ANCHORED RETAINING WALL "A"

	SOLDIER PILE SCHEDULE (2 BEAMS PER PILE)							ANCHOR SCHEDULE					
PILE NO.	BEAM SIZE	TOP OF CONCRETE FACING ELEV.	TOP OF PILE ELEV.	*TOP OF SOCKET ELEV.	PILE LENGTH ABOVE SOCKET (FT.)	MINIMUM TOTAL PILE LENGTH (FT.)	NO. OF STUDS PER BEAM	ANCHOR ELEV.	DESIGN LOAD (KIPS)	MINIMUM NO. OF STRANDS (0.6" DIA.)	MINIMUM FREE LENGTH (FT.)	**ESTIMATED BOND LENGTH IN ROCK (FT.)	ESTIMATED TOTAL LENGTH (FT.)
1	W14X30	601.60	600.6	592	8.6	13.6	6	—	—	—	—	—	—
2	W14X30	602.40	601.4	592	9.4	14.4	8	599.40	109	4	16	18	34
3	W14X30	603.20	602.2	592	10.2	15.2	10	600.20	109	4	16	18	34
4	W14X30	604.00	603.0	591	12.0	17.0	13	601.00	109	4	16	18	34
5	W14X30	604.02	603.0	591	12.0	17.0	14	601.02	109	4	16	18	34
6	W14X38	604.05	603.1	591	12.1	17.1	16	600.30	149	5	20	26	46
7	W14X38	604.07	603.1	591	12.1	17.1	16	600.32	149	5	20	26	46
8	W14X38	604.10	603.1	590	13.1	18.1	16	600.35	149	5	20	26	46
9	W14X38	604.12	603.1	590	13.1	18.1	16	600.37	149	5	20	26	46
10	W14X38	604.12	603.1	590	13.1	18.1	16	600.37	149	5	20	26	46
11	W14X38	604.11	603.1	590	13.1	18.1	16	600.36	149	5	20	26	46
12	W14X38	604.09	603.1	591	12.1	17.1	16	600.34	149	5	20	26	46
13	W14X38	604.07	603.1	591	12.1	17.1	16	600.32	149	5	20	26	46
14	W14X38	604.06	603.1	591	12.1	17.1	15	600.31	149	5	20	26	46
15	W14X30	604.04	603.0	592	11.0	16.0	13	601.04	109	4	15	18	33
16	W14X30	604.02	603.0	592	11.0	16.0	10	601.02	109	4	15	18	33
17	W14X30	604.00	603.0	592	11.0	16.0	7	—	—	—	—	—	—

*TOP-OF-SOCKET ELEVATIONS ARE APPROXIMATE ONLY.
**THE CONTRACTOR SHALL DETERMINE THE BOND LENGTH NECESSARY TO SATISFY THE LOAD TESTING REQUIRMENTS (AS PER SPECIAL PROVISIONS) AND SUBMIT TO ENGINEER FOR APPROVAL.

ANCHORED RETAINING WALL "B"

	SOLDIER PILE SCHEDULE (2 BEAMS PER PILE)							ANCHOR SCHEDULE					
PILE NO.	BEAM SIZE	TOP OF CONCRETE FACING ELEV.	TOP OF PILE ELEV.	*TOP OF SOCKET ELEV.	PILE LENGTH ABOVE SOCKET (FT.)	MINIMUM TOTAL PILE LENGTH (FT.)	NO. OF STUDS PER BEAM	ANCHOR ELEV.	DESIGN LOAD (KIPS)	MINIMUM NO. OF STRANDS (0.6" DIA.)	MINIMUM FREE LENGTH (FT.)	**ESTIMATED BOND LENGTH IN ROCK (FT.)	ESTIMATED TOTAL LENGTH (FT.)
1	W14X48	585.48	584.5	577	7.5	12.5	9	—	—	—	—	—	—
2	W14X48	587.41	586.4	577	9.4	14.4	9	583.41	160	5	16	28	44
3	W14X48	589.34	588.3	577	11.3	16.3	11	585.34	160	5	16	28	44
4	W14X48	591.27	590.3	577	13.3	18.3	13	587.27	160	5	16	28	44
5	W14X48	591.71	590.7	577	13.7	18.7	13	587.71	160	5	16	28	44
6	W14X48	591.95	591.0	576	15.0	20.0	13	587.95	160	5	16	28	44
7	W14X53	592.19	591.2	576	15.2	20.2	13	588.19	174	5	22	30	52
8	W14X53	592.42	591.4	575	16.4	21.4	13	588.42	174	5	22	30	52
9	W14X53	592.66	591.7	575	16.7	21.7	14	588.66	174	5	22	30	52
10	W14X53	592.90	591.9	574	17.9	22.9	14	588.90	174	5	22	30	52
11	W14X53	592.94	591.9	574	17.9	22.9	14	588.94	174	5	22	30	52
12	W14X53	592.88	591.9	574	17.9	22.9	13	588.88	174	5	22	30	52
13	W14X53	592.82	591.8	574	17.8	22.8	13	588.82	167	5	25	28	53
14	W14X53	592.76	591.8	573	18.8	23.8	13	588.76	167	5	25	28	53
15	W14X53	592.70	591.7	573	18.7	23.7	13	588.70	167	5	25	28	53
16	W14X53	592.64	591.6	573	18.6	23.6	13	588.64	167	5	25	28	53
17	W14X53	592.58	591.6	573	18.6	23.6	13	588.58	167	5	25	28	53
18	W14X53	592.52	591.5	573	18.5	23.5	12	588.52	167	5	25	28	53

GENERAL NOTES

1) CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN OF TIMBER LAGGING (PER SPECIAL PROVISIONS). LAGGING DESIGN SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL. QUANTITY SHOWN IN BILL OF MATERIALS IS AN ESTIMATE FOR BIDDING PURPOSES ONLY.
2) REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, OR M322 GRADE 60.
3) ALL EXPOSED EDGES OF THE CONCRETE CAPS SHALL BE CHAMFERED 3/4".
4) SEE SPECIAL PROVISIONS FOR INSTALLATION AND TESTING OF PERMANENT GROUND ANCHORS.
5) PAVED DITCHES SHALL HAVE TRANSVERSE JOINTS CUT 1/3" DEEP EVERY 10'. JOINTS SHALL THEN BE SEALED WITH HOT POURED JOINT SEALER. PAVED DITCH CONSTRUCTION SHALL CONFORM TO SECTION 606. JOINT SEALER SHALL BE IN ACCORDANCE WITH SECTION 420.14. AND SECTION 1050.02.
6) FOR DRAINAGE DETAILS (INLETS, STORM SEWERS, PIPE DRAINS, ETC.) SEE ROADWAY PLAN AND PROFILE SHEET.

SUGGESTED SEQUENCE OF CONSTRUCTION

1) DRILL HOLES FOR SOLDIER PILES. DO NOT EXCAVATE NEAR THESE HOLES AT THIS STAGE.
2) SET SOLDIER PILES.
3) PLACE PILE ENCASEMENT CONCRETE
4) PLACE CONTROLLED LOW-STRENGTH MATERIAL (CLSM)
5) BEGIN EARTH EXCAVETION. REMOVE ONLY EARTH AND CLSM AS NECESSARY TO INSTALL TIMBER LAGGING.
6) INSTALL PERMANENT GROUND ANCHORS. EARTH EXCAVATION SHALL BE NO MORE THAN TWO FEET BELOW ANCHOR LOCATION.
7) TEST PERMANENT GROUND ANCHORS AND FILL COVER WITH ANTI- CORROSION GROUT.
8) COMPLETE REMAINING EARTH EXCAVATION AND INSTALLATION OF WALL COMPONENTS AS IN STEP #5.
9) INSTALL GEOCOMPOSITE WALL DRAIN.
10) INSTALL STUD SHEAR CONNECTORS.
11) BACKFILL TIMBER LAGGING.
12) CONSTRUCT CONCRETE FASCIA.

BILL OF MATERIALS

ITEM	Unit	WALL "A"	WALL "B"	WALL "C"	TOTAL
DRILLING AND SETTING SOLDIER PILES (IN ROCK)	CU FT	515	1070	———	1585
PERMANENT GROUND ANCHORS	EACH	15	17	———	32
CONCRETE STRUCTURES	CU YD	60.2	50.3	36	146.5
REINFORCEMENT BARS, EPOXY COATED	POUND	7770	8820	2140	18730
FURNISHING SOLDIER PILES (BUILD-UP SECTION)	FOOT	283.1	273.2	———	656.3
GEOCOMPOSITE WALL DRAIN	SQ YD	32	42	———	74
STUD SHEAR CONNECTORS	EACH	448	452	396	1296
PERMANENT STEEL SHEET PILING	SQ FT	———	———	2028	2028
PAVED DITCH (SPECIAL)	FOOT	132	140	165	437
UNTREATED TIMBER LAGGING	SQ FT	1514	1162	———	2676

W14x53: 50 ksi (AASHTO M270 GR. 50

DESIGN SPECIFICATIONS

1989 AASHTO Specifications With 1990 Through 1991 Interim Specifications.

DESIGN STRESSES

fu	(Anchor Strands)	= 270 ksi (AASHTO M203, Gr.270)
fy	(Structural Steel)	= 36 ksi (AASHTO M270,Gr.36) EXCEPT WHERE NOTED
fy	(Anchor Bearing Pl's)	= 50 ksi (AASHTO M270, Gr.50)
fy	(Reinforcement)	= 60 ksi (AASHTO M31, OR M322, Gr.60)
f'c	(Concrete)	= 3.5 ksi
f'c	(Grout)	= 4.0 ksi
fb	(Untreated Timber)	= 1.0 ksi
fy	(Sheet Piles)	= 39 ksi (AASHTO M202)
f'c	(ENCASEMENT CONCRETE)	= 4.0 ksi

SCHEDULES, GENERAL NOTES AND BILL OF MATERIALS

RETAINING WALLS "A", "B" & "C"
F.A. RTE. 595 SECTION 1-1
ROCK ISLAND COUNTY