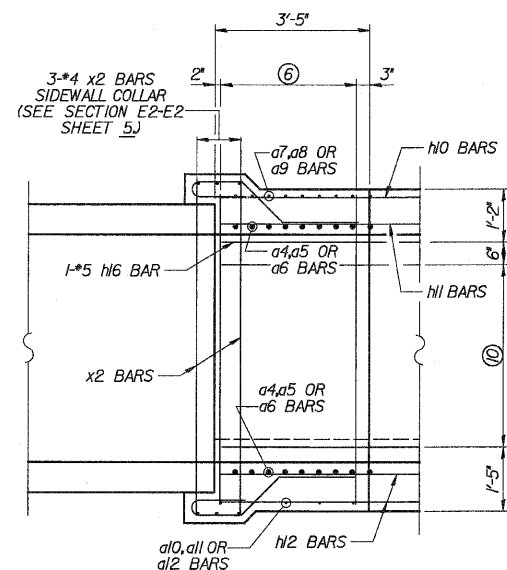


**PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR**

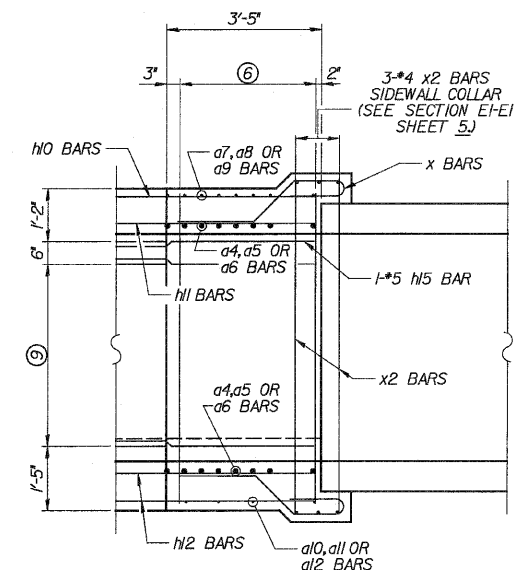
⑪ TOP SLAB - 4"  
BOTTOM SLAB - 3"  
SIDEWALLS - 10"



**DETAIL B**



**VIEW H-H**



**VIEW J-J**

**MIN. BAR LAPS**

- \*4 BARS - 1'-0"
- \*5 BARS - 1'-3"
- \*7 BARS - 2'-0"

**LEGEND**

T.T. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

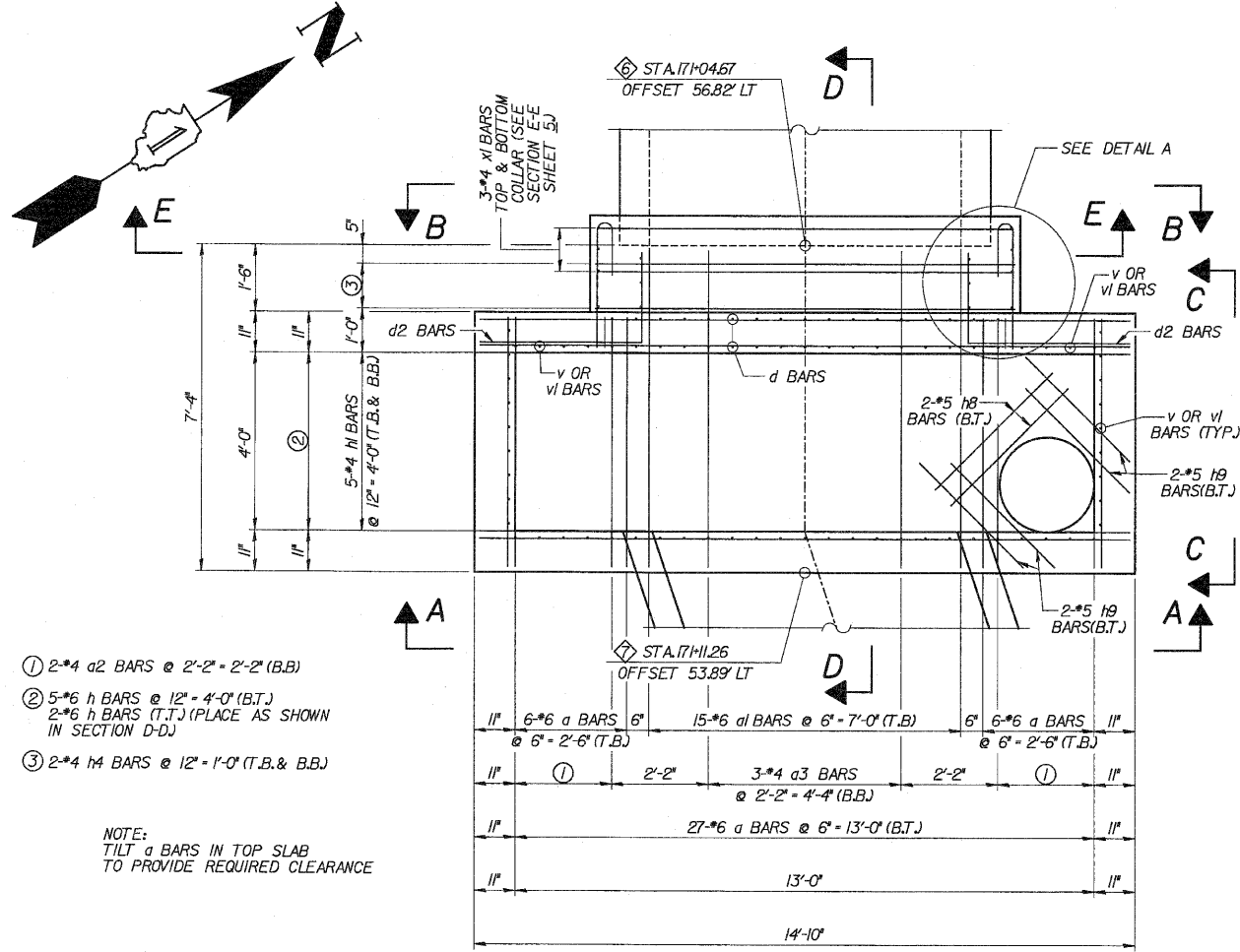
DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'C'  
JUNCTION CHAMBER I PLAN & ELEV.**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 170+61.58, 76.55' LT.  
WILL COUNTY  
STRUCTURE NUMBER 099-C012



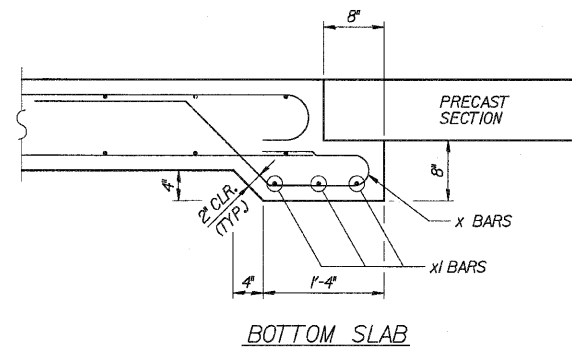


- ① 2-#4 d2 BARS @ 2'-2" = 2'-2" (B.B.)
- ② 5-#6 h BARS @ 12" = 4'-0" (B.T.)  
2-#6 h BARS (T.T.) (PLACE AS SHOWN IN SECTION D-D)
- ③ 2-#4 #8 BARS @ 12" = 1'-0" (T.B. & B.B.)

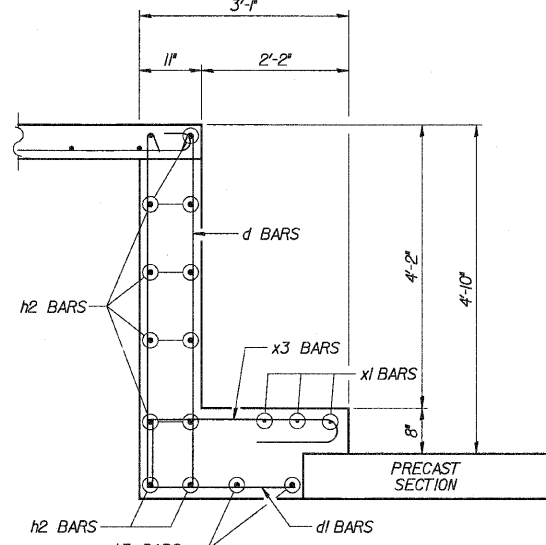
NOTE:  
TILT 'a' BARS IN TOP SLAB TO PROVIDE REQUIRED CLEARANCE

**PLAN**

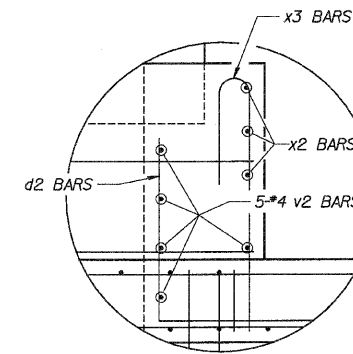
NOTE:  
FIELD CUT 'a' BARS AND 'h' BARS TO FIT AROUND OPENING FOR FRAME AND LID, WHEN NECESSARY.



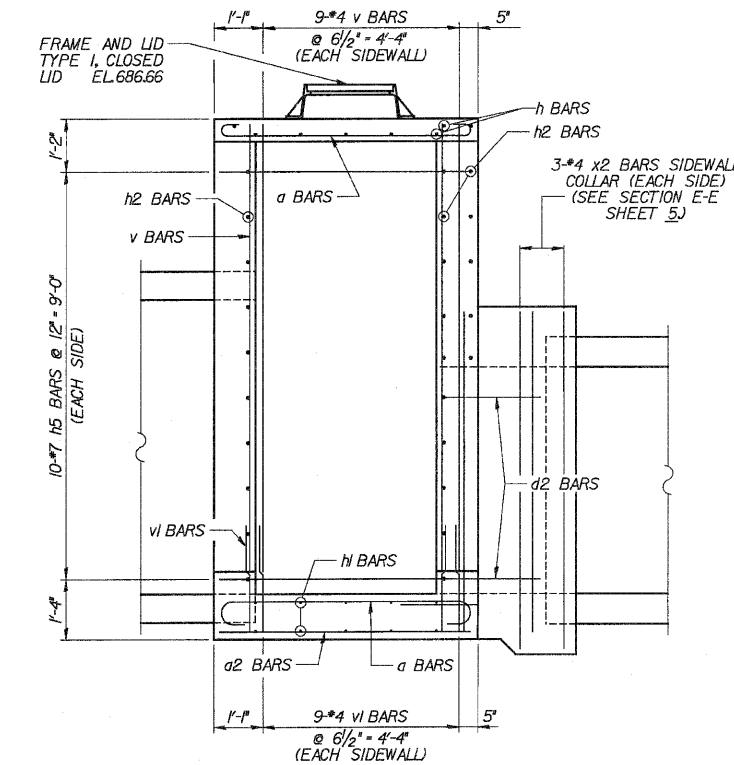
**BOTTOM SLAB**



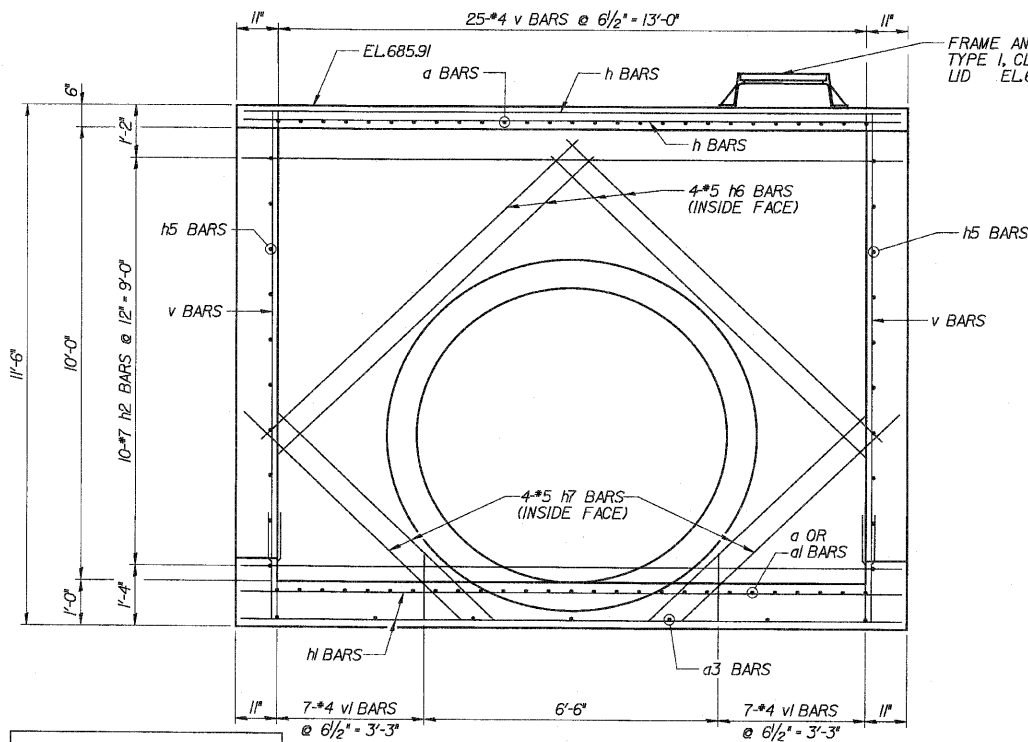
**PRECAST TO CAST-IN-PLACE CONNECTION COLLAR**



**DETAIL A**  
(EACH SIDE OF COLLAR)

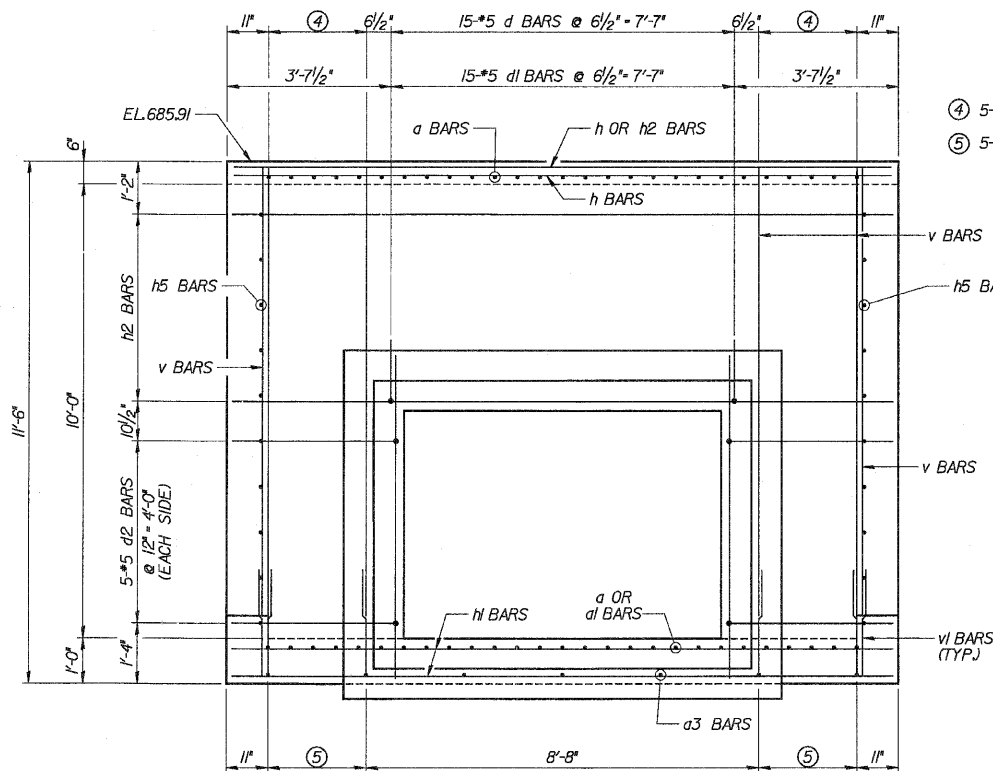


**VIEW C-C**

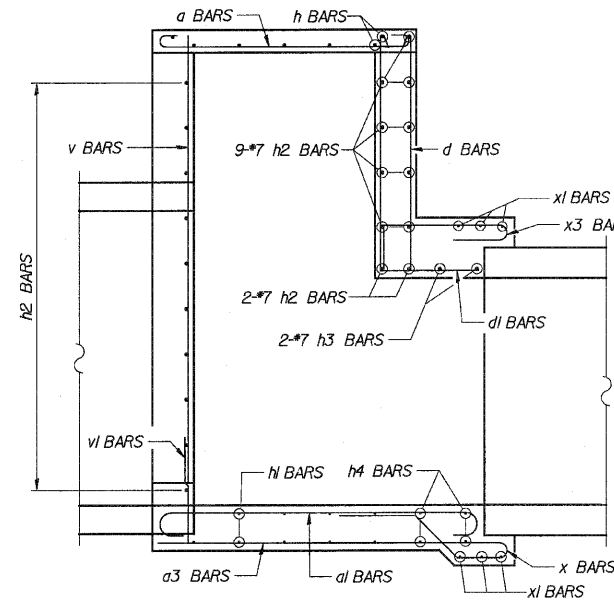


**VIEW A-A**

NOTE:  
FIELD CUT h2, v & v1 BARS TO FIT AROUND OPENING FOR PIPE, WHEN NECESSARY.



**VIEW B-B**



**SECTION D-D**

**LEGEND**

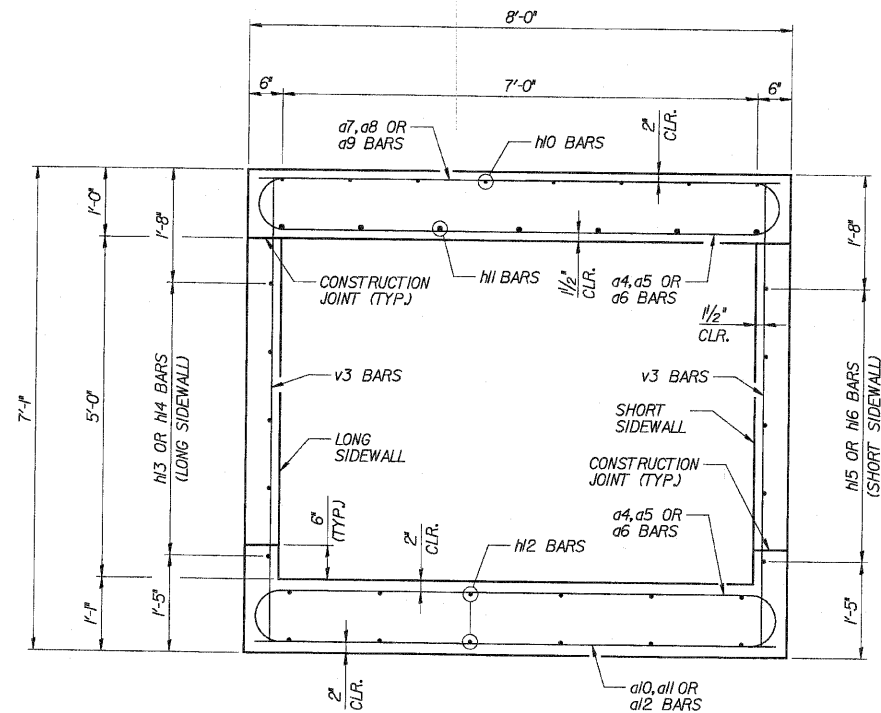
T.T. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

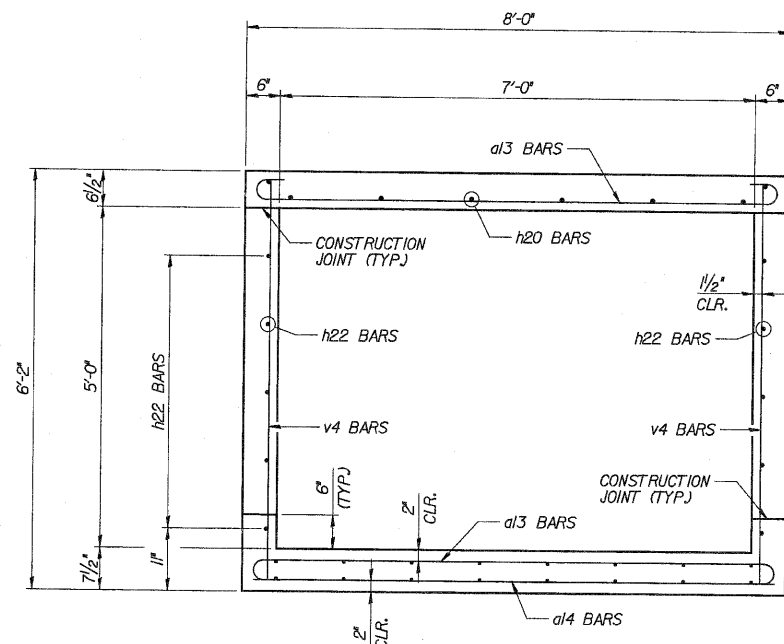
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

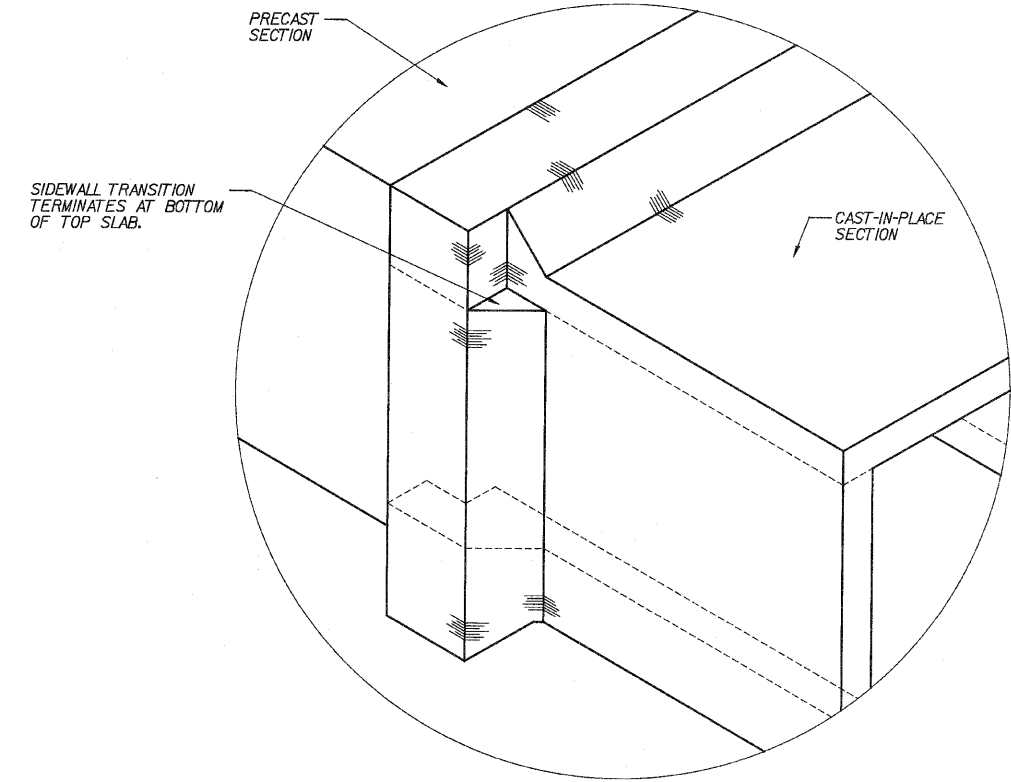
**CULVERT 'C'**  
**JUNCTION CHAMBER 2 PLAN & ELEV.**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 170+61.58, 76.55' LT.  
WILL COUNTY  
STRUCTURE NUMBER 099-C012



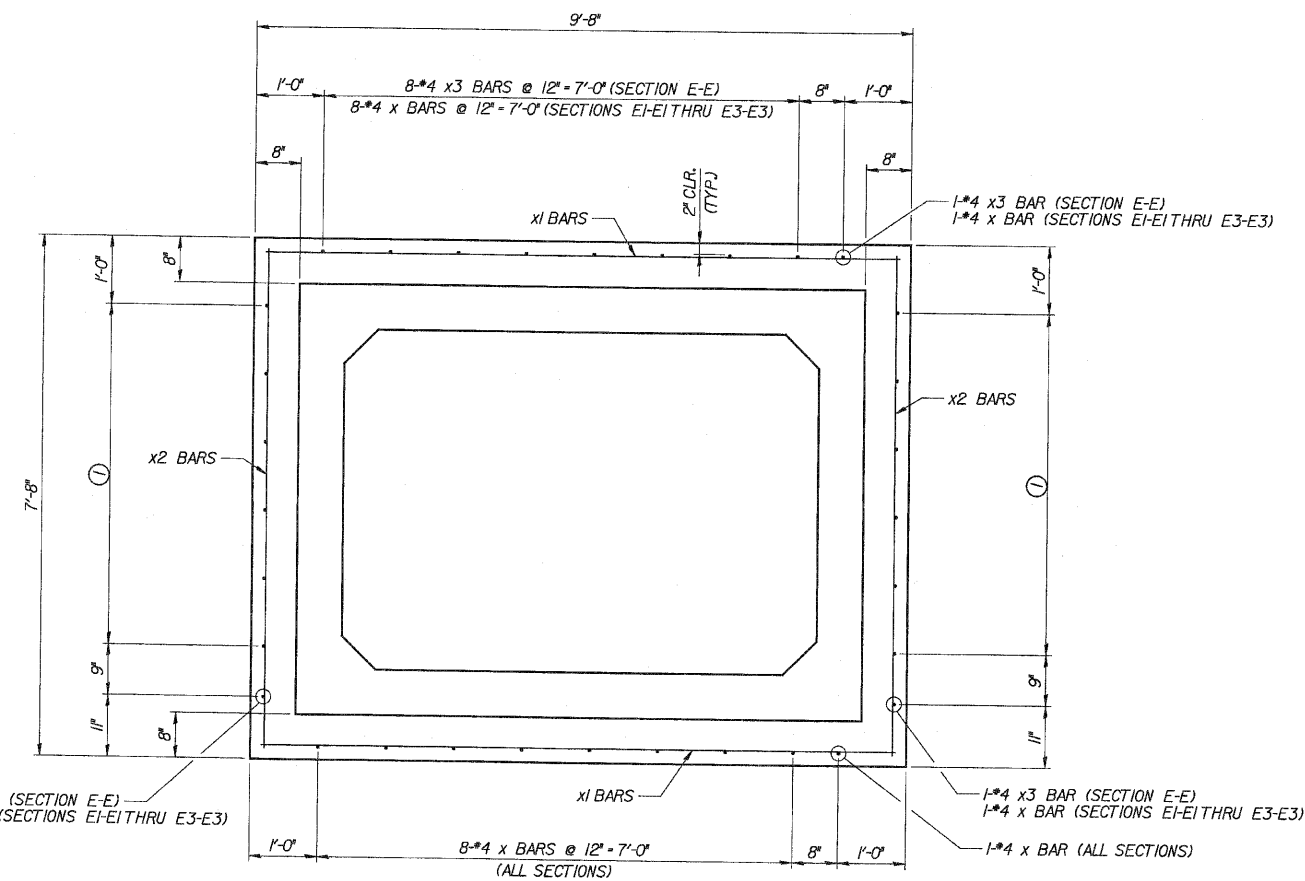
**SECTION K-K**



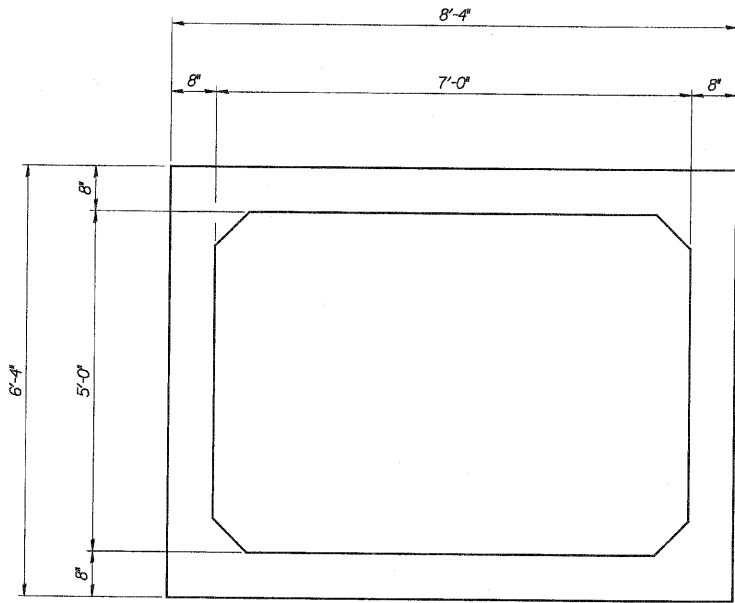
**SECTION L-L**



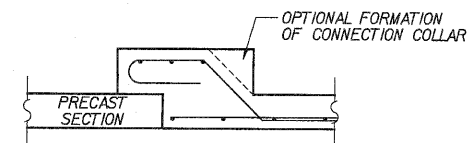
**ISOMETRIC VIEW OF CONNECTION COLLAR**



**SECTION E-E THRU E3-E3**



**PRECAST TYPICAL SECTION**



**OPTIONAL PRECAST TO CAST-IN-PLACE CONNECTION COLLAR**

NOTE: ADDITIONAL CONCRETE USED FOR THE OPTIONAL COLLAR FORMATION WILL BE PROVIDED AT THE CONTRACTOR'S EXPENSE.

1-#4 x3 BAR (SECTION E-E)  
1-#4 x BAR (SECTIONS E1-E1 THRU E3-E3)

x1 BARS

x2 BARS

1-#4 x3 BAR (SECTION E-E)  
1-#4 x BAR (SECTIONS E1-E1 THRU E3-E3)

1-#4 x BAR (ALL SECTIONS)

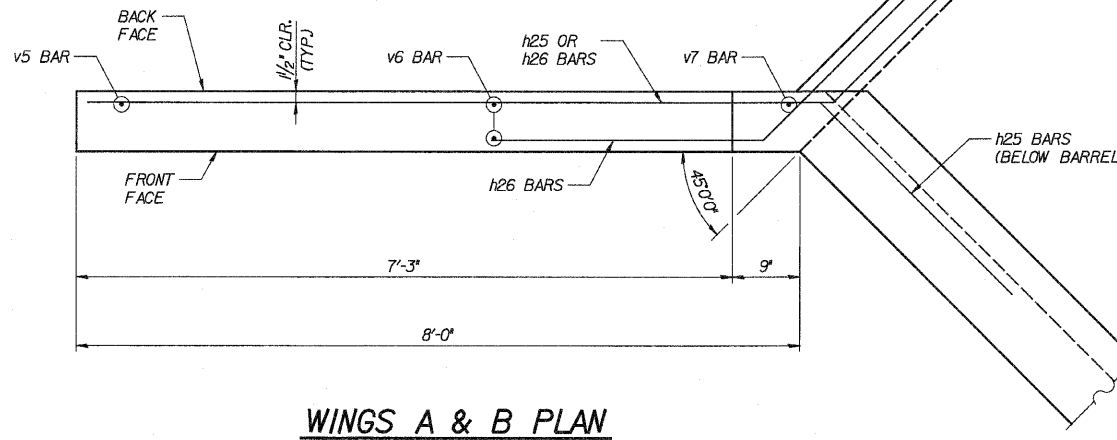
① 6-#4 x3 BARS @ 12" = 5'-0" (SECTION E-E)  
6-#4 x BARS @ 12" = 5'-0" (SECTIONS E1-E1 THRU E3-E3)

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

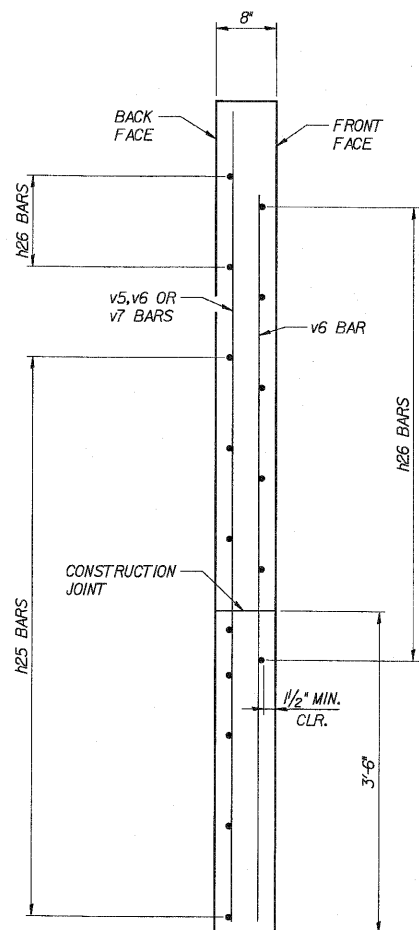
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

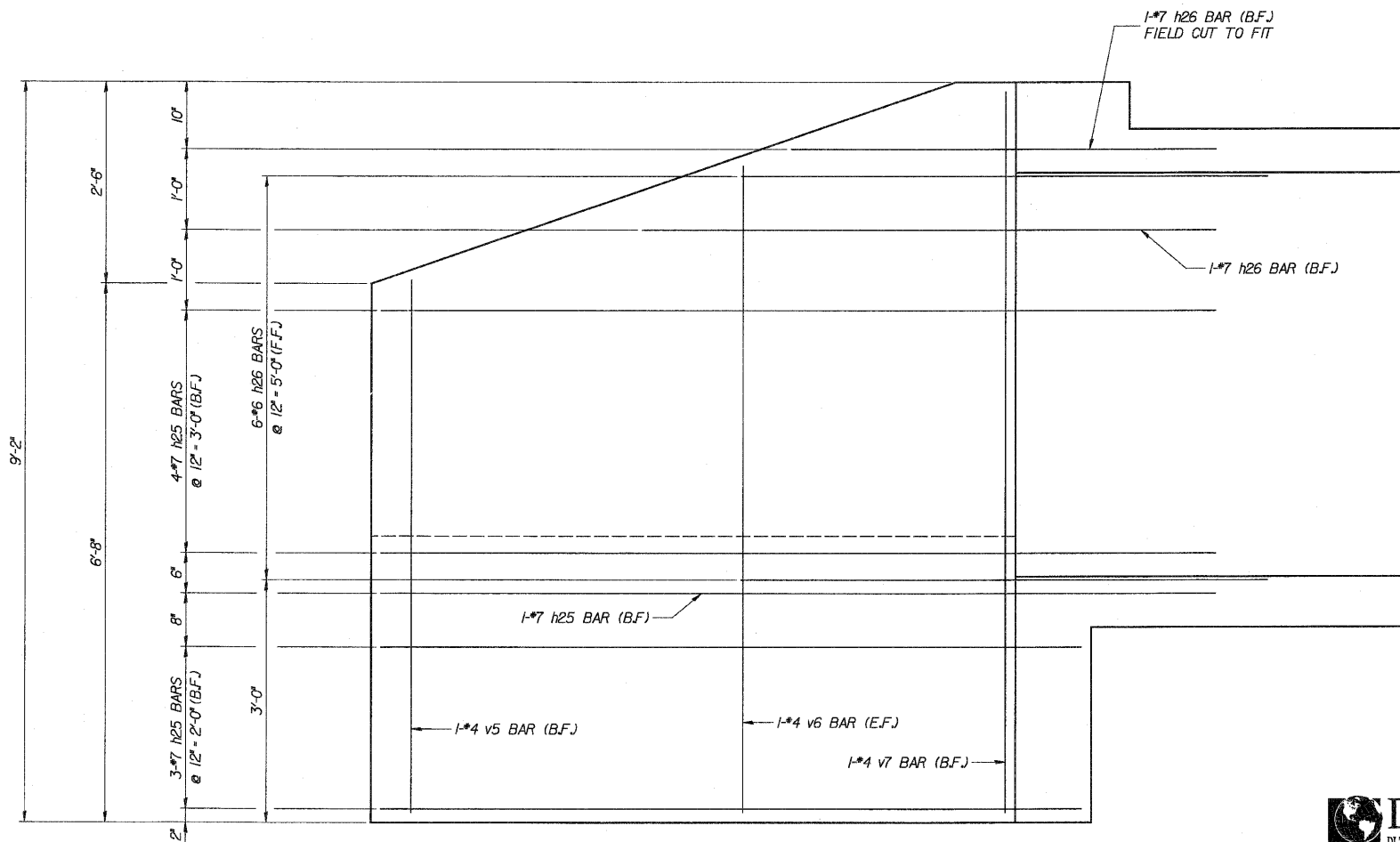
**CULVERT 'C'**  
**TYPICAL SECTIONS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 170+61.58, 76.55' LT.  
WILL COUNTY  
STRUCTURE NUMBER 099-C012



**WINGS A & B PLAN**



**WINGS A & B TYPICAL SECTION**



**WINGS A & B ELEVATION**

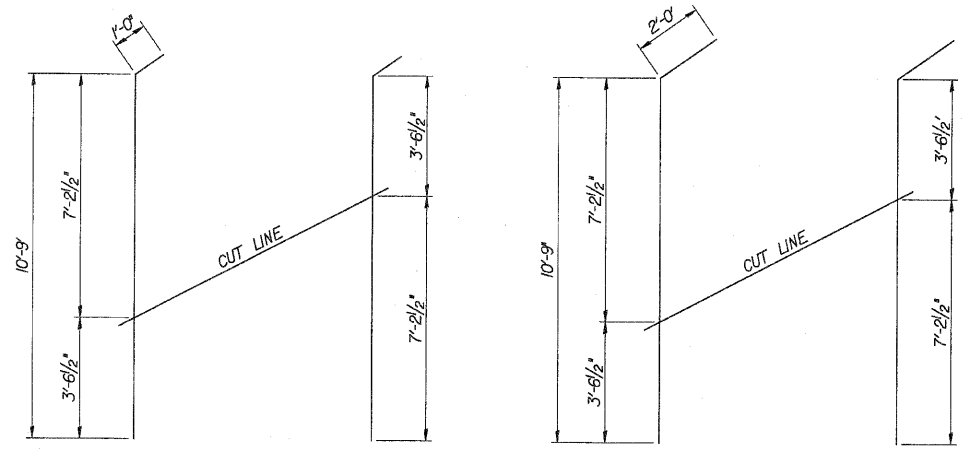
DESIGNED	CDS
CHECKED	ASP
DRAWN	BEM
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

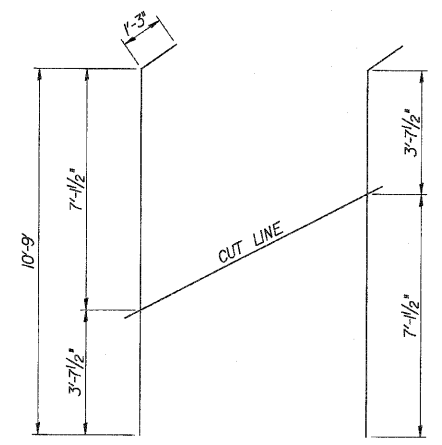
**CULVERT 'C'**  
**WINGS A & B**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION 12 & 13 WRS-3  
STATION 170+61.58, 76.55' LT.  
WILL COUNTY  
STRUCTURE NUMBER 099-C012

\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 02479



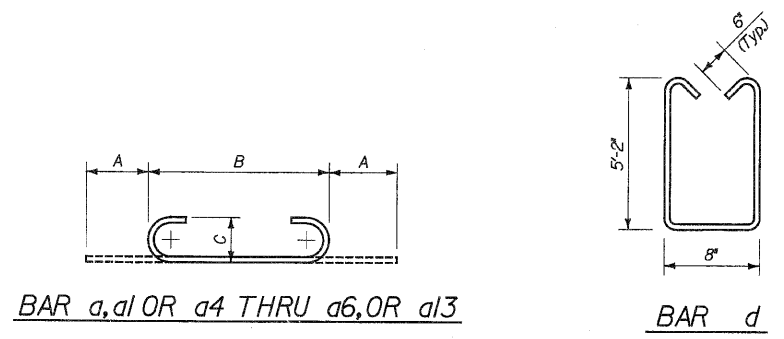
BARS h10  
H0-8 BARS-1 SET

BARS h11  
H1-7 BARS-1 SET



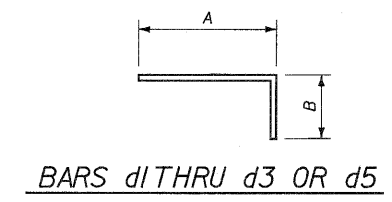
BARS h12  
H2-6 BARS-2 SETS

BAR CUTTING DIAGRAMS

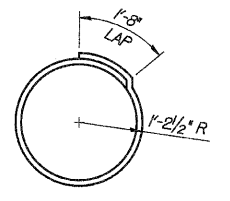


BAR a, d1 OR a4 THRU a6, OR d13

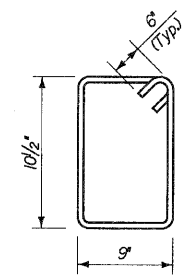
BAR d



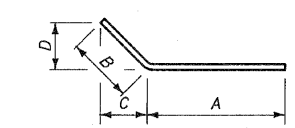
BARS d1 THRU d3 OR d5



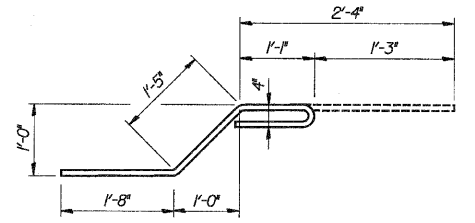
BARS d4



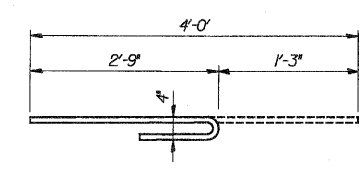
BAR d6



BARS h10 THRU h13, h15,  
h25 OR h26



BAR x



BAR x3

BAR BENDING DIAGRAMS

Bar	A		B		C		D	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
a	0	8	5	6	0	6		
d1	0	8	7	0	0	6		
a4	1	5	7	9	1	1 1/4		
a5	1	5	8	1	1	1 1/4		
a6	1	5	8	6	1	1 1/4		
d13	0	8	7	8	0	6		
d1	2	1	1	3				
d2	3	7	2	1				
d3	1	8	1	3				
d5	2	8	1	9				
h10	10	9	1	0	0	6 1/8	0	9 1/8
h11	10	9	2	0	1	1 3/4	1	7 3/8
h12	10	9	1	3	0	8 3/8	1	0 1/4
h13	7	3	1	3	0	8 3/8	1	0 1/4
h15	3	5	1	3	0	8 3/8	1	0 1/4
h25	8	1	3	0	2	1 1/2	2	1 1/2
h26	5	0	3	0	2	1 1/2	2	1 1/2

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	39	6	6'-10"	
d1	15	6	8'-4"	
a2	4	4	5'-7"	
a3	3	4	7'-1"	
a4	20	10	10'-7"	
a5	8	10	10'-11"	
a6	4	10	11'-4"	
a7	10	5	7'-9"	
a8	4	5	8'-1"	
a9	2	5	8'-6"	
a10	6	4	7'-9"	
d11	2	4	8'-2"	
d12	1	4	8'-8"	
d13	27	6	9'-0"	
d14	4	4	7'-8"	
d	15	5	12'-0"	
d1	15	5	3'-4"	
d2	10	5	5'-8"	
d3	8	5	2'-11"	
d4	3	5	9'-3"	
d5	8	4	4'-5"	
d6	8	4	4'-3"	
h	7	6	14'-7"	
h1	10	4	14'-7"	
h2	21	7	14'-7"	
h3	2	7	9'-5"	
h4	4	4	9'-5"	
h5	20	7	5'-7"	
h6	4	5	9'-8"	
h7	4	5	6'-7"	
h8	2	5	3'-9"	
h9	4	5	3'-4"	
h10	8	4	11'-9"	
h11	7	7	12'-9"	
h12	12	5	12'-0"	
h13	6	5	8'-6"	
h14	6	5	7'-3"	
h15	6	5	4'-8"	
h16	6	5	3'-5"	
h17	8	5	3'-4"	
h18	4	5	3'-9"	
h19	8	5	3'-3"	
h20	8	6	6'-9"	
h21	16	4	6'-9"	
h22	10	5	6'-9"	
h23	3	6	7'-5"	
h24	4	6	6'-9"	
h25	16	7	11'-1"	
h26	16	7	8'-0"	
v	53	4	9'-10"	
v1	42	4	2'-7"	
v2	10	4	7'-0"	
v3	31	4	6'-9"	
v4	20	4	5'-10"	
v5	2	4	6'-7"	
v6	4	4	8'-0"	
v7	2	4	8'-11"	
x	105	4	5'-5"	
x1	24	4	9'-4"	
x2	24	4	7'-4"	
x3	23	4	4'-0"	
CONCRETE BOX CULVERTS			CU. YD.	37.2
REINFORCEMENT BARS			POUND	7,294


**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'C'**  
**BARBILL AND DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 170+61.58, 76.55' LT.  
WILL COUNTY  
STRUCTURE NUMBER 099-C012

REVISIONS	
NAME	DATE



\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 62479


 Wang Engineering, Inc. Consulting Geotechnical and Environmental Engineers wangeng@wangeng.com 1145 N. Main Street Lombard, IL 60148 Telephone: (630) 953-9928 Fax: (630) 953-9938	<b>BORING LOG BP-012</b> WEI Job No.: 301-01-02		Datum: NGVD Elevations: 681.53 ft North: 1765319.96 ft East: 1092845.58 ft Station: 170+28.96 Offset: 43.76 LT
	Client	DLZ - Brighton Engineering, Inc.	
	Project	GEOT - US. 30, Will Co, IL, IDOT D-91-219-02	
	Location	T35N, R11E, Sec 22-24, R12E, Sec 19-21	

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)
	680.0	18-inch thick, black CLAY LOAM	0		1	10	4.00	12									
	679.5	--TOPSOIL--	7		7		P										
		Hard, brown CLAY			2	3	2.25	20									
		Very stiff, brown SILTY CLAY to SILTY CLAY LOAM			3	3											
			5		3	3	2.75	19									
		--A-4 (8)--			4	4											
		--LL=28%, PL=18%--			4	4	2.25	21									
	673.5	Medium dense, brown and gray SILT	6		6												
	672.5	Medium stiff, gray CLAY	7		7		0.75	16									
	671.5		8		8												
		Boring terminated at 10.00 ft	10		8												

<b>GENERAL NOTES</b> Begin Drilling: 02-26-2003      Complete Drilling: 02-26-2003 Drilling Contractor: TSC      Drill Rig: CME 75 TMR Driller: C&J      Logger: E. Dancea      Checked by: S. Janowski Drilling Method: 2.25" SSA; Boring backfilled upon completion				<b>WATER LEVEL DATA</b> While Drilling: <input checked="" type="checkbox"/> DRY At Completion of Drilling: <input checked="" type="checkbox"/> DRY Time After Drilling: NA Depth to Water: <input checked="" type="checkbox"/> NA			
---	--	--	--	---	--	--	--

MINNEAPOLIS SUBURB/CPJ MINNEAPOLIS 12/1/08

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

 **DLZ**  
85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

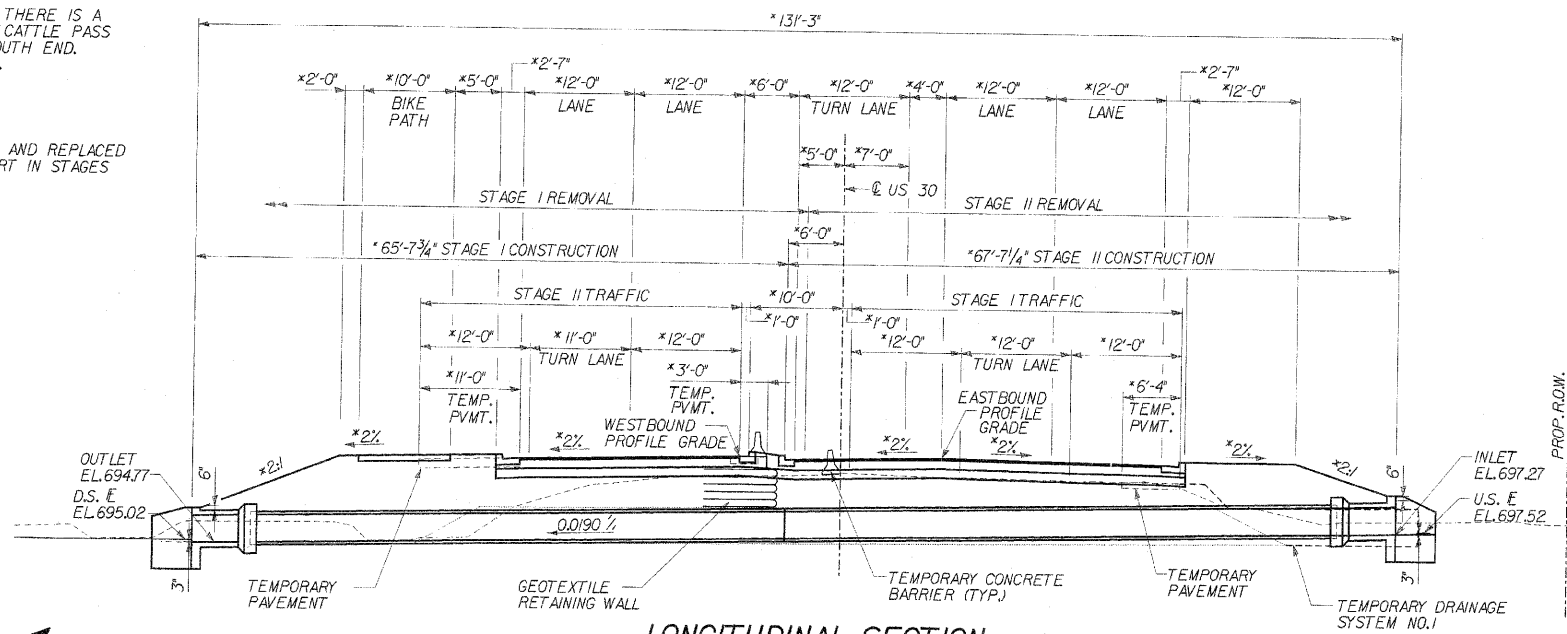
REVISIONS	
NAME	DATE

**CULVERT 'C'**  
**BORING LOG**  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 170+61.58, 76.55' LT.  
 WILL COUNTY  
 STRUCTURE NUMBER 099-C012

BENCH MARK: BM 221  
STA. 255+54.48, 33.62' LT., EL. 703.555  
RAILROAD SPIKE IN SOUTH FACE OF SECOND  
POWER POLE WEST OF HICKORY CREEK PRESERVE  
ENTRANCE, NORTH SIDE OF ROUTE 30.

EXISTING STRUCTURE:  
VARIES, STARTING AT THE NORTH END THERE IS A  
48" Ø R.C.P. ATTACHED TO A 4'-0" X 7'-0" CATTLE PASS  
ATTACHED TO A 48" Ø R.C.P. AT THE SOUTH END.  
APPROXIMATE TOTAL LENGTH OF 90'-0".

NO SALVAGE.  
PROPOSED IMPROVEMENTS:  
EXISTING STRUCTURE TO BE REMOVED AND REPLACED  
WITH A TRIPLE 3'-0" X 3'-0" BOX CULVERT IN STAGES  
MAINTAINING TWO LANES OF TRAFFIC.



STATION 256+75.00  
BUILT BY  
STATE OF ILLINOIS  
FAP 353 SECT. 12 & 13 WRS-3  
LOADING HS20  
STR. NO. 099-C014

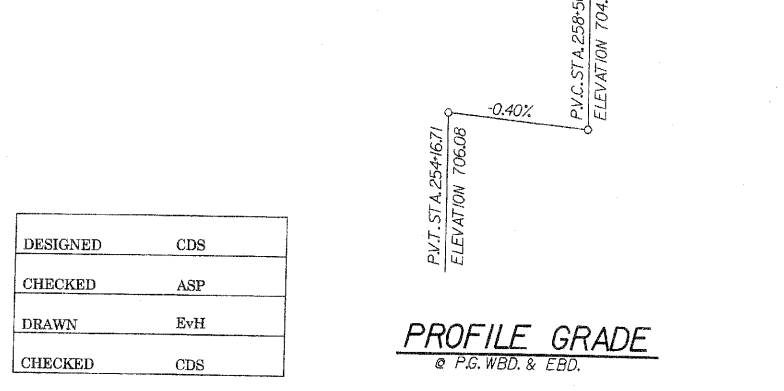
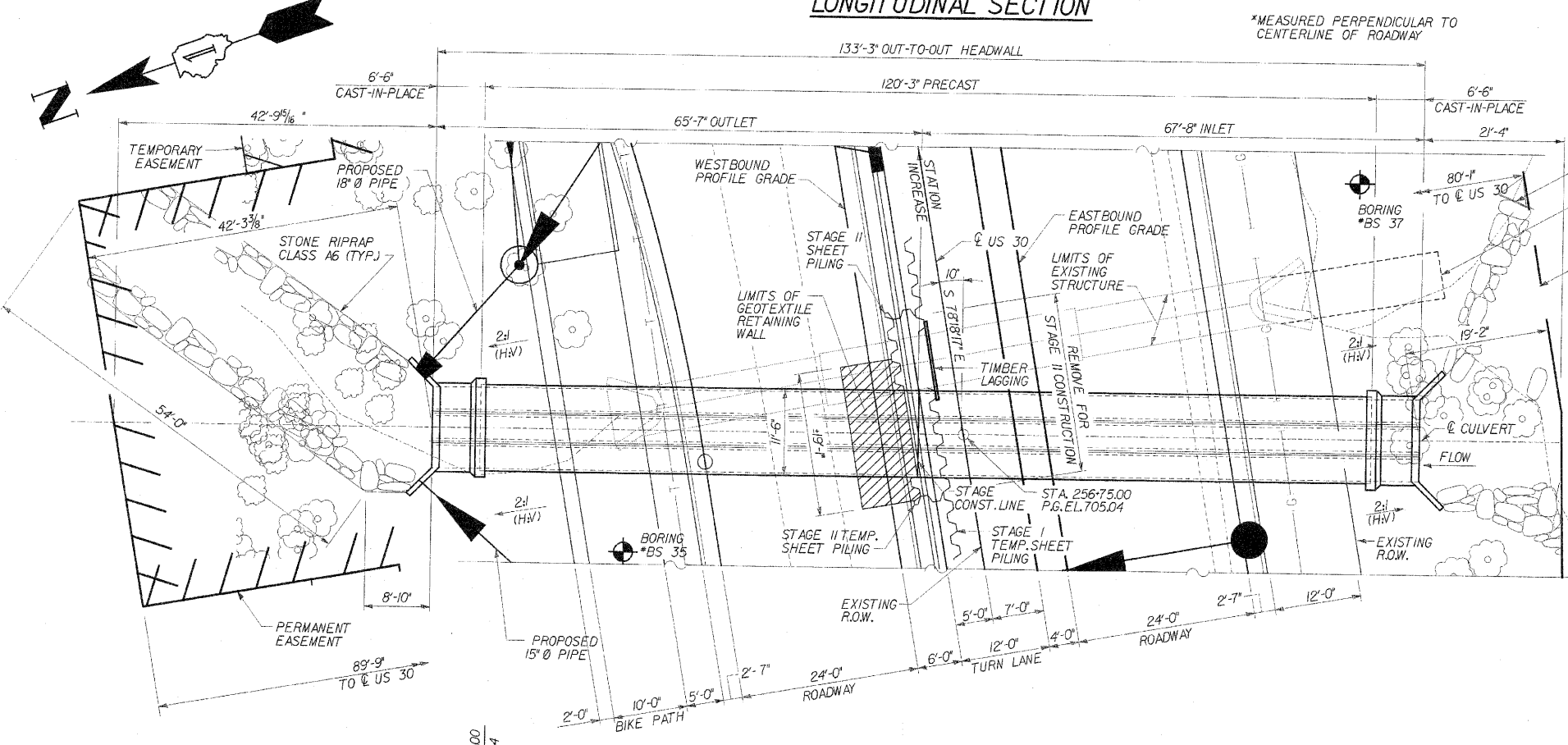
**NAME PLATE**  
NOTE: SEE STANDARD DRAWING S15001  
FOR NAME PLATE DETAILS.

**DESIGN SPECIFICATIONS**  
AASHTO 2002 SPECIFICATIONS  
**LOADING HS20-44**  
ALLOW 50\*/SQ.FT. FOR FUTURE WEARING SURFACE.  
**DESIGN STRESSES**  
FIELD UNITS  
f'c = 3,500 PSI  
fy = 60,000 PSI (REINFORCEMENT)  
PRECAST UNITS  
f'c = 5,000 PSI  
fy = 60,000 PSI (REINFORCEMENT)

**TOTAL BILL OF MATERIALS**

ITEM	UNIT	QUANTITY
STONE RIPRAP, CLASS A6	TON	200
FILTER FABRIC	SQ.YD.	170
REMOVAL OF EXISTING STRUCTURES NO. 4	EACH	1
REINFORCEMENT BARS	POUND	2,479
TEMPORARY SHEET PILING	SQ.FT.	1,102
NAME PLATES	EACH	1
CONCRETE BOX CULVERTS	CU. YD.	17.0
PRECAST CONCRETE BOX CULVERT 3' x 3'	FOOT	360.8
GEOTEXTILE RETAINING WALL	SQ.FT.	95
TEMPORARY DRAINAGE SYSTEM NO. 1	FOOT	25

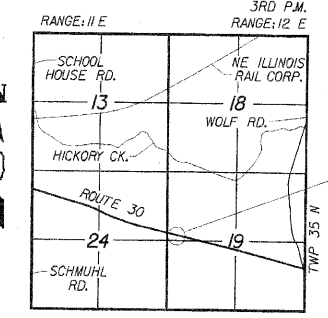
- GENERAL NOTES**
- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR 60. SEE SPECIAL PROVISIONS.
  - CAST-IN-PLACE BARREL SHALL BE POURED MONOLITHICALLY WITH WING WALLS.
  - EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER.
  - IN ACCORDANCE WITH ARTICLE 540.04 OF THE STANDARD SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DIVERT STREAM 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 "REMOVAL OF EXISTING STRUCTURES NO. 4." CLEAN FILL (GRANULAR) MATERIAL WILL ONLY BE ALLOWED.
  - THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M259 (DESIGN FILL HEIGHT= 6'-0")
  - THE CONTRACTOR SHALL PREPARE IN-STREAM WORK PLANS (ALL COFFERDAMS, WORK PADS, AND EROSION AND SEDIMENT CONTROL, ETC.) AND SUBMIT TO THE ENGINEER AND THE U.S. ARMY CORP OF ENGINEERS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHOULD EXPECT TO HAVE TO ATTEND MEETINGS AT THE USACE OFFICE TO DISCUSS THEIR WORK PLAN IN ORDER TO SECURE THEIR PERMIT. THE COST OF ALL IN-STREAM WORK ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	CDS

**WATERWAY INFORMATION**

FLOOD	FREQ. YR.	DISCHARGE C.F.S.	WATERWAY OPENING		NATURAL H.W.E.		CREATED HEAD		HEADWATER ELEVATION	
			EXISTING (Square Feet)	PROPOSED (Square Feet)	EXISTING U/S Face	PROPOSED U/S Face	EXISTING (feet)	PROPOSED (feet)	EXISTING	PROPOSED
DESIGN	10	78	8.58	16.50	698.82	699.35	0.20	0.20	699.02	699.55
BASE	50	123	9.34	18.19	699.01	699.54	1.29	0.19	700.30	699.73
MAX. CALC.	100	141	9.62	18.82	699.08	699.61	1.78	0.30	700.86	699.91
OVERTOPPING	500	186	10.22	20.17	699.23	699.76	2.94	0.72	702.17	700.48



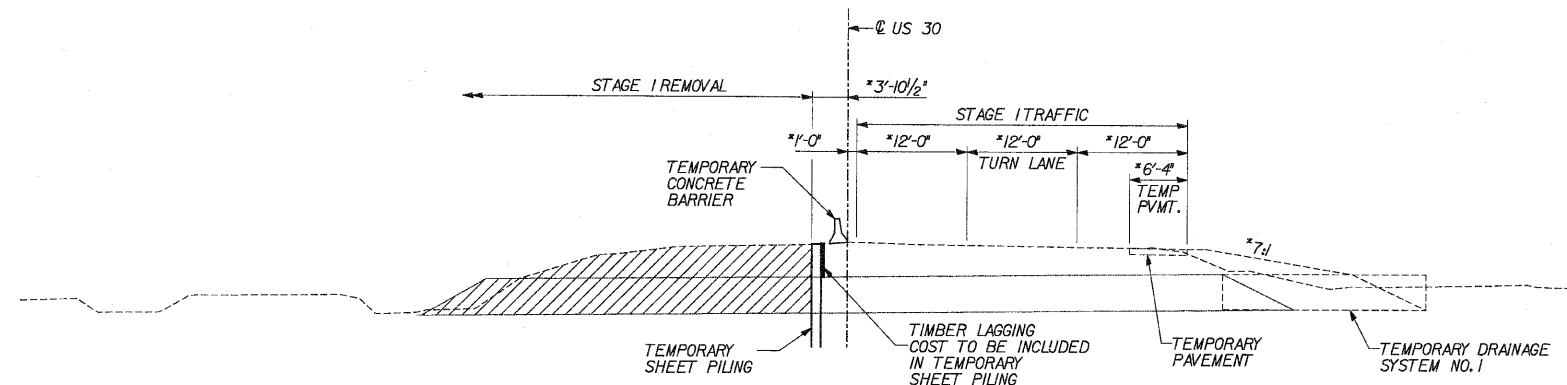
**LOCATION SKETCH**

REVISIONS

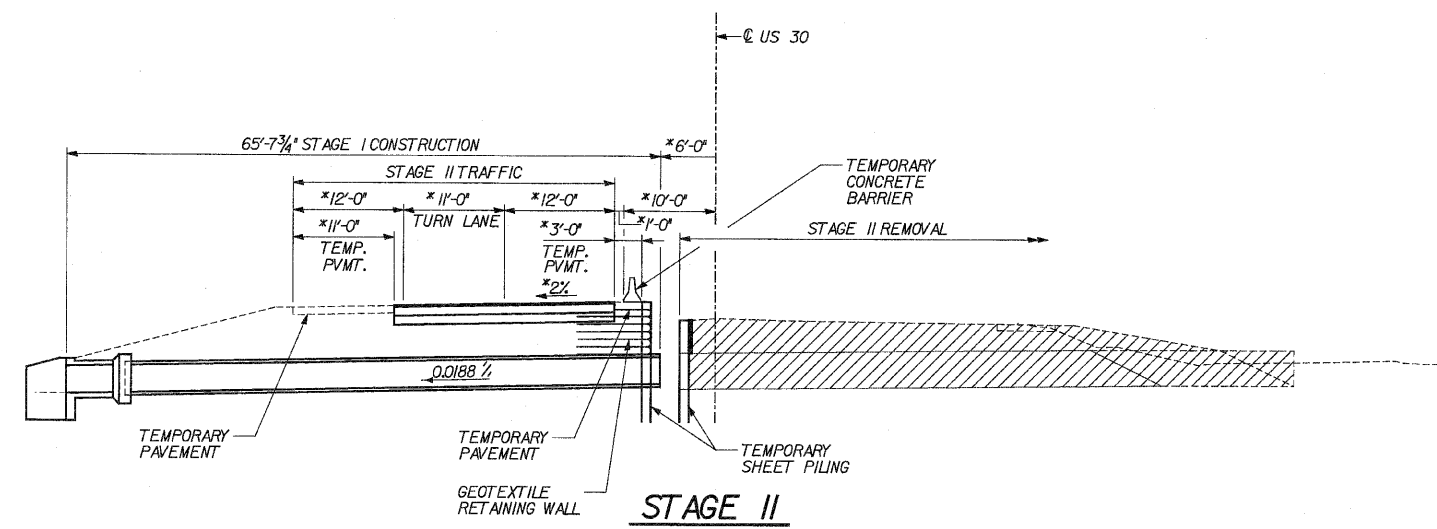
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

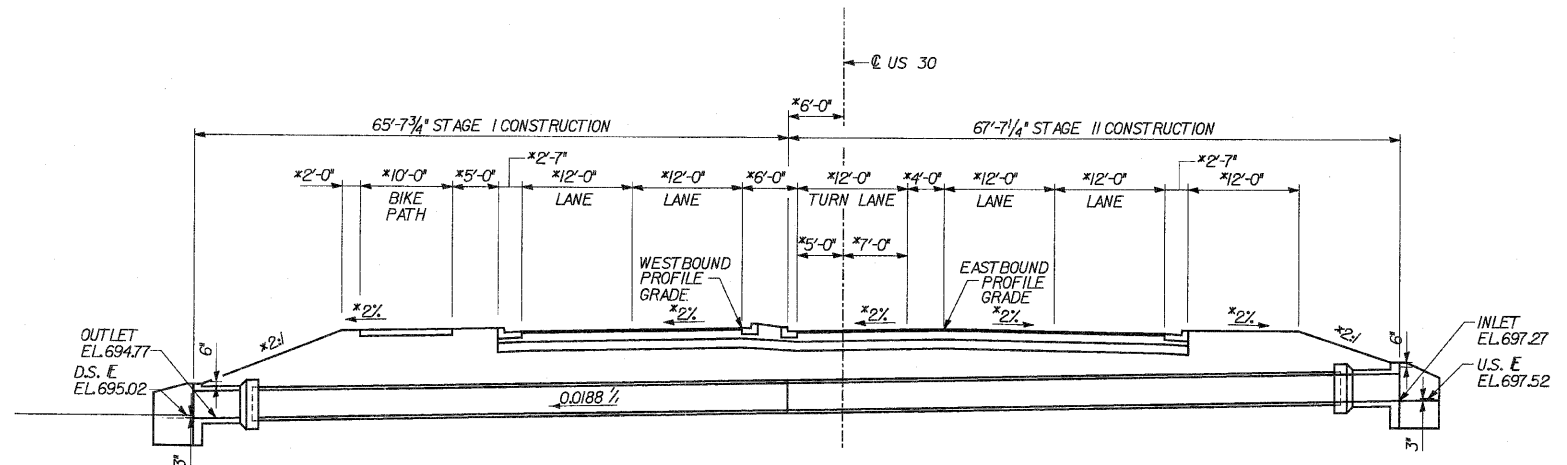
**CULVERT 'D'**  
**GENERAL PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION 12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014



**STAGE I**



**STAGE II**



**FINAL CROSS SECTION**

\*MEASURED PERPENDICULAR TO CENTERLINE OF ROADWAY

**LEGEND**



**PROPOSED STAGING NOTES**

- STAGE I REMOVAL AND CONSTRUCTION**
1. MAINTAIN TWO LANES OF TRAFFIC.
  2. INSTALL TEMPORARY DRAINAGE SYSTEM NO. 1 AND TEMPORARY PAVEMENT.
  3. INSTALL TEMPORARY CONCRETE BARRIER.
  4. INSTALL STAGE I TEMPORARY SHEET PILING AND TIMBER LAGGING.
  5. REMOVE PORTION OF NORTHERN END OF EXISTING STRUCTURE.
  6. CONSTRUCT STAGE I PORTION OF THE STRUCTURE.
  7. INSTALL STAGE II TEMPORARY SHEET PILING.
  8. INSTALL GEOTEXTILE RETAINING WALL DURING BACKFILL OPERATIONS.
  9. CONSTRUCT ROADWAY PAVEMENT & TEMPORARY PAVEMENT.
- STAGE II REMOVAL AND CONSTRUCTION**
1. INSTALL TEMPORARY CONCRETE BARRIER.
  2. REMOVE REMAINDER OF EXISTING STRUCTURE AND TEMPORARY DRAINAGE SYSTEM NO. 1.
  3. CONSTRUCT STAGE II PORTION OF THE STRUCTURE.
  4. CONSTRUCT ROADWAY PAVEMENT.

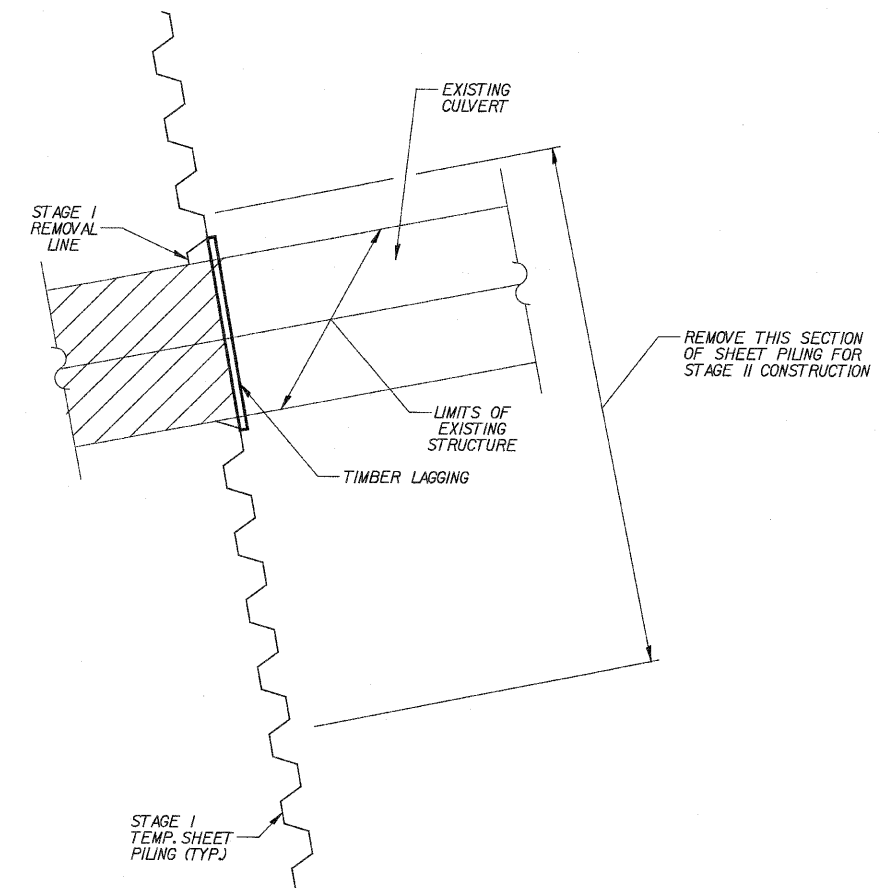
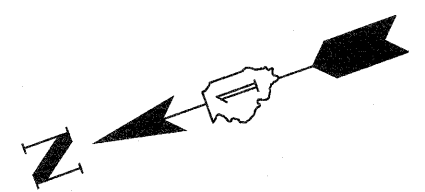
DESIGNED	ASP
CHECKED	WSP
DRAWN	BGC
CHECKED	ASP

REVISIONS	
NAME	DATE

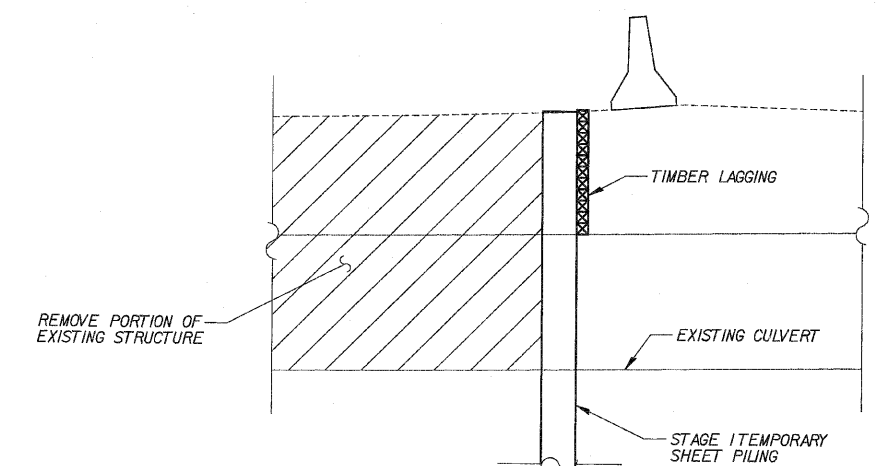
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

**CULVERT 'D'**  
**PROPOSED STAGING PLANNING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014



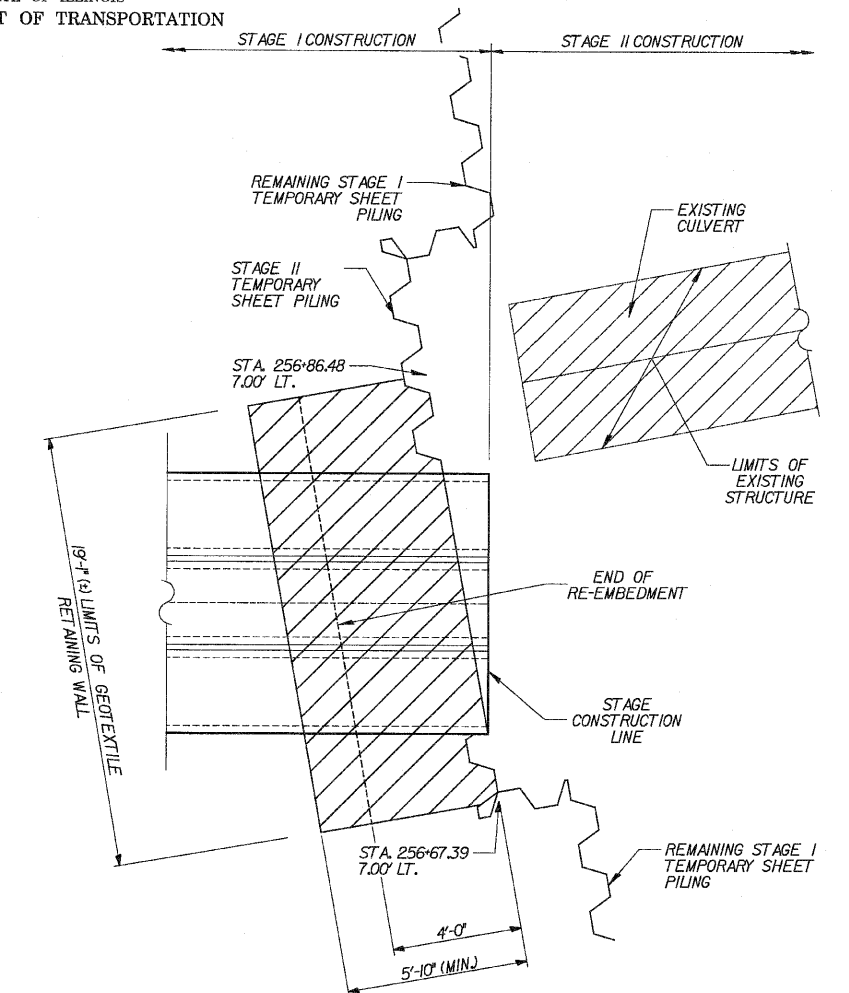


**STAGE I PLAN**

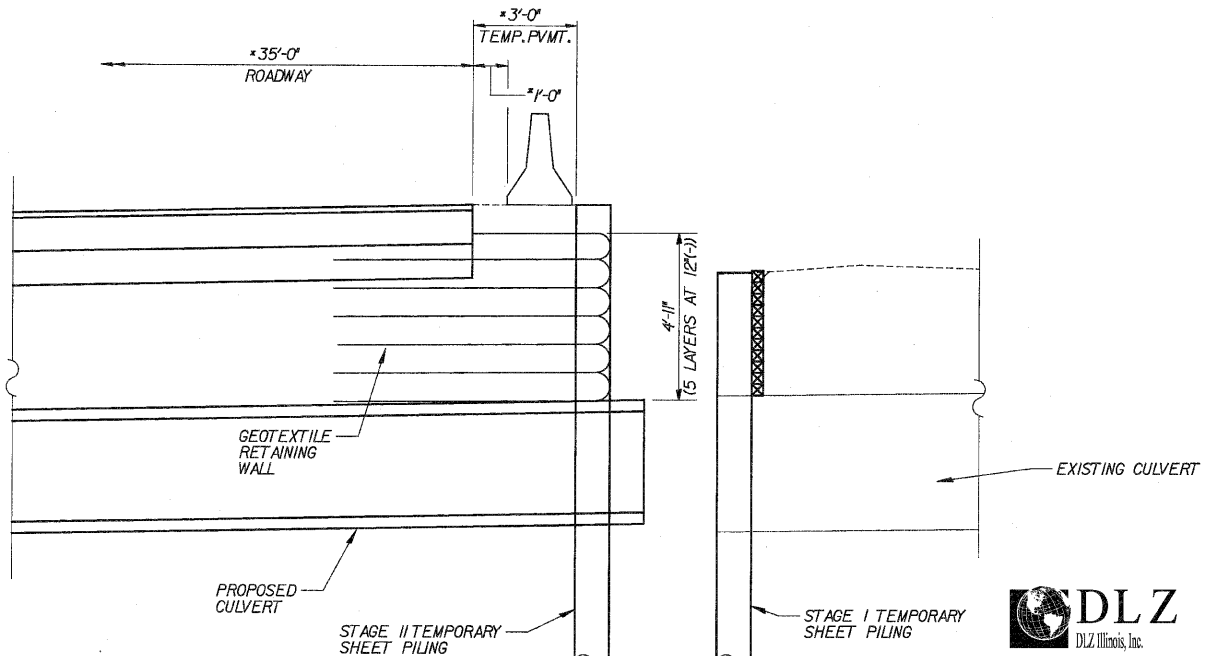


**STAGE I SECTION**

DESIGNED	CDS
CHECKED	ASP
DRAWN	BGC
CHECKED	LNB



**STAGE II PLAN**



**STAGE II SECTION**

NOTE:  
THE GEOTEXTILE SOIL REINFORCEMENT SHALL HAVE A MINIMUM ALLOWABLE TENSILE STRENGTH (T<sub>min</sub>) OF 21 lb./in. AS DETERMINED BY THE PROCEDURE DESCRIBED IN THE SPECIAL PROVISION. THE COMPUTATIONS SUPPORTING THE DETERMINATION OF T<sub>min</sub> SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

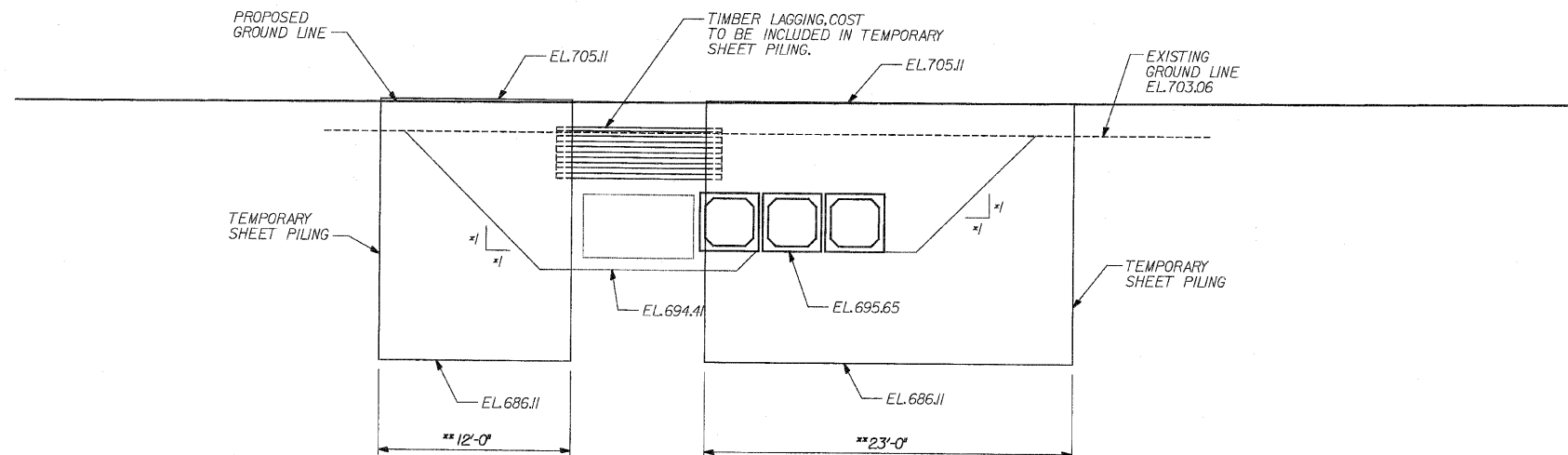
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

REVISIONS	
NAME	DATE

**CULVERT 'D'**  
**STAGING DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	642
FED. ROAD DIST. #	ILLINOIS	FED. AID PROJECT		

\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 62479



**STAGE I TEMPORARY SHEET PILING**

(LOOKING SOUTH)

- \* DENOTES PERPENDICULAR TO C. OF CULVERT
- \*\* MEASURED ALONG C. OF PILING

**PROPOSED  
TEMPORARY SHEET PILING DATA**

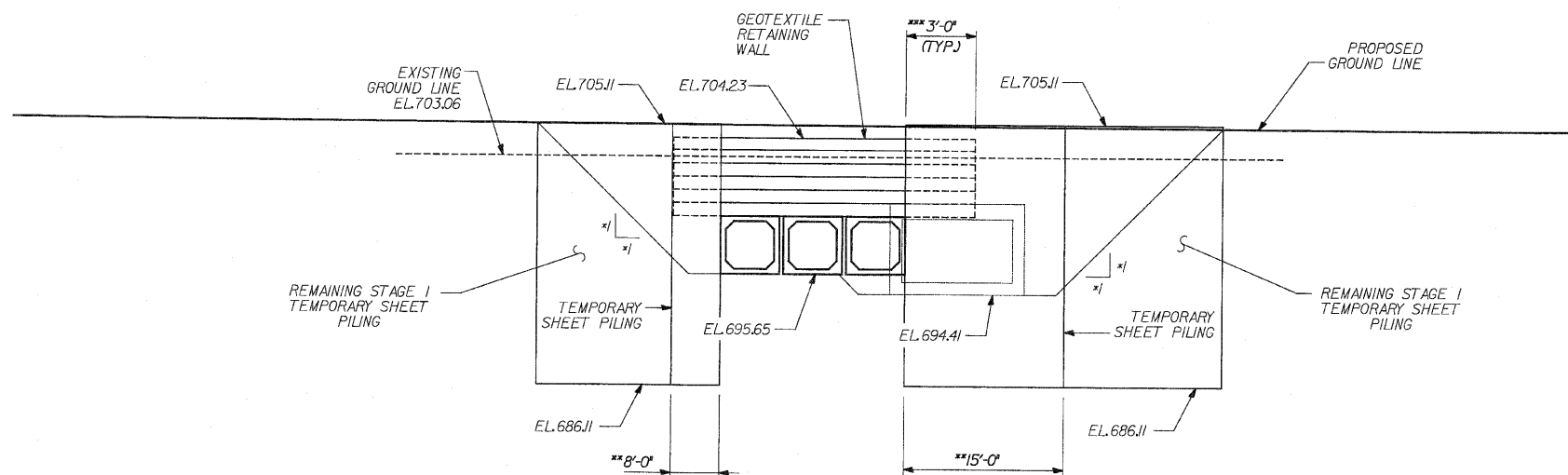
STAGE I

TOP ELEV. 705.11  
BOTTOM ELEV. 686.61  
EMBEDMENT - 8'-4"  
MIN. SECTION MODULUS - 7.9 IN<sup>3</sup>/FT  
LENGTH - 12'-0" (E. SIDE) 23'-0" (W. SIDE)

STAGE II

TOP ELEV. 705.11  
BOTTOM ELEV. 686.61  
EMBEDMENT - 8'-4"  
MIN. SECTION MODULUS - 7.9 IN<sup>3</sup>/FT  
LENGTH - 15'-0" (E. SIDE) 8'-0" (W. SIDE)

IF CONTRACTOR CHOOSES TO ALTER THE TEMPORARY CANTILEVERED SHEET PILING DESIGN REQUIREMENTS SHOWN ON THE PLANS FOR LESSER DESIGN REQUIREMENTS, THEN FULL DESIGN SUBMITTALS WITH THE REQUIRED SEALS WILL BE EXPECTED BY THE DEPARTMENT FOR REVIEW AND APPROVAL.



**STAGE II TEMPORARY SHEET PILING**

(LOOKING NORTH)

- \* DENOTES PERPENDICULAR TO C. OF CULVERT
- \*\* MEASURED ALONG C. OF PILING
- \*\*\* MEASURED PARALLEL TO C. OF ROADWAY

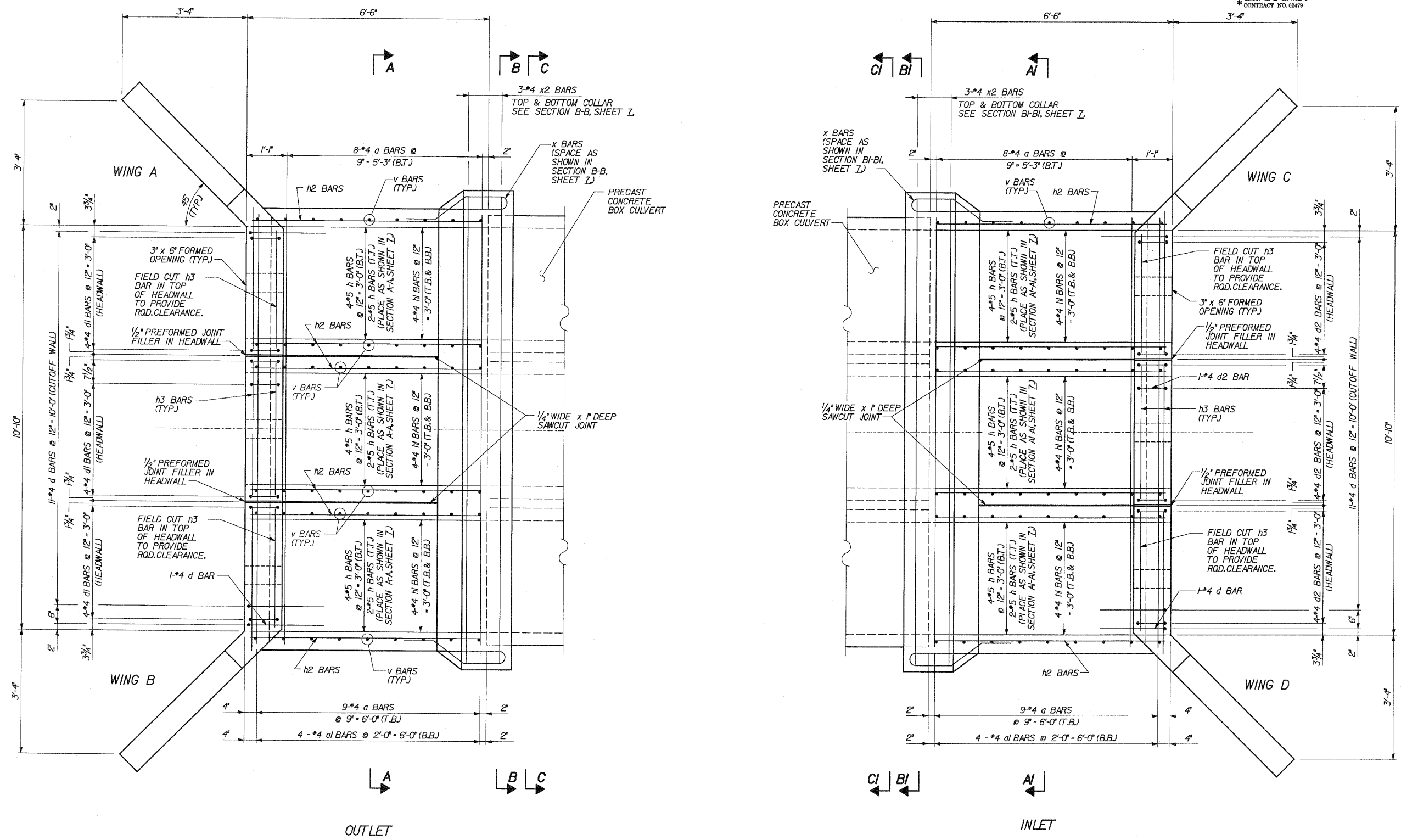
DESIGNED	ASP
CHECKED	WSP
DRAWN	BGC
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'D'  
TEMPORARY SHEET PILING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	643
FED. ROAD DIST. #	ILLINOIS	FED. AID PROJECT		



PLAN

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	CDS

**LEGEND**

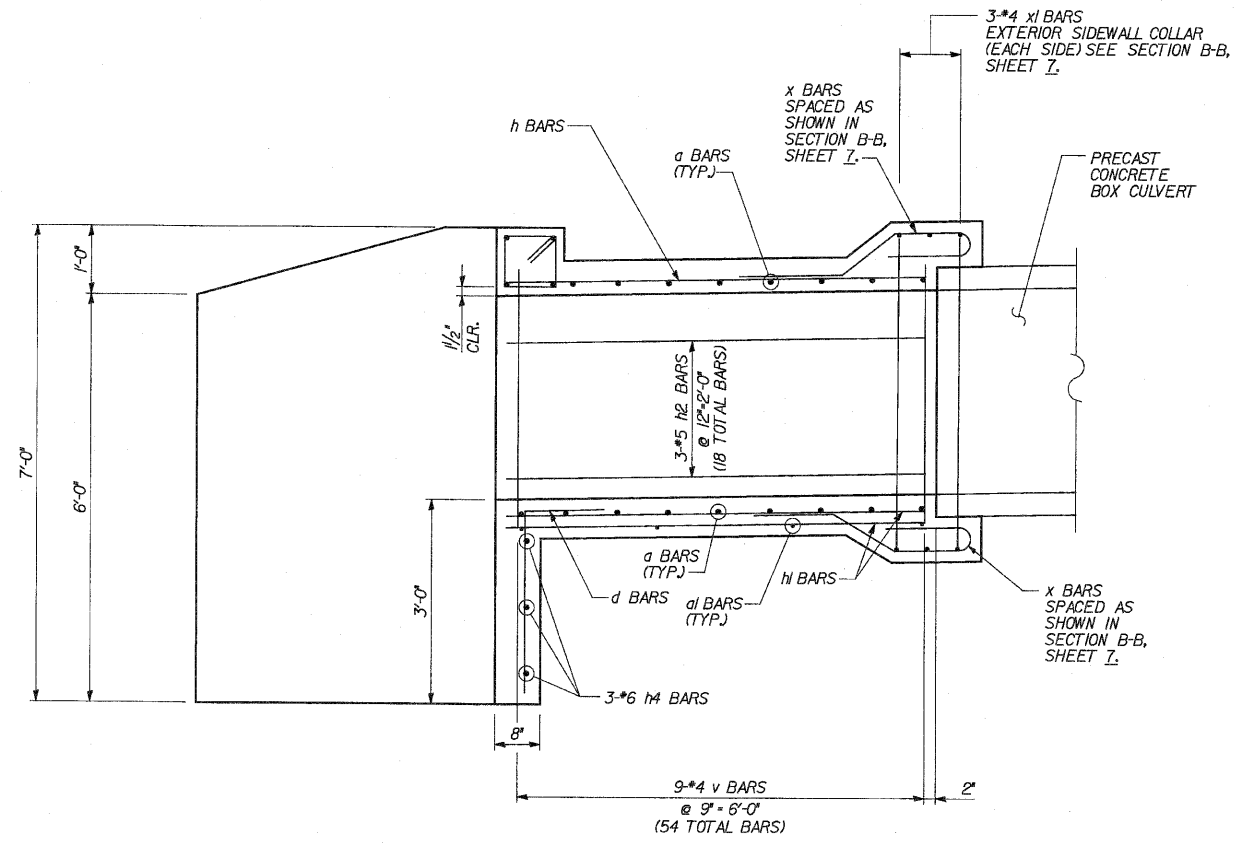
T.T. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

REVISIONS	
NAME	DATE

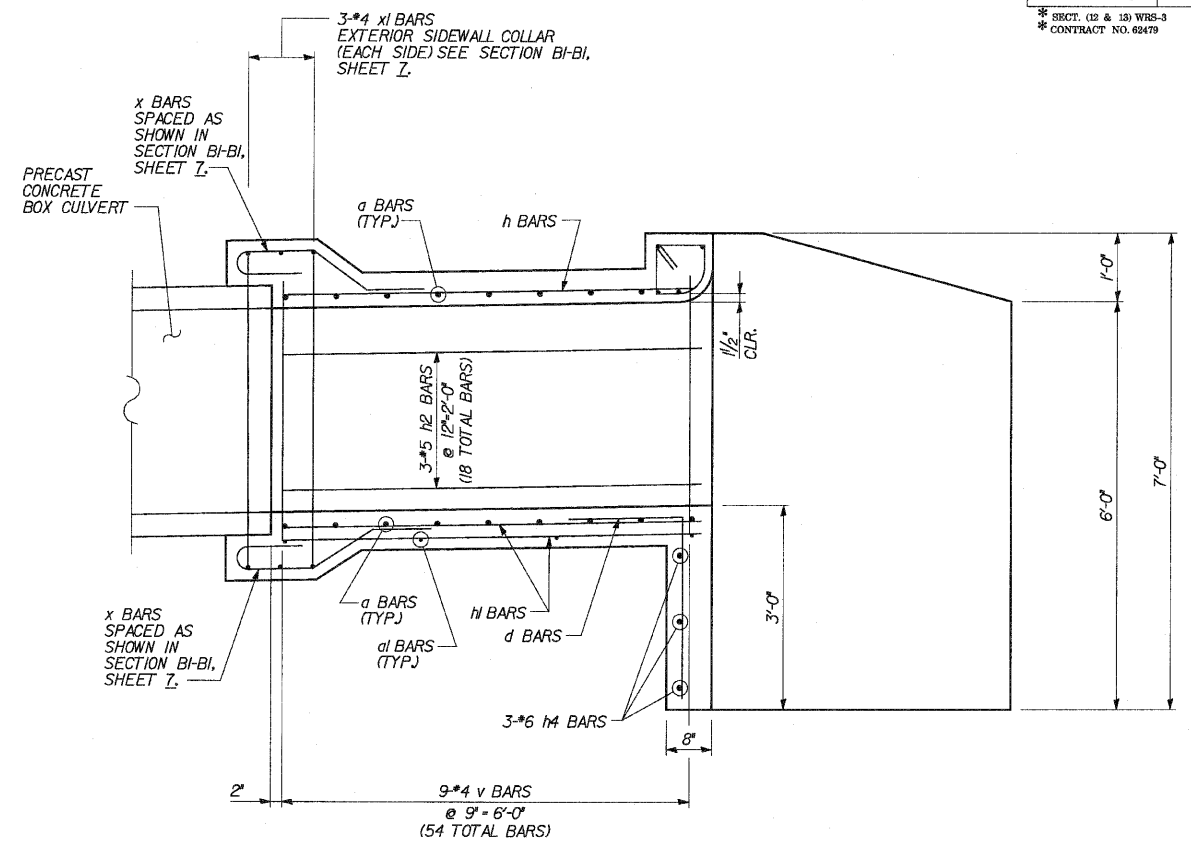
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'D'**  
**END SECTIONS PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014

\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 62479

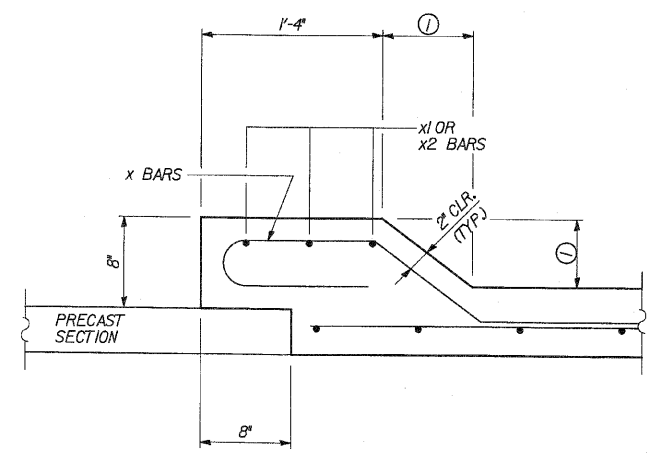


OUTLET

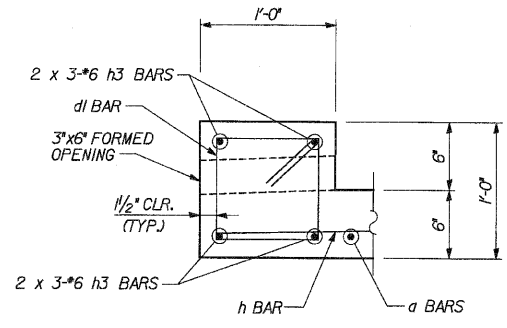


INLET

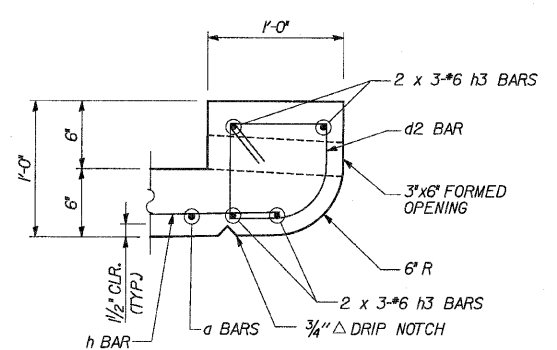
ELEVATION



PRECAST TO CAST-IN-PLACE CONNECTION COLLAR



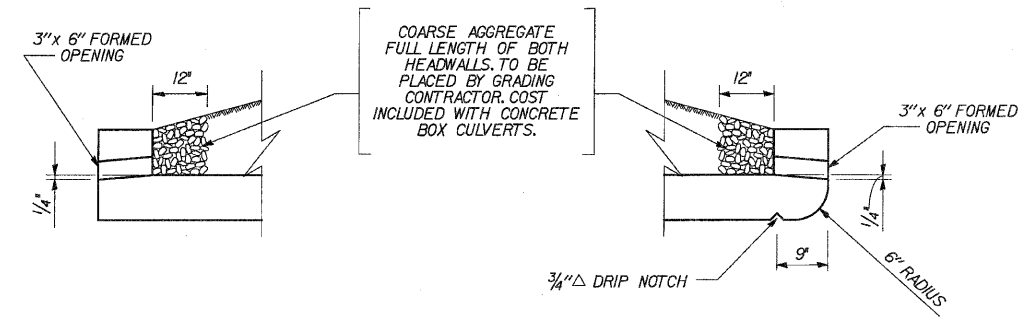
DOWNSTREAM END



UPSTREAM END

HEADWALL DETAILS

NOTE:  
BARS INDICATED THUS 2 x 3 #6 ETC. INDICATES 2 LINES OF BARS WITH 3 LENGTHS PER LINE.



DOWNSTREAM ONLY

UPSTREAM ONLY

DRAIN DETAIL

① TOP SLAB = 6'  
BOTTOM SLAB = 5'  
SIDEWALLS = 6'

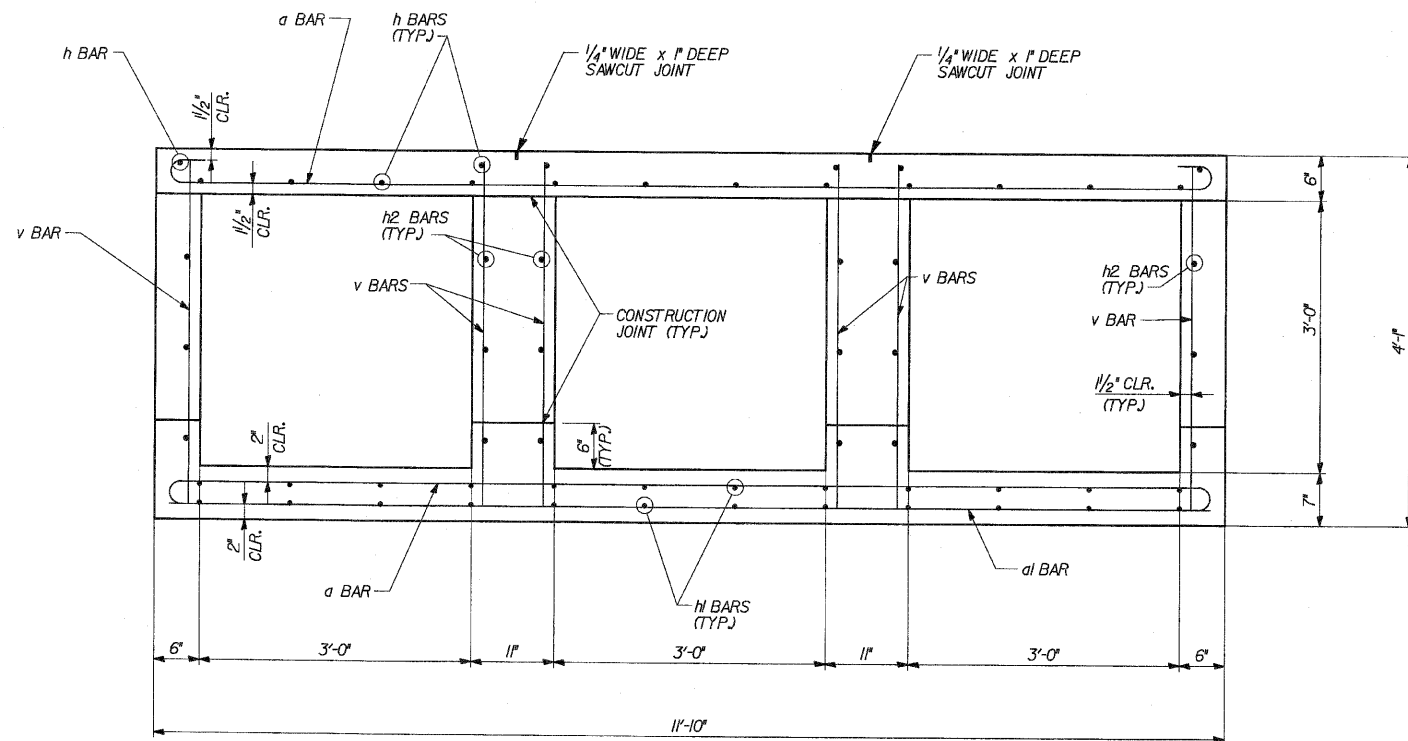
DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	CDS

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

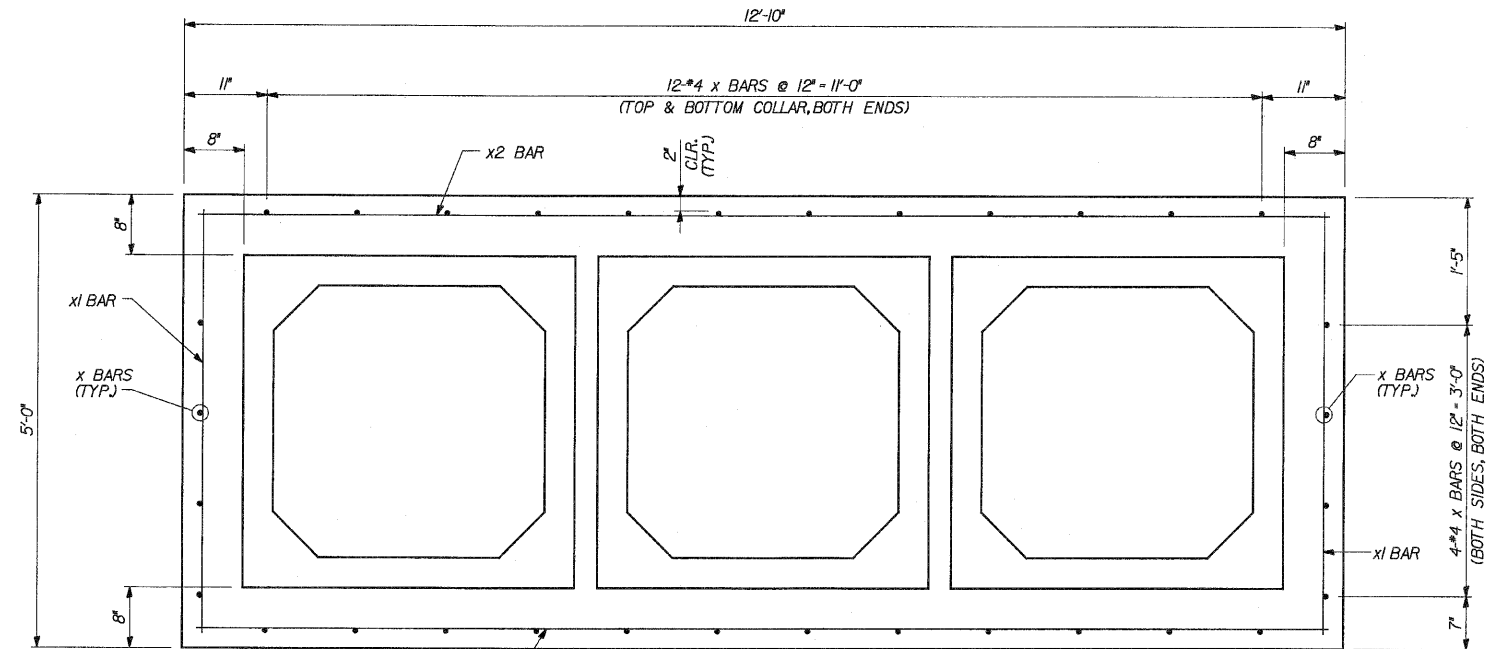
**CULVERT 'D'**  
**END SECTION ELEVATION**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PAP 353	*	WILL	1235	645
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	
* SECT. (12 & 13) WRS-3				
* CONTRACT NO. 62479				



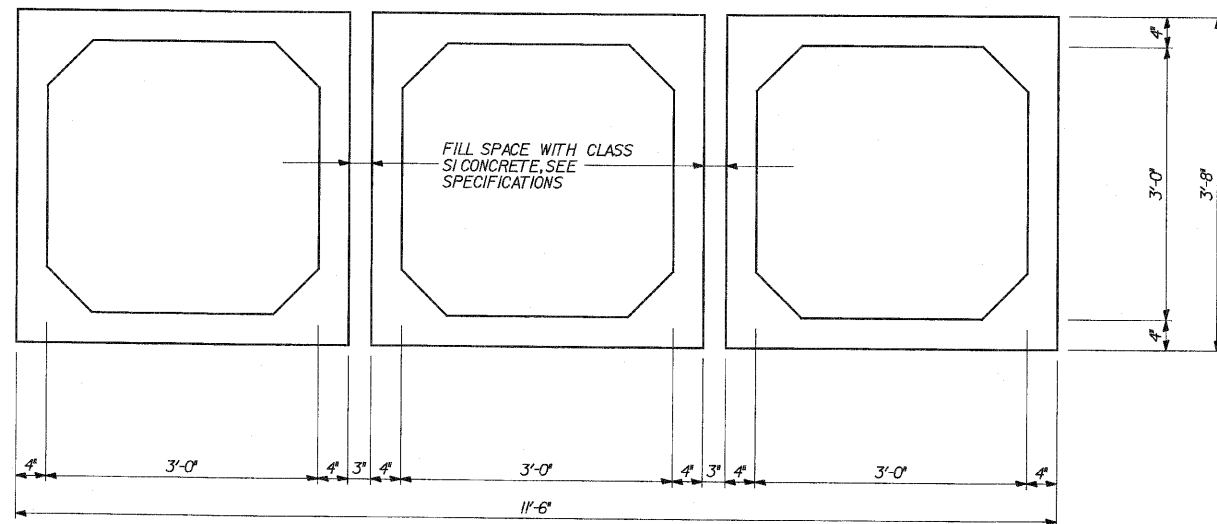
**CAST-IN PLACE TYPICAL SECTION**  
**SECTION A-A & A1-A1**

NOTE:  
TILT HOOK BARS IN TOP AND  
BOTTOM SLAB TO PROVIDE  
REQUIRED CLEARANCE.



**PRECAST TO CAST-IN-PLACE CONNECTION COLLAR**

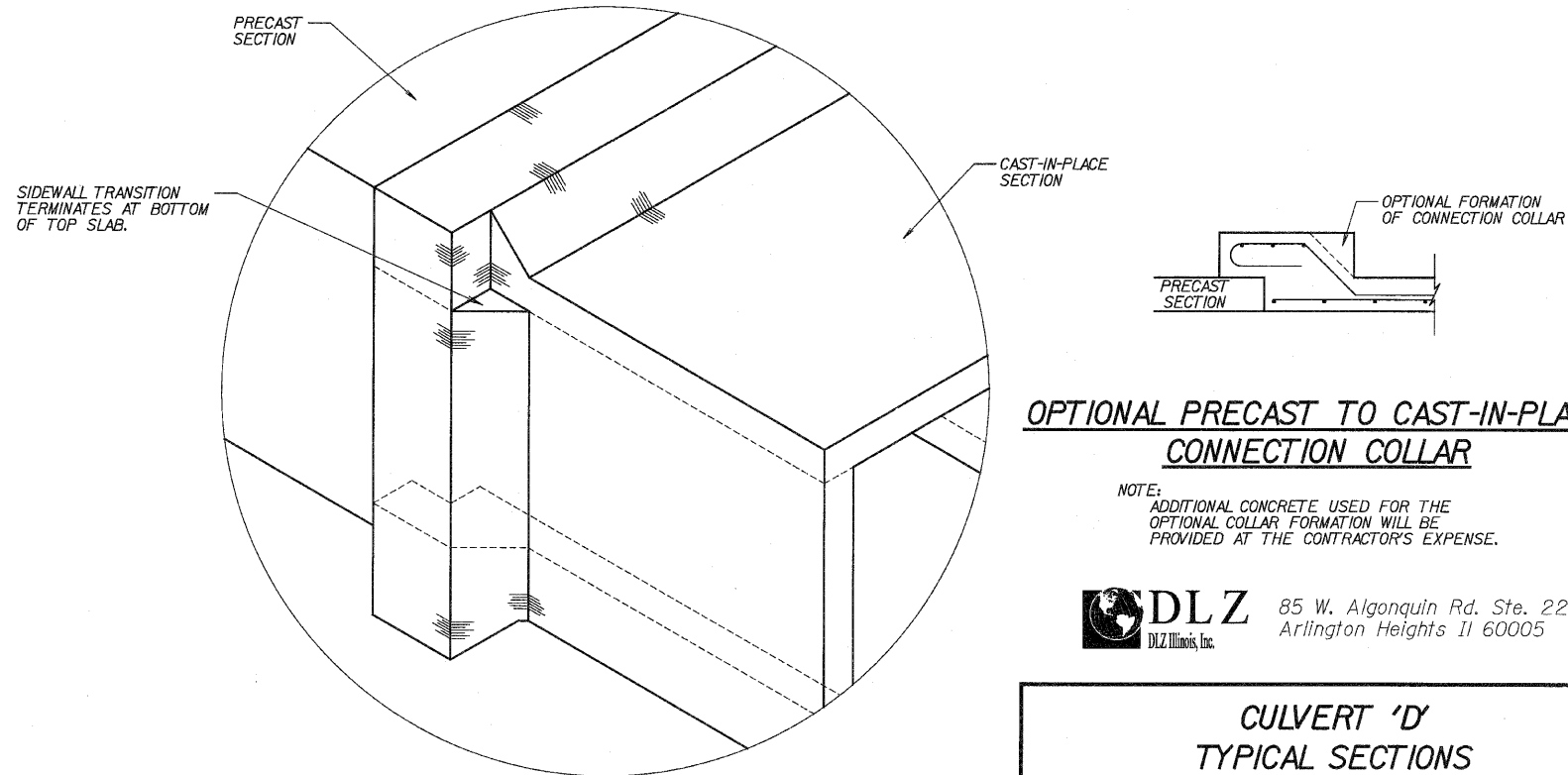
**SECTION B-B & B1-B1**



**PRECAST TYPICAL SECTION**  
**SECTION C-C & C1-C1**

NOTE:  
CLASS SI CONCRETE TO BE  
POURED BETWEEN PRECAST SECTIONS  
PRIOR TO FORMING AND POURING  
CAST-IN-PLACE END SECTIONS

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	CDS



**ISOMETRIC VIEW OF  
CONNECTION COLLAR**

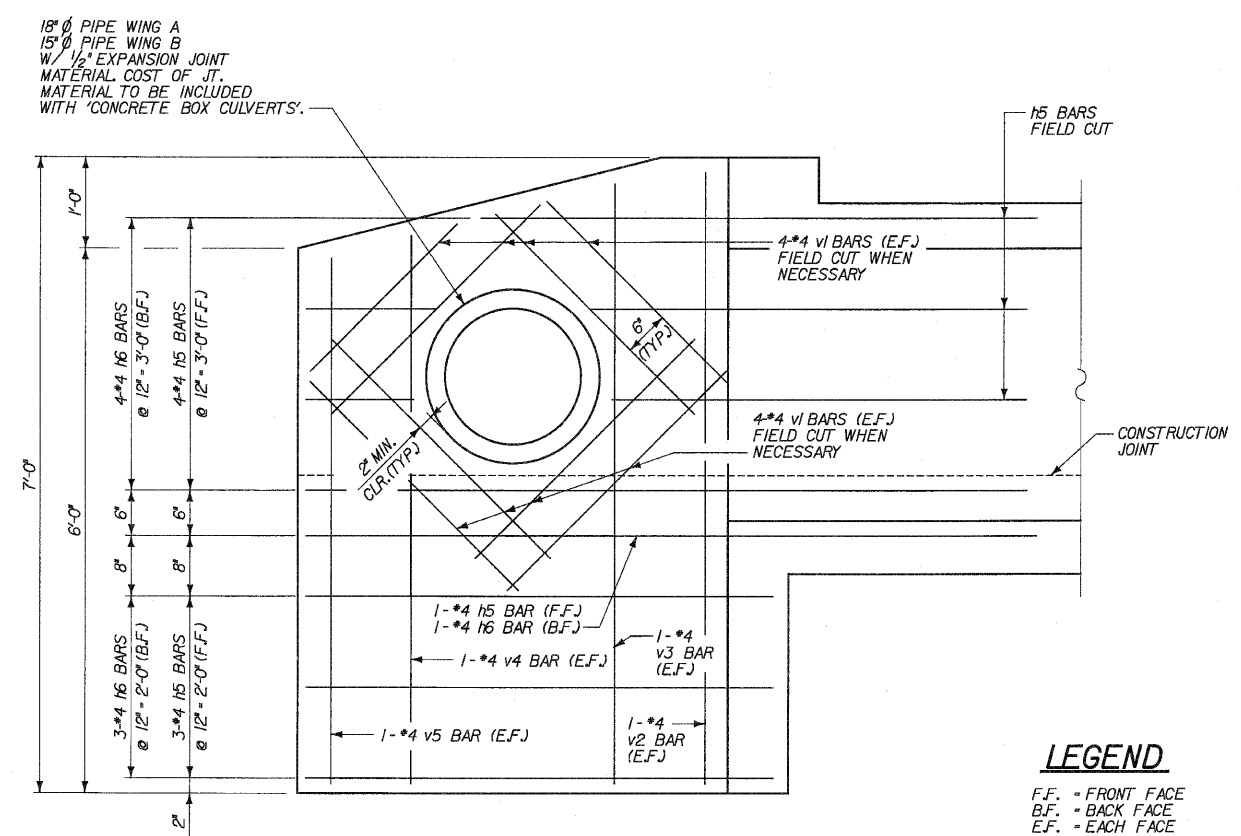
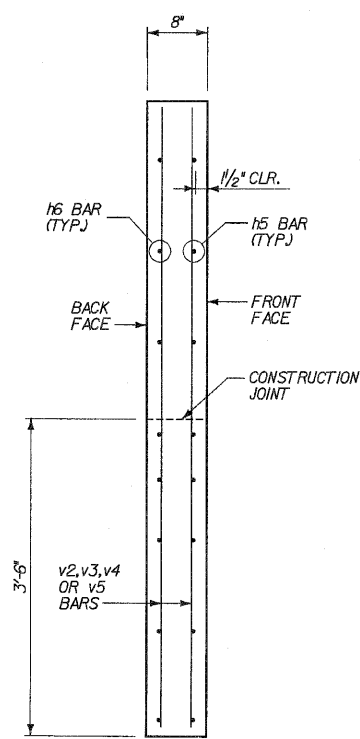
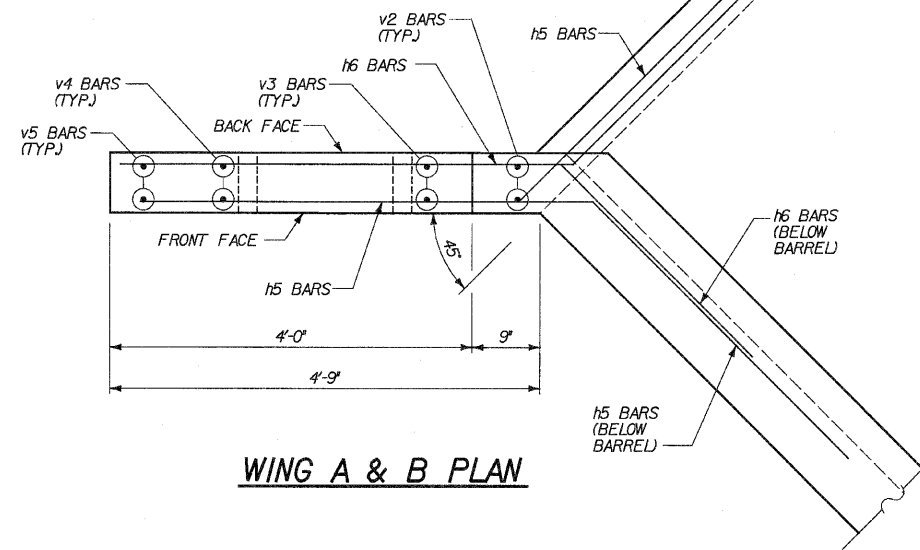
**OPTIONAL PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR**

NOTE:  
ADDITIONAL CONCRETE USED FOR THE  
OPTIONAL COLLAR FORMATION WILL BE  
PROVIDED AT THE CONTRACTOR'S EXPENSE.

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'D'**  
**TYPICAL SECTIONS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014

REVISIONS	
NAME	DATE



**LEGEND**  
F.F. = FRONT FACE  
B.F. = BACK FACE  
E.F. = EACH FACE

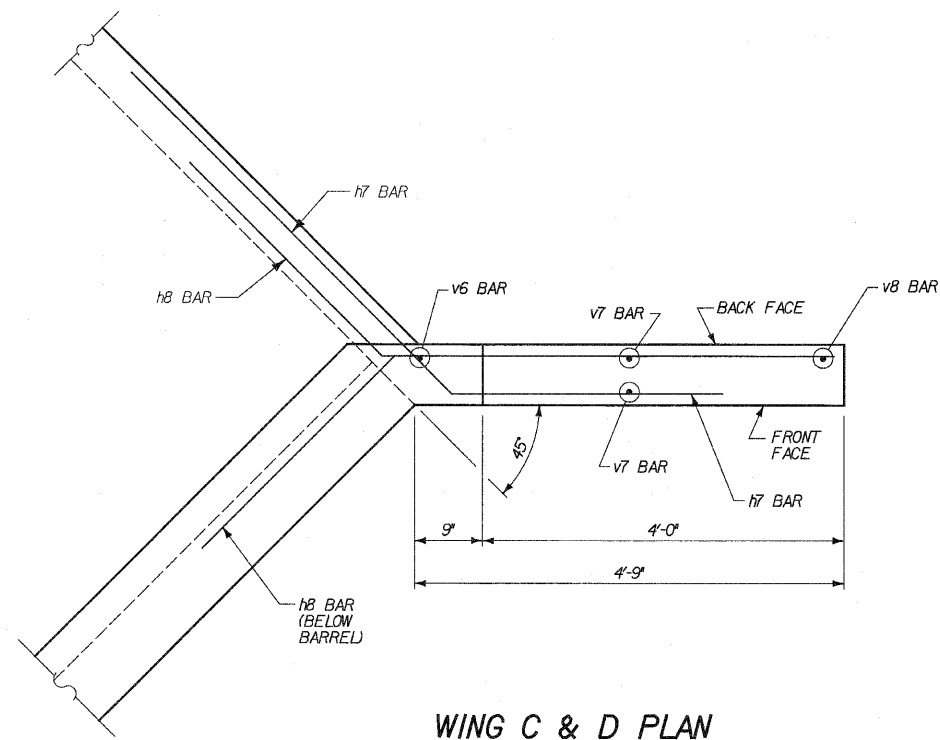
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	CDS

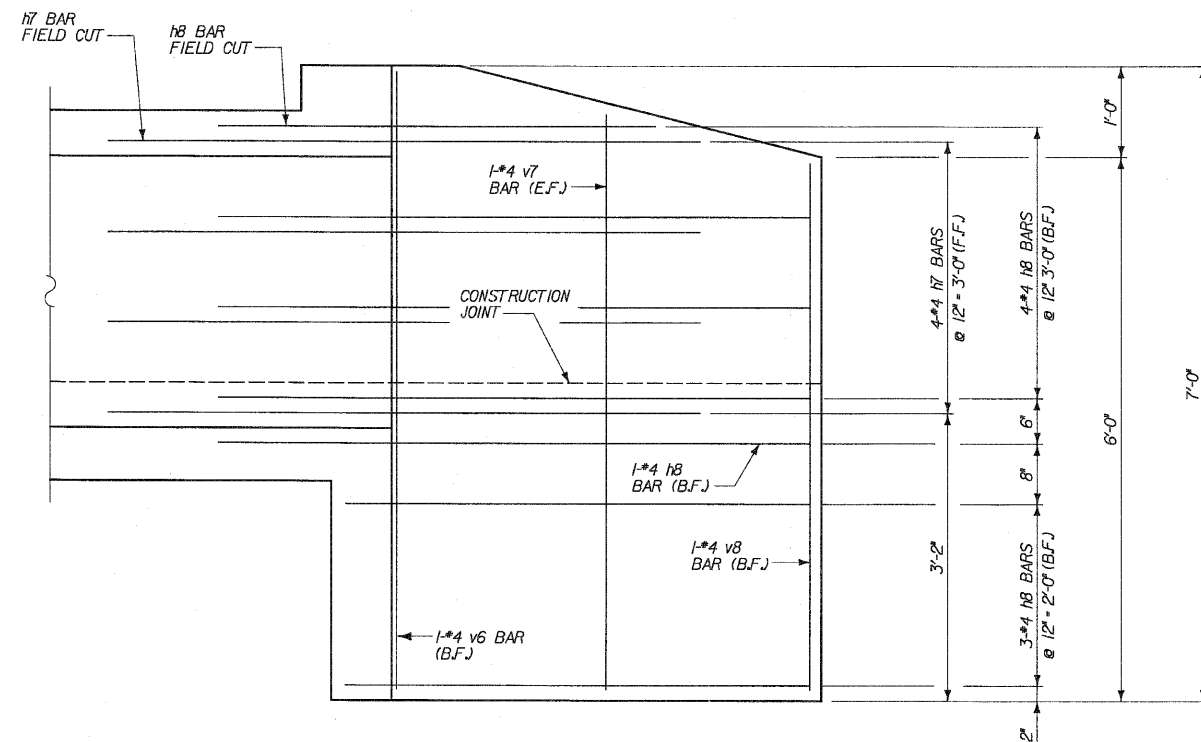
NOTE:  
FIELD CUT 15 & 16  
BARS FOR MIN.  
CLR. AROUND PIPE  
HOLE IN WINGS.

REVISIONS	
NAME	DATE

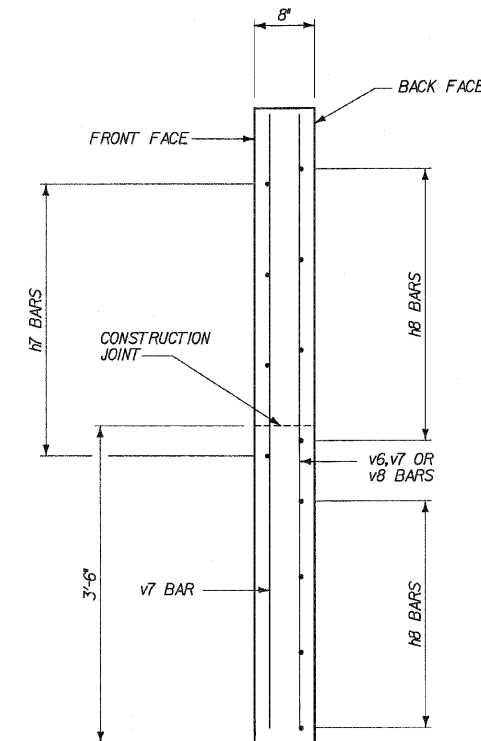
**CULVERT 'D'**  
**WINGS A & B**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014



**WING C & D PLAN**



**WING C & D ELEVATION**



**WING C & D TYPICAL SECTION**

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	CDS

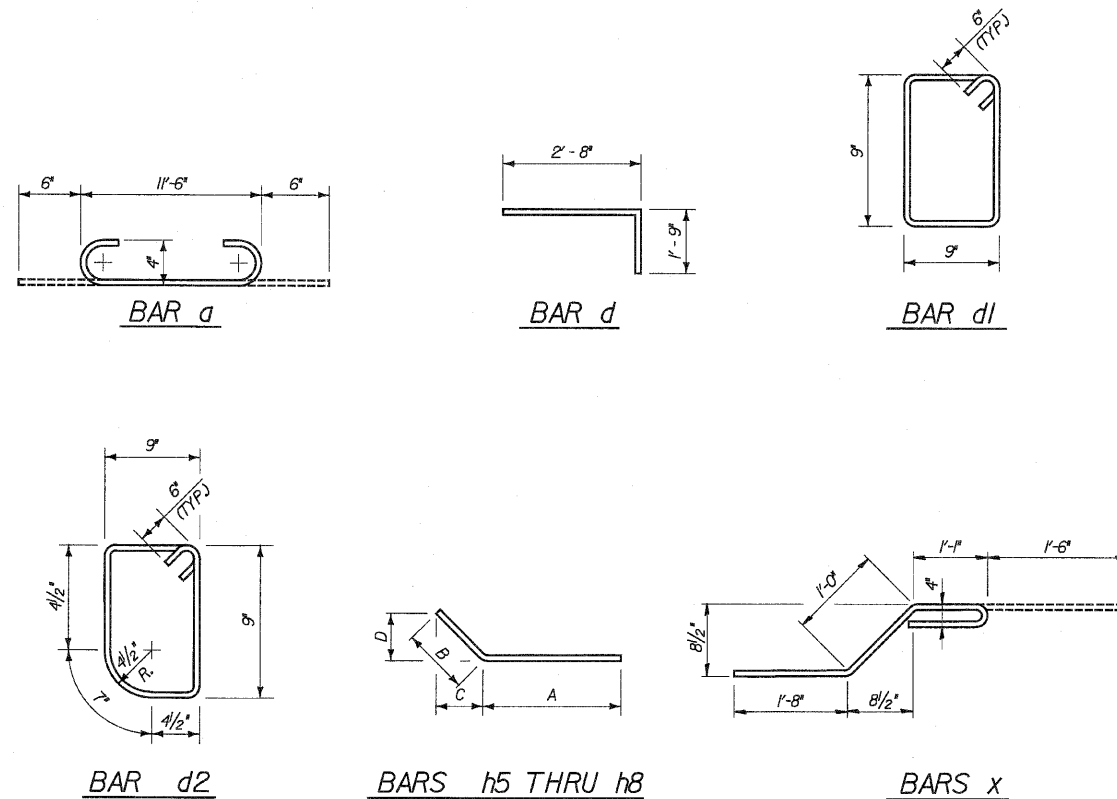
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'D'**  
**WINGS C & D**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a	34	4	12'-6"	
al	8	4	11'-6"	
d	24	4	4'-5"	
d1	13	4	4'-0"	
d2	13	4	3'-10"	
h	36	5	6'-1"	
h1	48	4	6'-2"	
h2	36	5	6'-2"	
h3	24	6	3'-7"	
h4	6	6	10'-9"	
h5	16	4	9'-0"	
h6	16	4	7'-10"	
h7	8	4	8'-0"	
h8	16	4	7'-10"	
v	108	4	3'-9"	
v1	32	4	3'-5"	
v2	4	4	6'-8"	
v3	4	4	6'-6"	
v4	4	4	6'-0"	
v5	4	4	5'-8"	
v6	2	4	6'-8"	
v7	4	4	6'-3"	
v8	2	4	5'-8"	
x	64	4	5'-3"	
x1	12	4	4'-8"	
x2	12	4	12'-6"	
CONCRETE BOX CULVERTS			CU. YD.	17.0
REINFORCEMENT BARS			POUND	2,479



**BAR BENDING DIAGRAMS**

Bar	A		B		C		D	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
h5	5	0	4	0	2	10	2	10
h6	4	10	3	0	2	1 1/2	2	1 1/2
h7	5	0	3	0	2	1 1/2	3	6 3/8
h8	4	10	3	0	2	1 1/2	2	1 1/2

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	CDS

REVISIONS	
NAME	DATE

**DLZ** DLZ Illinois, Inc.  
85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

**CULVERT 'D'**  
**BARBILL & DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 256+75.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C014





STA. 270+14.74, 25.17 RT., EL. 699.632  
 PK NAIL ON WESTMOST WOOD GUARDRAIL  
 POST +/- 300' WEST OF TALL GRASS PARKWAY,  
 SOUTH SIDE OF US 30

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	650
FED. ROAD DIST.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 1  
11 SHEETS

STATION 271+00.00  
 BUILT BY  
 STATE OF ILLINOIS  
 FAP 353 SECT. (12 & 13) WRS-3  
 LOADING HS20  
 STR. NO. 099-C015

DESIGN SPECIFICATIONS

AASHTO 2002 SPECIFICATIONS.  
 LOADING HS20-44  
 ALLOW 50\*/SQ.FT. FOR FUTURE WEARING SURFACE.

DESIGN STRESSES

FIELD UNITS  
 f'c = 3,500 PSI  
 fy = 60,000 PSI (REINFORCEMENT)  
 PRECAST UNITS  
 f'c = 5,000 PSI  
 fy = 60,000 PSI (REINFORCEMENT)

NAME PLATE

NOTE: SEE STANDARD DRAWING 515001  
 FOR NAME PLATE DETAILS.

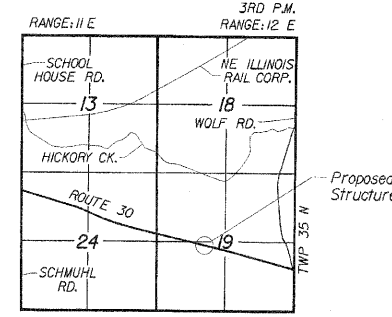
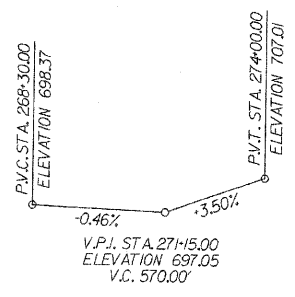
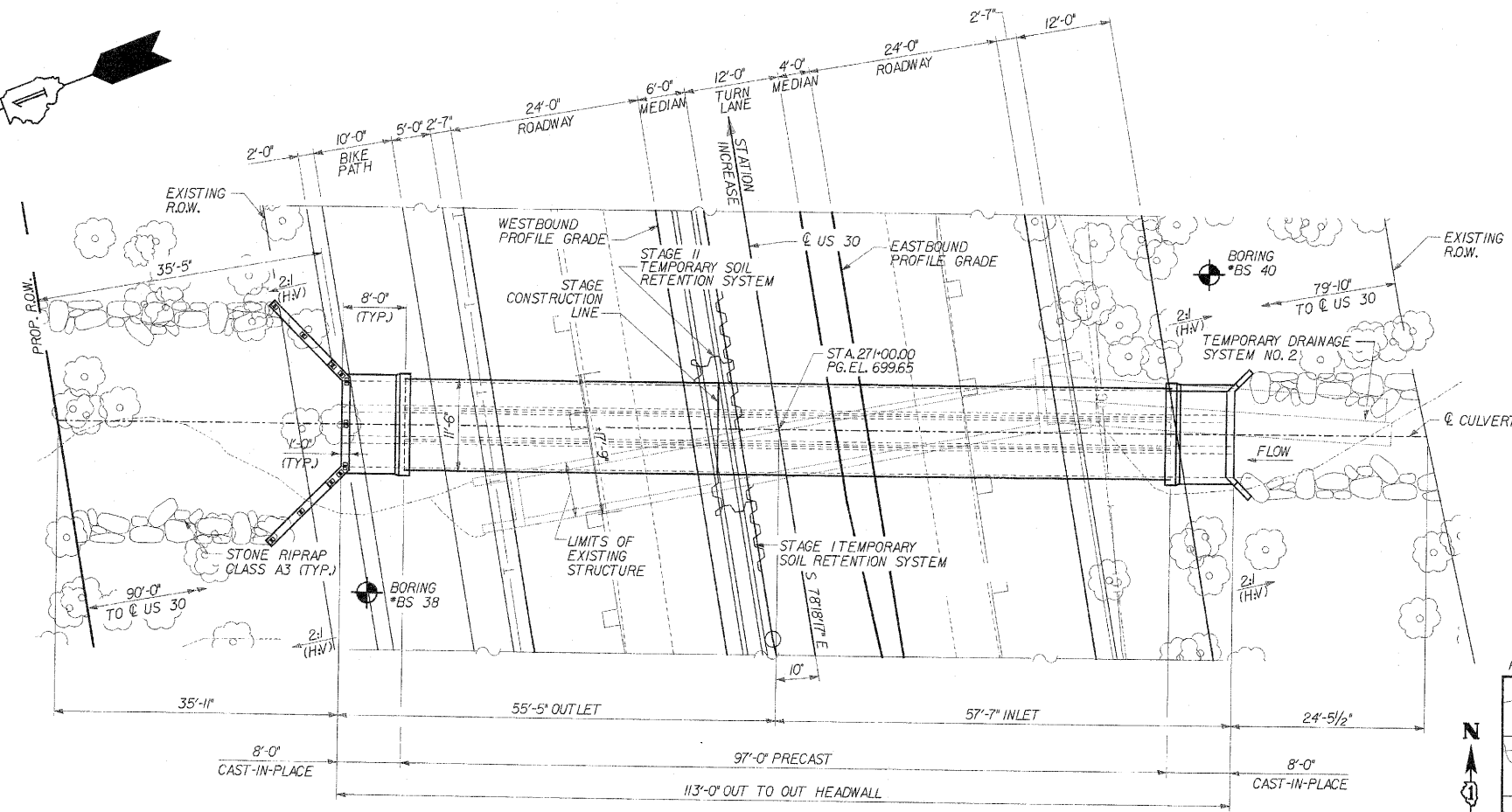
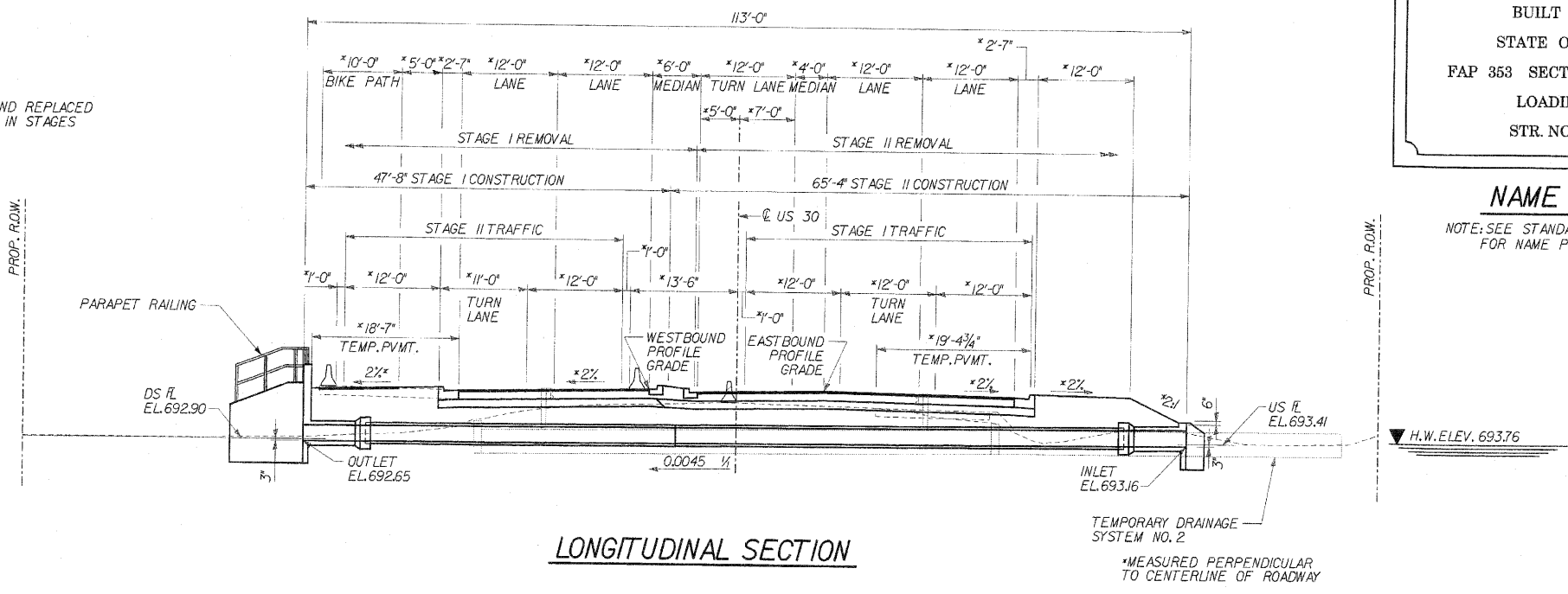
TOTAL BILL OF MATERIALS

ITEM	UNIT	QUANTITY
STONE RIPRAP CLASS A3	TON	90
FILTER FABRIC	SQ.YD.	160
REMOVAL OF EXISTING STRUCTURES NO.5	EACH	1
REINFORCEMENT BARS	POUND	3,294
PARAPET RAILING	FOOT	35
NAME PLATES	EACH	1
CONCRETE BOX CULVERTS	CU. YD.	27.1
PRECAST CONCRETE BOX CULVERT 3' x 2'	FOOT	291.0
TEMPORARY SOIL RETENTION SYSTEM	SQ. FT.	478
TEMPORARY DRAINAGE SYSTEM NO. 2	FOOT	44

GENERAL NOTES

- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR 60. SEE SPECIAL PROVISIONS.
- CAST-IN-PLACE BARREL SHALL BE POURED MONOLITHICALLY WITH THE WINGWALLS.
- EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER.
- IN ACCORDANCE WITH ARTICLE 540.04 OF THE STANDARD SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DIVERT STREAM 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 "REMOVAL OF EXISTING STRUCTURES NO. 5". CLEAN FILL (GRANULAR) MATERIAL WILL ONLY BE ALLOWED.
- THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M259 (DESIGN FILL HEIGHT= 3'-0")
- A CANTILEVERED SHEET PILING DESIGN DOES NOT APPEAR FEASIBLE AND ADDITIONAL MEMBERS OR OTHER RETENTION SYSTEM MAY BE NECESSARY. THE CONTRACTOR SHALL SUBMIT A TEMPORARY SOIL RETENTION SYSTEM DESIGN INCLUDING PLAN DETAILS AND CALCULATIONS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
- THE CONTRACTOR SHALL PREPARE IN-STREAM WORK PLANS (ALL COFFERDAMS, WORK PADS, AND EROSION AND SEDIMENT CONTROL, ETC.) AND SUBMIT TO THE ENGINEER AND THE U.S. ARMY CORP. OF ENGINEERS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHOULD EXPECT TO HAVE TO ATTEND MEETINGS AT THE USACE OFFICE TO DISCUSS THEIR WORK PLAN IN ORDER TO SECURE THEIR PERMIT. THE COST OF ALL IN-STREAM WORK ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

EXISTING STRUCTURE:  
 6'-0" x 3'-0" CONCRETE BOX CULVERT  
 TOTAL LENGTH IS APPROXIMATELY 68'-0".  
 NO SALVAGE.  
 PROPOSED IMPROVEMENTS:  
 EXISTING STRUCTURE TO BE REMOVED AND REPLACED WITH A TRIPLE 3'-0" x 2'-0" BOX CULVERT IN STAGES MAINTAINING TWO LANES OF TRAFFIC.



WAYNE A. TRIEK  
 REGISTERED STRUCTURAL ENGINEER  
 081-035429  
 STATE OF ILLINOIS  
 Wayne A. Triek 7-6-10  
 signed 11-30-10

WATERWAY INFORMATION										
DRAINAGE AREA (SQ. MI) - 0.17		LOW GRADE ELEV. (FEET) EXIST - 697.92 @ STA. 270+05				MAX. RECORDED H.W.E. -				
		PROPOSED - 698.21 @ STA. 268+96								
FLOOD	FREQ. YR.	DISCHARGE (C.F.S.)	WATERWAY OPENING		NATURAL H.W.E.		CREATED HEAD		HEADWATER ELEVATION	
			EXISTING (square feet)	PROPOSED (square feet)	EXISTING U/S Face	PROPOSED U/S Face	EXISTING (feet)	PROPOSED (feet)	EXISTING	PROPOSED
DESIGN	10	7.4	150	2.25	692.46	693.66	1.83	0.16	694.29	693.82
BASE	50	13	210	3.15	692.56	693.76	1.85	0.29	694.41	694.05
MAX. CALC.	100	16	234	3.51	692.60	693.80	1.86	0.30	694.46	694.10
OVERTOPPING	500	34	3.60	5.40	692.81	694.01	1.96	0.62	694.77	694.63

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	ASP

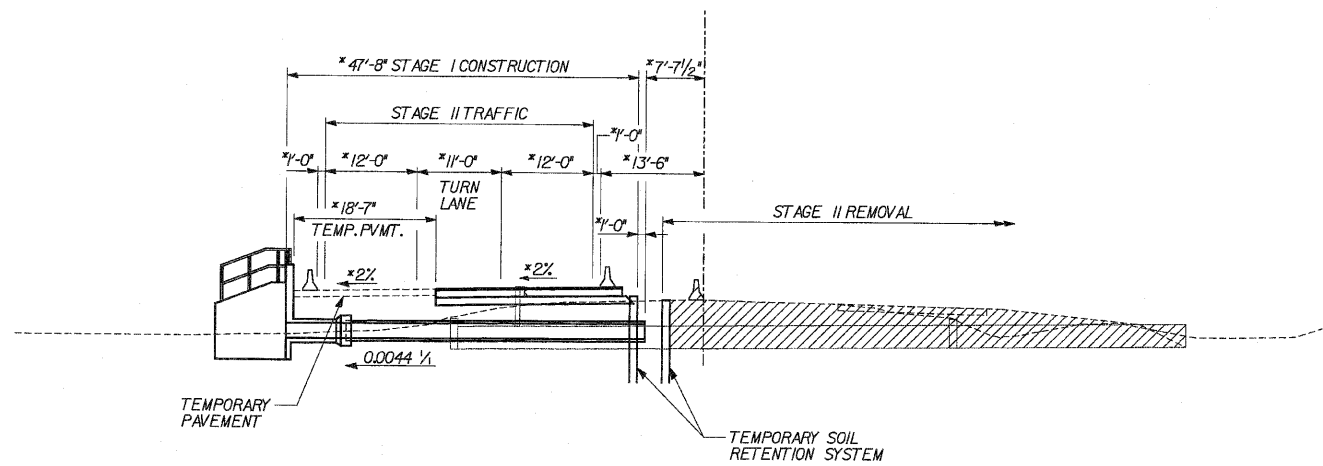
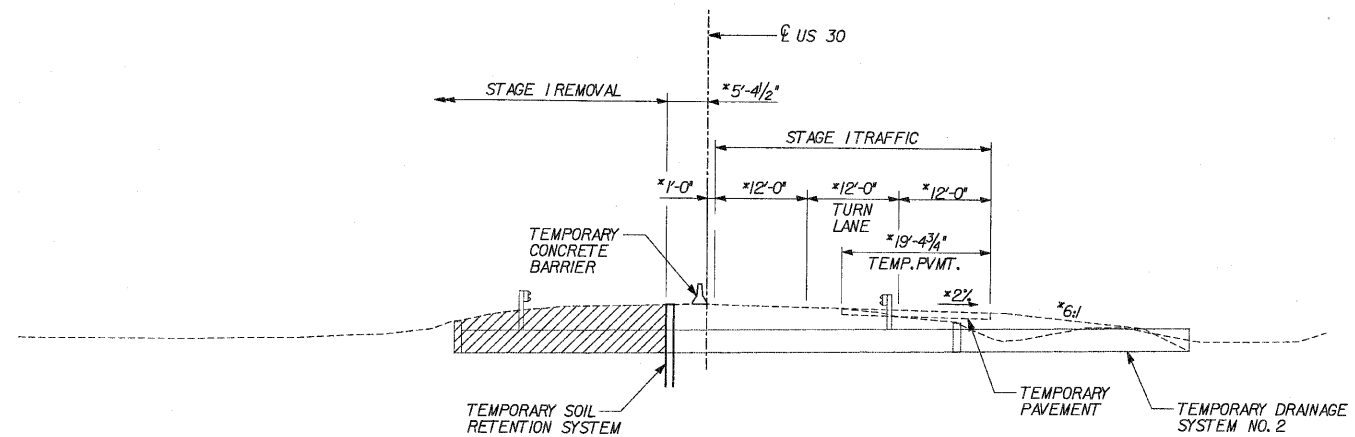
DLZ  
 DLZ Illinois, Inc.  
 85 W. Algonquin Rd. Ste. 220  
 Arlington Heights IL 60005

REVISIONS	
NAME	DATE

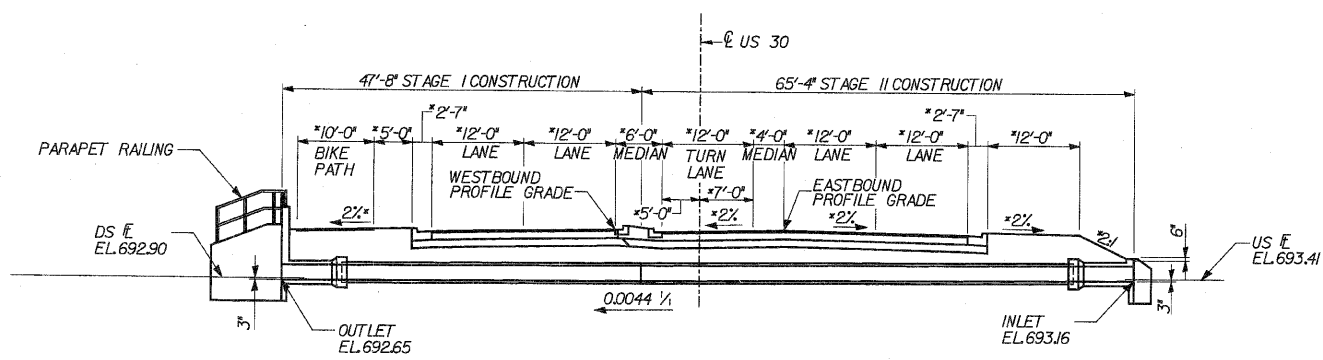
CULVERT 'E'  
 GENERAL PLAN  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 271+00.00  
 WILL COUNTY  
 STRUCTURE NUMBER 099-C015

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	651
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	

\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 62478



**STAGE II**



**FINAL CROSS SECTION**

\* MEASURED PERPENDICULAR TO CENTERLINE OF ROADWAY

**PROPOSED STAGING NOTES**

- STAGE I REMOVAL AND CONSTRUCTION**
1. MAINTAIN TWO LANES OF TRAFFIC.
  2. REMOVE EXISTING CULVERT HEADWALL AND INSTALL TEMPORARY DRAINAGE SYSTEM NO. 2.
  3. CONSTRUCT TEMPORARY PAVEMENT AND INSTALL TEMPORARY CONCRETE BARRIERS.
  4. INSTALL STAGE I TEMPORARY SOIL RETENTION SYSTEM.
  5. REMOVE PORTION OF NORTHERN END OF EXISTING STRUCTURE.
  6. CONSTRUCT STAGE I PORTION OF THE STRUCTURE.
  7. INSTALL STAGE II TEMPORARY SOIL RETENTION SYSTEM.
  8. CONSTRUCT ROADWAY PAVEMENT AND TEMPORARY PAVEMENT.
- STAGE II REMOVAL AND CONSTRUCTION**
1. INSTALL TEMPORARY CONCRETE BARRIERS.
  2. REMOVE REMAINDER OF EXISTING STRUCTURE AND TEMPORARY DRAINAGE SYSTEM NO. 2.
  3. CONSTRUCT STAGE II PORTION OF THE STRUCTURE.
  4. CONSTRUCT ROADWAY PAVEMENT.

**LEGEND**

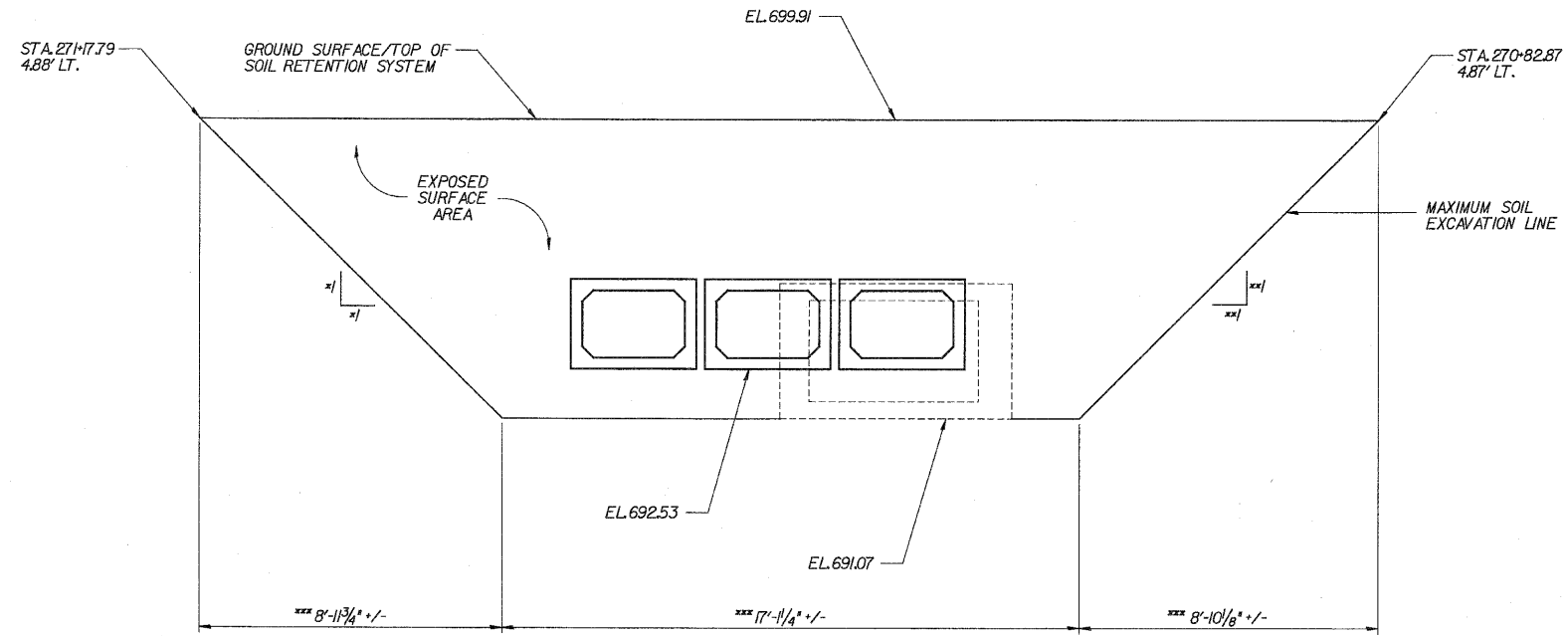
REMOVAL OF EXISTING STRUCTURES

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

DESIGNED	ASP
CHECKED	WSP
DRAWN	BGC
CHECKED	ASP

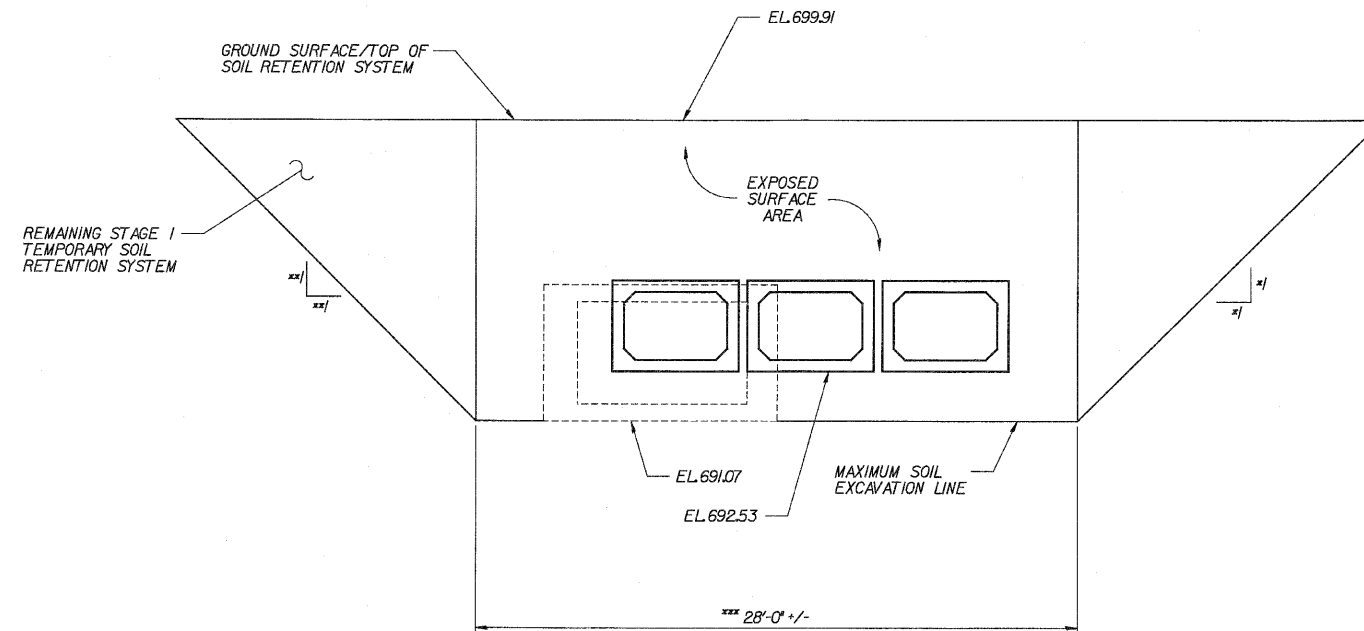
REVISIONS	
NAME	DATE

**CULVERT 'E'**  
**PROPOSED STAGE PLANNING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 271+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C015



**STAGE I TEMPORARY SOIL RETENTION SYSTEM**

(LOOKING SOUTH)  
 \* DENOTES PERPENDICULAR TO C. OF CULVERT  
 \*\* DENOTES PERPENDICULAR TO C. OF EXISTING CULVERT  
 \*\*\* MEASURED ALONG C. OF RETENTION SYSTEM



**STAGE II TEMPORARY SOIL RETENTION SYSTEM**

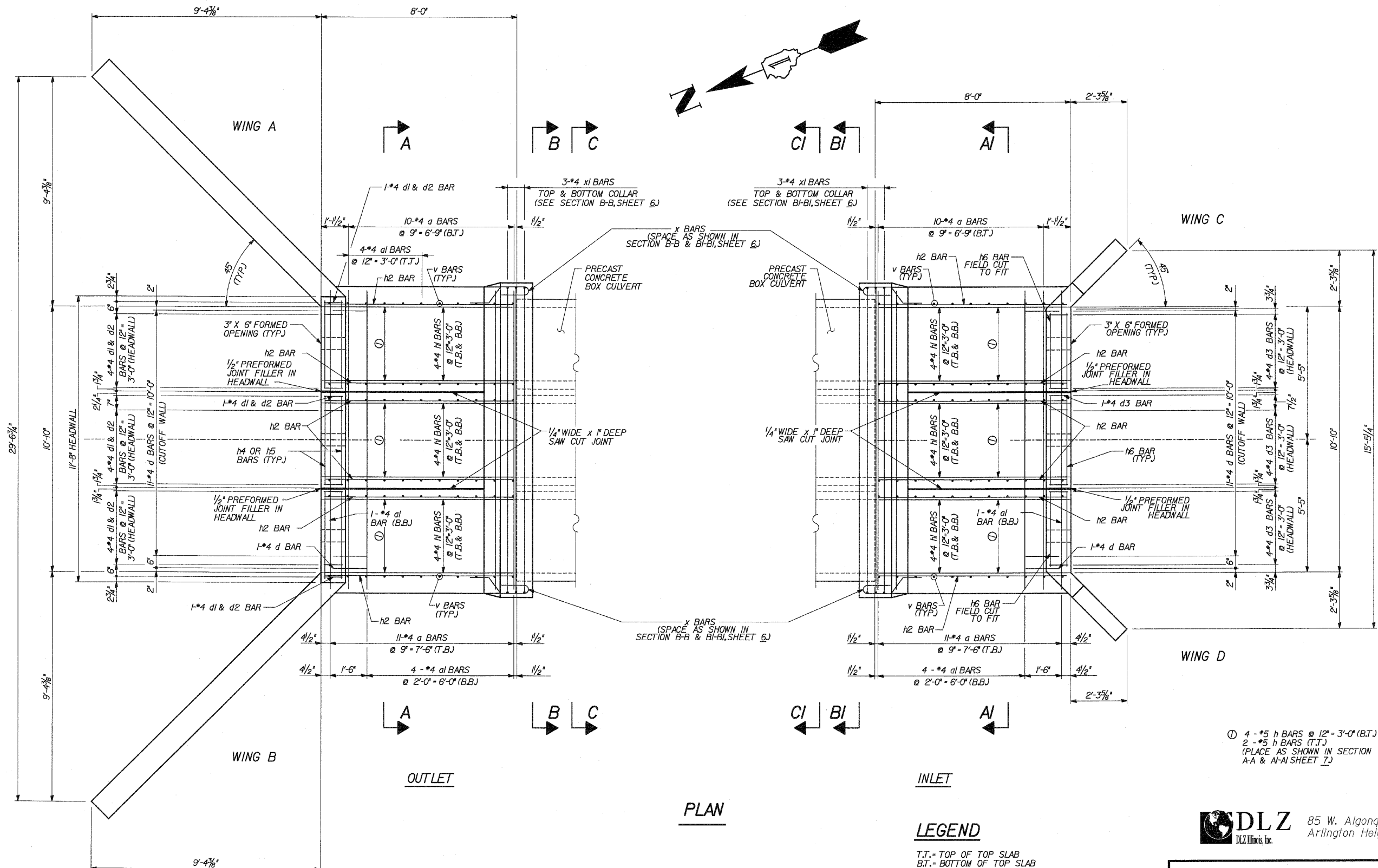
(LOOKING NORTH)  
 \* DENOTES PERPENDICULAR TO C. OF CULVERT  
 \*\* DENOTES PERPENDICULAR TO C. OF EXISTING CULVERT  
 \*\*\* MEASURED ALONG C. OF RETENTION SYSTEM

DESIGNED	ASP
CHECKED	WSP
DRAWN	BGC
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'E'**  
**TEMPORARY SOIL RETENTION SYSTEM**  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 271+00.00  
 WILL COUNTY  
 STRUCTURE NUMBER 099-C015



① 4 - #5 h BARS @ 12'-3"-0" (B.T.)  
2 - #5 h BARS (T.T.)  
(PLACE AS SHOWN IN SECTION A-A & A-AI SHEET T.)

PLAN

LEGEND

T.T. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	ASP

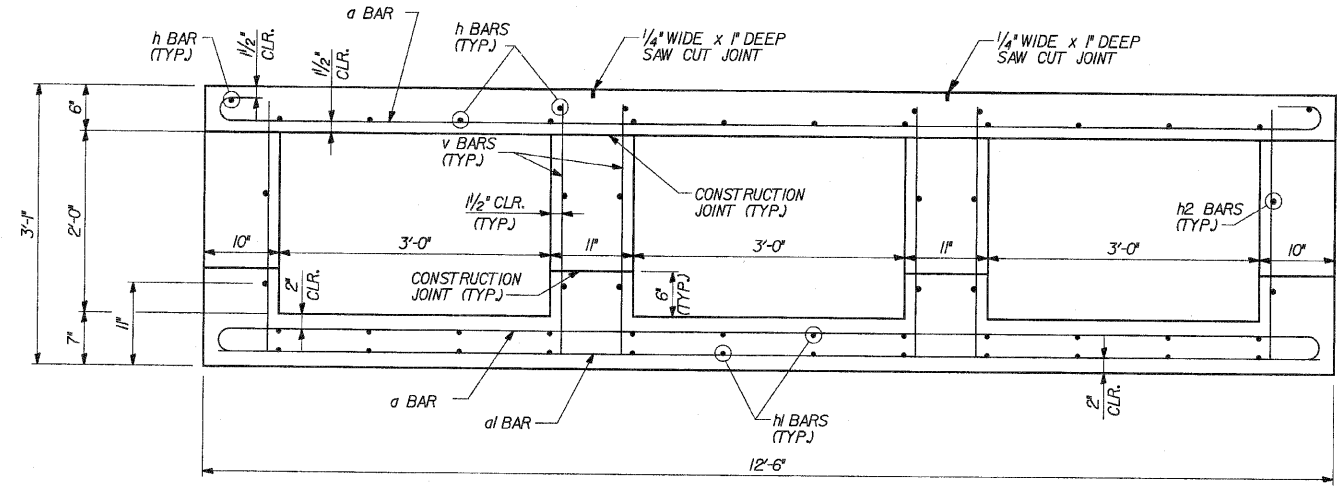
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

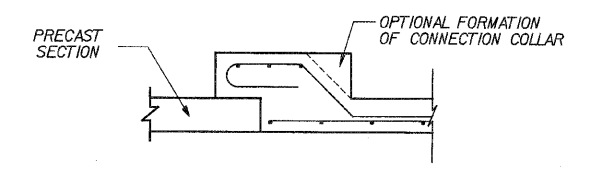
**CULVERT 'E'**  
**END SECTION PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 271+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C015



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL.	1235	655
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	
* SBC. (12 & 13) WRS-3		* CONTRACT NO. 62419		

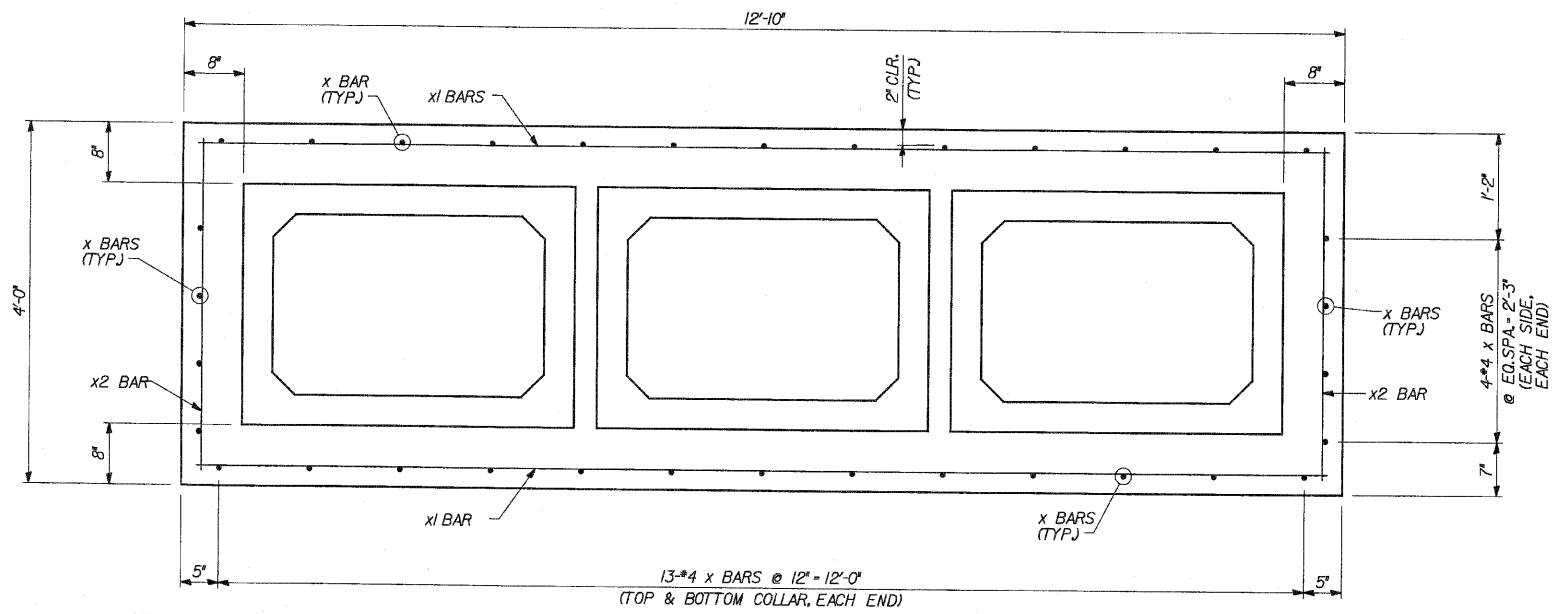


CAST-IN-PLACE TYPICAL SECTION  
SECTION A-A & A1-A1



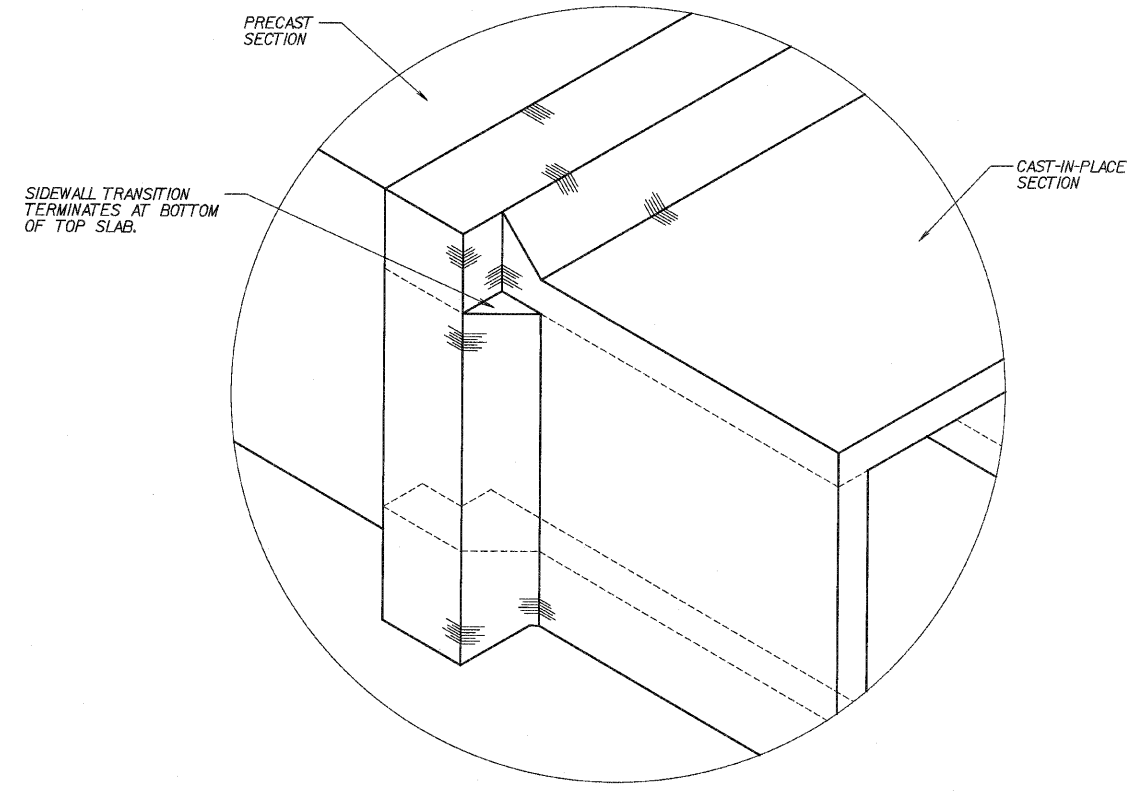
OPTIONAL PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR

NOTE:  
ADDITIONAL CONCRETE USED FOR THE  
OPTIONAL COLLAR FORMATION WILL BE  
PROVIDED AT THE CONTRACTOR'S EXPENSE.

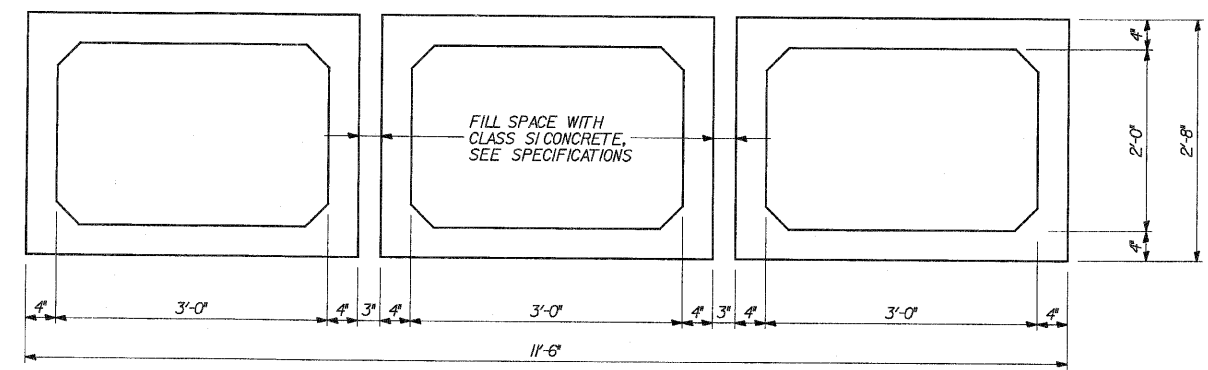


NOTE:  
TILT HOOK BARS IN TOP  
AND BOTTOM SLAB TO  
PROVIDE REQUIRED CLEARANCE.

PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR  
SECTION B-B & B1-B1



ISOMETRIC VIEW OF  
CONNECTION COLLAR



NOTE:  
CLASS S1 CONCRETE TO BE  
POURED BETWEEN PRECAST SECTIONS  
PRIOR TO FORMING AND POURING  
CAST-IN-PLACE END SECTIONS

PRECAST TYPICAL SECTION  
SECTION C-C & C1-C1

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	ASP

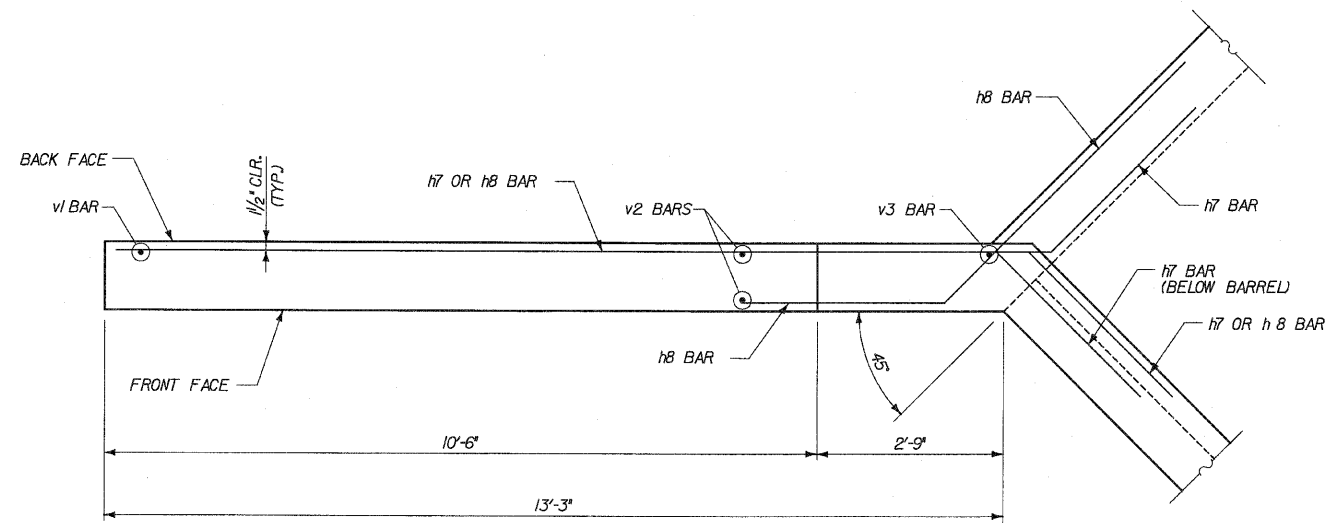
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

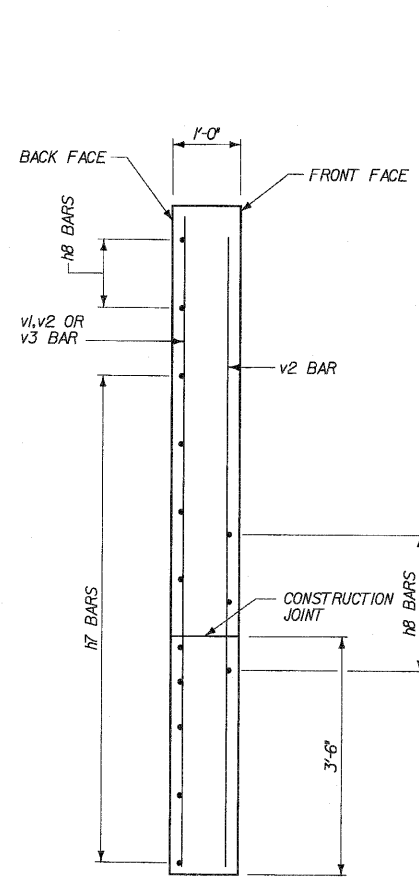
**CULVERT 'E'**  
TYPICAL SECTIONS  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 271+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C015

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PAP 385	*	WILL.	1235	656
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	

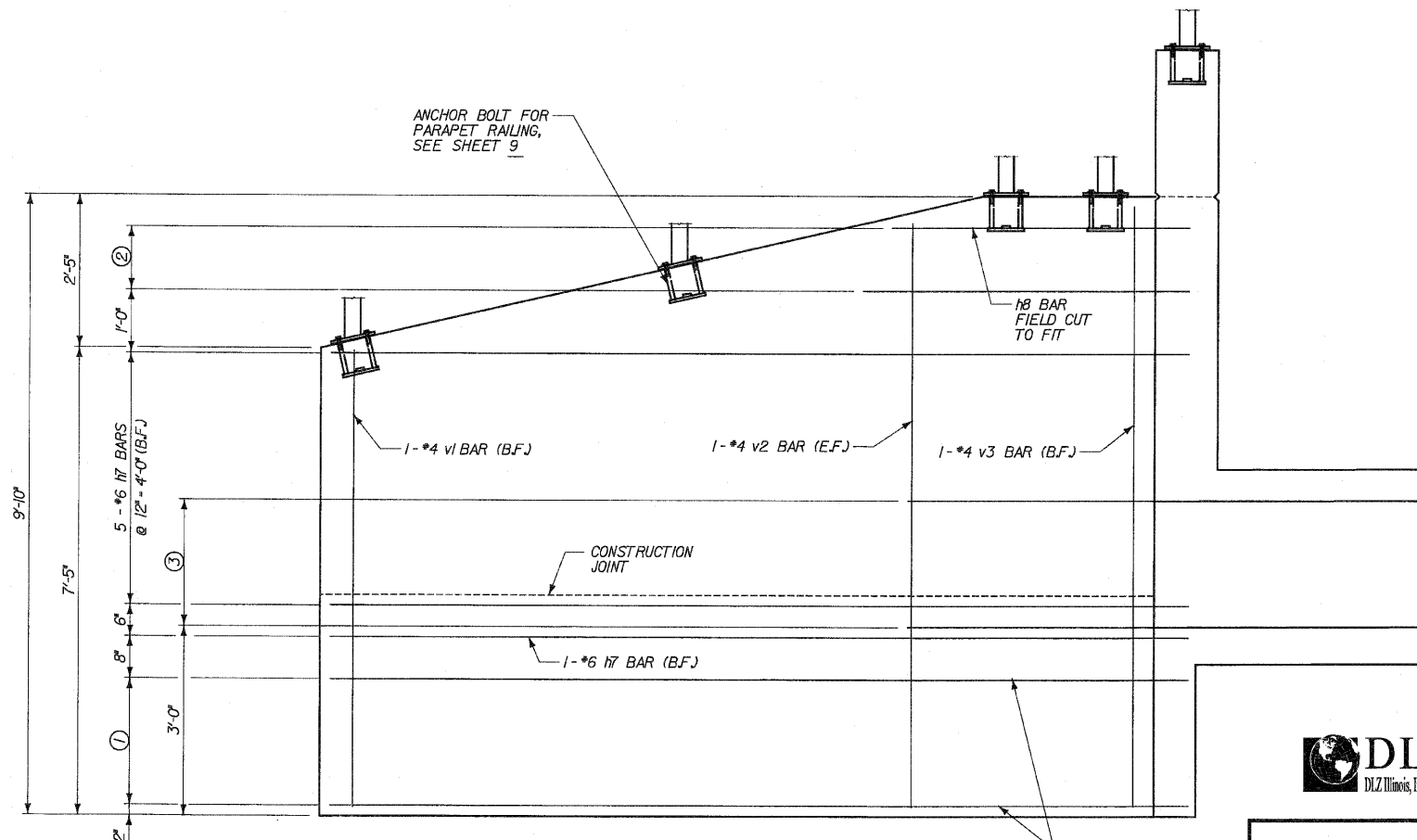
\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 02479



**WING A & B PLAN**



**WING A & B SECTION**



**WING A & B ELEVATION**

**LEGEND**

B.F. = BACK FACE  
F.F. = FRONT FACE  
E.F. = EACH FACE

- ① 3 - #6 17 BARS @ 12" = 2'-0" (B.F.) (FIELD CUT TO FIT)
- ② 2 - #6 18 BARS @ 12" = 1'-0" (B.F.)
- ③ 3 - #6 18 BARS @ 12" = 2'-0" (F.F.)

DESIGNED	ASP
CHECKED	CDS
DRAWN	EvH
CHECKED	ASP

REVISIONS	
NAME	DATE

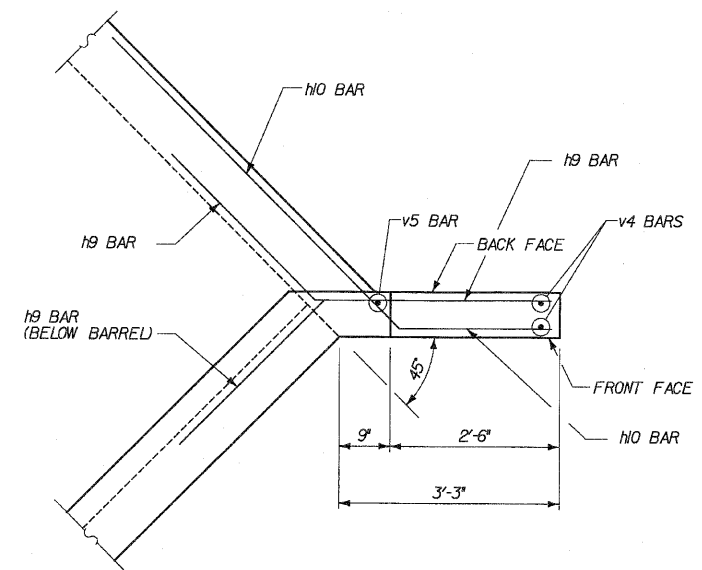


85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

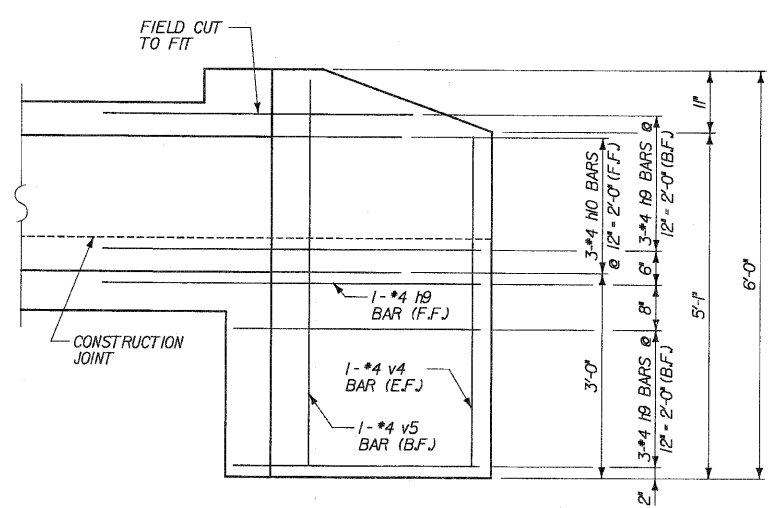
**CULVERT 'E'**  
**WINGS A & B**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 271+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C015



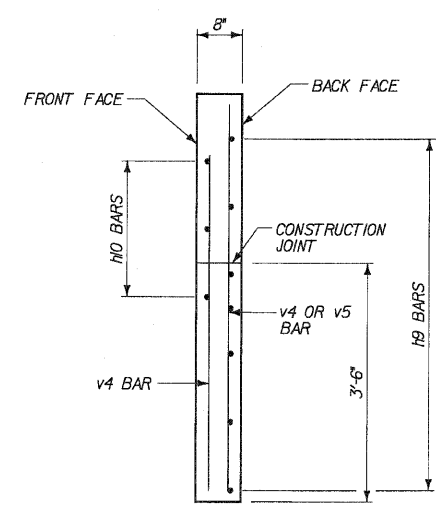
\* SECT. 12 & 13 WRS-3  
 \* CONTRACT NO. 02479



**WING C & D PLAN**



**WING C & D ELEVATION**



**WING C & D SECTION**

**LEGEND**

B.F. = BACK FACE  
 F.F. = FRONT FACE  
 E.F. = EACH FACE

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
 DLZ Illinois, Inc. Arlington Heights IL 60005

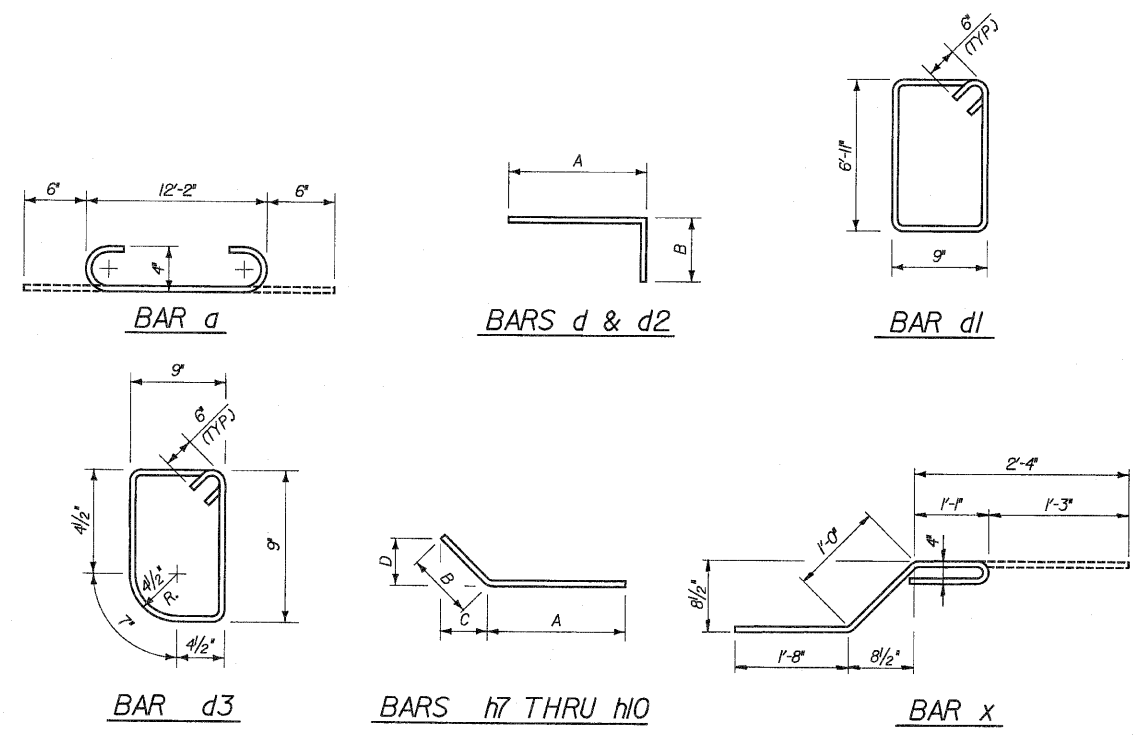
**CULVERT 'E'**  
**WINGS C & D**  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 271+00.00  
 WILL COUNTY  
 STRUCTURE NUMBER 099-C015



\* S371.02 & 13 WRS-3  
\* STRUCT. N3.0215

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape	
a	42	4	13'-2"		
d1	14	4	12'-2"		
d	24	4	4'-5"		
d1	15	4	16'-4"		
d2	15	5	5'-6"		
d3	13	4	3'-10"		
h	36	5	7'-9"		
h1	48	4	7'-9"		
h2	24	5	7'-9"		
h3	6	6	11'-3"		
h4	12	9	3'-6"		
h5	36	4	3'-6"		
h6	12	6	3'-7"		
h7	18	6	16'-5"		
h8	10	6	8'-0"		
h9	14	4	6'-4"		
h10	6	4	7'-3"		
v	132	4	2'-9"		
v1	2	4			
v2	4	4	9'-3"		
v3	2	4	9'-6"		
v4	4	4	4'-11"		
v5	2	4	5'-8"		
x	68	4	5'-3"		
x1	12	4	12'-6"		
x2	12	4	3'-8"		
CONCRETE BOX CULVERTS				CU. YD.	27.1
REINFORCEMENT BARS				POUND	3,294



**BAR BENDING DIAGRAMS**

Bar	A		B		C		D	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
h7	13	5	3	0	2	1/2	2	1/2
h8	5	0	3	0	2	1/2	2	1/2
h9	3	4	3	0	2	1/2	2	1/2
h10	5	0	2	3	1	7	1	7
d	2	8	1	9				
d2	4	0	1	6				

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	ASP

REVISIONS	
NAME	DATE
WSP	4/12/06



85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

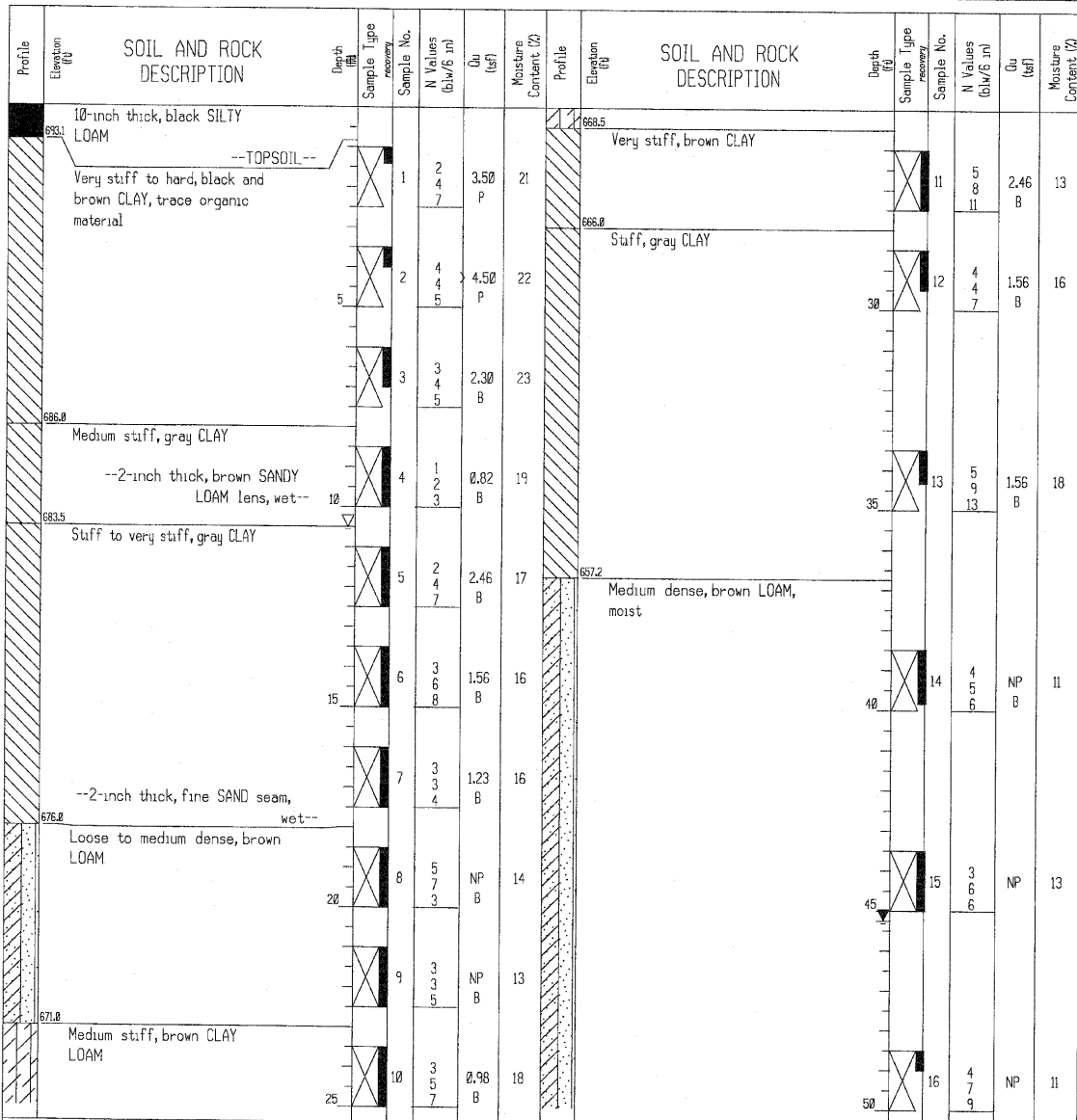
**CULVERT 'E'**  
**BARBILL & DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 271+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-CO15

**BORING LOG BS-038** Page 1 of 2

Wang Engineering, Inc.  
wangeng3@wangeng.com  
100 Fairbank Street  
Addison, IL 60101  
Telephone: 630 458-0700  
Fax: 630 458-0900

WEI Job No.: 301-01-01  
Client: Brighton Engineering Company  
Project: GEOT - US, 30, Will Co, IL, IDOT D-91-219-02  
Location: SEC 22, 23, 24, 19 T35N, R11, 12E

Datum: NGVD  
Elevation: 693.95 ft  
North: 1762629.04 ft  
East: 1102581.07 ft  
Station: 270+88.27  
Offset: 54.79 LT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	01-29-2003	Complete Drilling	01-30-2003
Drilling Contractor	TSC	Drill Rig	CME 750 ATV
Driller	E&A	Logger	J. Kasnick
Checked by	S. Janowski	Time After Drilling	NA
Drilling Method	2.25' SSA to 30 feet, 3.25' ID HSA thereafter; Boring backfilled with bentonite chips upon completion	Depth to Water	NA

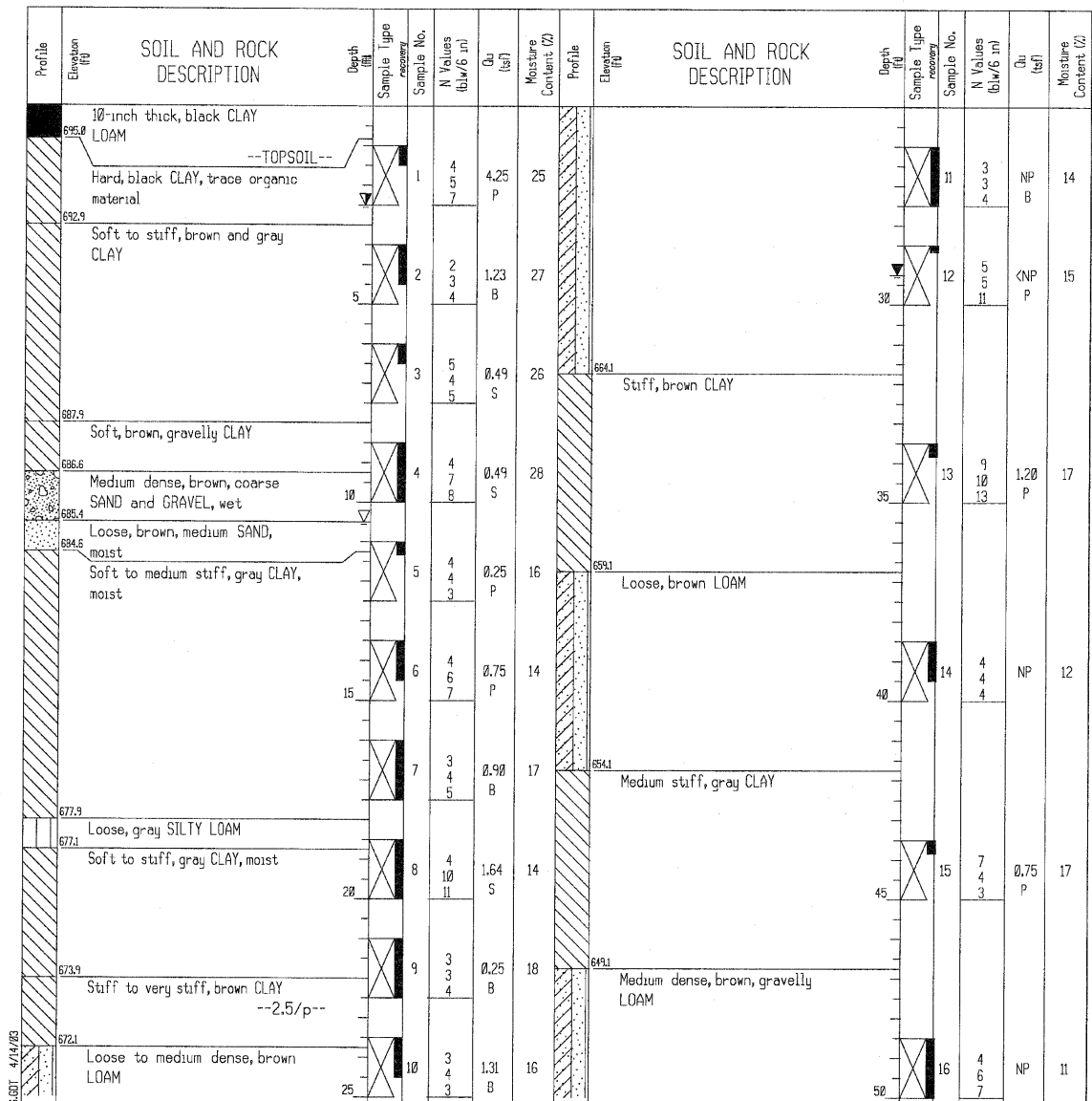
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

**BORING LOG BS-040** Page 1 of 2

Wang Engineering, Inc.  
wangeng3@wangeng.com  
100 Fairbank Street  
Addison, IL 60101  
Telephone: 630 458-0700  
Fax: 630 458-0900

WEI Job No.: 301-01-01  
Client: Brighton Engineering Company  
Project: GEOT - US, 30, Will Co, IL, IDOT D-91-219-02  
Location: SEC 22, 23, 24, 19 T35N, R11, 12E

Datum: NGVD  
Elevation: 695.87 ft  
North: 1762715.24 ft  
East: 1102580.14 ft  
Station: 271+10.43  
Offset: 56.84 RT



GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	02-04-2003	Complete Drilling	02-04-2003
Drilling Contractor	TSC	Drill Rig	CME 750 ATV
Driller	E&A	Logger	J. Kasnick
Checked by	S. Janowski	Time After Drilling	24 hours
Drilling Method	3.25' ID HSA; Boring backfilled with bentonite chips upon completion	Depth to Water	2.50 ft

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

DESIGNED	CDS
CHECKED	ASP
DRAWN	EvH
CHECKED	ASP

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

REVISIONS	
NAME	DATE

**CULVERT 'E'**  
**BORING LOG**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 271+00.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C015

BENCH MARK: BM 234  
 STA. 338+42.67 45.53' RT. ELEV. 726.825  
 MARK ON SOUTHERLY FLANGE BOLT OF SECOND HYDRANT  
 EAST OF 108TH AVENUE, SOUTH SIDE OF ROUTE 30.

EXISTING STRUCTURE: NO. 099-0106  
 21'-6" X 43'-0" SINGLE SPAN BRIDGE.  
 NO SALVAGE.

PROPOSED IMPROVEMENTS:  
 EXISTING STRUCTURE TO BE REMOVED AND REPLACED  
 WITH A DOUBLE 12' X 10' BOX CULVERT IN STAGES,  
 MAINTAINING TWO LANES OF TRAFFIC.

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIALS		
ITEM	UNIT	QUANTITY
STONE RIPRAP, CLASS A4	TON	295
FILTER FABRIC	SQ. YD.	410
REMOVAL OF EXISTING STRUCTURES NO. 6	EACH	1
REMOVAL OF EXISTING STRUCTURES NO. 7	EACH	1
REINFORCEMENT BARS	POUND	17,276
TEMPORARY SHEET PILING	SQ. FT.	2,430
NAME PLATES	EACH	1
CONCRETE BOX CULVERTS	CU. YD.	96.2
PRECAST CONCRETE BOX CULVERT 12' X 10'	FOOT	210
GEOTEXTILE RETAINING WALL	SQ. FT.	90

ROUTE NO. SECTION COUNTY TOTAL SHEETS SHEET NO.  
 FAP 353 \* WILL 1235 661  
 SHEET NO. 1  
 11 SHEETS

DESIGN SPECIFICATIONS

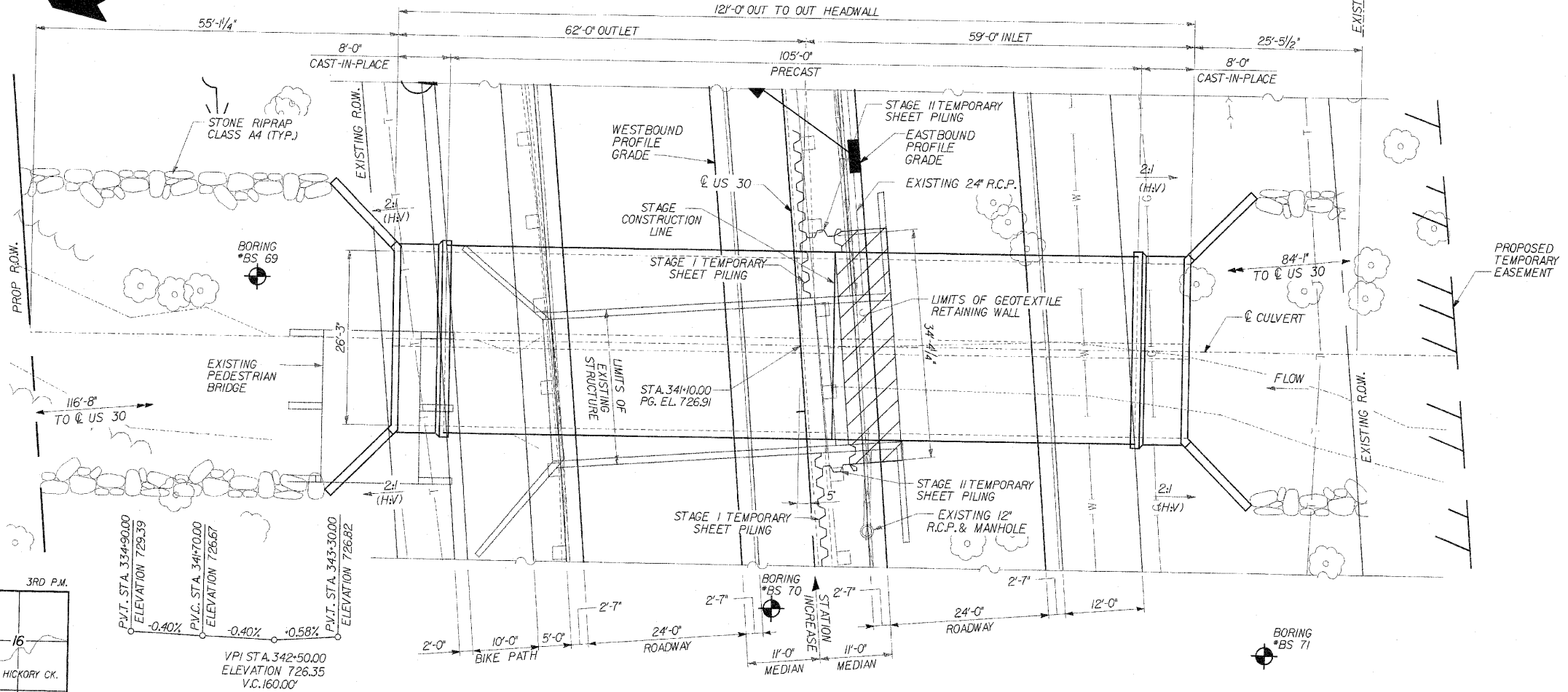
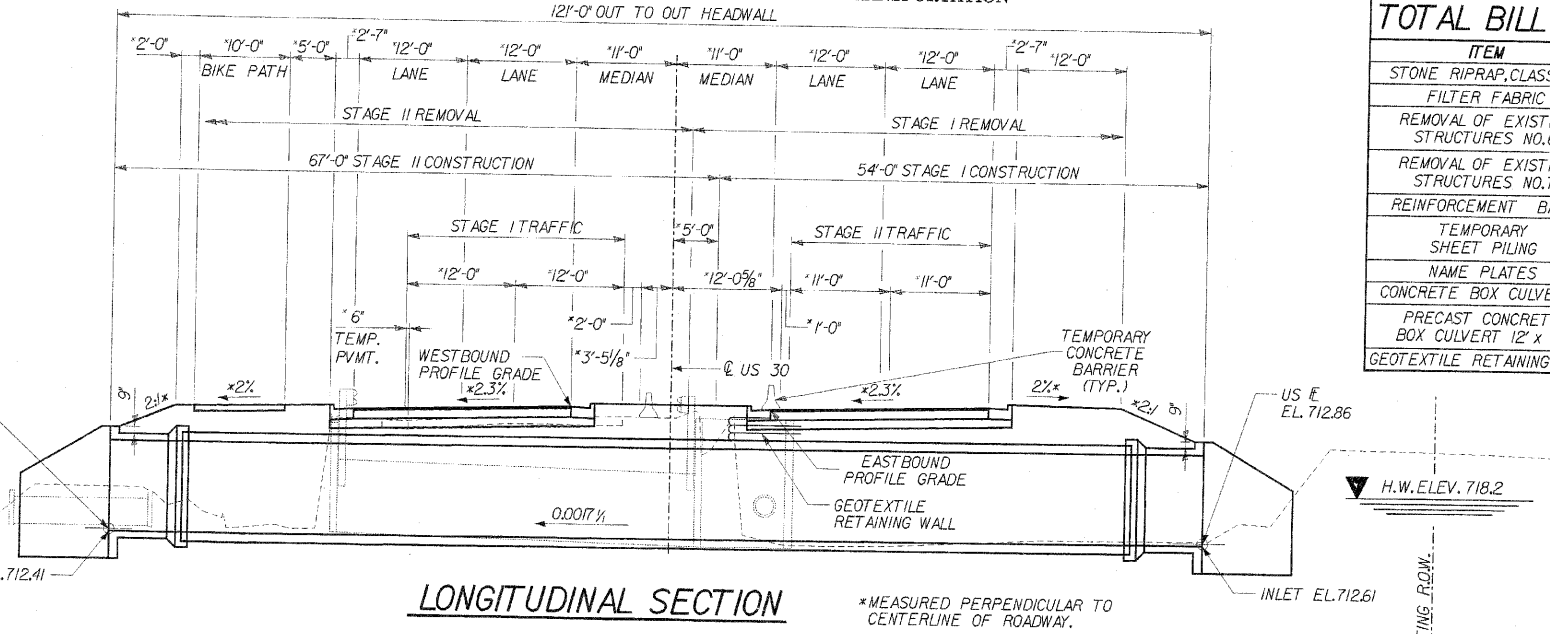
AASHTO 2002 SPECIFICATIONS.  
 LOADING HS20-44  
 ALLOW 50%/SQ.FT. FOR FUTURE WEARING SURFACE.

DESIGN STRESSES

FIELD UNITS  
 f<sub>c</sub> = 3,500 PSI  
 f<sub>y</sub> = 60,000 PSI (REINFORCEMENT)  
 PRECAST UNITS  
 f<sub>c</sub> = 5,000 PSI  
 f<sub>y</sub> = 60,000 PSI (REINFORCEMENT)

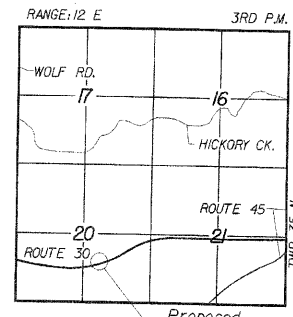
GENERAL NOTES

1. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR. 60. SEE SPECIAL PROVISIONS.
2. CAST-IN-PLACE BARREL SHALL BE POURED MONOLITHICALLY WITH THE WINGWALLS.
3. EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER.
4. IN ACCORDANCE WITH ARTICLE 540.04 OF THE STANDARD SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DIVERT STREAM 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 "REMOVAL OF EXISTING STRUCTURES NO. 6." CLEAN FILL (GRANULAR) MATERIAL WILL ONLY BE ALLOWED.
5. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M259 (DESIGN FILL HEIGHT = 5'-0").
6. THE CONTRACTOR SHALL PREPARE IN-STREAM WORK PLANS (ALL COFFERDAMS, WORK PADS, AND EROSION AND SEDIMENT CONTROL, ETC.) AND SUBMIT TO THE ENGINEER AND THE U.S. ARMY CORP OF ENGINEERS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHOULD EXPECT TO HAVE TO ATTEND MEETINGS AT THE USACE OFFICE TO DISCUSS THEIR WORK PLAN IN ORDER TO SECURE THEIR PERMIT. THE COST OF ALL IN-STREAM WORK ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



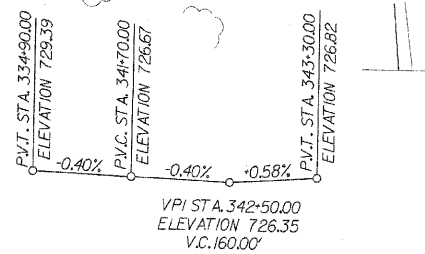
CURVE DATA

P.I. = STA. 339+67.40  
 Δ = 36°18'39.71" (LT.)  
 T = 131.69'  
 L = 2534.98'  
 R = 3999.99'  
 E = 209.57'



DESIGNED	ASP
CHECKED	CDS
DRAWN	LNH
CHECKED	ASP

PROFILE GRADE  
 @ P.G. W.B.D. & E.B.D.



WATERWAY INFORMATION

FLOOD	FREQ. YR.	DISCHARGE C.F.S.	WATERWAY OPENING		NATURAL H.W.E. (feet)	CREATED HEAD		HEADWATER ELEVATION	
			EXISTING (square feet)	PROPOSED (square feet)		EXISTING (feet)	PROPOSED (feet)	EXISTING	PROPOSED
DESIGN	10	366	85	104.2	717.2	0.6	0.0	717.8	717.2
BASE	50	681	106	128.2	718.2	1.2	0.3	719.4	718.5
MAX. CALC.	100	869	116	142.6	718.8	1.4	0.4	720.2	719.2
OVERTOPPING	500	1477	147	176.2	720.2	2.3	0.8	722.5	721.0

STATION 341+10.00  
 BUILT BY  
 STATE OF ILLINOIS  
 FAP 353 SECT. (12 & 13) WRS-3  
 LOADING HS20  
 STR. NO. 099-4662

NAME PLATE

NOTE: SEE STANDARD DRAWING 515001 FOR NAME PLATE DETAILS.

REVISIONS	
NAME	DATE



Wayne A. Trex  
 7-6-10  
 Expires 11-30-10

DLZ 85 W. Algonquin Rd. Ste. 220  
 Arlington Heights IL 60005

CULVERT 'G'  
 GENERAL PLAN

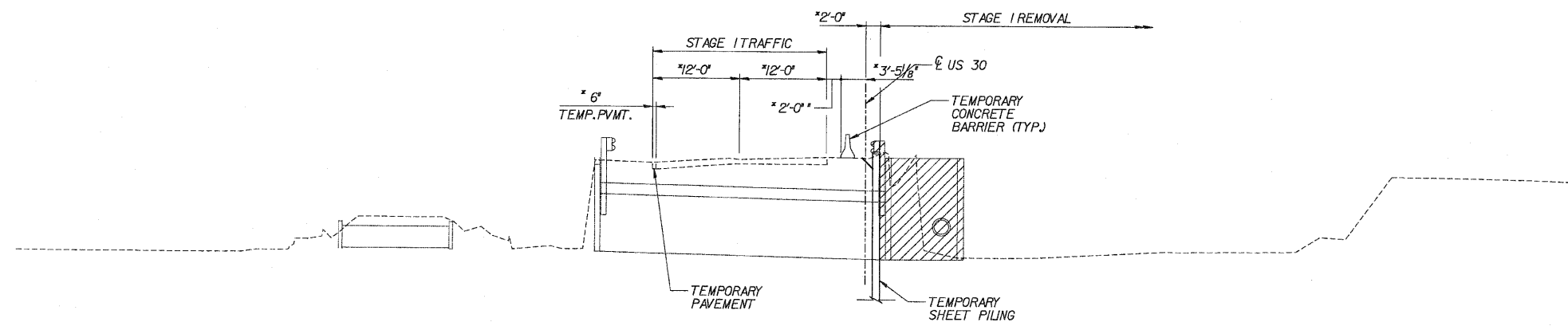
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 341+10.00

WILL COUNTY  
 STRUCTURE NUMBER 099-4662

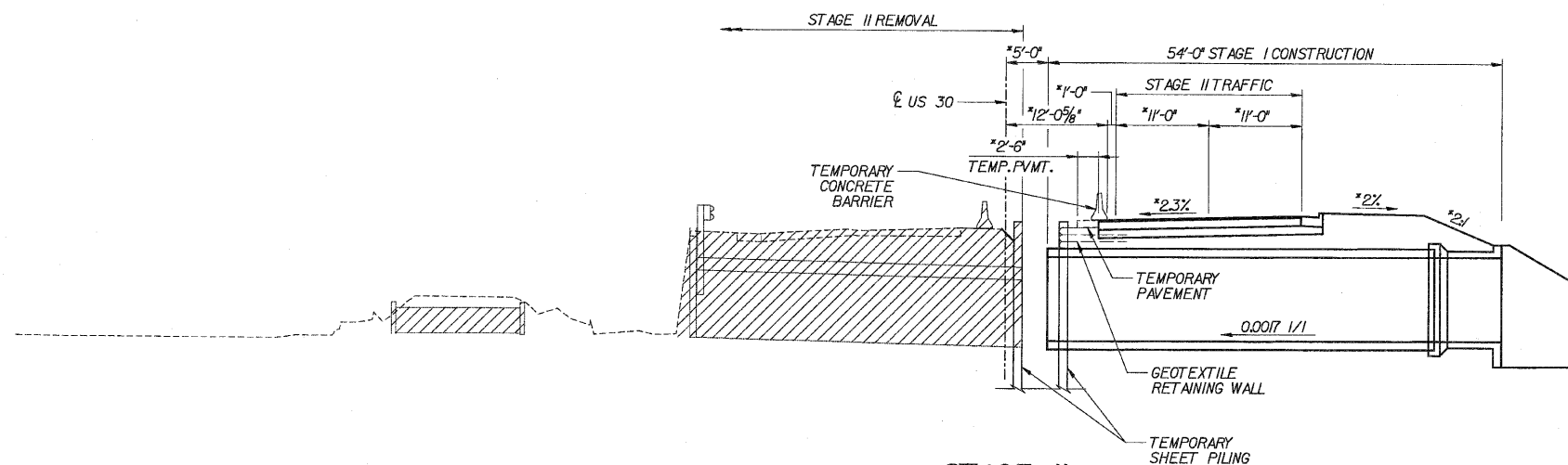
**PROPOSED  
STAGE PLANNING**

- STAGE I REMOVAL & CONSTRUCTION**
1. MAINTAIN TWO (2) LANES OF TRAFFIC.
  2. INSTALL TEMPORARY PAVEMENT AND TEMPORARY CONCRETE BARRIER.
  3. INSTALL STAGE I TEMPORARY SHEET PILING AS SHOWN.
  4. REMOVE SOUTH SIDE WINGS AND INDICATED PORTION OF EXISTING STRUCTURE.
  5. CONSTRUCT STAGE I PORTION OF THE STRUCTURE.
  6. INSTALL STAGE II TEMPORARY SHEET PILING AS SHOWN.
  7. INSTALL GEOTEXTILE RETAINING WALL DURING BACKFILLING OPERATIONS.
  8. CONSTRUCT ROADWAY PAVEMENT AND TEMPORARY PAVEMENT.

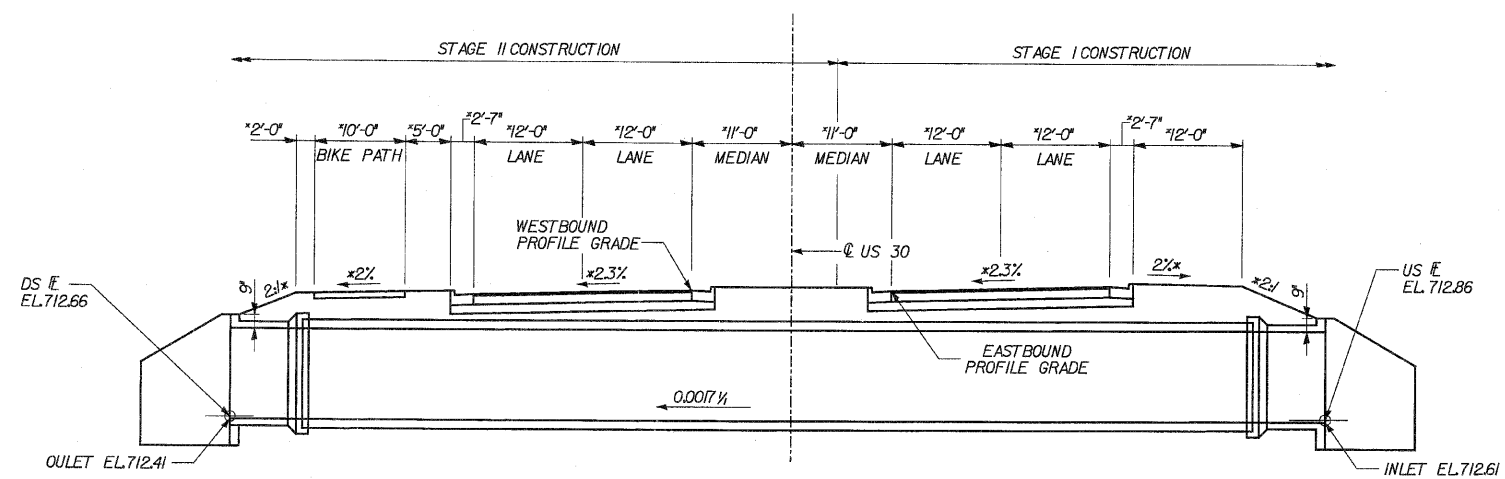
- STAGE II REMOVAL & CONSTRUCTION**
1. INSTALL TEMPORARY CONCRETE BARRIER.
  2. REMOVE REMAINDER OF EXISTING STRUCTURES.
  3. CONSTRUCT STAGE II PORTION OF THE STRUCTURE.
  4. CONSTRUCT ROADWAY PAVEMENT.



**STAGE I**



**STAGE II**



**FINAL CROSS SECTION**

**LEGEND**

REMOVAL OF EXISTING STRUCTURES

\* MEASURED PERPENDICULAR TO CENTERLINE OF ROADWAY.

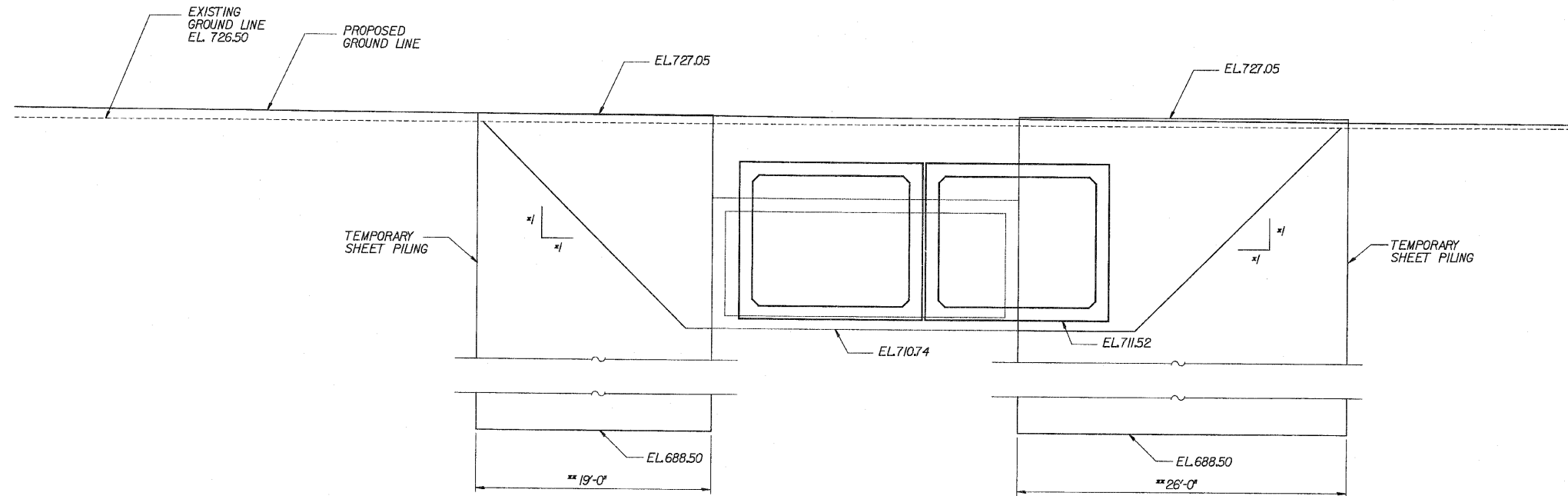
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

DESIGNED	ASP
CHECKED	ASP
DRAWN	BGC
CHECKED	ASP

REVISIONS	
NAME	DATE

**CULVERT 'G'**  
**PROPOSED STAGE PLANNING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 341+10.00  
WILL COUNTY  
STRUCTURE NUMBER 099-4662

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	663
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	
* SECT. 12 & 13 WRS-3				
* CONTRACT NO. 62479				



**STAGE I TEMPORARY SHEET PILING**

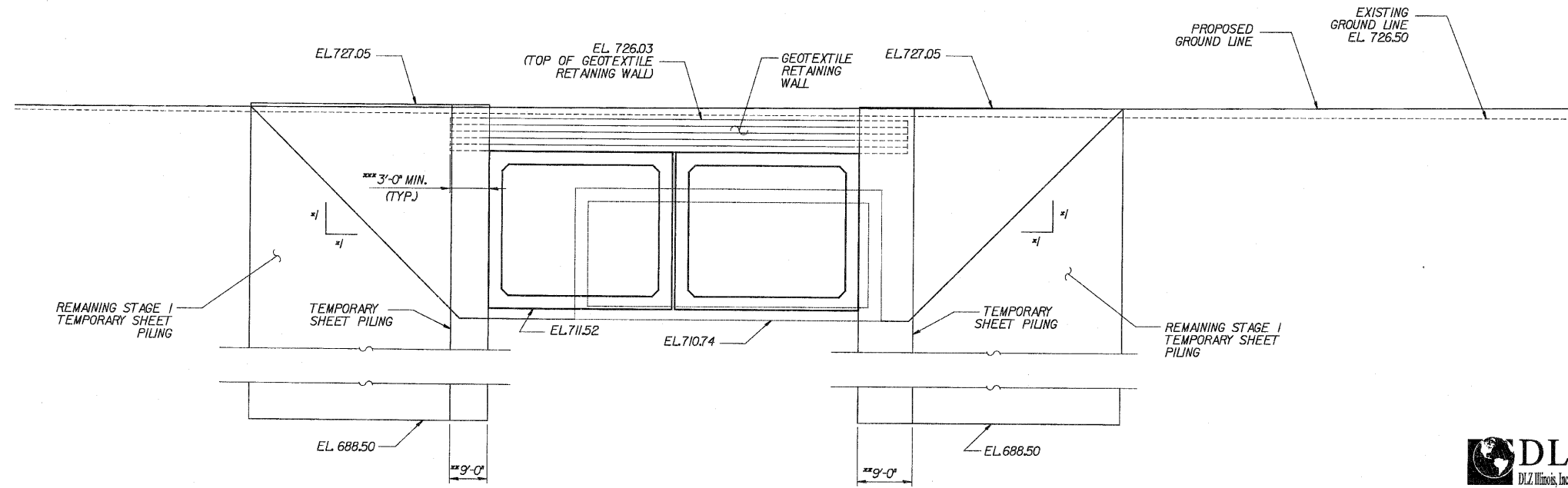
(LOOKING NORTH)  
\* DENOTES PERPENDICULAR TO C. OF CULVERT  
\*\* MEASURED ALONG C. OF PILING

**PROPOSED  
TEMPORARY SHEET PILING DATA**

STAGE I  
TOP ELEV. 727.05  
BOTTOM ELEV. 688.50  
EMBEDMENT - 22'-0"  
MIN. SECTION MODULUS - 57.3 IN 3/FT  
LENGTH - 26'-0" (E. SIDE) 19'-0" (W. SIDE)

STAGE II  
TOP ELEV. 727.05  
BOTTOM ELEV. 688.50  
EMBEDMENT - 22'-0"  
MIN. SECTION MODULUS - 57.3 IN 3/FT  
LENGTH - 9'-0" (E. SIDE) 9'-0" (W. SIDE)

IF CONTRACTOR CHOOSES TO ALTER THE TEMPORARY CANTILEVERED SHEET PILING DESIGN REQUIREMENTS SHOWN ON THE PLANS FOR LESSER DESIGN REQUIREMENTS, THEN FULL DESIGN SUBMITTALS WITH THE REQUIRED SEALS WILL BE EXPECTED BY THE DEPARTMENT, FOR REVIEW AND APPROVAL.



**STAGE II TEMPORARY SHEET PILING**

(LOOKING SOUTH)  
\* DENOTES PERPENDICULAR TO C. OF CULVERT  
\*\* MEASURED ALONG C. OF PILING  
\*\*\* MEASURED PARALLEL TO C. OF ROADWAY

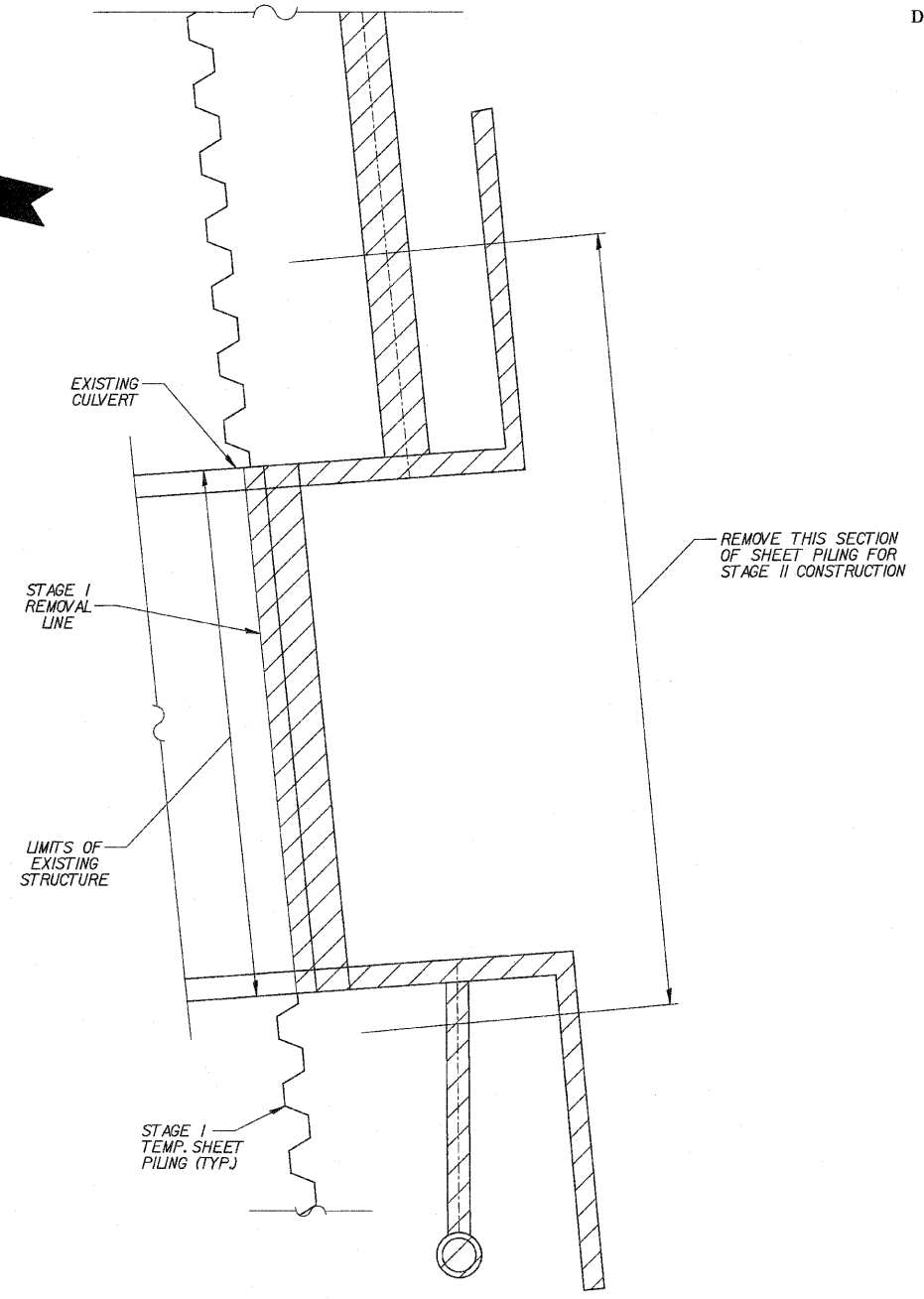
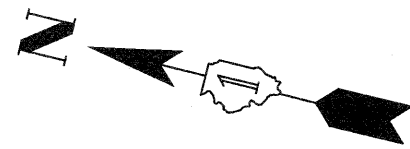
DESIGNED	ASP
CHECKED	WSP
DRAWN	BGC
CHECKED	ASP

REVISIONS	
NAME	DATE

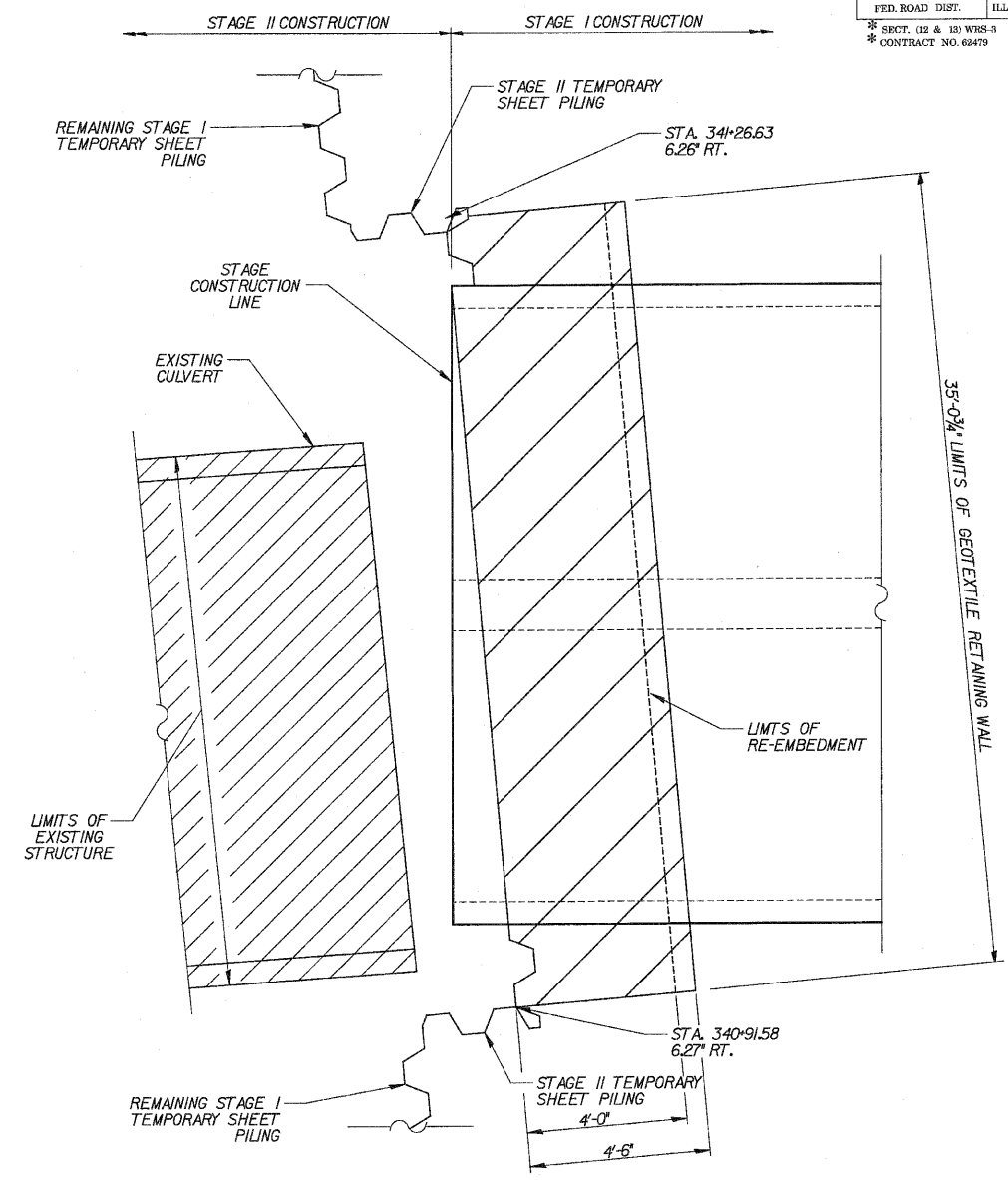
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

**CULVERT 'G'**  
**TEMPORARY SHEET PILING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 34+10.00  
WILL COUNTY  
STRUCTURE NUMBER 099-4662

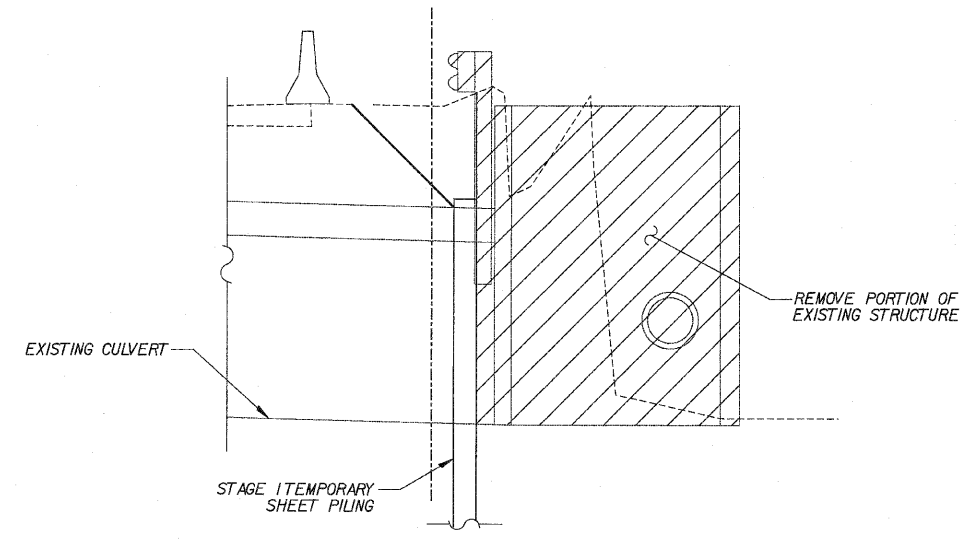
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	664
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	
* SECT. (12 & 13) WRS-3				
* CONTRACT NO. 68479				



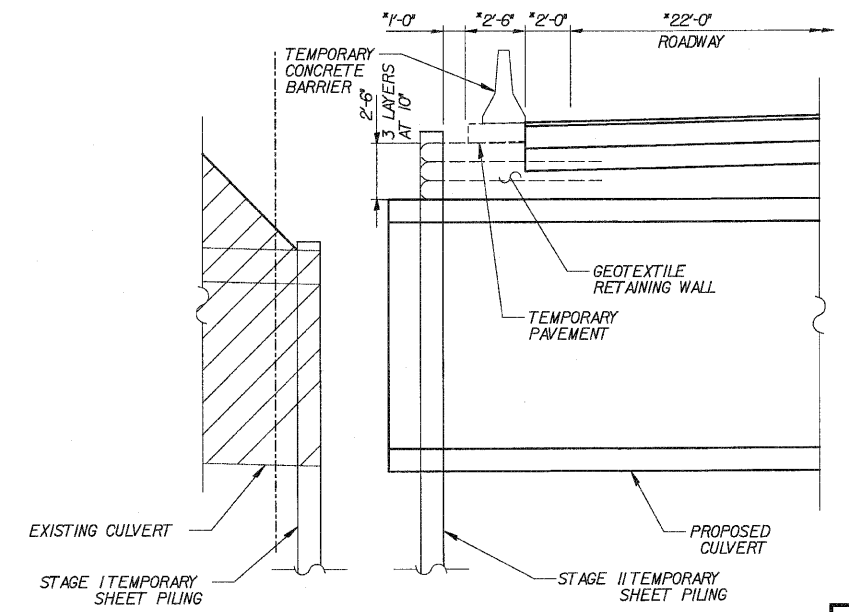
**STAGE I PLAN**



**STAGE 2 PLAN**



**STAGE I SECTION**



**STAGE 2 SECTION**

NOTE:  
THE GEOTEXTILE SOIL REINFORCEMENT SHALL HAVE A MINIMUM ALLOWABLE TENSILE STRENGTH (T<sub>m</sub>) OF 11 lb./in.<sup>2</sup> AS DETERMINED BY THE PROCEDURE DESCRIBED IN THE SPECIAL PROVISION. THE COMPUTATIONS SUPPORTING THE DETERMINATION OF T<sub>m</sub> SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

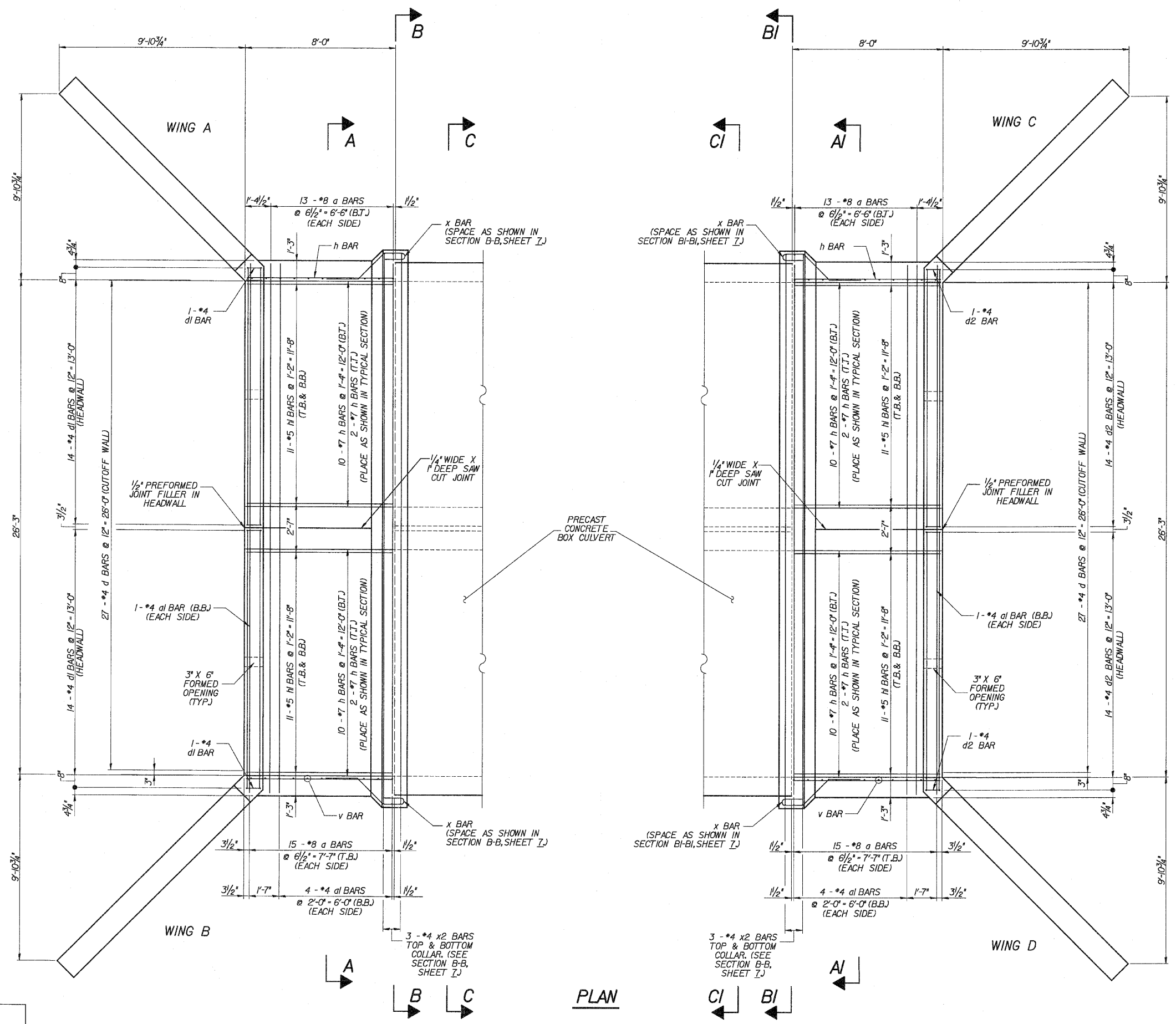
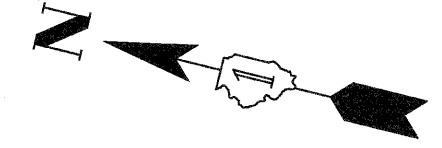
DESIGNED	ASP
CHECKED	ASP
DRAWN	BGC
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'G'**  
**STAGING DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 34+10.00  
WILL COUNTY  
STRUCTURE NUMBER 099-4662





PRECAST  
CONCRETE  
BOX CULVERT

PLAN

**LEGEND**

T.T. = TOP OF TOP SLAB  
B.T. = BOTTOM OF TOP SLAB  
T.B. = TOP OF BOTTOM SLAB  
B.B. = BOTTOM OF BOTTOM SLAB

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

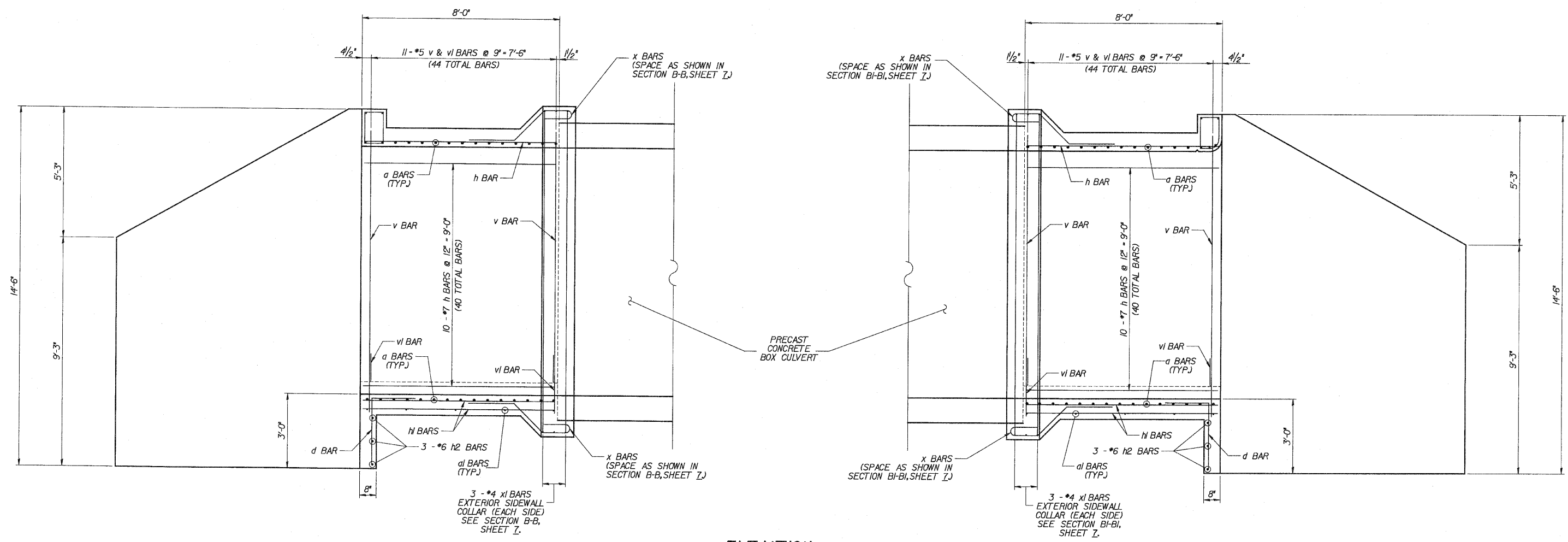
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

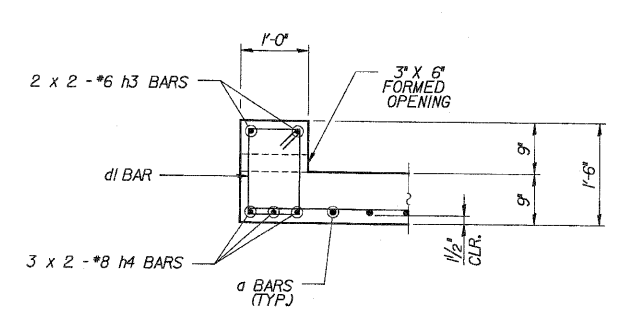
**CULVERT 'G'**  
**END SECTION PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 34+10.00  
WILL COUNTY  
STRUCTURE NUMBER 099-4662

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	666
FED. ROAD DIST.	ILLINOIS	FED. AID PROJECT		

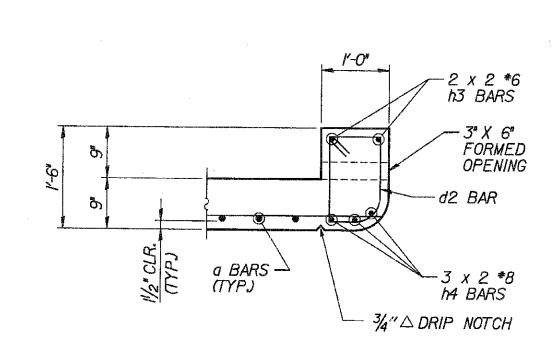
\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 62479



**ELEVATION**



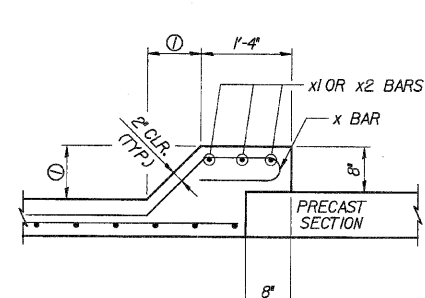
**DOWNSTREAM END**



**UPSTREAM END**

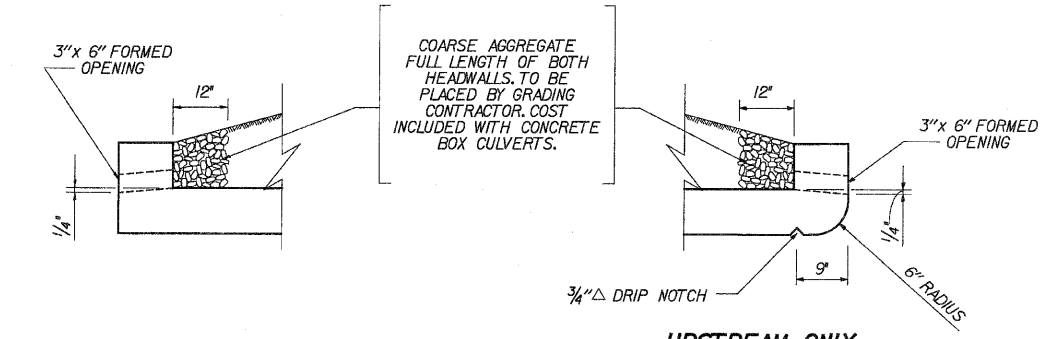
**HEADWALL DETAILS**

NOTE:  
BARS INDICATED THUS 3 x 2 - #8 ETC. INDICATES  
3 LINES OF BARS WITH 2 LENGTHS PER LINE.



① TOP SLAB - 11"  
BOTTOM SLAB - 10"  
SIDEWALLS - 7"

**PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR**



**DRAIN DETAIL**

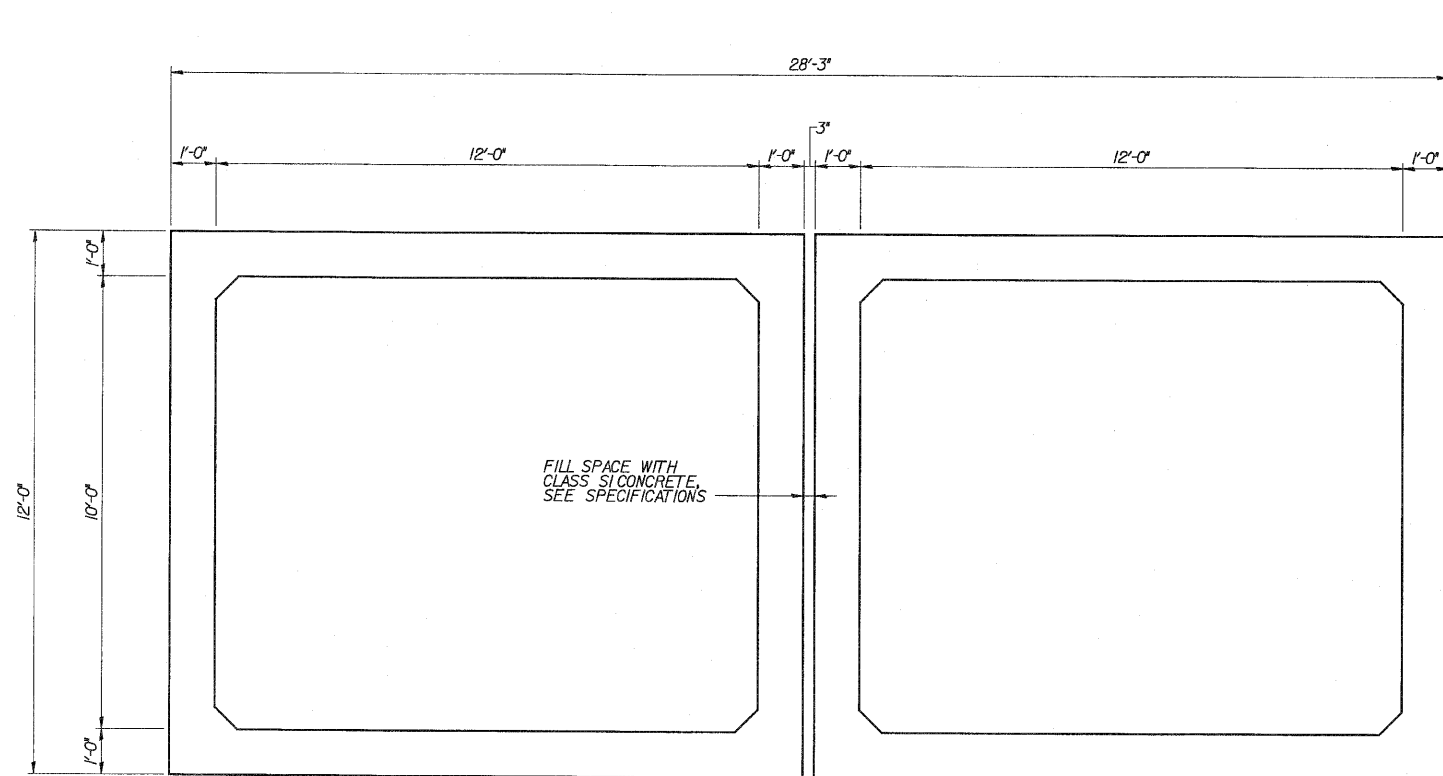
**UPSTREAM ONLY**

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

REVISIONS	
NAME	DATE

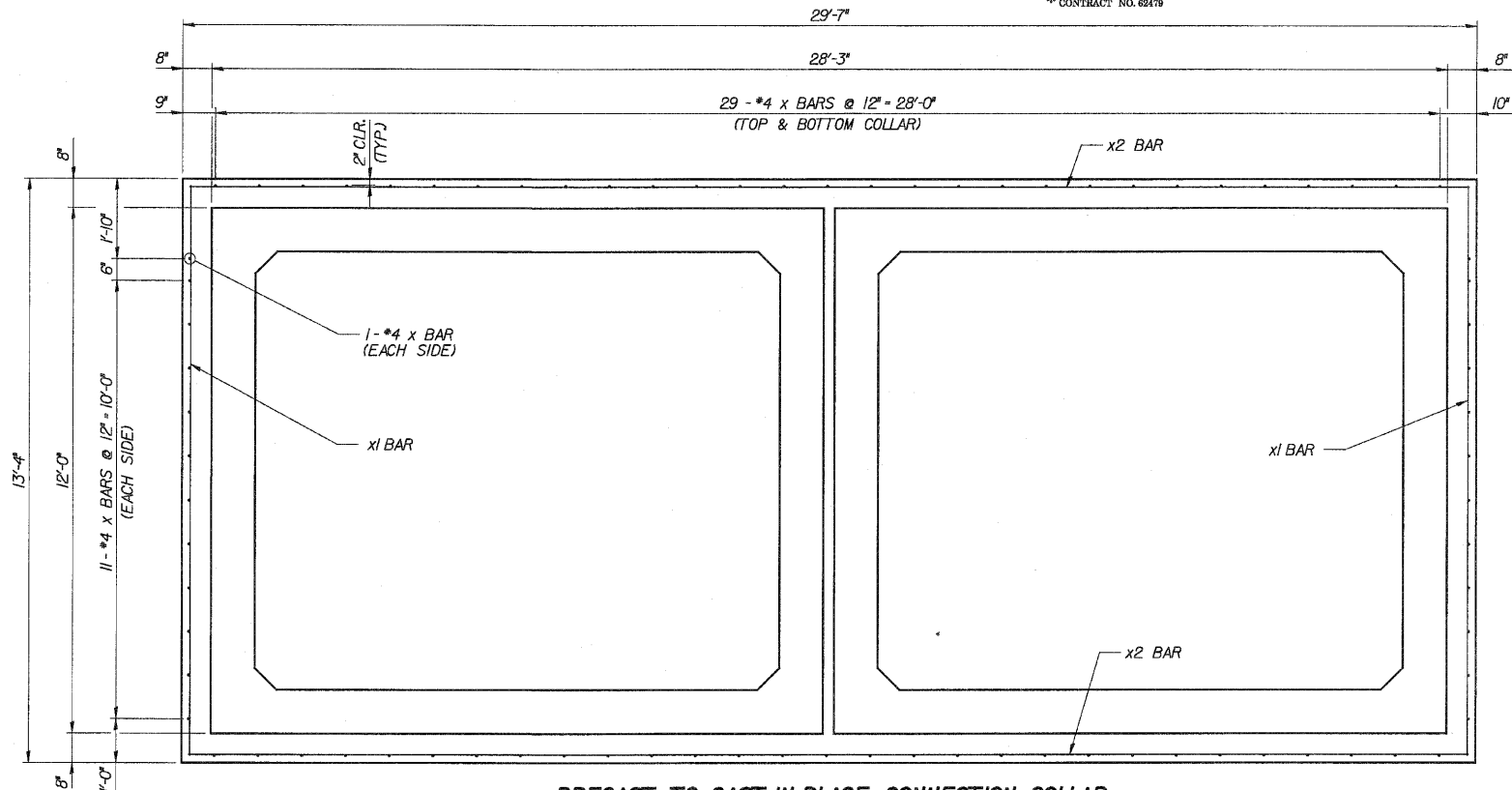
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

**CULVERT 'G'**  
**END SECTION ELEVATION**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 34+10.00  
WILL COUNTY  
STRUCTURE NUMBER 099-4662

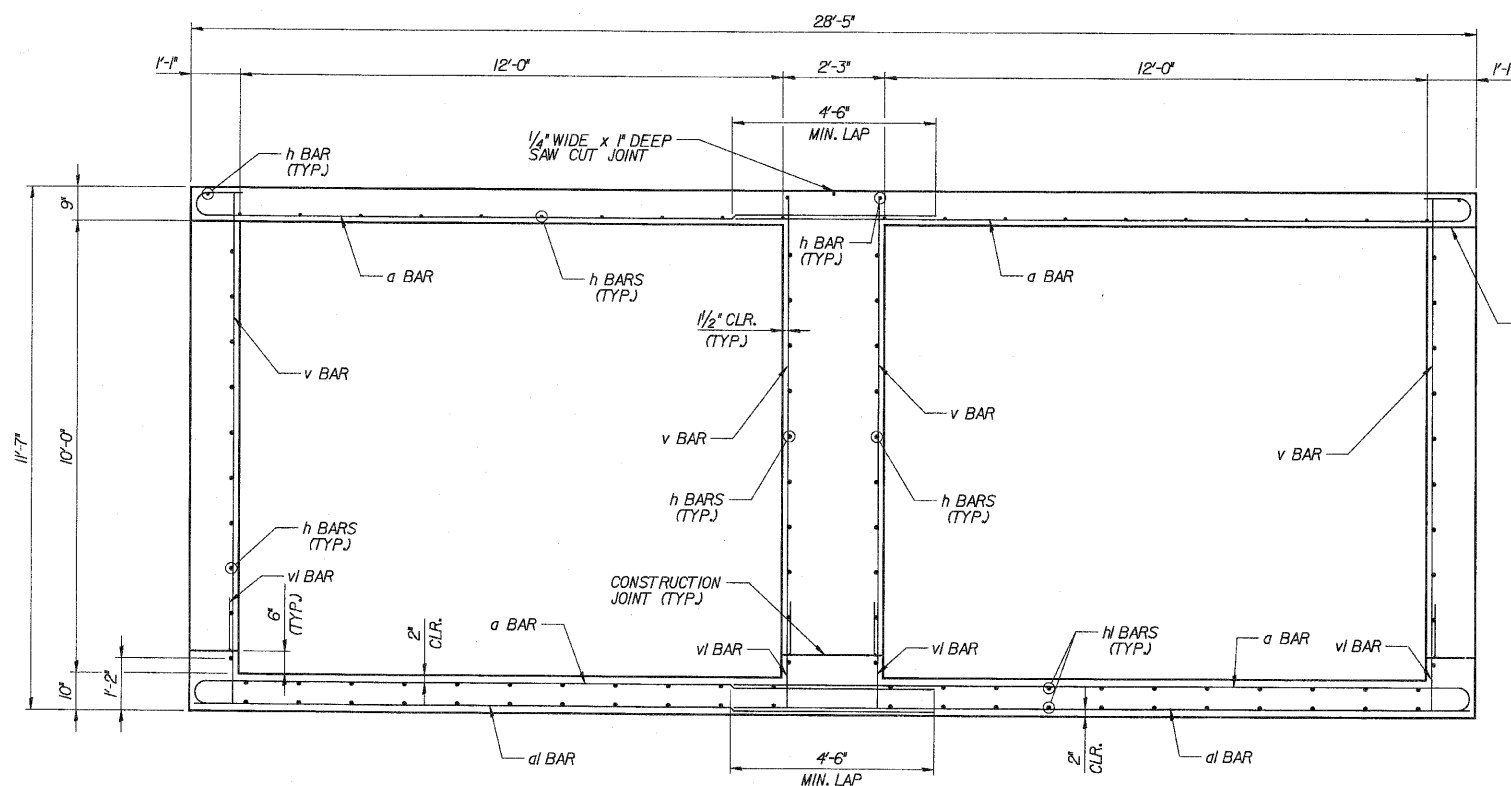


**PRECAST TYPICAL SECTION  
SECTION C-C & CI-CI**

NOTE:  
CLASS SI CONCRETE TO BE POURED BETWEEN  
PRECAST SECTIONS PRIOR TO FORMING AND  
POURING CAST-IN-PLACE END SECTIONS.



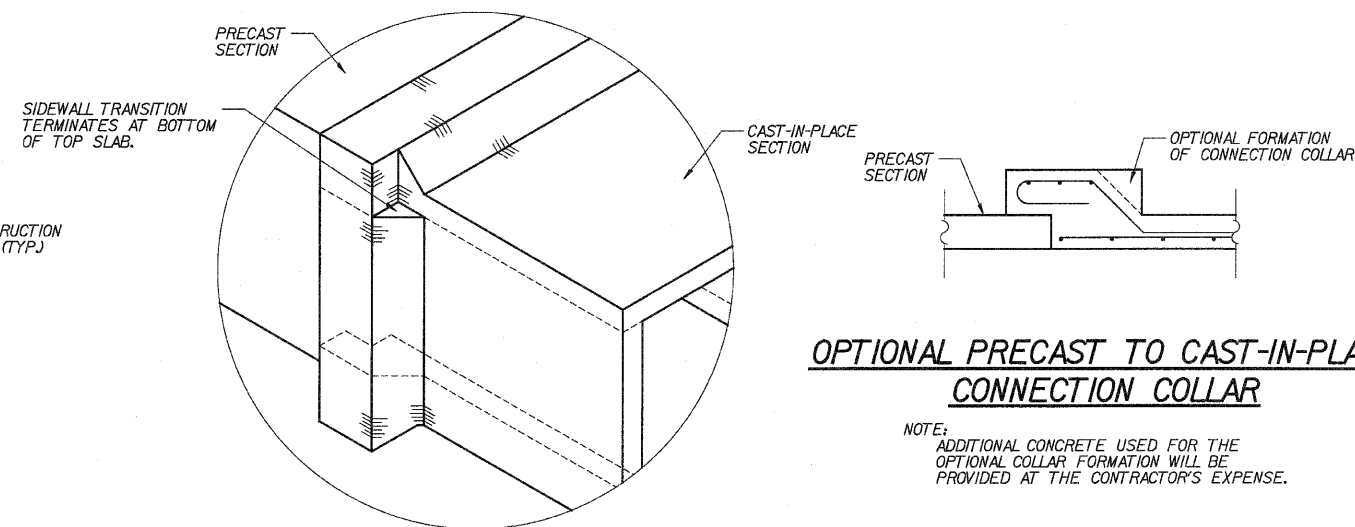
**PRECAST TO CAST-IN-PLACE CONNECTION COLLAR  
SECTION B-B & BI-BI**



**CAST-IN-PLACE TYPICAL SECTION  
SECTION A-A & AI-AI**

NOTE:  
TILT HOOK BARS IN TOP AND  
BOTTOM SLAB TO PROVIDE  
REQUIRED CLEARANCE.

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP



**ISOMETRIC VIEW OF  
CONNECTION COLLAR**

**OPTIONAL PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR**

NOTE:  
ADDITIONAL CONCRETE USED FOR THE  
OPTIONAL COLLAR FORMATION WILL BE  
PROVIDED AT THE CONTRACTOR'S EXPENSE.

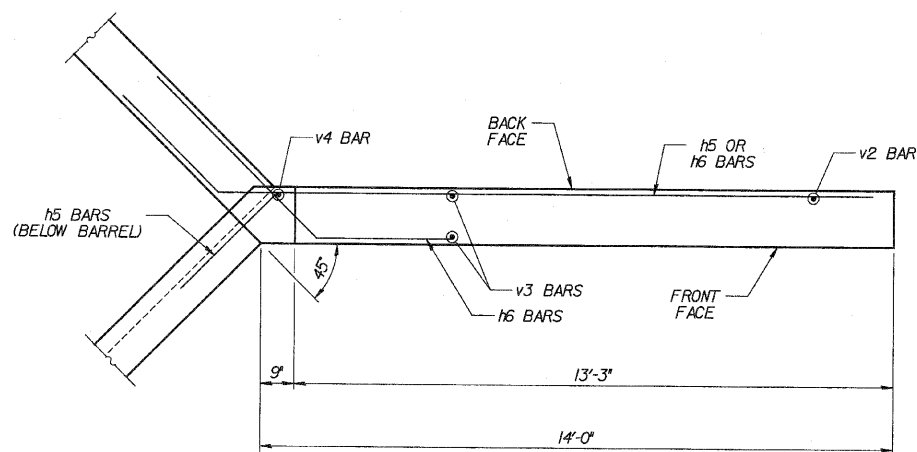
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'G'  
TYPICAL SECTIONS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 34+10.00  
WILL COUNTY  
STRUCTURE NUMBER 099-4662

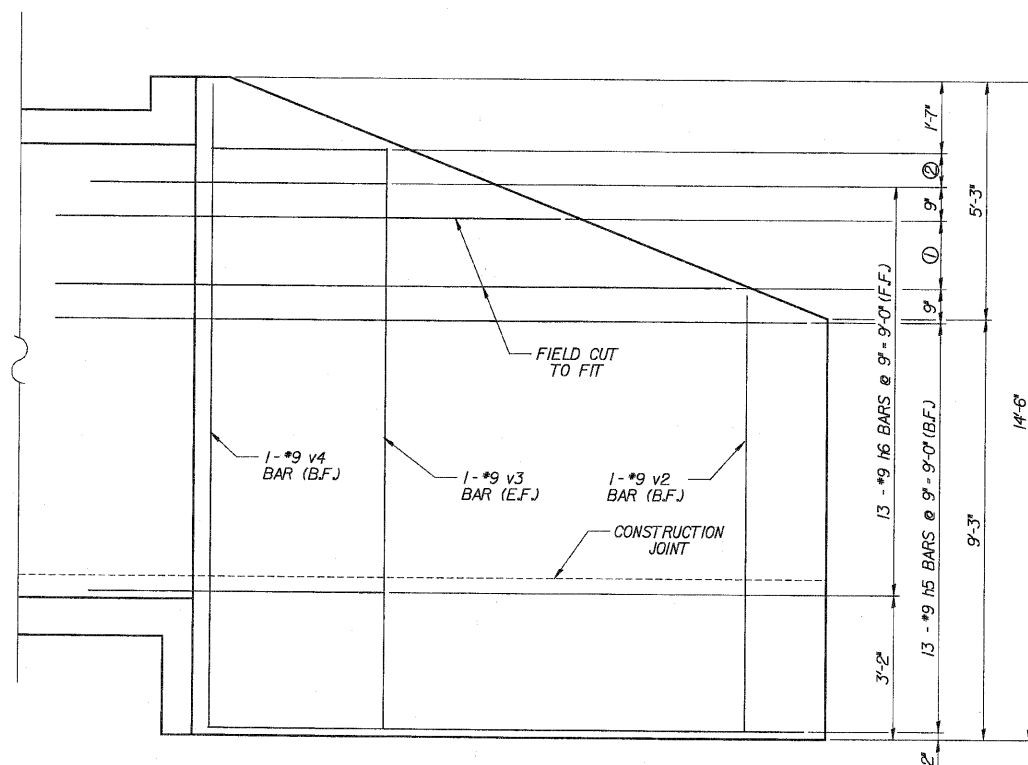
REVISIONS	
NAME	DATE

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	668
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	

\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 62479



**WING PLAN**

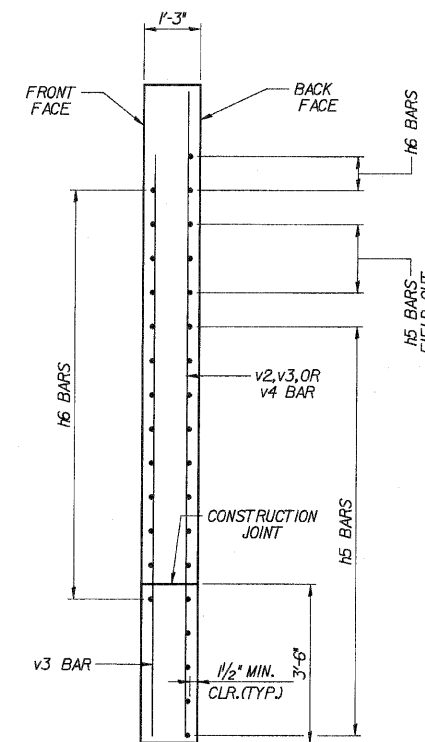


**WING ELEVATION**  
(4 REQUIRED)

**LEGEND**

B.F. - BACK FACE  
F.F. - FRONT FACE  
E.F. - EACH FACE

- ① 3 - #9 h5 BARS @ 9'-1'-6" (B.F.)  
(FIELD CUT TO FIT)
- ② 2 - #9 h6 BARS @ 9'-9" (B.F.)



**WING TYPICAL SECTION**

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

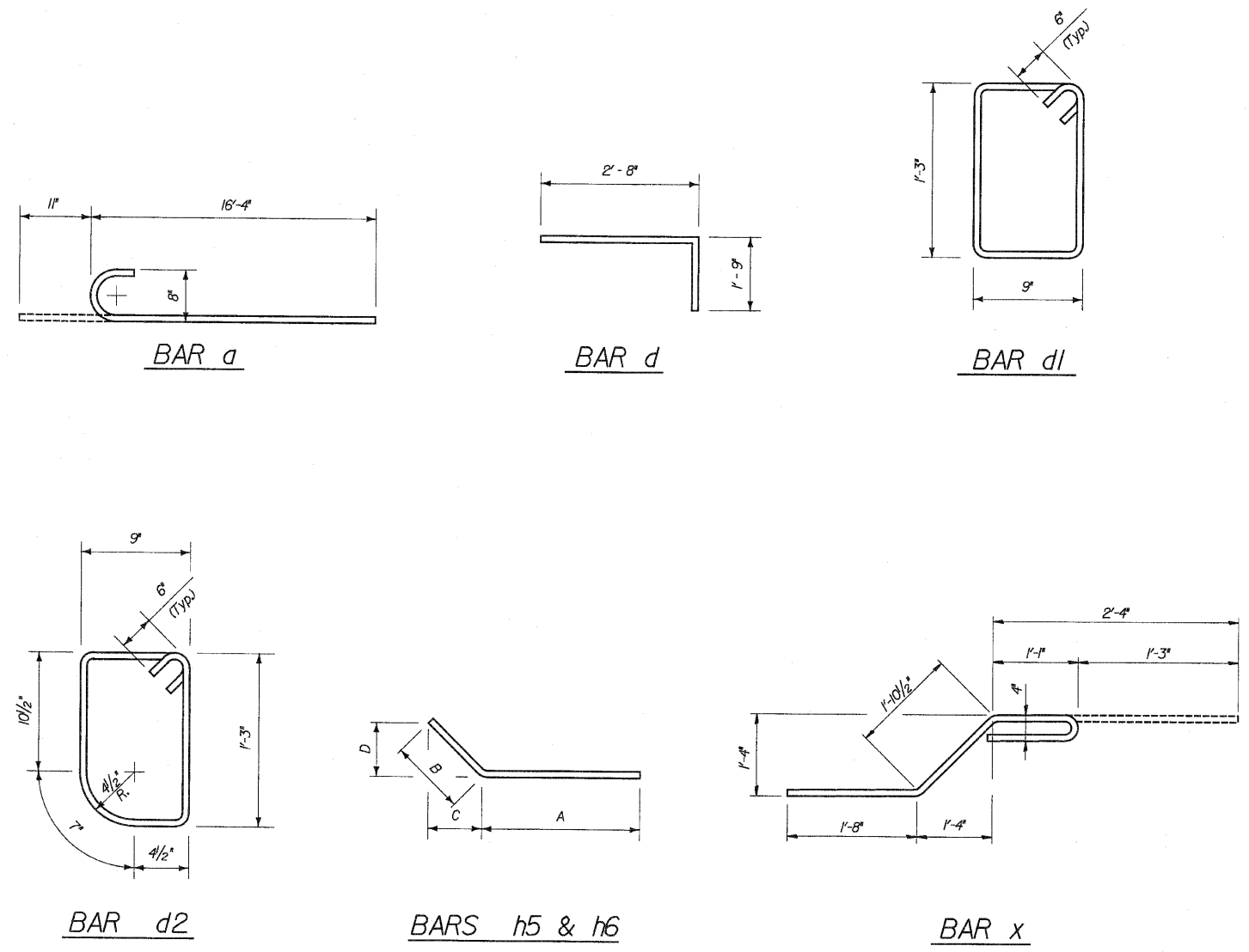
**CULVERT 'G'**  
**WING DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 34+10.00  
WILL COUNTY  
STRUCTURE NUMBER 099-4662

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	669
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	

\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 62479

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a	112	8	17'-3"	
al	20	4	16'-4"	
d	54	4	4'-5"	
d1	30	4	5'-0"	
d2	30	4	4'-10"	
h	128	7	7'-9"	
h1	88	5	7'-9"	
h2	6	6	28'-4"	
h3	8	6	13'-8"	
h4	12	8	13'-8"	
h5	64	9	16'-2"	
h6	60	9	8'-0"	
v	88	5	10'-1"	
v1	88	5	2'-4"	
v2	4	9	9'-7"	
v3	8	9	12'-9"	
v4	4	9	14'-2"	
x	164	4	5'-11"	
x1	12	4	13'-0"	
x2	12	4	29'-3"	
CONCRETE BOX CULVERTS			CU. YD.	96.2
REINFORCEMENT BARS			POUND	17,276



**BAR BENDING DIAGRAMS**

Bar	A		B		C		D	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
h5	13	2	3	0	2	1/2	2	1/2
h6	5	0	3	0	2	1/2	2	1/2


DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'G'**  
**BARBILL & DETAILS**  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 34+10.00  
 WILL COUNTY  
 STRUCTURE NUMBER 099-4662

\* SECT. 02 & 13) WRS-3  
\* CONTRACT NO. 02478



Wang Engineering, Inc.  
Consulting Geotechnical and Environmental Engineers  
wangeng3@wangeng.com  
100 Fairbank Street  
Addison, IL 60101  
Telephone: 630 458-0700  
Fax: 630 458-0700


### BORING LOG BS-069

WEI Job No.: 301-01-01

Datum: NGVD  
Elevation: 717.10 ft  
North: 1762026.87 ft  
East: 1109454.76 ft  
Station: 341+31.95  
Offset: 78.27 LT

Page 1 of 2

Client: Brighton Engineering Company  
Project: GEOT - US. 30, Will Co, IL, IDOT D-91-219-02  
Location: SEC 22, 23, 24, 19 T35N, R11, 12E



Wang Engineering, Inc.  
Consulting Geotechnical and Environmental Engineers  
wangeng3@wangeng.com  
100 Fairbank Street  
Addison, IL 60101  
Telephone: 630 458-0700  
Fax: 630 458-0700

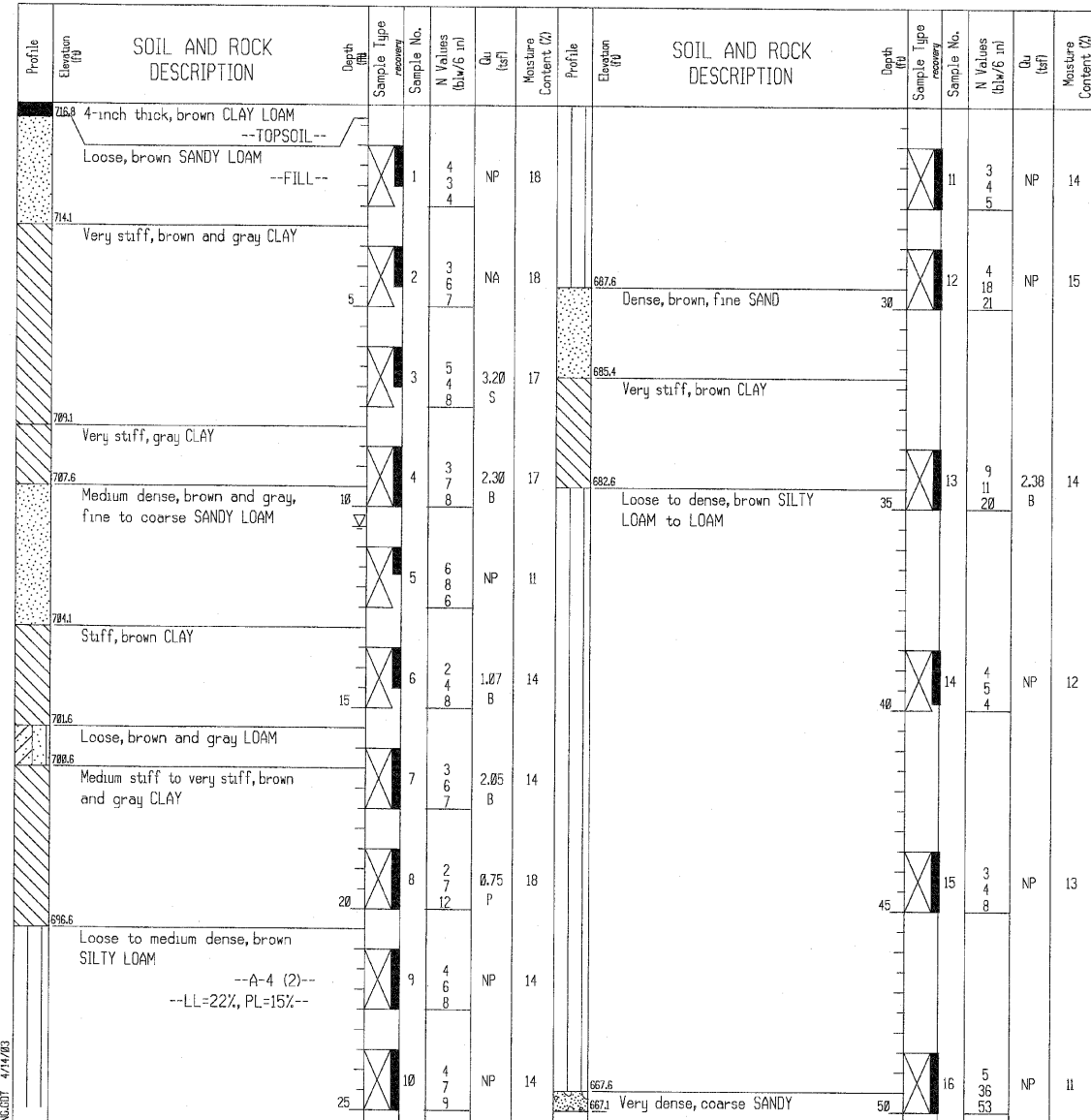
### BORING LOG BS-070

WEI Job No.: 301-01-01

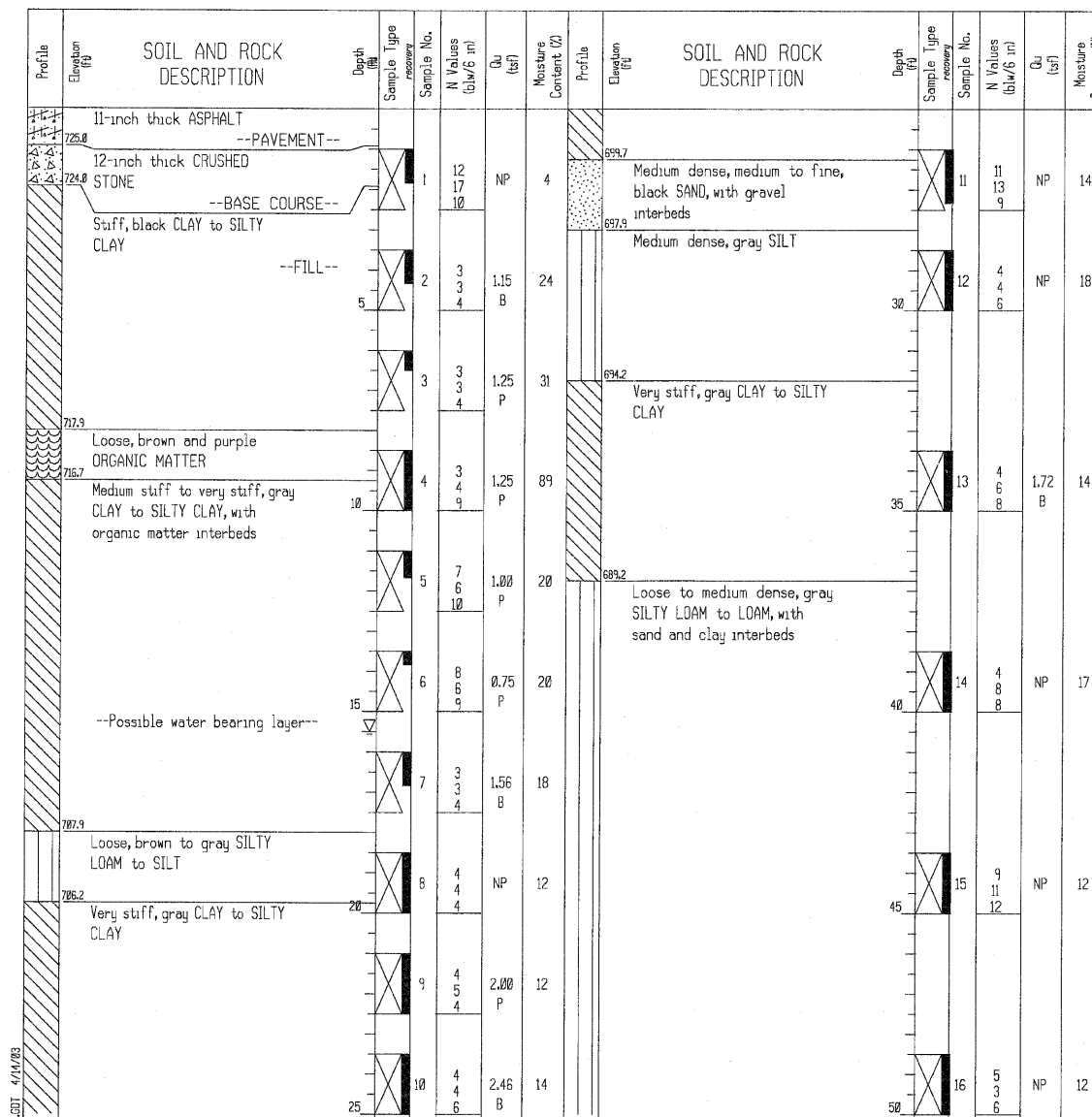
Datum: NGVD  
Elevation: 725.94 ft  
North: 1761938.45 ft  
East: 1109426.73 ft  
Station: 340+76.28  
Offset: 3.64 LT

Page 1 of 2

Client: Brighton Engineering Company  
Project: GEOT - US. 30, Will Co, IL, IDOT D-91-219-02  
Location: SEC 22, 23, 24, 19 T35N, R11, 12E



GENERAL NOTES				WATER LEVEL DATA	
Begin Drilling	02-14-2003	Complete Drilling	02-14-2003	While Drilling	10.50 ft
Drilling Contractor	TSC	Drill Rig	CME 550 ATV	At Completion of Drilling	DRY
Driller	E&A	Logger	J. Kasnick	Time After Drilling	NA
Checked by	S. Janowski	Drilling Method	2.25' SSA; Boring backfilled with bentonite chips upon completion		
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.					



GENERAL NOTES				WATER LEVEL DATA	
Begin Drilling	03-10-2003	Complete Drilling	03-10-2003	While Drilling	15.50 ft
Drilling Contractor	TSC	Drill Rig	CME 75 TMR	At Completion of Drilling	NA
Driller	C&J	Logger	S. Patel	Time After Drilling	NA
Checked by	S. Janowski	Drilling Method	2.25' SSA; Boring backfilled with bentonite chips upon completion		
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.					

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CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

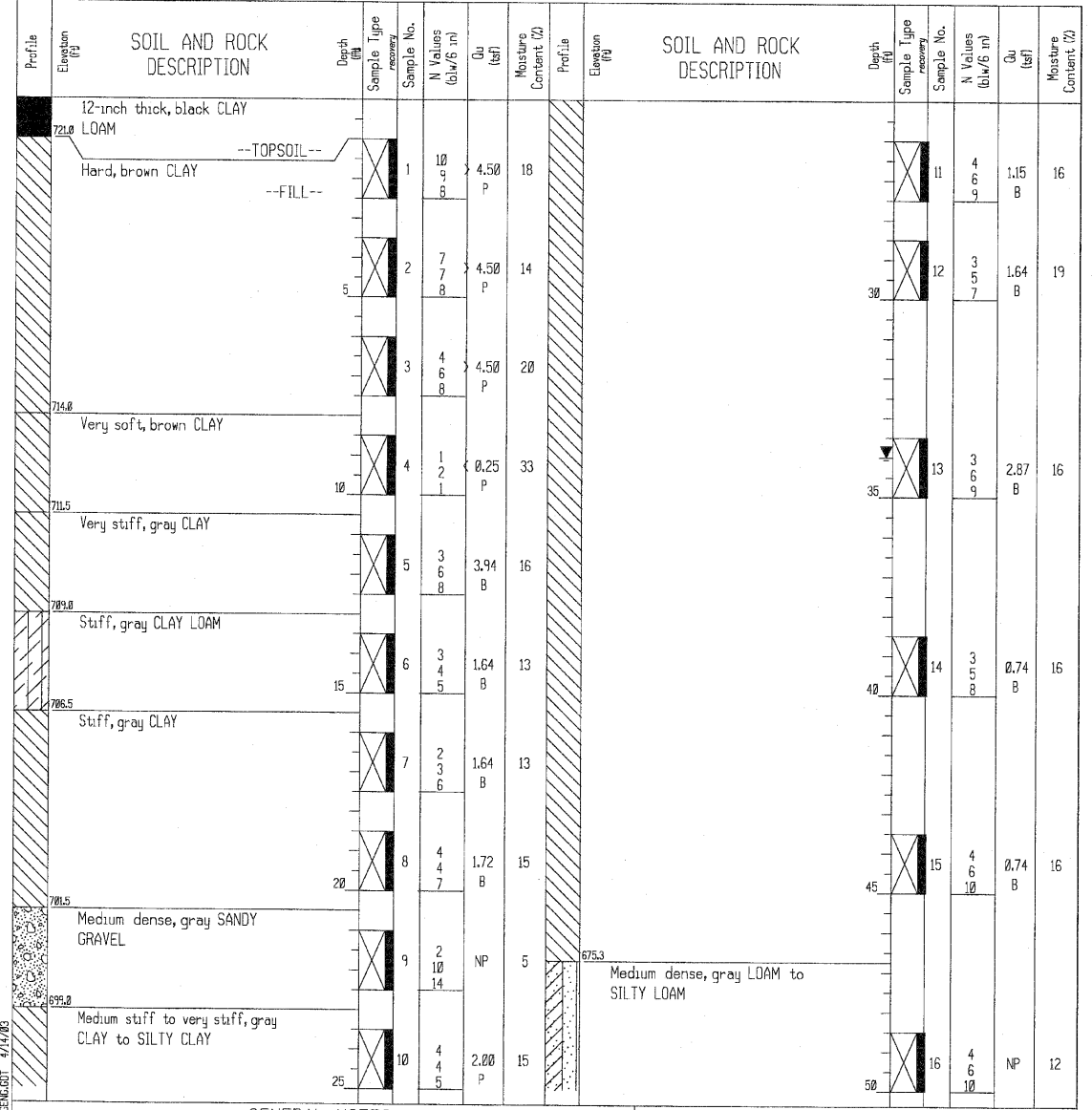
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

REVISIONS	
NAME	DATE

**CULVERT 'G'**  
**BORING LOG**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 34+10.00  
WILL COUNTY  
STRUCTURE NUMBER 099-4662

\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 62479

<p>Wang Engineering, Inc. Consulting Geotechnical and Environmental Engineers wangeng3@wangeng.com 120 Fairbank Street Addison, IL 60101 Telephone: 630 458-0700 Fax: 630 458-0900</p>	<h3>BORING LOG BS-071</h3> <p>WEI Job No.: 301-01-01</p>		Page 1 of 2
	Client	Brighton Engineering Company	
	Project	GEOT - US. 30, Will Co, IL, IDOT D-91-219-02	
	Location	SEC 22, 23, 24, 19 T35N, R11, 12E	
		Datum: NGVD Elevation: 722.02 ft North: 1761864.28 ft East: 1109438.07 ft Station: 340+63.78 Offset: 70.32 RT	



<b>GENERAL NOTES</b> Begin Drilling: 02-10-2003    Complete Drilling: 02-10-2003 Drilling Contractor: TSC    Drill Rig: CME 75 TMR Driller: E&A    Logger: E. Dances    Checked by: S. Janowski Drilling Method: 2.25" SSA Boring backfilled with bentonite chips upon completion		<b>WATER LEVEL DATA</b> While Drilling: <input checked="" type="checkbox"/> DRY At Completion of Drilling: <input checked="" type="checkbox"/> 34.00 ft Time After Drilling: NA Depth to Water: <input checked="" type="checkbox"/> NA The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.	
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DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

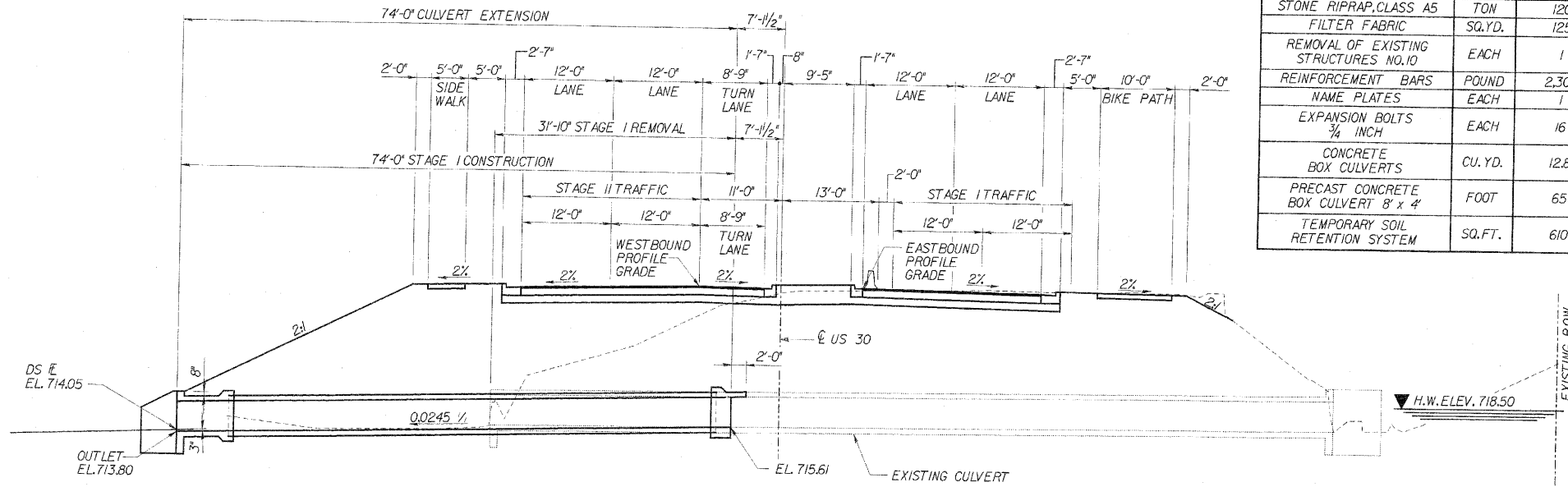
**CULVERT 'G'**  
**BORING LOG**  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 341+10.00  
 WILL COUNTY  
 STRUCTURE NUMBER 099-4662

REVISIONS	
NAME	DATE

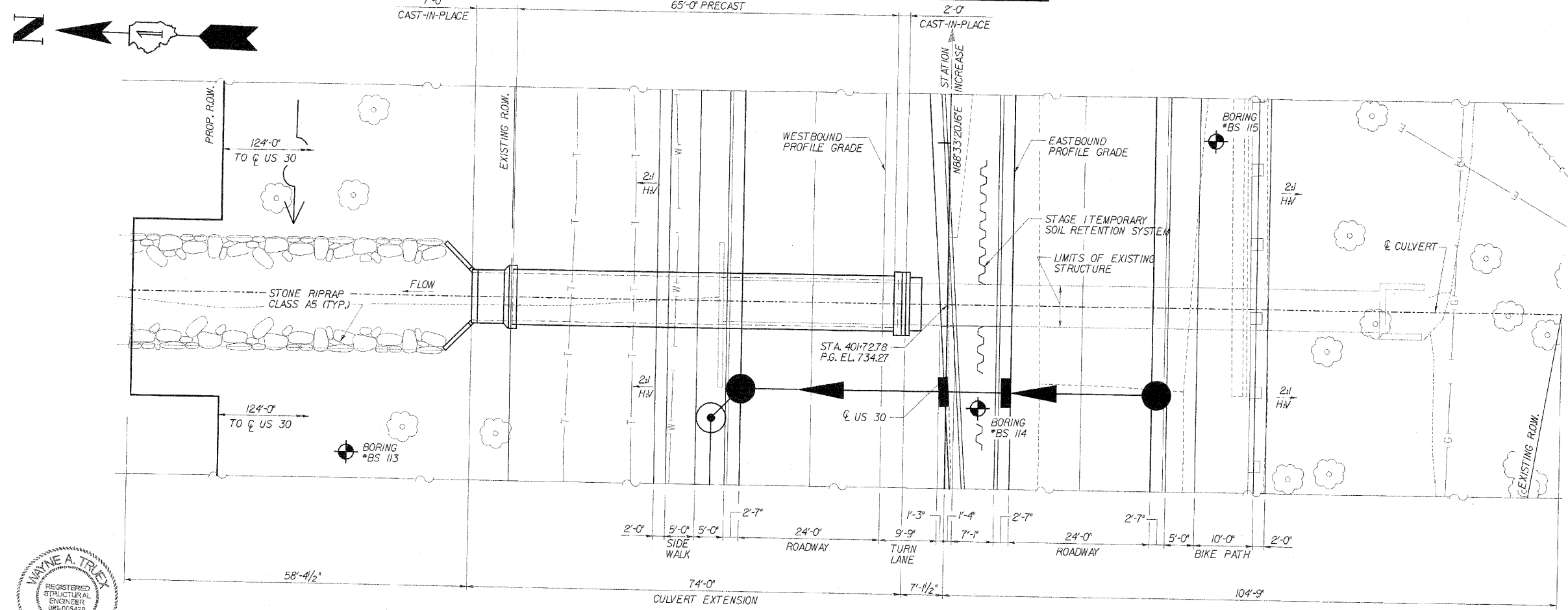
BENCH MARK: BM 243  
STA. 395+19.378, 51113' RT., ELEV. 732.295  
SET 3/8" DIAMETER IRON ROD ONE FOOT +/-  
SOUTH OF SOUTHERLY STONE SHOULDER OF  
ROUTE 30, +/- HALFWAY BETWEEN ELM STREET  
AND LOCUST STREET.

EXISTING STRUCTURE:  
SINGLE 8'-0" X 4'-0" X 112'-0" CONCRETE BOX CULVERT

PROPOSED IMPROVEMENTS:  
APPROXIMATELY 31'-10" OF THE NORTH END  
OF EXISTING STRUCTURE TO BE REMOVED AND  
EXTENDED 74'-0" WITH A SINGLE 8'-0" X 4'-0"  
PRECAST CONCRETE BOX CULVERT, WITH  
CAST-IN-PLACE END SECTIONS, MAINTAINING  
TWO LANES OF TRAFFIC.



LONGITUDINAL SECTION



PLAN

WATERWAY INFORMATION									
DRAINAGE AREA (SQ. MI.) - 0.18		LOW GRADE ELEV. (FEET) EXIST - 733.09 @ STA. 402+15				MAX. RECORDED H.W.E. -			
PROPOSED - 733.21 @ STA. 401+72									
FLOOD	FREQ. YR.	DISCHARGE C.F.S.	WATERWAY OPENING		NATURAL H.W.E.	CREATED HEAD		HEADWATER ELEVATION	
			EXISTING (square feet)	PROPOSED (square feet)		EXISTING (feet)	PROPOSED (feet)	EXISTING	PROPOSED
DESIGN	10	65	13.93	13.93	718.13	0.47	0.47	718.60	718.60
BASE	50	98	16.52	16.52	718.50	0.89	0.89	719.39	719.39
MAX. CALC.	100	112	17.50	17.50	718.64	1.07	1.07	719.71	719.71
OVERTOPPING	500	144	19.53	19.53	718.93	1.46	1.45	720.39	720.38

STATION 401+72.64  
BUILT BY  
STATE OF ILLINOIS  
FAP 353 SECT. (12 & 13) WRS-3  
LOADING HS20  
STR. NO. 099-C018

NAME PLATE  
NOTE: SEE STANDARD DRAWING 515001  
FOR NAME PLATE DETAILS.

REVISIONS	
NAME	DATE

DESIGN SPECIFICATIONS

AASHTO 2002 SPECIFICATIONS.  
LOADING HS20-44  
ALLOW 50\*/SQ.FT. FOR FUTURE WEARING SURFACE.

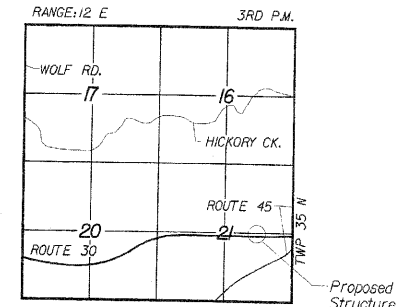
DESIGN STRESSES

FIELD UNITS  
f'c = 3,500 PSI  
fy = 60,000 PSI (REINFORCEMENT)

PRECAST UNITS  
f'c = 5,000 PSI  
fy = 60,000 PSI (REINFORCEMENT)

GENERAL NOTES

- REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 706 GR60. SEE SPECIAL PROVISIONS.
- CAST-IN-PLACE BARREL SHALL BE POURED MONOLITHICALLY WITH THE WINGWALLS.
- EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER.
- IN ACCORDANCE WITH ARTICLE 540.04 OF THE STANDARD SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DIVERT STREAM 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 "REMOVAL OF EXISTING STRUCTURES NO. 10". CLEAN FILL (GRANULAR) MATERIAL WILL ONLY BE ALLOWED.
- THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M259 (DESIGN FILL HEIGHT - 15'-0")
- A CANTILEVERED SHEET PILING DESIGN DOES NOT APPEAR FEASIBLE AND ADDITIONAL MEMBERS OR OTHER RETENTION SYSTEMS MAY BE NECESSARY. THE CONTRACTOR SHALL SUBMIT A TEMPORARY SOIL RETENTION SYSTEM DESIGN INCLUDING PLAN DETAILS AND CALCULATIONS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER.
- THE CONTRACTOR SHALL PREPARE IN-STREAM WORK PLANS (ALL COFFERDAMS, WORK PADS, AND EROSION AND SEDIMENT CONTROL, ETC.) AND SUBMIT TO THE ENGINEER AND THE U.S. ARMY CORP OF ENGINEERS FOR REVIEW AND APPROVAL. THE CONTRACTOR SHOULD EXPECT TO HAVE TO ATTEND MEETINGS AT THE USACE OFFICE TO DISCUSS THEIR WORK PLAN IN ORDER TO SECURE THEIR PERMIT. THE COST OF ALL IN-STREAM WORK ITEMS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.



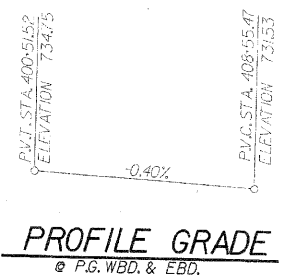
LOCATION SKETCH

DLZ 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

CULVERT 'H'  
GENERAL PLAN  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 401+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018

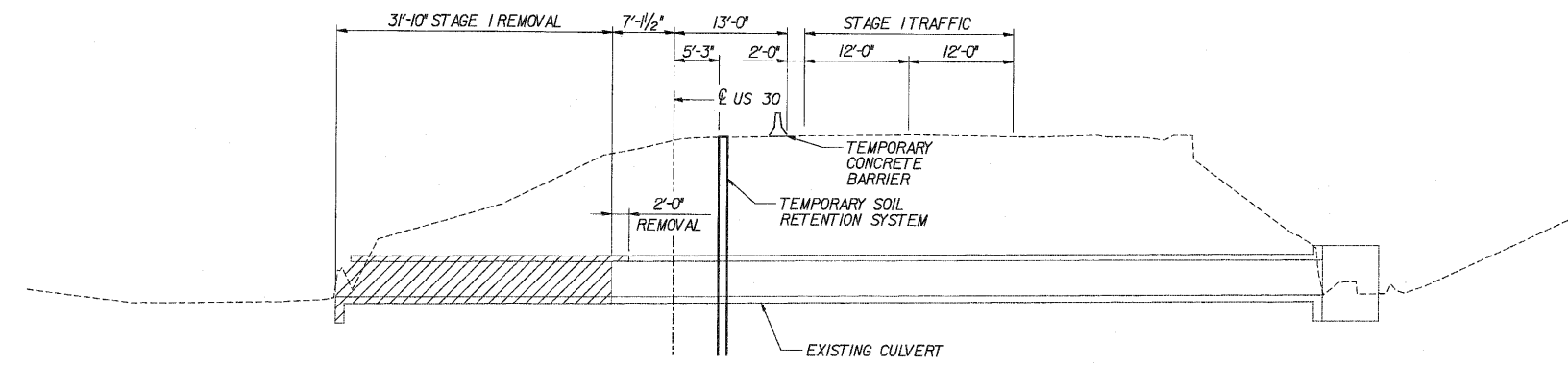
WAYNE A. TRUX  
REGISTERED STRUCTURAL ENGINEER  
STATE OF ILLINOIS  
081-009429  
Wayne A. Trux  
7-6-10  
Expire 11-30-12

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

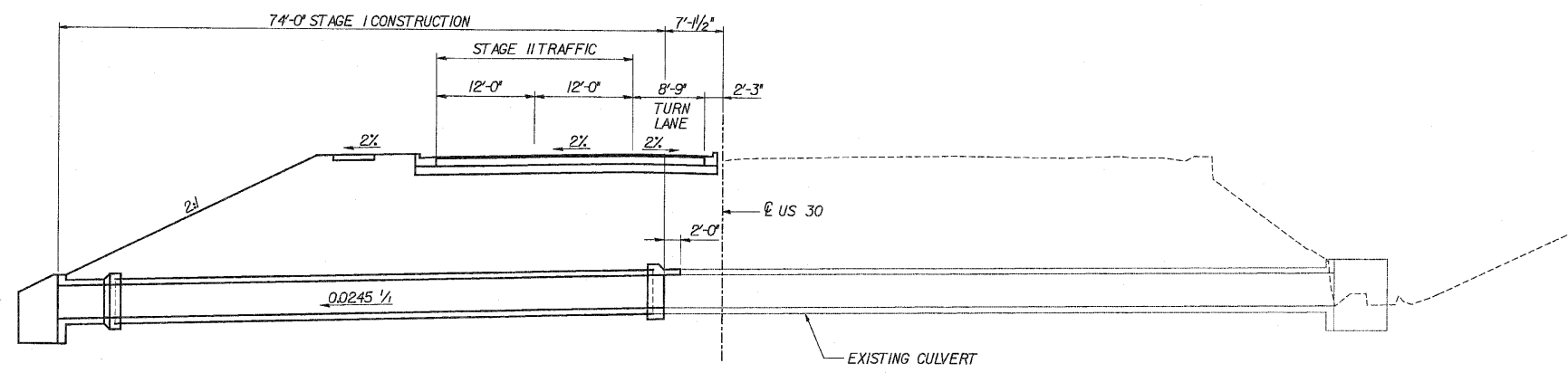


PROFILE GRADE  
© P.G. WBD. & EBD.

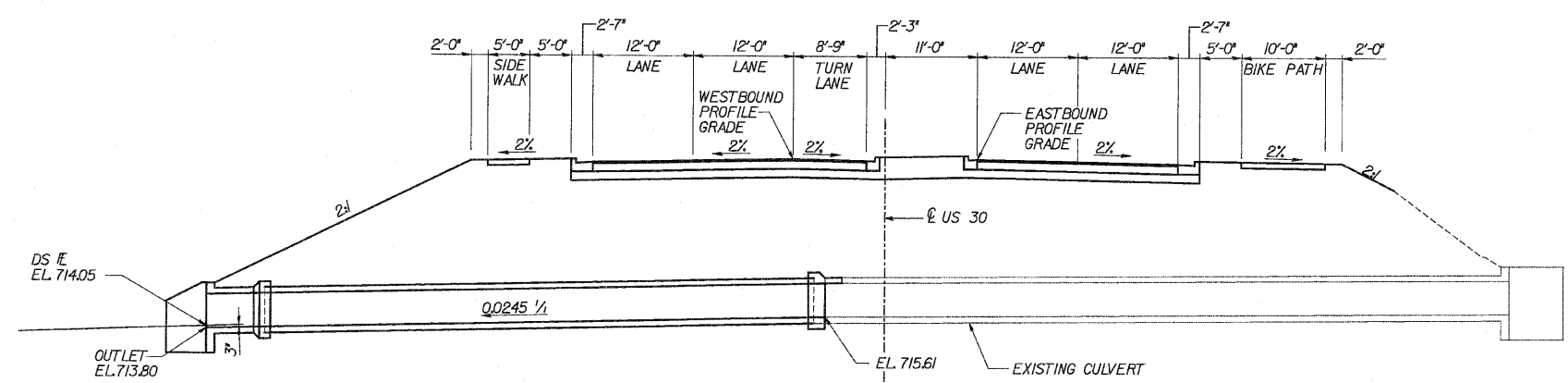




**STAGE I**



**STAGE II**



**FINAL CROSS SECTION**

**PROPOSED STAGING NOTES**

- STAGE I REMOVAL AND CONSTRUCTION**
1. MAINTAIN TWO (2) LANES OF TRAFFIC.
  2. INSTALL TEMPORARY CONCRETE BARRIER.
  3. INSTALL TEMPORARY SOIL RETENTION SYSTEM.
  4. REMOVE 31'-10" FROM NORTH END OF EXISTING STRUCTURE AND AN ADDITIONAL 2'-0" OF THE TOP SLAB.
  5. CONSTRUCT STAGE I PORTION OF THE STRUCTURE.
  6. CONSTRUCT ROADWAY PAVEMENT.
- STAGE II REMOVAL AND CONSTRUCTION**
1. CONSTRUCT ROADWAY PAVEMENT.

**LEGEND**

REMOVAL OF EXISTING STRUCTURES

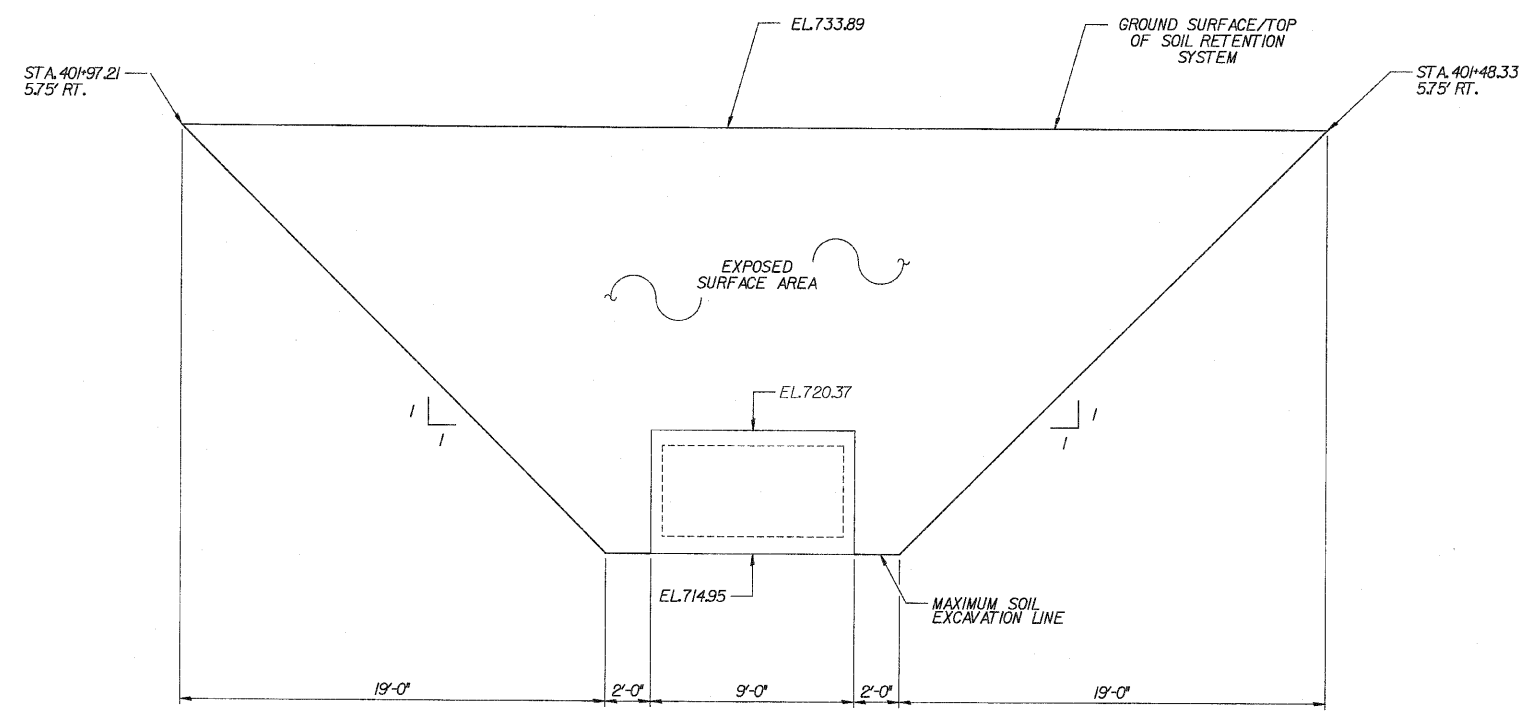
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DRAWN	LNB
CHECKED	ASP

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'H'**  
**PROPOSED STAGE PLANNING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 401+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018

\* SBC. 02 & 13 WRS-3  
\* CONTRACT NO. 62479



TEMPORARY SOIL RETENTION SYSTEM

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

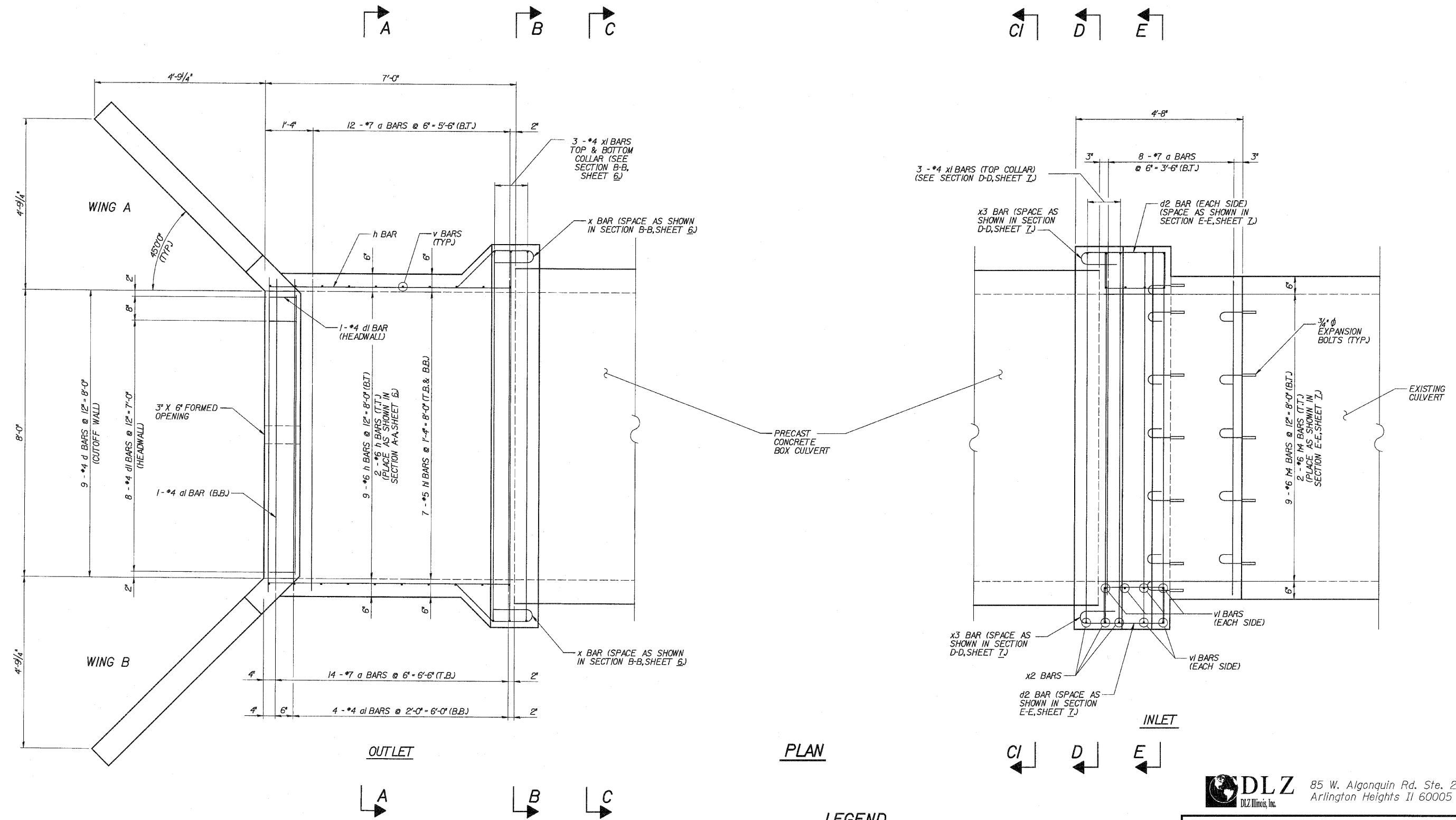
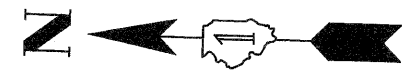
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'H'**  
**TEMPORARY SOIL RETENTION SYSTEM**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 40+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PAP 353	*	WILL	1235	675
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	

\* SECT. 12 & 13) WRS-3  
\* CONTRACT NO. 02479



PLAN

LEGEND

T.T. = TOP OF TOP SLAB  
B.T. = BOTTOM OF TOP SLAB  
T.B. = TOP OF BOTTOM SLAB  
B.B. = BOTTOM OF BOTTOM SLAB

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

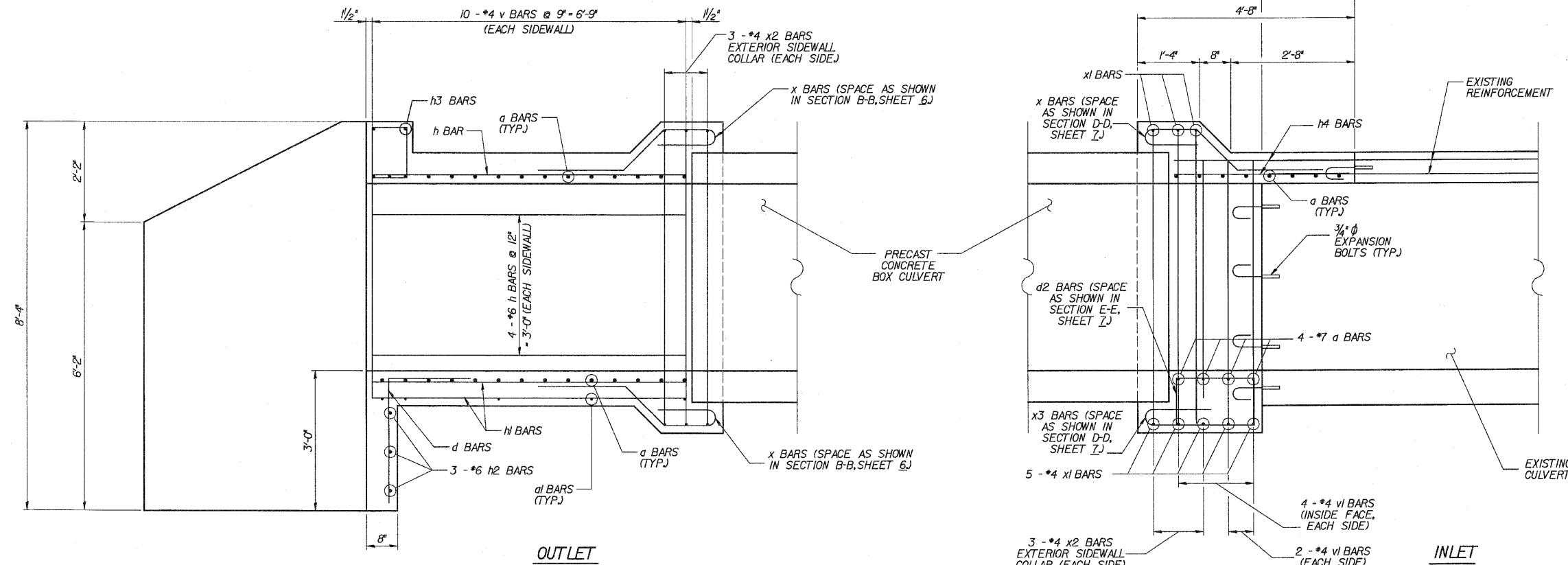
REVISIONS	
NAME	DATE

**DLZ** DLZ Illinois, Inc. 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

**CULVERT 'H'**  
**END SECTION PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 401+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018

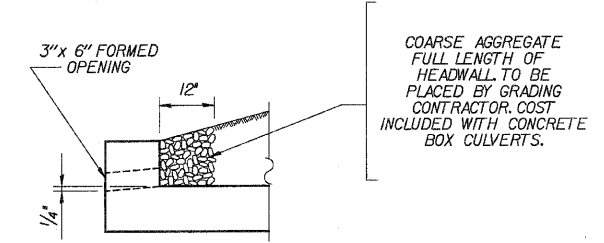
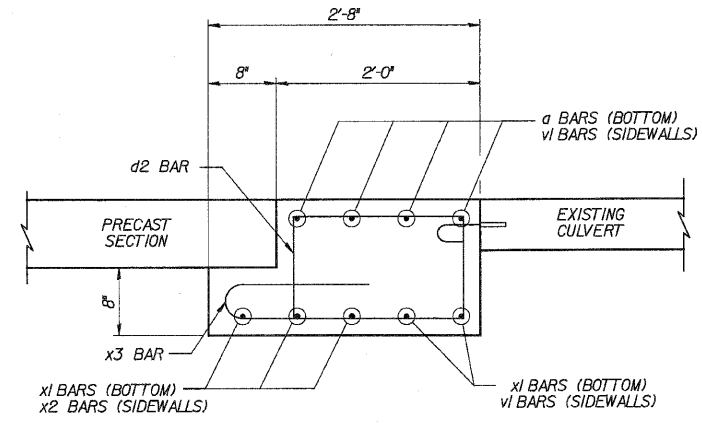
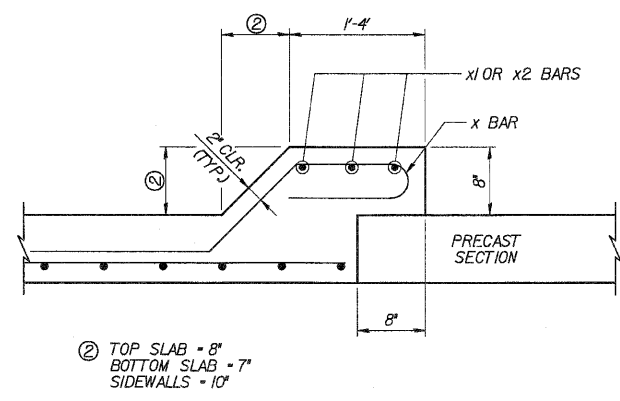
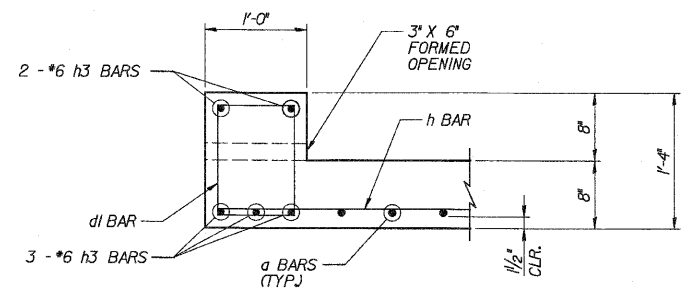
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	676
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	

\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 02479



① REMOVE AN ADDITIONAL 2'-0" OF TOP SLAB. EXISTING LONGITUDINAL REINFORCEMENT TO BE CLEANED, STRAIGHTENED, AND PLACED IN NEW SLAB.

NOTE: EXPANSION BOLTS SHALL BE 3/4" φ HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9" INTO NEW CONCRETE. TILT EXPANSION BOLTS IN SLAB TO PROVIDE REQUIRED CLEARANCE.



**PRECAST TO CAST-IN-PLACE CONNECTION COLLAR**

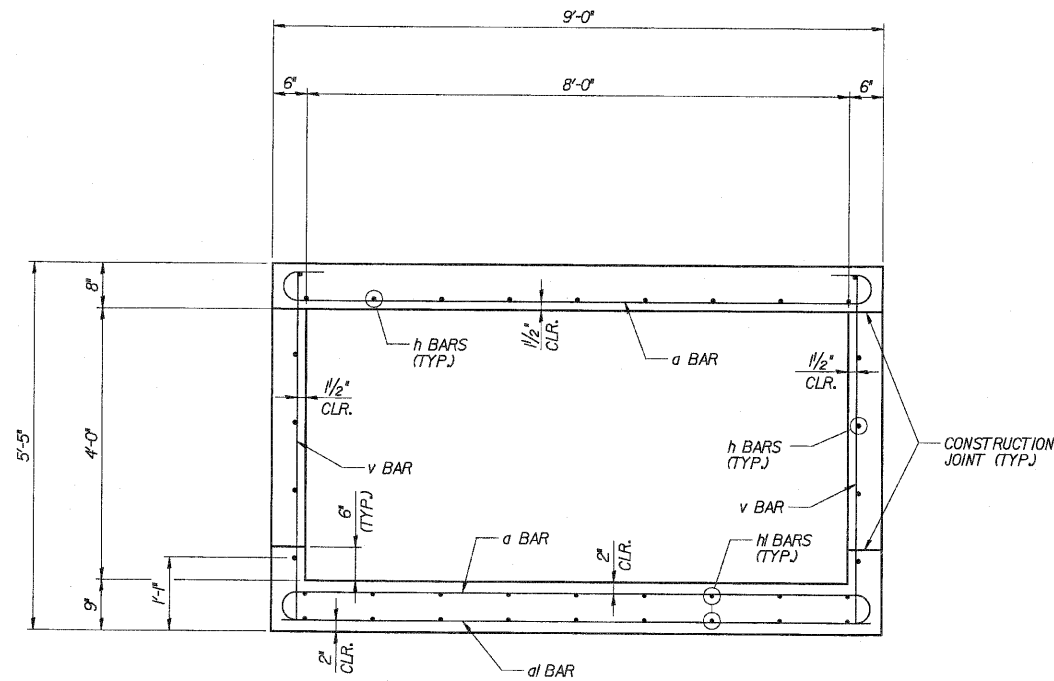
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REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

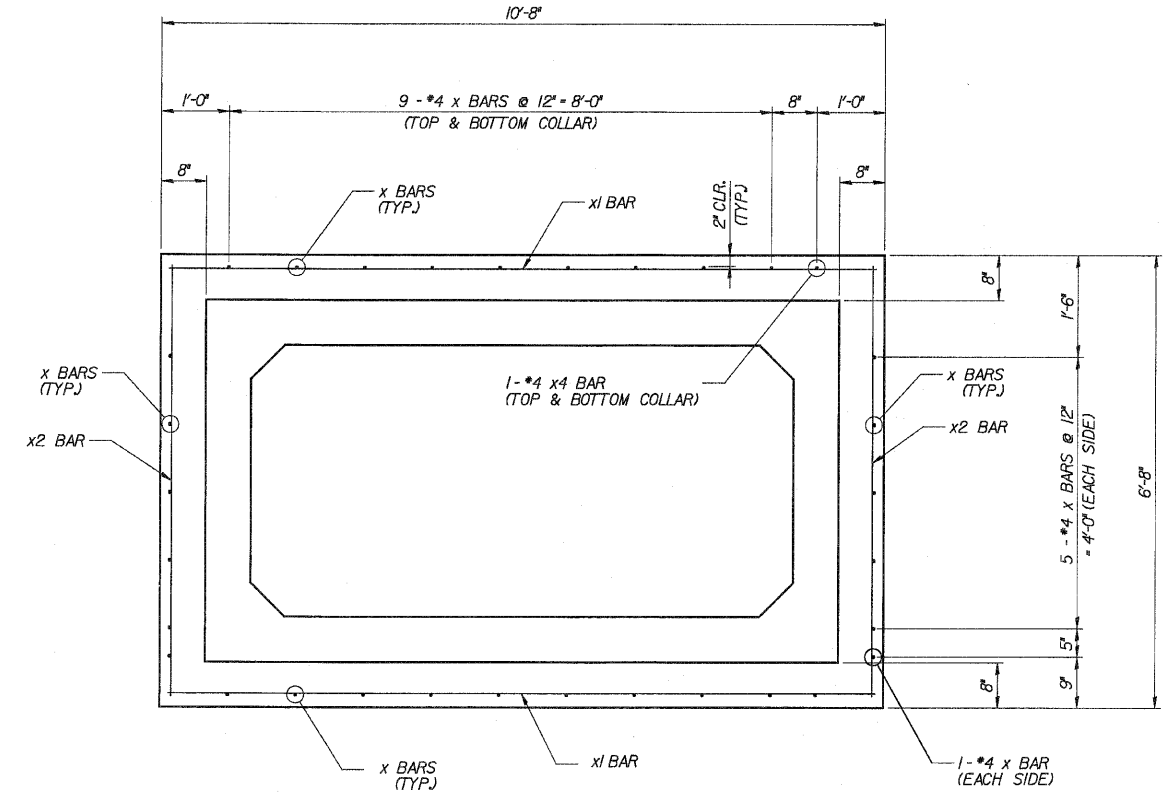
**CULVERT 'H'**  
**END SECTION ELEVATION**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 40+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	677
FED. ROAD DIST.		ILLINOIS	FED. AID PROJECT	
* SECT. (12 & 13) WRS-3				
* CONTRACT NO. 62479				

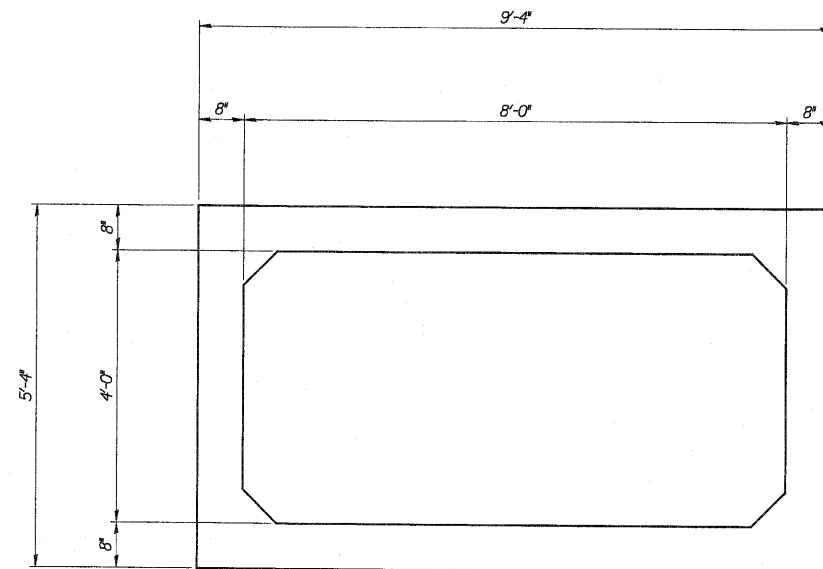


**CAST-IN-PLACE SECTION**  
**SECTION A-A**

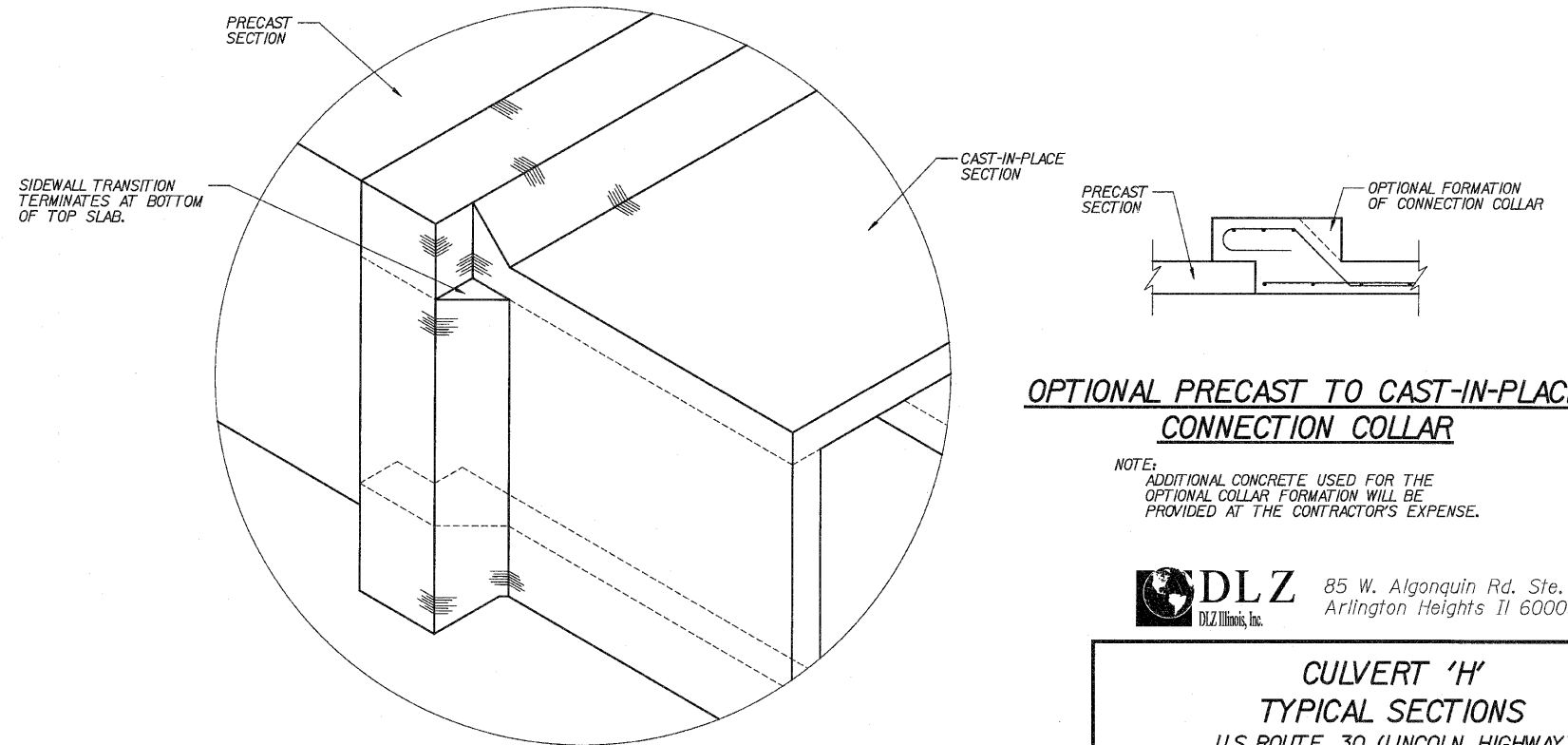
NOTE: TILT HOOK BARS IN TOP AND BOTTOM SLAB TO PROVIDE REQUIRED CLEARANCE.



**PRECAST TO CAST-IN-PLACE CONNECTION COLLAR**  
**SECTION B-B**



**PRECAST TYPICAL SECTION**  
**SECTION C-C & CI-CI**



**ISOMETRIC VIEW OF CONNECTION COLLAR @ OUTLET END**

**OPTIONAL PRECAST TO CAST-IN-PLACE CONNECTION COLLAR**

NOTE: ADDITIONAL CONCRETE USED FOR THE OPTIONAL COLLAR FORMATION WILL BE PROVIDED AT THE CONTRACTOR'S EXPENSE.

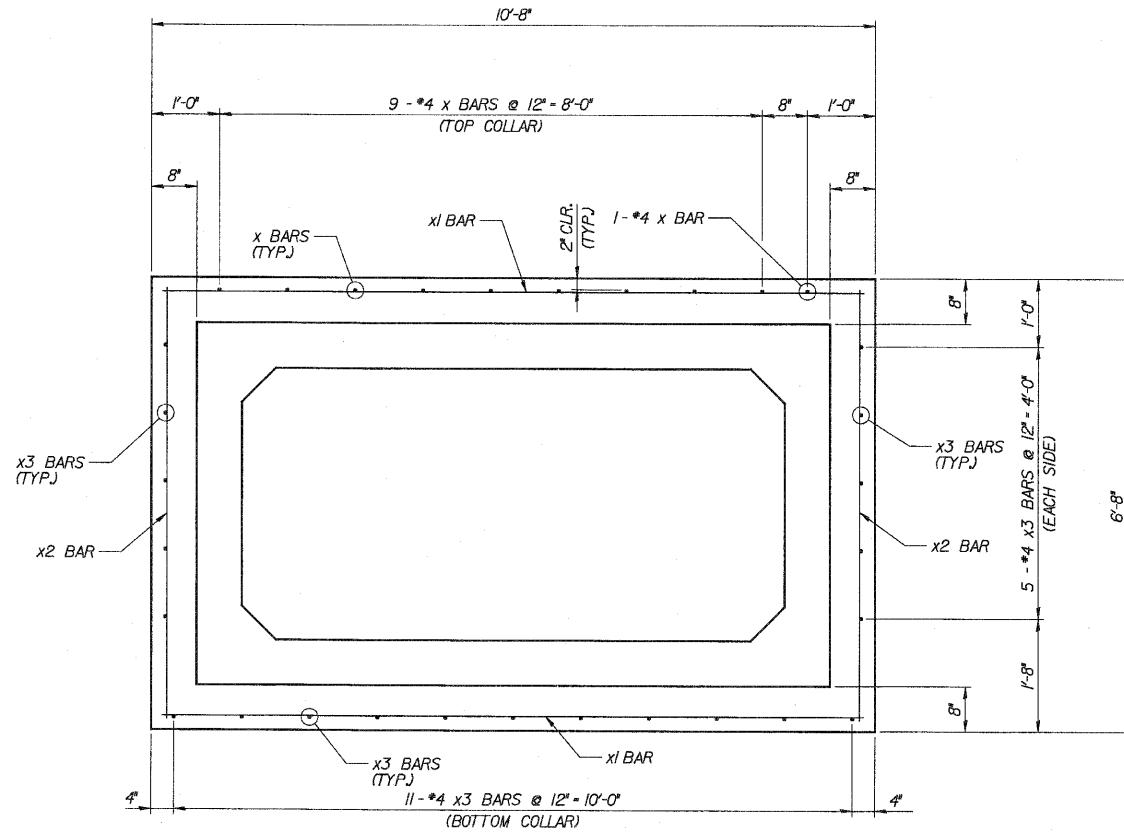
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

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DRAWN	LNB
CHECKED	ASP

REVISIONS	
NAME	DATE

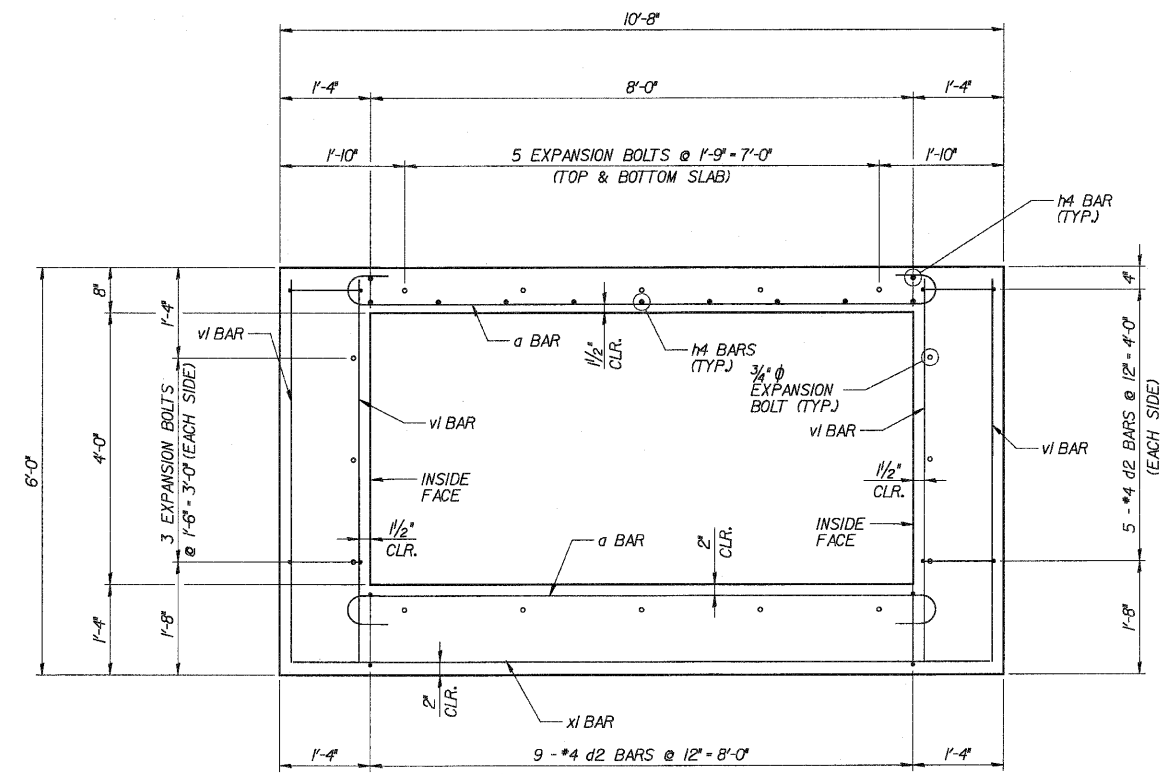
**CULVERT 'H'**  
**TYPICAL SECTIONS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 401+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018

\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 62479



PRECAST TO CAST-IN-PLACE CONNECTION COLLAR

SECTION D-D



CAST-IN-PLACE SECTION

SECTION E-E

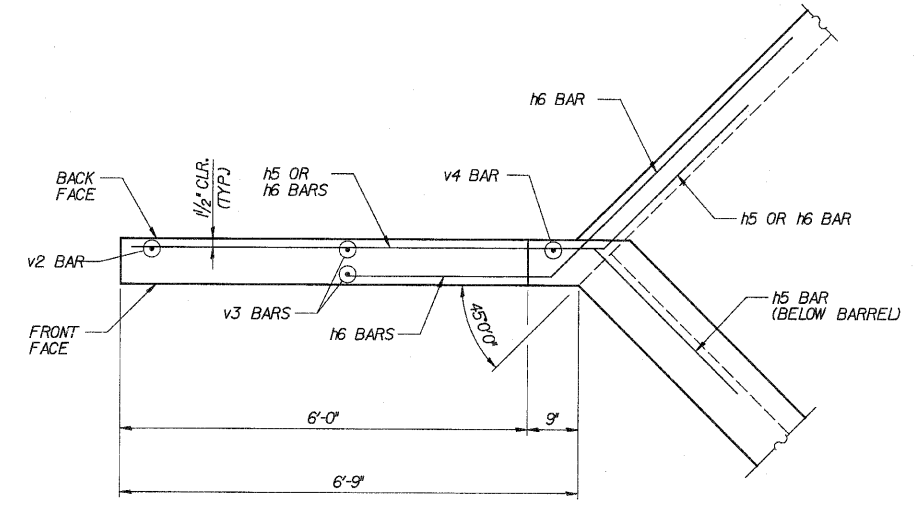
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REVISIONS	
NAME	DATE

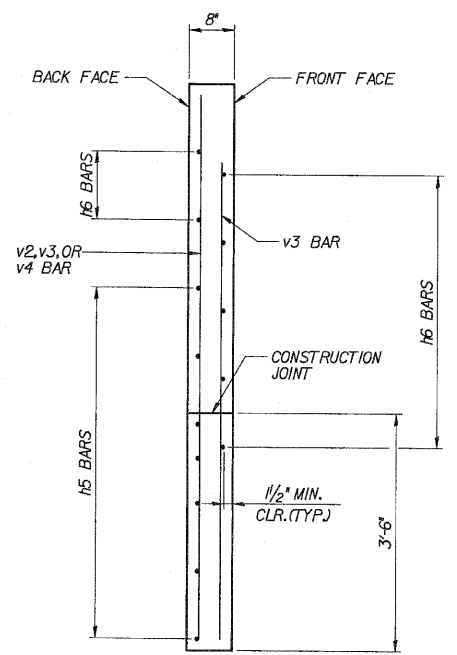
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'H'**  
**TYPICAL SECTIONS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 401+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018

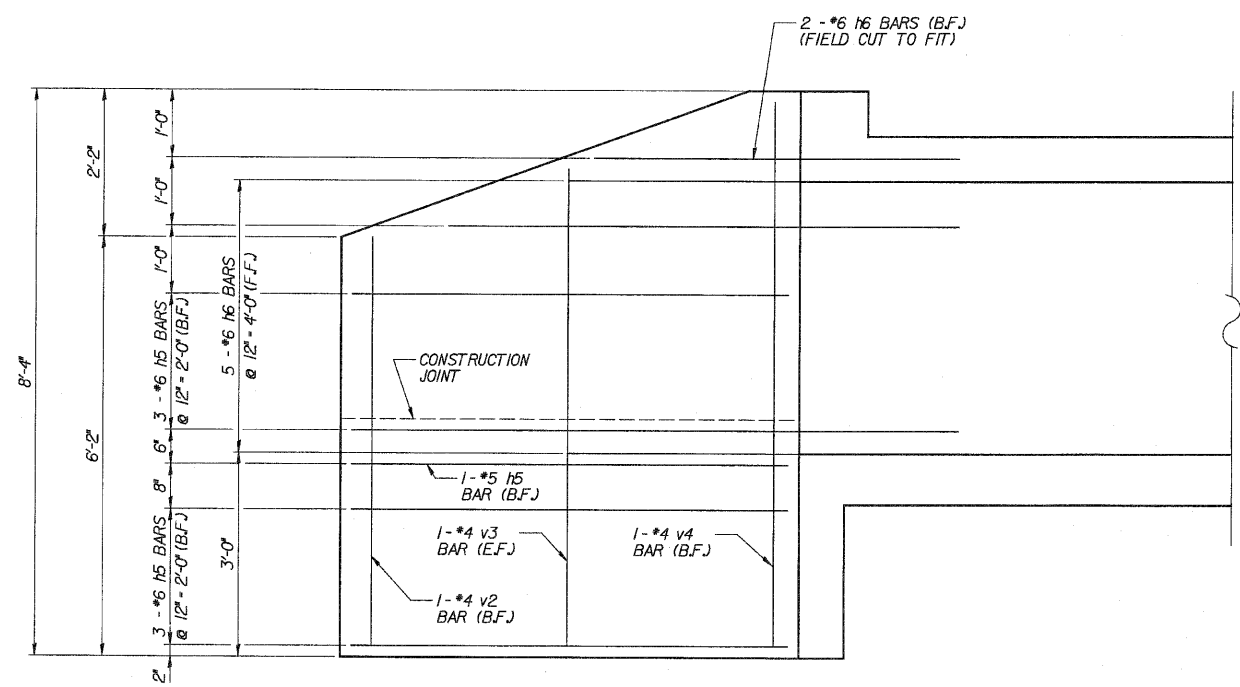
\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 62479



**WINGS A & B PLAN**



**WINGS A & B TYPICAL SECTION**



**WINGS A & B ELEVATION**

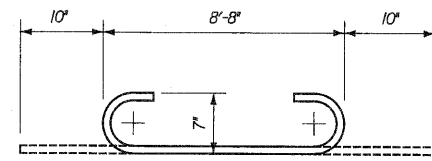
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REVISIONS	
NAME	DATE

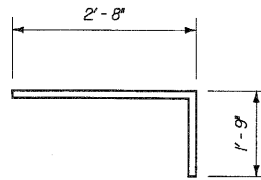
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'H'**  
**WINGS A & B**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 40+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018

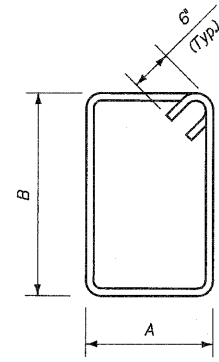
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\* CONTRACT NO. 69479



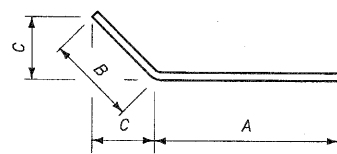
BAR a



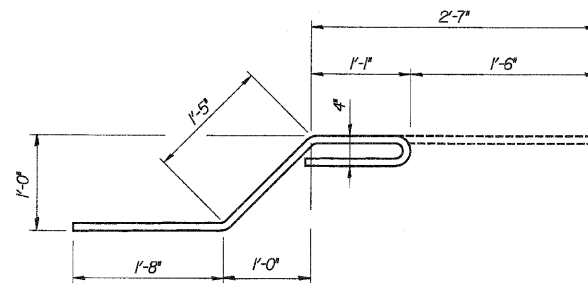
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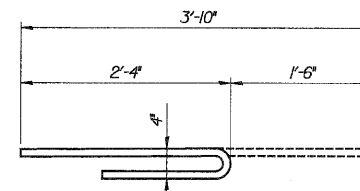
BAR d1 & d2



BARS h5 & h6



BAR x



BAR x3

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a	38	7	10'-4"	
d1	5	4	8'-8"	
d	9	4	4'-5"	
d1	9	4	4'-8"	
d2	19	4	6'-4"	
h	19	6	6'-9"	
h1	14	5	6'-9"	
h2	3	6	8'-5"	
h3	5	6	7'-9"	
h4	11	6	3'-9"	
h5	14	6	9'-9"	
h6	14	6	8'-0"	
v	20	4	5'-1"	
v1	12	4	5'-8"	
v2	2	4	6'-0"	
v3	4	4	7'-0"	
v4	2	4	8'-0"	
x	42	4	5'-8"	
x1	14	4	10'-4"	
x2	12	4	6'-4"	
x3	21	4	3'-10"	
CONCRETE BOX CULVERTS			CU. YD.	12.8
REINFORCEMENT BARS			POUND	2,300

**BAR BENDING DIAGRAMS**

Bar	A		B		C	
	Ft.	In.	Ft.	In.	Ft.	In.
d1	0	9	1	1		
d2	1	0	1	8		
h5	6	9	3	0	2	1/2
h6	5	0	3	0	2	1/2

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

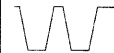
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

REVISIONS	
NAME	DATE

**CULVERT 'H'**  
**BARBILL & DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 401+72.78  
WILL COUNTY  
STRUCTURE NUMBER 099-C018





 Wang Engineering, Inc. Consulting Geotechnical and Environmental Engineers wangeng3@wangeng.com 100 Fairbank Street Addison, IL 60101 Telephone: 630 458-0700 Fax: 630 458-0900	BORING LOG BS-115		Page 1 of 2
	WEI Job No.: 301-01-01		Datum: NGVD
	Client: Brighton Engineering Company	Elevation: 733.94 ft	
	Project: GEOT - US. 30, Will Co, IL, IDOT D-91-219-02	North: 1763087.61 ft	
Location: SEC 22, 23, 24, 19 T35N, R11, 12E	East: 1115292.96 ft		Station: 40+2.28
			Offset: 45.24 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	N Values (blow/6 in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	N Values (blow/6 in)	Cu (tsf)	Moisture Content (%)
731.1	10-inch thick ASPHALT --PAVEMENT--							731.1							
732.3	10-inch thick CRUSHED STONE --BASE COURSE--							732.3	Medium dense, brown, coarse SAND, with gravel interbeds	11		11	3 14 10	NP	12
738.9	Hard, black CLAY LOAM							738.9	Loose, brown and gray SILT						
	Stiff to hard, brown and gray CLAY --FILL--	5		2	5 5 6	1.89 B		735.2	Very stiff, gray CLAY	30		12	4 5 8	2.95 B	17
				3	6 6 8	4.00 P									
				4	4 4 6	2.79 B		708.2	Medium dense, gray, fine to coarse SAND	35		13	6 6 7	NP	11
				5	5 6 9	2.62 B									
				6	4 7 8	2.95 B		695.2	Loose to medium dense, gray SILT	40		14	2 3 4	NP	14
				7	6 7 9	2.25 P									
712.7	Very stiff, black CLAY LOAM --BURIED TOPSOIL--							692.2	Hard, gray CLAY to SILTY CLAY	45		15	7 10 10	3.50 P	13
714.4	Very stiff, brown and gray CLAY	20		8	4 5 5	3.25 P		687.2	Very dense, gray SILT to SILTY LOAM						
				9	4 4 5	3.03 B		685.2	Very dense, gray GRAVEL to GRAVELLY SAND	50		16	28 38 50	NP	15
				10	4 5 7	2.95 B									

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	03-10-2003	Complete Drilling	03-10-2003	Water Drilling	34.00 ft		
Drilling Contractor	TSC	Drill Rig	CME 75 TMR	At Completion of Drilling	NA		
Driller	C&J	Logger	S. Patel	Time After Drilling	NA		
Checked by	S. Janowski			Depth to Water	NA		
Drilling Method	3.25" ID HSA Boring backfilled with bentonite chips upon completion						
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

DESIGNED	ASP
CHECKED	CDS
DRAWN	LNB
CHECKED	ASP

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'H'**  
**BORING LOG**  
 U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 40+72.78  
 WILL COUNTY  
 STRUCTURE NUMBER 099-C018

REVISIONS	
NAME	DATE

BENCH MARK: BM 211  
 STA. 188+46.596, 73.673' RT. EL. 701.457  
 CHISELED SQUARE ON WALK ON SOUTH  
 SIDE OF ROUTE 30, IN FRONT OF J.C. FLICKS VIDEO

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	12 & 13	WILL.	1235	683
SHEET NO. 1 21 SHEETS				

EXISTING STRUCTURE: 36" Ø x 117'-0" R.C.P.

NO SALVAGE

PROPOSED IMPROVEMENTS:  
 CONSTRUCTION OF NEW SINGLE 10'-0" x 4'-0" AND  
 SINGLE 3'-0" x 2'-0" BOX CULVERTS IN STAGES MAINTAINING  
 TWO LANES OF TRAFFIC.

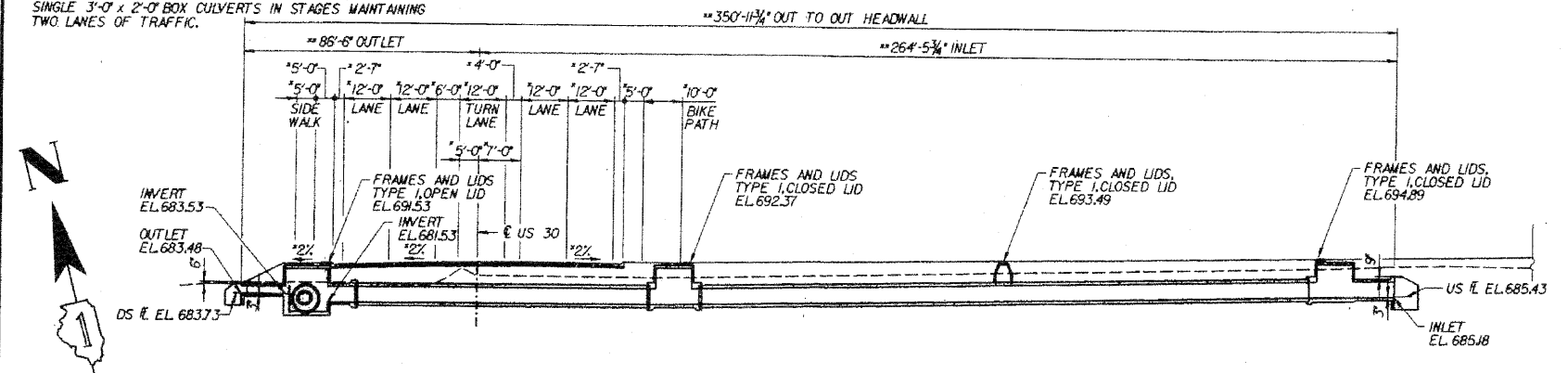
STATION 182+31.00  
 BUILT BY  
 STATE OF ILLINOIS  
 FAP 353 SECT. (12 & 13) WRS-3  
 LOADING HS20  
 STR. NO. 099-C013

NAME PLATE

NOTE: SEE STANDARD DRAWING 515001  
 FOR NAME PLATE DETAILS.

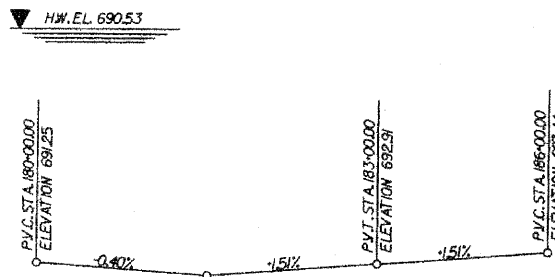
GENERAL NOTES

1. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53 GRADE 60.
2. A DISTANCE NOT LESS THAN 6'-0" OF THE BARREL SHALL BE POURED MONOLITHICALLY WITH THE WINGWALLS.
3. EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER.
4. IN ACCORDANCE WITH ARTICLE 540.04 OF THE STANDARD SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DIVERT STREAM 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 "REMOVAL OF EXISTING STRUCTURES". CLEAN FILL (GRANULAR) MATERIAL WILL ONLY BE ALLOWED.
5. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M259 (DESIGN FILL HEIGHT - 6'-0")



LONGITUDINAL SECTION

\* MEASURED PERPENDICULAR TO CENTERLINE OF ROADWAY  
 \*\* MEASURED ALONG CENTERLINE OF CULVERT



PROFILE GRADE

PG. WBD. & EBD.

DESIGN SPECIFICATIONS

AASHTO 2002 SPECIFICATIONS.

LOADING HS20-44

ALLOW 50' / 150' FT. FOR FUTURE WEARING SURFACE.

DESIGN STRESSES

FIELD UNITS

$f_c = 3,500$  PSI

$f_y = 60,000$  PSI (REINFORCEMENT)

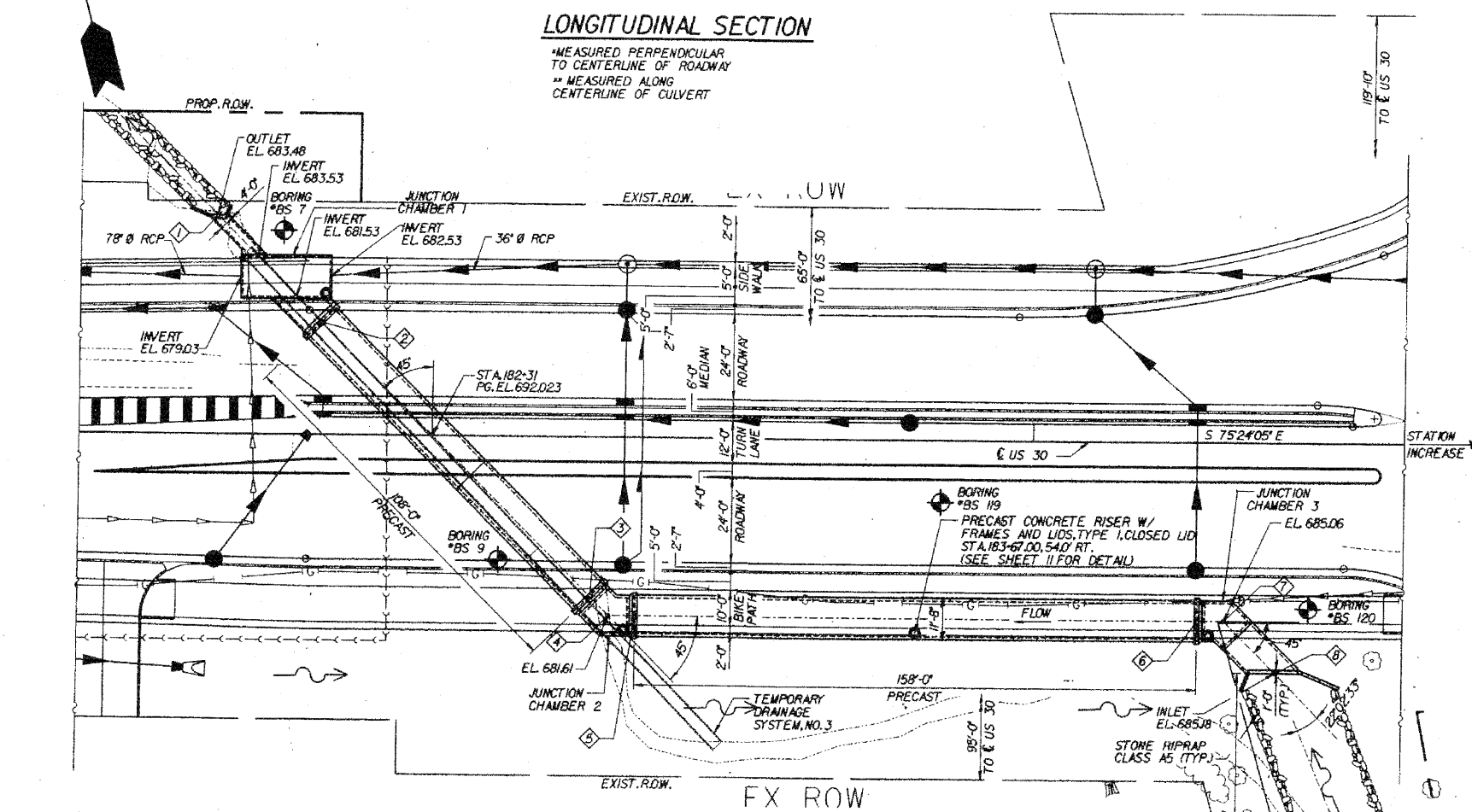
PRECAST UNITS

$f_c = 5,000$  PSI

$f_y = 60,000$  PSI (REINFORCEMENT)

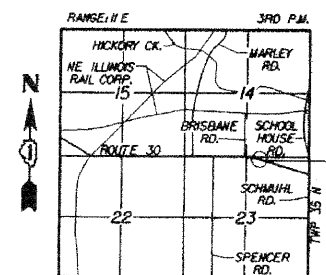
TOTAL BILL OF MATERIALS

ITEM	UNIT	QUANTITY
STONE RIPRAP, CLASS A5	TON	315
FILTER FABRIC	SQ. YD.	320
REMOVAL OF EXISTING STRUCTURES NO. 3	EACH	1
REINFORCEMENT BARS	POUND	25,966
TEMPORARY SHEET PILING	SQ. FT.	1,830
NAME PLATES	EACH	1
CONCRETE BOX CULVERTS	CU. YD.	130.9
PRECAST CONCRETE BOX CULVERT 10' x 4'	FOOT	266.0
FRAMES AND LIDS, TYPE 1, OPEN LID	EACH	1
FRAMES AND LIDS, TYPE 1, CLOSED LID	EACH	3
GEOTEXTILE RETAINING WALL	SQ. FT.	155
TEMPORARY DRAINAGE SYSTEM, NO. 3	FOOT	75
PRECAST CONCRETE RISER	EACH	1



PLAN

PT.	STATION	OFFSET
1	181+69.83	617' 2" LT.
2	181+99.33	31.67' LT.
3	182+75.70	44.69' RT.
4	182+81.00	50.00' RT.
5	182+88.50	50.00' RT.
6	184+46.50	50.00' RT.
7	184+54.00	50.00' RT.
8	184+68.67	64.67' RT.



LOCATION SKETCH



Wayne A. Tripp  
 11-30-10



85 W. Algonquin Rd. Ste. 220  
 Arlington Heights IL 60005

CULVERT 'J'  
 GENERAL PLAN

U.S. ROUTE 30 (LINCOLN HIGHWAY)  
 F.A.P. 353 (U.S. 30)  
 SECTION (12 & 13) WRS-3  
 STATION 182+31.00  
 WILL COUNTY  
 STRUCTURE NUMBER 099-C013

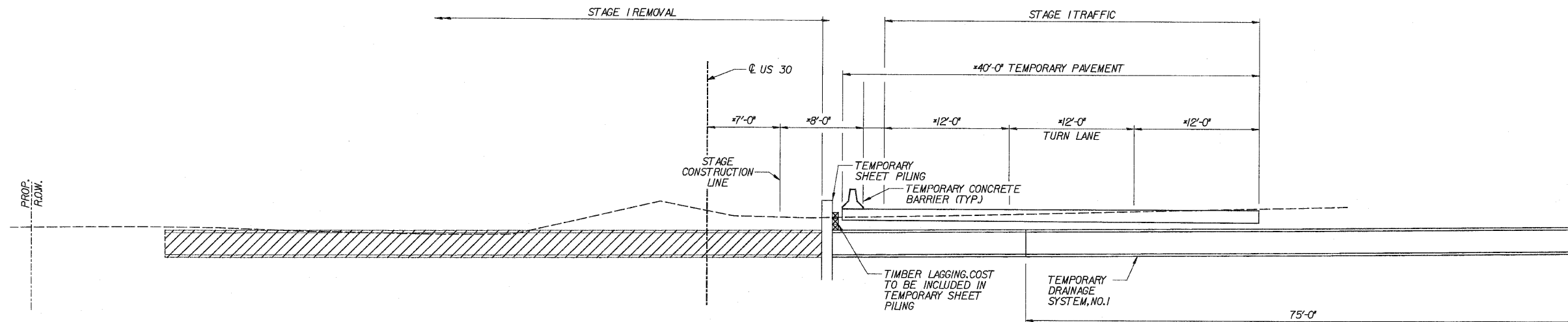
REVISIONS	
NAME	DATE

WATERWAY INFORMATION										
DRAINAGE AREA (SQ. MI.) ± 0.21		LOW GRADE ELEV. (FEET) EXIST - 690.00 AT STA. 177+38				MAX. RECORDED H.W.E. -				
		PROPOSED - 691.02 AT STA. 180+63								
FLOOD	FREQ. YR.	DISCHARGE C.F.S.	EXISTING (square feet)	PROPOSED (square feet)	NATURAL H.W.E. EXISTING U/S Face	PROPOSED U/S Face	CREATED HEAD EXISTING (feet)	PROPOSED (feet)	HEADWATER ELEVATION EXISTING	PROPOSED
OVERTOPPING (EX)	3	43	6.00	40.00	688.89	690.13	1.11	0.00	690.00	687.55
DESIGN	50	255	6.00	40.00	692.57	690.53	0.00	0.00	691.79	689.73
BASE	100	304	6.00	40.00	693.08	690.91	0.00	0.00	693.08	690.39
OVERTOPPING (PT)	150	354	6.00	40.00	690.91	690.91	0.00	0.21	691.12	691.12
MAX. CALC.	500	730	6.00	40.00	696.20	695.82	0.00	0.00	696.20	692.05

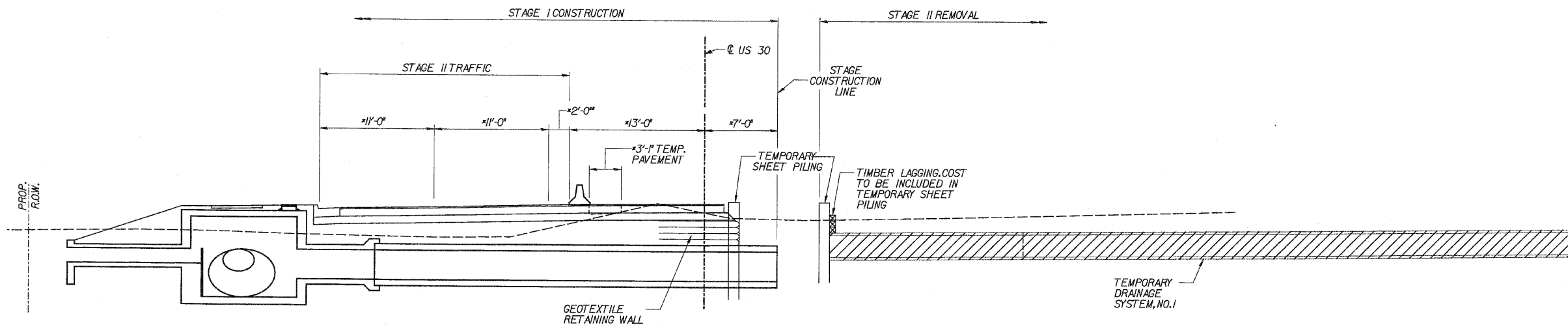
DESIGNED	ASP
CHECKED	LNB
DRAWN	BEM
CHECKED	ASP

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	684
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	

\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 09478



**STAGE I**  
\* MEASURED PERPENDICULAR TO CENTERLINE OF ROADWAY



**STAGE II**  
\* MEASURED PERPENDICULAR TO CENTERLINE OF ROADWAY

**PROPOSED  
STAGE PLANNING**

- STAGE I REMOVAL & CONSTRUCTION
1. MAINTAIN TWO (2) LANES OF TRAFFIC.
  2. INSTALL TEMPORARY DRAINAGE SYSTEM NO.1 AND TEMPORARY PAVEMENT.
  3. INSTALL TEMPORARY CONCRETE BARRIER.
  4. INSTALL STAGE I TEMPORARY SHEET PILING AND TIMBER LAGGING AS SHOWN.
  5. REMOVE NORTHERN PORTION OF EXISTING STRUCTURE.
  6. CONSTRUCT STAGE I PORTION OF THE STRUCTURE.
  7. INSTALL STAGE II TEMPORARY SHEET PILING
  8. INSTALL WIRE FACED MECHANICALLY STABILIZED EARTH WALL DURING BACKFILLING OPERATION.
  9. CONSTRUCT ROADWAY PAVEMENT.
- STAGE II REMOVAL & CONSTRUCTION
1. INSTALL TEMPORARY PAVEMENT
  2. INSTALL TEMPORARY CONCRETE BARRIER.
  3. REMOVE REMAINING PORTION OF EXISTING STRUCTURE AND TEMPORARY DRAINAGE SYSTEM NO.1.
  4. CONSTRUCT STAGE II PORTION OF THE STRUCTURE.
  5. CONSTRUCT ROADWAY PAVEMENT.

DESIGNED	ASP
CHECKED	LNB
DRAWN	BEM
CHECKED	ASP

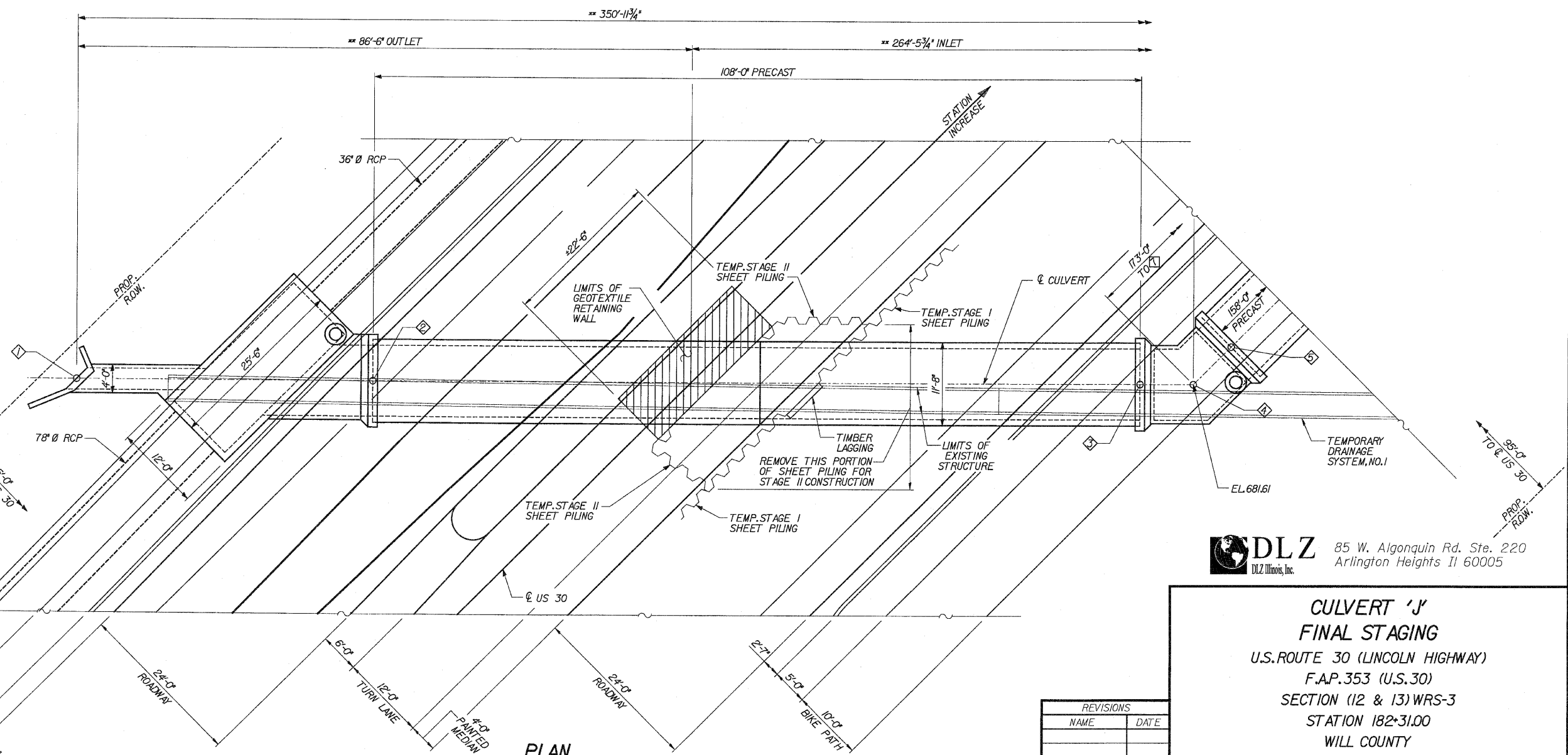
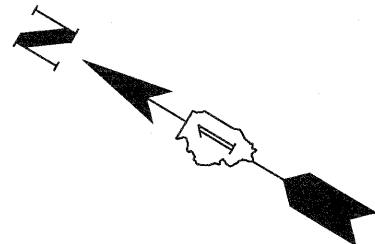
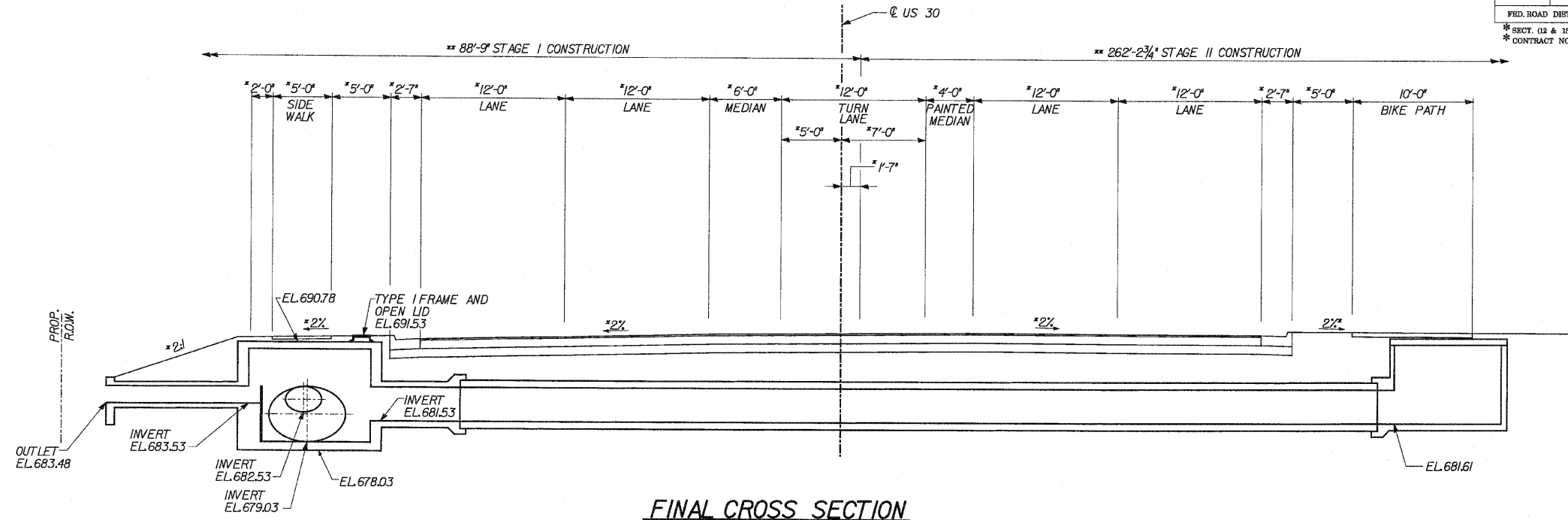
**LEGEND**  
 REMOVAL OF EXISTING STRUCTURES

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'J'  
STAGING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

\*SECT. (12 & 13) WRS-3  
\*CONTRACT NO. 09479



DESIGNED	ASP
CHECKED	LNB
DRAWN	BEM
CHECKED	ASP

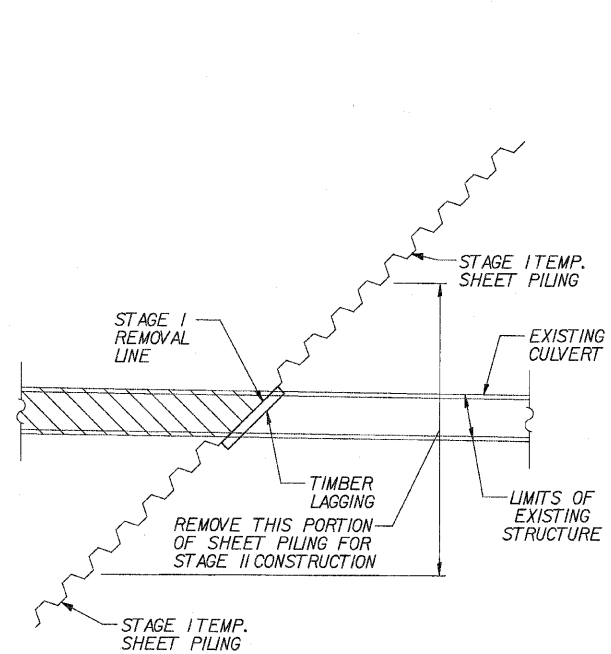
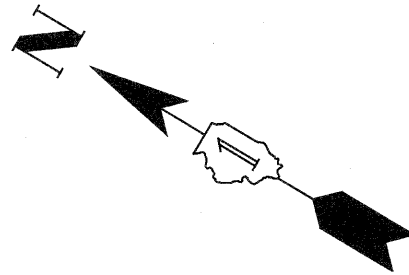
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

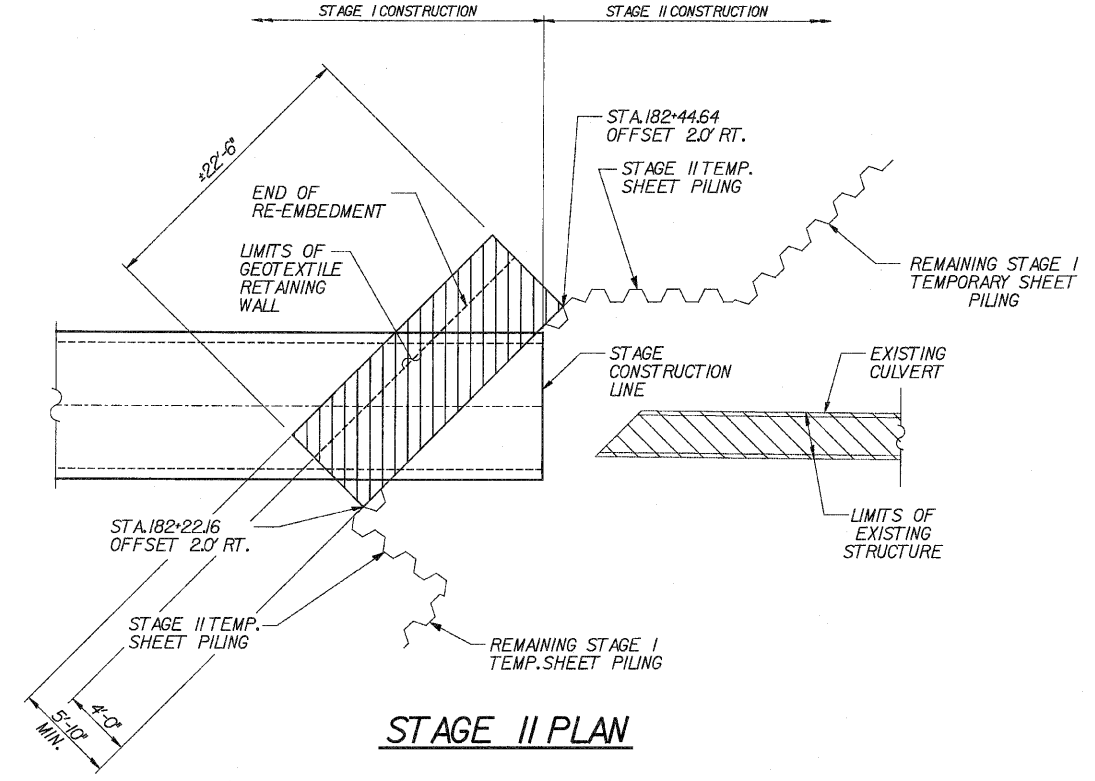
**CULVERT 'J'**  
**FINAL STAGING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	686
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	

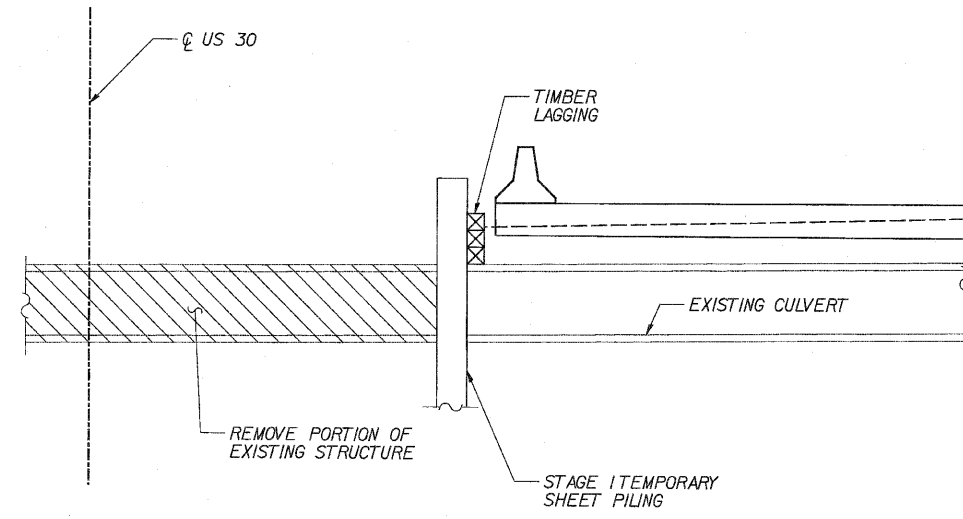
\* SECT. 12 & 13) WRS-3  
\* CONTRACT NO 62478



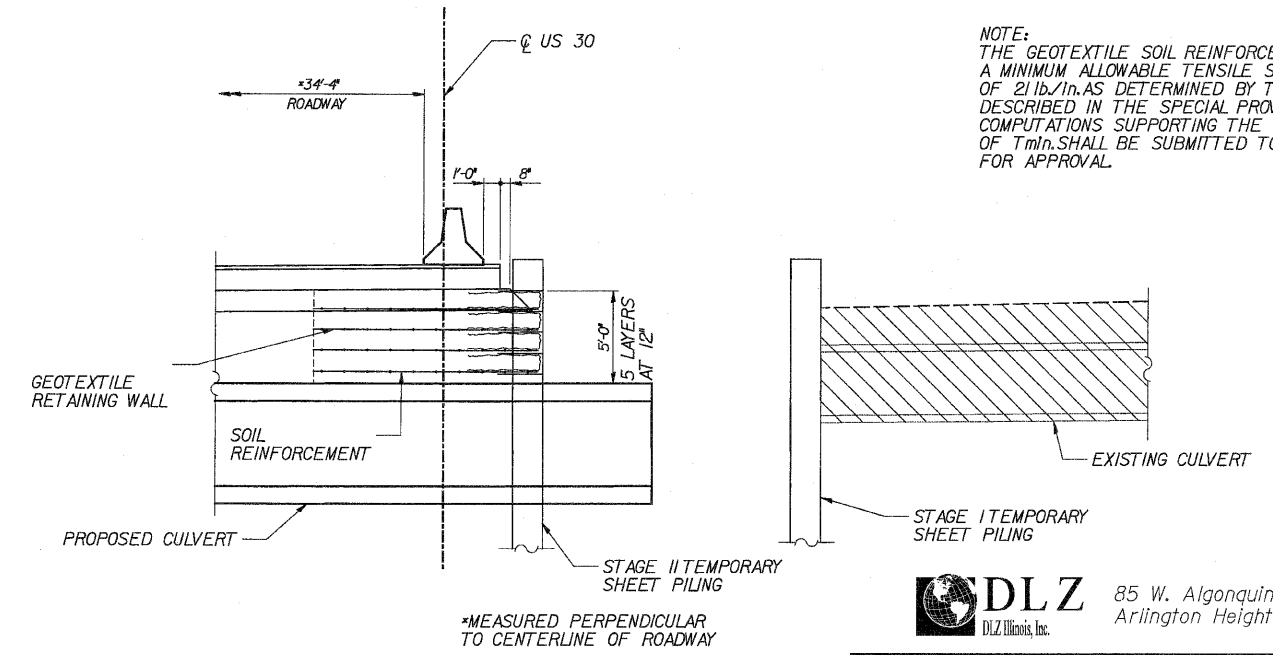
**STAGE I PLAN**



**STAGE II PLAN**



**STAGE I SECTION**



**STAGE II SECTION**

NOTE:  
THE GEOTEXTILE SOIL REINFORCEMENT SHALL HAVE A MINIMUM ALLOWABLE TENSILE STRENGTH (T<sub>min</sub>) OF 21 lb./in. AS DETERMINED BY THE PROCEDURE DESCRIBED IN THE SPECIAL PROVISION. THE COMPUTATIONS SUPPORTING THE DETERMINATION OF T<sub>min</sub> SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

DESIGNED	ASP
CHECKED	LNB
DRAWN	LNB
CHECKED	ASP

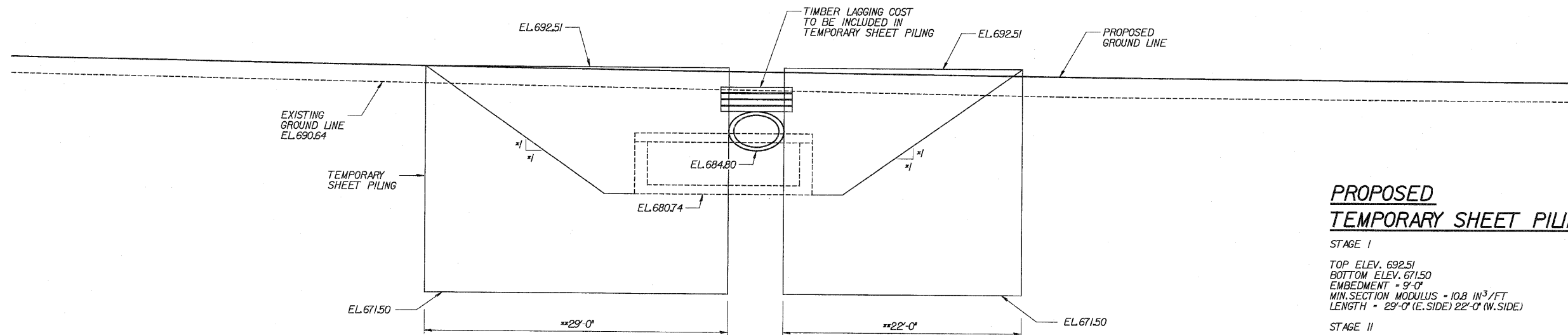
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'J'**  
**STAGING DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	687
FED. ROAD DIST. #	ILLINOIS	FED. AID PROJECT		

\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 09479



**PROPOSED  
TEMPORARY SHEET PILING DATA**

STAGE I

TOP ELEV. 692.51  
BOTTOM ELEV. 671.50  
EMBEDMENT - 9'-0"  
MIN. SECTION MODULUS - 10.8 IN<sup>3</sup>/FT  
LENGTH - 29'-0" (E. SIDE) 22'-0" (W. SIDE)

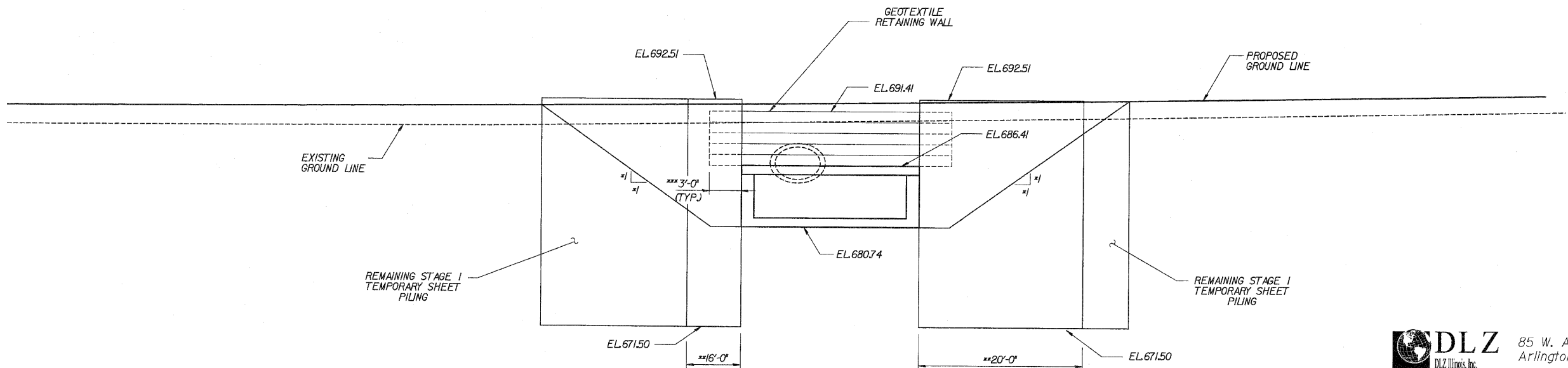
STAGE II

TOP ELEV. 692.51  
BOTTOM ELEV. 671.50  
EMBEDMENT - 9'-0"  
MIN. SECTION MODULUS - 10.8 IN<sup>3</sup>/FT  
LENGTH - 20'-0" (E. SIDE) 16'-0" (W. SIDE)

IF CONTRACTOR CHOOSES TO ALTER THE TEMPORARY CANTILEVERED SHEET PILING DESIGN REQUIREMENTS SHOWN ON THE PLANS FOR LESSER DESIGN REQUIREMENTS, THEN FULL DESIGN SUBMITTALS WITH THE REQUIRED SEALS WILL BE EXPECTED BY THE DEPARTMENT, FOR REVIEW AND APPROVAL.

**STAGE I TEMPORARY SHEET PILING**

(LOOKING SOUTH)  
\* DENOTES PERPENDICULAR TO  $\phi$  OF CULVERT  
\*\* MEASURED ALONG  $\phi$  OF PILING



**STAGE II TEMPORARY SHEET PILING**

(LOOKING NORTH)  
\* DENOTES PERPENDICULAR TO  $\phi$  OF CULVERT  
\*\* MEASURED ALONG  $\phi$  OF PILING  
\*\*\* MEASURED PARALLEL TO  $\phi$  OF US 30

DESIGNED	ASP
CHECKED	LNB
DRAWN	BEM
CHECKED	ASP

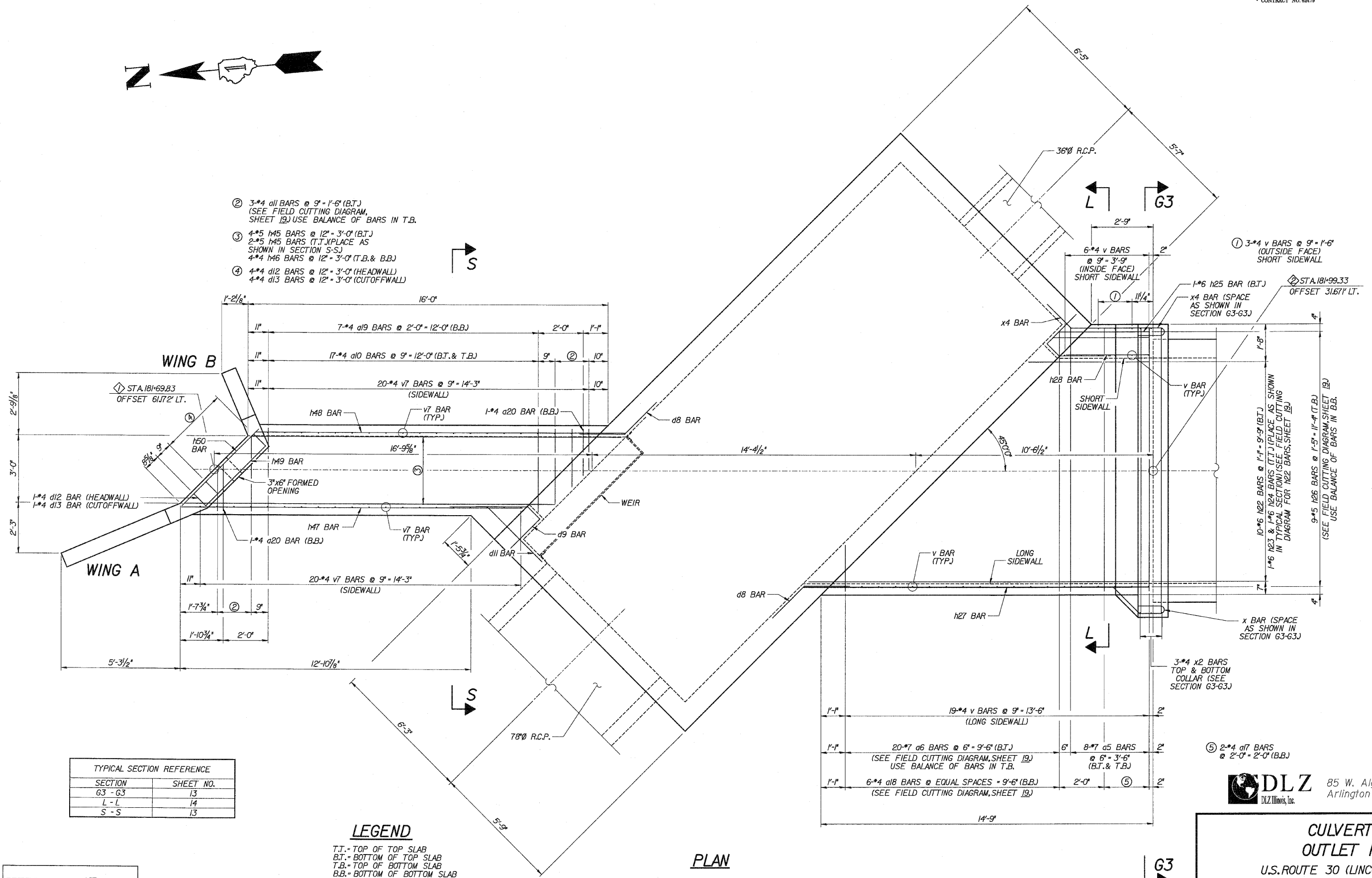
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'J'**  
**TEMPORARY SHEET PILING**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013



- ② 3-#4 d11 BARS @ 9'-1'-6" (B.T.)  
(SEE FIELD CUTTING DIAGRAM, SHEET 19.) USE BALANCE OF BARS IN T.B.
- ③ 4-#5 h45 BARS @ 12'-3'-0" (B.T.)  
2-#5 h45 BARS (T.T.) (PLACE AS SHOWN IN SECTION S-S)  
4-#4 h46 BARS @ 12'-3'-0" (T.B. & B.B.)
- ④ 4-#4 d12 BARS @ 12'-3'-0" (HEADWALL)  
4-#4 d13 BARS @ 12'-3'-0" (CUTOFFWALL)



TYPICAL SECTION REFERENCE	
SECTION	SHEET NO.
G3 - G3	13
L - L	14
S - S	13

**LEGEND**  
T.T. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

**PLAN**

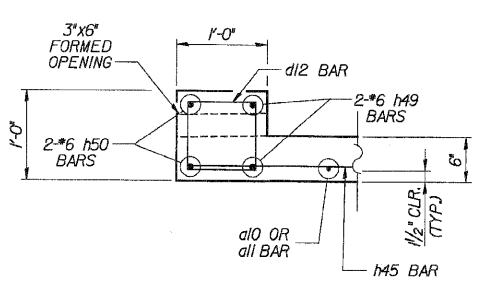
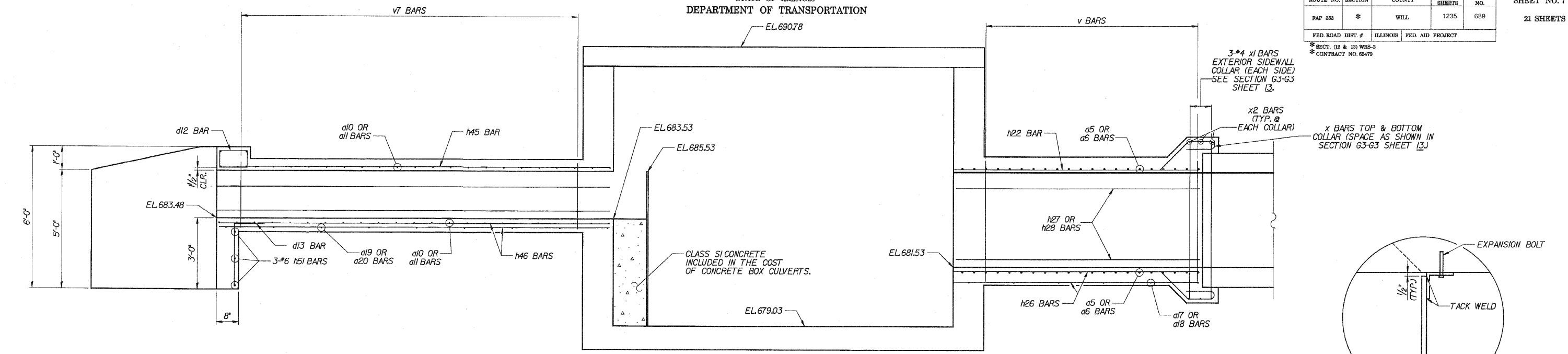
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REVISIONS	
NAME	DATE

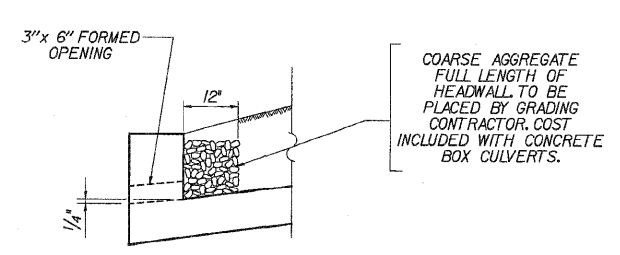
**DLZ** 85 W. ALGONQUIN RD. STE. 220  
ARLINGTON HEIGHTS, IL 60005  
DLZ Illinois, Inc.

**CULVERT 'J'  
OUTLET PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

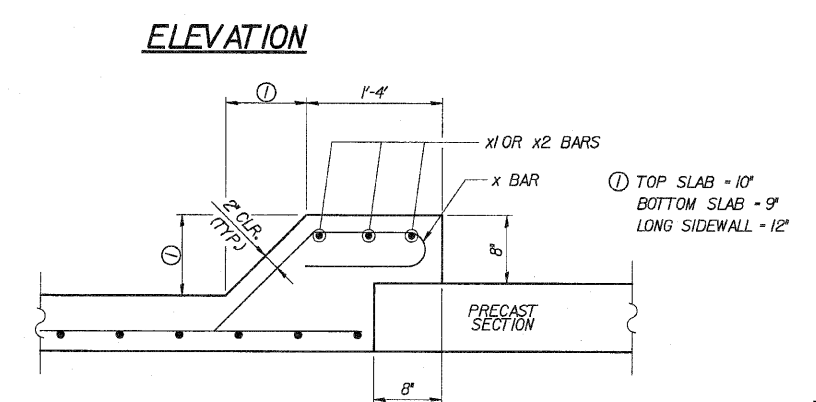




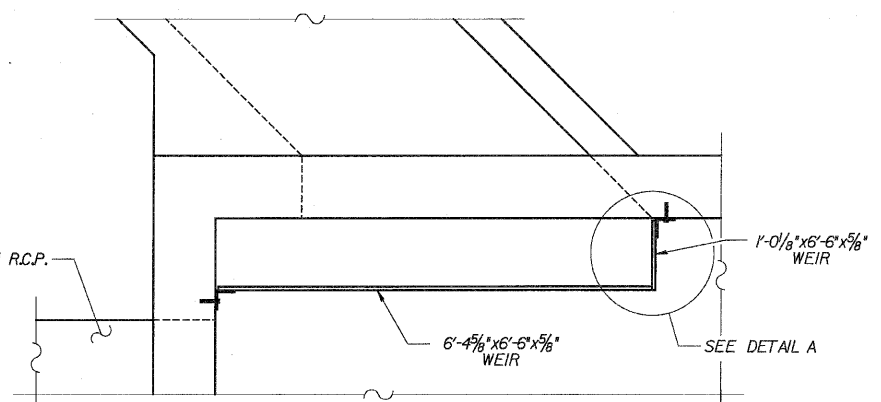
**OUTLET END  
HEADWALL DETAIL**



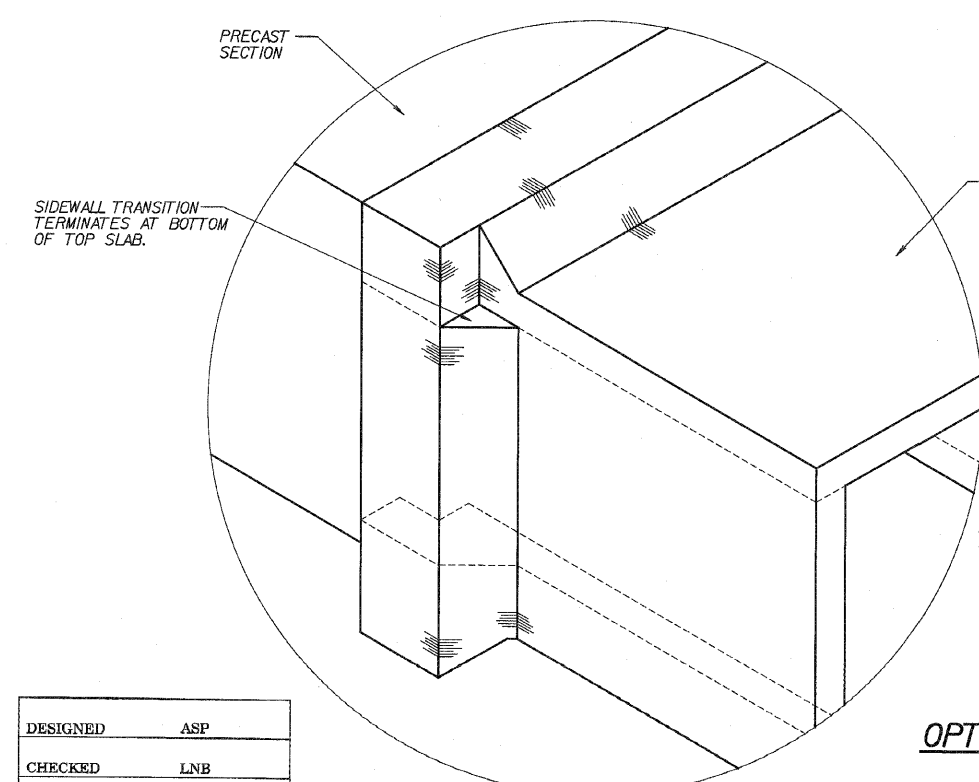
**OUTLET END  
DRAIN DETAIL**



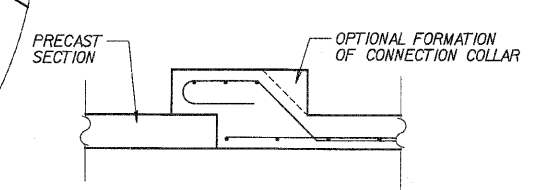
**PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR**



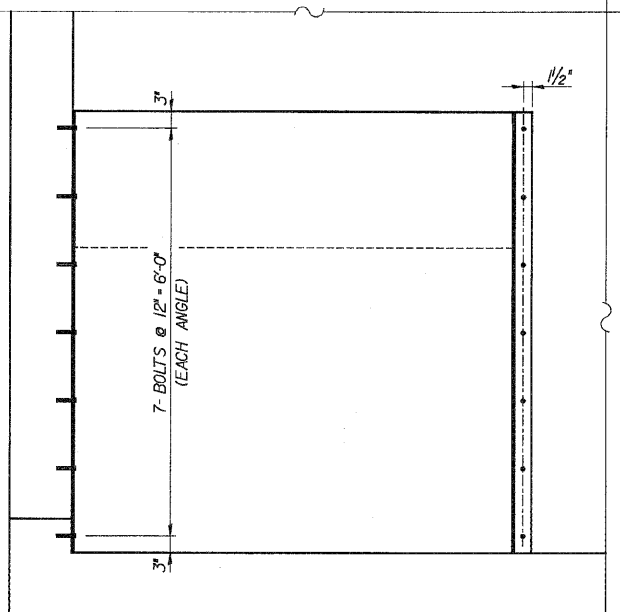
**WEIR PLAN**



**ISOMETRIC VIEW OF  
CONNECTION COLLAR**



**OPTIONAL PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR**



**WEIR ELEVATION**

- NOTES:
1. ANGLES SHOULD BE 3"x3"x3/8".
  2. ALL STEEL ANGLES AND PLATES TO BE GALVANIZED AFTER FABRICATION
  3. ALL RESTRICTOR PLATES, ANGLES AND HARDWARE TO BE INCLUDED IN THE COST OF CONCRETE BOX CULVERTS.

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'J'  
OUTLET ELEVATION & DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

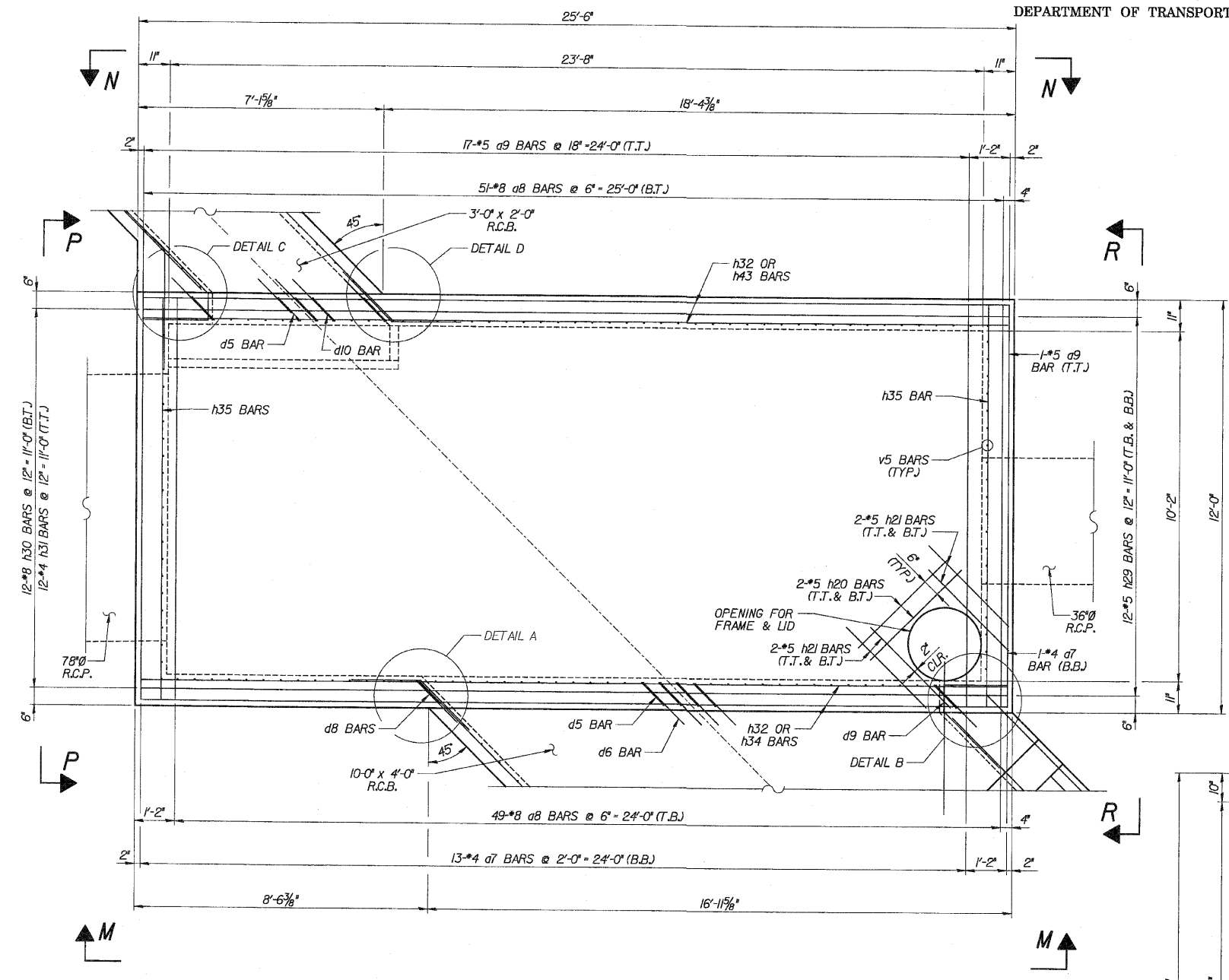
DESIGNED	ASP
CHECKED	LNB
DRAWN	BEM
CHECKED	ASP

REVISIONS	
NAME	DATE

NOTE:  
ADDITIONAL CONCRETE USED FOR THE  
OPTIONAL COLLAR FORMATION WILL BE  
PROVIDED AT THE CONTRACTOR'S EXPENSE.

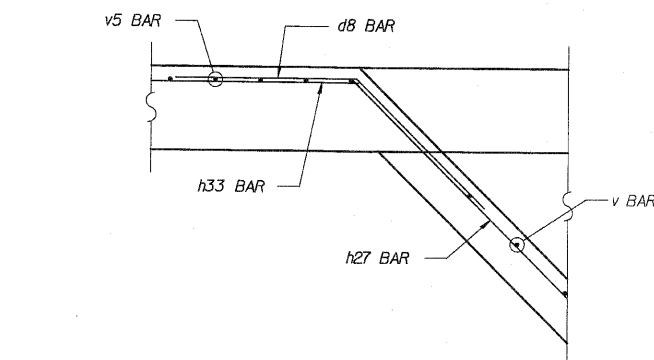
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	690
FED. ROAD DIST. #	ILLINOIS	FED. AID PROJECT		

\* SECT. 12 & 13 WRS-3  
\* CONTRACT NO. 62479

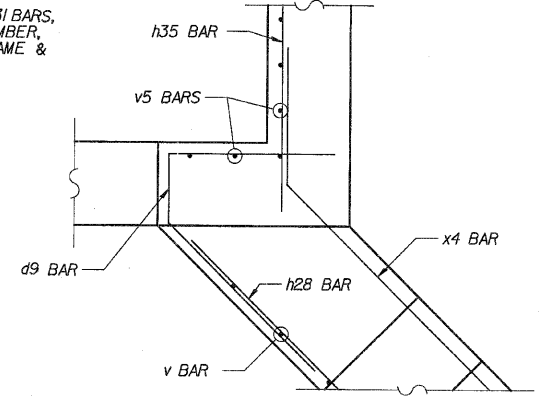


**PLAN**

NOTE:  
FIELD CUT a8, a9, h30 & h31 BARS,  
IN TOP OF JUNCTION CHAMBER,  
AROUND OPENING FOR FRAME &  
LID WHERE NECESSARY.



**DETAIL A**



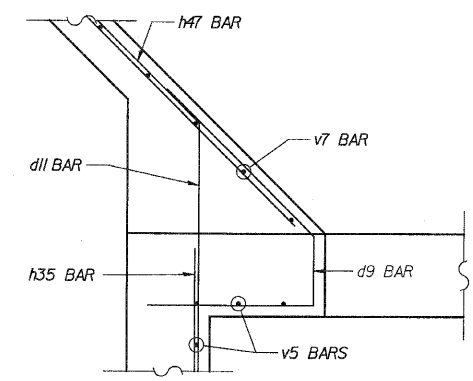
**DETAIL B**

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

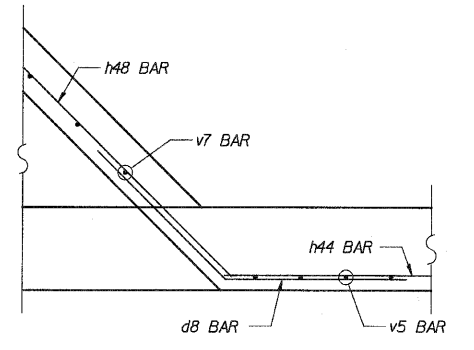
TYPICAL SECTION REFERENCE	
SECTION	SHEET NO.
M - M	8
N - N	9
P - P	9
R - R	9

**LEGEND**

T.T. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

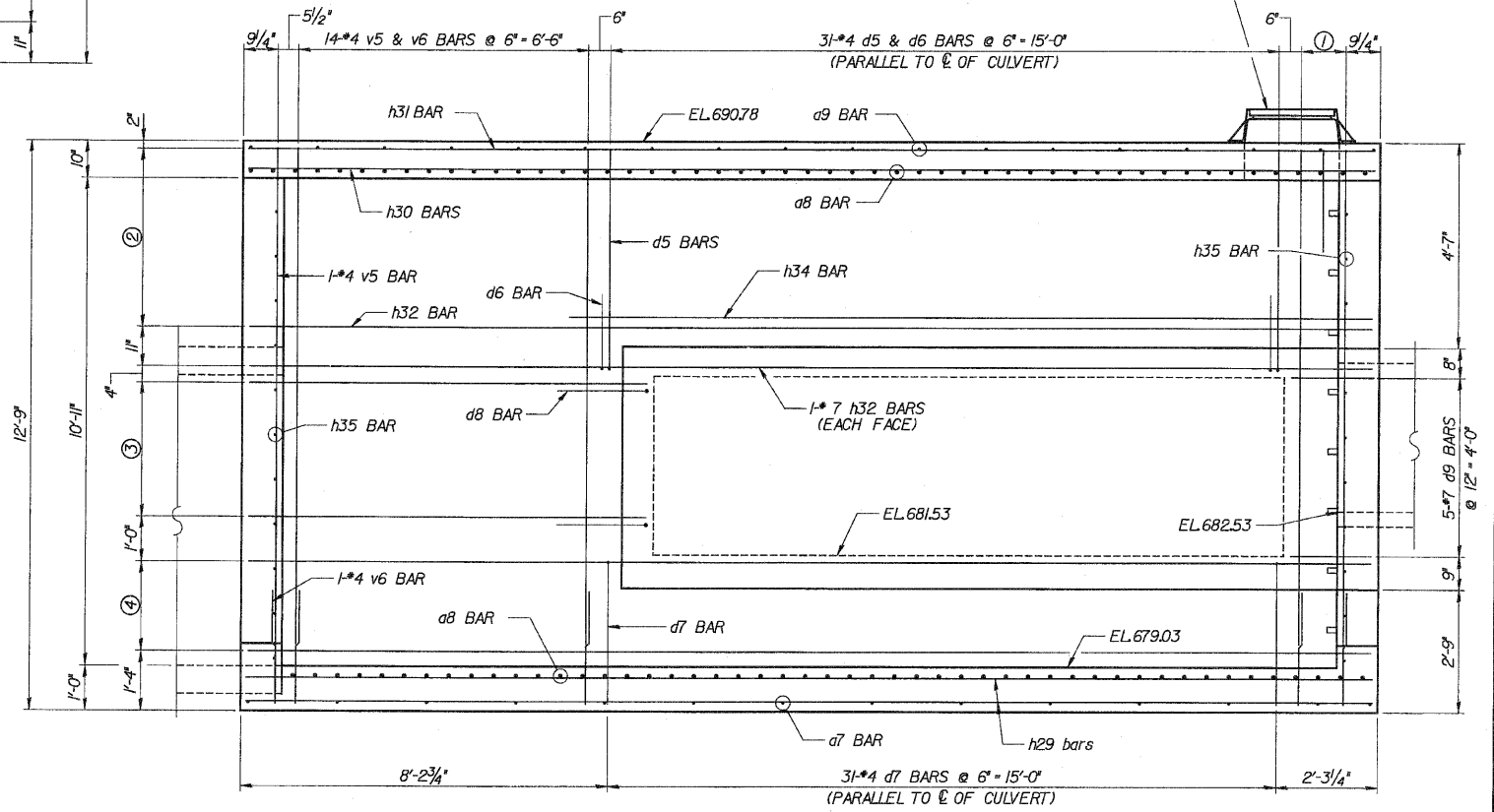


**DETAIL C**



**DETAIL D**

- 3-#4 v5 & v6 BARS @ 6'-1'-6"
- 5-#7 h32 BARS @ 12'-4'-0" (INSIDE FACE)  
5-#4 h34 BARS @ 12'-4'-0" (OUTSIDE FACE)
- 4-#7 h33 & d8 BARS @ 12'-3'-0"
- 3-#7 h32 BARS @ 12'-2'-0"



**VIEW M-M**

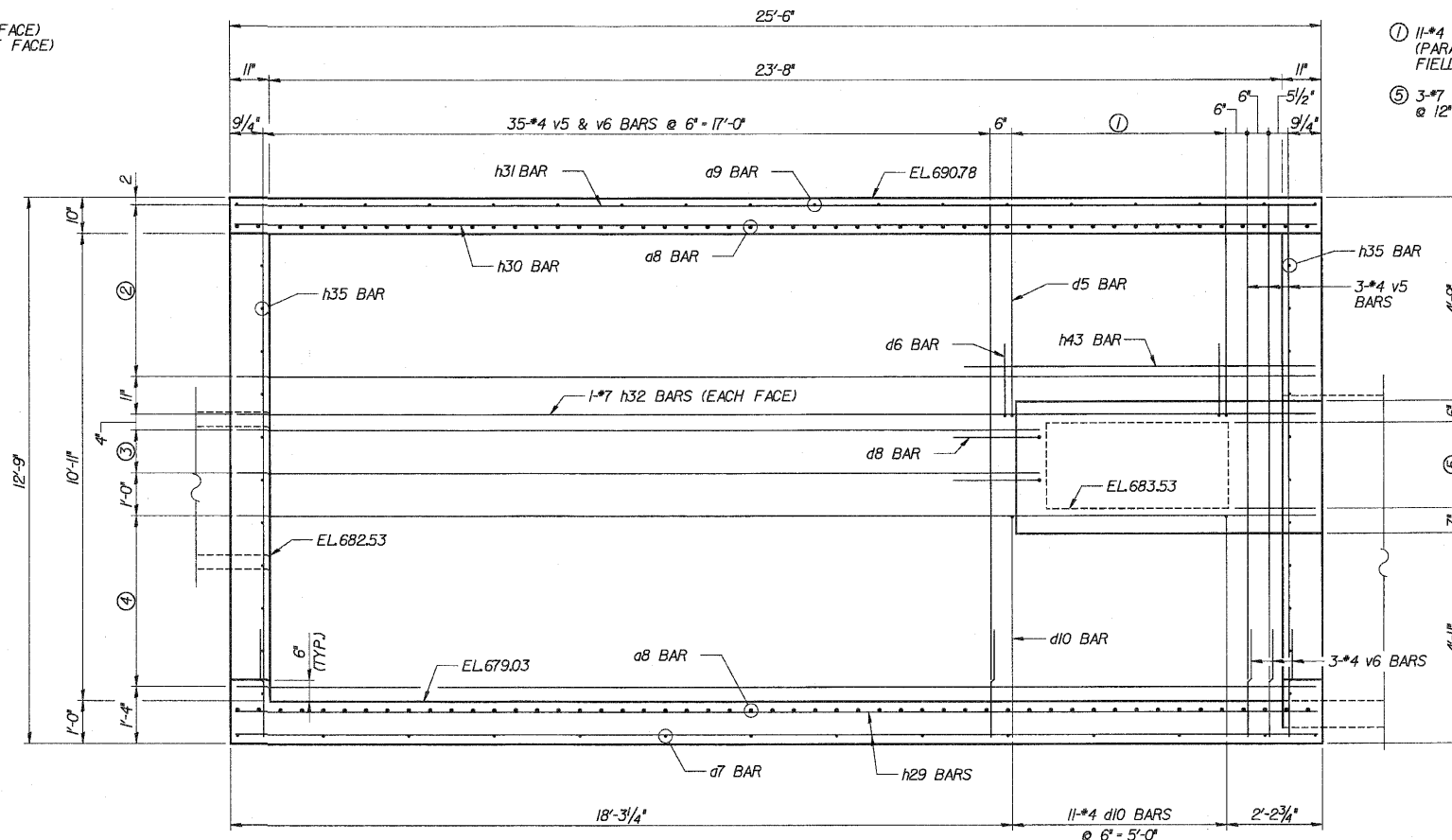
**CULVERT 'J'**  
**JUNCTION CHAMBER I PLAN & DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-CO13

**DLZ**  
DLZ Illinois, Inc.  
85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

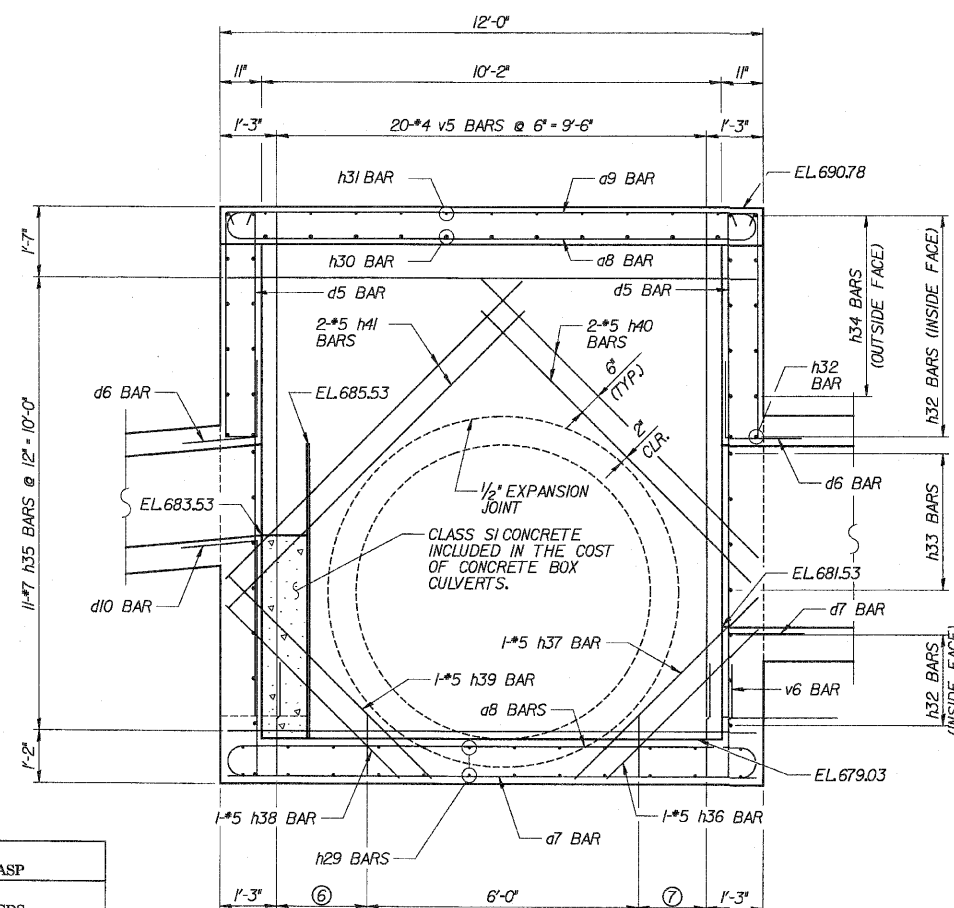
REVISIONS	
NAME	DATE

- ② 5-#7 h32 BARS @ 12" - 4'-0" (INSIDE FACE)
- 5-#4 h43 BARS @ 12" - 4'-0" (OUTSIDE FACE)
- ③ 2-#7 h44 & d8 BARS @ 12" - 1'-0"
- ④ 5-#7 h32 BARS @ 12" - 4'-0"

- ① 11-#4 d5 & d6 BARS @ 6" - 5'-0" (PARALLEL TO C OF CULVERT) FIELD BEND d6 BARS TO FIT
- ⑤ 3-#7 d9 & d11 BARS @ 12" - 2'-0"

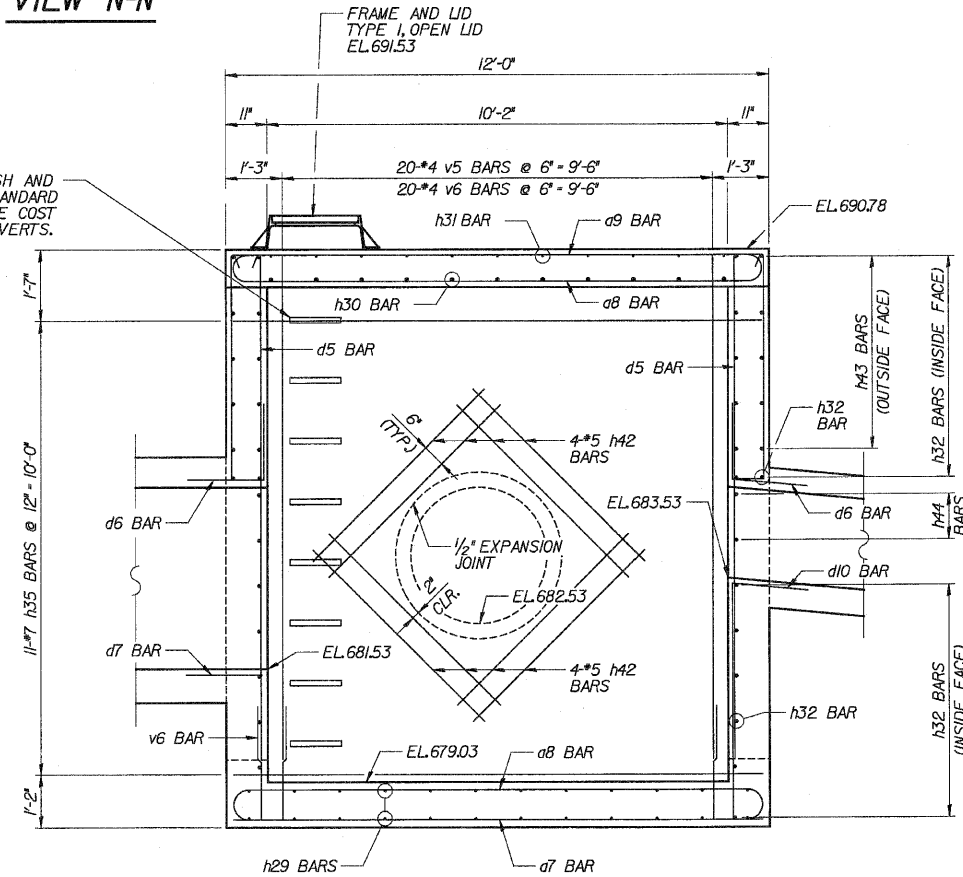


VIEW N-N



VIEW P-P

CONTRACTOR TO FURNISH AND INSTALL RUNGS. SEE STANDARD 602TOL. INCLUDED IN THE COST OF CONCRETE BOX CULVERTS.



VIEW R-R

NOTE:  
FIELD CUT h29, h35, v5 & v6 BARS, WHEN NECESSARY, TO FIT AROUND OPENINGS FOR PIPES.

**LEGEND**

- T.T. = TOP OF TOP SLAB
- B.T. = BOTTOM OF TOP SLAB
- T.B. = TOP OF BOTTOM SLAB
- B.B. = BOTTOM OF BOTTOM SLAB

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

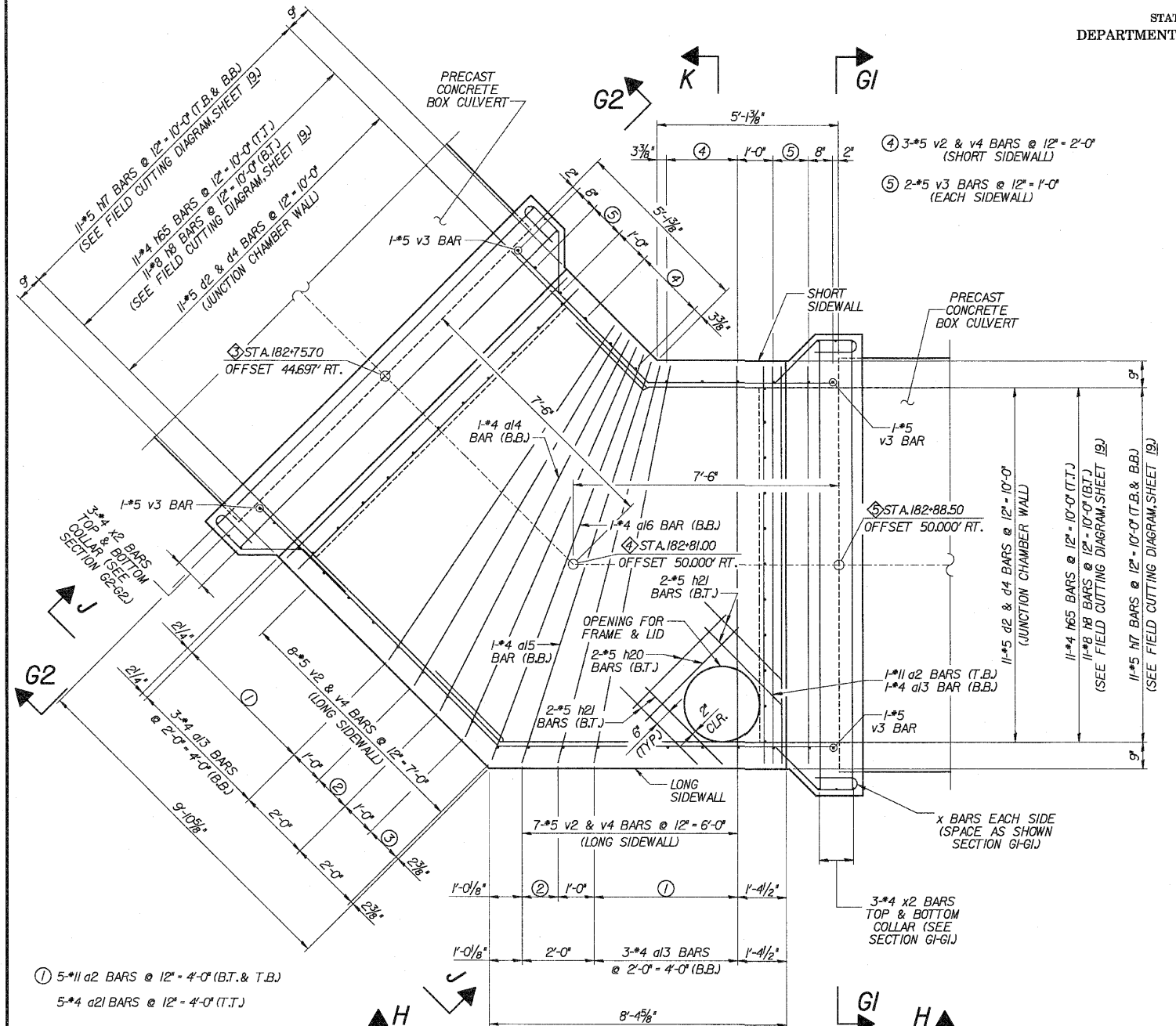
- ⑥ 5-#4 v6 BARS @ 6" - 2'-0"
- ⑦ 4-#4 v6 BARS @ 6" - 1'-6"

REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'J'**  
**JUNCTION CHAMBER I DETAILS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	692
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	
* SECT. (12 & 13) WRS-3		* CONTRACT NO. 69479		
* 2*4 a21 BARS				

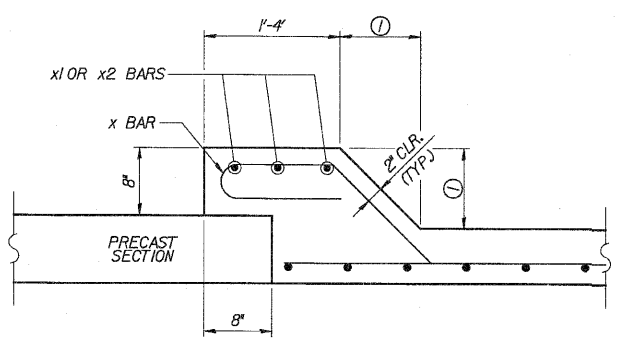


- ① 5\*11 a2 BARS @ 12" - 4'-0" (B.T. & T.B.)  
5\*4 a21 BARS @ 12" - 4'-0" (T.T.)
- ② 2\*11 a3 BARS @ 12" - 1'-0" (B.T. & T.B.)  
2\*4 a22 BARS @ 12" - 1'-0" (T.T.)
- ③ 2\*11 a4 BARS @ 12" - 1'-0" (B.T. & T.B.)  
2\*4 a23 BARS @ 12" - 1'-0" (T.T.)

**MIN. LAPS**

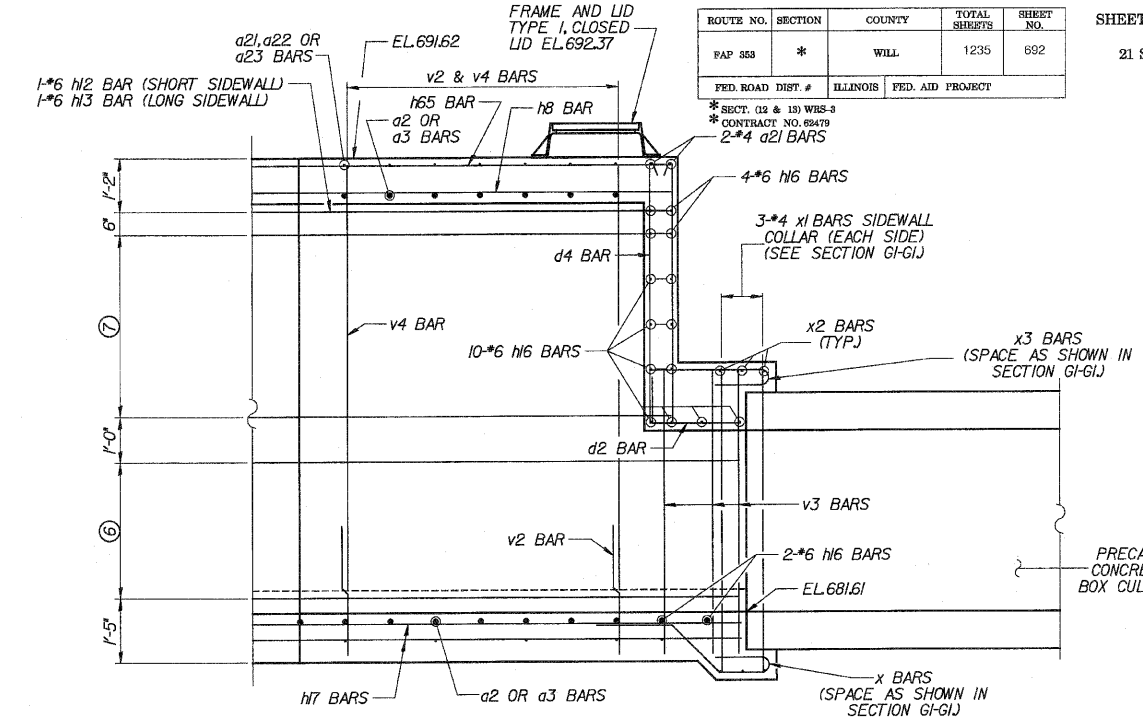
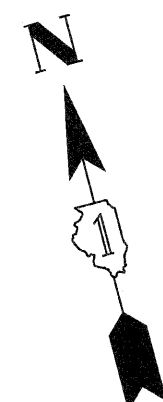
T.T. - 1'-0"  
T.B. & B.B. - 1'-3"  
B.T. - 2'-0"

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP



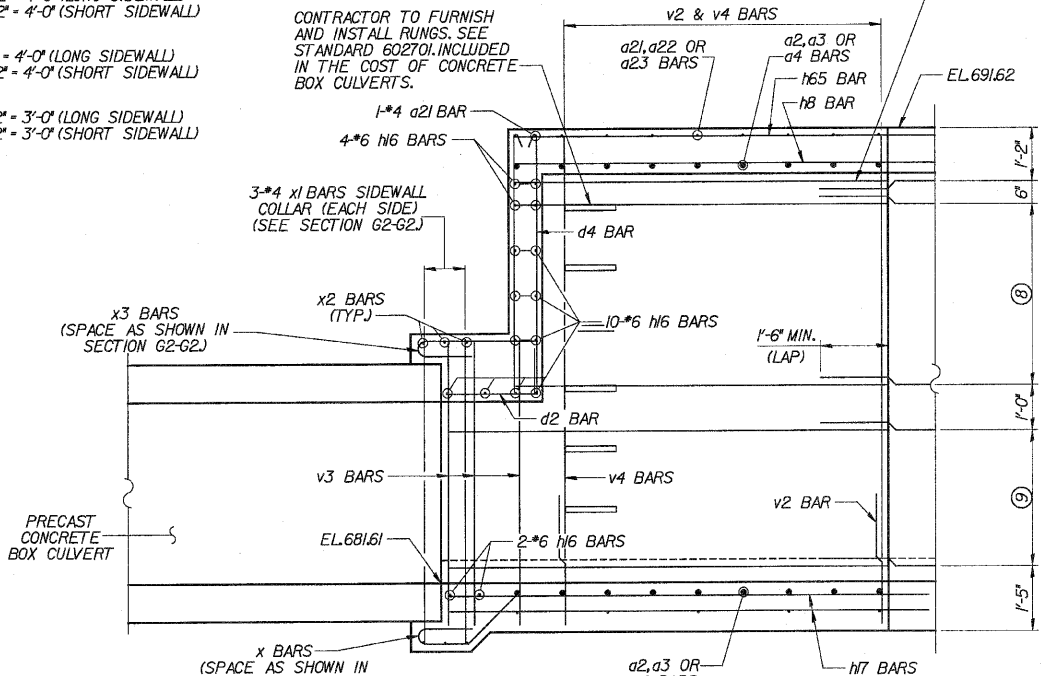
① BOTTOM SLAB - 5'  
SIDEWALLS - 9'

**PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR**



**VIEW H-H**

- ⑥ 4 - \*6 h5 BARS @ 12" - 3'-0" (LONG SIDEWALL)  
4 - \*6 h4 BARS @ 12" - 3'-0" (SHORT SIDEWALL)
- ⑦ 5 - \*6 h3 BARS @ 12" - 4'-0" (LONG SIDEWALL)  
5 - \*6 h2 BARS @ 12" - 4'-0" (SHORT SIDEWALL)
- ⑧ 5 - \*6 h1 BARS @ 12" - 4'-0" (LONG SIDEWALL)  
5 - \*6 h0 BARS @ 12" - 4'-0" (SHORT SIDEWALL)
- ⑨ 4 - \*6 h9 BARS @ 12" - 3'-0" (LONG SIDEWALL)  
4 - \*6 h8 BARS @ 12" - 3'-0" (SHORT SIDEWALL)



**VIEW J-J**

TYPICAL SECTION REFERENCE	
SECTION	SHEET NO.
G1 - G1	13
G2 - G2	13
H - H	10
J - J	10
K - K	14

**LEGEND**

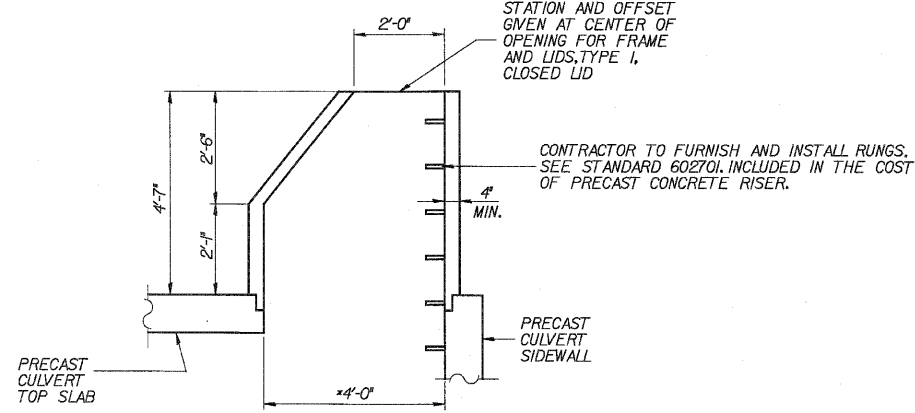
T.T. - TOP OF TOP SLAB  
B.T. - BOTTOM OF TOP SLAB  
T.B. - TOP OF BOTTOM SLAB  
B.B. - BOTTOM OF BOTTOM SLAB

REVISIONS	
NAME	DATE

**DLZ** 85 W. ALGONQUIN RD. STE. 220  
ARLINGTON HEIGHTS, IL 60005

**CULVERT 'J'**  
**JUNCTION CHAMBER 2 PLAN & ELEV.**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	693
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	
* SECT. 12 & 13 WRS-3		* CONTRACT NO. 02479		



**PRECAST CONCRETE RISER**

\* SPECIAL PRECAST CONCRETE BOX CULVERT SECTION WILL BE REQUIRED FOR THIS OPENING.

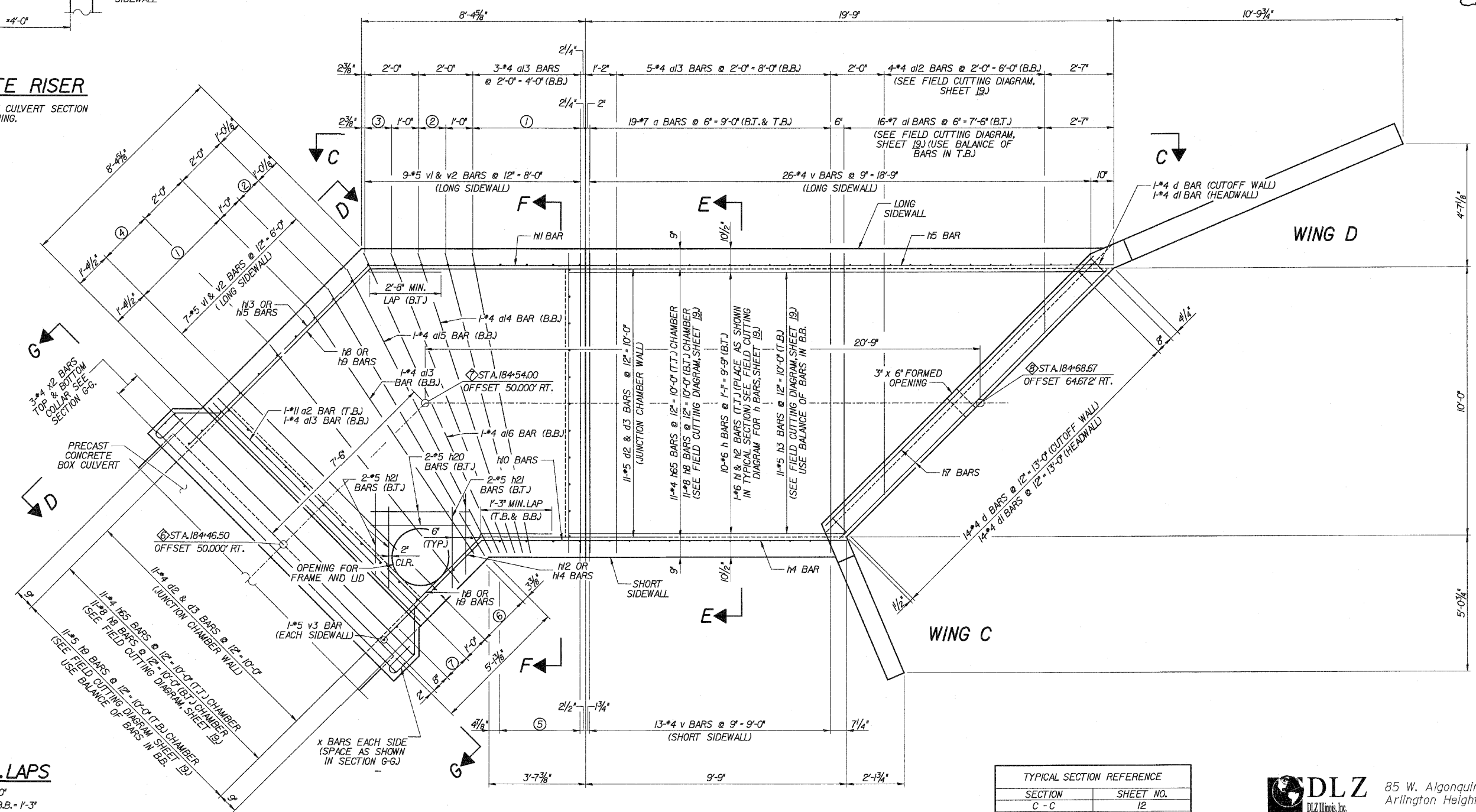
- ① 5-#11 a2 BARS @ 12'-4" (B.T. & T.B.)  
5-#4 a21 BARS @ 12'-4" (T.T.)
- ② 2-#11 a3 BARS @ 12'-1" (B.T. & T.B.)  
2-#4 a22 BARS @ 12'-1" (T.T.)
- ③ 2-#11 a4 BARS @ 12'-1" (B.T. & T.B.)  
2-#4 a23 BARS @ 12'-1" (T.T.)
- ④ 2-#4 a13 BARS @ 2'-0" - 2'-0" (B.B.)

**MIN. LAPS**

T.T. = 1'-0"  
T.B. & B.B. = 1'-3"  
B.T. = 2'-8"

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

NOTE:  
FIELD CUT a2, a21, h65, h8 BARS, IN TOP OF JUNCTION CHAMBER, AROUND OPENING FOR FRAME AND LID, WHERE NECESSARY.



**PLAN**

**LEGEND**

T.T. = TOP OF TOP SLAB  
B.T. = BOTTOM OF TOP SLAB  
T.B. = TOP OF BOTTOM SLAB  
B.B. = BOTTOM OF BOTTOM SLAB

TYPICAL SECTION REFERENCE	
SECTION	SHEET NO.
C - C	12
D - D	12
E - E	13
F - F	14
G - G	13

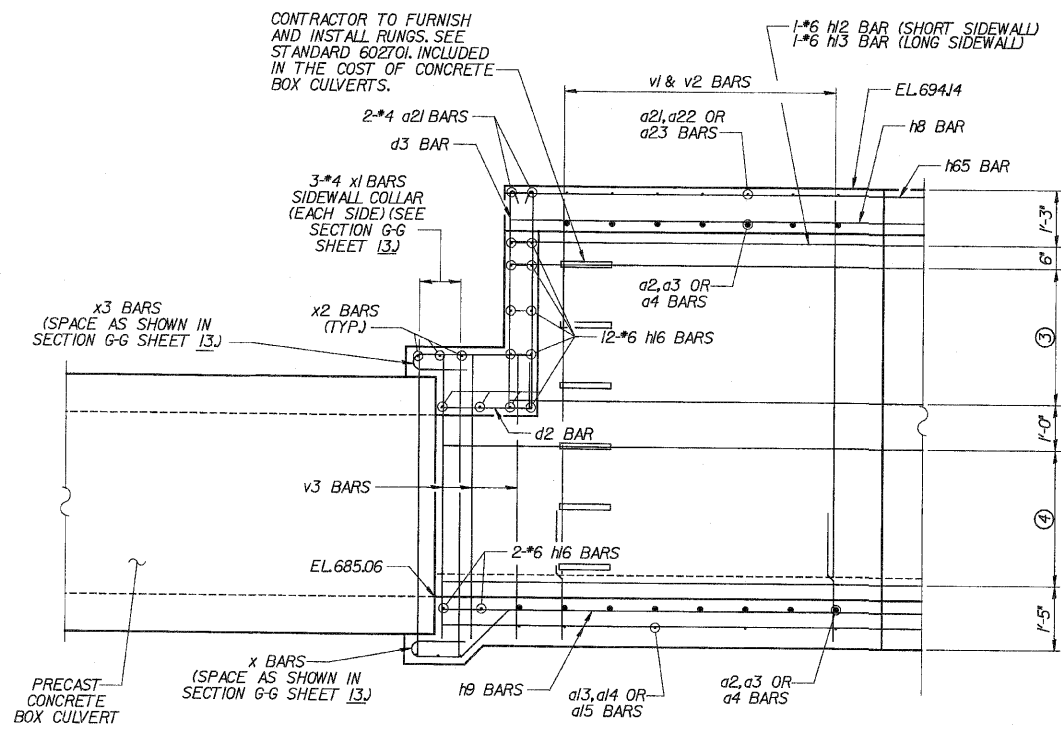
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

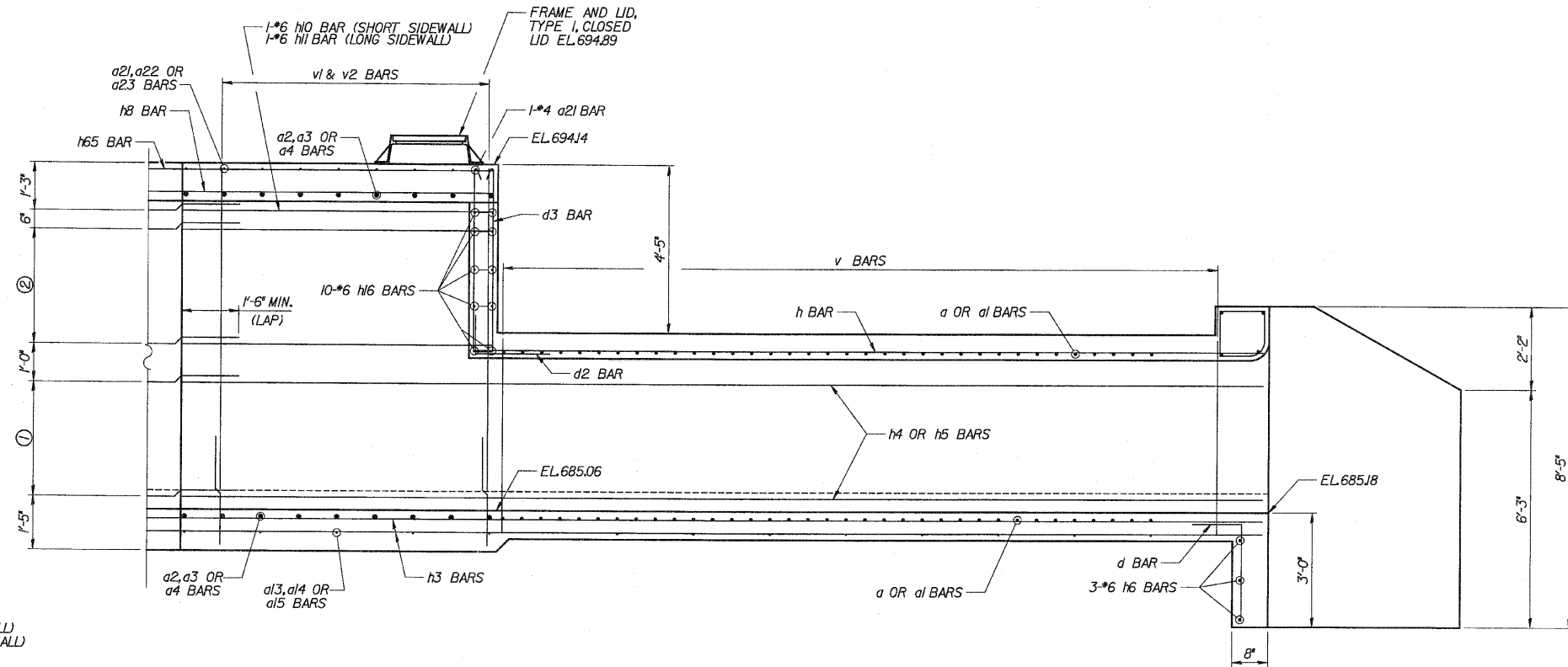
**CULVERT 'J'**  
**INLET/JUNCTION CHAMBER 3 PLAN**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	694
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	

\* SNOT. 08 & 18 WRS-3  
\* CONTRACT NO. 62479



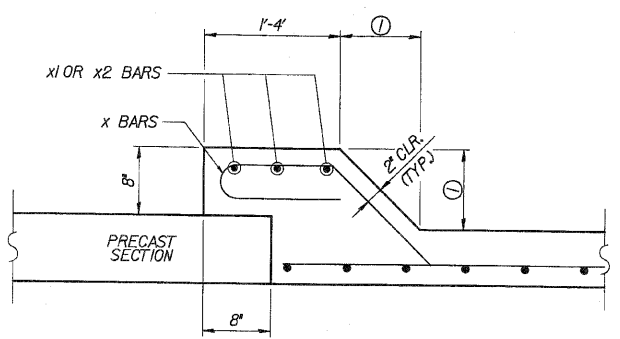
**VIEW D-D**



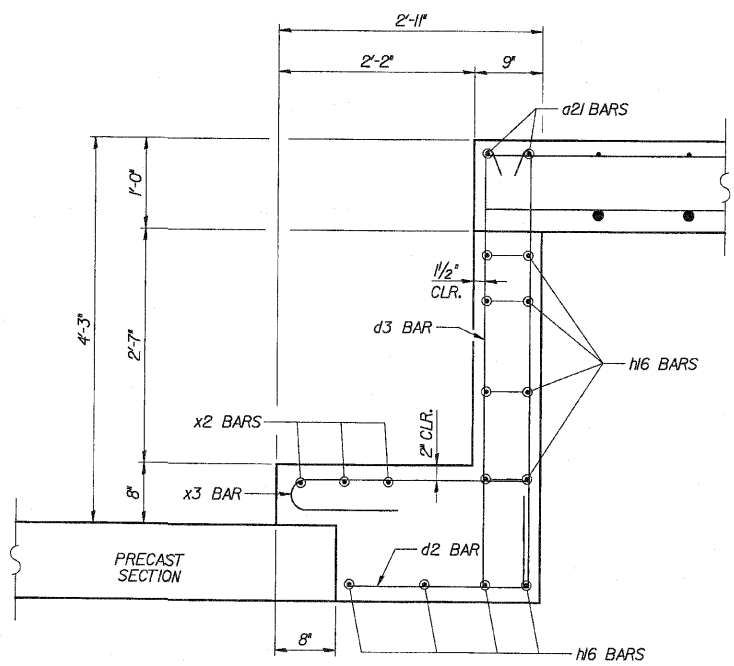
**VIEW C-C**

- ① 4 - #6 n5 BARS @ 12" - 3'-0" (LONG SIDEWALL)  
4 - #6 n4 BARS @ 12" - 3'-0" (SHORT SIDEWALL)
- ② 4 - #6 n1 BARS @ 12" - 3'-0" (LONG SIDEWALL)  
4 - #6 n10 BARS @ 12" - 3'-0" (SHORT SIDEWALL)
- ③ 4 - #6 n3 BARS @ 12" - 3'-0" (LONG SIDEWALL)  
4 - #6 n2 BARS @ 12" - 3'-0" (SHORT SIDEWALL)
- ④ 4 - #6 n5 BARS @ 12" - 3'-0" (LONG SIDEWALL)  
4 - #6 n4 BARS @ 12" - 3'-0" (SHORT SIDEWALL)

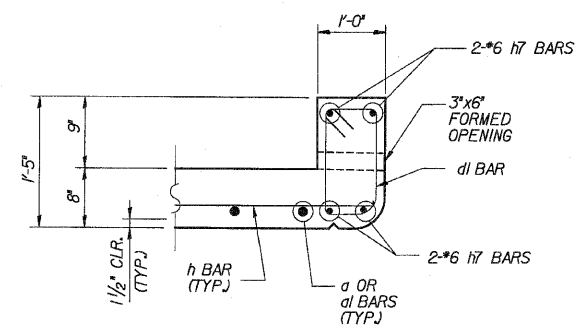
**ELEVATION**



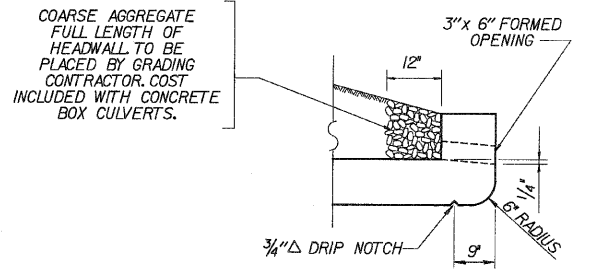
① BOTTOM SLAB - 5"  
SIDEWALLS - 9"



**PRECAST TO CAST-IN-PLACE  
CONNECTION COLLAR**



**INLET END  
HEADWALL DETAILS**



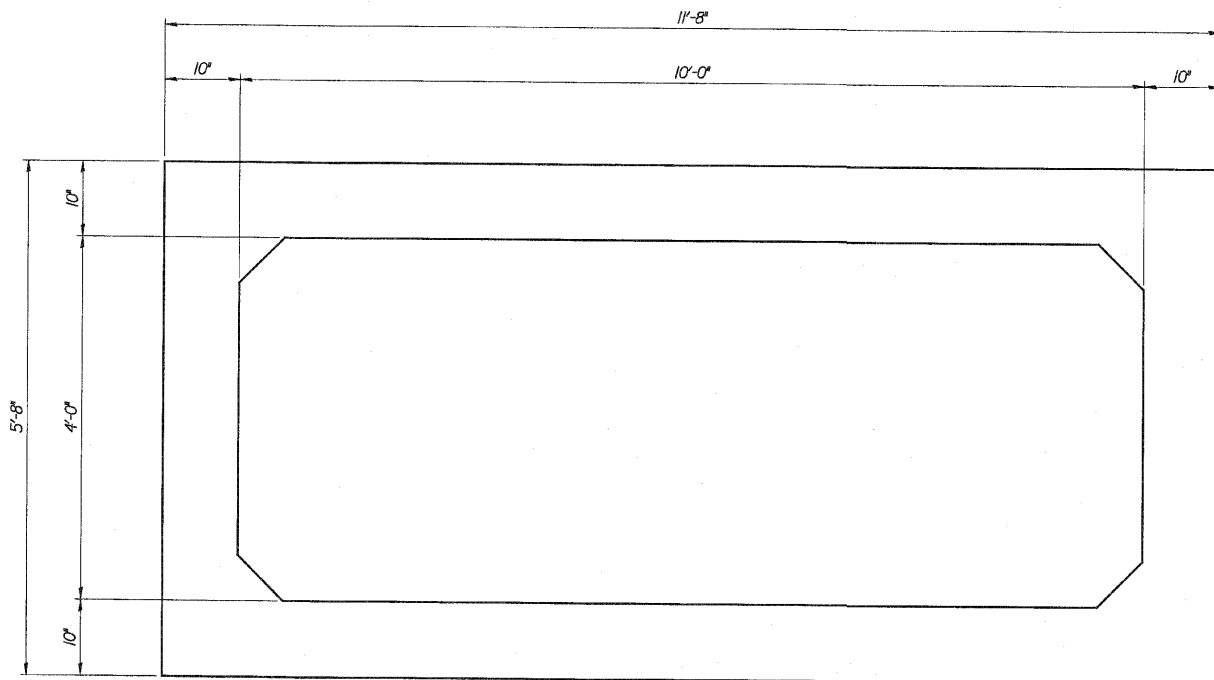
**INLET END  
DRAIN DETAIL**

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

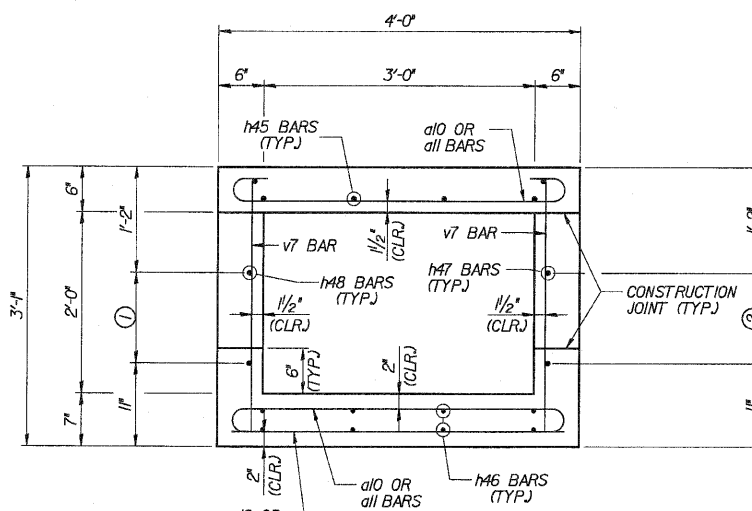
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

**CULVERT 'J'  
INLET/JUNCTION CHAMBER 3 ELEVATION**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

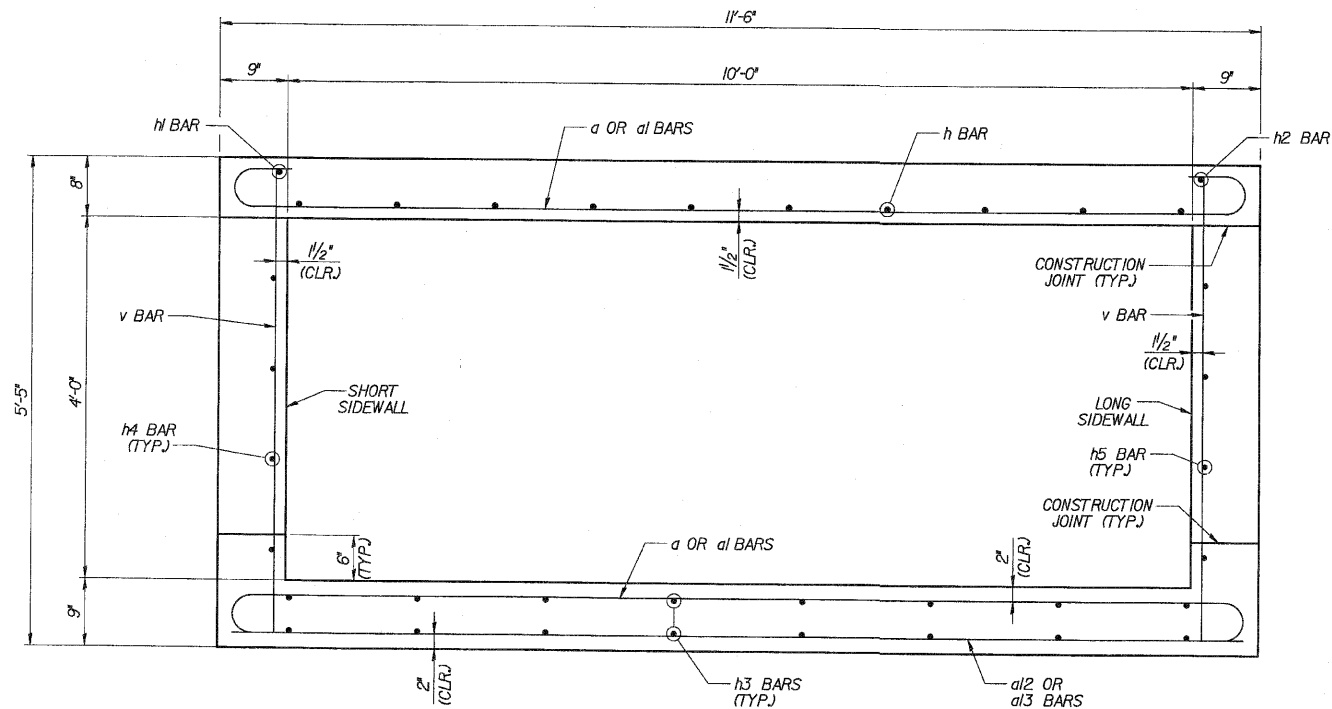


**PRECAST TYPICAL SECTION**



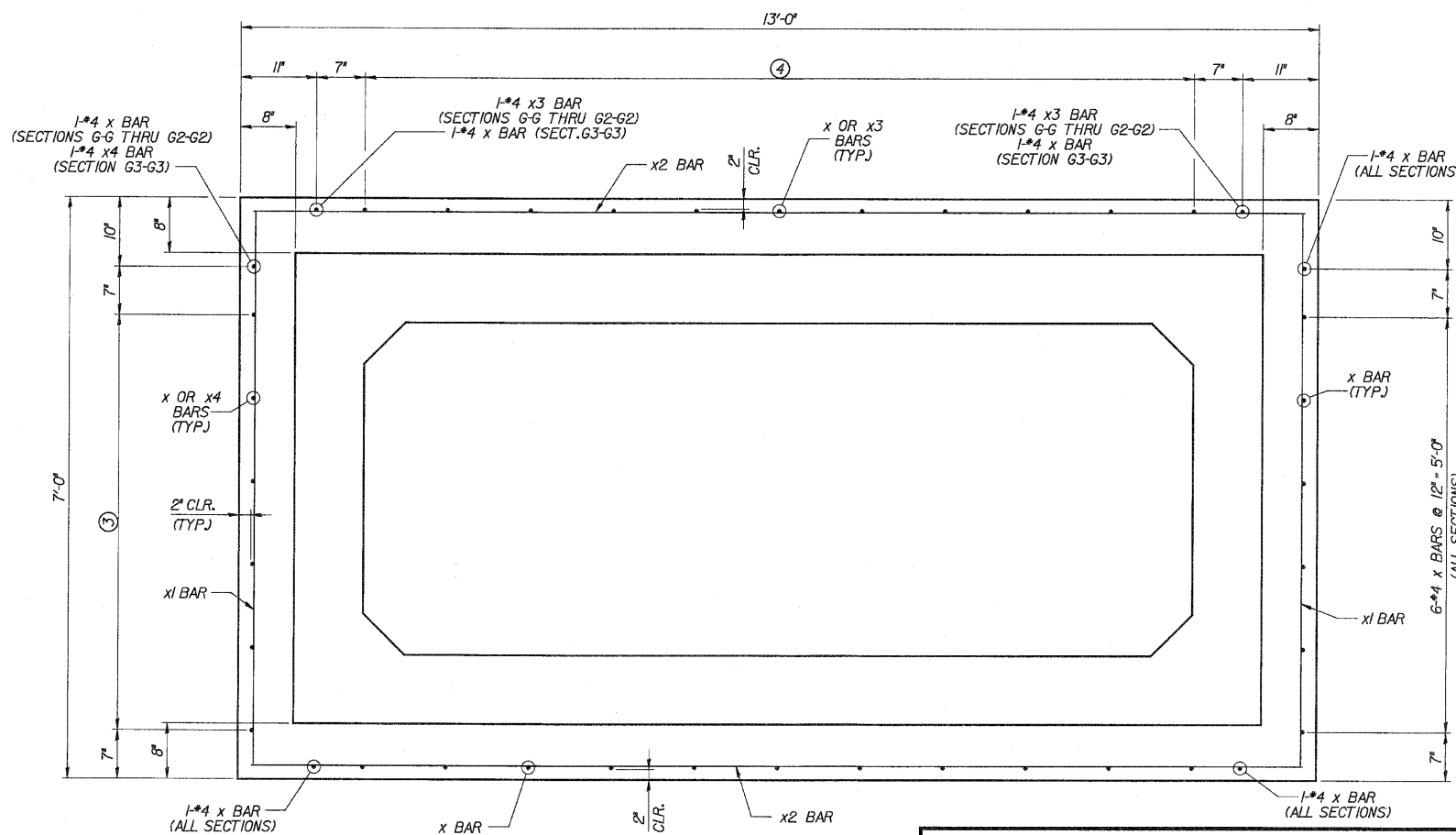
**SECTION S-S**

- ① 2\*5 M8 BARS @ 12" - 1'-0"
- ② 2\*5 M7 BARS @ 12" - 1'-0"



**SECTION E-E**

NOTE:  
TILT HOOK BARS IN TOP AND  
BOTTOM SLAB TO PROVIDE  
REQUIRED CLEARANCE.



**SECTIONS G-G THRU G3-G3**

- ③ 6\*4 x BARS @ 12" - 5'-0"  
(SECTIONS G-G THRU G2-G2)
- 6\*4 x 4 BARS @ 12" - 5'-0"  
(SECTION G3-G3)
- ④ 11\*4 x BARS @ 12" - 10'-0"  
(BOTTOM COLLAR, ALL SECTIONS)  
(TOP COLLAR, SECTION G3-G3)
- 11\*4 x 3 BARS @ 12" - 10'-0"  
(TOP COLLAR, SECTIONS G-G THRU G2-G2)

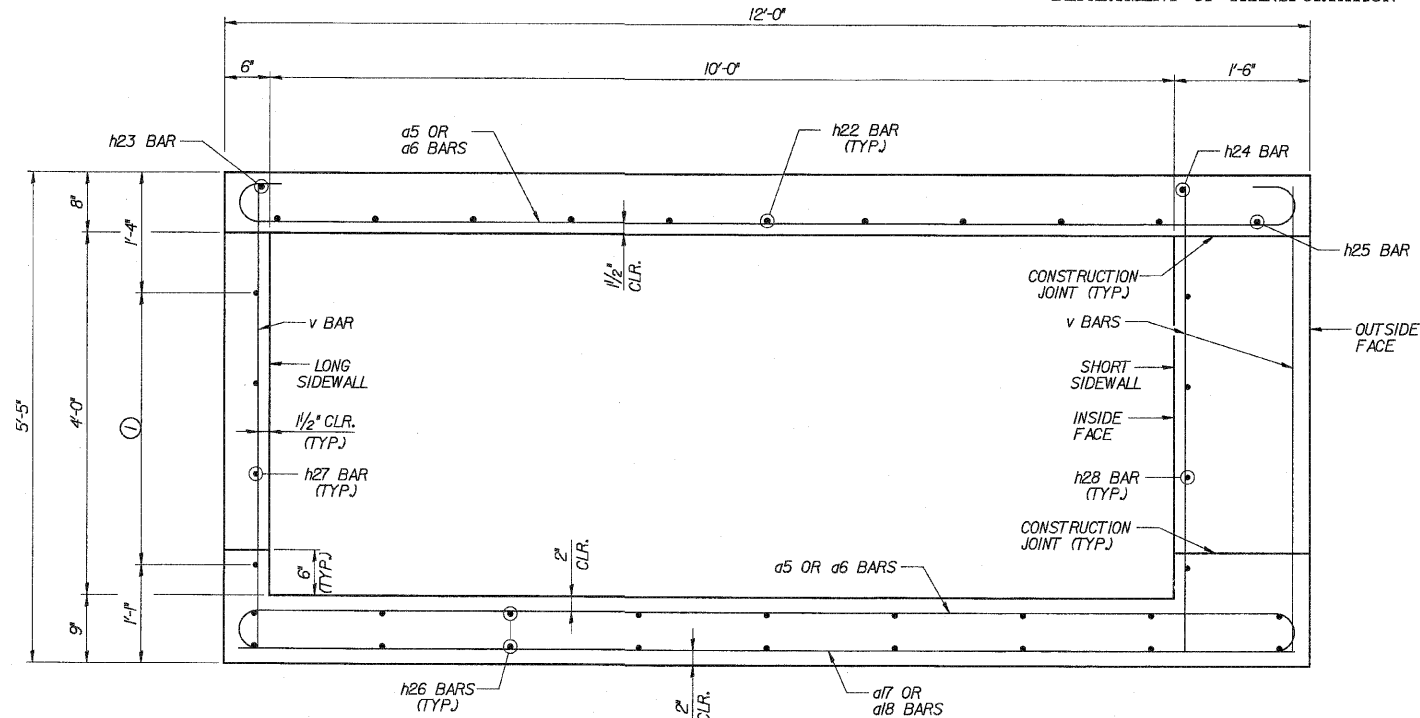
DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP



85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

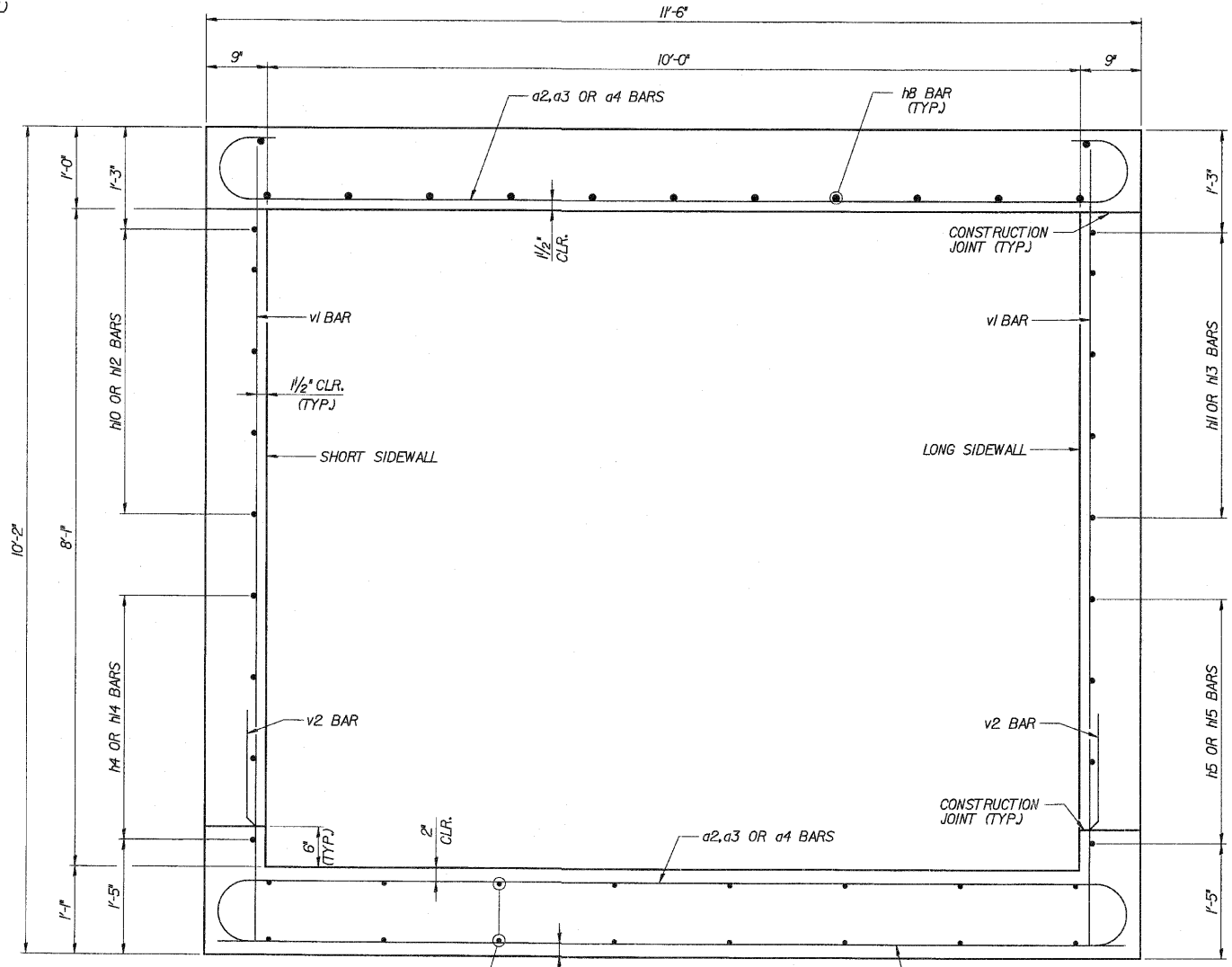
REVISIONS	
NAME	DATE

**CULVERT 'J'**  
**TYPICAL SECTIONS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-CO13

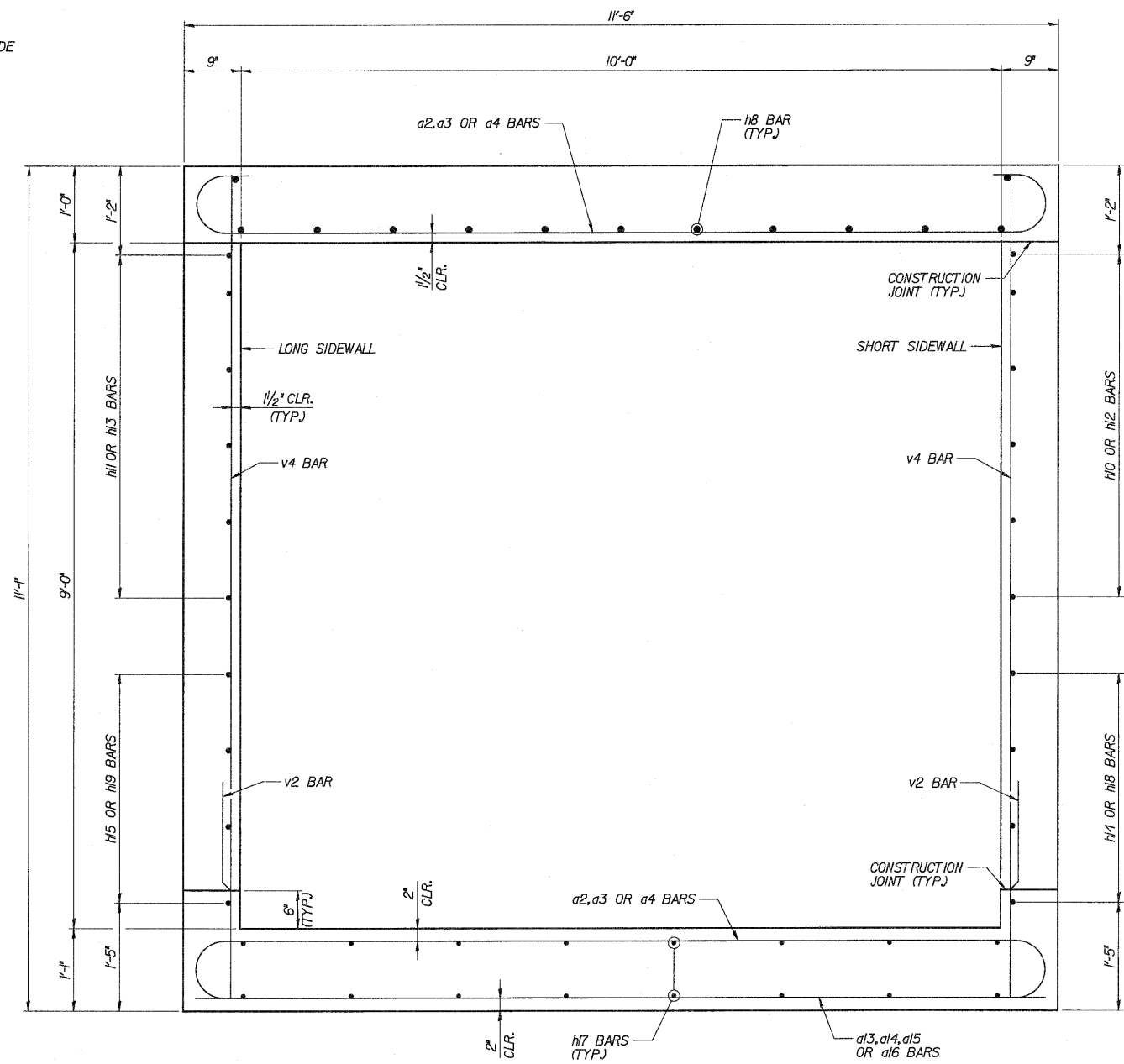


① 4\*5 h27 BARS @ 12'-3'-0" (LONG SIDEWALL)  
4\*5 h28 BARS @ 12'-3'-0" (SHORT SIDEWALL)

**SECTION L-L**



**SECTION F-F**



**SECTION K-K**

NOTE:  
TILT HOOK BARS IN TOP AND BOTTOM SLAB TO PROVIDE REQUIRED CLEARANCE.

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

REVISIONS	
NAME	DATE

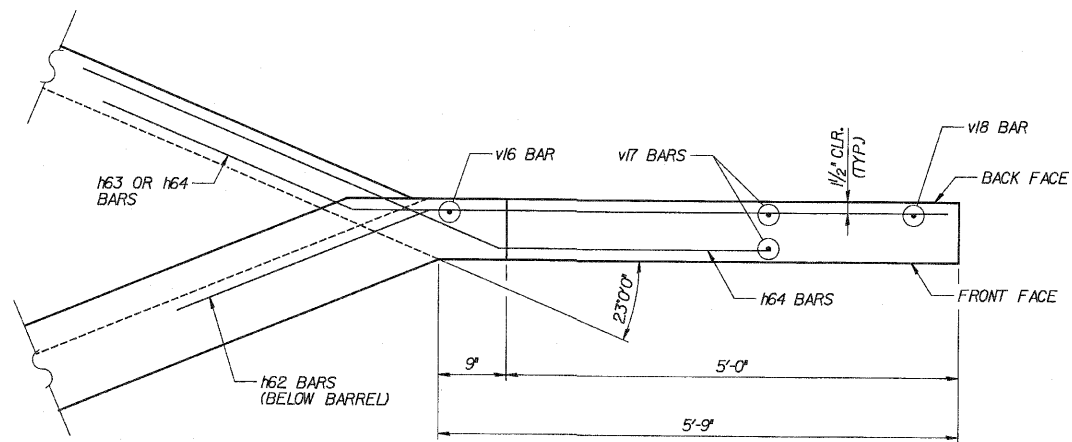
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'J'**  
**TYPICAL SECTIONS**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

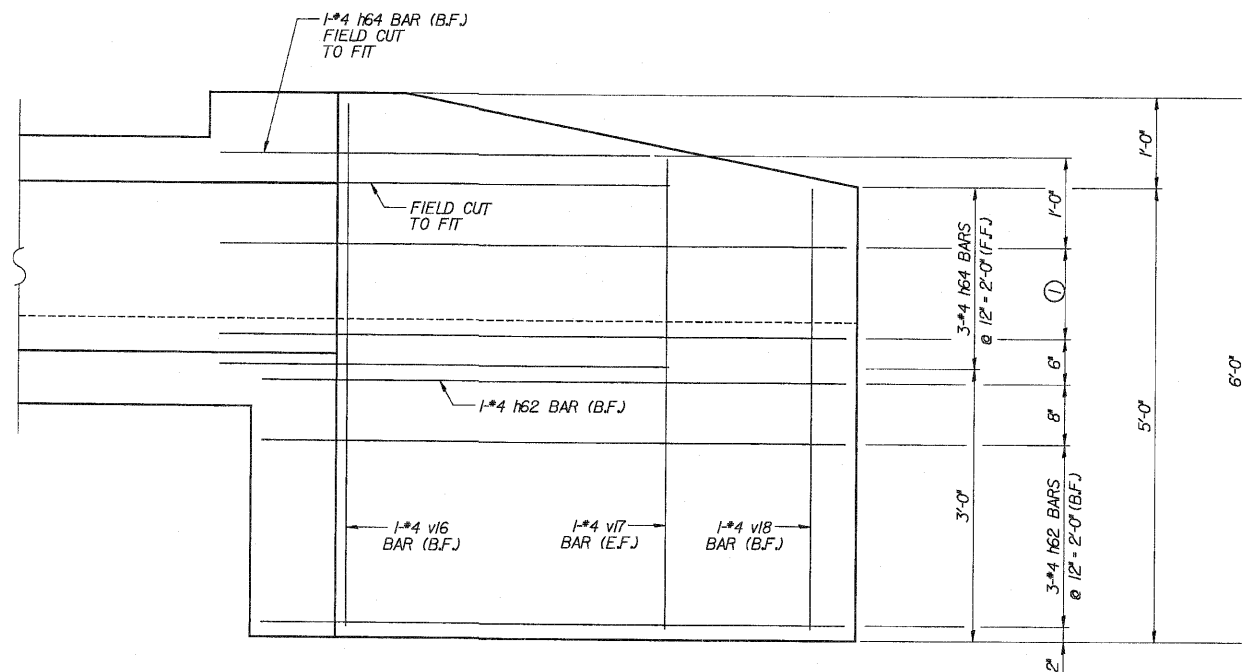


ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	697
FED. ROAD DIST. #	ILLINOIS	FED. AID PROJECT		

\* SECT. (12 & 13) WRS-3  
\* CONTRACT NO. 62479



**WING A PLAN**

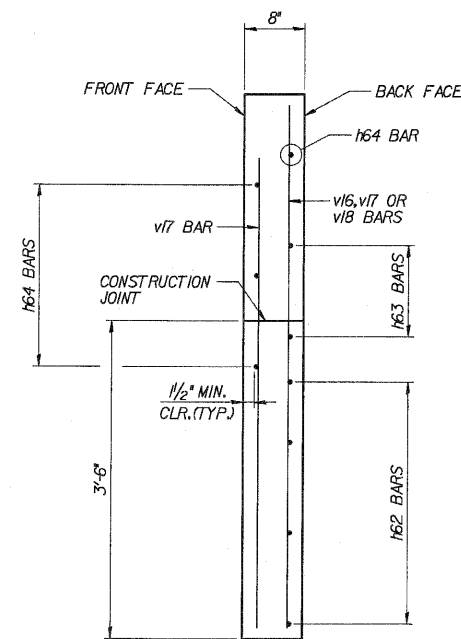


**WING A ELEVATION**

① 2-#4 163 BARS @ 12'-1'-0" (B.F.)

**LEGEND**

B.F. = BACK FACE  
F.F. = FRONT FACE  
E.F. = EACH FACE



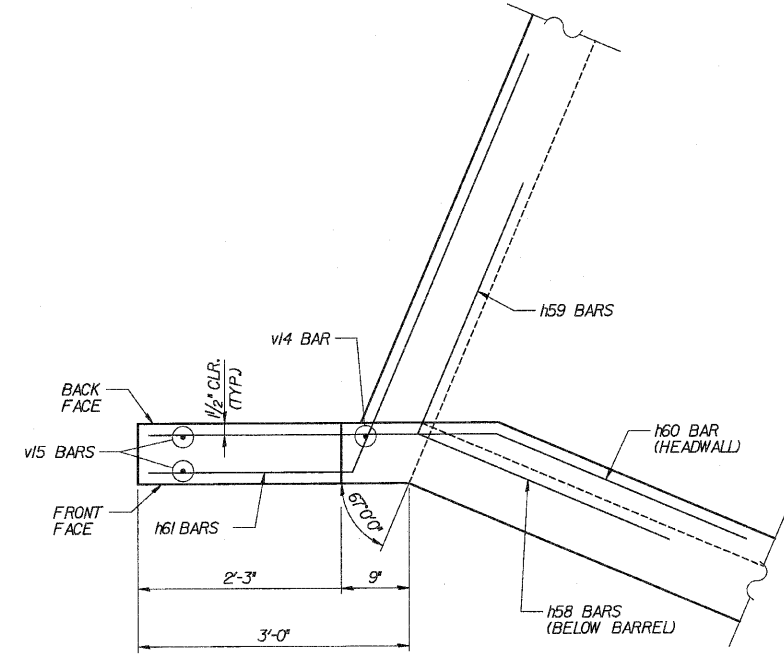
**WING A TYPICAL SECTION**

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

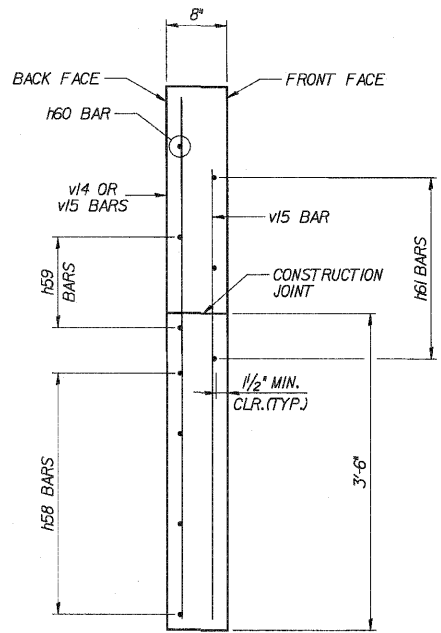
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

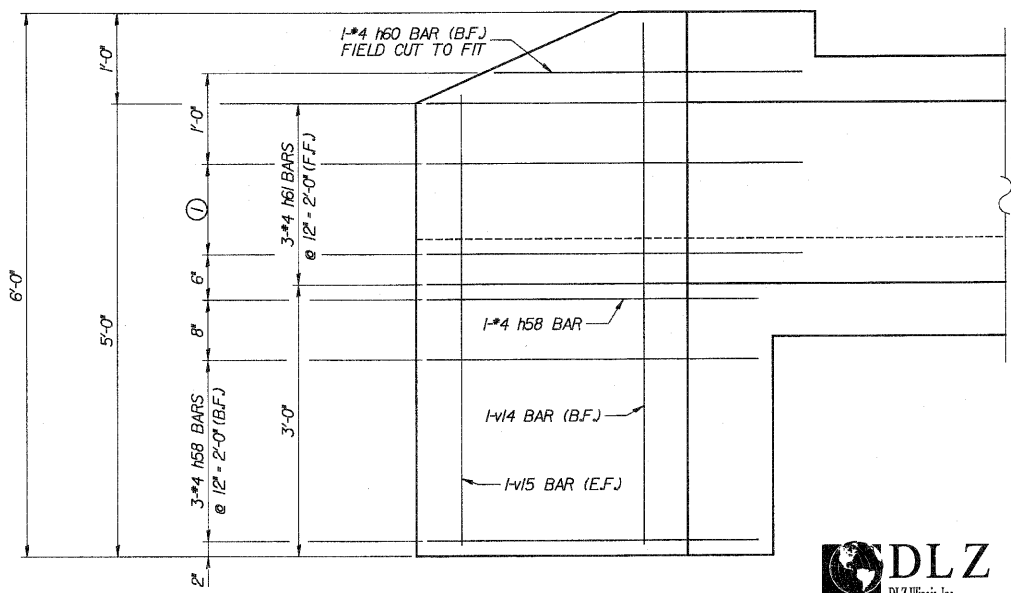
**CULVERT 'J'**  
**WING A**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-CO13



**WING B PLAN**



**WING B TYPICAL SECTION**



**WING B ELEVATION**

① 2-#4 h59 BARS @ 12'-1'-0" (B.F.)

**LEGEND**

B.F. - BACK FACE  
F.F. - FRONT FACE  
E.F. - EACH FACE

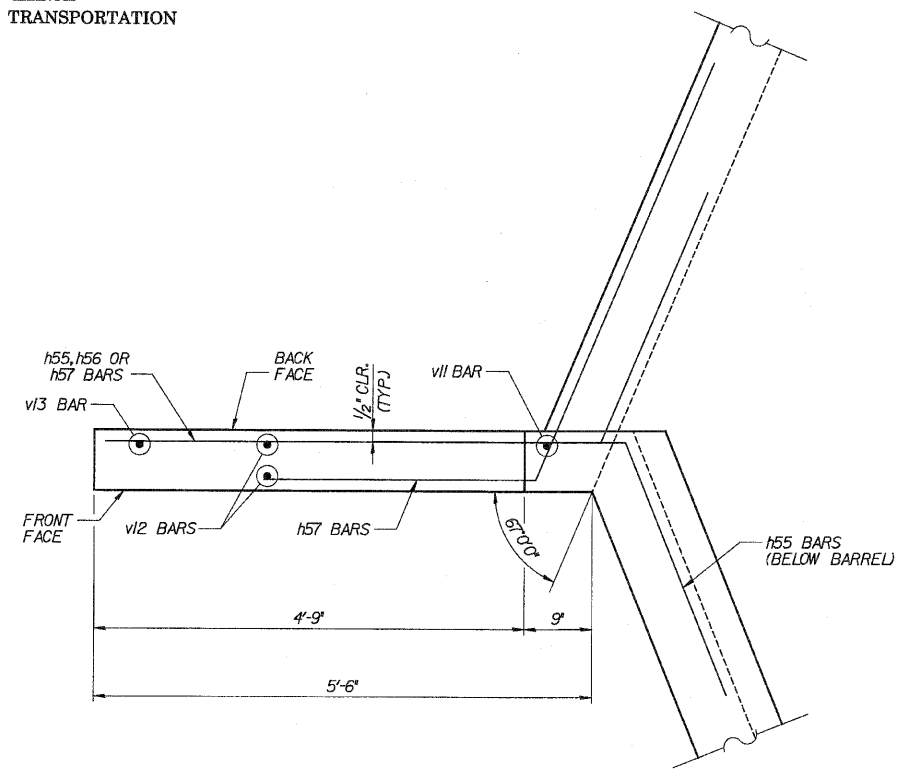
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REVISIONS	
NAME	DATE

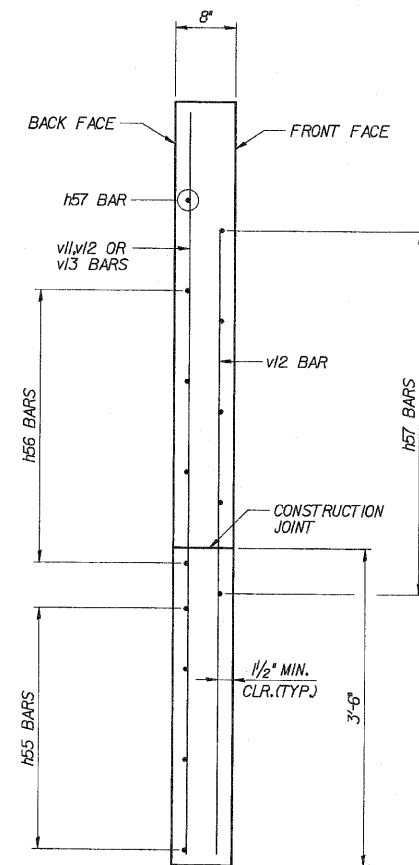
**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

**CULVERT 'J'**  
**WING B**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION 12 & 13 WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013

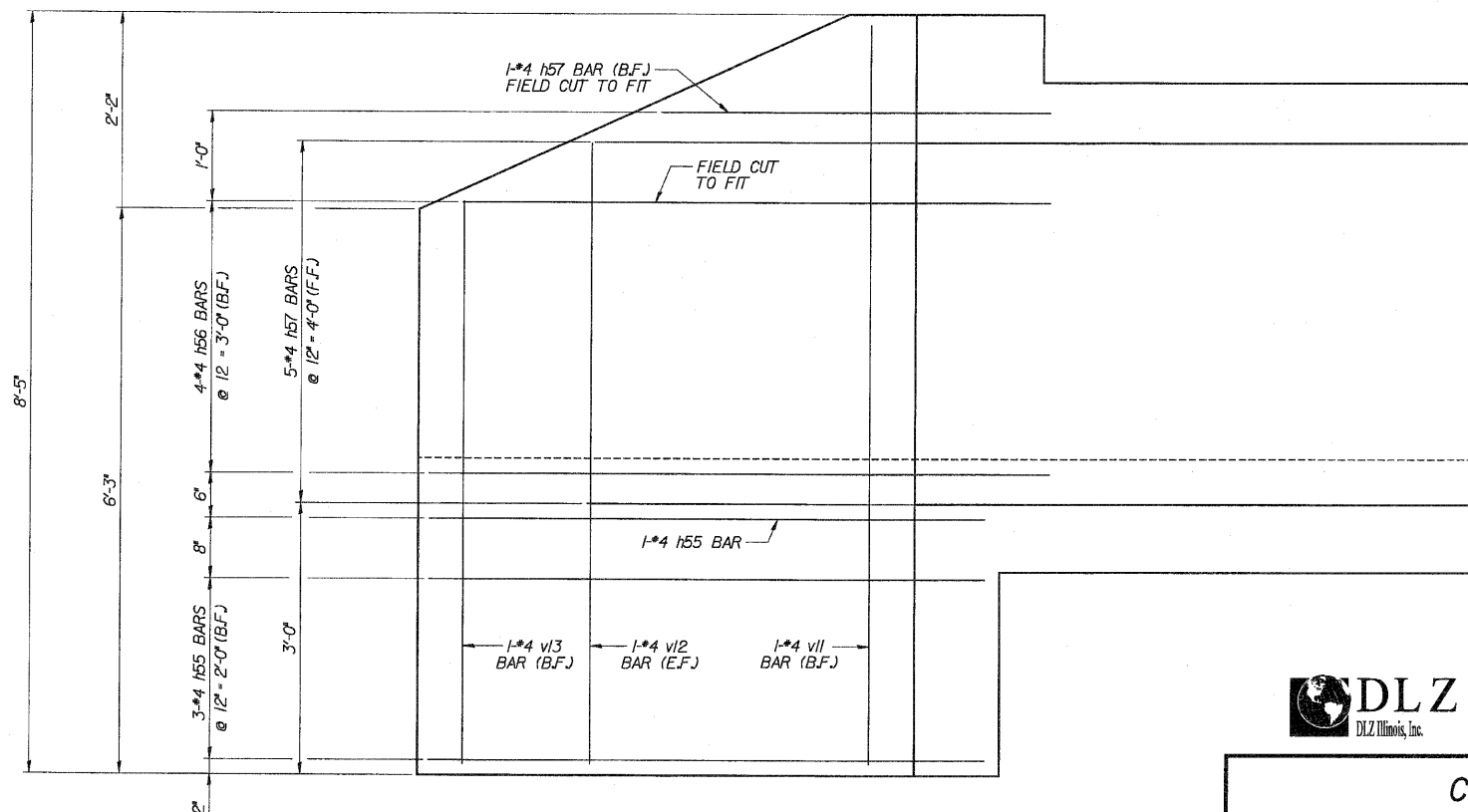
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 353	*	WILL	1235	699
FED. ROAD DIST. #		ILLINOIS	FED. AID PROJECT	
* SECT. (12 & 13) WRS-3				
* CONTRACT NO. 68479				



**WING C PLAN**



**WING C TYPICAL SECTION**



**WING C ELEVATION**

**LEGEND**

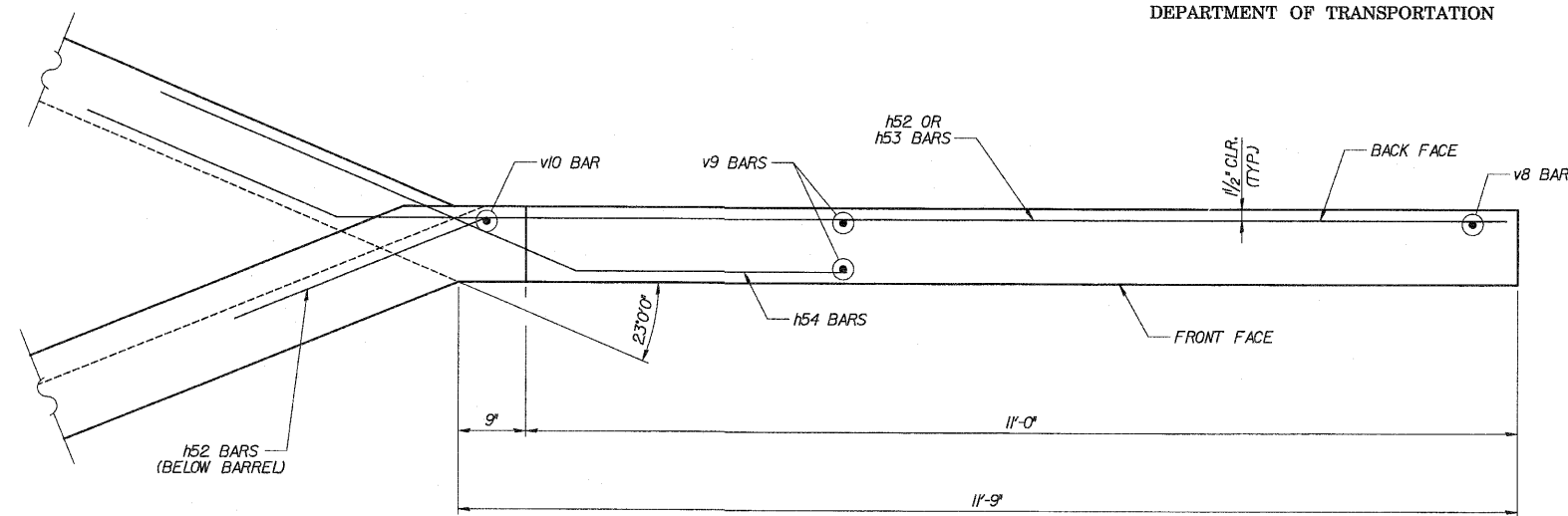
B.F. - BACK FACE  
F.F. - FRONT FACE  
E.F. - EACH FACE

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

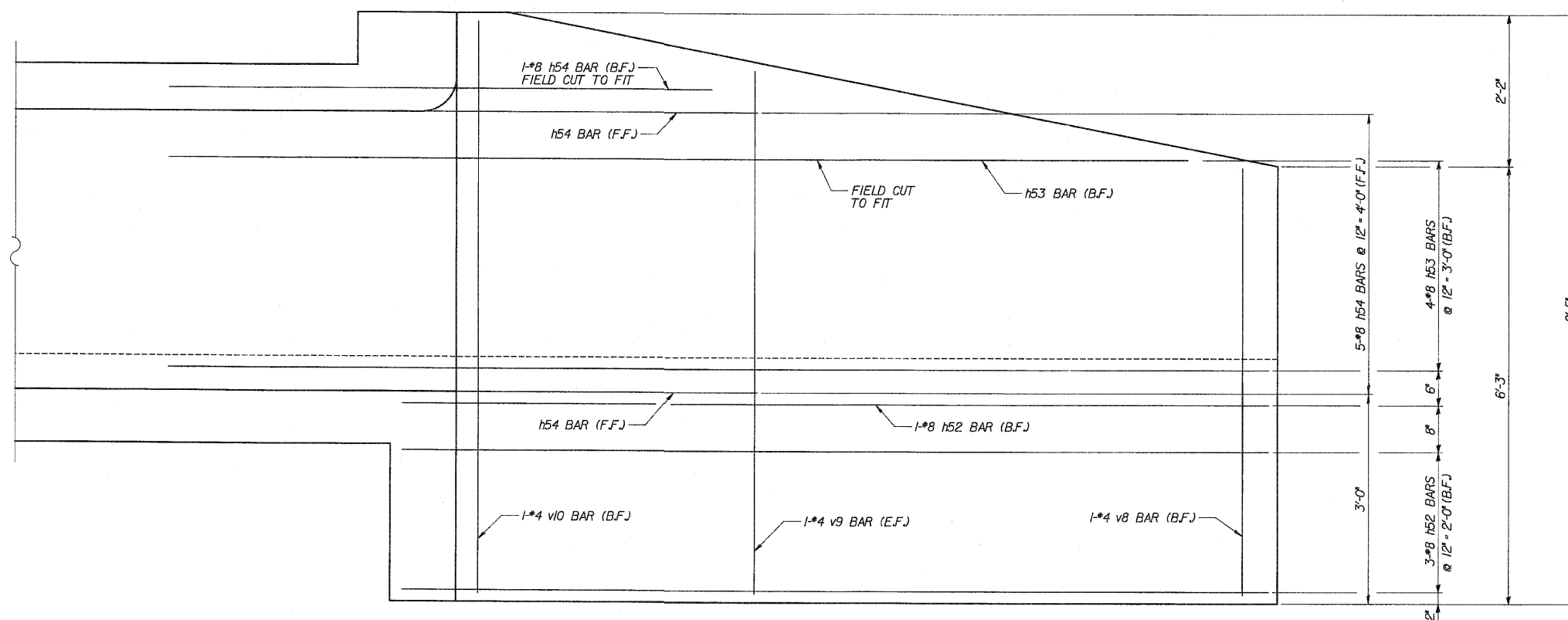
REVISIONS	
NAME	DATE

**DLZ** 85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005  
DLZ Illinois, Inc.

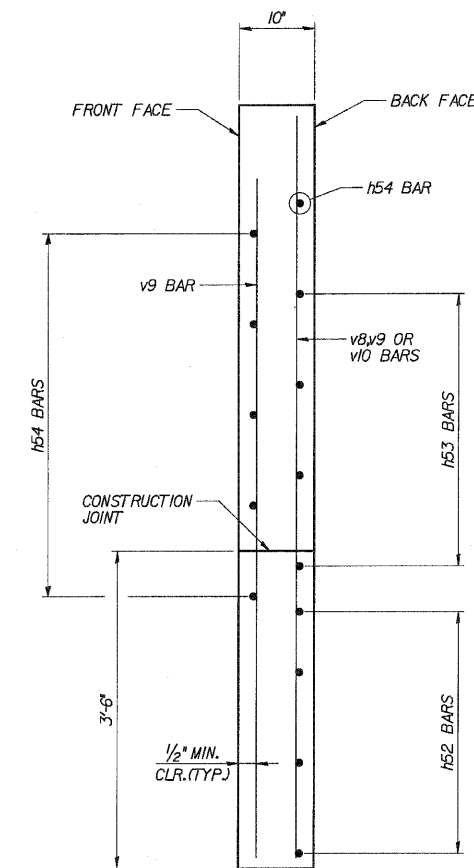
**CULVERT 'J'**  
**WING C**  
U.S. ROUTE 30 (LINCOLN HIGHWAY)  
F.A.P. 353 (U.S. 30)  
SECTION (12 & 13) WRS-3  
STATION 182+31.00  
WILL COUNTY  
STRUCTURE NUMBER 099-C013



**WING D PLAN**



**WING D ELEVATION**



**WING D TYPICAL SECTION**

DESIGNED	ASP
CHECKED	CDS
DRAWN	BEM
CHECKED	ASP

**LEGEND**

B.F. - BACK FACE  
F.F. - FRONT FACE  
E.F. - EACH FACE



85 W. Algonquin Rd. Ste. 220  
Arlington Heights IL 60005

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**CULVERT 'J'**  
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