

NOTE: THE REQUIREMENTS OF ITEM #540.10 - PRECAST CONCRETE BOX (MOD.) - AND SECTION 501 (STRUCTURAL CONCRETE) OF THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL APPLY TO THIS WORK.

DESCRIPTION OF FABRICATING FACILITIES FOR UNIT PRODUCTION:

- ALL CONCRETE TO BE SUPPLIED BY THE FORT MILLER CO., INC. AUTOMATED, NPCA CERTIFIED BATCH PLANT.
- CONCRETE TO BE DELIVERED FROM BATCH PLANT DIRECTLY TO THE FORM USING A MIXER TRUCK AND CONCRETE BUCKET.
- ALL CONCRETE TO BE CONSOLIDATED USING INTERNAL VIBRATION.
- QUALITY CONTROL EQUIPMENT: A) COMPRESSION MACHINE: FORNEY MODEL QC-410 (DATE OF CALIBRATION MAY 9, 2002)
B) HIGH PRESSURE AIR METER - PRESS-AIRE METER FORNEY MODEL LA-316

CONCRETE DATA

1. CONCRETE COMPRESSIVE STRENGTH

- A) LIFTING STRENGTH (FORM STRIPPING) = 4000 PSI
B) 28-DAY STRENGTH = 6000 PSI

2. MIX DESIGN (YIELD: 1.0 CUBIC YARD):

CEMENT:	752 LBS	TYPE I/II	UNIT WEIGHT: 144.47 PCF (APPROX.)
COARSE AGGREGATE:	1643 LBS	ASTM C33, SIZE #67	28-DAY STRENGTH: 6000 PSI (MIN.)
FINE AGGREGATE:	1306 LBS	ASTM C33	STRIPPING STRENGTH: 4000 PSI (MIN.)
WATER CONTENT:	256 LBS		WATER-CEMENT RATIO: 0.34 (APPROX.)
HIGH RANGE WATER REDUCER:	50 OZ	ASTM C494	AIR CONTENT: 5.0% TO 9.0%
LOW RANGE WATER REDUCER:	22 OZ	ASTM C494	SLUMP: 5" TO 8" (AFTER ADDITION OF HRWR)
AIR ENTRAINING AGENT:	22 OZ	ASTM C260	
CORROSION INHIBITOR:	256 OZ	ASTM C494 TYPE C	

PRIMARY MATERIAL SOURCE: 3901 LBS TOTAL (SEE ADMIXTURE NOTE BELOW)

CEMENT: BLUE CIRCLE CEMENT CO.; RAVENA, NY
COARSE AGGREGATE: E. GALUSHA & SONS; SOURCE #1-97G, TEST #99AG26C
FINE AGGREGATE: PECKHAM MATERIALS; SOURCE #1-85F, TEST #00AF20
HIGH RANGE WATER REDUCER: W.R. GRACE CO.; ADVA
LOW RANGE WATER REDUCER: W.R. GRACE CO.; WRDA/HYCOL
AIR ENTRAINING AGENT: W.R. GRACE CO.; DARAVAIR
CORROSION INHIBITOR: W.R. GRACE CO.; DCI

ADMIXTURE NOTE:

THE AMOUNT OF WATER REDUCING ADMIXTURES MAY VARY SLIGHTLY FROM DAY TO DAY. VARIATIONS IN ADMIXTURE QUANTITIES ARE MADE TO MAINTAIN A FAVORABLE WATER-CEMENT RATIO WHILE MAINTAINING A WORKABLE MIXTURE. THEREFORE WHEN THERE IS AN INCREASE IN THE HIGH RANGE WATER REDUCER, THERE IS A CORRESPONDING DECREASE IN THE AMOUNT OF WATER REQUIRED. THIS, IN TURN, INCREASES SLIGHTLY THE AMOUNT OF SAND AND STONE REQUIRED TO MAINTAIN A 1.0 CUBIC YARD YIELD.

3. TESTING:

PRECAST CONCRETE UNITS SHALL BE MANUFACTURED IN A PLANT WHICH PROVIDES BATCHING FACILITIES COMPLYING WITH THE REQUIREMENTS OF VAOT SECTION 501.05, WHICH PROVIDES A TESTING LABORATORY AS REQUIRED IN VAOT 501.04(B) AND WHICH CONTAINS A QUALITY CONTROL LABORATORY COMPLETE WITH EQUIPMENT FOR MEASURING THE PROPERTIES OF FRESH AND HARDENED CONCRETE. AT A MINIMUM, THE QUALITY CONTROL LABORATORY SHALL BE EQUIPPED WITH A COMPRESSION TESTING MACHINE, A CURING ROOM OR CHAMBER, APPARATUS FOR MEASURING SLUMP AND AIR ENTRAINMENT, AND A COMPLETE SET OF AGGREGATE SIEVES. THE COMPRESSION TESTING MACHINE SHALL BE CALIBRATED YEARLY BY AN INDEPENDENT LABORATORY USING EQUIPMENT WHICH IS CERTIFIED BY THE NATIONAL BUREAU OF STANDARDS. THE TESTING MACHINE SHALL BE POWER OPERATED AND CAPABLE OF APPLYING THE LOAD CONTINUOUSLY RATHER THAN INTERMITTENTLY, AND WITHOUT SHOCK.

FOR TESTING CONCRETE, THE FOLLOWING REQUIREMENTS SHALL APPLY:

- A) SAMPLING - SAMPLING FOR TESTS SHALL BE TAKEN IN ACCORDANCE WITH AASHTO T-141, SAMPLING OF FRESH CONCRETE, AS MODIFIED BY VAOT.
B) SLUMP TESTS - SLUMP TESTS, USING A SLUMP CONE, SHALL BE MADE IN ACCORDANCE WITH AASHTO T-119, SLUMP OF PORTLAND CEMENT CONCRETE.
C) AIR CONTENT - AIR CONTENT TESTS SHALL BE MADE IN ACCORDANCE WITH AASHTO T-152, AIR CONTENT OF FRESHLY MIXED CONCRETE BY PRESSURE METHOD, USING A PRESSURE TYPE AIR METER.

THE QUALITY CONTROL LABORATORY AND ITS EQUIPMENT MAY BE FACILITIES SEPARATE FROM THE TESTING LABORATORY, OR THE SAME FACILITIES, AS LONG AS ALL REQUIREMENTS ARE SATISFIED FULLY. THE FABRICATOR SHALL PROVIDE ALL NECESSARY ASSISTANCE TO THE ENGINEER TO ENSURE THAT ALL NECESSARY TESTING IS PERFORMED IN A TIMELY MANNER. UNLESS OTHERWISE DIRECTED BY THE CHIEF ENGINEER, ACTUAL TESTING WILL BE PERFORMED BY THE AGENCIES INSPECTOR.

SPECIMENS FOR COMPRESSIVE STRENGTH TESTING SHALL BE 6" BY 12" STANDARD CYLINDERS. A TEST SHALL BE THE AVERAGE OF THE STRENGTH OF AT LEAST (2) SPECIMENS FROM THE SAMPLE OF CONCRETE. A MINIMUM OF (4) CYLINDERS PER DAY OR PER (50) CUBIC YARDS OF CONCRETE SHALL BE MADE TO DETERMINE COMPLIANCE WITH THE 28-DAY STRENGTH REQUIREMENT. ADDITIONAL CYLINDERS SHALL BE MADE TO MONITOR THE REQUIRED CURING OR HANDLING STRENGTH (4000 PSI). TEST CYLINDERS SHALL BE CURED FOR THE REQUIRED CURING PERIOD WITH AND BY THE SAME METHODS AS THE UNITS THEY REPRESENT. AT THE END OF THE REQUIRED CURING PERIOD, THE CYLINDERS SHALL BE REMOVED FROM THEIR MOLDS AND PLACED IN STORAGE IN A MOIST CONDITION AT 73.5 ± 3°F.

REINFORCING STEEL DATA

- BLACK REINFORCEMENT SHALL BE IN CONFORMANCE WITH ASTM A615, GRADE 60.
- EPOXY-COATED REINFORCEMENT (WHERE REQ'D) IN CONFORMANCE WITH ASTM A775.

PRODUCTION SCHEDULE

- THE CONTRACTOR SHALL BE NOTIFIED AT LEAST (3) WEEKS PRIOR TO THE DATE THAT CASTING OF THE UNITS IS TO BEGIN IN ORDER THAT ARRANGEMENTS FOR PLANT INSPECTION MAY BE MADE BY VAOT.
- ONCE CASTING HAS BEGUN IT SHALL BE DONE ON A RELATIVELY CONTINUOUS BASIS. CURING ON A PIECEMEAL BASIS WILL NOT BE ACCEPTABLE.
- MARKING: EACH UNIT SHALL BE MARKED WITH THE FOLLOWING INFORMATION:

THE FORT MILLER CO., INC.
JOB #734 DATE CAST
(MARK #) (LOT #)

HYPAN UNITS	UNIT	QTY	LAY LENGTH	VOLUME (CY)	WEIGHT (T)
	H1	1	4'-6 3/8"	12.9	26.1
	H2	1	4'-6 3/8"	12.9	26.1
	H3	1	4'-6 3/8"	12.9	26.1

NOTE: THE VOLUMES AND WEIGHTS LISTED ARE BASED ON DESIGN THICKNESSES. ACTUAL VALUES CAN AND DO VARY IN ACCORDANCE WITH ALLOWABLE TOLERANCES. IT IS NECESSARY TO SIZE ALL LIFTING EQUIPMENT TAKING THIS FACT INTO CONSIDERATION.

FABRICATION

PRECAST CONCRETE UNITS SHALL BE CAST TO CONFORM TO THE SHAPE AND SIZE SHOWN ON THESE APPROVED SHOP DRAWINGS. UNITS SHALL BE UNIFORM IN APPEARANCE. THE ENDS OF CHAIRS OR SPACERS USED TO SUPPORT AND LOCATE REINFORCING STEEL AND BEAR ON THE FACES OF FORMS SHALL BE MADE OF OR COATED WITH NON-CORROSIVE MATERIALS SO THAT NO DISCOLORATION WILL SHOW ON THE FACES OF UNITS.

FORMS SHALL BE EXTERNALLY BRACED AND OF SUFFICIENT THICKNESS TO MAINTAIN A TRUE SHAPE AND ALIGNMENT. FORM OIL USED SHALL BE OF A NON-STAINING TYPE.

CURING

REGARDLESS OF THE CURING METHOD USED, UNITS SHALL NOT BE MOVED UNTIL THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH OF AT LEAST 4000 PSI.

NON-ACCELERATED CURE / SATURATED COVER:

PRODUCTION OF THESE PRECAST UNITS WILL OCCUR INSIDE A HEATED BUILDING.

1) INITIAL CURING PHASE:

INITIAL CURING PHASE FOR EACH UNIT SHALL BE THAT PERIOD BEGINNING FROM THE TIME EACH UNIT IS COMPLETELY FINISHED AND CONTINUING UNTIL THE FINAL CURING PHASE COMMENCES. DURING THIS PHASE, THE ENCLOSURE (FORM) TEMPERATURE SHALL BE MAINTAINED AT APPROXIMATELY THE CONCRETE PLACING TEMPERATURE; ARTIFICIAL HEAT SHALL BE APPLIED IF NECESSARY. THE PLASTIC CONCRETE OF EACH UNIT CAST SHALL BE ALLOWED TO ATTAIN INITIAL SET BEFORE THE FINAL CURING PHASE BEGINS TO PREVENT DAMAGE TO THE TOP-IN-FORM-SURFACE. THE INITIAL CURING PHASE SHALL BE APPROXIMATELY 1-4 HOURS, BUT SHALL NOT EXCEED 8 HOURS.

2) FINAL CURING PHASE:

THE FINAL CURING PHASE MAY BEGIN AT ANY TIME AFTER INITIAL SET HAS BEEN ATTAINED. EACH UNIT SHALL BE COVERED WITH HEAVY, WATER SATURATED BURLAP, OR OTHER MATERIAL ACCEPTABLE TO THE INSPECTOR. THE BURLAP SHALL BE KEPT SATURATED, AND THE CONCRETE SURFACE TEMPERATURE SHALL NOT DROP BELOW 45°F. THESE CONDITIONS SHALL BE MAINTAINED FOR A MINIMUM PERIOD OF (7) DAYS.

3) FALL/WINTER WEATHER CURING PROCEDURES

ALL CASTING WILL BE DONE IN HEATED PRODUCTION BUILDINGS WHERE THE AMBIENT AIR TEMPERATURE IS ABOVE 45°F. IF THE NECESSITY ARISES FOR PLACING CONCRETE AT A TEMPERATURE BELOW 45°F, A SEPARATE PROCEDURE WILL BE SUBMITTED FOR REVIEW.

TOLERANCES

ALL UNITS SHALL BE CHECKED FOR COMPLIANCE WITH THE TOLERANCES LISTED BELOW, AFTER THE UNITS HAVE COMPLETED THE FINAL CURING PHASE AND WITHIN THREE DAYS OF ACTUAL SHIPMENT.

TOLERANCES ARE AS FOLLOWS:

- A. BAR REINFORCEMENT COVER
1. 2" -0", +1/4" BACK FILLED SURFACES (ROOF & WALLS)
2. 1 1/2" -0", +1/4" ON ALL OTHER SURFACES
- B. INTERNAL DIMENSIONS
SPAN: 32'-0" ± 1" (PERPENDICULAR)
RISE: 7'-4" ± 1"
HAUNCH: ± 1/4" OF DESIGN DIMENSIONS
- C. SLAB & WALL THICKNESSES
1'-3 3/4" MINIMUM SLAB THICKNESS
1'-6 3/4" MINIMUM WALL THICKNESS (MEASURED PERPENDICULAR)
(A THICKNESS GREATER THAN REQUIRED SHALL NOT BE CAUSE FOR REJECTION.)
- D. LENGTH OF OPPOSITE SURFACES
LAYING LENGTH OF 2 ADJACENT UNITS SHALL NOT VARY BY MORE THAN 5/8" MAX.
- E. LENGTH OF SECTION
UNDERRUN IN ANY SECTION SHALL NOT BE MORE THAN 1/2" MAX.

REPAIR OF UNITS

UNITS THAT CONTAIN MINOR DEFECTS CAUSED BY MANUFACTURE OR HANDLING MAY BE REPAIRED AT THE MANUFACTURING SITE. MINOR DEFECTS ARE DEFINED AS HOLES, HONEYCOMBING OR SPALLS WHICH ARE 6 INCHES OR LESS IN DIAMETER, THAT DO NOT PENETRATE DEEPER THAN 2 INCHES INTO THE CONCRETE. SURFACE VOIDS OR "BUGHOLES" THAT ARE LESS THAN 5/8" IN DIAMETER AND LESS THAN 1/4" DEEP NEED NOT BE REPAIRED. REPAIRS SHALL BE MADE USING AN OVERHEAD AND VERTICAL CONCRETE REPAIR MATERIAL SATISFACTORY TO THE ENGINEER. REPAIRS SHALL BE MADE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF VAOT SECTION 580 - STRUCTURAL CONCRETE REPAIR - AND SHALL BE APPROVED BY THE ENGINEER. UNITS HAVING MAP OR CRAZE CRACKING OR LARGE SPALLS ARE NOT ACCEPTABLE AND SHALL NOT BE REPAIRED. ANY UNITS HAVING CRACKS WHICH GO THROUGH THE SECTION ARE NOT ACCEPTABLE AND SHALL NOT BE REPAIRED.

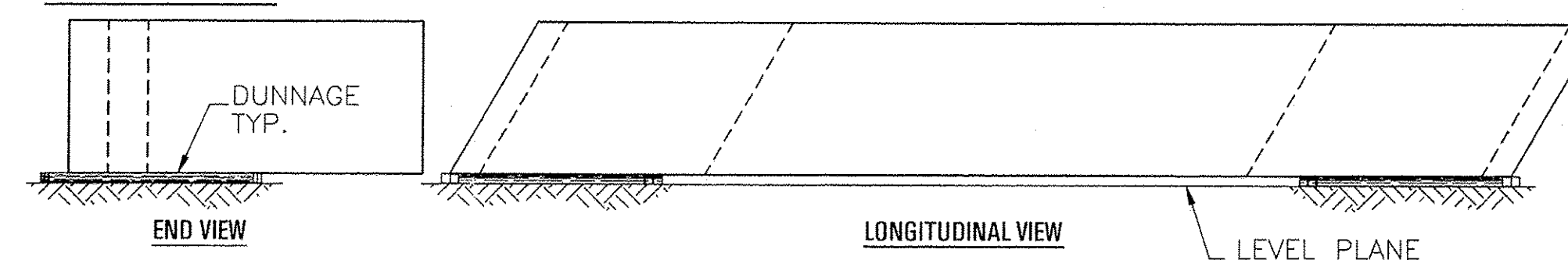
SHEET No.	DRAWING No.	TITLE	REVISION No.
1	B1	PRODUCTION NOTE SHEET	0
2	B2	BRIDGE LAYOUT	0
3	B3	UNIT DETAILS	0
4	B4	REINFORCEMENT/LIFTING	0

NOTE TO CONTRACTOR:

THIS SHOP DRAWING REPRESENTS OUR INTERPRETATION OF THE PLANS AND SPECIFICATIONS, AND OUR CONTRACT REQUIREMENTS FOR THIS PROJECT. PRIOR TO THE MANUFACTURE OF ANY ITEM FOR THIS PROJECT, ALL DIMENSIONS, METHODS OF CONSTRUCTION AND EXISTING CONDITIONS MUST BE CHECKED, CORRECTED AND/OR APPROVED BY OUR CUSTOMER. NO ITEM WILL BE SCHEDULED FOR PRODUCTION UNTIL WE HAVE BEEN NOTIFIED IN WRITING THAT OUR DRAWINGS HAVE BEEN APPROVED FOR FABRICATION. APPROVAL DELAYS WILL RESULT IN FABRICATION DELAYS. ANY ITEM THAT IS FABRICATED IN ACCORDANCE WITH APPROVED SHOP DRAWINGS THAT DOES NOT FIT THE CUSTOMER'S REQUIREMENTS WILL BE REMADE AND SHIPPED TO THE PROJECT ONLY AT THE CUSTOMER'S EXPENSE, AND ONLY AFTER RECEIPT OF A PURCHASE ORDER TO COVER THE ADDED EXPENSE. WE ASSUME NO RESPONSIBILITY FOR THE ALTERING OF OUR PRODUCTS TO ACCOMMODATE OTHER TRADES UNLESS REQUIRED INFORMATION IS FURNISHED AND SHOWN ON OUR SHOP DRAWINGS AT THE TIME THEY ARE APPROVED FOR FABRICATION BY OUR CUSTOMER.

LIVE LOADING	INVENTORY	OPERATING
HS-25	HS-28.01	HS-46.75

YARD STORAGE

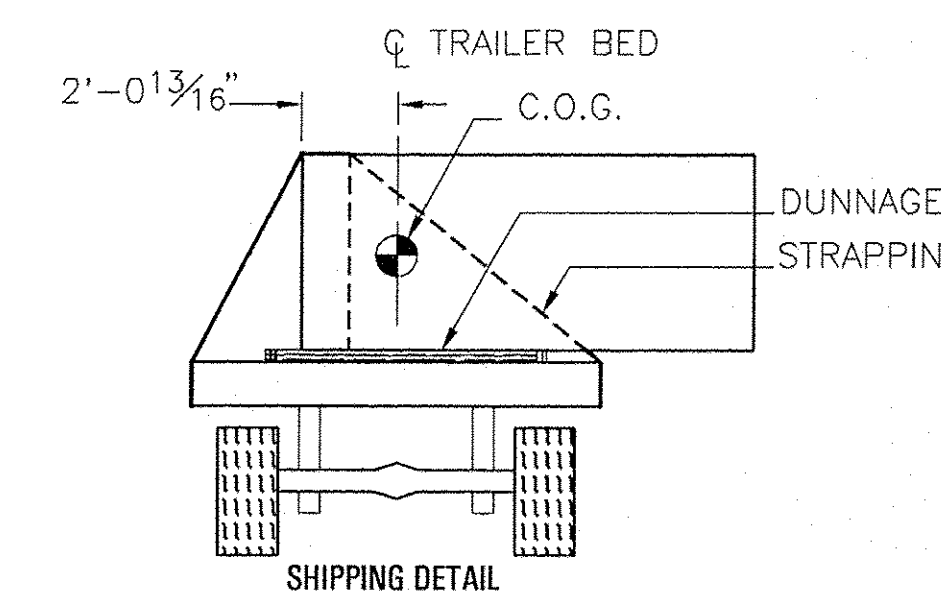


SHIPPING

PRECAST UNITS SHALL MEET 28-DAY STRENGTH REQUIREMENTS PRIOR TO SHIPPING. THE VAOT INSPECTOR SHALL INSPECT ALL UNITS PRIOR TO SHIPPING. UNITS WILL BE CONSIDERED FOR SHIPPING ONLY IF THEY ARE FREE FROM DEFECTS AS NOTED UNDER "REPAIR OF UNITS" ABOVE AND IF ALL SPECIFICATION REQUIREMENTS ARE ACHIEVED. PRECAST UNITS SHIPPED WITHOUT THE INSPECTOR'S APPROVAL WILL NOT BE USED AND WILL BE REJECTED WITHOUT EXCEPTION.

SHIPPING SUPPORT

- STRUCTURAL UNITS SHALL BE PLACED ON WOOD DUNNAGE SPACED NEAR EACH END.
- HYPAN SHALL BE STRAPPED TO THE TRAILER AT A MINIMUM OF TWO PLACES PER UNIT. STRAPPING TO BE LOCATED OVER DUNNAGE.



INSPECTION/TESTING: VERMONT AGENCY OF TRANSPORTATION.

BASIS OF ACCEPTANCE:

THE INSPECTOR'S STAMP OF APPROVAL SHALL CONSTITUTE THE BASIS OF ACCEPTANCE FOR SHIPMENT TO THE JOB SITE. THE INSPECTOR'S STAMP SHALL BE PLACED ON EACH UNIT AFTER LOADING FOR SHIPMENT.

MISCELLANEOUS NOTES:

- VERTICAL EDGES OF THE HYPAN WALLS DESCRIBING AN ACUTE ANGLE SHALL RECEIVE A 1" CHAMFER.
- POSITION OF REINFORCEMENT MAINTAINED WITH THERMOPLASTIC CHAIRS.
- ALL HYPAN LIFTING DEVICES TO BE MEDCO 20S(16T), SC-52 LIFTING ANCHORS U.N.O.
- HYPAN INTERIOR JOINT KEYWAYS TO RECEIVE A BRUSH SANDBLAST PRIOR TO SHIPPING.
- FORT MILLER SUPPLIED ITEMS INCLUDE THE FOLLOWING:
A) 1" RUBATEX CLOSED-CELL FOAM FOR VERTICAL JOINTS. (INSTALLED)
B) MEDCO #6 STANDARD LOCK EPOXY REBAR COUPLERS (CAST IN)
C) ITEMS SHOWN IN "SHIP LOOSE" LIST BELOW
- CONTRACTOR SUPPLIED ITEMS INCLUDE (& ARE NOT LIMITED TO) THE FOLLOWING:
A) APPROVED GROUT USED FOR SEALING JOINTS & FOOTER KEY.
B) STEEL OR OTHER APPROVED NON-COMPRESSIBLE SHIMS.
C) CABLES/SHACKLES/UNEQUAL LENGTH SLINGS FOR UNLOADING & SETTING.
D) 1" MIN. FOAM BACKER ROD FOR JOINTS.
E) #6 THREADED EPOXY DOWEL BARS (3/4"-10NC THREAD) FOR C.I.P. HEADWALL CONNECTION.
F) ALL REINFORCEMENT FOR CAST-IN-PLACE CONSTRUCTION

SHIP LOOSE:

- 16T SC-52 LIFTING EYES (TO BE RETURNED) QTY. (4)
- 18T COFFEE POT LIFTING SLINGS (TO BE RETURNED) QTY. (2)
- CLIP ANGLE ASSEMBLIES (TEMP. CONNECTION HARDWARE - TO BE RETURNED) QTY. (8)
EACH ASSEMBLY TO CONSIST OF:
(2) - 6" X 6" X 1/2" CLIP ANGLES X 6" LONG (1) - 3/4" X 28" LONG COIL ROD W/TAB
(2) - 1" X 3" HEX BOLTS (1) - 3/4" COIL NUT
(2) - 1" FLAT WASHERS (1) - 3/4" FLAT WASHER
- TECHNICAL SERVICE

VAOT RECEIVED
OCT 01 2002
AUG 01 2002
RESUBMIT APPROVED
BY RRW DATE 8/29/02

NO.	DATE	BY	REVISIONS

THE FORT MILLER Co., Inc.
P.O. BOX 98
SCHUYLERVILLE, NY 12871
(518) 695-5000
(518) 695-4970 FAX

F.M. JOB NO. 734
SHEET NO. 1
DATE: 6-1-02
DRN. BY: M.WERN
CHK. BY: S. HARRIGAN
SCALE: NONE
DWG. NO. B1

PROJECT: VT RTE 9 OVER BOND BROOK T/O SEARSBURG, VT
SUBJECT: PRODUCTION NOTE SHEET
CONTRACTOR: BECK & BELLUCCI, INC.
ENGINEER/ARCHITECT CLOUGH, HARBOUR & ASSOCIATES