

**ITEM 606 - ANCHOR ASSEMBLY, TYPE E-98 (CONT.)**

DWG. NO.	DRAWING NAME	DWG./REV.	ODOT APPROVAL DATE
SKT-4M	SEQUENTIAL KINKING TERMINAL (SKT-350) ASSEMBLY WITH 4 FOUNDATION TUBES	12/11/97	3/6/98

THE FACE OF THE TYPE E-98 IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.19, APPROXIMATELY 18" X 18", OR 12" X 18" IF APPLIED TO A RECTANGULAR ET-2000 "PLUS" EXTRUDER HEAD.

REFER TO THE MANUFACTURER'S INSTRUCTION REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4-INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 27-3/4-INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4-INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, TYPE E-98, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT

AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**PAVING UNDER GUARDRAIL**

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING 209, LINEAR GRADING AS PER PLAN, AND PAVING UNDER THE GUARDRAIL USING 448 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

ITEM 209, LINEAR GRADING AS PER PLAN, SHALL CONSIST OF EXCAVATING TOPSOIL, PLACING GRANULAR MATERIAL AND APPLYING HERBICIDE AS SPECIFIED IN THE PLANS AND IN ACCORDANCE WITH THE FOLLOWING:

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 105.17.

THE REMOVED MATERIAL SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO 703.16 PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

HERBICIDE SHALL BE EPA APPROVED FOR PAVING UNDER GUARDRAIL. IT SHALL BE APPLIED TO THE PREPARED AREA AFTER FINAL LEVELING AND GRADING HAS BEEN COMPLETED. THE APPLICATION SHALL BE JUST PRIOR TO PAVING AND SHALL STRICTLY ADHERE TO THE MANUFACTURER'S INSTRUCTIONS.

EACH SUCCESSFUL BIDDER MUST BE LICENSED BY THE OHIO DEPARTMENT OF AGRICULTURE AS A COMMERCIAL APPLICATOR AND ALL PERSONS INVOLVED IN THE ACTUAL SPRAYING SHALL BE LICENSED AS COMMERCIAL OPERATORS IN THE APPROPRIATE SPRAY CATEGORY.

**PAVING UNDER GUARDRAIL (CONT.)**

HERBICIDE LABEL, MATERIAL SAFETY DATA SHEET AND COPY OF APPLICATORS LICENSES SHALL BE SUBMITTED TO THE ENGINEER FOR VERIFICATION PRIOR TO COMMENCING WORK.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 209, LINEAR GRADING, AS PER PLAN.

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 448 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING, METHODS:

- METHOD A: 1) SET GUARDRAIL POSTS  
2) PLACE ITEM 448

METHOD B: 1) PLACE ITEM 448

- 2) BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)

- 3) SET GUARDRAIL POSTS

- 4) PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 448, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, PG 64-22, UNDER GUARDRAIL, AS PER PLAN.

**ITEM 606 - IMPACT ATTENUATOR, TYPE 2-98 (65 MPH, 24", UNIDIRECTIONAL)**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY ONE OF THE FOLLOWING IMPACT ATTENUATORS, OR AN APPROVED EQUAL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE AT WWW.DOT.STATE.OH.US/DRRC/ UNDER ROADSIDE SAFETY DEVICES FOR APPROVED IMPACT ATTENUATORS:

- 1) A QUADGUARD IMPACT ATTENUATOR MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC., 35 EAST WACKER DRIVE, CHICAGO, IL 60601 (TELEPHONE: 312-467-6750) AND DISTRIBUTED BY BALDWIN AND SOURS, INC. (614-851-8800). INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PRE-APPROVED SHOP DRAWINGS:

DWG. NO.	DRAWING NAME	DWG./REV.	ODOT APPROVAL DATE
OSTSCVR-U	QUADGUARD SYSTEM WITH TENSION STRUT BACKUP	7/10/96 Rev. A	3/6/98
QSCBCVR-U	QUADGUARD SYSTEM WITH CONCRETE BACKUP	4/28/97 Rev. E	3/6/98
QFTSCVR-U	QUADGUARD SYSTEM W/ 69" & 90" TENSION STRUT BACKUPS	9/5/97 Rev. C	3/6/98
QFCBCVR-U	QUADGUARD SYSTEM W/ 69" & 90" CONCRETE BACKUPS	9/4/97 Rev. D	3/6/98

35-40-20	DEFLECTOR ASSEMBLY, CONCRETE BACKUP RETROFIT, OG	11/14/97 Rev. B	7/31/98
35-40-03	QUADGUARD SYSTEM BACKUP ASSEMBLY, TS, OG	3/19/99 Rev. F	8/27/99
35-40-08	QUADGUARD SYSTEM CONCRETE BACKUP, OG ON GRADE & ON EXISTING CONCRETE STRUCTURE	10/14/97 Rev. F	8/27/99
35-40-21	TRANSITION ASSEMBLY QUAD-BEAM TO W-BEAM	11/6/97 Rev. B	8/27/99
		7/14/97 Rev. A	8/27/99
35-40-22	TRANSITION ASSEMBLY QUAD-BEAM TO THRIE-BEAM	7/15/97 Rev. A	8/27/99
		7/11/97 Rev. A	8/27/99
35-40-15	QUADGUARD SYSTEM END SHOE ASSEMBLY, OG	9/11/98 Rev. F	8/27/99
3540211	OG TRANSITION ASSEMBLY QUAD-BEAM TO W-BEAM-WIDE	8/29/97 Rev. A	8/27/99
		8/29/97 Rev. A	8/27/99
3540221	OG TRANSITION ASSEMBLY QUAD-BEAM TO THRIE-BEAM-WIDE	8/29/97 Rev. A	8/27/99
		8/29/97 Rev. A	8/27/99
3540498	OG SYSTEM NOSE ASSEMBLY, OG, 24, 30, 36, W/BELTING	12/30/98	8/27/99
3540150	QUADGUARD TRANSITION TO VERTICAL CONCRETE BARRIER	9/96	8/27/99
	2) THE BARRIER SYSTEMS, INC. TAU-II IMPACT ATTENUATOR DISTRIBUTED BY ROAD SYSTEMS, INC., SALES SUPPORT, 2183 ELM TRACE, AUSTINTOWN, OH 44515 TELEPHONE: (330) 799-9291. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING PREAPPROVED SHOP DRAWINGS:		
DWG. NO.	DRAWING NAME	DWG./REV.	ODOT APPROVAL DATE
SYSTEM CAPACITY	UNIVERSAL TAU-II CRASH CUSHION SYSTEM CONFIGURATION CHART	10/6/04 V5	10/16/04
A040416	UNIVERSAL TAU-II PARTS LIST	4/22/04	10/16/04
A040420	UNIVERSAL TAU-II FOUNDATION, FLUSH MOUNT BACKSTOP - PCC PAD	4/28/04	10/16/04
A040105	UNIVERSAL TAU-II FOUNDATION, PCB BACKSTOP (Referenced on A040420)	1/07/04	10/16/04
A040108	UNIVERSAL TAU-II FOUNDATION, WIDE FLANGE BACKSTOP	1/07/04	10/16/04
A040113	FOUNDATION SPECIFICATIONS (Referenced on A040420 and A040108)	1/09/04 Rev. A	10/16/04

B010537	COMPACT BACKSTOP, TAU-II	3/25/02	10/16/04
B040219	FLUSH MOUNT BACKSTOP ASSEMBLY	4/19/04	10/16/04
B040239	APPLICATION, FLUSH MOUNT BACKSTOP (Typical for parallel system, 60 & 70 mph, up to 36" hazard width, connected to SCD RM-4.6)	4/21/04	10/16/04
B033004	WIDE TAU-II 60 MPH, 60" BACKSTOP (Typical for 60 mph combination system)	12/21/03	10/16/04
B033101	WIDE TAU-II 70 MPH, 66" BACKSTOP (Typical for 70 mph combination system)	2/13/04	10/16/04
B033009	WIDE TAU-II 60 MPH, 90" BACKSTOP (Typical for 60 mph flared system)	11/26/03	10/16/04
B033105	WIDE TAU-II 70 MPH, 90" BACKSTOP (Typical for 70 mph flared system)	2/17/04	10/16/04
	3) THE TRINITY INDUSTRIES, INC. TRINITY ATTENUATING CRASH CUSHION DISTRIBUTED BY TRINITY INDUSTRIES, INC 1170 N. STATE ST., GIRARD, OHIO 44420, TELEPHONE: (800) 8321-2755. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AS DETAILED ON THE FOLLOWING SHOP DRAWINGS:		

DWG.#	DRAWING NAME	DWG./REV.	DATE
SS455	TRACC Transition to W-beam Median Barrier Plan, Elevation, and Sections		11/02/99
SS456	TRACC Transition to Vertical Concrete Wall Plan, Elevation & Sections		9/07/00
SS497	WideTRACC - Double Flare Wing Extensions		11/22/02
SS699	WideTRACC & TRACC Assembled Modular Base Unit		4/02/03
SSI000	Crash Cushion Attenuating Terminal Plan, Elevation, and Section Assembled Unit, Base and Rip Plate Schematic		3/30/05
SSI001	Crash Cushion Attenuating Terminal Assembled Base Unit		4/22/05
SSI002	Crash Cushion Attenuating Terminal Plan, Elevations, & Sections Shop Assembly Details (2 sheets)		5/11/05
SSI003	Crash Cushion Attenuating Terminal Plan, Elevations and Sections Unidirectional, Direct Attachment (2 sheets)		4/25/05
SSI004	ShorTRACC Crash Cushion Attenuating Terminal Assembled Base Unit		5/16/05
SSI005	ShorTRACC Crash Cushion Attenuating Terminal Shop Assembly Details (2 sheets)		5/24/05
SSI006	ShorTRACC Crash Cushion Attenuating Terminal Unidirectional, Direct Attachment		5/24/05

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**GENERAL NOTES**

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