

● 131ST / HIGH SCHOOL ■ MULTI-USE PATH

● 80% FED, 10% STATE, 10% OP; \*\*\* 80% FED, 13% STATE, 7% PP  
 OP=VILLAGE OF ORLAND PARK, PP=VILLAGE OF PALOS PARK, STA=STATE  
 ●=SPECIALTY ITEMS

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE														
				ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS	INTERCONNECT	NEW SIDEWALK/	ORLAND PARK 100%	NEW SIDEWALK/	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL	
				80% FED	100% OP	80% FED	100% OP	80% FED	***	80% FED	80% FED	80% FED	100% OP	80% FED	100% PP	100% OP	80% FED	
				20% STA		20% STA		20% STA		20% STA	20% STA	20% OP		20% PP			20% STA	
				0003	0021	0021	0021	0021	0021	0021	0021	0021	0021	0021	0021	0021	0021	0043
				MODIL,01	OTPOL,01	MODIL,01	OTPOL,02	MODIL,01	MODIL,02	MODIL,01	MODIL,01	MODIL,01	OTPOL,03	MODIL,02	OTPOL,04	OTPOL,05	MODIL,01	
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	292															
20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	277															
20100500	TREE REMOVAL, ACRES	ACRE	0.50															
20101000	TEMPORARY FENCE	FOOT	7247	7247														
20101100	TREE TRUNK PROTECTION	EACH	14	14														
20101200	TREE ROOT PRUNING	EACH	3	3														
20101300	TREE PRUNING (1 TO 10 INCH DIAMETER)	EACH	2	2														
20101350	TREE PRUNING (OVER 10 INCH DIAMETER)	EACH	6	6														
20200100	EARTH EXCAVATION	CU YD	37843	37843														
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	19734	19734														
20400800	FURNISHED EXCAVATION	CU YD	25689	25689														
20600200	GRANULAR EMBANKMENT, SPECIAL	CU YD	416															416
20800150	TRENCH BACKFILL	CU YD	17945	17945														
* 21101625	TOPSOIL FURNISH AND PLACE, 6"	SO YD	69140	69140														

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Rev. 4-17-13

131ST/HIGH SCHOOL MULTI-USE PATH

80% FED, 10% STATE, 10% OP; \*\*\* 80% FED, 13% STATE, 7% PP  
 OP=VILLAGE OF ORLAND PARK, PP=VILLAGE OF PALOS PARK, STA=STATE  
 \*=SPECIALTY ITEMS

CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE													
				ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH	INTERCONNECT	NEW SIDEWALK/MULTI-USE	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL
				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	***	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PP	100% OP	80% FED 20% STA
				0003	0021	0021	0021	0021	0021	0021	0021	0028	0021	0028	0021	0043	0040
* 21101685	TOPSOIL FURNISH AND PLACE, 24"	SO YD	13480	13480													
* 21101805	COMPOST FURNISH AND PLACE, 2"	SO YD	2008	2008													
* 25000210	SEEDING, CLASS 2A	ACRE	8.25	8.25													
* 25000310	SEEDING, CLASS 4	ACRE	2.75	2.75													
* 25000400	NITROGEN FERTILIZER NUTRIENT	POUND	915	915													
* 25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	915	915													
* 25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	915	915													
Δ 25000750	MOWING	ACRE	45.00	45.00													
* 25100115	MULCH, METHOD 2	ACRE	7.25	7.25													
* 25100127	MULCH, METHOD 3A	ACRE	10.5	10.5													
* 25100630	EROSION CONTROL BLANKET	SO YD	21,826	21,826													
* 25100635	HEAVY DUTY EROSION CONTROL BLANKET	SQ YD	1907	1907													
* 25200110	SODDING, SALT TOLERANT	SO YD	33,057	33,057													
* 25200200	SUPPLEMENTAL WATERING	UNIT	246	246													
28000200	EARTH EXCAVATION FOR EROSION CONTROL	CU YD	2075	2075													

Δ NON-PARTICIPATING (100% STATE)

Δ Rev. 4-17-13

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FILE NAME : DIGR62-SHT-500.dgn	USER NAME : Anthony.Plutz	DESIGNED -	REVISED -
SHT_PLAN	PLOT SCALE = 100.0000' / 1"	DRAWN -	REVISED -
	PLOT DATE = 3/14/2013	CHECKED -	REVISED -
		DATE = 03/13/13	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 2 OF 26 SHEETS STA. TO STA.

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 6
CONTRACT NO. 60M62			ILLINOIS FED. AID PROJECT	

131ST/HIGH SCHOOL MULTI-USE PATH

80% FED, 10% STATE, 10% OP, ... 80% FED, 13% STATE, 7% PP  
 OP=VILLAGE OF ORLAND PARK, PP=VILLAGE OF PALOS PARK, STA=STATE  
 =SPECIALTY ITEMS

CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH	INTERCONNECT	NEW SIDEWALK/MULTI-USE	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL
				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	...	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PP	100% OP	80% FED 20% STA
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	1062	1062													
28000305	TEMPORARY DITCH CHECKS	FOOT	2531	2531													
28000400	PERIMETER EROSION BARRIER	FOOT	12,239	12,239													
28000500	INLET AND PIPE PROTECTION	EACH	64	64													
28000510	INLET FILTERS	EACH	309	309													
28001000	AGGREGATE (EROSION CONTROL)	TON	102	102													
28100105	STONE RIPRAP, CLASS A3	SO YD	150	150													
28200200	FILTER FABRIC	SO YD	150	150													
30300001	AGGREGATE SUBGRADE IMPROVEMENT	CU YD	1046	1046													
30300112	AGGREGATE SUBGRADE IMPROVEMENT 12"	SO YD	99664	99664													
31102000	SUBBASE GRANULAR MATERIAL, TYPE C	CU YD	101	101													
35101582	AGGREGATE BASE COURSE, TYPE B 2"	SO YD	942	942													
35101800	AGGREGATE BASE COURSE, TYPE B 6"	SO YD	9885	1238								6811		1836			
35102000	AGGREGATE BASE COURSE, TYPE B 8"	SO YD	183	183													

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 \*SPECIALTY ITEMS

CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH	INTERCONNECT	NEW SIDEWALK/MULTI-USE	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL
				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	***	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PP	100% OP	80% FED 20% STA
42000501	PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)	SO YD	74,204	74,204													
42001300	PROTECTIVE COAT	SO YD	96967	96967													
42300200	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 6 INCH	SO YD	122	122													
42300400	PORTLAND CEMENT CONCRETE DRIVEWAY PAVEMENT, 8 INCH	SO YD	569	569													
42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SO FT	54263	4864								34773		14626			
42400800	DETECTABLE WARNINGS	SO FT	1046	548								331		167			
44000100	PAVEMENT REMOVAL	SO YD	117697	117697													
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SO YD	4147	4147													
44000200	DRIVEWAY PAVEMENT REMOVAL	SO YD	5395	5395													
44000300	CURB REMOVAL	FOOT	5417	377	5040												
44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	37920	37920													
44000600	SIDEWALK REMOVAL	SO FT	11642	11642													
44003100	MEDIAN REMOVAL	SO FT	73635	73635													
44004250	PAVED SHOULDER REMOVAL	SO YD	1714	1714													

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CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH	INTERCONNECT	NEW SIDEWALK/MULTI-USE	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL
				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	***	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PP	100% OP	80% FED 20% STA
44201761	CLASS D PATCHES, TYPE I, 10 INCH	SO YD	161	161													
44201765	CLASS D PATCHES, TYPE II, 10 INCH	SO YD	964	964													
44201769	CLASS D PATCHES, TYPE III, 10 INCH	SO YD	482	482													
44300200	STRIP REFLECTIVE CRACK CONTROL TREATMENT	FOOT	1734	1734													
48203021	HOT-MIX ASPHALT SHOULDERS, 6"	SO YD	67	67													
48203029	HOT-MIX ASPHALT SHOULDERS, 8"	SO YD	689	689													
50102400	CONCRETE REMOVAL	CU YD	412														412
50200100	STRUCTURE EXCAVATION	CU YD	12,478	544													11,934
50200450	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL FOR STRUCTURES	CU YD	451														451
50201101	COFFERDAM (TYPE 1) (LOCATION - 1)	EACH	1														1
50300225	CONCRETE STRUCTURES	CU YD	5330.7	50.5													5280.2
50300285	FORM LINER TEXTURED SURFACE	SO FT	37,959														37,959
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	5500														5500
50500505	STUD SHEAR CONNECTORS	EACH	2263														2263

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				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	***	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PP	100% OP	80% FED 20% STA	
50800105	REINFORCEMENT BARS	POUND	10410	9730														680
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	584,340															584,340
50901750	PARAPET RAILING	FOOT	2129															2129
51200958	FURNISHING METAL SHELL PILES 14" X 0.250"	FOOT	1006															1006
51201400	FURNISHING STEEL PILES HP10X42	FOOT	17202															17202
51201800	FURNISHING STEEL PILES HP14X73	FOOT	28,498															28,498
51202305	DRIVING PILES	FOOT	46,706															46,706
51203200	TEST PILE METAL SHELLS	EACH	1															1
51203400	TEST PILE STEEL HP10X42	EACH	4															4
51203800	TEST PILE STEEL HP14X73	EACH	6															6
51204650	PILE SHOES	EACH	732															732
51500100	NAME PLATES	EACH	6															6
54010603	PRECAST CONCRETE BOX CULVERTS 6' X 3'	FOOT	508	508														
542A0217	PIPE CULVERTS, CLASS A, TYPE 1 12"	FOOT	215	215														

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Rev. 4-17-13

FILE NAME : DIGR62-SHT-500.dgn	USER NAME : Anthony.Plutz	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE - 03/13/13	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES  
 SCALE: SHEET 7 OF 26 SHEETS STA. TO STA.

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 178	SHEET NO. 11
CONTRACT NO. 60M62				ILLINOIS FED. AID PROJECT

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				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	***	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PP	100% OP	80% FED 20% STA
				0003	0021	0021	0021	0021	0021	0021	0021	0028	0021	0028	0021	0043	0040
* 66900450	SPECIAL WASTE PLANS AND REPORTS	L SUM	1	1													
* 66900530	SOIL DISPOSAL ANALYSIS	EACH	15	15													
* 66901000	BACKFILL PLUGS	CU YD	200	200													
67000600	ENGINEER'S FIELD LABORATORY	CAL MO	30	30													
67100100	MOBILIZATION	L SUM	1	1													
70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	400	400													
70106800	CHANGEABLE MESSAGE SIGN	CAL MO	48	48													
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ FT	12,440	12,440													
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1488	1488													
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	713	713													
70600255	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 2	EACH	10	10													
70600322	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE), NARROW, TEST LEVEL 2	EACH	4	4													
* 72000100	SIGN PANEL - TYPE 1	SQ FT	785	635			30	30	60	30							
* 72000200	SIGN PANEL - TYPE 2	SQ FT	123	123													
* 72400100	REMOVE SIGN PANEL ASSEMBLY - TYPE A	EACH	36	36													

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				ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH	INTERCONNECT	NEW SIDEWALK/MULTI-USE	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL
				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	***	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PR	00% OP	80% FED 20% STA
				0003	0021	0021	0021	0021	0021	0021	0021	0028	0021	0028	0021	0043	0040
* 72400200	REMOVE SIGN PANEL ASSEMBLY - TYPE B	EACH	10	10													
* 72400310	REMOVE SIGN PANEL - TYPE 1	SO FT	262	262													
* 72400320	REMOVE SIGN PANEL - TYPE 2	SO FT	125	125													
* 72400500	RELOCATE SIGN PANEL ASSEMBLY - TYPE A	EACH	10	10													
* 72400600	RELOCATE SIGN PANEL ASSEMBLY - TYPE B	EACH	2	2													
* 72900200	METAL POST - TYPE B	FOOT	790	790													
* 73000100	WOOD SIGN SUPPORT	FOOT	87	87													
* 78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SO FT	474	474													
* 78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	11336	11336													
* 78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	2047	2047													
* 78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	405	405													
* 78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	25	25													
* 78005100	EPOXY PAVEMENT MARKING - LETTERS AND SYMBOLS	SO FT	1466	1466													
* 78005110	EPOXY PAVEMENT MARKING - LINE 4"	FOOT	54,491	54,491													

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Rev. 4-17-13

FILE NAME : D168H2-SHT-500.dgn	USER NAME : Anthony.Plutz	DESIGNED - DRAWN -	REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 20		
SHT_PLAN	PLOT SCALE : 1/8"=1'-0"	CHECKED -	REVISED -			SCALE:	SHEET 16 OF 26 SHEETS	STA.	TO STA.	CONTRACT NO. 60M62		
	PLOT DATE : 3/19/2013	DATE - 03/13/13	REVISED -			ILLINOIS FED. AID PROJECT						

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				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	***	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PP	100% OP	80% FED
				0003	0021	0021	0021	0021	0021	0021	0021	0028	0021	0028	0021	0043	0040
* 78005130	EPOXY PAVEMENT MARKING - LINE 6"	FOOT	4505	4505													
* 78005150	EPOXY PAVEMENT MARKING - LINE 12"	FOOT	1504	1504													
* 78005180	EPOXY PAVEMENT MARKING - LINE 24"	FOOT	414	414													
* 78008200	POLYUREA PAVEMENT MARKING TYPE I - LETTERS AND SYMBOLS	SO FT	1050	1050													
* 78008210	POLYUREA PAVEMENT MARKING TYPE I - LINE 4"	FOOT	8800	8800													
* 78008230	POLYUREA PAVEMENT MARKING TYPE I - LINE 6"	FOOT	4270	4270													
* 78008250	POLYUREA PAVEMENT MARKING TYPE I - LINE 12"	FOOT	2038	2038													
* 78008270	POLYUREA PAVEMENT MARKING TYPE I - LINE 24"	FOOT	635	635													
* 78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	1218	1218													
* 78200300	PRISMATIC CURB REFLECTOR	EACH	244	244													
* 78200420	GUARDRAIL MARKERS, TYPE B	EACH	4	4													
* 78200530	BARRIER WALL MARKERS, TYPE C	EACH	75	75													
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	1	1													
78300100	PAVEMENT MARKING REMOVAL	SO FT	8264	8264													

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CONSTRUCTION CODE

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				ROADWAY 80% FED 20% STA 0003	LIGHTING 100% OP 0021	TRAFFIC SIGNALS 135TH 80% FED 20% STA 0021	TRAFFIC SIGNALS SOUTHMOOR 100% OP 0021	TRAFFIC SIGNALS 131ST 80% FED 20% STA 0021	TRAFFIC SIGNALS CREEK *** 0021	TRAFFIC SIGNALS 131ST/HIGH 80% FED 20% STA 0021	INTERCONNECT 80% FED 20% STA 0021	NEW SIDEWALK/ MULTI-USE 80% FED 20% OP 0028	ORLAND PARK 100% 100% OP 0021	NEW SIDEWALK/ MULTI-USE 80% FED 20% PP 0028	PALOS PARK 100% 100% PR 0021	WATER MAIN/SAN SEWER 00% OP 0043	SPECIAL BRIDGE/RET WALL 80% FED 20% STA 0040		
* X0327004	TEMPORARY WOOD POLE, 60 FT., CLASS 4	EACH	5		5														
X0327353	STORMWATER TREATMENT SYSTEM LOCATION NO. 1	L SUM	1	1															
X0327354	STORMWATER TREATMENT SYSTEM LOCATION NO. 2	L SUM	1	1															
X0327374	REMOVAL OF TEMPORARY SOIL RETENTION SYSTEM	SO FT	1180																1180
X0329905	RELOCATE GATE POSTS AND GATE	EACH	1	1															
X2502024	SEEDING, CLASS 4B (MODIFIED)	ACRE	1	1															
<del>X2800400</del>	<del>PERIMETER EROSION BARRIER, SPECIAL</del>	<del>FOOT</del>	<del>1102</del>	<del>1102</del>															
X2800520	ABOVE GRADE INLET FILTERS	EACH	605	605															
X4021000	TEMPORARY ACCESS (PRIVATE ENTRANCE)	EACH	13	13															
X4022000	TEMPORARY ACCESS (COMMERCIAL ENTRANCE)	EACH	15	15															
X4023000	TEMPORARY ACCESS (ROAD)	EACH	5	5															
X4024000	TEMPORARY ACCESS (FIELD ENTRANCE)	EACH	2	2															
X4024100	TEMPORARY ACCESS (WINTERIZE)	SO YD	3642	3642															
X4200110	HIGH-EARLY-STRENGTH PORTLAND CEMENT CONCRETE PAVEMENT 10" (JOINTED)	SO YD	10232	10232															
X4402805	ISLAND REMOVAL	SO FT	2857	2857															

URS  
 100 S. WACKER DR.  
 SUITE 500  
 CHICAGO, IL 60605  
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 FAX (312) 939-4198

Rev. 4-17-13



80% FED, 10% STATE, 10% OP; \*\*\* 80% FED, 13% STATE, 7% PP  
 OP=VILLAGE OF ORLAND PARK, PP=VILLAGE OF PALOS PARK, STA=STATE  
 \*=SPECIALTY ITEMS

CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH	INTERCONNECT	NEW SIDEWALK/MULTI-USE	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL	
				80% FED 20% STA 0003	100% OP 0021	80% FED 20% STA 0021	100% OP 0021	80% FED 20% STA 0021	*** 0021	80% FED 20% STA 0021	80% FED 20% STA 0021	80% FED 20% OP 0028	100% OP 0021	80% FED 20% PP 0028	100% PP 0021	100% OP 0043	80% FED 20% STA 0040	
X4404000	PARKING LOT PAVEMENT REMOVAL	SO YD	155															
X5121800	PERMANENT STEEL SHEET PILING	SO FT	42888															42888
X550A562	TEMPORARY STORM SEWERS, CLASS A, TYPE 2 12"	FOOT	443															
X5860110	GRANULAR BACKFILL FOR STRUCTURES	CU YD	10,638															10,638
X6020095	MANHOLES, TYPE A, 4' DIAMETER, TYPE I FRAME, CLOSED LID, RESTRICTOR PLATE	EACH	1															
X6021193	TEMPORARY CATCH BASINS	EACH	28															
X6330705	RUB RAIL	FOOT	1069															
X6640200	TEMPORARY CHAIN LINK FENCE	FOOT	2302															
X6700410	ENGINEER'S FIELD OFFICE, TYPE A (SPECIAL)	CAL MO	30															
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1															
X7030025	WET REFLECTIVE TEMPORARY TAPE, TYPE III - LETTERS AND SYMBOLS	SO FT	1870															
X7030030	WET REFLECTIVE TEMPORARY TAPE TYPE III, 4 INCH	FOOT	109175															
X7030040	WET REFLECTIVE TEMPORARY TAPE TYPE III, 6 INCH	FOOT	8373															
X7030050	WET REFLECTIVE TEMPORARY TAPE TYPE III, 12 INCH	FOOT	3874															

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FILE NAME : 0160462-SHT-500.dgn	USER NAME : Anthony.Plutz	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
		DATE - 03/13/13	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES			
SCALE:	SHEET 26A0F 26	SHEETS	STA. TO STA.

F.A.P. RTEL 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 30A
CONTRACT NO. 60M62				

Rev 4-17-13

ORLAND FIRE PROTECTION DISTRICT PALOS FIRE PROTECTION DISTRICT

80% FED, 10% STATE, 10% OP, ... 80% FED, 13% STATE, 7% PP

OP=VILLAGE OF ORLAND PARK, PP=VILLAGE OF PALOS PARK, STA=STATE

\*=SPECIALTY ITEMS

CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE													
				ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH	INTERCONNECT	NEW SIDEWALK/MULTI-USE	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL
				80% FED 20% STA 0003	100% OP 0021	80% FED 20% STA 0021	100% OP 0021	80% FED 20% STA 0021	*** 0021	80% FED 20% STA 0021	80% FED 20% STA 0021	80% FED 20% OP 0028	100% OP 0021	80% FED 20% PP 0028	100% PR 0021	100% OP 0043	80% FED 20% STA 0040
* X8620200	UNINTERRUPTABLE POWER SUPPLY, SPECIAL	EACH	4			1	1	1	1								
* X8710024	FIBER OPTIC CABLE IN CONDUIT, NO. 62.5/125, MM12F SM24F	FOOT	9777								9777						
* X8730250	ELECTRIC CABLE IN CONDUIT NO. 20 3/C, TWISTED, SHIELDED	FOOT	3353										724(1)		2629(2)		
* X8730800	ELECTRIC CABLE IN CONDUIT, VIDEO, NO. 20 4 C	FOOT	170							170							
* X8950075	REMOVE EXISTING LIGHTING CONTROLLER AND SALVAGE	EACH	1		1												
* X8950600	REMOVE AND RELOCATE EXISTING LIGHT STANDARD	EACH	14		14												
* XX005713	ORNAMENTAL RAILING	FOOT	3691										1232		613		1846
* XX005937	LED INTERNALLY ILLUMINATED STREET NAME SIGN	EACH	14										9	5			△
* XX007559	GATE VALVE 8" WITH VAULT, 4' DIAMETER	EACH	2													2	
△ Z0005305	BOX CULVERTS TO BE CLEANED	FOOT	75	75													
* Z0007118	UNTREATED TIMBER LAGGING	SO FT	3303														3303
Z0013302	SEGMENTAL CONCRETE BLOCK WALL	SO FT	13054											11013			2041
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1													
Z0022800	FENCE REMOVAL	FOOT	376	376													

URS  
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CHICAGO, IL 60606  
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△ NON-PARTICIPATING (100% STATE)

△ Rev. 4-17-13

FILE NAME : 0160M62-SHT-500.dgn	USER NAME : Anthony.Plutz	DESIGNED -	REVISED -
SHT_PLAN	PLOT SCALE : 100.0000' / 1"	DRAWN -	REVISED -
	PLOT DATE : 3/19/2013	CHECKED -	REVISED -
	DATE : 03/13/13	REVISED -	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES			
SCALE:	SHEET 26	OF 26 SHEETS	STA. TO STA.

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 178	SHEET NO. 30C
CONTRACT NO. 60M62			ILLINOIS FED. AID PROJECT	

● 131ST/HIGH SCHOOL

80% FED, 10% STATE, 10% OP, \*\*\* 80% FED, 13% STATE, 7% PP  
 OP=VILLAGE OF ORLAND PARK, PP=VILLAGE OF PALOS PARK, STA=STATE  
 \*=SPECIALTY ITEMS

CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH	INTERCONNECT	NEW SIDEWALK/MULTI-USE	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL	
				80% FED 20% STA	100% OP	80% FED 20% STA	100% OP	80% FED 20% STA	***	80% FED 20% STA	80% FED 20% STA	80% FED 20% OP	100% OP	80% FED 20% PP	100% PP	100% OP	80% FED	0043
Z0023500	FILLING EXISTING CULVERTS	CU YD	27	27														
Z0026404	FURNISHING SOLDIER PILES (W SECTION)	FOOT	1514															1514
Z0027800	GEOTECHNICAL FABRIC	SO YD	99664	99664														
Z0030850	TEMPORARY INFORMATION SIGNING	SO FT	28	28														
* Z0033028	MAINTENANCE OF LIGHTING SYSTEM	CAL MO	30		30													
* Z0033040	ELECTRIC SERVICE DISCONNECT, LIGHTING AND TRAFFIC SIGNAL	EACH	3			1	1	1										
* Z0033056	OPTIMIZE TRAFFIC SIGNAL SYSTEM	EACH	1								1							
* Z0045100	PRESSURE CONNECTION 12" X 12"	EACH	1														1	
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	3808															3808
Z0046306	PIPE UNDERDRAINS FOR STRUCTURES 6"	FOOT	435															435
Z0048665	RAILROAD PROTECTIVE LIABILITY INSURANCE	L SUM	1	1														
Z0056608	STORM SEWER (WATER MAIN REQUIREMENTS) 12 INCH	FOOT	788	788														
Z0056610	STORM SEWER (WATER MAIN REQUIREMENTS) 15 INCH	FOOT	279	279														
Z0056612	STORM SEWER (WATER MAIN REQUIREMENTS) 18 INCH	FOOT	162	162														

100 S. WALKER DR.  
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 TEL (312) 939-0000  
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Rev. 4-17-13



80% FED, 10% STATE, 10% OP, \*\*\* 80% FED, 13% STATE, 7% PP  
 OP=VILLAGE OF ORLAND PARK, PP=VILLAGE OF PALOS PARK, STA=STATE  
 \*=SPECIALTY ITEMS

CONSTRUCTION CODE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY	LIGHTING	TRAFFIC SIGNALS 135TH	TRAFFIC SIGNALS SOUTHMOOR	TRAFFIC SIGNALS 131ST	TRAFFIC SIGNALS CREEK	TRAFFIC SIGNALS 131ST/HIGH SCHOOL	INTERCONNECT	NEW SIDEWALK/MULTI-USE PATH	ORLAND PARK 100%	NEW SIDEWALK/MULTI-USE PATH	PALOS PARK 100%	WATER MAIN/SAN SEWER	SPECIAL BRIDGE/RET WALL			
				80% FED	100% OP	80% FED	100% OP	80% FED	***	80% FED	80% FED	80% FED	100% OP	80% FED	100% PP	100% OP	80% FED	100% PP	100% OP	80% FED
				20% STA		20% STA		20% STA		20% STA		20% STA	20% STA	20% OP		20% PP				20% STA
				0003	0021	0021	0021	0021	0021	0021	0021	0028	0021	0028	0021	0043	0040			
X6020299	MANHOLES, TYPE A, 8' -DIAMETER, WITH 2 TYPE 1 FRAME, OPEN LIDS, RESTRICTOR PLATE	EACH	1	1																
* X5030285	FORM LINER TEXTURED SURFACE TEST SAMPLE	EACH	2										2							
* Z0048510	RAILROAD EMBLEMS	L SUM	1	1																
Z005870	BONDED PREFORMED JOINT SEALER, 1 INCH	FOOT	100															100		

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 100 S. WACKER DR.  
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 CHICAGO, IL 60606  
 TEL (312) 539-1000  
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FILE NAME : 016BHG2-SHT-500.dgn	USER NAME : Anthony.Plutz	DESIGNED -	REVISED -
SHT_PLAN	PLOT SCALE : 1/8" = 1'-0"	DRAWN -	REVISED -
	PLOT DATE : 3/19/2013	CHECKED -	REVISED -
		DATE : 03/13/13	REVISED -

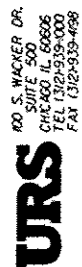
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 26 OF 26 SHEETS STA. TO STA.

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 30F
CONTRACT NO. 60M62			ILLINOIS FED. AID PROJECT	

Rev. 4-17-13



100 S. WACKER DR.  
 SUITE 2000  
 CHICAGO, IL 60606  
 TEL (312) 251-1000  
 FAX (312) 251-4598

EARTHWORK SCHEDULE - 60M62 NORTH					
	EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE (25%)	UNSUITABLE EXCAVATION	SUITABLE EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-) FURNISHED EXCAVATION
	CU YD	CU YD	CU YD	CU YD	CU YD
US 45 (LAGRANGE ROAD) STATION 286+00 TO STATION 384+00					
TEMPORARY	2,390.18	1,792.63	2,060.47	1,776.01	16.62
STAGE 1	17,698.16	13,273.62	12,089.20	27,290.84	-14,017.22
STAGE 2	573.40	430.05	12.96	1,000.37	-570.32
STAGE 3	7,125.92	5,344.44	3,295.52	16,509.09	-11,164.65
STAGE 4	2,046.56	1,534.92	143.09	5,767.19	-4,232.27
TOTAL:	29,834.23	22,375.67	17,601.24	52,343.51	-29,967.84
131ST STREET					
TEMPORARY	64.7	48.5	0.0	5.7	42.9
STAGE A	3,612.3	2,709.2	683.3	87.4	2,621.8
STAGE B	1,851.3	1,388.5	360.4	279.2	1,109.3
STAGE C	293.4	220.1	24.2	70.7	149.4
SUBTOTAL:	5,821.7	4,366.3	1,067.9	442.9	3,923.4
135TH STREET					
TEMPORARY	49.0	36.8	153.0	342.9	-306.1
STAGE A	634.3	475.7	276.1	213.4	262.3
STAGE B	841.2	630.9	312.3	555.0	75.9
STAGE C	426.4	319.8	192.3	121.8	198.0
SUBTOTAL:	1,950.9	1,463.2	933.8	1,233.2	230.1
CREEK ROAD					
STAGE A	236.6	177.4	131.5	52.4	125.0
TOTAL:	37,843	28,383	19,734	54,072	-25,689

NOTES:

- "REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL" INCLUDES TOPSOIL/UNSUITABLE EXCAVATION AND THE QUANTITY OF REMOVAL REQUIRED FOR AGGREGATE SUBGRADE IMPROVEMENT, 12" PLACEMENT.
- FOR QUANTITY CALCULATIONS THE AVERAGE EXISTING TOPSOIL THICKNESS IS ASSUMED TO BE 6".

• ASSUME 25% FOR SHRINKAGE

FILE NAME : D:\60M62-SHT-SCHEDULE01.dgn	USER NAME : james.push	DESIGNED - MJT	REVISED -  04/12/2013
		DRAWN - MJT	REVISED -
	PLOT SCALE = 100.0000' / 1"	CHECKED - ---	REVISED -
SHT.PLAN	PLOT DATE = 4/10/2013	DATE - 03/13/13	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES

SCALE: N.T.S. SHEET 1 OF 4 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	38
SC-01			CONTRACT NO. 60M62	
ILLINOIS FED. AID PROJECT				





**EROSION CONTROL SCHEDULE  
SHEETS ER-02 TO ER-30**

ITEM	20101000 TEMPORARY FENCE	25100127 MULCH, METHOD 3A	25100630 EROSION CONTROL BLANKET	25100635 HEAVY DUTY EROSION CONTROL BLANKET	25200110 SODDING, SALT TOLERANT	28000200 EARTH EXCAVATION FOR EROSION CONTROL	28000250 TEMPORARY EROSION CONTROL SEEDING	28000305 TEMPORARY DITCH CHECKS	28000400 PERIMETER EROSION BARRIER	28001000 AGGREGATE (EROSION CONTROL)	72000200 SIGN PANEL - TYPE 2	X2800520 ABOVE GRADE INLET FILTERS
	FOOT	ACRE	SO YD	SO YD	SO YD	CU YD	POUND	FOOT	FOOT	TON	SO FT	EACH
SHEET												
ER-02	145	0.00	0	0	0	0	0.00	0	0	0	0	2
ER-03	1340	1.00	105	0	2745	240	106.25	434	700	6	54	29
ER-04	405	1.25	0	0	1228	0	125.00	234	87	0	18	63
ER-05	605	0.75	0	0	0	0	75.00	116	607	0	18	28
ER-06	207	0.75	0	0	0	0	75.00	0	0	0	18	23
ER-07	0	1.00	102	471	0	205	105.50	0	1997	28	0	43
ER-08	337	0.50	100	0	1573	330	35.00	79	1669	29	0	50
ER-09	1770	0.25	98	0	3643	285	25.00	268	31	8	0	21
ER-10	0	0.00	0	0	0	0	0.00	0	0	0	0	10
ER-11	0	0.00	0	0	0	0	0.00	0	0	0	0	16
ER-12	0	0.00	0	0	0	0	0.00	0	0	0	0	17
ER-13	0	0.00	0	0	0	0	0.00	0	0	0	0	9
ER-14	776	0.75	57	391	0	235	87.25	0	379	8	0	27
ER-15	1452	0.50	86	0	4160	255	50.00	470	148	8	0	53
ER-16	2619	0.50	120	0	2858	335	56.75	286	0	6	0	49
ER-17	0	1.00	0	0	873	0	100.00	136	1626	0	0	15
ER-18	0	0.00	0	0	0	0	0.00	0	0	0	0	8
ER-19	0	0.00	0	0	0	0	0.00	0	0	0	0	17
ER-20	0	0.00	0	0	0	0	0.00	0	0	0	0	21
ER-21	0	0.00	0	0	0	0	0.00	0	0	0	0	18
ER-22	0	0.00	0	0	0	0	0.00	92	555	0	0	7
ER-23	0	0.00	0	0	0	0	0.00	96	551	0	0	1
ER-24	0	0.50	0	0	717	0	50.00	42	586	0	0	5
ER-25	0	0.25	0	319	0	0	25.00	48	437	0	0	6
ER-26	0	0.25	0	553	0	0	25.00	0	1158	0	0	10
ER-27	0	0.00	0	0	0	0	0.00	0	0	0	0	0
ER-28	0	0.25	0	0	0	0	25.00	0	595	0	0	2
ER-29	0	0.00	0	0	0	0	0.00	0	0	0	0	0
ER-30	0	0.00	0	0	0	0	0.00	0	0	0	0	0
SUB TOTAL	9,656	9.50	668	1,734	17,797	1,885	965.75	2,301	11,126	93		550
AT THE ENGINEER'S DISCRETION	966	1.00	67	173	1,780	190	96.25	230	1,113	9		55
GRAND TOTAL	10,622	10.50	735	1,907	19,577	2,075	1,062	2,531	12,239	102	108	605

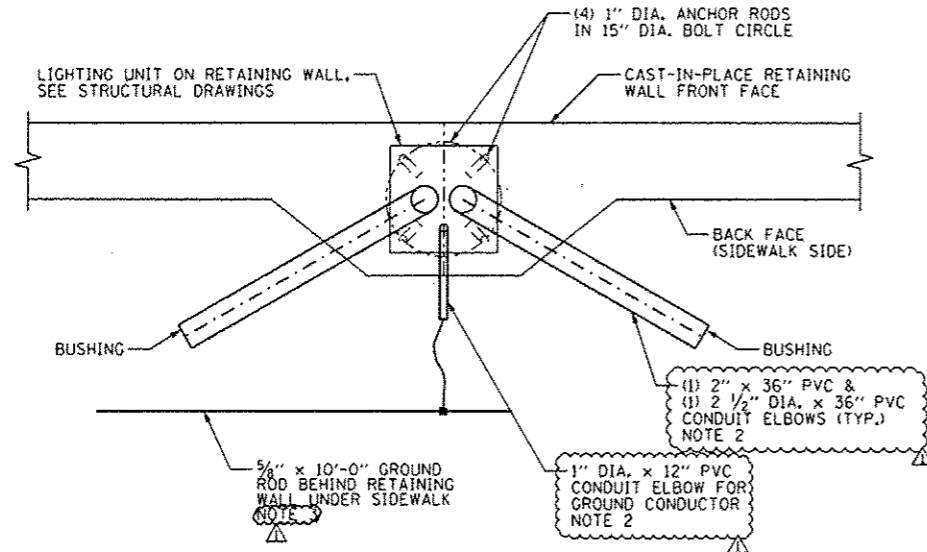
**APEX**  
CONSULTING ENGINEERS, LLC  
111 E. Wacker Drive, Suite 528  
Chicago, IL 60601

FILE NAME *	USER NAME * #USER*	DESIGNED - LN	REVISED - $\Delta$ 04/12/2013	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>EROSION CONTROL SCHEDULE OF QUANTITIES NORTH CONTRACT</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
#FILE#		DRAWN - HAA	REVISED -			330	103R-5	COOK	778	41	
PLT SCALE * #SCALE#		CHECKED - WHI	REVISED -			<b>SC-04</b>					
PLT DATE * #DATE#		DATE - 3/15/2013	REVISED -			SCALE: N.T.S.	SHEET NO. 4 OF 5 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT

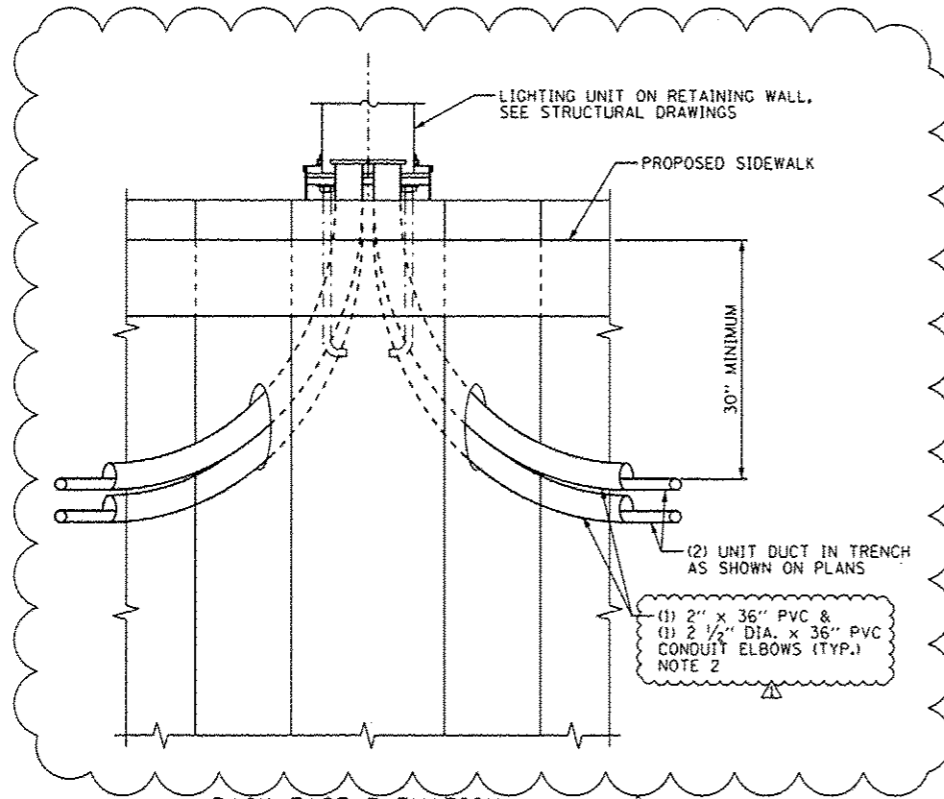


**NOTES:**

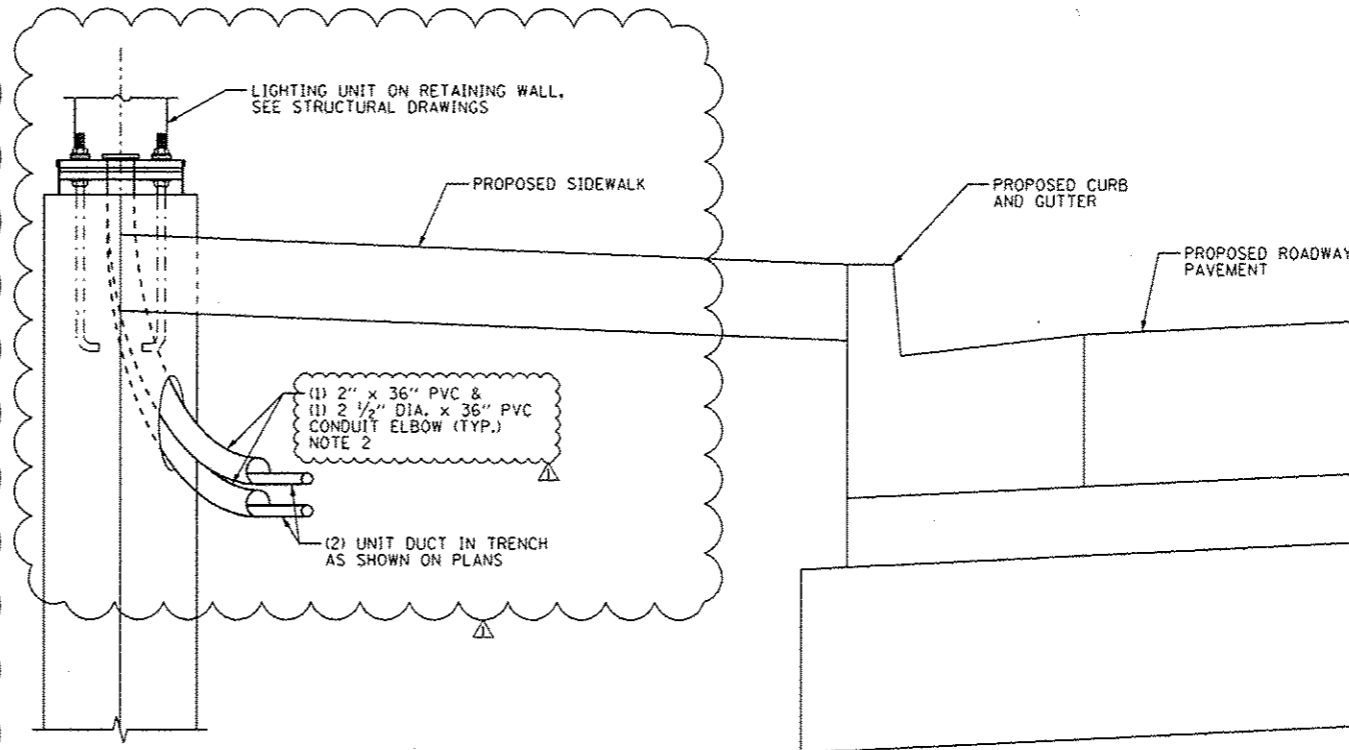
1. SEE DRAWING E-1 FOR ELECTRICAL SYMBOL LIST AND ABBREVIATIONS. SEE DRAWING E-2 FOR ELECTRICAL GENERAL NOTES.
2. CONDUIT ELBOWS IN LIGHT POLE FOUNDATIONS MOUNTED ON RETAINING WALLS ARE PAID FOR SEPARATELY AND ARE NOT INCLUDED IN THE COST OF THE LIGHT POLE FOUNDATION.
3. GROUND RODS AND GROUNDING MATERIALS ARE INCLUDED IN THE COST OF THE FOUNDATIONS AND ARE NOT PAID FOR SEPARATELY.



PLAN VIEW



BACK FACE ELEVATION  
(GROUNDING SYSTEM OMITTED)



SECTION

**LIGHT POLE ON CAST-IN-PLACE RETAINING WALL**  
N.T.S.

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 939-0000  
FAX (312) 939-0158

FILE NAME : DIG0M2-SHT-E44.dgn	USER NAME : james.push	DESIGNED - MAE	REVISED - 04/12/2013
		DRAWN - WM	REVISED -
	PLOT SCALE * 2,0000 1/1 in.	CHECKED - DAD	REVISED -
SHT_PLAN	PLOT DATE * 4/11/2013	DATE - 03/13/13	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

US 45 (LaGRANGE ROAD)  
RETAINING WALL MOUNTED LIGHT POLE INSTALLATION DETAILS

SCALE: NONE SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 368
E-44			CONTRACT NO. 60M62	
ILLINOIS FED. AID PROJECT				

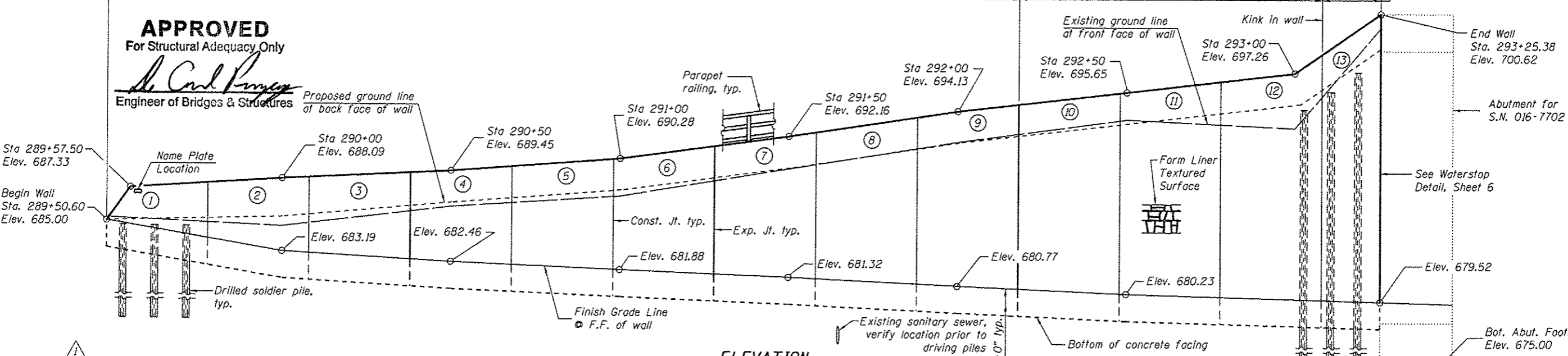
Bench Mark: Elev. 689.00 Top of brass survey monument located at the west edge of the LaGrange Road southbound pavement, 600 feet north of the SouthWest Highway bridge.

Existing Structure: None

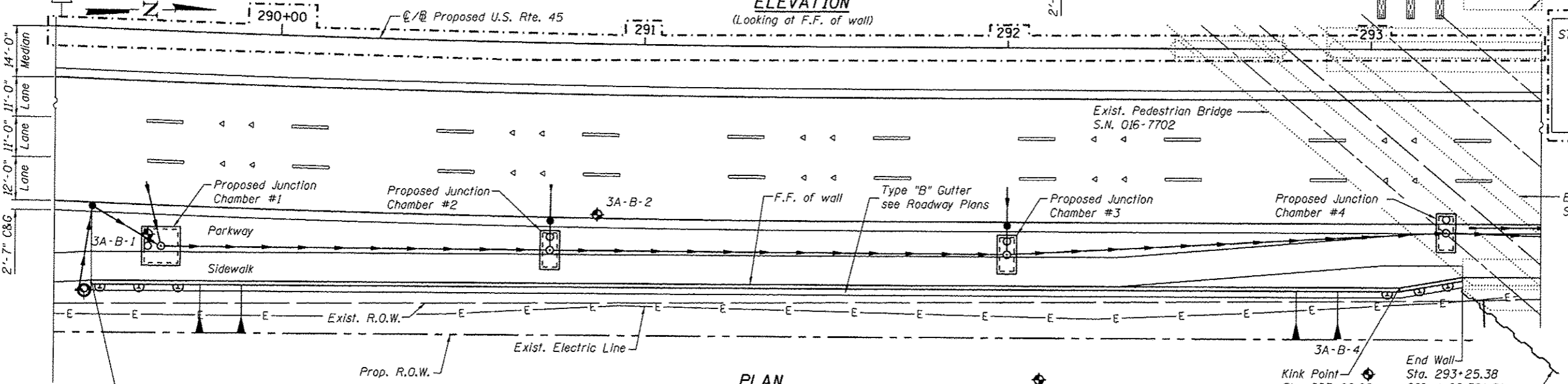
377'-7 1/2"

Exp. Jt. Spa. 3 Spa. @ 90'-0" = 270'-0"  
 Const. Jt. Spa. 9 Spa. @ 30'-0" = 270'-0"

**APPROVED**  
 For Structural Adequacy Only  
*De Carl Panyer*  
 Engineer of Bridges & Structures



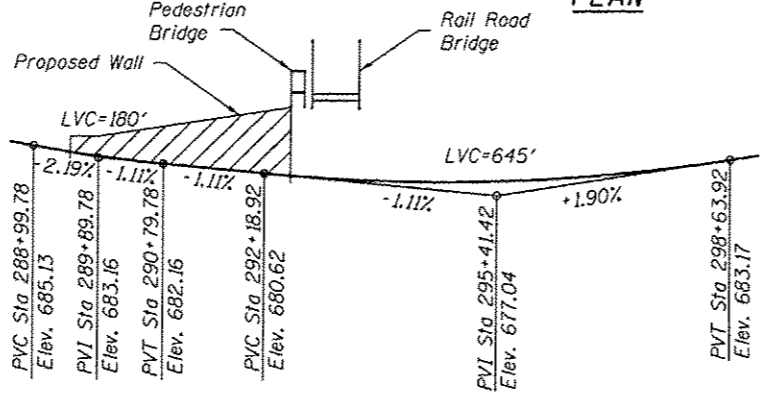
**ELEVATION**  
 (Looking at F.F. of wall)



**PLAN**

**CURVE DATA**

Prop. Curve US45PCL-2  
 P.I. STA. = 290+43.86  
 $\Delta = 2^\circ 22' 27''$  (LT)  
 $D = 1^\circ 03' 15''$   
 $R = 5,435.00'$   
 $T = 112.62'$   
 $L = 225.21'$   
 $E = 1.17'$   
 $e = N.C.$   
 $T.R. = -$   
 S.E. RUN = --  
 P.C. STA = 289+31.24  
 P.T. STA = 291+56.45



**PROFILE GRADE**  
 (along PGL US Rte. 45)

**LEGEND**

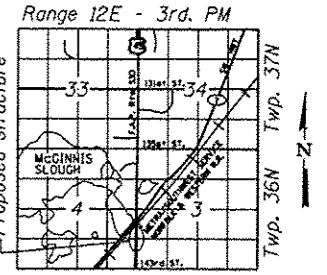
- (dashed) — Exist. Sanitary Sewer
- (solid) — Prop. Drainage Structure
- (solid) — Prop. Storm Sewer
- (dotted) — Soil Boring
- F.F. = Front Face
- B.F. = Back Face
- E.F. = Each Face
- I.F. = Inside Face
- O.F. = Outside Face

Note:  
 Offsets are measured from the C/L of U.S. Rte. 45 to front face of wall

STATION 289+50.60 TO 293+25.38  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A.P. RTE. 330 SEC. 103R-5  
 LOADING HS-20  
 STRUCTURE NO. 016-2002

**NAME PLATE**  
 See Std. 515001

Exist. Metra Bridge  
 S.N. 016-6201



**LOCATION SKETCH**



*Arsalan M. Khan*  
 ARSALAN M. KHAN, S.E.  
 LICENSE NO.: 081-006258  
 EXPIRES: NOVEMBER 30, 2014  
 DATE: 04-11-2013

**DESIGN SPECIFICATIONS**  
 2002 AASHTO Standard Specifications  
 for Highway Bridges

**DESIGN STRESSES**  
**FIELD UNITS**  
 $f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 36,000$  psi (M270 Grade 36)

**GENERAL PLAN & ELEVATION**  
**U.S. ROUTE 45 - LAGRANGE ROAD**  
**F.A.P. RTE. 330 SEC. 103R-5**  
**COOK COUNTY**  
**STATION 289+50.60 TO 293+25.38**  
**STRUCTURE NO. 016-2002**

URS  
 100 S. Wacker Dr.  
 Chicago, IL 60606  
 TEL: (312) 291-4000  
 FAX: (312) 939-4199

FILE NAME = 0162002-60M62-001-CPE.dgn	USER NAME = arsalan.khan	DESIGNED - KJH	REVISED - 04/12/2013 P.M.H.
PLOT SCALE = 3/8" = 1' / 1/4"	PLOT DATE = 4/11/2013	CHECKED - PMH	REVISOR -
		DRAWN - RJ	REVISOR -
		CHECKED - MJL	REVISOR -

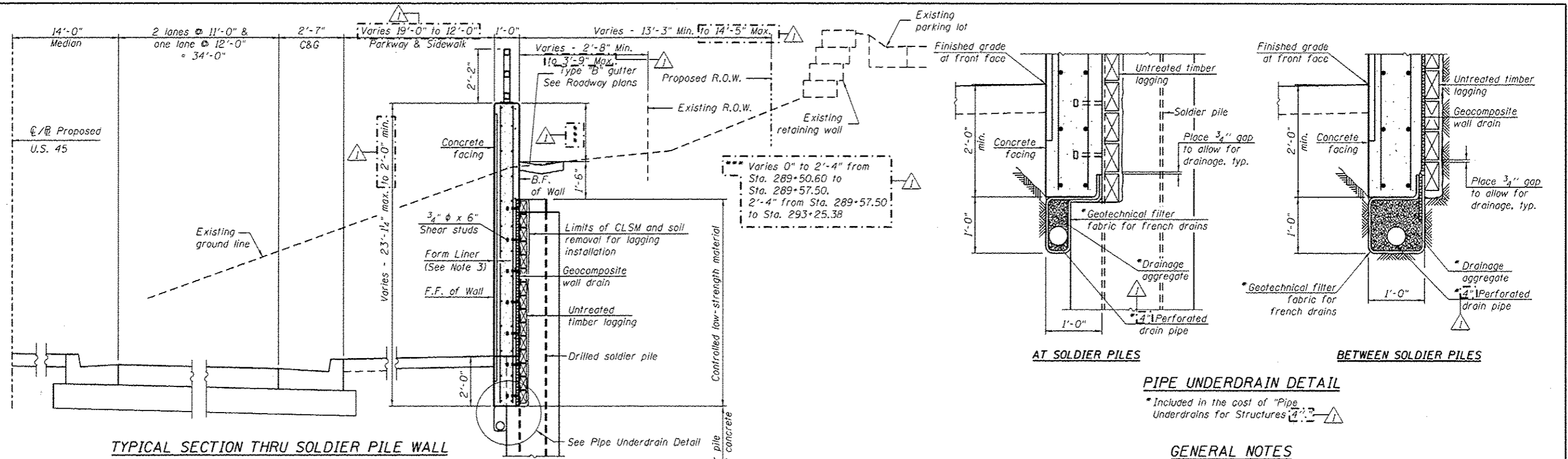
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 9 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	394
CONTRACT NO. 60M62				

ILLINOIS FED. AID PROJECT





**TYPICAL SECTION THRU SOLDIER PILE WALL**  
(Looking North)

**PIPE UNDERDRAIN DETAIL**

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

**GENERAL NOTES**

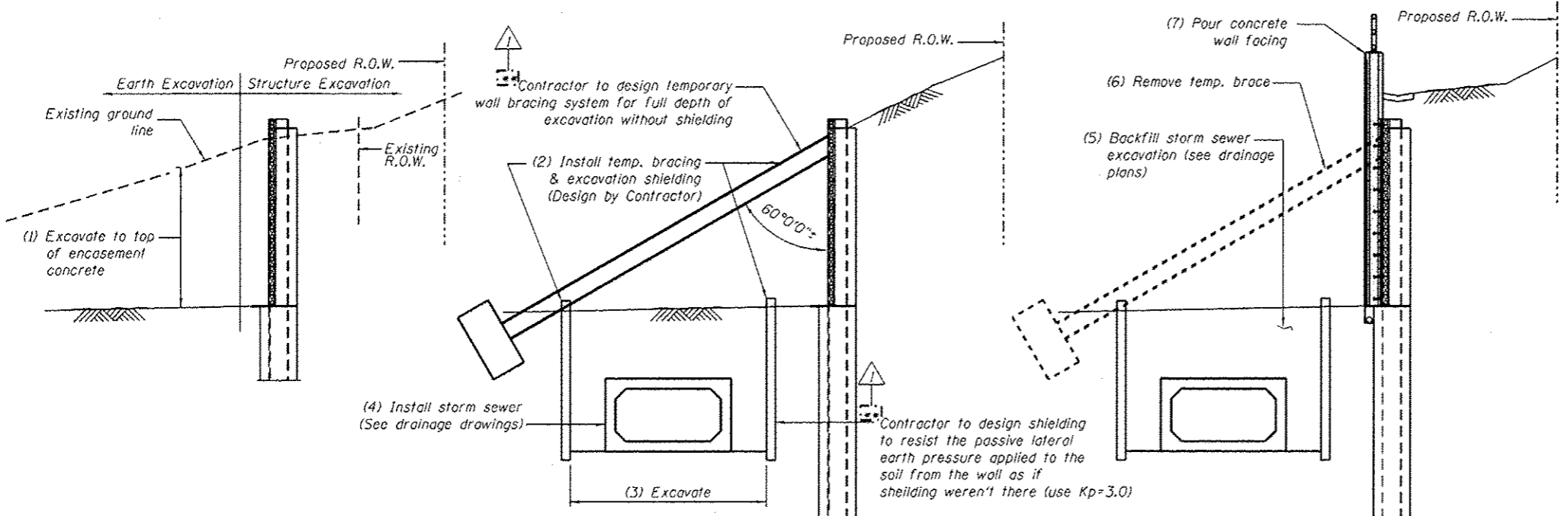
1. Reinforcement bars designated (E) shall be epoxy coated.
2. The Contractor is responsible for the design and performance of the lagging using no less than a 3 in. nominal rough-sawn timber with a minimum allowable bending stress of 1000 psi.
3. The form liner shall be a random Ashlar blend pattern consisting of the following block sizes:
  1. 28% - 4" X 18"
  2. 16% - 8" X 8"
  3. 26% - 8" X 11"
  4. 28% - 8" X 18"

**INDEX OF SHEETS**

1. General Plan & Elevation
2. General Details & Bill of Material
3. Plan and Elevation
4. Plan and Elevation
5. Pile Schedule & Details
6. Bill of Material
7. Parapet Railing
8. Soil Borings
9. Soil Borings

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	683
Removal and Disposal of Unsuitable Material for Structures	Cu. Yd.	40
Concrete Structures	Cu. Yd.	175.7
Form Liner Textured Surface	Sq. Ft.	3,989
Stud Shear Connectors	Each	973
Reinforcement Bars, Epoxy Coated	Pound	20,100
Parapet Railing	Foot	378
Name Plates	Each	1
Geocomposite Wall Drain	Sq. Yd.	375
Drilling and Setting Soldier Piles (In Soil)	Cu. Ft.	12,474
Removal of Temporary Soil Retention System	Sq. Ft.	962
Untreated Timber Lagging	Sq. Ft.	3,303
Furnishing Soldier Piles (W Section)	Foot	1,514
Pipe Underdrains for Structures 4"	Foot	435
Temporary Wall Bracing System	L. Sum	1
Bonded Preformed Joint Sealer, 1 Inch	Foot	24



**STEP 1 - CONSTRUCT SOLDIER PILE WALL W/O FACING**

**STEP 2 - INSTALL TEMPORARY WALL BRACING SYSTEM AND STORM SEWER**

**STEP 3 - FINISH WALL CONSTRUCTION**

**SOLDIER PILE WALL STAGE CONSTRUCTION**

See special provision for Temporary Wall Bracing System

URS  
100 S. Wacker Dr.  
Suite 500  
Chicago, IL 60606  
Tel (312) 939-0000  
Fax (312) 939-0088

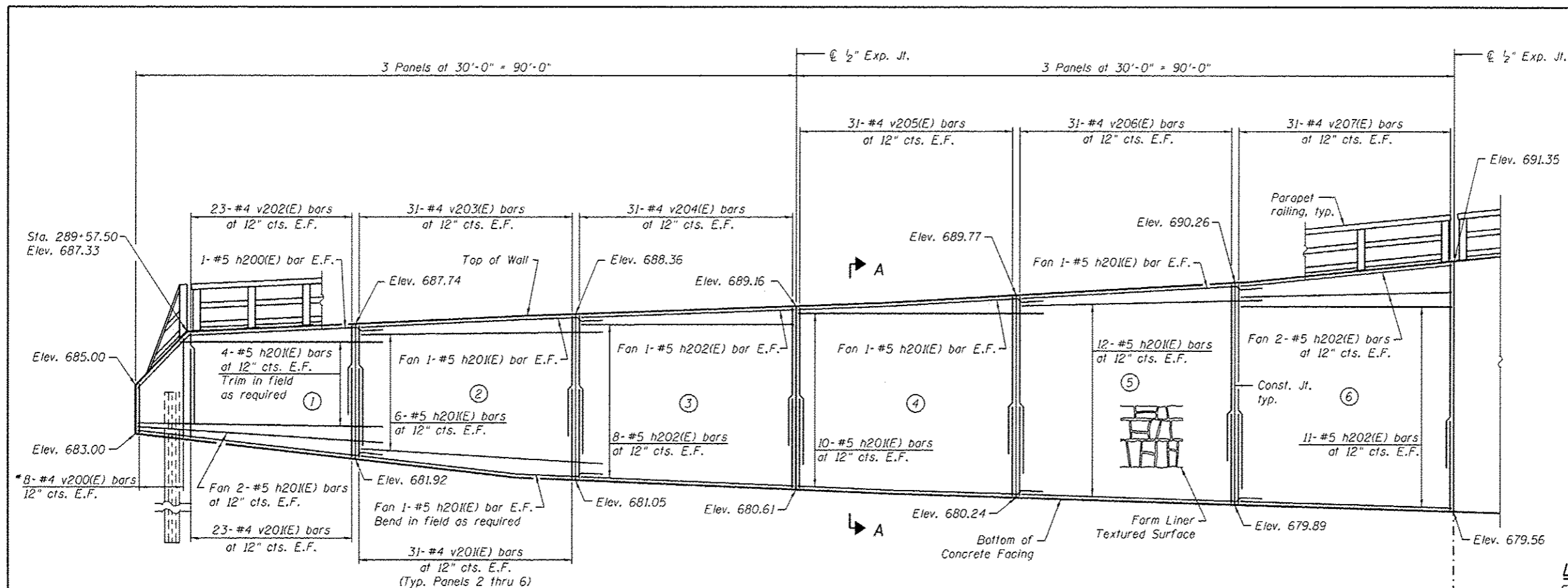
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		CHECKED: PMH	REVISED:
		DRAWN: PMH/RJ	REVISED:
		CHECKED: MJL	REVISED:

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

GENERAL DETAILS & BILL OF MATERIAL  
STRUCTURE NO. 016-2002

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 395
				CONTRACT NO. 60M62
ILLINOIS FED. AID PROJECT				





\* Denotes bars with bar cutting diagram.

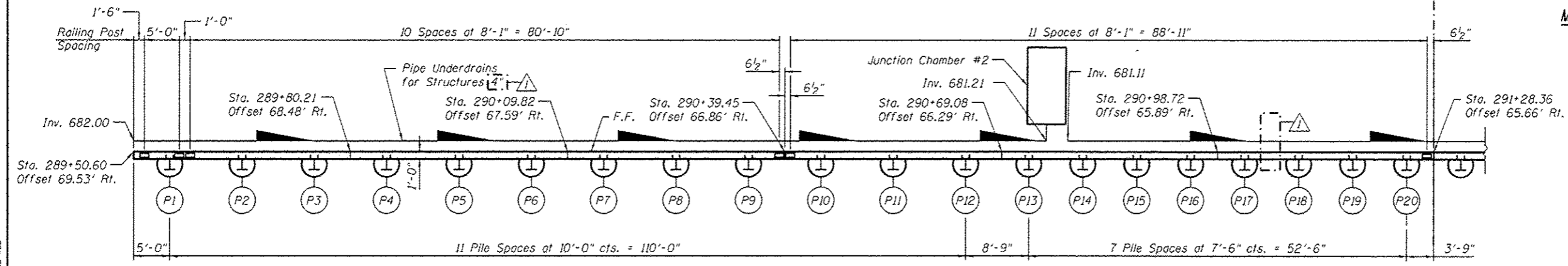
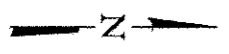
**WALL ELEVATION**  
(Looking at F.F. of Wall)

- LEGEND:**
- F.F. = Front Face of Wall
  - E.F. = Each Face of Wall
  - (1) = Panel No.
  - (P1) = Soldier Pile No.

- NOTES:**
1. Wall stations, offsets and dimensions are measured at front face of wall.
  2. For Bar List see Sheet 6.
  3. For Typical Details see Sheet 2.
  4. For Soldier Pile Schedule see Sheet 5.
  5. For Section A-A see Sheet 6.
  6. For Railing Details see Sheet 7.

**MIN. BAR LAP**  
#4 bars = 2'-1"  
#5 bars = 2'-11"

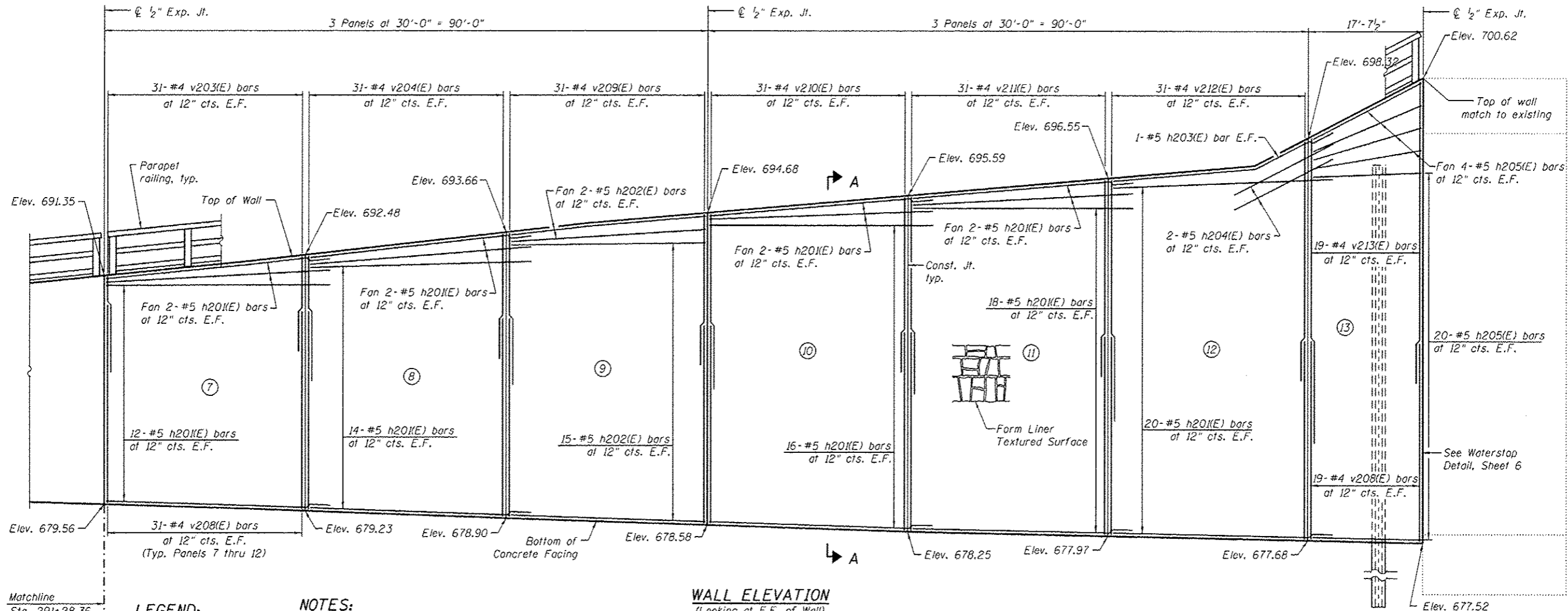
Matchline  
Sta. 291+28.36



**PLAN**

URS  
 800 S. Wacker Dr.  
 Suite 500  
 Chicago, IL 60606  
 TEL 312/919-0000  
 FAX 312/919-4588

FILE NAME : 0102002-60M62-003-plan.dgn	USER NAME : arslan.khan	DESIGNED - KJH	REVISED - 04/12/2013 P.M.H	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>PLAN AND ELEVATION STRUCTURE NO. 016-2002</b>	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 396
PLOT SCALE : 1/8" = 1'-0"	CHECKED - PMH	DRAWN - RJ				CONTRACT NO. 60M62				
PLOT DATE : 4/11/2013	CHECKED - MJL					ILLINOIS FED. AID PROJECT				
						SHEET NO. 3 OF 9 SHEETS				



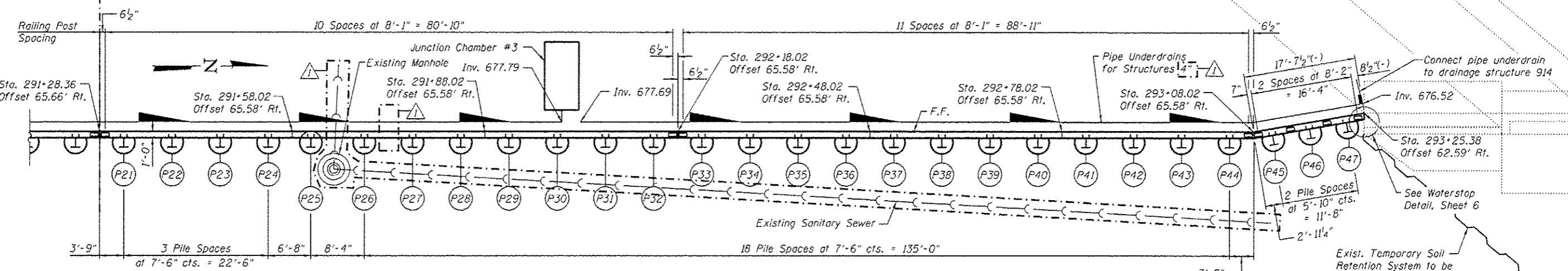
**WALL ELEVATION**  
(Looking at F.F. of Wall)

Matchline  
Sta. 291+28.36

- LEGEND:**
- F.F. = Front Face of Wall
  - E.F. = Each Face of Wall
  - (1) = Panel No.
  - (PI) = Soldier Pile No.

- NOTES:**
1. Wall stations, offsets and dimensions are measured at front face of wall.
  2. For Bar List see Sheet 6.
  3. For Typical Details see Sheet 2.
  4. For Soldier Pile Schedule see Sheet 5.
  5. For Section A-A see Sheet 6.
  6. For Railing Details see Sheet 7.

**MIN. BAR LAP**  
#4 bars = 2'-1"  
#5 bars = 2'-11"



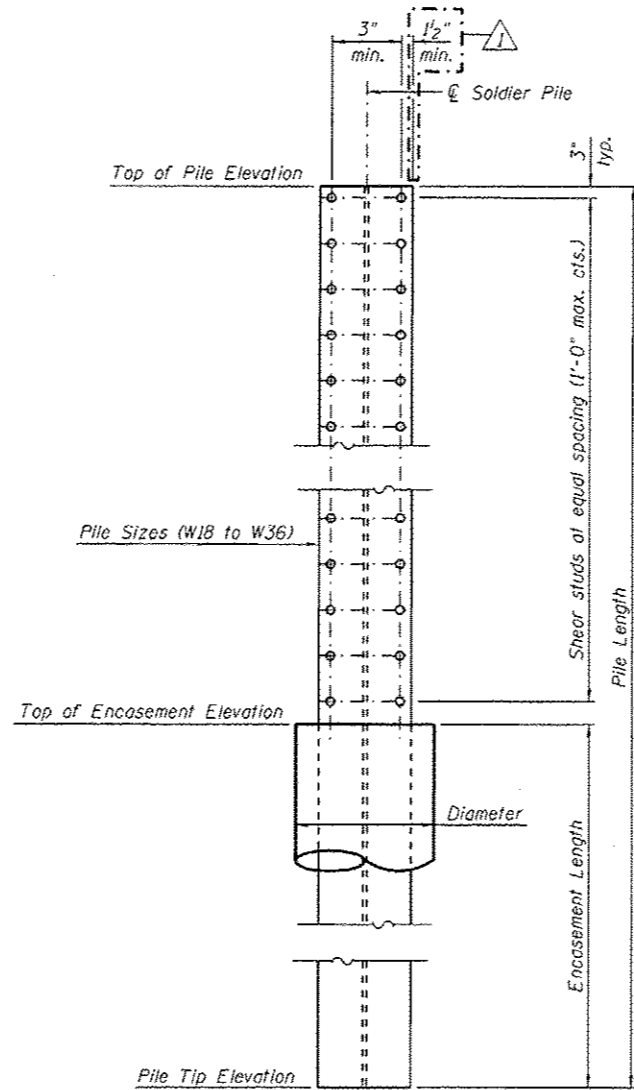
**PLAN**

URS  
 100 S. WACKER DR.  
 SUITE 500  
 CHICAGO, IL 60606  
 TEL (312) 899-0000  
 FAX (312) 939-4158

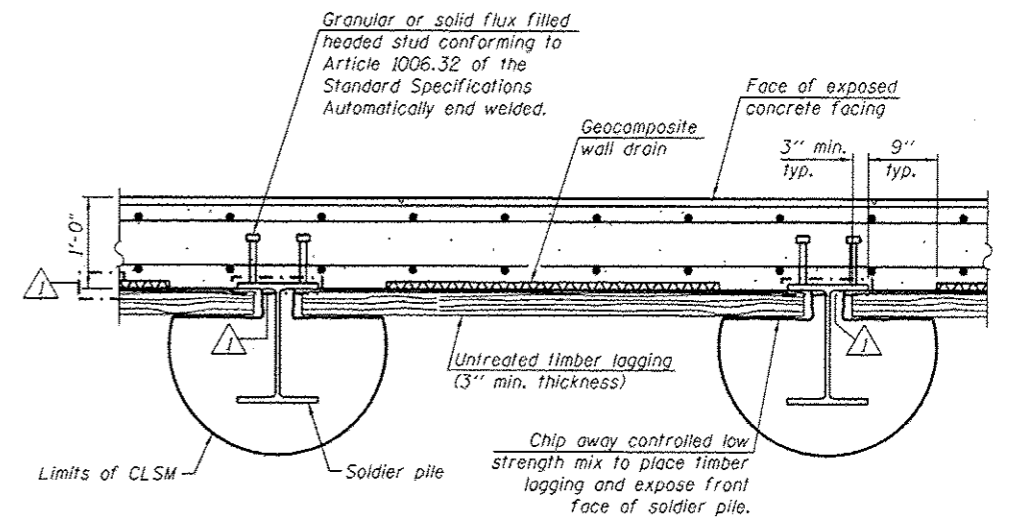
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PLOT SCALE = 1/8" = 1'-0"	DRAWN - RJ	REVISOR -	CONTRACT NO. = 60M62							
PLOT DATE = 4/11/2013	CHECKED - M.J.L.	REVISOR -	ILLINOIS FED. AID PROJECT							
SHEET NO. 4 OF 9 SHEETS										

**SOLDIER PILE SCHEDULE**

Soldier Pile Data						Concrete Encasement Data		
Pile No.	Pile Size	Top of Pile Elevation	Pile Tip Elevation	Pile Length (Ft.)	No. of Studs	Diameter (In.)	Top of Encasement Elevation	Encasement Length
P1	W18x46	682.84	667.07	15.77	2	24	682.82	15.75
P2	W18x46	683.64	666.71	16.93	4	24	682.46	15.75
P3	W18x46	683.82	666.35	17.47	4	24	682.10	15.75
P4	W18x46	684.01	666.02	17.99	6	24	681.77	15.75
P5	W18x46	684.22	665.73	18.49	6	24	681.48	15.75
P6	W18x46	684.42	665.44	18.98	8	24	681.19	15.75
P7	W18x76	684.66	663.47	21.19	8	30	680.97	17.50
P8	W18x76	684.93	663.33	21.60	10	30	680.83	17.50
P9	W18x76	685.20	663.19	22.01	10	30	680.69	17.50
P10	W21x93	685.43	661.55	23.88	10	30	680.55	19.00
P11	W21x93	685.63	661.43	24.21	12	30	680.43	19.00
P12	W21x93	685.84	661.30	24.53	12	30	680.30	19.00
P13	W21x93	686.00	661.20	24.80	12	30	680.20	19.00
P14	W21x93	686.12	661.11	25.01	14	30	680.11	19.00
P15	W21x93	686.24	661.02	25.22	14	30	680.02	19.00
P16	W21x93	686.37	660.94	25.43	14	30	679.94	19.00
P17	W24x104	686.56	659.60	26.96	14	36	679.85	20.25
P18	W24x104	686.84	659.52	27.32	16	36	679.77	20.25
P19	W24x104	687.11	659.44	27.67	16	36	679.69	20.25
P20	W24x104	687.38	659.35	28.03	16	36	679.60	20.25
P21	W24x131	687.66	657.52	30.14	18	36	679.52	22.00
P22	W24x131	687.94	657.44	30.50	18	36	679.44	22.00
P23	W24x131	688.22	657.36	30.87	18	36	679.36	22.00
P24	W24x131	688.50	657.27	31.23	20	36	679.27	22.00
P25	W27x146	688.76	656.95	31.81	20	36	679.20	22.25
P26	W27x146	689.09	656.86	32.23	20	36	679.11	22.25
P27	W27x146	689.38	656.78	32.61	22	36	679.03	22.25
P28	W27x146	689.68	656.69	32.99	22	36	678.94	22.25
P29	W27x146	689.96	654.86	35.09	24	36	678.86	24.00
P30	W27x146	690.21	654.78	35.43	24	36	678.78	24.00
P31	W27x146	690.47	654.70	35.77	24	36	678.70	24.00
P32	W27x146	690.72	654.62	36.10	26	36	678.62	24.00
P33	W30x173	690.96	652.78	38.18	26	42	678.53	25.75
P34	W30x173	691.19	652.70	38.49	26	42	678.45	25.75
P35	W30x173	691.42	652.62	38.79	28	42	678.37	25.75
P36	W30x173	691.65	652.54	39.10	28	42	678.29	25.75
P37	W33x201	691.88	649.72	42.16	28	42	678.22	28.50
P38	W33x201	692.12	649.64	42.48	28	42	678.14	28.50
P39	W33x201	692.36	649.57	42.79	30	42	678.07	28.50
P40	W33x201	692.60	649.50	43.10	30	42	678.00	28.50
P41	W36x262	692.84	647.10	45.74	30	48	677.93	30.83
P42	W36x262	693.08	647.03	46.05	32	48	677.86	30.83
P43	W36x262	693.33	646.96	46.37	32	48	677.79	30.83
P44	W36x262	693.57	646.89	46.68	32	48	677.72	30.83
P45	W36x262	694.87	643.83	51.05	36	48	677.66	33.83
P46	W36x262	695.64	643.77	51.86	38	48	677.60	33.83
P47	W36x262	696.40	643.72	52.68	38	48	677.55	33.83



**SOLDIER PILE ELEVATION AND SHEAR STUD CONNECTION DETAILS**



**DETAIL PLAN**

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 999-0000  
FAX (312) 999-4088

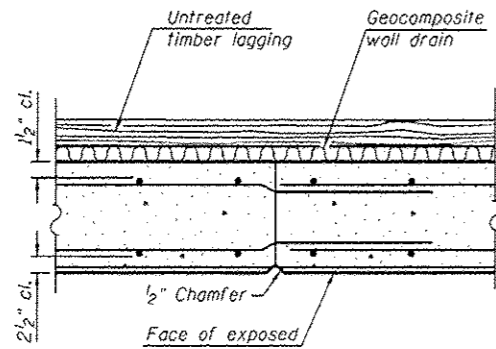
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		CHECKED - PMH	REVISED -
		DRAWN - RJ	REVISED -
		CHECKED - MJL	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

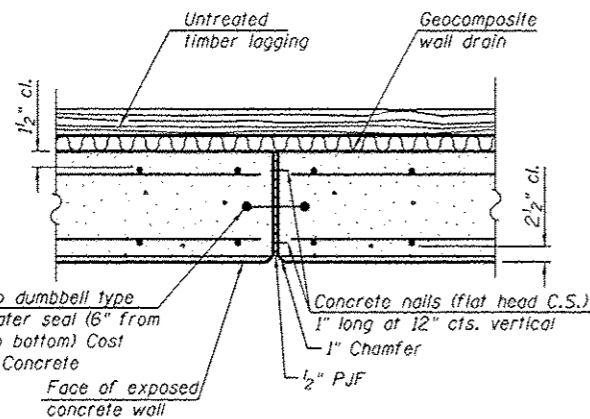
PILE SCHEDULE & DETAILS  
STRUCTURE NO. 016-Z002

SHEET NO. 5 OF 9 SHEETS

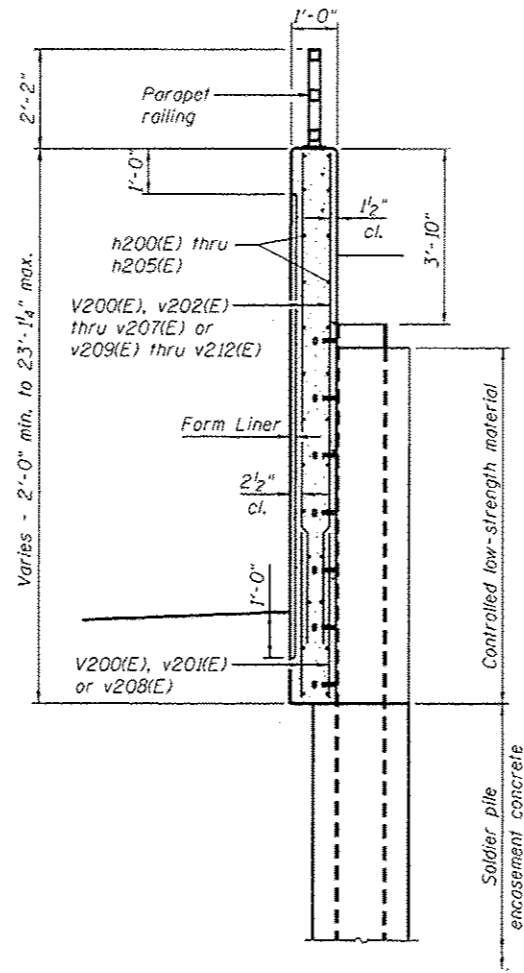
F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 398
				CONTRACT NO. 60M62
ILLINOIS FED. AID PROJECT				



**CONSTRUCTION JOINT DETAIL**

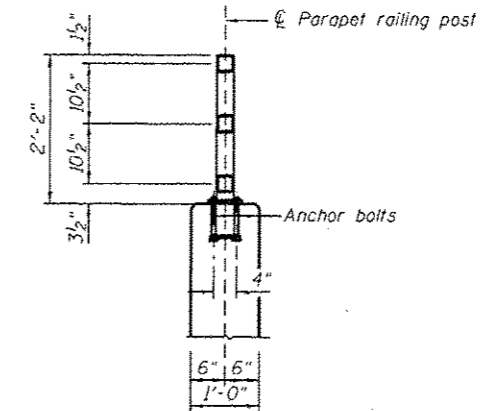


**EXPANSION JOINT DETAIL**



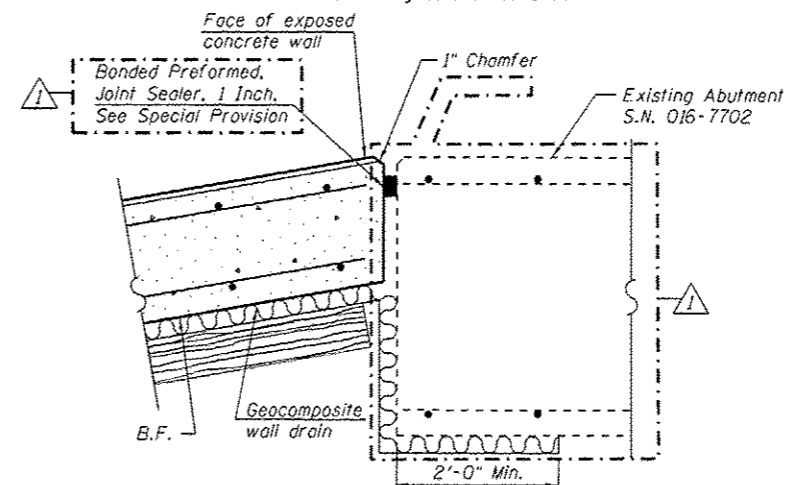
**SECTION A-A**

For details not shown see Typical Section Thru Soldier Pile Wall, Sheet 2.



**SECTION THRU PARAPET RAILING**

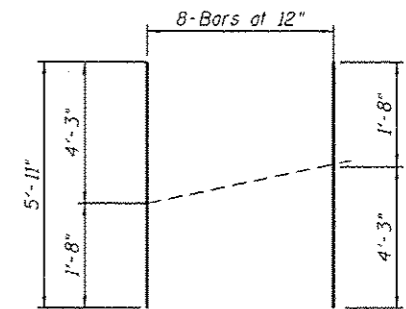
For railing details see Sheet 7.



**WATERSTOP DETAIL**

**BILL OF MATERIAL**

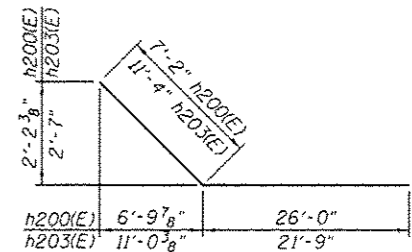
Bar	No.	Size	Length	Shape
h200(E)	2	#5	33'-2"	
h201(E)	252	#5	33'-0"	
h202(E)	78	#5	29'-8"	
h203(E)	2	#5	33'-1"	
h204(E)	4	#5	14'-3"	
h205(E)	48	#5	17'-3"	
v200(E)	8	#4	5'-11"	
v201(E)	356	#4	4'-0"	
v202(E)	46	#4	3'-9"	
v203(E)	124	#4	5'-3"	
v204(E)	124	#4	6'-9"	
v205(E)	62	#4	7'-6"	
v206(E)	62	#4	8'-3"	
v207(E)	62	#4	9'-9"	
v208(E)	410	#4	10'-0"	
v209(E)	62	#4	8'-1"	
v210(E)	62	#4	9'-3"	
v211(E)	62	#4	10'-6"	
v212(E)	62	#4	12'-7"	
v213(E)	38	#4	15'-1"	
Reinforcement Bars, Epoxy Coated		Pound	20,100	
Concrete Structures		Cu. Yd.	175.7	



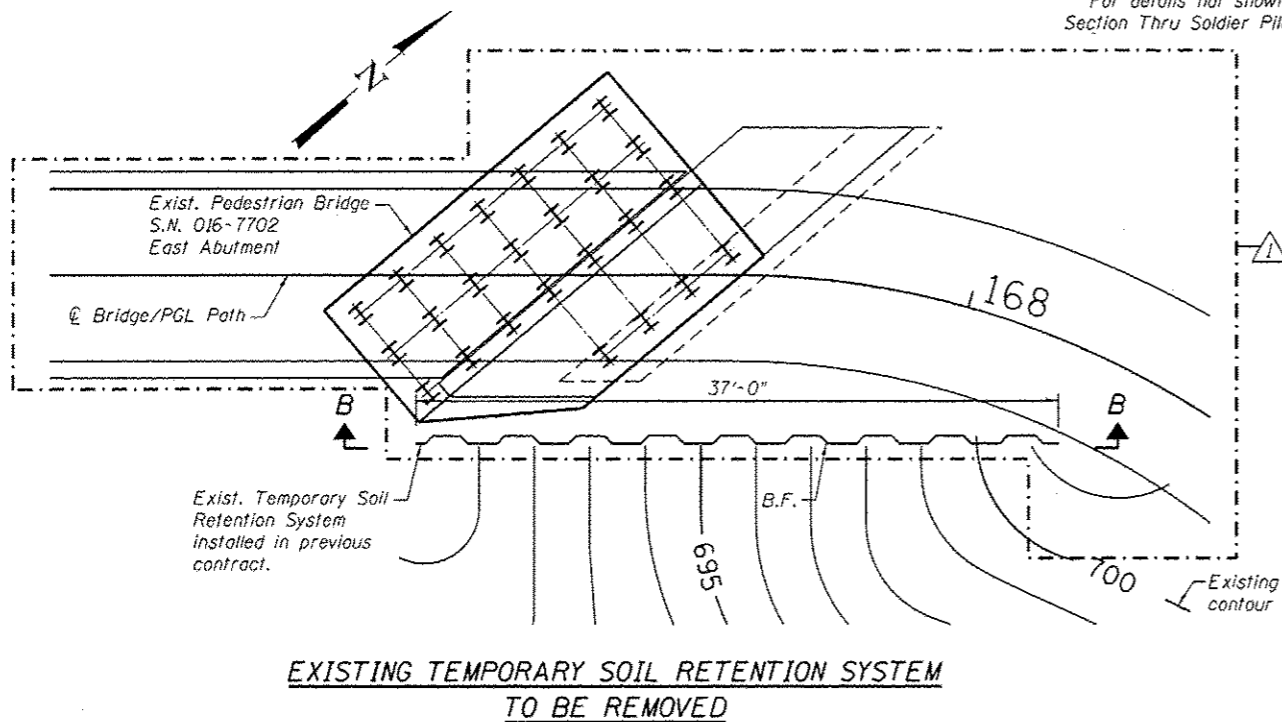
**BAR v200(E)**

**BAR CUTTING DIAGRAM**

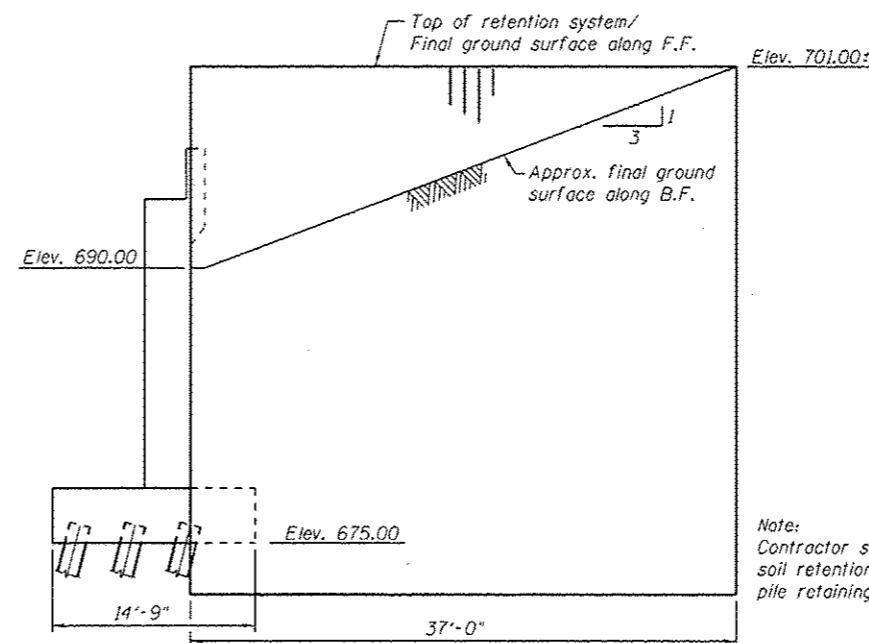
Order bars full length. Cut to fit as shown and place at one end of the dimension line shown on the plan. Use remainder of bars at opposite end of the dimension line on the opposite face of the Retaining Wall.



**BARS h200(E) & h203(E)**



**EXISTING TEMPORARY SOIL RETENTION SYSTEM TO BE REMOVED**



**SECTION B-B**

(Looking at B.F.)

Note: Contractor shall remove temporary soil retention system after soldier pile retaining wall is in place.

URS  
100 S. Wacker Dr.  
Suite 520  
Chicago, IL 60606  
Tel: 312/939-0000  
Fax: 312/939-0098

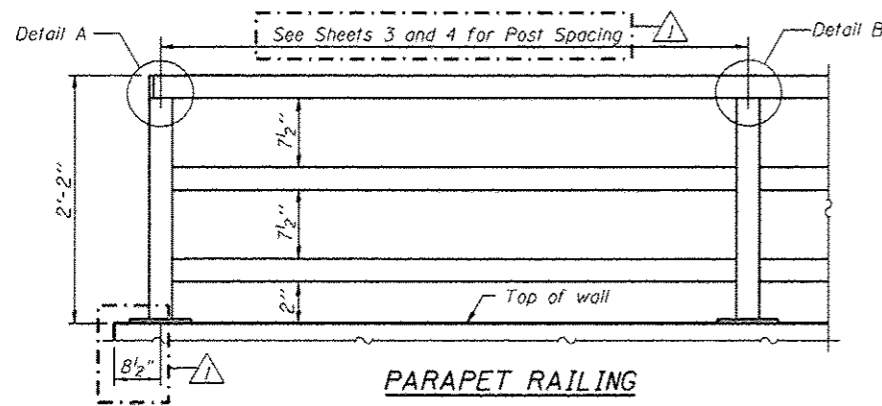
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		CHECKED = PMH	REVISED =
		DRAWN = RJ	REVISED =
		CHECKED = MJL	REVISED =

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL  
STRUCTURE NO. 016-2002

SHEET NO. 6 OF 95 SHEETS

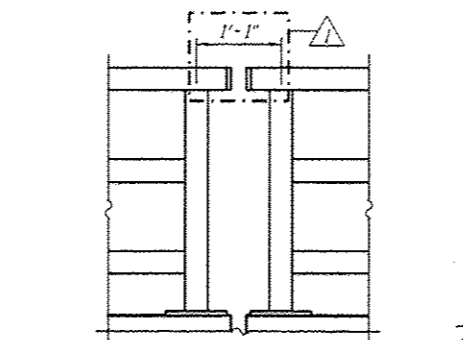
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	399
CONTRACT NO. 60M62				
ILLINOIS FED. AID PROJECT				



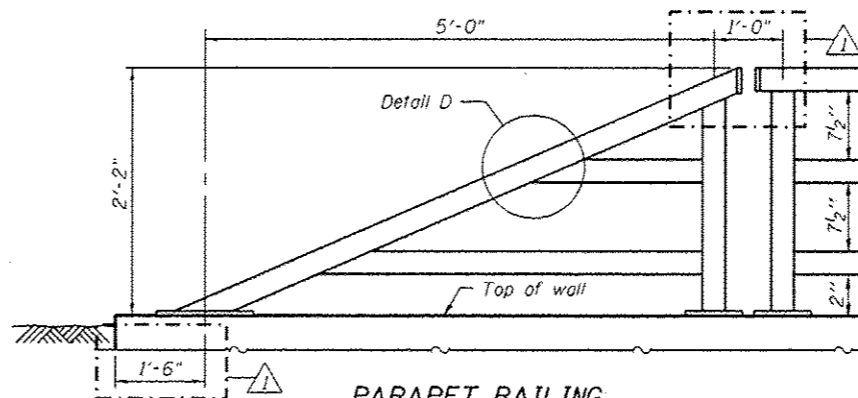
**PARAPET RAILING**

**ELEVATION**

(Inside Face of Rail)  
(End Section at North End of Wall shown)



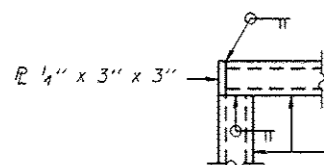
**PARAPET RAILING**  
**ELEVATION AT EXPANSION JOINT**



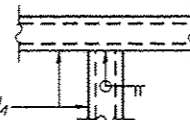
**PARAPET RAILING**  
**AT END SECTION**

(At South End of Wall)

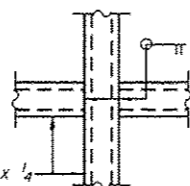
Note:  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



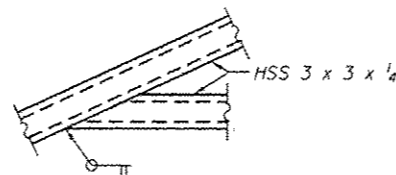
**DETAIL A**



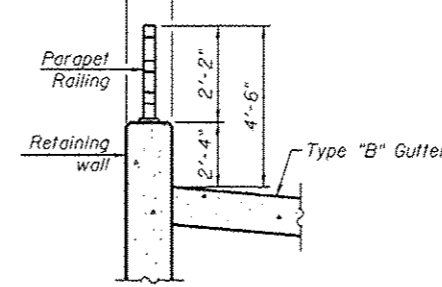
**DETAIL B**



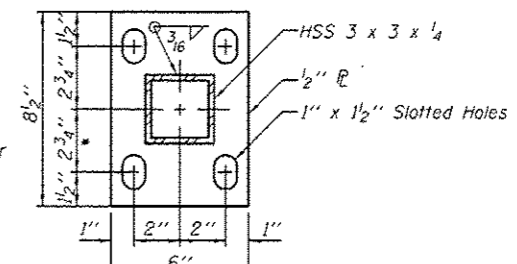
**DETAIL C**



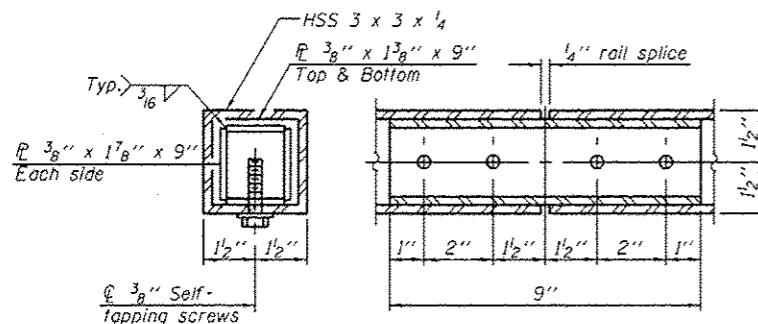
**DETAIL D**



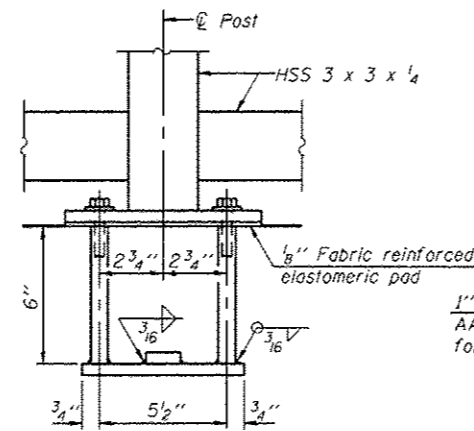
**SECTION THRU RAILING**



**BASE PL**

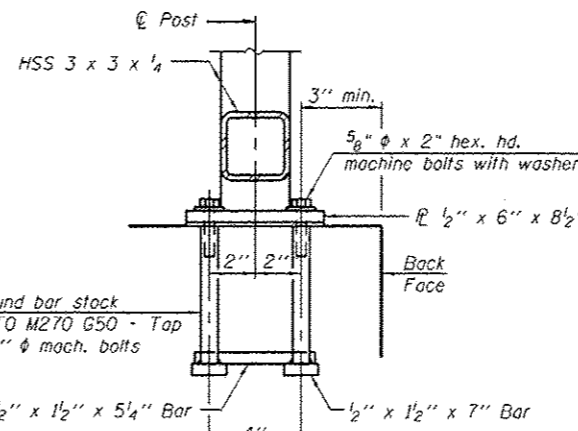


**RAIL SPLICE**



**ANCHOR BOLT DETAILS**

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



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**BILL OF MATERIAL**

Item	Unit	Quantity
Parapet Railing	Foot	378

FILE NAME : 0162002-60M62-007-Rail.dgn	USER NAME : orsalan.khan	DESIGNED - PMH	REVISED - 04/12/2013 P.M.H
		CHECKED - M.J.L	REVISED -
		DRAWN - R.J	REVISED -
		CHECKED - M.J.L	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PARAPET RAILING**  
**STRUCTURE NO. 016-Z002**

SHEET NO. 7 OF 9 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	400
CONTRACT NO. 60M62				
ILLINOIS FED. AID PROJECT				



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### BORING LOG 3A-B-1

WEI Job No.: 201-40-01

Client: McDonough Associates Inc.  
Project: US 45, Segment 3  
Location: Ret. Wall 016-2002, Cook Co., T36N, R12E

Datum: NGVD  
Elevation: 682.11 ft  
North: 1809765.73 ft  
East: 1115359.56 ft  
Station: 289+65.48  
Offset: 56.19 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Cu (tsf)	Moisture Content (%)
684.93	3-inch thick, dark brown SILTY CLAY --TOPSOIL-- Stiff, brown CLAY LOAM --FILL--	0-1	1	1	1.23	15									
679.1	Medium stiff, black to dark brown SILTY CLAY, trace organic matter --BURIED TOPSOIL--	1-5	2	2	1.25	33									
675.8	Stiff, dark brown to dark gray, organic SILTY CLAY, trace shells and plant material	5-10	3	3	0.66	32									
		10-15	4	4	0.41	52									
		15-20	5	5	0.25	51									
		20-25	6	6	0.25	46									
		25-30	7	7	0.25	60									
664.1	Stiff, gray SILTY CLAY, trace gravel	30-35	8	8	1.72	17									
662.1	Boring terminated at 20.00 ft														

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	10-04-2010	Complete Drilling	10-04-2010	While Drilling	DRY		
Drilling Contractor	WTS	Drill Rig	B-57 TMR	At Completion of Drilling	DRY		
Driller	K&K	Logger	B. Wilson	Time After Drilling	NA		
Checked by	C. Marin	Drilling Method	3.25" IDA HSA; Boring backfilled upon completion	Depth to Water	NA		



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### BORING LOG 3A-B-2

WEI Job No.: 201-40-01

Client: McDonough Associates Inc.  
Project: US 45, Segment 3  
Location: Ret. Wall 016-2002, Cook Co., T36N, R12E

Datum: NGVD  
Elevation: 681.22 ft  
North: 1809889.37 ft  
East: 1115353.47 ft  
Station: 290+67.76  
Offset: 47.00 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Cu (tsf)	Moisture Content (%)
680.84	4-inch thick, black SILTY CLAY --TOPSOIL-- Very stiff, brown CLAY LOAM --FILL--	0-1	1	1	3.3	2.00	31								
675.2	Soft, dark brown CLAY, trace organic matter	1-5	2	2	0.48	30									
674.6	Medium stiff to very stiff, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	5-10	3	3	0.74	26									
		10-15	4	4	1.50	17									
		15-20	5	5	1.64	20									
		20-25	6	6	2.62	19									
		25-30	7	7	2.54	18									
663.0	Loose, gray SANDY LOAM	30-35	8	8	NP	17									
660.7	Loose, gray SILT	35-40	9	9	NP	14									
658.2	Stiff, gray SILTY CLAY LOAM, little GRAVEL	40-45	10	10	1.64	14									
656.2	Boring terminated at 25.00 ft														

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	10-04-2010	Complete Drilling	10-04-2010	While Drilling	DRY		
Drilling Contractor	WTS	Drill Rig	B-57 TMR	At Completion of Drilling	DRY		
Driller	K&K	Logger	B. Wilson	Time After Drilling	NA		
Checked by	C. Marin	Drilling Method	3.25" IDA HSA; Boring backfilled upon completion	Depth to Water	NA		

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Entire sheet revised

FILE NAME: 0162002-60M62-008-bor.dgn	USER NAME: orselan.khan	DESIGNED: WEI	REVISION: 04/12/2013 P.M.H.	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS STRUCTURE NO. 016-2002	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 401
PLOT SCALE: 1/8" = 1' / 1/4" = 1'	DRAWN: WEI	REVISION:	CONTRACT NO. 60M62							
PLOT DATE: 4/11/2013	CHECKED: PMH	REVISION:	ILLINOIS FED. AID PROJECT							





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### BORING LOG 3A-B-3

WEI Job No.: 201-40-01

Client: **McDonough Associates Inc.**  
Project: **US 45, Segment 3**  
Location: **Ret. Wall 016-Z002, Cook Co., T36N, R12E**

Datum: NGVD  
Elevation: 695.79 ft  
North: 1810011.14 ft  
East: 1115398.33 ft  
Station: 292+08.99  
Offset: 91.26 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
695.9	4-inch thick ASPHALT --PAVEMENT--												
694.9	12-inch thick CRUSHED STONE --BASE COURSE--												
	Soft to hard, brown CLAY LOAM, little gravel --FILL--	1	2	4	4.26	14			11	8	13	2.87	11
		2	3	4						11	11		
		3	4							11	11		
		5	2	1	0.49	20			30	6	7	NR	
		6	3	6						7	8		
		3	2	3	1.50	19							
		4	3	4									
667.6	Very stiff to hard, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel	4	4	6	5.33	19			35	20	10	2.00	12
		6	6	6						11	11		
		5	3	6	3.61	16							
		6	4	6									
		15	3	4	3.03	24			40	4	6	2.54	14
		6	4	6						7	7		
		7	4	5	6.23	20							
		8	5	9									
		8	3	8	6.50	20							
		10	5	7									
		8	4	6									
		25	4	6	5.17	13							
		7	4	7									

--L<sub>c</sub>(%)=41, P<sub>c</sub>(%)=19--  
--%Gravel=0.2--  
--%Sand=8.3--  
--%Silt=50.9--  
--%Clay=40.6--  
--A-7-6 (21)--

Boring terminated at 40.00 ft

#### GENERAL NOTES

Begin Drilling: 10-04-2010  
Complete Drilling: 10-04-2010  
Drilling Contractor: WTS  
Drill Rig: B-57 TMR  
Driller: K&K  
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: 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.



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### BORING LOG 3A-B-4

WEI Job No.: 201-40-01

Client: **McDonough Associates Inc.**  
Project: **US 45, Segment 3**  
Location: **Ret. Wall 016-Z002, Cook Co., T36N, R12E**

Datum: NGVD  
Elevation: 695.22 ft  
North: 1810101.71 ft  
East: 1115396.48 ft  
Station: 292+09.56  
Offset: 89.32 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
695.9	4-inch thick ASPHALT --PAVEMENT--												
694.9	12-inch thick CRUSHED STONE --BASE COURSE--												
	Very stiff, brown CLAY LOAM, some gravel --FILL--	1	3	3	3.20	19			11	3	4	1.23	12
		2	3	3						5	5		
		5	2	3	1.72	26			30	3	3	1.89	13
		6	3	3						6	6		
		3	2	3	2.38	24							
		4	3	5									
		10	4	5	3.28	20			35	3	4	NP	13
		5	4	5						4	4		
		5	4	7	3.00	18							
		6	3	4									
		15	3	4	4.02	19			40	5	6	NP	23
		6	4	6						7	7		
		7	3	3	0.98	15							
		8	5	5									
		20	5	6	2.25	12							
		5	6	5									
		9	3	4	1.47	16							
		5	3	4									
		25	3	4	2.30	12							
		5											

#### GENERAL NOTES

Begin Drilling: 10-04-2010  
Complete Drilling: 10-04-2010  
Drilling Contractor: WTS  
Drill Rig: B-57 TMR  
Driller: K&K  
Logger: B. Wilson  
Checked by: C. Marin  
Drilling Method: 3.25" IDA HSA; Boring backfilled upon completion.

#### WATER LEVEL DATA

While Drilling: 38.00 ft  
At Completion of Drilling: 38.00 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.

100 S. WACKER DR.  
SUITE 1000  
CHICAGO, IL 60606  
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FAX (312) 939-4098



△ Entire sheet revised

FILE NAME: 016Z002-60M62-001-bor.dgn	USER NAME: breslan_khan	DESIGNED: WEI	REVISION: 04/12/2013 P.M.H.
		CHECKED: PMH	REVISION:
		DRAWN: WEI	REVISION:
		CHECKED: PMH	REVISION:

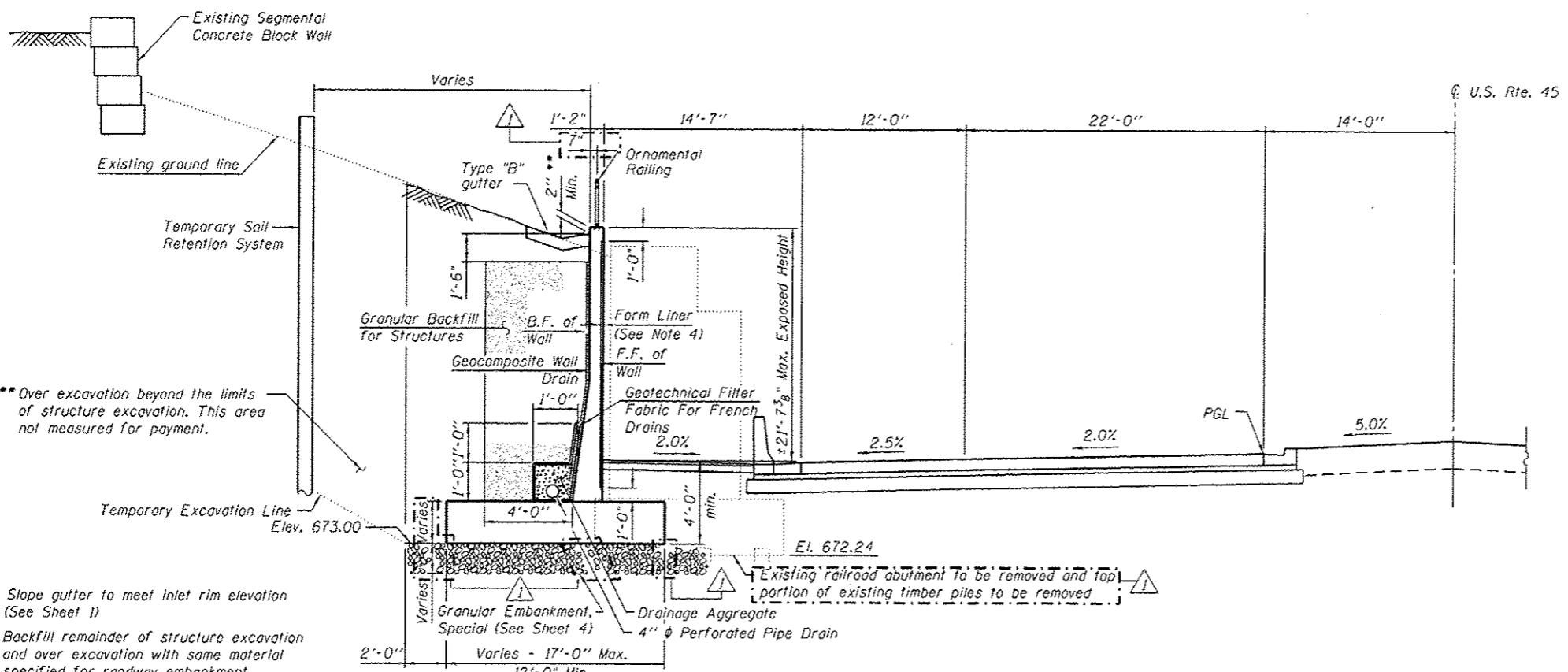
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS  
STRUCTURE NO. 016-2002

SHEET NO. 9 OF 9 SHEETS

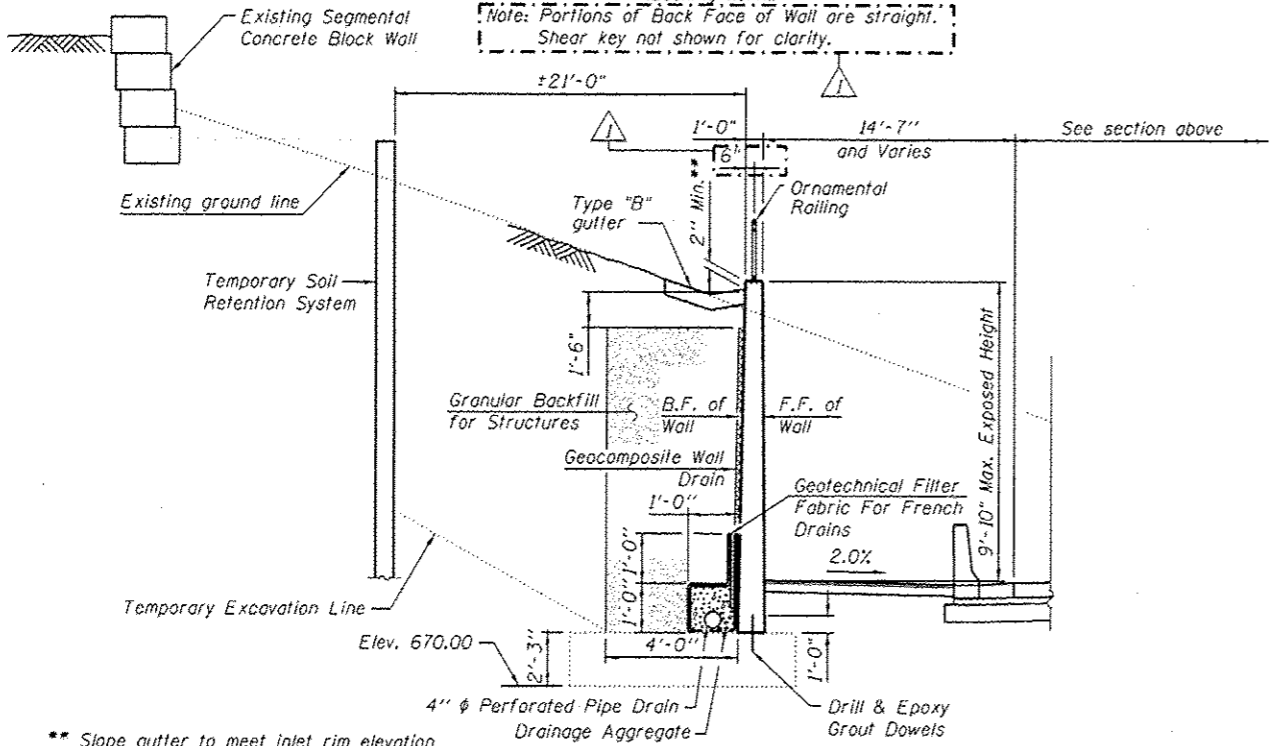
F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 402
CONTRACT NO. 60M62				
ILLINOIS FED. AID PROJECT				





**SECTION THRU RETAINING WALL**  
(Sta. 292+73.27 to 293+76.50)  
(Looking North)

Note: Portions of Back Face of Wall are straight.  
Shear key not shown for clarity.

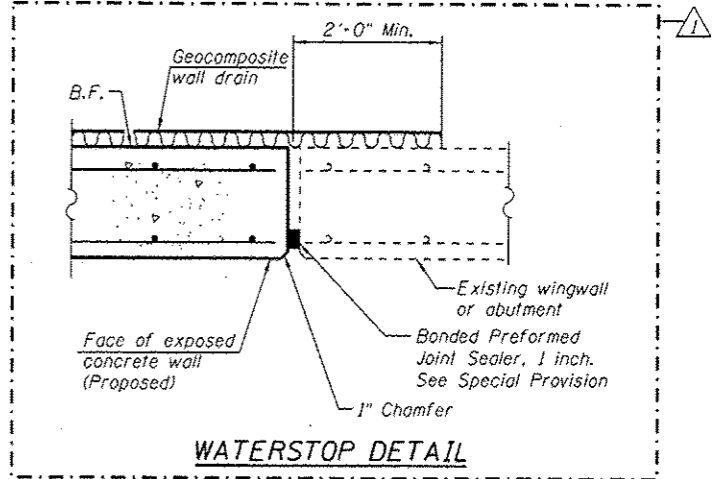


**SECTION THRU RETAINING WALL**  
(Sta. 293+76.50 to 293+90.50)  
(Looking North)

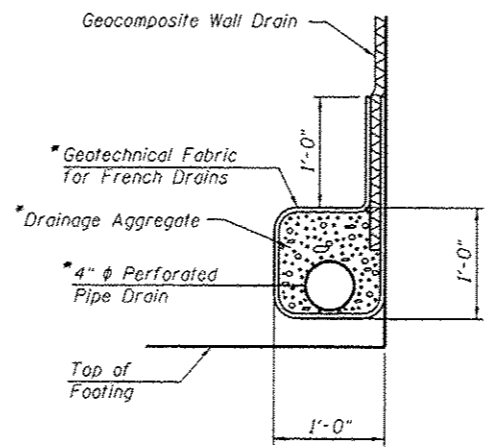
TOTAL BILL OF MATERIAL		
ITEM	UNIT	TOTAL
Granular Embankment, Special	Cu. Yd.	98
Concrete Removal	Cu. Yd.	419
Structure Excavation	Cu. Yd.	1,638
Removal and Disposal of Unsuitable Material for Structures	Cu. Yd.	93
Concrete Structures	Cu. Yd.	2,229
Form Liner Textured Surface	Sq. Ft.	1,366
Reinforcement Bars, Epoxy Coated	Pound	25,130
Name Plates	Each	1
Geocomposite Wall Drain	Sq. Yd.	157
Removal of Temporary Soil Retention System	Sq. Ft.	218
Granular Backfill for Structures	Cu. Yd.	256
Ornamental Railing	Foot	182
Bonded Preformed Joint Sealer, 1 Inch	Foot	37
Pipe Underdrains for Structures 4"	Foot	112
Temporary Soil Retention System	Sq. Ft.	1,427

**INDEX OF SHEETS**

1. General Plan and Elevation
2. General Details and Bill of Material
3. Retaining Wall Plan and Elevation
4. Sections and Details
5. Removal Plan and Soil Retention System
6. Railing Details
7. Soil Borings



**WATERSTOP DETAIL**



**PIPE UNDERDRAIN DETAIL**

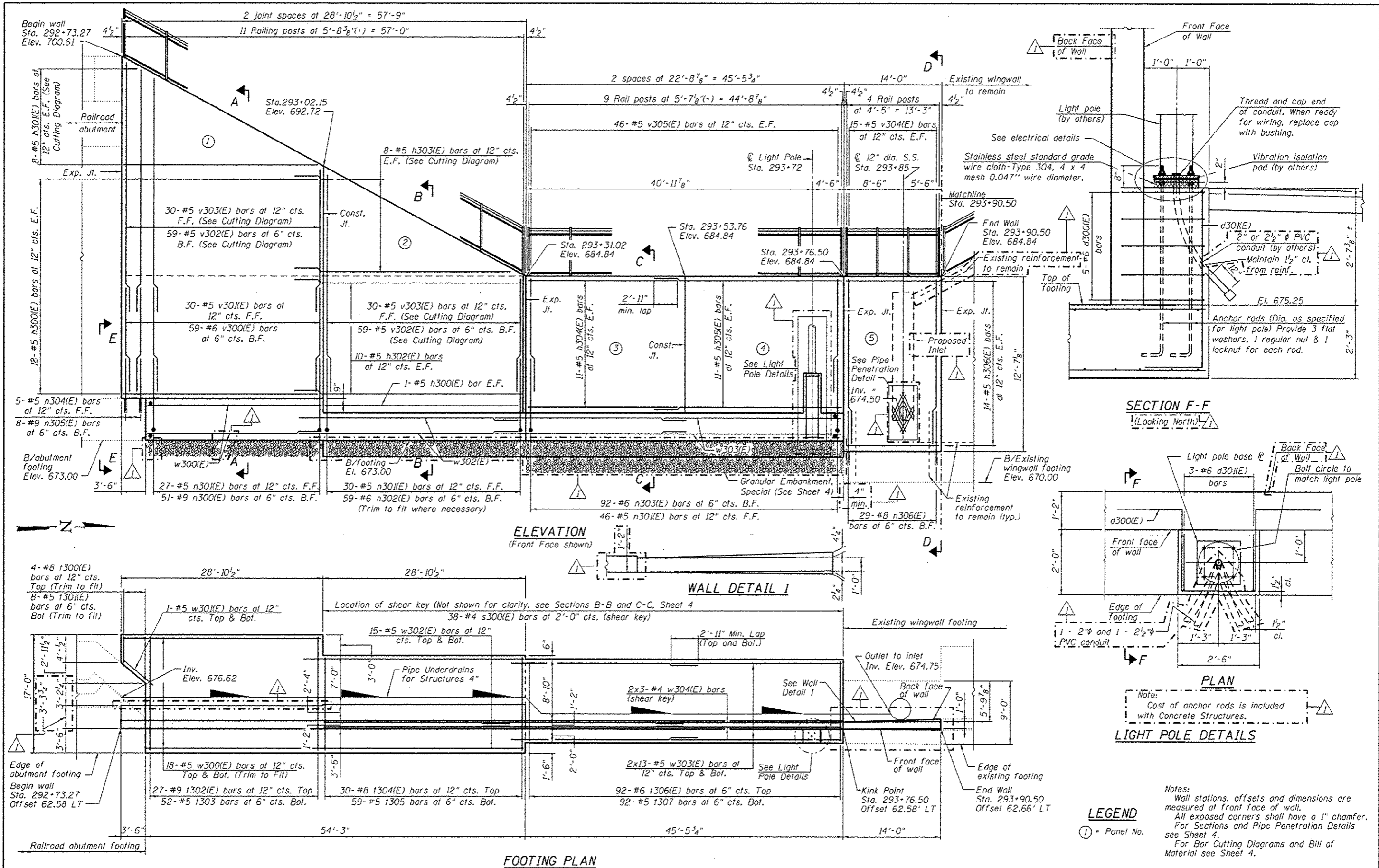
\*Included in the cost of "Pipe Underdrains for Structures 4".

**GENERAL NOTES**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. The back face of Retaining Wall shall be waterproofed according to Article 503.18 of the Standard Specifications.
3. The form liner shall be a random Ashlar blend pattern consisting of the following block sizes:
  1. 28% - 4" X 18"
  2. 16% - 8" X 8"
  3. 28% - 8" X 11"
  4. 28% - 8" X 18"

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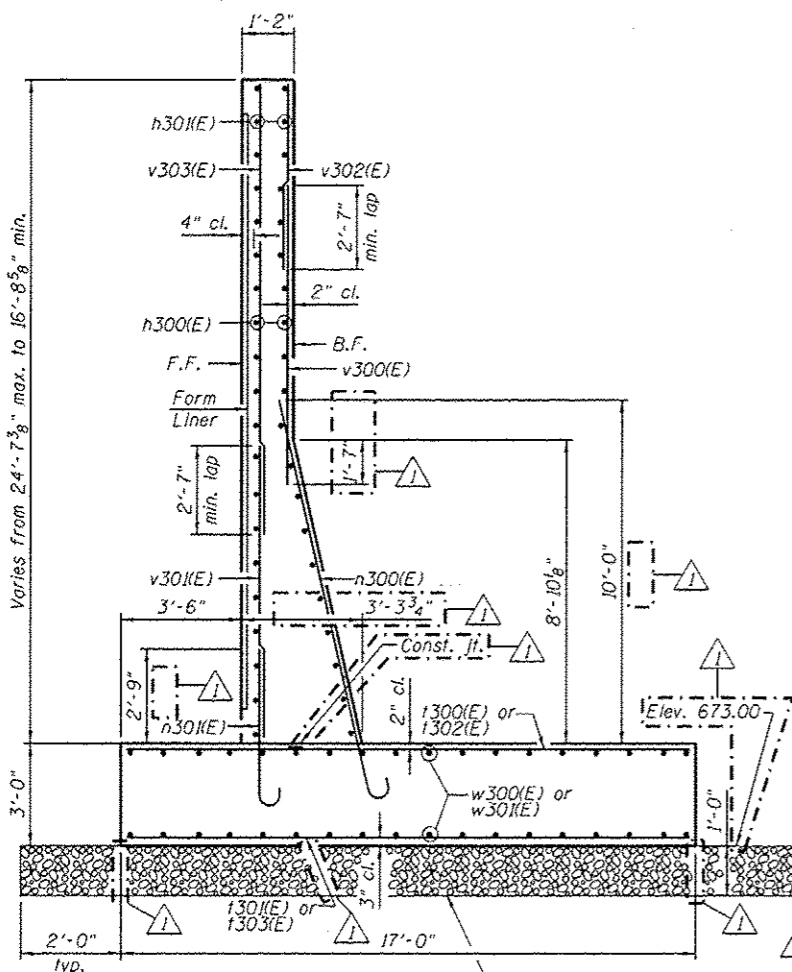
FILE NAME: 0162003-G0M62-002-GND.dgn	USER NAME: arsalan.khan	DESIGNED: MJL	REVISED: 4/12/2013 P.M.J.H.	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL DETAILS AND BILL OF MATERIAL STRUCTURE NO. 016-2003	F.A.P. RTE.:	SECTION:	COUNTY:	TOTAL SHEETS:	SHEET NO.:	
PLOT SCALE: 1/8" = 1'-0"	DRAWN: PMH/AMV	CHECKED: MCB	REVISED:			330	103R-5	COOK	778	404	
PLOT DATE: 4/12/2013	CHECKED: MCB	REVISED:				CONTRACT NO. 60M62					
						ILLINOIS F&O PROJECT					



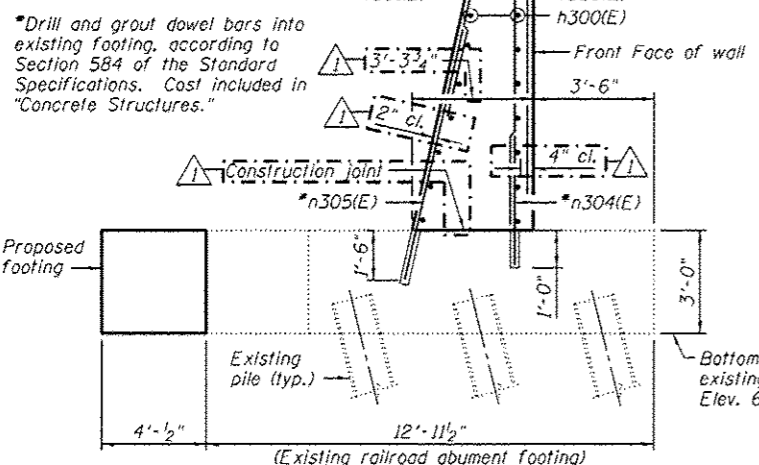
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 100 S. WACKER DR.  
 SUITE 500  
 CHICAGO, IL 60606  
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 FAX (312) 939-4598

FILE NAME: 0162003-60M62-003-pln.dgn	USER NAME: arealon.khan	DESIGNED: MJL	REVISED: 4/12/2013 P.M.H.	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	RETAINING WALL PLAN AND ELEVATION STRUCTURE NO. 016-2003	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 405	
	PLOT SCALE: 1/2" = 1'-0"	CHECKED: MGB	REVISED:			CONTRACT NO. 60M62			ILLINOIS FED. AID PROJECT		
	PLOT DATE: 4/12/2013	DRAWN: AMV/MJL	REVISED:								
		CHECKED: MGB	REVISED:								

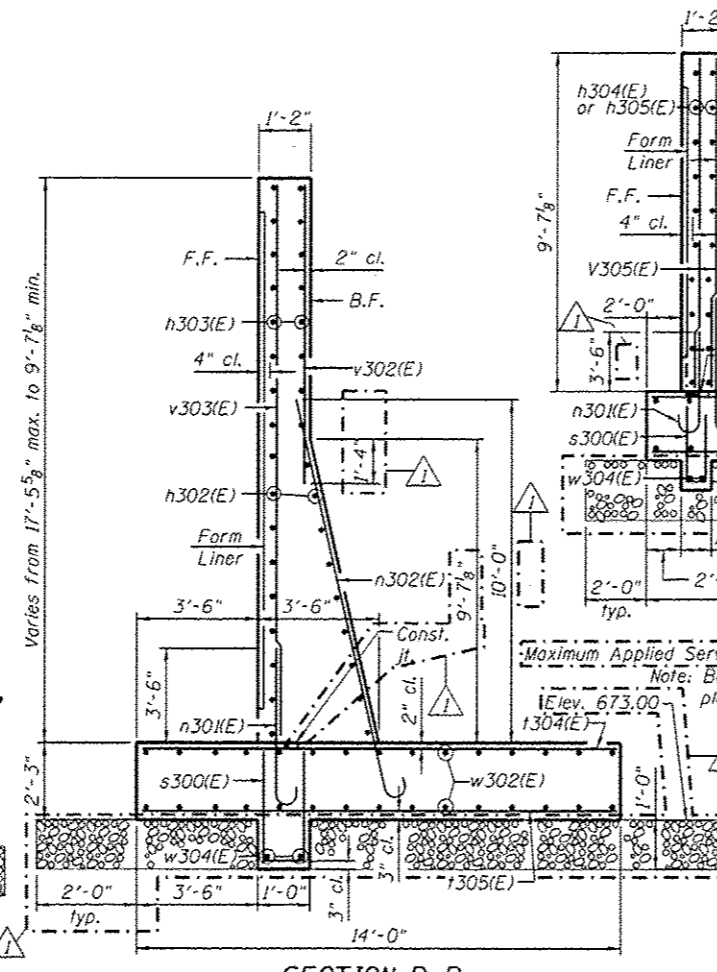




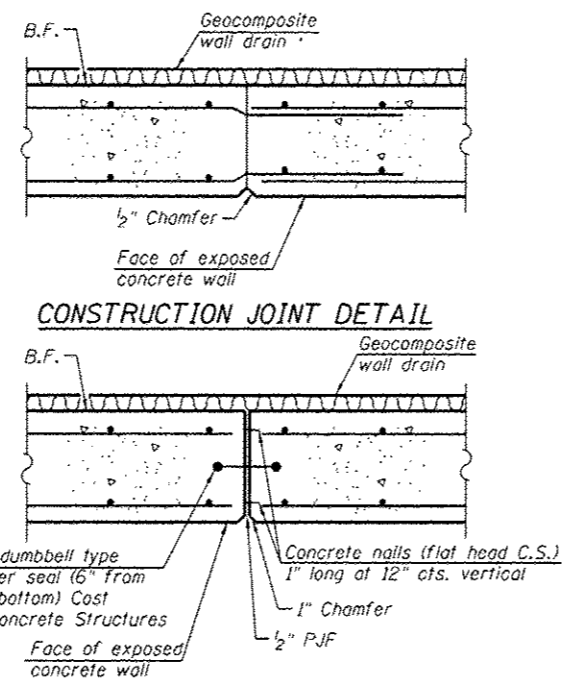
**SECTION A-A**



**SECTION E-E**

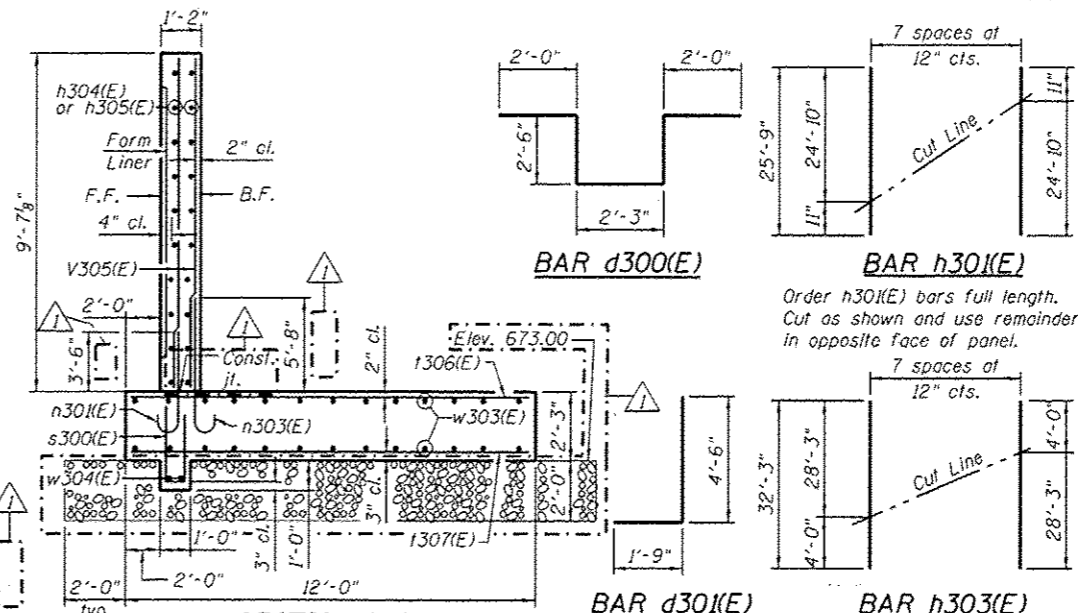


**SECTION B-B**

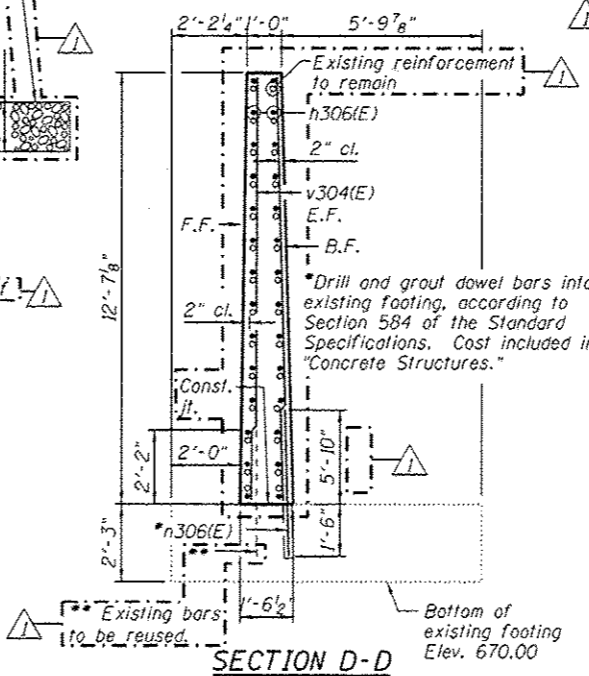


**CONSTRUCTION JOINT DETAIL**

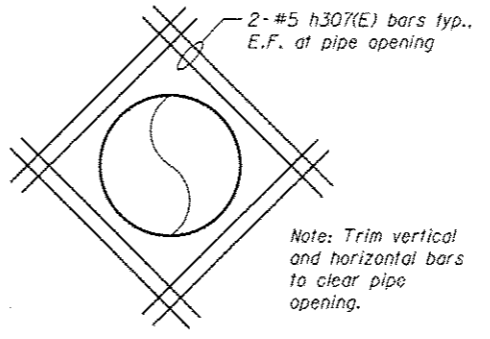
**EXPANSION JOINT DETAIL**



**SECTION C-C**



**SECTION D-D**



**PIPE PENETRATION DETAIL**

**BAR d300(E)**

**BAR h30(E)**

**BAR d30(E)**

**BAR h303(E)**

**BAR v302(E)**

**BAR v303(E)**

**CUTTING DIAGRAMS**

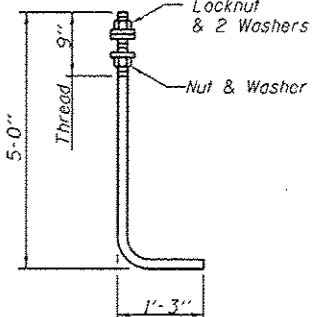
Bar	a	b	c
n300(E)	12'-9"	1'-3"	11'-4"
n301(E)	5'-6"	7"	5"
n302(E)	12'-0"	8"	6"
n303(E)	7'-8"	8"	6"

**BARS n300(E), n301(E), n302(E) and n303(E)**

**WALL BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d300(E)	5	#6	11'-3"	U
d301(E)	3	#6	6'-3"	U
h300(E)	38	#5	28'-6"	—
h301(E)	8	#5	25'-9"	—
h302(E)	20	#5	32'-0"	—
h303(E)	8	#5	32'-3"	—
h304(E)	22	#5	22'-4"	—
h305(E)	22	#5	25'-8"	—
h306(E)	28	#5	13'-8"	—
h307(E)	16	#5	2'-6"	—
n300(E)	51	#9	14'-0"	U
n301(E)	103	#5	6'-1"	U
n302(E)	59	#6	12'-8"	U
n303(E)	92	#6	8'-4"	U
n304(E)	5	#5	3'-9"	—
n305(E)	8	#9	8'-6"	—
n306(E)	29	#8	7'-4"	—
s300(E)	38	#4	6'-0"	U
v300(E)	4	#8	6'-8"	—
v301(E)	8	#5	6'-8"	—
v302(E)	27	#9	16'-8"	—
v303(E)	52	#5	16'-8"	—
v304(E)	30	#8	13'-8"	—
v305(E)	59	#5	13'-8"	—
v306(E)	92	#6	11'-8"	—
v307(E)	92	#5	11'-8"	—
w300(E)	59	#6	10'-6"	—
w301(E)	30	#5	10'-11"	—
w302(E)	59	#5	11'-9"	—
w303(E)	30	#5	24'-10"	—
w304(E)	30	#5	12'-3"	—
w305(E)	92	#5	9'-6"	—
w306(E)	36	#5	28'-6"	—
w307(E)	2	#5	5'-0"	—
w308(E)	30	#5	31'-9"	—
w309(E)	52	#5	25'-8"	—
w3010(E)	6	#4	26'-3"	—
Concrete Structures		Cu. Yd.	224.9	
Reinforcement Bars, Epoxy Coated		Pound	25,130	

Bars indicated thus 14 x 2-#5 etc. indicates 14 lines of bars with 2 lengths per line.



**ANCHOR ROD**

Diameter as specified for light poles. (ASTM F 1554 Grade 105) Full length not dipped galvanized.

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 939-0000  
FAX (312) 939-0158

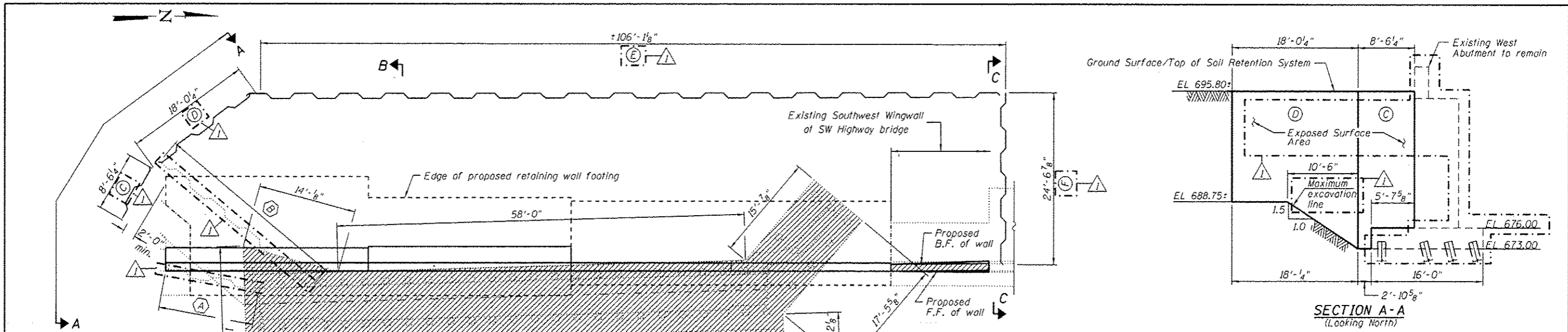
FILE NAME : 0162003-60402-004-det.dgn	USER NAME : aretan_khan	DESIGNED : AMV	REVISED : 04/12/2013 P.M.H.
		CHECKED : MGB	REVISED :
		DRAWN : AMV/MJL	REVISED :
		CHECKED : MGB	REVISED :

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SECTIONS AND DETAILS  
STRUCTURE NO. 016-2003  
SHEET NO. 4 OF 7 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	406
				CONTRACT NO. 60M62

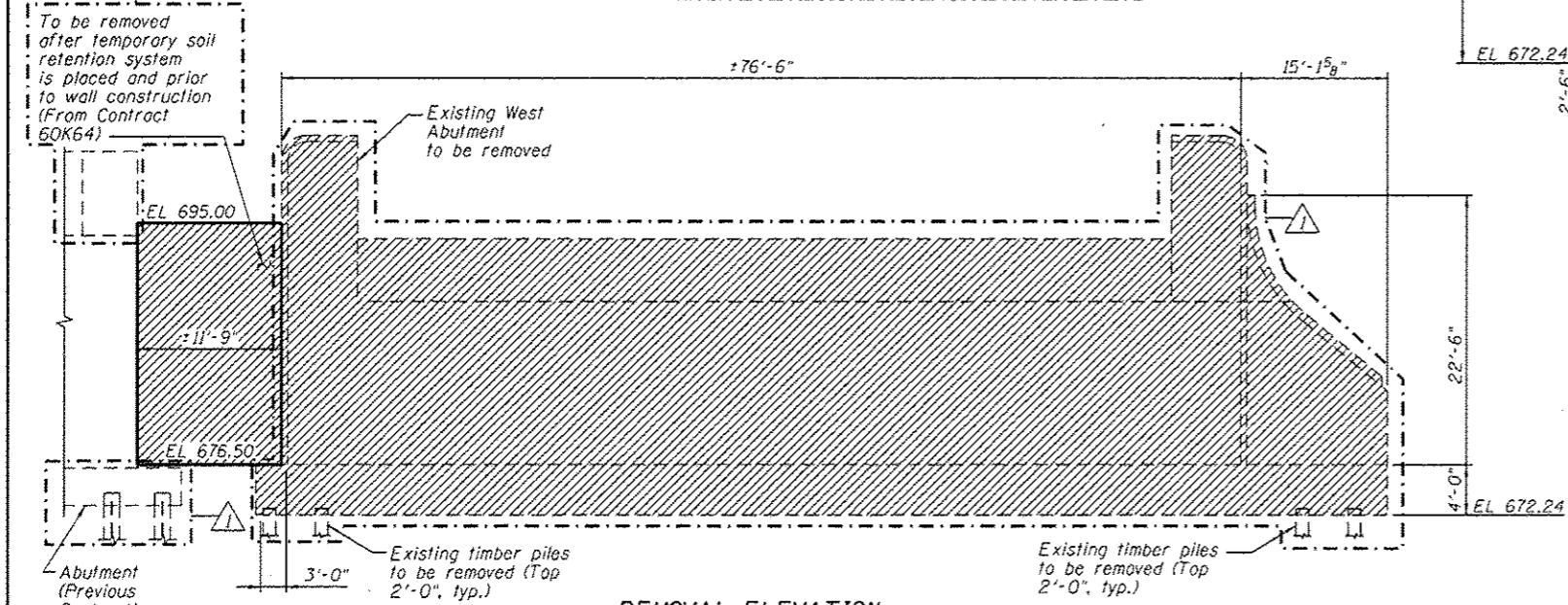
ILLINOIS FED. AID PROJECT



- TEMPORARY SOIL RETENTION SYSTEM REMOVAL SEQUENCE**
1. Remove section (A), approximate length = ±11'-9"
  2. Remove section (B), approximate length = ±28'-6"

**REMOVAL PLAN**

Note:  
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.

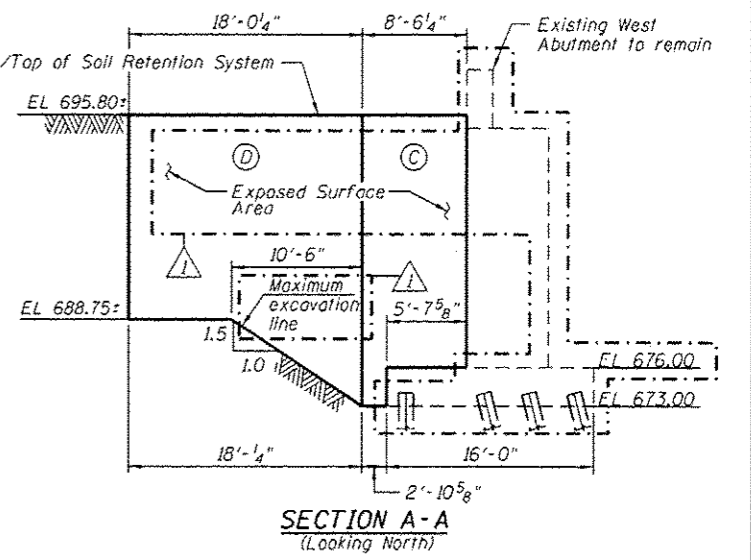


**REMOVAL ELEVATION**  
(Looking West, Existing Only)

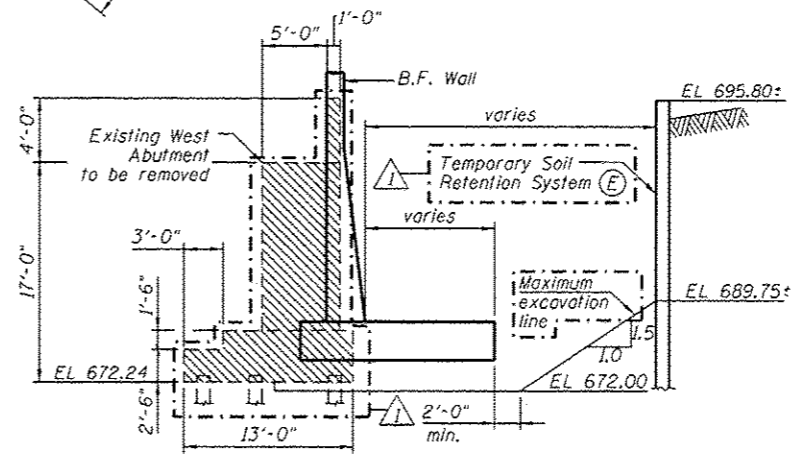
**BILL OF MATERIAL**

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	419
Removal of Temporary Soil Retention System	Sq. Ft.	218
Temporary Soil Retention System	Sq. Ft.	1,427

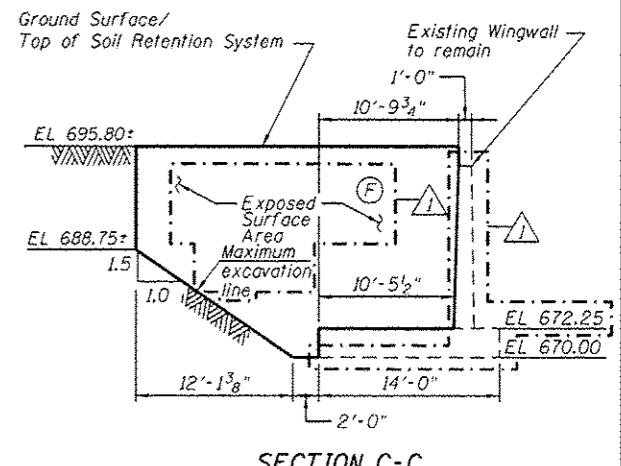
Notes:  
Existing bars shall be cut flush with removal concrete except as noted otherwise.  
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.



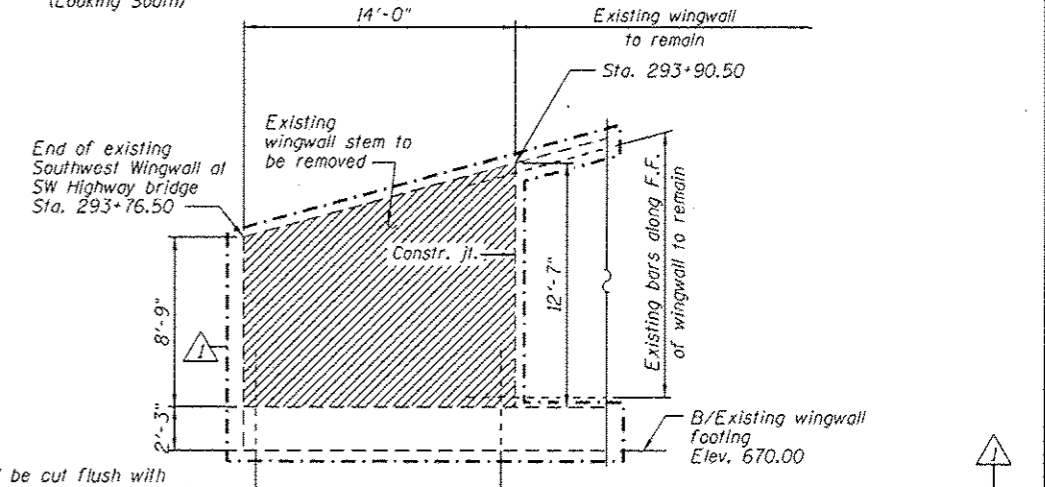
**SECTION A-A**  
(Looking North)



**SECTION B-B**  
(Looking South)



**SECTION C-C**  
(Looking North)

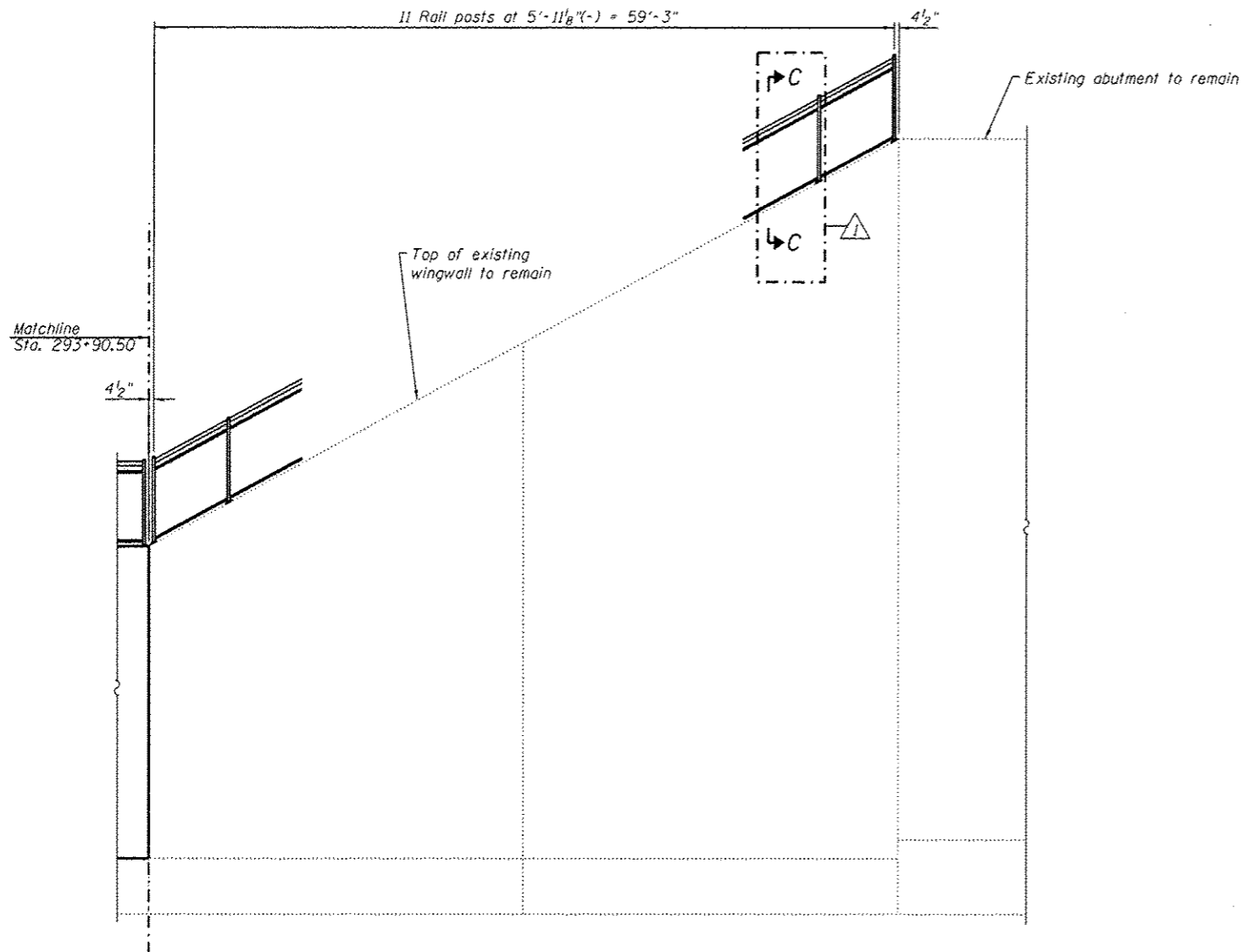


**SECTION D-D**  
(Looking West)

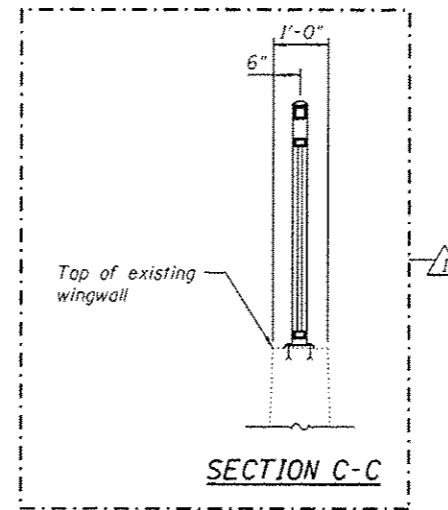
Notes:  
1. Dimensions shown are along Temporary Soil Retention System as shown in plan view.  
2. "Concrete Removal" quantity based on existing drawings. Contractor to verify dimensions in field.

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 939-0000  
FAX (312) 939-4158

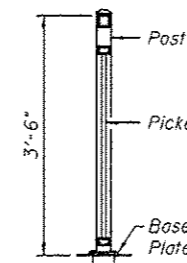




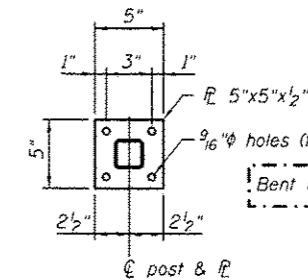
**WINGWALL ELEVATION**  
(Front Face shown)



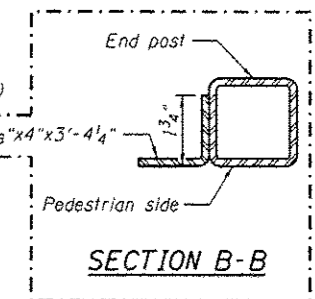
**SECTION C-C**



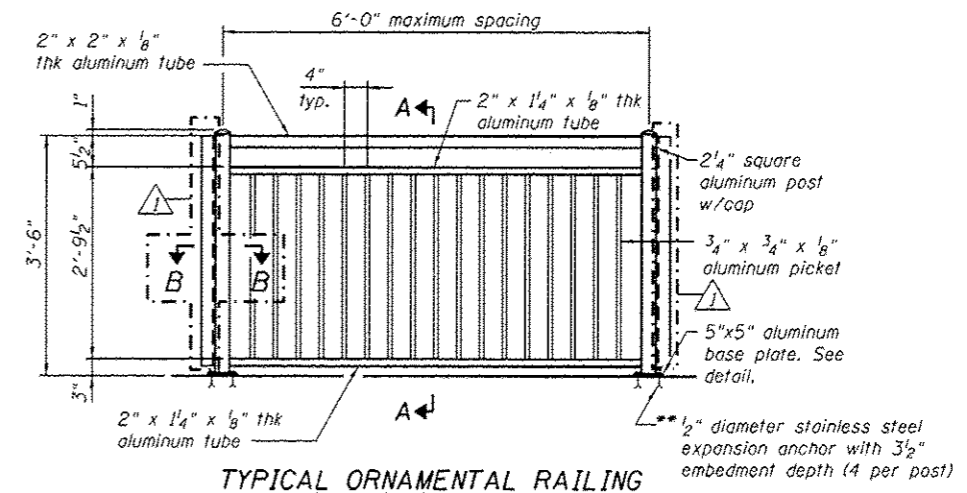
**SECTION A-A**



**BASE PLATE DETAIL**



**SECTION B-B**



**TYPICAL ORNAMENTAL RAILING**

\*\* At existing wall, Contractor shall drill and set 1/2"  $\phi$  anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

URS  
100 S. WACKER DR.  
CHICAGO, IL 60606  
TEL (312) 939-4000  
FAX (312) 939-4588

FILE NAME : 016Z003-60M62-005-Rail.dgn	USER NAME : mrean_khan	DESIGNED - PMH	REVISED - 04/12/2013 P.M.H.
		CHECKED - NRP	REVISED -
	PLOT SCALE : 12,500' / in.	DRAWN - PMH	REVISED -
	PLOT DATE : 4/12/2013	CHECKED - NRP	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

RAILING DETAILS  
STRUCTURE NO. 016-2003

SHEET NO. 6 OF 7 SHEETS

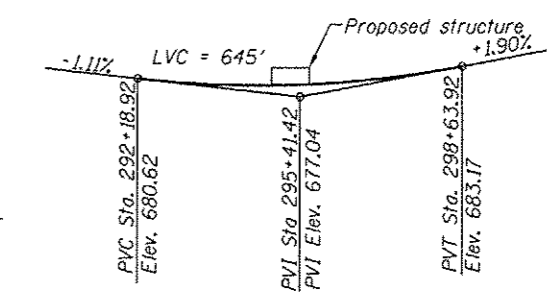
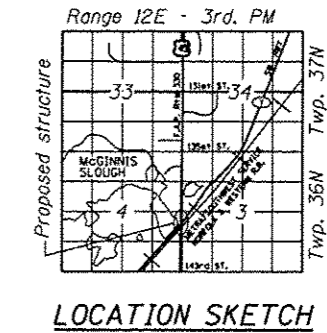
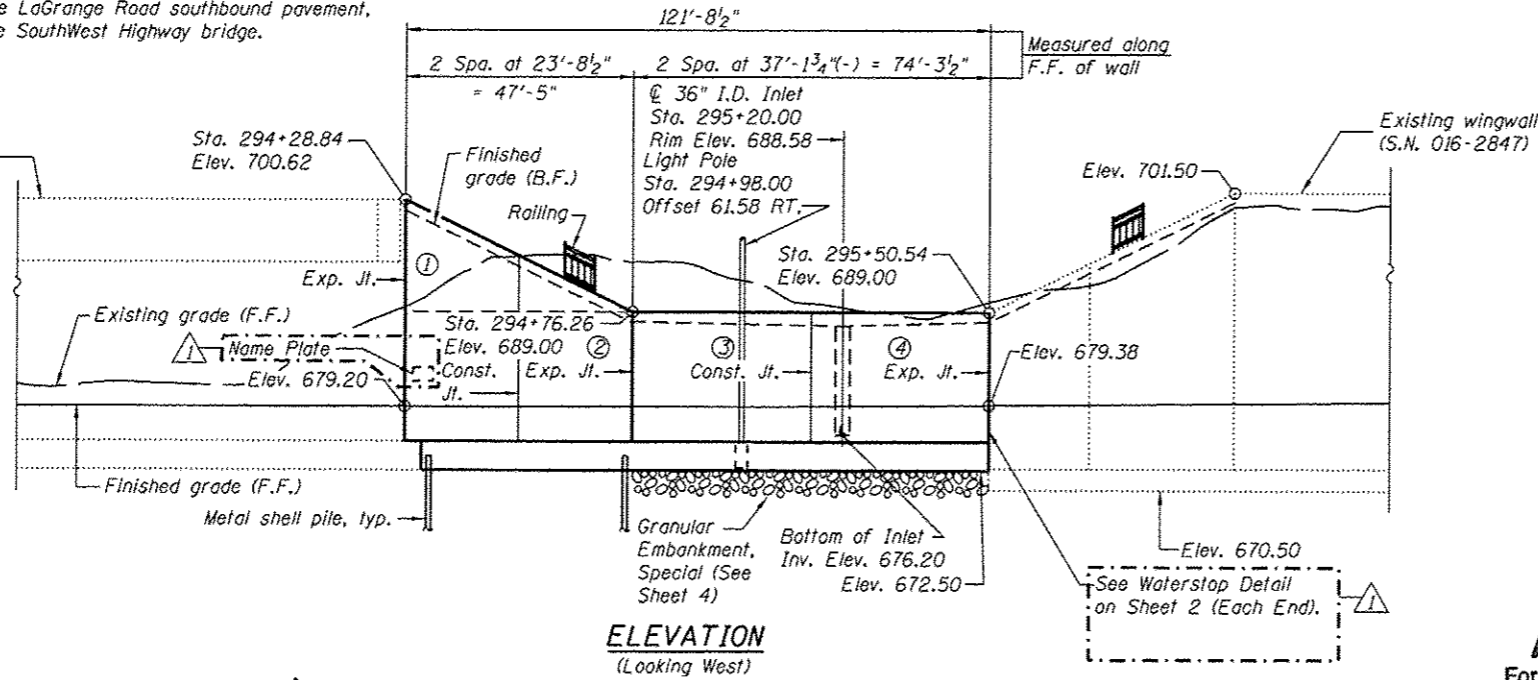
F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 408
CONTRACT NO. 60M62				ILLINOIS FED. AID PROJECT



Bench Mark: Elev. 689.00 Top of brass survey monument located at the west edge of the LaGrange Road southbound pavement, 600 feet north of the SouthWest Highway bridge.

Existing Structure: None

New railroad abutment built under separate contract (S.N. 016-6201)



**APPROVED**  
For Structural Adequacy Only  
*Arif M. Khan*  
Engineer of Bridges & Structures



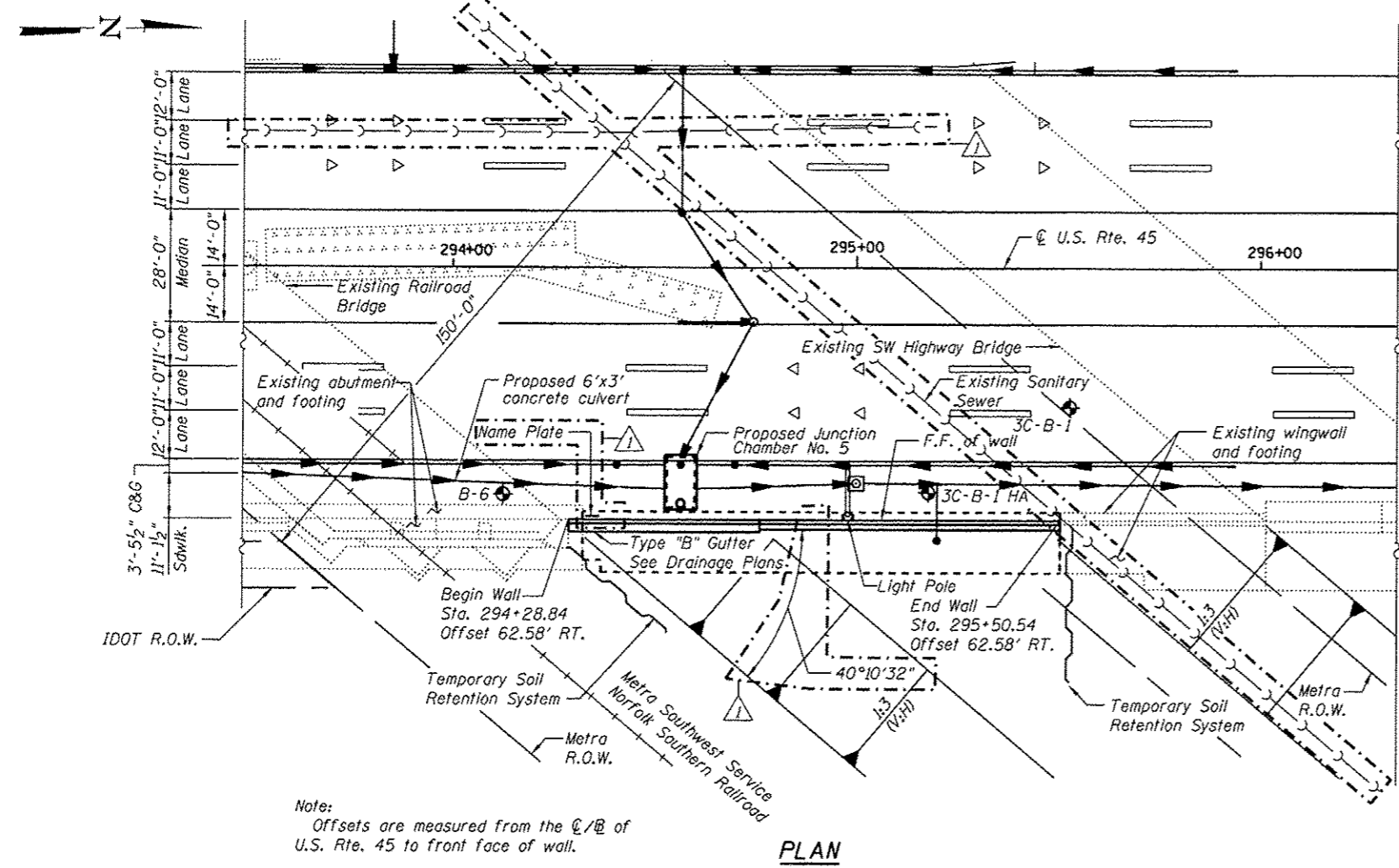
*Arsalan M. Khan*  
ARSALAN M. KHAN, S.E.  
LICENSE NO.: 081-006258  
EXPIRES: NOVEMBER 30, 2014  
DATE: 04-11-2013

**DESIGN STRESSES**  
**FIELD UNITS**  
f'c = 3,500 psi  
fy = 60,000 psi (Reinforcement)  
fy = 50,000 psi (M270 Grade 50)

**DESIGN SPECIFICATIONS**  
2002 AASHTO Standard Specifications for Highway Bridges

**LEGEND**

- Prop. Drainage Structure
- ▶ Prop. Storm Sewer
- Prop. Lighting
- ◆ Soil Boring
- F.F.=Front Face
- B.F.=Back Face
- E.F.=Each Face
- I.F.=Inside Face
- O.F.=Outside Face
- ① = Panel No.



Note:  
Offsets are measured from the C/B of U.S. Rte. 45 to front face of wall.

**GENERAL PLAN & ELEVATION**  
**U.S. ROUTE 45 - LAGRANGE ROAD**  
**F.A.P. RTE. 330 SEC. 103R-5**  
**COOK COUNTY**  
**STATION 294+28.84 TO 295+50.54**  
**STRUCTURE NO. 016-2004**

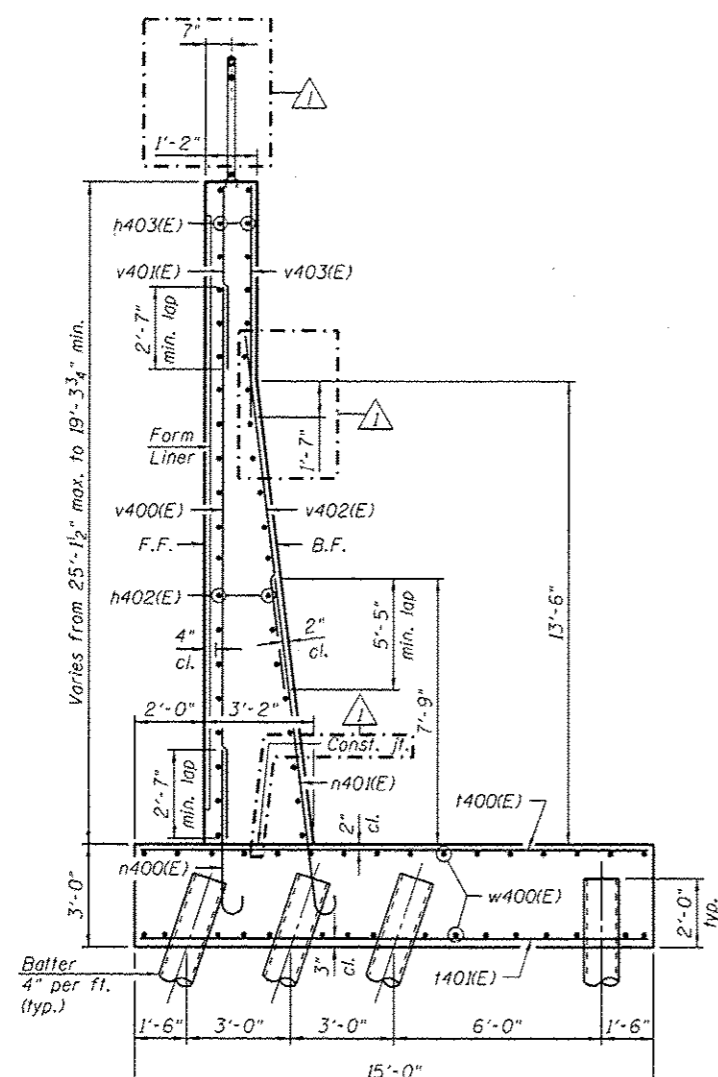
URS  
100 S. WACKER DR.  
CHICAGO, IL 60606  
TEL (312) 433-4000  
FAX (312) 433-4088

FILE NAME = 0162004-60M62-001-CPE.dgn	USER NAME = arsalan.khan	DESIGNED - MJL	REVISED - 04/12/2013 P.M.H.
		CHECKED - NPP	REVISED -
		DRAWN - PMH/AMV	REVISED -
		CHECKED - MJL	REVISED -

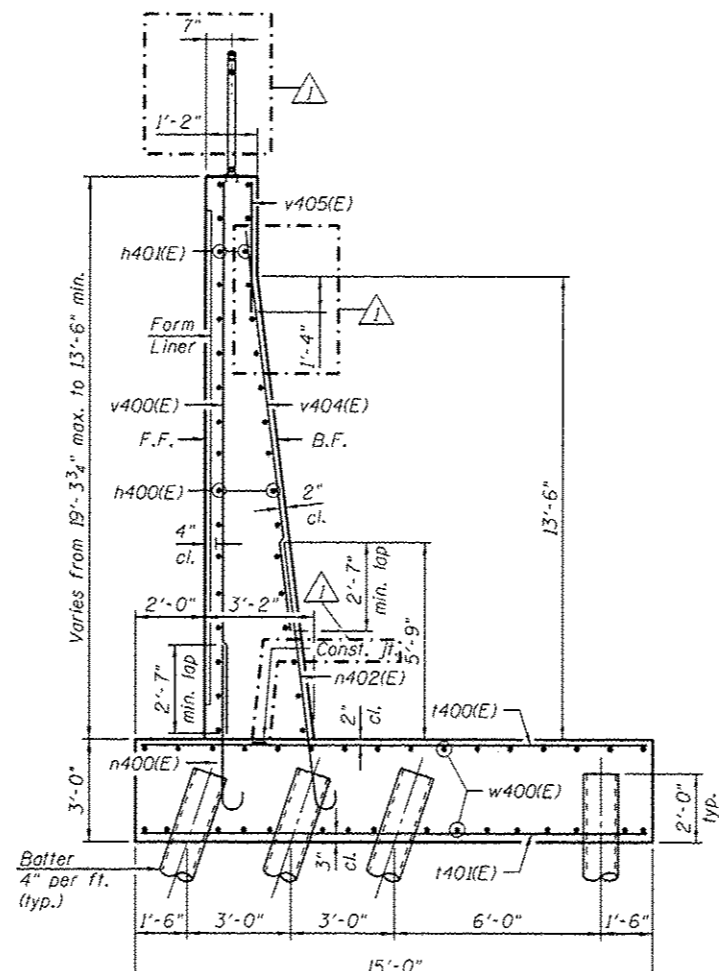
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	410
				CONTRACT NO. 60M62

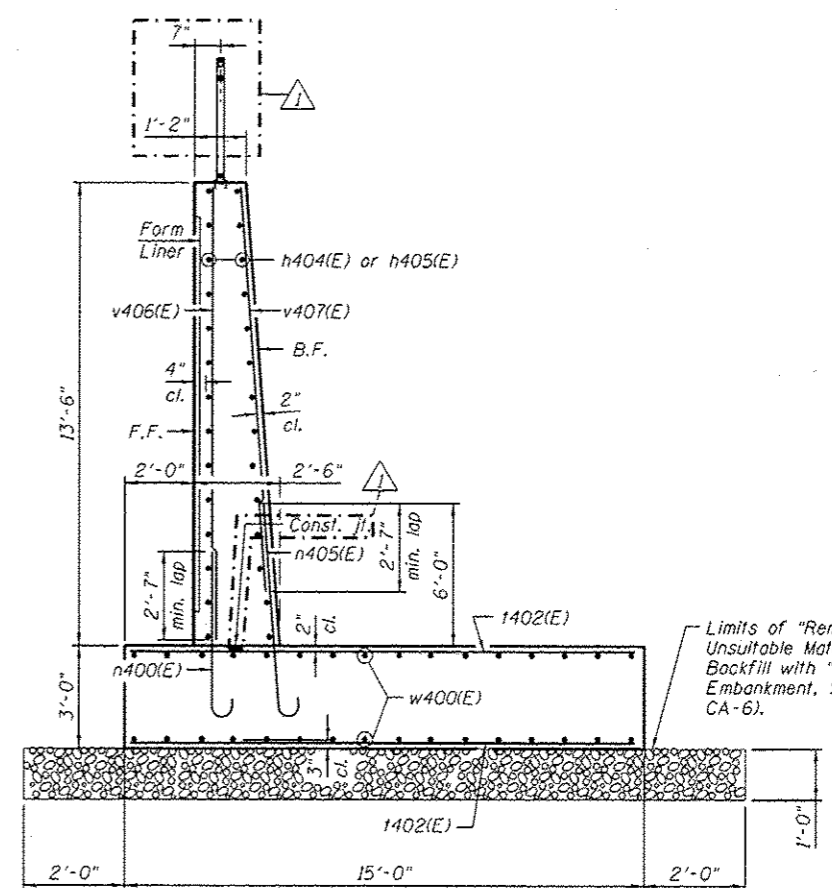




**SECTION A-A**  
(Panel 1)



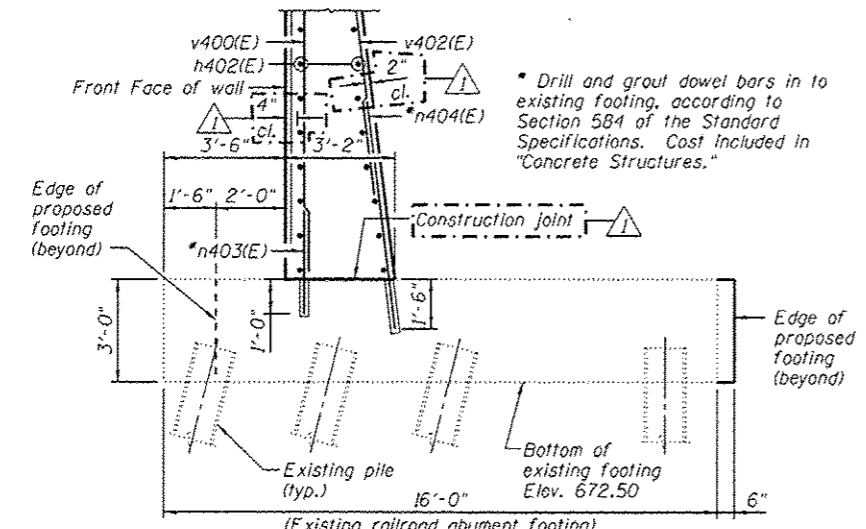
**SECTION B-B**  
(Panel 2)



**SECTION C-C**  
(Panels 3 and 4)

Maximum Applied Service Bearing Pressure = 0max = 3.20kst

Limits of "Removal and Disposal of Unsuitable Material for Structures." Backfill with "Granular Embankment, Special" (compacted CA-6).



**SECTION D-D**

**URS**  
800 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 939-0000  
FAX (312) 939-4188

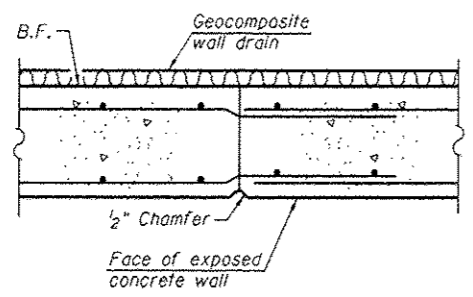
FILE NAME : 0162004-G0M62-00-det.dgn	USER NAME : aretan_khan	DESIGNED - MJL	REVISED - 04/12/2013 P.M.H.
		CHECKED - NPP	REVISED -
		DRAWN - AMV	REVISED -
		CHECKED - MJL	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

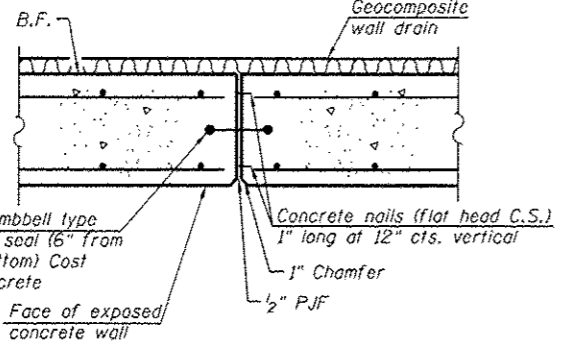
**SECTIONS AND DETAILS 1**  
**STRUCTURE NO. 016-2004**

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 413
CONTRACT NO. 60M62				
ILLINOIS FED. AID PROJECT				

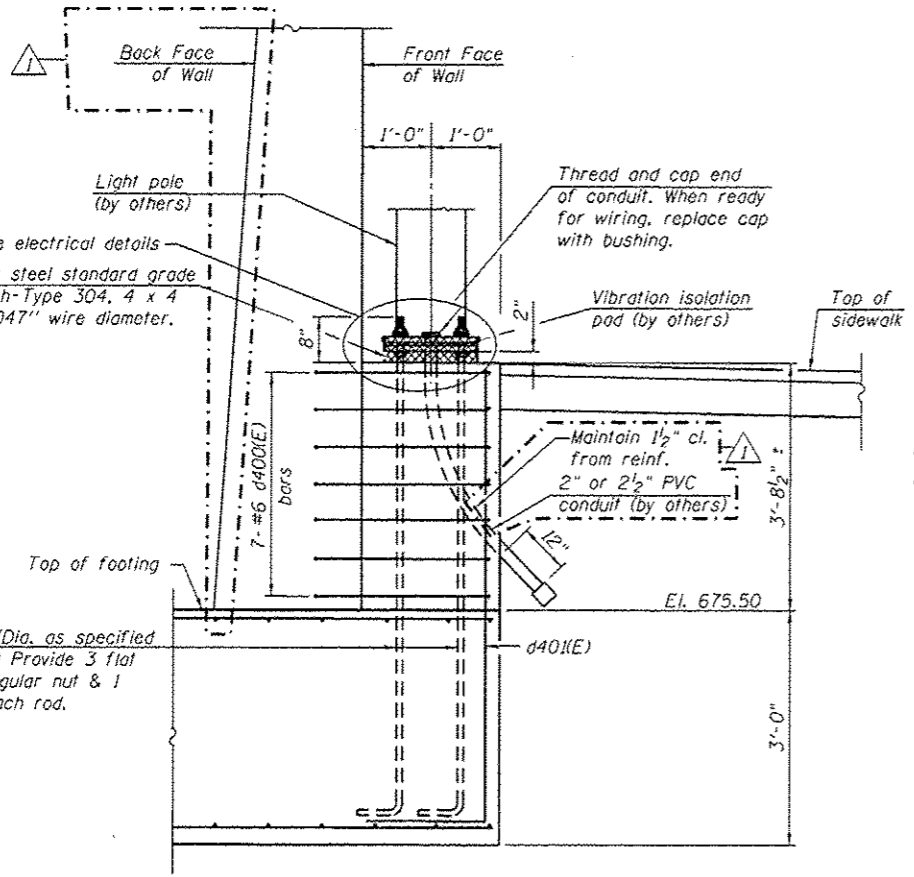
SHEET NO. 4 OF 10 SHEETS



**CONSTRUCTION JOINT DETAIL**

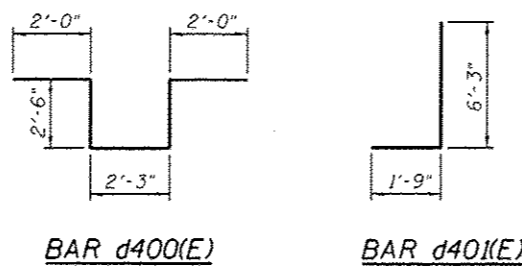


**EXPANSION JOINT DETAIL**

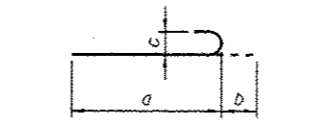


**SECTION A-A**  
(Looking South)

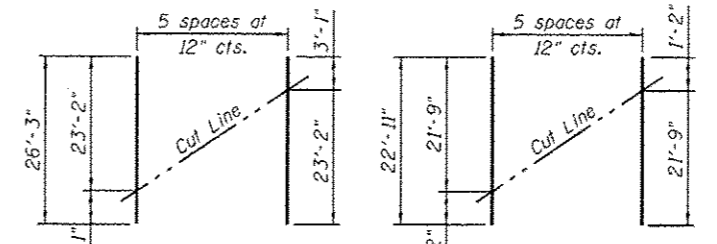
**LIGHT POLE DETAILS**



Bar	a	b	c
n400(E)	5'-6"	7"	5"
n401(E)	10'-5"	1'-5"	1'-1 1/4"
n402(E)	8'-6"	1'-3"	11'-4"
n405(E)	8'-11"	11"	8"

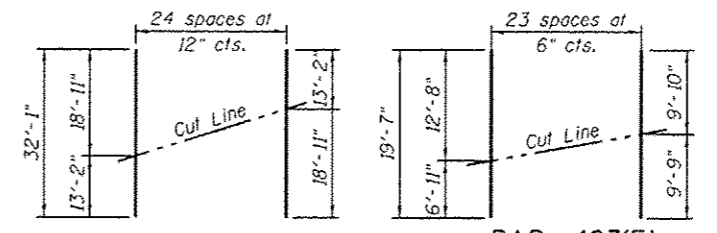


**BARS n400(E), n401(E), n402(E) and n405(E)**



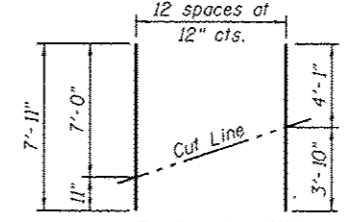
**BAR h401(E)**  
Order h401(E) bars full length. Cut as shown and use remainder of bars in opposite face of panel.

**BAR h403(E)**  
Order h403(E) bars full length. Cut as shown and use remainder of bars in opposite face of panel.



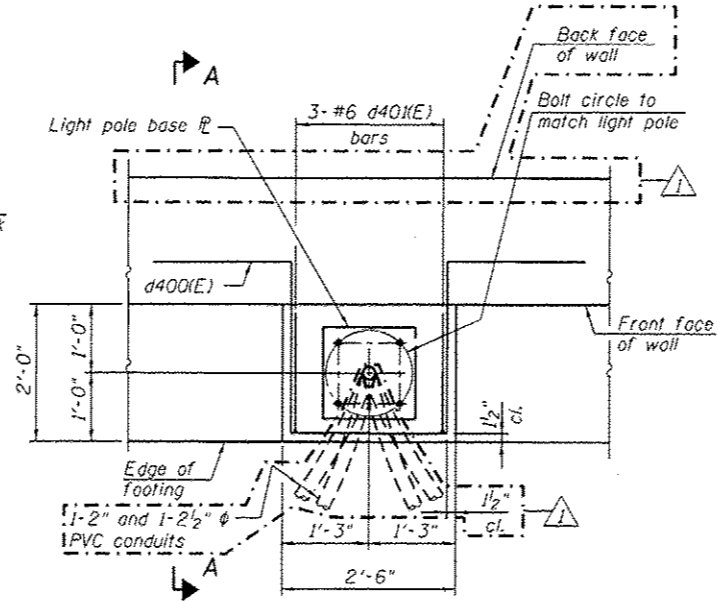
**BAR v400(E)**  
Order v400(E) bars full length. Cut as shown and use remainder in F.F. of adjacent panel.

**BAR v403(E)**  
Order v403(E) bars full length. Cut as shown and use all in B.F. of panel.



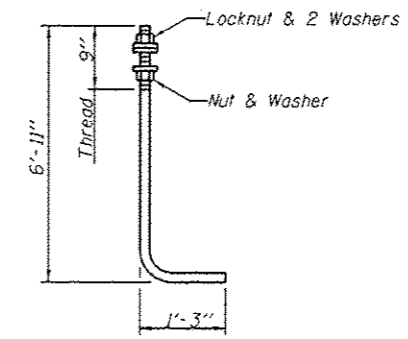
**BAR v405(E)**  
Order v405(E) bars full length. Cut as shown and use all in B.F. of panel.

**CUTTING DIAGRAMS**



**PLAN**

Note:  
Cast of anchor rods are included with Concrete Structures.



**ANCHOR ROD**

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

**WALL**  
**BILL OF MATERIAL**

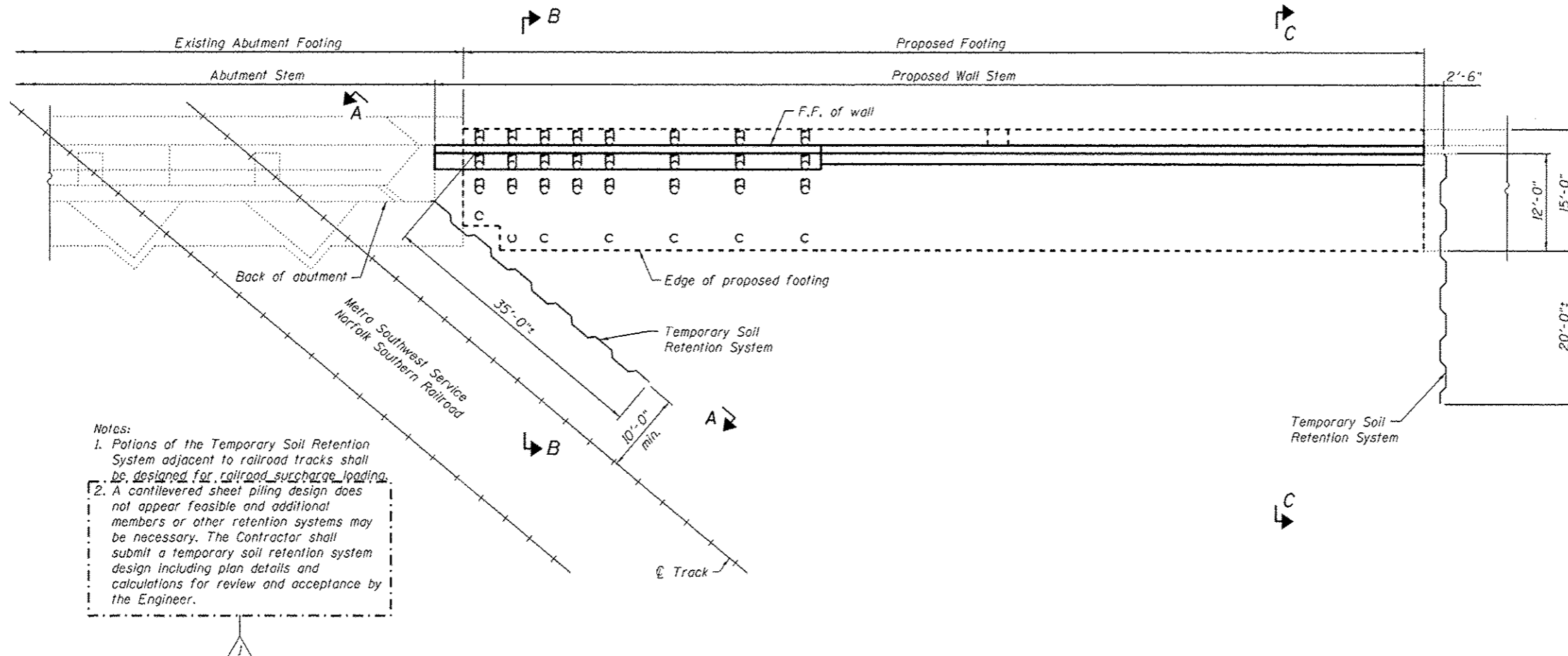
Bar	No.	Size	Length	Shape
d400(E)	7	#6	11'-3"	U
d401(E)	3	#6	8'-0"	U
h400(E)	30	#5	26'-8"	—
h401(E)	6	#5	26'-3"	—
h402(E)	42	#5	23'-4"	—
h403(E)	6	#5	22'-11"	—
h404(E)	30	#5	40'-1"	—
h405(E)	30	#5	36'-9"	—
h406(E)	16	#5	2'-11"	—
n400(E)	122	#5	6'-1"	U
n401(E)	41	#10	11'-10"	U
n402(E)	25	#9	9'-9"	—
n403(E)	4	#5	3'-9"	—
n404(E)	7	#10	9'-3"	—
n405(E)	76	#8	9'-10"	U
v400(E)	89	#9	14'-8"	—
v401(E)	65	#5	14'-8"	—
v402(E)	300	#7	14'-8"	—
v400(E)	25	#5	32'-1"	—
v401(E)	25	#5	8'-8"	—
v402(E)	48	#8	13'-2"	—
v403(E)	24	#6	19'-7"	—
v404(E)	25	#5	12'-0"	—
v405(E)	13	#5	7'-11"	—
v406(E)	76	#5	13'-2"	—
v407(E)	76	#5	11'-11"	—
w400(E)	160	#5	26'-0"	—
Concrete Structures			Cu. Yd.	329.0
Reinforcement Bars, Epoxy Coated			Pound	34,450

Bars indicated thus 14 x 2-#5 etc. indicates 14 lines of bars with 2 lengths per line.

URS  
800 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 939-0000  
FAX (312) 939-4998

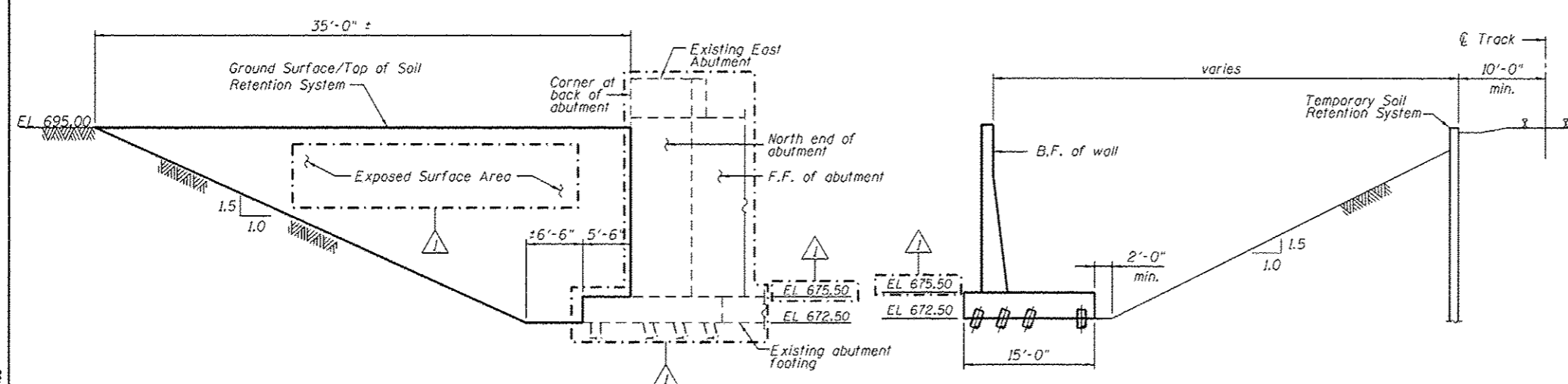
FILE NAME : 0162004-60M62-005-det.dgn	USER NAME : arealon.khan	DESIGNED - MJL	REVISED - 04/12/2013 BAR	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SECTIONS AND DETAILS 2 STRUCTURE NO. 016-2004	F.A.P. R.T.E. : 330	SECTION : 103R-5	COUNTY : COOK	TOTAL SHEETS : 778	SHEET NO. : 414	
PLOT SCALE : 012.0000 1/1 in.	DRAWN - AMV	REVISOR -	REVISOR -			CONTRACT NO. 60M62					
PLOT DATE : 4/11/2013	CHECKED - MJL	REVISOR -	REVISOR -			ILLINOIS FED. AID PROJECT					
						SHEET NO. 5 OF 10 SHEETS					



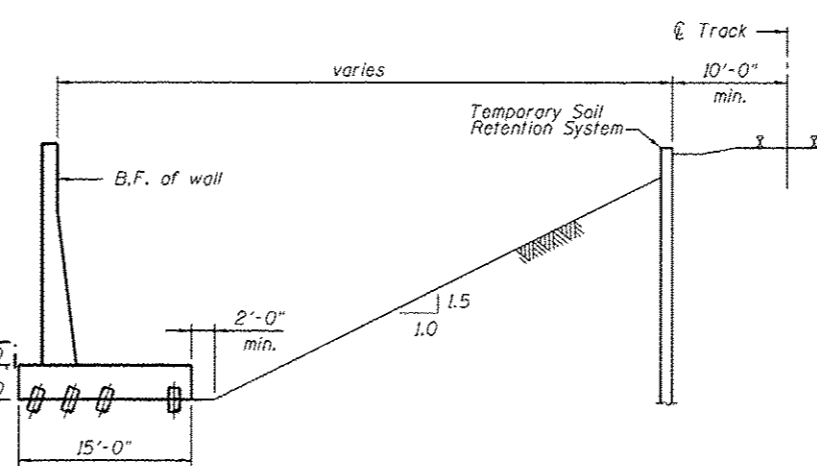


Notes:  
 1. Portions of the Temporary Soil Retention System adjacent to railroad tracks shall be designed for railroad surcharge loading.  
 2. A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

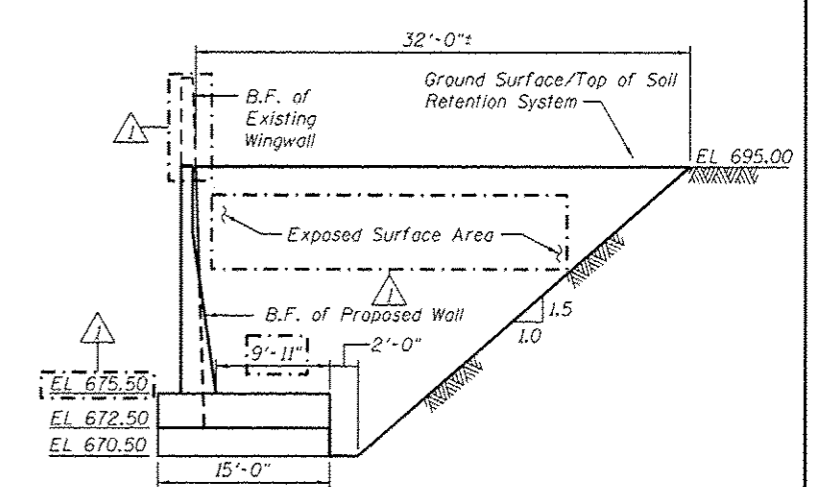
PLAN



SECTION A-A



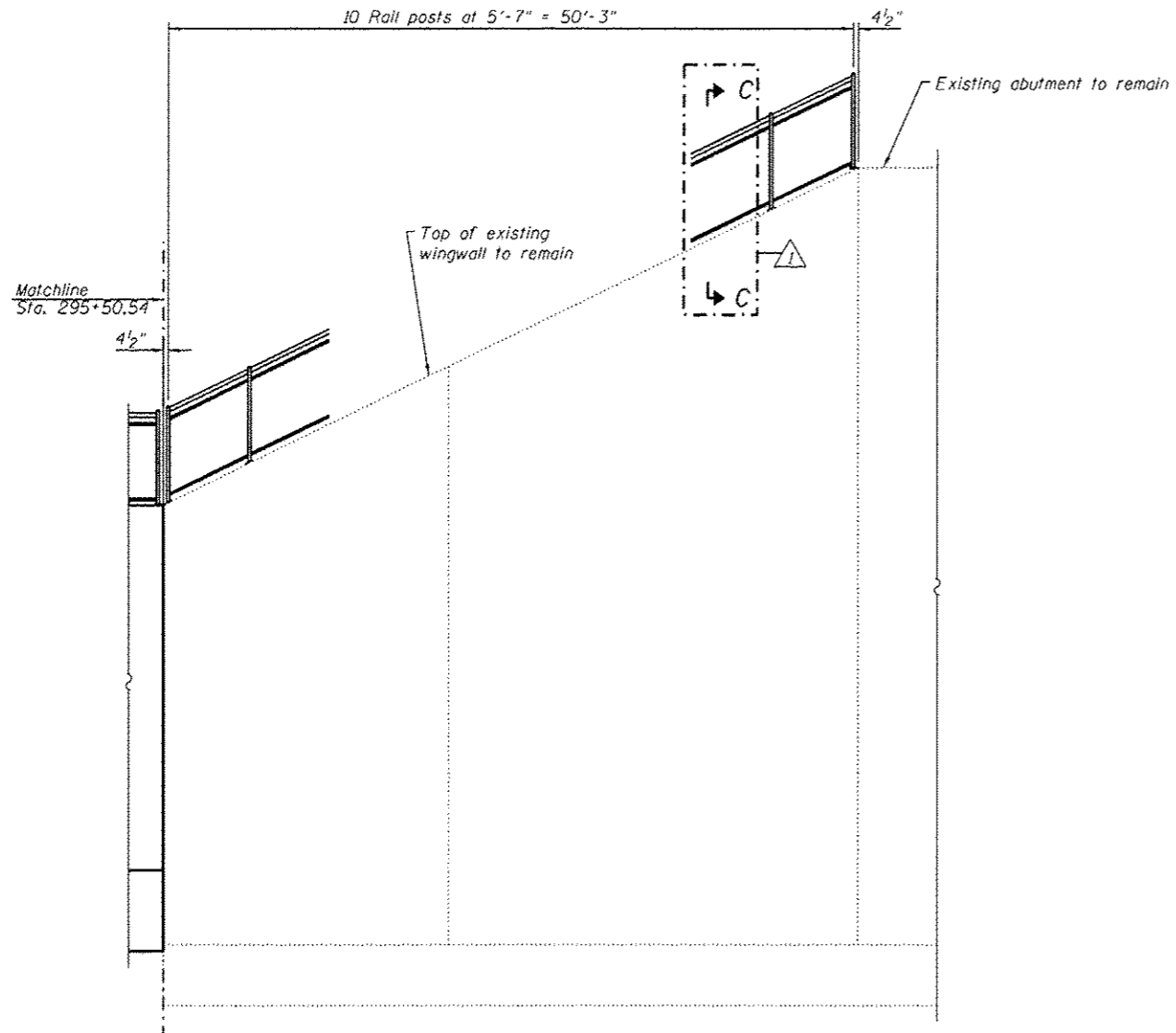
SECTION B-B



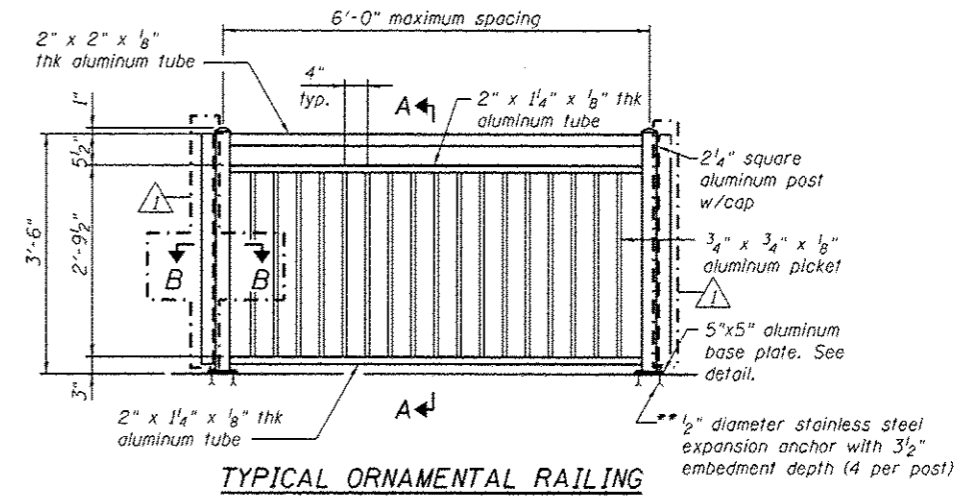
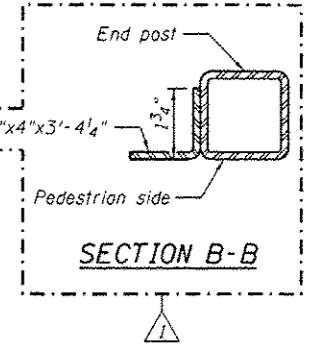
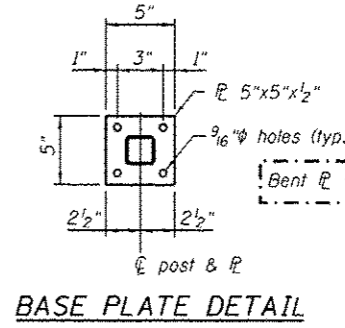
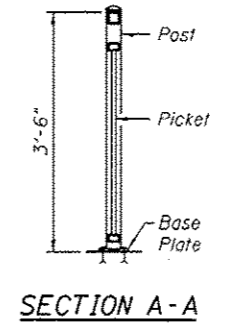
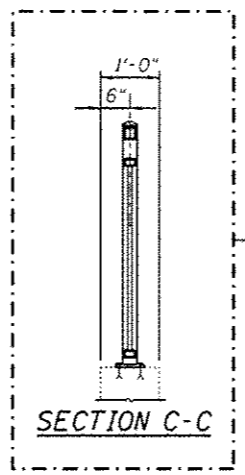
SECTION C-C

URS  
 100 S. WACKER DR.  
 SUITE 500  
 CHICAGO, IL 60606  
 TEL 312/919-0000  
 FAX 312/919-0098

FILE NAME : 8162004-G0M52-006-Retention.dgn	USER NAME : areolan_khan	DESIGNED - MAI	REVISED - 04/12/2013 BAR	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL RETENTION PLAN AND SECTION STRUCTURE NO. 016-2004	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 415
PLOT SCALE : 1/8" = 1' - 0"	DRAWN - AMV	CHECKED - NPP	REVISED -			CONTRACT NO. 60M62				
PLOT DATE : 4/11/2013	CHECKED - NPP	REVISED -	REVISED -			ILLINOIS FED. AID PROJECT				
						SHEET NO. 6 OF 10 SHEETS				



**WINGWALL ELEVATION**  
(Looking West)



\*\* At existing wall, Contractor shall drill and set 1/2"  $\phi$  anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

**URS**  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL: (312) 939-4000  
FAX: (312) 939-4058

FILE NAME : 016Z004-60M62-007-rail.dgn	USER NAME : arealon,khan	DESIGNED - PMH	REVISED - 04/12/2013 P.M.H.
		CHECKED - NPP	REVISED -
	PLOT SCALE : 12,500 / 1"	DRAWN - PMH	REVISED -
	PLOT DATE : 4/11/2013	CHECKED - NPP	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**RAILING DETAILS**  
**STRUCTURE NO. 016-Z004**  
SHEET NO. 7 OF 10 SHEETS

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 416
CONTRACT NO. 60M62				ILLINOIS FED. AID PROJECT

ILLINOIS DEPARTMENT OF TRANSPORTATION STRUCTURE BORING LOG									
ROUTE US 45		DESCRIPTION Metra Bridge over LaGrange Road		Page 1 of 2 Date 9/9/04					
SECTION 103R-5		STRUCTURE NO. 016-Z004		DRILLED BY SEECO Consultants Inc./GF					
COUNTY Cook		LOCATION Orland Park, IL							
Boring No. B-6				Surf. Wat. El. N.A.		D		B	
Station 294+13.00				Groundwater Elev.: When Drilling 27' (666.3)		E		L	
Offset 56' Rt.				at Completion 19' (674.3)		P		O	
Surface El. +693.25' M.S.L.				After Hrs		T		W	
		QU				QU		W	
		W				H		S	
		T				H		S	
		S				H		S	
		P				H		S	
		O				H		S	
		W				H		S	
		S				H		S	
		H				H		S	
CLAY LOAM, Brown, Trace Sand, Trace Fine Gravel, Very Stiff to Hard, Moist (A-6)		1.0				42.0			
CLAY LOAM, Brown, Trace Gray, Trace Sand, Trace Fine Gravel, Hard, Moist (A-6)		2.0		15		43.0			
CLAY LOAM, Brown, Trace Gray, Trace Sand, Trace Fine Gravel, Trace Shale, Very Stiff, Moist (A-6)		3.0		4.5 P		44.0		18	
CLAY LOAM, Brown, Trace Gray, Trace Sand, Trace Fine Gravel, Trace Shale, Very Stiff, Moist (A-6)		4.0				45.0			
CLAY LOAM, Brown, Trace Gray, Trace Sand, Trace Fine Gravel, Trace Shale, Very Stiff, Moist (A-6)		5.0		8		46.0			
CLAY, Brown, Trace Sand, Trace Fine Gravel, Hard to Very Stiff, Moist (A-6)		6.0		2.0 P		47.0			
CLAY, Brown, Trace Sand, Trace Fine Gravel, Hard to Very Stiff, Moist (A-6)		7.0				48.0			
CLAY, Brown, Trace Sand, Trace Fine Gravel, Hard to Very Stiff, Moist (A-6)		8.0		17		49.0		25	
CLAY, Brown, Trace Sand, Trace Fine Gravel, Hard to Very Stiff, Moist (A-6)		9.0		4.5 P		50.0			
CLAY, Brown, Trace Sand, Trace Fine Gravel, Hard to Very Stiff, Moist (A-6)		10.0				51.0			
CLAY, Brown, Trace Sand, Trace Fine Gravel, Hard to Very Stiff, Moist (A-6)		11.0		14		52.0			
CLAY, Brown, Trace Sand, Trace Fine Gravel, Hard to Very Stiff, Moist (A-6)		12.0		2.3 P		53.0			
CLAY, Brown, Trace Sand, Trace Fine Gravel, Hard to Very Stiff, Moist (A-6)		13.0				54.0		37	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		14.0		12		55.0		21.1	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		15.0		2.7 B		56.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		16.0				57.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		17.0				58.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		18.0				59.0		45	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		19.0		9		60.0		24.2	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		20.0		2.5 P		61.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		21.0				62.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		22.0				63.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		23.0				64.0		49	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		24.0		9		65.0		18.5	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		25.0		3.1 B		66.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		26.0				67.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		27.0				68.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		28.0				69.0		53	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		29.0		18		70.0		18.3	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		30.0				71.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		31.0				72.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		32.0				73.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		33.0				74.0		59	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		34.0		13		75.0		18.8	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		35.0				76.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		36.0				77.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		37.0				78.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		38.0				79.0		51	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		39.0		34		80.0		17.9	
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		40.0				81.0			
CLAY, Gray, Trace Sand, Trace Fine Gravel, Very Stiff, Moist (A-6)		41.0				82.0			

N=Standard Penetration Test-Blows per foot to drive 2" O.D.  
Split Spoon Sampler 12" with 140lb hammer falling 30"  
(QU)B=Bulge S=Shear P=Penetration Test  
Stations, Depths, Offset, and Elevations are in Feet  
Offset is from edge of traveled Pavement

SEECO Job No. 7947G

Entire sheet revised

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FILE NAME: 016Z004-60M62-001-bor.dgn	USER NAME: arsalon_khan	DESIGNED: WEJ	REVISED: 04/12/2013 P.M.H.
		CHECKED: NPP	REVISED: -
		DRAWN: AMV	REVISED: -
		CHECKED: NPP	REVISED: -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SOIL BORINGS 1  
STRUCTURE NO. 016-Z004

SHEET NO. 9 OF 10 SHEETS

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 418
CONTRACT NO. 60M62			ILLINOIS FED. AID PROJECT	

ILLINOIS DEPARTMENT OF TRANSPORTATION STRUCTURE BORING LOG									
ROUTE US 45		DESCRIPTION Metra Bridge over LaGrange Road		Page 2 of 2 Date 9/9/04					
SECTION 103R-5		STRUCTURE NO. 016-Z004		DRILLED BY SEECO Consultants Inc./GF					
COUNTY Cook		LOCATION Orland Park, IL							
Boring No. B-6				Surf. Wat. El. N.A.		D		B	
Station 294+13.00				Groundwater Elev.: When Drilling 27' (666.3)		E		L	
Offset 56' Rt.				at Completion 19' (674.3)		P		O	
Surface El. +693.25' M.S.L.				After Hrs		T		W	
		QU				QU		W	
		W				H		S	
		T				H		S	
		S				H		S	
		P				H		S	
		O				H		S	
		W				H		S	
		S				H		S	
		H				H		S	
		1.0				42.0		43	
		2.0		15		43.0		10.6	
		3.0		4.5 P		44.0			
		4.0				45.0			
		5.0		8		46.0			
		6.0		2.0 P		47.0			
		7.0				48.0			
		8.0		17		49.0		25	
		9.0		4.5 P		50.0			
		10.0				51.0			
		11.0		14		52.0			
		12.0		2.3 P		53.0			
		13.0				54.0		37	
		14.0		12		55.0		21.1	
		15.0		2.7 B		56.0			
		16.0				57.0			
		17.0				58.0			
		18.0				59.0		45	
		19.0		9		60.0		24.2	
		20.0		2.5 P		61.0			
		21.0				62.0			
		22.0				63.0			
		23.0				64.0		49	
		24.0		9		65.0		18.5	
		25.0		3.1 B		66.0			
		26.0				67.0			
		27.0				68.0			
		28.0				69.0		53	
		29.0		18		70.0		18.3	
		30.0				71.0			
		31.0				72.0			
		32.0				73.0			
		33.0				74.0		59	
		34.0		13		75.0		18.8	
		35.0				76.0			
		36.0				77.0			
		37.0				78.0			
		38.0				79.0		51	
		39.0		34		80.0		17.9	
		40.0				81.0			
		41.0				82.0			

(QU)B=Bulge S=Shear P=Penetration Test  
Stations, Depths, Offset, and Elevations are in Feet  
Offset is from edge of traveled Pavement

6" Lense of Silty Clay with Trace Sand and Gravel

MEDIUM TO COARSE GRAINED SAND WITH FINE TO MEDIUM GRAVEL, Trace Silt, Medium Dense to Dense, Saturated (A-1-b)

End of Boring at 125 feet.

**Wang Engineering**  
 wangeng@wangeng.com  
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 Lombard, IL 60148  
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 Fax: 630 953-9938

**BORING LOG 3C-B-1 HA**  
 WEI Job No.: 201-40-01  
 Client: McDonough Associates Inc.  
 Project: US 45  
 Location: ORLAND PARK, T 36N, R 12E

Datum: NGVD  
 Elevation: 690.11 ft  
 North: 1810320.05 ft  
 East: 1115363.13 ft  
 Station: 295+17.87  
 Offset: 55.71 RT

Page 1 of 1

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
699.9	3-inch thick, brown SILTY LOAM --TOPSOIL--														
698.1	Very stiff, brown CLAY LOAM with some gravel --FILL--	1	ISUCP	1	3.00	15									
698.1	Very stiff, brown SILTY CLAY, trace gravel --FILL--	2	ISUCP	2	2.75	20									
698.1		3	ISUCP	3	2.00	19									
698.1		4	ISUCP	4	2.75	16									
692.1	Hard, brown and gray SILTY CLAY	5	ISUCP	5	4.50	20									
690.1	Boring terminated at 10.00 ft	10													

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	11-05-2010	Complete Drilling	11-05-2010	While Drilling	▽	DRY	
Drilling Contractor	WTS	Drill Rig	Geoprobe	At Completion of Drilling	▽	DRY	
Driller	R&J	Logger	N. Boddy	Time After Drilling		NA	
Checked by	C. Marin	Drilling Method	Hand Auger	Depth to Water	▽	NA	

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

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 Fax: 630 953-9938

**BORING LOG 3C-B-1**  
 WEI Job No.: 201-40-01  
 Client: McDonough Associates Inc.  
 Project: US 45  
 Location: ORLAND PARK, T 36N, R 12E

Datum: NGVD  
 Elevation: 680.87 ft  
 North: 1810355.15 ft  
 East: 1115341.98 ft  
 Station: 295+52.94  
 Offset: 34.52 RT

Page 1 of 1

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
677.9	Hard, brown and gray SILTY CLAY LOAM with trace gravel --FILL--	1	ISUCP	1	4.00	17									
677.9	Very stiff to hard, brown and gray SILTY CLAY LOAM with trace gravel	2	ISUCP	2	2.00	23									
677.9	--L <sub>1</sub> (%)=35, P <sub>1</sub> (%)=17-- --%Gravel=3.3-- --%Sand=16.3-- --%Silt=53.6-- --%Clay=26.8-- --A-6(13)--	3	ISUCP	3	4.50	23									
677.9		4	ISUCP	4	3.00	19									
677.9		5	ISUCP	5	4.50	16									
677.9		6	ISUCP	6	4.25	16									
677.9		7	ISUCP	7	4.00	21									
662.9	Very stiff, gray CLAY to SILTY CLAY	8	ISUCP	8	2.00	26									
660.4	Loose, brown SILTY LOAM --L <sub>1</sub> (%)=25, P <sub>1</sub> (%)=14-- --%Gravel=4.5-- --%Sand=24.3-- --%Silt=54.2-- --%Clay=17.0-- --A-6(5)--	9	ISUCP	9	NP	16									
657.9		10	ISUCP	10	NP	16									
655.4	Medium dense, gray SAND	11	ISUCP	11	4.66	2.75	11								
655.4		12	ISUCP	12	4.79	1.75	12								
655.4		13	ISUCP	13	4.68	3.75	16								
645.1	Medium dense, gray SILTY LOAM with trace GRAVEL	14	ISUCP	14	5.69	NP	12								
640.9	Boring terminated at 40.00 ft	40													

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	11-05-2010	Complete Drilling	11-05-2010	While Drilling	▽	20.00 ft	
Drilling Contractor	WTS	Drill Rig	B-57 TMR	At Completion of Drilling	▽	17.00 ft	
Driller	R&J	Logger	N. Boddy	Time After Drilling		NA	
Checked by	C. Marin	Drilling Method	3.25" IDA HSA; Boring backfilled upon completion	Depth to Water	▽	NA	

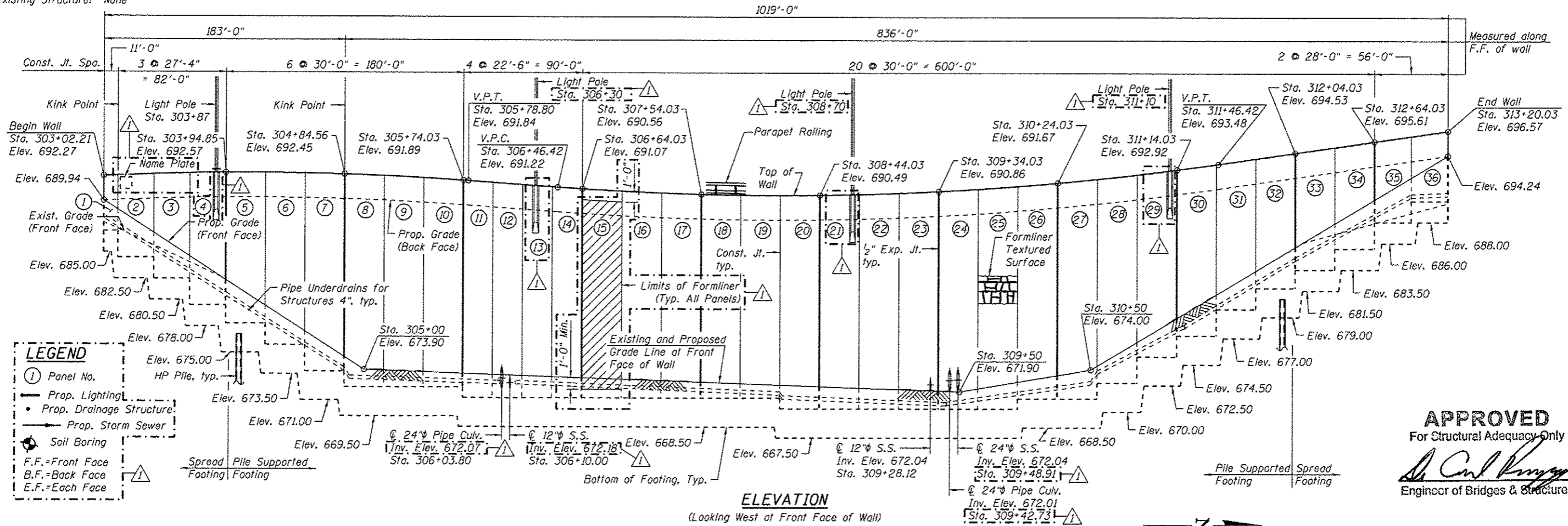
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

800 S. WACKER DR.  
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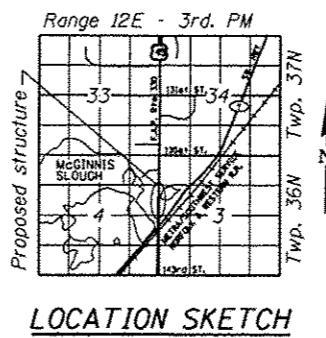
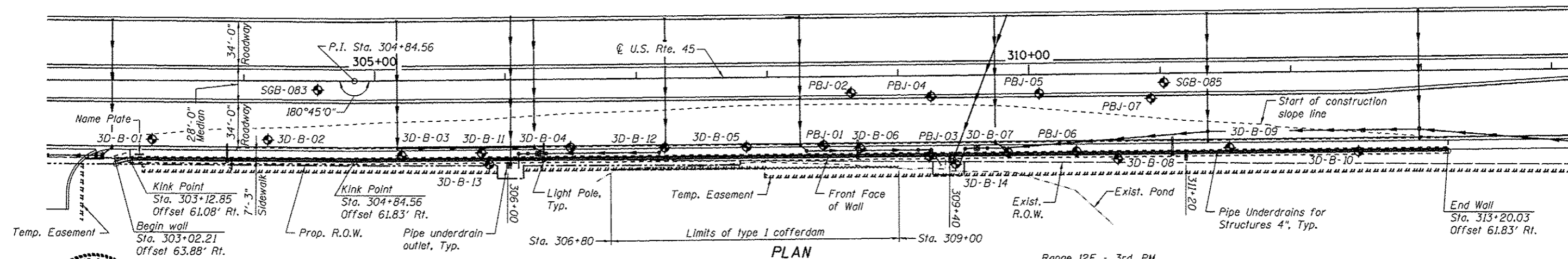
△ Entire sheet revised

Bench Mark: Elev. 689.00 Top of brass survey monument located at the west edge of the LaGrange Road southbound pavement, 600 feet north of the SouthWest Highway bridge.

Existing Structure: None



**APPROVED**  
For Structural Adequacy Only  
*Dr. Carl Krueger*  
Engineer of Bridges & Structures



**GENERAL PLAN & ELEVATION**  
**U.S. ROUTE 45 - LAGRANGE ROAD**  
**F.A.P. RTE. 330 SEC. 103R-5**  
**COOK COUNTY**  
**STATION 303+02.21 TO 313+20.03**  
**STRUCTURE NO. 016-2005**

**DESIGN STRESSES**  
**FIELD UNITS**  
f'c = 3,500 psi  
fy = 60,000 psi (Reinforcement)  
fy = 50,000 psi (M270 Grade 50)

**DESIGN SPECIFICATIONS**  
2012 AASHTO LRFD Bridge Design Specifications,  
6th Edition, with 2012 Interims



*Arsalan Khan*  
ARSALAN M. KHAN, S.E.  
LICENSE NO.: 081-006258  
EXPIRES: NOVEMBER 30, 2014  
DATE: 04-11-2013

FILE NAME = 0162005-60M62-201-GPE.dgn	USER NAME = arsalan.khan	DESIGNED - PMH	REVISIONS - 04/12/2013 P.M.H.	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 420
		CHECKED - ANK							
		DRAWN - PMH							
		CHECKED - ANK							

SHEET NO. 1 OF 21 SHEETS

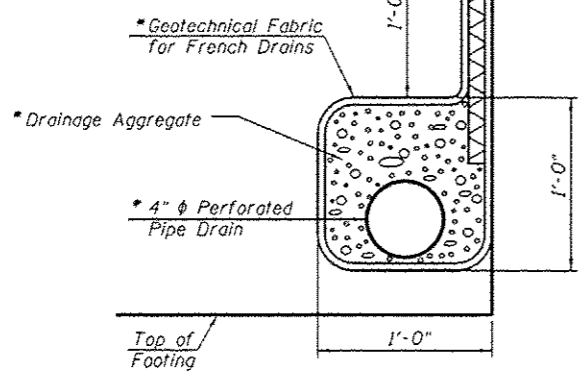
CONTRACT NO. GOM62

ILLINOIS FED. AIG PROJECT

URS  
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SUITE 400  
CHICAGO, IL 60606  
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STATION 303+02.21 TO 313+20.03  
 BUILT 20\_\_ BY  
 STATE OF ILLINOIS  
 F.A.P RT. 330 SEC. 103R-5  
 LOADING HL-93  
 STR. NO. 016-2005

**NAME PLATE**  
 See Std. 515001

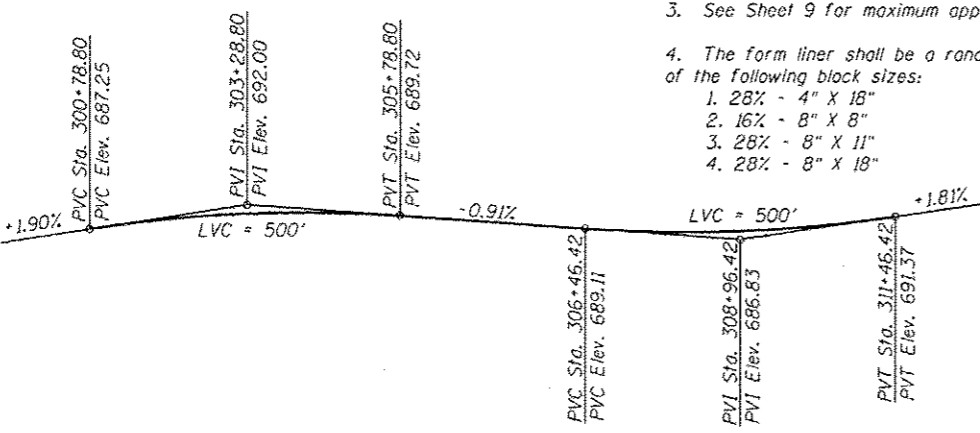


**PIPE UNDERDRAIN DETAIL**

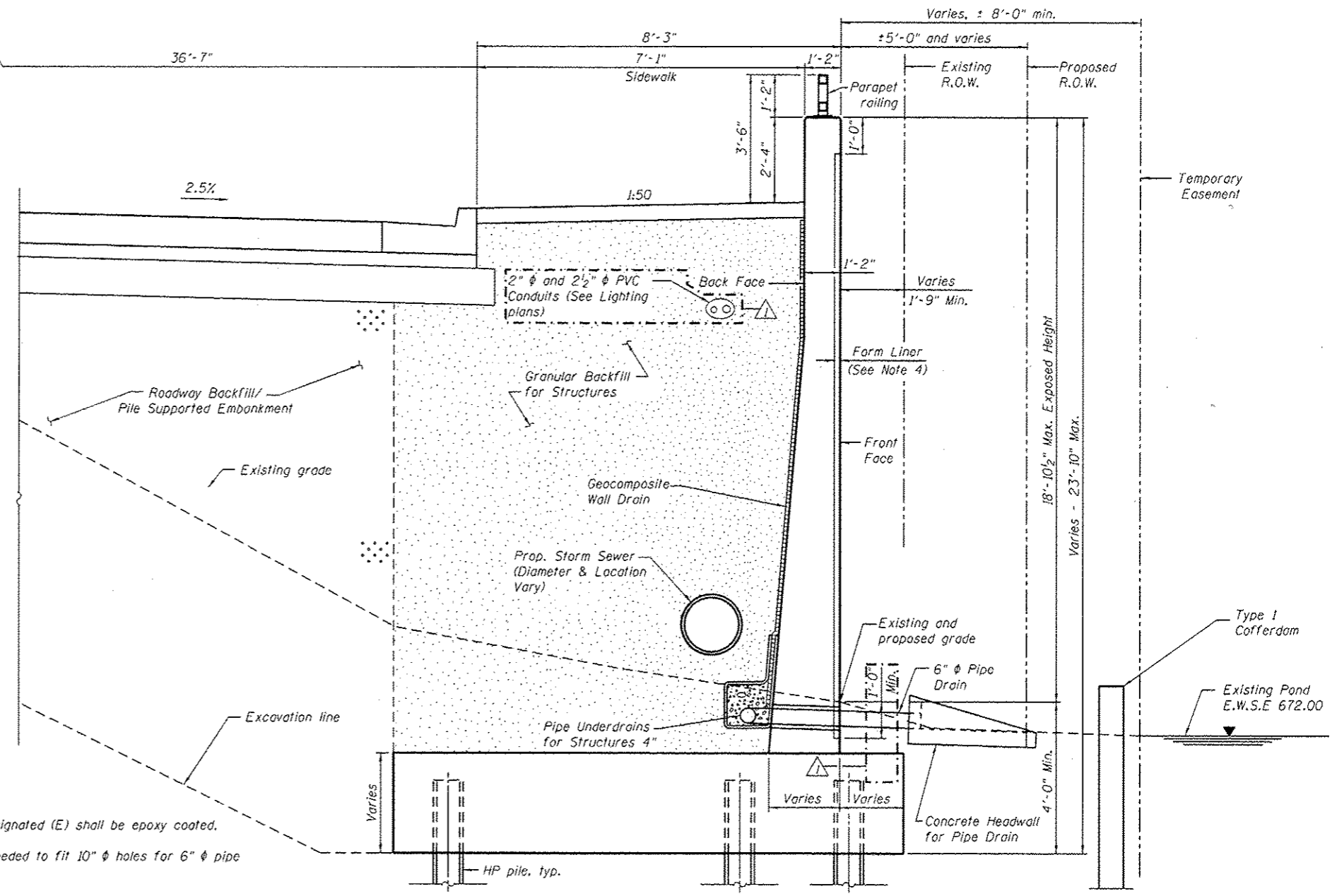
\* Included in the cost of "Pipe Underdrains for Structures 4".

**GENERAL NOTES**

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Cut reinforcement as needed to fit 10"  $\phi$  holes for 6"  $\phi$  pipe drain outlets.
3. See Sheet 9 for maximum applied service bearing pressures.
4. The form liner shall be a random Ashlar blend pattern consisting of the following block sizes:
  1. 28% - 4" X 18"
  2. 16% - 8" X 8"
  3. 28% - 8" X 11"
  4. 28% - 8" X 18"



**PROFILE GRADE-PROPOSED LAGRANGE RD**  
 (along PGL roadway)



**TYPICAL SECTION THRU RETAINING WALL**

**INDEX OF SHEETS**

- |                                       |                     |
|---------------------------------------|---------------------|
| 1. General Plan & Elevation           | 12. HP Pile Details |
| 2. General Details & Bill of Material | 13. Soil Borings 1  |
| 3. Detailed Plan and Elevation 1      | 14. Soil Borings 2  |
| 4. Detailed Plan and Elevation 2      | 15. Soil Borings 3  |
| 5. Detailed Plan and Elevation 3      | 16. Soil Borings 4  |
| 6. Detailed Plan and Elevation 4      | 17. Soil Borings 5  |
| 7. Detailed Plan and Elevation 5      | 18. Soil Borings 6  |
| 8. Detailed Plan and Elevation 6      | 19. Soil Borings 7  |
| 9. Sections and Details               | 20. Soil Borings 8  |
| 10. Bill of Material                  | 21. Soil Borings 9  |

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	3,839
Cofferdam (Type 1) (Location - 1)	Each	1
Concrete Structures	Cu. Yd.	2,226.7
Form Liner Textured Surface	Sq. Ft.	175,812
Reinforcement Bars, Epoxy Coated	Pound	250,470
Parapet Railing	Foot	1,019
Furnishing Steel Piles HP14x73	Foot	128,498
Driving Piles	Foot	128,498
Test Pile Steel HP14x73	Each	6
Pile Shoes	Each	450
Geocomposite Wall Drain	Sq. Yd.	1,605
Granular Backfill for Structures	Cu. Yd.	4,610
Pipe Underdrains for Structures 4"	Foot	1,121
Name Plates	Each	1

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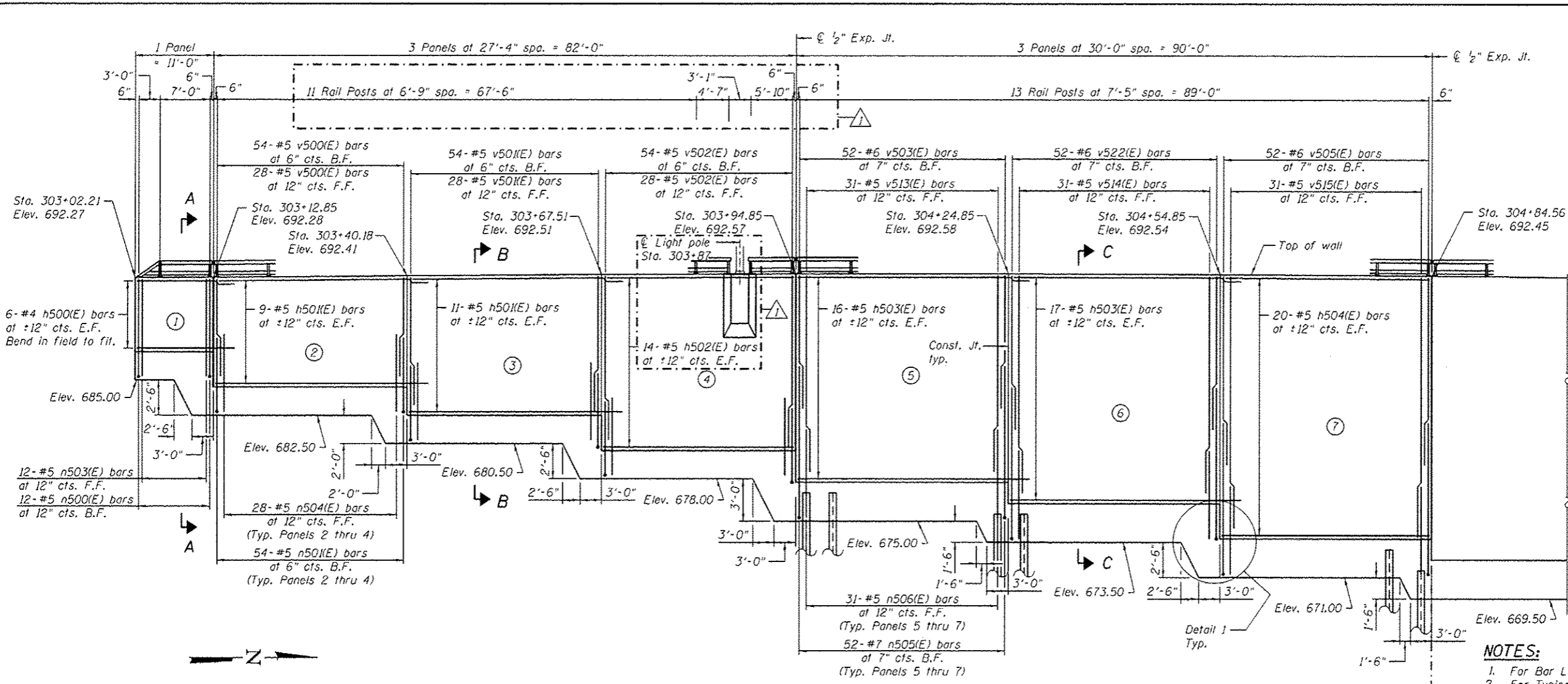
FILE NAME : 0162005-60M62-802-010.dgn	USER NAME : arealon.khan	DESIGNED - PMH	REVISED - 04/12/2013 K.M.P.
		CHECKED - AMK	REVISED -
		DRAWN - PMH/RJ	REVISED -
		CHECKED - AMK	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**GENERAL DETAILS & BILL OF MATERIAL  
 STRUCTURE NO. 016-2005**

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 421
SHEET NO. 2 OF 21 SHEETS				CONTRACT NO. 60M62
ILLINOIS FED. AID PROJECT				

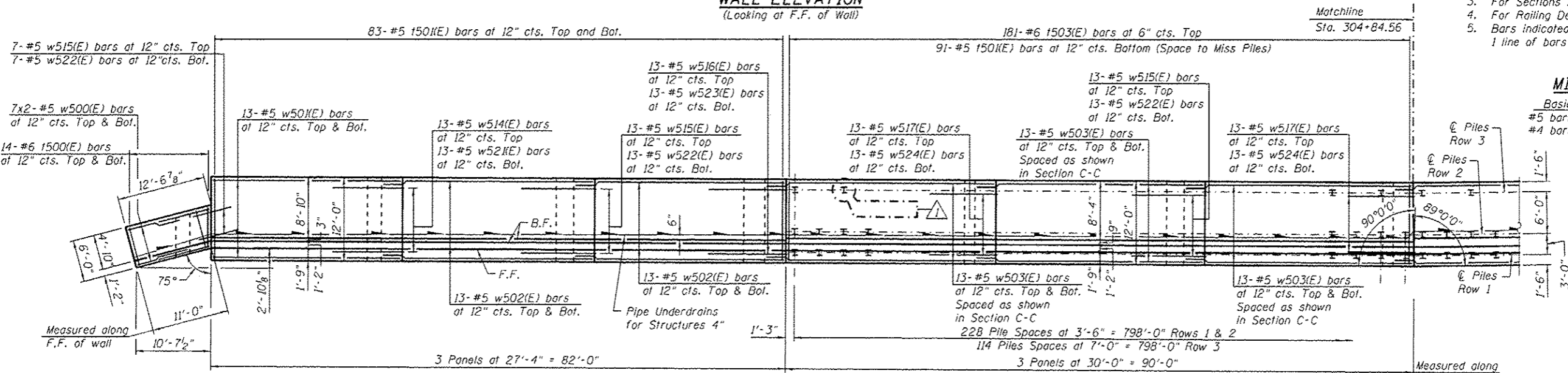




**LEGEND:**  
 F.F. = Front Face of Wall  
 B.F. = Back Face of Wall  
 E.F. = Each Face of Wall  
 I = Vertical Pile  
 ① = Panel No.

**NOTES:**  
 1. For Bar List & Detail 1 see Sheet 10.  
 2. For Typical Details see Sheet 2.  
 3. For Sections A-A, B-B & C-C see Sheet 9.  
 4. For Railing Details see Sheet 11.  
 5. Bars indicated thus 1 x 3-#8 etc. indicates 1 line of bars with 3 lengths per line.

**WALL ELEVATION**  
 (Looking at F.F. of Wall)



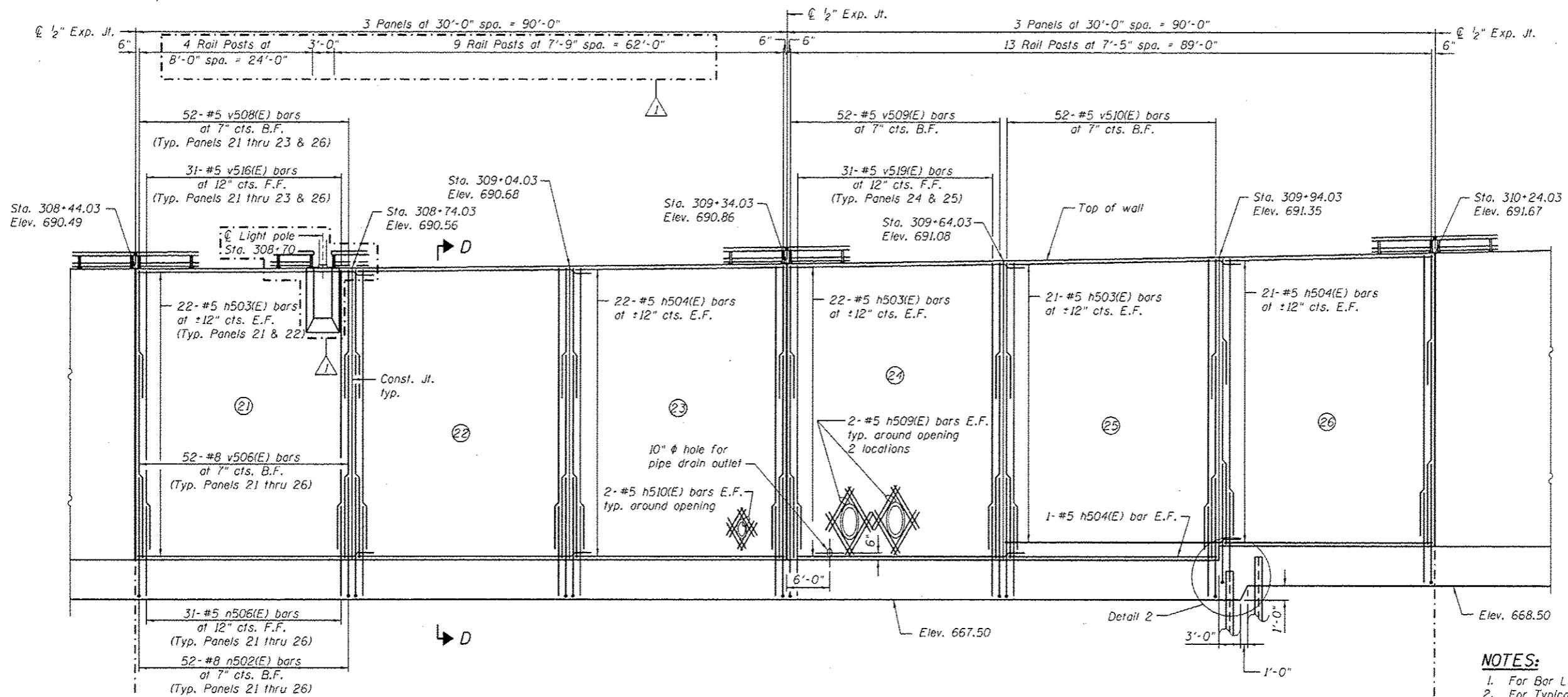
**MINIMUM BAR LAP**  
 Basic Lap: #5 bars - 2'-7", #4 bars - 2'-1"  
 Top Bar Lap: #5 bars - 2'-11"

**FOOTING PLAN**

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FILE NAME: 0162005-00M02-003-pln.dgn	USER NAME: arselan.khan	DESIGNED: PMH	REVISION: 04/12/2013 K.M.P.	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DETAILED PLAN AND ELEVATION 1 STRUCTURE NO. 016-2005	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 422
PLT SCALE: 1/8" = 1'-0"	CHECKED: AMK	DRAWN: PMH	REVISION:			CONTRACT NO. 60M62			ILLINOIS FED. AID PROJECT	
PLT DATE: 4/12/2013	CHECKED: AMK	REVISION:	SHEET NO. 3 OF 21 SHEETS							

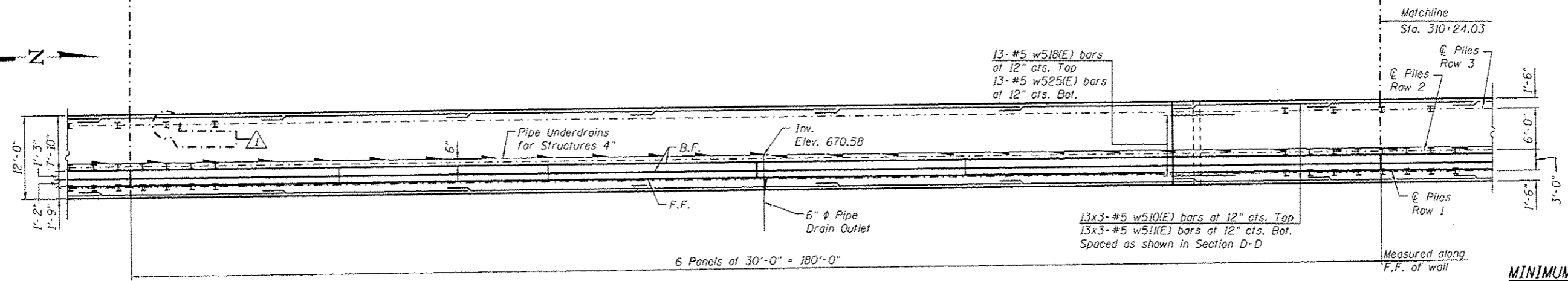




**WALL ELEVATION**  
(Looking at F.F. of Wall)

**LEGEND:**  
 F.F. = Front Face of Wall  
 B.F. = Back Face of Wall  
 E.F. = Each Face of Wall  
 I = Vertical Pile  
 (1) = Panel No.

- NOTES:**
1. For Bar List & Detail 2 see Sheet 10.
  2. For Typical Details see Sheet 2.
  3. For Section D-D see Sheet 9.
  4. For Railing Details see Sheet 11.
  5. Bars indicated thus 1 x 3-#8 etc. indicates 1 line of bars with 3 lengths per line.



**FOOTING PLAN**

**MINIMUM BAR LAP**  
 Basic Lap: #5 bars - 2'-7"  
 Top Bar Lap: #5 bars - 2'-11"

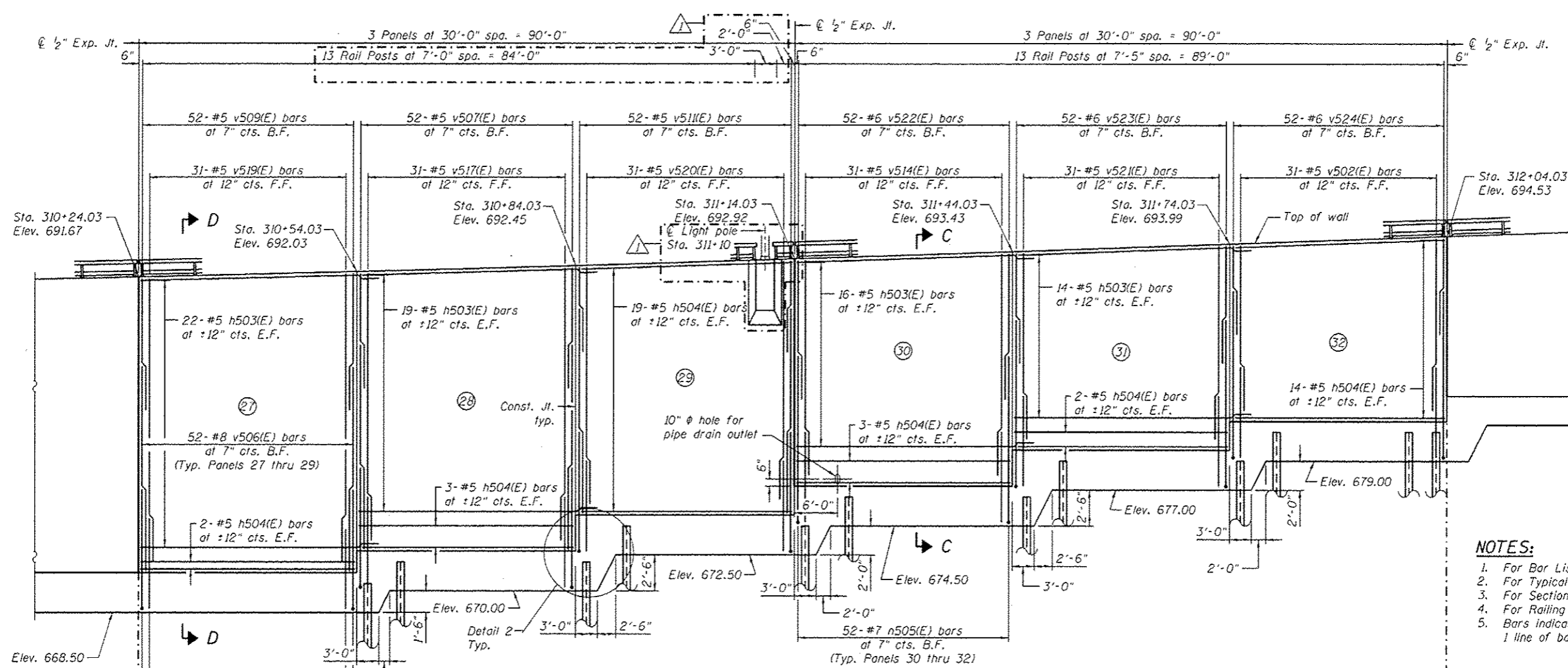
URS  
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 CHICAGO, IL 60606  
 TEL: (312) 866-6000  
 FAX: (312) 866-4000

FILE NAME =	USER NAME = arelon.khan	DESIGNED - PMH	REVISED - 04/12/2013 K.M.P.
RIG2005-60M62-006-pln.dgn		CHECKED - AMK	REVISED -
		DRAWN - PMH	REVISED -
		CHECKED - AMK	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

DETAILED PLAN AND ELEVATION 4  
 STRUCTURE NO. 016-Z005  
 SHEET NO. 6 OF 21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	425
				CONTRACT NO. 60M62
ILLINOIS FED. AID PROJECT				

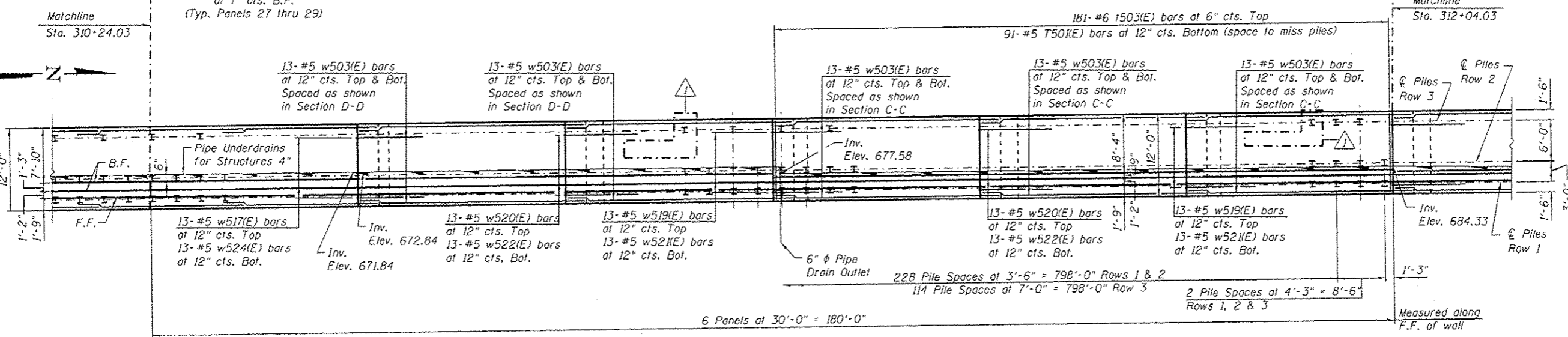


**LEGEND:**  
 F.F. = Front Face of Wall  
 B.F. = Back Face of Wall  
 E.F. = Each Face of Wall  
 I = Vertical Pile  
 (1) = Panel No.

**NOTES:**  
 1. For Bar List & Detail 2 see Sheet 10.  
 2. For Typical Details see Sheet 2.  
 3. For Sections C-C & D-D see Sheet 9.  
 4. For Railing Details see Sheet 11.  
 5. Bars indicated thus 1 x 3-#8 etc. indicates 1 line of bars with 3 lengths per line.

**MINIMUM BAR LAP**  
 Basic Lap      Top Bar Lap  
 #5 bars - 2'-7"   #5 bars - 2'-11"

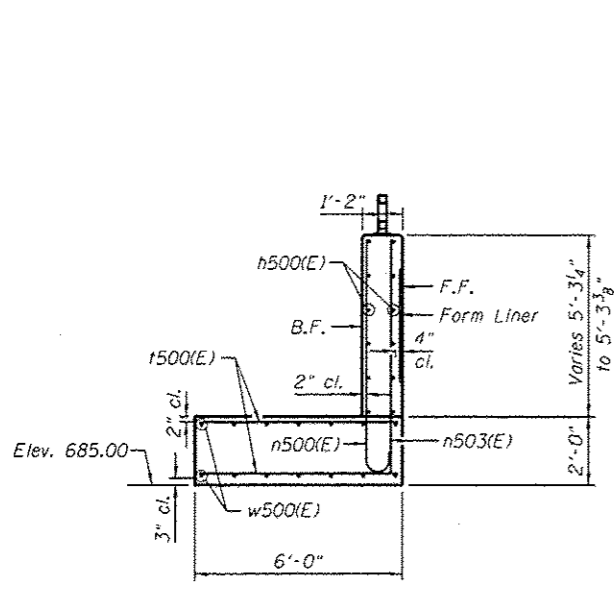
**WALL ELEVATION**  
 (Looking at F.F. of Wall)



**FOOTING PLAN**

URS  
 100 S. WACKER DR.  
 CHICAGO, IL 60606  
 TEL 312-939-0000  
 FAX 312-939-4998

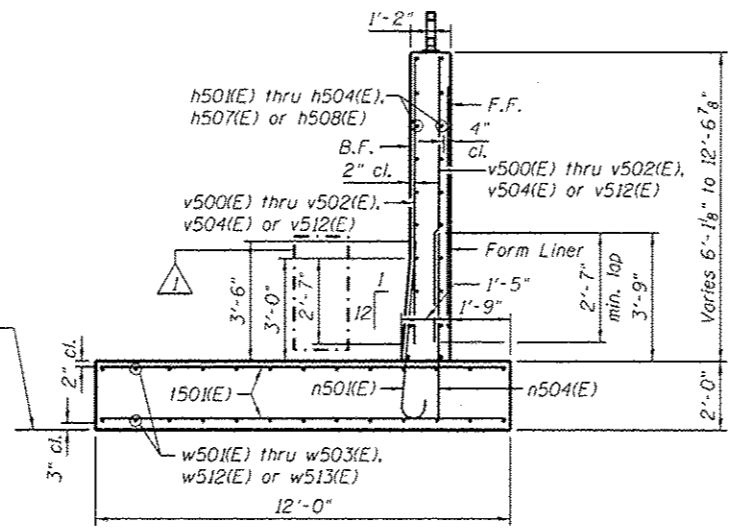
FILE NAME : 01G2005-00M62-007-pln.dgn	USER NAME : arsalan.khan	DESIGNED - PMH	REVISED - 04/12/2013 K.M.P.	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILED PLAN AND ELEVATION 5 STRUCTURE NO. 016-2005</b>	F.A.P. RITE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 426
PLOT SCALE : 1/8" = 1'-0"	DRAWN - PMH	CHECKED - AMK	REVISED -			CONTRACT NO. 60M62				
PLOT DATE : 4/12/2013	CHECKED - AMK	REVISED -	REVISED -			ILLINOIS FED. AID PROJECT				
						SHEET NO. 7 OF 21 SHEETS				



**SECTION A-A  
PANEL 1**

Maximum Applied Service Bearing  
Pressure  $Q_{max} = 1.32$  ksf

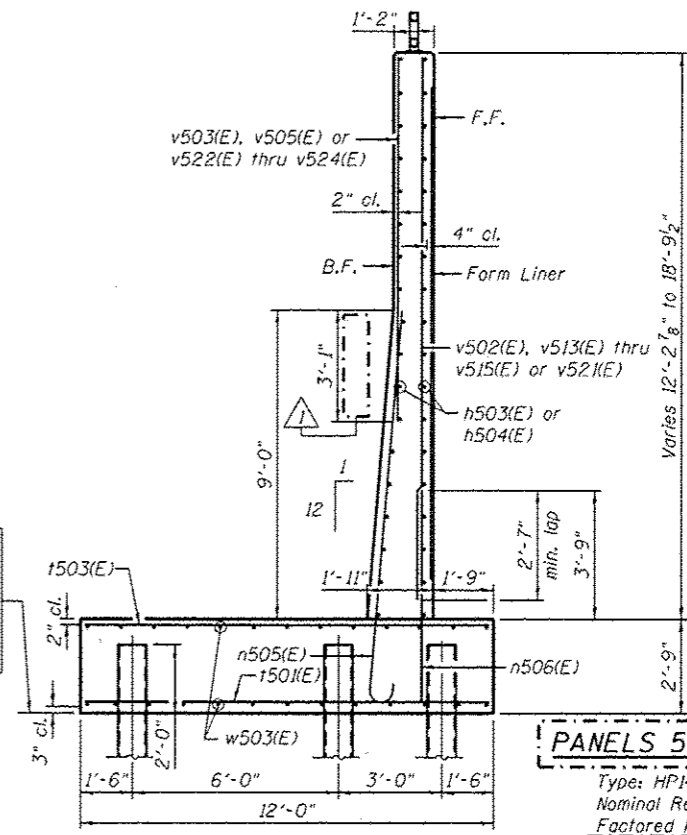
- Elev. 682.50 (Panel 2)
- Elev. 680.50 (Panel 3)
- Elev. 678.00 (Panel 4)
- Elev. 681.50 (Panel 33)
- Elev. 683.50 (Panel 34)
- Elev. 686.00 (Panel 35)
- Elev. 688.00 (Panel 36)



**SECTION B-B  
PANELS 2 THRU 4 & 33 THRU 36**

Maximum Applied Service Bearing  
Pressure  $Q_{max} = 2.00$  ksf

- Elev. 675.00 (Panel 5)
- Elev. 673.50 (Panel 6)
- Elev. 671.00 (Panel 7)
- Elev. 674.50 (Panel 30)
- Elev. 677.00 (Panel 31)
- Elev. 679.00 (Panel 32)



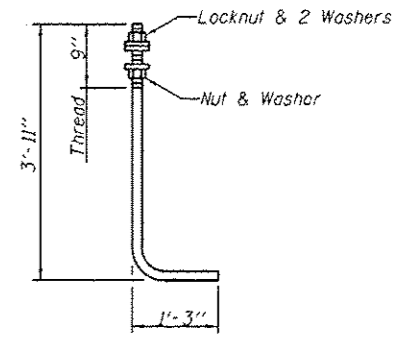
**SECTION C-C  
PANELS 5 THRU 7 & 30 THRU 32**

**PILE DATA**

Panel	Min. Tip Elev.
5	647.00
6	645.50
7	643.00
30	646.50
31	649.00
32	651.00

Type: HP14x73  
Nominal Required Bearing: 240 kips  
Factored Resistance Available: 80 kips  
Est. Length: 30'  
Min. Tip Elevation: (See Table)  
No. Production Piles: 124  
No. Test Piles: 2 (recommended in panels 5 and 32)

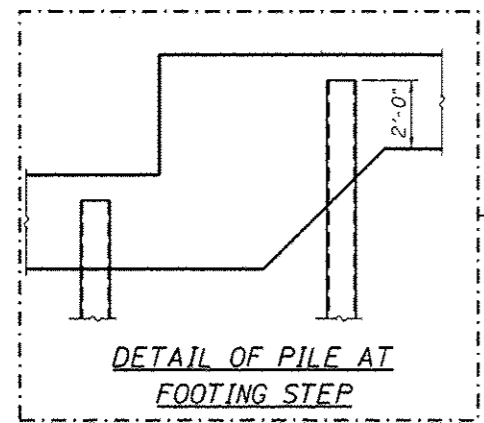
Pile length is required for fixity to resist lateral load.



**ANCHOR ROD**  
Diameter as specified for light poles.  
(ASTM F 1554 Grade 105)  
Cost of anchor rods is included with Concrete Structures.

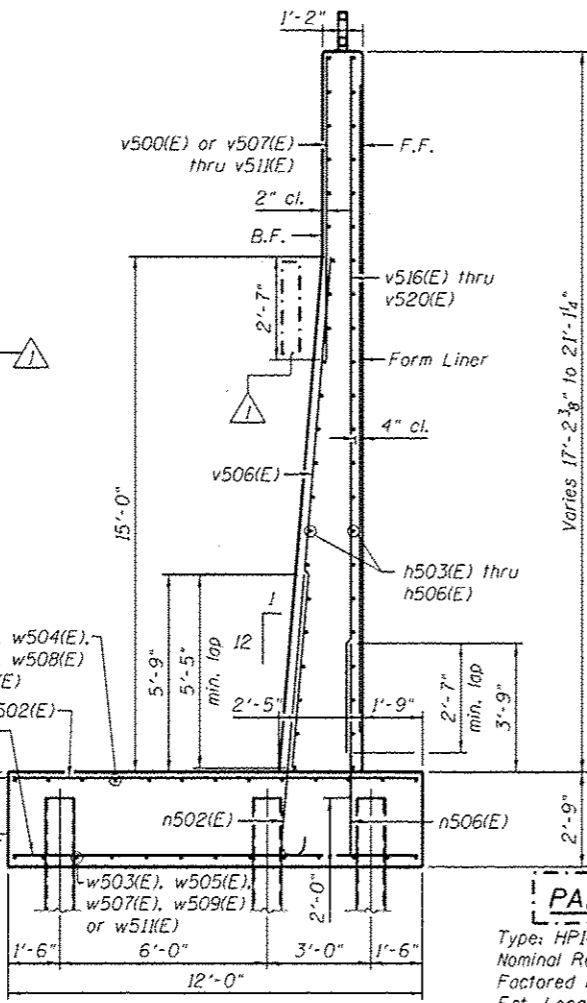
**LEGEND:**  
F.F. = Front Face of Wall  
B.F. = Back Face of Wall  
E.F. = Each Face of Wall

**NOTES:**  
1. For Bar List see Sheet 10.



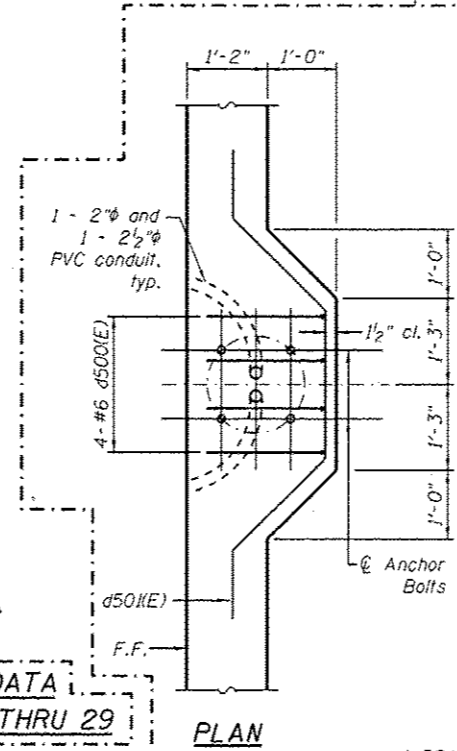
**DETAIL OF PILE AT  
FOOTING STEP**

- Elev. 669.50 (Panels 8 thru 10)
- Elev. 668.50 (Panels 11 thru 19)
- Elev. 667.50 (Panels 20 thru 25)
- Elev. 668.50 (Panels 26 & 27)
- Elev. 670.00 (Panel 28)
- Elev. 672.50 (Panel 29)



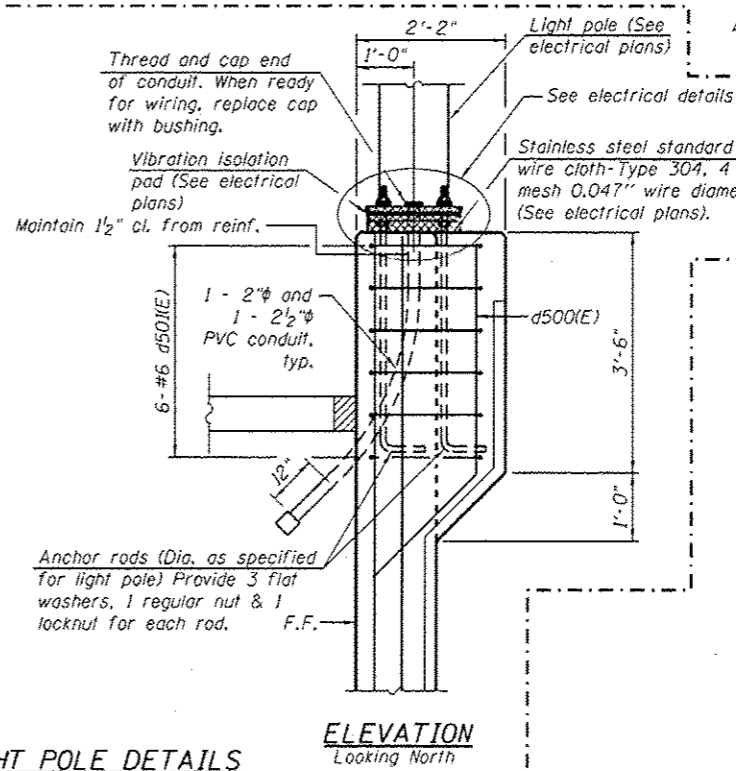
**SECTION D-D  
PANELS 8 THRU 29**

Type: HP14x73 with pile shoes  
Nominal Required Bearing: 216 kips  
Factored Resistance Available: 80 kips  
Est. Length: 55'  
No. Production Piles: 446  
No. Test Piles: 4 (recommended in panels 8, 15, 21, and 29)



**PLAN**

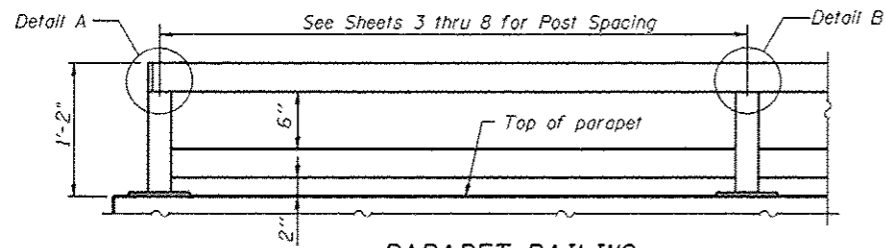
**LIGHT POLE DETAILS**  
Mounted on retaining wall  
Typical, 4 locations



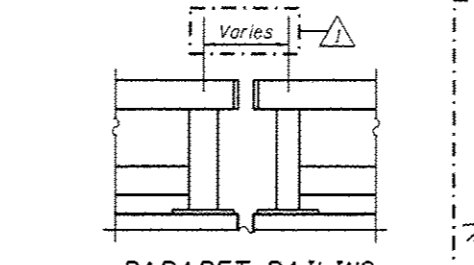
**ELEVATION  
Looking North**

URS  
 80 S. WACKER DR.  
 SUITE 500  
 CHICAGO IL 60606  
 TEL (312) 999-0000  
 FAX (312) 999-4088

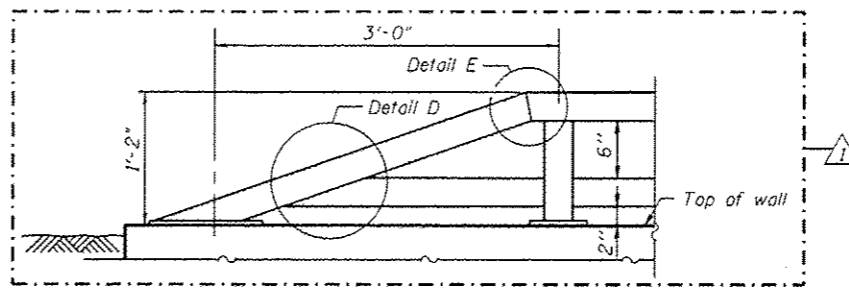
FILE NAME: 0162005-60M2-001-ds1.dgn	USER NAME: orsan.khan	DESIGNED: PMH	REVISION: 4/12/2013 K.M.P.	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>SECTIONS AND DETAILS STRUCTURE NO. 016-2005</b>	F.A.P. RTE.: 330	SECTION: 103R-5	COUNTY: COOK	TOTAL SHEETS: 778	SHEET NO.: 428		
PLOT SCALE: 5/8" = 1'-0"	DRAWN: PMH	CHECKED: AMK	REVISION:			CONTRACT NO. 60M62						
PLOT DATE: 4/12/2013	CHECKED: AMK	REVISION:	REVISION:			ILLINOIS FED. AID PROJECT						
SHEET NO. 9 OF 21 SHEETS												
ILLINOIS FED. AID PROJECT												



**PARAPET RAILING**  
**ELEVATION**  
(Inside Face of Rail)

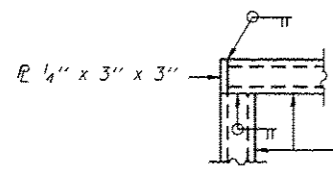


**PARAPET RAILING**  
**ELEVATION AT EXPANSION JOINT**

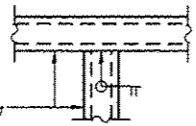


**PARAPET RAILING**  
**AT END SECTION**

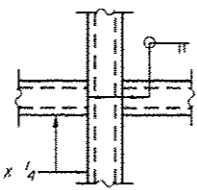
Note:  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



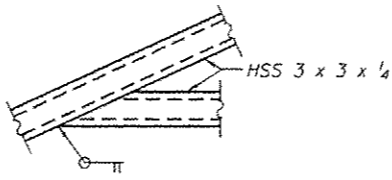
**DETAIL A**



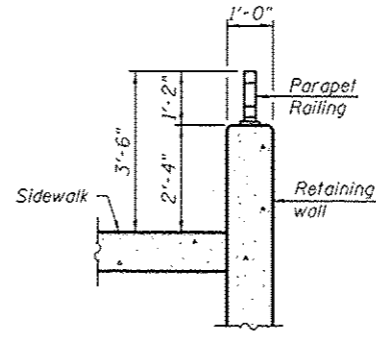
**DETAIL B**



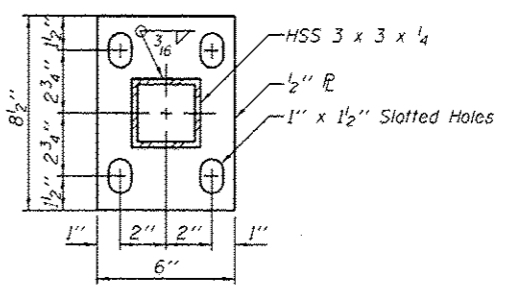
**DETAIL C**



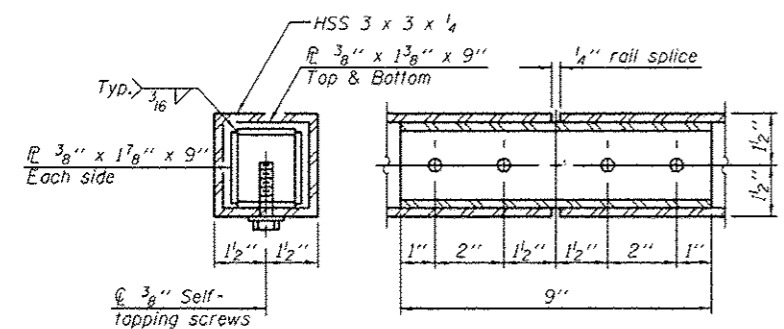
**DETAIL D**



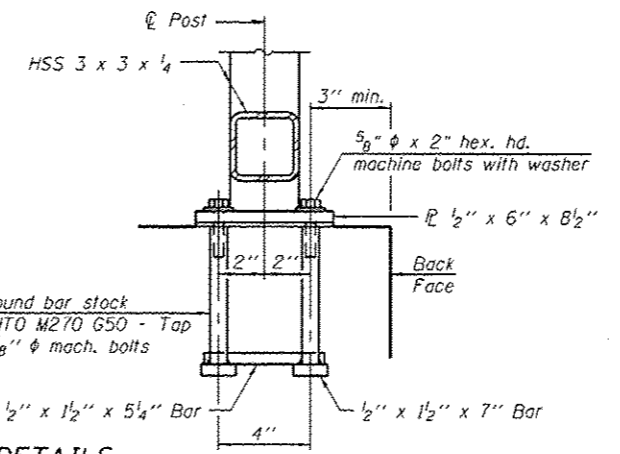
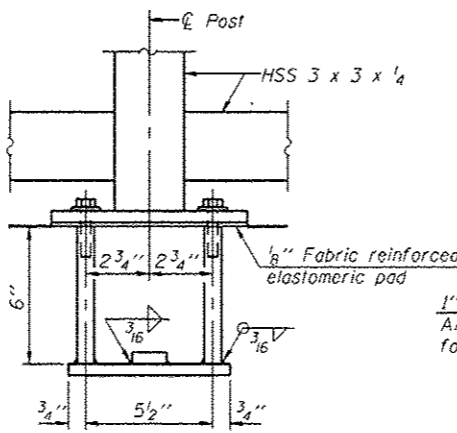
**SECTION THRU RAILING**



**BASE PL**

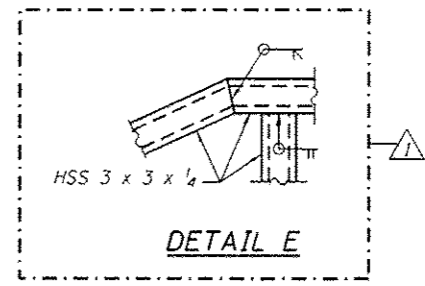


**RAIL SPLICE**



**ANCHOR BOLT DETAILS**

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8"  $\phi$  anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



**DETAIL E**

**BILL OF MATERIAL**

Item	Unit	Quantity
Parapet Railing	Foot	1,019

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 939-0000  
FAX (312) 939-4598

FILE NAME : 0162005-G0M62-011-Rail.dgn	USER NAME : arsalan_khan	DESIGNED - PMH	REVISED - 04/12/2013 K.M.P.
		CHECKED - AMK	REVISED -
		DRAWN - PMH	REVISED -
		CHECKED - AMK	REVISED -
			REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

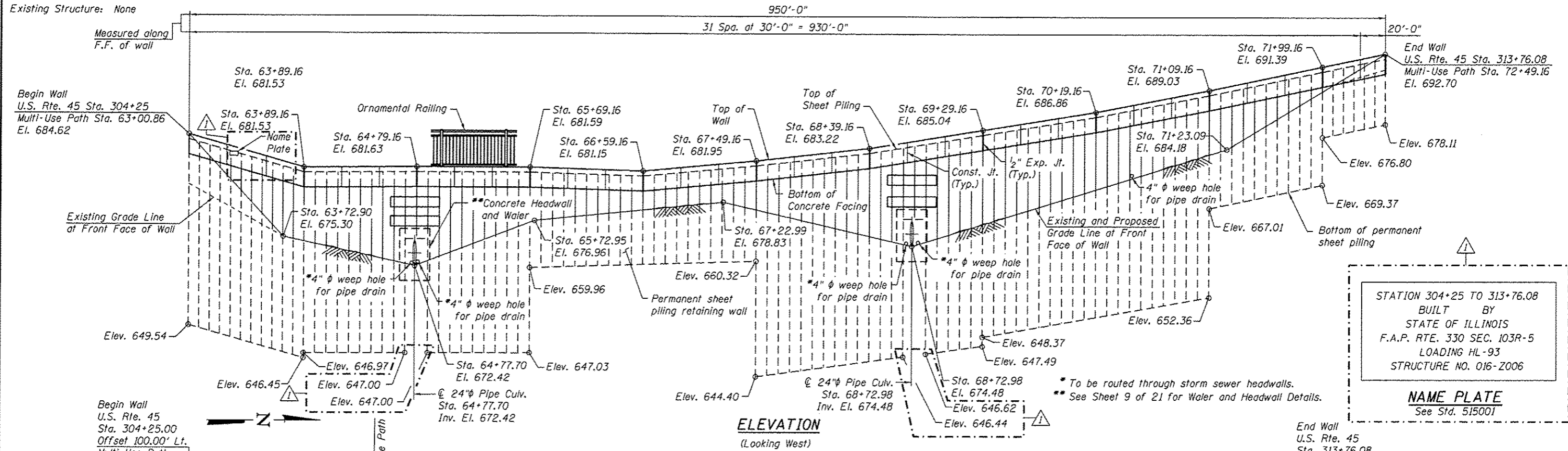
**PARAPET RAILING**  
**STRUCTURE NO. 016-2005**  
SHEET NO. 11 OF 21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	430
				CONTRACT NO. 60M62
ILLINOIS FED. AID PROJECT				

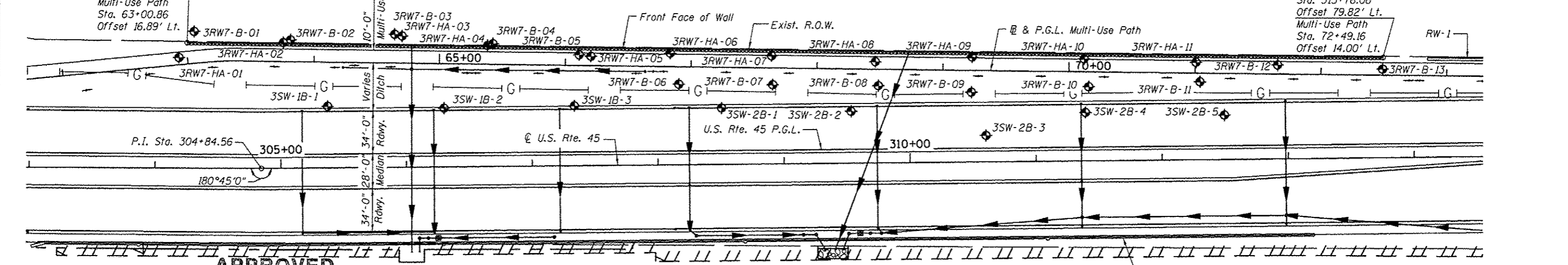


Bench Mark: Elev. 689.00 Top of brass survey monument located at the west edge of the LaGrange Road southbound pavement, 600 feet north of the SouthWest Highway bridge.

Existing Structure: None



STATION 304+25 TO 313+76.08  
 BUILT BY  
 STATE OF ILLINOIS  
 F.A.P. RTE. 330 SEC. 103R-5  
 LOADING HL-93  
 STRUCTURE NO. 016-Z006  
**NAME PLATE**  
 See Std. 515001



**APPROVED**  
 For Structural Adequacy Only

*De Carl Perry*  
 Engineer of Bridges & Structures



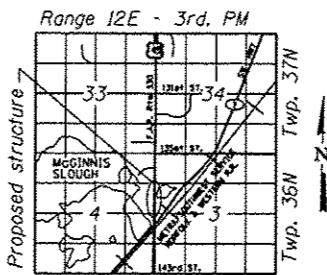
*Arsalan Khan*  
 ARSALAN M. KHAN, S.E.  
 LICENSE NO.: 081-006258  
 EXPIRES: NOVEMBER 30, 2014  
 DATE: 04-11-2013

**DESIGN SPECIFICATIONS**  
 2012 AASHTO LRFD Bridge Design Specifications,  
 6th Edition

**DESIGN STRESSES**  
 FIELD UNITS  
 $f_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)  
 $f_y = 50,000$  psi (ASTM A 572 Grade 50 Sheet Piling)  
 $f_y = 50,000$  psi (AASHTO M 270 Grade 50W Walers)

Note:  
 Wall offsets are measured from the  $\odot$  U.S. Rte. 45 & the  $\odot$  Multi-Use Path to the front face of wall.

**LEGEND**  
 - Ditch Flow Line  
 - Exist. Gas Line  
 • Prop. Drainage Structure  
 - Prop. Storm Sewer/Pipe Culvert  
 • Soil Boring  
 F.F.=Front Face  
 B.F.=Back Face  
 E.F.=Each Face  
 I.F.=Inside Face  
 O.F.=Outside Face

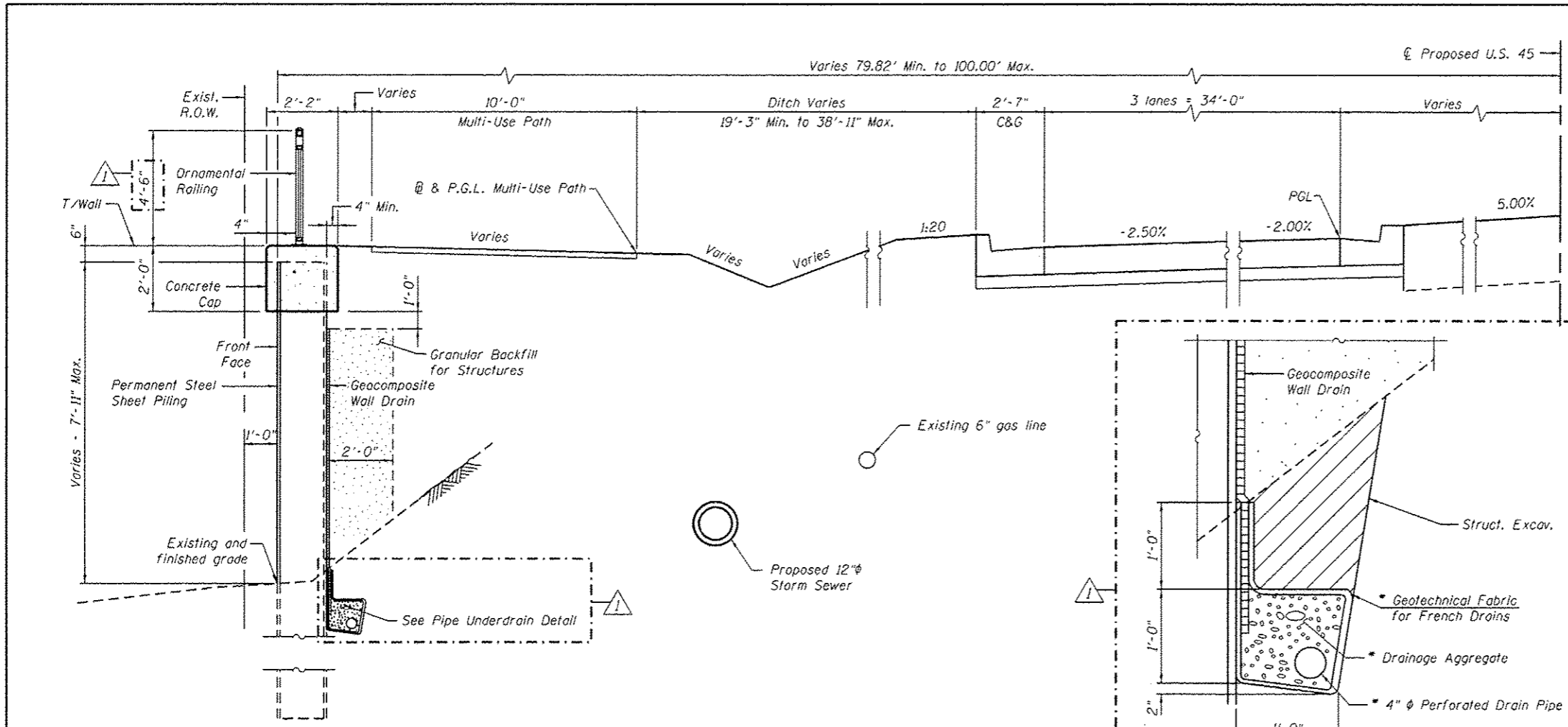


**CURVE DATA**  
 P.I. STA. = 63+26.57  
 $\Delta = 5^\circ 03' 32''$   
 $R = 245.00'$   
 P.C. STA. = 63+13.25  
 P.T. STA. = 63+39.87

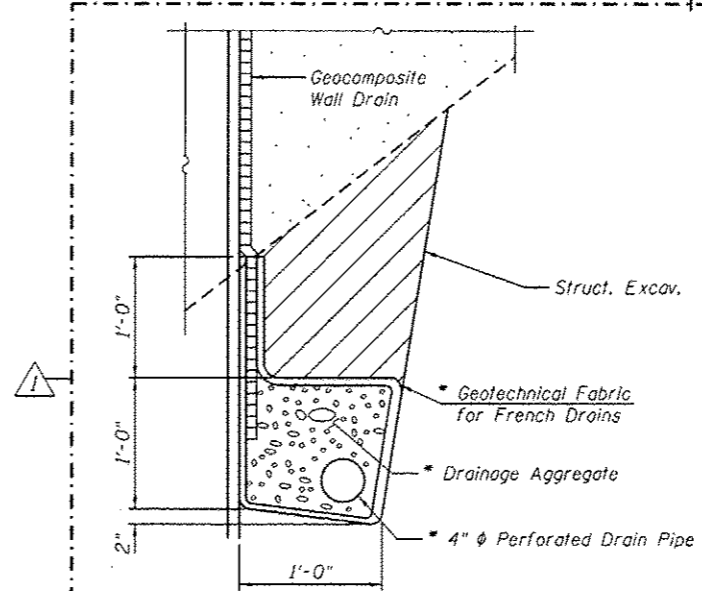
**GENERAL PLAN & ELEVATION**  
 U.S. ROUTE 45 - LAGRANGE ROAD  
 F.A.P. RTE. 330 SEC. 103R-5  
 COOK COUNTY  
 STATION 304+25.00 TO 313+76.08  
 STRUCTURE NO. 016-Z006

URS  
 100 S. WACKER DR.  
 SUITE 500  
 CHICAGO, IL 60606  
 TEL: (312) 999-0000  
 FAX: (312) 999-4999

FILE NAME : 016Z006-60M62-001-GPC.dgn	USER NAME : arsalan.khan	DESIGNED - PMH	REVISD - 04/12/2013 P.M.H	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 441
PLOT SCALE : 0.01250019 1' = 12.500000'	DRAWN - PMH	CHECKED - AMK	REVISD -		SHEET NO. 1 OF 21 SHEETS	CONTRACT NO. 60M62			
PLOT DATE : 4/11/2013	CHECKED - AMK	REVISD -	REVISD -		ILLINOIS FED. AID PROJECT				



**SECTION THRU SHEET PILE WALL**  
(Looking North)



**PIPE UNDERDRAIN DETAIL**

**TOTAL BILL OF MATERIAL**

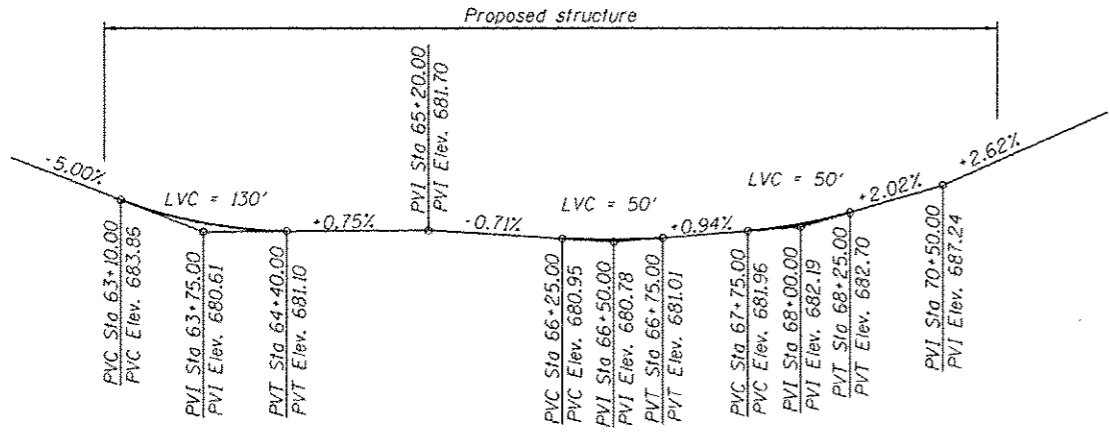
ITEM	UNIT	TOTAL
Structure Excavation	Cu. Yd.	101.7
Concrete Structures	Cu. Yd.	161.7
Furnishing and Erecting Structural Steel	Pound	5,500
Stud Shear Connectors	Each	1,290
Reinforcement Bars	Pound	680
Reinforcement Bars, Epoxy Coated	Pound	11,620
Geocomposite Wall Drain	Sq. Yd.	114
Permanent Steel Sheet Piling	Sq. Ft.	28,731
Granular Backfill for Structures	Cu. Yd.	242.7
Ornamental Railing	Foot	950
Pipe Underdrains for Structures 4"	Foot	998
Name Plates	Each	1

**GENERAL NOTES**

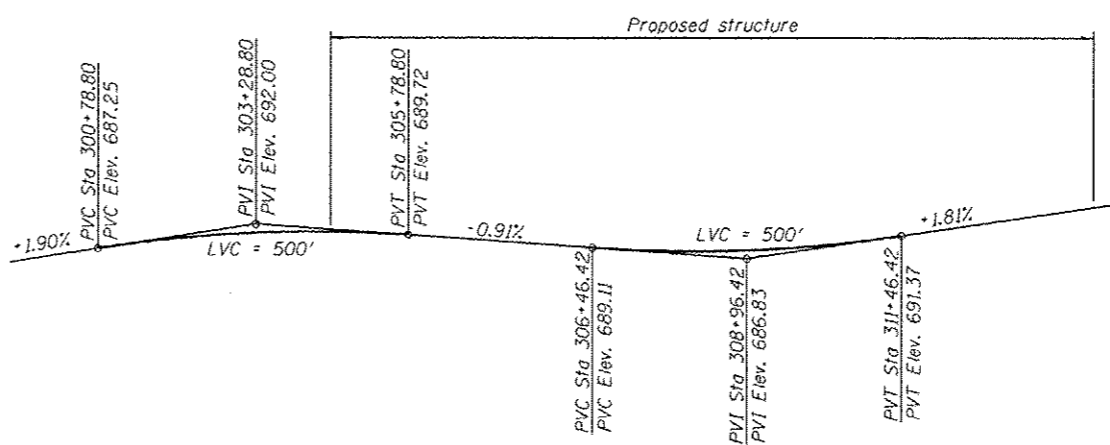
- Fasteners shall be ASTM A325 Type 3, mechanically galvanized bolts. Bolts  $\frac{3}{4}$  in.  $\phi$ , holes  $\frac{13}{16}$  in.  $\phi$  unless otherwise noted.
- Calculated weight of Structural Steel for Waters and Bolts = 5,500 lbs.
- All structural steel for Waters shall be AASHTO M 270 Grade 50W.
- No field welding is permitted except as specified in the contract documents.
- Reinforcement bars designated (E) shall be epoxy coated.
- Concrete cap shall be constructed after backfill is in place.
- All exposed corners shall have a 1" chamfer.
- See special provision "Permanent Steel Sheet Piling (LRFD)".

**INDEX OF SHEETS**

- General Plan & Elevation
- General Details & Bill of Material
- Detailed Plan and Elevation 1
- Detailed Plan and Elevation 2
- Detailed Plan and Elevation 3
- Detailed Plan and Elevation 4
- Detailed Plan and Elevation 5
- Detailed Plan and Elevation 6
- Water and Headwall Details
- Soil Borings 1
- Soil Borings 2
- Soil Borings 3
- Soil Borings 4
- Soil Borings 5
- Soil Borings 6
- Soil Borings 7
- Soil Borings 8
- Soil Borings 9
- Soil Borings 10
- Soil Borings 11
- Soil Borings 12



**PROFILE GRADE-PROPOSED MUTLI-USE PATH**  
(along PGL path)



**PROFILE GRADE-PROPOSED LAGRANGE RD**  
(along PGL roadway)

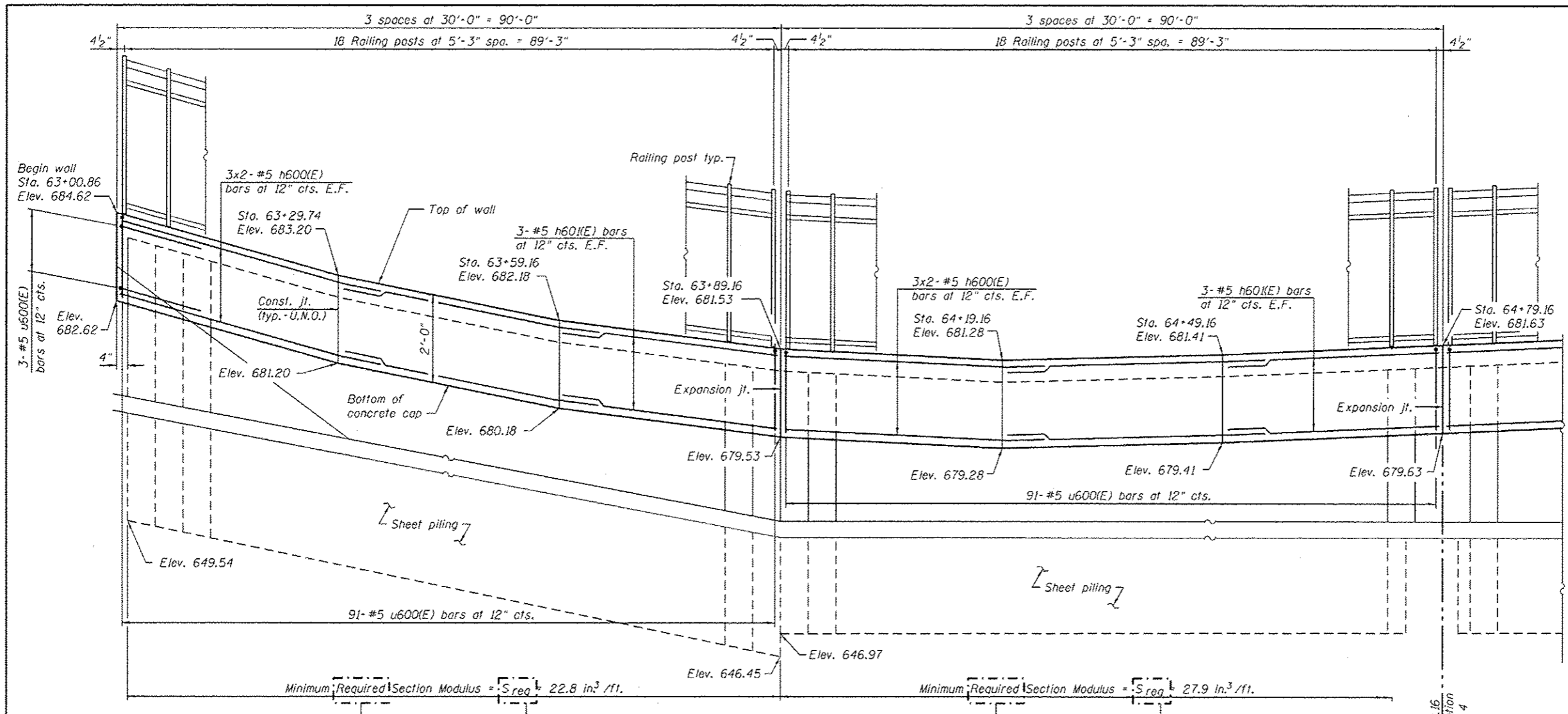
400 S. WACKER DR.  
 SUITE 500  
 CHICAGO, IL 60606  
 TEL (312) 939-0000  
 FAX (312) 939-4158  
**URS**

FILE NAME = 0162005-60M62-002-040.dgn	USER NAME = arealen_khan	DESIGNED - PMH	REVISED - 04/12/2013 P.M.H.
		CHECKED - AMK	REVISED -
		DRAWN - PMH/AMV	REVISED -
		CHECKED - AMK	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

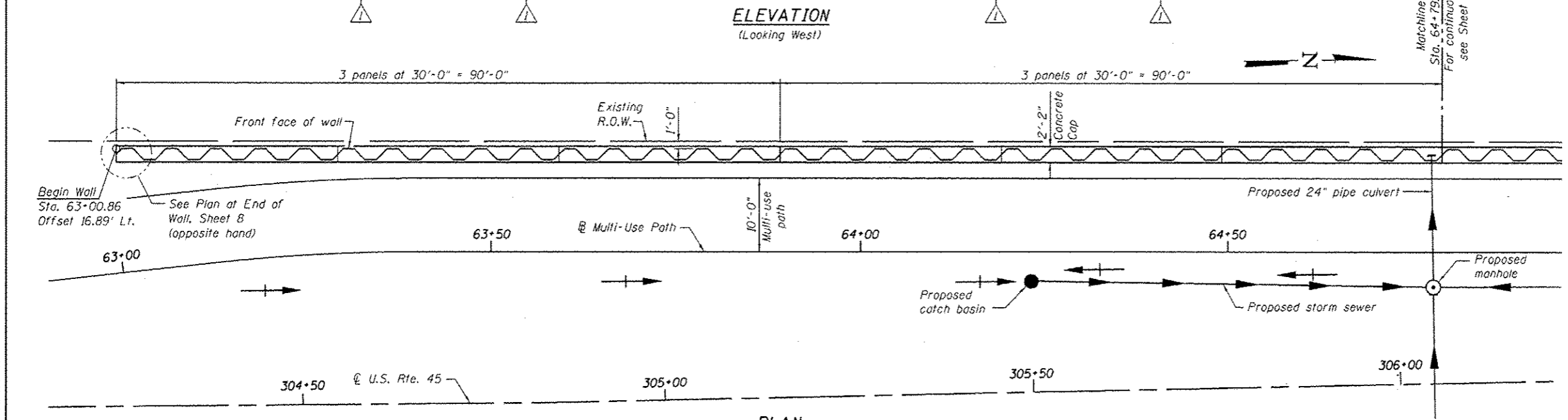
**GENERAL DETAILS & BILL OF MATERIAL**  
**STRUCTURE NO. 016-2006**  
 SHEET NO. 2 OF 21 SHEETS

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 442
CONTRACT NO. 60M62			ILLINOIS FED. AID PROJECT	



**MINIMUM BAR LAP**  
#5 bar = 3'-8"

**ELEVATION**  
(Looking West)

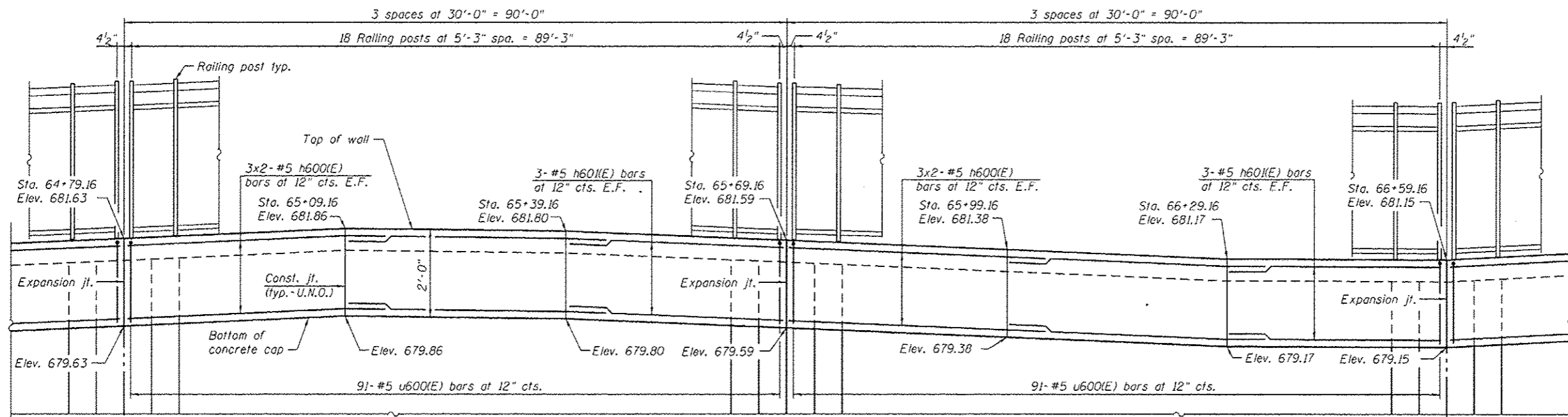


**PLAN**

- Notes:
1. For Bar List see Sheet 8.
  2. For Typical Details see Sheet 2.
  3. For Railing Details see Sheet 8.
  4. Bars indicated thus 3x2-#5 etc. indicates 3 lines of bars with 2 lengths per line.

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 939-0000  
FAX (312) 939-4158

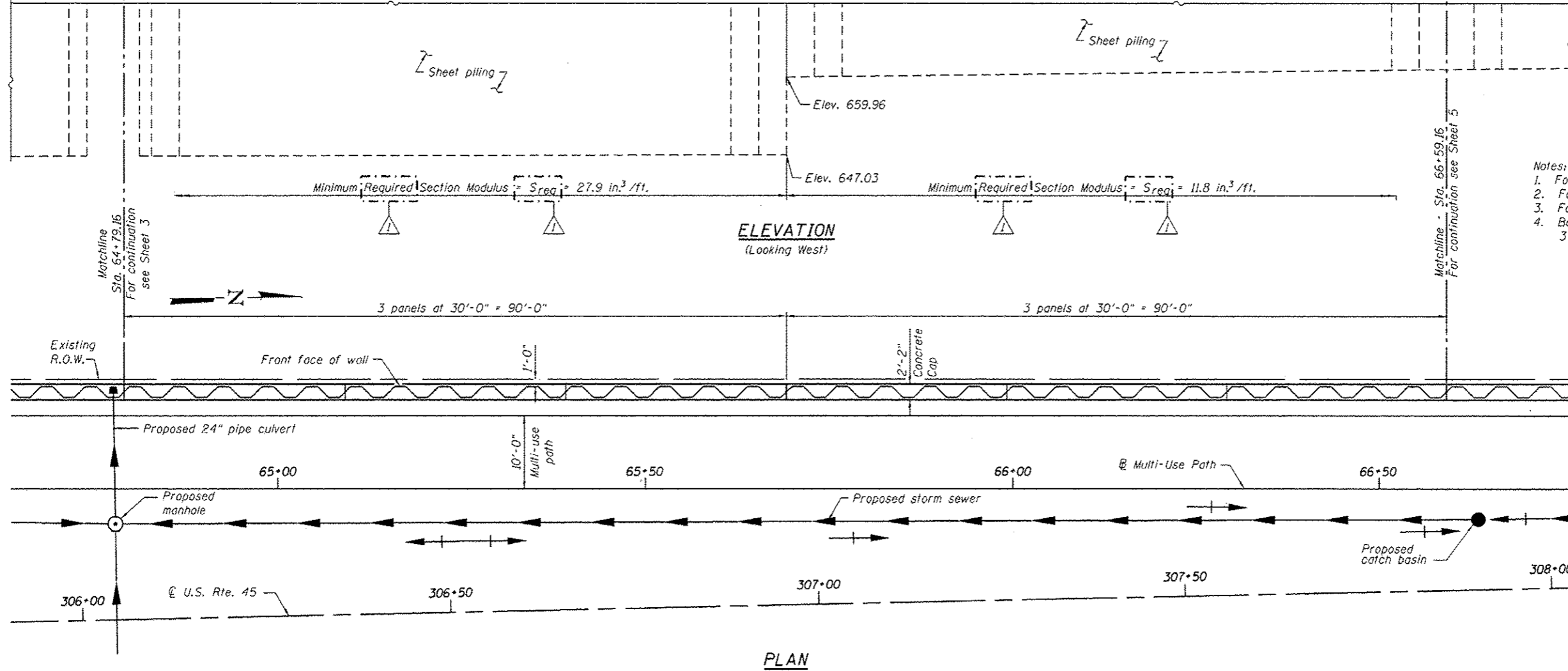
FILE NAME = 0162006-60M62-003-pln.dgn	USER NAME = arealen.khan	DESIGNED - PMH	REVISED - 04/12/2013 P.M.H.	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILED PLAN AND ELEVATION 1 STRUCTURE NO. 016-2006</b>	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 443	
PLOT SCALE = 16.0000' / 1"	DRAWN - AMV	REVISOR -	REVISOR -			CONTRACT NO. 60M62					
PLOT DATE = 4/11/2013	CHECKED - AMK	REVISOR -	REVISOR -			SHEET NO. 3 OF 21 SHEETS					
						ILLINOIS FED. AID PROJECT					



**MINIMUM BAR LAP**  
#5 bar = 3'-8"

- Notes:
1. For Bar List see Sheet 8.
  2. For Typical Details see Sheet 2.
  3. For Railing Details see Sheet 8.
  4. Bars indicated thus 3x2-#5 etc. indicates 3 lines of bars with 2 lengths per line.

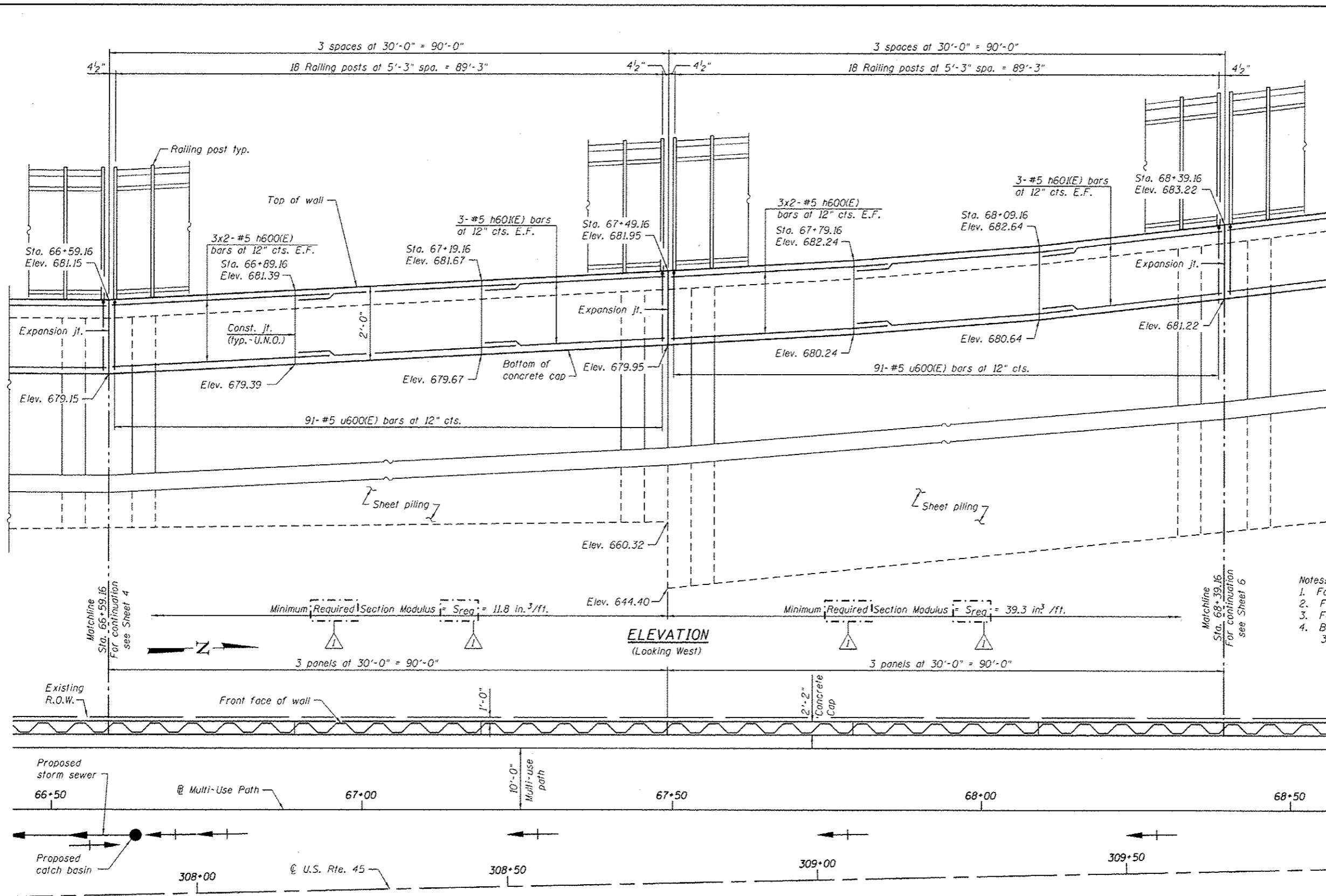
**ELEVATION**  
(Looking West)



**PLAN**

URS  
800 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 839-0000  
FAX (312) 839-0088

FILE NAME 0162806-60M2-004-pln.dgn	USER NAME arason.khan	DESIGNED - PMH	REVISED - 04/12/2013 P.M.H.	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILED PLAN AND ELEVATION 2 STRUCTURE NO. 016-2006</b>	F.A.P. R.T.E. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 444
PLOT SCALE 1/8" = 1'-0"	DRAWN - AMV	REVISOR -	SHEET NO. 4 OF 21 SHEETS			CONTRACT NO. 60M62				
PLOT DATE 4/11/2013	CHECKED - AMK	REVISOR -	ILLINOIS FED. AID PROJECT							



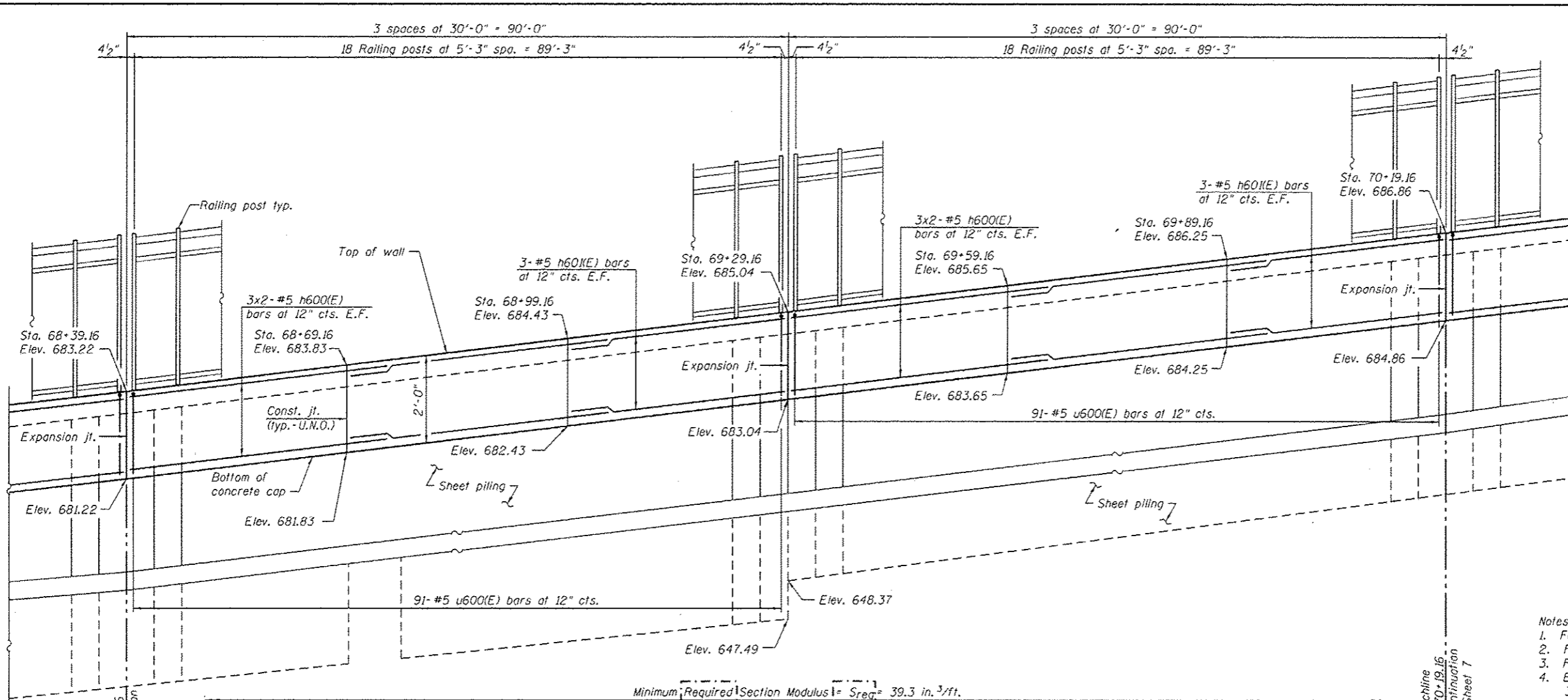
**MINIMUM BAR LAP**  
#5 bar = 3'-8"

- Notes:
1. For Bar List see Sheet B.
  2. For Typical Details see Sheet 2.
  3. For Railing Details see Sheet 8.
  4. Bars indicated thus 3x2-#5 etc. indicates 3 lines of bars with 2 lengths per line.

**PLAN**

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 999-0000  
FAX (312) 999-4998

FILE NAME : 0162006-60M62-005-pln.dgn	USER NAME : arson_khan	DESIGNED - PMH	REVISED - 04/12/2013 P.M.H.	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILED PLAN AND ELEVATION 3 STRUCTURE NO. 016-2006</b>	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 445	
PLOT SCALE : 1/16" = 1'-0"	CHECKED - AMK	DRAWN - AMV	REVISED -			CONTRACT NO. 60M62					
PLOT DATE : 4/11/2013	CHECKED - AMK	REVISED -	REVISED -			ILLINOIS FED. AID PROJECT					
SHEET NO. 5 OF 21 SHEETS											

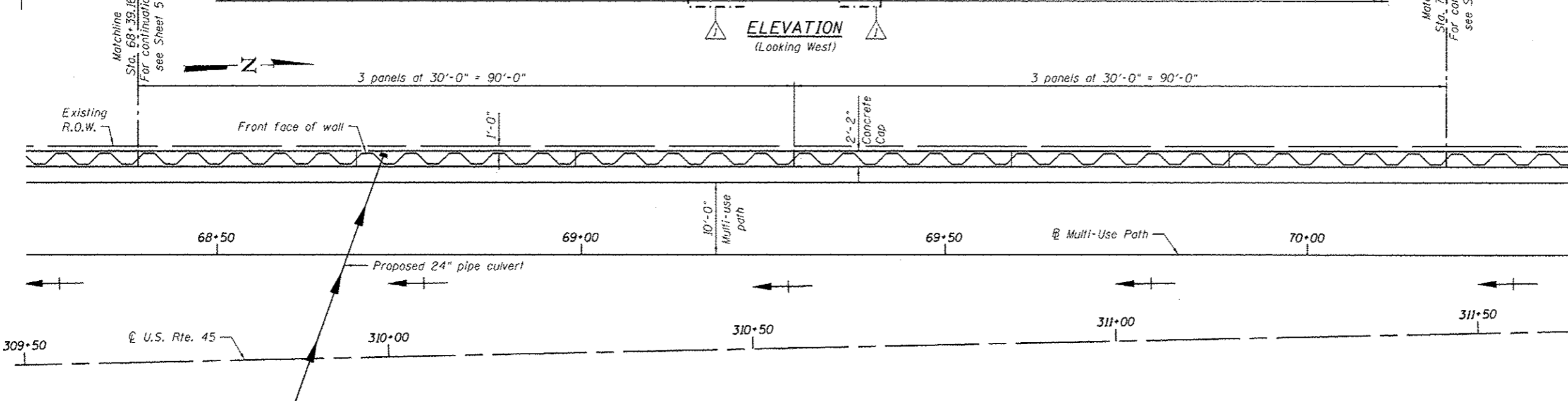


**MINIMUM BAR LAP**  
#5 bar = 3'-8"

- Notes:
1. For Bar List see Sheet 8.
  2. For Typical Details see Sheet 2.
  3. For Railing Details see Sheet 8.
  4. Bars indicated thus 3x2-#5 etc. indicates 3 lines of bars with 2 lengths per line.

Minimum Required Section Modulus =  $S_{req} = 39.3 \text{ in.}^3/\text{ft.}$

**ELEVATION**  
(Looking West)

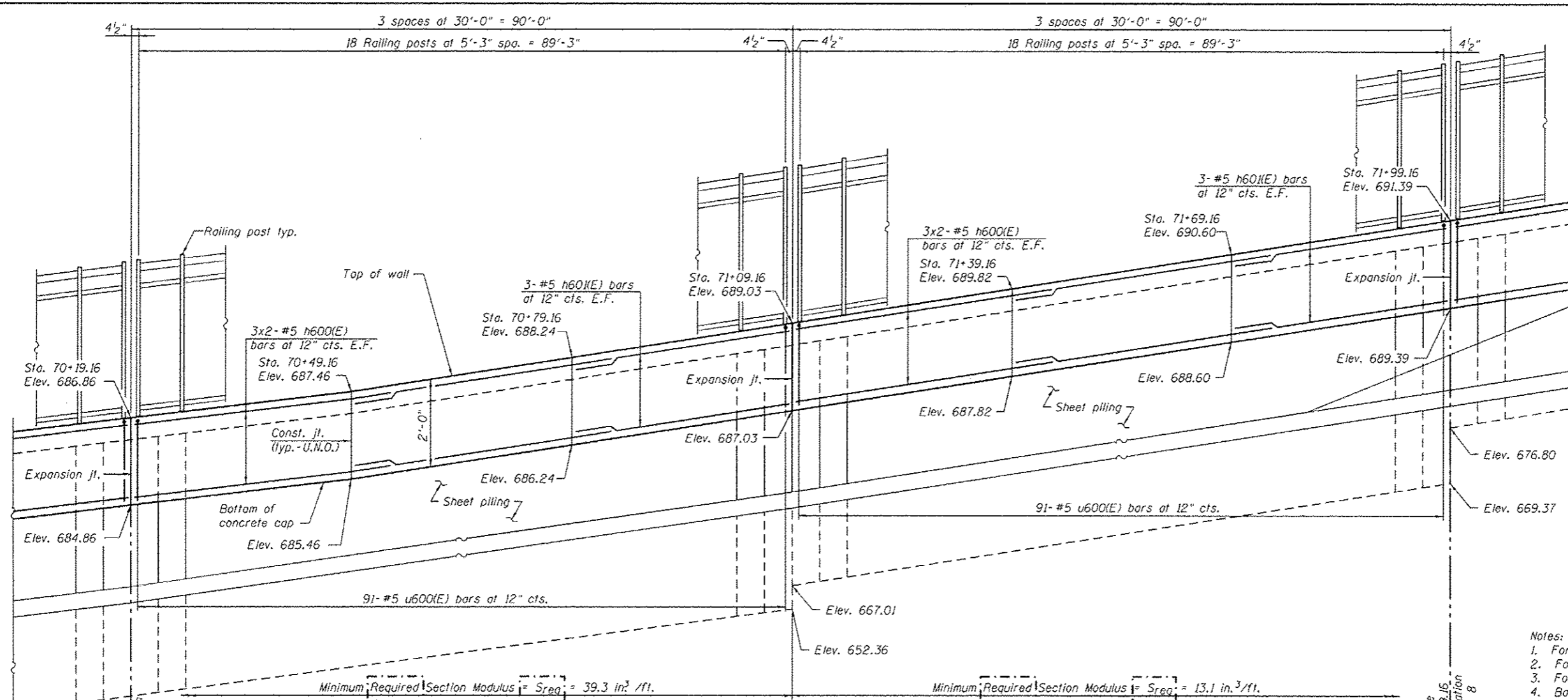


**PLAN**

URS  
400 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 939-0000  
FAX (312) 939-0198

FILE NAME : 0162006-G0M62-006-pln.dgn	USER NAME : arsalon_khan	DESIGNED - PMH	REVISED - 04/12/2013 P.M.H.	<b>STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILED PLAN AND ELEVATION 4 STRUCTURE NO. 016-2006</b>	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE : 1/8" = 1'-0"	DRAWN - AMV	REVISOR -	330			103R-5	COOK	778	446	
PLOT DATE : 4/11/2013	CHECKED - AMK	REVISOR -	CONTRACT NO. 60M62							
SHEET NO. 6 OF 21 SHEETS						ILLINOIS FED. AID PROJECT				

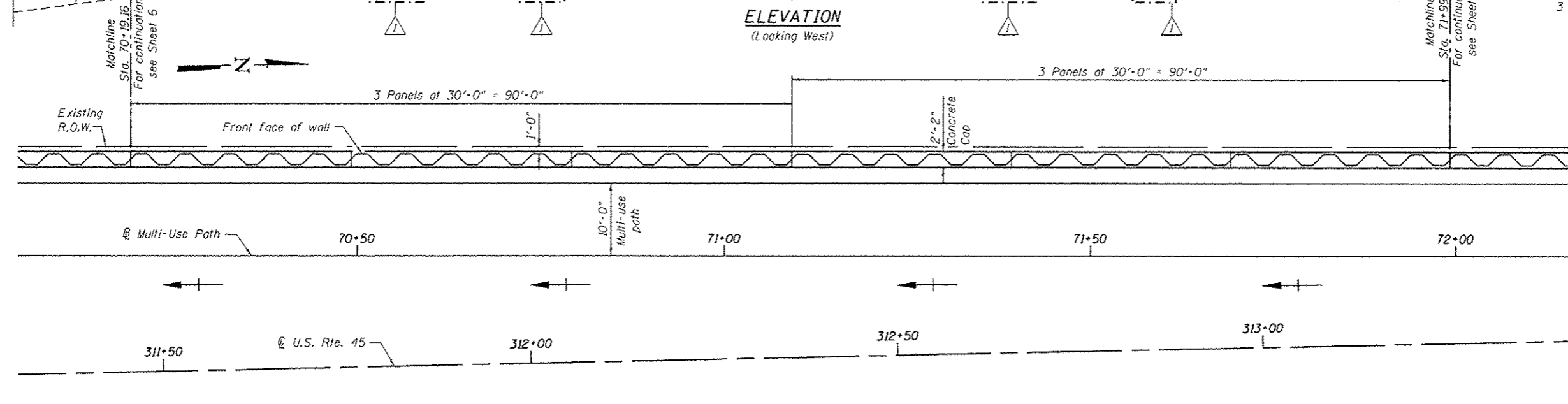




**MINIMUM BAR LAP**  
#5 bar = 3'-8"

- Notes:
1. For Bar List see Sheet 8.
  2. For Typical Details see Sheet 2.
  3. For Railing Details see Sheet 8.
  4. Bars indicated thus 3x2-#5 etc. indicates 3 lines of bars with 2 lengths per line.

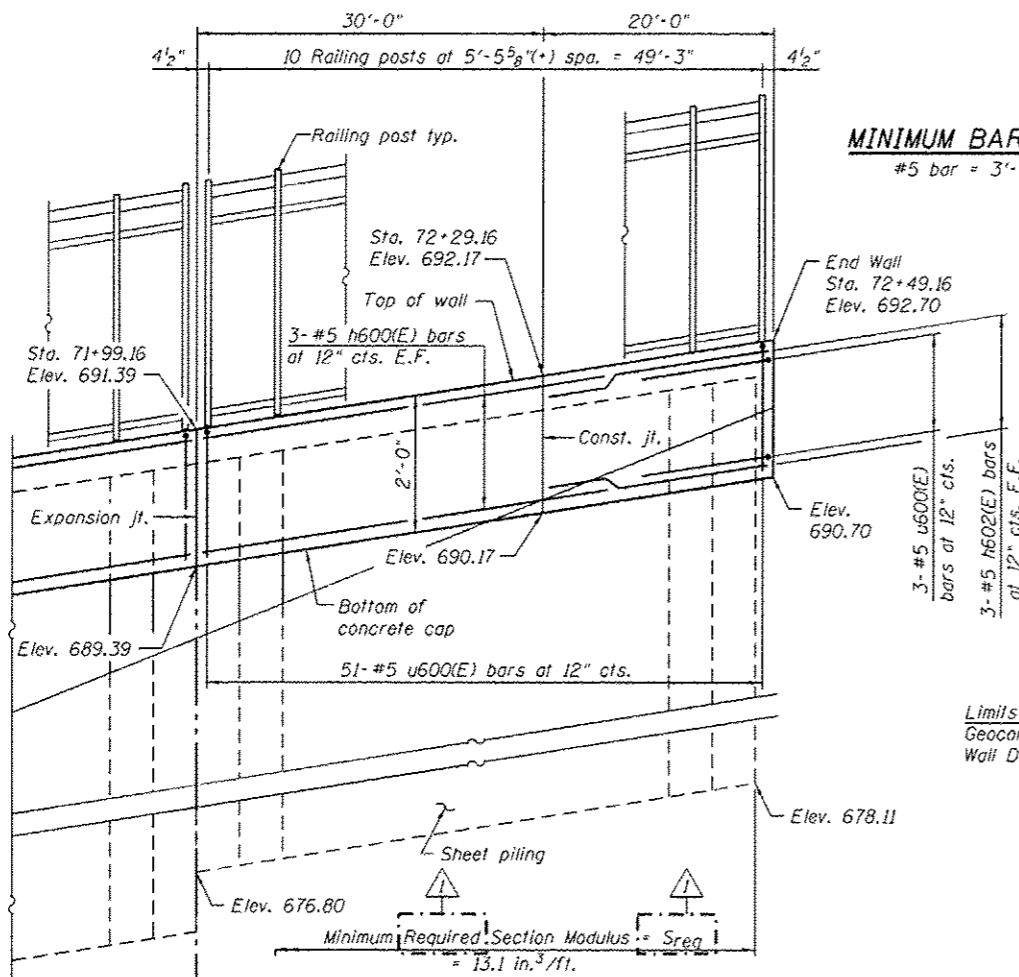
**ELEVATION**  
(Looking West)



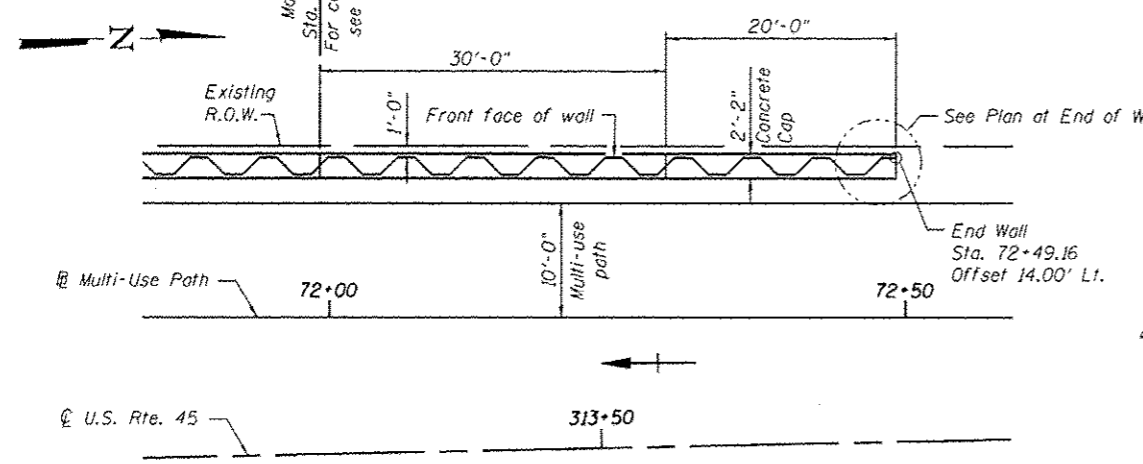
**PLAN**

URS  
 100 S. Wacker Dr.  
 Chicago, IL 60606  
 TEL (312) 939-0000  
 FAX (312) 939-4388

FILE NAME: 0162006-60462-007-pln.dgn	USER NAME: arsanlan.han	DESIGNED - PMH	REVISD - 04/12/2013 P.M.H.	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DETAILED PLAN AND ELEVATION 5</b> <b>STRUCTURE NO. 016-2006</b> SHEET NO. 7 OF 21 SHEETS	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 447	
PLOT SCALE: 1/16" = 1'-0"	DRAWN - AMV	CHECKED - AMK	REVISD -			CONTRACT NO. 60M62					
PLOT DATE: 4/11/2013	CHECKED - AMK	REVISD -	REVISD -			ILLINOIS FED. AID PROJECT					

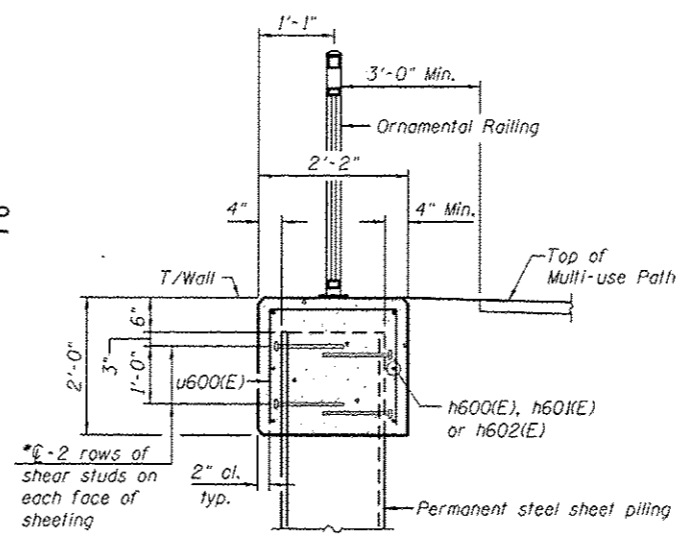


**ELEVATION**  
(Looking West)



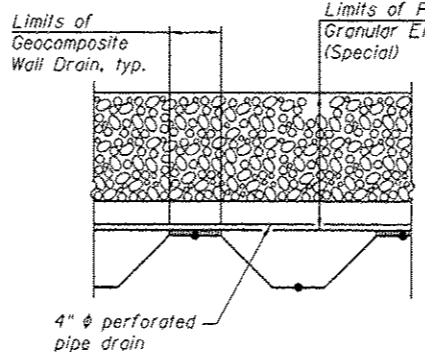
**PLAN**

**MINIMUM BAR LAP**  
#5 bar = 3'-8"

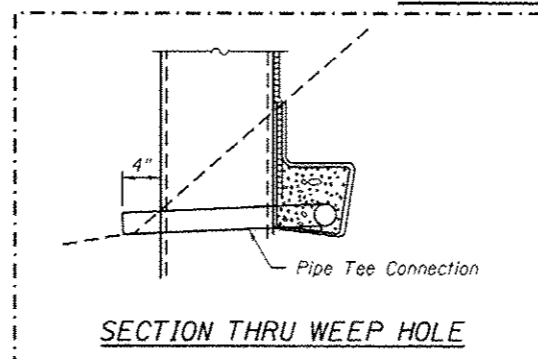


**TYPICAL SECTION THROUGH CONCRETE CAP**

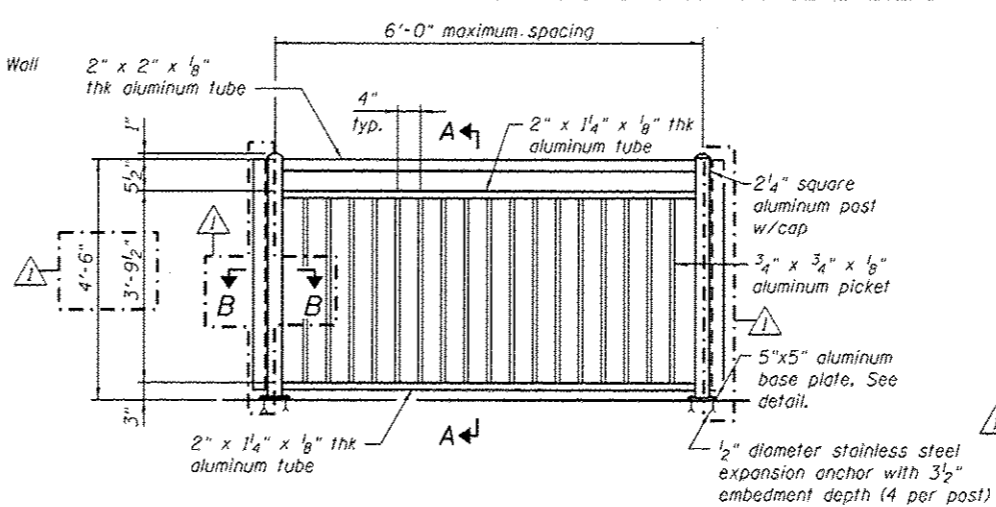
\* Shear studs shall be 3/4" φ x 12" long granular or solid flux filled headed studs automatically end welded in field to sheet piling.



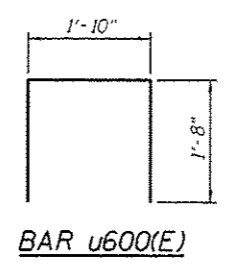
**WALL DRAINAGE DETAILS**



**SECTION THRU WEEP HOLE**



**TYPICAL ORNAMENTAL RAILING**



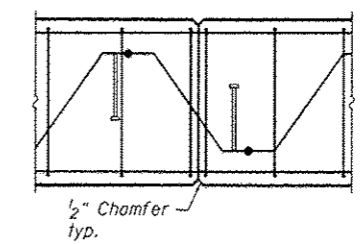
**BAR u600(E)**

Notes:  
1. For Typical Details see Sheet 2.  
2. Bars indicated thus 3x2-#5 etc. indicates 3 lines of bars with 2 lengths per line.

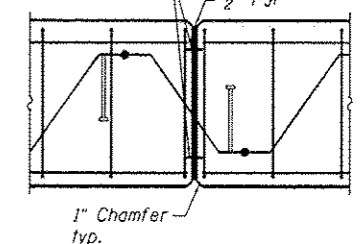
**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h600(E)	126	#5	33'-8"	
h601(E)	60	#5	29'-8"	
h602(E)	6	#5	19'-8"	
u600(E)	967	#5	5'-2"	
Reinforcement Bars, Epoxy Coated			Pound	11,620
Concrete Structures			Cu. Yd.	152.5

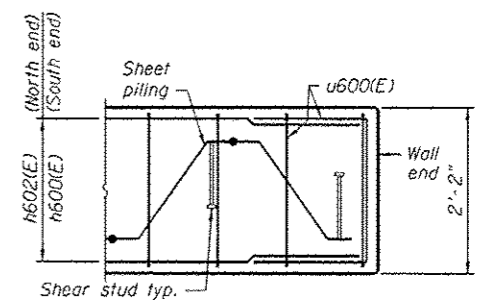
Bars indicated thus 3x2-#5 h600(E) etc. indicates 3 lines of bars with 2 lengths per line.



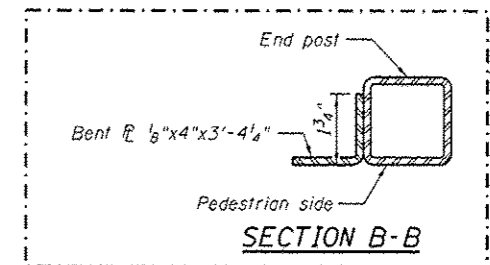
**WALL CONSTRUCTION JOINT**



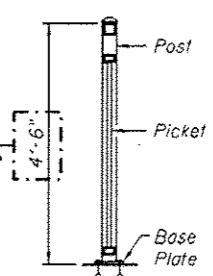
**WALL EXPANSION JOINT**



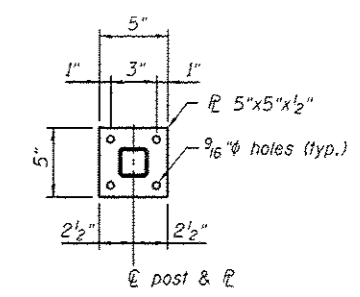
**PLAN AT END OF WALL**



**SECTION B-B**



**SECTION A-A**



**BASE PLATE DETAIL**

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL 312-939-1000  
FAX 312-939-4588

FILE NAME: 0162006-60M62-000-pl.rdg	USER NAME: analan_khan	DESIGNED: PMH	REVISION: 04/12/2013 P.M.H.
		CHECKED: AMK	REVISION:
		DRAWN: AMV	REVISION:
		CHECKED: AMK	REVISION:
			REVISION:

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DETAILED PLAN AND ELEVATION 6  
STRUCTURE NO. 016-2006  
SHEET NO. 8 OF 21 SHEETS

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 448
				CONTRACT NO. 60M62
ILLINOIS FED. AID PROJECT				

**Wang Engineering**  
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 Lombard, IL 60148  
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 Fax: 630-953-0938

**BORING LOG 3RW7-HA-11**  
 WEI Job No.: 201-40-01  
 Client: McDonough Associates Inc.  
 Project: US 45, Segment 3  
 Location: Ret. Wall 016-Z006, Cook Co., IL

Date: RCVP  
 Elevation: 604.66 ft  
 North: 1812042.97 ft  
 East: 1115224.28 ft  
 Station: 312+31.06  
 Office: 75-41 LT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)
604.66	12 inch thick, dark brown SILTY LOAM	1	PUSH	NP	17		1	604.66						
604.66	TOPSOIL - Yellowish brown, SILTY LOAM	1						604.66						
604.66	FILL - Dark brown SILTY LOAM - BURIED TOPSOIL	2	PUSH	NP	16		2	604.66						
604.66	As gravel	3	PUSH	NP	7		3	604.66						
604.66	Yellowish brown SAND to SANDY LOAM	4	PUSH	NP	10		4	604.66						
604.66		5	PUSH	NP	14		5	604.66						
604.66		6	PUSH	NP	9		6	604.66						
604.66	Brown SILT	7	PUSH	NP	5		7	604.66						
604.66	Brown GRAVELLY SAND	8	PUSH	NP	8		8	604.66						
604.66	Brown SAND to SANDY LOAM	9	PUSH	NP	12		9	604.66						
604.66	Slit to very stiff (3.5PL) gray SILTY CLAY, trace gravel	10	PUSH	NP	12		10	604.66						
604.66	Boring terminated at 10.10 ft							604.66						

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	10-24-2011	Complete Drilling	10-24-2011	Water Level	DRY	At Completion of Drilling	DRY
Drilling Contractor	WTS	Dill Rig	Geoprobe	Time After Drilling	NA	Depth to Water	NA
Diller	F&N	Logger	N. Boddy	Checked by	C. Marin	Drilling Method	Hand Auger
The vertical axis represents the approximate boundary between soil types. The actual soil type may vary.							

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 Lombard, IL 60148  
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 Fax: 630-953-0938

**BORING LOG 3SW-1B-1**  
 WEI Job No.: 201-40-01  
 Client: McDonough Associates Inc.  
 Project: US 45, Segment 3  
 Location: Ret. Wall 016-Z006, Cook Co., IL

Date: RCVP  
 Elevation: 606.71 ft  
 North: 1811342.71 ft  
 East: 1115357.31 ft  
 Station: 309+44.02  
 Office: 46-10 LT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/ft)	Moisture Content (%)
606.71	12-inch thick ASPHALT - PAVEMENT							606.71						
606.71	4-inch thick CRUSHED STONE - BASE COURSE	1						606.71						
606.71	Slit to hard, brown SILTY CLAY, trace gravel	2						606.71						
606.71	FILL - Silty to medium stiff, gray SILTY CLAY	3						606.71						
606.71		4						606.71						
606.71		5						606.71						
606.71		6						606.71						
606.71		7						606.71						
606.71		8						606.71						
606.71		9						606.71						
606.71		10						606.71						
606.71	Medium stiff, gray SILTY CLAY LOAM, plant material	11						606.71						
606.71		12						606.71						
606.71		13						606.71						
606.71		14						606.71						
606.71		15						606.71						
606.71		16						606.71						
606.71		17						606.71						
606.71	Loose gray LOAM	18						606.71						
606.71		19						606.71						
606.71		20						606.71						
606.71		21						606.71						
606.71		22						606.71						
606.71		23						606.71						
606.71		24						606.71						
606.71	Medium stiff to stiff, black to dark brown ORGANIC SILTY CLAY LOAM, some plant and shells fragments	25						606.71						
606.71		26						606.71						
606.71		27						606.71						
606.71		28						606.71						
606.71		29						606.71						
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606.71		97						606.71						
606.71		98						606.71						
606.71		99						606.71						
606.71		100						606.71						
606.71														

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Lombard, IL 60148  
Telephone: 630-953-9975  
Fax: 630-953-9933

**BORING LOG 3SW-1B-3**

WEI Job No.: 201-40-01

Client: **McDonough Associates Inc.**  
Project: **US 45, Segment 3**  
Location: **Ret. Wall 016-2006, Cook Co., IL**

Date: NGVD  
Elevation: 488.18 ft  
North: NAD 83  
East: 115265.51 ft  
Station: 30+43.30  
Offset: 45.55 LT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Blows (60 lbs)	Moisture Content (%)	Specific Gravity	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Blows (60 lbs)	Moisture Content (%)	Specific Gravity
12.0	12-inch thick ASPHALT -PAVEMENT-													
11.5	6-inch thick CRUSHED STONE -BASE COURSE-	1	18	1	18				1	18	1	18		
11.0	Very stiff to hard, brown SILTY CLAY, little to some gravel -FILL-	2	19	2	3.00				2	19	2	3.00		
10.5		3	19	3	7				3	19	3	7		
10.0		4	21	4	5.00				4	21	4	5.00		
9.5		5	NR	5	NR				5	NR	5	NR		
9.0		6	18	6	4				6	18	6	4		
8.5	Stiff to hard, brown and gray SILTY CLAY, trace gravel	7	23	7	1.40				7	23	7	1.40		
8.0		8	22	8	4.10				8	22	8	4.10		
7.5	Boring terminated at 20.00 ft													

**GENERAL NOTES**

Begin Drilling: 10-12-2010  
Drilling Contractor: K&S  
Driller: T&M  
Logger: B. Wilson  
Check 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

**Wang Engineering**  
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1145 N Main Street  
Lombard, IL 60148  
Telephone: 630-953-9975  
Fax: 630-953-9933

**BORING LOG 3SW-2B-1**

WEI Job No.: 201-40-01

Client: **McDonough Associates Inc.**  
Project: **US 45, Segment 3**  
Location: **Ret. Wall 016-2006, Cook Co., IL**

Date: NGVD  
Elevation: 488.48 ft  
North: NAD 83  
East: 115265.51 ft  
Station: 30+44.29  
Offset: 42.73 LT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Blows (60 lbs)	Moisture Content (%)	Specific Gravity	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Blows (60 lbs)	Moisture Content (%)	Specific Gravity
12.0	12-inch thick ASPHALT -PAVEMENT-													
11.5	4-inch thick CRUSHED STONE -BASE COURSE-	1	18	1	18				1	18	1	18		
11.0	Very stiff to hard, brown and gray SILTY CLAY LOAM, little to some gravel and debris -FILL-	2	19	2	2.50				2	19	2	2.50		
10.5		3	12	3	33				3	12	3	33		
10.0		4	12	4	12				4	12	4	12		
9.5	Black SILTY CLAY -BURIED TOPSOIL-	5	NA	5	NA				5	NA	5	NA		
9.0	Stiff to hard, brown to gray SILTY CLAY LOAM, trace gravel	6	10	6	3.77				6	10	6	3.77		
8.5		7	10	7	4.92				7	10	7	4.92		
8.0		8	13	8	1.50				8	13	8	1.50		
7.5		9	15	9	3.10				9	15	9	3.10		
7.0	Boring terminated at 25.00 ft													

**GENERAL NOTES**

Begin Drilling: 10-12-2010  
Drilling Contractor: K&S  
Driller: T&M  
Logger: B. Wilson  
Check 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

**Wang Engineering**  
wangeng@wangeng.com  
1145 N Main Street  
Lombard, IL 60148  
Telephone: 630-953-9975  
Fax: 630-953-9933

**BORING LOG 3SW-2B-2**

WEI Job No.: 201-40-01

Client: **McDonough Associates Inc.**  
Project: **US 45, Segment 3**  
Location: **Ret. Wall 016-2006, Cook Co., IL**

Date: NGVD  
Elevation: 489.03 ft  
North: NAD 83  
East: 115265.89 ft  
Station: 30+57.14  
Offset: 39.08 LT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Blows (60 lbs)	Moisture Content (%)	Specific Gravity	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Sample Type	SPT Blows (60 lbs)	Moisture Content (%)	Specific Gravity
12.0	16-inch thick ASPHALT -PAVEMENT-													
11.5	4-inch thick CRUSHED STONE -BASE COURSE-	1	48	1	3.50				1	48	1	3.50		
11.0	Very soft, gray SILTY CLAY LOAM, some gravel -FILL-	2	17	2	3.50				2	17	2	3.50		
10.5	HARD DRILLING -CONCRETE debris-	3	17	3	NR				3	17	3	NR		
10.0	Very stiff, brown and gray SILTY CLAY LOAM, little gravel -FILL-	4	16	4	1.50				4	16	4	1.50		
9.5	Dense, CONCRETE debris -FILL-	5	16	5	1.50				5	16	5	1.50		
9.0	Hard, brown and gray SILTY CLAY LOAM, little gravel -FILL-	6	16	6	1.50				6	16	6	1.50		
8.5	Stiff, black SILTY CLAY LOAM, trace organic -BURIED TOPSOIL-	7	31	7	0.82				7	31	7	0.82		
8.0	Medium soft, black to gray SILTY CLAY LOAM	8	22	8	1.15				8	22	8	1.15		
7.5	Loose, brown SANDY LOAM, moist	9	22	9	1.15				9	22	9	1.15		
7.0	Stiff to very stiff, brown to gray SILTY CLAY LOAM, trace gravel	10	17	10	2.05				10	17	10	2.05		
6.5	Boring terminated at 25.00 ft													

**GENERAL NOTES**

Begin Drilling: 10-12-2010  
Drilling Contractor: K&S  
Driller: T&M  
Logger: B. Wilson  
Check 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

**URS**  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL: (312) 939-0000  
FAX: (312) 939-4188

FILE NAME: 0162006-60M62-020-bor.dgn

USER NAME: amv  
DESIGNED: WEI  
CHECKED: AMK  
DRAWN: AMV  
PLOT SCALE: 1/8" = 1'-0"  
PLOT DATE: 4/11/2013

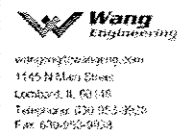
DESIGNED: WEI  
CHECKED: AMK  
DRAWN: AMV  
CHECKED: AMK

REVISED: 04/12/2013 P.M.H.  
REVISED:  
REVISED:  
REVISED:

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**SOIL BORINGS 11  
STRUCTURE NO. 016-2006**  
SHEET NO. 20 OF 21 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	460
CONTRACT NO. 60M62				
ILLINOIS FED. AID PROJECT				



**BORING LOG 3SW-2B-3**

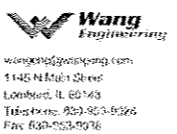
WEI Job No.: 201-40-01

Date: NGVD  
Elevation: 634.44 ft  
North: 1812014.00 ft  
East: 1115205.63 ft  
Station: 3+0+14.31  
Offset: 19.77 LT

Client: McDonough Associates Inc.  
Project: US 45, Segment 3  
Location: Ret. Wall 016-2006, Cook Co., IL

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Remarks	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Remarks
634.44	16-inch thick ASPHALT -PAVEMENT-	0.00						
634.44	2-inch thick CRUSHED STONE -BASE COURSE-	0.00						
634.44	Stiff to hard, brown SILTY CLAY LOAM, little gravel	0.00						
634.44	-FILL-	0.00						
634.44		1.70						
634.44		3.25						
634.44		4.51						
634.44		5.90						
634.44		7.20						
634.44		8.50						
634.44		9.80						
634.44		11.10						
634.44		12.40						
634.44		13.70						
634.44		15.00						
634.44		16.30						
634.44		17.60						
634.44		18.90						
634.44		20.20						
634.44		21.50						
634.44		22.80						
634.44		24.10						
634.44		25.40						
634.44		26.70						
634.44		28.00						
634.44		29.30						
634.44		30.60						
634.44		31.90						
634.44		33.20						
634.44		34.50						
634.44		35.80						
634.44		37.10						
634.44		38.40						
634.44		39.70						
634.44		41.00						
634.44		42.30						
634.44		43.60						
634.44		44.90						
634.44		46.20						
634.44		47.50						
634.44		48.80						
634.44		50.10						

GENERAL NOTES		WATER LEVEL DATA	
Began Drilling	10-12-2010	Complete Drilling	10-12-2010
Drilling Contractor	K&S	At Completion of Drilling	21.00 ft
Driller	T&M	Time After Drilling	10.00 ft
Drilling Method	3.25" IDA HSA; Boring backfilled upon completion.	Time After Drilling	NA
		Depth to Water	NA



**BORING LOG 3SW-2B-4**

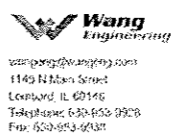
WEI Job No.: 201-40-01

Date: NGVD  
Elevation: 637.61 ft  
North: 1811544.92 ft  
East: 1115214.64 ft  
Station: 3+1+45.31  
Offset: 36.32 LT

Client: McDonough Associates Inc.  
Project: US 45, Segment 3  
Location: Ret. Wall 016-2006, Cook Co., IL

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Remarks	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Remarks
637.61	12-inch thick ASPHALT	0.00						
637.61	2-inch thick CRUSHED STONE -BASE COURSE-	0.00						
637.61	Medium dense, brown SILTY LOAM, some gravel	0.00						
637.61	-FILL-	0.00						
637.61	Very stiff to hard, dark brown SILTY CLAY LOAM, some gravel	0.00						
637.61	-FILL-	0.00						
637.61		1.70						
637.61		3.25						
637.61		4.51						
637.61		5.90						
637.61		7.20						
637.61		8.50						
637.61		9.80						
637.61		11.10						
637.61		12.40						
637.61		13.70						
637.61		15.00						
637.61		16.30						
637.61		17.60						
637.61		18.90						
637.61		20.20						
637.61		21.50						
637.61		22.80						
637.61		24.10						
637.61		25.40						
637.61		26.70						
637.61		28.00						
637.61		29.30						
637.61		30.60						
637.61		31.90						
637.61		33.20						
637.61		34.50						
637.61		35.80						
637.61		37.10						
637.61		38.40						
637.61		39.70						
637.61		41.00						
637.61		42.30						
637.61		43.60						
637.61		44.90						
637.61		46.20						
637.61		47.50						
637.61		48.80						
637.61		50.10						

GENERAL NOTES		WATER LEVEL DATA	
Began Drilling	10-11-2010	Complete Drilling	10-11-2010
Drilling Contractor	K&S	At Completion of Drilling	DRY
Driller	T&M	Time After Drilling	DRY
Drilling Method	3.25" IDA HSA; Boring backfilled upon completion.	Time After Drilling	NA
		Depth to Water	NA



**BORING LOG 3SW-2B-5**

WEI Job No.: 201-40-01

Date: NGVD  
Elevation: 663.82 ft  
North: 1812014.00 ft  
East: 1115205.63 ft  
Station: 3+2+51.19  
Offset: 33.15 LT

Client: McDonough Associates Inc.  
Project: US 45, Segment 3  
Location: Ret. Wall 016-2006, Cook Co., IL

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Remarks	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	Remarks
663.82	12-inch thick ASPHALT -PAVEMENT-	0.00						
663.82	2-inch thick CRUSHED STONE -BASE COURSE-	0.00						
663.82	Very soft to hard, dark brown and gray SILTY CLAY LOAM, trace to little gravel	0.00						
663.82	-FILL-	0.00						
663.82		1.70						
663.82		3.25						
663.82		4.51						
663.82		5.90						
663.82		7.20						
663.82		8.50						
663.82		9.80						
663.82		11.10						
663.82		12.40						
663.82		13.70						
663.82		15.00						
663.82		16.30						
663.82		17.60						
663.82		18.90						
663.82		20.20						
663.82		21.50						
663.82		22.80						
663.82		24.10						
663.82		25.40						
663.82		26.70						
663.82		28.00						
663.82		29.30						
663.82		30.60						
663.82		31.90						
663.82		33.20						
663.82		34.50						
663.82		35.80						
663.82		37.10						
663.82		38.40						
663.82		39.70						
663.82		41.00						
663.82		42.30						
663.82		43.60						
663.82		44.90						
663.82		46.20						
663.82		47.50						
663.82		48.80						
663.82		50.10						

GENERAL NOTES		WATER LEVEL DATA	
Began Drilling	10-11-2010	Complete Drilling	10-11-2010
Drilling Contractor	K&S	At Completion of Drilling	DRY
Driller	T&M	Time After Drilling	DRY
Drilling Method	3.25" IDA HSA; Boring backfilled upon completion.	Time After Drilling	NA
		Depth to Water	NA

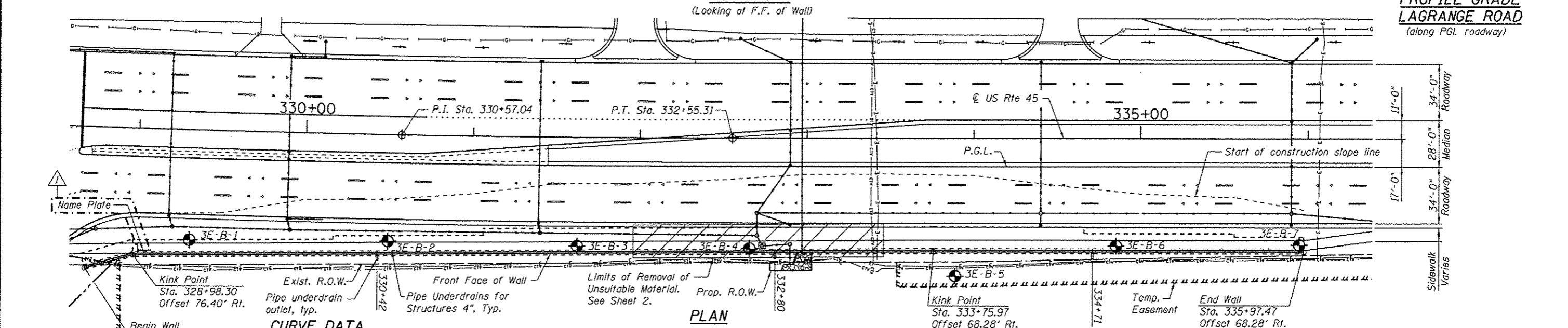
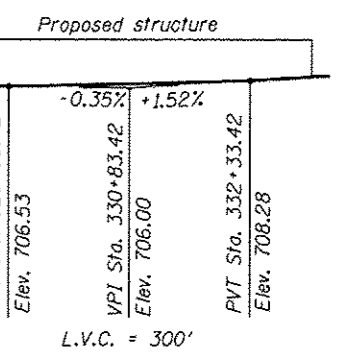
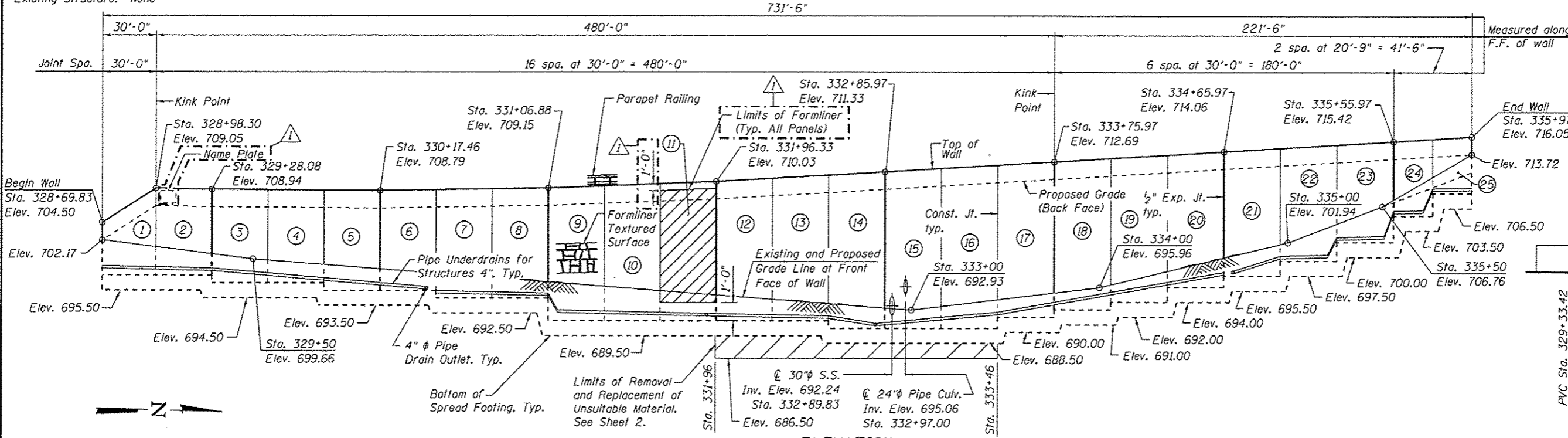
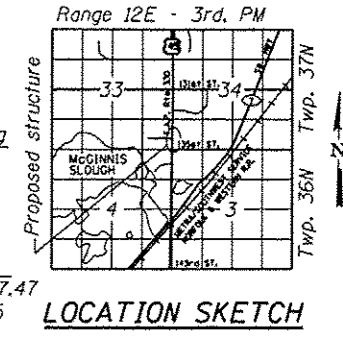
URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL 312-919-0000  
FAX 312-919-4198

FILE NAME: 0162006-60M62-021-bor.dgn	USER NAME: arash.khan	DESIGNED: WEI	REVISOR: 04/12/2013 P.M.H.	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORINGS 12 STRUCTURE NO. 016-2006	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 461	CONTRACT NO. 60M62
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Bench Mark: Elev. 689.00 Top of brass survey monument located at the west edge of the LaGrange Road southbound pavement, 600 feet north of the SouthWest Highway bridge.

Existing Structure: None



**CURVE DATA**

(US45 PCL-3)  
 PI Sta. = 330+57.04  
 $\Delta = 1^\circ 59' 00''$  (LT)  
 $D = 0^\circ 30' 00''$   
 $R = 11,457.04'$   
 $T = 198.32'$   
 $L = 396.59'$   
 $E = 1.72'$   
 $e = N/A$   
 $T.R. = N/A$   
 $S.E. Run = N/A$   
 $P.C. Sta. = 328+58.72$   
 $P.T. Sta. = 332+55.31$



*Arsalan Khan*  
 ARSALAN M. KHAN, S.E.  
 LICENSE NO.: 081-006258  
 EXPIRES: NOVEMBER 30, 2014  
 DATE: 04-12-2013

Note: Wall offsets are measured from the  $\odot$  of U.S. Rte. 45 to the F.F. of wall.

**DESIGN SPECIFICATIONS**  
 2012 AASHTO LRFD Bridge Design Specifications, 6th Edition

**DESIGN STRESSES**  
 FIELD UNITS

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

**LEGEND**

- ① Panel No.
- Prop. Drainage Structure
- Prop. Storm Sewer
- Prop. Ditch Flow Line
- ⊕ Soil Boring
- F.F.=Front Face
- B.F.=Back Face
- E.F.=Each Face
- I.F.=Inside Face
- O.F.=Outside Face

**APPROVED**  
 For Structural Adequacy Only  
*Carl Kruger*  
 Engineer of Bridges & Structures

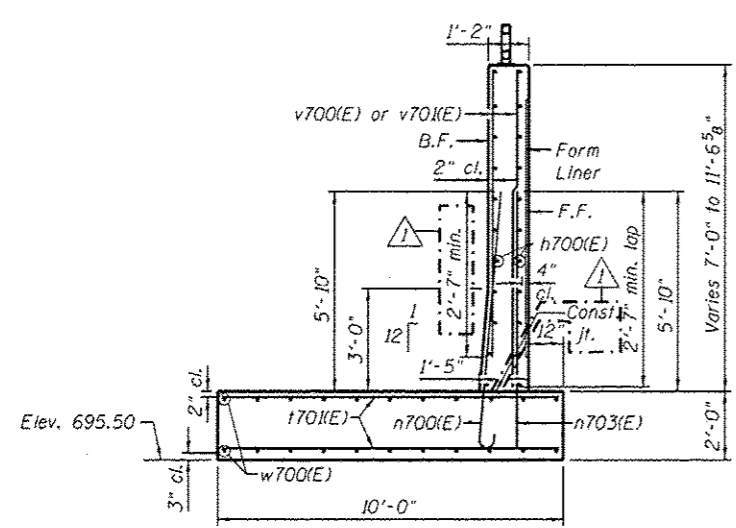
**GENERAL PLAN & ELEVATION**  
**U.S. ROUTE 45 - LAGRANGE ROAD**  
**F.A.P. RTE. 330 SEC. 103R-5**  
**COOK COUNTY**  
**STATION 328+69.83 TO 335+97.47**  
**STRUCTURE NO. 016-2007**

URS  
 100 S. WACKER DR.  
 SUITE 500  
 CHICAGO, IL 60606  
 TEL (312) 939-4000  
 FAX (312) 939-4686

FILE NAME: 0162007-60M62-001-CPE.dgn	USER NAME: arsalan.khan	DESIGNED: PMH	REVISION: 04/12/2013 P.M.H.	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 462
		CHECKED: MJL							
		DRAWN: PMH							
		CHECKED: MJL							
SHEET NO. 1 OF 12 SHEETS					CONTRACT NO. 60M62				
					ILLINOIS FED. AID PROJECT				

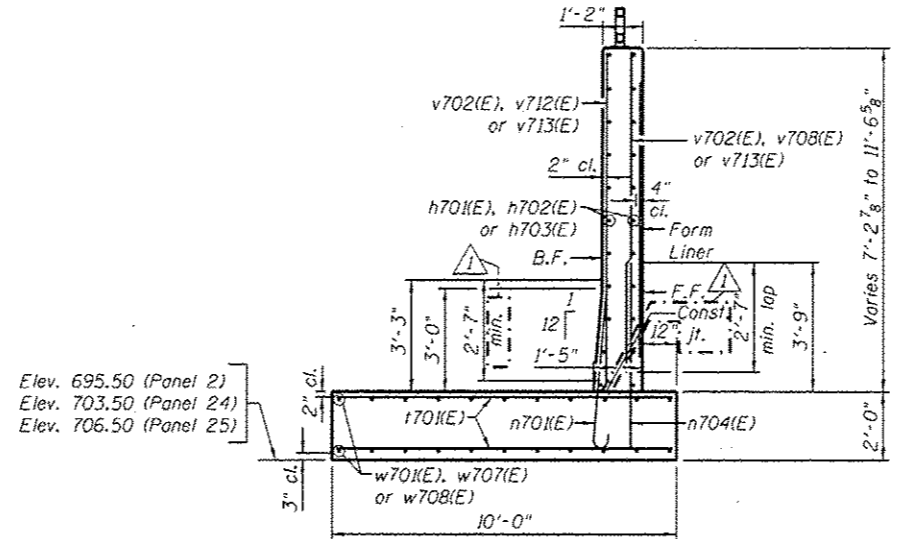






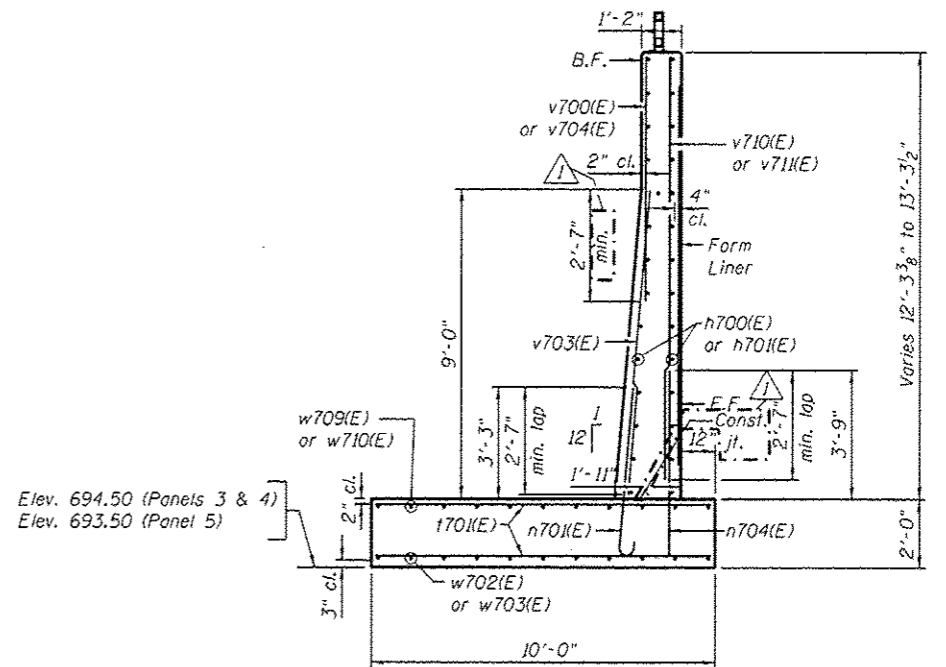
**SECTION A-A**  
**PANEL 1**

Maximum Applied Service Bearing Pressure =  $Q_{max}$  = 2.23 ksf



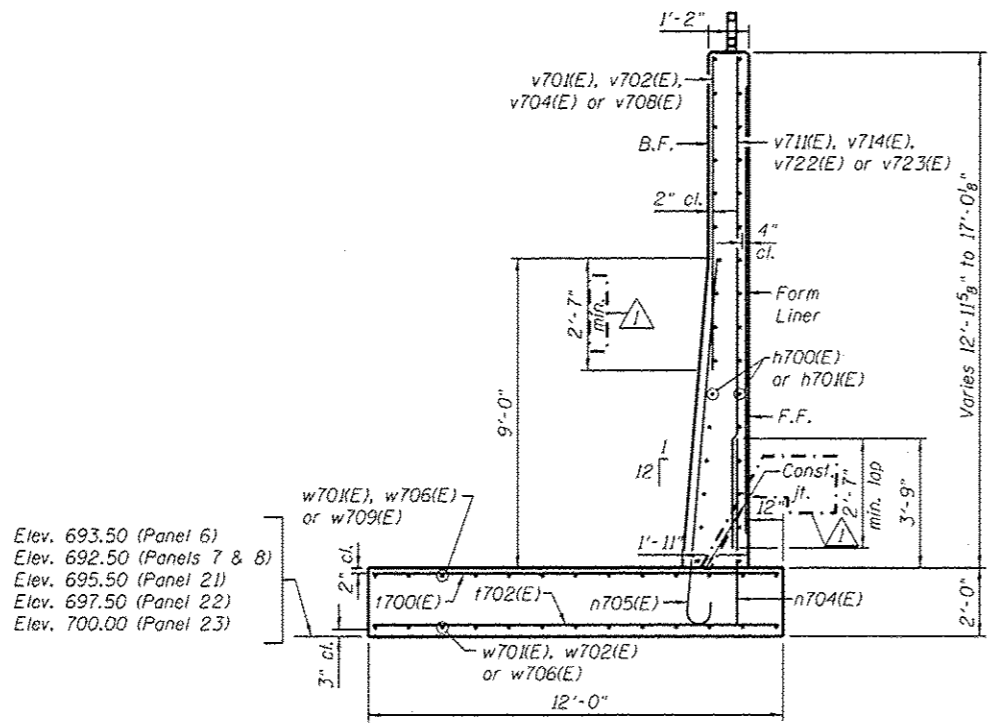
**SECTION B-B**  
**PANELS 2, 24 & 25**

Maximum Applied Service Bearing Pressure =  $Q_{max}$  = 2.23 ksf



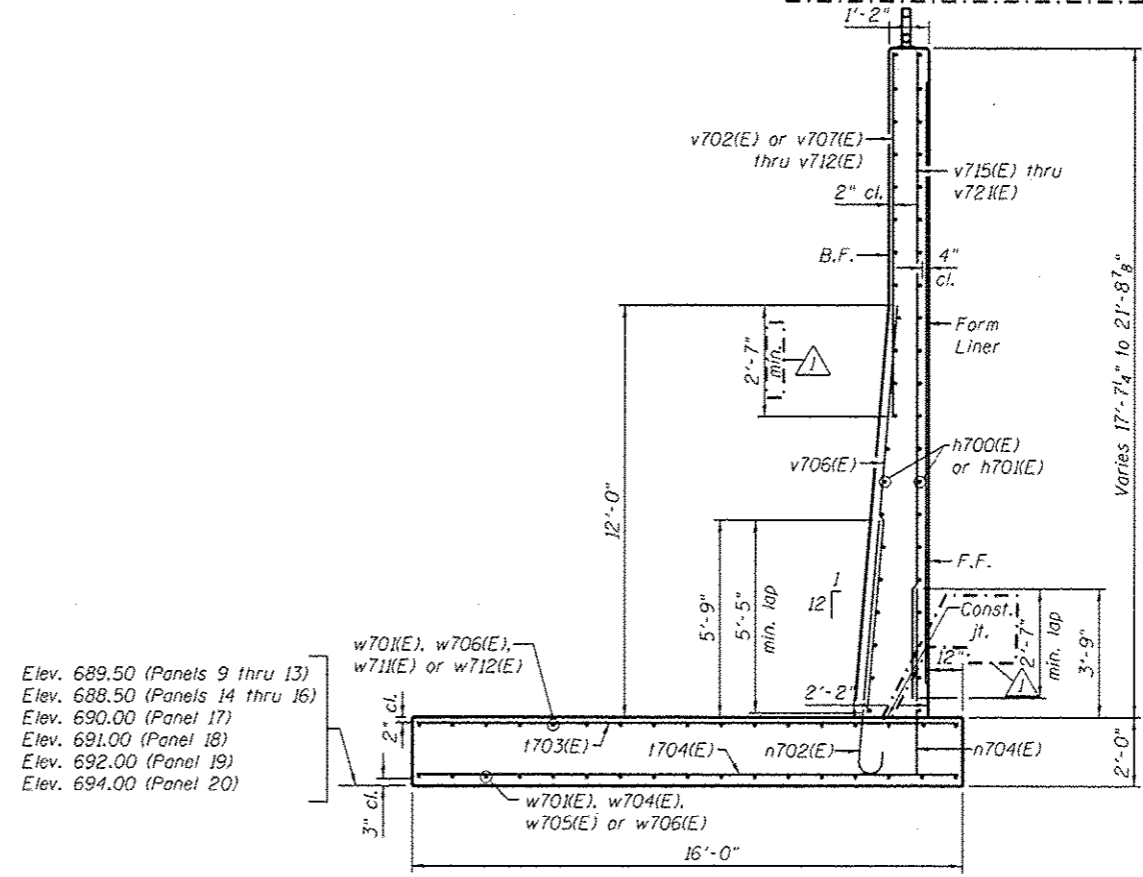
**SECTION C-C**  
**PANELS 3 THRU 5**

Maximum Applied Service Bearing Pressure =  $Q_{max}$  = 2.80 ksf



**SECTION D-D**  
**PANELS 6 THRU 8 & 21 THRU 23**

Maximum Applied Service Bearing Pressure =  $Q_{max}$  = 3.68 ksf



**SECTION E-E**  
**PANELS 9 THRU 20**

Maximum Applied Service Bearing Pressure =  $Q_{max}$  = 4.46 ksf

**LEGEND**  
F.F. = Front Face of Wall  
B.F. = Back Face of Wall  
E.F. = Each Face of Wall

**NOTES**  
1. For Bar List see Sheet 8.

URS  
100 S. WACKER DR.  
SUITE 500  
CHICAGO, IL 60606  
TEL (312) 959-0000  
FAX (312) 959-4158

FILE NAME :	USER NAME :	DESIGNED :	REVISED :
0162007-60M62-007-det.dgn	arsolan_khan	PMH	04/12/2013 P.M.H.
		CHECKED :	REVISED :
		MJL	
		DRAWN :	REVISED :
		PMH	
		CHECKED :	REVISED :
		MJL	

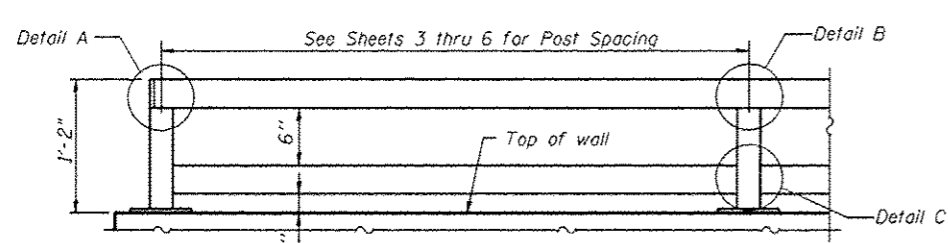
PLOT SCALE :	DESIGNED :	REVISED :
01/2" = 1' / in.	PMH	04/12/2013 P.M.H.
PLOT DATE :	CHECKED :	REVISED :
4/12/2013	MJL	

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

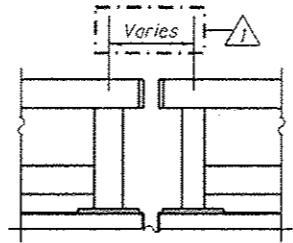
SECTIONS AND DETAILS  
STRUCTURE NO. 016-2007

SHEET NO. 7 OF 12 SHEETS

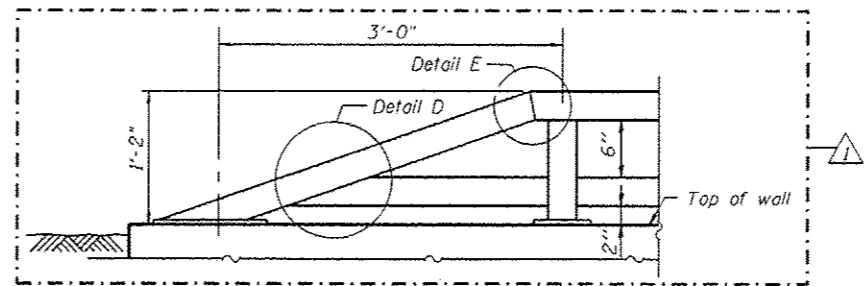
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
330	103R-5	COOK	778	468
				CONTRACT NO. 60M62
ILLINOIS FED. AID PROJECT				



**PARAPET RAILING**  
**ELEVATION**  
(Inside Face of Rail)

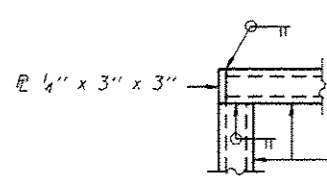


**PARAPET RAILING**  
**ELEVATION AT EXPANSION JOINT**  
See sheets 3 thru 6 for spacing between end posts

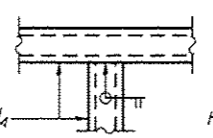


**PARAPET RAILING**  
**AT END SECTION**

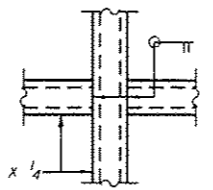
Note:  
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



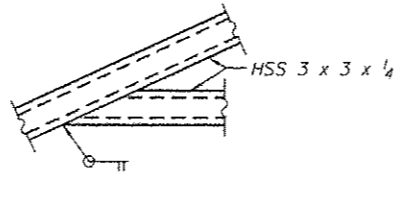
**DETAIL A**



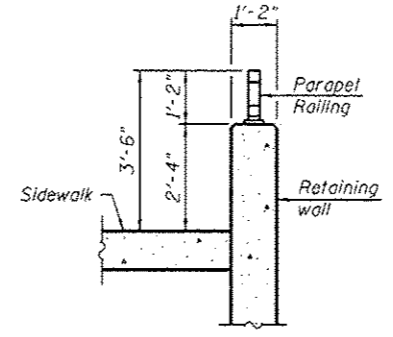
**DETAIL B**



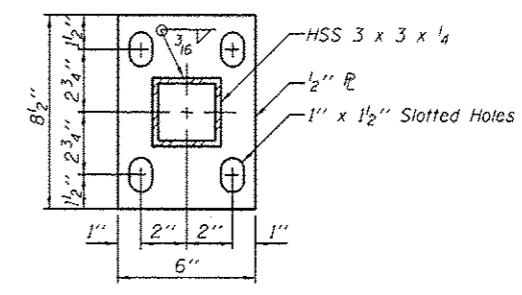
**DETAIL C**



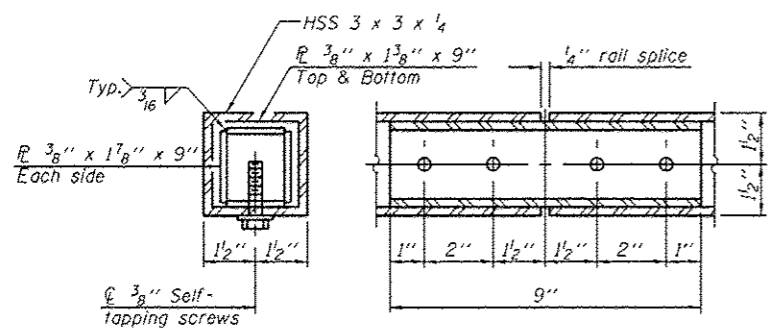
**DETAIL D**



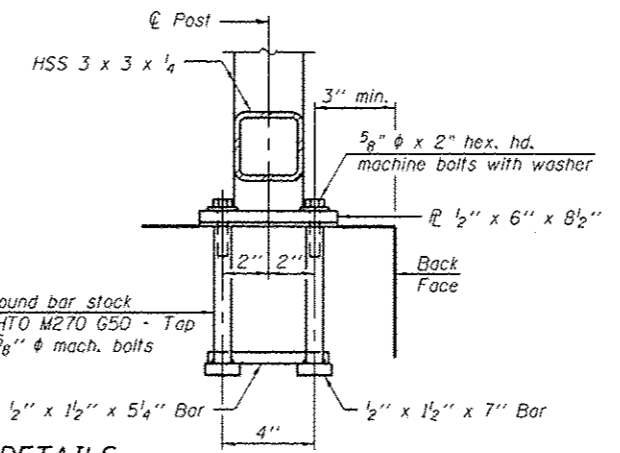
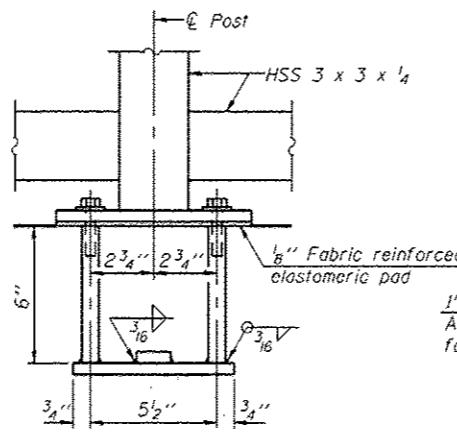
**SECTION THRU RAILING**



**BASE PLATE**

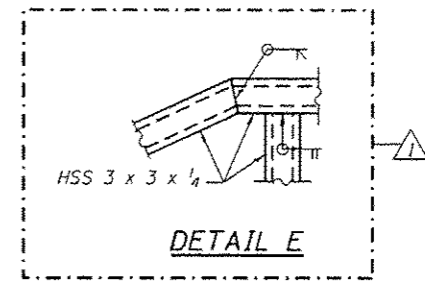


**RAIL SPLICE**



**ANCHOR BOLT DETAILS**

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8"  $\phi$  anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



**DETAIL E**

**URS**  
100 S. WACKER DR.  
CHICAGO, IL 60606  
TEL (312) 453-9000  
FAX (312) 453-9096

FILE NAME : 0162007-60M62-009-Rail.dgn	USER NAME : arwalen_khan	DESIGNED - JCE	REVISED - 04/12/2013 P.M.H.
		CHECKED - PMH	REVISED -
		DRAWN - AMV	REVISED -
		CHECKED - PMH	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PARAPET RAILING**  
**STRUCTURE NO. 016-2007**

SHEET NO. 9 OF 12 SHEETS

**BILL OF MATERIAL**

Item	Unit	Quantity
Parapet Railing	Foot	732

F.A.P. RTE. 330	SECTION 103R-5	COUNTY COOK	TOTAL SHEETS 778	SHEET NO. 470
				CONTRACT NO. 60M62
ILLINOIS FED. AID PROJECT				