Benchmark: Cut square on center of door entrance to 707 W. Harrison St. (south side of Harrison St., approx. 90' west of west line of Des Plaines St.). Elevation 597.47.

Existing Structure: None. Traffic shall be maintained on the existing Ramp EN Structure (S.N. 016-2453) during construction of the proposed retaining wall. Subsequently, traffic shall be detoured to allow for construction of the remaining portions of the proposed Ramp EN (S.N. 016-1712) approaches and bridge structure.

HIGHWAY CLASSIFICATION

Ramp EN
Functional Class: Interstate
ADT: 26,600 (2012); 31,000 (2040)
ADTT: 1,032 (2012); 1,203 (2040)
DHV: 1,910 (2040)
Design Speed: 30 m.p.h.
Posted Speed: 30 m.p.h.
One-Way Traffic
Directional Distribution: 100%

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 and 2016 Interim Revisions

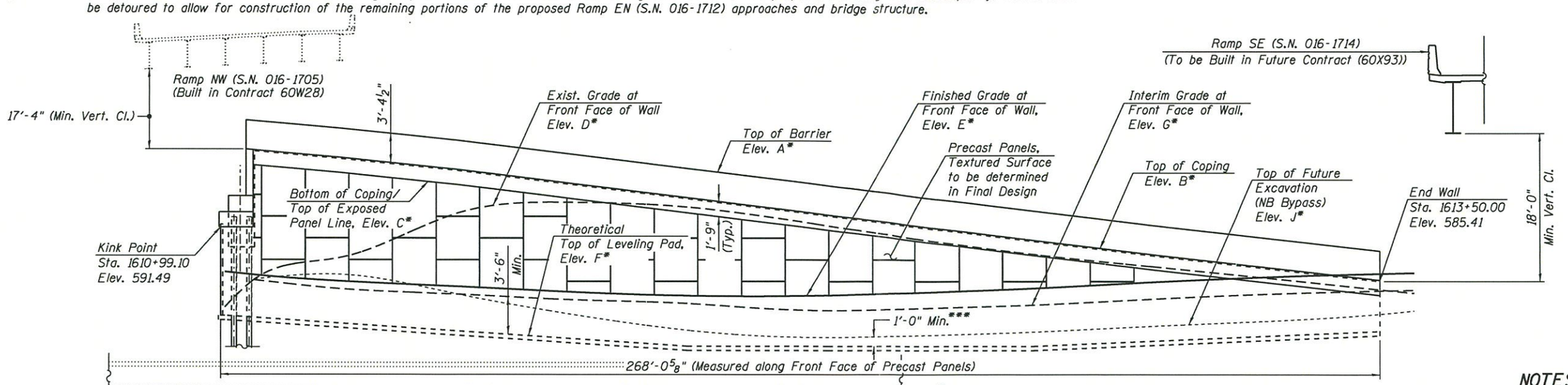
DESIGN STRESSES

FIELD UNITS

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

PRECAST UNITS

f'c = 4,500 psi



PARTIAL UNFOLDED ELEVATION

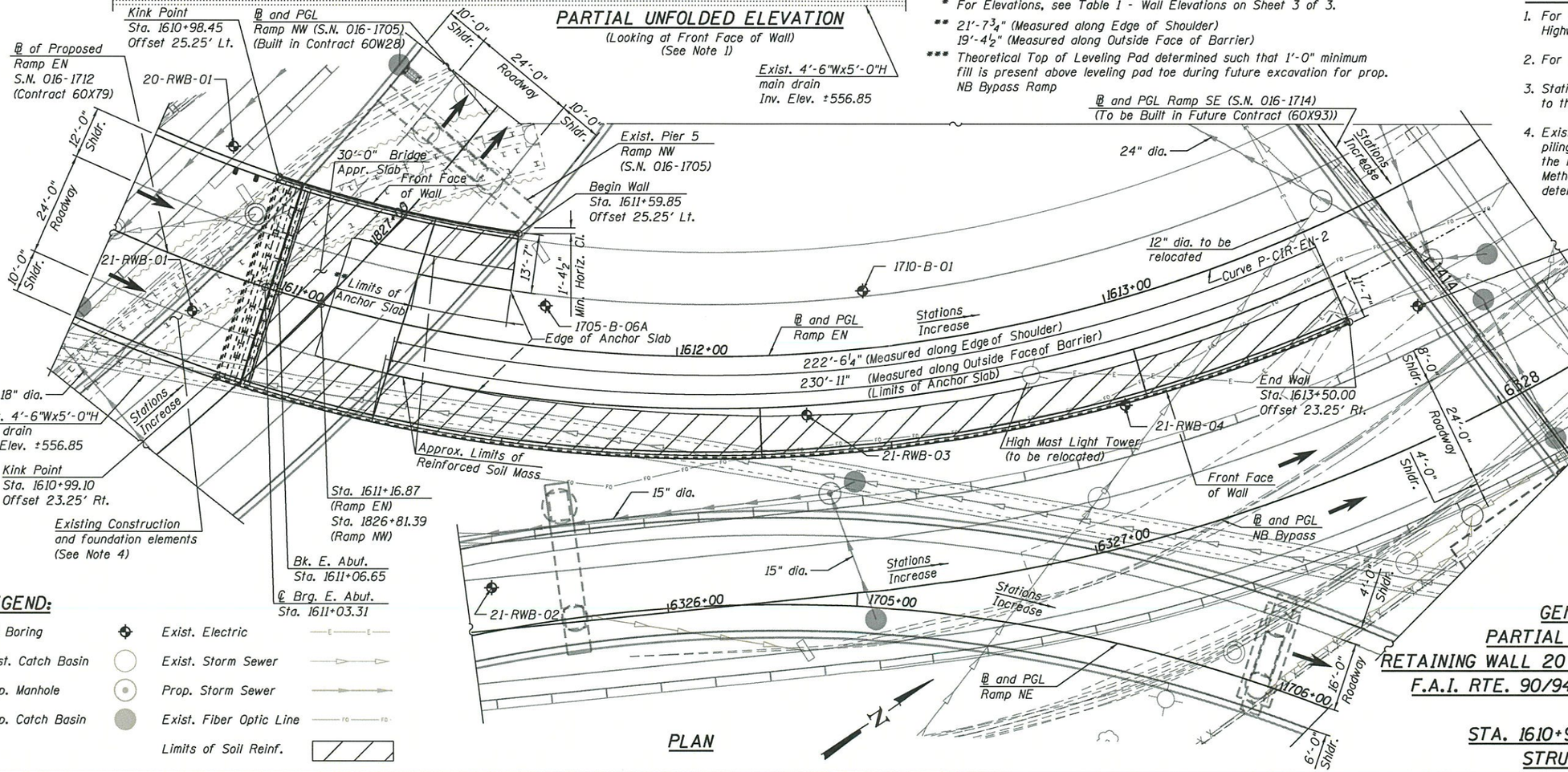
(Looking at Front Face of Wall)
(See Note 1)

Exist. 4'-6"Wx5'-0"H main drain Inv. Elev. ±556.85

* For Elevations, see Table 1 - Wall Elevations on Sheet 3 of 3.

** 21'-7¾" (Measured along Edge of Shoulder)
19'-4½" (Measured along Outside Face of Barrier)

*** Theoretical Top of Leveling Pad determined such that 1'-0" minimum fill is present above leveling pad toe during future excavation for prop. NB Bypass Ramp



PLAN

NOTES:

1. For remaining portions of Unfolded Elevation and Highway Classification Data, see Sheet 2.
2. For Table 1 - Wall Elevations, see Sheet 3.
3. Stations and offsets are measured along ℄ Ramp EN to the front face of precast panels.
4. Existing construction and foundation elements (sheet piling, drilled shafts, steel piles, etc.) are present at the north portion of proposed Retaining Wall 20. Methods for resolving potential conflicts will be determined during the design phase.

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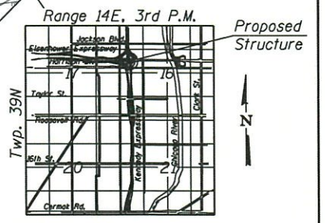

LOCATION SKETCH

LEGEND:

Soil Boring	⊕	Exist. Electric	—E—E—
Exist. Catch Basin	○	Exist. Storm Sewer	——▷——
Prop. Manhole	◉	Prop. Storm Sewer	——▶——
Prop. Catch Basin	●	Exist. Fiber Optic Line	—FO—FO—
		Limits of Soil Reinf.	▨

GENERAL PLAN AND PARTIAL UNFOLDED ELEVATION RETAINING WALL 20 ALONG RAMP EN EAST ABUTMENT F.A.I. RTE. 90/94/290 - SECTION 2014-005R&B COOK COUNTY STA. 1610+99.10 TO STA. 1613+50.00 STRUCTURE NO. 016-1811

HBM ENGINEERING GROUP, LLC.
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	DRAWN - SK	REVISED -	
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PLOT DATE = 3/24/2018	DATE - 03/23/2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-1811

SCALE: | SHEET 1 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	3	1
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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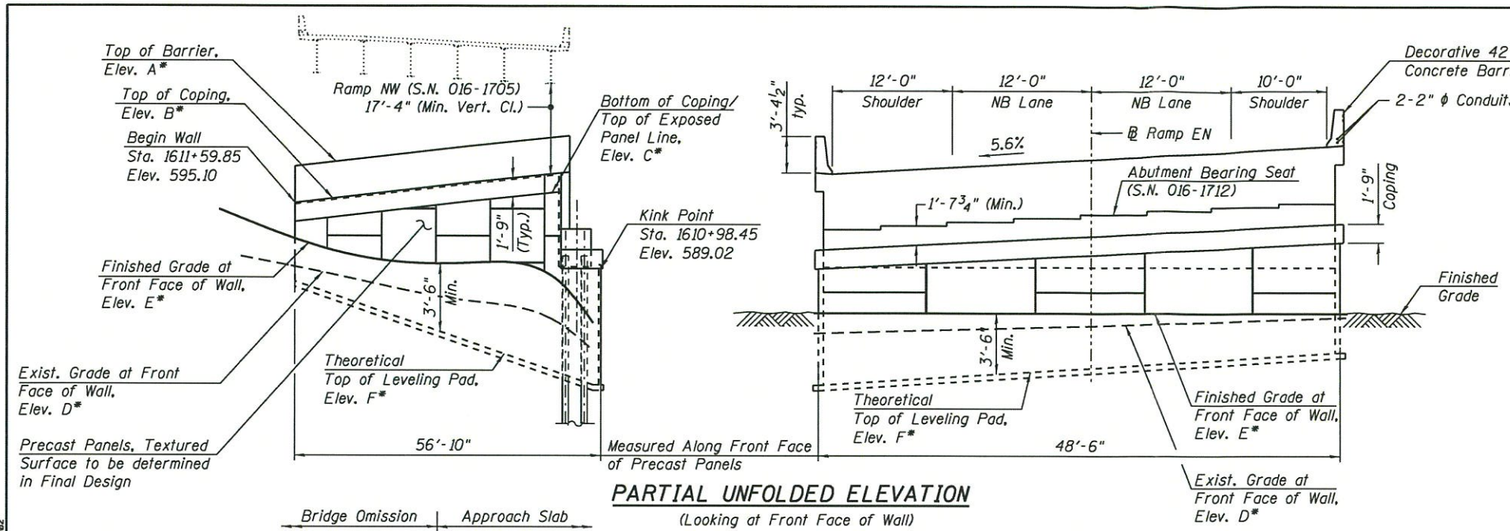
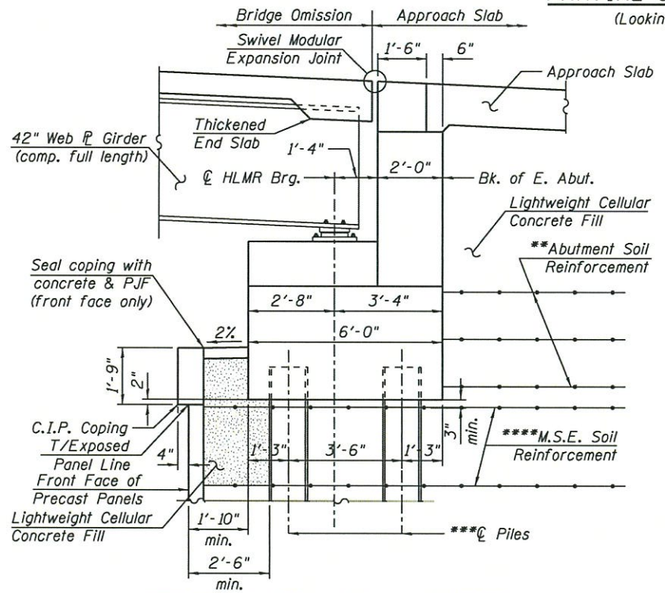


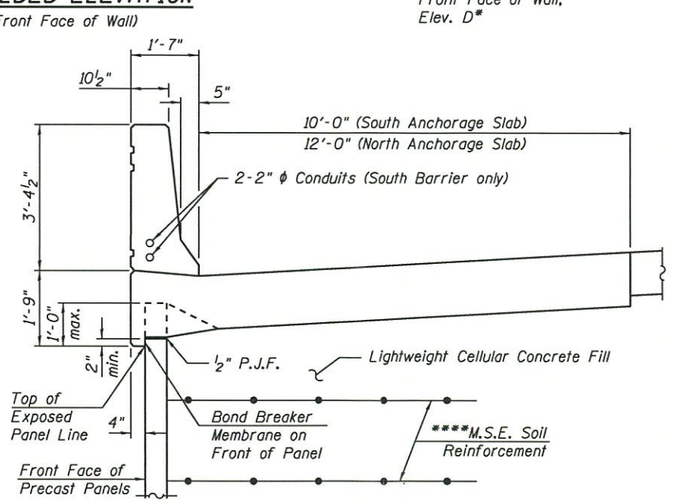
PARTIAL UNFOLDED ELEVATION

(Looking at Front Face of Wall)



SECTION THRU EAST ABUTMENT

(Horiz. Dims. @ Rt. L's to ℄ Brg.)



SECTION THROUGH BARRIER AND ANCHORAGE SLAB

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AS A BASIS FOR PREPARATION OF DETAILED PLANS

HIGHWAY CLASSIFICATION

Ramp NW	NB Bypass	Ramp SE
Functional Class: Interstate	Functional Class: Interstate	Functional Class: Interstate
ADT: 32,500 (2012); 36,000 (2040)	ADT: NA (2012); 17,000 (2040)	ADT: 4,600 (2010); 5,000 (2040)
ADTT: 2,483 (2012); 2,730 (2040)	ADTT: NA (2012); 442 (2040)	ADTT: 123 (2012); 134 (2040)
DHV: 2,790 (2040)	DHV: 1,680 (2040)	DHV: 440 (2040)
Design Speed: 35 m.p.h.	Design Speed: 30 m.p.h.	Design Speed: 25 m.p.h.
Posted Speed: 35 m.p.h.	Posted Speed: 30 m.p.h.	Posted Speed: 25 m.p.h.
One-Way Traffic	One-Way Traffic	One-Way Traffic
Directional Distribution: N/A	Directional Distribution: NA	Directional Distribution: 100%

NOTES:

1. All Lightweight Cellular Concrete Fill shall be Class III.
2. For additional Notes, see Sheet 1.

* For Elevations, see Table 1 - Wall Elevations on Sheet 3 of 3.

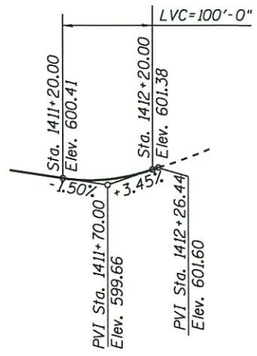
** Abutment soil reinforcement to resist lateral loads in lieu of steel piles.

*** Size, spacing, depth and number as required by design.

**** The MSE Wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1 ksf and horizontal sliding force of 0.83 kips/ft of wall.

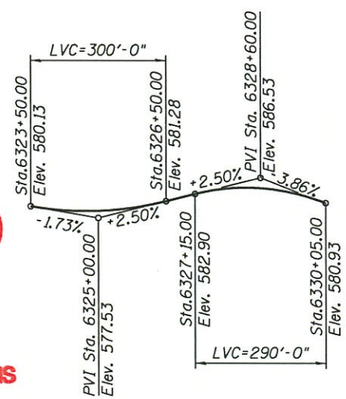
CURVE DATA

(RAMP SE)
PROP. CURVE P-CIR-SE-2
PI STA. = 1415+83.08
Δ = 157° 44' 18" (LT)
D = 24° 48' 12"
R = 231.00'
T = 1,174.08'
L = 635.96'
E = 965.59'
e = 5.60%
T.R. = NA
S.E. RUN = 128'
P.C. STA. = 1404+09.00
P.T. STA. = 1410+44.95
DS = 25
PS = 25



PROFILE GRADE

(Along ℄ RAMP SE)



PROFILE GRADE

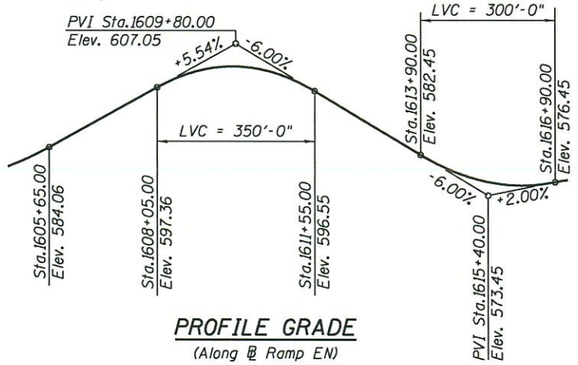
(Along ℄ NB Bypass)

CURVE DATA

(RAMP NB Bypass)
(Prop. Curve P-NCD-NX-4)
P.I. Sta. = 6328+76.78
Δ = 59° 05' 41" (LT)
D = 14° 08' 50"
R = 405.00'
T = 229.58'
L = 417.72'
E = 60.54'
e = 5.40%
T.R. = 36'
S.E. Run =98'
P.C. Sta. = 6326+47.20
P.T. Sta. = 6330+64.91
DS = 30
PS = 30

CURVE DATA

(RAMP EN)
(PROP. CURVE P-CIR-EN-2)
PI STA. = 1624+41.43
Δ = 158° 32' 09" (LT)
D = 16° 51' 06"
R = 340.00'
T = 1,793.89'
L = 940.77'
E = 1,485.82'
e = 5.60%
T.R. = 36'
S.E. RUN = 102'
P.C. STA. = 1606+47.54
P.T. STA. = 1615+88.31
DS = 30
PS = 30

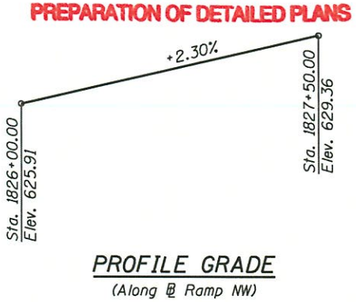


PROFILE GRADE

(Along ℄ Ramp EN)

CURVE DATA

(RAMP NW)
(Prop. Curve P-CIR-NW-6)
P.I. Sta. = 1831+44.22
Δ = 88° 30' 25" (LT)
D = 10° 36' 37"
R = 540.00'
T = 526.11'
L = 834.16'
E = 213.92'
e = 5.40%
T.R. = 39'
S.E. Run = 105'
P.C. Sta. = 1826+18.11
P.T. Sta. = 1834+52.27
DS = 35
PS = 35



PROFILE GRADE

(Along ℄ Ramp NW)

PARTIAL UNFOLDED ELEVATIONS, SECTIONS, AND DETAILS
RETAINING WALL 20 ALONG RAMP EN EAST ABUTMENT
F.A.I. RTE. 90/94/290 - SECTION 2014-005R&B
COOK COUNTY
STA. 1610+99.10 TO STA. 1613+50.00
STRUCTURE NO. 016-1811

HBM ENGINEERING GROUP, LLC. CONSULTING & DESIGN INSPECTION & RATING RESEARCH & TESTING
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PLOT DATE = 3/24/2018	DATE - 03/23/2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-1811

SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	3	2
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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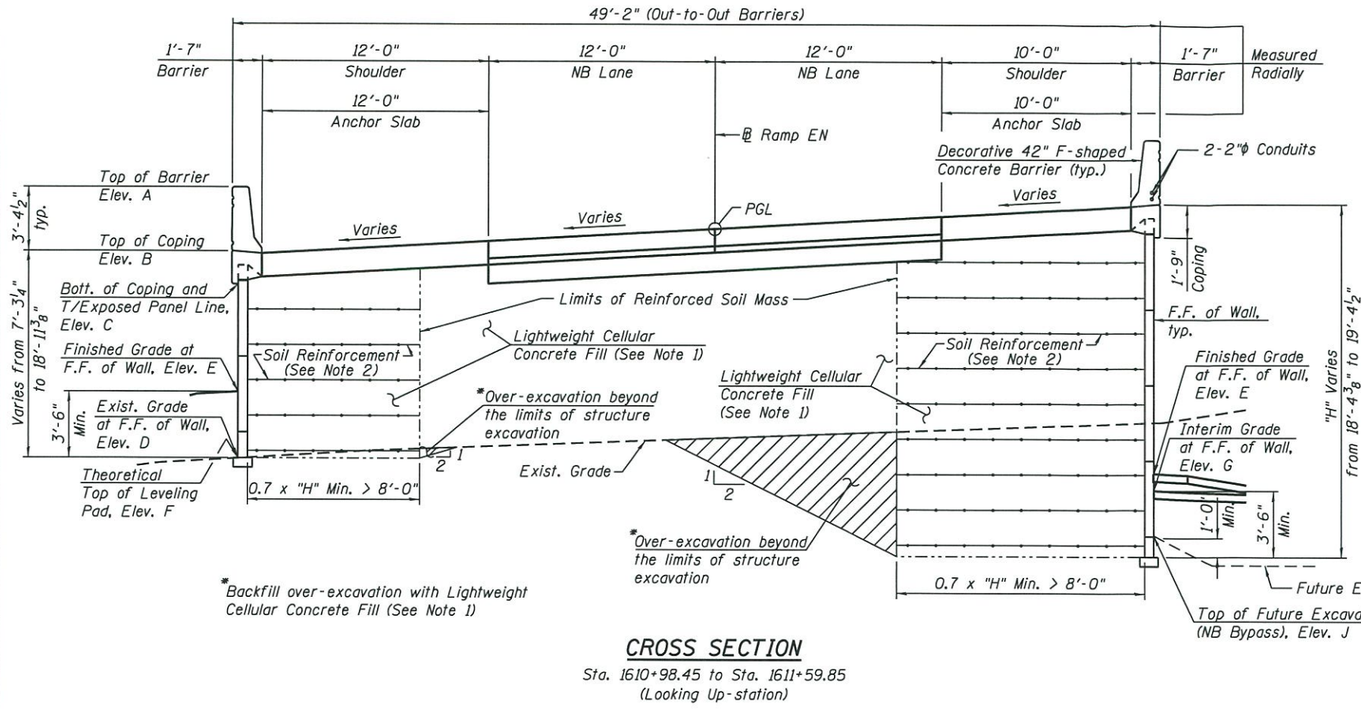
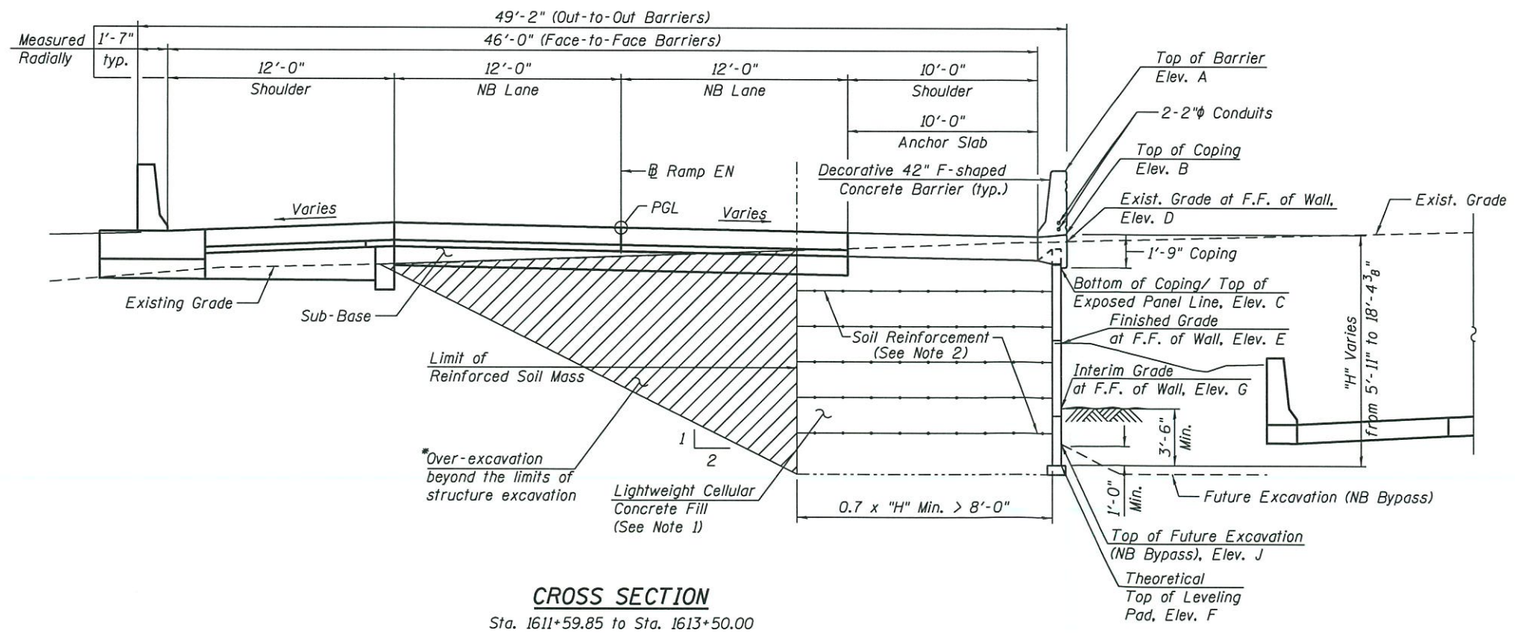


CROSS SECTION

Sta. 1610+98.45 to Sta. 1611+59.85
(Looking Up-station)



CROSS SECTION

Sta. 1611+59.85 to Sta. 1613+50.00
(Looking Up-station)

TABLE 1 - WALL ELEVATIONS

Station	Offset	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E	Elevation F	Elevation G	Elevation J
1611+59.85	25.25 LT.	598.48	595.11	593.36	589.19	591.78	587.83	-	-
1611+50.00	25.25 LT.	599.01	595.64	593.89	586.02	589.53	586.26	-	-
1611+25.00	25.25 LT.	600.36	596.99	595.24	583.99	587.86	582.25	-	-
1610+98.45	25.25 LT.	-	-	-	-	-	-	-	-
1610+99.10	23.25 RT.	-	-	-	-	-	-	-	-
1611+25.00	23.25 RT.	602.94	599.57	597.82	587.99	585.29	580.42	584.40	586.07
1611+50.00	23.25 RT.	601.58	598.21	596.46	593.08	584.68	579.54	583.78	583.82
1611+75.00	23.25 RT.	599.95	596.58	594.83	594.40	584.04	578.66	583.14	581.46
1612+00.00	23.25 RT.	598.31	594.94	593.19	593.85	583.61	577.78	582.71	579.62
1612+25.00	23.25 RT.	596.68	593.31	591.56	592.13	583.60	577.78	581.93	578.81
1612+50.00	23.25 RT.	595.04	591.67	589.92	590.16	583.97	577.78	582.13	579.00
1612+75.00	23.25 RT.	593.41	590.04	588.29	588.41	584.46	577.78	582.54	579.42
1613+00.00	23.25 RT.	591.79	588.42	586.67	587.02	585.16	578.35	583.21	580.08
1613+25.00	23.25 RT.	590.29	586.92	585.17	585.69	585.75	578.93	583.79	580.66
1613+50.00	23.25 RT.	588.79	585.42	583.67	584.32	586.17	579.50	584.18	581.50

Elevation A - Top of Barrier
Elevation B - Top of Coping
Elevation C - Bottom of Coping/Top of Exposed Panel Line
Elevation D - Exist. Grade at Front Face of Wall
Elevation E - Finished Grade at Front Face of Wall
Elevation F - Theoretical Top of Leveling Pad
Elevation G - Interim Grade at Front Face of Wall
Elevation J - Top of Future Excavation (NB Bypass)

NOTES:

1. All lightweight cellular concrete fill shall be Class III.
2. The MSE wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.83 kips/ft. of wall.
3. F.F. denotes Front Face.
4. For additional notes, see Sheet 1.

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APR 11 2018

AS A BASIS FOR PREPARATION OF DETAILED PLANS

SECTIONS
RETAINING WALL 20 ALONG RAMP EN EAST ABUTMENT
F.A.I. RTE. 90/94/290 - SECTION 2014-005R&B
COOK COUNTY
STA. 1610+99.10 TO STA. 1613+50.00
STRUCTURE NO. 016-1811

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	DRAWN - SK	REVISED -
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PLOT DATE = 3/24/2018	DATE - 03/23/2018	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-1811

SCALE: | SHEET 3 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	3	3
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			

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