

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	1

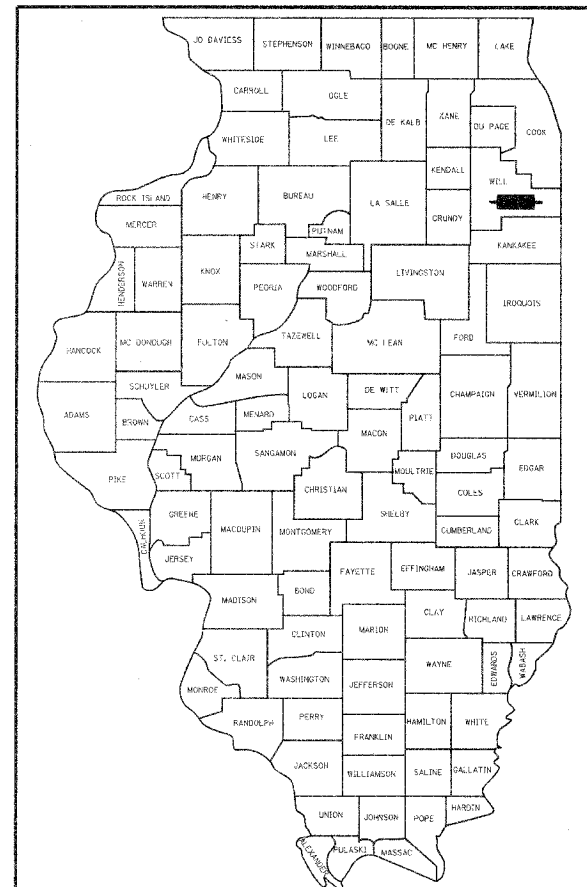
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- 31-35 CROSS SECTIONS

WILL COUNTY DEPARTMENT OF HIGHWAYS PLANS FOR PROPOSED FEDERAL AID HIGHWAY

**FAP ROUTE 532
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
SECTION 02-00117-21-BR
BRIDGE REPLACEMENT AND DITCH GRADING
PROJECT NO. BRM-8003 (317)
EXISTING S.N. 099-3304
PROPOSED S.N. 099-3395**

**WILL COUNTY, ILLINOIS
C-91-178-03**



LOCATION OF SECTION INDICATED THUS: - [rectangle] -

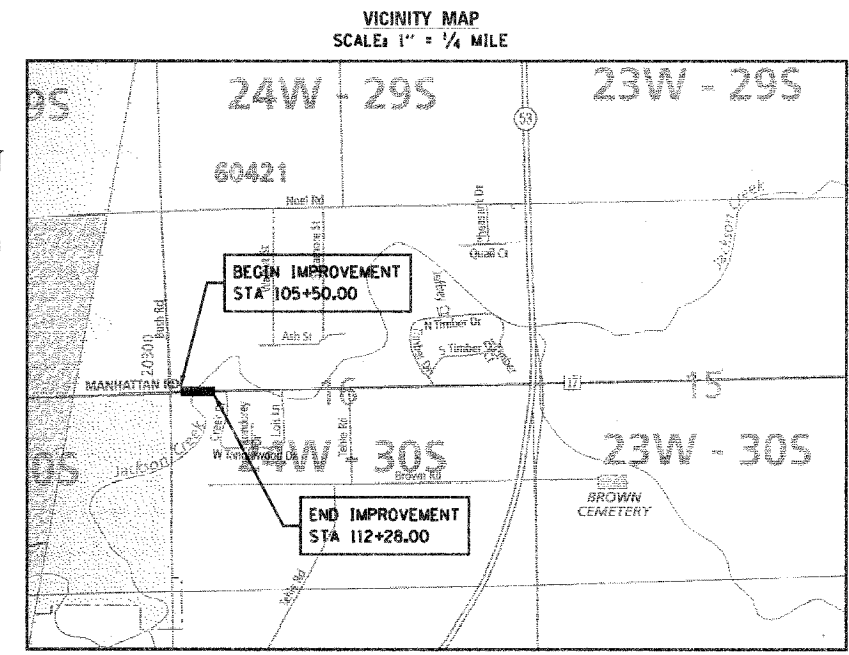
ENGINEER:
SMITH ENGINEERING CONSULTANTS
A DIVISION OF SEC GROUP, INC.
4500 PRIME PARKWAY
MCHENRY, ILLINOIS 60050
(815) 385-1778
CONTACT:
ANDY UNDERWAGER, S.E., P.E. - STRUCTURAL ENGINEER
T. SCOTT CREECH, P.E. - PROJECT ENGINEER

SURVEYOR:
SMITH ENGINEERING CONSULTANTS
759 JOHN STREET
YORKVILLE, ILLINOIS 60560
(630) 553-7560

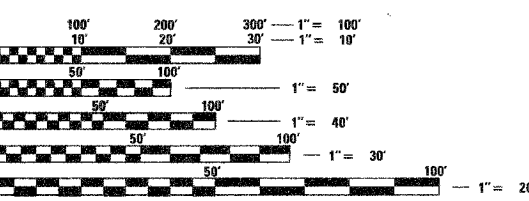
STRUCTURE INFORMATION:

EXISTING SN 099-3304:
EXISTING 3-SPAN STRUCTURE CONSISTS OF PRECAST, PRESTRESSED CONCRETE DECK BEAMS WITH AN OUT-TO-OUT WIDTH OF 36'-0" AND A TOTAL LENGTH OF 140'-0 1/2" BK. TO BK. ABUTMENTS WITH A 45 DEGREE SKEW. THE SUBSTRUCTURE CONSISTS OF CONCRETE ENCASED STEEL PILE BENT PIERS AND ABUTMENTS. STRUCTURE TO BE REMOVED AS SHOWN WITH NO SALVAGE.

PROPOSED SN 099-3395:
PROPOSED 3-SPAN STRUCTURE CONSISTS OF A CAST IN PLACE CONCRETE DECK ON STEEL WIDE FLANGE BEAMS WITH AN OUT-TO-OUT WIDTH OF 47'-2" AND A TOTAL LENGTH OF 167'-10 1/2" BK. TO BK. ABUTMENTS WITH A 30 DEGREE SKEW. THE SUBSTRUCTURE CONSISTS OF INTEGRAL ABUTMENTS AND CONCRETE ENCASED STEEL PILE BENT PIERS.



NET LENGTH OF IMPROVEMENT = 678 FT. = 0.128 MILES
GROSS LENGTH OF IMPROVEMENT = 678 FT. = 0.128 MILES
TOWNSHIP = JACKSON ; T34N, R10E



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

CONTRACT NO. 83885

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

WILL COUNTY DEPARTMENT OF HIGHWAYS

APPROVED: Sheldon C. Lutz 12/11/06 (DATE)
COUNTY ENGINEER
LOCAL AGENCY POSITION

PASSED: January 3 2007 (DATE)
Christopher Holt
DISTRICT 1 ENGINEER OF LOCAL ROADS & STREETS

RELEASING FOR BID
BASED ON LIMITED
REVIEW: January 3 2007 (DATE)
Diane O'Keefe
DEPUTY DIRECTOR OF HIGHWAYS, REGION 1 ENGINEER

STRUCTURAL ENGINEER'S SIGN & SEAL

Robert G. Davies
ROBERT G. DAVIES, S.E., P.E.
DATE: 12/5/06
EXPIRES: 11/30/08

FUNCTIONAL CLASSIFICATION
OTHER PRINCIPAL ARTERIAL

DESIGN SPEED
MANHATTAN-ARSENAL: 60 MPH

SPEED LIMIT
MANHATTAN-ARSENAL: 45 MPH

2004 TRAFFIC DATA:
MANHATTAN-ARSENAL: ADT = 3300

PROFESSIONAL ENGINEER'S SIGN & SEAL

T. Scott Creech
T. SCOTT CREECH, P.E.
DATE: 12/5/06
EXPIRES: 11/30/07

FEDERAL AID DESIGN ENGINEER: JESSICA FELICIANO (847) 705-4487

COMPANY NAME: SEC, INC.
PROJECT CONTACT: T. SCOTT CREECH
CLIENT: (CLIENT)
DATE: 12/27/08 10:43 AM
SEC PROJ. NO.: WILL 040595-14

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	2
STA.		TO STA.		
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

SPECIFICATIONS & GENERAL NOTES

- THE CONTRACTOR WILL PROVIDE AND INSTALL TWO (2) WEIGHTED SAND BAGS ON EACH BARRICADE USED. (TYPE I OR TYPE II (ONE (1) WEIGHTED SAND BAG ACROSS EACH BOTTOM RAIL.) ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF FOUR (4) SANDBAGS PER BARRICADE.
 - FORTY EIGHT HOURS BEFORE STARTING EXCAVATION THE CONTRACTOR WILL CALL J.U.L.L.E. (1-800-892-0123) TO HAVE THE LOCATION OF EXISTING UTILITIES STAKED.
 - THE CONTRACTOR SHALL CONTACT THE WILL COUNTY DEPARTMENT OF HIGHWAYS AND I.D.O.T. BUREAU OF TRAFFIC AT LEAST 72 HOURS IN ADVANCE OF BEGINNING ANY WORK ON MANHATTAN-ARSENAL ROAD.
 - THE CONTRACTOR WILL NOT BE ALLOWED TO SET UP A YARD OR FIELD OFFICE ON COUNTY PROPERTY WITHOUT WRITTEN PERMISSION FROM THE WILL COUNTY DEPARTMENT OF HIGHWAYS.
 - PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AFFECTING THEIR WORK WITH THE ACTUAL CONDITIONS AT THE JOB SITE. IN ADDITION, THE CONTRACTOR MUST VERIFY THE ENGINEER'S LINE AND GRADE STAKES. IF THERE ARE ANY DISCREPANCIES FROM WHAT IS SHOWN ON THE CONSTRUCTION PLANS, HE MUST IMMEDIATELY REPORT SAME TO THE ENGINEER BEFORE DOING ANY WORK, OTHERWISE THE CONTRACTOR ASSUMES FULL RESPONSIBILITY. IN THE EVENT OF DISAGREEMENT BETWEEN THE CONSTRUCTION PLANS, STANDARD SPECIFICATIONS AND/OR SPECIAL DETAILS, THE CONTRACTOR SHALL SECURE WRITTEN INSTRUCTIONS FROM THE ENGINEER PRIOR TO PROCEEDING WITH ANY PART OF THE WORK AFFECTED BY OMISSIONS OR DISCREPANCIES. FAILING TO SECURE SUCH INSTRUCTIONS, THE CONTRACTOR WILL BE CONSIDERED TO HAVE PROCEEDED AT HIS OWN RISK AND EXPENSE. IN THE EVENT OF ANY DOUBT OR QUESTION ARISING WITH RESPECT TO THE TRUE MEANING OF THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE DECISION OF THE ENGINEER SHALL BE FINAL AND CONCLUSIVE.
 - THE CONTRACTOR SHALL ENSURE THAT ALL STORM SEWER MANHOLES AND SANITARY SEWER MANHOLES REMAIN READILY ACCESSIBLE TO THE COUNTY FOR EMERGENCY OPERATIONS. THE LOCATIONS OF ALL STORM AND SANITARY FACILITIES SHALL BE MARKED AND READILY VISIBLE AT ALL TIMES.
 - A SOILS REPORT HAS BEEN COMPLETED FOR THIS PROJECT AND IS AVAILABLE FOR CONTRACTOR REVIEW AT THE WILL COUNTY DEPARTMENT OF HIGHWAYS.
8. THE LENGTH OF "GUARDRAIL REMOVAL" INCLUDES THE LENGTH OF THE TRAFFIC BARRIER TERMINALS.
9. EXISTING FIELD TILES ENCOUNTERED DURING CONSTRUCTION SHALL BE MAINTAINED IN ACCORDANCE WITH SECTION 611 OF THE STANDARD SPECIFICATIONS. THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM "REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL."
10. IF EXISTING TREES OR STUMPS OVER 6" CALIPER ARE ENCOUNTERED THAT CONFLICT WITH CONSTRUCTION OPERATIONS, THEY SHALL BE REMOVED IN ACCORDANCE WITH SECTION 201 OF THE STANDARD SPECIFICATIONS. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM "REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL."
11. PLACING EMBANKMENT SHALL BE IN ACCORDANCE WITH THE "BENCHING DETAIL FOR EMBANKMENT WIDENING" AND THE STANDARD SPECIFICATIONS. EXCAVATION OF THE BENCH CUTS WITHIN EXISTING EMBANKMENT WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE ITEM "EARTH EXCAVATION."
12. THE WORK UNDER THIS CONTRACT SHALL CONFORM TO ALL REGULATIONS GIVEN IN THE REGIONAL PERMIT ISSUED FOR THE PROJECT AND THE IDNR/OWR PERMIT ISSUED FOR THE PROJECT.
13. THIS PROJECT MAY REQUIRE UP TO TWO CHANGEABLE MESSAGE SIGNS.

STATE STANDARDS

- 000001-04 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 280001-03 TEMPORARY EROSION CONTROL SYSTEM
- 420401-05 BRIDGE APPROACH PAVEMENT
- 515001-02 NAME PLATE FOR BRIDGES
- 609006-03 BRIDGE APPROACH PAVEMENT (DRAIN DETAIL)
- 630301-04 SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
- 630001-07 STEEL PLATE BEAM GUARDRAIL
- 631031-06 TRAFFIC BARRIER TERMINAL, TYPE 6
- 635006-02 REFLECTOR AND TERMINAL MARKER PLACEMENT
- 635011-01 REFLECTOR MARKER AND MOUNTING DETAILS
- 702001-06 TRAFFIC CONTROL DEVICES
- 780001-01 TYPICAL PAVEMENT MARKINGS
- BLR22-4 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (TWO LANE TWO WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)

SYMBOL LEGEND

	EXISTING	PROPOSED
SANITARY MANHOLE	⊙	⊙
STORM MANHOLE	⊙	⊙
STORM CATCH BASIN	⊙	●
INLET	⊙	—
FLARED END SECTION	⊙	▶
VALVE VAULT	⊙	⊙
FIRE HYDRANT	⊙	⊙
LIGHT POLE	⊙	⊙
STREET SIGN	⊙	⊙
REGULATORY SIGN	⊙	⊙
UTILITY POLE	⊙	⊙
UTILITY BOX	⊙	⊙
MAILBOX	⊙	⊙
WELL	⊙	⊙
SANITARY SEWER	—	—
STORM SEWER	—	—
CULVERT	—	—
WATER MAIN	—	—
WATER MAIN ENCASEMENT	—	—
STORM UNDERDRAIN	—	—
ELECTRIC LINE	—	—
TELEPHONE LINE	—	—
GAS LINE	—	—
CABLE TV LINE	—	—
TREELINE	—	—
TREE	⊙	⊙
FENCE	—	—
EROSION CONTROL FENCE	—	—
DITCH CHECK	—	—
DRAINAGE ARROW	—	—
100 YEAR OVERFLOW	—	—

STANDARD ABBREVIATIONS

- B-B - BACK TO BACK OF CURB
- B.C. - BACK OF CURB
- B.O.C. - BACK OF CURB
- B.S.L. - BUILDING SETBACK LINE
- C.B. - STORM CATCH BASIN
- C.E. - COMMONWEALTH EDISON CO.
- D.E. - DRAINAGE EASEMENT
- E-E - EDGE TO EDGE OF PAVEMENT
- E.O.P. - EDGE OF PAVEMENT
- E.O.S. - EDGE OF SHOULDER
- E.P. - EDGE OF PAVEMENT
- E.S. - EDGE OF SHOULDER
- F.E.S. - FLARED END SECTION
- I.B.T. - ILLINOIS BELL TELEPHONE CO.
- L.E. - LANDSCAPE EASEMENT
- M.H. - MANHOLE (TYPE SPECIFIED ON PLANS)
- R.O.W. - RIGHT OF WAY
- T.B.F. - TRENCH BACKFILL
- T.C. - TOP OF CURB
- T.C.E. - TEMPORARY CONSTRUCTION EASEMENT
- T.O.B. - TOP OF BERM
- T.O.C. - TOP OF CURB
- U.E. - UTILITY EASEMENT

UTILITY CONTACTS

SBC	DAWN KRONENBERGER	(618) 482-6157
COMED	TOM STUTZMAN	(630) 437-2236
COMCAST	MARY STEFAN	(630) 600-6352
NATURAL GAS PIPELINE CO.	ROBERT L. JONES	(815) 272-9108
NICOR	SCOTT STOGSDILL	(630) 983-8678 EXT. 2362
NORTHERN BORDER PIPELINE	DAVID ROENSCH	(815) 521-1420
PEOPLES GAS LIGHT & COKE	STEVEN GRIFFIN	(312) 240-4740
VILLAGE OF ELWOOD	CHARLES BERNHARD	(815) 423-5011
TEPPCO	MIKE BOOMSMA	(708) 534-6266

REVISIONS		WILL COUNTY DEPARTMENT OF HIGHWAYS
NAME	DATE	
		<p align="center">GENERAL NOTES, SPECIFICATIONS AND STATE STANDARDS</p> <p align="center">MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK</p> <p>SCALE: NONE DRAWN BY SVJ</p> <p>DATE 12-08-06 CHECKED BY JUS</p>

COMPANY NAME: SEC. INC.
 PROJECT CONTACT: T. SCOTT CREECH
 CLIENT: H.C. LEINTZ
 12/07/2006 12:41:07 PM
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 SEC. PROJ. NO.: 83885

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	3
STA. TO STA.			FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT	

SUMMARY OF QUANTITIES			URBAN	CONSTRUCTION TYPE CODE	
CODE NUMBER	PAY ITEMS	UNIT		ROADWAY	BRIDGE
		TOTAL QUANTITY	80% FEDERAL 20% LOCAL 1000-2A	80% FEDERAL 20% LOCAL X071-2A	
20200100	EARTH EXCAVATION	CU YD	3547	3547	--
20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	727	727	--
20700400	POROUS GRANULAR EMBANKMENT, SPECIAL	CU YD	152	--	152
21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	3361	3361	--
25000210	SEEDING, CLASS 2A	ACRE	0.70	0.70	--
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	63	63	--
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	63	63	--
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	63	63	--
25100630	EROSION CONTROL BLANKET	SQ YD	3361	3361	--
28000255	TEMPORARY EROSION CONTROL SEEDING	ACRE	0.70	0.70	--
28000300	TEMPORARY DITCH CHECK	EACH	4	4	--
28000400	PERIMETER EROSION BARRIER	FOOT	1180	1180	--
28100107	STONE RIPRAP, CLASS A4	SQ YD	1296	56	1240
28200200	FILTER FABRIC	SQ YD	1296	56	1240
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	305	305	--
42001430	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ YD	56	56	--
44000100	PAVEMENT REMOVAL	SQ YD	379	379	--
44004000	PAVED DITCH REMOVAL	FOOT	130	130	--
48101500	AGGREGATE SHOULDERS, TYPE B, 6"	SQ YD	753	753	--
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	--	1
50104650	SLOPE WALL REMOVAL	SQ YD	711	--	711
50200100	STRUCTURE EXCAVATION	CU YD	390	--	390
50300225	CONCRETE STRUCTURES	CU YD	192.3	--	192.3
50300255	CONCRETE SUPERSTRUCTURE	CU YD	270	--	270
50300260	BRIDGE DECK GROOVING	SQ YD	783	--	783
50300280	CONCRETE ENCASMENT	CU YD	9	--	9
50300300	PROTECTIVE COAT	SQ YD	987	--	987
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1	--	1
50500505	STUD SHEAR CONNECTORS	EACH	3492	--	3492
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	82920	--	82920
50800515	BAR SPLICERS	EACH	88	--	88
51201600	FURNISHING STEEL PILES HP 12X53	FOOT	881	--	881
51202305	DRIVING PILES	FOOT	293	--	293
51203600	TEST PILE STEEL HP 12X53	EACH	1	--	1
51204650	PILE SHOES	EACH	14	--	14
51500100	NAME PLATES	EACH	1	--	1
52100520	ANCHOR BOLTS, 1"	EACH	48	--	48
54213447	END SECTIONS 12"	EACH	2	2	--
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	74	--	74
60100060	CONCRETE HEADWALL FOR PIPE DRAINS	EACH	4	--	4
60100945	PIPE DRAINS, 12"	FOOT	52	52	--
60109580	PIPE UNDERDRAINS FOR STRUCTURES, 4"	FOOT	189	--	189
60900315	TYPE D INLET BOX, STANDARD 609006	EACH	2	2	--
60900515	CONCRETE THRUST BLOCKS	EACH	2	--	2
63000000	STEEL PLATE BEAM GUARDRAIL, TYPE A	FOOT	454	454	--

SUMMARY OF QUANTITIES			URBAN	CONSTRUCTION TYPE CODE	
CODE NUMBER	PAY ITEMS	UNIT		ROADWAY	BRIDGE
		TOTAL QUANTITY	80% FEDERAL 20% LOCAL 1000-2A	80% FEDERAL 20% LOCAL X071-2A	
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4	--
63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	4	4	--
63200310	GUARDRAIL REMOVAL	FOOT	425	425	--
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO.	6	3	3
67100100	MOBILIZATION	L SUM	1	0.5	0.5
70106800	CHANGEABLE MESSAGE SIGN	CAL MO.	3	3	--
72000100	SIGN PANEL, TYPE 1	SQ FT	5.6	5.6	--
72900100	METAL POST, TYPE A	FOOT	27	27	--
78005110	EPOXY PAVEMENT MARKING - LINE 4"	FOOT	2500	2500	--
78200420	GUARDRAIL MARKERS, TYPE B	EACH	12	12	--
78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4	--
X0322256	TEMPORARY INFORMATION SIGNING	SQ FT	200	100	100
X5020501	UNDERWATER STRUCTURE EXCAVATION PROTECTION, LOCATION 1	EACH	1	--	1
X5020502	UNDERWATER STRUCTURE EXCAVATION PROTECTION, LOCATION 2	EACH	1	--	1
X7011005	TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR	L SUM	1	0.5	0.5
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	0.5	0.5
Z0065000	SETTING PILES IN ROCK	EACH	24	--	24
Z0076600	TRAINEES	HOURS	500	250	250

• SPECIALTY ITEM
 Δ ୨୦୧୦

CONTRACT NO. 83885
 PROJECT NO. 02-00117-21-BR
 SHEET NO. 3
 DATE 12-08-06
 DRAWN BY SVJ
 CHECKED BY JUS

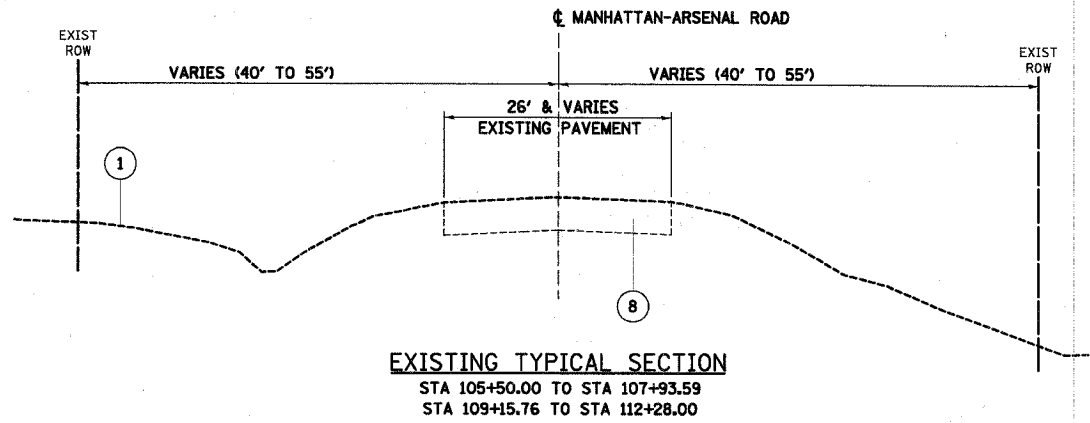
REVISIONS		WILL COUNTY DEPARTMENT OF HIGHWAYS	
NAME	DATE		

SUMMARY OF QUANTITIES
 MANHATTAN-ARSENAL ROAD
 OVER JACKSON CREEK

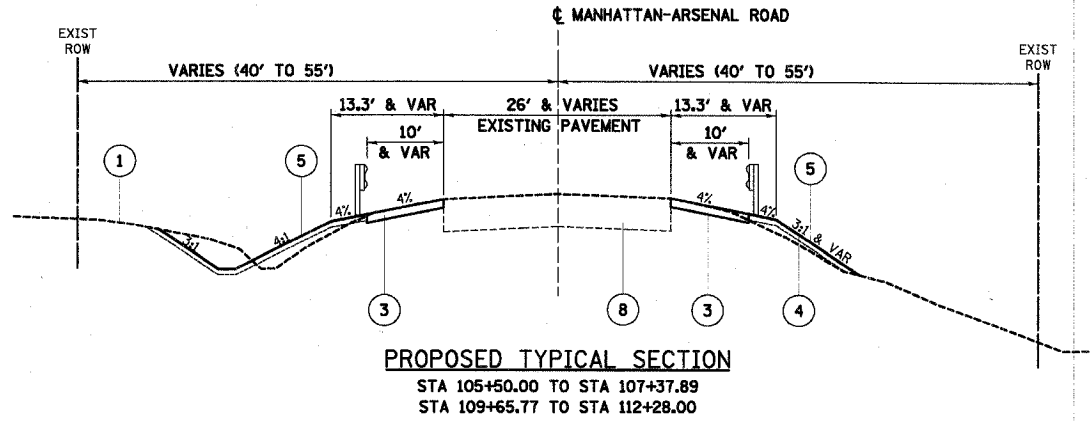
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 DATE: 12-08-06

DRAWN BY SVJ
 CHECKED BY JUS

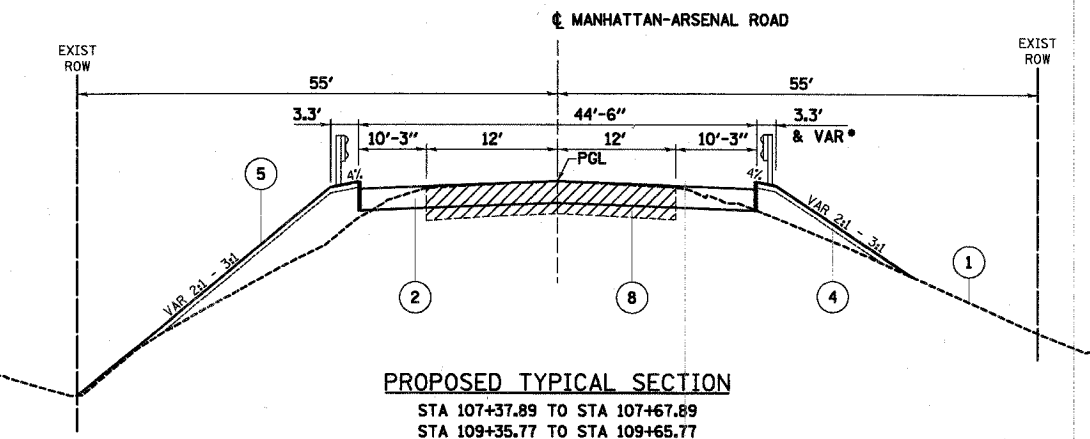
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	4
STA.		TO STA.		
FED. ROAD DIST. NO. 1 ILLINOIS		FED. AID PROJECT		



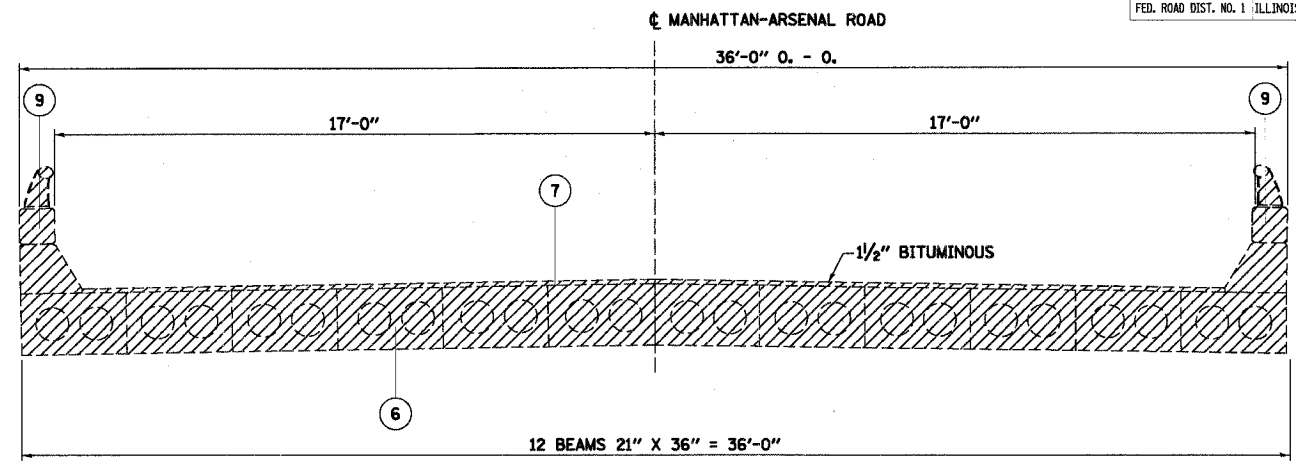
EXISTING TYPICAL SECTION
 STA 105+50.00 TO STA 107+93.59
 STA 109+15.76 TO STA 112+28.00



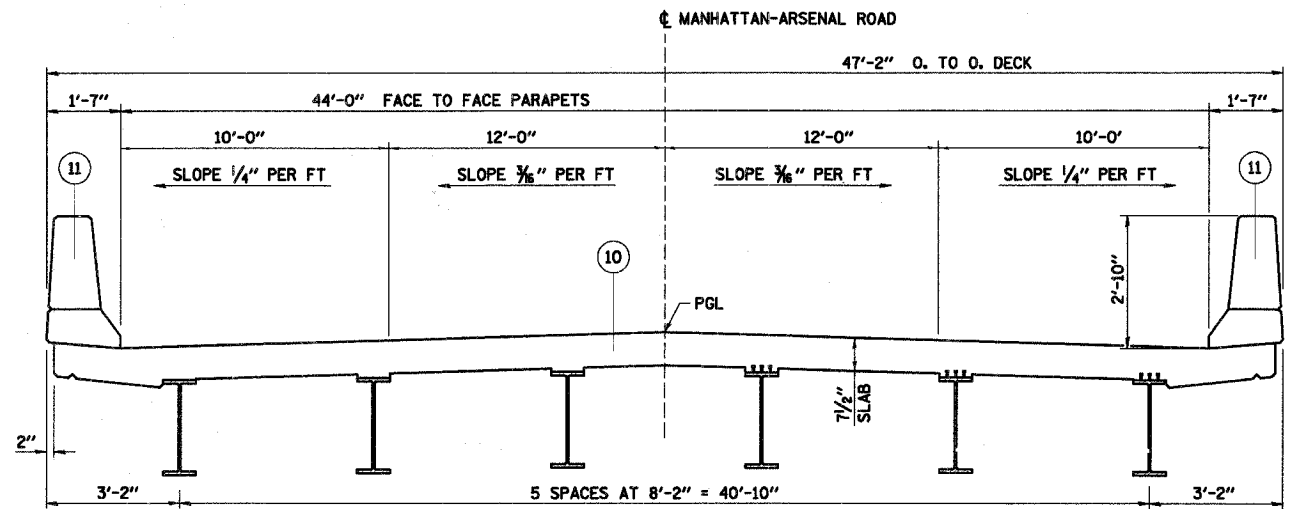
PROPOSED TYPICAL SECTION
 STA 105+50.00 TO STA 107+37.89
 STA 109+65.77 TO STA 112+28.00



PROPOSED TYPICAL SECTION
 STA 107+37.89 TO STA 107+67.89
 STA 109+35.77 TO STA 109+65.77
 * SEE HIGHWAY STANDARD 630301-04 FOR SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS



EXISTING BRIDGE TYPICAL SECTION
 STA 107+86.34 TO STA 109+22.39



PROPOSED BRIDGE TYPICAL SECTION
 STA 107+67.89 TO STA 109+35.77

LEGEND

- ① EXISTING GROUND
 - ② BRIDGE APPROACH PAVEMENT
 - ③ AGG SHOULDER TYPE B, 6" (TYP)
 - ④ TOPSOIL FURNISH AND PLACE, 4"
 - ⑤ SEEDING, CLASS 2A (TYP) WITH NITROGEN, PHOSPHOROUS, POTASSIUM FERTILIZER NUTRIENT, & EROSION CONTROL BLANKET
 - ⑥ EXISTING PPC DECK BEAM SUPERSTRUCTURE (21" X 36" BEAMS)
 - ⑦ EXISTING BITUMINOUS WEARING SURFACE (1 1/2" THICK)
 - ⑧ EXISTING BITUMINOUS PAVEMENT
 - ⑨ EXISTING CONCRETE PARAPET WITH ALUMINUM RAILING
 - ⑩ PROPOSED CONCRETE SUPERSTRUCTURE (SEE BRIDGE PLANS)
 - ⑪ PROPOSED CONCRETE PARAPET (SEE BRIDGE PLANS)
- ▨ INDICATES ITEMS TO BE REMOVED

HOT-MIX ASPHALT REQUIREMENTS		
MIXTURE TYPE	AC TYPE	AIR VOIDS
* HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70	PG 64-22	4% @ 70 Gyr.
* HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	PG 64-22 / 58-22 *	4% @ 70 Gyr.

THE UNIT WEIGHT USED TO CALCULATE ALL HOT-MIX ASPHALT SURFACE MIXTURE QUANTITIES IS 112 LBS./SQ YD./IN.
 * WHEN RAP EXCEEDS 20%, THE NEW ASPHALT BINDER IN THE MIX SHALL BE PG 58-22
 ** BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)

REVISIONS		WILL COUNTY DEPARTMENT OF HIGHWAYS	
NAME	DATE		
		TYPICAL SECTIONS MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK	

SCALE: NONE
 DATE: 12-08-06
 DRAWN BY: SVJ
 CHECKED BY: JJS

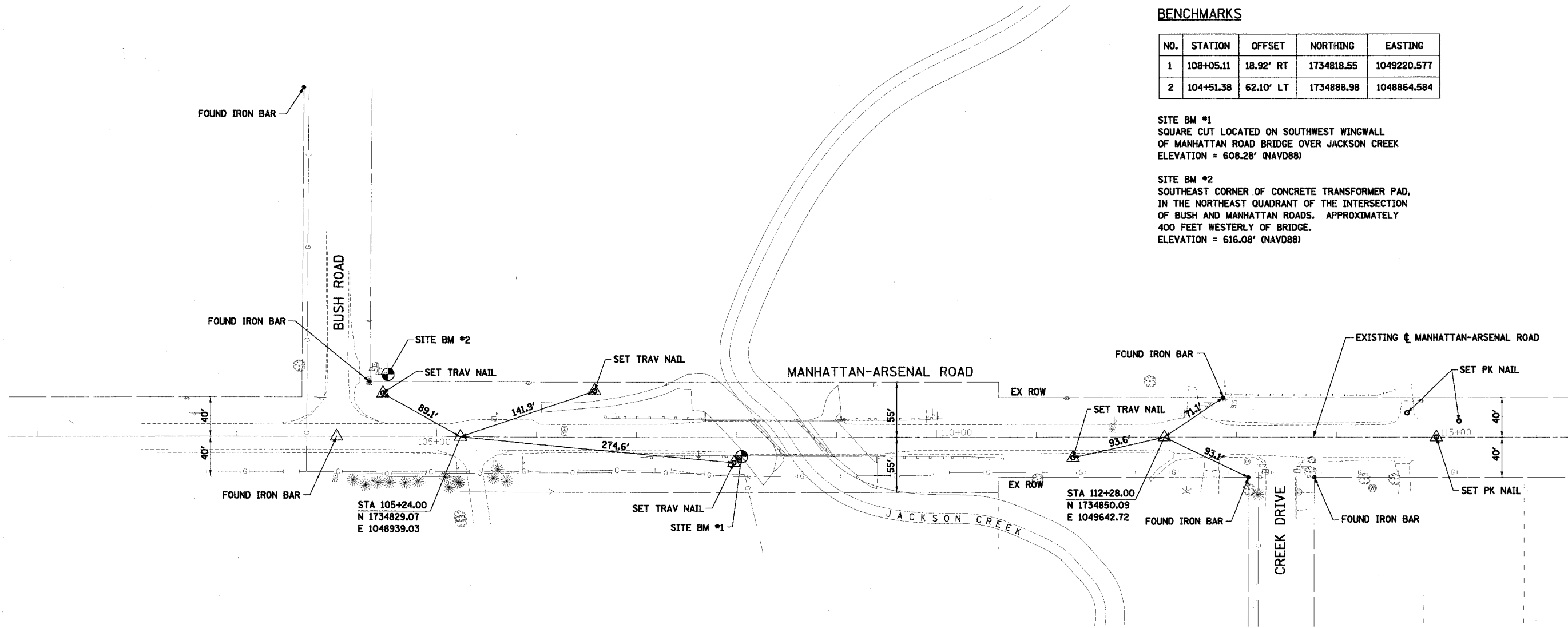
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	5
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	

BENCHMARKS

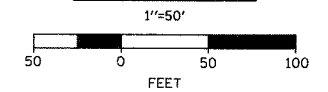
NO.	STATION	OFFSET	NORTHING	EASTING
1	108+05.11	18.92' RT	1734818.55	1049220.577
2	104+51.38	62.10' LT	1734688.98	1048864.584

SITE BM #1
 SQUARE CUT LOCATED ON SOUTHWEST WINGWALL
 OF MANHATTAN ROAD BRIDGE OVER JACKSON CREEK
 ELEVATION = 608.28' (NAVD88)

SITE BM #2
 SOUTHEAST CORNER OF CONCRETE TRANSFORMER PAD,
 IN THE NORTHEAST QUADRANT OF THE INTERSECTION
 OF BUSH AND MANHATTAN ROADS. APPROXIMATELY
 400 FEET WESTERLY OF BRIDGE.
 ELEVATION = 616.08' (NAVD88)



GRAPHIC SCALE



COMPANY NAME: SEC, INC.
 PROJECT: CONTRACT 1, SOUTT CREECH
 DATE: 12/12/2006
 TIME: 12:38:16 PM
 FILE: \\s01\22\11\21\83885\Drawings\Sheets\040556-600.dgn
 SEC PROJ. NO.: 83885

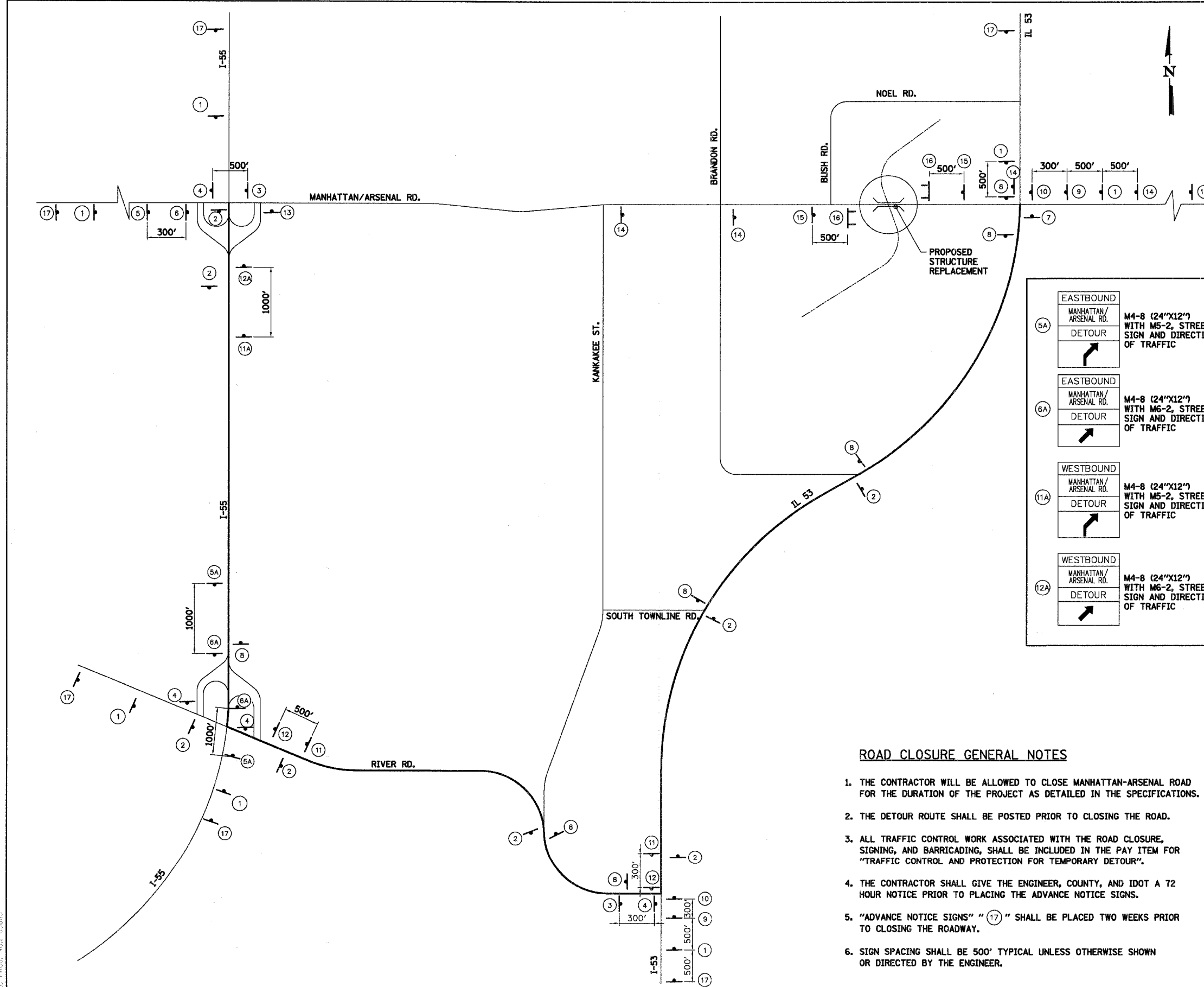
REVISIONS		WILL COUNTY DEPARTMENT OF HIGHWAYS	
NAME	DATE		

**ALIGNMENT, TIES,
& BENCHMARKS**

**MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK**

SCALE: 1"=50' DRAWN BY SVJ
 DATE 12-08-06 CHECKED BY JJS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	7
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		



SIGN LEGEND

- ① W20-3 (48"X48") WITH STREET SIGN
- ② M4-9 (30"X21") WITH STREET SIGN AND DIRECTION OF TRAFFIC
- ③ M4-9L (30"X21") WITH STREET SIGN AND DIRECTION OF TRAFFIC
- ④ M4-9L (30"X21") WITH STREET SIGN AND DIRECTION OF TRAFFIC
- ⑤ M4-9Ra (30"X21") WITH STREET SIGN AND DIRECTION OF TRAFFIC
- ⑥ M4-9R (30"X21") WITH STREET SIGN AND DIRECTION OF TRAFFIC
- ⑦ M4-8a (24"X18") WITH STREET SIGN AND INFORMATION SIGN
- ⑧ M4-8 (24"X12") WITH M5-2, STREET SIGN AND DIRECTION OF TRAFFIC
- ⑨ M4-8 (24"X12") WITH M5-2, STREET SIGN AND DIRECTION OF TRAFFIC
- ⑩ M4-8 (24"X12") WITH M6-2, STREET SIGN AND DIRECTION OF TRAFFIC
- ⑪ M4-8 (24"X12") WITH M5-2, STREET SIGN AND DIRECTION OF TRAFFIC
- ⑫ M4-8 (24"X12") WITH M6-2, STREET SIGN AND DIRECTION OF TRAFFIC
- ⑬ M4-8 (24"X12") WITH M6-2, STREET SIGN AND DIRECTION OF TRAFFIC
- ⑭ ROAD CLOSED R11-3a (60"X30") MILES AHEAD LOCAL TRAFFIC ONLY
- ⑮ ROAD CLOSED AHEAD W20-2 (48"X48")
- ⑯ ROAD CLOSED R11-2 (48"X30")
- ⑰ MANHATTAN/ARSENAL RD CLOSED BETWEEN BUSH RD AND IL ROUTE 53 USE RIVER RD INFO (60"X30")

ROAD CLOSURE GENERAL NOTES

1. THE CONTRACTOR WILL BE ALLOWED TO CLOSE MANHATTAN-ARSENAL ROAD FOR THE DURATION OF THE PROJECT AS DETAILED IN THE SPECIFICATIONS.
2. THE DETOUR ROUTE SHALL BE POSTED PRIOR TO CLOSING THE ROAD.
3. ALL TRAFFIC CONTROL WORK ASSOCIATED WITH THE ROAD CLOSURE, SIGNING, AND BARRICADING, SHALL BE INCLUDED IN THE PAY ITEM FOR "TRAFFIC CONTROL AND PROTECTION FOR TEMPORARY DETOUR".
4. THE CONTRACTOR SHALL GIVE THE ENGINEER, COUNTY, AND IDOT A 72 HOUR NOTICE PRIOR TO PLACING THE ADVANCE NOTICE SIGNS.
5. "ADVANCE NOTICE SIGNS" "⑰" SHALL BE PLACED TWO WEEKS PRIOR TO CLOSING THE ROADWAY.
6. SIGN SPACING SHALL BE 500' TYPICAL UNLESS OTHERWISE SHOWN OR DIRECTED BY THE ENGINEER.

REVISIONS		WILL COUNTY DEPARTMENT OF HIGHWAYS	
NAME	DATE		

TEMPORARY DETOUR PLAN
MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK

SCALE: NONE DRAWN BY SVJ
DATE 12-08-06 CHECKED BY JJS

COMPANY NAME: SEC, INC.
PROJECT: CONTRACT: T. SCOTT GREECH
DATE: 12/8/2006
V:\Jobs\2006\83885\Lead\Sheet\83885-61.dwg
SEC PROJ. NO.: 83885

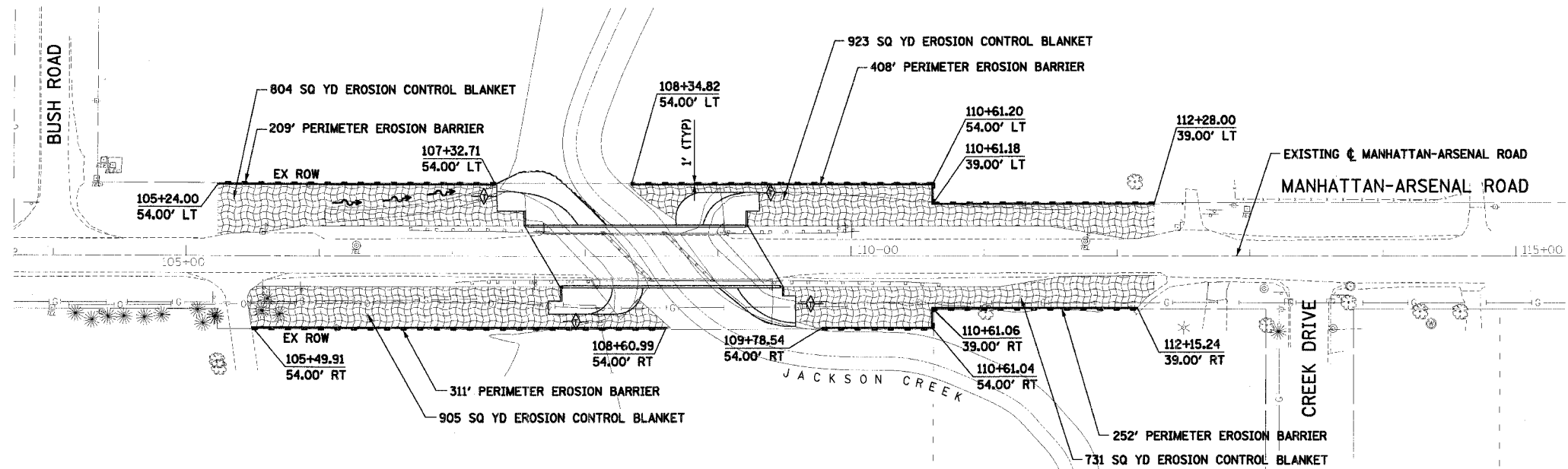
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	8
STA.	TO STA.			
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

LEGEND

- PERIMETER EROSION BARRIER
- EROSION CONTROL BLANKET
- EXISTING R.O.W.
- TEMPORARY DITCH CHECK (HAY OR STRAW BALES NOT TO BE USED)
- DIRECTION OF FLOW

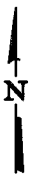
TEMPORARY EROSION CONTROL SEQUENCE OF CONSTRUCTION

1. ESTABLISH TEMPORARY EROSION CONTROL MEASURES AND ERECT PERIMETER EROSION BARRIER ALONG SITE BOUNDARIES PRIOR TO EARTHWORK.
2. INSTALL DITCH CHECKS IMMEDIATELY AFTER DITCH GRADING IS COMPLETED.
3. INSTALL TEMPORARY EROSION CONTROL SEEDING.

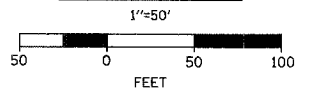


TEMPORARY EROSION CONTROL NOTES

1. THE CONTRACTOR WILL BE REQUIRED TO IMPLEMENT AND MAINTAIN EROSION CONTROL MEASURES IMMEDIATELY AFTER STRIPPING OF EXISTING VEGETATION.
2. NO RUNOFF FROM STRIPPED AREAS WILL LEAVE THE SITE OTHER THAN THROUGH SEDIMENTATION/STILLING BASINS. THE CONTRACTOR WILL ADJUST HIS OPERATIONS AND IMPLEMENT EROSION CONTROL MEASURES ACCORDINGLY.
3. THE QUANTITIES SHOWN FOR TEMPORARY DITCH CHECKS ARE MEASURED AS EACH, REGARDLESS OF TYPE OR CONFIGURATION USED. HAY OR STRAW BALES ARE **NOT** TO BE USED.
4. THE CONTRACTOR SHALL SURROUND ALL EARTH STOCKPILES WITH SILT FILTER FENCE AND SHALL BE PAID FOR AS PERIMETER EROSION BARRIER. EROSION CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR AND ENGINEER AT LEAST ONCE A WEEK WITHIN 24 HOURS OF ANY STORM EXCEEDING 0.5 INCH OF PRECIPITATION.
5. ALL CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM STORM WATER PERMIT.
6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PREVENT POLLUTION OF STORM WATER AND SHALL FOLLOW IEPA & IDOT CONSTRUCTION MEMORANDUM NO. 95-60.
7. STABILIZATION MEASURES SHALL BE INITIATED WITHIN 3 DAYS OF CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASING IN AREAS WHERE IT WILL NOT OCCUR FOR A PERIOD OF 21 OR MORE CALENDAR DAYS.
8. THE CONTRACTOR SHALL APPLY TEMPORARY EROSION CONTROL SEEDING TO ALL ERODIBLE BARE EARTH AREAS WITHIN THE CONTRACT LIMITS EACH WEEK, REGARDLESS OF WEATHER CONDITIONS OR PROGRESS OF THE WORK, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ERODIBLE EMBANKMENT AND EXCAVATION AREAS WHERE WORK IS IN PROGRESS SHALL BE INCLUDED ON THE AREAS TO BE SEEDDED. SEE SPECIAL PROVISION FOR TEMPORARY EROSION CONTROL SEEDING.



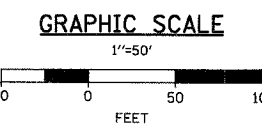
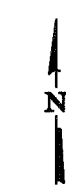
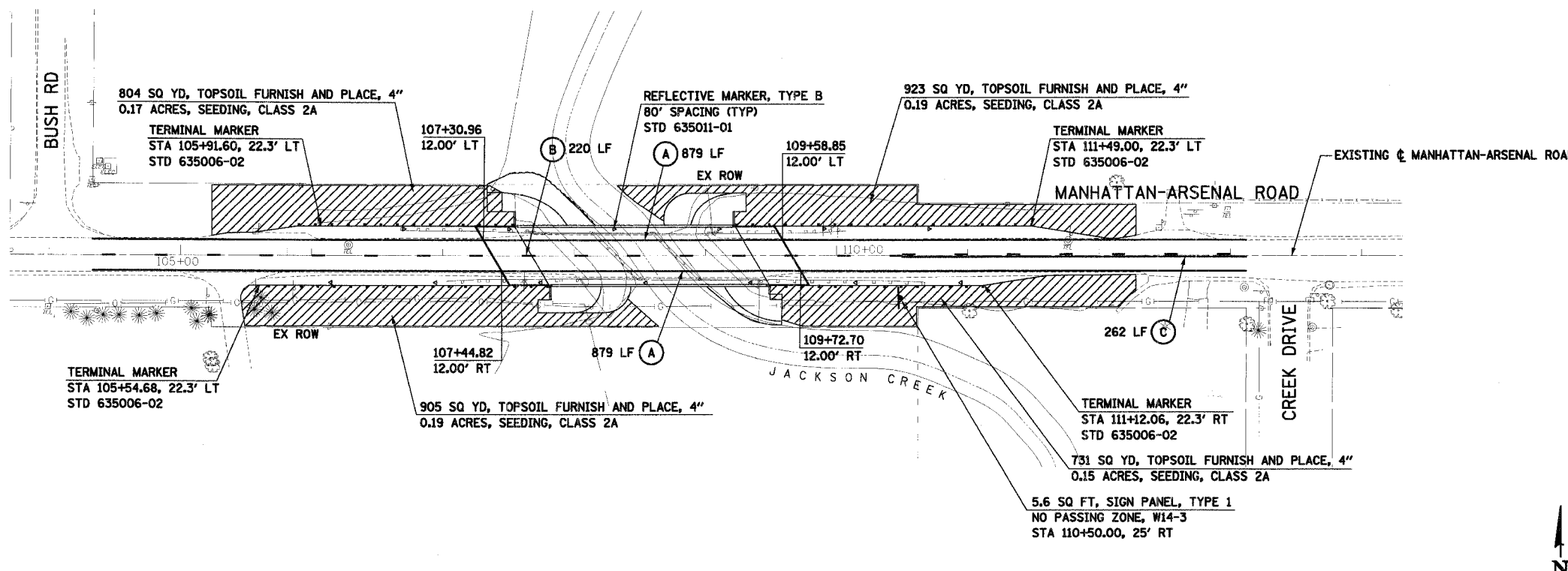
GRAPHIC SCALE



COMPANY NAME: SEC, INC.
 PROJECT: CONTRACT 1, SCOTT CREECH
 PROJECT LOCATION: 1242315 PM
 DATE: 12/18/2008
 V:\Jobs\2004\0408595\Sec\Shawna\0408595-628.dgn
 SFC PROJ. NO.: 83885

REVISIONS		WILL COUNTY DEPARTMENT OF HIGHWAYS
NAME	DATE	
		EROSION CONTROL PLAN MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK SCALE: 1"=50' DATE 12-08-06 DRAWN BY SVJ CHECKED BY JJS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	9
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		



LEGEND

	TOPSOIL FURNISH AND PLACE, 4" SEEDING, CL 2A
	EPOXY PAVEMENT MARKING - LINE 4" (SOLID WHITE)
	EPOXY PAVEMENT MARKING - LINE 4" (YELLOW SKIP DASH, 10' DASH, 30' SKIP)
	EPOXY PAVEMENT MARKING - LINE 4" (SOLID YELLOW)

COMPANY NAME: SEC, INC.
 PROJECT: CONTRACT T1 SCOTT CREECH
 DATE: 12/16/2006
 DRAWN BY: SVJ
 CHECKED BY: JJS
 SEC PROJ. NO.: 83885

REVISIONS		WILL COUNTY DEPARTMENT OF HIGHWAYS
NAME	DATE	
		PAVEMENT MARKING AND RESTORATION PLAN MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK SCALE: 1"=50' DATE 12-08-06
		DRAWN BY SVJ CHECKED BY JJS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 532	02-00117-21-BR	WILL	35	10
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	CONTRACT # 83885	

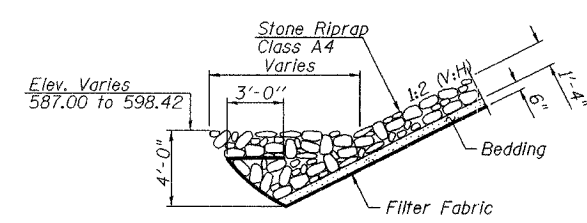
SHEET NO. S-1
S-19 SHEETS

Benchmark: Square cut located on southwest wing wall.
Elev. = 605.28 (NAVD 88 Datum)

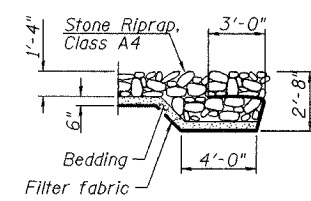
Existing Structure: S.N. 099-3304 was built in 1972 under Sec. 117 B1-CT by Will County. The 3-span structure consists of precast, prestressed concrete deck beams with an out-to-out width of 36'-0" and a total length of 140'-1 1/2" bk. to bk. abutments with a 45° skew. The substructure consists of concrete encased steel pile bent piers and abutments. The existing structure is to be removed and replaced while the bridge is closed to traffic.

See Roadway Plans for detour route.

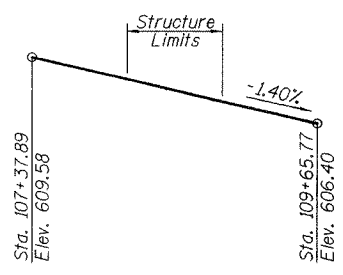
No Salvage



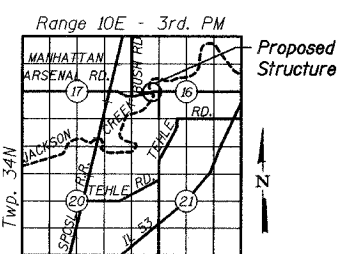
STONE RIPRAP ANCHOR DETAIL



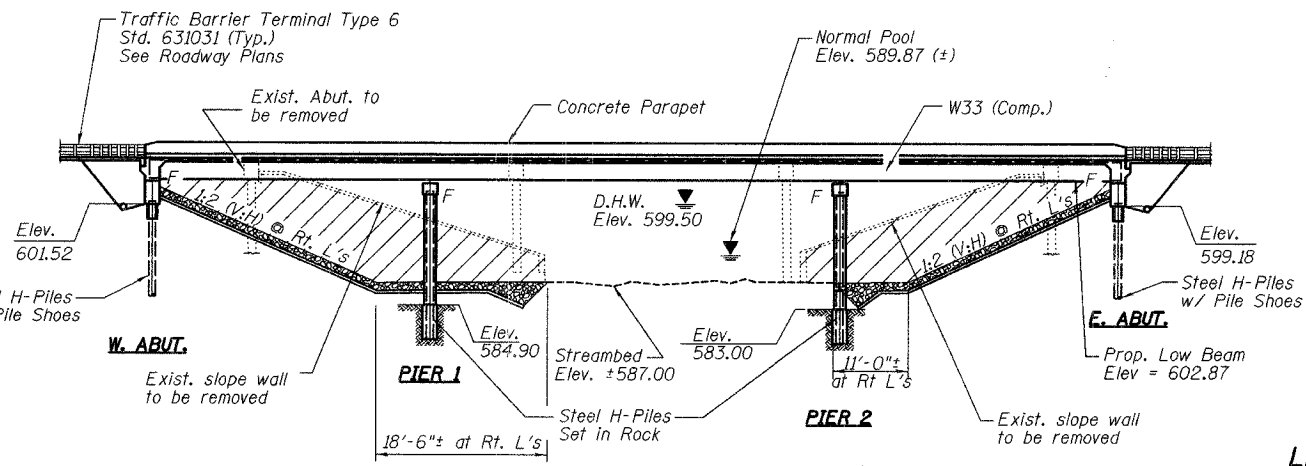
SECTION A-A



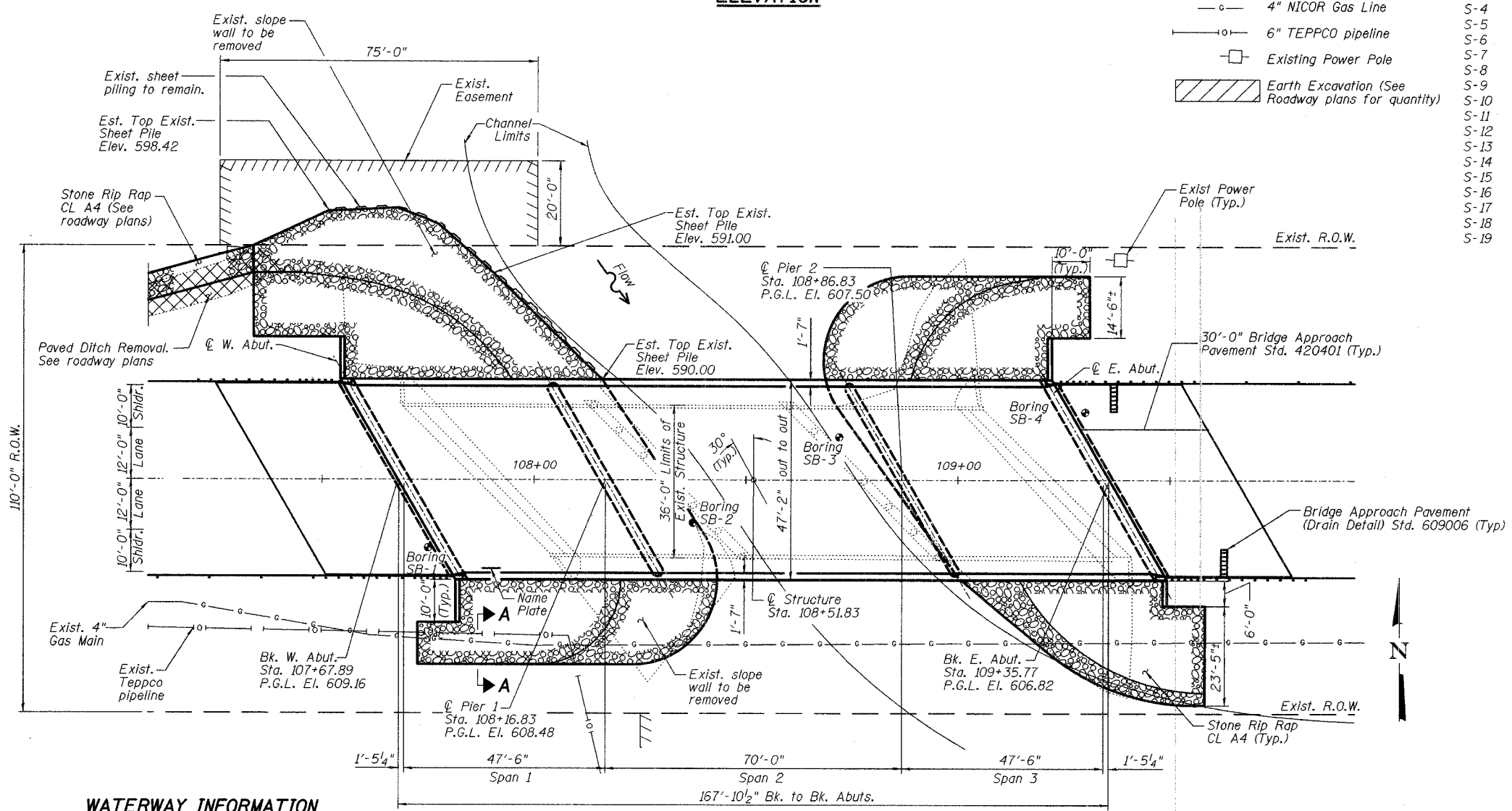
PROFILE GRADE
(Along Manhattan - Arsenal Road)



LOCATION SKETCH



ELEVATION



PLAN

WATERWAY INFORMATION

Drainage Area = 25.98 Sq. Mi. Low Grade Elev. 604.34 @ Sta. - 111+84.71

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
	10	2,368	739	1001	598.26	0.03	0.09	598.29	598.35
Design	30	3,128	845	1158	599.38	0.04	0.12	599.42	599.50
	50	3,559	905	1242	599.98	0.00	0.10	599.98	600.08
Base	100	4,068	965	1327	600.57	0.00	0.07	600.55	600.64

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

LEGEND

- Soil Boring Location
- 4" NICOR Gas Line
- 6" TEPPCO pipeline
- Existing Power Pole
- ▨ Earth Excavation (See Roadway plans for quantity)

LOADING HS20-44

Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications - 17th Ed.

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 4%g
Site Coefficient (S) = 1.0

INDEX OF SHEETS

- S-1 GENERAL PLAN & ELEVATION
- S-2 GENERAL NOTES, INDEX & QUANTITIES
- S-3 SUBSTRUCTURE LAYOUT PLAN
- S-4 TOP OF DECK ELEVATIONS
- S-5 TOP OF DECK ELEVATIONS
- S-6 DECK PLAN & CROSS SECTION
- S-7 SUPERSTRUCTURE DETAILS
- S-8 DIAPHRAGM DETAILS
- S-9 STRUCTURAL STEEL
- S-10 STRUCTURAL STEEL DETAILS
- S-11 BEARING DETAILS
- S-12 ANCHOR BOLT DETAILS
- S-13 WEST ABUTMENT DETAILS
- S-14 EAST ABUTMENT DETAILS
- S-15 PIER 1 DETAILS
- S-16 PIER 2 DETAILS
- S-17 BAR SPLICER ASSEMBLY DETAILS
- S-18 SOIL BORING LOGS
- S-19 SOIL BORING LOGS



To the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "AASHTO Standard Specifications for Highway Bridges".

Andrew E. Underwager 12-8-2006
Andrew E. Underwager Date
Licensed Structural Engineer
License Expires November 30, 2008

WILL COUNTY DEPARTMENT OF HIGHWAYS

GENERAL PLAN AND ELEVATION
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395



DATE 12-8-2006

GENERAL NOTES

Fasteners shall be high strength bolts.
Bolts $\frac{7}{8}$ " ϕ , open holes $\frac{15}{16}$ " ϕ , unless otherwise noted.

Calculated weight of Structural Steel = 142,547 lbs.

Field welding of construction accessories will not be permitted to beams.

Anchor bolts shall be set before bolting diaphragms over supports.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams and all splice plate material except fill plates.

Reinforcement bars shall conform to the requirements of AASHTO M 31 or M 322, Grade 60.

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the Engineer.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two $\frac{1}{8}$ " adjusting shims, of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims.

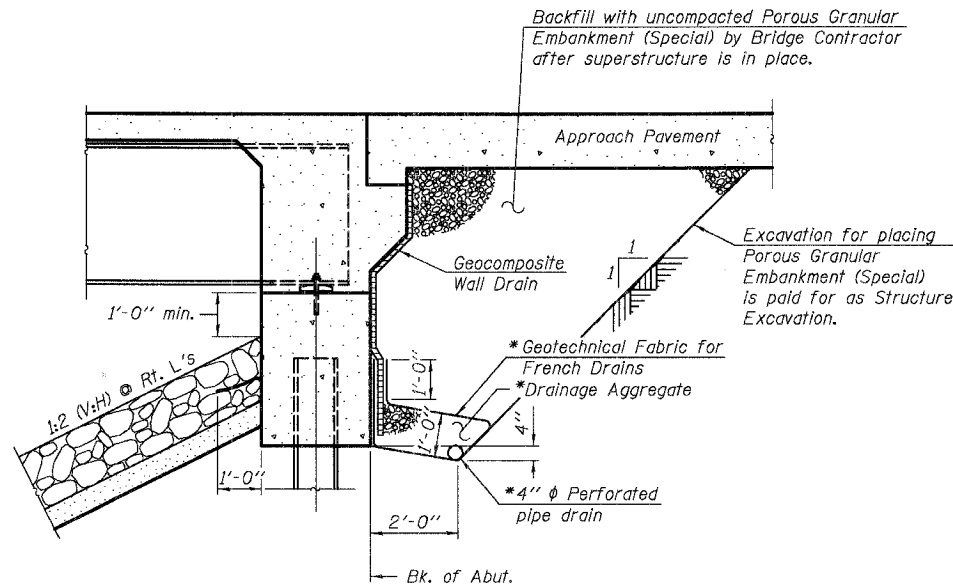
The contractor shall drive one (1) HP-12x53 test pile in a permanent location at the East Abutment and Pier 1 as directed by the Engineer before ordering the remainder of piles.

All construction joints shall be bonded.

The Contractor shall obtain a construction permit from the Illinois Department of Natural Resources (IDNR), Office of Water Resources for any temporary construction activity placed in the water except cofferdams. This shall include the placement of material for run-arounds, causeways, etc. Any permit application by the Contractor shall refer to the IDNR permit number NE 2004056 which was issued for the permanent construction.

The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for painting of new structural steel except where otherwise noted. The color of the final finish coat for all steel surfaces shall be gray, Munsell No. 5B 7/1. See Special Provision for "Cleaning and Painting New Metal Structures".

The information shown in these plans concerning the type and location of utilities is not guaranteed to be accurate or all-inclusive. The Contractor is responsible for making his own determination as to the existence of type, size and location of all underground and overhead utilities as may be necessary to avoid conflict with construction operations and/or damage to the utility.



SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)

* Included in the cost of Pipe Underdrains for Structures.

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.		152	152
Stone Riprap, Class A4	Sq. Yd.		1240	1240
Filter Fabric	Sq. Yd.		1240	1240
Removal of Existing Structures	Each			1
Slope Wall Removal	Sq. Yd.		711	711
Structure Excavation	Cu. Yd.		390	390
Concrete Structures	Cu. Yd.		192.3	192.3
Concrete Superstructure	Cu. Yd.	270		270
Bridge Deck Grooving	Sq. Yd.	783		783
Concrete Encasement	Cu. Yd.		9.0	9.0
Protective Coat	Sq. Yd.	987		987
Name Plates	Each	1		1
Anchor Bolts, 1"	Each		48	48
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	3,492		3,492
Bar Splicers	Each	88		88
Reinforcement Bars, Epoxy Coated	Pound	64,870	18,050	82,920
Furnishing Steel Piles HP 12x53	Foot		881	881
Driving Piles	Foot		293	293
Test Pile Steel HP 12x53	Each		1	1
Pile Shoes	Each		14	14
Geocomposite Wall Drain	Sq. Yd.		74	74
Pipe Underdrains for Structures, 4"	Foot		189	189
Underwater Structure Excavation Protection, Location 1	Each		1	1
Underwater Structure Excavation Protection, Location 2	Each		1	1
Setting Piles in Rock	Each		24	24

JACKSON CREEK
BUILT 200 - BY
WILL COUNTY
SEC 02-00117-21-BR
F.A.P. RT. 532 STA. 108+51.83
STR. NO. 099-3395 LOADING HS20

NAME PLATE

See Std. 515001

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

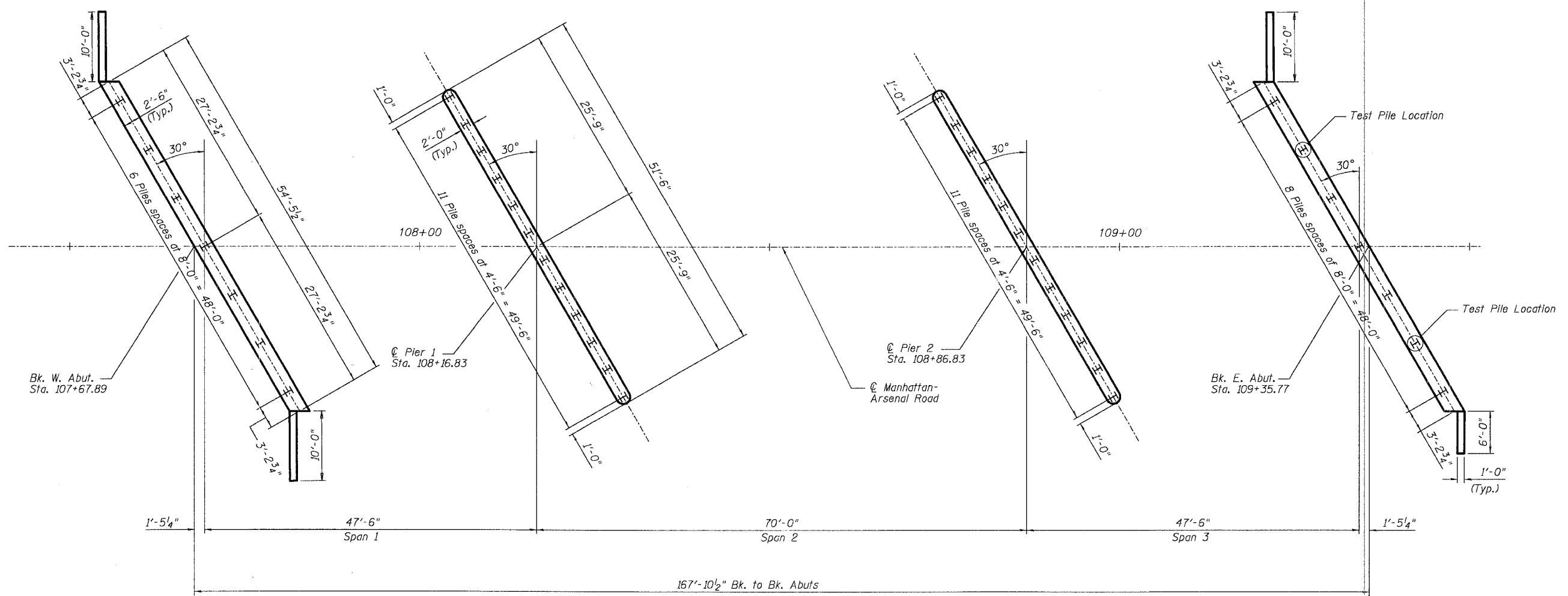
WILL COUNTY DEPARTMENT OF HIGHWAYS

GENERAL NOTES, INDEX & QUANTITIES
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395

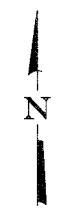
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET
FAP 532	02-00117-21-BR	WILL	35	12
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		
1				

SHEET NO. S-3
S-19 SHEETS

CONTRACT #: 83885



SUBSTRUCTURE LAYOUT

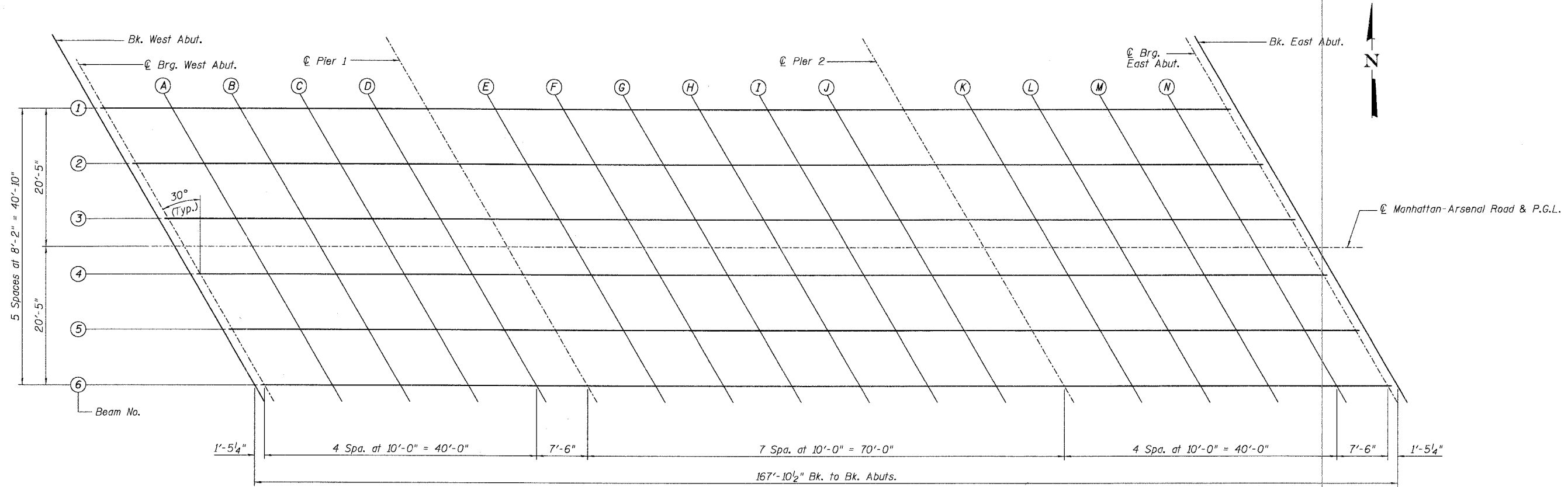


DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

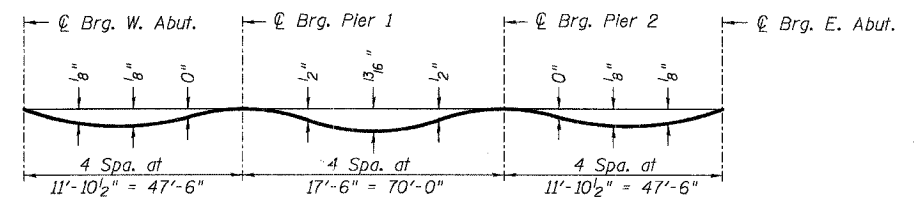
SEC GROUP, INC.
 Smith Engineering Consultants • SEC Automation • SEC Planning
 4500 Prime Parkway, McHenry, IL 60050
 t. 815.385.1778 f. 815.385.1781
 www.secgroupinc.com engineering@secgroupinc.com

WILL COUNTY DEPARTMENT OF HIGHWAYS
 SUBSTRUCTURE LAYOUT
 MANHATTAN-ARSENAL ROAD
 OVER JACKSON CREEK
 WILL COUNTY
 SECTION NO. 02-00117-21-BR
 STRUCTURE NO. 099-3395
 DATE 12-8-2006

COMPANY NAME, SEC INC.
 PROJECT: CONTRACT #099-3395, CONTRACT DATE 12/8/06
 DRAWN BY: MDJ, CHECKED BY: RGD, DESIGNED BY: KMA
 DATE: 12/8/06, SCALE: AS SHOWN, SHEET NO. S-3 OF 19

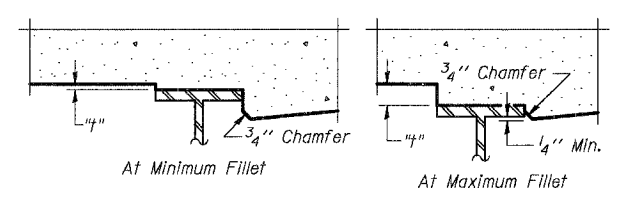


PLAN



DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheet S-5.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "t" above top flange of beams.

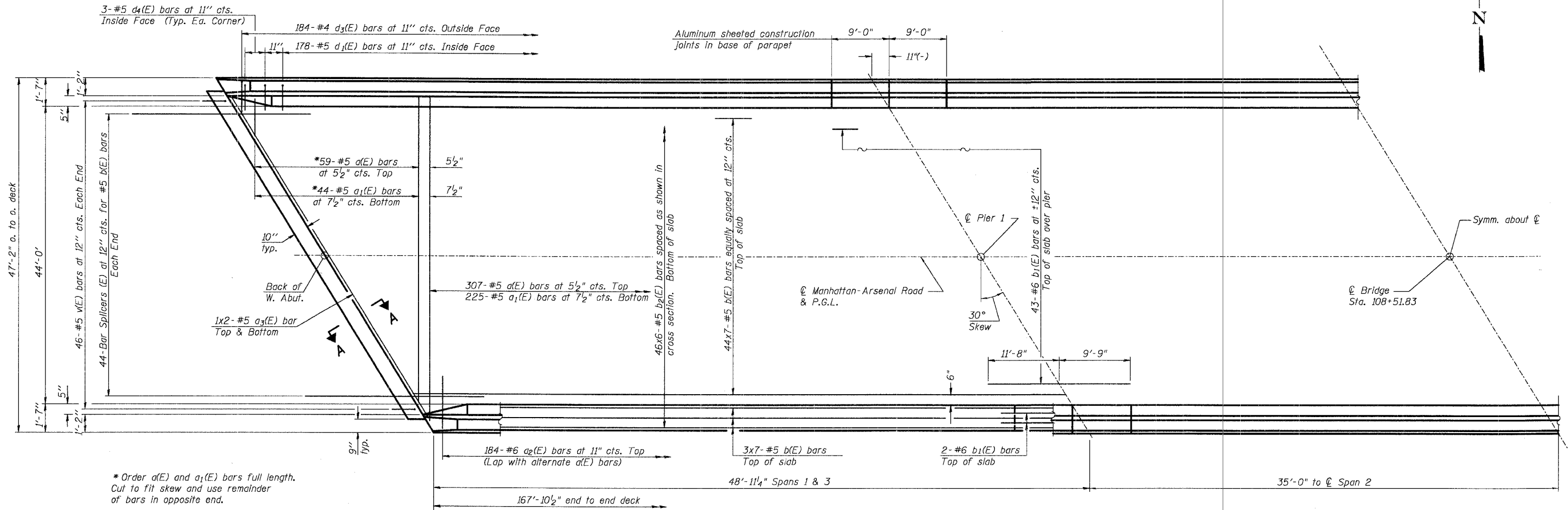
FILLET HEIGHTS

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

SEC GROUP, INC.
Smith Engineering Consultants • SEC Automation • SEC Planning
4500 Prime Parkway, McHenry, IL 60050
t. 815.385.1776 f. 815.385.1781
www.secgroupinc.com engineering@secgroupinc.com

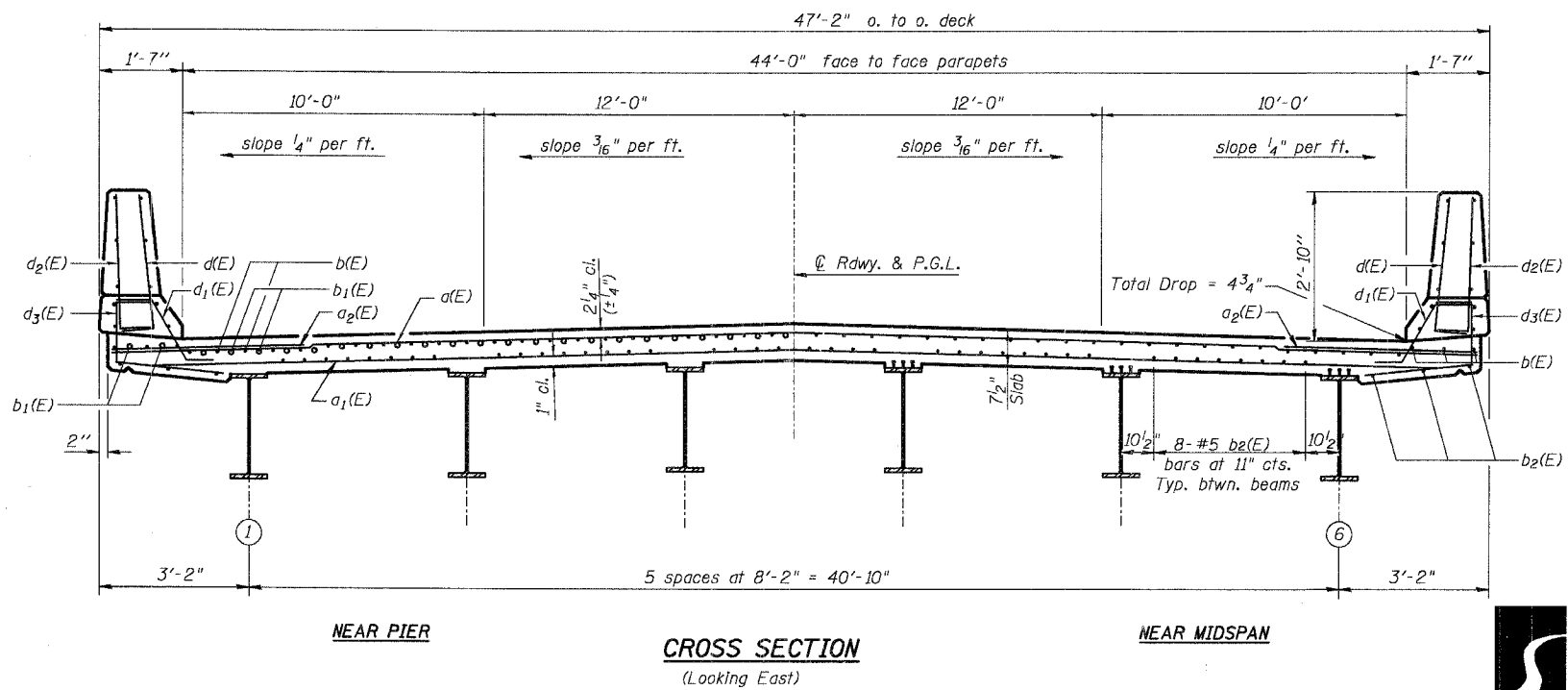
WILL COUNTY DEPARTMENT OF HIGHWAYS
**TOP OF DECK ELEVATIONS
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395**
DATE 12-8-2006

COMPANY NAME, SEC, INC.
 PROJECT CONTACT, PROJECT CONTACT
 DATE, 12/11/2006, 10:57 AM
 PROJECT NO., 02-00117-21-BR
 SHEET NO., S-4
 CONTRACT NO., 83885



* Order a(E) and a₁(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

MIN. BAR LAP
#5 bar = 2'-2"



Notes:
See Sheets S-7 for superstructure details. Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
See Sheet S-7 for parapet reinforcement.
See Sheet S-7 for details of v(E) bars.
See Sheet S-8 for Section A-A and diaphragm details.
See Sheet S-17 for Bar Splicer details.
See Sheet S-8 for Bill of Materials.

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

WILL COUNTY DEPARTMENT OF HIGHWAYS

DECK PLAN & CROSS SECTION
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395

DATE 12-8-2006

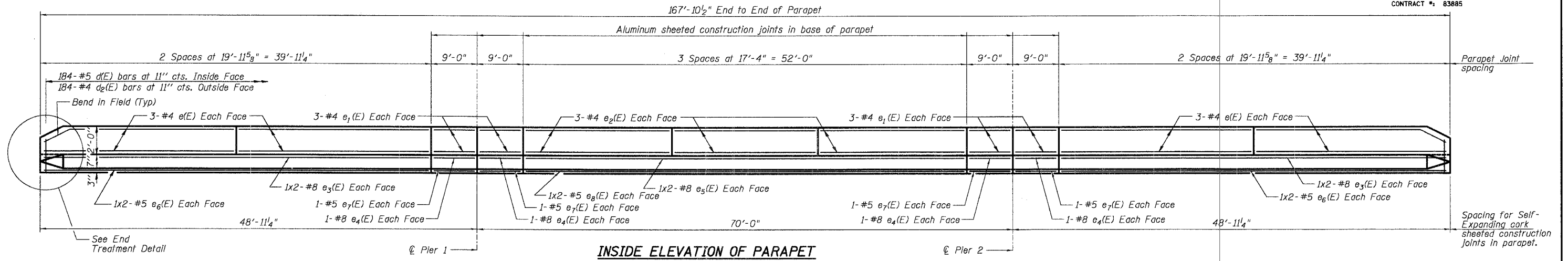
SEC GROUP, INC.
Civil Engineering Consultants • SEC Automation • SEC Planning
4500 Prime Parkway, Mokena, IL 60050
T 815.385.1776 F 815.385.1781
www.secgroupinc.com engineering@secgroupinc.com

COMPANY NAME, SEC, INC.
 PROJECT: CONTRACT: #099-3395-01/21
 07/15/06 10:59 AM
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ROUTE NO.	SECTION	COUNTY	SHEET	SHEET
FAP 532	02-00117-21-BR	WILL	35	16
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT-		
1				

SHEET NO. S-7
S-19 SHEETS

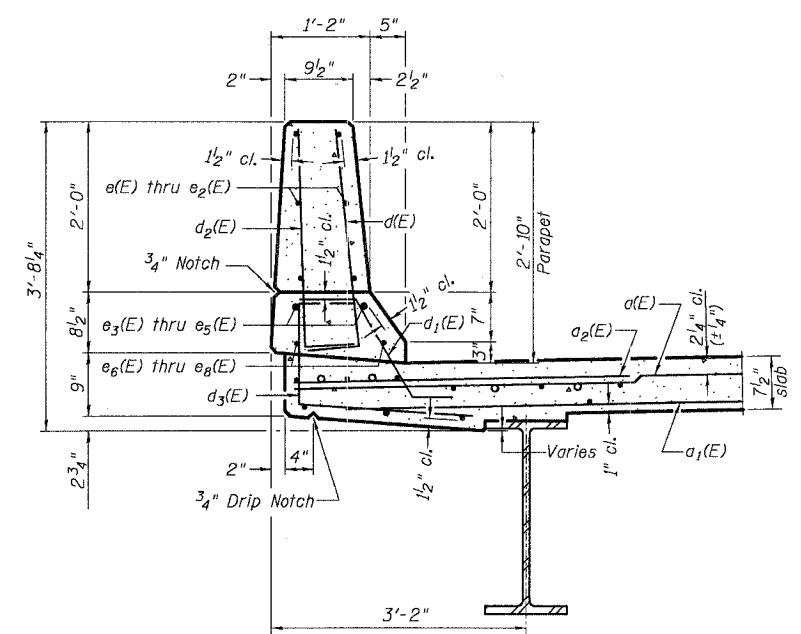
CONTRACT #: 83885



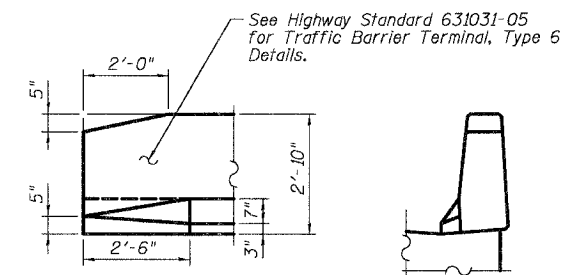
INSIDE ELEVATION OF PARAPET

MIN. BAR LAP

#5 bar = 1'-8"
#8 bar = 3'-5"

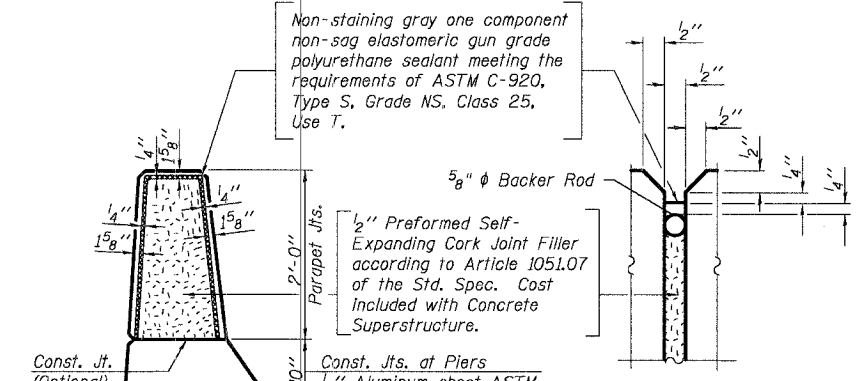


SECTION THRU PARAPET



ELEVATION **END VIEW**

END TREATMENT DETAIL
Not to Scale



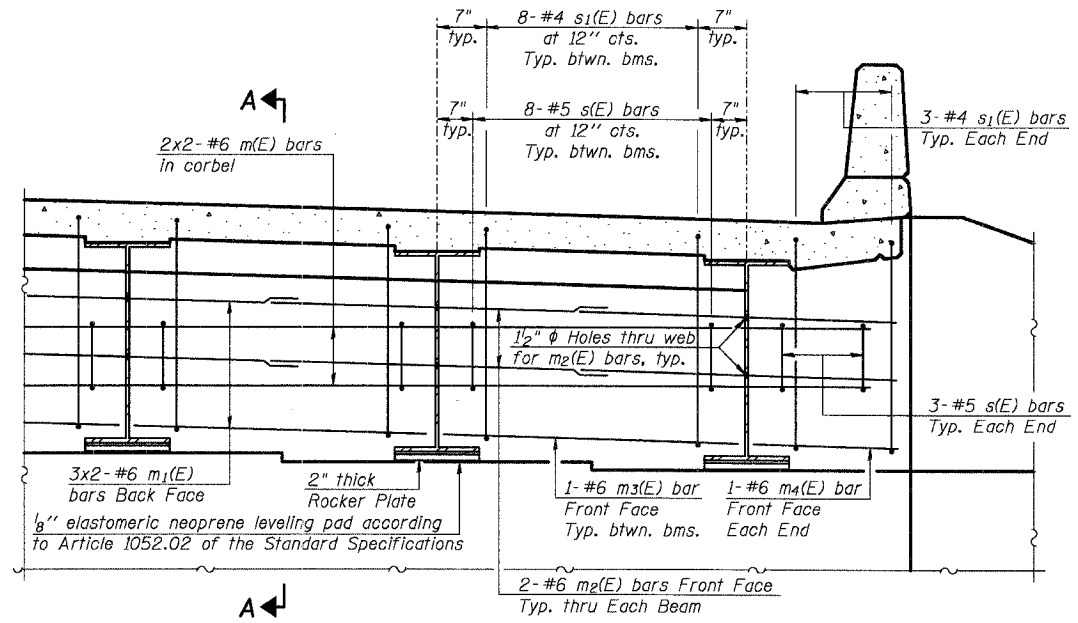
PARAPET JOINT DETAILS

Notes:
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 1 x 2-#5 etc. indicates 1 line of bars with 2 lengths per line.
See Sheet S-8 for Bill of Material.

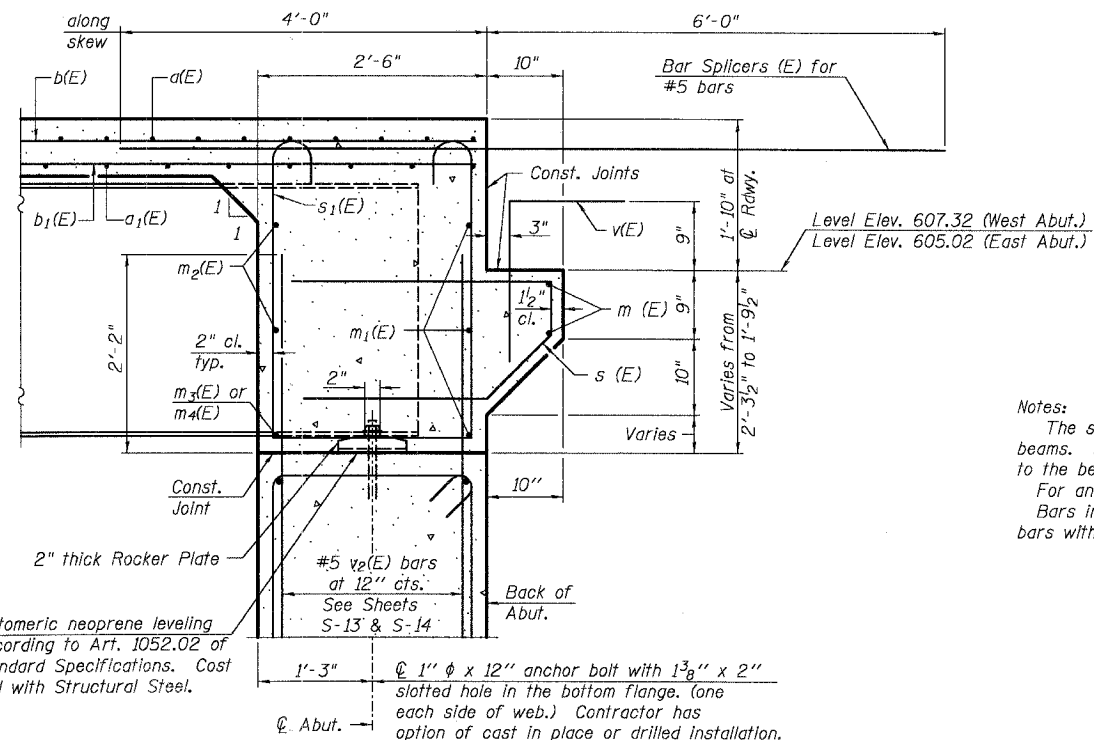
DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

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www.secgroupinc.com engineering@secgroupinc.com

WILL COUNTY DEPARTMENT OF HIGHWAYS
**SUPERSTRUCTURE DETAILS
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY**
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395
DATE 12-8-2006

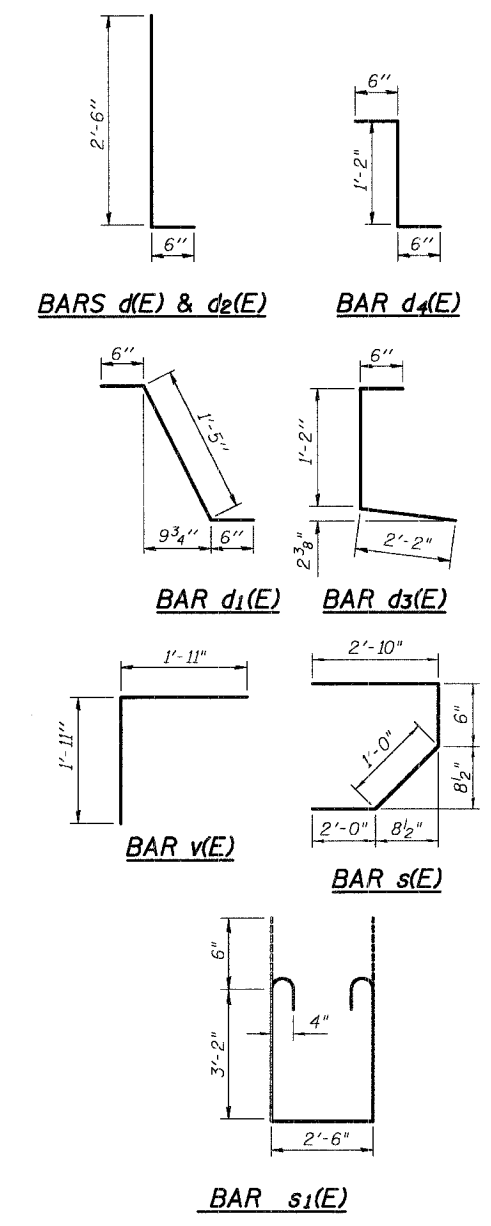


DIAPHRAGM ELEVATION AT ABUTMENT



SECTION A-A
Dimensions at right angles to abutment, except as shown.

MIN. BAR LAP
#6 bar = 2'-9"



SUPERSTRUCTURE BILL OF MATERIAL

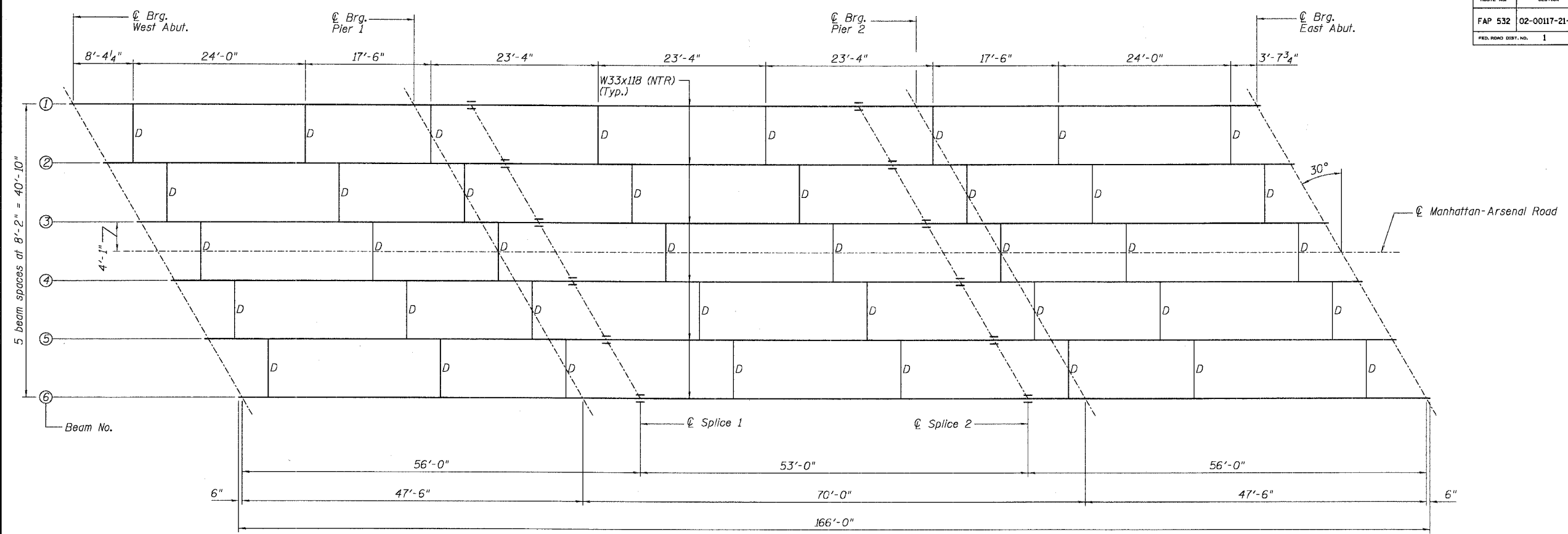
Bar	No.	Size	Length	Shape
a (E)	366	# 5	46'-8"	—
a1(E)	269	# 5	45'-0"	—
a2(E)	368	# 6	4'-6"	—
a3(E)	8	# 5	28'-0"	—
b (E)	350	# 5	25'-10"	—
b1(E)	94	# 6	21'-5"	—
b2(E)	276	# 5	29'-9"	—
d (E)	368	# 5	3'-0"	┌
d1(E)	356	# 5	2'-5"	┌
d2(E)	368	# 4	3'-0"	┌
d3(E)	368	# 4	3'-10"	┌
d4(E)	12	# 5	2'-2"	┌
e (E)	48	# 4	19'-7"	—
e1(E)	48	# 4	8'-8"	—
e2(E)	36	# 4	17'-0"	—
e3(E)	16	# 8	21'-6"	—
e4(E)	16	# 8	8'-8"	—
e5(E)	8	# 8	27'-7"	—
e6(E)	16	# 5	20'-8"	—
e7(E)	16	# 5	8'-8"	—
e8(E)	8	# 5	26'-8"	—
m (E)	8	# 6	27'-8"	—
m1(E)	12	# 6	28'-6"	—
m2(E)	24	# 6	12'-3"	—
m3(E)	10	# 6	9'-2"	—
m4(E)	4	# 6	3'-4"	—
s (E)	92	# 5	6'-4"	┐
s1(E)	92	# 4	9'-10"	┐
v (E)	92	# 5	3'-10"	┐
Reinforcement Bars, Epoxy Coated		Pound		64,870
Concrete Superstructure		Cu. Yds.		270

Notes:
The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
For anchor bolt details see sheet S-12.
Bars indicated thus 1x2-#5 etc. indicates 1 line of bars with 2 lengths per line.

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

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WILL COUNTY DEPARTMENT OF HIGHWAYS
DIAPHRAGM DETAILS
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395
DATE 12-8-2006



FRAMING PLAN

All beams are W33x118 AASHTO M270, Grade 50 (NTR)

	0.4 Sp. 1	Pier	0.5 Sp. 2
I_s (in ⁴)	5,900	5,900	5,900
I_c (n) (in ⁴)	15,932	---	15,932
I_c (3n) (in ⁴)	11,946	---	11,946
S_s (in ³)	359	359	359
S_c (n) (in ³)	527	---	527
S_c (3n) (in ³)	480	---	480
Z (in ³)	---	---	---
ϕ (k/ft.)	0.92	1.44	0.92
$M\phi$ (k)	113	499	224
$s\phi$ (k/ft.)	0.517	---	0.517
$Ms\phi$ (k)	76	---	157
$M\phi$ (k)	369	252	524
M (Imp) (k)	107	68	136
$5_3[M\phi + M(Imp)]$ (k)	793	533	1,100
M_a (k)	1,277	1,342	1,925
M_u (k)	2,118	---	2,040
$f_s\phi$ non-comp (k.s.i.)	3.8	16.7	7.5
$f_s\phi$ (comp) (k.s.i.)	1.9	---	3.9
$f_s 5_3 (\phi + Imp)$ (k.s.i.)	18.1	17.8	25.0
f_s (Overload) (k.s.i.)	23.8	34.5	36.4
f_s (Total) (k.s.i.)	---	44.9	---
VR (k)	66.1	---	57.3

* Compact section
** Braced non-compact section

	Abut.	Pier
$R\phi$ (k)	23.6	94.9
$R\phi$ (k)	46.2	55.4
$Imp.$ (k)	13.4	11.6
R (Total) (k)	83.2	161.9

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total & Overload).
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)
 VR is the maximum Live Load + Impact shear range in span.
 Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
 M_a (Applied Moment) = $1.3[M\phi + Ms\phi + 5_3(M\phi + M(Imp))]$.
The Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 and 10.50.1.1.
 f_s (Overload) is the sum of the stresses due to $M\phi + Ms\phi + 5_3(M\phi + M(Imp))$.
 f_s (Total) (Non-compact section) is the sum of the stresses due to $1.3[M\phi + Ms\phi + 5_3(M\phi + M(Imp))]$.

LOCATION	WEST ABUT.	EAST ABUT.	PIER 1	PIER 2	SPLICE 1	SPLICE 2
BEAM 1	608.26	605.96	607.54	606.57	607.42	606.68
BEAM 2	608.37	606.07	607.65	606.68	607.53	606.79
BEAM 3	608.43	606.13	607.71	606.74	607.59	606.85
BEAM 4	608.37	606.07	607.65	606.68	607.53	606.79
BEAM 5	608.17	605.87	607.45	606.48	607.33	606.59
BEAM 6	607.94	605.64	607.22	606.25	607.10	606.36

NOTES:

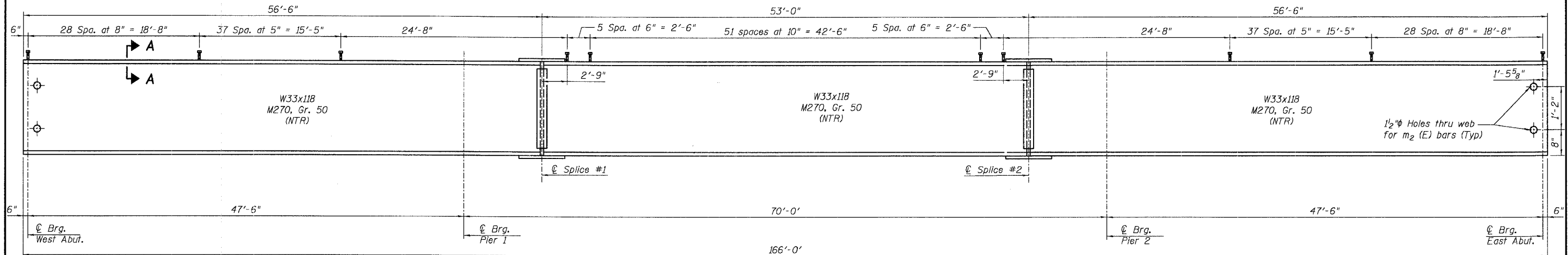
All materials shall be AASHTO M270 Grade 50.
"NTR" denotes members to which Notch Toughness Requirements are applicable.
See Sheet S-10 for beam elevation and framing details.

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

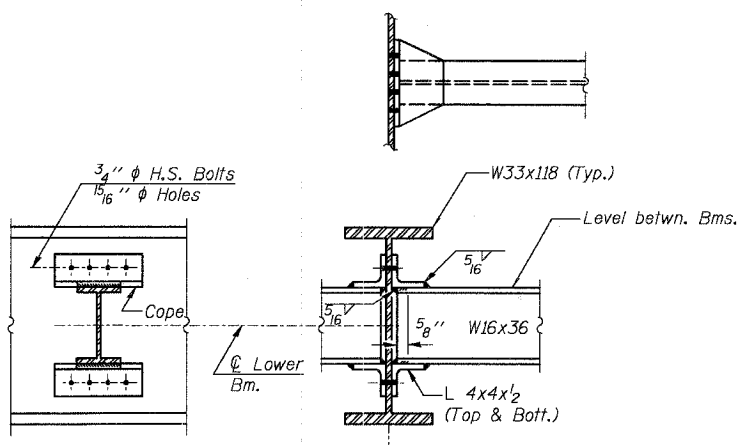
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WILL COUNTY DEPARTMENT OF HIGHWAYS
STRUCTURAL STEEL
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395
DATE 12-8-2006

COMPANY NAME, SEC NO.
 PROJECT NO./SECTION NO./PROJECT CONTRACT
 DATE/ISSUE NO./REVISED BY

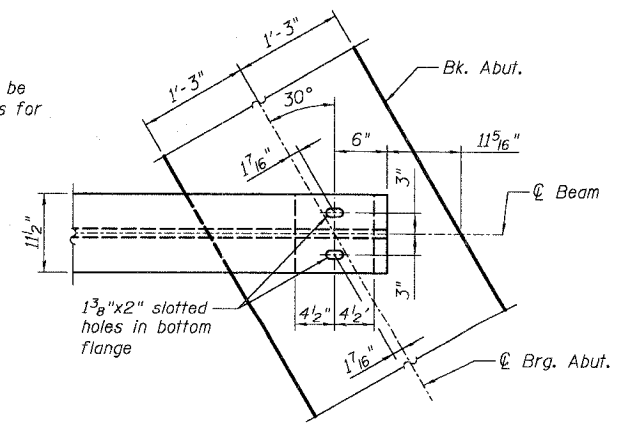


TYPICAL BEAM ELEVATION
 "NTR" denotes beams to which Notch Toughness Requirements are applicable

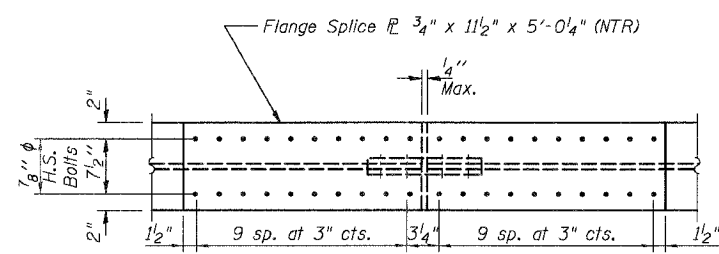


DIAPHRAGM D
 (40 Required)

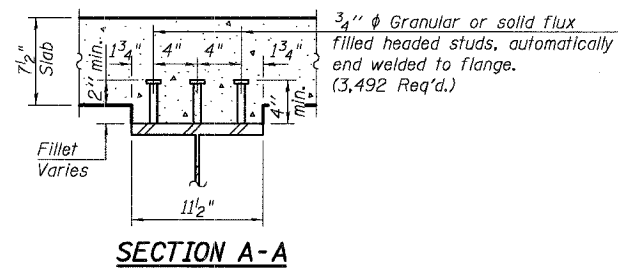
Note:
 Two hardened washers shall be required over all oversize holes for diaphragms.



PLAN AT ABUTMENTS



FIELD SPLICE DETAIL
 (12 Required)



SECTION A-A

BILL OF MATERIAL

Item	Unit	Quantity
Furnishing & Erecting Structural Steel	L. Sum	1
Stud Shear Connectors	Each	3,492

Notes:
 Work this Sheet with Sheets S-9 & S-11.
 All splice material shall be M270 Grade 50.

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

WILL COUNTY DEPARTMENT OF HIGHWAYS

STRUCTURAL STEEL DETAILS
 MANHATTAN-ARSENAL ROAD
 OVER JACKSON CREEK
 WILL COUNTY
 SECTION NO. 02-00117-21-BR
 STRUCTURE NO. 099-3395

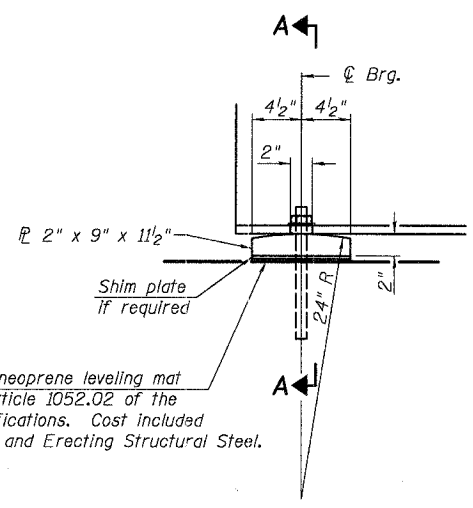
DATE 12-8-2006

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 1-815-565-1775 • 815-565-1781
 www.secgroupinc.com engineering@secgroupinc.com

CONTRACT NO. SEC-02-00117-21-BR
 PROJECT CONTRACT: STRUCTURAL CONTRACT
 DATE: 12/8/06
 DRAWN BY: MDJ
 CHECKED BY: RGD
 DESIGNED BY: KMA
 PROJECT NO. 02-00117-21-BR
 SHEET NO. S-19

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET TOTAL
FAP 532	02-00117-21-BR	WILL	35	20
FED. ROAD DIST. NO.	ILL. ROAD DIST. NO.	FED. AID PROJECT NO.	CONTRACT NO. 83885	
1				

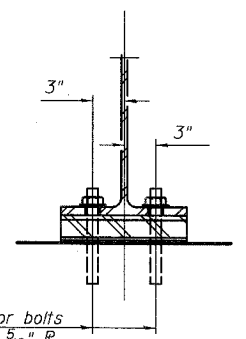
SHEET NO. S-11
S-19 SHEETS



1/8" elastomeric neoprene leveling mat according to Article 1052.02 of the Standard Specifications. Cost included with Furnishing and Erecting Structural Steel.

ELEVATION AT ABUTMENTS

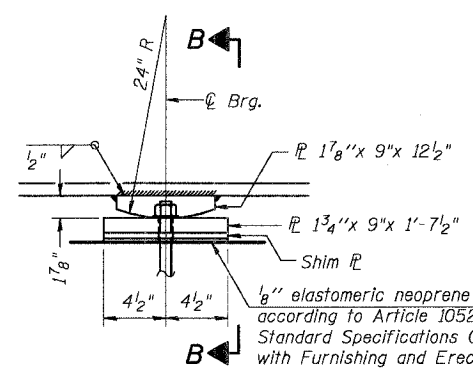
FIXED BEARING AT ABUTMENTS
(12 Required)



1" ϕ x 12" anchor bolts with 2 1/4" x 2 1/4" x 5/16" flange washer under nut. 1 3/8" x 2" slotted hole in flange. 1/2" ϕ holes in bearing plate.

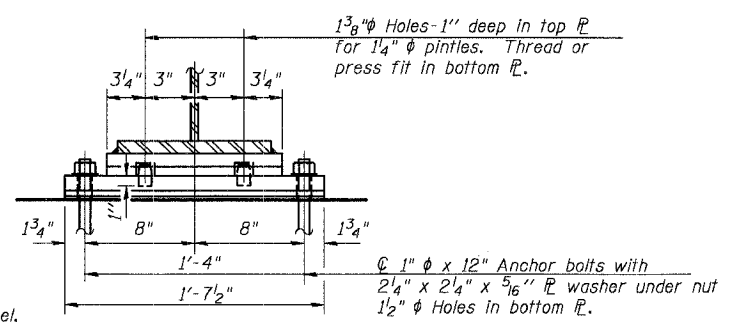
SECTION A-A

Notes:
Anchor bolts at fixed bearings may be built into the masonry.
See sheet S-12 for Anchor Bolt installation.

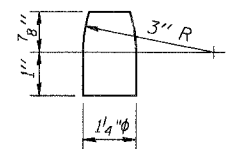


ELEVATION AT PIERS

FIXED BEARING AT PIERS 1 & 2
(12 Required)



SECTION B-B



PINTLE

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

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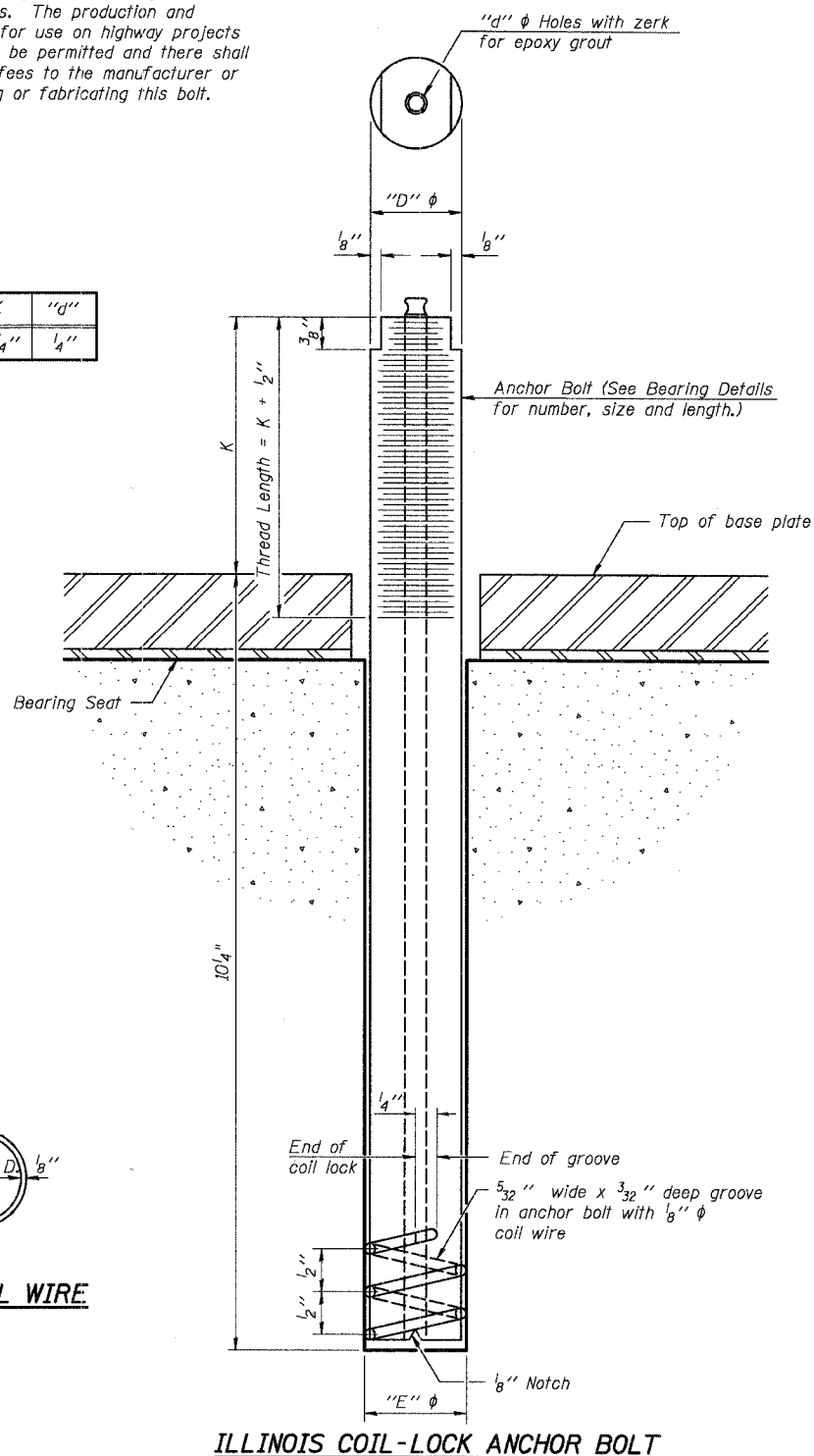
WILL COUNTY DEPARTMENT OF HIGHWAYS

BEARING DETAILS
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395
DATE 12-8-2006

DRAWN AND CHECKED BY: MDJ
 PROJECT NO.: 02-00117-21-BR
 SHEET NO.: S-19
 DATE: 12-8-2006

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

D	E	H	K	"d"
1"	1 1/8"	1 3/16"	1 3/4"	1/4"



MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and cut washers.
The coil wire shall be made of any suitable soft steel wire.
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.

- The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
 2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

Location	Size	Type
Abutments	1"	ASTM A307
Piers	1"	ASTM A307

ASTM F 1554 Grade 105, ASTM A 449 and AASHTO M 314 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and adjusted.
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

BILL OF MATERIAL

Item	Unit	Quantity
Anchor Bolts, 1"	Each	48

PLAN-COIL WIRE

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

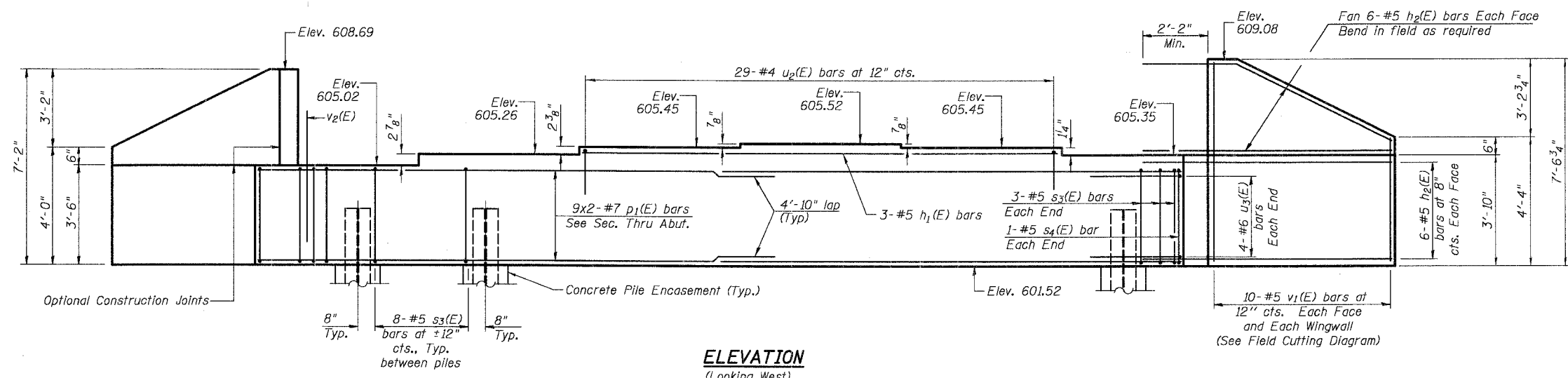
WILL COUNTY DEPARTMENT OF HIGHWAYS

ANCHOR BOLT DETAILS
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395



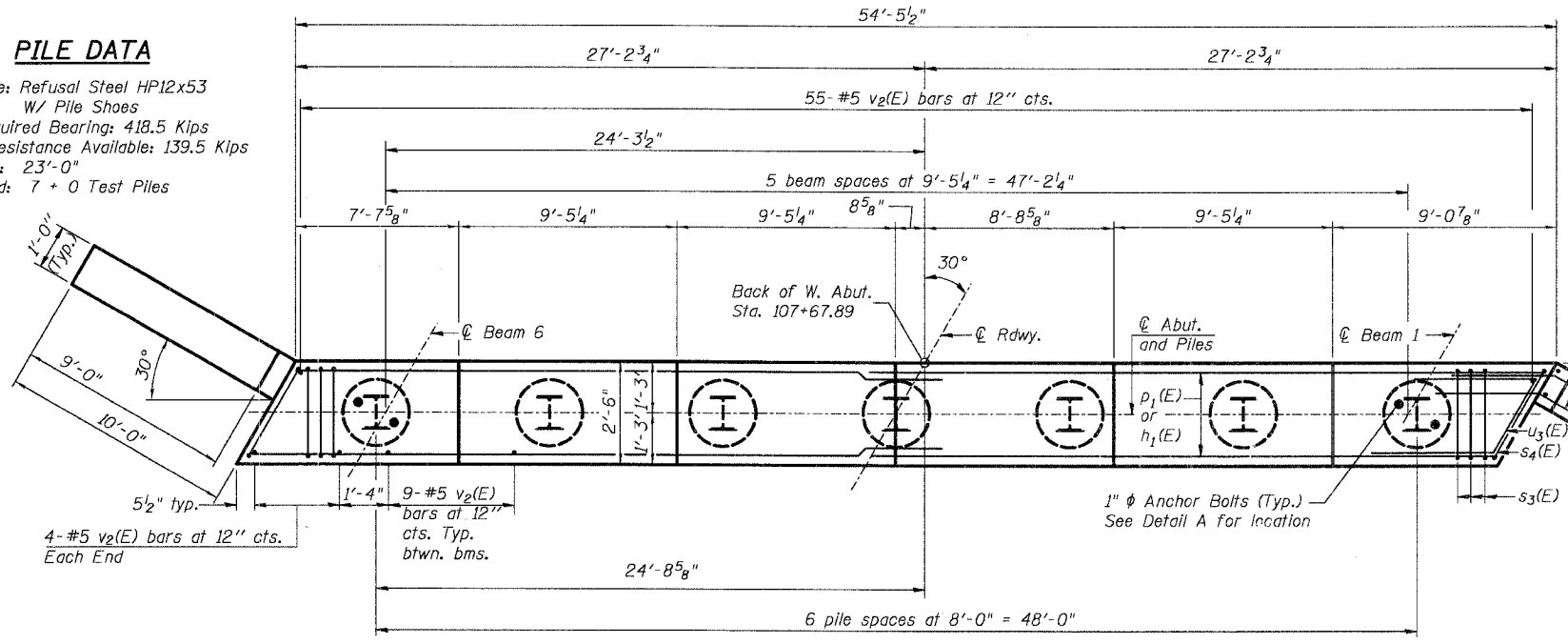
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SEC GROUP, INC.
Smith Engineering Consultants • SEC Automation • SEC Planning
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DATE 12-8-2006

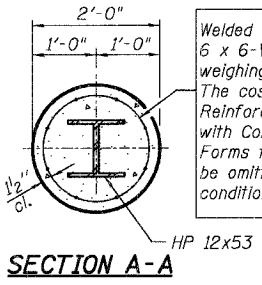


ELEVATION
(Looking West)

PILE DATA
 Type & Size: Refusal Steel HP12x53
 W/ Pile Shoes
 Nominal Required Bearing: 418.5 Kips
 Allowable Resistance Available: 139.5 Kips
 Est. Length: 23'-0"
 No. Required: 7 + 0 Test Piles

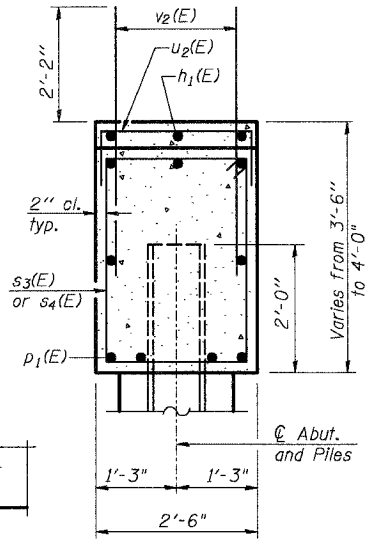


PLAN



SECTION A-A
HP 12x53

PILE ENCASEMENT DETAIL

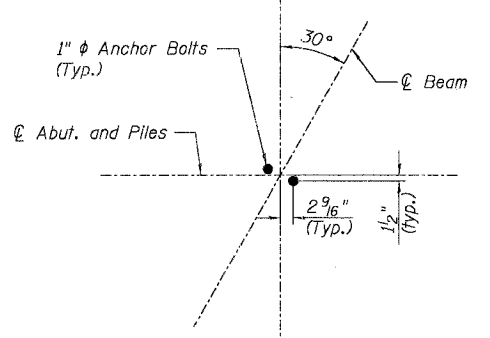


SEC. THRU ABUT.

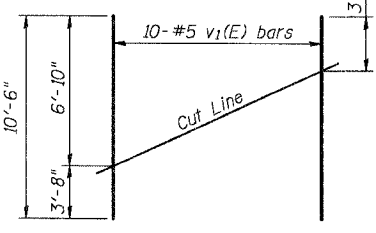
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₁ (E)	3	#5	27'-11"	—
h ₂ (E)	48	#5	12'-0"	↘
p ₁ (E)	18	#7	29'-6"	—
s ₃ (E)	54	#5	11'-7"	□
s ₄ (E)	2	#5	12'-3"	□
u ₂ (E)	29	#4	4'-2"	□
u ₃ (E)	8	#6	8'-4"	↘
v ₁ (E)	20	#5	10'-6"	—
v ₂ (E)	108	#5	4'-4"	—
Concrete Structures		Cu. Yd.	23.7	
Reinforcement Bars, Epoxy Coated		Pound	3,340	
Structure Excavation		Cu. Yd.	179	
Furnishing Steel Piles HP 12 x 53		Foot	161	
Driving Piles		Foot	161	
Pile Shoes		Each	7	
Concrete Encasement		Cu. Yd.	2.4	

Notes: Four steps monolithically with cap. Reinforcement bars designated (E) shall be epoxy coated.

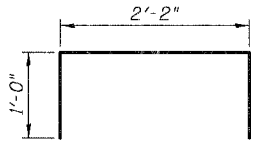


DETAIL A

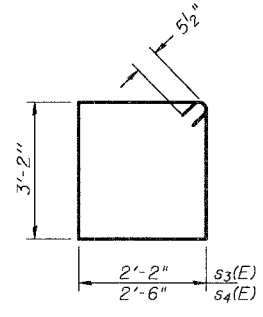


FIELD CUTTING DIAGRAM

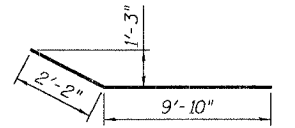
Order v₁(E) bars full length. Cut as shown and use remainder of bars in opposite end.



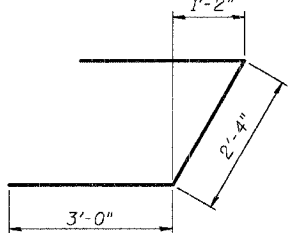
BAR u₂(E)



BARS s₃(E) & s₄(E)



BAR h₂(E)

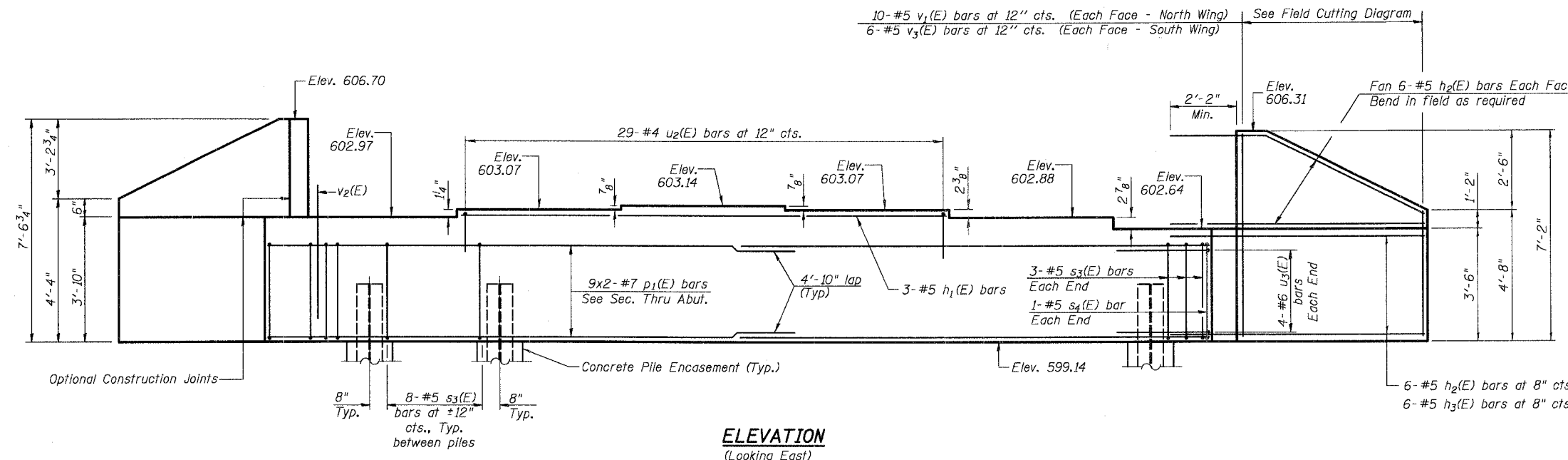


BAR u₃(E)

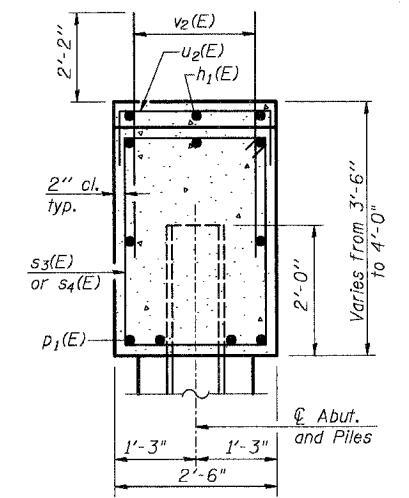
DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

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WILL COUNTY DEPARTMENT OF HIGHWAYS
 WEST ABUTMENT DETAILS
 MANHATTAN-ARSENAL ROAD
 OVER JACKSON CREEK
 WILL COUNTY
 SECTION NO. 02-00117-21-BR
 STRUCTURE NO. 099-3395
 DATE 12-8-2006



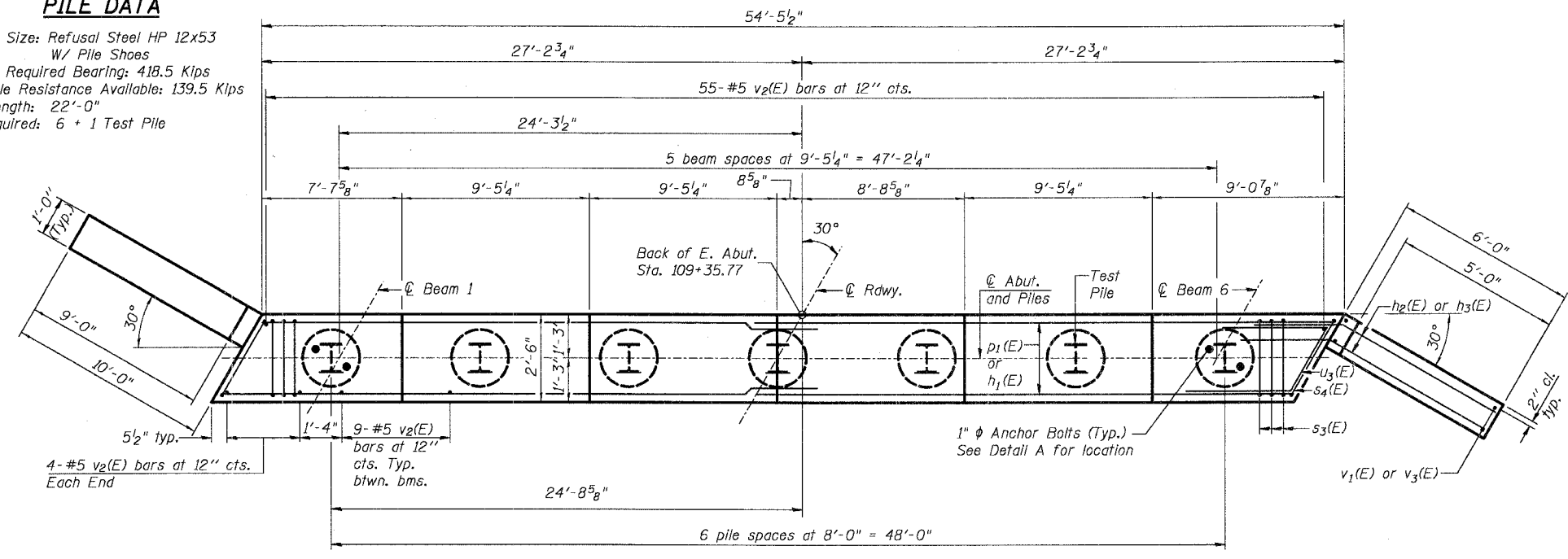
ELEVATION
(Looking East)



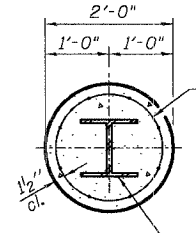
SEC. THRU ABUT.

PILE DATA

Type & Size: Refusal Steel HP 12x53
 W/ Pile Shoes
 Nominal Required Bearing: 418.5 Kips
 Allowable Resistance Available: 139.5 Kips
 Est. Length: 22'-0"
 No. Required: 6 + 1 Test Pile



PLAN



SECTION A-A

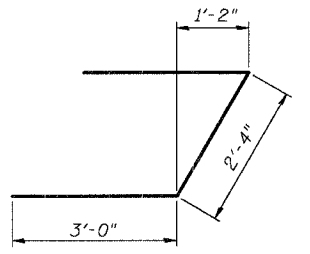
Welded wire fabric
 6 x 6-W4.0 x W4.0
 weighing 58#/100 sq. ft.
 The cost of Excavation and
 Reinforcement is included
 with Concrete Encasement.
 Forms for Encasement may
 be omitted when soil
 conditions permit.

PILE ENCASEMENT DETAIL

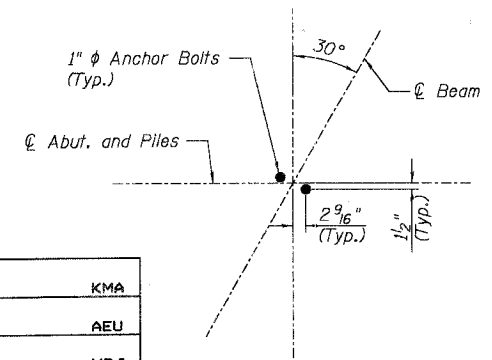
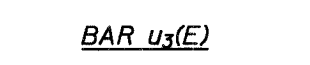
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1(E)	3	#5	27'-11"	—
h2(E)	24	#5	12'-0"	└
h3(E)	24	#5	8'-0"	└
p1(E)	18	#7	29'-6"	—
s3(E)	54	#5	11'-7"	□
s4(E)	2	#5	12'-3"	□
u2(E)	29	#4	4'-2"	└
u3(E)	8	#6	8'-4"	└
v1(E)	10	#5	10'-6"	—
v2(E)	108	#5	4'-4"	—
v3(E)	6	#5	11'-2"	—
Concrete Structures		Cu. Yd.	22.9	
Reinforcement Bars, Epoxy Coated		Pound	3,200	
Structure Excavation		Cu. Yd.	173	
Furnishing Steel Piles HP 12x53		Foot	132	
Driving Piles		Foot	132	
Pile Shoes		Each	7	
Concrete Encasement		Cu. Yd.	2.4	
Test Pile HP 12x53		Each	1	

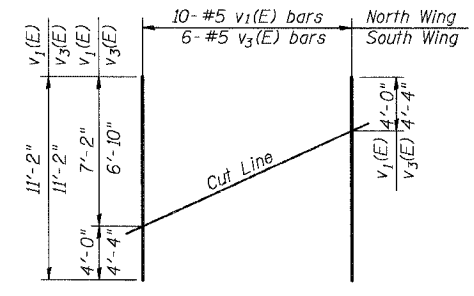
BARS h2(E) & h3(E)



BAR u3(E)

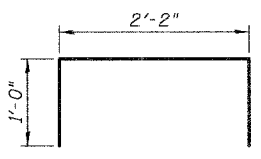


DETAIL A

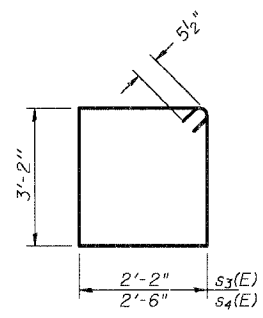


FIELD CUTTING DIAGRAM

Order v1(E) & v3(E) bars full length. Cut as shown and use remainder of bars in opposite face.



BAR u2(E)



BARS s3(E) & s4(E)

Notes: Four steps monolithically with cap. Reinforcement bars designated (E) shall be epoxy coated.

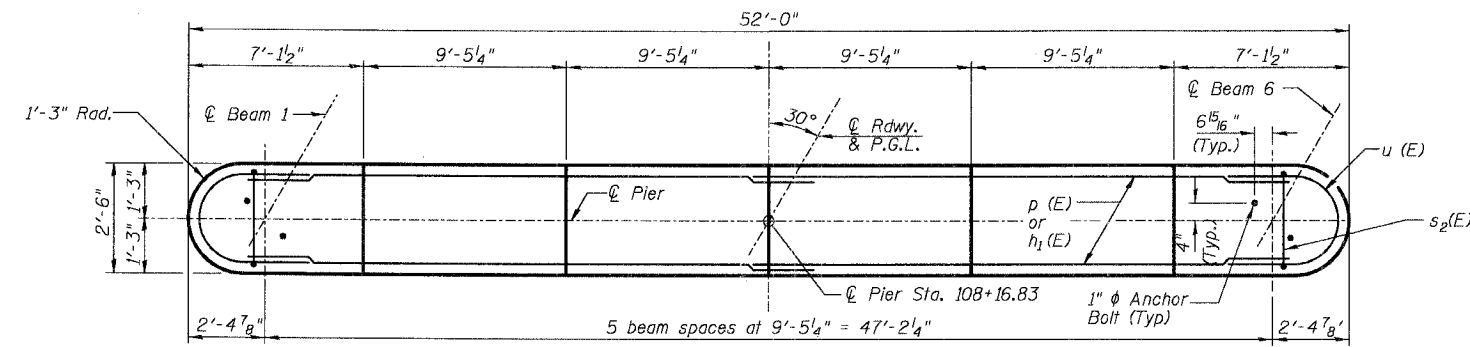
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WILL COUNTY DEPARTMENT OF HIGHWAYS
 EAST ABUTMENT DETAILS
 MANHATTAN-ARSENAL ROAD
 OVER JACKSON CREEK
 WILL COUNTY
 SECTION NO. 02-00117-21-BR
 STRUCTURE NO. 099-3395
 DATE 12-8-2006

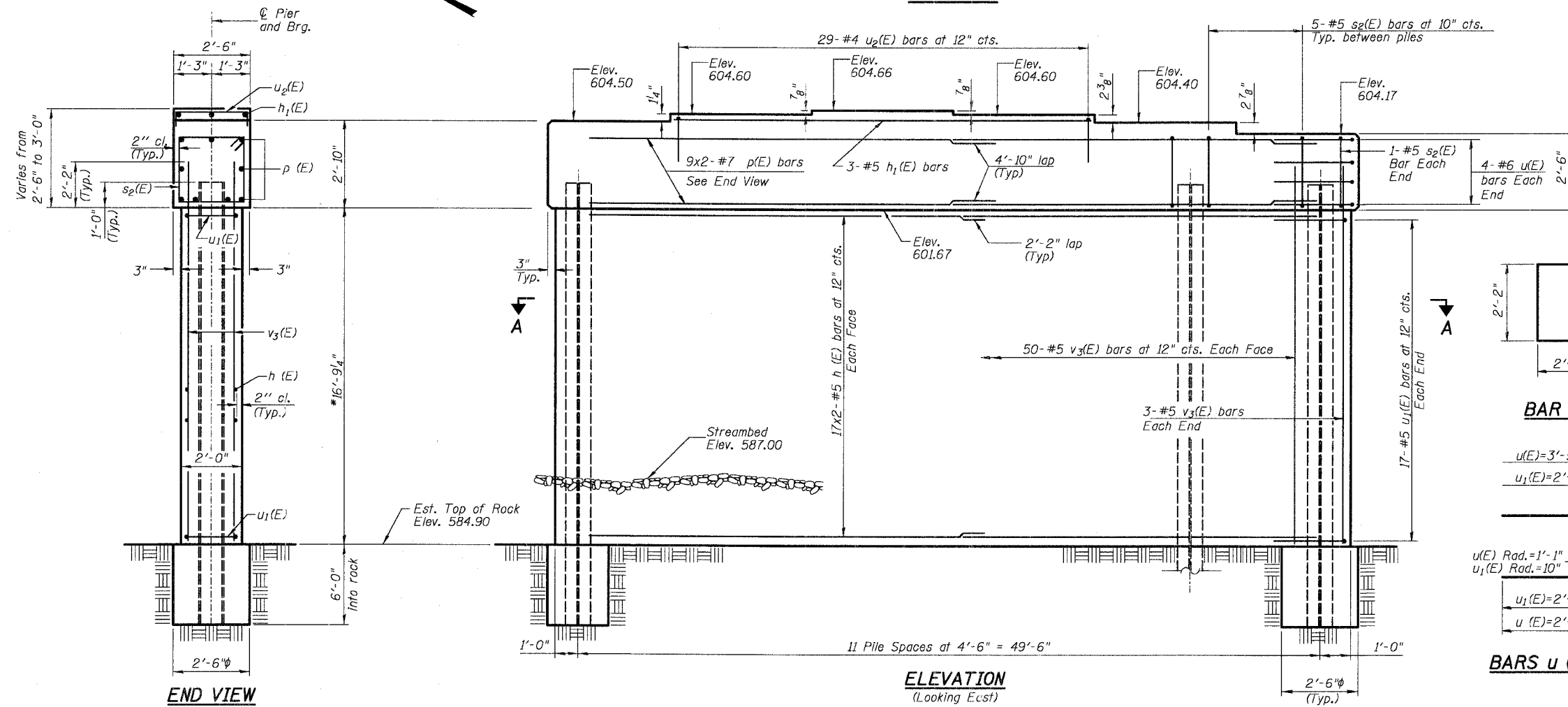
COMPANY NAME, SEC INC. PROJECT NUMBER 02-00117-21-BR SHEET NO. S-14
 DATE 12-8-2006
 DRAWN BY MDJ
 CHECKED BY RGD
 DESIGNED BY KMA
 CHECKED BY AEU
 PROJECT NO. 02-00117-21-BR
 SHEET NO. S-14
 CONTRACT NO. 83885
 STRUCTURE NO. 099-3395

PILE DATA

Type & Size: Steel HP 12x53
 Nominal Required Bearing: Set in Rock
 Allowable Resistance Available: 139.5 Kips
 Est. Length: 24'-0"
 No. Required: 12 + 0 Test Piles

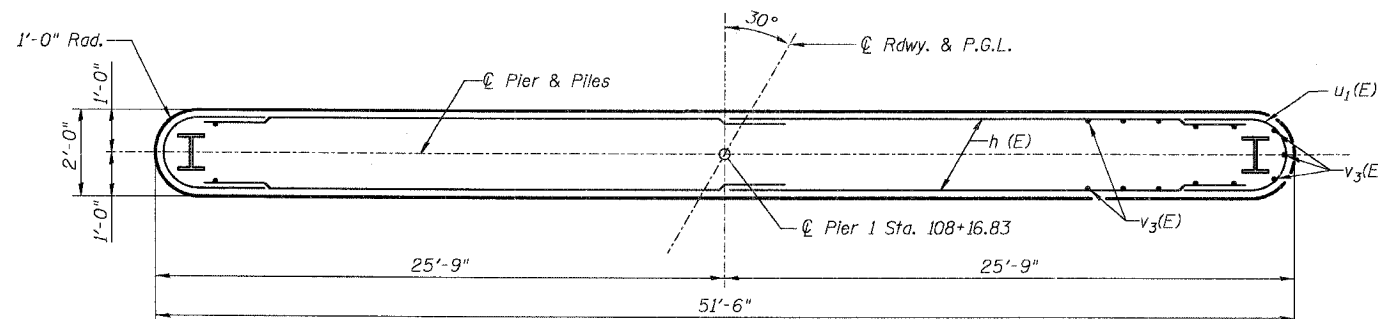


TOP PLAN



ELEVATION
(Looking East)

END VIEW



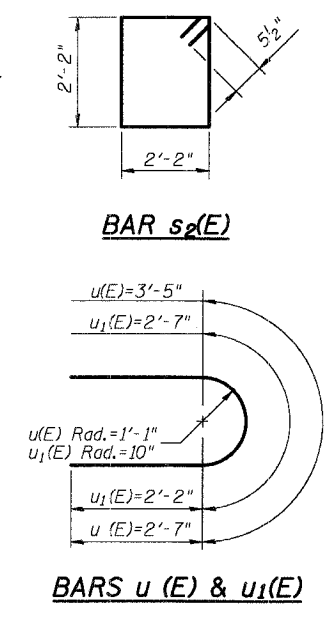
SECTION A-A

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h (E)	68	#5	25'-10"	—
h1(E)	3	#5	27'-11"	—
p (E)	18	#7	27'-2"	—
s2(E)	57	#5	9'-7"	□
u (E)	8	#6	8'-7"	U
u1(E)	34	#5	6'-11"	U
u2(E)	29	#4	4'-2"	□
v3(E)	106	#5	18'-9"	—
Concrete Structures			Cu. Yd.	76.9
Reinforcement Bars, Epoxy Coated			Pound	5,990
Structure Excavation			Cu. Yd.	26
Furnishing Steel Piles HP 12x53			Foot	288
Setting Piles in Rock			Each	12
Underwater Structure Excavation Protection, Location 1			Each	1

Reinforcement Bars designated (E) shall be epoxy coated.

Notes:
 Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.



* If a portion of the pier wall is under water, concrete shall be tremied under water into forms according to Article 503.08 of the Standard Specifications. Concrete shall be tremied to an elevation 1'-0" above the water level at the time of construction.

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

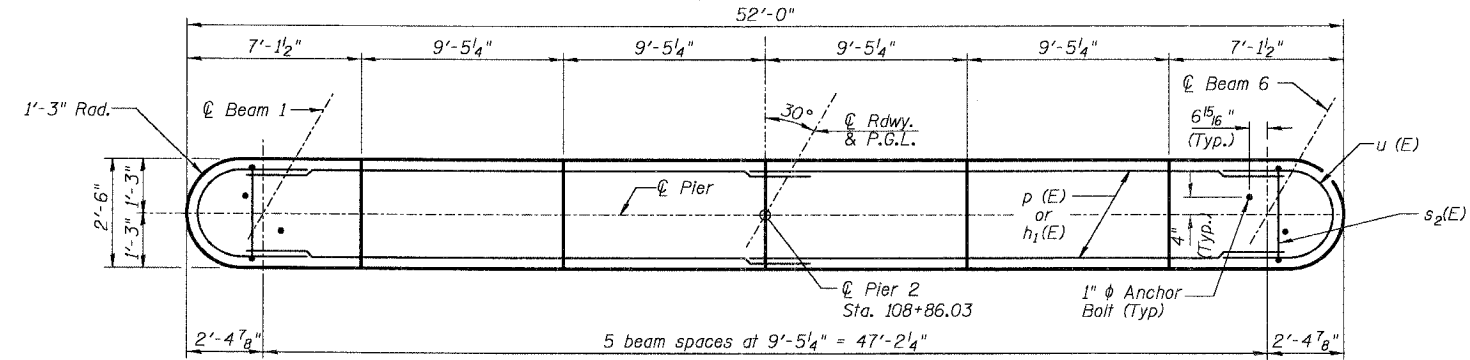
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 www.secgroupinc.com • engineering@secgroupinc.com

WILL COUNTY DEPARTMENT OF HIGHWAYS
 PIER 1 DETAILS
 MANHATTAN-ARSENAL ROAD
 OVER JACKSON CREEK
 WILL COUNTY
 SECTION NO. 02-00117-21-BR
 STRUCTURE NO. 099-3395
 DATE 12-8-2006

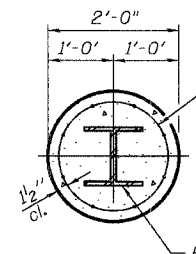
COMPANY NAME, SEC, INC.
 PROJECT NO. 02-00117-21-BR
 SHEET NO. S-15
 DATE 12-8-2006
 PROJECT LOCATION: MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK, WILL COUNTY, ILLINOIS
 DRAWN BY: MDJ
 CHECKED BY: RGD
 DESIGNED BY: KMA
 PROJECT ENGINEER: AEU

PILE DATA

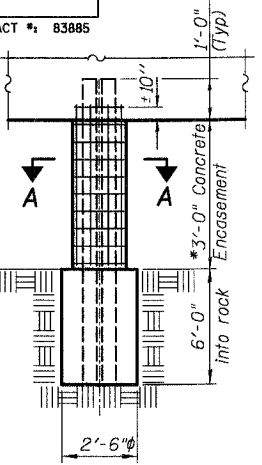
Type & Size: Steel HP 12x53
 Nominal Required Bearing: Set in Rock
 Allowable Resistance Available: 139.5 Kips
 Est. Length: 25'-0"
 No. Required: 12 + 0 Test Piles



TOP PLAN

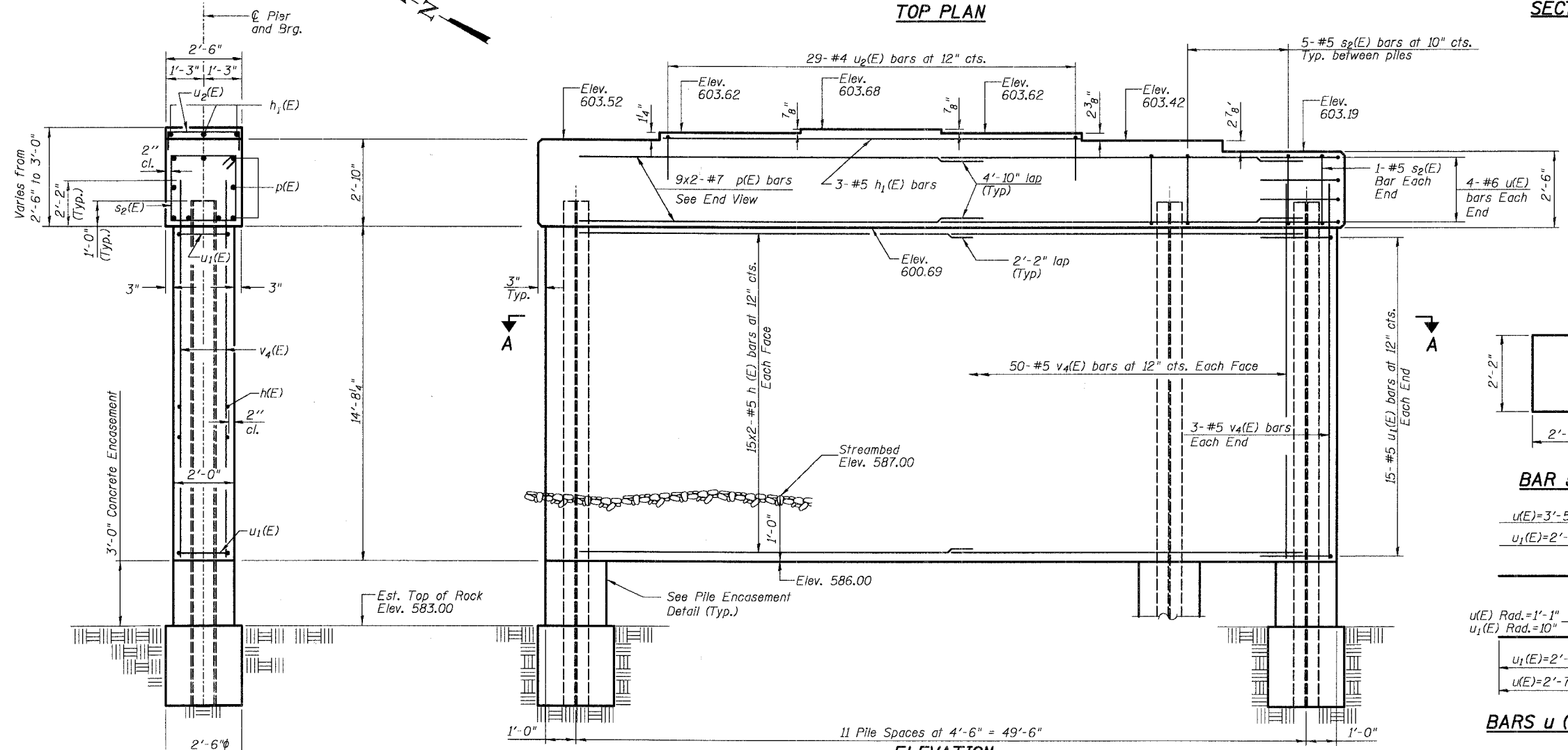


SECTION A-A

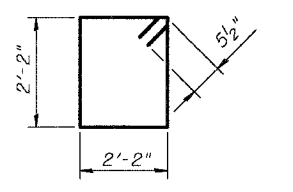


PILE ENCASUREMENT DETAIL

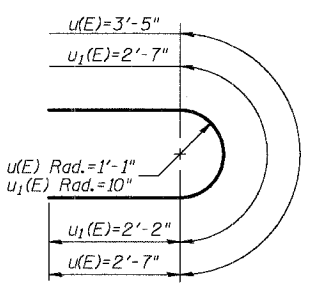
* Form shall be placed below Elev. 586.00 after excavation for pier wall. Reinforcement and concrete encasement shall be poured underwater into forms. If a portion of the pier wall is underwater, concrete shall be tremied underwater into forms according to Article 503.08 of the Standard Specifications. Concrete shall be tremied to an elevation 1'-0" above the water level at the time of construction.



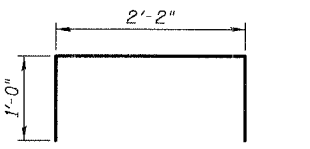
ELEVATION (Looking East)



BAR s2(E)



BARS u(E) & u1(E)



BAR u2(E)

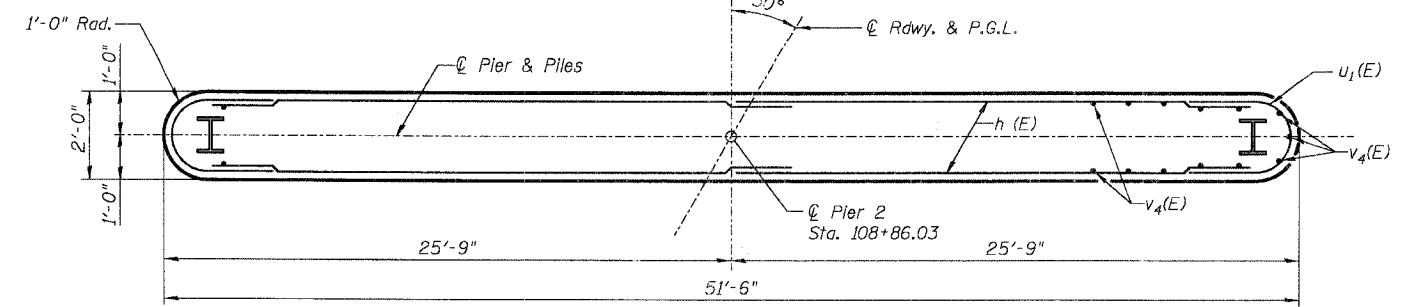
Notes:
 Space reinforcement in cap to miss anchor bolts.
 Pour steps monolithically with cap.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	60	#5	25'-10"	—
h1(E)	3	#5	27'-11"	—
p(E)	18	#7	27'-2"	—
s2(E)	57	#5	9'-7"	□
u(E)	8	#6	8'-7"	U
u1(E)	30	#5	6'-11"	U
u2(E)	29	#4	4'-2"	□
v4(E)	106	#5	16'-8"	—
Concrete Structures	Cu. Yd.		69.1	
Reinforcement Bars, Epoxy Coated	Pound		5,520	
Structure Excavation	Cu. Yd.		12	
Furnishing Steel Piles HP 12x53	Foot		300	
Setting Piles in Rock	Each		12	
Concrete Encasement	Cu. Yd.		4.2	
Underwater Structure Excavation Protection, Location 2	Each		1	

Reinforcement Bars designated (E) shall be epoxy coated.

END VIEW



SECTION A-A

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

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WILL COUNTY DEPARTMENT OF HIGHWAYS
 PIER 2 DETAILS
 MANHATTAN-ARSENAL ROAD
 OVER JACKSON CREEK
 WILL COUNTY
 SECTION NO. 02-00117-21-BR
 STRUCTURE NO. 099-3395
 DATE 12-8-2006

The diameter of this part is the same as the diameter of the bar spliced.

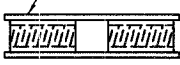
The diameter of this part is equal or larger than the diameter of bar spliced.

ROLLED THREAD DOWEL BAR



**** ONE PIECE**

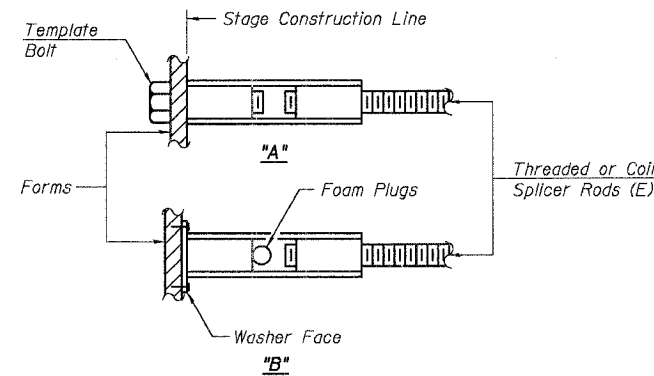
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.

NOTES

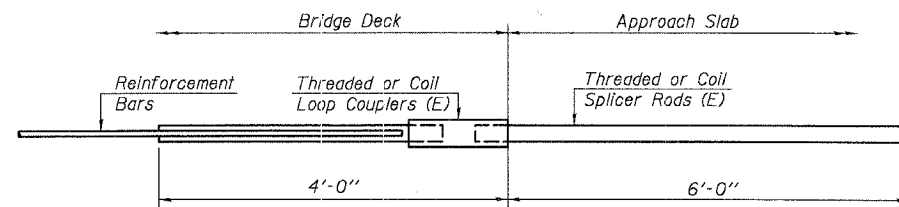
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
 All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
 Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
- Minimum *Pull-out Strength = $1.25 \times f_{sallow} \times A_t$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 f_{sallow} = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_t = Tensile stress area of lapped reinforcement bars.
 * = 28 day concrete

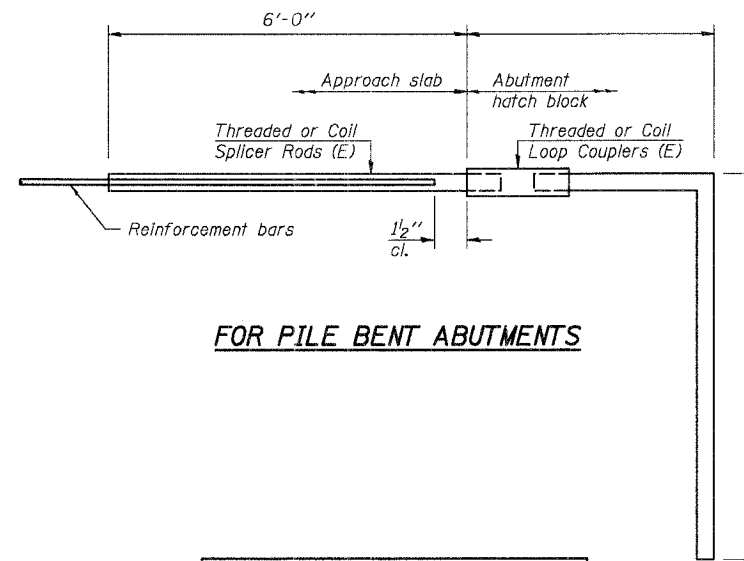
BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	5.9
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6
#9	5'-9"	75.0	30.0
#10	7'-3"	95.0	38.0
#11	9'-0"	117.4	46.8

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."



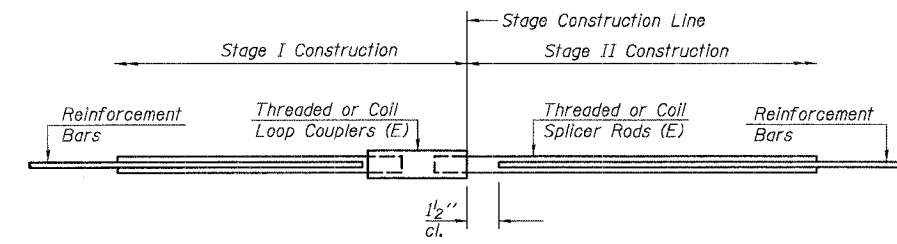
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required = 88



FOR PILE BENT ABUTMENTS

Bar Splicer for #5 bar
Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =



STANDARD

Bar Size	No. Assemblies Required	Location

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

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WILL COUNTY DEPARTMENT OF HIGHWAYS
 BAR SPLICER ASSEMBLY DETAILS
 MANHATTAN-ARSENAL ROAD
 OVER JACKSON CREEK
 WILL COUNTY
 SECTION NO. 02-00117-21-BR
 STRUCTURE NO. 099-3395
 DATE 12-8-2006

DRAWING NAME: SEC.PDS
 PROJECT CONTROL: #PROJECT_007167
 DATE: 07/17/2006 10:40 AM
 DRAWN BY: MDJ
 CHECKED BY: RGD
 DESIGNED BY: KMA
 PROJECT: 02-00117-21-BR

S.A.M. Consultants, Inc. 500 East 22nd Street
Geotechnical Engineering & Materials Testing
DBE/MBE Firm
Lombard, IL 60148
Telephone: 630-424-1200
Fax: 630-424-1245

BORING NUMBER SB-1
PAGE 1 OF 2

CLIENT: Smith Engineering Consultants, Inc. PROJECT NAME: Manhattan - Arsenal Road over Jackson Creek
PROJECT NUMBER: SAM-06-GT-027 PROJECT LOCATION: Will County, Illinois
DATE STARTED: 8/1/06 COMPLETED: 8/1/06 GROUND ELEVATION: 608.26 ft HOLE SIZE: 8
DRILLING CONTRACTOR: C.S. Drilling GROUND WATER LEVELS:
DRILLING METHOD: NX Diamond Core Bit AT TIME OF DRILLING: 14.5 ft / Elev 593.0 ft
LOGGED BY: Ron Clauson CHECKED BY: RC AT END OF DRILLING: N/A
NOTES: Water used during coring invalidates "End" readings. N/A hrs AFTER DRILLING: N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		Approximately 2.5 inches ASPHALT FILL. Brown, dark brown and black LEAN CLAY, trace sand and gravel, some pockets of fat clay	SS 1	56	2-2-3 (5)	2.5		16				
5			SS 2	56	2-2-2 (4)	1.0		19				
10		Encountered approximately 4 inches of wood obstruction at 9 feet	SS 3	60	1-2-2 (4)	1.25		25				
10			SS 4	56	2-16-9 (27)	1.5		25				
15		Gray SILTY CLAY, some sand seams, trace sand and gravel, stiff (CL-MI)	SS 5	67	3-3-5 (8)	2.0		23				
15			SS 6	56	5-6-7 (15)	2.0		19				
20		Gray CLAYEY GRAVEL, trace sand (broken bedrock), medium dense to dense, (GC)	SS 7	69	6-10-20 (26)	4.5		21				
20			SS 8	94	4-8-11 (19)	4.0		22				
20			SS 9	100	3-5-7 (12)	3.75		24				
25		Alternate layers of highly weathered LIMESTONE bedrock and CLAY seams, medium dense	SS 10	69	4-19-21 (40)	3.0		6				
25			SS 11	83	7-11-12 (23)	4.0		6				
30		Weathered LIMESTONE bedrock ROD (25.4%) Recovery (100%)										

(Continued Next Page)

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Fax: 630-424-1245

BORING NUMBER SB-1
PAGE 2 OF 2

CLIENT: Smith Engineering Consultants, Inc. PROJECT NAME: Manhattan - Arsenal Road over Jackson Creek
PROJECT NUMBER: SAM-06-GT-027 PROJECT LOCATION: Will County, Illinois

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	FINES CONTENT (%)
35		Weathered LIMESTONE bedrock ROD (25.4%) Recovery (100%) (continued)										
		Bottom of hole at 38.5 feet.										

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Telephone: 630-424-1200
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BORING NUMBER SB-2
PAGE 1 OF 1

CLIENT: Smith Engineering Consultants, Inc. PROJECT NAME: Manhattan - Arsenal Road over Jackson Creek
PROJECT NUMBER: SAM-06-GT-027 PROJECT LOCATION: Will County, Illinois
DATE STARTED: 8/1/06 COMPLETED: 8/1/06 GROUND ELEVATION: 607.97 ft HOLE SIZE: 8
DRILLING CONTRACTOR: C.S. Drilling GROUND WATER LEVELS:
DRILLING METHOD: NX Diamond Core Bit AT TIME OF DRILLING: 18.0 ft / Elev 590.0 ft
LOGGED BY: Ron Clauson CHECKED BY: RC AT END OF DRILLING: 18.0 ft / Elev 590.0 ft
NOTES: Water reported is the surface of creek from top of bridge deck. N/A hrs AFTER DRILLING: 18.0 ft / Elev 590.0 ft

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (ROD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		Approximately 4 inches of ASPHALT. Approximately 22 inches of reinforced-hollow core CONCRETE panels (BRIDGE DECK)										
0		AIR between bridge deck and creek surface										
20		Water and very soft creek sediments										
20		Gray LEAN CLAY, trace sand and gravel, medium stiff (CL)	SS 1	100	2-3-5 (8)	2.5		13				
25		Highly weathered LIMESTONE bedrock, some clay seams, medium dense	SS 2	56	6-8-15 (23)			6				
25		Highly weathered LIMESTONE bedrock, some clay seams. Apparent Auger Refusal.										
		Bottom of hole at 26.5 feet.										

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

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SEC GROUP, INC.
Smith Engineering Consultants - SEC Automation - SEC Planning
4550 Prime Parkway, Moline, IL 60050
1-815-385-1778 F-615-385-1781
www.secgroupinc.com engineering@secgroupinc.com

WILL COUNTY DEPARTMENT OF HIGHWAYS
SOIL BORING LOGS
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395
DATE 12-8-2006

S.A.M. Consultants, Inc. 500 East 22nd Street
Geotechnical Engineering & Materials Testing
Lombard, IL 60148
Telephone: 630-424-1200
FAX: 630-424-1245

BORING NUMBER SB-3
PAGE 1 OF 1

CLIENT: Smith Engineering Consultants, Inc. PROJECT NAME: Manhattan - Arsenal Road over Jackson Creek
PROJECT NUMBER: SAM-08-GT-027 PROJECT LOCATION: Will County, Illinois
DATE STARTED: 7/31/06 COMPLETED: 7/31/06 GROUND ELEVATION: 607.50 ft HOLE SIZE: 8
DRILLING CONTRACTOR: C.S. Drilling GROUND WATER LEVELS:
DRILLING METHOD: NX Diamond Core Bit AT TIME OF DRILLING: 18.0 ft / Elev 589.5 ft
LOGGED BY: Ron Clauson CHECKED BY: RC AT END OF DRILLING: 18.0 ft / Elev 589.5 ft
NOTES: Water reported in the surface of creek from top of bridge deck. N/A after drilling: 16.0 ft / Elev 589.5 ft

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RUD)	BLOW COUNTS (N VALUE)	POCKET PEN. (psi)	DRY UNIT WT. (pcf)	ATTERBERG LIMITS							
								LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	FINES CONTENT (%)				
0		Approximately 4 inches of ASPHALT Approximately 22 inches of reinforced-hollow core CONCRETE panels (BRIDGE DECK) AIR between bridge deck and creek surface													
20		Water and very soft creek sediments													
22		Gray LEAN CLAY, trace sand and gravel, stiff (CL)	SS 1	80	3-4-9 (13)	2.25		27							
25		Highly weathered LIMESTONE bedrock, some clay seams, very dense Apparent Auger Refusal Bottom of hole at 25.0 feet.	SS 2	78	5-6-48 (54)			7							

S.A.M. Consultants, Inc. 500 East 22nd Street
Geotechnical Engineering & Materials Testing
Lombard, IL 60148
Telephone: 630-424-1200
FAX: 630-424-1245

BORING NUMBER SB-4
PAGE 1 OF 2

CLIENT: Smith Engineering Consultants, Inc. PROJECT NAME: Manhattan - Arsenal Road over Jackson Creek
PROJECT NUMBER: SAM-08-GT-027 PROJECT LOCATION: Will County, Illinois
DATE STARTED: 7/31/06 COMPLETED: 7/31/06 GROUND ELEVATION: 606.34 ft HOLE SIZE: 8
DRILLING CONTRACTOR: C.S. Drilling GROUND WATER LEVELS:
DRILLING METHOD: NX Diamond Core Bit AT TIME OF DRILLING: 14.5 ft / Elev 581.8 ft
LOGGED BY: Ron Clauson CHECKED BY: RC AT END OF DRILLING: N/A
NOTES: Water used during coring invalidates "End" readings. N/A after drilling: N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RUD)	BLOW COUNTS (N VALUE)	POCKET PEN. (psi)	DRY UNIT WT. (pcf)	ATTERBERG LIMITS							
								LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	FINES CONTENT (%)				
0		Approximately 10 inches ASPHALT FILL: Brown, dark brown and black LEAN CLAY, trace sand and gravel, some pockets of fat clay	SS 1	87	2-2-3 (5)	1.25	19								
2			SS 2	78	2-5-11 (16)	4.0	15								
4			SS 3	78	2-3-4 (7)	1.0	22								
6			SS 4	83	2-2-3 (7)	1.0	29								
8			SS 5	89	2-2-4 (3)	0.75	32								
10			SS 6	78	2-2-3 (5)	0.5	26								
12		Black LEAN to FAT CLAY with sand, trace gravel, medium stiff (CL-CH) Brownish gray to gray LEAN CLAY, some sand seams, trace gravel, stiff (CL)	SS 7	89	3-5-7 (12)	3.0	24								
14			SS 8	88	3-3-4 (7)	2.5	23								
16		Gray SILT with clay and sand seams, trace gravel, very stiff, (ML)	SS 9	89	7-7-8 (15)	4.5	10								
18		Alternate layers of highly weathered LIMESTONE bedrock and CLAY seams, very stiff	SS 10	89	25-28-34 (60)	1.5	6								
20			SS 11	0	45-50										
25		Weathered LIMESTONE bedrock: RQC (54.0%) Recovery (53.3%)													

(Continued Next Page)

S.A.M. Consultants, Inc. 500 East 22nd Street
Geotechnical Engineering & Materials Testing
Lombard, IL 60148
Telephone: 630-424-1200
FAX: 630-424-1245

BORING NUMBER SB-4
PAGE 2 OF 2

CLIENT: Smith Engineering Consultants, Inc. PROJECT NAME: Manhattan - Arsenal Road over Jackson Creek
PROJECT NUMBER: SAM-08-GT-027 PROJECT LOCATION: Will County, Illinois

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RUD)	BLOW COUNTS (N VALUE)	POCKET PEN. (psi)	DRY UNIT WT. (pcf)	ATTERBERG LIMITS							
								LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	FINES CONTENT (%)				
0		Weathered LIMESTONE bedrock RQC (54.0%) Recovery (53.3%) (continued)													
38.5		Bottom of hole at 38.5 feet.													

SEDTech BY COLLUMS - BRIDGE BORINGS FOR MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK

DESIGNED	KMA
CHECKED	AEU
DRAWN	MDJ
CHECKED	RGD

Illinois Professional Design Firm # 184-000108

SEC GROUP, INC.
Smith Engineering Consultants - SEC Automation - SEC Planning
4500 Prima Parkway, Mokena, IL 60450
T: 815.388.1776 F: 815.365.1761
www.secgroupinc.com engineering@secgroupinc.com

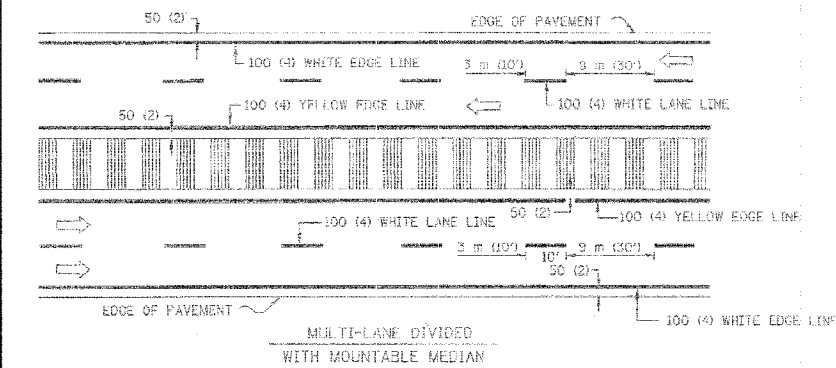
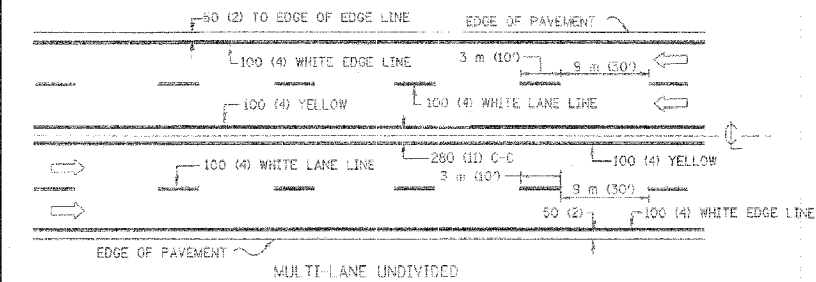
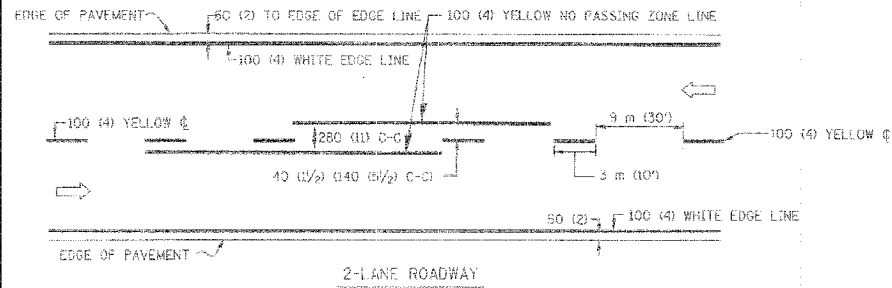
WILL COUNTY DEPARTMENT OF HIGHWAYS

SOIL BORING LOGS
MANHATTAN-ARSENAL ROAD
OVER JACKSON CREEK
WILL COUNTY
SECTION NO. 02-00117-21-BR
STRUCTURE NO. 099-3395

DATE 12-8-2006

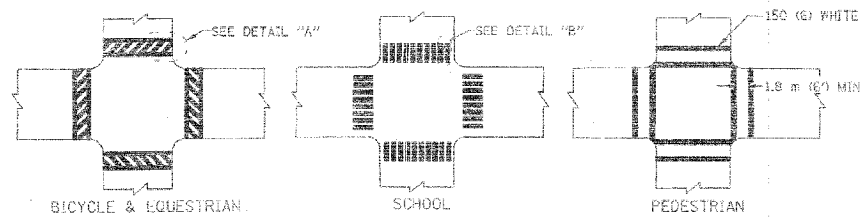
COMPANY: S.A.M. CONSULTANTS, INC. PROJECT: MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK
CLIENT: SMITH ENGINEERING CONSULTANTS, INC. DATE: 12/8/06
DRAWN BY: MDJ. CHECKED BY: RGD. DESIGNED BY: KMA. PROJECT NO.: SAM-08-GT-027

F.A.P. No.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	29
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS FED. AID PROJECT		

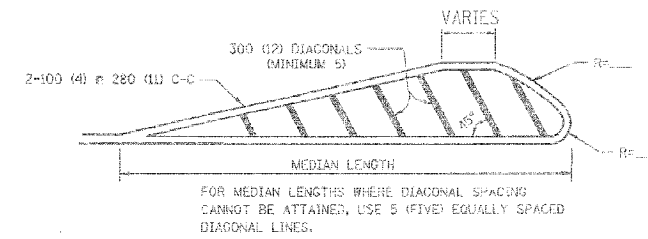
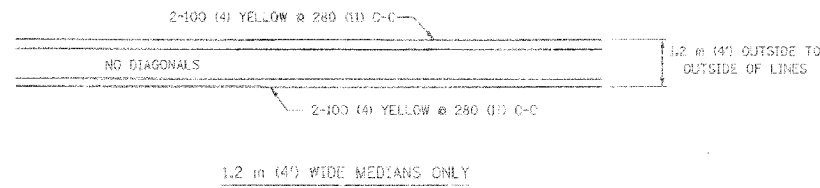


NOTE: MEDIANS WITH BARRIER CURBS DO NOT REQUIRE AN EDGE LINE

TYPICAL LANE AND EDGE LINE MARKING

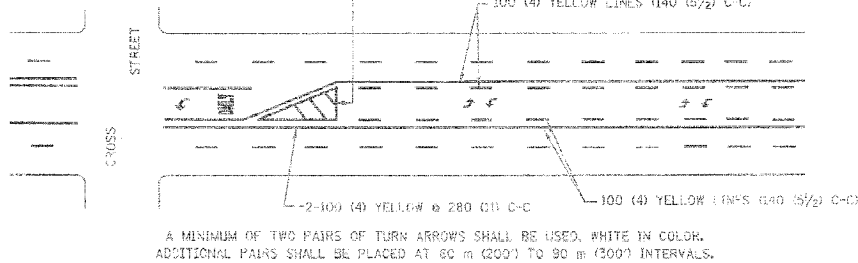


TYPICAL CROSSWALK MARKING



DIAGONAL LINE SPACING: 15 m (50') C-C (LESS THAN 50 km/h (30 MPH))
25 m (75') C-C (50 km/h (30 MPH) TO 70 km/h (45 MPH))
45 m (150') C-C (MORE THAN 70 km/h (45 MPH))

MEDIANS OVER 1.2 m (4') WIDE

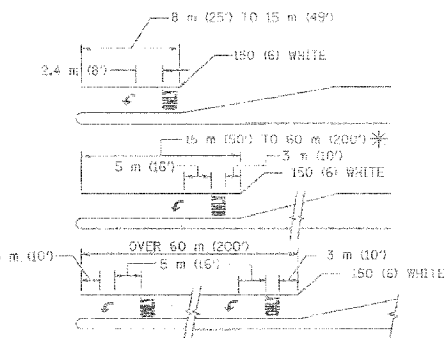


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 60 m (200') TO 90 m (300') INTERVALS.



MEDIAN WITH TWO-WAY LEFT TURN LANE

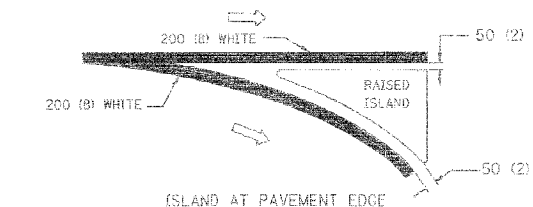
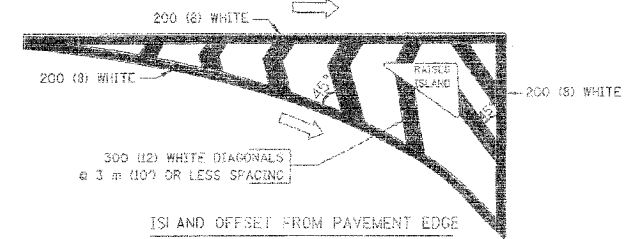
TYPICAL PAINTED MEDIAN MARKING



FULL SIZE LETTERS 2.4 m (8') AND ARROWS SHALL BE USED.
AREA = 1.5 m² (0.5 SQ. FT.)
AREA = 1.9 m² (20.8 SQ. FT.)
* TURN LANES IN EXCESS OF 120 m (400') IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



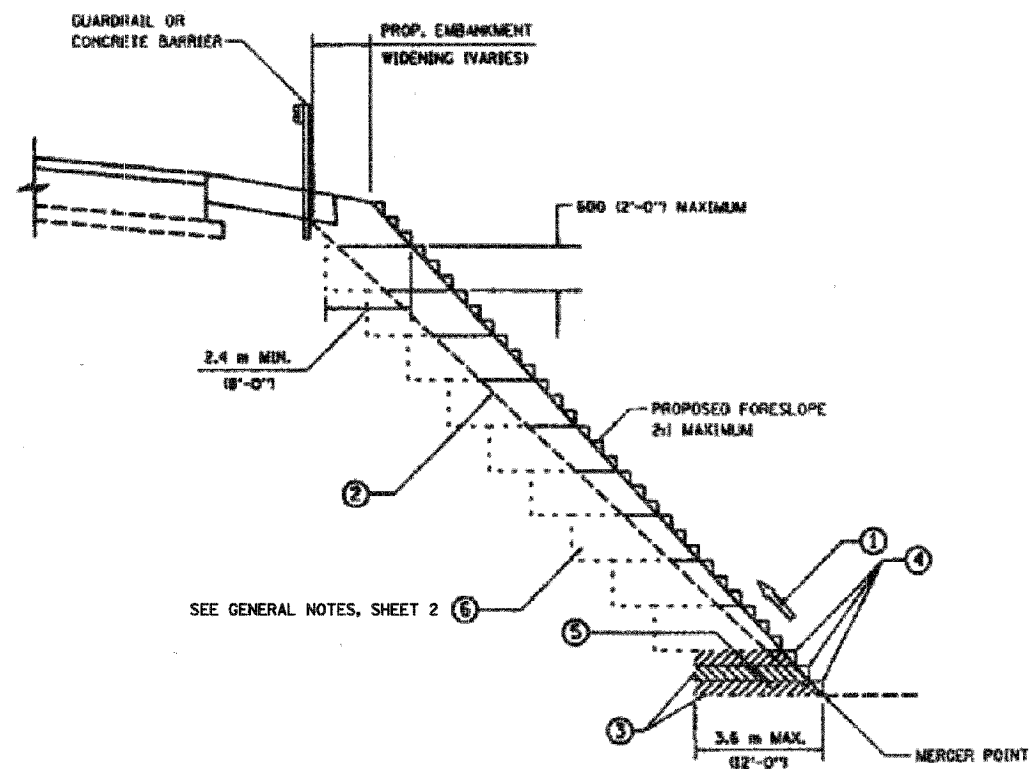
TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	100 (4)	SKIP-DASH	YELLOW	3 m (10') LINE WITH 9 m (30') SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 @ 100 (4)	SOLID	YELLOW	280 (11) C-C
NO PASSING ZONE LINES FOR ONE DIRECTION FOR BOTH DIRECTIONS	100 (4) 2 @ 100 (4)	SOLID SOLID	YELLOW YELLOW	140 (5 1/2) C-C FROM SKIP-DASH CENTERLINE 280 (11) C-C ONLY SKIP-DASH CENTERLINE BETWEEN
LANE LINES	100 (4) 125 (5) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	3 m (10') LINE WITH 9 m (30') SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	600 (2') LINE WITH 1.8 m (6') SPACE
EDGE LINES	100 (4)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	150 (6) LINE; FULL SIZE LETTERS & SYMBOLS (2.4 m (8'))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 @ 100 (4) EACH DIRECTION 2.4 m (8') LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	3 m (10') LINE WITH 9 m (30') SPACE FOR SKIP-DASH; 140 (5 1/2) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN & LONGITUDINAL BARS (SCHOOL))	2 @ 150 (6) 300 (12) @ 45° 300 (12) @ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 1.8 m (6') APART 600 (2') APART 600 (2') APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	600 (24)	SOLID	WHITE	PLACE 1.2 m (4') IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE PLACE AT DESIRED STOPPING POINT, PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 @ 100 (4) WITH 300 (12) DIAGONALS @ 45° NO DIAGONALS USED FOR 1.2 m (4') WIDE MEDIANS	SOLID	YELLOW; TWO WAY TRAFFIC WHITE; ONE WAY TRAFFIC	280 (11) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	200 (8) WITH 300 (12) DIAGONALS @ 45°	SOLID	WHITE	DIAGONALS: 4.5 m (15') C-C (LESS THAN 50 km/h (30 MPH)) 6 m (20') C-C (50 km/h (30 MPH) TO 70 km/h (45 MPH)) 9 m (30') C-C (OVER 70 km/h (45 MPH))
RAILROAD CROSSING	600 (24) TRANSVERSE LINES; "RR" 15 1.8 m (6') LETTERS; 400 (16) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD T6000 AREA OF: "R"=0.33m ² (3.6 SQ. FT.) EACH "X"=5.0 m ² (54.0 SQ. FT.)
SHOULDER DIAGONALS	300 (12) @ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	15 m (50') C-C (LESS THAN 50 km/h (30 MPH)) 25 m (75') C-C (50 km/h (30 MPH) TO 70 km/h (45 MPH)) 45 m (150') C-C (OVER 70 km/h (45 MPH))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD T6000.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION
NAME	DATE	
		DISTRICT ONE TYPICAL PAVEMENT MARKINGS MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK SCALE: NONE DATE 12-08-06 DRAWN BY CADD CHECKED BY

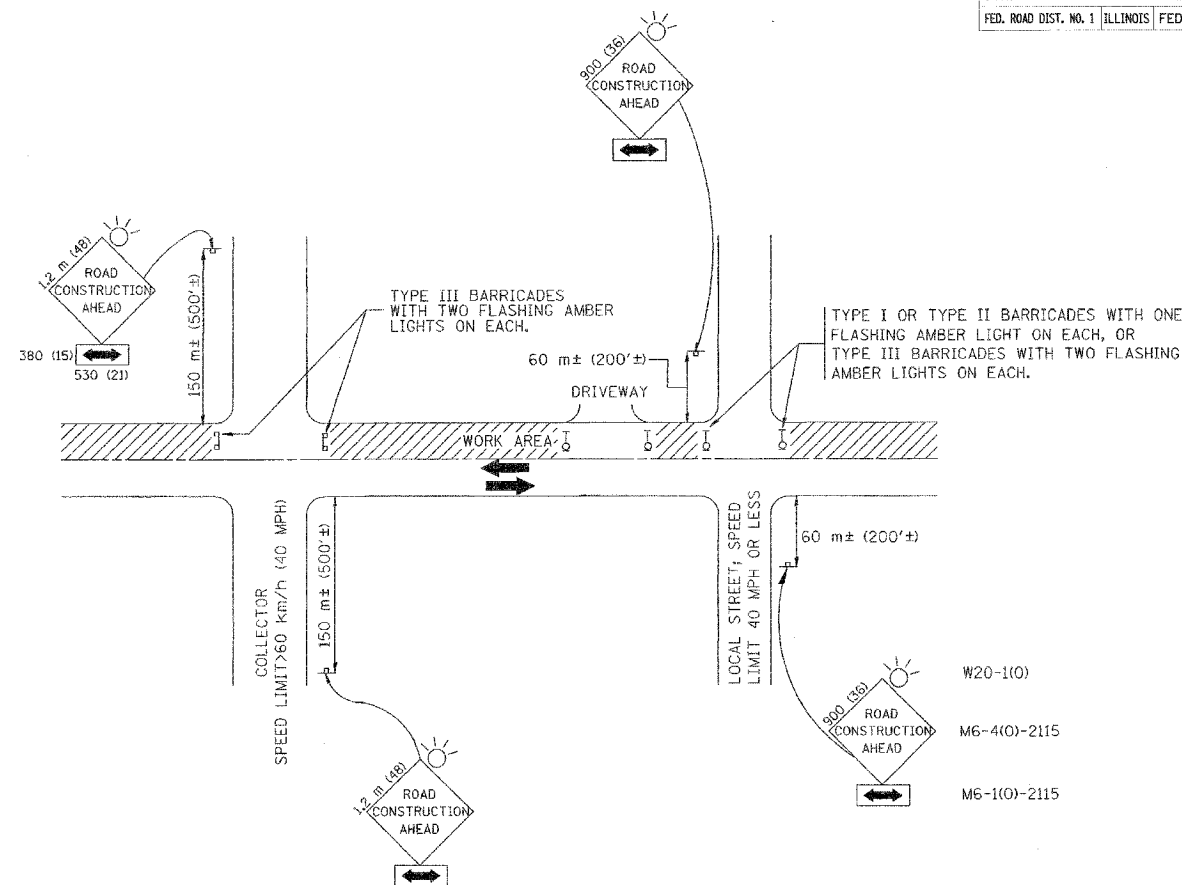
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
532	02-00117-21-BR	WILL	35	30
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILLINOIS	FED. AID PROJECT	



TYPICAL BENCHING DETAIL FOR EMBANKMENT

NOTES:

- 1 CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
- 2 EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.04 OF THE STANDARD SPECIFICATIONS.
- 3 BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
- 4 TRIM TO FINAL SLOPE.
- 5 EQUAL 200 (8-INCH) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.06 OF THE STANDARD SPECIFICATIONS.
- 6 EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR HEAVY EXCAVATION (SPECIAL). THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL. NO ADDITIONAL COMPENSATION WILL BE ALLOWED. SEE GENERAL NOTES, SHEET 2



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

NOTES:

- A. FOR NO LANE RESTRICTION ON THE SIDE ROAD OR DRIVEWAYS
 1. SIDE ROAD WITH A SPEED LIMIT OF 60 km/h (40 MPH) OR LESS AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE ROAD CONSTRUCTION AHEAD SIGN 300x360 (36x36) WITH A FLASHER AND FLAG MOUNTED ON IT APPROXIMATELY 60 m (200') 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 60 km/h (40 MPH) AS SHOWN ON THE DRAWING AND AS DIRECTED BY THE ENGINEER:
 - a) ONE ROAD CONSTRUCTION AHEAD SIGN 1.2 m x 1.2 m (48x48) WITH A FLASHER MOUNTED ON IT APPROXIMATELY 150 m (500') 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. 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).
- B. FOR A LANE CLOSURE ON A SIDE ROAD OR DRIVEWAY:

USE APPLICABLE PORTIONS OF THE TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES (STD. 701501, STD. 701606 OR THE APPROPRIATE STANDARD). THE SPACING OF SIGNS AND BARRICADES SHALL BE ADJUSTED FOR FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. THE DIRECTIONAL ARROW SHALL BE COVERED OR REMOVED WHEN NO LONGER CONSISTENT WITH THE SIDE ROAD LANE CLOSURE.

C. ADVANCE WARNING SIGNS ARE TO BE OMITTED ON DRIVEWAY UNLESS OTHERWISE NOTED.

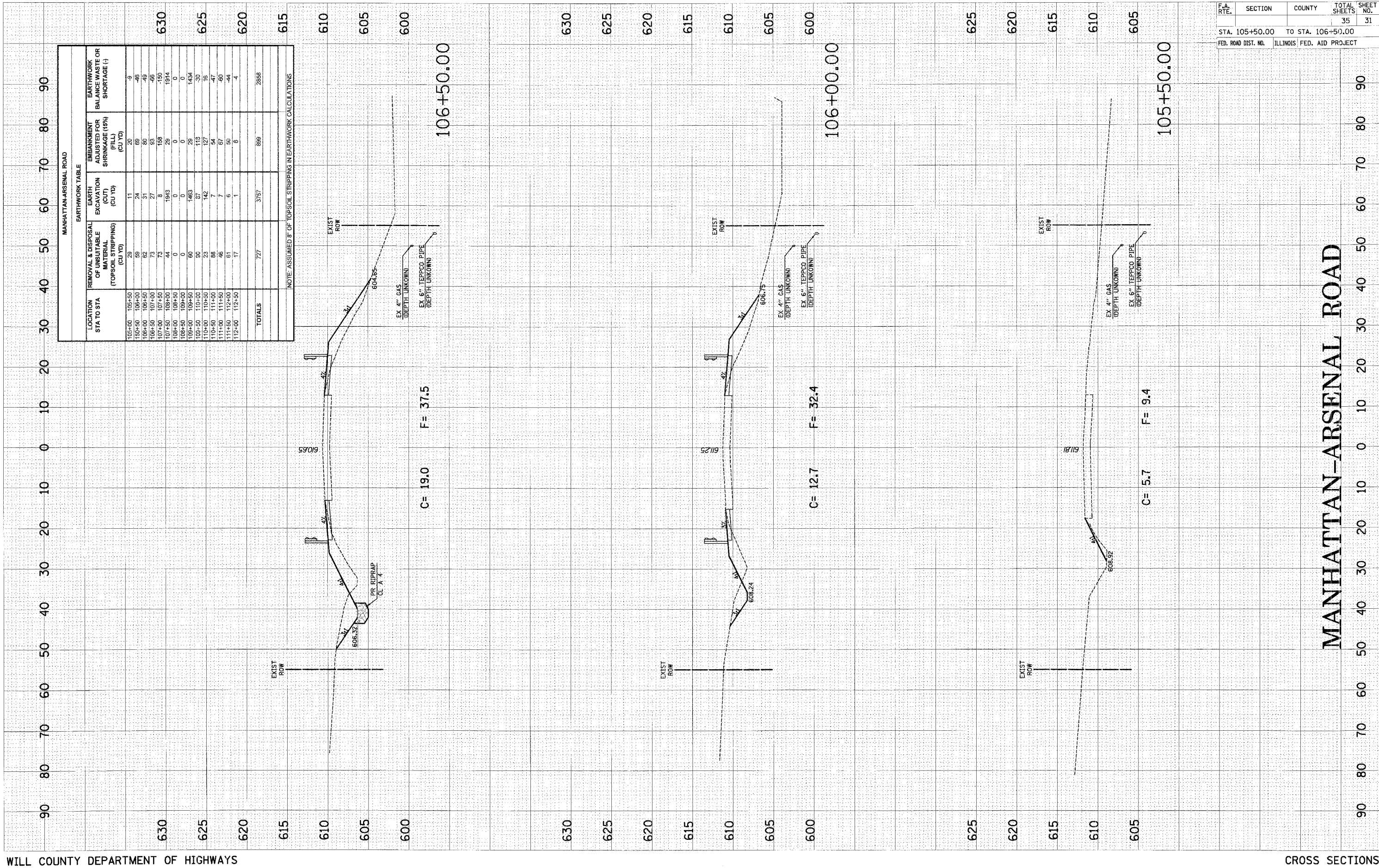
D. THE TRAFFIC CONTROL AND PROTECTION FOR SIDE ROADS, INTERSECTIONS, AND DRIVEWAYS SHALL BE INCIDENTAL TO THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION	
NAME	DATE	TRAFFIC CONTROL & PROTECTION FOR SIDE ROADS, INTERSECTIONS, DRIVEWAYS, AND BENCHING DETAIL FOR EMBANKMENT WIDENING	
		MANHATTAN-ARSENAL ROAD OVER JACKSON CREEK	
		SCALE: NONE	DRAWN BY SVJ
		DATE 12-08-06	CHECKED BY JUS

PLOT DATE = 12/6/2005
 FILE NAME = #FILE#
 SCALE = #REF#
 REFERENCE = #REF#

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

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



MANHATTAN-ARSENAL ROAD					
EARTHWORK TABLE					
LOCATION STA TO STA	REMOVAL & DISPOSAL OF UNSUITABLE MATERIAL (TOPSOIL STRIPPING) (CU YD)	EARTH EXCAVATION (CUT) (CU YD)	EMBANKMENT ADJUSTED FOR SHRINKAGE (15% (FILL) (CU YD)	EARTHWORK BALANCE WASTE OR SHORTAGE (+)	
105+00 105+50	29	11	20	-9	
150+50 106+00	59	24	89	-46	
106+00 106+50	62	31	80	-49	
106+50 107+00	73	27	93	-46	
107+00 107+50	44	8	158	-150	
107+50 108+00	0	1943	29	1914	
108+00 108+50	0	0	0	0	
108+50 109+00	0	0	0	0	
109+00 109+50	60	1463	29	1434	
109+50 110+00	90	87	119	-30	
110+00 110+50	23	142	127	-16	
110+50 111+00	88	7	54	-47	
111+00 111+50	46	7	67	-60	
111+50 112+00	61	6	50	-44	
112+00 112+50	17	1	6	-4	
TOTALS	727	3757	866	2658	

NOTE: ASSUMED 8" OF TOPSOIL STRIPPING IN EARTHWORK CALCULATIONS

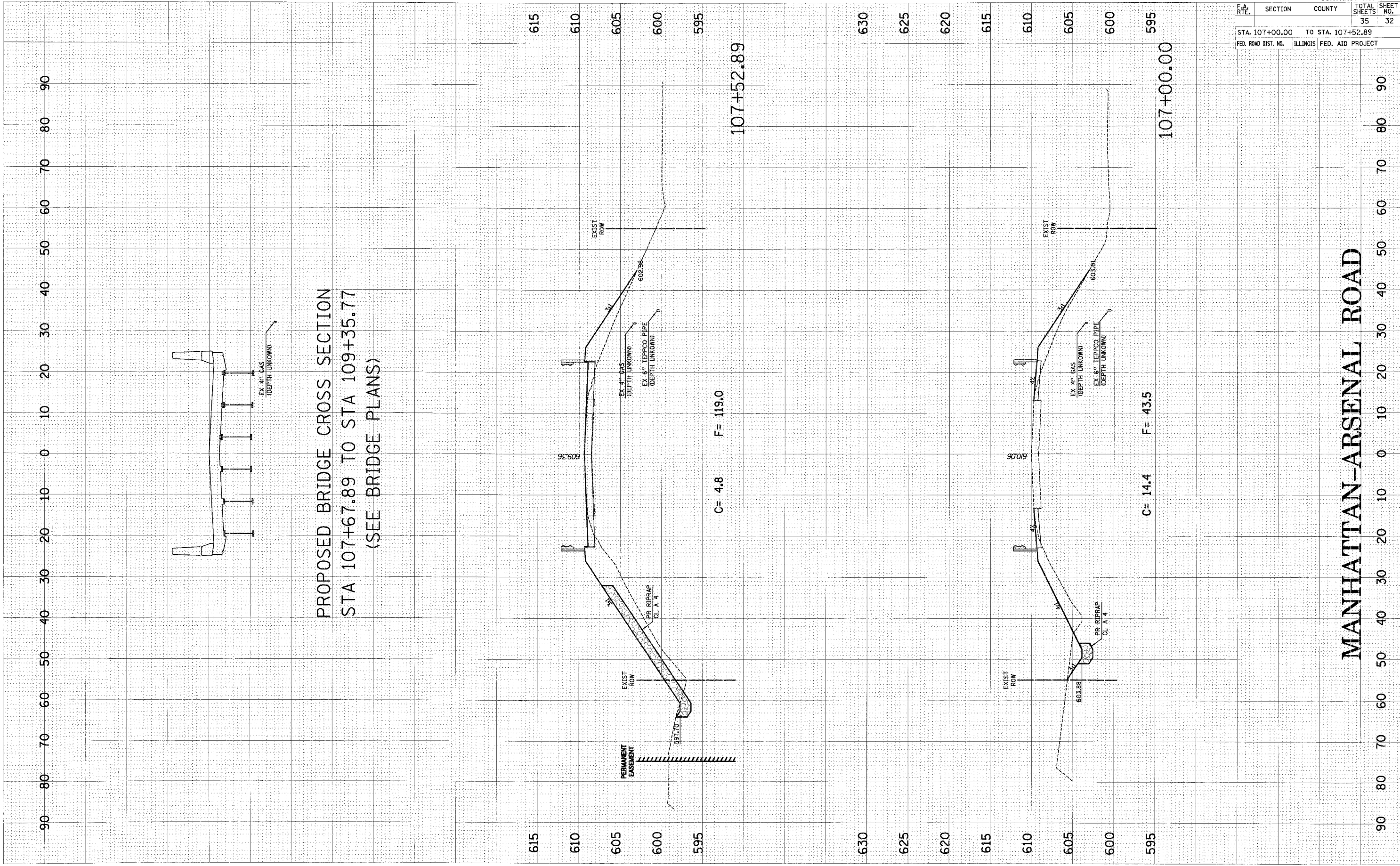
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			35	31
STA. 105+50.00		TO STA. 106+50.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

MANHATTAN-ARSENAL ROAD

PLOT DATE = 12/16/2006
 FILE NAME = #FILEL*
 PLOT SCALE = #REF*
 REFERENCE = #REF*

ORIGINAL SURVEY NO. _____
 SURVEYED BY _____
 NOTE BOOK NO. _____
 TEMPLATE AREAS CHECKED _____

FINAL SURVEY NO. _____
 SURVEYED BY _____
 NOTE BOOK NO. _____
 TEMPLATE AREAS CHECKED _____



PROPOSED BRIDGE CROSS SECTION
 STA 107+67.89 TO STA 109+35.77
 (SEE BRIDGE PLANS)

C = 4.8 F = 119.0

C = 14.4 F = 43.5

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			35	32
STA. 107+00.00 TO STA. 107+52.89				
FED. ROAD DIST. NO. ILLINOIS			FED. AID PROJECT	

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			35	33
STA. 109+50.77		TO STA. 110+00.00		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

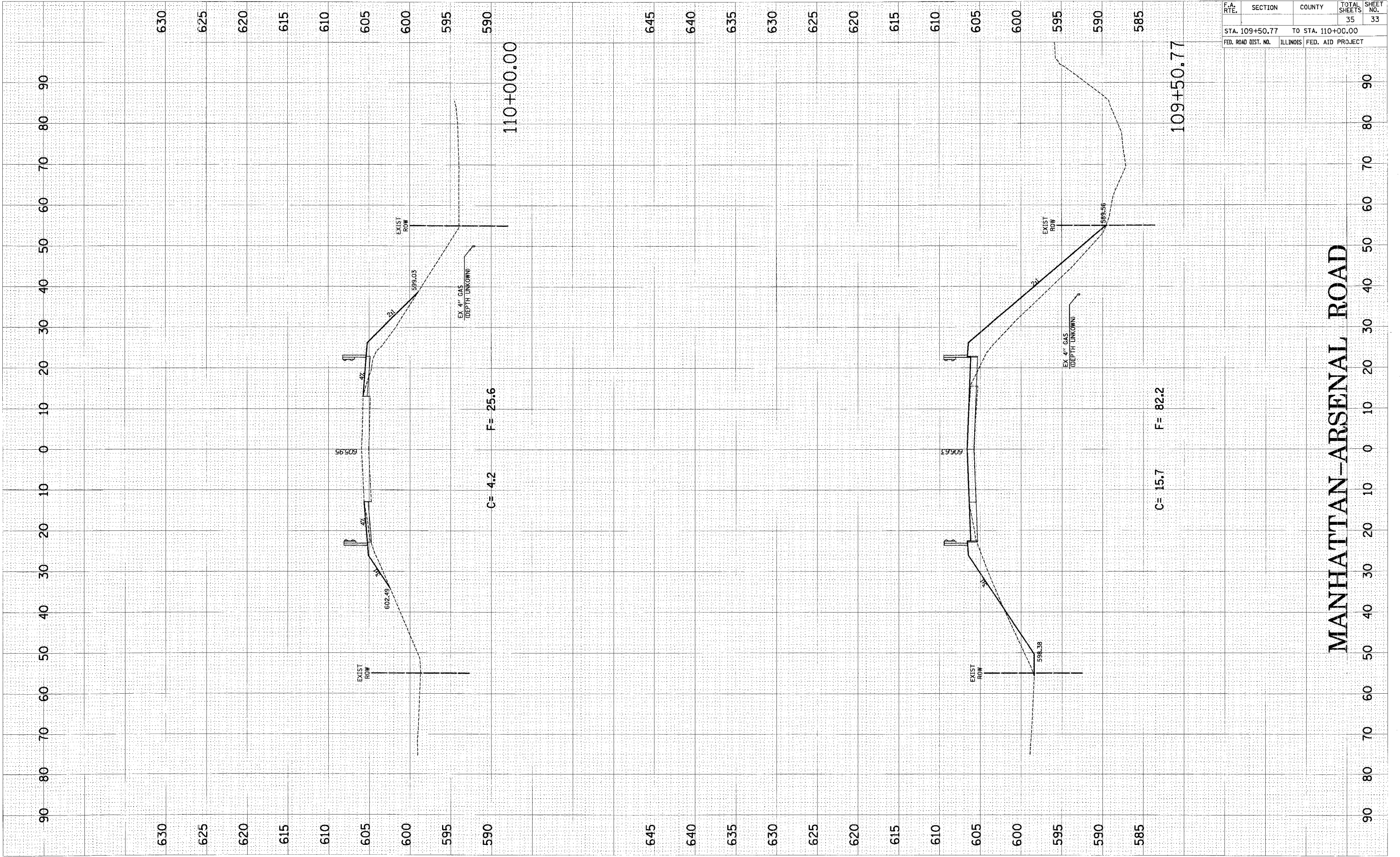
FINAL SURVEY

SURVEYED	BY	DATE
NO. 10		
AREAS CHECKED		

ORIGINAL SURVEY

SURVEYED	BY	DATE
NO. 10		
AREAS CHECKED		

PLOT DATE = 12/26/2008
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 PLOT SCALE = #REF#
 REFERENCE = #REF#

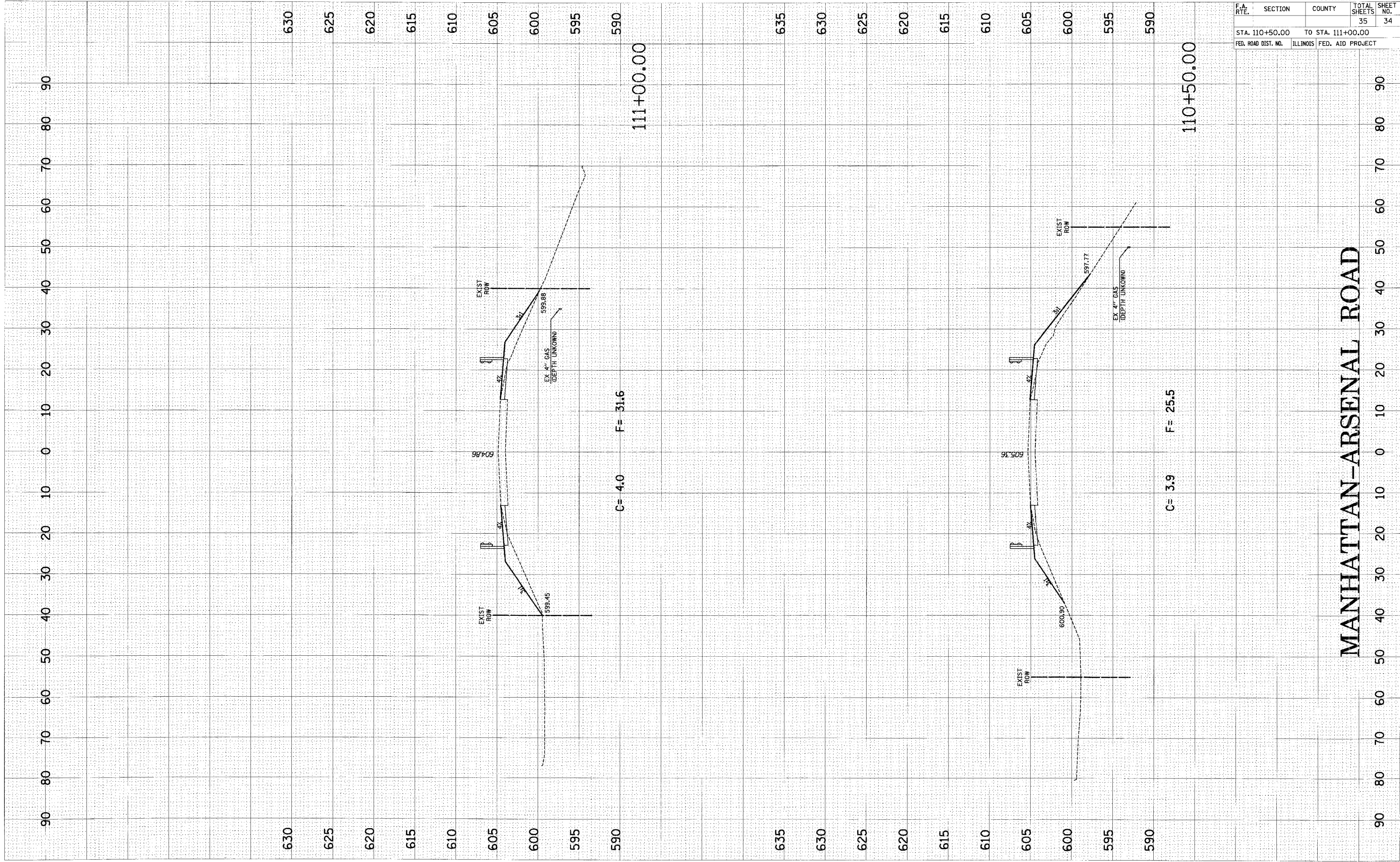


MANHATTAN-ARSENAL ROAD

PLOT DATE = 12/16/2006
 FILE NAME = #FILEL*
 PLOT SCALE = #REF*
 REFERENCE = #REF*

ORIGINAL SURVEY
 SURVEY NO. 111+00.00
 DATE:

FINAL SURVEY
 SURVEY NO. 111+00.00
 DATE:



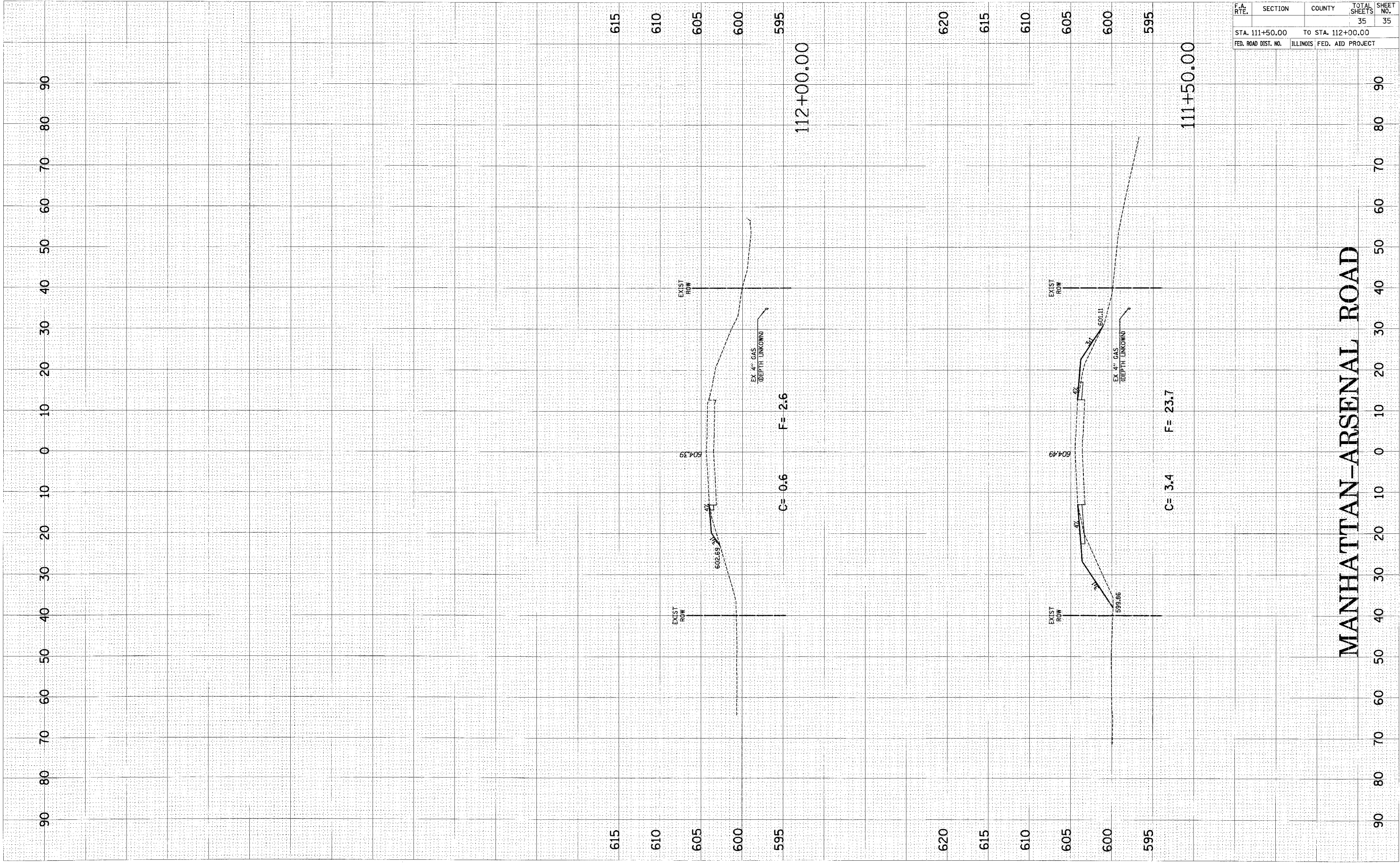
CONTRACT NO. 83985			
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS
			35
			SHEET NO. 34
STA. 110+50.00		TO STA. 111+00.00	
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT	

MANHATTAN-ARSENAL ROAD

PLOT DATE = 12/6/2006
 FILE NAME = #FILEL#
 PLOT SCALE = #REF#

ORIGINAL SURVEY BY DATE
 NOTE BOOK NO. DATE
 TEMPLATE ARFAS CHECKED

FINAL SURVEY BY DATE
 NOTE BOOK NO. DATE
 TEMPLATE ARFAS CHECKED



F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			35	35
STA. 111+50.00		TO STA. 112+00.00		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

MANHATTAN-ARSENAL ROAD