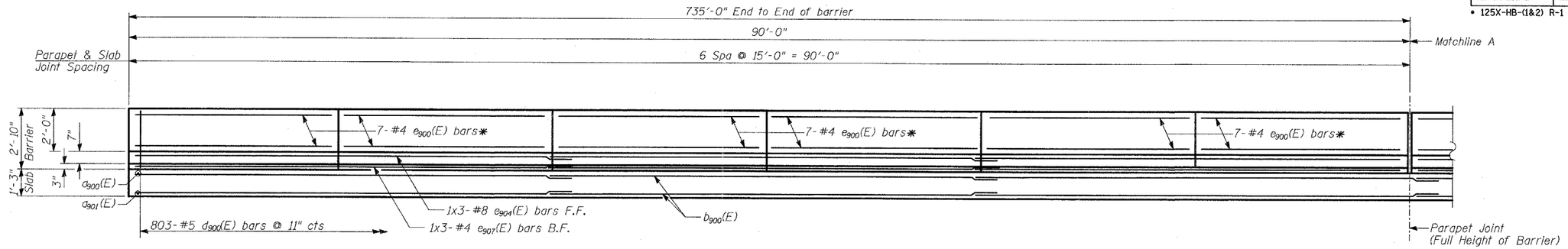
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	301
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

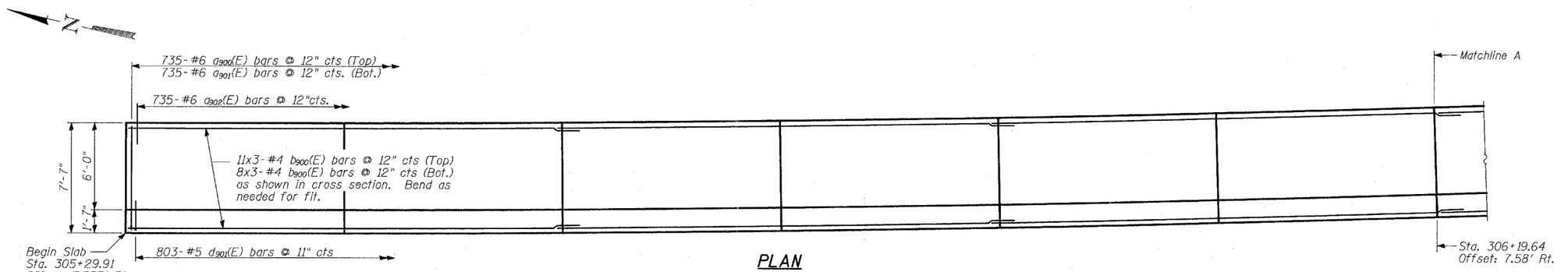
SHEET NO. - 3
15 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

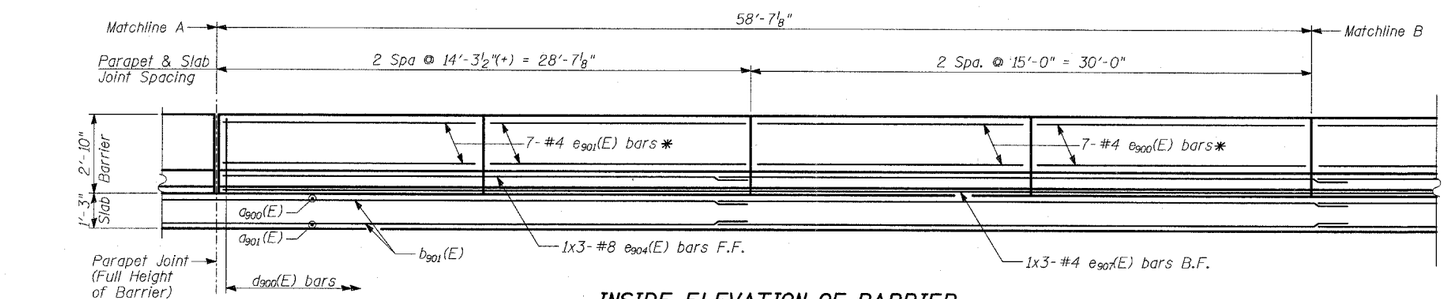


INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15

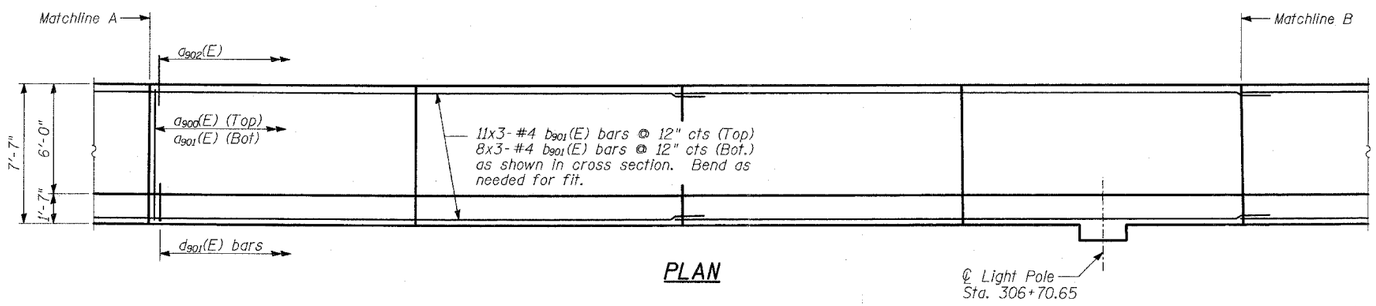


PLAN



INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15



PLAN

NOTES

1. Offsets are measured from ℄ & P.G.L. Ramp C.
2. Dimensions are measured along Outside Face of Slab/Barrier.
3. Work this Sheet with Sheets 8 and 9 of 15.
4. See Sheet 9 of 15 for Light Pole Mount Details.
5. Bars indicated 20x3 indicate 20 lengths of bars with 3 lengths per line.

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

TYLIN INTERNATIONAL

DESIGNED	-	SP
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

ANCHORAGE SLAB AND PARAPET
(1 OF 5)

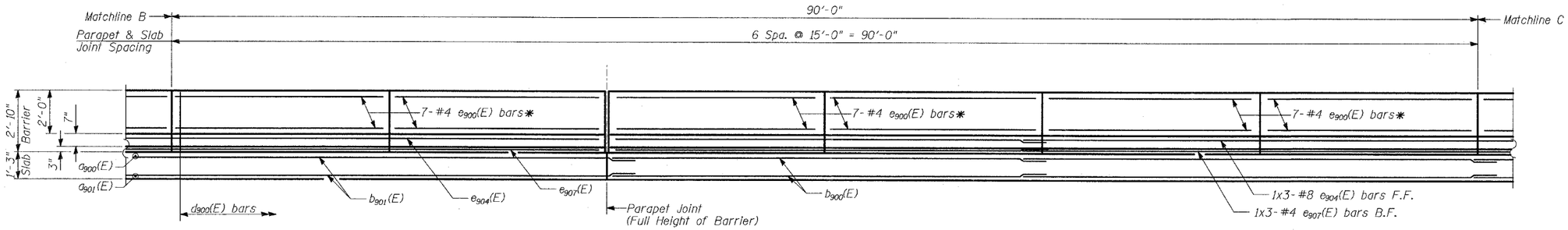
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W035

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	302
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

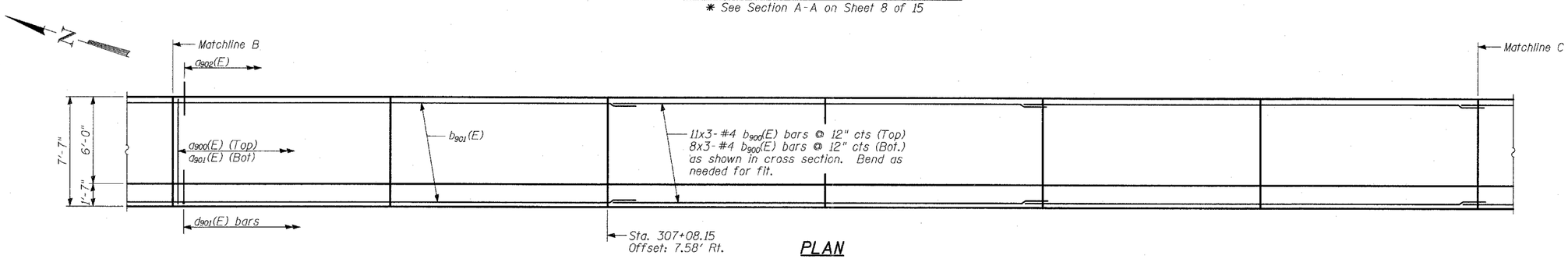
SHEET NO. - 4
15 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826

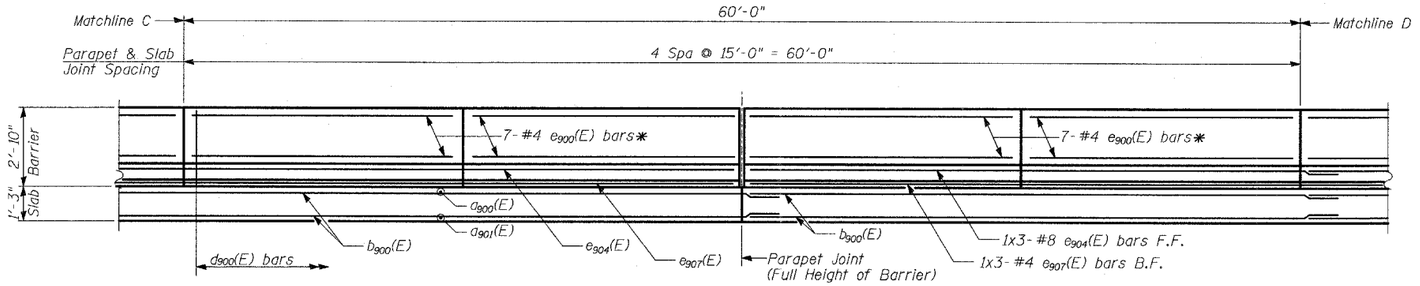


INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15

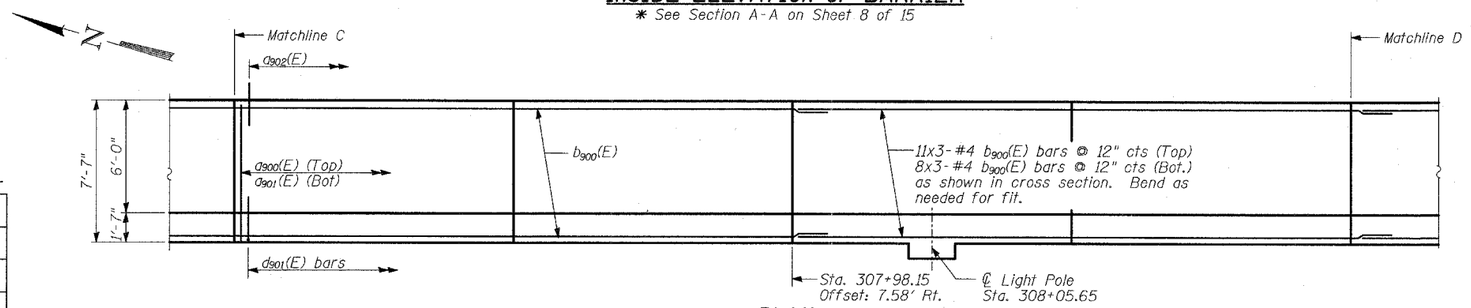


PLAN



INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15



PLAN

NOTES

1. Offsets are measured from ℄ & P.G.L. Ramp C.
2. Dimensions are measured along Outside Face of Slab/Barrier.
3. Work this Sheet with Sheets 8 and 9 of 15.
4. See Sheet 9 of 15 for Light Pole Mount Details.
5. Bars indicated 20x3 indicate 20 lengths of bars with 3 lengths per line.

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

TYLIN INTERNATIONAL

DESIGNED	- SP
CHECKED	- AD
DRAWN	- MAF
CHECKED	- AD

ANCHORAGE SLAB AND PARAPET
(2 OF 5)

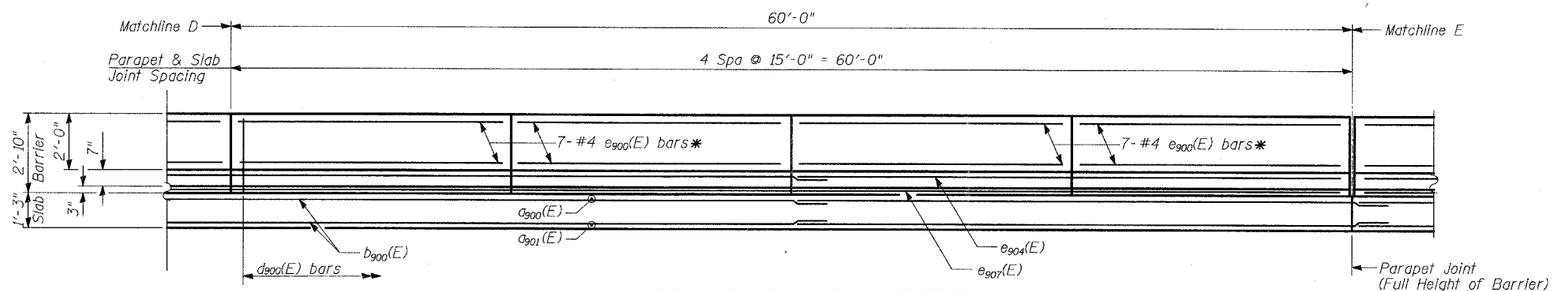
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	303
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

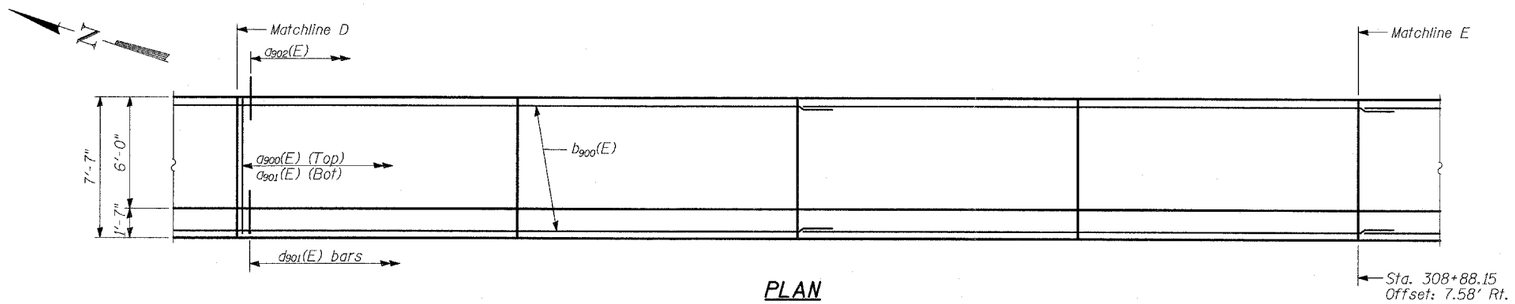
SHEET NO. 5
15 SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826

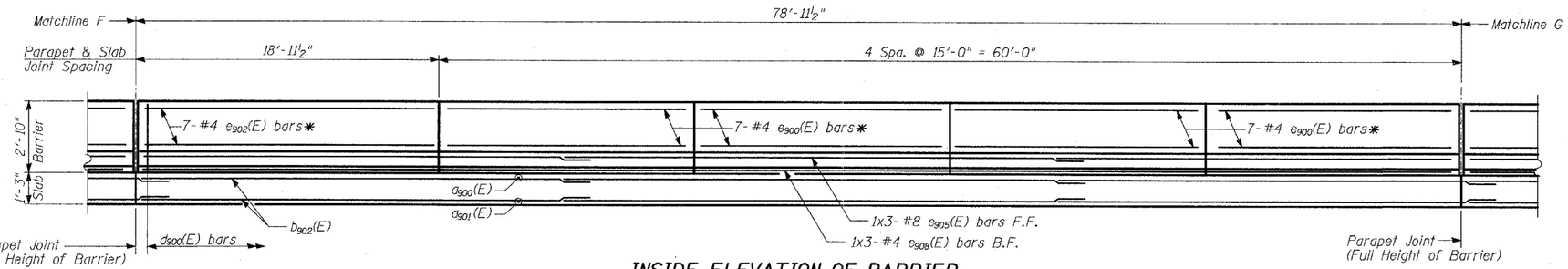


INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15

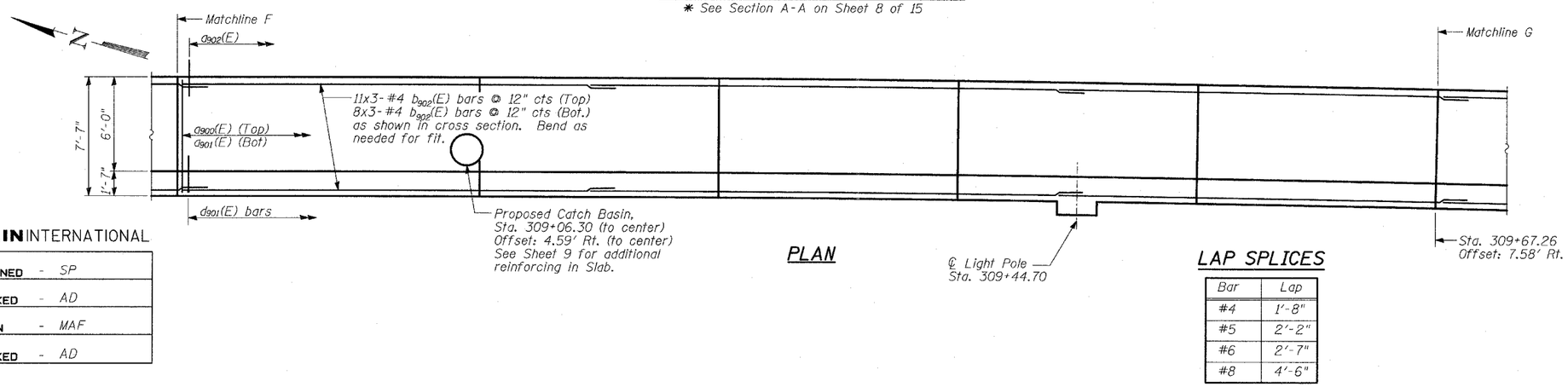


PLAN



INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15



PLAN

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES

1. Offsets are measured from ℄ & P.G.L. Ramp C.
2. Dimensions are measured along Outside Face of Slab/Barrier.
3. Work this Sheet with Sheets 8 and 9 of 15.
4. See Sheet 9 of 15 for Light Pole Mount Details.
5. Bars indicated 20x3 indicate 20 lengths of bars with 3 lengths per line.

TYLIN INTERNATIONAL

DESIGNED	- SP
CHECKED	- AD
DRAWN	- MAF
CHECKED	- AD

ANCHORAGE SLAB AND PARAPET
(3 OF 5)

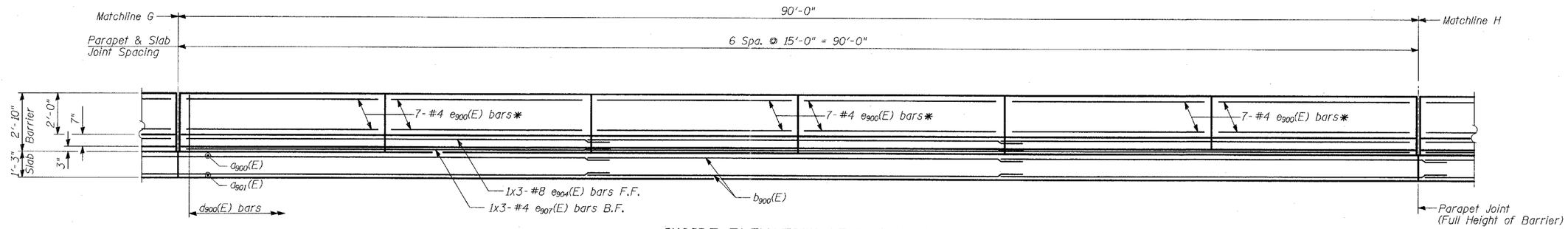
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	304
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

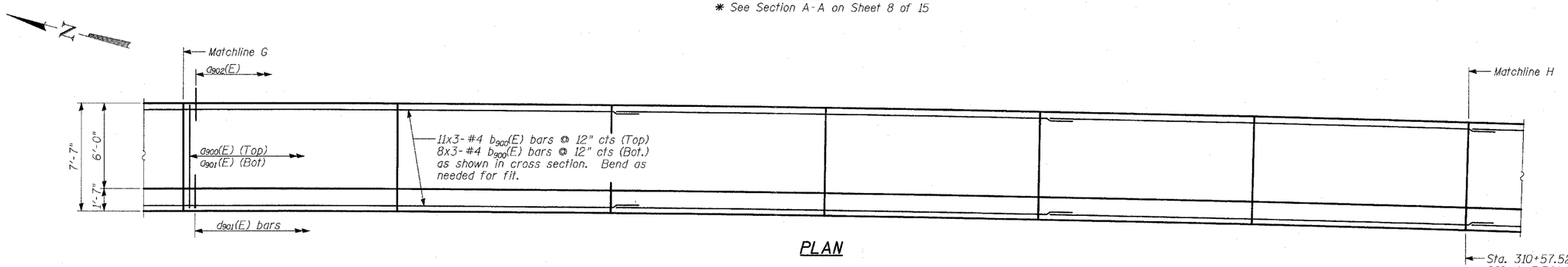
* 125X-HB-(1&2) R-1 CONTRACT # 60826

SHEET NO. - 6
15 - SHEETS

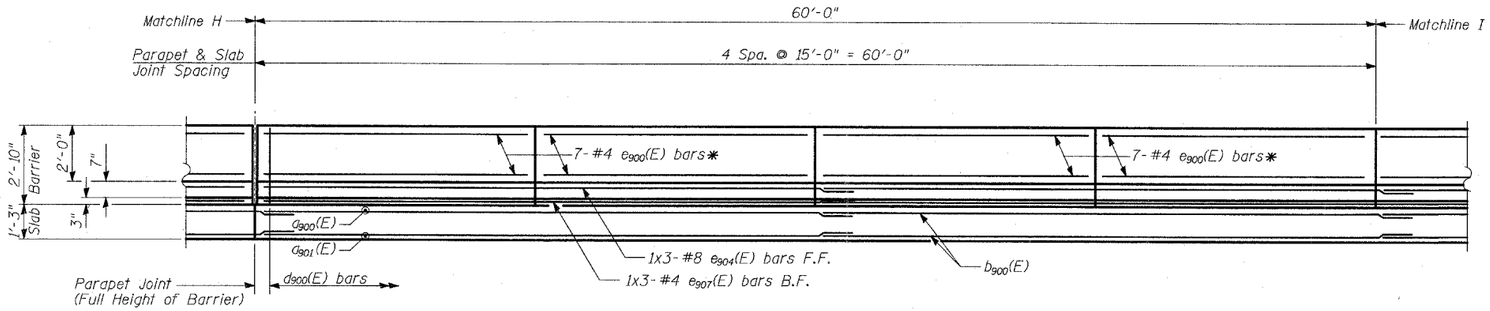


INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15

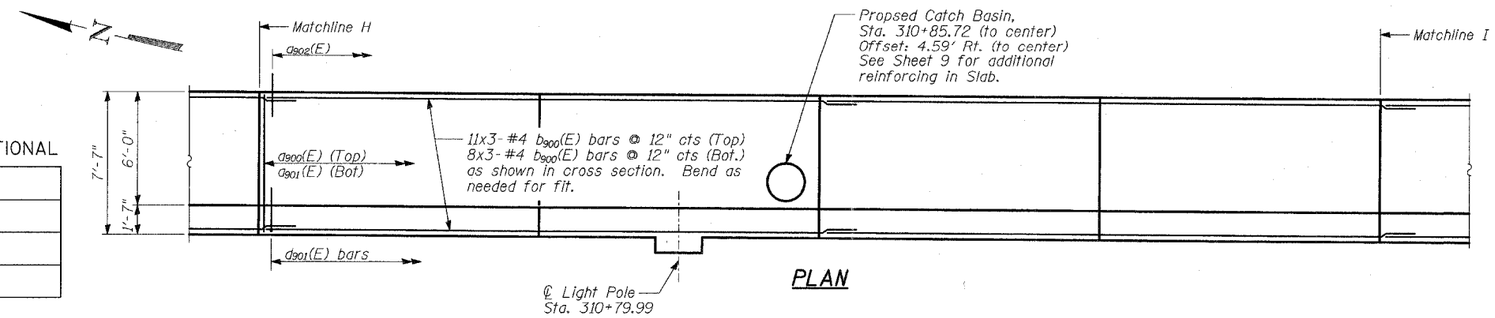


PLAN



INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15



PLAN

NOTES

1. Offsets are measured from ℄ & P.G.L. Ramp C.
2. Dimensions are measured along Outside Face of Slab/Barrier.
3. Work this Sheet with Sheets 8 and 9 of 15.
4. See Sheet 9 of 15 for Light Pole Mount Details.
5. Bars indicated 20x3 indicate 20 lengths of bars with 3 lengths per line.

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

TYLIN INTERNATIONAL

DESIGNED	-	SP
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

ANCHORAGE SLAB AND PARAPET (4 OF 5)

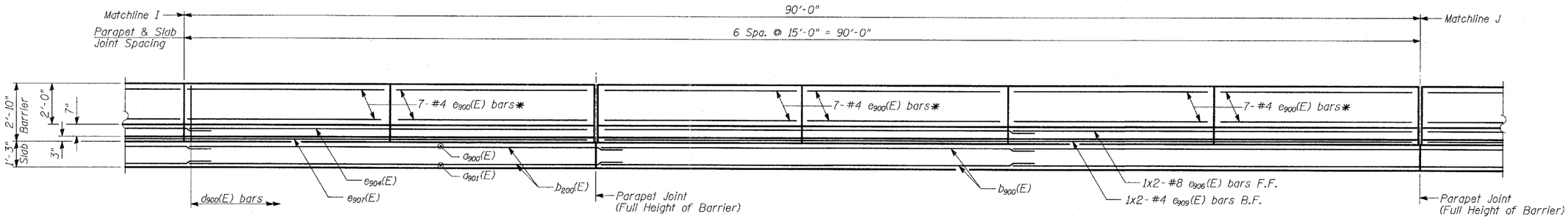
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	305
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

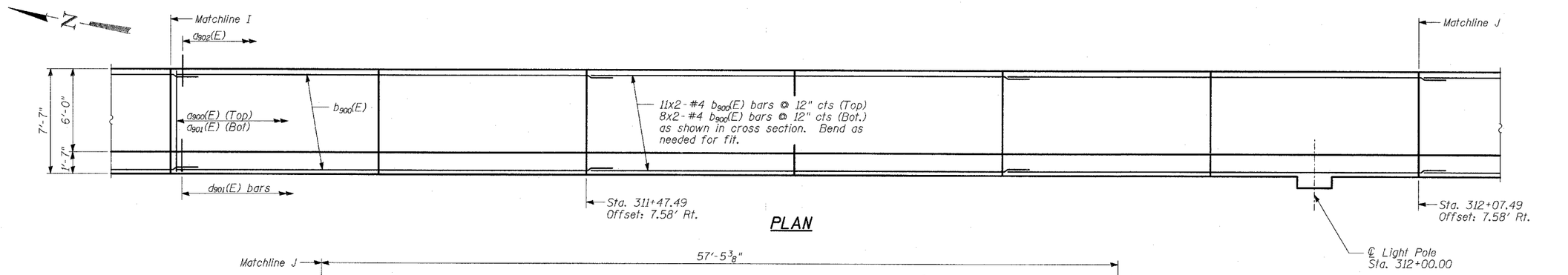
SHEET NO. 7 15 SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826

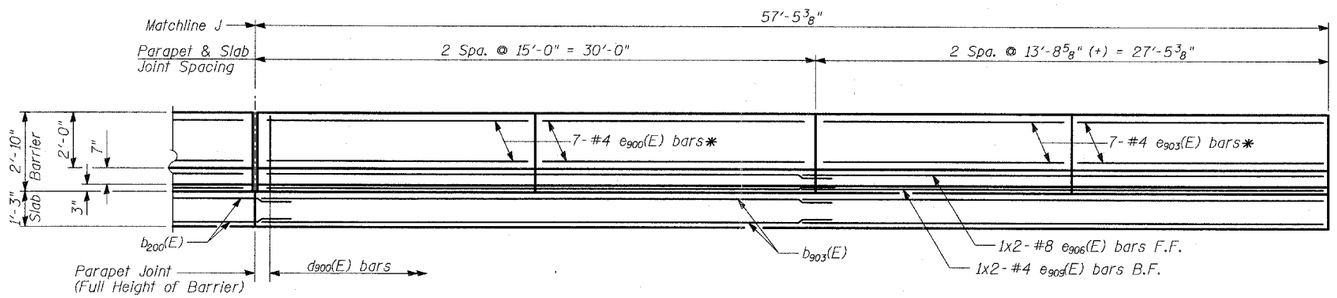


INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15

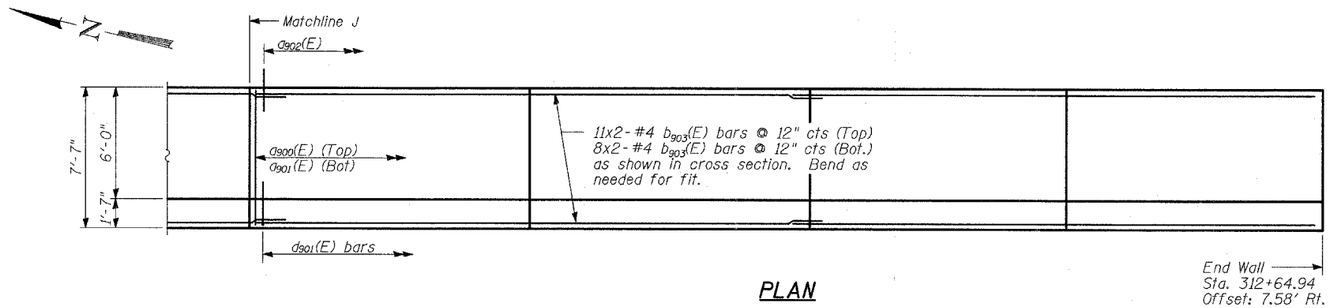


PLAN



INSIDE ELEVATION OF BARRIER

* See Section A-A on Sheet 8 of 15



PLAN

NOTES

1. Offsets are measured from ℄ & P.G.L. Ramp C.
2. Dimensions are measured along Outside Face of Slab/Barrier.
3. Work this Sheet with Sheets 8 and 9 of 15.
4. See Sheet 9 of 15 for Light Pole Mount Details.
5. Bars indicated 20x3 indicate 20 lengths of bars with 3 lengths per line.

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

TYLIN INTERNATIONAL

DESIGNED	-	SP
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

ANCHORAGE SLAB AND PARAPET
(5 OF 5)

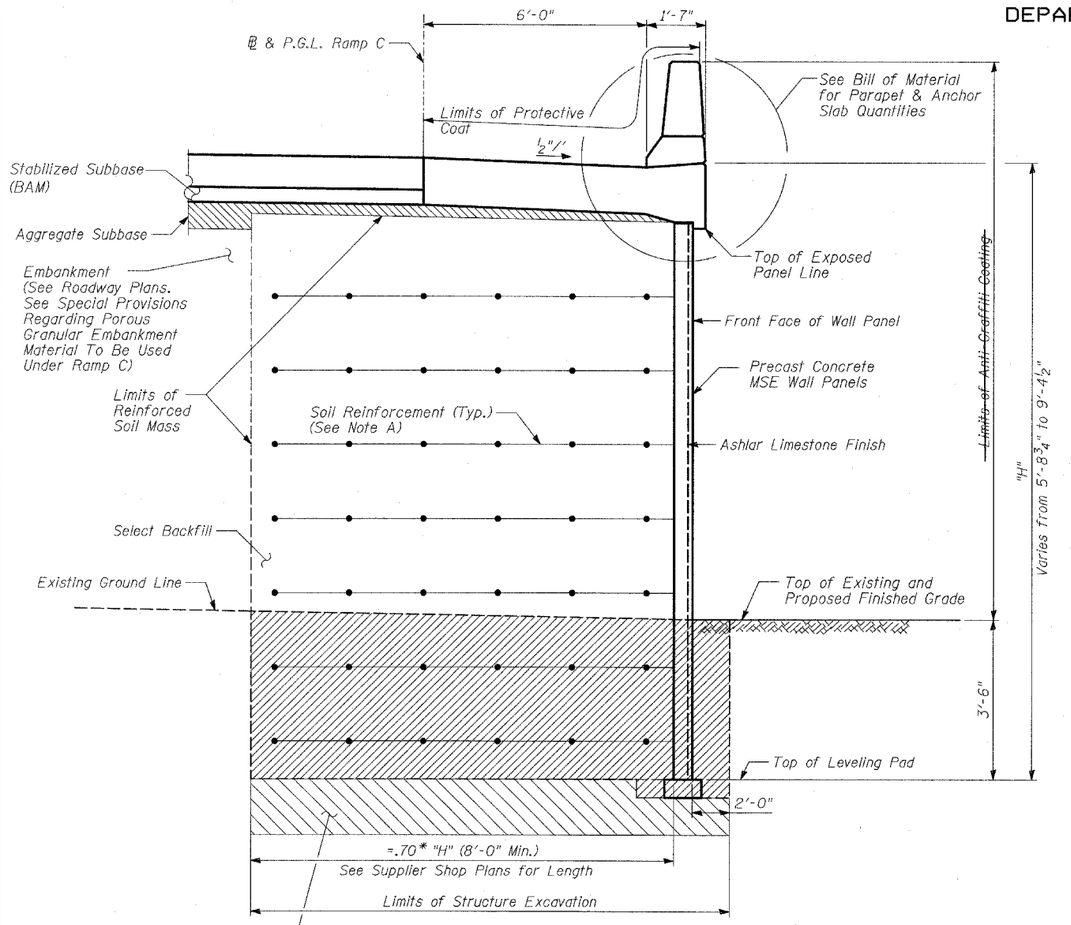
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W035

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	306
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

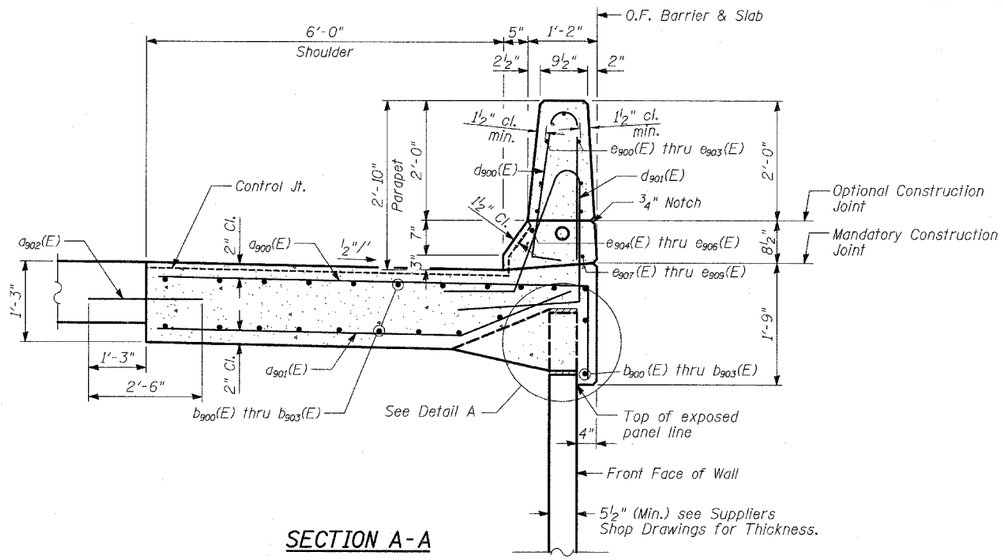
SHEET NO. - 8
15 - SHEETS

* 125X-HB-(1&2) R-1
CONTRACT # 60826



TYPICAL CROSS SECTION

Note A: The M.S.E. Wall Suppliers internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and a horizontal sliding force of 0.5 k/ft of wall.



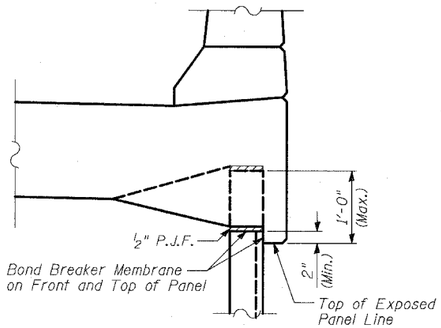
SECTION A-A

NOTES:

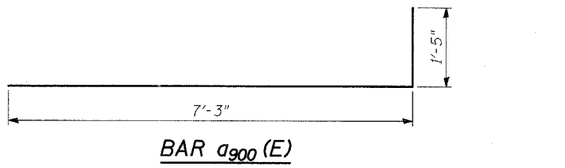
Surface Treatment of MSE Wall Panels shall be Ashlar Limestone Finish Pattern. Maximum relief = 1 1/2". Cost of Surface Treatment shall be included in the cost of "Mechanically Stabilized Earth Retaining Wall."

BILL OF MATERIAL

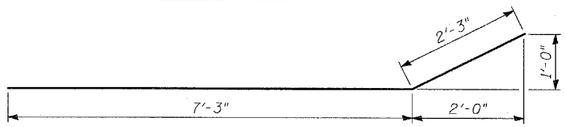
Bar	No.	Size	Length	Shape
$a_{900}(E)$	735	#6	8'-8"	
$a_{901}(E)$	735	#6	9'-6"	
$a_{902}(E)$	735	#6	2'-6"	
$a_{903}(E)$	40	#6	5'-6"	
$a_{904}(E)$	8	#6	4'-6"	
$b_{900}(E)$	323	#4	31'-2"	
$b_{901}(E)$	57	#4	30'-8"	
$b_{902}(E)$	57	#4	27'-5"	
$b_{903}(E)$	38	#4	29'-6"	
$d_{900}(E)$	803	#5	5'-7"	
$d_{901}(E)$	803	#5	7'-5"	
$d_{902}(E)$	15	#6	4'-5"	
$d_{903}(E)$	25	#6	8'-11"	
$e_{900}(E)$	308	#4	14'-9"	
$e_{901}(E)$	14	#4	14'-0"	
$e_{902}(E)$	7	#4	18'-8"	
$e_{903}(E)$	14	#4	13'-5"	
$e_{904}(E)$	18	#8	32'-11"	
$e_{905}(E)$	3	#8	29'-3"	
$e_{906}(E)$	4	#8	32'-1"	
$e_{907}(E)$	18	#4	31'-0"	
$e_{908}(E)$	3	#4	27'-4"	
$e_{909}(E)$	4	#4	30'-8"	
Concrete Superstructure			CU YD	353
Reinforcement Bars, Epoxy Coated			POUND	50,260



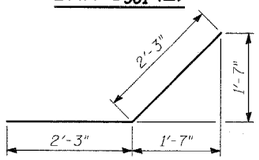
DETAIL A



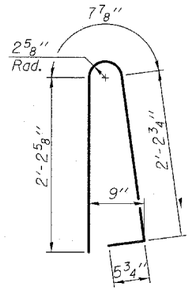
BAR $a_{900}(E)$



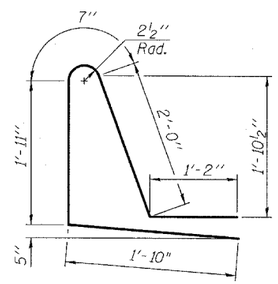
BAR $a_{901}(E)$



BAR $a_{904}(E)$



BAR $d_{900}(E)$



BAR $d_{901}(E)$

TYLIN INTERNATIONAL

DESIGNED	- SP
CHECKED	- AD
DRAWN	- MAF
CHECKED	- AD

REVISIONS	
NAME	DATE
ANNA ZYSMAN	6-17-08

WALL N
ANCHORAGE SLAB AND PARAPET SECTIONS AND BAR LIST

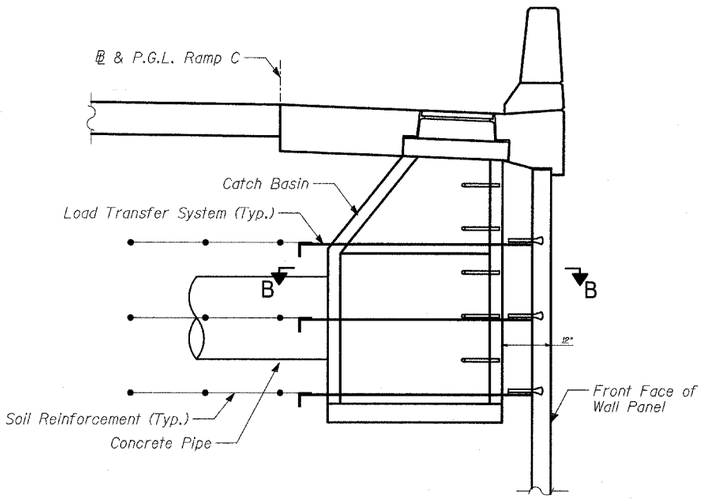
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

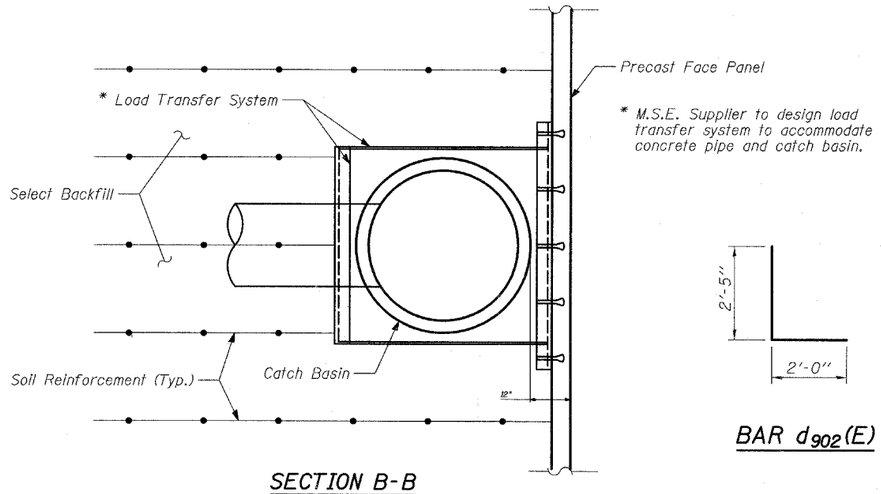
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	307
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 9
15 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT * 60826

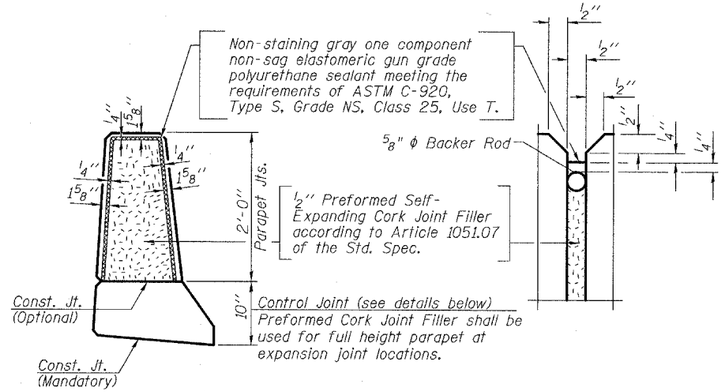


SECTION A-A

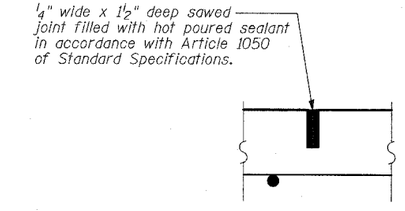


SECTION B-B

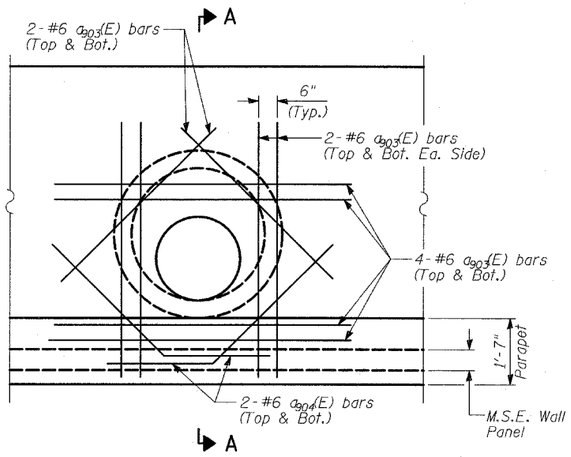
BAR d_{902}(E)



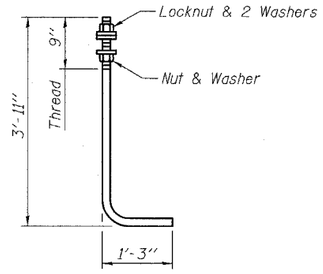
PARAPET JOINT DETAILS
(Cost Included with Concrete Structures)



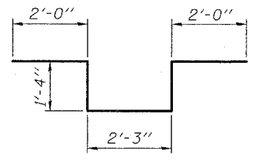
SAWED CONTRACTION JOINT DETAIL - SLAB
(Cost Included with Concrete Structures)



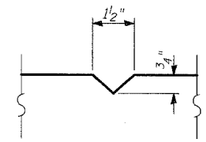
PLAN AT CATCH BASIN



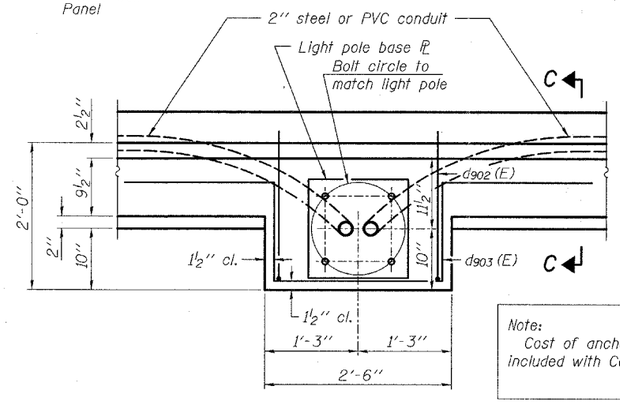
ANCHOR ROD
Diameter as specified for light poles.
(ASTM F 1554 Grade 105)



BAR d_{903}(E)

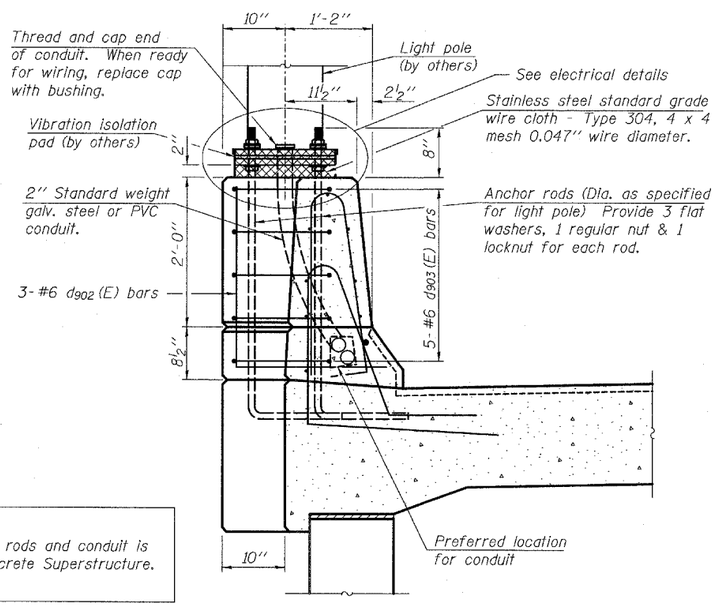


CONTROL JOINT DETAIL-PARAPET



PLAN

Note:
Cost of anchor rods and conduit is included with Concrete Superstructure.



SECTION C-C

TYLIN INTERNATIONAL

DESIGNED	-	SP
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

ANCHORAGE SLAB AND PARAPET DETAILS

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	308
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 10
15 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amberly Court, Suite 204
Naperville, Illinois 60565
(630) 305-2806

SOIL BORING LOG

PAGE 1 of 1
DATE 10/6/2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ35
Station
BORING NO. N-2
Station 304+85.2 Ramp C Baseline
Offset 6.Ø' Right
Ground Surface Elev. 688.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 666.9
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL with Gravel-black (Fill)
687.4				
	8		116	
	8			CLAY-dark brown & black-
	8	11.ØB	14	hard (A-6) Fill
684.4				
	8		124	
	15			
-5	15	10.4B	12	
	6		119	CLAY-brown & gray-hard (A-6)
	10			
	12	8.7B	16	
	7		117	
	11			
-10	15	8.5B	16	
677.4				
	5		116	
	8			
	11	6.2B	17	
				CLAY-gray-stiff to hard (A-6)
	4		114	
	7			
-15	9	4.6B	18	
	6		108	
	6			
	5	2.5B	21	
	5		126	
	3			
-20	3	1.1B	24	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	3		120	
	5			CLAY-gray-stiff to hard (A-6)
	9	1.9B	18	
	5		128	
	9			
-25	9	4.2B	12	
661.4				
	15			
	10	NP	12	
				SAND & GRAVEL-gray-
	3			loose to medium dense (A-1)
	3			
-30	6	NP	10	
658.4				
				End of Boring @ -30.Ø'
				Hollow Stem Augers
				D-12Ø Safety Hammer
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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SOIL BORING LOG

PAGE 1 of 1
DATE 10-20-2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME-75 Auto Hammer
STRUCT. NO. SN Ø49-WØ35
Station
BORING NO. N-3
Station 305+60.2 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 685.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 661.9
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	7			SANDY TOPSOIL-black
	8			
	8		NR	
682.4				
	7		123	
	7			CLAY-brown-very stiff to hard (A-6)
-5	6	3.5B	11	
	7		118	
	9			
	11	5.3B	15	
679.9				
	5		121	
	6			
-10	9	2.7B	14	
				CLAY-gray-stiff to very stiff (A-6)
	4		121	
	6			
	6	1.75B	18	
	4		128	
	4			
-15	6	1.75B	18	
	1		126	
	3			
	4	2.5B	19	
669.9				
	3			SILTY CLAY LOAM-gray-
	6			medium dense (A-4/A-6)
-20	6	0.5P	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SILTY CLAY LOAM-gray-
662.2				medium dense (A-4/A-6)
	46			
	18			CLAYEY SAND, GRAVEL & STONE-gray-
	16	NP	27	medium dense to dense (A-1-a)
	6			
	7			
680.4 -25	8	NP	12	
				End of Boring @ -25.Ø'
				Hollow Stem Augers
				CME-75 Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	- MAF
CHECKED	- AD
DRAWN	- MAF
CHECKED	- AD

BORING LOGS N-2 & N-3

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	309
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 11
15 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826

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SOIL BORING LOG

PAGE 1 of 1
DATE 10/5/2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346
TWNSHP Gurnee
COUNTY Lake
DESCRIPTION New Overpass
LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer

STRUCT. NO. SN 049-W035
Station
BORING NO. N-4
Station 306+34.9 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 683.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (A-7) 682.0
	7			
	8			CLAY-brown & gray-hard (A-6) Fill
	6	4.5+P	17	
	5		116	
	7			
-5	8	5.5B	17	CLAY-gray-very stiff to hard (A-6)
				677.0
	8			
	18			SANDY LOAM-brown-dense (A-2-6) Apparent Fill
	17	NP	11	
	3		119	674.0
	8			
-10	9	3.4B	16	
	4		118	
	6			CLAY-gray-very stiff to hard (A-6)
	7	2.5B	16	
	7		112	
	9			
-15	11	4.25B	19	
	3		108	
	5			
	8	3.4B	21	
	4		130	
	7			
-20	7	6.9B	11	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	3		118	
	4			
	8	2.7B	17	
	4		129	
	8			
-25	10	4.9B	11	
	5		120	
	8			
	10	3.5B	15	
	9		119	
	8			
-30	11	3.2B	16	653.0
				End of Boring @ -30.0' Hollow Stem Augers D-120 Safety Hammer
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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(630) 305-2956

SOIL BORING LOG

PAGE 1 of 1
DATE 10/5/2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346
TWNSHP Gurnee
COUNTY Lake
DESCRIPTION New Overpass
LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer

STRUCT. NO. SN 049-W035
Station
BORING NO. N-5
Station 307+10.0 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 687.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAYEY TOPSOIL-black (A-7)
				Drillers Observation: Auger refusal @ -2.0'. Unknown obstruction. 685.1
				End of Boring @ -2.0' Hollow Stem Augers D-120 Safety Hammer
				Boring Offset 2 times and hit Obstruction @-2.0'
-5				
-10				
-15				
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-25			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	MAF
CHECKED	AD
DRAWN	MAF
CHECKED	AD

BORING LOGS N-4 & N-5

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W035

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	310
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 12
15 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT # 60826

Geo Services Inc.
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SOIL BORING LOG

PAGE 1 of 1
DATE 10-20-2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME-75 Auto Hammer
STRUCT. NO. SN 049-W035
Station
BORING NO. N-6
Station 307+85.0 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 681.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black (A-7)		7		
		6		
		8	-	29
	677.6			
		8		
		10		
CLAY-brown & gray-hard (A-6)	-5	12	4.5P	13
		7		120
		11		
		13	9.7B	15
	672.1	7		129
		10		
	-10	12	4.4B	15
CLAY-gray-very stiff to hard (A-6)		11		120
		10		
		11	3.5B	16
		3		116
		4		
	-15	6	2.7B	23
		2		
	664.1	4		
		6	NP	11
LOAM-gray-medium dense (A-4)	662.6			
		4		126
CLAY-gray-very stiff (A-6)		5		
	-20	6	2.7B	8

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
		9		128
CLAY-gray-very stiff (A-6)		8		
		8	3.5B	11
		3		114
	656.1	4		
	-25	7	2.0P	15
End of Boring @ -25.0'				
Hollow Stem Augers				
CME-75 Automatic Hammer				
	-30			
	-35			
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

Geo Services Inc.
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Naperville, Illinois 60565
(630) 305-2936

SOIL BORING LOG

PAGE 1 of 1
DATE 10/5/2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W035
Station
BORING NO. N-7
Station 308+60.3 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 681.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL-black (A-7)		4		
		5		
	678.9	4	4.5+P	17
		5		116
		7		
CLAY-brown & gray-hard (A-6)	-5	10	5.5B	17
		5		112
		9		
		11	5.4B	19
		6		122
		12		
	-10	17	10.6B	15
	670.4	4		110
		7		
		9	5.8B	19
CLAY-gray-stiff to hard (A-6)		3		101
		5		
	-15	5	1.9B	25
		2		102
		4		
		7	1.6B	24
	663.4	1		
CLAY-gray-medium stiff (A-6)				
	-20	3		
		4	0.5P	26

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY-gray-medium stiff (A-6)	659.9	4		128
		8		
CLAY-gray-very stiff to hard (A-6)		8	2.0P	17
		5		120
		7		
	-25	10	4.6B	15
		5		119
		7		
		18	3.7B	16
		5		121
		7		
	-30	10	3.4B	15
	651.4			
End of Boring @ -30.0'				
Hollow Stem Augers				
D-120 Safety Hammer				
	-35			
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	- MAF
CHECKED	- AD
DRAWN	- MAF
CHECKED	- AD

BORING LOGS N-6 & N-7

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W035

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	311
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 13
15 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826

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Naperville, Illinois 60565
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SOIL BORING LOG

PAGE 1 of 1
DATE 10-20-2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ35
Station
BORING NO. N-8
Station 309+35.5 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 680.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (A-7)
679.8				
	4			SILTY CLAY LOAM-gray-
	6			medium dense (A-4/A-6)
	8	2.5P	14	
				SILTY CLAY-brown-
				very stiff to hard (A-6)
	3		119	
	6			
-5	5	3.5B	18	
	5		109	
	9			
	11	6.2B	22	
672.3				
	6		117	
	8			
-10	12	6.2B	21	
				CLAY-gray-stiff to hard (A-6)
	4		120	
	6			
	8	4.4B	18	
	4		108	
	5			
-15	6	2.5B	16	
	2		107	
	4			
	5	1.75B	24	
662.3				
	3		118	SILTY CLAY LOAM-gray-
	6			medium dense (A-4/A-6)
-20	4	0.9B	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	3			SILTY CLAY LOAM-gray-
657.3				medium dense (A-4/A-6)
	4		122	
	5			CLAY-gray-hard (A-6)
-25	6	4.0B	10	
				End of Boring @ -25.0'
				Hollow Stem Augers
				D-120 Safety Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

Geo Services Inc.
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SOIL BORING LOG

PAGE 1 of 1
DATE 10/5/2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ35
Station
BORING NO. N-9
Station 310+10.7 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 682.9

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (A-7)
681.4				
	5			
	6			
	7	3.5P	13	
				CLAY-brown & gray-
				stiff to very stiff (A-6) Fill
	5			
	4			
-5	4	2.5P	15	
	2			
	2			
	2	1.0P	13	
674.4				
	5		110	
	8			
-10	10	2.5B	20	
				CLAY-brown & gray-
				very stiff (A-6)
681.4	7		118	
	10			
	12	6.6B	16	
				CLAY-gray-hard (A-6)
	6		119	
	11			
-15	11	5.75B	15	
	3		105	
	6			
	9	4.0B	23	
662.9				
	3			
	4			CLAY LOAM-gray-
-20	5	1.0P	24	stiff to very stiff (A-6)

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	3			CLAY LOAM-gray-
659.9				stiff to very stiff (A-6)
	4			
	7	3.5P	13	
	4		115	
	6			
-25	7	1.3B	21	CLAY-gray-stiff to very stiff (A-6)
	3		118	
	4			
	5	2.1B	18	
	4		118	
	6			
652.9 -30	8	2.5B	16	
				End of Boring @ -30.0'
				Hollow Stem Augers
				D-120 Safety Hammer
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TYLIN INTERNATIONAL

DESIGNED	-	MAF
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

BORING LOGS N-8 & N-9

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	312
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 14
15 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
825 Amherst Court, Suite 204
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(630) 955-2606

SOIL BORING LOG

PAGE 1 of 1
DATE 10-20-2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25' Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ35
Station
BORING NO. N-10
Station 310+86.Ø Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 681.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-dark brown (Fill) 680.5
	5			
	8			CLAY-brown & gray spotted black-hard (A-6) Fill
	13	4.5+P	13	
				678.Ø
	10			
	8			
-5	7	4.5P	12	CLAY-brown & gray-hard (A-6)
	5		119	
	8			
	12	5.5B	15	
				673.Ø
	6		128	
	8			
-10	10	7.1B	14	
				CLAY-gray-stiff to very stiff (A-6)
	3			
	4			
	4	1.Ø P	2Ø	
	2			
	4			
-15	6	1.25P	21	
	2		12Ø	
	4			
	6	2.5B	19	
	3			
	5			
-20	5	1.75P	2Ø	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	4		114	CLAY-gray-stiff to very stiff (A-6)
	5			
	7	2.78	16	
	6		124	
	8			
-25	8	2.75P	15	656.5
				End of Boring @ -25.Ø' Hollow Stem Augers D-120 Safety Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
825 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 955-2606

SOIL BORING LOG

PAGE 1 of 1
DATE 10/5/2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25' Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ35
Station
BORING NO. N-11
Station 311+60.8 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 681.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 669.4
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (A-7) 680.4
	7			
	7			CLAY to CLAY LOAM-brown & gray-hard (A-6) Fill
	9	4.5+P	12	
				677.9
	12		120	
	12			
-5	13	10.6B	14	CLAY-brown & gray-hard (A-6)
	5		112	
	12			
	14	8.1B	19	
	4		111	
	5			671.9
-10	3	2.7B	19	CLAY-gray-very stiff (A-6)
	4			670.4
	6			SANDY LOAM-gray-medium dense (A-2-4) ▼
	5	NP	16	
				667.9
	2		121	
	2			CLAY LOAM-gray-stiff (A-6)
-15	3	1.1B	22	
				665.4
	3		129	
	4			
	4	1.4B	24	CLAY-gray-stiff to hard (A-6)
	10		119	
	11			
-20	10	4.25B	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	2		114	CLAY-gray-stiff to hard (A-6)
	4			
	5	1.9B	18	
	8		116	
	9			
-25	10	2.1B	17	
	4		122	
	5			
	6	2.Ø P	17	
	7		121	
	8			651.4
-30	7	2.8B	15	End of Boring @ -30.Ø' Hollow Stem Augers D-120 Safety Hammer
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TYLIN INTERNATIONAL

DESIGNED	-	MAF
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

BORING LOGS N-10 & N-11

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ35

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	313
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 15
15 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
805 Amberly Court, Suite 204
Naperville, Illinois 60565
(630) 355-2538

SOIL BORING LOG

PAGE 1 of 1
DATE 10-20-2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer

STRUCT. NO. SN 049-W035
Station
BORING NO. N-12
Station 312+35.8 Ramp C Baseline
Offset 7.25' Right
Ground Surface Elev. 680.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 666.5
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	4			SANDY TOPSOIL-black (A-7)
678.0	4			
	4	4.5P	23	CLAY LOAM-gray- medium dense to very dense (A-4)
	5		110	CLAY-brown & gray- very stiff to hard (A-6)
-5	8	3.5B	17	
	5		118	
	9			
	10	3.1B	19	
671.5				
	6		114	
-10	10	8.4B	17	CLAY-gray-hard (A-6)
	13			
	6			
668.0	10			
	10	NP	10	CLAYEY SAND & GRAVEL-gray- medium dense (A-2-6)
▼ 666.5				
	4			
	3			SILTY CLAY LOAM-gray-loose (A-4/A-6)
-15	4	0.5P	13	
665.9				
	3			
	4			SILTY LOAM-gray-medium dense (A-4)
	7	NP	13	
661.5				
	3		118	CLAY LOAM-gray- medium dense to very dense (A-4)
	5			
-20	8	0.9B	12	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	3		118	
	4			
	7	0.5B	13	
	4		129	
	6			
-25	8	2.5B	13	
655.0				End of Boring @ -25.0' Hollow Stem Augers D-120 Safety Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TYLIN INTERNATIONAL

DESIGNED	-	MAF
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

BORING LOG N-12

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W035

Benchmark: BM #6 - Square cut in base of L.P. at N.E. corner of IL Route 132 and Magnolia (Speedway) 45.14' LT, Sta. 32+13.24 (IL 132 E.B. ℄). Elev. 696.47.

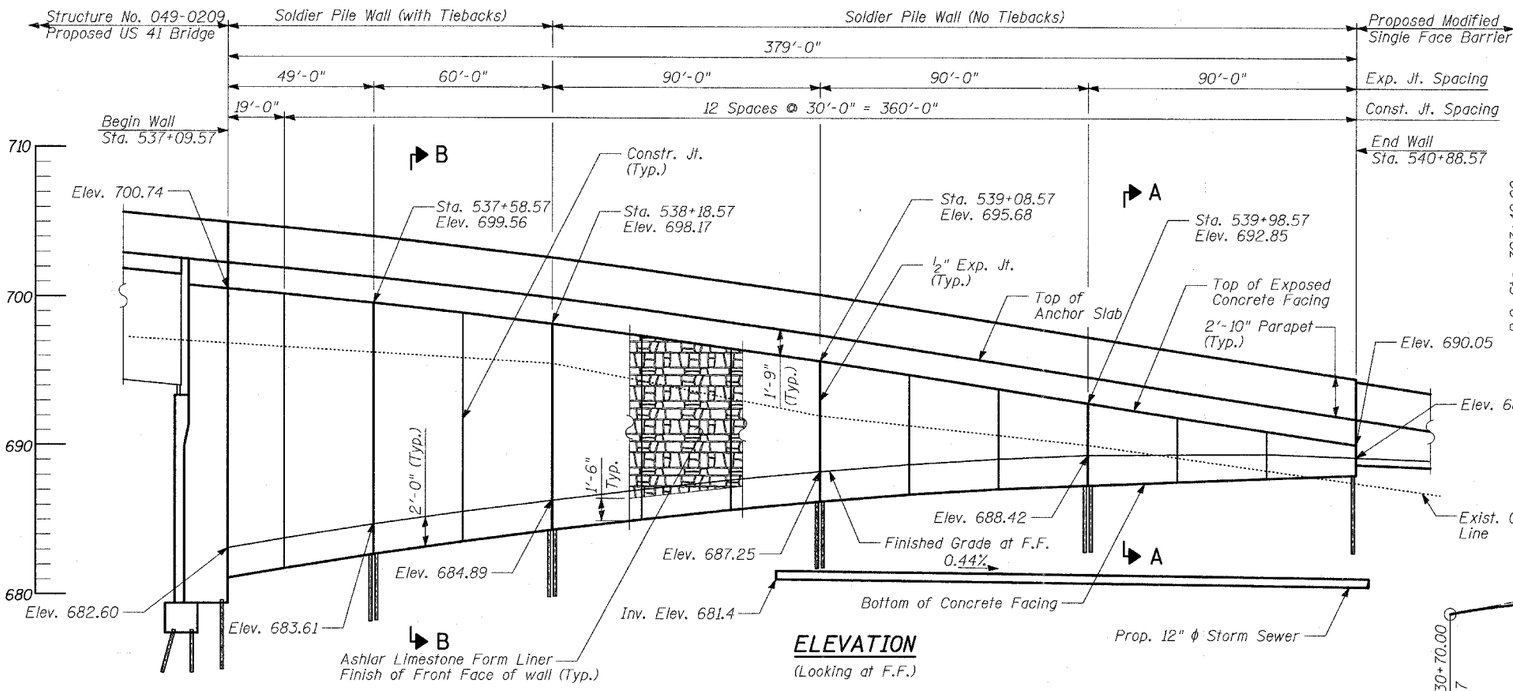
Existing Structure: None.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

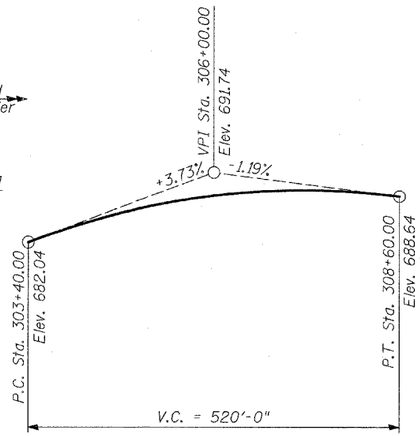
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	314
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 1 21 - SHEETS

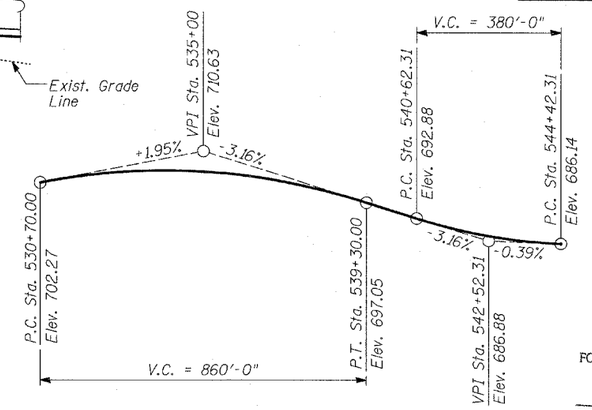
* 125X-HB-(1&2) R-1 CONTRACT # 60826



ELEVATION
(Looking at F.F.)



PROFILE GRADE RAMP C



PROFILE GRADE U.S. 41 S.B.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	CU YD	459
Concrete Structures	CU YD	219
Concrete Superstructure	CU YD	259
Protective Coat	SQ YD	580
Form Liner Textured Surface	SQ YD	417
Furnishing and Erecting Structural Steel	POUND	7,780
Stud Shear Connectors	EACH	778
Untreated Timber Lagging	SQ FT	3,746
Furnishing Soldier Piles (W Section)	FOOT	1,802
Reinforcement Bars, Epoxy Coated	POUND	49,810
Geocomposite Wall Drain	SQ YD	438
Pipe Underdrains for Structures, 4"	FOOT	379
Drilling and Setting Soldier Piles (in Soil)	CU FT	9,220
~~Anti-Graffiti Coating~~	~~SQ FT~~	5,262

DESIGN SPECIFICATIONS
2002 AASHTO Standard Specifications For Highway Bridges

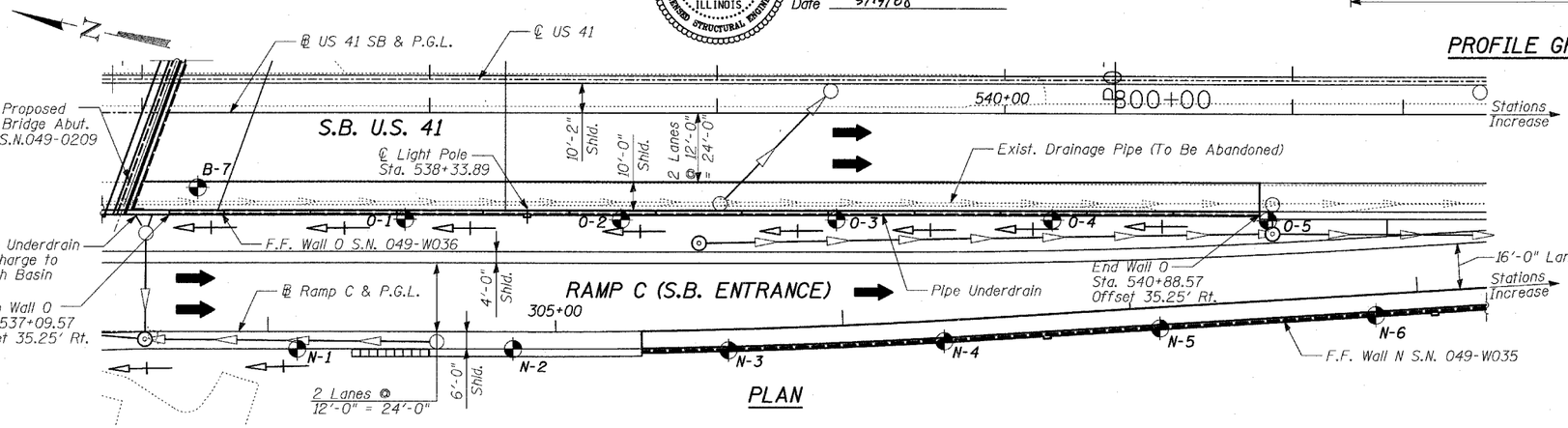
DESIGN STRESSES
FIELD UNITS
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 36,000 psi (structural steel M270 Grade 36)
f'_s = 150,000 psi (tierods)

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
SPIROS PANTAZIS
081-006448
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

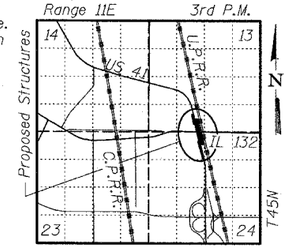
Signed _____
Spiros Pantazis, S.E. Il. Lic. No. 081-006448 Expires 11-30-2008.
For drawings 1 thru 21 of 21

Date 5/14/08



PLAN

NOTES:
1. Wall stations and offsets are given to the front face of the concrete facing, and are measured from US 41 SB Baseline.
2. Existing utilities in conflict with soldier pile wall construction shall be abandoned or relocated according to direction given in roadway plans
3. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60 (IL Modified). See Special Provisions.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. All exposed concrete edges shall be chamfered ¾" except as noted.
6. Slipforming of the parapet is not allowed.
7. All construction joints shall be bonded.
8. Soldier Pile Wall design can accomodate disturbance in front of wall for installation of proposed storm sewer. Lagging pay limits are to proposed bottom of C.I.P. concrete facing.



LOCATION SKETCH

INDEX OF SHEETS

TY·LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	CM/AD
DRAWN	-	DE
CHECKED	-	CM/AD

LEGEND
- Manhole
- Catch Basin
- Soil Boring
- Prop. Storm Sewer
- Exist. Drain Pipe
- Proposed Drainage Swale

WALL O
GENERAL PLAN
STA 537+09.59 TO STA 540+88.57

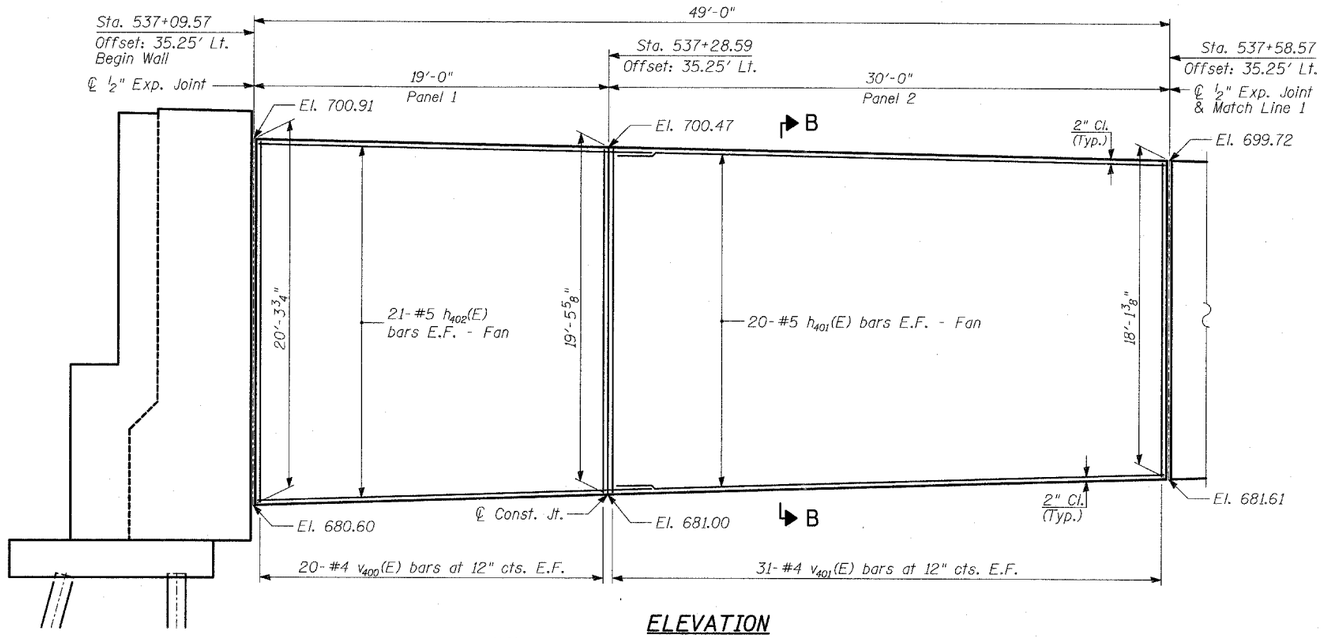
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ36

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	315
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. - 2
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

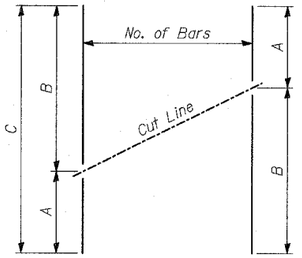


ELEVATION

(Offsets are Given From US41 SB Baseline to F.F. of Wall)

BAR TABLE SCHEDULE

Bar	No. of Sets Required	No. of Bars Per Set	A	B	C
$v_{400}(E)$	1	20	20'-0"	19'-2"	39'-2"
$v_{401}(E)$	1	31	19'-2"	17'-10"	37'-0"
$v_{402}(E)$	1	31	17'-10"	16'-7"	34'-5"
$v_{403}(E)$	1	31	16'-7"	15'-2"	31'-9"
$v_{404}(E)$	1	31	15'-2"	13'-7"	28'-9"
$v_{405}(E)$	1	31	13'-7"	11'-11"	25'-6"
$v_{406}(E)$	1	31	11'-11"	10'-4"	22'-3"
$v_{407}(E)$	1	31	10'-4"	9'-1"	19'-5"
$v_{408}(E)$	1	31	9'-1"	7'-9"	16'-10"
$v_{409}(E)$	1	31	7'-9"	5'-6"	13'-3"
$v_{410}(E)$	1	31	5'-6"	4'-6"	10'-0"
$v_{411}(E)$	1	31	4'-6"	3'-6"	8'-0"
$v_{412}(E)$	1	31	3'-6"	2'-7"	6'-1"

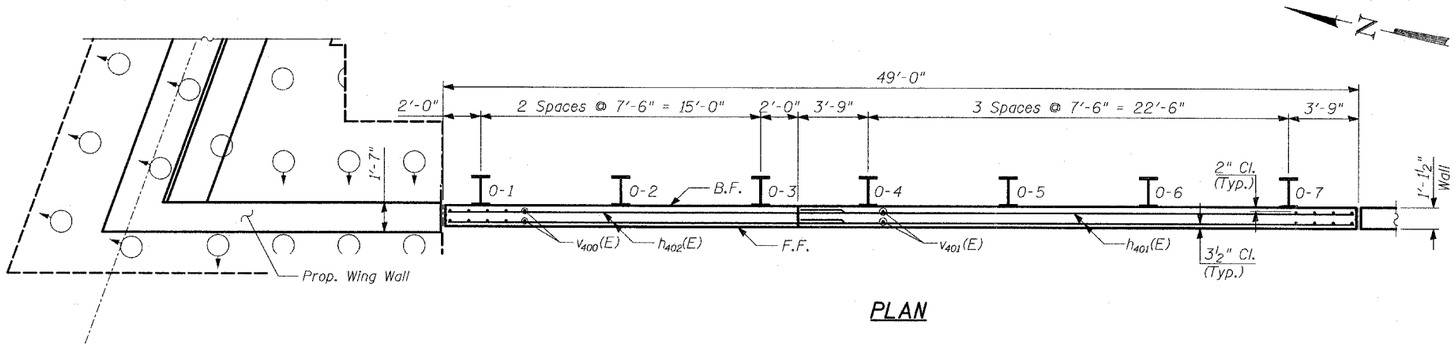


SERIES OF BAR CUTTING DIAGRAM

See table for dimensions.
Order Bars Full Length. Cut as Shown Normal
to Bar Axis and Use Remainder of Bars in Opposite Face.

BILL OF MATERIAL

Bar	Number	Size	Length	Shape
$v_{400}(E)$	20	#4	39'-2"	
$v_{401}(E)$	31	#4	37'-0"	
$v_{402}(E)$	31	#4	34'-5"	
$v_{403}(E)$	31	#4	31'-9"	
$v_{404}(E)$	31	#4	28'-9"	
$v_{405}(E)$	31	#4	25'-6"	
$v_{406}(E)$	31	#4	22'-3"	
$v_{407}(E)$	31	#4	19'-5"	
$v_{408}(E)$	31	#4	16'-10"	
$v_{409}(E)$	31	#4	13'-3"	
$v_{410}(E)$	31	#4	10'-0"	
$v_{411}(E)$	31	#4	8'-0"	
$v_{412}(E)$	31	#4	6'-1"	
$h_{400}(E)$	172	#5	32'-0"	
$h_{401}(E)$	130	#5	29'-8"	
$h_{402}(E)$	42	#5	21'-0"	
Reinforcement Bars, Epoxy Coated		Pound	16,460	
Concrete Structures		CU YD	180	
Anti-Graffiti Coating		SQ FT	5,262	
Furnishing Soldier Piles (W Section)		FOOT	1,802	
Drilling and Setting Soldier Piles (in Soil)		CU FT	9,220	



PLAN

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	TB
CHECKED	-	AD

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
0-1	W18x119	37'-9"	699.4	661.6
0-2	W18x119	37'-9"	699.2	661.4
0-3	W18x119	37'-9"	699.0	661.3
0-4	W18x119	36'-10"	698.9	662.0
0-5	W18x119	36'-10"	698.7	661.9
0-6	W18x119	36'-10"	698.5	661.7
0-7	W18x119	36'-10"	698.3	661.5

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 7 thru 14 of 21.
5. Pile spacing measured along front face of wall.
6. For Section B-B, see Sheet 8 of 21.

WALL 0
PLAN AND ELEVATION
STA 537+09.59 TO STA 537+58.57

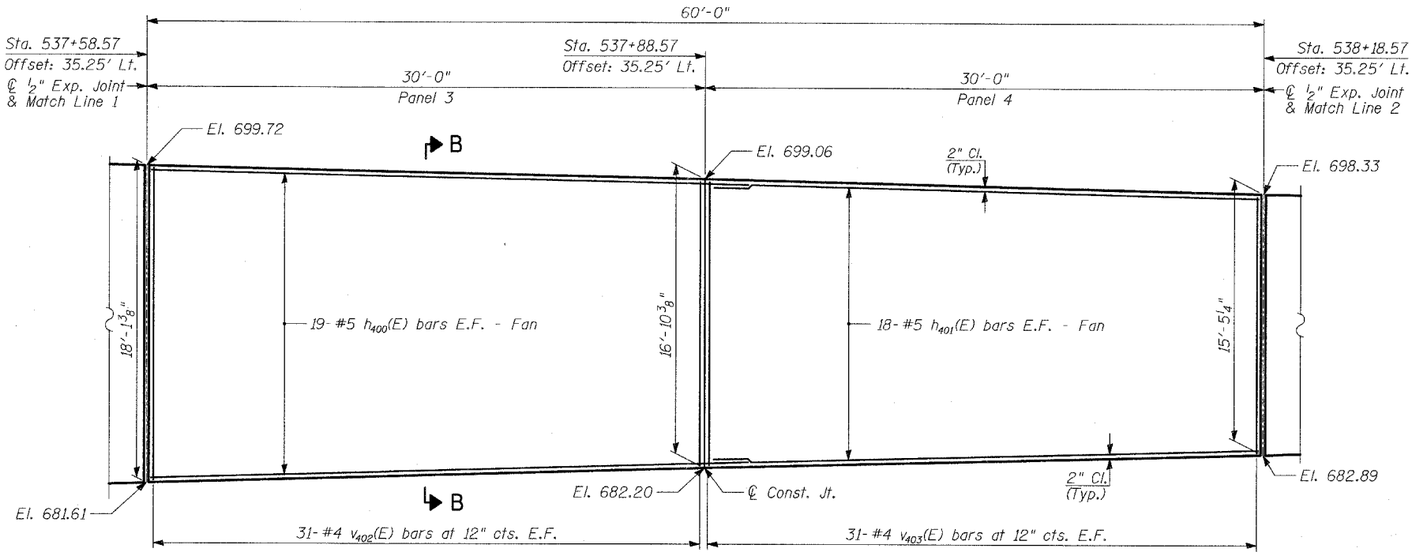
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	316
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 3
21 - SHEETS

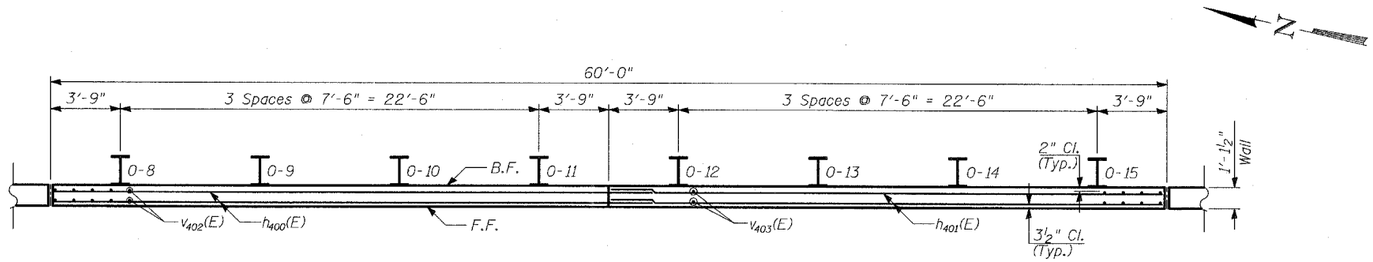
* 125X-HB-(1&2) R-1 CONTRACT # 60826

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

(Offsets are Given From US41 SB Baseline to F.F. of Wall)



PLAN

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
0-8	W18x119	33'-6"	698.1	664.6
0-9	W18x119	33'-6"	698.0	664.5
0-10	W18x119	33'-6"	697.8	664.3
0-11	W18x119	33'-6"	697.6	664.1
0-12	W18x119	32'-3"	697.5	665.2
0-13	W18x119	32'-3"	697.3	665.0
0-14	W18x119	32'-3"	697.1	664.9
0-15	W18x119	32'-3"	696.9	664.7

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 7 thru 14 of 21.
5. Pile spacing measured along front face of wall.
6. For Bill of Material, see Sheet 2 of 21.
7. For Section B-B, see Sheet 8 of 21.

TY-LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	TB
CHECKED	-	AD

WALL O
PLAN AND ELEVATION
STA 537+58.57 TO STA 538+18.57

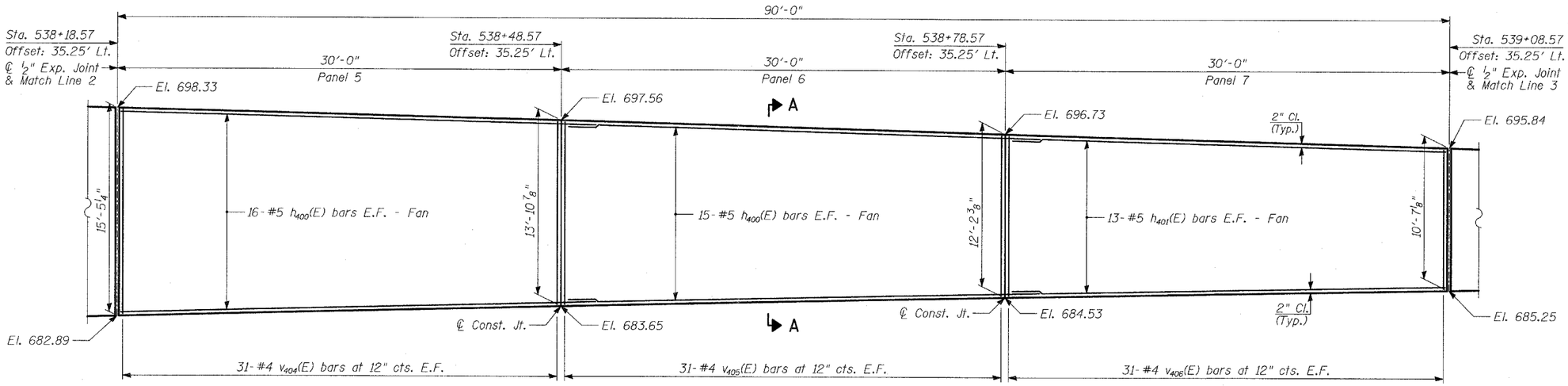
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ36

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	317
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

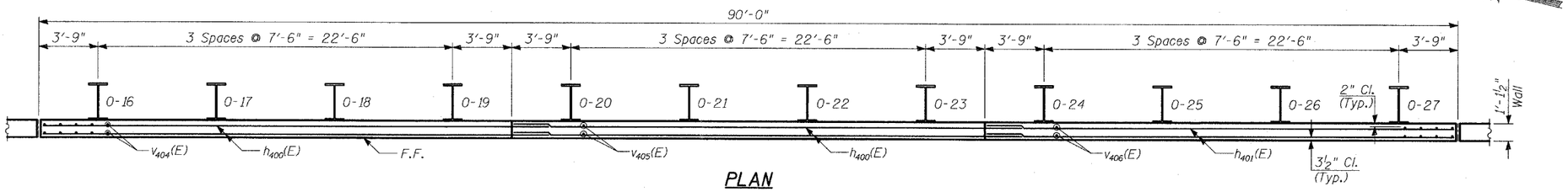
SHEET NO. - 4
21 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826



ELEVATION

(Offsets are Given From US41 SB Baseline to F.F. of Wall)



PLAN

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
0-16	W27x194	44'-10"	696.7	651.9
0-17	W27x194	44'-10"	696.5	651.7
0-18	W27x194	44'-10"	696.4	651.5
0-19	W27x194	44'-10"	696.2	651.3
0-20	W27x194	43'-3"	696.0	652.7
0-21	W27x194	43'-3"	695.8	652.5
0-22	W27x194	43'-3"	695.5	652.3
0-23	W27x194	43'-3"	695.3	652.1
0-24	W27x194	41'-6"	695.1	653.6
0-25	W27x194	41'-6"	694.9	653.4
0-26	W27x194	41'-6"	694.7	653.2
0-27	W27x194	41'-6"	694.5	653.0

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 7 thru 14 of 21.
5. Pile spacing measured along front face of wall.
6. For Bill of Material, see Sheet 2 of 21.
7. For Section A-A, see Sheet 7 of 21.

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	TB
CHECKED	-	AD

WALL O
PLAN AND ELEVATION
STA 538+18.57 TO STA 539+08.57

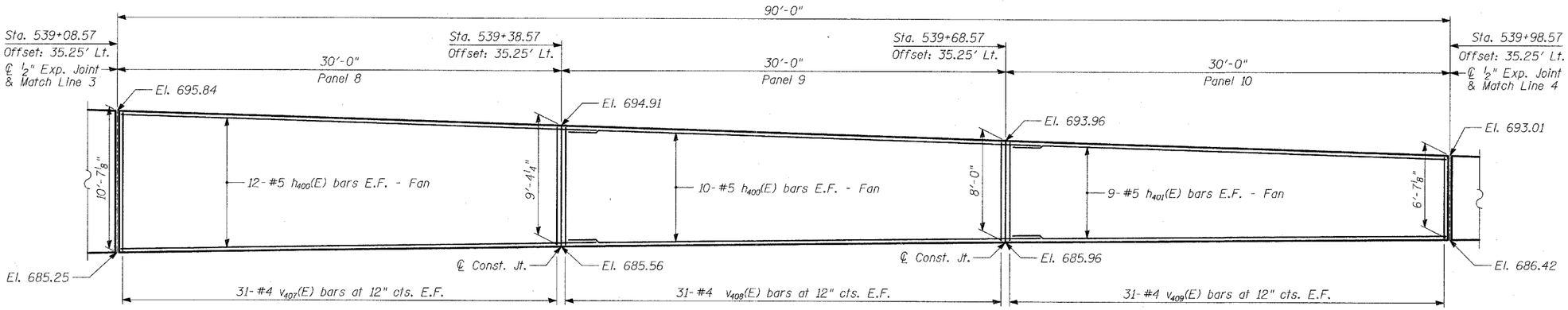
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	318
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 5
21 - SHEETS

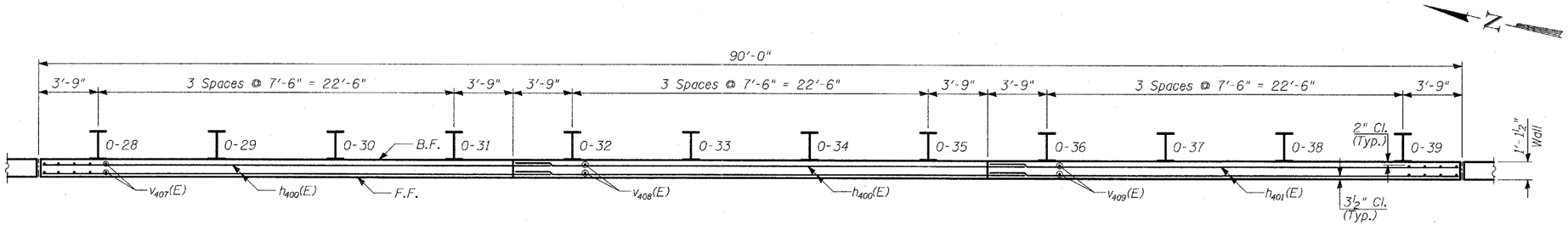
* 125X-HB-(1&2) R-1 CONTRACT * 60826

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

(Offsets are Given From US41 SB Baseline to F.F. of Wall)



PLAN

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
0-28	W21x111	36'-0"	694.2	658.2
0-29	w21X111	36'-0"	694.0	658.0
0-30	W21x111	36'-0"	693.8	657.8
0-31	W21x111	36'-0"	693.5	657.5
0-32	W21x111	34'-9"	693.3	658.5
0-33	w21X111	34'-9"	693.1	658.3
0-34	W21x111	34'-9"	692.8	658.1
0-35	W21x111	34'-9"	692.6	657.8
0-36	W21x111	33'-4"	692.3	659.0
0-37	W21X111	33'-4"	692.1	658.8
0-38	W21x111	33'-4"	691.9	658.5
0-39	W21x111	33'-4"	691.6	658.3

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 7 thru 14 of 21.
5. Pile spacing measured along front face of wall.
6. For Bill of Material, see Sheet 2 of 21.
7. For Section A-A, see Sheet 7 of 21.

TY-LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	TB
CHECKED	-	AD

WALL O
PLAN AND ELEVATION
STA 539+08.57 TO STA 539+98.57

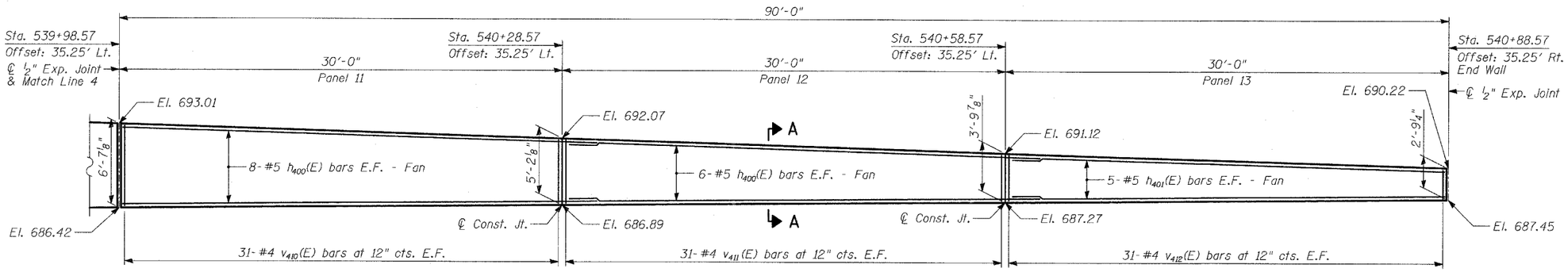
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	319
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

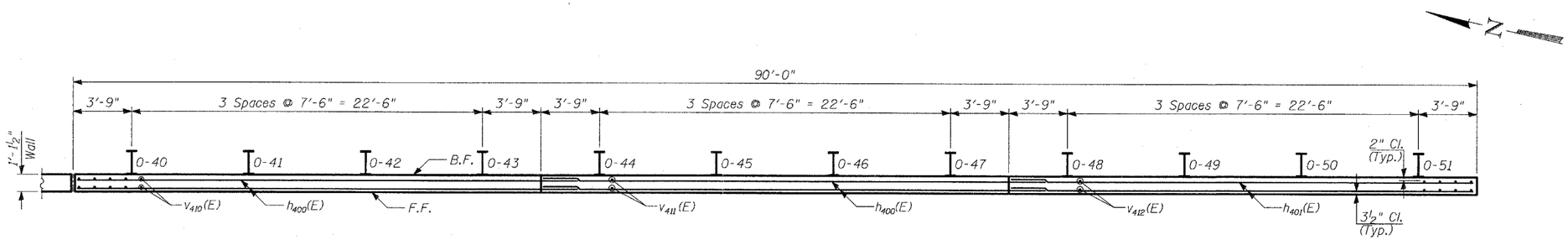
SHEET NO. - 6
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826



ELEVATION

(Offsets are Given From US41 SB Baseline to F.F. of Wall)



PLAN

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
0-40	W18x65	29'-11"	691.4	661.5
0-41	W18x65	29'-11"	691.2	661.2
0-42	W18x65	29'-11"	690.9	661.0
0-43	W18x65	29'-11"	690.7	660.8
0-44	W18x65	28'-7"	690.5	661.9
0-45	W18x65	28'-7"	690.2	661.6
0-46	W18x65	28'-7"	690.0	661.4
0-47	W18x65	28'-7"	689.7	661.2
0-48	W18x65	27'-3"	689.5	662.3
0-49	W18x65	27'-3"	689.3	662.0
0-50	W18x65	27'-3"	689.1	661.8
0-51	W18x65	27'-3"	688.8	661.6

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 7 thru 14 of 21.
5. Pile spacing measured along front face of wall.
6. For Bill of Material, see Sheet 2 of 21.
7. For Section A-A, see Sheet 7 of 21.

TY·LIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- TB
CHECKED	- AD

WALL 0
PLAN AND ELEVATION
STA STA 539+98.57 TO STA 540+88.57

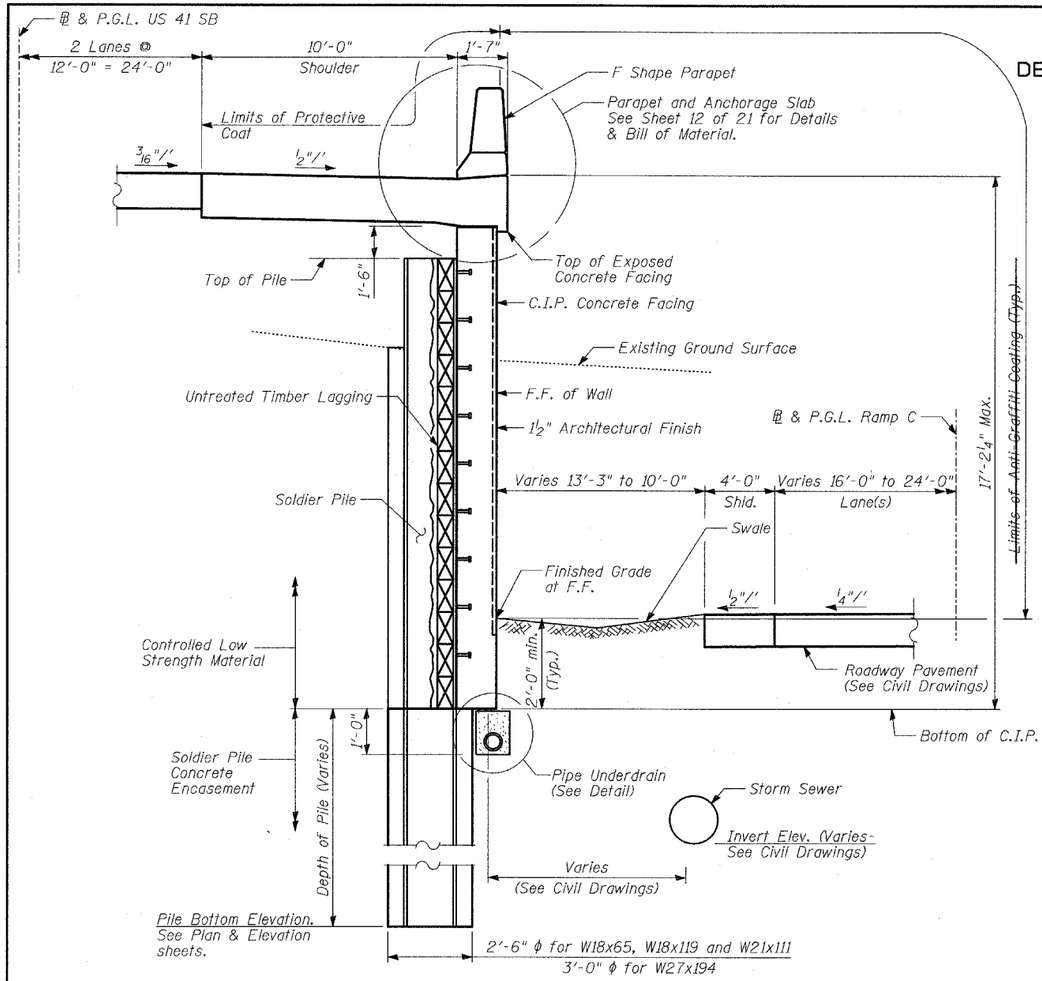
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	320
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

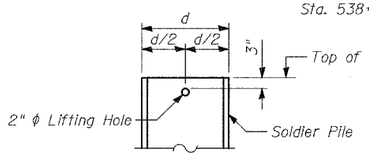
SHEET NO. - 7
21 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826



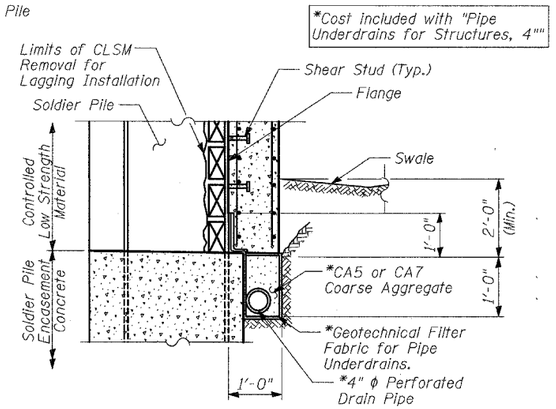
SECTION A-A

Sta. 538+18.57 to Sta. 540+88.57

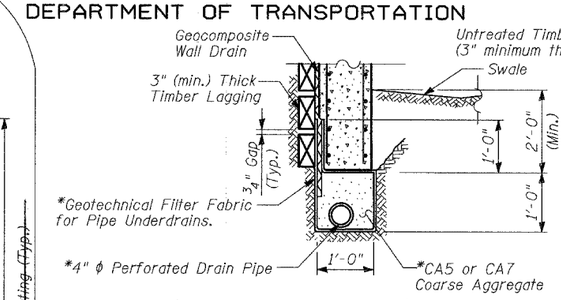


LIFTING HOLE DETAIL

Lifting Hole to be Provided if Necessary. Cost included with "Furnishing Soldier Piles (W Section).

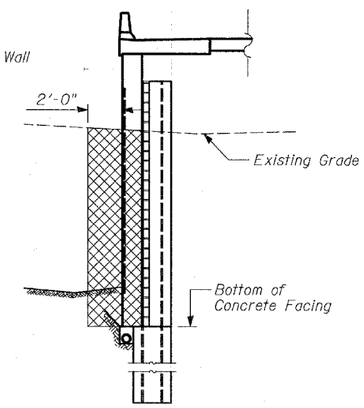


PIPE UNDERDRAIN DETAIL AT SOLDIER PILE



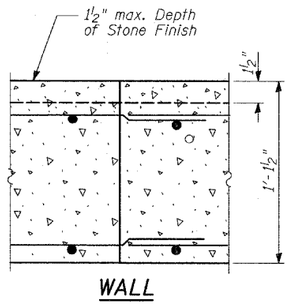
PIPE UNDERDRAIN DETAIL BETWEEN SOLDIER PILES

*Included in the cost of "Pipe Underdrains for Structures"



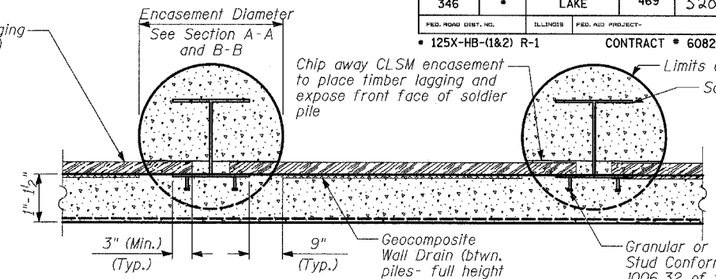
STRUCTURE EXCAVATION

(For Proposed Wall)

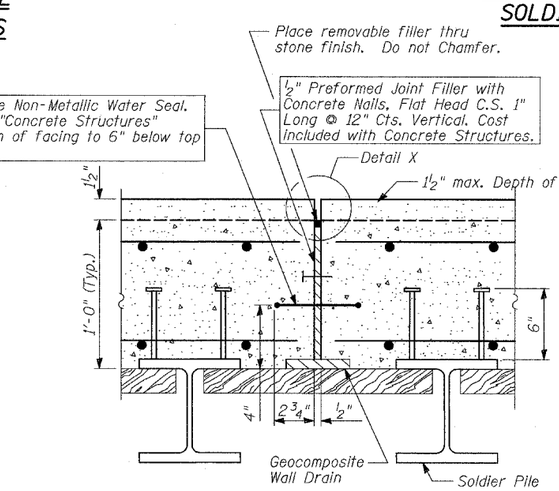


WALL

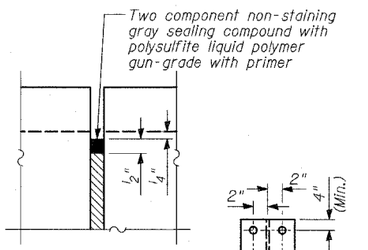
CONSTRUCTION JOINT DETAIL



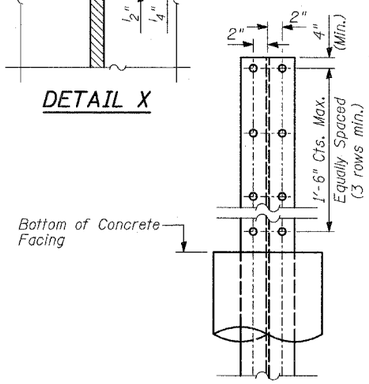
TYPICAL SECTION THRU SOLDIER PILE WALL



EXPANSION JOINT DETAIL



DETAIL X



SHEAR STUD CONNECTOR DETAIL

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	CU YD	318
Stud Shear Connectors	EACH	778
Untreated Timber Lagging	SQ FT	3,746
Geocomposite Wall Drain	SQ YD	438
Pipe Underdrains for Structures, 4"	FOOT	379

NOTES:

1. The Geocomposite Wall Drain shall be constructed according to Section 591 of the Standard Specifications.
2. The Contractor is responsible for the design and performance of the lagging using no less than 3" nominal rough-sawn thickness and the minimum tabulated unit stress in bending (f_b), used in the design of timber lagging shall be 1000 psi.
3. Stud shear connectors shall be 3/4" ϕ x 6" granular or solid flux filled headed studs, automatically end welded to the front flange of the soldier piles.

TY-LIN INTERNATIONAL

DESIGNED	MB
CHECKED	AD
DRAWN	CM
CHECKED	MB

WALL 0 SECTIONS AND DETAILS
(1 OF 2)

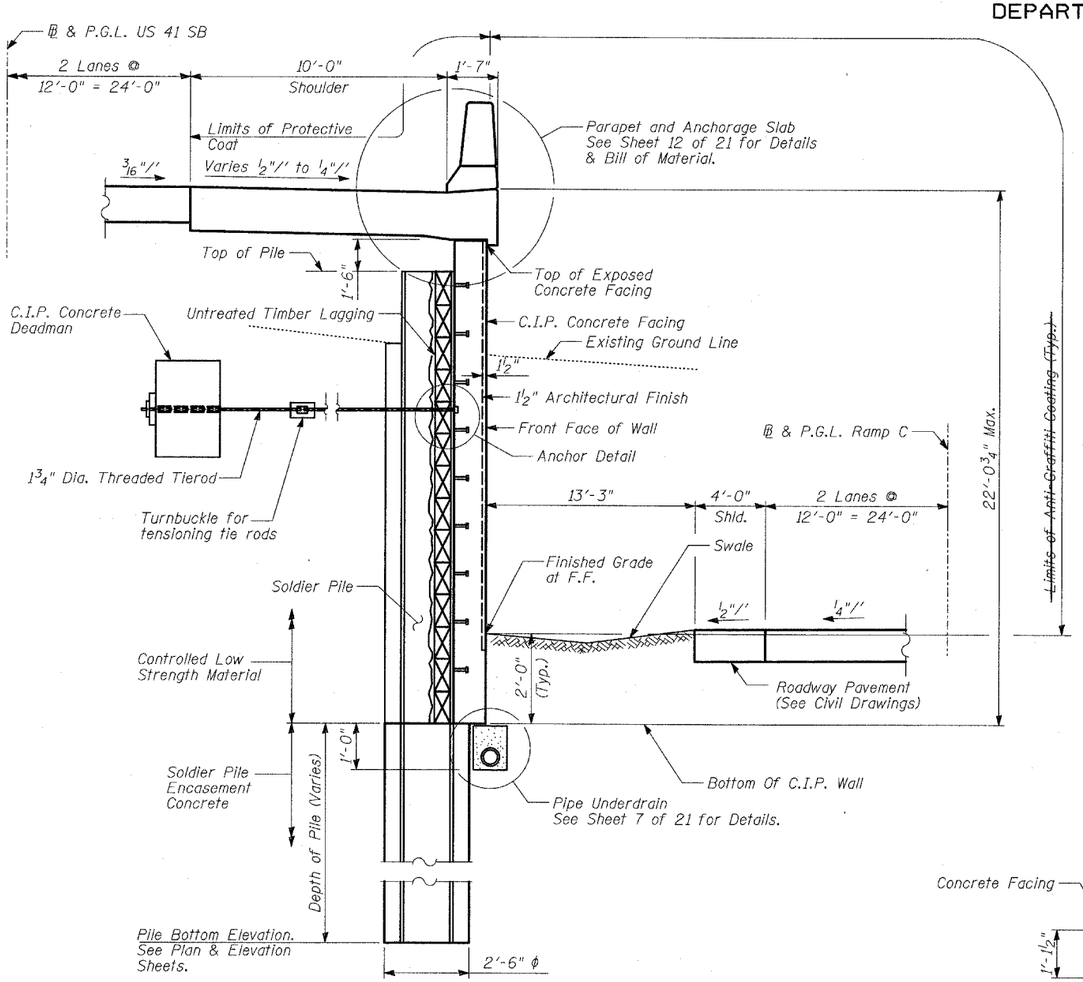
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ36

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

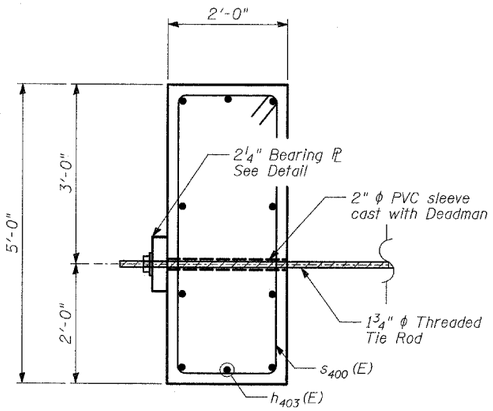
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	321
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. - 8
21 - SHEETS

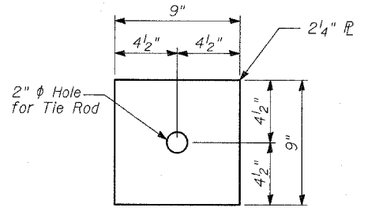
• 125X-HB-(1&2) R-1 CONTRACT # 60826



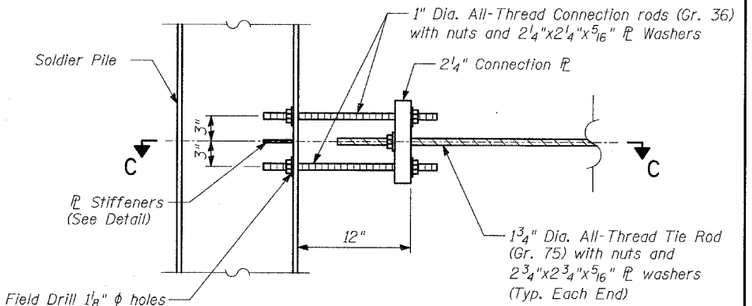
SECTION B-B
Sta. 537+09.57 to Sta. 538+18.57



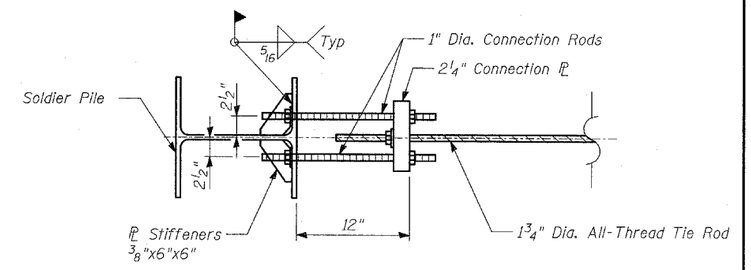
SECTION - CONCRETE DEADMAN



BEARING PLATE DETAIL



ANCHOR DETAIL (ELEVATION)



SECTION C-C (PLAN)

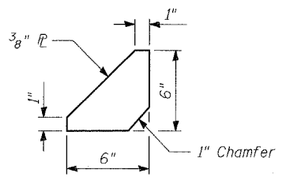
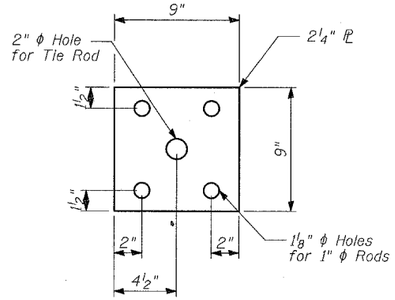
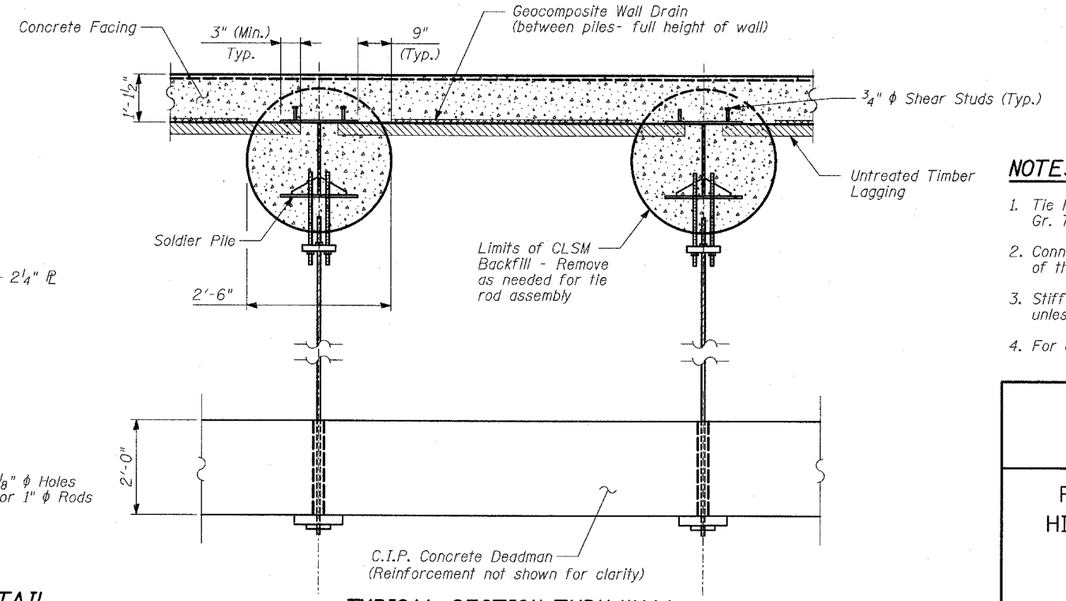


PLATE STIFFENER DETAIL



CONNECTION PLATE DETAIL



TYPICAL SECTION THRU WALL
(With Tiebacks)

NOTES:

1. Tie Rods shall meet the requirements of ASTM A615, Gr. 75 of the diameter specified.
2. Connection Rods shall meet the requirements of ASTM A36 of the diameter specified.
3. Stiffener, Bearing, and Connection plates shall be ASTM A36, unless otherwise noted.
4. For additional Soldier Pile Wall details, see Sheet 7 of 21.

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	CM
CHECKED	-	AD

WALL 0 SECTIONS AND DETAILS
(2 OF 2)

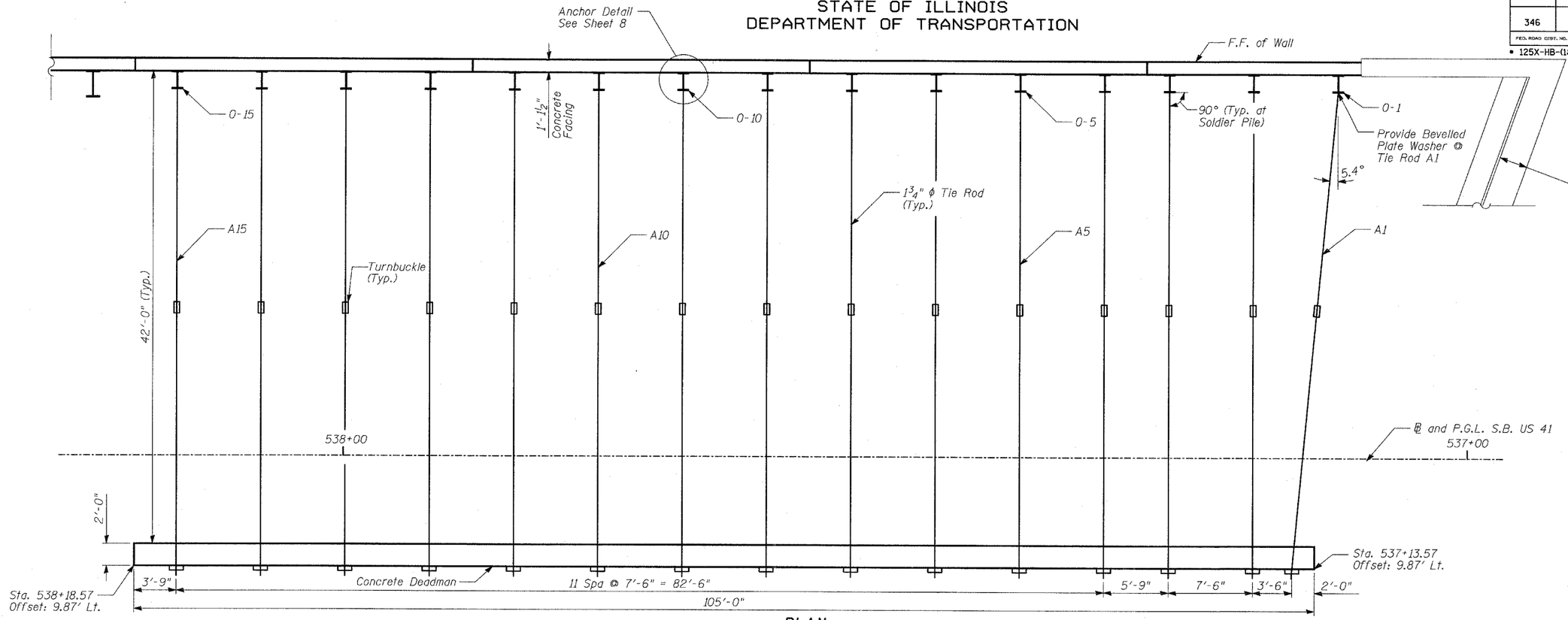
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

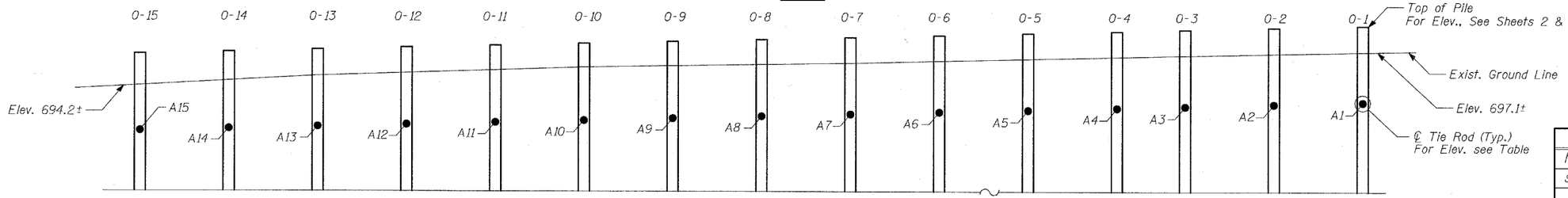
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	322
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. - 9
21 - SHEETS

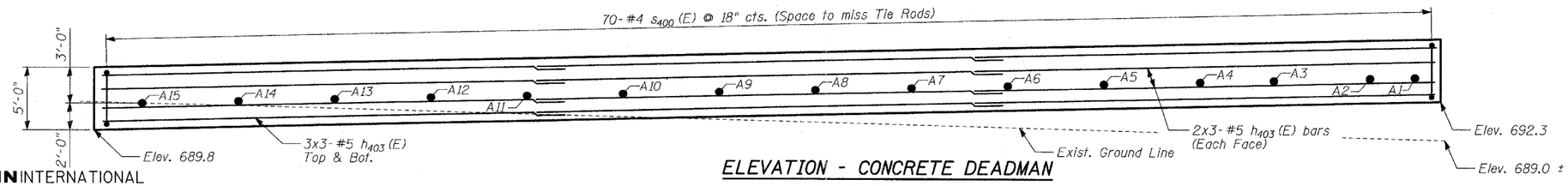
• 125X-HB-(1&2) R-1 CONTRACT # 60826



PLAN



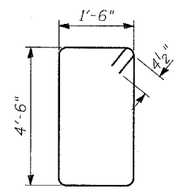
ELEVATION - SOLDIER PILES
(Looking West)



ELEVATION - CONCRETE DEADMAN
(Looking West)

ANCHOR TIE ROD

Anchor Tie Rod	Elevation
A1	694.3
A2	694.1
A3	693.9
A4	693.8
A5	693.6
A6	693.4
A7	693.2
A8	693.0
A9	692.9
A10	692.7
A11	692.5
A12	692.4
A13	692.2
A14	692.0
A15	691.8



BAR s_{400} (E)

DEADMAN BAR LIST AND BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{403} (E)	30	#5	36'-4"	
s_{400} (E)	70	#4	12'-9"	
Reinforcement Bars, Epoxy Coated			POUND	1,740
Concrete Structures			CU YD	39
Furnishing and Erecting Structural Steel			POUND	7,780
Structure Excavation			CU YD	141

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

TYLIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

WALL 0
TIE BACK AND DEADMAN DETAILS

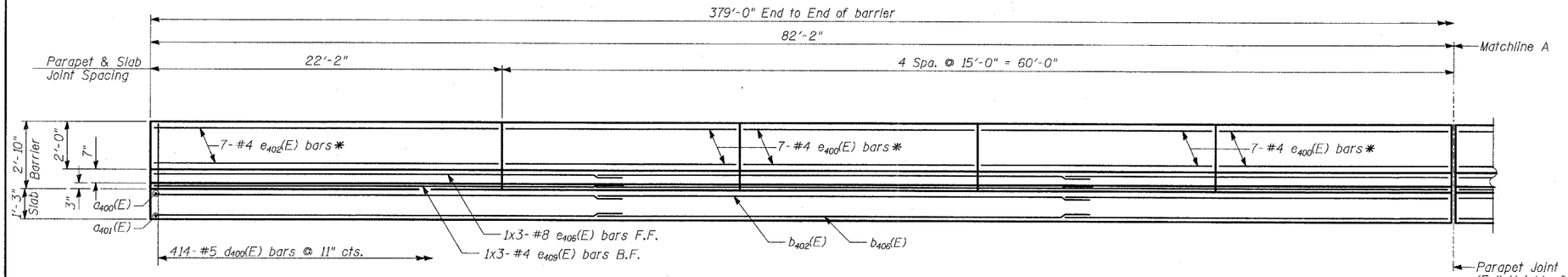
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ36

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	323
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

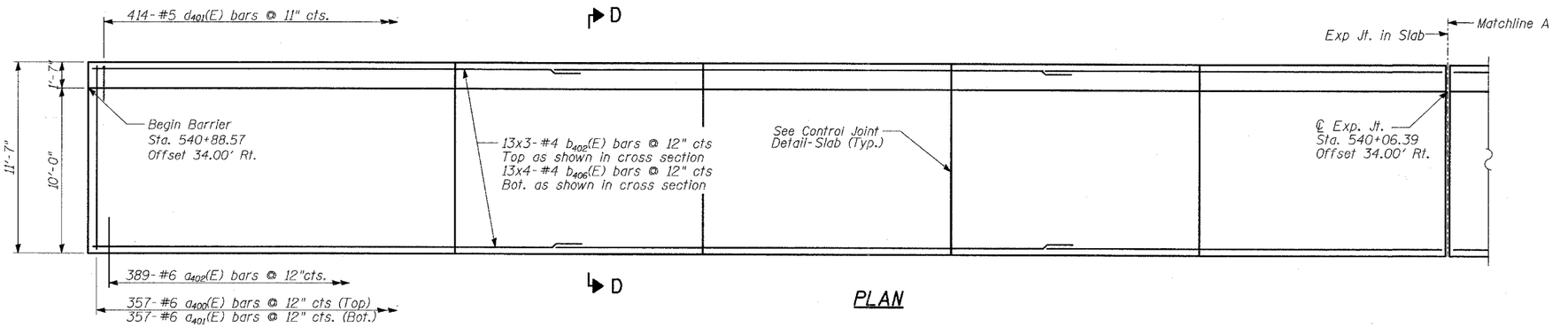
SHEET NO. - 10
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

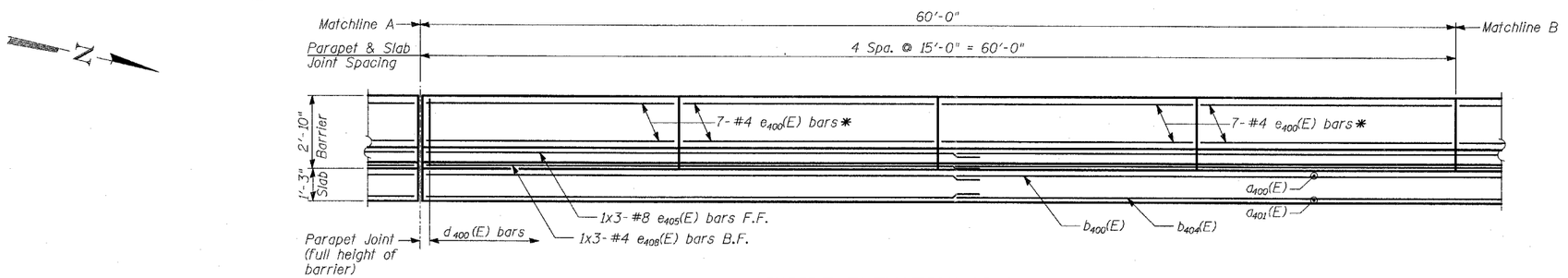


INSIDE ELEVATION OF BARRIER

* See Section D-D on Sheet 12 of 21

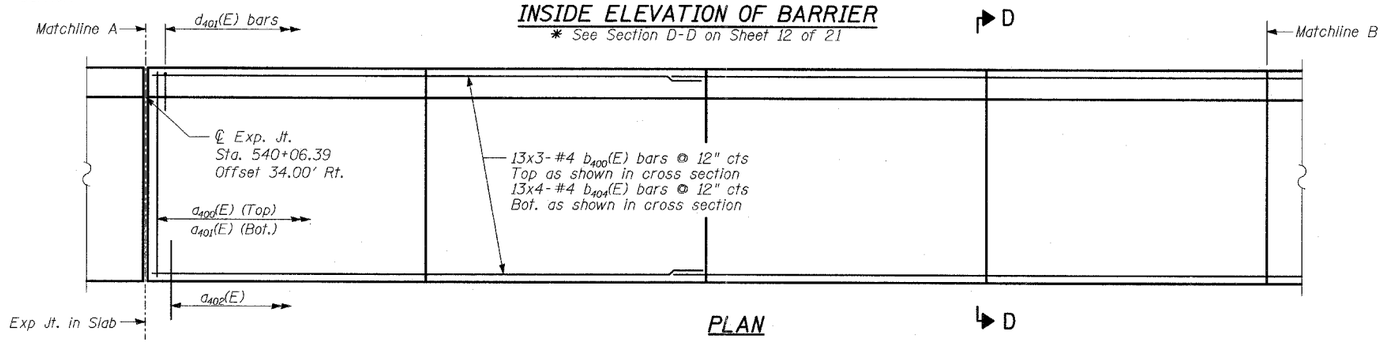


PLAN



INSIDE ELEVATION OF BARRIER

* See Section D-D on Sheet 12 of 21



PLAN

NOTES:

1. Offsets are measured from ℄ & P.G.L. SB US 41.
2. Work this sheet with Sheets 11 thru 13 of 21.
3. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

TY·LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	DE
CHECKED	-	AD

WALL 0
ANCHORAGE SLAB AND PARAPET
(1 OF 3)

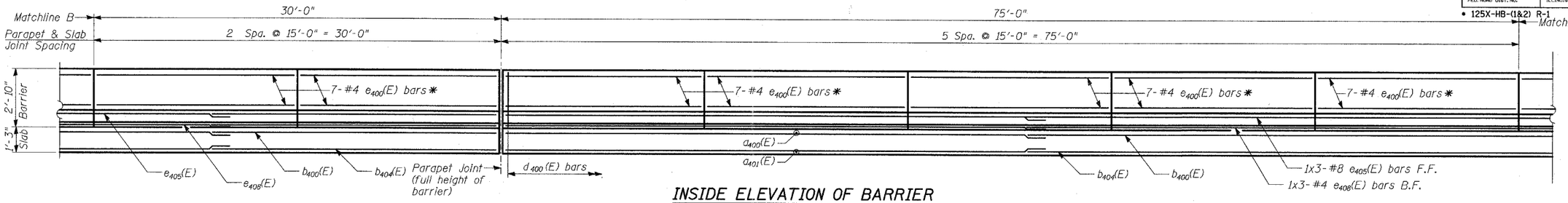
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	324
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

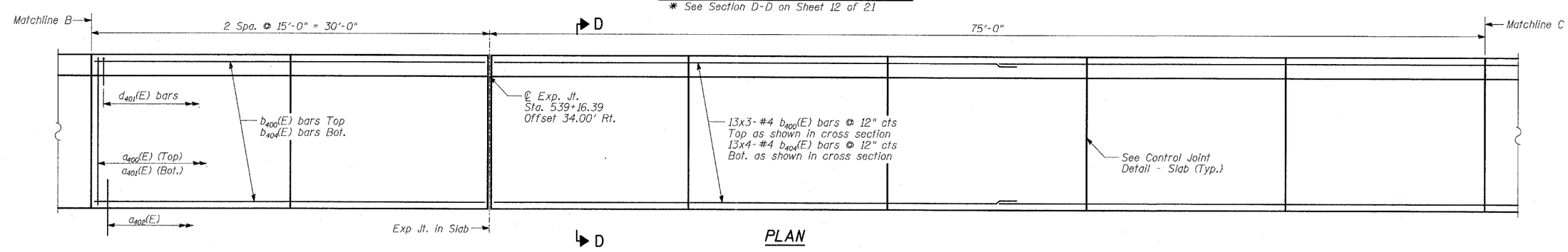
SHEET NO. - 11
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826

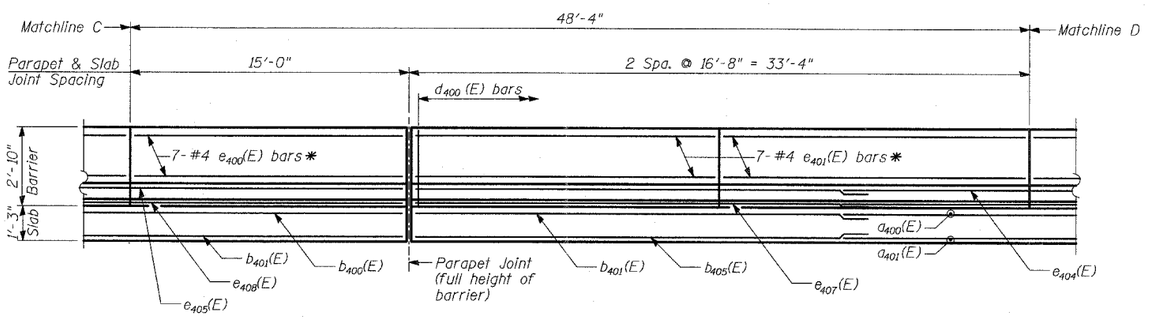


INSIDE ELEVATION OF BARRIER

* See Section D-D on Sheet 12 of 21

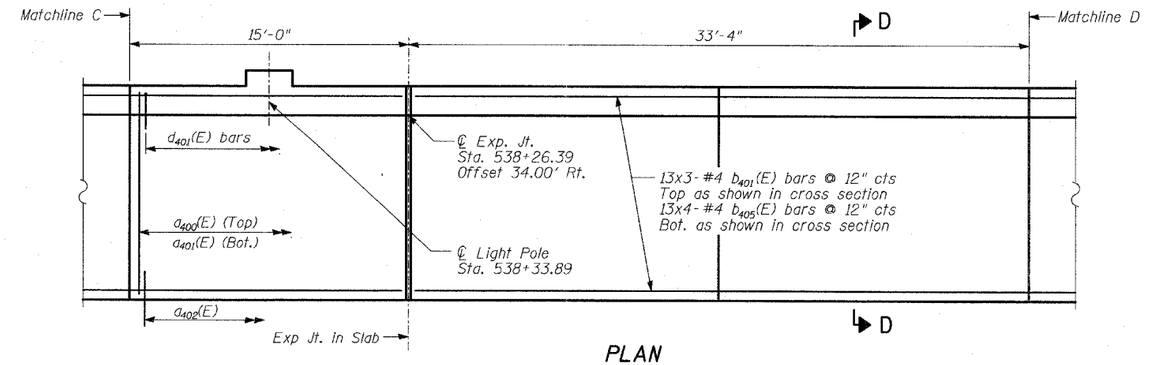


PLAN



INSIDE ELEVATION OF BARRIER

* See Section D-D on Sheet 12 of 21



PLAN

N

NOTES:

1. Offsets are measured from ℄ & P.G.L. SB US 41.
2. Work this sheet with Sheets 10, 12, and 13 of 21.
3. See Sheet 13 of 21 for Light Pole Mount Details.
4. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

TY·LIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- DE
CHECKED	- AD

WALL 0
ANCHORAGE SLAB AND PARAPET
(2 OF 3)

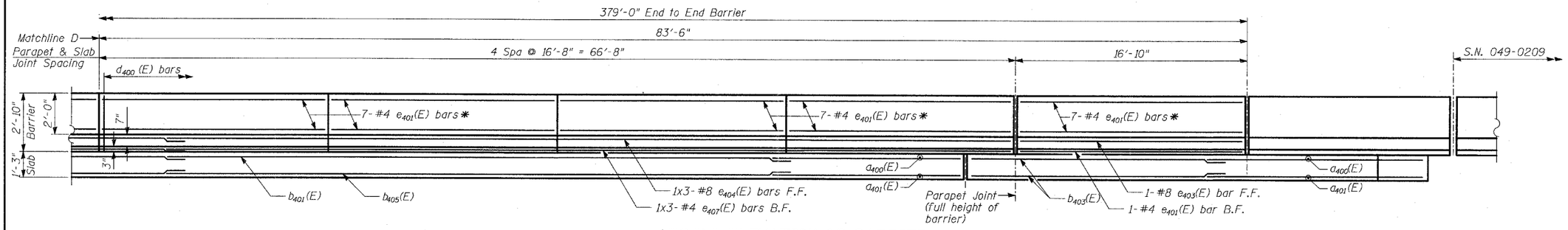
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	325
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

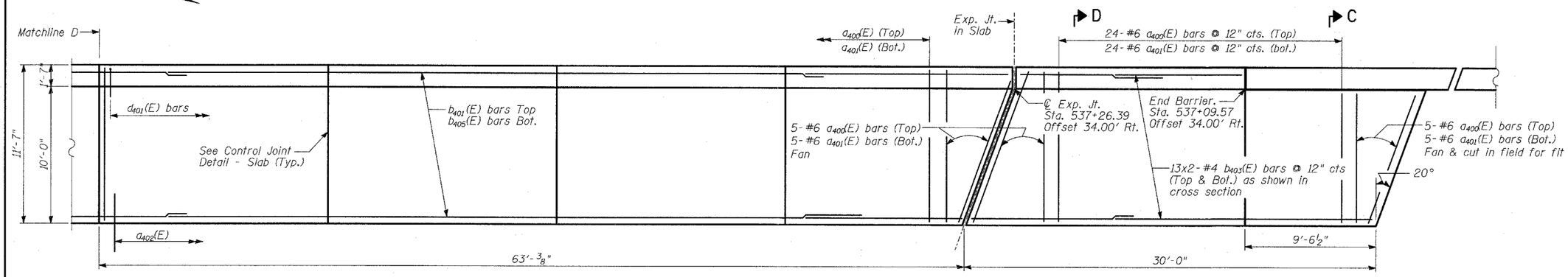
SHEET NO. - 12
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826

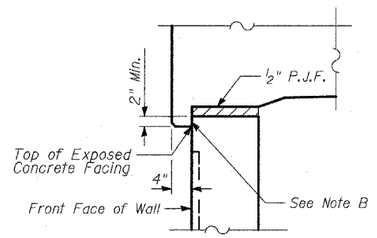


INSIDE ELEVATION OF BARRIER

* See Section D-D

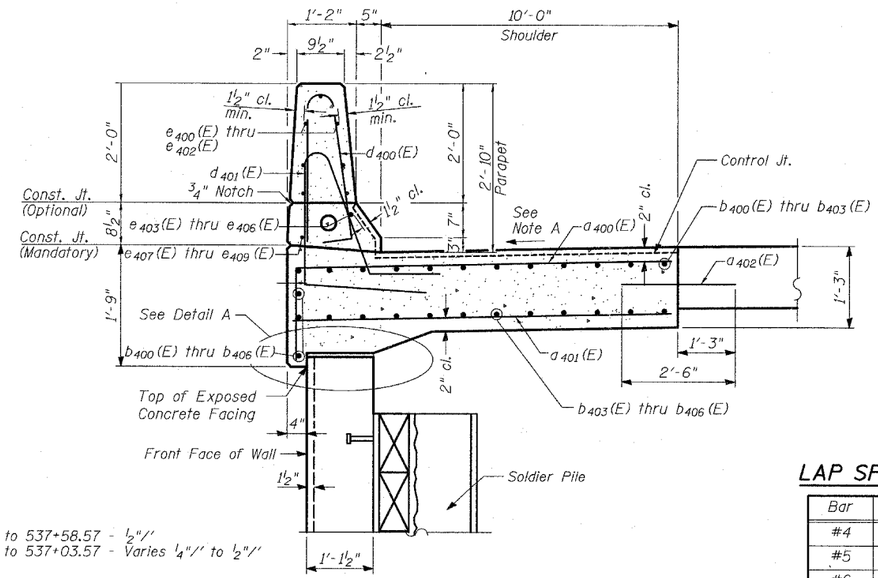


PLAN



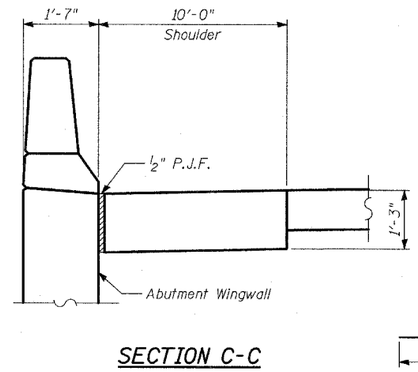
DETAIL A

Note B:
Bond breaker membrane on top of fascisa wall.

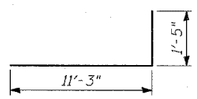


Note A:
Sta. 540+88.57 to 537+58.57 - 1/2"/'
Sta. 537+58.57 to 537+03.57 - Varies 1/4"/' to 1/2"/'

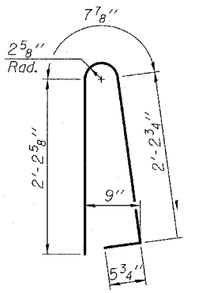
SECTION D-D



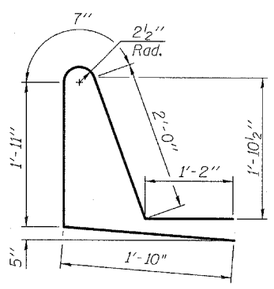
SECTION C-C



BAR a_{400}(E)



BAR d_{400}(E)



BAR d_{401}(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{400}(E)	396	#6	12'-8"	
a_{401}(E)	396	#6	11'-3"	
a_{402}(E)	389	#6	2'-6"	
b_{400}(E)	78	#4	31'-0"	
b_{401}(E)	39	#4	34'-4"	
b_{402}(E)	39	#4	28'-5"	
b_{403}(E)	52	#4	15'-9"	
b_{404}(E)	104	#4	23'-8"	
b_{405}(E)	52	#4	26'-2"	
b_{406}(E)	52	#4	21'-9"	
d_{400}(E)	414	#5	5'-7"	
d_{401}(E)	414	#5	7'-5"	
d_{402}(E)	3	#6	4'-5"	
d_{403}(E)	5	#6	8'-11"	
e_{400}(E)	96	#4	14'-8"	
e_{401}(E)	36	#4	16'-4"	
e_{402}(E)	6	#4	16'-6"	
e_{403}(E)	6	#8	36'-3"	
e_{404}(E)	2	#8	16'-6"	
e_{405}(E)	12	#8	32'-11"	
e_{406}(E)	12	#5	31'-4"	
e_{407}(E)	6	#5	34'-8"	
e_{408}(E)	2	#5	16'-6"	
e_{409}(E)	6	#4	21'-10"	
e_{410}(E)	6	#8	30'-4"	
e_{411}(E)	6	#5	28'-9"	
Concrete Superstructure		CU YD	259	
Reinforcement Bars, Epoxy Coated		Pound	31,610	
Protective Coat		SQ YD	580	

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. Offsets are measured from ℄ & P.G.L. SB US 41.
2. Work this sheet with Sheets 10, 11 and 13 of 21.
3. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

TY·LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	DE
CHECKED	-	AD

WALL 0
ANCHORAGE SLAB AND PARAPET
(3 OF 3)

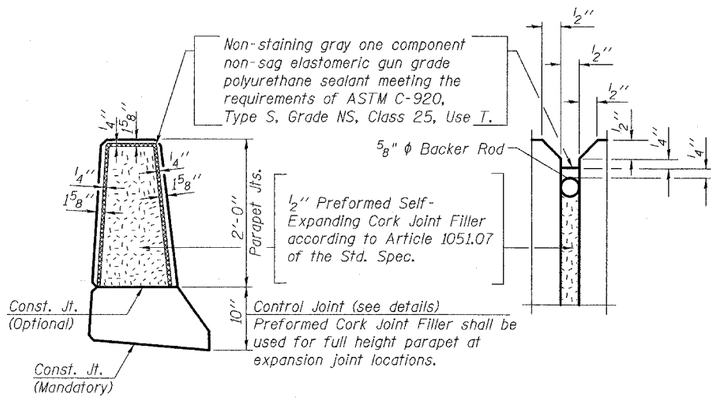
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

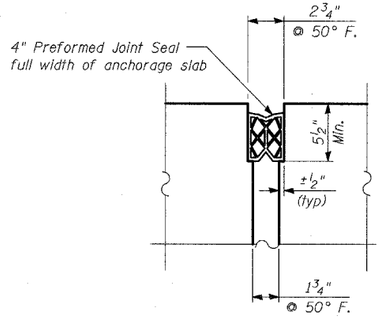
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	326
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 13
21 - SHEETS

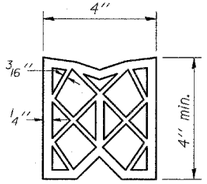
* 125X-HB-(1&2) R-1 CONTRACT # 60826



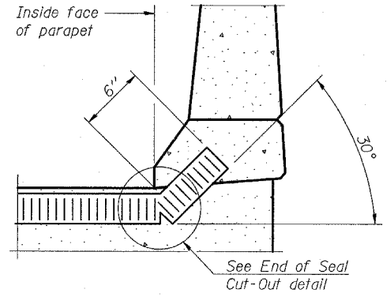
PARAPET JOINT DETAILS
(Cost included with Concrete Superstructure)



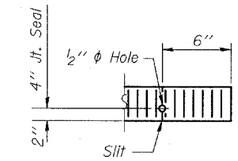
SECTION



PREFORMED JOINT SEAL

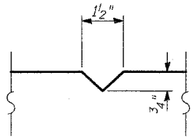


END OF SEAL TREATMENT AT PARAPET

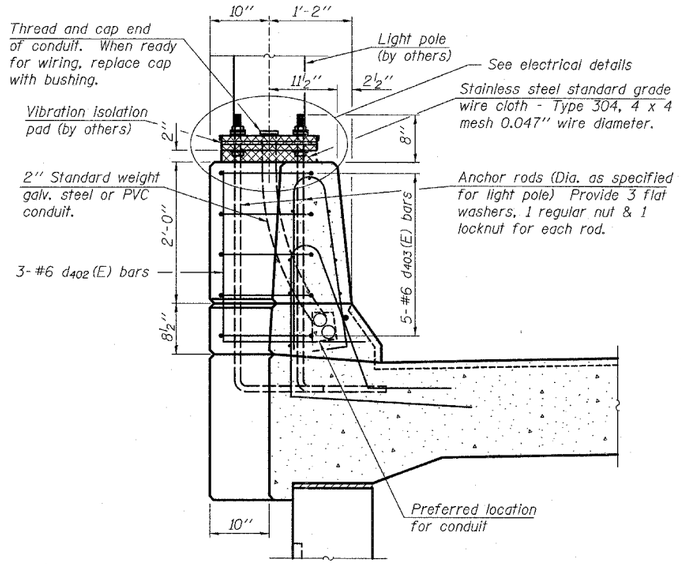


END OF SEAL CUT-OUT

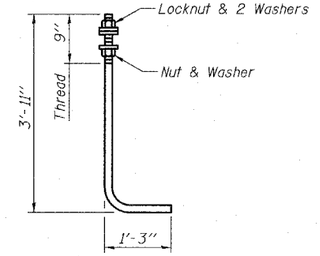
DETAIL - EXPANSION JOINT IN SLAB



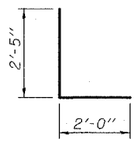
CONTROL JOINT DETAIL-PARAPET



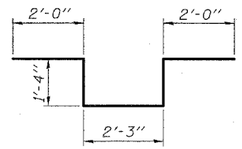
SECTION A-A



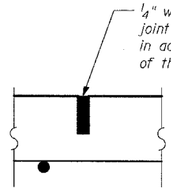
ANCHOR ROD
Diameter as specified for light poles.
(ASTM F 1554 Grade 105)



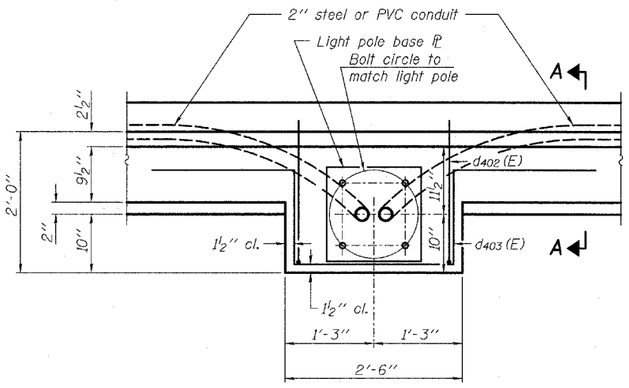
BAR d_{402}(E)



BAR d_{403}(E)



CONTROL JOINT DETAIL-SLAB
(Cost included with Concrete Structures)



PLAN

Note:
Cost of anchor rods and conduit is included with Concrete Superstructure.

TY·LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	CM
CHECKED	-	AD

WALL 0
MISCELLANEOUS DETAILS

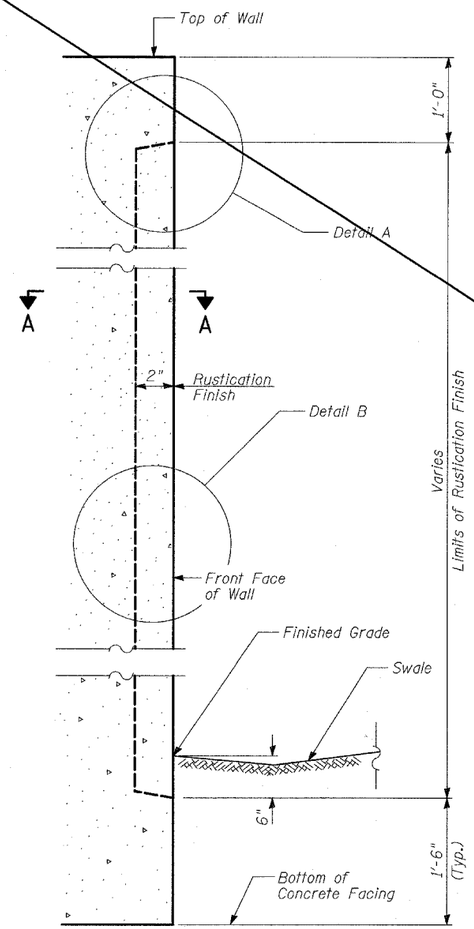
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ36

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

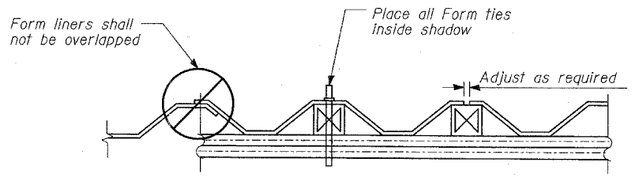
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	327
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 14
21 SHEETS

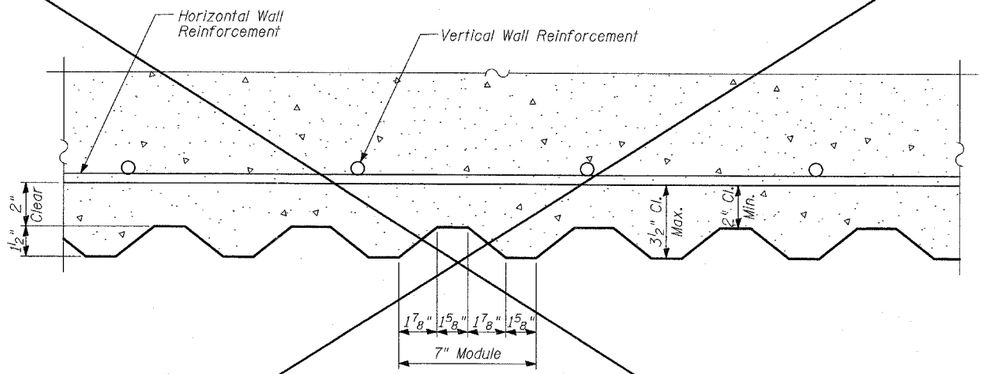
• 125X-HB-(1&2) R-1 CONTRACT # 60826



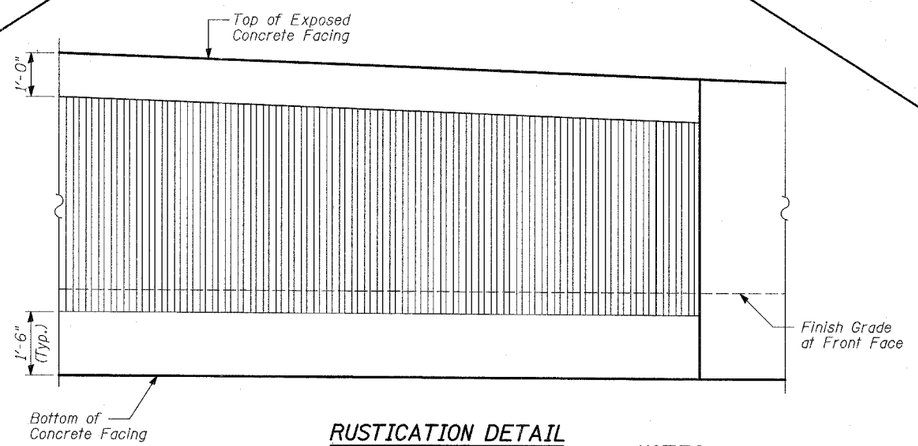
WALL DETAIL



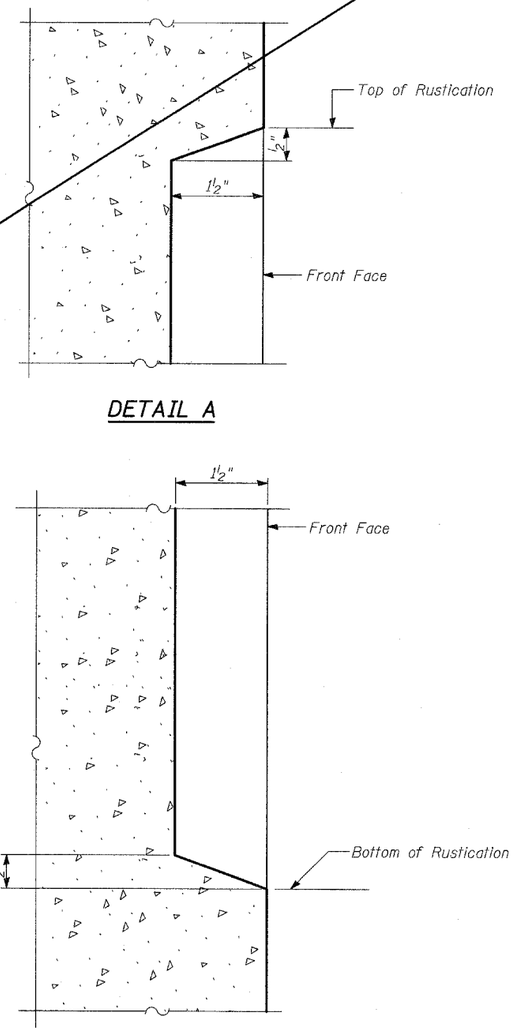
SUGGESTED FORMWORK DETAIL



SECTION A-A



RUSTICATION DETAIL
(At Interior Panel with Embankment)



DETAIL A

DETAIL B

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Rustication Finish	SQ FT	3,286

NOTES:

1. See Sheet 7 of 21 for expansion and construction joint details.

TY·LIN INTERNATIONAL

DESIGNED	MB
CHECKED	AD
DRAWN	CM
CHECKED	AD

WALL O
RUSTICATION DETAILS

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ36

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	328
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 15
21 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT # 60826

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2956

SOIL BORING LOG

PAGE 1 of 3
DATE 6/23-7/30/2004
LOGGED BY AD
GSI JOB No. 0314

ROUTE FAP Rte. 346
DESCRIPTION New Overpass
TWNSHP Gurnee
LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake
DRILLING METHOD 3.25" HSA/Rotary
HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-0209
Station
BORING NO. B-7
Station 537+19.4 US 41 Centerline
Offset 37.6' Right
Ground Surface Elev. 697.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	6			CLAYEY TOPSOIL-black (A-7)
	7 11	1.75P	20	
693.2	7		101	
	10			CLAY-brown & gray-medium stiff to very stiff (A-6)
-5	10	1.4B	25	
	4		113	
	7 8	2.3B	18	
	2			
	3			
-10	4	2.0P	16	
	-			Drillers Observation: Unknown obstruction @ -11.0'.
	-		NR	
	10		102	
	22			
-15	22	0.5P	24	SAND-gray-dense (A-3)
	18			
	30 33		21	
679.2				
	11		114	CLAY-gray-stiff to very stiff (A-6)
	17			
-20	22	3.7B	18	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	8		110	CLAY-gray-stiff to very stiff (A-6)
	11 17	3.4B	20	
	9		104	
	11			
-25	16	2.3B	23	
	8		101	
	10 11	1.8B	25	
	9		103	
	8			
-30	10	1.5B	24	
	18			
	24			
-35	20	NP	18	
659.7				
	8		111	CLAY-gray-very stiff (A-6)
	14			
657.2 -40	19	2.5B	19	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2956

SOIL BORING LOG

PAGE 2 of 3
DATE 6/23-7/30/2004
LOGGED BY AD
GSI JOB No. 0314

ROUTE FAP Rte. 346
DESCRIPTION New Overpass
TWNSHP Gurnee
LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake
DRILLING METHOD 3.25" HSA/Rotary
HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-0209
Station
BORING NO. B-7
Station 537+19.4 US 41 Centerline
Offset 37.6' Right
Ground Surface Elev. 697.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND & GRAVEL-gray-medium dense (A-1)
	6			
	11			
-45	14	NP	23	
	11			
	15			
-50	17	NP	12	
644.7				
	9		123	CLAY-gray-medium stiff to very stiff (A-6)
	10			
-55	12	2.8B	14	
	11		117	
	8			
-60	9	2.8P	16	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
635.6				CLAY-gray-medium stiff to very stiff (A-6)
				Fine SAND-gray-dense (A-3)
	15			
	20			
-65	21	NP	15	
	21			
	25			
-70	21	NP	15	
625.2				
	12			SAND & GRAVEL-gray-dense (A-1)
	20			
622.2 -75	22	NP	7	
				CLAY-gray-hard (A-6)
	7		X	
	10			
-80	14	1.9B	13	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	- SNB
CHECKED	- AD
DRAWN	- SNB
CHECKED	- AD

BORING LOG B-7
(1 OF 2)

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	329
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 16
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2236

SOIL BORING LOG

PAGE 3 of 3
DATE 6/23-7/30/2004
LOGGED BY AD
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25' HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-0209
Station
BORING NO. B-7
Station 537+19.4 US 41 Centerline
Offset 37.6' Right
Ground Surface Elev. 697.2

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	8		120	CLAY-gray-hard (A-6)
	12			
-85	14	3.5P	15	
	8		124	
	10			
-90	16	4.5P	14	
				End of Boring @ -110.0'
				Hollow Stem Augers to -10.0'
				Rotary Drilling to Completion
				80.0' Casing Used
				D-120 Safety Hammer
	13			
	15			
-95	22	-	16	
	16		121	
	24			
-100	20	4.5P	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAY-gray-hard (A-6)
	26			
	42			
-105	30	-	14	
	50			
	39			
587.2 -110	34	-	16	
-115				
-120				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TYLIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG B-7
(2 OF 2)

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	330
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 17
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 955-2606

SOIL BORING LOG

PAGE 1 of 2
DATE 8/16-17/2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W036
Station
BORING NO. O-1
Station 537+91.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 693.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (A-7)
691.6	21		109	
	6			
	7	3.0B	20	
				CLAY-brown & gray-
	4		104	stiff to very stiff (A-6) Fill
	5			
-5	6	1.3B	22	
	4		108	
	5			
	9	3.1B	21	
	4		109	
	3			
-10	2	1.8B	20	
	3			
681.1	2			
	5	NP	19	SANDY LOAM-dark brown-
				loose (A-2-6) Apparent Fill
679.8				
	7		118	
	5			
	7	3.4B	16	CLAY-brown & gray-
-15				very stiff to hard (A-6)
	8		124	
	14			
	19	5.7B	13	
674.1	12		105	
	9			CLAY-gray-stiff to very stiff (A-6)
-20	8	2.2B	22	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	3		116	CLAY-gray-stiff to very stiff (A-6)
	5			
	6	2.1B	17	
	4		99	
	7			
-25	7	1.6B	21	
667.1				
	9			SANDY LOAM-gray-medium dense
	13	NP	16	
664.6				
	6			CLAY-gray-very stiff to hard (A-6)
	5			
-30	8	2.5P	15	
	10		123	
	13			
-35	13	4.5P	14	
655.1				
	10			SAND & GRAVEL-gray-
				medium dense (A-1)
	8			
-40	8	NP	12	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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SOIL BORING LOG

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LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W036
Station
BORING NO. O-1
Station 537+91.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 693.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND & GRAVEL-gray-
				medium dense (A-1)
649.1	6		122	
	8			
-45	7	2.1B	18	
				CLAY-gray-very stiff (A-6)
	7		122	
	9			
-50	12	3.5P	14	
	7		119	
	7			
-55	10	2.75P	16	
635.1				
	22			SAND-gray-dense (A-3)
	14			
-60	20	NP	20	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND-gray-dense (A-3)
631.1				
	15			SAND & GRAVEL-gray-
	11			medium dense (A-1)
-65	10	NP	9	
624.6				
	15		119	CLAY-gray-very stiff (A-6)
	13			
-70	14	3.0P	15	
619.1	21			
	11			SILTY LOAM-gray-medium dense (A-2-4)
618.1 -75	12	NP	11	
				End of Boring @ -75.0'
				Hollow Stem Augers to -10.0'
				Rotary Drilling to Completion
				D-120 Safety Hammer
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG O-1

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	331
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. - 18
21 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826

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SOIL BORING LOG

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GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W036
Station
BORING NO. O-2
Station 538+66.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 689.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 656.0
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SANDY TOPSOIL with Gravel-black (Fill)
				688.5
	2		113	
	3			
	4	3.4B	20	CLAY-brown & gray-medium stiff to very stiff (A-6) Fill
	3		119	
	5			
-5	6	2.1B	18	
	2		114	
	5			
	6	3.5B	14	
	2		101	
	3			
-10	6	1.3B	26	
	1		113	
	2			
	3	0.9B	23	
				676.5
	3		130	CLAY-brown-very stiff (A-6)
	6			
-15	9	3.5B	15	
				673.5
	3		126	
	7			CLAY-gray-medium stiff to very stiff (A-6)
	10	3.5B	15	
	8		118	
	5			
-20	7	2.5B	13	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	2		114	
	4			
	7	3.5B	17	CLAY-gray-medium stiff to very stiff (A-6)
	2		110	
	4			
-25	5	4.0B	14	
	2		110	
	2			
	3	1.75B	22	
	1		108	
	3			
-30	4	0.9B	25	
				656.5 ▼
	6			SAND & GRAVEL-gray-medium dense (A-1)
	8			
-35	7	NP	8	
				651.5
	6			CLAY-gray-very stiff (A-6)
	12			
-40	12	3.5P	17	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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SOIL BORING LOG

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ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W036
Station
BORING NO. O-2
Station 538+66.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 689.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 656.0
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAY-gray-very stiff (A-6)
	5		119	
	13			
-45	17	3.75P	16	
	3		121	
	7			
-50	9	3.0P	15	
	6		122	
	8			
-55	12	3.25P	14	
				631.5
	5			SAND-gray-medium dense (A-3)
	7			
-60	9	NP	23	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND-gray-medium dense (A-3)
				626.5
	13			
	13			
-65	17	NP	17	SAND & GRAVEL-gray-dense (A-1)
				621.5
	11		121	
	15			
-70	17	4.5P	14	
				CLAY-gray-hard (A-6)
	19		118	
	21			
-75	23	4.5P	16	
				614.5
				End of Boring @ -75.0'
				Hollow Stem Augers
				D-120 Safety Hammer
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG O-2

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	332
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. - 19
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

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SOIL BORING LOG

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GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer

STRUCT. NO. SN Ø49-WØ36
Station
BORING NO. O-3
Station 539+41.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 688.9

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (A-7)
687.9				
	8			
	8			CLAY-brown & gray spotted black-very stiff to hard (A-6) Fill
	8	3.5P	20	
	5		110	CLAY-gray-stiff to very stiff (A-6)
	7			
-5	9	4.1B	18	
682.9				
	3			
	4			CLAYEY TOPSOIL-dark brown & black-(A-6/A-7) Fill
	6	-	23	
680.4				
	11		110	
	8			CLAY-brown & gray-very stiff (A-6)
-10	9	3.2B	18	
677.9				
	5			
	7			SILTY LOAM-brown & gray-medium dense (A-4)
	10	NP	20	
675.4				
	7		116	
	10			CLAY-brown & gray-very stiff (A-6)
-15	14	3.2B	17	
672.4	5		116	
	7			
	11	3.1B	17	CLAY-gray-stiff to very stiff (A-6)
	4		117	
	6			
-20	9	2.7B	16	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	4		116	
	6			
	8	2.8B	16	
	3		103	
	5			
-25	7	1.8B	24	
	7		101	
	4			
	4	1.1B	22	
	4			
-30	9		NR	
	14			
	20			
-35	30	3.0P	16	
	6			
	12			
-40	12	3.25P	15	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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SOIL BORING LOG

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GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer

STRUCT. NO. SN Ø49-WØ36
Station
BORING NO. O-3
Station 539+41.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 688.9

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAY-gray-stiff to hard (A-6)
626.9				
	5		121	CLAY-gray-stiff to hard (A-6)
	13			
-45	17	4.0P	15	
	3		109	
	7			
-50	9	1.6B	19	
	6		126	
	8			
-55	12	2.9B	18	
613.9				
				End of Boring @ -75.0'
				Hollow Stem Augers to -10.0'
				Rotary Drilling to Completion
				D-120 Safety Hammer
	5		108	
	7			
-60	9	1.8B	20	
-80				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	13			
-65	17	NP	10	SAND & GRAVEL-gray-medium dense to dense (A-1)
	11			
	15			
-70	17	NP	9	
	19			
	21			
-75	23	NP	11	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	SNB
CHECKED	AD
DRAWN	SNB
CHECKED	AD

BORING LOG O-3

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ36

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	333
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 20
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

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SOIL BORING LOG

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GSI JOB No. 0314

ROUTE FAP Rte. 346
DESCRIPTION New Overpass
TWNSHP Gurnee
LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake
DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME-75 Auto Hammer
STRUCT. NO. SN 049-W036
Station
BORING NO. O-4
Station 540+16.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 688.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 659.0
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				Blind drill to -26.0'.
-5				
-10				
-15				
-20				
-25				
				662.0
	3		118	
	8			
	9	2.0P	18	CLAY-gray- stiff to very stiff (A-6)
	3		126	
-30	7			
	8	2.0B	17	
-35	3		115	
	7			
	10	1.8B	17	
-40	4			
	6			
	8	2.0P	17	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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SOIL BORING LOG

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ROUTE FAP Rte. 346
DESCRIPTION New Overpass
TWNSHP Gurnee
LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake
DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME-75 Auto Hammer
STRUCT. NO. SN 049-W036
Station
BORING NO. O-4
Station 540+16.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 688.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 659.0
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND-gray-loose (A-3)
				625.0
	4		118	
	4			CLAYEY SAND & STONE- gray-loose (A-2-6)
-45	7	1.8B	18	
				620.0
	4		115	
	7			
-50	4	1.75P	19	CLAY-gray- very stiff (A-6)
				635.0
	6			
	12			SILTY LOAM-gray-medium dense (A-4)
-55	14	NP	24	
				630.0
	3			SAND-gray-loose (A-3)
	3			
-60	4	NP	20	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	1			
	3			
-65	6	NP	8	
	2			
	4			
-70	8	2.0P	14	
	4			
	7			
-75	11	3.5P	13	
				613.0 End of Boring @ -75.0' Hollow Stem Augers CME-75 Automatic Hammer
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TYLIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG O-4

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	334
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 21
21 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

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SOIL BORING LOG

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ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W036
Station
BORING NO. O-5
Station 540+91.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 687.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SANDY TOPSOIL-black (Fill)
686.3				
	3			
	3	1.0P	23	CLAY-brown & gray-medium stiff (A-6) Fill
682.4				
	2			TOPSOIL-black (A-7)
	5			
-5	6	1.0P	25	
681.3				
	3		99	
	5			CLAY-brown & gray-stiff to hard (A-6)
	8	1.1B	26	
	3		110	
	5			
-10	9	2.7B	20	
	3		106	
	3			
	4	1.75B	21	
	6		122	
	12			
-15	20	4.4B	16	
	7		116	
	15			
	20	4.8B	17	
668.8				
	5		120	CLAY-gray-medium stiff to very stiff (A-6)
	10			
-20	15	2.7B	18	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	3		122	CLAY-gray-stiff to very stiff (A-6)
	5			
	7	1.3B	24	
	3		110	
	5			
-25	8	1.75B	25	
	2			
	4			
	7	2.0P	19	
	5		115	
	8			
-30	10	2.5P	15	
	5		132	
	8			
-35	13	2.75P	13	
	5		128	
	11			
-40	12	2.25P	18	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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(630) 355-2936

SOIL BORING LOG

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GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W036
Station
BORING NO. O-5
Station 540+91.5 US 41 Centerline
Offset 48.75' Right
Ground Surface Elev. 687.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND-gray-dense (A-3)
624.3				
	5		126	CLAY-gray-very stiff to hard (A-6)
	9			SAND & GRAVEL-gray-very dense (A-1-b)
-45	15	4.0P	13	
	4		108	
	11			
-50	12	3.0P	18	
633.8				
	6			
	10			SILTY LOAM-gray-medium dense (A-4)
-55	23	NP	15	
630.3				
	21			SAND-gray-dense (A-3)
	24			
-60	21	NP	20	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	19			
	30			
622.3 -65	25	NP	9	
				End of Boring @ -65.0'
				Hollow Stem Augers to -10.0'
				Rotary Drilling to Completion
				D-120 Safety Hammer
-70				
-75				
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG O-5

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W036

Benchmark: BM #6 - Square cut in base of L.P. at N.E. corner of IL Route 132 and Magnolia (Speedway) 45.14' LT. Sta. 32+13.24 (IL 132 E.B. ℄). Elev. 696.47.

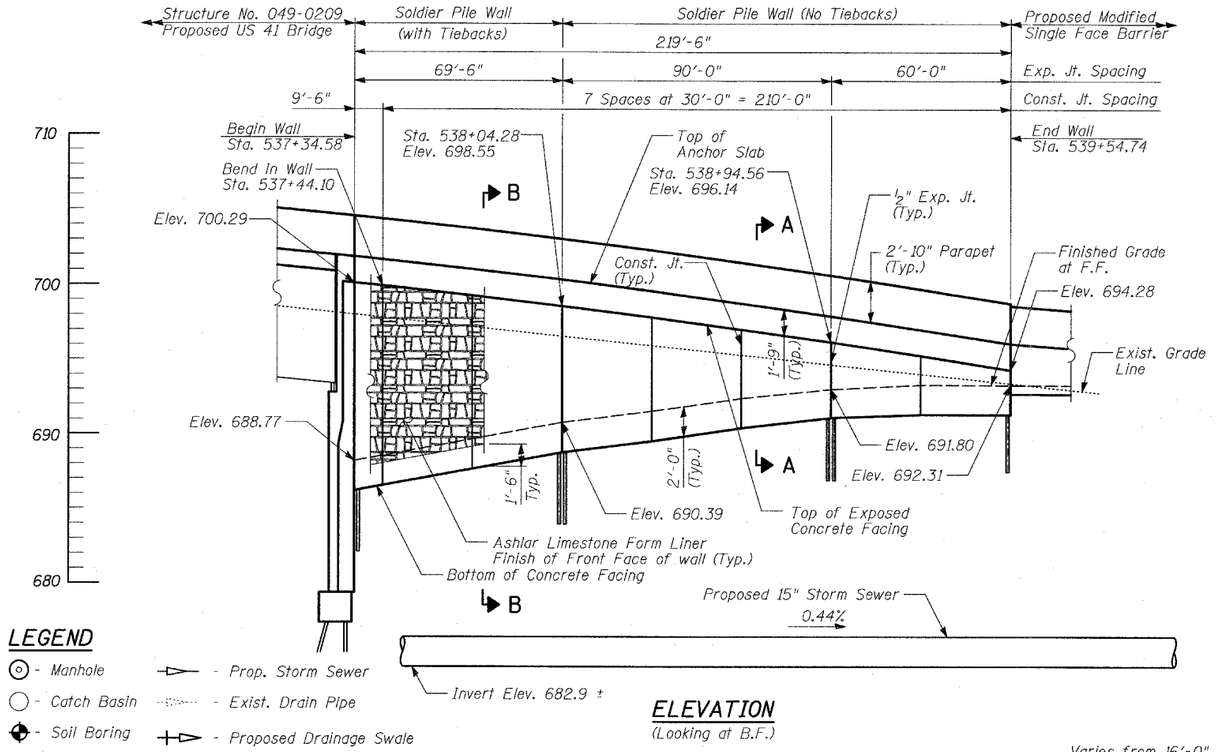
Existing Structure: None.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	335
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 1 16 - SHEETS

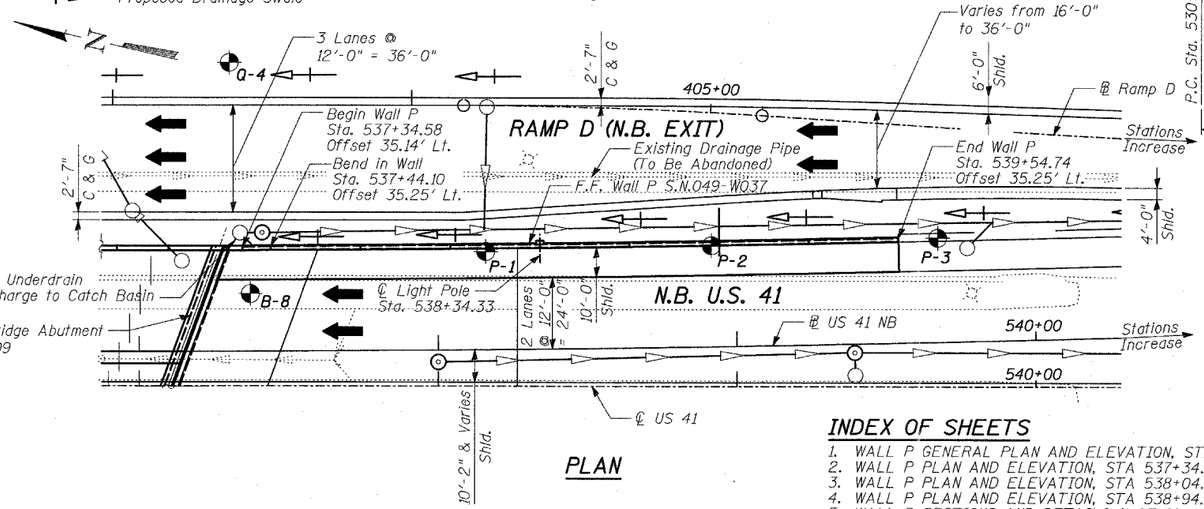
• 125X-HB-(1&2) R-1 CONTRACT # 60826



ELEVATION
(Looking at B.F.)

LEGEND

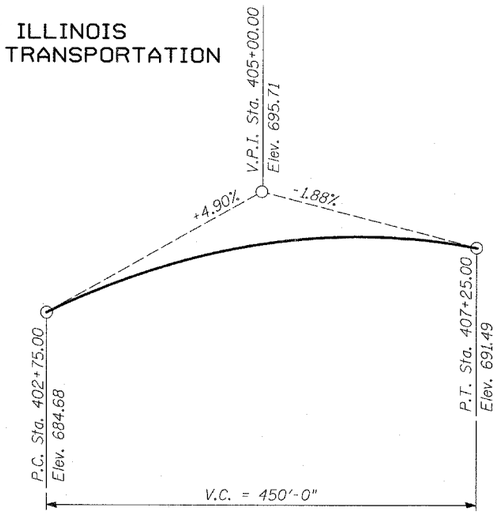
- ⊙ - Manhole
- ◯ - Catch Basin
- ◆ - Soil Boring
- ⟶ - Prop. Storm Sewer
- ⋯⋯ - Exist. Drain Pipe
- ⟶ - Proposed Drainage Swale



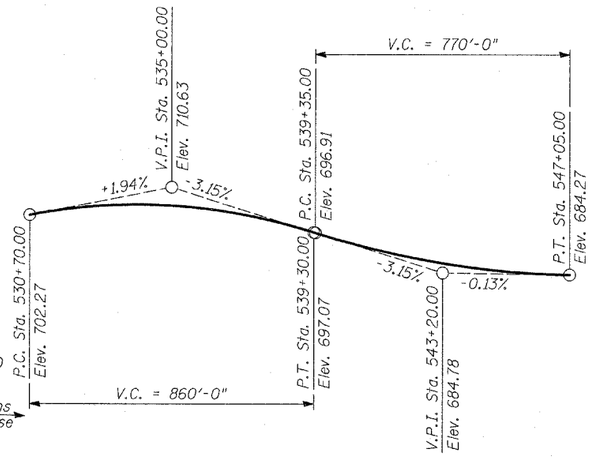
PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	CU YD	200
Concrete Structures	CU YD	105
Concrete Superstructure	CU YD	150
Protective Coat	SQ YD	336
Form Liner Textured Surface	SQ YD	174
Furnishing and Erecting Structural Steel	POUND	3,780
Stud Shear Connectors	EACH	350
Untreated Timber Lagging	SQ FT	1,564
Furnishing Soldier Piles (W Section)	FOOT	923
Reinforcement Bars, Epoxy Coated	POUND	27,380
Geocomposite Wall Drain	SQ YD	186
Pipe Underdrains for Structures, 4"	FOOT	220
Drilling and Setting Soldier Piles (in Soil)	CU FT	5,246
~~Anti-Graffiti Coating~~	~~SQ FT~~	~~2,442~~



PROFILE GRADE RAMP D



PROFILE GRADE N.B. U.S. 41

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications For Highway Bridges

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 36,000 psi (structural steel M270 Grade 36)
f'_s = 150,000 psi (tierods)

NOTES:

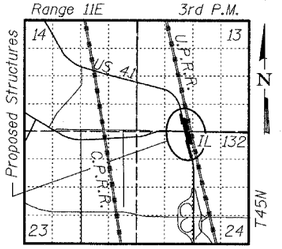
1. Wall stations and offsets are given to the front face of the concrete facing, and are measured from NB US 41 Baseline.
2. Existing utilities in conflict with soldier pile wall construction shall be abandoned or relocated according to direction given in roadway plans.
3. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60 (IL Modified). See Special Provisions.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. All exposed concrete edges shall be chamfered ¾" except as noted.
6. Slipforming of the parapet is not allowed.
7. All construction joints shall be bonded.
8. Soldier Pile Wall design can accomodate disturbance in front of wall for installation of proposed storm sewer. Lagging pay limits are to proposed bottom of C.I.P. concrete facing.

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E Anderson
ENGINEER OF BRIDGES AND STRUCTURES

N.B. U.S. 41 HORIZONTAL CURVE DATA

Prop. Curve M41NB-3
PI Sta. 538+72.51
Δ = 1° 52' 52" (LT)
D = 0° 29' 56"
T = 188.53'
R = 11,483.00'
L = 377.03'
E = 1.55'
PC Sta. 536+83.97
PT Sta. 540+61.01

INDEX OF SHEETS



LOCATION SKETCH

TYLIN INTERNATIONAL

DESIGNED	MB
CHECKED	CM/AD
DRAWN	DE
CHECKED	CM/AD

STATE OF ILLINOIS
SPIROS PANTAZIS
081-006448
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed _____
Spiros Pantazis, S.E. Il. Lic. No. 081-006448 Expires 11-30-2008.
For drawings 1 thru 16 of 16

Date 5/14/08

WALL P
GENERAL PLAN
STA 537+34.58 TO STA 539+54.74

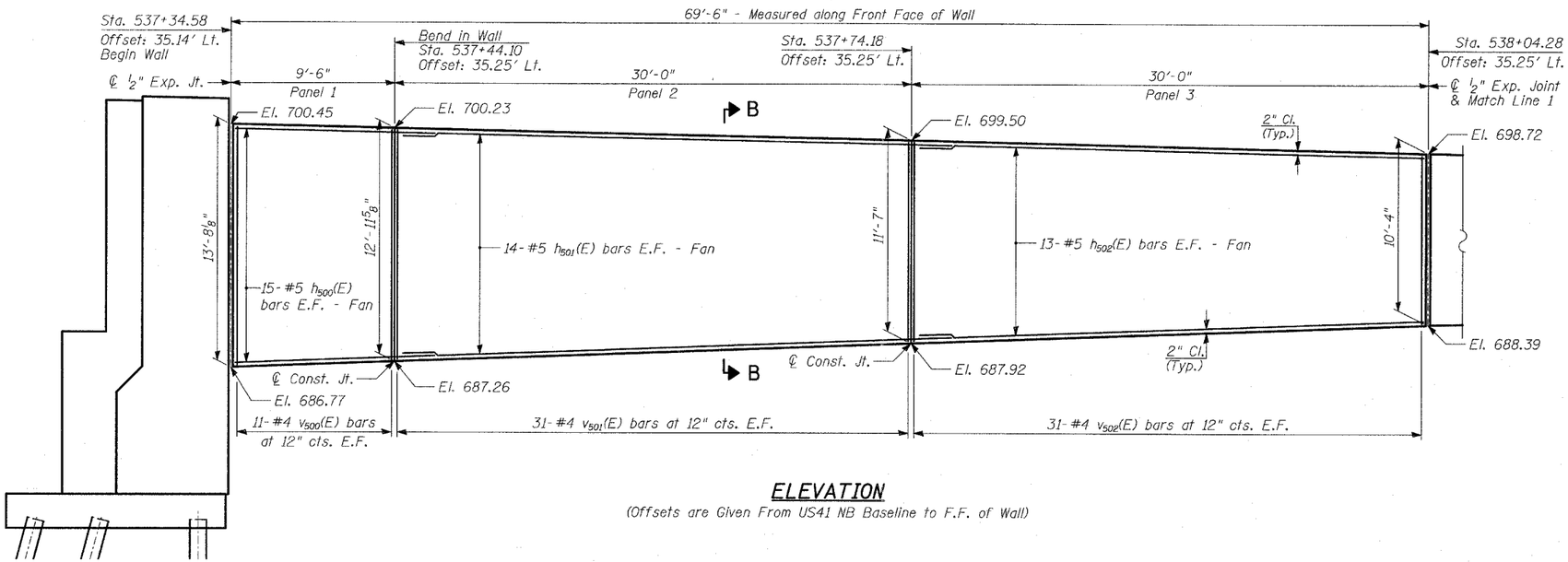
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ37

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	336
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 2
16 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826

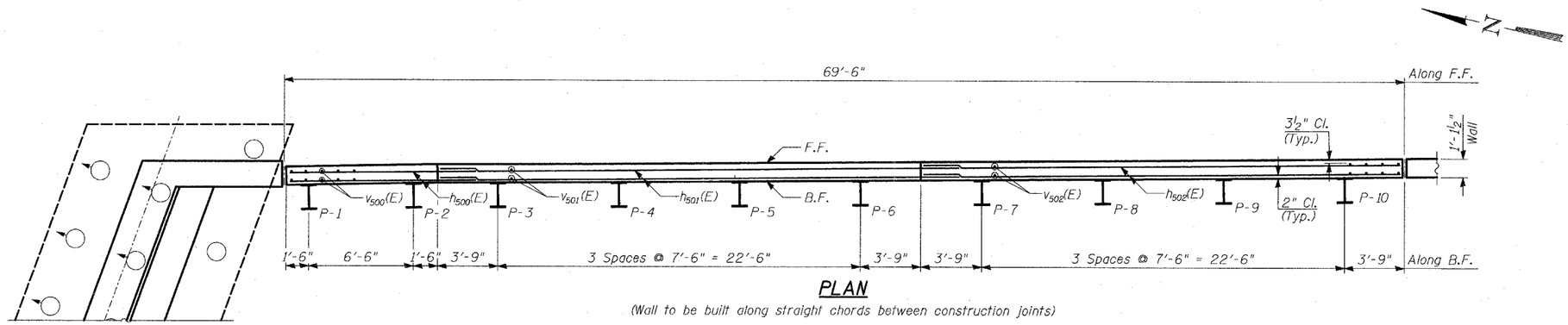


ELEVATION

(Offsets are Given From US41 NB Baseline to F.F. of Wall)

BILL OF MATERIAL

Bar	Number	Size	Length	Shape
$v_{500}(E)$	11	#4	26'-1"	
$v_{501}(E)$	31	#4	23'-11"	
$v_{502}(E)$	31	#4	21'-3"	
$v_{503}(E)$	31	#4	18'-8"	
$v_{504}(E)$	31	#4	16'-0"	
$v_{505}(E)$	31	#4	13'-7"	
$v_{506}(E)$	31	#4	11'-3"	
$v_{507}(E)$	31	#4	8'-10"	
$h_{500}(E)$	30	#5	11'-6"	
$h_{501}(E)$	86	#5	32'-0"	
$h_{502}(E)$	56	#5	29'-8"	
Reinforcement Bars, Epoxy Coated			Pound	7,510
Concrete Structures			CU YD	79
Form Liner Textured Surface			SQ YD	174
Furnishing Soldier Piles (W Section)			FOOT	923
Drilling and Setting Soldier Piles (in Soil)			CU FT	5,246



PLAN

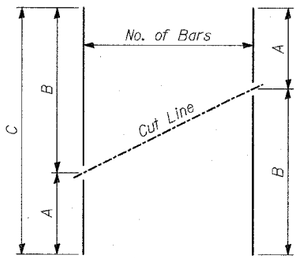
(Wall to be built along straight chords between construction joints)

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
P-1	W18x106	25'-1"	698.9	673.8
P-2	W18x106	25'-1"	698.8	673.7
P-3	W18x106	24'-4"	698.6	674.3
P-4	W18x106	24'-4"	698.5	674.1
P-5	W18x106	24'-4"	698.3	673.9
P-6	W18x106	24'-4"	698.1	673.8
P-7	W18x106	23'-0"	697.9	674.9
P-8	W18x106	23'-0"	697.7	674.7
P-9	W18x106	23'-0"	697.5	674.5
P-10	W18x106	23'-0"	697.3	674.3

BAR TABLE SCHEDULE

Bar	No. of Sets Required	No. of Bars Per Set	A	B	C
$v_{500}(E)$	1	11	13'-5"	12'-8"	26'-1"
$v_{501}(E)$	1	31	12'-8"	11'-3"	23'-11"
$v_{502}(E)$	1	31	11'-3"	10'-0"	21'-3"
$v_{503}(E)$	1	31	10'-0"	8'-8"	18'-8"
$v_{504}(E)$	1	31	8'-8"	7'-4"	16'-0"
$v_{505}(E)$	1	31	7'-4"	6'-3"	13'-7"
$v_{506}(E)$	1	31	6'-3"	5'-0"	11'-3"
$v_{507}(E)$	1	31	5'-0"	3'-10"	8'-10"



SERIES OF BAR CUTTING DIAGRAM

See table for dimensions.
Order Bars Full Length, Cut as Shown Normal to Bar Axis and Use Remainder of Bars in Opposite Face.

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 5 thru 11 of 16.
5. Pile spacing measured along back face of wall.
6. For Section B-B, See Sheet 6 of 16.

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	TB
CHECKED	-	AD

WALL P
PLAN AND ELEVATION
STA 537+34.58 TO STA 538+04.28

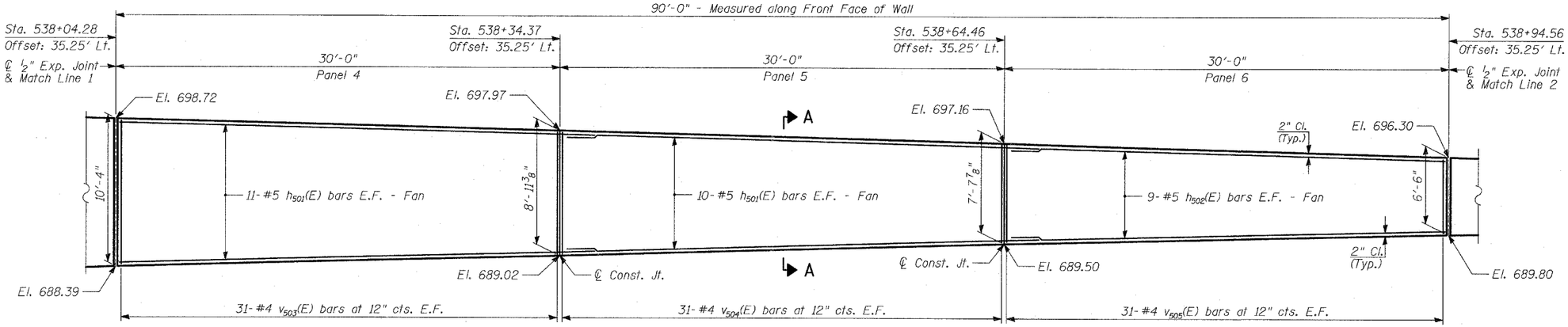
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	337
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

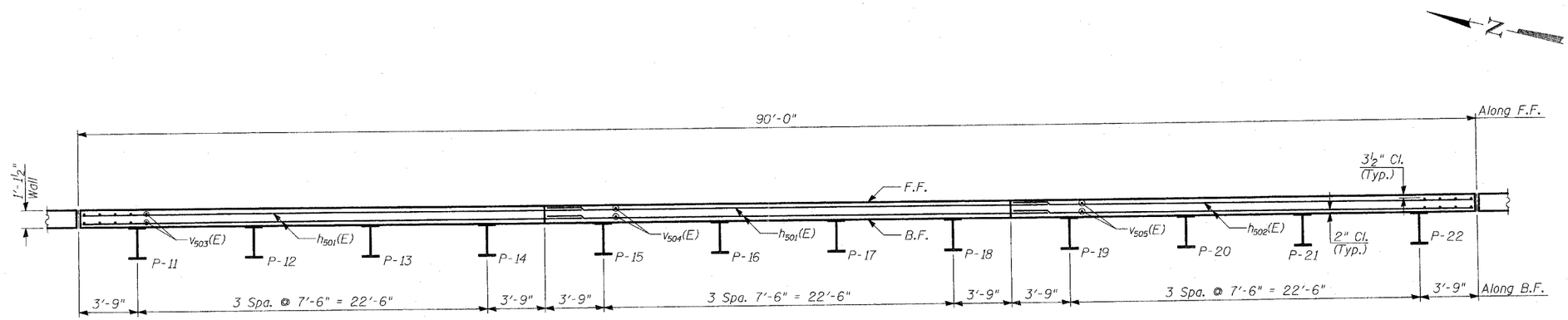
SHEET NO. - 3
16 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826



ELEVATION

(Offsets are Given From US41 NB Baseline to F.F. of Wall)



PLAN

(Wall to be built along straight chords between construction joints)

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
P-11	W24x146	38'-8"	697.1	658.5
P-12	W24x146	38'-8"	696.9	658.3
P-13	W24x146	38'-8"	696.8	658.1
P-14	W24x146	38'-8"	696.6	657.9
P-15	W24x146	37'-4"	696.4	659.0
P-16	W24x146	37'-4"	696.2	658.8
P-17	W24x146	37'-4"	696.0	658.6
P-18	W24x146	37'-4"	695.8	658.4
P-19	W24x146	36'-1"	695.6	659.5
P-20	W24x146	36'-1"	695.3	659.3
P-21	W24x146	36'-1"	695.1	659.0
P-22	W24x146	36'-1"	694.9	658.8

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 5 thru 11 of 16.
5. Pile spacing measured along back face of wall.
6. For Bill of Material, see Sheet 2 of 16.
7. For Section A-A, See Sheet 5 of 16.

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	TB
CHECKED	-	AD

WALL P
PLAN AND ELEVATION
STA 538+04.28 TO STA 538+94.56

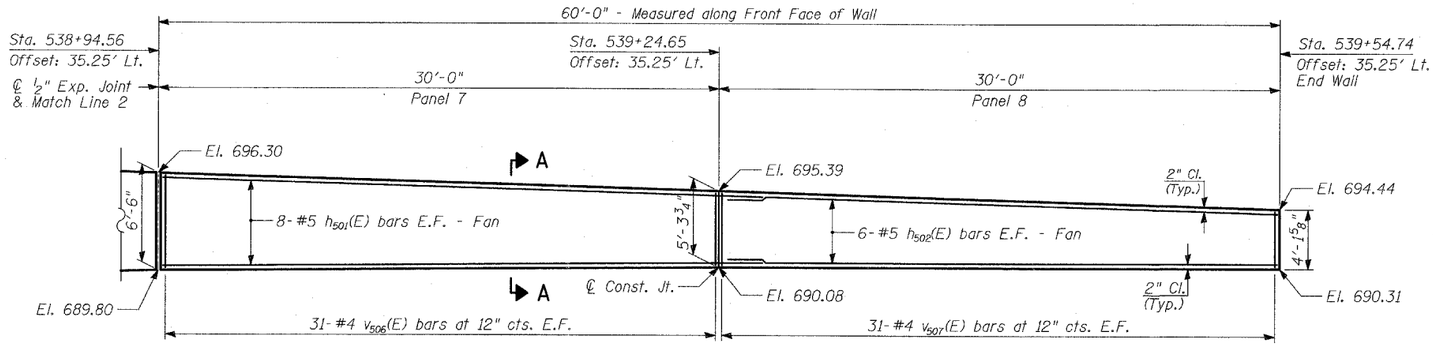
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ37

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	338
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

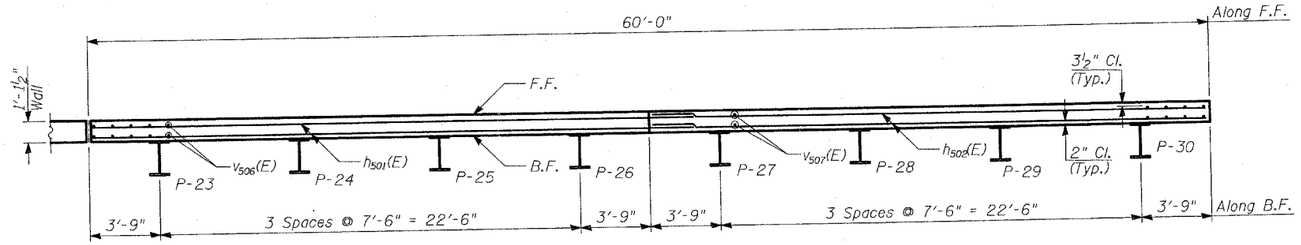
SHEET NO. - 4
16 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826



ELEVATION

(Offsets are Given From US41 NB Baseline to F.F. of Wall)



PLAN

(Wall to be built along straight chords between construction joints)

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
P-23	W21x111	29'-11"	694.7	664.8
P-24	W21x111	29'-11"	694.5	664.5
P-25	W21x111	29'-11"	694.2	664.3
P-26	W21x111	29'-11"	694.0	664.1
P-27	W21x111	28'-8"	693.8	665.1
P-28	W21x111	28'-8"	693.5	664.9
P-29	W21x111	28'-8"	693.3	664.6
P-30	W21x111	28'-8"	693.1	664.4

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 5 thru 11 of 16.
5. Pile spacing measured along back face of wall.
6. For Bill of Material, see Sheet 2 of 16.
7. For Section A-A, See Sheet 5 of 16.

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	TB
CHECKED	-	AD

WALL P
PLAN AND ELEVATION
STA 538+94.56 TO STA 539+54.74

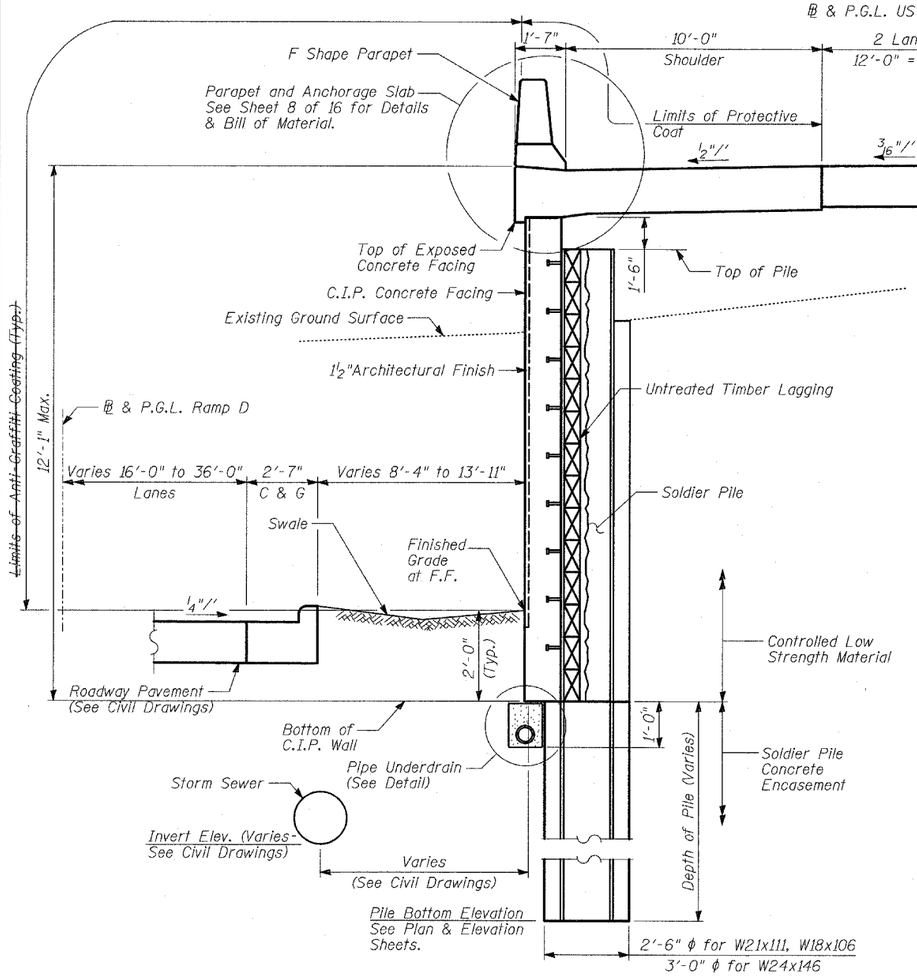
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ37

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	339
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

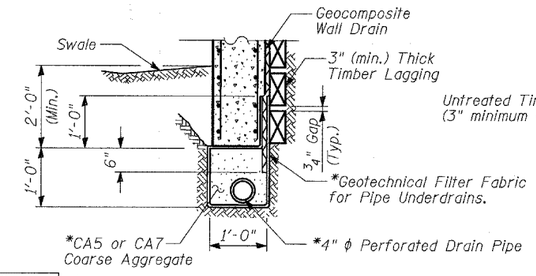
SHEET NO. - 5
16 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826



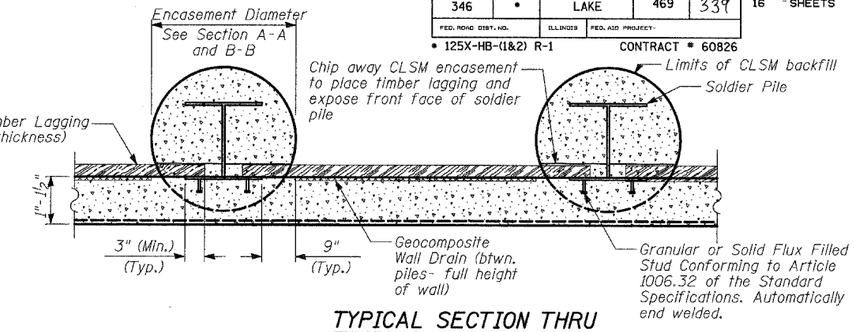
SECTION A-A

Sta. 538+04.28 to Sta. 539+54.74



*Included in the cost of "Pipe Underdrains for Structures, 4""

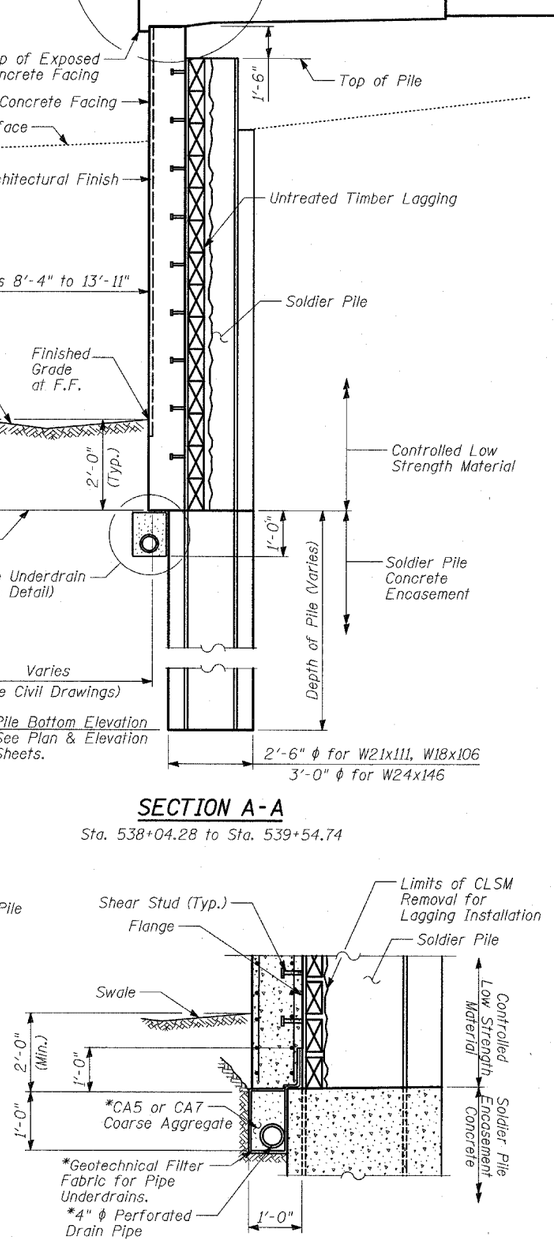
PIPE UNDERDRAIN DETAIL BETWEEN SOLDIER PILES



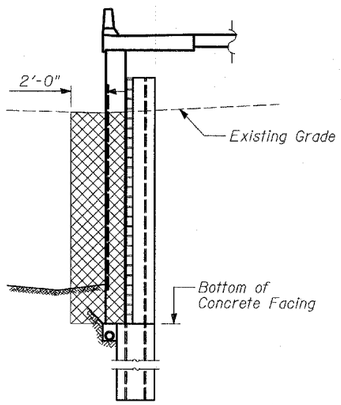
TYPICAL SECTION THRU SOLDIER PILE WALL

LIFTING HOLE DETAIL

Lifting Hole to be Provided if Necessary. Cost included with "Furnishing Soldier Piles (W Section).

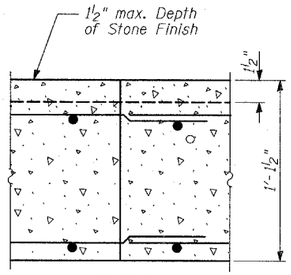


PIPE UNDERDRAIN DETAIL AT SOLDIER PILE



STRUCTURE EXCAVATION

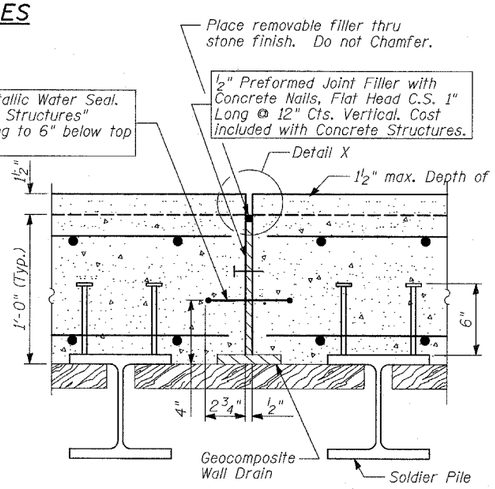
(For Proposed Wall)



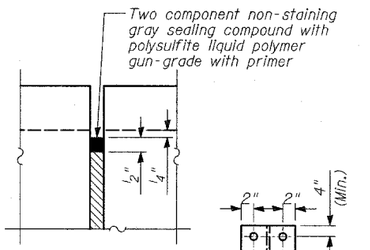
WALL

CONSTRUCTION JOINT DETAIL

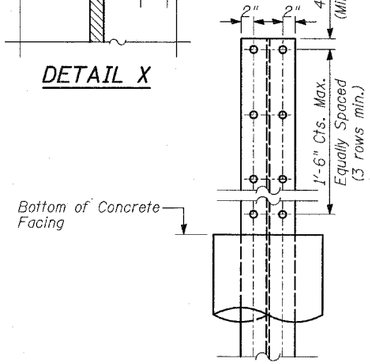
6" Hollow Bulb Type Non-Metallic Water Seal. Cost included with "Concrete Structures" Extend from bottom of facing to 6" below top of facing.



EXPANSION JOINT DETAIL



DETAIL X



SHEAR STUD CONNECTOR DETAIL

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	CU YD	145
Stud Shear Connectors	EACH	350
Untreated Timber Lagging	SQ FT	1,564
Geocomposite Wall Drain	SQ YD	186
Pipe Underdrains for Structures, 4"	FOOT	220

NOTES:

1. The Geocomposite Wall Drain shall be constructed according to Section 591 of the Standard Specifications.
2. The Contractor is responsible for the design and performance of the lagging using no less than 3" nominal rough-sawn thickness and the minimum tabulated unit stress in bending (F_b), used in the design of timber lagging shall be 1000 psi.
3. Stud shear connectors shall be 3/4" ϕ x 6" granular or solid flux filled headed studs, automatically end welded to the front flange of the soldier piles.

TYLIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

WALL P SECTIONS AND DETAILS (1 OF 2)

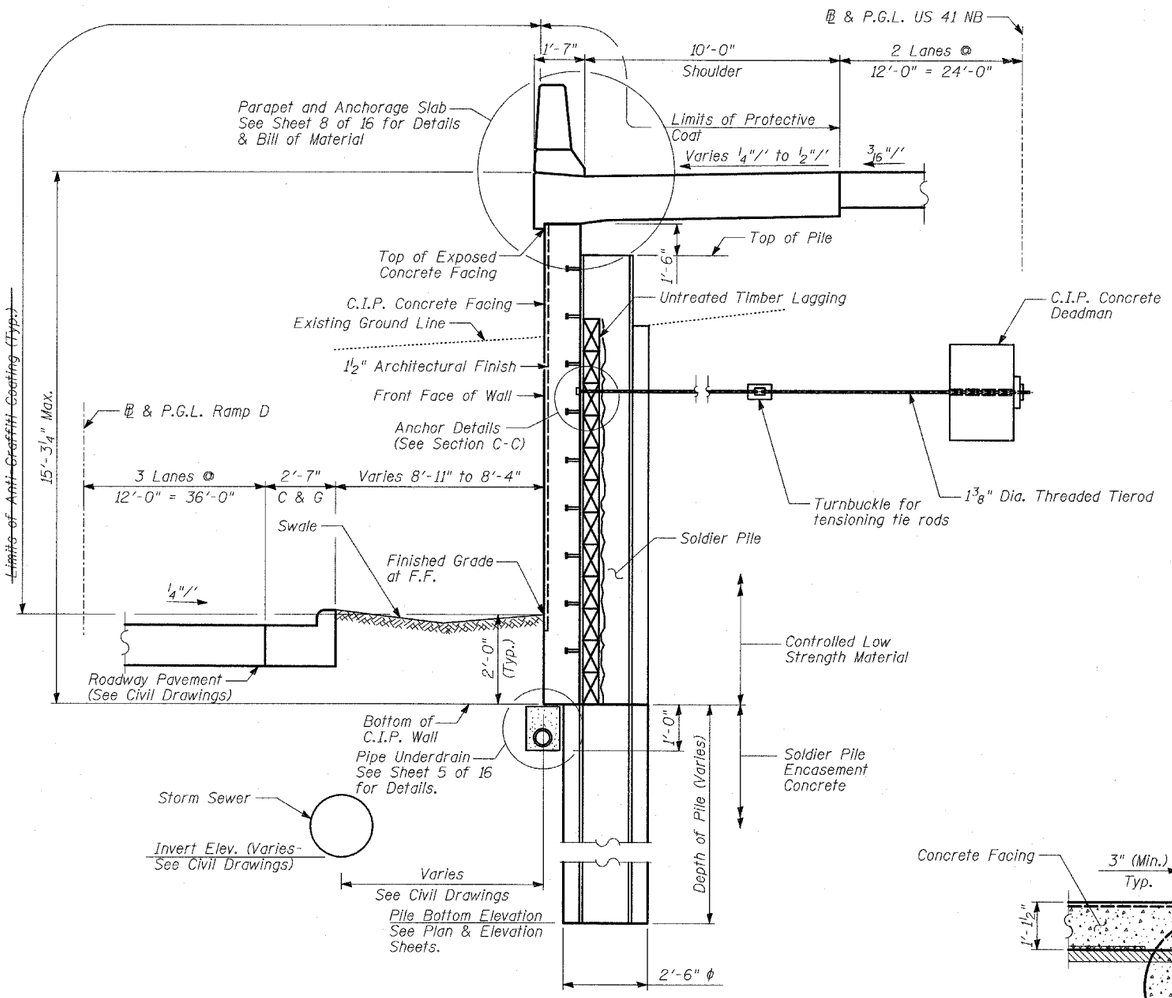
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ37

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	340
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

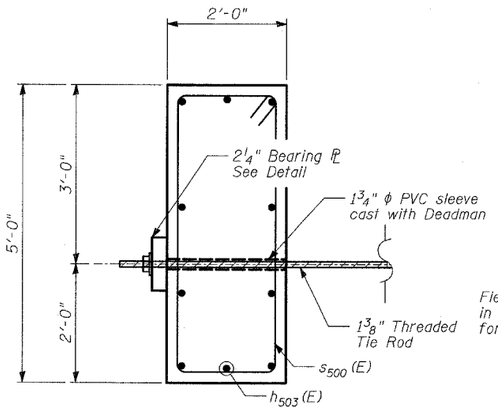
SHEET NO. - 6
16 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

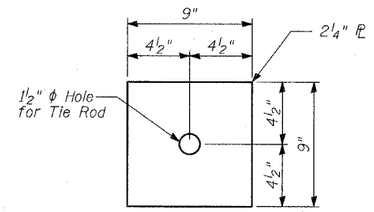


SECTION B-B

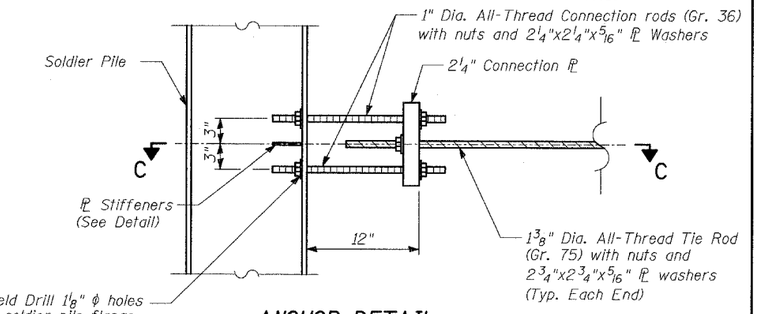
Sta. 537+34.58 to Sta. 538+04.28



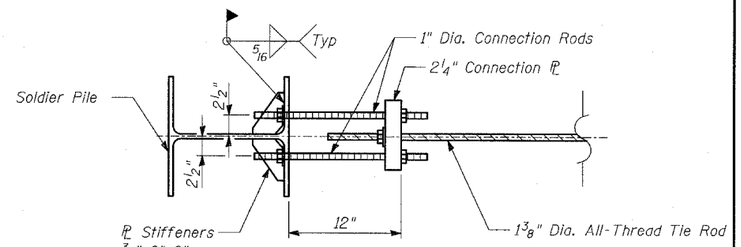
SECTION - CONCRETE DEADMAN



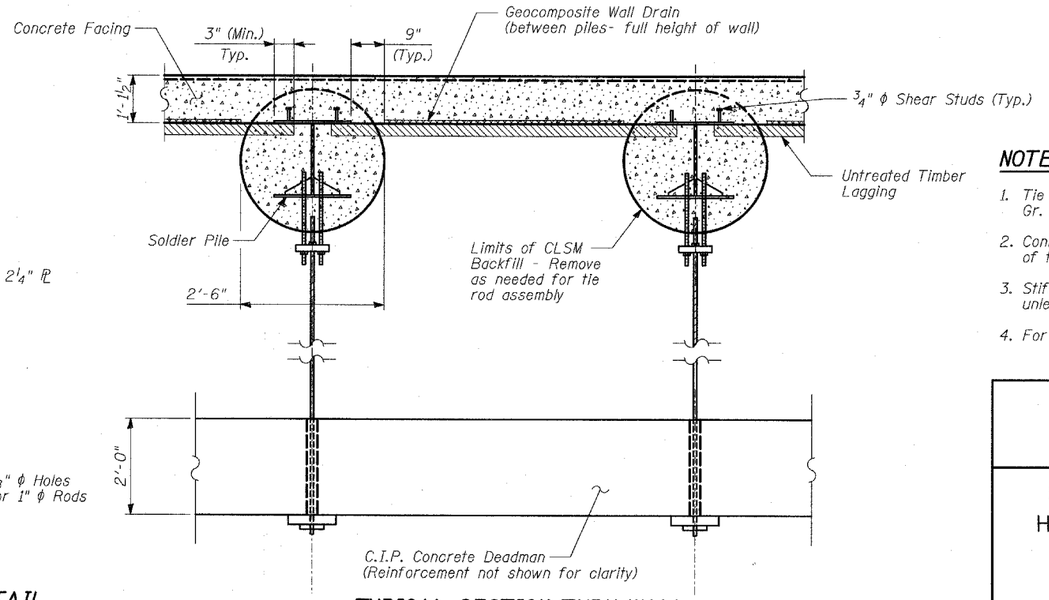
BEARING PLATE DETAIL



ANCHOR DETAIL (ELEVATION)



SECTION C-C (PLAN)



TYPICAL SECTION THRU WALL

(With Tiebacks)

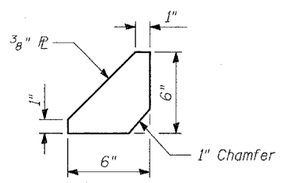
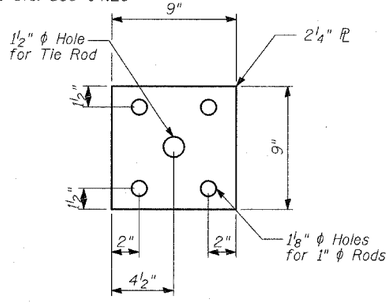


PLATE STIFFENER DETAIL



CONNECTION PLATE DETAIL

NOTES:

1. Tie Rods shall meet the requirements of ASTM A615, Gr. 75 of the diameter specified.
2. Connection Rods shall meet the requirements of ASTM A36 of the diameter specified.
3. Stiffener, Bearing, and Connection plates shall be ASTM A36, unless otherwise noted.
4. For additional Soldier Pile Wall details, see Sheet 5 of 16.

TY·LIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

WALL P SECTION AND DETAILS (2 OF 2)

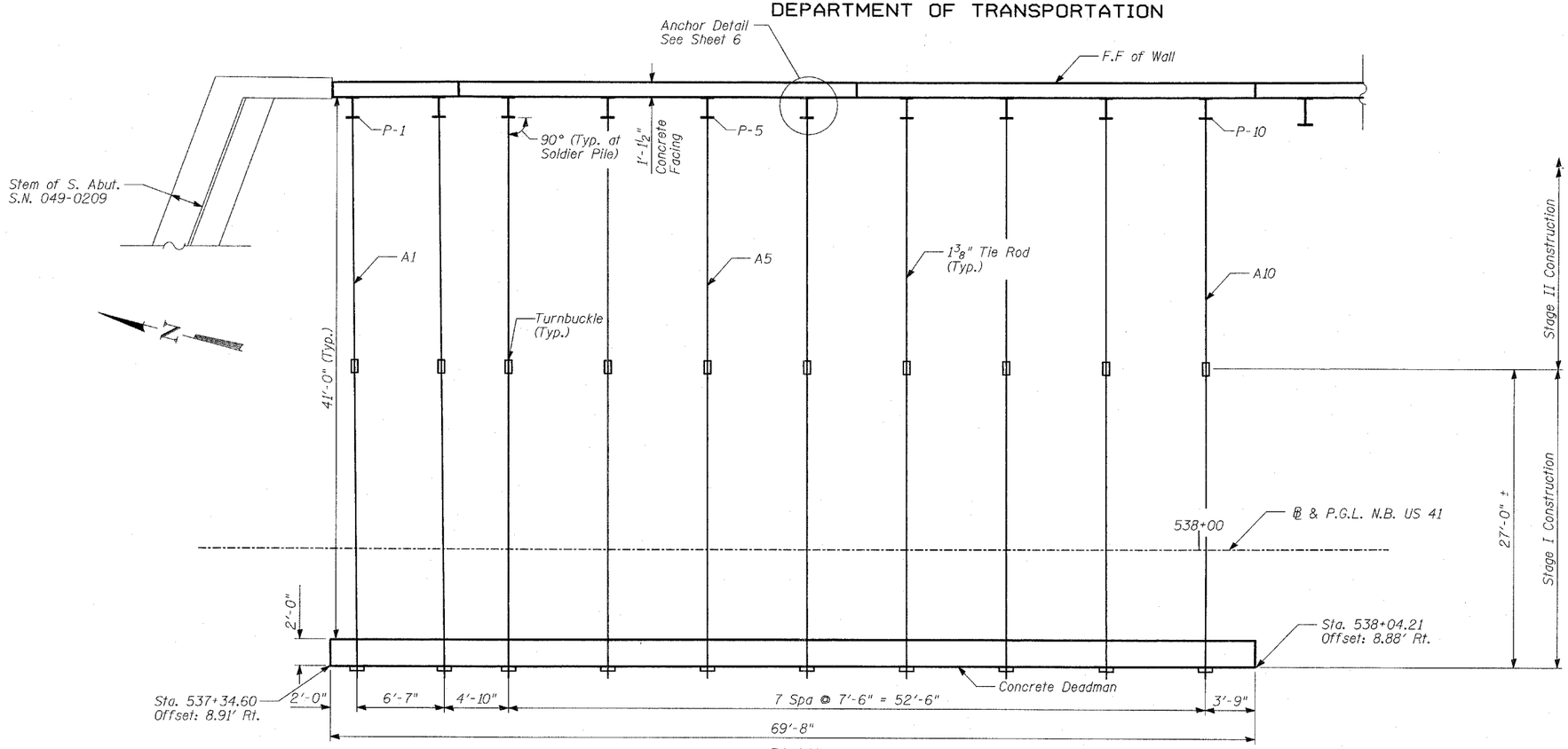
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

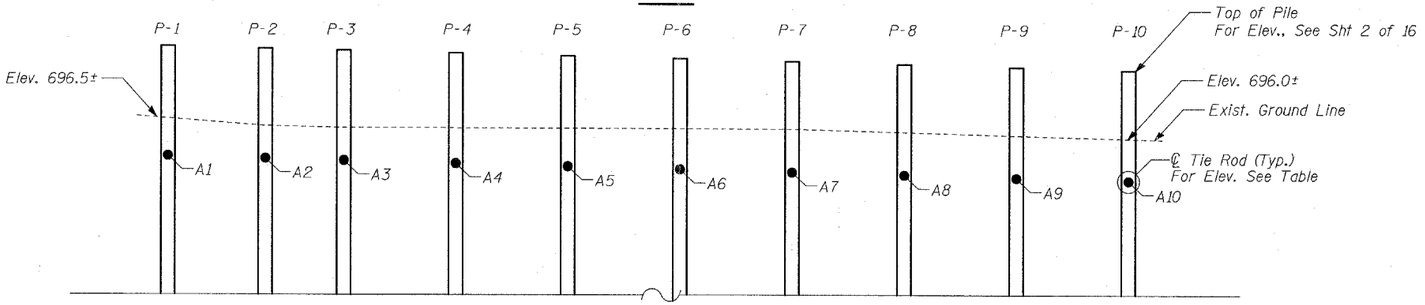
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	341
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 7
16 - SHEETS

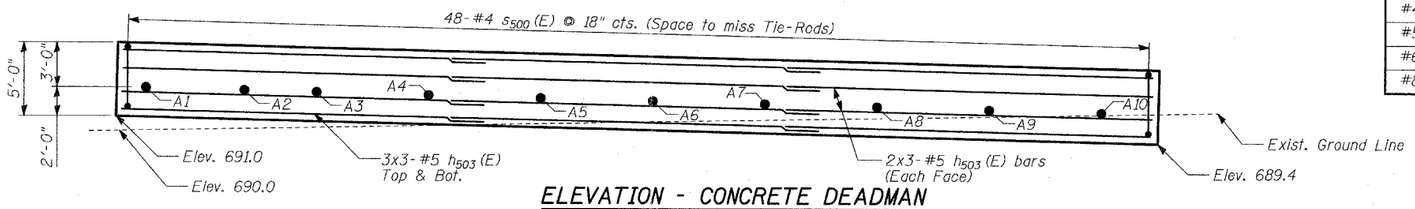
• 125X-HB-(1&2) R-1 CONTRACT # 60826



PLAN



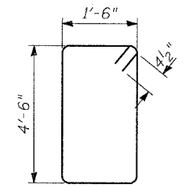
ELEVATION - SOLDIER PILES
(Looking West)



ELEVATION - CONCRETE DEADMAN
(Looking West)

ANCHOR TIE ROD

Anchor Tie Rod	Elevation
A1	693.0
A2	692.9
A3	692.7
A4	692.6
A5	692.4
A6	692.2
A7	692.0
A8	691.8
A9	691.6
A10	691.4



BAR s_{300} (E)

DEADMAN BAR LIST AND BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{503} (E)	30	#5	24'-7"	——
s_{500} (E)	48	#4	12'-9"	□
Reinforcement Bars, Epoxy Coated			POUND	1,180
Concrete Structures			CU YD	26
Furnishing and Erecting Structural Steel			POUND	3,780
Structure Excavation			CU YD	55

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES:

1. Install Concrete Deadman and portion of Tie Rod as indicated during Stage I Construction.
2. Install Turnbuckle and remaining section of Tie Rod along with Soldier Piles in Stage II Construction.

TYLIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

WALL P
TIE BACK AND DEADMAN DETAILS

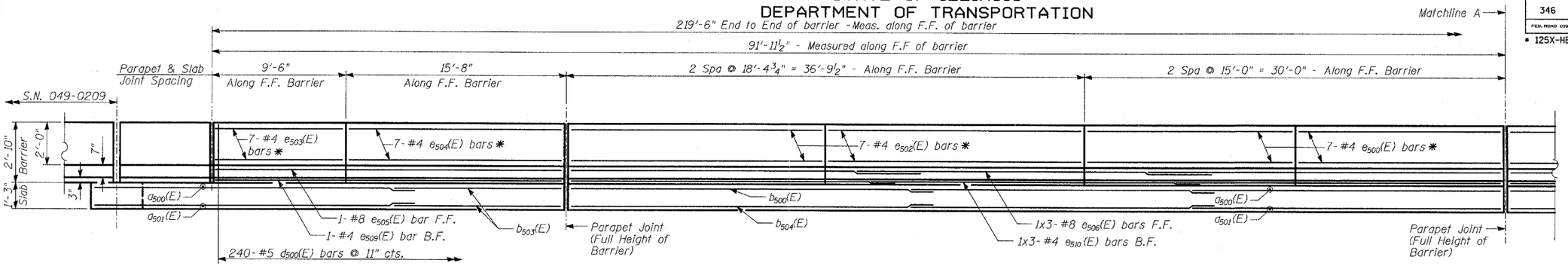
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ37

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	342
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

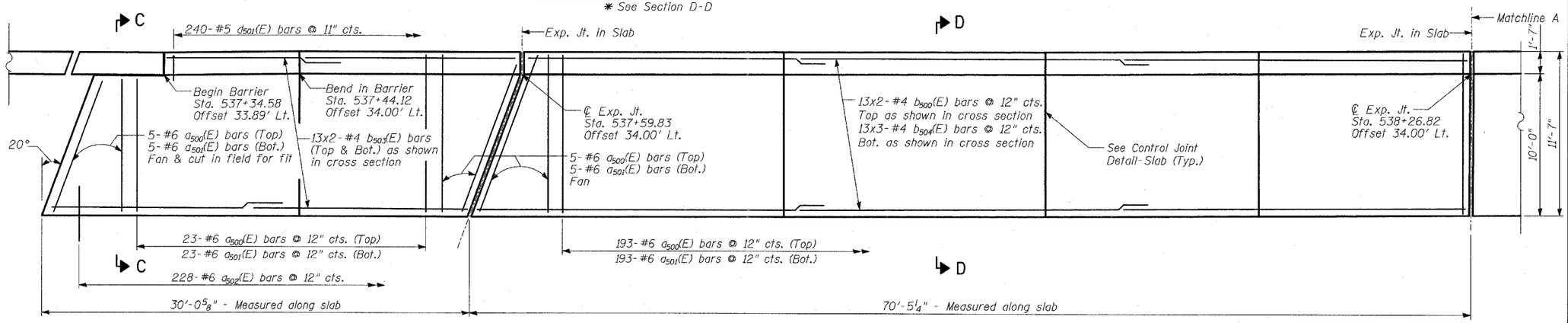
SHEET NO. - 8
16 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826



INSIDE ELEVATION OF BARRIER

* See Section D-D

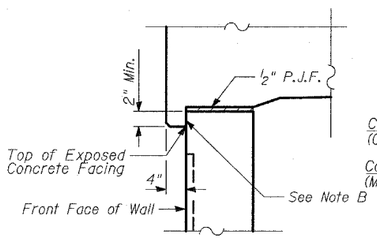


PLAN

Z

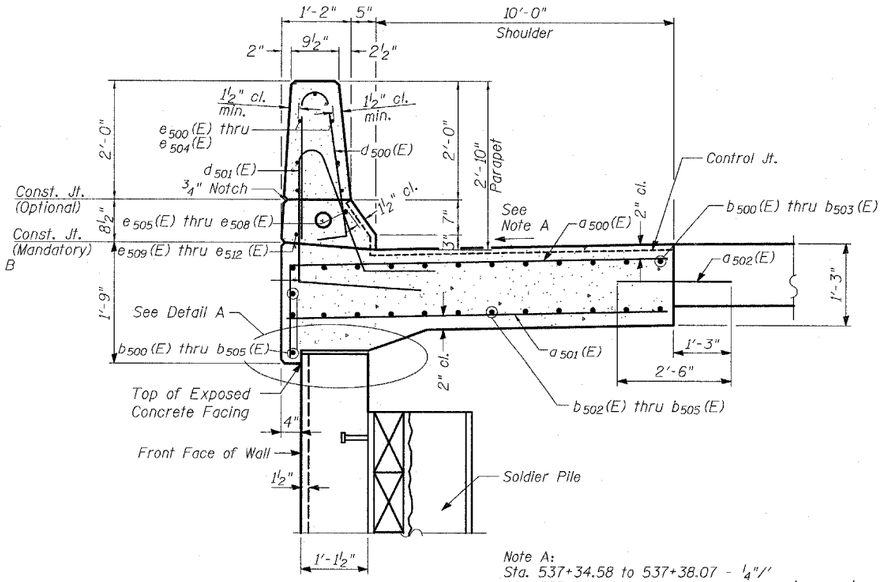
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a500(E)	231	#6	12'-8"	
a501(E)	231	#6	11'-3"	
a502(E)	228	#6	2'-6"	
b500(E)	39	#4	35'-11"	
b501(E)	39	#4	31'-0"	
b502(E)	26	#4	37'-3"	
b503(E)	52	#4	15'-9"	
b504(E)	39	#4	24'-6"	
b505(E)	52	#4	23'-8"	
d500(E)	240	#5	5'-7"	
d501(E)	240	#5	7'-5"	
d502(E)	3	#6	4'-5"	
d503(E)	5	#6	8'-11"	
e500(E)	56	#4	14'-9"	
e501(E)	14	#4	18'-6"	
e502(E)	14	#4	18'-1"	
e503(E)	7	#4	9'-3"	
e504(E)	7	#4	15'-4"	
e505(E)	1	#8	24'-10"	
e506(E)	3	#8	25'-2"	
e507(E)	3	#8	32'-11"	
e508(E)	1	#8	37'-3"	
e509(E)	1	#4	24'-10"	
e510(E)	3	#4	23'-4"	
e512(E)	4	#4	23'-8"	
e513(E)	2	#4	19'-6"	
Concrete Superstructure		CU YD	150	
Reinforcement Bars, Epoxy Coated		Pound	18690	
Protective Coat		SQ YD	336	



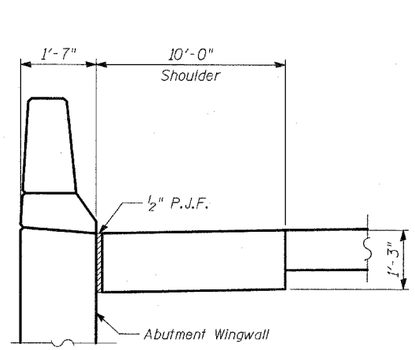
DETAIL A

Note B:
Bond Breaker membrane on top and front of fascia wall.

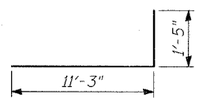


SECTION D-D

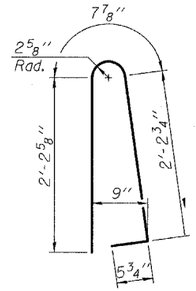
Note A:
Sta. 537+34.58 to 537+38.07 - ¼"/'
Sta. 537+38.07 to 538+04.28 - Varies ¼"/' to ½"/'
Sta. 538+04.28 to 539+54.75 - ½"/'



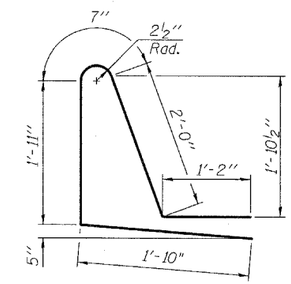
SECTION C-C



BAR a500(E)



BAR d500(E)



BAR d501(E)

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES

1. Offsets are measured from ℄ & P.G.L. NB US 41.
2. Work this sheet with Sheets 9 thru 10 of 16.
3. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	DE
CHECKED	-	AD

WALL P
ANCHORAGE SLAB AND PARAPET
(1 OF 2)

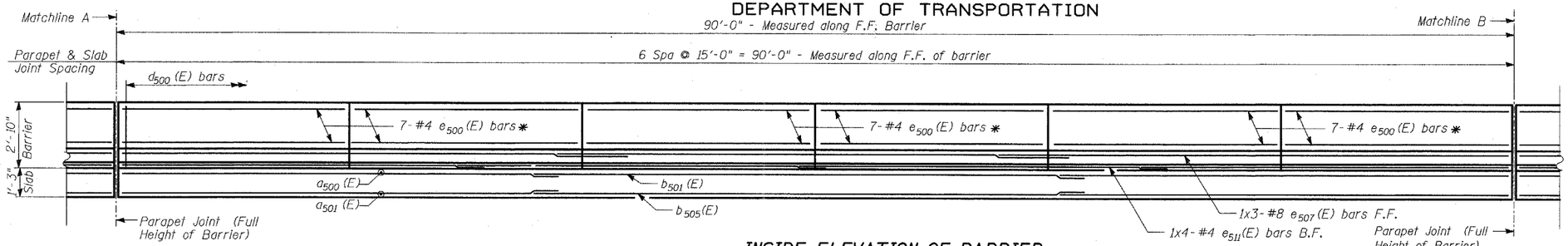
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	343
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

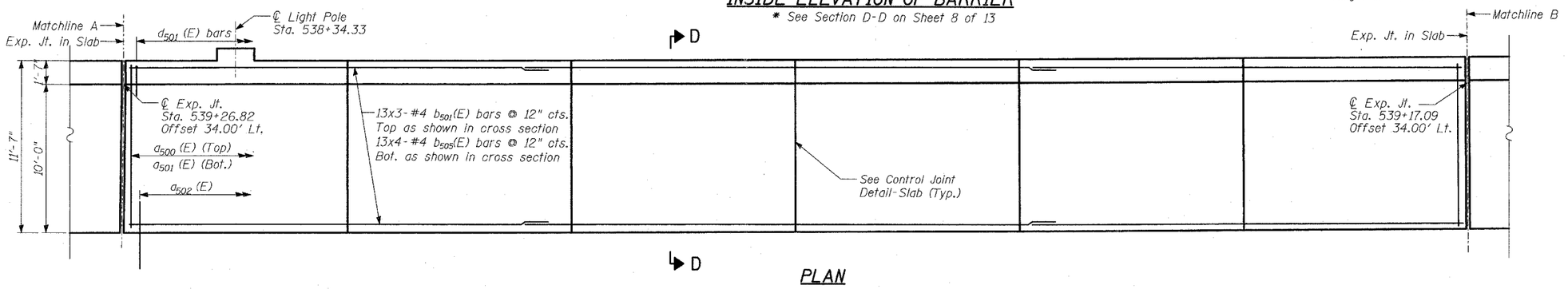
SHEET NO. - 9 - 16 SHEETS

• 125X-HB-(1&2) R-1 CONTRACT # 60826

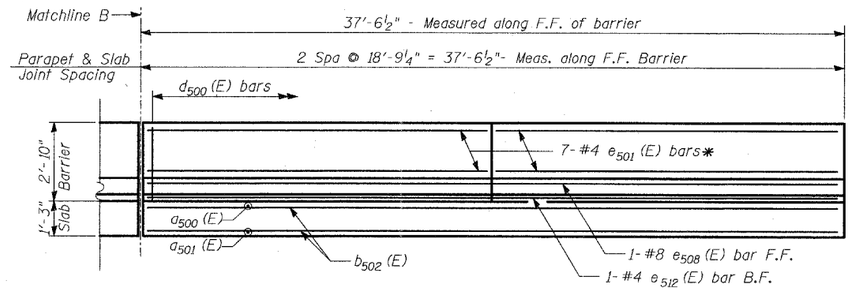


INSIDE ELEVATION OF BARRIER

* See Section D-D on Sheet 8 of 13

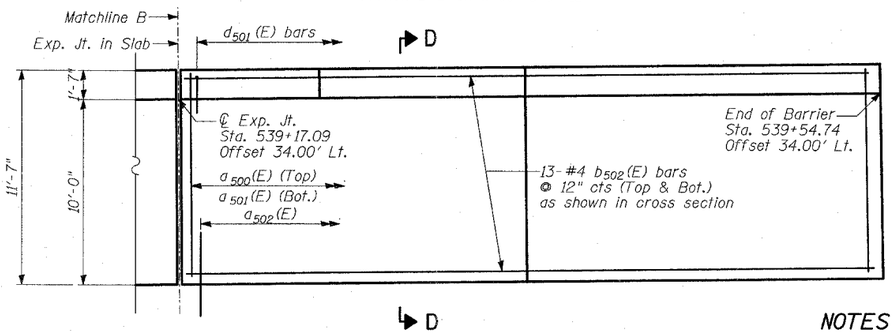


PLAN



INSIDE ELEVATION OF BARRIER

* See Section D-D on Sheet 8 of 13



PLAN

NOTES

1. Offsets are measured from ℄ & P.G.L. NB US 41.
2. Work this sheet with Sheets 8 and 10 of 16.
3. See Sheet 10 of 16 for Light Pole Mount Details.
4. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
5. Bar a_{502}(E) shall be installed in accordance with Article 420.10(b) of the Standard Specifications. Cost shall be included in the unit price of Concrete Superstructure.

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

TYLIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- DE
CHECKED	- AD

WALL P
ANCHORAGE SLAB AND PARAPET
(2 OF 2)

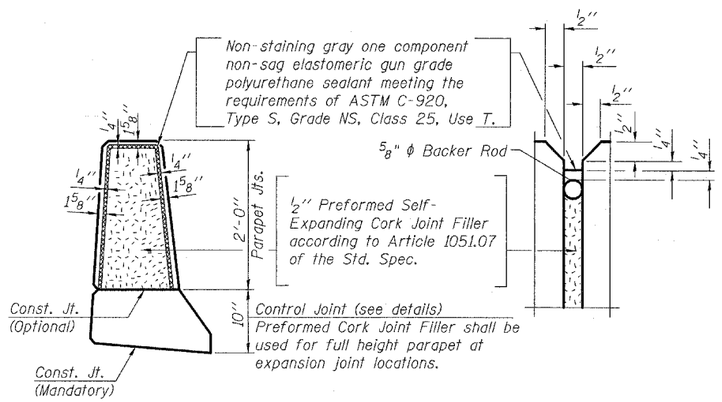
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ37

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

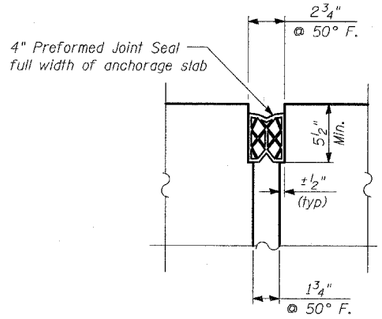
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	344
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 10
16 - SHEETS

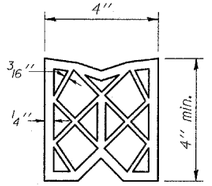
* 125X-HB-(1&2) R-1 CONTRACT # 60826



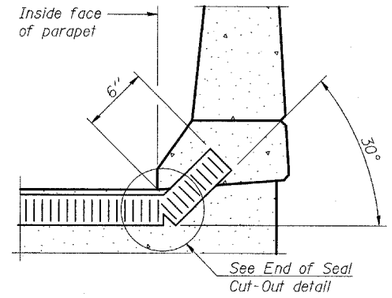
PARAPET JOINT DETAILS
(Cost included with Concrete Superstructure)



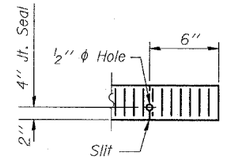
SECTION



PREFORMED JOINT SEAL

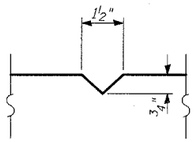


END OF SEAL TREATMENT AT PARAPET

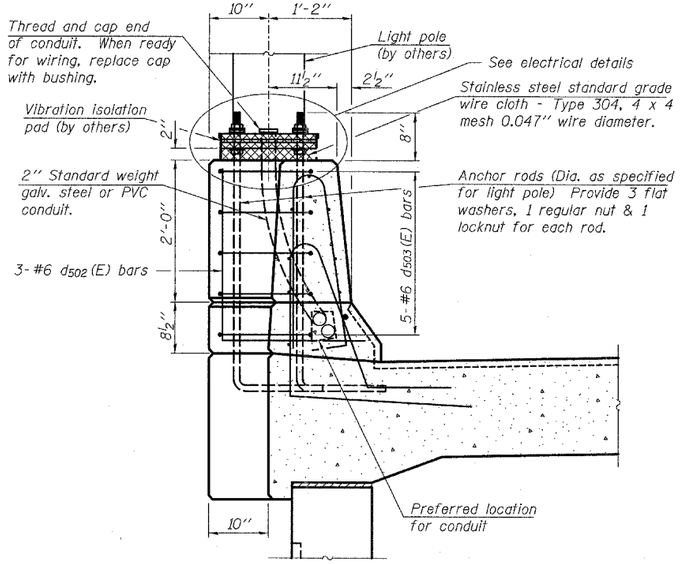


END OF SEAL CUT-OUT

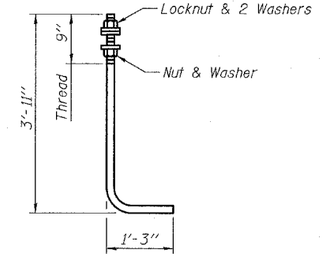
DETAIL - EXPANSION JOINT IN SLAB



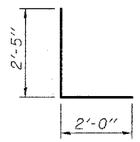
CONTROL JOINT DETAIL-PARAPET



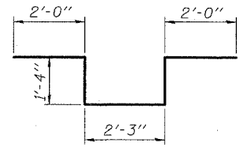
SECTION A-A



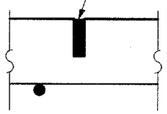
ANCHOR ROD
Diameter as specified for light poles.
(ASTM F 1554 Grade 105)



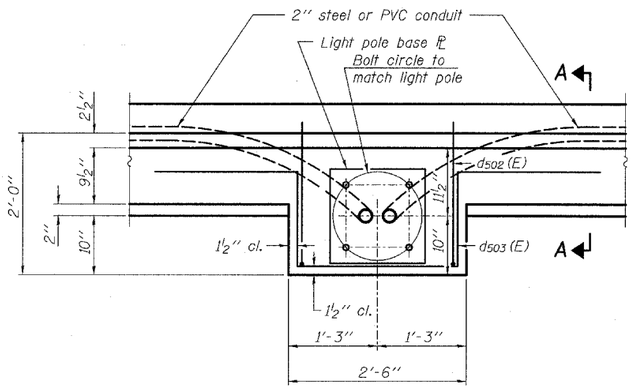
BAR d_{502}(E)



BAR d_{503}(E)



CONTROL JOINT DETAIL-SLAB
(Cost included with Concrete Structures)



PLAN

Note:
Cost of anchor rods and conduit is included with Concrete Superstructure.

TY·LIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

WALL P
MISCELLANEOUS DETAILS

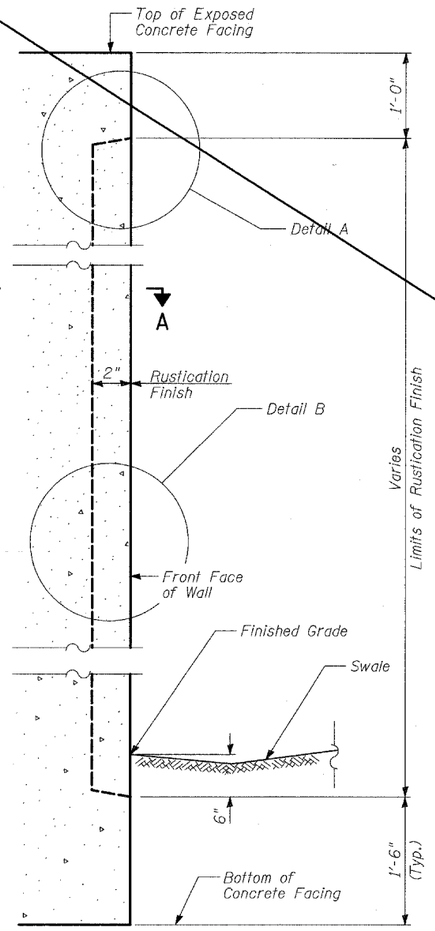
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

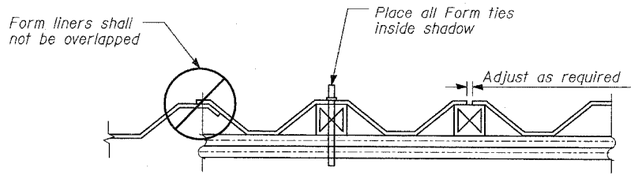
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	345
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
16 SHEETS

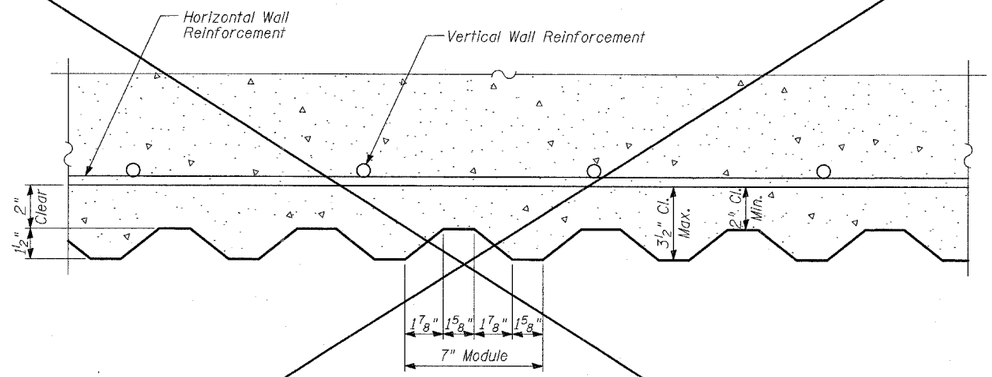
* 125X-HB-(1&2) R-1 CONTRACT * 60826



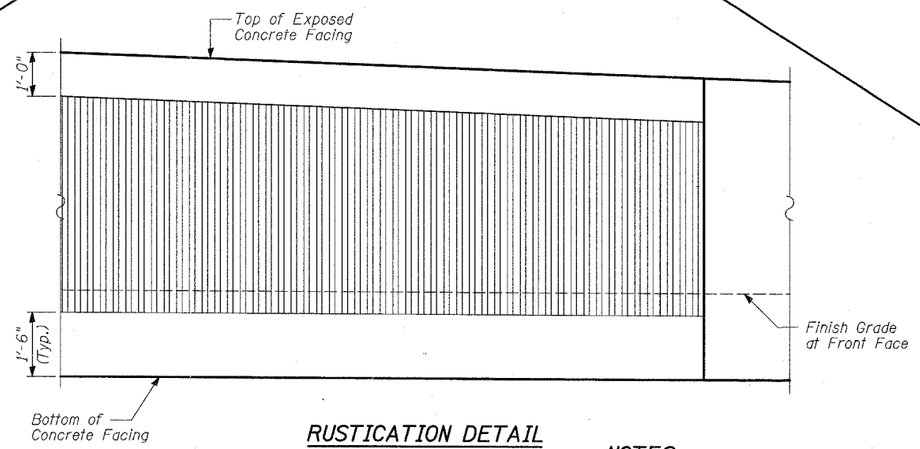
WALL DETAIL



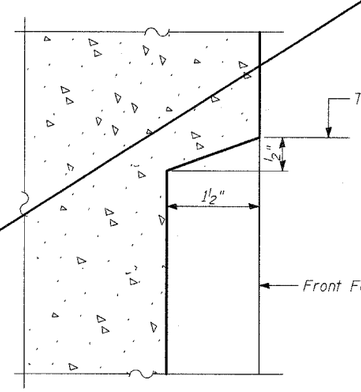
SUGGESTED FORMWORK DETAIL



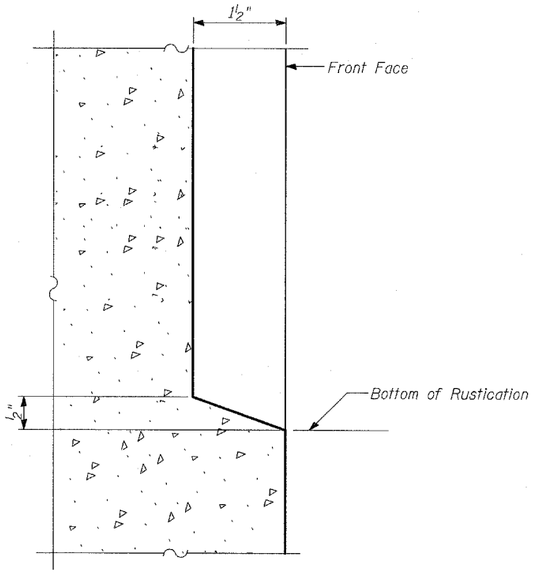
SECTION A-A



RUSTICATION DETAIL
(At Interior Panel with Embankment)



DETAIL A



DETAIL B

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Rustication Finish	SQ FT	1,295

NOTES:

1. See Sheet 5 of 16 for expansion and construction joint details.

TY·LIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

WALL P
RUSTICATION DETAILS

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ37

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	346
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 12
16 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court Suite 204
Naperville, Illinois 60565
(630) 355-2956

SOIL BORING LOG

PAGE 1 of 3
DATE June 17-18, 2004
LOGGED BY AD
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-0209
Station XX
BORING NO. B-8
Station 537+37.2 US 41 Centerline
Offset 30.97' Left
Ground Surface Elev. 690.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 679.4 ▼
Upon Completion n/a ▽
After ____ Hrs. ____ ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (A-7)
688.9	3		107	
	5			SILTY CLAY-trace organics-brown & gray spotted black-medium stiff to very stiff (A-6) Fill
	6	3.9B	18.9	
	2		106	
-5	4	0.9B	21.3	SAND with Gravel-gray-medium dense (A-1-b)
684.4	4			
	3		112	
	2			CLAY-brown & gray-stiff to very stiff (A-6)
	6	2.0P	16.2	
	4			
	6			
-10	8	2.0P	18.1	
679.6 ▼				
	4		111	CLAY-gray-stiff to very stiff (A-6)
	6			
	7	1.3B	19.4	
	4			
	8			
-15	7	2.4B	20.5	
	3		124	
	7			
	7	2.3P	12.9	
	3		119	
	6			
-20	6	1.8B	15.5	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	4		96	CLAY-gray-stiff to very stiff (A-6)
	7			
	6	2.2B	20.6	
666.9				
	5			SAND with Gravel-gray-medium dense (A-1-b)
-25	8			
	9	NP	13.2	
664.9				
	4			
	5			CLAY-gray-very stiff to hard (A-6)
	11	3.7P	12.1	
	10		128	
	13			
660.4 -30	16	5.0B	11.7	
	18			SAND with Gravel-gray-medium dense to dense (A-1-b)
	9			
-35	11	NP	12.8	
	8			
	14			
-40	19	NP	8.2	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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SOIL BORING LOG

PAGE 2 of 3
DATE June 17-18, 2004
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GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-0209
Station
BORING NO. B-8
Station 537+37.2 US 41 Centerline
Offset 30.97' Left
Ground Surface Elev. 690.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 679.4 ▼
Upon Completion n/a ▽
After ____ Hrs. ____ ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND with Gravel-gray-medium dense to dense (A-1-b)
	20			
	11			
-45	17	NP	10.2	
641.9				
	6		123	CLAY-gray-hard (A-6)
	8			
-50	12	4.5P	13.9	
	8		130	
	10			
-55	14	4.5P	10.9	
631.9				
	6			SAND-gray-medium dense to dense (A-3)
	5			
-60	6	NP	14.6	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND-gray-medium dense to dense (A-3)
	17			
	15			
-65	9	NP	11.9	
	39			
	22			
-70	19	NP	12.3	
618.4				
	8		117	CLAY-gray-hard (A-6)
	13			
-75	17	4.0P	16.4	
	7		122	
	10			
-80	11	4.0P	14.2	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	- SNB
CHECKED	- AD
DRAWN	- SNB
CHECKED	- AD

BORING LOG B-8
(1 OF 2)

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	347
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. - 13
16 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

Geo Services Inc.
Geotechnical, Environmental & Civil Engineering
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Naperville, Illinois 60565
(630) 305-0258

SOIL BORING LOG

PAGE 3 of 3
DATE June 17-18, 2004
LOGGED BY AD
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer

STRUCT. NO. SN 049-0209
Station
BORING NO. B-8
Station 537+37.2 US 41 Centerline
Offset 30.97' Left
Ground Surface Elev. 690.4

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 679.4 ▼
Upon Completion n/a ▽
After ____ Hrs. ▼

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAY-gray-hard (A-6)
	11		130	
	14			
-85	19	4.5P	11.3	
				End of Boring @ -105.0'
				Hollow Stem Augers to -11.0'
				Rotary Drilling to Completion
				75.0' Casing Used
				D-120 Safety Hammer
	10			
	11			
-90	25	4.5P	15.0	
	11		124	
	13			
-95	16	4.5P	13.3	
	15		123	
	12			
-100	14	4.5P	13.8	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAY-gray-hard (A-6)
	16		101	
	15			
585.4 -105	15	4.5P	24.9	
-110				
-115				
-120				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG B-8
(2 OF 2)

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	348
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 14
16 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

Geo Services, Inc.
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Naperville, Illinois 60565
(630) 355-2336

SOIL BORING LOG

PAGE 1 of 2
DATE 10/14/2004
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GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer

STRUCT. NO. SN 049-W037
Station
BORING NO. P-1
Station 538+15.8 US 41 Centerline
Offset 45.25' Left
Ground Surface Elev. 695.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				3.0" ASPHALT, 9.0" CRUSHED STONE
694.2				
	4			
	6			CLAY-brown & gray spotted black-
	8		NR	stiff to very stiff (A-6) Fill
	4			
	6			
-5	9	2.5P	18	
	3		105	
	3			
	7	1.25B	23	
687.1				
	3			
	2			CLAY-brown-soft (A-6) Wet
-10	4	0.25P	27	
	3			
683.1				
	2			
	1	NP	13	SAND & GRAVEL-brown-
681.6				medium dense (A-1)
	4		116	
	7			
-15	10	4.25B	17	CLAY-brown-hard (A-6)
	8		117	
	10			
	15	6.5B	17	
677.1				
	7		117	CLAY-gray-very stiff to hard (A-6)
	9			
-20	14	5.5B	16	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	5		117	CLAY-gray-very stiff to hard (A-6)
	7			
	10	4.6B	16	
	4		106	
	8			
-25	10	2.7B	22	
	5		104	
	8			
	14	2.1B	23	
	5		115	
	7			
-30	13	2.1B	18	
662.1				
	7			
	11			CLAYEY SAND & GRAVEL-
-35	18	NP	19	gray-medium dense (A-2-6)
657.1				
	10	1.0P		CLAY-gray-stiff (A-6)
656.1				
	15			SAND & GRAVEL-
-40	11	NP	20	gray-medium dense to dense (A-1)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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Geotechnical, Environmental & Civil Engineering
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Naperville, Illinois 60565
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SOIL BORING LOG

PAGE 2 of 2
DATE 10/14/2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer

STRUCT. NO. SN 049-W037
Station
BORING NO. P-1
Station 538+15.8 US 41 Centerline
Offset 45.25' Left
Ground Surface Elev. 695.1

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SAND & GRAVEL-
				gray-medium dense to dense (A-1)
	9			
	12			
-45	11	NP	9	
	10			
	12			
-50	18		NR	
642.1				
	4		121	
	8			
-55	10	3.0P	15	
	4		108	CLAY-gray-stiff to very stiff (A-6)
	4			
-60	8	1.1B	21	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAY-gray-stiff to very stiff (A-6)
632.1				
	12			
	11			
-65	15	NP	16	SAND-gray-medium dense (A-3)
627.1				
	14			SAND & GRAVEL-
	12			gray-medium dense (A-1)
625.1 -70	9	NP	10	
				End of Boring @ -70.0'
				Hollow Stem Augers to -5.0'
				Rotary Drilling to Completion
				D-120 Safety Hammer
-75				
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG P-1

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	349
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 15
16 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT # 60826

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2556

SOIL BORING LOG

PAGE 1 of 2
DATE 10/27/2004
LOGGED BY C&S
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME-75 Auto Hammer
STRUCT. NO. SN 049-W037
Station
BORING NO. P-2
Station 538+91.3 US 41 Centerline
Offset 47.37' Left
Ground Surface Elev. 692.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (Fill) 692.5
	3		89	CLAY-brown & gray-very stiff (A-6) Fill
	4			
	4	2.3B	17	
				689.3
	1		102	CLAY-gray-stiff to very stiff (A-6)
	2			
-5	4	1.6B	19	
				CLAY-brown & gray-stiff to hard (A-6)
	2		102	
	5			
	6	2.5B	20	
	3		95	
	5			
-10	7	2.5B	27	
	1		107	
	2			
	3	1.7B	19	
	1		118	
	2			
-15	5	2.7B	16	
	5		118	
	10			
	13	5.1B	14	
				674.3
	3			CLAY-gray-stiff to very stiff (A-6)
	5			
-20	8	1.5P	14	
				CLAY-gray-stiff to very stiff (A-6)
	5		113	
	7			
	8	1.7B	14	
				CLAY-gray-stiff to very stiff (A-6)
	4		122	
	5			
-25	6	2.0B	14	
				CLAY-gray-stiff to very stiff (A-6)
	5		123	
	7			
	10	3.4B	14	
	4		114	
	5			
-30	9	2.7B	18	
				CLAY-gray-stiff to very stiff (A-6)
	5		117	
	21			
-35	15	1.6B	16	
				CLAY-gray-stiff to very stiff (A-6)
	2		117	
	5			
-40	6	2.5B	11	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

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(630) 355-2556

SOIL BORING LOG

PAGE 2 of 2
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LOGGED BY C&S
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME-75 Auto Hammer
STRUCT. NO. SN 049-W037
Station
BORING NO. P-2
Station 538+91.3 US 41 Centerline
Offset 47.37' Left
Ground Surface Elev. 692.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				CLAY-gray-stiff to very stiff (A-6)
	4		110	
	7			
-45	7	2.0B	19	
				CLAY-gray-stiff to very stiff (A-6)
	4		119	
	5			
-50	7	1.0B	15	
				CLAYEY SAND & GRAVEL-gray-medium dense to dense (A-2-6)
	5		123	
	10			
-55	14	2.0B	14	
				624.8
	4			CLAY-gray-very stiff (A-6)
	2			End of Boring @ -80.0'
-60	2		NR	Hollow Stem Augers
				CME-75 Automatic Hammer
				614.8
				CLAY-gray-stiff to very stiff (A-6)
	4		117	
	5			
-65	20	3.2B	16	
				CLAY-gray-stiff to very stiff (A-6)
	4		117	
	15			
-65	20	3.2B	16	
				CLAY-gray-stiff to very stiff (A-6)
	4		122	
	6			
-70	13		NR	
				CLAY-gray-stiff to very stiff (A-6)
	13			
	16			
-70	13		NR	
				CLAY-gray-stiff to very stiff (A-6)
	14			
	18			
-75	18	NP	12	
				CLAY-gray-stiff to very stiff (A-6)
	6		122	
	8			
-80	12	2.0B	14	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG P-2

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	350
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 16
16 -SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

Geo Services, Inc.
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Naperville, Illinois 60565
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SOIL BORING LOG

PAGE 1 of 2
DATE 10/14/2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W037
Station
BORING NO. P-3
Station 539+67.0 US 41 Centerline
Offset 50.0' Left
Ground Surface Elev. 691.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
690.0 3.0" ASPHALT, 9.0" CRUSHED STONE			
	5		
	7		
	7	-	14
CLAY-brown & gray- very stiff (A-6) Fill			
	3		107
	7		
-5	8	2.5B	21
685.0			
	5		
SAND & GRAVEL-brown- medium dense (A-1) Possible Fill	8		
	8	NP	6
682.5			
	4		103
	4		
-10	4	1.1B	23
CLAY-brown & gray- stiff to very stiff (A-6)			
	5		124
	6		
	7	3.5B	13
	4		118
	10		
-15	11	3.4B	16
	8		118
	9		
	13	2.7B	16
	6		117
	10		
-20	12	3.7B	16

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
665.0 CLAY-brown & gray- stiff to very stiff (A-6)			
	6		120
	10		
	10	3.5P	15
CLAY-gray-stiff to very stiff (A-6)			
	7		119
	8		
-25	11	3.0P	15
	6		106
	9		
	14	2.7B	22
	7		115
	8		
-30	14	1.9B	17
			124
	7		
	12		
-35	15	3.5P	13
653.0			
CLAYEY SAND & GRAVEL-gray- medium dense (A-2-6)	10		
	13		
-40	16	NP	20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2886

SOIL BORING LOG

PAGE 2 of 2
DATE 10/14/2004
LOGGED BY TOB
GSI JOB No. 0314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN 049-W037
Station
BORING NO. P-3
Station 539+67.0 US 41 Centerline
Offset 50.0' Left
Ground Surface Elev. 691.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAYEY SAND & GRAVEL-gray- medium dense (A-2-6)			
648.0			
	10		121
	11		
-45	12	4.0P	14
CLAY-gray-very stiff to hard (A-6)			
	11		121
	14		
-50	18	4.5P	14
	9		121
	8		
-55	11	4.5P	14
	5		
	7		
-60	10	3.0P	15

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY-gray-medium stiff to very stiff (A-6)			
628.0			
SILTY LOAM-gray-dense (A-4)	12		
	14		
626.0 -65	16	NP	15
End of Boring @ -65.0' Hollow Stem Augers to -10.0' Rotary Drilling to Completion D-120 Safety Hammer			
-70			
-75			
-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	-	SNB
CHECKED	-	AD
DRAWN	-	SNB
CHECKED	-	AD

BORING LOG P-3

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W037

Benchmark: BM #6 - Square cut in base of L.P. at N.E. corner of IL Route 132 and Magnolia (Speedway) 45.14' LT, Sta. 32+13.24 (IL 132 E.B. ℄), Elev. 696.47.

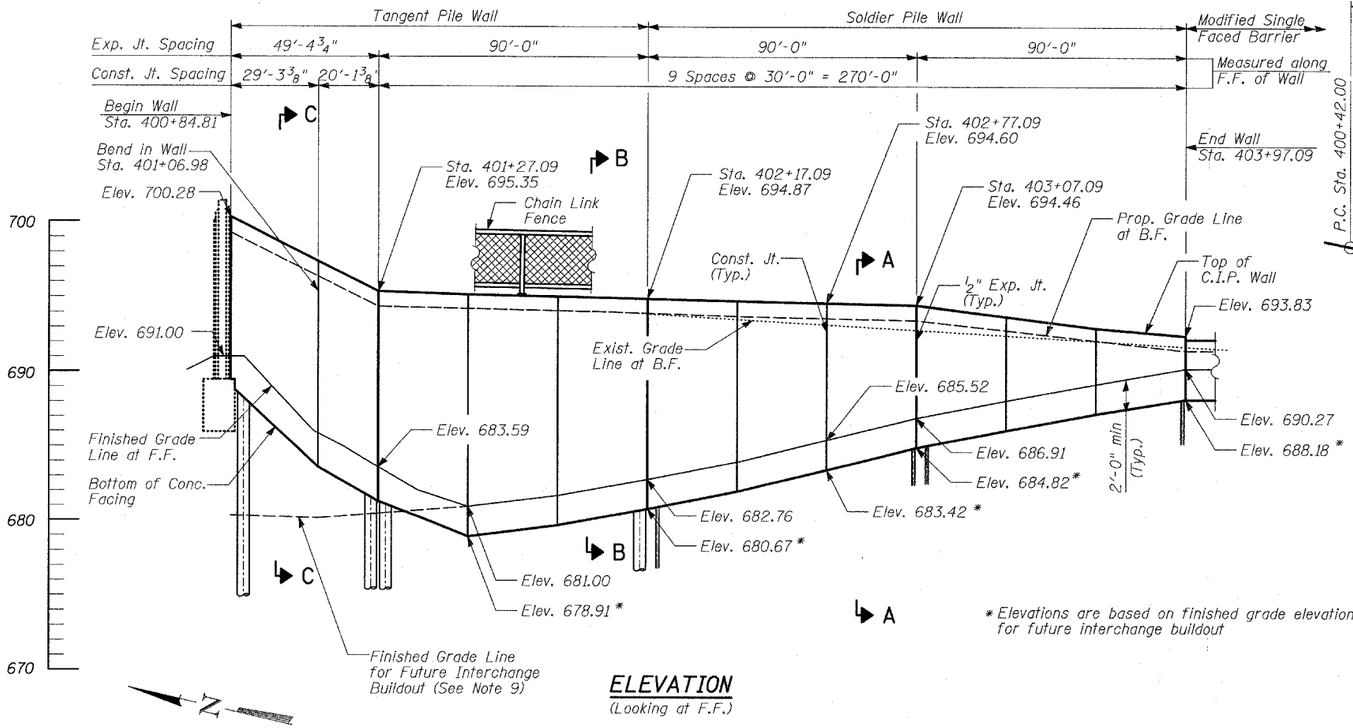
Existing Structure: None.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	351
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

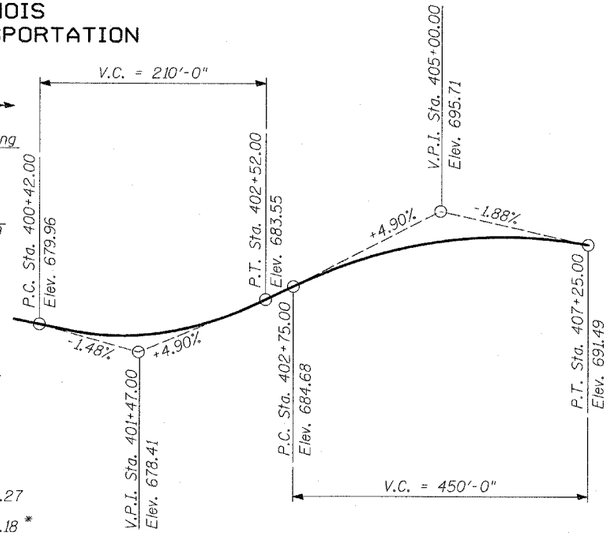
SHEET NO. 1 13 SHEETS

• 125X-HB-(1&2) R-1 CONTRACT # 60826



* Elevations are based on finished grade elevations for future interchange buildout

ELEVATION
(Looking at F.F.)



PROFILE GRADE RAMP D

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	CU YD	401
Concrete Structures	CU YD	158
~~Anti-Graffiti Coating~~	~~SQ FT~~	~~3,657~~
~~Rustication Finish~~	~~SQ FT~~	~~2,968~~
Stud Shear Connectors	EACH	266
Untreated Timber Lagging	SQ FT	1,401
Furnishing Soldier Piles (W Section)	FOOT	852
Reinforcement Bars	POUND	143,020
Reinforcement Bars, Epoxy Coated	POUND	17,180
Drilled Shaft in Soil	CU YD	592
Geocomposite Wall Drain	SQ YD	367
Pipe Underdrains for Structures, 4"	FOOT	320
Drilling and Setting Soldier Piles (in Soil)	CU FT	5,507
Chain Link Fence, 42" Attached to Structure (Special)	FOOT	320

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications For Highway Bridges

DESIGN STRESSES

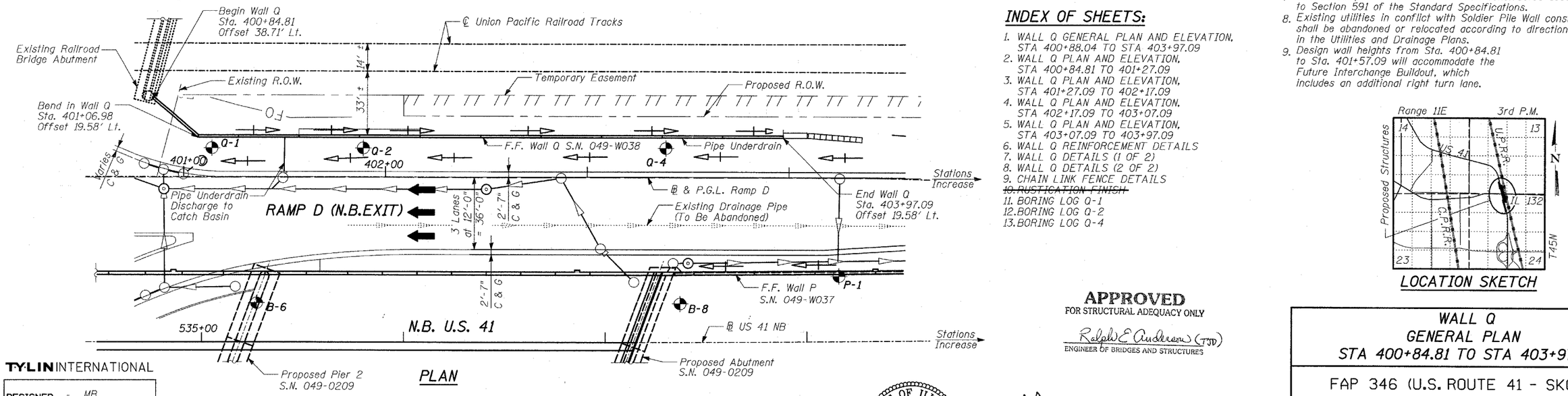
FIELD UNITS

f'_c = 3,500 psi
f_s = 60,000 psi (reinforcement)
f_y = 36,000 psi (structural steel M270 Grade 36)

INDEX OF SHEETS:

GENERAL NOTES:

1. Wall stations and offsets are given to the front face of the concrete facing, and are measured from Ramp D Baseline.
2. Reinforcement bars shall conform to the requirements of ASTM A706 Grade 60 (IL Modified). See Special Provisions.
3. Reinforcement bars designated (E) shall be epoxy coated.
4. The Contractor is responsible for the design and performance of the lagging using no less than 3" nominal rough-sawn thickness and timber with a minimum allowable bending stress (f_b) of 1000 psi.
5. All exposed concrete edges shall be chamfered 3/4" except as noted.
6. ~~Anti-Graffiti Coating shall be applied to exposed surfaces of the concrete facing.~~
7. The Geocomposite Wall Drain shall be constructed according to Section 591 of the Standard Specifications.
8. Existing utilities in conflict with Soldier Pile Wall construction shall be abandoned or relocated according to directions given in the Utilities and Drainage Plans.
9. Design wall heights from Sta. 400+84.81 to Sta. 401+57.09 will accommodate the Future Interchange Buildout, which includes an additional right turn lane.



PLAN

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	CM/AD
DRAWN	-	DE
CHECKED	-	CM/AD

LEGEND

- Manhole
- Catch Basin
- Soil Boring
- Prop. Storm Sewer
- Exist. Drain Pipe
- Proposed Drainage Swale

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ralph E Anderson (TJD)
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS · SPIROS PANTAZIS · 081-006448 · CHICAGO, ILLINOIS · REGISTERED STRUCTURAL ENGINEER

Signed _____
Spiros Pantazis, S.E. Il. Lic. No. 081-006448 Expires 11-30-2008.
For drawings 1 thru 12 of 12

Date 5/14/08

LOCATION SKETCH

WALL Q
GENERAL PLAN
STA 400+84.81 TO STA 403+97.09

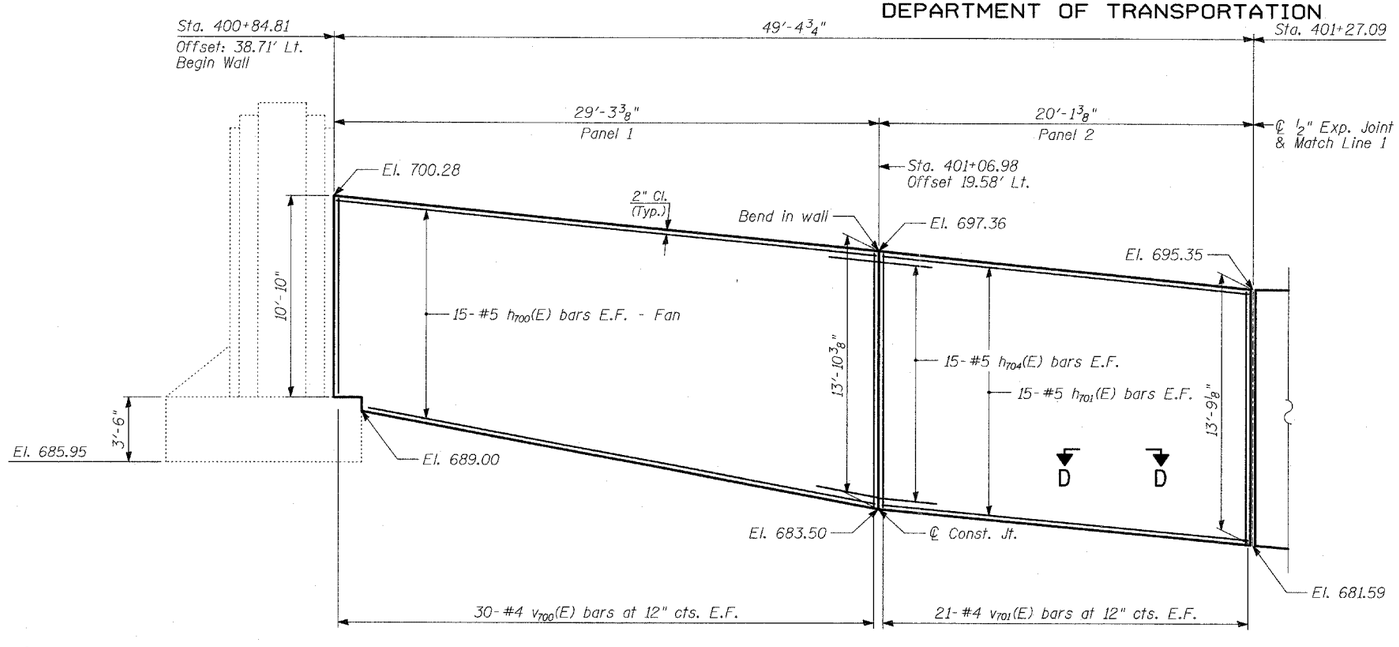
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ38

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	352
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

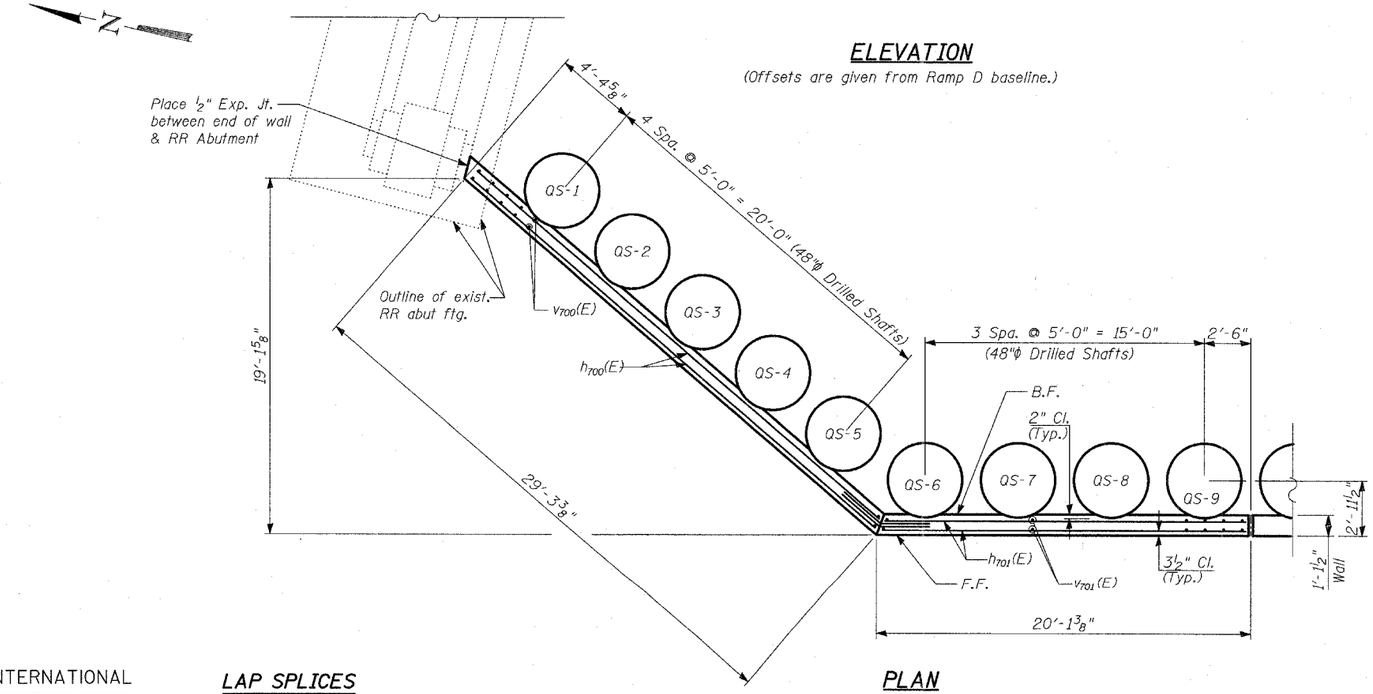
SHEET NO. - 2
13 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT # 60826



ELEVATION

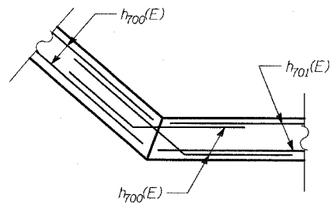
(Offsets are given from Ramp D baseline.)



PLAN

DRILLED SHAFT SUMMARY

Shaft Mark	Length	Top Elevation	Bottom Elevation	Reinforcing (Vertical)	Reinforcing (spiral)
QS-1	53'-2"	643.80	696.90	24-v_{T20}	sp_{T00}
QS-2	53'-2"	643.30	696.40	24-v_{T20}	sp_{T00}
QS-3	53'-2"	642.80	696.00	24-v_{T20}	sp_{T00}
QS-4	53'-2"	642.30	695.50	24-v_{T20}	sp_{T00}
QS-5	53'-2"	641.80	695.00	24-v_{T20}	sp_{T00}
QS-6	44'-0"	650.20	694.20	20-v_{T21}	sp_{T01}
QS-7	44'-0"	649.70	693.70	20-v_{T21}	sp_{T01}
QS-8	44'-0"	649.20	693.20	20-v_{T21}	sp_{T01}
QS-9	44'-0"	648.70	692.70	20-v_{T21}	sp_{T01}



BEND IN WALL DETAIL

TY·LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	CM
CHECKED	-	AD

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

NOTES

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 3 thru 10 of 13.
5. Drilled Shaft spacing measured along front face of wall.

WALL Q
PLAN AND ELEVATION
STA 400+84.81 TO STA 401+27.09

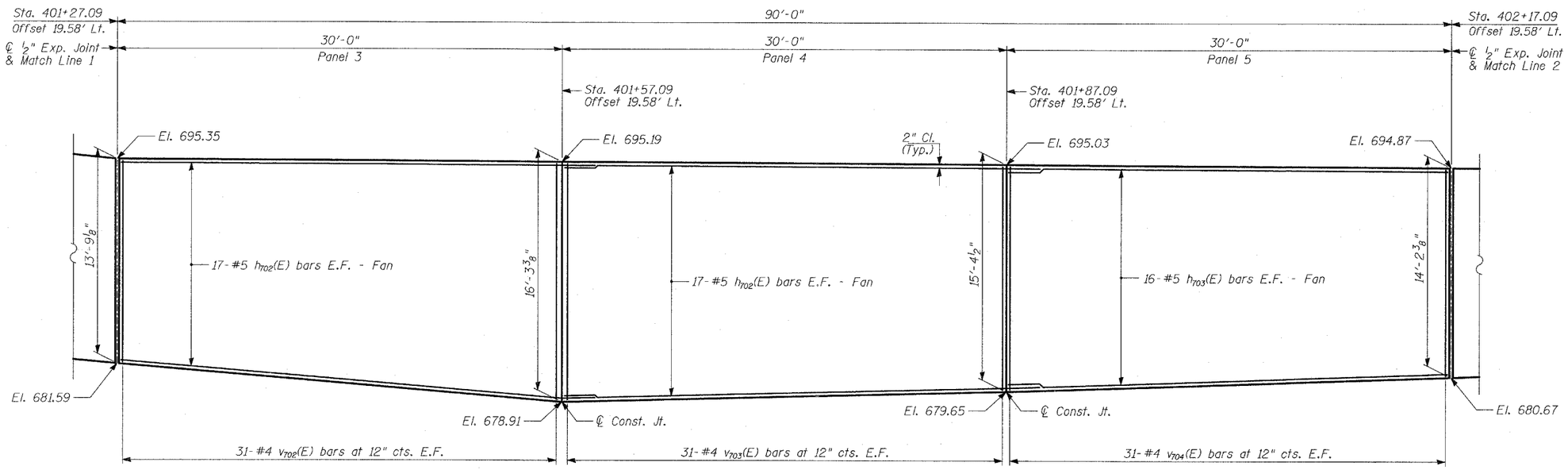
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

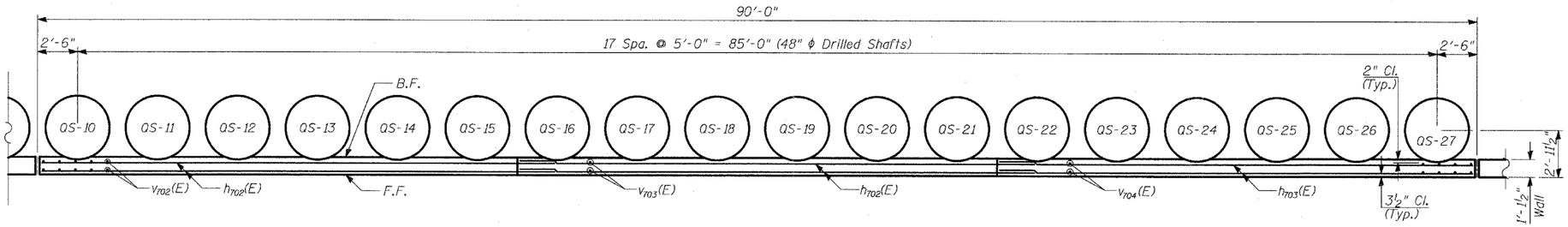
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	353
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. - 3
13 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826



ELEVATION



PLAN

DRILLED SHAFT SUMMARY

Shaft Mark	Length	Top Elevation	Bottom Elevation	Reinforcing (Vertical)	Reinforcing (spiral)
QS-10	46'-3"	646.20	692.40	20-v_{T22}	sp_{T02}
QS-11	46'-3"	646.20	692.40	20-v_{T22}	sp_{T02}
QS-12	46'-3"	646.10	692.40	20-v_{T22}	sp_{T02}
QS-13	46'-3"	646.10	692.40	20-v_{T22}	sp_{T02}
QS-14	46'-3"	646.10	692.30	20-v_{T22}	sp_{T02}
QS-15	46'-3"	646.10	692.30	20-v_{T22}	sp_{T02}
QS-16	46'-4"	645.90	692.30	20-v_{T22}	sp_{T02}
QS-17	46'-4"	645.90	692.30	20-v_{T22}	sp_{T02}
QS-18	46'-4"	645.90	692.20	20-v_{T22}	sp_{T02}

Shaft Mark	Length	Top Elevation	Bottom Elevation	Reinforcing (Vertical)	Reinforcing (spiral)
QS-19	46'-4"	645.90	692.20	20-v_{T22}	sp_{T02}
QS-20	46'-4"	645.80	692.20	20-v_{T22}	sp_{T02}
QS-21	46'-4"	645.80	692.10	20-v_{T22}	sp_{T02}
QS-22	45'-5"	646.70	692.10	20-v_{T23}	sp_{T03}
QS-23	45'-5"	646.70	692.10	20-v_{T23}	sp_{T03}
QS-24	45'-5"	646.70	692.10	20-v_{T23}	sp_{T03}
QS-25	45'-5"	646.60	692.00	20-v_{T23}	sp_{T03}
QS-26	45'-5"	646.60	692.00	20-v_{T23}	sp_{T03}
QS-27	45'-5"	646.60	692.00	20-v_{T23}	sp_{T03}

NOTES

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 2 thru 10 of 13.
5. Drilled Shaft spacing measured along front face of wall.

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

TYLIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

WALL Q
PLAN AND ELEVATION
STA 401+27.09 TO STA 402+17.09

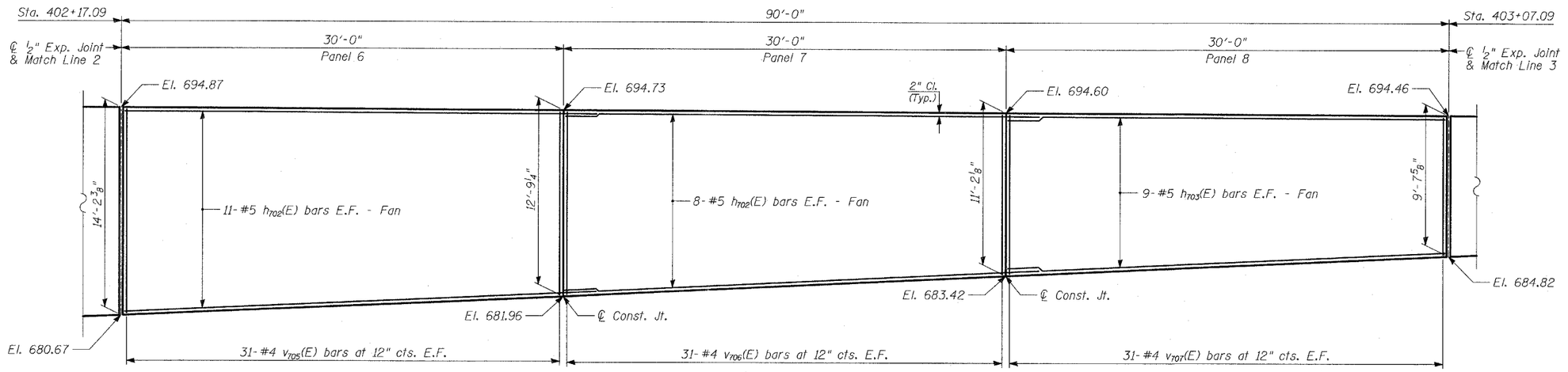
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
049-W038N.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

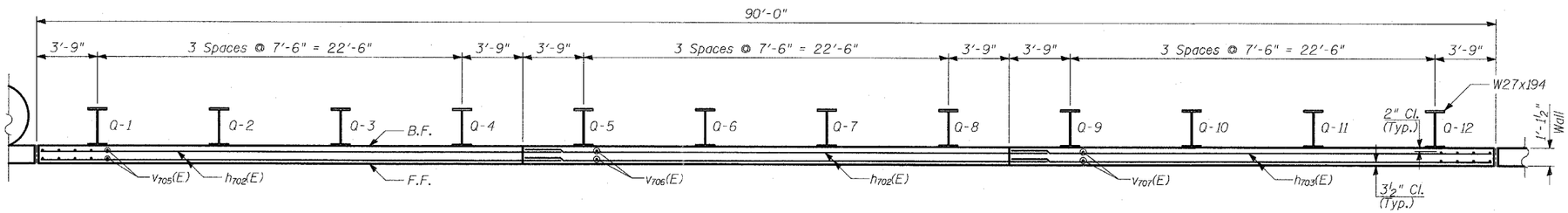
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	354
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 4
13 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826



ELEVATION



PLAN

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
Q-1	W27x194	42'-2"	692.00	649.80
Q-2	W27x194	42'-2"	691.90	649.80
Q-3	W27x194	42'-2"	691.90	649.70
Q-4	W27x194	42'-2"	691.90	649.70
Q-5	W27x194	40'-9"	691.80	651.10
Q-6	W27x194	40'-9"	691.80	651.00
Q-7	W27x194	40'-9"	691.80	651.00
Q-8	W27x194	40'-9"	691.70	651.00
Q-9	W27x194	39'-2"	691.70	652.50
Q-10	W27x194	39'-2"	691.70	652.50
Q-11	W27x194	39'-2"	691.60	652.50
Q-12	W27x194	39'-2"	691.60	652.40

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 2 thru 10 of 13.
5. Pile spacing measured along front face of wall.

TY·LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	CM
CHECKED	-	AD

WALL Q
PLAN AND ELEVATION
STA 402+17.09 TO STA 403+07.09

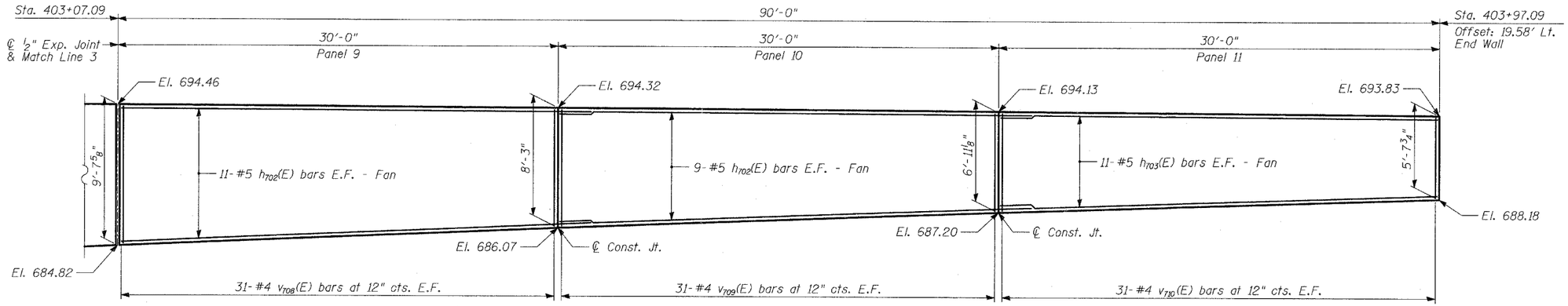
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

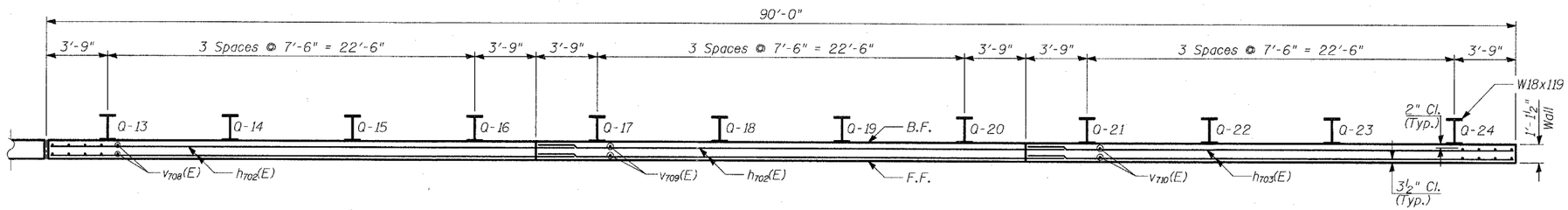
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	355
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 5
13 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT * 60826



ELEVATION
(Offsets are given from Ramp D baseline.)



PLAN

PILE SUMMARY

Pile Label	Pile Size	Length	Top of Pile Elevation	Bot. of Pile Elevation
Q-13	W18x119	31'-7"	691.50	660.00
Q-14	W18x119	31'-7"	691.50	659.90
Q-15	W18x119	31'-7"	691.50	659.90
Q-16	W18x119	31'-7"	691.40	659.90
Q-17	W18x119	30'-3"	691.40	661.20
Q-18	W18x119	30'-3"	691.40	661.10
Q-19	W18x119	30'-3"	691.30	661.10
Q-20	W18x119	30'-3"	691.30	661.00
Q-21	W18x119	28'-11"	691.20	662.30
Q-22	W18x119	28'-11"	691.10	662.20
Q-23	W18x119	28'-11"	691.00	662.10
Q-24	W18x119	28'-11"	691.00	662.10

LAP SPLICES

Bar	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#8	4'-6"

1. B.F. - denotes Back Face.
2. E.F. - denotes Each Face.
3. F.F. - denotes Front Face.
4. Work this Sheet with Sheets 2 thru 10 of 13.
5. Pile spacing measured along front face of wall.

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	CM
CHECKED	-	AD

WALL Q
PLAN AND ELEVATION
STA 403+07.09 TO STA 403+97.09

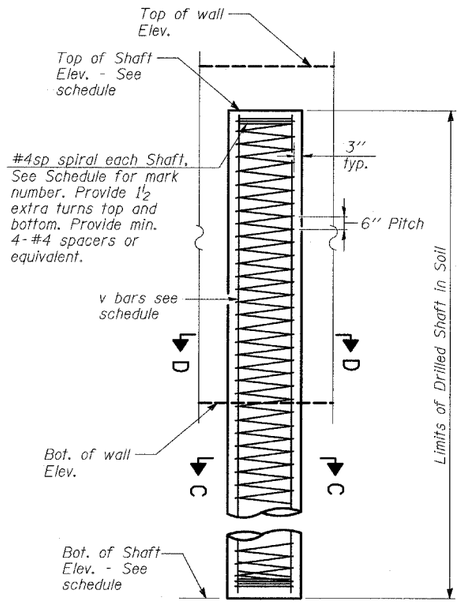
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

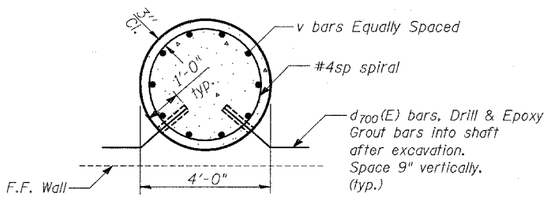
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	356
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 6
13 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826

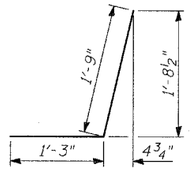


DRILLED SHAFT ELEVATION

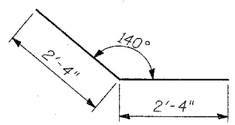


SECTION D-D

Drill & Epoxy Grout d_{700}(E) bars according to Article 584 of the Standard Specifications. The cost shall be included with "Reinforcement Bars, Epoxy Coated".



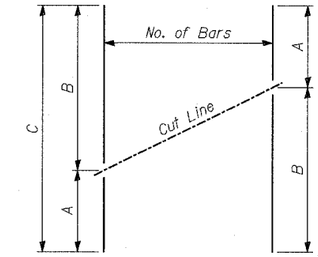
BAR d_{700}(E)



BAR h_{704}(E)

BAR TABLE SCHEDULE

Bar	No. of Sets Required	No. of Bars Per Set	A	B	C
v_{700}(E)	1	30	11'-0"	13'-7"	24'-7"
v_{702}(E)	1	31	13'-6"	16'-0"	29'-6"
v_{703}(E)	1	31	16'-0"	15'-1"	31'-1"
v_{704}(E)	1	31	15'-1"	13'-11"	29'-0"
v_{705}(E)	1	31	13'-11"	12'-6"	26'-5"
v_{706}(E)	1	31	12'-6"	10'-11"	23'-5"
v_{707}(E)	1	31	10'-11"	9'-4"	20'-3"
v_{708}(E)	1	31	9'-4"	8'-0"	17'-4"
v_{709}(E)	1	31	8'-0"	6'-8"	14'-8"
v_{710}(E)	1	31	6'-8"	5'-4"	12'-0"



SERIES OF BAR CUTTING DIAGRAM

See table for dimensions.
Order Bars Full Length, Cut as Shown Normal to Bar Axis and Use Remainder of Bars in Opposite Face.

BAR LIST AND BILL OF MATERIAL

	Bar	Number	Size	Length	Shape
	d_{700}(E)	854	#5	3'-0"	⌋
	h_{700}(E)	30	#5	28'-8"	—
	h_{701}(E)	30	#5	19'-5"	—
	h_{702}(E)	166	#5	32'-0"	—
	h_{703}(E)	72	#5	29'-8"	—
	h_{704}(E)	30	#5	4'-8"	⌒
	v_{700}(E)	30	#4	24'-7"	—
	v_{701}(E)	42	#4	13'-6"	—
	v_{702}(E)	31	#4	29'-6"	—
	v_{703}(E)	31	#4	31'-1"	—
	v_{704}(E)	31	#4	29'-0"	—
	v_{705}(E)	31	#4	26'-5"	—
	v_{706}(E)	31	#4	23'-5"	—
	v_{707}(E)	31	#4	20'-3"	—
	v_{708}(E)	31	#4	17'-4"	—
	v_{709}(E)	31	#4	14'-8"	—
	v_{710}(E)	31	#4	12'-0"	—
**	sp_{700}	5	#4	52'-8"	▮▮▮▮
**	sp_{701}	4	#4	43'-6"	▮▮▮▮
**	sp_{702}	12	#4	45'-9"	▮▮▮▮
**	sp_{703}	6	#4	44'-9"	▮▮▮▮
	v_{720}	120	#11	52'-8"	—
	v_{721}	80	#10	43'-6"	—
	v_{722}	240	#10	45'-9"	—
	v_{723}	120	#10	44'-9"	—

Reinforcement Bars, Epoxy Coated	Pound	17,180
Concrete Structures	CU YD	158
Anti-Graffiti Coating	SQ FT	3,657
Furnishing Soldier Piles (W Section)	FOOT	852
Drilling and Setting Soldier Piles (In Soil)	CU FT	5,507
Drilled Shaft in Soil	CU YD	592
Reinforcement Bars	Pound	143,020

Minimum Lap for Spirals = 1½ Turns
** Length is Height of Spiral.

TYLIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

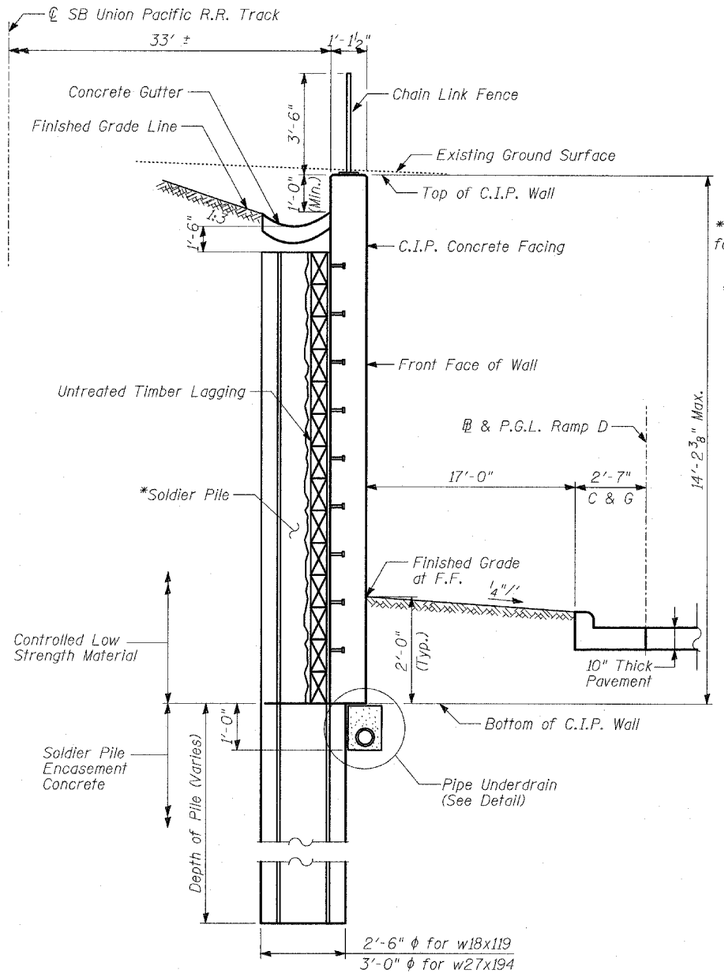
WALL Q
REINFORCEMENT DETAILS

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. 049-W038

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

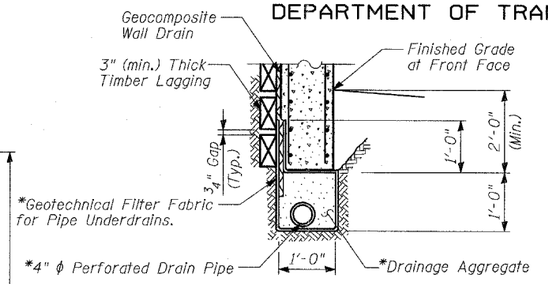
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	357
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 7
13 - SHEETS
* 125X-HB-(1&2) R-1
CONTRACT * 60826



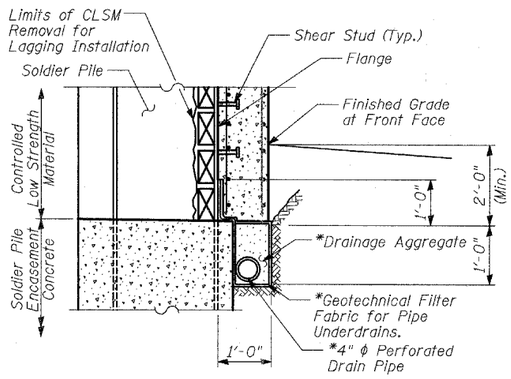
SECTION A-A

Sta. 402+17.09 to Sta 403+97.09
(Soldier Pile Wall)

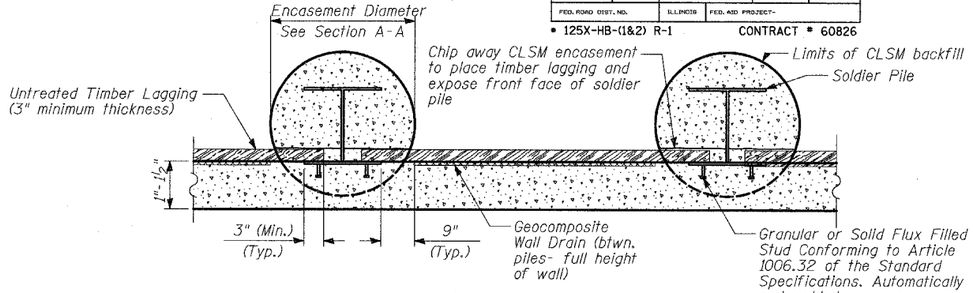


PIPE UNDERDRAIN DETAIL BETWEEN SOLDIER PILES

*Included in the cost of "Pipe Underdrains for Structures"

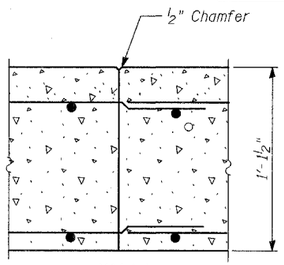


PIPE UNDERDRAIN DETAIL AT SOLDIER PILE



TYPICAL SECTION THRU SOLDIER PILE WALL

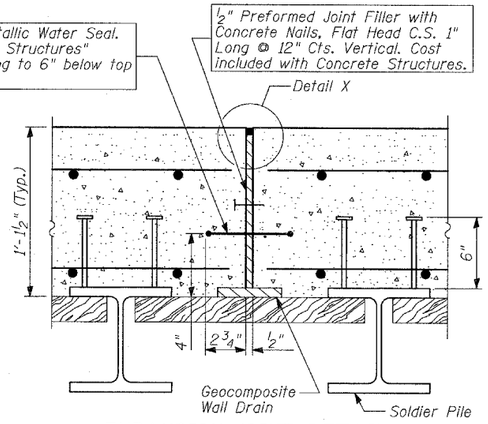
6" Hollow Bulb Type Non-Metallic Water Seal. Cost included with "Concrete Structures" Extend from bottom of facing to 6" below top of facing.



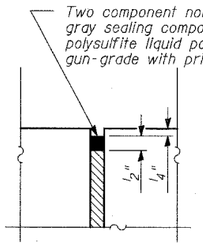
WALL

CONSTRUCTION JOINT DETAIL

½" Preformed Joint Filler with Concrete Nails, Flat Head C.S. 1" Long @ 12" Ctrs. Vertical. Cost included with Concrete Structures.



EXPANSION JOINT DETAIL



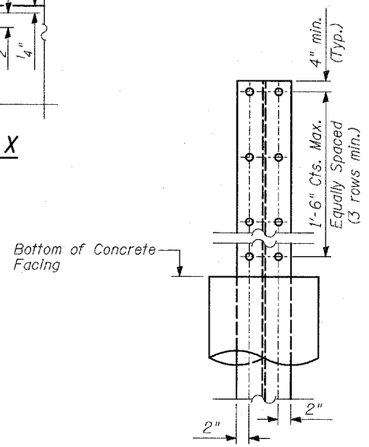
DETAIL X

ITEM	UNIT	TOTAL
Structure Excavation	CU YD	401
Stud Shear Connectors	EACH	266
Untreated Timber Lagging	SQ FT	1,401
Geocomposite Wall Drain	SQ YD	367
Pipe Underdrains for Structures, 4"	FOOT	320

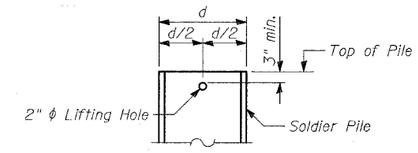
BILL OF MATERIAL

NOTES:

1. The Geocomposite Wall Drain shall be constructed according to Section 591 of the Standard Specifications.
2. The Contractor is responsible for the design and performance of the lagging using no less than 3" nominal rough-sawn thickness and the minimum tabulated unit stress in bending (f_b), used in the design of timber lagging shall be 1000 psi.
3. Stud shear connectors shall be ¾" ϕ x 6" granular or solid flux filled headed studs, automatically end welded to the front flange of the soldier piles.

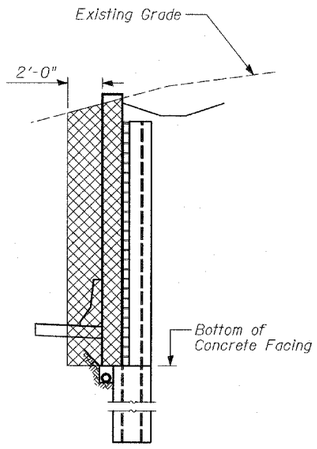


SHEAR STUD CONNECTOR DETAIL



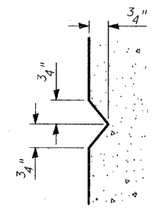
LIFTING HOLE DETAIL

Lifting hole to be provided if necessary. Cost included with "Furnishing Soldier Piles (W Section)"



STRUCTURE EXCAVATION

(For Proposed Wall)



CHAMFER DETAIL

Cost of Chamfer included with "Concrete Structures"

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	DE
CHECKED	-	CM, AD

WALL Q
DETAILS (1 OF 2)

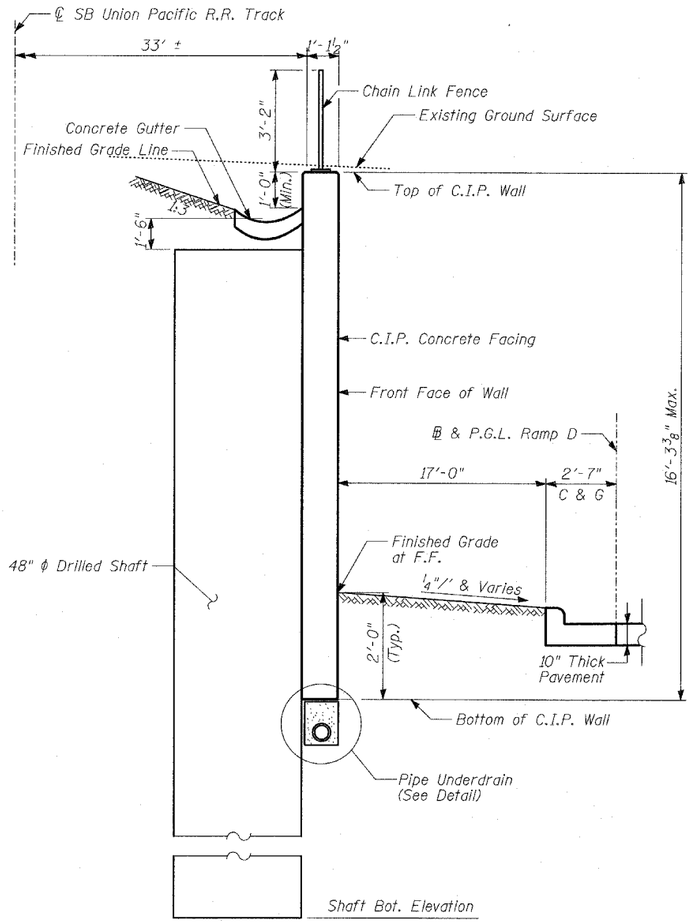
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ38

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

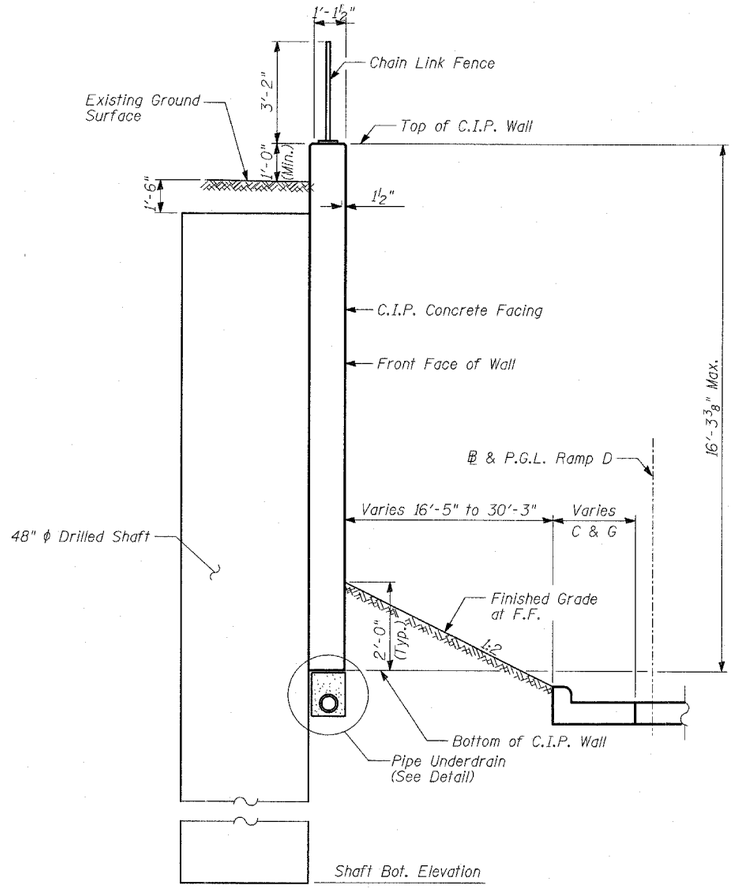
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	358
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 8 13 SHEETS

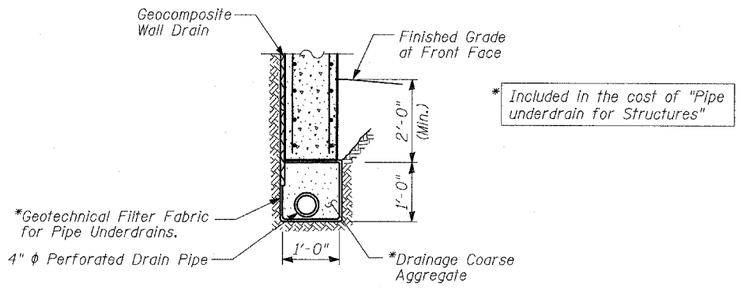
* 125X-HB-(1&2) R-1 CONTRACT * 60826



SECTION B-B
Sta. 401+57.09 to Sta. 402+17.09
(Tangent Pile Wall)

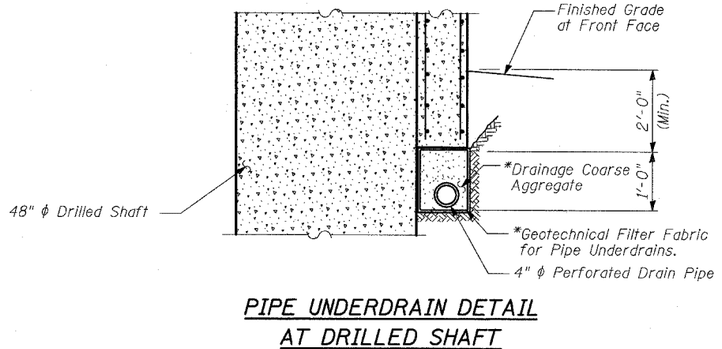


SECTION C-C
Sta. 400+84.81 to Sta. 401+57.09
(Tangent Pile Wall)

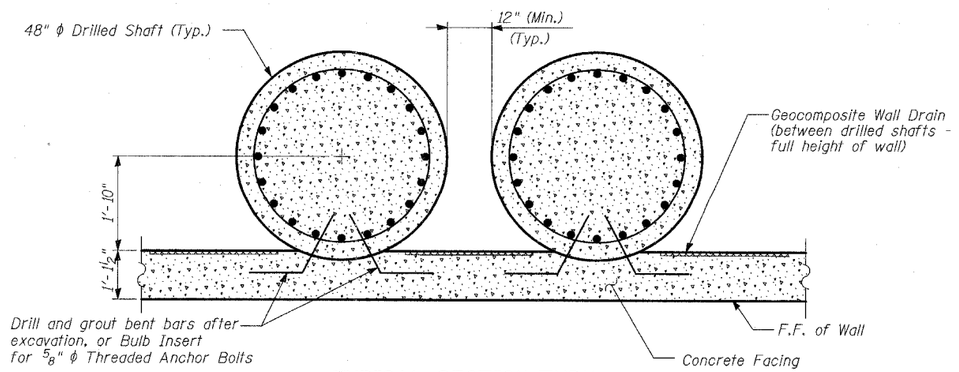


* Included in the cost of "Pipe underdrain for Structures"

PIPE UNDERDRAIN DETAIL
BETWEEN DRILLED SHAFTS



PIPE UNDERDRAIN DETAIL
AT DRILLED SHAFT



TYPICAL SECTION THRU
TANGENT PILE WALL

TY·LIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	DE
CHECKED	-	CM, AD

WALL Q
DETAILS (2 OF 2)

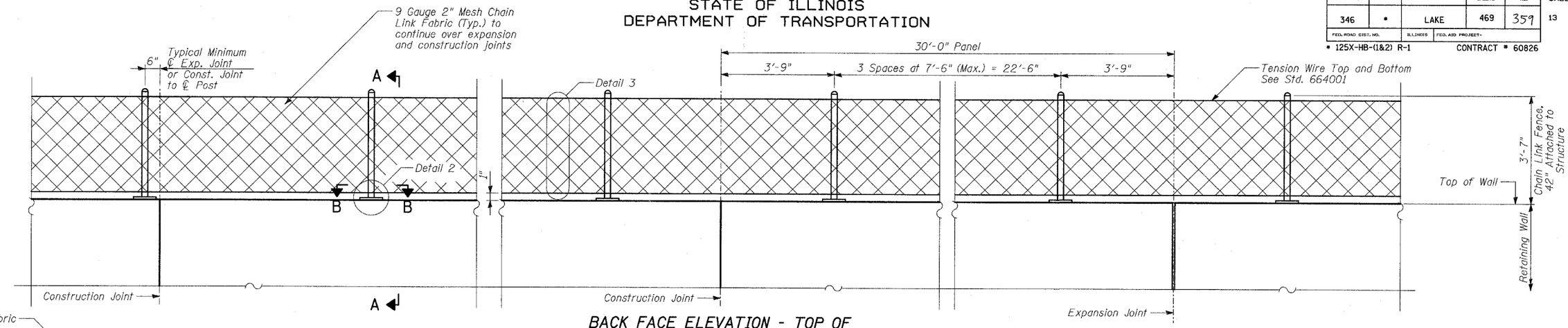
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ38

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	359
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

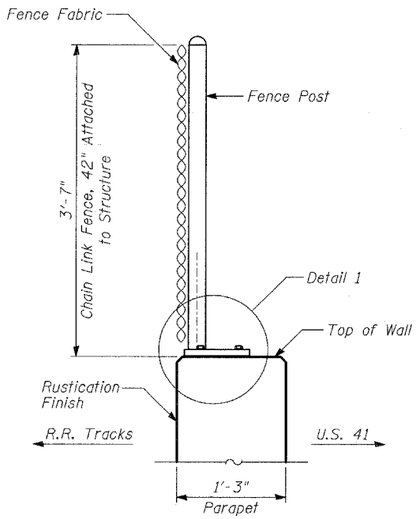
SHEET NO. - 9
13 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

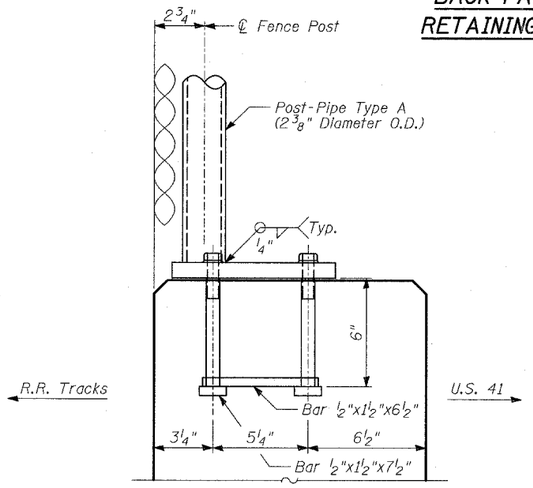
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



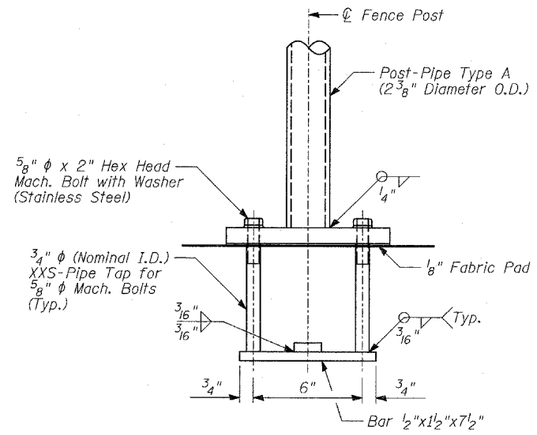
BACK FACE ELEVATION - TOP OF RETAINING WALL CHAIN LINK FENCE



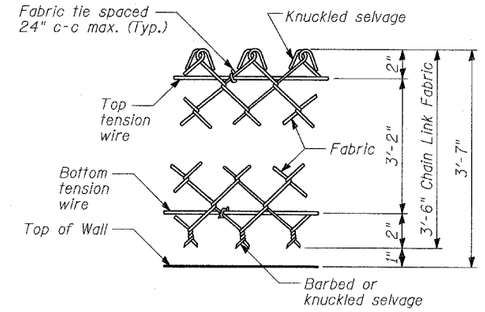
SECTION A-A



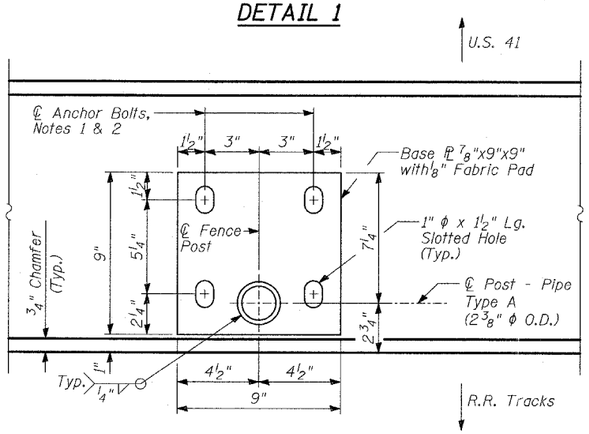
DETAIL 1



DETAIL 2



DETAIL 3



SECTION B-B
BASE PLATE PLAN

ITEM	UNIT	TOTAL
Chain Link Fence, 42" Attached to Structure	FOOT	320

BILL OF MATERIAL

NOTES:

1. In lieu of the cast-in-place anchor bolt assembly shown, the Contractor has the option of drilling and epoxy grouting 5/8" diameter anchor rods with 1 1/4" diameter washers. The Contractor shall use the capsule or the adhesive cartridge type anchor rods that have been previously tested and given prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures. The capsule or adhesive cartridge shall be sealed with pre-measured amounts of adhesive chemical. Anchor rod threading to be peened after nuts are installed.
2. For additional chain link details, see Standard 664001.

TYLIN INTERNATIONAL

DESIGNED	-	MB
CHECKED	-	AD
DRAWN	-	CM
CHECKED	-	AD

CHAIN LINK FENCE DETAILS

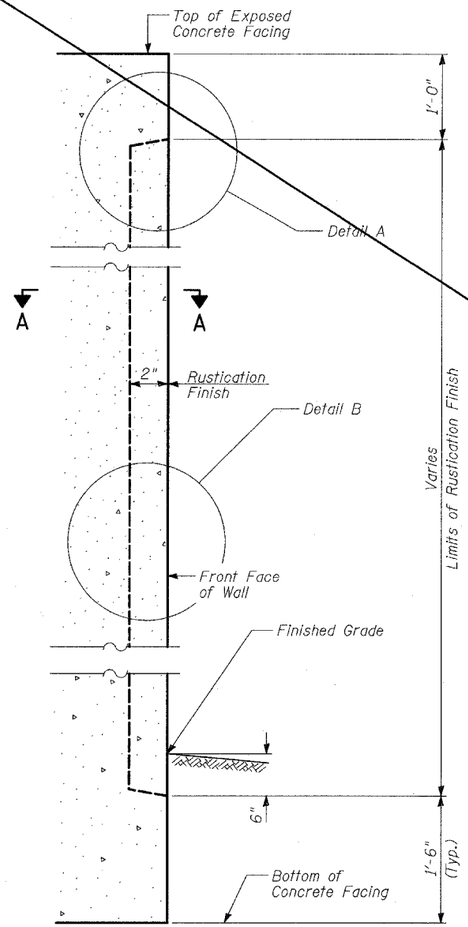
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ38

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

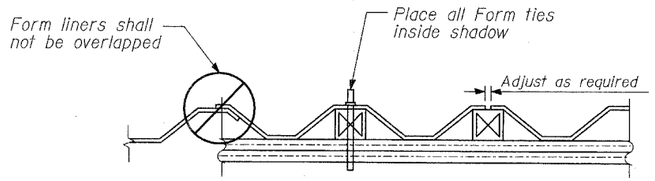
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	360
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 10
13 SHEETS

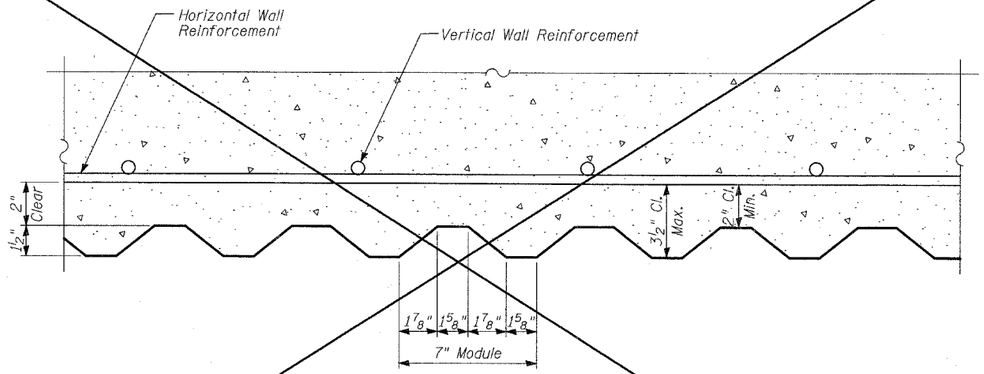
• 125X-HB-(1&2) R-1 CONTRACT # 60826



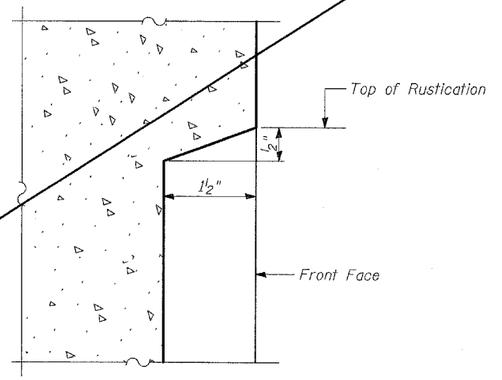
WALL DETAIL



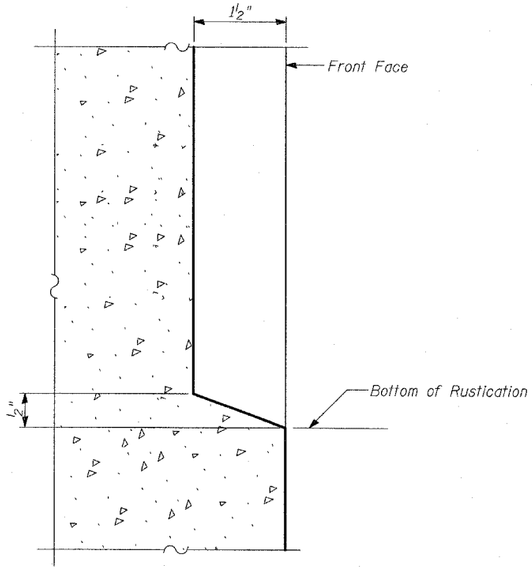
SUGGESTED FORMWORK DETAIL



SECTION A-A



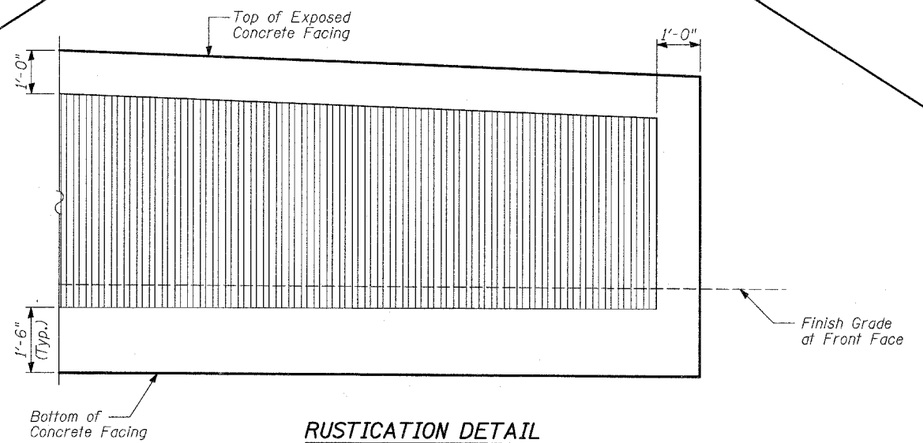
DETAIL A



DETAIL B

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Rustication Finish	SQ FT	2,968



RUSTICATION DETAIL
(At Interior Panel with Embankment)

TY·LIN INTERNATIONAL

DESIGNED	- MB
CHECKED	- AD
DRAWN	- CM
CHECKED	- AD

WALL Q
RUSTICATION DETAILS

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ38

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	361
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 11
13 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amberst Court Suite 204
Naperville, Illinois 60565
(630) 355-2936

SOIL BORING LOG

PAGE 1 of 2
DATE 10/26/2004
LOGGED BY C&S
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME-75 Auto Hammer
STRUCT. NO. SN Ø49-WØ38
Station
BORING NO. Q-1
Station 401+14.Ø Ramp D Baseline
Offset 14.3' Left
Ground Surface Elev. 682.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 667.8 ▼
Upon Completion Dry ▽
After Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
681.3			
TOPSOIL-black (Fill)	3		
	4		
	6	-	18
CLAY-brown & gray-hard (A-6)			
	4		
	5		
-5	7	4.ØP	17
676.3			
	2		109
	6		
	7	2.2B	17
CLAY-gray-very stiff (A-6)			
	2		112
	4		
-1Ø	5	2.2B	16
	2		11Ø
	3		
	6	2.5B	2Ø
	1		1Ø8
▼	4		
-15	7	2.8B	2Ø
	2		93
	2		
	5	2.3B	24
	1		1Ø5
	3		
-2Ø	7	2.1B	23

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
661.3			
CLAY-gray-very stiff (A-6)	2		
	6		
	9	NP	19
SANDY CLAY LOAM-gray-medium dense (A-2-6)			
658.8			
	4		
	5		
-25	6	1.75P	18
	3		
	5	1.25P	19
CLAY-gray-stiff to very stiff (A-6)			
	1		
	6		
-3Ø	7	2.ØP	16
	2		121
	5		
-35	8	2.25P	15
	4		123
	6		
-4Ø	1Ø	2.5P	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amberst Court Suite 204
Naperville, Illinois 60565
(630) 355-2936

SOIL BORING LOG

PAGE 2 of 2
DATE 10/26/2004
LOGGED BY C&S
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME-75 Auto Hammer
STRUCT. NO. SN Ø49-WØ38
Station
BORING NO. Q-1
Station 401+14.Ø Ramp D Baseline
Offset 14.3' Left
Ground Surface Elev. 682.3

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 667.8 ▼
Upon Completion Dry ▽
After Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY-gray-stiff to very stiff (A-6)			
	4		119
	6		
-45	11	1.25B	15
634.3			
	5		
SAND & GRAVEL-gray-medium dense (A-1-b)	10		
632.3 -5Ø	16	NP	21
CLAYEY SAND & GRAVEL-gray-medium dense (A-2-6)	4		
	8		
627.3 -55	1Ø	NP	19
End of Boring @ -55.Ø' Hollow Stem Augers CME-75 Automatic Hammer			
-6Ø			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-65			
-7Ø			
-75			
-8Ø			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TYLIN INTERNATIONAL

DESIGNED	-	MAF
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

BORING LOG Q-1

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ38

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	362
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 12
13 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT • 60826

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 305-2858

SOIL BORING LOG

PAGE 1 of 2
DATE 9/15/2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ38
Station
BORING NO. Q-2
Station 401+89.Ø Ramp D Baseline
Offset 14.3' Left
Ground Surface Elev. 699.Ø

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				TOPSOIL-black (A-7)
698.Ø				
	16			
	8			TOPSOIL & CLAY-dark brown & black (A-6/A-7) Fill
	11	4.5+P	18	
	12			CLAY-gray-stiff to very stiff (A-6)
	6			
-5	8	4.5+P	20	
693.Ø				
	8		96	
	5			CLAY-brown & gray-hard (A-6) Fill
	6	4.4B	19	
690.5				
	11			
	2			TOPSOIL & CLAY-dark brown & black
-10	2	Ø.5P	17	medium stiff (A-6/A-7) Fill
688.Ø				
	4		108	
	7			CLAY-brown & gray-hard (A-6)
	12	4.4B	21	
	6		103	
	10			
-15	12	4.4B	22	
682.5				
	7			SAND & GRAVEL-gray- medium dense (A-1-b)
	9			
	10	2.0P	13	CLAY LOAM-brown-very stiff (A-6)
680.5				
	7		112	
	8			CLAY-gray-stiff to very stiff (A-6)
-20	11	2.7B	19	
670.Ø				
	9			
-35	13	NP	10	
661.Ø				
	7		120	CLAY-gray-very stiff (A-6)
	12			
-40	16	3.5B	15	
	4		115	
	5			
	11	2.7B	17	
	2		113	
	3			
-25	4	1.1B	18	
	4		107	
	6			
	8	1.1B	22	
	4		103	
	4			
-30	5	1.9B	24	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 305-2858

SOIL BORING LOG

PAGE 2 of 2
DATE 9/15/2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ38
Station
BORING NO. Q-2
Station 401+89.Ø Ramp D Baseline
Offset 14.3' Left
Ground Surface Elev. 699.Ø

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CLAY-gray-very stiff (A-6)
655.Ø				
	12			
	10			
-45	12	NP	10	
				SAND & GRAVEL-gray- medium dense to dense (A-1-b)
	9			
	21			
-50	18		NR	
646.Ø				
	7		124	
	12			
-55	16	3.5B	14	
				CLAY-gray-very stiff (A-6)
	9		117	
	9			
-60	9	2.25P	16	
				CLAY-gray-very stiff (A-6)
635.Ø				
	7			
	17			
-65	27	-	10	
				SANDY CLAY-gray-dense (A-6)
632.Ø				
	17			
	17			
-70	18	NP	19	SAND & GRAVEL-gray-dense (A-1-b)
	17			
	24			
624.Ø -75	24	NP	8	
				End of Boring @ -75.Ø'
				Hollow Stem Augers to -1Ø.Ø'
				Rotary Drilling to Completion
				D-12Ø Safety Hammer
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY·LIN INTERNATIONAL

DESIGNED	-	MAF
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

BORING LOG Q-2

FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ38

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	363
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 13
13 - SHEETS

• 125X-HB-(1&2) R-1 CONTRACT # 60826

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2626

SOIL BORING LOG

PAGE 1 of 2
DATE 9/16/2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ38
Station
BORING NO. Q-4
Station 403+39.Ø Ramp D Baseline
Offset 14.3' Left
Ground Surface Elev. 696.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				TOPSOIL-black (A-7)
695.2	7		119	
	6			CLAY-brown & gray-hard (A-6) Fill
	7	6.2B	16	
693.2				
	7			SILTY LOAM-brown & gray-medium dense (A-4) Fill
-5	6			
	8	NP	12	
690.7				
	7		100	CLAY-brown & gray-stiff (A-6) Fill
	10			
	12	1.9B	24	
688.2				
	3		107	CLAY-brown & gray-stiff to very stiff (A-6)
	3			
-10	1	1.8B	22	
	3		112	
	2			
	6	2.8B	19	
683.7				
	9			SILT-brown & gray-medium dense (A-4)
	11			
681.7 -15	10	1.5P	21	
	7		118	CLAY-gray-stiff to hard (A-6)
	5			
	8	1.8B	16	
	5		102	
	6			
-20	9	1.8B	17	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	6		111	CLAY-gray-stiff to hard (A-6)
	7			
	10	5.1B	19	
	5		116	
	8			
-25	12	3.5B	17	
	5		105	
	6			
	4	2.7B	22	
	4		110	
	6			
-30	12	1.8B	20	
	22			
	9			
-35	10	4.0P	11	
	11		131	
	16			
-40	22	4.5P	11	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2626

SOIL BORING LOG

PAGE 2 of 2
DATE 9/16/2004
LOGGED BY TOB
GSI JOB No. Ø314

ROUTE FAP Rte. 346 DESCRIPTION New Overpass
TWNSHP Gurnee LOCATION TWP 44 N, R 6E on the south boundary of Sec 28
COUNTY Lake DRILLING METHOD 3.25" HSA/Rotary HAMMER TYPE D-120 Safety Hammer
STRUCT. NO. SN Ø49-WØ38
Station
BORING NO. Q-4
Station 403+39.Ø Ramp D Baseline
Offset 14.3' Left
Ground Surface Elev. 696.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				Fine SAND-gray-dense (A-3)
633.2				
	10		118	CLAY-gray-stiff to hard (A-6)
	8			
-45	7	2.1B	16	
				SAND & GRAVEL-gray-medium dense to dense (A-1)
	11		135	
	5			
-50	9	2.5B	9	
	4		123	
	6			
641.7 -55	8	2.5B	14	
				Fine SAND-gray-dense (A-3)
	10			
	13			
-60	18	NP	17	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	12			
-65	12	NP	6	
	11			
	18			
626.7 -70	23	NP	10	
				End of Boring @ -70.0'
				Hollow Stem Augers to -10.Ø'
				Rotary Drilling to Completion
				D-120 Safety Hammer
-75				
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)

TY-LIN INTERNATIONAL

DESIGNED	- MAF
CHECKED	- AD
DRAWN	- MAF
CHECKED	- AD

BORING LOG Q-4

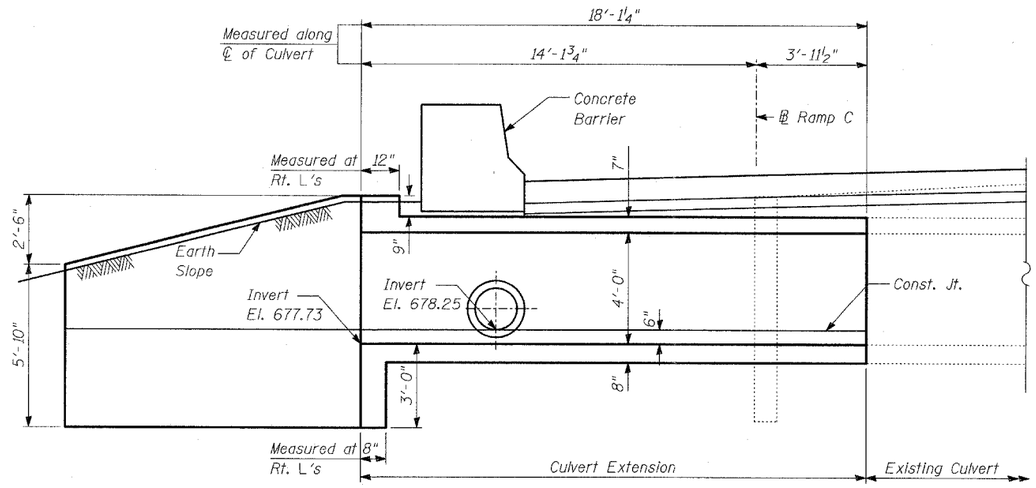
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N. Ø49-WØ38

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

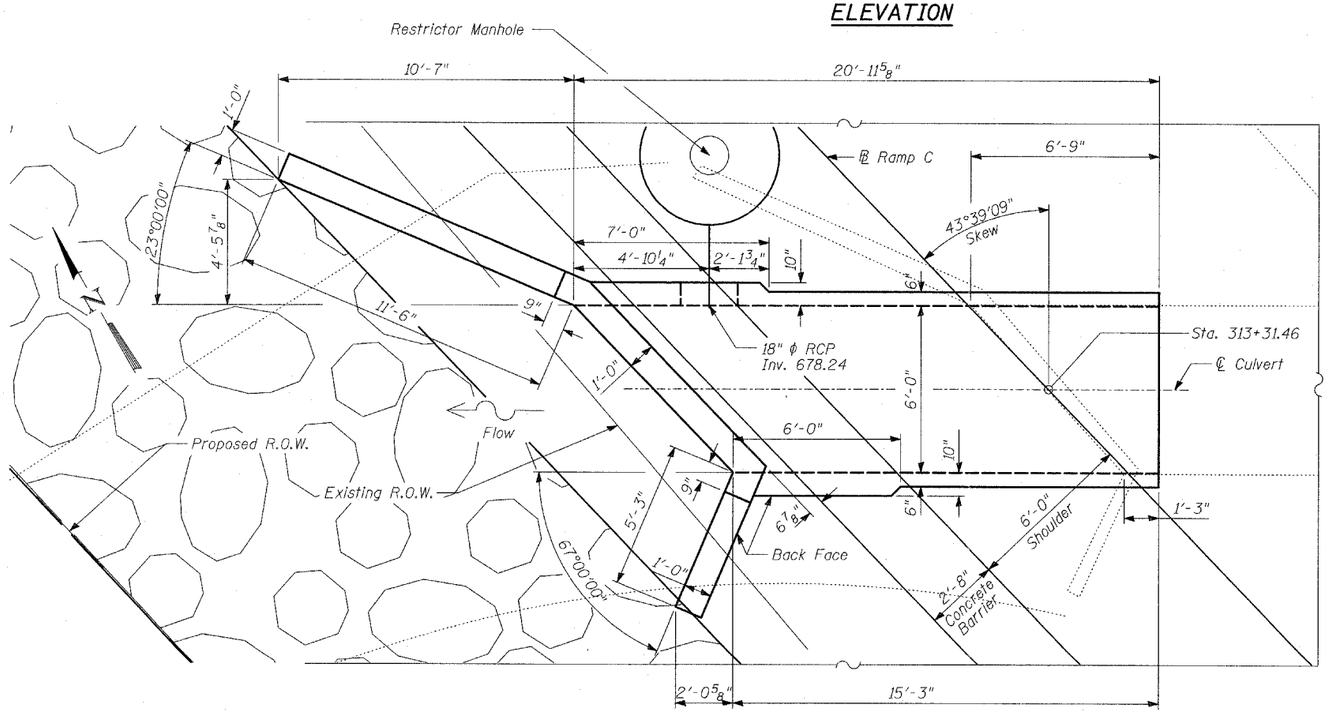
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	30A
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		

SHEET NO. - 1
2 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826



ELEVATION



PLAN

CONCRETE REMOVAL - PLAN

Concrete Removal

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	CU YD	6
Reinforcement Bars	POUND	2,520
Expansion Bolts 3/4"	EACH	16
Concrete Box Culverts	CU YD	15

LOADING HS20-44

Allow 50 psf for future wearing surface

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications For Highway Bridges

DESIGN STRESSES

FIELD UNITS

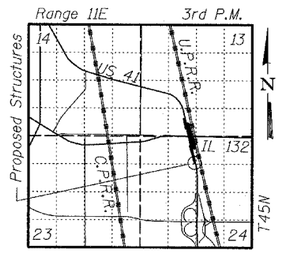
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.035g
Site Coefficient (S) = 1.0

NOTES:

1. A distance of half the wingwall length, but not less than 6 feet of the barrel shall be poured monolithically with the wingwalls.
2. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60 (IL Modified). See Special Provisions.
3. All exposed concrete edges shall be chamfered 3/4" except as noted.
4. All construction joints shall be bonded.



LOCATION SKETCH

TY·LIN INTERNATIONAL

DESIGNED	-	AD, MAF
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD

STATE OF ILLINOIS
SPIROS PANTAZIS
081-006448
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

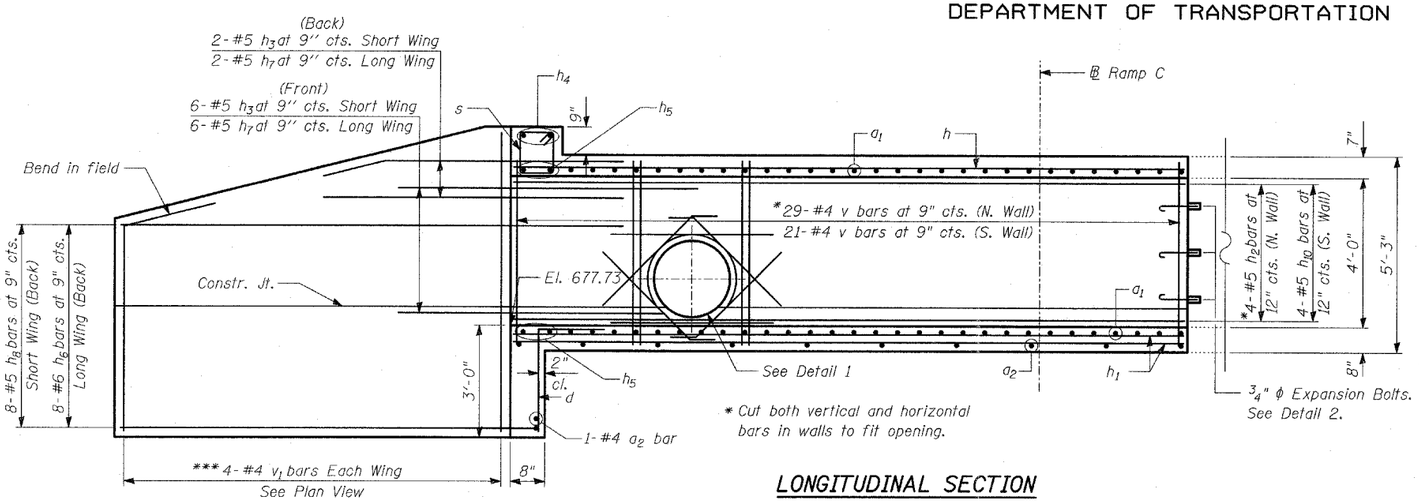
Signed _____
Spiros Pantazis, S.E. Il. Lic. No. 081-006448 Expires 11-30-2008.
For drawings 1 and 2 of 2

Date 5/14/08

BOX CULVERT EXTENSION
STA. 313+31.46

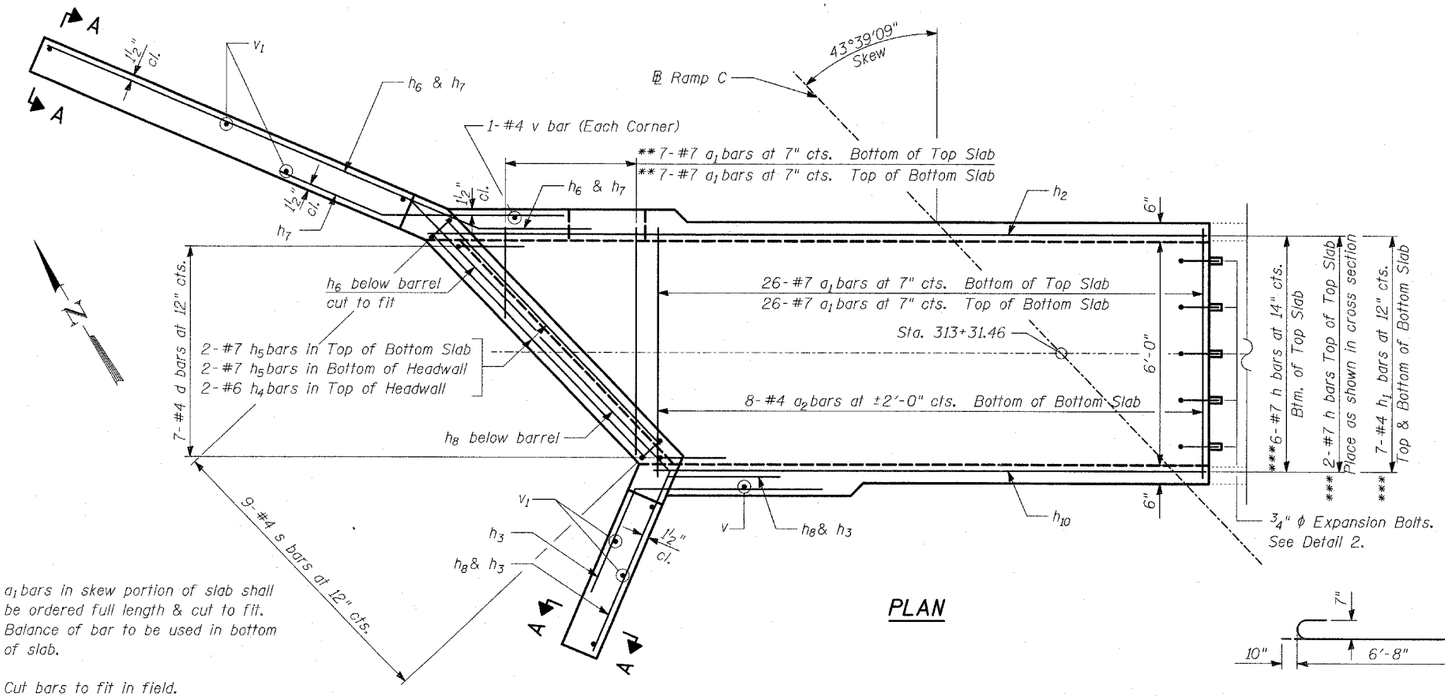
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



* Cut both vertical and horizontal bars in walls to fit opening.

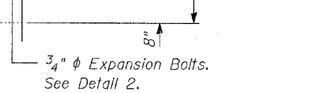
LONGITUDINAL SECTION



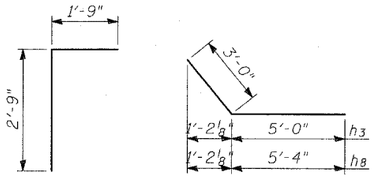
** a_1 bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in bottom of slab.

*** Cut bars to fit in field.

PLAN

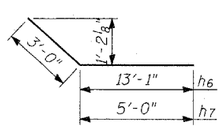


BAR a_1

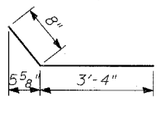


BAR d

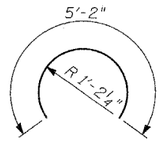
BAR h_3 & h_8



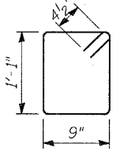
BAR h_6 & h_7



BAR v_2



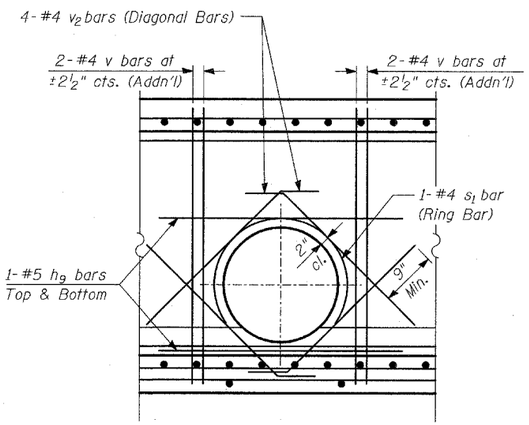
BAR s_1



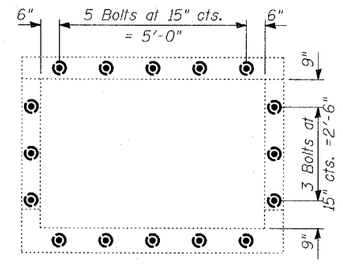
BAR s

TY·LIN INTERNATIONAL

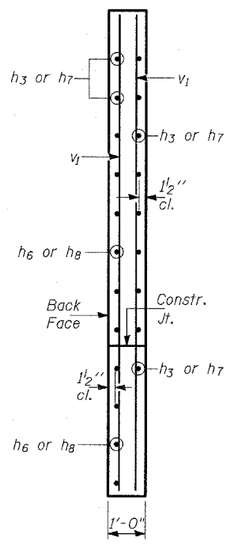
DESIGNED	-	AD, MAF
CHECKED	-	AD
DRAWN	-	MAF
CHECKED	-	AD



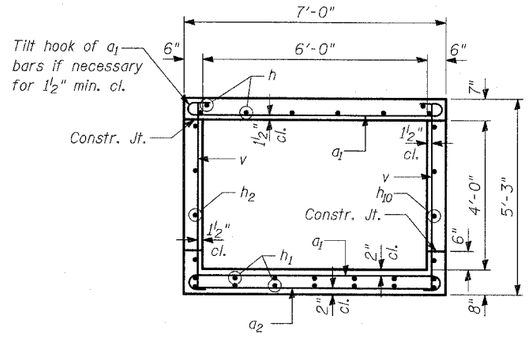
DETAIL 1



DETAIL 2



SECTION A-A



SECTION THRU BARREL

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	365
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 2
2 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826

BILL OF MATERIAL

Bar	Number	Size	Length	Shape
a_1	59	#7	8'-4"	
a_2	9	#4	6'-8"	
d	7	#4	4'-6"	
h	8	#7	20'-8"	
h_1	14	#4	20'-8"	
h_2	4	#5	20'-8"	
h_3	8	#5	8'-0"	
h_4	2	#6	8'-4"	
h_5	4	#7	8'-4"	
h_6	8	#6	16'-1"	
h_7	8	#5	8'-0"	
h_8	8	#5	8'-4"	
h_9	2	#5	4'-4"	
h_{10}	4	#5	14'-7"	
s	9	#4	4'-5"	
s_1	1	#4	5'-2"	
v	56	#4	4'-11"	
v_1	8	#4	8'-1"	
v_2	4	#4	4'-0"	
Reinforcement Bars			POUND	2,520
Concrete Box Culvert			CU YD	15
¾" ϕ Expansion Bolts			EACH	16

NOTES:

Expansion bolts shall be ¾" ϕ hooked bolts. Hooked bolts shall extend a minimum of 9" into new concrete.

BOX CULVERT EXTENSION
STA. 313+31.46
REINFORCEMENT DETAILS

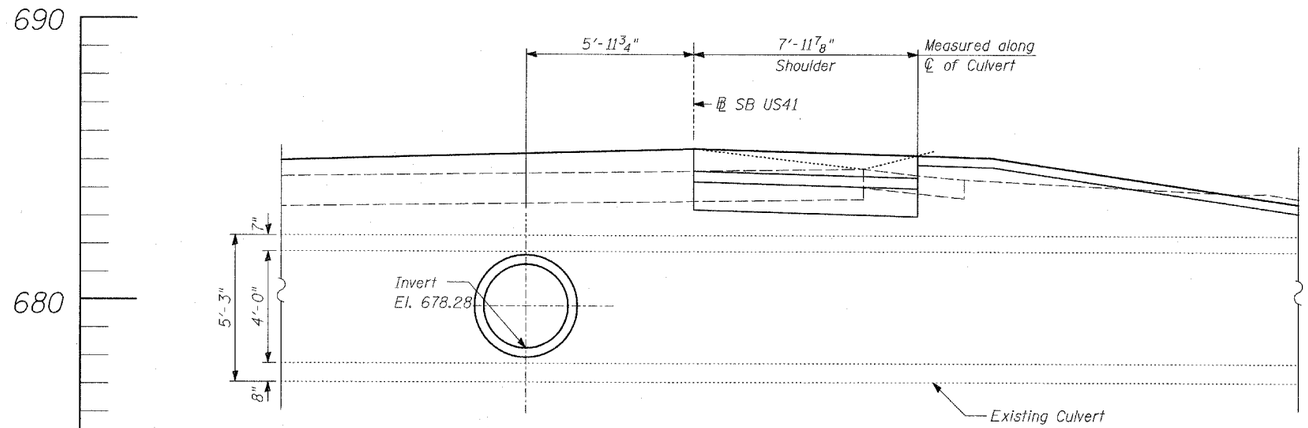
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

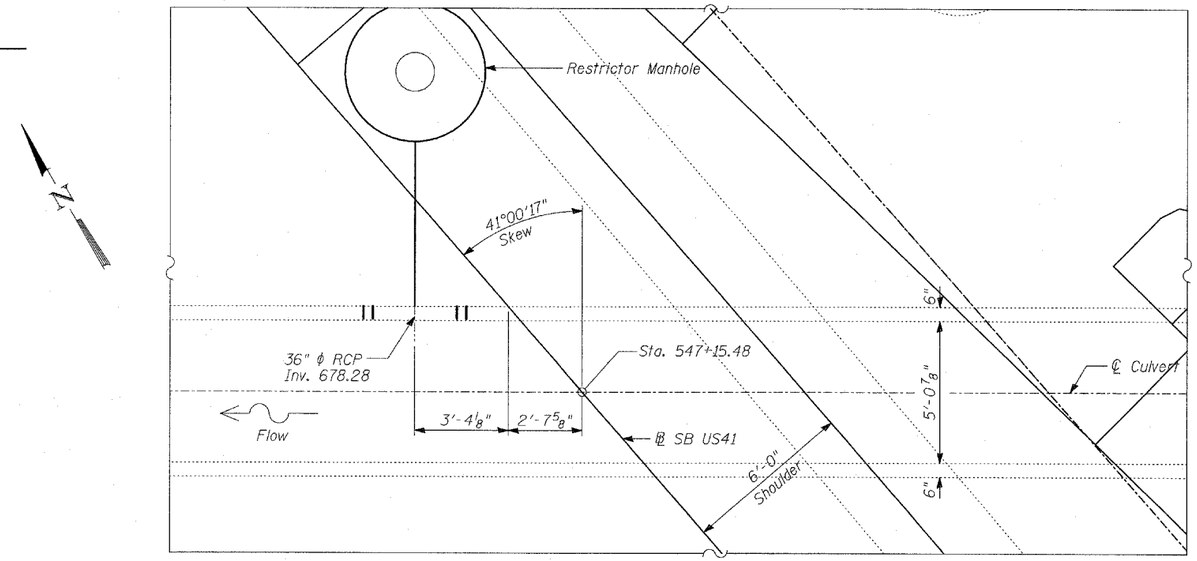
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	365A
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 1
2 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT # 60826



ELEVATION



PLAN

LOADING HS20-44

Allow 50 psf for future wearing surface

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications For Highway Bridges

DESIGN STRESSES

FIELD UNITS

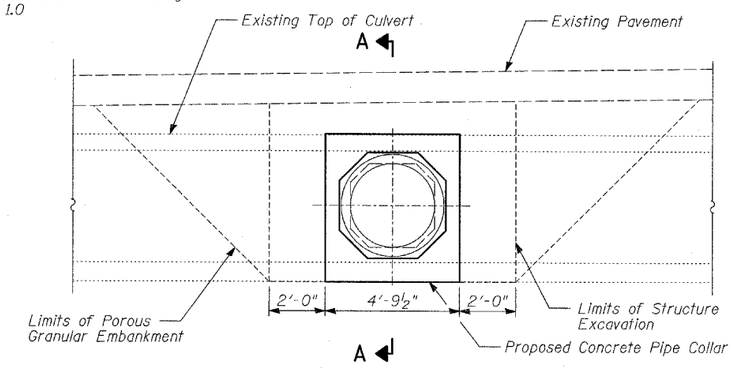
f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)

SEISMIC DATA

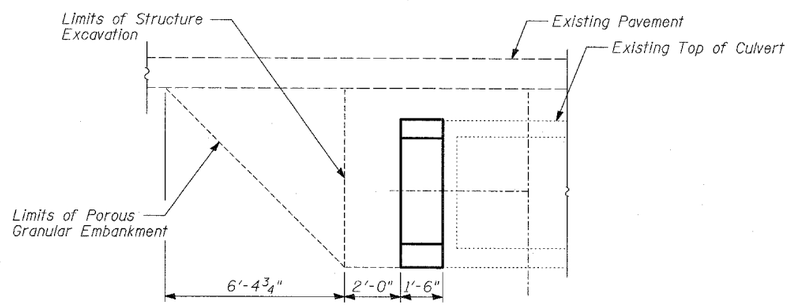
Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.035g
Site Coefficient (S) = 1.0

TOTAL BILL OF MATERIAL

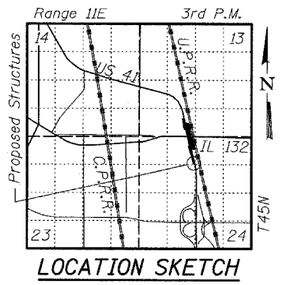
ITEM	UNIT	TOTAL
Porous Granular Embankment	CU YD	17
Concrete Removal	CU YD	1
Structure Excavation	CU YD	8
Concrete Box Culverts	CU YD	1
Reinforcement Bars	POUND	130
Expansion Bolts 3/4"	EACH	12



LIMITS OF POROUS GRANULAR EMBANKMENT & STRUCTURE EXCAVATION



SECTION A-A



LOCATION SKETCH

TYLIN INTERNATIONAL

DESIGNED	-
CHECKED	-
DRAWN	-
CHECKED	-

NOTES:

1. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr. 60 (IL Modified). See Special Provisions.
2. All exposed concrete edges shall be chamfered 3/4" except as noted.
3. All construction joints shall be bonded.

STATE OF ILLINOIS
SPIROS PANTAZIS
081-006448
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed SPP
Spiros Pantazis, S.E. Il. Lic. No. 081-006448 Expires 11-30-2008.
For drawings 1 and 2 of 2

Date 5/14/08

PIPE COLLAR AT EXISTING CULVERT
STA. 547+15.48

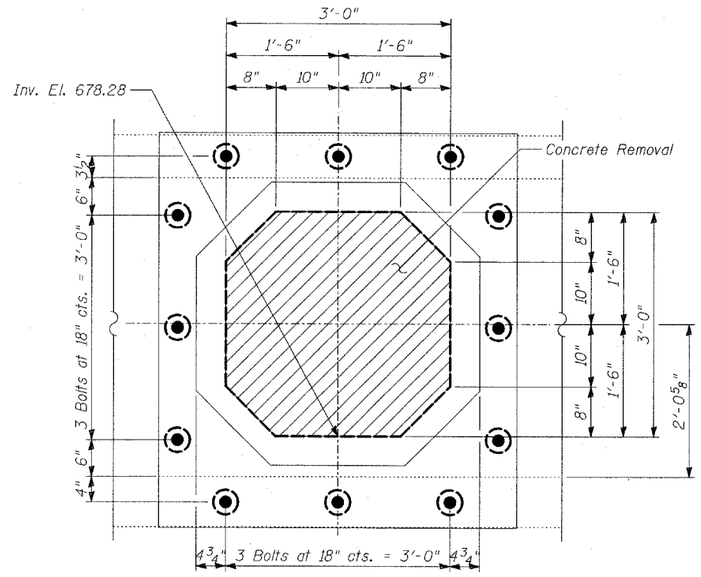
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

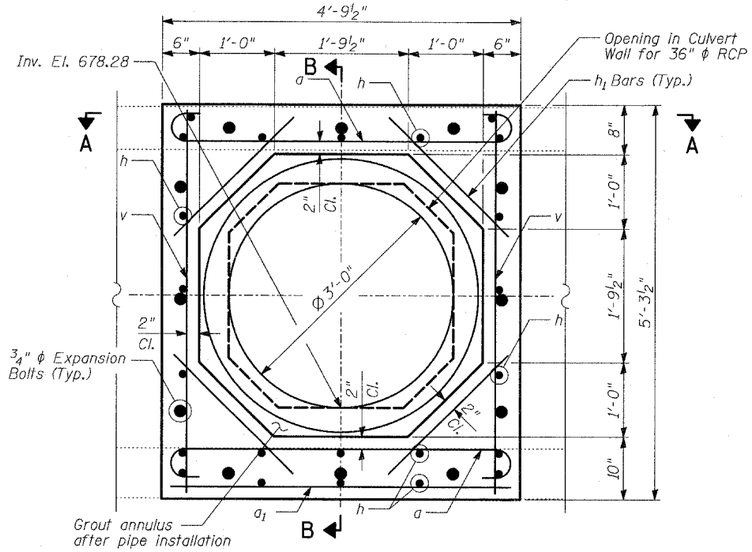
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	365B
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 2 - SHEETS

* 125X-HB-(1&2) R-1 CONTRACT * 60826



CONCRETE REMOVAL & EXPANSION BOLTS LAYOUT - ELEVATION



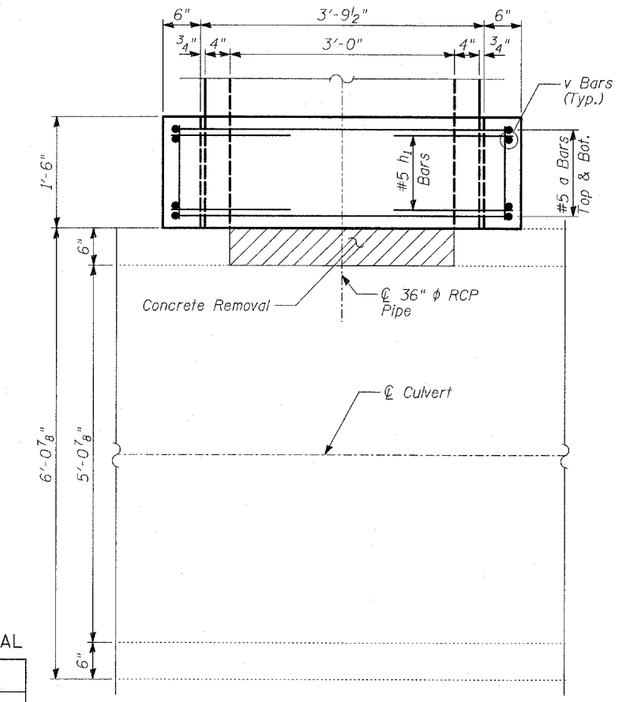
COLLAR DETAIL - ELEVATION

BILL OF MATERIAL

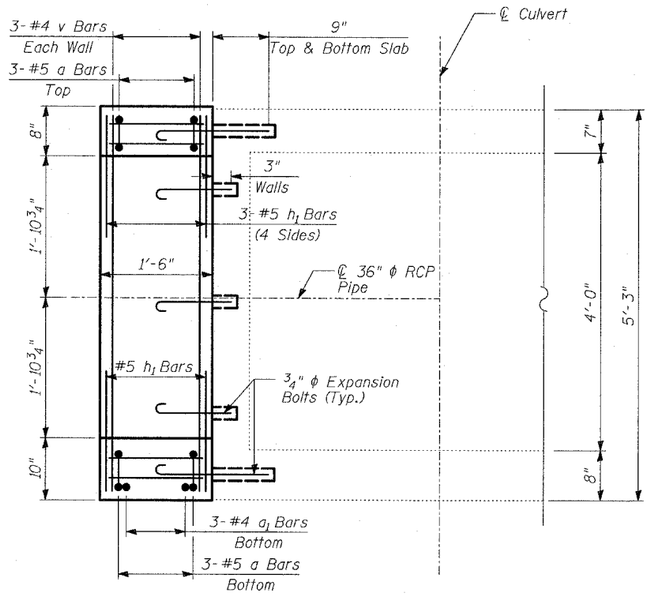
Bar	Number	Size	Length	Shape
a	6	#5	5'-8"	
a_1	3	#4	4'-6"	
h	23	#5	1'-3"	
h_1	12	#5	2'-3"	
v	6	#4	5'-0"	
Reinforcement Bars			POUND	130
Porous Granular Embankment			CU YD	17
Concrete Removal			CU YD	1
Structure Excavation			CU YD	8
Concrete Box Culverts			CU YD	1
¾" ϕ Expansion Bolts			EACH	12

NOTES:

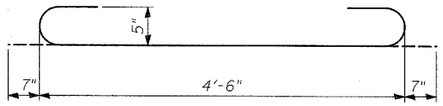
Expansion bolts shall be ¾" ϕ hooked bolts. Hooked bolts shall extend a minimum of 9" into new concrete.



SECTION A-A
(Expansion Bolts Not Shown for Clarity)



SECTION B-B



BAR a

TYLIN INTERNATIONAL

DESIGNED	-
CHECKED	-
DRAWN	-
CHECKED	-

PIPE COLLAR AT EXISTING CULVERT
REINFORCEMENT DETAILS
STA. 547+15.48

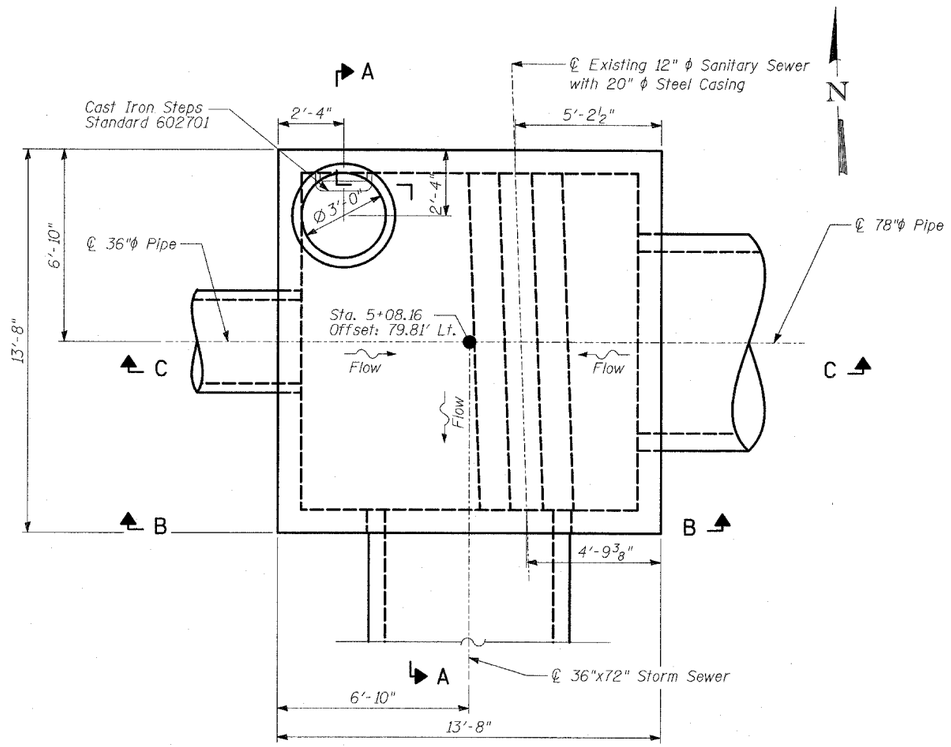
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

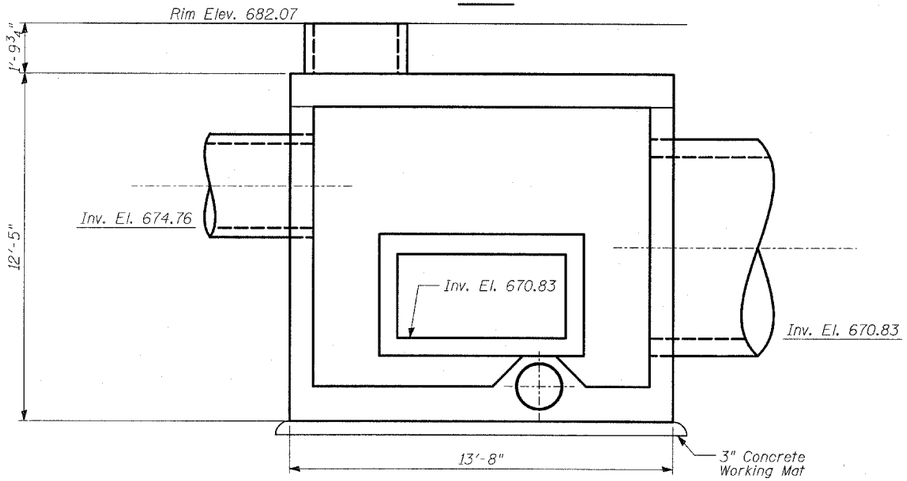
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	366
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 1
3 - SHEETS

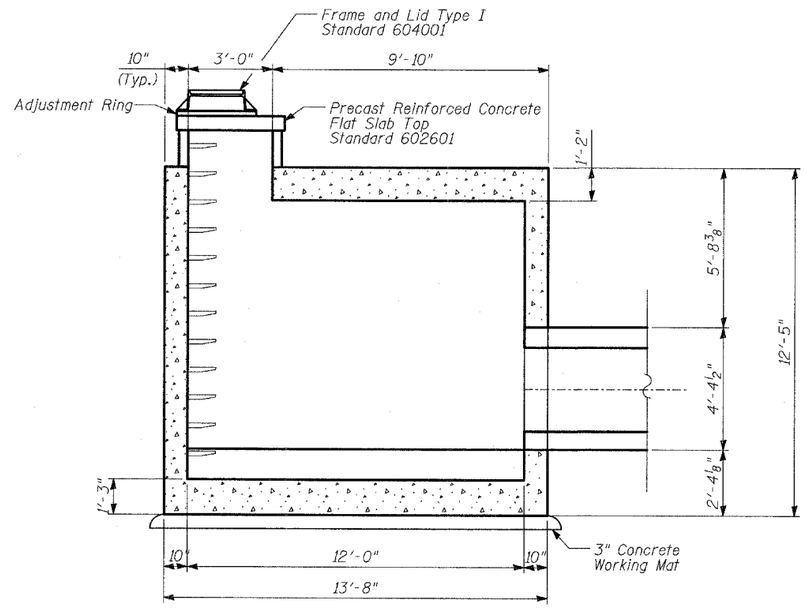
• 125X-HB-(1&2) R-1 CONTRACT # 60826



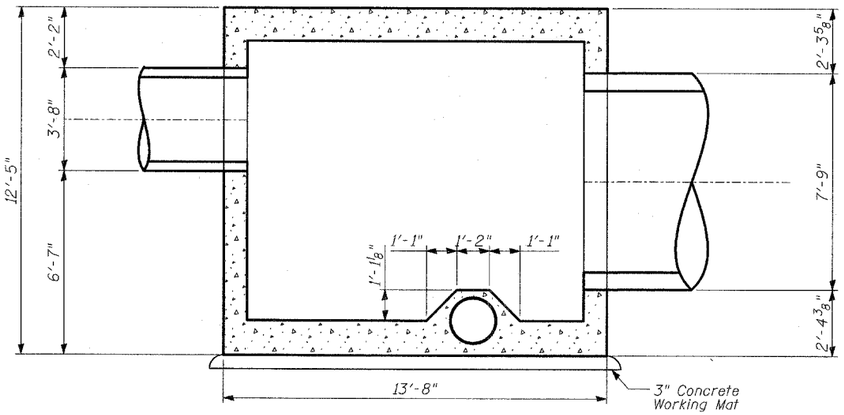
PLAN



ELEVATION B-B



SECTION A-A



SECTION C-C

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications
For Highway Bridges

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 36,000 psi (structural steel M270 Grade 36)

NOTES:

1. The Contractor shall verify the location of all underground utilities before submitting the temporary soil retention system drawings.
2. For additional information, see Standard Specifications.
3. For reinforcement details, see Sheets 2 and 3 of 3.
4. All pipe openings are based on ASTM C76, coordinate openings with pipe supplier for proper fit.
5. The maximum width of the temporary soil retention system shall be the width of the junction chamber plus 4 feet. The maximum length of the temporary soil retention system shall be the length of junction chamber plus 4 feet.
6. The design of the temporary soil retention system is the responsibility of the Contractor. The Contractor shall submit design calculations and details to the Engineer for approval. The design calculations shall be signed and sealed by an Illinois licensed Structural Engineer, submitted and approved prior to the start of any work. The Engineer's approval shall not relieve the Contractor of responsibility for the safety of the excavation.
7. Retention systems placed within 10 feet of a watermain must remain in place permanently.

BILL OF MATERIAL

ITEM	UNIT	J.C. 51
Porous Granular Embankment	CU YD	82
Junction Chamber	EACH	1
Temporary Soil Retention System	SQ FT	1,023

TY·LIN INTERNATIONAL

DESIGNED	-	DE
CHECKED	-	PL
DRAWN	-	DE
CHECKED	-	PL

STATE OF ILLINOIS
PAUL A. LOPEZ
081-006523
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Paul Lopez
Paul A. Lopez, S.E. Il. Lic. No. 081-006523 Expires 11-30-2008. For drawings 1 thru 3 of 3
Date 5/14/08

JUNCTION CHAMBER 51
GENERAL PLAN AND ELEVATION

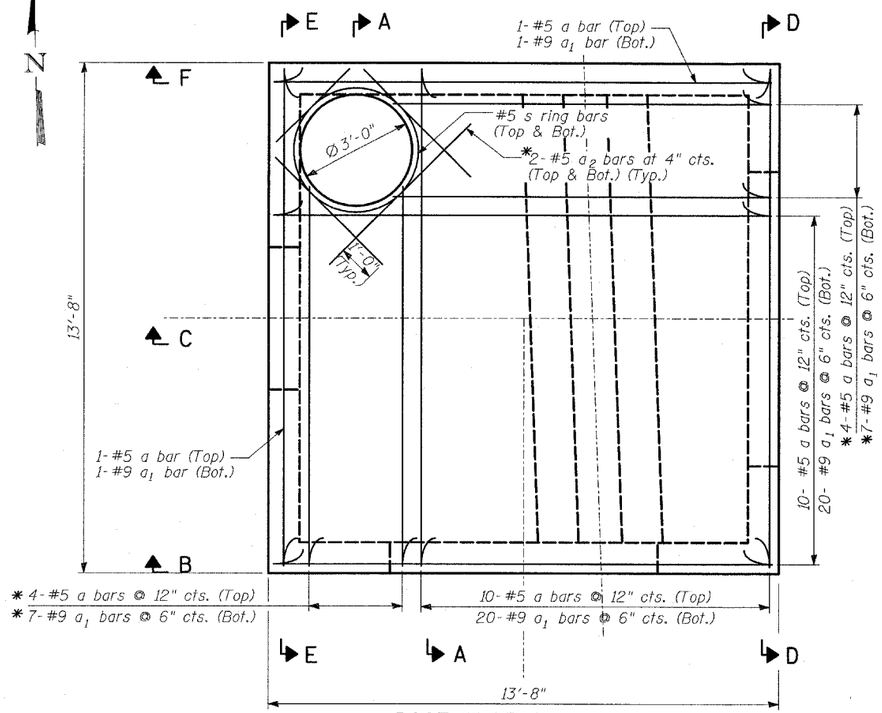
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

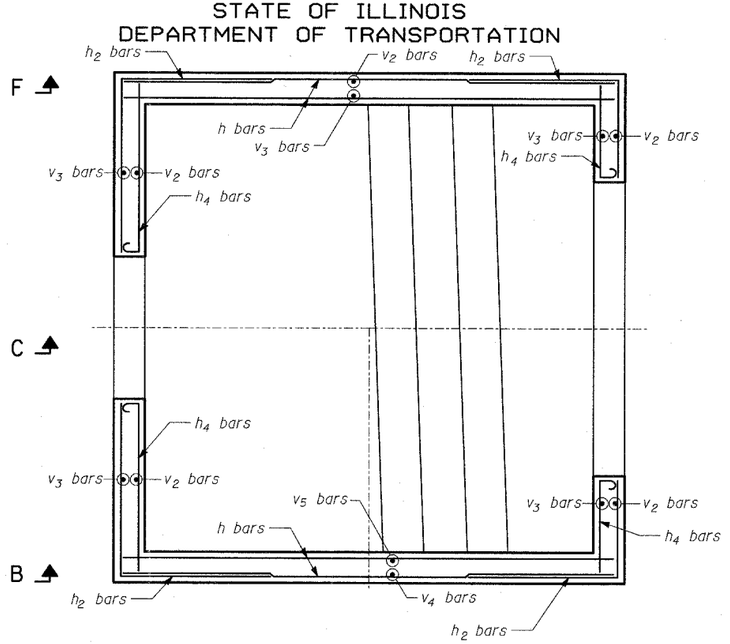
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	*	LAKE	469	367
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 2
3 - SHEETS

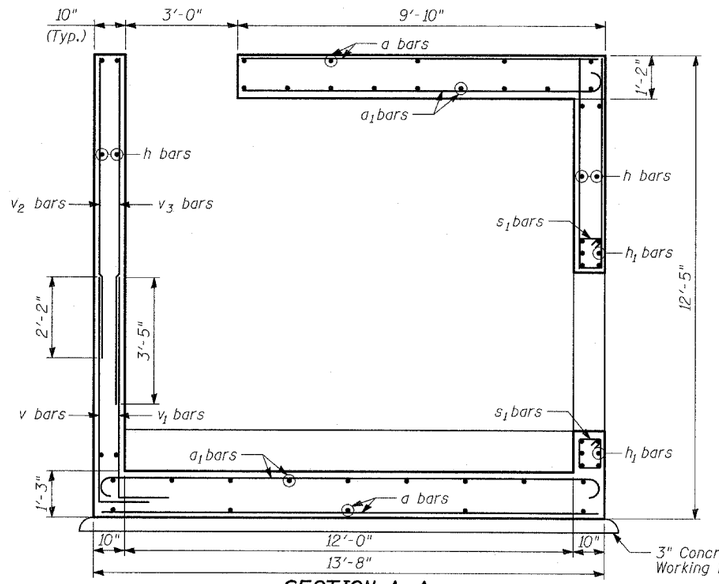
* 125X-HB-(1&2) R-1 CONTRACT # 60826



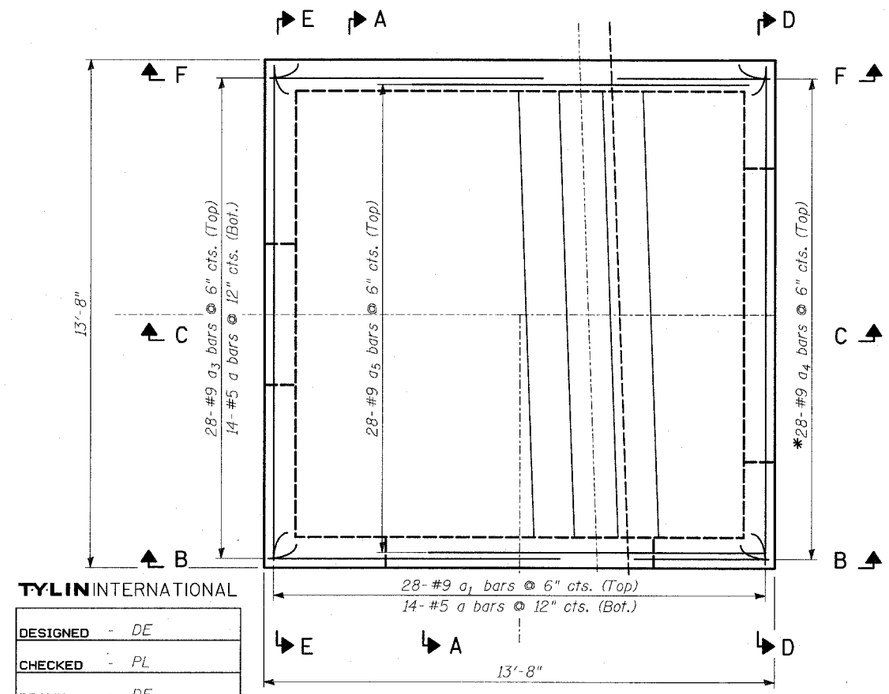
ROOF SLAB PLAN



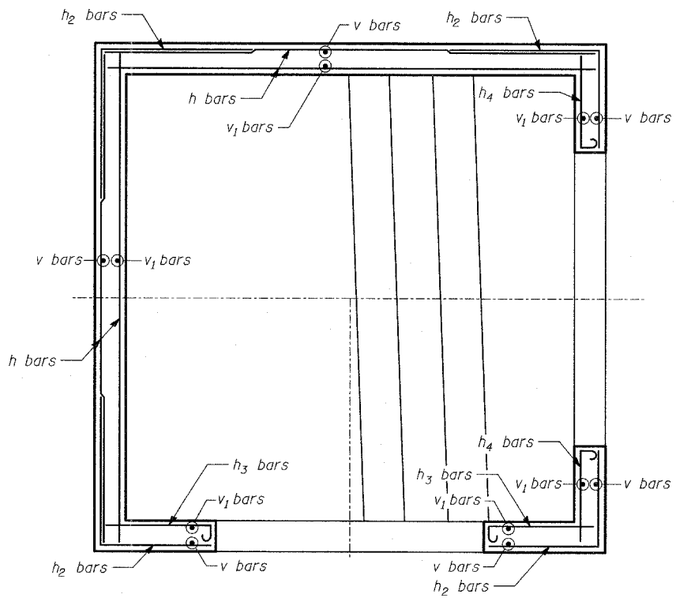
SECTIONAL PLAN G-G



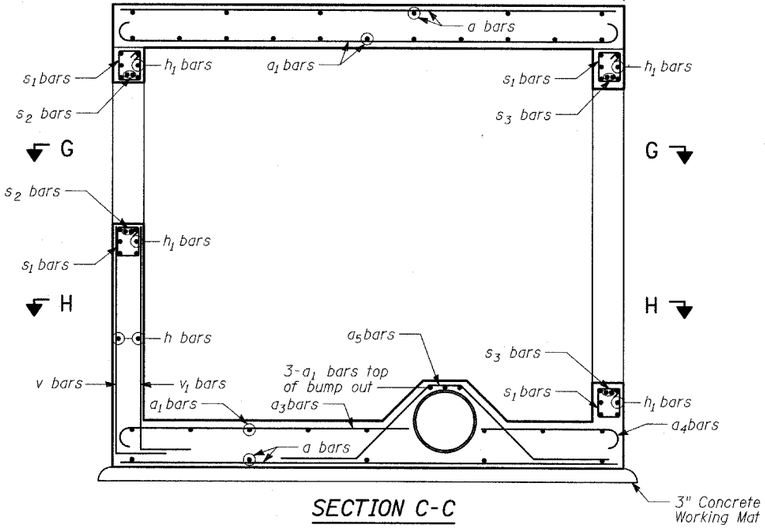
SECTION A-A



BOTTOM SLAB PLAN



SECTIONAL PLAN H-H



SECTION C-C

TYLIN INTERNATIONAL

DESIGNED	- DE
CHECKED	- PL
DRAWN	- DE
CHECKED	- PL

* Cut bars to fit in field.
E.F. - denotes Each Face
E.S. - denotes Each Side
I.F. - denotes Inside Face
O.F. - denotes Outside Face

JUNCTION CHAMBER 51
DETAILS 1

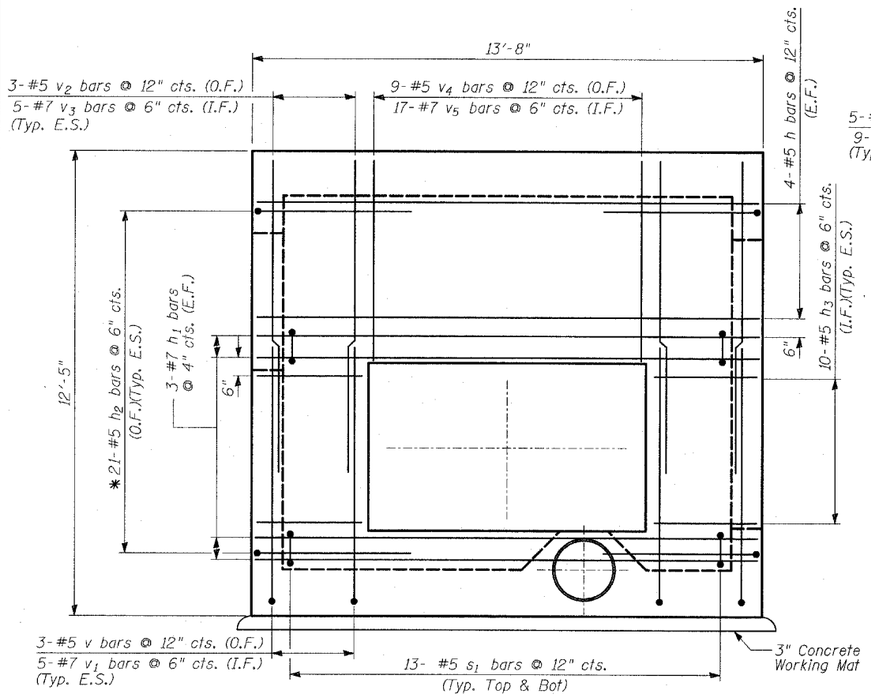
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

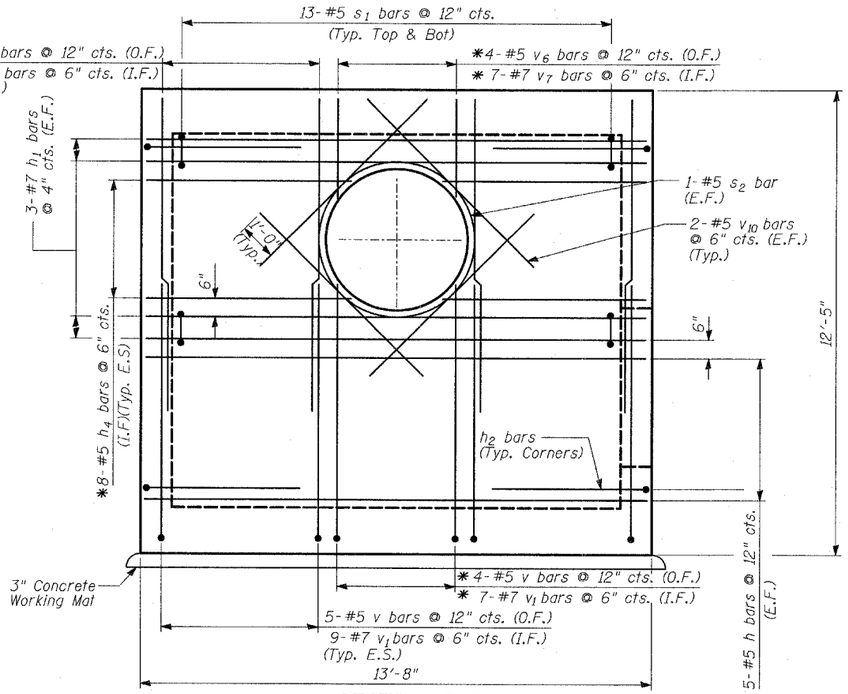
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	368
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 3
3 - SHEETS

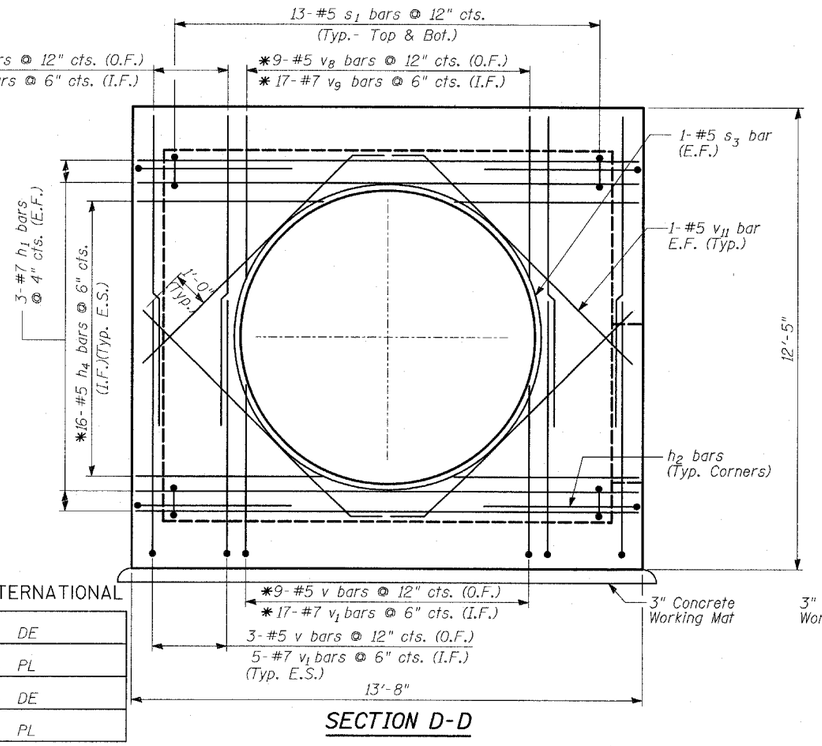
• 125X-HB-(1&2) R-1 CONTRACT • 60826



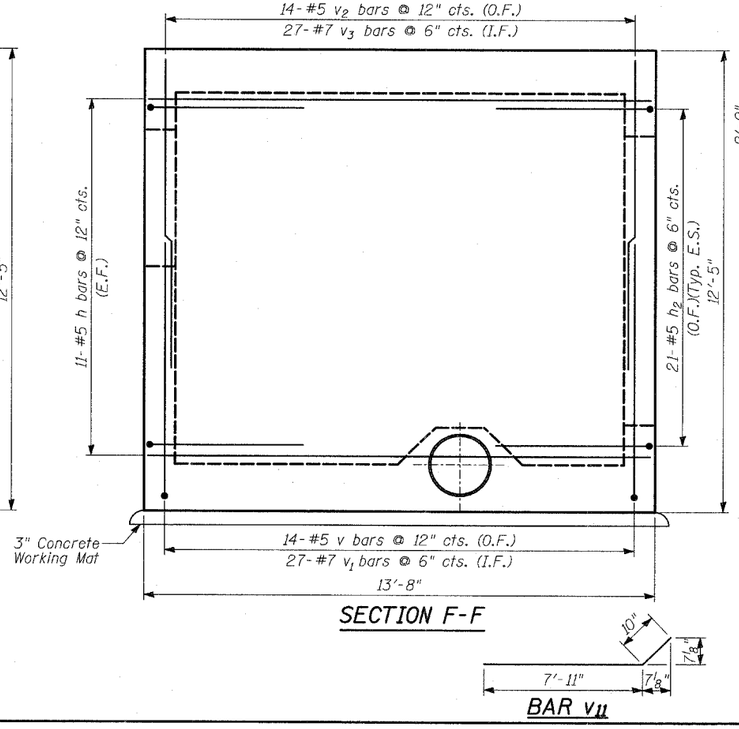
SECTION B-B



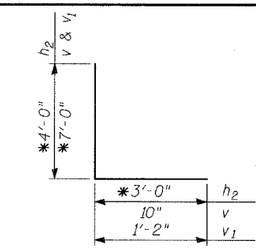
SECTION E-E



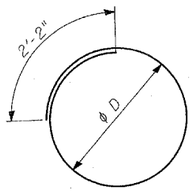
SECTION D-D



SECTION F-F

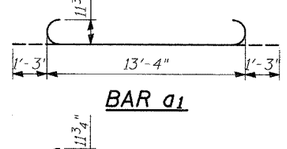


BARS h_2, v & v_1

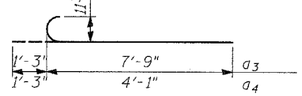


BARS s, s_2 & s_3

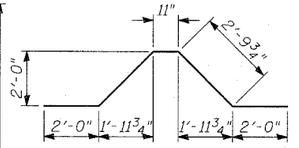
Bar	ϕ D
s	3'-4"
s_2	4'-2"
s_3	8'-3"



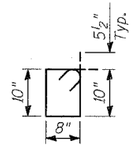
BAR a_1



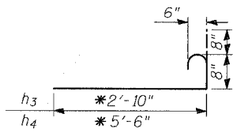
BARS a_3 & a_4



BAR a_5



BAR s_1



BARS h_3 & h_4

BAR v_{11}

BILL OF MATERIAL
JUNCTION CHAMBER 51

Bar	No.	Size	Length	Shape
a	58	#5	13'-4"	
a_1	84	#9	15'-10"	
a_2	16	#5	5'-4"	
a	28	#9	9'-0"	
a	28	#9	5'-4"	
a	28	#9	10'-7"	
h	40	#5	13'-4"	
h_1	36	#7	13'-4"	
h_2	84	#5	8'-0"	
h_3	20	#5	4'-2"	
h_4	48	#5	6'-10"	
s	2	#5	12'-8"	
s_1	78	#5	3'-11"	
s_2	2	#5	14'-9"	
s_3	2	#5	27'-7"	
v	49	#5	7'-10"	
v_1	89	#7	8'-2"	
v_2	36	#5	7'-2"	
v_3	65	#7	8'-5"	
v_4	9	#5	5'-4"	
v_5	17	#7	5'-4"	
v_6	4	#5	2'-10"	
v_7	7	#7	2'-10"	
v_8	9	#5	5'-0"	
v_9	17	#7	5'-0"	
v_{10}	16	#5	6'-2"	
v_{11}	8	#5	8'-9"	
Reinforcement Bars		POUND	14,850	
Concrete Structures		CU YD	30	

NOTES:

1. All dimensions and elevations shall be field verified prior to construction.
2. Concrete pipe sizes shall be coordinated with openings provided into junction chamber before pouring concrete.
3. Manhole Frame, Ladder Rungs, and any inserts installation shall be coordinated with Roadway Plans.
4. Concrete cover for reinforcement steel to be 2" unless otherwise noted.
5. All concrete edges shall be chamfered 1 inch.
6. All lap splices marked on the drawings are minimum.
7. Concrete Compressive Strength f'c = 3,500 psi.
8. Steel Yield Strength = 60,000 psi.
9. Work this Sheet with Sheets 1 and 2 of 3.

LEGEND

* Cut bars to fit in field.
E.F. - denotes Each Face
E.S. - denotes Each Side
I.F. - denotes Inside Face
O.F. - denotes Outside Face

TYLIN INTERNATIONAL

DESIGNED -	DE
CHECKED -	PL
DRAWN -	DE
CHECKED -	PL

JUNCTION CHAMBER 51
DETAILS 2

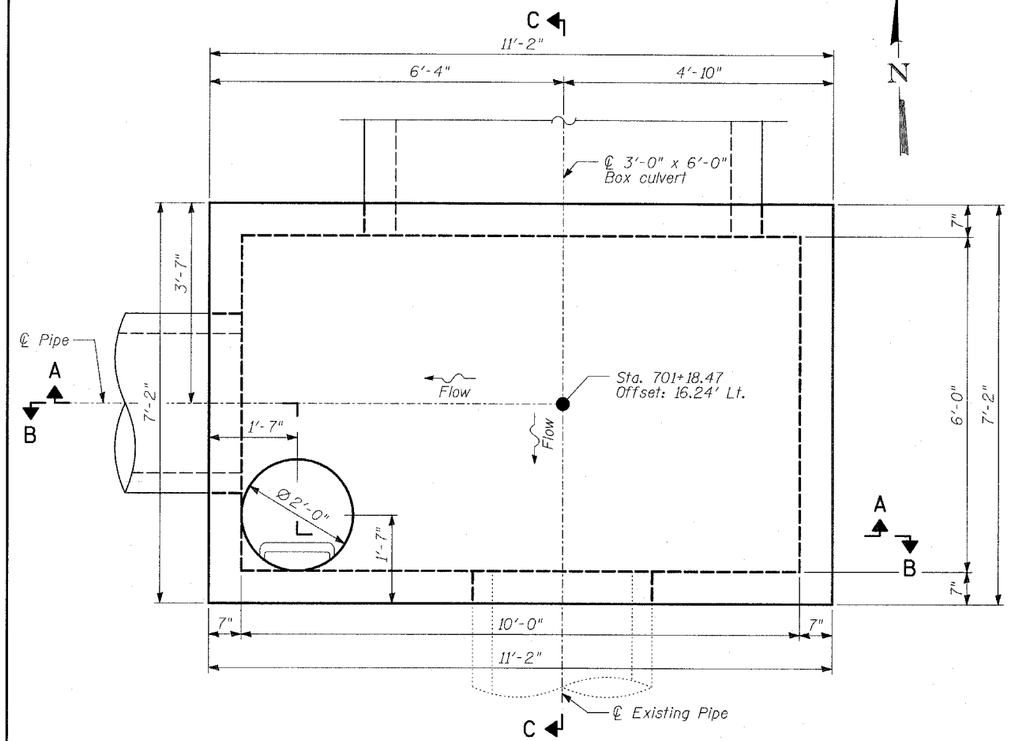
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

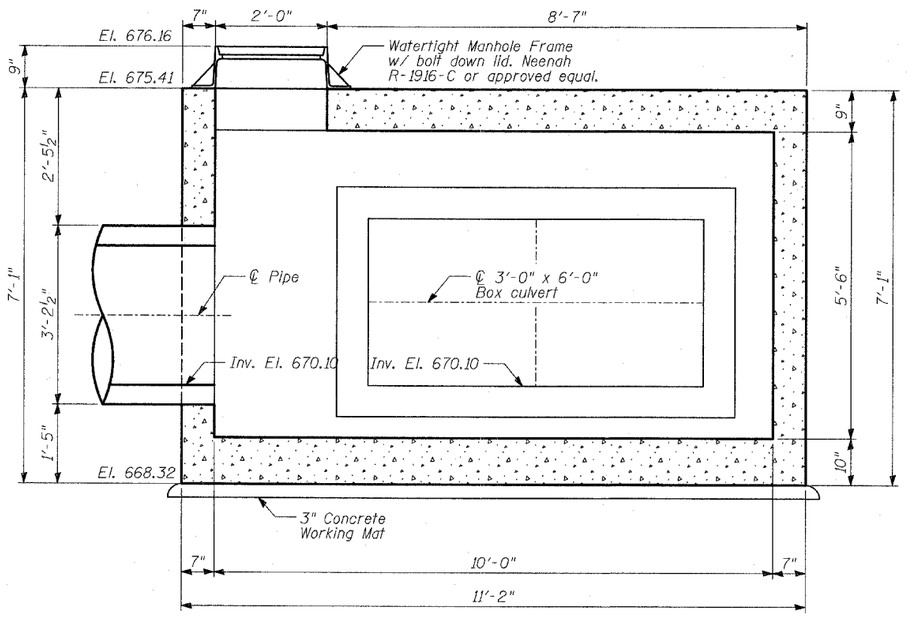
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	369
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 1
3 - SHEETS

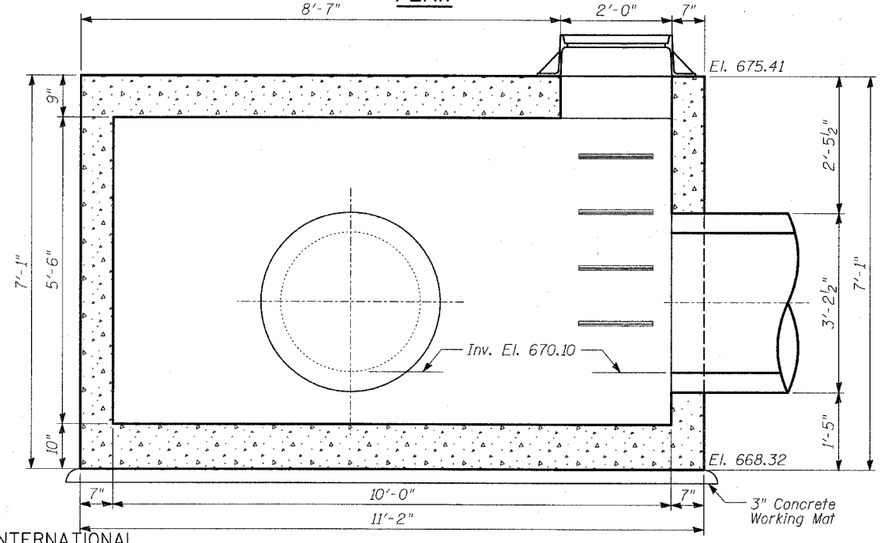
• 125X-HB-(1&2) R-1 CONTRACT # 60826



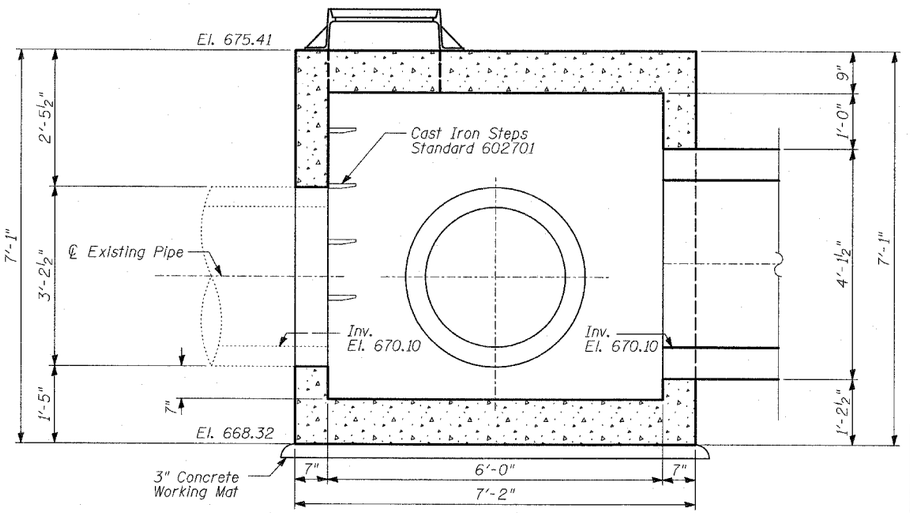
PLAN



SECTION A-A



SECTION B-B



SECTION C-C

TYLIN INTERNATIONAL

DESIGNED	- MAF
CHECKED	- PL
DRAWN	- MAF
CHECKED	- PL

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications
For Highway Bridges

DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinforcement)
f_y = 36,000 psi (structural steel M270 Grade 36)

NOTES:

1. The Contractor shall verify the location of all underground utilities before submitting the temporary soil retention system drawings.
2. For additional information, see Standard Specifications.
3. For reinforcement details, see Sheets 2 and 3 of 3.
4. All pipe openings are based on ASTM C76, coordinate openings with pipe supplier for proper fit.
5. The maximum width of the temporary soil retention system shall be the width of the junction chamber plus 4 feet. The maximum length of the temporary soil retention system shall be the length of junction chamber plus 4 feet.
6. The design of the temporary soil retention system is the responsibility of the Contractor. The Contractor shall submit design calculations and details to the Engineer for approval. The design calculations shall be signed and sealed by an Illinois licensed Structural Engineer, submitted and approved prior to the start of any work. The Engineer's approval shall not relieve the Contractor of responsibility for the safety of the excavation.
7. Retention systems placed within 10 feet of a watermain must remain in place permanently.

TOTAL BILL OF MATERIAL

ITEM	UNIT	J.C. 52
Porous Granular Embankment	CU YD	24
Junction Chamber	EACH	1
Temporary Soil Retention System	SQ FT	385

STATE OF ILLINOIS
PAUL A. LOPEZ
081-006523
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Paul Lopez
Paul A. Lopez, S.E. Illinois Lic. No. 081-006523
Expires 11-30-2008.

Date 5/14/08

For drawings 1 thru 3 of 3

JUNCTION CHAMBER 52
GENERAL PLAN AND ELEVATION

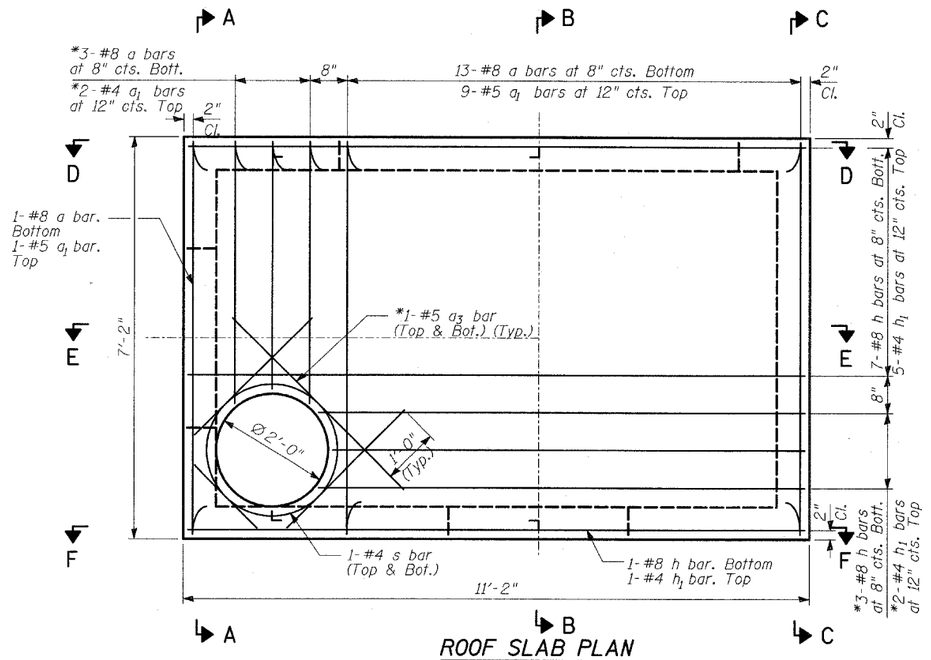
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

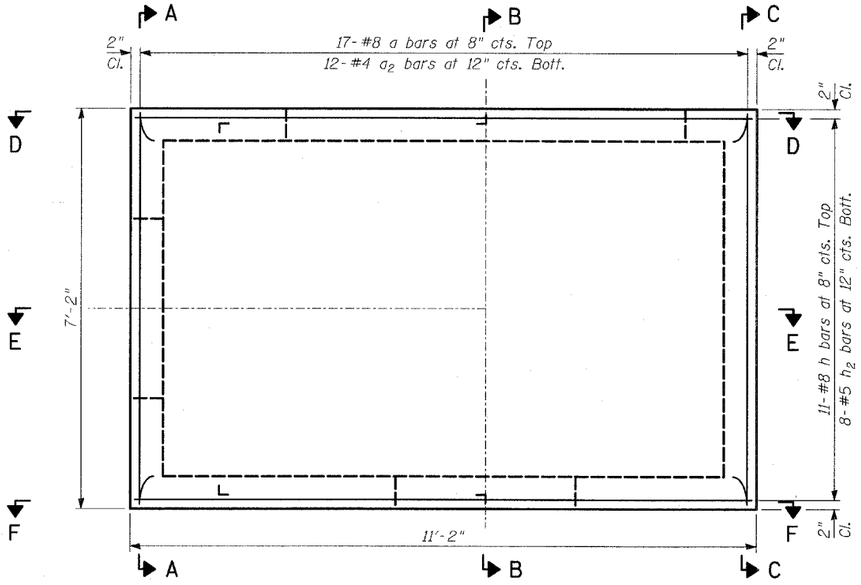
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	370
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 2
3 - SHEETS

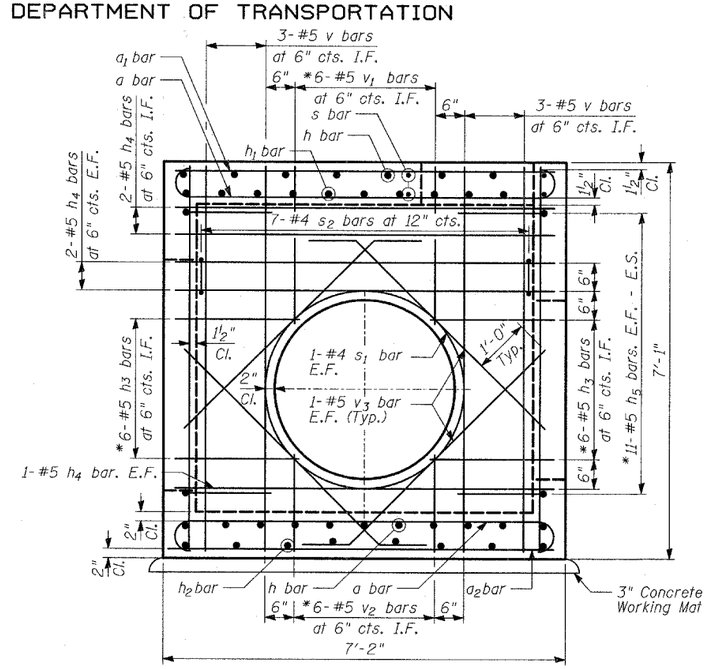
• 125X-HB-(1&2) R-1 CONTRACT # 60826



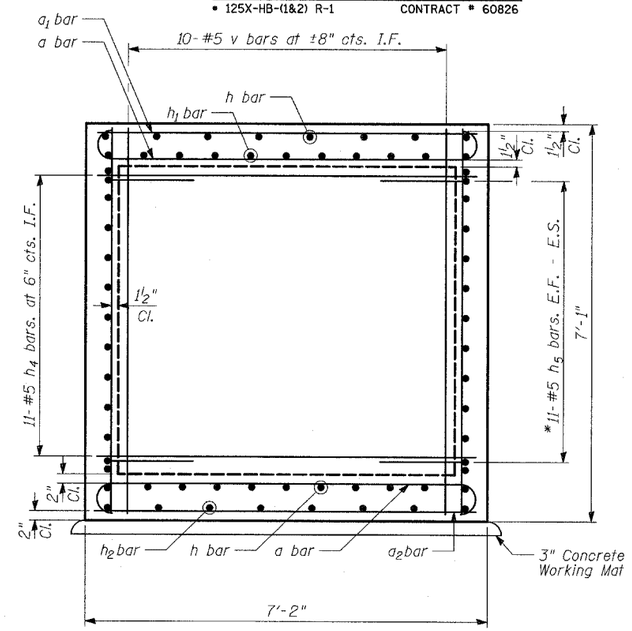
ROOF SLAB PLAN



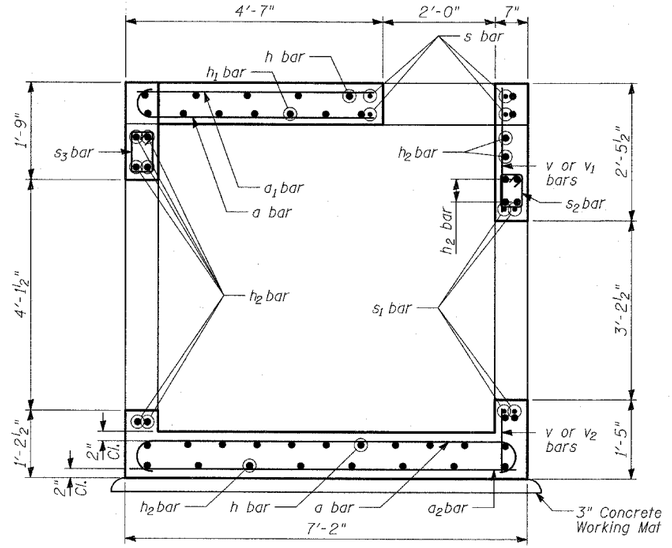
BOTTOM SLAB PLAN



SECTION A-A



SECTION C-C



SECTION B-B

NOTES:

1. All dimensions and elevations shall be field verified prior to construction.
2. Concrete pipe sizes shall be coordinated with openings provided into junction chamber before pouring concrete.
3. Manhole Frame, Ladder Rungs, and any inserts installation shall be coordinated with Roadway Plans.
4. Concrete cover for reinforcement steel to be 2" unless otherwise noted.
5. All concrete edges shall be chamfered 1 inch.
6. All lap splices marked on the drawings are minimum.
7. Concrete Compressive Strength fc' = 3,500 psi.
8. Steel Yield Strength = 60,000 psi.
9. Work this Sheet with Sheets 1 and 3 of 3.

TY·LIN INTERNATIONAL

DESIGNED	- MAF
CHECKED	- PL
DRAWN	- MAF
CHECKED	- PL

* Cut bars to fit in field.
E.F. - denotes Each Face
E.S. - denotes Each Side
I.F. - denotes Inside Face
O.F. - denotes Outside Face

JUNCTION CHAMBER 52
DETAILS (1 OF 2)

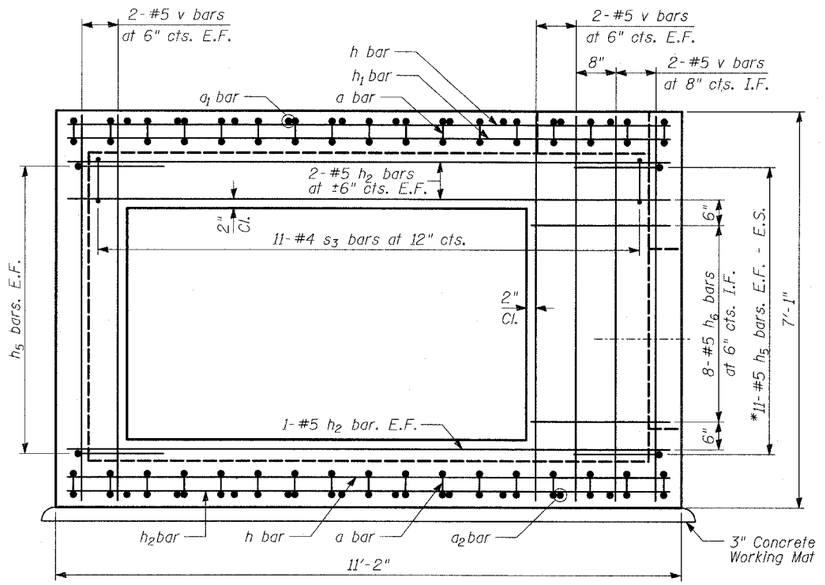
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

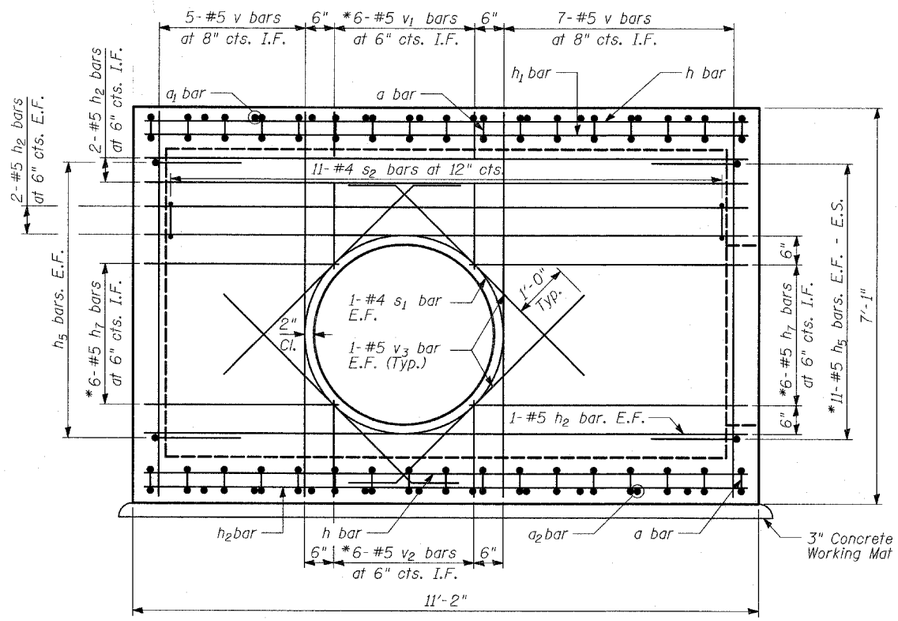
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	371
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT-	

SHEET NO. - 3
3 - SHEETS

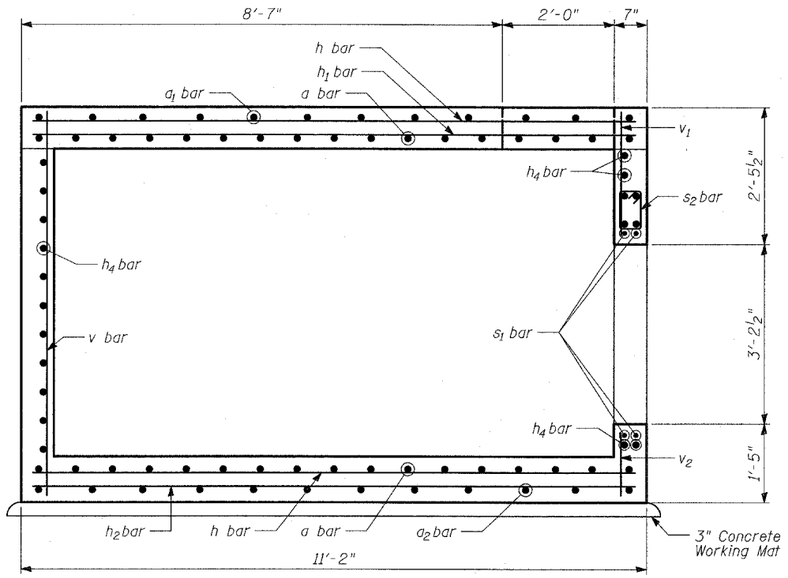
• 125X-HB-(1&2) R-1 CONTRACT * 60826



SECTION D-D



SECTION F-F



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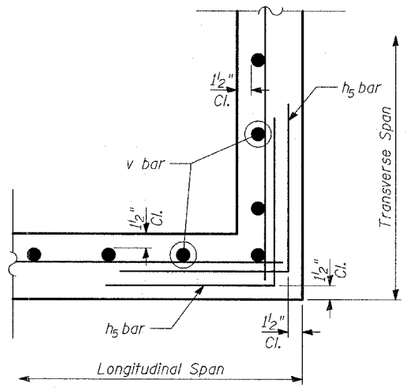
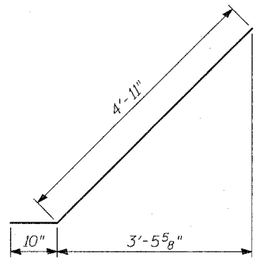
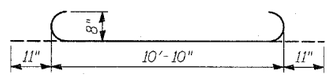


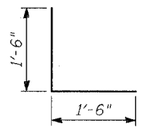
CORNER BAR DETAIL



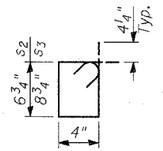
BAR v_3



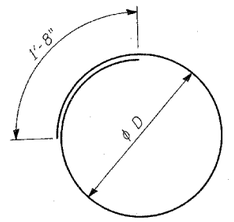
BAR a



BAR h_5



BAR s_2 & s_3



BARS s & s_1

Bar	ϕ D
s	2'-4"
s_1	3'-6½"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	34	#8	12'-8"	
a_1	12	#8	6'-11"	
a_2	12	#4	6'-11"	
a_3	8	#5	4'-4"	
h	22	#8	10'-11"	
h_1	8	#4	10'-11"	
h_2	22	#5	10'-11"	
h_3	12	#5	2'-2"	
h_4	19	#5	6'-11"	
h_5	88	#5	3'-0"	L
h_6	8	#5	2'-6"	
h_7	12	#5	5'-0"	
s	2	#4	12'-10"	
s_1	4	#4	9'-0"	
s_2	18	#4	2'-6"	
s_3	11	#4	2'-10"	
v	38	#5	6'-10"	
v_1	12	#5	2'-8"	
v_2	12	#5	1'-7"	
v_3	16	#5	5'-11"	
Reinforcement Bars		POUND	3,460	
Concrete Structures		CU YD	8	

TY·LIN INTERNATIONAL

DESIGNED	-	MAF
CHECKED	-	PL
DRAWN	-	MAF
CHECKED	-	PL

* Cut bars to fit in field.

E.F. - denotes Each Face

E.S. - denotes Each Side

I.F. - denotes Inside Face

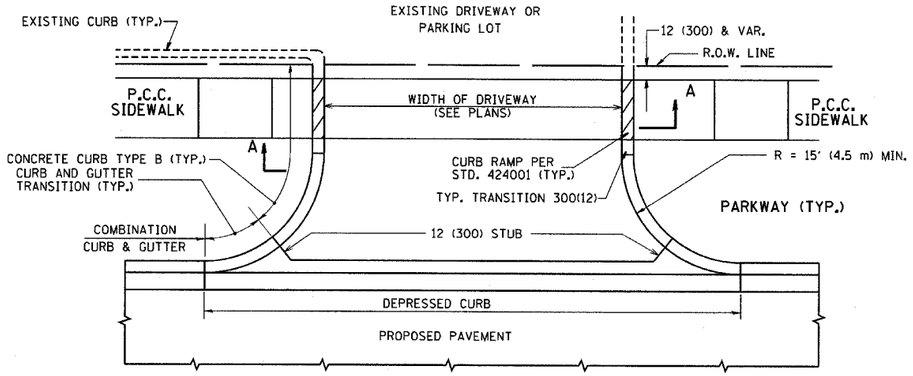
O.F. - denotes Outside Face

NOTES:

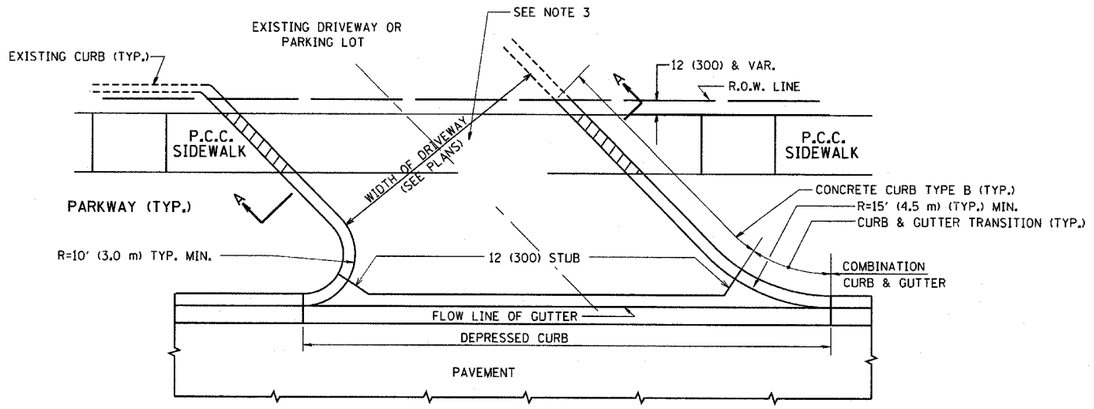
1. All dimensions and elevations shall be field verified prior to construction.
2. Concrete pipe sizes shall be coordinated with openings provided into junction chamber before pouring concrete.
3. Manhole Frame, Ladder Rungs, and any inserts installation shall be coordinated with Roadway Plans.
4. Concrete cover for reinforcement steel to be 2" unless otherwise noted.
5. All concrete edges shall be chamfered 1 inch.
6. All lap splices marked on the drawings are minimum.
7. Concrete Compressive Strength fc' = 3,500 psi.
8. Steel Yield Strength = 60,000 psi.
9. Work this Sheet with Sheets 1 and 3 of 3.

JUNCTION CHAMBER 52
DETAILS (2 OF 2)

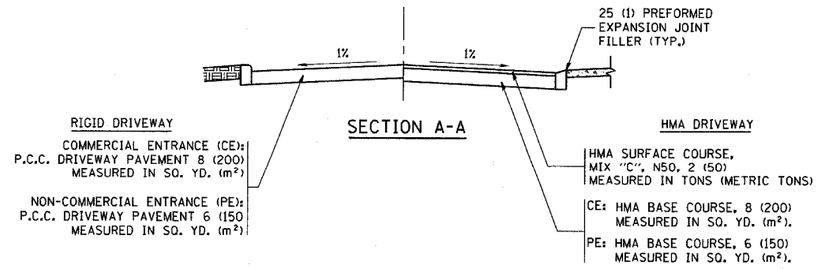
FAP 346 (U.S. ROUTE 41 - SKOKIE HIGHWAY) OVER ILLINOIS ROUTE 132
SECTION 125X-HB-(1&2)R-1
LAKE COUNTY
S.N.

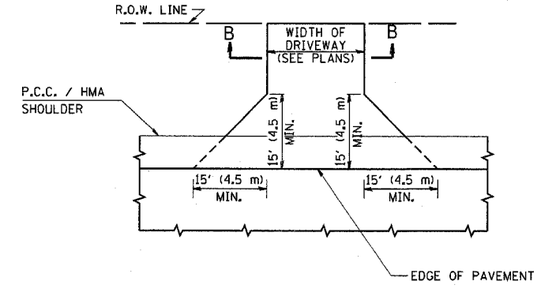


WITH CONCRETE CURB, TYPE B

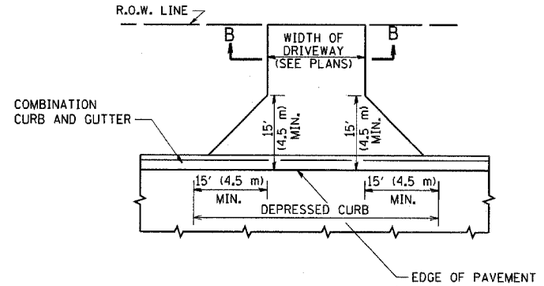


WITH CONCRETE CURB, TYPE B

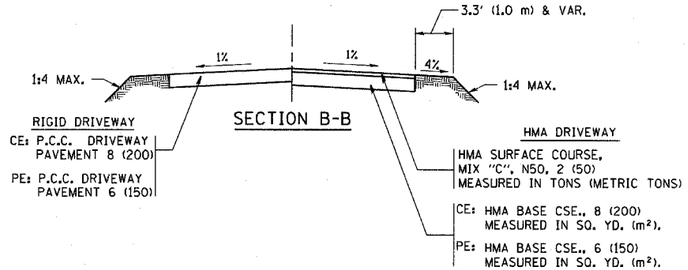




ADJACENT TO P.C.C. / HMA SHOULDER



ADJACENT TO CURB AND GUTTER



RURAL FIELD ENTRANCE (FE)

HMA SURFACE COURSE,
MIX "C", N50, 2 (50)
MEASURED IN TONS (METRIC TONS)

AGGREGATE BASE CSE., TYPE A B (200)
MEASURED IN SQ. YD. (m²).

GENERAL NOTES:

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATIONS IN THE PERMIT HANDBOOK. DRIVEWAYS SHALL BE REPLACED IN KIND, UNLESS OTHERWISE NOTED ON THE PLANS.

COMMERCIAL DRIVEWAYS SHALL BE CONSTRUCTED WITH CONCRETE CURB, TYPE B RETURNS EXCEPT WHEN THE SIDEWALK EDGE IS 4 FEET (1.2 METERS) OR LESS FROM THE BACK OF CURB, CONSTRUCT A FLARE DRIVEWAY WITHOUT CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

WHEN THE P.C.C. SIDEWALK EXTENDS THROUGH THE DRIVEWAY, THE THICKNESS OF THE SIDEWALK IN THE DRIVEWAY AREA SHALL BE THE SAME AS THE DRIVEWAY THICKNESS. SIDEWALK WILL BE PAID FOR AS P.C.C. SIDEWALK OF THE THICKNESS SPECIFIED. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

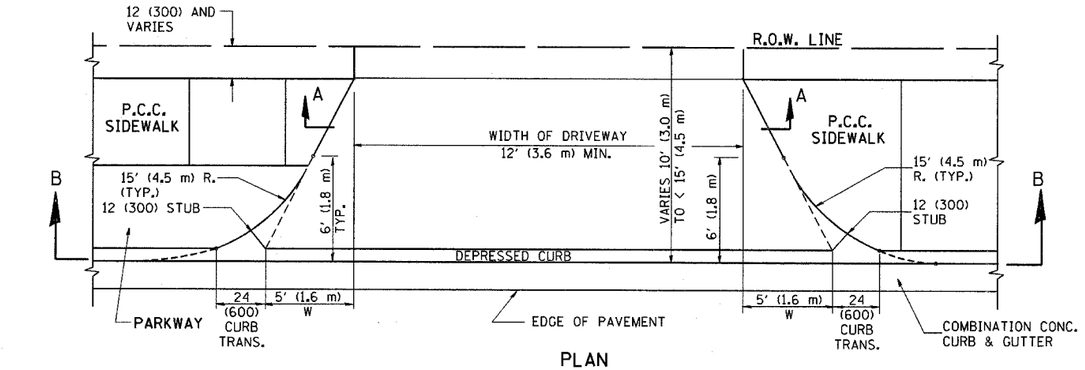
FILE NAME = W:\diststd\22x34\bd01.dgn	USER NAME = gaglienobt	DESIGNED - R. SHAH	REVISED - T. HOLTZ 04-08-97
		DRAWN -	REVISED - M. GOMEZ 04-06-01
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - P. LaFLUER 04-15-03
	PLOT DATE = 1/4/2008	DATE - 11-04-95	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRIVEWAY DETAILS – DISTANCE BETWEEN R.O.W. AND FACE OF CURB & EDGE OF SHOULDER >= 15' (4.5 m)

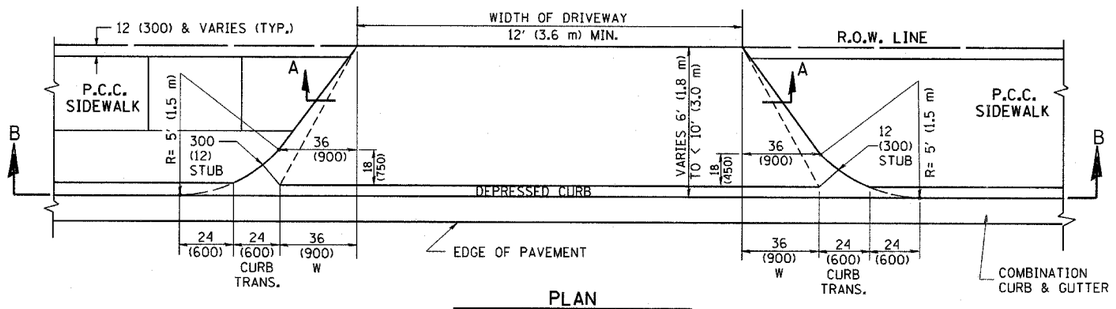
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	372
	BD0156-07 (BD-01)		CONTRACT NO.	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



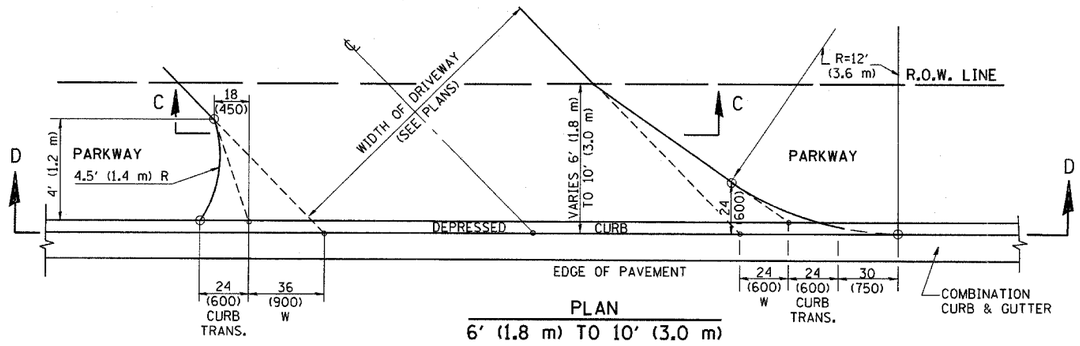
PLAN

10' (3.0 m) TO < 15' (4.5 m)



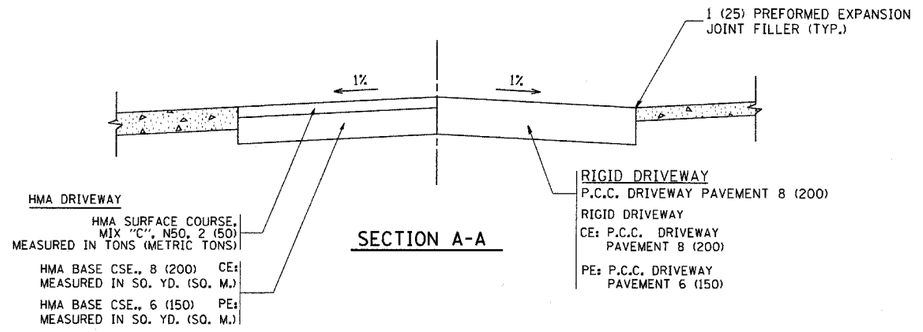
PLAN

6' (1.8 m) TO < 10' (3.0 m)

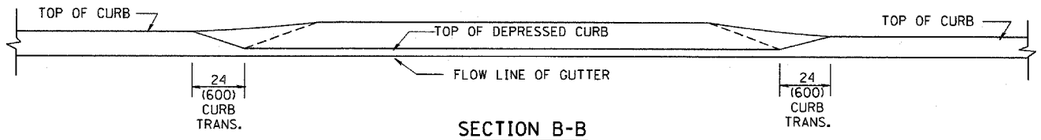


PLAN

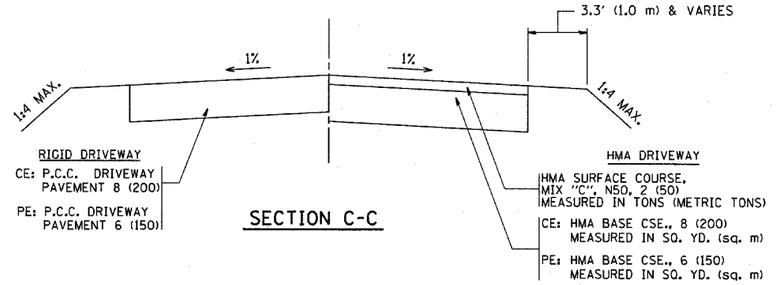
6' (1.8 m) TO 10' (3.0 m)



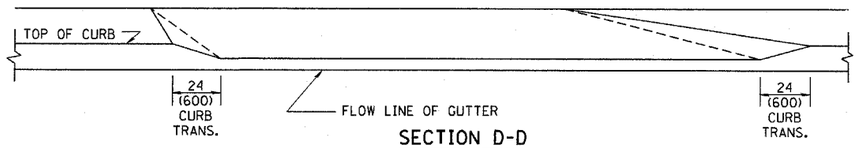
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

GENERAL NOTES

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATION 10 IN THE PERMIT HANDBOOK. WHERE SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED WITH RIGID PAVEMENT. WHERE NO SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED IN KIND. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

WHEN THE DISTANCE BETWEEN R.O.W. AND THE BACK OF CURB IS EQUAL TO OR LESS THAN 8' (2.4 m), THE P.C.C. SIDEWALK SHALL EXTEND TO THE BACK OF CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

THE 1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

"W" VARIES FROM 36 (900) TO 5' (1.5 m) PROPORTIONAL TO THE LENGTH (L), FROM 6' (1.8 m) TO 10' (3 m).

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE NOTED.

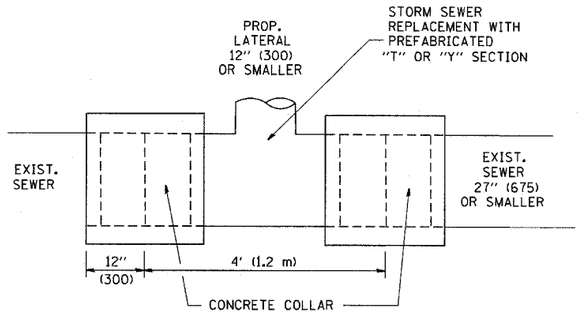
FILE NAME = W:\diststd\22x34\bd02.dgn	USER NAME = gaglianobt	DESIGNED - R. SHAH	REVISED - T. HOLTZ 04-08-97
		DRAWN -	REVISED - M. GOMEZ 04-06-01
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - P. LaFLEUR 04-15-03
	PLOT DATE = 1/4/2008	DATE - 11-06-95	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRIVEWAY DETAILS
DISTANCE BETWEEN ROW AND FACE OF CURB < 15' (4.5 m)

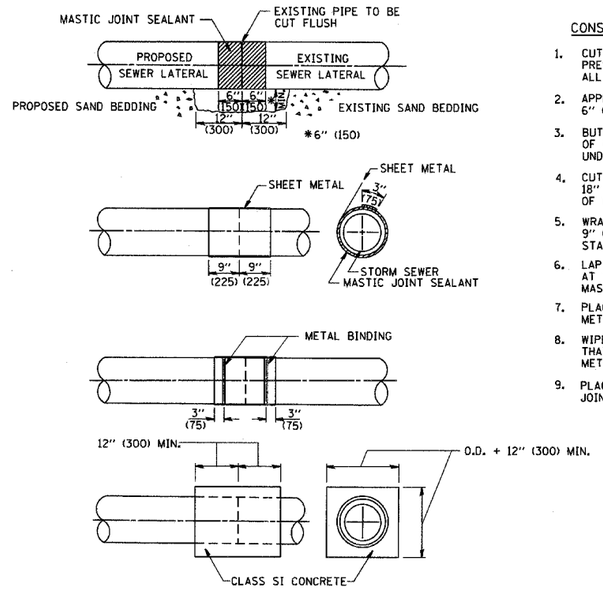
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	373
	BD400-02 (BD-02)		CONTRACT NO.	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



DETAIL "A"

LATERAL CONNECTION TO EXISTING SEWER
OF 27" (675) OR SMALLER

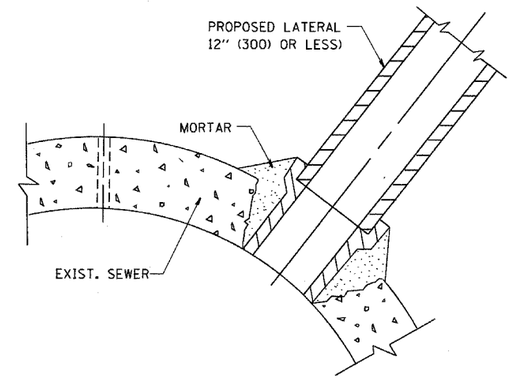


DETAIL "B"

CLASS SI CONCRETE COLLAR

CONSTRUCTION SEQUENCE

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST 6" (150) OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12" x 6" (300 x 150) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 1.1 (0.0418) 18" (450) WIDE BY THE OUTSIDE CIRCUMFERANCE OF THE PIPE PLUS 3" (75) LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES, 9" (225) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" (75) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OOZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.



DETAIL "C"

PROPOSED LATERAL
CONNECTION TO EXISTING SEWER
OF 30" (750) OR LARGER

NOTES

MATERIAL

MATERIAL USED FOR THE TEE OR WYE SECTION SHALL BE COMPATIBLE WITH THE EXISTING STORM SEWER OR THE PROPOSED STORM SEWER.

CONSTRUCTION METHODS

I. THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.

II. CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:

A) PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER SEE DETAIL "A" AND "B".

B) PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER SEE DETAIL "C".

IF THE EXISTING SEWER PIPE IS CRACKED, BROKEN OR OTHERWISE DAMAGED BY THE CONTRACTOR IN MAKING THE CIRCULAR OPENING, THE CONTRACTOR SHALL REPLACE THAT SECTION OF PIPE WITH PIPE EQUAL AND SIMILAR IN ALL RESPECTS TO THE PIPE IN THE EXISTING SEWER, IN A CAREFUL WORKMANLIKE MANNER, WITHOUT EXTRA COMPENSATION.

GENERAL

CARE MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE SEWER. ALL DEBRIS WHICH ENTERS THE SEWER MUST BE REMOVED. THE SEWER MUST BE LEFT CLEAN AND UNOBSTRUCTED UPON COMPLETION OF THE CONTRACT.

CARE MUST BE TAKEN TO PREVENT ANY PART OF THE NEW PIPE CONNECTION FROM PROJECTING INTO THE EXISTING SEWER.

BASIS OF PAYMENT

TEE OR WYE CONNECTIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STORM SEWER TEE OR WYE OF THE TYPE AND SIZE SPECIFIED IN THE PLANS, THIS PRICE SHALL INCLUDE ALL EXCAVATION OF THE TRENCH, REMOVAL OF THE EXISTING STORM SEWER, FURNISHING AND INSTALLING THE SPECIFIED TEE OR WYE SECTION, FURNISHING AND INSTALLING THE REQUIRED CONCRETE COLLAR, AND ALL OTHER MATERIAL NECESSARY TO COMPLETE THIS WORK AS SHOWN AND SPECIFIED.

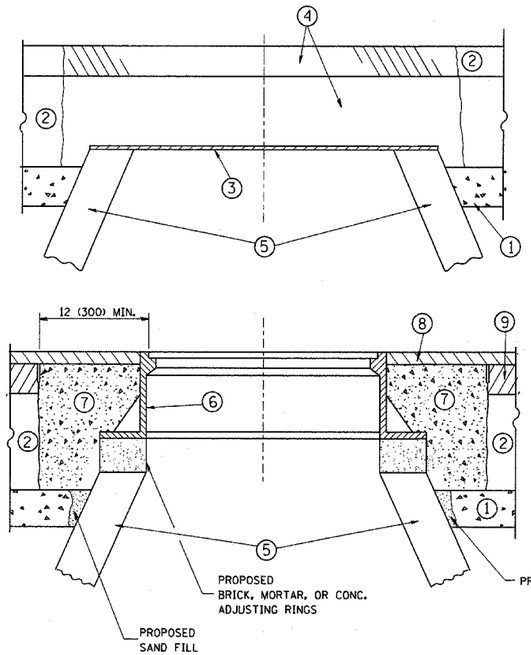
REMOVAL AND REINSTALLATION OF EXISTING STORM SEWER ADJACENT TO THE PROPOSED TEE OR WYE SECTION, FOR THE PURPOSE OF FACILITATING THE INSTALLATION OF THE TEE OR WYE SECTION, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE WORK.

TRENCH BACKFILL, EXCAVATION IN ROCK AND REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW PLAN BEDDING GRADE WILL BE PAID FOR SEPARATELY.

CONCRETE COLLAR FOR CONNECTING A PROPOSED STORM SEWER TO AN EXISTING STORM SEWER WILL NOT BE PAID PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd07.dgn	USER NAME = gaglenobt	DESIGNED - M. DE YONG	REVISED - M. DE YONG 05-08-92	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAIL OF STORM SEWER CONNECTION TO EXISTING SEWER			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. SHAH 09-09-94								469	374
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - R. SHAH 10-25-94						BD500-01 (BD-7)		CONTRACT NO.	
	PLOT DATE = 1/4/2008	DATE - 07-25-90	REVISED - R. SHAH 06-12-96		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



CONSTRUCTION PROCEDURES

STAGE 1 (BEFORE PAVEMENT MILLING)

A) REMOVE A MINIMUM OF 12 (300) OF THE PAVEMENT FROM AROUND THE STRUCTURE.

B) REMOVE THE EXISTING FRAME AND LID FROM THE STRUCTURE.

C) COVER THE STRUCTURE OPENING WITH A 36 (900) DIAMETER METAL PLATE.

D) BACKFILL WITH CRUSHED STONE AND A MINIMUM 1½ (40) THICK HMA SURFACE MIX APPROVED BY THE ENGINEER.

STAGE 2 (AFTER PAVEMENT MILLING)

A) REMOVE THE HMA SURFACE MIX AND CRUSHED STONE.

B) INSTALL THE FRAME AND LID; ADJUST THE FRAME TO ITS FINAL SURFACE ELEVATION.

C) THE SURROUNDING SPACE SHALL BE FILLED WITH CLASS SI CONCRETE, OR HMA SURFACE COURSE OR HMA BINDER COURSE TO THE ELEVATION OF THE SURFACE OF THE EXISTING BASE COURSE OR THE BINDER COURSE.

THE PROCEDURE EXPLAINED ABOVE SHALL CONFORM TO THE APPLICABLE PORTIONS OF SECTIONS 353, 406, 602, AND 603 OF THE STANDARD SPECIFICATIONS.

LEGEND

1. SUB-BASE GRANULAR MATERIAL
2. EXISTING PAVEMENT
3. 36 (900) DIAMETER METAL PLATE
4. PROPOSED CRUSHED STONE AND HMA SURFACE MIX
5. EXISTING STRUCTURE
6. FRAME AND LID (SEE NOTES)
7. CLASS SI CONCRETE, HMA SURFACE COURSE OR HMA BINDER COURSE
8. PROPOSED HMA SURFACE COURSE
9. PROPOSED HMA BINDER COURSE

NOTES:

EXISTING BROKEN FRAMES AND LIDS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AND SHALL BE REPLACED AS DIRECTED BY THE ENGINEER. REPLACEMENT FRAMES AND LIDS WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS UNLESS A SEPARATE PAY ITEM HAS BEEN PROVIDED.

IF THE EXISTING LIDS ARE OPEN, THE FRAME WILL BE ADJUSTED TO THE ELEVATION OF THE MILLED PAVEMENT SURFACE PRIOR TO THE MILLING OPERATION. THE FRAME WILL NOT BE REMOVED AND COVERED BY THE METAL PLATE.

CITY OF CHICAGO CASTINGS ARE THE PROPERTY OF THE CITY AND THE CONTRACTOR SHALL NOTIFY THE CITY FOR REMOVAL AND DISPOSITION OF THE CASTINGS.

THE METAL PLATE USED TO COVER THE STRUCTURE SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

WHEN STRUCTURES ARE TO BE ADJUSTED OR RECONSTRUCTED, THE LOWERING AND RAISING OF THE FRAMES AND LIDS WILL NOT BE PAID FOR SEPARATELY BUT WILL BE INCLUDED IN THE COST OF THE CORRESPONDING PAY ITEM.

LOCATION OF STRUCTURES:

THE CONTRACTOR WILL BE REQUIRED TO KEEP A RECORD OF THE LOCATIONS OF THE BURIED STRUCTURES ACCORDING TO THE STATION AND DISTANCE LEFT OR RIGHT OF THE CENTERLINE OF PAVEMENT. UPON COMPLETION OF THE WORK, THE CONTRACTOR WILL DELIVER THE RECORD TO THE ENGINEER.

BASIS OF PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER EACH FOR "FRAMES AND LIDS TO BE ADJUSTED, SPECIAL"

NEW FRAMES AND LIDS, WHEN SPECIFIED, WILL BE PAID FOR SEPARATELY.

DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

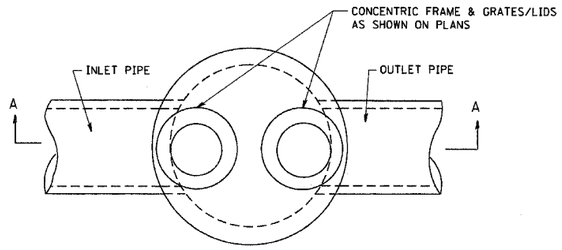
FILE NAME = W:\diststd\22x34\bd08.dgn	USER NAME = gaglianobt	DESIGNED - R. SHAH	REVISED - R. SHAH 03-10-95
		DRAWN -	REVISED - A. ABBAS 03-21-97
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - R. WIEDEMAN 05-14-04
	PLOT DATE = 1/4/2008	DATE - 10-25-94	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

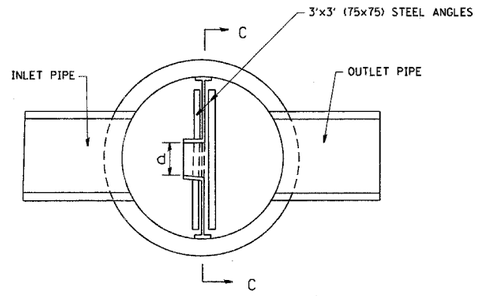
DETAILS FOR FRAMES AND LIDS ADJUSTMENT WITH MILLING

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

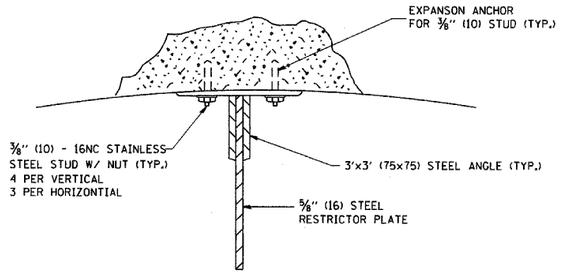
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	375
BD600-03 (BD-8)		CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



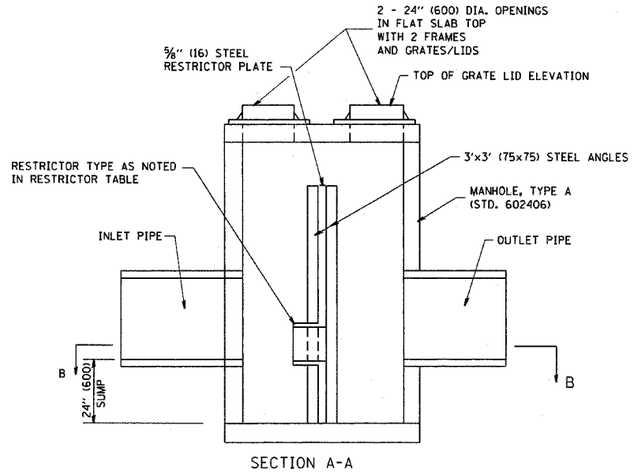
PLAN



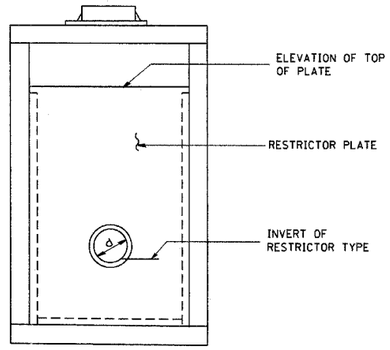
SECTION B-B



ANGLE FASTENER DETAIL



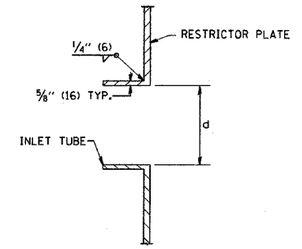
SECTION A-A



SECTION C-C

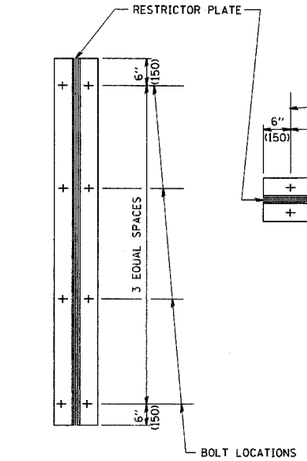
NOTES:

1. ALL STEEL ANGLES AND PLATES TO BE GALVANIZED AFTER FABRICATION.
2. ALL RESTRICTOR PLATES, ANGLES AND HARDWARE TO BE INCLUDED IN THE COST OF THE MANHOLE.
3. BASIS OF PAYMENT: "MANHOLES ,TYPE A, 6 FT. (1.8 m)-DIAMETER, TYPE 1 FRAME, CLOSED LID, RESTRICTOR PLATE" EACH

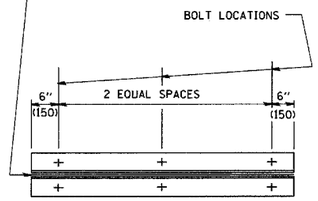


INLET TUBE DETAIL

STATION	MANHOLE DIAMETER	FRAME AND GRATE	RESTRICTOR TYPE	INSIDE RESTRICTOR TYPE DIAMETER in. (mm) (d)	INVERT OF RESTRICTOR TYPE	ELEVATION OF TOP OF PLATE OVERFLOW



TYPICAL VERTICAL ANGLES
LOOKING TOWARD MANHOLE WALL



TYPICAL HORIZONTIAL
ANGLES LOOKING TOWARD
BOTTOM OF MANHOLE

TOTAL BOLTS REQUIRED: 22

NOTE:

1. ANGLES SHOULD BE 3x3x⅜ (75x75x75)
2. VERTICAL ANGLES SHOULD EXTEND FROM THE BOTTOM OF THE RESTRICTOR PLATE TO THE TOP.
3. HORIZONTIAL ANGLES SHOULD EXTEND FROM VERTICAL ANGLE TO VERTICAL ANGLE.

STEEL ANGLE BOLTING DETAILS

RESTRICTOR TYPE					
1	2	3	4	5	6
RE-ENTRANT TUBE	SHARP EDGED	SQUARE EDGED	RE-ENTRANT TUBE	SQUARE EDGED	ROUNDED
LENGTH: ½ TO 1 DIA.		STREAM CLEARS SIDES	LENGTH: 2-½ DIA.	LENGTH: 2-½ DIA.	
C=.52	C=.61	C=.61	C=.73	C=.82	C=.98

VALUES OF "C" FOR CIRCULAR
AND SQUARE ORIFICES

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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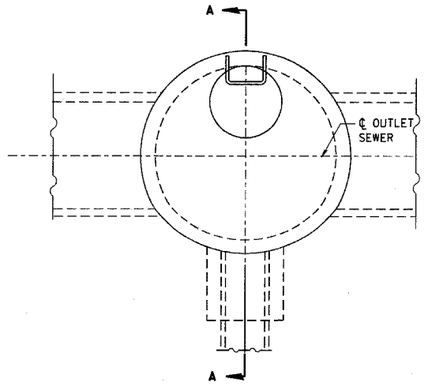
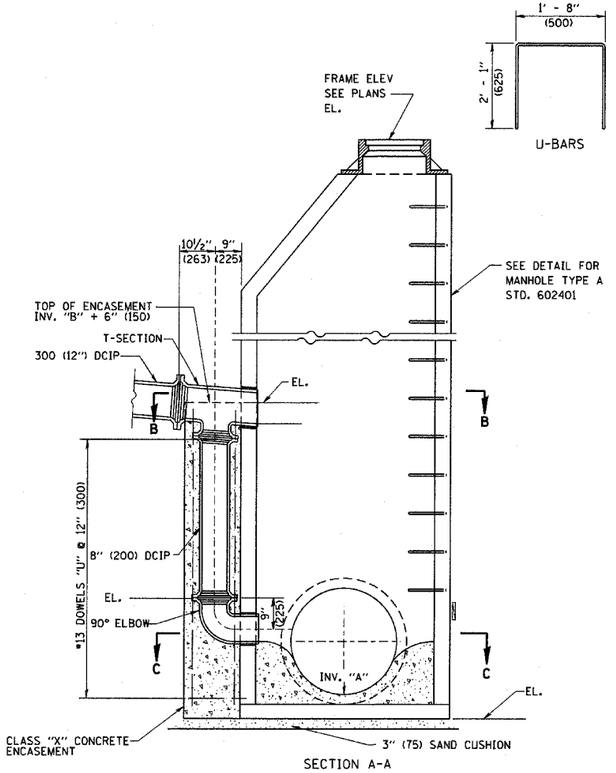
		DRAWN -	REVISED - E. GOMEZ 08-28-00								969	376
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - M. GOMEZ 01-08-01						BD600-04 (BD-12)		CONTRACT NO.	
	PLOT DATE = 1/4/2008	DATE - 09-09-94	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

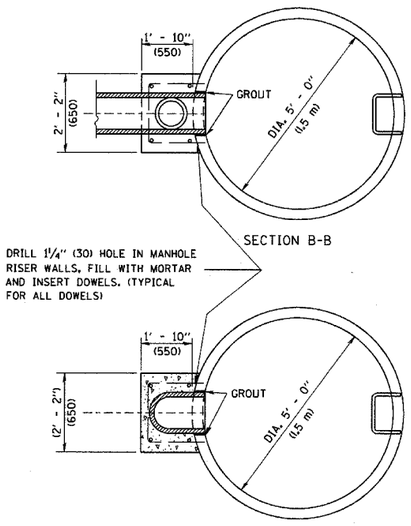


PLAN
FOR LOCATION SEE DRAINAGE PLANS

ENCASEMENT DETAILS				
DROP M.H. LOCATION STA., OFFSET				
INV. "A"				
INLET PIPE				
INV. "B"				
INV. "C"				
A				
B				
"V" BAR LENGTH				
NO. OF "U" BARS				
REINF. BARS				
CLASS "SI" CONC. CUBIC METER (CU. YD.)				



SECTION A-A



SECTION C-C

TYPE A1-1 MANHOLE WITH 1 DROP AND DEPTH UP TO 10' (3 m)
TYPE A1-2 " " 1 " " " FROM 10' TO 15' (3 m TO 1.5 m)
TYPE A1-3 " " 1 " " " FROM 15' TO 20' (1.5 m TO 6 m)
TYPE A1-4 " " 1 " " " OVER 20' (6 m)

TYPE A2-1 MANHOLE WITH 2 DROPS AND DEPTH UP TO 10' (3 m)
TYPE A2-2 " " 2 " " " FROM 10' TO 15' (3 m TO 1.5 m)
TYPE A2-3 " " 2 " " " FROM 15' TO 20' (1.5 m to 6 m)
TYPE A2-4 " " 2 " " " OVER 20' (6 m)

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

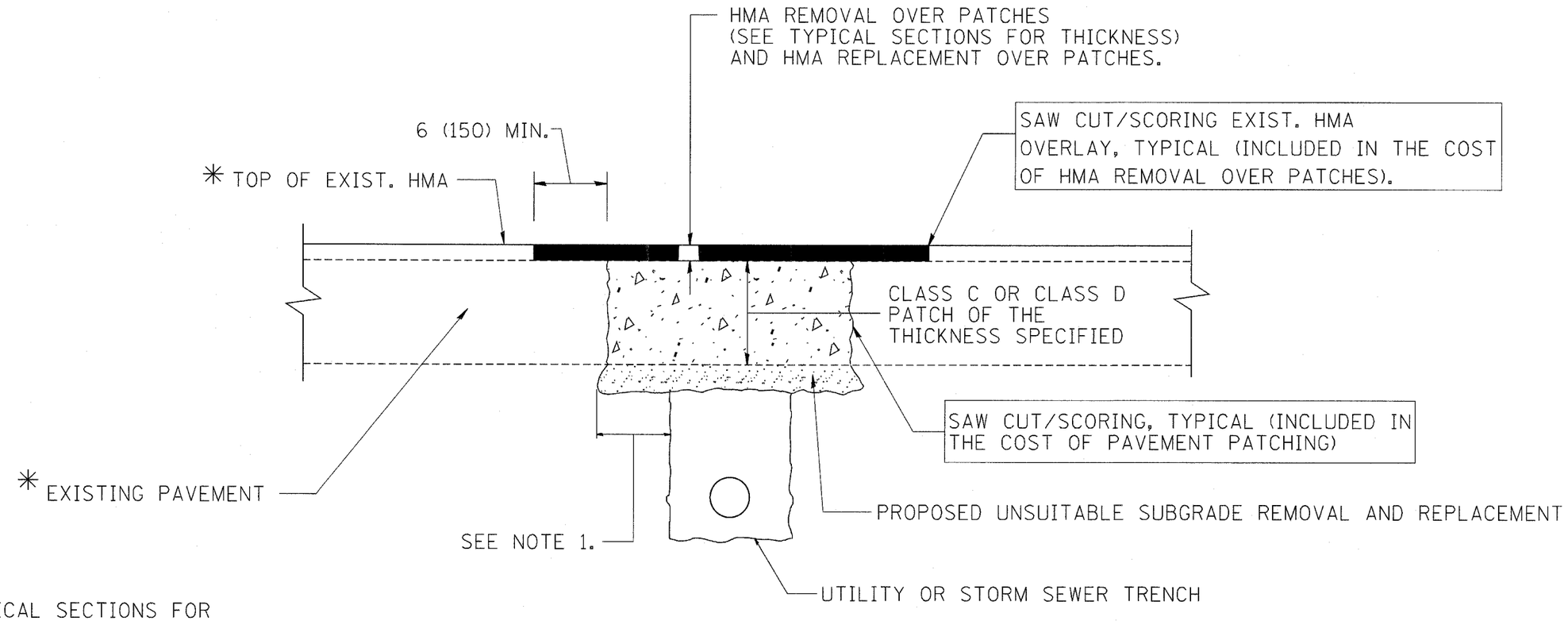
FILE NAME = W:\diststd\22x34\bd16.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE - 10-18-02	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DROP MANHOLE DETAILS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	377
	BD600-05 (BD-16)		CONTRACT NO.	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



* SEE TYPICAL SECTIONS FOR THICKNESS AND MATERIALS

NOTES:

1. THE WIDTH OF THE FULL DEPTH PATCH OVER A TRENCH SHALL BE 12 (300) WIDER ON EACH SIDE OF THE TRENCH.
2. FOR METHOD OF MEASUREMENT AND BASIS OF PAYMENT, SEE RECURRING SPECIAL PROVISION "PATCHING WITH HOT-MIX ASPHALT OVERLAY REMOVAL".

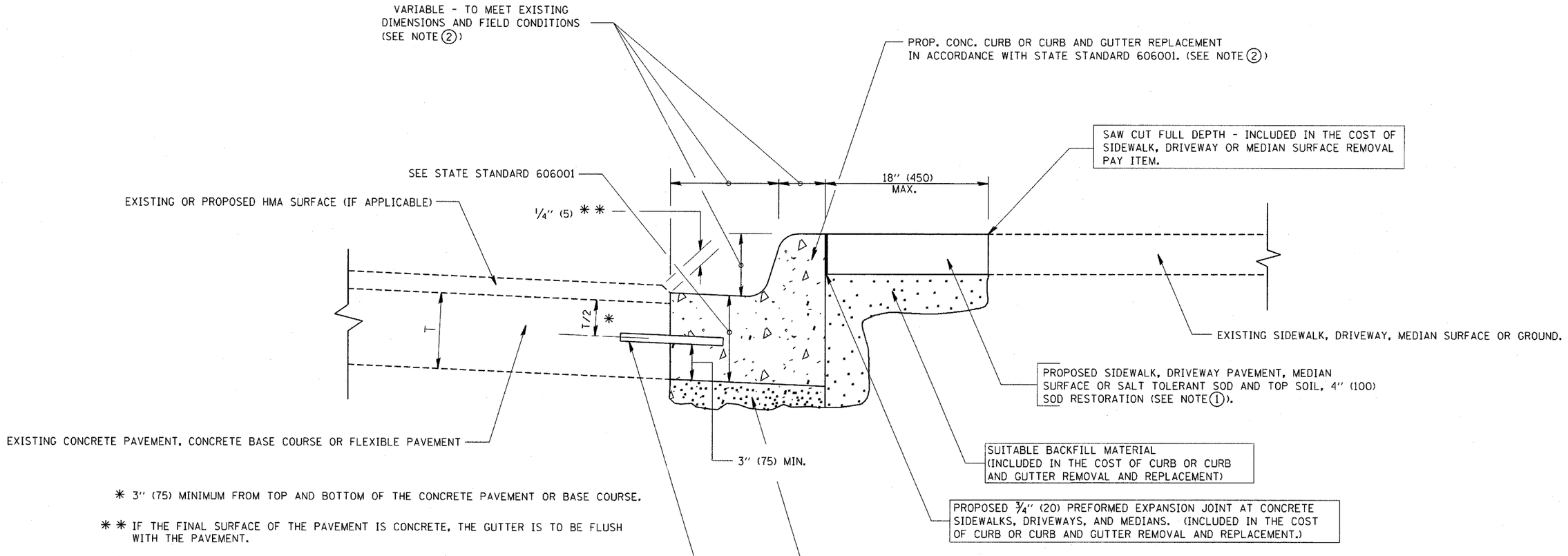
SEQUENCE OF CONSTRUCTION

1. REMOVE THE EXISTING HMA MATERIAL OVER THE AREA TO BE PATCHED.
2. REMOVE AND REPLACE FULL DEPTH PATCHES
3. REPLACE HMA MATERIAL OVER THE AREA TO BE PATCHED.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd22.dgn	USER NAME = gaglianobt	DESIGNED - R. SHAH	REVISED - A. ABBAS 01-20-98	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT PATCHING FOR HMA SURFACED PAVEMENT
		DRAWN -	REVISED - A. ABBAS 04-27-98		
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - R. BORO 01-01-07		
	PLOT DATE = 1/4/2008	DATE - 10-25-94	REVISED - R. BORO 09-04-07		SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	378
	BD400-04 (BD-22)	CONTRACT NO.		
FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT				



* 3" (75) MINIMUM FROM TOP AND BOTTOM OF THE CONCRETE PAVEMENT OR BASE COURSE.

* * IF THE FINAL SURFACE OF THE PAVEMENT IS CONCRETE, THE GUTTER IS TO BE FLUSH WITH THE PAVEMENT.

NOTE: (1) SIDEWALK, DRIVEWAY PAVEMENT OR MEDIAN SURFACE SHALL BE SIMILAR TO THE MATERIAL BEING REMOVED AND WILL BE PAID FOR SEPARATELY.

SALT TOLERANT SOD AND TOP SOIL, 4" (100) RESTORATION WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT.

(2) CURB OR CURB AND GUTTER REPLACEMENT SHALL MATCH THE SHAPE OF THE EXISTING CURB OR CURB AND GUTTER UNLESS OTHERWISE SPECIFIED.

(3) FOR CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT ADJACENT TO FLEXIBLE PAVEMENT DELETE EPOXY COATED TIE BARS.

(4) LONGITUDINAL BARS, IF ENCOUNTERED IN THE EXISTING CURB OR CURB AND GUTTER, ARE NOT TO BE REPLACED. CUTTING AND REMOVING LONGITUDINAL BARS SHALL BE INCLUDED IN THE COST OF CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT.

(5) THE COST OF HMA SURFACE REMOVAL IN THE EXISTING GUTTER FLAG SHALL BE INCLUDED IN THE COST OF THE CURB AND GUTTER REMOVAL AND REPLACEMENT.

(6) THE REMOVAL AND REPLACEMENT OF THE EXISTING CURB OR CURB AND GUTTER SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF SECTION 440 AND 606 OF THE STANDARD SPECIFICATIONS.

(7) THE LOCATIONS OF REMOVAL AND REPLACEMENT OF EXISTING CURB OR CURB AND GUTTER SHALL BE DETERMINED BY THE RESIDENT ENGINEER AT THE TIME OF CONSTRUCTION.

BASIS OF PAYMENT:

THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT (METER) FOR "CURB REMOVAL AND REPLACEMENT" OR "COMBINATION CONCRETE CURB AND GUTTER REMOVAL AND REPLACEMENT".

CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd24.dgn	USER NAME = gaglionobt	DESIGNED - A. HOUSEH	REVISED - R. SHAH 10-03-96
		DRAWN -	REVISED - A. ABBAS 03-21-97
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - M. GOMEZ 01-22-01
	PLOT DATE = 1/4/2008	DATE - 03-11-94	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CURB OR CURB AND GUTTER REMOVAL AND REPLACEMENT

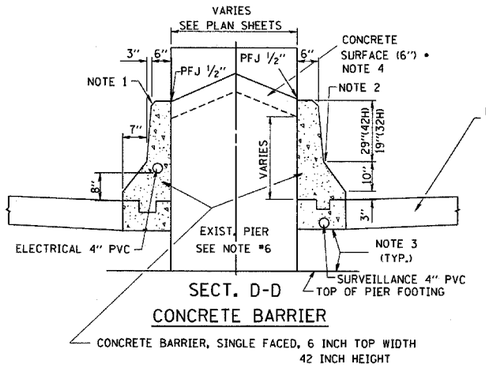
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	379

BD600-06 (BD-24) | CONTRACT NO.

FED. ROAD DIST. NO. 1 | ILLINOIS | FED. AID PROJECT

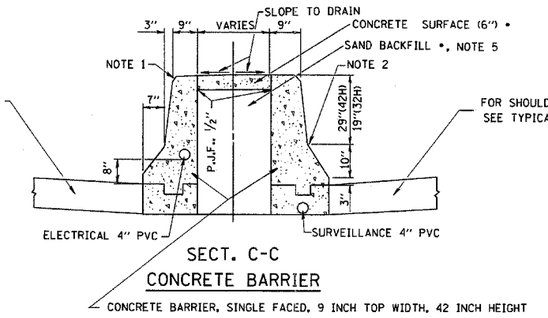
TANGENT CONDITION



SECT. D-D

CONCRETE BARRIER

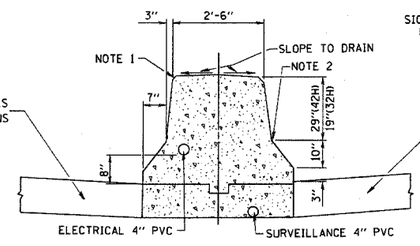
CONCRETE BARRIER, SINGLE FACED, 6 INCH TOP WIDTH
42 INCH HEIGHT



SECT. C-C

CONCRETE BARRIER

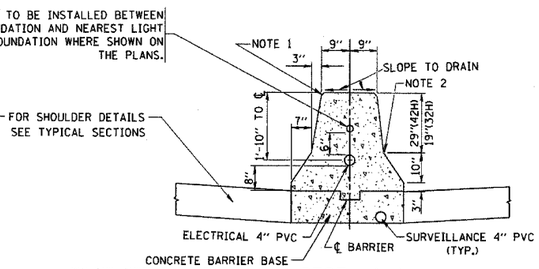
CONCRETE BARRIER, SINGLE FACED, 9 INCH TOP WIDTH, 42 INCH HEIGHT



SECT. B-B

CONCRETE BARRIER

CONCRETE BARRIER, DOUBLE FACED
18 INCH VARIABLE TOP WIDTH
42 INCH HEIGHT

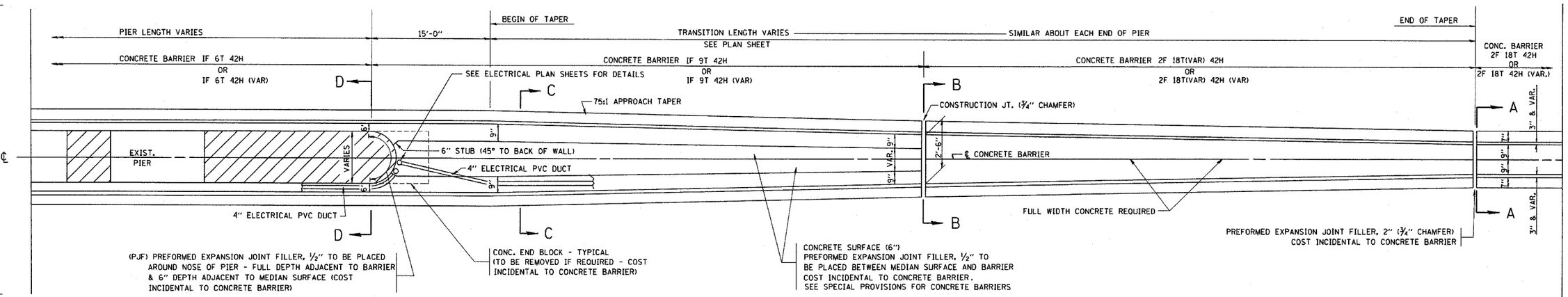


SECT. A-A

CONCRETE BARRIER

CONCRETE BARRIER, DOUBLE FACE,
18 INCH TOP WIDTH,
42 INCH HEIGHT

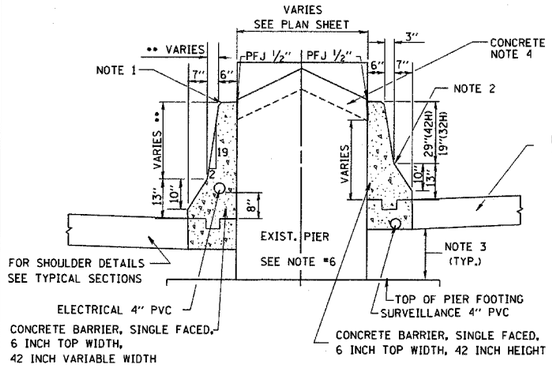
PLAN VIEW OF CONCRETE BARRIER TRANSITION



(SUPER ELEVATION CONDITION)

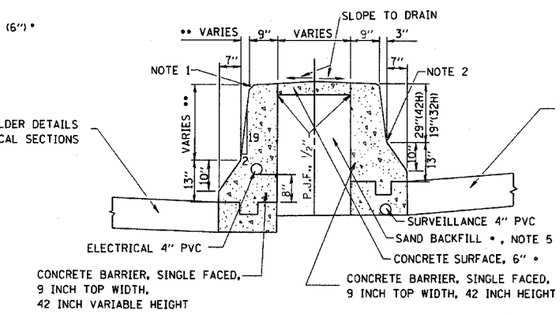
SECT. D-D

CONCRETE BARRIER



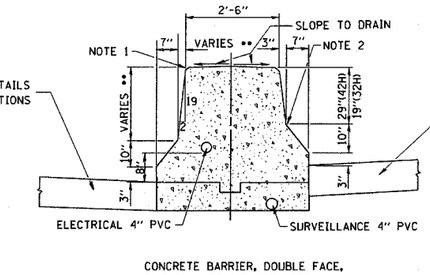
SECT.C-C

CONCRETE BARRIER



SECT. B-B

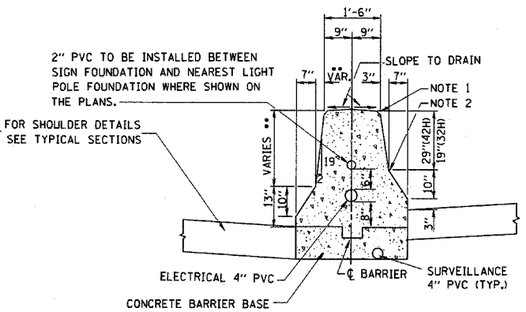
CONCRETE BARRIER



CONCRETE BARRIER, DOUBLE FACE,
18 INCH VARIABLE TOP WIDTH,
42 INCH VARIABLE HEIGHT

SECT. A-A

CONCRETE BARRIER



CONCRETE BARRIER, DOUBLE FACE,
18 INCH TOP WIDTH,
42 INCH VARIABLE HEIGHT

GENERAL NOTES - FOR UNDERDRAIN DETAILS SEE TYPICAL SECTIONS

- PREFORMED JOINT FILLER SHALL BE INCIDENTAL TO THE CONCRETE BARRIER OF THE TYPE INVOLVED.
- FOR KEYWAY (F) DIMENSIONS, SEE TYPICAL SECTIONS
- CONCRETE BARRIER BASE PAY ITEM IS TO BE INCLUDED IF THE BARRIER IS CONSTRUCTED MONOLITHIC OR JOINTED TO BASE. IF JOINTED CONTRACTORS WILL HAVE THE OPTION OF USING A KEYWAY OR •__ TIE BARS AT _____O.C.

NOTE 1 - ¾" CHAMFER OR 1" RADIUS (OPTIONAL)

NOTE 2 - 10" RADIUS (OPTIONAL)

NOTE 3 - EXTEND BOTTOM OF BARRIER TO FOOTING ONLY WHEN DEPTH IS 6" OR LESS, OTHERWISE MAINTAIN SAME DEPTH AS BOTTOM OF SHOULDER

NOTE 4 - PIER FILLER MATERIAL TO BE CONCRETE IF MINIMUM 6" THICKNESS WILL BE MAINTAINED. IF 6" THICKNESS CANNOT BE MAINTAINED USE ASPHALT FILLER MATERIAL AS DIRECTED BY THE ENGINEER.

NOTE 5 - SAND BACKFILL AND CONCRETE SURFACE WILL BE REQUIRED. FILLING WITH CONCRETE WILL NOT BE ALLOWED.

NOTE 6 - IF PIER IS NEW CONSTRUCTION BARRIER WALL MAY BE MONOLITHIC

•• MAINTAIN SLOPE OF FACE AS SHOWN ON DETAIL. HEIGHT AND WIDTH OF BARRIER INCREASE WHERE A DIFFERENCE IN MEDIAN EDGE-OF-PAVEMENT GRADE ELEVATION EXISTS.

• COST OF SAND BACKFILL, CONCRETE SURFACE (6"), AND PIER FILLER MATERIAL WILL NOT BE INCIDENTAL.

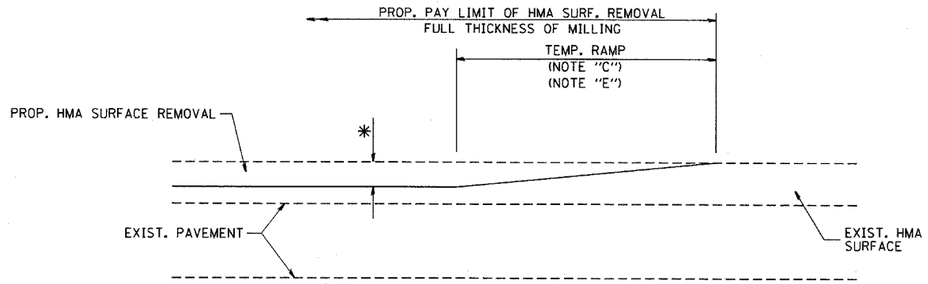
FILE NAME = W:\diststd\22x34\bd27.dgn	USER NAME = gaglionobt	DESIGNED - FORD	REVISED - FORD 12-06-88
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE - 09-09-88	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER TRANSITION &
GENERAL DETAILS, CONCRETE BARRIER BASE

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

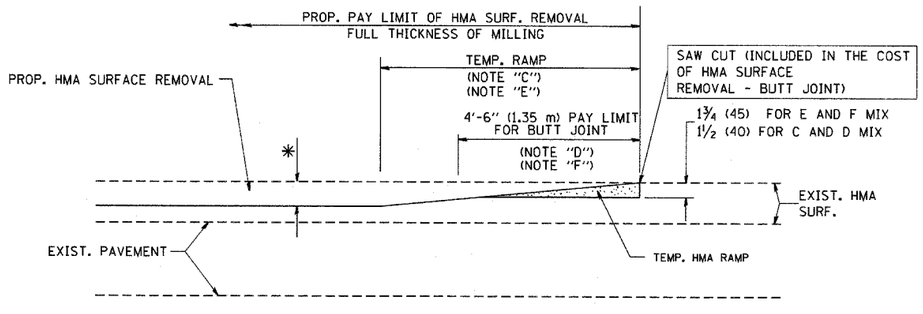
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	380
	BD-27		CONTRACT NO.	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



MILLED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

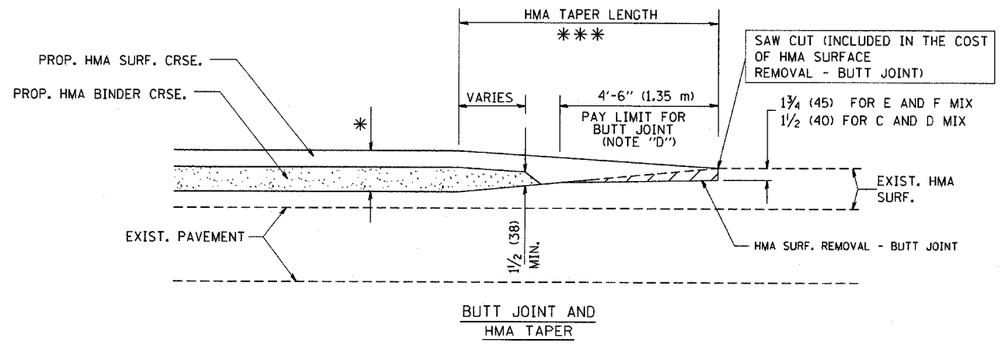


HMA CONSTRUCTED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

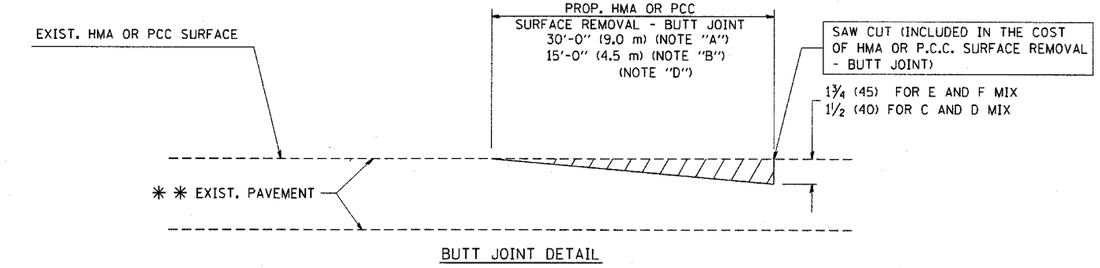
OPTION 2

TYPICAL TEMPORARY RAMP

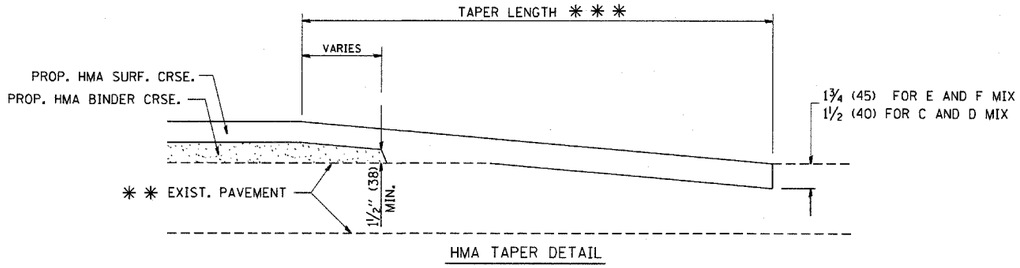


BUTT JOINT AND HMA TAPER

TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

** PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

NOTES

A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.

B: MINOR SIDE ROADS.

C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.

D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.

E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.

F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT

G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".

* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.

*** 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

BASIS OF PAYMENT:

THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL- BUTT JOINT".

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

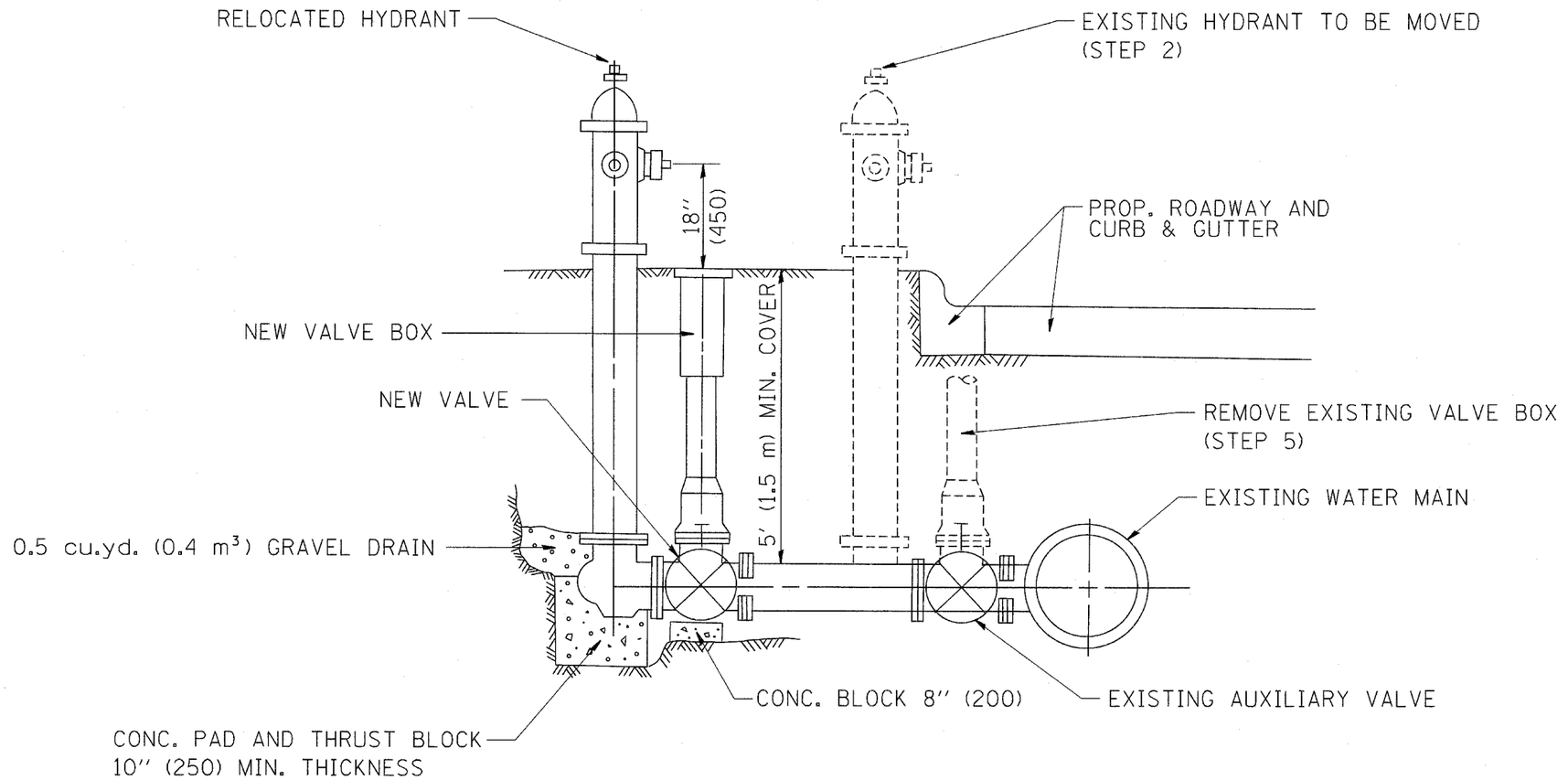
FILE NAME = W:\diststd\22x34\bd32.dgn	USER NAME = gaglionobt	DESIGNED - M. DE YONG	REVISED - R. SHAH 10-25-94
		DRAWN -	REVISED - A. ABBAS 03-21-97
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - M. GOMEZ 04-06-01
	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BUTT JOINT AND HMA TAPER DETAILS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	381
	BD400-05 BD32	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



SEQUENCE OF CONSTRUCTION:

1. CLOSE EXISTING VALVE.
2. REMOVE EXISTING HYDRANT.
3. INSTALL HYDRANT EXTENSION AND NEW VALVE.
4. RELOCATE EXISTING HYDRANT.
5. OPEN EXISTING VALVE, REMOVE BOX.
6. BACKFILL.
7. FLUSH AND TEST FOR CHLORIDE RESIDUAL AND PROVIDE TEST.

ALL WORK TO BE DONE IN ACCORDANCE WITH ARTICLE 564 OF THE STANDARD SPECIFICATIONS. NEW VALVE AND BOX SHALL BE SAME MAKE AND MODEL AS EXISTING.

FIRE HYDRANT TO BE MOVED

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

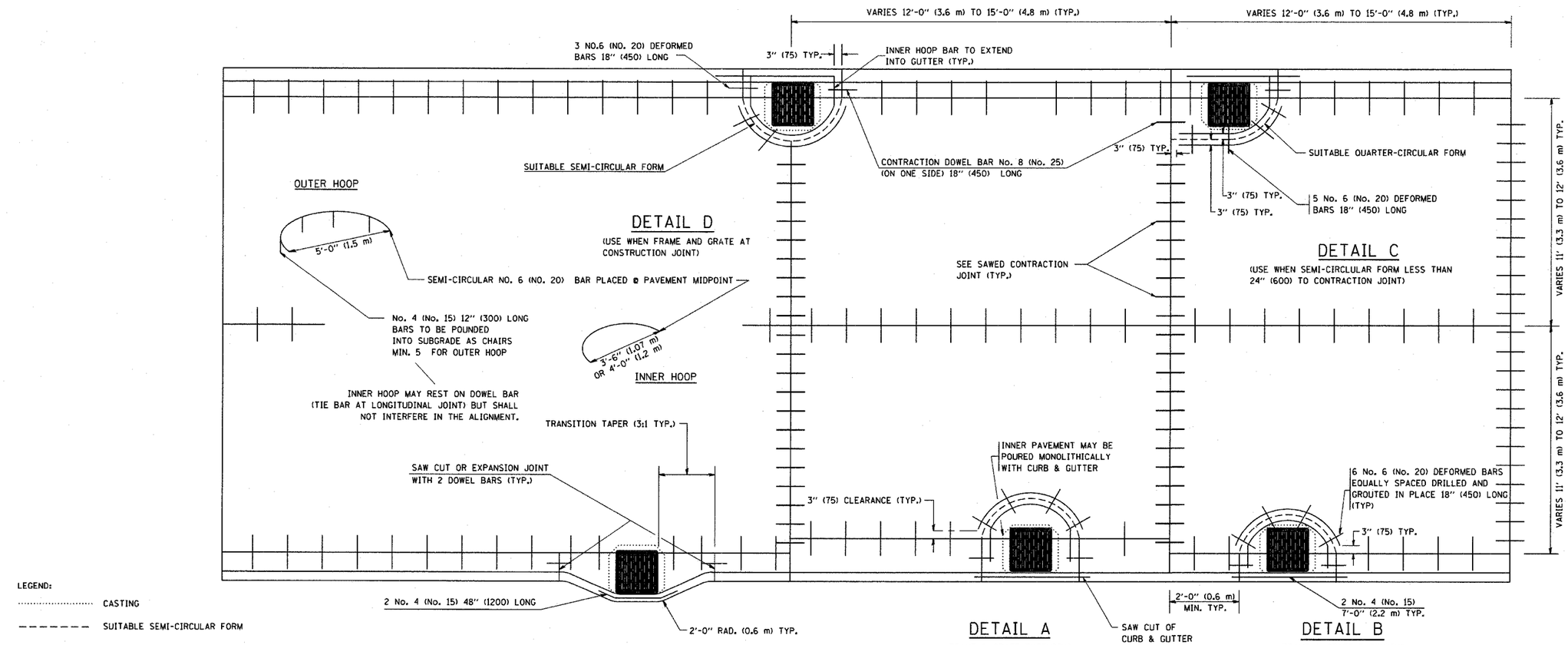
FILE NAME = W:\diststd\22x34\bd36.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - R. SHAH 09-09-94	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FIRE HYDRANT TO BE MOVED		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. SHAH 10-25-94							469	382
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -					BD-36	CONTRACT NO.		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

FRAME EXTENSION INTO PAVEMENT	INNER HOOP REINFORCEMENT DIAMETER	SEMI CIRCULAR FORM DIAMETER	OUTER HOOP REINFORCEMENT DIAMETER
UP TO 8" (200)	3'-6" (1.1 m)	4'-0" (1.2 m)	5'-0" (1.5 m)
> 8" (200) TO 14" (360)	4'-0" (1.2 m)	4'-6" (1.4 m)	5'-0" (1.5 m)

DESIGNER NOTE:
THIS DETAIL IS TO BE USED WHEN THE GUTTER FLAG IS LESS THAN 24"

NOTES :

1. THE ROUNDOUT AND ADDED REINFORCEMENT WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE PAVEMENT.
2. TRANSVERSE JOINTS MAY BE MOVED TO ACCOMMODATE ROUNDOUT. EDGE OF CIRCULAR JOINT SHALL BE MINIMUM 12" (300) FROM TRANSVERSE JOINT. RELOCATED TRANSVERSE JOINT SHALL BE CONTINUOUS FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT.
3. SEMI-CIRCULAR FORM SHALL BE REMOVED PRIOR TO DRILL AND GROUT OF TIE BARS.
4. ALL REINFORCED BARS SHALL BE EPOXY COATED.
5. DRILL AND GROUT IS PREFERRED, HOWEVER TIE BARS CAN BE POURED IN PLACE IF CLEARANCE IS PROVIDED TO OUTER EDGE OF FRAME. MINIMUM 2" (50) CLEARANCE.
6. WOOD SHIMS SHALL BE USED TO ADJUST ALL FRAMES. AFTER ADJUSTING MORTAR HAS CURED, THE WOOD SHIMS SHALL BE REMOVED AND THE VOIDS UNDER THE FRAMES FILLED WITH NON SHRINK GROUT.
7. HOOP REINFORCEMENT SHALL BE ONE PIECE CONSTRUCTION.
8. CIRCULAR FRAMES AND GRATES MAY BE SUBSTITUTED.
9. CURB DOWELS MUST BE PLACED LEVEL & TRUE TO ALLOW CONTRACTION MOVEMENT.



TRANSITION CURB & AND GUTTER INTO PARKWAY
(PREFERRED BECAUSE PAVING OF MAINLINE NOT AFFECTED.)

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE NOTED

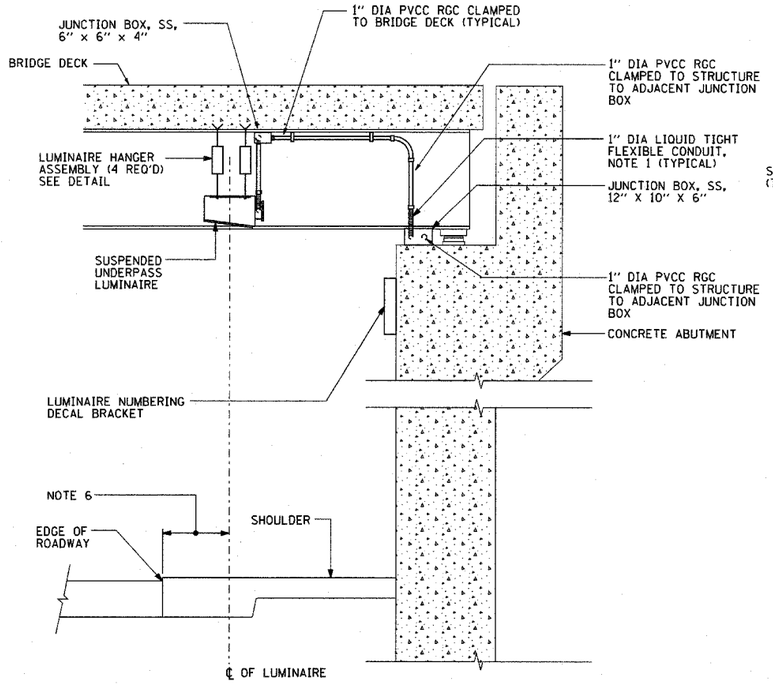
FILE NAME = W:\diststd\22x34\bd48.dgn	USER NAME = gaglienobt	DESIGNED - A. ABBAS	REVISED - T. MATOUSEK 08-28-00
		DRAWN - TOM MATOUSEK	REVISED - T. MATOUSEK 10-02-00
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - A. ABBAS	REVISED - T. MATOUSEK 04-25-02
	PLOT DATE = 1/4/2008	DATE - 01-04-99	REVISED - P. LAFLEUR 08-27-02

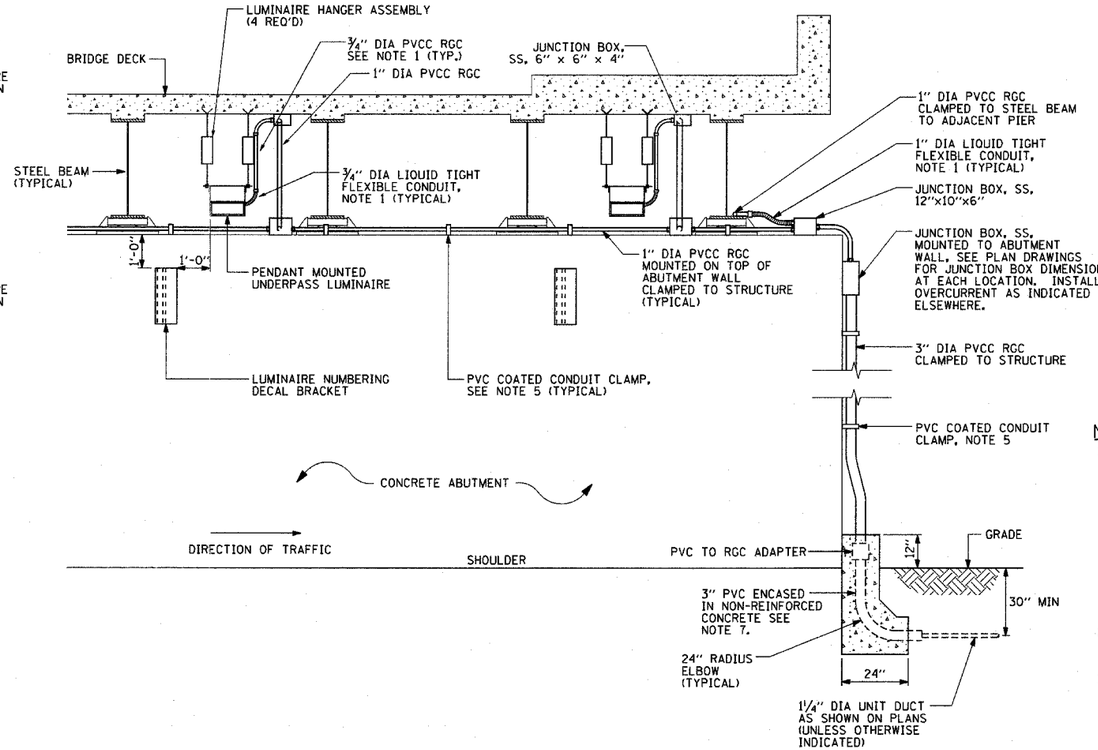
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PCC PAVEMENT ROUNDOUTS AT CURB AND GUTTER

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

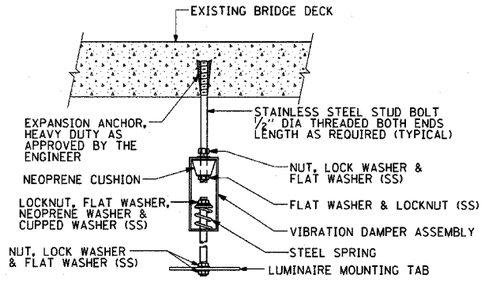
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	383
	BD-48		CONTRACT NO.	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



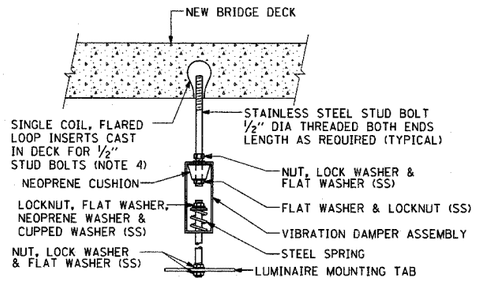


NOTES:

1. LIQUID TIGHT FLEXIBLE METAL CONDUIT, MAXIMUM LENGTH 6'-0", TYPICAL FOR EACH INSTANCE AS SHOWN. PROVIDE PVC COATED RIGID GALVANIZED STEEL CONDUIT AS REQUIRED NOT TO EXCEED 6'-0" OF FLEXIBLE LIQUID TIGHT METAL CONDUIT. LIQUID TIGHT FLEXIBLE METAL CONDUIT WILL BE INCLUDED IN THE COST OF THE CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED PAY ITEM EXCEPT THAT ¾" DIA. CONDUIT AND ¾" DIA. FLEXIBLE CONDUIT SHALL BE INCLUDED IN THE COST OF UNDERPASS LUMINAIRE INSTALLATION.
2. SEE UNDERPASS LIGHTING PLANS FOR INSTALLATION LOCATION OF UNDERPASS LIGHTING LUMINAIRES.
3. THE CONTRACTOR SHALL USE APPROVED SINGLE COIL FLARED LOOP INSERTS WHEN SUSPENDED MOUNTING AN UNDERPASS LUMINAIRE TO A NEW BRIDGE DECK. THE FLARED LOOP INSERTS MUST BE CAST INTO THE CONCRETE DECK. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND COORDINATING THE INSERT LOCATIONS FOR MOUNTING THE UNDERPASS LIGHTING SYSTEM AS SHOWN ON THE PLANS WITH THE BRIDGE DECK CONTRACTOR. SEE DETAIL.
4. THE UNDERPASS LUMINAIRE HANGER ASSEMBLY COMPLETE WITH HEAVY DUTY ANCHORS/INSERTS AND ALL APPLICABLE HARDWARE SHALL BE INCLUDED IN THE COST OF THE UNDERPASS LUMINAIRE PAY ITEM.
5. SECURE THE CONDUIT WITH PVC COATED CONDUIT CLAMPS OR CONDUIT BEAM CLAMPS AS SHOWN AT 5'-0" INTERVALS FOR LATERALS AND WITHIN 2'-0" MAXIMUM FROM ANY JUNCTION BOX, FLEXIBLE CONDUIT, OR CHANGE IN DIRECTION. ALL PVC COATED CONDUIT CLAMPS OR BEAM CLAMPS SHALL BE INCLUDED WITH THE COST OF THE "CONDUIT ATTACHED TO STRUCTURE, OF THE CORRESPONDING DIA., GALVANIZED STEEL, PVC COATED" PAY ITEM.
6. ALL UNDERPASS LUMINAIRES MUST BE CENTERED IN THE BEAM SPACE AS INDICATED ON THE PLANS UNLESS OTHERWISE DIRECTED BY THE ENGR. LUMINAIRE SETBACK SHALL BE AS INDICATED IN PLANS FOR EACH SPECIFIC UNDERPASS
7. THE CONCRETE ENCASED CONDUIT TRANSITION SHALL BE INCLUDED IN THE COST OF THE GALVANIZED RIGID STEEL CONDUIT PAY ITEMS.
8. ALL CONDUIT ATTACHED TO STRUCTURE SHALL BE PVC COATED RIGID STEEL CONDUIT (PVCC RGC) TYPICAL.

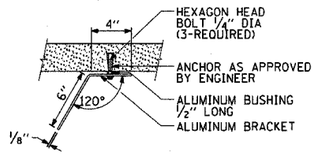


EXISTING BRIDGE DECK INSTALLATION



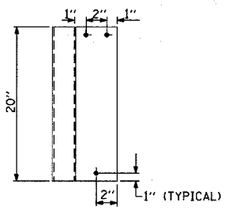
NEW BRIDGE DECK INSTALLATION

TYPICAL LUMINAIRE HANGER ASSEMBLY DETAILS



TOP VIEW

LUMINAIRE NUMBERING DECAL BRACKET
NOT TO SCALE



ELEVATION

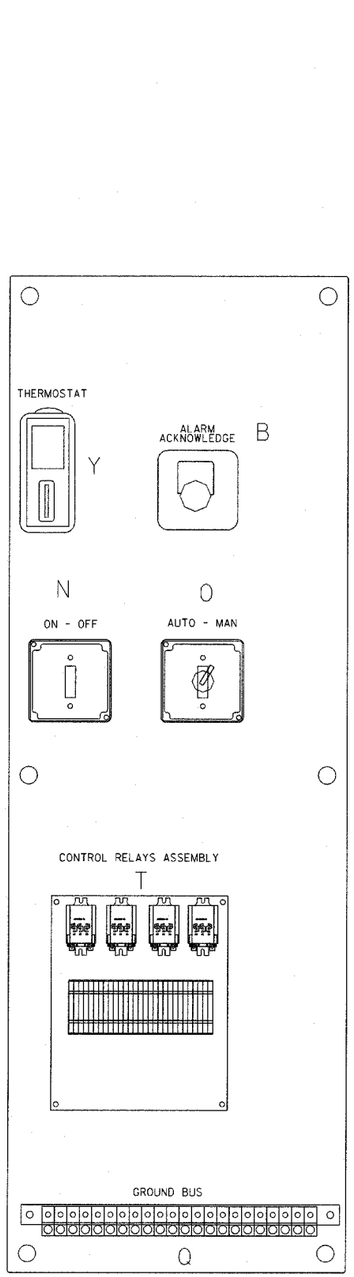
PVC COATED CONDUIT BEAM CLAMP
NOT TO SCALE

PVC COATED CONDUIT CLAMP
NOT TO SCALE

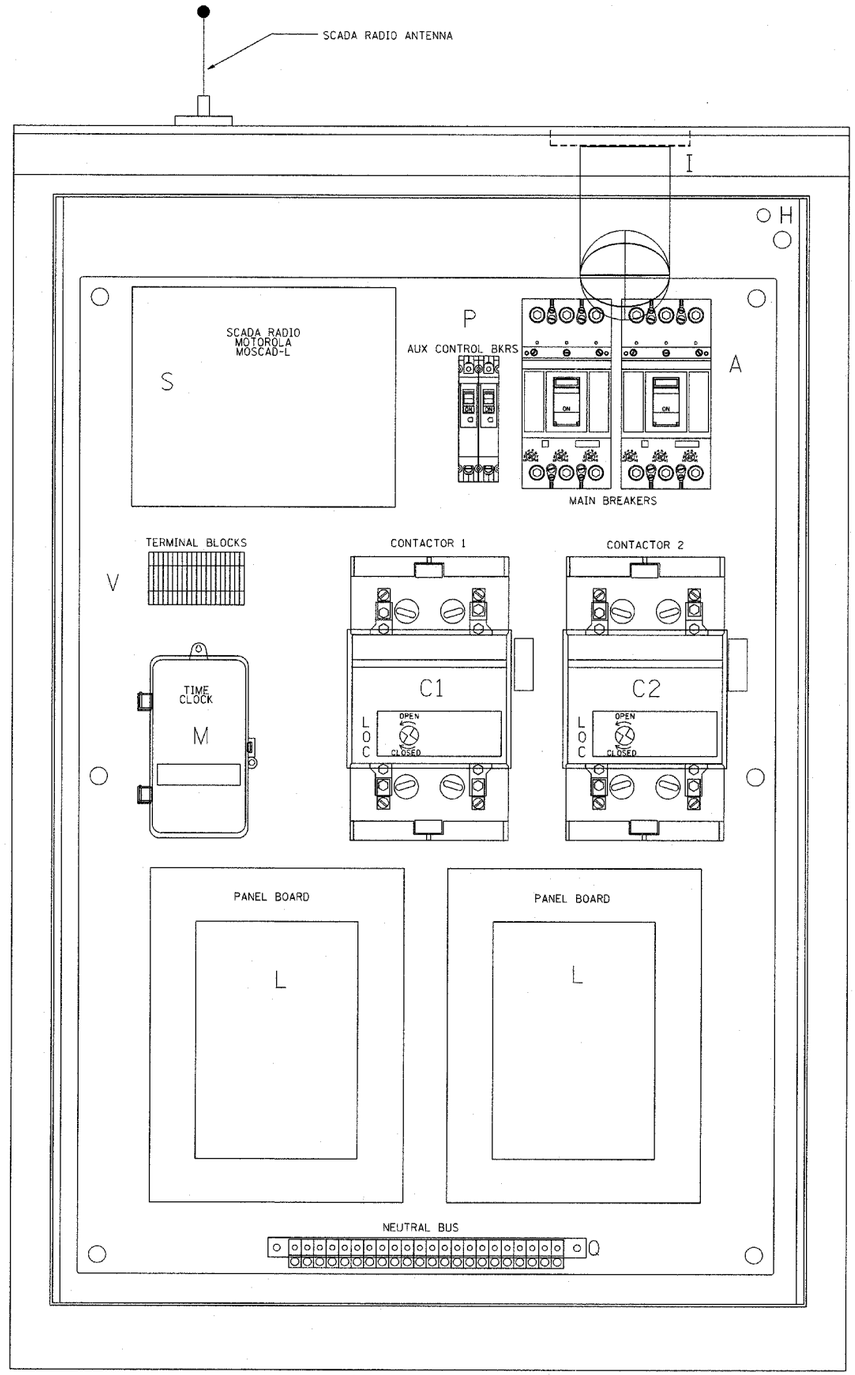
FILE NAME = W:\diststd\22x34\be900.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 12-12-05	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**SUSPENDED MOUNT UNDERPASS LUMINAIRE INSTALLATION DETAILS**
		DRAWN -	REVISED -		
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		

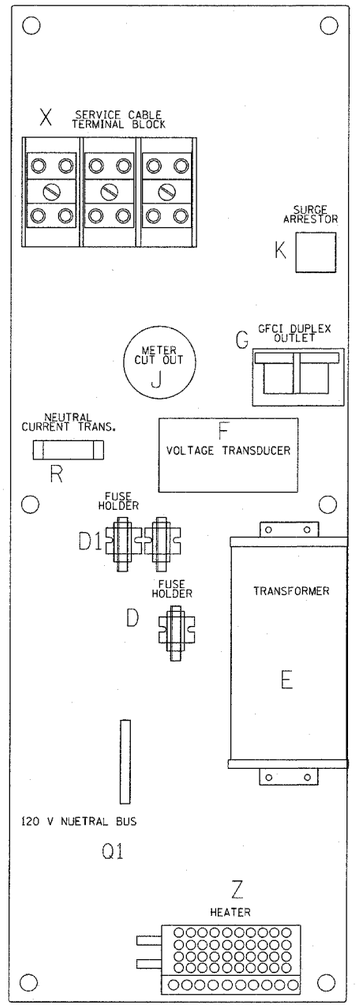
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	383J
	BE-900	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



LEFT SIDE PANEL





RIGHT SIDE PANEL

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
A	2	MAIN CIRCUIT BREAKERS 2 POLE 175 AMP WITH AUX CONTACT
B	1	ACKNOWLEDGE SWITCH, PUSH BUTTON WITH YELLOW INSERT
C1, C2*	2	CONTACTOR 2 POLE 200 AMP 240V COIL WITH AUX CONTACTS
D	1	FINGERSAFE FUSE HOLDER WITH KTK-15 FUSE
D1	2	FINGERSAFE FUSE HOLDER WITH KTK-½ FUSE
E	1	2.0 KVA 277V-240/120 TRANSFORMER
F	1	VOLTAGE TRANSDUCER WITH COVERED TERMINALS
G	1	15 AMP GFCI DUPLEX OUTLET W/COVER
H	2	DOOR SWITCH
I	1	LIGHT FIXTURE
J	1	METER FITTING 1 PHASE 3 WIRE 200 AMP
K	1	SURGE ARRESTER
L	2	PANEL BOARD 480/240V 1 PHASE, 250 AMP COPPER BUS
M	1	2 CHANNEL DIGITAL TIME CLOCK
N	1	MOMENTARY SWITCH ON - OFF
O	1	SQUARE D, 9001KS11BH13, 2 POSITION SWITCH IN 9001KY1 ENCLOSURE OR APPROVED EQUAL
P	2	BREAKER 1P 15A
Q	2	COPPER GROUND AND NEUTRAL BUS 1 x 16 x 1/4
Q1	1	COPPER NEUTRAL BUS WITH 1 #6 AND 8 #12 CONDUCTOR POINTS
R	1	CURRENT TRANSDUCER
S	1	MOTOROLA MOSCAD-L RADIO, 240 V
T*	1	CONTROL RELAY ASSEMBLEY 240V COILS WITH 4 3 PDT 25A RELAYS (W389ACX-15) (R1, R2, R3, R4). QTY 32 TERMINAL BLOCKS
V	20	TERMINAL BLOCKS
X*	1	620 AMP SLPICE BLOCK
Y	1	40-80 DEG THERMOSTAT
Z	1	375 WATT HEATER

* TERMINALS SHALL BE COVERED WITH CLEAR PLEXIGLASS SHEET

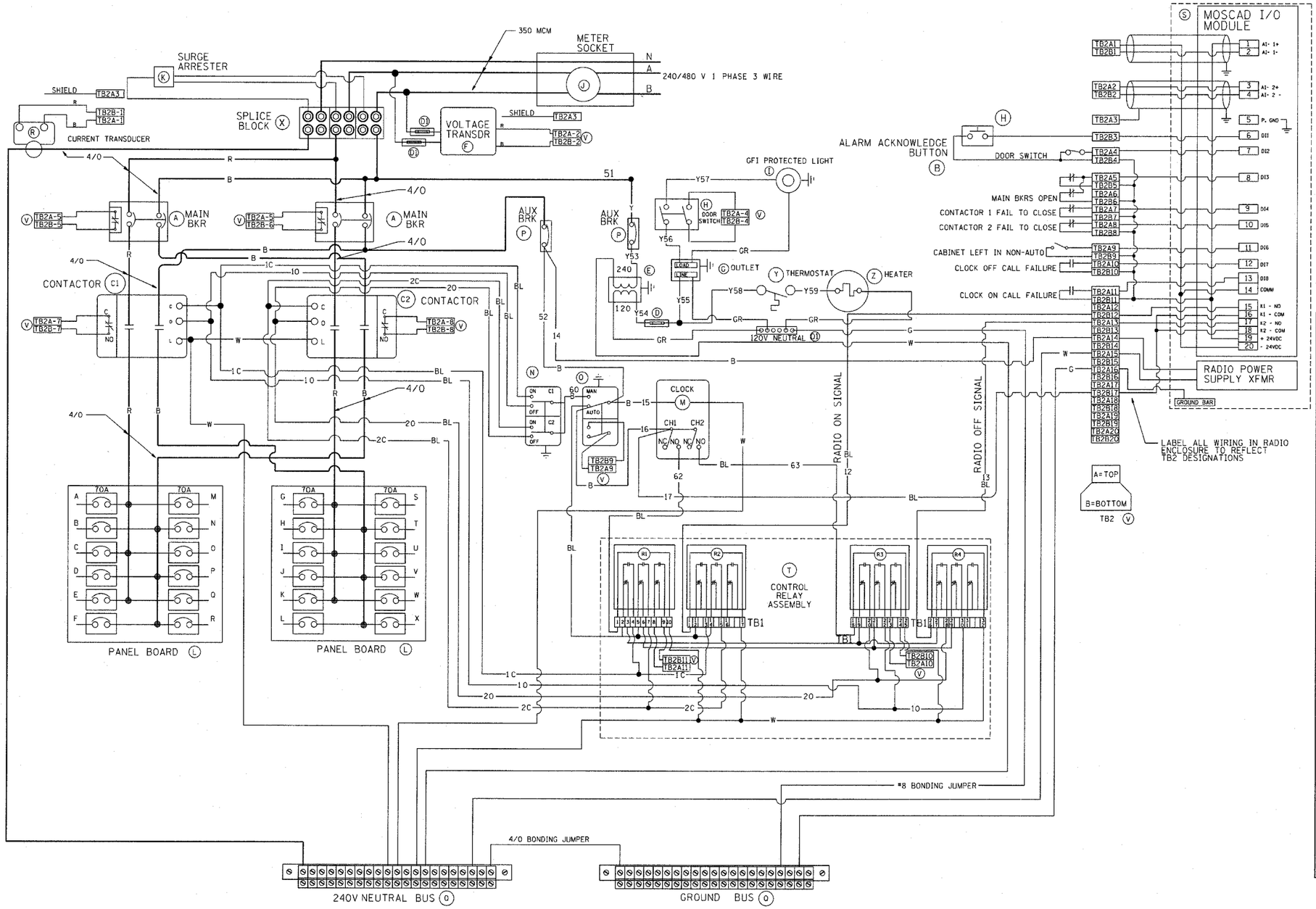
FILE NAME = W:\diststd\22x34\be205.dgn	USER NAME = gaglienobt	DESIGNED -	REVISED - R. TOMSONS 08-19-04
		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LIGHTING CONTROLLER, RADIO CONTROL
DUPLEX TYPE WITH SCADA

SCALE: NONE | SHEET NO. 1 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	383A
	BE-205	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

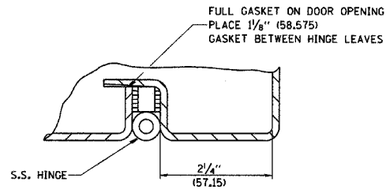


BILL OF MATERIALS

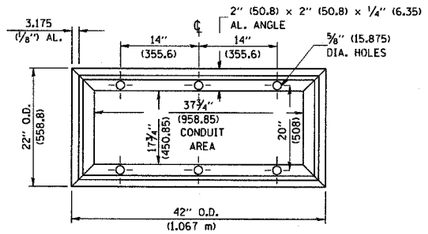
ITEM *	QTY	DESCRIPTION
A	2	MAIN CIRCUIT BREAKERS 2 POLE 175 AMP WITH AUX CONTACT
B	1	ACKNOWLEDGE SWITCH, PUSH BUTTON WITH YELLOW INSERT
C1, C2	2	CONTACTOR 2 POLE 200 AMP 240V COIL WITH AUX CONTACTS
D	1	FINGERSAFE FUSE HOLDER WITH KTK-10 FUSE
DI	2	FINGERSAFE FUSE HOLDER WITH KTK-½ FUSE
E	1	2.0 KVA 277V-240/120 TRANSFORMER
F	1	VOLTAGE TRANSDUCER
G	1	15 AMP GFCI DUPLEX OUTLET W/COVER
H	2	DOOR SWITCH A-2060-B7-K
I	1	LIGHT FIXTURE
J	1	METER FITTING 1 PHASE 3 WIRE 200 AMP
K	1	SURGE ARRESTER
L	2	PANEL BOARD 480/240V 1 PHASE, 250 AMP COPPER BUS
M	1	2 CHANNEL DIGITAL TIME CLOCK
N	1	MOMENTARY SWITCH ON - OFF
O	1	SQUARE D, 9001KS11BH13, 2 POSITION SWITCH IN 9001KY1 ENCLOSURE
P	2	BREAKER 1P 15A
Q	2	COPPER GROUND AND NEUTRAL BUS 1 x 16 x 1/4
Q1	1	COPPER NEUTRAL BUS WITH 1 1/0 AND #6 CONDUCTOR POINTS
R	1	CURRENT TRANSDUCER
S	1	MOTOROLA MOSCAD-L RADIO, 240 V
T	1	CONTROL RELAY ASSEMBLEY 240V COILS WITH 4 3 PDT 25A RELAYS (W389ACX-15) (R1, R2, R3, R4) . QTY 32 TERMINAL BLOCKS
V	20	TERMINAL BLOCKS
X	1	620 AMP SLPICE BLOCK
Y	1	40-80 DEG THERMOSTAT
Z	1	375 WATT HEATER

*

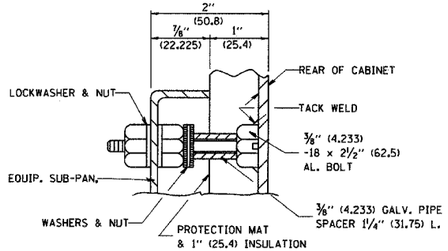
FILE NAME = W:\diststd\22x34\be205.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - R. TOMSONS 08-19-04	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING CONTROLLER, RADIO CONTROL DUPLEX TYPE WITH SCADA		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED -							469	3838
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -					BE-205	CONTRACT NO.		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE	SHEET NO. 2 OF 4 SHEETS STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



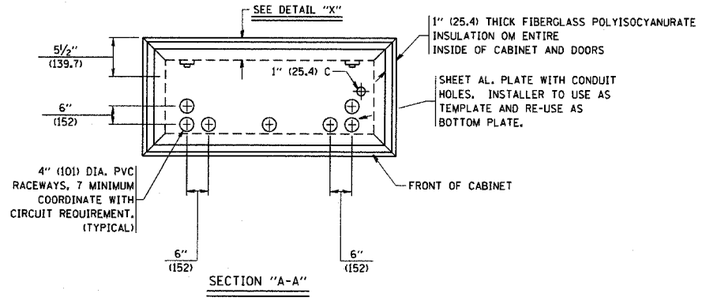
DETAIL "Y"



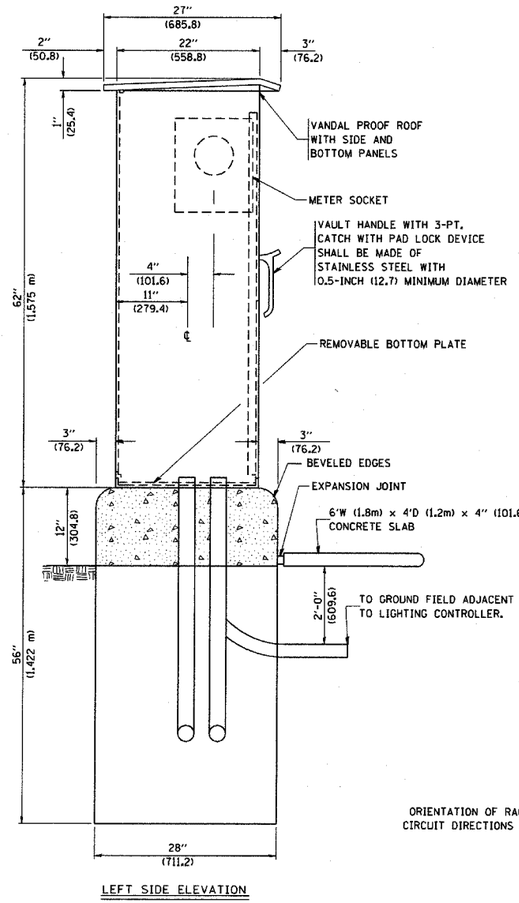
BASE MTG. DETAIL



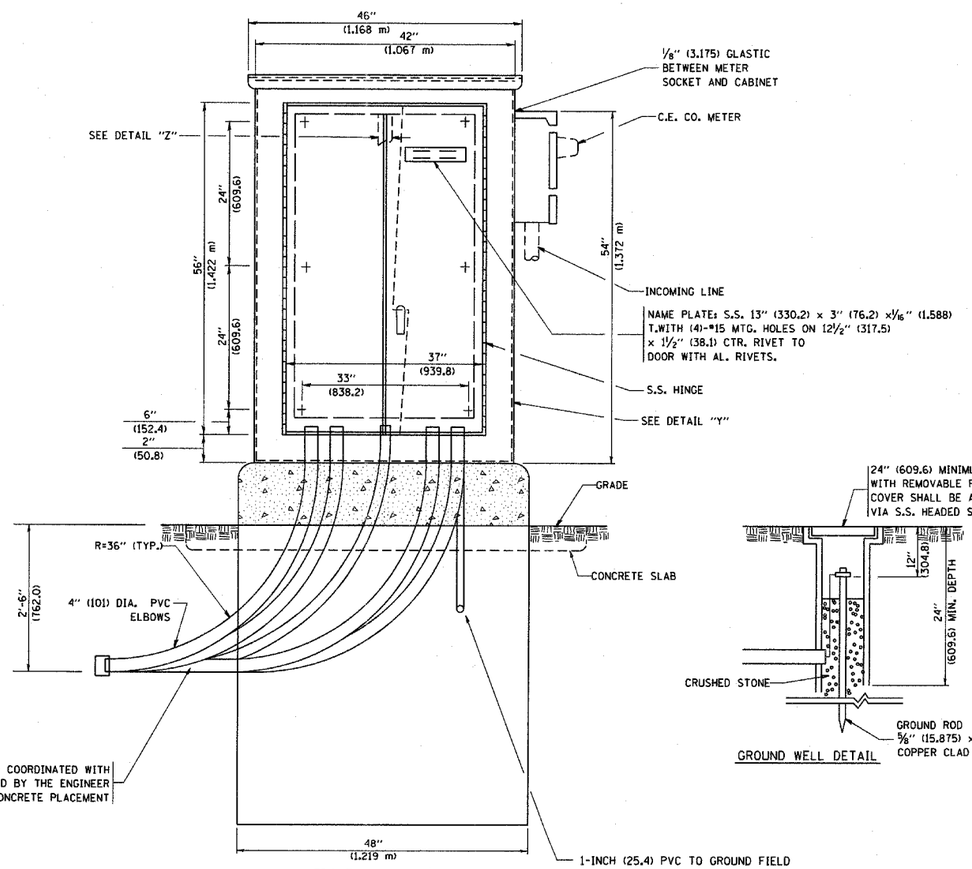
DETAIL "X"



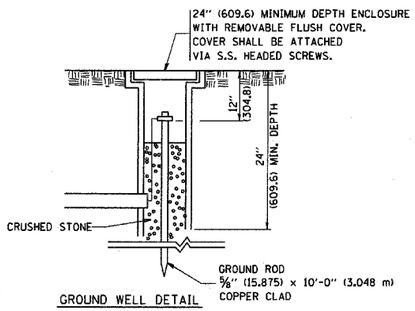
SECTION "A-A"



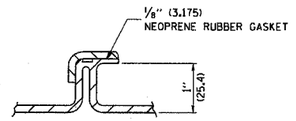
LEFT SIDE ELEVATION



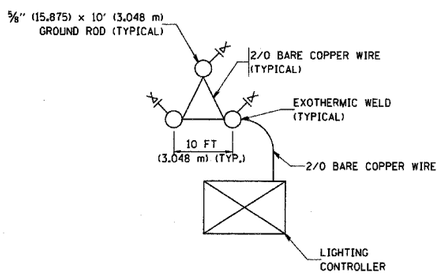
FRONT ELEVATION



GROUND WELL DETAIL



DETAIL "Z"



GROUND FIELD DETAIL
(N.T.S.)

THE CONTRACTOR SHALL
VERIFY EXACT LOCATION
WITH THE ENGINEER

FILE NAME = W:\diststd\22x34\be205.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - R. TOMSONS 08-19-04	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	LIGHTING CONTROLLER, RADIO CONTROL DUPLEX TYPE WITH SCADA
		DRAWN -	REVISED -		
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE | SHEET NO. 3 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	383C
	BE-205	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

NOTES

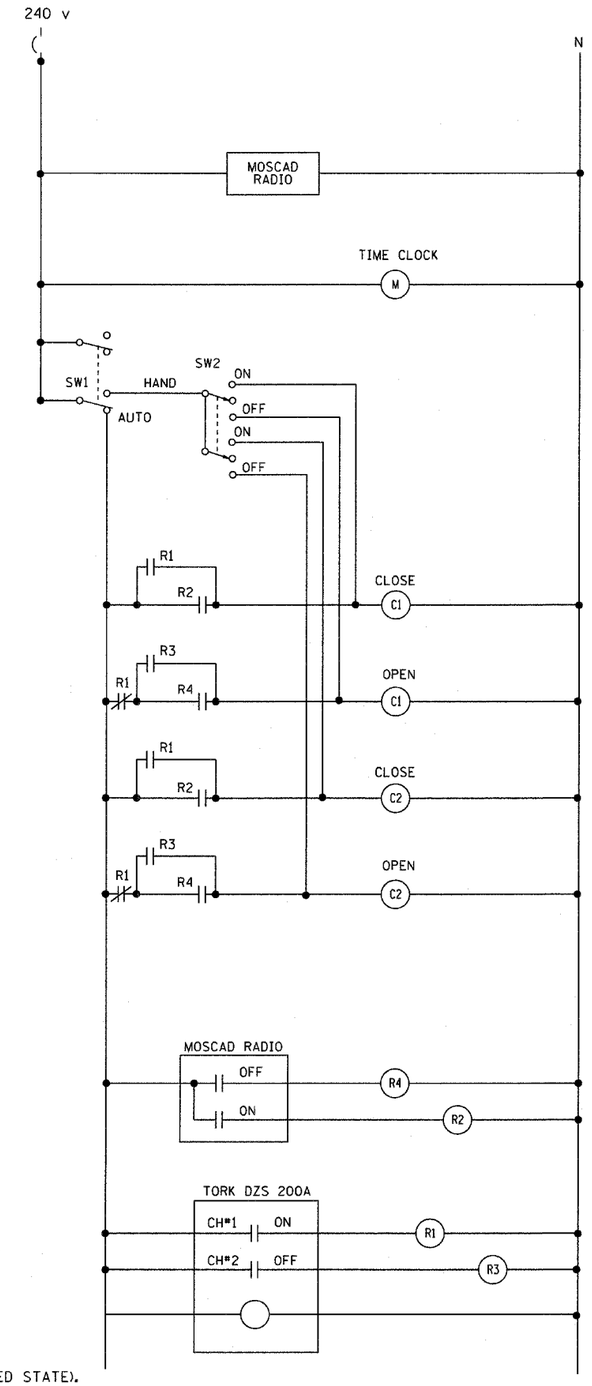
1. CABINET SHALL BE FABRICATED FROM 0.125-INCH (3.175) SHEET ALUMINUM *3003H14, FORMED AND ARC WELDED.
2. ALL SCREWS AND HARDWARE SHALL BE PLATED, GALVANIZED, OR MADE OF BRASS, ALUMINUM OR STAINLESS STEEL, UNLESS OTHERWISE NOTED.
3. NAME PLATE SHALL HAVE ENGRAVED 0.75-INCH (19.05) HIGH LETTERS FILLED IN BLACK: "STATE OF ILLINOIS LIGHTING CONTROLS" UNLESS OTHERWISE SPECIFIED.
4. ONE INCH THICK POLYISOCYANURATE INSULATION SHALL BE INSTALL AND PERMANENTLY CEMENTED ON ALL SIDES OF THE CABINET AND DOORS.
5. CABINET SHALL BE PRIMED AND PAINTED AS SPECIFIED.
6. ELECTRIC UTILITY METER BOX SHALL BE MOUNTED ON THE SIDE OF CONTROL CABINET AS SHOWN ON THE PANEL LAYOUT DIAGRAM.
7. THE COMPLETED CONTROLLER SHALL BE U.L. LISTED AS AN INDUSTRIAL CONTROL PANEL UNDER UL508.
8. METAL MOUNTING PANEL SHALL BE FABRICATED FROM THE SAME MATERIAL AS THE CABINET AND SHALL BE FLANGED BACK 0.75-INCHES I.D. ON 4 SIDES.
9. CIRCUIT BREAKERS AND CONTACTORS AND OTHER COMPONENTS SHALL BE MOUNTED ON 0.125-INCH (3.175) THICK GLASTIC INSULATION BACK PANEL.
10. ALL DEVICES SHALL BE FRONT REMOVABLE.
11. TIME CLOCK CHANNEL 1 N.O. CONTACT IS CLOSED NIGHT AND OPEN DAY (LIGHTS ON).
12. SET LATITUDE TO 42 DEGREES. SET CH.1 TO 25 MINUTES AFTER ASTRONOMICAL SUNSET, 40 MINUTES BEFORE ASTRONOMICAL SUNRISE. SET CH.2 TO 60 MINUTES AFTER ASTRONOMICAL SUNSET (WITH A SIGNAL LENGTH OF 1 SECOND), +20 MINUTES AFTER ASTRONOMICAL SUNRISE (WITH A SIGNAL LENGTH OF 7 SECONDS.)
13. BUS BAR SHALL HAVE 22 LUG TERMINALS SIZED TO ACCOMMODATE REQUIRED WIRE SIZES. 240V NEUTRAL BUS SHALL BE PAINTED WHITE, GROUND BUS SHALL BE PAINTED GREEN, AND THE 120V NEUTRAL BUS SHALL BE PAINTED GREY.
14. ALL LUGS SHALL BE OF COPPER SCREWS AND CONNECTORS, SPRING HELD.
15. ALL WIRING TERMINATIONS SHALL BE RATED NOT LESS THAN 75 DEGREE CENTIGRADE.
16. ALL CONTROL WIRING SHALL BE 600V #12 TYPE MTW.
17. ALL POWER WIRING SHALL BE 600V TYPE RHH/RHW.
18. ALL WIRING WITHIN THE CABINET SHALL BE COLOR CODED AS INDICATED:

    R - RED Y - YELLOW
    B - BLACK W - WHITE
    BL- BLUE G - GREEN
    G - GREY
19. MOSCAD I/O WIRING SHALL BE:

    DIGITAL INPUT (DI) WIRING SHALL BE #16 MTW PURPLE.

    ANALOG INPUT (AI) WIRING SHALL BE #18, 2/C SHIELDED.

    AI AND DI WIRING MAY BE BUNDLED TOGETHER, BUT SHALL NOT BE BUNDLED WITH OTHER WIRING.
20. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
21. SCHEMATIC SHOWN WITH BREAKER OPEN, CONTACTOR OPEN, CABINET DOOR CLOSED, CLOCK NOT ACTIVE (DE-ENERGIZED STATE).
22. A LAMINATED COPY OF THE CIRCUIT SCHEMATIC AND SCADA I/O DIAGRAM (NO SMALLER THAN 11"x17" EACH) SHALL BE ATTACHED TO THE INSIDE OF THE CONTROLLER WITH STAINLESS STEEL SCREWS.



CONTROL CIRCUIT LADDER LOGIC DIAGRAM

MOSCAD I/O ASSIGNMENTS		
TERM	MOSCAD DESTINATION	DESCRIPTION OF INPUT
1	ANALOG INPUT 1 (+)	CABINET NEUTRAL CURRENT
2	ANALOG INPUT 1 (-)	CABINET NEUTRAL CURRENT
3	ANALOG INPUT 2 (+)	CABINET SERVICE VOLTAGE
4	ANALOG INPUT 2 (-)	CABINET SERVICE VOLTAGE
5	P. GROUND	GROUND
6	DIGITAL INPUT 1	ALARM KNOWLEDGE
7	DIGITAL INPUT 2	DOOR OPEN
8	DIGITAL INPUT 3	MAIN(S) BREAKER OPEN
9	DIGITAL INPUT 4	CONTACTOR 1 OPEN
10	DIGITAL INPUT 5	CONTACTOR 2 OPEN
11	DIGITAL INPUT 6	CABINET IN NON-AUTO
12	DIGITAL INPUT 7	BACK-UP CLOCK OFF CALL
13	DIGITAL INPUT 8	BACK-UP CLOCK ON CALL
14	DI COMMON	COMMON
15	K1 NO	LIGHTS ON CALL
16	K1 C	K1 COMMON
17	K2 NO	LIGHTS OFF CALL
18	K2 C	K2 COMMON
19	24 V+	24+VDC
20	24 V-	24-VDC

ALL ANALOG INPUTS WILL BE 4-20 MA ONLY. DIGITAL OUTPUT RELAYS WILL BE ELECTRICALLY ENERGIZED AND MOMENTARILY HELD

MIXED I/O MODULE MODEL NUMBER V436

FILE NAME = W:\diststd\22x34\be205.dgn	USER NAME = gaglionobt	DESIGNED -	REVISED - R. TOMSONS 08-19-04
		DRAWN -	REVISED -
	PLOT SCALE = 50.000 '/ IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

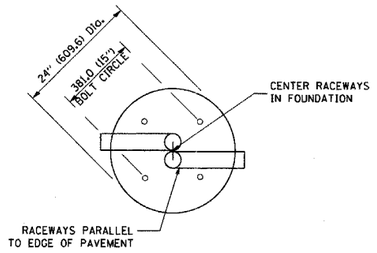
LIGHTING CONTROLLER, RADIO CONTROL
DUPLEX TYPE WITH SCADA

SCALE: NONE | SHEET NO. 4 OF 4 SHEETS | STA. | TO STA.

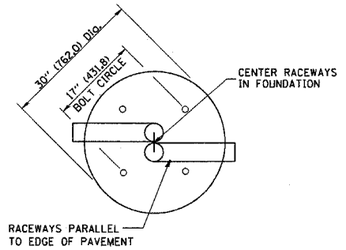
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	383D
	BE-205	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

LIGHT POLE FOUNDATION DEPTH TABLE
40 FT. (12.192 m) TO 47.5 FT. (14.478 m) MOUNTING HEIGHT

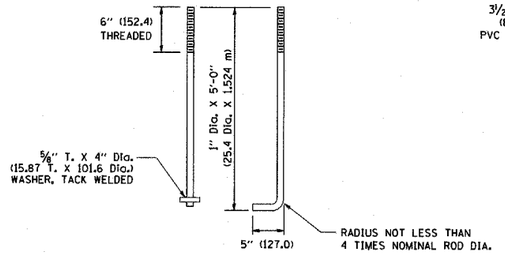
SOIL CONDITIONS	DESIGN DEPTH "D" OF FOUNDATION	
	SINGLE ARM POLE	TWIN ARM POLE
SOFT CLAY Ou = 0.375 TON/SQ. FT.	13'-0" (3.96 m)	15'-0" (4.57 m)
MEDIUM CLAY Ou = 0.75 TON/SQ.FT	9'-6" (2.09 m)	10'-9" (3.23 m)
STIFF CLAY Ou = 1.50 TON/SQ. FT.	7'-0" (2.13 m)	8'-0" (2.44 m)
LOOSE SAND Ø = 34°	9'-0" (2.74 m)	10'-0" (3.05 m)
MEDIUM SAND Ø = 37.5°	8'-3" (2.52 m)	9'-0" (2.74 m)
DENSE SAND Ø = 40°	7'-9" (2.36 m)	9'-0" (2.74 m)



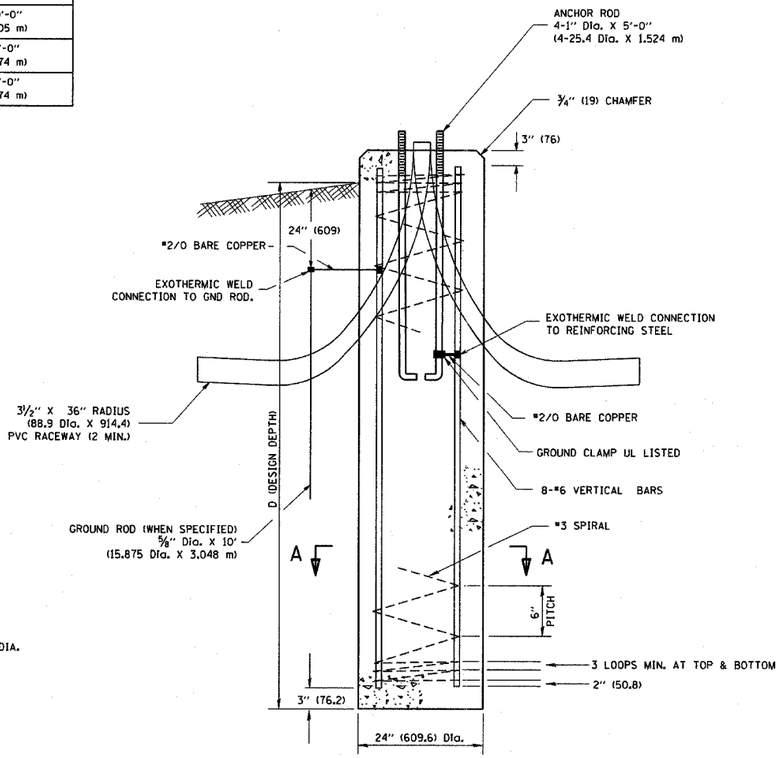
TOP VIEW



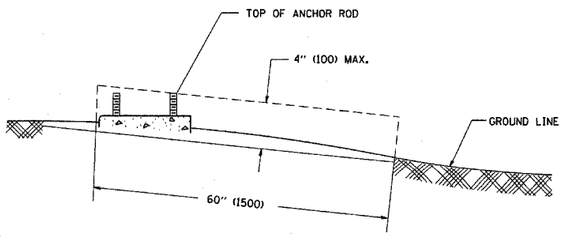
TOP VIEW



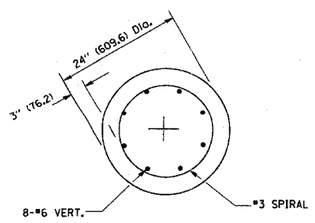
ANCHOR ROD DETAIL



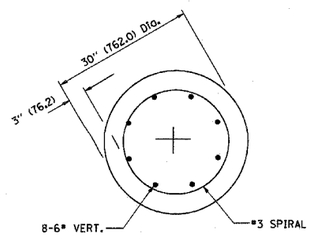
FOUNDATION DETAIL



FOUNDATION EXTENSION DETAIL



SECTION A-A



SECTION A-A

NOTES

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. THE ANCHOR RODS AND RACEWAYS SHALL BE PROPERLY SECURED IN PLACE BEFORE THE CONCRETE IN PLACED.
3. THE FOUNDATION SHALL NOT PROTRUDE MORE THAN 100MM (4 IN.) ABOVE THE FINISHED GRADE WITHIN A 60 IN. (1.5 m) CHORD ACROSS THE FOUNDATION, WITH ANCHOR RODS INCLUDED. IN ACCORDANCE WITH AASHTO GUIDELINES, IF THE FOUNDATION HEIGHT, INCLUDING ANCHOR RODS, EXTENDS BEYOND THESE SPECIFIED LIMITS, THE FOUNDATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SEE FOUNDATION EXTENSION DETAIL.
4. THE HOLE FOR THE FOUNDATION SHALL BE MADE BY DRILLING WITH AN AUGER, OF THE SAME DIAMETER AS THE FOUNDATION. IF SOIL CONDITIONS REQUIRE THE USE OF A LINER TO FORM THE HOLE, THE LINER SHALL BE WITHDRAWN AS THE CONCRETE IS DEPOSITED.
5. THE TOP OF THE FOUNDATION SHALL BE CONSTRUCTED LEVEL. A LINER OR FORM SHALL BE USED TO PRODUCE A UNIFORM SMOOTH SIDE TO THE TOP OF THE FOUNDATION. FOUNDATION TOP SHALL BE CHAMFERED 3/4-IN. (20 mm).
6. THE CONCRETE SHALL BE CLASS SI. CONCRETE SHALL CURE ACCORDING TO ARTICLE 1020.13 BEFORE LIGHT POLES ARE INSTALLED.
7. THE ANCHOR ROD SHALL BE A HOOK ROD TYPE. COLD BENDING OF THE ANCHOR ROD WILL NOT BE ALLOWED. THE RADIUS OF THE HOOK BEND SHALL NOT BE LESS THAN 4 TIMES THE NOMINAL DIAMETER OF THE ANCHOR ROD. A TACK WELDED ANCHOR ROD MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER.
8. THE ANCHOR RODS SHALL BE ACCORDING TO ASTM F1554 GRADE 725 (GRADE 105). NUTS SHALL BE HEXAGON NUTS ACCORDING TO ASTM A 194 2H OR ASTM A 563 DH, AND WASHERS SHALL BE ACCORDING TO ASTM F 436.
9. ANCHOR RODS, NUTS AND WASHERS SHALL BE COMPLETELY GALVANIZED BY EITHER THE HOT-DIPPED PROCESS CONFORMING WITH AASHTO M 232, THE MECHANICAL PLATING METHOD CONFORMING TO AASHTO M 298, CLASS 50 WITH A MAXIMUM COATING THICKNESS OF 150 UM(6 MILS) OR THE ELECTROLYTIC PROCESS ACCORDING TO ASTM F 1136.
10. THE ANCHOR RODS SHALL BE THREADED A MINIMUM OF 6 INCHES (150 mm) WITH A MINIMUM OF 3 INCHES (75 mm) OF THREADED ANCHOR ROD EMBEDDED IN THE FOUNDATION.
11. ANCHOR RODS SHALL PROJECT 2 3/4" (69.9 mm) ABOVE THE TOP OF THE FOUNDATION. IF BREAKAWAY COUPLINGS ARE SPECIFIED, THE CONTRACTOR SHALL CAREFULLY COORDINATE THE ANCHOR ROD PROJECTION WITH THE INSTALLATION REQUIREMENTS OF THE BREAKAWAY COUPLINGS.
12. THE CONTRACTOR SHALL USE A #3 SPIRAL AT 6" (152.4 mm) PITCH OR MAY SUBSTITUTE #3 TIES AT 12" (304.8 mm) O.C. WITH THE APPROVAL OF THE ENGINEER.
13. THE CABLE TRENCHES AND FOUNDATION SHALL BE BACK FILLED AND COMPACTED AS SPECIFIED BEFORE THE LIGHT POLE IS ERECTED.
14. THE RACEWAYS SHALL PROJECT 1" (25.4 mm) ABOVE THE TOP OF THE FOUNDATION.

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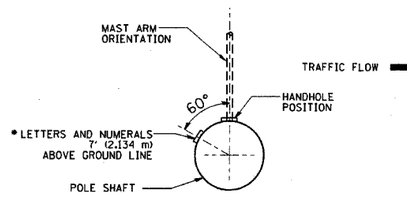
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

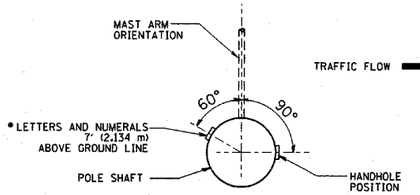
LIGHT POLE FOUNDATION
40' (12.192 m) TO 47 1/2' (14.478 m) M.H. 15" (381 mm) BOLT CIRCLE

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

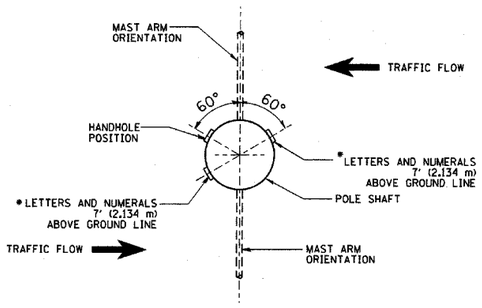
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	383E
	BE-301	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



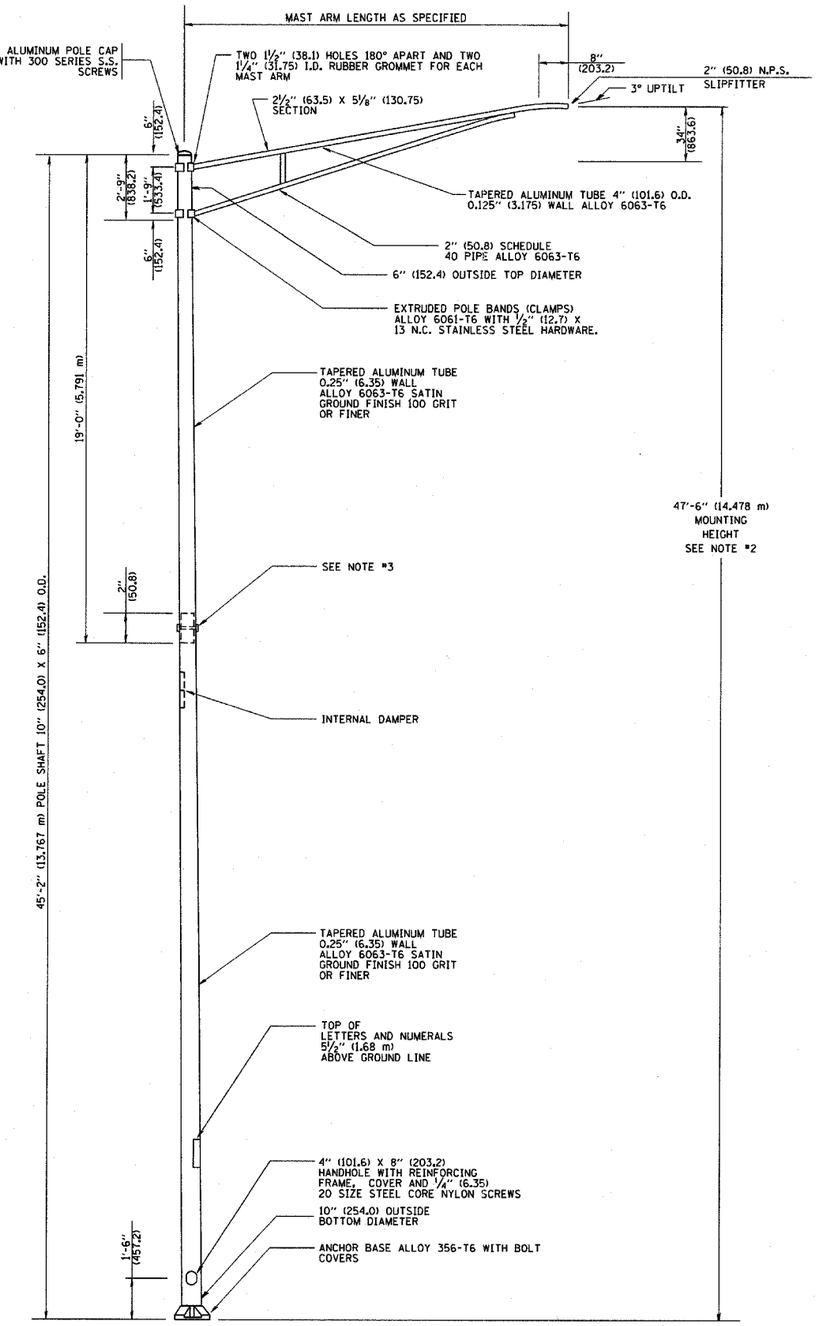
POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES MOUNTED ON BRIDGE PARAPET OR BARRIER WALL

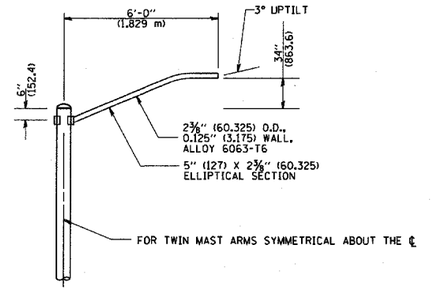


POSITION OF HANDHOLE AND POLE NUMBER FOR SINGLE MAST ARM POLES



POSITION OF HANDHOLE AND POLE NUMBER FOR TWIN MAST ARM POLES

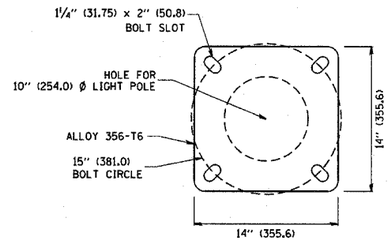




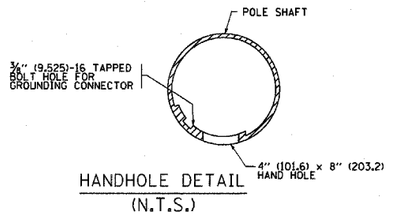
6' (1.8 m) SINGLE MEMBER MAST ARM
(N.T.S.)

NOTES:

1. ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.
2. MOUNTING HEIGHT IS DEFINED AS THE DISTANCE FROM THE CENTERLINE OF THE TENON TO THE BOTTOM OF THE ANCHOR BASE.
3. TWO PIECE SHAFT WILL BE MATCHED MARKED AND INTERCHANGEABLE BETWEEN DIFFERENT UNITS. FIELD DRILLING OF THE HOLES WILL NOT BE ALLOWED.
4. THE LIGHT POLE WILL MEET AASHTO DESIGN CRITERIA AS SPECIFIED.
5. THE INSTALLING CONTRACTOR WILL PROVIDE A UL LISTED GROUNDING CONNECTOR. BURNDY K2C23, T&B SP4DL OR APPROVED EQUAL.
6. LIGHT POLES WILL NOT BE INSTALLED WITHOUT MAST ARMS AND LUMINAIRES.
7. LIGHT POLES WILL BE SET PLUMB ON THE FOUNDATION WITHOUT THE USE OF LEVELING NUTS, WASHERS OR SHIMS.
8. LIGHTING UNIT IDENTIFICATION NUMBERS SHALL BE INSTALLED BEFORE THE LIGHTING UNIT IS ENERGIZED.



LIGHT POLE BASE PLATE DETAIL
15 INCH (381.0) BOLT CIRCLE



HANDHOLE DETAIL
(N.T.S.)

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		DRAWN -	REVISED - R. TOMSONS 09-03-03						469	383F
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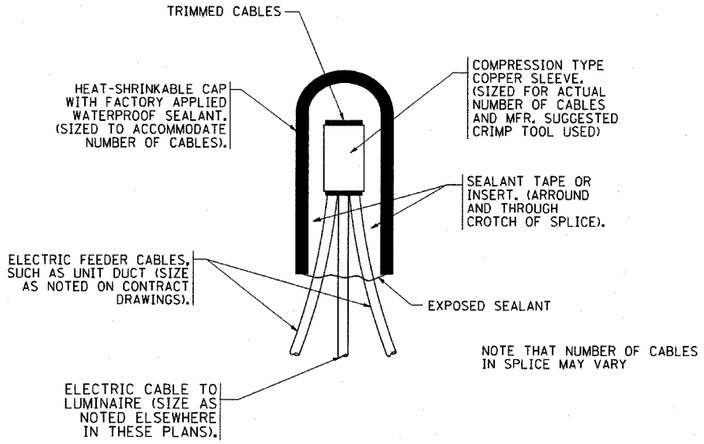
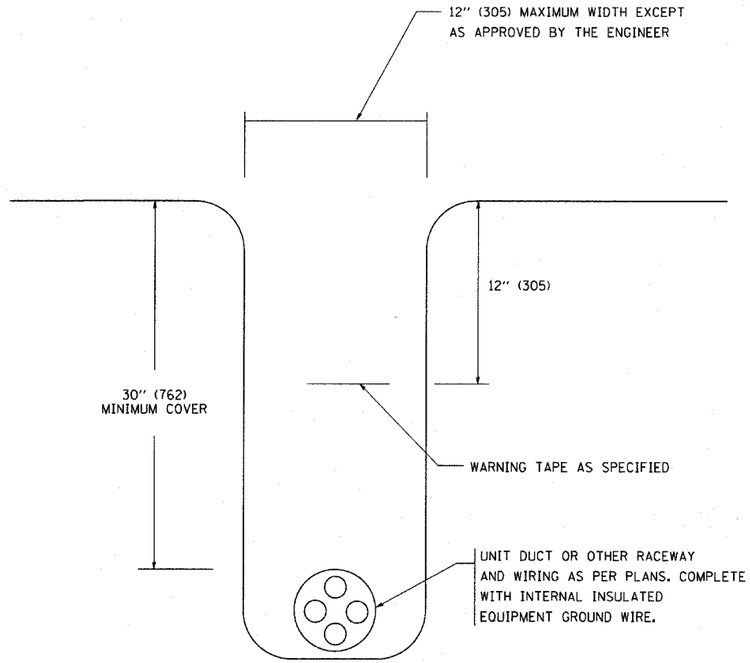
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.		FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	



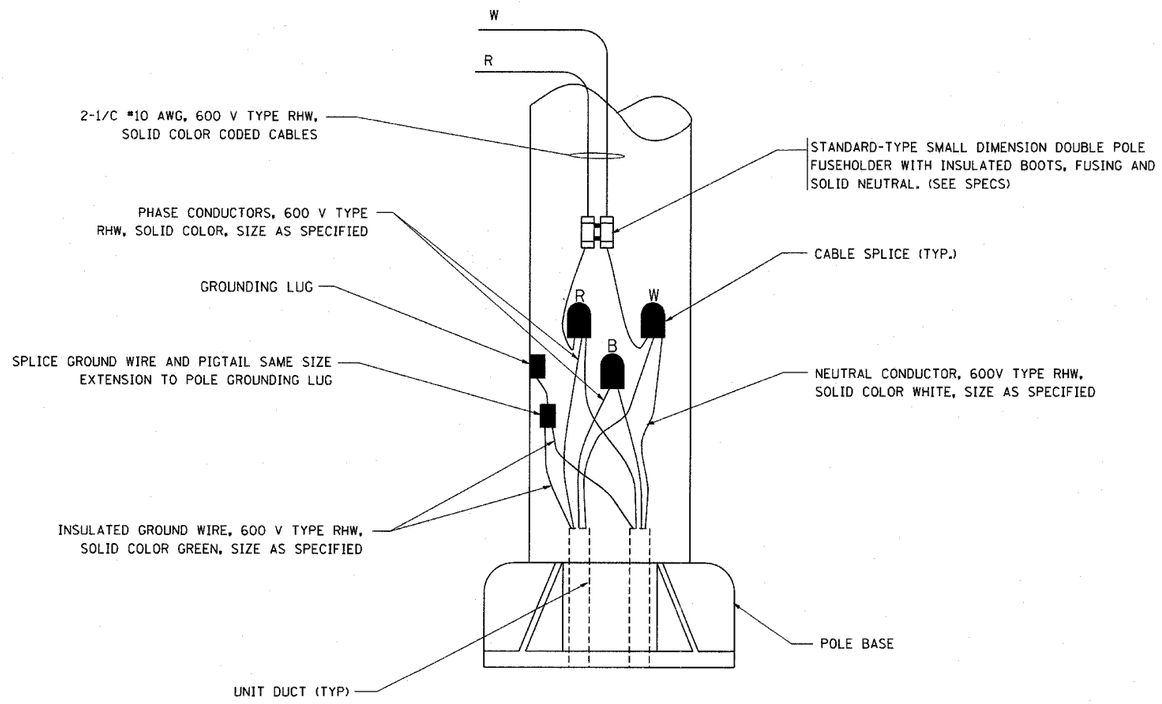
TYPICAL SPLICE DETAIL

N.T.S.



TYPICAL WIRING IN TRENCH DETAIL

N.T.S.



POLE WIRING DETAIL

N.T.S.

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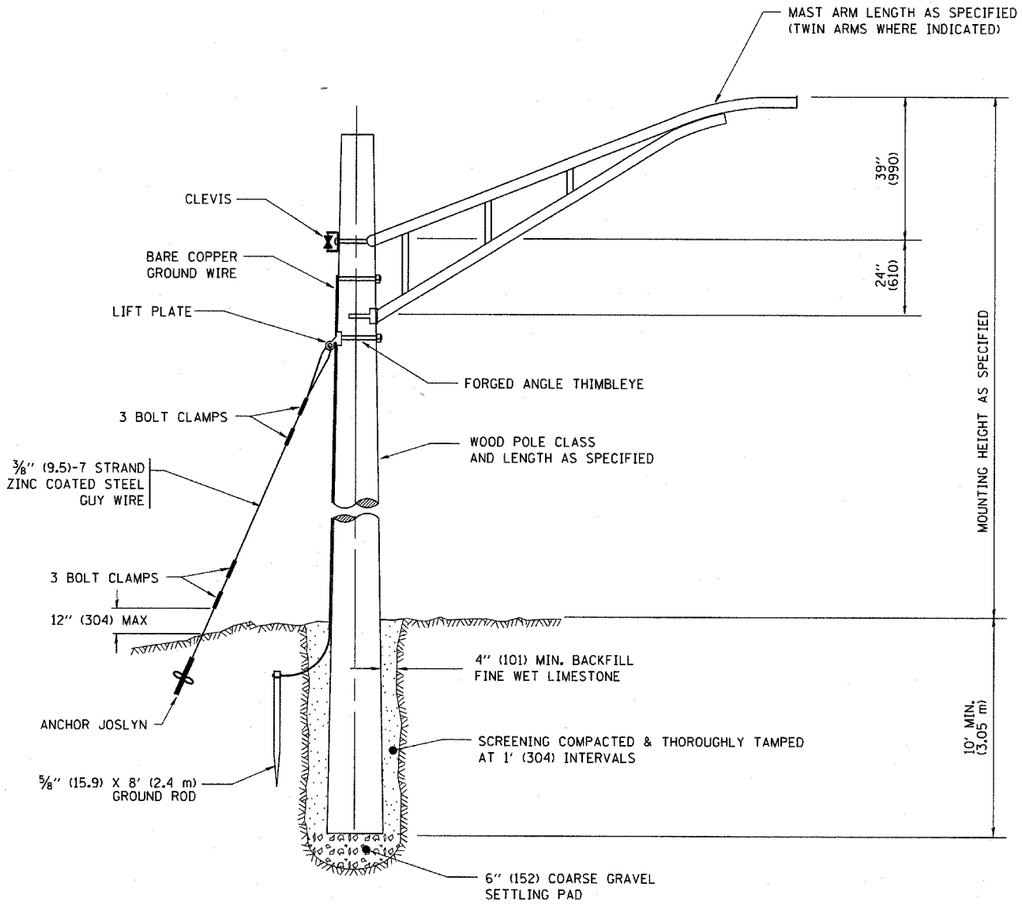
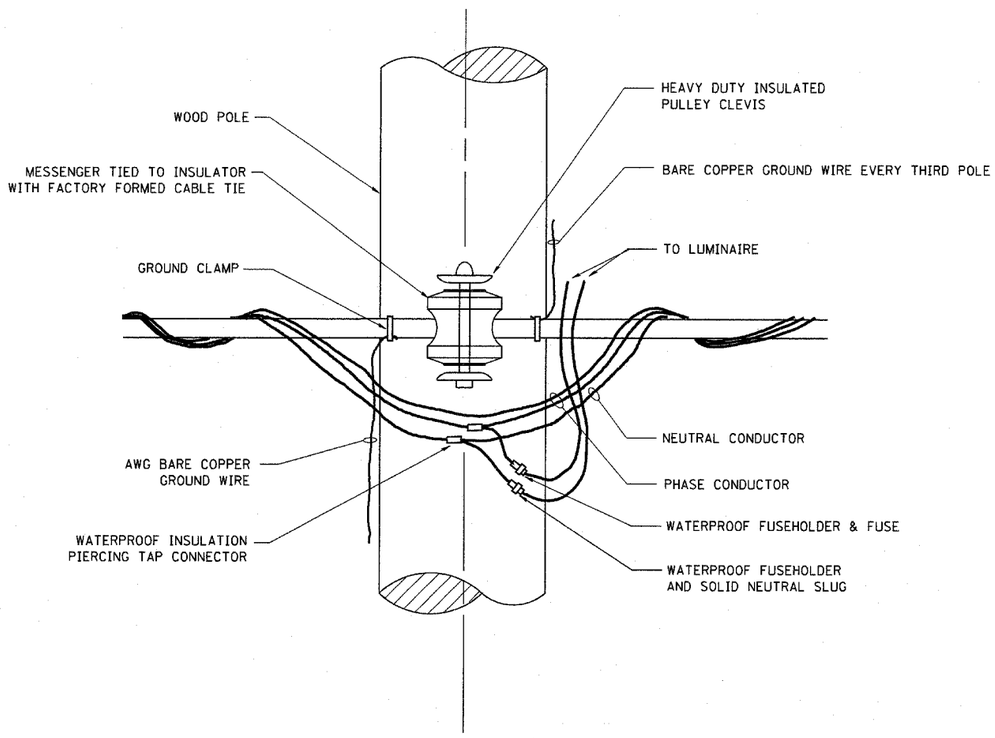


TEMPORARY LIGHT POLE DETAIL



TEMPORARY LIGHT POLE ATTACHMENT DETAIL

NOTES:

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED

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	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -		
	PLOT DATE = 1/4/2008	DATE -	REVISED -		SCALE: NONE / SHEET NO. 1 OF 1 SHEETS / STA. / TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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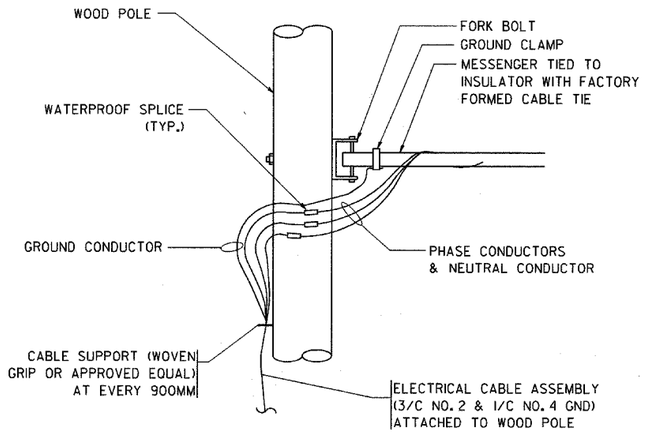
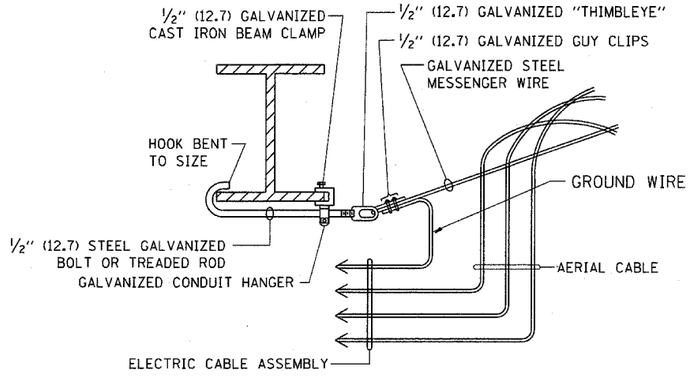
	BE-800	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



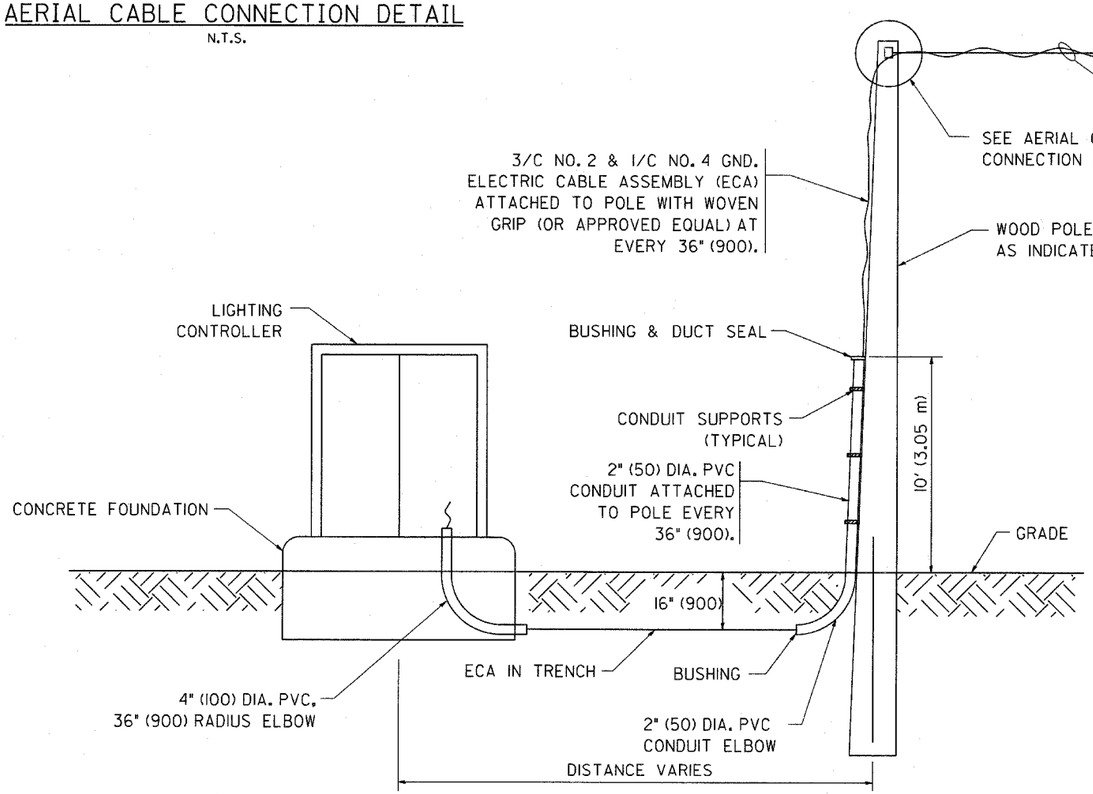
AERIAL CABLE CONNECTION DETAIL

N.T.S.



AERIAL CABLE ATTACHED TO STRUCTURE

NOT TO SCALE



WOOD POLE TO LIGHTING CONTROLLER WIRING CONNECTION DETAIL

N.T.S.

NOTES:

1. ALL DIMENSIONS IN INCHES (MILLIMETERS) UNLESS OTHERWISE INDICATED.
2. SEE PROPOSED LIGHTING PLAN FOR CONDUIT, CABLE AND ROUTING.
3. THE CONTRACTOR SHALL PROVIDE INTERMEDIATE SUPPORTS TO MAINTAIN MINIMUM CLEARANCES. REFER TO AERIAL AERIAL CABLE ATTACHED TO STRUCTURE DETAIL.
4. COST OF SPLICES AND MOUNTING HARDWARE SHALL BE INCLUDED IN THE UNIT PRICE FOR AERIAL CABLE.

FILE NAME = W:\diststd\22x34\be801.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 08-08-03
		DRAWN -	REVISED -
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	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY AERIAL CABLE INSTALLATION

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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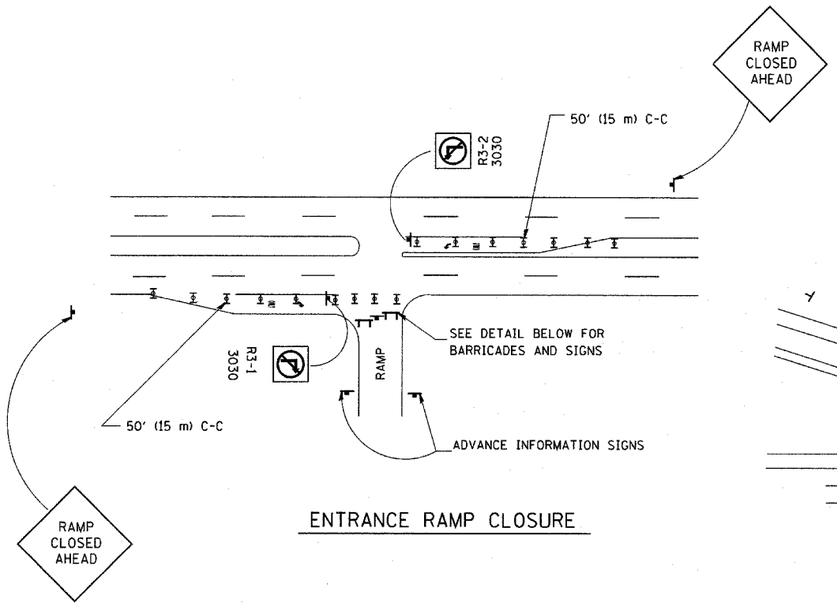
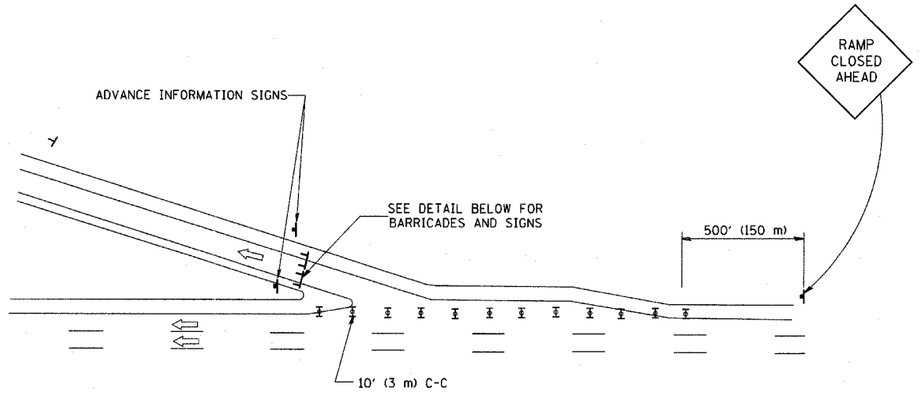
	BE-801	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

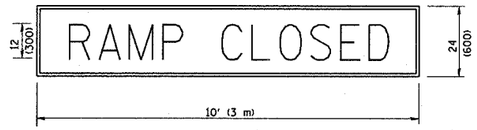


ENTRANCE RAMP CLOSURE



EXIT RAMP CLOSURE

RAMP CLOSURE ADVANCE WARNING SIGN

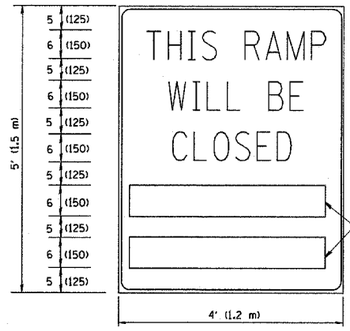


BLACK LEGEND ON ORANGE REFLECTORIZED BACKGROUND

1 (25) BORDER

THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR THE CLOSED EXIT RAMPS.

RAMP CLOSURE ADVANCE INFORMATION SIGN

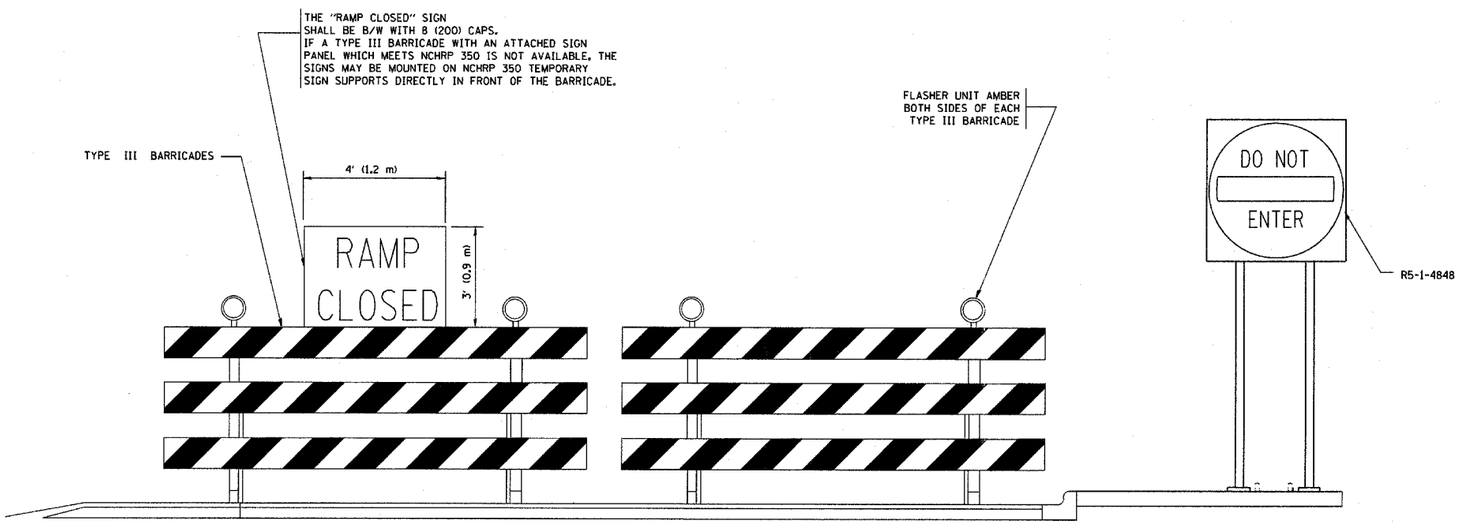


BLACK LEGEND ON WHITE REFLECTORIZED BACKGROUND

½ (12) BORDER

THESE BLANK AREAS SHALL BE FILLED WITH THE DATES AND THE TIME THAT THE RAMP WILL BE CLOSED.

THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.



DETAIL FOR REQUIRED BARRICADES & SIGNS

GENERAL NOTES:

1. CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
2. STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
3. A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES.
4. ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED.
5. THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
7. THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY- FOUR 24 HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED TWENTY FOUR 24 HOURS IN LENGTH.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

SYMBOLS

TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT

TYPE III BARRICADE WITH FLASHING LIGHT

FILE NAME = W:\diststd\22x34\tc08.dgn	USER NAME = gaglianobt	DESIGNED - DWS	REVISED - DWS 12-94
		DRAWN -	REVISED - DWS/JAF 12-02
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - JAF 02-06
	PLOT DATE = 1/4/2008	DATE - 02-83	REVISED - SPB 01-07

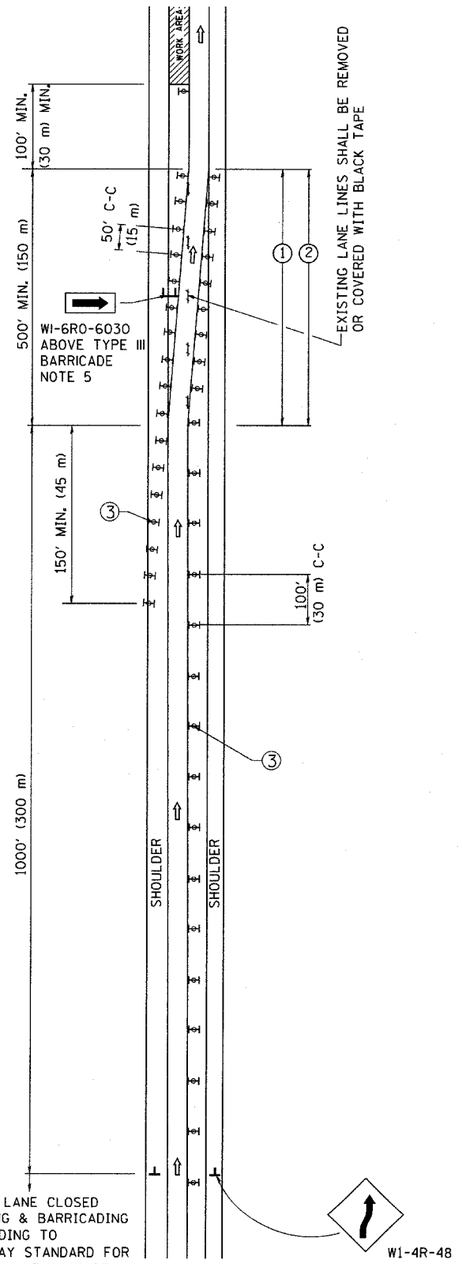
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FREEWAY ENTRANCE AND EXIST RAMP CLOSURE DETAILS

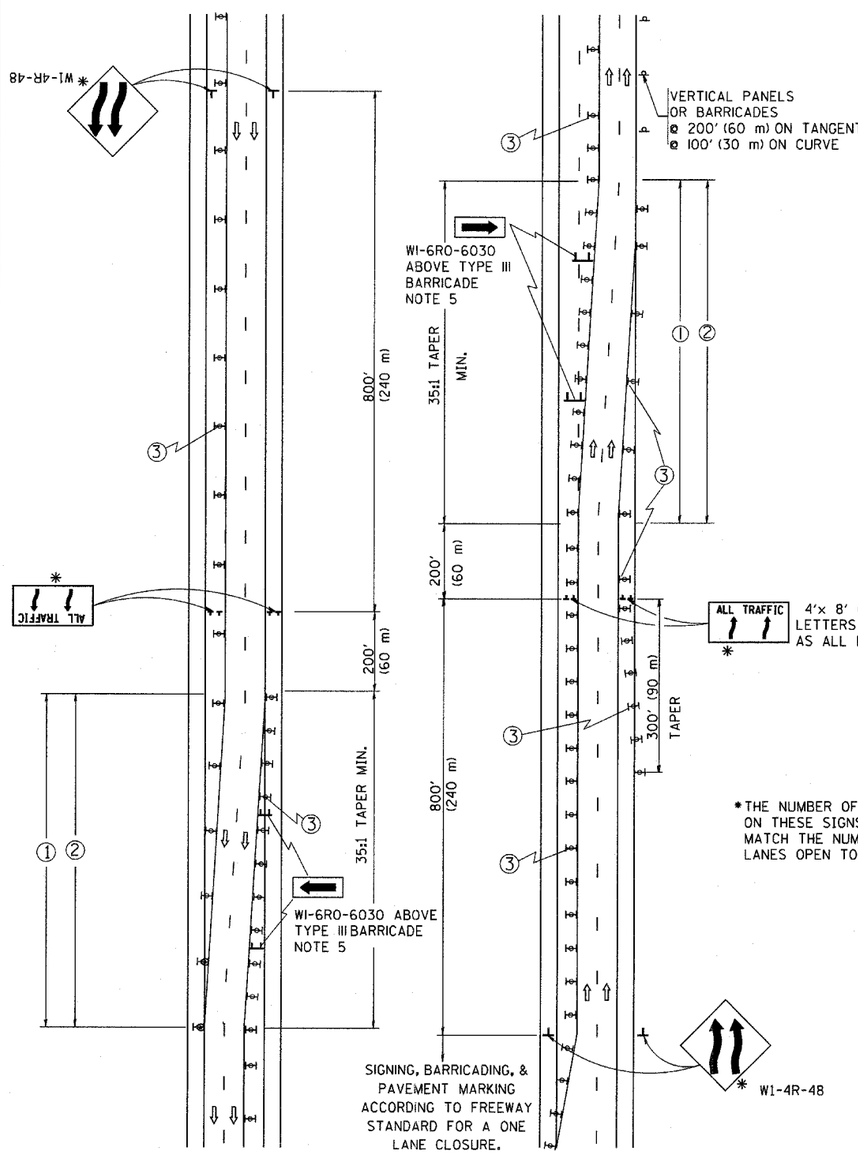
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	384
	TC-08	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SINGLE LANE WEAVE



MULTI-LANE WEAVE



4'x 8' (1.2 m x 2.4 m); 1 (25) BORDER; 10 (250) CAPITAL LETTERS BACKGROUND SHEETING SHALL BE THE SAME AS ALL DIAMOND SHAPED CONSTRUCTION SIGNS.

*THE NUMBER OF ARROWS ON THESE SIGNS SHALL MATCH THE NUMBER OF LANES OPEN TO TRAFFIC

GENERAL NOTES

1. EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED OR COVERED WITH BLACK TAPE. PAVEMENT MARKING REMOVAL OR BLACK TAPE SHALL NOT BE REQUIRED FOR LANE CLOSURES UNDER 24 HOURS IN DURATION.
2. CONTINOUS REFLECTIVE TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE TAPER AND FOR 300' (90 m) ALONG SIDE THE WORK AREA WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS. THE LEFT EDGE LINE SHALL BE YELLOW AND THE RIGHT EDGE LINE SHALL BE WHITE. FOR MULTI-LANE WEAVE LANE LINES SHALL BE 10'-30' (3 m-9 m) SKIP DASH, WHITE.
3. PLASTIC DRUMS WITH STEADY BURN LIGHTS AT 50' (15 m) C-C SPACING IN TAPERS AND 100' (30 m) C-C SPACING IN TANGENTS.
4. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
5. IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 IS NOT AVAILABLE, THE SIGNS MAY BE MOUNTED ON NCHRP 350 TEMPORARY SIGN SUPPORTS DIRECTLY IN FRONT OF THE BARRICADE.
6. IF THE WIDTH OF OFFSET IS LESS THAN 6' THEN THE TYPE III BARRICADE WITH ATTACHED ARROW SIGN PANEL CAN BE ELIMINATED IN THE TAPER AREAS.

SYMBOLS

- DIRECTION OF TRAFFIC
- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH MONO-DIRECTIONAL STEADY BURNING LIGHT

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

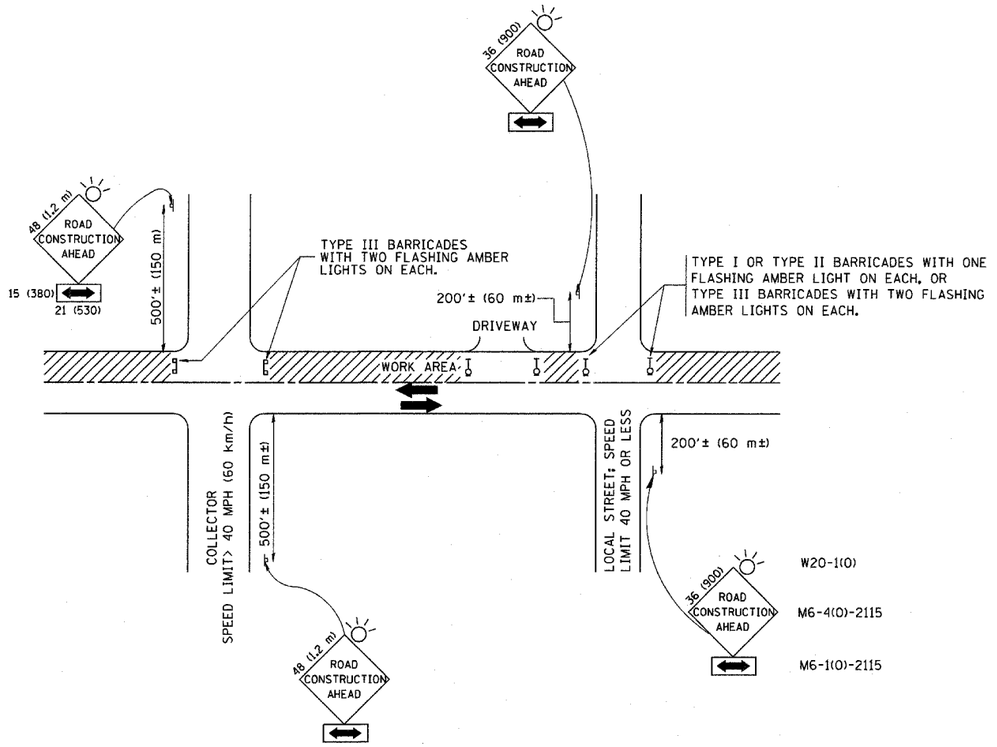
FILE NAME = W:\diststd\22x34\tc09.dgn	USER NAME = gaglianobt	DESIGNED - DWS	REVISED - DWS 11-96
		DRAWN -	REVISED - JAF 01-03
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - JAF 02-06
	PLOT DATE = 1/4/2008	DATE - 02-87	REVISED - SPB 01-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	385
	TC-09		CONTRACT NO.	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

NOTES:

A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS

1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:

   a) ONE **ROAD CONSTRUCTION AHEAD** SIGN 36 x 36 (900x900) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.

   b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.

2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:

   a) ONE **ROAD CONSTRUCTION AHEAD** SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.

   b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.

3. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).

B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:

USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.

C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.

D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

All dimensions are in millimeters (inches) unless otherwise shown.

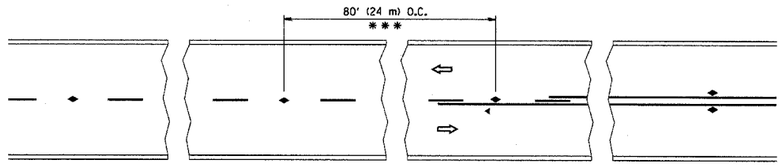
FILE NAME = ws\diststd\22x34\tc10.dgn	USER NAME = geghanobt	DESIGNED - LHA	REVISED - J. OBERLE 10-18-95
		DRAWN -	REVISED - A. HOUSEH 03-06-96
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - A. HOUSEH 10-15-96
	PLOT DATE = 1/4/2008	DATE - 06-89	REVISED -T. RAMMACHER 01-06-00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

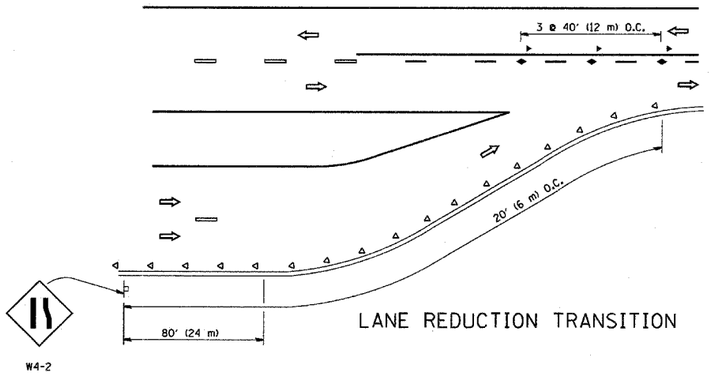
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	386
	TC-10	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

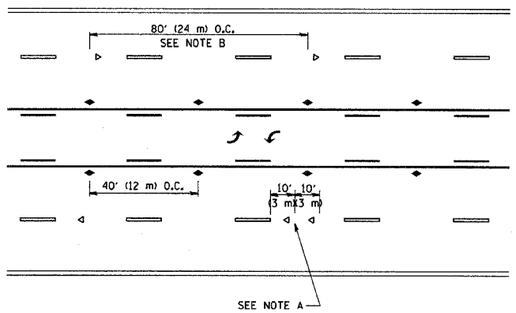


* * * REDUCE TO 40' (12 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 45 M.P.H. (70 km/h) OR LESS.

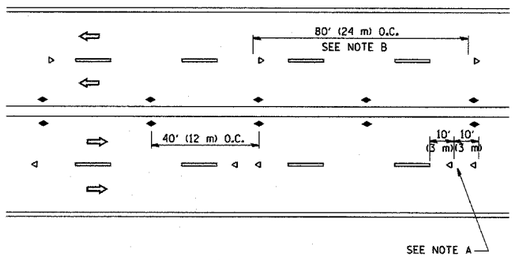
TWO-LANE/TWO-WAY



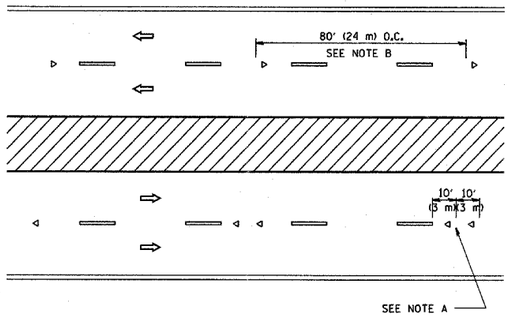
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 2 TO 3 (50 TO 75) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 500' (150 m) IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

SYMBOLS

- YELLOW STRIPE
- WHITE STRIPE
- ONE-WAY AMBER MARKER
- ONE-WAY CRYSTAL MARKER (W/O)
- TWO-WAY AMBER MARKER

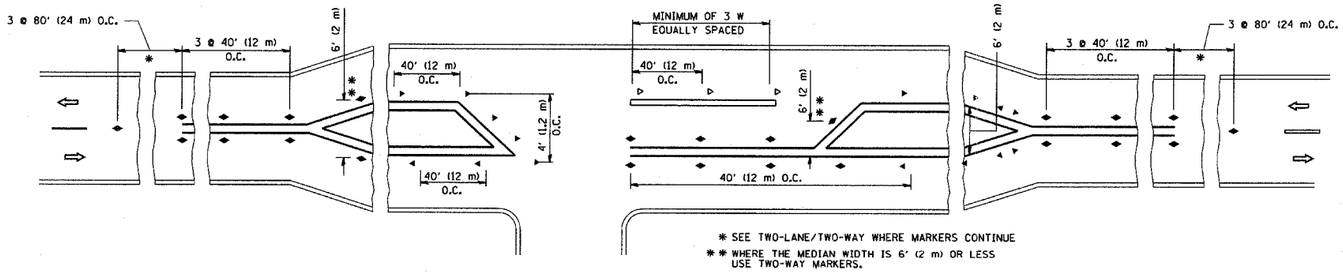
LANE MARKER NOTES

B. REDUCE TO 40' (12 m) O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 M.P.H (20 km/h) LOWER THAN POSTED SPEEDS.

A. USE DOUBLE LANE LINE MARKERS SPACED AS SHOWN.

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS SHALL BE USED UNLESS SPECIFIED OTHERWISE.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHOULD BE INCLUDED IN THE PLANS.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED.



* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE

** WHERE THE MEDIAN WIDTH IS 6' (2 m) OR LESS USE TWO-WAY MARKERS.

LEFT TURN

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME = W:\diatstd\22x34\tc11.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - T. RAMMACHER 09-19-94
		DRAWN -	REVISED - T. RAMMACHER 03-12-99
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - T. RAMMACHER 01-06-00
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

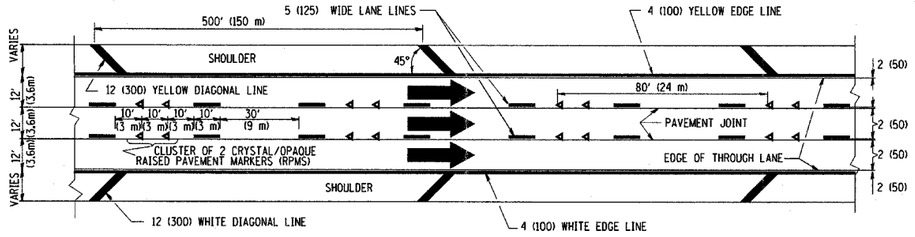
TYPICAL APPLICATIONS
RAISED REFLECTIVE PAVEMENT MARKERS (SNOW-PLOW RESISTANT)

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	387
	TC-11		CONTRACT NO.	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

THE DIAGONAL LINES SHALL BE SPACED AT 40' (12 m) C-C ACROSS ALL STRUCTURES WHICH ARE 500' (150 m) OR LESS IN LENGTH

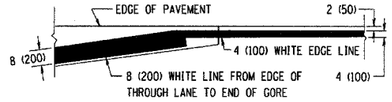
THE DIAGONAL LINES ARE NOT REQUIRED ON SHOULDERS WHICH ARE 6' (1.8 m) OR LESS IN WIDTH



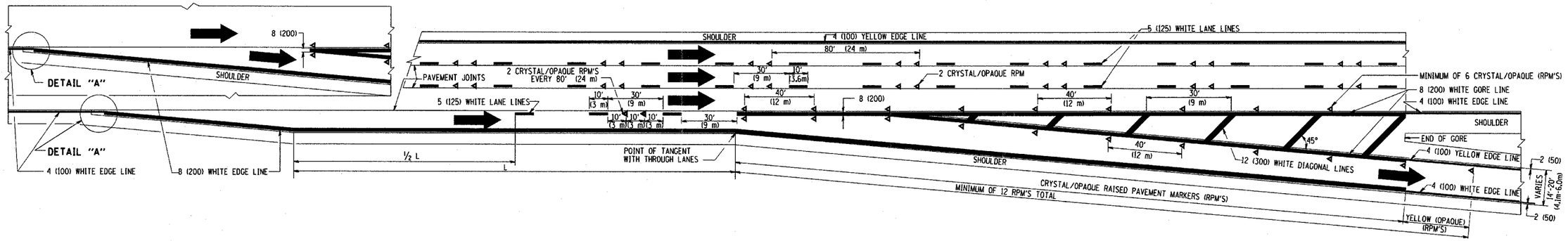
TYPICAL EDGE LINES & LANE LINES

NOTES:

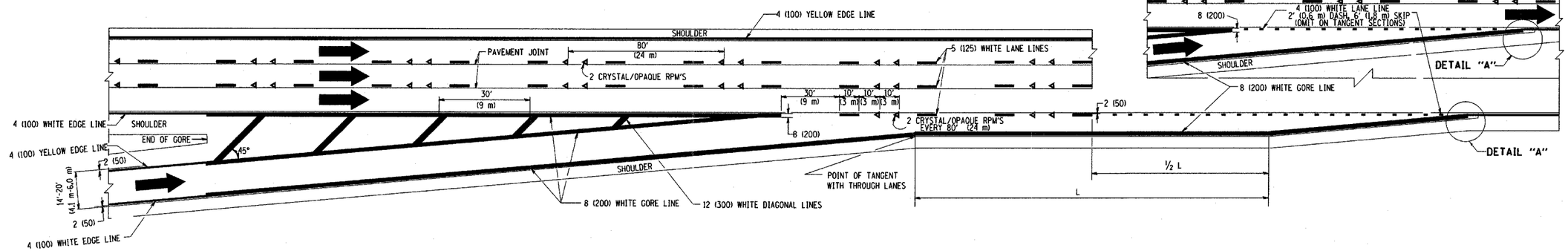
1. THERMO PLASTIC PAVEMENT MARKING LINE SHALL BE USED FOR THE EDGE LINES, GORE LINES, AND DIAGONAL LINES ON BITUMINOUS PAVEMENT ONLY.
2. PREFORMED PLASTIC TYPE B PAVEMENT MARKING LINE SHALL BE USED FOR ALL LANE LINES ON BITUMINOUS PAVEMENT
3. POLYUREA PAVEMENT MARKING SHALL BE USED FOR ALL MARKINGS ON PCC



DETAIL "A"

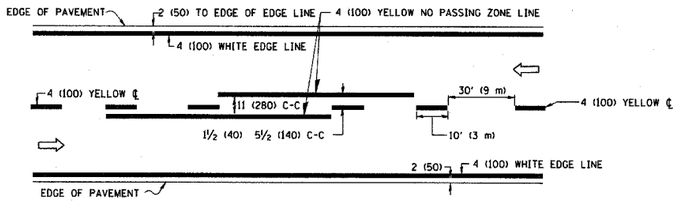


TYPICAL EXIT RAMP PAVEMENT MARKINGS

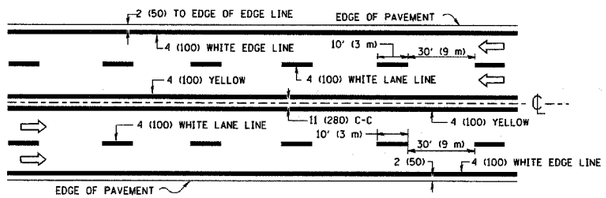


TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS

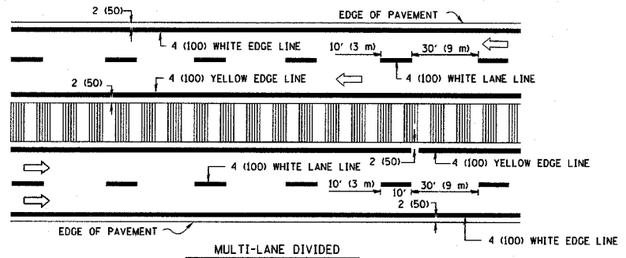
FILE NAME = W:\diststd\22x34\tc12.dgn	USER NAME = gaglionobt	DESIGNED - D.W.S.	REVISED - A.H. 03-96	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	MULTI-LANE FREEWAY PAVEMENT MARKING DETAILS			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - D.W.S. 07-96								469	388
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - J.A.F. 02-06						TC-12		CONTRACT NO.	
	PLOT DATE = 1/4/2008	DATE - 01-90	REVISED - S.P.B. 01-07		SCALE: NONE	SHEET NO. 1 OF 2 SHEETS	STA. TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



2-LANE ROADWAY



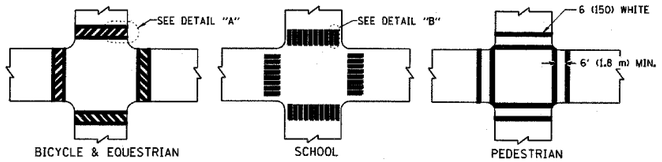
MULTI-LANE UNDIVIDED

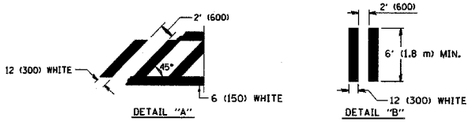


MULTI-LANE DIVIDED
WITH MOUNTABLE MEDIAN

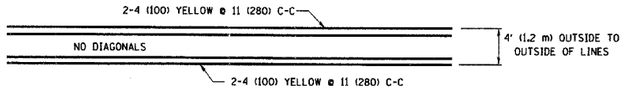
NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

TYPICAL LANE AND EDGE LINE MARKING

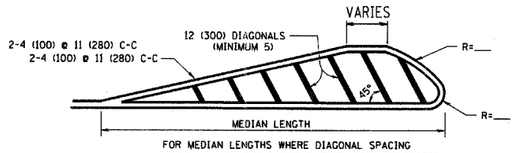




TYPICAL CROSSWALK MARKING



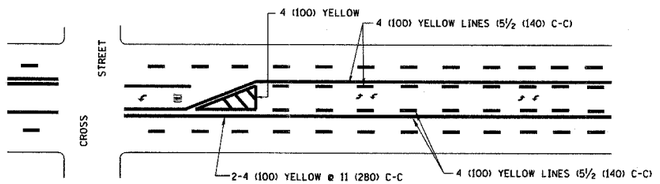
4' (1.2 m) WIDE MEDIANS ONLY



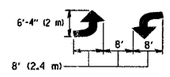
FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.

DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))
75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h))
150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

MEDIANS OVER 4' (1.2 m) WIDE

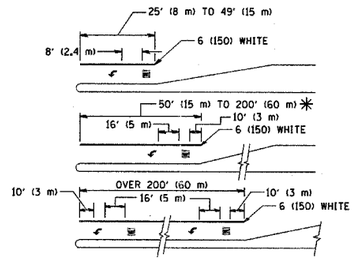


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

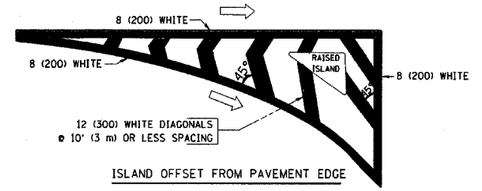


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
↰ AREA = 15.6 SQ. FT. (1.5 m^2) ONLY AREA = 20.8 SQ. FT. (1.9 m^2)

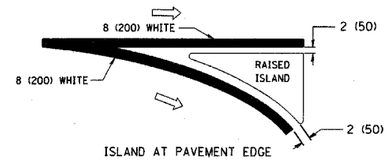
✳ TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



ISLAND OFFSET FROM PAVEMENT EDGE



ISLAND AT PAVEMENT EDGE

TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVEDED PAVEMENT	2 @ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 @ 4 (100)	SOLID SOLID	YELLOW YELLOW	5½ (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW: EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5½ (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 @ 6 (150) 12 (300) @ 45° 12 (300) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT. PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 4 (100) WITH 12 (300) DIAGONALS @ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m^2) EACH "X"=54.0 SQ. FT. (5.0 m^2)
SHOULDER DIAGONALS	12 (300) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.

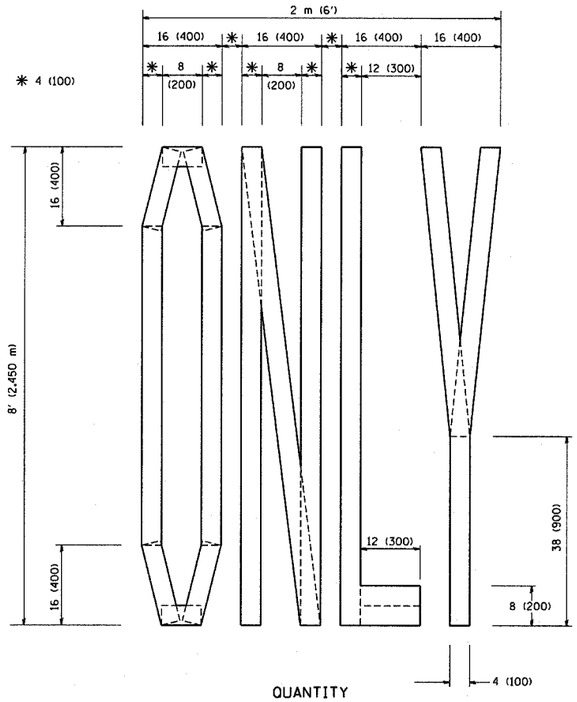
FILE NAME = W:\diststd\22x34\tc13.dgn	USER NAME = gaglionobt	DESIGNED - EVERS	REVISED -T. RAMMACHER 10-27-94
		DRAWN -	REVISED -A. HOUSEH 10-09-96
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -A. HOUSEH 10-17-96
	PLOT DATE = 1/4/2008	DATE - 03-19-90	REVISED -T. RAMMACHER 01-06-00

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

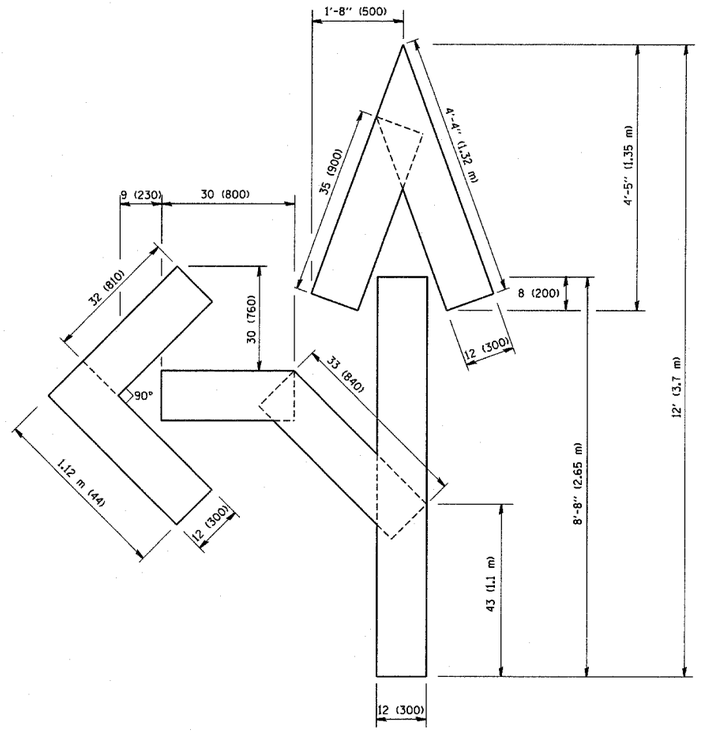
DISTRICT ONE
TYPICAL PAVEMENT MARKINGS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

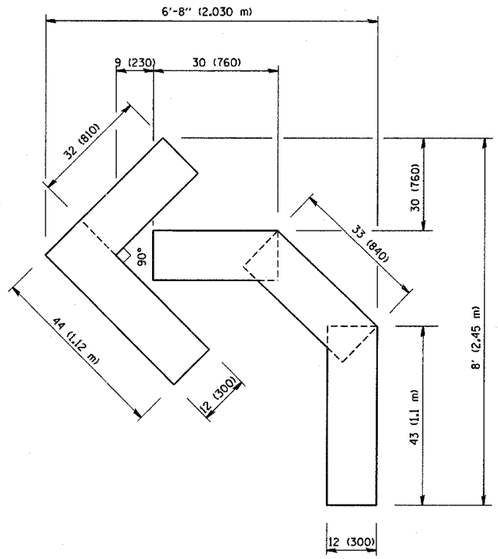
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	389
	TC-13	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



QUANTITY
4 (100) LINE = 64.1 ft. (19.7 m)
21.1 sq. ft. (1.97 sq. m)



QUANTITY
4 (100) LINE = 82.5 ft. (25.3 m)
27.5 sq. ft. (2.53 sq. m)



QUANTITY
4 (100) LINE = 45.5 ft. (13.9 m)
15.2 sq. ft. (1.39 sq. m)

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME = W:\diststd\22x34\tc16.dgn	USER NAME = goglionobt	DESIGNED -	REVISED -T. RAMMACHER 06-05-96
		DRAWN -	REVISED -T. RAMMACHER 11-04-97
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -T. RAMMACHER 03-02-98
	PLOT DATE = 1/4/2008	DATE - 09-18-94	REVISED -E. GOMEZ 08-28-00

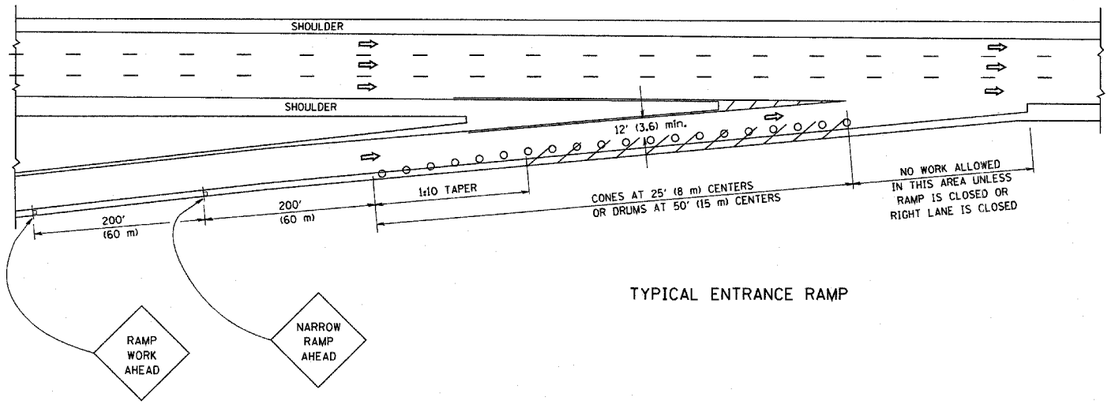
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING LETTERS AND SYMBOLS FOR TRAFFIC STAGING

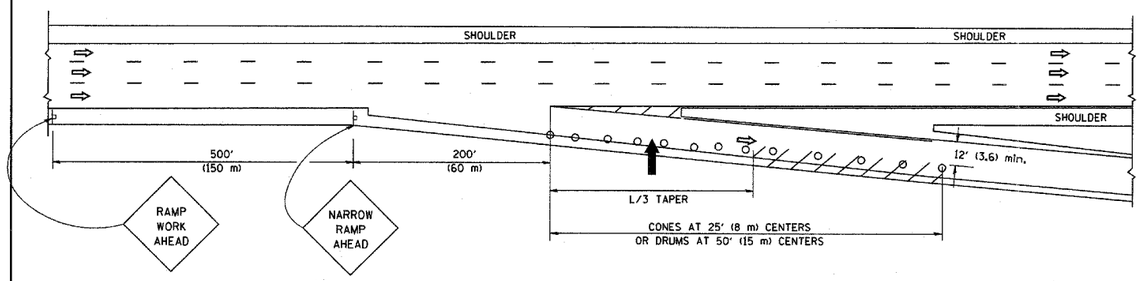
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	390
	TC-16	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

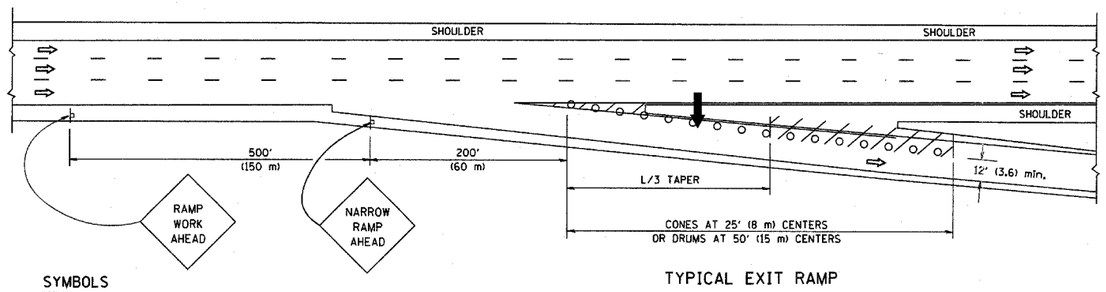
PARTIAL RAMP CLOSURE DETAILS



TYPICAL ENTRANCE RAMP



TYPICAL EXIT RAMP



TYPICAL EXIT RAMP

SYMBOLS

- ARROWBOARD
- WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE

GENERAL NOTES

1. THE "L" DISTANCE EQUALS:

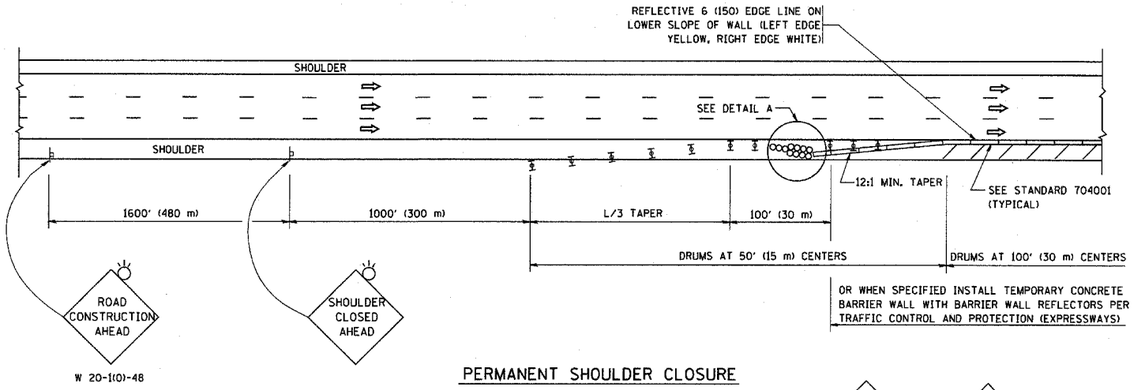
SPEED LIMIT	FORMULAS	
	METRIC	ENGLISH
45 mph (80 km/h) OR GREATER:	L=0.65(W)(S)	L=(W)(S)

W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/H)

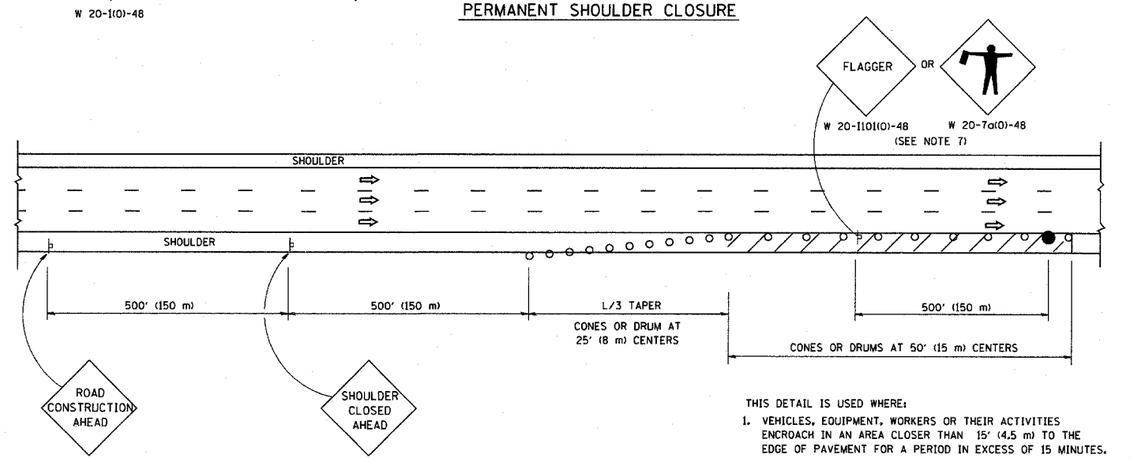
2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.
5. THE IMPACT ATTENTUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE "TRAFFIC BARRIER TERMINAL, TYPE III, TEMPORARY" DEVICE TO MEET NCHRP350 FOR POSTED SPEED.
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
   a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
   b. THE WORK AVTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.

   THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.

SHOULDER CLOSURE DETAILS



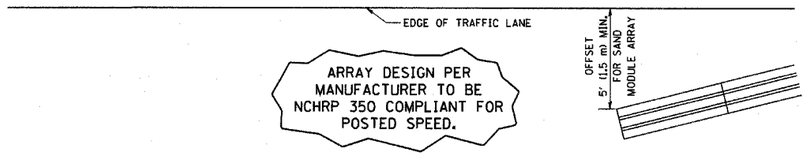
PERMANENT SHOULDER CLOSURE



THIS DETAIL IS USED WHERE:

1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.

DAYTIME SHOULDER CLOSURE

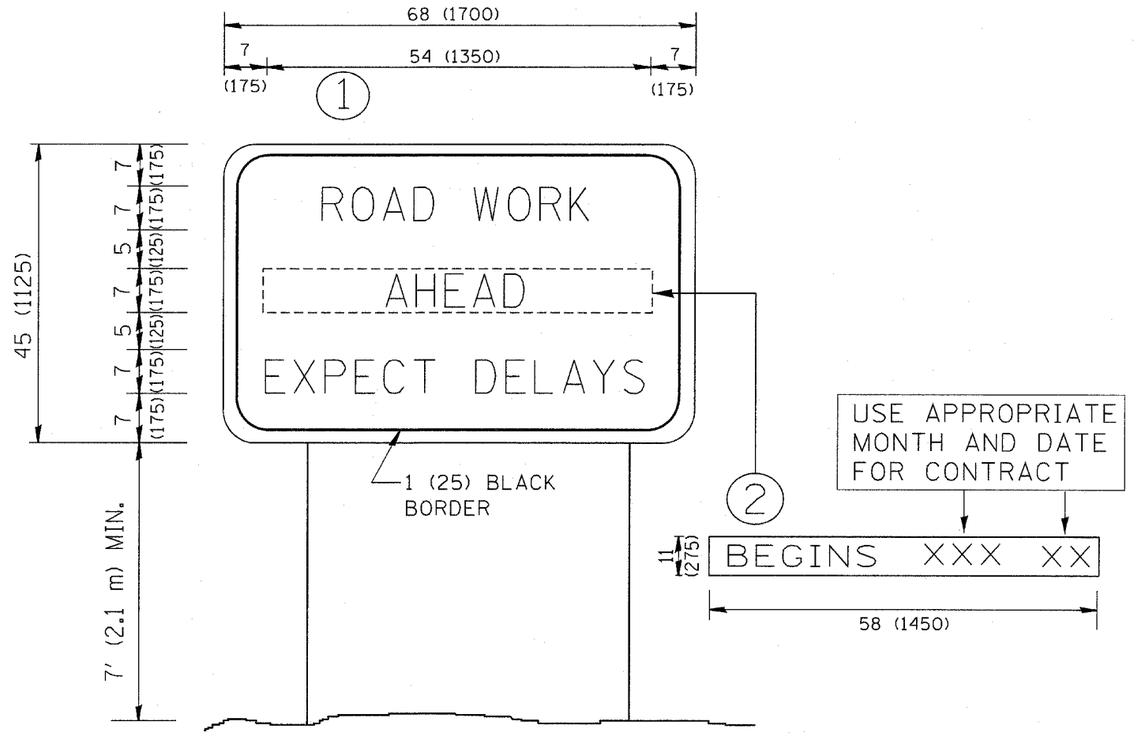


DETAIL "A"
IMPACT ATTENTUATOR, TEMPORARY
(SEE NOTE 5)

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\tc17.dgn	USER NAME = gaglionobt	DESIGNED -	REVISED - J.A.F. 12-02	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES
		DRAWN - D.W.S.	REVISED - 04-03		
	PLOT SCALE = 50.0000 '/ IN.	CHECKED -	REVISED - J.A.F. 12-06		
	PLOT DATE = 1/4/2008	DATE - 11-96	REVISED - S.P.B. 01-07		SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	391
	TC-17		CONTRACT NO.	
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN (1) WITH INSTALLED PANEL (2) ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL (2) SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\tc22.dgn	USER NAME = gaglionobt	DESIGNED -	REVISED - R. MIRS 09-15-97
		DRAWN -	REVISED - R. MIRS 12-11-97
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -T. RAMMACHER 02-02-99
	PLOT DATE = 1/4/2008	DATE -	REVISED - C. JUCIUS 01-31-07

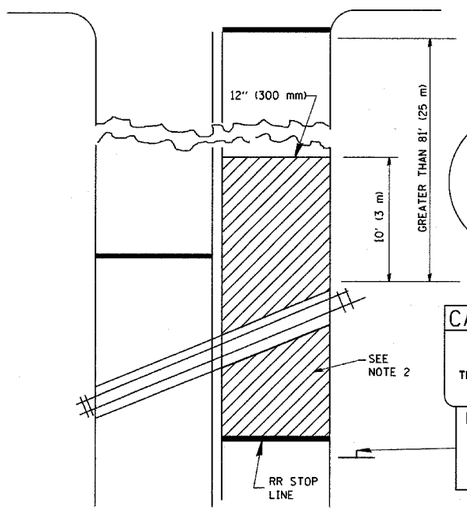
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARTERIAL ROAD INFORMATION SIGN

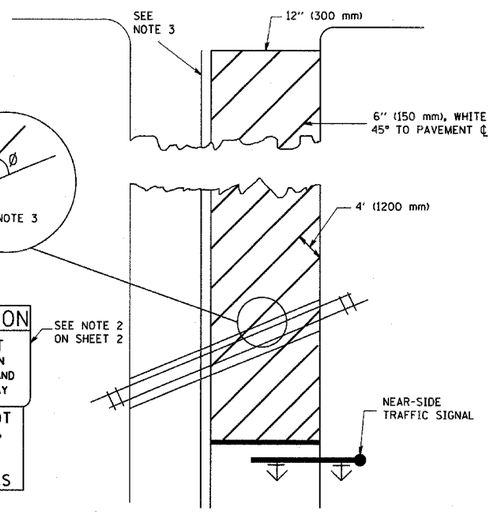
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	392
	TC-22	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

WITH INTERSECTION TRAFFIC SIGNALS



WITH NEAR-SIDE TRAFFIC SIGNALS

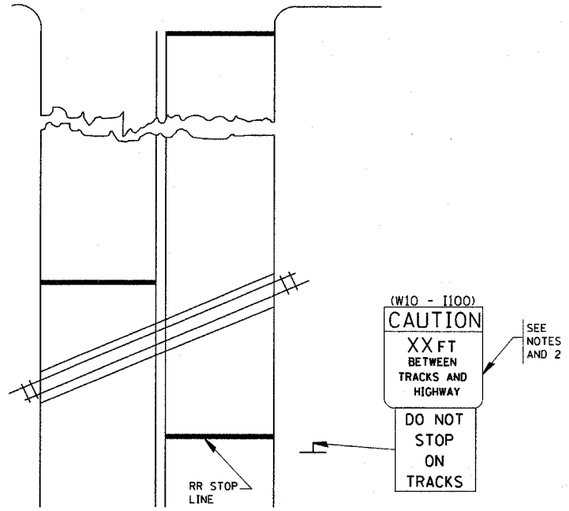


NOTES:

1. PAVEMENT MARKINGS TO BE INSTALLED ONLY ON APPROACHES TO INTERSECTIONS CONTROLLED BY TRAFFIC SIGNALS WHICH ARE INTERCONNECTED WITH THE RAILROAD WARNING SIGNALS.
2. WHERE NEAR-SIDE TRAFFIC SIGNALS ARE USED, THE PAVEMENT MARKINGS EXTENDS TO THE INTERSECTION.
3. WHERE THE ANGLE BETWEEN THE DIAGONAL STRIPES AND THE TRACK (ϕ) WOULD BE LESS THAN APPROXIMATELY 20°, THE STRIPES SHOULD BE SLOPED IN THE OPPOSITE DIRECTION FROM THAT SHOWN.

WITH NONSIGNALIZED INTERSECTION

81' (25 m) OR LESS TO CLOSEST RAIL



NOTE :

1. DISTANCE TO BE SHOWN ON SIGN MEASURED FROM A POINT 6 FEET (1.8 m) FROM THE RAIL CLOSEST TO THE INTERSECTION TO THE STOP LINE OR CROSSWALK, WHICHEVER IS CLOSEST, ROUNDED DOWN TO THE NEAREST 5 FEET (1.5 m). WHERE THERE IS NO STOP LINE, MEASURE TO POINT WHERE THE DRIVER HAS A VIEW OF APPROACHING TRAFFIC.
2. THE CLEARANCE SIGN IS ALSO TO BE USED AS AN INTERIM MEASURE AT LOCATIONS WITH INTERCONNECTED INTERSECTION TRAFFIC SIGNALS WHERE IT IS PLANNED TO CHANGE THEM TO NEAR-SIDE SIGNALS AT A FUTURE TIME. IN THIS CASE, THE DISTANCE TO BE SHOWN ON THE SIGN IS MEASURED FROM THE EDGE OF THE STRIPED-OUT AREA INSTEAD OF 6-FEET FROM THE RAIL. THE SIGN IS TO BE REMOVED WHEN THE NEAR-SIDE SIGNALS ARE INSTALLED AND THE PAVEMENT MARKINGS EXTEND TO THE INTERSECTION.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

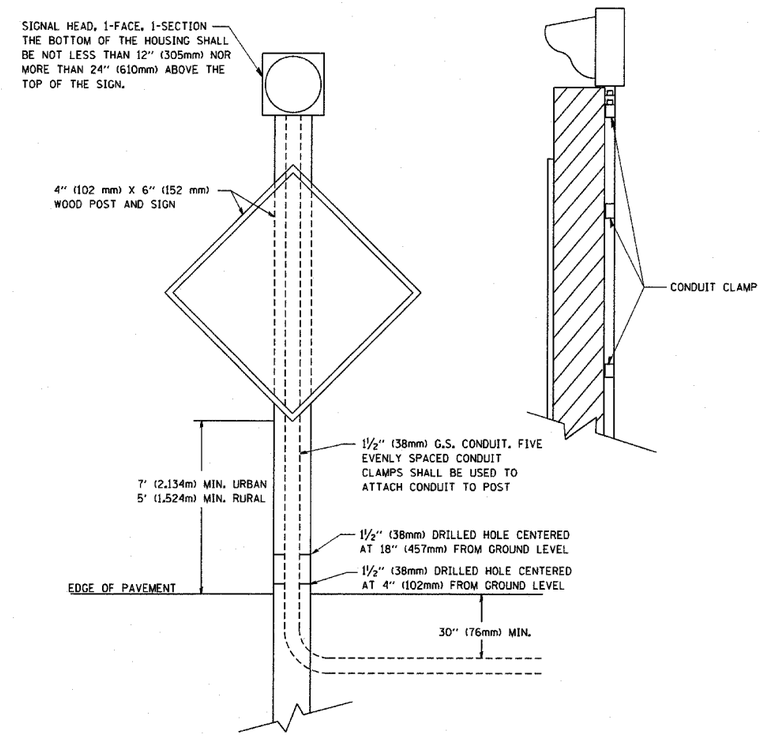
FILE NAME = W:\diststd\22x34\tc23.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 01-01-07
		DRAWN -	REVISED -
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SUPPLEMENTAL SIGNING AND PAVEMENT MARKING TREATMENT FOR RAILROAD CROSSINGS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	393
	TC-23	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



POST MOUNTED FLASHING BEACON

FILE NAME = W:\diststd\22x34\ts04.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - 01-01-07
		DRAWN -	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 1/4/2008	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

POST MOUNTED FLASHING BEACON

SCALE: NONE | SHEET NO. 3 OF 3 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			469	393A
	TS-04	CONTRACT NO.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

CONTRACT NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346		LAKE	469	394
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
		CONTRACT # 60826		

LOOP DETECTOR NOTES

1. EACH PAIR OF LOOP WIRES SHALL BE PLACED IN A SEPARATE UNIT DUCT FROM THE EDGE OF PAVEMENT TO THE HANDHOLE. SPACING BETWEEN THE HOLES DRILLED IN THE PAVEMENT SHALL NOT BE LESS THAN 6" (150 mm). UNIT DUCT SHALL BE INCLUDED IN THE COST OF THE LOOP WIRE.

2. THE NUMBER OF LOOP TURNS SHALL BE AS RECOMMENDED BY THE AMPLIFIER MANUFACTURER. ALL ADJACENT SIDES OF THE LOOPS SHALL BE INSTALLED IN SUCH A WAY THAT THE CURRENT FLOW IS IN THE SAME DIRECTION TO REINFORCE ITS MAGNETIC FIELDS FOR SMALL VEHICLE DETECTION.

3. EACH LOOP LEAD-IN SHALL BE IDENTIFIED AND PERMANENTLY TAGGED IN THE HANDHOLE. EACH LEAD-IN CABLE TAG SHALL INDICATE THE LOCATION OF THE LOOP, LOOP ROTATION (CLOCKWISE/COUNTERCLOCKWISE), LOOP LEAD-IN DIRECTION (IN OR OUT), LOOP CABLE NUMBER AND LOCATION IN CABINET, AND NUMBER OF TURNS IN THE DETECTOR LOOPS IN WATER PROOF INK AS INDICATED ON THE DISTRICT 1 STANDARD TRAFFIC SIGNAL DESIGN DETAIL. THE CONTRACTOR SHALL MARK LOOP LOCATIONS ON RECORD DRAWINGS AND PRESENT TO THE ENGINEER AFTER FINAL INSPECTION. LOOPS SHALL BE MARKED BY LANE AND LOOP NUMBER. SEE DETAIL BELOW.

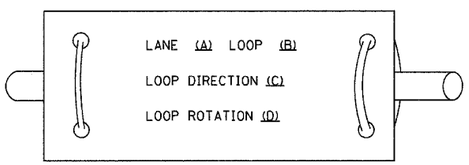
4. ALL LOOP CABLE SHALL BE FASTENED WITH PLASTIC TIE WRAP TO THE HANDHOLE HOOKS.

5. IN ASPHALT PAVEMENT, LOOPS SHOULD BE PLACED IN THE BINDER AND DIVEHOLES MARKED AT THE CURB WITH A SAW-CUT. THE SAW-CUT SHALL BE CUT IN ACCORDANCE WITH LOCAL AND E.P.A. DUST CONTROL REQUIREMENTS. DETECTOR LOOP(S) SHALL NOT BE INSTALLED IN WET CONDITIONS AND THE SAW-CUTS MUST BE FREE OF DEBRIS AND RESIDUE SUCH AS DUST AND WATER WHICH IS TO BE ACHIEVED BY THE USE OF COMPRESSED AIR, WIRE BRUSHING AND HEAT DRYING ACCORDING TO SEALANT MANUFACTURER REQUIREMENTS. THE DETECTOR WIRE SHALL BE HELD IN PLACE BY THE USE OF FORM WEDGES. WEDGES SHALL BE SPACED NO MORE THAN 18" (450 mm) APART.

6. LOOP SPLICES SHALL BE SOLDERED USING A SOLDERING IRON. BLOW TORCHES OR OTHER DEVICES WHICH OXIDIZE COPPER CABLE SHALL NOT BE ALLOWED FOR SOLDERING OPERATIONS. SEE DETAIL BELOW RIGHT.

7. PREFORMED DETECTOR LOOPS SHALL BE USED, AS SHOWN ON THE PLANS, WHERE NEW CONCRETE PAVEMENT IS PROPOSED. THE INSTALLATION OF PREFORMED LOOPS SHALL BE IN ACCORDANCE WITH THE DISTRICT 1 SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

LOOP LEAD-IN CABLE TAG

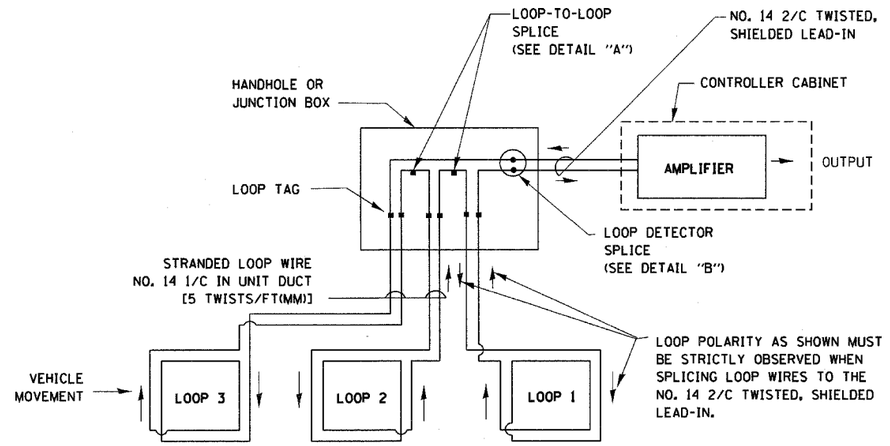


A. LANE 1 IS THE LANE CLOSEST TO THE CENTERLINE OF THE ROADWAY

B. LOOP #1 IS THE LOOP IN THE LANE CLOSEST TO THE INTERSECTION.

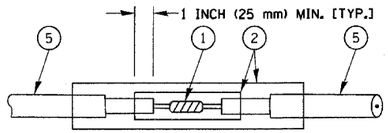
C. LABEL LOOP CABLE "IN" OR LOOP CABLE "OUT".

D. LABEL LOOP CABLE CLOCKWISE OR LOOP CABLE COUNTERCLOCKWISE.

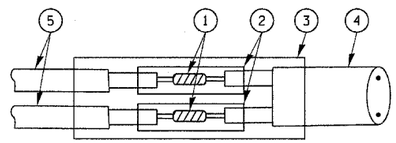


DETECTOR LOOP WIRING SCHEMATIC

- LOOPS SHALL BE SPLICED IN SERIES.
- SAW-CUTS SHALL BE A MINIMUM WIDTH OF 5/16" (8 mm).
- SAW-CUT DEPTHS SHALL BE 3" (75 mm). IF IN CONCRETE, THE SAW-CUT DEPTH SHALL BE TO THE TOP OF THE REINFORCEMENT.
- LOOP CORNERS SHALL BE DRILLED WITH A 2" (50 mm) DIAMETER CORE.



DETAIL "A"
LOOP-TO-LOOP SPLICE



DETAIL "B"
LOOP-TO-CONTROLLER SPLICE

LOOP DETECTOR SPLICE

(1) WESTERN UNION SPLICE SOLDERED WITH ROSIN CORE FLUX. ALL EXPOSED SURFACES OF THE SOLDER SHALL BE SMOOTH.

(2) WCSMW 30/100 HEAT SHRINK TUBE, MINIMUM LENGTH 3" (75 mm), UNDERWATER GRADE.

(3) WCS 200/750 HEAT SHRINK TUBE, MINIMUM LENGHT 6" (150 mm), UNDERWATER GRADE.

(4) NO. 14 2/C TWISTED, SHIELDED CABLE.

(5) LOOP CONDUCTOR WITH FLEXIBLE PLASTIC TUBE.

REVISIONS	
NAME	DATE
CADD	5/30/00
ADD NOTE NO. 8	11/12/01
BUREAU OF TRAFFIC	1-01-02

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE

DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 1 OF 4

TS05

PLOT DATE = 3/7/2007
FILE NAME = K:\district\ts05.dgn
PLOT SCALE = 50.0000 ' / IN.
USER NAME = bauerdl

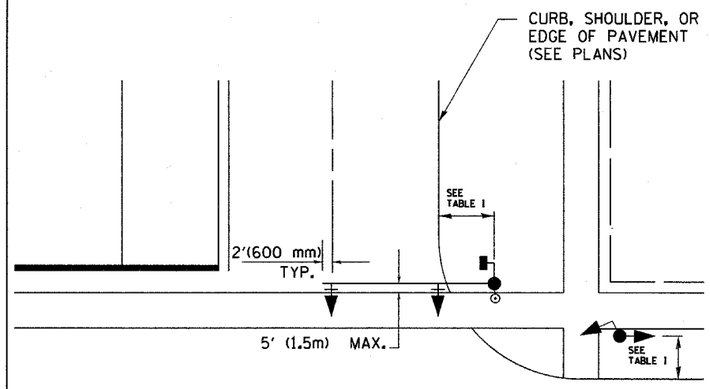
CONTRACT NO.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346		LAKE	469	395
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

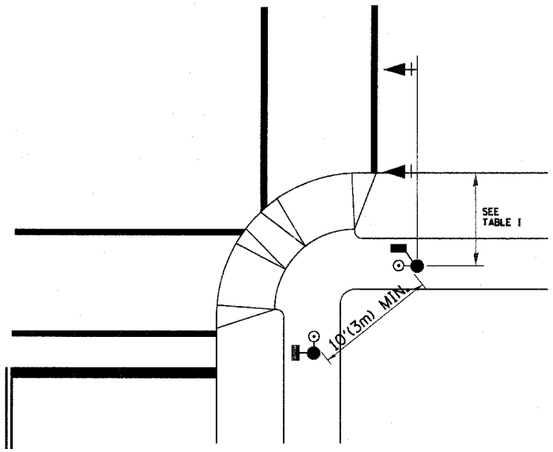
CONTRACT # 60828

TRAFFIC SIGNAL MAST ARM AND POST

MAST ARM MOUNTED SIGNAL IN PROPOSED & FUTURE SIDEWALK AREA. INTERSECTION SHOWN WITH PEDESTRIAN SIGNAL AND PUSHBUTTON DETECTOR



PEDESTRIAN SIGNAL PUSHBUTTON



RECOMMENDED PUSHBUTTON LOCATIONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHALL BE IN ACCORDANCE WITH THE CURRENT MUTCD (SEE NOTE 1). TO MEET MUTCD REQUIREMENTS, PEDESTRIAN SIGNAL PUSHBUTTONS MAY HAVE TO BE MOUNTED ON A SEPARATE POST.

NOTES:

1. AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS WITH PEDESTRIAN ACTUATION, EACH PUSHBUTTON SHALL ACTIVATE BOTH THE WALK INTERVAL AND THE ACCESSIBLE PEDESTRIAN SIGNALS.

   AT ACCESSIBLE PEDESTRIAN SIGNAL LOCATIONS, PUSHBUTTONS SHOULD CLEARLY INDICATE WHICH CROSSWALK SIGNAL IS ACTUATED BY EACH PUSHBUTTON. PUSHBUTTONS AND TACTILE ARROWS SHOULD HAVE HIGH VISUAL CONTRAST (SEE THE DEPARTMENT OF JUSTICE'S AMERICANS WITH DISABILITIES ACT STANDARDS FOR ACCESSIBLE DESIGN, 1991). TACTILE ARROWS SHOULD POINT IN THE SAME DIRECTION AS THE ASSOCIATED CROSSWALK. AT CORNERS OF SIGNALIZED LOCATIONS WITH ACCESSIBLE PEDESTRIAN SIGNALS WHERE PEDESTRIAN PUSHBUTTONS ARE PROVIDED, THE PUSHBUTTONS SHOULD BE SEPARATED BY THE DISTANCE OF AT LEAST 10 FT (3m). THIS ENABLES PEDESTRIANS WHO HAVE VISUAL DISABILITIES TO DISTINGUISH AND LOCATE THE APPROPRIATE PUSHBUTTON.

   PUSHBUTTONS FOR ACCESSIBLE PEDESTRIAN SIGNALS SHOULD BE LOCATED AS FOLLOWS:

   A: ADJACENT TO A LEVEL ALL-WEATHER SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR, AND WHERE THERE IS AN ALL WEATHER SURFACE, WHEELCHAIR ACCESSIBLE ROUTE TO THE RAMP.

   B: WITHIN 5 FT (1.5m) OF THE CROSSWALK EXTENDED.

   C: WITHIN 10 FT (3m) OF THE EDGE OF CURB, SHOULDER, OR PAVEMENT.

   D: PARALLEL TO THE CROSSWALK TO BE USED (SEE MUTCD FIGURE 4E-2).

   E: NORMAL PEDESTRIAN PUSHBUTTON MOUNTING HEIGHT SHOULD BE 3.5 FT (1.05m) ABOVE ADJACENT SIDEWALK

2. PEDESTRIAN SIGNAL FACES SHALL BE MOUNTED WITH THE BOTTOM OF THE HOUSING NOT LESS THAN 8 FT (2.4m) NOR MORE THAN 10 FT (3.0m) ABOVE THE SIDEWALK LEVEL AND SO THERE IS A PEDESTRIAN INDICATION IN THE LINE OF PEDESTRIANS' VISION WHICH PERTAINS TO THE CROSSWALK BEING USED.

3. THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, NOT MOUNTED OVER A ROADWAY, SHALL BE AT LEAST 10 FT (3.0m) BUT NOT MORE THAN 15 FT (4.5m) ABOVE THE SIDEWALK OR, ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE HIGHWAY IF NO SIDEWALKS EXIST.

4. THE BOTTOM OF THE HOUSING OF A VEHICLE SIGNAL FACE, MOUNTED OVER A ROADWAY, SHALL BE ACCORDING TO CURRENT STATE STANDARDS 877001 AND 877006. (16 FT (5m) MIN., 18 FT (5.5m) MAX., FROM HIGHEST POINT OF PAVEMENT)

PEDESTRIAN SIGNAL POST

PEDESTRIAN SIGNAL HEAD AND PEDESTRIAN PUSHBUTTON DETECTOR LOCATION

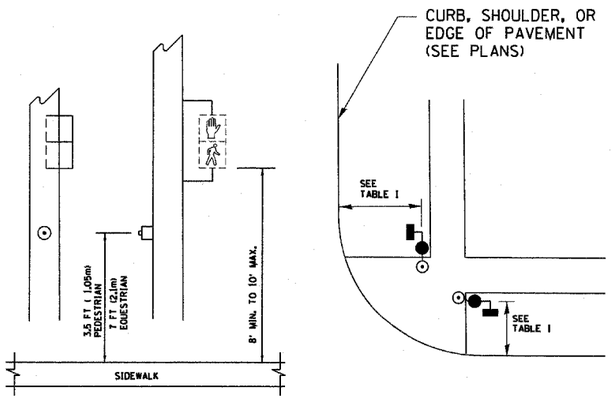


TABLE I

TRAFFIC SIGNAL EQUIPMENT	COMBINATION CONCRETE CURB AND GUTTER (MIN. DIST. FROM BACK OF CURB)	SHOULDER/NON-CURBED AREA (MIN. DIST. FROM EDGE OF PAVEMENT)
TRAFFIC SIGNAL MAST ARM POLE	6 FT (1.8m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
TRAFFIC SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
PEDESTRIAN SIGNAL POST	4 FT (1.2m)	SHOULDER WIDTH + 2FT(0.6m), MINIMUM 10FT(3.0m)
PEDESTRIAN PUSHBUTTON	SEE NOTE 1	SEE NOTE 1

REVISIONS	
NAME	DATE
BUREAU OF TRAFFIC	1/01/02

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT 1
STANDARD TRAFFIC SIGNAL DESIGN DETAILS

SCALE: NONE

DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 2 OF 4

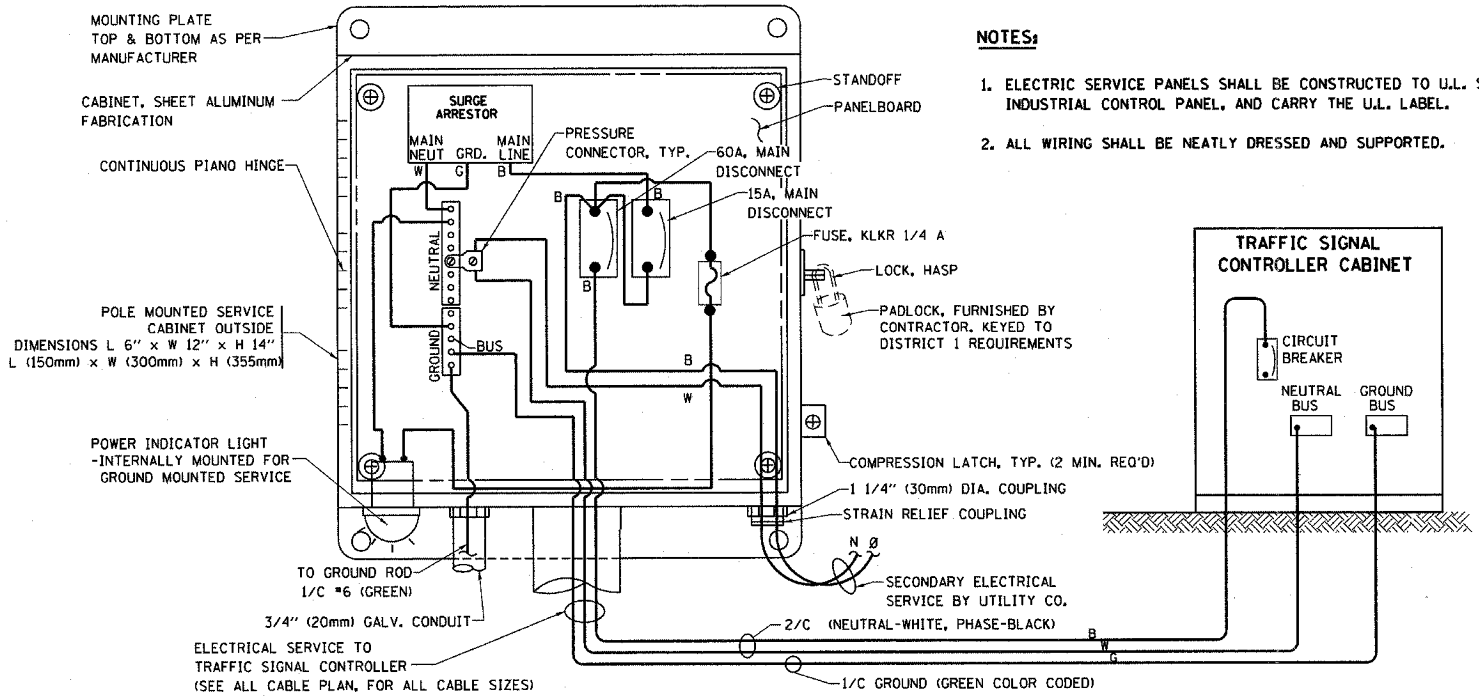
TS05

PLOT DATE = 3/7/2007
FILE NAME = K:\diasad\ts05.dgn
PLOT SCALE = 50.0000 ' / IN.
USER NAME = bwardl

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346		LAKE	469	396
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

CONTRACT NO.

CONTRACT #60826



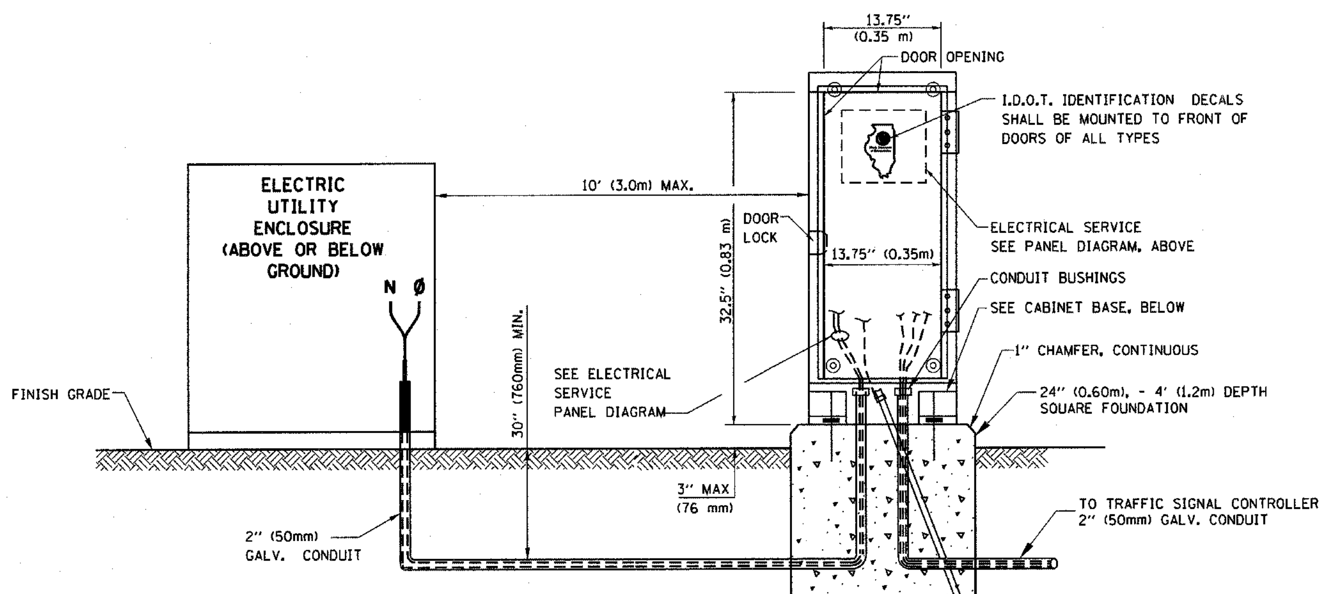
NOTES:

1. ELECTRIC SERVICE PANELS SHALL BE CONSTRUCTED TO U.L. STD 508, INDUSTRIAL CONTROL PANEL, AND CARRY THE U.L. LABEL.
2. ALL WIRING SHALL BE NEATLY DRESSED AND SUPPORTED.

ELECTRICAL SERVICE – PANEL DIAGRAM (TYPICAL FOR POLE AND GROUND MOUNTED SERVICE)

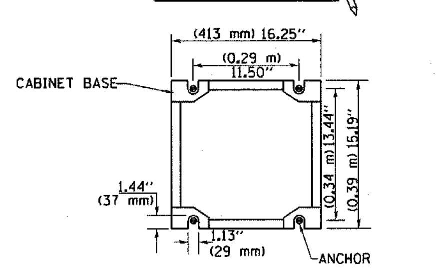
SERVICE INSTALLATION POLE MOUNT (SHOWN)

(NOT TO SCALE)



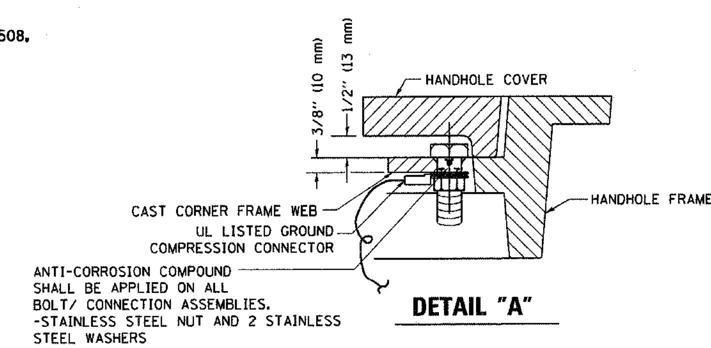
SERVICE INSTALLATION GROUND MOUNT

(NOT TO SCALE)

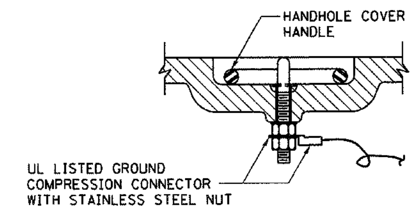


CABINET – BASE BOLT PATTERN

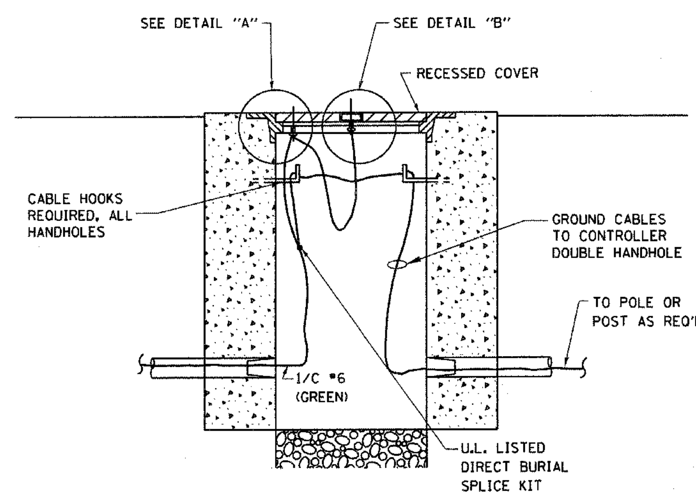
(NOT TO SCALE)



DETAIL "A"

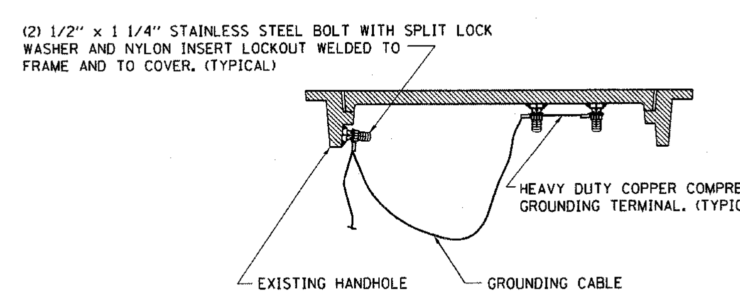


DETAIL "B"



HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)



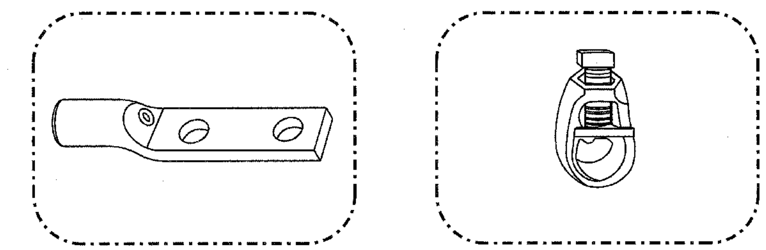
EXISTING HANDHOLE COVER & FRAME – GROUNDING DETAIL

(NOT TO SCALE)

NOTES:

GROUNDING SYSTEM

1. THE GROUNDING SYSTEM SHALL CONSIST OF AN INSULATED CONDUCTOR TYPE XLP, NO. 6 A.W.G., STRANDED COPPER TO BE INSTALLED IN RACEWAYS. THE GROUNDING CABLE SHALL BE INSTALLED IN A CONTINUOUS MANNER AS SHOWN ON THE CABLE PLAN PROVIDED. ALL GROUNDING CONDUCTORS SHALL BE BONDED TO METAL ENCLOSURE (HANDHOLE, POST, MAST ARM, CONTROLLER, ETC.). GROUND ROD SHALL BE 3/4" DIA. x 10'-0" (20mm x 3.0m) LONG, COPPER CLAD. ONE GROUND ROD SHALL BE INSTALLED AT ALL POST FOUNDATIONS, POLE FOUNDATIONS, CONTROLLER CABINET FOUNDATION AND ELECTRICAL SERVICE INSTALLATION AS INDICATED ON THE CABLE PLAN. IF THERE ARE ANY SPECIAL CONDITIONS SUCH AS SUB-SURFACE CONDITIONS OR INSTALLATION PROBLEMS, THE RESIDENT ENGINEER SHALL BE NOTIFIED OR CONTACT THE BUREAU OF TRAFFIC, ILLINOIS DEPARTMENT OF TRANSPORTATION DISTRICT ONE AT (847) 705-4139.
2. THE NEUTRAL CONDUCTOR AND THE GROUND CONDUCTOR SHALL BE CONNECTED IN THE SERVICE INSTALLATION. AT NO OTHER POINT IN THE TRAFFIC SIGNAL SYSTEM SHALL THE NEUTRAL AND GROUND CONDUCTORS BE CONNECTED.
3. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL TERMINATE AT THE GROUND BUS IN THE CONTROLLER CABINET.
4. THE CONTRACTOR SHALL PROVIDE A GROUND CABLE WITH CONNECTORS BETWEEN THE HANDHOLE COVER AND HANDHOLE FRAME.

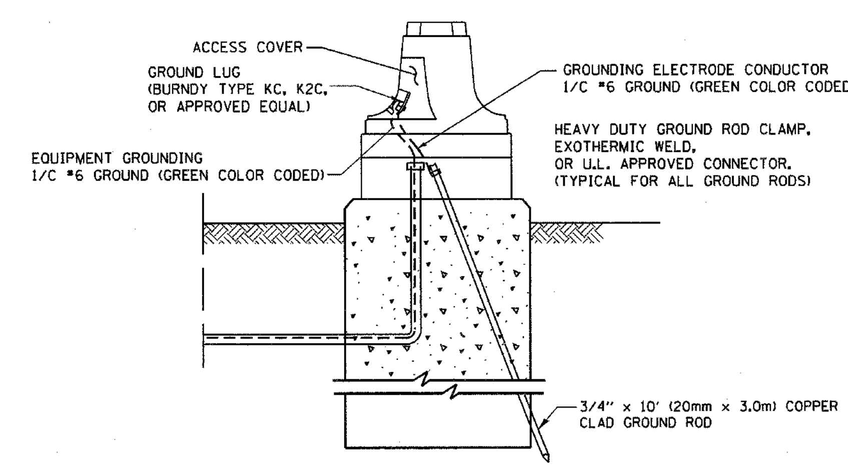


HEAVY-DUTY COMPRESSION TERMINAL (BURNDY TYPE YGHA OR APPROVED EQUAL)

3/4" (20mm) HEAVY-DUTY GROUND ROD CLAMP (BURNDY TYPE GRC OR APPROVED EUAL)

NOTES:

- ALL CLAMPS SHALL BE BRONZE OR COPPER, UL APPROVED.
- GROUND CABLE SHALL BE LOOPED OVER HOOKS IN THE HANDHOLES 6.5' (2.0m) SLACK SHALL BE PROVIDED IN SINGLE HANDHOLES 13' (4.0m) OF SLACK SHALL BE PROVIDED IN DOUBLE HANDHOLES. 5' (1.4m) OF SLACK SHALL BE PROVIDED BETWEEN FRAME AND COVER.



MAST ARM POLE / POST–GROUNDING DETAIL

(NOT TO SCALE)

REVISIONS	
NAME	DATE
CADD	5/30/00
CADD	3/15/01
BUREAU OF TRAFFIC	1/01/02

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: NONE

DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 3 OF 4

TS05

PLOT DATE = 3/7/2007
FILE NAME = K:\dsstd\ts05.dgn
PLOT SCALE = 50.0000 ' / IN.
USER NAME = bowerdl

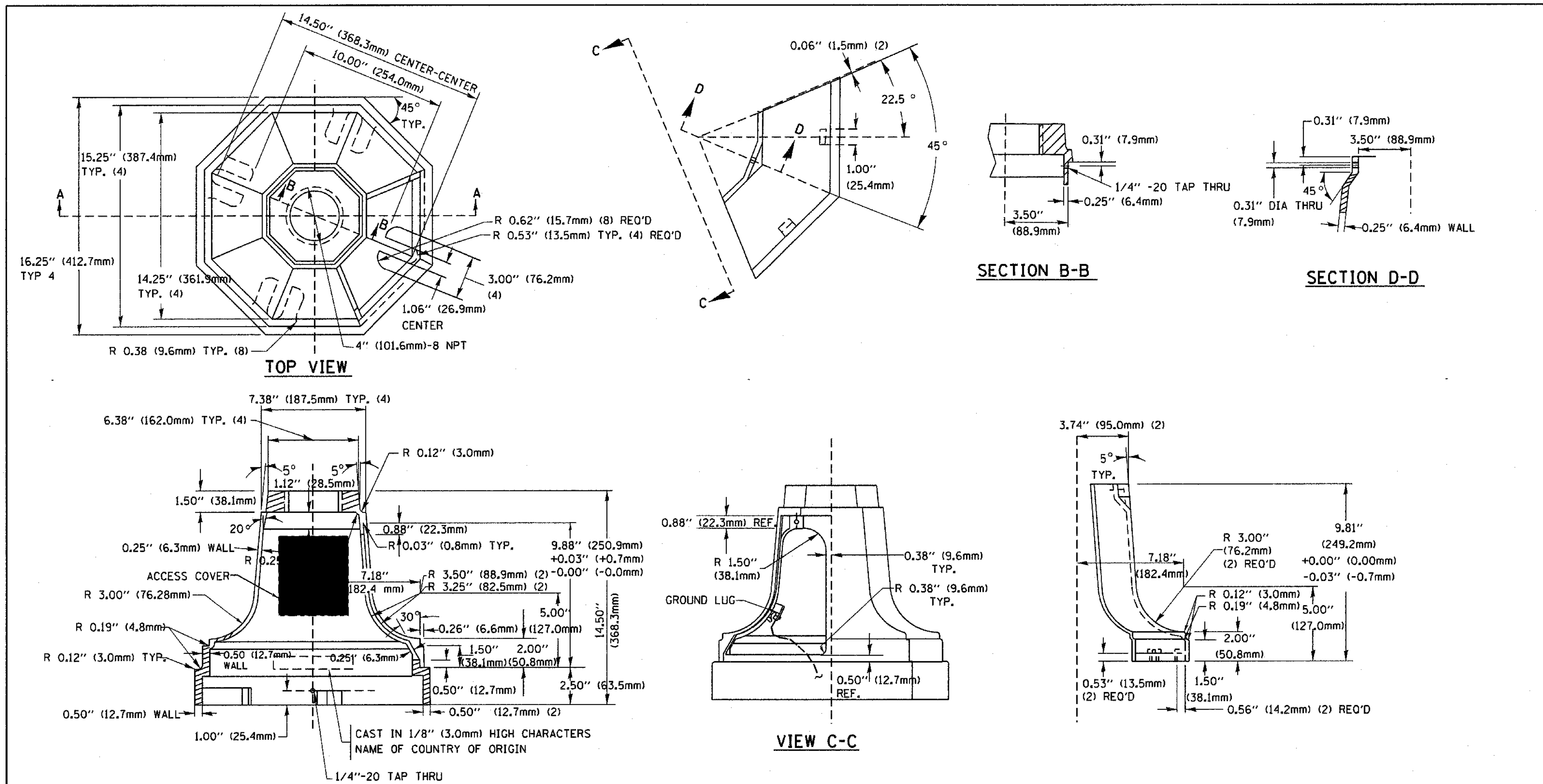
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
348		LAKE	469	397

CONTRACT NO.

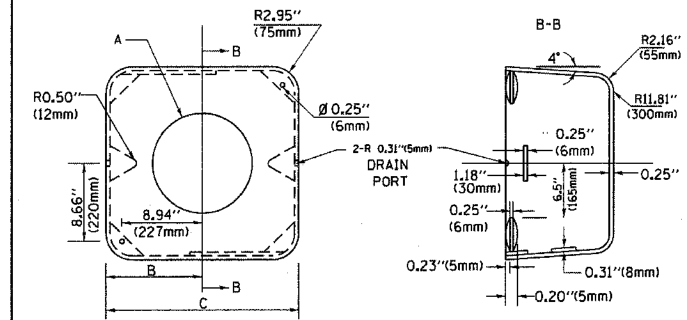
STA. TO STA.

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

CONTRACT # 60826



TRAFFIC SIGNAL POST - MOUNTING BASE - TYPE A



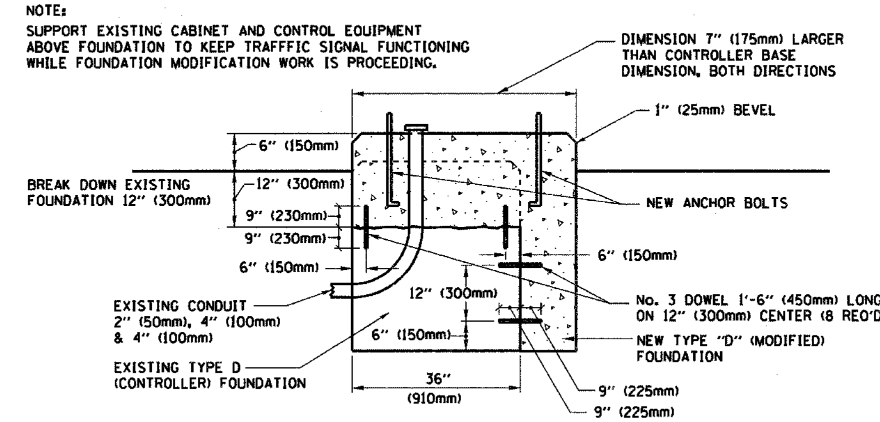
MATERIAL:

- ASTM A48 CLASS 30 GREY IRON
- ASTM A123 HOT DIPPED GALVANIZED

TYPE	A	B	C	HEIGHT	WEIGHT
I	Ø 10.125"(257mm)	9.5"(241mm)	19"(483mm)	12" (300mm)	24kg
II	Ø 11.125"(283mm)	10.75"(273mm)	21.5"(546mm)	12" (300mm)	26kg

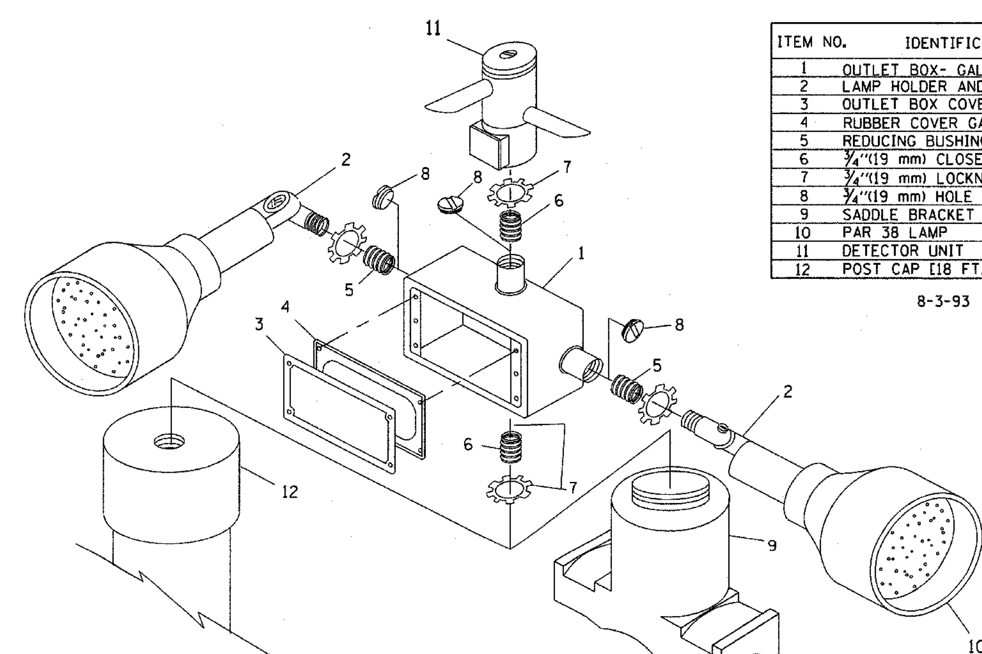
SHROUD DETAIL

NOTE:
SUPPORT EXISTING CABINET AND CONTROL EQUIPMENT ABOVE FOUNDATION TO KEEP TRAFFFIC SIGNAL FUNCTIONING WHILE FOUNDATION MODIFICATION WORK IS PROCEEDING.



MODIFY EXISTING TYPE "D" FOUNDATION

(NOT TO SCALE)



ITEM NO.	IDENTIFICATION
1	OUTLET BOX- GALV. 21 CU.IN. (0.000344 CU-M)
2	LAMP HOLDER AND COVER
3	OUTLET BOX COVER
4	RUBBER COVER GASKET
5	REDUCING BUSHING
6	¾"(19 mm) CLOSE NIPPLE
7	¾"(19 mm) LOCKNUT
8	¾"(19 mm) HOLE PLUG
9	SADDLE BRACKET - GALV.
10	PAR 38 LAMP
11	DETECTOR UNIT
12	POST CAP [18 FT. (5.4 m) POST MIN.]

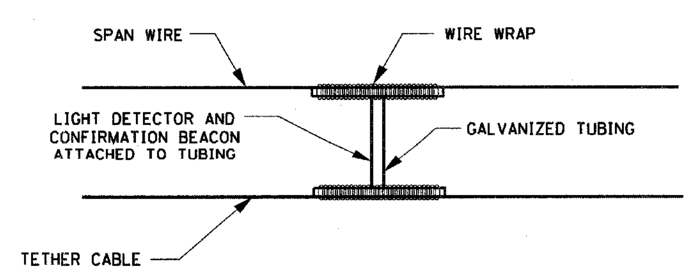
8-3-93

POST CAP MOUNT MAST ARM MOUNT

EMERGENCY VEHICLE DETECTOR WITH CONFIRMATION BEACON MOUNTING DETAIL

NOTES:

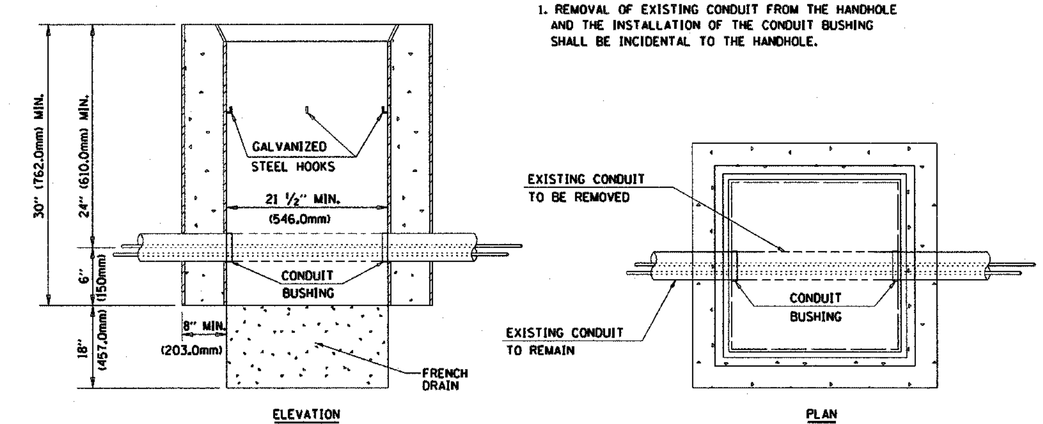
1. ALL ELECTRICAL ITEMS, EXCEPT ITEMS #2 AND #11 SHALL BE ALUMINUM OR GALVANIZED
2. ITEM #1- OZ/GEDNEY FSX-1-50 OR EQUIVALENT
   ITEM #2- MULBERRY CON-O-SHADE LAMP SHIELD OR EQUIVALENT
   ITEM #9- "BAND-IT" SADDLE BRACKET OR EQUIVALENT
3. WHEN POST MOUNTING IS SPECIFIED, ITEM #9 SHALL NOT BE REQUIRED. THE DETECTION UNIT SHALL BE MOUNTED DIRECTLY ON TOP OF THE CAP BY DRILLING AND TAPPING A ¾"(19 mm) HOLE WITH PIPE THREADS. THE POST CAP SHALL EITHER BE SCREWED TO THE TOP OF THE POST OR A MINIMUM OF 3 TIGHTENING SCREWS SHALL BE REQUIRED ON EACH CAP.



LIGHT DETECTOR AND CONFIRMATION BEACON MOUNTING FOR TEMPORARY TRAFFIC SIGNALS

(NOT TO SCALE)

NOTES:
1. REMOVAL OF EXISTING CONDUIT FROM THE HANDHOLE AND THE INSTALLATION OF THE CONDUIT BUSHING SHALL BE INCIDENTAL TO THE HANDHOLE.



DETAIL
HANDHOLE TO INTERCEPT EXISTING CONDUIT
N.T.S.

REVISIONS	
NAME	DATE
BUREAU OF TRAFFIC	5/30/00
BUREAU OF TRAFFIC	3/15/01
BUREAU OF TRAFFIC	11/12/01
BUREAU OF TRAFFIC	1-01-02

ILLINOIS DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
STANDARD TRAFFIC SIGNAL
DESIGN DETAILS

SCALE: NONE

DRAWN BY: RWP
DESIGNED BY: DAD
CHECKED BY: DAZ
SHEET 4 OF 4
TS05

PLOT DATE = 3/7/2007
FILE NAME = K:\dist\std\ts05.dgn
PLOT SCALE = 50.0000 ' / IN.
USER NAME = bauerdl

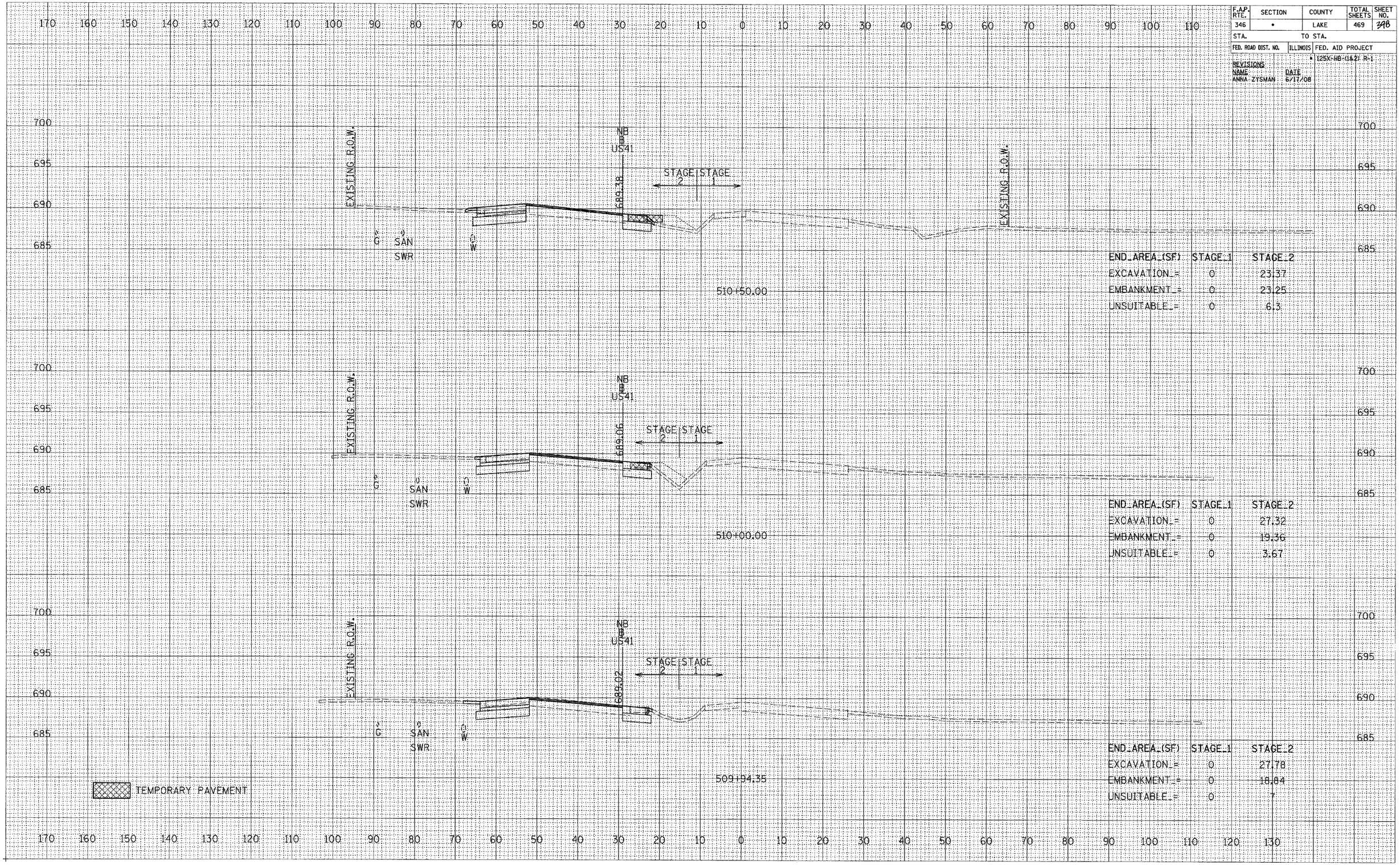
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	348
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• I25X-HB-(1&2) R-1

REVISIONS
NAME | DATE
ANNA ZYSMAN | 6/17/08

FINAL SURVEY — NOTE BOOK — NO.
SURVEYED | PLOTTED | TEMPLATE AREAS | AREAS CHECKED
BY | DATE

ORIGINAL SURVEY — NOTE BOOK — NO.
SURVEYED | PLOTTED | TEMPLATE AREAS | AREAS CHECKED
BY | DATE



US 41 CROSS SECTIONS
SHEET 1 OF 56

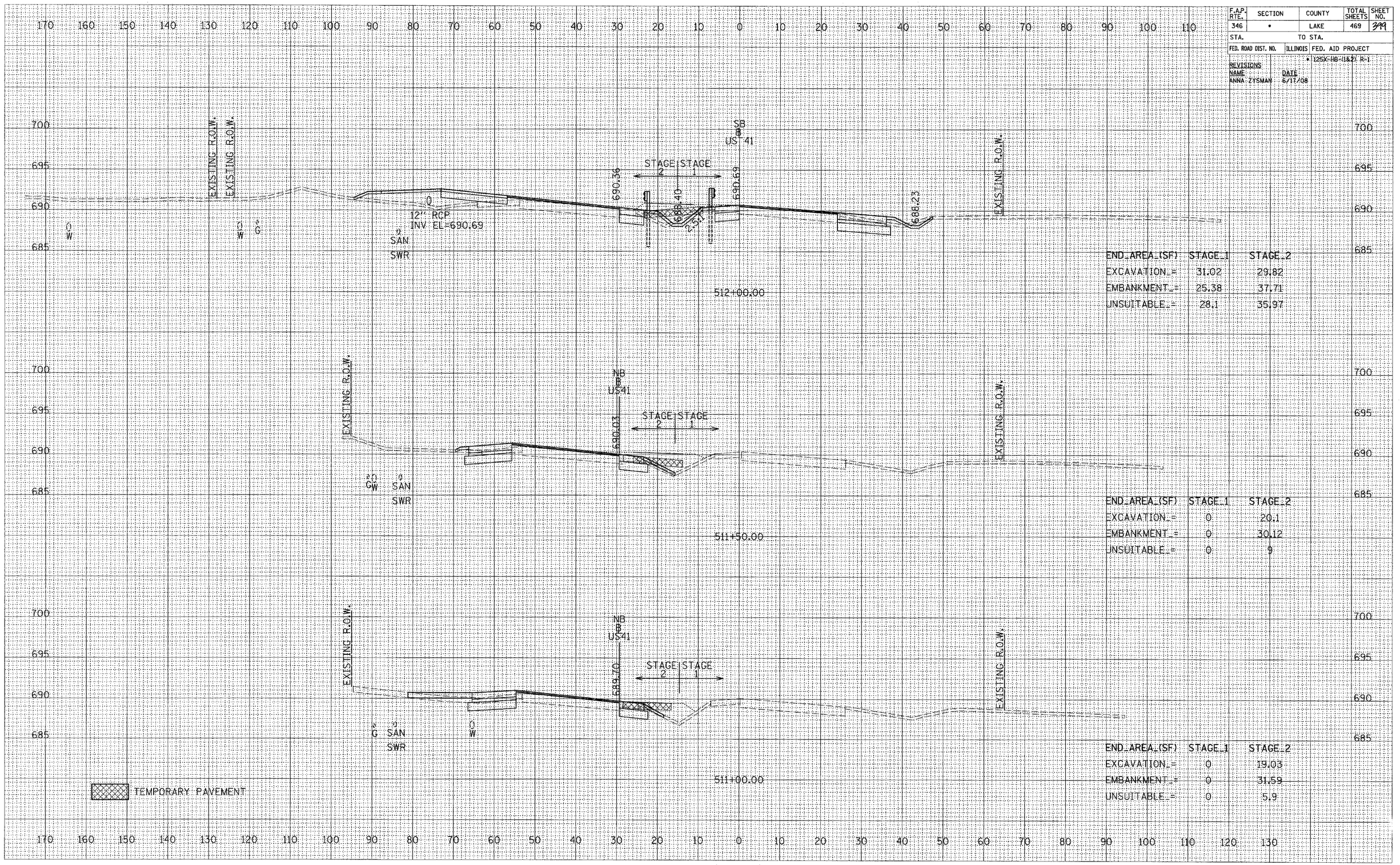
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
346	•	LAKE	469	399
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

• 125X-HB-(1&2) R-1

REVISIONS
NAME DATE
ANNA ZYSMAN 6/17/08

FINAL SURVEY NOTE BOOK — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE — NO.

ORIGINAL SURVEY NOTE BOOK — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE — NO.



F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* I25X-HB-(1&2) R-1

REVISIONS
NAME DATE
ANNA ZYSMAN 6/17/08

FINAL SURVEY NOTE BOOK NO.
SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED
BY DATE

ORIGINAL SURVEY NOTE BOOK NO.
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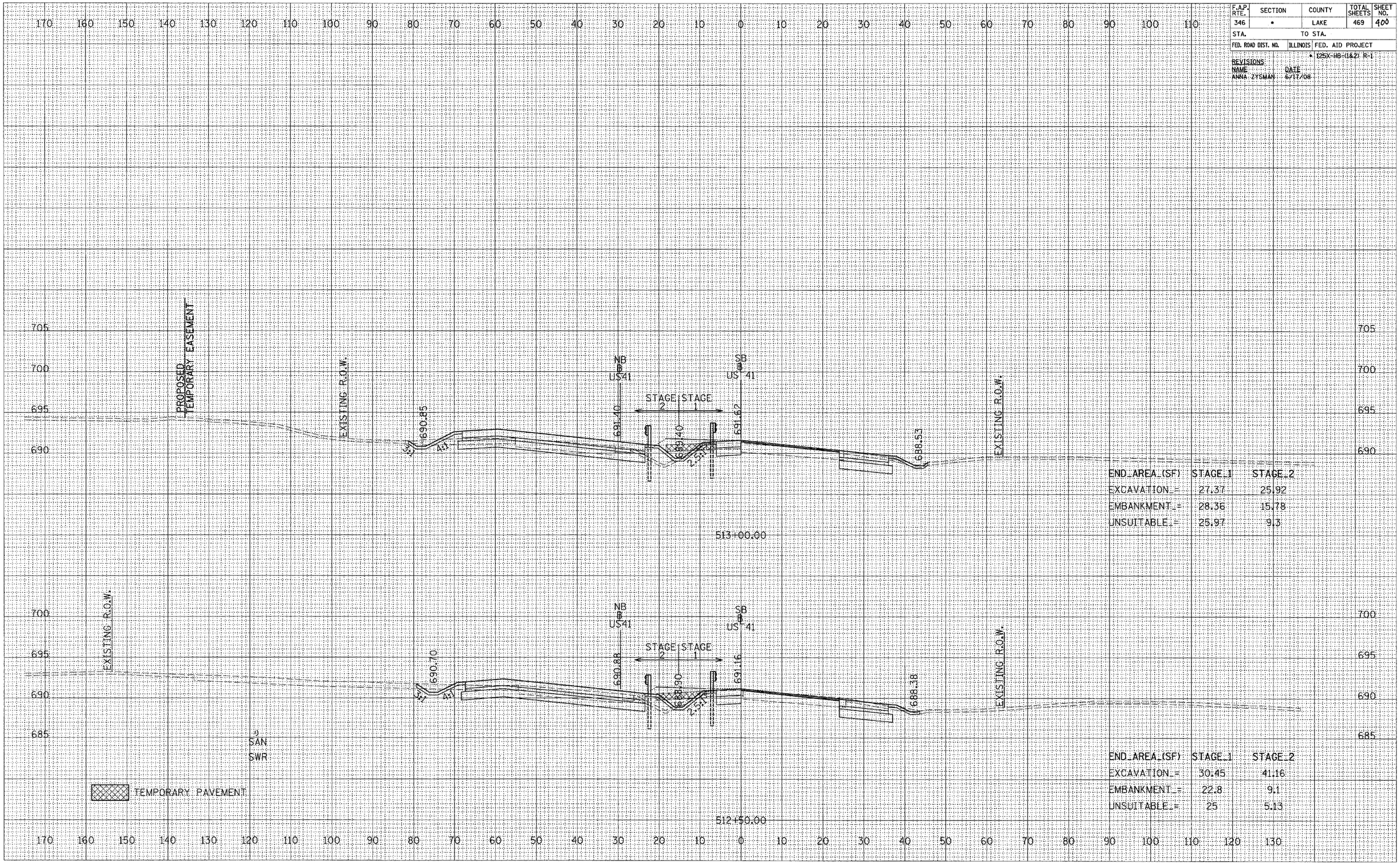
BY DATE



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EMBANKMENT_=	28.36	15.78
UNSUITABLE_=	25.97	9.3

END_AREA_(SF)	STAGE_1	STAGE_2
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EMBANKMENT_=	22.8	9.1
UNSUITABLE_=	25	5.13

US 41 CROSS SECTIONS
SHEET 3 OF 56