03-09-2018 LETTING ITEM 010

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	01
	ILLINOIS	CONTRACT NO. 62B99		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

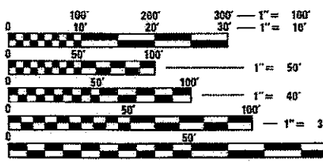
TR ROUTE 9250 (OLD WILLOW SPRINGS ROAD) OVER DES PLAINES RIVER (1.9 MI S OF I-55)
S.N. 016-0539
SECTION 142A-B
PROJECT STP-15YZ(817)
BRIDGE REPLACEMENT
COOK COUNTY
C-91-210-16

FOR INDEX OF SHEETS, AND LIST OF HIGHWAY STANDARDS, SEE SHEET NO. 2

IMPROVEMENT LOCATED IN VILLAGE OF WILLOW SPRINGS

TRAFFIC DATA

FUNCTIONAL CLASSIFICATION
PEDESTRIAN BRIDGE
2015 ADT = N/A
POSTED SPEED = N/A



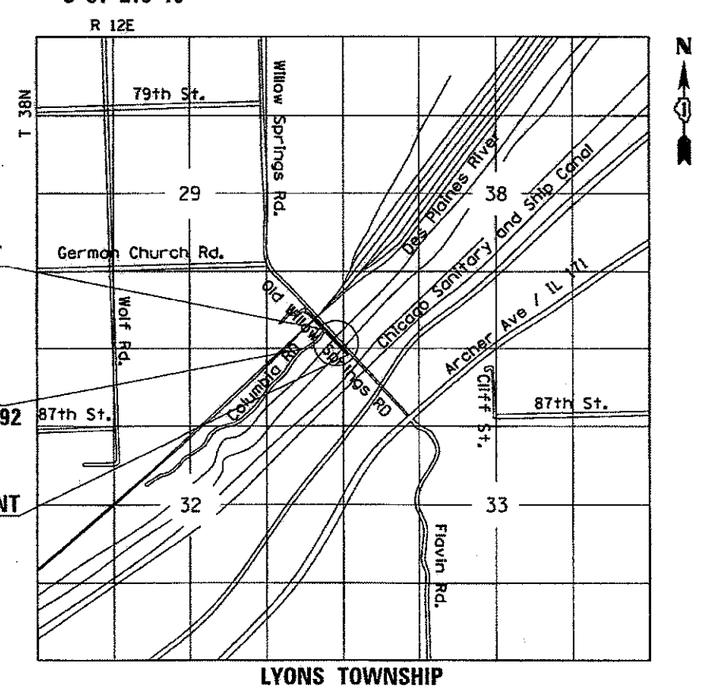
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

END IMPROVEMENT
STA. 157+59.93

OLD WILLOW SPRINGS RD
OVER DES PLAINES RIVER
STA. 153+03.09 TO STA. 156+19.92
SN 016-0539

BEGIN IMPROVEMENT
STA. 152+03.42



LYONS TOWNSHIP
LOCATION MAP
NOT TO SCALE

GROSS LENGTH = 556.51 FT. = 0.105 MILE
NET LENGTH = 556.51 FT. = 0.105 MILE

STATE OF ILLINOIS
JOSEPH M. GLENNON
062-046610
CHICAGO, ILLINOIS
LICENSED PROFESSIONAL ENGINEER

Signed Joseph Glennon
Joseph Glennon, P.E.
Il. Lic. No. 062-046610
Expires 11-30-2019

Date 12/08/2017
For Sheets 1 Thru 13 and Sheets 40 Thru 42

STATE OF ILLINOIS
MOUSSA A. ISSA
081-005738
CHICAGO, ILLINOIS
LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa
Dr. Moussa A. Issa, S.E.
Il. Lic. No. 081-005738
Expires 11-30-2018

Date 12/08/2017
For Sheets 15 Thru 37

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED December 12 20 17

Anthony J. Quigley 1/143
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
Feb 2 20 18

ENGINEER OF DESIGN AND ENVIRONMENT
Feb 2 20 18

DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PREPARED BY

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

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PROJECT MANAGER: FAWAD AQUEEL, P.E. (847) 705-4247
PROJECT ENGINEER: RAGHAD ADEIS-DAHHAN, P.E. (847) 705-4237

CONTRACT NO. 62B99

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	INDEX OF SHEETS, HIGHWAY STANDARDS, AND GENERAL NOTES
3-5	SUMMARY OF QUANTITIES
6-7	TYPICAL SECTIONS FOR BRIDGE APPROACHES
8	SCHEDULE OF QUANTITIES
9	ALIGNMENT AND TIE, BENCHMARKS
10	EXISTING CONDITION AND REMOVAL PLAN
11	PLAN AND PROFILE
12	DROP GATE DETAILS
13	EROSION CONTROL PLAN
14	ROW OF SURVEY
15-37	STRUCTURE PLANS
38	TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS (TC-10)
39	ARTERIAL ROAD INFO SIGN (TC-22)
40-42	CROSS SECTIONS - NORTH & SOUTH APPROACHES

HIGHWAY STANDARDS

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420406	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB
515001-03	NAME PLATE FOR BRIDGES
601101-02	CONCRETE HEADWALL FOR PIPE UNDERDRAINS
602401-04	MANHOLE TYPE A
606001-07	CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER
701011-04	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701301-04	LANE CLOSURE, 2L, 2W SHORT TIME OPERATIONS
701311-03	LANE CLOSURE 2L, 2W MOVING OPERATIONS- DAY ONLY
701501-06	URBAN LANE CLOSURE, 2L, 2W, UNDIVIDED
701901-07	TRAFFIC CONTROL DEVICES
720021-02	SIGN PANELS, EXTRUDED ALUMINUM TYPE
728001-01	TELESCOPING STEEL SIGN SUPPORT
731001-01	BASE FOR TELESCOPING STEEL SIGN SUPPORT

GENERAL NOTES

BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL"JULIE" AT 800-892-0123 OR 811 FOR FIELD LOCATIONS OF BURIED ELECTRIC, TELEPHONE AND GAS FACILITIES. (48 HOUR NOTIFICATION IS REQUIRED)

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH UTILITY COMPANIES AND VILLAGE OF WILLOW SPRINGS.

THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON STATE PROPERTY WITHOUT WRITTEN PERMISSION FROM THE DEPARTMENT.

THE CONTRACTOR SHALL CONTACT THE TRAFFIC CONTROL SUPERVISOR AT (847) 705-4470 A MINIMUM OF 72 HOURS IN ADVANCE OF BEGINNING WORK.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING MATERIALS

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ACCESS TO ABUTTING PROPERTY AT ALL TIMES DURING THE CONSTRUCTION OF THIS PROJECT

DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.

THIS PROJECT REQUIRES A U.S. ARMY CORPS OF ENGINEERS (USACE) 404 PERMIT THAT WILL BE SECURED BY THE DEPARTMENT. ALL CONDITIONS OF THE 404 PERMIT, FOUND IN THE SPECIAL PROVISIONS, MUST BE FOLLOWED. AS A CONDITION OF THIS PERMIT, THE CONTRACTOR WILL NEED TO SUBMIT AN IN-STREAM WORK PLAN (INCLUDING WORK IN WETLANDS) TO THE DEPARTMENT FOR APPROVAL. GUIDELINES ON ACCEPTABLE IN-STREAM WORK TECHNIQUES (INCLUDING WORK IN WETLANDS) CAN BE FOUND ON THE USACE WEBSITE. THE USACE DEFINES AND DETERMINES IN-STREAM WORK (WHICH INCLUDES WORK WITHIN WETLANDS). THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THE ABOVE PROVISIONS TO PREPARE AND IMPLEMENT AN IN-STREAM WORK PLAN (INCLUDING WORK WITHIN WETLANDS) WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE UNIT BID PRICES OF THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

COMMITMENT

NO IN-STREAM WORK SHALL BE CONDUCTED FROM APRIL 1ST TO JUNE 15TH

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4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, HIGHWAY STANDARDS, AND GENERAL NOTES

SHEET 1 OF 1 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	02
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE 80% FED 20% STATE ROADWAY 0028	BRIDGE 0028 S. N. 016-0539
20101000	TEMPORARY FENCE	FOOT	60	60	
20101100	TREE TRUNK PROTECTION	EACH	4	4	
20200100	EARTH EXCAVATION	CU YD	260	260	
20300100	CHANNEL EXCAVATION	CU YD	379	379	
20400800	FURNISHED EXCAVATION	CU YD	219	219	
21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	486	486	
25000312	SEEDING, CLASS 4A	ACRE	0.1	0.1	
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	9	9	
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	9	9	
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	9	9	
25100630	EROSION CONTROL BLANKET	SQ YD	462	462	
28000400	PERIMETER EROSION BARRIER	FOOT	727	727	
28000500	INLET AND PIPE PROTECTION	EACH	3	3	
Δ 28100109	STONE RIPRAP, CLASS A5	SQ YD	631		631
Δ 28200200	FILTER FABRIC	SQ YD	403		403

Δ CONSTRUCTION CODE 0048

CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE 80% FED 20% STATE ROADWAY 0028	BRIDGE 0028 S. N. 016-0539
35101500	AGGREGATE BASE COURSE, TYPE B	CU YD	31	31	
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	520	520	
40701841	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8"	SQ YD	170	170	
40701881	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"	SQ YD	250	250	
40800025	BITUMINOUS MATERIALS (PRIME COAT)	POUND	543	543	
42000070	PAVEMENT CONNECTOR (HMA) FOR BRIDGE APPROACH SLAB	SQ YD	33	33	
42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	270	270	
42400800	DETECTABLE WARNINGS	SQ FT	64	64	
44000100	PAVEMENT REMOVAL	SQ YD	590	590	
44004250	PAVED SHOULDER REMOVAL	SQ YD	40	40	
48101498	AGGREGATE SHOULDERS, TYPE B 4"	SQ YD	80	80	
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1		1
50200100	STRUCTURE EXCAVATION	CU YD	296		296
50300225	CONCRETE STRUCTURES	CU YD	87.9		87.9

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SHEET 1 OF 3 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	03
		CONTRACT NO. 62B99		
		ILLINOIS FED. AID PROJECT		

CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE 80% FED 20% STATE ROADWAY 0028	CONSTRUCTION CODE 80% FED 20% STATE BRIDGE 0028 S. N. 016-0539
50300255	CONCRETE SUPERSTRUCTURE	CU YD	2.4		2.4
50300300	PROTECTIVE COAT	SQ YD	591	30	561
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	22		22
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	20750		20750
50901720	BICYCLE RAILING	FOOT	88		88
51201800	FURNISHING STEEL PILES HP14X73	FOOT	260		260
51202305	DRIVING PILES	FOOT	260		260
51203800	TEST PILE STEEL HP14X73	EACH	1		1
51204650	PILE SHOES	EACH	11		11
51500100	NAME PLATES	EACH	1		1
52000110	PREFORMED JOINT STRIP SEAL	FOOT	45		45
X0327645	TEMPORARY SOIL RETENTION SYSTEM (SPECIAL)	SQ FT	68		68
58700300	CONCRETE SEALER	SQ FT	1173		1173
59000200	EPOXY CRACK INJECTION	FOOT	18		18

CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE 80% FED 20% STATE ROADWAY 0028	CONSTRUCTION CODE 80% FED 20% STATE BRIDGE 0028 S. N. 016-0539
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	101		101
60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	2	2	
60108100	PIPE UNDERDRAINS 4" (SPECIAL)	FOOT	28	28	
60265700	VALVE VAULTS TO BE ADJUSTED	EACH	1	1	
60605000	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	FOOT	100	100	
63200310	GUARDRAIL REMOVAL	FOOT	100	100	
* 66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	935	935	
* 66900450	SPECIAL WASTE PLANS AND REPORTS	LSUM	1	1	
* 66900530	SOIL DISPOSAL ANALYSIS	EACH	2	2	
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	6	
67100100	MOBILIZATION	LSUM	1	1	
70400100	TEMPORARY CONCRETE BARRIER	FOOT	25	25	
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	472	472	
X0321322	DROP GATE	EACH	1	1	

* SPECIALTY ITEMS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SHEET 2 OF 3 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	04
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

REV

CODE NO.	ITEM	UNIT	TOTAL QUANTITY (URBAN)	CONSTRUCTION CODE 80% FED 20% STATE ROADWAY 0028	CONSTRUCTION CODE 80% FED 20% STATE BRIDGE 0028 S. N. 016-0539
X0322508	PEDESTRIAN TRUSS SUPERSTRUCTURE	SQ FT	4508		4508
X5860110	GRANULAR BACKFILL FOR STRUCTURES	CU YD	216		216
X6640200	TEMPORARY CHAIN LINK FENCE	FOOT	100	100	
X6640304	CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED	FOOT	105	105	
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	LSUM	1	1	
X7200075	REMOVE AND REINSTALL SIGN PANEL	SQ FT	34	34	
Z0004552	APPROACH SLAB REMOVAL	SQ YD	150	150	
Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	37		37
Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	15		15
Z0013798	CONSTRUCTION LAYOUT	LSUM	1	1	
Z0030850	TEMPORARY INFORMATION SIGNING	SQ FT	97	97	
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	107		107
Z0076600	TRAINEES	HOUR	500	500	
Z0076604	TRAINEES- TRAINING PROGRAM GRADUATE	HOUR	500	500	

12

CONSTRUCTION CODE 0042

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SHEET 3 OF 3 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	05
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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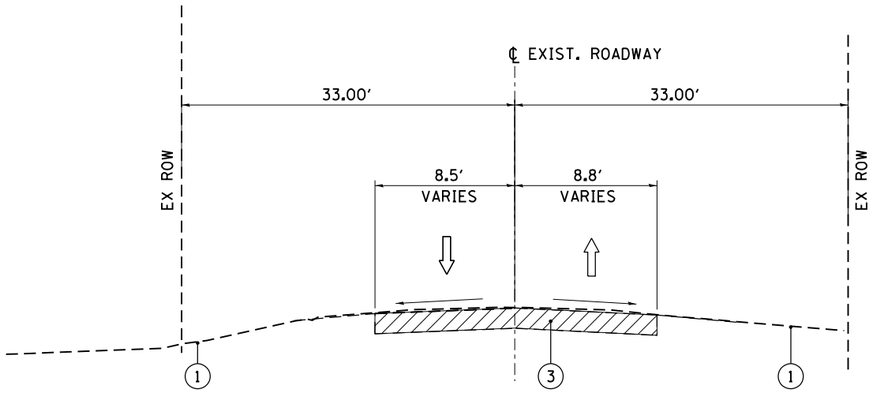
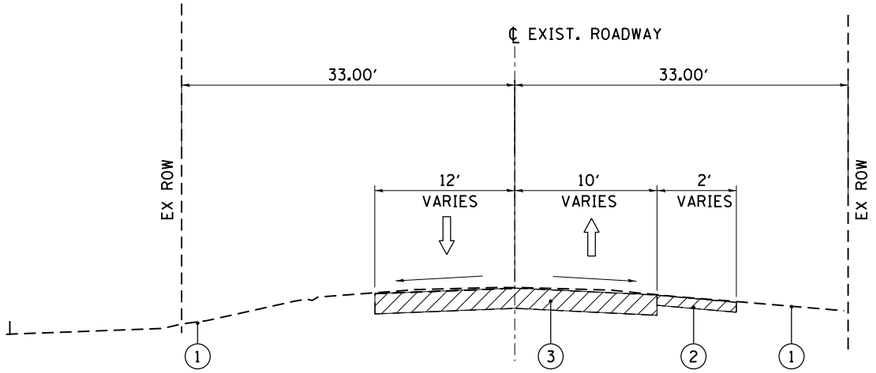


EXISTING ROADWAY – OLD WILLOW SPRINGS RD.

STA. 152+03.42 TO STA. 153+02.42
LOOKING NORTHWEST

REMOVAL OF EXISTING STRUCTURE
STA. 153+02.42 TO STA. 156.02.42



EXISTING ROADWAY – OLD WILLOW SPRINGS RD.

STA. 156+02.42 TO STA. 157+59.93
LOOKING NORTHWEST

LEGEND

REMOVAL ITEMS

TRAFFIC FLOW - NOTE BRIDGE AND PORTION OF ROADWAY SOUTH OF FOREST PRESERVE ENTRANCE IS NOT USED FOR THRU VEHICLE TRAFFIC

(1) EXISTING EMBANKMENT SLOPE

(2) EXISTING HMA SHOULDER

(3) EXISTING HMA PAVEMENT (12")
OR
EXISTING APPROACH PAVEMENT(14"-SEE EXISTING CONDITION AND REMOVAL PLAN FOR DETAILS)

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RESEARCH & TESTING
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SUITE 231
HILLSIDE, IL 60162
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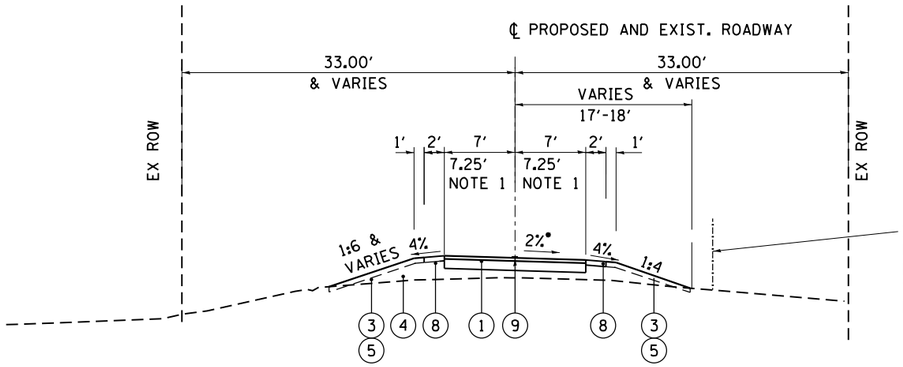
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS FOR BRIDGE APPROACHES

SHEET 1 OF 2 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	06
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			



IF REQUIRED FOR CONSTRUCTION ACTIVITIES PORTIONS OF FENCE CAN BE REMOVED AND RE-INSTALLED. COORDINATE WITH MWRD THIS WORK WILL BE PAID FOR AS CHAIN LINK FENCE TO BE REMOVED AND RE-ERECTED

PROPOSED BIKE PATH – OLD WILLOW SPRINGS RD.

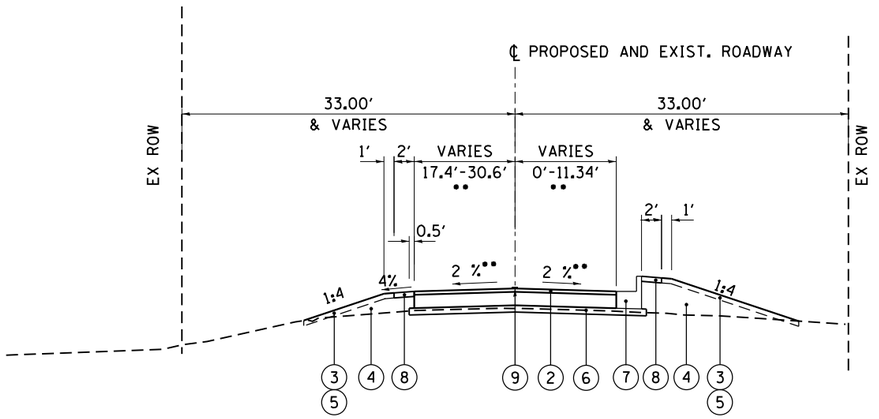
STA. 152+03.42 TO STA. 152+86.67

BRIDGE AND BRIDGE APPROACH PAVEMENT OMISSION
STA. 152+86.67 TO STA. 156+34.42

PAVEMENT CONNECTOR FOR BRIDGE APPROACH SLAB
STA 152+76.67 TO STA 152+86.67
STA 156+34.42 TO STA 156+44.42

• NOTE 1 STA 156+34.42 TO 156+74.86 (8.05 LT)

TRANSITION CROSS SLOPE FROM APPROACH PAVEMENT CROSS SLOPE (FLAT) TO 2 % OVER 15′ LENGTH
CROSS SLOPE DIRECTION AS SHOWN IS TOWARDS THE EAST FOR AREA SOUTH OF BRIDGE.
NORTH OF BRIDGE SLOPE VARIES AND SLOPES TOWARDS THE WEST



PROPOSED FOREST PRESERVE ENTRANCE – OLD WILLOW SPRINGS RD.

STA. 156+82.35 (30.58 LT) TO STA. 157+59.93

•• FOR WIDTH AND CROSS SLOPE SEE FOREST PRESERVE ENTRANCE PLAN POINT ELEVATIONS

LEGEND

(1) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8″
HOT-MIX ASPHALT SURFACE COURSE, MIX ″D″, N50, 2″
HOT-MIX ASPHALT BINDER COURSE, IL-19, N50; 6″

(2) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10″
HOT-MIX ASPHALT SURFACE COURSE, MIX ″D″, N50, 2″
HOT-MIX ASPHALT BINDER COURSE, IL-19, N50; 8″

(3) TOPSOIL FURNISH AND PLACE, 4″

(4) FURNISHED EXCAVATION

(5) SEEDING, CLASS 4A

(6) AGGREGATE BASE COURSE, TYPE B - 4″

(7) COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24

(8) AGGREGATE SHOULDERS, TYPE B 4″

(9) PAINT PAVEMENT MARKING LINE, 4″ SOLID YELLOW LINE ALONG CENTERLINE OF BIKE PATH FROM STA 152+03.42 TO STA 156+75.42.

HMA MIXTURE TABLE

USE	PAY ITEM OR DESCRIPTION	HOT-MIX ASPHALT MIXTURE REQUIREMENTS		QUALITY MANAGEMENT PROGRAM (QMP)
		MIXTURE TYPE	% AIR VOIDS @ N_{des}	
BIKE PATH	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8″	HOT-MIX ASPHALT SURFACE COURSE, MIX ″D″ N50 (IL 9.5 mm) 2″ TOP	4% @ 50 Gyr.	QC/QA
		HOT-MIX ASPHALT BINDER COURSE, IL-19mm, N50; 6″	4% @ 50 Gyr.	QC/QA
FOREST PRESERVE ENTRANCE	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10″	HOT-MIX ASPHALT SURFACE COURSE, MIX ″D″ N50 (IL 9.5 mm) 2″ TOP	4% @ 50 Gyr.	QC/QA
		HOT-MIX ASPHALT BINDER COURSE, IL-19mm, N50; 8″	4% @ 50 Gyr.	QC/QA

QMP DESIGNATION: QUALITY CONTROL/QUALITY ASSURANCE (QC/QA)

THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIX QUANTITIES IS 112 LBS/SQYD/IN. THE AC TYPE FOR POLYMERIZED HMA MIXTURES SHALL BE ″SBS/SBR PG 76-22″AND FOR NON-POLYMERIZED HMA THE ″AC TYPE″ SHALL BE ″PG 64-22″ UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.

FOR USE OF RECYCLE MATERIALS SEE DISTRICT ONE SPECIAL PROVISIONS.

QUALITY MANAGEMENT PROGRAM (QMP) IDENTIFIES THE PARTICULAR QUALITY CONTROL SPECIFICATION THAT APPLIES TO THE MIXTURE

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INSPECTION & RATING
RESEARCH & TESTING
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D111697-sht-typical-2.dgn	DESIGNED - DA	REVISED	01/22/2018
USER NAME = Ken.drabant	DRAWN - EAH	REVISED	
PLOT SCALE = 15:0.0000 ′:′ / in.	CHECKED - JMG	REVISED	
PLOT DATE = 1/22/2018	DATE - 12/08/2017	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS FOR BRIDGE APPROACHES (SHEET 2 OF 2)

SHEET 2 OF 2 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	07
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

TREE TRUNK PROTECTION		20101100
STATION	OFFSET	EACH
152+48.00	23.0' LT	1
152+66.68	22.6' LT	1
156+46.43	26.2' LT	1
157+44.92	38.3' LT	1
	TOTAL	4

CHANNEL EXCAVATION	20300100
LOCATION	VOLUME (CU YD)
152+88.66 TO 153+29.59	167
154+72.42 TO 154+92.42	134
155+90.17 TO 156+00.92	78
TOTAL	379

PAVEMENT REMOVAL			44000100
STATION	STATION	LENGTH (FT)	AREA (SQ YD)
152+03.42	152+77.42	74.0	160
156+27.42	157+59.93	132.51	430
		TOTAL	590

PAVED SHOULDER REMOVAL			44004250
STATION	STATION	LENGTH (FT)	AREA (SQ YD)
156+27.42	157+57.84	130.42'	40.0
		TOTAL	40.0

COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24		60605000
STATION	STATION	LENGTH (FT)
156+82.35	157+59.93	100
	TOTAL	100

REMOVE AND REINSTALL SIGN PANEL						
SIGN TEXT	STATION	OFFSET	SUPPORT TYPE	WIDTH (INCHES)	HEIGHT (INCHES)	REMOVE AND REINSTALL SIGN PANEL (SQ FT)
FPD-CENTENNIAL TRAIL***	±152+72	LT	TIMBER POSTS	24"	36"	6.00
NO MOTOR VEHICLES	±152+93	LT	STEEL CHANNEL	18"	18"	2.25
FPD-DOGS MUST BE LEASHED	±152+93	LT	STEEL CHANNEL	12"	12"	1.00
TRAIL MARKER	±153+00	LT	NONE	4"	36"	1.00
BIKE ROUTE	±156+24	LT	STEEL CHANNEL	18"	18"	2.25
ARROW	±156+24	LT	STEEL CHANNEL	12"	12"	1.00
FPD-TRAIL MAP***	±156+00	LT	TIMBER POSTS	60"	48"	20.00
					TOTAL	34

***TIMBER POSTS SHALL BE REPLACED IN KIND UNLESS THE RESIDENT ENGINEER APPROVES USE OF THE EXISTING POSTS. COST OF NEW POSTS SHALL BE INCLUDED IN THE PAY ITEM REMOVE AND REINSTALL SIGN PANEL

EARTHWORK SCHEDULE				
LOCATION	EARTH EXCAVATION (CU YD)	STRUCTURE EXCAVATION (CU YD)	SUM OF EARTH AND STRUCTURAL EXCAVATION (CU YD)	EMBANKMENT (CU YD)
SOUTH OF SOUTH ABUTMENT	0	118.00	118.00	119.05
IN RIVER•	0	0	0	
NORTH OF BACK FACE OF EXISTING NORTH ABUTMENT	259.70	178.00	437.70	99.77
			TOTAL	219

• EXCAVATION IN THE RIVER (AREA BETWEEN EXISTING SOUTH AND EXISTING NORTH ABUTMENT SHALL BE PAID FOR AS CHANNEL EXCAVATION.

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

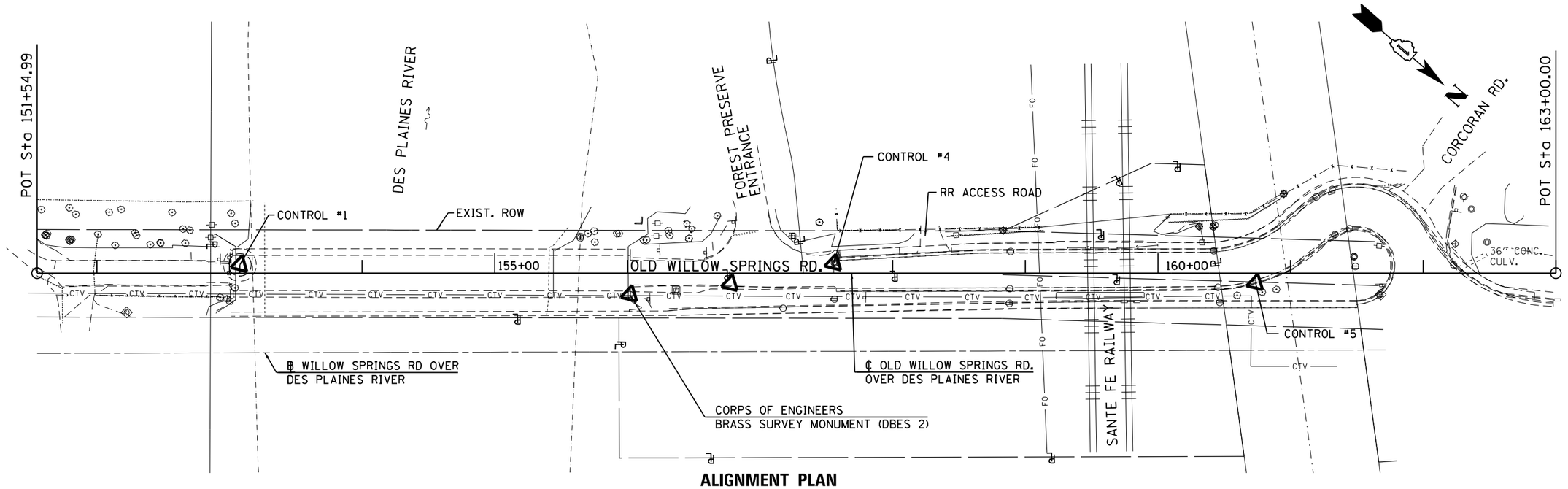
D111697-sht-SCH00.dgn	DESIGNED - DA	REVISED 01/18/2018
USER NAME = Ken.drabant	DRAWN - EAH	REVISED
PLOT SCALE = 2.0000 '/ in.	CHECKED - JMG	REVISED
PLOT DATE = 1/18/2018	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES

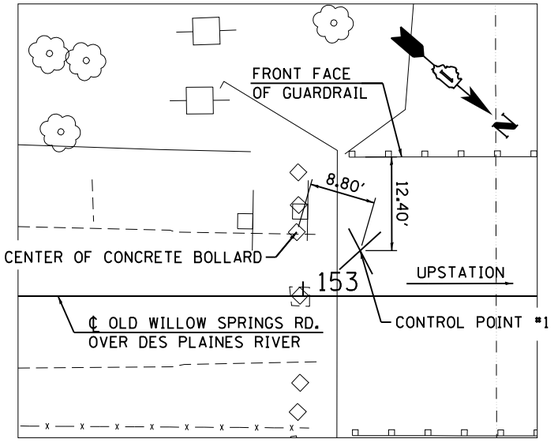
SHEET 1 OF 1 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	08
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			



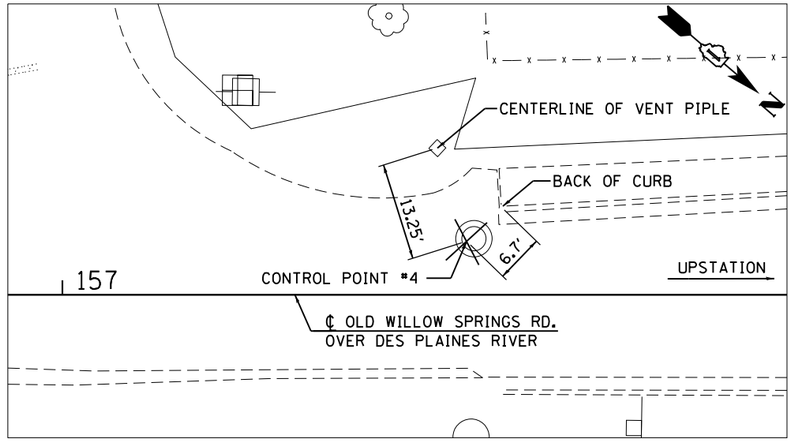
ALIGNMENT PLAN

STA. 151+54.99 TO STA 163+00.00



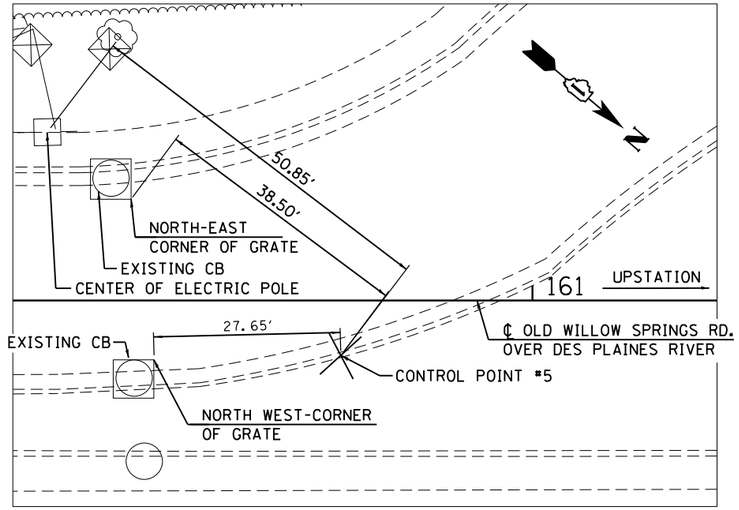
CONTROL POINT #1

STA. 153+07.85
OFFSET 6.25' LT
N (1,846,418.215)
E (1,107,601.698)
ELEV. 600.746
DESCRIPTION: MAGNETIC NAIL



CONTROL POINT #4

STA. 157+55.60
OFFSET 7.35' LT
N (1,846,741.597)
E (1,107,292.018)
ELEV. 598.732
DESCRIPTION: CROSS ON SOUTH SIDE OF RIM OF UTILITY STRUCTURE



CONTROL POINT #5

STA. 160+73.65
OFFSET 7.57' RT
N (1,846,982.134)
E (1,107,083.404)
ELEV. 596.812
DESCRIPTION: CUT CROSS ON TOP OF CURB

BENCHMARK: USGS BM #31E STANDARD COUNTY BRONZE SECTION MARKER BRONZE PLUS LOCATED AT CENTER OF WOLF RD. AND GERMAN CHURCH RD. (83N). ELEV. 621.81

TBM "A" IS A CUT SQUARE ON TOP OF RETAINING WALL ON THE NORTH-WEST CORNER OF NEW BRIDGE WILLOW SPRING RD OVER DES PLAINES RIVER " NORTH-WEST CORNER OF RETAINING WALL"

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

D111697-sht-ATB.dgn	DESIGNED - DA	REVISED
USER NAME = Kendrabant	DRAWN - EAH	REVISED
PLOT SCALE = 83.3333 ' / in.	CHECKED - JMG	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALIGNMENT AND TIE, BENCHMARKS

SHEET 1 OF 1 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	09
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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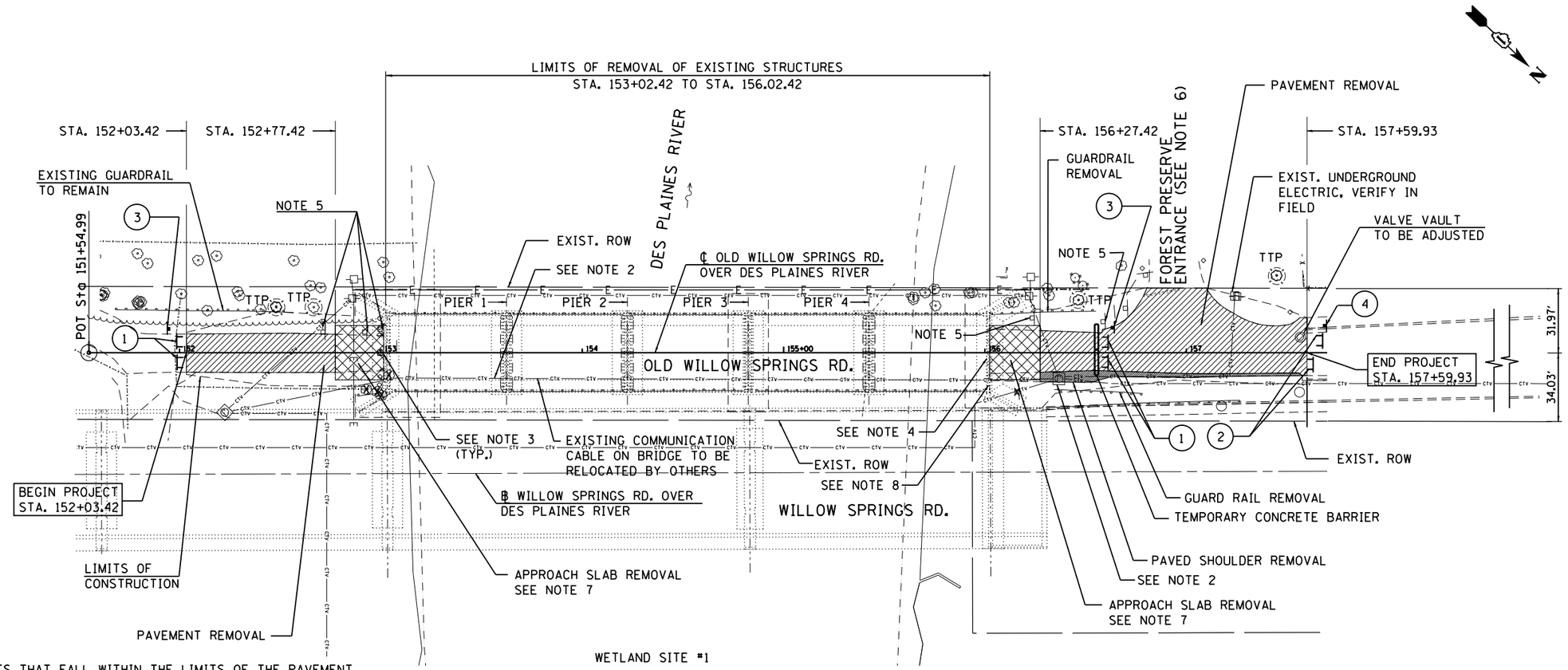
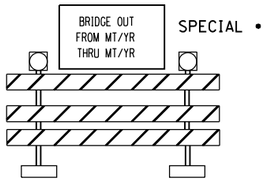


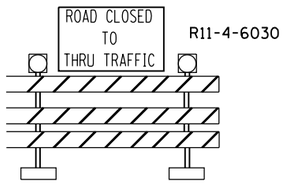
NOTES

1. EXISTING SURVEY CONTROL POINTS THAT FALL WITHIN THE LIMITS OF THE PAVEMENT REMOVAL SHALL BE RELOCATED BY THE CONTRACTOR PRIOR TO CONSTRUCTION ACTIVITIES. SEE ALIGNMENT AND TIES PLAN FOR CONTROL POINT LOCATIONS.
2. CARE SHALL BE TAKEN WHEN EXCAVATING IN THE PROJECT AREA IN ORDER TO PROTECT THE EXISTING COMED & COMMUNICATION UTILITY LINES. THE CONTRACTOR SHALL VERIFY THAT THE COMMUNICATION CABLE EMBEDDED IN THE BRIDGE DECK HAS BEEN REMOVED PRIOR TO BRIDGE DEMOLITION
3. EXISTING TRAIL LOCKS AND DROP GATES SHALL BE REMOVED, COST INCLUDED IN PAVEMENT REMOVAL.
4. EXIST TEMPORARY ROADWAY COVER STEEL COVER PLATES TO BE REMOVED, COST INCLUDED IN PAVEMENT REMOVAL. TO BE SALVAGED AND PICKED UP BY: D1 BRIDGES.
5. REMOVE EXISTING SIGNAGE SUCH AS EXISTING BIKE SIGNS THAT CONFLICT WITH CONSTRUCTION ACTIVITIES, STORE AND REINSTALL AT CONCLUSION OF MAJOR CONSTRUCTION ACTIVITIES. SIGNS DAMAGE DURING REMOVAL, REINSTALLATION, HANDLING OR STORAGE SHALL BE REPLACE "IN -KIND" WITH NO ADDITIONAL COST TO THE STATE.
6. MAINTAIN ACCESS TO FOREST PRESERVE ENTRANCE DURING CONSTRUCTION. COST OF MAINTAINING ENTRANCE AND TRAFFIC CONTROL DEVICES/SIGNS SHALL BE INCLUDED IN TRAFFIC CONTROL AND PROTECTION (SPECIAL)
7. FOR REMOVAL OF EXISTING APPROACH SLAB SEE SPECIAL PROVISION "APPROACH SLAB REMOVAL".
8. EXISTING U.S.A.C.E. SURVEY MARKER TO BE RELOCATED BY OTHERS.
9. CONTRACTOR SHALL PROVIDE A FENCE (WITH GATES FOR CONTRACTOR USE ONLY) TO FURTHER ENSURE THAT THE BRIDGE CANNOT BE ACCESSED BY PEDESTRIANS AND BICYCLIST.
10. EXCAVATION IN THE AREA DEFINED BY THE FRONT FACE OF SOUTH ABUTMENT AND WING WALLS AND PROCEEDING NORTH TO FRONT FACE OF THE EXISTING NORTH ABUTMENT AND WING WALLS SHALL BE PAID FOR AS CHANNEL EXCAVATION EXCAVATION SOUTH OF THE EXISTING SOUTH ABUTMENT AND WING WALLS AND NORTH OF NORTH ABUTMENT AND WING WALLS SHALL BE EARTH EXCAVATION OR STRUCTUAL EXCAVATION. SEE SECTIONS ON SHEET 26 AND 31

REMOVAL PLAN

STA. 152+03.42 TO STA 157+59.93





* USE WHITE LETTERS ON GREEN BACKGROUND

LEGEND

- PAVEMENT REMOVAL
- PAVED SHOULDER REMOVAL
- APPROACH SLAB REMOVAL
- SIGN REMOVAL
- TREES
- TEMP. FENCE TO PROTECT TREE
- TTP - TREE TRUNK PROTECTION
- WETLAND
- E — COMED POWER LINE
- CTV — COMMUNICATION LINES
- LIMITS OF CONSTRUCTION
- SIGN
- TYPE III BARRICADE

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

D111697-sht-Removal.dgn	DESIGNED - DA	REVISED 01/18/2018
USER NAME = Ken.drabant	DRAWN - EAH	REVISED
PLOT SCALE = 60:0.00 '; / in.	CHECKED - JMG	REVISED
PLOT DATE = 1/18/2018	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING CONDITION AND REMOVAL PLAN

SHEET 1 OF 1 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	10
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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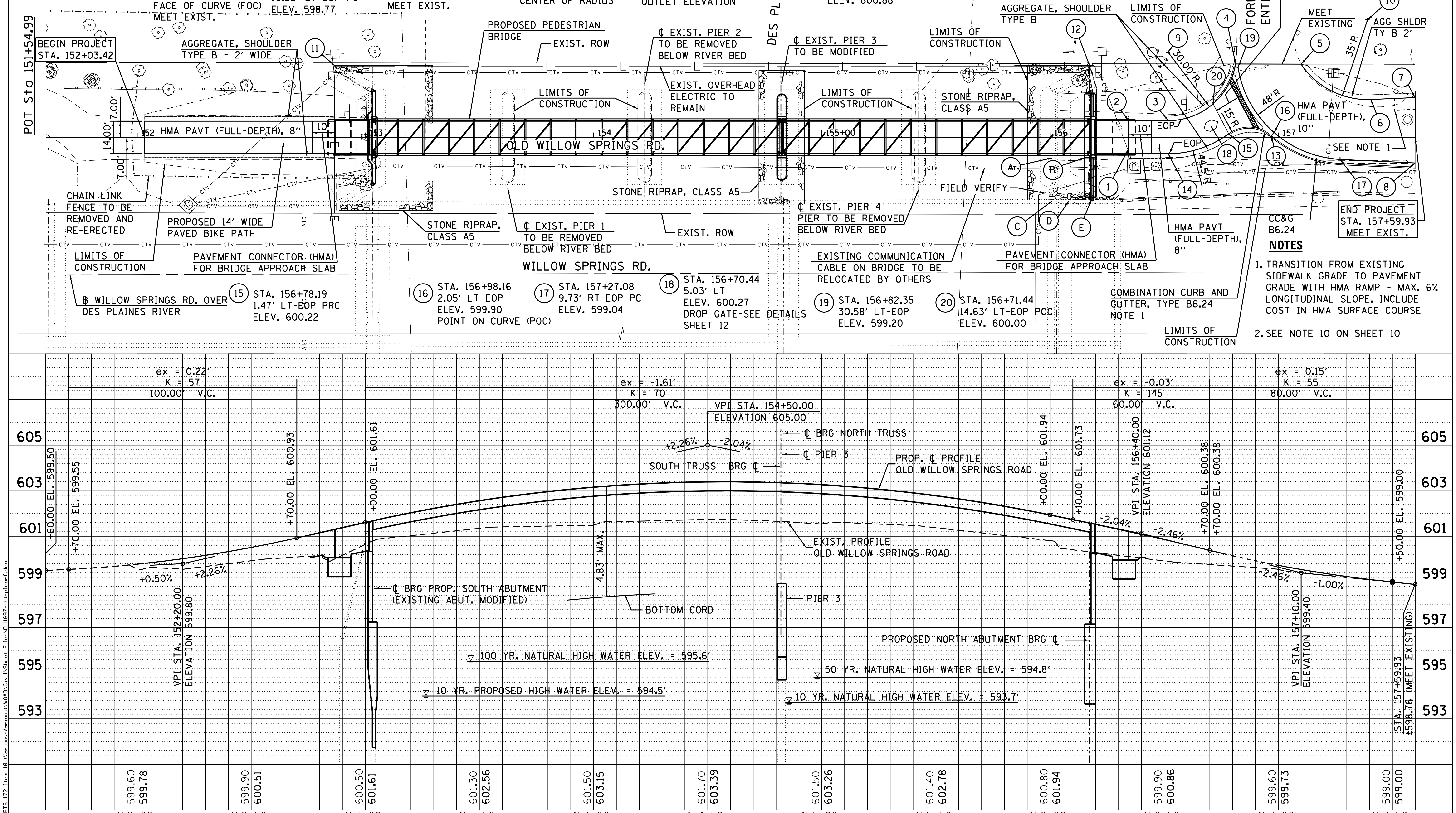
1. STA. 156+34.42, 7.25' RT-EOP, ELEV. 601.21
2. STA. 156+34.42, 7.25' LT-EOP, ELEV. 601.21
3. STA. 156+51.74, 7.25' LT-EOP PC, ELEV. 600.76
4. STA. 156+81.29, 32.10' LT-FOC, ELEV. ±599.18, FACE OF CURVE (FOC) MEET EXIST.
5. STA. 157+09.99, 32.05' LT-EOP, ELEV. ±598.87, MEET EXIST.
6. STA. 157+40.59, 16.53' LT-EOP PC, ELEV. 598.77
7. STA. 157+59.93, 17.36' LT-EOP, ELEV. MEET EXIST.
8. STA. 157+59.93, 11.34' RT-EOP, ELEV. ±598.73, MEET EXIST.
9. STA. 156+51.74, 37.25' LT, CENTER OF RADIUS
10. STA. 157+39.10, 51.50' LT, CENTER OF RADIUS
11. PROP. CONC. HEADWALL FOR PIPE
12. UNDERDRAINS 4" (SPECIAL). FIELD DETERMINE OUTLET ELEVATION
13. STA. 156+96.98, 0.70' LT-FOC PCC, ELEV. 599.66
14. STA. 156+51.74, 7.25' RT-EOP PC, ELEV. 600.88
15. STA. 156+78.19, 1.47' LT-EOP PRC, ELEV. 600.22
16. STA. 156+98.16, 2.05' LT EOP, ELEV. 599.90, POINT ON CURVE (POC)
17. STA. 157+27.08, 9.73' RT-EOP PC, ELEV. 599.04
18. STA. 156+70.44, 5.03' LT, ELEV. 600.27, DROP GATE-SEE DETAILS SHEET 12
19. STA. 156+82.35, 30.58' LT-EOP, ELEV. 599.20
20. STA. 156+71.44, 14.63' LT-EOP POC, ELEV. 600.00

NORTH ABUTMENT TOP OF RIPRAP			
POINT	STATION	OFFSET	ELEVATION
A	156+00.92	9.08' RT	±589.03
B	156+15.17	9.08' RT	596.28
C	156+00.92	28.00' RT	±589.03
D	156+08.29	28.00' RT	595.3
E	156+17.92	28.00' RT	600.12



NOTES

1. TRANSITION FROM EXISTING SIDEWALK GRADE TO PAVEMENT GRADE WITH HMA RAMP - MAX. 6% LONGITUDINAL SLOPE. INCLUDE COST IN HMA SURFACE COURSE
2. SEE NOTE 10 ON SHEET 10

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

USER NAME = Ken.drabant
PLOT SCALE = 40.0000 ' / in.
PLOT DATE = 1/18/2018

DESIGNED - DA
DRAWN - EAH
CHECKED - JMG
DATE - 12/08/2017

REVISED - 01/18/2018
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OLD WILLOW SPRINGS RD. OVER DES PLAINES RIVER
PLAN AND PROFILE

SCALE: 40.0000 ' / in. SHEET 1 OF 1 SHEETS STA. 152+03.42 TO STA.157.59.93

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	11

CONTRACT NO. 62B99
ILLINOIS FED. AID PROJECT

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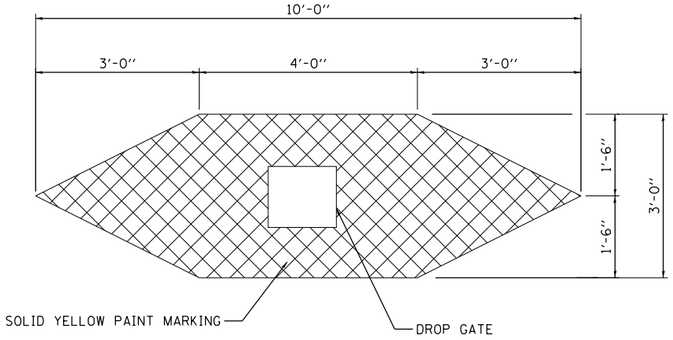
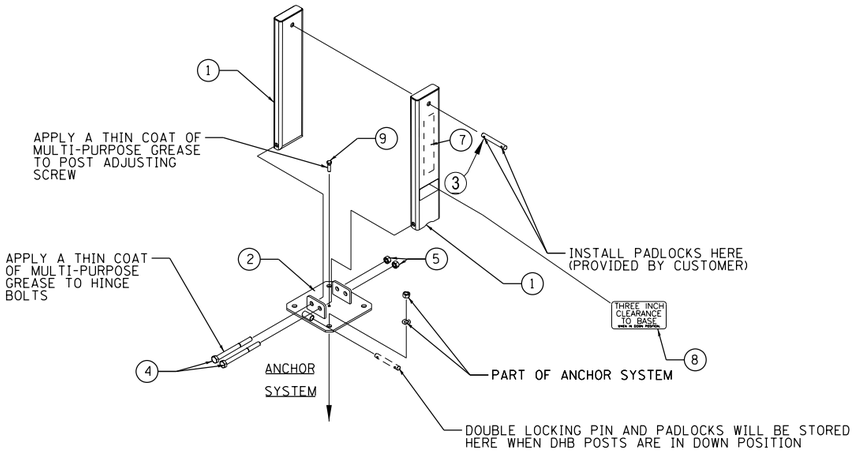


DROP GATE MARKING DETAIL

N.T.S.



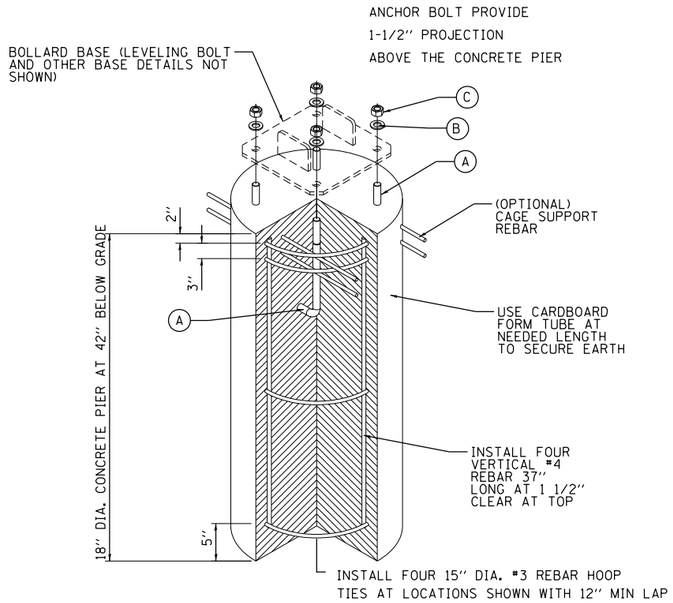
DROP GATE DETAIL

LEGEND

1. DOUBLED HINGED BOLLARD (DHB) POST
2. DHB BASE
3. SINGLE LOCKING PIN SS316
4. DOUBLE LOCKING PIN SS316
5. DIA. 3/4" x 8" HEX HEAD HINGE BOLT-18-8 SS
6. DIA. 3/4" HEX NUT-18-8 SS
7. SAFETY LABEL 3"x12"
8. THREE INCH CLEARANCE LABEL
9. LEVELING BOLT DIA. 1/2"x1 1/2" HEX HEAD 18-8 SS

NOTES

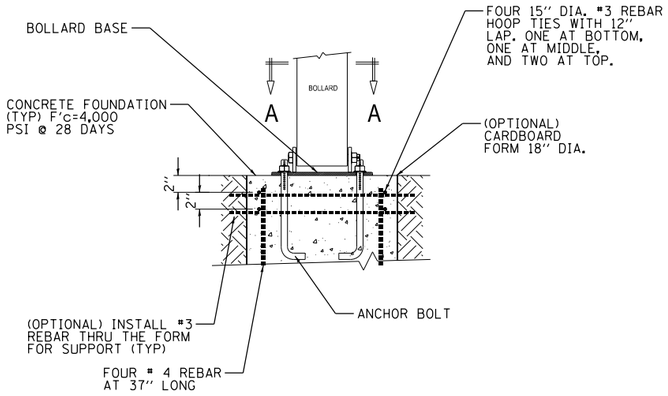
1. FOR DETAILS NOT SHOWN SEE SPECIAL PROVISION



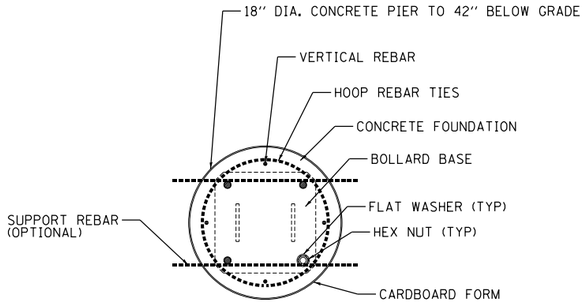
COLLAPSIBLE POST ANCHOR SYSTEM ASSEMBLY

LEGEND

- (A) DIA. 3/4" x 12" TYPE L ANCHOR BOLT-H.D.G.
- (B) DIA. 3/4" TYPE A FLAT NARROW WASHER GALVANIZED STEEL
- (C) DIA. 3/4" HEX NUT GALVANIZED STEEL



FRONT ELEVATION SECTION



PLAN SECTION "A-A"

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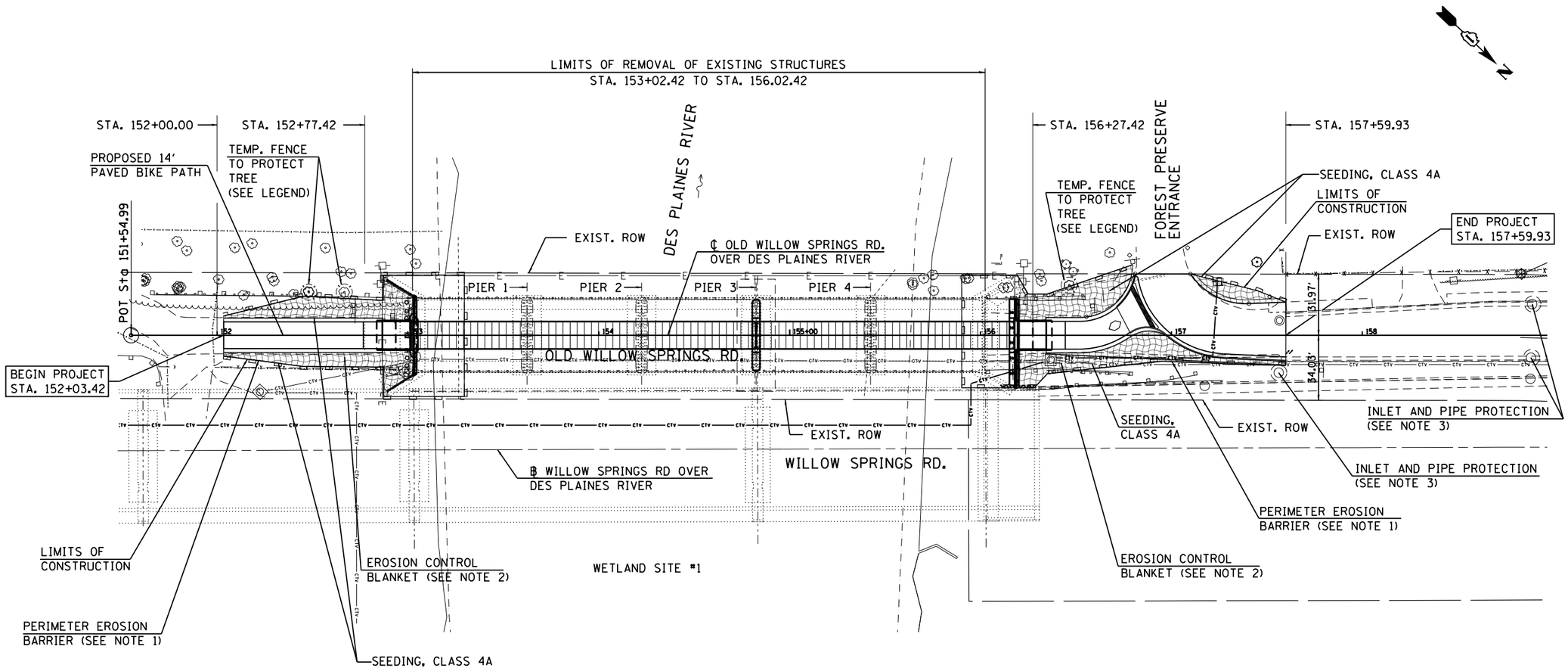
RESEARCH & TESTING
4415 WEST HARRISON ST.
SUITE 231
HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901

D111697-sht-DROP GATE.dgn	DESIGNED -	REVISED
USER NAME = Ken.drabant	DRAWN -	REVISED
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

OLD WILLOW SPRINGS RD. OVER DES PLAINES RIVER
DROP GATE DETAILS
SHEET 1 OF 1 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	12
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			



EROSION CONTROL PLAN

STA. 152+00.00 TO STA 157+59.93

NOTES

1. PROVIDE PERIMETER EROSION BARRIER AT LIMITS OF CONSTRUCTION.
2. PROVIDE EROSION CONTROL BLANKET ON THE PORTION OF VEGETATION AREAS DISTURBED BY CONSTRUCTION ACTIVITIES.
3. PROVIDE INLET AND PIPE PROTECTION PER IDOT HIGHWAY STANDARD 280001 FOR DRAINAGE STRUCTURES DISTURBED BY CONSTRUCTION ACTIVITIES.
4. REMOVAL OF EXISTING STRUCTURES WILL REQUIRE THE PARTIAL REMOVAL OF PIERS 1, 2, & 4 TO BELOW RIVERBED; THE CONTRACTOR WILL BE REQUIRED TO SUBMIT AN "IN-STREAM" WORK PLAN AS NOTED IN GENERAL NOTES 7 THRU 10.

LEGEND

- EROSION CONTROL BLANKET
- PERIMETER EROSION BARRIER
- TEMP. FENCE TO PROTECT TREE
- INLET PROTECTION
- PROPOSED BRIDGE

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

D111697-sht-sed-control.dgn	DESIGNED - DA	REVISED
USER NAME = Ken.drabant	DRAWN - EAH	REVISED
PLOT SCALE = 60.00 ' / in.	CHECKED - JMG	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL /LANDSCAPING PLAN

SHEET 1 OF 1 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	13
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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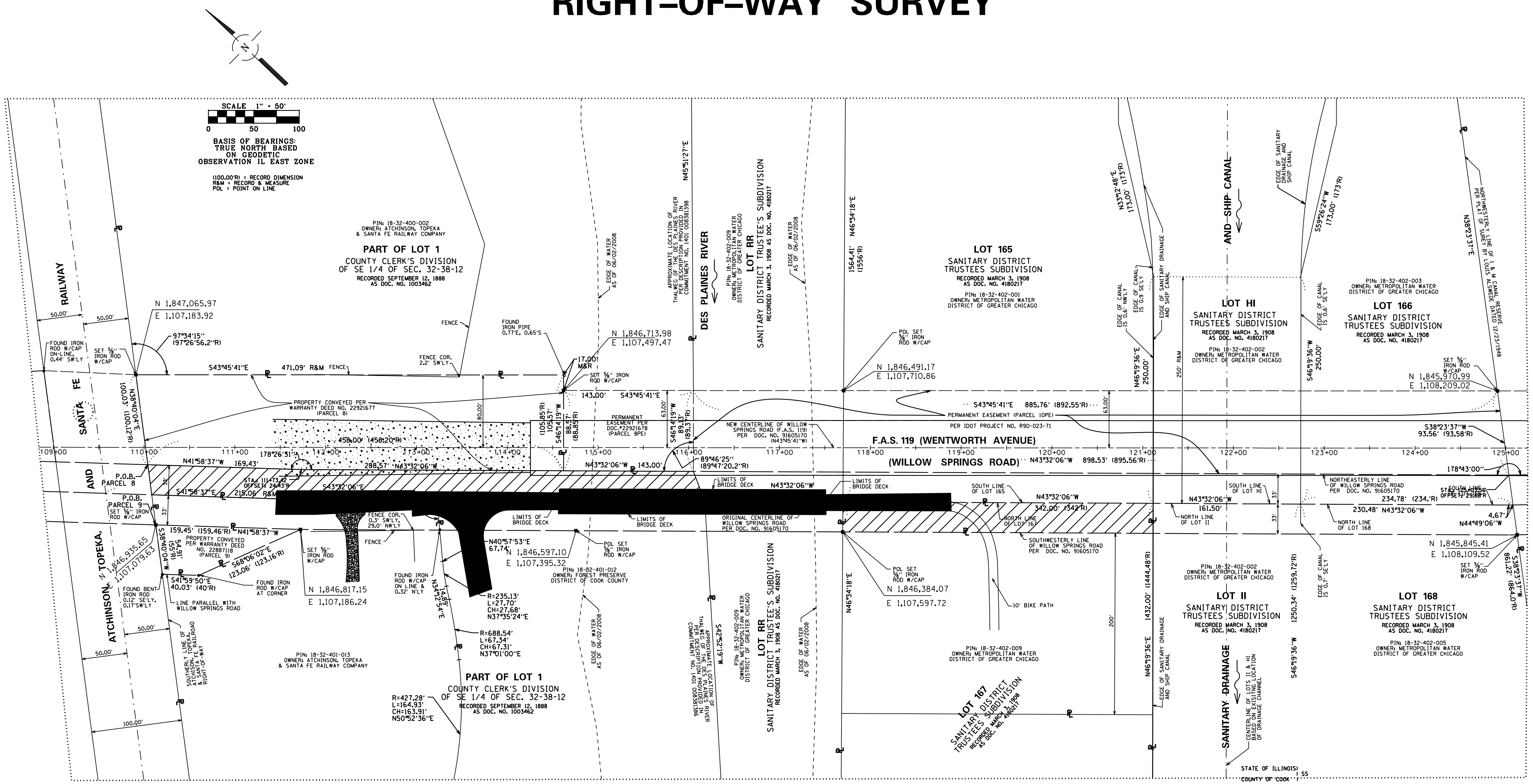
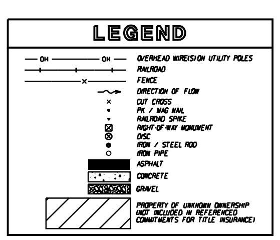
RIGHT-OF-WAY SURVEY





STATE OF ILLINOIS)
) SS
COUNTY OF COOK)

WE, SPACECO, INC., AN ILLINOIS PROFESSIONAL DESIGN FIRM, NUMBER 184-001157, DO HEREBY DECLARE THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED IS A TRUE AND CORRECT REPRESENTATION OF SAID SURVEY.

ALL DIMENSIONS ARE IN FEET AND DECIMAL PARTS THEREOF.
NO DISTANCES OR ANGLES SHOWN HEREON MAY BE ASSUMED BY SCALING.

GIVEN UNDER OUR HAND AND SEAL THIS ____ DAY OF ____________ , 20______ IN ROSEMONT, ILLINOIS.

REBECCA Y. POPECK, I.P.L.S. No. 035-3642

LICENSE EXPIRES: 11-30-2008

(VALID ONLY IF EMBOSSED SEAL AFFIXED)

COMPARE ALL DIMENSIONS BEFORE BUILDING AND REPORT ANY DISCREPANCIES AT ONCE. REFER TO DEED OR TITLE POLICY FOR BUILDING LINES AND EASEMENTS.

REBECCA Y. POPECK 3642 PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS ROSEMONT, ILLINOIS

07/03/08
09/02/08

07/02/08
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D111697-sht-ROW_SURVEY.dgn	DESIGNED -	REVISED
USER NAME = Ken.drabant	DRAWN -	REVISED
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PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY SURVEY

SHEET 1 OF 1 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	14
		CONTRACT NO. 62B99		
	ILLINOIS	FED. AID PROJECT		

Benchmark: USGS BM #31E Standard county bronze section marker Bronze Plus located at center of Wolf Rd. and German Church Rd. (83N). Elev. 621.81

Existing Structure: S.N. 016-0539 was constructed in 1924 under Section 142A-15D, Route 18. This structure has not undergone any major repairs. The structure consists of a five span (59'-3", 60'-0", 60'-0", 60'-0", 59'-3") cast-in-place reinforced concrete T-beam bridge supported by reinforced concrete piers and abutments on spread footings. The total length is 300' (Back-to-Back Abutments). The out to out bridge width is 39'-7" with a clear roadway width of 27' measured face to face of curbs. The existing bridge will be replaced with a prefabricated Pedestrian Truss Superstructure. Pier 3 will be rehabilitated and Piers 1, 2 and 4 will be removed. The top portion of the existing north abutment will be removed, and new spill thru abutment will be constructed behind the existing abutment. The top portion (approximately 5') of the south abutment will be removed and reconstructed to meet new pedestrian bridge geometrics. The structure will be closed to vehicular traffic and pedestrians during construction.

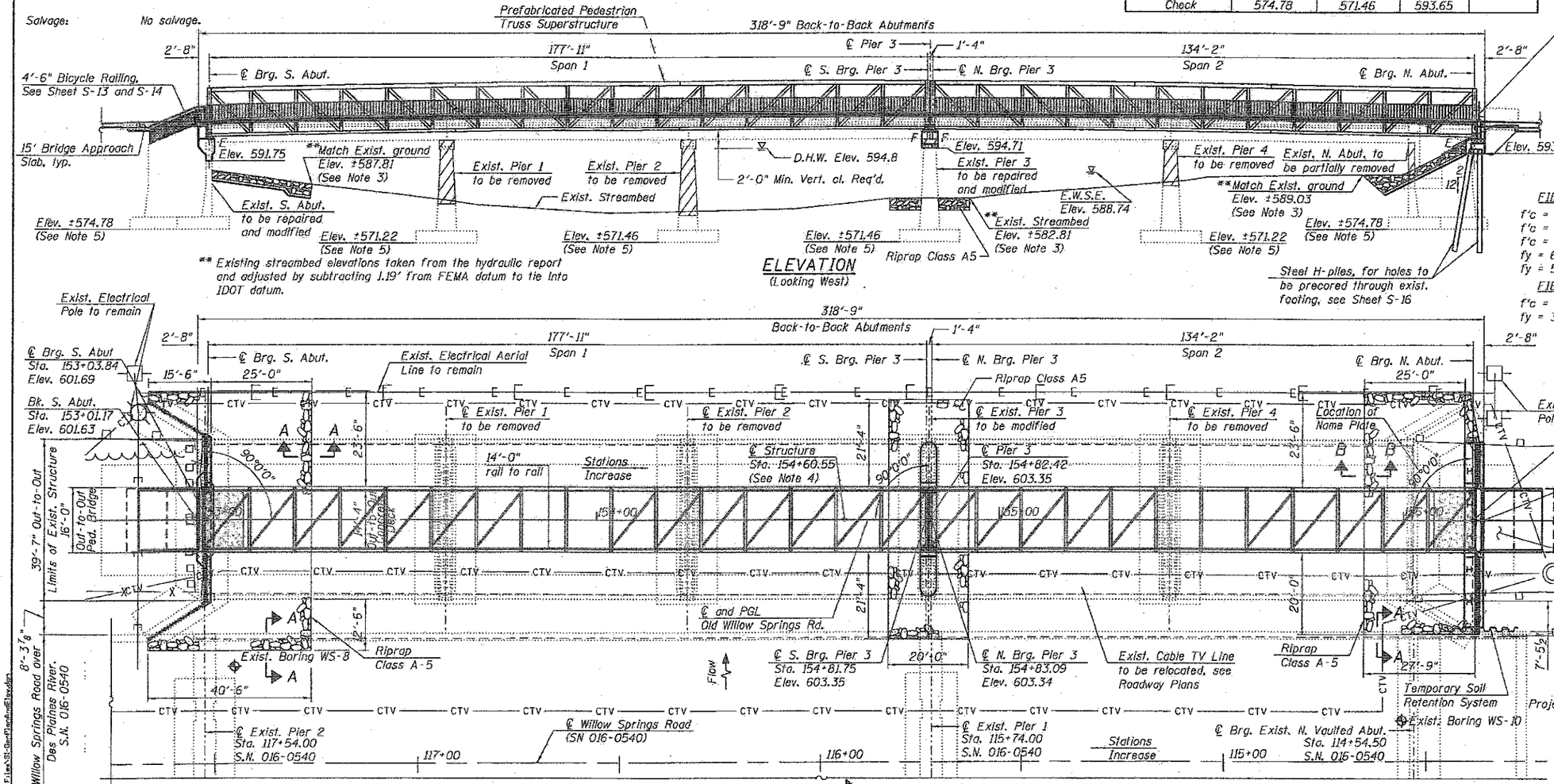
Salvage: No salvage.

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)			Item 113
	S. Abut.	Pier 3	N. Abut.	
Q100	565.70	570.80	593.65	7
Q500	565.20	569.80	593.65	
Design	574.78	571.46	593.65	
Check	574.78	571.46	593.65	

BORINGS

BORING	LOCATION
WS-8	Sta. 153+10.69, 36.04' Rt.
WS-9	Sta. 154+83.77, 67.61' Rt.
WS-10	Sta. 155+99.73, 49.33' Rt.



DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 and 2016 Interim Revisions
2009 AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges with 2015 Interim Revisions

DESIGN STRESSES

FIELD UNITS (NEW CONSTRUCTION)

f'c = 3,500 psi (Substructure Concrete)
f'c = 4,000 psi (Superstructure Appr. Concrete)
f'c = 4,500 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50W)

FIELD UNITS (EXISTING CONSTRUCTION)

f'c = 2,500 psi
fy = 33,000 psi (Reinforcement)

LOADING

* H5 (Maintenance vehicle)
Pedestrian Live Load: 90 psf

*H5 loading is in accordance with agreement between Forest Preserve District of Cook County (Owner) and other government agencies.

NOTES:

1. For Profile Grade line, General Notes, Waterway Information Table, Index of Sheets and Total Bill of Materials, see Sheet S-02.
2. For Sections A-A and B-B, see Sheet S-03.
3. Layout of riprap may be varied to suit the ground in the field as directed by the Engineer.
4. Bridge Stations based on survey.
5. Bottom of existing footing elevations are based on historical documents and survey.
6. Excavation for installing rip rap located at the south abutment and pier 3 will be paid for as Channel Excavation. Excavation for installing rip rap located at the north abutment shall be paid for as channel excavation, earth excavation and structure excavation; See Excavation Detail on sheet S-17.

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.064 g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.118 g
Soil Site Class = C

STATE OF ILLINOIS MOUSSA A. ISSA 081-005738 CHICAGO, ILLINOIS LICENSED STRUCTURAL ENGINEER

Signed Moussa A. Issa
Moussa A. Issa, HBM Il. Lic. No. 081-005738
Expires 11-30-2018

Date 12/08/2017 For Sheets S-01 Thru S-23 (Total of 23 Sheets)

GENERAL PLAN AND ELEVATION
OLD WILLOW SPRINGS ROAD
OVER DES PLAINES RIVER
PUBLIC WATER
PEDESTRIAN BRIDGE
TR RTE. 9250 SECTION 142A-B
COOK COUNTY
STA. 154+60.55
EXISTING STRUCTURE NO. 016-0539
PROPOSED STRUCTURE NO. 016-0539

HBM ENGINEERING GROUP, LLC. CONSULTING & DESIGN INSPECTION & RATING RESEARCH & TESTING
4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162 PHONE (708) 236-0900 FAX (708) 236-0931

S1-GenPlanAndElev.dgn	DESIGNED - MI, JMG, KJD	REVISED	01/18/2018
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PLOT DATE = 1/18/2018	DATE - 03/03/2017	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 016-0539
SHEET S-01 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	15
		CONTRACT NO. 62B99		
		ILLINOIS FED. AID PROJECT		

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GENERAL NOTES

1. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

2. Reinforcement bars designated (E) shall be epoxy coated.

3. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$" (0.01 ft). Adjustment shall be made either by grinding the surface or by shimming the bearings.

4. Concrete Sealer shall be applied to the designated areas of the pier, abutments and wingwalls.

5. All components of the pedestrian bridge shall use unpainted weathering steel.

6. All structural steel shall be AASHTO M 270 Grade 50W (Except expansion joints which shall be AASHTO M 270 Grade 50).

7. No field welding is permitted except as specified in the contract documents.

8. Protective Coat shall be applied to both the approach slabs and the pedestrian truss superstructure reinforced concrete deck.

9. Commonwealth Edison (ComEd) overhead power line and towers exist near and cross the proposed improvement. The contractor shall coordinate with ComEd by providing detailed staging plans that detail equipment type (such as crane boom heights) and placement for ComEd review/approval prior to construction activities.

10. The Contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge, Earth Excavation, Channel Excavation, Structure Excavation, installation of Temporary Soil Retention System and other loads applied will not have detrimental effects on the adjacent existing structure (SN 016-0540). Any damage to the existing adjacent structure during construction shall be repaired by the Contractor at his expense at no charge to IDOT. All repairs shall be reviewed and approved by the Engineer.

11. The Contractor is responsible for the design, fabrication, storage, delivery and erection of the welded steel, Pedestrian Truss Superstructure, including all truss members, railing, toe plates, bearings, concrete deck, expansion joints, and all attachments on the superstructure. See Special Provisions.

12. An existing duct line is embedded in the bottom of the bridge deck, and coordination with the utility owner by IDOT District 1 to remove or abandon the line will occur prior to construction. The Contractor shall obtain or provide written documentation that confirms the status of the utility allows for the bridge to be removed prior to bridge demolition.

13. Dimensions shown for the prefabricated bridges are based on a particular manufactured product. Actual dimensions of supplied bridge structure may vary depending on supplier chosen from the IDOT approved list. Contractor to verify and adjust substructure elements as required, subject to approval of the Engineer. Cost shall be included with "Pedestrian Truss Superstructure".

14. The Contractor shall verify the final location of anchor bolts with the Pedestrian Truss Superstructure Manufacturer prior to construction and placement.

15. the weight of the structural concrete for deck shall be a maximum of 120 pcf. The structural concrete shall consist of Class BS concrete meeting the requirements of Art. 1020 of the standard specification except for using lightweight aggregate. The lightweight aggregate shall be according to Art. 1004.02 and the Contractor shall provide ASTM 330 certification for lightweight aggregate

WATERWAY INFORMATION *

Drainage Area = 650 SQ. MI.

Existing Low Grade Elev. = 599.5 ft at Station 152+03
Proposed Low Grade Elev. = 599.5 ft at Station 152+03

Flood	Frequency (YR)	Discharge (CFS)	Waterway Opening (SQ FT)		Natural H.W.E. (FT)	Head (FT)		Headwater Elev. (FT)	
			Existing	Proposed		Existing	Proposed	Existing	Proposed
	10	6000	2663	2755	593.7	0.8	0.8	594.5	594.5
Design	50	7500	2960	3059	594.8	0.8	0.8	595.6	595.6
Base	100	8400	3148	3256	595.6	0.8	0.8	596.4	596.4
Max Calc	500	9300	3310	3422	596.1	0.8	0.8	596.9	596.9

10 Year Velocity through Existing Bridge = 2.3 fps
ALL TIME H.W.E. & DATE= 595.5/July 1957
2 Year Peak Flow (Q) = 4,743 C.F.S.
Estimated Water Surface Elevation = 588.74

10 Year Velocity through Proposed Bridge = 2.2 fps

* All elevations are reduced 1.2' from June, 2000 Hydraulic Report to correlate with April, 2012 Elevation Data.

SCOPE OF WORK:

1. Relocate the existing Cable TV line (by others) prior to Letting (Coordinate) at bottom of deck if coordination determines that the utility line is active.

2. Remove the concrete bridge deck, sidewalks, parapets, railings, deck drains, expansion joints and all other superstructure appurtenances.

3. Remove Piers 1, 2 and 4 to a depth 1' below river bed.

4. Remove the concrete cap of Pier 3. Reconstruct cap to meet new bridge seat elevations for a length of 18'-0" (9'-0" on each side of centerline of bridge). Reconstruct the remaining portions of pier to an elevation 1'-0" above removal line.

5. Repair remaining exposed portions of Pier 3 using epoxy crack injection and structural repair of Concrete.

6. Construct new north abutment consisting of a spill-thru abutment supported on HP-piles behind existing abutment.

7. Remove portions of the existing north abutment and wingwalls as shown on the plans.

8. Remove portions of the south abutment (approx. to a depth of 5'-6") that were found to be unsound. Reconstruct abutment to meet new bridge seat elevations for a length of 18'-0" (9'-0" on each side of centerline of bridge). Reconstruct the remaining portions of abutment to match top of wingwall elevations.

9. Repair remaining, exposed portions of south abutment and wingwalls using epoxy crack injection and structural repair of concrete.

10. Re-grade area in front of abutments and wingwalls and install riprap at abutments and Pier 3.

11. Install Prefabricated Pedestrian Truss Superstructure, and fencing.

12. Construct approach pavements and approach roadways.

13. Install the 4'-6" Bicycle Railing above abutments (areas outside bridge limits) and wingwalls.

14. Existing streambed elevations were taken from the hydraulic report and adjusted by subtracting 1.19' from FEMA datum to tie into the IDOT datum.

15. Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

PREFABRICATED TRUSS

1. The substructure is designed per AASHTO LRFD and based on the assumed truss loads given in the Truss Reaction table.

2. Truss Manufacturer shall camber the truss as necessary to provide allowance for dead load deflection.

3. Bridge bearing seat elevations and ℄ bearing locations are subject to revision based on the approved pedestrian truss superstructure shop drawings. Contractor shall verify all dimensions and elevations with final approved shop drawings.

4. Truss manufacturer shall provide the lightweight reinforced concrete deck design. Concrete deck to utilize stay-in-place galvanized forms. Reinforcement shall be epoxy coated. Contractor shall place the concrete deck after truss is set. The cost of the railing shall be included with "Pedestrian Truss Superstructure". Protective coat shall be paid for under pay item "Protective Coat".

STATION 154+60.55
REBUILT 201_ BY
STATE OF ILLINOIS
SECTION 142A-B
LOADING H5 & PEDESTRIAN
STRUCTURE NO. 016-0539

NAME PLATE

See Std. 515001

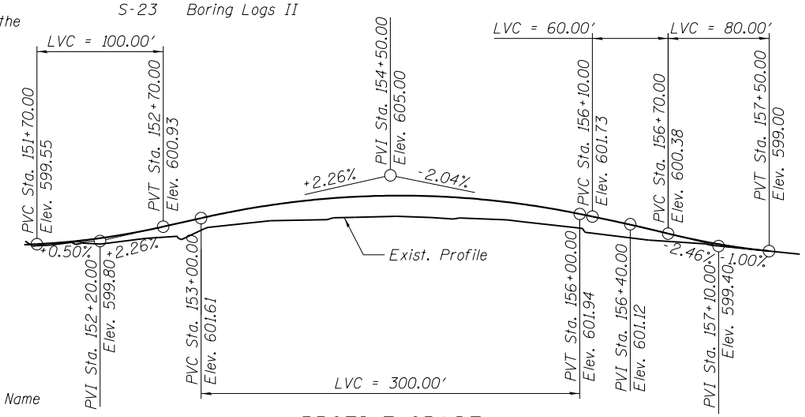
Locate Name Plate at the Front Face of bridge side wall at the Northwest Corner

Contractor to coordinate permanent mounting of Name Plates on the bridge with the Pedestrian Truss Superstructure manufacturer.

TOTAL BILL OF MATERIAL

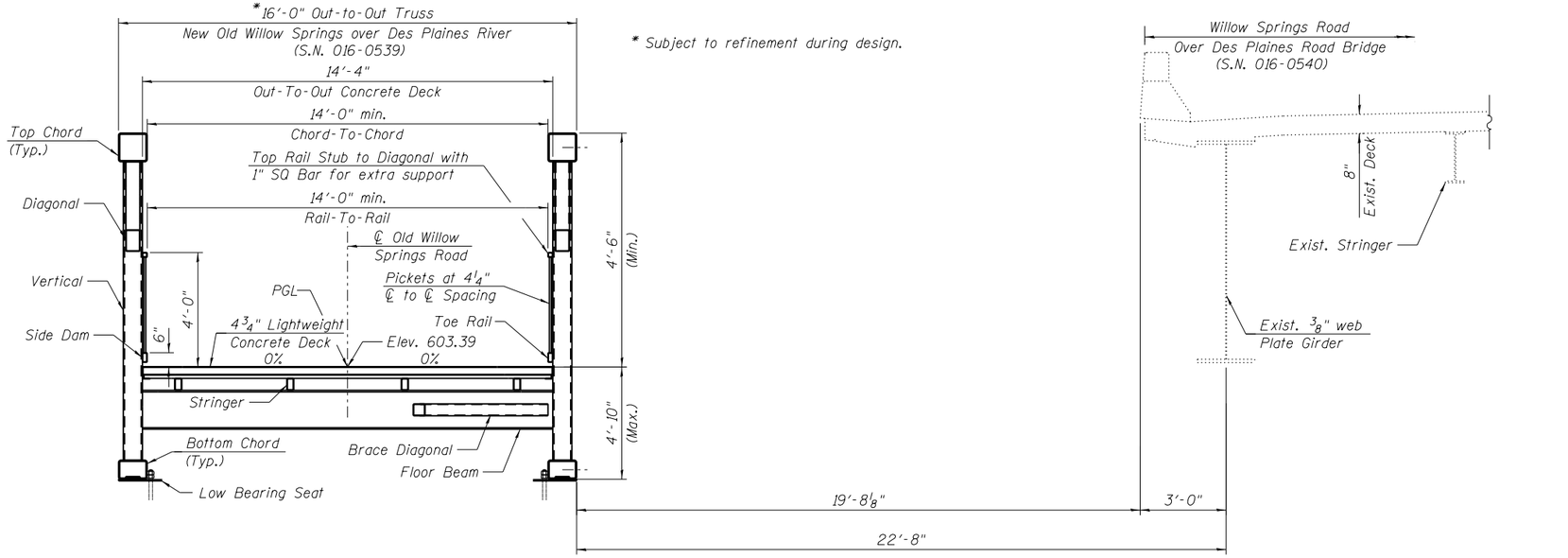
ITEM	UNIT	SUPER.	SUB.	TOTAL QUANTITY
Stone Riprap, Class A5	Sq Yd	-	631	631
Filter Fabric	Sq Yd	-	403	403
Removal of Existing Structures	Each	-	1	1
Structure Excavation	Cu Yd	-	296	296
Concrete Structures	Cu Yd	-	88	88
Concrete Superstructure	Cu Yd	2	-	2
Protective Coat	Sq Yd	561	-	561
Concrete Superstructure (Approach Slab)	Cu Yd	22	-	22
Reinforcement Bars, Epoxy Coated	Pound	7,900	12,850	20,750
Bicycle Railing	Foot	88	-	88
Furnishing Steel Piles HP14x73	Foot	-	260	260
Driving Piles	Foot	-	260	260
Test Pile Steel HP14x73	Each	-	1	1
Pile Shoes	Each	-	11	11
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	45	-	45
Concrete Sealer	Sq Ft	-	1,173	1,173
Epoxy Crack Injection	Foot	-	18	18
Geocomposite Wall Drain	Sq Yd	-	101	101
Pedestrian Truss Superstructure	Sq Ft	4,508	-	4,508
Temporary Soil Retention System (Special)	Sq Ft	-	68	68
Granular Backfill for Structures	Cu Yd	-	216	216
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	-	37	37
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	-	15	15
Pipe Underdrains for Structures 4"	Foot	-	107	107

INDEX OF SHEETS



PROFILE GRADE

(Old Willow Spring Road)

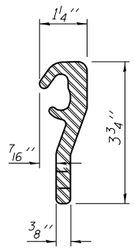


* Subject to refinement during design.

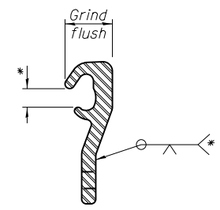
BRIDGE SECTION

(Looking upstation)
(At ℄ of Structure Sta. 154+60.55)

Note: Structure depths shown are subject to refinement per Truss Manufacturer. See Note 2.

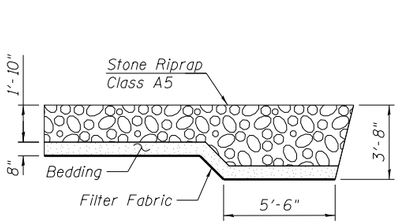


LOCKING EDGE RAIL

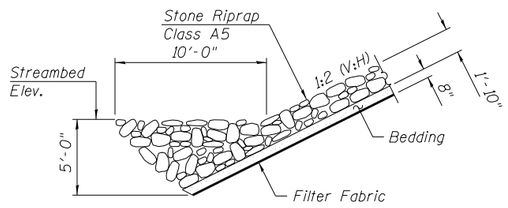


* Omit weld at seal opening.

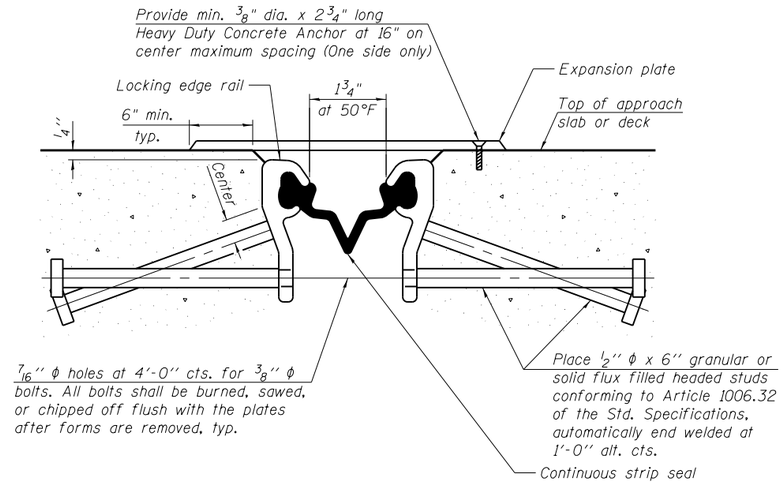
LOCKING EDGE RAIL SPLICE



SECTION A-A



SECTION B-B



SECTION THRU STRIP SEAL JOINT

Place at deck joints at each abutment and at pier

Strip Seal Notes:

1. The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails.
2. The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed.
3. The inside of the Locking Edge Rail groove shall be free of weld residue.
4. Locking Edge Rails may be spliced at slope discontinuities.
5. The manufacturer's recommended installation methods shall be followed.
6. Minimum thickness 1/2" for Expansion Plate.

REACTION TABLES

"Design loads utilized, provided by Truss Fabricator: This information has been provided for reference only. If actual design loads exceed those stated by more than 5% the Fabricator must inform the Design Engineer to re-evaluate the substructure design."

BRIDGE REACTIONS FOR 177'-11" SPAN	+ DOWNWARD - UPWARD		
	P (LBS)	H (LBS)	L (LBS)
DEAD LOAD	62,225		
UNIFORM LIVE LOAD	56,440		
VEHICLE LOAD	5,000		
WIND UPLIFT (20 psf)	-21,505		
WIND	±18,425	37,630	
SEISMIC			
THERMAL			9,335

Bridge lifting weight = 113,600 LBS
(not including weight of concrete)

BRIDGE REACTIONS FOR 134'-2" SPAN	+ DOWNWARD - UPWARD		
	P (LBS)	H (LBS)	L (LBS)
DEAD LOAD	45,950		
UNIFORM LIVE LOAD	42,425		
VEHICLE LOAD	5,000		
WIND UPLIFT (20 psf)	-16,165		
WIND	±13,220	28,285	
SEISMIC			
THERMAL			6,895

Bridge lifting weight = 82,100 LBS
(not including weight of concrete)

TABLES REFERENCES

"P" - Vertical Load at Each Base plate (4 per Bridge)

"H" - Horizontal Load at Each Footing (2 per Bridge)

"L" - Longitudinal Load at Each Bearing (4 per Bridge)

Positive - Downward Load

Negative - Upward Load

NOTES:

1. Handrail to meet ADA requirements.
2. For aesthetic considerations, the short span and long span shall be the same structural depth as well as individual elements of the truss be similar in depth in elevation view. The truss designer may economize the design by using thinner wall thicknesses for the shorter span.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Protective Coat	Sq Yd	501
Preformed Joint Strip Seal	Foot	45
Pedestrian Truss Superstructure	Sq Ft	4,508

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

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PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE SECTIONS AND DETAILS
STRUCTURE NO. 016-0539
SHEET S-03 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	17
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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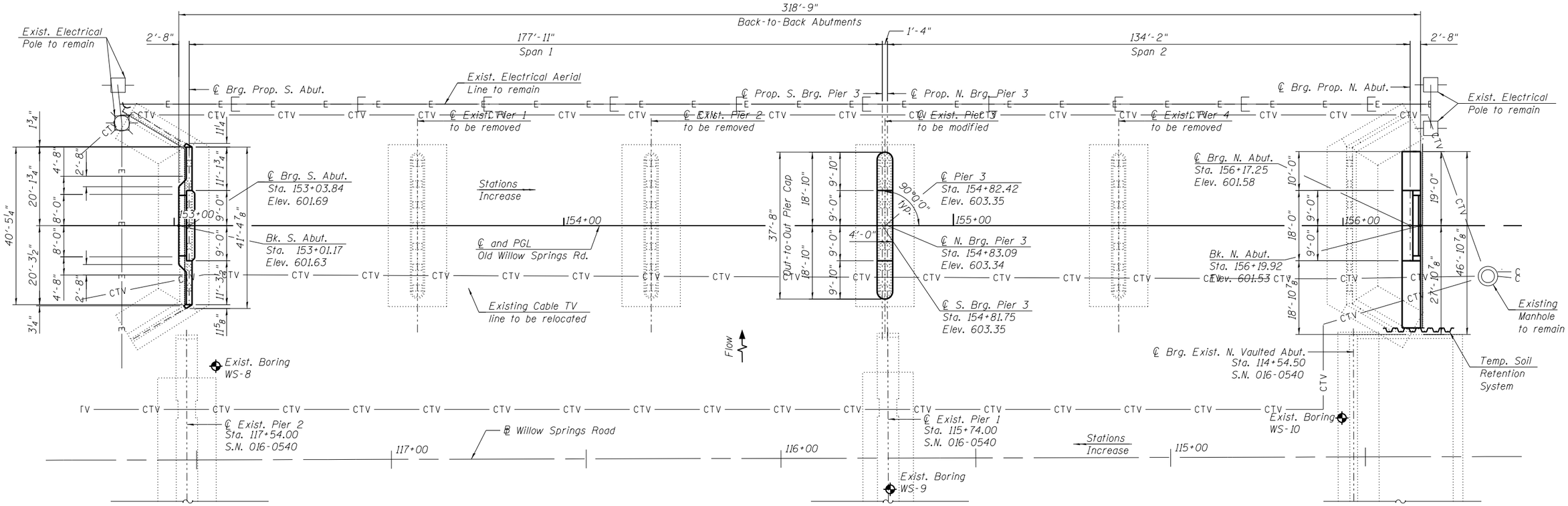
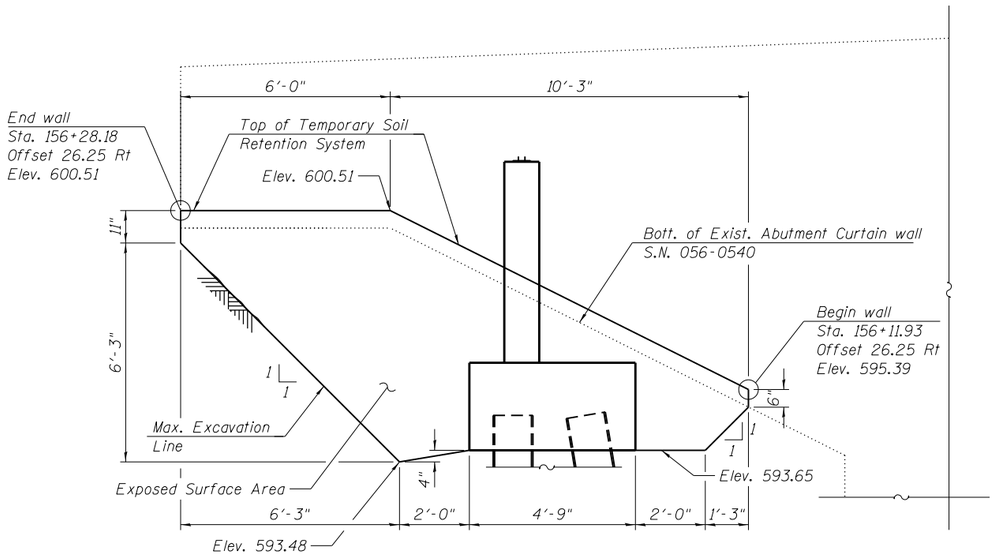


SUBSTRUCTURE LAYOUT



TEMPORARY SOIL RETENTION SYSTEM

(Looking Northeast)

NOTES

1. A cantilevered sheet pilling design does not appear to feasible and additional members of other retention systems may be necessary. The contractor shall submit a soil retention system design including plan details and calculations for review and acceptance by the Engineer.
2. For substructures removal details, see Sheets S-05 thru S-07.
3. The Temporary Soil Retention System for the North Abutment East Wingwall construction shall remain in place.
4. The contractor shall exercise extreme caution during construction to make certain that construction activities, live load surcharge, Channel Excavation, Structure Excavation, installation of Temporary Soil Retention System and other loads applied will not have detrimental effects on the adjacent existing vaulted abutment of SN 016-0540. Any damage to the existing adjacent vaulted abutment during construction shall be repaired by the contractor at his expense at no charge to IDOT.

LEGEND

- E — Existing Electrical Aerial Line
- CTV — Existing Cable TV Line
- Soil Borings
- Existing Electrical Pole
- Existing Manhole

BILL OF MATERIAL

Item	Unit	Quantity
Temporary Soil Retention System (Special)	Sq Ft	68

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

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PLOT DATE = 1/30/2018	DATE - 12/08/2017	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE LAYOUT
STRUCTURE NO. 016-0539
SHEET S-04 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	18
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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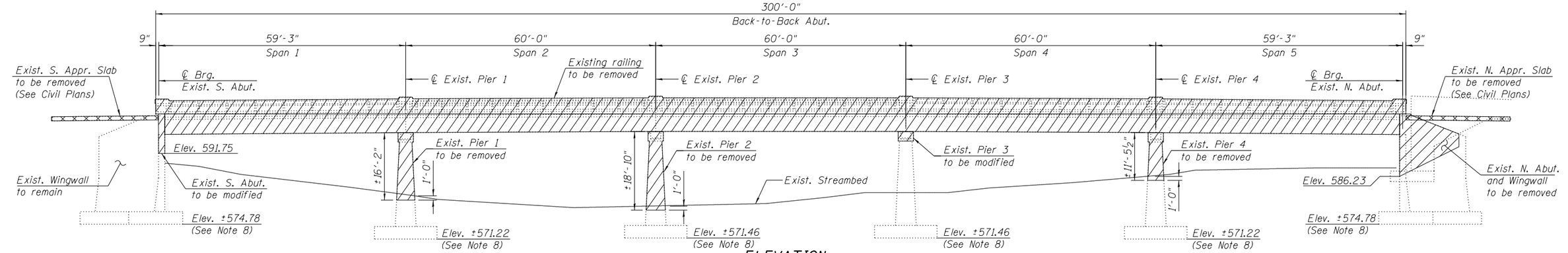
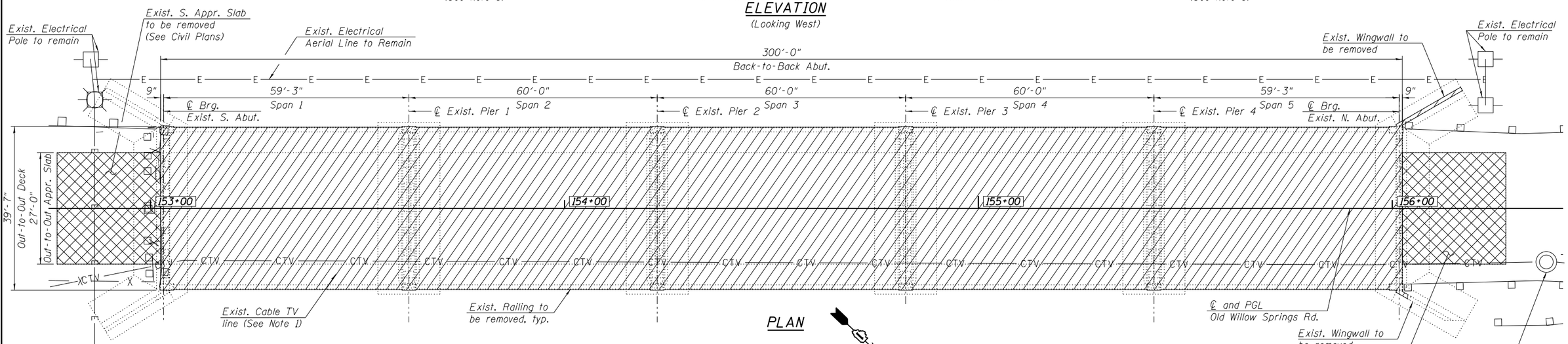


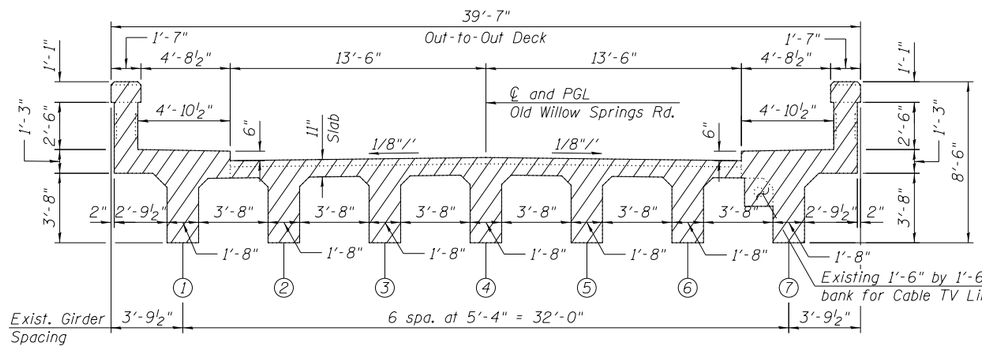
ELEVATION
(Looking West)



PLAN

NOTES:

1. Relocate the existing Cable TV line (by others) prior to Letting (Coordinate) at bottom of deck if coordination determines that the utility line is active.
2. Dimensions shown have been taken from historical design drawings and may not represent "as built" conditions. The Contractor must verify all dimensions in the field. Variation in the field dimensions shall not warrant additional compensation for Removal of Existing Structures.
3. For substructure removal details, see Sheets S-06 and S-07 .
4. Existing Piers 1, 2, 4 and the existing North Abutment shall be removed according to Art. 501.04 of the Standard Specifications and included in the cost of Removal of Existing Structures.
5. Portions of the existing south abutment and pier 3 shall be removed according to Art. 501.05 of the Standard Specifications and as shown in the plans. The partial removal of the south abutment and pier 3 shall be included in Removal of Existing Structures.
6. Existing reinforcement bars shall be cleaned, straightened and incorporated into the new construction. Any damaged reinforcement bars during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Removal of Existing Structures.
7. For existing approach slabs and pavement removal, see Civil Plans.
8. Bottom of existing footing elevations based on historical documents and survey.
9. Contractor's means and methods to remove existing Piers 1, 2 and 4 to the specified limits is included in the cost of Removal of Existing Structures.



TYPICAL DECK CROSS SECTION

LEGEND

- Removal of Existing Structures
- Approach Slab Removal
- E — Existing Electrical Aerial Line
- CTV — Existing Cable TV Line
- Existing Electrical Pole
- Existing Utility Manhole

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Removal of Existing Structures	Each	1

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

S5-RemPlan&Elev.dgn	DESIGNED - MAA, KJD	REVISED	
USER NAME = Ken.drabant	DRAWN - MAA, KJD	REVISED	
PLOT SCALE = 24±0.0000 '±' / in.	CHECKED - MAI, MI	REVISED	
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE REMOVAL PLAN AND ELEVATION
STRUCTURE NO. 016-0539
SHEET S-05 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	19
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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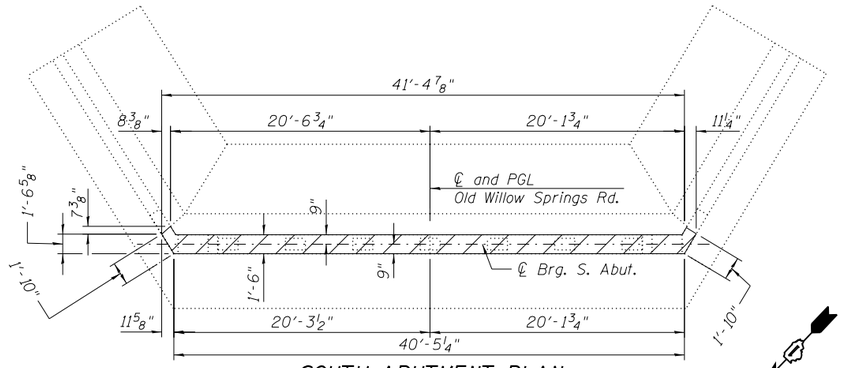
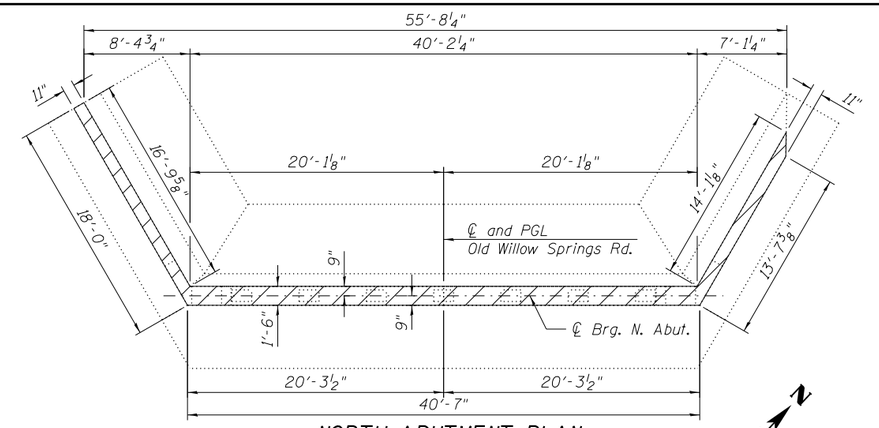
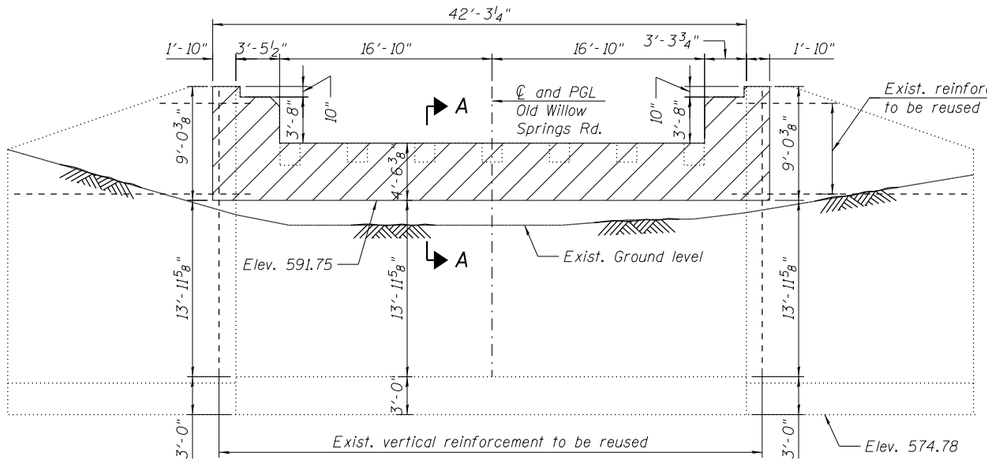


SOUTH ABUTMENT PLAN

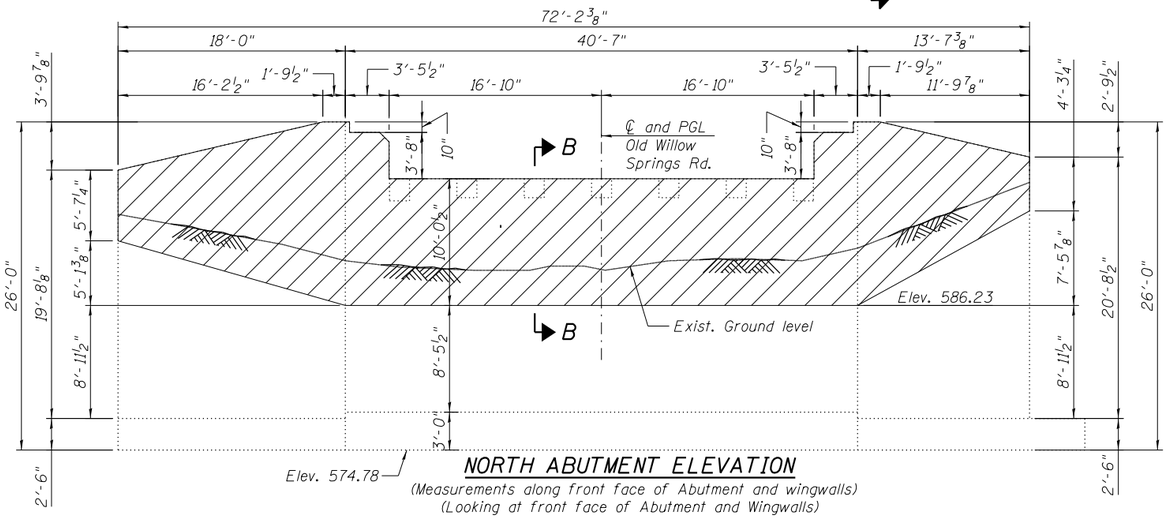


NORTH ABUTMENT PLAN



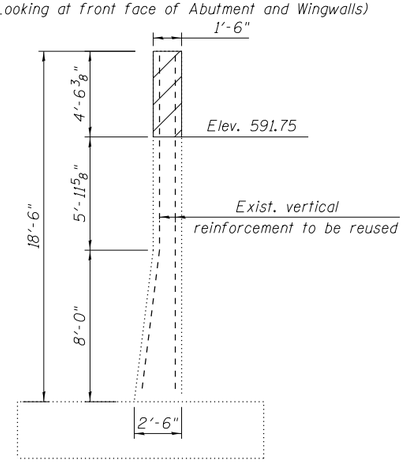
SOUTH ABUTMENT ELEVATION

(Measurements along front face of Abutment and wingwalls)
(Looking at front face of Abutment and Wingwalls)

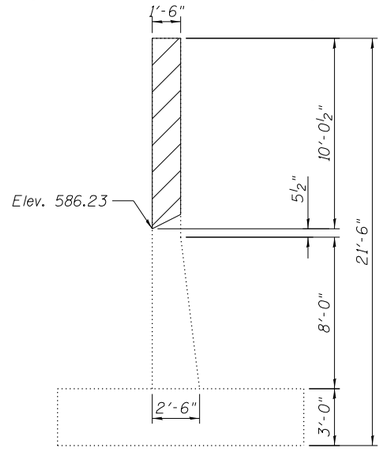


NORTH ABUTMENT ELEVATION

(Measurements along front face of Abutment and wingwalls)
(Looking at front face of Abutment and Wingwalls)



SECTION A-A



SECTION B-B

NOTES:

1. For additional notes, see Sheet S-05.
2. The existing North Abutment and wingwalls shall be removed as shown after the complete construction of the new North Abutment and wingwalls.

LEGEND

Existing Concrete to be removed
Cost included in Removal of
Existing Structures

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

S6-RemAbuts.dgn	DESIGNED - MAA, KJD	REVISED
USER NAME = Ken.drabant	DRAWN - MAA, KJD	REVISED
PLOT SCALE = 12.0 '' / in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE REMOVAL – NORTH AND SOUTH ABUTMENTS
STRUCTURE NO. 016-0539
SHEET S-06 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	20
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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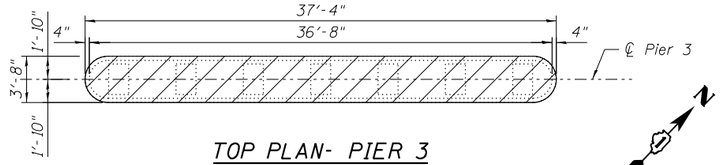
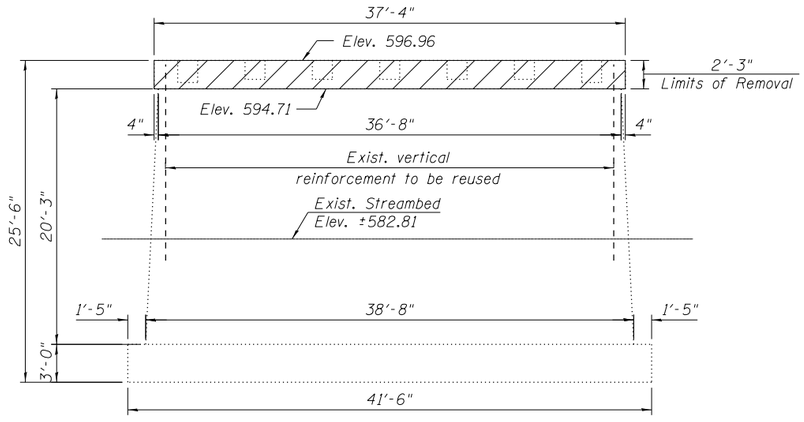
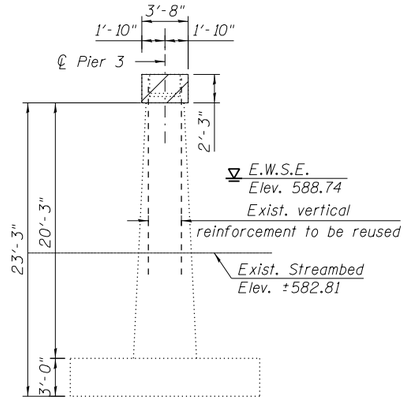


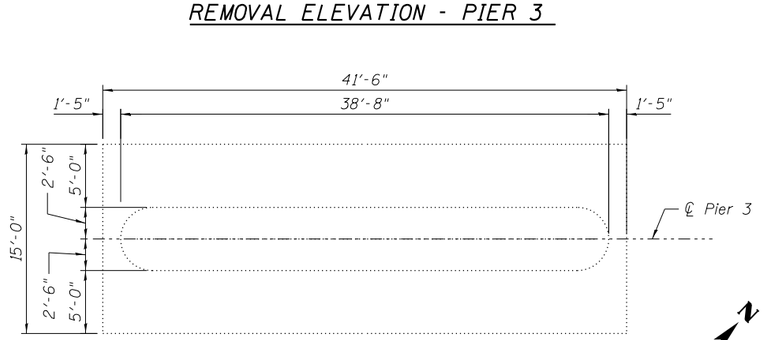
TOP PLAN- PIER 3



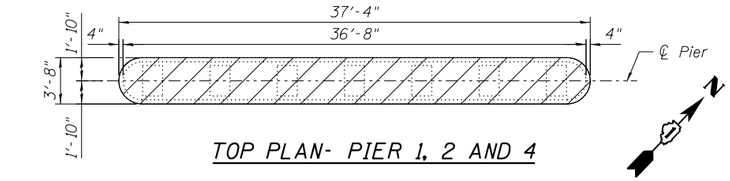
REMOVAL ELEVATION - PIER 3



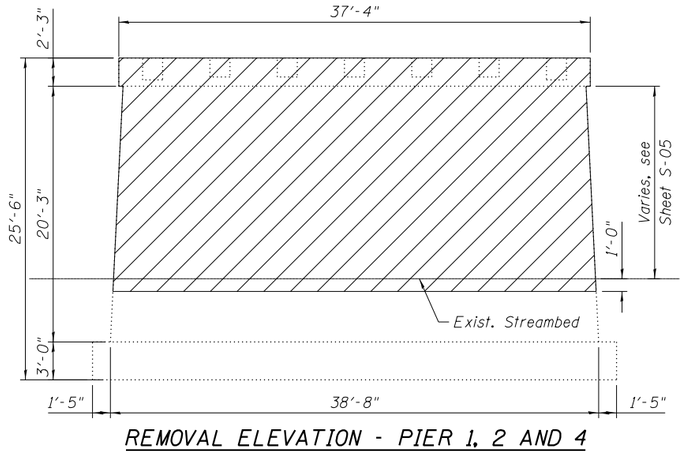
SIDE ELEVATION
PIER 3



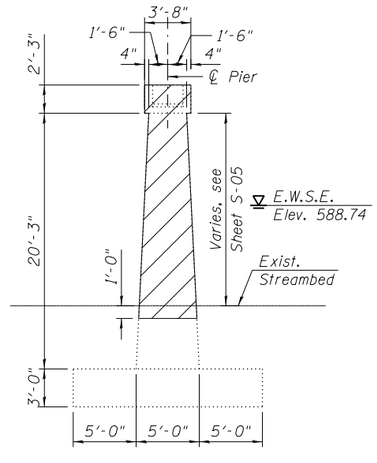
FOOTING PLAN- PIER 3



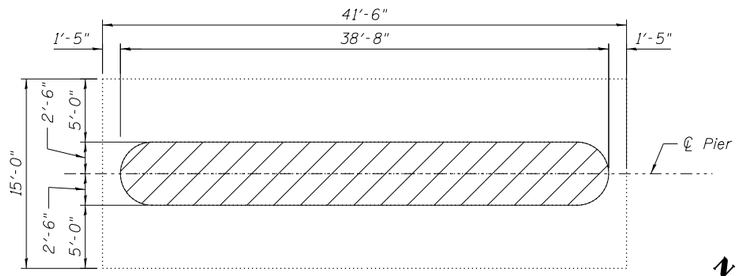
TOP PLAN- PIER 1, 2 AND 4



REMOVAL ELEVATION - PIER 1, 2 AND 4



SIDE ELEVATION
PIER 1, 2 AND 4



FOOTING PLAN- PIER 1, 2 AND 4

NOTES:

1. For additional Notes, see Sheet S-05.

LEGEND

Existing Concrete to be Removed
Cost included in Removal of
Existing Structures

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

S7-RemPiers.dgn	DESIGNED - MAA, KJD	REVISED
USER NAME = Ken.drabant	DRAWN - MAA, KJD	REVISED
PLOT SCALE = 12.0 '' / in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE REMOVAL – PIERS 1, 2, 3 AND 4
STRUCTURE NO. 016-0539
SHEET S-07 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	21
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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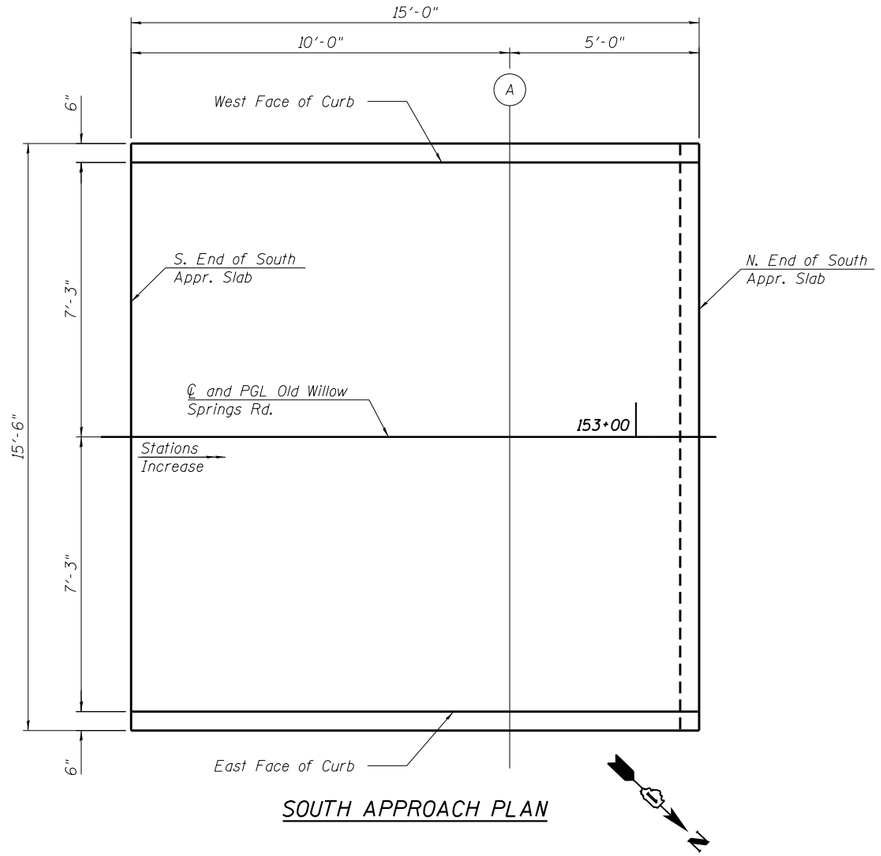
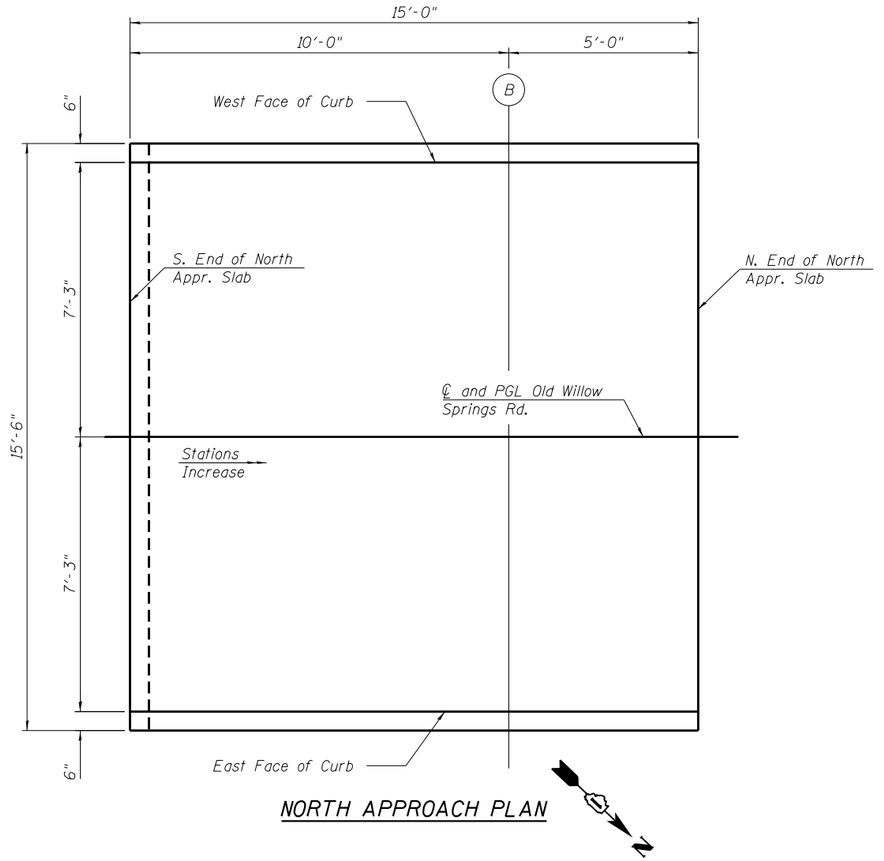


SOUTH APPROACH PLAN



NORTH APPROACH PLAN

WEST FACE OF CURB
(South Approach)

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	152+86.67	-7.25'	601.31
A	152+96.67	-7.25'	601.53
N. End of South Appr. Slab	153+01.67	-7.25'	601.65

℄ AND PGL OLD WILLOW SPRINGS RD.
(South Approach)

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	152+86.67	0.00'	601.31
A	152+96.67	0.00'	601.53
N. End of South Appr. Slab	153+01.67	0.00'	601.65

EAST FACE OF CURB
(South Approach)

Location	Station	Offset	Theoretical Grade Elevations
S. End of South Appr. Slab	152+86.67	7.25'	601.31
A	152+96.67	7.25'	601.53
N. End of South Appr. Slab	153+01.67	7.25'	601.65

WEST FACE OF CURB
(North Approach)

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	156+19.42	-7.25'	601.54
B	156+29.42	-7.25'	601.32
N. End of North Appr. Slab	156+34.42	-7.25'	601.21

℄ AND PGL OLD WILLOW SPRINGS RD.
(North Approach)

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	156+19.42	0.00'	601.54
B	156+29.42	0.00'	601.32
N. End of North Appr. Slab	156+34.42	0.00'	601.21

EAST FACE OF CURB
(North Approach)

Location	Station	Offset	Theoretical Grade Elevations
S. End of North Appr. Slab	156+19.42	7.25'	601.54
B	156+29.42	7.25'	601.32
N. End of North Appr. Slab	156+34.42	7.25'	601.21

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

S8-TopAppSlabElev.dgn	DESIGNED - KJD	REVISED
USER NAME = Ken.drabant	DRAWN - KJD	REVISED
PLOT SCALE = 4.00 '/ in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLABS ELEVATION LAYOUT AND TABLES
STRUCTURE NO. 016-0539
SHEET S-08 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	22
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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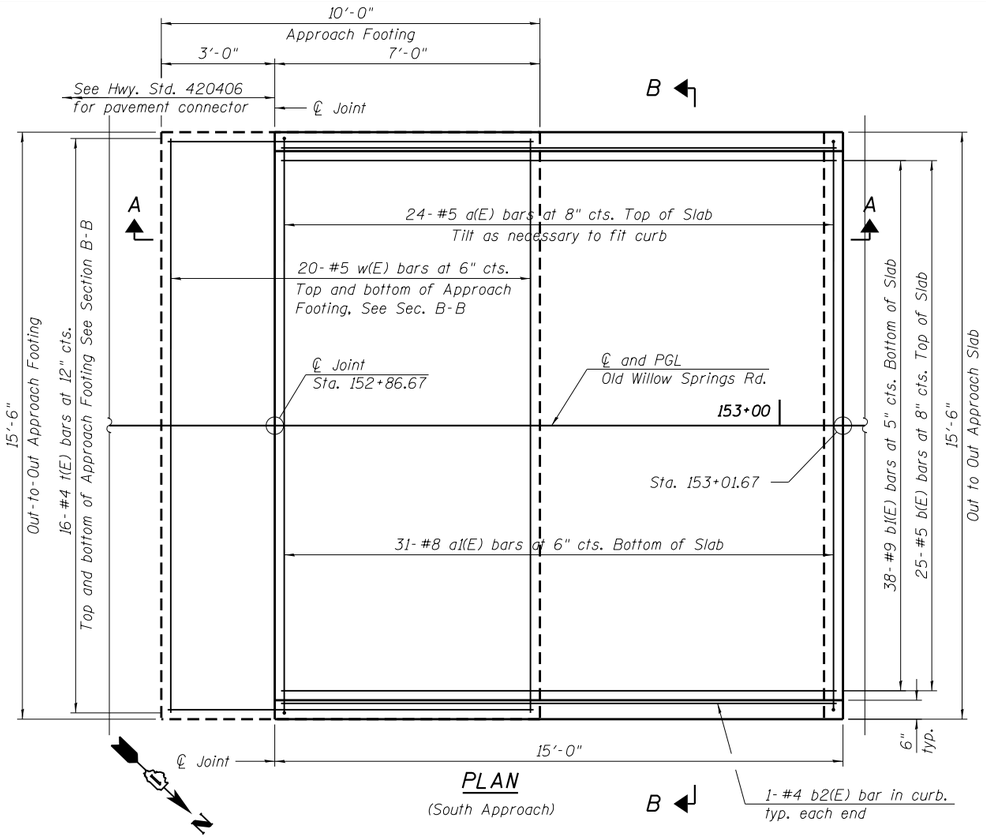
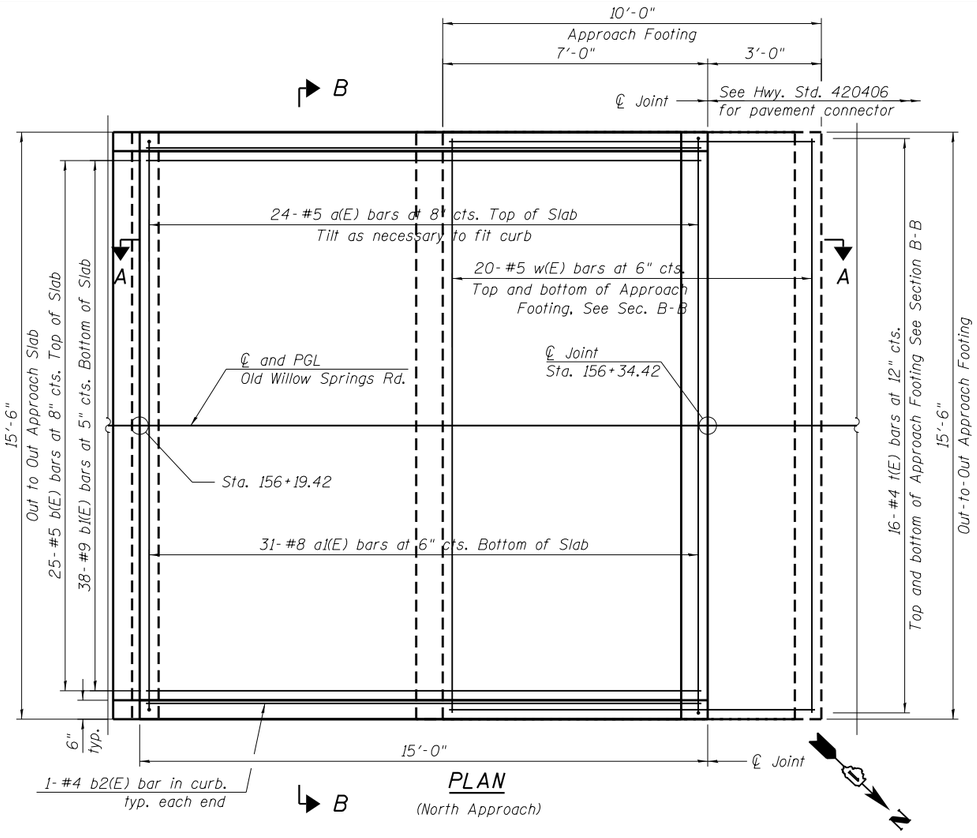


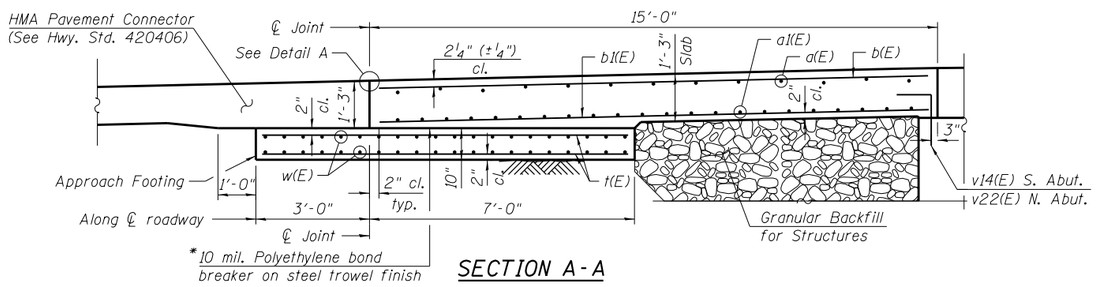


SOUTH APPROACH BILL OF MATERIAL

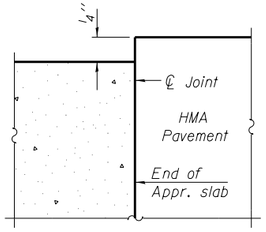
Bar	No.	Size	Length	Shape
a(E)	24	#5	15'-11"	
a1(E)	31	#8	15'-2"	
b(E)	25	#5	14'-8"	
b1(E)	38	#9	14'-8"	
b2(E)	2	#4	14'-8"	
t(E)	32	#4	9'-8"	
w(E)	40	#5	15'-2"	
Concrete Structures			Cu. Yd.	4.8
Protective Coat			Sq. Yd.	27
Concrete Superstructure (Approach Slab)			Cu. Yd.	11
Reinforcement Bars, Epoxy Coated			Pound	4,790

NORTH APPROACH BILL OF MATERIAL

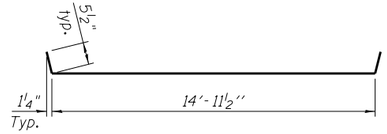
Bar	No.	Size	Length	Shape
a(E)	24	#5	15'-11"	
a1(E)	31	#8	15'-2"	
b(E)	25	#5	14'-8"	
b1(E)	38	#9	14'-8"	
b2(E)	2	#4	14'-8"	
t(E)	32	#4	9'-8"	
w(E)	40	#5	15'-2"	
Concrete Structures			Cu. Yd.	4.8
Protective Coat			Sq. Yd.	27
Concrete Superstructure (Approach Slab)			Cu. Yd.	11
Reinforcement Bars, Epoxy Coated			Pound	4,790



SECTION A-A

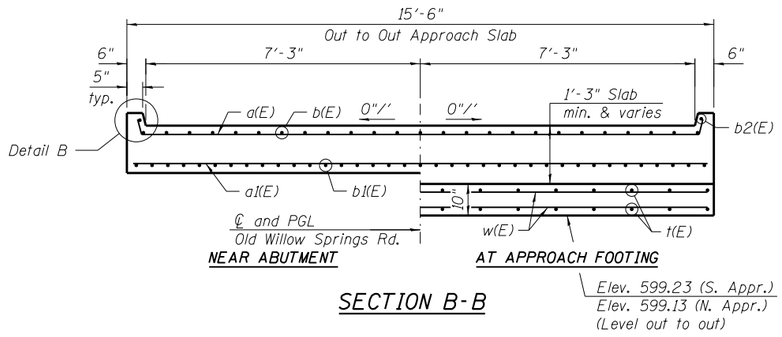


DETAIL A

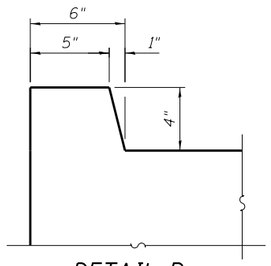


BAR a(E)

* Cost included with Concrete Superstructure (Approach Slab)



SECTION B-B



DETAIL B

NOTES:

1. Approach slab concrete shall be paid for as Concrete Superstructure (Approach Slab).
2. Approach footing concrete shall be paid for as Concrete Structures.
3. For v14(E) and v22(E) bar details, see Sheets S-12 and S-16, respectively.
4. The approach footing maximum applied bearing pressure (Qmax)=2.0 ksf.
5. Cost of excavation for approach footing included with Concrete Structures.
6. For Granular Backfill for Structures see Sheets S-12 and S-17.

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

S9-AppSlabDet.dgn	DESIGNED - KJD, SK	REVISED
USER NAME = Ken.drabant	DRAWN - KJD, SK	REVISED
PLOT SCALE = 4±0.0000 '± / in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLABS DETAILS
STRUCTURE NO. 016-0539
SHEET S-09 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	23
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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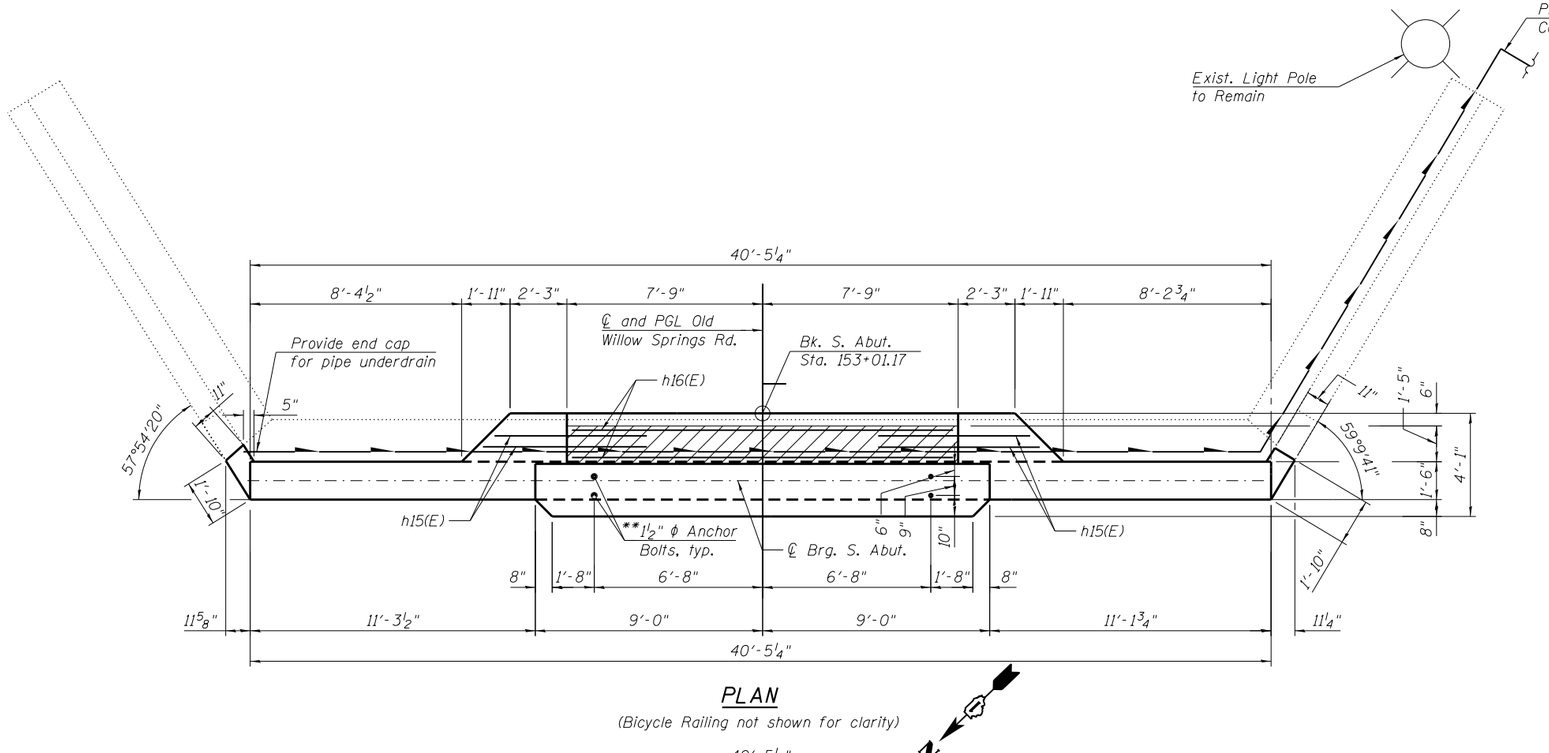
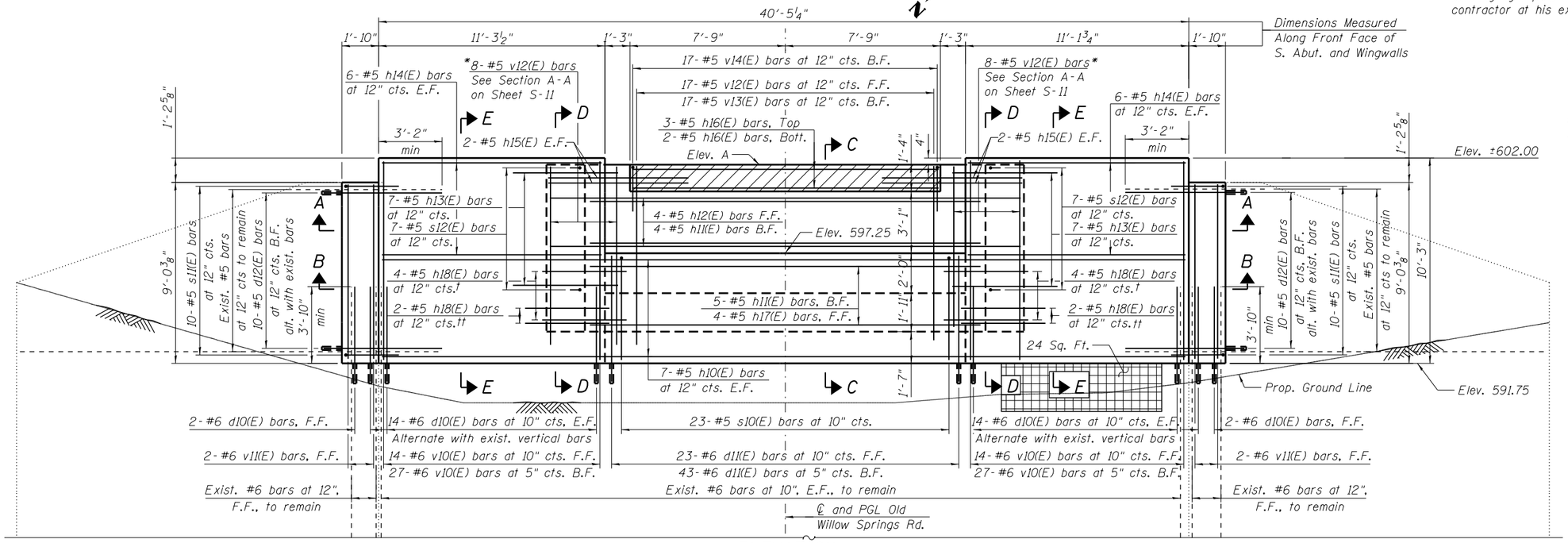


PLAN

(Bicycle Railing not shown for clarity)



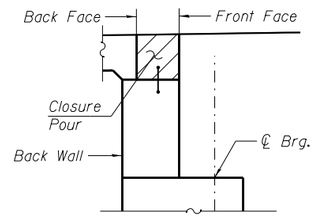
ELEVATION

(Looking South)
(Bicycle Railing not shown for clarity)

NOTES:

1. For anchor bolt layout, see pedestrian Truss Superstructure sheets prepared by the manufacturer.
2. For Sections A-A, B-B, C-C, D-D and E-E, see Sheet S-11.
3. For Bar Diagrams, Bill of Materials, Minimum Bar Laps, Structure Excavation and Granular Backfill, see Sheet S-12.
4. Space reinforcement to miss anchor bolts.
5. Reinforcement bars shall be equally spaced unless otherwise noted.
6. The d10(E), d11(E) and d12(E) bars are to be drilled and epoxy grouted in accordance with Section 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Structures.
7. Existing reinforcement bars shall be cleaned, straightened and incorporated into the new construction. Any damaged reinforcement bars during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Removal of Existing Structures.
8. All exposed surfaces of backwalls, bridge seats, wingwalls, and front faces of abutment stems shall be treated with Concrete Sealer. Concrete Sealer shall only be applied to new concrete.
9. The abutment seat elevation shall be coordinated with the requirements of the Pedestrian Truss Superstructure with approval from the Engineer.
10. The contractor shall exercise extreme caution during construction to make certain that construction activities, Structure Excavation, and installation of Pipe Underdrains for Structures will not have detrimental effects on the existing light pole. Any damage to the existing light pole during construction shall be repaired by the contractor at his expense at no charge to IDOT.

* Cut to fit in field
** Anchor bolt size and locations shall be checked against the Pedestrian Truss Superstructure Fabricator's requirements prior to setting them.
† Lap with h17(E) bars F.F.
†† Lap with h11(E) bars B.F.



TOP OF BACKWALL (CLOSURE POUR)

POINT	FRONT FACE	BACK FACE
Elevation A	601.68	601.65

LEGEND:

Structural Repair of Concrete (Depth Equal to or Less Than 5")

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

S10-SAbutPlan&Elev.dgn	DESIGNED - SK, MAA	REVISED
USER NAME = Kendrabant	DRAWN - SK, MAA	REVISED
PLOT SCALE = 6.0.0000 '/ in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 016-0539
SHEET S-10 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	24
		CONTRACT NO. 62B99		
ILLINOIS FED. AID PROJECT				

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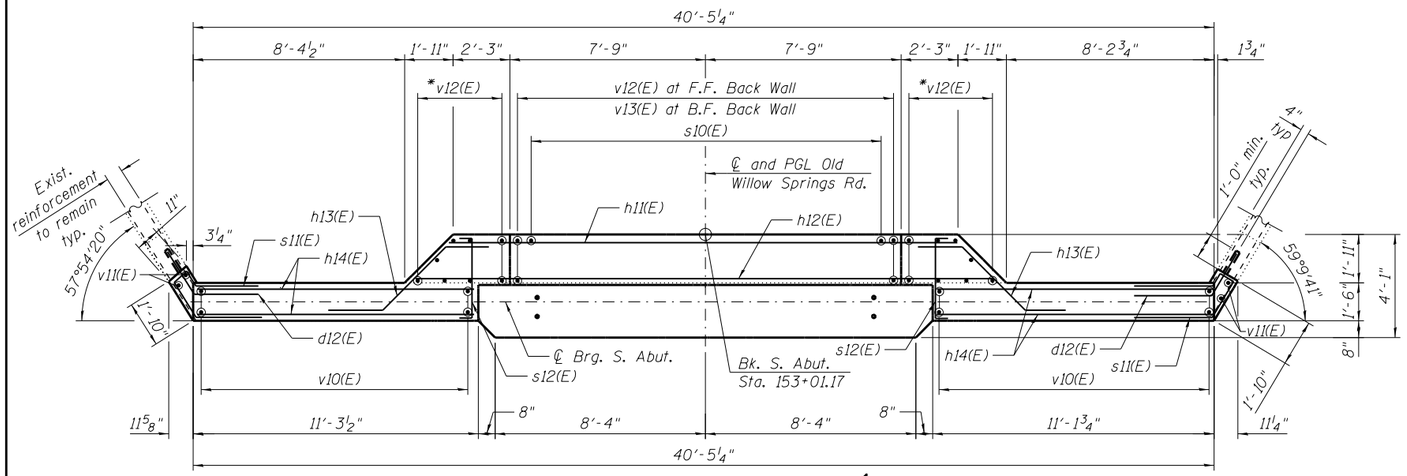
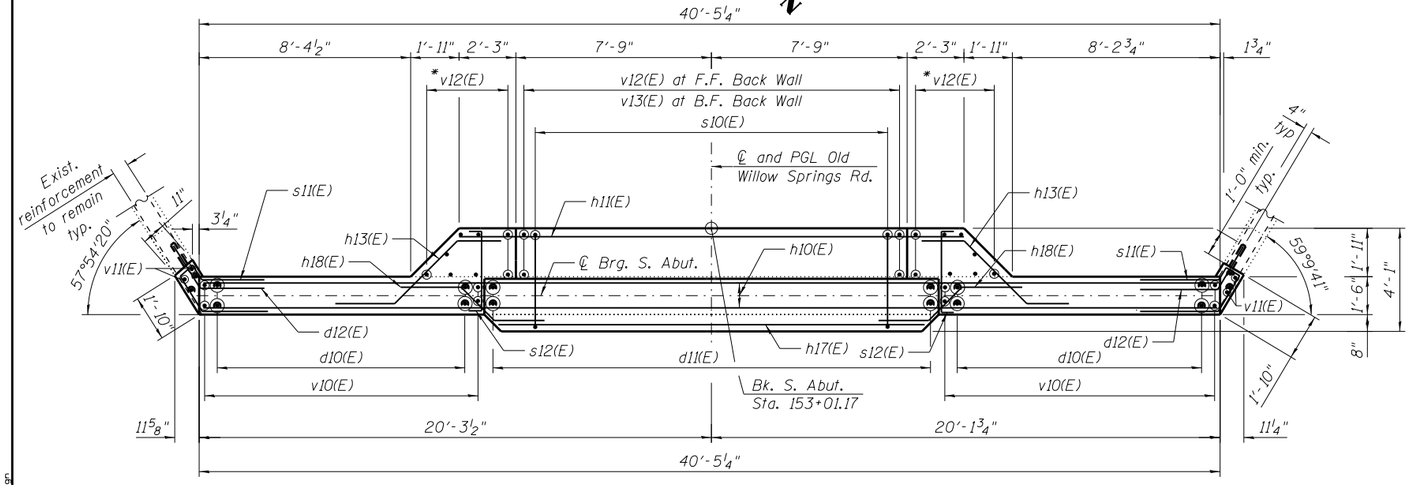


SECTION A-A

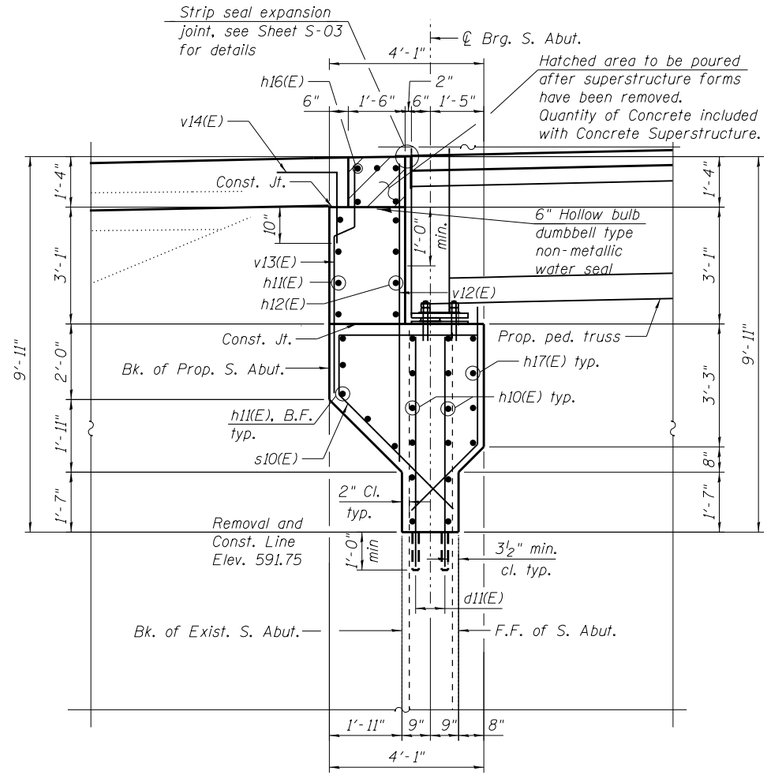


SECTION B-B

* Bend to fit in field

NOTES:

1. For 4'-6" Bicycle Railing, see Sheets S-13 and S-14.
2. For additional Notes, see Sheet S-10.



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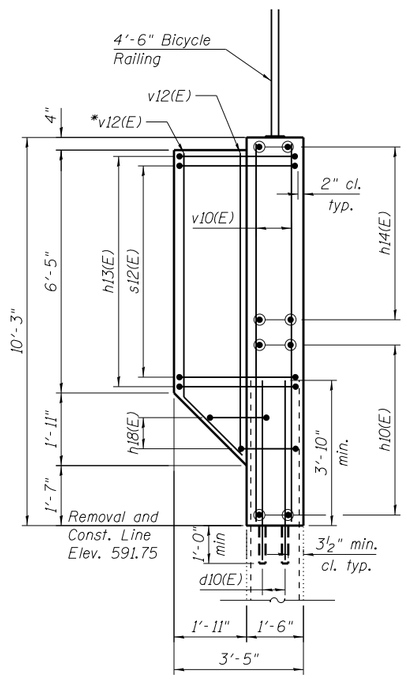

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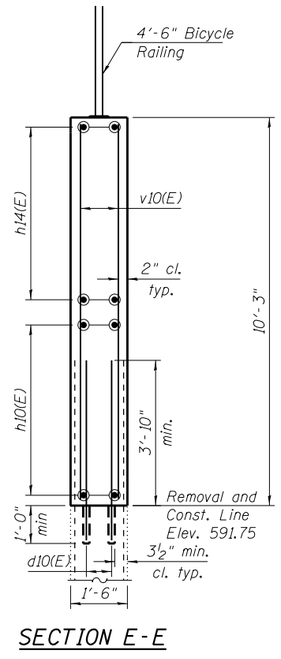

SECTION E-E

HBM ENGINEERING GROUP, LLC. CONSULTING & DESIGN INSPECTION & RATING RESEARCH & TESTING — 4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162 PHONE: (708) 236-0900 FAX: (708) 236-0901	S11-SAbutSec&Detl.dgn	DESIGNED - SK, MAA	REVISED
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	PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT SECTIONS AND DETAILS (SHEET 1 OF 2)
STRUCTURE NO. 016-0539
SHEET S-11 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	25
		CONTRACT NO. 62B99		
	ILLINOIS	FED. AID PROJECT		

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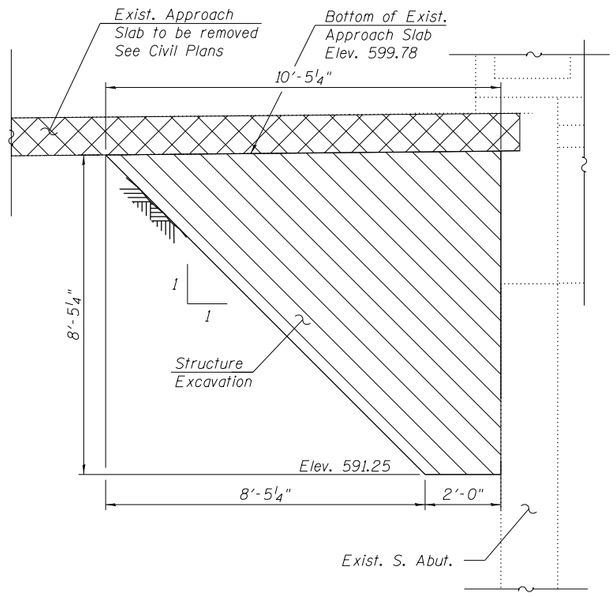
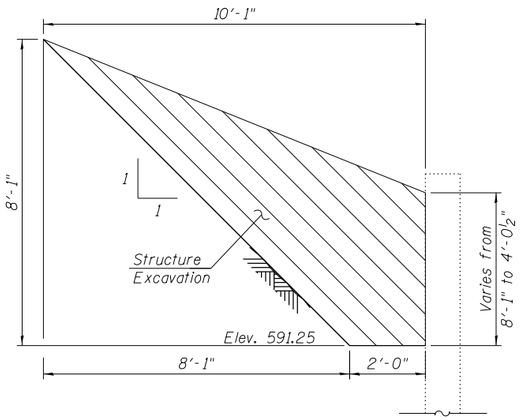
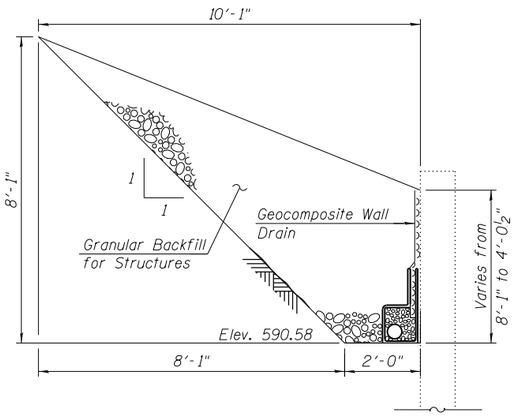


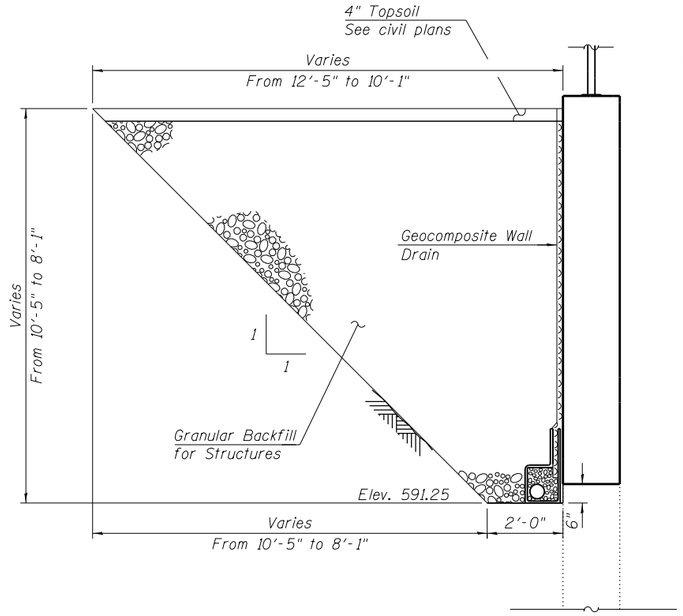
STRUCTURE EXCAVATION AT ABUTMENT AND ABUTMENT ENDS



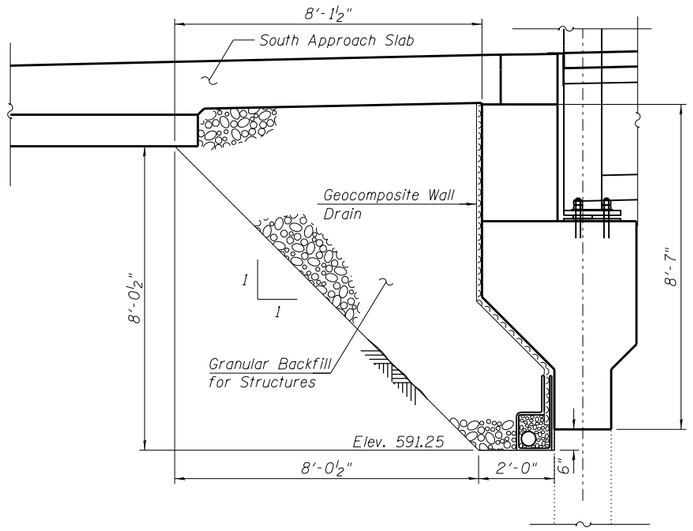
STRUCTURE EXCAVATION AT SOUTHWEST WINGWALL



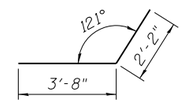
GRANULAR BACKFILL AT SOUTHWEST WINGWALL



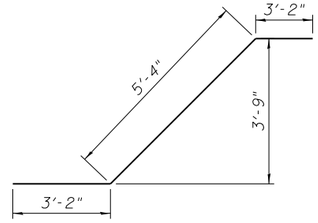
GRANULAR BACKFILL AT ABUTMENT ENDS



GRANULAR BACKFILL AT ABUTMENT



d12(E)



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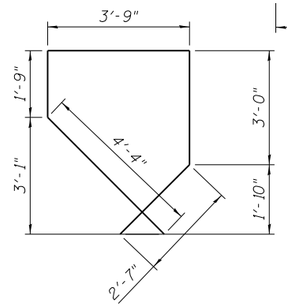

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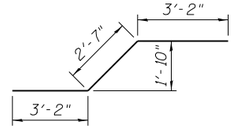

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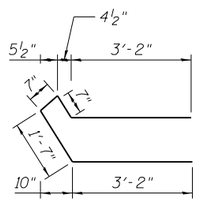

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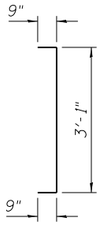

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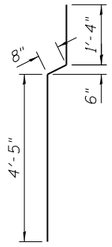
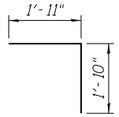


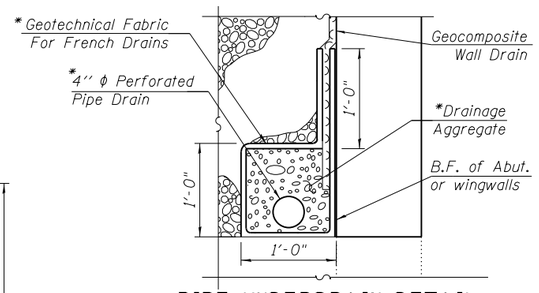
v13(E)



v14(E)

BILL OF MATERIAL

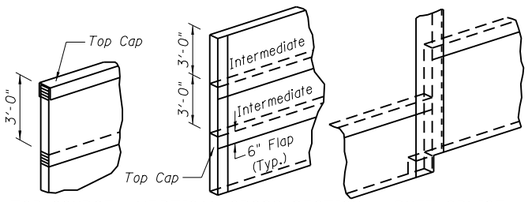
Bar	No.	Size	Length	Shape
d10(E)	60	#6	4'-10"	
d11(E)	66	#6	6'-4"	
d12(E)	20	#5	5'-10"	
h10(E)	14	#5	40'-1"	
h11(E)	9	#5	19'-10"	
h12(E)	4	#5	23'-6"	
h13(E)	14	#5	11'-8"	
h14(E)	24	#5	11'-0"	
h15(E)	8	#5	6'-10"	
h16(E)	5	#5	15'-2"	
h17(E)	4	#5	16'-4"	
h18(E)	12	#5	8'-11"	
s10(E)	23	#5	15'-5"	
s11(E)	20	#5	9'-1"	
s12(E)	14	#5	4'-7"	
v10(E)	82	#6	9'-11"	
v11(E)	4	#6	8'-8"	
v12(E)	33	#5	8'-0"	
v13(E)	17	#5	6'-6"	
v14(E)	17	#5	3'-9"	
Stone Riprap, Class A5		Sq. Yd.	219	
Filter Fabric		Sq. Yd.	219	
Structure Excavation		Cu. Yd.	118	
Concrete Structures		Cu. Yd.	30.8	
Concrete Superstructure		Cu. Yd.	1.2	
Protective Coat		Sq. Yd.	3	
Reinforcement Bars, Epoxy Coated		Pound	5,180	
Concrete Sealer		Sq. Ft.	526	
Geocomposite Wall Drain		Sq. Yd.	60	
Granular Backfill for Structures		Cu. Yd.	135	
Structural Repair of Concrete (Depth Equal to or Less Than 5")		Sq. Ft.	24	
Pipe Underdrains For Structures 4"		Foot	60	



PIPE UNDERDRAIN DETAIL

*Cost included with "Pipe Underdrains for Structures, 4"

Minimum Bar Laps		
Bar	Lap	
	s < 6"	s >= 6"
#4	2'-7"	2'-7"
#5	3'-4"	3'-2"
#6	4'-9"	3'-10"
#7	5'-6"	4'-5"
#8	7'-2"	5'-1"



TOP COURSE VERTICAL CROSS SECTION BUTT SPLICE

GEOCOMPOSITE WALL DRAIN DETAILS

NOTES:

1. For additional notes, see Sheet S-10.
2. All drainage system components shall extend 2'-0" from the end of the southwest wingwall except an outlet pipe shall extend until intersecting with the side slopes. The outlet pipe shall drain into concrete headwall. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

LEGEND:

Granular Backfill for Structures

Structure Excavation

Approach Slab Removal (See Civil Plans)

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4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162
PHONE: (708) 236-0900 FAX: (708) 236-0901

S12-SAbutSec&Det2.dgn	DESIGNED - SK, MAA	REVISED
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PLOT DATE = 12/8/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT SECTIONS AND DETAILS (SHEET 2 OF 2)
STRUCTURE NO. 016-0539
SHEET S-12 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	26
		CONTRACT NO. 62B99		
		ILLINOIS FED. AID PROJECT		

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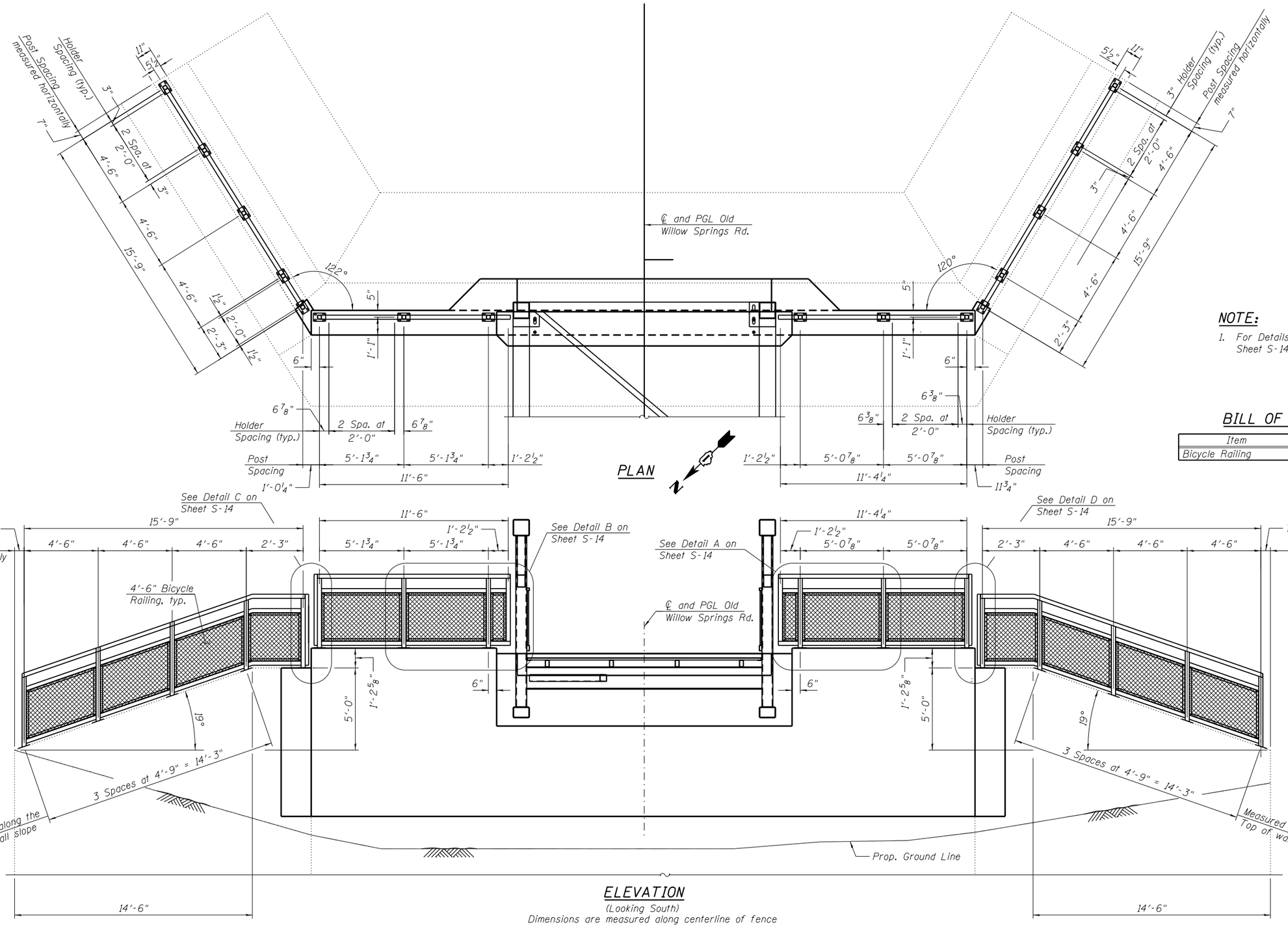

NOTE:

1. For Details A Thru D. See Sheet S-14.

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	58

ELEVATION

(Looking South)
Dimensions are measured along centerline of fence

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4415 WEST HARRISON ST.
SUITE 231
HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901

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PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT BICYCLE RAILING PLAN AND ELEVATION
STRUCTURE NO. 016-0539
SHEET S-13 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	ILLINOIS FED. AID PROJECT			

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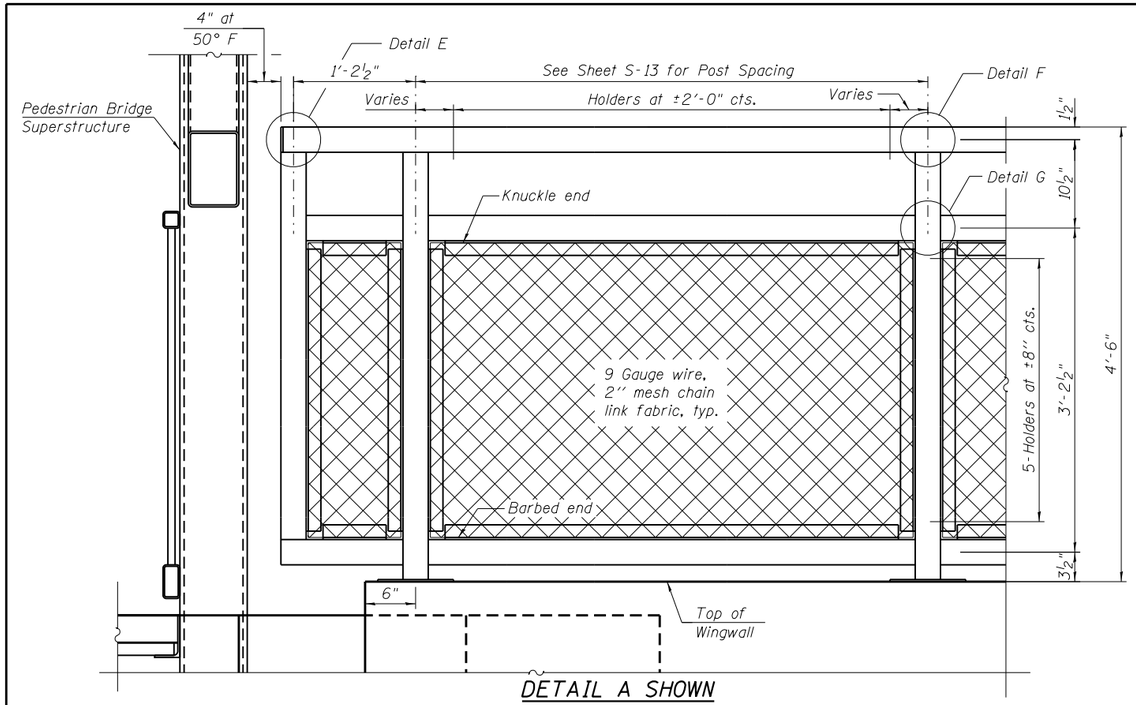
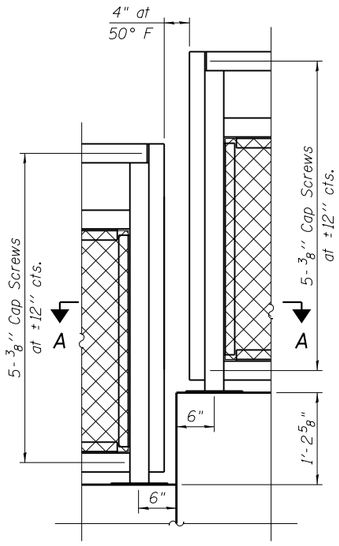
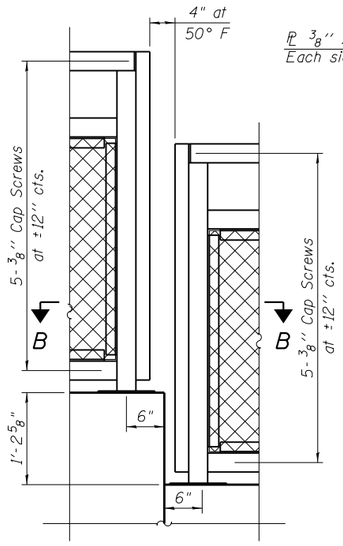


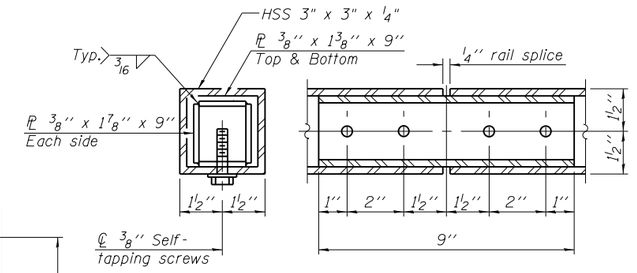
DETAIL A SHOWN
DETAIL B OPPOSITE HAND



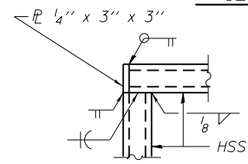
DETAIL C



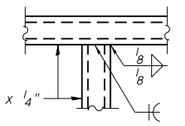
DETAIL D



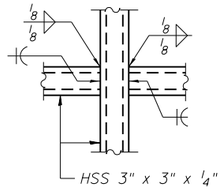
RAIL SPLICE



DETAIL E



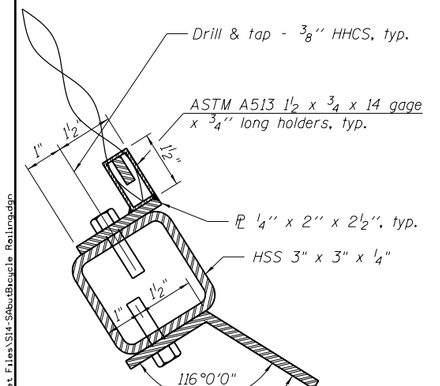
DETAIL F

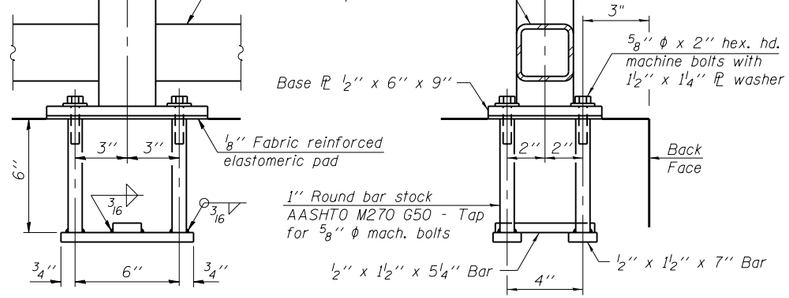


DETAIL G

NOTES:

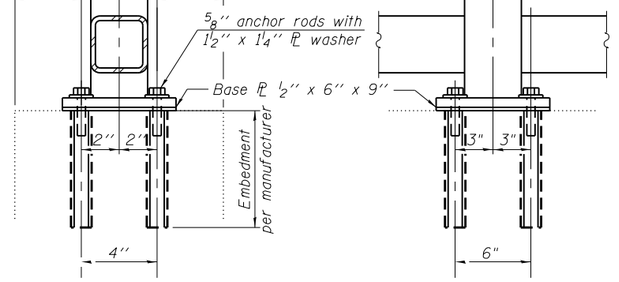
1. All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
2. All structural steel tubing, post and railing, for parapet railing shall be CVN tested according to 1006.34(b) of the Standard Specifications.
3. Reinforcement shall be spaced to miss anchor bolts.
4. For locations of Detail A thru D, See Sheet S-13.





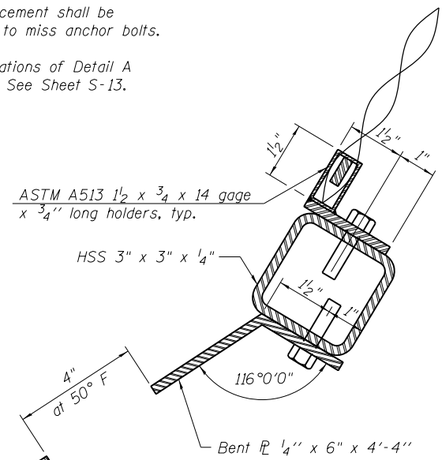
ANCHOR BOLT DETAILS IN NEW CONCRETE

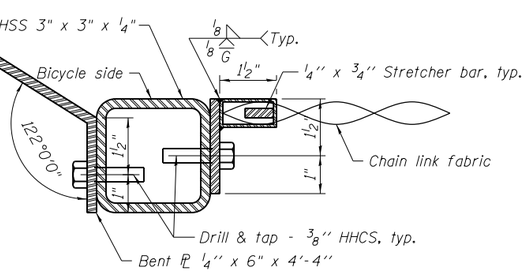
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



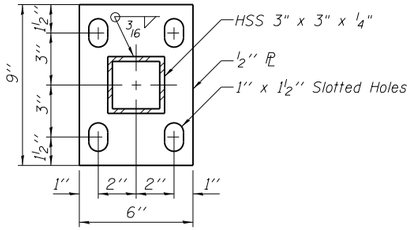
ANCHOR BOLT DETAILS IN EXISTING CONCRETE

The Contractor shall perform drilling and setting ⅝" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

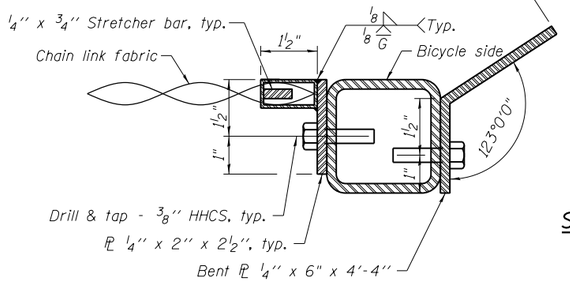




SECTION A-A



BASE PL



SECTION B-B

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

S14-SAbutBicycle Railing.dgn	DESIGNED - KJD	REVISED
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PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT BICYCLE RAILING DETAILS
STRUCTURE NO. 016-0539
SHEET S-14 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	28
		CONTRACT NO. 62B99		
	ILLINOIS	FED. AID PROJECT		

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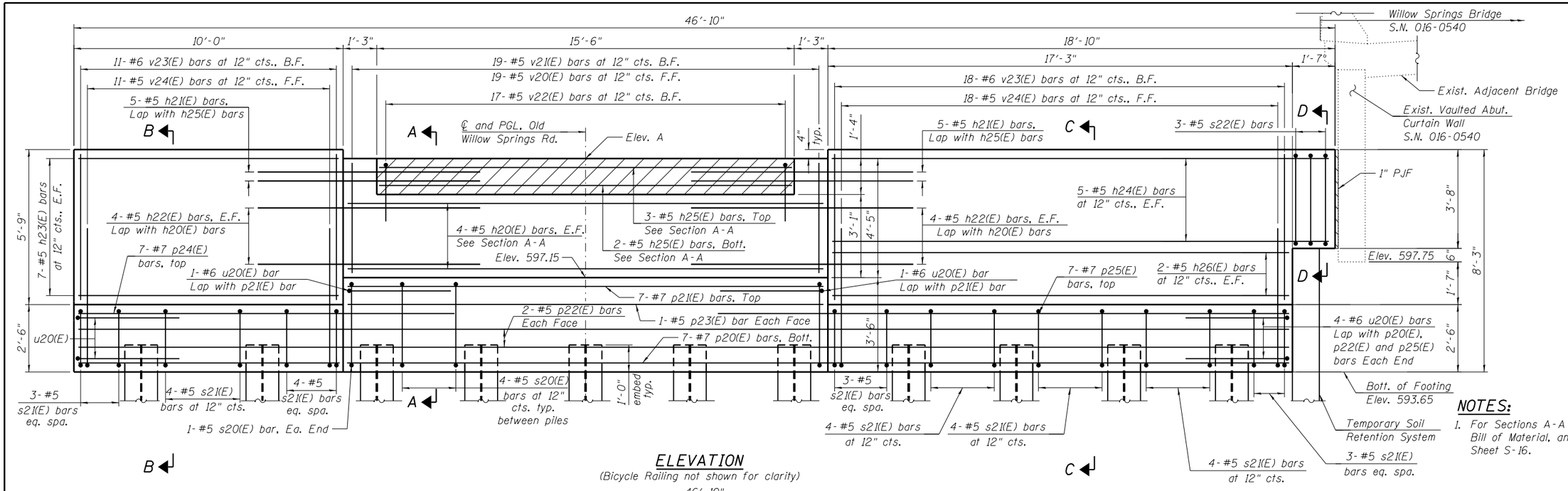
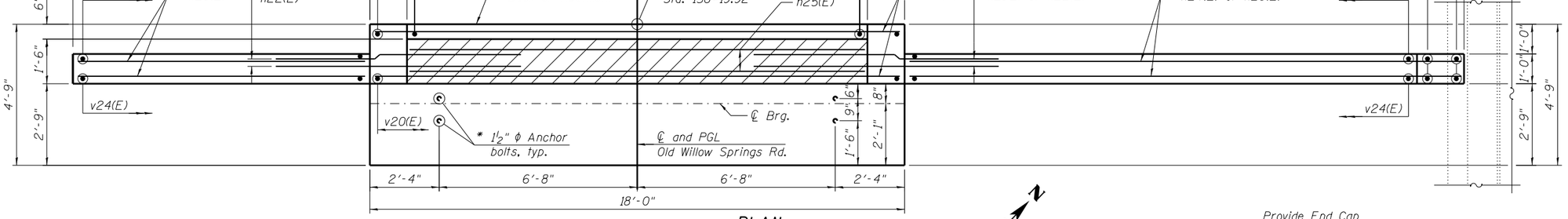


ELEVATION

(Bicycle Railing not shown for clarity)

NOTES:

1. For Sections A-A thru E-E, Bar Diagrams, Bill of Material, and additional notes, see Sheet S-16.

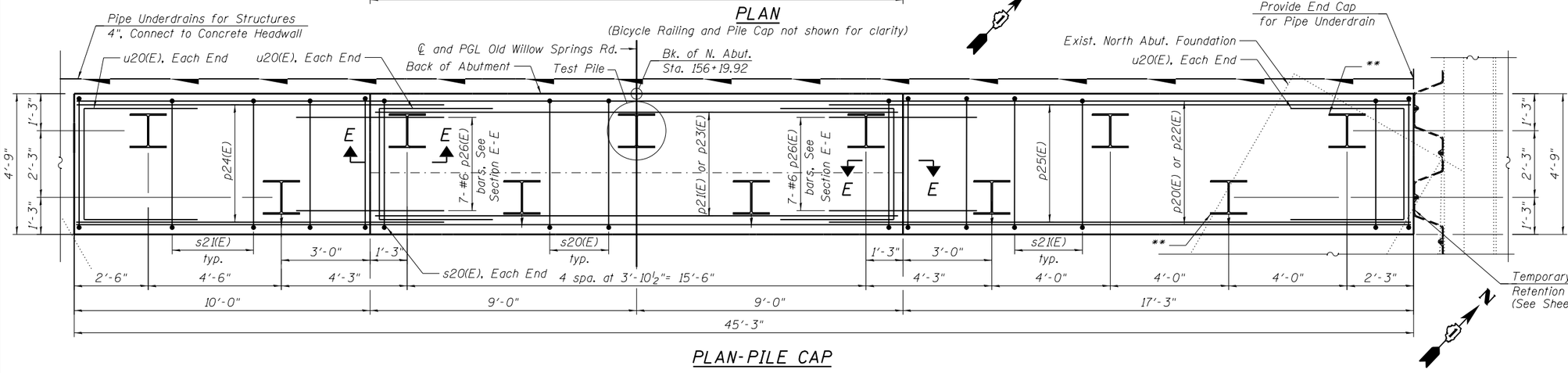


* Anchor bolt size and locations shall be checked against the Pedestrian Truss Superstructure Manufacturer's requirements prior to setting them.

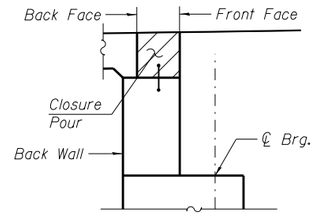
** See Note 9 on Sheet S-16.

PLAN

(Bicycle Railing and Pile Cap not shown for clarity)



PLAN-PILE CAP



TOP OF BACKWALL (CLOSURE POUR)

POINT	FRONT FACE	BACK FACE
Elevation A	601.58	601.55

PILE DATA

Type: Steel HP 14X73
Nominal Required Bearing: 145 k
Factored Resistance Available: 80 k
Estimated Length: 26 ft
No Production Piles: 10
No. Test Piles: 1

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RESEARCH & TESTING
4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901

S15-NAbutPlan&Elev.dgn	DESIGNED - MI, SK	REVISED
USER NAME = Ken.drabant	DRAWN - SK	REVISED
PLOT SCALE = 4.0 '/ in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 016-0539
SHEET S-15 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	29
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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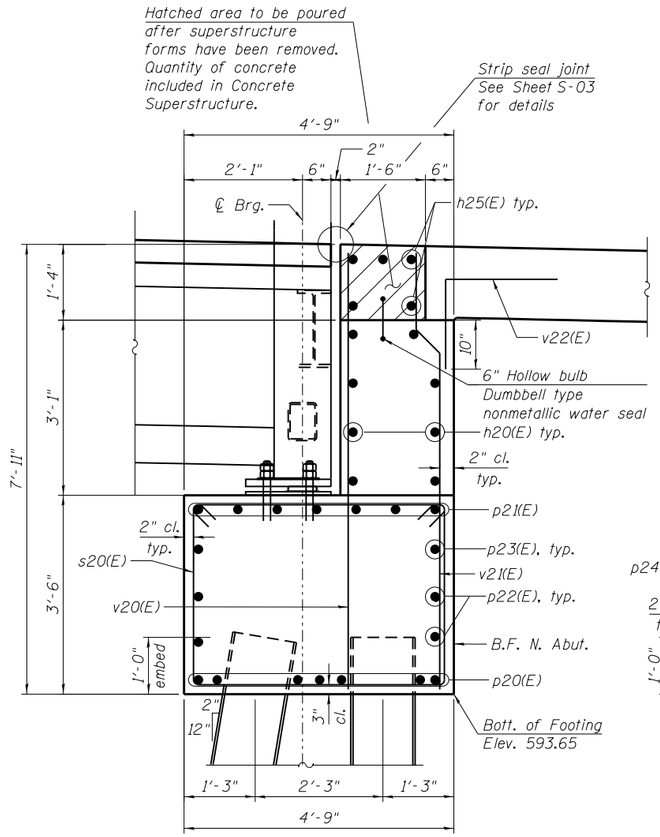
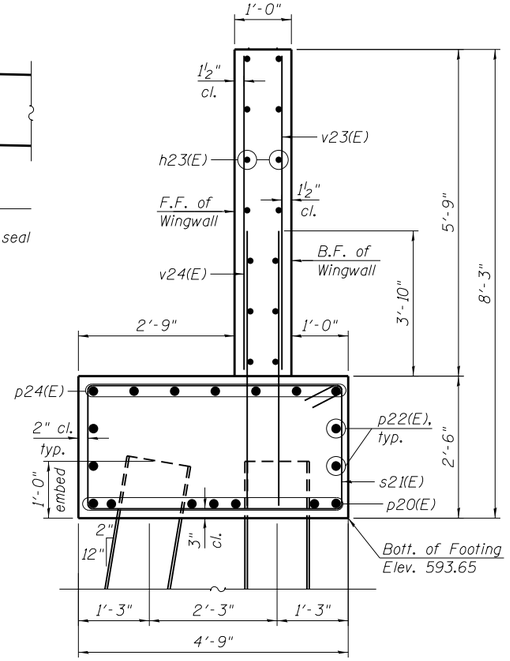
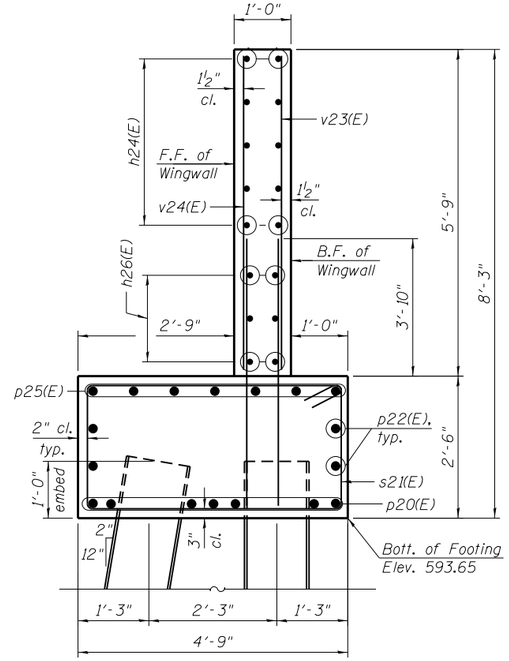


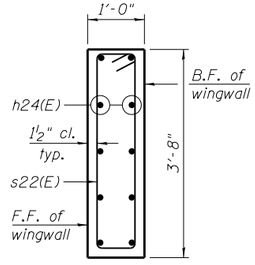
SECTION A-A



SECTION B-B



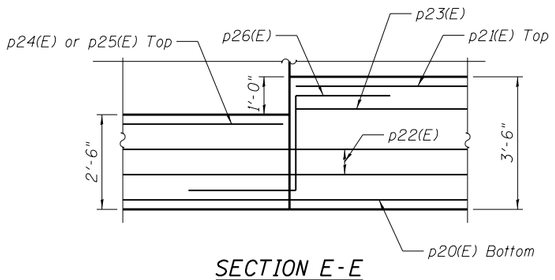
SECTION C-C



SECTION D-D

BILL OF MATERIAL

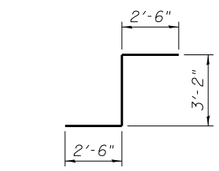
Bar	No.	Size	Length	Shape
h20(E)	8	#5	17'-8"	
h21(E)	10	#5	7'-7"	
h22(E)	16	#5	6'-4"	
h23(E)	14	#5	9'-8"	
h24(E)	10	#5	18'-6"	
h25(E)	5	#5	15'-2"	
h26(E)	4	#5	16'-11"	
p20(E)	7	#7	44'-11"	
p21(E)	7	#7	17'-8"	
p22(E)	4	#5	44'-11"	
p23(E)	2	#5	17'-8"	
p24(E)	7	#7	15'-1"	
p25(E)	7	#7	23'-2"	
p26(E)	14	#6	8'-1"	
s20(E)	18	#5	15'-11"	
s21(E)	29	#5	13'-11"	
s22(E)	3	#5	8'-11"	
u20(E)	10	#6	12'-1"	
v20(E)	19	#5	7'-6"	
v21(E)	19	#5	7'-8"	
v22(E)	17	#5	3'-9"	
v23(E)	29	#6	7'-10"	
v24(E)	29	#5	7'-10"	
Concrete Structures		Cu. Yd.	33.5	
Concrete Superstructure		Cu. Yd.	1.2	
Protective Coat		Sq. Yd.	3	
Reinforcement Bars, Epoxy Coated		Pound	4,530	
Furnishing Steel Piles HP14x73		Foot	260	
Driving Piles HP14x73		Foot	260	
Test Pile Steel HP14x73		Each	1	
Pile Shoes		Each	11	
Concrete Sealer		Sq. Ft.	303	



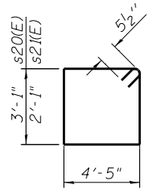
SECTION E-E

NOTES:

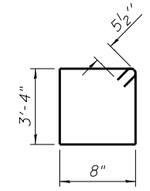
1. For anchor bolt layout, see Pedestrian Truss Superstructure sheets prepared by the manufacturer.
2. Space reinforcement to miss anchor bolts.
3. All exposed surfaces of backwalls, bridge seats, wingwalls and front faces of pile caps shall be treated with Concrete Sealer.
4. For HP Pile details, see Sheet S-21.
5. The abutment seat elevation shall be coordinated with the requirements of the Pedestrian Truss Superstructure with approval from the Engineer.
6. For temporary soil retention system, see Sheet S-04.
7. For existing structure removal details, see Sheets S-05 and S-06.
8. The portion of the existing North Abutment and wingwalls to be removed shall be removed after the complete construction of the new North Abutment and wingwalls.
9. If the Contractor determines partial removal of structural elements is required for means/methods of construction, a structural analysis/detailed drawings and plans shall be submitted for review and approval by Engineer. This cost shall be included in Removal of Existing Structures.
10. Holes shall be precored through the existing abutment footing for piles which are to be driven past the existing abutment footing according to Article 512.09 of the Standard Specifications. If oversize holes are drilled, the void space outside of the pile shall be filled with dry, loose sand. Cost included in the cost of the Driving Piles.
11. According to the existing plans, the thickness of the existing abutment footing is approximately 3'-0", with one layer of #6 reinforcement at the top of the footing, spaced at 6" cts.



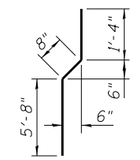
BAR p26(E)



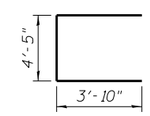
BARS s20(E) & s21(E)



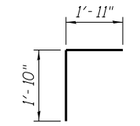
BARS s22(E)



BAR v21(E)



BAR u20(E)



BAR v22(E)

Minimum Bar Laps		
Bar	Lap	
	s < 6"	s >= 6"
#4	2'-7"	2'-7"
#5	3'-4"	3'-2"
#6	4'-9"	3'-10"
#7	5'-6"	4'-5"
#8	7'-2"	5'-1"

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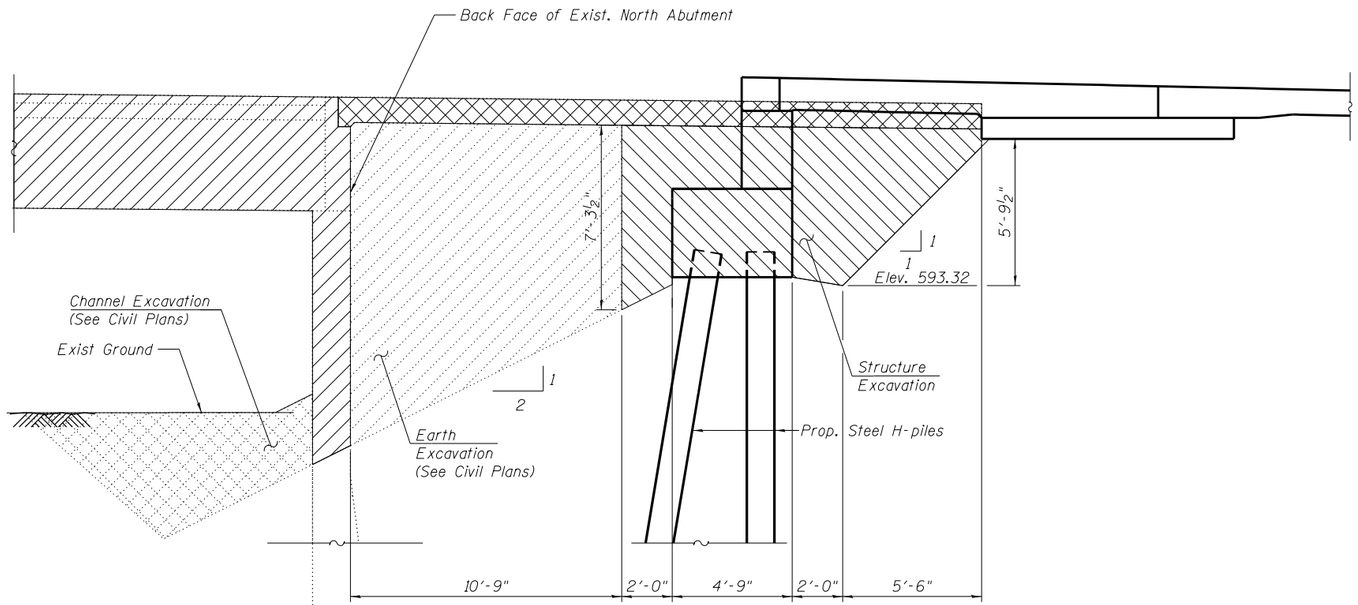
4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162
PHONE: (708) 236-0900 FAX: (708) 236-0901

S16-NAbutSec&Det.dgn	DESIGNED - MI, SK	REVISED
USER NAME = Ken.drabant	DRAWN - SK	REVISED
PLOT SCALE = 4:0 ':' / in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

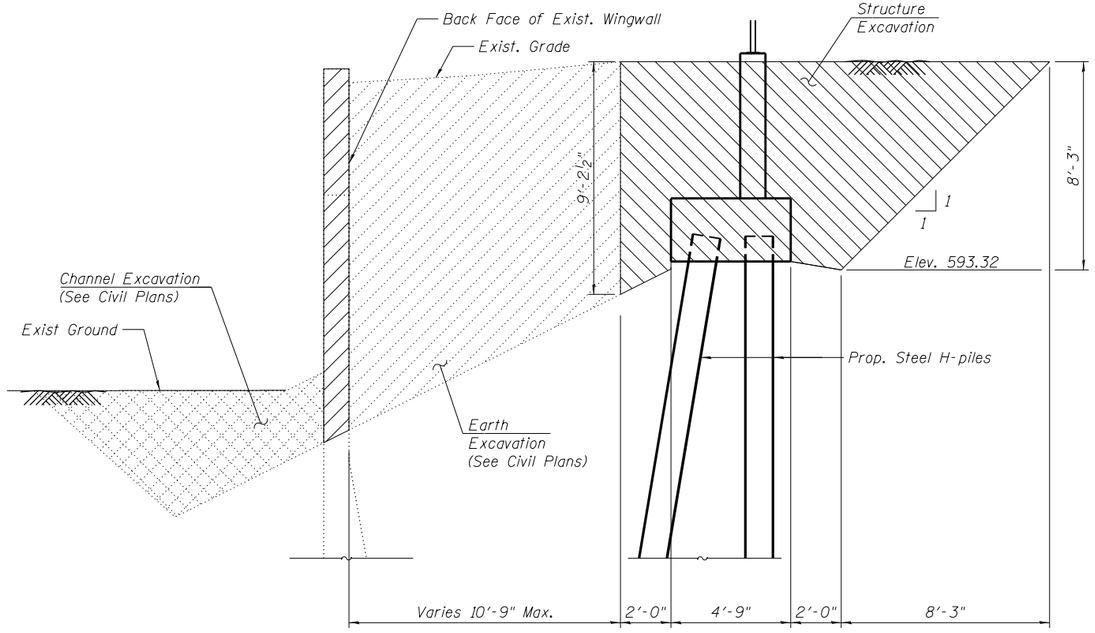
NORTH ABUTMENT SECTIONS AND DETAILS
STRUCTURE NO. 016-0539
SHEET S-16 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	30
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			



STRUCTURE EXCAVATION - ABUTMENT

Pedestrian Truss Superstructure not shown for Clarity)



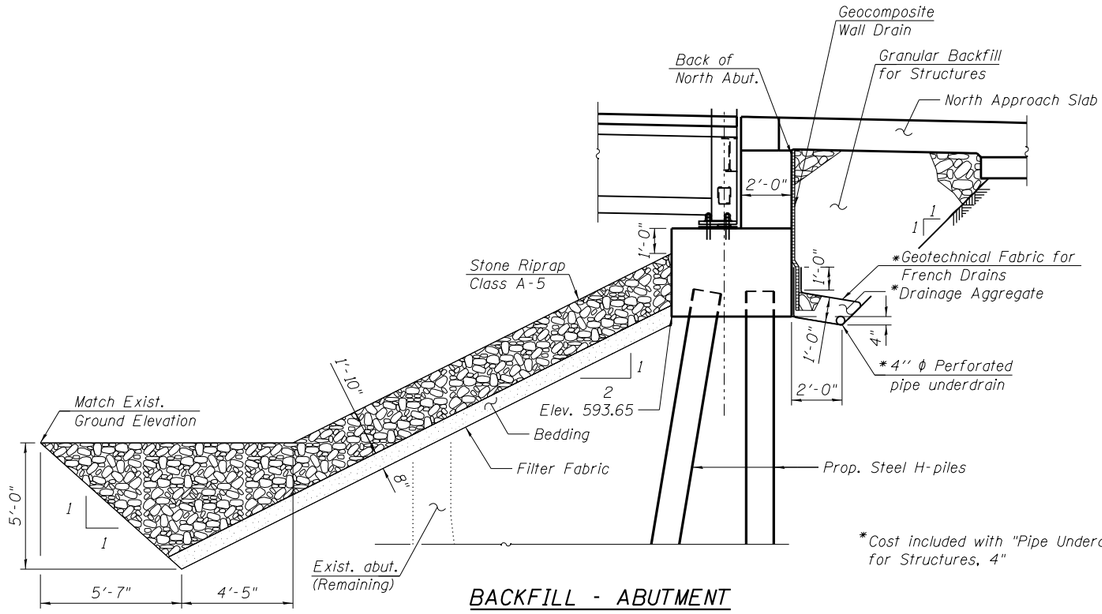
STRUCTURE EXCAVATION - WINGWALL

NOTES:

1. For additional notes, see Sheet S-16.
2. All drainage system components shall extend 2'-0" from the end of the northwest wingwall except an outlet pipe shall extend until intersecting with the side slopes. The outlet pipe shall drain into concrete headwall. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

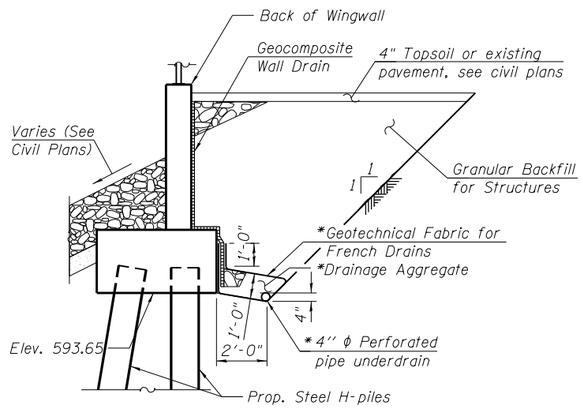
LEGEND:

- Granular Backfill for Structures
- Structure Excavation
- Channel Excavation (See Civil Plans)
- Earth Excavation (See Civil Plans)
- Approach Slab Removal (See Civil Plans)
- Removal of Existing Structures



*Cost included with "Pipe Underdrains for Structures, 4"

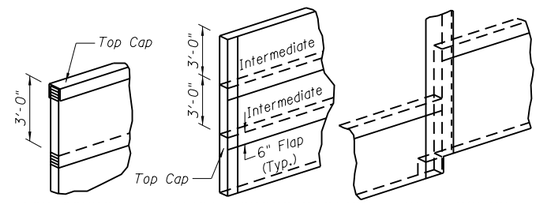
BACKFILL - ABUTMENT



BACKFILL - WINGWALL

BILL OF MATERIAL

Item	Unit	Quantity
Stone Riprap, Class A5	Sq. Yd.	184
Filter Fabric	Sq. Yd.	184
Structure Excavation	Cu. Yd.	178
Geocomposite Wall Drain	Sq. Yd.	41
Granular Backfill for Structures	Cu. Yd.	81
Pipe Underdrains for Structures, 4"	Foot	47



GEOCOMPOSITE WALL DRAIN DETAILS

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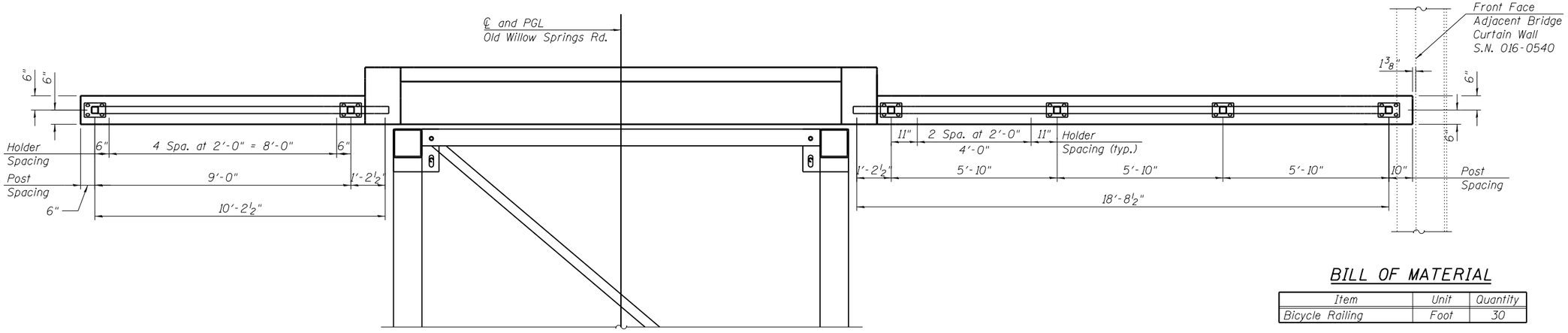
4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162 PHONE: (708) 236-0900 FAX: (708) 236-0901

S17-NAbutEx&Bfill.dgn	DESIGNED - KJD, SK	REVISED
USER NAME = Ken.drabant	DRAWN - KJD, SK	REVISED
PLOT SCALE = 6.0 '' / in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/8/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT EXCAVATION AND BACKFILL
STRUCTURE NO. 016-0539
SHEET S-17 OF S-23 SHEETS

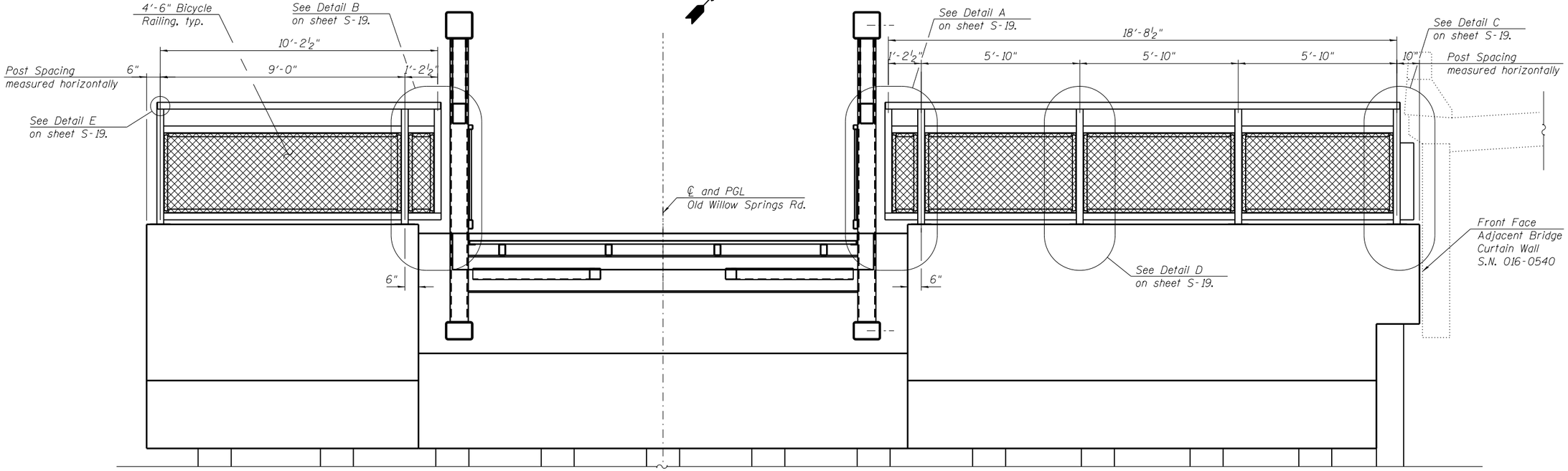
TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	31
		CONTRACT NO. 62B99		
	ILLINOIS	FED. AID PROJECT		



PLAN

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	30



ELEVATION
(Looking North)

NOTE:

1. For Details A thru E, see Sheet S-19.

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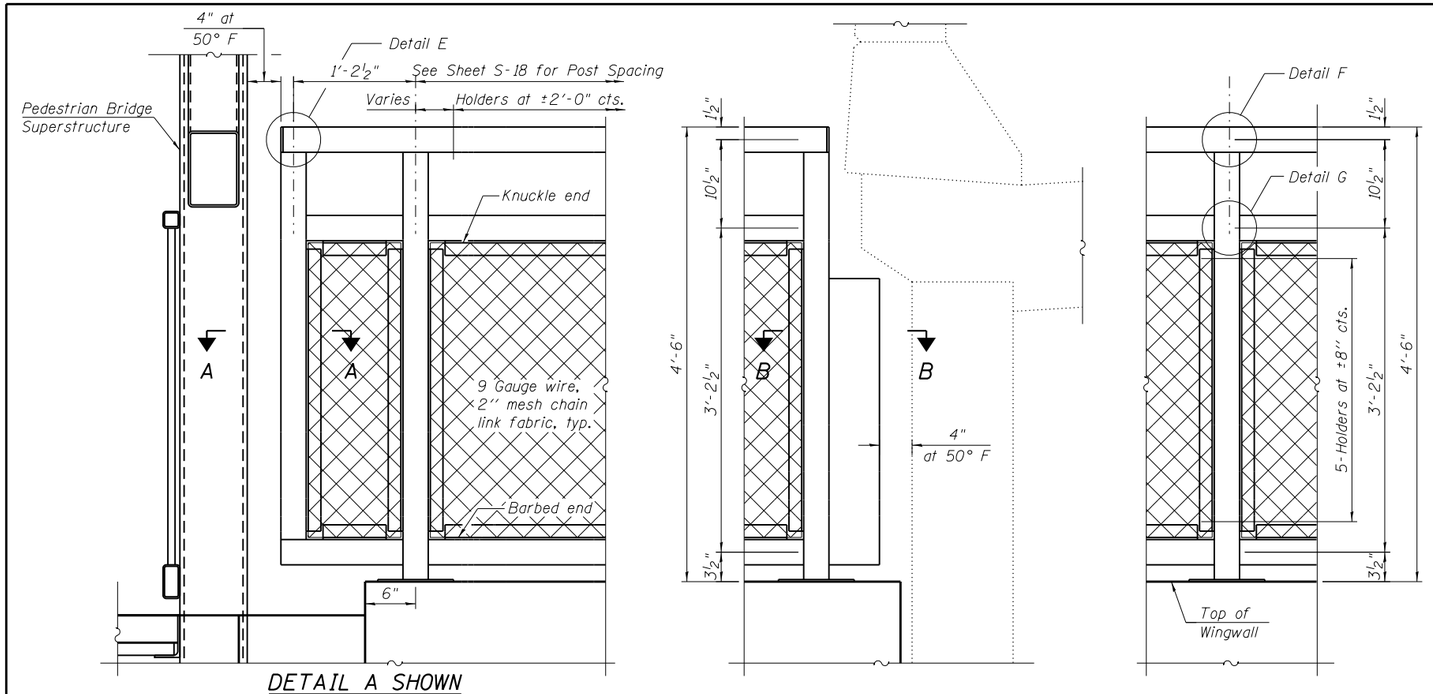
CONSULTING & DESIGN
INSPECTION & RATING
RESEARCH & TESTING
4415 WEST HARRISON ST.
SUITE 231
HILLSIDE, IL 60162
PHONE: (708) 236-0900
FAX: (708) 236-0901

S18-NAbutRailingPlan&Elev.dgn	DESIGNED - KJD	REVISED
USER NAME = Ken.drabant	DRAWN - KJD	REVISED
PLOT SCALE = 4.0 '' / in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT BICYCLE RAILING PLAN AND ELEVATION
STRUCTURE NO. 016-0539
SHEET S-18 OF S-23 SHEETS

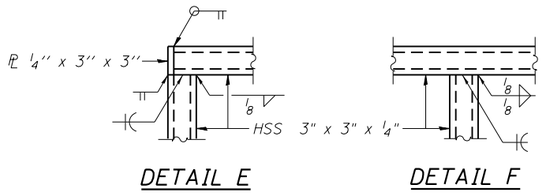
TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	32
		CONTRACT NO. 62B99		
	ILLINOIS	FED. AID PROJECT		



DETAIL A SHOWN
DETAIL B OPPOSITE HAND

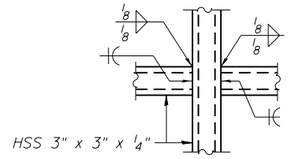
DETAIL C

DETAIL D



DETAIL E

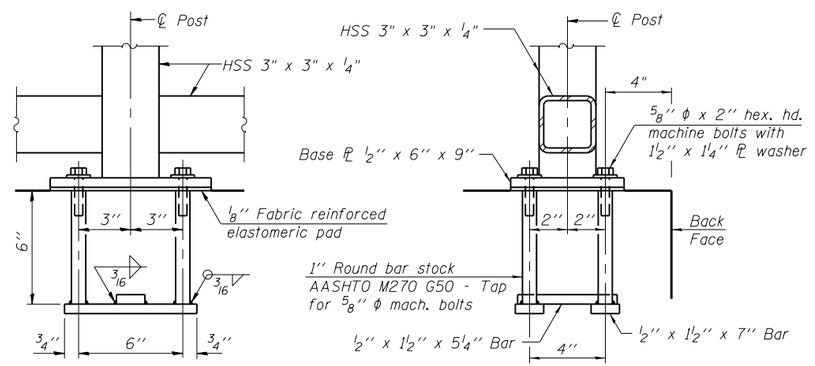
DETAIL F



DETAIL G

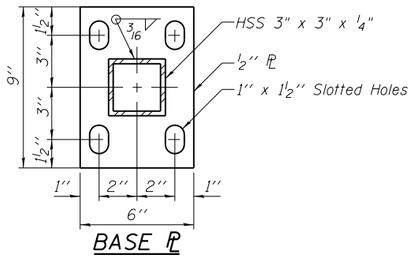
NOTES:

1. All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.
2. All structural steel tubing, post and railing, for parapet railing shall be CVN tested according to 1006.34(b) of the Standard Specifications.
3. Reinforcement shall be spaced to miss anchor bolts.
4. For locations of Details A thru E. See Sheet S-18.

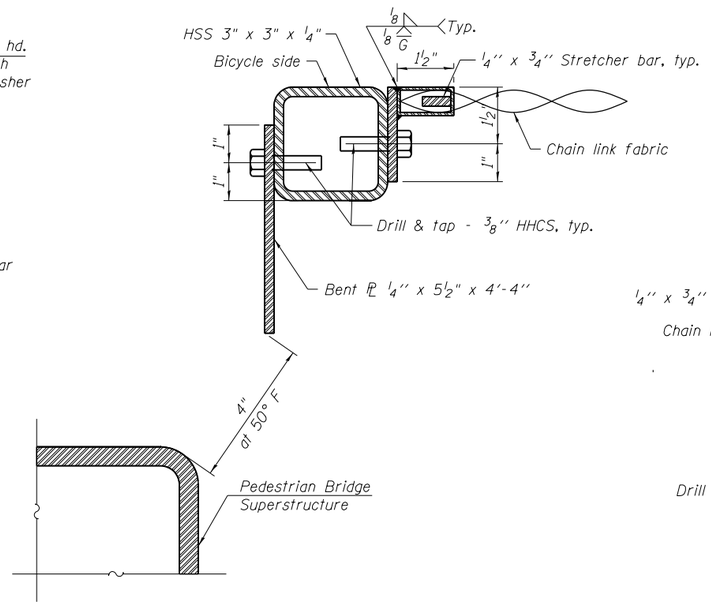


ANCHOR BOLT DETAILS IN NEW CONCRETE

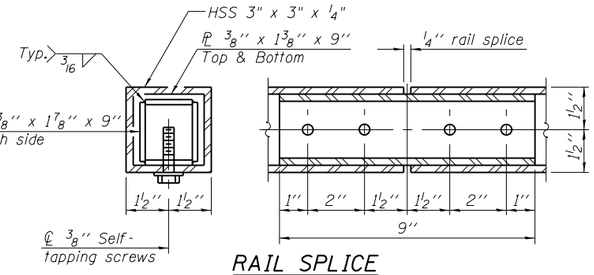
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



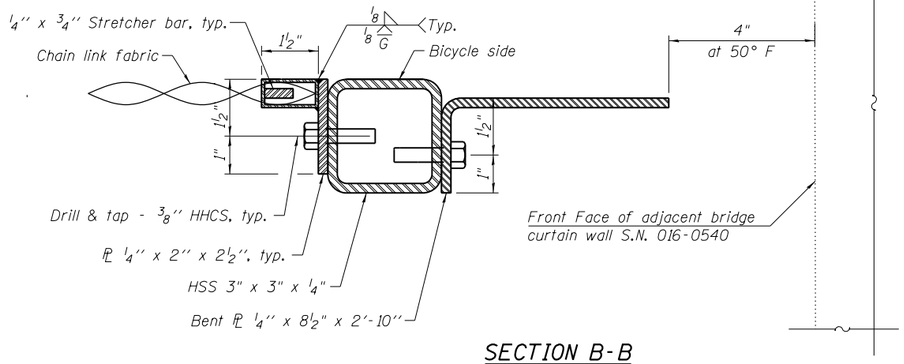
BASE PL



SECTION A-A



RAIL SPLICE



SECTION B-B

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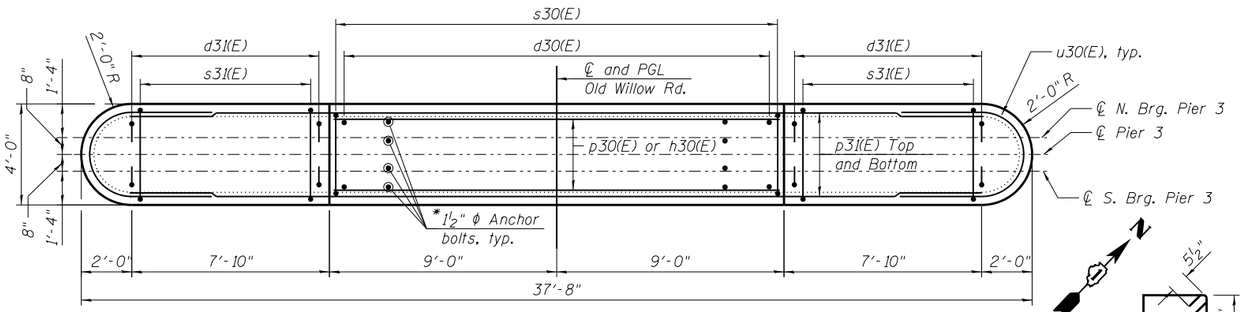
CONSULTING & DESIGN INSPECTION & RATING RESEARCH & TESTING
4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162
PHONE: (708) 236-0900 FAX: (708) 236-0901

S19-NAbutBicycle Railing.dgn	DESIGNED - KJD	REVISED
USER NAME = Ken.drabant	DRAWN - KJD	REVISED
PLOT SCALE = 48.0000 '' / in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

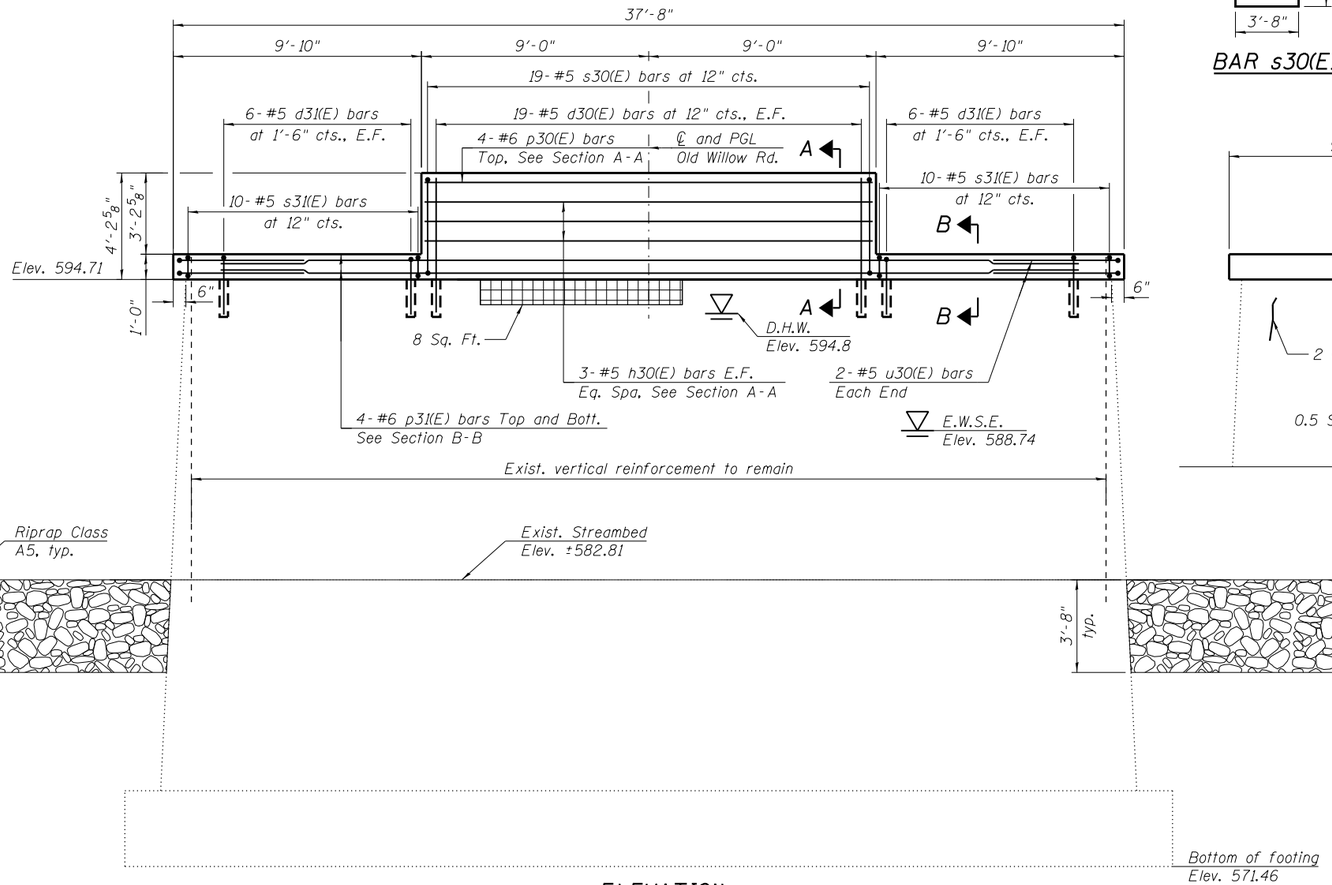
NORTH ABUTMENT BICYCLE RAILING DETAILS
STRUCTURE NO. 016-0539
SHEET S-19 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	33
		CONTRACT NO. 62B99		
	ILLINOIS	FED. AID PROJECT		



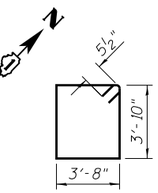
*Anchor bolt size and locations shall be checked against the pedestrian Truss Superstructure Manufacturer's requirements prior to setting them.

TOP PLAN

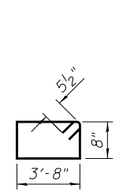


ELEVATION

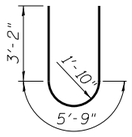
(Looking North)



BAR s30(E)



BAR s31(E)



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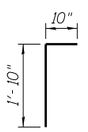


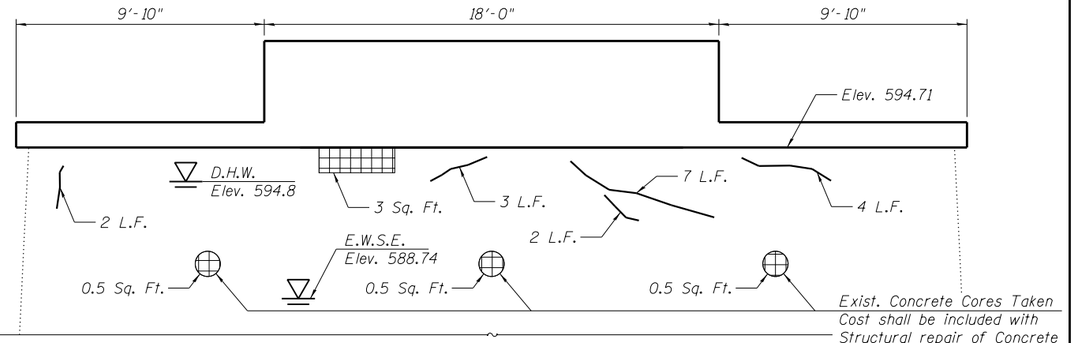
BAR d31(E)

LEGEND:

- Structural Repair of Concrete (Depth Equal to or Less Than 5")
- Epoxy Crack Injection

BILL OF MATERIAL

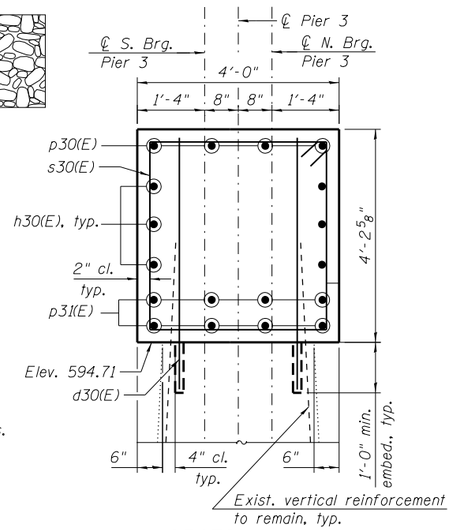
Bar	No.	Size	Length	Shape
d30(E)	38	#5	5'-0"	——
d31(E)	24	#5	2'-8"	⌟
h30(E)	6	#5	17'-8"	——
p30(E)	4	#6	17'-8"	——
p31(E)	8	#6	33'-8"	——
s30(E)	19	#5	15'-11"	□
s31(E)	20	#5	9'-7"	□
u30(E)	4	#5	12'-1"	⊃
Stone Riprap, Class A5		Sq. Yd.	228	
Concrete Structures		Cu. Yd.	14.0	
Reinforcement Bars, Epoxy Coated		Pound	1,460	
Concrete Sealer		Sq. Ft.	344	
Epoxy Crack Injection		Foot	18	
Structural Repair of Concrete (Depth Equal to or Less Than 5")		Sq. Ft.	13	
Structural Repair of Concrete (Depth Greater Than 5")		Sq. Ft.	15	



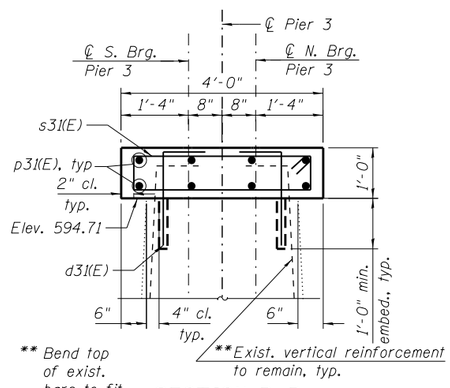
PIER 3 NORTH FACE REPAIR

(Looking South)

Minimum Bar Laps		
Bar	Lap	
	s < 6"	s >= 6"
#4	2'-7"	2'-7"
#5	3'-4"	3'-2"
#6	4'-9"	3'-10"
#7	5'-6"	4'-5"
#8	7'-2"	5'-1"



SECTION A-A



SECTION B-B

NOTES:

1. For anchor bolts layout, see Pedestrian Truss Superstructure sheets prepared by the manufacturer.
2. Space reinforcement in cap to miss anchor bolts.
3. All edges shall have standard $\frac{3}{4}$" chamfer.
4. All exposed surface areas of new concrete shall be treated with Concrete Sealer.
5. The pier seat elevations shall be coordinated with the requirements of the pedestrian Truss Superstructure with approval from the Engineer.
6. Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Removal of Existing Structures.
7. The d30(E) and d31(E) bars are to be drilled and epoxy grouted in accordance with section 584 of the Standard Specifications. Drill to miss existing reinforcement. Cost included with Concrete Structures.
8. Any areas of Structural Repair of Concrete (Depth Greater Than 5 Inches) shall be determined in the field by the Engineer.

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

S20-Pier3Mod.dgn	DESIGNED - MAA, SK	REVISED	
USER NAME = Ken.drabant	DRAWN - MAA, SK	REVISED	
PLOT SCALE = 6.0 '' / in.	CHECKED - MAI, MI	REVISED	
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 MODIFICATIONS
STRUCTURE NO. 016-0539
SHEET S-20 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	34
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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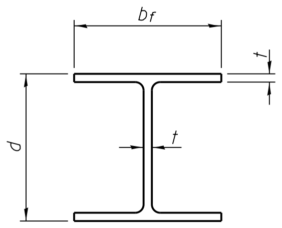
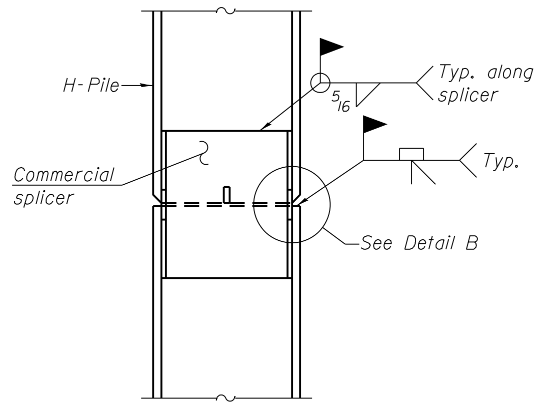
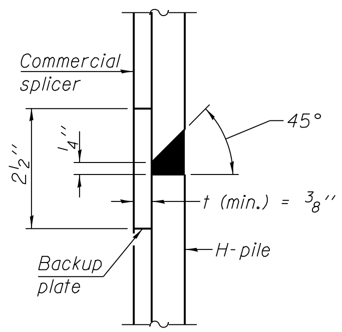


STEEL PILE TABLE

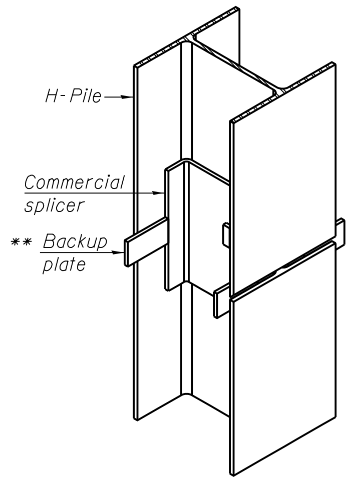
Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4''	14 7/8''	13/16''	30''
x102	14''	14 3/4''	11/16''	30''
x89	13 7/8''	14 3/4''	5/8''	30''
x73	13 5/8''	14 5/8''	1/2''	30''
HP 12x84	12 1/4''	12 1/4''	11/16''	24''
x74	12 1/8''	12 1/4''	5/8''	24''
x63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



ELEVATION

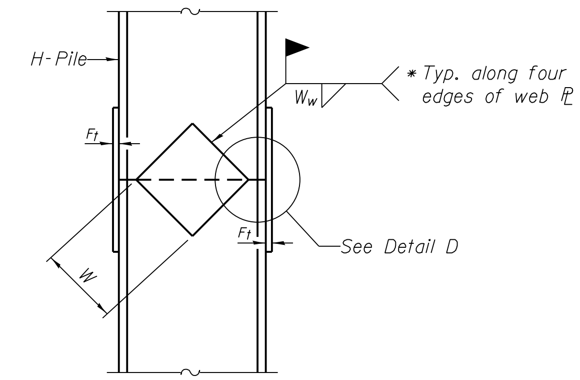


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



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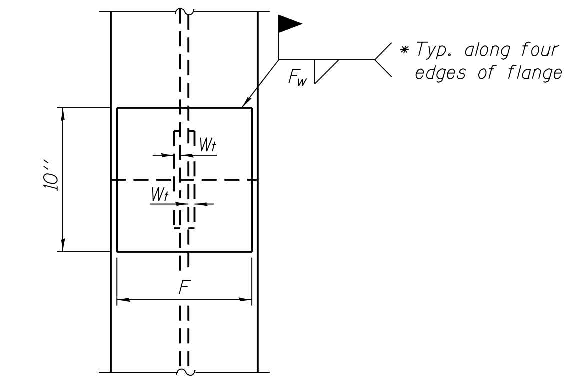
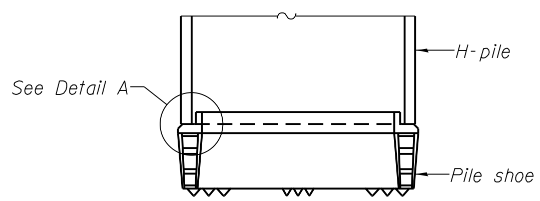


END VIEW



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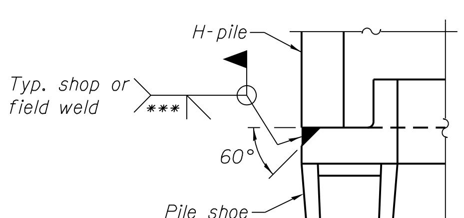
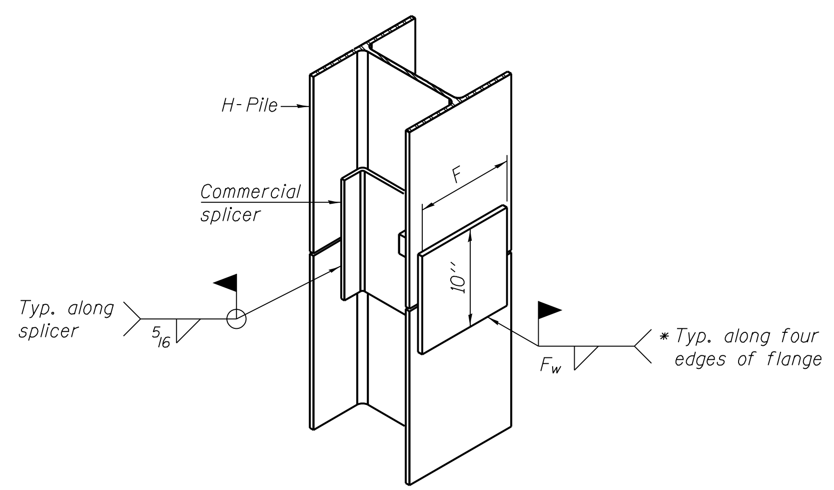


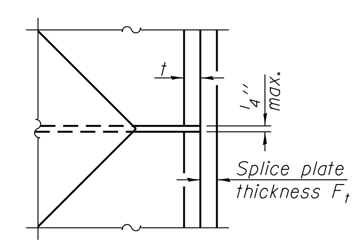
DETAIL A

H-PILE SHOE ATTACHMENT



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE



DETAIL D

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

WELDED PLATE FIELD SPLICE

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

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

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

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

F-HP 1-27-12

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

S21-HPileDet.dgn	DESIGNED - KJD	REVISED
USER NAME = Ken.drabant	DRAWN - KJD	REVISED
PLOT SCALE = 0:2.0000 ':' / in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 016-0539
SHEET S-21 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	35

CONTRACT NO. 62B99
ILLINOIS FED. AID PROJECT

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FORM NO. B.D. 137 REV. 9-60

BRIDGE FOUNDATION BORING LOG

Sh. of Sh.

PROJECT PC-91-819-71
ROUTE FAS 119 (SA-18), Section 142B
COUNTY Cook
Boring No. WS-8
Station 117+45
Offset 24' Rt.

BRIDGE Willow Springs Road over Chicago Sanitary & Ship Canal
STA.
Date 4/26/72, 4/27/72
Bored By Kauzlarich, LW
Checked By Ulses, HNTB

Surface Water El. 591.1
Groundwater El. at Completion
After ____ Hours

Elevation		N	Qu t/s.f.	w(%)
Ground Surface 591.1	0			
WATER.				
589.4				
Gray, soft, CLAY LOAM, trace of gravel, moist.	-5	14	0.4B	29+
Brown, soft to firm CLAY, trace of sand, moist.		5	0.7P	77
583.1				
Black, very soft to soft, organic SILT, with shells and fiberous material, moist.	-10	3	0.19B 0.2P	164
		2	0.4B	186
577.1				
Gray-brown, soft, organic SILT, trace of shells, moist.	-15	3	0.6B 0.5P	154
575.1				
Gray, soft, SILTY CLAY, moist.		3	0.4B 0.2P	48
573.6				
Gray, very dense, broken LIMESTONE, with layers of sand and gravel, moist.	-20	100		
		100/7"		

Elevation		N	Qu t/s.f.	w(%)
566.1	-25	100/8"		
Gray, hard, LIMESTONE, with thin layers of sand or silt (Maximum thickness 10"±)				
(Drilled with 2" roller bit)	-30			
	-35			
553.1				
Gray, hard, LIMESTONE, solid.	-40			
550.6				
Bottom of boring.	-45			

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".

Qu-Unconfined Compressive Strength - t/s.f.

w - Water Content - Percentage of oven dry weight - %

Type failure:
B - Bulge Failure
S - Shear Failure
E - Estimated Value
P - Penetrometer

Sta. 153+10.59 on current contract

FORM NO. B.D. 137 REV. 9-60

BRIDGE FOUNDATION BORING LOG

Sh. of Sh.

PROJECT PC-91-819-71
ROUTE FAS 119 (SA-18), Section 142B
COUNTY Cook
Boring No. WS-9
Station 115+72
Offset 8' Lt.

BRIDGE Willow Springs Road over Chicago Sanitary & Ship Canal
STA.
Date 4/28/72, 4/29/72
Bored By Kauzlarich, LW
Checked By Ulses, HNTB

Surface Water El. 590.6
Groundwater El. at Completion
After ____ Hours

Elevation		N	Qu t/s.f	w(%)
Ground Surface 590.6	0			
WATER.				
580.6	-10			
Black, very soft, SILT, with organic material & shells.				
575.6	-15			
Gray, very dense, fine to coarse SAND, with layers of very stiff, CLAY LOAM, moist.		57		24
572.1				
Gray, very dense, fine to coarse SAND & GRAVEL, moist.	-20	50/5"		
*Sampler bouncing				

Elevation		N	Qu t/s.f	w(%)
Gray, very dense, fine to coarse SAND & GRAVEL, with trace of SILTY LOAM, moist.		89		
	-25	73		
		60		
	-30	100		
560.1				
Gray, hard, solid, LIMESTONE.		(Drilled with 2" roller bit)		
556.6				
Bottom of boring.	-35			
	-40			
	-45			

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sample 12" with 140# hammer falling 30"

Qu-Unconfined Compressive Strength - t/s.f.

w - Water Content - Percentage of oven dry weight - %

Type failure:
B - Bulge Failure
S - Shear Failure
E - Estimated Value
P - Penetrometer

Sta. 154+83.77 on current contract

HBM ENGINEERING GROUP, LLC. CONSULTING & DESIGN INSPECTION & RATING RESEARCH & TESTING — 4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162 PHONE: (708) 236-0900 FAX: (708) 236-0901	S22-BoringLogsI.dgn	DESIGNED - FA	REVISED
	USER NAME = Ken.drabant	DRAWN - FA	REVISED
	PLOT SCALE = 0.2.0000 '' / in.	CHECKED - MAI, MI	REVISED
	PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS I
STRUCTURE NO. 016-0539
SHEET S-22 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	36
		CONTRACT NO. 62B99		
		ILLINOIS FED. AID PROJECT		

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FORM NO. B.D. 137 REV. 9-60

BRIDGE FOUNDATION BORING LOG

Sh. of Sh.

PROJECT PC-91-819-71

ROUTE FAS 119 (SA-18), Section 142B

COUNTY Cook

Boring No. WS-10

Station 114+56

Offset 14' Rt.

BRIDGE Willow Springs Road over Chicago Sanitary & Ship Canal

Date 5/2/72

Bored By Pagenkopf, LW

STA.

Checked By Ulses, HNTB

Surface Water El. 589.6

Groundwater El. at Completion

After Hours

Elevation		N	Qu t/s.f.	w(%)	
Ground Surface	589.6				
WATER.	589.1				
Dark brown to gray-brown, soft to firm, CLAY, trace of organic, moist. A-7-6(20)					
		2	0.8B 1.0P	60	
		*			
	584.6				
Gray, very soft, SILTY CLAY LOAM, wet. A-4(8)		U-1	0.2P 0.5S	30	
	583.1				
Gray, medium dense, fine to coarse SANDY LOAM, with gravel and layers of clay loam, moist.		27			
	578.6	25			
Gray, hard, CLAY LOAM, with sand layers, moist.		44	6.8B 4.5+P	12	
	575.6				
Gray, dense, SILTY LOAM to SILT, trace of gravel, moist.		34			
		32		18	
	569.6				
Gray, very dense, broken LIMESTONE, with clay loam layers, moist.		107			

Elevation		N	Qu t/s.f.	w(%)
Gray, very dense, broken LIMESTONE.		100/ 0"		
	565.3			
Hard, blue-gray LIMESTONE, layers interbedded with silt or sand layers.		NX R-1		Rec.=80% RQD=10%
	556.8	NX R-2		Rec.=50% RQD=0%
Light gray, hard, LIMESTONE, broken with layers of clay loam.		NX R-3		Rec.=80% RQD=0%
	553.1			
Light gray, hard, LIMESTONE, solid.		NX R-4		Rec.=100% RQD=100%
	548.5			
Bottom of boring.				

*Sample U-2: 2.0' - 4.0'
3" undisturbed tube
w = 45%
Qu = 0.62B
1.0P

N - Standard Penetration Test - Blows per foot to drive 2" O.D Split Spoon Sampler 12" with 140# hammer falling 30"

Qu-Unconfined Compressive Strength - t/s.f.

w - Water Content - Percentage of even dry weight %

Type failure:
B - Bulge Failure
S - Shear Failure
E - Estimated Value
P - Penetrometer

Sta. 155+99.73 on current contract

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

S23-BoringLogsII.dgn	DESIGNED - FA	REVISED
USER NAME = Ken.drabant	DRAWN - FA	REVISED
PLOT SCALE = 0:2.0000 '/ in.	CHECKED - MAI, MI	REVISED
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS II
STRUCTURE NO. 016-0539
SHEET S-23 OF S-23 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	37
		CONTRACT NO. 62B99		
	ILLINOIS FED. AID PROJECT			

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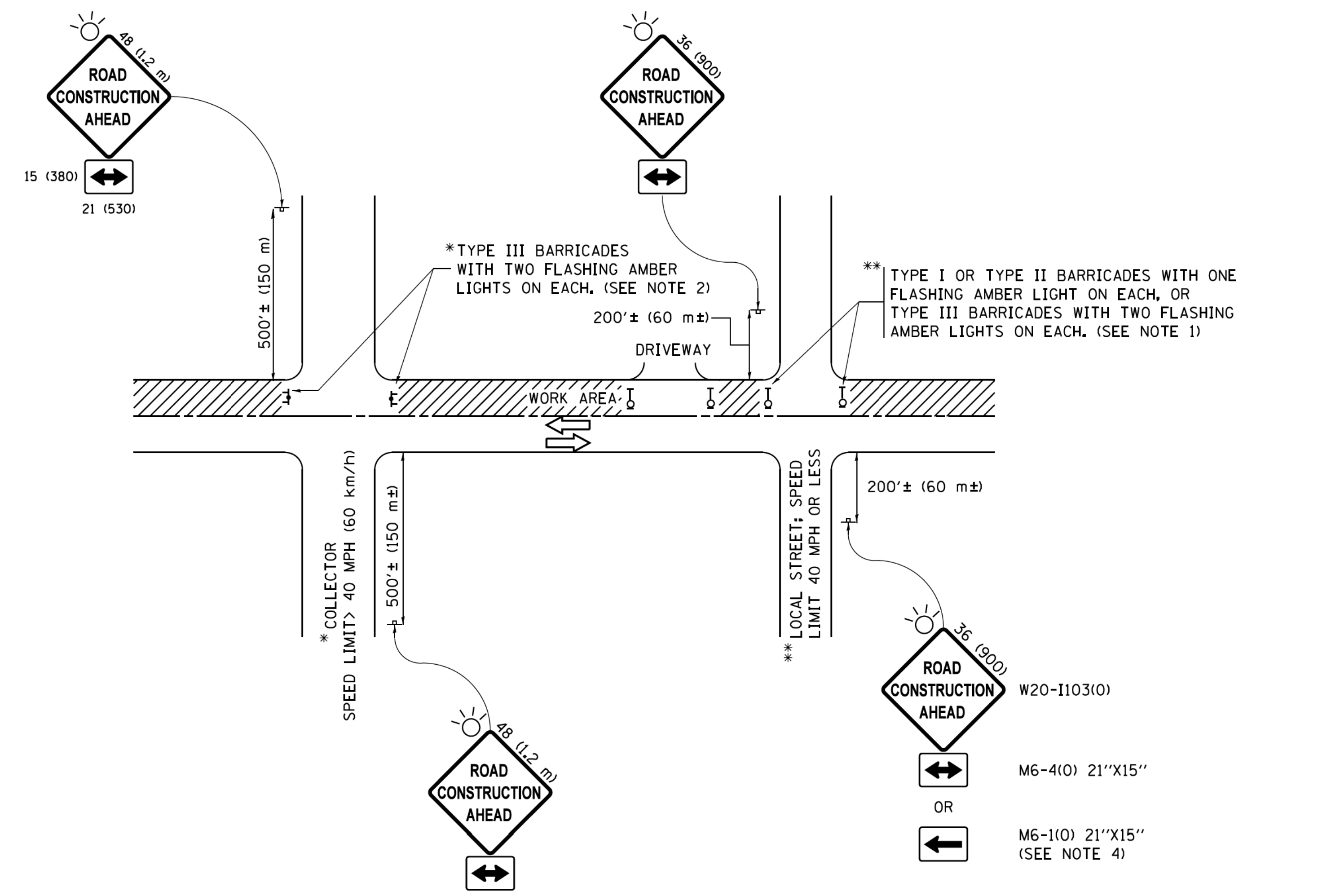


NOTES:

1. SIDE ROAD WITH A SPEED LIMIT OF 40 MPH (60 km/h) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:

   a) ONE "ROAD CONSTRUCTION AHEAD" SIGN 36 x 36 (900x900) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 200' (60 m) IN ADVANCE OF THE MAIN ROUTE.

   b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE I, TYPE II OR TYPE III BARRICADES, 1/3 OF THE CROSS SECTION OF THE CLOSED PORTION.

2. SIDE ROAD WITH A SPEED LIMIT GREATER THAN 40 MPH (60 km/h) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:

   a) ONE "ROAD CONSTRUCTION AHEAD" SIGN 48 x 48 (1.2 m x 1.2 m) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 500' (150 m) IN ADVANCE OF THE MAIN ROUTE.

   b) THE CLOSED PORTION OF THE MAIN ROUTE SHALL BE PROTECTED BY BLOCKING WITH TYPE III BARRICADES, 1/2 OF THE CROSS SECTION OF THE CLOSED PORTION.

3. CONES MAY BE SUBSTITUTED FOR BARRICADES OR DRUMS AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (710) IN HEIGHT.

4. WHEN THE SIDE ROAD LIES BETWEEN THE BEGINNING OF THE MAINLINE SIGNING AND THE WORK ZONE, A SINGLE HEADED ARROW (M6-1) SHALL BE USED IN LIEU OF THE DOUBLE HEADED ARROW (M6-4).

5. WHEN WORK IS BEING PERFORMED ON A SIDE ROAD OR DRIVEWAY, FOLLOW THE APPLICABLE STANDARD(S). THE DIRECTIONAL ARROW (M6-1 OR M6-4) SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE TRAFFIC CONTROL SET-UP.

6. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAYS UNLESS OTHERWISE SPECIFIED IN THE PLANS OR BY THE ENGINEER.

7. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

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

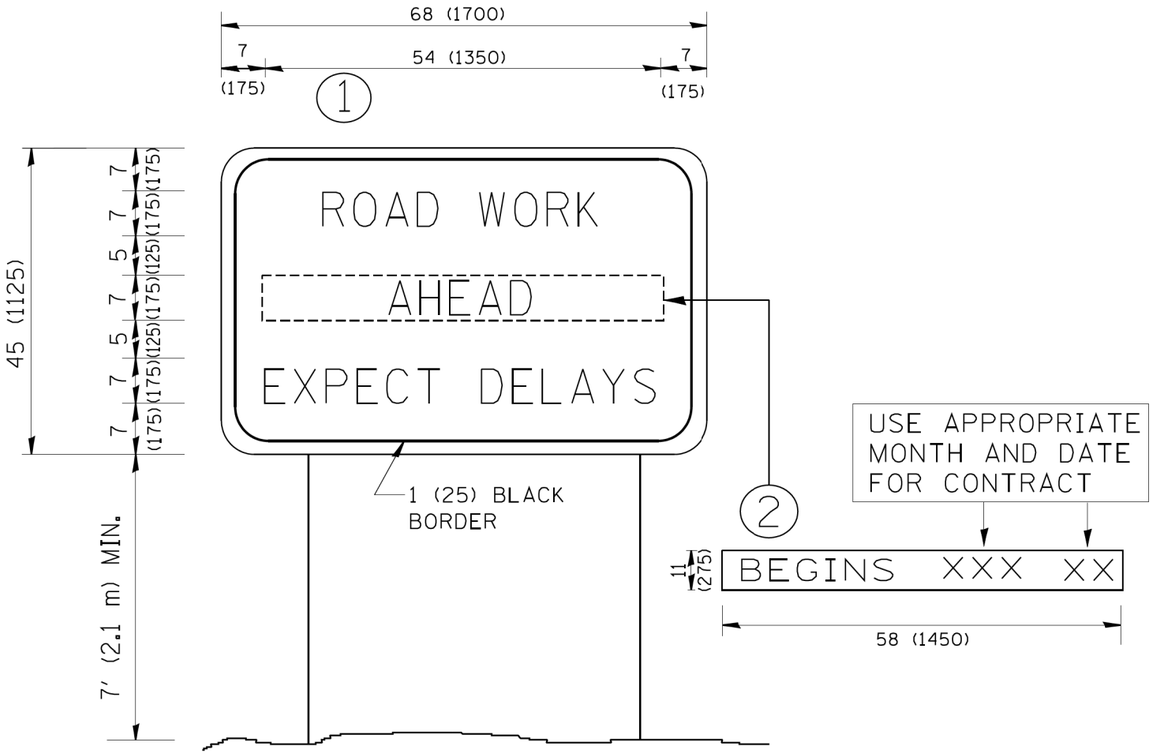
FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist... \CADData\CADsheets\tc10.dgn	USER NAME = footemj	DESIGNED - L.H.A.	REVISED - A. HOUSEH 10-15-96
		DRAWN	REVISED -T. RAMMACHER 01-06-00
	PLOT SCALE = 50.000 ' / in.	CHECKED -	REVISED - A. SCHUETZE 07-01-13
Default	PLOT DATE = 9/15/2016	DATE - 06-89	REVISED - A. SCHUETZE 09-15-16

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS

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

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	38
TC-10		CONTRACT NO. 62B99		
	ILLINOIS	FED. AID PROJECT		



NOTES:

1. USE BLACK LETTERING ON ORANGE BACKGROUND.
2. ERECT SIGNS IN ADVANCE OF THE LOCATION FOR THE "ROAD CONSTRUCTION AHEAD" SIGN AT LOCATIONS AS DIRECTED BY THE ENGINEER.
3. ERECT SIGN (1) WITH INSTALLED PANEL (2) ONE WEEK PRIOR TO THE START OF CONSTRUCTION.
4. REMOVE PANEL (2) SOON AFTER THE START OF CONSTRUCTION.
5. SEE SPECIAL PROVISION FOR "TEMPORARY INFORMATION SIGNING" FOR ADDITIONAL INFORMATION.
6. ONE SIGN ASSEMBLY EQUALS 25.70 SQ. FT. (2.3 SQ. M.)
7. SHALL BE PAID FOR AS TEMPORARY INFORMATION SIGNING.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

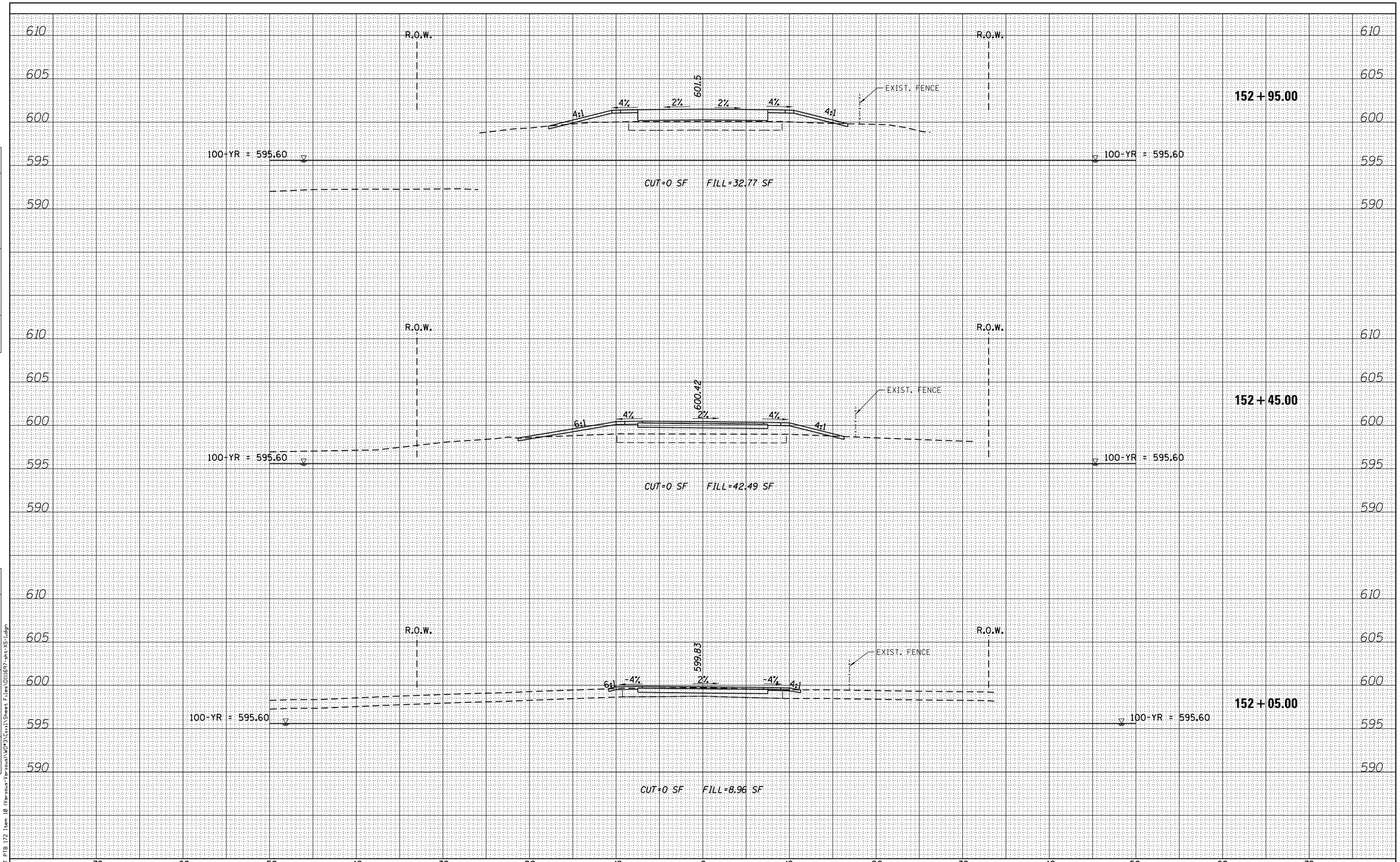
FILE NAME = W:\diststd\22x34\tc22.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED - R. MIRS 09-15-97
		DRAWN -	REVISED - R. MIRS 12-11-97
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - T. RAMMACHER 02-02-99
	PLOT DATE = 1/4/2008	DATE -	REVISED - C. JUCIUS 01-31-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ARTERIAL ROAD INFORMATION SIGN

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	39
	TC-22	CONTRACT NO. 62B99		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



FINAL SURVEY

NO.	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE

ORIGINAL SURVEY

NO.	NOTE BOOK	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE

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

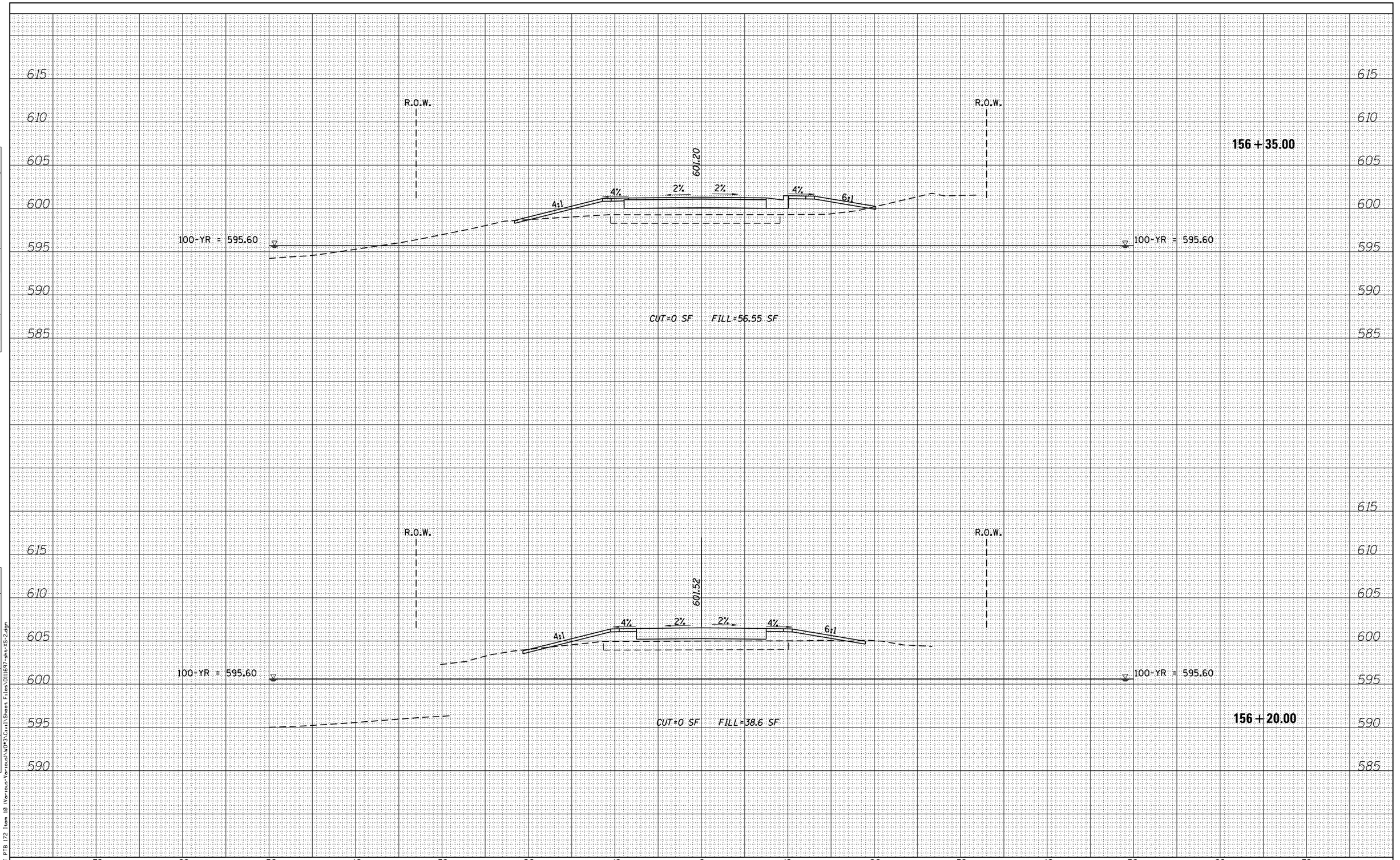
USER NAME = Ken.drabant	DESIGNED - DA	REVISED -	
	DRAWN - EAH	REVISED -	
PLOT SCALE = 10.0000 '/ in.	CHECKED - JMG	REVISED -	
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS – NORTH AND SOUTH APPROACHES

SCALE: $SCALE$ | SHEET 1 OF 3 SHEETS | STA. 152+05.00 | TO STA. 152+95.00

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	40
		CONTRACT NO. 62B99		
	ILLINOIS			



FINAL SURVEY — NOTE BOOK — NO. — BY — DATE
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

ORIGINAL SURVEY — NOTE BOOK — NO. — BY — DATE
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

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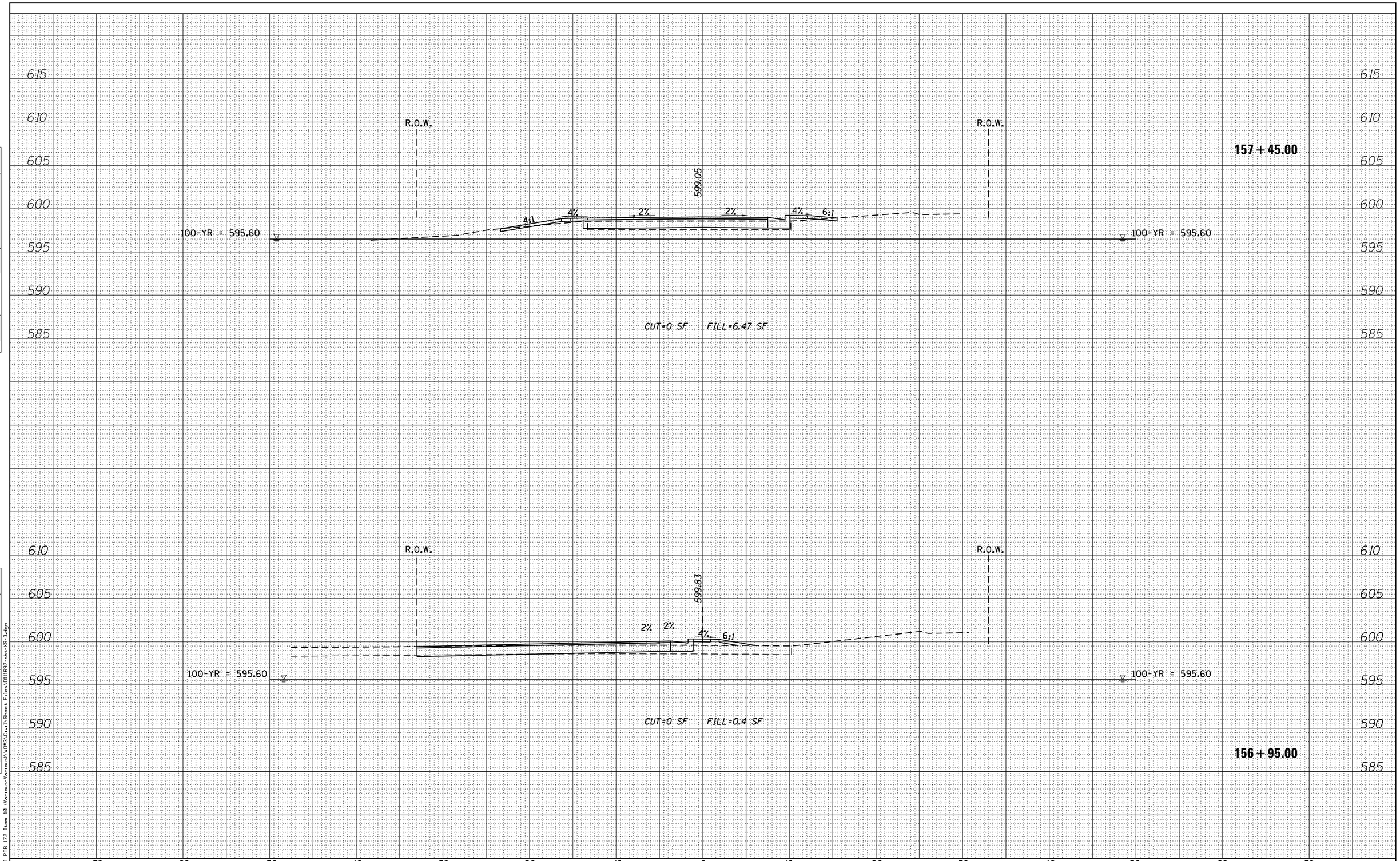
HBM ENGINEERING GROUP, LLC. CONSULTING & DESIGN INSPECTION & RATING RESEARCH & TESTING — 4415 WEST HARRISON ST. SUITE 231 HILLSIDE, IL 60162 PHONE: (708) 236-0900 FAX: (708) 236-0901			
USER NAME = Kendrabant	DESIGNED - DA	REVISED -	
	DRAWN - EAH	REVISED -	
PLOT SCALE = 10.0000 ' / in.	CHECKED - JMG	REVISED -	
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS – NORTH AND SOUTH APPROACHES

SCALE: $SCALE$ | SHEET 2 OF 3 SHEETS | STA. 156+15.00 TO STA. 156+35.00

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	41
		CONTRACT NO. 62B99		
	ILLINOIS			



FINAL SURVEY — NOTE BOOK — NO.

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY — NOTE BOOK — NO.

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

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

USER NAME = Kendrabant	DESIGNED - DA	REVISED -
	DRAWN - EAH	REVISED -
PLOT SCALE = 10.0000 ' / in.	CHECKED - JMG	REVISED -
PLOT DATE = 12/7/2017	DATE - 12/08/2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS – NORTH AND SOUTH APPROACHES

SCALE: $SCALE$ | SHEET 3 OF 3 SHEETS | STA. 156+95.00 TO STA. 157+45.00

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
9250	142A-B	COOK	42	42
		CONTRACT NO. 62B99		
	ILLINOIS			