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.

Existing Structure: The existing retaining wall is a reinforced concrete T-type wall supported on concrete piles with attached guardrail above. The total length of the retaining wall is 282'-6½" with an exposed height that varies from approximately 18'-5" at the west end to 1'-11" at the east end (measured from grade at front face of wall). The retained height varies from 22'-8" to 9'-3⅝". A 2'-8" high crashwall is present in front of the retaining wall in Panels 1 thru 3. A 25'-4¾" portion of the existing wall was removed and replaced in Contract 60W25 with a 26'-3" long T-type wall panel adjacent to the northeast wingwall of Morgan St. Bridge (S.N. 016-1709).

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

Salvage: Existing railing attached to top of existing retaining wall.

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition

DESIGN STRESSES

FIELD UNITS

f'_c = 7,000 psi (Drilled Shafts) Panels 1, 2 & 3

f'_c = 3,500 psi (All other Concrete)

f_y = 60,000 psi (Reinforcement)

f_y = 50,000 psi (M270 Grade 50) Soldier piles

APPROVED

DEC 03 2014

AS A BASIS FOR PREPARATION OF DETAILED PLANS

* 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

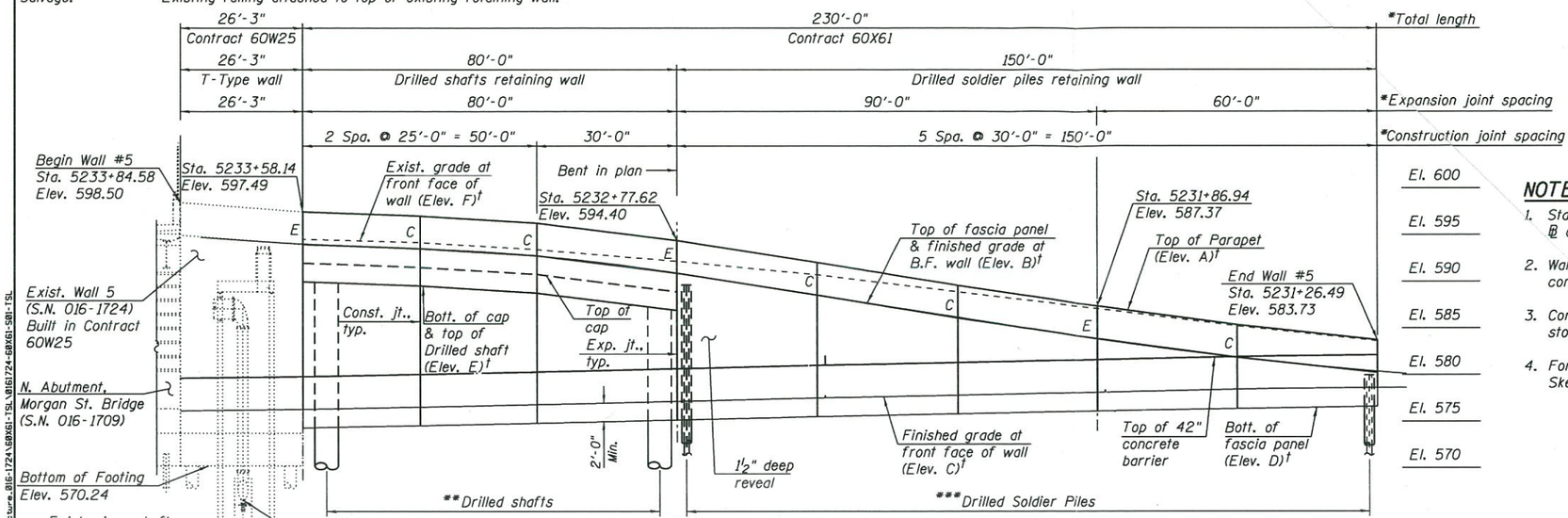
†† Temporary Soil Retention System shall be removed prior to installation of proposed 78" ϕ main drain

NOTES:

1. Stations and offsets for the wall are given from the ℄ of 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.

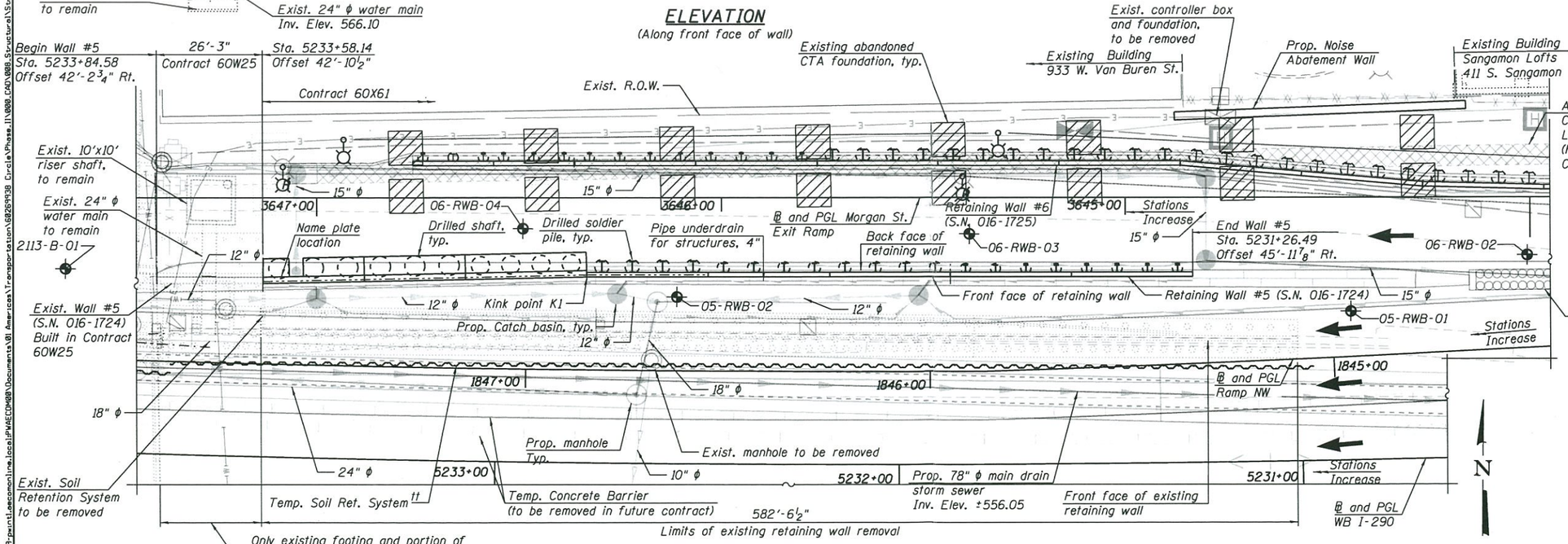
LEGEND:

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

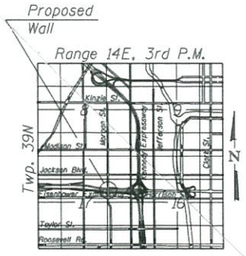


ELEVATION

(Along front face of wall)



PLAN



LOCATION SKETCH

GENERAL PLAN AND ELEVATION RETAINING WALL 5 ALONG MORGAN ST. EXIT RAMP F.A.I. RTE. 290 (EISENHOWER EXPRESSWAY) F.A.I. RTE. 290 - SECTION 2013-077R COOK COUNTY STA. 5233+84.58 TO STA. 5231+26.49 STRUCTURE NO. 016-1724

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

0161724-60X61-S01-TSL	DESIGNED - WM		
USER NAME = kendrobant	DRAWN - WM		
PLOT SCALE = 30.00 ' / in.	CHECKED - MAI, MI		
PLOT DATE = 10/29/2014	DATE -		

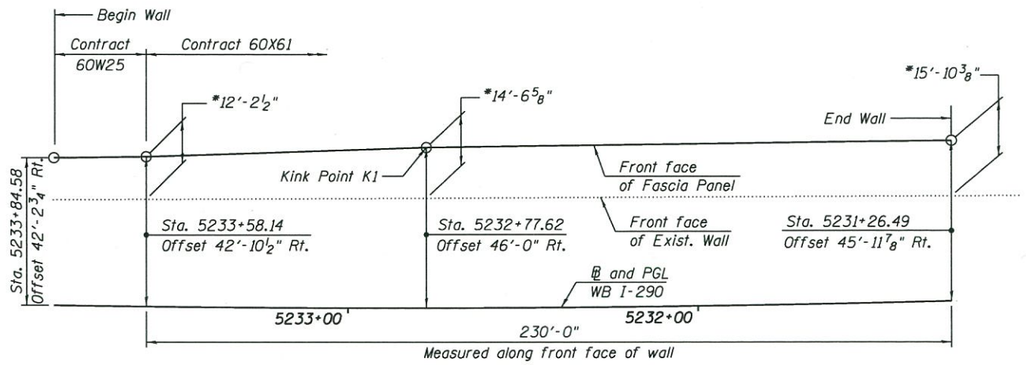
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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:\\380833-pwnt1.eeconnline.local:PWEECDMGR\Documents\01 American\Transportation\68269938 Circle\Phase_II\800_CAD\800_Structural\Structure_0161724-60X61-TSL\0161724-60X61-TSL.dgn

*Measured perpendicular from the front face of prop. Retaining Wall #5



OFFSET SKETCH

ELEVATIONS TABLE

Station	Offset	Elevation A	Elevation B	Elevation C	Elevation D	Elevation E	Elevation F	Wall Type
5233+58.14	42'-10 1/2"	597.49	593.99	576.31	574.31	589.99	594.55	Drilled Shafts Wall
5233+32.98	43'-11 5/8"	597.03	593.53	576.55	574.56	589.53	594.19	
5233+07.82	44'-11 3/8"	596.27	592.77	576.81	574.81	588.77	593.43	
5232+77.62**	46'-0"	594.40	590.90	577.15	575.16	586.90	592.18	
5232+77.62***	46'-0"	594.40	590.90	577.15	575.16	-	592.18	Drilled Soldier Piles Wall
5232+47.40	46'-3 1/2"	592.04	588.54	577.51	575.51	-	590.72	
5232+17.17	46'-5 1/8"	589.59	586.09	577.81	575.81	-	588.90	
5231+86.94	46'-5 1/8"	587.37	583.87	578.12	576.12	-	587.10	
5231+56.72	46'-3 3/8"	585.35	581.85	578.42	576.36	-	585.23	
5231+26.49	45'-11 7/8"	583.73	580.23	578.60	576.60	-	583.62	

Elevation A- Top of parapet Elevation
Elevation B- Top of Fascia Panel Elevation/ Proposed Grade at Back Face 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
** Elevations just to the left of expansion joint.
*** Elevations just to the right of expansion joint.

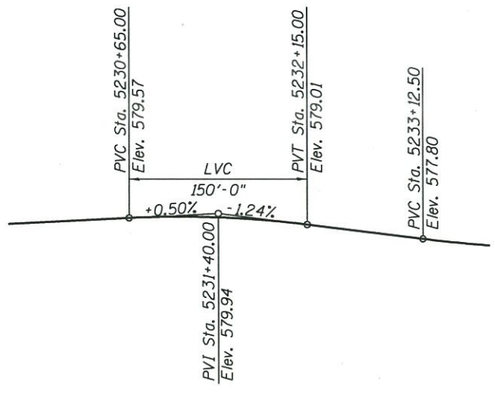
APPROVED
DEC 02 2014
AS A BASIS FOR PREPARATION OF DETAILED PLANS

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

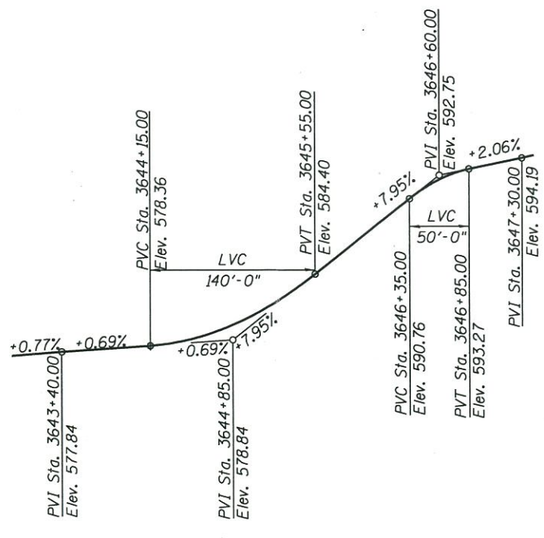
FAI Rte. WB I-290 (Peoria to Racine)
Functional Class: Interstate
ADT: 84,300 (2012); 88,000 (2040)
ADTT: 2840 (2012); 2965 (2040)
DHV: 5135 (2012); 6150 (2040)
Design Speed: 50 m.p.h.
Posted Speed: 45 m.p.h.
One-Way Traffic
Directional Distribution: 100%

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%

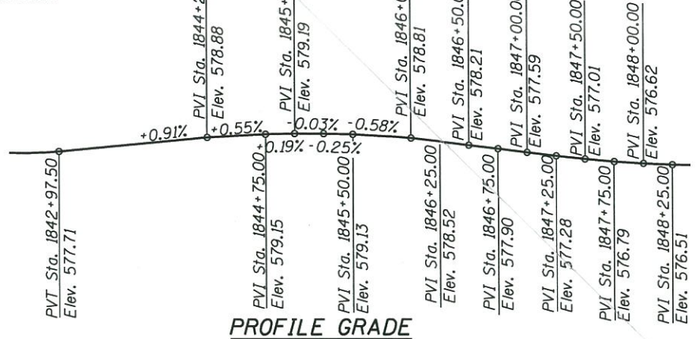


PROFILE GRADE
(along ℄ WB I-290)

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)



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

PGLS AND MISC. DETAILS
RETAINING WALL 5 ALONG MORGAN STREET EXIT RAMP
F.A.I. RTE. 290
(EISENHOWER EXPRESSWAY)
F.A.I. RTE. 290 - SECTION 2013-077R
COOK COUNTY
STATION 5233+84.58 TO 5231+26.49
STRUCTURE NO. 016-1724

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

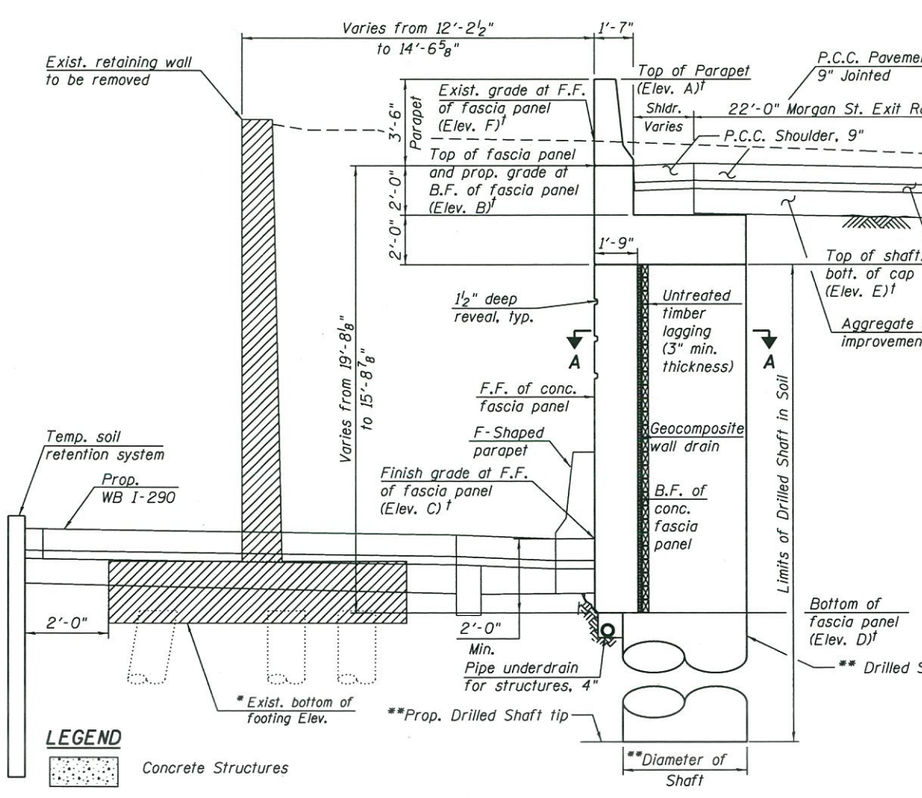
0161724-60X61-S02-TSL	DESIGNED -	WM	
USER NAME = kendrabant	DRAWN -	WM	
PLOT SCALE = 2.0000 '/ in.	CHECKED -	MAI, MI	
PLOT DATE = 10/29/2014	DATE -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 2 OF 4 SHEETS

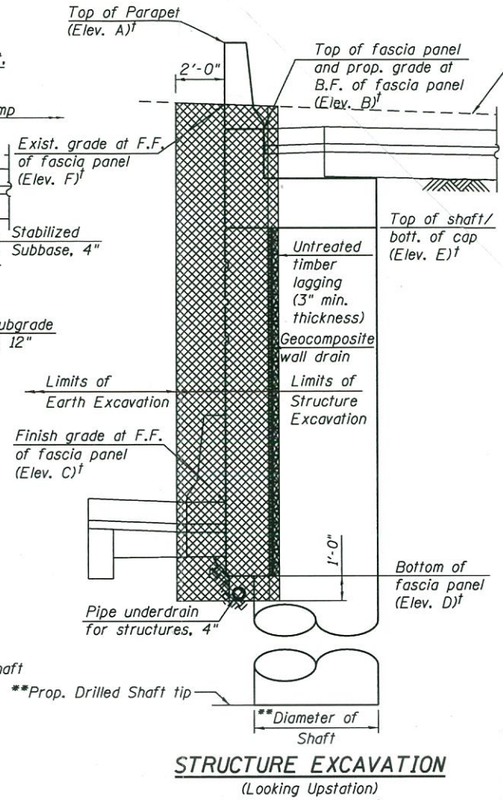
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-077R	COOK	4	2
		CONTRACT NO. 60X61		
		ILLINOIS FED. AID PROJECT		

FILE PATH = pw:\\388039-pwcti.eecomonline.local:PWAECDM01\Documents\01 Americas\Transportation\60269938 Circle\Phase II\000.CAD\000.Structural\Structure.dgn



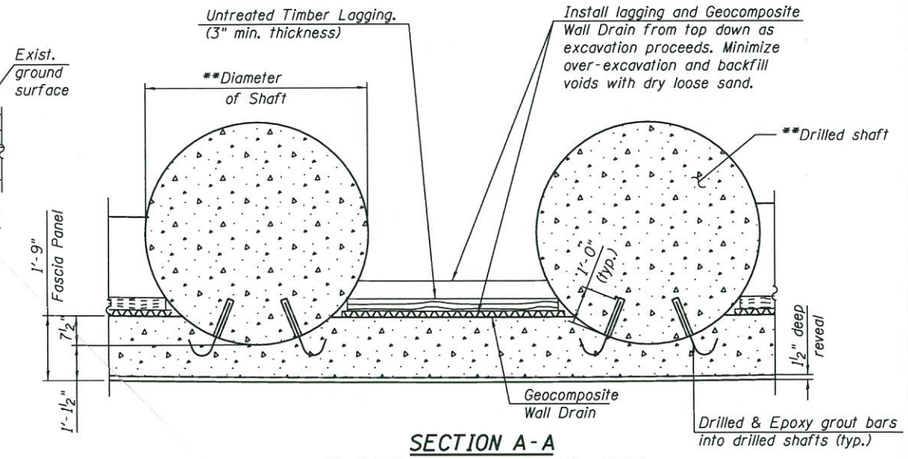
TYPICAL CROSS SECTION

(Looking Upstation)
(From Sta. 5232+77.62 to Sta. 5233+58.14)
(Prop. 78" ϕ main drain storm sewer is not shown for clarity. Inv. Elev. ±556.05)



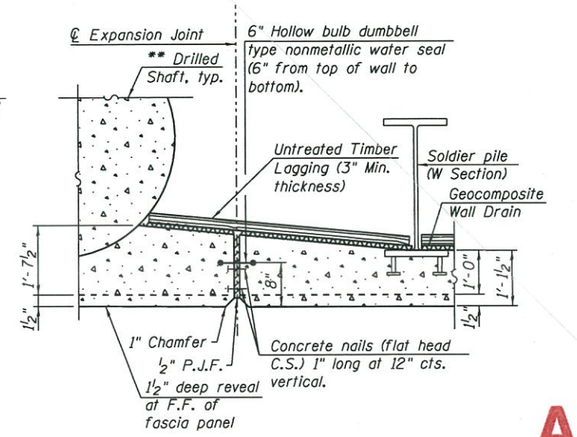
STRUCTURE EXCAVATION

(Looking Upstation)
(For proposed wall)



SECTION A-A

(Shaft Reinforcement not shown for clarity)



EXPANSION JOINT DETAILS

(At Sta. 5232+77.62)

LEGEND

- Concrete Structures
- Existing Structure Removal
- Structure Excavation

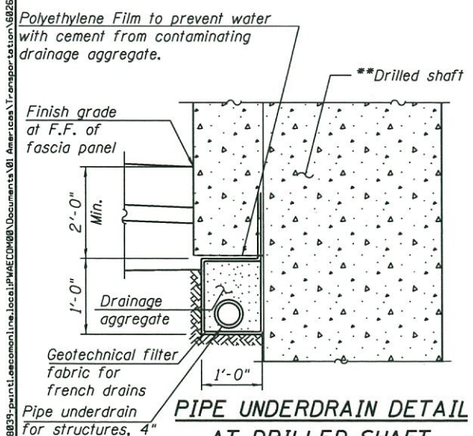
B.F. Back Face

F.F. Front Face

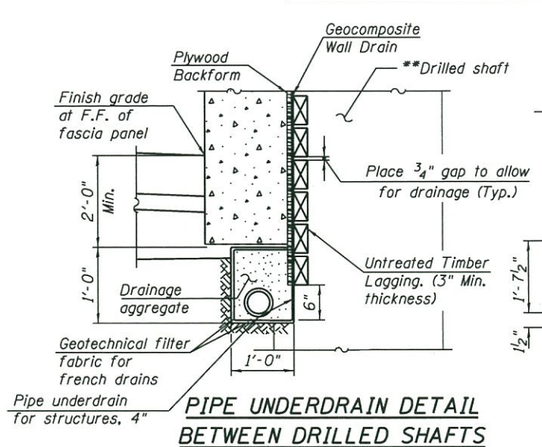
* As Estimated from Record Drawings:
Elev. 573.69 (from Sta. 5233+82.60 to Sta. 5232+81.65)
Elev. 574.19 (from Sta. 5232+81.65 to Sta. 5231+30.84)
Elev. 574.44 (from Sta. 5231+30.84 to Sta. 5231+00.89)

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

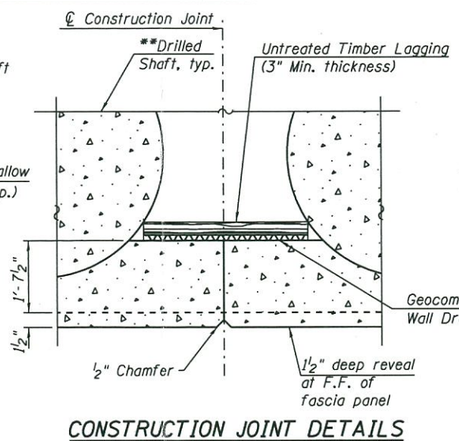
† See Elevations Table on Sheet 2.



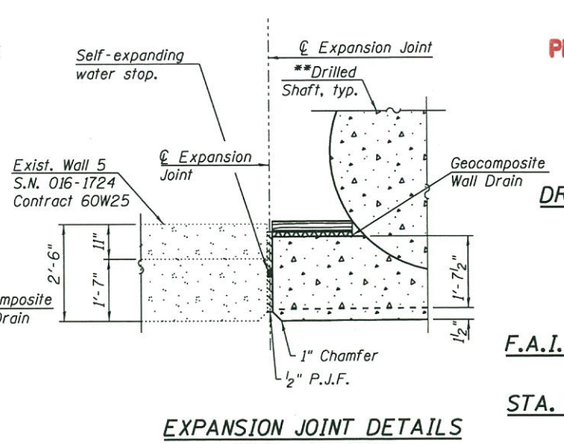
PIPE UNDERDRAIN DETAIL AT DRILLED SHAFT



PIPE UNDERDRAIN DETAIL BETWEEN DRILLED SHAFTS



CONSTRUCTION JOINT DETAILS



EXPANSION JOINT DETAILS

(At Sta. 5233+58.14)

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

DRILLED SHAFT WALL DETAILS
RETAINING WALL 5 ALONG MORGAN ST. EXIT RAMP
F.A.I. RTE. 290 (EISENHOWER EXPRESSWAY)
F.A.I. RTE. 290 - SECTION 2013-077R
COOK COUNTY
STA. 5233+84.58 TO STA. 5231+26.49
STRUCTURE NO. 016-1724

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

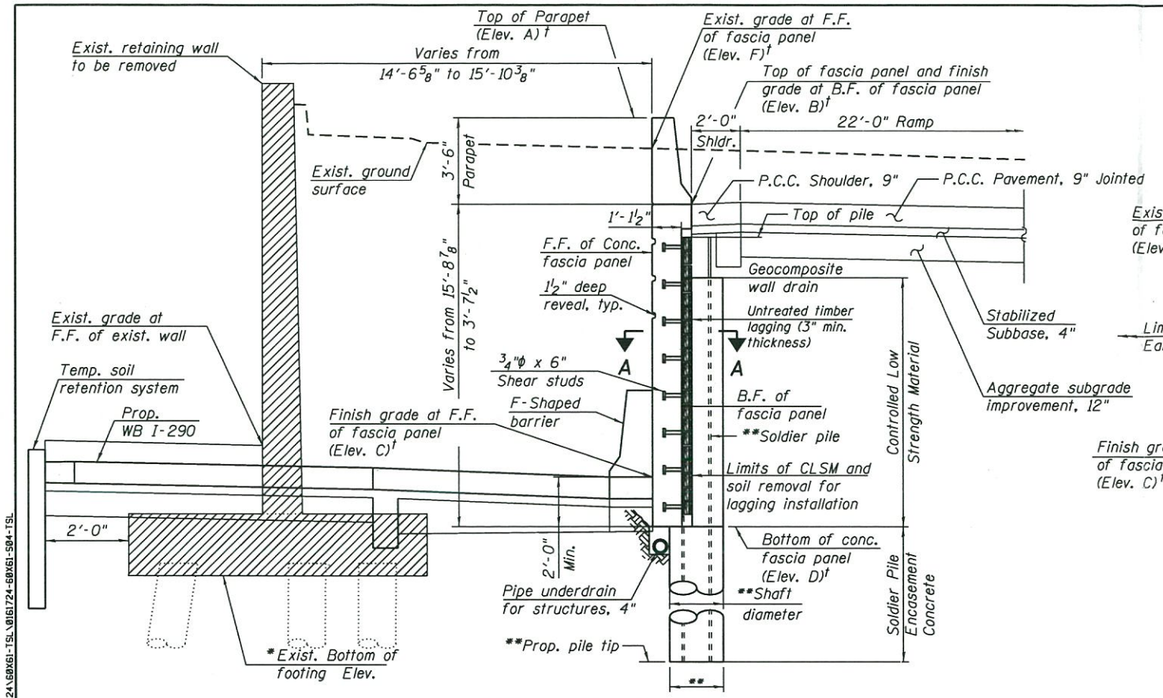
0161724-60X61-SB3-TSL	DESIGNED -	WM
USER NAME = kendrabant	DRAWN -	WM
PLOT SCALE = 6.0000 ' / in.	CHECKED -	MAI, MI
PLOT DATE = 10/29/2014	DATE -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 3 OF 4 SHEETS

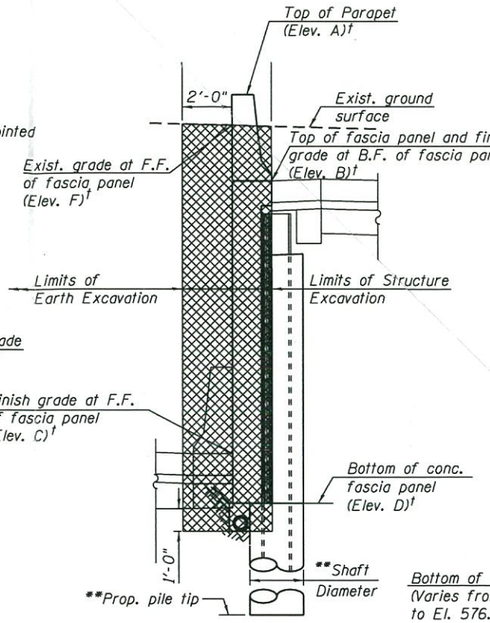
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-077R	COOK	4	3
		CONTRACT NO. 60X61		
	ILLINOIS	FED. AID PROJECT		

FILE PATH = pw:\\388039-pwint.eecomonline.local:PWAECDM08\Documents\01 Americas\Transportation\68269938 Circle\Phase II\008.CAD\008.Structural\8.Structural\Structure_016-1724\60X61-TSL\016I724-60X61-SB3-TSL



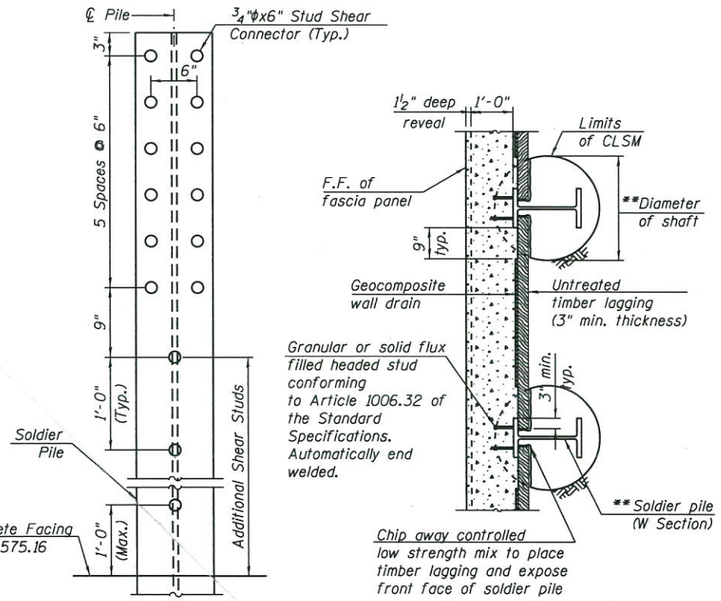
TYPICAL CROSS SECTION

(Looking Upstation)
(From Sta. 5231+26.49 to Sta. 5232+77.62)
(Prop. 78" ϕ main drain storm sewer is not shown for clarity. Inv. Elev. ±556.05)



STRUCTURE EXCAVATION

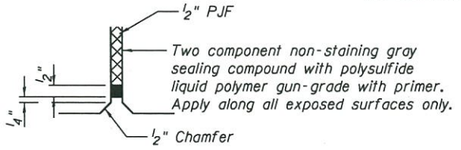
(Looking Upstation)
(For proposed wall)



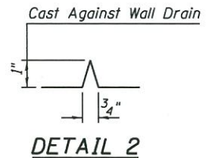
SHEAR STUD DETAIL

SECTION A-A

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



DETAIL 1

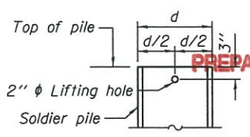


DETAIL 2

* As Estimated From Record Drawings:
Elev. 573.69 (from Sta. 5233+82.60 to Sta. 5232+81.65)
Elev. 574.19 (from Sta. 5232+81.65 to Sta. 5231+30.84)
Elev. 574.44 (from Sta. 5231+30.84 to Sta. 5231+00.89)

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

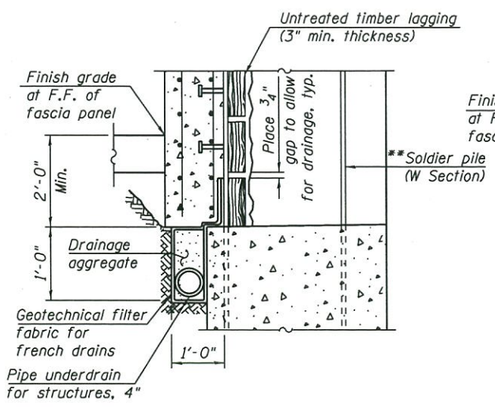
† See Elevations Table on Sheet 2.



LIFTING HOLE DETAIL

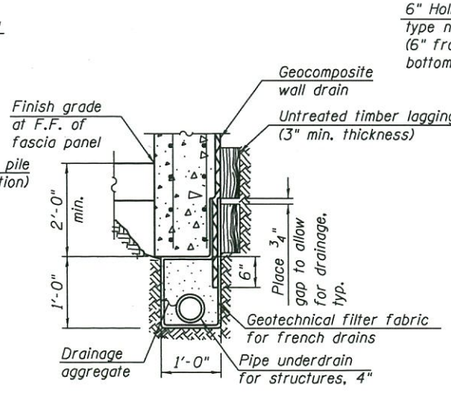
LEGEND

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



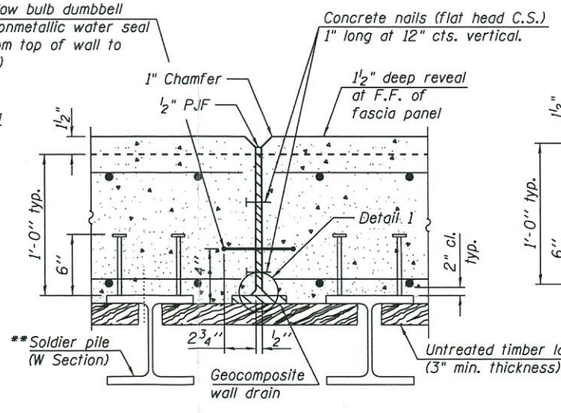
PIPE UNDERDRAIN DETAIL AT SOLDIER PILE

(Type F barrier not shown for clarity)



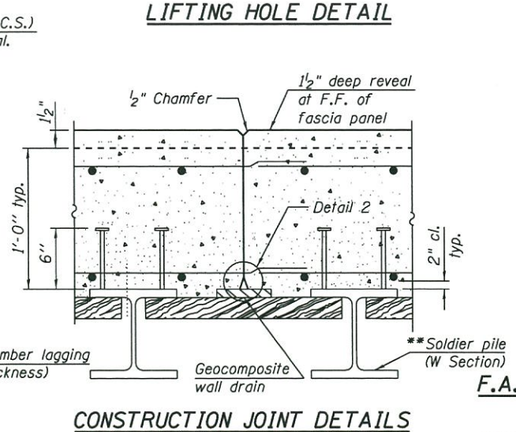
PIPE UNDERDRAIN DETAIL BETWEEN SOLDIER PILES

(Type F barrier not shown for clarity)



EXPANSION JOINT DETAILS

(At Sta. 5231+86.94)



CONSTRUCTION JOINT DETAILS

SOLDIER PILE WALL DETAILS
RETAINING WALL 5 ALONG MORGAN ST. EXIT RAMP
F.A.I. RTE. 290 (EISENHOWER EXPRESSWAY)
F.A.I. RTE. 290 - SECTION 2013-077R
COOK COUNTY
STA. 5233+84.58 TO STA. 5231+26.49
STRUCTURE NO. 016-1724

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		
0161724-60X61-S04-TSL	DESIGNED - WM	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	
USER NAME = ken.drobant	DRAWN - WM		
PLOT SCALE = 6.0000 ' / in.	CHECKED - MAI, MI		SHEET 4 OF 4 SHEETS
PLOT DATE = 10/29/2014	DATE -		

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 = ...\Structural\Structure_016-1724\60X61-TSL\016I724-60X61-TSL.DGN 10/29/2014 10:38:39 -print\Leeconomine.local\PWAECD\WO\Documents\01 Americas\Transportation\60269938 Circle\Phase_II\000_CAD\008_Structural\Structure_016-1724\60X61-TSL\016I724-60X61-S04-TSL