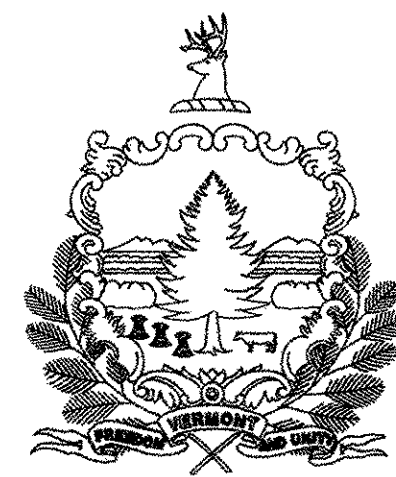


- INDEX OF SHEETS**
- 1. TITLE SHEET
  - 2. TYPICAL SECTIONS, NOTES & QUANTITIES
  - 3. TIE SHEET
  - 4. LAYOUT SHEET
  - 5. RESOURCE SHEET
  - 6-8. DETAIL SHEETS

**VAOT STANDARD SHEETS**

- E - 100A SIDE ROAD CONSTRUCTION APPROACH SIGNS - 1/02/04
- E - 102 CONSTRUCTION SIGN DETAILS - 6/30/03
- E - 102A CONSTRUCTION SIGN DETAILS - 5/01/04
- E - 107 DELINEATION, BARRICADES AND DETOURS... - 6/30/03
- E - 107A BREAKAWAY BARRICADE DETAILS - 8/08/95
- E - 121 STANDARD SIGN PLACEMENT-CONVENTIONAL ROAD - 8/08/95
- E - 146 REGULATORY SIGN DETAILS - 9/20/95
- E - 155 WARNING SIGN DETAILS - 5/01/04

# STATE OF VERMONT AGENCY OF TRANSPORTATION



## PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWN OF: BRATTLEBORO  
COUNTY OF: WINDHAM

ROUTE NO: TH 374, CL III BRIDGE NO: 30

PROJECT LOCATION: ON TH 374 BEGINNING APPROXIMATELY 0.015 MILES  
SOUTH FROM ITS INTERSECTION WITH TH2 (VT 9) AND EXTENDING  
SOUTHERLY APPROXIMATELY 0.016 MILES.

PROJECT DESCRIPTION: REHABILITATION OF THE CREAMERY COVERED BRIDGE.

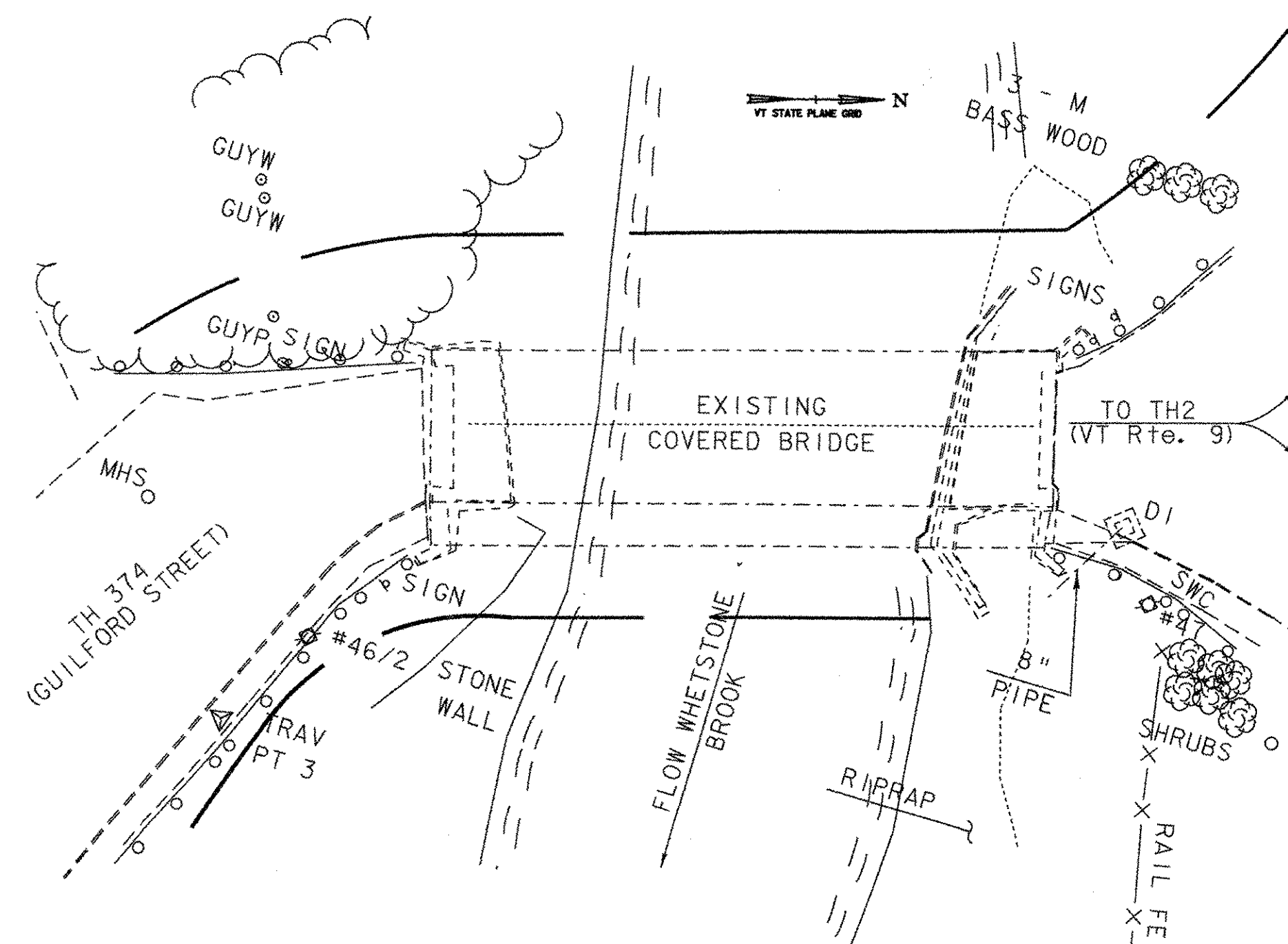
LENGTH OF STRUCTURE: 83.4 FEET  
LENGTH OF PROJECT: 83.4 FEET

RECORD PLANS	
CONTRACTOR:	RENAUD BROTHERS, INC. - VERNON, VT
RESIDENT ENGINEER:	DAN TYLER
CONSTRUCTION BEGAN:	DECEMBER 11, 2006
CONSTRUCTION COMPLETE:	MAY 25, 2007
RECORD PLANS BY:	D. TYLER & M. BOOTH
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY:	<i>Dan H. Gannell</i> RESIDENT ENGINEER
DATE:	2/24/09
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.	

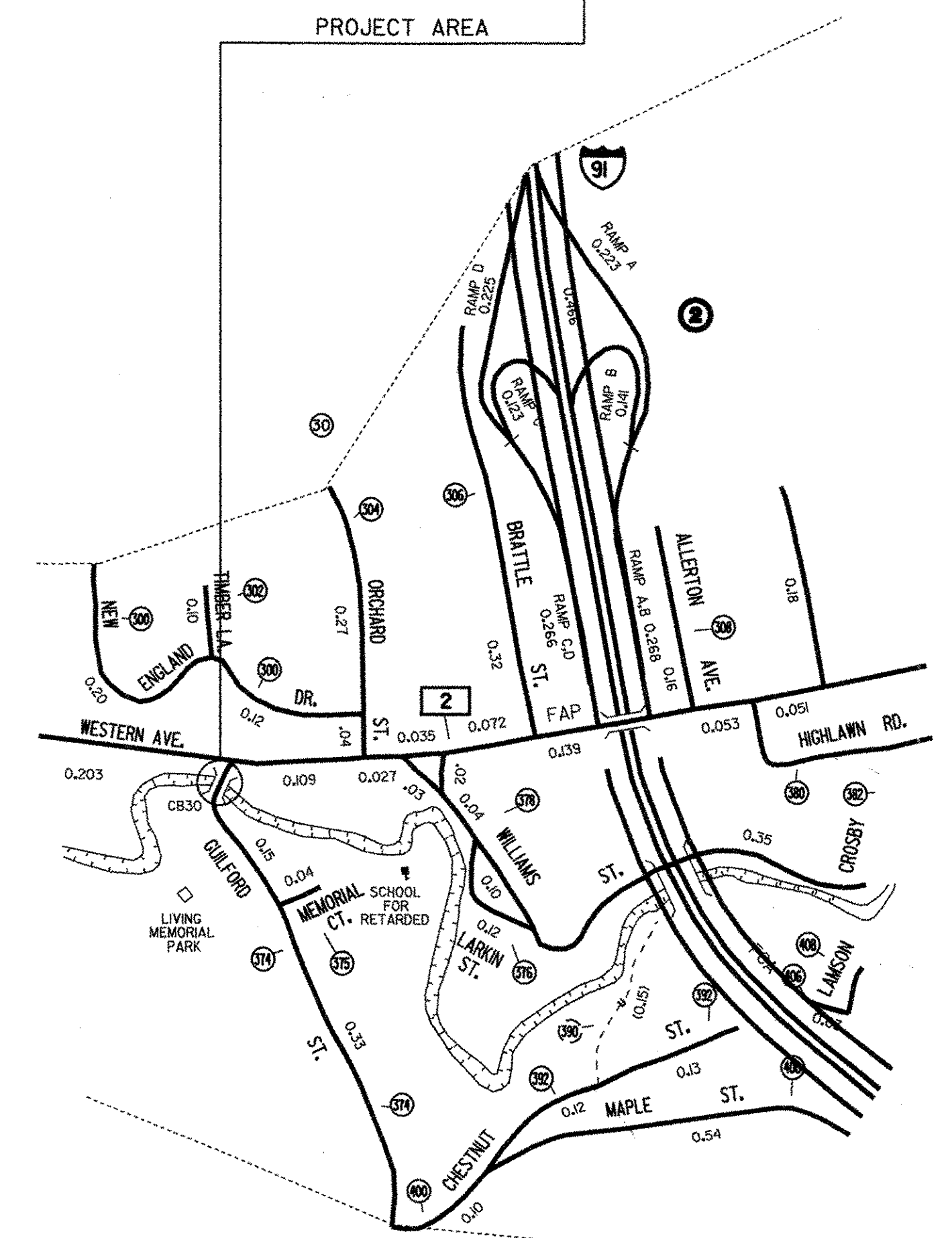
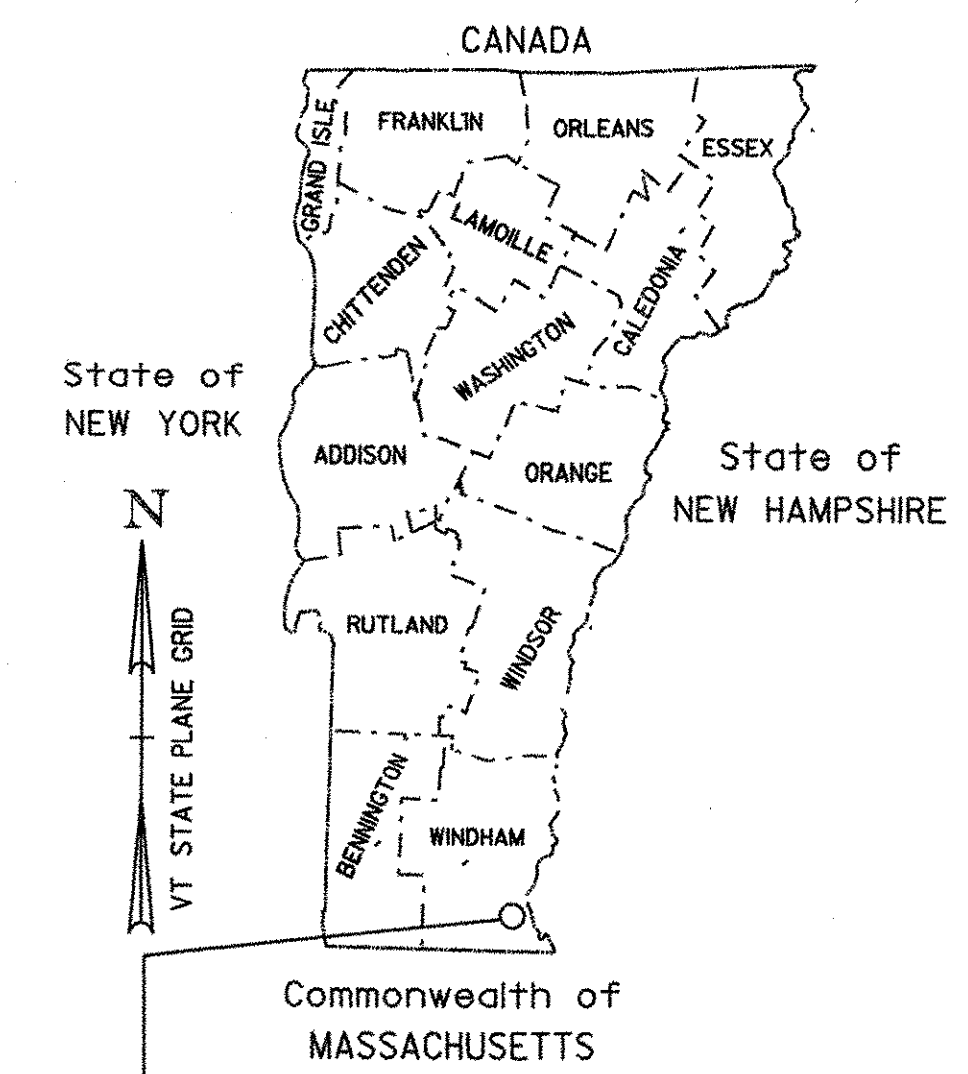
CONVENTIONAL SYMBOLS	
COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	
FENCE LINE	
STONE WALL	
TRAVELED WAY	
GUARD RAIL	
RAILROAD	
SURVEY LINE	
CULVERT	
POWER POLE	
TELEPHONE POLE	
TREES	
CONTROL OF ACCESS	
PROPERTY LINE	
R.O.W. TAKING LINE	
SLOPE RIGHTS	
TOP OF CUT	
TOE OF SLOPE	

SURVEYED BY : R. D. GILMAN  
SURVEYED DATE : 9-17-97

DATUM  
VERTICAL NAVD 88  
HORIZONTAL NAD-83 (92)



PLAN  
N. T. S.

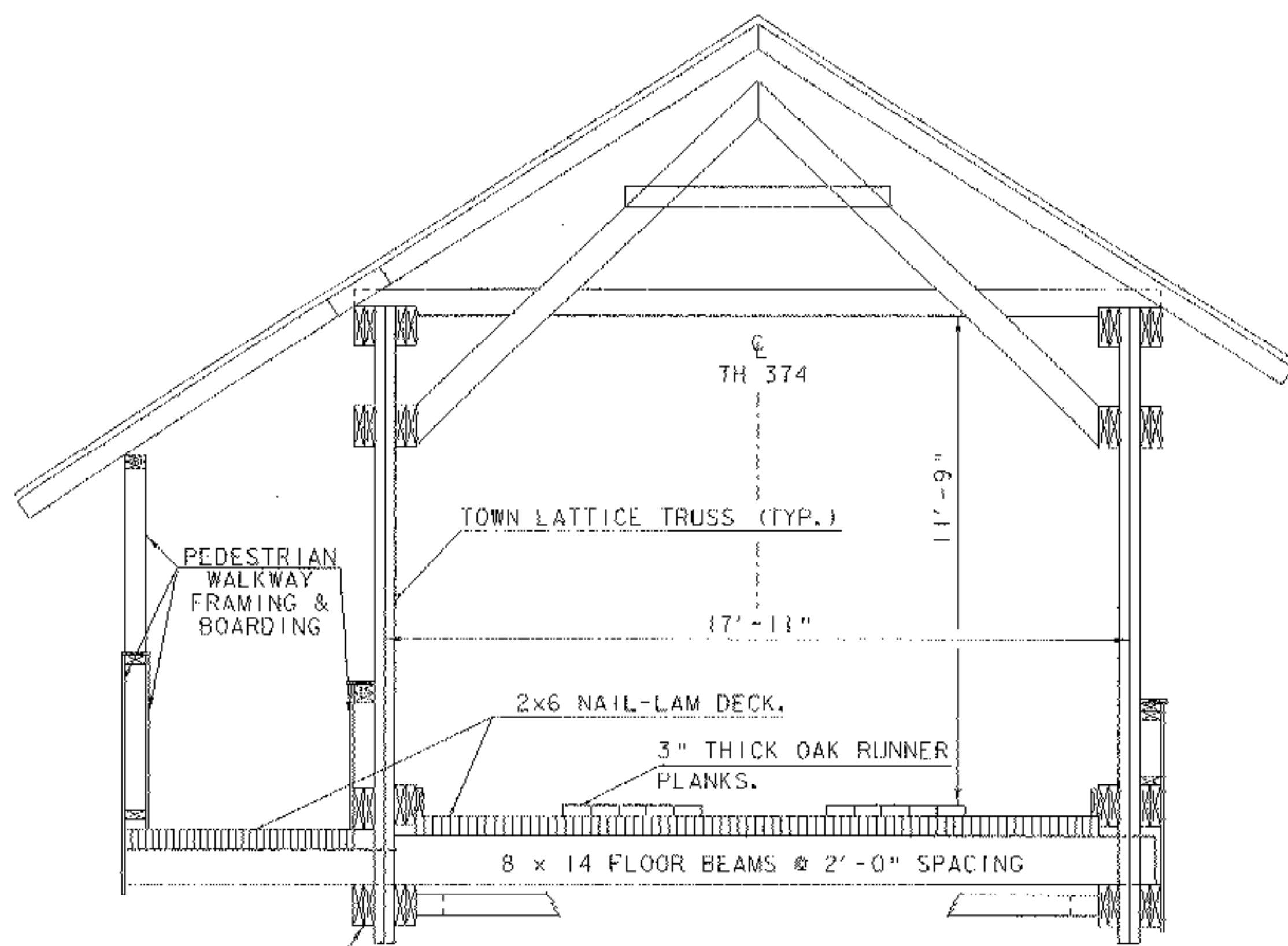


DISTANCES SHOWN ARE IN MILES

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

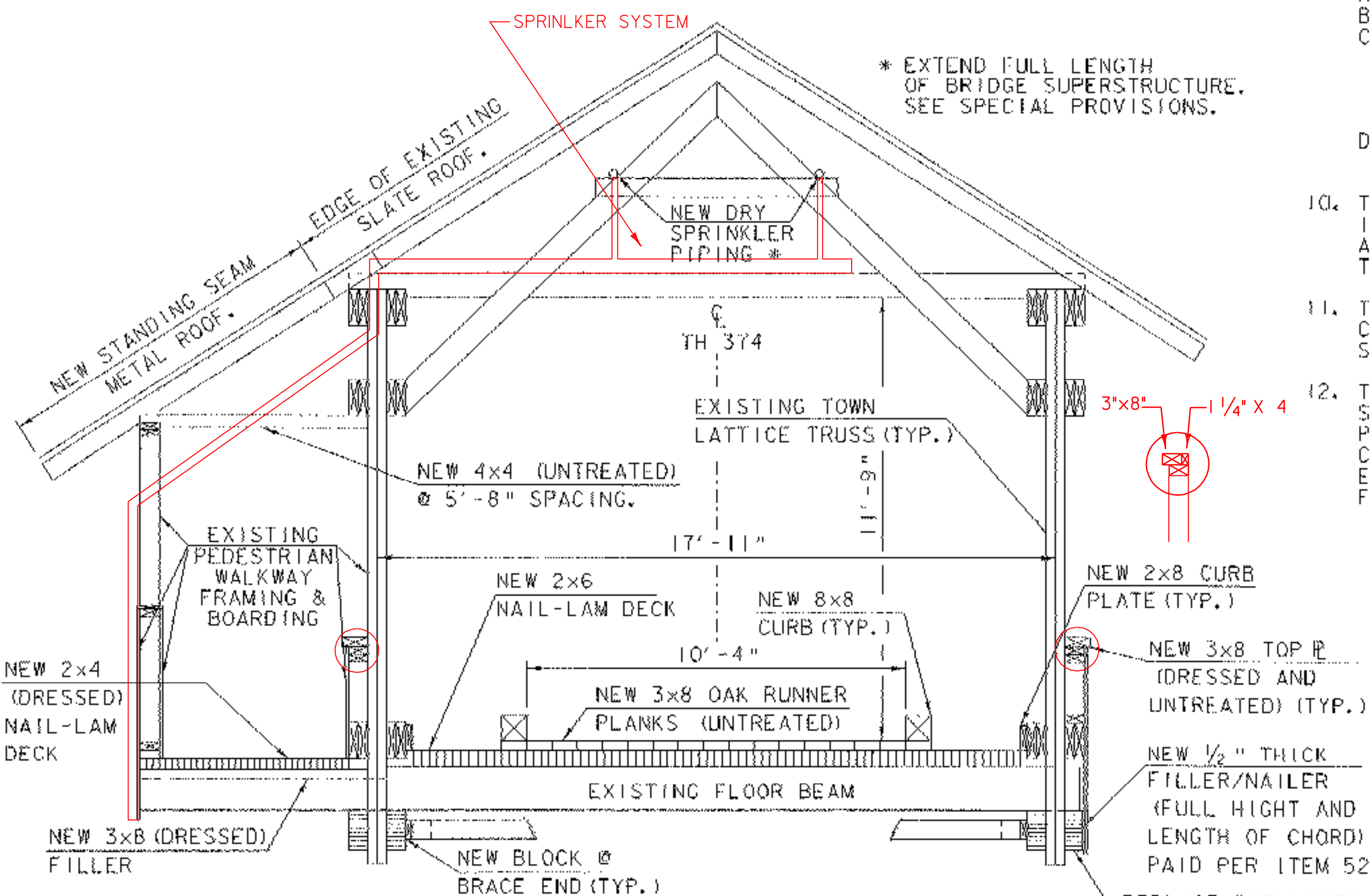
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATOR	
APPROVED	<i>Mark D. Riebler</i> DATE 9-6-06
DIRECTOR OF PROGRAM DEVELOPMENT	
APPROVED	<i>Richard J. Farnsworth</i> DATE 8-1-06
PROJECT MANAGER : J. WEAVER	
PROJECT : BRATTLEBORO BHO 1442 (33) (Re-advertised)	
SHEET 1 OF 8 SHEETS	



EXISTING CROSS SECTION

SCALE: 3/8" = 1'-0"



NEW CROSS SECTION

SCALE: 3/8" = 1'-0"

GENERAL NOTES:

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.
- ALL INFORMATION PROVIDED IN THE PLANS, INCLUDING, BUT NOT LIMITED TO, PLAN DIMENSIONS AND LUMBER SIZE FIT-UP, SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING THE WORK.
- ALL WORK IS TO BE COMPLETED WITHIN THE AVAILABLE TOWN-OWNED RIGHT-OF-WAY. THE THREE ROD R.O.W. PORTION IS ASSUMED TO BE CENTERED ABOUT THE CENTER LINE OF THE BRIDGE OR ROADWAY. NO PROVISIONS HAVE BEEN MADE TO GO OUTSIDE THE EXISTING RIGHT-OF-WAY AND NO WORK SHALL BE PERFORMED OR PAID FOR OUTSIDE OF EXISTING TOWN-OWNED RIGHT-OF-WAY LIMITS. SHOULD THE CONTRACTOR REQUIRE ANY ADDITIONAL R.O.W. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL EASEMENTS.
- EXCEPT FOR TEMPORARY SUPPORTS REQUIRED DURING THE ESTABLISHMENT AND REMOVAL OF TEMPORARY SHORING, IT IS ANTICIPATED THAT NO WORK WILL TAKE PLACE WITHIN THE STREAM-BEDS. FOR ANY OTHER CONTRACTOR REQUIRED OPERATIONS IN THE STREAM, AND ERECTING STAGING, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL PERMITS.
- GREAT CARE SHALL BE TAKEN BY THE CONTRACTOR TO PREVENT ANY MATERIAL FROM ENTERING THE STREAM BED PER SECTION 105 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. ANY MATERIAL THAT DOES ESCAPE THE CONTRACTOR'S CONTAINMENT SYSTEM WILL BE RECOVERED IMMEDIATELY.
- ALL WORK SHALL PROCEED IN A CAREFUL, ORDERLY MANNER SO THAT AFFECTED HISTORIC STRUCTURES ARE NOT DAMAGED IN ANY WAY. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ALL DAMAGE TO THE STRUCTURE AS A RESULT OF ITS OPERATIONS AT NO COST TO THE STATE. ALL DAMAGE WILL BE REPORTED TO THE PROJECT MANAGER IMMEDIATELY AND NO REPAIRS WILL BE MADE UNTIL APPROVED BY THE AGENCY.
- DETOURS AS DETAILED IN STANDARD E-107 WILL NOT BE ENCOUNTERED, HOWEVER GENERAL PLACEMENT OF APPROACH SIGNING AND "ROAD CLOSED" SIGNS WILL BE AS SHOWN ON STANDARD E-107. THE CONTRACTOR MAY CHOOSE TO SUBMIT TRAFFIC CONTROL PLANS FOR REVIEW.
- WITHIN EXISTING R.O.W. LIMITS, THINNING AND TRIMMING SHALL INCLUDE ALL WORK REQUIRED TO CUT AND TRIM TREES, STUMPS, AND VEGETATION UP TO 6 FEET FROM EXISTING ABUTMENT AND WING WALL FACES AND IN OTHER AREAS, AS DETERMINED BY THE ENGINEER.
- THE WORK PAID FOR UNDER ITEM 529.20 PARTIAL REMOVAL OF STRUCTURE SHALL INCLUDE:
  - REMOVAL AND DISPOSAL OF EXISTING ROADWAY DECK AND RUNNERS.
  - REMOVAL AND DISPOSAL OF EXISTING WALKWAY DECK.
  - REMOVAL AND DISPOSAL OF EXISTING LOWER BOTTOM CHORD MEMBERS AND FASTENERS. ONCE LOWER CHORD MEMBERS ARE COMPLETELY REMOVED, THE ENGINEER WILL CONTACT THE PROJECT MANAGER AND AGENCY/FHWA PERSONNEL WILL DETERMINE THE CONDITION, REPAIRS AND SISTER MEMBERS REQUIRED AT LATTICE TO CHORD CONNECTION LOCATIONS.
  - REMOVAL AND DISPOSAL OF THE EXISTING DRAIN CHANNEL AND CHANNEL SUPPORTS AT THE SOUTH ABUTMENT.
- THE WORK PAID FOR UNDER ITEM 502.10 SHORING SUPERSTRUCTURE SHALL INCLUDE PROVIDING TEMPORARY SUPPORT FOR BRIDGE TRUSSES, FLOOR BEAMS AND OTHER MEMBERS (THAT ARE TO REMAIN IN PLACE) WHILE THE LOWER BOTTOM TRUSS CHORDS ARE REPLACED AND DURING OTHER CONSTRUCTION OPERATIONS.
- THE DI NEAR THE NORTH PORTAL SHALL BE FITTED WITH A TEMPORARY SEDIMENT CONTROL DEVICE DURING CONSTRUCTION. WORK AND MATERIALS REQUIRED SHALL BE PAID FOR UNDER THE 651.26 PAY ITEM.
- THE BRIDGE WILL BE CLOSED DURING CONSTRUCTION. THE CONTRACTOR SHALL GIVE NOTICE TO THE BRATTLEBORO PUBLIC WORKS DIRECTOR 3 WEEKS PRIOR TO CLOSING. PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION FOR THE ENGINEER'S APPROVAL. THE TOWN OF BRATTLEBORO WILL BE RESPONSIBLE FOR SIGNING OF THE DETOUR ROUTE.

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2001	3660	505	57	4.0	115
2021	4750	645	57	3.0	130
FLEXIBLE ESAL'S 2001-2021		1,687,000	2001-2041		3,881,000

ASD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTORY)	TRUCK				
	H	HS	3S2	6 AXLE	3A. STR.
INVENTORY	4.6				
POSTED	5.8				
OPERATING	6.5				

COMMENTS: EXISTING END FLOORBEAMS CONTROL LOAD RATING

SUGGESTED SEQUENCE OF CONSTRUCTION:

- REMOVE EXISTING NAIL-LAM ROADWAY DECK AND RUNNER PLANKS, REMOVE EXISTING NAIL-LAM WALKWAY DECK.
- SHORE SUPERSTRUCTURE, SUPPORTING THE TRUSSES WITH ABOVE GRADE CARRYING MEMBERS FOUNDED AT OR NEAR EXISTING ABUTMENT BRIDGE SEATS. SUPPORT EXISTING BOTTOM BRACING AND FLOORBEAMS WITH THE SAME SUPPORT SYSTEM.
- REPLACE LOWER BOTTOM TRUSS CHORDS. SEE GENERAL NOTE 9 THIS SHEET. FIT EXISTING BOTTOM BRACING TO NEW GLULAM CHORD MEMBERS.
- REMOVE SUPERSTRUCTURE SHORING. INSTALL NEW DRAINAGE-CHANNEL AT SOUTH ABUTMENT.
- INSTALL NEW LATTICE SISTER MEMBERS.
- INSTALL NEW ROADWAY DECK, RUNNER PLANKS AND CURBS. INSTALL NEW WALKWAY DECK.
- REPLACE METAL ROOFING IN WALKWAY AREA.
- APPLY INSECTICIDE AND FIRE RETARDANT COATINGS.

QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	TOTAL
201.31	THINNING AND TRIMMING	EACH	1
502.10	SHORING SUPERSTRUCTURE	LS	1
506.60	STRUCTURAL STEEL (MOD.)	LBS	310
513.30	STRUCTURAL PAINTING, FIELD APPLIED (MOD.)	LS	1
513.36	CONTAINMENT & ENVIRONMENTAL PROTECTION, FIELD (MOD.)	LS	1
522.20	STRUCTURAL LUMBER AND TIMBER-UNTREATED	MFBM	3.4
522.20	STRUCTURAL LUMBER AND TIMBER-UNTREATED (MOD.)	MFBM	0.7
522.25	STRUCTURAL LUMBER AND TIMBER-TREATED (DECK)	MFBM	10.7
522.25	STRUCTURAL LUMBER AND TIMBER-TREATED	MFBM	1.1
522.30	NON-STRUCTURAL LUMBER-UNTREATED	MFBM	0.5
522.40	STRUCTURAL GLUED LAMINATED TIMBER	LS	1
529.20	PARTIAL REMOVAL OF STRUCTURE	EACH	1
602.30	REPOINTING MASONRY (MOD.)	SY	3
623.60	WATER MAIN ON BRIDGE (MOD.- SPRINKLER SYSTEM)	LS	1
630.15	FLAGGERS	HR	25
631.10	FIELD OFFICE - ENGINEERS	LS	1
631.25	FIELD OFFICE - TELEPHONE (N.A.B.I.)	LU	1
635.11	MOBILIZATION / DEMOBILIZATION	LS	1
641.10	TRAFFIC CONTROL	LS	1
651.26	HAY BALES FOR EROSION CONTROL (MOD.)	EACH	1
665.15	REMOVE EXISTING ROOF	SF	750
665.18	METAL ROOFING	SF	750
679.15	STREET LIGHTING (MOD.- FIRE ALARM)	LS	1

EXISTING STRUCTURE HYDRAULIC DATA

STRUCTURE TYPE: SINGLE SPAN WOODEN COVERED BRIDGE YEAR BUILT: 1879

CLEAR SPAN (NORMAL TO STREAM): 16.8m (55.1 FEET)

VERTICAL CLEARANCE ABOVE STREAMBED: 4.6m (15.1 FEET) [AVG. LOW STEEL: 126.0m (413.4 FEET)]

WATERWAY OF FULL OPENING: 74.5m (244.4 FEET)

DISPOSITION OF STRUCTURE: VEHICLE USE

TYPE OF MATERIAL UNDER SUBSTRUCTURE: UNKNOWN

WATER SURFACE ELEV. @ Q2.33= 122.1m (400.6 FEET) VELOCITY= 3.4 mps (11.2 FPS)

Q10= 122.7m (402.6 FEET) " 4.3 mps (14.1 FPS)

Q25= 123.2m (404.2 FEET) " 4.8 mps (15.7 FPS)

Q50= 123.5m (405.2 FEET) " 5.2 mps (17.1 FPS)

Q100= 123.9m (406.5 FEET) " 5.6 mps (18.4 FPS)

LONG TERM STREAM BED CHANGES: 0.3m (1 FOOT) SCOUR THROUGH BRIDGE AREA

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: Q100+

RELIEF ELEVATION: 126m (413.4 FEET) DISCHARGE OVER ROAD @ Q100: N/A

PROJECT: BRATTLEBORO BHO 1442 (33)

DESIGN FILE NAME: IPARM FILE NAME: PLOT DATE: 10-AUG-2006

DESIGNED BY: J. WEAVER DRAWN BY: J. WHITE CHECKED BY: J. WEAVER

TYPICAL SECTIONS, NOTES & QUANTITIES SHEET: 2 OF 8

GPS CONTROL POINTS

**B95065:**

STATION MARK IS A VERMONT SURVEY DISK WITH SETTING IN THE TOP OF A BRIDGE ABUTMENT. THE MARK IS STAMPED B95065.

NORTHING: 38968.9540  
 EASTING: 493532.1120  
 ELEVATION: 127.638 M (418.760 FT)

**LOCATION:**  
 BRATTLEBORO

DESCRIBED BY VERMONT AGENCY OF TRANSPORTATION 1995 (CHR):  
 GENERAL LOCATION, BRATTLEBORO, VT AT THE EAST END OF THE VT ROUTE 9 BRIDGE OVER I-91 IN BRATTLEBORO, SET IN THE TOP OF THE ABUTMENT AT THE NORTHEAST CORNER OF THE BRIDGE. THE MARK IS 9.8 M (32.2 FT) NORTH OF AND ABOUT LEVEL WITH THE CENTERLINE OF THE MEDIAN STRIP ON VT ROUTE 9, 0.4 M (1.3 FT) WEST OF THE EAST END OF THE BRIDGE DECK, 0.6 M (2.0 FT) NORTH OF THE FACE OF THE BRIDGE CURB, AND 3.1 M (10.2 FT) SOUTHWEST OF A FIBERGLASS WITNESS POST.

**A 14:**

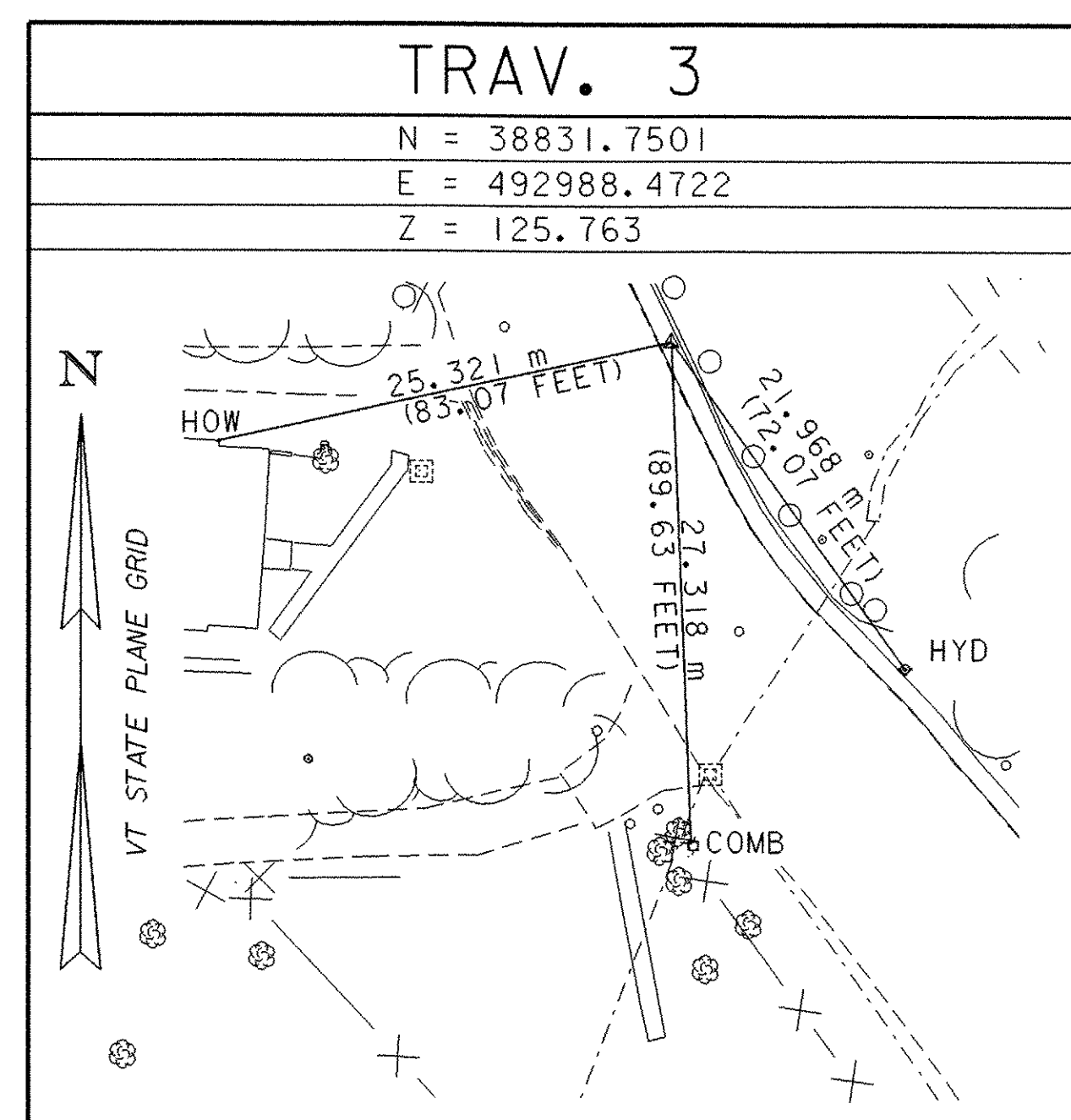
STATION MARK IS A VERMONT SURVEY DISK WITH SETTING IN THE TOP OF A SQUARE CONCRETE MONUMENT. THE MARK IS STAMPED A 14.

NORTHING: 38885.1910  
 EASTING: 493003.3870  
 ELEVATION: 127.763 M (419.170 FT)

**LOCATION:**  
 BRATTLEBORO

RECOVERY NOTE BY VERMONT AGENCY OF TRANSPORTATION 1995 (CHR):  
 GENERAL LOCATION, BRATTLEBORO, VT, ABOUT 2.4 KM (1.5 MI) WEST OF BRATTLEBORO, ABOUT 23.3 KM (14.5 MI) EAST OF WILMINGTON, AND ABOUT 13.7 KM (8.5 MI) NORTH OF THE MASSACHUSETTS/VERMONT STATE LINE. TO REACH FROM THE EAST END OF THE VT ROUTE 9 BRIDGE OVER I-91 IN BRATTLEBORO GO WEST ALONG VT ROUTE 9 FOR 0.5 KM (0.3 MI) THE INTERSECTION OF GUILFORD STREET LEFT AT THE CREAMERY COVERED BRIDGE, AND THE MARK ON THE LEFT IN THE EAST POINT OF THE MOWED TRIANGLE FORMED BY THE INTERSECTION. THE MARK IS SET IN THE TOP OF A 15 CM SQUARE CONCRETE MONUMENT 2 CM BELOW GROUND SURFACE. IT IS 7.0 M (23.0 FT) SOUTH OF AND ABOUT LEVEL WITH THE CENTERLINE OF VT ROUTE 9, 10.0 M (32.8 FT) WEST OF THE CENTERLINE OF THE EAST LEG OF GUILFORD STREET, 19.5 M (64.0 FT) EAST OF CENTERLINE OF THE WEST LEG OF GUILFORD STREET, 23.2 M (76.1 FT) NORTH OF THE NORTHWEST CORNER OF THE COVERED BRIDGE, 14.2 M (46.6 FT) NORTH OF A FIRE HYDRANT, 9.5 M (31.2 FT) EAST OF A SEWER MANHOLE, AND 0.4 M (1.3 FT) EAST OF A FIBERGLASS WITNESS POST AND ROAD SIGN.

TRAVERSE TIES



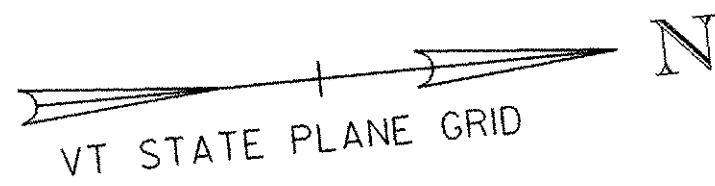
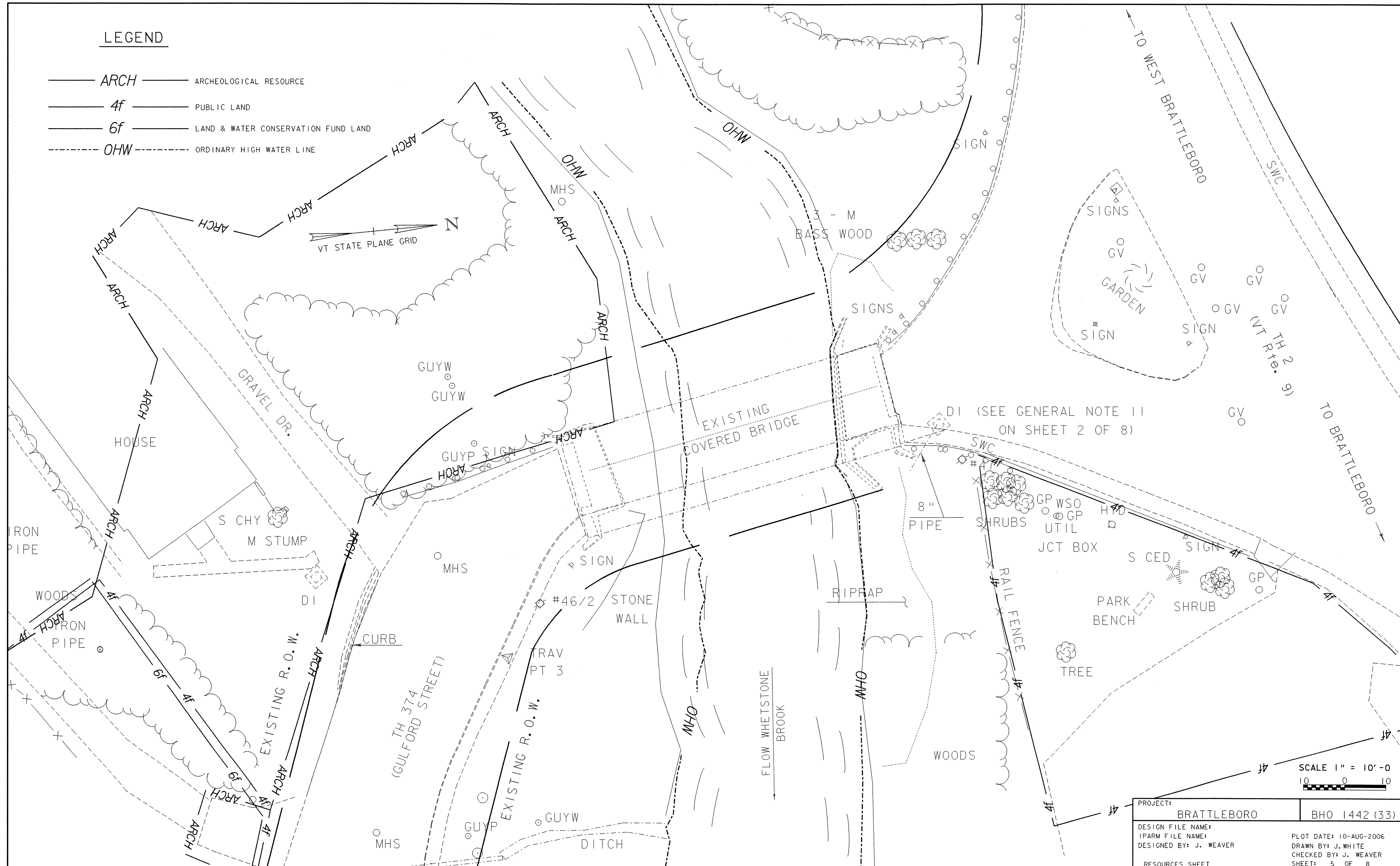
<b>DATUM</b>	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)
ADJUSTED	NO
TYPE	N/A

PROJECT NAME: BRATTLEBORO	
PROJECT NUMBER: BHO 1442 (33)	
FILE NAME: 96j228\Structures\sj228tie.i	PLOT DATE: 10-AUG-2006
IPARM FILE NAME:	DRAWN BY: J. WHITE
DESIGNED BY: J. WEAVER	CHECKED BY: J. WEAVER
TIE SHEET	SHEET 3 OF 8

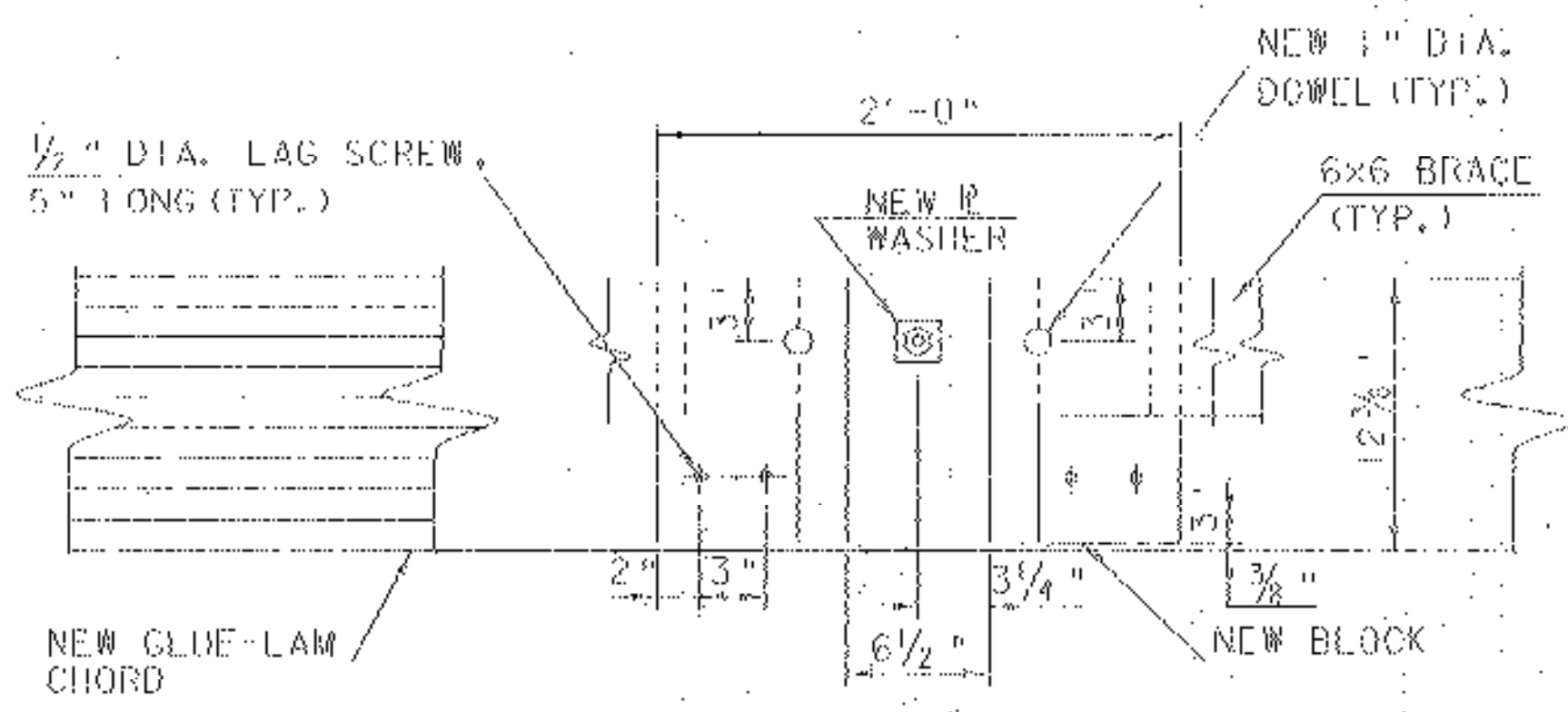


**LEGEND**

- ARCH — ARCHEOLOGICAL RESOURCE
- 4f — PUBLIC LAND
- 6f — LAND & WATER CONSERVATION FUND LAND
- - - OHW - - - ORDINARY HIGH WATER LINE

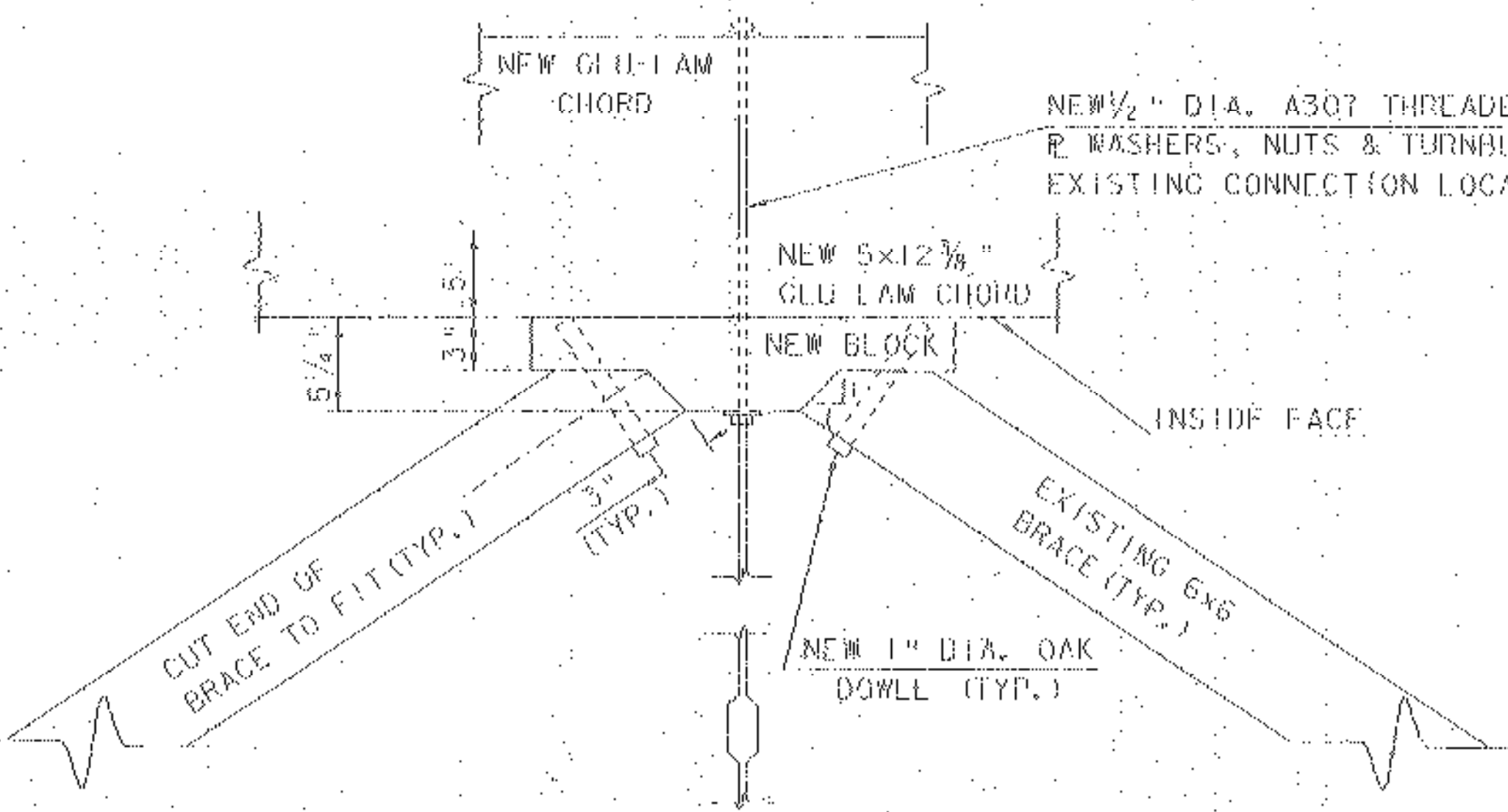


PROJECT: BRATTLEBORO		BHO 1442 (33)
DESIGN FILE NAME:		
IPARM FILE NAME:		
DESIGNED BY: J. WEAVER	PLOT DATE: 10-AUG-2006	
	DRAWN BY: J. WHITE	
	CHECKED BY: J. WEAVER	
RESOURCES SHEET	SHEET: 5 OF 8	



ELEVATION @ LOWER BOTTOM CHORD

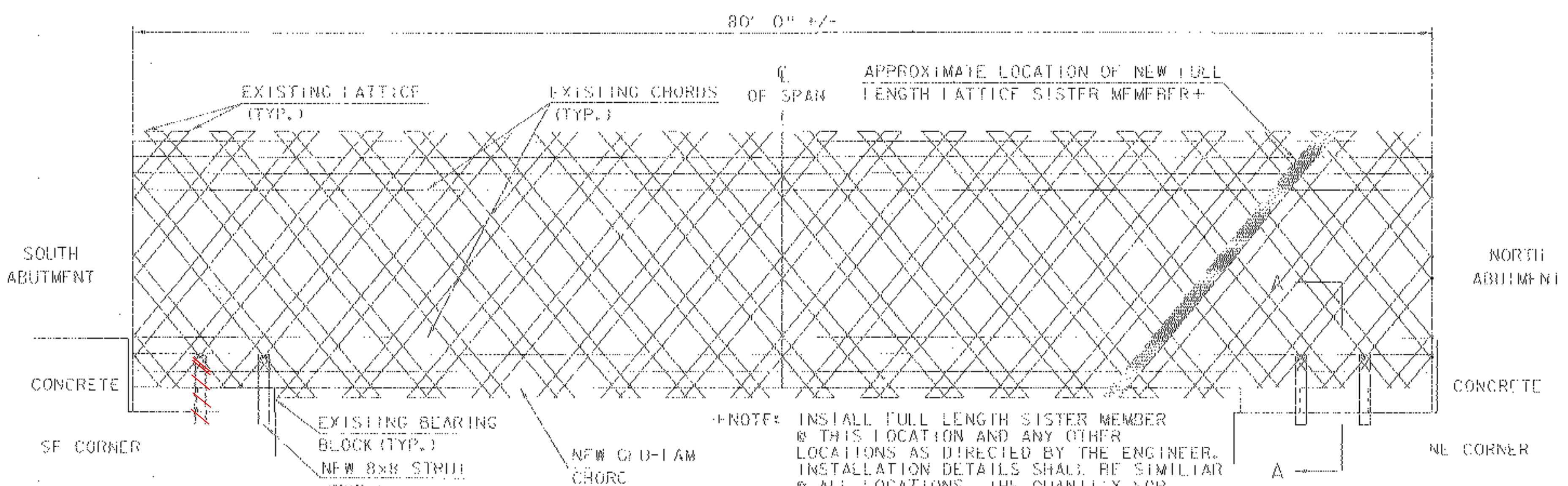
SCALE: 1/2" = 1'-0"



PLAN @ LOWER BOTTOM CHORD

SCALE: 1/2" = 1'-0"

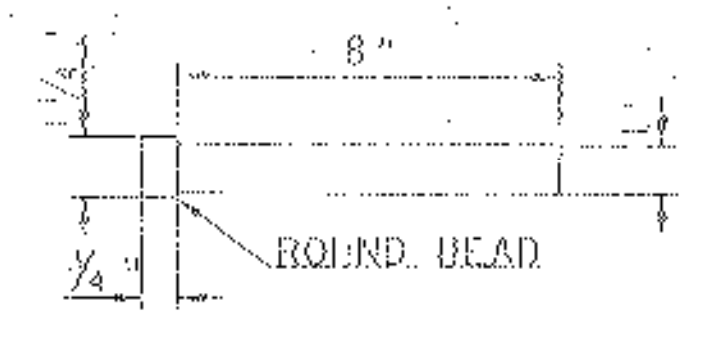
\* NOTE: THE CONTRACTOR SHALL SUBMIT ITS SEQUENCE OF TIGHTENING TO THE ENGINEER FOR APPROVAL.



OUTSIDE ELEVATION FAST TRUSS

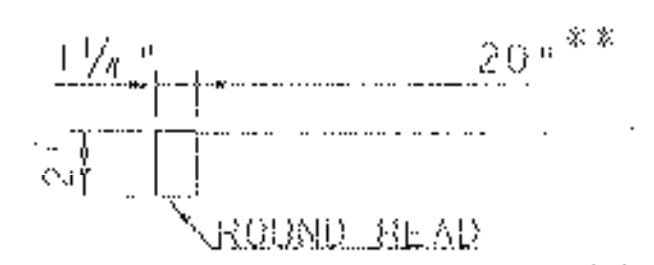
SCALE: 1" = 5'-0"

NOTE: INSTALL FULL LENGTH SISTER MEMBER @ THIS LOCATION AND ANY OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. INSTALLATION DETAILS SHALL BE SIMILAR @ ALL LOCATIONS. THE QUANTITY FOR STRUCTURAL LUMBER AND TIMBER - UNTREATED INCLUDES MATERIAL FOR FIVE FULL LENGTH LATTICE SISTER MEMBERS.



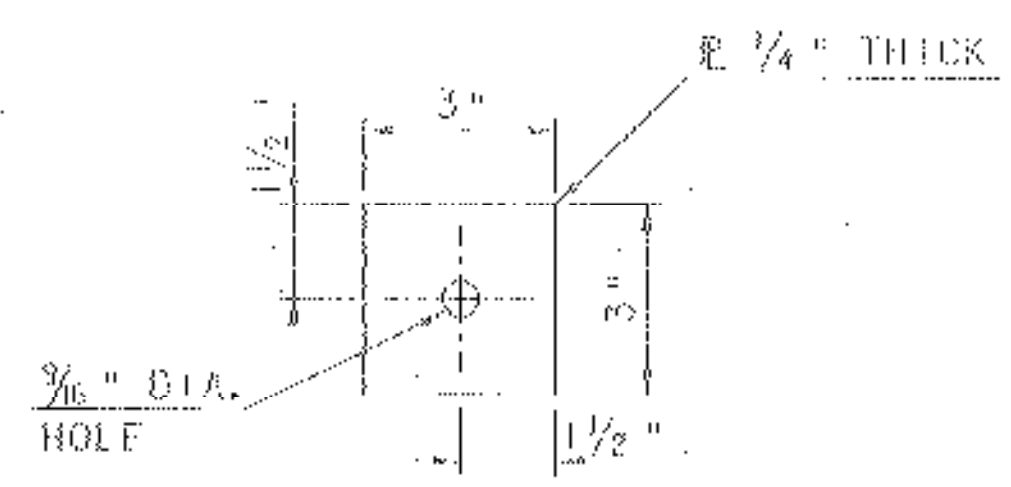
DOWEL DETAIL

N.T.S.



TRUNNEL DETAIL

N.T.S.



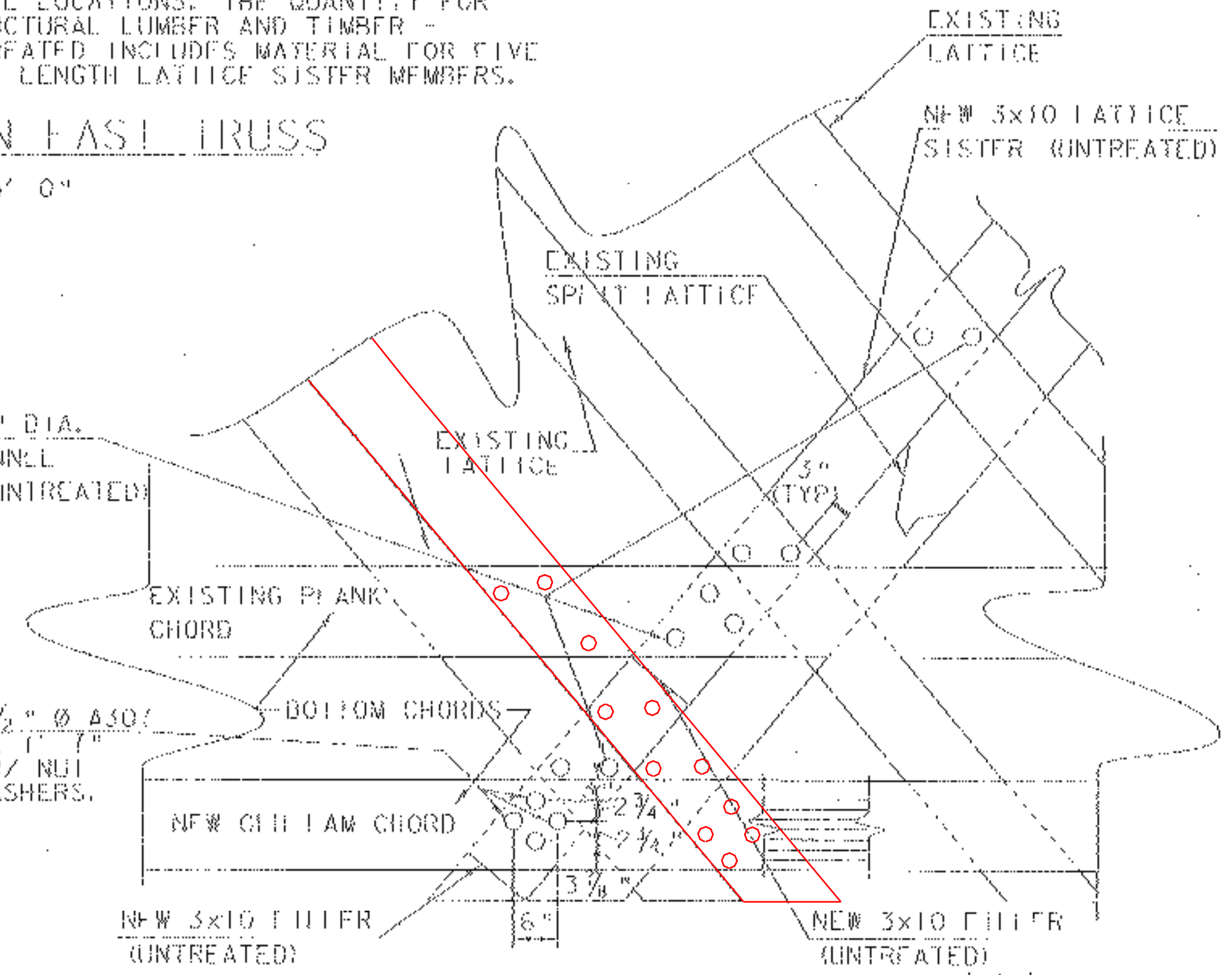
R WASHER DETAIL

N.T.S.

NEW LATTICE SISTER MEMBER AS BOUTRDED. SEE GENERAL NOTE 9 ON SHEET 2 OF B.

NEW 1 1/2" DIA. OAK TRUNNEL (TYP.) (UNTREATED)

NEW 1 1/2" Ø A307 BOLTS, 1' 7" LONG W/ NUT AND WASHERS.



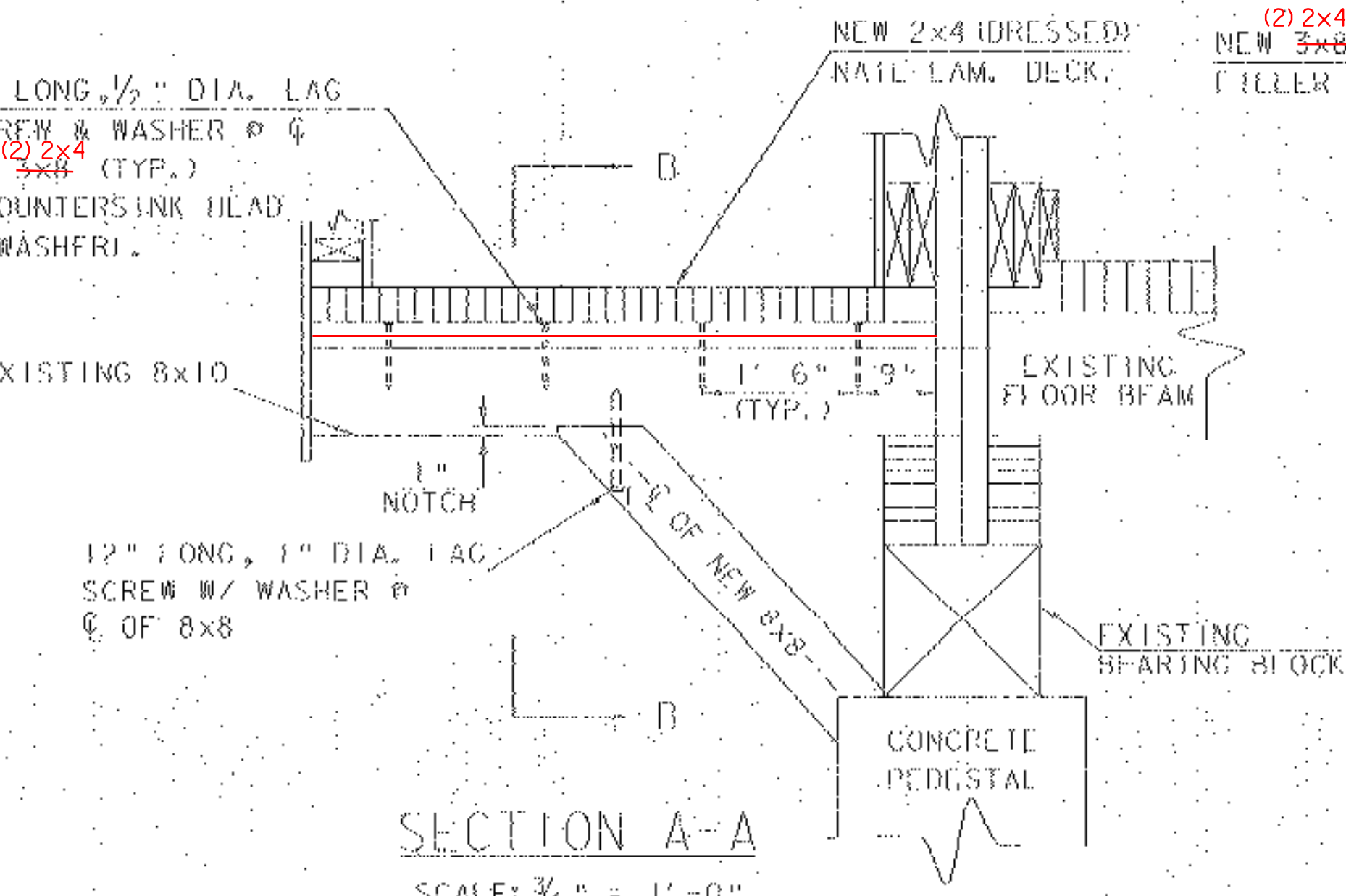
LATTICE SISTER DETAIL

SCALE: 3/4" = 1'-0"

\*\*\*VIEW FROM OUTSIDE OF FAST TRUSS. DETAILS FOR PARTIAL LENGTH LATTICE SISTER MEMBERS SHALL BE SIMILAR. PARTIAL LENGTH SISTER MEMBERS SHALL BE INSTALLED AT LOCATIONS AS DIRECTED BY THE ENGINEER. LENGTHS OF PARTIAL SISTER MEMBERS ARE TO BE DETERMINED BY THE ENGINEER AND LIMITED TO 9'-6" +/- TO FACILITATE INSTALLATION.

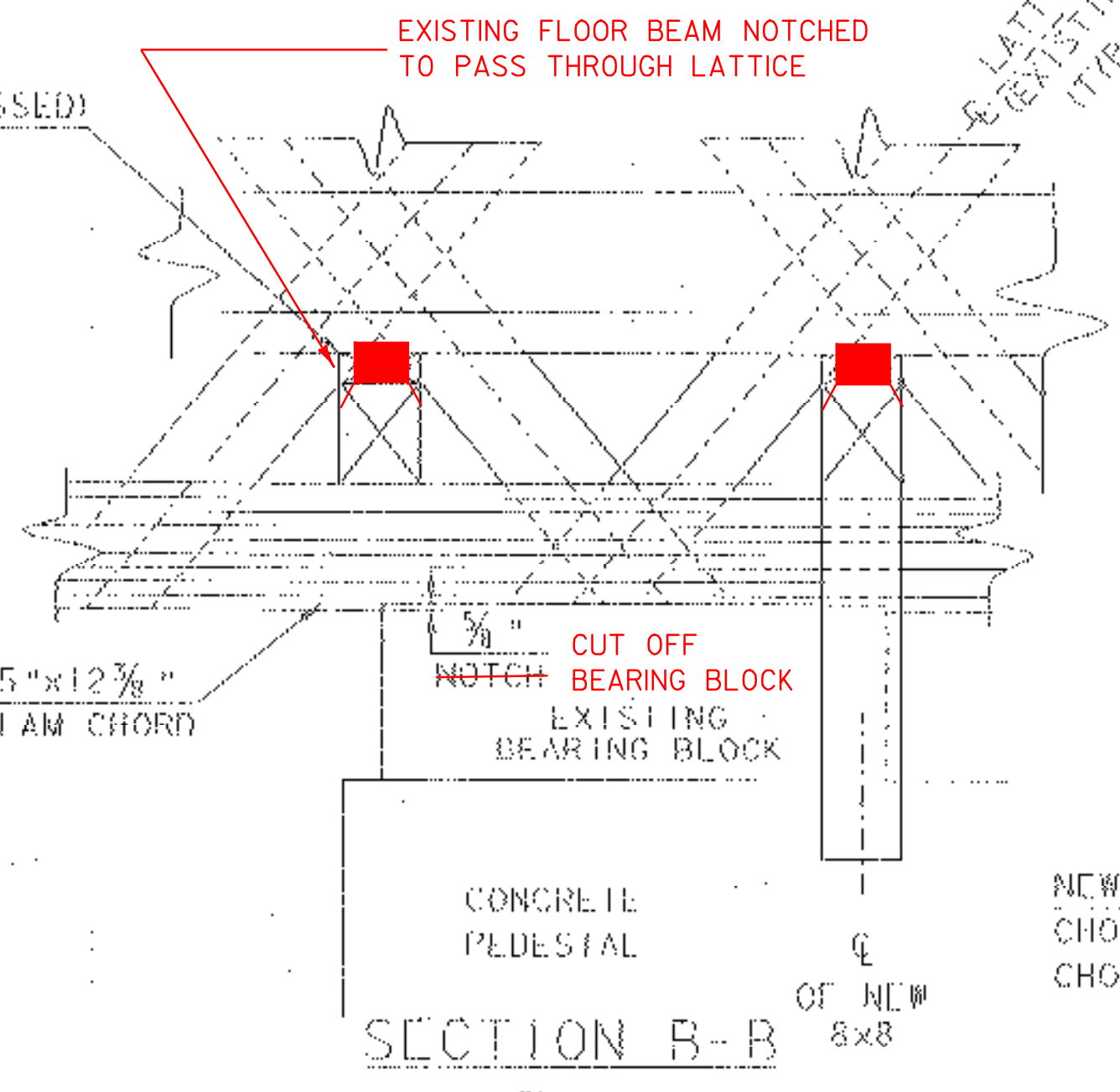
\*\*\*\* NOTE: A TEMPLATE OR OTHER METHOD MUST BE USED TO LOCATE EXISTING LATTICE HOLES. THE CONTRACTOR SHALL SUBMIT ITS METHOD TO THE ENGINEER FOR APPROVAL FOR CONNECTIONS AT NEW LATTICE SISTER MEMBERS, SEE LATTICE SISTER DETAIL.

SISTER BOTH SIDES OF BAD CONNECTION PER JOHN WEAVER 1/11/07



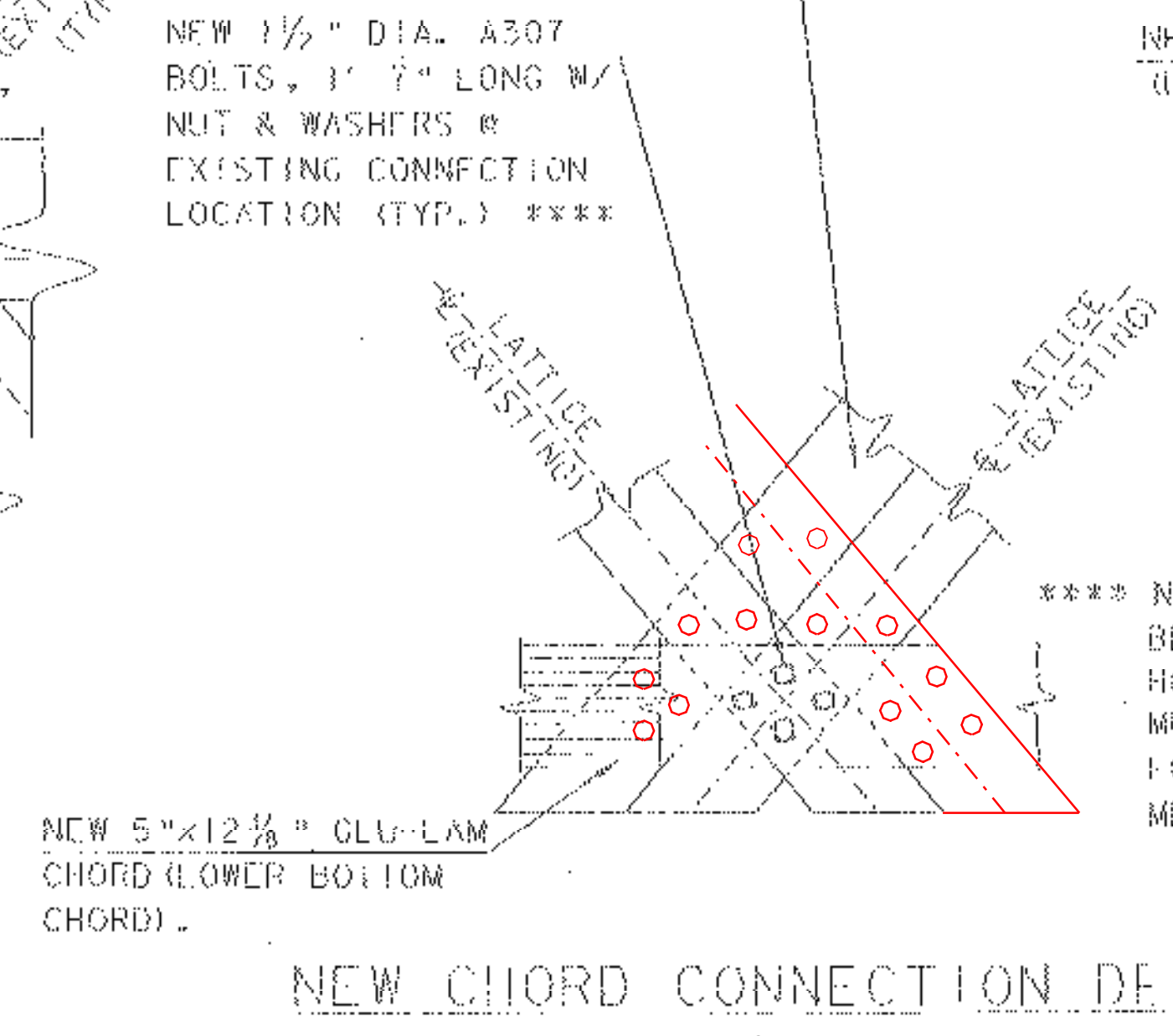
SECTION A-A

SCALE: 3/4" = 1'-0"



SECTION B-B

SCALE: 3/4" = 1'-0"



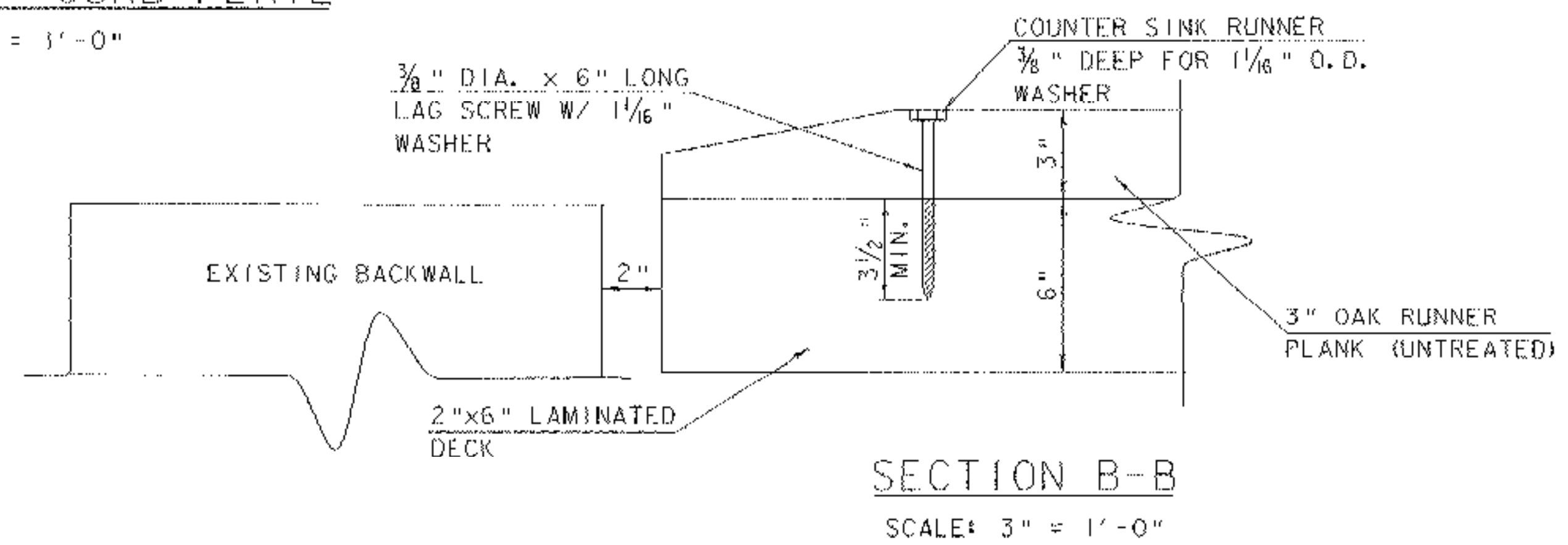
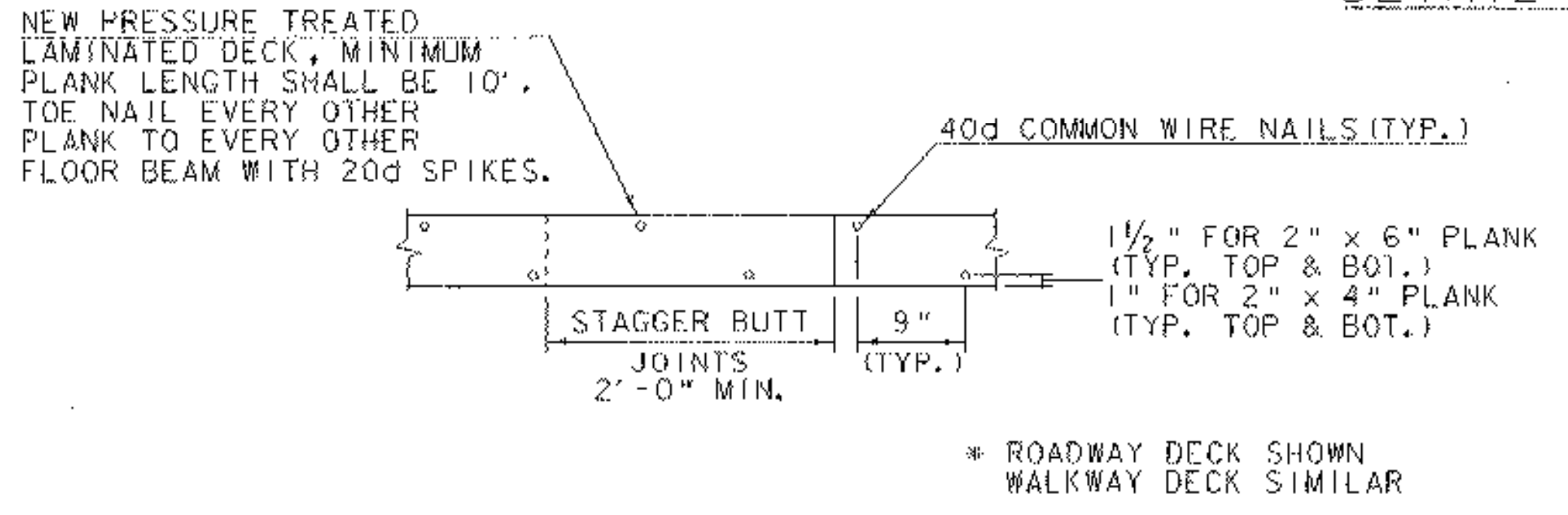
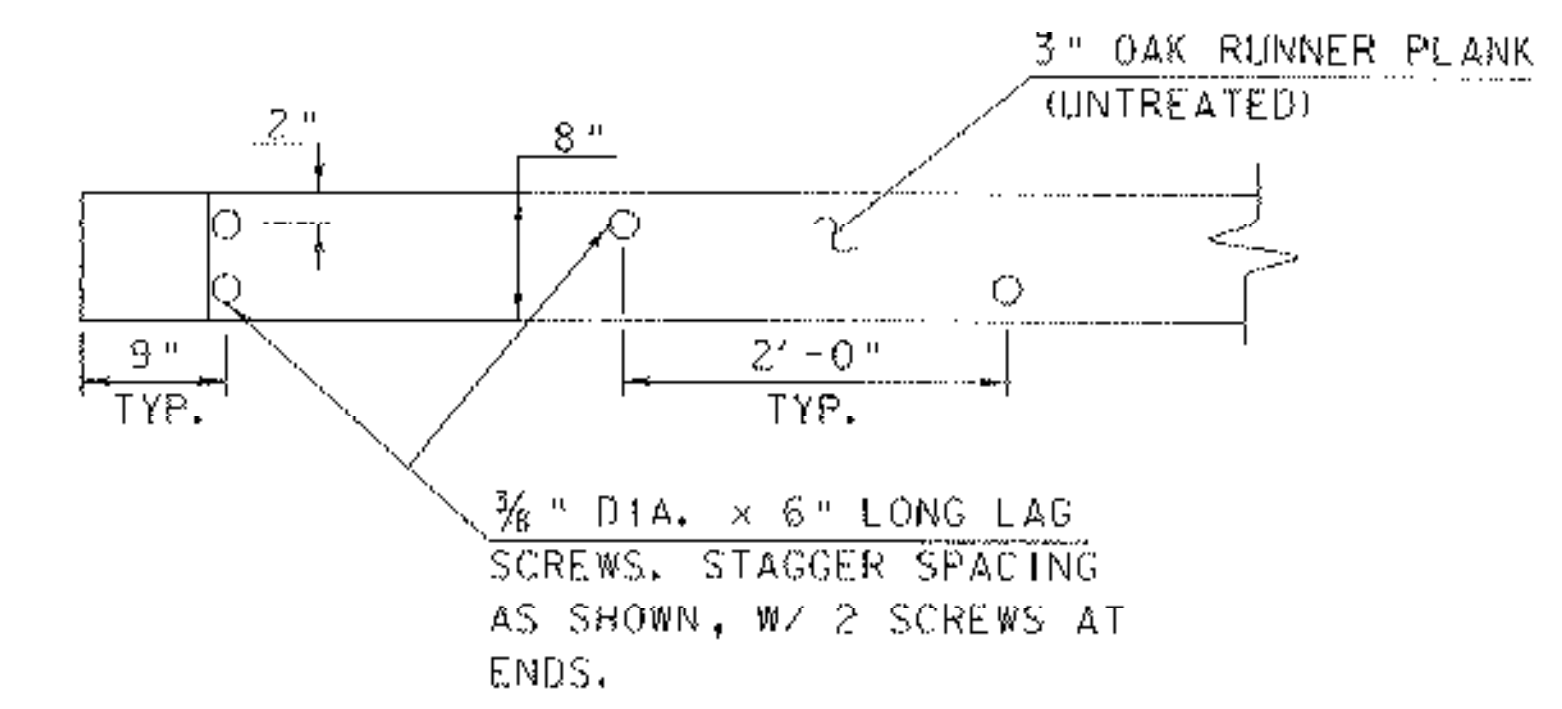
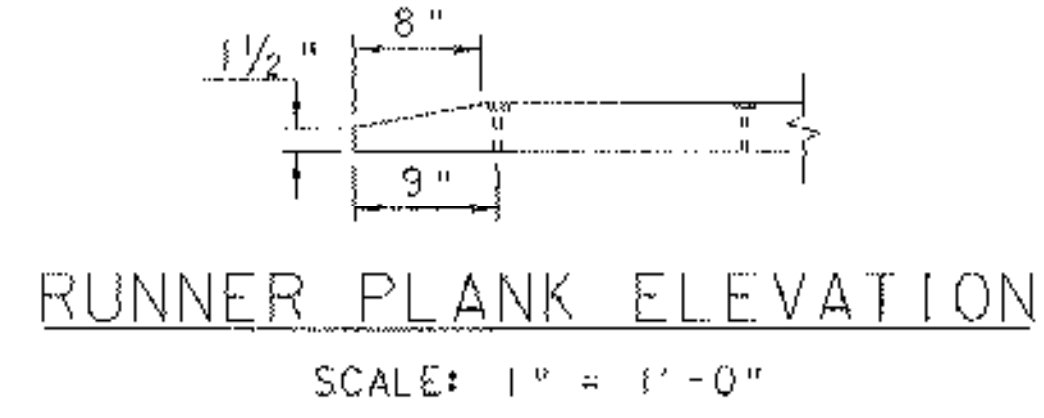
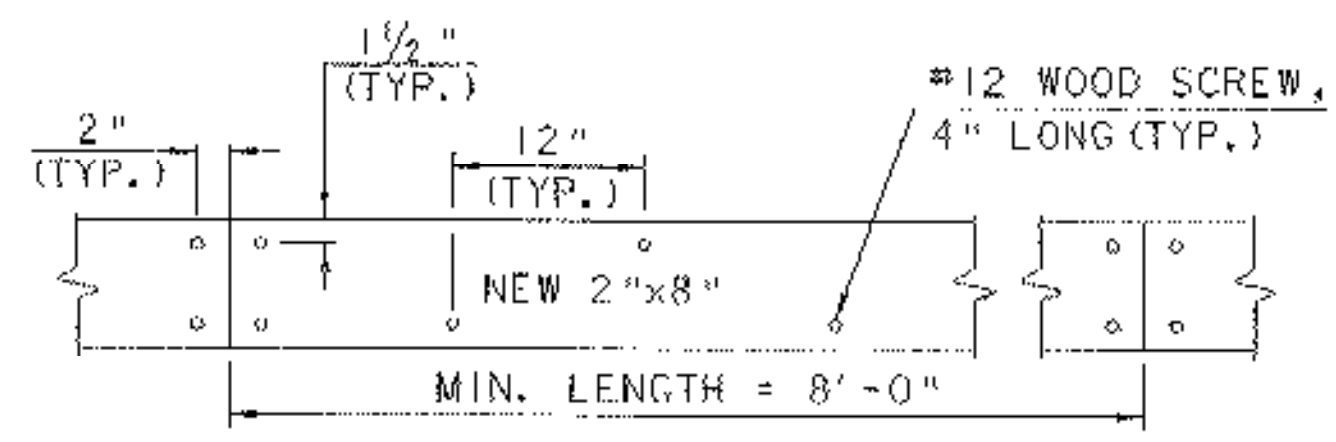
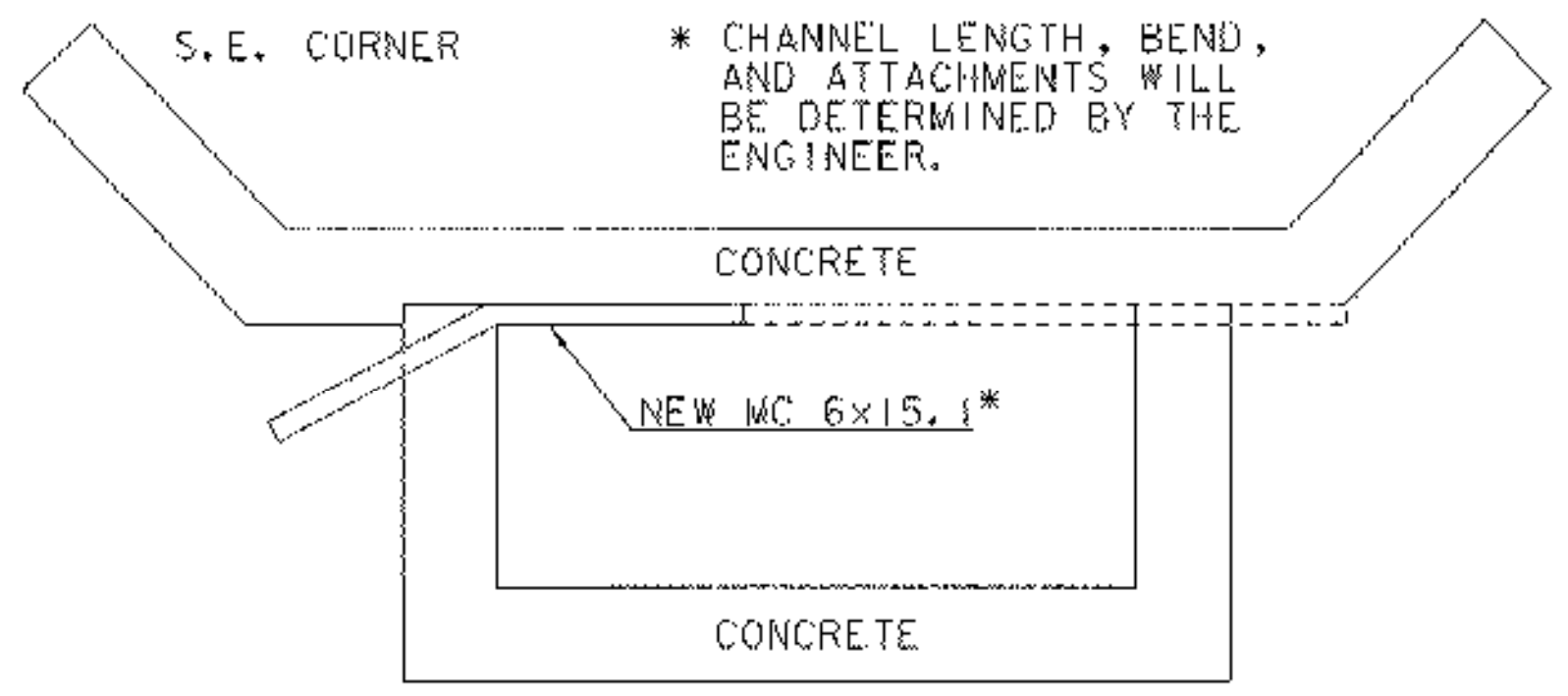
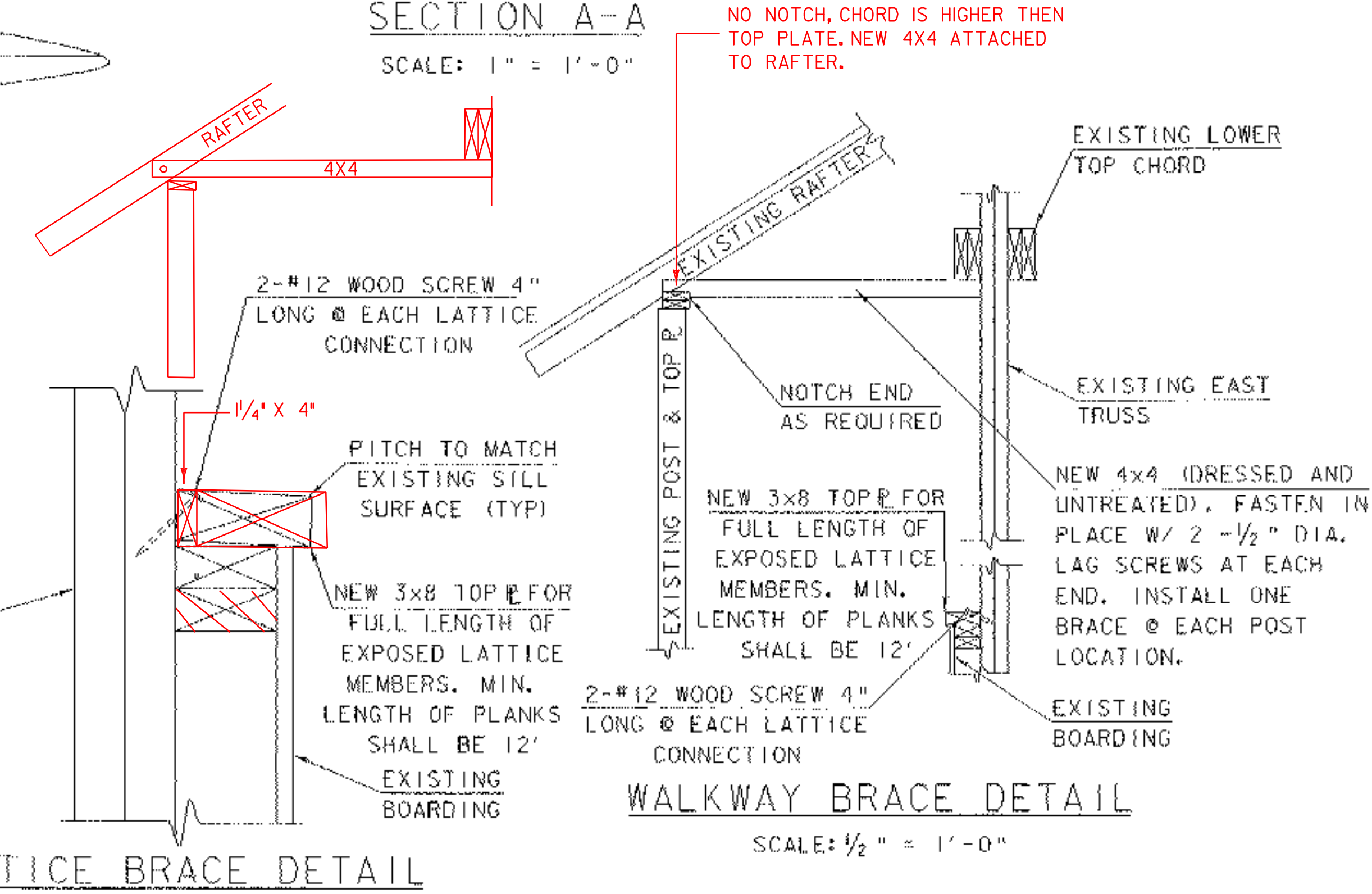
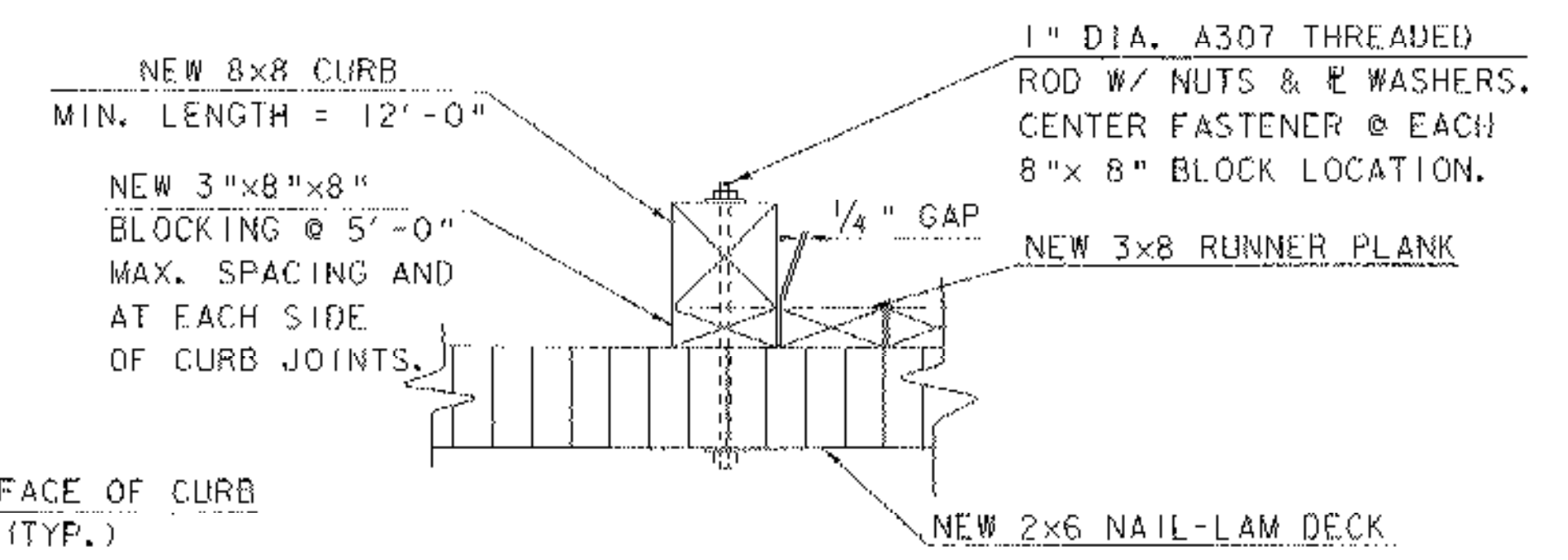
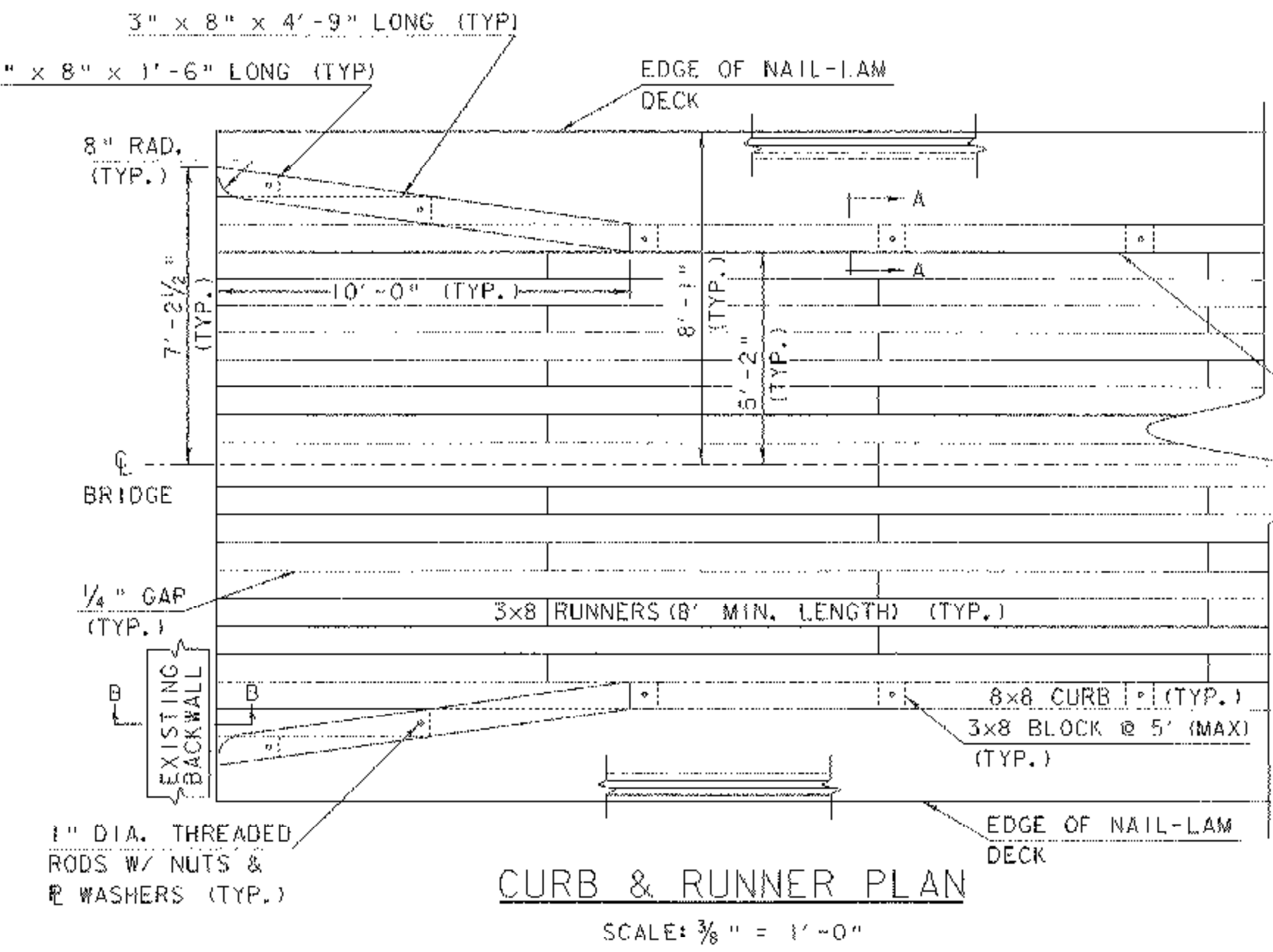
NEW CHORD CONNECTION DETAIL

SCALE: 3/4" = 1'-0"

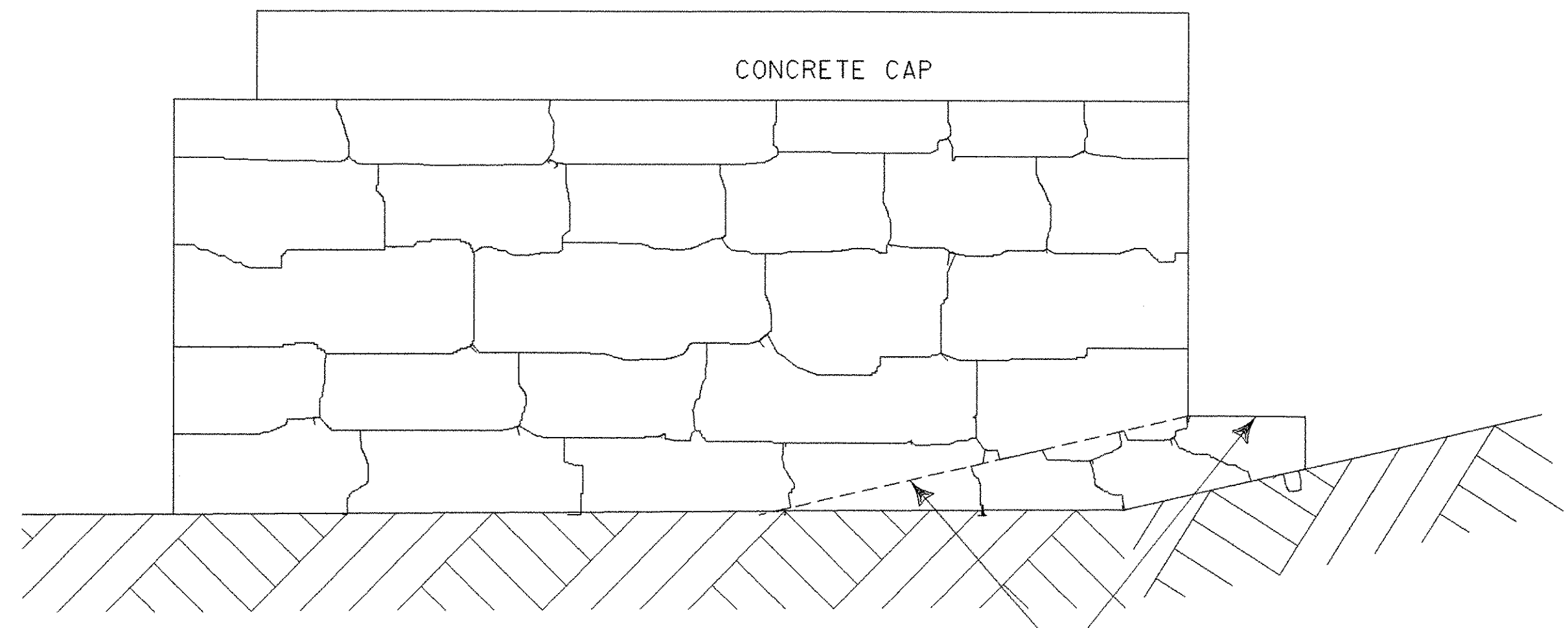
PROJECT:	BRATTLEBORO	BHO 1442 (33)
DESIGN FILE NAME:		
IPARM FILE NAME:		
DESIGNED BY:	J. WEAVER	
CONSTRUCTION DETAIL SHEET 1		
PLOT DATE:	10-AUG 2006	
DRAWN BY:	J. WHITE	
CHECKED BY:	J. WEAVER	
SHEET:	6 OF 8	

**NOTES**

- EXCEPT AS NOTED, ALL STRUCTURAL LUMBER AND TIMBER SHALL BE FULL SAWN, ROUGH FINISH, SPRUCE/PINE/FIR STRUCTURAL GRADE NO. 1 OR BETTER. ALL RUNNER PLANKS SHALL BE FULL SAWN ROUGH FINISH, WHITE OAK STRUCTURAL GRADE NO. 3 OR BETTER.
- ALL WOOD DOWELS (TRUNNELS) SHALL BE UNTREATED WHITE OAK, NO. 1 GRADE OR BETTER.
- ALL STRUCTURAL GLUED LAMINATED TIMBER SHALL BE SOUTHERN YELLOW PINE COMBINATION 47.
- EXCEPT AS NOTED, ALL LUMBER AND TIMBER SHALL BE PRESSURE TREATED TO MEET THE REQUIREMENTS OF SUBSECTION 726.01, PRESERVATIVE TYPE IV TREATMENT.
- THE WORK PAID FOR UNDER ITEM 506.60 STRUCTURAL STEEL (MOD.) SHALL INCLUDE:
  - TIE RODS, NUTS, & WASHERS.
  - TURNBUCKLES.
  - DRAIN CHANNEL AND SUPPORTS.
- THE WORK PAID FOR UNDER ITEM 506.60 STRUCTURAL STEEL (MOD.) SHALL EXCLUDE:
  - CONNECTION BOLTS, NUTS AND WASHERS.
  - NAILS, SPIKES, AND LAG SCREWS.
  - CURB THREADED ROD CONNECTORS, NUTS, & WASHERS.
- ALL TURNBUCKLE/ROD ASSEMBLIES SHALL BE SNUG TIGHT OR TIGHTENED AS DIRECTED BY THE ENGINEER.
- ALL STRUCTURAL SHAPES SHALL CONFORM TO ASTM A36/A36M SPECIFICATIONS. ALL STEEL COMPONENTS SHALL BE GALVANIZED PER AASHTO M 111M/M111 OR M 232M/M232, AS APPROPRIATE.
- ALL BOARDING REQUIRED TO PATCH THE SIDING WHICH IS REMOVED TO FACILITATE INSTALLATION OF NEW AND TEMPORARY MEMBERS AND USED IN OTHER AREAS SHALL BE MATERIAL APPROVED BY THE ENGINEER AND PAID FOR UNDER ITEM 522.30 NON-STRUCTURAL LUMBER UNTREATED.
- WITHOUT ADDITIONAL TEMPORARY SUPPORTS AND SHORING IN PLACE, THE CONTRACTOR SHALL BE PROHIBITED FROM MOVING ANY HEAVY (GREATER THAN THREE TONS) EQUIPMENT ACROSS THE BRIDGE SUPERSTRUCTURE.



PROJECT:	BRATTLEBORO	BHO 1442 (33)
DESIGN FILE NAME:		
IPARM FILE NAME:		
DESIGNED BY: J. WEAVER		PLOT DATE: 10-AUG-2006
		DRAWN BY: J. WHITE
		CHECKED BY: J. WEAVER
CONSTRUCTION DETAIL SHEET 2		SHEET: 7 OF 8



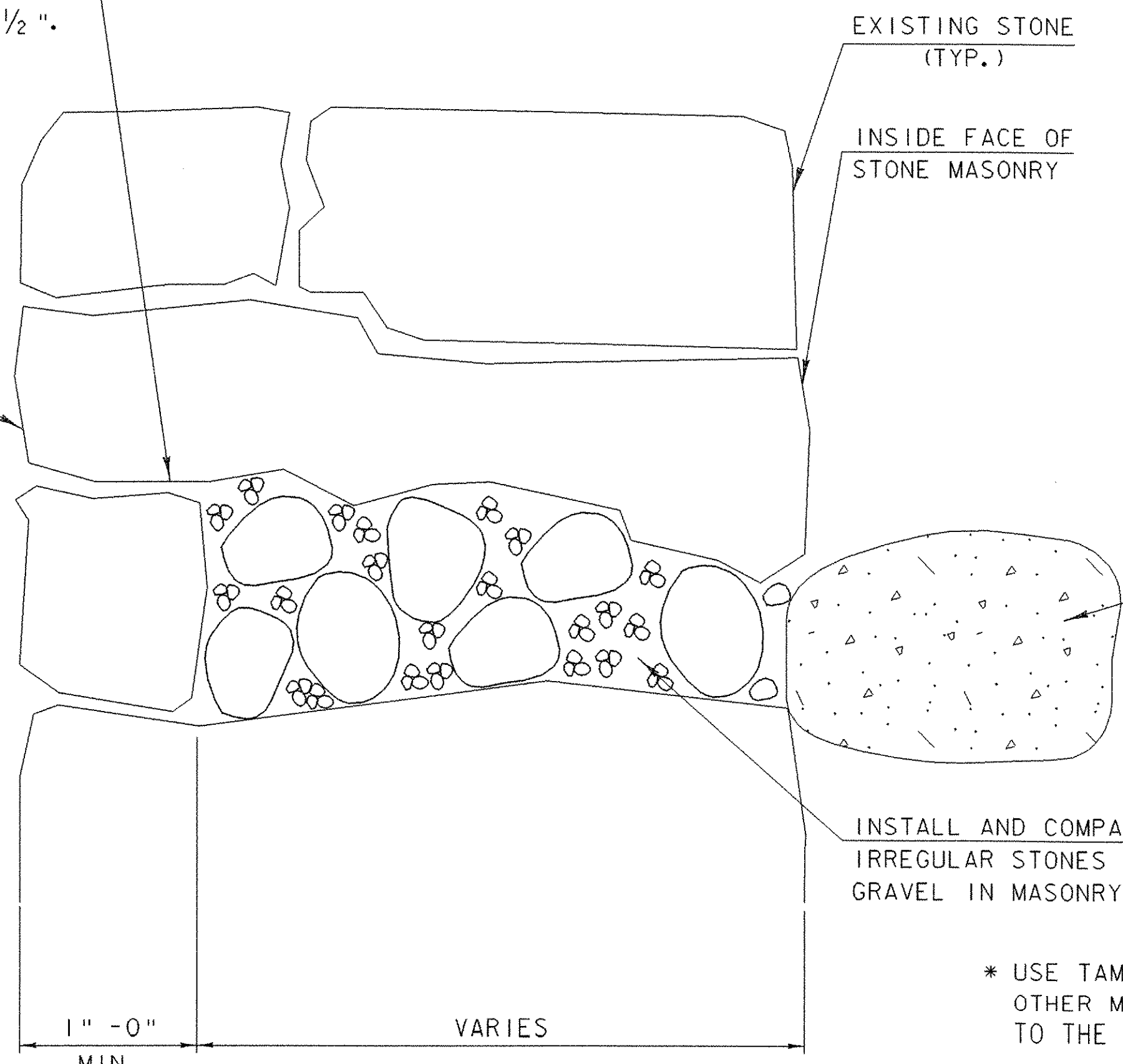
**SOUTH ABUTMENT ELEV.**

N. T. S.

AREA OF REPOINTING  
MASONRY (MOD)  
LIMITS TO BE DETERMINED  
BY THE ENGINEER

INSTALL IRREGULAR STONES  
TO TIGHT FIT. GAP BETWEEN  
NEW AND EXISTING STONE  
SHALL BE LESS THAN 1/2".

OUTSIDE FACE OF  
STONE MASONRY



EXISTING STONE  
(TYP.)

INSIDE FACE OF  
STONE MASONRY

INSTALL AND COMPACT CRUSHED  
GRAVEL TO COMPLETELY FILL  
VOIDS IN EXISTING FILL BEHIND  
MASONRY WALL. \*

INSTALL AND COMPACT SMALL  
IRREGULAR STONES AND CRUSHED  
GRAVEL IN MASONRY WALL. \*

1" -0"  
MIN.                      VARIES

\* USE TAMPING RODS OR  
OTHER METHODS ACCEPTABLE  
TO THE ENGINEER.

\*\* FOR FURTHER INFORMATION SEE  
SECTION 602 OF THE PROJECT  
SPECIAL PROVISIONS.

**REPOINTING DETAIL\*\***

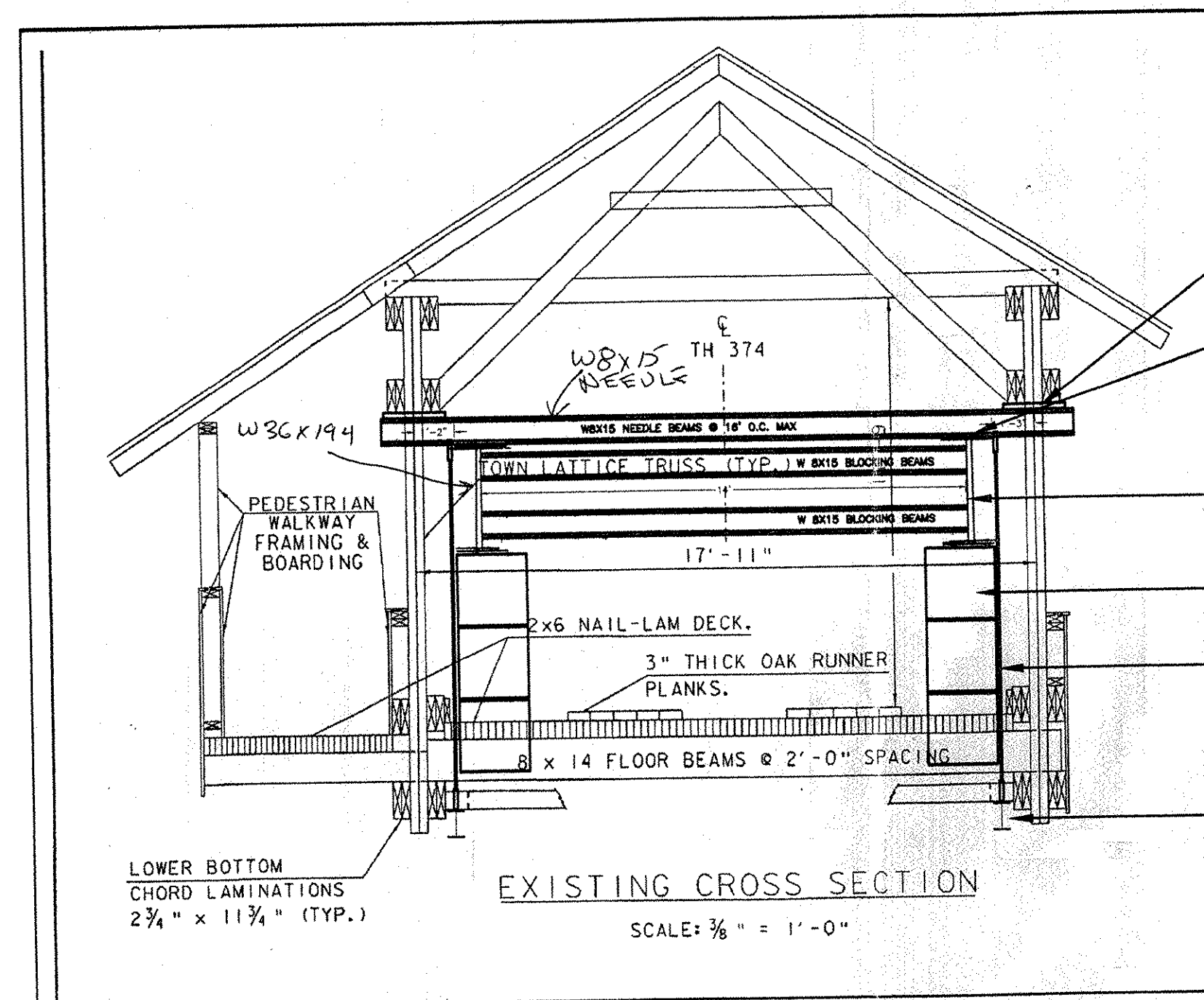
N. T. S.

SCALE 1/2" = 1'-0"

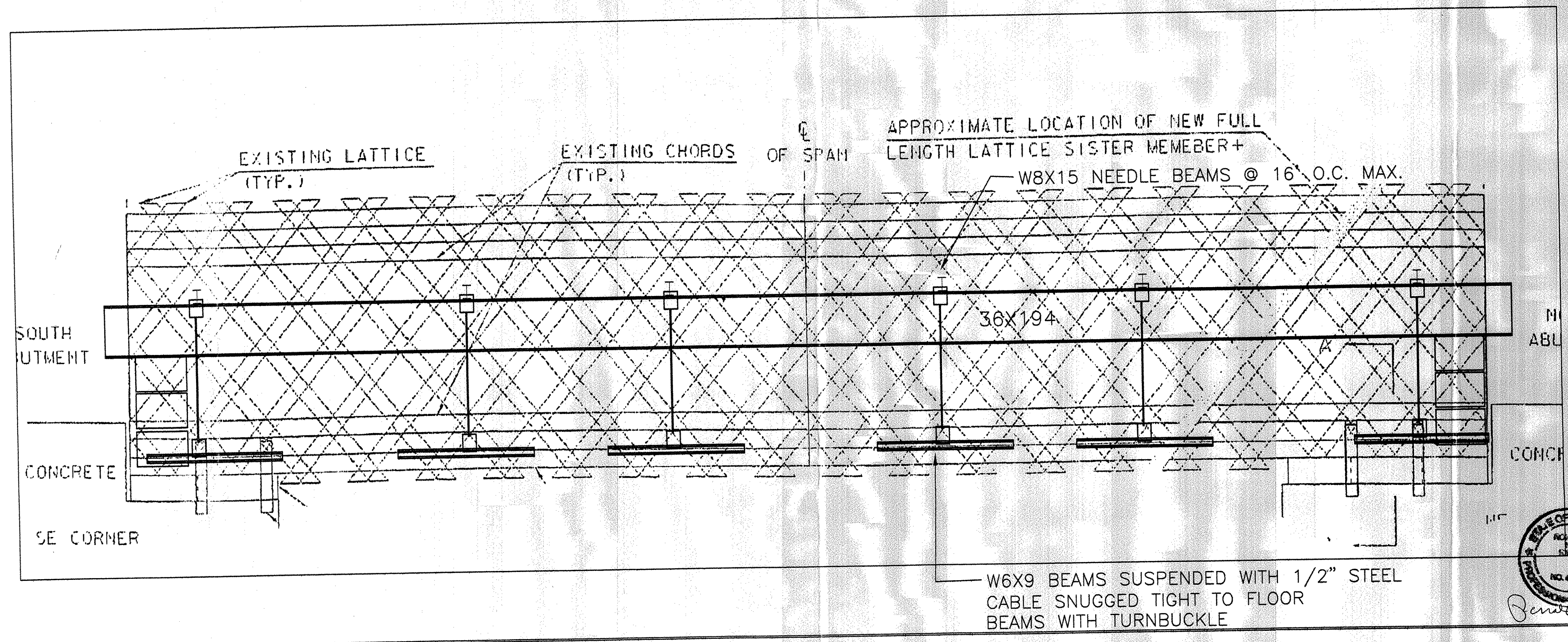


PROJECT NAME: BRATTLEBORO  
PROJECT NUMBER: BHO 1442 (33)

FILE NAME:	PLOT DATE: 10-AUG-2006
PROJECT LEADER:	DRAWN BY: D.D. BEARD
DESIGNED BY: J. WEAVER	CHECKED BY: J. WEAVER
CONSTRUCTION DETAIL SHEET 3	SHEET 8 OF 8



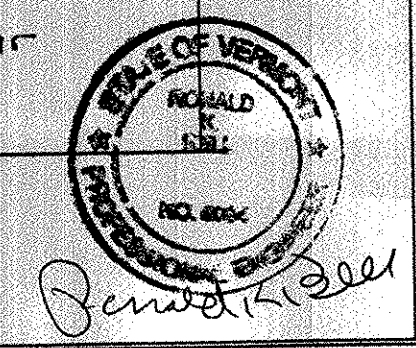
- SOLID BLOCKING
- SECURE NEEDLE BEAMS TO SUPPORT BEAM WITH I-BEAM CLAMPS
- 36X194
- CONCRETE GRAVITY BLOCKS
- 1/2 STEEL CABLE
- W6X9 SUPPORTING FLOOR BEAMS



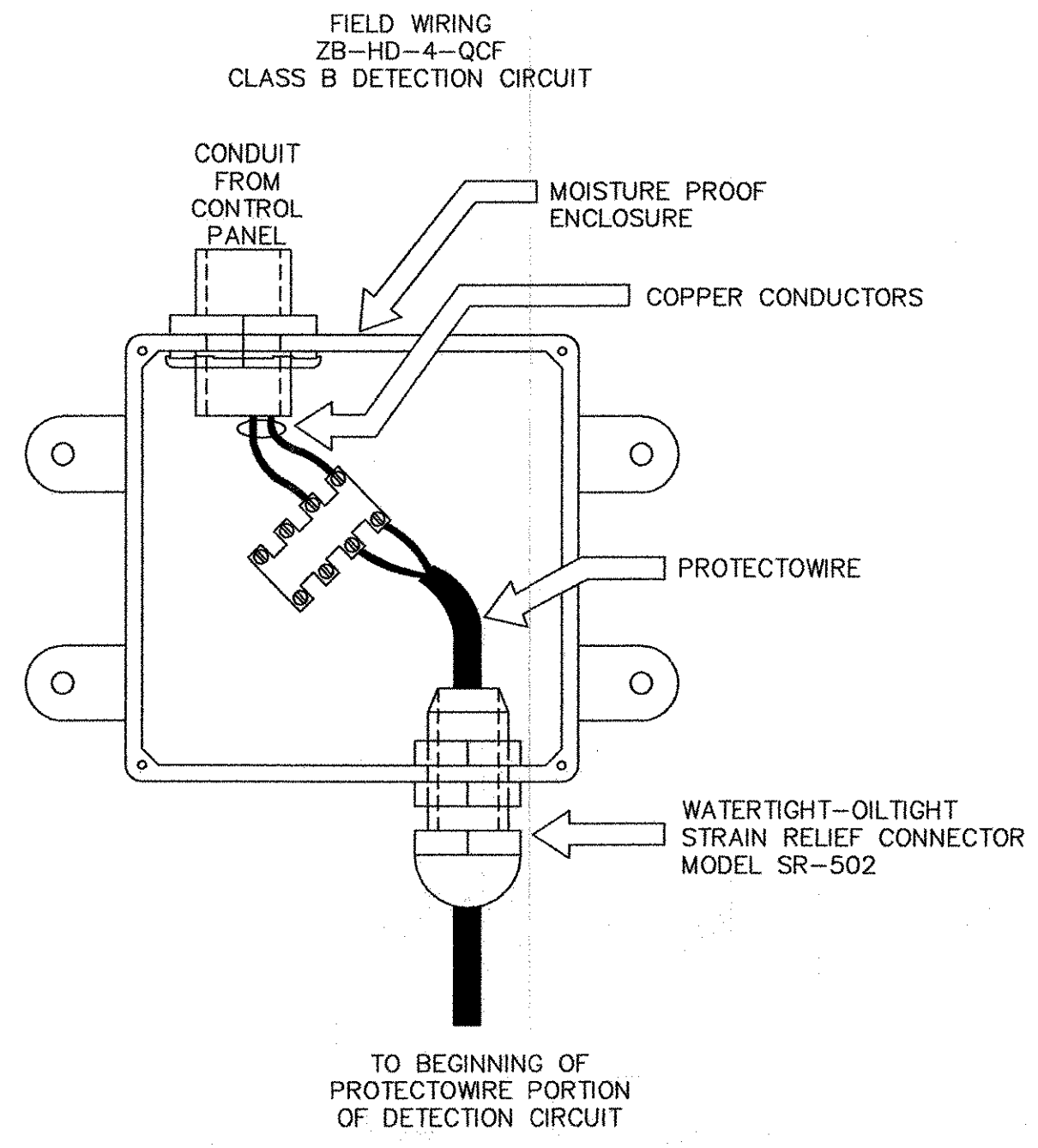
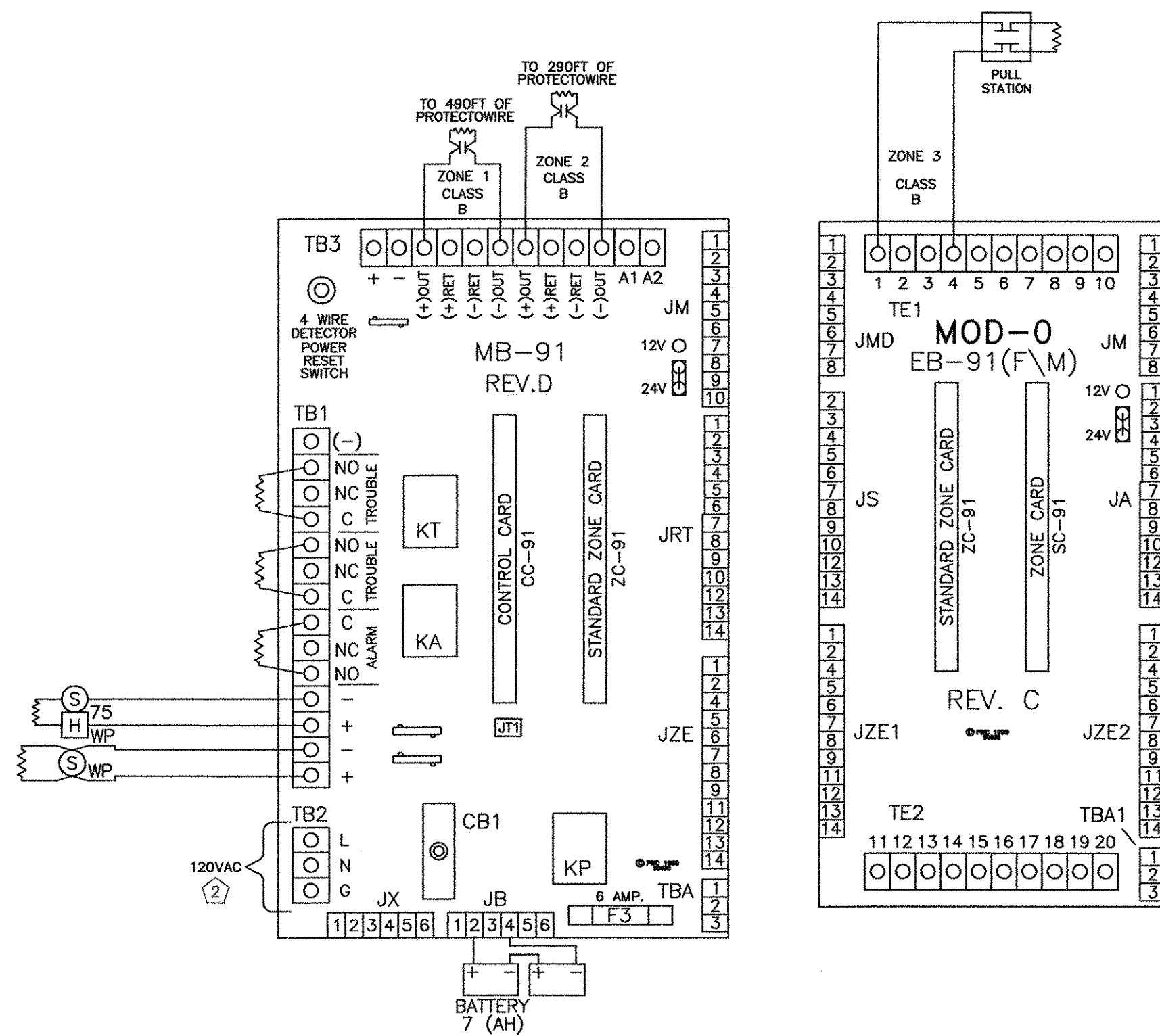
— W6X9 BEAMS SUSPENDED WITH 1/2" STEEL CABLE SNUGGED TIGHT TO FLOOR BEAMS WITH TURNBUCKLE

SHORING PLAN  
CREAMERY BRIDGE  
WEST BRATTLEBORO, VT

DATE: DECEMBER 18, 2006



**BELL ENGINEERING**  
CIVIL & ENVIRONMENTAL  
17 ECHO COVE WAY  
SPOFFORD, NEW HAMPSHIRE 03462  
(603) 363-9966



**WARNING**

THE INSTALLING CONTRACTOR IS RESPONSIBLE FOR THE WIRING OF ALL DEVICES, THE WIRE TYPE AND THAT ALL WIRE SIZES MEET STATE AND LOCAL CODE REQUIREMENTS. THE INSTALLING CONTRACTOR IS ALSO RESPONSIBLE THAT THE INSTALLATION IS FREE OF ALL DEFECTS.

**WIRING SPECIFICATIONS**

POWER CKTS- 16AWG MIN 12AWG MAX  
 ZONE/SUBLOOP- 16 AWG MIN 12AWG MAX.  
 STROBE CKTS- 16AWG MIN 12AWG MAX  
 POWER LIMITED AND NONPOWER LIMITED CABLE CAN NOT BE RUN THROUGH THE SAME RACEWAY.

**NOTES**

1 Must be grounded to a driven ground rod or the cold water pipe on the street side of the main shut off valve.  
 2 No AC voltage on any terminal other than those specified.

**GENERAL NOTES**

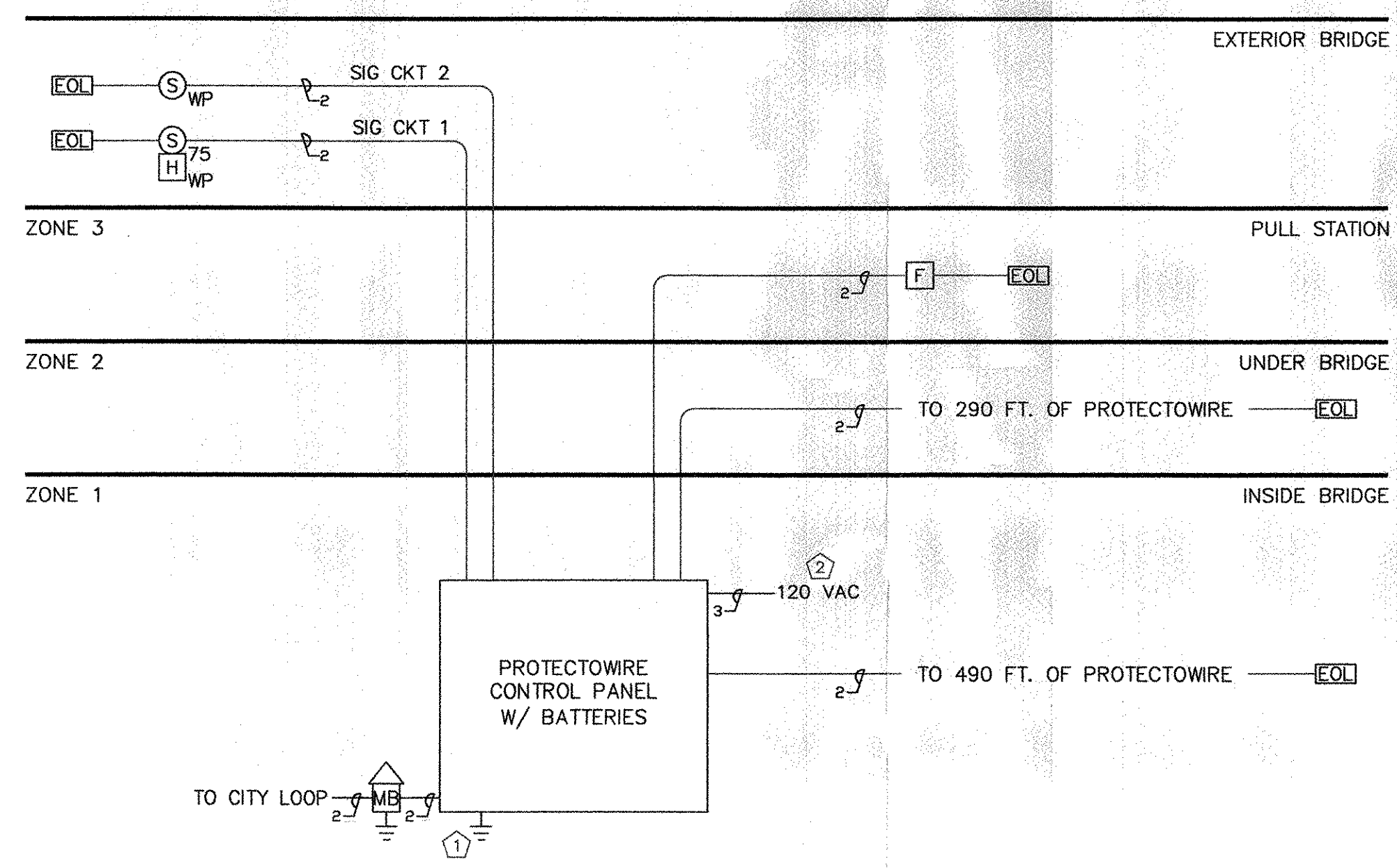
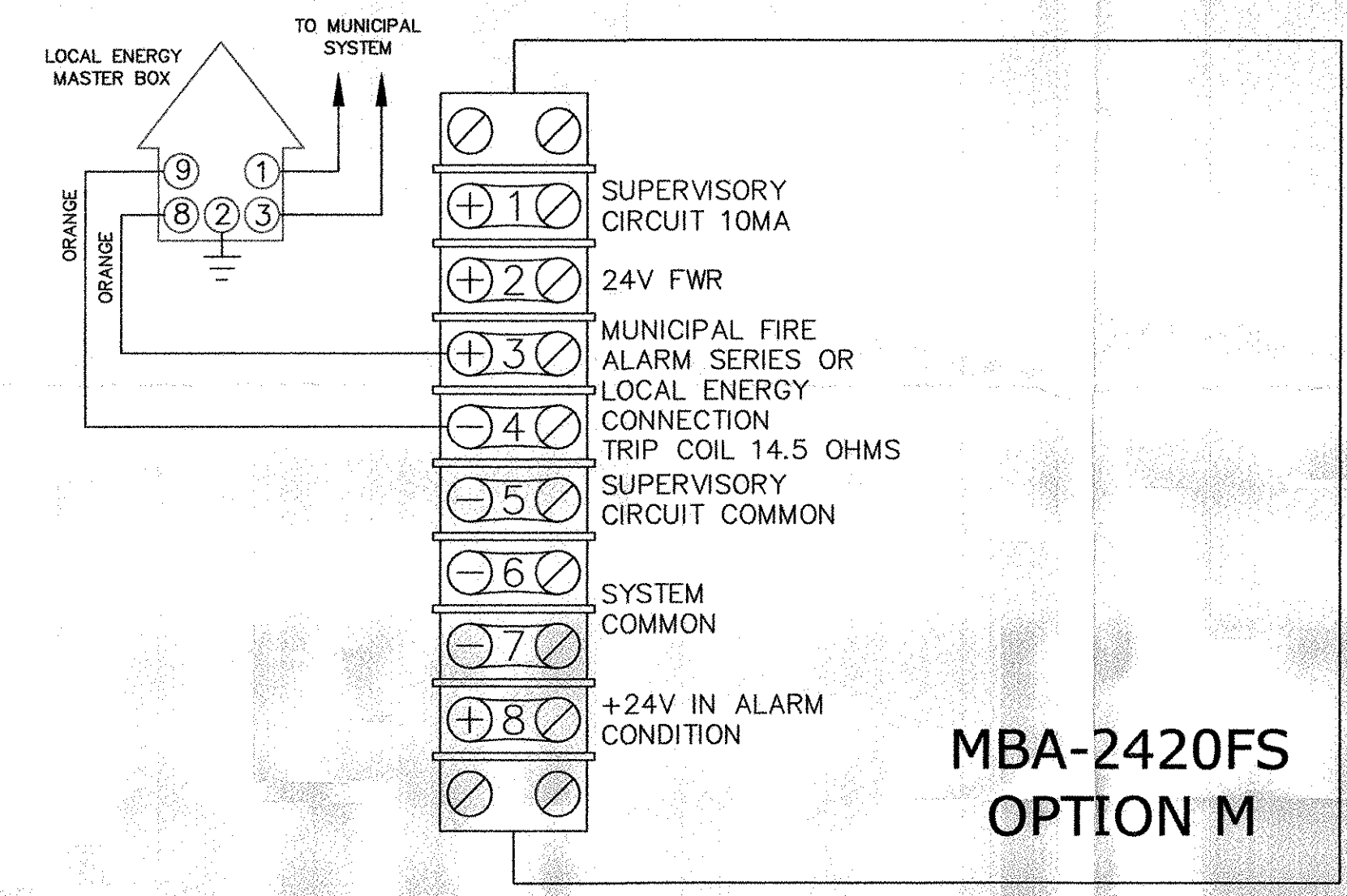
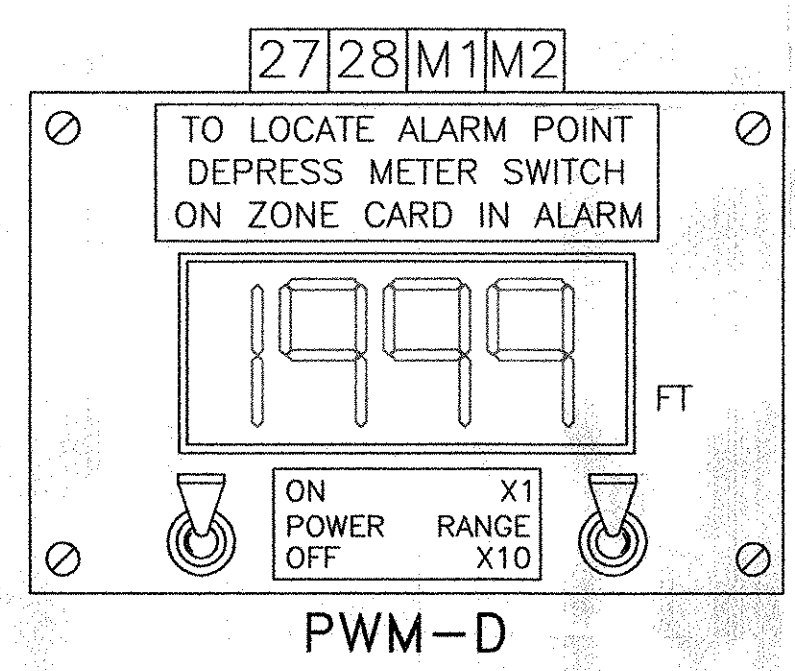
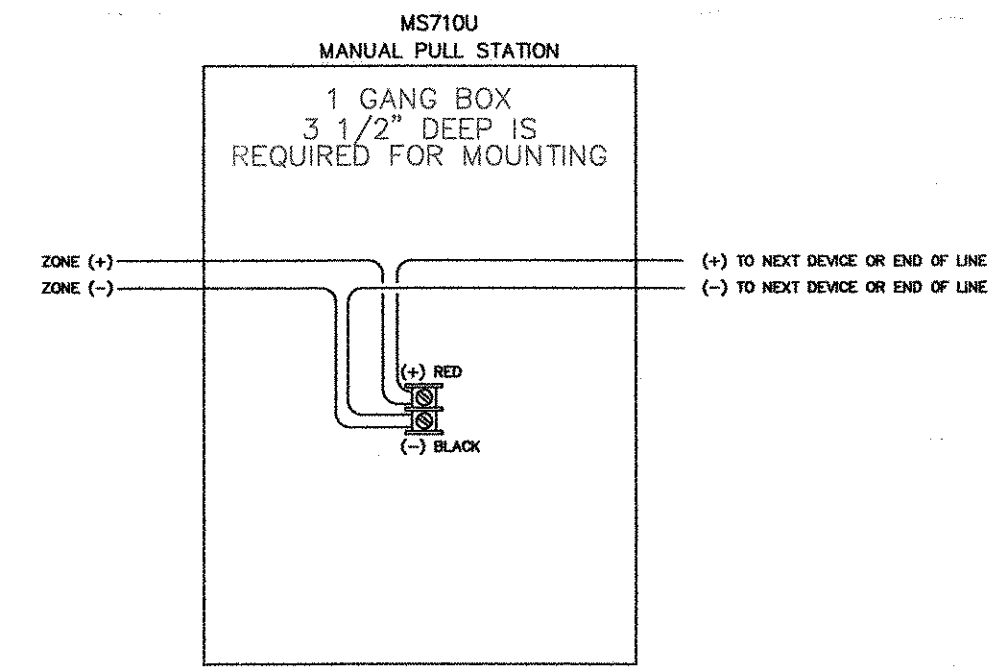
- ALL Fire Alarm System wiring shall comply with the National Electrical Code, Applicable State and Local Fire and Safety Codes, as well as being coordinated with the Local Authority Having Jurisdiction.
- CAUTION DO NOT connect any power to control panel (batteries or 120 vac) until all other field wiring is tested and connected.
- DO NOT install F.A.C.P. or smoke detectors in any unheated area.
- DO NOT install any A.C. current carrying conductors close to or in the same raceway with fire alarm system conductors.
- Dotted lines indicate factory wiring. Solid lines indicate connections to be made by the installer.
- See Installation Manual for additional wiring instructions.
- Indicating circuit outputs are 2 amps at 24 VDC per circuit.
- Cabinet Dimensions: EN2R  
 L 53" W 26" D 5.60"

**SPECIAL FUNCTIONS**

All Wiring to be Class B.

**LEGEND**

1 [F] Manual Pull Station  
 1 [S] Outdoor Beacon  
 1 [S] Horn/Strobe Weatherproof  
 75 75 Candela  
 WP Weatherproof  
 Ground



*ROLL BOX FOR TESTING ONLY?  
 1L PANEL?*

**SIGNAL CIRCUITS**

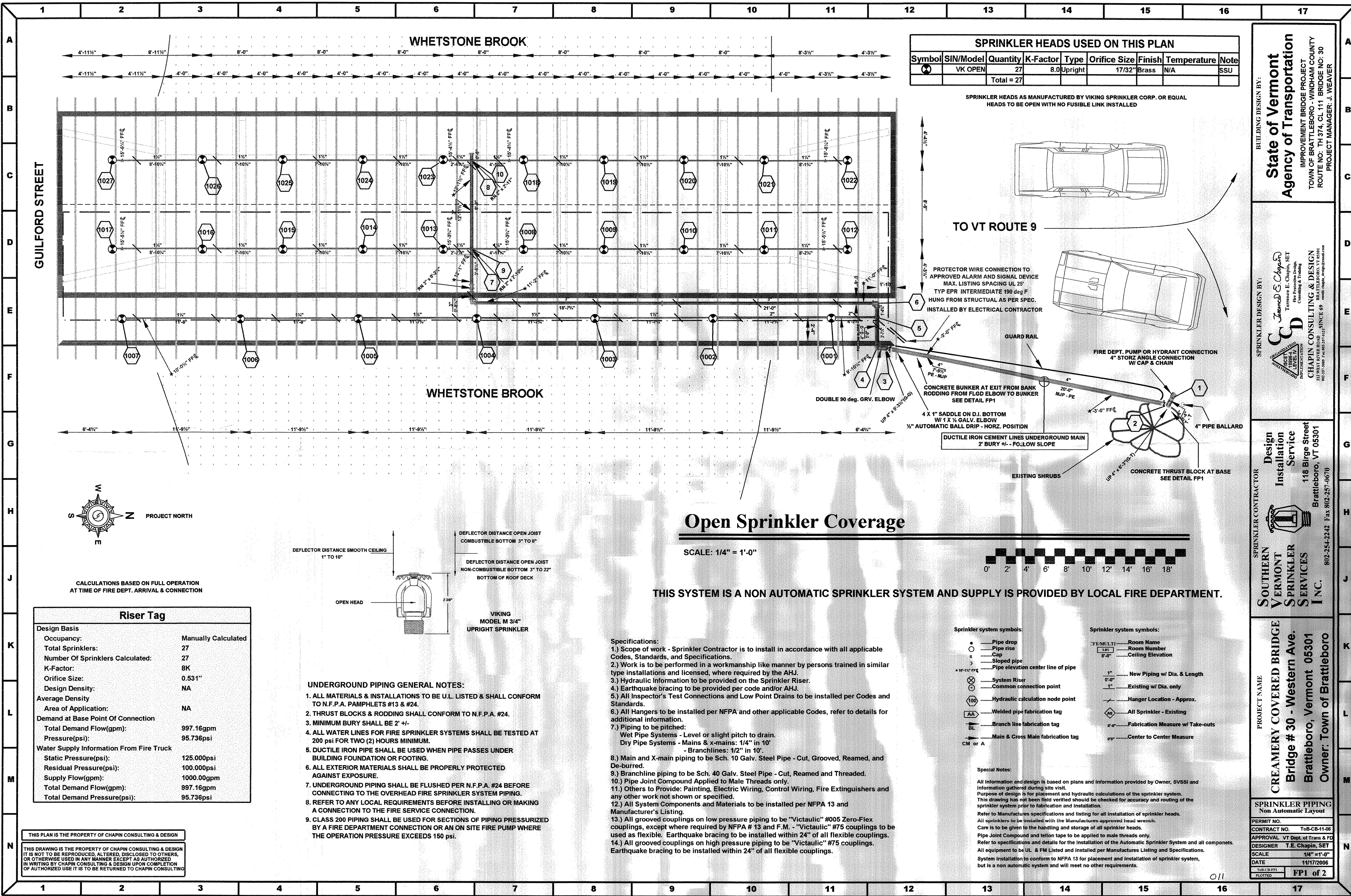
CKT. #	TOTAL LOAD
SIG CKT 1	0.1680
SIG CKT 2	0.3200

WIRE SIZE TO BE DETERMINED BY INSTALLING CONTRACTOR IN FIELD ALL SYSTEM WIRING SHALL BE 16AWG MIN AND 12AWG MAX

**PPM** Property Protection Monitoring Incorporated  
 1-877-794-8344  
 Lowell, MA 01854-3126  
 24 Hour UL Listed Signal Monitoring

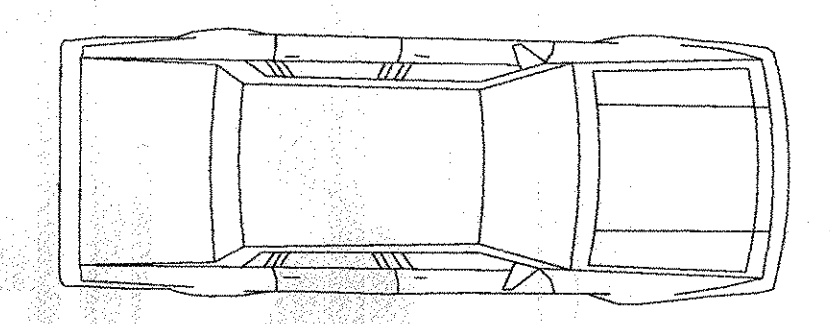
**MFA** Mammoth Fire Alarms Incorporated  
 1-800-895-9808  
 Lowell, MA 01854-3126

Scale: None Approved By: M.D. 3-27-07 Drawn By: M.A.D.  
 Date: 1/22/07 Revised: 3/23/07 c.d.  
 State of Vermont Creamery Bridge  
 Guilford Rd. Brattleboro, VT 05301  
 A.L. Tyler Electric Drawing No. 140966  
 175 Canal St. Brattleboro, VT 05301



SPRINKLER HEADS USED ON THIS PLAN									
Symbol	SIN/Model	Quantity	K-Factor	Type	Orifice Size	Finish	Temperature	Note	
⊗	VK OPEN	27	8.0	Upright	17/32"	Brass	N/A	SSU	
		<b>Total = 27</b>							

SPRINKLER HEADS AS MANUFACTURED BY VIKING SPRINKLER CORP. OR EQUAL HEADS TO BE OPEN WITH NO FUSIBLE LINK INSTALLED



TO VT ROUTE 9

PROTECTOR WIRE CONNECTION TO APPROVED ALARM AND SIGNAL DEVICE MAX. LISTING SPACING UL 257 TYP EPR INTERMEDIATE 190 deg F HUNG FROM STRUCTURAL AS PER SPEC. INSTALLED BY ELECTRICAL CONTRACTOR

GUARD RAIL

FIRE DEPT. PUMP OR HYDRANT CONNECTION 4" STORZ ANGLE CONNECTION W/ CAP & CHAIN

DOUBLE 90 deg. GRV. ELBOW

CONCRETE BUNKER AT EXIT FROM BANK RODDING FROM FLOD ELBOW TO BUNKER SEE DETAIL FP1

4 X 1" SADDLE ON D.I. BOTTOM W/ 1 X 1/2 GALV. ELBOW

1/2" AUTOMATIC BALL DRIP - HORIZ. POSITION

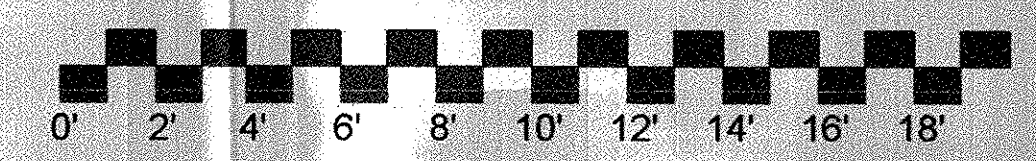
DUCTILE IRON CEMENT LINES UNDERGROUND MAIN 2' BURY +/- - F.O. LOW SLOPE

EXISTING SHRUBS

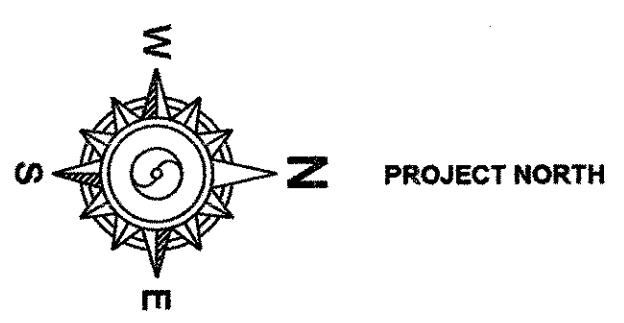
CONCRETE THRUST BLOCK AT BASE SEE DETAIL FP1

## Open Sprinkler Coverage

SCALE: 1/4" = 1'-0"

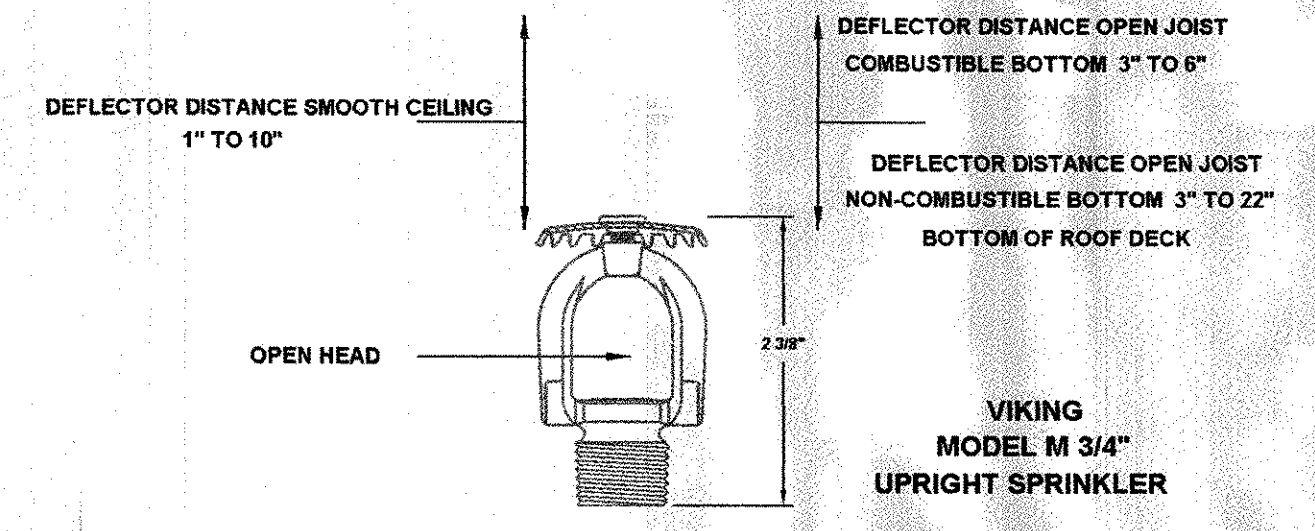


THIS SYSTEM IS A NON AUTOMATIC SPRINKLER SYSTEM AND SUPPLY IS PROVIDED BY LOCAL FIRE DEPARTMENT.



CALCULATIONS BASED ON FULL OPERATION AT TIME OF FIRE DEPT. ARRIVAL & CONNECTION

Riser Tag	
Design Basis	Manually Calculated
Total Sprinklers:	27
Number Of Sprinklers Calculated:	27
K-Factor:	8K
Orifice Size:	0.531"
Design Density:	NA
Average Density	
Area of Application:	NA
Demand at Base Point Of Connection	
Total Demand Flow(gpm):	997.16gpm
Pressure(psi):	95.736psi
Water Supply Information From Fire Truck	
Static Pressure(psi):	125.000psi
Residual Pressure(psi):	100.000psi
Supply Flow(gpm):	1000.00gpm
Total Demand Flow(gpm):	997.16gpm
Total Demand Pressure(psi):	95.736psi



### UNDERGROUND PIPING GENERAL NOTES:

- ALL MATERIALS & INSTALLATIONS TO BE U.L. LISTED & SHALL CONFORM TO N.F.P.A. PAMPHLETS #13 & #24.
- THRUST BLOCKS & RODDING SHALL CONFORM TO N.F.P.A. #24.
- MINIMUM BURY SHALL BE 2' +/-
- ALL WATER LINES FOR FIRE SPRINKLER SYSTEMS SHALL BE TESTED AT 200 psi FOR TWO (2) HOURS MINIMUM.
- DUCTILE IRON PIPE SHALL BE USED WHEN PIPE PASSES UNDER BUILDING FOUNDATION OR FOOTING.
- ALL EXTERIOR MATERIALS SHALL BE PROPERLY PROTECTED AGAINST EXPOSURE.
- UNDERGROUND PIPING SHALL BE FLUSHED PER N.F.P.A. #24 BEFORE CONNECTING TO THE OVERHEAD FIRE SPRINKLER SYSTEM PIPING.
- REFER TO ANY LOCAL REQUIREMENTS BEFORE INSTALLING OR MAKING A CONNECTION TO THE FIRE SERVICE CONNECTION.
- CLASS 200 PIPING SHALL BE USED FOR SECTIONS OF PIPING PRESSURIZED BY A FIRE DEPARTMENT CONNECTION OR AN ON SITE FIRE PUMP WHERE THE OPERATION PRESSURE EXCEEDS 150 psi.

### Specifications:

- Scope of work - Sprinkler Contractor is to install in accordance with all applicable Codes, Standards, and Specifications.
- Work is to be performed in a workmanship like manner by persons trained in similar type installations and licensed, where required by the AHJ.
- Hydraulic Information to be provided on the Sprinkler Riser.
- Earthquake bracing to be provided per code and/or AHJ.
- All Inspector's Test Connections and Low Point Drains to be installed per Codes and Standards.
- All Hangers to be installed per NFPA and other applicable Codes, refer to details for additional information.
- Piping to be pitched:  
Wet Pipe Systems - Level or slight pitch to drain.  
Dry Pipe Systems - Mains & x-mains: 1/4" in 10'  
- Branchlines: 1/2" in 10'.
- Main and X-main piping to be Sch. 10 Galv. Steel Pipe - Cut, Grooved, Reamed, and De-burred.
- Branchline piping to be Sch. 40 Galv. Steel Pipe - Cut, Reamed and Threaded.
- Pipe Joint Compound Applied to Male Threads only.
- Others to Provide: Painting, Electric Wiring, Control Wiring, Fire Extinguishers and any other work not shown or specified.
- All System Components and Materials to be installed per NFPA 13 and Manufacturer's Listing.
- All grooved couplings on low pressure piping to be "Victaulic" #005 Zero-Flex couplings, except where required by NFPA # 13 and F.M. - "Victaulic" #75 couplings to be used as flexible. Earthquake bracing to be installed within 24" of all flexible couplings.
- All grooved couplings on high pressure piping to be "Victaulic" #75 couplings. Earthquake bracing to be installed within 24" of all flexible couplings.

### Sprinkler system symbols:

- Pipe drop
- Pipe rise
- Cap
- > Sloped pipe
- +10'-15' FFE Pipe elevation center line of pipe
- ⊗ System Riser
- Common connection point
- ⊗ Hydraulic calculation node point
- AA Welded pipe fabrication tag
- BL Branch line fabrication tag
- Main & Cross Main fabrication tag
- CM or A
- FEMULTI Room Name
- 181 Room Number
- 8'-0" Ceiling Elevation
- 1" New Piping w/ Dia. & Length
- 0'-0" Existing w/ Dia. only
- Hanger Location - Approx.
- ⊗ All Sprinkler - Existing
- 8'-0" Fabrication Measure w/ Take-outs
- gg Center to Center Measure

### Special Notes:

All information and design is based on plans and information provided by Owner, SVSSI and information gathered during site visit. Purpose of design is for placement and hydraulic calculations of the sprinkler system. This drawing has not been field verified should be checked for accuracy and routing of the sprinkler system prior to fabrication and installation. Refer to Manufacturer's specifications and listing for all installation of sprinkler heads. All sprinklers to be installed with the Manufacturer's approved head wrench. Care is to be given to the handling and storage of all sprinkler heads. Pipe Joint Compound and teflon tape to be applied to male threads only. Refer to specifications and details for the installation of the Automatic Sprinkler System and all components. All equipment to be U.L. & FM Listed and installed per Manufacturer's Listing and Specifications. System installation to conform to NFPA 13 for placement and installation of sprinkler system, but is a non automatic system and will meet no other requirements.

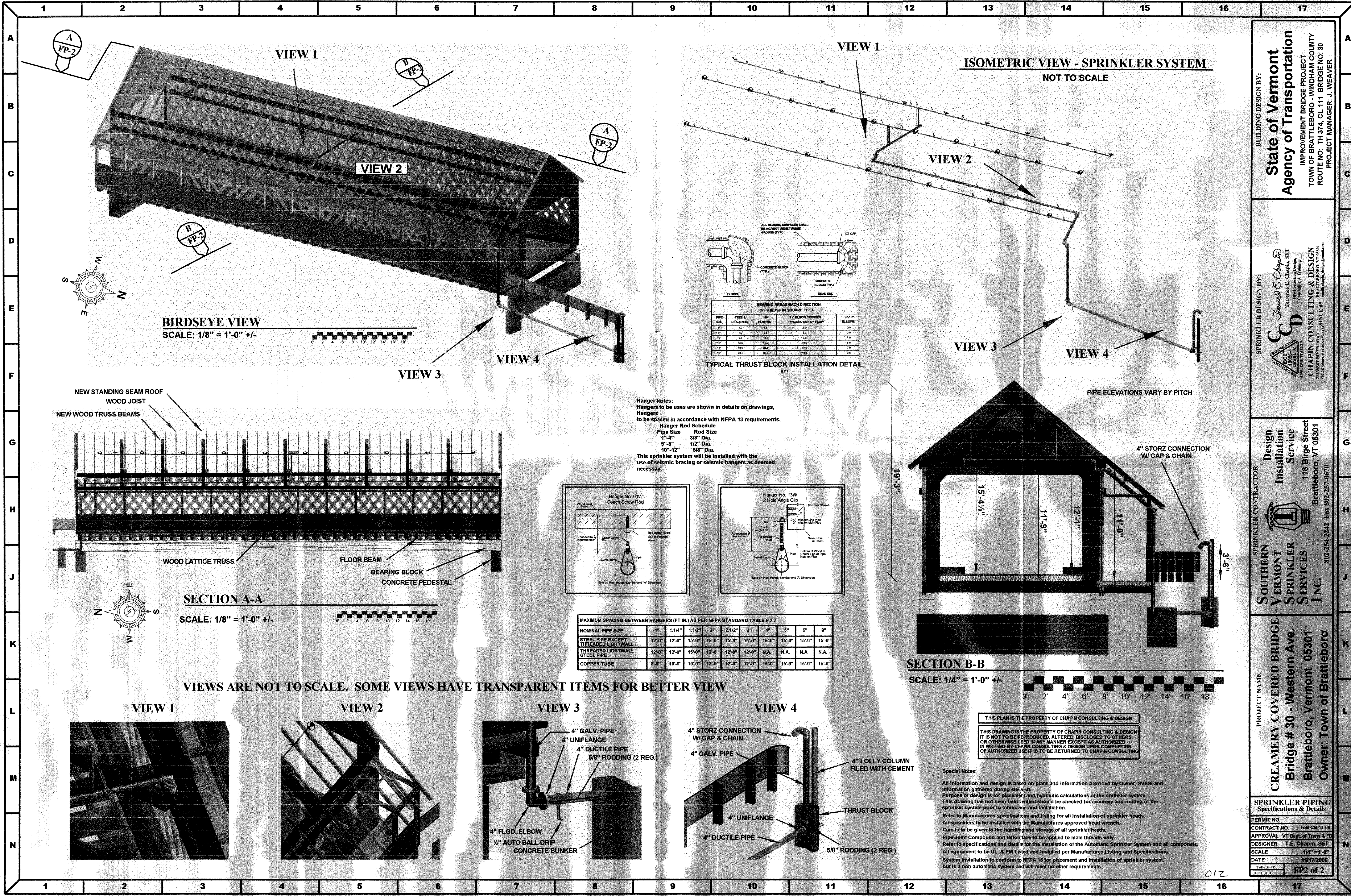
BUILDING DESIGN BY:  
**State of Vermont Agency of Transportation**  
IMPROVEMENT BRIDGE PROJECT  
TOWN OF BRATTLEBORO - WINDHAM COUNTY  
ROUTE NO: TH 374, CL 111 BRIDGE NO: 30  
PROJECT MANAGER: J. WEAVER

SPRINKLER DESIGN BY:  
**Chapin Consulting & Design**  
Terrence E. Chapin, SET  
Fire Protection Design  
Consulting & Training  
CD  
233 WEST WYLER ROAD, SUITE 69  
BRATTLEBORO, VT 05701  
802-257-2242 Fax: 802-257-0670

SPRINKLER CONTRACTOR  
**Southern Vermont Sprinkler Services Inc.**  
Design Installation Service  
118 Birge Street  
Brattleboro, VT 05501  
802-254-2242 Fax: 802-257-0670

PROJECT NAME  
**CREAMERY COVERED BRIDGE**  
Bridge # 30 - Western Ave.  
Brattleboro, Vermont 05301  
Owner: Town of Brattleboro

SPRINKLER PIPING  
Non Automatic Layout  
PERMIT NO.  
CONTRACT NO. ToB-CB-11-48  
APPROVAL: VT Dept. of Trans & FD  
DESIGNER: T.E. Chapin, SET  
SCALE: 1/4" = 1'-0"  
DATE: 11/17/2006  
ToB-CB-FP1  
PLOT: FP1 of 2



**BIRDSEYE VIEW**  
SCALE: 1/8" = 1'-0" +/-

**SECTION A-A**  
SCALE: 1/8" = 1'-0" +/-

**SECTION B-B**  
SCALE: 1/4" = 1'-0" +/-

VIEW 1 VIEW 2 VIEW 3 VIEW 4

**VIEW 1**

**VIEW 2**

**VIEW 3**

**VIEW 4**

BEARING AREAS EACH DIRECTION OF THRUST IN SQUARE FEET

PIPE SIZE	TEES & BRANCHES	90° ELBOWS	45° ELBOW CROSSOVERS IN DIRECTION OF FLOW	20-45° ELBOWS
4"	4.0	6.5	3.5	3.0
6"	7.0	8.5	5.0	3.5
8"	8.5	12.0	7.0	4.5
10"	12.0	16.0	10.0	6.0
12"	15.0	20.0	13.0	8.0
14"	18.0	25.0	16.0	10.0
16"	22.0	30.0	20.0	12.0

MAXIMUM SPACING BETWEEN HANGERS (FT. IN.) AS PER NFPA STANDARD TABLE 6-2.2

NOMINAL PIPE SIZE	1"	1.1/4"	1.1/2"	2"	2.1/2"	3"	4"	5"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL	12'-0"	12'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"
THREADED LIGHTWALL STEEL PIPE	12'-0"	12'-0"	15'-0"	12'-0"	12'-0"	N.A.	N.A.	N.A.	N.A.	N.A.
COPPER TUBE	8'-0"	10'-0"	10'-0"	12'-0"	12'-0"	12'-0"	15'-0"	15'-0"	15'-0"	15'-0"

**State of Vermont Agency of Transportation**  
IMPROVEMENT BRIDGE PROJECT  
TOWN OF BRATTLEBORO - WINDHAM COUNTY  
ROUTE NO. TH 374, CL 111 BRIDGE NO. 30  
PROJECT MANAGER: J. WEAVER

**Chapin Consulting & Design**  
TERRANCE E. CHAPIN, SET  
FOR PROFESSIONAL ENGINEERING  
CONSULTING & DESIGN  
33 WEST RIVER ROAD, SUITE 201, BRATTLEBORO, VT 05701  
802-257-5897 FAX 802-257-1111 SINCE 1969

**Southern Vermont Sprinkler Services Inc.**  
Design Installation Service  
118 Birge Street  
Brattleboro, VT 05301  
802-254-2242 Fax 802-257-0670

**CREAMERY COVERED BRIDGE**  
Bridge # 30 - Western Ave.  
Brattleboro, Vermont 05301  
Owner: Town of Brattleboro

**SPRINKLER PIPING Specifications & Details**

PERMIT NO.	
CONTRACT NO.	ToB-CB-11-06
APPROVAL	VT Dept. of Trans & FD
DESIGNER	T.E. Chapin, SET
SCALE	1/4" = 1'-0"
DATE	11/17/2006
PLOTTED	FP2 of 2

**Special Notes:**  
All information and design is based on plans and information provided by Owner, SVSSI and information gathered during site visit.  
Purpose of design is for placement and hydraulic calculations of the sprinkler system. This drawing has not been field verified and should be checked for accuracy and routing of the sprinkler system prior to fabrication and installation.  
Refer to Manufacturer's specifications and listing for all installation of sprinkler heads.  
All sprinklers to be installed with the Manufacturer's approved head wrench.  
Care is to be given to the handling and storage of all sprinkler heads.  
Pipe Joint Compound and teflon tape to be applied to male threads only.  
Refer to specifications and details for the installation of the Automatic Sprinkler System and all components.  
All equipment to be UL & FM Listed and installed per Manufacturer's Listing and Specifications.  
System installation to conform to NFPA 13 for placement and installation of sprinkler system, but is a non-automatic system and will meet no other requirements.

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