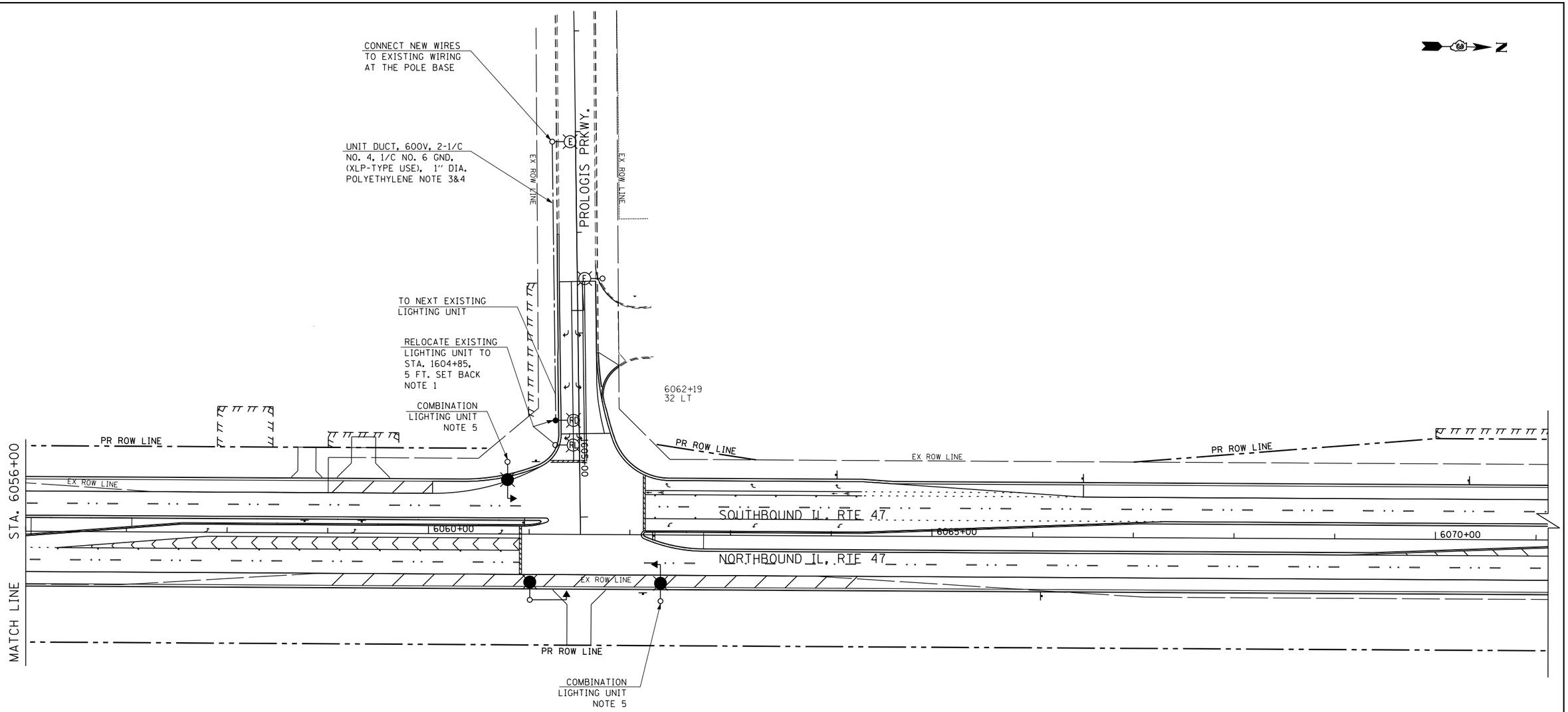


NOTES

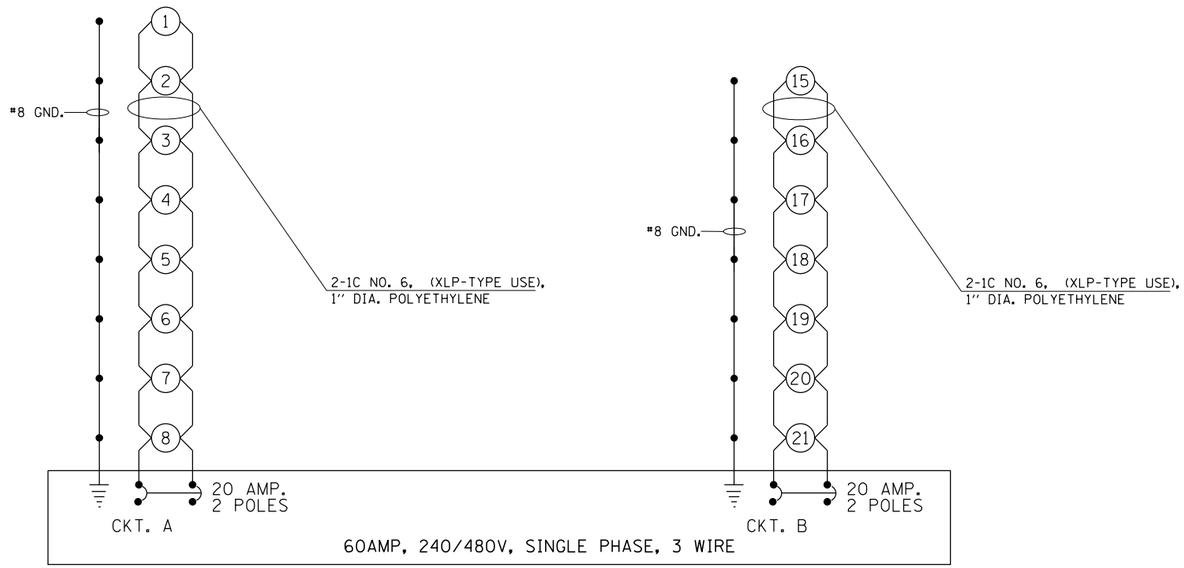
1. THE EXISTING LIGHTING UNIT SHALL BE REMOVED AND PROPERLY STORED TO BE RELOCATED AT THE CONCLUSION OF THE CONSTRUCTION STAGES. THE RELOCATED EXISTING LIGHTING UNIT SHOULD BE INSTALLED AT THE PROPOSED LOCATION AS SHOWN ON THE PLAN. THE RELOCATED EXISTING LIGHTING UNIT SHALL BE CONNECTED TO THE ADJACENT LIGHTING UNIT.
2. INSTALL 2" P.V.C. CONDUIT RACEWAY IN PROPOSED FOUNDATION FOR FUTURE EXPANSION OF LIGHTING SYSTEM. EXTEND 2' OUT FROM FOUNDATION CAP AND SEAL. COST OF CONDUIT RACEWAY SHALL BE CONSIDERED INCLUDED IN COST OF "LIGHT POLE FOUNDATION".
3. CONNECT THE NEW WIRES TO THE EXISTING CIRCUIT AT THE EXISTING POLE HANDHOLE.
4. THE CONTRACTOR SHALL VERIFY THE NUMBER AND SIZE OF EXISTING CIRCUIT CONDUCTOR AND REPLACE IN KIND AS DIRECTED BY THE ENGINEER.
5. REFER TO TRAFFIC SIGNAL PLANS FOR EXACT LOCATION OF COMBINATION TRAFFIC SIGNAL ASSEMBLY.

SCALE IN FEET
0 50 100
SCALE: 1"=50'

E-04

FILE NAME = c:\pw_work\pwidot\corcoranlm\d0358354\D066B83-sht-light 4.dgn	USER NAME = corcoranlm	DESIGNED - SM	EJM ENGINEERING, INC. 411 South Wells Street Suite 1000 Chicago, Illinois 60607	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ILLINOIS ROUTE 47 LIGHTING PLAN
		DRAWN - BG			
	PLOT SCALE = 100.0000 ' / in.	CHECKED - A. OSHANA			
	PLOT DATE = 03/01/2013	DATE - 7/15/2013			SCALE: 1"=50' SHEET 4 OF 7 SHEETS STA. 6056+00 TO STA. 6070+77

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	301
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		



ROADWAY LIGHTING CONTROLLER

○ 400 WATT HPS FIXTURE, 480V BALLAST

NOTE

1. PROVIDE 4 - 20 AMP 2 POLE BRANCH CIRCUIT BREAKERS IN THE LIGHTING CONTROLLER

E-05

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		DRAWN - BG	
	PLOT SCALE = 100.0000 ' / in.	CHECKED - A. OSHANA	
	PLOT DATE = 03/01/2013	DATE - 7/15/2013	

EJM ENGINEERING, INC.
411 South Wells Street Suite 1000
Chicago, Illinois 60607

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 47
SCHEMATIC WIRING DIAGRAM

SCALE: N/A | SHEET 5 OF 7 SHEETS | STA. N/A | TO STA. N/A

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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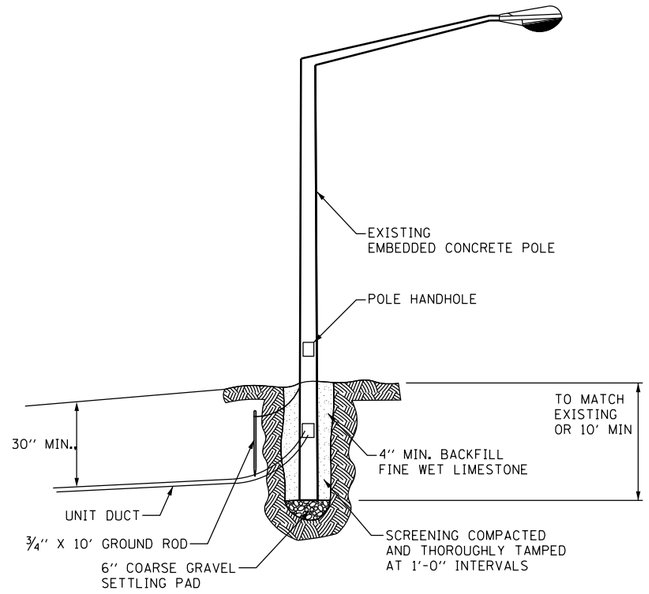
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		



RELOCATE EMBEDDED CONCRETE LIGHT POLE DETAIL

NOT TO SCALE

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		DRAWN -	BG
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	PLOT DATE = 03/01/2013	DATE -	7/15/2013

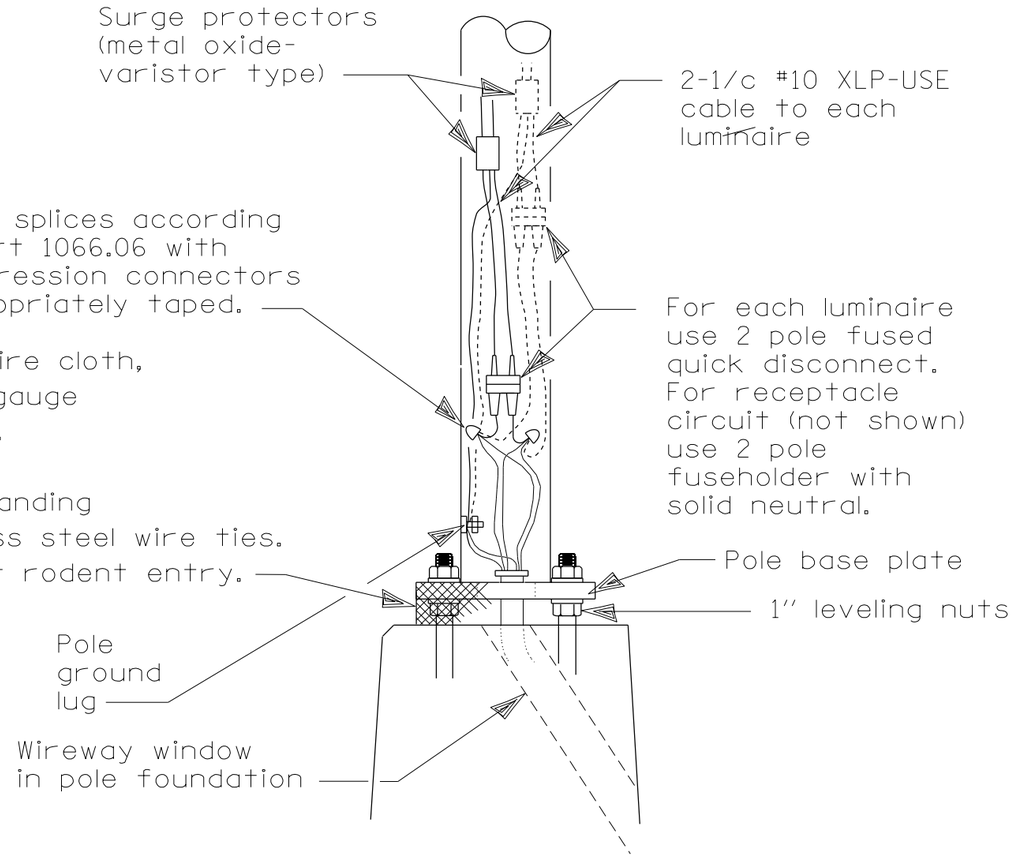
EJM ENGINEERING, INC.
411 South Wells Street Suite 1000
Chicago, Illinois 60607

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NIGHTTIME LIGHTING INSPECTION DETAIL AND RELOCATED CONCRETE POLE DETAIL

SCALE: N/A | SHEET 6 OF 7 SHEETS | STA. N/A | TO STA. N/A

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	303
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		



WIRING DETAIL

NO SCALE

GENERAL NOTES

All taped splices shall use 2 layers of electrical tape over 3 layers of rubber tape as required by the Standard Specifications. Coat the finished taped splice with bonding compound.

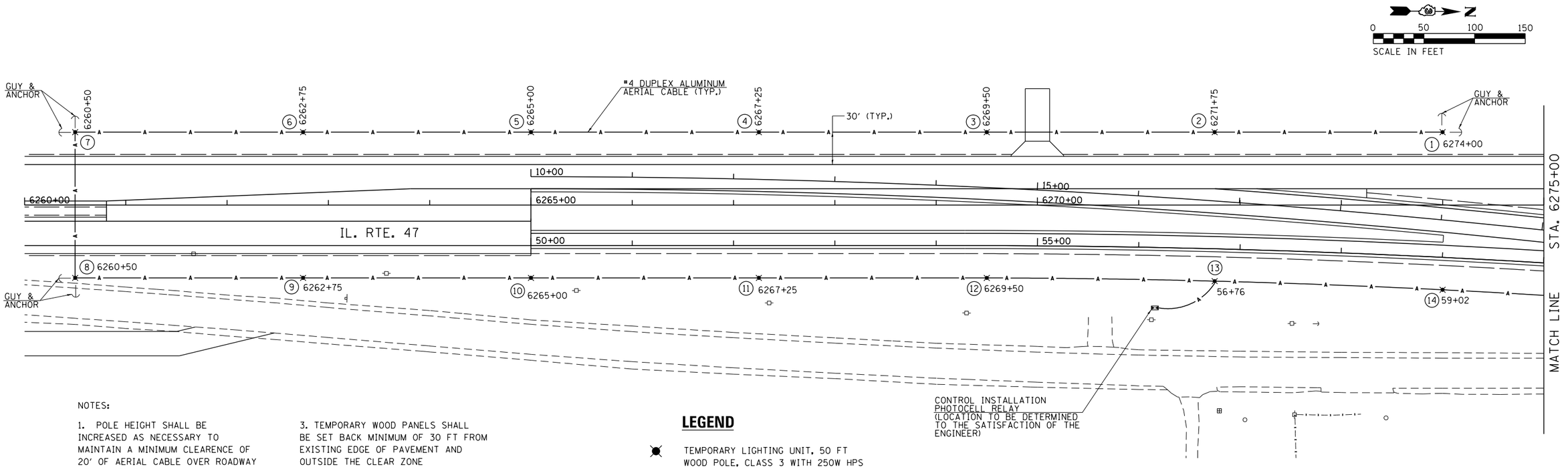
All cable splices shall be taped unless another method has been specifically approved by the Engineer.

For example purposes the pole is shown on an anchor base. If the pole is required to be set on a breakaway base, consult the Standard Specifications.

All dimensions are in millimeters (inches) unless otherwise shown.

E-07

FILE NAME = c:\pw_work\pwidot\corcoranlm\d0358354\D366B83-sht-light 7.dgn	USER NAME = corcoranlm	DESIGNED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	POLE HANDHOLE WIRING	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
	PLOT SCALE = 100.0000 ' / in.	DRAWN -			326	(110)R, BR & BR-1	GRUNDY	644 / 304
	PLOT DATE = 03/01/2013	CHECKED - OSHANA					CONTRACT NO. 66B83	
		DATE - 7/15/2013		SCALE: N/A SHEET 7 OF 7 SHEETS STA. N/A TO STA. N/A			ILLINOIS FED. AID PROJECT	



NOTES:

1. POLE HEIGHT SHALL BE INCREASED AS NECESSARY TO MAINTAIN A MINIMUM CLEARENCE OF 20' OF AERIAL CABLE OVER ROADWAY AT ALL TIMES

2. GUYS AND ANCHORS ARE SHOWN AS EXAMPLE AND SHALL BE INSTALLED AS NECESSARY TO THE SATISFACTION OF THE ENGINEER

3. TEMPORARY WOOD PANELS SHALL BE SET BACK MINIMUM OF 30 FT FROM EXISTING EDGE OF PAVEMENT AND OUTSIDE THE CLEAR ZONE

4. TRAFFIC MAY NOT USE MEDIAN CROSSOVERS UNTIL TEMPORARY LIGHTING IS OPERATIONAL

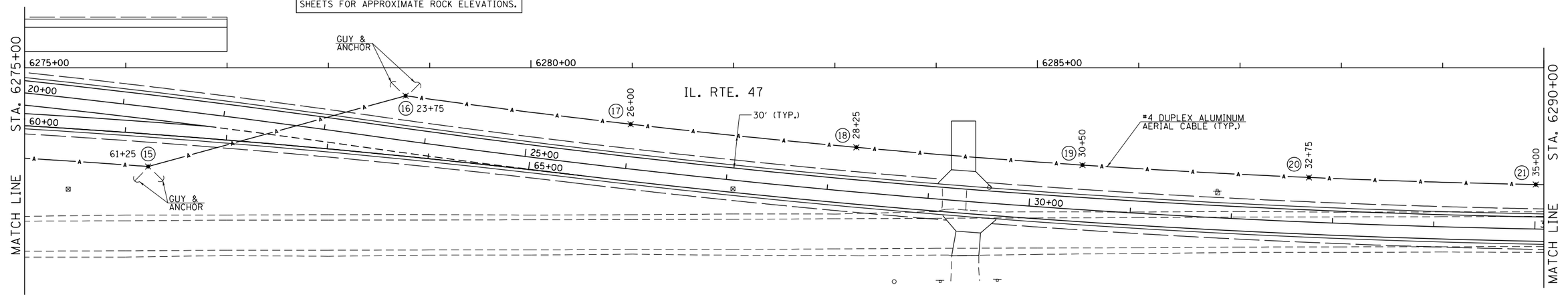
5. THE CONTRACTOR SHALL NOTE THERE IS SHALLOW ROCK IN THE VICINITY OF THE TEMPORARY LIGHTING SYSTEM, SEE PLAN AND PROFILE AND CROSS-SECTION SHEETS FOR APPROXIMATE ROCK ELEVATIONS.

LEGEND

- TEMPORARY LIGHTING UNIT, 50 FT WOOD POLE, CLASS 3 WITH 250W HPS MULTI MOUNT LUMINAIRE
- —A— AERIAL CABLE, 2-1/C NO. 4 ALUMINUM WITH MESSAGE WIRE
- TEMPORARY LIGHTING CONTROLLER AND ELECTRIC SERVICE 30A, 240V, 1 PHASE AND 3 WIRE

SCHEDULE OF QUANTITIES

CODE	ITEM DESCRIPTION	UNIT	QUANTITY
X8410102	TEMPORARY LIGHTING SYSTEM	L SUM	1
X8410118	MAINTENANCE OF TEMPORARY LIGHTING	L SUM	1



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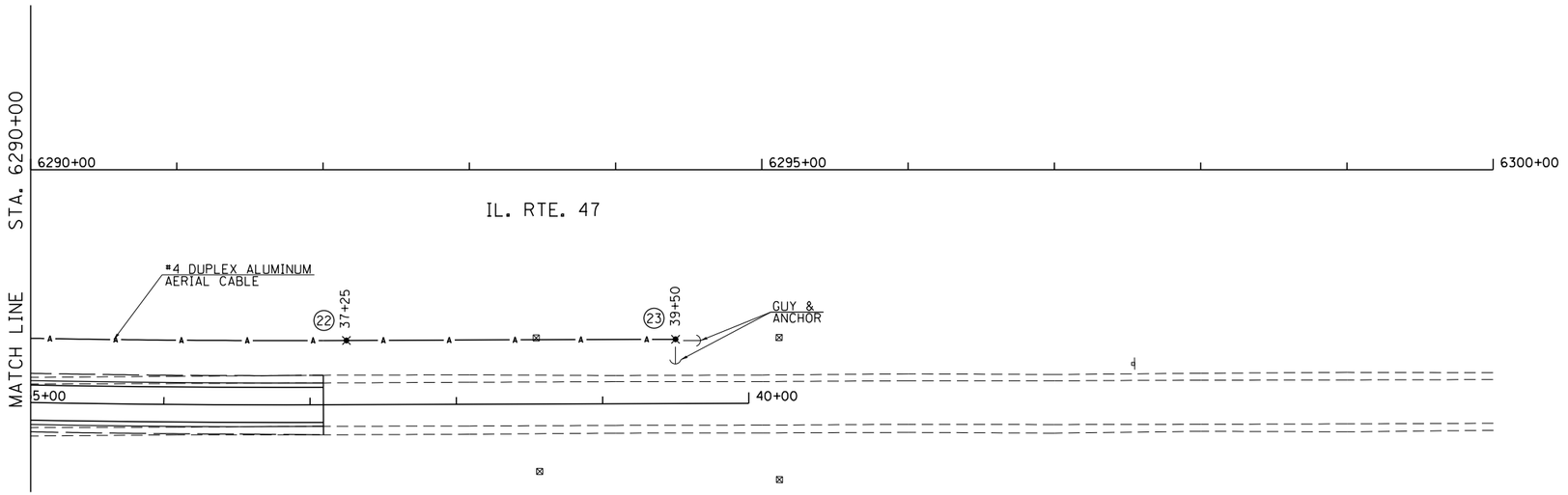
		DRAWN - SRH/RMD	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - DJD	REVISED -
	PLOT DATE = 10/9/2013	DATE - 7/15/2013	REVISED -

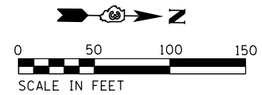
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

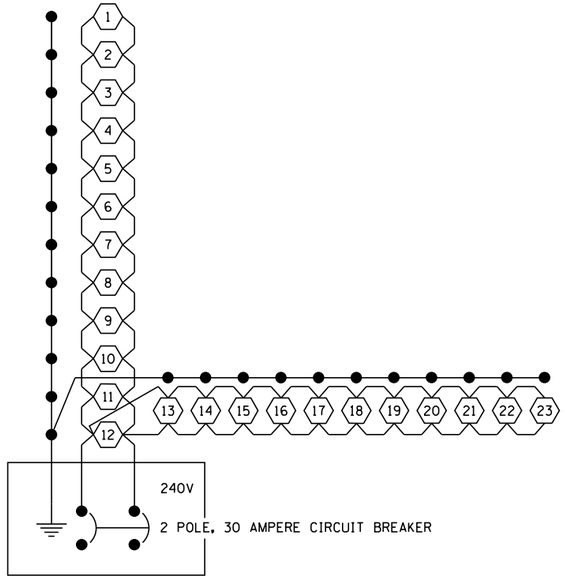
IL. RTE. 47
TEMPORARY LIGHTING PLAN

SCALE: 1"=50' | SHEET 1 OF 3 SHEETS | STA. 6260+00 TO STA. 6290+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	305
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			







CONTROL INSTALLATION – PHOTOCELL RELAY WIRING DIAGRAM

LEGEND

- TEMPORARY LIGHTING UNIT, 50 FT WOOD POLE, CLASS 3 WITH 250W HPS MULTI MOUNT LUMINAIRE
- —A— AERIAL CABLE, 2-1/C NO. 4 ALUMINUM WITH MESSAGE WIRE
- TEMPORARY LIGHTING CONTROLLER AND ELECTRIC SERVICE 30A, 240V, 1 PHASE AND 3 WIRE
- 250W ROADWAY LUMINAIRE

NOTES:

1. POLE HEIGHT SHALL BE INCREASED AS NECESSARY TO MAINTAIN A MINIMUM CLEARENCE OF 20' OF AERIAL CABLE OVER ROADWAY AT ALL TIMES

2. GUYS AND ANCHORS ARE SHOWN AS EXAMPLE AND SHALL BE INSTALLED AS NECESSARY TO THE SATISFACTION OF THE ENGINEER

3. TEMPORARY WOOD PANELS SHALL BE SET BACK MINIMUM OF 30 FT FROM EXISTING EDGE OF PAVEMENT AND OUTSIDE THE CLEAR ZONE

4. TRAFFIC MAY NOT USE MEDIAN CROSSOVERS UNTIL TEMPORARY LIGHTING IS OPERATIONAL

5. THE CONTRACTOR SHALL NOTE THERE IS SHALLOW ROCK IN THE VICINITY OF THE TEMPORARY LIGHTING SYSTEM, SEE PLAN AND PROFILE AND CROSS-SECTION SHEETS FOR APPROXIMATE ROCK ELEVATIONS.

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	PLOT SCALE = 100.0000 ' / in.	CHECKED - DJD	REVISED -
	PLOT DATE = 10/9/2013	DATE - 7/15/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL. RTE. 47
TEMPORARY LIGHTING PLAN

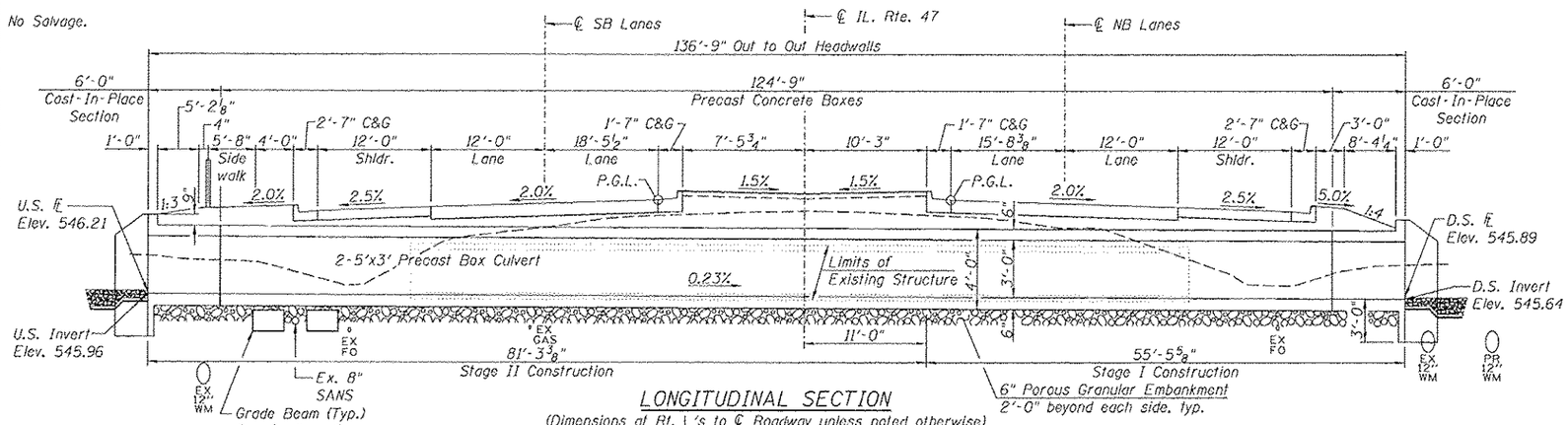
SCALE: 1"=50' | SHEET 2 OF 3 SHEETS | STA. 6290+00 TO STA. 6300+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	306
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		

Benchmark: Tag bolt on FH located in front of Grundy County Farm Bureau. Elev. 551.80.

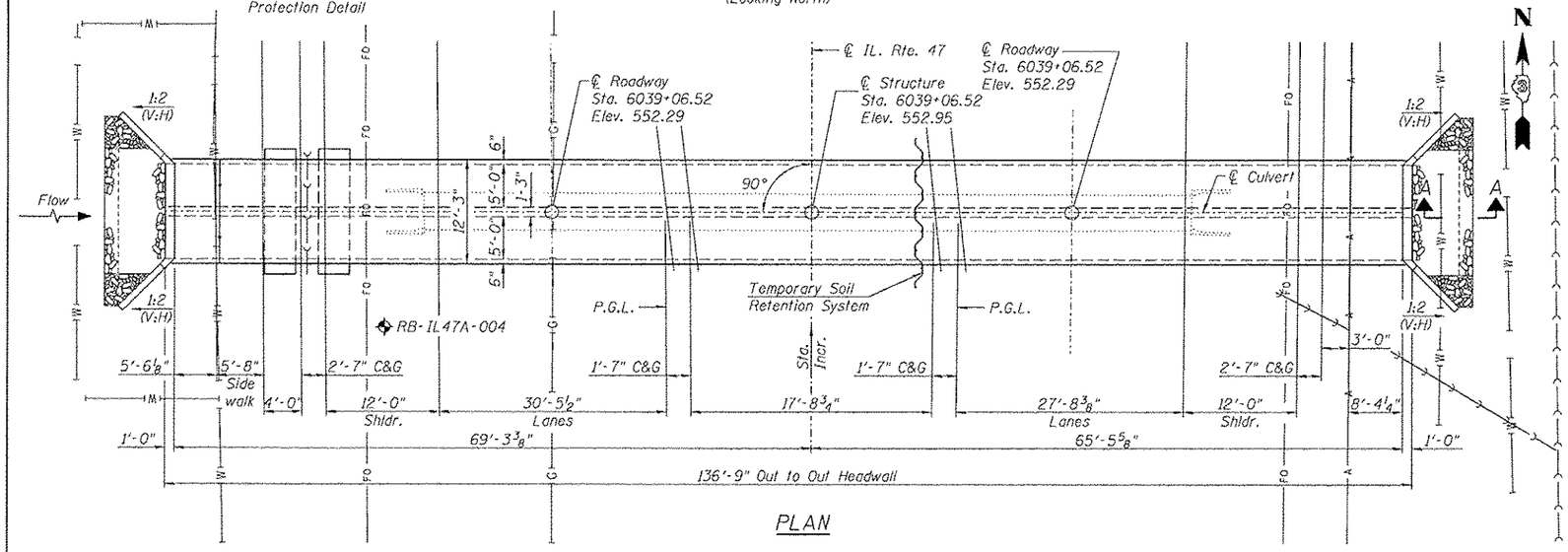
Existing Structure: The existing structure consists of a 4'x3' precast box culvert with concrete wingwalls. The culvert is approximately 81'-0" in length with no skew. Existing structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

No Salvage.



LONGITUDINAL SECTION

(Dimensions at Rt. L's to ℄ Roadway unless noted otherwise)
(Looking North)



PLAN

WATERWAY INFORMATION

Drainage Area = 0.61 sq mi
Exist. Low Grade Elev. 550.21
Prop. Low Grade El. = 551.30

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	124	11	30	548.9	1.9	0.0	550.7	548.9
Design	50	185	11	30	549.1	1.8	0.6	550.8	549.7
Base	100	208	12	30	549.3	1.8	1.0	551.1	550.3
Overtopping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	264	12	30	549.4	1.9	1.6	551.3	551.1

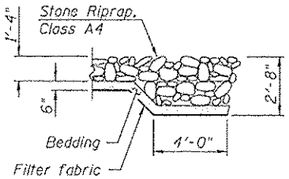
10 year velocity through Existing structure = 11.3 fps
10 year velocity through Proposed structure = 4.1 fps

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	41.2
Stone Riprap, Class A4	Sq. Yd.	30
Filter Fabric	Sq. Yd.	30
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	2990
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	12.5
Precast Concrete Box Culverts 5'x3'	Foot	249.5
Temporary Soil Retention System	Sq. Ft.	227

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	542.96	542.64

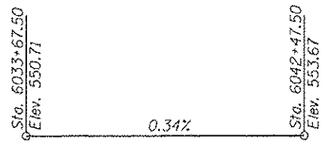


SECTION A-A

STATION 6039+06.52
BUILT BY
STATE OF ILLINOIS
F.A.P. RTE. 326
SEC. (110)R, BR & BR-1
LOADING HL-93
STRUCTURE NO. 032-2541

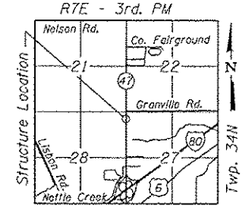
NAME PLATE

See Std. 515001



PROFILE GRADE

(Along IL. Rte. 47 P.G.)



LOCATION SKETCH

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS
f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheet 3.

Precast concrete box culverts shall conform to the design requirements of ASTM C1577.

See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.

LICENSED STRUCTURAL ENGINEER
VINCENT P. TABOR
081-007047
STATE OF ILLINOIS

Vincent P. Tabor 7/15/2013

Vincent P. Tabor — Date
Licensed Structural Engineer
State of Illinois No. 081-007047
Expires 11/30/2014

GENERAL PLAN & ELEVATION
IL. RTE. 47 OVER DRAINAGE DITCH
F.A.P. RTE. 0326-SEC (110)R, BR & BR-1
GRUNDY COUNTY
STATION 6039+06.52
STRUCTURE NO. 032-2541

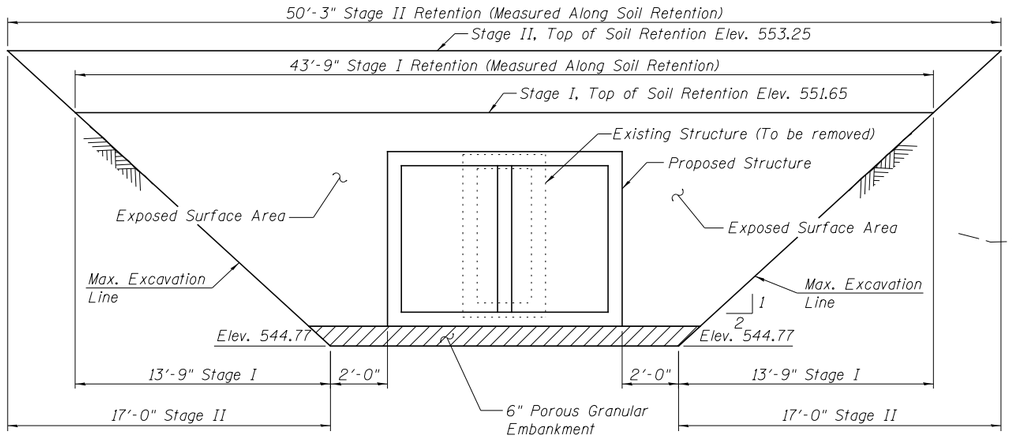
REVISED -	USER NAME =	DESIGNED -	PSS
REVISED -	FILE NAME =	CHECKED -	VPT
REVISED -	PLOT SCALE =	DRAWN -	AJF
REVISED -	PLOT DATE =	CHECKED -	VPT

LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 032-2541
SHEET NO. 1 OF 4 SHEETS

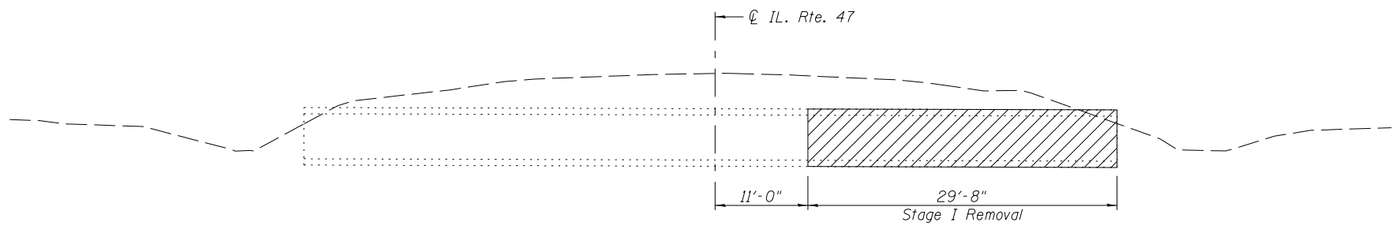
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	308
		CONTRACT NO. 66883		
	ILLINOIS FED. AID PROJECT			



TEMPORARY SOIL RETENTION

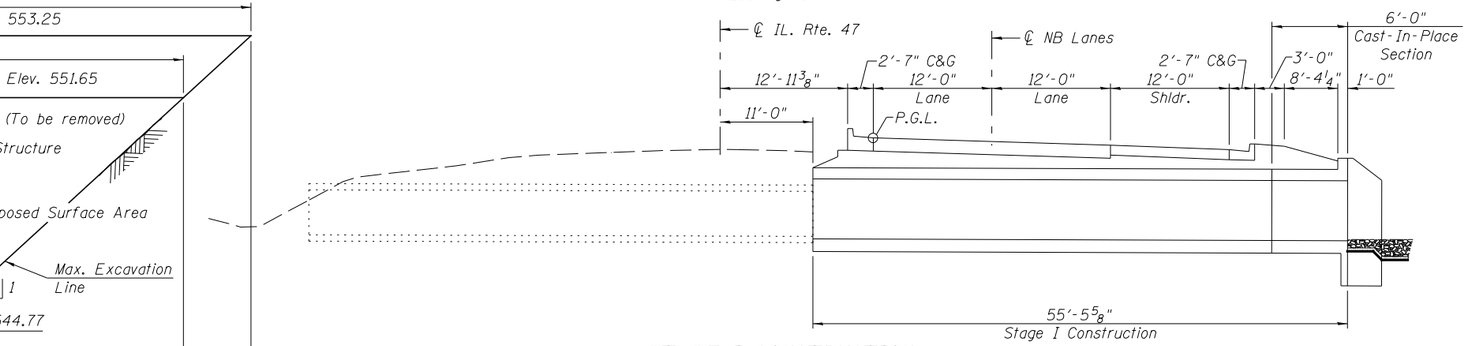
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

Slopes shown are parallel to ℄ of Roadway, unless noted otherwise.



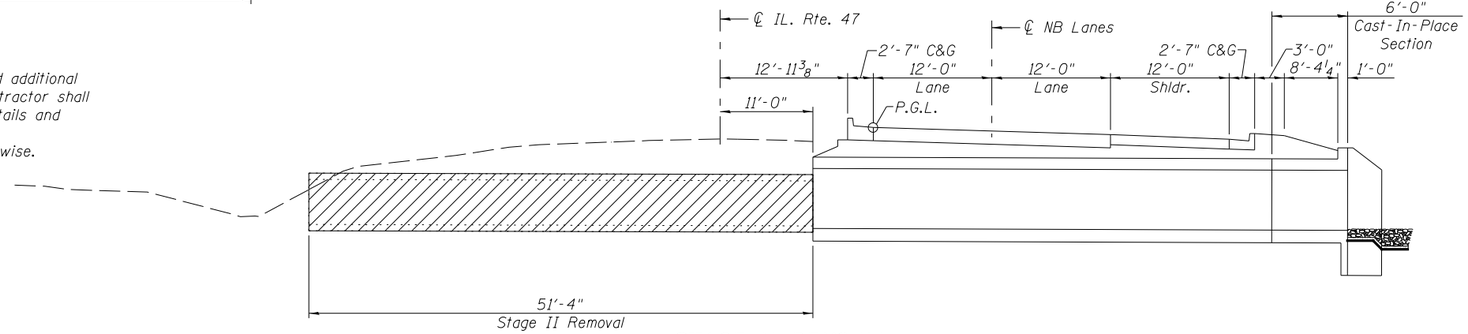
STAGE I REMOVAL

(Looking North)



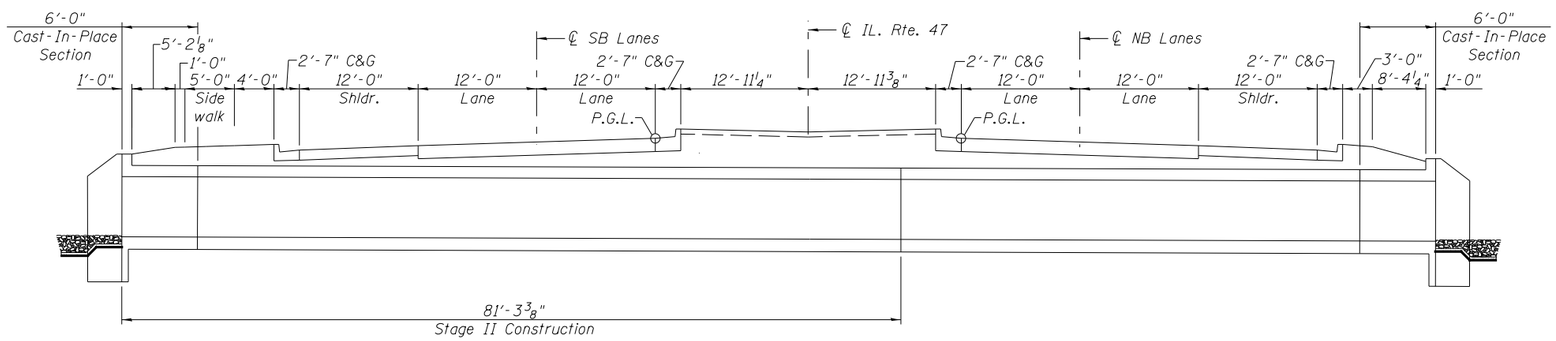
STAGE I CONSTRUCTION

(Looking North)



STAGE II REMOVAL

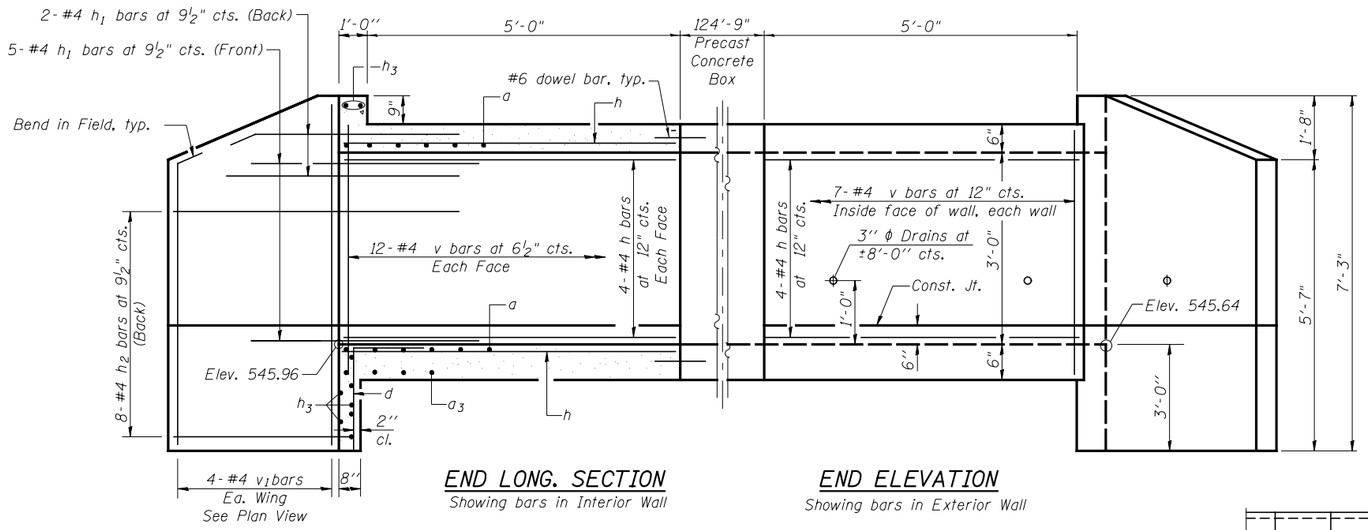
(Looking North)



STAGE II CONSTRUCTION

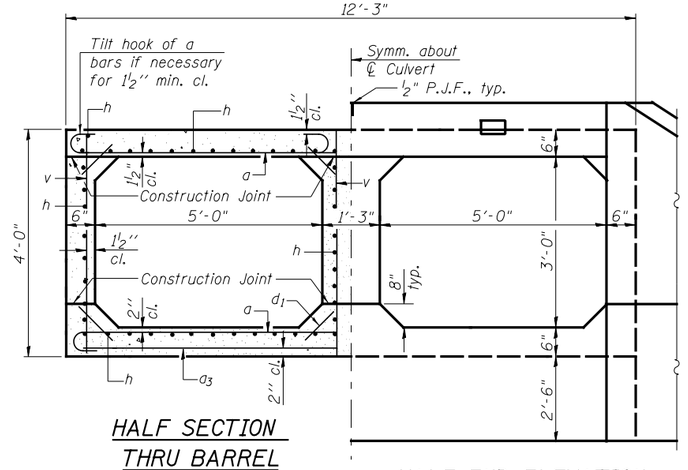
(Looking North)

REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING,LTD. Consulting Engineers Springfield, Illinois	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL DATA STRUCTURE NO. 032–2541	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
REVISED -	FILE NAME =	CHECKED - VPT				326	(110)R, BR & BR-1	GRUNDY	644	309
REVISED -	PLOT SCALE =	DRAWN - AJF						CONTRACT NO. 66B83		
REVISED -	PLOT DATE =	CHECKED - VPT			SHEET NO. 2 OF 4 SHEETS			ILLINOIS FED. AID PROJECT		



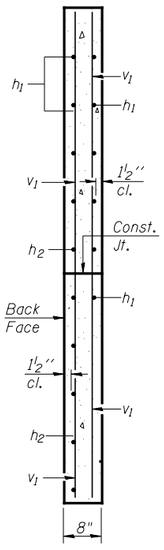
END LONG. SECTION
Showing bars in Interior Wall

END ELEVATION
Showing bars in Exterior Wall

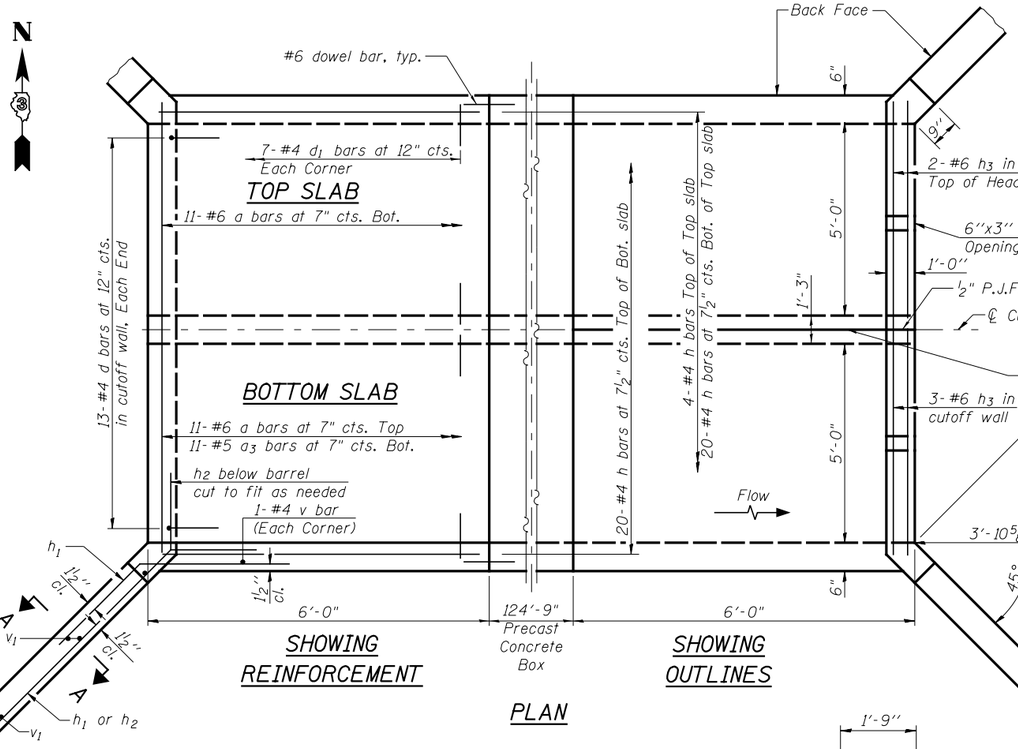


HALF SECTION THRU BARREL

HALF END ELEVATION



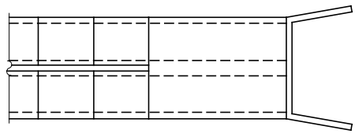
SECTION A-A



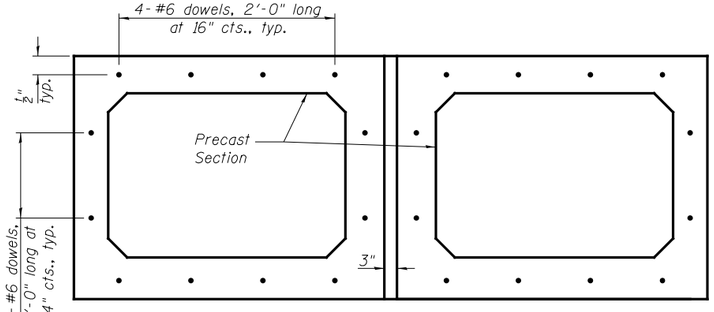
SHOWING REINFORCEMENT

PLAN

SHOWING OUTLINES

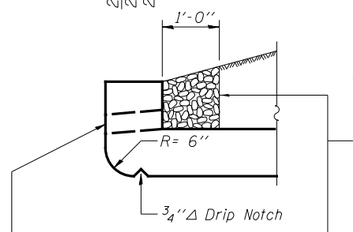


ALIGNED PRECAST SECTIONS PLAN



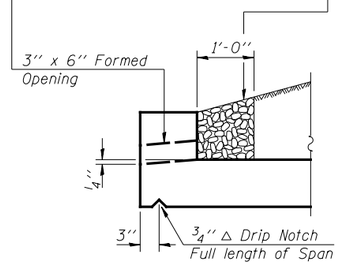
PRECAST CONCRETE CULVERT END ELEVATION

(Section is symmetrical about ℄ culvert)



Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with Concrete Box Culverts.

AT UPSTREAM END

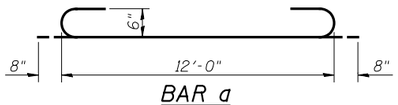


AT DOWNSTREAM END

DRAIN DETAIL

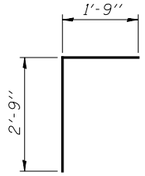
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	66	#6	13'-4"	
a_3	22	#5	12'-0"	
d	26	#4	4'-6"	
d_1	112	#4	1'-0"	
h	120	#4	5'-9"	
h_1	28	#4	8'-0"	
h_2	32	#4	8'-6"	
h_3	10	#6	11'-2"	
v	80	#4	3'-9"	
v_1	16	#4	7'-0"	
Concrete Box Culverts			Cu. Yd.	12.5
Reinforcement Bars			Pound	2990

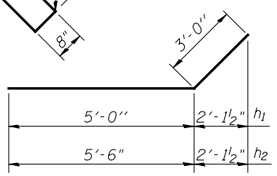


BAR a

Notes:
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.



BAR d



BARS h_1 & h_2

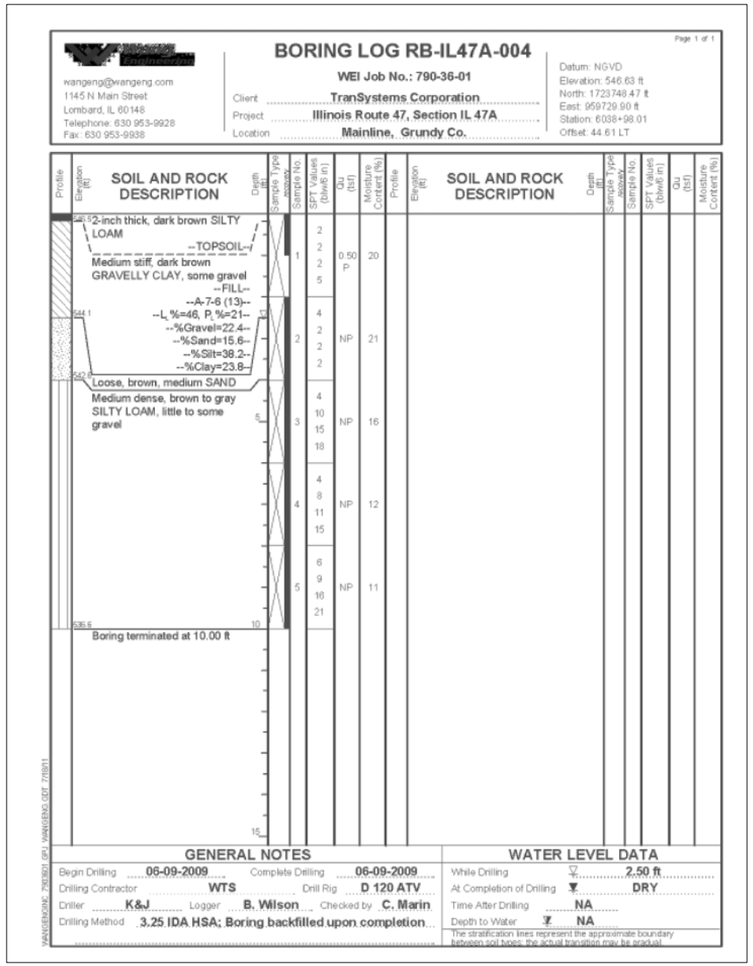
REVISED -	USER NAME =	DESIGNED - PSS	
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
STRUCTURE NO. 032-2541
SHEET NO. 3 OF 4 SHEETS

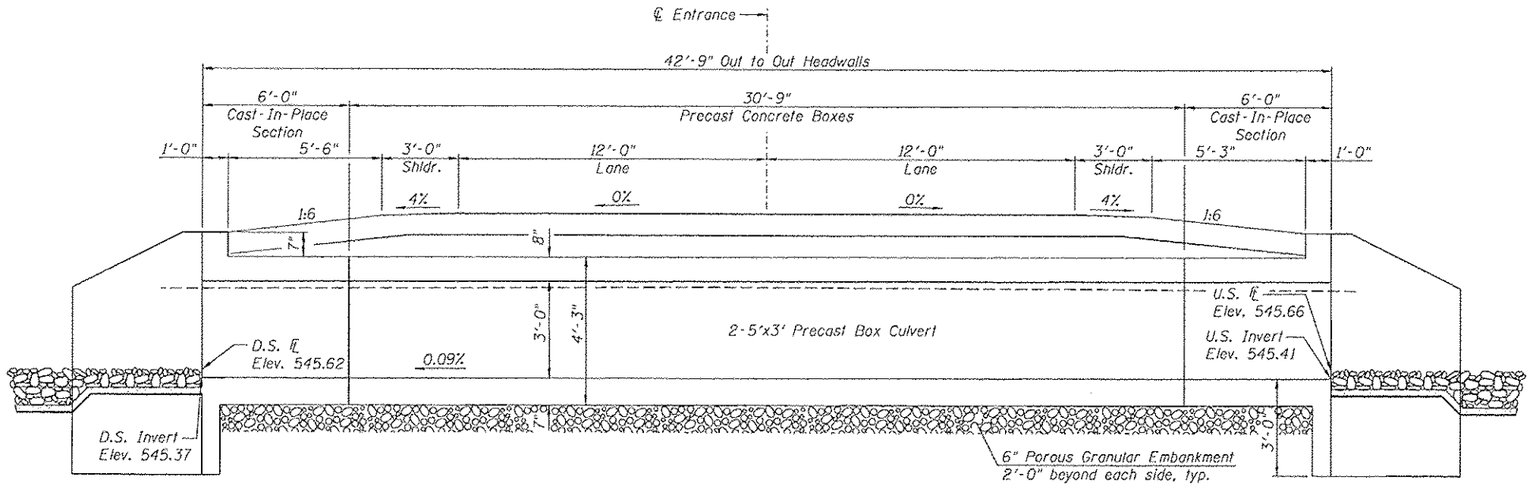
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	310
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			



REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING,LTD. Consulting Engineers Springfield, Illinois	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS STRUCTURE NO. 032–2541	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
REVISED -	FILE NAME =	CHECKED - VPT				326	(110)R, BR & BR-1	GRUNDY	644	311
REVISED -	PLOT SCALE =	DRAWN - AJF							CONTRACT NO. 66B83	
REVISED -	PLOT DATE =	CHECKED - VPT			SHEET NO. 4 OF 4 SHEETS			ILLINOIS	FED. AID PROJECT	

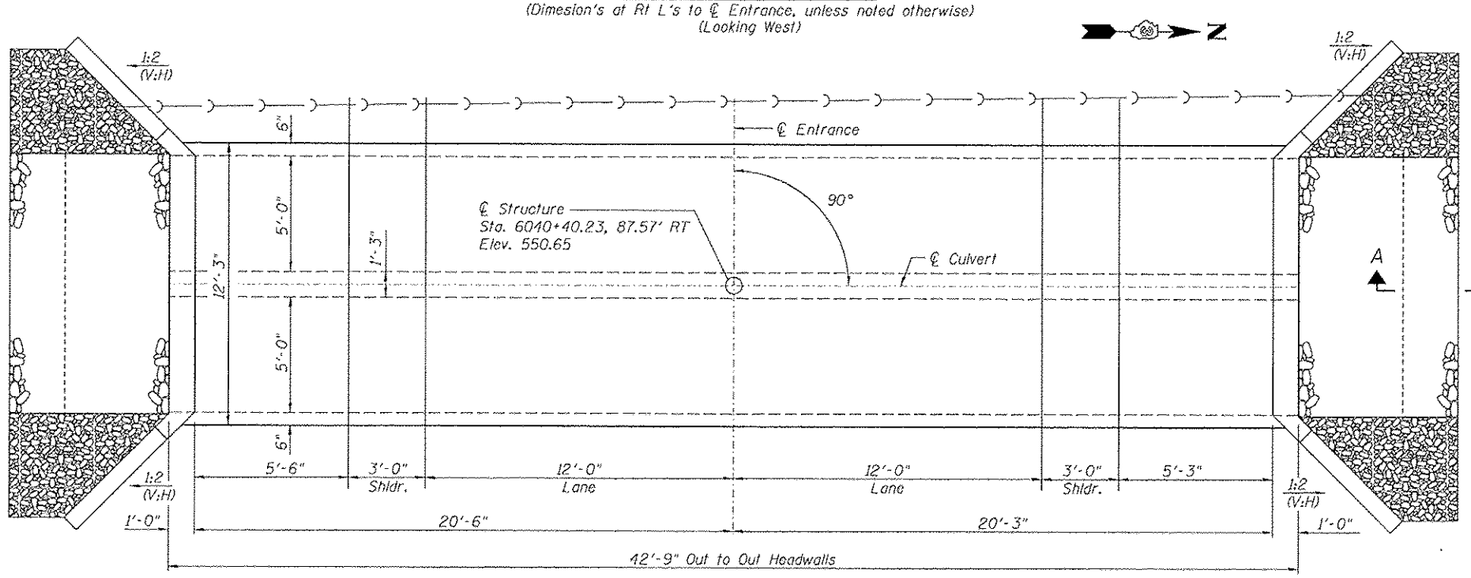
Benchmark: Tag bolt on FH located in front of Grundy County Farm Bureau, Elev. 551.80

Existing Structure: None. Traffic to be detoured during construction.



LONGITUDINAL SECTION

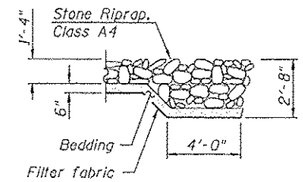
(Dimesion's at Rt L's to ℄ Entrance, unless noted otherwise)
(Looking West)



PLAN

STATION 6040+40.23
BUILT BY
STATE OF ILLINOIS
F.A.P. RTE. 326
SEC. (110)R, BR & BR-1
LOADING HL-93
STRUCTURE NO. 032-2543

NAME PLATE
See Std. 515001



SECTION A-A

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS
f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)

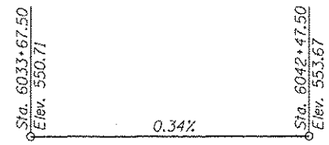
GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheet 2.

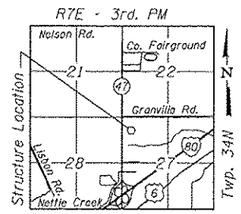
Precast concrete box culverts shall conform to the design requirements of ASTM C1577.

See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.



PROFILE GRADE

(Along IL. Rte. 47 P.G.)



LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	12.9
Stone Riprap, Class A4	Sq. Yd.	31
Filter Fabric	Sq. Yd.	31
Reinforcement Bars	Pound	2480
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	14.2
Precast Concrete Box Culverts 5'x3'	Foot	61.5

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	542.41	542.37

LICENSED STRUCTURAL ENGINEER — VINCENT P. TABOR 081-007047 — STATE OF ILLINOIS

Vincent P. Tabor 7/15/2013

Vincent P. Tabor — Date
Licensed Structural Engineer
State of Illinois No. 081-007047
Expires 11/30/2014

GENERAL PLAN & ELEVATION
ENTRANCE OVER
DRAINAGE DITCH
F.A.P. RTE. 326-SEC (110)R,
BR & BR-1
GRUNDY COUNTY
STATION 6040+40.23
STRUCTURE NO. 032-2543

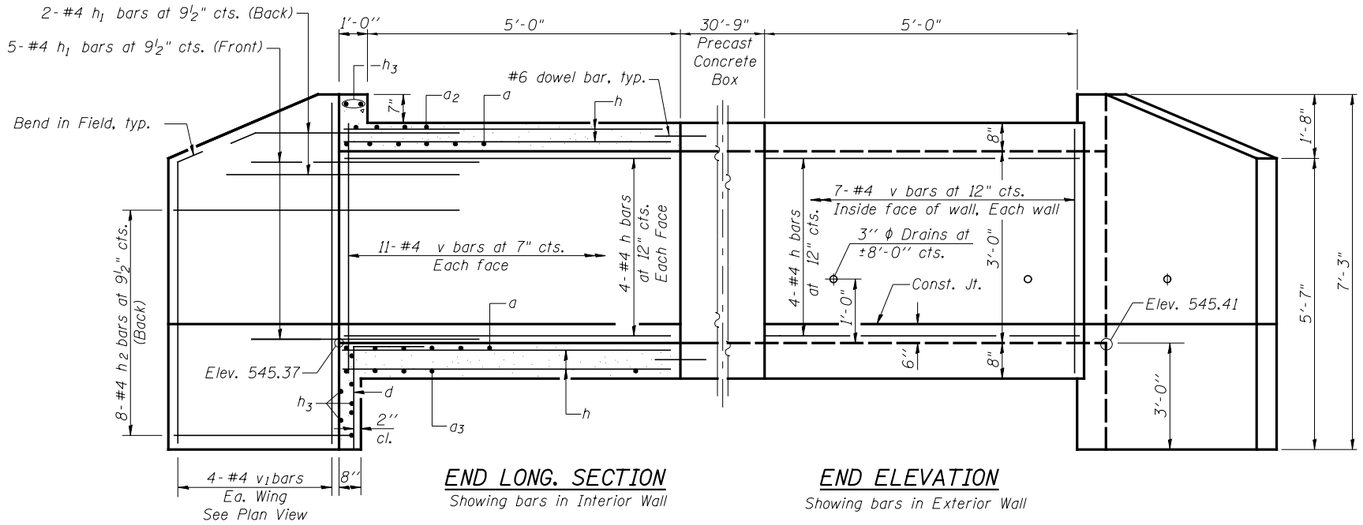
REVISED -	USER NAME =	DESIGNED -	PSS
REVISED -	FILE NAME =	CHECKED -	VPT
REVISED -	PLOT SCALE =	DRAWN -	AJF
REVISED -	PLOT DATE =	CHECKED -	VPT

LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

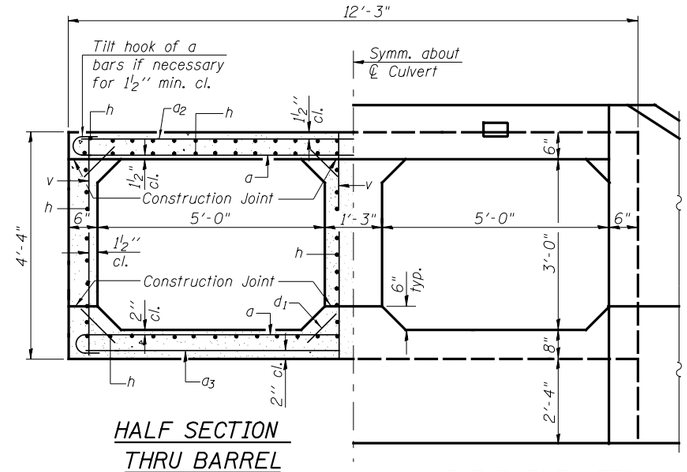
GENERAL PLAN & ELEVATION
STRUCTURE NO. 032-2543
SHEET NO. 1 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	312
		CONTRACT NO. 66883		
	ILLINOIS FED. AID PROJECT			



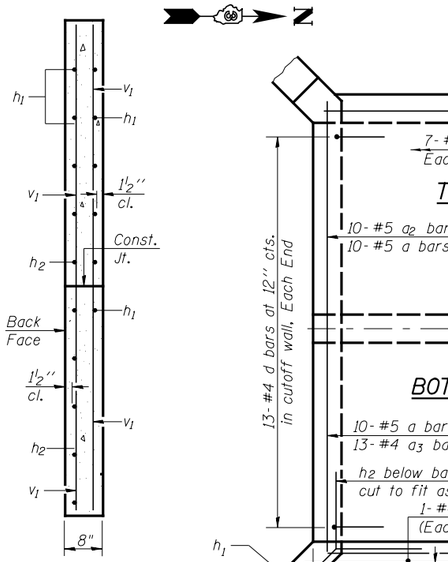
END LONG. SECTION
Showing bars in Interior Wall

END ELEVATION
Showing bars in Exterior Wall



HALF SECTION THRU BARREL

HALF END ELEVATION



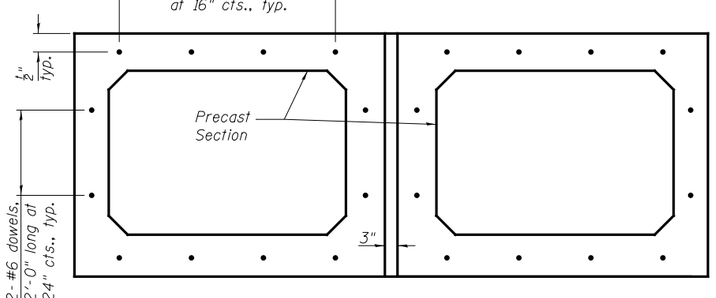
SECTION A-A

SHOWING REINFORCEMENT

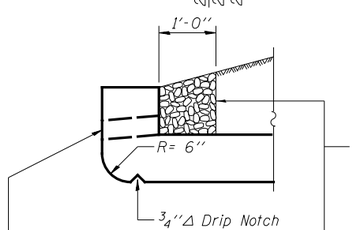
PLAN

SHOWING OUTLINES

ALIGNED PRECAST SECTIONS
PLAN

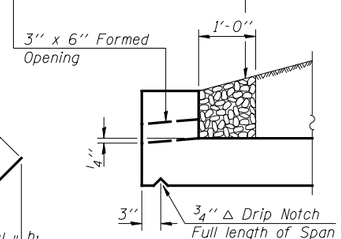


PRECAST CONCRETE
CULVERT END ELEVATION
(Section is symmetrical about ℄ culvert)



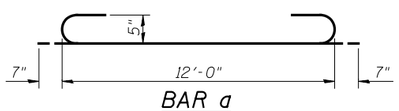
AT UPSTREAM END

Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with Concrete Box Culverts.



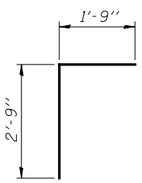
AT DOWNSTREAM END

DRAIN DETAIL

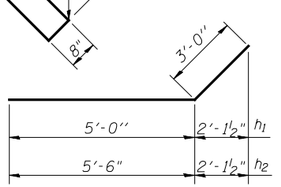


BAR a

Notes:
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.



BAR d



BARS h_1 & h_2

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	40	#5	13'-2"	
a_2	20	#5	12'-0"	
a_3	26	#4	12'-0"	
d	26	#4	4'-6"	
d_1	112	#4	1'-2"	
h	136	#4	5'-9"	
h_1	28	#4	8'-0"	
h_2	32	#4	8'-6"	
h_3	10	#6	11'-2"	
v	76	#4	4'-1"	
v_1	16	#4	7'-0"	
Concrete Box Culverts			Cu. Yd.	14.2
Reinforcement Bars			Pound	2480

REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
STRUCTURE NO. 032-2543
SHEET NO. 2 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	313
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Date 2/15/12

ROUTE IL 47 (FAP 326) DESCRIPTION Box Culvert under a Field Entrance East of IL 47, 0.7 Miles North of I-80 (Structure 8A) LOGGED BY Larry Myers

SECTION (109, 110)R,R-1, 110BR & BR-1 LOCATION NW 1/4, SEC. 27, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Structure 8A (Prop.)
Station 6040+40, 82' RT

BORING NO. 1
Station 6040+79
Offset 79.00ft Rt.
Ground Surface Elev. 548.87 ft

Surface Water Elev. ft
Stream Bed Elev. ft
Groundwater Elev.:
First Encounter 536.9 ft
Upon Completion 540.9 ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered black silty clay loam, brown silty clay loam.				
	546.37			
Very stiff to soft brown and gray silty clay loam fill - Fill for sanitary sewer line. Free water at 12 ft.		3 3 3	2.5 P	16.6
	-5			
		2 2 2	2.0 P	19.1
		1		
	-7			
		1 2	1.0 P	20.1
	-8			
		WH WH WH	0.5 P	25.5
	536.37			
Hard gray silty loam till with silt layers.		9 12 16	5.6 S	13.7
** Max Rmac at 5%.	-15			
		23 31 47	11.5** S	20.1
Note: Attempted to perform a boring at the south end of the proposed box culvert. Encountered trench backfill (gravel) for an unmarked sanitary sewer line on three separate attempts. Boring could not be obtained due to the unknown location of the sanitary sewer line.		18		
		21 24	10.8 S	18.4
	-20			
	-25			
		21 23 31	10.8 S	18.9
End of Boring	522.37			
	-30			
	-35			
	-40			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
		19 22 27	10.5 S	15.2
		19 21 21	10.5 S	17.6

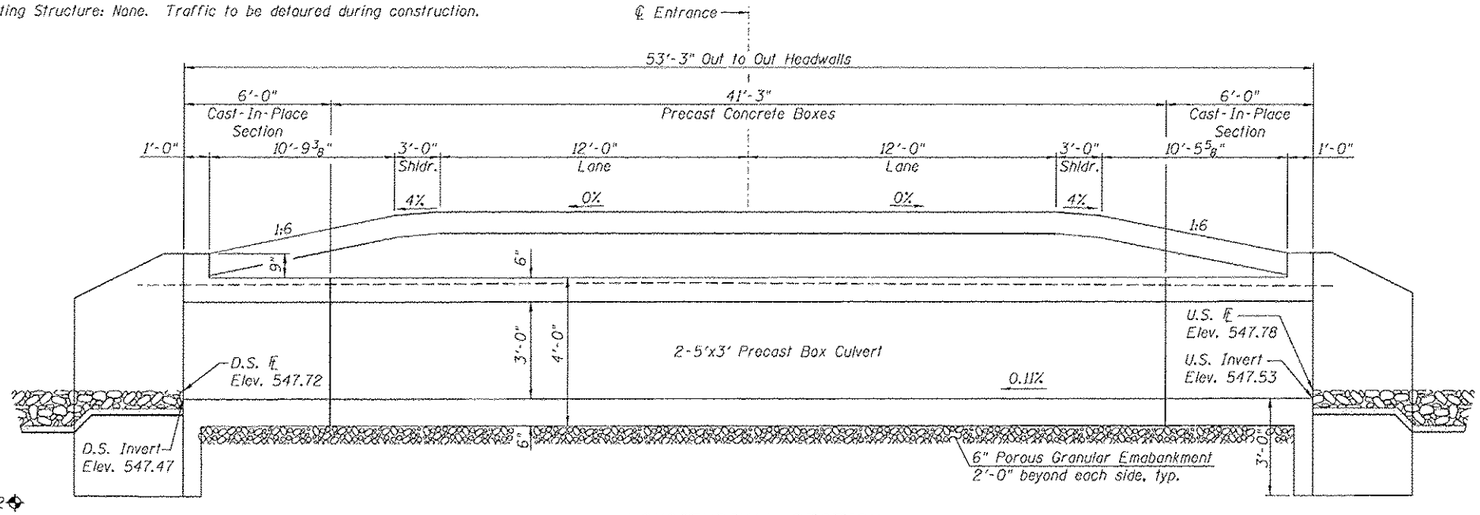
The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING,LTD. Consulting Engineers Springfield, Illinois	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS STRUCTURE NO. 032–2543	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
REVISED -	FILE NAME =	CHECKED - VPT				326	(110)R, BR & BR-1	GRUNDY	644	314
REVISED -	PLOT SCALE =	DRAWN - AJF						CONTRACT NO. 66B83		
REVISED -	PLOT DATE =	CHECKED - VPT			SHEET NO. 3 OF 3 SHEETS			ILLINOIS FED. AID PROJECT		

Benchmark: Cut "X" on NE corner of handhole cover. Handhole is the middle one of the three located in east side of IL. Rte. 47 across from Prologis Prkwy. entrance. Elev. 554.26

Existing Structure: None. Traffic to be detoured during construction.

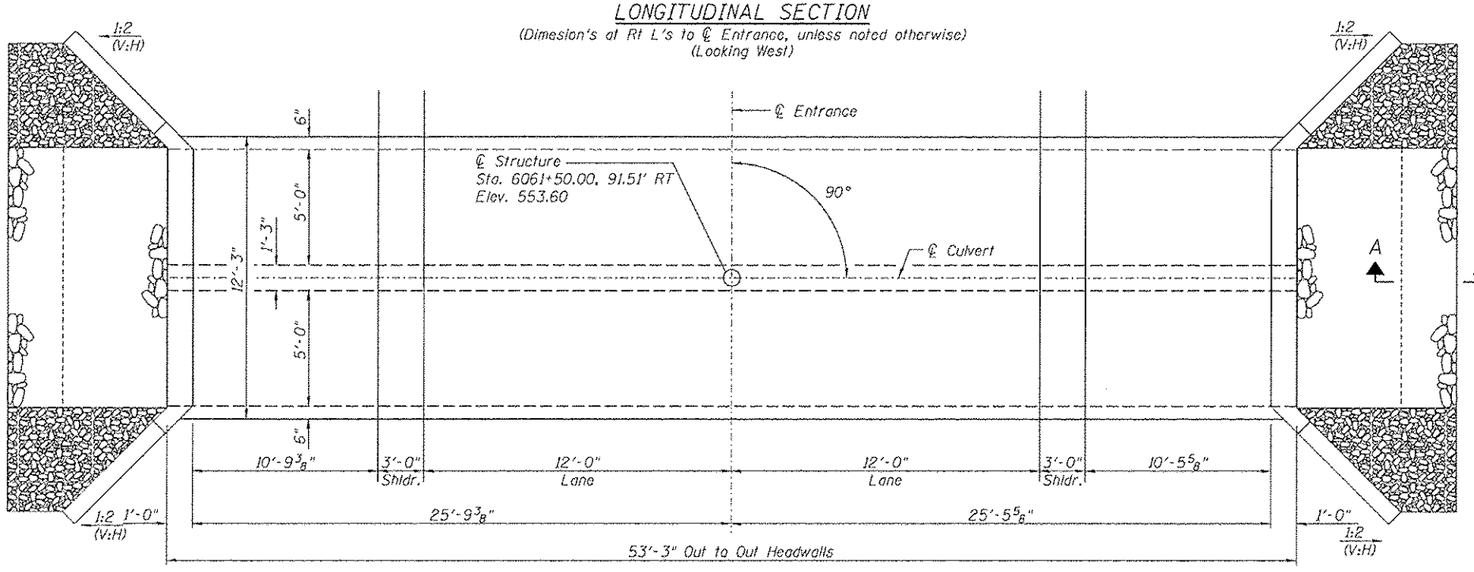


2

LONGITUDINAL SECTION

(Dimesion's at Rt L's to ℄ Entrance, unless noted otherwise)
(Looking West)

3



PLAN

Z

Flow

STATION 6061+50.00
BUILT BY
STATE OF ILLINOIS
F.A.P. RTE. 326
SEC. (110)R, BR & BR-1
LOADING HL-93
STRUCTURE NO. 032-2545

NAME PLATE

See Std. 515001

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)

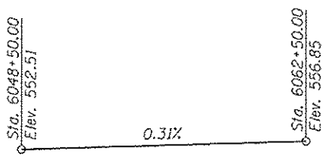
GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheet 2.

Precast concrete box culverts shall conform to the design requirements of ASTM C1577.

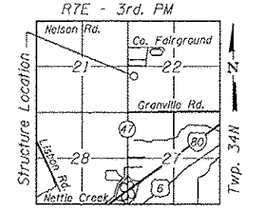
See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.



PROFILE GRADE

(Along IL. Rte. 47 P.G.)

RTE - 3rd. PM



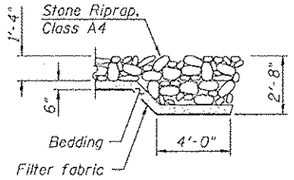
LOCATION SKETCH

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	16.1
Stone Riprap, Class A4	Sq. Yd.	30
Filter Fabric	Sq. Yd.	30
Reinforcement Bars	Pound	2990
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	12.5
Precast Concrete Box Culverts 5'x3'	Foot	82.5

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	544.53	544.47



SECTION A-A

LICENSED STRUCTURAL ENGINEER
VINCENT P. TABOR
081-007047
STATE OF ILLINOIS

Vincent P. Tabor 7/15/2013
Vincent P. Tabor — Date
Licensed Structural Engineer
State of Illinois No. 081-007047
Expires 11/30/2014

GENERAL PLAN & ELEVATION
ENTRANCE OVER
DRAINAGE DITCH
F.A.P. RTE. 326-SEC (110)R, BR & BR-1
GRUNDY COUNTY
STATION 6061+50.00
STRUCTURE NO. 032-2545

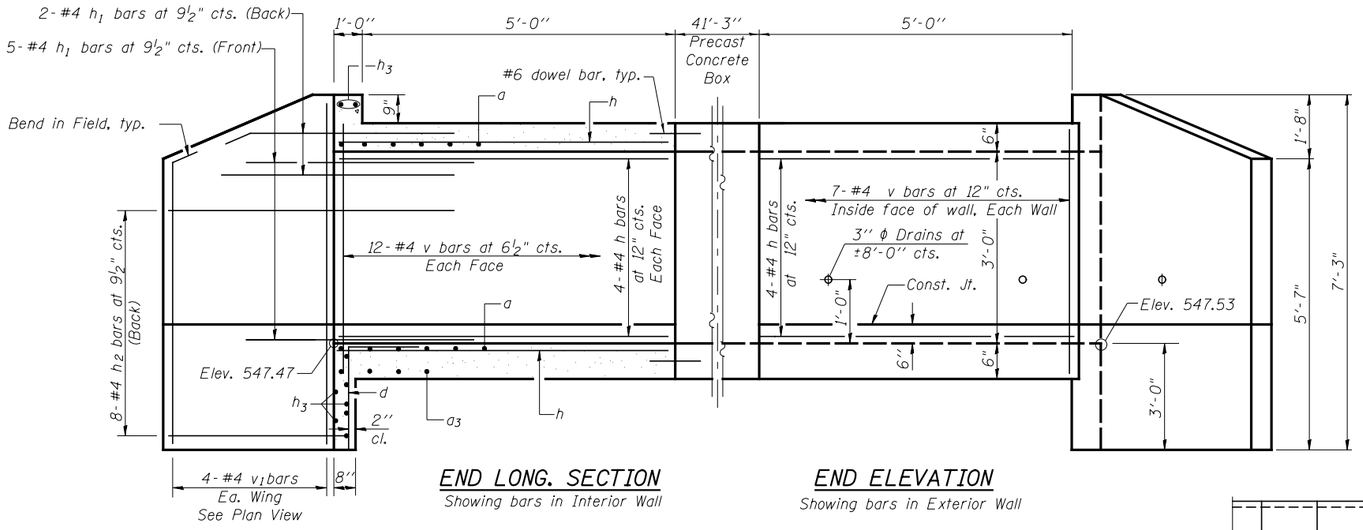
REVISED -	USER NAME =	DESIGNED - PSS
REVISED -	FILE NAME =	CHECKED - VPT
REVISED -	PLOT SCALE =	DRAWN - AJF
REVISED -	PLOT DATE =	CHECKED - VPT

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

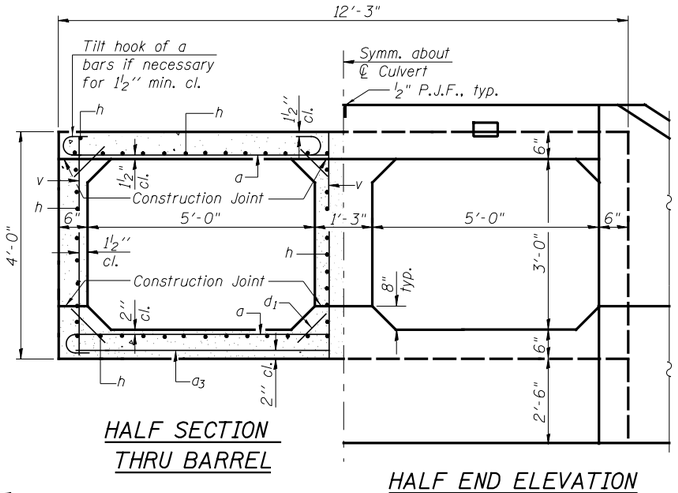
GENERAL PLAN & ELEVATION
STRUCTURE NO. 032-2545
SHEET NO. 1 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	315
		CONTRACT NO. 66883		
		ILLINOIS FED. AID PROJECT		



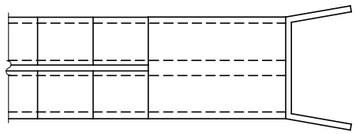
END LONG. SECTION
Showing bars in Interior Wall

END ELEVATION
Showing bars in Exterior Wall

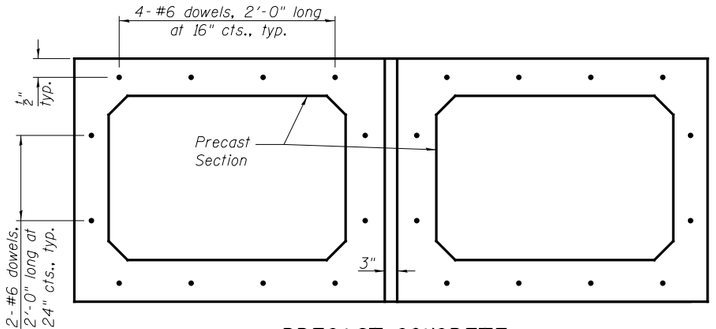


HALF SECTION THRU BARREL

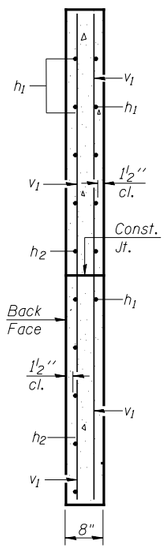
HALF END ELEVATION



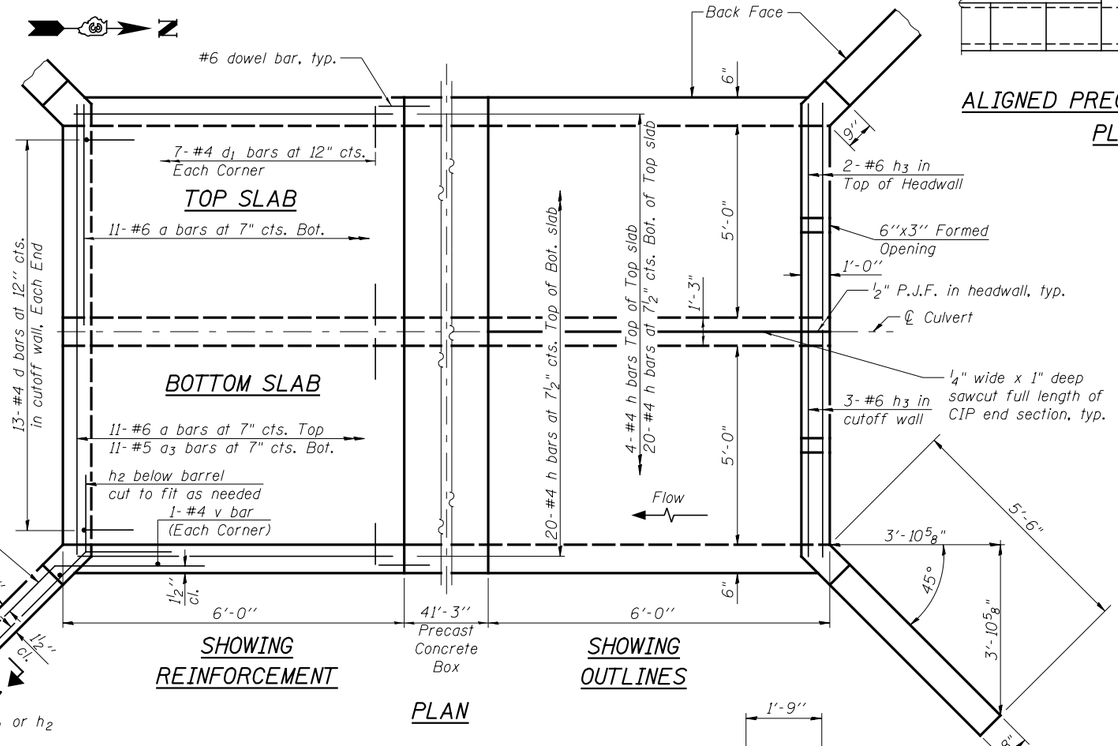
ALIGNED PRECAST SECTIONS PLAN



PRECAST CONCRETE CULVERT END ELEVATION
(Section is symmetrical about ℄ culvert)



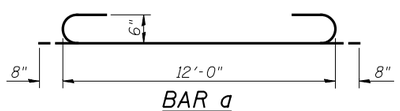
SECTION A-A



SHOWING REINFORCEMENT

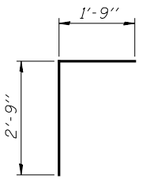
SHOWING OUTLINES

PLAN

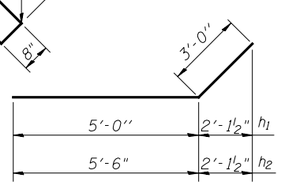


BAR a

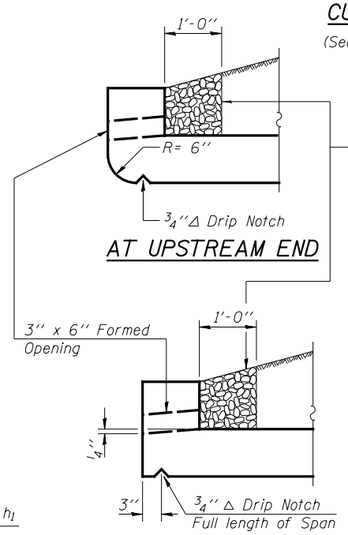
Notes:
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.



BAR d



BARS h_1 & h_2



AT UPSTREAM END

AT DOWNSTREAM END

DRAIN DETAIL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	66	#6	13'-4"	
a_3	22	#5	12'-0"	
d	26	#4	4'-6"	
d_1	112	#4	1'-0"	
h	120	#4	5'-9"	
h_1	28	#4	8'-0"	
h_2	32	#4	8'-6"	
h_3	10	#6	11'-2"	
v	80	#4	3'-9"	
v_1	16	#4	7'-0"	
Concrete Box Culverts			Cu. Yd.	12.5
Reinforcement Bars			Pound	2990

REVISED -	USER NAME =	DESIGNED -	PSS
REVISED -	FILE NAME =	CHECKED -	VPT
REVISED -	PLOT SCALE =	DRAWN -	AJF
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Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
STRUCTURE NO. 032-2545
SHEET NO. 2 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	316
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Page 1 of 1

Date 1/24/12

ROUTE IL 47 (FAP 326) DESCRIPTION Box Culvert under a Field Entrance East of IL 47, 1.1 Miles North of I-80 (Structure 9) LOGGED BY Larry Myers

SECTION (109, 110)R,R-1, 110BR & BR-1 LOCATION SW 1/4, SEC. 22, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Structure 9 (Prop.)
Station 6080+40, 80' Rt

BORING NO. 2
Station 6080+76
Offset 27.00ft Rt.
Ground Surface Elev. 555.42 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered White Shoulder Stone, Black/Brown Silty Clay Loam Fill			
552.92			
Very Stiff Black & Brown Silty Clay Loam Fill	2 3 4	3.0 P	17.6
-5	5 4 4	3.8 P	21.3
547.92	4 5 6	3.9 S	17.6
Hard Brown Silty Clay Loam Till			
545.42 -10	8 11 14	8.3 S	13.8
Hard Gray Silty Clay Loam Till			
	9 10 12	8.0 S	11.4
540.92			
Hard Gray Silty Loam/Silty Clay Loam Till with some Silt Layers ** Max Rimac @ 5% -15	16 16 26	11.5** S	11.7
	12 14 29	11.5** S	8.4
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard Gray Silty Clay Loam/Silty Clay Loam Till with some Silt Layers *(continued)*			
533.92			
End of Boring	23 33 40	11.5** S	12.2
-25			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Page 1 of 1

Date 1/24/12

ROUTE IL 47 (FAP 326) DESCRIPTION Box Culvert under a Field Entrance East of IL 47, 1.1 Miles North of I-80 (Structure 9) LOGGED BY Larry Myers

SECTION (109, 110)R,R-1, 110BR & BR-1 LOCATION SW 1/4, SEC. 22, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Structure 9 (Prop.)
Station 6080+40, 80' Rt

BORING NO. 3
Station 6082+19
Offset 26.00ft Rt.
Ground Surface Elev. 555.29 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered White Shoulder Stone, Black & Brown Silty Clay Loam Fill			
552.79			
Very Stiff Black & Brown Silty Clay Loam Fill	3 4 5	3.0 P	23.6
-5 550.29	4 4 5	3.5 P	15.2
Very Stiff Brown & Gray Silty Loam Till	4		
	4 3	3.0 P	17.4
545.79			
Hard Brown Silty Loam/Silty Clay Loam Till -10	4 5 6	4.1 S	13.7
543.29			
Hard Gray Silty Clay Loam/Silty Loam Till	8 9 10	7.6 S	12.2
-15	21 32 37	11.5** S	8.3
*** Max Rimac @ 0%	22		
-20	41 42	12.1*** S	5.4

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard Gray Silty Clay Loam/Silty Loam Till *(continued)*	31 58 79	12.1*** S	6.5
533.79			
End of Boring			
-25			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

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REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

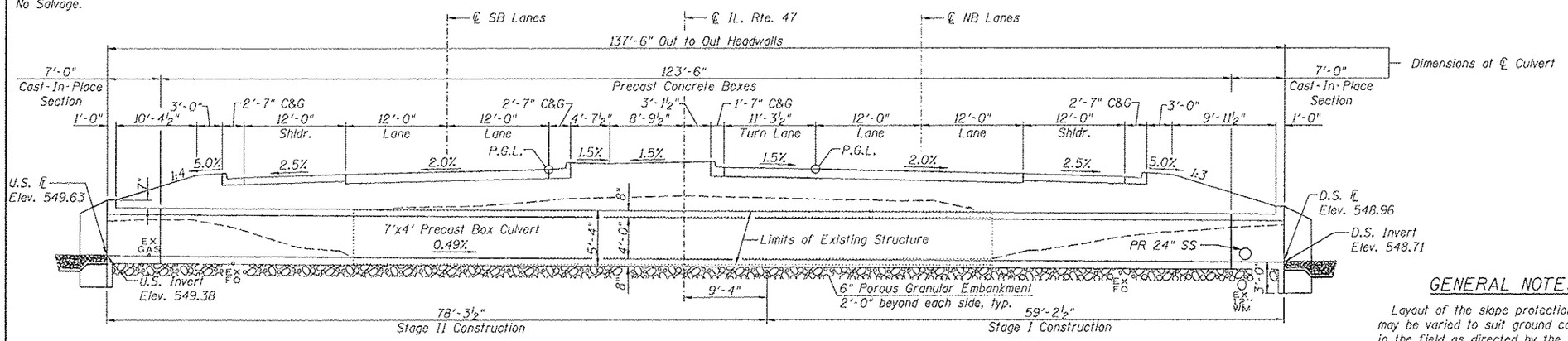
SOIL BORINGS
STRUCTURE NO. 032-2545
SHEET NO. 3 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	317
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

Benchmark: R.R. spike in west face of first P.P. north of south entrance to Grundy Co. Fair Grounds, Elev. 553.42.

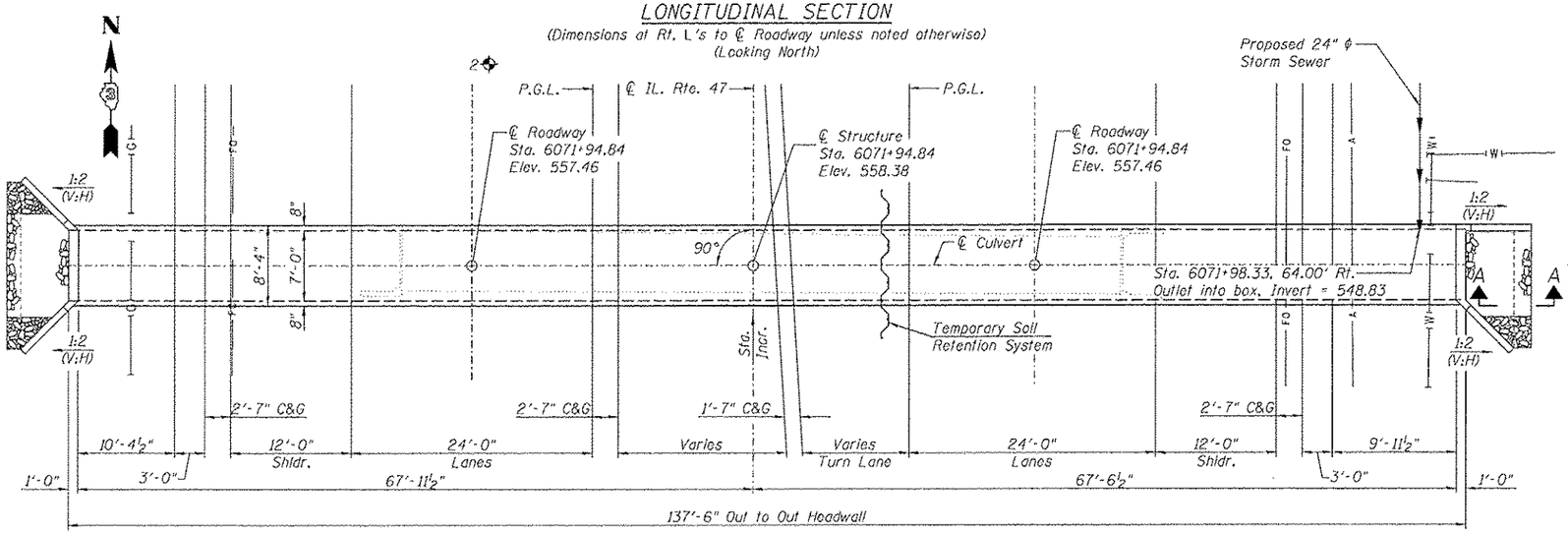
Existing Structure: The existing structure consists of a 6' x 4' precast box culvert with concrete wingwalls. The culvert is approximately 74'-0" in length with no skew. Existing structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

No Salvage.



LONGITUDINAL SECTION

(Dimensions at Rt. L's to ℄ Roadway unless noted otherwise)
(Looking North)



PLAN

WATERWAY INFORMATION

Drainage Area = 0.69 sq mi
Exist. Low Grade Elev. 554.16
Prop. Low Grade Elev. 555.21

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	100	23	25	553.1	0.4	0.0	553.5	553.0
Design	50	149	24	26	553.4	0.9	0.4	554.3	553.8
Base	100	168	24	27	553.4	1.2	0.7	554.6	554.1
Overtopping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	213	24	27	553.5	1.6	1.4	555.1	554.9

10 year velocity through Existing structure = 4.3 fps
10 year velocity through Proposed structure = 4.0 fps

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	31.4
Stone Riprap, Class A4	Sq. Yd.	24
Filter Fabric	Sq. Yd.	24
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	1850
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	13.7
Precast Concrete Box Culverts 7'x4'	Foot	125.5
Temporary Soil Retention System	Sq. Ft.	281

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	546.38	545.71

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS
f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)

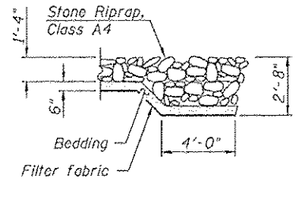
GENERAL NOTES

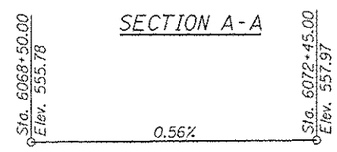
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheet 3.

Precast concrete box culverts shall conform to the design requirements of ASTM C1577.

See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.





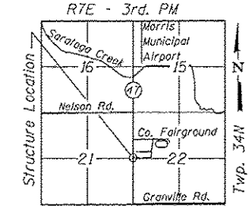
PROFILE GRADE

(Along IL. Rte. 47 P.G.)

STATION 6071+94.84
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RTE. 326
SEC. (110)R, BR & BR-1
LOADING HL-93
STRUCTURE NO. 032-2538

NAME PLATE

See Std. 515001



LOCATION SKETCH

LICENSED STRUCTURAL ENGINEER
VINCENT P. TABOR
081-007047
STATE OF ILLINOIS

Vincent P. Tabor 7/15/2013

Vincent P. Tabor
Licensed Structural Engineer
State of Illinois No. 081-007047
Expires 11/30/2014

Date

GENERAL PLAN & ELEVATION
IL. RTE. 47 OVER DRAINAGE DITCH
F.A.P. RTE. 326-SEC (110)R, BR & BR-1
GRUNDY COUNTY
STATION 6071+94.84
STRUCTURE NO. 032-2538

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REVISED -	PLOT DATE =	CHECKED -	VPT

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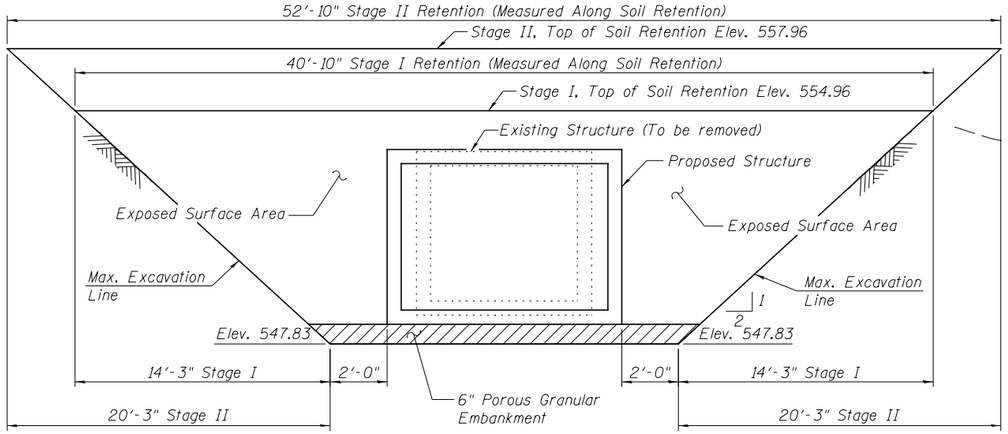
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 032-2538
SHEET NO. 1 OF 4 SHEETS

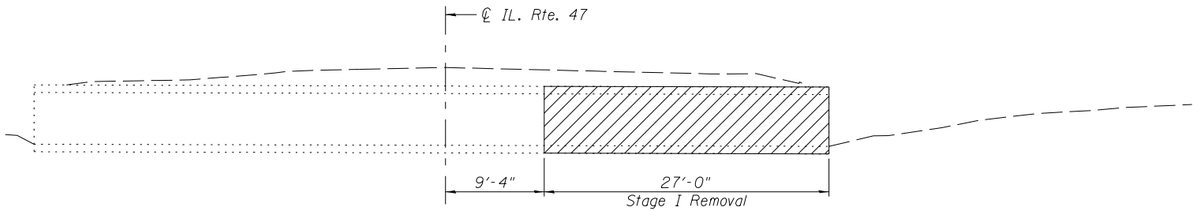
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	318
		CONTRACT NO. 66883		
		ILLINOIS FED. AID PROJECT		



TEMPORARY SOIL RETENTION

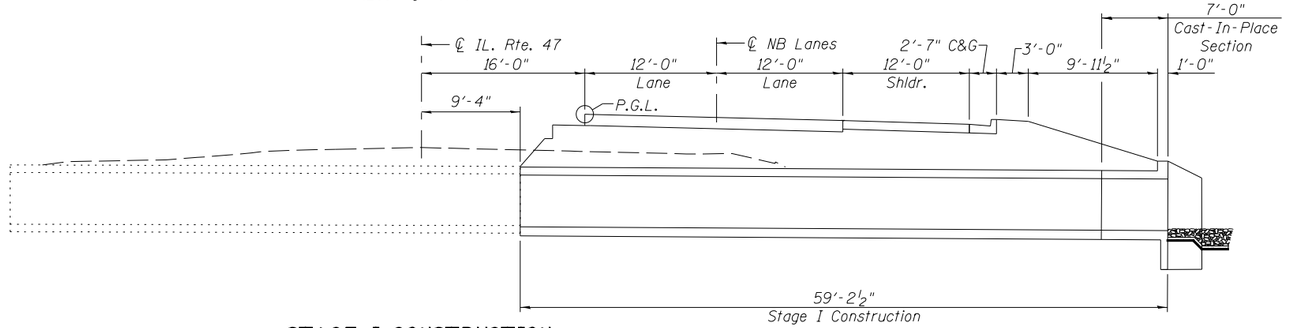
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

Slopes shown are parallel to ℄ of Roadway, unless noted otherwise.



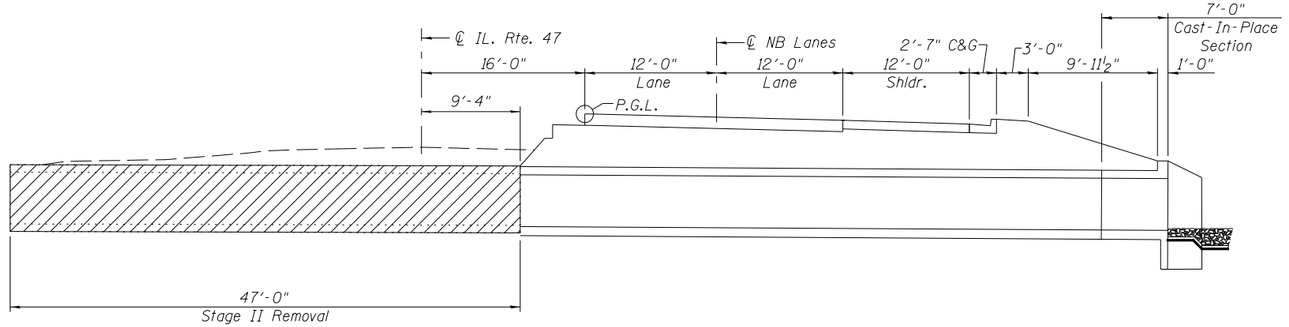
STAGE I REMOVAL

(Looking North)



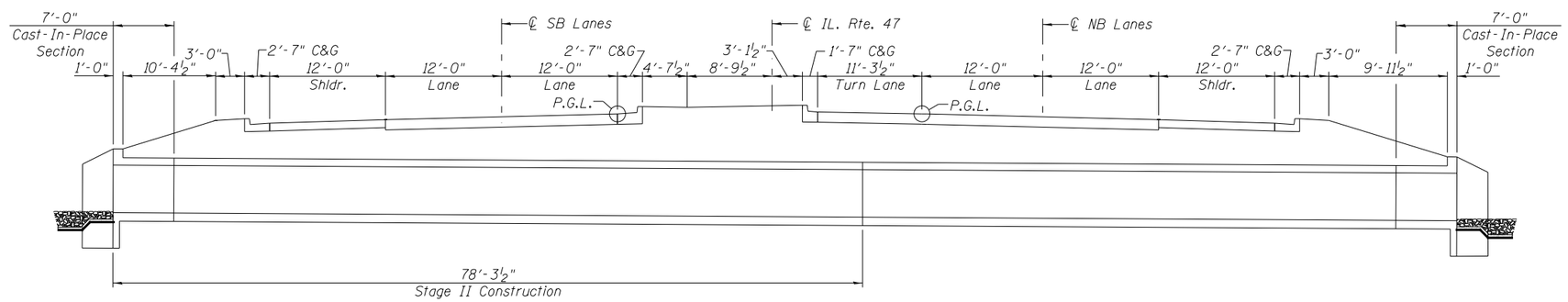
STAGE I CONSTRUCTION

(Looking North)



STAGE II REMOVAL

(Looking North)



STAGE II CONSTRUCTION

(Looking North)

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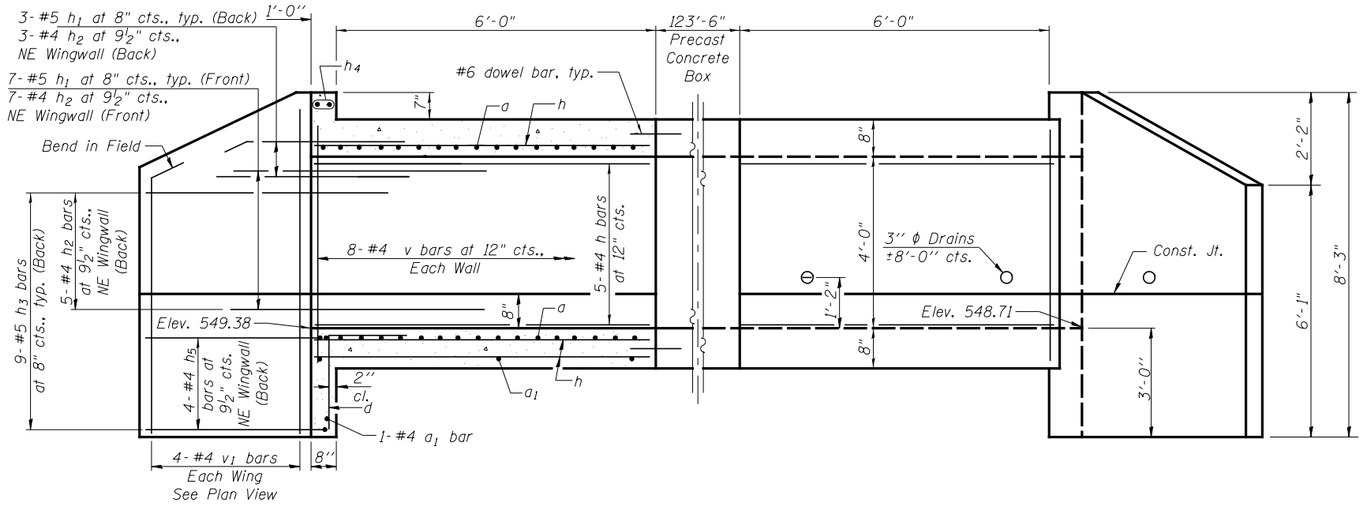
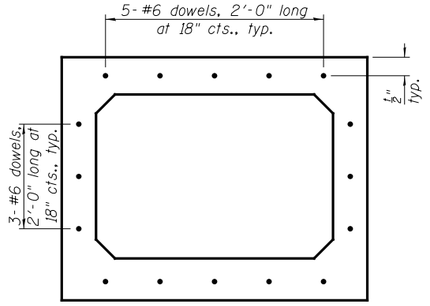
GENERAL DATA
STRUCTURE NO. 032-2538
SHEET NO. 2 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	319
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			



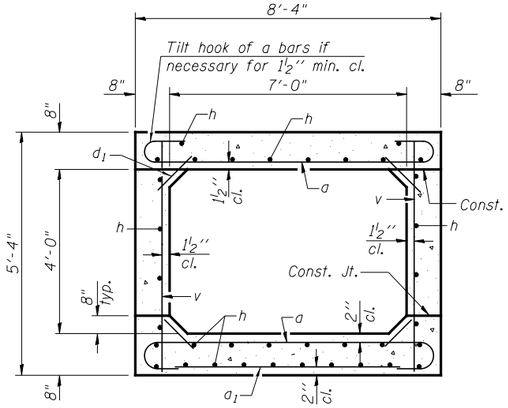
END LONG. SECTION

END ELEVATION

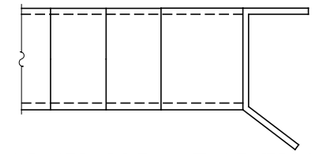


PRECAST CONCRETE CULVERT END ELEVATION

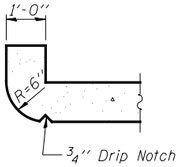
(Section is symmetrical about ℄ culvert)



SECTION THRU BARREL

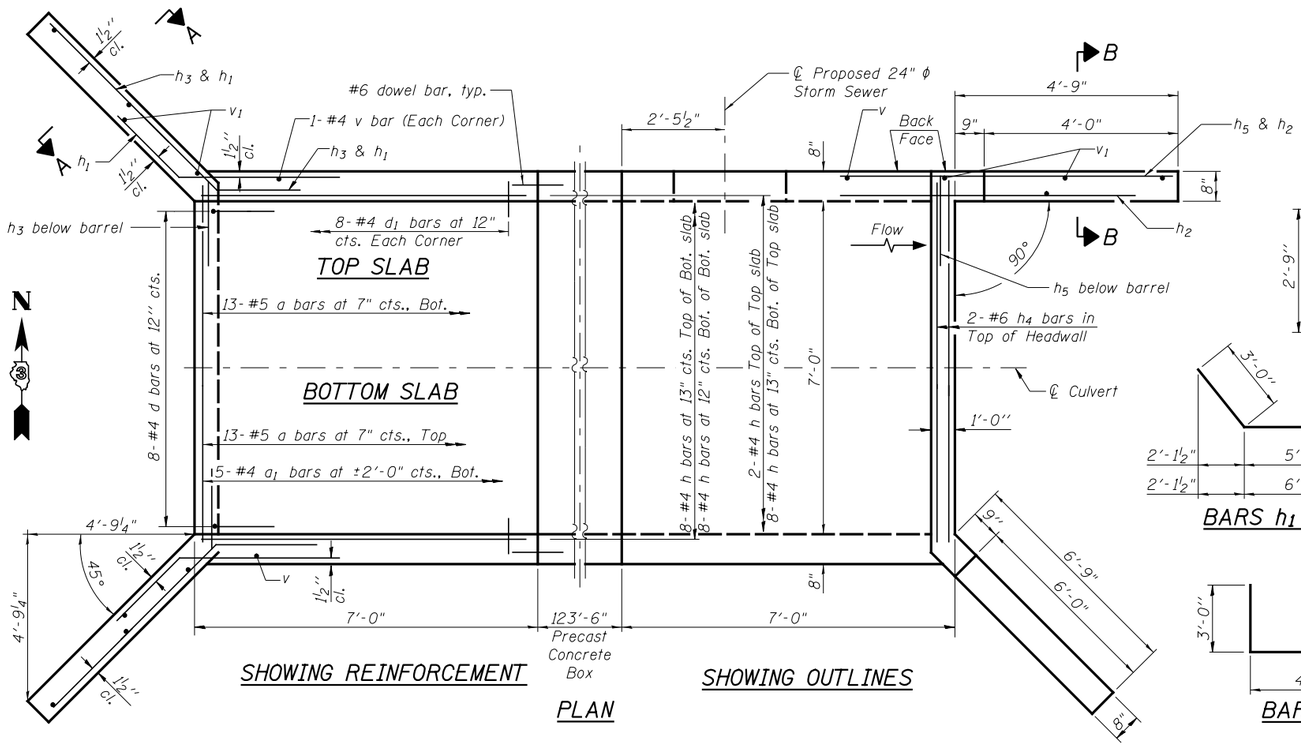


ALIGNED PRECAST SECTIONS PLAN



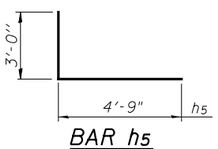
SECTION THRU HEADWALL

(Up Stream End Only)

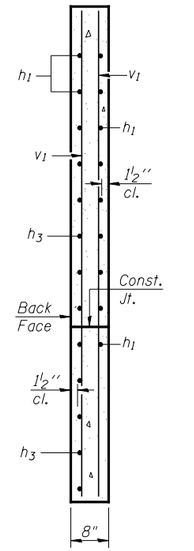


BAR d

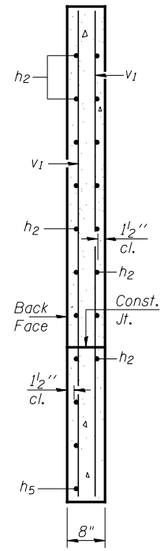
BARS h_1 & h_3



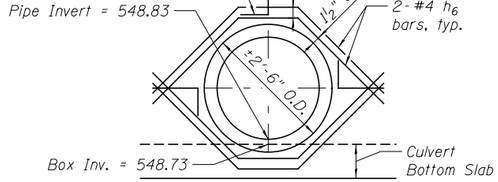
BAR h_5



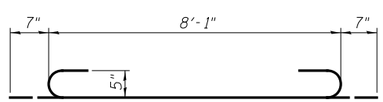
SECTION A-A



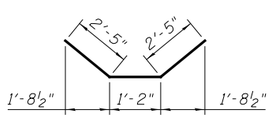
SECTION B-B



ADDITIONAL REINFORCEMENT FOR 24" ϕ PIPE OPENING



BAR a



BAR h_6

Notes:
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	52	#5	9'-3"	
a_1	12	#4	8'-1"	
d	16	#4	4'-6"	
d_1	64	#4	1'-2"	
h	62	#4	6'-9"	
h_1	30	#5	8'-0"	
h_2	15	#4	8'-9"	
h_3	27	#5	9'-9"	
h_4	4	#6	6'-11"	
h_5	4	#4	7'-9"	
h_6	4	#4	6'-0"	
v	36	#4	5'-1"	
v_1	16	#4	8'-0"	
Concrete Box Culverts			Cu. Yd.	13.7
Reinforcement Bars			Pound	1850

REVISED -	USER NAME =	DESIGNED - PSS	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
STRUCTURE NO. 032-2538
SHEET NO. 3 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	320
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Page 1 of 1

Date 1/5/12

ROUTE IL 47 (FAP 326) DESCRIPTION IL 47 over a Unnamed Tributary to East Fork of Nettle Creek, 1.41 Miles North of I-80 (WC 145) LOGGED BY Larry Myers

SECTION 110-110-B LOCATION SW 1/4, SEC. 22, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 032-2502 (Exist.) 032-2538 (Prop.)
Station 6071+95 (Prop.)

BORING NO. 1
Station 6071+65
Offset 28.00ft Rt.
Ground Surface Elev. 554.28 ft

Surface Water Elev. 549.91 ft
Stream Bed Elev. ft
Groundwater Elev.:
First Encounter Dry ft
Upon Completion 530.3 ft ▽
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				Augered Black Silty Clay Loam Fill
551.78				
	2 4 5	3.0 P	22.1	Very Stiff Black Silty Clay Loam Fil
549.28	3 4 3	2.0 P	25.2	Stiff to Very Stiff Brown & Gray Silty Clay Loam Till
547.28	5 7 9	5.1 S	14.0	Hard Brown & Gray Silty Loam Till
	8 11 17	7.1 S	13.4	
542.28	8 10 15	7.6 S	10.3	Hard Gray Silty Clay Loam Till
	9 11 18	8.1 S	9.3	
	11 17 24	8.1 S	18.8	
				Hard Gray Silty Clay Loam Till *(continued)*
532.28				
	26 72 93	>4.5 P	4.0	Hard Gray Silty Clay Loam/Silty Loam Till - Extremely Hard & Brittle
530.28 ▽				
	20 37 44	11.5 *	9.4	Hard Grayish Brown Silty Clay Loam Till * Maxed Rimac @ 5%
527.78				End of Boring

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Page 1 of 1

Date 1/5/12

ROUTE IL 47 (FAP 326) DESCRIPTION IL 47 over a Unnamed Tributary to East Fork of Nettle Creek, 1.41 Miles North of I-80 (WC 145) LOGGED BY Larry Myers

SECTION 110-110-B LOCATION SE 1/4, SEC. 21, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 032-2502 (Exist.) 032-2538 (Prop.)
Station 6071+95 (Prop.)

BORING NO. 2
Station 6072+07
Offset 27.00ft Lt.
Ground Surface Elev. 554.26 ft

Surface Water Elev. 549.91 ft
Stream Bed Elev. ft
Groundwater Elev.:
First Encounter Dry ft
Upon Completion 538.3 ft ▽
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				Augered Black Silty Clay Loam Fill
551.76				
	2 2 2	1.5 P	24.7	Stiff Black, Brown & Gray Silty Clay Loam Fill
	WH 1 2	1.0 P	25.5	
546.76	3 4 9	>4.5 P	12.2	Hard Brown & Gray Silty Loam Till
	9 11 14	>4.5 P	12.2	
542.26	5 12 5	4.1 S	13.6	Hard Gray Silty Clay Loam Till
539.76	10 24 34	>4.5 P	8.9	Hard Gray Silty Loam with Loamy Gravel Layers - Brittle
▽	19 23 37	>4.5 P	8.8	
535.26				Hard Gray Silty Clay Loam Till with Boulders/Cobbles
				Auger Refusal - Boulder/Cobble obstruction @ 20'
534.09				End of Boring

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

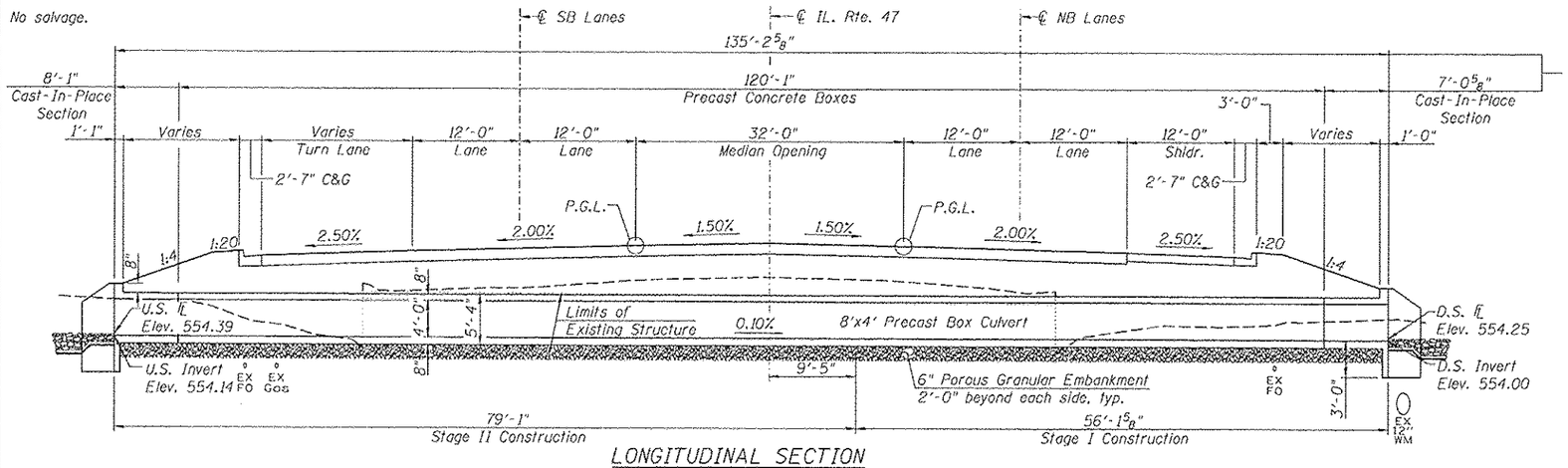
BBS, form 137 (Rev. 8-99)

REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING,LTD. Consulting Engineers Springfield, Illinois	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS STRUCTURE NO. 032–2538	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
REVISED -	FILE NAME =	CHECKED - VPT				326	(110)R, BR & BR-1	GRUNDY	644	321
REVISED -	PLOT SCALE =	DRAWN - AJF							CONTRACT NO. 66B83	
REVISED -	PLOT DATE =	CHECKED - VPT			SHEET NO. 4 OF 4 SHEETS			ILLINOIS	FED. AID PROJECT	

Benchmark: R.R. spike in west face of P.P. located approximately 1050' south of Nelson Rd. on east side of IL. Rte. 47 across from farm buildings. Elev. 560.06

Existing Structure: The existing structure consists of a 6' x 4' concrete box culvert with concrete wingwalls. The culvert is approximately 80'-0" in length with a 12° right ahead skew. Existing structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

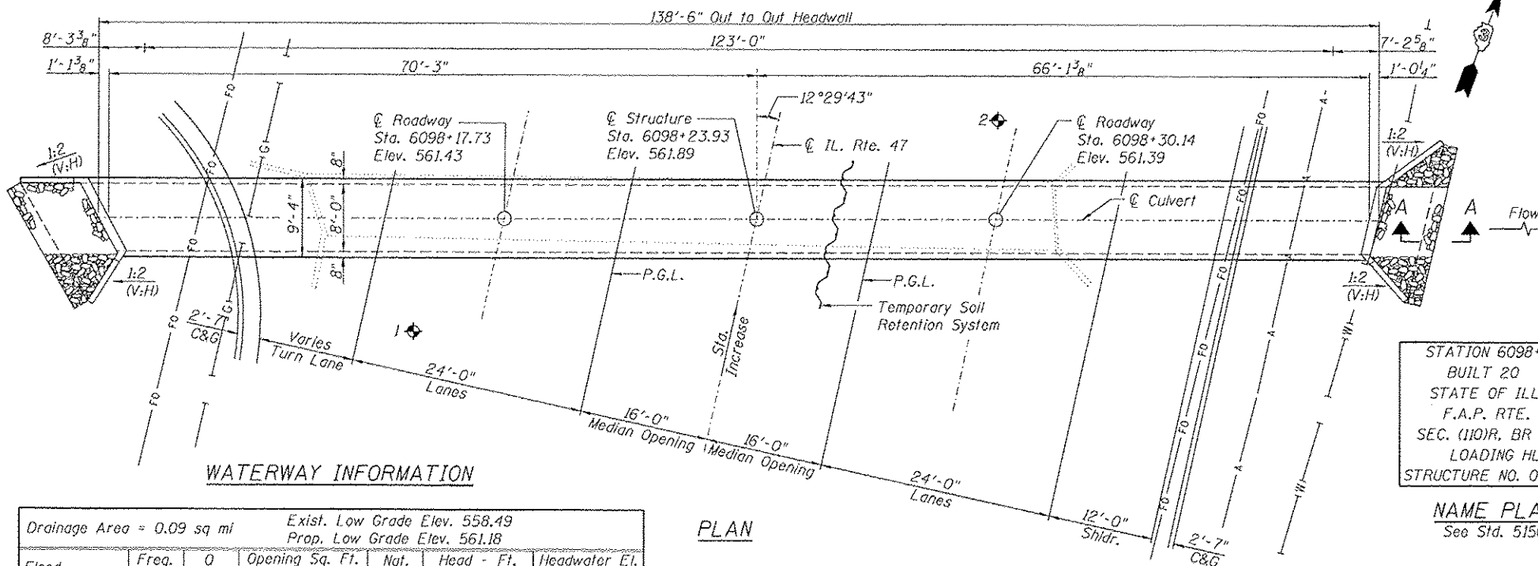
No salvage.



Dimensions at ℄ Culvert

LONGITUDINAL SECTION

(Dimensions at Rt L's to ℄ Roadway, unless noted otherwise)
(Looking North)



PLAN

WATERWAY INFORMATION

Drainage Area = 0.09 sq mi
Exist. Low Grade Elev. 558.49
Prop. Low Grade Elev. 561.18

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	36	20.3	24	556.7	0.2	0.2	556.9	556.9
Design	50	73	21.6	24	557.0	0.4	0.4	557.4	557.4
Base	100	97	22.2	24	557.1	0.6	0.5	557.6	557.5
Overtopping	-	149	-	-	-	-	-	-	-
Max. Calc.	500	165	23.4	24	557.3	1.5	0.9	558.7	558.2

10 year velocity through Existing Structure = 1.8 fps
10 year velocity through Proposed Structure = 1.5 fps

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	551.14	551.00

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	34.2
Stone Riprap, Class A4	Sq. Yd.	31
Filter Fabric	Sq. Yd.	31
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	2380
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	15.9
Precast Concrete Box Culverts 8'x4'	Foot	123.0
Temporary Soil Retention System	Sq. Ft.	233

INDEX OF SHEETS

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheets 3 and 4.

Precast concrete box culverts shall conform to the design requirements of ASTM C1577.

See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

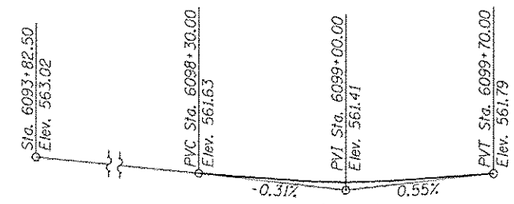
LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS
f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)



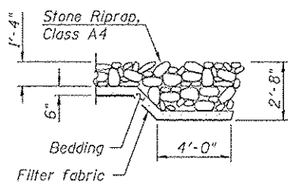
PROFILE GRADE

(Along IL. Rte. 47 P.G.)

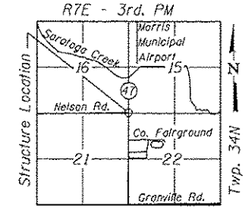
STATION 6098+23.93
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RTE. 326
SEC. (110)R, BR & BR-1
LOADING HL-93
STRUCTURE NO. 032-2537

NAME PLATE

See Std. 515001



SECTION A-A



LOCATION SKETCH

LICENSED STRUCTURAL ENGINEER
VINCENT P. TABOR
081-007047
STATE OF ILLINOIS

Vincent P. Tabor 7/15/2013

Vincent P. Tabor — Date
Licensed Structural Engineer
State of Illinois No. 081-007047
Expires 11/30/2014

GENERAL PLAN & ELEVATION
IL. RTE. 47 OVER
DRAINAGE DITCH
F.A.P. RTE. 326-SEC (110)R, BR & BR-1
GRUNDY COUNTY
STATION 6098+23.93
STRUCTURE NO. 032-2537

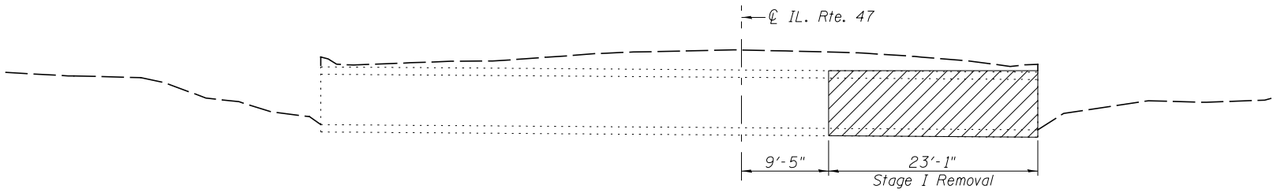
REVISED -	USER NAME =	DESIGNED -	PSS
REVISED -	FILE NAME =	CHECKED -	VPT
REVISED -	PLOT SCALE =	DRAWN -	AJF
REVISED -	PLOT DATE =	CHECKED -	VPT

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

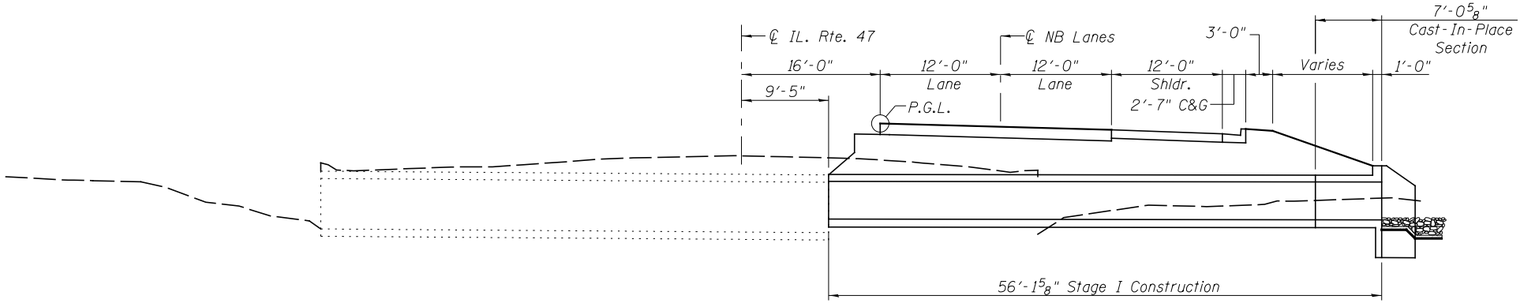
GENERAL PLAN & ELEVATION
STRUCTURE NO. 032-2537
SHEET NO. 1 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	322
		CONTRACT NO. 66883		
	ILLINOIS FED. AID PROJECT			



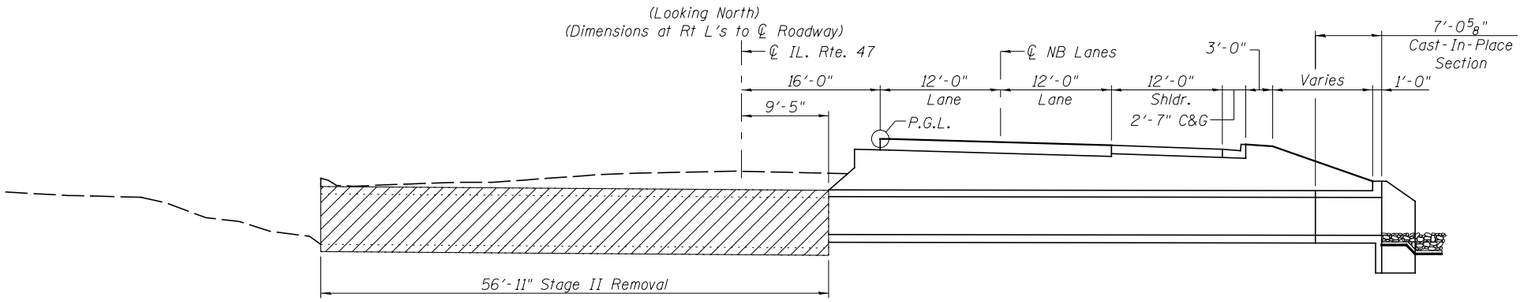
STAGE I REMOVAL

(Looking North)
(Dimensions at Rt L's to ℄ Roadway)



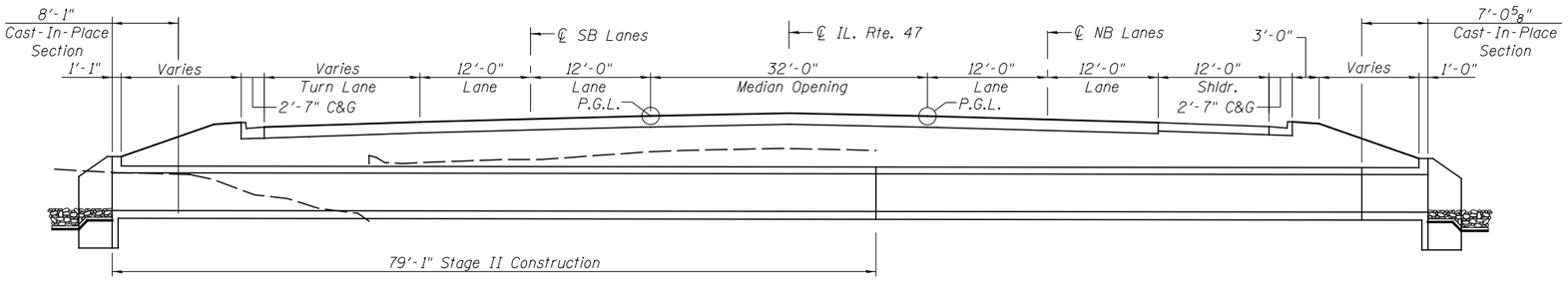
STAGE I CONSTRUCTION

(Looking North)
(Dimensions at Rt L's to ℄ Roadway)



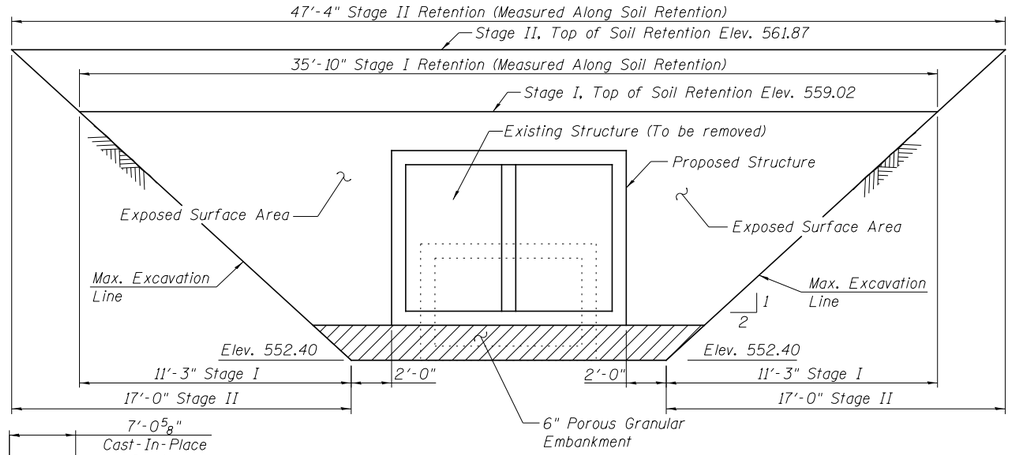
STAGE II REMOVAL

(Looking North)
(Dimensions at Rt L's to ℄ Roadway)



STAGE II CONSTRUCTION

(Looking North)
(Dimensions at Rt L's to ℄ Roadway)

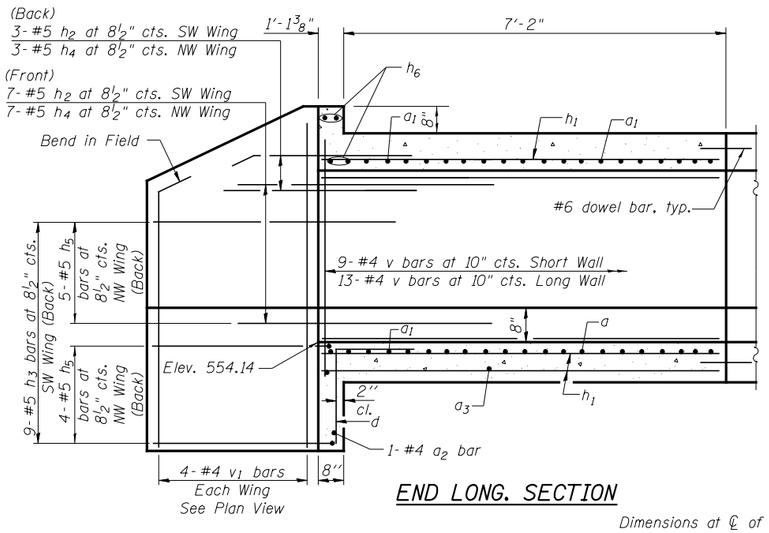


TEMPORARY SOIL RETENTION

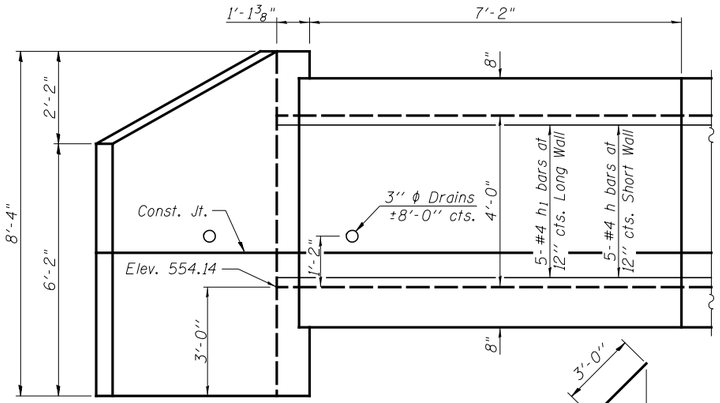
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

Slopes shown are parallel to ℄ of Roadway, unless noted otherwise.

REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL DATA STRUCTURE NO. 032-2537	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
REVISED -	FILE NAME =	CHECKED - VPT				326	(110)R, BR & BR-1	GRUNDY	644	323
REVISED -	PLOT SCALE =	DRAWN - AJF							CONTRACT NO. 66B83	
REVISED -	PLOT DATE =	CHECKED - VPT			SHEET NO. 2 OF 5 SHEETS			ILLINOIS	FED. AID PROJECT	



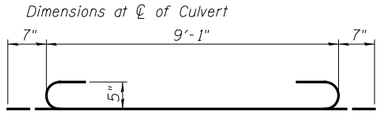
END LONG. SECTION



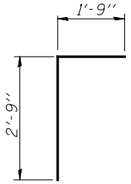
END ELEVATION

NOTES

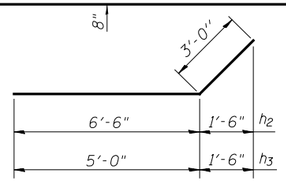
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.



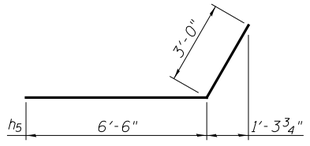
BAR a



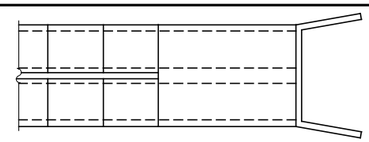
BAR d



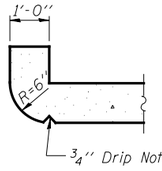
BARS h_2 & h_3



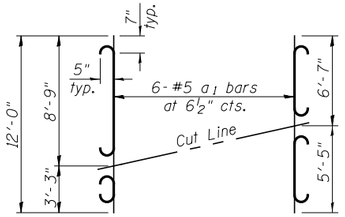
BAR h_5



ALIGNED PRECAST SECTIONS PLAN

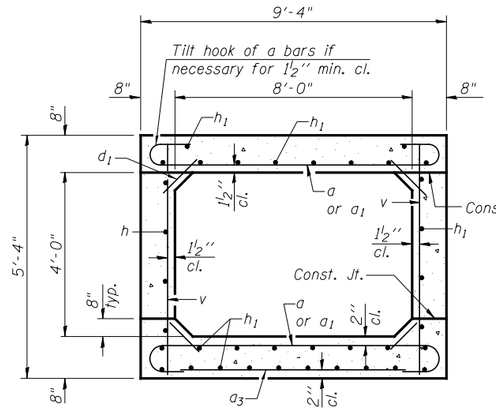


SECTION THRU HEADWALL
(Up Stream End Only)

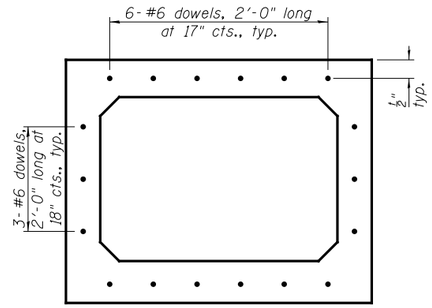


FIELD CUTTING DIAGRAM

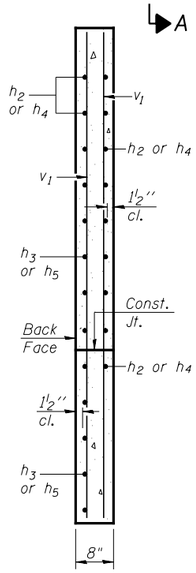
Order a_1 bars full length and cut as shown above. Place as indicated in Plan and Section views. Bend in field as required.



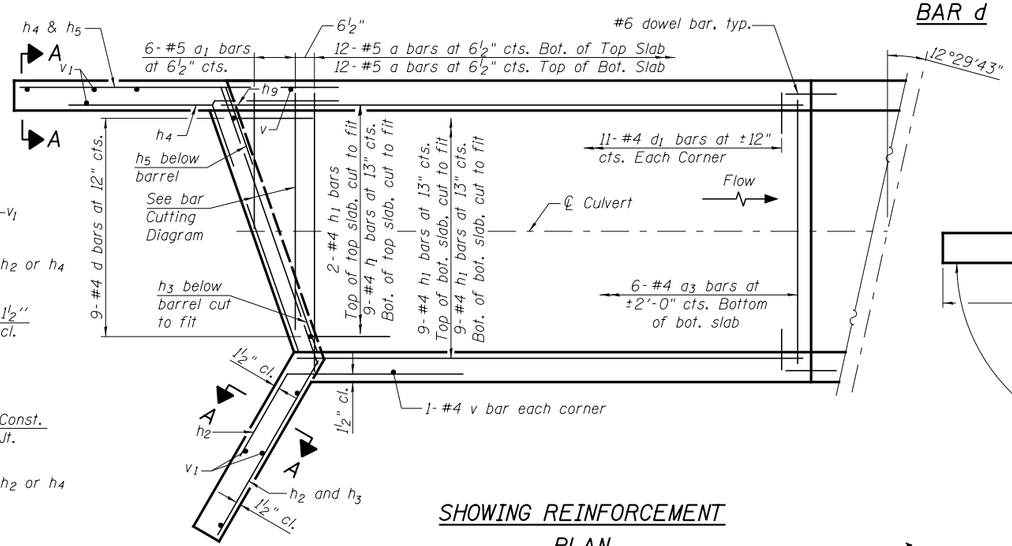
SECTION THRU BARREL



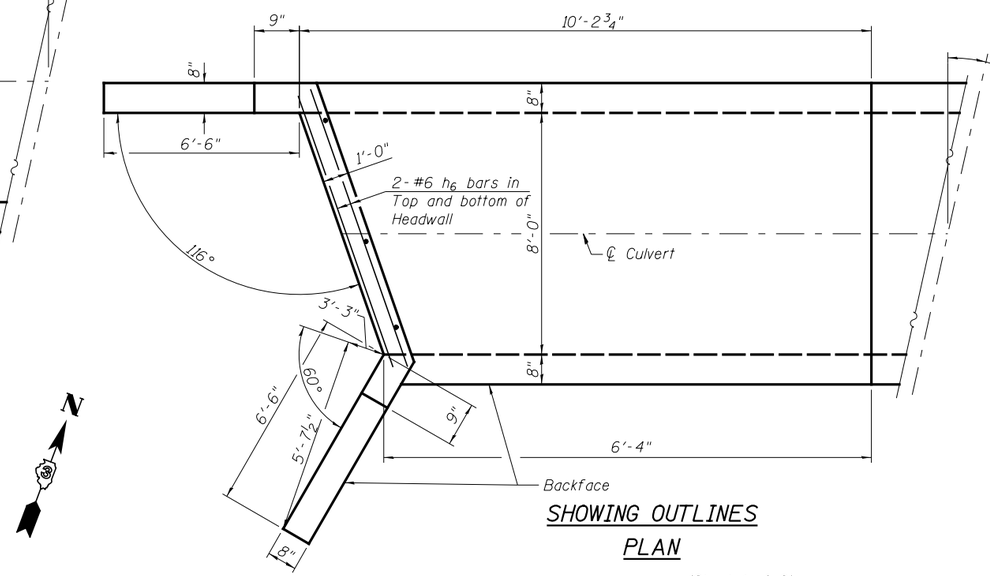
PRECAST CONCRETE CULVERT END ELEVATION



SECTION A-A



SHOWING REINFORCEMENT PLAN



SHOWING OUTLINES PLAN

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	24	#5	10'-3"	
a_1	6	#5	12'-0"	
a_2	1	#4	9'-7"	
a_3	6	#4	9'-0"	
d	9	#4	4'-6"	
d_1	44	#4	1'-2"	
h	5	#4	6'-1"	
h_1	34	#4	9'-11"	
h_2	10	#5	9'-6"	
h_3	9	#5	8'-0"	
h_4	10	#5	10'-8"	
h_5	9	#5	9'-6"	
h_6	4	#6	9'-2"	
v	24	#4	5'-1"	
v_1	8	#4	8'-1"	
Concrete Box Culverts			Cu. Yd.	7.9
Reinforcement Bars			Pound	1240

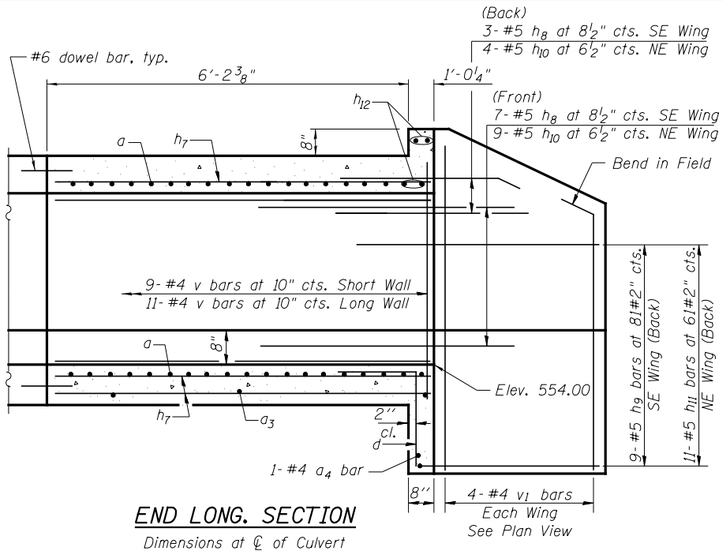
REVISED -	USER NAME =	DESIGNED - PSS
REVISED -	FILE NAME =	CHECKED - VPT
REVISED -	PLOT SCALE =	DRAWN - AJF
REVISED -	PLOT DATE =	CHECKED - VPT

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

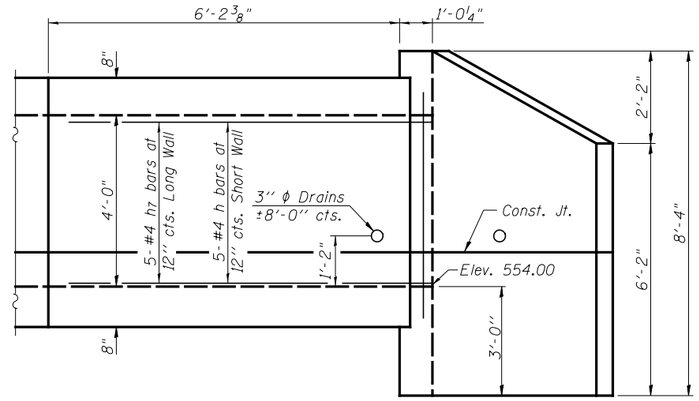
CULVERT DETAILS–WEST END
STRUCTURE NO. 032–2537
SHEET NO. 3 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	324
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			



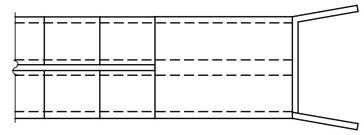
END LONG. SECTION

Dimensions at ℄ of Culvert

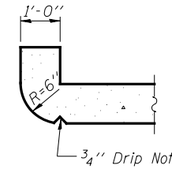


END ELEVATION

Dimensions at ℄ of Culvert

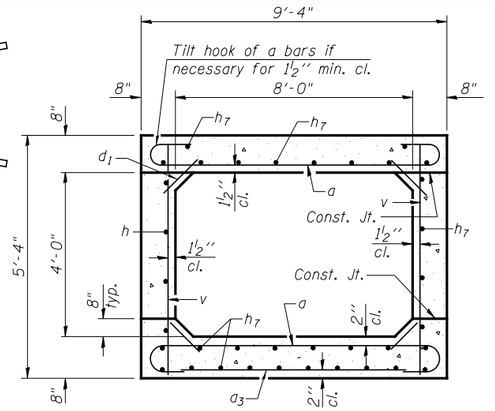


ALIGNED PRECAST SECTIONS PLAN



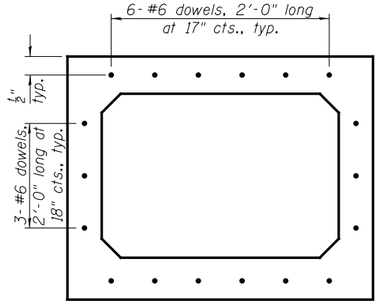
SECTION THRU HEADWALL

(Up Stream End Only)



SECTION THRU BARREL

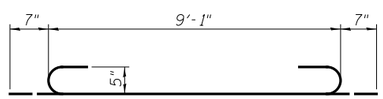
(Looking West)



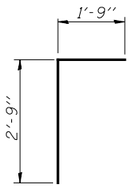
PRECAST CONCRETE CULVERT END ELEVATION

NOTES

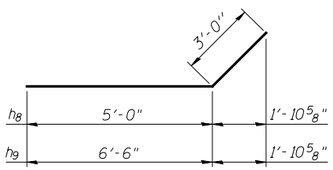
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.



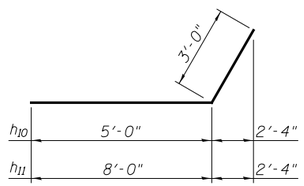
BAR a



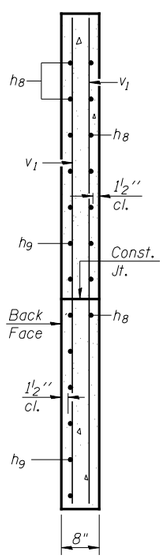
BAR d



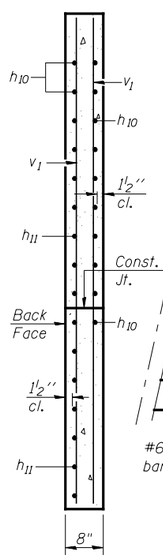
BARS h_8 & h_9



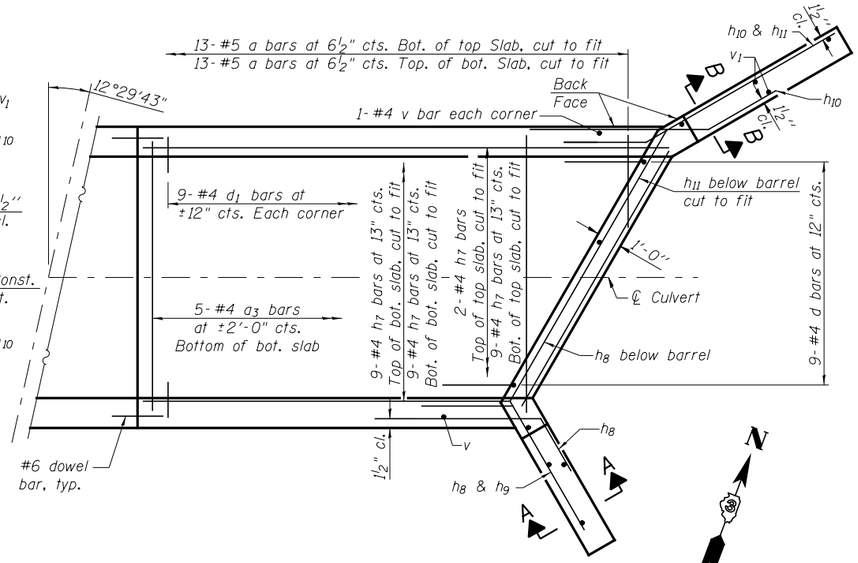
BAR h_{10} & h_{11}



SECTION A-A

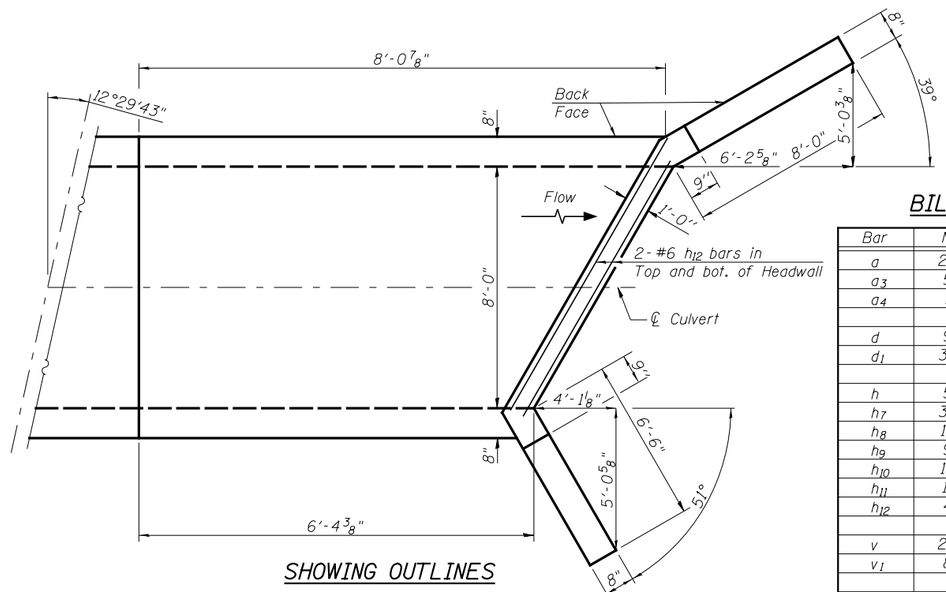


SECTION B-B



SHOWING REINFORCEMENT

PLAN



SHOWING OUTLINES

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	26	#5	10'-3"	
a_3	5	#4	9'-0"	
a_4	1	#4	8'-9"	
d	9	#4	4'-6"	
d_1	36	#4	1'-2"	
h	5	#4	6'-1"	
h_7	34	#4	7'-9"	
h_8	10	#5	8'-0"	
h_9	9	#5	9'-6"	
h_{10}	13	#5	8'-0"	
h_{11}	11	#5	11'-0"	
h_{12}	4	#6	8'-0"	
v	22	#4	5'-1"	
v_1	8	#4	8'-1"	
Concrete Box Culverts			Cu. Yd.	7.7
Reinforcement Bars			Pound	1140

REVISED -	USER NAME =	DESIGNED - PSS	
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS–EAST END
STRUCTURE NO. 032–2537
SHEET NO. 4 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	325
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Page 1 of 1

Date 1/4/12

ROUTE IL 47 (FAP 326) DESCRIPTION IL 47 over Tributary to Saratoga Creek, 1.9 Miles North of I-80 (WC 144) LOGGED BY Larry Myers

SECTION 110-110-B LOCATION NE 1/4, SEC. 21, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 032-2501 (Exist.) 032-2537 (Prop.)
Station 6098+24 (Prop.)

BORING NO. 1
Station 6098+02
Offset 33.00ft Lt.
Ground Surface Elev. 558.36 ft

Surface Water Elev. ft
Stream Bed Elev. 553.87 ft

Groundwater Elev.:
First Encounter 546.4 ft
Upon Completion 550.4 ft
After Hrs. ft

Material	Elev. (ft)	Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
Augered Shoulder Stone, Black Silty Clay Loam Fill					
	555.86				
Stiff Black Silty Clay Loam Topsoil Fill			2 3 2	1.5 P	25.4
	553.36	-5			
Very Stiff Gray & Brown Silty Clay Loam Till			2 2 4	2.0 P	13.7
	551.36				
Hard Gray Silty Loam Till - Brittle			8		
▽			13 14	>4.5 P	9.4
	548.86	-10			
Hard Gray Silty Clay Loam Till with Layers of Gray Clay & Silt with Sand Layers at 16'			6 7 9	4.7 S	19.7
▼			12 7 8	4.7 S	15.2
		-15			
			5 7 10	4.1 S	21.7
	541.36				
Dense Gray Fine to Coarse Sand with Free Water & Gravel at 23'			12 21 31		11.5
		-20			
Dense Gray Fine to Coarse Sand with Free Water & Gravel at 23' *(continued)*					
		-25	16 20 29		14.4
			15 20 25		9.3
		-30	14 28 32		9.4
Advanced Auger to 27.5', Sand Blew up 8' into Augers, could not clean out Augers to insert Split Spoon Sampler	530.86				
End of Boring		-35			
		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Page 1 of 1

Date 1/4/12

ROUTE IL 47 (FAP 326) DESCRIPTION IL 47 over Tributary to Saratoga Creek, 1.9 Miles North of I-80 (WC 144) LOGGED BY Larry Myers

SECTION 110-110-B LOCATION NW 1/4, SEC. 22, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 032-2501 (Exist.) 032-2537 (Prop.)
Station 6098+24 (Prop.)

BORING NO. 2
Station 6098+43
Offset 26.00ft Rt.
Ground Surface Elev. 558.53 ft

Surface Water Elev. ft
Stream Bed Elev. 554.10 ft

Groundwater Elev.:
First Encounter 542.5 ft
Upon Completion 551.5 ft
After Hrs. ft

Material	Elev. (ft)	Depth (ft)	Blows (/6")	UCS Qu (tsf)	Moist (%)
Augered White Shoulder Stone & Black Silty Clay Loam Fill					
	556.03				
Stiff to Very Stiff Black Silty Clay Loam Fill			3 3 4	2.0 P	30.1
	553.53	-5			
Stiff to Very Stiff Brown & Gray Silty Clay Loam Till with Sand Layers			3 2 3	1.5 P	20.3
	551.53				
Hard Gray Silty Loam Till			9		
			12 15	6.1 S	9.8
	548.53	-10			
Very Stiff to Hard Gray Silt, Clay & Silty Clay Loam Till Layers			5 7 9	3.0 P	14.6
			6 9 11	4.7 S	19.4
		-15			
▼			5 9 14	2.5 P	21.5
	541.53				
Dense Gray Fine to Coarse Sand with some Fine to Coarse Gravel & Free Water			10 18 23		15.4
		-20			
Dense Gray Fine to Coarse Gravel & Free Water *(continued)*					
		-25	14 21 27		16.1
			12 27 28		14.8
		-30	10 20 21		27.1
Advanced Augers to 27.5', Sand Blew into Augers, could not clean out Augers to insert Split Spoon Sampler	531.03				
End of Boring		-35			
		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING,LTD. Consulting Engineers Springfield, Illinois
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

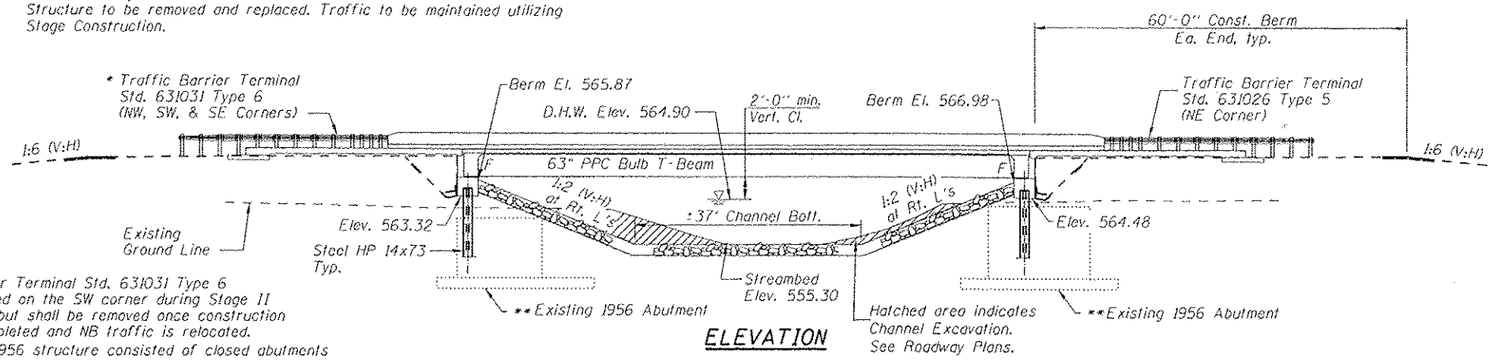
SOIL BORINGS
STRUCTURE NO. 032-2537
SHEET NO. 5 OF 5 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	326
		CONTRACT NO. 66883		
	ILLINOIS FED. AID PROJECT			

Bench Mark: Set $\frac{5}{8}$" rebar. in the Northeast Quad. of I-80 and IL Rte. 47. Elev. 547.82

Existing Structure: S.N. 032-0089, built in 1988 as F.A. Rte. 100, Section 110BR at Station 136+58.25. Existing Structure consists of a Single Span Prestressed Concrete Bridge 91'-6" Bk. to Bk. Abutments, 39'-2" out-to-out deck. Structure to be removed and replaced. Traffic to be maintained utilizing Stage Construction.

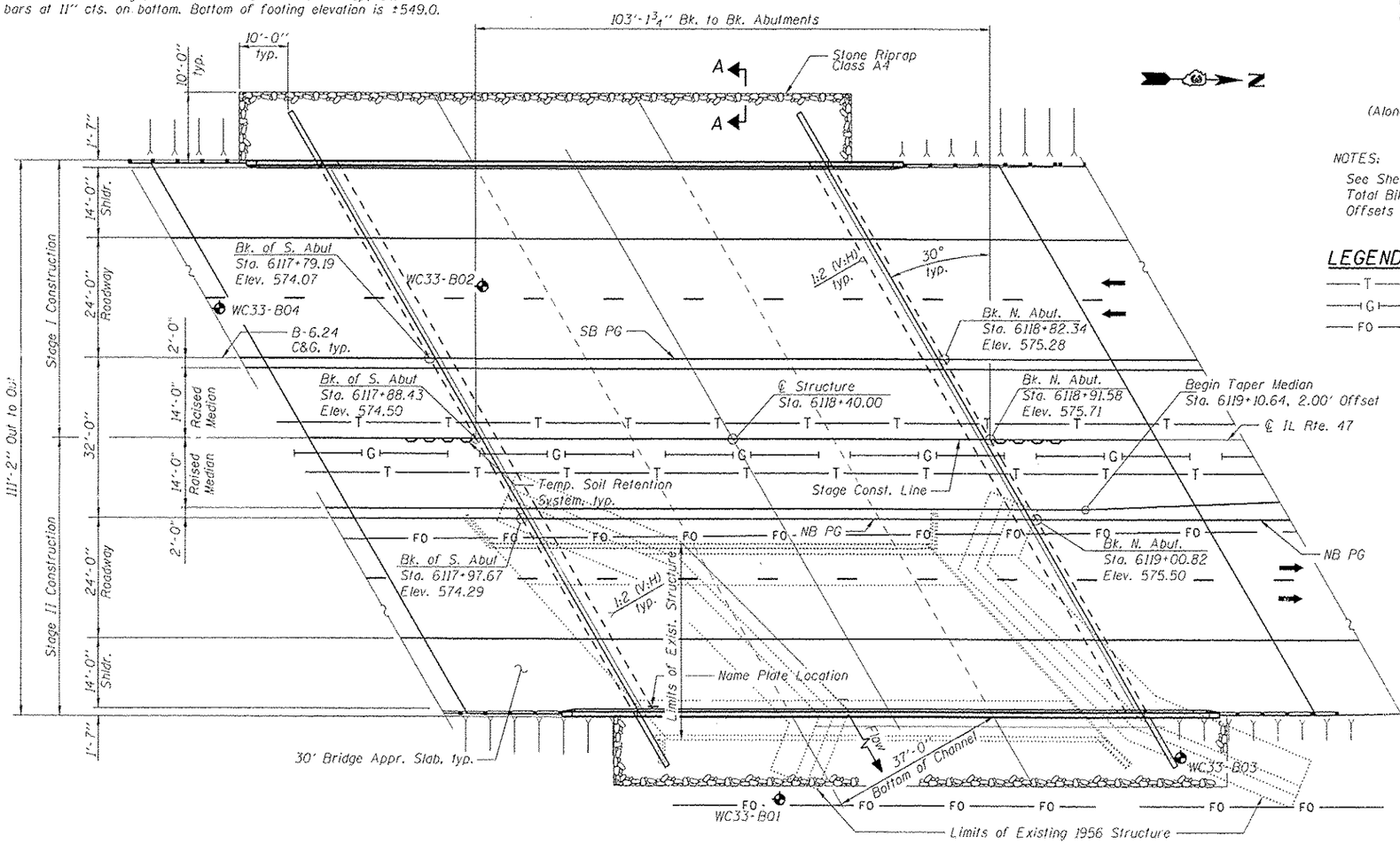
No salvage.



ELEVATION

* Traffic Barrier Terminal Std. 631031 Type 6 shall be utilized on the SW corner during Stage II Construction, but shall be removed once construction has been completed and NB traffic is relocated.

** The existing 1956 structure consisted of closed abutments with 2'-0" thick footings, with #7 bars at 11" cts. on top, and #6 bars at 11" cts. on bottom. Bottom of footing elevation is ±549.0.



PLAN

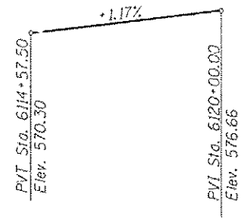
WATERWAY INFORMATION

Drainage Area = 12.130 mi²
Low Grade Elev. 568.90 at Sta. 6113+60 (Exist.)
Low Grade Elev. 569.98 at Sta. 6116+44 (Prop.)

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Hwt. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	924	221	253	562.8	0.4	0.5	563.2	563.2
Design	50	1381	315	387	564.9	0.5	0.5	565.4	565.4
Base	100	1564	315	434	565.6	0.6	0.5	566.2	566.1
Max. Calc.	500	2003	315	506	566.6	1.0	0.5	567.6	567.1

DESIGN SCOUR ELEVATION TABLE

	Design Scour Elevation (ft.) S. Abut.	N. Abut.
0100	563.32	564.48
0500	563.32	564.48



PROFILE GRADE

(Along SB PG and NB PG IL Rte. 47)

NOTES:

See Sheet 2 of 32 for Index of Sheets, Total Bill of Material, and General Notes. Offsets are taken from NB PG.

LEGEND

—T—	Exist. Underground Telephone
—G—	Exist. Underground Gas
—FO—	Exist. Underground Fiber Optic

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th edition

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

PRECAST PRESTRESSED UNITS

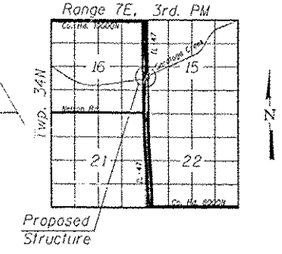
f'c = 7,000 psi
f'ci = 6,000 psi
fpu = 270,000 psi (½" ϕ low relax strands)
fpbt = 201,960 psi (½" ϕ low relax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.069g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.128g
Soil Site Class = C

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

BENJAMIN A. NEBEL 081-006621 LICENSED STRUCTURAL ENGINEER ILLINOIS
7/18/2013
Lic. Exp. 11/30/2014



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
IL RTE. 47 OVER
SARATOGA CREEK
F.A.P. RTE. 326 - SEC. 110BR
GRUNDY COUNTY
STATION 6118+40.00
STRUCTURE NO. 032-0122

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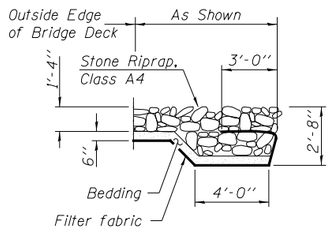
		CHECKED - BAN	

Hutchison Engineering, Inc.
JACKSONVILLE-SHOREWOOD-PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 032-0122
SHEET NO. 1 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	327
		CONTRACT NO. 66883		
	ILLINOIS	FED. AID PROJECT		



SECTION A-A

STATION 6118+40.00
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT. 326 SEC. 110BR
LOADING HL-93
STR. NO. 032-0122

NAME PLATE
(See Std. 515001)

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the engineer.

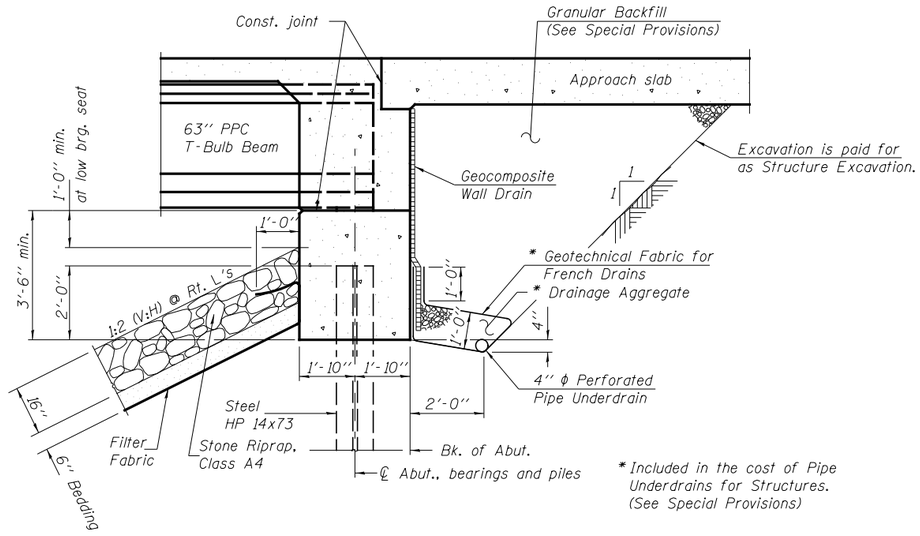
Protective coat shall be applied to the top of the deck, top and sides of the median, and inside face and top of the parapets.

The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

The existing fixed bearings contain $\frac{1}{8}$" lead plate. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Granular Backfill For Structures	CU YD	——	650	650
Stone Riprap, Class A4	SQ YD	——	1,530	1,530
Filter Fabric	SQ YD	——	1,530	1,530
Removal of Existing Structures No. 1	EACH	——	——	1
Structure Excavation	CU YD	——	920	920
Concrete Structures	CU YD	——	243.0	243.0
Concrete Superstructure	CU YD	973.5	——	973.5
Bridge Deck Grooving	SQ YD	1,360	——	1,360
Protective Coat	SQ YD	2,065	——	2,065
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams 63"	FOOT	1,399	——	1,399
Reinforcement Bars, Epoxy Coated	POUND	185,120	27,980	213,100
Bar Splicers	EACH	587	20	607
Furnishing Steel Piles HP14x73	FOOT	——	1,475	1,475
Driving Piles	FOOT	——	1,475	1,475
Test Pile Steel HP14x73	EACH	——	2	2
Pile Shoes	EACH	——	37	37
Name Plates	EACH	1	——	1
Geocomposite Wall Drain	SQ YD	——	290	290
Pipe Underdrains For Structures 4"	FOOT	——	340	340
Temporary Soil Retention System	SQ FT	——	213	213



* Included in the cost of Pipe Underdrains for Structures. (See Special Provisions)

Note:

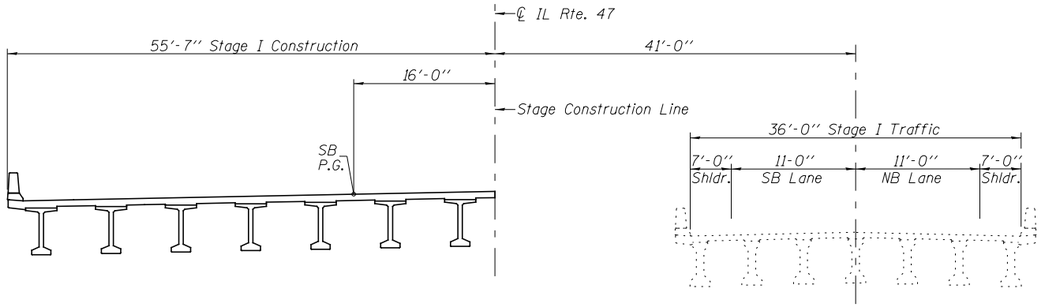
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101)

SECTION THRU INTEGRAL ABUTMENT

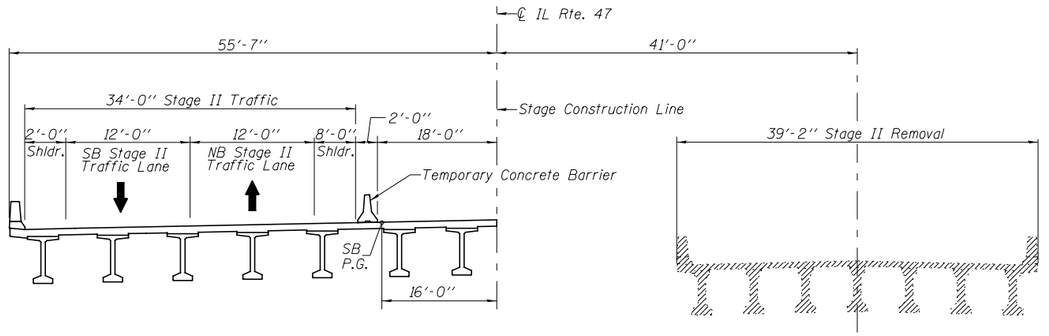
(Horizontal Dimensions @ Right Angles)

INDEX OF SHEETS

Notes:
See Sheet 4 of 32 for Temp. Concrete Barrier Details.
See Roadway Plans for quantity of Temp. Concrete Barrier.
Existing utilities to be relocated by others prior to bridge construction.

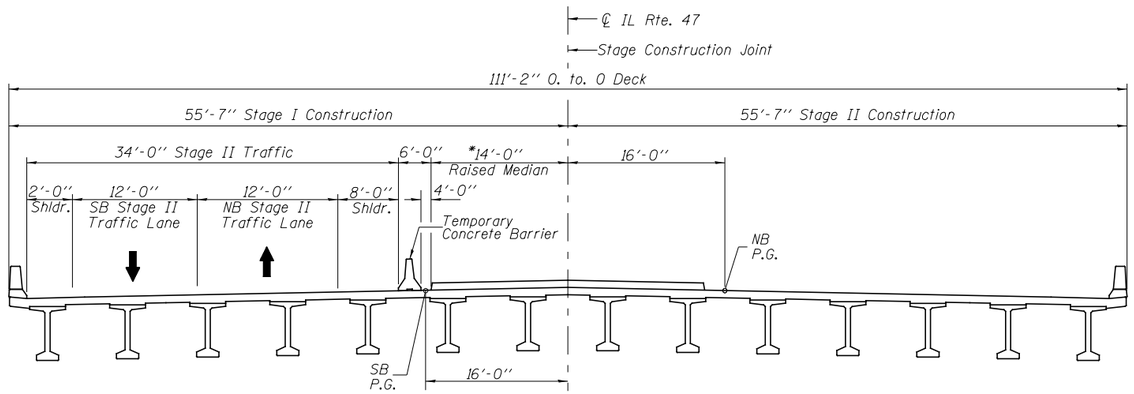


STAGE I CONSTRUCTION
(Looking North)

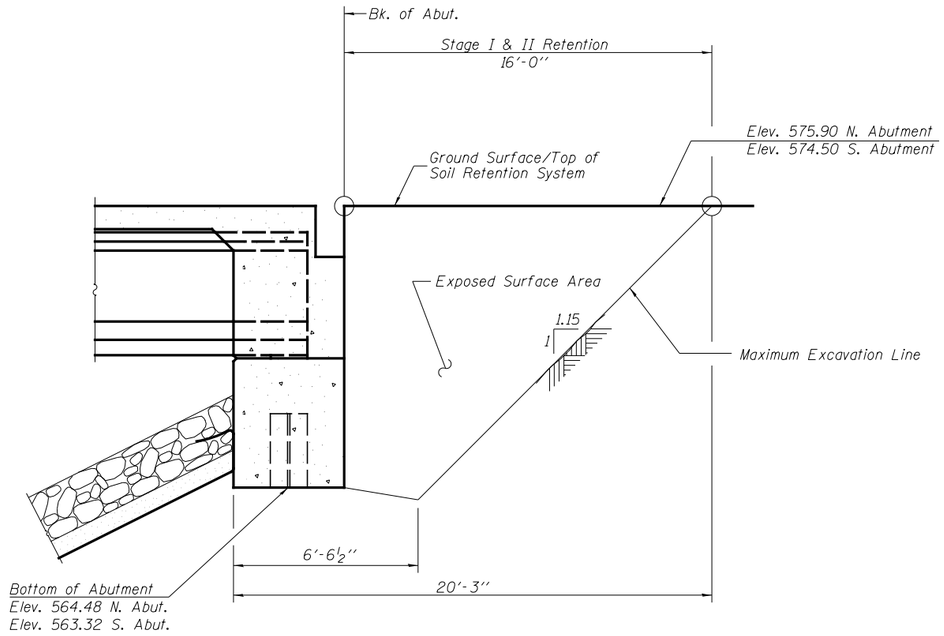


STAGE II REMOVAL
(Looking North)

*The Raised Median shall be poured after Stage II Construction deck has met its requried 14 day strength.



STAGE II CONSTRUCTION
(Looking North)

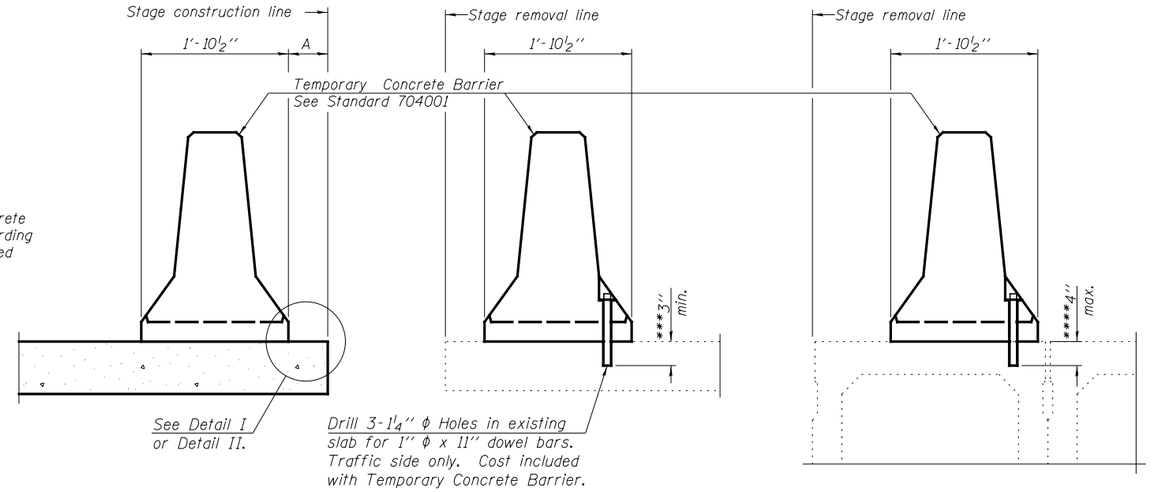


TEMPORARY SOIL RETENTION SYSTEM
Horizontal dimension parallel to roadway.
(North abutment shown, south abutment similar.)

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

V:\3195\Structure\032-0122\0320122-66B83-003-STAGING SEQU.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION DETAILS STRUCTURE NO. 032-0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - STM				326	110BR	GRUNDY	644	329
	PLOT DATE = 8/6/2013	CHECKED - BAN			SHEET NO. 3 OF 32 SHEETS				CONTRACT NO. 66B83	
		CHECKED - BAN						ILLINOIS	FED. AID PROJECT	

When "A" is 3'-6'' or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6''.



NEW SLAB

EXISTING SLAB

EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:

Connect one (1) 1'' x 7'' x ''W'' steel ℙ to the top layer of couplers with 2-⅝'' ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:

Connect one (1) 1'' x 7'' x ''W'' steel ℙ to the concrete slab or concrete wearing surface with 2-⅝'' ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

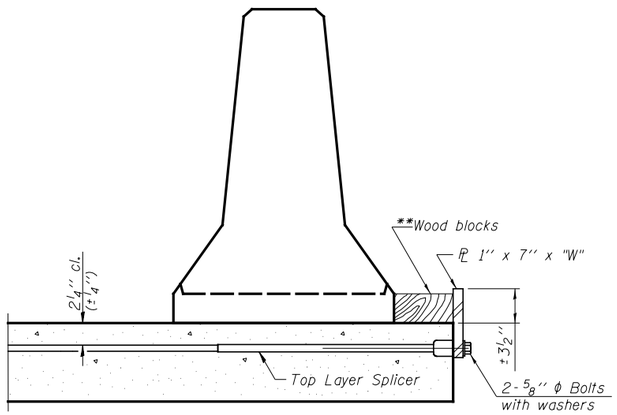
Cost of anchorage is included with Temporary Concrete Barrier.

The 1'' x 7'' x ''W'' plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

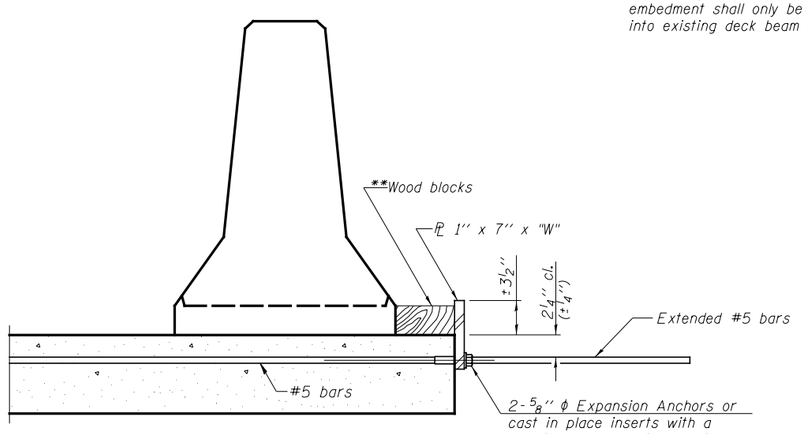
SECTIONS THRU SLAB OR DECK BEAM

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



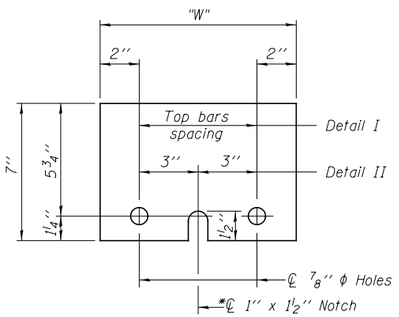
DETAIL I



DETAIL II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4''



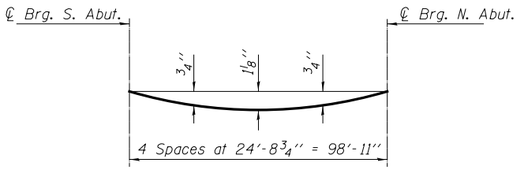
STEEL RETAINER ℙ 1'' x 7'' x ''W''

* Required only with Detail II

R-27

7-1-10

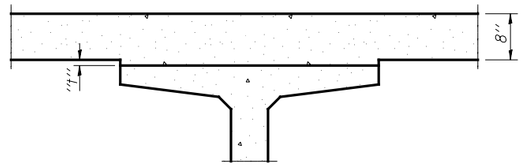
V:\3195\Structure\032-0122\0320122-66B83-004-TEMP BARRIER.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE-SHOREWOOD-PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION STRUCTURE NO. 032-0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - STM			SHEET NO. 4 OF 32 SHEETS	326	110BR	GRUNDY	644	330
	PLOT DATE = 8/6/2013	CHECKED - BAN							CONTRACT NO. 66B83	
								ILLINOIS	FED. AID PROJECT	



DEAD LOAD DEFLECTION DIAGRAM

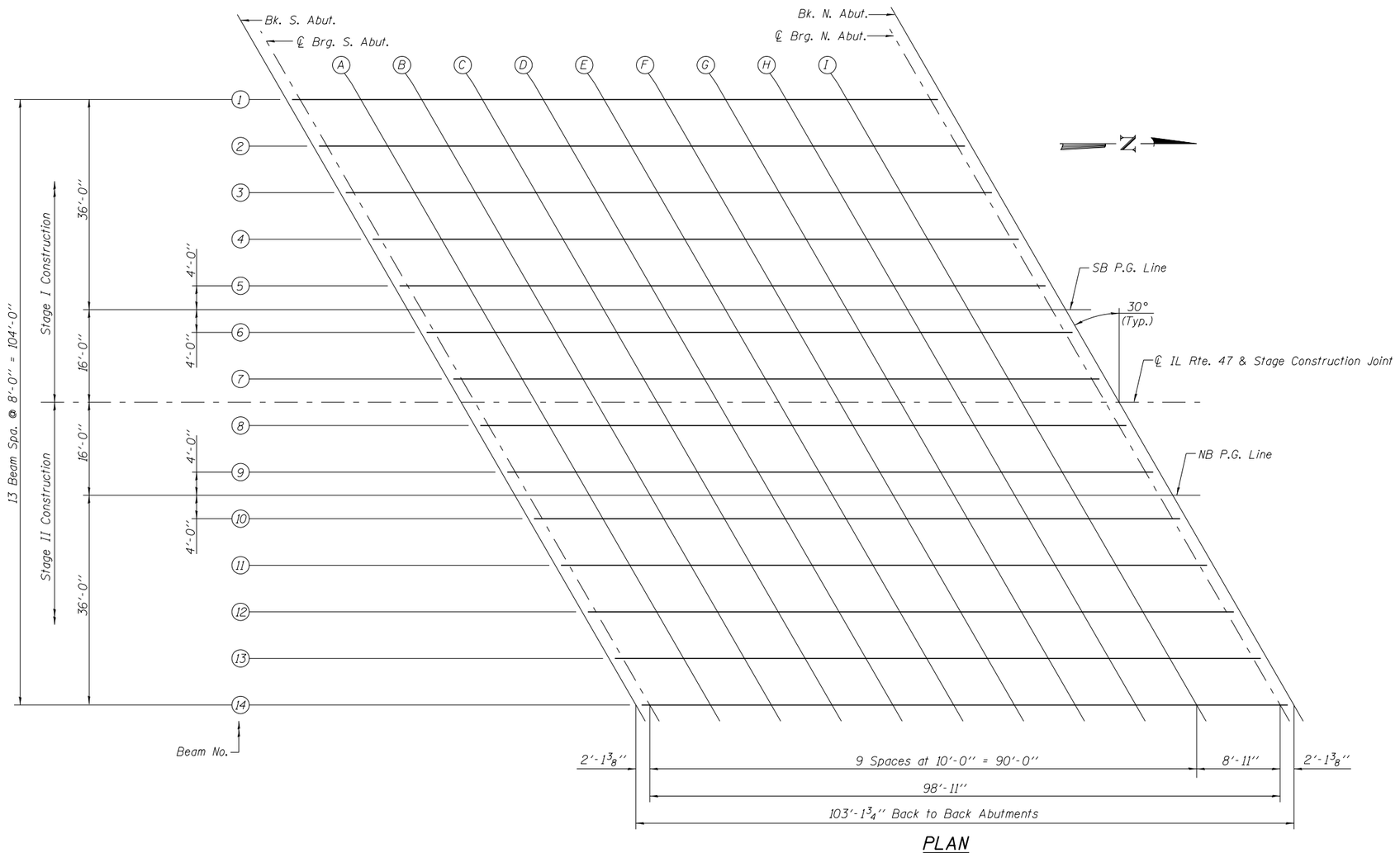
(Includes weight of concrete, excluding beams).

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheets 6, 7, & 8 of 32.



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown on Sh. 6, 7 & 8 of 32, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS



PLAN

V:\3195\Structure\032-0122\0320122-66883-005-TOP SLAB ELEV.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS STRUCTURE NO. 032–0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - TAC/STM			SHEET NO. 5 OF 32 SHEETS	326	110BR	GRUNDY	644	331
	PLOT DATE = 8/6/2013	CHECKED - BAN						CONTRACT NO. 66B83		
		CHECKED - BAN						ILLINOIS FED. AID PROJECT		

*Measured from SB P.G.

BEAM #1

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+58.41	-36.00	573.05	573.05
CL Brg. S. Abut.	6117+60.52	-36.00	573.07	573.07
A	6117+70.52	-36.00	573.19	573.22
B	6117+80.52	-36.00	573.31	573.36
C	6117+90.52	-36.00	573.43	573.50
D	6118+00.52	-36.00	573.54	573.62
E	6118+10.52	-36.00	573.66	573.75
F	6118+20.52	-36.00	573.78	573.86
G	6118+30.52	-36.00	573.89	573.97
H	6118+40.52	-36.00	574.01	574.06
I	6118+50.52	-36.00	574.13	574.15
CL Brg. N. Abut.	6118+59.44	-36.00	574.23	574.23
Bk. N. Abutment	6118+61.56	-36.00	574.26	574.26

BEAM #2

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+63.03	-28.00	573.30	573.30
CL Brg. S. Abut.	6117+65.14	-28.00	573.33	573.33
A	6117+75.14	-28.00	573.45	573.47
B	6117+85.14	-28.00	573.56	573.62
C	6117+95.14	-28.00	573.68	573.76
D	6118+05.14	-28.00	573.80	573.89
E	6118+15.14	-28.00	573.91	574.01
F	6118+25.14	-28.00	574.03	574.12
G	6118+35.14	-28.00	574.15	574.22
H	6118+45.14	-28.00	574.27	574.32
I	6118+55.14	-28.00	574.38	574.41
CL Brg. N. Abut.	6118+64.06	-28.00	574.49	574.49
Bk. N. Abutment	6118+66.18	-28.00	574.51	574.51

BEAM #3

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+67.65	-20.00	573.54	573.54
CL Brg. S. Abut.	6117+69.76	-20.00	573.56	573.56
A	6117+79.76	-20.00	573.68	573.71
B	6117+89.76	-20.00	573.80	573.85
C	6117+99.76	-20.00	573.91	573.99
D	6118+09.76	-20.00	574.03	574.12
E	6118+19.76	-20.00	574.15	574.24
F	6118+29.76	-20.00	574.27	574.35
G	6118+39.76	-20.00	574.38	574.45
H	6118+49.76	-20.00	574.50	574.55
I	6118+59.76	-20.00	574.62	574.64
CL Brg. N. Abut.	6118+68.68	-20.00	574.72	574.72
Bk. N. Abutment	6118+70.80	-20.00	574.75	574.75

BEAM #4

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+72.26	-12.00	573.75	573.75
CL Brg. S. Abut.	6117+74.38	-12.00	573.78	573.78
A	6117+84.38	-12.00	573.89	573.92
B	6117+94.38	-12.00	574.01	574.07
C	6118+04.38	-12.00	574.13	574.20
D	6118+14.38	-12.00	574.25	574.33
E	6118+24.38	-12.00	574.36	574.45
F	6118+34.38	-12.00	574.48	574.57
G	6118+44.38	-12.00	574.60	574.67
H	6118+54.38	-12.00	574.71	574.77
I	6118+64.38	-12.00	574.83	574.86
CL Brg. N. Abut.	6118+73.30	-12.00	574.94	574.94
Bk. N. Abutment	6118+75.41	-12.00	574.96	574.96

BEAM #5

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+76.88	-4.00	573.97	573.97
CL Brg. S. Abut.	6117+79.00	-4.00	573.99	573.99
A	6117+89.00	-4.00	574.11	574.14
B	6117+99.00	-4.00	574.22	574.28
C	6118+09.00	-4.00	574.34	574.42
D	6118+19.00	-4.00	574.46	574.55
E	6118+29.00	-4.00	574.58	574.67
F	6118+39.00	-4.00	574.69	574.78
G	6118+49.00	-4.00	574.81	574.88
H	6118+59.00	-4.00	574.93	574.98
I	6118+69.00	-4.00	575.05	575.07
CL Brg. N. Abut.	6118+77.92	-4.00	575.15	575.15
Bk. N. Abutment	6118+80.03	-4.00	575.17	575.17

SOUTHBOUND P.G.

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+79.19	0.00	574.07	574.07
CL Brg. S. Abut.	6117+81.31	0.00	574.10	574.10
A	6117+91.31	0.00	574.21	574.24
B	6118+01.31	0.00	574.33	574.39
C	6118+11.31	0.00	574.45	574.52
D	6118+21.31	0.00	574.57	574.65
E	6118+31.31	0.00	574.68	574.78
F	6118+41.31	0.00	574.80	574.89
G	6118+51.31	0.00	574.92	574.99
H	6118+61.31	0.00	575.04	575.09
I	6118+71.31	0.00	575.15	575.18
CL Brg. N. Abut.	6118+80.23	0.00	575.26	575.26
Bk. N. Abutment	6118+82.34	0.00	575.28	575.28

V:\3195\Structure\032-0122\0320122-66883-006-TOP SLAB ELEV.dgn

USER NAME = bdecraene | DESIGNED - STM
PLOT SCALE = NONE | DRAWN - STM
PLOT DATE = 8/6/2013 | CHECKED - BAN

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 032-0122
SHEET NO. 6 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	332
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		

*Measured from SB P.G.
**Measured from NB P.G.

BEAM #6

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+81.50	4.00	574.18	574.18
CL Brg. S. Abut.	6117+83.62	4.00	574.20	574.20
A	6117+93.62	4.00	574.32	574.35
B	6118+03.62	4.00	574.44	574.49
C	6118+13.62	4.00	574.56	574.63
D	6118+23.62	4.00	574.67	574.76
E	6118+33.62	4.00	574.79	574.88
F	6118+43.62	4.00	574.91	575.00
G	6118+53.62	4.00	575.02	575.10
H	6118+63.62	4.00	575.14	575.19
I	6118+73.62	4.00	575.26	575.29
CL Brg. N. Abut.	6118+82.53	4.00	575.36	575.36
Bk. N. Abutment	6118+84.65	4.00	575.39	575.39

BEAM #7

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+86.12	12.00	574.39	574.39
CL Brg. S. Abut.	6117+88.24	12.00	574.42	574.42
A	6117+98.24	12.00	574.54	574.57
B	6118+08.24	12.00	574.65	574.71
C	6118+18.24	12.00	574.77	574.85
D	6118+28.24	12.00	574.89	574.98
E	6118+38.24	12.00	575.00	575.10
F	6118+48.24	12.00	575.12	575.21
G	6118+58.24	12.00	575.24	575.31
H	6118+68.24	12.00	575.36	575.41
I	6118+78.24	12.00	575.47	575.50
CL Brg. N. Abut.	6118+87.15	12.00	575.58	575.58
Bk. N. Abutment	6118+89.27	12.00	575.60	575.60

℄ IL RTE. 47 & STAGE CONSTRUCTION JOINT

Location	Station	*Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+88.43	16.00	574.50	574.50
CL Brg. S. Abut.	6117+90.55	16.00	574.53	574.53
A	6118+00.55	16.00	574.64	574.67
B	6118+10.55	16.00	574.76	574.82
C	6118+20.55	16.00	574.88	574.95
D	6118+30.55	16.00	574.99	575.08
E	6118+40.55	16.00	575.11	575.20
F	6118+50.55	16.00	575.23	575.32
G	6118+60.55	16.00	575.35	575.42
H	6118+70.55	16.00	575.46	575.52
I	6118+80.55	16.00	575.58	575.61
CL Brg. N. Abut.	6118+89.46	16.00	575.68	575.68
Bk. N. Abutment	6118+91.58	16.00	575.71	575.71

BEAM #8

Location	Station	**Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+90.74	-12.00	574.45	574.45
CL Brg. S. Abut.	6117+92.86	-12.00	574.47	574.47
A	6118+02.86	-12.00	574.59	574.62
B	6118+12.86	-12.00	574.71	574.76
C	6118+22.86	-12.00	574.82	574.90
D	6118+32.86	-12.00	574.94	575.03
E	6118+42.86	-12.00	575.06	575.15
F	6118+52.86	-12.00	575.18	575.26
G	6118+62.86	-12.00	575.29	575.37
H	6118+72.86	-12.00	575.41	575.46
I	6118+82.86	-12.00	575.53	575.55
CL Brg. N. Abut.	6118+91.77	-12.00	575.63	575.63
Bk. N. Abutment	6118+93.89	-12.00	575.66	575.66

BEAM #9

Location	Station	**Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+95.36	-4.00	574.34	574.34
CL Brg. S. Abut.	6117+97.48	-4.00	574.37	574.37
A	6118+07.48	-4.00	574.48	574.51
B	6118+17.48	-4.00	574.60	574.66
C	6118+27.48	-4.00	574.72	574.79
D	6118+37.48	-4.00	574.84	574.92
E	6118+47.48	-4.00	574.95	575.05
F	6118+57.48	-4.00	575.07	575.16
G	6118+67.48	-4.00	575.19	575.26
H	6118+77.48	-4.00	575.30	575.36
I	6118+87.48	-4.00	575.42	575.45
CL Brg. N. Abut.	6118+96.39	-4.00	575.53	575.53
Bk. N. Abutment	6118+98.51	-4.00	575.55	575.55

NORTHBOUND P.G.

Location	Station	**Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+97.67	0.00	574.29	574.29
CL Brg. S. Abut.	6117+99.78	0.00	574.31	574.31
A	6118+09.78	0.00	574.43	574.46
B	6118+19.78	0.00	574.55	574.60
C	6118+29.78	0.00	574.67	574.74
D	6118+39.78	0.00	574.78	574.87
E	6118+49.78	0.00	574.90	574.99
F	6118+59.78	0.00	575.02	575.10
G	6118+69.78	0.00	575.13	575.21
H	6118+79.78	0.00	575.25	575.30
I	6118+89.78	0.00	575.37	575.39
CL Brg. N. Abut.	6118+98.70	0.00	575.47	575.47
Bk. N. Abutment	6119+00.82	0.00	575.50	575.50

**Measured from NB P.G.

BEAM #10

Location	Station	**Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6117+99.98	4.00	574.24	574.24
CL Brg. S. Abut.	6118+02.09	4.00	574.26	574.26
A	6118+12.09	4.00	574.38	574.41
B	6118+22.09	4.00	574.50	574.55
C	6118+32.09	4.00	574.61	574.69
D	6118+42.09	4.00	574.73	574.82
E	6118+52.09	4.00	574.85	574.94
F	6118+62.09	4.00	574.96	575.05
G	6118+72.09	4.00	575.08	575.16
H	6118+82.09	4.00	575.20	575.25
I	6118+92.09	4.00	575.32	575.34
CL Brg. N. Abut.	6119+01.01	4.00	575.42	575.42
Bk. N. Abutment	6119+03.13	4.00	575.44	575.44

BEAM #11

Location	Station	**Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6118+04.60	12.00	574.13	574.13
CL Brg. S. Abut.	6118+06.71	12.00	574.16	574.16
A	6118+16.71	12.00	574.27	574.30
B	6118+26.71	12.00	574.39	574.45
C	6118+36.71	12.00	574.51	574.58
D	6118+46.71	12.00	574.62	574.71
E	6118+56.71	12.00	574.74	574.83
F	6118+66.71	12.00	574.86	574.95
G	6118+76.71	12.00	574.98	575.05
H	6118+86.71	12.00	575.09	575.15
I	6118+96.71	12.00	575.21	575.24
CL Brg. N. Abut.	6119+05.63	12.00	575.31	575.31
Bk. N. Abutment	6119+07.75	12.00	575.34	575.34

BEAM #12

Location	Station	**Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6118+09.21	20.00	574.02	574.02
CL Brg. S. Abut.	6118+11.33	20.00	574.05	574.05
A	6118+21.33	20.00	574.17	574.20
B	6118+31.33	20.00	574.28	574.34
C	6118+41.33	20.00	574.40	574.48
D	6118+51.33	20.00	574.52	574.61
E	6118+61.33	20.00	574.64	574.73
F	6118+71.33	20.00	574+75	574.84
G	6118+81.33	20.00	574.87	574.94
H	6118+91.33	20.00	574.99	575.04
I	6119+01.33	20.00	575.10	575.13
CL Brg. N. Abut.	6119+10.25	20.00	575.21	575.21
Bk. N. Abutment	6119+12.36	20.00	575.23	575.23

BEAM #13

Location	Station	**Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6118+13.83	28.00	573.90	573.90
CL Brg. S. Abut.	6118+15.95	28.00	573.92	573.92
A	6118+25.95	28.00	574.04	574.07
B	6118+35.95	28.00	574.16	574.21
C	6118+45.95	28.00	574.28	574.35
D	6118+55.95	28.00	574.39	574.48
E	6118+65.95	28.00	574.51	574.60
F	6118+75.95	28.00	574.63	574.71
G	6118+85.95	28.00	574.74	574.82
H	6118+95.95	28.00	574.86	574.91
I	6119+05.95	28.00	574.98	575.00
CL Brg. N. Abut.	6119+14.87	28.00	575.08	575.08
Bk. N. Abutment	6119+16.98	28.00	575.11	575.11

BEAM #14

Location	Station	**Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6118+18.45	36.00	573.75	573.75
CL Brg. S. Abut.	6118+20.57	36.00	573.78	573.78
A	6118+30.57	36.00	573.89	573.92
B	6118+40.57	36.00	574.01	574.07
C	6118+50.57	36.00	574.13	574.20
D	6118+60.57	36.00	574.25	574.33
E	6118+70.57	36.00	574.36	574.46
F	6118+80.57	36.00	574.48	574.57
G	6118+90.57	36.00	574.60	574.67
H	6119+00.57	36.00	574.72	574.77
I	6119+10.57	36.00	574.83	574.86
CL Brg. N. Abut.	6119+19.49	36.00	574.94	574.94
Bk. N. Abutment	6119+21.60	36.00	574.96	574.96

V:\3195\Structure\032-0122\0320122-66B83-00B-TOP SLAB ELEV.dgn

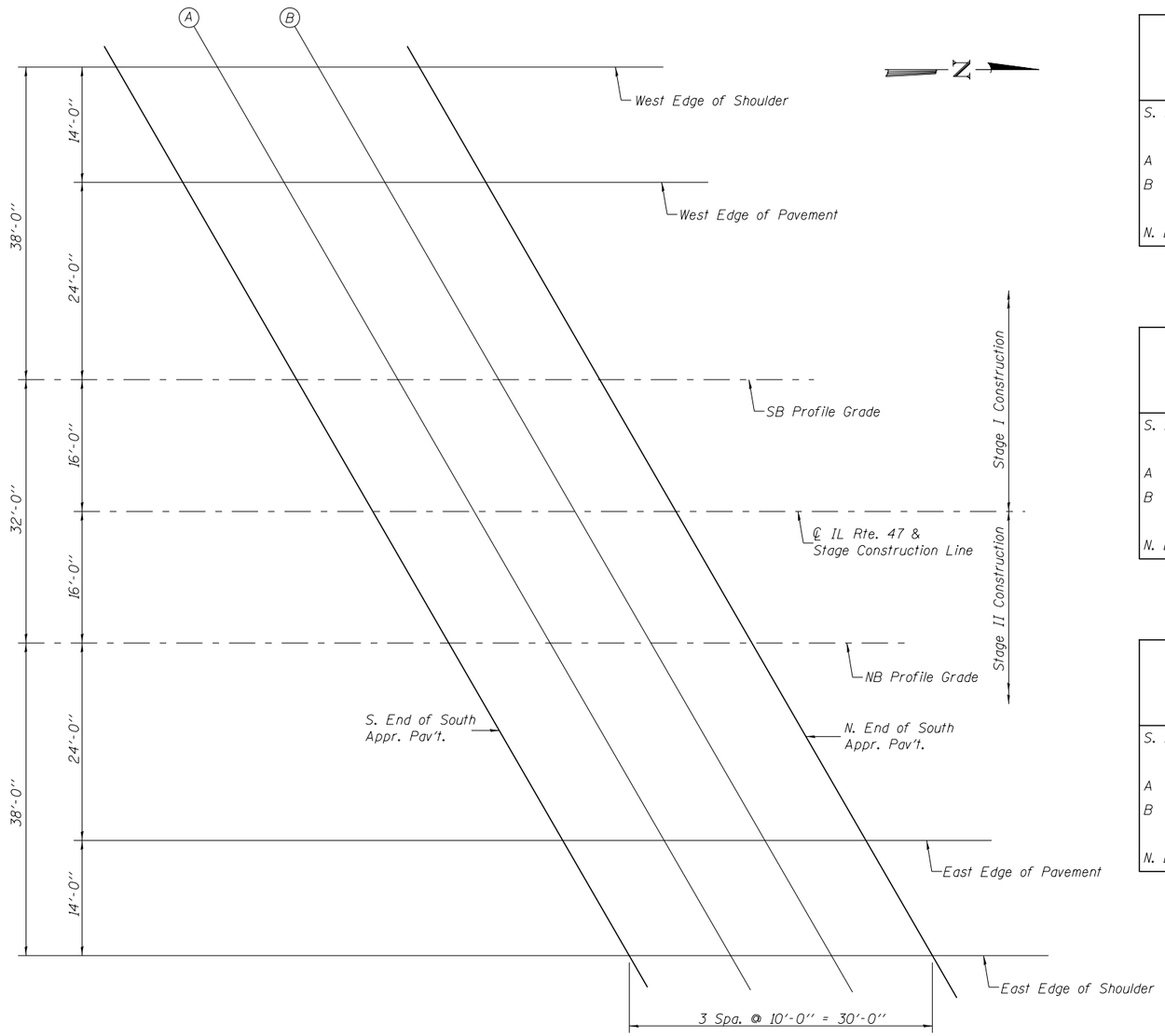
USER NAME = bdecraene | DESIGNED - STM
CHECKED - BAN
PLOT SCALE = NONE | DRAWN - STM
PLOT DATE = 8/6/2013 | CHECKED - BAN

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 032–0122
SHEET NO. 8 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	334
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		



PLAN SOUTH APPROACH PAVEMENT

*Measured from SB P.G.
**Measured from NB P.G.

WEST EDGE OF SHOULDER

Location	Station	*Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	6117+28.41	-38.00	572.65
A	6117+38.41	-38.00	572.76
B	6117+48.41	-38.00	572.88
N. End South Appr. Pav't.	6117+58.41	-38.00	573.00

WEST EDGE OF PAVEMENT

Location	Station	*Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	6117+36.49	-24.00	573.09
A	6117+46.49	-24.00	573.21
B	6117+56.49	-24.00	573.33
N. End South Appr. Pav't.	6117+66.49	-24.00	573.44

SB PROFILE GRADE

Location	Station	*Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	6117+50.35	0.00	573.73
A	6117+60.35	0.00	573.85
B	6117+70.35	0.00	573.97
N. End South Appr. Pav't.	6117+80.35	0.00	574.09

℄ IL RTE. 47 & STAGE CONSTRUCTION LINE

Location	Station	*Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	6117+59.58	16.00	574.16
A	6117+69.58	16.00	574.28
B	6117+79.58	16.00	574.40
N. End South Appr. Pav't.	6117+89.58	16.00	574.51

NB PROFILE GRADE

Location	Station	**Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	6117+68.82	0.00	573.95
A	6117+78.82	0.00	574.07
B	6117+88.82	0.00	574.19
N. End South Appr. Pav't.	6117+98.82	0.00	574.30

EAST EDGE OF PAVEMENT

Location	Station	**Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	6117+82.68	24.00	573.63
A	6117+92.68	24.00	573.75
B	6118+02.68	24.00	573.87
N. End South Appr. Pav't.	6118+12.68	24.00	573.99

EAST EDGE OF SHOULDER

Location	Station	**Offset	Theoretical Grade Elevations
S. End South Appr. Pav't.	6117+90.76	38.00	573.38
A	6118+00.76	38.00	573.50
B	6118+10.76	38.00	573.61
N. End South Appr. Pav't.	6118+20.76	38.00	573.73

V:\3195\Structure\032-0122\0320122-66B83-009-TOP SOUTH APPR SLAB ELEV.dgn

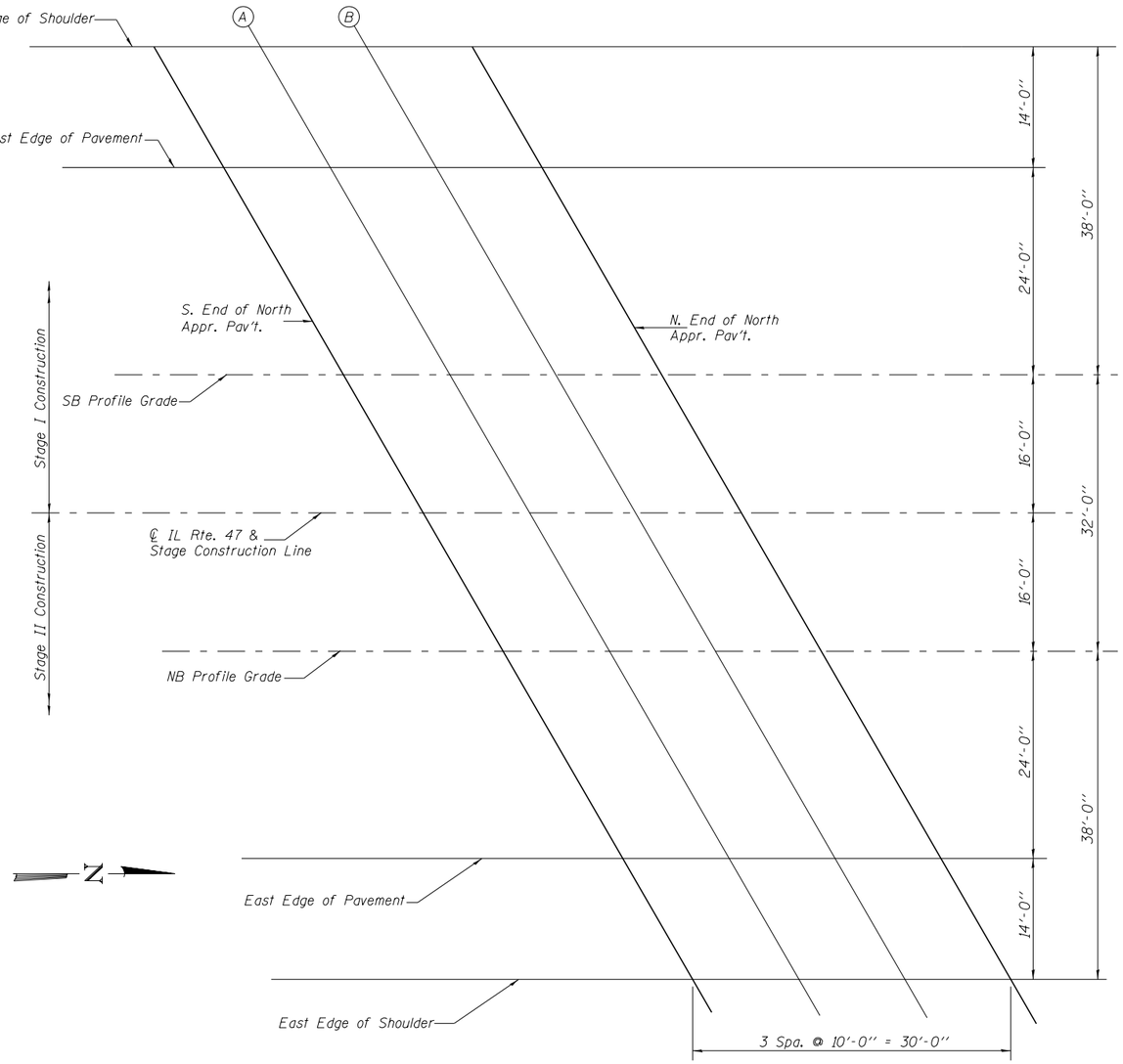
USER NAME = bdecraene | DESIGNED - STM
PLOT SCALE = NONE | DRAWN - STM
PLOT DATE = 8/6/2013 | CHECKED - BAN

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 032-0122
SHEET NO. 9 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	335
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		



PLAN NORTH APPROACH PAVEMENT

WEST EDGE OF SHOULDER

Location	Station	*Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	6118+59.25	-38.00	574.18
A	6118+69.25	-38.00	574.30
B	6118+79.25	-38.00	574.42
N. End North Appr. Pav't.	6118+89.25	-38.00	574.53

WEST EDGE OF PAVEMENT

Location	Station	*Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	6118+67.33	-24.00	574.63
A	6118+77.33	-24.00	574.74
B	6118+87.33	-24.00	574.86
N. End North Appr. Pav't.	6118+97.33	-24.00	574.98

SB PROFILE GRADE

Location	Station	*Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	6118+81.19	0.00	575.27
A	6118+91.19	0.00	575.39
B	6119+01.19	0.00	575.50
N. End North Appr. Pav't.	6119+11.19	0.00	575.62

℄ IL RTE. 47 & STAGE CONSTRUCTION LINE

Location	Station	*Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	6118+90.43	16.00	575.70
A	6119+00.43	16.00	575.81
B	6119+10.43	16.00	575.93
N. End North Appr. Pav't.	6119+20.43	16.00	576.05

NB PROFILE GRADE

Location	Station	**Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	6118+99.66	0.00	575.48
A	6119+09.66	0.00	575.60
B	6119+19.66	0.00	575.72
N. End North Appr. Pav't.	6119+29.66	0.00	575.84

EAST EDGE OF PAVEMENT

Location	Station	**Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	6119+13.52	24.00	575.17
A	6119+23.52	24.00	575.28
B	6119+33.52	24.00	575.40
N. End North Appr. Pav't.	6119+43.52	24.00	575.52

EAST EDGE OF SHOULDER

Location	Station	**Offset	Theoretical Grade Elevations
S. End North Appr. Pav't.	6119+21.60	38.00	574.91
A	6119+31.60	38.00	575.03
B	6119+41.60	38.00	575.15
N. End North Appr. Pav't.	6119+51.60	38.00	575.26

*Measured from SB P.G.
**Measured from NB P.G.

V:\3195\Structure\032-0122\0320122-66883-010-TOP NORTH APPR SLAB ELEV.dgn

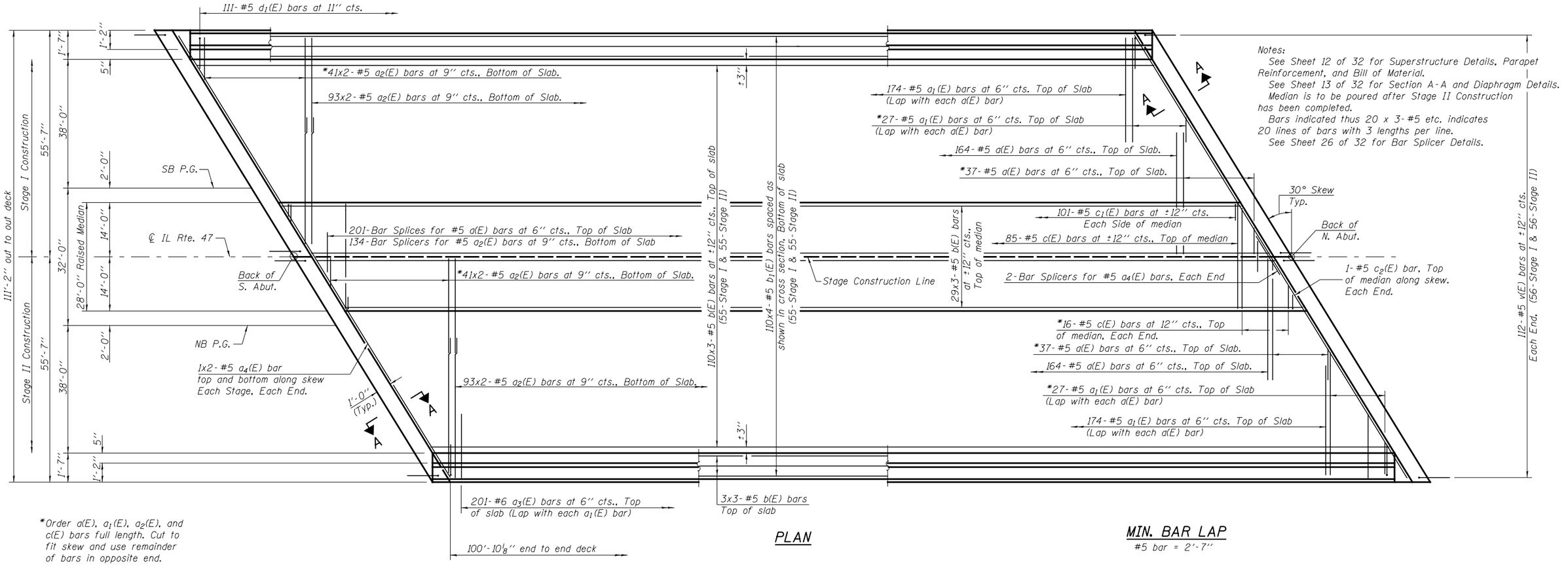
USER NAME = bdecraene | DESIGNED - STM
PLOT SCALE = NONE | DRAWN - STM
PLOT DATE = 8/6/2013 | CHECKED - BAN

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 032-0122
SHEET NO. 10 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	336
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		

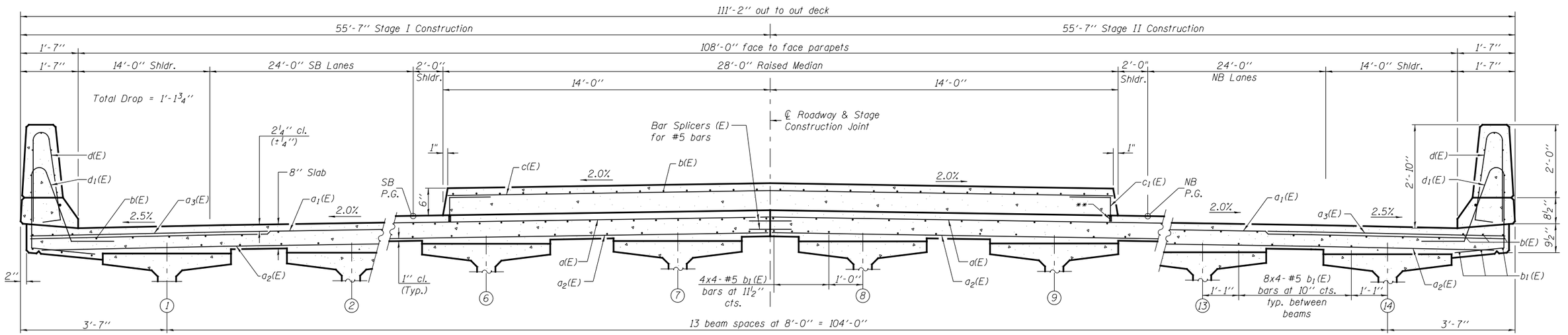


Notes:
See Sheet 12 of 32 for Superstructure Details, Parapet Reinforcement, and Bill of Material.
See Sheet 13 of 32 for Section A-A and Diaphragm Details.
Median is to be poured after Stage II Construction has been completed.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet 26 of 32 for Bar Splicer Details.

*Order a(E), a_1(E), a_2(E), and c(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

PLAN

MIN. BAR LAP
#5 bar = 2'-7"



CROSS SECTION
(Looking North)

**¾" ϕ Galvanized expansion anchor or Ferrule Loop Slab Insert (Proof Load 6600 lb.). Cost is included in the cost of the Reinforcement Bars, Epoxy Coated.

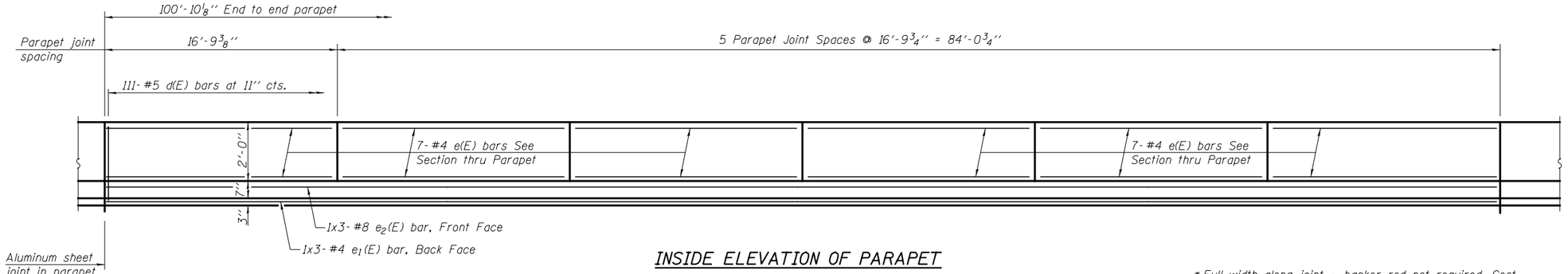
V:\3195\Structure\032-0122\0320122-66883-011-SUPERSTRUCTURE.dgn	USER NAME = bdecreene	DESIGNED - STM	
	PLOT SCALE = NONE	CHECKED - BAN	
	PLOT DATE = 8/6/2013	DRAWN - TAC/STM	
		CHECKED - BAN	

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

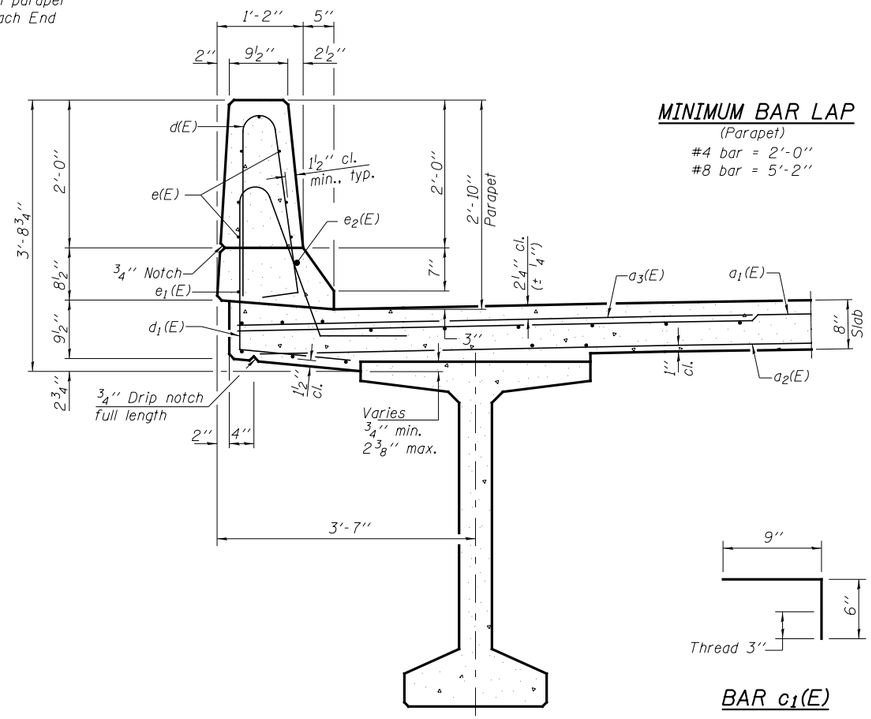
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 032-0122
SHEET NO. 11 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	337
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		



INSIDE ELEVATION OF PARAPET



SECTION THRU PARAPET

MINIMUM BAR LAP

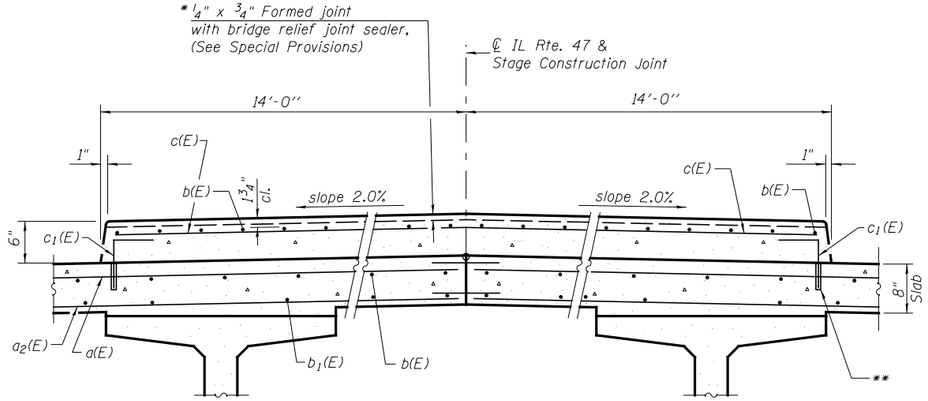
(Parapet)

#4 bar = 2'-0"

#8 bar = 5'-2"

* 1/4" x 3/4" Formed joint with bridge relief joint sealer. (See Special Provisions)

℄ IL Rte. 47 & Stage Construction Joint



* Full width along joint - backer rod not required. Cost included with Concrete Superstructure.

** 3/4" ϕ Galvanized expansion anchor or Ferrule Loop Slab Insert (Proof Load 6600 lb.). Cost is included in the cost of the Reinforcement Bars, Epoxy Coated.

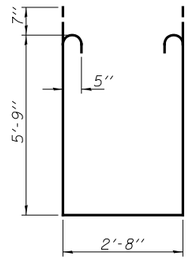
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	402	#5	33'-2"	
a_1(E)	402	#5	24'-1"	
a_2(E)	536	#5	28'-8"	
a_3(E)	402	#6	6'-6"	
a_4(E)	16	#5	33'-2"	
b(E)	435	#5	35'-4"	
b_1(E)	440	#5	27'-2"	
c(E)	101	#5	27'-8"	
c_1(E)	202	#5	1'-3"	
c_2(E)	2	#5	31'-11"	
d(E)	222	#5	5'-7"	
d_1(E)	222	#5	7'-1"	
e(E)	84	#4	16'-6"	
e_1(E)	6	#4	34'-11"	
e_2(E)	6	#8	37'-1"	
m(E)	56	#6	33'-8"	
m_1(E)	120	#6	8'-4"	
m_2(E)	20	#6	3'-5"	
m_3(E)	24	#6	6'-5"	
m_4(E)	4	#6	2'-6"	
m_5(E)	84	#5	4'-0"	
m_6(E)	20	#6	3'-11"	
m_7(E)	4	#6	3'-1"	
s(E)	196	#5	10'-0"	
s_1(E)	144	#5	15'-4"	
v(E)	224	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			POUNDS	91,080
Concrete Superstructure			CU YD	553.0

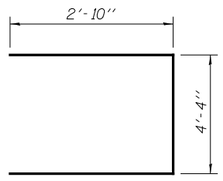
Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.

BAR c_1(E)

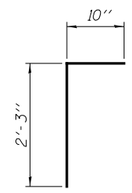
SECTION THRU MEDIAN



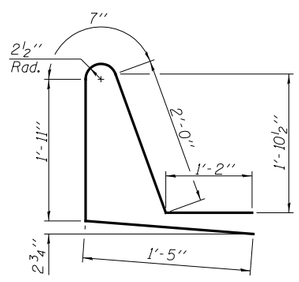
BAR s_1(E)



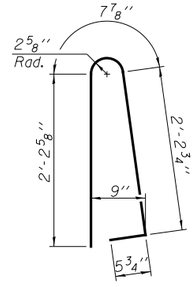
BAR s(E)



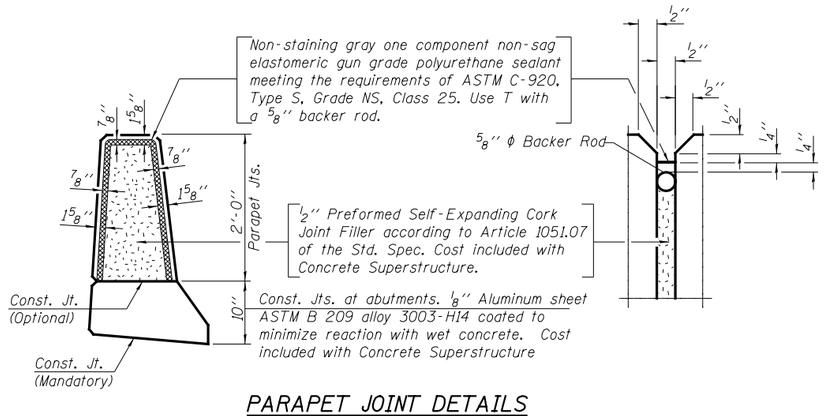
BAR v(E)



BAR d_1(E)

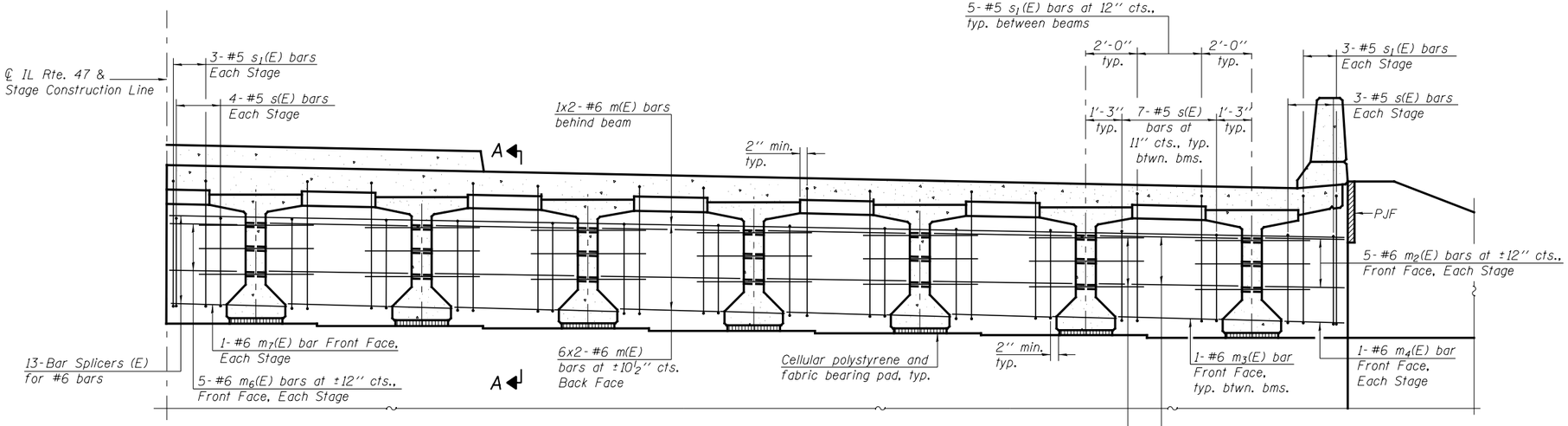


BAR d(E)



PARAPET JOINT DETAILS

V:\3195\Structure\032-0122\0320122-66B83-012-SUPERSTR DETAILS.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS STRUCTURE NO. 032-0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - TAC/STM				326	110BR	GRUNDY	644	338
	PLOT DATE = 8/6/2013	CHECKED - BAN			SHEET NO. 12 OF 32 SHEETS				CONTRACT NO. 66B83	
								ILLINOIS	FED. AID PROJECT	



DIAPHRAGM ELEVATION AT ABUTMENT

Notes:

Reinforcement bars in diaphragm are billed with superstructure on Sheet 12 of 32.

Concrete in diaphragm is included with Concrete Superstructure on Sheet 12 of 32.

See Sheet 12 of 32 for details of bars s(E), s_1(E) and v(E).

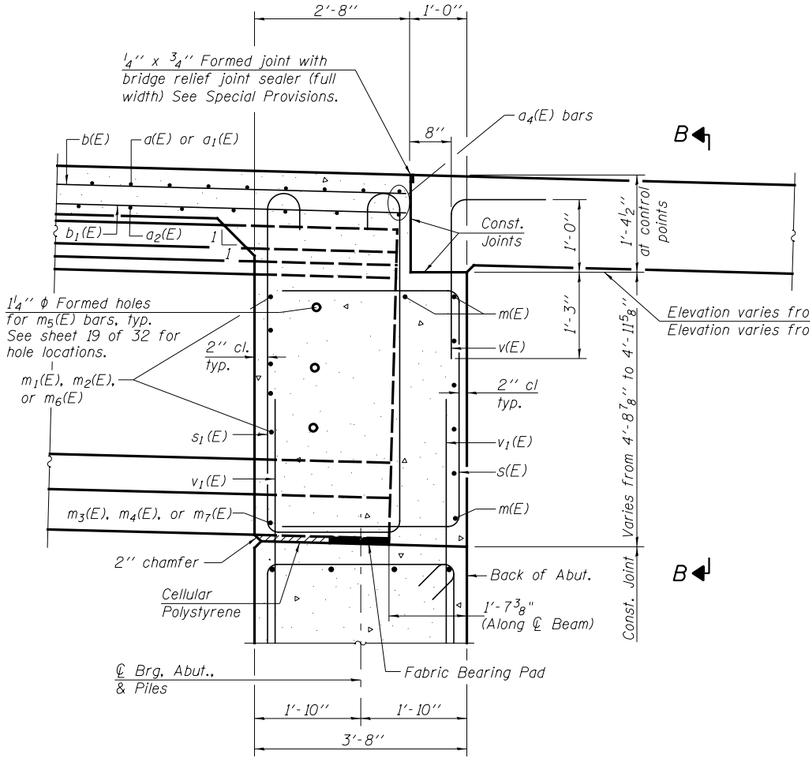
The s(E) and s_1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

The approach slab seat shall have a constant slope determined from the control points shown.

Cost of cellular polystyrene is included with Concrete Superstructure. See Sheet 26 of 32 for Bar Splicer Details.

MIN. BAR LAP

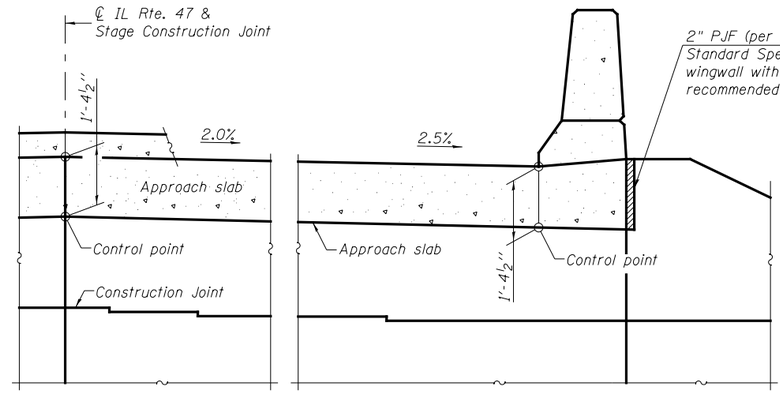
#6 bar = 3'-4"



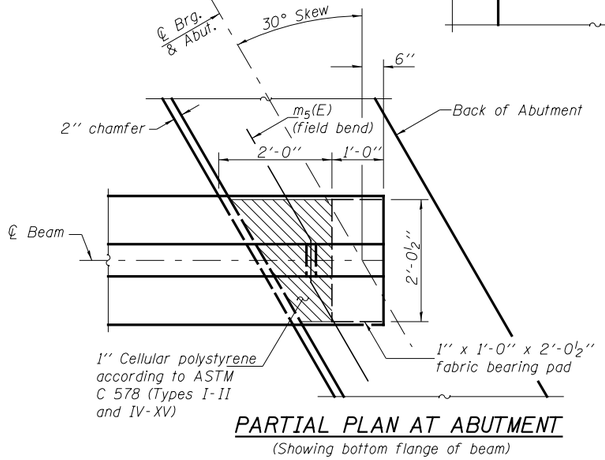
SECTION A-A

(at Rt. L's)

(South Abutment shown, North Abutment similar)



VIEW B-B

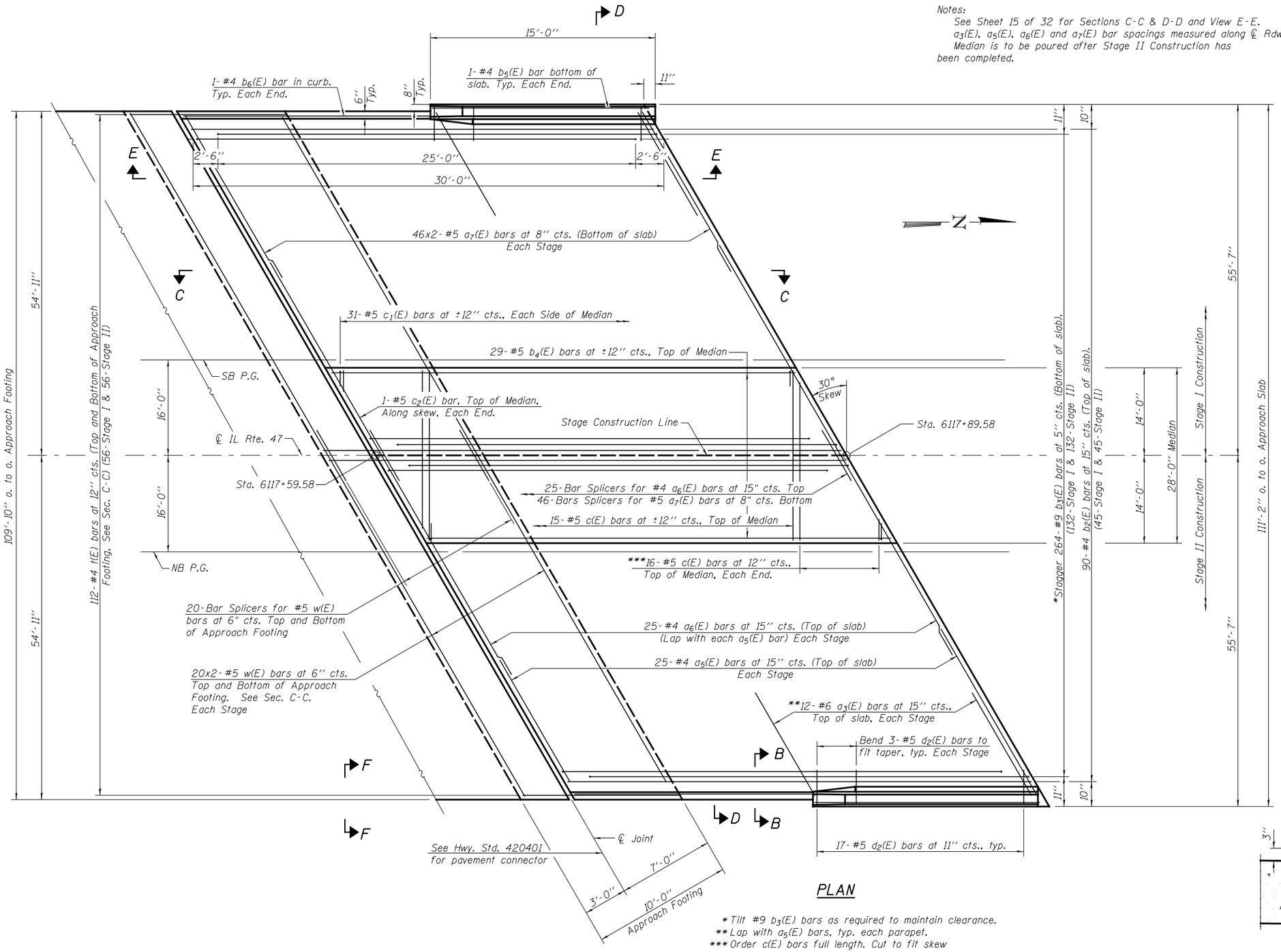


PARTIAL PLAN AT ABUTMENT

(Showing bottom flange of beam)

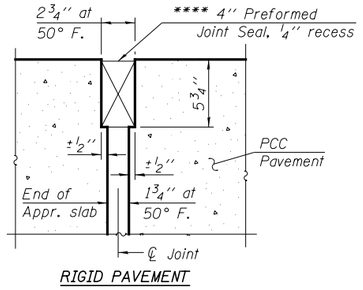
V:\3195\Structure\032-0122\0320122-66B83-013-DIAPHRAGM.dgn	USER NAME = bdecraene	DESIGNED - STM	*Hutchison Engineering, Inc.* JACKSONVILLE–SHOREWOOD–PEORIA	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**DIAPHRAGM DETAILS STRUCTURE NO. 032-0122**	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - STM				326	110BR	GRUNDY	644	339
	PLOT DATE = 8/6/2013	CHECKED - BAN			SHEET NO. 13 OF 32 SHEETS			CONTRACT NO. 66B83		
		CHECKED - BAN					ILLINOIS	FED. AID PROJECT		

Notes:
See Sheet 15 of 32 for Sections C-C & D-D and View E-E.
a_3(E), a_5(E), a_6(E) and a_7(E) bar spacings measured along ℄ Rdwy.
Median is to be poured after Stage II Construction has been completed.



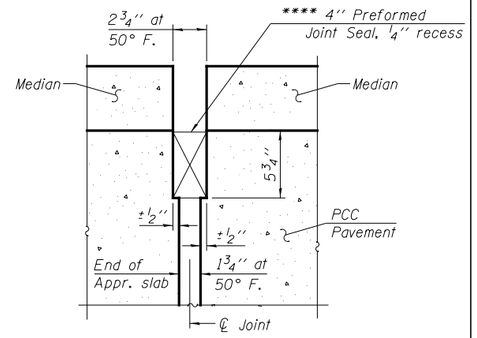
PLAN

* Tilt #9 b_3(E) bars as required to maintain clearance.
** Lap with a_5(E) bars, typ. each parapet.
*** Order c(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.
**** Cost included with Concrete Superstructure.



RIGID PAVEMENT

DETAIL A

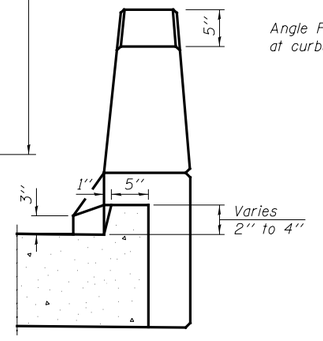


RIGID PAVEMENT

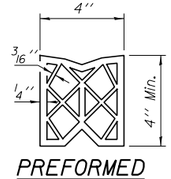
DETAIL B

VIEW F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.



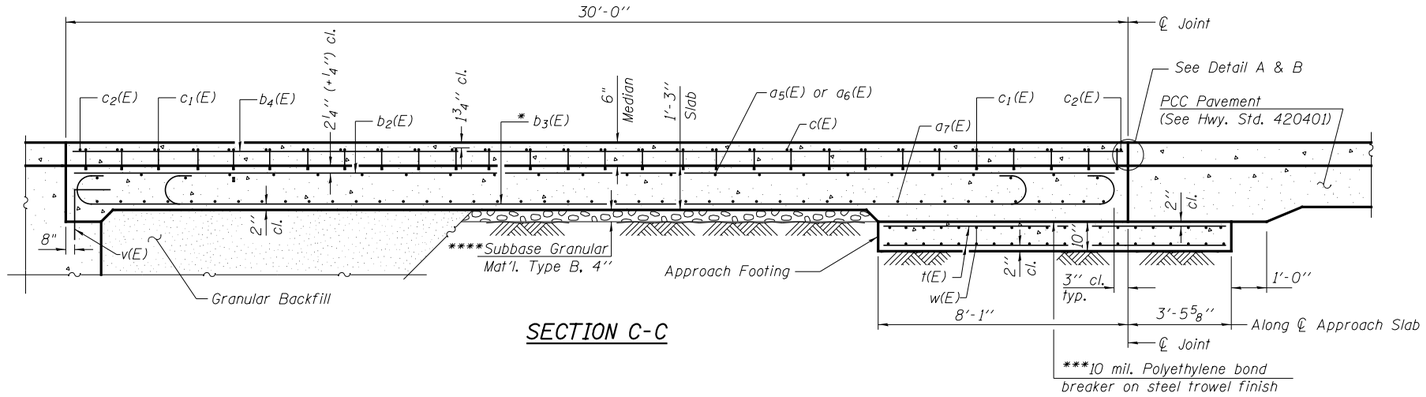
VIEW B-B



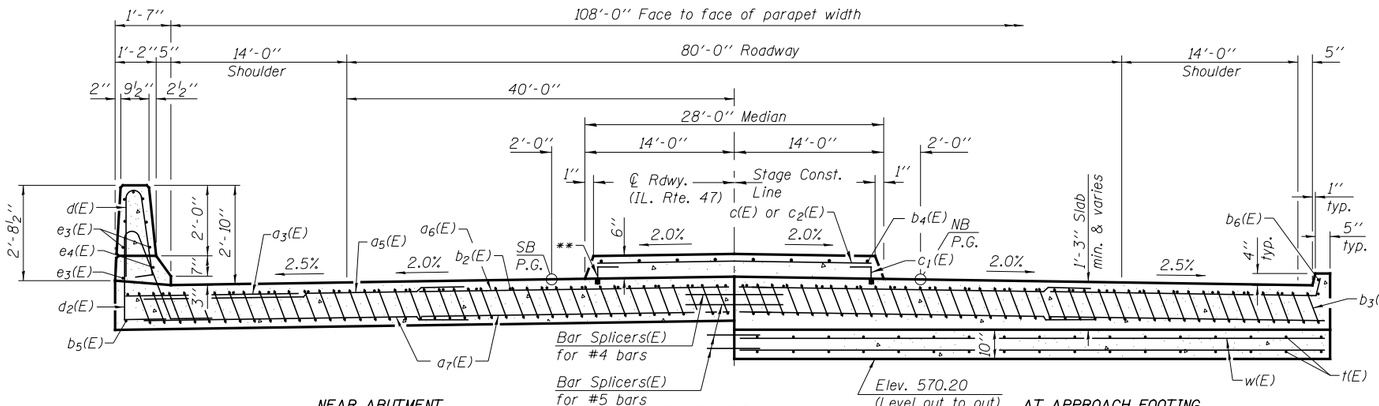
PREFORMED JOINT SEAL

(Sheet 1 of 2)

V:\3195\Structure\032-0122\0320122-66883-014 SOUTH APPR SLAB 1.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOUTH BRIDGE APPROACH SLAB DETAILS STRUCTURE NO. 032-0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - STM				326	110BR	GRUNDY	644	340
	PLOT DATE = 8/6/2013	CHECKED - BAN			SHEET NO. 14 OF 32 SHEETS			CONTRACT NO. 66B83		
							ILLINOIS	FED. AID PROJECT		



SECTION C-C

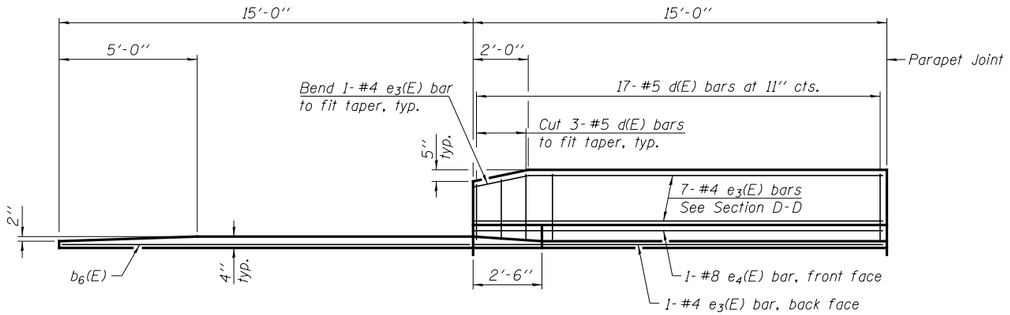


NEAR ABUTMENT

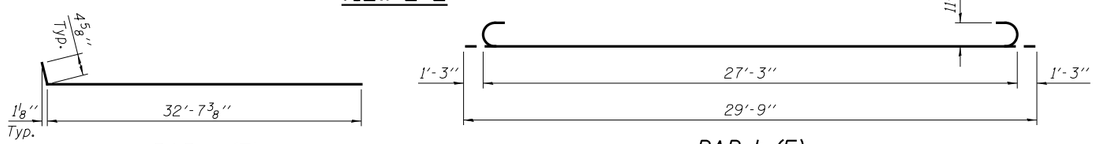
SECTION D-D

(See Plan for dimensions not shown)

AT APPROACH FOOTING



VIEW E-E

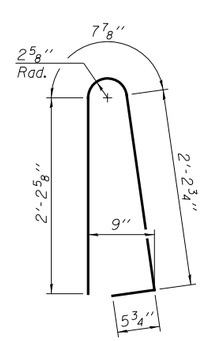


BAR a5(E)

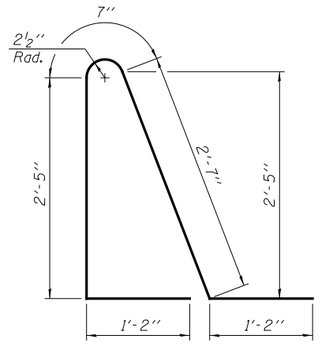
BAR b3(E)

Notes:

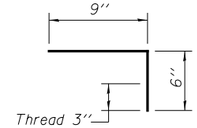
See Sheet 14 of 32 for Details A & B and View B-B.
Approach slab, parapet, and median concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
See Sheet 12 of 32 for v(E) bar details.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
See Sheet 26 of 32 for bar splicer details.
Cost of excavation for approach footing included with Concrete Structures.
See Sheet 2 of 32 for Granular Backfill and drainage treatment details.
See Sheet 12 of 32 for additional parapet details.
Median is to be poured after Stage II Construction has been completed.



BAR d(E)



BAR d2(E)



BAR c1(E)

MIN. BAR LAP

#4 = 2'-1"
#5 = 2'-7"

* Tilt #9 b3(E) bars as required to maintain clearance.

** ¾" ϕ Galvanized expansion anchor or Ferrule Loop Slab Insert (Proof Load 6600 lbs). Cost is included in the cost of Reinforcement Bars, Epoxy Coated.

*** Cost included with Concrete Superstructure.

SOUTH APPROACH BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3(E)	24	#6	6'-6"	
a5(E)	50	#4	33'-0"	
a6(E)	50	#4	32'-7"	
a7(E)	184	#5	32'-8"	
b2(E)	90	#4	29'-8"	
b3(E)	264	#9	29'-9"	
b4(E)	29	#5	29'-8"	
b5(E)	2	#4	14'-8"	
b6(E)	2	#4	14'-4"	
c(E)	31	#5	27'-8"	
c1(E)	62	#5	1'-3"	
c2(E)	2	#5	31'-10"	
d(E)	34	#5	5'-7"	
d2(E)	34	#5	7'-11"	
e3(E)	16	#4	14'-8"	
e4(E)	2	#8	14'-8"	
t(E)	224	#4	11'-2"	
w(E)	160	#5	32'-10"	
Concrete Superstructure			CU YD	210.6
Concrete Structures			CU YD	39.1
Reinforcement Bars, Epoxy Coated			POUND	47,020

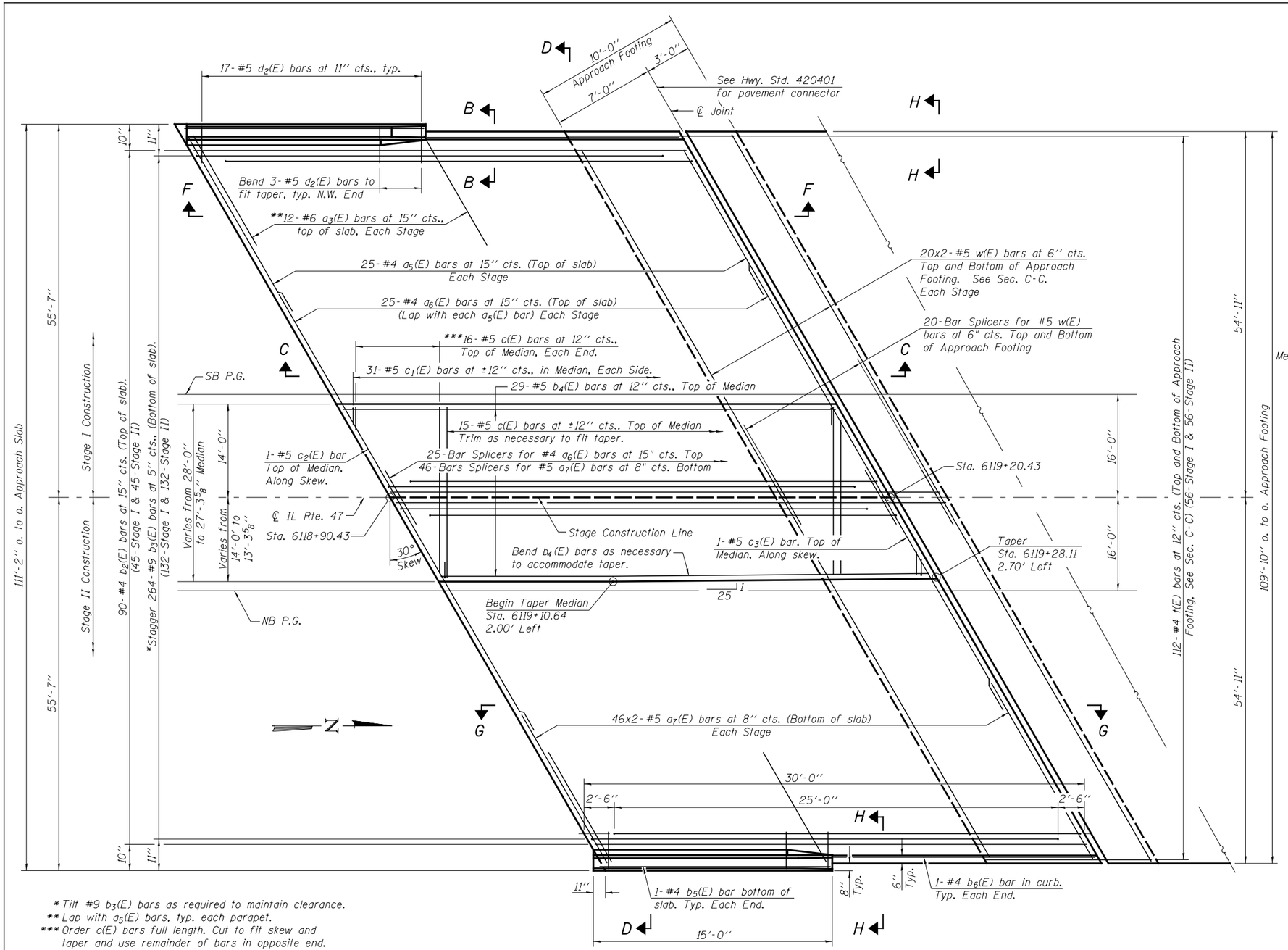
V:\3195\Structure\032-0122\0320122-66883-015 SOUTH APPR SLAB 2.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA
		CHECKED - BAN	
	PLOT SCALE = NONE	DRAWN - STM	
	PLOT DATE = 8/6/2013	CHECKED - BAN	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 032-0122

SHEET NO. 15 OF 32 SHEETS

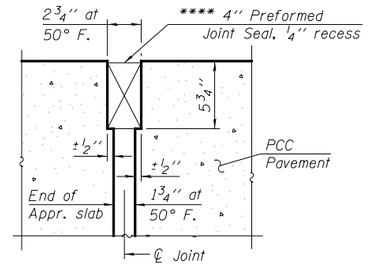
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	341
		CONTRACT NO. 66B83		
ILLINOIS FED. AID PROJECT				



PLAN

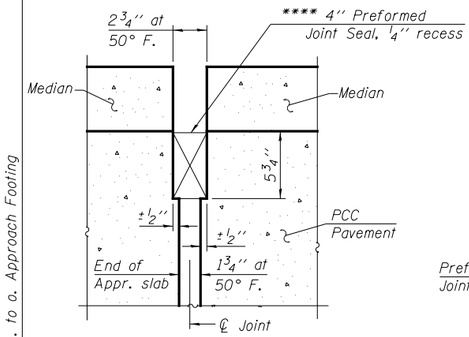
* Tilt #9 b_3(E) bars as required to maintain clearance.
** Lap with a_5(E) bars, typ. each parapet.
*** Order c(E) bars full length. Cut to fit skew and taper and use remainder of bars in opposite end.
**** Cost included with Concrete Superstructure.

Notes:
See Sheet 17 of 32 for Sections C-C & D-D and Views F-F and G-G.
a_3(E), a_5(E), a_6(E) and a_7(E) bar spacings measured along ℄ Rdwy.
Median is to be poured after Stage II Construction has been completed.
Offsets are taken from NB P.G.



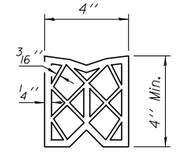
RIGID PAVEMENT

DETAIL A

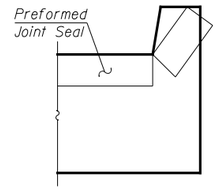


RIGID PAVEMENT

DETAIL B

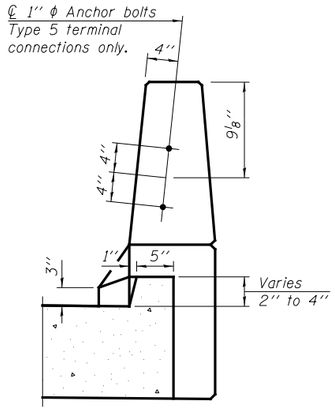


PREFORMED JOINT SEAL

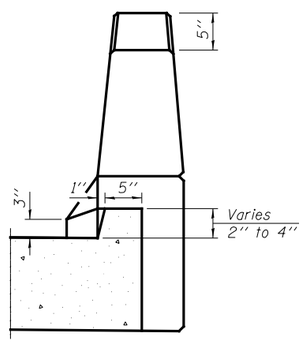


VIEW H-H

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.

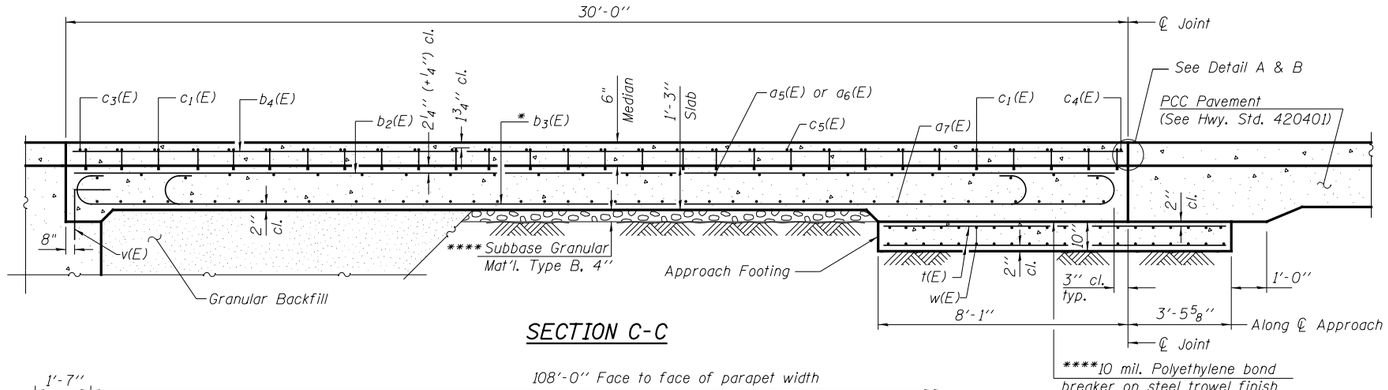


VIEW H-H

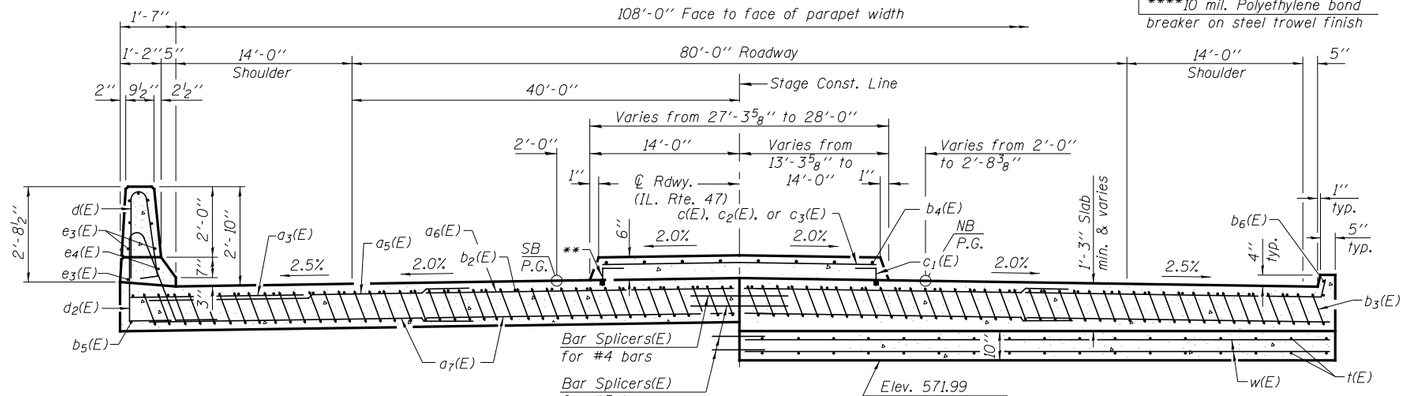


VIEW B-B

V:\3195\Structure\032-0122\0320122-66B83-016-NORTH APPR SLAB 1.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	NORTH BRIDGE APPROACH SLAB DETAILS STRUCTURE NO. 032–0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - STM			SHEET NO. 16 OF 32 SHEETS	326	110BR	GRUNDY	644	342
	PLOT DATE = 8/6/2013	CHECKED - BAN							CONTRACT NO. 66B83	
		CHECKED - BAN						ILLINOIS	FED. AID PROJECT	



SECTION C-C

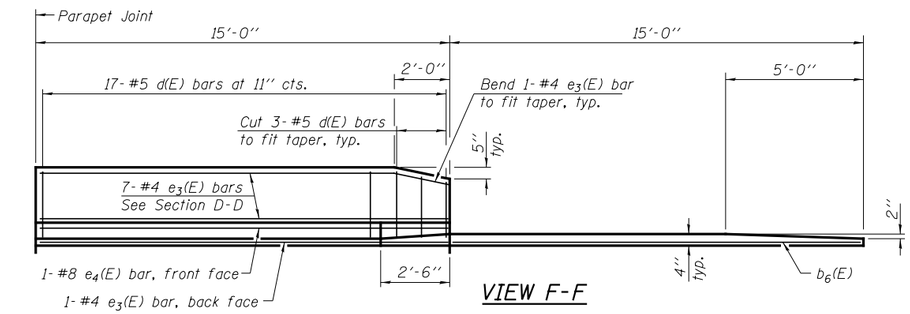


NEAR ABUTMENT

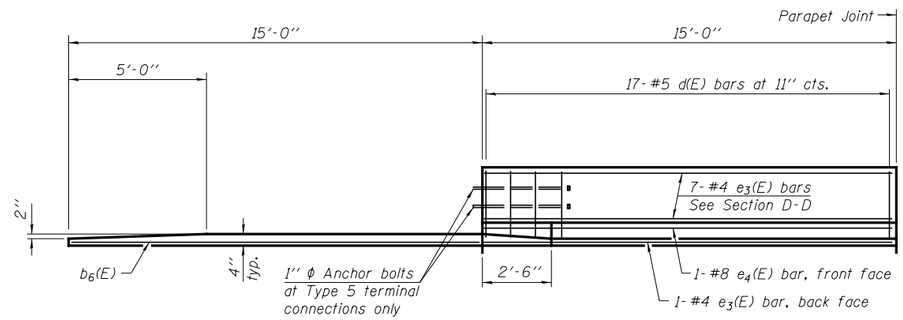
AT APPROACH FOOTING

SECTION D-D

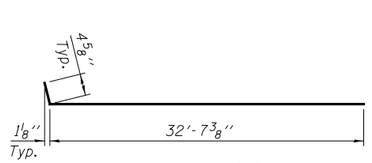
(See Plan for dimensions not shown)



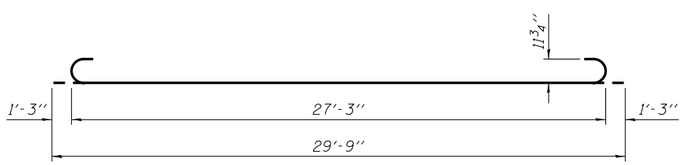
VIEW F-F



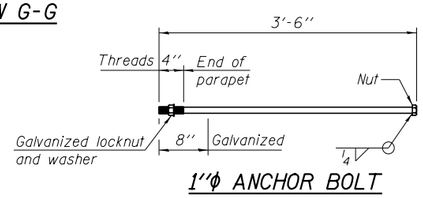
VIEW G-G



BAR a5(E)



BAR b3(E)

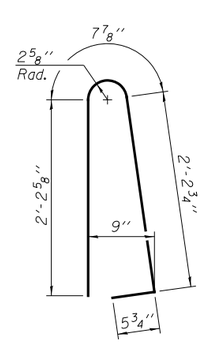


1"ϕ ANCHOR BOLT

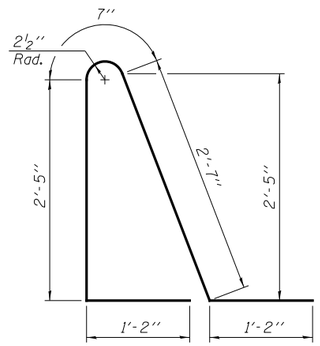
(Cost included with Concrete Superstructure)

Notes:

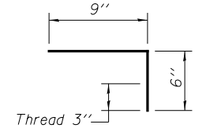
See Sheet 16 of 32 for Details A & B and View B-B.
Approach slab, parapet, curb, and median concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
See Sheet 12 of 32 for v(E) bar details.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
See Sheet 26 of 32 for bar splicer details.
Cost of excavation for approach footing included with Concrete Structures.
See Sheet 2 of 32 for Granular Backfill and drainage treatment details.
See Sheet 12 of 32 for additional parapet details.
Median is to be poured after Stage II Construction has been completed.



BAR d(E)



BAR d2(E)



BAR c1(E)

MIN. BAR LAP

#4 = 2'-1"
#5 = 2'-7"

* Tilt #9 $b_3(E)$ bars as required to maintain clearance.

** ¾" ϕ Galvanized expansion anchor or Ferrule Loop Slab Insert (Proof Load 6600 lbs). Cost is included in the cost of Reinforcement Bars, Epoxy Coated.

*** Cost included with Concrete Superstructure.

NORTH APPROACH BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_3(E)$	24	#6	6'-6"	
$a_5(E)$	50	#4	33'-0"	
$a_6(E)$	50	#4	32'-7"	
$a_7(E)$	184	#5	32'-8"	
$b_2(E)$	90	#4	29'-8"	
$b_3(E)$	264	#9	29'-9"	
$b_4(E)$	29	#5	29'-8"	
$b_5(E)$	2	#4	14'-8"	
$b_6(E)$	2	#4	14'-4"	
c(E)	31	#5	27'-8"	
$c_1(E)$	62	#5	1'-3"	
$c_2(E)$	1	#5	31'-10"	
$c_3(E)$	1	#5	31'-0"	
d(E)	34	#5	5'-7"	
$d_2(E)$	34	#5	7'-11"	
$e_3(E)$	16	#4	14'-8"	
$e_4(E)$	2	#8	14'-8"	
t(E)	224	#4	11'-2"	
w(E)	160	#5	32'-10"	
Concrete Superstructure			CU YD	209.9
Concrete Structures			CU YD	39.1
Reinforcement Bars, Epoxy Coated			POUND	47,020

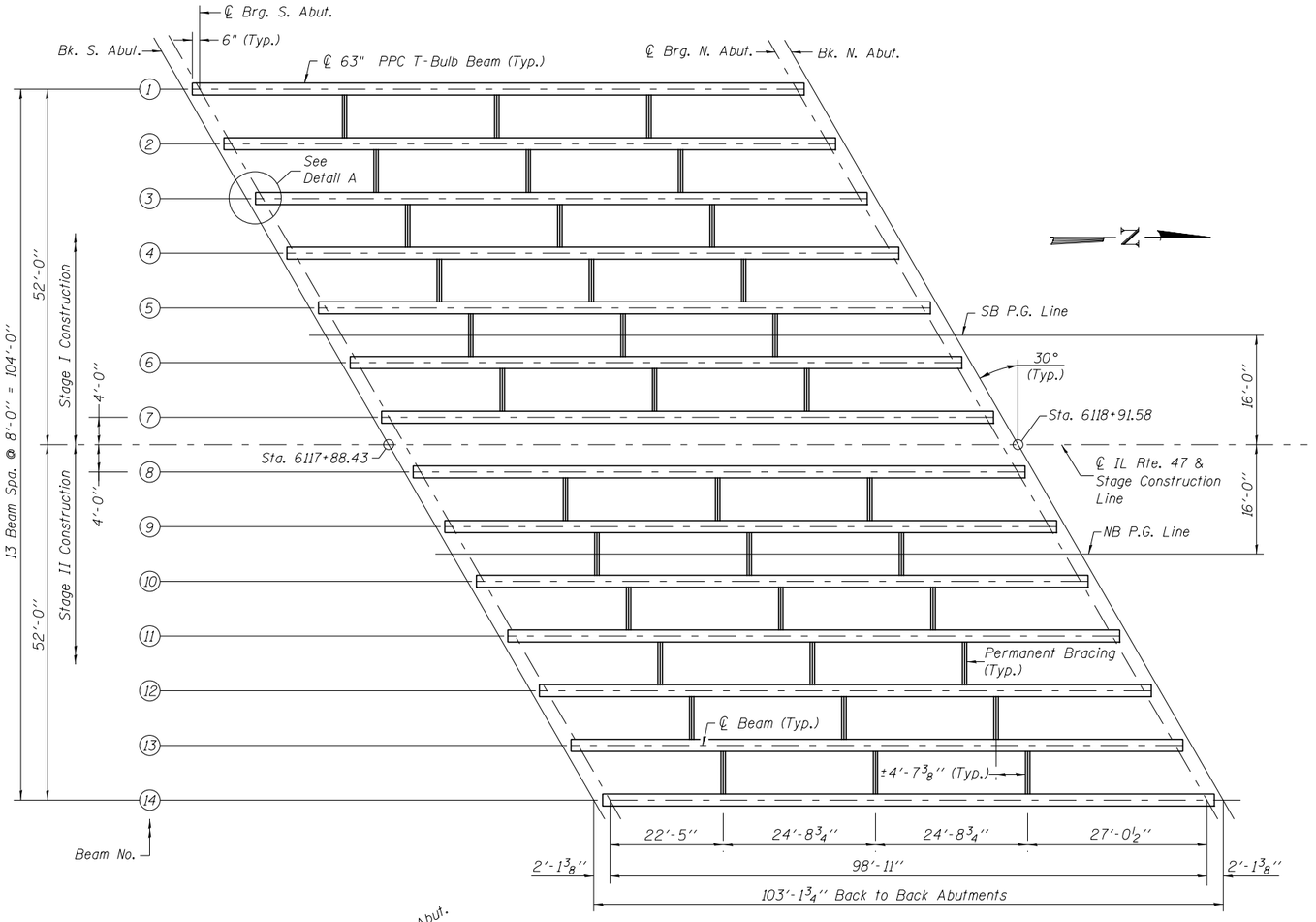
V:\3195\Structure\032-0122\0320122-66B83-017-NORTH APPR SLAB 2.dgn
USER NAME = bdecraene
PLOT SCALE = NONE
PLOT DATE = 8/6/2013
DESIGNED - STM
CHECKED - BAN
DRAWN - STM
CHECKED - BAN

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 032–0122
SHEET NO. 17 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	343
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

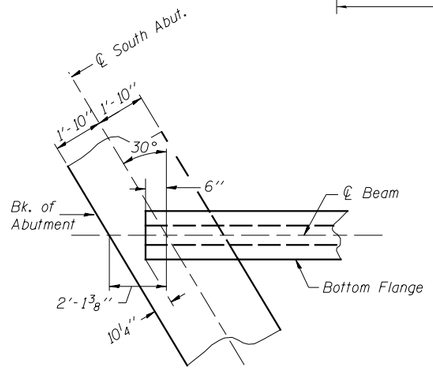


FRAMING PLAN

INTERIOR BEAM MOMENT TABLE		
		0.5 Sp. 1
I	(in^4)	392,638
I'	(in^4)	770,576
S_b	(in^3)	12,224
S_b'	(in^3)	16,326
S_t	(in^3)	12,715
S_t'	(in^3)	48,772
DC1	(k/')	1.60
M_{DC1}	('k)	1,954
DC2	(k/')	0.26
M_{DC2}	('k)	322
DW	(k/')	0.40
M_{DW}	('k)	490
M_{L+IM}	('k)	1,951

INTERIOR BEAM REACTION TABLE		
		Abut.
R_{DC1}	(k)	79.1
R_{DC2}	(k)	12.9
R_{DW}	(k)	19.8
R_{L+IM}	(k)	107.6
R_{Total}	(k)	219.4

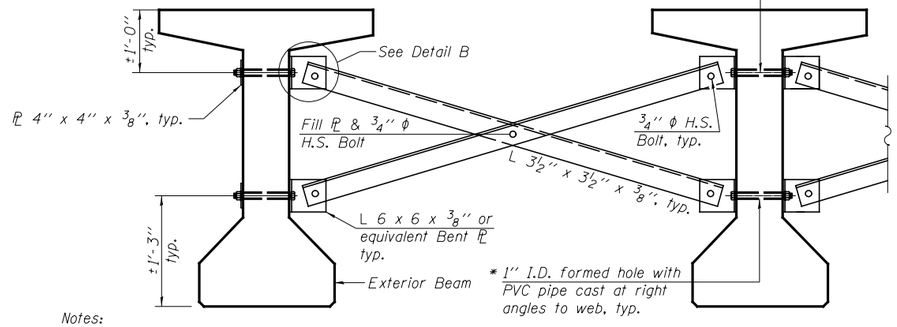
I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).



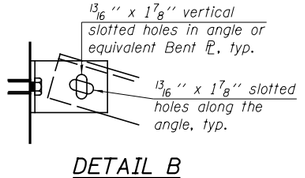
DETAIL A

* Fabricator shall locate to miss strands within permissible tolerances.

3/4" ϕ A307 Bolts with lock nuts.. typ. Bolts through the concrete web shall be tightened to snug tight only.



Notes:
All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.
Two hardened washers are required for each set of oversized holes.
All holes shall be 15/16"ϕ unless otherwise noted.
5/16" x 3" x 3" plate washers are required over all slotted holes.
All bolts shall be galvanized according to AASHTO M232.
Bracing shall be installed as beams are erected and tightened as soon as possible during erection.
Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams.
All structural steel for permanent bracing shall be AASHTO M 270 Grade 50.



DETAIL B

PERMANENT BRACING DETAILS FOR BULB T-BEAMS

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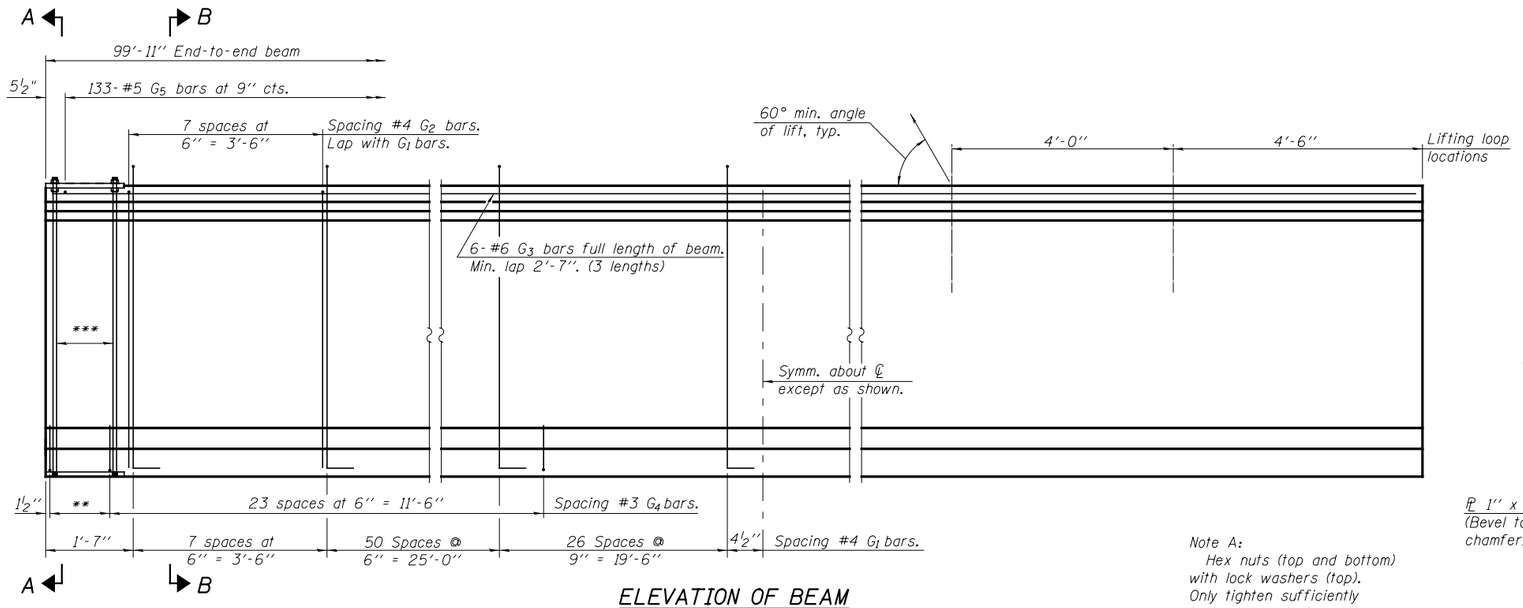
	PLOT SCALE = NONE	CHECKED - BAN	
	PLOT DATE = 8/6/2013	DRAWN - TAC/STM	
		CHECKED - BAN	

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 032-0122
SHEET NO. 18 OF 32 SHEETS

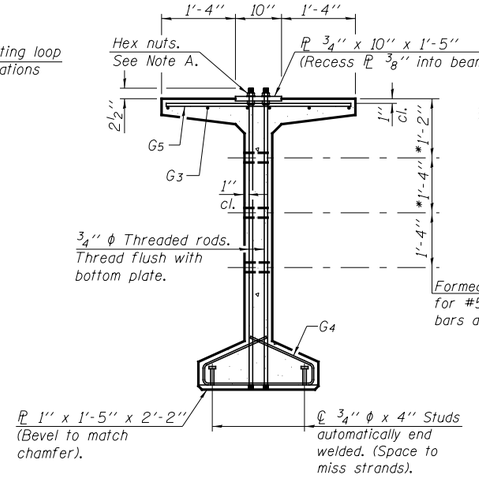
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	344
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		



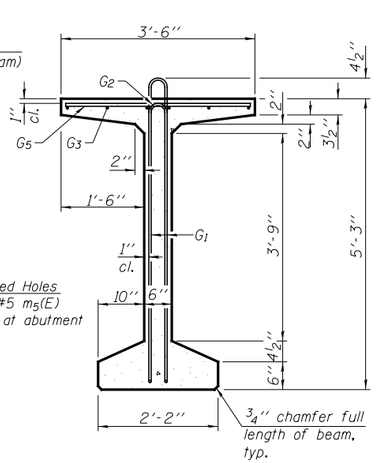
ELEVATION OF BEAM
(Showing reinforcement & dimensions)

* Adjust these dimensions to miss draped strands.
** 4 spaces at 3¼" = 1'-1".
*** 5-¾" ϕ threaded dowel rods at 3¼" cts., each face.

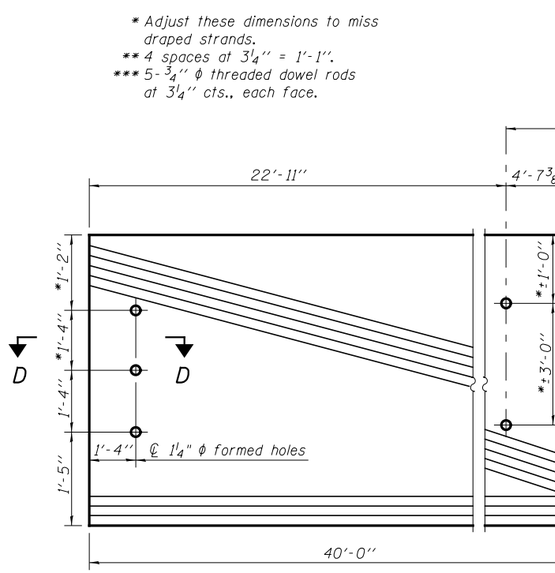
Note A:
Hex nuts (top and bottom) with lock washers (top). Only tighten sufficiently to compress lock washers.



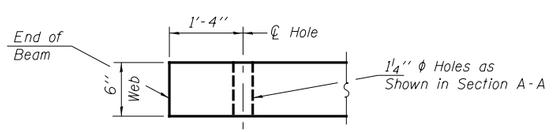
SECTION A-A



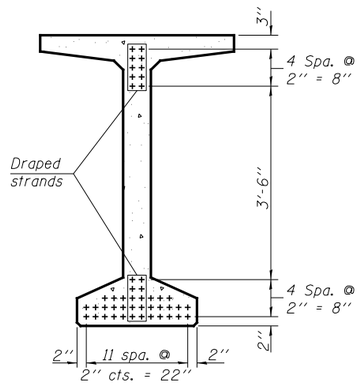
SECTION B-B



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION D-D

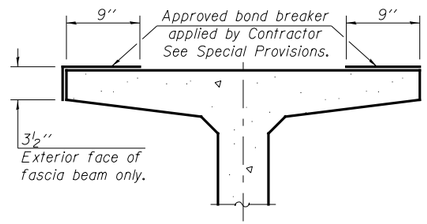


SECTION C-C

****BAR LIST
ONE BEAM ONLY

Bar	No.	Size	Length	Shape
G_1	168	#4	11'-11"	⊓L
G_2	14	#4	10'-2"	⊓
G_3	18	#6	35'-0"	——
G_4	56	#3	4'-11"	⌓
G_5	133	#5	3'-4"	——

****For information only



SECTION THRU TOP FLANGE
(Showing limits of bond breaker)

Notes:
See Sheet 20 of 32 for additional details and Bill of Material.
Required release strength, f'ci, shall be 6,000 psi.
Apply approved bond breaker as shown in Section Thru Top Flange full length of beam. See Special Provisions.

V:\3195\Structure\032-0122\0320122-66B83-019-PPC BULB T 63 INCH.dgn
USER NAME = bdecraene
PLOT SCALE = NONE
PLOT DATE = 8/6/2013
DESIGNED - STM
CHECKED - BAN
DRAWN - TAC/STM
CHECKED - BAN

Hutchison Engineering, Inc.
JACKSONVILLE-SHOREWOOD-PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

63" PPC BULB T-BEAM
STRUCTURE NO. 032-0122
SHEET NO. 19 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	345
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		

NOTES

Inserts for $\frac{3}{4}''$ ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

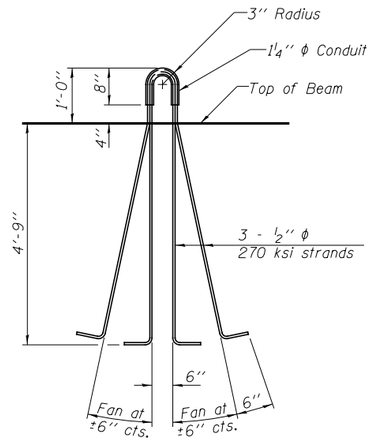
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be $\frac{1}{2}''$ and the nominal cross-sectional area shall be 0.153 sq. in.

A minimum $2\frac{1}{2}''$ ϕ lifting pin shall be used to engage the lifting loops during handling.

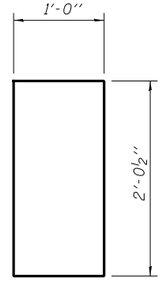
The top and bottom plates shall be AASHTO M270 Grade 50.

The bottom plates and studs shall be galvanized according to AASHTO M111. Top plates and threaded rods need not be galvanized.

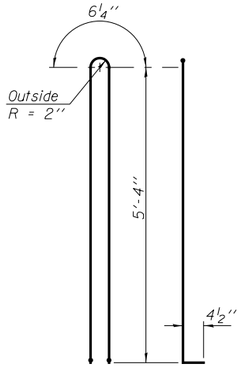
Threaded rods shall be ASTM F 1554 Grade 55.



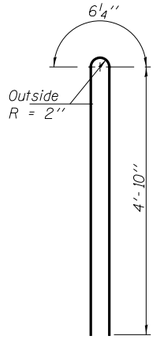
LIFTING LOOP DETAIL



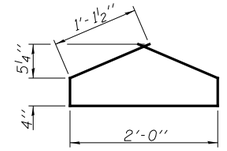
1'' FABRIC BEARING PAD



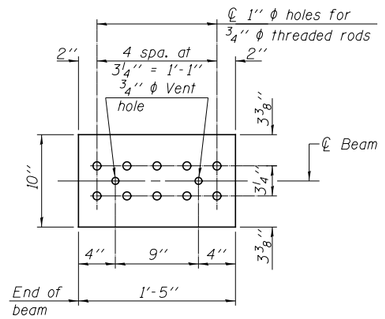
BAR G1



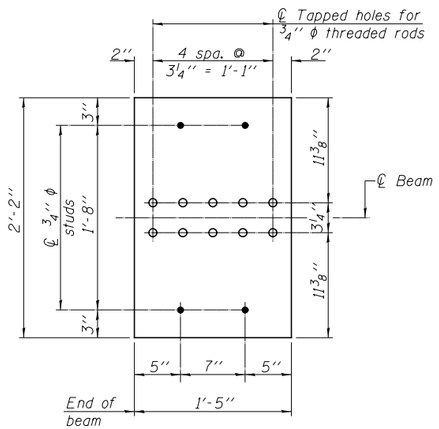
BAR G2



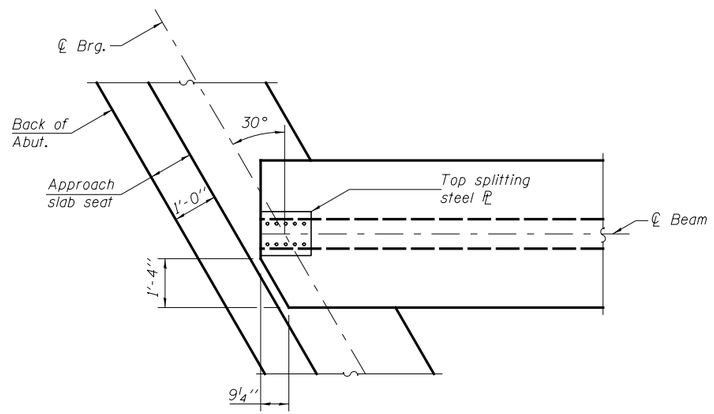
BAR G4



TOP PLATE



BOTTOM PLATE



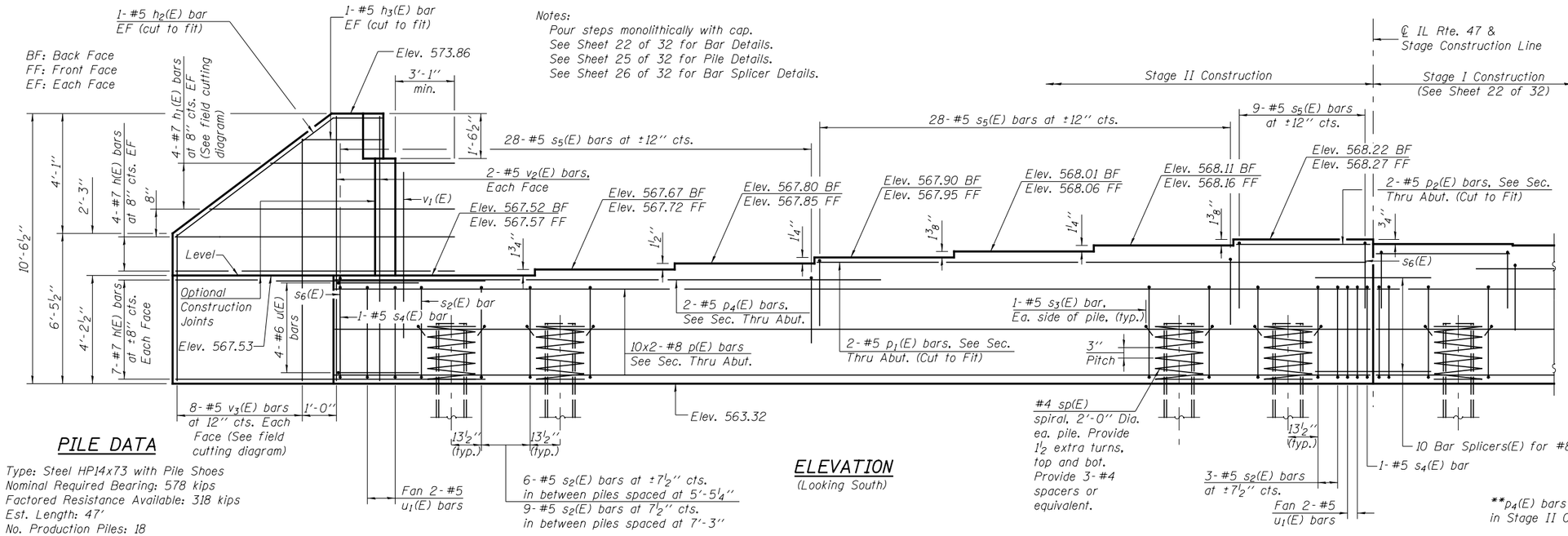
TOP FLANGE PLAN - CLIPPED

(Showing top flange of Bulb T-Beam at intergral abutment.)

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Bulb T-Beams, 63''	Ft.	1,399

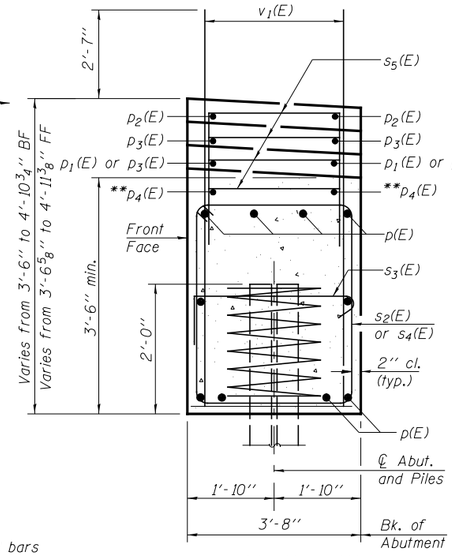
V:\3195\Structure\032-0122\0320122-66883-020-PPC BULB T DETAILS.dgn	USER NAME = bdecreene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	63" PPC BULB T–BEAM DETAILS STRUCTURE NO. 032–0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - TAC/STM			SHEET NO. 20 OF 32 SHEETS	326	110BR	GRUNDY	644	346
	PLOT DATE = 8/6/2013	CHECKED - BAN							CONTRACT NO. 66B83	
		CHECKED - BAN						ILLINOIS	FED. AID PROJECT	



Notes:
Pour steps monolithically with cap.
See Sheet 22 of 32 for Bar Details.
See Sheet 25 of 32 for Pile Details.
See Sheet 26 of 32 for Bar Splicer Details.

ELEVATION
(Looking South)

**p_4(E) bars are required only in Stage II Construction.



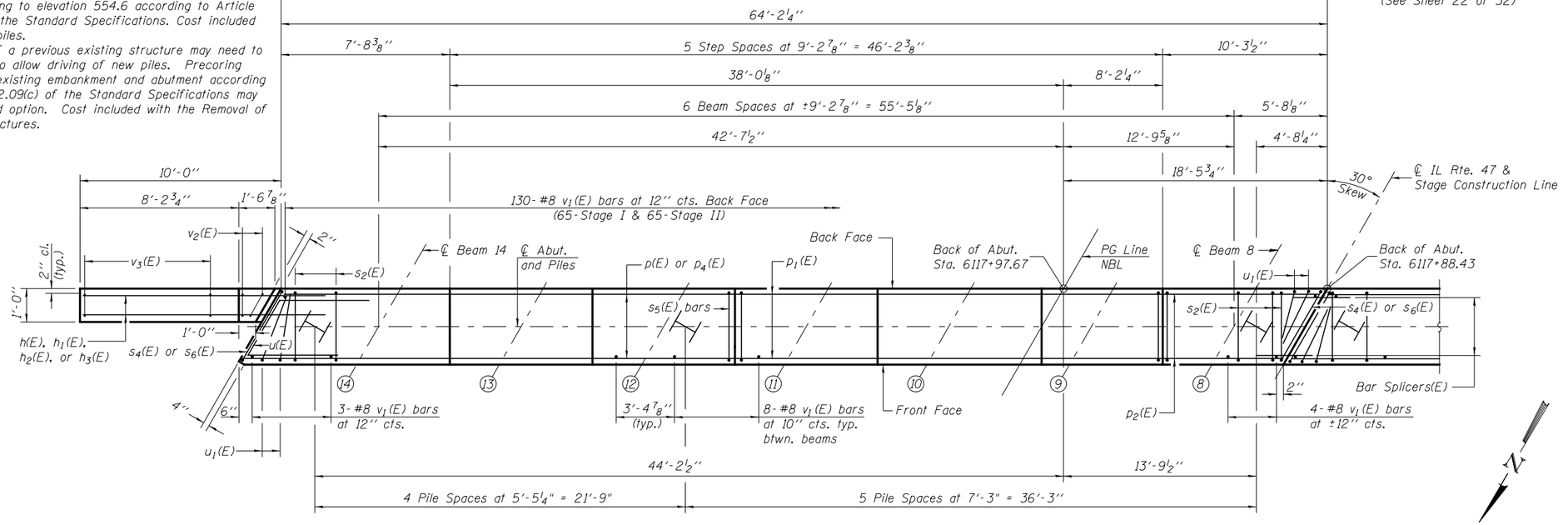
SEC. THRU ABUT.
(At Right Angles)

PILE DATA

Type: Steel HP14x73 with Pile Shoes
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 47'
No. Production Piles: 18
No. Test Piles: 1

Piles shall be driven through 2'-0" diameter precored holes extending to elevation 554.6 according to Article 512.09(c) of the Standard Specifications. Cost included with driving piles.

Portions of a previous existing structure may need to be removed to allow driving of new piles. Precoring through the existing embankment and abutment according to Article 512.09(c) of the Standard Specifications may be an allowed option. Cost included with the Removal of Existing Structures.



PLAN

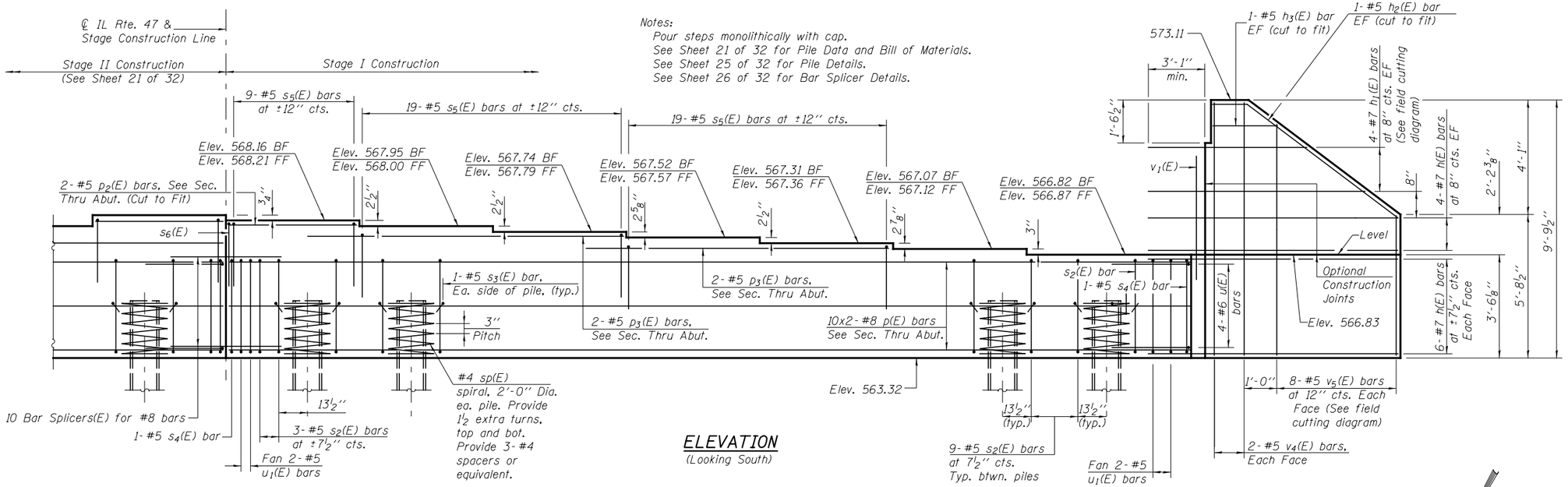
MIN. BAR LAP
#8 bar = 7'-8"

SOUTH ABUTMENT BILL OF MATERIAL

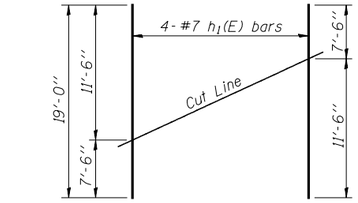
Bar	No.	Size	Length	Shape
h(E)	42	#7	13'-0"	
h_1(E)	8	#7	19'-0"	
h_2(E)	4	#5	10'-6"	
h_3(E)	4	#5	2'-6"	
p(E)	40	#8	35'-10"	
p_1(E)	2	#5	37'-8"	
p_2(E)	4	#5	9'-11"	
p_3(E)	4	#5	20'-6"	
p_4(E)	2	#5	30'-0"	
s_2(E)	149	#5	13'-11"	
s_3(E)	38	#5	4'-4"	
s_4(E)	4	#5	14'-11"	
s_5(E)	112	#5	8'-8"	
s_6(E)	3	#5	9'-2"	
* sp(E)	19	#4	2'-0"	
u(E)	8	#6	11'-4"	
u_1(E)	8	#5	9'-2"	
v_1(E)	240	#8	5'-11"	
v_2(E)	4	#5	10'-2"	
v_3(E)	8	#5	15'-9"	
v_4(E)	4	#5	9'-5"	
v_5(E)	8	#5	14'-3"	
Structure Excavation		CU YD	460	
Concrete Structures		CU YD	82.4	
Reinforcement Bars, Epoxy Coated		POUND	13,990	
Furnishing Steel Piles HP14x73		FOOT	846	
Driving Piles		FOOT	846	
Test Pile Steel HP14x73		EACH	1	
Pile Shoes		EACH	19	

*Length is height of spiral.

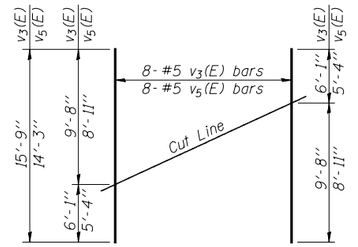
Notes:
Pour steps monolithically with cap.
See Sheet 21 of 32 for Pile Data and Bill of Materials.
See Sheet 25 of 32 for Pile Details.
See Sheet 26 of 32 for Bar Splicer Details.



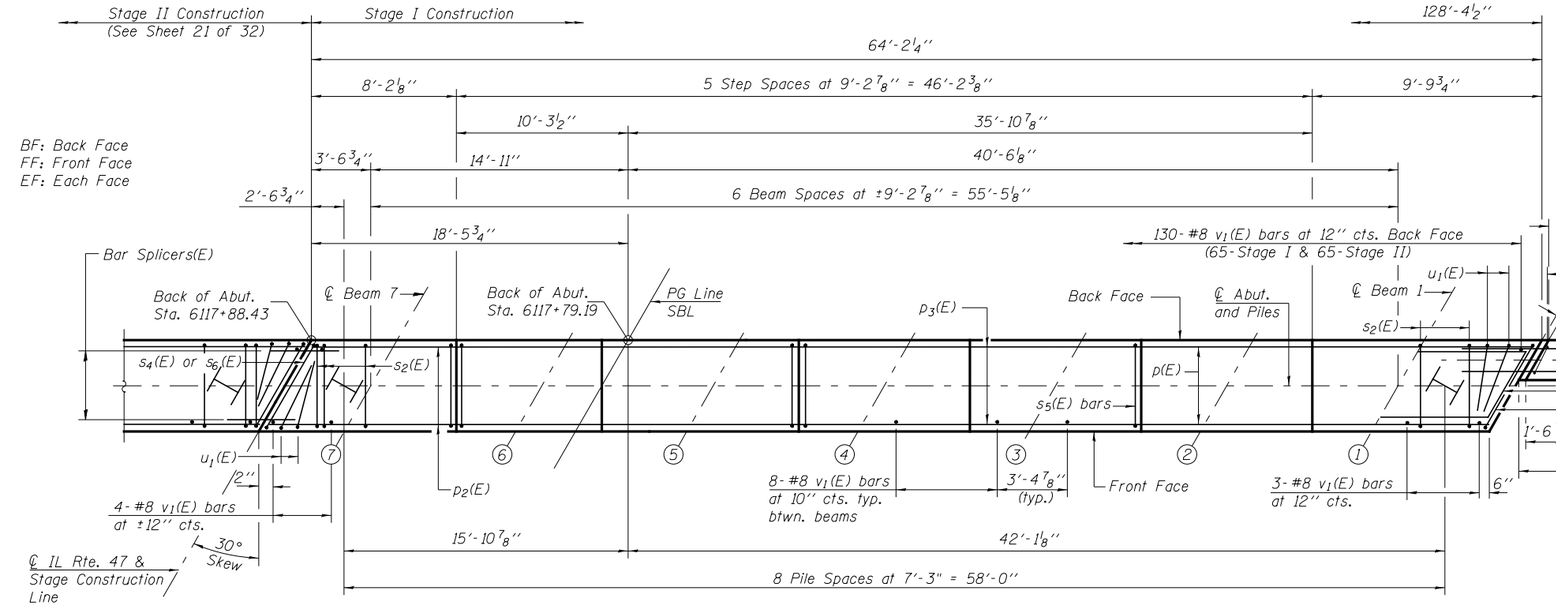
ELEVATION
(Looking South)



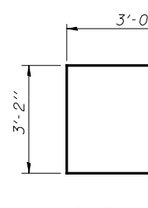
FIELD CUTTING DIAGRAM
Order h_1(E) full length. Cut as shown and use remainder of bars in opposite face.



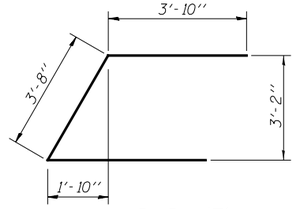
FIELD CUTTING DIAGRAM
Order v_3(E) and v_5(E) full length. Cut as shown and use remainder of bars in opposite face.



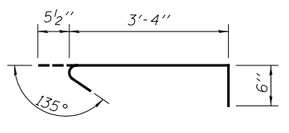
PLAN



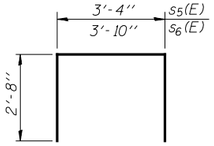
BAR u_1(E)



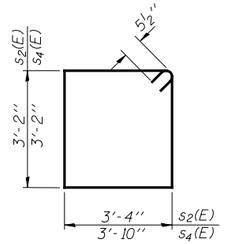
BAR u(E)



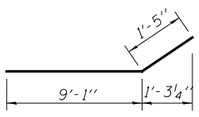
BAR s_3(E)



BAR s_5(E) & s_6(E)

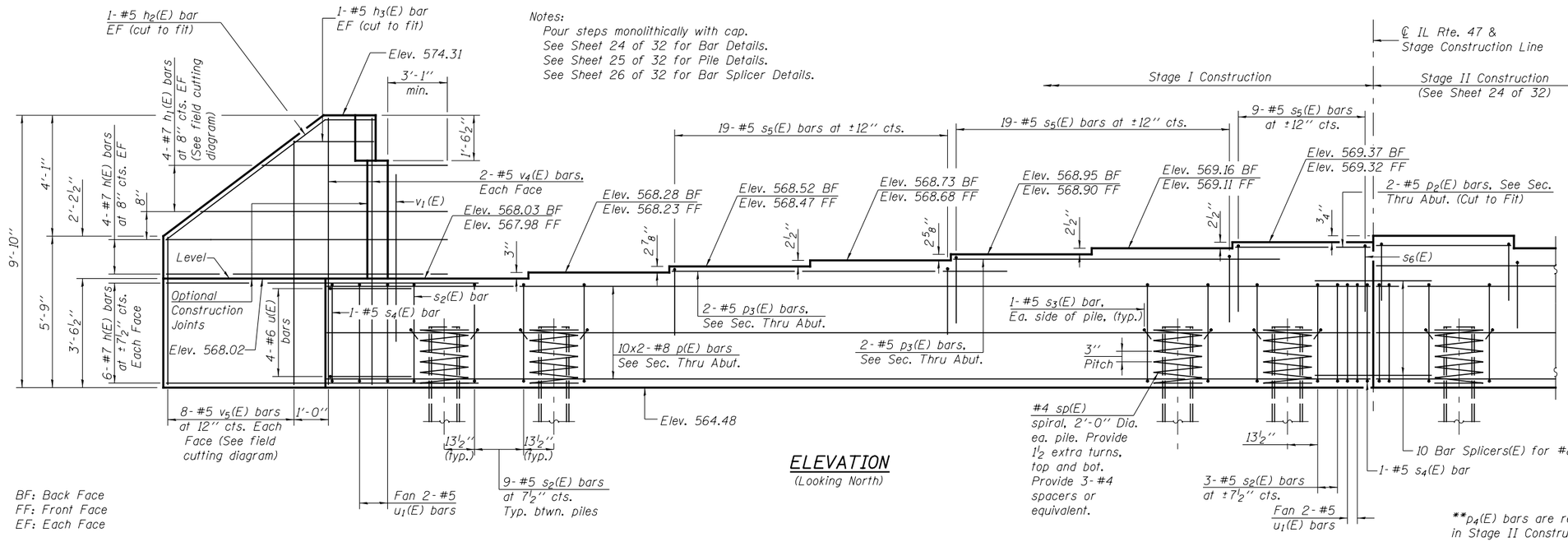


BAR s_2(E) & s_4(E)



BAR h_2(E)

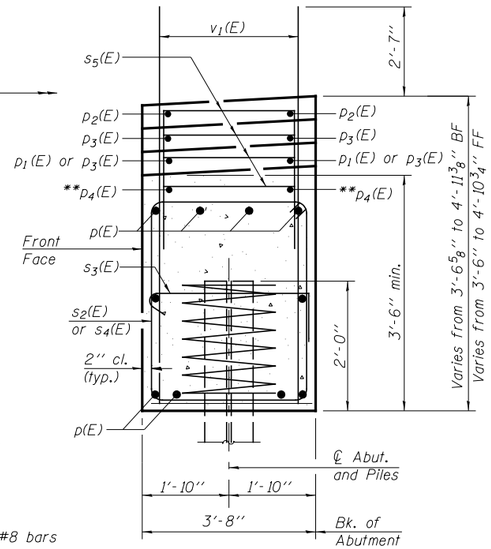
V:\3195\Structure\032-0122\0320122-66883-022-SOUTH ABUT 2.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOUTH ABUTMENT STRUCTURE NO. 032-0122	F.A.P. RTE. 326 / SECTION 110BR / COUNTY GRUNDY / TOTAL SHEETS 644 / SHEET NO. 348
	PLOT SCALE = NONE	DRAWN - STM			SHEET NO. 22 OF 32 SHEETS	CONTRACT NO. 66B83
	PLOT DATE = 8/6/2013	CHECKED - BAN				ILLINOIS FED. AID PROJECT



Notes:
Pour steps monolithically with cap.
See Sheet 24 of 32 for Bar Details.
See Sheet 25 of 32 for Pile Details.
See Sheet 26 of 32 for Bar Splicer Details.

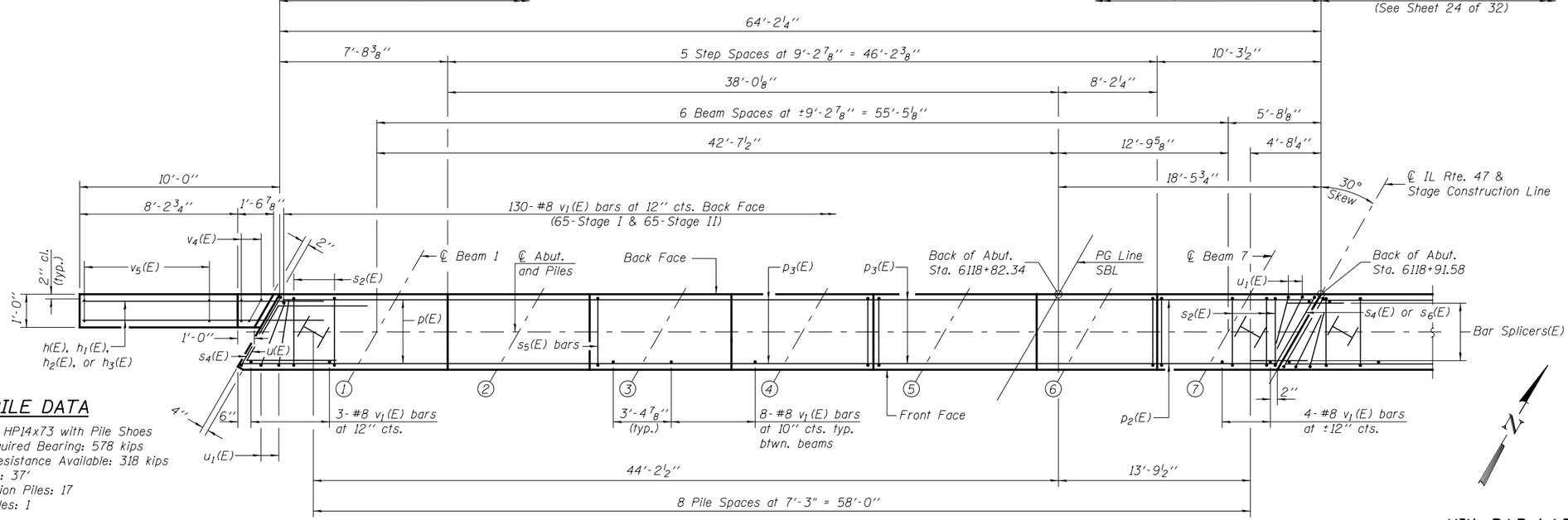
BF: Back Face
FF: Front Face
EF: Each Face

ELEVATION
(Looking North)



SEC. THRU ABUT.
(At Right Angles)

**p4(E) bars are required only in Stage II Construction.



PLAN

PILE DATA

Type: Steel HP14x73 with Pile Shoes
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 37'
No. Production Piles: 17
No. Test Piles: 1

Portions of a previous existing structure may need to be removed to allow driving of new piles. Precoring through the existing embankment and abutment according to Article 512.09(c) of the Standard Specifications may be an allowed option. Cost included with the Removal of Existing Structures.

MIN. BAR LAP
#8 bar = 7'-8"

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	42	#7	13'-0"	
h1(E)	8	#7	19'-0"	
h2(E)	4	#5	10'-6"	
h3(E)	4	#5	2'-6"	
p(E)	40	#8	35'-10"	
p1(E)	2	#5	37'-8"	
p2(E)	4	#5	9'-11"	
p3(E)	4	#5	20'-6"	
p4(E)	2	#5	30'-0"	
s2(E)	152	#5	13'-11"	
s3(E)	36	#5	4'-4"	
s4(E)	4	#5	14'-11"	
s5(E)	112	#5	8'-8"	
s6(E)	3	#5	9'-2"	
* sp(E)	18	#4	2'-0"	
u(E)	8	#6	11'-4"	
u1(E)	8	#5	9'-2"	
v1(E)	240	#8	5'-11"	
v2(E)	4	#5	10'-2"	
v3(E)	8	#5	15'-9"	
v4(E)	4	#5	9'-5"	
v5(E)	8	#5	14'-3"	

Structure Excavation	CU YD	460
Concrete Structures	CU YD	82.4
Reinforcement Bars, Epoxy Coated	POUND	13,990
Furnishing Steel Piles HP14x73	FOOT	629
Driving Piles	FOOT	629
Test Pile Steel HP14x73	EACH	1
Pile Shoes	EACH	18

*Length is height of spiral.

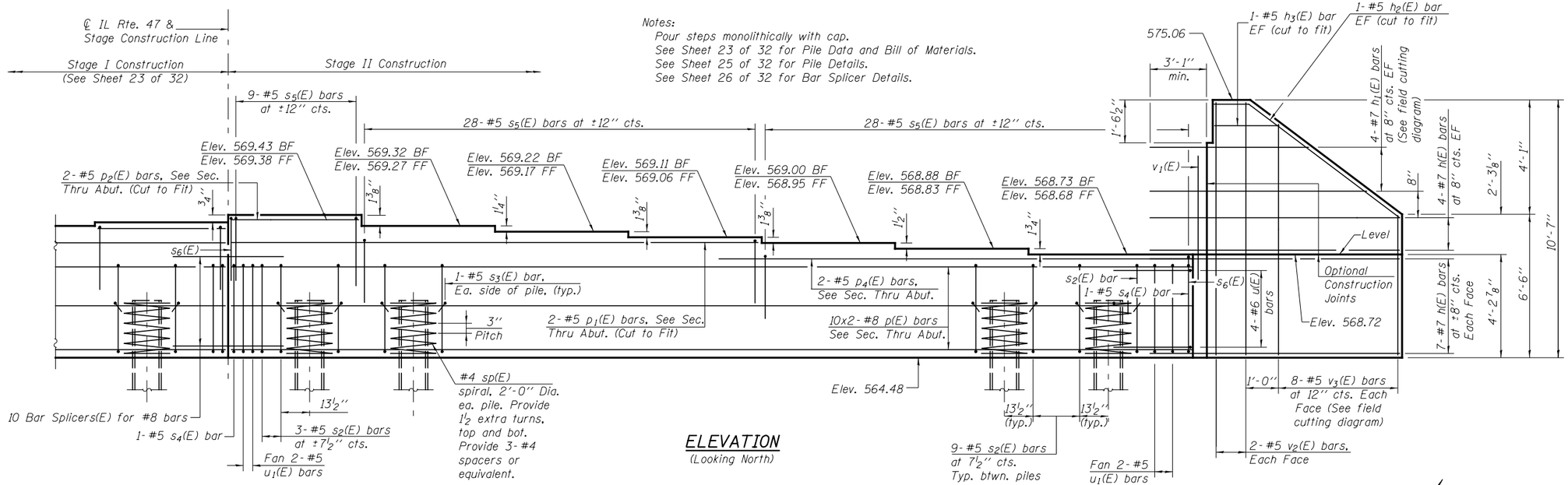
V:\3195\Structure\032-0122\0320122-66B83-023-NORTH ABUT 1.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA
	PLOT SCALE = NONE	CHECKED - BAN	
	PLOT DATE = 8/6/2013	DRAWN - STM	
		CHECKED - BAN	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

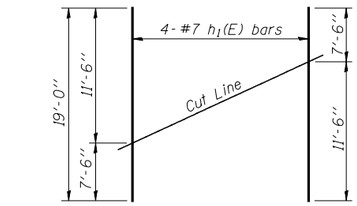
NORTH ABUTMENT
STRUCTURE NO. 032-0122
SHEET NO. 23 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	349
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		

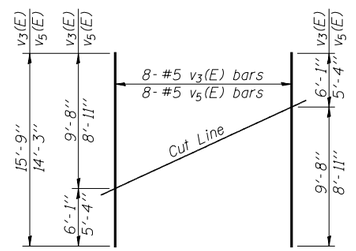
Notes:
Pour steps monolithically with cap.
See Sheet 23 of 32 for Pile Data and Bill of Materials.
See Sheet 25 of 32 for Pile Details.
See Sheet 26 of 32 for Bar Splicer Details.



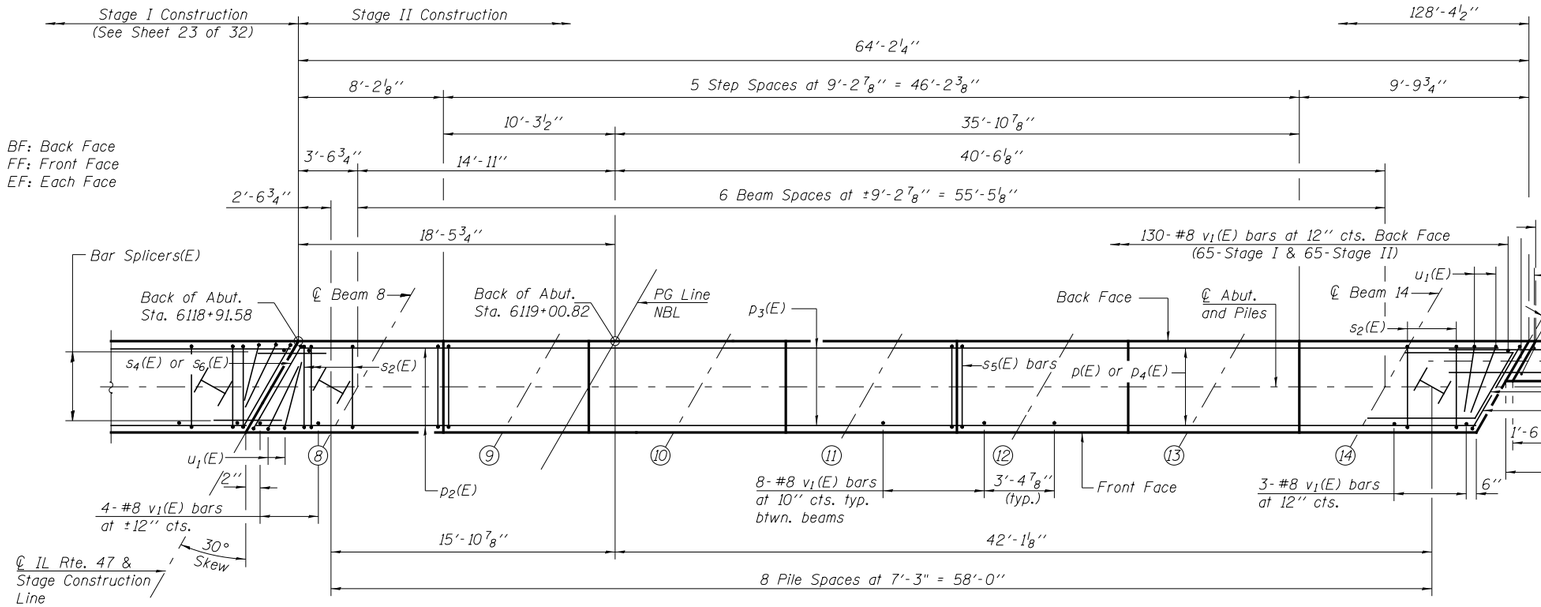
ELEVATION
(Looking North)



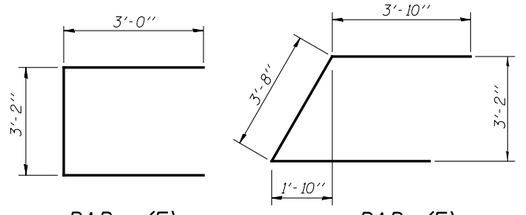
FIELD CUTTING DIAGRAM
Order $h_1(E)$ full length. Cut as shown and use remainder of bars in opposite face.



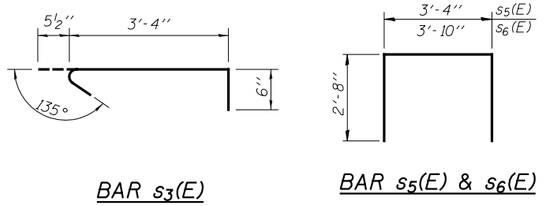
FIELD CUTTING DIAGRAM
Order $v_3(E)$ and $v_5(E)$ full length. Cut as shown and use remainder of bars in opposite face.



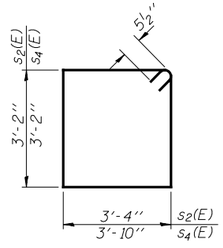
PLAN



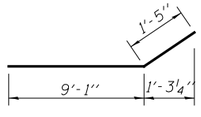
BAR $u_1(E)$ BAR $u(E)$



BAR $s_3(E)$ BAR $s_5(E)$ & $s_6(E)$



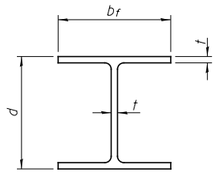
BAR $s_2(E)$ & $s_4(E)$



BAR $h_2(E)$

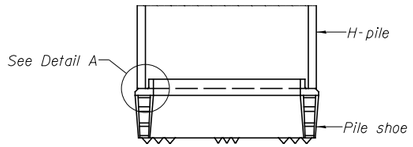
V:\3195\Structure\032-0122\0320122-66B83-024-NORTH ABUT 2.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA
	PLOT SCALE = NONE	DRAWN - STM	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	PLOT DATE = 8/6/2013	CHECKED - BAN	NORTH ABUTMENT STRUCTURE NO. 032-0122
			SHEET NO. 24 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	350
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		

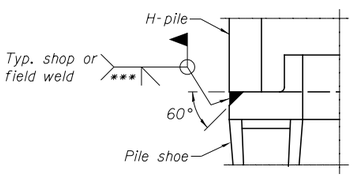


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''

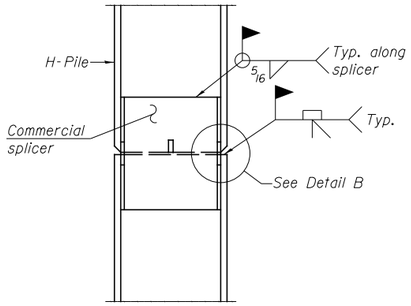


ELEVATION

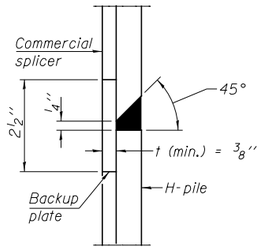


DETAIL A

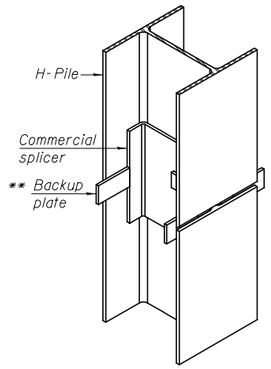
H-PILE SHOE ATTACHMENT



ELEVATION

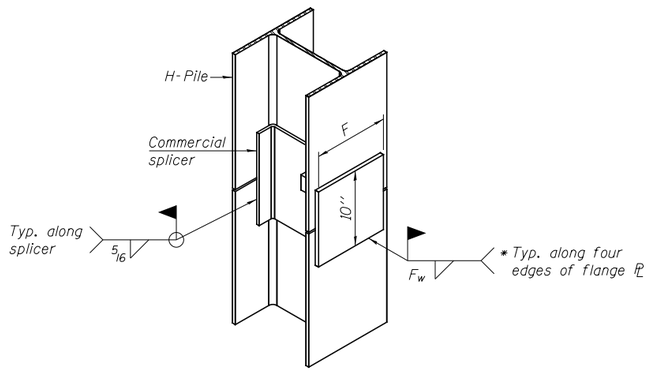


DETAIL "B"

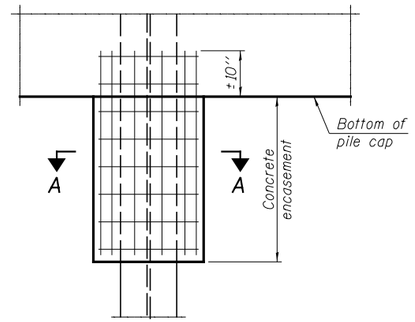


ISOMETRIC VIEW

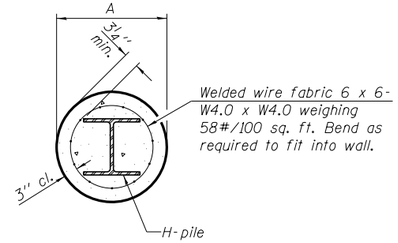
WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW



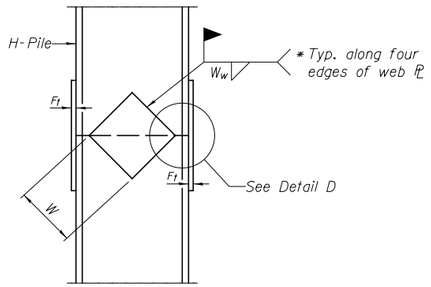
ELEVATION



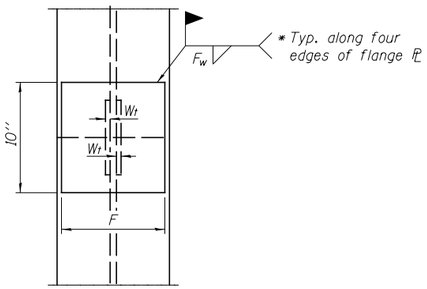
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

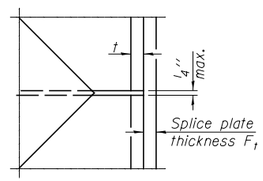
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	$12\frac{1}{2}''$	1''	$\frac{7}{8}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x102	$12\frac{1}{2}''$	$\frac{7}{8}''$	$\frac{3}{4}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x89	$12\frac{1}{2}''$	$\frac{3}{4}''$	$\frac{11}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x73	$12\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{9}{16}''$	$7\frac{3}{4}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
HP 12x84	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x74	10''	$\frac{7}{8}''$	$\frac{11}{16}''$	$6\frac{1}{2}''$	$\frac{5}{8}''$	$\frac{1}{2}''$
x63	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x53	10''	$\frac{5}{8}''$	$\frac{1}{2}''$	$6\frac{1}{2}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 10x57	8''	$\frac{3}{4}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
x42	8''	$\frac{5}{8}''$	$\frac{9}{16}''$	$5\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$
HP 8x36	7''	$\frac{5}{8}''$	$\frac{7}{16}''$	$4\frac{1}{4}''$	$\frac{1}{2}''$	$\frac{3}{8}''$

WELDED PLATE FIELD SPLICE

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds $\frac{1}{4}''$ from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer ($\frac{5}{16}''$ min.).

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

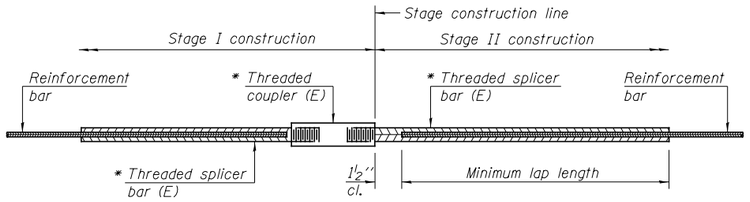
F-HP 1-27-12

V:\3195\Structure\032-0122\0320122-66B83-025-HP PILE DETAIL.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE-SHOREWOOD-PEORIA
	PLOT SCALE = NONE	CHECKED - BAN	
	PLOT DATE = 8/6/2013	DRAWN - TAC	
		CHECKED - BAN	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 032-0122
SHEET NO. 25 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	351
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

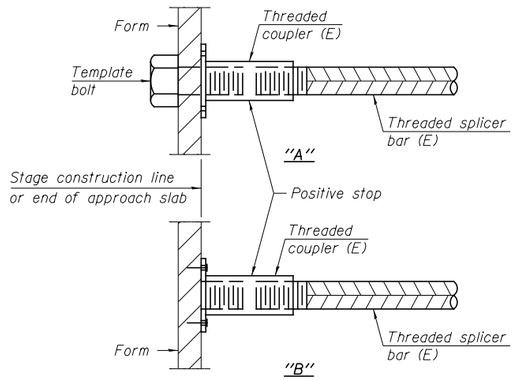
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Class C
Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1½" + thread length

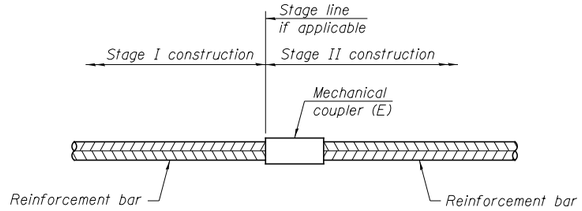
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	339	5
Diaphragm	#6	26	6
S. Appr. Pav't.	#5	86	6
S. Appr. Pav't.	#4	25	6
N. Appr. Pav't.	#5	86	6
N. Appr. Pav't.	#4	25	6
S. Abutment	#8	10	6
N. Abutment	#8	10	6



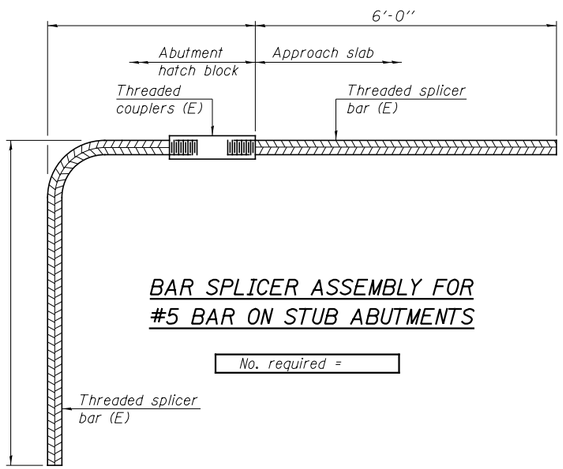
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

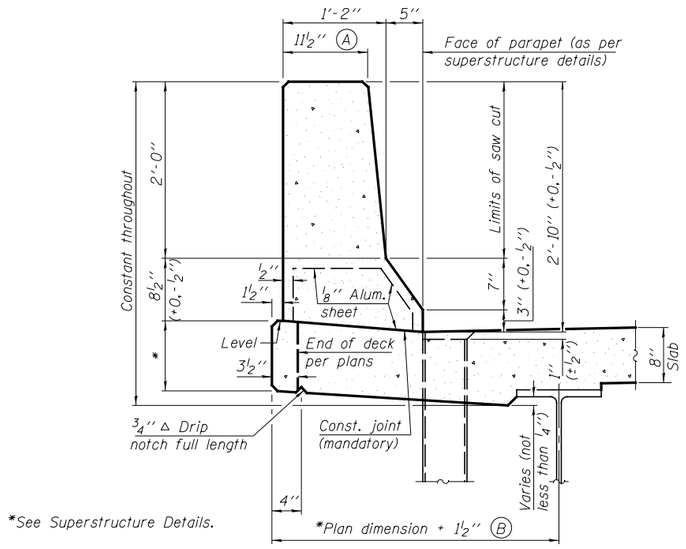
All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

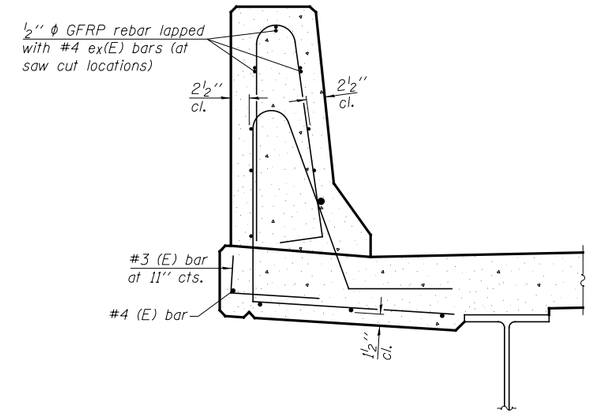
BSD-1 8-31-12

V:\3195\Structure\032-0122\0320122-66B83-026-BAR SPLICER DETAIL.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 032-0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - TAC				326	110BR	GRUNDY	644	352
	PLOT DATE = 8/6/2013	CHECKED - BAN			SHEET NO. 26 OF 32 SHEETS			CONTRACT NO. 66B83		
								ILLINOIS FED. AID PROJECT		



34" F SHAPE PARAPET SECTION

(Showing dimensions)



SECTION

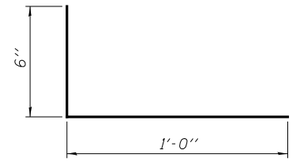
(34" parapet shown - 42" parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

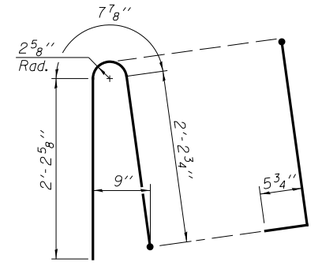
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet.

Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.

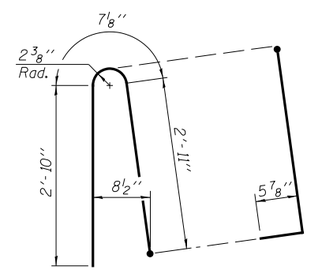


#3 (E) BAR



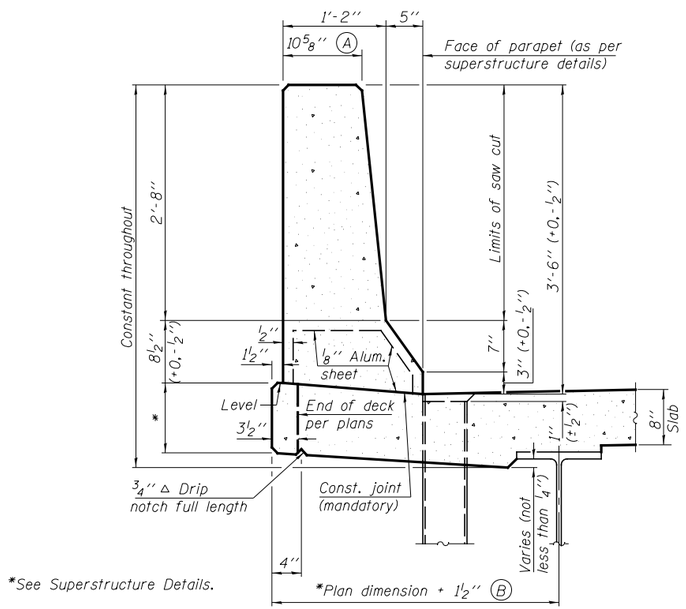
ALTERNATE BAR d(E)

(For 34" parapet when conduit is present)



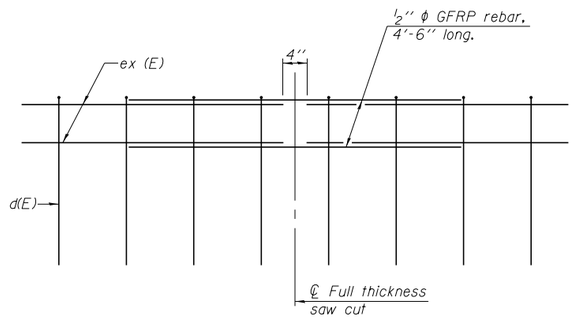
ALTERNATE BAR d(E)

(For 42" parapet when conduit is present)



42" F SHAPE PARAPET SECTION

(Showing dimensions)



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)

SFP 34-42

8-16-12

V:\3195\Structure\032-0122\0320122-66883-027-SLIP FORMING.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CONCRETE PARAPET SLIPFORMING OPTION STRUCTURE NO. 032-0122	F.A.P. RTE. 326
	PLOT SCALE = NONE	DRAWN - STM			SHEET NO. 27 OF 32 SHEETS	SECTION 110BR
	PLOT DATE = 8/6/2013	CHECKED - BAN				COUNTY GRUNDY
		CHECKED - BAN				TOTAL SHEETS 644
						SHEET NO. 353
						CONTRACT NO. 66B83
						ILLINOIS FED. AID PROJECT

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax 630 953-9938

BORING LOG WC33-B01

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Saratoga Creek, Grundy Co., IL

Datum: NGVD
Elevation: 561.20 ft
North: 1731698.97 ft
East: 959699.87 ft
Station: 6118+48.99
Offset: 71.98 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
561.0	2-inch thick, black LOAM --TOPSOIL--						
	Medium dense, brown SANDY LOAM, trace gravel			1	4 4 7	NP	18
558.2	Stiff, brown SILTY CLAY LOAM, trace gravel			2	5 6 6	1.75 P	19
	--L_L(%)=35, P_L(%)=18--						
	--%Gravel=5.4--	5					
	--%Sand=14.7--			3	2 4 5	1.75 P	18
	--%Silt=58.9--						
	--%Clay=20.9--						
	--A-6 (12)--						
552.5	Medium stiff, gray CLAY			4	2 2 7	0.82 B	32
550.7		10					
	Medium dense, gray, SANDY LOAM, little gravel			5	3 9 16	NP	12
548.2	Dense to very dense, gray, fine SAND			6	6 13 23	NP	18
		15		7	9 15 23	NP	13
				8	4 50/6	NP	20
540.7	Hard, gray SILTY CLAY, trace gravel	20					
				9	5 12 14	> 4.50 P	18
536.7				10	30 50/2	4.50 P	17
	Dense to very dense, gray, fine to medium SAND, little gravel	25					
524.7	Very dense, gray LOAM with rock fragments			11	13 16 24	NP	9
523.7	--WEATHERED BEDROCK--			12	20 29 36	NP	8
	Strong, fair to good quality, light gray, horizontally fractured DOLOSTONE with shale partings	30					
	Run #1, 37.5' to 42.5' RECOVERY = 90% RQD = 60%			13	43 45 50/1	NP	7
		35					
	Run #2, 42.5' to 47.5' RECOVERY = 93% RQD = 89%			14	50/0.5	NP	
		40					
		45					
513.7	Boring terminated at 47.50 ft						
		50					

GENERAL NOTES

Begin Drilling: 06-24-2009 Complete Drilling: 06-24-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

WANGENGINC 790861.GPJ WANGENG.GDT 6/22/11

Illinois Department of Transportation

ROCK CORE LOG

Date 06/24/2009

Prairie Parkway
Section IL47A

ROUTE IL 47 DESCRIPTION Structure Boring LOGGED BY Francisc Bozga
SECTION IL47A LOCATION IL 47 over Saratoga Creek SEC. 15 TWP. 34N RNG. 7E PM
COUNTY Grundy CORING METHOD Conventional 5' run
STRUCT. NO. 032-0122 CORING BARREL TYPE & SIZE NWD4 2,985x2.060
Station 6118+40.00 Core Diameter 2.1 in
Top of Rock Elev. 523.7 ft
BORING NO. WC33-B01 Begin Core Elev. 523.7 ft
Station 6118+48.99
Offset 71.98 RT
Ground Surface Elev. 561.20 ft

		DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Strong, fair to good quality, light gray, horizontally fractured DOLOSTONE with shale partings	Run 1	37.5	1	90	60		
	Run 2	42.5	2	93	89		

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS 138 (Rev. 3/01)

V:\3195\Structure\032-0122\0320122-66883-028-BORINGS 1.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS STRUCTURE NO. 032–0122
	PLOT SCALE = NONE	DRAWN - STM			SHEET NO. 28 OF 32 SHEETS
	PLOT DATE = 8/6/2013	CHECKED - BAN			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	354
				CONTRACT NO. 66B83
		ILLINOIS	FED. AID PROJECT	

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BORING LOG WC33-B02

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Saratoga Creek, Grundy Co., IL

Datum: NGVD
Elevation: 560.10 ft
North: 1731637.78 ft
East: 959598.45 ft
Station: 6117+89.52
Offset: 30.45 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	559.1	12-inch thick, dark brown SILTY LOAM --TOPSOIL--						
		Very soft to soft, brown and gray SILTY CLAY LOAM to SILTY LOAM, trace gravel --L_L(%)=32, P_L(%)=15-- --%Gravel=7.1-- --%Sand=22.8-- --%Silt=54.3-- --%Clay=15.8-- --A-6 (6)--	5		1	4 2 3	0.25 P	39
					2	1 2 2	< 0.25 P	26
	554.6	Medium dense, gray SILTY LOAM, some gravel			3	3 7 10	NP	10
			10		4	5 9 17	NP	11
					5	6 8 14	NP	14
	547.1	Very stiff to hard, gray SILTY CLAY, little gravel	15		6	4 8 14	3.20 S	19
					7	5 9 12	5.41 B	18
	542.1	Very dense, gray GRAVELLY SAND	20		8	10 30 22	NP	11
	539.6	Medium dense, gray SILTY LOAM, some gravel			9	9 10 15	NP	10
	537.1	Very dense, gray SANDY LOAM, some gravel	25		10	8 22 29	NP	10
	534.6	Very dense, gray SILTY LOAM, some gravel			12	14 20 30	NP	6
	531.1	Very dense, gray LOAM and broken pieces of rock	30		13	9 22 49	NP	9
	528.1	Medium dense, gray SILT --WEATHERED BEDROCK--			14	5 10 14	NP	16
	522.1	Very weak, very poor quality, gray to pale green, WEATHERED SHALE --WEATHERED BEDROCK-- Run #1, 38' to 41.5' RECOVERY = 73% RQD = 9% Run #2, 41.5' to 45' RECOVERY = 78% RQD = 0%	35 40 45	CORE	1 2			
					15	17 17 53	NP	18
			50		16	26 45 50	NP	11

GENERAL NOTES

Begin Drilling: 06-17-2009 Complete Drilling: 06-18-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: B. Wilson Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

WANGENGINC 7903601.GPJ WANGENG.GDT 6/22/11

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BORING LOG WC33-B02

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Saratoga Creek, Grundy Co., IL

Datum: NGVD
Elevation: 560.10 ft
North: 1731637.78 ft
East: 959598.45 ft
Station: 6117+89.52
Offset: 30.45 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	509.6	SHALE --BEDROCK--	0		17	50/3"	-	
			55					
	502.6	Strong, excellent quality, white to light gray, fresh DOLOSTONE Run #3, 57.5' to 62.5' RECOVERY = 98% RQD = 92%	60	CORE	3			
		Run #4, 62.5' to 67.5' RECOVERY = 100% RQD = 100%	65	CORE	4			
	492.6	Boring terminated at 67.50 ft	70					
			75					

GENERAL NOTES

Begin Drilling: 06-17-2009 Complete Drilling: 06-18-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: B. Wilson Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

WANGENGINC 7903601.GPJ WANGENG.GDT 6/22/11

Illinois Department of Transportation

ROCK CORE LOG

Page 1 of 1

Date 06/18/2009

Prairie Parkway
Section IL47A

ROUTE IL 47 DESCRIPTION Structure Boring LOGGED BY Brandon Wilson

SECTION IL47A LOCATION IL 47 over Saratoga Creek SEC. 16 TWP. 34N RNG. 7E PM

COUNTY Grundy CORING METHOD Conventional 5' run

STRUCT. NO. 032-0122 CORING BARREL TYPE & SIZE NWD4 2,985x2.060

Station 6118+40.00 Core Diameter 2.1 in
Top of Rock Elev. 522.1 ft
Begin Core Elev. 522.1 ft

BORING NO. WC33-B02
Station 6117+89.52
Offset 30.45 LT
Ground Surface Elev. 560.10 ft

		DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Very weak, very poor quality, gray to pale green, WEATHERED SHALE	Run 1	38	1	73	9		
Very weak, very poor quality, gray to pale green, WEATHERED SHALE	Run 2	41.75	2	78	0		
Strong, excellent quality, white to light gray DOLOSTONE	Run 3	57.5	3	98	92		
Strong, excellent quality, white to light gray DOLOSTONE	Run 4	62.5	4	100	100		

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS 138 (Rev. 3/01)

Wang Engineering

wangeng@wangeng.com
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Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG WC33-B03

Page 1 of 2

WEI Job No.: 790-36-01

Client TranSystems Corporation
Project Prairie Parkway
Location IL 47 Over Saratoga Creek, Grundy Co., IL

Datum: NGVD
Elevation: 569.14 ft
North: 1731779.21 ft
East: 959690.12 ft
Station: 6119+29.36
Offset: 63.55 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	568.1	12-inch thick, ASPHALT --SHOULDER--						
		Stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, some gravel --FILL--			1	3 5 4	2.25 P	17
			5		2	2 3 3	1.31 B	22
					3	1 2 3	1.56 S	20
			10		4	2 4 4	1.78 S	21
	558.6	Medium stiff, brown and gray SILTY CLAY LOAM to SILTY LOAM, trace gravel --L_L(%)=34, P_L(%)=16-- --%Gravel=6.9-- --%Sand=13.5-- --%Silt=61.9-- --%Clay=17.7-- --A-6 (13)--			5	1 2 2	0.50 P	26
			15		6	1 1 10	0.82 B	20
	552.4	Wet SAND			7	0 1 3	-	25
	551.1	Hard, gray SILTY CLAY, trace gravel	20		8	2 4 8	4.76 B	19
					9	4 7 11	6.64 B	14
	546.1	Stiff to hard, gray SILTY LOAM, trace gravel	25		10	6 9 10	1.64 S	14
	543.6	Very stiff to hard, gray SILTY CLAY, trace gravel --L_L(%)=37, P_L(%)=17-- --%Gravel=3.7-- --%Sand=9.8-- --%Silt=49.3-- --%Clay=37.2-- --A-6 (17)--	30		11	6 8 14	5.00 B	19
					12	6 8 10	4.51 B	16
			35		13	4 5 8	2.87 B	18
		--Hard drilling--						
	530.4	Dense, gray SANDY LOAM, little gravel	40		14	10 21 17	NP	11
	526.1	Very dense, gray LOAM with DOLOSTONE fragments --WEATHERED BEDROCK--	45		15	52/3	NP	14
	521.1	Very strong, fair to excellent quality, light gray, fresh DOLOSTONE with trace pyrite Run #1, 48' to 53'	50			CORE		

WANGENGINC 7902601.GPJ WANGENG.GDT 6/22/11

GENERAL NOTES

Begin Drilling 12-03-2009 Complete Drilling 12-08-2009
Drilling Contractor WTS Drill Rig B-57 TMR
Driller K&J Logger B. Wilson Checked by C. Marin
Drilling Method 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ 17.50 ft
At Completion of Drilling ▼ WASHED
Time After Drilling NA
Depth to Water ▽ NA

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

V:\3195\Structure\032-0122\0320122-66883-030-BORINGS 3.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA
	PLOT SCALE = NONE	CHECKED - BAN	
	PLOT DATE = 8/6/2013	DRAWN - STM	
		CHECKED - BAN	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
STRUCTURE NO. 032–0122
SHEET NO. 30 OF 32 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR	GRUNDY	644	356
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

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Fax 630 953-9938

BORING LOG WC33-B03

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Saratoga Creek, Grundy Co., IL

Datum: NGVD
Elevation: 569.14 ft
North: 1731779.21 ft
East: 959890.12 ft
Station: 6119+29.36
Offset: 63.55 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		RECOVERY = 100% RQD = 71%			1			
		Run #2, 53' to 58' RECOVERY = 100% RQD = 92%	55		2	CORE		
		Run #3, 58' to 63' RECOVERY = 100% RQD = 90%	60		3	CORE		
	506.1	Boring terminated at 63.00 ft	63					
			65					
			70					
			75					

GENERAL NOTES

Begin Drilling: 12-03-2009 Complete Drilling: 12-08-2009
Drilling Contractor: WTS Drill Rig: B-57 TMR
Driller: K&J Logger: B. Wilson Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 17.50 ft
At Completion of Drilling: ▼ WASHED
Time After Drilling: NA
Depth to Water: ▼ NA

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

WANGENGINC 790801.GPJ WANGENG.GDT 6/22/11

Illinois Department of Transportation

ROCK CORE LOG

Page 1 of 1

Date 12/03/2009

ROUTE IL 47 DESCRIPTION Structure Boring LOGGED BY Brandon Wilson
SECTION IL47A LOCATION IL 47 over Saratoga Creek SEC. 15 TWP. 34N RNG. 7E PM
COUNTY Grundy CORING METHOD Conventional 5' run
STRUCT. NO. 032-0122 CORING BARREL TYPE & SIZE NWD4 2,985x2.060
Station 6118+40.00 Core Diameter 2.1 in
Top of Rock Elev. 521.14 ft
BORING NO. WC33-B03 Begin Core Elev. 521.14 ft
Station 6119+29.36
Offset 63.55 RT
Ground Surface Elev. 569.14 ft

		DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Very strong, fair to excellent quality, light gray DOLOSTONE with trace pyrite.	Run 1	48	1	100	71	2.66	
	Run 2	53	2	100	92	2.9	
	Run 3	58	3	100	90	3.39	

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS 138 (Rev. 3/01)

BORING LOG WC33-B04

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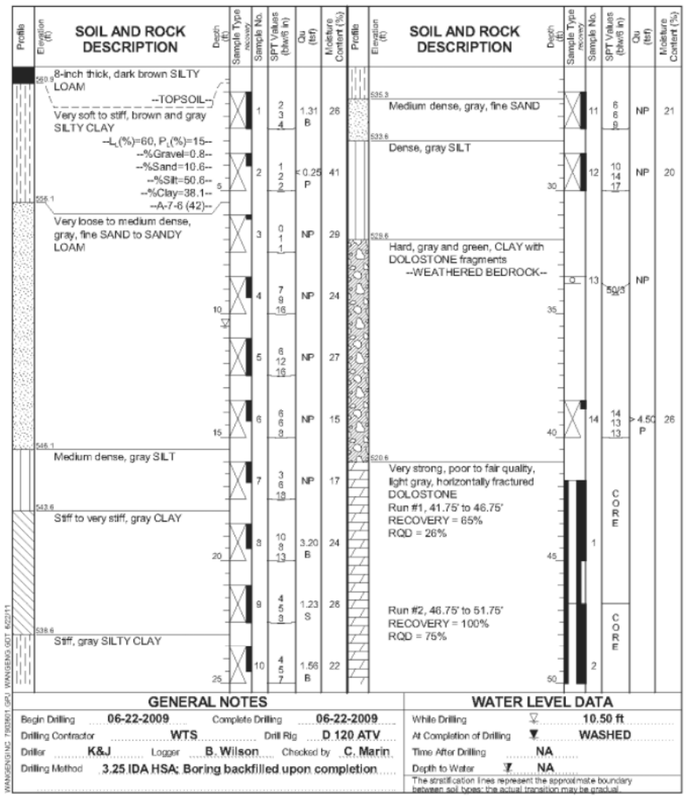
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax 630 953-9938

WEI Job No.: 790-36-01
Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Saratoga Creek, Grundy Co., IL.

Datum: NGVD
Elevation: 561.60 ft
North: 1731585.08 ft
East: 959803.87 ft
Station: 6117+36.73
Offset: 25.94 LT



GENERAL NOTES

Begin Drilling: 06-22-2009 Complete Drilling: 06-22-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: B. Wilson Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 10.50 ft
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

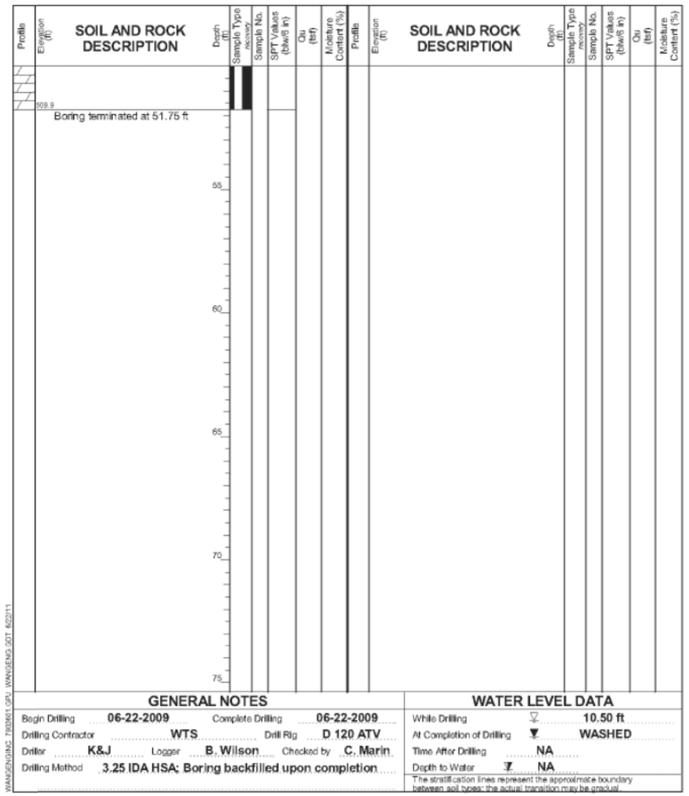
WANGENGINC 7929601.GPJ WANGENG.GDT 6/22/11

BORING LOG WC33-B04

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax 630 953-9938

WEI Job No.: 790-36-01
Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Saratoga Creek, Grundy Co., IL.

Datum: NGVD
Elevation: 561.60 ft
North: 1731585.08 ft
East: 959803.87 ft
Station: 6117+36.73
Offset: 25.94 LT



GENERAL NOTES

Begin Drilling: 06-22-2009 Complete Drilling: 06-22-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: B. Wilson Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 10.50 ft
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

WANGENGINC 7929601.GPJ WANGENG.GDT 6/22/11

Illinois Department of Transportation

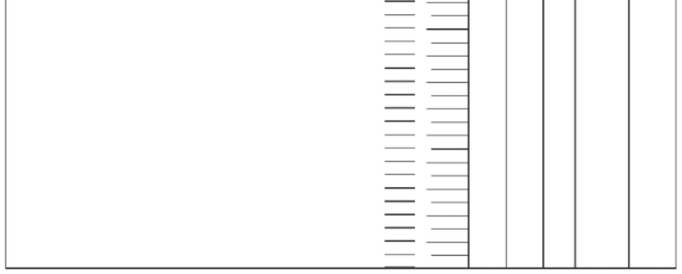
ROCK CORE LOG

Date 06/22/2009

Prairie Parkway
Section IL47A

ROUTE IL 47 DESCRIPTION Structure Boring LOGGED BY Brandon Wilson
SECTION IL47A LOCATION IL 47 over Saratoga Creek SEC. 16 TWP. 34N RNG. 7E PM
COUNTY Grundy CORING METHOD Conventional 5' run
STRUCT. NO. 032-0122 CORING BARREL TYPE & SIZE NWD4 2,985x2.060
Station 6118+40.00
BORING NO. WC33-B04
Station 6117+36.73
Offset 25.94 LT
Ground Surface Elev. 561.60 ft
Core Diameter 2.1 in
Top of Rock Elev. 520.6 ft
Begin Core Elev. 520.6 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Very strong, poor to fair quality, light gray, horizontally fractured DOLOSTONE	Run 1 41.75	1	65	26		
	Run 2 46.75	2	100	75		



Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the unlaxial compressive strength of the core sample (ASTM D-2938)

BBS 138 (Rev. 3/01)

V:\3195\Structure\032-0122\0320122-66B83-032-BORINGS 5.dgn	USER NAME = bdecraene	DESIGNED - STM	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS STRUCTURE NO. 032–0122	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - STM				326	110BR	GRUNDY	644	358
	PLOT DATE = 8/6/2013	CHECKED - BAN			SHEET NO. 32 OF 32 SHEETS				CONTRACT NO. 66B83	
		CHECKED - BAN						ILLINOIS	FED. AID PROJECT	

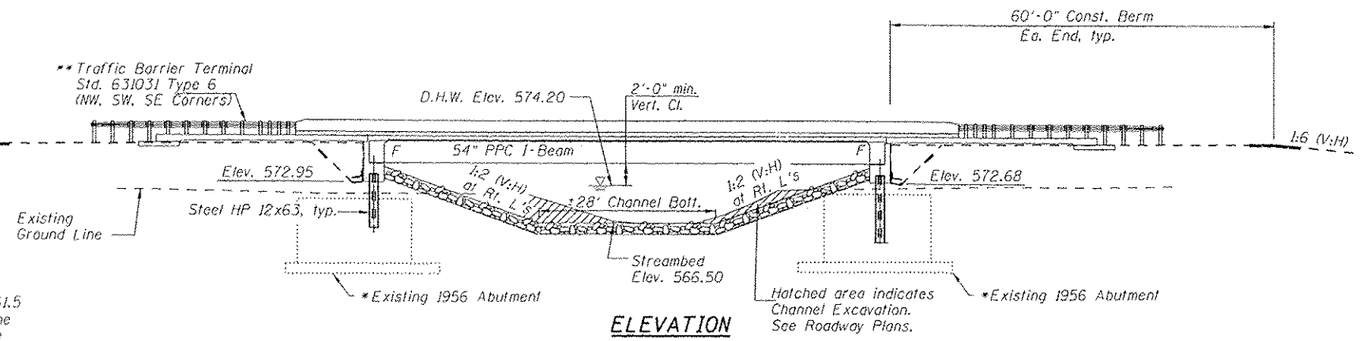
Bench Mark: Found PSM, 45.5' North of the Intersection of Joliet Road and Quarry Road, near the Westerly right-of-way of IL Rte. 47. Elev. 636.44

Existing Structure: S.N. 032-0088, built in 1988 as F.A. Rte. 100, Section 110BR-1, at Station 203+54.75. Existing Structure consists of a Single Span Prestressed Concrete Bridge 86'-6" Bk. to Bk. Abutments. 39'-2" out-to-out deck. Structure to be removed and replaced. Traffic to be maintained utilizing Stage Construction.

No salvage.

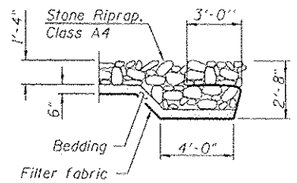
* The existing 1956 structure consisted of closed abutments with 2'-0" thick footings, with #7 bars at 12" cts. on top, and #6 bars at 12" cts. on bottom. Bottom of footing elevation is 561.5

** Traffic Barrier Terminal Sta. 631601 Type 6 shall be utilized on the SW corner during Stage II Construction, but shall be removed once construction has been completed and NB traffic is relocated.

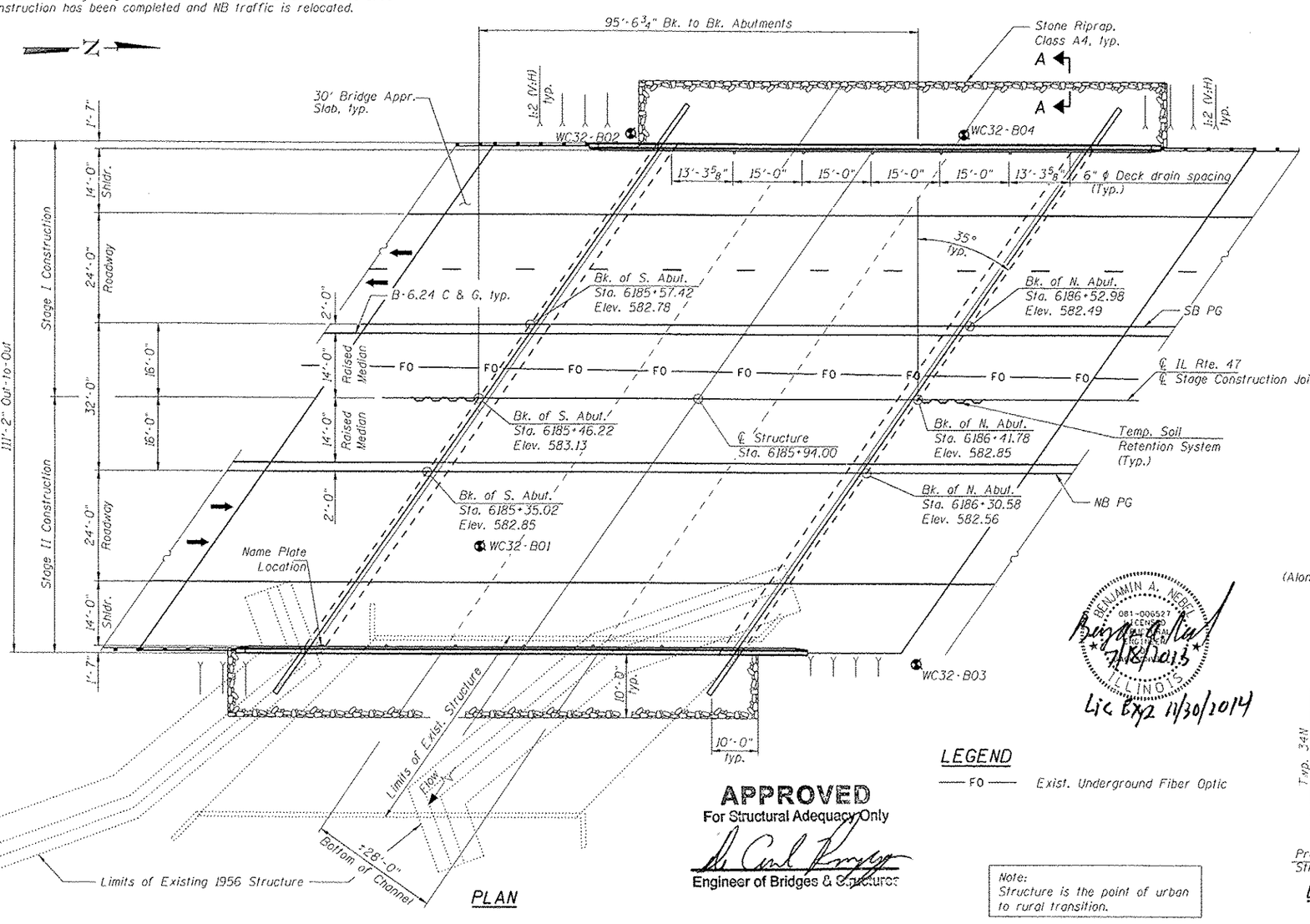


ELEVATION

NOTE:
See sheet 2 of 30 for Index of Sheets, Total Bill of Material, and General Notes.



SECTION A-A



PLAN

WATERWAY INFORMATION

Drainage Area = 8.63 mi²
Low Grade Elev. 580.94 at Sta. 6186+53 (Exist.)
Low Grade Elev. 581.60 at Sta. 6190+00 (Prop.)

Flood	Freq.	Q	Opening Sq. Ft.		Nat.	Head - Ft.		Headwater El.	
	Yr.	C.F.S.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
	10	716	166	228	573.3	0.4	0.0	573.7	573.3
Design	50	1070	213	279	574.2	0.5	0.1	574.7	574.3
Base	100	1212	228	297	574.5	0.6	0.1	575.1	574.6
Max. Calc.	500	1551	266	339	575.2	0.7	0.2	575.9	575.4

LOADING HL-93

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

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications

DESIGN STRESSES

FIELD UNITS

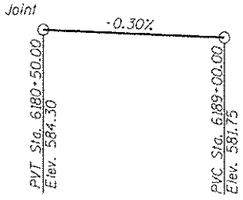
f'_c = 3,500 psi
f_y = 60,000 psi (Reinforcement)
f_y = 50,000 psi (M270 Grade 50)

PRECAST PRESTRESSED UNITS

f'_c = 7,000 psi
f'_{ci} = 6,000 psi
f_{pu} = 270,000 psi (½" ϕ low relax strands)
f_{pbt} = 201,960 psi (½" ϕ low relax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.069g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.128g
Soil Site Class = C



PROFILE GRADE

(Along SB PG and NB PG IL. Rte. 47)

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)		
	S. Abut.	N. Abut.
0100	572.95	572.68
0500	572.95	572.68

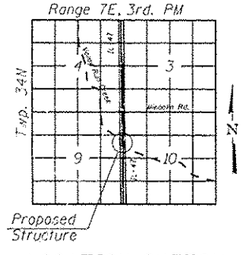
BENJAMIN A. NEBEL
081-006527
LICENSED
PROFESSIONAL
ENGINEER
ILLINOIS
Lic Exp 11/30/2014

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

LEGEND

—— FO —— Exist. Underground Fiber Optic

Note:
Structure is the point of urban to rural transition.



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
IL RTE. 47 OVER
VALLEY RUN CREEK
F.A.P. RTE. 326 - SEC. 110BR-1
GRUNDY COUNTY
STATION 6185+94.00
STRUCTURE NO. 032-0123

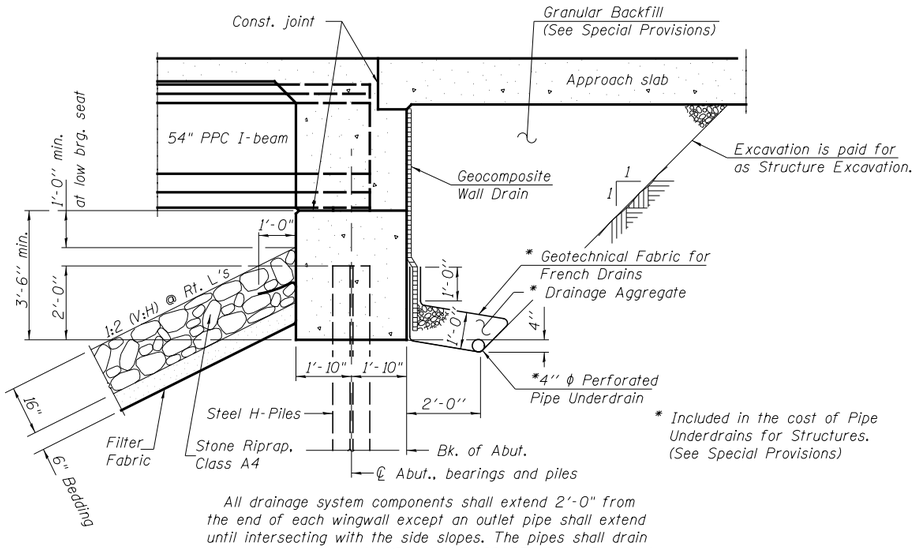
Y:\Bridge\3195 Grundy\032-0123\0320123-66883-001-GEN PLAN.dgn	USER NAME = bnabel	DESIGNED - NPH	
	PLOT SCALE = NONE	CHECKED - JOH	
	PLOT DATE = 7/18/2013	DRAWN - RMD	
		CHECKED - JOH/NPH	

Hutchison Engineering, Inc.
JACKSONVILLE-SHOREWOOD-PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 032-0123
SHEET NO. 1 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	359
		CONTRACT NO. 66883		
		ILLINOIS FED. AID PROJECT		



* Included in the cost of Pipe Underdrains for Structures. (See Special Provisions)

All drainage system components shall extend 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)

GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

Protective coat shall be applied to the top and sides of the deck, and top and sides of curbs.

The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

The existing fixed bearings contain a ⅛" lead plate. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

STATION 6185+94.00
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT. 326 SEC. 110BR-1
LOADING HL-93
STR. NO. 032-0123

NAME PLATE

(See Std. 515001)

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures No. 2	EACH	———	———	1
Structure Excavation	CU YD	———	970	970
Concrete Structures	CU YD	———	247.4	247.4
Concrete Superstructure	CU YD	882.7	———	882.7
Bridge Deck Grooving	SQ YD	1,293	———	1,293
Protective Coat	SQ YD	1,962	———	1,962
Reinforcement Bars, Epoxy Coated	POUND	173,230	24,330	197,560
Name Plates	EACH	1	———	1
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 54 in.	FOOT	1,473.5	———	1,473.5
Furnishing Steel Piles HP12x63	FOOT	———	1,717	1,717
Driving Piles	FOOT	———	1,717	1,717
Test Pile Steel HP12x63	EACH	———	1	1
Pile Shoes	EACH	———	40	40
Granular Backfill for Structures	CU YD	———	593	593
Bar Splicers	EACH	438	100	538
Pipe Underdrains for Structures 4"	FOOT	———	350	350
Geocomposite Wall Drain	SQ YD	———	300	300
Stone Riprap, Class A4	SQ YD	———	1,390	1,390
Filter Fabric	SQ YD	———	1,390	1,390
Temporary Soil Retention System	SQ FT	———	165	165
Floor Drains	EACH	10	———	10

INDEX OF SHEETS

V:\3195\Structure\032-0123\0320123-66B83-002-GN AND DETAILS.dgn

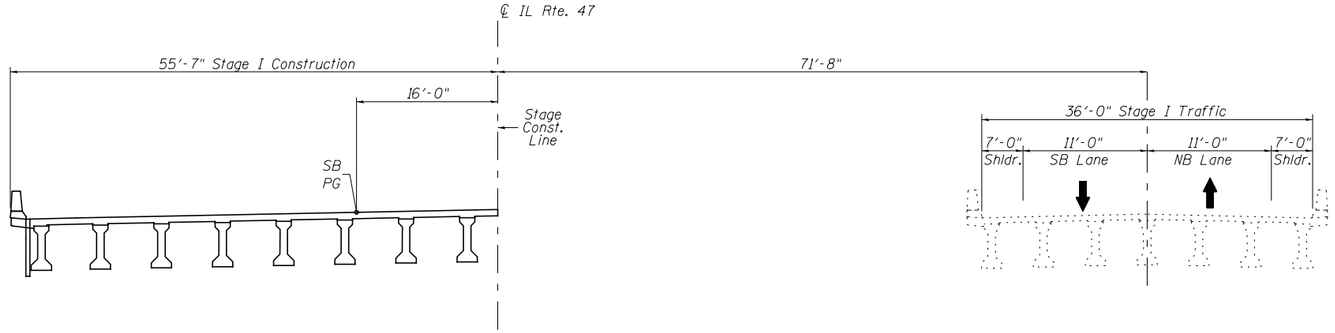
USER NAME = bdecraene	DESIGNED - NPH
	CHECKED - JOH
PLOT SCALE = NONE	DRAWN - NPH
PLOT DATE = 8/6/2013	CHECKED - JOH/NPH

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

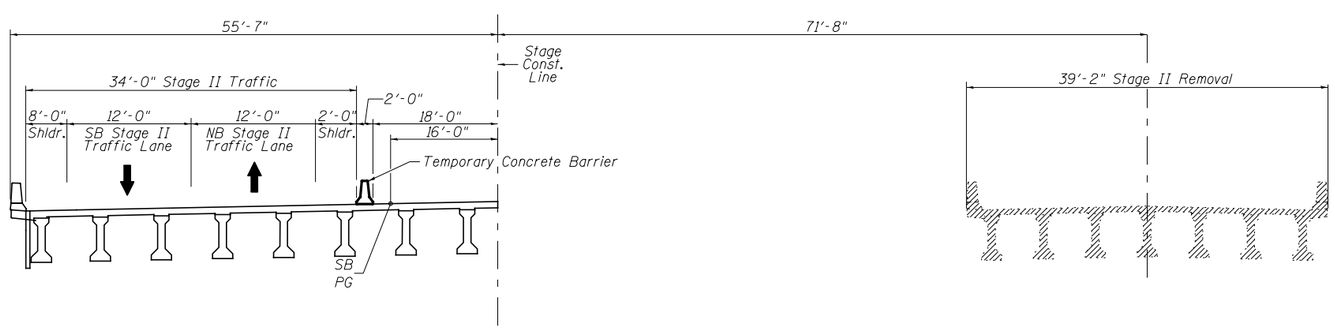
GENERAL NOTES AND DETAILS
STRUCTURE NO. 032-0123
SHEET NO. 2 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	360
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		



STAGE I CONSTRUCTION

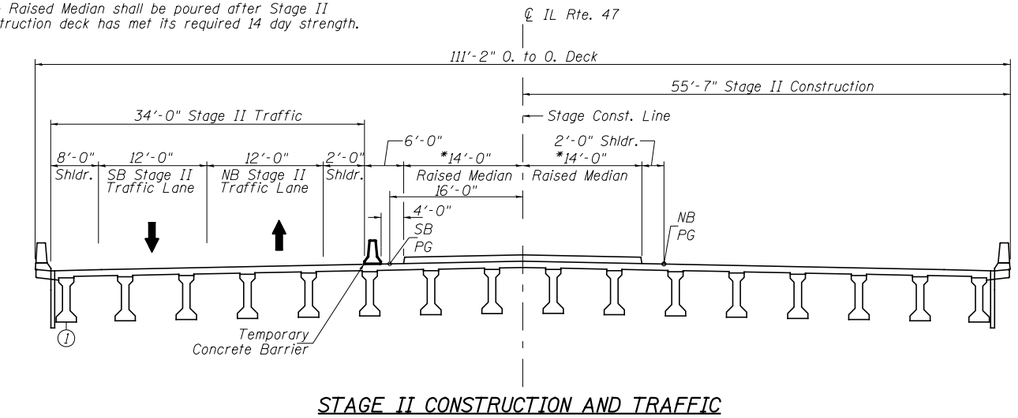
(Looking North)



STAGE II REMOVAL

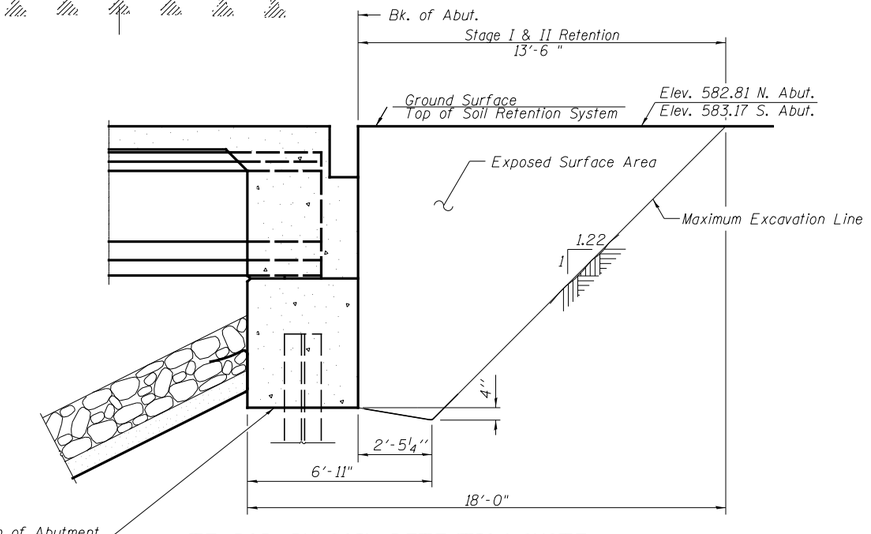
(Looking North)

*The Raised Median shall be poured after Stage II Construction deck has met its required 14 day strength.



STAGE II CONSTRUCTION AND TRAFFIC

(Looking North)



TEMPORARY SOIL RETENTION SYSTEM

Horizontal Dimensions Parallel to Roadway
(North Abutment shown, South Abutment similar)

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

Notes:
See sheet 4 of 30 for Temporary Concrete Barrier Details.
See Roadway Plans for quantity of Temporary Concrete Barrier.
Existing utilities to be relocated by others prior to bridge construction.

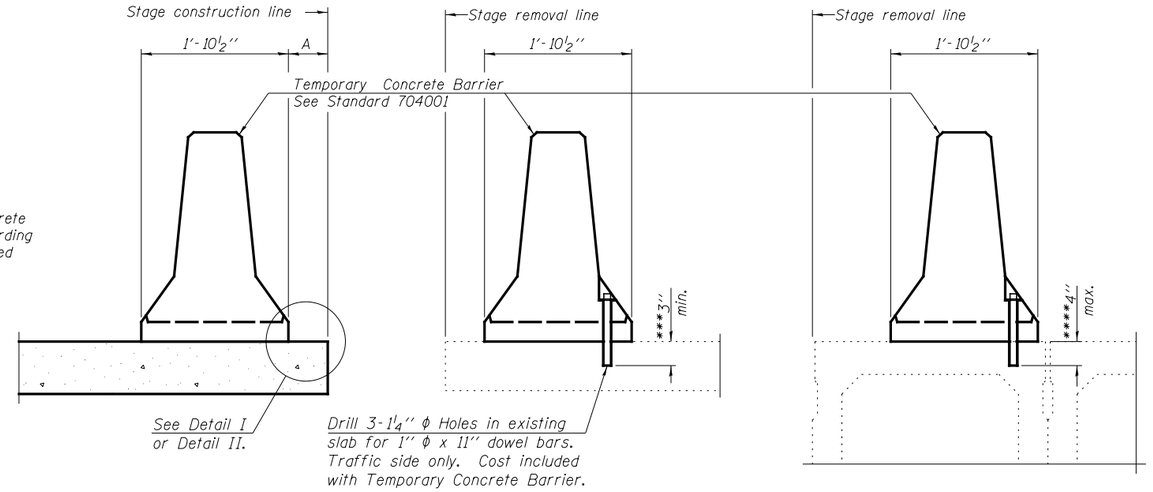
V:\3195\Structure\032-0123\0320123-66B83-003-STAGING SEQU.dgn

USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc.	STATE OF ILLINOIS
PLOT SCALE = NONE	CHECKED - JOH	JACKSONVILLE–SHOREWOOD–PEORIA	DEPARTMENT OF TRANSPORTATION
PLOT DATE = 8/6/2013	DRAWN - RMD		
	CHECKED - JOH/NPH		

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 032–0123
SHEET NO. 3 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	361
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

When "A" is 3'-6'' or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6''.



NEW SLAB | EXISTING SLAB | EXISTING DECK BEAM

NOTES

Detail I - With Bar Splicer or Couplers:

Connect one (1) 1'' x 7'' x "W'' steel ℙ to the top layer of couplers with 2-⅝'' ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:

Connect one (1) 1'' x 7'' x "W'' steel ℙ to the concrete slab or concrete wearing surface with 2-⅝'' ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

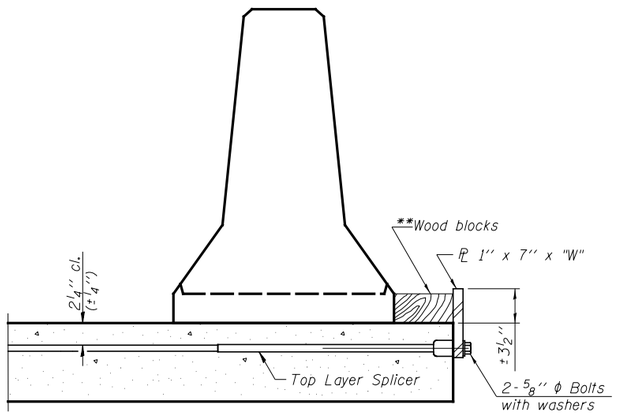
Cost of anchorage is included with Temporary Concrete Barrier.

The 1'' x 7'' x "W'' plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

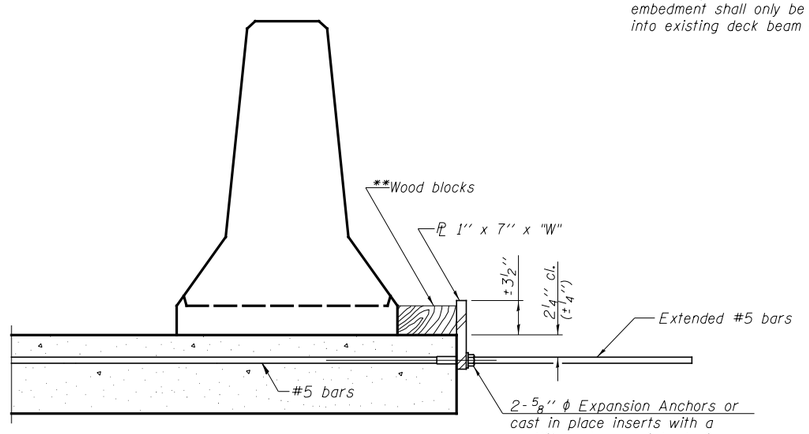
SECTIONS THRU SLAB OR DECK BEAM

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



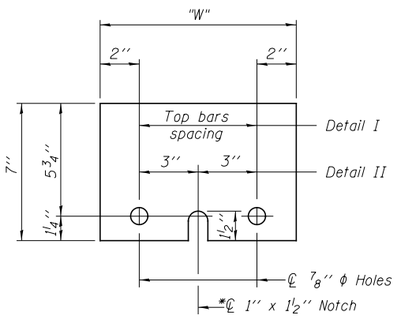
DETAIL I



DETAIL II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4''



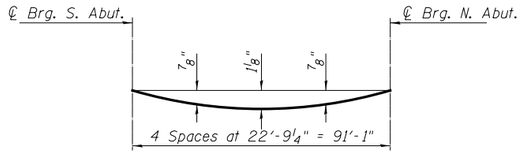
STEEL RETAINER ℙ 1'' x 7'' x "W''

* Required only with Detail II

R-27

7-1-10

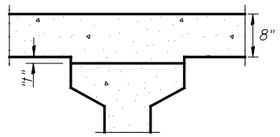
V:\3195\Structure\032-0123\0320123-66B83-004-TEMP BARRIER.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE-SHOREWOOD-PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION STRUCTURE NO. 032-0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 4 OF 30 SHEETS	326	110BR-1	GRUNDY	644	362
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH						CONTRACT NO. 66B83		
		CHECKED - JOH						ILLINOIS FED. AID PROJECT		



DEAD LOAD DEFLECTION DIAGRAM

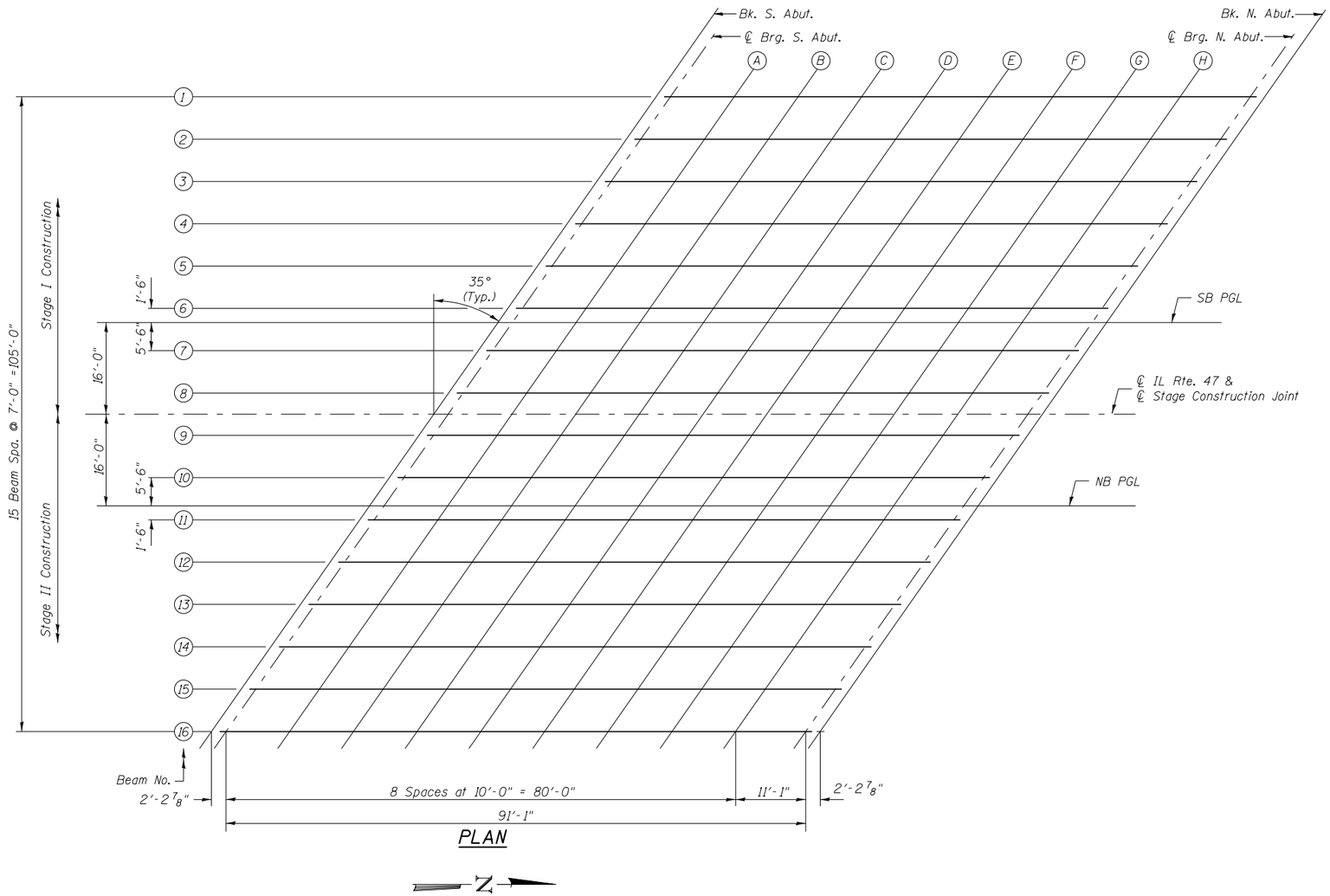
(Includes weight of concrete, excluding beams).

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 6, 7 & 8 of 30.



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown on sheets 6, 7 & 8 of 30, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS



PLAN

N

V:\3195\Structure\032-0123\0320123-66B83-005-TOP SLAB ELEV.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS STRUCTURE NO. 032–0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 5 OF 30 SHEETS	326	110BR-1	GRUNDY	644	363
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH						CONTRACT NO. 66B83		
								ILLINOIS FED. AID PROJECT		

BEAM #1

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+82.98	-36.50	581.91	581.91
CL Brg. S. Abutment	6185+85.22	-36.50	581.90	581.90
A	6185+95.22	-36.50	581.87	581.90
B	6186+05.22	-36.50	581.84	581.90
C	6186+15.22	-36.50	581.81	581.89
D	6186+25.22	-36.50	581.78	581.87
E	6186+35.22	-36.50	581.75	581.84
F	6186+45.22	-36.50	581.72	581.80
G	6186+55.22	-36.50	581.69	581.76
H	6186+65.22	-36.50	581.66	581.70
CL Brg. N. Abutment	6186+76.30	-36.50	581.63	581.63
Bk. N. Abutment	6186+78.54	-36.50	581.62	581.62

BEAM #2

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+78.08	-29.50	582.10	582.10
CL Brg. S. Abutment	6185+80.32	-29.50	582.09	582.09
A	6185+90.32	-29.50	582.06	582.09
B	6186+00.32	-29.50	582.03	582.09
C	6186+10.32	-29.50	582.00	582.08
D	6186+20.32	-29.50	581.97	582.06
E	6186+30.32	-29.50	581.94	582.03
F	6186+40.32	-29.50	581.91	581.99
G	6186+50.32	-29.50	581.88	581.95
H	6186+60.32	-29.50	581.85	581.89
CL Brg. N. Abutment	6186+71.40	-29.50	581.82	581.82
Bk. N. Abutment	6186+73.64	-29.50	581.81	581.81

BEAM #3

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+73.18	-22.50	582.28	582.28
CL Brg. S. Abutment	6185+75.42	-22.50	582.27	582.27
A	6185+85.42	-22.50	582.24	582.27
B	6185+95.42	-22.50	582.21	582.27
C	6186+05.42	-22.50	582.18	582.26
D	6186+15.42	-22.50	582.15	582.24
E	6186+25.42	-22.50	582.12	582.22
F	6186+35.42	-22.50	582.09	582.17
G	6186+45.42	-22.50	582.06	582.13
H	6186+55.42	-22.50	582.03	582.07
CL Brg. N. Abutment	6186+66.50	-22.50	582.00	582.00
Bk. N. Abutment	6186+68.74	-22.50	581.99	581.99

BEAM #4

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+68.28	-15.50	582.44	582.44
CL Brg. S. Abutment	6185+70.52	-15.50	582.43	582.43
A	6185+80.52	-15.50	582.40	582.43
B	6185+90.52	-15.50	582.37	582.43
C	6186+00.52	-15.50	582.34	582.42
D	6186+10.52	-15.50	582.31	582.40
E	6186+20.52	-15.50	582.28	582.37
F	6186+30.52	-15.50	582.25	582.33
G	6186+40.52	-15.50	582.22	582.28
H	6186+50.52	-15.50	582.19	582.22
CL Brg. N. Abutment	6186+61.60	-15.50	582.16	582.16
Bk. N. Abutment	6186+63.84	-15.50	582.15	582.15

BEAM #5

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+63.38	-8.50	582.59	582.59
CL Brg. S. Abutment	6185+65.62	-8.50	582.58	582.58
A	6185+75.62	-8.50	582.55	582.58
B	6185+85.62	-8.50	582.52	582.58
C	6185+95.62	-8.50	582.49	582.57
D	6186+05.62	-8.50	582.46	582.55
E	6186+15.62	-8.50	582.43	582.52
F	6186+25.62	-8.50	582.40	582.48
G	6186+35.62	-8.50	582.37	582.44
H	6186+45.62	-8.50	582.34	582.38
CL Brg. N. Abutment	6186+56.70	-8.50	582.31	582.31
Bk. N. Abutment	6186+58.94	-8.50	582.30	582.30

BEAM #6

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+58.47	-1.50	582.74	582.74
CL Brg. S. Abutment	6185+60.71	-1.50	582.74	582.74
A	6185+70.71	-1.50	582.71	582.74
B	6185+80.71	-1.50	582.68	582.74
C	6185+90.71	-1.50	582.65	582.73
D	6186+00.71	-1.50	582.62	582.71
E	6186+10.71	-1.50	582.59	582.68
F	6186+20.71	-1.50	582.56	582.64
G	6186+30.71	-1.50	582.53	582.59
H	6186+40.71	-1.50	582.50	582.53
CL Brg. N. Abutment	6186+51.79	-1.50	582.47	582.47
Bk. N. Abutment	6186+54.03	-1.50	582.46	582.46

SOUTH BOUND PGL

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+57.42	0.00	582.78	582.78
CL Brg. S. Abutment	6185+59.66	0.00	582.77	582.77
A	6185+69.66	0.00	582.74	582.77
B	6185+79.66	0.00	582.71	582.77
C	6185+89.66	0.00	582.68	582.76
D	6185+99.66	0.00	582.65	582.74
E	6186+09.66	0.00	582.62	582.71
F	6186+19.66	0.00	582.59	582.67
G	6186+29.66	0.00	582.56	582.63
H	6186+39.66	0.00	582.53	582.57
CL Brg. N. Abutment	6186+50.74	0.00	582.50	582.50
Bk. N. Abutment	6186+52.98	0.00	582.49	582.49

* Measured From SB PG
** Measured From NB PG

V:\3195\Structure\032-0123\0320123-66B83-006-TOP SLAB ELEV.dgn

USER NAME = bdecraene | DESIGNED - NPH
CHECKED - JOH
PLOT SCALE = NONE | DRAWN - RMD
PLOT DATE = 8/6/2013 | CHECKED - JOH/NPH

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 032-0123
SHEET NO. 6 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	364
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		

BEAM #7

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+53.57	5.50	582.90	582.90
CL Brg. S. Abutment	6185+55.81	5.50	582.89	582.89
A	6185+65.81	5.50	582.86	582.89
B	6185+75.81	5.50	582.83	582.89
C	6185+85.81	5.50	582.80	582.88
D	6185+95.81	5.50	582.77	582.86
E	6186+05.81	5.50	582.74	582.83
F	6186+15.81	5.50	582.71	582.79
G	6186+25.81	5.50	582.68	582.75
H	6186+35.81	5.50	582.65	582.69
CL Brg. N. Abutment	6186+46.89	5.50	582.62	582.62
Bk. N. Abutment	6186+49.13	5.50	582.61	582.61

BEAM #8

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+48.67	12.50	583.05	583.05
CL Brg. S. Abutment	6185+50.91	12.50	583.05	583.05
A	6185+60.91	12.50	583.02	583.05
B	6185+70.91	12.50	582.99	583.05
C	6185+80.91	12.50	582.96	583.04
D	6185+90.91	12.50	582.93	583.02
E	6186+00.91	12.50	582.90	582.99
F	6186+10.91	12.50	582.87	582.95
G	6186+20.91	12.50	582.84	582.90
H	6186+30.91	12.50	582.81	582.84
CL Brg. N. Abutment	6186+41.99	12.50	582.78	582.78
Bk. N. Abutment	6186+44.23	12.50	582.77	582.77

℄ ROADWAY AND STAGE CONSTRUCTION JOINT

Location	Station	* Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+46.22	16.00	583.13	583.13
CL Brg. S. Abutment	6185+48.46	16.00	583.13	583.13
A	6185+58.46	16.00	583.10	583.13
B	6185+68.46	16.00	583.07	583.13
C	6185+78.46	16.00	583.04	583.11
D	6185+88.46	16.00	583.01	583.09
E	6185+98.46	16.00	582.98	583.07
F	6186+08.46	16.00	582.95	583.02
G	6186+18.46	16.00	582.92	582.98
H	6186+28.46	16.00	582.89	582.92
CL Brg. N. Abutment	6186+39.54	16.00	582.86	582.86
Bk. N. Abutment	6186+41.78	16.00	582.85	582.85

BEAM #9

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+43.77	-12.50	583.07	583.07
CL Brg. S. Abutment	6185+46.01	-12.50	583.06	583.06
A	6185+56.01	-12.50	583.03	583.06
B	6185+66.01	-12.50	583.00	583.06
C	6185+76.01	-12.50	582.97	583.05
D	6185+86.01	-12.50	582.94	583.03
E	6185+96.01	-12.50	582.91	583.00
F	6186+06.01	-12.50	582.88	582.96
G	6186+16.01	-12.50	582.85	582.92
H	6186+26.01	-12.50	582.82	582.86
CL Brg. N. Abutment	6186+37.09	-12.50	582.79	582.79
Bk. N. Abutment	6186+39.33	-12.50	582.78	582.78

BEAM #10

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+38.87	-5.50	582.94	582.94
CL Brg. S. Abutment	6185+41.11	-5.50	582.94	582.94
A	6185+51.11	-5.50	582.91	582.94
B	6185+61.11	-5.50	582.88	582.94
C	6185+71.11	-5.50	582.85	582.92
D	6185+81.11	-5.50	582.82	582.91
E	6185+91.11	-5.50	582.79	582.88
F	6186+01.11	-5.50	582.76	582.84
G	6186+11.11	-5.50	582.73	582.79
H	6186+21.11	-5.50	582.70	582.73
CL Brg. N. Abutment	6186+32.19	-5.50	582.67	582.67
Bk. N. Abutment	6186+34.43	-5.50	582.66	582.66

NORTH BOUND PGL

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+35.02	0.00	582.85	582.85
CL Brg. S. Abutment	6185+37.26	0.00	582.84	582.84
A	6185+47.26	0.00	582.81	582.84
B	6185+57.26	0.00	582.78	582.84
C	6185+67.26	0.00	582.75	582.83
D	6185+77.26	0.00	582.72	582.81
E	6185+87.26	0.00	582.69	582.78
F	6185+97.26	0.00	582.66	582.74
G	6186+07.26	0.00	582.63	582.69
H	6186+17.26	0.00	582.60	582.63
CL Brg. N. Abutment	6186+28.34	0.00	582.57	582.57
Bk. N. Abutment	6186+30.58	0.00	582.56	582.56

* Measured From SB PG
** Measured From NB PG

V:\3195\Structure\032-0123\0320123-66B83-007-TOP SLAB ELEV.dgn

USER NAME = bdecraene | DESIGNED - NPH
CHECKED - JOH
PLOT SCALE = NONE | DRAWN - RMD
PLOT DATE = 8/6/2013 | CHECKED - JOH/NPH

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 032-0123
SHEET NO. 7 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	365
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		

BEAM #11

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+33.97	1.50	582.82	582.82
CL Brg. S. Abutment	6185+36.21	1.50	582.81	582.81
A	6185+46.21	1.50	582.78	582.81
B	6185+56.21	1.50	582.75	582.81
C	6185+66.21	1.50	582.72	582.80
D	6185+76.21	1.50	582.69	582.78
E	6185+86.21	1.50	582.66	582.75
F	6185+96.21	1.50	582.63	582.71
G	6186+06.21	1.50	582.60	582.67
H	6186+16.21	1.50	582.57	582.61
CL Brg. N. Abutment	6186+27.29	1.50	582.54	582.54
Bk. N. Abutment	6186+29.53	1.50	582.53	582.53

BEAM #12

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+29.06	8.50	582.69	582.69
CL Brg. S. Abutment	6185+31.30	8.50	582.69	582.69
A	6185+41.30	8.50	582.66	582.69
B	6185+51.30	8.50	582.63	582.69
C	6185+61.30	8.50	582.60	582.67
D	6185+71.30	8.50	582.57	582.66
E	6185+81.30	8.50	582.54	582.63
F	6185+91.30	8.50	582.51	582.59
G	6186+01.30	8.50	582.48	582.54
H	6186+11.30	8.50	582.45	582.48
CL Brg. N. Abutment	6186+22.38	8.50	582.42	582.42
Bk. N. Abutment	6186+24.62	8.50	582.41	582.41

BEAM #13

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+24.16	15.50	582.57	582.57
CL Brg. S. Abutment	6185+26.40	15.50	582.56	582.56
A	6185+36.40	15.50	582.53	582.56
B	6185+46.40	15.50	582.50	582.56
C	6185+56.40	15.50	582.47	582.55
D	6185+66.40	15.50	582.44	582.53
E	6185+76.40	15.50	582.41	582.50
F	6185+86.40	15.50	582.38	582.46
G	6185+96.40	15.50	582.35	582.42
H	6186+06.40	15.50	582.32	582.35
CL Brg. N. Abutment	6186+17.48	15.50	582.29	582.29
Bk. N. Abutment	6186+19.72	15.50	582.28	582.28

BEAM #14

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+19.26	22.50	582.44	582.44
CL Brg. S. Abutment	6185+21.50	22.50	582.44	582.44
A	6185+31.50	22.50	582.41	582.44
B	6185+41.50	22.50	582.38	582.44
C	6185+51.50	22.50	582.35	582.42
D	6185+61.50	22.50	582.32	582.41
E	6185+71.50	22.50	582.29	582.38
F	6185+81.50	22.50	582.26	582.34
G	6185+91.50	22.50	582.23	582.29
H	6186+01.50	22.50	582.20	582.23
CL Brg. N. Abutment	6186+12.58	22.50	582.17	582.17
Bk. N. Abutment	6186+14.82	22.50	582.16	582.16

BEAM #15

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+14.36	29.50	582.29	582.29
CL Brg. S. Abutment	6185+16.60	29.50	582.28	582.28
A	6185+26.60	29.50	582.25	582.28
B	6185+36.60	29.50	582.22	582.28
C	6185+46.60	29.50	582.19	582.27
D	6185+56.60	29.50	582.16	582.25
E	6185+66.60	29.50	582.13	582.22
F	6185+76.60	29.50	582.10	582.18
G	6185+86.60	29.50	582.07	582.14
H	6185+96.60	29.50	582.04	582.08
CL Brg. N. Abutment	6186+07.68	29.50	582.01	582.01
Bk. N. Abutment	6186+09.92	29.50	582.00	582.00

BEAM #16

Location	Station	** Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abutment	6185+09.46	36.50	582.13	582.13
CL Brg. S. Abutment	6185+11.70	36.50	582.12	582.12
A	6185+21.70	36.50	582.09	582.12
B	6185+31.70	36.50	582.06	582.12
C	6185+41.70	36.50	582.03	582.11
D	6185+51.70	36.50	582.00	582.09
E	6185+61.70	36.50	581.97	582.06
F	6185+71.70	36.50	581.94	582.02
G	6185+81.70	36.50	581.91	581.98
H	6185+91.70	36.50	581.88	581.92
CL Brg. N. Abutment	6186+02.78	36.50	581.85	581.85
Bk. N. Abutment	6186+05.02	36.50	581.84	581.84

* Measured From SB PG
** Measured From NB PG

V:\3195\Structure\032-0123\0320123-66B83-008-TOP SLAB ELEV.dgn

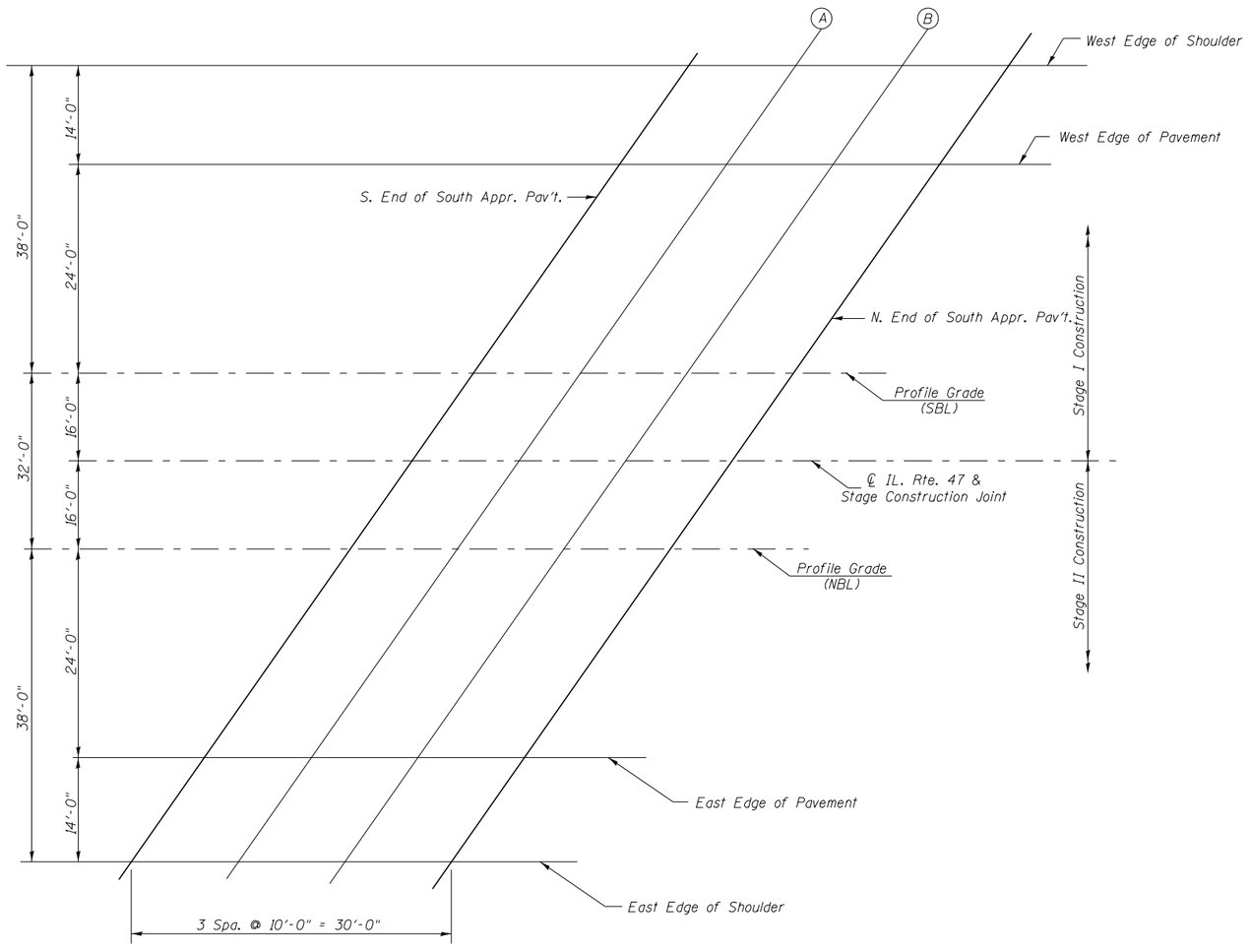
USER NAME = bdecraene | DESIGNED - NPH
CHECKED - JOH
PLOT SCALE = NONE | DRAWN - RMD
PLOT DATE = 8/6/2013 | CHECKED - JOH/NPH

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 032-0123
SHEET NO. 8 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	366
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		



PLAN SOUTH APPROACH SLAB

WEST EDGE OF SHOULDER

Location	Station	* Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	6185+55.25	-38.00	581.95
A	6185+65.25	-38.00	581.92
B	6185+75.25	-38.00	581.89
N. End of South Appr. Pavement	6185+85.25	-38.00	581.86

WEST EDGE OF PAVEMENT

Location	Station	* Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	6185+45.45	-24.00	582.33
A	6185+55.45	-24.00	582.30
B	6185+65.45	-24.00	582.27
N. End of South Appr. Pavement	6185+75.45	-24.00	582.24

PROFILE GRADE (SBL)

Location	Station	* Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	6185+28.64	0.00	582.86
A	6185+38.64	0.00	582.83
B	6185+48.64	0.00	582.80
N. End of South Appr. Pavement	6185+58.64	0.00	582.77

℄ IL. RTE. 47 & STAGE CONSTRUCTION JOINT

Location	Station	* Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	6185+17.44	16.00	583.22
A	6185+27.44	16.00	583.19
B	6185+37.44	16.00	583.16
N. End of South Appr. Pavement	6185+47.44	16.00	583.13

PROFILE GRADE (NBL)

Location	Station	** Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	6185+06.24	0.00	582.93
A	6185+16.24	0.00	582.90
B	6185+26.24	0.00	582.87
N. End of South Appr. Pavement	6185+36.24	0.00	582.84

EAST EDGE OF PAVEMENT

Location	Station	** Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	6184+89.43	24.00	582.50
A	6184+99.43	24.00	582.47
B	6185+09.43	24.00	582.44
N. End of South Appr. Pavement	6185+19.43	24.00	582.41

EAST EDGE OF SHOULDER

Location	Station	** Offset	Theoretical Grade Elevations
S. End of South Appr. Pavement	6184+79.63	38.00	582.18
A	6184+89.63	38.00	582.15
B	6184+99.63	38.00	582.12
N. End of South Appr. Pavement	6185+09.63	38.00	582.09

* Measured From SB PG
** Measured From NB PG

V:\3195\Structure\032-0123\0320123-66B83-009-TOP SOUTH APPR SLAB ELEV.dgn

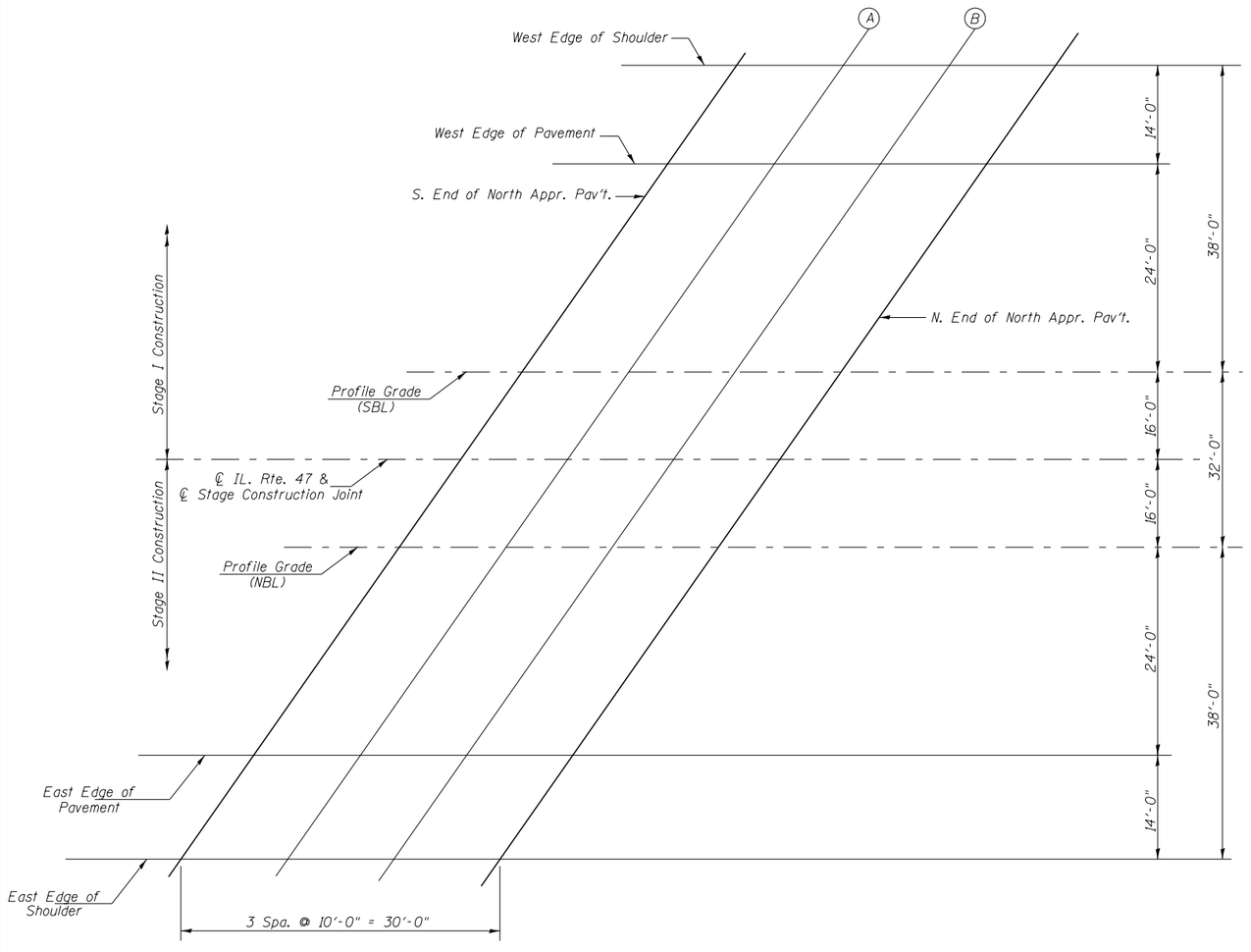
USER NAME = bdecraene | DESIGNED - NPH
CHECKED - JOH
PLOT SCALE = NONE | DRAWN - RMD
PLOT DATE = 8/6/2013 | CHECKED - JOH/NPH

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO. 032-0123
SHEET NO. 9 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	367
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			



PLAN NORTH APPROACH SLAB

N

WEST EDGE OF SHOULDER

Location	Station	* Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	6186+78.37	-38.00	581.59
A	6186+88.37	-38.00	581.56
B	6186+98.37	-38.00	581.53
N. End of North Appr. Pavement	6187+08.37	-38.00	581.50

WEST EDGE OF PAVEMENT

Location	Station	* Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	6186+68.57	-24.00	581.96
A	6186+78.57	-24.00	581.93
B	6186+88.57	-24.00	581.90
N. End of North Appr. Pavement	6186+98.57	-24.00	581.87

PROFILE GRADE (SBL)

Location	Station	* Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	6186+51.76	0.00	582.50
A	6186+61.76	0.00	582.47
B	6186+71.76	0.00	582.44
N. End of North Appr. Pavement	6186+81.76	0.00	582.41

℄ IL. RTE. 47 & STAGE CONSTRUCTION JOINT

Location	Station	* Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	6186+40.56	16.00	582.85
A	6186+50.56	16.00	582.82
B	6186+60.56	16.00	582.79
N. End of North Appr. Pavement	6186+70.56	16.00	582.76

PROFILE GRADE (NBL)

Location	Station	** Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	6186+29.36	0.00	582.56
A	6186+39.36	0.00	582.53
B	6186+49.36	0.00	582.50
N. End of North Appr. Pavement	6186+59.36	0.00	582.47

EAST EDGE OF PAVEMENT

Location	Station	** Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	6186+12.55	24.00	582.13
A	6186+22.55	24.00	582.10
B	6186+32.55	24.00	582.07
N. End of North Appr. Pavement	6186+42.55	24.00	582.04

EAST EDGE OF SHOULDER

Location	Station	** Offset	Theoretical Grade Elevations
S. End of North Appr. Pavement	6186+02.75	38.00	581.81
A	6186+12.75	38.00	581.78
B	6186+22.75	38.00	581.75
N. End of North Appr. Pavement	6186+32.75	38.00	581.72

* Measured From SB PG
** Measured From NB PG

V:\3195\Structure\032-0123\0320123-66B83-010-TOP NORTH APPR SLAB ELEV.dgn

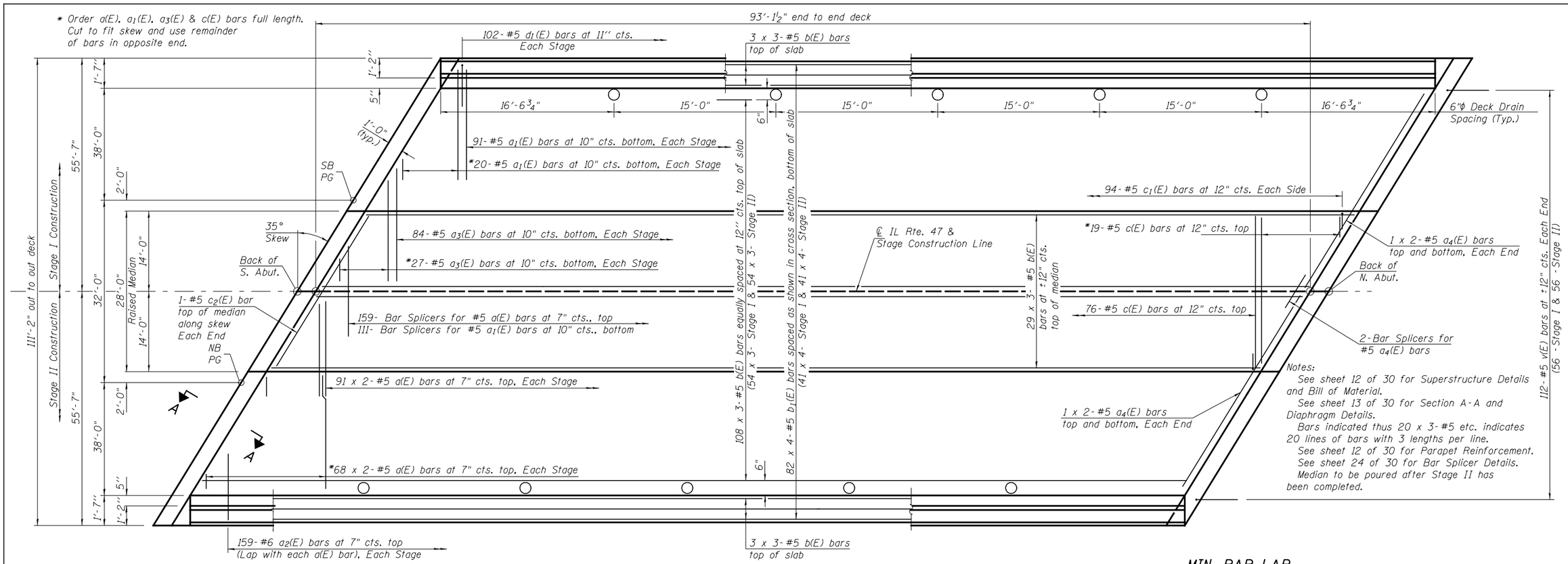
USER NAME = bdecraene | DESIGNED - NPH
PLOT SCALE = NONE | DRAWN - RMD
PLOT DATE = 8/6/2013 | CHECKED - JOH/NPH

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO. 032-0123
SHEET NO. 10 OF 30 SHEETS

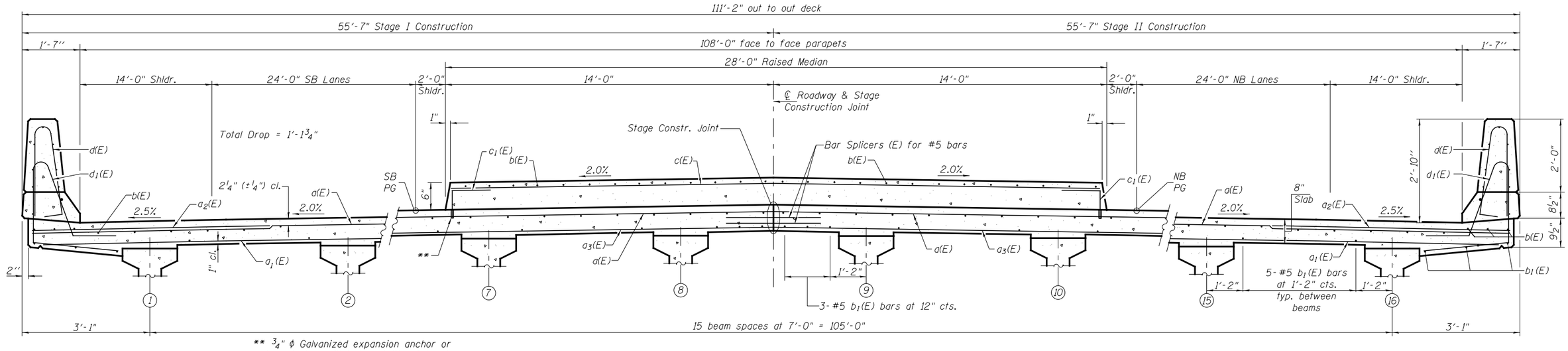
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	368
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			



PLAN

MIN. BAR LAP

#5 = 2'-7"

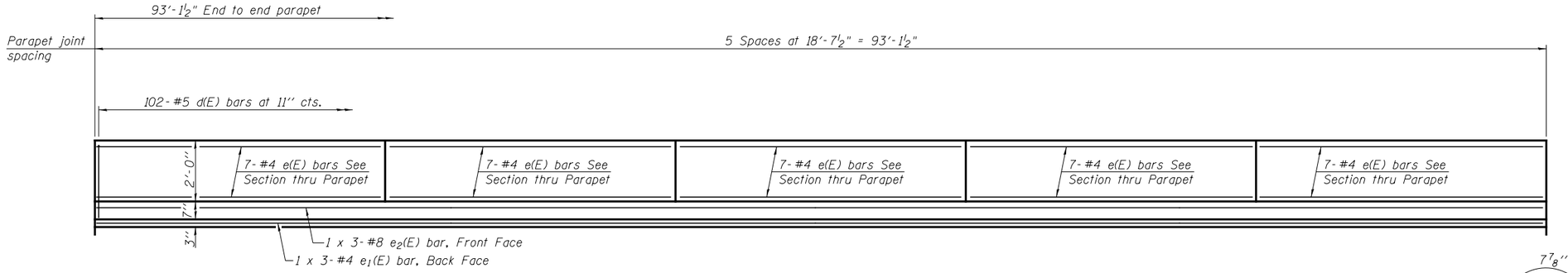


** 3/4" φ Galvanized expansion anchor or Ferrule Loop Slab Insert (Proof Load 6600 lbs). Cost is included in the cost of Reinforcement Bars, Epoxy Coated.

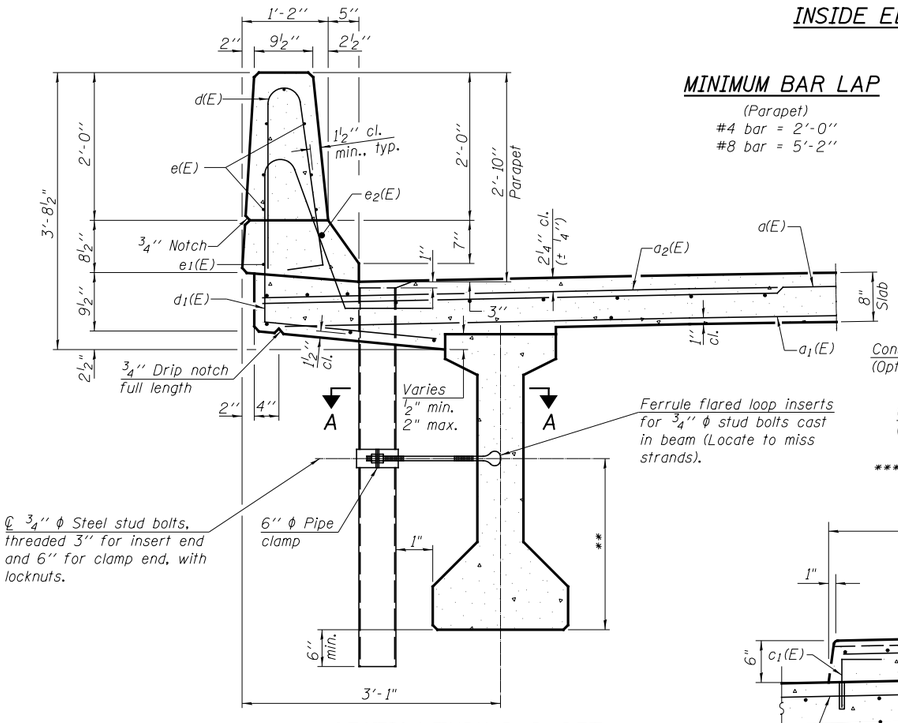
CROSS SECTION

(Looking North)

V:\3195\Structure\032-0123\0320123-66B83-011-SUPERSTRUCTURE.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE-SHOREWOOD-PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE STRUCTURE NO. 032-0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 11 OF 30 SHEETS	326	110BR-1	GRUNDY	644	369
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH						CONTRACT NO. 66B83		
		CHECKED - JOH						ILLINOIS FED. AID PROJECT		



INSIDE ELEVATION OF PARAPET

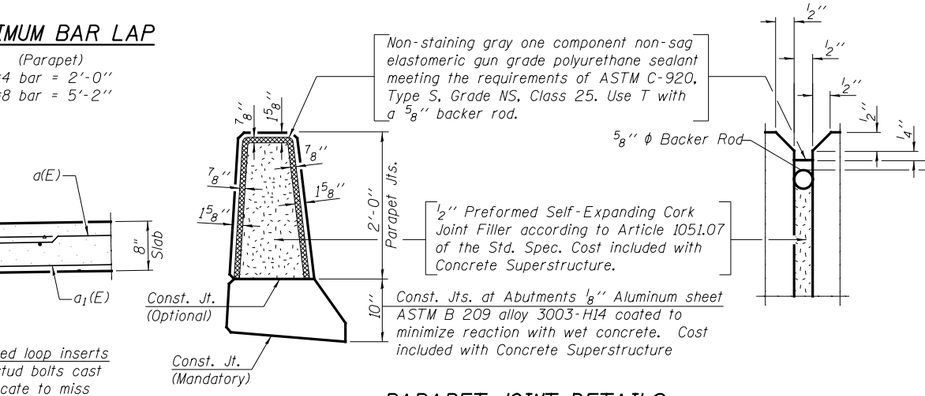


SECTION THRU PARAPET

**See sheet 17 of 30 for insert locations.
See sheet 11 of 30 for floor drain locations.

MINIMUM BAR LAP

(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"

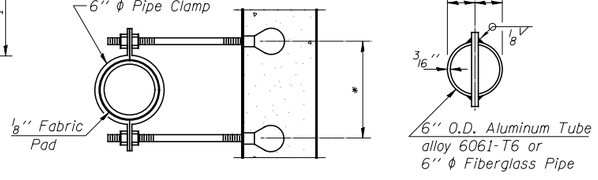


*** Full width along joint, backer rod not required.

PARAPET JOINT DETAILS

SECTION THRU MEDIAN

TOP PLAN

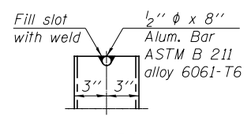


SECTION A-A

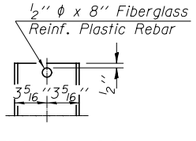
*Dimension as required by Pipe Clamp

TOP PLAN

(Showing Aluminum Tube)



ALUMINUM TUBE



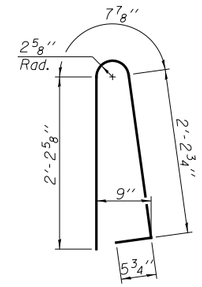
FIBERGLASS PIPE

Notes:
Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
The exterior surfaces of the floor drains shall be coated or pigmented by the manufacturer with a color that matches the concrete.
The clamping device and inserts shall be galvanized according to AASHTO M 232. Cost of clamping device and galvanizing included with Floor Drains.

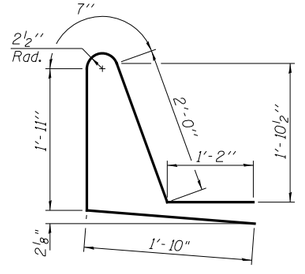
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	636	#5	28'-8"	
a1(E)	222	#5	33'-0"	
a2(E)	318	#6	6'-6"	
a3(E)	222	#5	24'-10"	
a4(E)	16	#5	35'-0"	
b(E)	429	#5	32'-9"	
b1(E)	328	#5	25'-2"	
c(E)	95	#5	27'-7"	
c1(E)	188	#5	1'-3"	
c2(E)	2	#5	33'-8"	
d(E)	204	#5	5'-7"	
d1(E)	204	#5	7'-6"	
e(E)	70	#4	18'-4"	
e1(E)	6	#4	32'-5"	
e2(E)	6	#8	34'-6"	
m(E)	72	#6	24'-11"	
m1(E)	112	#6	7'-8"	
m2(E)	16	#6	3'-2"	
m3(E)	28	#6	6'-0"	
m4(E)	4	#6	2'-5"	
m5(E)	64	#5	4'-0"	
m6(E)	16	#6	3'-8"	
m7(E)	4	#6	2'-10"	
s(E)	192	#5	9'-4"	
s1(E)	192	#5	14'-0"	
v(E)	224	#5	3'-1"	
Concrete Superstructure			CU YD	486.1
Reinforcement Bars, Epoxy Coated			POUND	76,840

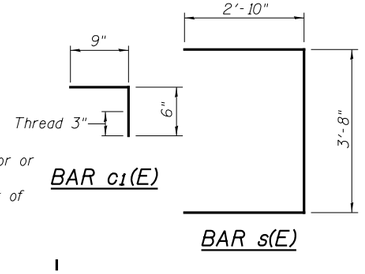
Bars indicated thus 1 x 4-#5 etc. indicates 1 line of bars with 4 lengths per line.



BAR d(E)



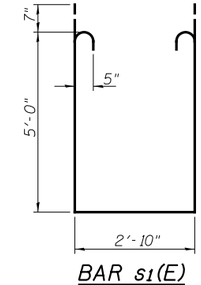
BAR d1(E)



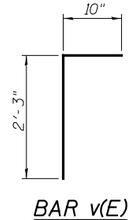
BAR c1(E)

**** ¾" ϕ Galvanized expansion anchor or Ferrule Loop Slab Insert (Proof Load 6600 lbs). Cost is included in the cost of Reinforcement Bars, Epoxy Coated.

BAR s(E)



BAR s1(E)



BAR v(E)

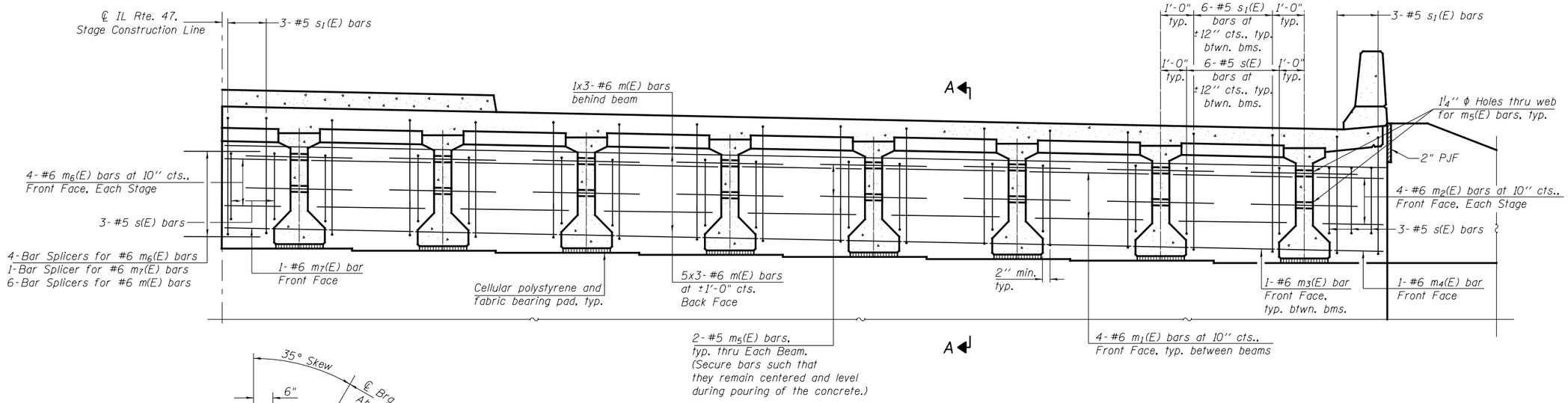
V:\3195\Structure\032-0123\0320123-66B83-02-SUPERSTR DETAILS.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA
	PLOT SCALE = NONE	CHECKED - JOH	
	PLOT DATE = 8/6/2013	DRAWN - RMD	
		CHECKED - JOH/NPH	

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE DETAILS
STRUCTURE NO. 032-0123**

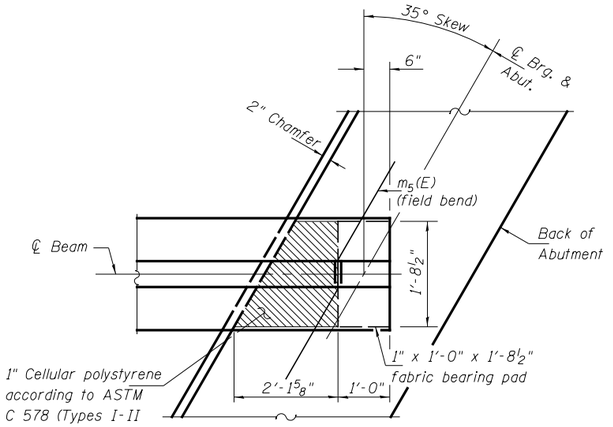
SHEET NO. 12 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	370
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		



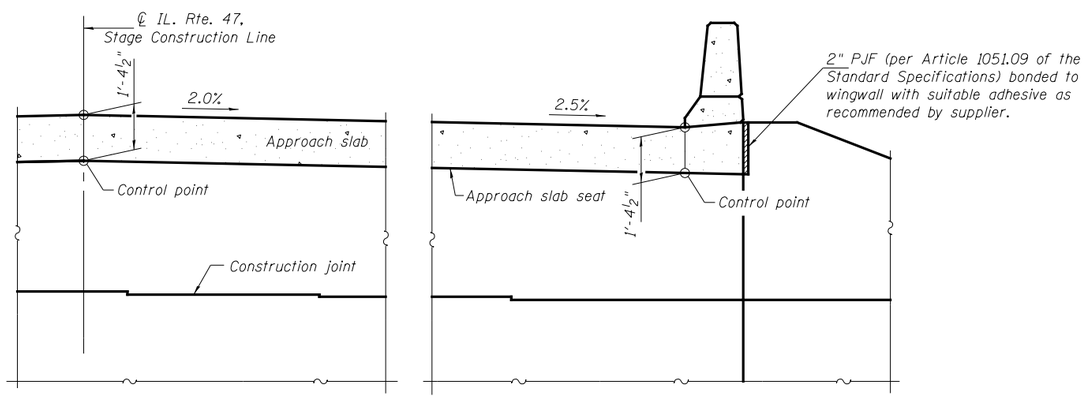
DIAPHRAGM ELEVATION AT ABUTMENT

MIN. BAR LAP
#6 bar = 3'-4"

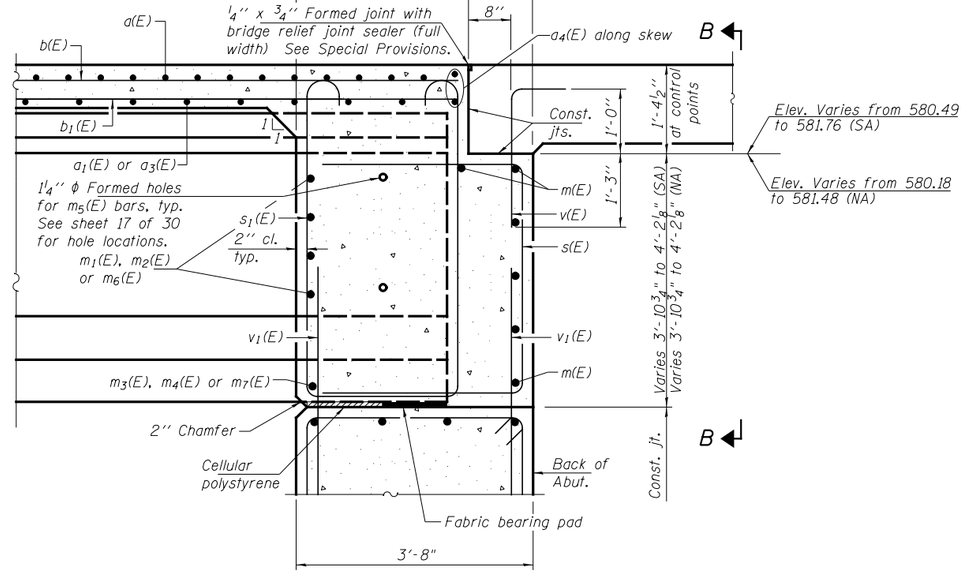


PARTIAL PLAN AT ABUTMENT
(Showing bottom flange of beam)

Notes:
Reinforcement bars in diaphragm are billed with superstructure on sheet 12 of 30.
Concrete in diaphragm is included with Concrete Superstructure on sheet 12 of 30.
See sheet 12 of 30 for details of bars s(E), s_1(E) and v(E).
The s(E) and s_1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
The approach slab seat shall have a constant slope determined from the control points shown.
Cost of cellular polystyrene is included with Concrete Superstructure.
See sheet 24 of 30 for Bar Splicer Details.

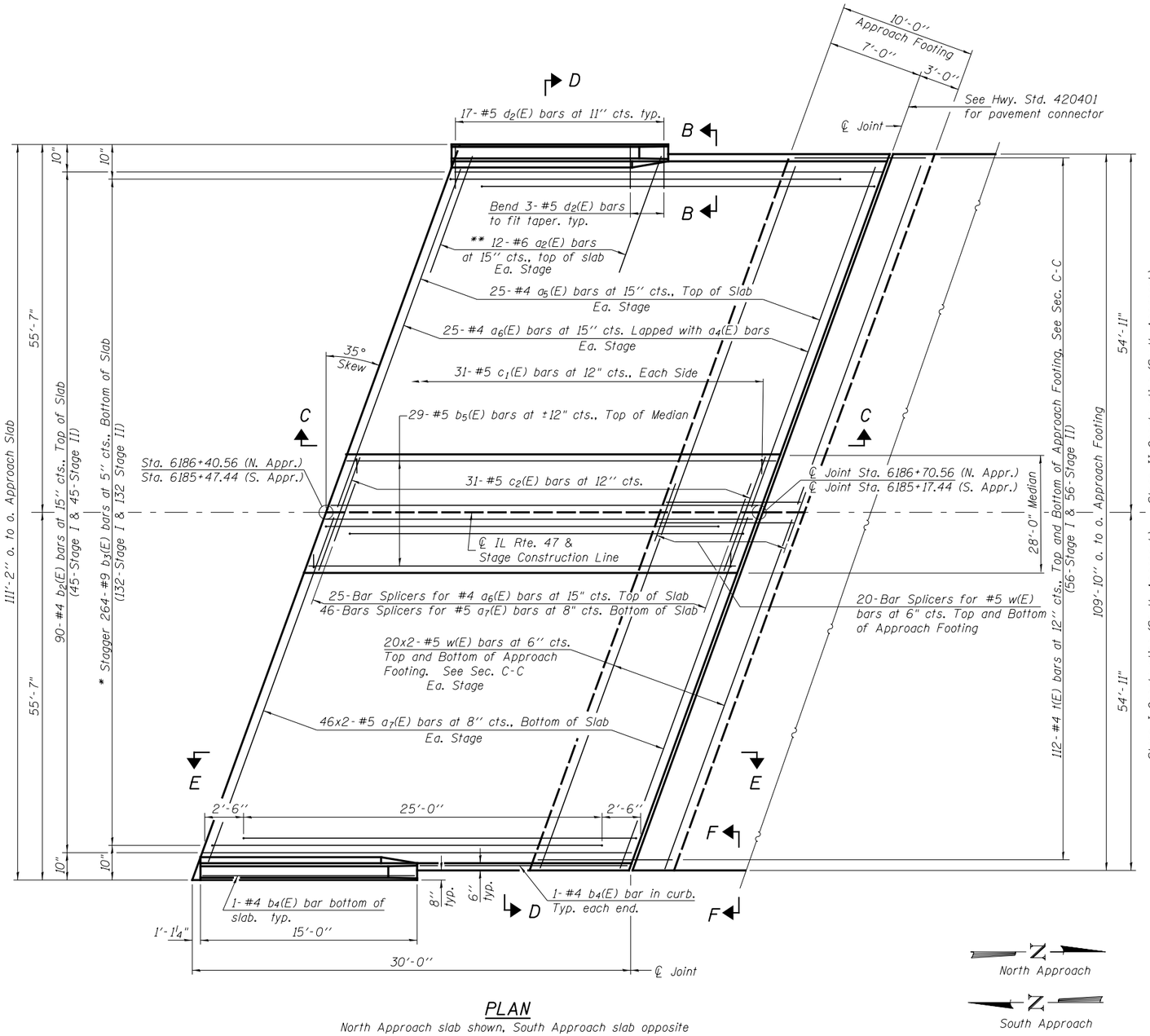


VIEW B-B



SECTION A-A
(at Rt. L's)

V:\3195\Structure\032-0123\0320123-66B83-013-DIAPHRAGM.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DIAPHRAGM DETAILS STRUCTURE NO. 032-0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 13 OF 30 SHEETS	326	110BR-1	GRUNDY	644	371
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH						CONTRACT NO. 66B83		
								ILLINOIS FED. AID PROJECT		

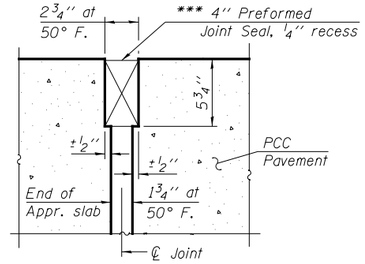


PLAN

North Approach slab shown, South Approach slab opposite

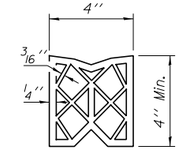
* Tilt #9 b_3(E) bars as required to maintain clearance.
** Lap with a_5(E) bars, typ. each parapet.
*** Cost included with Concrete Superstructure.

Notes:
See sheet 15 of 30 for Sections C-C & D-D and View E-E.
a_2(E), a_5(E), a_6(E) and a_7(E) bar spacings measured along ℄ Rdwy.
See sheet 24 of 30 for Bar Splicer details.

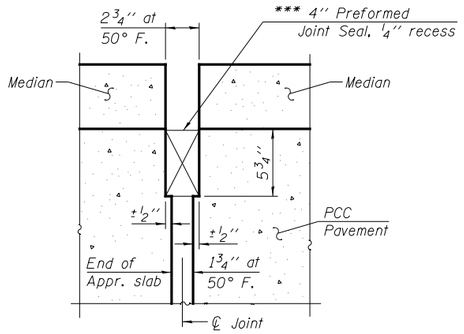


RIGID PAVEMENT

DETAIL A

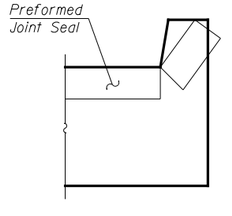


PREFORMED JOINT SEAL



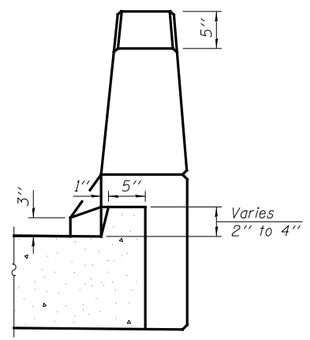
RIGID PAVEMENT

DETAIL B



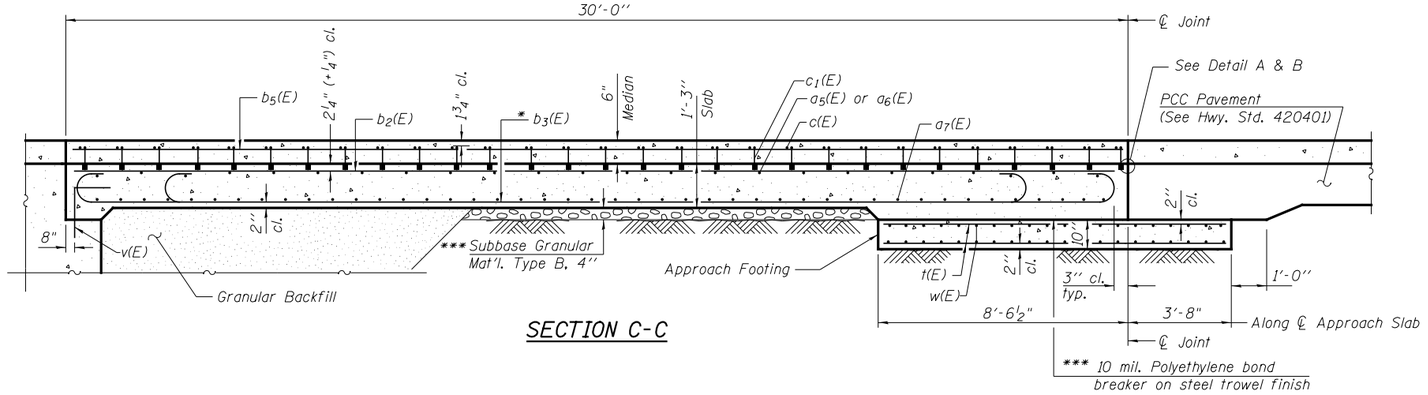
VIEW F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.



VIEW B-B

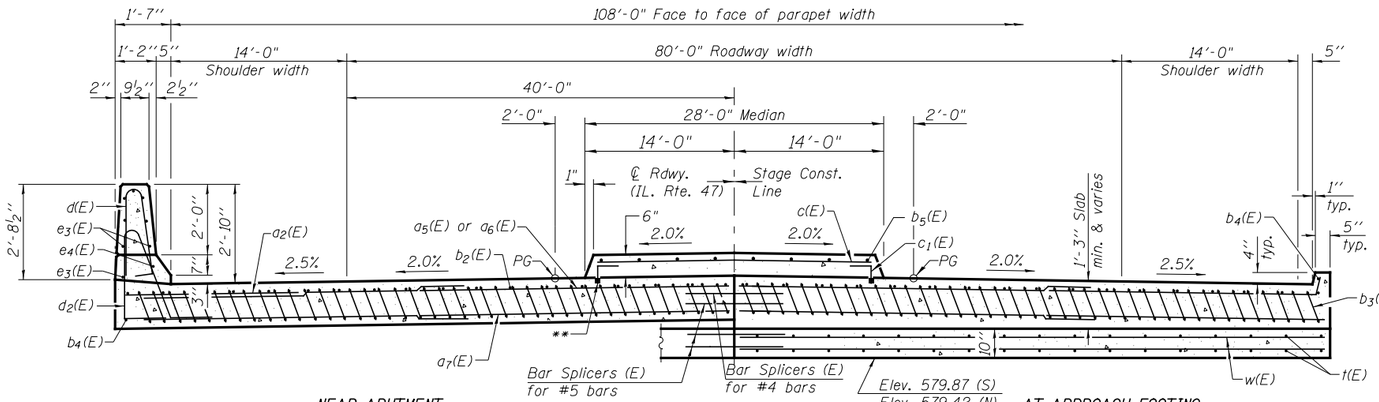
V:\3195\Structure\032-0123\0320123-66B83-014-APPR SLAB 1.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO. 032-0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 14 OF 30 SHEETS	326	110BR-1	GRUNDY	644	372
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH						CONTRACT NO. 66B83		
		CHECKED - JOH						ILLINOIS	FED. AID PROJECT	



SECTION C-C

Notes:

See sheet 14 of 30 for Detail A, Detail B, View B-B & View F-F.
Approach slab, parapet, and median concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
See sheet 12 of 30 for v(E) bar details.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
See sheet 24 of 30 for Bar Splicer Details.
Cost of excavation for approach footing included with Concrete Structures.
See sheet 2 of 30 for Granular Backfill and drainage treatment details.
See sheet 12 of 30 for additional parapet details.
Median is to be poured after Stage II construction has been completed.



NEAR ABUTMENT

SECTION D-D

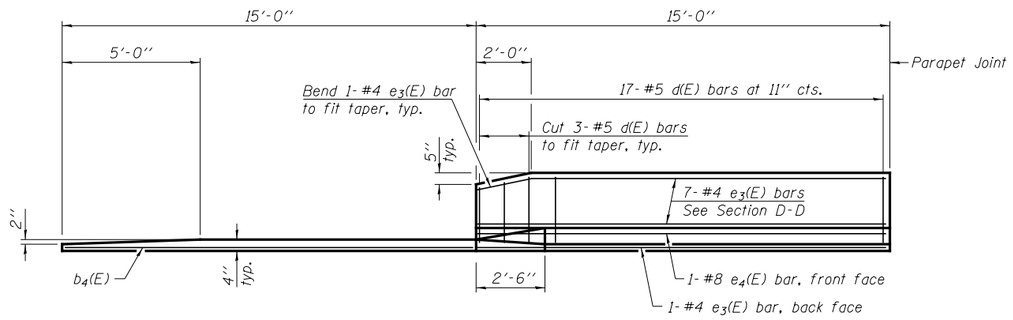
(See Plan for dimensions not shown)

AT APPROACH FOOTING

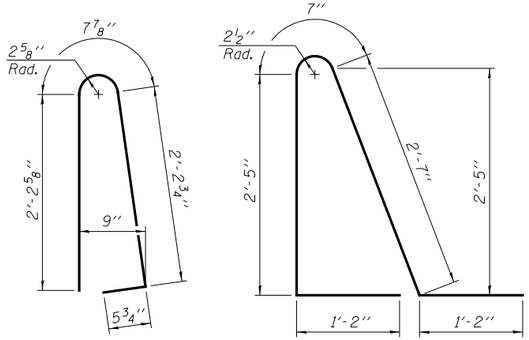
* Tilt #9 $b_3(E)$ bars as required to maintain clearance.

** ¾" ϕ Galvanized expansion anchor or Ferrule Loop Slab Insert (Proof Load 6600 lbs). Cost is included in the cost of Reinforcement Bars, Epoxy Coated.

*** Cost included with Concrete Superstructure.

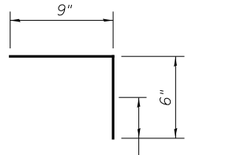


VIEW E-E



BAR d(E)

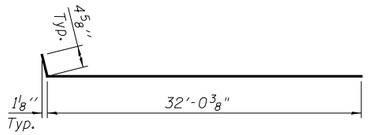
BAR $d_2(E)$



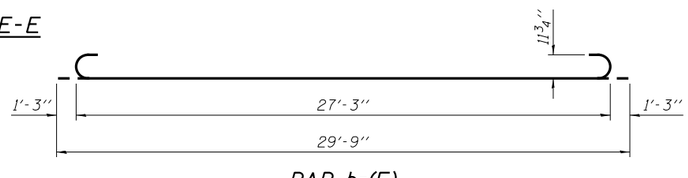
BAR $c_1(E)$

MIN. BAR LAP

#4 = 2'-1"
#5 = 2'-7"



BAR $a_5(E)$



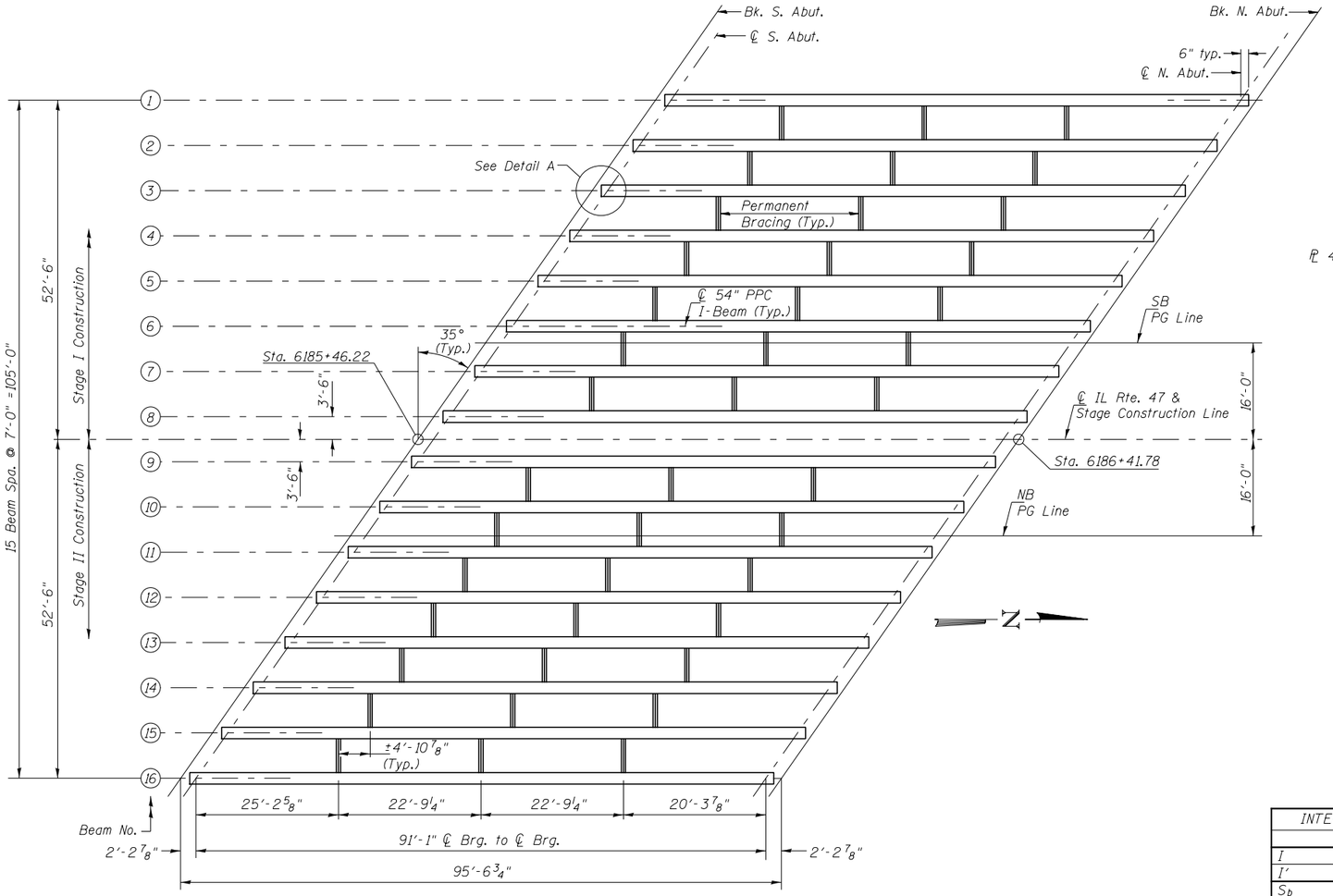
BAR $b_3(E)$

NORTH AND SOUTH APPROACH BILL OF MATERIAL

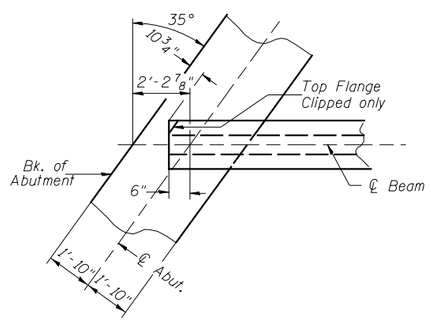
Bar	No.	Size	Length	Shape
$a_2(E)$	48	#6	6'-6"	
$a_5(E)$	100	#4	32'-2"	
$a_6(E)$	100	#4	36'-9"	
$a_7(E)$	368	#5	35'-0"	
$b_2(E)$	180	#4	29'-9"	
$b_3(E)$	528	#9	29'-9"	
$b_4(E)$	8	#4	14'-9"	
$b_5(E)$	58	#5	29'-9"	
$c_1(E)$	124	#5	1'-3"	
$c_2(E)$	62	#5	33'-8"	
$d(E)$	68	#5	5'-7"	
$d_2(E)$	68	#5	7'-11"	
$e_3(E)$	32	#4	14'-9"	
$e_4(E)$	4	#8	14'-9"	
$t(E)$	448	#4	11'-11"	
$w(E)$	320	#5	35'-0"	
Concrete Superstructure			CU YD	396.6
Concrete Structures			CU YD	83.0
Reinforcement Bars, Epoxy Coated			POUND	96,390

V:\3195\Structure\032-0123\0320123-66B83-025-APPR SLAB 2.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO. 032–0123
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 15 OF 30 SHEETS
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	373
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		



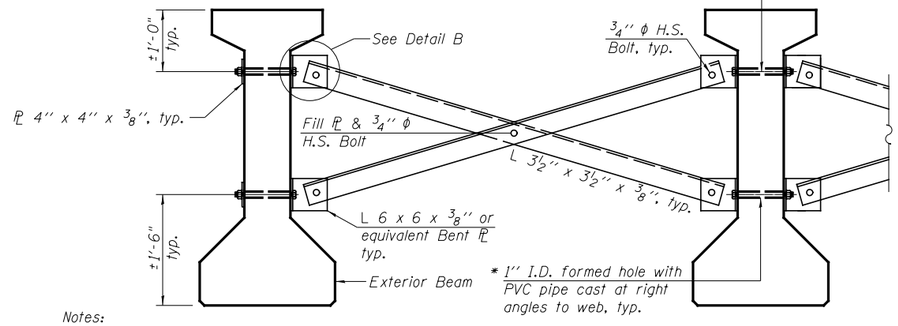
PLAN



DETAIL A

(South Abutment Shown, North Abutment Similar)

* Fabricator shall locate to miss strands within permissible tolerances.



Notes:

All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.

Two hardened washers are required for each set of oversized holes.

All holes shall be 15/16"ϕ unless otherwise noted.

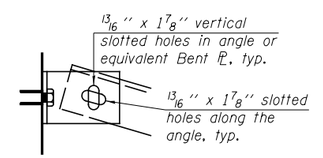
5/16" x 3" x 3" plate washers are required over all slotted holes.

All bolts shall be galvanized according to AASHTO M232.

Bracing shall be installed as beams are erected and tightened as soon as possible during erection.

Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete I-Beams.

All structural steel for permanent bracing shall be AASHTO M270 Gr. 50.



DETAIL B

PERMANENT BRACING DETAILS FOR 54" PPC I-BEAMS

INTERIOR BEAM MOMENT TABLE		
		0.5 Sp. 1
I	(in^4)	213715
I′	(in^4)	505995
S_b	(in^3)	8559
S_b'	(in^3)	12771
S_t	(in^3)	7362
S_t'	(in^3)	35187
DC1	(k/′)	1.365
M_{DC1}	('k)	1415
DC2	(k/′)	0.263
M_{DC2}	('k)	273
DW	(k/′)	0.35
M_{DW}	('k)	363
M_{L+IM}	('k)	1540

INTERIOR BEAM REACTION TABLE		
		Abut.
R_{DC1}	(k)	62.2
R_{DC2}	(k)	12.0
R_{DW}	(k)	15.9
R_{L+IM}	(k)	85.5
R_{Total}	(k)	175.6

I: Non-composite moment of inertia of beam section ($in.^4$).

I′: Composite moment of inertia of beam section ($in.^4$).

S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).

S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).

S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).

S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

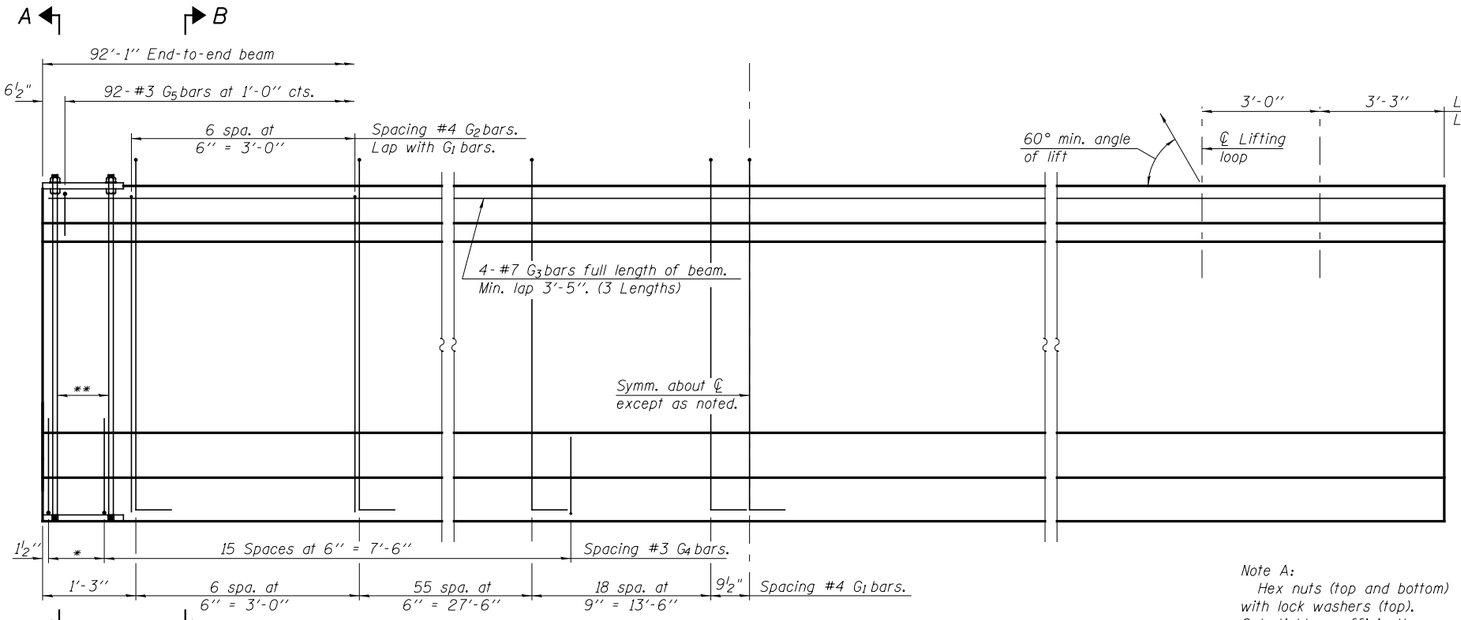
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft).

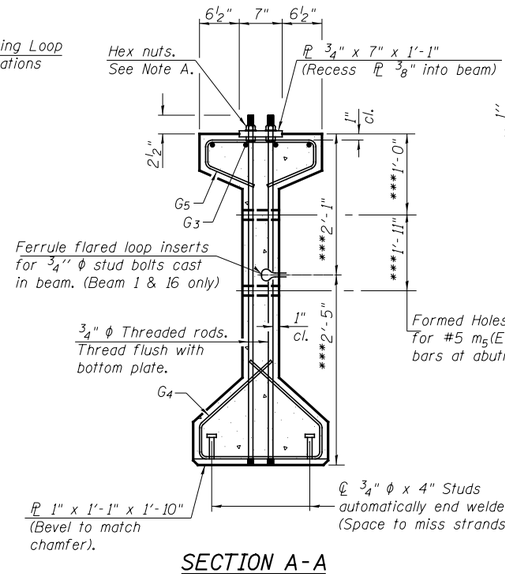
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

V:\3195\Structure\032-0123\0320123-66B83-016-FRAMING.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN STRUCTURE NO. 032–0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	CHECKED - JOH				326	110BR-1	GRUNDY	644	374
	PLOT DATE = 8/6/2013	DRAWN - RMD								CONTRACT NO. 66B83
		CHECKED - JOH/NPH			SHEET NO. 16 OF 30 SHEETS			ILLINOIS	FED. AID PROJECT	

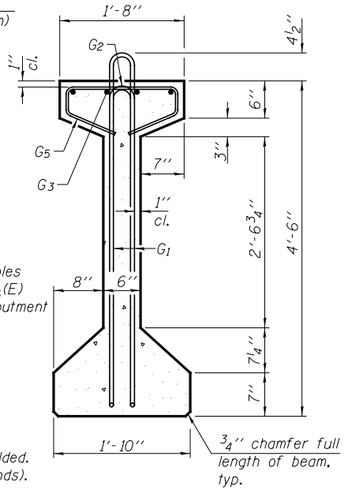


ELEVATION OF BEAM
(Showing reinforcement & dimensions)

Note A:
Hex nuts (top and bottom) with lock washers (top). Only tighten sufficiently to compress lock washers.

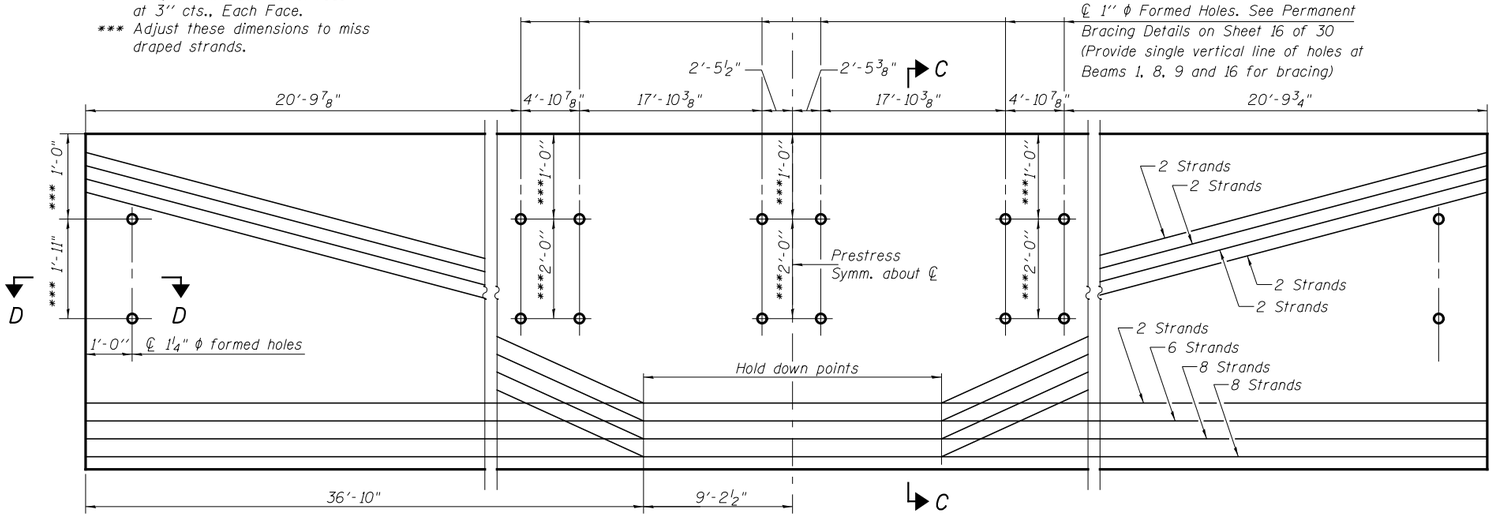


SECTION A-A

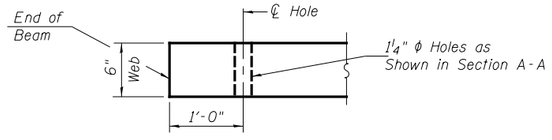


SECTION B-B

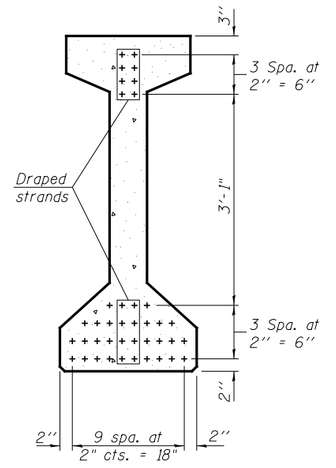
* 3 spaces at 3" = 9".
** 4-¾" ϕ threaded dowel rods at 3" cts., Each Face.
*** Adjust these dimensions to miss draped strands.



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION D-D



SECTION C-C

****BAR LIST
ONE BEAM ONLY

Bar	No.	Size	Length	Shape
G_1	161	#4	10'-5"	⊓L
G_2	14	#4	8'-8"	⊓
G_3	12	#7	33'-0"	——
G_4	38	#3	4'-11"	⊏⊐
G_5	92	#3	3'-5"	⊏⊐

****For information only

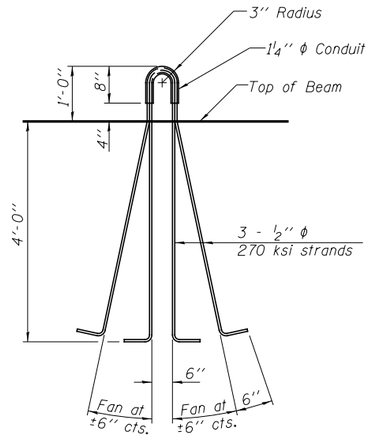
Notes:
See sheet 18 of 30 for additional details and Bill of Material.
Required release strength, f'ci, shall be 6,000 psi.

V:\3195\Structure\032-0123\0320123-66B83-017-PPC I-BEAM 54 INCH.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA
	PLOT SCALE = NONE	CHECKED - JOH	
	PLOT DATE = 8/6/2013	DRAWN - RMD	
		CHECKED - JOH/NPH	

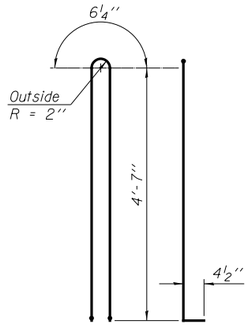
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

54" PPC I-BEAM
STRUCTURE NO. 032-0123
SHEET NO. 17 OF 30 SHEETS

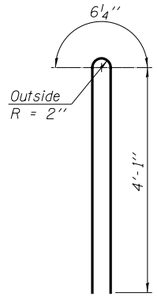
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	375
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		



LIFTING LOOP DETAIL



BAR G1



BAR G2

NOTES

Inserts for ¾'' ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

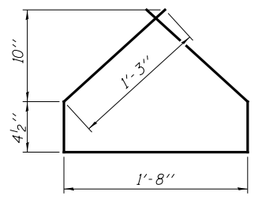
Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½'' and the nominal cross-sectional area shall be 0.153 sq. in.

A minimum 2½'' ϕ lifting pin shall be used to engage the lifting loops during handling.

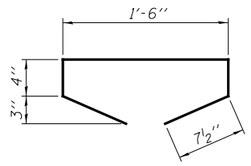
The top and bottom plates shall be AASHTO M270 Grade 50.

The bottom plates and studs shall be galvanized according to AASHTO M111. Top plates and threaded rods need not be galvanized.

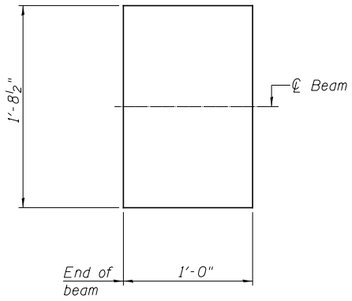
Threaded rods shall be ASTM F 1554 Grade 55.



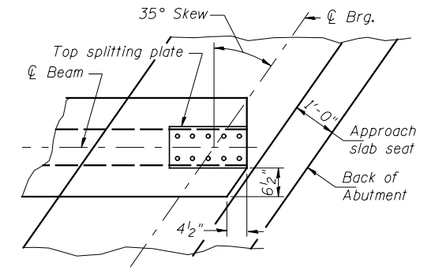
BAR G4



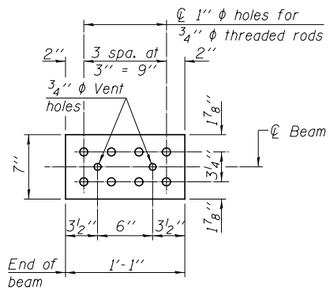
BAR G5



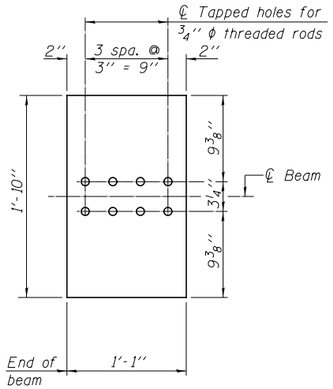
1" FABRIC BEARING PAD



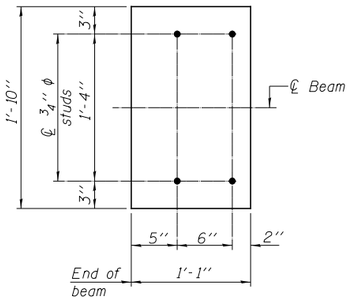
TOP FLANGE PLAN - CLIPPING



TOP PLATE



BOTTOM PLATE
(Showing threaded rods)

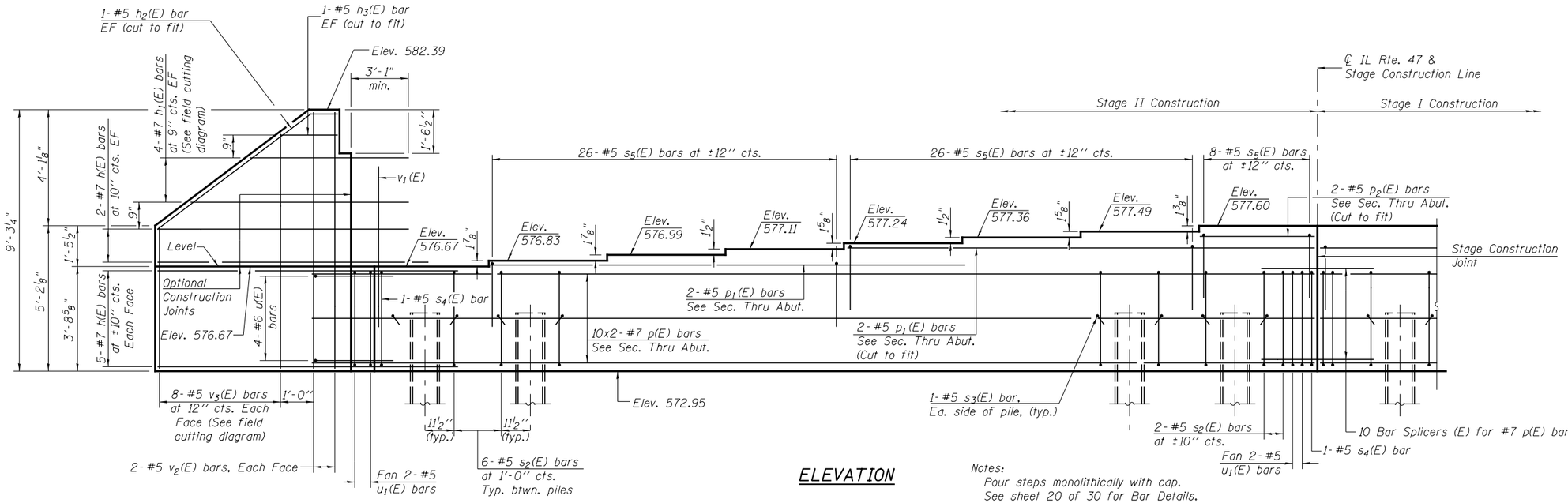


BOTTOM PLATE
(Showing studs)

BILL OF MATERIAL

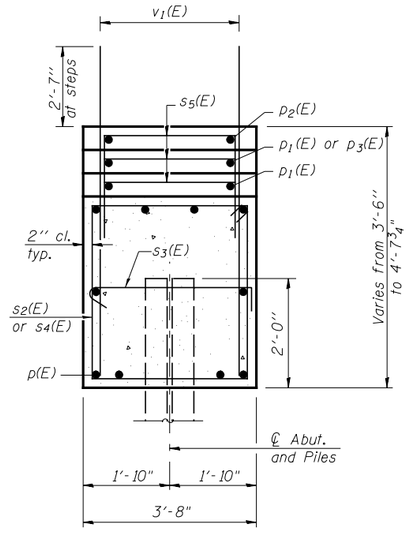
Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 54''	Ft.	1473.5

V:\3195\Structure\032-0123\0320123-66B83-018-PPC I-BEAM DETAILS.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE-SHOREWOOD-PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	54" PPC I-BEAM DETAILS STRUCTURE NO. 032-0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 18 OF 30 SHEETS	326	110BR-1	GRUNDY	644	376
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH						CONTRACT NO. 66B83		
							ILLINOIS FED. AID PROJECT			



ELEVATION

Notes:
Pour steps monolithically with cap.
See sheet 20 of 30 for Bar Details.
See sheet 23 or 30 for Pile Details.
See sheet 24 of 30 for Bar Splicer Details.



SEC. THRU ABUT.

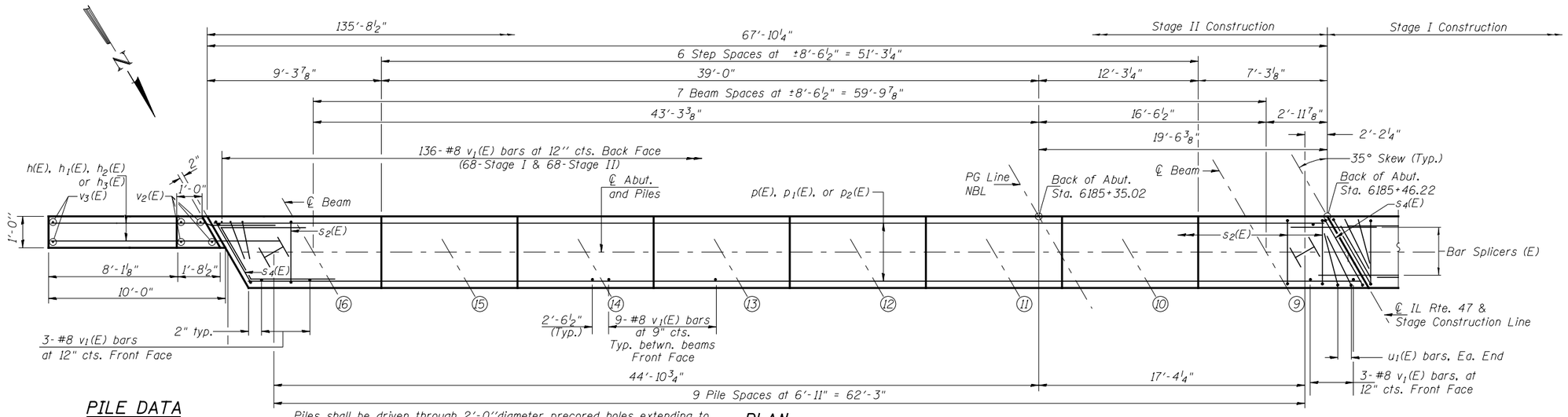
Dimensions at right angles to abutment.

MIN. BAR LAP

#7 = 5'-10"

SOUTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	28	#7	13'-9"	
h_1(E)	8	#7	18'-5"	
h_2(E)	4	#5	10'-5"	
h_3(E)	4	#5	2'-9"	
p(E)	40	#7	36'-9"	
p_1(E)	6	#5	33'-10"	
p_2(E)	2	#5	8'-2"	
p_3(E)	2	#5	27'-10"	
s_2(E)	112	#5	13'-9"	
s_3(E)	40	#5	4'-4"	
s_4(E)	4	#5	15'-1"	
s_5(E)	111	#5	8'-8"	
u(E)	8	#6	14'-3"	
u_1(E)	8	#5	9'-2"	
v_1(E)	274	#8	5'-11"	
v_2(E)	4	#5	8'-10"	
v_3(E)	8	#5	13'-4"	
v_4(E)	4	#5	8'-8"	
v_5(E)	8	#5	12'-10"	
Structure Excavation		Cu. Yd.	485	
Concrete Structures		Cu. Yd.	82.2	
Reinforcement Bars, Epoxy Coated		Pound	12,160	
Furnishing Steel Piles, HP12x63		Foot	817	
Driving Piles		Foot	817	
Test Pile, Steel HP 12x63		Each	1	
Pile Shoes		Each	20	



PLAN

PILE DATA

Type: Steel HP12x63 with Pile Shoes
Nominal Required Bearing: 497 kips
Factored Resistance Available: 273 kips
Est. Length: 43'
No. Production Piles: 19
No. Test Piles: 1

Piles shall be driven through 2'-0" diameter precored holes extending to elevation 567.5 according to Article 512.09(c) of the Standard Specifications. Cost included with driving piles.

Portions of a previous existing structure may need to be removed to allow driving of new piles. Precoring through the existing embankment and abutment according to Article 512.09(c) of the Standard Specifications may be an allowed option. Cost included with the Removal of Existing Structures.

V:\3195\Structure\032-0123\0320123-66B83-019-SOUTH ABUT 1.dgn
PLOT SCALE = NONE
PLOT DATE = 8/6/2013

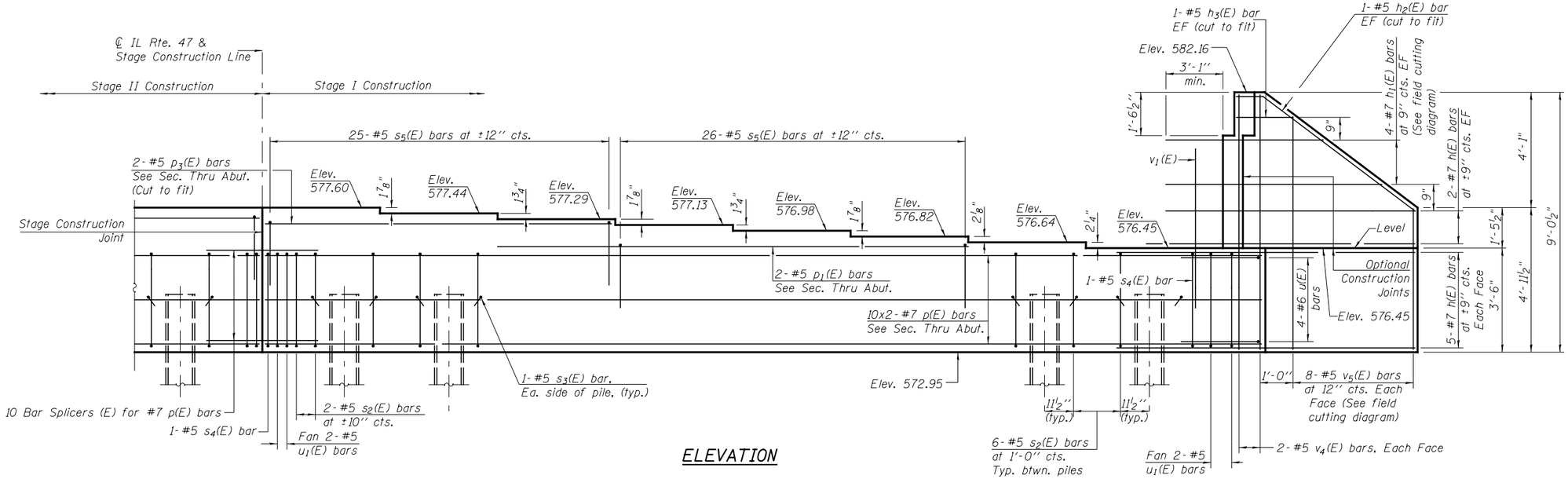
USER NAME = bdecraene
DESIGNED - NPH
CHECKED - JOH
DRAWN - RMD
CHECKED - JOH/NPH

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

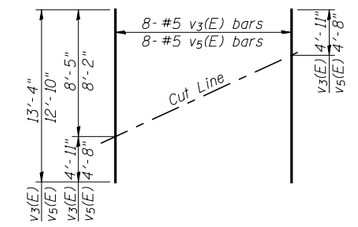
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 032-0123
SHEET NO. 19 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	377
		CONTRACT NO. 66B83		
		ILLINOIS	FED. AID PROJECT	

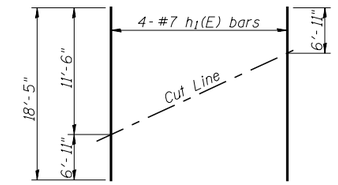


ELEVATION



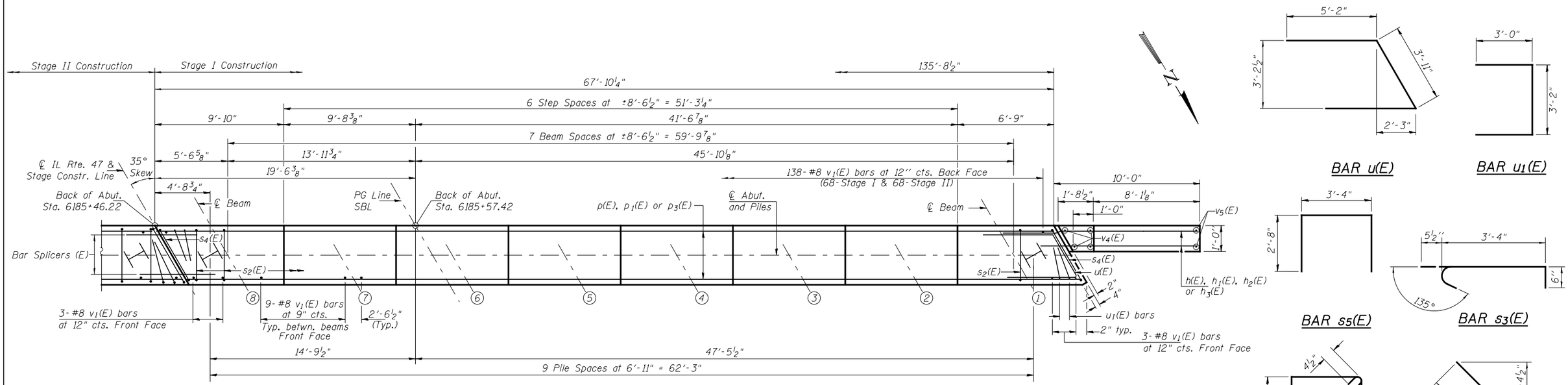
FIELD CUTTING DIAGRAM

Order $v_3(E)$ and $v_5(E)$ full length. Cut as shown and use remainder of bars in opposite face.



FIELD CUTTING DIAGRAM

Order $h_1(E)$ full length. Cut as shown and use remainder of bars in opposite face.



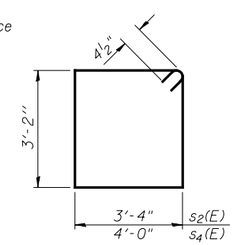
PLAN

BAR u(E)

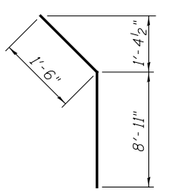
BAR u1(E)

BAR s5(E)

BAR s3(E)



BARS s2(E) & s4(E)



BAR h2(E)

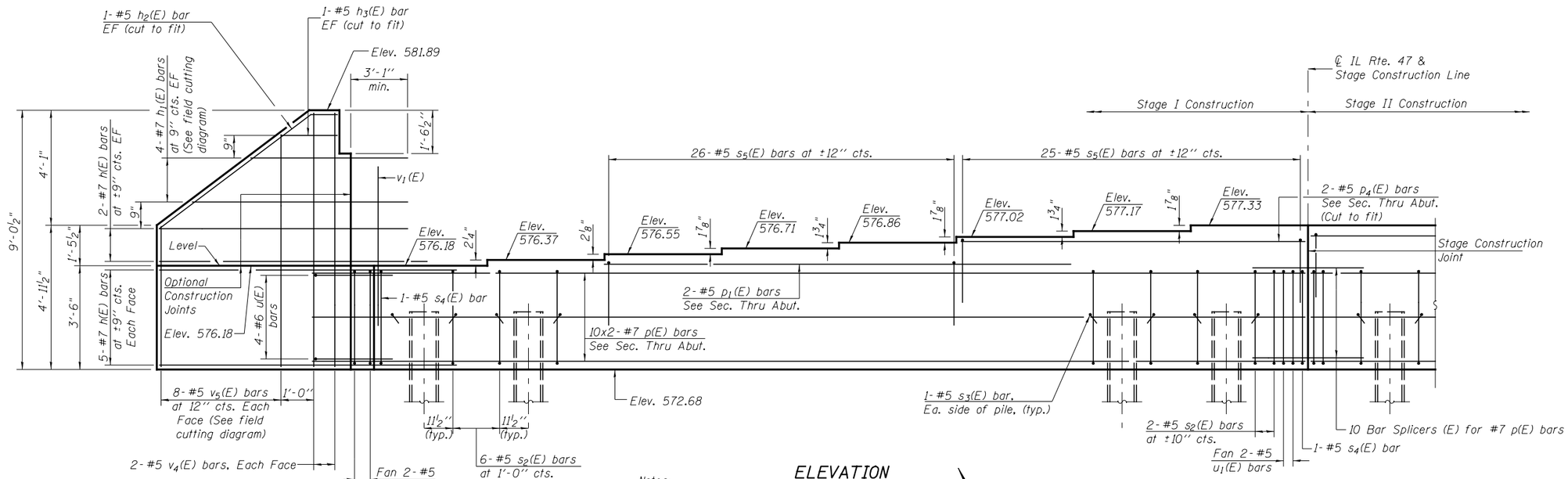
MIN. BAR LAP

#7 = 5'-10"

Notes:

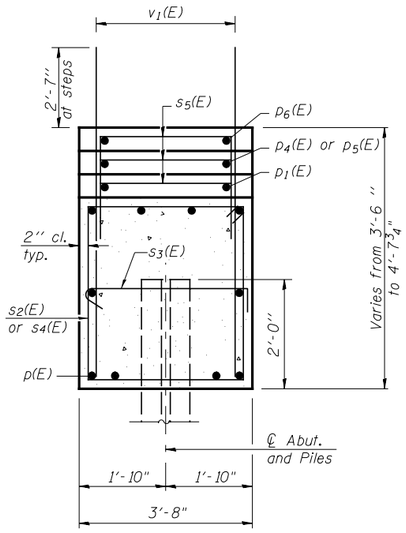
- Pour steps monolithically with cap.
- See sheet 23 of 30 for Pile Details.
- See sheet 24 of 30 for Bar Splicer Details.
- See sheet 19 of 30 for Pile Data.
- See sheet 19 of 30 for Bill of Materials.
- See sheet 19 of 30 for Section Thru Abutment.

V:\3195\Structure\032-0123\0320123-66B83-020-SOUTH ABUT 2.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOUTH ABUTMENT STRUCTURE NO. 032-0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 20 OF 30 SHEETS	326	110BR-1	GRUNDY	644	378
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH						CONTRACT NO. 66B83		
		CHECKED - JOH						ILLINOIS FED. AID PROJECT		



ELEVATION

Notes:
- Pour steps monolithically with cap.
- See sheet 22 of 30 for Bar Details
- See sheet 23 or 30 for Pile Details.
- See sheet 24 of 30 for Bar Splicer Details.



SEC. THRU ABUT.

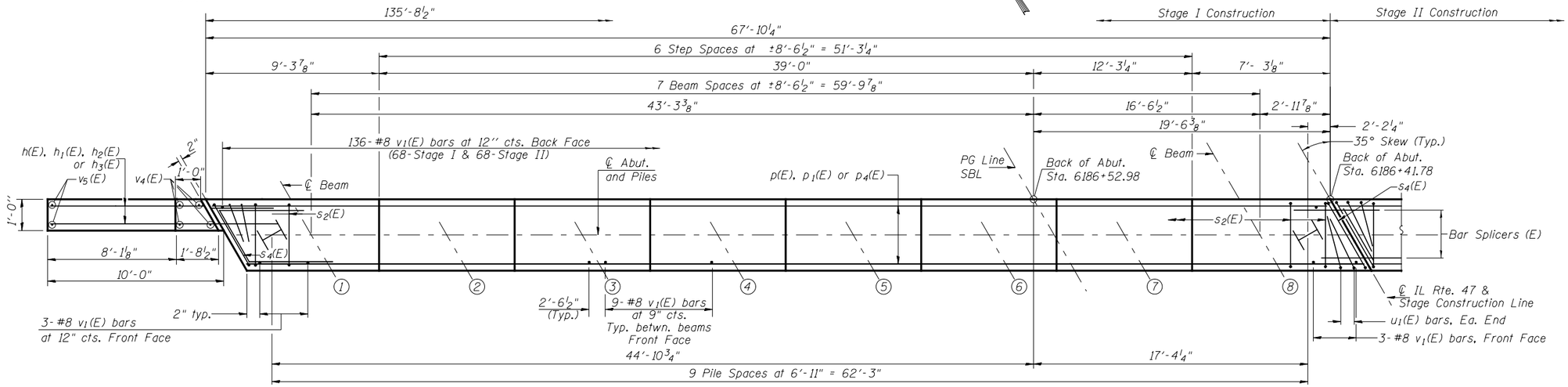
Dimensions at right angles to abutment.

NORTH ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	28	#7	13'-9"	
h1(E)	8	#7	18'-5"	
h2(E)	4	#5	10'-5"	
h3(E)	4	#5	2'-9"	
p(E)	40	#7	36'-9"	
p1(E)	4	#5	33'-10"	
p4(E)	2	#5	25'-3"	
p5(E)	2	#5	36'-4"	
p6(E)	2	#5	10'-8"	
s2(E)	112	#5	13'-9"	
s3(E)	40	#5	4'-4"	
s4(E)	4	#5	15'-1"	
s5(E)	111	#5	8'-8"	
u(E)	8	#6	14'-3"	
u1(E)	8	#5	9'-2"	
v1(E)	274	#8	5'-11"	
v2(E)	4	#5	8'-10"	
v3(E)	8	#5	13'-4"	
v4(E)	4	#5	8'-8"	
v5(E)	8	#5	12'-10"	
Structure Excavation		Cu. Yd.	485	
Concrete Structures		Cu. Yd.	82.2	
Reinforcement Bars, Epoxy Coated		Pound	12,170	
Furnishing Steel Piles, HP12x63		Foot	900	
Driving Piles		Foot	900	
Pile Shoes		Each	20	

MIN. BAR LAP

#7 = 5'-10"



PLAN

PILE DATA

Type: Steel HP12x63 with Pile Shoes
Nominal Required Bearing: 497 kips
Factored Resistance Available: 273 kips
Est. Length: 45'
No. Production Piles: 20
No. Test Piles: 0

Piles shall be driven through 2'-0" diameter precored holes extending to elevation 567.5 according to Article 512.09(c) of the Standard Specifications. Cost included with driving piles.

Portions of a previous existing structure may need to be removed to allow driving of new piles. Precoring through the existing embankment and abutment according to Article 512.09(c) of the Standard Specifications may be an allowed option. Cost included with the Removal of Existing Structures.

V:\3195\Structure\032-0123\0320123-66B83-021-NORTH ABUT 1.dgn

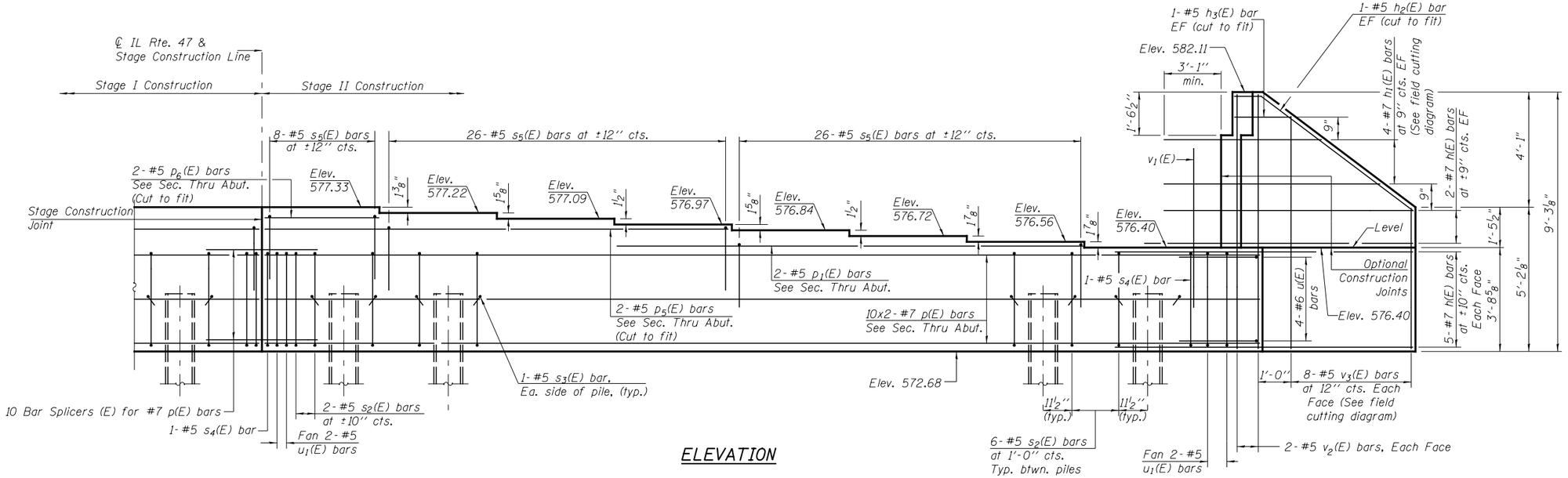
USER NAME = bdecraene	DESIGNED - NPH
PLOT SCALE = NONE	CHECKED - JOH
PLOT DATE = 8/6/2013	DRAWN - RMD
	CHECKED - JOH/NPH

Hutchison Engineering, Inc.
JACKSONVILLE–SHOREWOOD–PEORIA

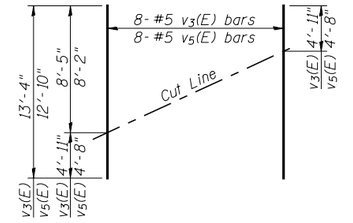
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT
STRUCTURE NO. 032-0123
SHEET NO. 21 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	379
		CONTRACT NO. 66B83		
		ILLINOIS	FED. AID PROJECT	

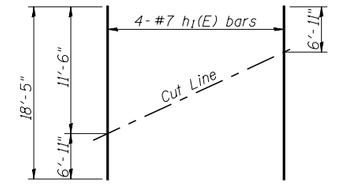


ELEVATION



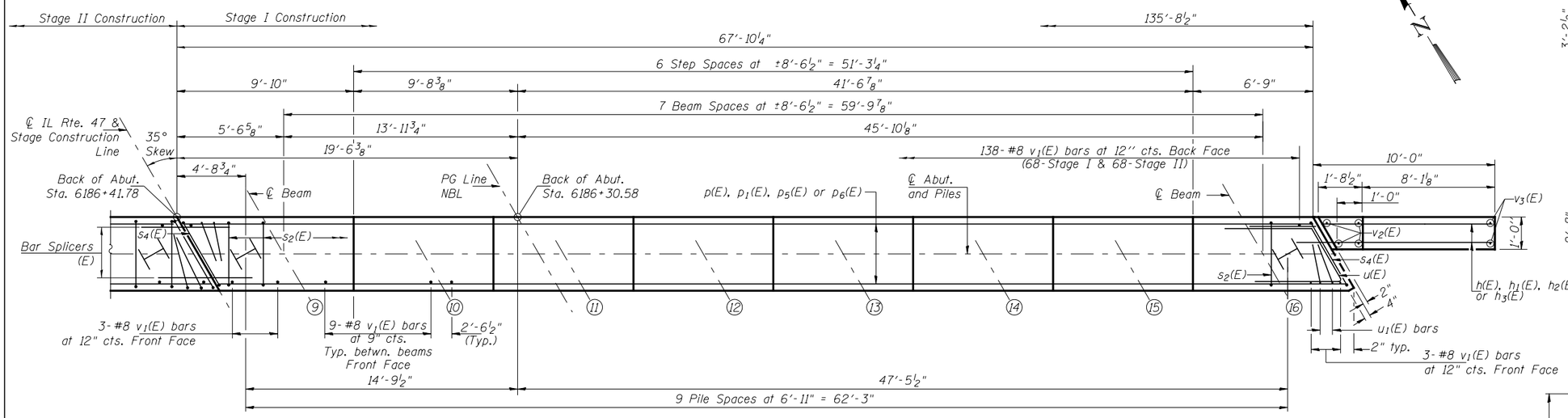
FIELD CUTTING DIAGRAM

Order $v_3(E)$ and $v_5(E)$ full length. Cut as shown and use remainder of bars in opposite face.

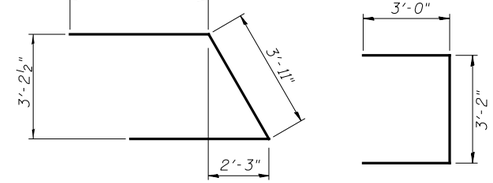


FIELD CUTTING DIAGRAM

Order $h_1(E)$ full length. Cut as shown and use remainder of bars in opposite face.

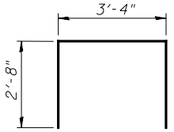


PLAN

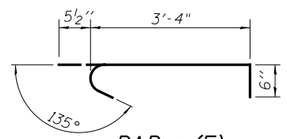


BAR u(E)

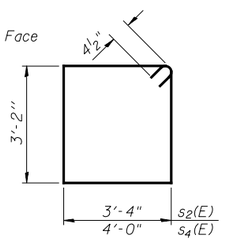
BAR u1(E)



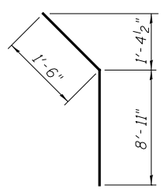
BAR s5(E)



BAR s3(E)



BARS s2(E) & s4(E)



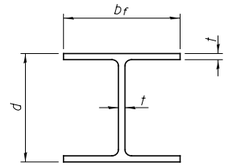
BAR h2(E)

MIN. BAR LAP

#7 = 5'-10"

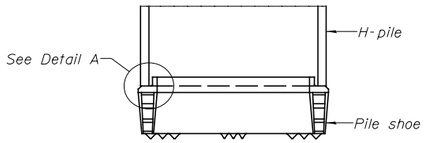
Notes:
- Pour steps monolithically with cap.
- See sheet 23 of 30 for Pile Details.
- See sheet 24 of 30 for Bar Splicer Details.
- See sheet 21 of 30 for Pile Data.
- See sheet 21 of 30 for Bill of Materials
- See sheet 21 of 30 for Section Thru Abutment.

V:\3195\Structure\032-0123\0320123-66B83-022-NORTH ABUT 2.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	NORTH ABUTMENT STRUCTURE NO. 032-0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	CHECKED - JOH				326	110BR-1	GRUNDY	644	380
	PLOT DATE = 8/6/2013	DRAWN - RMD								CONTRACT NO. 66B83
		CHECKED - JOH/NPH			SHEET NO. 22 OF 30 SHEETS			ILLINOIS	FED. AID PROJECT	

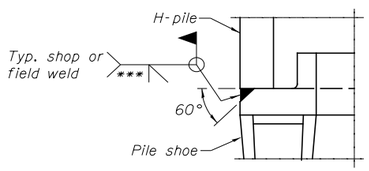


STEEL PILE TABLE

Designation	Depth d	Flange width br	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4''	14 7/8''	13/16''	30''
x102	14''	14 3/4''	11/16''	30''
x89	13 7/8''	14 3/4''	5/8''	30''
x73	13 5/8''	14 5/8''	1/2''	30''
HP 12x84	12 1/4''	12 1/4''	11/16''	24''
x74	12 1/8''	12 1/4''	5/8''	24''
x63	12''	12 1/8''	1/2''	24''
x53	11 3/4''	12''	7/16''	24''
HP 10x57	10''	10 1/4''	9/16''	24''
x42	9 3/4''	10 1/8''	7/16''	24''
HP 8x36	8''	8 1/8''	7/16''	18''

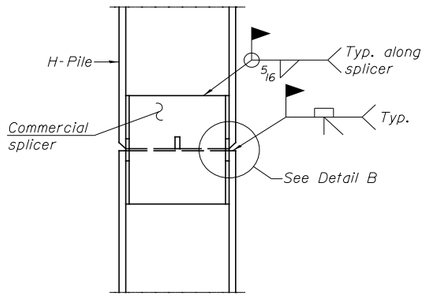


ELEVATION

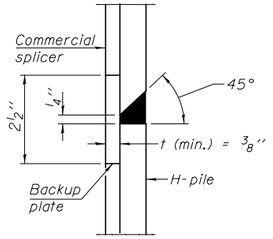


DETAIL A

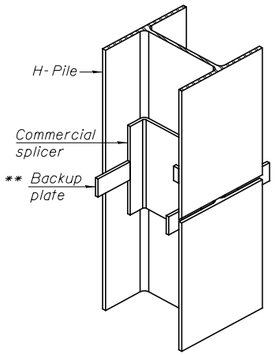
H-PILE SHOE ATTACHMENT



ELEVATION

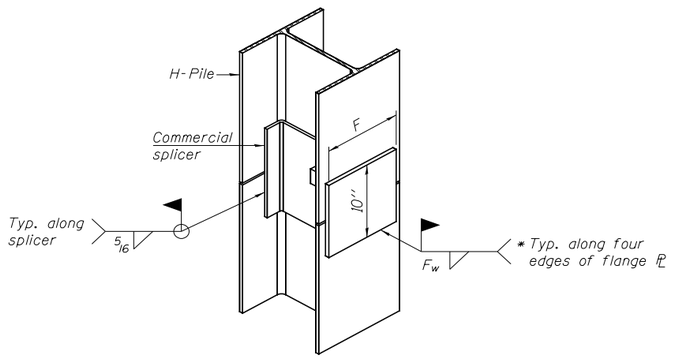


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



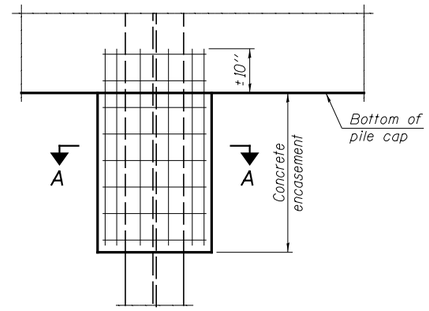
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

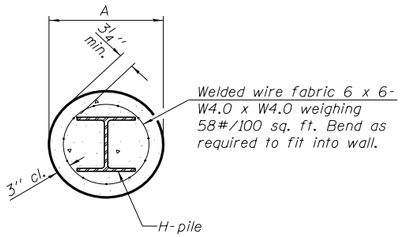
* Interrupt welds 1/4'' from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16'' min.).



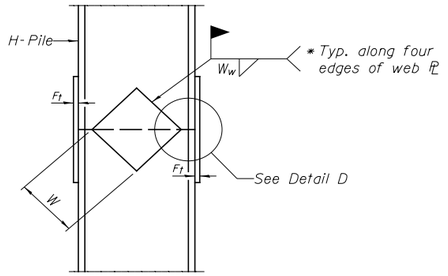
ELEVATION



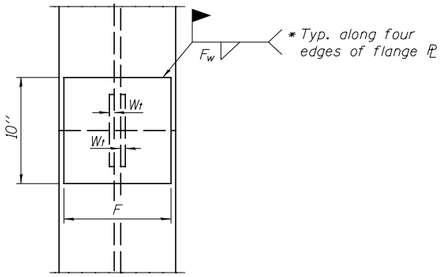
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

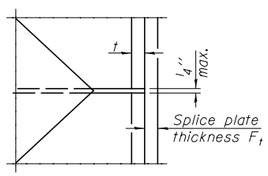
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2''	1''	7/8''	7 3/4''	5/8''	1/2''
x102	12 1/2''	7/8''	3/4''	7 3/4''	5/8''	1/2''
x89	12 1/2''	3/4''	11/16''	7 3/4''	5/8''	1/2''
x73	12 1/2''	5/8''	9/16''	7 3/4''	5/8''	1/2''
HP 12x84	10''	7/8''	11/16''	6 1/2''	5/8''	1/2''
x74	10''	7/8''	11/16''	6 1/2''	5/8''	1/2''
x63	10''	5/8''	1/2''	6 1/2''	1/2''	3/8''
x53	10''	5/8''	1/2''	6 1/2''	1/2''	3/8''
HP 10x57	8''	3/4''	9/16''	5 1/4''	1/2''	3/8''
x42	8''	5/8''	9/16''	5 1/4''	1/2''	3/8''
HP 8x36	7''	5/8''	7/16''	4 1/4''	1/2''	3/8''

WELDED PLATE FIELD SPLICE

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

F-HP

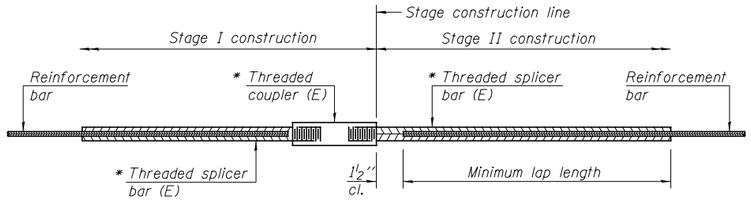
1-27-12

V:\3195\Structure\032-0123\0320123-66B83-023-HP PILE DETAIL.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA
	PLOT SCALE = NONE	CHECKED - JOH	
	PLOT DATE = 8/6/2013	DRAWN - RMD	
		CHECKED - JOH/NPH	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 032-0123
SHEET NO. 23 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	381
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY

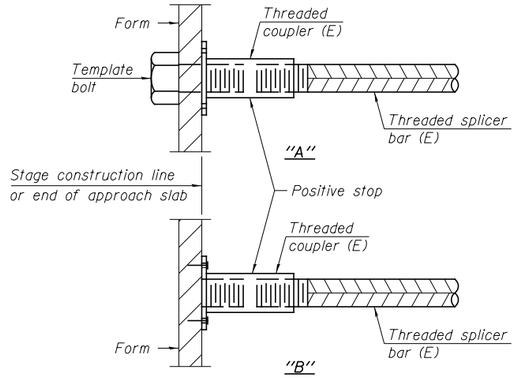
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Class C
Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + $1\frac{1}{2}$" + thread length

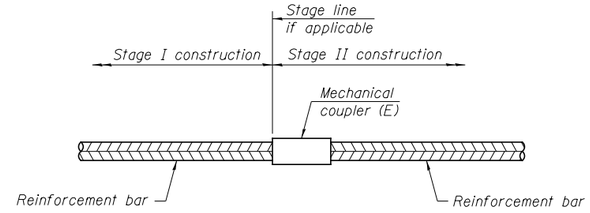
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck	#5	274	5
Diaphragm	#6	22	6
N. Appr. Pav't.	#5	86	6
N. Appr. Pav't.	#4	25	6
S. Appr. Pav't.	#5	86	6
S. Appr. Pav't.	#4	25	6
N. Abutment	#7	10	6
S. Abutment	#7	10	6



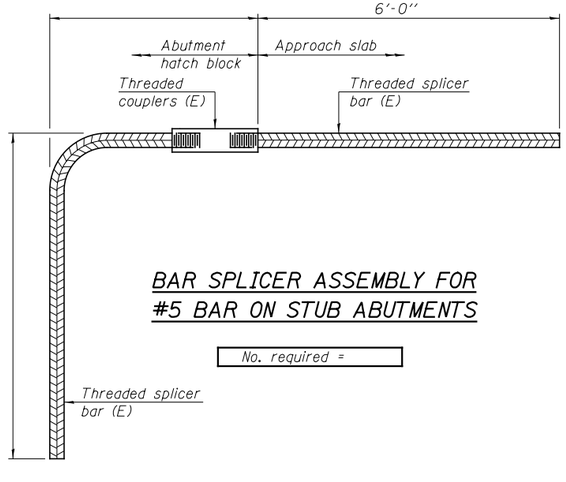
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

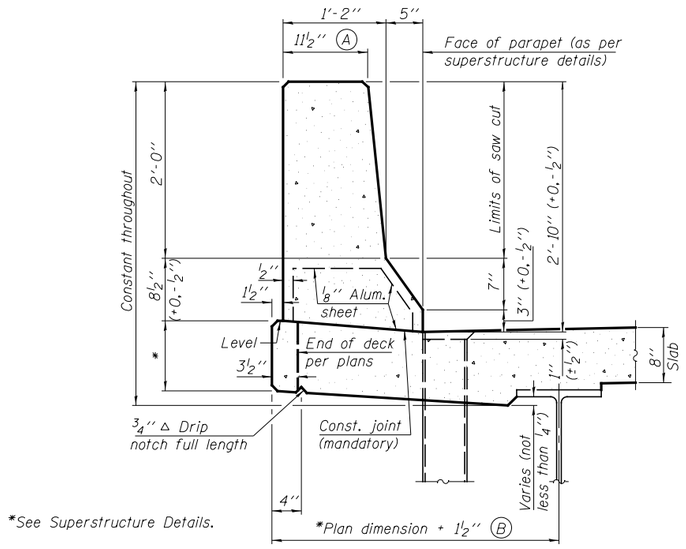
All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

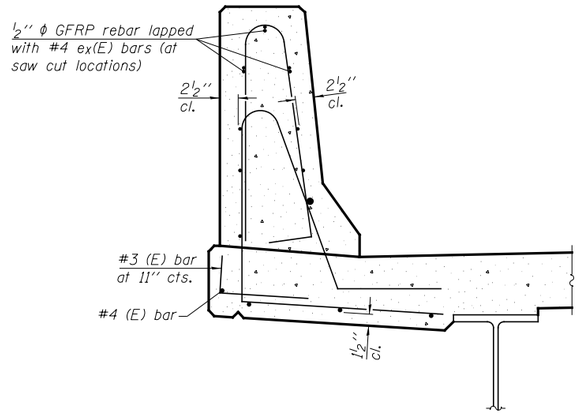
BSD-1 8-31-12

V:\3195\Structure\032-0123\0320123-66B83-024-BAR SPLICER DETAIL.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 032–0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD				326	110BR-1	GRUNDY	644	382
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH			SHEET NO. 24 OF 30 SHEETS			CONTRACT NO. 66B83		
		CHECKED - JOH						ILLINOIS FED. AID PROJECT		



34" F SHAPE PARAPET SECTION

(Showing dimensions)



SECTION

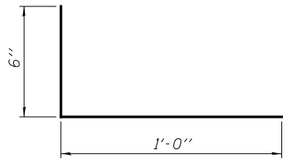
(34" parapet shown - 42" parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

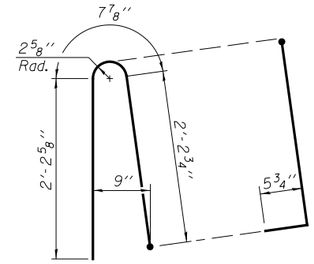
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34" parapet or = 0.0223 cu. yds./ft. for 42" parapet.

Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.

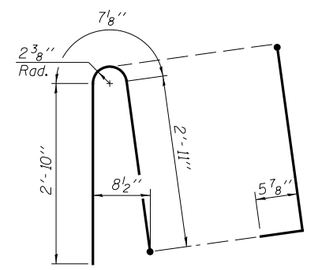


#3 (E) BAR



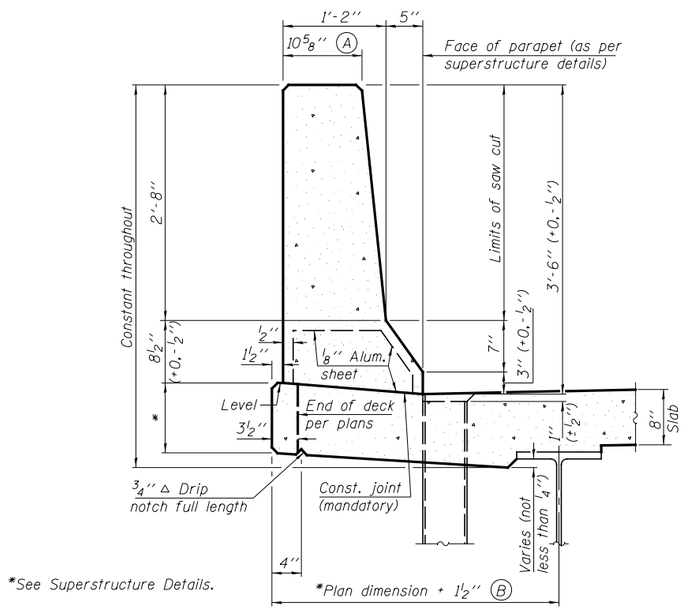
ALTERNATE BAR d(E)

(For 34" parapet when conduit is present)



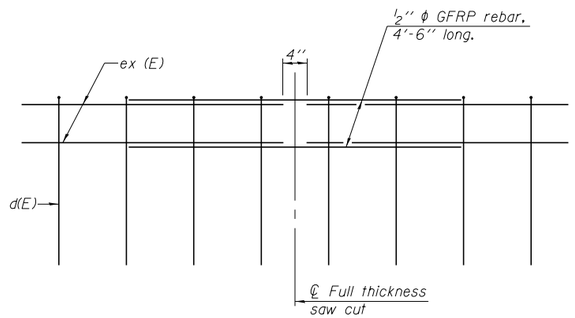
ALTERNATE BAR d(E)

(For 42" parapet when conduit is present)



42" F SHAPE PARAPET SECTION

(Showing dimensions)



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)

SFP 34-42

8-16-12

V:\3195\Structure\032-0123\0320123-66B83-025-SLIP FORMING.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CONCRETE PARAPET SLIPFORMING OPTION STRUCTURE NO. 032-0123	F.A.P. RTE. 326
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 25 OF 30 SHEETS	SECTION 110BR-1
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH				COUNTY GRUNDY
		CHECKED - JOH				TOTAL SHEETS 644
						SHEET NO. 383
						CONTRACT NO. 66B83
						ILLINOIS FED. AID PROJECT

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BORING LOG WC32-B01

WEI Job No.: 790-36-01

Client TranSystems Corporation
Project Prairie Parkway
Location IL 47 Over Valley Run Creek, Grundy Co., IL.

Datum: NGVD
Elevation: 571.13 ft
North: 1738392.42 ft
East: 959520.93 ft
Station: 6185+46.10
Offset: 32.11 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	571.1	12-inch thick, black LOAM --TOPSOIL--						
		Medium stiff, brown CLAY LOAM			1	5 4 4	0.75 P	28
	567.4	Medium dense to very dense, gray SILT to SILTY LOAM with little gravel			2	3 4 8	NP	25
		--%Gravel=0.3-- --%Sand=40.8-- --%Silt=56.4-- --%Clay=2.5-- --A-4 (0)--	5		3	6 9 11	NP	20
			10		4	9 16 19	NP	9
					5	8 37 50/5	NP	7
			15		6	10 16 34	NP	7
					7	35 40 25	NP	11
	553.1	Very stiff, gray SILTY CLAY LOAM, some gravel	20		8	6 6 9	2.46 B	12
	550.6	Medium dense to very dense, gray SILTY LOAM, trace gravel to possible cobbles			9	4 8 13	NP	11
			25		10	13 50/3	NP	11
	543.1	Dense, gray medium to coarse SAND, trace gravel			11	89 57 63	NP	10
			30		12	6 12 23	NP	11
	538.9	Very dense, gray GRAVELLY SILTY LOAM			13	46 50/3	NP	9
	535.1	Moderately strong, fair quality, gray and yellowish DOLOSTONE, somewhat weathered with shale partings Run #1, 36' to 41' RECOVERY = 80 RQD = 50%	35	CORE	1			
		Run #2, 41' to 46' RECOVERY = 93 RQD = 54%	40	CORE	2			
	525.1	Boring terminated at 46.00 ft	45					
			50					

WANGENGINC 790801.GPJ WANGENG.GDT 6/21/11

GENERAL NOTES

Begin Drilling 07-22-2009 Complete Drilling 07-22-2009
Drilling Contractor WTS Drill Rig D 120 ATV
Driller K&J Logger F. Bozga Checked by C. Marin
Drilling Method 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling ▽ 5.00 ft
At Completion of Drilling ▼ 15.00 ft
Time After Drilling NA
Depth to Water ▼ NA

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

Illinois Department of Transportation

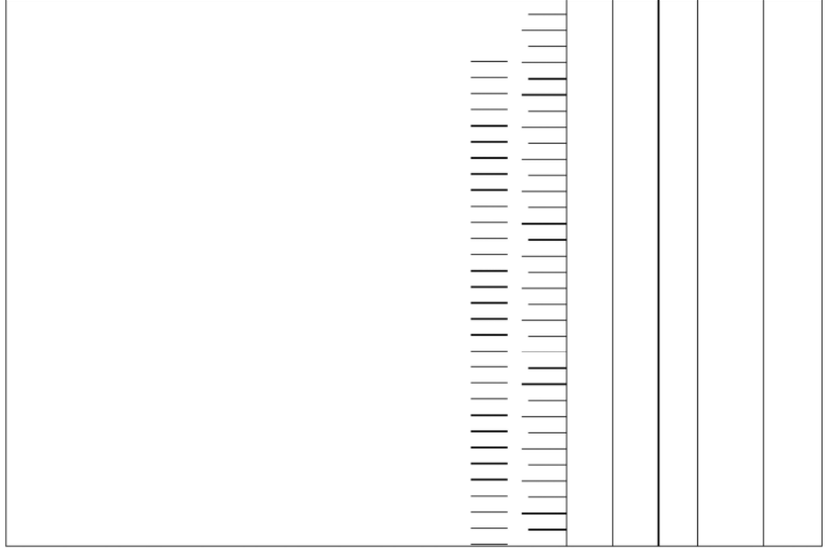
ROCK CORE LOG

Date 07/22/2009

Prairie Parkway
Section IL47A

ROUTE IL47 DESCRIPTION Structure Boring LOGGED BY Francisc Bozga
SECTION IL47A LOCATION Minooka Road SEC. 10 TWP. 34N RNG. 7E PM
COUNTY Grundy CORING METHOD Conventional 5' run
STRUCT. NO. 032-0123 CORING BARREL TYPE & SIZE NWD4 2,985x2.060
Station 6185+94.00 Core Diameter 2.1 in
Top of Rock Elev. 535.1 ft
BORING NO. WC32-B01 Begin Core Elev. 535.1 ft
Station 6185+46.10
Offset 32.11 RT
Ground Surface Elev. 571.13 ft

		DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Moderately strong, fair quality, gray and yellowish DOLOSTONE, somewhat weathered, with shale partings	Run 1	36	1	80	50		
	Run 2	41	2	93	54		



Color pictures of the cores Yes
Cores will be stored for examination until _____
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS 138 (Rev. 3/01)

V:\3195\Structure\032-0123\0320123-66B83-026-BORINGS 1.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS STRUCTURE NO. 032–0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD				326	110BR-1	GRUNDY	644	384
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH			SHEET NO. 26 OF 30 SHEETS			CONTRACT NO. 66B83		
		CHECKED - JOH						ILLINOIS FED. AID PROJECT		

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BORING LOG WC32-B02

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Valley Run Creek, Grundy Co., IL.

Datum: NGVD
Elevation: 572.25 ft
North: 1738415.72 ft
East: 959428.47 ft
Station: 6185+78.91
Offset: 57.72 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	570.8	18-inch thick, black LOAM --TOPSOIL--						
		Stiff, black to brown SILTY CLAY LOAM			1	3 4 4	1.75 P	25
	569.3	Loose to medium dense, brown to gray medium SAND, trace gravel			2	3 4 5	NP	20
			5		3	4 6 13	NP	15
	564.3	Medium dense to very dense, gray SILTY LOAM to SILT, trace gravel			4	14 30 30	NP	10
			10		5	15 49 71	NP	10
			15		6	10 16 9	NP	9
		--L_L(%)=23, P_I(%)=15-- --%Gravel=8.5-- --%Sand=16.8-- --%Silt=62.9-- --%Clay=11.8-- --A-4 (3)--			7	3 6 14	NP	15
			20		8	7 13 15	NP	14
	551.8	Very stiff, gray SILTY CLAY to SILTY LOAM, trace gravel			9	7 10 5	2.46 B	12
	549.3	Dense to very dense, gray LOAM to SANDY LOAM, trace gravel	25		10	18 31 50/4	-	

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			30		11	40 50 50/2	NP	7
					12	6 20 25	NP	9
			35		13	25 36 34	NP	12
			40		14	15 70 50/3	NP	15
	530.8	Strong, fair to good quality, gray to yellowish DOLOSTONE with shale partings Run #1, 41.5' to 46.5' RECOVERY = 100% RQD = 70%		CORE	1			
			45					
		Run #2, 46.5' to 51.5' RECOVERY = 93% RQD = 78%		CORE	2			
			50					

WANGENGINC 790991 GPJ WANGENG GDT 6/21/11

GENERAL NOTES

Begin Drilling: 07-21-2009 Complete Drilling: 07-22-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 5.00 ft
At Completion of Drilling: ▼ NA
Time After Drilling: NA
Depth to Water: ▼ NA

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

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BORING LOG WC32-B02

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Valley Run Creek, Grundy Co., IL.

Datum: NGVD
Elevation: 572.25 ft
North: 1738415.72 ft
East: 959428.47 ft
Station: 6185+78.91
Offset: 57.72 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	529.8	Boring terminated at 51.50 ft						
			55					
			60					
			65					
			70					
			75					

WANGENGINC 790991 GPJ WANGENG GDT 6/21/11

GENERAL NOTES

Begin Drilling: 07-21-2009 Complete Drilling: 07-22-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 5.00 ft
At Completion of Drilling: ▼ NA
Time After Drilling: NA
Depth to Water: ▼ NA

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

Illinois Department of Transportation

Prairie Parkway
Section IL47A

ROCK CORE LOG

Date 07/22/2009

ROUTE IL 47 DESCRIPTION Structure Boring LOGGED BY Francisc Bozga
SECTION IL47A LOCATION Minooka Road SEC. 10 TWP. 34N RNG. 7E PM
COUNTY Grundy CORING METHOD Conventional 5' run
STRUCT. NO. 032-0123 CORING BARREL TYPE & SIZE NWD4 2,985x2.060
Station 6185+94.00
Core Diameter 2.1 in
Top of Rock Elev. 530.8 ft
Begin Core Elev. 530.8 ft
BORING NO. WC32-B02
Station 6185+78.91
Offset 57.72 LT
Ground Surface Elev. 572.25 ft

		DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Strong, fair to good quality, gray to yellowish DOLOSTONE with shale partings	Run 1	41.5	1	100	70		
	Run 2	46.5	2	93	78		

Color pictures of the cores Yes
Cores will be stored for examination until _____
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS 138 (Rev. 3/01)

V:\3195\Structure\032-0123\0320123-66B83-027-BORINGS 2.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS STRUCTURE NO. 032–0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 27 OF 30 SHEETS	326	110BR-1	GRUNDY	644	385
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH							CONTRACT NO. 66B83	
								ILLINOIS	FED. AID PROJECT	

BORING LOG WC32-B03

Wang Engineering

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1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
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WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Valley Run Creek, Grundy Co., IL.

Datum: NGVD
Elevation: 581.06 ft
North: 1738468.71 ft
East: 959550.05 ft
Station: 6186+22.06
Offset: 62.16 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	580.9	13-inch thick, ASPHALT --PAVEMENT--						
	579.7	2-inch thick, GRAVEL --AGGREGATE BASE--						
		Medium dense, gray GRAVELLY SILTY LOAM --FILL--			1	- - -	NP	9
			5		2	7 9 9	NP	9
					3	3 5 8	NP	10
	573.1	Medium stiff to very stiff, black SILTY CLAY LOAM to SILTY CLAY			4	4 6 7	3.50 P	30
		--L_L(%)=60, P_I(%)=27--10						
		--%Gravel=0.7--						
		--%Sand=6.9--						
		--%Silt=67.9--						
		--%Clay=24.5--			5	3 4 5	0.75 P	37
		--A-7-6 (35)--						
			15		6	2 2 3	1.23 B	29
					7	1 2 3	0.82 B	35
	563.1	Medium dense to dense, gray SILT to SILTY LOAM, some gravel						
			20		8	5 10 14	NP	21
					9	10 17 20	NP	10
			25		10	13 16 23	NP	12

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	595.6	Dense, gray LOAM			11	19 13 26	NP	17
	593.1	Hard, gray SILTY CLAY LOAM, little gravel			12	8 12 17	5.74 B	11
	549.6	Very dense, gray SILTY LOAM, some gravel	30		13	17 50/5"	NP	7
	546.1	Gray SILTY CLAY LOAM, some gravel and cobbles --ROCK FRAGMENTS--	35		1	50/4"	CORE	
	541.1	Dense, gray SILTY LOAM, little gravel	40		14	8 17 26	NP	11
			45		15	10 50/4"	NP	
	536.1	Medium strong, poor quality, light gray, moderately weathered DOLOSTONE, horizontally fractured RECOVERY = 45% RQD = 35%			2		CORE	
		Medium strong, light gray, fair to	50					

WANGENGINC 7909001.GPJ WANGENG.GDT 6/21/11

GENERAL NOTES

Begin Drilling: 03-08-2010 Complete Drilling: 03-08-2010
Drilling Contractor: WTS Drill Rig: B-57 TMR
Driller: P&J Logger: B. Wilson Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 23.00 ft
At Completion of Drilling: ▼ WASHED
Time After Drilling: NA
Depth to Water: ▽ NA

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

BORING LOG WC32-B03

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WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Valley Run Creek, Grundy Co., IL.

Datum: NGVD
Elevation: 581.06 ft
North: 1738468.71 ft
East: 959550.05 ft
Station: 6186+22.06
Offset: 62.16 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		excellent quality, slightly weathered joints, horizontally fractured DOLOSTONE Run #1, 49.5' to 54.5' RECOVERY = 100% RQD = 93%			3	CORE		
		Run #2, 54.5' to 59.5' RECOVERY = 100% RQD = 52%	55		4	CORE		
	521.6	Boring terminated at 59.50 ft	60					
			65					
			70					
			75					

WANGENGINC 7909001.GPJ WANGENG.GDT 6/21/11

GENERAL NOTES

Begin Drilling: 03-08-2010 Complete Drilling: 03-08-2010
Drilling Contractor: WTS Drill Rig: B-57 TMR
Driller: P&J Logger: B. Wilson Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 23.00 ft
At Completion of Drilling: ▼ WASHED
Time After Drilling: NA
Depth to Water: ▽ NA

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

Illinois Department of Transportation

ROCK CORE LOG

Date 07/22/2009

Prairie Parkway
Section IL47A

ROUTE IL 47 DESCRIPTION Structure Boring LOGGED BY Francisc Bozga

SECTION IL47A LOCATION Morris SEC. 10 TWP. 34N RNG. 7E PM

COUNTY Grundy CORING METHOD Conventional 5' run

STRUCT. NO. 032-0123 CORING BARREL TYPE & SIZE NWD4 2,985x2.060

Station 6185+94.00
Core Diameter 2.1 in
Top of Rock Elev. 535.06 ft
Begin Core Elev. 546.1 ft

BORING NO. WC32-B03
Station 6186+22.06
Offset 62.16 RT
Ground Surface Elev. 581.06 ft

		DEPTH (ft)	CORE (ft)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Medium strong, poor quality, light gray, moderately weathered DOLOSTONE, horizontally fractured	Run	44.0	1	45	35		
Medium strong, fair to excellent quality, light gray, slightly weathered joints, horizontally fractured DOLOSTONE	Run 1	49.5	2	100	93		
	Run 2	54.5	3	100	52		

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS 138 (Rev. 3/01)

V:\3195\Structure\032-0123\0320123-66B83-028-BORINGS 3.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS STRUCTURE NO. 032–0123
	PLOT SCALE = NONE	DRAWN - RMD			SHEET NO. 28 OF 30 SHEETS
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH			

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	386
		CONTRACT NO. 66B83		
	ILLINOIS	FED. AID PROJECT		

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BORING LOG WC32-B04

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Valley Run Creek, Grundy Co., IL

Datum: NGVD
Elevation: 572.01 ft
North: 1738495.96 ft
East: 959443.44 ft
Station: 6186+50.61
Offset: 44.16 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	571.4	7-inch thick, black LOAM --TOPSOIL--						
		Stiff, dark brown CLAY LOAM			1	3 4 5	1.50 P	36
	568.3	Loose, brown GRAVELLY SILTY LOAM	5		2	2 2 3	NP	22
		--L_L(%)=23, P_I(%)=15-- --%Gravel=15.1-- --%Sand=34.4-- --%Silt=44.0-- --%Clay=6.4-- --A-4 (1)--			3	4 7 9	NP	22
	566.5	Medium dense to very dense, gray SILT to SILTY LOAM, trace gravel			4	6 15 21	NP	15
		--L_L(%)=22, P_I(%)=12-- --%Gravel=13.2-- --%Sand=29.4-- --%Silt=46.6-- --%Clay=10.8-- --A-4 (3)--	10		5	10 28 42	NP	7
			15		6	10 16 20	NP	8
	555.8	Very stiff, gray SILTY CLAY LOAM to SILTY LOAM, trace to little gravel and boulders			7	6 7 13	2.95 B	13
			20		8	7 11 14	3.03 B	10
					9	9 28 27	3.20 B	11
					10	50/2	-	
			25					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	546.5	Boring terminated at 25.50 ft						
			30					
			35					
			40					
			45					
			50					

GENERAL NOTES

Begin Drilling: 06-26-2009 Complete Drilling: 06-26-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

WANGENGINC 7939691.GPJ WANGENG.GDT 9/25/11

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG WC32-B04C

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Valley Run Creek, Grundy Co., IL

Datum: NGVD
Elevation: 571.32 ft
North: 1738496.60 ft
East: 959429.85 ft
Station: 6186+51.37
Offset: 57.7 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		-BLIND DRILLED TO 23.5'--						
			5					
			10					
			15					
			20					
	547.8	Dense to very dense, gray SILTY LOAM, trace to little gravel --L_L(%)=20, P_I(%)=12--25			1	8 16 25	NP	10

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Gravel=11.2-- --%Sand=33.9-- --%Silt=47.4-- --%Clay=7.5-- --A-4 (1)--			2	16 85/6	NP	9
			30		3	25 52 53	NP	10
	539.3	Very dense, gray, medium to coarse SAND						
			35		4	9 22 33	NP	14
	534.3	Very dense, gray SAND with rock fragments --WEATHERED BEDROCK--			5	90/5	NP	12
			40					
	528.3	Weak, fair to good quality, gray and greenish somewhat weathered DOLOSTONE Run #1, 43' to 48' RECOVERY = 90% RQD = 62%	45		6	50/3	-	
					1	CORE		
		Run #2, 48' to 53' RECOVERY = 100% RQD = 81%	50			CORE		

GENERAL NOTES

Begin Drilling: 07-17-2009 Complete Drilling: 07-17-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 40.00 ft
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

WANGENGINC 7939691.GPJ WANGENG.GDT 9/25/11

V:\3195\Structure\032-0123\0320123-66B83-029-BORINGS 4.dgn

USER NAME = bdecraene	DESIGNED - NPH	*Hutchison Engineering, Inc.* JACKSONVILLE–SHOREWOOD–PEORIA	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
PLOT SCALE = NONE	DRAWN - RMD		
PLOT DATE = 8/6/2013	CHECKED - JOH/NPH		

BORING LOGS
STRUCTURE NO. 032-0123
SHEET NO. 29 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	110BR-1	GRUNDY	644	387
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

Wang Engineering
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Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG WC32-B04C

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Prairie Parkway
Location: IL 47 Over Valley Run Creek, Grundy Co., IL

Datum: NGVD
Elevation: 571.32 ft
North: 1738496.60 ft
East: 958429.85 ft
Station: 6186+51.37
Offset: 57.7 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					2			
	518.3	Boring terminated at 53.00 ft						
			55					
			60					
			65					
			70					
			75					

GENERAL NOTES

Begin Drilling: 07-17-2009 Complete Drilling: 07-17-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 40.00 ft
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

WANGENGINC 790601.GPJ WANGENG.GDT 6/21/11

Illinois Department of Transportation

ROCK CORE LOG

Date 07/17/2009

Prairie Parkway
Section IL47A

ROUTE IL 47 DESCRIPTION Structure boring LOGGED BY Francisc Bozga
SECTION IL47A LOCATION Minooka Road SEC. 10 TWP. 34N RNG. 7E PM
COUNTY Grundy CORING METHOD Conventional 5' run
STRUCT. NO. 032-0123 CORING BARREL TYPE & SIZE NWD4 2.985x2.060
Station 6185+94.00 Core Diameter 2.1 in
Top of Rock Elev. 528.3 ft
BORING NO. WC32-B04C Begin Core Elev. 528.3 ft
Station 6186+51.37
Offset 57.7 LT
Ground Surface Elev. 571.32 ft

		DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Weak, fair to good quality, gray and greenish somewhat weathered DOLOSTONE	Run 1	43	1	90	62		
	Run 2	48	2	100	81		

Color pictures of the cores Yes
Cores will be stored for examination until
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

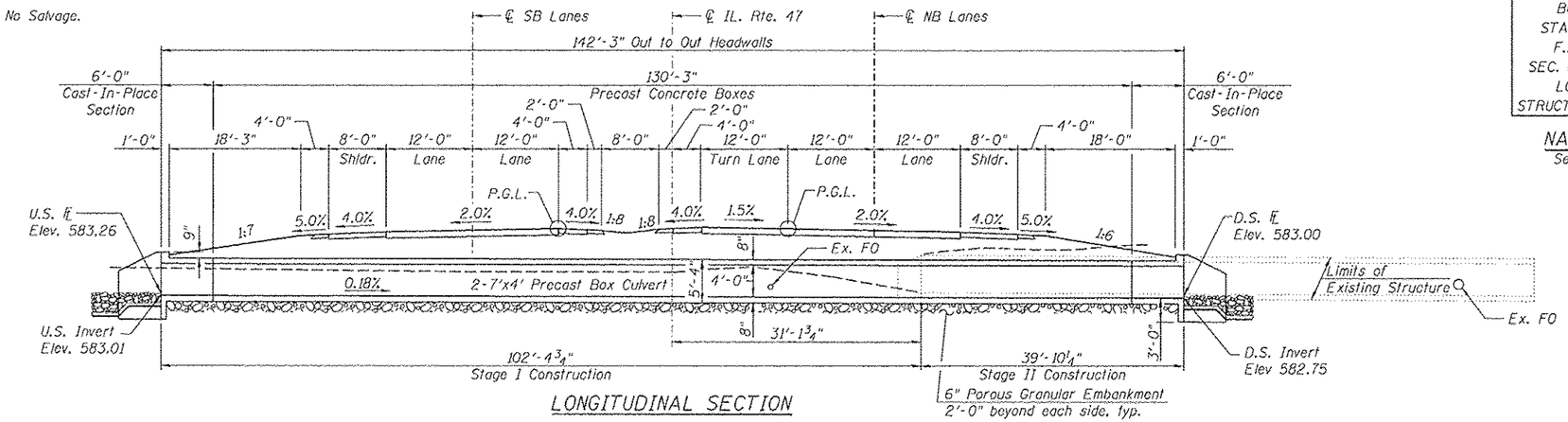
BBS 138 (Rev. 3/01)

V:\3195\Structure\032-0123\0320123-66B83-030-BORINGS 5.dgn	USER NAME = bdecraene	DESIGNED - NPH	Hutchison Engineering, Inc. JACKSONVILLE–SHOREWOOD–PEORIA	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BORING LOGS STRUCTURE NO. 032–0123	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = NONE	DRAWN - RMD				326	110BR-1	GRUNDY	644	388
	PLOT DATE = 8/6/2013	CHECKED - JOH/NPH			SHEET NO. 30 OF 30 SHEETS			CONTRACT NO. 66B83		
		CHECKED - JOH					ILLINOIS	FED. AID PROJECT		

Benchmark: R.R. spike in west face of P.P. located on east side of IL. Rte. 47 just south of 2nd house south of Sherrill Rd.. Elev. 592.26

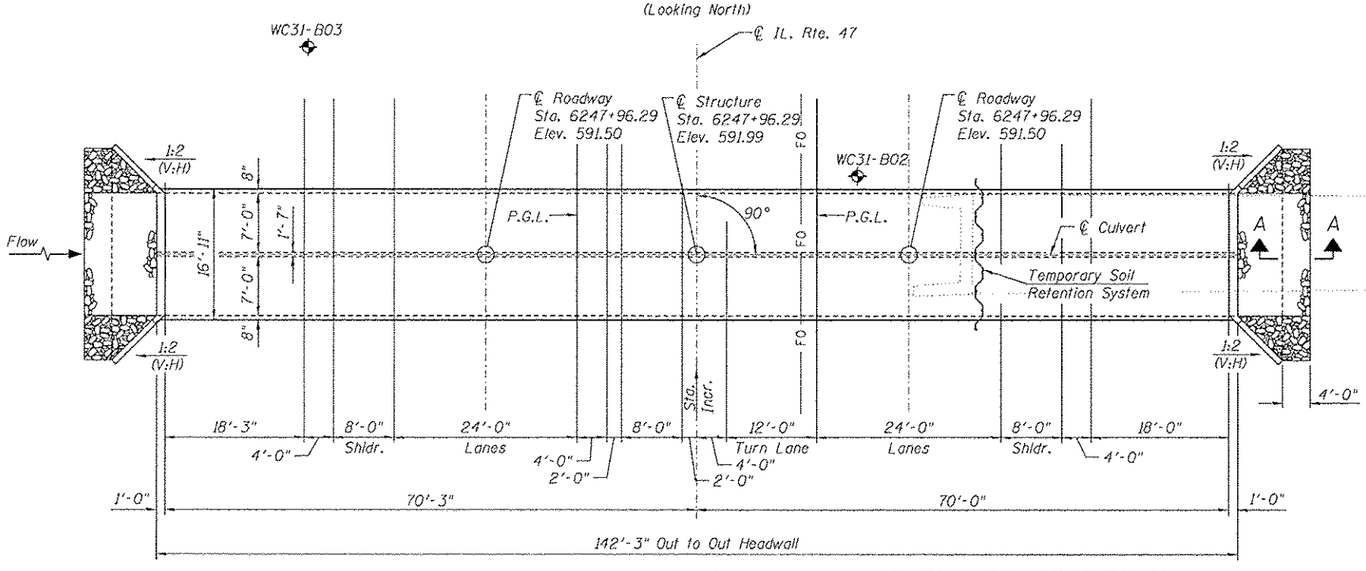
Existing Structure: The existing structure consists of an 10' x 4' concrete box culvert with concrete wingwalls. The culvert is approximately 77'-0" in length with no skew. Existing structure to be removed and replaced. Traffic to be maintained utilizing stage construction.

No Salvage.



LONGITUDINAL SECTION

(Dimension's at Rt L's to ℄ Roadway, unless noted otherwise)
(Looking North)



PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	55.2
Stone Riprap, Class A4	Sq. Yd.	46
Filter Fabric	Sq. Yd.	46
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	4080
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	21.0
Precast Concrete Box Culverts 7'x4'	Foot	260.5
Temporary Soil Retention System	Sq. Ft.	134

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	580.01	579.75

WATERWAY INFORMATION

Drainage Area = 1.08 sq mi
Exist. Low Grade Elev. 587.85
Prop. Low Grade Elev. 590.45

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E. Exist.	Nat. H.W.E. Prop.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	191	19	46	585.7	586.6	1.0	0.0	586.7	586.4
Design	50	292	21	48	585.9	586.7	2.0	0.7	587.9	587.4
Base	100	333	21	48	585.9	586.7	2.7	1.0	588.6	587.7
Overtopping	-	-	-	-	-	-	-	-	-	-
Max. Calc.	500	431	22	51	586.1	586.9	2.8	1.7	588.9	588.6

10 year velocity through Existing Structure = 5.03 fps
10 year velocity through Proposed Structure = 3.1 fps

STATION 6247+96.29
BUILT 20 BY
STATE OF ILLINOIS
F.A.P. RTE. 326
SEC. (110)R, BR & BR-1
LOADING HL-93
STRUCTURE NO. 032-2536

NAME PLATE

See Std. 515001

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
PRECAST UNITS
f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)

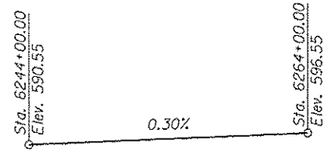
GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheet 3.

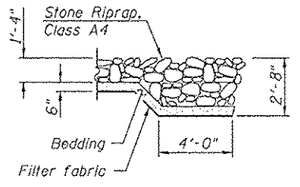
Precast concrete box culverts shall conform to the design requirements of ASTM C1577.

See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.

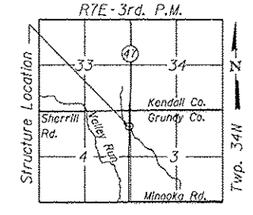


PROFILE GRADE

(Along IL. Rte. 47 P.G.)



SECTION A-A



LOCATION SKETCH

LICENSED STRUCTURAL ENGINEER
VINCENT P. TABOR
081-007047
STATE OF ILLINOIS

Vincent P. Tabor 7/15/2013
Vincent P. Tabor — Date
Licensed Structural Engineer
State of Illinois No. 081-007047
Expires 11/30/2014

GENERAL PLAN & ELEVATION
IL. RTE. 47 OVER
DRAINAGE DITCH
F.A.P. RTE. 326-SEC (110)R, BR & BR-1
GRUNDY COUNTY
STATION 6247+96.29
STRUCTURE NO. 032-2536

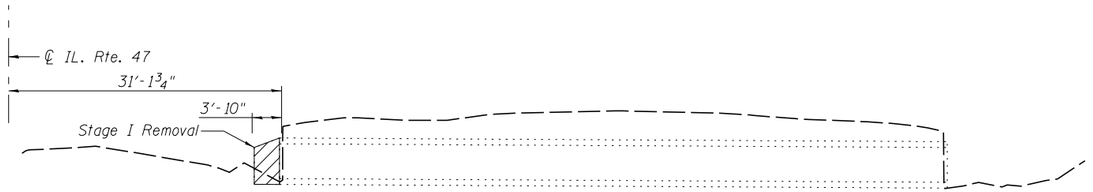
REVISED -	USER NAME =	DESIGNED -	PSS
REVISED -	FILE NAME =	CHECKED -	VPT
REVISED -	PLOT SCALE =	DRAWN -	AJF
REVISED -	PLOT DATE =	CHECKED -	VPT

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

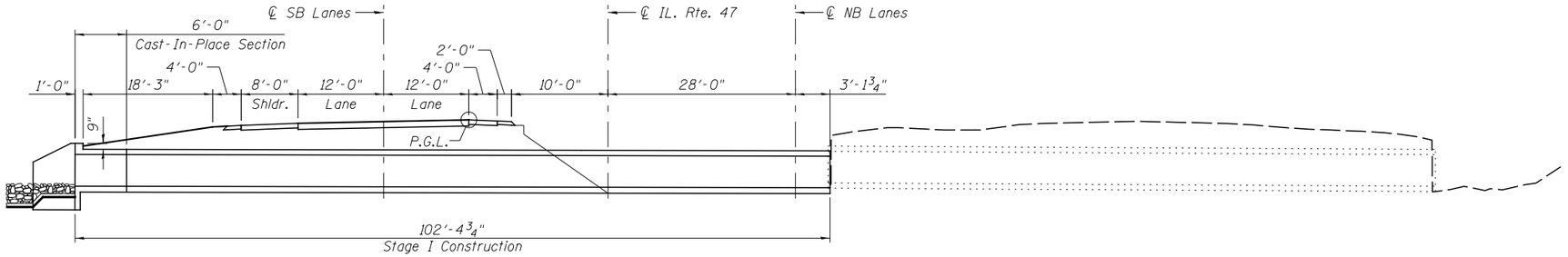
GENERAL PLAN & ELEVATION
STRUCTURE NO. 032-2536
SHEET NO. 1 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	389
		CONTRACT NO. 66883		
	ILLINOIS FED. AID PROJECT			



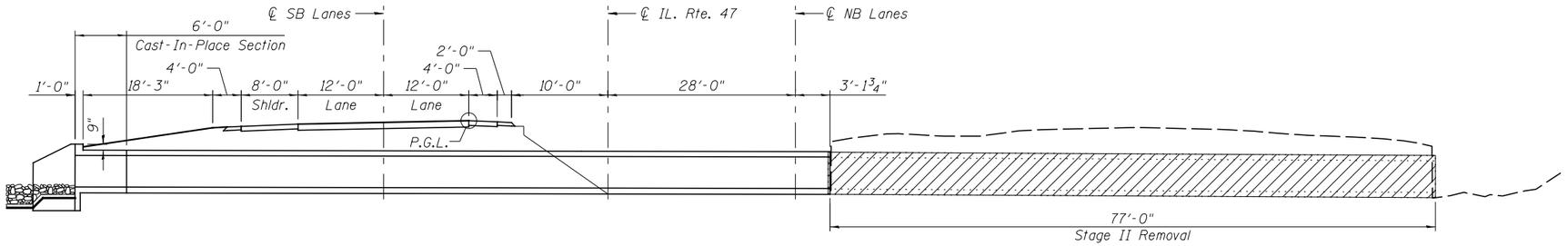
STAGE I REMOVAL

(Looking North)



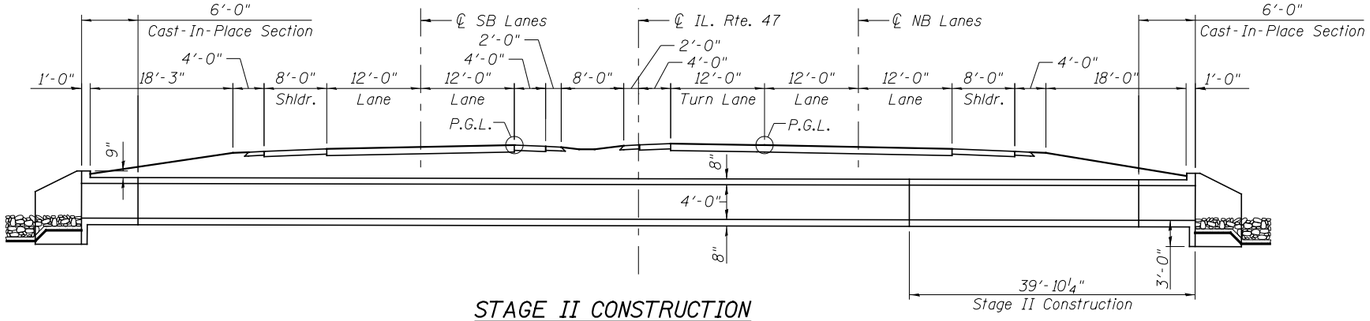
STAGE I CONSTRUCTION

(Looking North)



STAGE II REMOVAL

(Looking North)

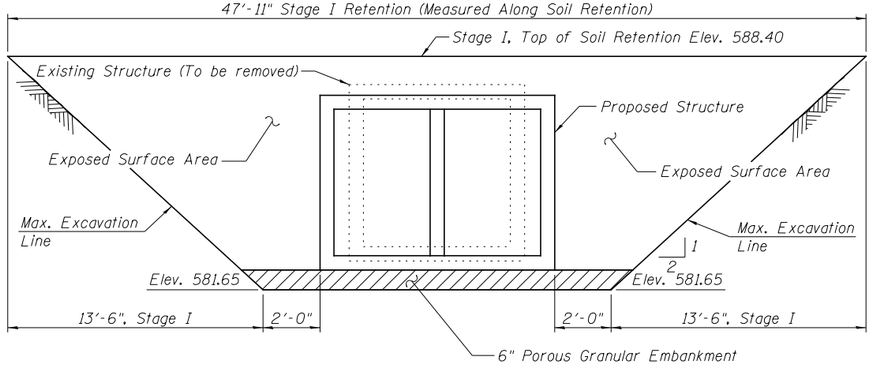


STAGE II CONSTRUCTION

(Looking North)

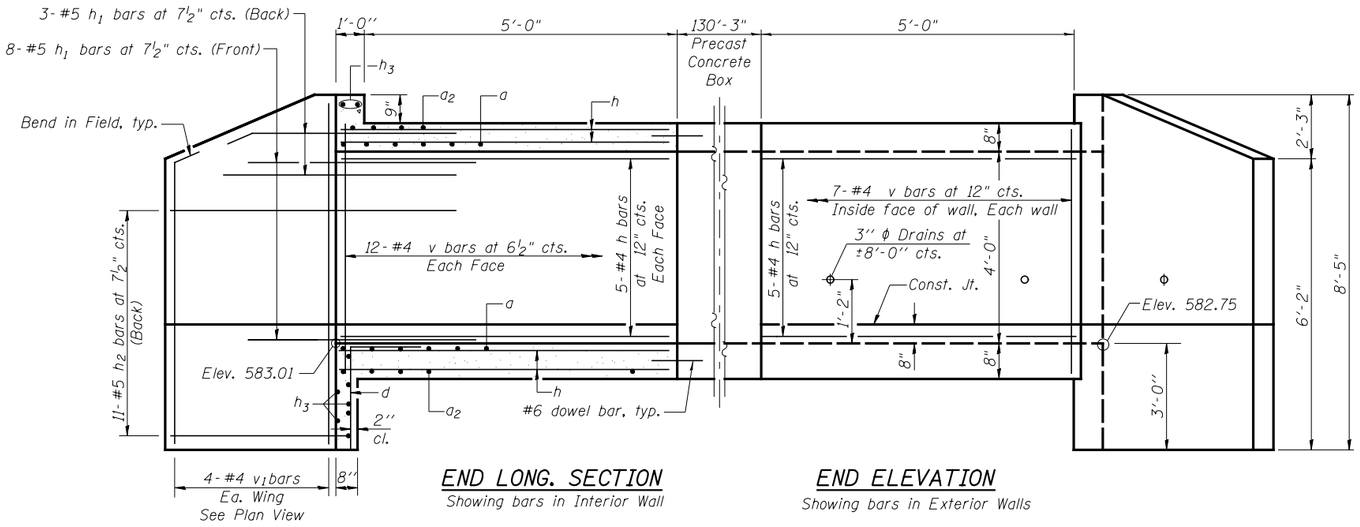
A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

Slopes shown are parallel to ℄ of Roadway, unless noted otherwise.



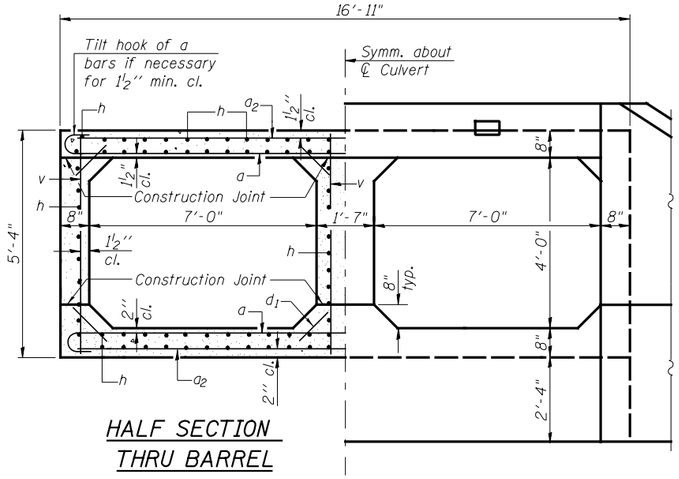
TEMPORARY SOIL RETENTION

REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL DATA STRUCTURE NO. 032-2536	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
REVISED -	FILE NAME =	CHECKED - VPT				326	(110)R, BR & BR-1	GRUNDY	644	390
REVISED -	PLOT SCALE =	DRAWN - AJF						CONTRACT NO. 66883		
REVISED -	PLOT DATE =	CHECKED - VPT			SHEET NO. 2 OF 4 SHEETS			ILLINOIS FED. AID PROJECT		



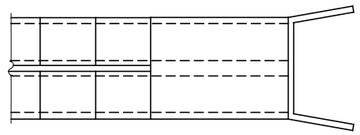
END LONG. SECTION
Showing bars in Interior Wall

END ELEVATION
Showing bars in Exterior Walls

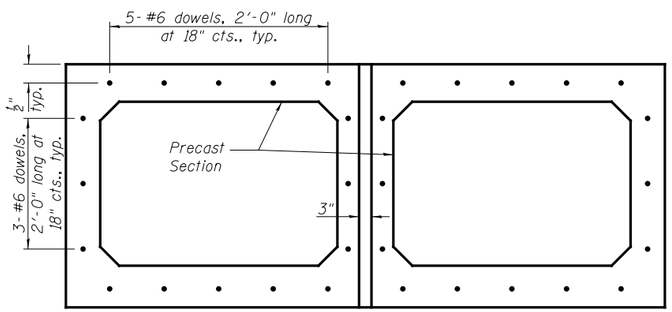


HALF SECTION THRU BARREL

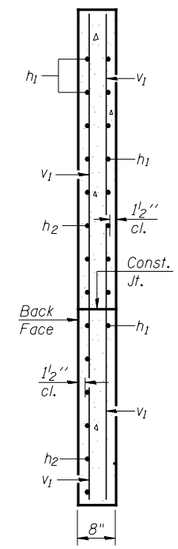
HALF END ELEVATION



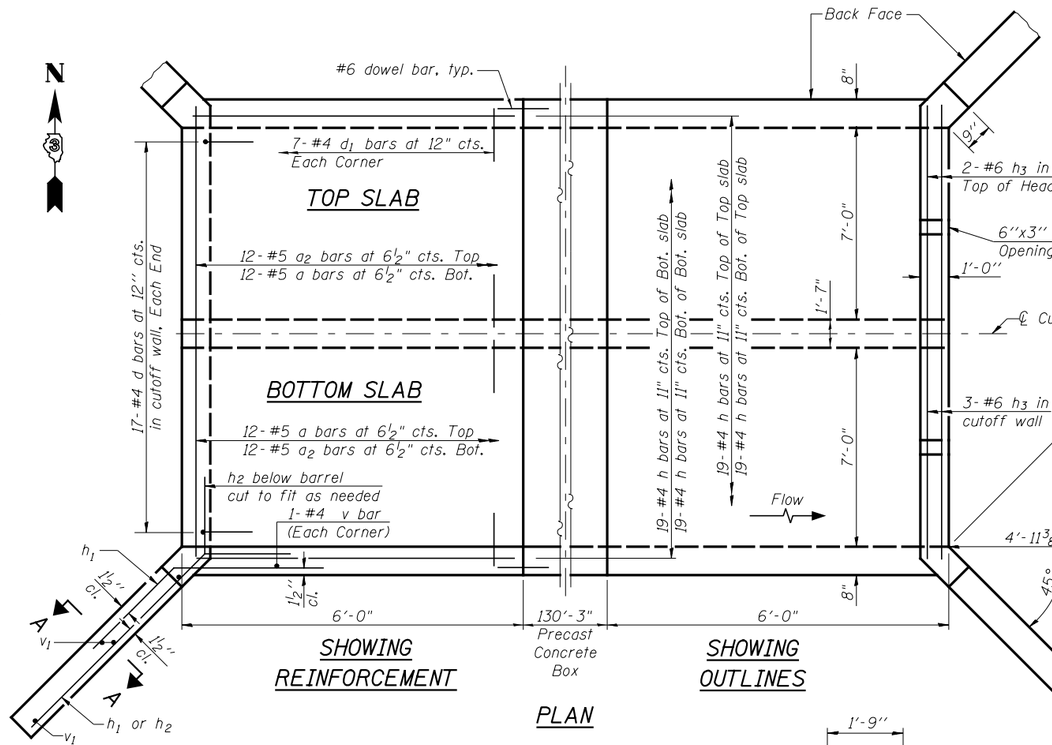
ALIGNED PRECAST SECTIONS PLAN



PRECAST CONCRETE CULVERT END ELEVATION
(Section is symmetrical about ℄ culvert)



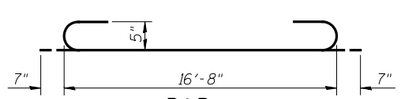
SECTION A-A



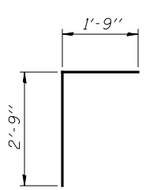
SHOWING REINFORCEMENT

PLAN

SHOWING OUTLINES



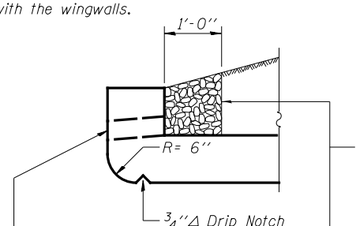
BAR a



BAR d

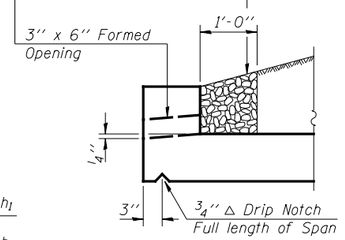
BARS h_1 & h_2

Notes:
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.



AT UPSTREAM END

Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with Concrete Box Culverts.



AT DOWNSTREAM END

DRAIN DETAIL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	48	#5	17'-10"	
a_2	48	#5	16'-8"	
d	34	#4	4'-6"	
d_1	112	#4	1'-2"	
h	192	#4	5'-9"	
h_1	44	#5	8'-0"	
h_2	44	#5	10'-0"	
h_3	10	#6	15'-6"	
v	80	#4	5'-1"	
v_1	16	#4	8'-2"	
Concrete Box Culverts			Cu. Yd.	21.0
Reinforcement Bars			Pound	4080

REVISED -	USER NAME =	DESIGNED - PSS	
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
STRUCTURE NO. 032-2536
SHEET NO. 3 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	391
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

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Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG WC31-B01

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Illinois Route 47, Section IL 47A
Location: Mainline, Grundy Co.

Datum: NGVD
Elevation: 588.97 ft
North: 1744627.10 ft
East: 959507.07 ft
Station: 6247+80.52
Offset: 92.24 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blow/6 in)	Qu (tsf)	Moisture Content (%)
588.0	Loose, black SANDY LOAM, little gravel --FILL-- --SHOULDER--			1	2 4 4	NP	25
586.0	Stiff, brown GRAVELLY SILTY CLAY LOAM --FILL-- --A-7-6 (12)-- --L_L (%)=44, P_I (%)=17-- --%Gravel=28.7-- --%Sand=13.7-- --%Silt=39.8-- --%Clay=17.7--	5		2	2 2 3	1.00 P	22
583.5	Stiff, black CLAY LOAM --BURIED TOPSOIL--	10		3	10 18 23	1.00 P	30
582.8	Dense, gray SANDY GRAVEL						
579.5	Dense, gray rock fragments --WEATHERED BEDROCK--	15		4	12 13 18	NP	9
				5	20 21 21	NP	4
575.2	--AUGER REFUSAL-- Boring terminated at 13.75 ft			6	50/3"	–	

GENERAL NOTES

Begin Drilling: 07-24-2009 Complete Drilling: 07-24-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: DRY
Time After Drilling: NA
Depth to Water: NA

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

wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG WC31-B02

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Illinois Route 47, Section IL 47A
Location: Mainline, Grundy Co.

Datum: NGVD
Elevation: 585.89 ft
North: 1744660.81 ft
East: 959431.18 ft
Station: 6248+15.12
Offset: 16.74 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blow/6 in)	Qu (tsf)	Moisture Content (%)
584.9	12" black LOAM --TOPSOIL--						
	Stiff, brown SANDY CLAY LOAM			1	2 14 18	1.25 P	14
582.9	--AUGER REFUSAL-- -- OFFSET 6 FT SOUTH-- Very stiff, brown SILTY CLAY LOAM, little gravel	5		2	2 5 7	3.00 P	18
	--Hard drilling--	10		3	7 7 7	3.25 P	13
577.9	Very dense, rock fragments --WEATHERED BEDROCK--			4	50/2"	–	
575.4	--AUGER REFUSAL-- -- OFFSET 15 FT NORTHWEST-- Strong, light gray, very poor, horizontally and vertically fractured DOLOSTONE with rusted weathered joints RECOVERY = 95% RQD = 17.5%	15	C O R E	1			
570.4	Boring terminated at 15.50 ft	20					
		25					
		30					

GENERAL NOTES

Begin Drilling: 07-24-2009 Complete Drilling: 07-24-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: WASHED
Time After Drilling: NA
Depth to Water: NA

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

wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG WC31-B03

WEI Job No.: 790-36-01

Client: TranSystems Corporation
Project: Illinois Route 47, Section IL 47A
Location: Mainline, Grundy Co.

Datum: NGVD
Elevation: 586.30 ft
North: 1744718.96 ft
East: 959366.95 ft
Station: 6248+74.08
Offset: 46.76 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blow/6 in)	Qu (tsf)	Moisture Content (%)
585.3	12-inch thick, dark brown SILTY LOAM --TOPSOIL--						
	Medium stiff, brown and gray SILTY CLAY LOAM --A-7-6 (31)-- --L_L (%)=52, P_I (%)=19-- --%Gravel=0.6-- --%Sand=11.7-- --%Silt=62.0-- --%Clay=25.7-- Qu = 0.75 P			1	4 3 3	0.75 P	27
581.8	Loose, brown and gray SILTY LOAM, some gravel	5		2	3 3 5	NP	12
580.8	Stiff, gray CLAY LOAM, some gravel			3	6 6 13	1.25 P	12
577.3	Dense, SANDY GRAVEL --WEATHERED BEDROCK--	10		4	15 13 32	NP	8
575.3	--AUGER REFUSAL-- Boring terminated at 11.10 ft	15		5	50/1"	–	

GENERAL NOTES

Begin Drilling: 08-12-2009 Complete Drilling: 08-12-2009
Drilling Contractor: WTS Drill Rig: D 120 ATV
Driller: K&J Logger: B. Wilson Checked by: C. Marin
Drilling Method: 3.25 IDA HSA; Boring backfilled upon completion

WATER LEVEL DATA

While Drilling: 9.00 ft
At Completion of Drilling: DRY
Time After Drilling: NA
Depth to Water: NA

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

REVISED -	USER NAME =	DESIGNED - PSS	
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

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Consulting Engineers
Springfield, Illinois

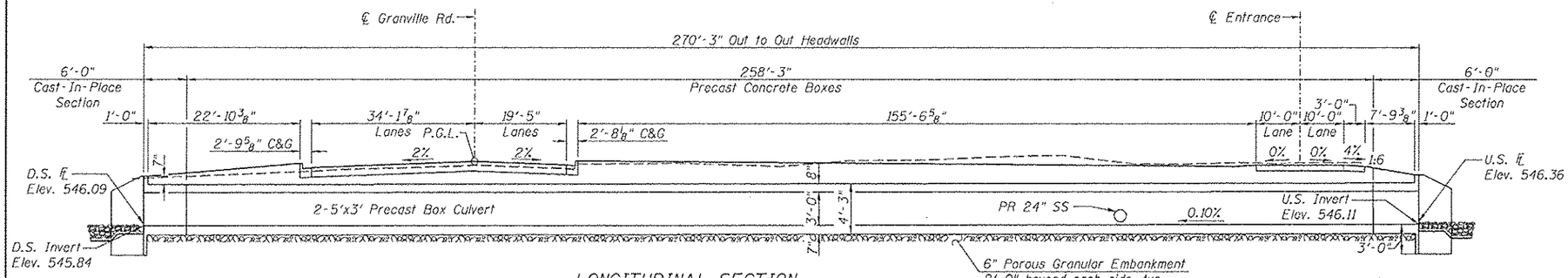
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS
STRUCTURE NO. 032-2536
SHEET NO. 4 OF 4 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	392
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

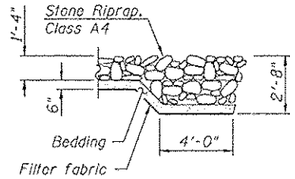
Benchmark: Tag bolt on FH located in front of Grundy County Farm Bureau, Elev. 551.80

Existing Structure: None. Traffic to be detoured during construction.

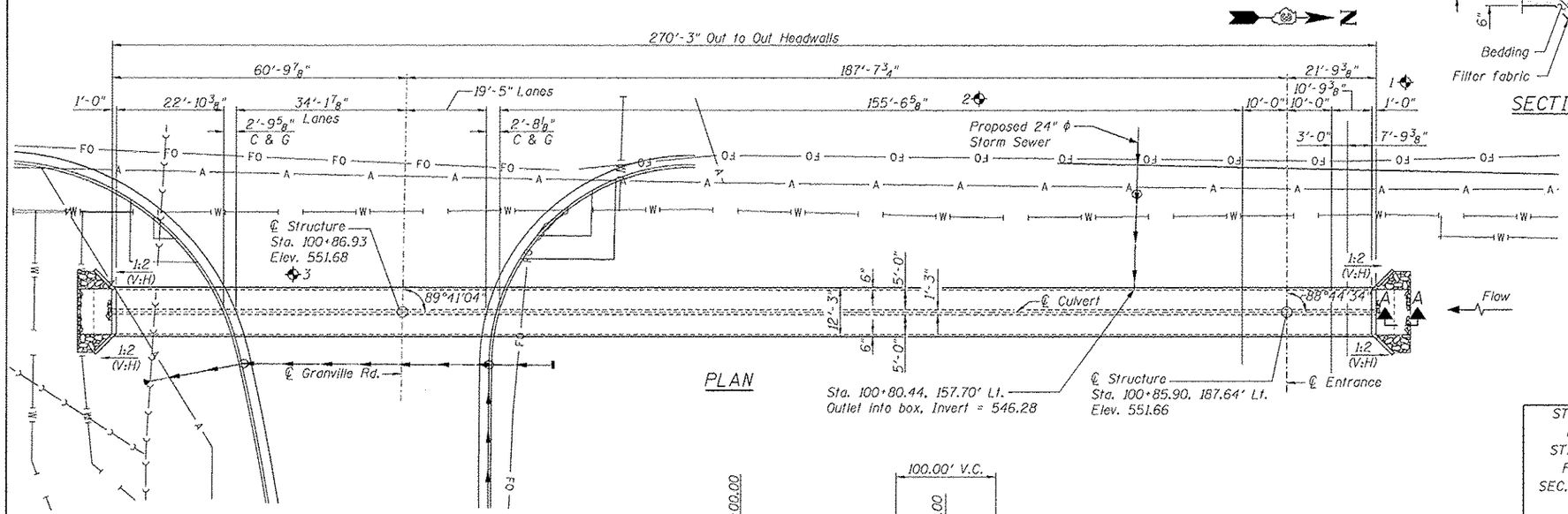


LONGITUDINAL SECTION

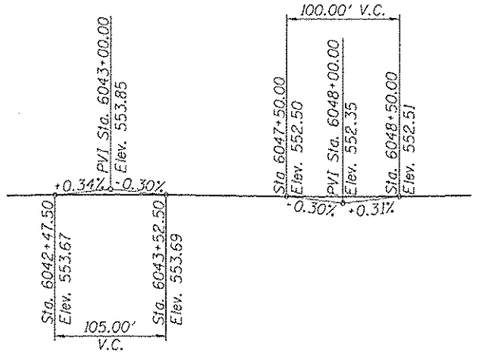
(Dimensions at Rt. L's to ℄ Roadway at ℄ of culvert)
(Looking West)



SECTION A-A



PLAN



PROFILE GRADE

(Along IL. Rte. 47 P.G.)

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)

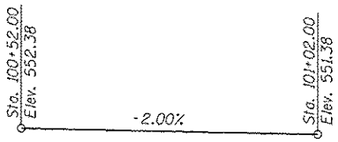
GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheet 2.

Precast concrete box culverts shall conform to the design requirements of ASTM C1577.

See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.



PROFILE GRADE

(Along Granville Rd. P.G.)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	81.4
Stone Riprap, Class A4	Sq. Yd.	30
Filter Fabric	Sq. Yd.	30
Reinforcement Bars	Pound	2480
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	14.2
Precast Concrete Box Culverts 5'x3'	Foot	516.5

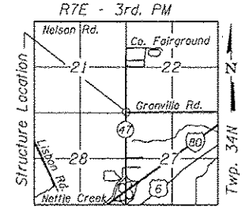
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	543.11	542.84

STATION 100+86.93
BUILT BY
STATE OF ILLINOIS
F.A.P. RTE. 326
SEC. (110)R, BR & BR-1
LOADING HL-93
STRUCTURE NO. 032-2544

NAME PLATE

See Std. 515001



LOCATION SKETCH

VINCENT P. TABOR 081-007047 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

Vincent P. Tabor 7/15/2013

Vincent P. Tabor — Date
Licensed Structural Engineer
State of Illinois No. 081-007047
Expires 11/30/2014

GENERAL PLAN & ELEVATION
GRANVILLE RD. OVER DRAINAGE DITCH
F.A.P. RTE. 326-SEC (110)R, BR & BR-1
GRUNDY COUNTY
STATION 100+86.93
STRUCTURE NO. 032-2544

REVISED -	USER NAME =	DESIGNED -	PSS
REVISED -	FILE NAME =	CHECKED -	VPT
REVISED -	PLOT SCALE =	DRAWN -	AJF
REVISED -	PLOT DATE =	CHECKED -	VPT

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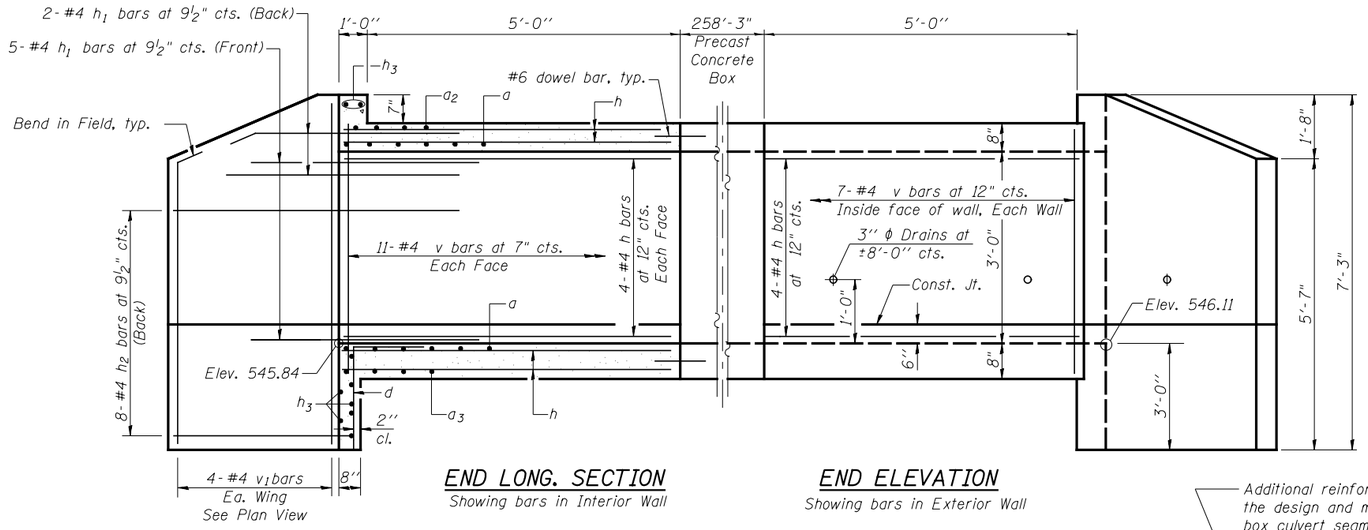
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 032-2544

SHEET NO. 1 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	393
		CONTRACT NO. 66883		
		ILLINOIS FED. AID PROJECT		

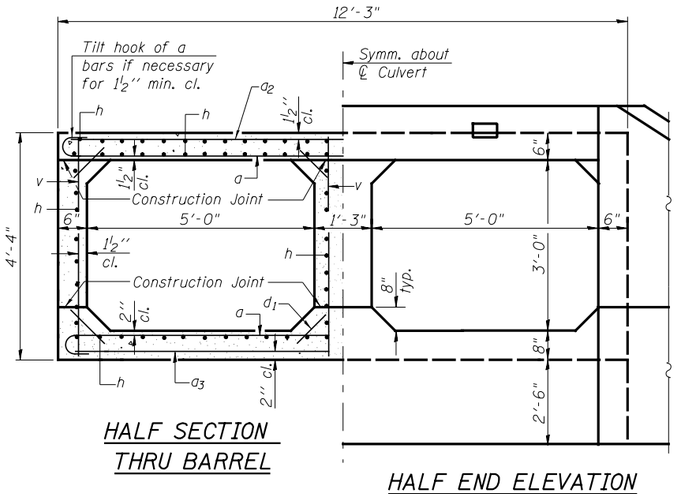


END LONG. SECTION

Showing bars in Interior Wall

END ELEVATION

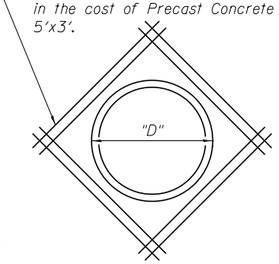
Showing bars in Exterior Wall



HALF SECTION THRU BARREL

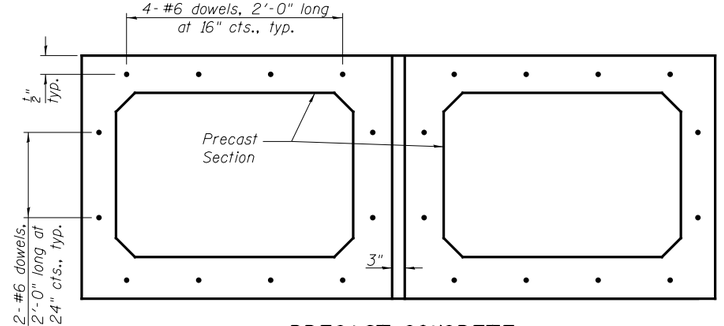
HALF END ELEVATION

Additional reinforcement incorporated into the design and manufacture of the proposed box culvert segment at opening, and included in the cost of Precast Concrete Box Culvert 5'x3'.



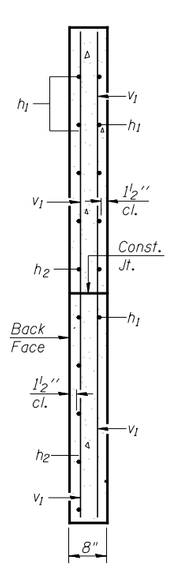
ADDITIONAL REINFORCEMENT FOR 24" ϕ PIPE OPENING

"D" = 24" ϕ + wall thickness

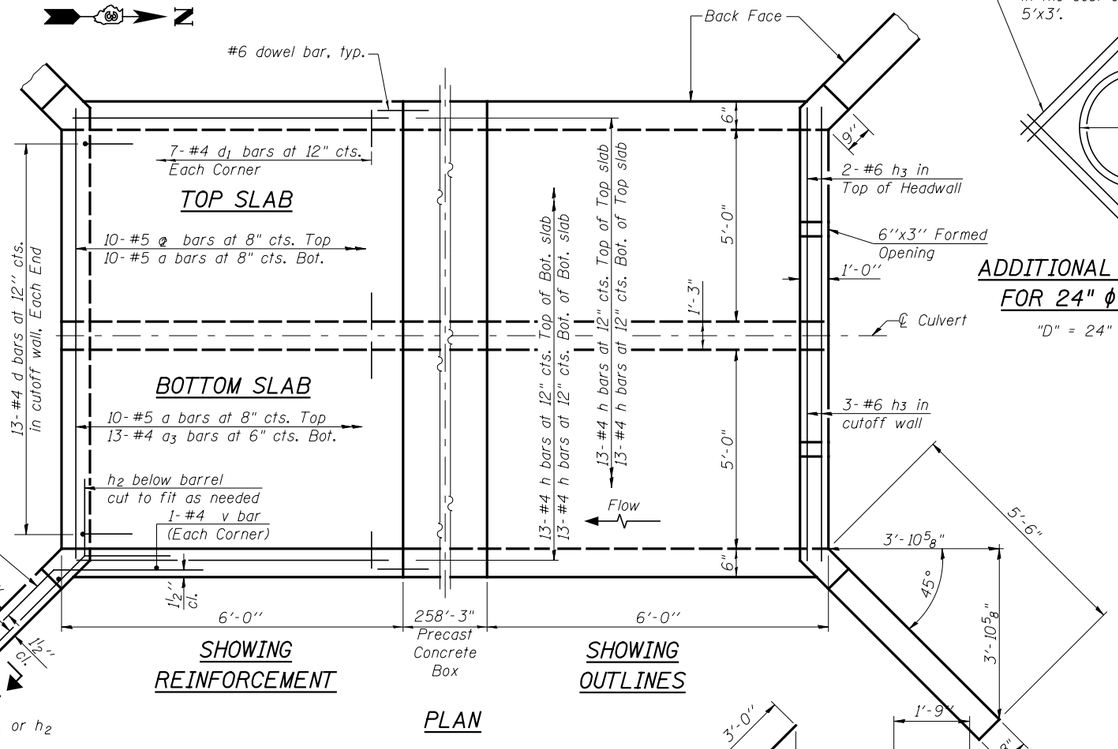


PRECAST CONCRETE CULVERT END ELEVATION

(Section is symmetrical about ℄ culvert)



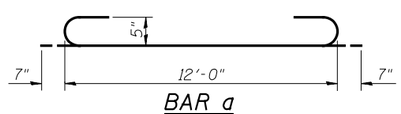
SECTION A-A



PLAN

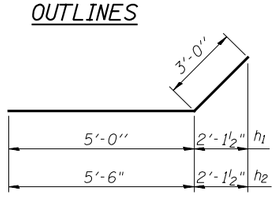
SHOWING REINFORCEMENT

SHOWING OUTLINES

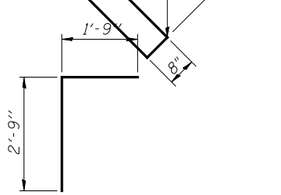


BAR a

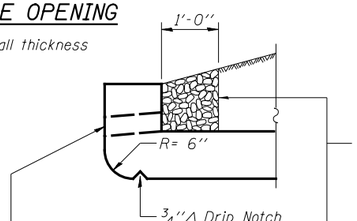
Notes:
A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.



BARS h_1 & h_2

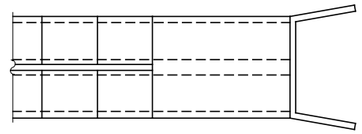


BAR d

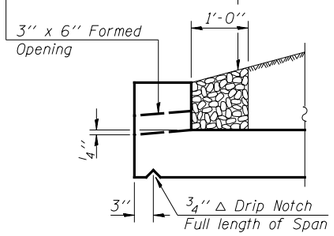


AT UPSTREAM END

Coarse aggregate full length of both headwalls. To be placed by Grading Contractor. Cost included with Concrete Box Culverts.



ALIGNED PRECAST SECTIONS PLAN



AT DOWNSTREAM END

DRAIN DETAIL

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	40	#5	13'-2"	
a_2	20	#5	12'-0"	
a_3	26	#4	12'-0"	
d	26	#4	4'-6"	
d_1	112	#4	1'-2"	
h	136	#4	5'-9"	
h_1	28	#4	8'-0"	
h_2	32	#4	8'-6"	
h_3	10	#6	11'-2"	
v	76	#4	4'-1"	
v_1	16	#4	7'-0"	
Concrete Box Culverts			Cu. Yd.	14.2
Reinforcement Bars			Pound	2480

REVISED -	USER NAME =	DESIGNED - PSS	
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
STRUCTURE NO. 032-2544
SHEET NO. 2 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	394
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Box Culvert under Granville Road and a Private Entrance East of IL 47, 0.8 Miles North of I-80 (Structure 8)

Date 2/15/12

ROUTE IL 47 (FAP 326) DESCRIPTION (109, 110)R,R-1, 110BR & BR-1 LOGGED BY Larry Myers

SECTION LOCATION SW 1/4, SEC. 22, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Structure 8 (Prop.)
Station 6046+30, 82' RT

BORING NO. 1
Station 6047+56
Offset 40.00ft Rt.
Ground Surface Elev. 551.88 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 541.9 ft
Upon Completion 543.9 ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered black silty clay loam fill with gravel pieces.			
549.38			
Very stiff to hard brown silty clay loam till.	4 5 6	3.5 P	19.4
-5	4 5 5	4.0 P	15.0
544.38			
Medium brown fine sand. Free water at 10 ft.	5 7 10		17.1
-10	7 12 12		22.4
539.88			
Hard gray silt with fine sand layers and minor clay seams.	7 14 18	>4.5 P	18.4
537.38			
Hard gray silty clay loam / silty loam till with silt layers. * Max Rimac at 0%. ** Max Rimac at 5%.	-15 21 39 64	12.1* S	11.4
	31 47 58	12.1*	10.0
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard gray silty clay loam / silty loam till with silt layers. * Max Rimac at 0%. ** Max Rimac at 5%. *(continued)*			
-25	26 31	11.5**	11.2
525.88	51		
End of Boring			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Box Culvert under Granville Road and a Private Entrance East of IL 47, 0.8 Miles North of I-80 (Structure 8)

Date 2/15/12

ROUTE IL 47 (FAP 326) DESCRIPTION (109, 110)R,R-1, 110BR & BR-1 LOGGED BY Larry Myers

SECTION LOCATION SW 1/4, SEC. 22, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Structure 8 (Prop.)
Station 6046+30, 82' RT

BORING NO. 2
Station 6046+71
Offset 39.00ft Rt.
Ground Surface Elev. 551.80 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered black silty clay loam fill.			
549.30			
Very stiff black, brown, and gray silty clay and silty clay loam fill.	3 4 5	3.0 P	22.4
546.80 -5			
Very stiff to hard brown silty clay loam / silty loam till.	3 4 3	3.5 P	16.9
	3		
	5 7	4.5 S	15.0
542.30			
Hard gray silty loam till with silt layers. * Max Rimac at 0%.	-10 7 12 18	6.1 S	13.4
	15 31 54	10.9 S	10.8
-15	21 25 31	11.1 S	9.3
	25 25 40	12.1* S	9.0
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard gray silty loam till with silt layers. *(continued)* * Max Rimac at 0%. *(continued)*			
-25	25 26 38	12.1* S	8.7
	22 29 46	12.1* S	11.1
-25	25 29 44	12.1* S	9.1
525.30			
End of Boring			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Box Culvert under Granville Road and a Private Entrance East of IL 47, 0.8 Miles North of I-80 (Structure 8)

Date 2/15/12

ROUTE IL 47 (FAP 326) DESCRIPTION (109, 110)R,R-1, 110BR & BR-1 LOGGED BY Larry Myers

SECTION LOCATION NW 1/4, SEC. 27, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. Structure 8 (Prop.)
Station 6046+30, 82' RT

BORING NO. 3
Station 6045+14
Offset 78.00ft Rt.
Ground Surface Elev. 550.70 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered black silty clay loam fill.			
548.20			
Very stiff black, brown and gray silty loam / silty clay loam fill.	4 5 6	3.0 P	15.2
546.20 -5			
Very stiff to hard brown silty loam / silty clay loam till.	6 7 8	4.5 S	17.0
	7		
	9 12	5.1 S	13.2
540.70 -10			
Hard gray silty loam till with silt layers.	12 21 31	>4.5 P	17.1
	13 16 27	8.4 S	14.0
-15	10 15 19	7.5 S	9.1
	11 21 24	10.7 S	11.3
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard gray silty loam till with silt layers. *(continued)*			
-25	14 18 29	10.7 S	17.0
	16 23 31	11.1 S	10.6
-25	18 30 37	11.1 S	8.8
524.20			
End of Boring			
-30			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING,LTD. Consulting Engineers Springfield, Illinois
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

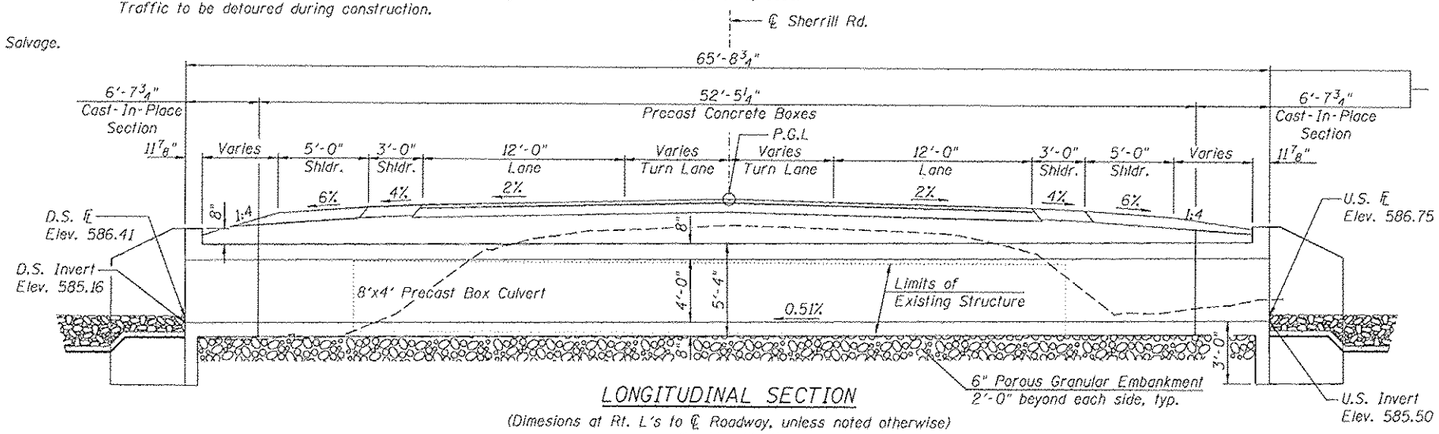
SOIL BORINGS
STRUCTURE NO. 032-2544
SHEET NO. 3 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	395
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

Benchmark: R.R. spike in west face of last P.P. on west side of IL. Rte. 47 north of Sherrill Rd., Elev. 594.19

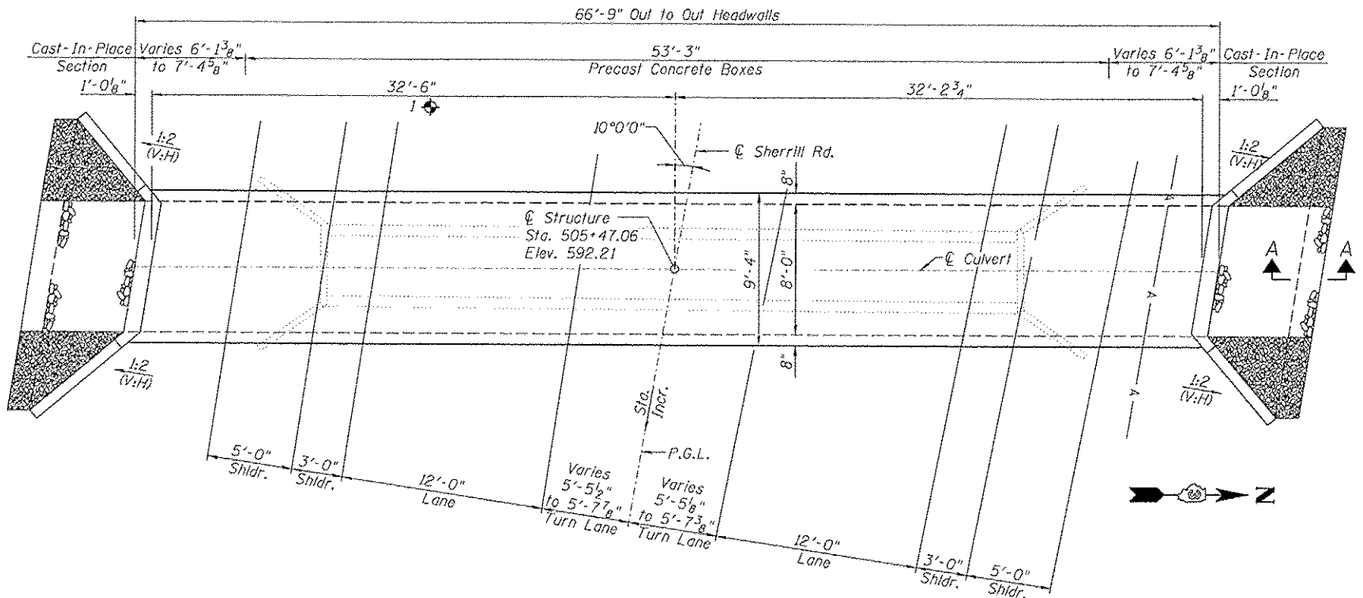
Existing Structure: The existing structure consists of a 59" x 38" elliptical CMP pipe. The pipe is approximately 42'-4" in length at a 10° right ahead skew. Existing structure to be removed and replaced. Traffic to be detoured during construction.

No Salvage.

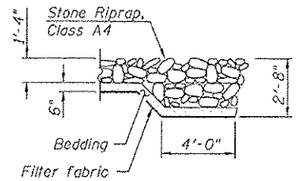


LONGITUDINAL SECTION

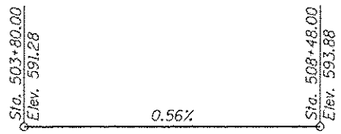
(Dimesions at Rt. L's to ℄ Roadway, unless noted otherwise)
(Looking West)



PLAN



SECTION A-A

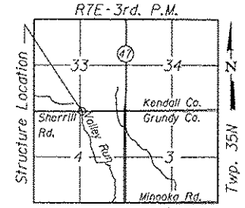


PROFILE GRADE

(Along Sherrill Rd. P.G.)

STATION 505+47.06
BUILT BY
STATE OF ILLINOIS
F.A.P. RTE. 326
SEC. (110)R, BR & BR-1
LOADING HL-93
WATER CROSSING 143

NAME PLATE
See Std. 515001



LOCATION SKETCH

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications. 6th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

f'c = 5,000 psi
fy = 60,000 psi (Reinforcement)
fy = 65,000 psi (Welded Wire Fabric)

GENERAL NOTES

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

The last section of precast culvert on each end shall have reinforcing bars extending from the precast culvert to be incorporated into the cast-in-place end sections as shown on sheet 2.

Precast concrete box culverts shall conform to the design requirements of ASTM C1577.

See Box Culvert Backfilling Detail within roadway detail sheets for limits of Granular Culvert Backfill.

WATERWAY INFORMATION

Drainage Area = 0.69 sq mi
Exist. Low Grade Elev. 589.37
Prop. Low Grade Elev. 590.69

Flood	Freq.	Q C.F.S.		Opening Sq. Ft.		Nat.	Head - Ft.		Headwater El.	
	Yr.	Exist.	Prop.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
	10	128	147	8	40	588.7	1.3	0.2	590.0	588.9
Design	50	196	226	8	42	588.8	1.4	0.7	590.2	589.5
Base	100	224	258	8	42	588.8	1.4	1.0	590.2	589.8
Overtopping	-	-	-	-	-	-	-	-	-	-
Max. Calc.	500	290	336	9	43	588.9	1.5	1.5	590.4	590.4

10 year velocity through Existing Structure = 7.05 fps
10 year velocity through Proposed Structure = 3.74 fps

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	16.5
Stone Riprap, Class A4	Sq. Yd.	31
Filter Fabric	Sq. Yd.	31
Removal of Existing Structures	Each	1
Reinforcement Bars	Pound	2220
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	14.6
Precast Concrete Box Culverts 8'x4'	Foot	53.5

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	U.S. Invert	D.S. Invert
	582.50	582.16

LICENSED STRUCTURAL ENGINEER
VINCENT P. TABOR
081-007047
STATE OF ILLINOIS

Vincent P. Tabor 7/15/2013
Vincent P. Tabor — Date
Licensed Structural Engineer
State of Illinois No. 081-007047
Expires 11/30/2014

GENERAL PLAN & ELEVATION
SHERRILL RD. OVER DRAINAGE DITCH
F.A.P. RTE. 326-SEC (110)R, BR & BR-1
GRUNDY/KENDALL COUNTY
STATION 505+47.06
WATER CROSSING 143

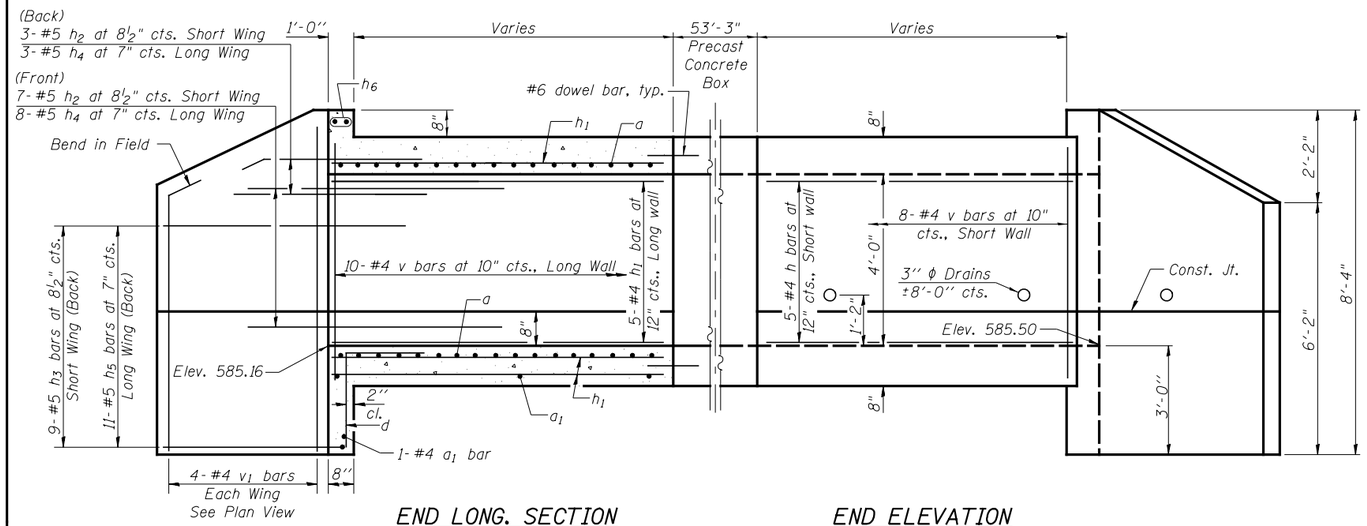
REVISED -	USER NAME =	DESIGNED -	PSS
REVISED -	FILE NAME =	CHECKED -	VPT
REVISED -	PLOT SCALE =	DRAWN -	AJF
REVISED -	PLOT DATE =	CHECKED -	VPT

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

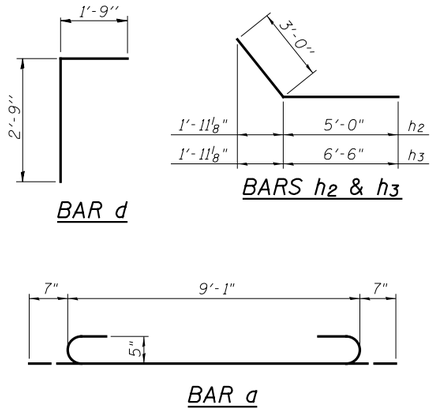
GENERAL PLAN & ELEVATION
WATER CROSSING 143
SHEET NO. 1 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	396
		CONTRACT NO. 66883		
	ILLINOIS FED. AID PROJECT			

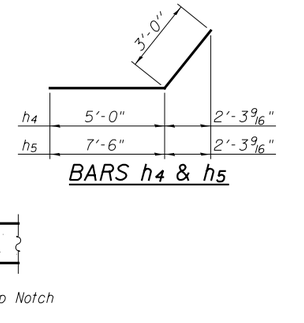


END LONG. SECTION
(Long wall)

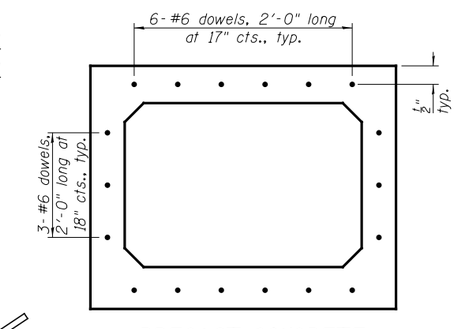
END ELEVATION
(Short wall)



SECTION THRU BARREL

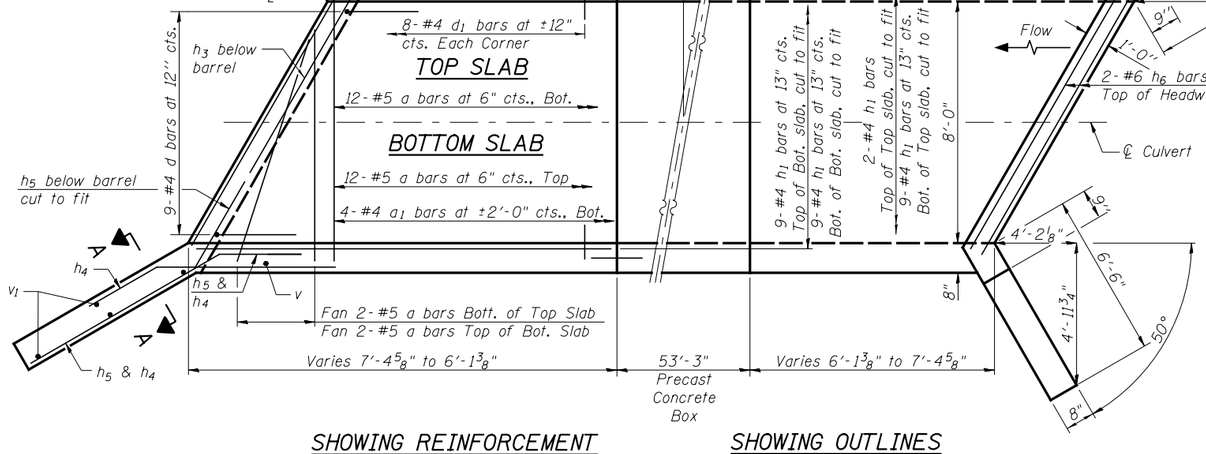


SECTION THRU HEADWALL
(Up Stream End Only)



PRECAST CONCRETE CULVERT END ELEVATION

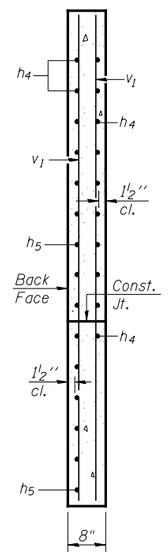
(Section is symmetrical about ℄ culvert)



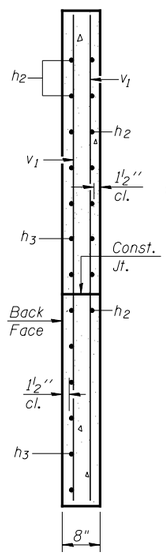
SHOWING REINFORCEMENT

SHOWING OUTLINES

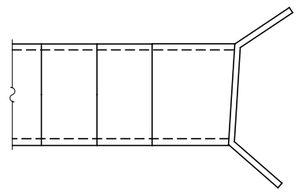
PLAN



SECTION A-A



SECTION B-B



ALIGNED PRECAST SECTIONS PLAN

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	56	#5	10'-3"	
a_1	10	#4	9'-1"	
d	18	#4	4'-6"	
d_1	64	#4	1'-2"	
h	10	#4	5'-9"	
h_1	68	#4	7'-2"	
h_2	20	#5	8'-0"	
h_3	20	#5	9'-6"	
h_4	22	#5	8'-0"	
h_5	24	#5	10'-6"	
h_6	4	#6	9'-1"	
v	40	#4	5'-1"	
v_1	16	#4	8'-1"	
Concrete Box Culverts			Cu. Yd.	14.6
Reinforcement Bars			Pound	2220

NOTES

A distance of half the length of the wingwall but not less than six feet of the barrel shall be poured monolithically with the wingwalls.

REVISED -	USER NAME =	DESIGNED - PSS	
REVISED -	FILE NAME =	CHECKED - VPT	
REVISED -	PLOT SCALE =	DRAWN - AJF	
REVISED -	PLOT DATE =	CHECKED - VPT	

LIN ENGINEERING,LTD.
Consulting Engineers
Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT DETAILS
WATER CROSSING 143
SHEET NO. 2 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	397
		CONTRACT NO. 66B83		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

SOIL BORING LOG

Date 12/27/11

ROUTE Sherrill Road DESCRIPTION 353' West of Proposed IL 47 on Sherrill Road (WC 143) LOGGED BY Larry Myers

SECTION _____ LOCATION NE 1/4, SEC. 4, TWP. 34N, RNG. 7E

COUNTY Grundy DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. WC 143
Station 505+47

BORING NO. 1
Station 505+31
Offset 11.00ft Rt.
Ground Surface Elev. 590.42 ft

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 583.4 ft ▼
Upon Completion 583.4 ft ▽
After ____ Hrs. _____ ft

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Augered Shoulder Stone, Black Silty Clay Loam Fill					
Stiff Brown & Gray Silty Clay	587.92		3 3 3	1.5 P	28.7
Loose Gray Loamy Fine Sand to Coarse Gravel. Cobble/Boulders Potential	583.92 ▼	-5	1 1 3 1	1.0 P	27.4
	590.42	-10	3 2		20.3
Weathered and Reworked Limestone Surface	590.09		100/4"		7.0
Auger Refusal End of Boring		-15 -20			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

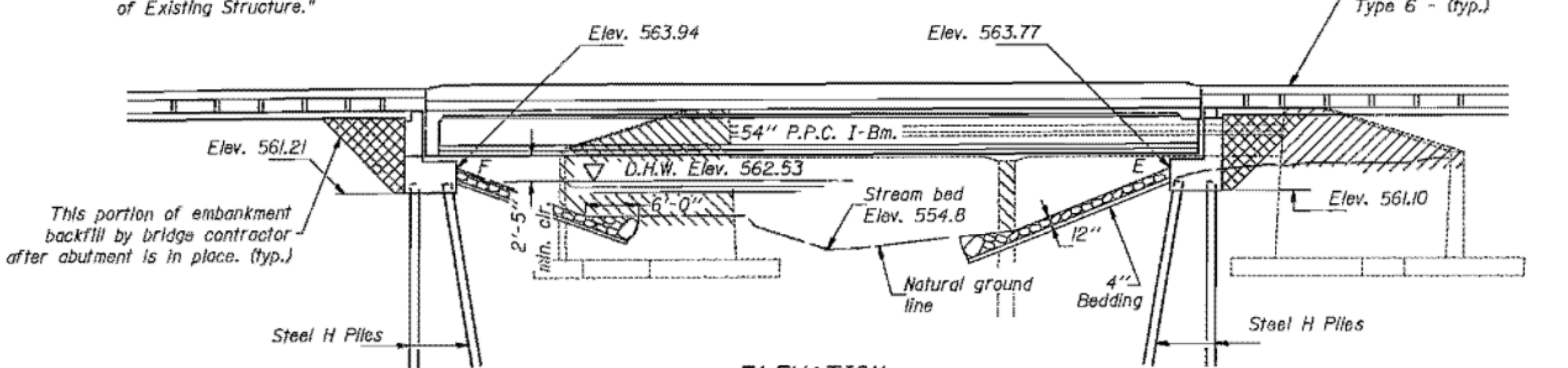
REVISED -	USER NAME =	DESIGNED - PSS	LIN ENGINEERING,LTD. Consulting Engineers Springfield, Illinois	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS WATER CROSSING 143	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
REVISED -	FILE NAME =	CHECKED - VPT				326	(110)R, BR & BR-1	GRUNDY	644	398
REVISED -	PLOT SCALE =	DRAWN - AJF			SHEET NO. 3 OF 3 SHEETS			CONTRACT NO. 66B83		
REVISED -	PLOT DATE =	CHECKED - VPT						ILLINOIS FED. AID PROJECT		

Bench Mark: #22 "□" ⊙ N.W. corner of East hub guard 14.2' Rt. Sta. 137+27; Elev. 570.83
Existing Structure: #032-0027 is a two span R.C. slab on R.C. closed abutments and open pile bent pier. Built in 1956 as S.B.I. Rte. 47, Section 110B-1, the existing structure is to be removed by the bridge contractor. One lane of traffic is to be maintained at all times utilizing stage construction.
No salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1
15 SHEETS

Note: Hatched portions indicates "Removal of Existing Structure."

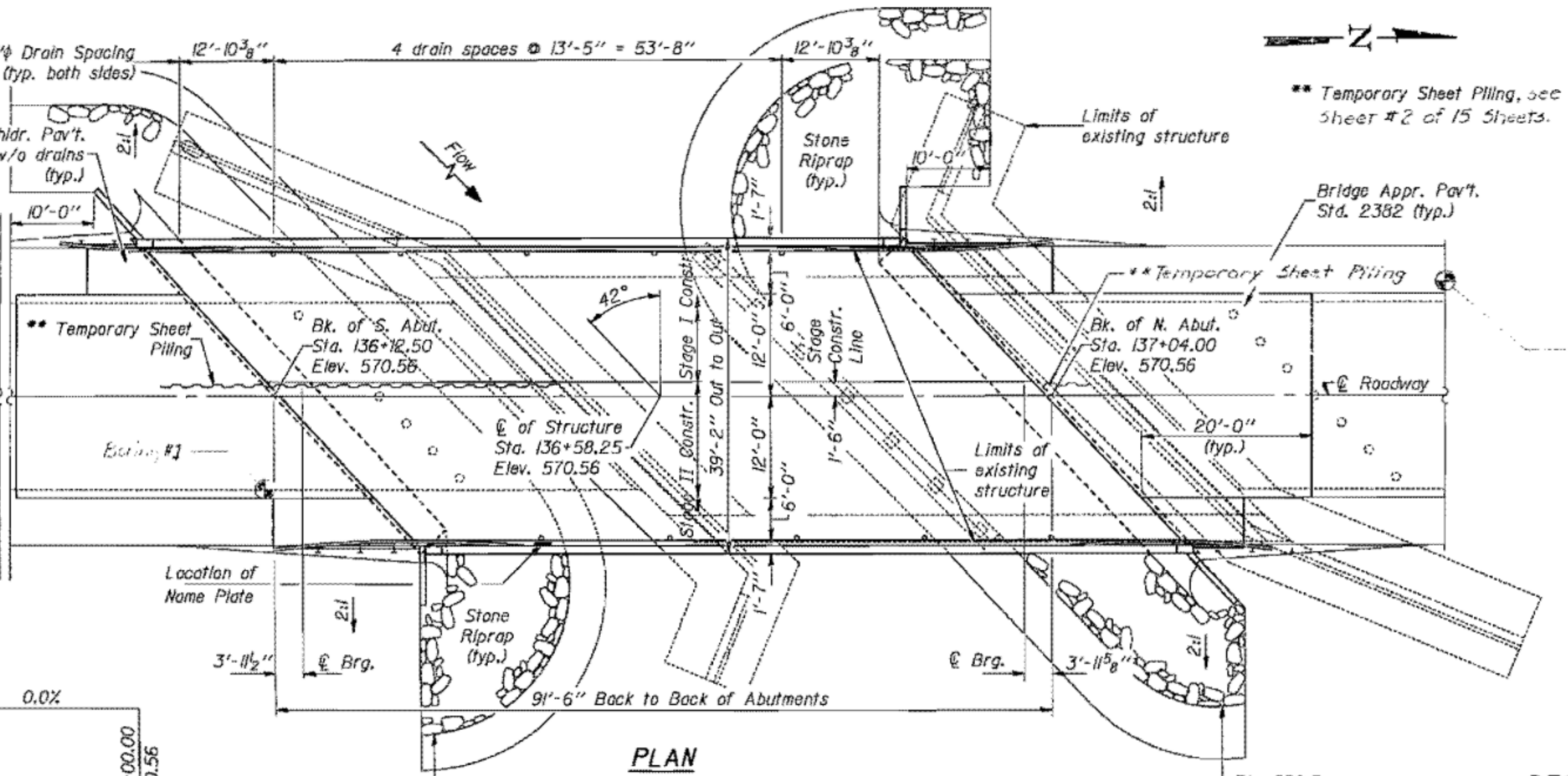


ELEVATION

GENERAL NOTES

See Proposal for Boring Data.
All structural steel shall be shop painted with the zinc-silicate and vinyl paint system.
Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, or M-53 Grade 60.
Layout of stone riprap may be varied in the field to suit ground conditions as directed by the Engineer.
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
The contractor shall drive (1) Steel (HP10x42) test pile in a permanent location at the South Abutment as directed by the Engineer before ordering the remainder of piles.

FOR INFORMATION ONLY



** Temporary Sheet Piling, see Sheet #2 of 15 Sheets.

PLAN

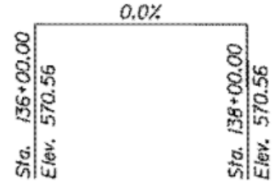
STATION 136+58.25
BUILT 198 BY
STATE OF ILLINOIS
F.A. RT. 100 SEC. 110BR
PROJECT F-100(59)
LOADING HS20
STR. NO. 032-0089

NAME PLATE

See Std. 2113

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Class X Concrete Superstructure	Cu. Yd.	133.7		133.7
Class X Concrete	Cu. Yd.		32.5	32.5
Reinforcement Bars (Epoxy Coated)	Lbs.	24,040		24,040
Reinforcement Bars	Lbs.		8,170	8,170
Furnishing & Erecting Precast Prestressed Concrete I Beams (54")	Lin. Ft.	510		510
Steel Piles (HP10x42)	Lin. Ft.		778	778
Test Piles Steel (HP10x42)	Each		1	1
Name Plates	Each	1		1
Stone Riprap	Sq. Yd.		542	542
Structure Excavation	Cu. Yd.	268		268
Preformed Joint Seal (1 3/4")	Lin. Ft.	53		53
Neoprene Expansion Joint (2")	Lin. Ft.	51		51
Protective Coat	Sq. Yd.		71	71
Structural Steel	Lbs.	1,330	1,440	2,770
Elastomeric Bearing Assembly, Type I	Each	6		6
Removal of Existing Structure	Each		1	1
Temporary Sheet Piling	Sq. Ft.		1774	1774
Floor Drains	Each	10		10



PROFILE GRADE

(along ℄ roadway)

DESIGNED Victor Veliz
CHECKED Eric Grady
DRAWN Rita Williams
CHECKED V.V.

EXAMINED — ENGINEER OF BRIDGE DESIGN
PASSED — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

WATERWAY INFORMATION

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.*	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Drainage Area = 12.0 sq. mi. Low Grade Elev. 570.50 @ Sta. 139+00.00									
Design	50	1111	228	232	562.53	1.06	0.77	563.6	563.3
Base	100	1274	234	239	562.68	1.35	1.02	564.0	563.7
Overtopping									
Max. Calc.	500	1657	248	256	563.00	2.07	1.61	565.1	564.6

* Single Span, open abutment bridge with 42° skew angle.

DESIGN SPECIFICATIONS

AASHTO (1983) and applicable Interims (1984 thru 1985)

LOADING HS20-44

Allow 25#/sq. ft. for future wearing surface.

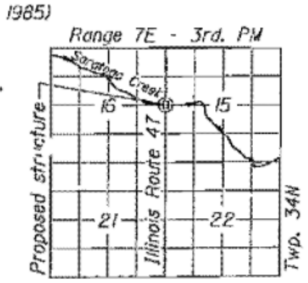
DESIGN STRESSES

FIELD UNITS

f'_c = 3,500 psi
f_y = 60,000 psi (reinf.)
f_y = 36,000 psi (Struc.)

PRECAST PRESTRESSED UNITS

f'_c = 5,000 psi
f'_{ci} = 4,000 psi minimum
f'_s = 270,000 psi (1/2" ⌀ strands)
f'_{si} = 189,000 psi (1/2" ⌀ strands)



LOCATION SKETCH

GENERAL PLAN
ILLINOIS ROUTE 47 OVER
SARATOGA CREEK
F.A. ROUTE 100 - SECTION 110BR
GRUNDY COUNTY
STATION 136+58.25
STRUCTURE NO. 032-0089

FILE NAME = V:\3195\66B83 (South Section)\CADD Sheets	USER NAME = bdecraene	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	\D366B83-sht-exstruct-1.dgn	DRAWN -	REVISED -	
	PLOT SCALE = 2.0000 ' / in.	CHECKED -	REVISED -	
SHT_PLAN	PLOT DATE = 8/6/2013	DATE - 7/15/2013	REVISED -	

IL. RTE. 47
EXISTING BRIDGE PLANS

SCALE: N/A | SHEET 1 OF 23 SHEETS | STA. N/A | TO STA. N/A

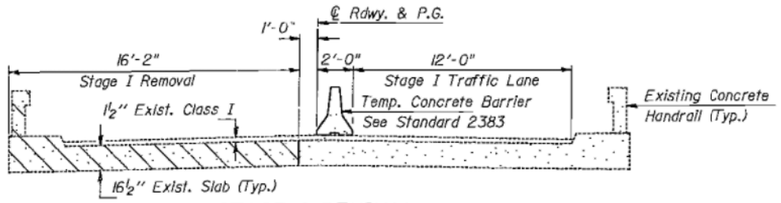
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	399
CONTRACT NO. 66B83				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. RTE. 100	7	* **	126	52
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

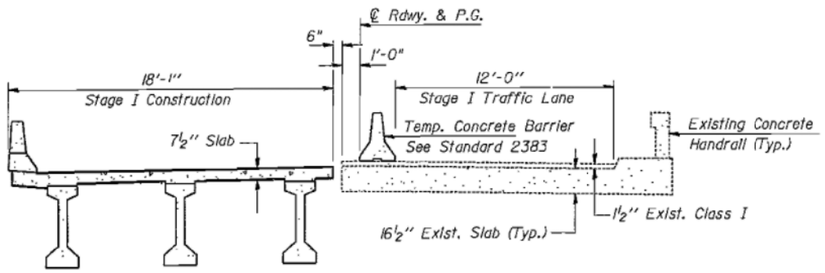
SHEET NO. 2
15 SHEETS

* 110(RS-2,13R,SE-1,8-2)
** GRUNDY 7 RENDALL



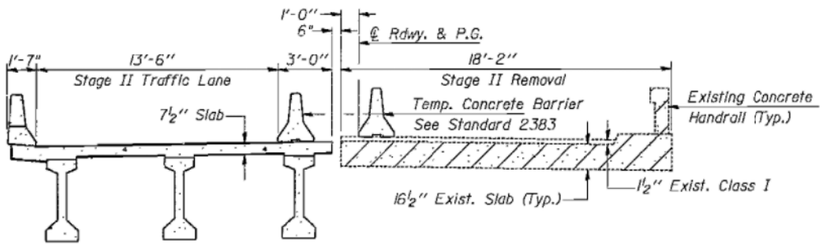
STAGE I REMOVAL

(Looking North)



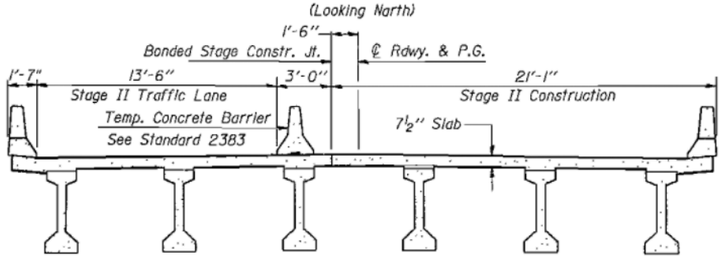
STAGE I CONSTRUCTION

(Looking North)



STAGE II REMOVAL

(Looking North)



STAGE II CONSTRUCTION

(Looking North)

Notes:

Hatched area indicates "Removal of Existing Superstructrure".
For details of "Temporary Concrete Barrier" see sheet #3 of 15 sheets.
For quantity of "Temporary Concrete Barrier" see Roadway Plans.
Cost of removal of existing concrete handrail is incidental to "Removal of Existing Structure".
Removal of existing class I asphalt is incidental to "Removal of Existing Structure".

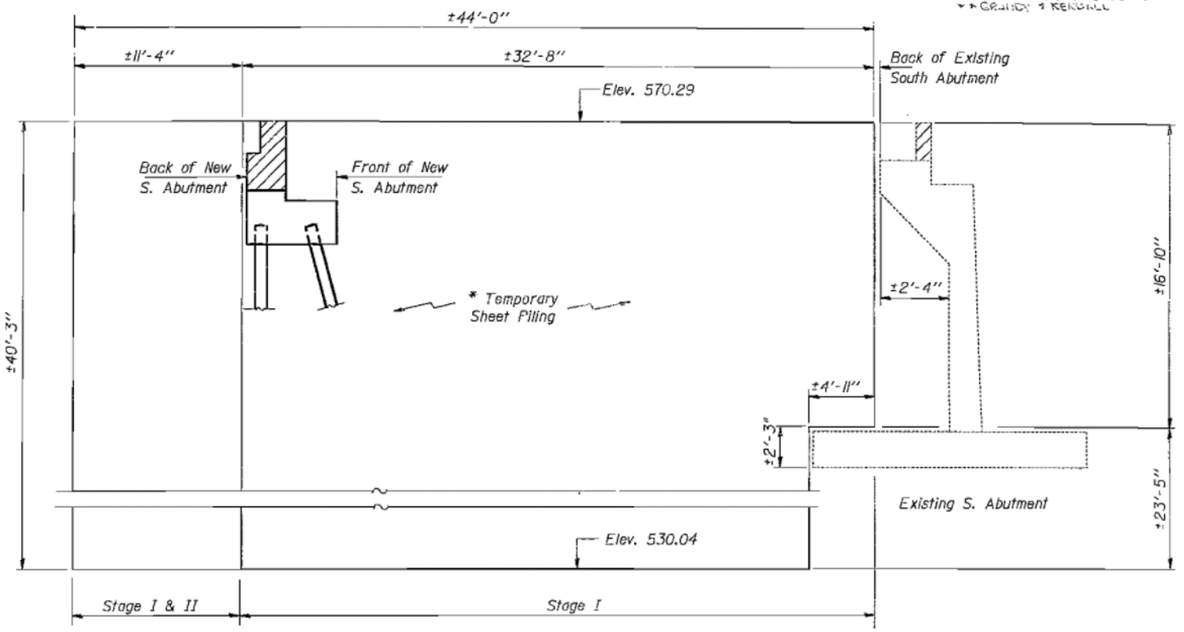
DESIGNED	VICTOR VELIZ
CHECKED	Eric Dowdy
DRAWN	Rita Williams
CHECKED	V.V. EEG pmp

May 22 1987

EXAMINED Engineer of Bridge Design

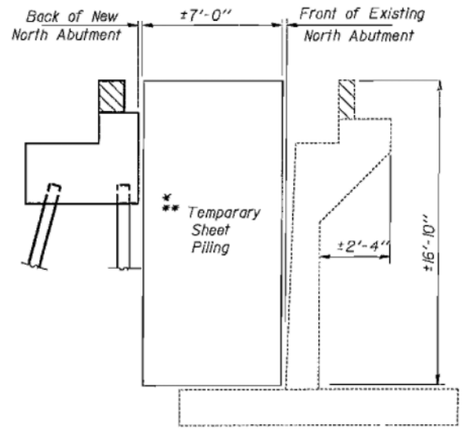
PASSED Engineer of Highways and Structures

APPROVED Director of Highways



* TEMPORARY SHEET PILING DETAIL - STAGE I & STAGE II REMOVAL & CONSTRUCTION

* The information shown for the Temporary Sheet Piling is estimated. It is the contractor's responsibility to provide a design of the Temporary Sheet Piling and associated members, if required, subject to the approval of the Engineer. The Temporary Sheet Piling should be placed as shown in details.



Existing N. Abutment

** Sheet Piling should be placed after Stage I Construction of abutment cap and prior to backfilling.

FOR INFORMATION ONLY

STAGE CONSTRUCTION DETAILS
TEMPORARY SHEET PILING DETAILS
F.A. RT. 100 SEC. 110BR
GRUNDY COUNTY
STA. 136+58.25

FILE NAME = V:\3195\66B83 (South Section)\CADD Sheets\D366B83-sht-exstruct-2.dgn	USER NAME = bdecraene	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 2.0000 ' / in.	CHECKED -	REVISED -
SHT_PLAN	PLOT DATE = 8/6/2013	DATE - 7/15/2013	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL. RTE. 47
EXISTING BRIDGE PLANS

SCALE: N/A | SHEET 2 OF 23 SHEETS | STA. N/A | TO STA. N/A

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	(110)R, BR & BR-1	GRUNDY	644	400
		CONTRACT NO. 66B83		
		ILLINOIS FED. AID PROJECT		