Benchmark: Cut square on northwest corner of sign foundation at north side of Harrison Street, approximately 80' west of west line of Morgan Street. Elevation 593.07.

Traffic Control: Morgan Street exit ramp will be closed during construction.

Existing Structure: None

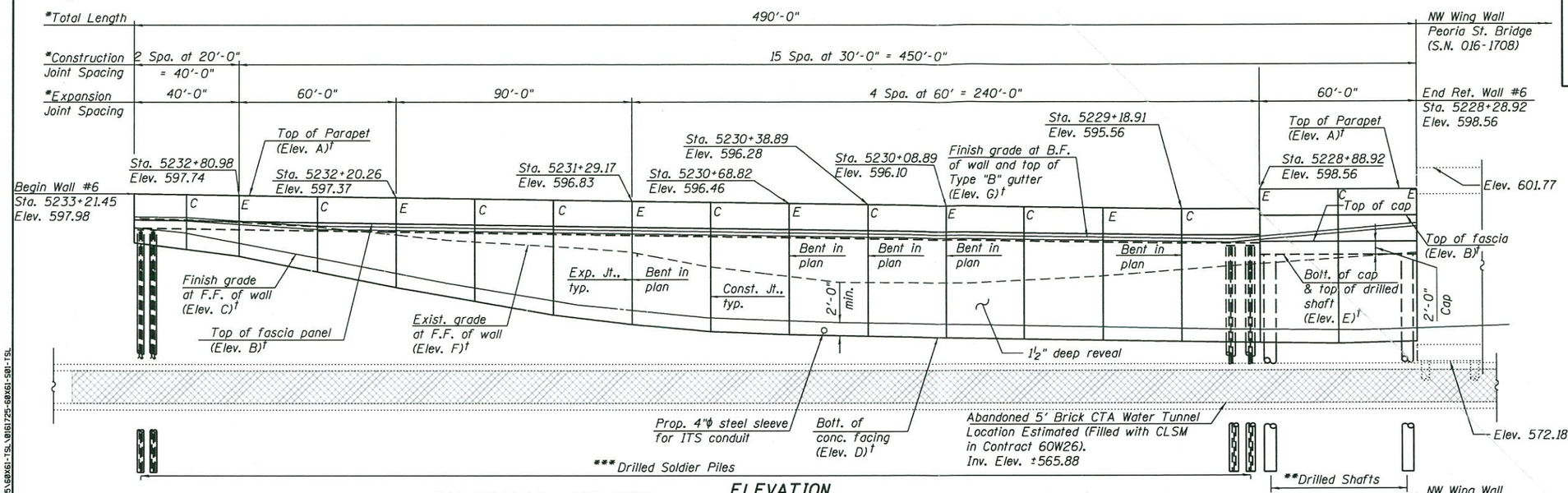
* Measured along front face of wall.

** Spacing, tip elevation and shaft diameter to be determined during final design.

*** Pile section, spacing, tip elevation and shaft diameter to be determined during final design.

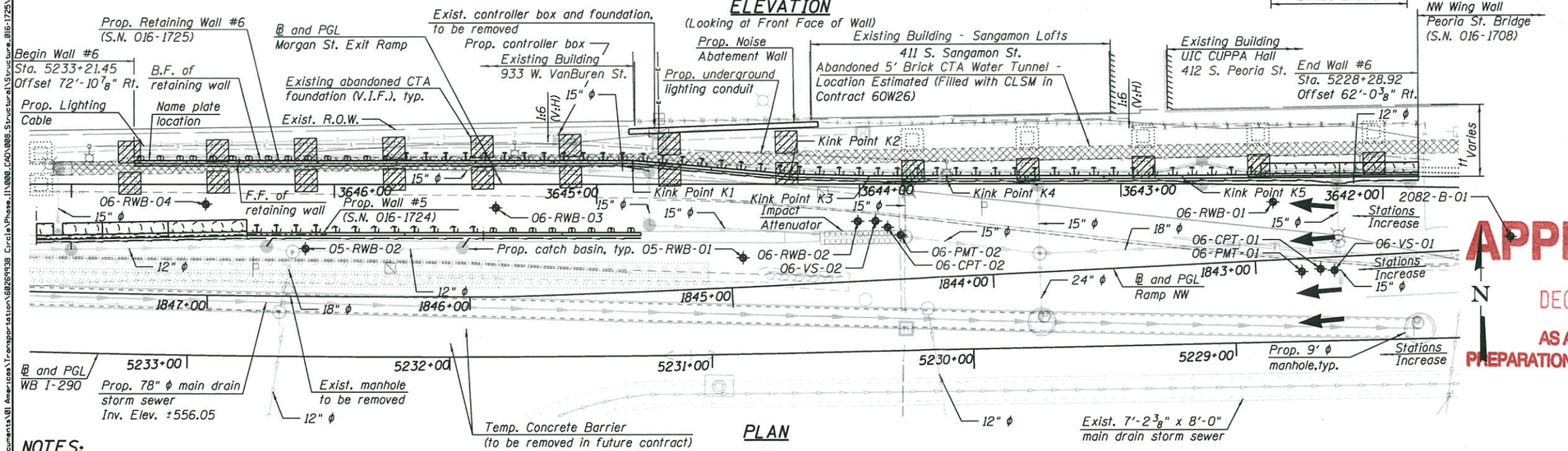
† See Elevation Table on Sheet 2

†† R.O.W to F.F. of wall dimension varies from 11'-4 3/4" at Sta. 5233+21.45 to 27'-5 3/8" at Sta. 5228+28.92



ELEVATION

(Looking at Front Face of Wall)



PLAN

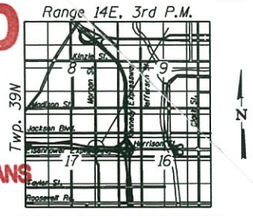
LEGEND:

Front Face	F.F.
Back Face	B.F.
Combined Sewer	
Boring Log/Soil Test	
Fire Hydrant	
Light Pole	
Exist. Electric Cable	E
Prop. Lighting Cable	L
Exist. Fence	x x
Fiber Optic	FO
Exist. Storm Sewer	
Prop. Storm Sewer	
Temp. Soil Retention System	
Water Line	W
Prop. catchbasin	
Foundation Removal	
Existing Abandoned CTA Water Tunnel (Filled with CLSM in Contract 60W26)	

APPROVED

DEC 02 2014

AS A BASIS FOR PREPARATION OF DETAILED PLANS



LOCATION SKETCH

NOTES:

1. Stations and offsets for the wall are given from the ℄ WB I-290 to the front face of wall.
2. Wall to be built along straight chords between construction joints.
3. Connect pipe underdrain below retaining wall to storm sewer system.
4. For stations and offsets at kink points, see Offset Sketch on Sheet 2.
5. Abandoned 5' Brick CTA Water Tunnel was filled with Controlled Low Strength Material (CLSM) during Contract 60W26. A number of the drilled soldier piles will be placed through this tunnel. Drilling operations must account for the presence of debris, brick material, and CLSM.
6. Some existing CTA foundations were most likely removed or partially removed when the existing exit ramp south retaining wall was originally constructed. Any existing foundation that is within the proposed excavation for the new retaining wall construction shall be removed. See contract drawings for payment.

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition

DESIGN STRESSES

FIELD UNITS

f'_c = 7,000 psi (Drilled Shafts - Panels 16 and 17)
f'_c = 3,500 psi (All other concrete)
f_y = 60,000 psi (Reinforcement)
f_y = 50,000 psi (M270 Grade 50 - Soldier Piles)

GENERAL PLAN AND ELEVATION
RETAINING WALL 6
MORGAN STREET EXIT RAMP
F.A.I. RTE. 290
(EISENHOWER EXPRESSWAY)
F.A.I. RTE. 290 - SECTION 2013-077R
COOK COUNTY
STATION 5233+21.45 TO 5228+28.92
STRUCTURE NO. 016-1725

HBM ENGINEERING GROUP, LLC
CONSULTING & DESIGN
INSPECTION & RATING
RESEARCH & TESTING
4415 WEST HARRISON ST. SUITE 231
HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901

0161725-60X61-S01-TSL	DESIGNED -	WM, MI
USER NAME = kendrabant	DRAWN -	WM
PLOT SCALE = 46.8 '/ / in.	CHECKED -	MAI, MI
PLOT DATE = 10/29/2014	DATE -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 4 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-077R	COOK	4	1
		CONTRACT NO. 60X61		
	ILLINOIS FED. AID PROJECT			

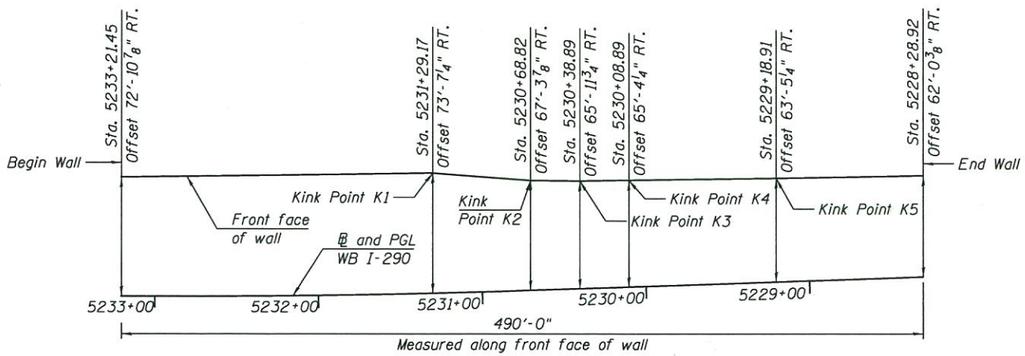
FILE PATH = pw:\\388839-pwntl.ecomonline.local:PWAECD400\Documents\01 Americas\Transportation\68269938 Circle\Phase II\008.CAD\008.Structural\S-structure_816-1725\60X61-TSL\0161725-60X61-S01-TSL

HIGHWAY CLASSIFICATION

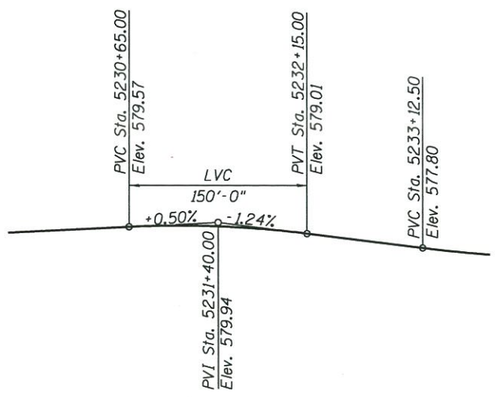
Morgan Street
Functional Class: Local Street (Urban)
ADT: 900 (2012); 4000 (2040)
ADTT: 40 (2012); 160 (2040)
DHV: 400 (2040)
Design Speed: 30 m.p.h.
Posted Speed: 30 m.p.h.
Two-Way Traffic
Directional Distribution: 50:50

FAI Rte. WB I-290 (Peoria to Racine)
Functional Class: Interstate
ADT: 84,300 (2012); 88,000 (2040)
ADTT: 2840 (2012); 2965 (2040)
DHV: 5135 (2012); 6150 (2040)
Design Speed: 50 m.p.h.
Posted Speed: 45 m.p.h.
One-Way Traffic
Directional Distribution: 100%

Morgan Street Exit Ramp
Functional Class: Interstate
ADT: 2,400 (2012); 2,000 (2040)
ADTT: 58 (2012); 48 (2040)
DHV: 192 (2012); 260 (2040)
Design Speed: 30 m.p.h.
Posted Speed: 30 m.p.h.
One-Way Traffic
Directional Distribution: 100%



OFFSET SKETCH

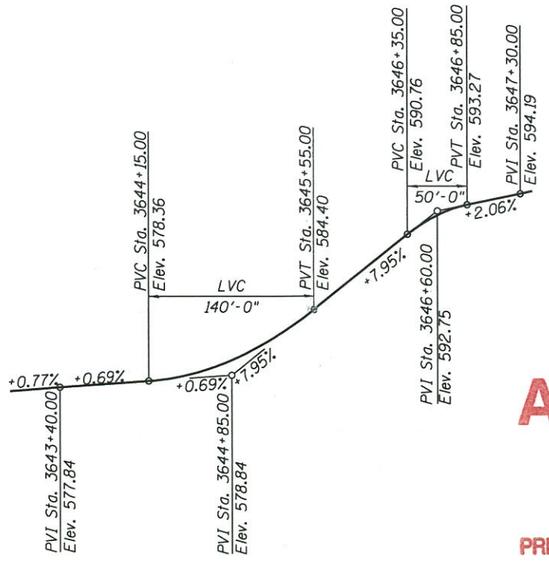


PROFILE GRADE

(along ℄ WB I-290)

CURVE DATA

(WB I-290)
(Prop. Curve P-IKE-WB-1)
P.I. Sta. = 5236+19.61
Δ = 10° 05' 11.39" (RT)
D = 0° 55' 27"
R = 6,200.00'
T = 547.15'
L = 1,091.46'
E = 24.10'
e = 2.00%
T.R. = 96' and 72'
S.E. Run Attainment = 96', 24' and 50'
S.E. Run Removal = 96' and 24'
P.C. Sta. = 5230+72.47
P.T. Sta. = 5241+63.93



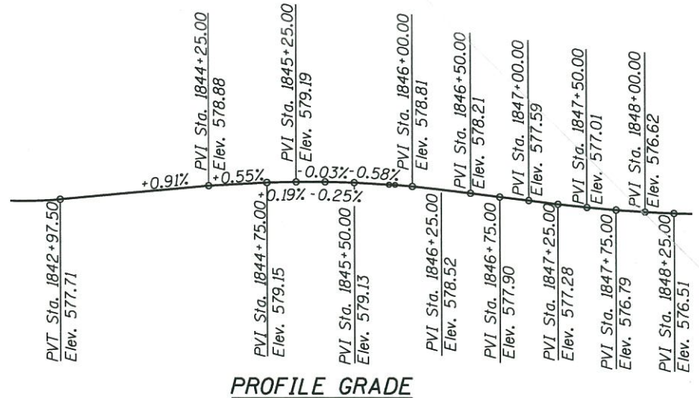
PROFILE GRADE

(along ℄ Morgan St. Exit Ramp)

ELEVATIONS TABLE

Station	Offset	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E	Elevation F	Elevation G	Wall Type
5233+21.45	72'-10 7/8"	597.98	593.98	592.80	590.48	-	594.20	594.44	Soldier Piles Wall
5233+01.22	73'-3"	597.86	593.86	591.94	589.45	-	594.01	594.33	
5232+80.98	73'-6 1/2"	597.74	593.74	590.42	588.42	-	593.58	593.81	
5232+50.62	73'-10 1/8"	597.55	593.55	588.14	586.02	-	592.91	593.04	
5232+20.26	74'-0 1/8"	597.37	593.37	585.79	583.62	-	591.66	592.87	
5231+89.90	74'-0 1/4"	597.19	593.19	583.56	581.51	-	590.61	592.69	
5231+59.53	73'-10 5/8"	597.01	593.01	581.57	579.40	-	589.89	592.51	
5231+29.17	73'-7 1/4"	596.83	592.83	580.13	577.96	-	588.99	592.33	
5230+98.98	70'-6 1/2"	596.64	592.64	578.95	576.87	-	586.75	592.15	
5230+68.82	67'-3 7/8"	596.46	592.46	578.51	576.38	-	585.29	591.97	
5230+38.89	65'-11 3/4"	596.28	592.28	578.15	576.12	-	584.35	591.79	
5230+08.89	65'-4 1/4"	596.10	592.10	577.94	575.86	-	584.27	591.61	
5229+78.90	64'-8 5/8"	595.92	591.92	577.73	575.67	-	584.69	591.43	
5229+48.91	64'-0 7/8"	595.74	591.74	577.52	575.47	-	585.32	591.25	
5229+18.91	63'-5 1/4"	595.56	591.56	577.28	575.26	-	586.25	591.07	
5228+88.92*	62'-11 5/8"	595.56	591.56	577.10	575.09	588.56	587.15	591.33	
5228+88.92**	62'-11 5/8"	598.56	594.56	577.10	575.09	588.56	587.15	591.33	Drilled Shafts Wall
5228+58.92	62'-6"	598.56	594.56	577.01	574.92	588.56	587.99	592.36	
5228+28.92	62'-0 3/8"	598.56	594.56	577.25	575.24	588.56	588.83	593.39	

Elevation A- Top of Parapet
Elevation B- Top of Fascia Panel
Elevation C- Finish Grade at Front Face of Fascia Panel
Elevation D- Bottom of Fascia Panel / Top of Encasement Concrete
Elevation E- Bottom of Cap / Top of Drilled Shaft
Elevation F- Existing Grade at Front Face of Fascia Panel
Elevation G- Grade at Back Face of Fascia Panel / Top of Type "B" Gutter
* Elevations just to the left of expansion joint.
** Elevations just to the right of expansion joint.



PROFILE GRADE

(along ℄ Ramp NW)

CURVE DATA

(Ramp NW)
(Prop. Curve P-CIR-NW-7)
P.I. Sta. = 1845+33.13
Δ = 0° 57' 55" (RT)
D = 0° 55' 39"
R = 6,177.00'
T = 52.03'
L = 104.06'
E = 0.22'
e = N.C.
T.R. = N/A
S.E. Run = N/A
P.C. Sta. = 1844+81.10
P.T. Sta. = 1845+85.16

APPROVED
DEC 02 2014
AS A BASIS FOR
PREPARATION OF DETAILED PLANS

PGLS AND MISC. DETAILS
RETAINING WALL 6
MORGAN STREET EXIT RAMP
F.A.I. RTE. 290
(EISENHOWER EXPRESSWAY)
F.A.I. RTE. 290 - SECTION 2013-077R
COOK COUNTY
STATION 5233+21.45 TO 5228+28.92
STRUCTURE NO. 016-1725

FILE PATH = par\\388839-pwnt1.aecomonline.local\PWAECOM\WB\Documents\01 Americas\Transportation\60285938 Circle\Phase II\000.CAD\WB8.Structural\Structure.B16-1725\S60X61-S02-PGL

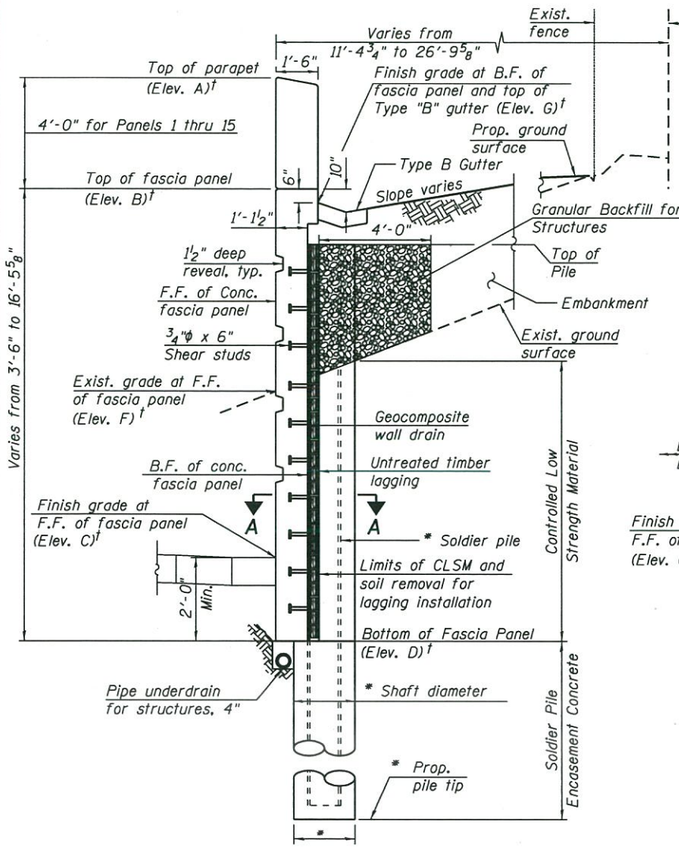
HBM ENGINEERING GROUP, LLC
CONSULTING & DESIGN
INSPECTION & RATING
RESEARCH & TESTING
4415 WEST HARRISON ST.
SUITE 231
HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901

0161725-60X61-S02-PGL	DESIGNED -	WM, MI	
USER NAME = ken.drabant	DRAWN -	WM	
PLOT SCALE = 20.0000 ' / in.	CHECKED -	MAI, MI	
PLOT DATE = 10/29/2014	DATE -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

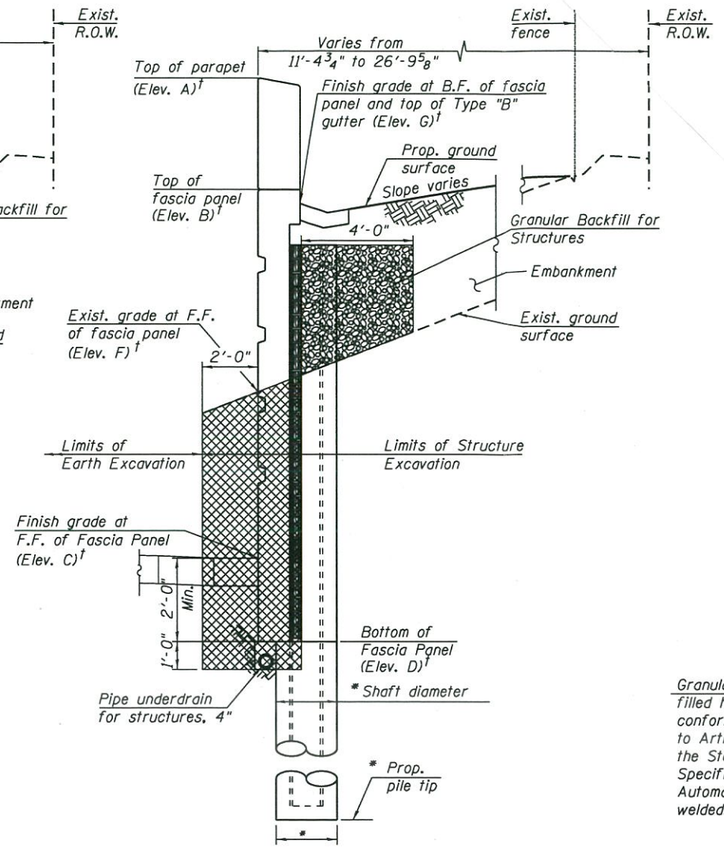
SHEET 2 OF 4 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-077R	COOK	4	2
		CONTRACT NO. 60X61		
		ILLINOIS FED. AID PROJECT		



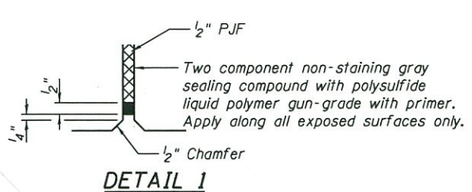
TYPICAL CROSS SECTION

(Looking Upstation)
(From Sta. 5228+88.92 to Sta. 5233+21.45)

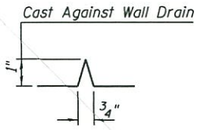


STRUCTURE EXCAVATION

(Looking Upstation)
(For proposed wall)



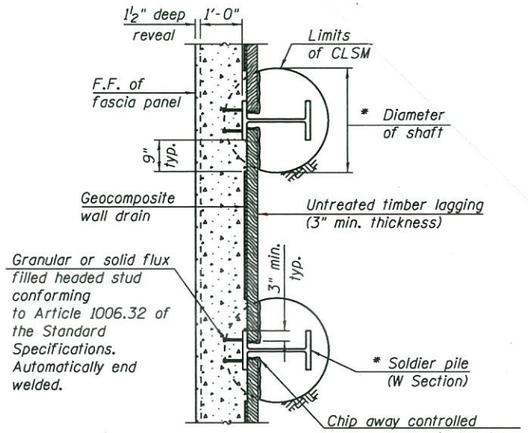
DETAIL 1



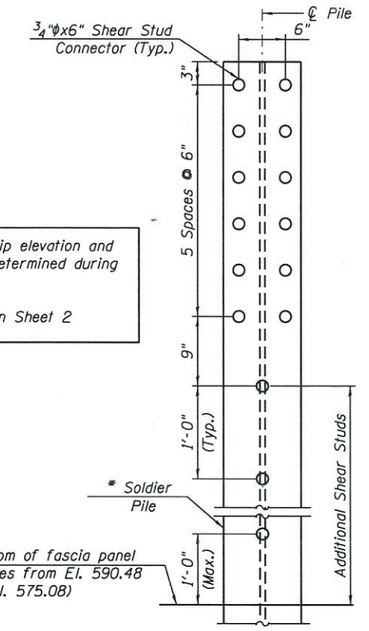
DETAIL 2

* Pile section, spacing, tip elevation and shaft diameter to be determined during final design.

† See Elevations Table on Sheet 2



SECTION A-A



SHEAR STUD DETAIL

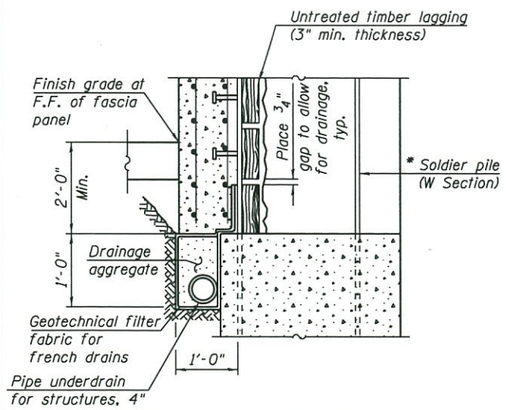
LEGEND

- Concrete Structures
- Structure Excavation
- B.F. - Back Face
- F.F. - Front Face

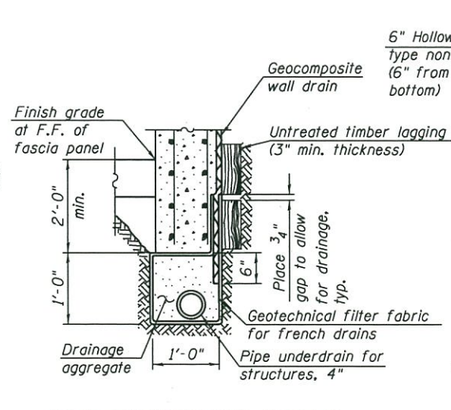
APPROVED

DEC 02 2014

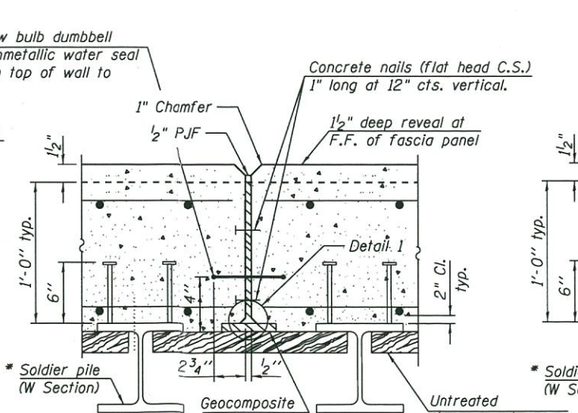
AS A BASIS FOR PREPARATION OF DETAILED PLANS



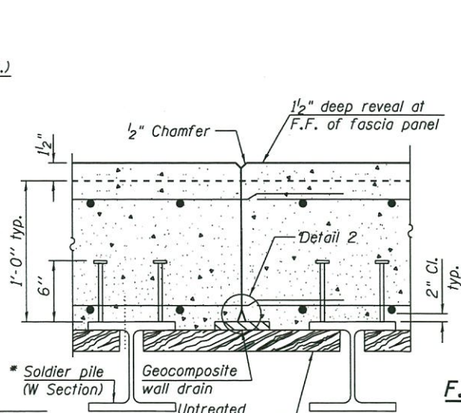
PIPE UNDERDRAIN DETAIL AT SOLDIER PILE



PIPE UNDERDRAIN DETAIL BETWEEN SOLDIER PILES



EXPANSION JOINT DETAILS



CONSTRUCTION JOINT DETAILS

SOLDIER PILE WALL DETAILS
RETAINING WALL 6
MORGAN STREET EXIT RAMP
F.A.I. RTE. 290
(EISENHOWER EXPRESSWAY)
F.A.I. RTE. 290 - SECTION 2013-077R
COOK COUNTY
STATION 5233+21.45 TO 5228+28.92
STRUCTURE NO. 016-1725

HBM ENGINEERING GROUP, LLC
4415 WEST HARRISON ST. SUITE 231
HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901
CONSULTING & DESIGN INSPECTION & RATING RESEARCH & TESTING

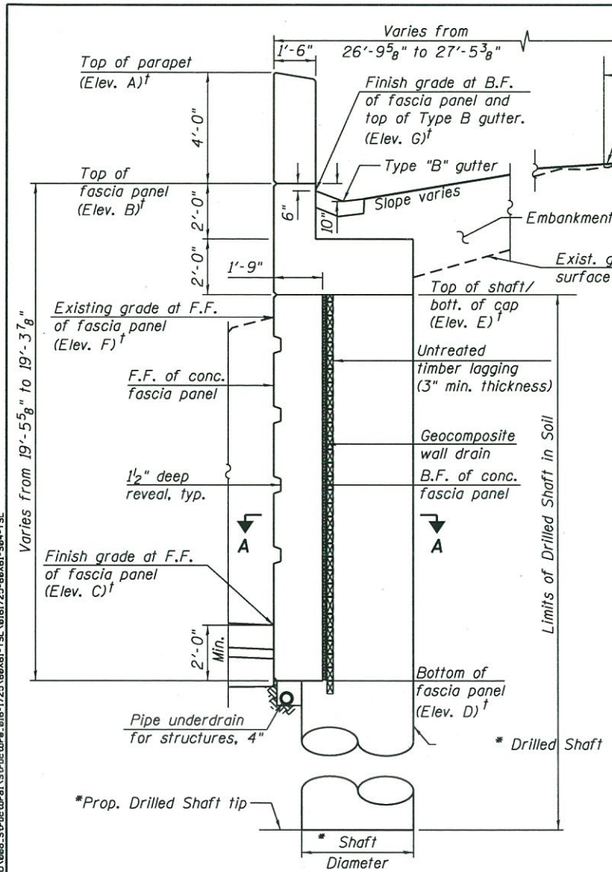
0161725-60X61-S03-TSL	DESIGNED - WM, MI	
USER NAME = kendrobert	DRAWN - WM	
PLOT SCALE = 5±4.0000 '/ in.	CHECKED - MAI, MI	
PLOT DATE = 10/29/2014	DATE -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 3 OF 4 SHEETS

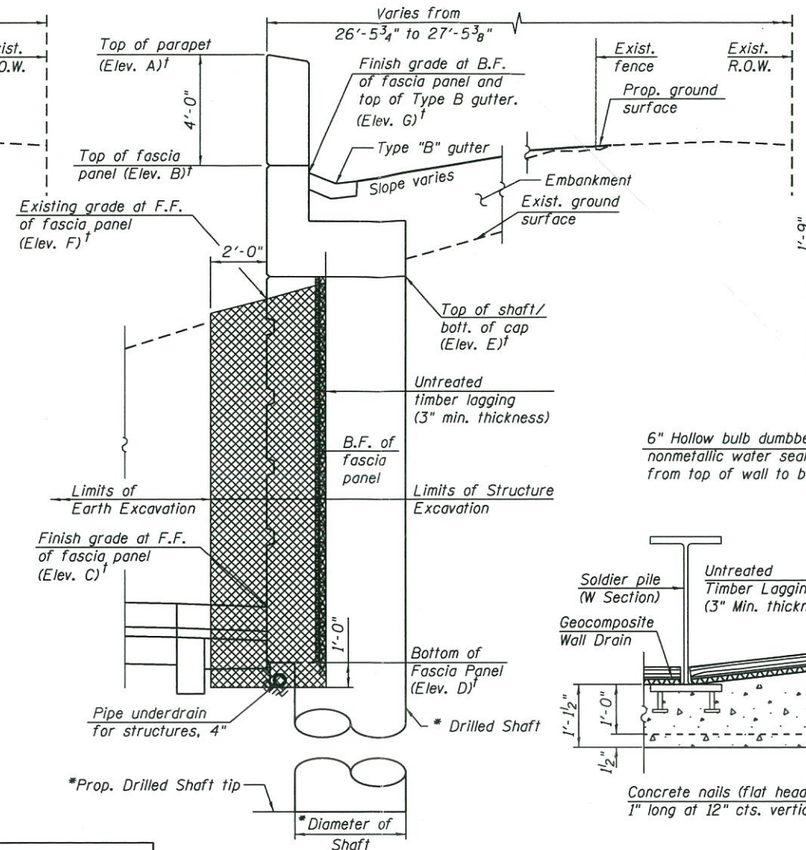
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-077R	COOK	4	3
		CONTRACT NO. 60X61		
	ILLINOIS FED. AID PROJECT			

FILE PATH = p:\388839-pw\Lacommoline.local\PW\ECDM\80\Documents\01 Americas\Transportation\68269938 Circle\Phase II\008.CADD\008.Structural\Structure.016-1725\60X61-TSL\016725-60X61-S03-TSL



TYPICAL CROSS SECTION

(Looking Upstation)
(From Sta. 5228+28.92 to Sta. 5228+88.92)

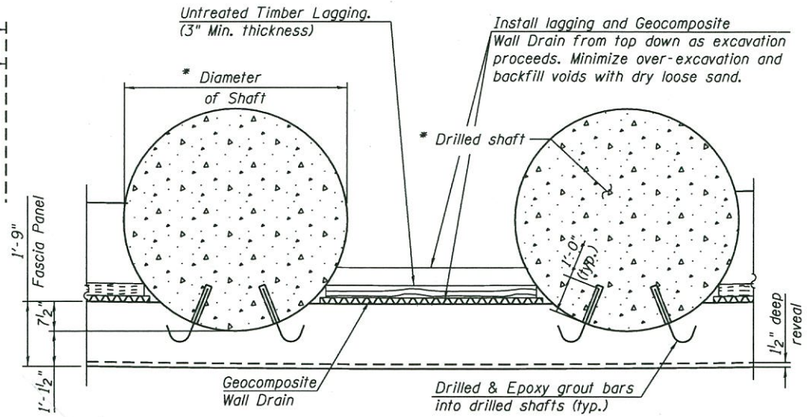


STRUCTURE EXCAVATION

(Looking Upstation)
(For proposed wall)

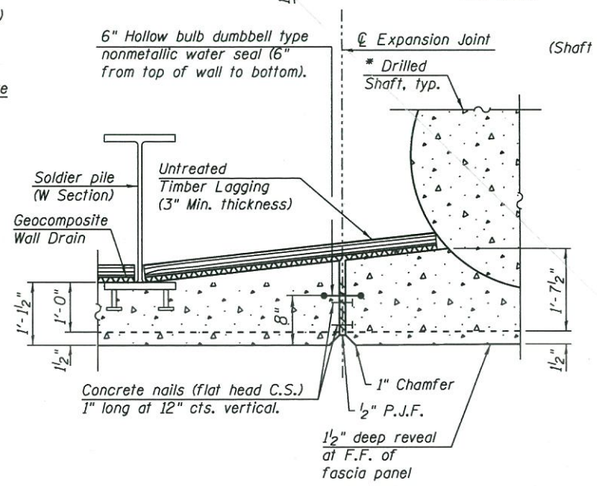
* Drilled shaft diameter, spacing and tip elevation to be determined during final design.

† See Elevation Table on Sheet 2



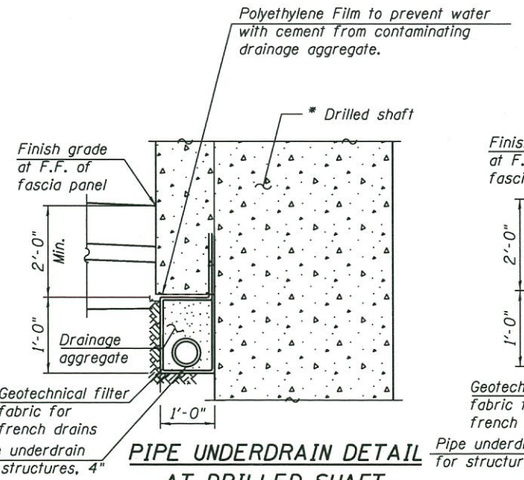
SECTION A-A

(Shaft Reinforcement not shown for clarity)

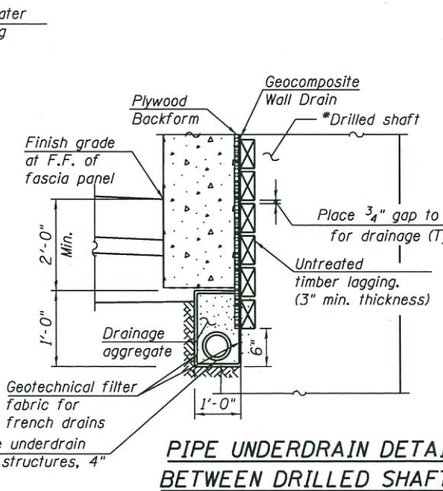


EXPANSION JOINT DETAILS

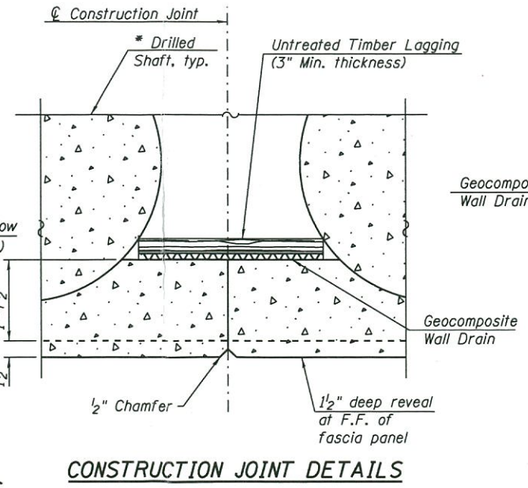
(Sta. 5228+88.92)



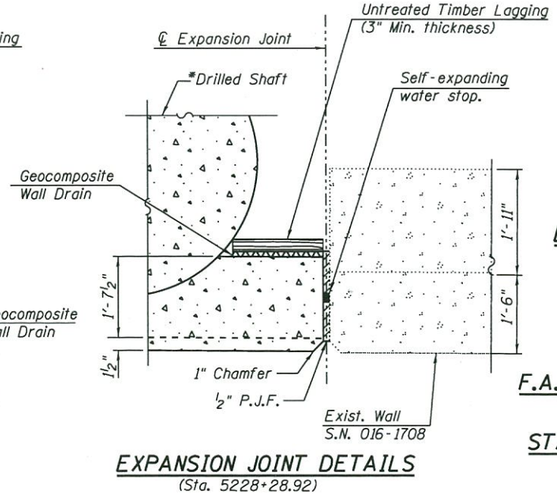
PIPE UNDERDRAIN DETAIL AT DRILLED SHAFT



PIPE UNDERDRAIN DETAIL BETWEEN DRILLED SHAFTS



CONSTRUCTION JOINT DETAILS



EXPANSION JOINT DETAILS

(Sta. 5228+28.92)

LEGEND

- Concrete Structures
- Structure Excavation
- B.F. - Back Face
- F.F. - Front Face

DRILLED SHAFT WALL DETAILS
RETAINING WALL 6
MORGAN STREET EXIT RAMP
F.A.I. RTE. 290
(EISENHOWER EXPRESSWAY)
F.A.I. RTE. 290 - SECTION 2013-077R
COOK COUNTY
STATION 5233+21.45 TO 5228+28.92
STRUCTURE NO. 016-1725

APPROVED
DEC 02 2014
AS A BASIS FOR
PREPARATION OF DETAILED PLANS

HBM ENGINEERING GROUP, LLC
CONSULTING & DESIGN
INSPECTION & RATING
RESEARCH & TESTING
4415 WEST HARRISON ST.
SUITE 231
HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901

0161725-60X61-S04-TSL	DESIGNED -	WM, MI	
USER NAME = kendrabant	DRAWN -	WM	
PLOT SCALE = 5:4 '/ in.	CHECKED -	MAI, MI	
PLOT DATE = 10/29/2014	DATE -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 4 OF 4 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-077R	COOK	4	4
		CONTRACT NO. 60X61		
		ILLINOIS FED. AID PROJECT		

FILE PATH = cad:\388839-pw1.eeconnline.local\PWAECDMBD\Documents\01 Americas\Transportation\68226938 Circle\Phase II\000_CAD\000_Structural\Structure_016-1725\60X61-TSL\0161725-60X61-S04-TSL