

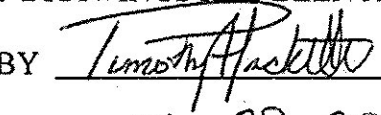
STATE OF VERMONT
AGENCY OF TRANSPORTATION

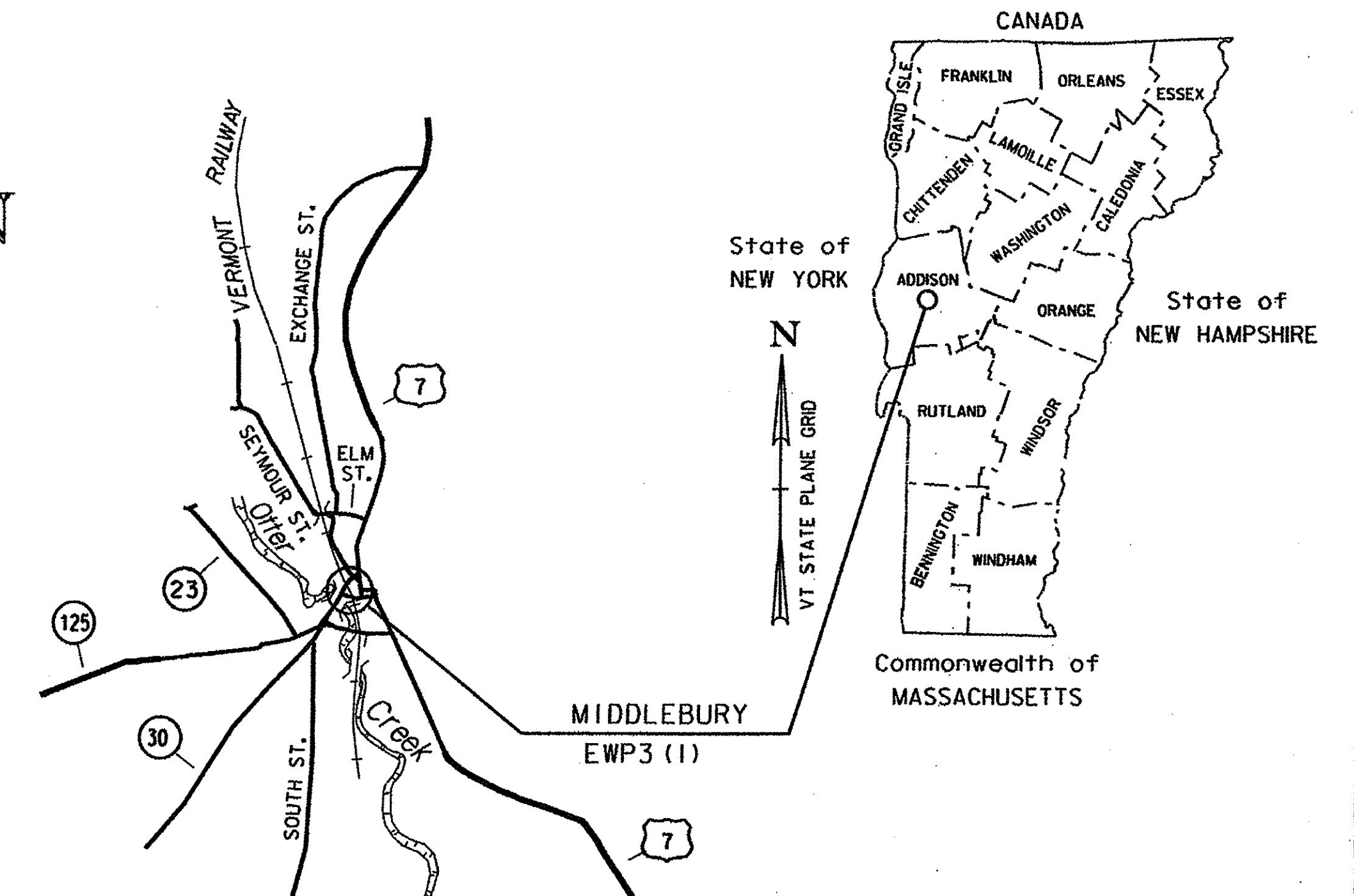


PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF MIDDLEBURY
COUNTY OF ADDISON

MAIN ST (MINOR ARTERIAL), BRIDGE NO. 102 - MERCHANTS ROW (MAJOR COLLECTOR), BRIDGE NO. 2

RECORD PLANS	
CONTRACTOR:	KUBRICKY CONSTRUCTION CORP. - GLENS FALLS, NY
RESIDENT ENGINEER:	TIM POCKETTE
CONSTRUCTION BEGAN:	JUNE 02, 2017
CONSTRUCTION COMPLETE:	SEPTEMBER 08, 2017
RECORD PLANS BY:	TIM POCKETTE & AARON WEAVER
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.	
BY	 RESIDENT ENGINEER
DATE	06-29-2018
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.	



PROJECT LOCATION:

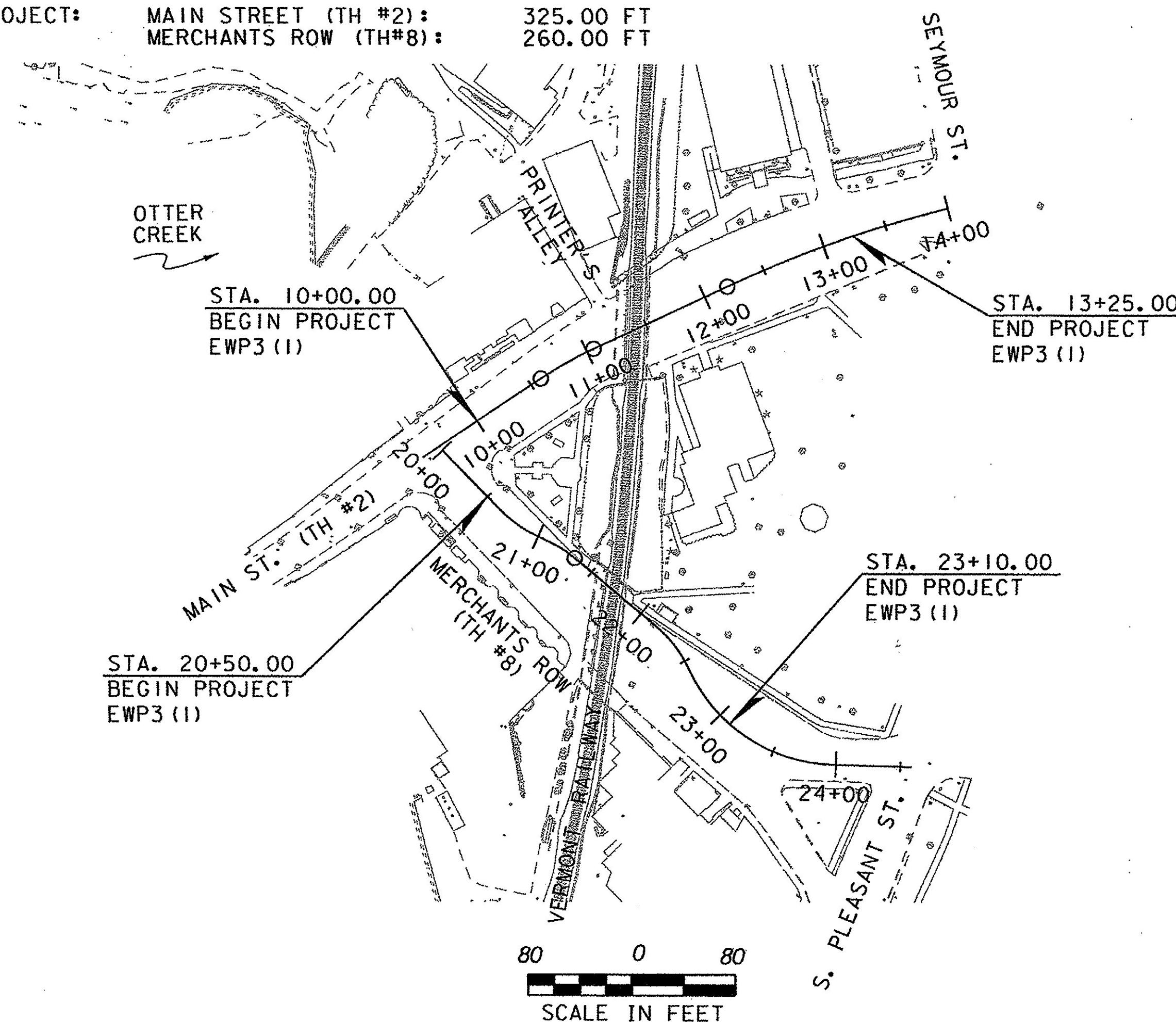
LOCATED IN THE COUNTY OF ADDISON, TOWN OF MIDDLEBURY, ON MAIN STREET (TH 2); BRIDGE NO. 102 OVER VERMONT RAILWAY, APPROXIMATELY 400 FT SOUTHWEST OF THE INTERSECTION OF MAIN STREET AND US ROUTE 7, AND ON MERCHANTS ROW (TH 8); BRIDGE NO. 2 OVER VERMONT RAILWAY, APPROXIMATELY 230 FT WEST OF THE INTERSECTION OF MERCHANTS ROW AND SOUTH PLEASANT STREET (TH 47).

PROJECT DESCRIPTION:

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE REMOVAL AND REPLACEMENT OF BRIDGE NO. 102 AND BRIDGE NO. 2 WITH TEMPORARY BRIDGES, CONSTRUCTION OF A PEDESTRIAN BRIDGE ALONG MAIN STREET, CONSTRUCTION OF APPROACH RETAINING WALLS, ROADWAY APPROACHES TO NEW BRIDGES, NEW SIDEWALK, NEW DRAINAGE, SIGNAGE, STRIPING, AND OTHER ROADWAY RELATED ITEMS.

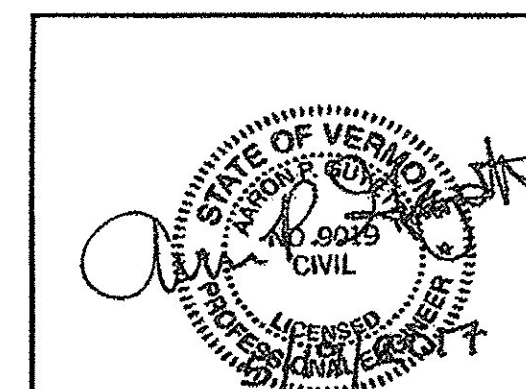
LENGTH OF PROJECT:

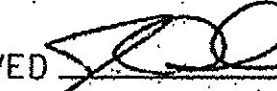
MAIN STREET (TH #2): 325.00 FT
MERCHANTS ROW (TH#8): 260.00 FT



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL I	
SURVEYED BY :	VHB
SURVEYED DATE :	MAY 2013
DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83



DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED 	DATE May 25, 2017
DIRECTOR OF PROJECT DELIVERY	
APPROVED 	DATE 5/22/17
PROJECT MANAGER : JOEL PERRIGO	
PROJECT NAME : MIDDLEBURY	
PROJECT NUMBER : EWP3 (1)	
SHEET 1 OF 54 SHEETS	

INDEX OF SHEETS

1	TITLE SHEET
2	INDEX OF SHEETS
3	NOTES SHEET
4	CONVENTIONAL SYMBOLOGY LEGEND SHEET
5-7	TYPICAL SECTION SHEETS
8	DETAILS SHEET
9	PED. BRIDGE & WATERLINE ABUTMENT DETAILS
10	PEDESTRIAN BRIDGE DETAILS
11	MABEY BRIDGE DETAIL SHEET
12	MABEY BRIDGE FOUNDATIONS DETAILS
13-14	QUANTITY SUMMARY SHEETS
15-17	TIE SHEETS
18	ALIGNMENT LAYOUT SHEET
19	MAIN STREET LAYOUT PLAN SHEET
20	MERCHANTS ROW LAYOUT PLAN SHEET
21-23	PROFILE SHEETS
24	MAIN STREET SIGNS PLAN SHEET
25	MERCHANTS ROW SIGNS PLAN SHEET
26-28	TRAFFIC SIGN SUMMARY SHEETS
29-30	TCP - NOTES SHEETS
31-32	TCP - SIGN SUMMARY SHEETS
33	TCP - WORKZONE LIMITS
34	TCP - PHASE 1A
35	TCP - PHASE 1B
36	TCP - PHASE 2A
37	TCP - PHASE 2B
38	TCP - PHASE 3A
39	TCP - PHASE 3B
40	TCP - PHASE 3 - MAIN ST VEHICLE DETOUR
41	TCP - PHASE 3 - MAIN ST - PED DETOUR
42	TCP - PHASE 4A
43	TCP - PHASE 4B
44	TCP - PHASE 4C
45	TCP - PHASE 4 - VEHICLE DETOUR
46	TCP - PHASE 4 - PEDESTRIAN DETOUR
47	TCP - S. PLEASANT STREET DETOUR
48-54	CROSS SECTIONS

VAOT STANDARDS

A-76	03-03-2003
B-12	06-01-1994
B-71	07-08-2005
C-2A	10-14-2005
C-2B	10-14-2005
C-3A	3-10-2008
C-3B	3-10-2008
C-10	2-11-2008
D-8	1-3-2000
D-9	6-1-1994
D-11	6-1-1994
D-15	6-1-1994
D-16	6-1-1994
E-121	8-8-1995
E-136B	8-8-1995
E-191	2-1-1999
E-193	8-18-1995
T-1	4-25-2016
T-2	4-25-2016
T-10	8-6-2012
T-17	8-6-2012
T-28	8-6-2012
T-30	8-6-2012
T-35	8-6-2012
T-36	8-6-2012
T-42	4-9-2014
T-44	4-9-2014
T-45	1-2-2013
T-56	10-26-2015
T-70	04-25-2016
T-92	10-26-2015
T-93	10-26-2015

HISTORICAL LIGHTING RECORD DRAWINGS (FOR REFERENCE)

1R	PROPOSED GENERAL PLAN	12-6-2004
2R	DETAILS AND NOTES	12-6-2004
3R	DETAILS AND NOTES W/ESC	12-6-2004



PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(1)	
FILE NAME: z17b016_IND.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: B.M. ROBERTS
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETRICK
INDEX OF SHEETS	SHEET 2 OF 54

PROJECT NOTES

GENERAL

- 1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS, AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION, AND ITS LATEST REVISIONS.
- 2. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.
- 3. FOR INFORMATION REGARDING UTILITIES, SEE THE PROJECT SPECIAL PROVISIONS.
- 4. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING THE WORK. SOME UTILITIES HAVE BEEN RELOCATED DURING THE PREPARATION OF THESE PLANS AND THE CONTRACTOR WILL NEED TO COORDINATE WITH ALL UTILITY OWNERS TO CONFIRM ACUTAL LOCATIONS PRIOR TO CONSTRUCTION.
- 5. THE CONTRACTOR SHALL VERIFY ALL EXISTING ELEVATIONS AND NOTIFY THE RESIDENT ENGINEER OF ANY DISCREPANCIES.
- 6. ALL WORK SHALL BE COMPLETED WITH THE TOWN AND RAILROAD ROWS.

TRAFFIC CONTROL

- 7. THE TRAFFIC CONTROL PLANS (TCP) PROVIDED IN THIS PLANSET ALONG WITH THE TRANSPORTATION MANAGEMENT PLAN (TMP) ARE THE VTRANS APPROVED TRAFFIC CONTROL PLANS AND SHALL BE USED BY THE CONTRACTOR FOR THEIR TRAFFIC CONTROL FOR ALL STAGES OF CONSTRUCTION.
- 8. ALL SIGNS SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE “MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES” (MUTCD) AND THE “STANDARD HIGHWAY SIGNS AND MARKINGS” BOOK (SHSM) PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION (FHWA).
- 9. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL TEMPORARY ON AND OFF PROJECT SIGNS AND TRAFFIC CONTROL DEVICES AS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK WILL BE INCLUDED IN ITEM 641.10, “TRAFFIC CONTROL”.
- 10. FULL ACCESS TO ALL DRIVES WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES, EXCPET AS IDENTIFED IN THE CONTRACT DOCUMENTS.
- 11. AS PART OF THIS PROJECT, PRINTERS ALLEY SHALL BE CLOSED TO VEHICULAR TRAFFIC. PRINTERS ALLEY SHALL REMAIN OPEN TO PEDESTRIAN TRAFFIC FOR THE DURATION OF THE PROJECT. DURING PERIODS OF TIME WHEN CONSTRUCTION ACTIVITES WILL REQUIRE THE CLOSURE OF PRINTERS ALLEY TO PEDESTRIANS, SHORT TERM CLOSURES WILL BE PERMITTED WITH PRIOR COORDINATION. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, THE TOWN OF MIDDLEBURY PROJECT LIAISON, AND THE NATIONAL BANK OF MIDDLEBURY A MINIMUM OF 24-HOURS IN ADVANCE OF CLOSING PRINTERS ALLEY TO PEDESTRIANS.
- 12. THE BATTELL BLOCK ACCESS DRIVE SHALL REMAIN OPEN FOR THE DURATION OF CONSTRUCTION. SHORT TERM CLOSURES UP TO 4 HOURS WILL BE PERMITTED WITH PRIOR COORDINATION. DURING PERIODS WHEN EQUIPMENT OR CONSTRUCTION ACTIVITIES REQUIRE THE CLOSURE OF THE BATTELL BLOCK DRIVE, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, THE TOWN OF MIDDLEBURY PROJECT LIAISON, AND THE MANAGER OF THE BATTELL BLOCK A MINIMUM OF 24-HOURS IN ADVANCE OF THE CLOSURE.
- 13. UNLESS OTHERWISE COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR TEMPORARY TRAFFIC CONTROL WILL BE INCLUDED IN ITEM 641.10, “TRAFFIC CONTROL”.

REMOVAL OF STRUCTURES

- 14. THE ENTIRE SUPERSTRUCTURE AND PIERS OF THE EXISTING MAIN STREET AND MERCHANTS ROW BRIDGES SHALL BE DEMOLISHED AND REMOVED FROM THE PROJECT SITE. MATERIALS REMOVED OR DEMOLISHED SHALL BE DISPOSED OF AT AN APPROVED LOCATION. COSTS FOR DEMOLITION AND REMOVAL OF MATERIALS SHALL BE PAID FOR UNDER ITEM 529.20, “PARTIAL REMOVAL OF STRUCTURE”.
- 15. EXISTING PIERS SHALL BE REMOVED TO THE ELEVATION OF THE EXISTING GROUND AT EACH PIER LOCATION.

- 16. THE EXISTING ABUTMENTS SHALL NOT BE REMOVED OR MODIFIED EXCEPT THE ASHLAR BLOCKS FROM THE EXISTIG BRIDGE ABUTMENTS SHALL ONLY BE REMOVED TO THE EXENT WHICH FACILITATES CONSTRUCTION OF THE TEMPORARY BRDIGE ABUTMENTS. ASHLAR BLOCKS THAT ARE REMOVED SHALL BE PROTECTED FROM DAMAGE AND SHALL BE STOCKPILED AT THE TOWN OF MIDDLEBURY STUMP DUMP FOR FUTURE USE. COSTS FOR REMOVAL, PROTECTION, TRANSPORTING, AND STOCKPILING OF ASHLAR BLOCKS WILL BE INCLUDED IN ITEM 529.20, “PARTIAL REMOVAL OF STRUCTURE”.

TEMPORARY BRIDGES

- 17. TEMPORARY BRIDGES SHALL BE INSTALLED ON MAIN STREET AND MERCHANTS ROW AS IDENTIFIED IN THE CONTRACT DOCUMENTS. VTRANS WILL SUPPLY THE TEMPORARY BRIDGES FOR CONTRACTOR USE PER THE SPECIAL PROVISIONS.
- 18. PAYMENT FOR TEMPORARY BRIDGES WILL BE MADE UNDER THE LUMP SUM ITEMS IDENTIFIED IN THE CONTRACT DOCUMENTS. THE LUMP SUM ITEMS WILL INCLUDE ALL ITEMS IDENTIFIED IN SECTION 528, WITH THE EXCEPTION OF PAVEMENT MARKINGS, WHICH WILL BE PAID FOR SEPERATELY UNDER THEIR RESPECTIVE ITEMS IN THE CONTRACT.
- 19. TIMBER USED IN THE CONSTRUCTION OF THE TEMPORARY PEDESTRIAN BRIDGE SHALL MEET THE REQUIREMENTS OF SECTION 709.01 OF THE SPECIFICATIONS. ALL TIMBER SHALL BE NO. GRADE OR BETTER AND SHALL BE TREATED.

DRAINAGE

- 20. EXISTING DRAINAGE INLET STRUCTURES SHALL BE ADJUSTED SO THEIR RIM ELEVATIONS ARE AT FINISHED GRADE AS SHOWN ON THE PLANS. IF THE DRAINAGE STRUCTURE IS TO BE MODIFIED UNDER ANOTHER ITEM, THE ADJUSTMENT OF THE RIM ELEVATION WILL BE INCLUDED IN THE COST FOR THAT OTHER ITEM. WHEN NO OTHER MODIFICATIONS TO DRAINAGE INLET STRUCTURES ARE PROPOSED, PAYMENT FOR THIS WORK WILL BE INCLUDED UNDER ITEM 640.40, “CHANGING ELEVATION OF DROP INLETS, CATCHBASINS, OR MAHHOLES”.
- 21. PROPOSED DRAINAGE INFRASTRUCTURE INCLUDES NEW PENETRATIONS INTO EXISTING DRAINAGE INLET STRUCTURES. AT STRUCTURES WHERE NEW PENETRATIONS ARE TO BE CONSTRUCTED, THE WORK FOR CREATING THE NEW PENETRATION AS WELL AS ANY WORK REQUIRED FOR CHANGING THE ELEVATION OF THE STRUCTURE RIM WILL BE PAID FOR UNDER ITEM 604.415, “REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS II”.



PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(I)	
FILE NAME: z17b016_IND.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: J.D. KEENER
DESIGNED BY: A.P. GUYETTE	CHECKED BY: S.E. BURBANK
NOTES SHEET	SHEET 3 OF 54

GENERAL INFORMATION

SYMBOLGY LEGEND NOTE

THE SYMBOLGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLGY. THE SYMBOLGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R. O. W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
▣	BNDNS	BOUND TO BE SET
●	IPNS	IRON PIN SET
◎	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
⌘	APL	BOUND APPARENT LOCATION
▣	BM	BENCHMARK
▣	BND	BOUND
▣	CB	CATCH BASIN
⊕	COMB	COMBINATION POLE
▣	DITHR	DROP INLET THROATED DNC
⊕	EL	ELECTRIC POWER POLE
⊙	FPOLE	FLAGPOLE
⊙	GASFIL	GAS FILLER
⊙	GP	GUIDE POST
⊗	GSO	GAS SHUT OFF
⊙	GUY	GUY POLE
⊙	GUYW	GUY WIRE
⊗	GV	GATE VALUE
⊕	H	TREE HARDWOOD
△	HCTRL	CONTROL HORIZONTAL
△	HVCTRL	CONTROL HORIZ. & VERTICAL
◇	HYD	HYDRANT
⊙	IP	IRON PIN
⊙	IPIPE	IRON PIPE
⊕	LI	LIGHT - STREET OR YARD
⊕	MB	MAILBOX
⊙	MH	MANHOLE (MH)
▣	MM	MILE MARKER
⊙	PM	PARKING METER
▣	PMK	PROJECT MARKER
POST	POST	POST STONE/WOOD
RRSIG	RRSIG	RAILROAD SIGNAL
RRSL	RRSL	RAILROAD SWITCH LEVER
S	S	TREE SOFTWOOD
SAT	SAT	SATELLITE DISH
SHRUB	SHRUB	SHRUB
SIGN	SIGN	SIGN
STUMP	STUMP	STUMP
TEL	TEL	TELEPHONE POLE
TIE	TIE	TIE
TSIGN	TSIGN	SIGN W/DOUBLE POST
VCTRL	VCTRL	CONTROL VERTICAL
WELL	WELL	WELL
WSO	WSO	WATER SHUT OFF
DMH (P)	DMH (P)	PROPOSED DRAINAGE MANHOLE

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLGY

UNDERGROUND UTILITIES

— UT —	UTILITY (GENERIC-UNKNOWN)
— UE —	TELEPHONE
— UC —	ELECTRIC
— UEC —	CABLE (TV)
— UEC —	ELECTRIC+CABLE
— UET —	ELECTRIC+TELEPHONE
— UCT —	CABLE+TELEPHONE
— UECT —	ELECTRIC+CABLE+TELEP.
— G —	GAS LINE
— W —	WATER LINE
— S —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

— T —	UTILITY (GENERIC-UNKNOWN)
— E —	TELEPHONE
— C —	ELECTRIC
— EC —	CABLE (TV)
— EC —	ELECTRIC+CABLE
— ET —	ELECTRIC+TELEPHONE
— AER E&T —	ELECTRIC+TELEPHONE
— CT —	CABLE+TELEPHONE
— ECT —	ELECTRIC+CABLE+TELEP.
— — —	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLGY

PROJECT DESIGN & LAYOUT SYMBOLGY

— — — CZ — — —	CLEAR ZONE
— — — — —	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

△ — △ — △ — △	TOP OF CUT SLOPE
○ — ○ — ○ — ○	TOE OF FILL SLOPE
⊗ ⊗ ⊗ ⊗ ⊗ ⊗	STONE FILL
— — — — —	BOTTOM OF DITCH
— — — — —	CULVERT PROPOSED
— — — — —	STRUCTURE SUBSURFACE
PDF — PDF —	PROJECT DEMARCATION FENCE
BF — — — — BF — — — —	BARRIER FENCE
XXXXXXXXXXXXXXXXXXXX	TREE PROTECTION ZONE (TPZ)
//////////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLGY

BOUNDARY LINES

— TOWN LINE —	TOWN BOUNDARY LINE
— COUNTY LINE —	COUNTY BOUNDARY LINE
— STATE LINE —	STATE BOUNDARY LINE
— — — — —	PROPOSED STATE R.O.W. (LIMITED ACCESS)
— — — — —	PROPOSED STATE R.O.W.
— — — — —	STATE ROW (LIMITED ACCESS)
— — — — —	STATE ROW
— — — — —	TOWN ROW
— — — — —	PERMANENT EASEMENT LINE (P)
— — — — —	TEMPORARY EASEMENT LINE (T)
— — — — —	SURVEY LINE
P — — — — — P	PROPERTY LINE (P/L)
SR — — — — — SR	SLOPE RIGHTS
6f — — — — — 6f	6F PROPERTY BOUNDARY
4f — — — — — 4f	4F PROPERTY BOUNDARY
HAZ — — — — — HAZ	HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLGY

EPSC MEASURES

ONNOONNOONNO	FILTER CURTAIN
— — — — —	SILT FENCE
— — — — —	SILT FENCE WOVEN WIRE
— — — — —	CHECK DAM
— — — — —	DISTURBED AREAS REQUIRING RE-VEGETATION
— — — — —	EROSION MATTING

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLGY

ENVIRONMENTAL RESOURCES

— — — — —	WETLAND BOUNDARY
— — — — —	RIPARIAN BUFFER ZONE
— — — — —	WETLAND BUFFER ZONE
— — — — —	SOIL TYPE BOUNDARY
— — — — —	THREATENED & ENDANGERED SPECIES
HAZ — — — — — HAZ	HAZARDOUS WASTE AREA
AG — — — — —	AGRICULTURAL LAND
HABITAT — — — — —	FISH & WILDLIFE HABITAT
FLOOD PLAIN — — — — —	FLOOD PLAIN
OHW — — — — —	ORDINARY HIGH WATER (OHW)
— — — — —	STORM WATER
— — — — —	USDA FOREST SERVICE LANDS
— — — — —	WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

— ARCH — — — — —	ARCHEOLOGICAL BOUNDARY
— HISTORIC DIST — — — — —	HISTORIC DISTRICT BOUNDARY
— HISTORIC — — — — —	HISTORIC AREA
(H)	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLGY

EXISTING FEATURES

— — — — —	ROAD EDGE PAVEMENT
— — — — —	ROAD EDGE GRAVEL
— — — — —	DRIVEWAY EDGE
— — — — —	DITCH
— — — — —	FOUNDATION
x — — — — — x	FENCE (EXISTING)
□ — — — — — □	FENCE WOOD POST
○ — — — — — ○	FENCE STEEL POST
— — — — —	GARDEN
— — — — —	ROAD GUARDRAIL
— — — — —	RAILROAD TRACKS
— — — — —	CULVERT (EXISTING)
— — — — —	STONE WALL
— — — — —	WALL
— — — — —	WOOD LINE
— — — — —	BRUSH LINE
— — — — —	HEDGE
— — — — —	BODY OF WATER EDGE
— — — — —	LEDGE EXPOSED

PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW3(I)
FILE NAME:	z17b016_legend.dgn
PLOT DATE:	5/19/2017
PROJECT LEADER:	A.P. GUYETTE
DRAWN BY:	VTRANS
DESIGNED BY:	VTRANS
CHECKED BY:	E.P. DETRICK
CONVENTIONAL SYMBOLGY LEGEND SHEET	SHEET 4 OF 54

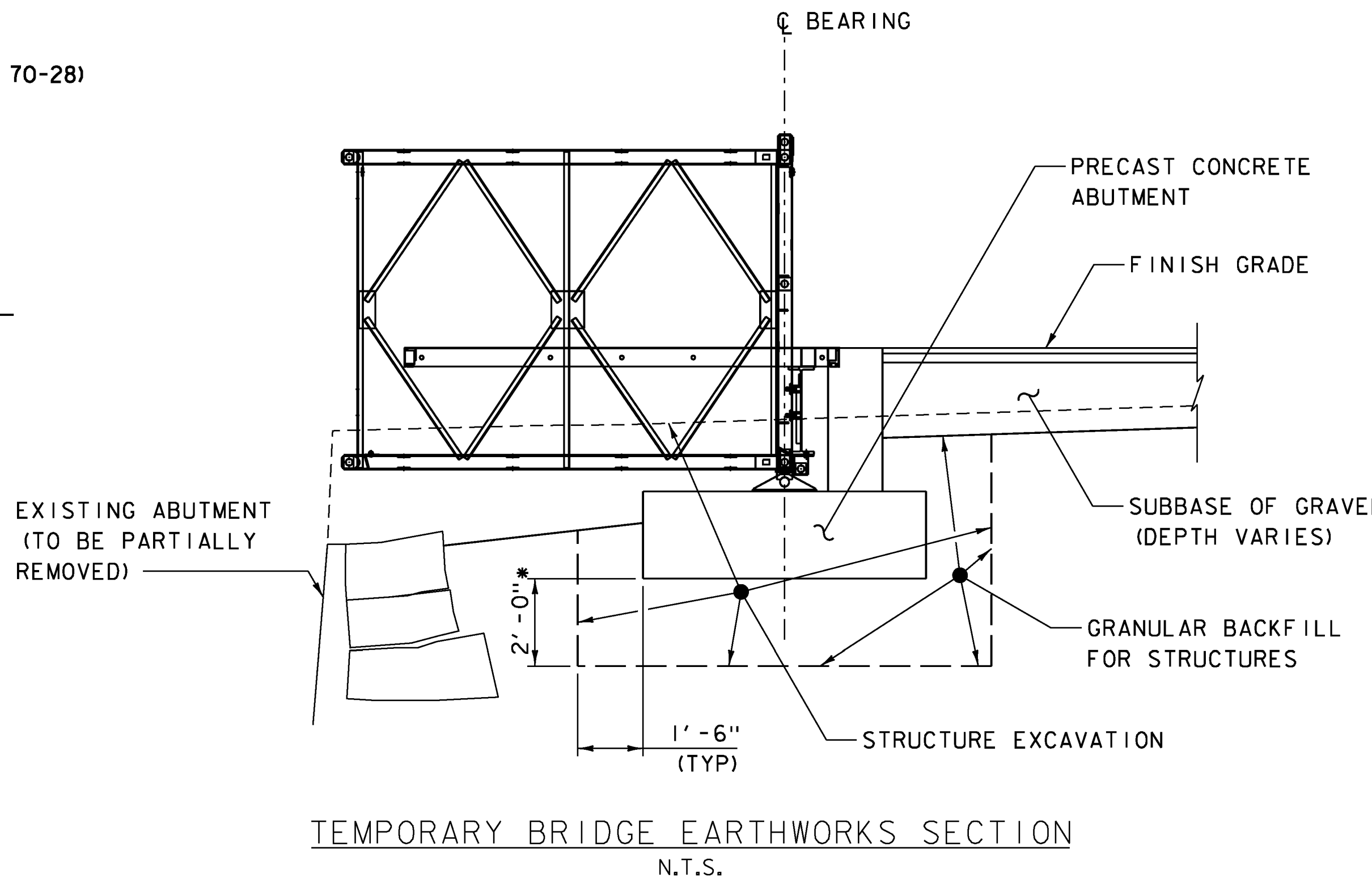
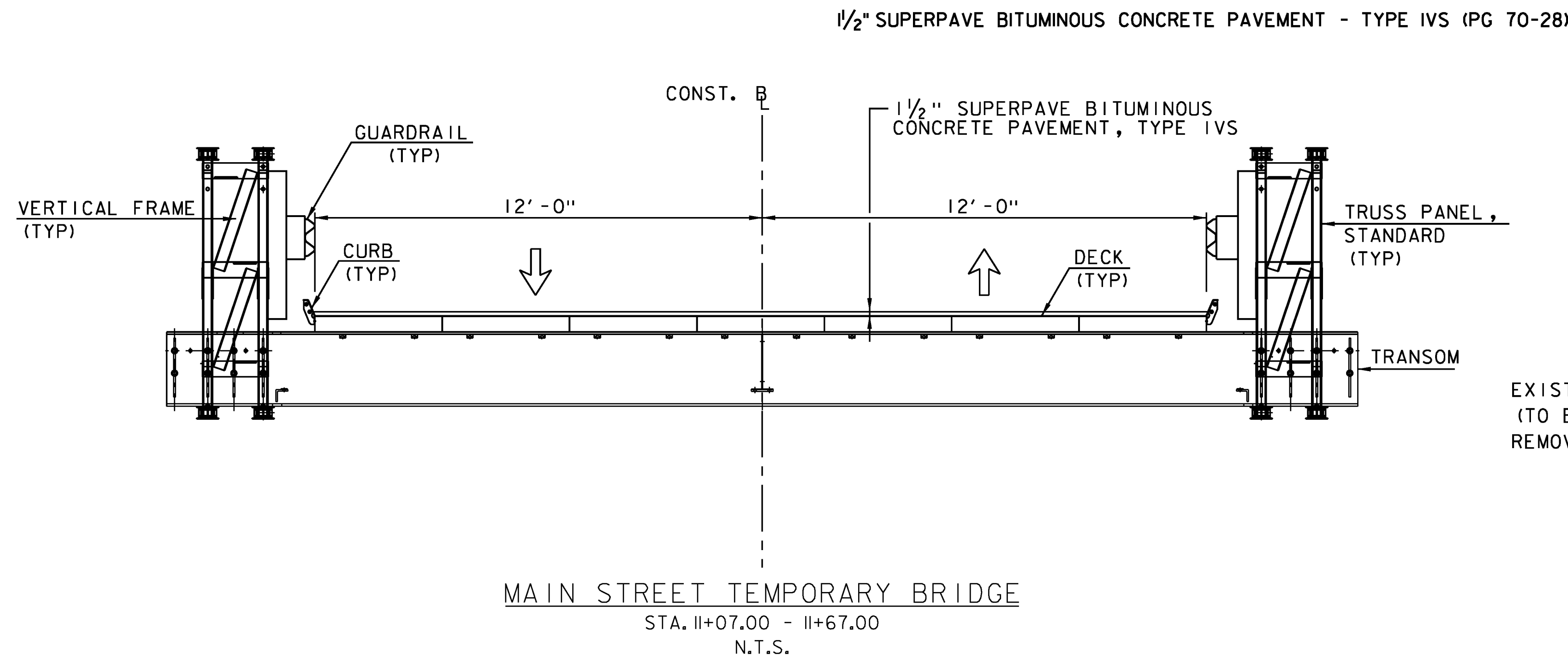
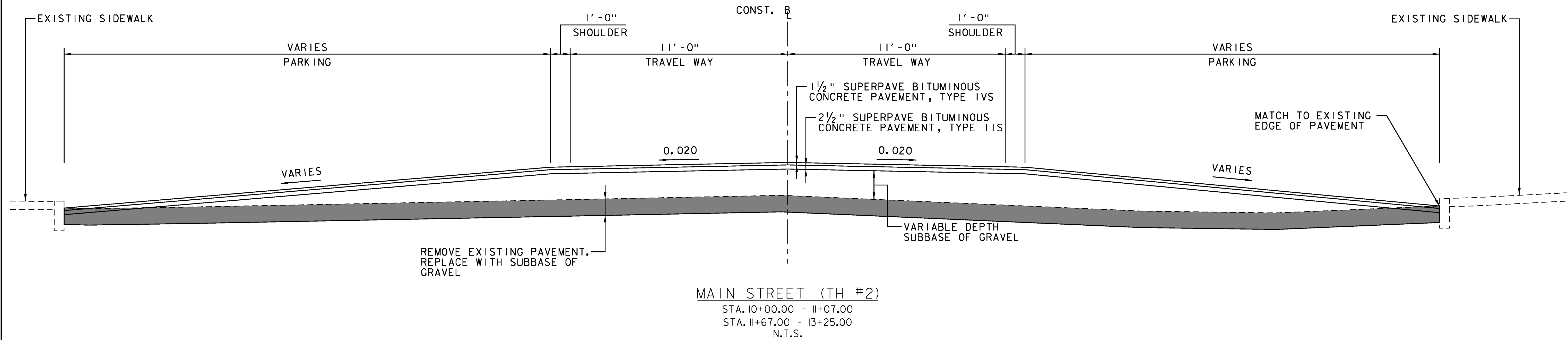




MATERIAL TOLERANCES	
MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT (FULL DEPTH)	± 1/4" (TOTAL THICKNESS)
SUBBASE	± 1"
SAND BORROW	± 1"

# TYPICAL SECTIONS

1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT - TYPE IVS (PG 70-28)  
2 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT - TYPE IIS (PG 70-28)  
SUBBASE OF GRAVEL



## NOTES

- SIDEWALK RAMP DETECTABLE WARNING SURFACES SHALL BE TRUNCATED DOME DETECTABLE WARNING CAST IRON PLATES FROM THE VTRANS APPROVED PRODUCTS LIST.
- SAWCUT OF EXISTING PAVEMENT, CONCRETE BASE, OR SIDEWALK SHALL BE INCIDENTAL TO TEMPORARY BRIDGE ITEMS (TYP).
- TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT AN APPLICATION RATE OF 0.040 GAL/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AND ON COLD-PLANED BITMINOUS SURFACES AS DIRECTED BY THE ENGINEER.

* IF MATERIAL ENCOUNTERED IS DETERMINED TO BE UNSUITABLE BY THE ENGINEER.

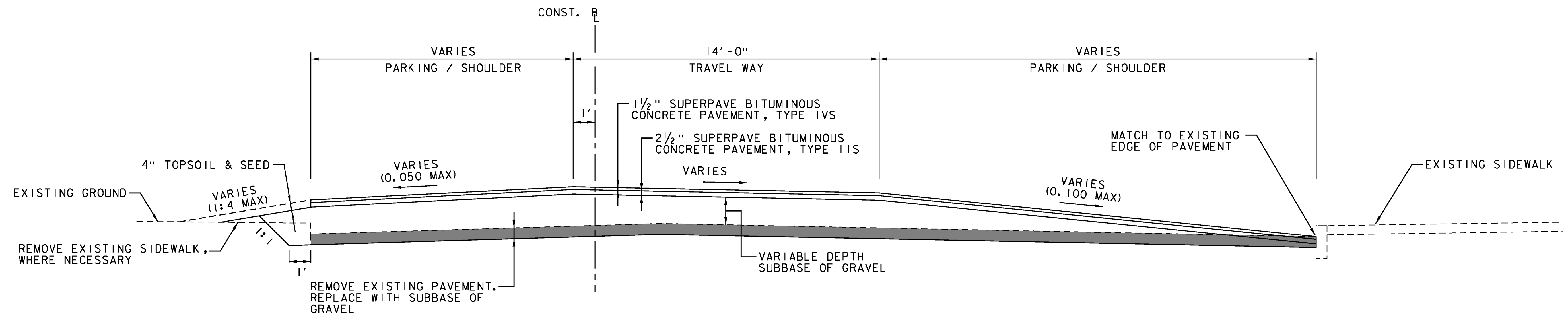


PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW3(1)
FILE NAME:	z17b016_TYP.dgn
PROJECT LEADER:	A.P. GUYETTE
DESIGNED BY:	D.M. PECK
TYPICAL SECTIONS SHEET 1	
PLOT DATE:	5/19/2017
DRAWN BY:	D.M. PECK
CHECKED BY:	E.P. DETRICK
SHEET	5 OF 54

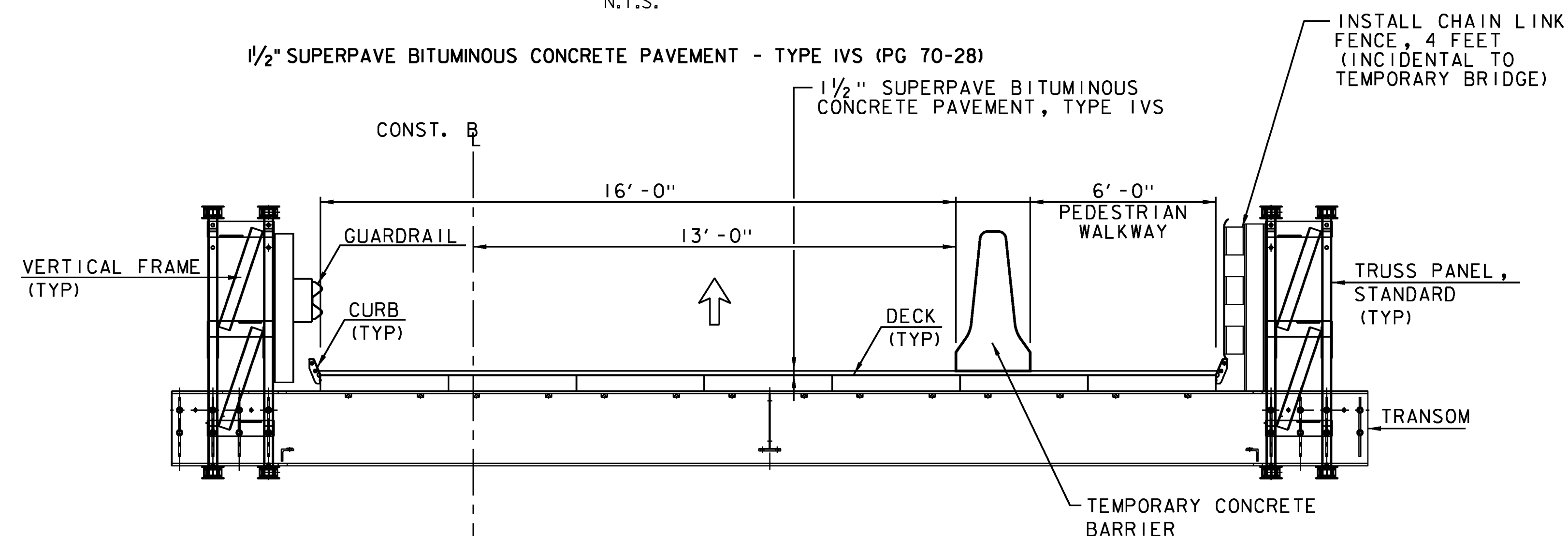


# TYPICAL SECTIONS

1 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT - TYPE IVS (PG 70-28)  
2 1/2" SUPERPAVE BITUMINOUS CONCRETE PAVEMENT - TYPE IIS (PG 70-28)  
SUBBASE OF GRAVEL



MERCHANTS ROW (TH #8)  
STA. 20+50.00 - 21+44.00  
STA. 22+04.00 - 23+10.00  
N.T.S.

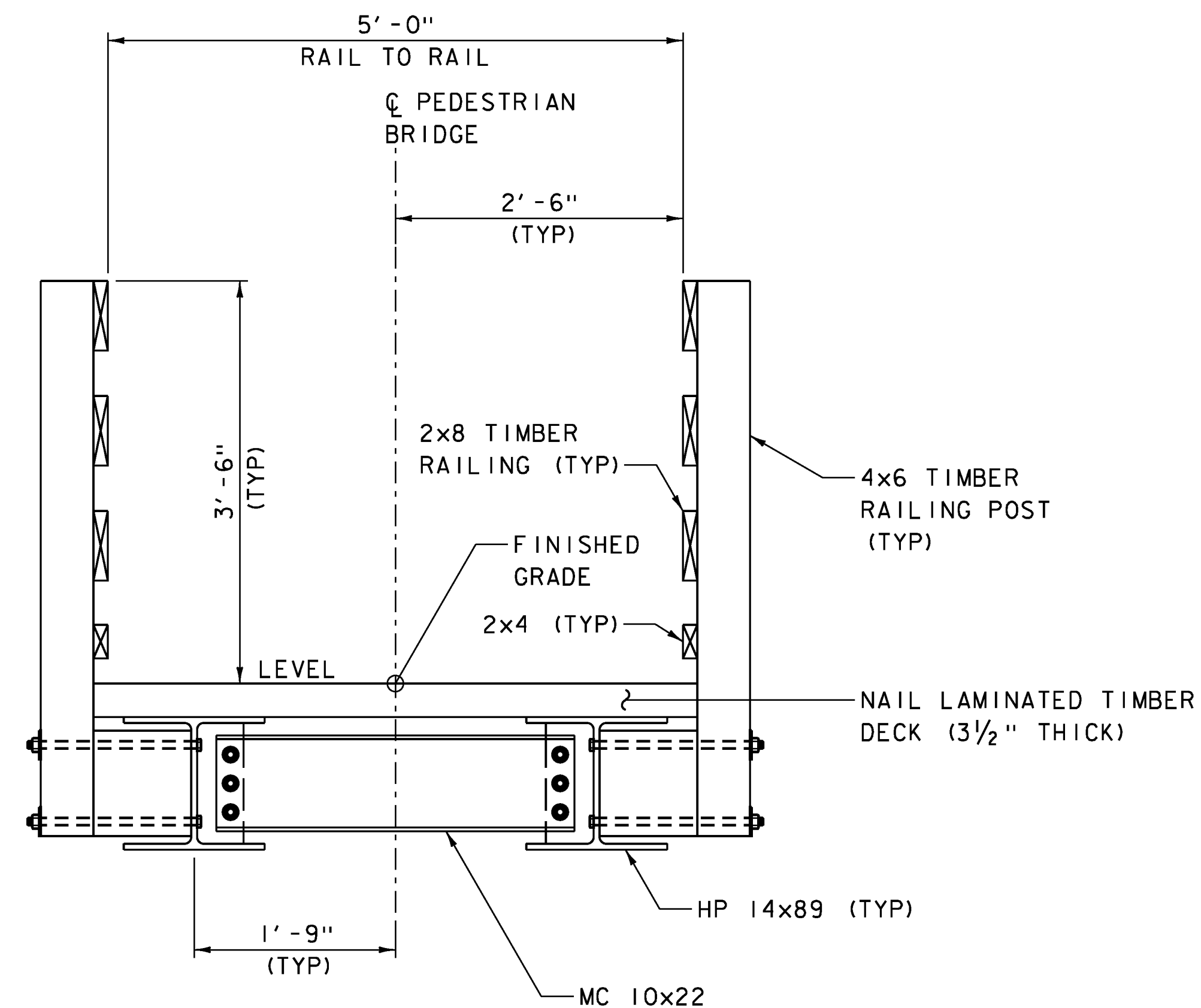


MERCHANTS ROW TEMPORARY BRIDGE  
STA. 21+44.00 - 22+04.00  
N.T.S.

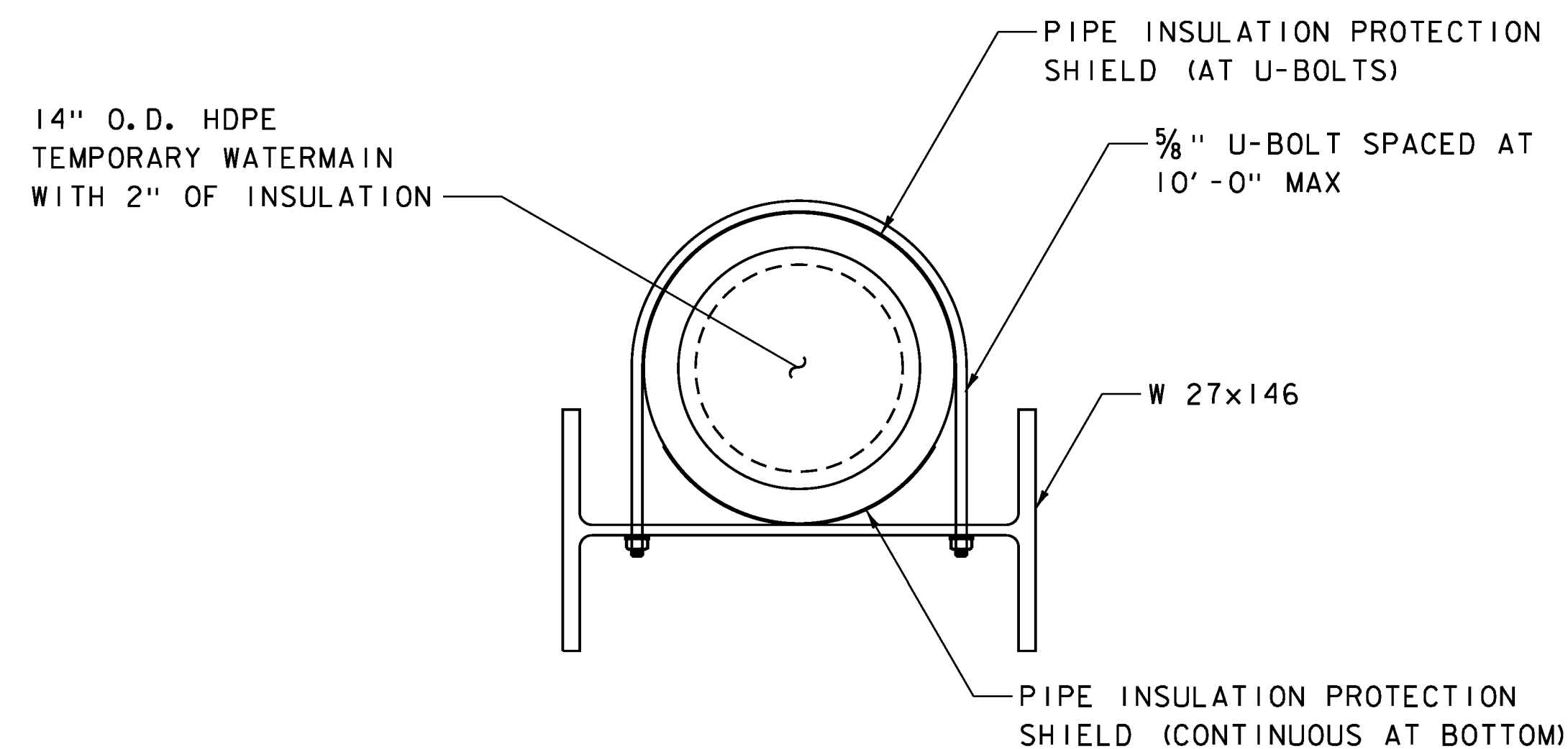
PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EWP3(1)
FILE NAME:	z17b016_TYP.dgn
PROJECT LEADER:	A.P. GUYETTE
DESIGNED BY:	D.M. PECK
TYPICAL SECTIONS SHEET 2	
PLOT DATE:	5/19/2017
DRAWN BY:	D.M. PECK
CHECKED BY:	E.P. DETRICK
SHEET	6 OF 54



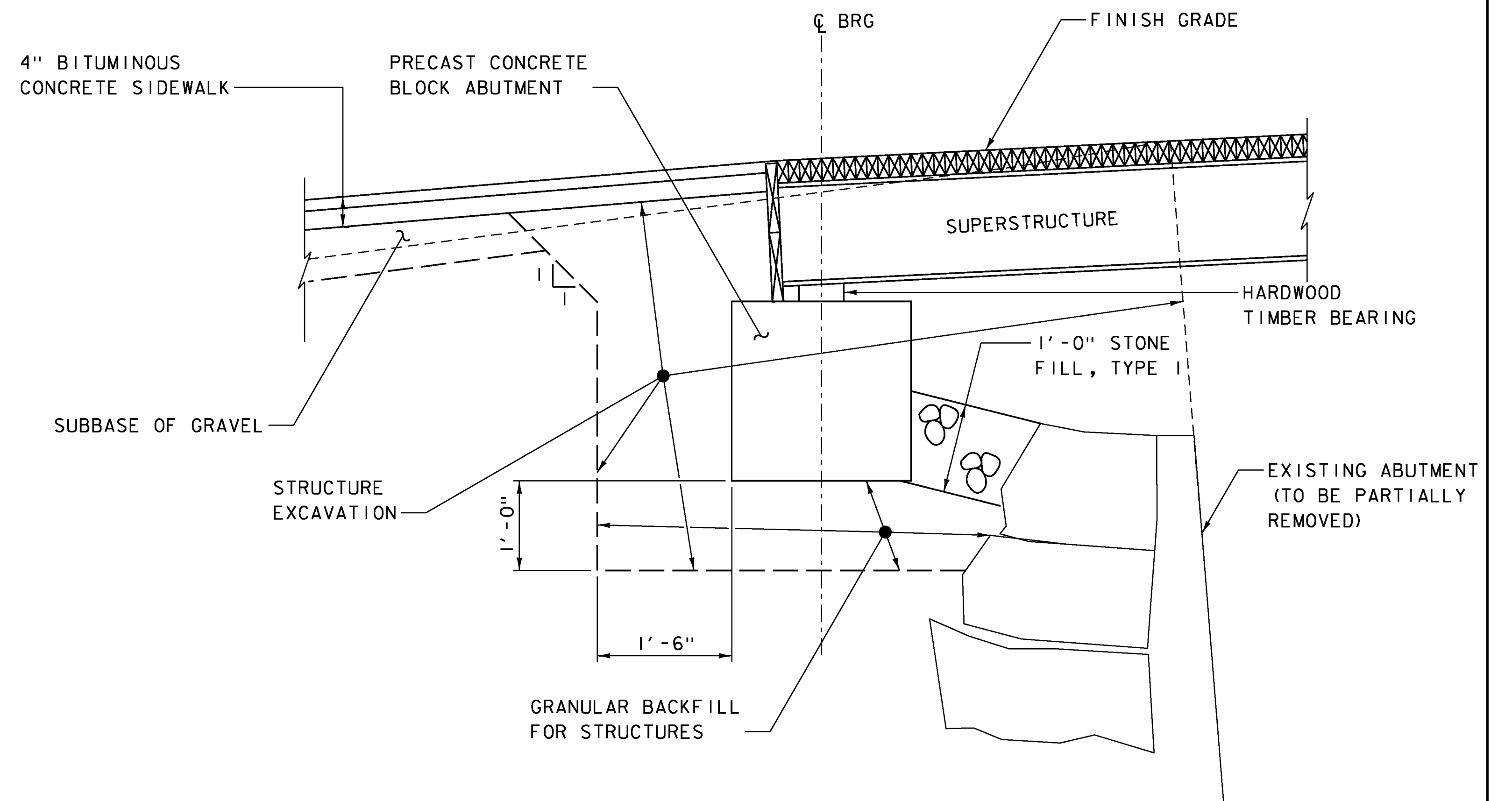




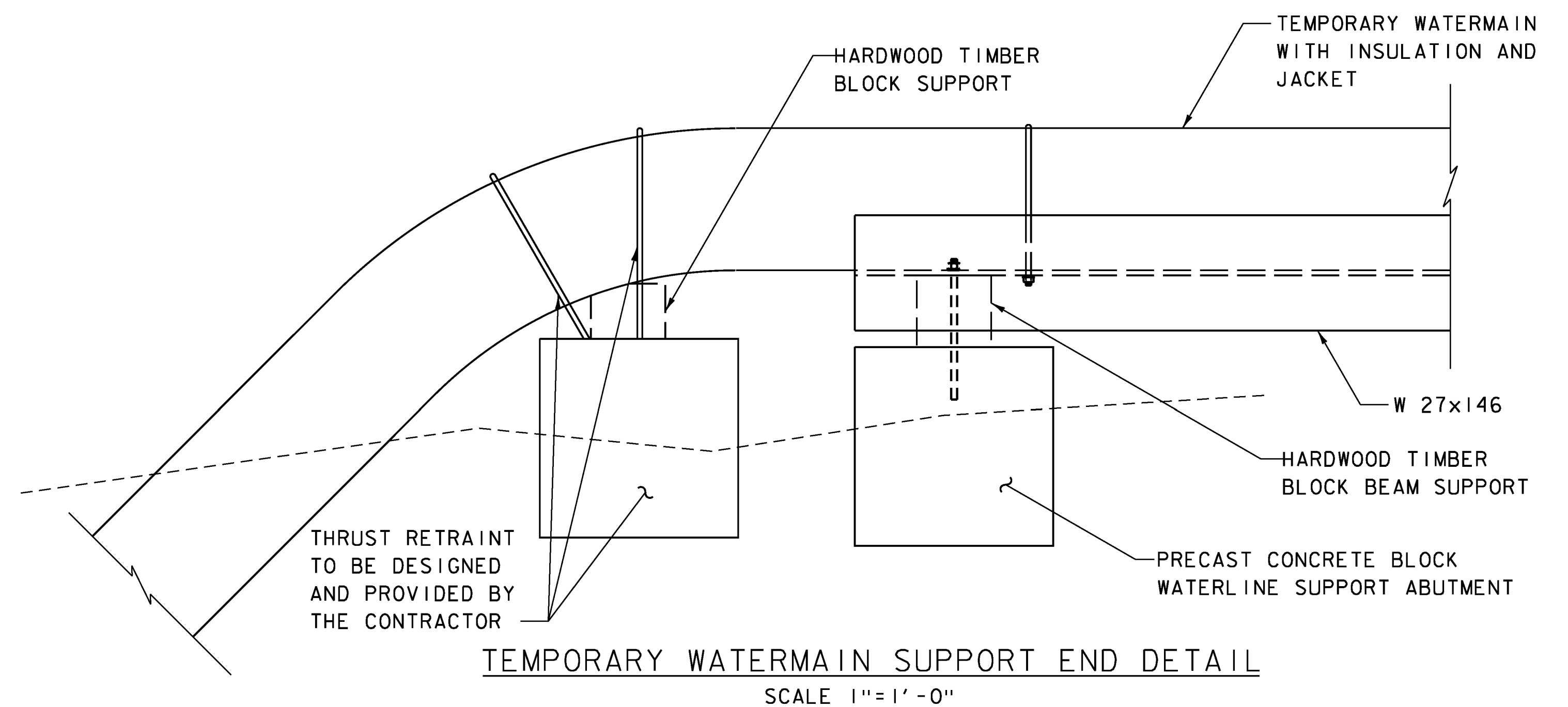
TYPICAL TEMPORARY PEDESTRIAN BRIDGE SECTION  
SCALE 1"=1'-0"



TYPICAL TEMPORARY WATERMAIN SUPPORT SECTION  
SCALE 1 1/2"=1'-0"



TEMPORARY PEDESTRIAN BRIDGE  
ABUTMENT EARTHWORKS TYPICAL SECTION  
SCALE 1"=1'-0"

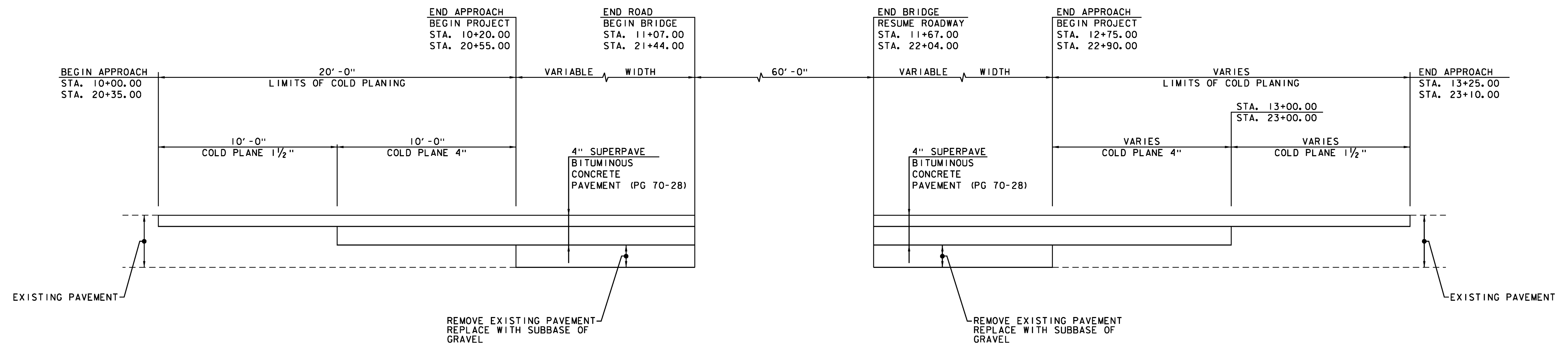


TEMPORARY WATERMAIN SUPPORT END DETAIL  
SCALE 1"=1'-0"



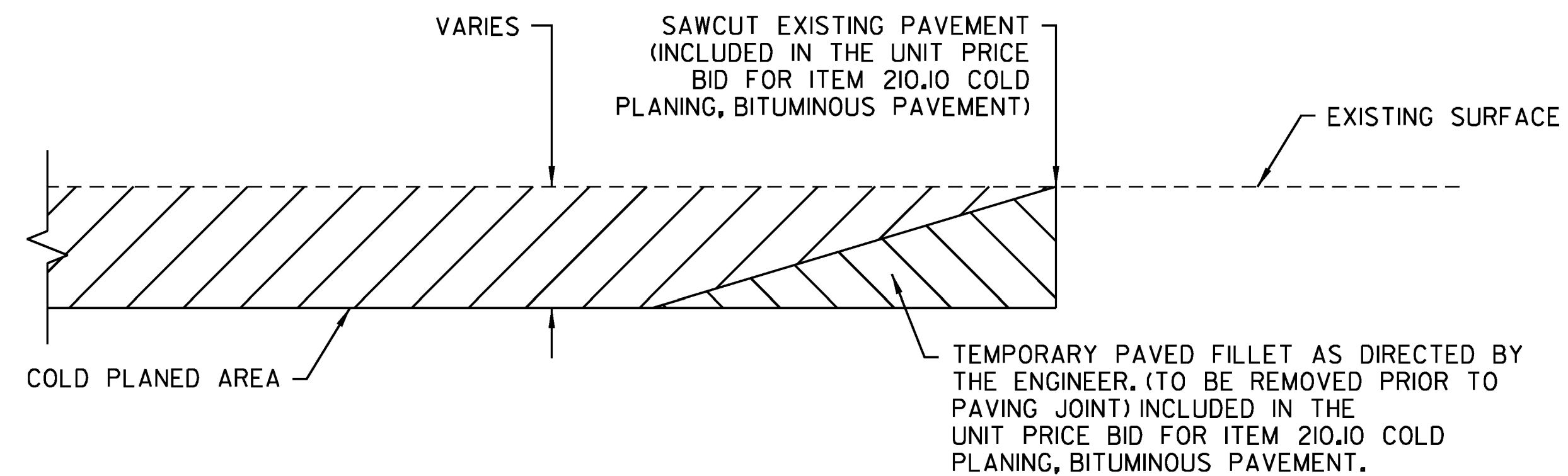
PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW3(1)
FILE NAME:	z17b016_TYP_PedBridge.dgn
PROJECT LEADER:	A.P. GUYETTE
DESIGNED BY:	R.H. BARNES
TYPICAL SECTIONS SHEET 3	
PLOT DATE:	5/19/2017
DRAWN BY:	R.H. BARNES
CHECKED BY:	S.E. BURBANK
SHEET	7 OF 54





NOTE:  
EMULSIFIED ASPHALT TO BE APPLIED AT A RATE  
OF 0.040 GAL/SY BETWEEN LIFTS OF BITUMINOUS  
CONCRETE PAVEMENT.

# PAVEMENT TRANSITION DETAIL MAIN STREET MERCHANTS ROW N.T.S.

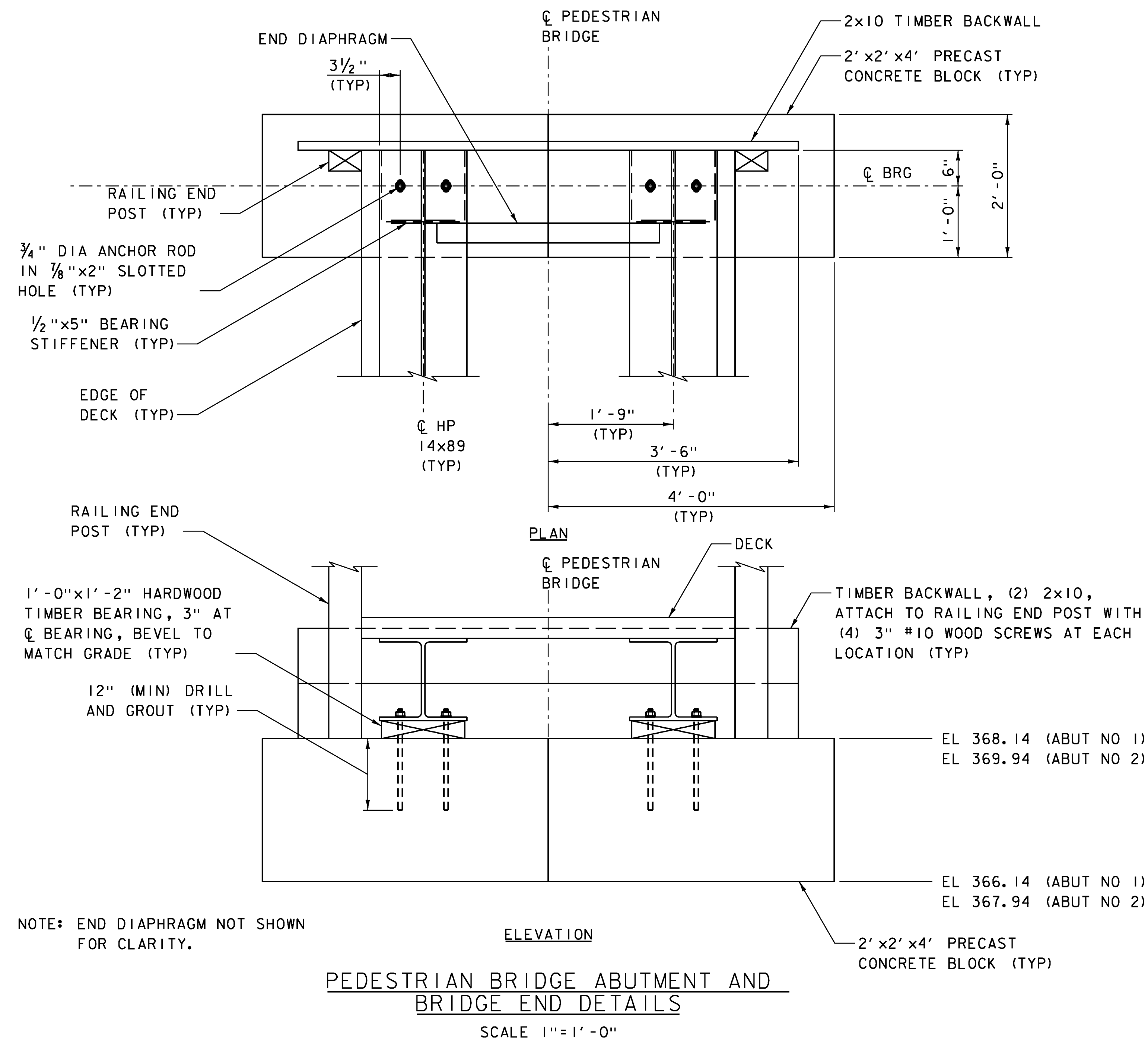


# VERTICAL COLD PLANE JOINTS DETAIL N.T.S.

PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW P3(1)
FILE NAME:	z17b016_DET.dgn
PROJECT LEADER:	A.P. GUYETTE
DESIGNED BY:	D.M. PECK
DETAILS SHEET	
PLOT DATE:	5/19/2017
DRAWN BY:	B.M. ROBERTS
CHECKED BY:	E.P. DETRICK
SHEET	8 OF 54

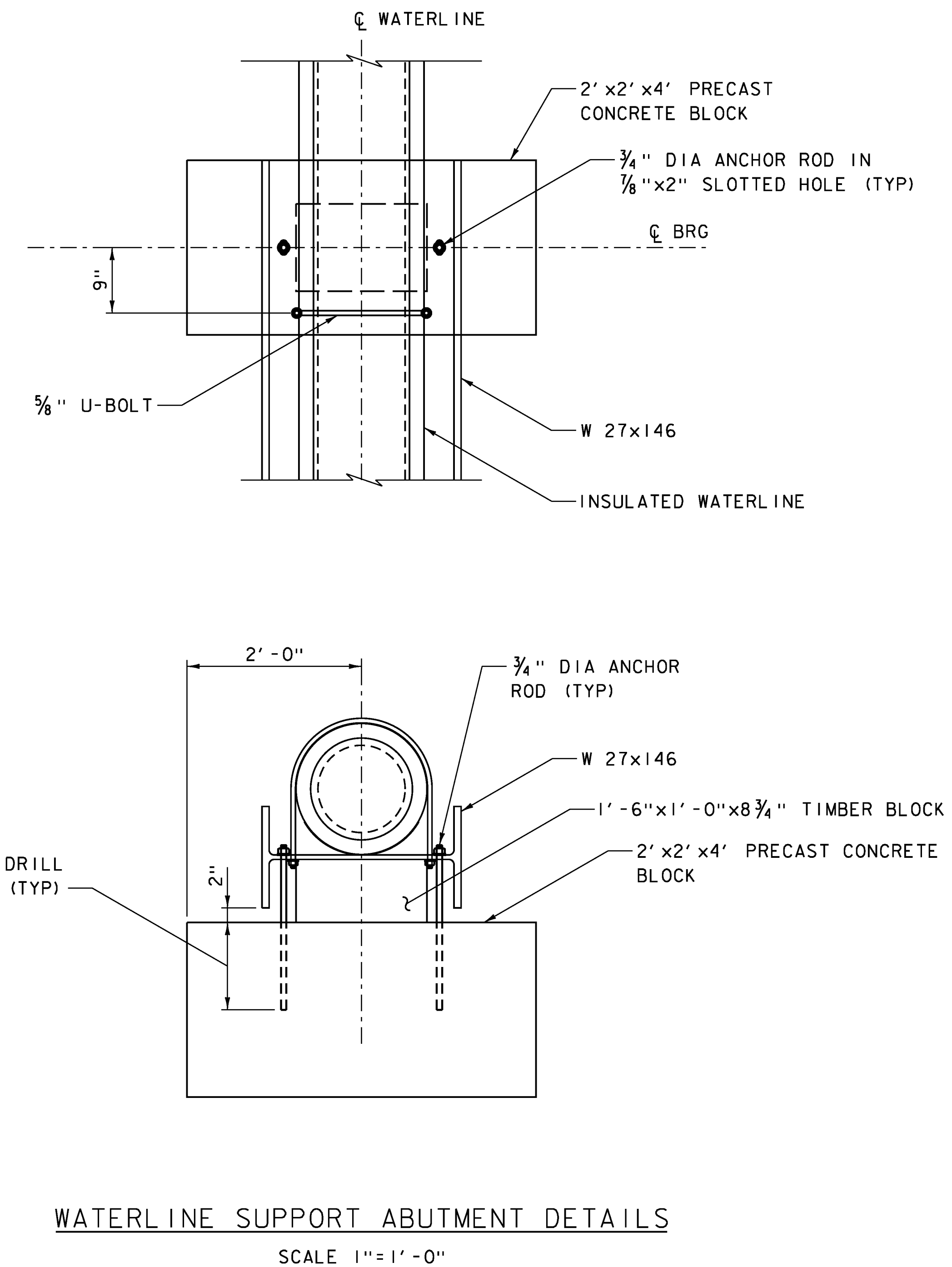






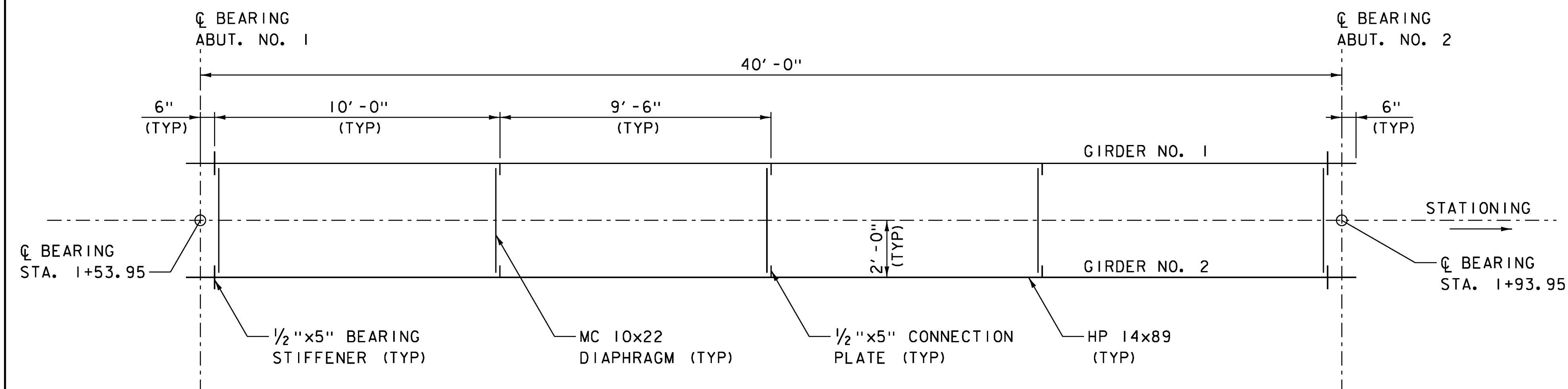
#### NOTES:

1. PRECAST CONCRETE BLOCKS SHALL BE OF THE DIMENSIONS SHOWN WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.
2. ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36.
3. HOLES FOR ANCHOR RODS SHALL BE DRILLED TO A MINIMUM OF 1" LARGER DIAMETER THAN THE ROD AND SET WITH MORTAR, TYPE IV.

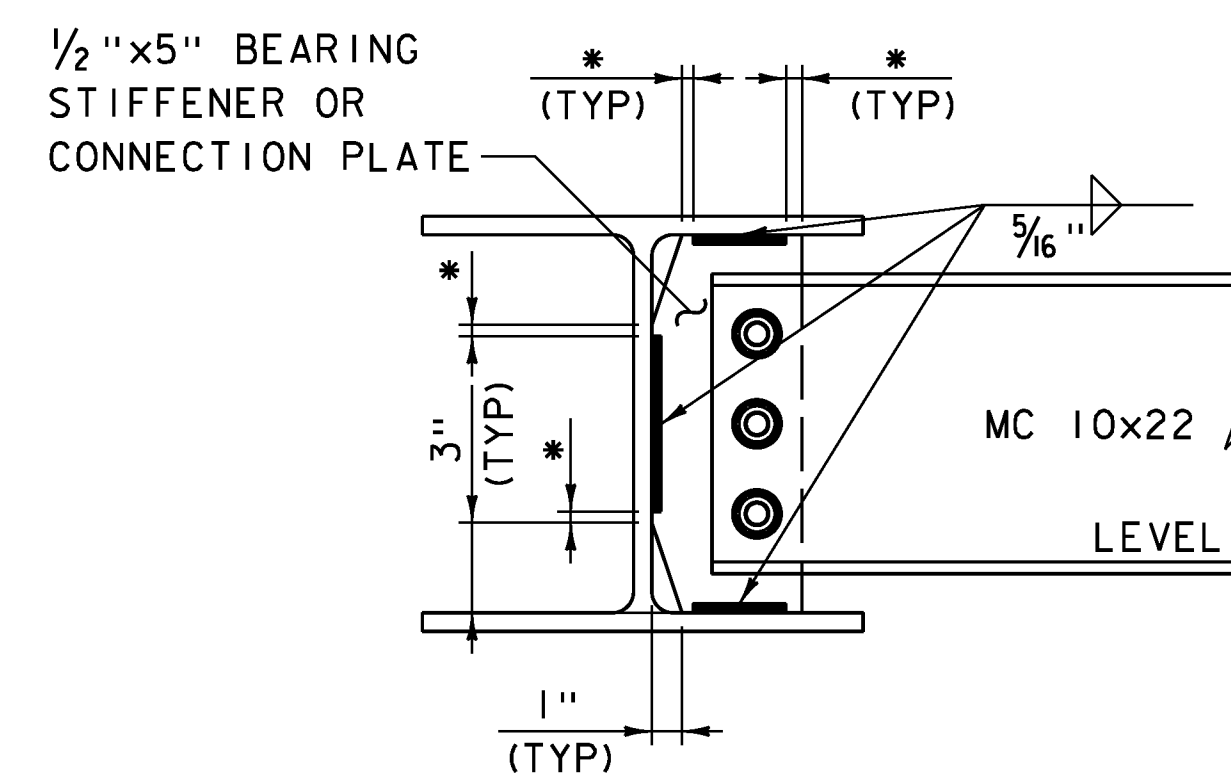


PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW3(1)
FILE NAME: z17b016_TYP_PedBridge.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: R.H. BARNES
DESIGNED BY: R.H. BARNES	CHECKED BY: E.P. DETRICK
PED. BRIDGE & WATERLINE ABUTMENT DETAILS SHEET	9 OF 54

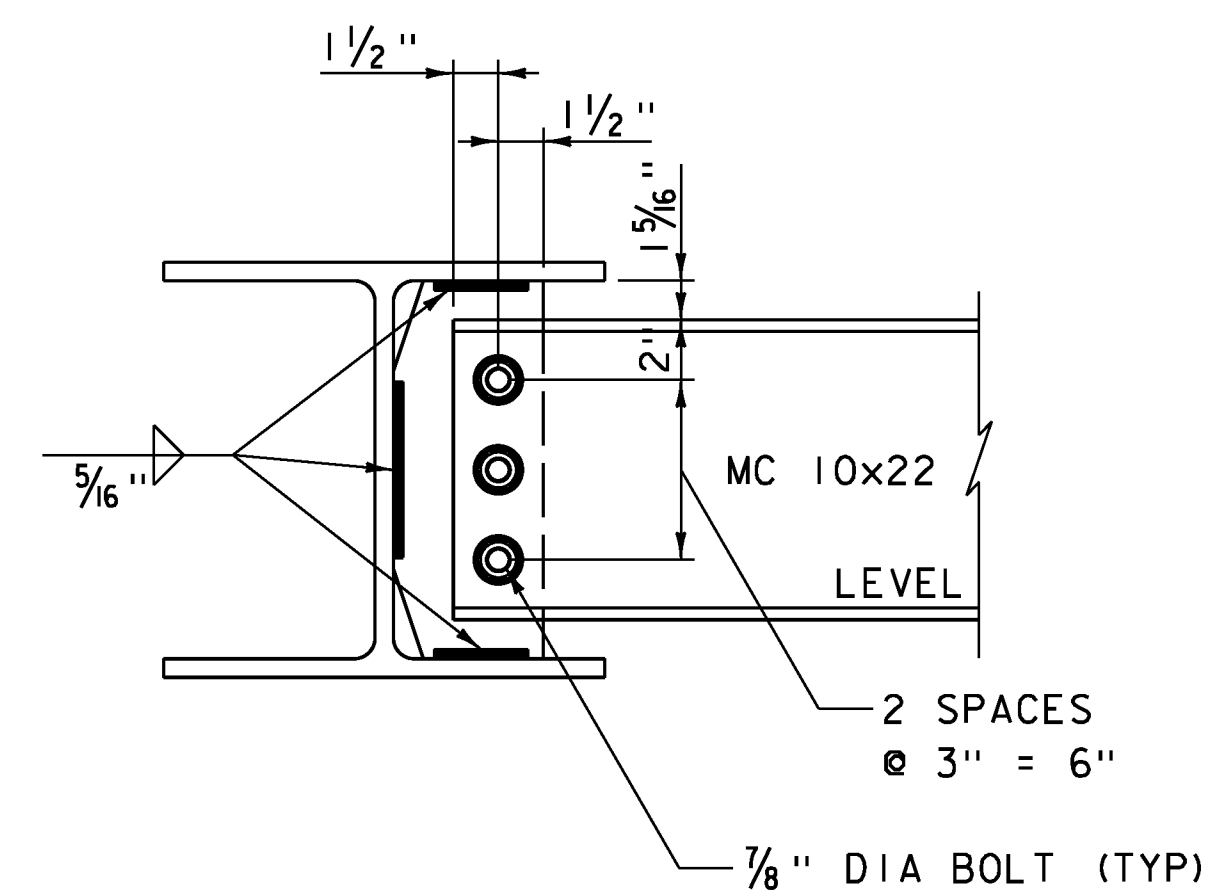




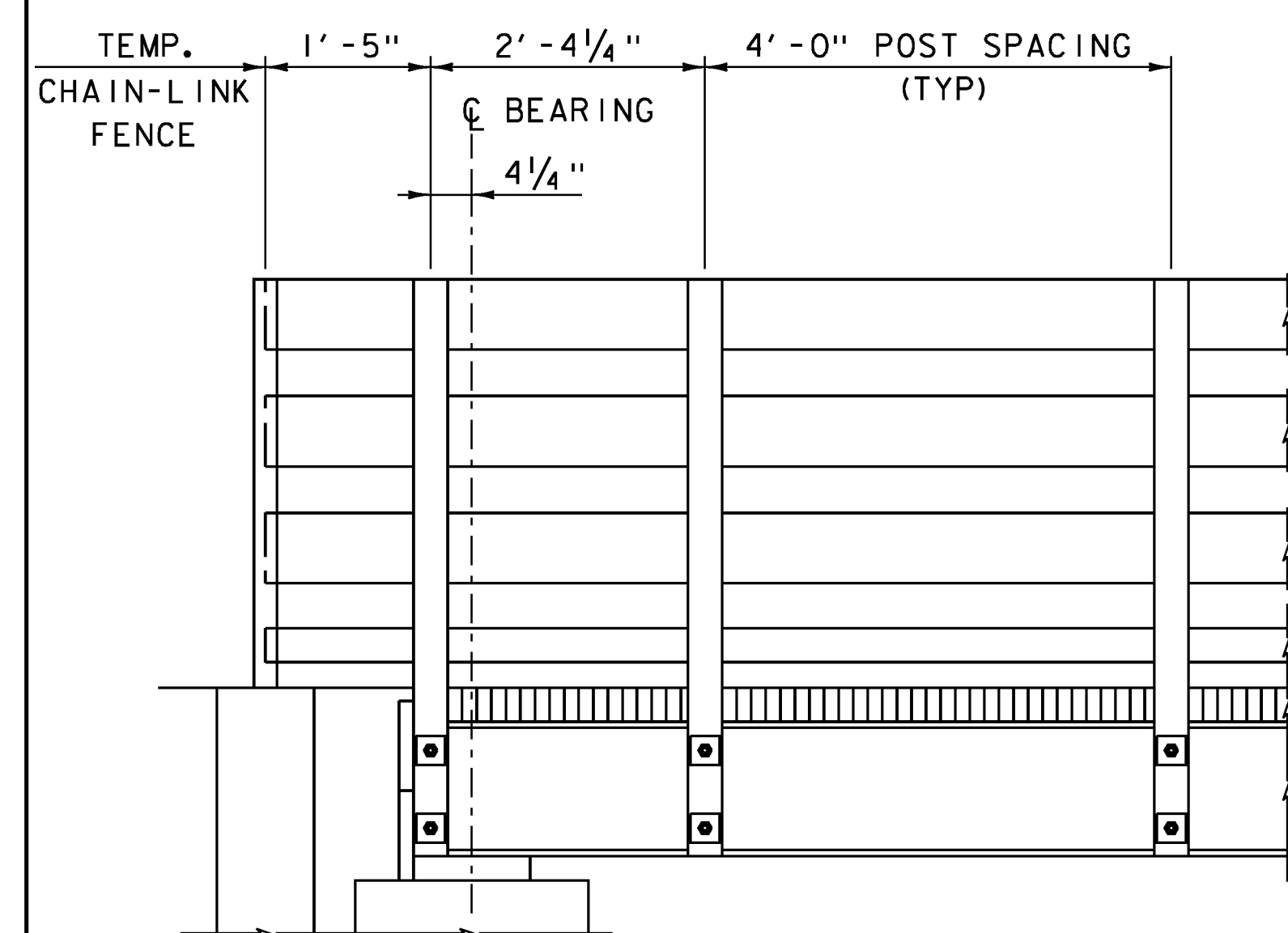
FRAMING PLAN  
SCALE:  $\frac{3}{8}$ " = 1'-0"



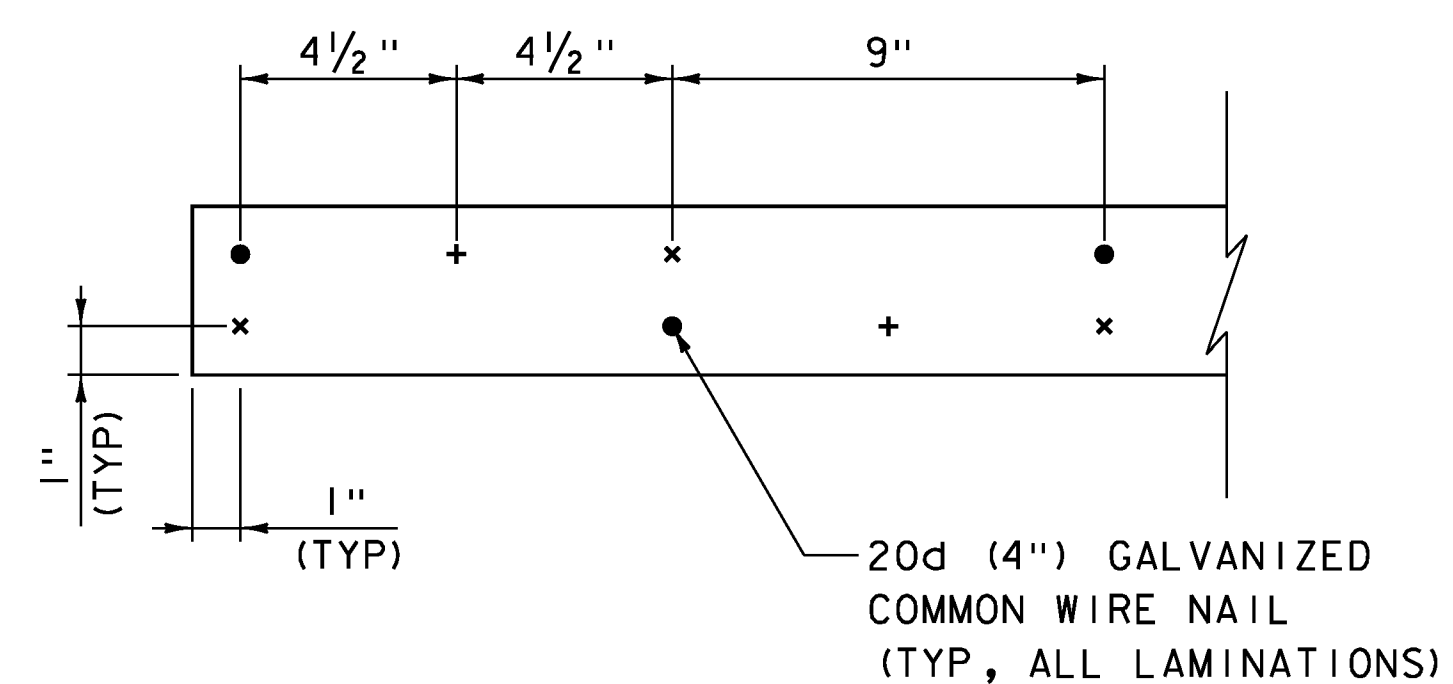
* NO WELD FOR  $\frac{3}{8}$ " MIN,  $\frac{7}{8}$ " MAX  
WELD TERMINATION AND COPING DETAIL  
NOT TO SCALE



DIAPHRAGM CONNECTION DETAIL  
NOT TO SCALE

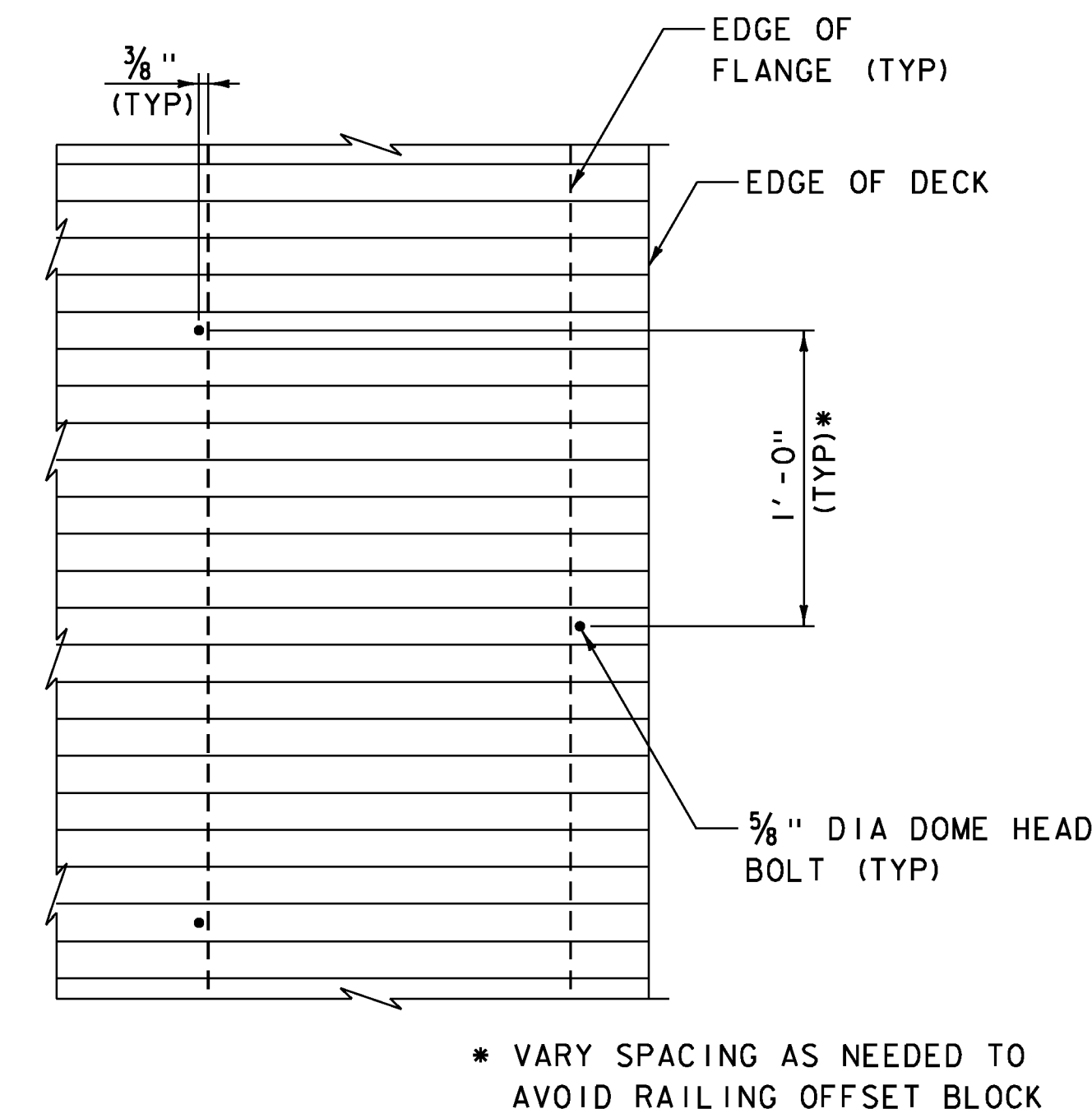


POST SPACING END DETAIL  
SCALE:  $\frac{3}{4}$ " = 1'-0"



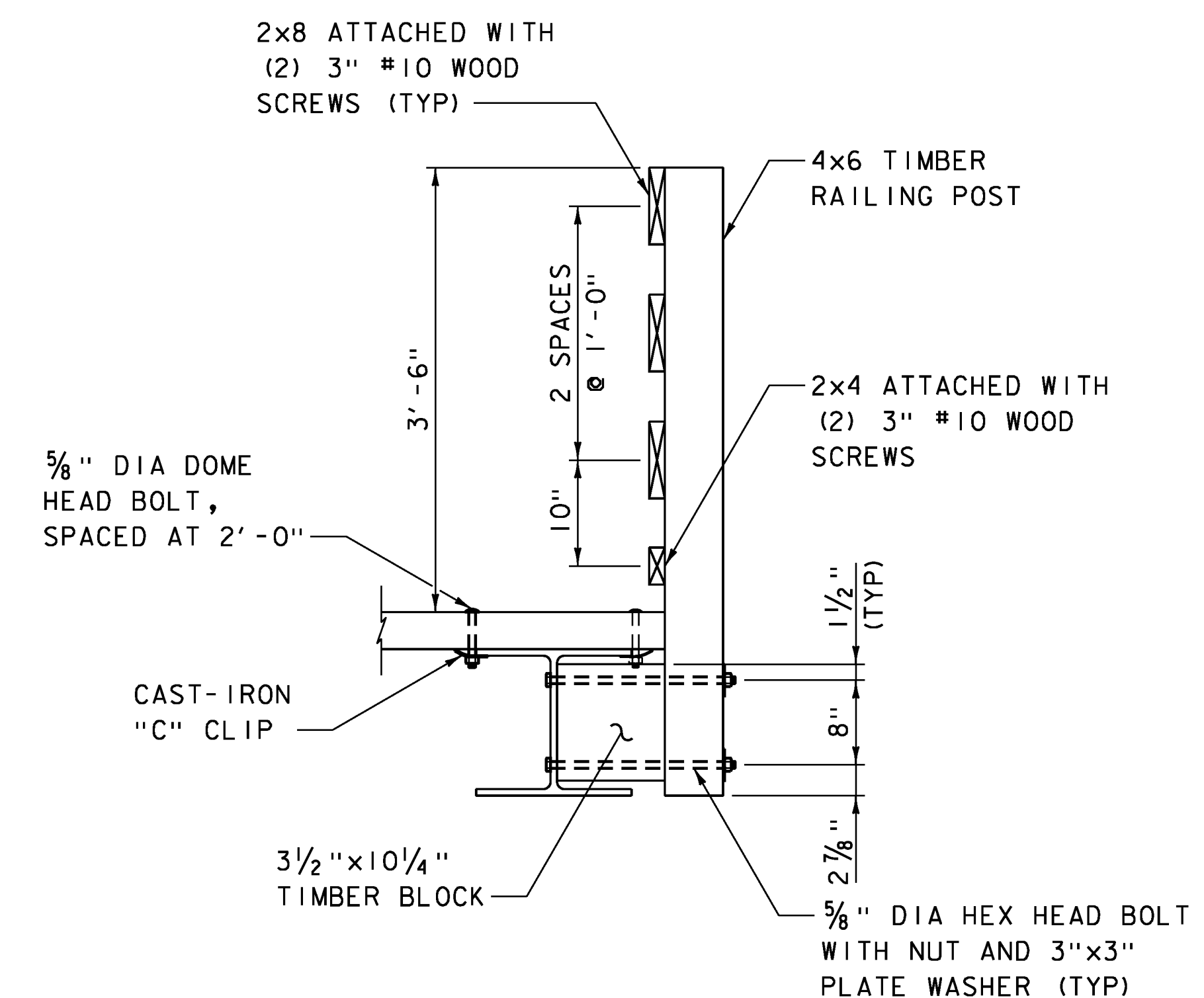
- INDICATES NAILS IN FIRST LAMINATION
- + INDICATES NAILS IN SECOND LAMINATION
- x INDICATES NAILS IN THIRD LAMINATION

NAIL PLACEMENT PATTERN  
NOT TO SCALE



DECK CLIP BOLT PLACEMENT DETAIL  
NOT TO SCALE

NOTE: NAIL LAMINATED DECK PANELS SHALL BE A MINIMUM OF 18" IN LENGTH WITH A  $\frac{1}{2}$ " GAP BETWEEN PANELS



PEDESTRIAN BRIDGE RAILING DETAIL  
SCALE: 1" = 1'-0"

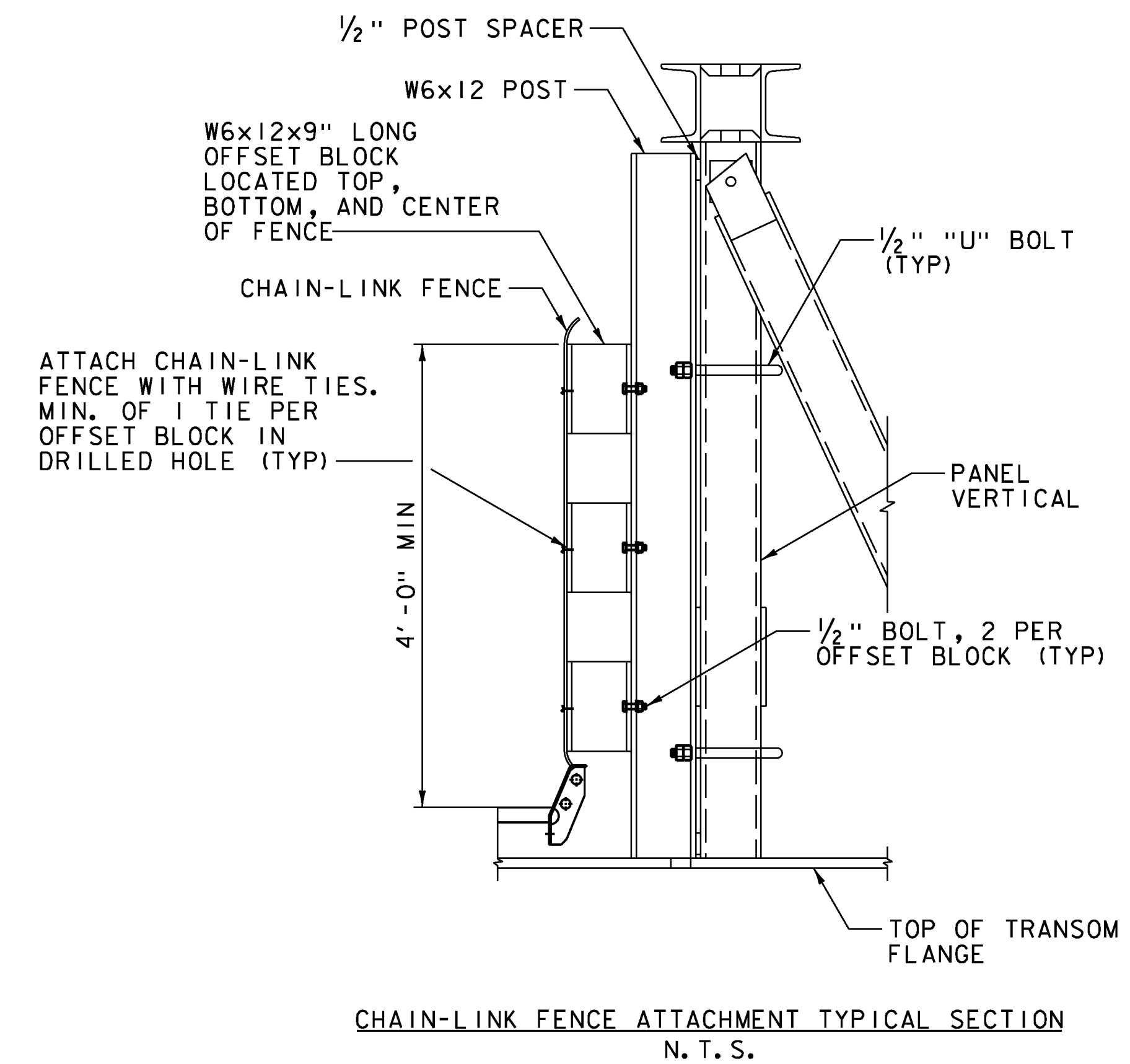
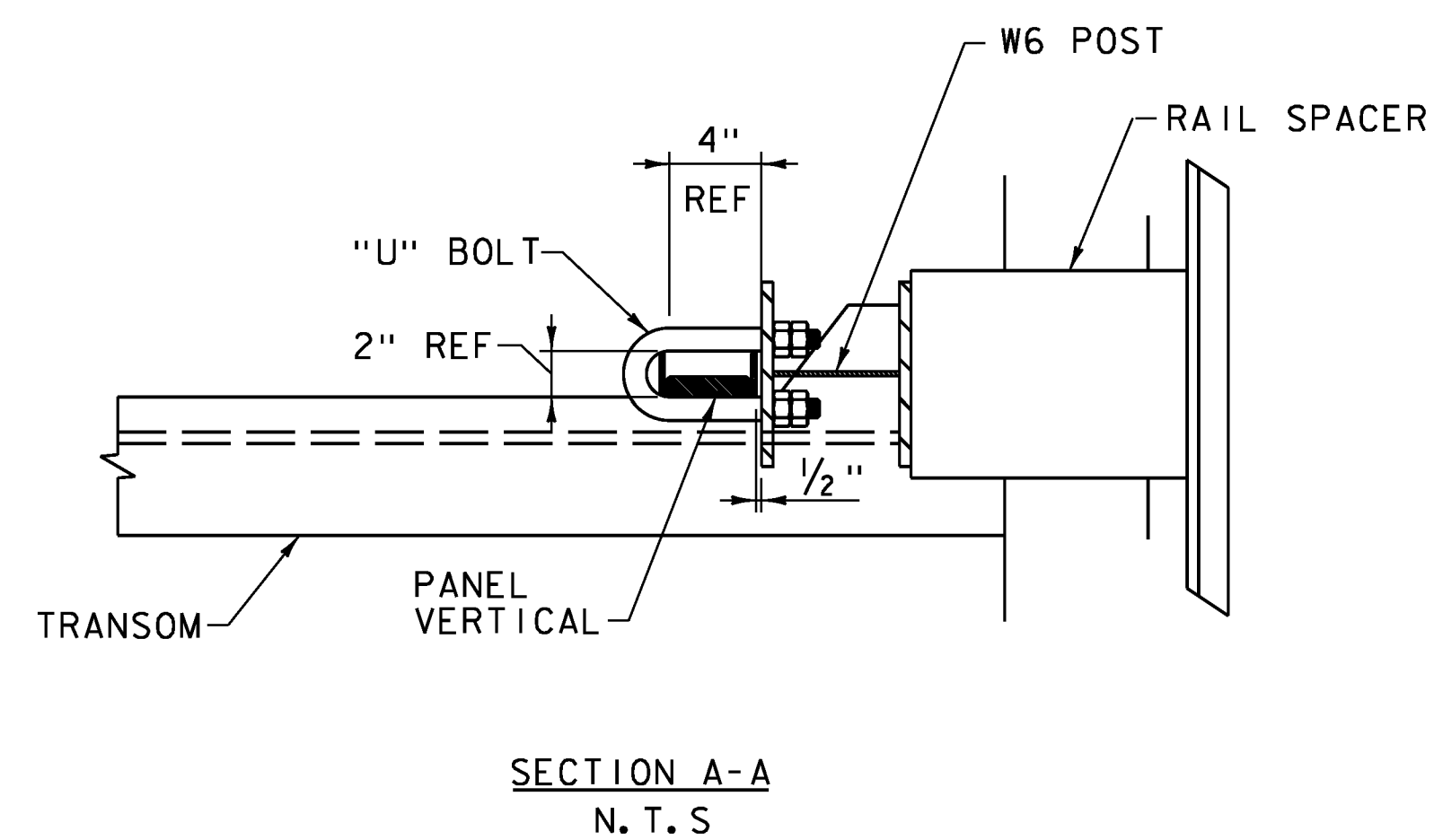
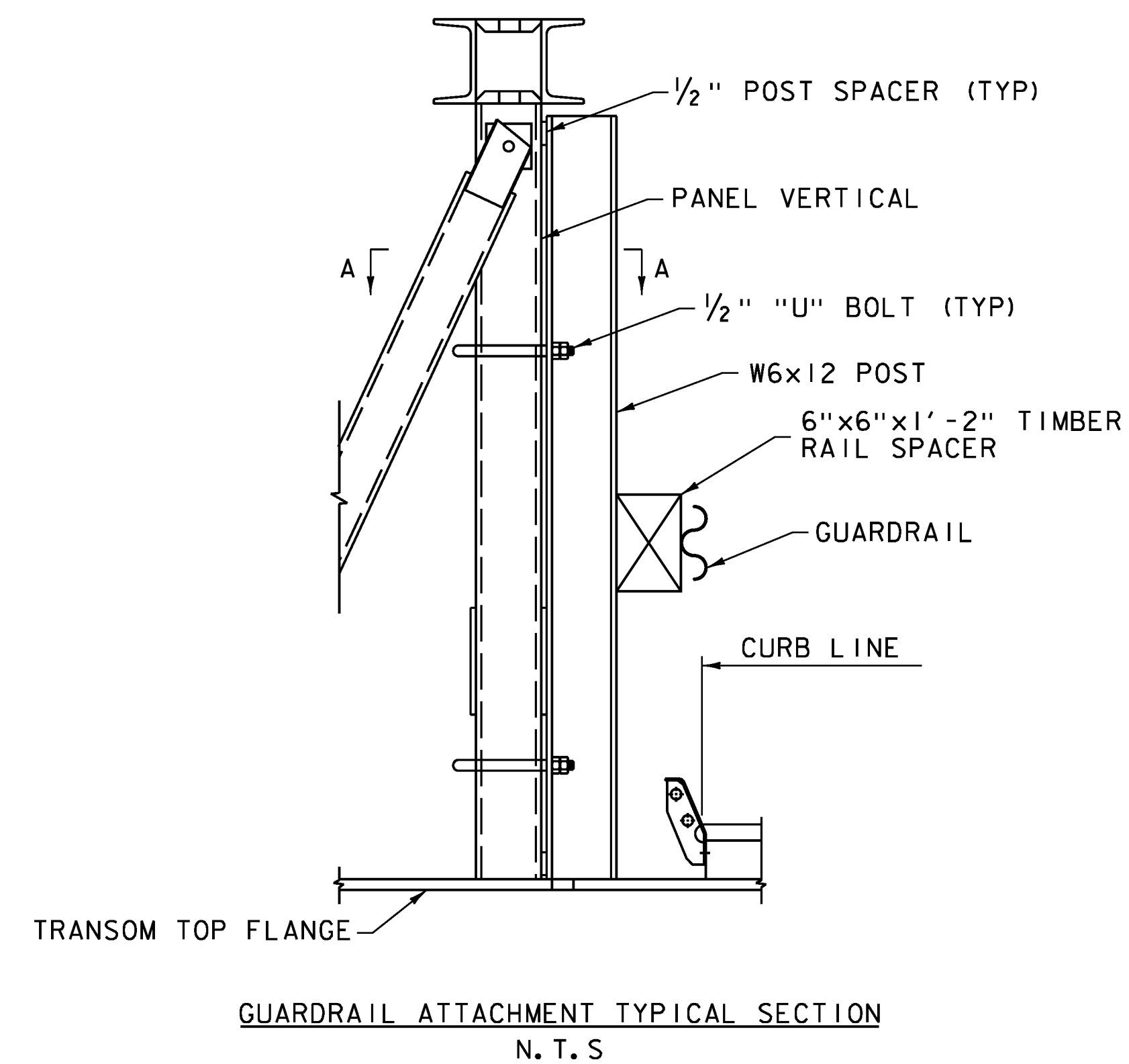
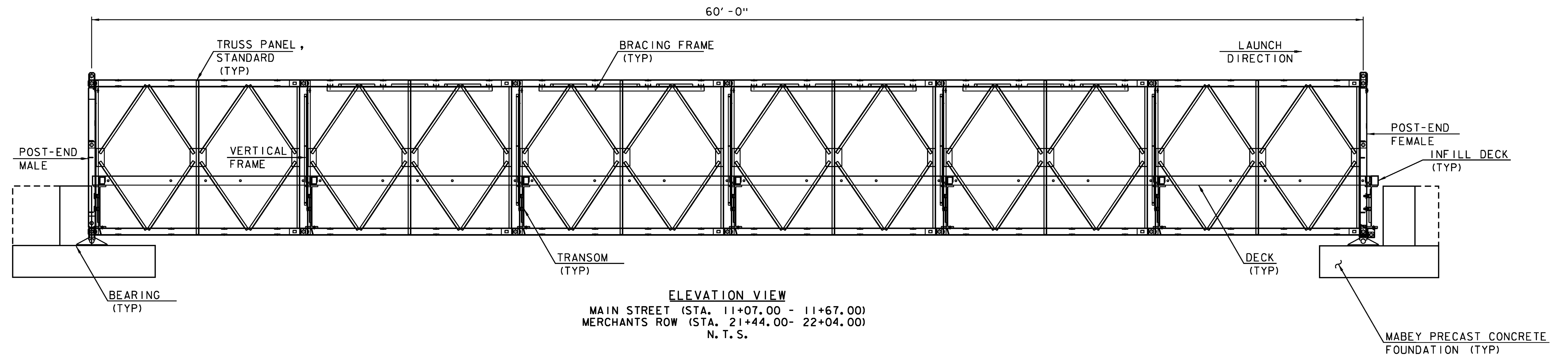
NOTES:

1. ALL STRUCTURAL STEEL FOR THE TEMPORARY PEDESTRIAN BRIDGE SHALL MEET THE REQUIREMENTS OF AASHTO M270M/M270 GRADE 50.
2. ALL BOLTS FOR STRUCTURAL STEEL SHALL CONFORM TO ASTM A325.
3. ALL TIMBER SHALL MEET THE REQUIREMENTS OF SECTION 709.01 OF THE SPECIFICATION. TIMBER SHALL BE SOUTHERN PINE, NO. 1 GRADE OR BETTER AND SHALL BE TREATED. FINISH SHALL BE DRESSED.
4. ALL TIMBER SIZES ARE NOMINAL AND SURFACED FOUR SIDES (S4S) UNLESS NOTED WITH THE ACTUAL DIMENSIONS.
5. ALL CONNECTION HARDWARE USED FOR TIMBER MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 709.01 (H) OF THE SPECIFICATIONS.



PROJECT NAME: MIDDLEBURY	PLOT DATE: 5/19/2017
PROJECT NUMBER: EWP3(I)	DRAWN BY: R.H. BARNES
FILE NAME: z17b016_PedSup.dgn	CHECKED BY: S.E. BURBANK
PROJECT LEADER: A.P. GUYETTE	SHEET 10 OF 54
DESIGNED BY: R.H. BARNES	
PEDESTRIAN BRIDGE DETAILS	





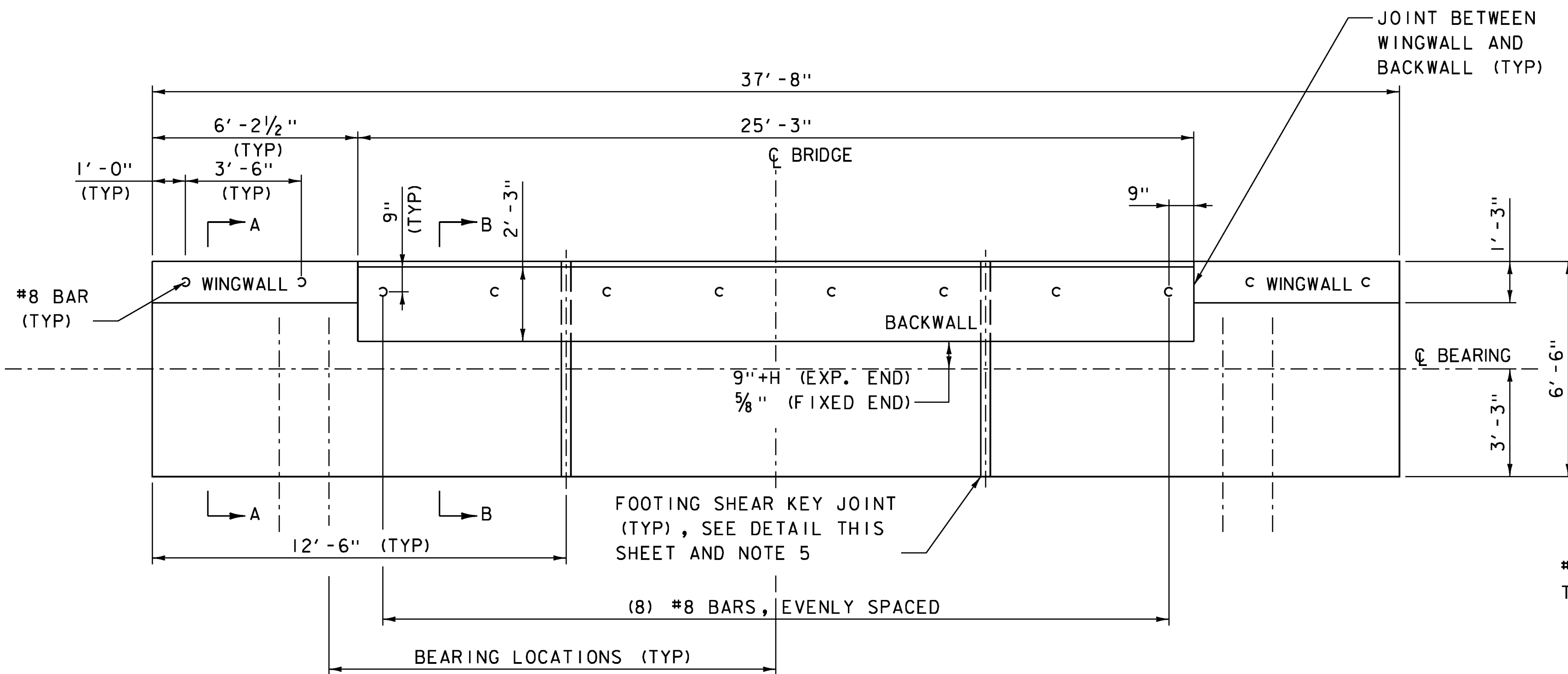
PROJECT NAME: MIDDLEBURY  
 PROJECT NUMBER: EWP3(I)

FILE NAME: z17b016_DET.dgn  
 PROJECT LEADER: A.P. GUYETTE  
 DESIGNED BY: MABEY  
 MABEY BRIDGE DETAIL SHEET

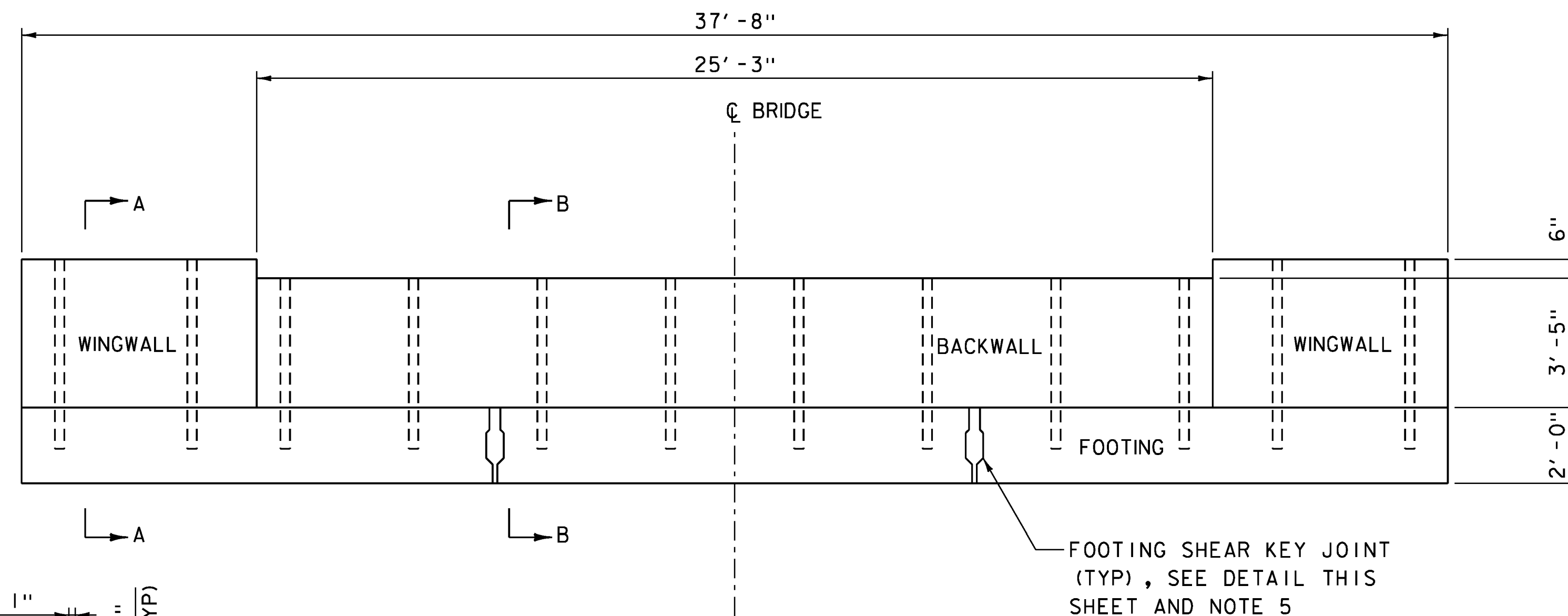
PLOT DATE: 5/19/2017  
 DRAWN BY: VTRANS  
 CHECKED BY: VHB  
 SHEET 11 OF 54



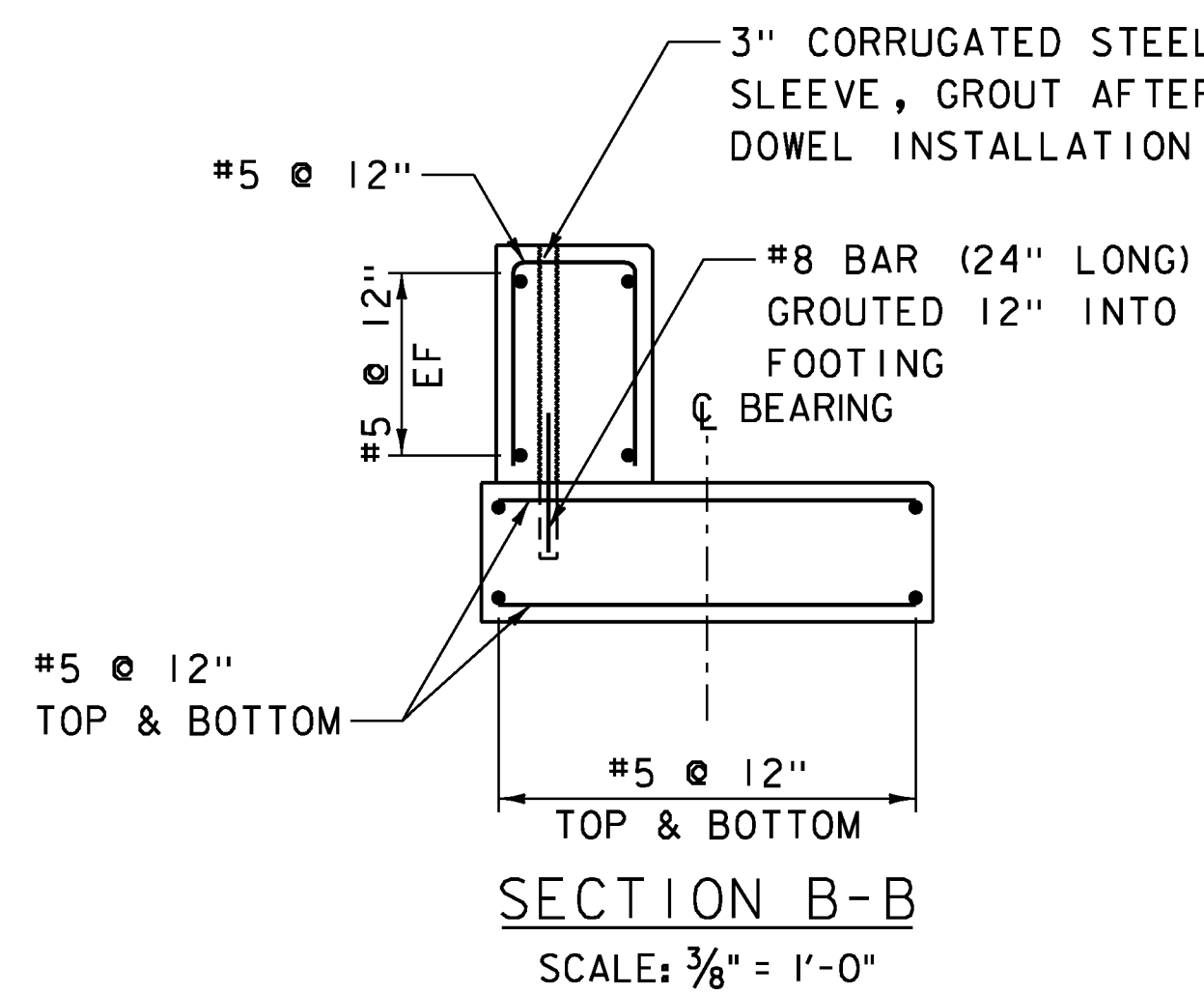
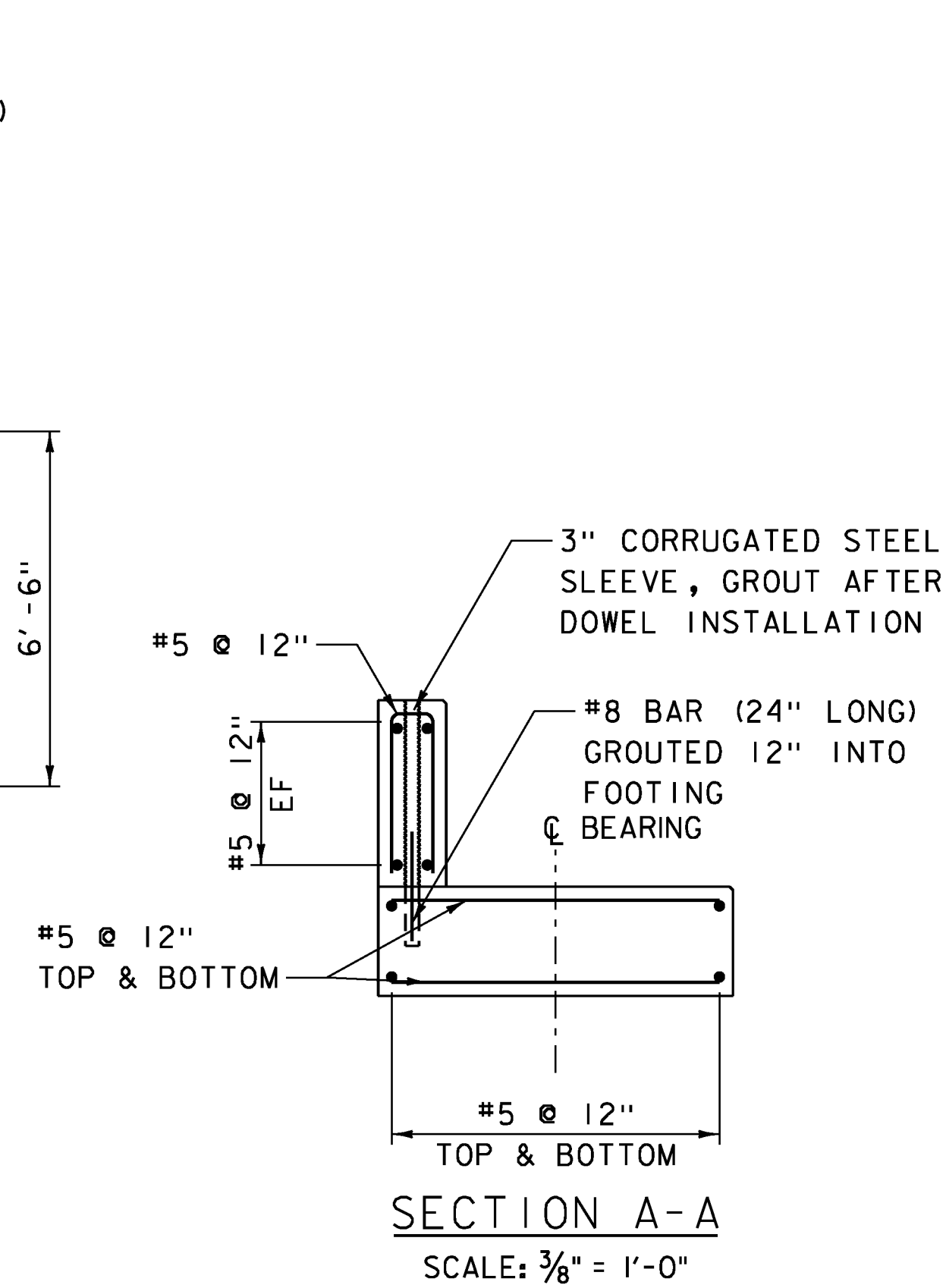
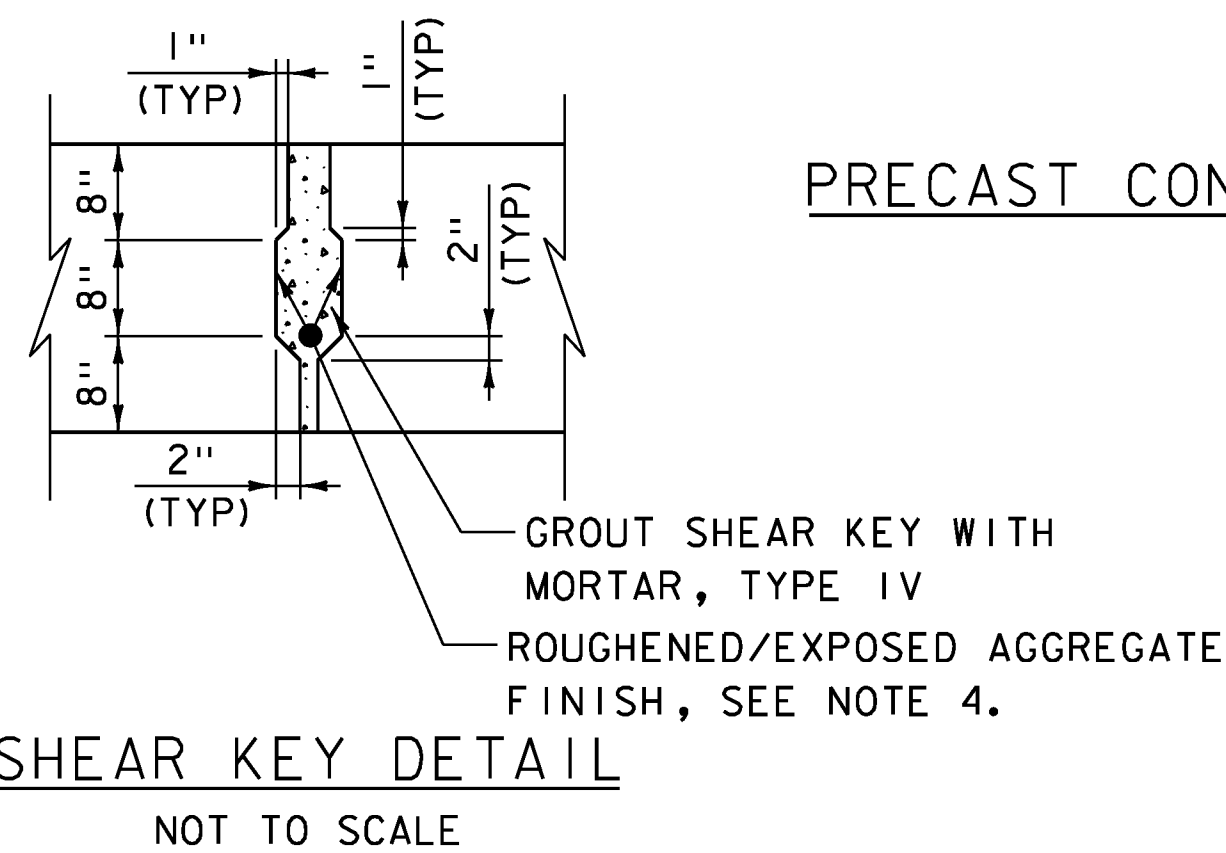




PRECAST CONCRETE FOUNDATION PLAN  
SCALE:  $\frac{3}{8}" = 1'-0"$



PRECAST CONCRETE FOUNDATION ELEVATION  
SCALE:  $\frac{3}{8}" = 1'-0"$

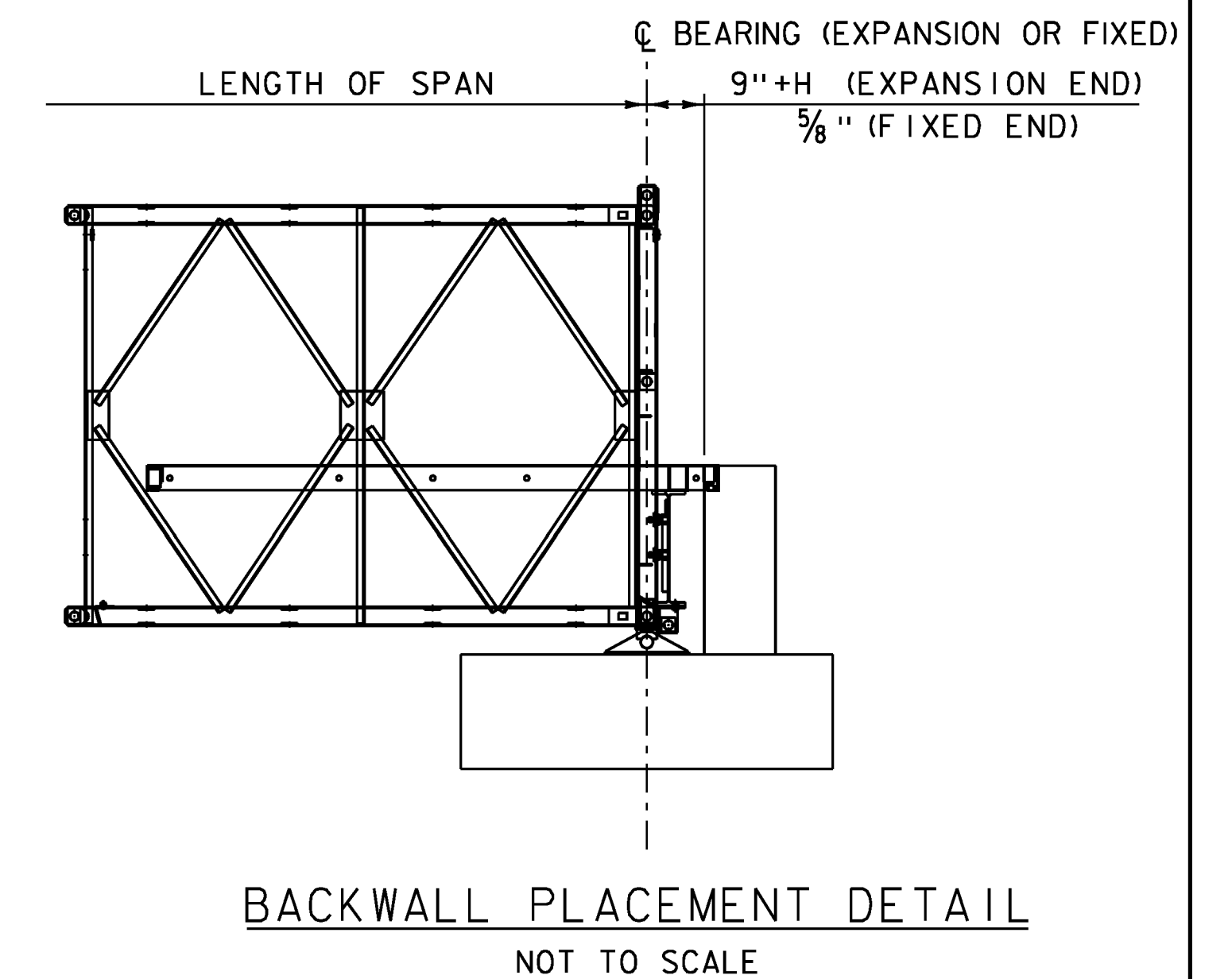


## NOTES:

1. THE BRIDGE FOUNDATION MUST BE PLACED ON SUITABLE MATERIAL AS DETERMINED BY THE ENGINEER. IF THE FOUNDATION MATERIAL ENCOUNTERED IS DETERMINED TO BE UNSUITABLE BY THE ENGINEER, THE MATERIAL SHALL BE UNDERCUT 2'-0" AND REPLACED WITH GRANULAR BACKFILL FOR STRUCTURES.
2. THE WINGWALLS SHALL NOT BE INSTALLED UNTIL THE BRIDGE HAS BEEN LAUNCHED AND JACKED DOWN INTO POSITION ON THE BEARINGS.
3. PRECAST CONCRETE LIFTING POINTS AND LIFTING DEVICES SHALL BE DETERMINED BY THE FABRICATOR.
4. THE CONCRETE EDGES OF THE SHEAR KEY SHALL BE TREATED TO PROVIDE A ROUGHENED/EXPOSED AGGREGATE FINISH OF A MINIMUM  $\frac{1}{8}"$  AMPLITUDE. FINISH SHALL BE COMPLETE PRIOR TO ERECTION OF FOOTING PIECES.
5. THE FOOTING SHEAR KEY JOINT MAY ALTERNATELY BE LOCATED AT THE CENTERLINE OF BRIDGE FOR THE FOOTING TO BE IN 2 PIECES. THE NUMBER AND/OR LOCATION OF JOINTS MAY BE ALTERED IN ANOTHER WAY WITH A MAXIMUM OF 2 JOINTS, WHILE MAINTAINING CLEARANCE FROM BEARING LOCATIONS.

## EXPANSION GAP TEMPERATURE ADJUSTMENT

TEMP (°F)	"H" DISTANCE (IN)
0	1 $\frac{5}{8}$
15	1 $\frac{1}{2}$
30	1 $\frac{5}{16}$
45	1 $\frac{3}{16}$
60	1 $\frac{1}{16}$
75	$\frac{5}{16}$
90	$\frac{3}{4}$
105	$\frac{5}{8}$



## NOTE:

- NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
▲ = CUT TO FIT  
3" CLEAR, UNLESS OTHERWISE SPECIFIED ON THE PLANS.  
2'-2" BAR LAP UNLESS OTHERWISE SPECIFIED ON THE PLANS.



PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW3(I)
FILE NAME:	z17b016_AbutD+Is.dgn
PROJECT LEADER:	A.P. GUYETTE
DESIGNED BY:	R.H. BARNES
CHECKED BY:	S.E. BURBANK
MABEY BRIDGE FOUNDATION DETAILS	
PLOT DATE:	5/19/2017
DRAWN BY:	R.H. BARNES
SHEET	12 OF 54



STATE OF VERMONT  
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES											TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
							ROADWAY	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
							1				1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
							25				25		CY	SOLID ROCK EXCAVATION	203.16				
							100				100		CY	TRENCH EXCAVATION OF EARTH	204.20				
							10				10		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
							100				100		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
									1		1		LS	ONE-WAY TEMPORARY BRIDGE (MERCHANTS ROW)	528.10				
									1		1		LS	TWO-WAY TEMPORARY BRIDGE (MAIN STREET)	528.11				
									1		1		LS	TEMPORARY PEDESTRIAN BRIDGE (MAIN STREET)	528.12				
									1		1		EACH	PARTIAL REMOVAL OF STRUCTURE (MAIN STREET)	529.20				
									1		1		EACH	PARTIAL REMOVAL OF STRUCTURE (MERCHANTS ROW)	529.20				
							70				70		LF	18" CPEP(SL)	601.2615				
							3				3		EACH	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	604.18				
							7				7		EACH	CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES	604.40				
							2				2		EACH	REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS II	604.415				
							2				2		EACH	CHANGING ELEVATION OF SEWER MANHOLES	604.42				
							80				80		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28				
							30				30		LF	REMOVAL OF EXISTING CURB	616.41				
							25				25		SY	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH	618.10				
							10				10		TON	BITUMINOUS CONCRETE SIDEWALK	618.15				
							40				40		SF	DETECTABLE WARNING SURFACE	618.30				
							160				160		LF	CHAIN-LINK FENCE, 4 FEET	620.11				
							15				15		EACH	BRACING ASSEMBLY FOR CHAIN-LINK FENCE, 4 FEET	620.20				
							60				60		LF	REMOVING AND RESETTING FENCE	620.50				
							360				360		LF	TEMPORARY TRAFFIC BARRIER	621.90				
							2				2		EACH	GATE VALVE WITH VALVE BOX (12-INCH)	629.27				
							1000				1000		HR	FLAGGERS	630.15				
							1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
							1				1		LS	TRAFFIC CONTROL	641.10				
							6				6		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
							3700				3700		LF	4 INCH WHITE LINE	646.20				
							1000				1000		LF	4 INCH YELLOW LINE	646.21				
							60				60		LF	8 INCH WHITE LINE	646.22				
							70				70		LF	8 INCH YELLOW LINE	646.23				
							320				320		LF	12 INCH WHITE LINE	646.24				
							40				40		LF	24 INCH STOP BAR	646.26				
							8				8		EACH	LETTER OR SYMBOL	646.30				
							325				325		LF	TEMPORARY 4 INCH WHITE LINE, TEMPORARY PAVEMENT MARKING TAPE	646.6011				
							1250				1250		LF	TEMPORARY 4 IN YELLOW LINE, TEMPORARY PAVEMENT MARKING TAPE	646.6111				
							111				111		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85				
							1875				1875		SF	PAVEMENT MARKING MASK	646.86				

v

h

b

PROJECT NAME: MIDDLEBURY

PROJECT NUMBER: EWP3(I)

FILE NAME: z17b016_QSS.dgn

PROJECT LEADER: A.P. GUYETTE

DESIGNED BY: D.M. PECK

QUANTITY SUMMARY SHEET 1

PLOT DATE: 5/19/2017

DRAWN BY: D.M. PECK

CHECKED BY: J.D. KEENER

SHEET 13 OF 54

VHB 57603.00

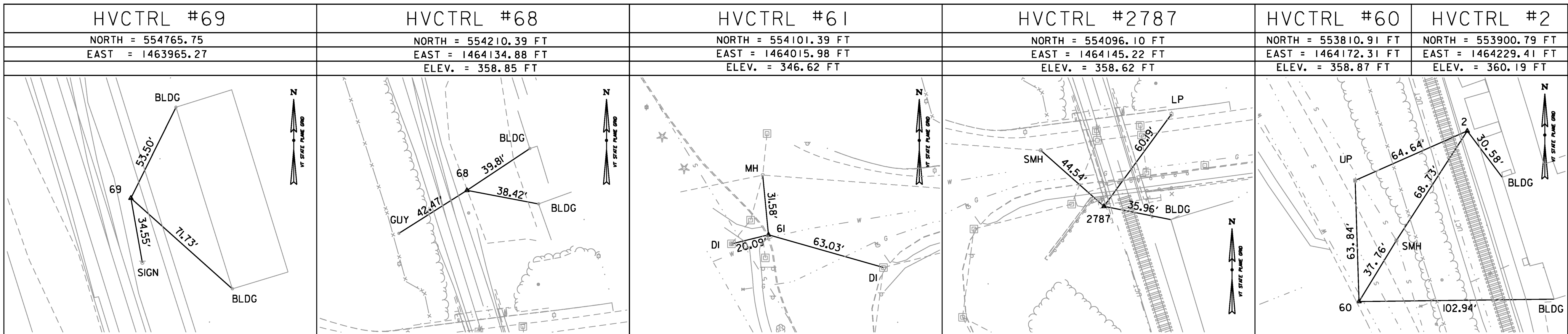


# QUANTITY SHEET 2

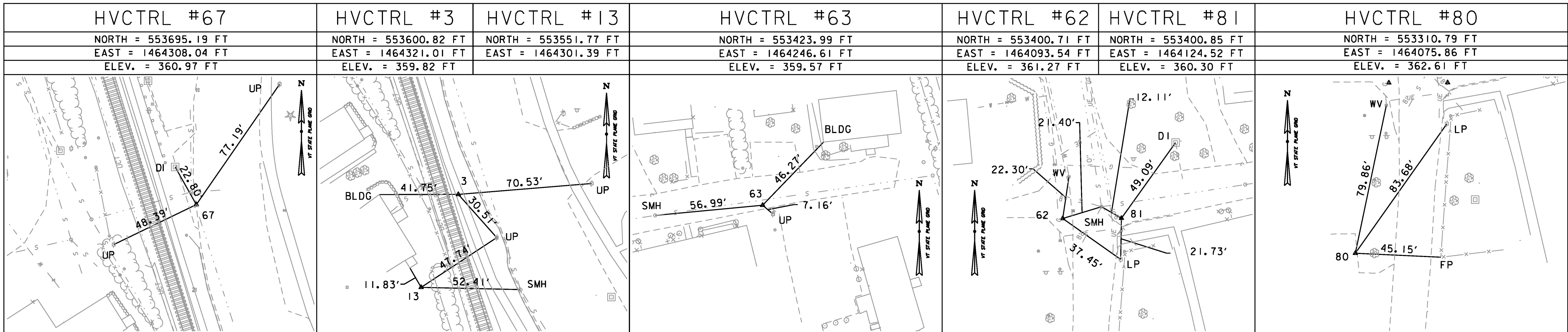
PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(1)	
FILE NAME: z17b016_QSS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: J.D. KEENER
QUANTITY SUMMARY SHEET 2	SHEET 14 OF 54



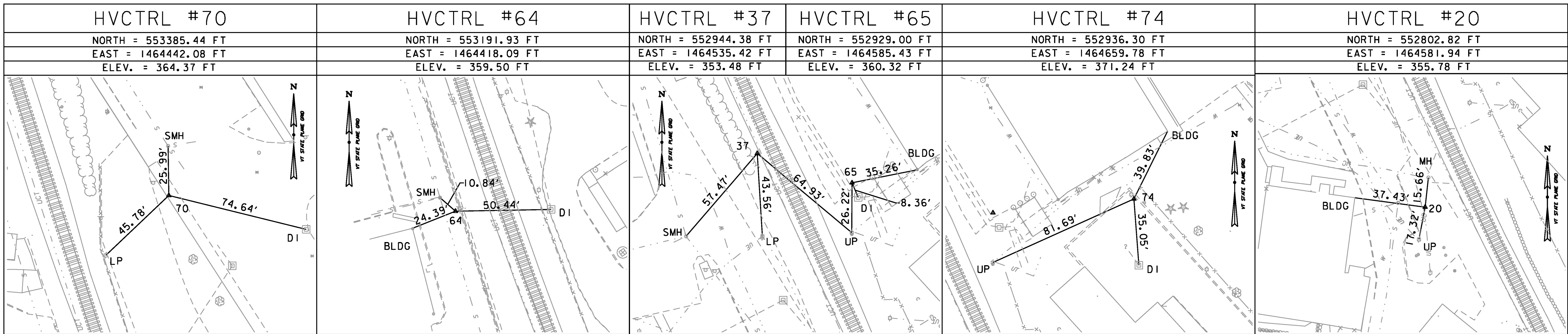
TRAVERSE TIES



TRAVERSE TIES



TRANSVERSE TIES



DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD83



PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(I)	
FILE NAME: z17b016_TieSheet.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: K.C. BARRY
DESIGNED BY: J.F. VEAR	CHECKED BY: D.M. PECK
TIE SHEET (1 OF 3)	SHEET 15 OF 54



4 INCH DOUBLE YELLOW LINE  
STA. 10+00 - 12+75, BL  
STA. 12+83 - 13+50, BL

4 INCH WHITE LINE  
STA. 10+00 - 11+11, RT (PARKING)  
STA. 10+61 - 11+67, RT  
STA. 11+77 - 12+80, RT (PARKING)  
STA. 12+86 - 13+67, RT (PARKING)  
STA. 10+00 - 10+28, LT (PARKING)  
STA. 10+28 - 11+67, LT  
STA. 11+74 - 12+72, LT (PARKING)  
STA. 12+77 - 13+08, LT (PARKING)

12 INCH WHITE LINE  
STA. 12+75 - 12+83 (CROSSWALK)

TEMPORARY BRIDGE  
STA. 11+07 - 11+67

CHANGING ELEVATIONS OF SEWER MANHOLES  
~~STA. 11+26, LT NOT CHANGED~~

BITUMINOUS CONCRETE SIDEWALK  
STA. 11+11 - 11+35, LT  
STA. 11+77 - 11+90, LT  
~~STA. 11+98 - 12+28, LT~~  
TEMPORARY PEDESTRIAN BRIDGE  
STA. 11+36 - 11+76, LT

CHANGING ELEVATION OF DROP INLETS,  
CATCH BASINS OR MANHOLES  
STA. 10+08, RT  
STA. 11+98, LT  
STA. 12+04, RT

TEMPORARY TRAFFIC BARRIER  
STA. 10+83 - 11+06, RT  
STA. 11+29 - 11+36, LT  
STA. 11+33 - 11+48, RT  
STA. 11+63 - 11+73, LT

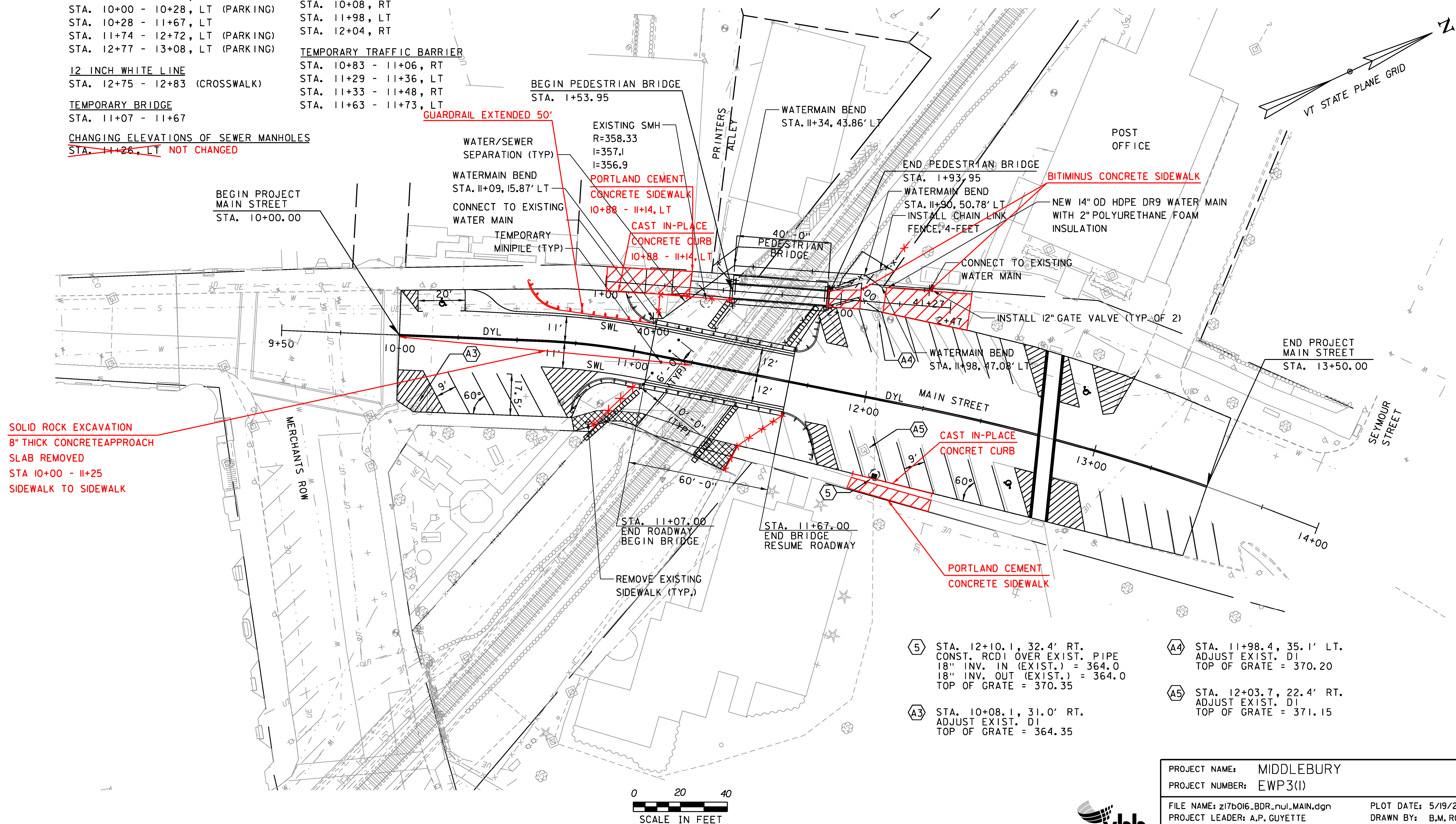
TEMPORARY WATERMAIN  
STA. 11+05 - 12+13, LT  
GATE VALVE WITH BOX  
STA. 11+05, LT  
STA. 12+13, LT

CHAIN LINK FENCE, 4 FEET  
STA. 11+28 - 11+35, LT  
STA. 11+77 - ~~12+03~~, LT 12+15  
STA. 11+77 - 11+99, LT  
STA 10+12 - 11+07, RT  
STA 11+40 - 11+52, RT  
PED. STA 1+43 - 1+43, LT

SOLID ROCK EXCAVATION  
STA. 10+76 - 11+11, RT  
STA. 11+33 - 11+51, RT

LETTER OR SYMBOL  
STA. 10+18, LT (HANDICAP)  
STA. 12+68, RT (HANDICAP)  
STA. 12+90, LT (HANDICAP)

TEMPORARY MINIPILE  
STA. 10+94 - 11+37  
16 PILES, LOCATIONS  
SHOWN APPROXIMATELY  
IN PLAN VIEW  
10 PILES INSTALLED



- (5) STA. 12+10.1, 32.4' RT.  
CONST. RCDI OVER EXIST. PIPE  
18" INV. IN (EXIST.) = 364.0  
18" INV. OUT (EXIST.) = 364.0  
TOP OF GRATE = 370.35
- (A3) STA. 10+08.1, 31.0' RT.  
ADJUST EXIST. DI  
TOP OF GRATE = 364.35

- (A4) STA. 11+98.4, 35.1' LT.  
ADJUST EXIST. DI  
TOP OF GRATE = 370.20
- (A5) STA. 12+03.7, 22.4' RT.  
ADJUST EXIST. DI  
TOP OF GRATE = 371.15

PROJECT NAME: MIDDLEBURY  
PROJECT NUMBER: EWP3(I)

FILE NAME: z17b016_BDR_nul_MAIN.dgn  
PROJECT LEADER: A.P. GUYETTE  
DESIGNED BY: B.M. ROBERTS  
MAIN STREET LAYOUT PLAN SHEET

PLOT DATE: 5/19/2017  
DRAWN BY: B.M. ROBERTS  
CHECKED BY: E.P. DETRICK  
SHEET 19 OF 54



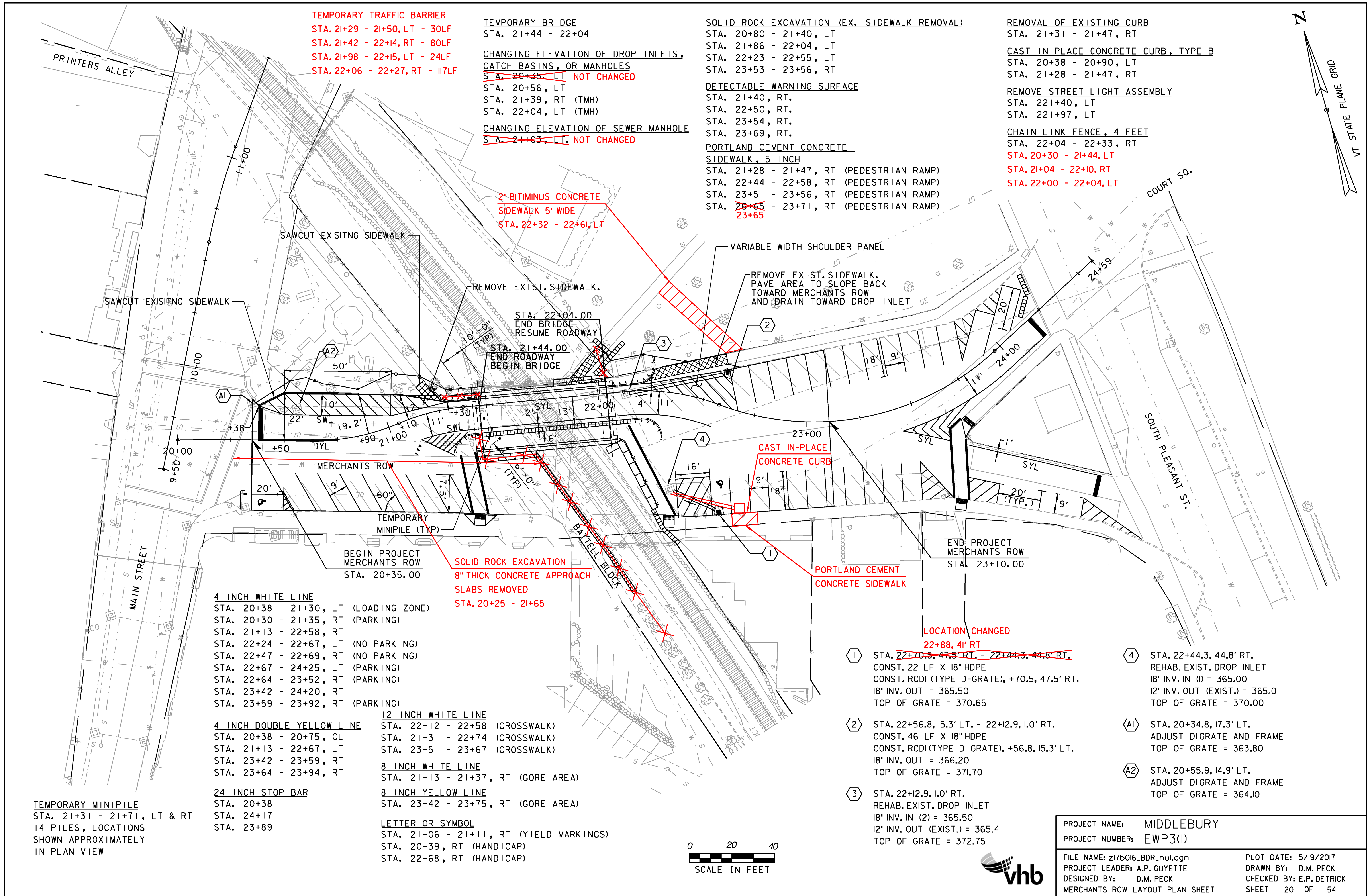




Table with 4 columns: POINT TYPE, STATION, NORTHING, EASTING. Rows include POB, PC, PI, PT, PC, PI, PT, POE for MAIN STREET.

CURVE #6  
STA 12+99.55  
N = 552769.28  
E = 1464784.79  
R = 920.00'  
Δ = 9°59'36"  
D = 6°13'40"  
L = 160.46'  
T = 80.43'  
E = 3.51'

CURVE #5  
STA 10+82.28  
N = 552593.94  
E = 1464656.32  
R = 300.00'  
Δ = 8°53'11"  
D = 19°05'55"  
L = 46.53'  
T = 23.31'  
E = 0.90'

CURVE #2  
STA 21+20.79  
N = 552468.55  
E = 1464723.57  
R = 100.00'  
Δ = 17°50'28"  
D = 57°17'45"  
L = 31.14'  
T = 15.70'  
E = 1.22'

CURVE #3  
STA 22+35.33  
N = 552447.43  
E = 1464836.41  
R = 100.00'  
Δ = 26°09'24"  
D = 57°17'45"  
L = 45.65'  
T = 23.23'  
E = 2.66'

CURVE #1  
STA 20+84.58  
N = 552463.91  
E = 1464687.05  
R = 100.00'  
Δ = 23°51'25"  
D = 57°17'45"  
L = 41.64'  
T = 21.13'  
E = 2.21'

CURVE #4  
STA 23+35.40  
N = 552387.07  
E = 1464917.23  
R = 125.00'  
Δ = 63°41'37"  
D = 45°50'12"  
L = 138.96'  
T = 77.64'  
E = 22.15'

Table with 4 columns: POINT TYPE, STATION, NORTHING, EASTING. Rows include POB, POE for PEDESTRIAN BRIDGE.

Table with 4 columns: POINT TYPE, STATION, NORTHING, EASTING. Rows include POB, PC, PI, PRC, PI, PT, PC, PI, PRC, PI, PT, POE for MERCHANTS ROW.

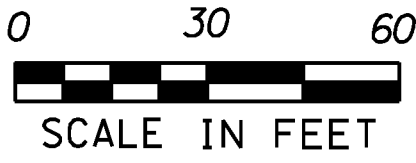
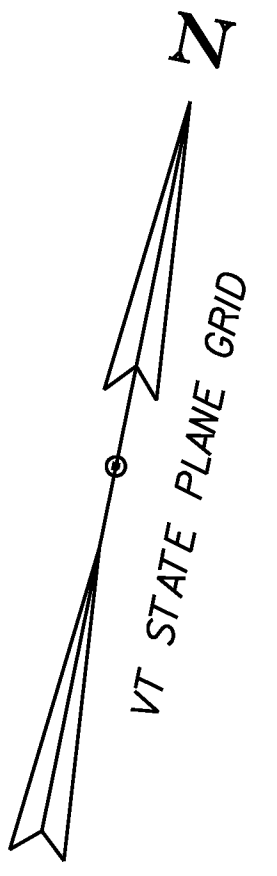


Table with 2 columns: PROJECT NAME, PROJECT NUMBER, FILE NAME, PROJECT LEADER, DESIGNED BY, ALIGNMENT LAYOUT PLAN SHEET, PLOT DATE, DRAWN BY, CHECKED BY, SHEET.



4 INCH DOUBLE YELLOW LINE  
STA. 10+00 - 12+75, BL  
STA. 12+83 - 13+50, BL

4 INCH WHITE LINE  
STA. 10+00 - 11+11, RT (PARKING)  
STA. 10+61 - 11+67, RT  
STA. 11+77 - 12+80, RT (PARKING)  
STA. 12+86 - 13+67, RT (PARKING)  
STA. 10+00 - 10+28, LT (PARKING)  
STA. 10+28 - 11+67, LT  
STA. 11+74 - 12+72, LT (PARKING)  
STA. 12+77 - 13+08, LT (PARKING)

12 INCH WHITE LINE  
STA. 12+75 - 12+83 (CROSSWALK)

TEMPORARY BRIDGE  
STA. 11+07 - 11+67

CHANGING ELEVATIONS OF SEWER MANHOLES  
STA. 11+26, LT

BITUMINOUS CONCRETE SIDEWALK  
STA. 11+11 - 11+35, LT  
STA. 11+77 - 11+90, LT

TEMPORARY PEDESTRIAN BRIDGE  
STA. 11+36 - 11+76, LT

CHANGING ELEVATION OF DROP INLETS,  
CATCH BASINS OR MANHOLES

STA. 10+08, RT  
STA. 11+98, LT  
STA. 12+04, RT

TEMPORARY TRAFFIC BARRIER  
STA. 10+83 - 11+06, RT  
STA. 11+29 - 11+36, LT  
STA. 11+33 - 11+48, RT  
STA. 11+63 - 11+73, LT

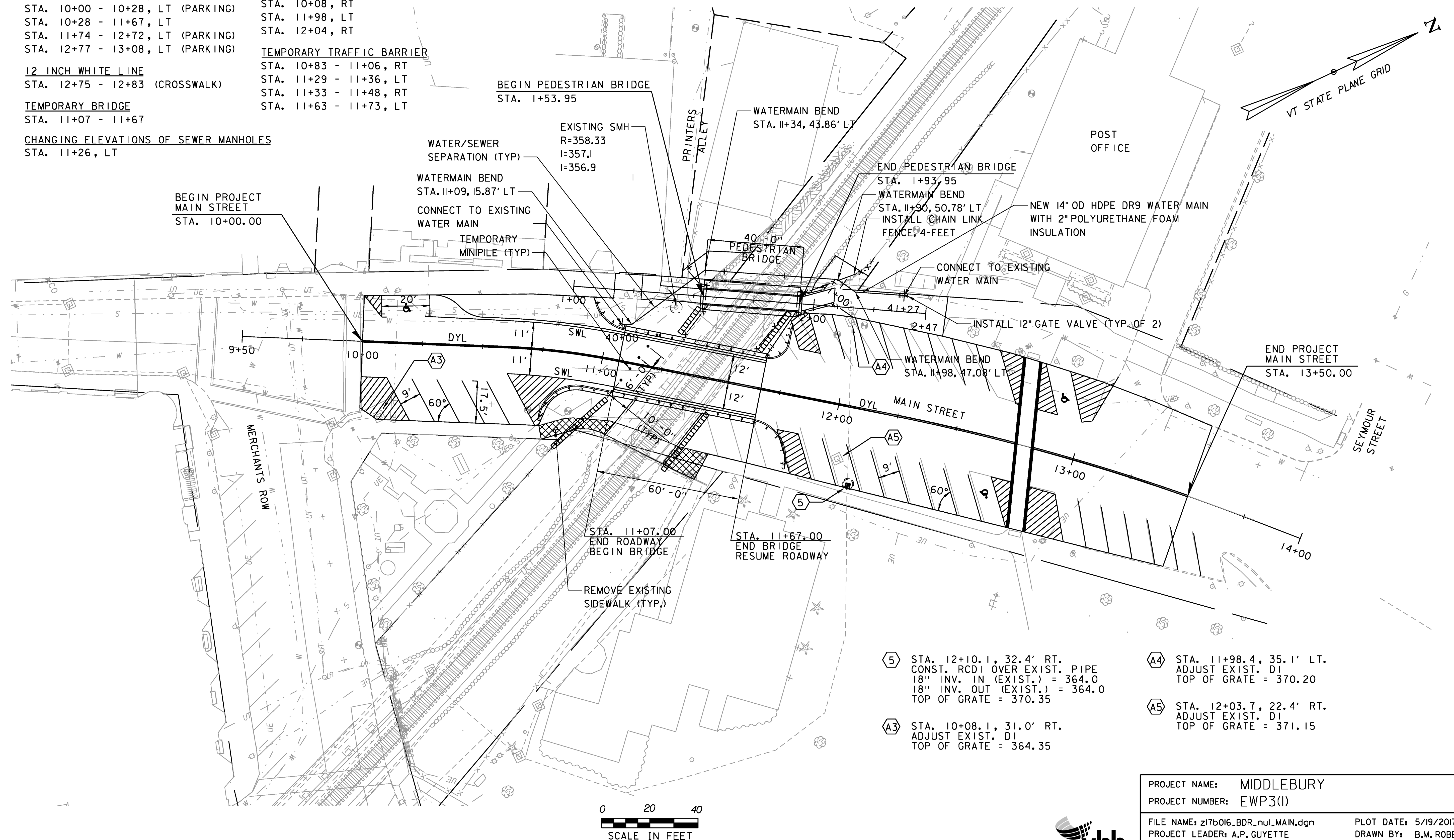
TEMPORARY WATERMAIN  
STA. 11+05 - 12+13, LT  
GATE VALVE WITH BOX  
STA. 11+05, LT  
STA. 12+13, LT

CHAIN LINK FENCE, 4 FEET  
STA. 11+28 - 11+35, LT  
STA. 11+77 - 12+03, LT  
STA. 11+77 - 11+99, LT

SOLID ROCK EXCAVATION  
STA. 10+76 - 11+11, RT  
STA. 11+33 - 11+51, RT

LETTER OR SYMBOL  
STA. 10+18, LT (HANDICAP)  
STA. 12+68, RT (HANDICAP)  
STA. 12+90, LT (HANDICAP)

TEMPORARY MINIPILE  
STA. 10+94 - 11+37  
16 PILES, LOCATIONS  
SHOWN APPROXIMATELY  
IN PLAN VIEW

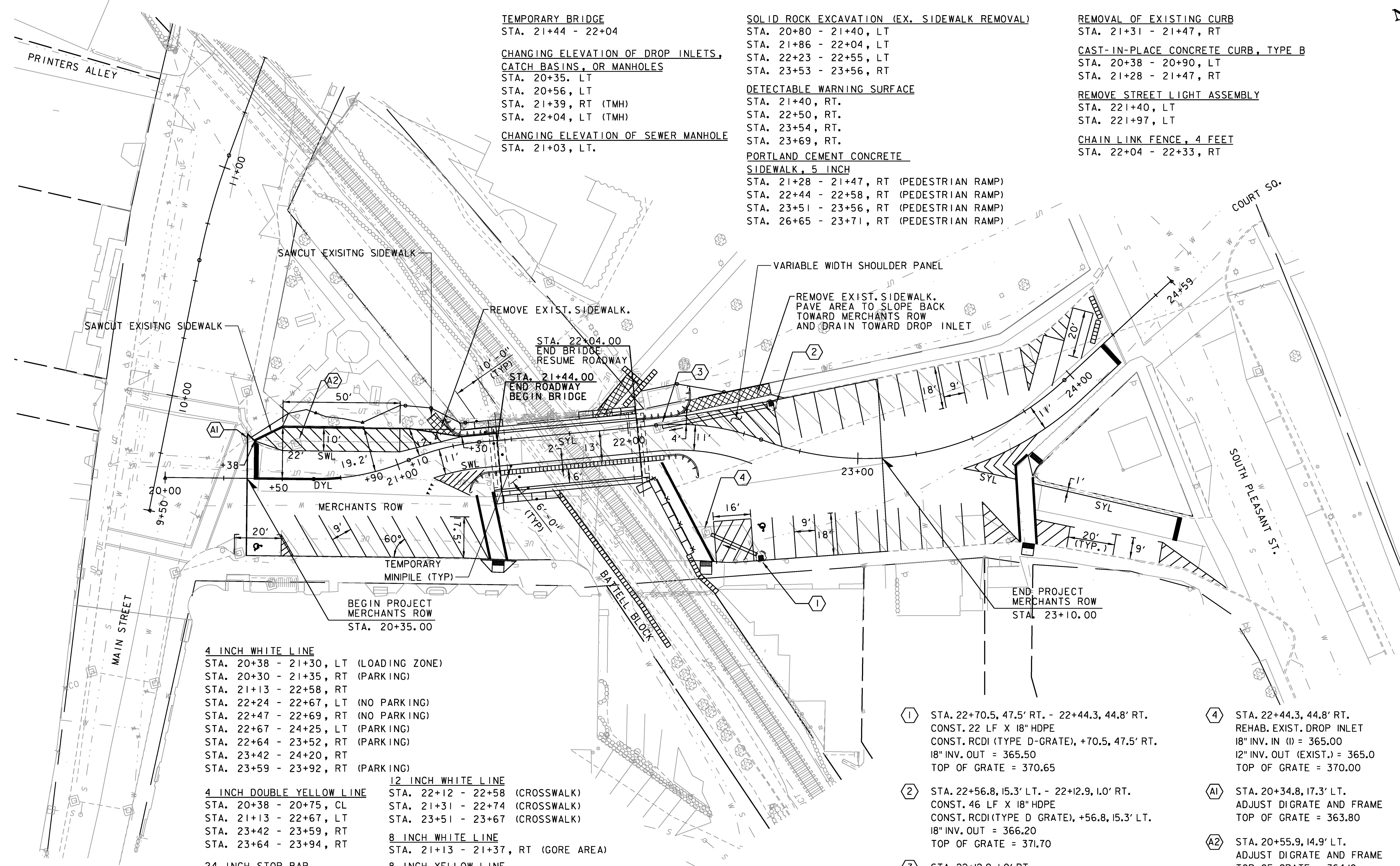
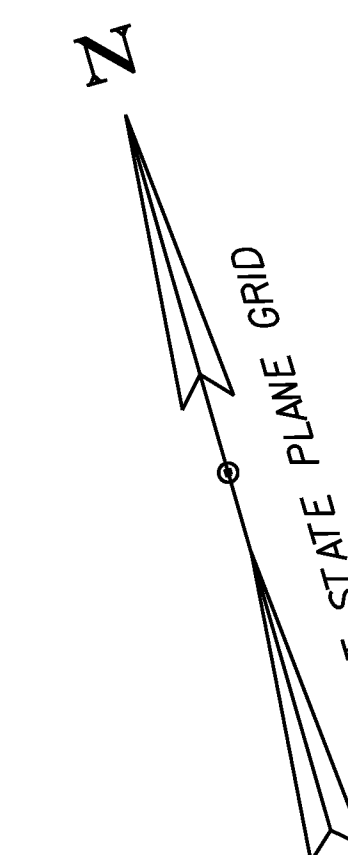


- 5 STA. 12+10.1, 32.4' RT.  
CONST. RCDI OVER EXIST. PIPE  
18" INV. IN (EXIST.) = 364.0  
18" INV. OUT (EXIST.) = 364.0  
TOP OF GRATE = 370.35
- A3 STA. 10+08.1, 31.0' RT.  
ADJUST EXIST. D1  
TOP OF GRATE = 364.35

- A4 STA. 11+98.4, 35.1' LT.  
ADJUST EXIST. D1  
TOP OF GRATE = 370.20
- A5 STA. 12+03.7, 22.4' RT.  
ADJUST EXIST. D1  
TOP OF GRATE = 371.15

PROJECT NAME:	MIDDLEBURY	PLOT DATE:	5/19/2017
PROJECT NUMBER:	EW3(1)	DRAWN BY:	B.M. ROBERTS
FILE NAME:	z17b016_BDR_nul_MAIN.dgn	DESIGNED BY:	B.M. ROBERTS
PROJECT LEADER:	A.P. GUYETTE	CHECKED BY:	E.P. DETRICK
MAIN STREET LAYOUT PLAN SHEET		SHEET	19 OF 54





- TEMPORARY BRIDGE  
STA. 21+44 - 22+04

CHANGING ELEVATION OF DROP INLETS, CATCH BASINS, OR MANHOLES  
STA. 20+35, LT  
STA. 20+56, LT  
STA. 21+39, RT (TMH)  
STA. 22+04, LT (TMH)

CHANGING ELEVATION OF SEWER MANHOLE  
STA. 21+03, LT.
- SOLID ROCK EXCAVATION (EX. SIDEWALK REMOVAL)  
STA. 20+80 - 21+40, LT  
STA. 21+86 - 22+04, LT  
STA. 22+23 - 22+55, LT  
STA. 23+53 - 23+56, RT

DETECTABLE WARNING SURFACE  
STA. 21+40, RT.  
STA. 22+50, RT.  
STA. 23+54, RT.  
STA. 23+69, RT.

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH  
STA. 21+28 - 21+47, RT (PEDESTRIAN RAMP)  
STA. 22+44 - 22+58, RT (PEDESTRIAN RAMP)  
STA. 23+51 - 23+56, RT (PEDESTRIAN RAMP)  
STA. 26+65 - 23+71, RT (PEDESTRIAN RAMP)
- REMOVAL OF EXISTING CURB  
STA. 21+31 - 21+47, RT

CAST-IN-PLACE CONCRETE CURB, TYPE B  
STA. 20+38 - 20+90, LT  
STA. 21+28 - 21+47, RT

REMOVE STREET LIGHT ASSEMBLY  
STA. 221+40, LT  
STA. 221+97, LT

CHAIN LINK FENCE, 4 FEET  
STA. 22+04 - 22+33, RT

TEMPORARY MINIPILE  
STA. 21+31 - 21+71, LT & RT  
14 PILES, LOCATIONS  
SHOWN APPROXIMATELY  
IN PLAN VIEW

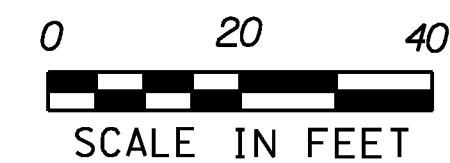
- 4 INCH WHITE LINE  
STA. 20+38 - 21+30, LT (LOADING ZONE)  
STA. 20+30 - 21+35, RT (PARKING)  
STA. 21+13 - 22+58, RT  
STA. 22+24 - 22+67, LT (NO PARKING)  
STA. 22+47 - 22+69, RT (NO PARKING)  
STA. 22+67 - 24+25, LT (PARKING)  
STA. 22+64 - 23+52, RT (PARKING)  
STA. 23+42 - 24+20, RT  
STA. 23+59 - 23+92, RT (PARKING)

- 4 INCH DOUBLE YELLOW LINE  
STA. 20+38 - 20+75, CL  
STA. 21+13 - 22+67, LT  
STA. 23+42 - 23+59, RT  
STA. 23+64 - 23+94, RT

- 24 INCH STOP BAR  
STA. 20+38  
STA. 24+17  
STA. 23+89

- 12 INCH WHITE LINE  
STA. 22+12 - 22+58 (CROSSWALK)  
STA. 21+31 - 22+74 (CROSSWALK)  
STA. 23+51 - 23+67 (CROSSWALK)
- 8 INCH WHITE LINE  
STA. 21+13 - 21+37, RT (GORE AREA)
- 8 INCH YELLOW LINE  
STA. 23+42 - 23+75, RT (GORE AREA)

- LETTER OR SYMBOL  
STA. 21+06 - 21+11, RT (YIELD MARKINGS)  
STA. 20+39, RT (HANDICAP)  
STA. 22+68, RT (HANDICAP)



- ① STA. 22+70.5, 47.5' RT. - 22+44.3, 44.8' RT.  
CONST. 22 LF X 18" HDPE  
CONST. RCDI (TYPE D-GRATE), +70.5, 47.5' RT.  
18" INV. OUT = 365.50  
TOP OF GRATE = 370.65

② STA. 22+56.8, 15.3' LT. - 22+12.9, 1.0' RT.  
CONST. 46 LF X 18" HDPE  
CONST. RCDI (TYPE D GRATE), +56.8, 15.3' LT.  
18" INV. OUT = 366.20  
TOP OF GRATE = 371.70

③ STA. 22+12.9, 1.0' RT.  
REHAB. EXIST. DROP INLET  
18" INV. IN (2) = 365.50  
12" INV. OUT (EXIST.) = 365.4  
TOP OF GRATE = 372.75
- ④ STA. 22+44.3, 44.8' RT.  
REHAB. EXIST. DROP INLET  
18" INV. IN (1) = 365.00  
12" INV. OUT (EXIST.) = 365.0  
TOP OF GRATE = 370.00

AI STA. 20+34.8, 17.3' LT.  
ADJUST DIGRATE AND FRAME  
TOP OF GRATE = 363.80

A2 STA. 20+55.9, 14.9' LT.  
ADJUST DIGRATE AND FRAME  
TOP OF GRATE = 364.10

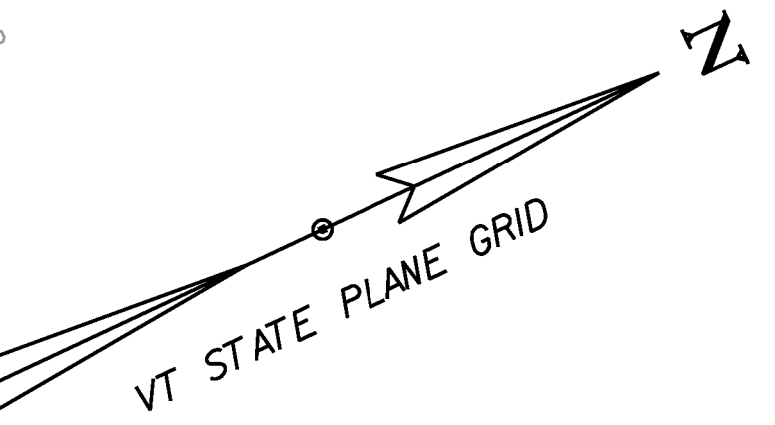
PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW3(1)
FILE NAME:	z17b016_BDR_nul.dgn
PROJECT LEADER:	A.P. GUYETTE
DESIGNED BY:	D.M. PECK
MERCHANTS ROW LAYOUT PLAN SHEET	
PLOT DATE:	5/19/2017
DRAWN BY:	D.M. PECK
CHECKED BY:	E.P. DETRICK
SHEET	20 OF 54



REMOVING SIGNS  
 STA. 10+09, LT  
 STA. 11+05, LT  
 STA. 11+09, LT  
 STA. 11+36, LT  
 STA. 11+39, LT  
 STA. 11+42, LT (3 SIGNS)  
 STA. 11+63, RT  
 STA. 12+57, LT

ERECTING SALVAGED SIGNS  
 STA. 10+04, LT  
 STA. 12+75, RT

BEGIN PROJECT  
 MAIN STREET  
 STA. 10+00.00



PED. CROSS HERE  
 NEW SIGN & POST  
 STA. 11+13, RT

NO PEDESTRIAN SYMBOL  
 NEW SIGN & POST  
 STA. 10+83, RT  
 STA. 11+66, RT  
 STA. 11+70, RT

NEW SIGN

#### NOTE

- SEE MAIN STREET LAYOUT PLAN SHEET FOR ADDITIONAL INFORMATION RELATED TO PAVEMENT MARKINGS.
- IF A SIGN NOTED AS RETAIN MUST BE REMOVED BY THE CONTRACTOR, THE SIGN SHALL BE REMOVED AND RELOCATED ONCE THE CONSTRUCTION IS CLEAR OF THE SIGN LOCATION. (SUBSIDIARY)

#### SIGNING LEGEND

N = NEW  
 R = REMOVE  
 R&S = REMOVE AND SALVAGE  
 R&SA = REMOVE AND SALVAGE TO ACTR  
 R&SM = REMOVE AND SALVAGE TO TOWN OF MIDDLEBURY  
 RET = RETAIN  
 S = SALVAGED SIGN  
 B-B = BACK TO BACK

0 20 40  
 SCALE IN FEET

PROJECT NAME: MIDDLEBURY  
 PROJECT NUMBER: EWP3(I)

FILE NAME: z17b016_BDR_Sign_MAIN.dgn  
 PROJECT LEADER: A.P. GUYETTE  
 DESIGNED BY: B.M. ROBERTS  
 MAIN STREET SIGNS PLAN SHEET

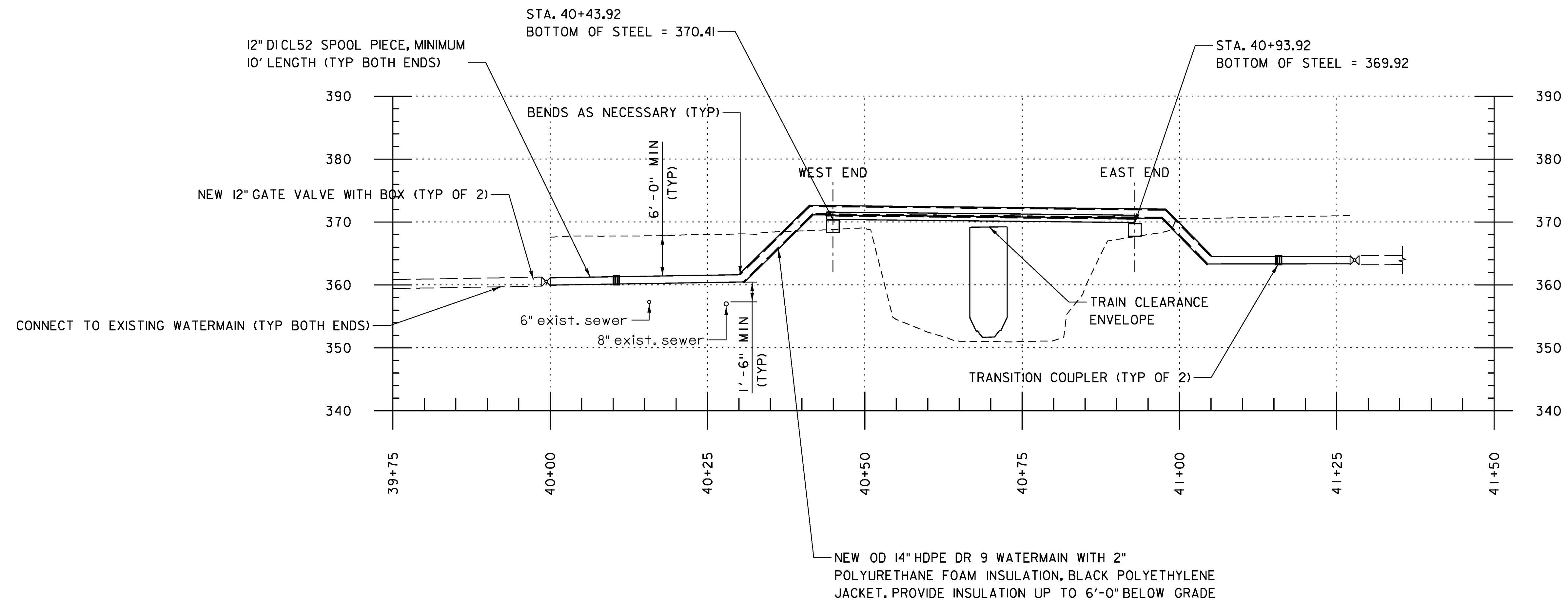
PLOT DATE: 5/19/2017  
 DRAWN BY: B.M. ROBERTS  
 CHECKED BY: E.P. DETRICK  
 SHEET 24 OF 54











### TEMPORARY WATERMAIN PROFILE

SCALE 1" = 10'-0"

#### NOTES:

- I. PROVIDE THRUST RESTRAINT/THRUST BLOCKS AT ALL PIPE BENDS, 22.5 DEGREE AND GREATER.



PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(1)	
FILE NAME: z17b016_WATERLINE PRO.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: K.C. BARRY
DESIGNED BY: R. MARVIN	CHECKED BY: A.P. GUYETTE
WATERLINE PROFILE	SHEET 23 OF 54

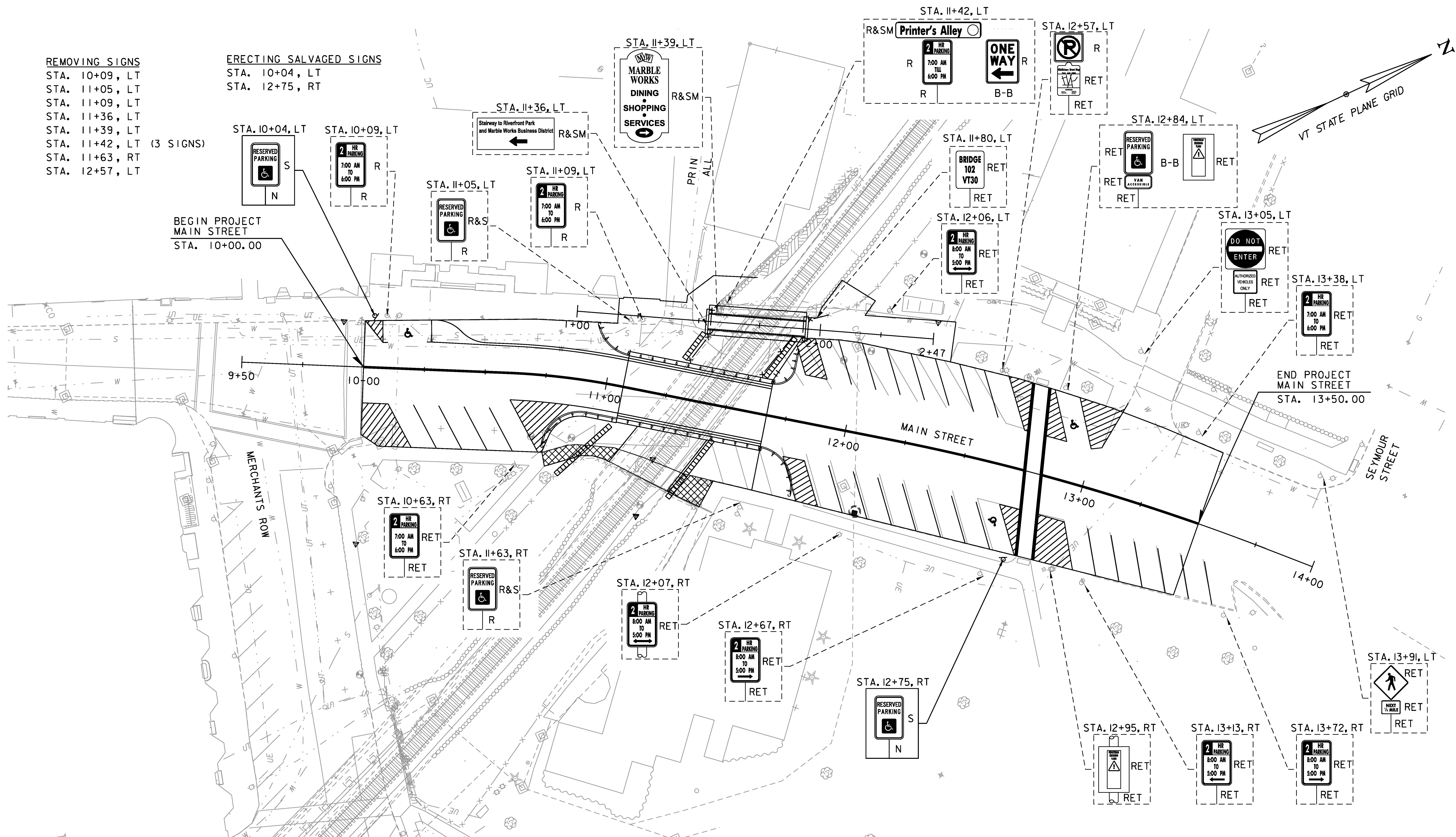


REMOVING SIGNS

STA. 10+09, LT  
STA. 11+05, LT  
STA. 11+09, LT  
STA. 11+36, LT  
STA. 11+39, LT  
STA. 11+42, LT (3 SIGNS)  
STA. 11+63, RT  
STA. 12+57, LT

ERECTING SALVAGED SIGNS

STA. 10+04, LT  
STA. 12+75, RT



BEGIN PROJECT  
MAIN STREET  
STA. 10+00.00

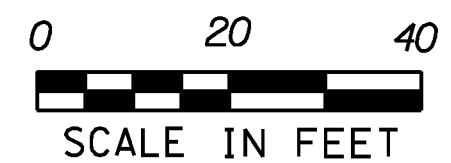
END PROJECT  
MAIN STREET  
STA. 13+50.00

NOTE

1. SEE MAIN STREET LAYOUT PLAN SHEET FOR ADDITIONAL INFORMATION RELATED TO PAVEMENT MARKINGS.
2. IF A SIGN NOTED AS RETAIN MUST BE REMOVED BY THE CONTRACTOR, THE SIGN SHALL BE REMOVED AND RELOCATED ONCE THE CONSTRUCTION IS CLEAR OF THE SIGN LOCATION. (SUBSIDIARY)

SIGNING LEGEND

N = NEW  
R = REMOVE  
R&S = REMOVE AND SALVAGE  
R&SA = REMOVE AND SALVAGE TO ACTR  
R&SM = REMOVE AND SALVAGE TO TOWN OF MIDDLEBURY  
RET = RETAIN  
S = SALVAGED SIGN  
B-B = BACK TO BACK



PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW3(1)
FILE NAME:	z17b016_BDR_Sign_MAIN.dgn
PROJECT LEADER:	A.P. GUYETTE
DESIGNED BY:	B.M. ROBERTS
MAIN STREET SIGNS PLAN SHEET	
PLOT DATE:	5/19/2017
DRAWN BY:	B.M. ROBERTS
CHECKED BY:	E.P. DETRICK
SHEET	24 OF 54









# TRAFFIC SIGN SUMMARY SHEET

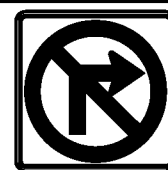
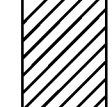
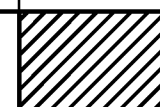
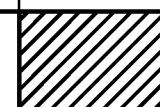


PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EWP3(1)
FILE NAME: z17b016_TSSS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETTRICK
TRAFFIC SIGN SUMMARY SHEET 1	SHEET 26 OF 54



STATE OF VERMONT  
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST RE TAIN ING	NO. OF POS TS	NEW SIGN POSTS												RE FR AM E D	REMARKS	SIGN DETAIL						
					"A"	"B"	SALV SIGN	SALV TIS			FLANGED CHANNEL			SQUARE STEEL (IN)			TUBULAR ALUMINUM Ø (IN)			WOOD POST (LF)		W-SHAPE STEEL			DETAIL ON SHEET NUMBER	STD. SHEET NUMBER					
		EA	WIDTH (IN)	HEIGHT (IN)							1.75	2.0	2.5	3.0	4.0	4.0 MOD	TYPE 1	TYPE 2	FTG. SIZE		WEIGHT	POST SIZE									
																			LB/FT	LB/FT							LB/FT	24"	30"		
OPTION ITEMS																															
MERCHANTS ROW																															
21+97 , RT		I	24	24	4.00																							SHSM R3-1 MOUNT TO EXISTING POST			
22+25 , RT		I	36	12	3.00																							SHSM R6-1R MOUNT ABOVE R5-1			
22+25 , RT		I	36	12	3.00																							SHSM R6-1L MOUNT BACK TO BACK WITH R6-1R			
22+25 , RT		I	30	30	6.25					I					X		X											SHSM R5-1			
22+37 , LT		I	36	12	3.00																							SHSM R6-1R MOUNT ABOVE R5-1			
22+37 , LT		I	30	30	6.25					I					X		X											SHSM R5-1			
22+72 , RT								I		I					X		X											EXISTING SIGN REMOVED AND RESET ON NEW POST FROM STA 22+78 , RT			
23+84 , RT		I	30	30	6.25					I					X		X											SHSM R1-1			
23+96 , RT		2	36	12	6.00																							SHSM R6-1L SEE DETAIL FOR MOUNTING			
23+96 , RT		I	36	12	3.00																							SHSM R6-1R SEE DETAIL FOR MOUNTING			
23+96 , RT		I	30	30	6.25					I					X		X											SHSM R5-1 SEE DETAIL FOR MOUNTING			
24+16 , RT		I	30	30	6.25					I					X		X											SHSM R5-3			
24+19 , RT		2	36	12	6.00																							SHSM R6-1L SEE DETAIL FOR MOUNTING			
24+19 , RT		I	36	12	3.00																							SHSM R6-1R SEE DETAIL FOR MOUNTING			
24+19 , RT		I	30	30	6.25					I					X		X											SHSM R5-1 SEE DETAIL FOR MOUNTING			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE ROADWAY, TRAFFIC & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."											FT	FT	FT	FT	FT	FT		EA	LB	LB	LB	TYPE 1		TYPE 2					WOG = WHITE LEGEND ON GREEN BACKGROUND - PLAQUE FYG = BLACK LEGEND ON FLUORESCENT YELLOW-GREEN BACKGROUND SHSM = FHWA STANDARD HIGHWAY SIGNS AND MARKINGS BOOK (WITH 2012 SUPPLEMENT)		
TOTALS					SF	SF	EA.	SF		FT			FT			105				LB			EA.	WOOD POSTS (FT)		EA.	EA.	LB	PROJECT NAME: MIDDLEBURY		
					68.50		I									105															

POST LENGTH AVERAGES 15 FEET

POST LENGTH WITH '+ ' AVERAGES 20 FEET



PROJECT NAME: MIDDLEBURY  
PROJECT NUMBER: EWP3(1)

FILE NAME: z17b016_TSSS.dgn  
PROJECT LEADER: A.P. GUYETTE  
DESIGNED BY: D.M. PECK  
TRAFFIC SIGN SUMMARY SHEET 2

PLOT DATE: 5/19/2017  
DRAWN BY: D.M. PECK  
CHECKED BY: E.P. DETRICK  
SHEET 27 OF 54



# TRAFFIC SIGN SUMMARY SHEET

POST LENGTH AVERAGES 15 FEET

POST LENGTH WITH '+' AVERAGES 20 FEET

PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EWP3(1)
FILE NAME: z17b016_TSSS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETTRICK
TRAFFIC SIGN SUMMARY SHEET 3	SHEET 28 OF 54



GENERAL TRAFFIC CONTROL , DETOUR , AND PHASING NOTES:

1. THE FOLLOWING TRAFFIC CONTROL INFORMATION AND PHASING PLAN IS INTENDED TO BE AN OUTLINE FOR HOW THE WORK WILL PROCEED.
2. THE RECONSTRUCTION OF THE MAIN STREET AND MERCHANTS ROW BRIDGES WILL INCLUDE THE USE OF DETOUR ROUTES. TRAFFIC WILL BE MAINTAINED BY USING A COMBINATION OF VEHICLE AND PEDESTRIAN DETOURS AS OUTLINED IN THE PROJECT PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, ERECTING, MAINTAINING, AND REMOVING ALL TEMPORARY AND DETOUR SIGNING ALONG THE DETOUR ROUTES AS SHOWN IN THE PLANS, AS REQUIRED BY SITE SPECIFIC WORK, AND AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, MAINTAINING, AND REMOVING TEMPORARY PAVEMENT MARKINGS AS REQUIRED FOR THE PROJECT. SITE SPECIFIC TRAFFIC CONTROLS SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) , 2009 EDITION AND LATEST REVISIONS.
3. SOLID SUBSTRATE CONSTRUCTION SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING "AMERICAN SOCIETY FOR TESTING AND MATERIALS" (ASTM) TYPE VII, VIII OR IX REQUIREMENTS, UNLESS OTHERWISE NOTED.
4. ALL SIGNS SHALL BE LOCATED SO THEY ARE VISIBLE AND ABLE TO BE READ BY THE TRAVELING PUBLIC. SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS. ALL SIGN STANDS AND POST INSTALLATIONS SHALL BE "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 COMPLIANT. NO SIGN POSTS SHALL EXTEND OVER THE TOP OF THE SIGN INSTALLED ON SAID POST(S). WHEN ANCHORS ARE INSTALLED, STUBS SHALL NOT BE GREATER THAN FOUR INCHES ABOVE EXISTING GROUND. FIXED SIGNS SHALL BE SET SECURELY IN THE GROUND. THE BOTTOM OF A SIGN SHALL BE AT LEAST SEVEN FEET ABOVE THE EDGE OF PAVEMENT.
5. BEFORE THE DEMOLITION OF THE MAIN STREET AND MERCHANTS ROW BRIDGES, DETOUR PLANS SHALL BE ESTABLISHED TO MAINTAIN THE CONTINUITY OF VEHICLE AND PEDESTRIAN TRAFFIC THROUGH THE IMPACTED AREA. DETOUR SIGNS FOR EACH CONSTRUCTION PHASE SHALL BE IN PLACE PRIOR TO THE BEGINNING OF WORK FOR THE RESPECTIVE CONSTRUCTION PHASE AS SHOWN ON THE DETOUR PLANS AND AS DIRECTED BY THE ENGINEER. SIGNS SHALL BE COVERED UNTIL WORK COMMENCES AND UPON COMPLETION OF THE WORK. THE CONTRACTOR SHALL MAINTAIN ALL DETOURS, TEMPORARY SIGNING, AND OTHER SUPPORTING TRAFFIC CONTROLS THROUGHOUT CONSTRUCTION. INSTALLING, MAINTAINING, ADJUSTING, MODIFYING, AND REMOVING THE DETOUR AND TRAFFIC CONTROLS SHALL BE INCIDENTAL TO ITEM 641.10 TRAFFIC CONTROL. DETOUR ROUTE MARKER ASSEMBLIES SHALL BE INSTALLED ADJACENT TO THE EXISTING ROUTE MARKER ASSEMBLIES AT THE INTERSECTIONS.
6. ANY CONFLICTING PAVEMENT MARKINGS SHALL BE BLACKED OUT OR REMOVED BY BURNING OR GRINDING. EXISTING PAVEMENT MARKINGS THAT ARE TO REMAIN FOR LATER USE SHALL BE BLACKED OUT WITH TEMPORARY TAPE.
7. THE CONSTRUCTION PHASES SHOW VEHICULAR TRAFFIC ADJACENT TO CONSTRUCTION WORK AREAS. REFLECTORIZED DRUMS OR CONES SHALL BE USED TO DELINEATE THE WORK ZONE FROM THE TRAVELED WAY.
8. EXISTING SIGNS SHALL REMAIN, WITH COVERING AS NECESSARY, UNTIL THEY ARE NO LONGER REQUIRED. TEMPORARY SIGNS SHALL BE INSTALLED, AS SHOWN IN THE PLANS AND AS REQUIRED BY THE MUTCD. ALL PROPOSED SIGNING SHALL BE INSTALLED AND ALL SIGNS TO BE REMOVED SHALL BE REMOVED PRIOR TO THE APPLICATION OF THE FINAL PAVEMENT MARKINGS.
9. CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS AS NOTED IN THE TRAFFIC CONTROL PLANS. PEDESTRIAN ACCESS SHALL MEET APPLICABLE AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS TO THE MAXIMUM EXTENT FEASIBLE. CONTRACTOR SHALL COORDINATE WORK ADJACENT TO COMMERCIAL ACCESS AREAS WITH THE LAND/BUSINESS OWNER PRIOR TO STARTING WORK IN THE AREA.
10. SPECIAL CARE MUST BE TAKEN TO PROVIDE ACCESS THROUGH THE WORK ZONES FOR EMERGENCY VEHICLES. THE CONTRACTOR SHALL COORDINATE WITH BOTH POLICE AND FIRE DEPARTMENTS TO DETERMINE THEIR MINIMUM ACCESS REQUIREMENTS. CONTRACTOR SHALL ENSURE THAT ACCESS IS AVAILABLE TO ALL PROPERTIES AT ALL TIMES FOR EMERGENCY VEHICLES.
11. ACTR HAS BEEN NOTIFIED THAT THEY WILL NEED TO REMOVE AND RELOCATE THE EXISTING BUS STOP ON MERCHANTS ROW PRIOR TO PHASE 2A.

TRAFFIC MANAGEMENT SEQUENCING:

1. THE DEMOLITION OF THE EXISTING BRIDGES AND CONSTRUCTION OF TEMPORARY REPLACEMENTS FOR THE MAIN STREET AND MERCHANTS ROW BRIDGES IS EXPECTED TO TAKE SIX WEEKS. THE FOLLOWING PARAGRAPHS DESCRIBE THE PROPOSED PHASES OF CONSTRUCTION FOR THIS WORK. PHASES HAVE BEEN DEVELOPED BASED ON MAINTAINING TRAFFIC THROUGHOUT THE PROJECT WHILE MINIMIZING THE IMPACTS TO ADJACENT COMMERCIAL, RESIDENTIAL, AND MUNICIPAL PROPERTIES. EACH PHASE HAS A SPECIFIC CONSTRUCTION AND DETOUR SIGNING PLAN. (ALL STATION REFERENCES ARE APPROXIMATE; ACTUAL BEGIN AND END STATIONS WILL BE DETERMINED BY THE CONTRACTOR AND THE ENGINEER IN THE FIELD.)
2. CONSTRUCTION PHASE 1

CONTRACTOR SHALL PREPARE FOR DEMOLITION OF THE EXISTING MAIN STREET BRIDGE DURING THIS INITIAL PHASE OF CONSTRUCTION. THE CONTRACTOR SHALL INSTALL SUPPORT OF EXCAVATION (SOE) TO PREPARE FOR THE TEMPORARY BRIDGE BACKWALLS AND ABUTMENTS FOR THE MAIN STREET BRIDGE AND CONSTRUCT THE TEMPORARY WATER MAIN ON MAIN STREET DURING THE TWO SUBPHASES, PHASE 1A AND PHASE 1B. THE TRAFFIC CONTROL REQUIRED FOR BOTH SUBPHASES IS DETAILED IN THE FOLLOWING SUBPHASE DESCRIPTIONS. ALL PHASE 1 SIGNING, PAVEMENT MARKINGS, AND TRAFFIC CONTROL DEVICES SHALL BE INSTALLED, OR ON-SITE, PRIOR TO COMMENCEMENT OF PHASE 1A.
3. PHASE 1A STA 10+75 TO STA 12+75, PRELIMINARY WORK PRIOR TO MAIN STREET BRIDGE DEMOLITION

A. ON MAIN STREET, BETWEEN TRIANGLE PARK AND THE EXISTING MIDBLOCK CROSSWALK IN FRONT OF THE MIDDLEBURY POST OFFICE, TWO-WAY VEHICULAR TRAFFIC SHALL BE MAINTAINED AND PUSHED TOWARD THE WEST-SIDE CURB OF THE MAIN STREET BRIDGE. THE WEST SIDE SIDEWALK SHALL REMAIN OPEN TO PEDESTRIANS ACROSS THE BRIDGE WHILE THE EAST SIDE SIDEWALK WILL BE CLOSED FROM MERCHANTS ROW TO APPROXIMATE STA 11+75. PRINTERS ALLEY SHALL REMAIN OPEN TO ALL VEHICLE AND PEDESTRIAN TRAFFIC.

B. THE EXISTING NORTHBOUND TRAVEL LANE AND PARKING SPACES ALONG THE EAST-SIDE CURB OF THE MAIN STREET BRIDGE SHALL BE CLOSED USING TYPE III BARRICADES FROM BOTH DIRECTIONS. THE EXISTING PARKING SPACES ALONG THE WEST-SIDE CURB OF THE MAIN STREET BRIDGE SHALL BE USED AS THE PHASE 1A SOUTHBOUND TRAVEL LANE. THE EXISTING SOUTHBOUND TRAVEL LANE SHALL BE USED AS THE PHASE 1A NORTHBOUND TRAVEL LANE. A TEMPORARY CENTERLINE OF CHANNELIZING DEVICES SHALL BE PLACED BETWEEN BOTH TRAVEL LANES AND A MINIMUM OF 11 FOOT TRAVEL LANES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE TRANSITION TO PHASE 1B.
4. PHASE 1B STA 10+75 TO STA 12+75, PRELIMINARY WORK PRIOR TO MAIN STREET BRIDGE DEMOLITION

A. ON MAIN STREET, BETWEEN TRIANGLE PARK AND THE EXISTING MIDBLOCK CROSSWALK IN FRONT OF THE MIDDLEBURY POST OFFICE, TWO-WAY VEHICULAR TRAFFIC SHALL BE MAINTAINED AND PUSHED TOWARD THE EAST-SIDE CURB OF THE MAIN STREET BRIDGE. THE EAST SIDE SIDEWALK SHALL REMAIN OPEN AND ACCESSIBLE TO PEDESTRIANS. THE WEST SIDE SIDEWALK WILL BE CLOSED FROM PRINTERS ALLEY TO APPROXIMATE STA 12+00. PRINTERS ALLEY SHALL REMAIN OPEN TO PEDESTRIAN TRAFFIC ONLY.

B. THE EXISTING SOUTHBOUND TRAVEL LANE AND PARKING SPACES ALONG THE WEST-SIDE CURB OF THE MAIN STREET BRIDGE SHALL BE CLOSED USING TYPE III BARRICADES FROM BOTH DIRECTIONS. THE EXISTING PARKING SPACES ALONG THE EAST-SIDE CURB OF THE MAIN STREET BRIDGE SHALL REMAIN CLOSED FROM PHASE 1A AND USED AS THE PHASE 1B NORTHBOUND TRAVEL LANE. THE EXISTING NORTHBOUND TRAVEL LANE SHALL BE USED AS THE PHASE 1B SOUTHBOUND TRAVEL LANE. A TEMPORARY CENTERLINE OF CHANNELIZING DEVICES SHALL BE PLACED BETWEEN BOTH TRAVEL LANES AND A MINIMUM OF 11 FOOT TRAVEL LANES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE TRANSITION TO PHASE 2.

C. AT THE END OF PHASE 1B, MAIN STREET TRAFFIC AND PARKING PATTERNS SHALL BE RETURNED TO PRE-EXISTING CONDITIONS UNTIL PHASE 3.

TRAFFIC MANAGEMENT SEQUENCING (CONT.):

5. CONSTRUCTION PHASE 2

THE CONTRACTOR SHALL INSTALL SOE TO PREPARE MERCHANTS ROW FOR THE TEMPORARY BRIDGE WORK DURING THE TWO SUBPHASES, PHASE 2A AND PHASE 2B. THE TRAFFIC CONTROL REQUIRED FOR BOTH SUBPHASES IS DETAILED IN THE FOLLOWING SUBPHASE DESCRIPTIONS.
6. PHASE 2A STA 20+25 TO STA 24+25, PRELIMINARY WORK PRIOR TO MERCHANTS ROW BRIDGE DEMOLITION.

A. MERCHANTS ROW WILL BE GENERALLY LIMITED TO ONE WAY TRAFFIC EASTBOUND FROM MAIN STREET TO S. PLEASANT STREET. THE EASTBOUND TRAVEL LANE WILL BE PUSHED TO THE NORTH SIDE OF THE MERCHANTS ROW BRIDGE. THE NORTH SIDE SIDEWALK SHALL REMAIN OPEN TO PEDESTRIANS ACROSS THE BRIDGE WHILE THE SOUTH SIDE SIDEWALK WILL BE CLOSED FROM THE EAST END OF THE BATTELL BUILDING TO APPROXIMATELY STA 22+75. THE DRIVE AISLE TO THE PARKING LOT BEHIND THE BATTELL BUILDING SHALL REMAIN OPEN AND ACCESSIBLE THROUGHOUT CONSTRUCTION. SHORT DURATION CLOSURES OF THE BATTELL BLOCK DRIVE WILL BE PERMITTED WITH PRIOR COORDINATION BETWEEN THE CONTRACTOR, THE ENGINEER, THE TOWN OF MIDDLEBURY PROJECT LIASON, AND THE BATTELL BLOCK MANAGER.

B. APPROXIMATELY ONE-HALF OF THE PARKING SPACES IN FRONT OF THE BATTELL BUILDING WILL BE CLOSED. THE PARALLEL PARKING SPACES ADJACENT TO TRIANGLE PARK WILL BE CLOSED. MOST OF THE PARKING SPACES EAST OF THE MERCHANTS ROW BRIDGE WILL BE CLOSED AT LEAST PART OF THE TIME DURING PHASE 2A.
7. PHASE 2B STA 20+25 TO STA 24+25, PRELIMINARY WORK PRIOR TO MERCHANTS ROW BRIDGE DEMOLITION.

A. MERCHANTS ROW WILL CONTINUE TO BE LIMITED TO ONE WAY TRAFFIC EASTBOUND FROM MAIN STREET TO S. PLEASANT STREET. THE EASTBOUND TRAVEL LANE WILL BE RETURNED TO ITS PRE-EXISTING POSITION SOUTH OF THE DOUBLE YELLOW LINE ALONG MERCHANTS ROW. THE NORTH SIDE SIDEWALK SHALL BE CLOSED TO PEDESTRIANS FROM TRIANGLE PARK TO APPROXIMATELY STA 23+50. THE SOUTH SIDE SIDEWALK SHALL REMAIN OPEN TO PEDESTRIANS IN FRONT OF THE BATTELL BUILDING, ACROSS THE MERCHANTS ROW BRIDGE, AND EAST TO S. PLEASANT STREET. THE DRIVE AISLE TO THE PARKING LOT BEHIND THE BATTELL BUILDING WILL BE OPEN, RESTRICTING TRAFFIC TO A RIGHT-IN, RIGHT-OUT CONDITION.

B. THE PARALLEL PARKING SPACES ADJACENT TO TRIANGLE PARK WILL CONTINUE TO BE CLOSED, AS WILL PARKING FROM THE MERCHANTS ROW BRIDGE TO STA 23+50 ALONG THE NORTH SIDE CURB. PARKING ALONG THE SOUTH SIDE CURB SHALL REMAIN OPEN THROUGHOUT PHASE 2B.

C. AT THE END OF PHASE 2B, MERCHANTS ROW TRAFFIC AND PARKING PATTERNS SHALL RETURN TO PRE-EXISTING CONDITIONS UNTIL PHASE 4.
8. CONSTRUCTION PHASE 3

THE CONTRACTOR SHALL CLOSE MAIN STREET AND ESTABLISH DELINEATION, PAVEMENT MARKINGS, WORKER AND PUBLIC PROTECTIONS, AND DETOURS NECESSARY TO DEMOLISH THE EXISTING MAIN STREET BRIDGE. FOLLOWING DEMOLITION, THE CONTRACTOR SHALL CONSTRUCT THE TEMPORARY MAIN STREET VEHICULAR AND PEDESTRIAN BRIDGES AS INDICATED IN THE PLANS. THE TRAFFIC CONTROL REQUIRED IS DETAILED IN THE FOLLOWING TWO SUBPHASE DESCRIPTIONS.



PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(1)	
FILE NAME: z17b016_TCP_notes.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETRICK
TCP - NOTES SHEET (1 OF 2)	SHEET 29 OF 54



TRAFFIC MANAGEMENT SEQUENCING (CONT.):

9. PHASE 3A STA 10+00 TO STA 12+75, FIRST WEEKEND / MAIN STREET BRIDGE DEMOLITION
- A. THIS PHASE SHALL CONSIST OF THE MAIN STREET BRIDGE CLOSURE AND DEMOLITION. TYPE III BARRICADES SHALL BE INSTALLED ALONG THE NORTH CROSSWALK AT THE INTERSECTION OF MAIN STREET AT MERCHANT’S ROW AND ALONG THE MIDBLOCK CROSSWALK IN FRONT OF THE MIDDLEBURY POST OFFICE. PEDESTRIAN ACCESS TO BOTH CROSSWALKS SHALL BE MAINTAINED.

B. MAIN STREET NORTHBOUND THROUGH TRAFFIC SHALL BE DETOURED ALONG CROSS STREET, COURT STREET, COURT SQUARE, AND NORTH PLEASANT STREET. MAIN STREET SOUTHBOUND THROUGH TRAFFIC SHALL BE DETOURED ALONG SEYMOUR STREET, NORTH PLEASANT STREET, COURT SQUARE, COURT STREET, AND CROSS STREET. VEHICLE ACCESS FOR PRINTERS ALLEY FROM MAIN STREET WILL BE PROHIBITED DURING THE MAIN STREET BRIDGE DEMOLITION WORK. PRINTERS ALLEY VEHICULAR TRAFFIC SHALL BE DETOURED ALONG CROSS STREET, COURT STREET, COURT SQUARE, NORTH PLEASANT STREET, SEYMOUR STREET, ELM STREET, MIDDLE SEYMOUR STREET, AND MAPLE STREET.

C. THE EAST-SIDE SIDEWALK OF MAIN STREET SHALL BE CLOSED BETWEEN THE INTERSECTION OF MAIN STREET AND MERCHANT’S ROW AND THE NORTHSIDE OF THE MAIN STREET BRIDGE. THE EAST-SIDE SIDEWALK FROM THE SIDE ENTRANCE OF THE SAINT STEPHEN’S CHURCH NORTH SHALL REMAIN OPEN. THE WEST-SIDE SIDEWALK SHALL BE OPEN ONLY FROM MERCHANTS ROW TO SOUTH OF PRINTERS ALLEY AND CLOSED FROM THE SOUTH SIDE OF PRINTERS ALLEY TO THE MIDDLEBURY POST OFFICE.
10. PHASE 3B STA 10+00 TO STA 12+75, BETWEEN FIRST AND SECOND WEEKEND
- A. THIS PHASE SHALL CONSIST OF STAGING AND CONSTRUCTION OF THE MAIN STREET TEMPORARY VEHICULAR BRIDGE AND TEMPORARY PEDESTRIAN BRIDGE. THIS PHASE SHALL MAINTAIN THE TRAFFIC CONTROL MEASURES FROM PHASE 3A; HOWEVER, PRINTERS ALLEY SHALL BE OPEN TO PEDESTRIAN TRAFFIC ONLY. THE WEST-SIDE SIDEWALK SHALL REMAIN CLOSED FROM THE NORTH SIDE OF PRINTERS ALLEY TO THE MIDDLEBURY POST OFFICE.
11. CONSTRUCTION PHASE 4
- THE CONTRACTOR SHALL INSTALL THE TEMPORARY MAIN STREET VEHICULAR AND PEDESTRIAN BRIDGES, COMPLETE MAIN STREET CONSTRUCTION, AND RE-OPEN MAIN STREET TO TWO-WAY TRAFFIC, AS INDICATED IN THE PLANS. THE CONTRACTOR SHALL CLOSE MERCHANTS ROW AND ESTABLISH DELINEATION, PAVEMENT MARKINGS, WORKER AND PUBLIC PROTECTIONS, AND DETOURS NECESSARY TO DEMOLISH THE EXISTING MERCHANTS ROW BRIDGE. FOLLOWING DEMOLITION, THE CONTRACTOR SHALL CONSTRUCT AND INSTALL THE TEMPORARY MERCHANTS ROW BRIDGE AS INDICATED IN THE PLANS. THE TRAFFIC CONTROL REQUIRED IS DETAILED IN THE FOLLOWING THREE SUBPHASE DESCRIPTIONS.
12. PHASE 4A STA 10+00 TO STA 12+75 AND STA 20+25 TO STA 24+25, SECOND WEEKEND AND WEEK / MAIN STREET TEMPORARY BRIDGE INSTALLATION / MERCHANTS ROW BRIDGE DEMOLITION
- A. THIS PHASE SHALL CONSIST OF MOVING THE COMPLETED MAIN STREET TEMPORARY VEHICULAR BRIDGE AND TEMPORARY PEDESTRIAN BRIDGE INTO THEIR FINAL POSITIONS ACROSS THE EXISTING RAILROAD TRACKS. THE CONTRACTOR SHALL FINALIZE GRADING BETWEEN THE EXISTING ROADWAY AND SIDEWALK AND THEIR RESPECTIVE TEMPORARY BRIDGE.

B. THIS PHASE SHALL CONSIST OF THE MERCHANTS ROW BRIDGE CLOSURE AND DEMOLITION. TYPE III BARRICADES SHALL BE INSTALLED ALONG THE EAST CROSSWALK AT THE INTERSECTION OF MAIN STREET AT MERCHANTS ROW AND ALONG THE CROSSWALKS AT THE INTERSECTIONS OF MERCHANTS ROW AT SOUTH PLEASANT STREET. ALL VEHICULAR TRAFFIC SHALL BE PROHIBITED ON MERCHANTS ROW DURING PHASE 4A.

C. PEDESTRIAN ACCESS SHALL BE LIMITED TO ONLY PARTS OF THE SOUTH SIDE OF MERCHANTS ROW. THE NORTH-SIDE SIDEWALK ON MERCHANTS ROW SHALL BE CLOSED. THE SOUTH-SIDE SIDEWALK SHALL BE OPEN ONLY FROM MAIN STREET TO THE FARTHEST BUSINESS DOOR EAST ON THE BATTELL BLOCK AND FROM SOUTH PLEASANT STREET WEST TO THE CLOSEST BUSINESS TO THE MERCHANTS ROW BRIDGE.

- D. STARTING IN PHASE 4A SOUTH PLEASANT STREET SHALL BE RESTRICTED TO SOUTHBOUND TRAFFIC ONLY. NORTHBOUND TRAFFIC ON SOUTH PLEASANT STREET SHALL BE DETOURED FROM CROSS STREET TO COURT STREET. SEE SOUTH PLEASANT STREET DETOUR PLAN. "DO NOT ENTER" R5-1 AND "ONE WAY" R6-1 SIGNS SHALL BE PLACED WITH TYPE III BARRICADES AS SHOWN IN PLANS ALONG SOUTH PLEASANT STREET TO PREVENT NORTHBOUND VEHICULAR TRAFFIC.

E. THE END OF THIS PHASE REESTABLISHES TWO-WAY TRAFFIC FLOW OVER THE MAIN STREET TEMPORARY VEHICULAR BRIDGE AND PEDESTRIAN TRAFFIC OVER THE TEMPORARY PEDESTRIAN BRIDGE. ALL MAIN STREET ROADWAY SURFACES SHALL BE PAVED TO FINISHED GRADE TO THE LIMITS SHOWN IN THE PLANS. FINAL PAVEMENT MARKINGS, FINAL SIGNING AND GUARDRAIL SHALL BE INSTALLED. THE MAIN STREET DETOUR SHALL BE REMOVED. PRINTERS ALLEY SHALL REMAIN CLOSED TO VEHICLE TRAFFIC WHILE PEDESTRIAN TRAFFIC ON PRINTERS ALLEY SHALL BE MAINTAINED.

13. PHASE 4B STA 20+25 TO STA 24+25, BETWEEN SECOND AND THIRD WEEKEND
- A. PHASE 4B SHALL MAINTAIN THE OVERALL TRAFFIC CONTROL MEASURES FROM PHASE 4A ALONG MERCHANTS ROW, WITH SOME MODIFICATIONS OF THE WORK ZONE. MERCHANTS ROW SHALL REMAIN CLOSED AT THE MERCHANTS ROW BRIDGE FOR BOTH VEHICULAR AND PEDESTRIAN TRAFFIC. THE TYPE III BARRICADES AT THE INTERSECTION OF MERCHANTS ROW AND SOUTH PLEASANT STREET SHALL BE MOVED WEST TO APPROXIMATELY STA 23+25. THIS SHALL ALLOW FOR LOCAL TRAFFIC TO ACCESS SIX (6) PARKING SPACES ON THE EAST END OF MERCHANTS ROW.

B. BARRIERS AT THE INTERSECTION OF MERCHANTS ROW AND MAIN STREET SHALL BE MOVED NORTH AND EAST TO ALLOW VEHICULAR ACCESS TO THE PARKING BEHIND BATTELL BLOCK AND FOUR (4) TEMPORARY PARKING SPACES. ALTERNATING ONE-WAY TRAFFIC SHALL BE MAINTAINED FROM MAIN STREET TO THE BATTELL BLOCK REAR PARKING LOT.

14. PHASE 4C STA 200+25 TO STA 204+10, THIRD WEEKEND / MERCHANTS ROW TEMPORARY BRIDGE INSTALLATION
- A. THIS PHASE SHALL CONSIST OF MOVING THE COMPLETED MERCHANTS ROW TEMPORARY VEHICULAR AND PEDESTRIAN BRIDGE INTO ITS FINAL POSITION. THE CONTRACTOR SHALL FINALIZE GRADING BETWEEN THE EXISTING ROADWAY AND SIDEWALK TO THE TEMPORARY BRIDGE. THIS PHASE SHALL REESTABLISH THE TRAFFIC CONTROL MEASURES FROM PHASE 4A. THIS REMOVES ACCESS TO THE TEMPORARY PARKING SPACES ON THE EAST AND WEST ENDS OF MERCHANTS ROW AND REMOVES THE ACCESS TO THE BATTELL BLOCK REAR PARKING LOT.

B. BEGINING IN PHASE 4B AND COMPLETED IN PHASE 4C, THE CONTRACTOR SHALL FINALIZE THE CONSTRUCTION OF THE LOADING ZONE ADJACENT TO TRIANGLE PARK ON THE WEST SIDE OF THE MERCHANTS ROW TEMPORARY BRIDGE.

15. PHASE 5 AFTER THIRD WEEKEND / INCORPORATING TRAFFIC ONTO MERCHANTS ROW TEMPORARY BRIDGE FINAL CONDITIONS
- A. THIS PHASE SHALL CONSIST OF THE OPENING OF MERCHANTS ROW FOR ONE-WAY VEHICULAR TRAFFIC FLOW EASTBOUND AND TWO-WAY VEHICULAR TRAFFIC FLOW ONLY ON THE WEST SIDE OF THE CROSSING PROVIDING ACCESS TO AND FROM BATTELL BLOCK REAR PARKING. LEFT TURNS FROM MERCHANTS ROW AT MAIN STREET SHALL BE PROHIBITED. PEDESTRIAN ACCESS SHALL BE OPENED USING THE PROTECTED PEDESTRIAN WALKWAY ON THE SOUTH SIDE OF THE TEMPORARY BRIDGE. THE EXISTING NORTH SIDEWALK SHALL BE CLOSED FROM STA 20+30 TO STA 22+75.

B. THIS PHASE SHALL INCLUDE THE REMOVAL OF ALL DETOUR SIGNING AND OTHER TRAFFIC CONTROL DEVICES. FINAL TRAFFIC PATTERNS WILL BE ESTABLISHED INCLUDING SOUTH PLEASANT STREET ONE-WAY SOUTHBOUND TRAFFIC FLOW AND PRINTERS ALLEY DETOUR SIGNS. ALL LANDSCAPING WILL BE COMPLETED. ALL ROADWAY SURFACES SHALL BE PAVED TO FINISHED GRADE TO THE LIMITS SHOWN IN THE PLANS. FINAL PAVEMENT MARKINGS SHALL BE APPLIED AND FINAL SIGNING SHALL BE INSTALLED.



PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(I)	
FILE NAME: z17b016_TCP_notes.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETRICK
TCP - NOTES SHEET (2 OF 2)	SHEET 30 OF 54



IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	NUMBER OF SIGNS REQ'D	REMARKS
	WIDTH (IN)	HEIGHT (IN)			
D3-1	42	9		12	MOUNT ABOVE M4-9 OR MI-5
D3-2	42	9		9	MOUNT ABOVE M4-9
G20-2	36	18		5	MOUNT ON ONE POST
MI-5	24	24		17	MOUNT ON ONE POST
M3-3	24	12		1	MOUNT ABOVE MI-5
M4-8	24	12		19	MOUNT ABOVE MI-5
M4-8A	24	18		1	MOUNT ON ONE POST
M4-9L	30	24		3	MOUNT ON ONE POST
M4-9R	30	24		3	MOUNT ON ONE POST
M4-9S	30	24		3	MOUNT ON ONE POST
M4-9bL	30	24		3	MOUNT ON ONE POST
M4-9bR	30	24		4	MOUNT ON ONE POST
M4-9-bT	30	24		3	MOUNT ON ONE POST
M4-10L	48	18		1	MOUNT ON TYPE III BARRICADE
M5-1L	21	15		2	MOUNT BELOW MI-5
M5-1R	21	15		1	MOUNT BELOW MI-5
M6-1L	21	15		6	MOUNT BELOW MI-5

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	NUMBER OF SIGNS REQ'D	REMARKS
	WIDTH (IN)	HEIGHT (IN)			
M6-1R	21	15		3	MOUNT BELOW MI-5
M6-2R	21	15		2	MOUNT BELOW MI-5
M6-3	21	15		5	MOUNT BELOW MI-5
R3-1R	24	24		1	MOUNT ON ONE POST
R3-1L	24	24		2	MOUNT ON ONE POST
R4-8	24	12		1	MOUNT ON ONE POST
R5-1	30	30		4	MOUNT ON ONE POST
R6-1L	48	18		4	MOUNT ON ONE POST
R6-1R	48	18		5	MOUNT ON ONE POST
R7-1L	12	18		1	MOUNT BELOW R5-1
R7-1R	12	18		2	MOUNT BELOW R5-1
R8-3	30	30		2	MOUNT ON ONE POST
R9-9	24	12		4	MOUNT ON ONE POST OR TYPE III BARRICADE
R9-9A	24	12		2	MOUNT ON ONE POST
R9-9B	24	18		1	MOUNT ON ONE POST
R9-10	24	12		1	MOUNT ON ONE POST
R9-11L	24	18		1	MOUNT ON ONE POST

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	NUMBER OF SIGNS REQ'D	REMARKS
	WIDTH (IN)	HEIGHT (IN)			
R9-11R	24	18		1	MOUNT ON ONE POST
R9-11aL	24	12		1	MOUNT ON ONE POST
R9-11aR	24	12		1	MOUNT ON ONE POST
R11-2	48	30		5	MOUNT ON TYPE III BARRICADE
R11-2A	60	30		2	MOUNT ON TYPE III BARRICADE
R11-3AM	60	30		2	MOUNT ON TWO POSTS
R11-3C	48	54		1	MOUNT ON TWO POSTS
R11-3D	48	36		3	MOUNT ON TWO POSTS
R11-3E	60	30		1	MOUNT ON TWO POSTS
R11-3F	60	42		1	MOUNT ON TWO POSTS
R11-4	60	30		3	MOUNT ON TYPE III BARRICADE

NOTES:

- COLORS FOR THE MI-5 SIGNS SHALL MATCH THE COLORS SHOWN ON VTRANS STD. E-136B.
- COLORS FOR THE M5-1, M6-1, M6-2, AND THE M6-3 SIGNS SHALL BE A BLACK ARROW AND BORDER ON RETROREFLECTIVE ORANGE BACKGROUND.
- THE MI-5 SIGNS SHALL BECOME THE PROPERTY OF THE STATE AFTER THEY ARE REMOVED FROM THE DETOUR. THE CONTRACTOR SHALL DELIVER THE SIGNS TO THE TOWN AT THE TOWN GARAGE. ALL COSTS ASSOCIATED WITH PROVIDING THE SIGNS TO THE TOWN SHALL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".
- COLORS FOR THE M4-9, D3-1, AND D3-2 SIGNS SHALL BE A BLACK ARROW, TEXT, AND BORDER ON RETROREFLECTIVE ORANGE BACKGROUND.



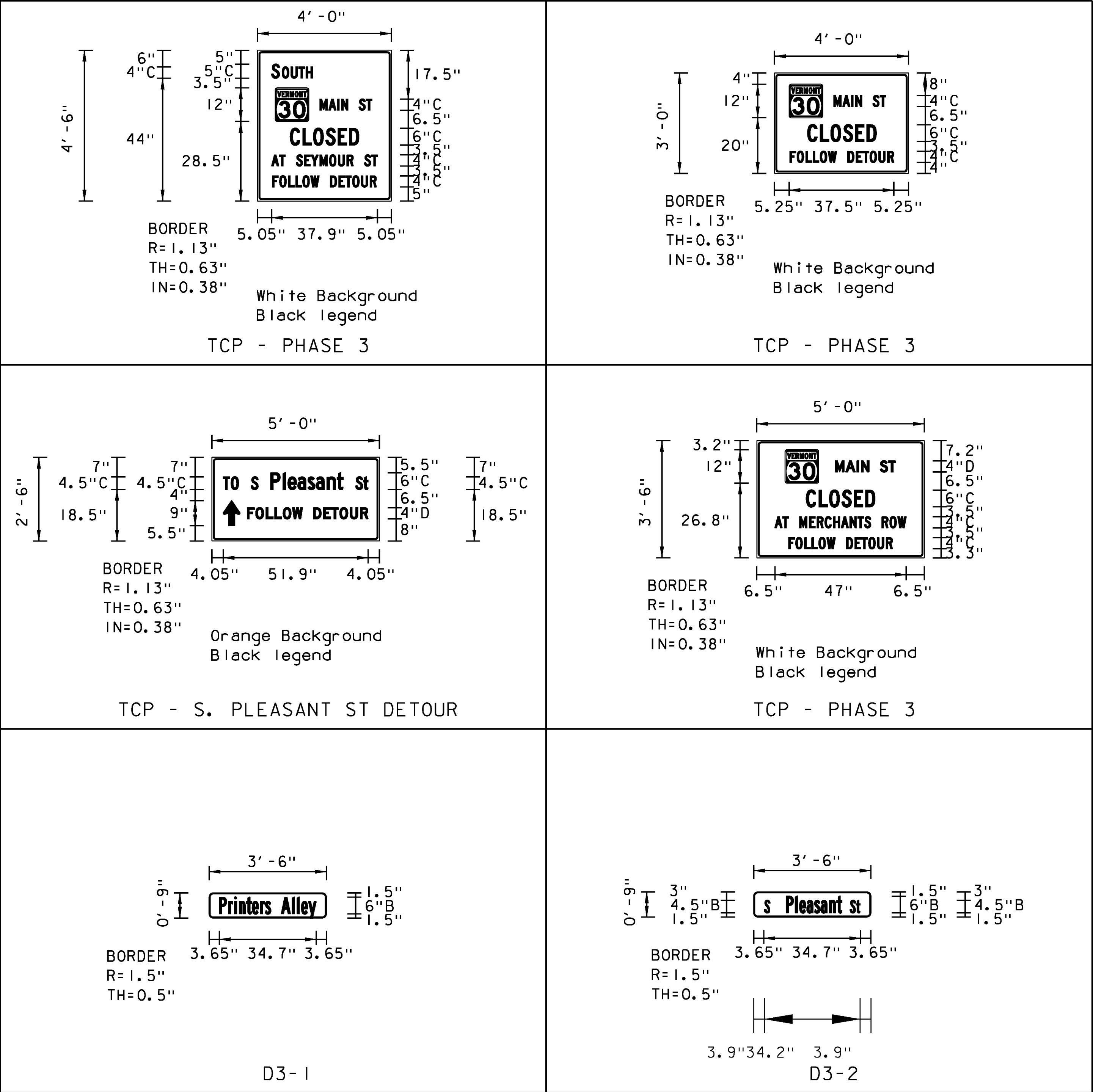
PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(1)	
FILE NAME: z17b016_TCP_TSSS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETRICK
TCP - SIGN SUMMARY SHEET 1	SHEET 31 OF 54



IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	NUMBER OF SIGNS REQ'D	REMARKS
	WIDTH (IN)	HEIGHT (IN)			
W1-4 (R)	36	36		1	MOUNT ON ONE POST
W1-4 (L)	36	36		1	MOUNT ON ONE POST
W1-6	48	24		1	MOUNT ON TYPE III BARRICADE
W20-1	36	36		5	MOUNT ON ONE POST

NOTES:

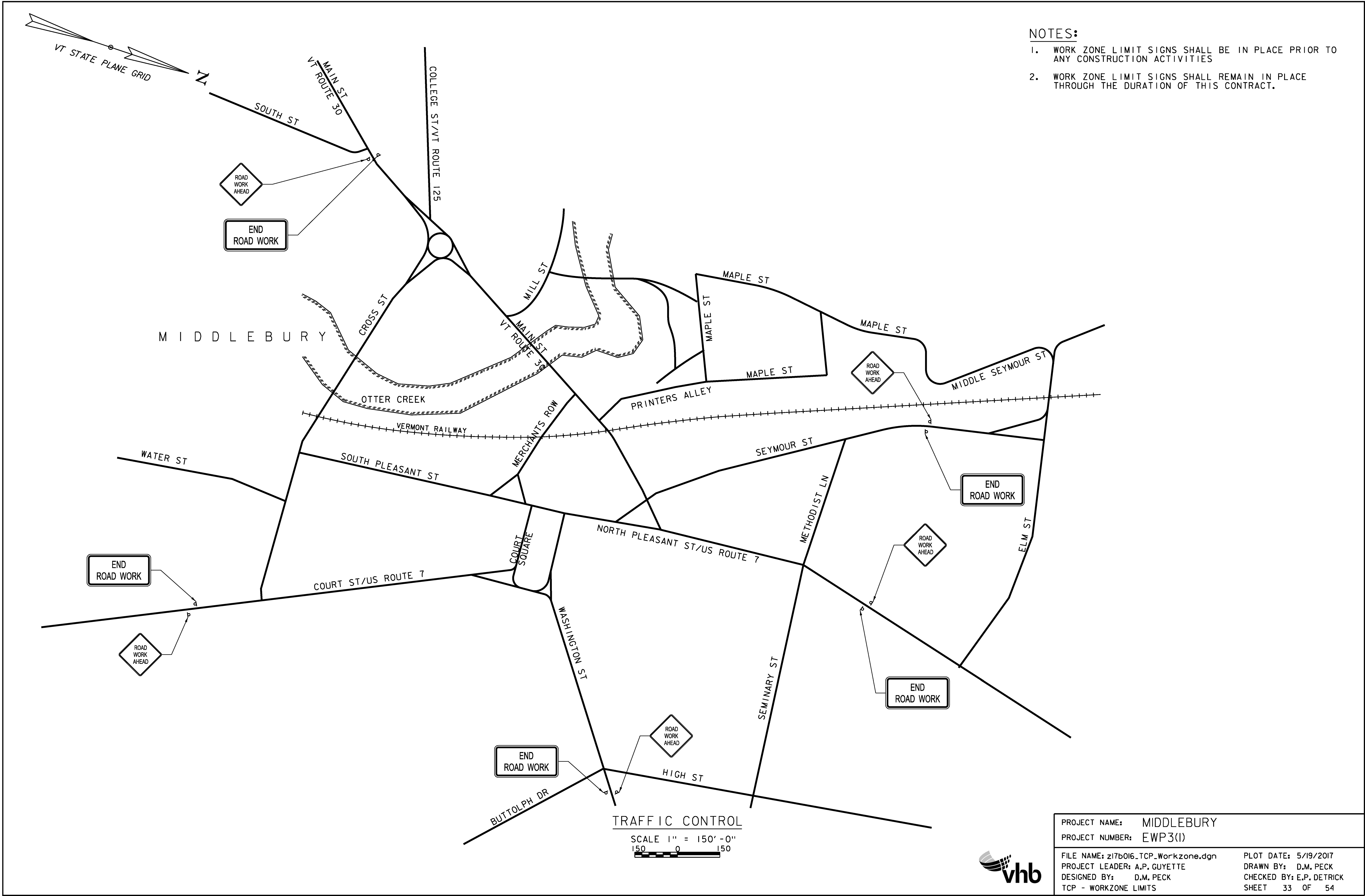
- COLORS FOR THE M1-5 SIGNS SHALL MATCH THE COLORS SHOWN ON VTRANS STD. E-136B.
- COLORS FOR THE M5-1, M6-1, M6-2, AND THE M6-3 SIGNS SHALL BE A BLACK ARROW AND BORDER ON RETROREFLECTIVE ORANGE BACKGROUND.
- THE M1-5 SIGNS SHALL BECOME THE PROPERTY OF THE STATE AFTER THEY ARE REMOVED FROM THE DETOUR. THE CONTRACTOR SHALL DELIVER THE SIGNS TO THE TOWN AT THE TOWN GARAGE. ALL COSTS ASSOCIATED WITH PROVIDING THE SIGNS TO THE TOWN SHALL BE INCIDENTAL TO ITEM 641.10 "TRAFFIC CONTROL".
- COLORS FOR THE M4-9, D3-1, AND D3-2 SIGNS SHALL BE A BLACK ARROW, TEXT, AND BORDER ON RETROREFLECTIVE ORANGE BACKGROUND.



PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(I)	
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PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETRICK
TCP - SIGN SUMMARY SHEET 2	SHEET 32 OF 54



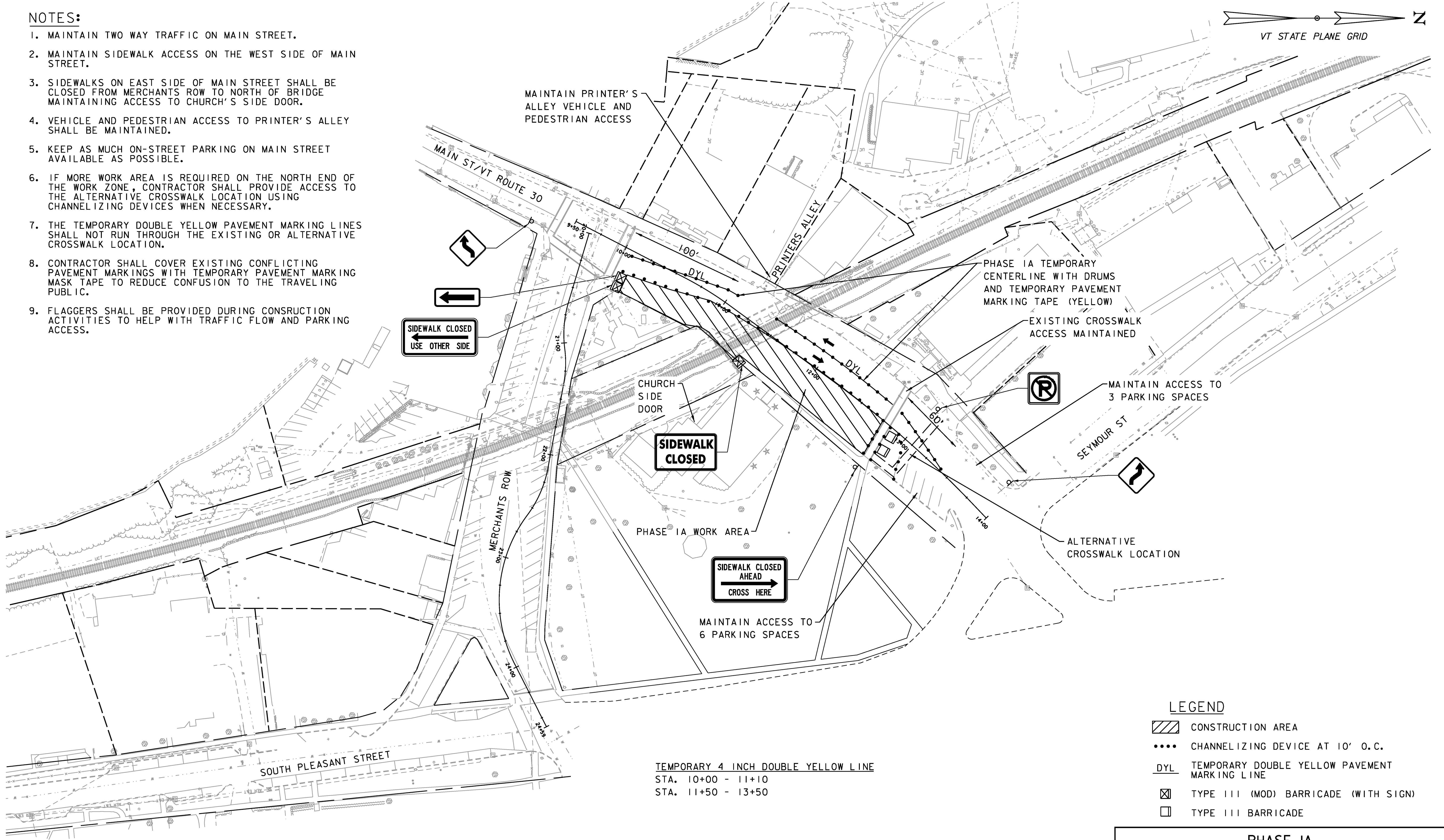
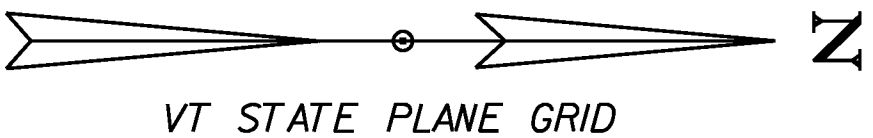
- NOTES:
- 1. WORK ZONE LIMIT SIGNS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES
  - 2. WORK ZONE LIMIT SIGNS SHALL REMAIN IN PLACE THROUGH THE DURATION OF THIS CONTRACT.





NOTES:

1. MAINTAIN TWO WAY TRAFFIC ON MAIN STREET.
2. MAINTAIN SIDEWALK ACCESS ON THE WEST SIDE OF MAIN STREET.
3. SIDEWALKS ON EAST SIDE OF MAIN STREET SHALL BE CLOSED FROM MERCHANTS ROW TO NORTH OF BRIDGE MAINTAINING ACCESS TO CHURCH'S SIDE DOOR.
4. VEHICLE AND PEDESTRIAN ACCESS TO PRINTER'S ALLEY SHALL BE MAINTAINED.
5. KEEP AS MUCH ON-STREET PARKING ON MAIN STREET AVAILABLE AS POSSIBLE.
6. IF MORE WORK AREA IS REQUIRED ON THE NORTH END OF THE WORK ZONE, CONTRACTOR SHALL PROVIDE ACCESS TO THE ALTERNATIVE CROSSWALK LOCATION USING CHANNELIZING DEVICES WHEN NECESSARY.
7. THE TEMPORARY DOUBLE YELLOW PAVEMENT MARKING LINES SHALL NOT RUN THROUGH THE EXISTING OR ALTERNATIVE CROSSWALK LOCATION.
8. CONTRACTOR SHALL COVER EXISTING CONFLICTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKING MASK TAPE TO REDUCE CONFUSION TO THE TRAVELING PUBLIC.
9. FLAGGERS SHALL BE PROVIDED DURING CONSRUCTION ACTIVITIES TO HELP WITH TRAFFIC FLOW AND PARKING ACCESS.



LEGEND

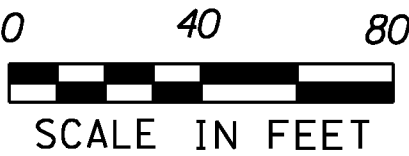
- CONSTRUCTION AREA
- CHANNELIZING DEVICE AT 10' O.C.
- DYL TEMPORARY DOUBLE YELLOW PAVEMENT MARKING LINE
- TYPE III (MOD) BARRICADE (WITH SIGN)
- TYPE III BARRICADE

PHASE IA

PROJECT NAME: MIDDLEBURY  
PROJECT NUMBER: EWP3(I)

FILE NAME: z17b016_TCP_IA.dgn  
PROJECT LEADER: A.P. GUYETTE  
DESIGNED BY: D.M. PECK  
TCP - PHASE IA

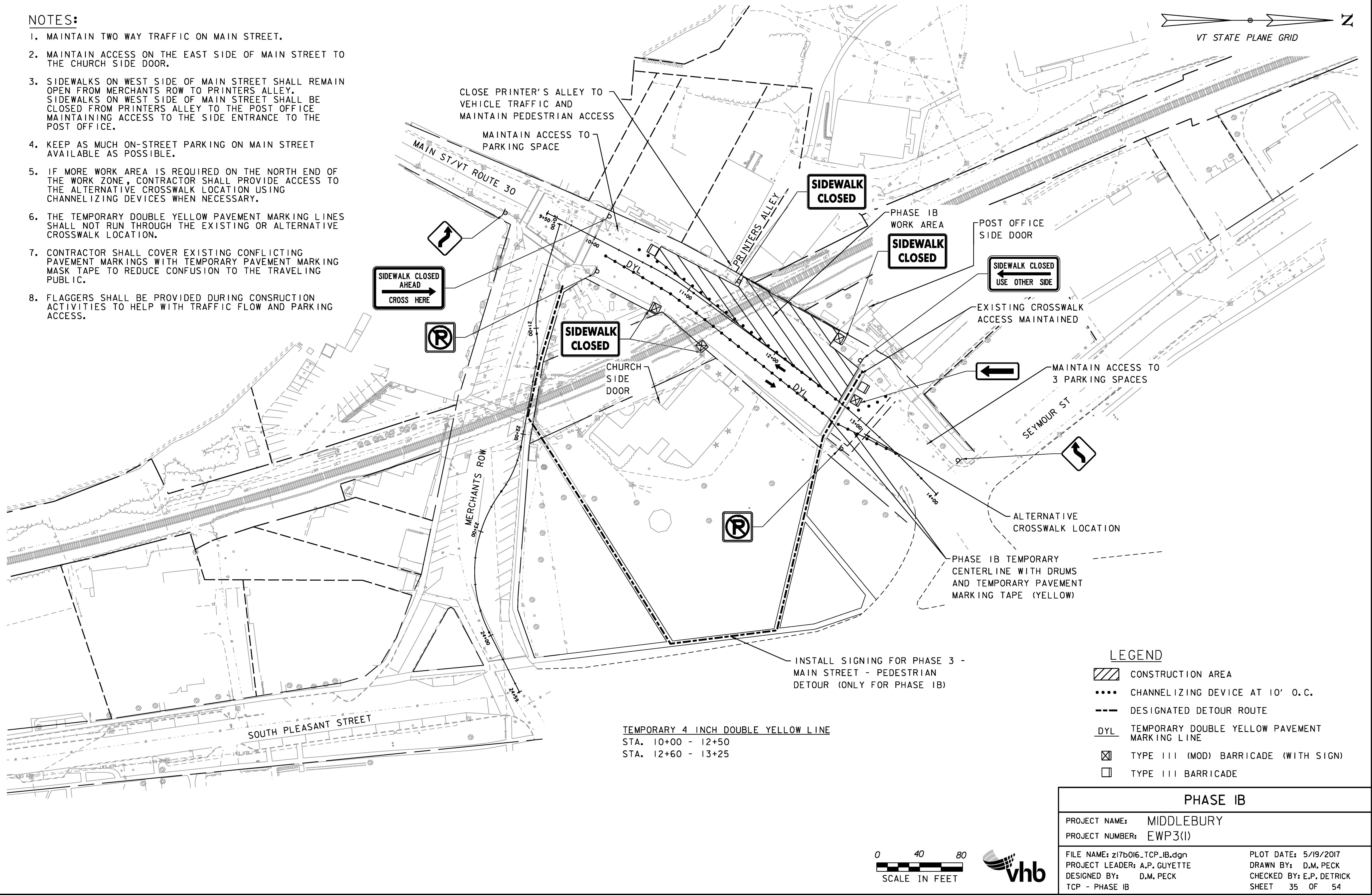
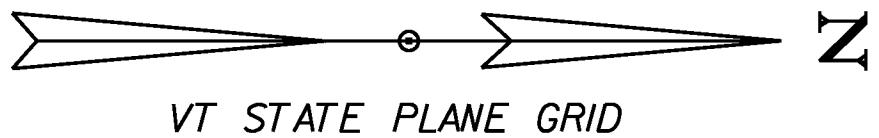
PLOT DATE: 5/19/2017  
DRAWN BY: D.M. PECK  
CHECKED BY: E.P. DETRICK  
SHEET 34 OF 54





NOTES:

1. MAINTAIN TWO WAY TRAFFIC ON MAIN STREET.
2. MAINTAIN ACCESS ON THE EAST SIDE OF MAIN STREET TO THE CHURCH SIDE DOOR.
3. SIDEWALKS ON WEST SIDE OF MAIN STREET SHALL REMAIN OPEN FROM MERCHANTS ROW TO PRINTERS ALLEY. SIDEWALKS ON WEST SIDE OF MAIN STREET SHALL BE CLOSED FROM PRINTERS ALLEY TO THE POST OFFICE MAINTAINING ACCESS TO THE SIDE ENTRANCE TO THE POST OFFICE.
4. KEEP AS MUCH ON-STREET PARKING ON MAIN STREET AVAILABLE AS POSSIBLE.
5. IF MORE WORK AREA IS REQUIRED ON THE NORTH END OF THE WORK ZONE, CONTRACTOR SHALL PROVIDE ACCESS TO THE ALTERNATIVE CROSSWALK LOCATION USING CHANNELIZING DEVICES WHEN NECESSARY.
6. THE TEMPORARY DOUBLE YELLOW PAVEMENT MARKING LINES SHALL NOT RUN THROUGH THE EXISTING OR ALTERNATIVE CROSSWALK LOCATION.
7. CONTRACTOR SHALL COVER EXISTING CONFLICTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKING MASK TAPE TO REDUCE CONFUSION TO THE TRAVELING PUBLIC.
8. FLAGGERS SHALL BE PROVIDED DURING CONSRUCTION ACTIVITIES TO HELP WITH TRAFFIC FLOW AND PARKING ACCESS.



LEGEND

- CONSTRUCTION AREA
- CHANNELIZING DEVICE AT 10' O.C.
- DESIGNATED DETOUR ROUTE
- TEMPORARY DOUBLE YELLOW PAVEMENT MARKING LINE
- TYPE III (MOD) BARRICADE (WITH SIGN)
- TYPE III BARRICADE

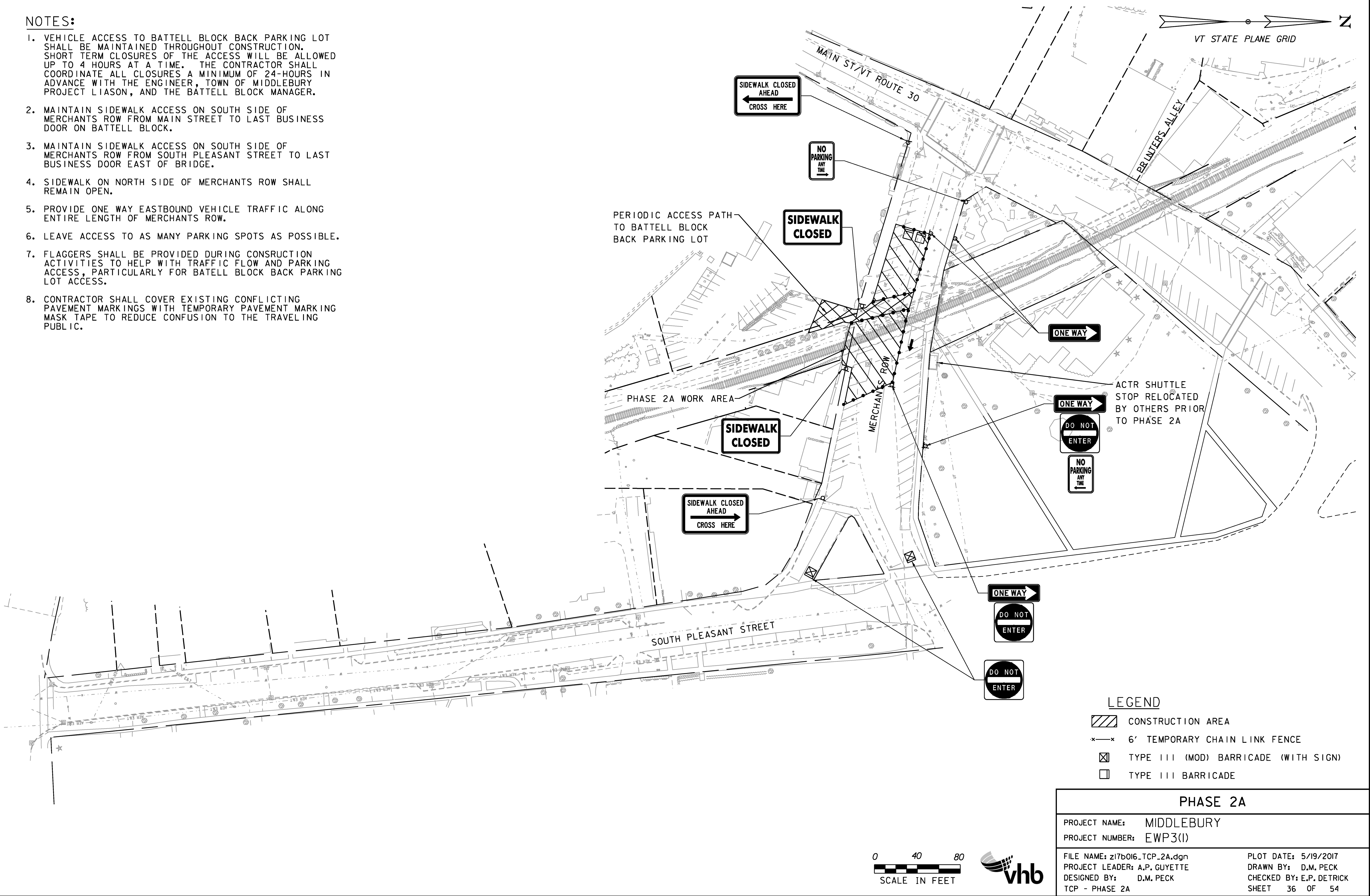
PHASE IB

PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EWP3(I)
FILE NAME:	z17b016_TCP_IB.dgn
PLOT DATE:	5/19/2017
PROJECT LEADER:	A.P. GUYETTE
DRAWN BY:	D.M. PECK
DESIGNED BY:	D.M. PECK
CHECKED BY:	E.P. DETRICK
TCP - PHASE IB	SHEET 35 OF 54



NOTES:

1. VEHICLE ACCESS TO BATTELL BLOCK BACK PARKING LOT SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. SHORT TERM CLOSURES OF THE ACCESS WILL BE ALLOWED UP TO 4 HOURS AT A TIME. THE CONTRACTOR SHALL COORDINATE ALL CLOSURES A MINIMUM OF 24-HOURS IN ADVANCE WITH THE ENGINEER, TOWN OF MIDDLEBURY PROJECT LIASON, AND THE BATTELL BLOCK MANAGER.
2. MAINTAIN SIDEWALK ACCESS ON SOUTH SIDE OF MERCHANTS ROW FROM MAIN STREET TO LAST BUSINESS DOOR ON BATTELL BLOCK.
3. MAINTAIN SIDEWALK ACCESS ON SOUTH SIDE OF MERCHANTS ROW FROM SOUTH PLEASANT STREET TO LAST BUSINESS DOOR EAST OF BRIDGE.
4. SIDEWALK ON NORTH SIDE OF MERCHANTS ROW SHALL REMAIN OPEN.
5. PROVIDE ONE WAY EASTBOUND VEHICLE TRAFFIC ALONG ENTIRE LENGTH OF MERCHANTS ROW.
6. LEAVE ACCESS TO AS MANY PARKING SPOTS AS POSSIBLE.
7. FLAGGERS SHALL BE PROVIDED DURING CONSRUCTION ACTIVITIES TO HELP WITH TRAFFIC FLOW AND PARKING ACCESS, PARTICULARLY FOR BATELL BLOCK BACK PARKING LOT ACCESS.
8. CONTRACTOR SHALL COVER EXISTING CONFLICTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKING MASK TAPE TO REDUCE CONFUSION TO THE TRAVELING PUBLIC.



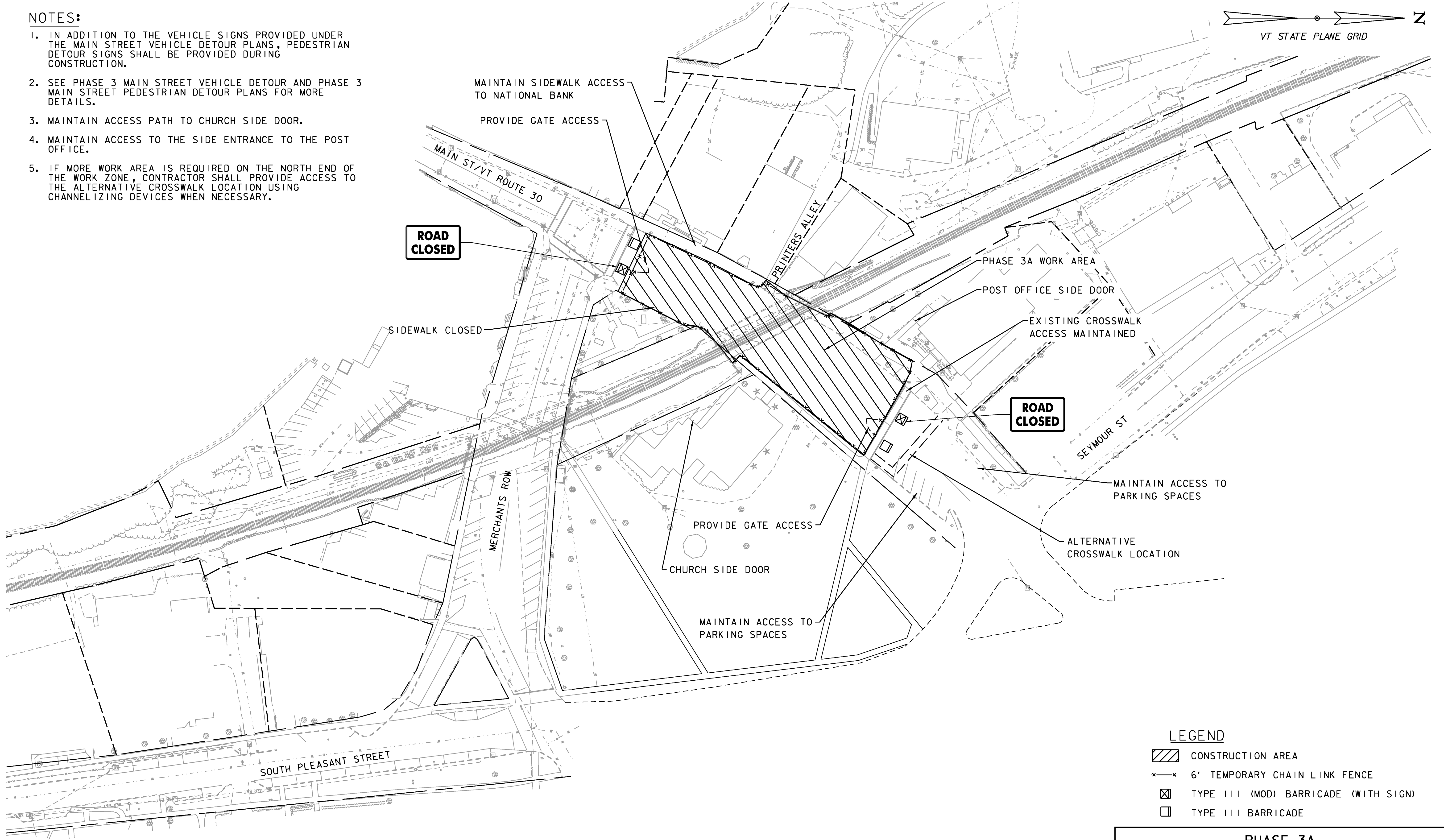
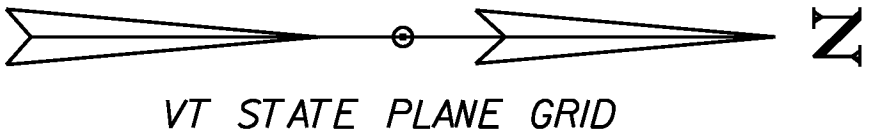






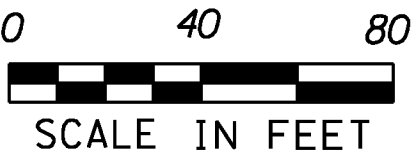
NOTES:

1. IN ADDITION TO THE VEHICLE SIGNS PROVIDED UNDER THE MAIN STREET VEHICLE DETOUR PLANS, PEDESTRIAN DETOUR SIGNS SHALL BE PROVIDED DURING CONSTRUCTION.
2. SEE PHASE 3 MAIN STREET VEHICLE DETOUR AND PHASE 3 MAIN STREET PEDESTRIAN DETOUR PLANS FOR MORE DETAILS.
3. MAINTAIN ACCESS PATH TO CHURCH SIDE DOOR.
4. MAINTAIN ACCESS TO THE SIDE ENTRANCE TO THE POST OFFICE.
5. IF MORE WORK AREA IS REQUIRED ON THE NORTH END OF THE WORK ZONE, CONTRACTOR SHALL PROVIDE ACCESS TO THE ALTERNATIVE CROSSWALK LOCATION USING CHANNELIZING DEVICES WHEN NECESSARY.



LEGEND

- CONSTRUCTION AREA
- 6' TEMPORARY CHAIN LINK FENCE
- TYPE III (MOD) BARRICADE (WITH SIGN)
- TYPE III BARRICADE

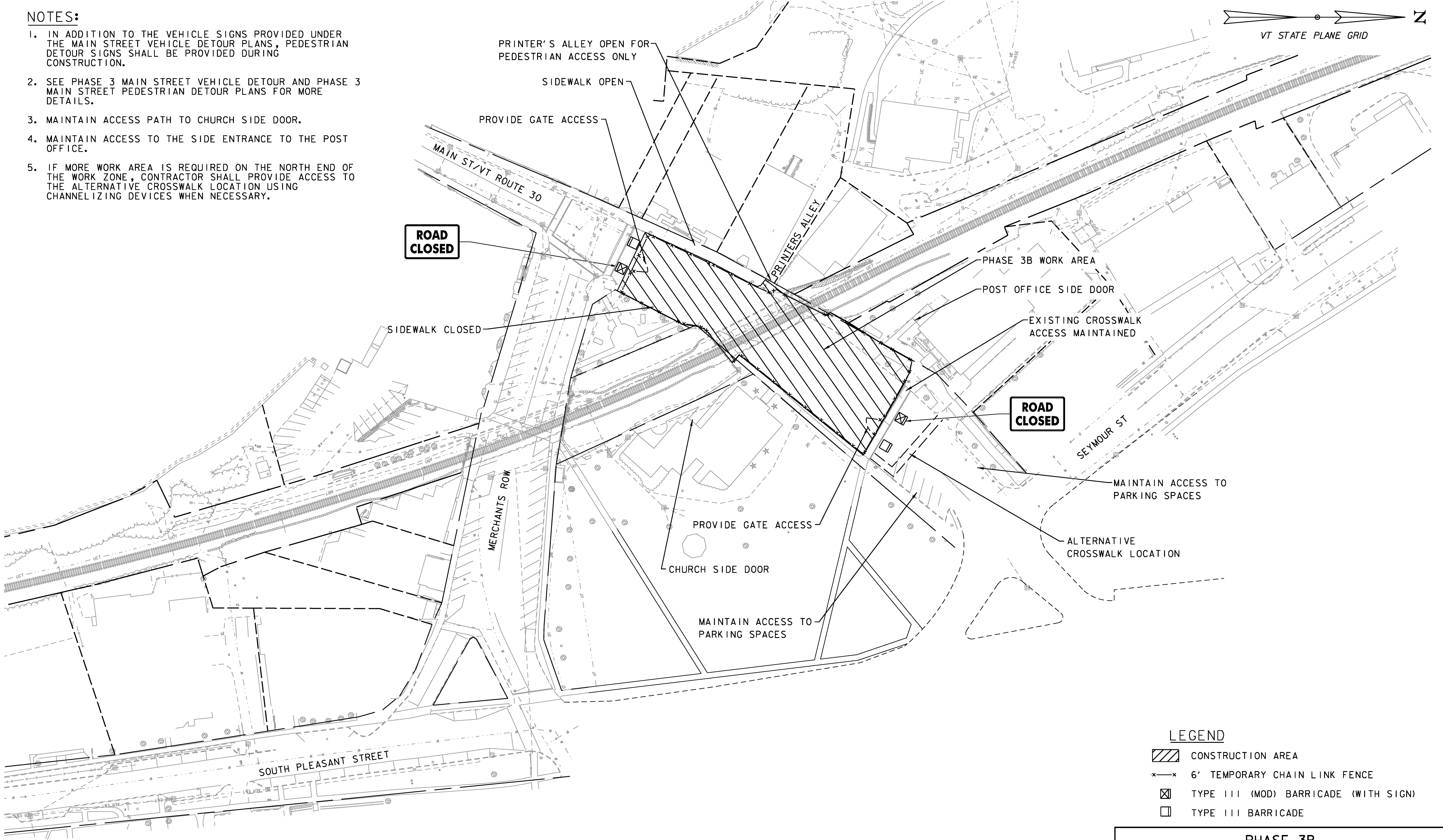
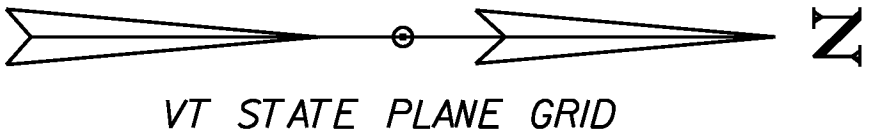


PHASE 3A			
PROJECT NAME:		MIDDLEBURY	
PROJECT NUMBER:		EWP3(I)	
FILE NAME:		z17b016_TCP_3A.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER:		A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY:		D.M. PECK	CHECKED BY: E.P. DETRICK
TCP - PHASE 3A			SHEET 38 OF 54



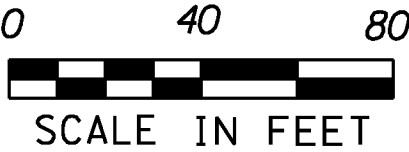
NOTES:

1. IN ADDITION TO THE VEHICLE SIGNS PROVIDED UNDER THE MAIN STREET VEHICLE DETOUR PLANS, PEDESTRIAN DETOUR SIGNS SHALL BE PROVIDED DURING CONSTRUCTION.
2. SEE PHASE 3 MAIN STREET VEHICLE DETOUR AND PHASE 3 MAIN STREET PEDESTRIAN DETOUR PLANS FOR MORE DETAILS.
3. MAINTAIN ACCESS PATH TO CHURCH SIDE DOOR.
4. MAINTAIN ACCESS TO THE SIDE ENTRANCE TO THE POST OFFICE.
5. IF MORE WORK AREA IS REQUIRED ON THE NORTH END OF THE WORK ZONE, CONTRACTOR SHALL PROVIDE ACCESS TO THE ALTERNATIVE CROSSWALK LOCATION USING CHANNELIZING DEVICES WHEN NECESSARY.



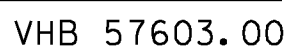
LEGEND

- CONSTRUCTION AREA
- 6' TEMPORARY CHAIN LINK FENCE
- TYPE III (MOD) BARRICADE (WITH SIGN)
- TYPE III BARRICADE



PHASE 3B			
PROJECT NAME:		MIDDLEBURY	
PROJECT NUMBER:		EWP3(I)	
FILE NAME:		z17b016_TCP_3B.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER:		A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY:		D.M. PECK	CHECKED BY: E.P. DETRICK
TCP - PHASE 3B			SHEET 39 OF 54

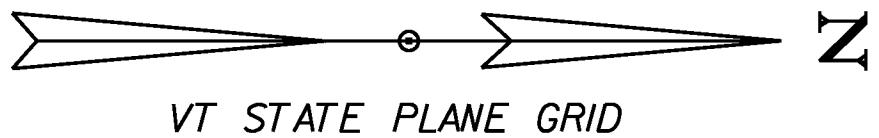






NOTES:

1. MAIN STREET PEDESTRIAN PHASE 3 DETOUR SHALL BE PROVIDED DURING CONSTRUCTION PHASES 1B, 3A, AND 3B AT THE SAME TIME AS THE VEHICLE DETOURS AND OTHER TRAFFIC CONTROL.



SIGN ON SOUTH SIDE OF PRINTERS ALLEY FOR PHASE 3A  
MOVE SIGN TO NORTH SIDE OF PRINTERS ALLEY FOR PHASE 3B

**SIDEWALK CLOSED**

**SIDEWALK CLOSED AHEAD**  
CROSS HERE

**SIDEWALK CLOSED**

DETOUR

DETOUR

DETOUR

DETOUR

**SIDEWALK CLOSED**

**SIDEWALK CLOSED**  
CROSS HERE

MOUNT TO FENCE

SEYMOUR ST

MERCHANTS ROW

SOUTH PLEASANT STREET

LEGEND

- CONSTRUCTION AREA
- DESIGNATED DETOUR ROUTE
- 6' TEMPORARY CHAIN LINK FENCE
- TYPE III (MOD) BARRICADE (WITH SIGN)
- TYPE III BARRICADE

PHASE 3 - MAIN ST - PEDESTRIAN DETOUR

PROJECT NAME: MIDDLEBURY  
PROJECT NUMBER: EWP3(I)

FILE NAME: z17b016_TCP_3Ped.dgn  
PROJECT LEADER: A.P. GUYETTE  
DESIGNED BY: D.M. PECK  
TCP - PHASE 3 - MAIN ST - PED DETOUR

PLOT DATE: 5/19/2017  
DRAWN BY: D.M. PECK  
CHECKED BY: E.P. DETRICK  
SHEET 41 OF 54

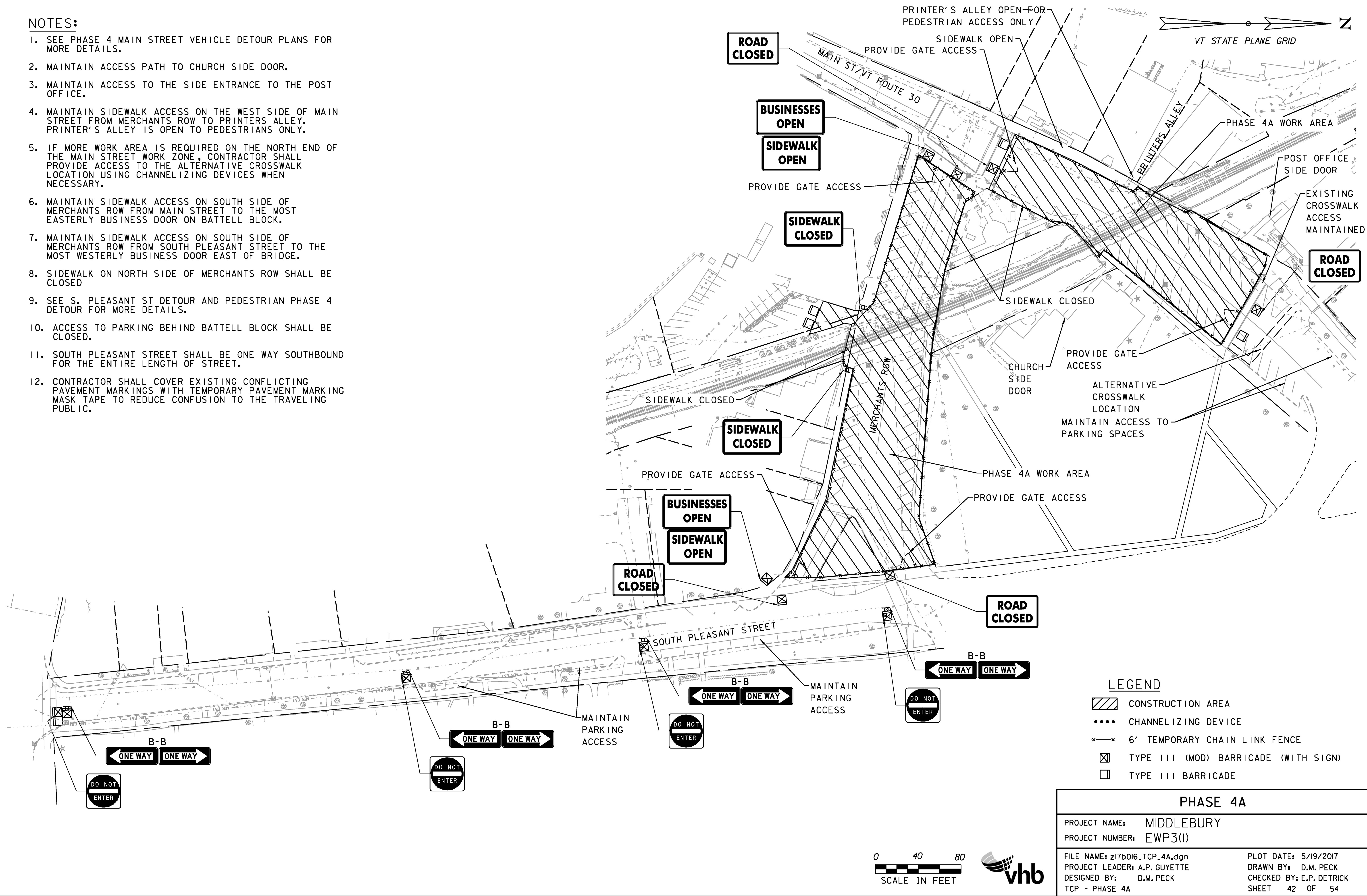
0 40 80  
SCALE IN FEET





NOTES:

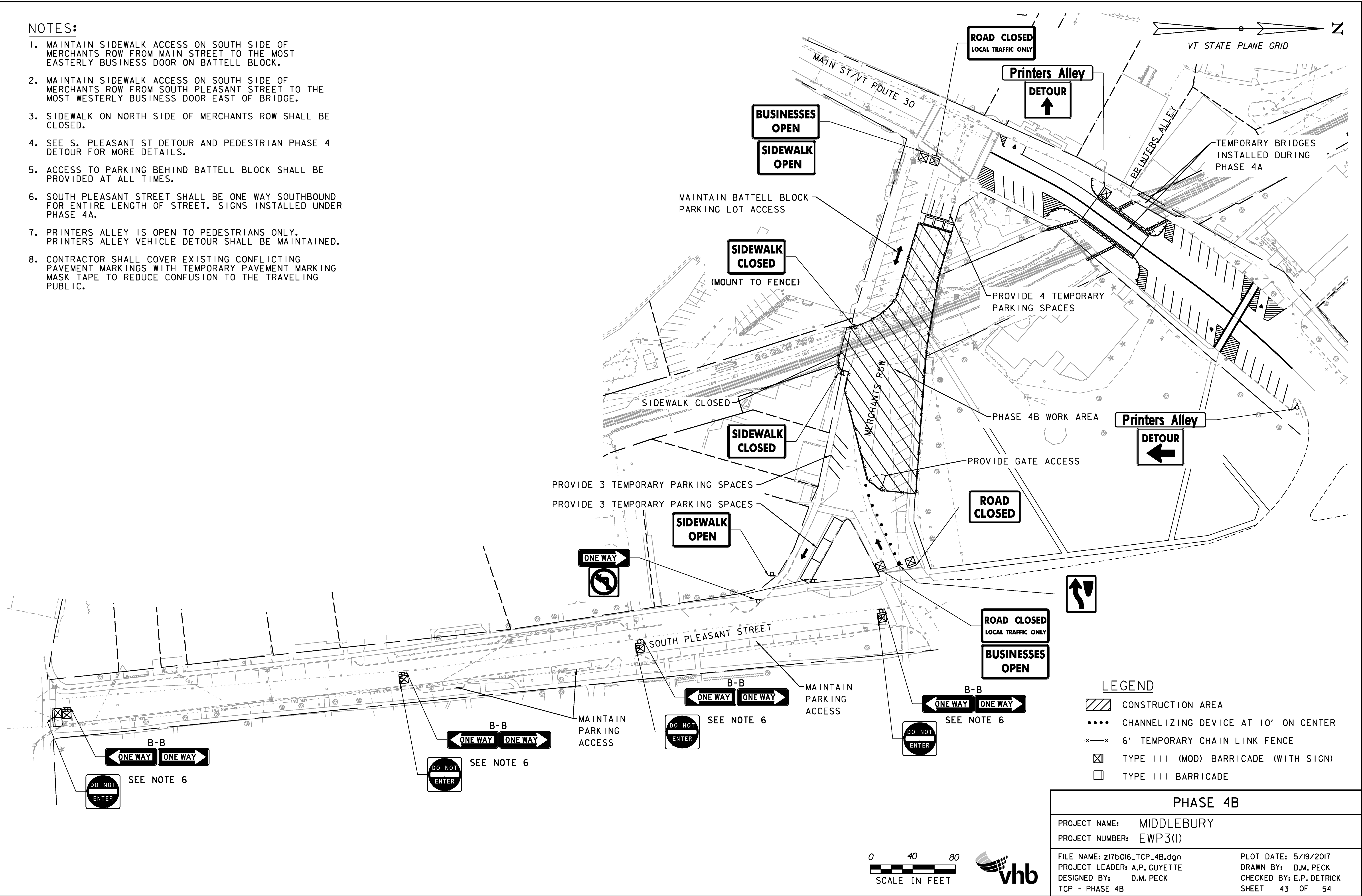
1. SEE PHASE 4 MAIN STREET VEHICLE DETOUR PLANS FOR MORE DETAILS.
2. MAINTAIN ACCESS PATH TO CHURCH SIDE DOOR.
3. MAINTAIN ACCESS TO THE SIDE ENTRANCE TO THE POST OFFICE.
4. MAINTAIN SIDEWALK ACCESS ON THE WEST SIDE OF MAIN STREET FROM MERCHANTS ROW TO PRINTERS ALLEY. PRINTER'S ALLEY IS OPEN TO PEDESTRIANS ONLY.
5. IF MORE WORK AREA IS REQUIRED ON THE NORTH END OF THE MAIN STREET WORK ZONE, CONTRACTOR SHALL PROVIDE ACCESS TO THE ALTERNATIVE CROSSWALK LOCATION USING CHANNELIZING DEVICES WHEN NECESSARY.
6. MAINTAIN SIDEWALK ACCESS ON SOUTH SIDE OF MERCHANTS ROW FROM MAIN STREET TO THE MOST EASTERLY BUSINESS DOOR ON BATTELL BLOCK.
7. MAINTAIN SIDEWALK ACCESS ON SOUTH SIDE OF MERCHANTS ROW FROM SOUTH PLEASANT STREET TO THE MOST WESTERLY BUSINESS DOOR EAST OF BRIDGE.
8. SIDEWALK ON NORTH SIDE OF MERCHANTS ROW SHALL BE CLOSED
9. SEE S. PLEASANT ST DETOUR AND PEDESTRIAN PHASE 4 DETOUR FOR MORE DETAILS.
10. ACCESS TO PARKING BEHIND BATTELL BLOCK SHALL BE CLOSED.
11. SOUTH PLEASANT STREET SHALL BE ONE WAY SOUTHBOUND FOR THE ENTIRE LENGTH OF STREET.
12. CONTRACTOR SHALL COVER EXISTING CONFLICTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKING MASK TAPE TO REDUCE CONFUSION TO THE TRAVELING PUBLIC.





NOTES:

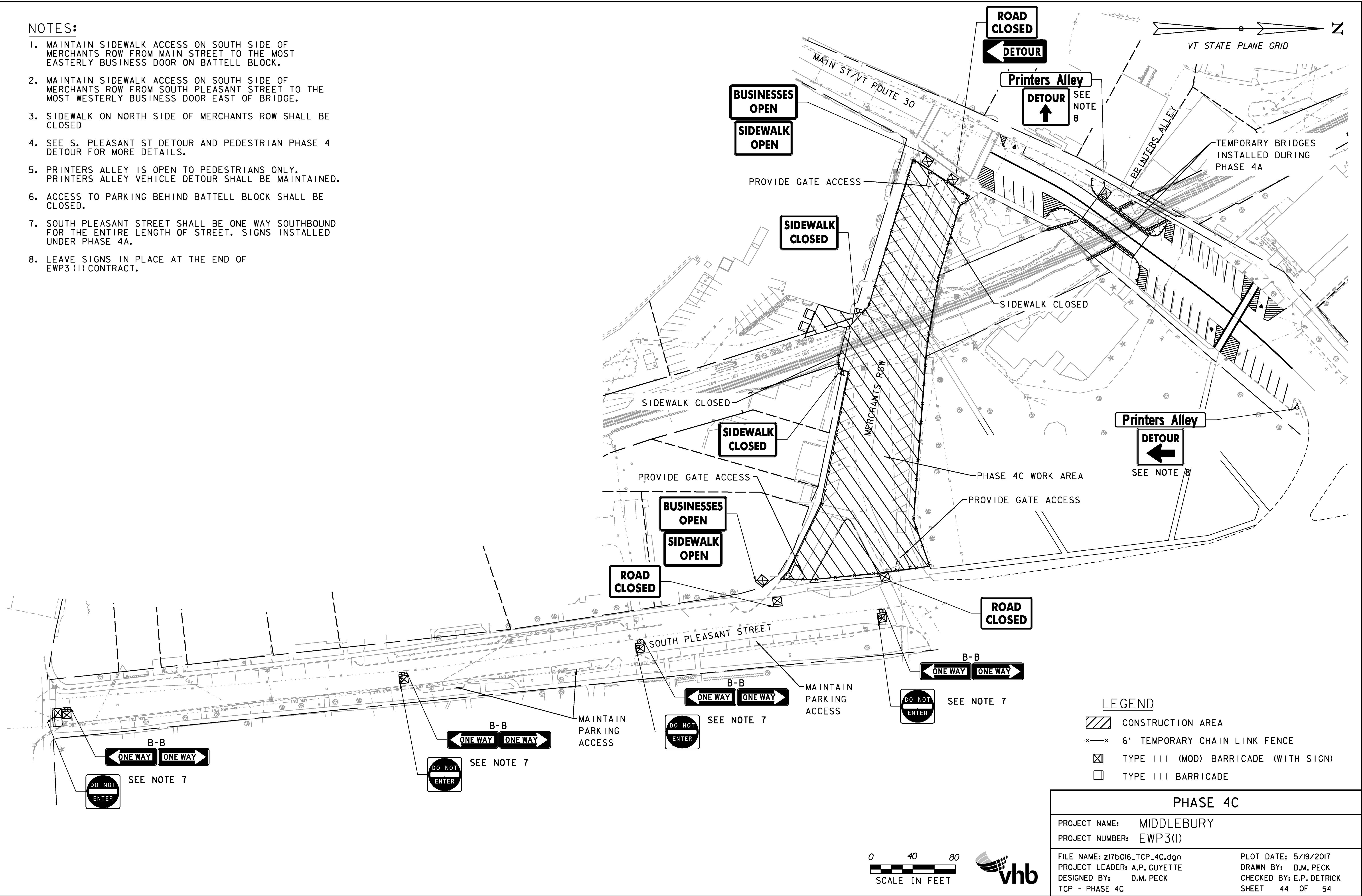
1. MAINTAIN SIDEWALK ACCESS ON SOUTH SIDE OF MERCHANTS ROW FROM MAIN STREET TO THE MOST EASTERLY BUSINESS DOOR ON BATTELL BLOCK.
2. MAINTAIN SIDEWALK ACCESS ON SOUTH SIDE OF MERCHANTS ROW FROM SOUTH PLEASANT STREET TO THE MOST WESTERLY BUSINESS DOOR EAST OF BRIDGE.
3. SIDEWALK ON NORTH SIDE OF MERCHANTS ROW SHALL BE CLOSED.
4. SEE S. PLEASANT ST DETOUR AND PEDESTRIAN PHASE 4 DETOUR FOR MORE DETAILS.
5. ACCESS TO PARKING BEHIND BATTELL BLOCK SHALL BE PROVIDED AT ALL TIMES.
6. SOUTH PLEASANT STREET SHALL BE ONE WAY SOUTHBOUND FOR ENTIRE LENGTH OF STREET. SIGNS INSTALLED UNDER PHASE 4A.
7. PRINTERS ALLEY IS OPEN TO PEDESTRIANS ONLY. PRINTERS ALLEY VEHICLE DETOUR SHALL BE MAINTAINED.
8. CONTRACTOR SHALL COVER EXISTING CONFLICTING PAVEMENT MARKINGS WITH TEMPORARY PAVEMENT MARKING MASK TAPE TO REDUCE CONFUSION TO THE TRAVELING PUBLIC.





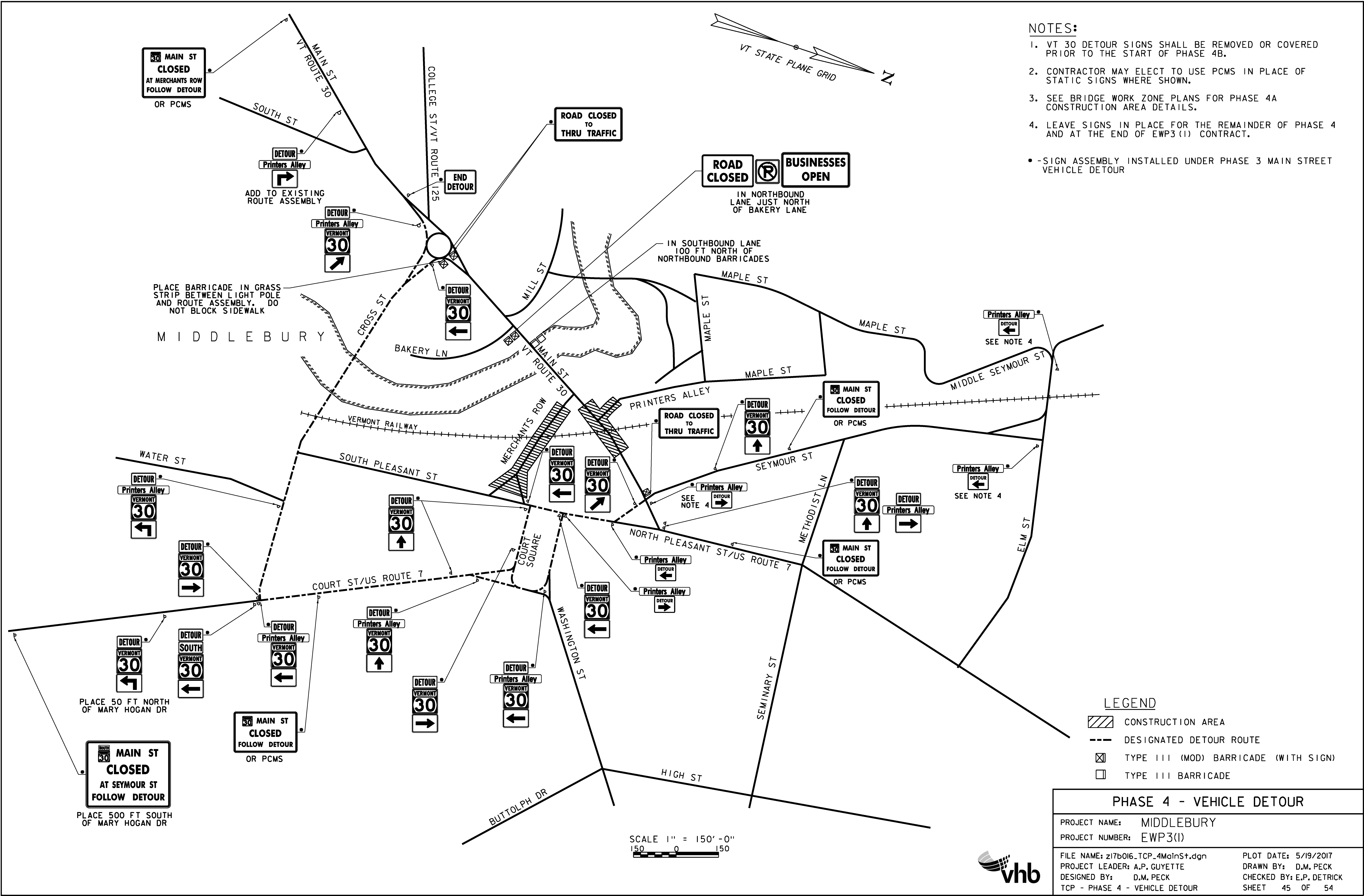
NOTES:

1. MAINTAIN SIDEWALK ACCESS ON SOUTH SIDE OF MERCHANTS ROW FROM MAIN STREET TO THE MOST EASTERLY BUSINESS DOOR ON BATTELL BLOCK.
2. MAINTAIN SIDEWALK ACCESS ON SOUTH SIDE OF MERCHANTS ROW FROM SOUTH PLEASANT STREET TO THE MOST WESTERLY BUSINESS DOOR EAST OF BRIDGE.
3. SIDEWALK ON NORTH SIDE OF MERCHANTS ROW SHALL BE CLOSED
4. SEE S. PLEASANT ST DETOUR AND PEDESTRIAN PHASE 4 DETOUR FOR MORE DETAILS.
5. PRINTERS ALLEY IS OPEN TO PEDESTRIANS ONLY. PRINTERS ALLEY VEHICLE DETOUR SHALL BE MAINTAINED.
6. ACCESS TO PARKING BEHIND BATTELL BLOCK SHALL BE CLOSED.
7. SOUTH PLEASANT STREET SHALL BE ONE WAY SOUTHBOUND FOR THE ENTIRE LENGTH OF STREET. SIGNS INSTALLED UNDER PHASE 4A.
8. LEAVE SIGNS IN PLACE AT THE END OF EWP3 (I) CONTRACT.



PHASE 4C			
PROJECT NAME:		MIDDLEBURY	
PROJECT NUMBER:		EWP3(I)	
FILE NAME:		z17b016_TCP_4C.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER:		A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY:		D.M. PECK	CHECKED BY: E.P. DETRICK
TCP - PHASE 4C			SHEET 44 OF 54

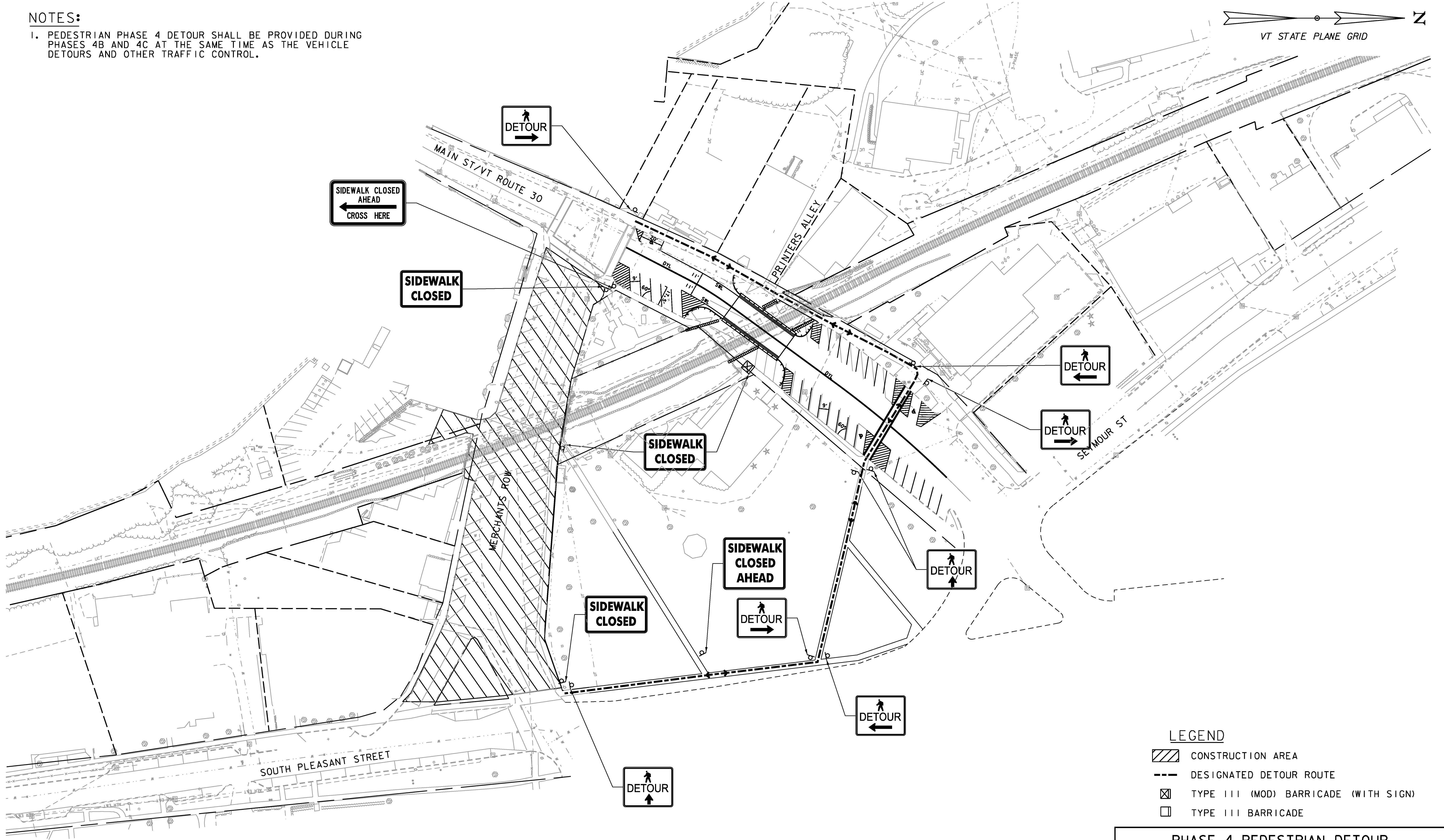
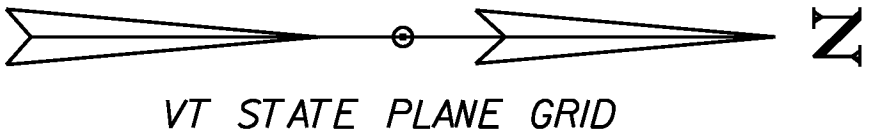






NOTES:

1. PEDESTRIAN PHASE 4 DETOUR SHALL BE PROVIDED DURING PHASES 4B AND 4C AT THE SAME TIME AS THE VEHICLE DETOURS AND OTHER TRAFFIC CONTROL.

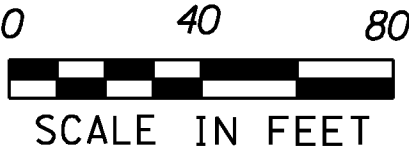


LEGEND

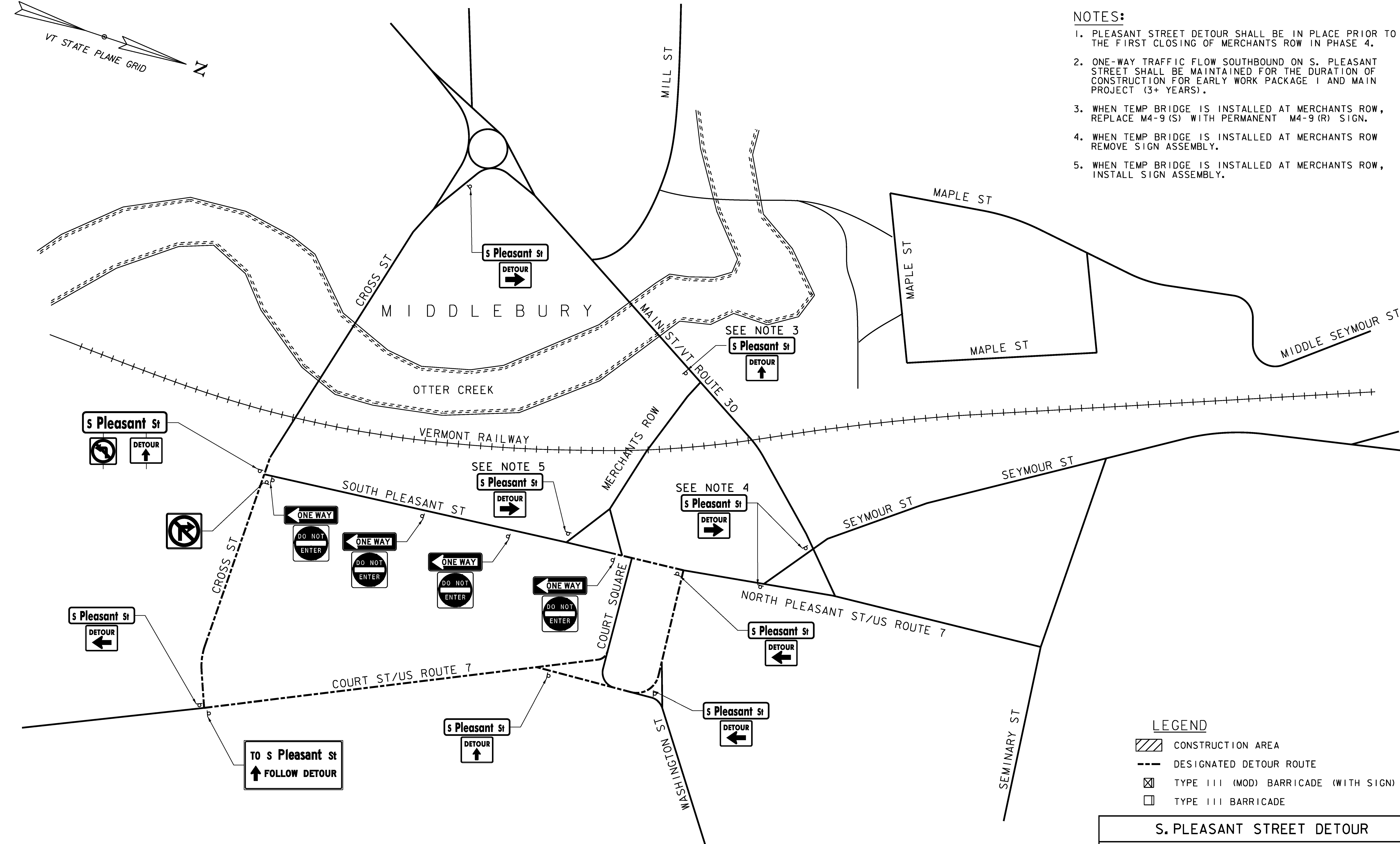
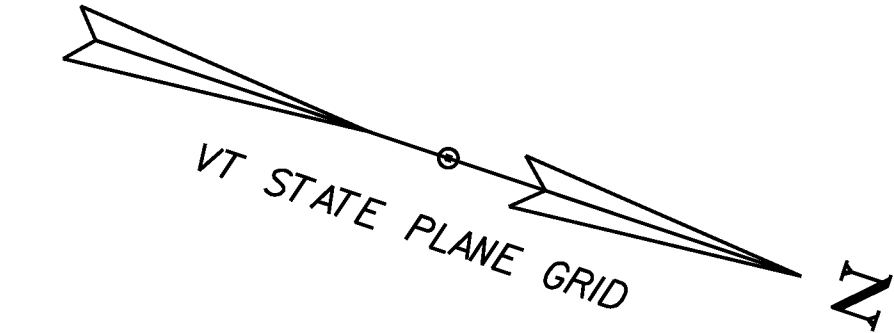
- CONSTRUCTION AREA
- DESIGNATED DETOUR ROUTE
- TYPE III (MOD) BARRICADE (WITH SIGN)
- TYPE III BARRICADE

PHASE 4 PEDESTRIAN DETOUR

PROJECT NAME:	MIDDLEBURY	PLOT DATE:	5/19/2017
PROJECT NUMBER:	EW3(I)	DRAWN BY:	D.M. PECK
FILE NAME:	z17b016_TCP_4Ped.dgn	CHECKED BY:	E.P. DETRICK
DESIGNED BY:	D.M. PECK		
TCP - PHASE 4 - PEDESTRIAN DETOUR		SHEET	46 OF 54







NOTES:

1. PLEASANT STREET DETOUR SHALL BE IN PLACE PRIOR TO THE FIRST CLOSING OF MERCHANTS ROW IN PHASE 4.
2. ONE-WAY TRAFFIC FLOW SOUTHBOUND ON S. PLEASANT STREET SHALL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION FOR EARLY WORK PACKAGE 1 AND MAIN PROJECT (3+ YEARS).
3. WHEN TEMP BRIDGE IS INSTALLED AT MERCHANTS ROW, REPLACE M4-9 (S) WITH PERMANENT M4-9 (R) SIGN.
4. WHEN TEMP BRIDGE IS INSTALLED AT MERCHANTS ROW REMOVE SIGN ASSEMBLY.
5. WHEN TEMP BRIDGE IS INSTALLED AT MERCHANTS ROW, INSTALL SIGN ASSEMBLY.

LEGEND

- CONSTRUCTION AREA
- DESIGNATED DETOUR ROUTE
- TYPE III (MOD) BARRICADE (WITH SIGN)
- TYPE III BARRICADE

S. PLEASANT STREET DETOUR

PROJECT NAME: MIDDLEBURY  
PROJECT NUMBER: EWP3(I)

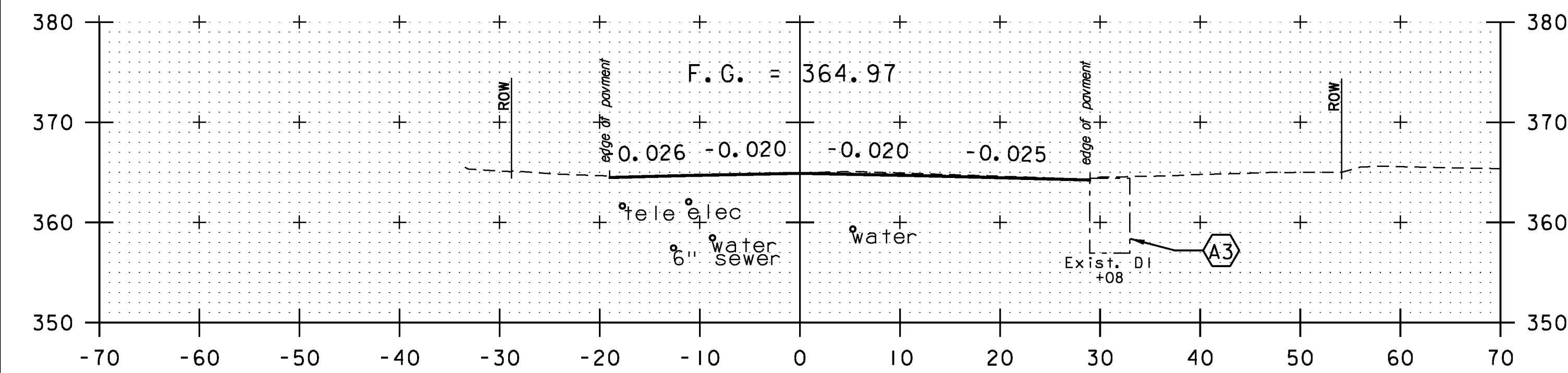
FILE NAME: z17b016_TCP_SIPleasantSt.dgn  
PROJECT LEADER: A.P. GUYETTE  
DESIGNED BY: D.M. PECK  
TCP - S. PLEASANT STREET DETOUR

PLOT DATE: 5/19/2017  
DRAWN BY: D.M. PECK  
CHECKED BY: E.P. DETRICK  
SHEET 47 OF 54

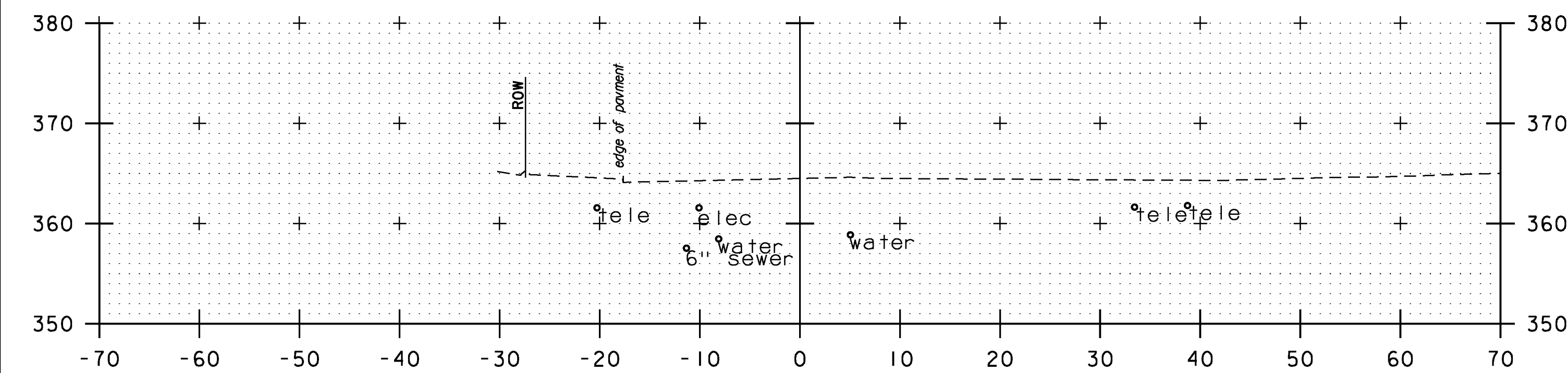


SCALE 1" = 100' - 0"  
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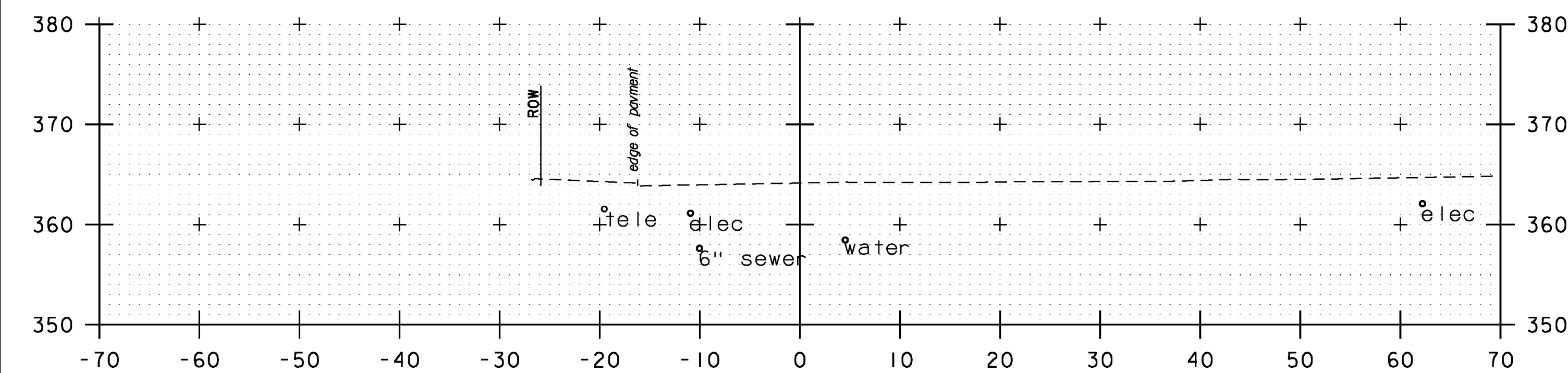




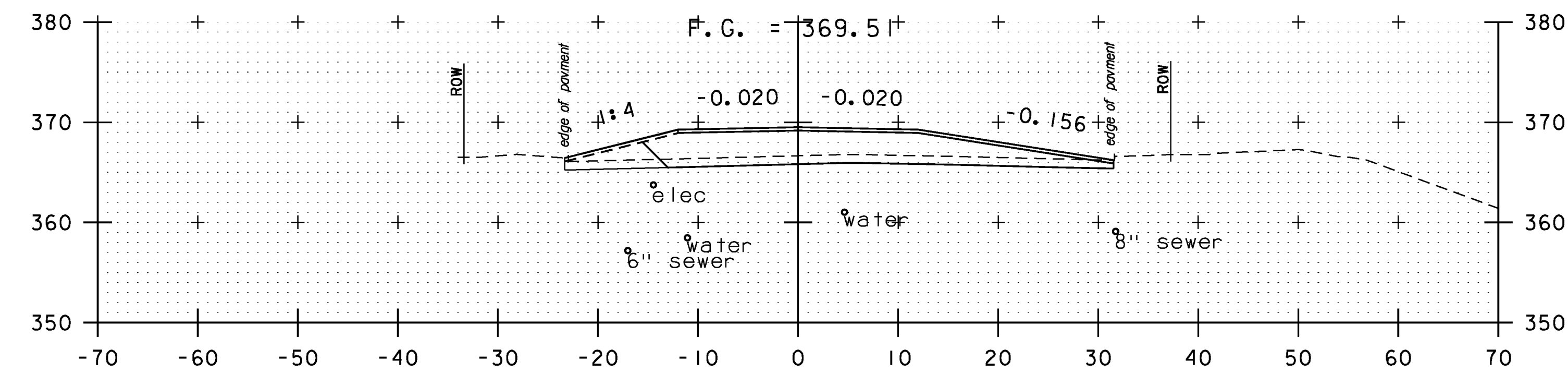
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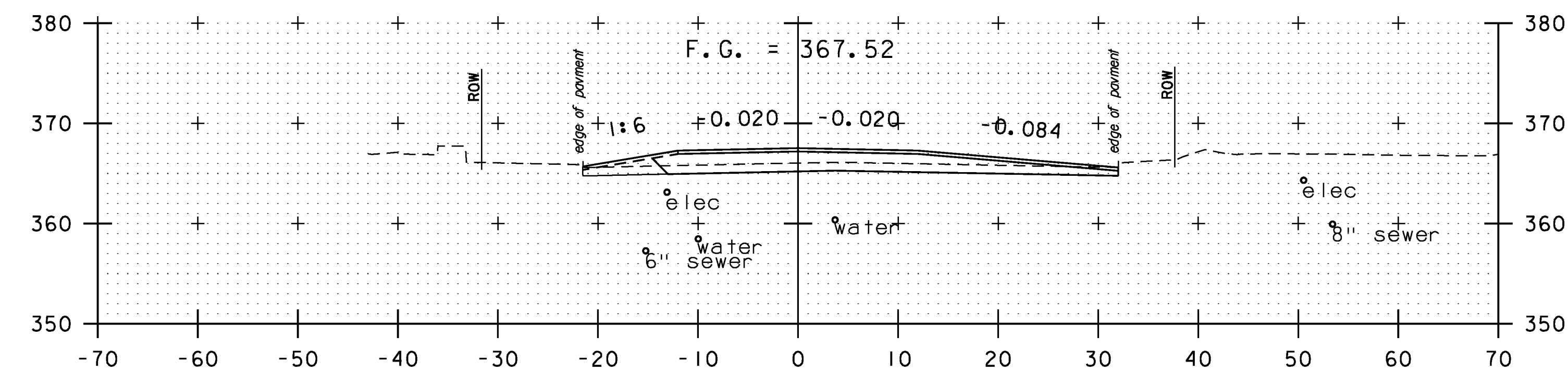
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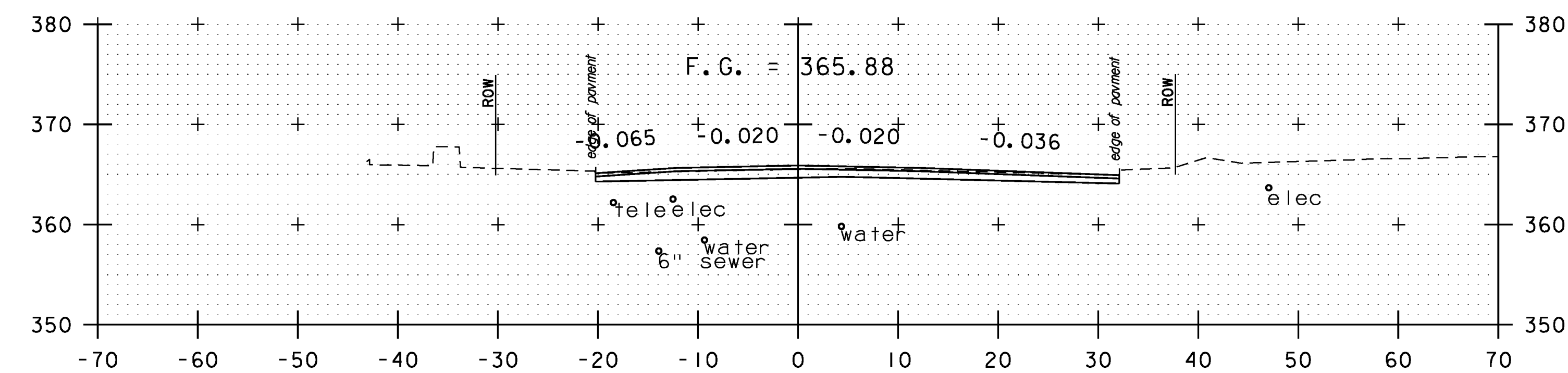
9+50



10+75



10+50



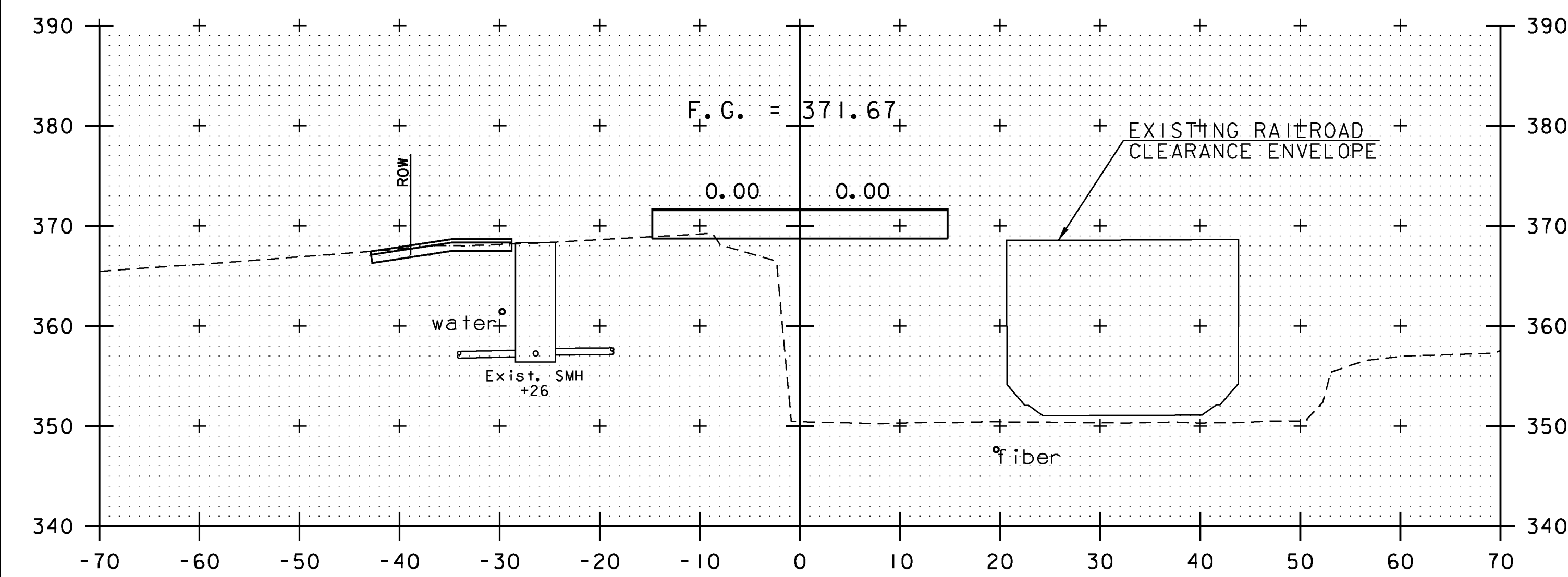
10+25

MAIN STREET

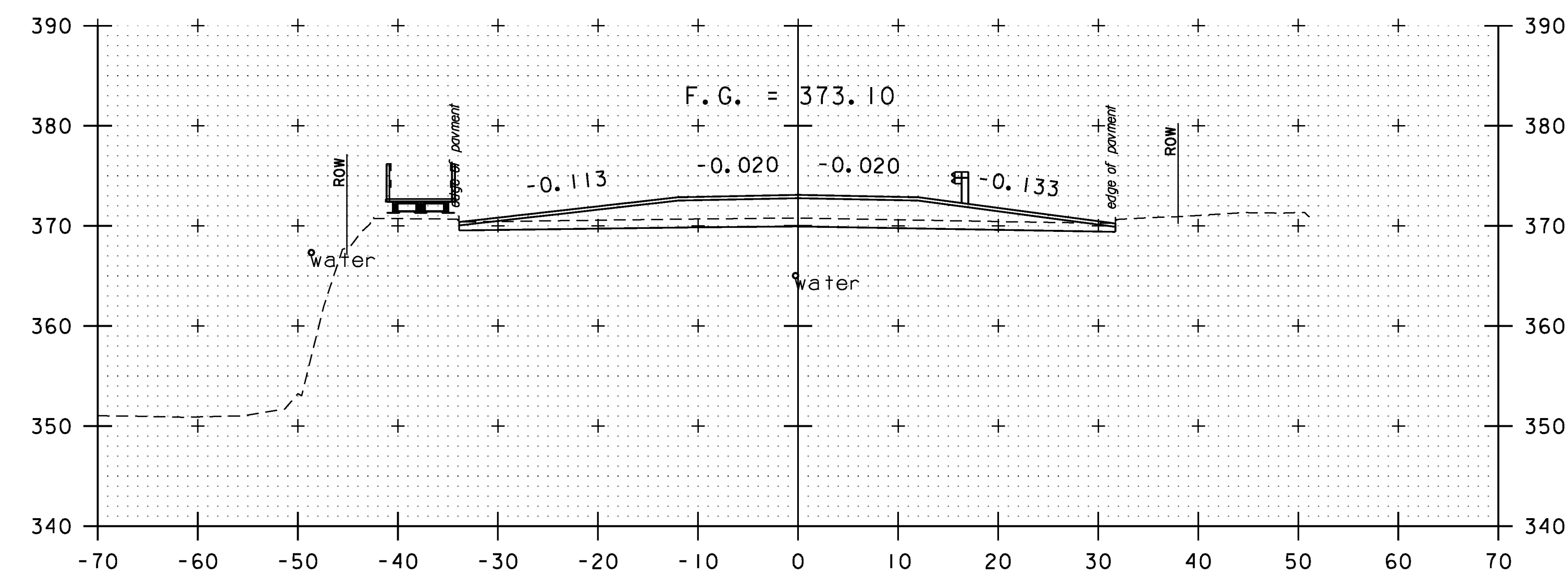
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PROJECT NUMBER: EWP3(1)	
FILE NAME: z17b016_MAIN.XS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: B.M. ROBERTS
DESIGNED BY: B.M. ROBERTS	CHECKED BY: E.P. DETRICK
CROSS SECTION (SHEET 1 OF 7)	SHEET 48 OF 54



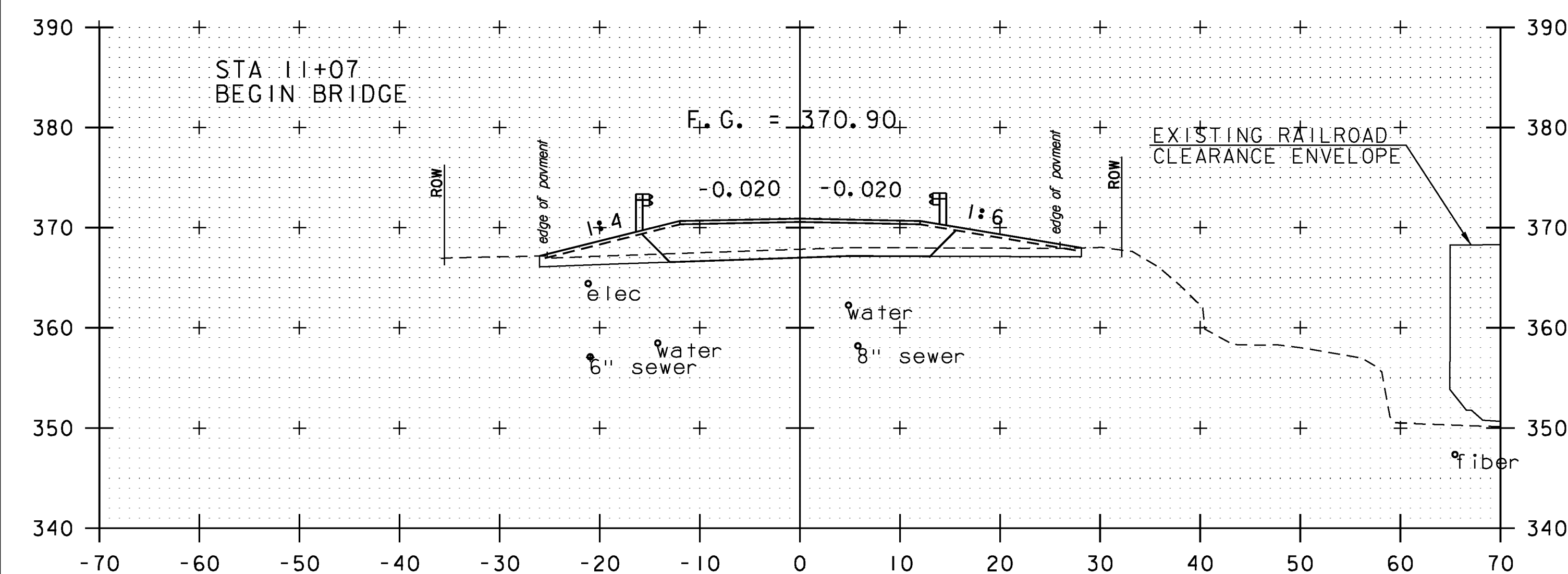




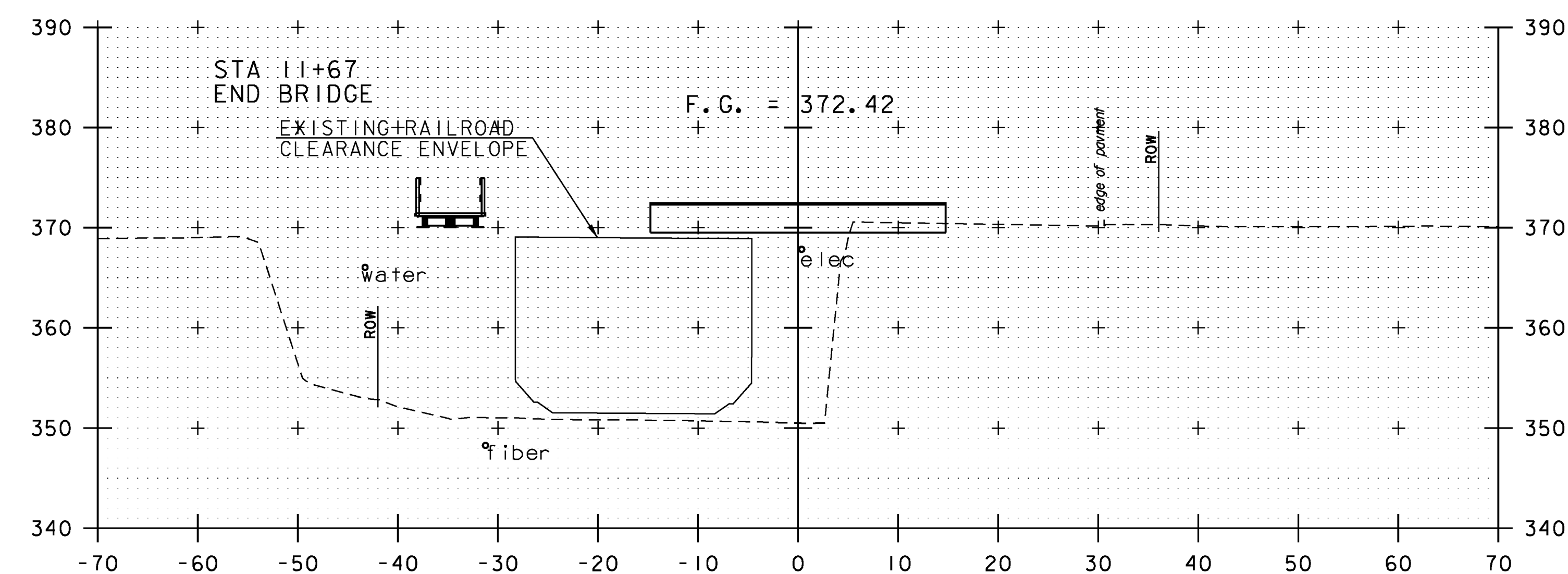
11+25



11+75



11+00



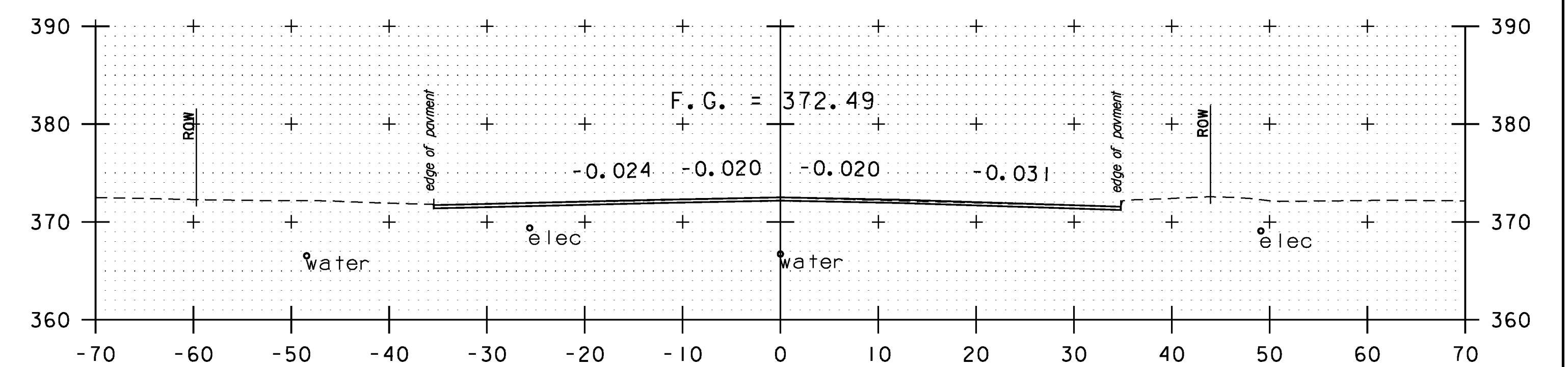
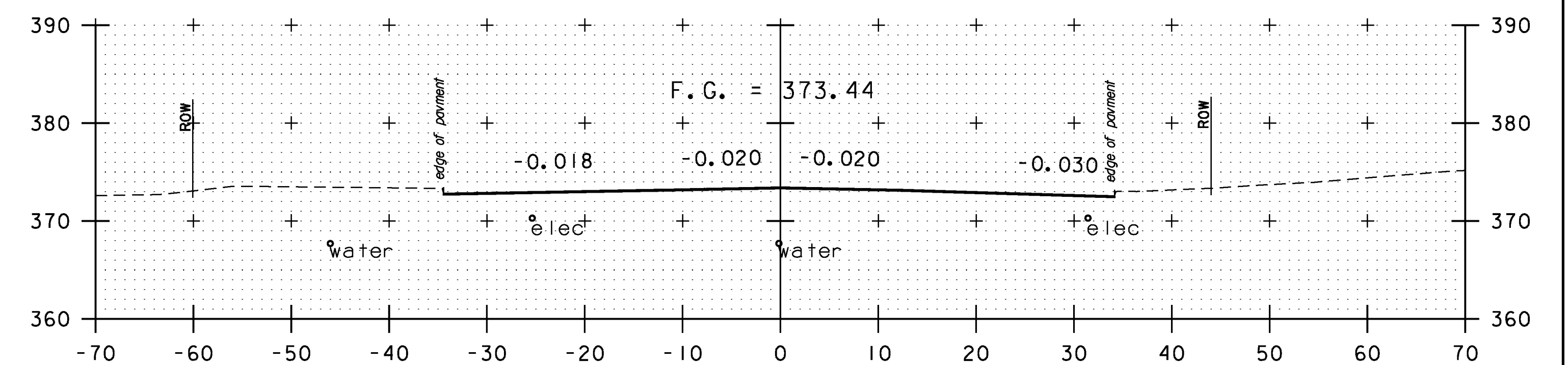
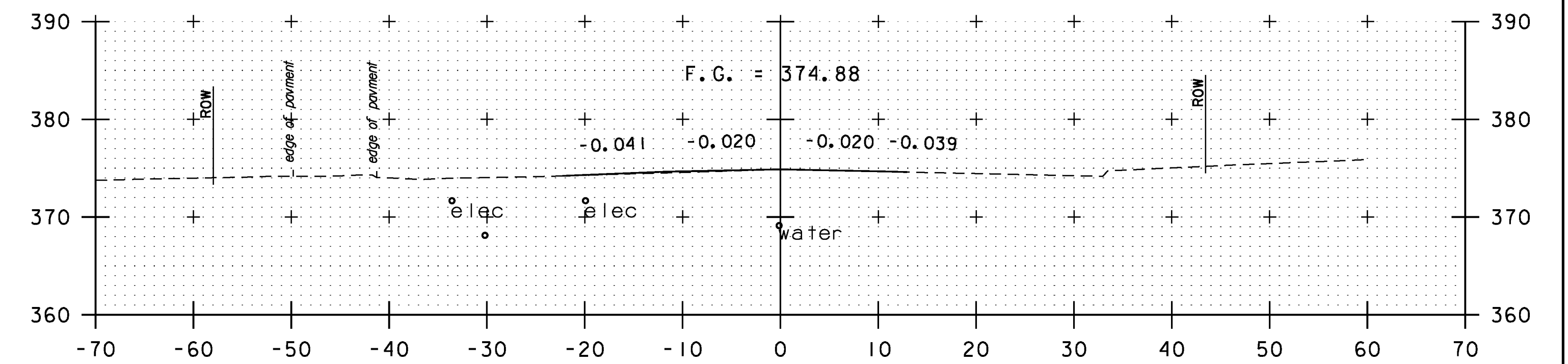
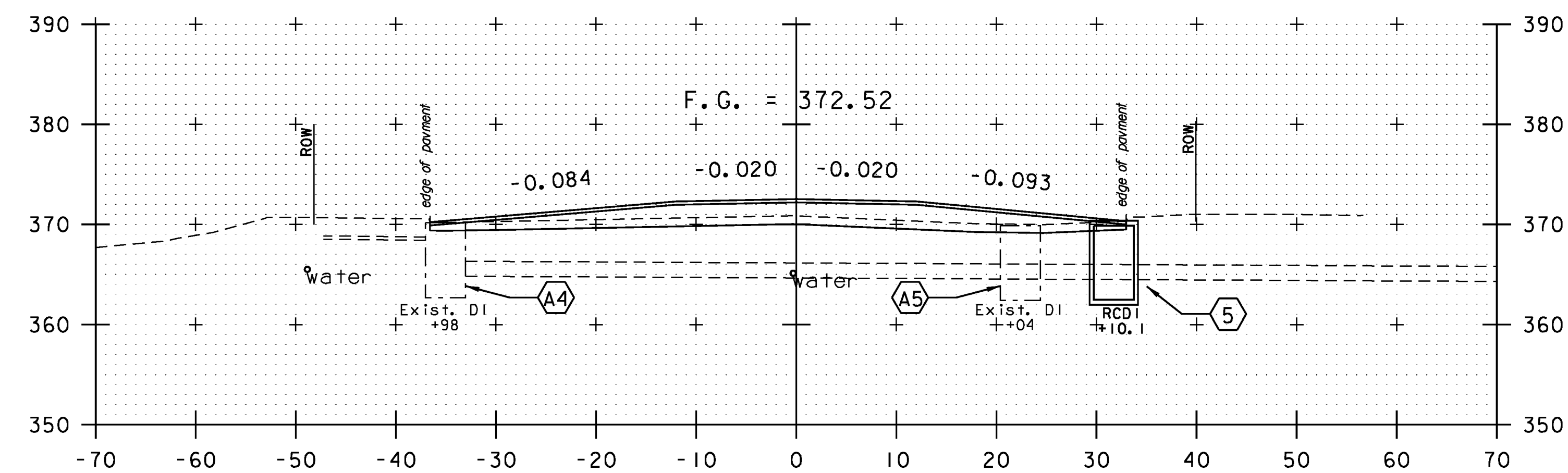
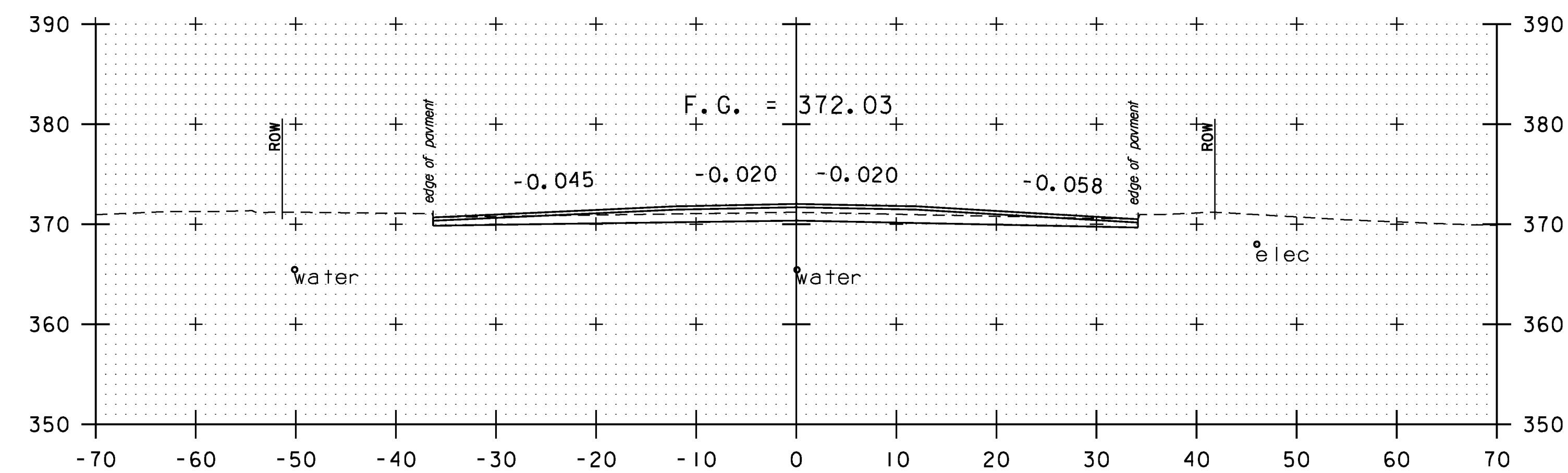
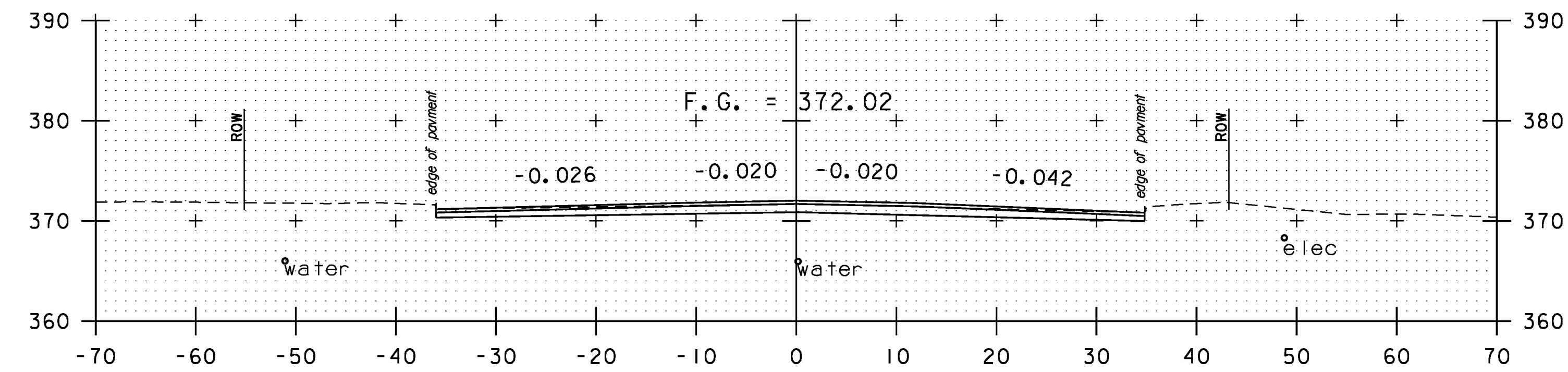
11+50

MAIN STREET

PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EW3(1)
FILE NAME:	z17b016_MAIN XS.dgn
PROJECT LEADER:	A.P. GUYETTE
DESIGNED BY:	B.M. ROBERTS
CROSS SECTION (SHEET 2 OF 7)	
PLOT DATE:	5/19/2017
DRAWN BY:	B.M. ROBERTS
CHECKED BY:	E.P. DETRICK
SHEET	49 OF 54







# MAIN STREET

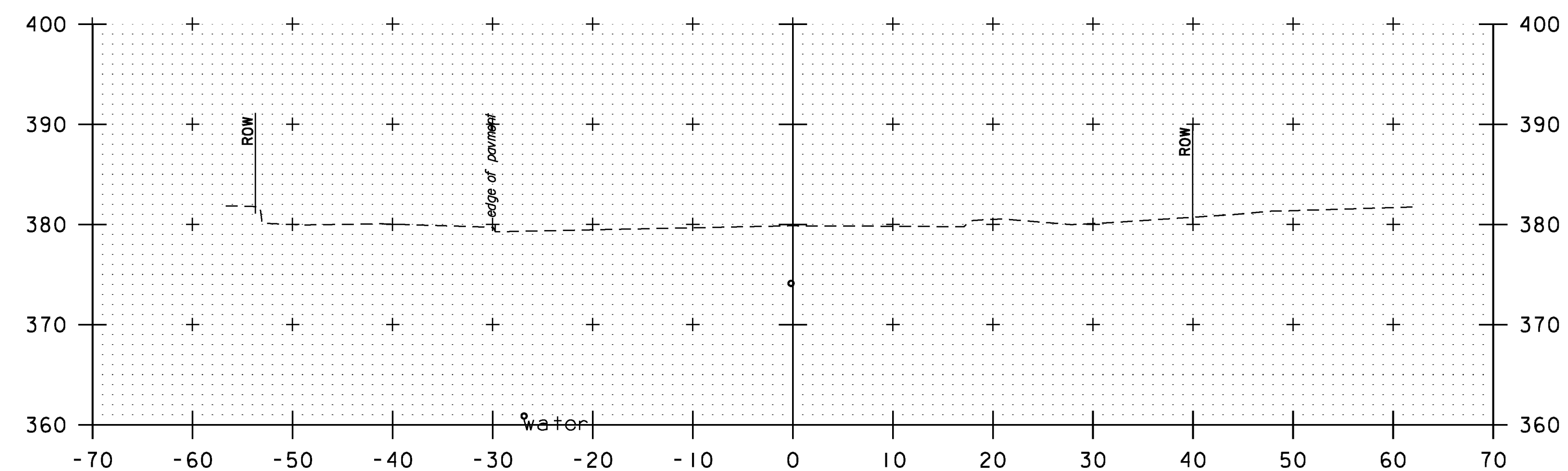
PROJECT NAME: MIDDLEBURY  
PROJECT NUMBER: EWP3(I)

FILE NAME: z17b016_MAIN.XS.dgn  
PROJECT LEADER: A.P. GUYETTE  
DESIGNED BY: B.M. ROBERTS  
CROSS SECTION (SHEET 3 OF 7)

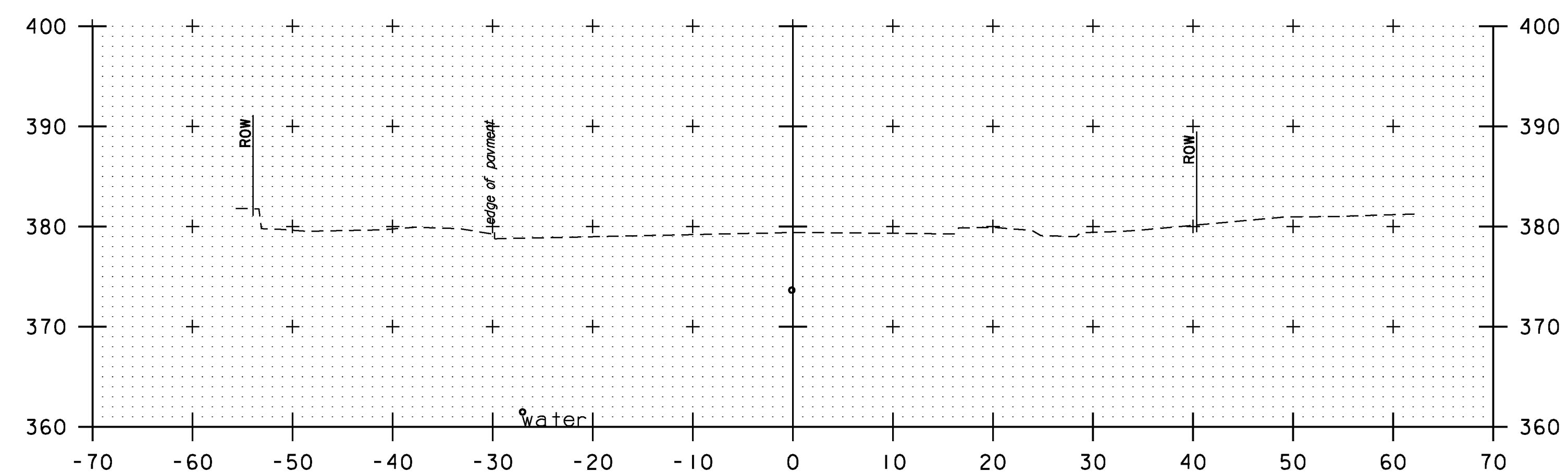
PLOT DATE: 5/19/2017  
DRAWN BY: B.M. ROBERTS  
CHECKED BY: E.P. DETRICK  
SHEET 50 OF 54



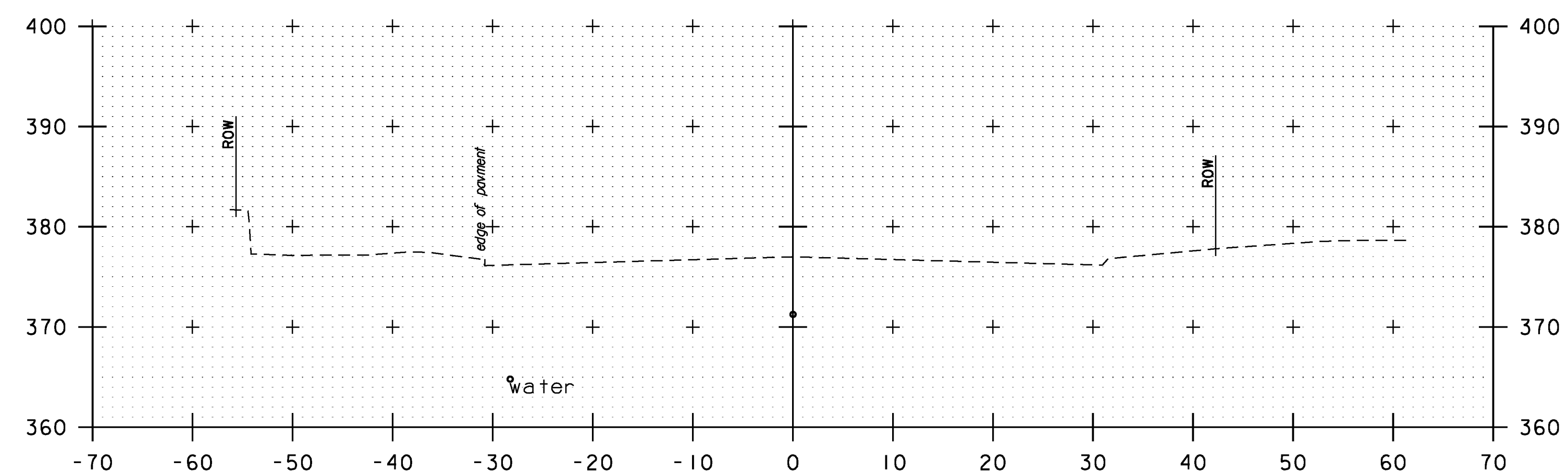




13+80



13+75



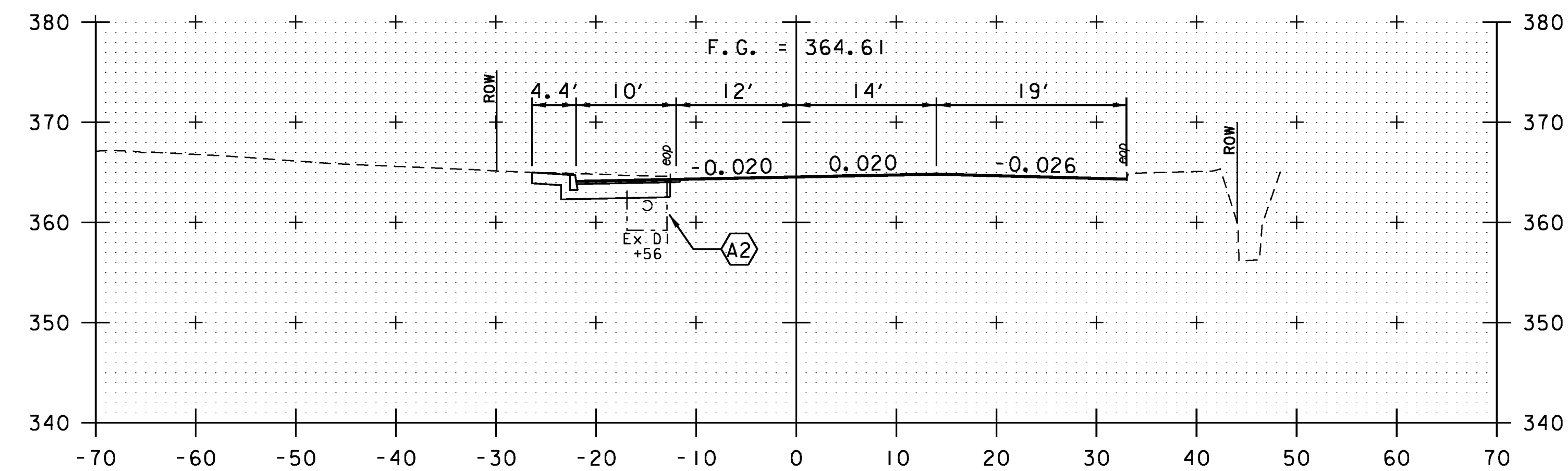
13+50

# MAIN STREET

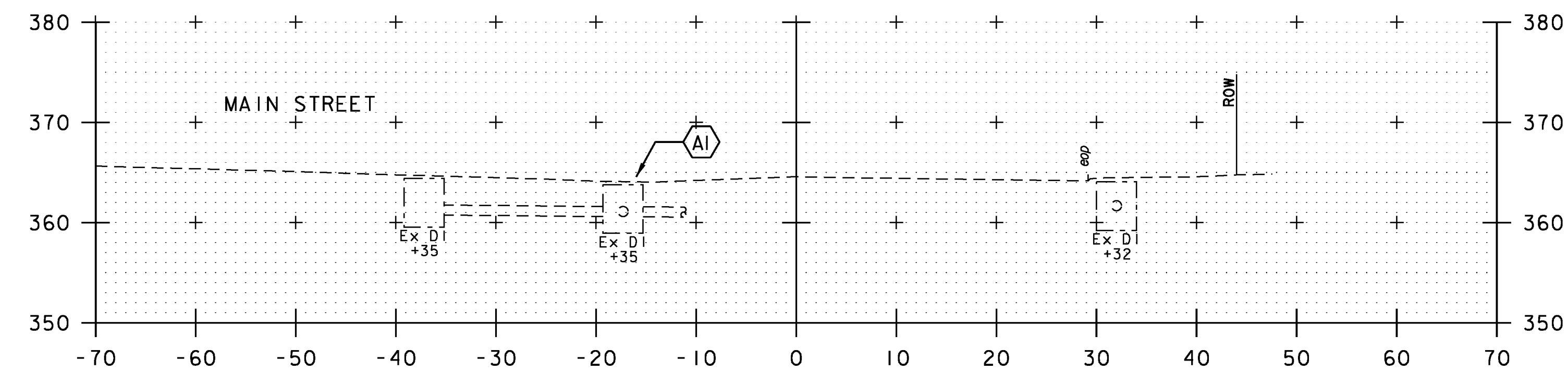
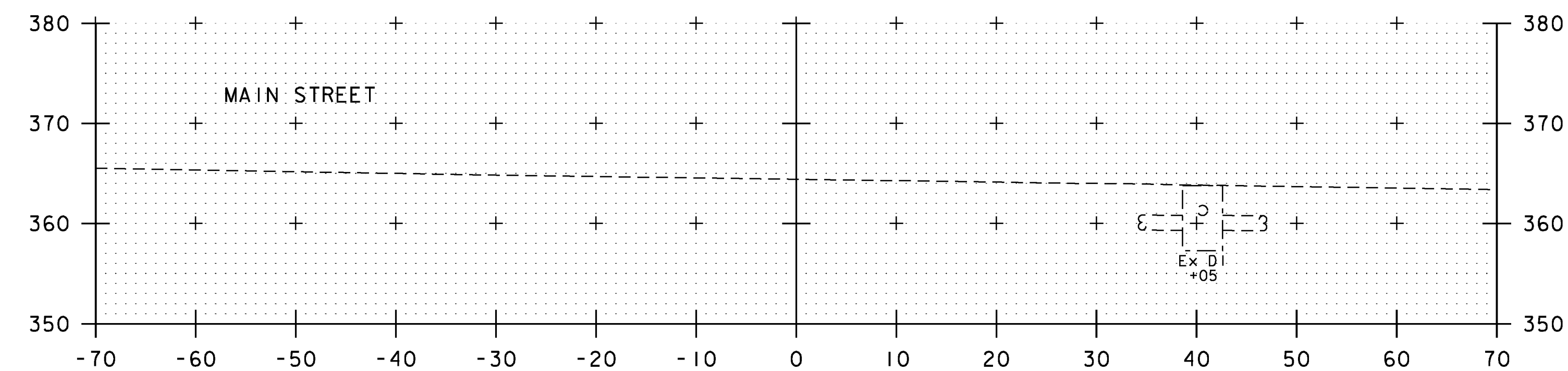
PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(1)	
FILE NAME: z17b016_MAIN XS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: B.M. ROBERTS
DESIGNED BY: B.M. ROBERTS	CHECKED BY: E.P. DETRICK
CROSS SECTION (SHEET 4 OF 7)	SHEET 51 OF 54



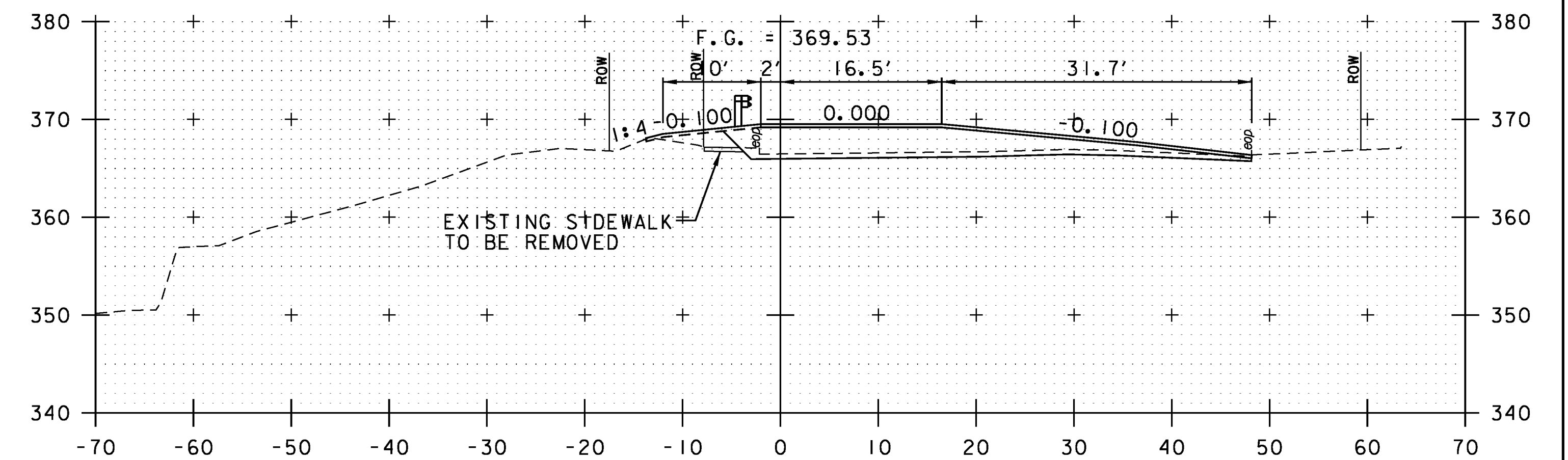
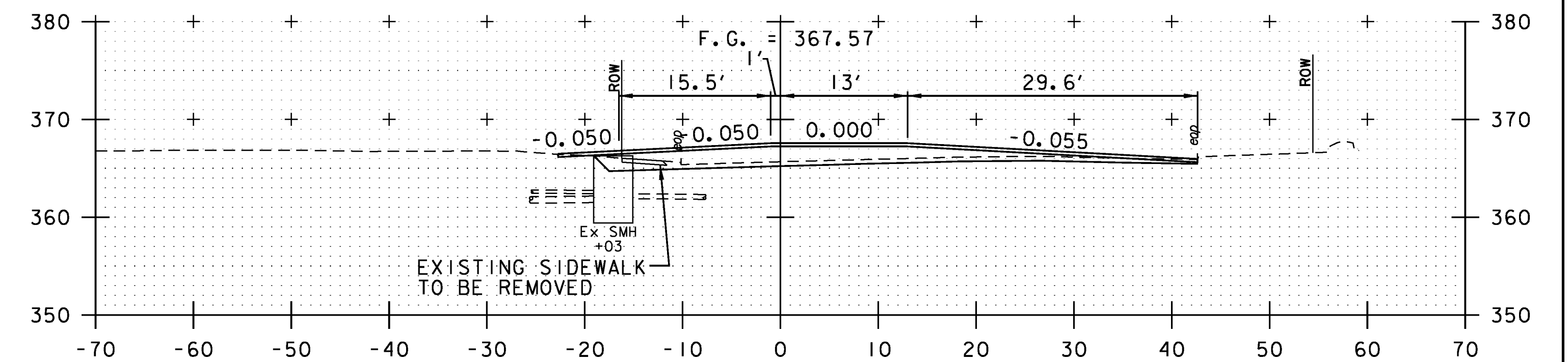




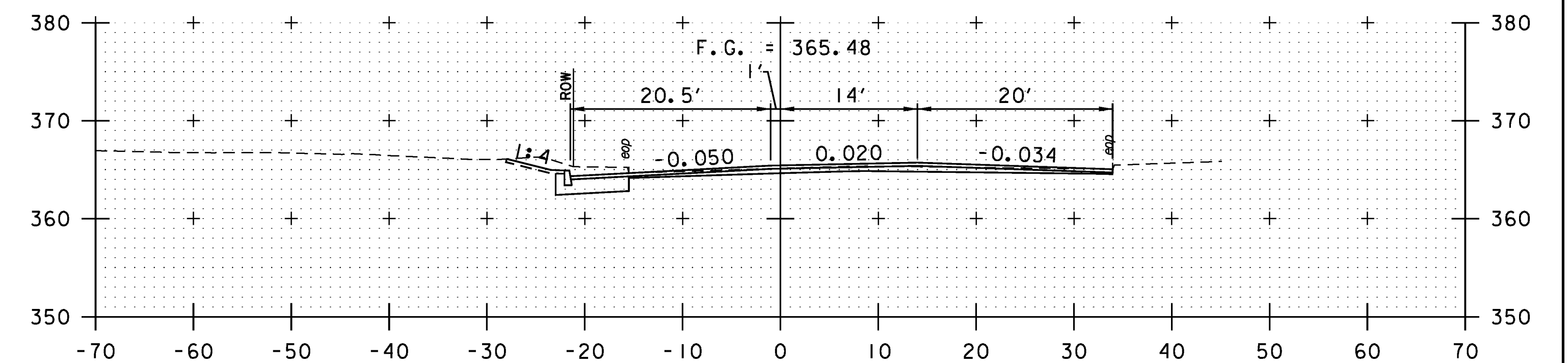
STA. 20+35.00  
BEGIN PROJECT

 $20+50$  $20+25$ 

20+00

 $21+25$ 

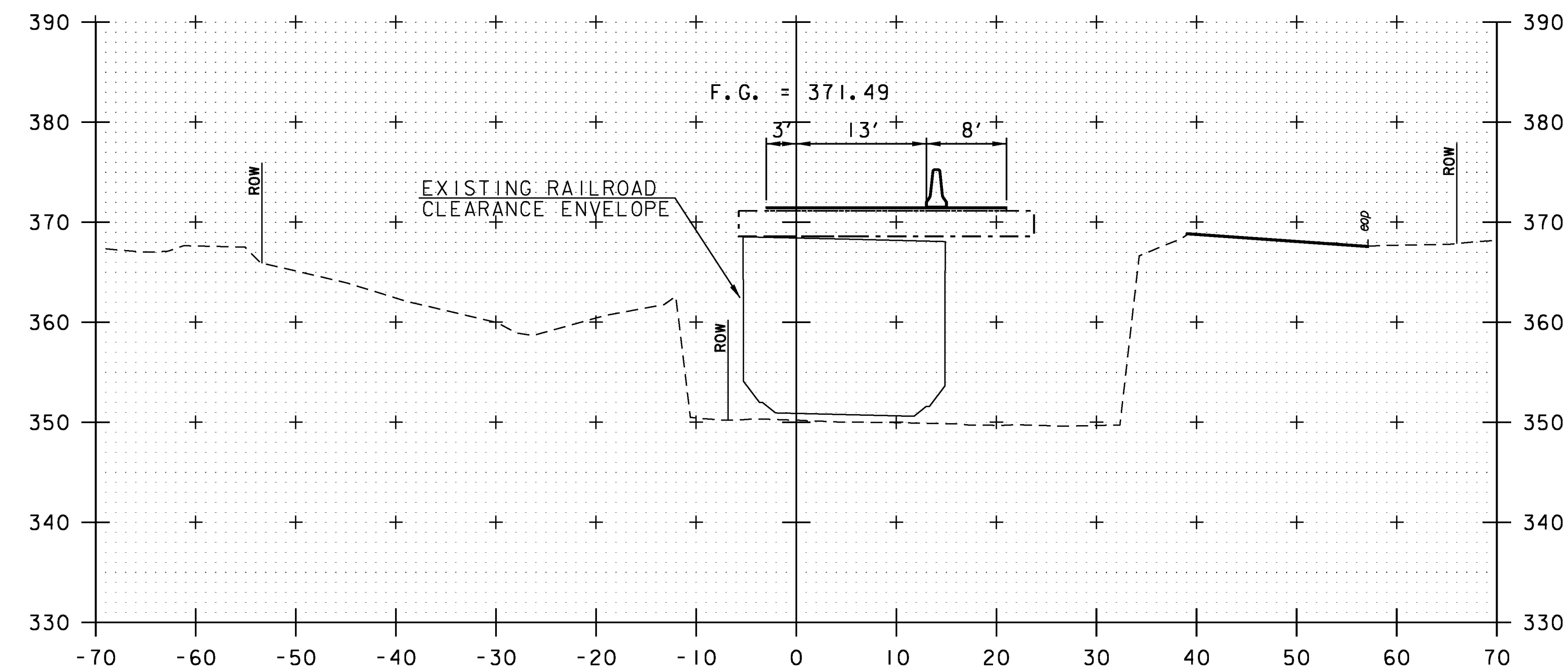
21+00

 $20+75$ 

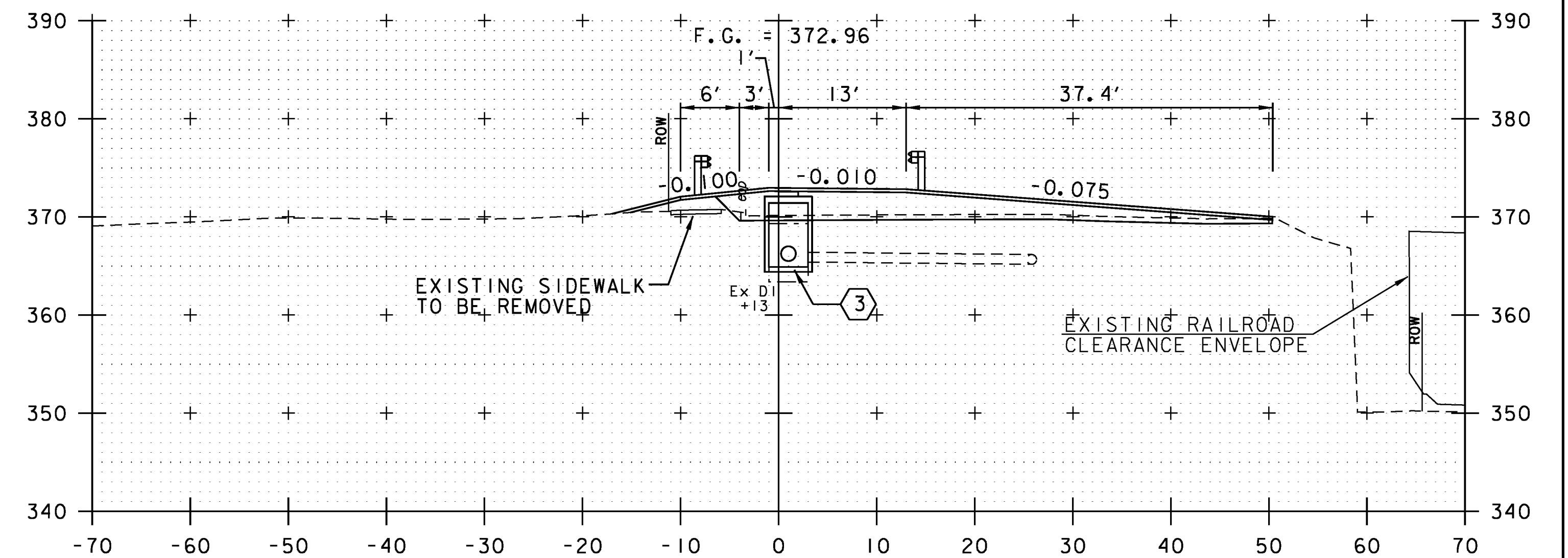
MERCHANTS ROW

PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(I)	
FILE NAME: z17b016_MERCHANTS_XS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETRICK
CROSS SECTIONS (SHEET 5 OF 7)	SHEET 52 OF 54

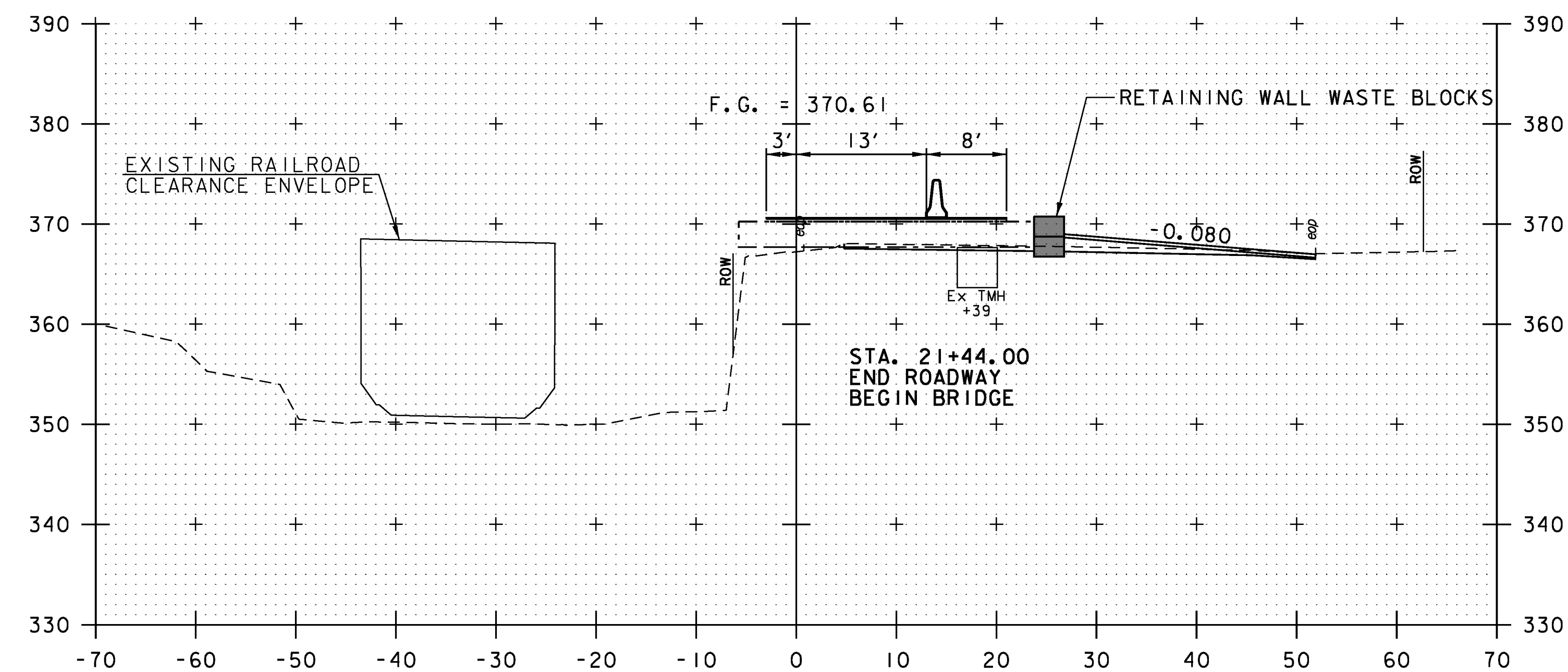




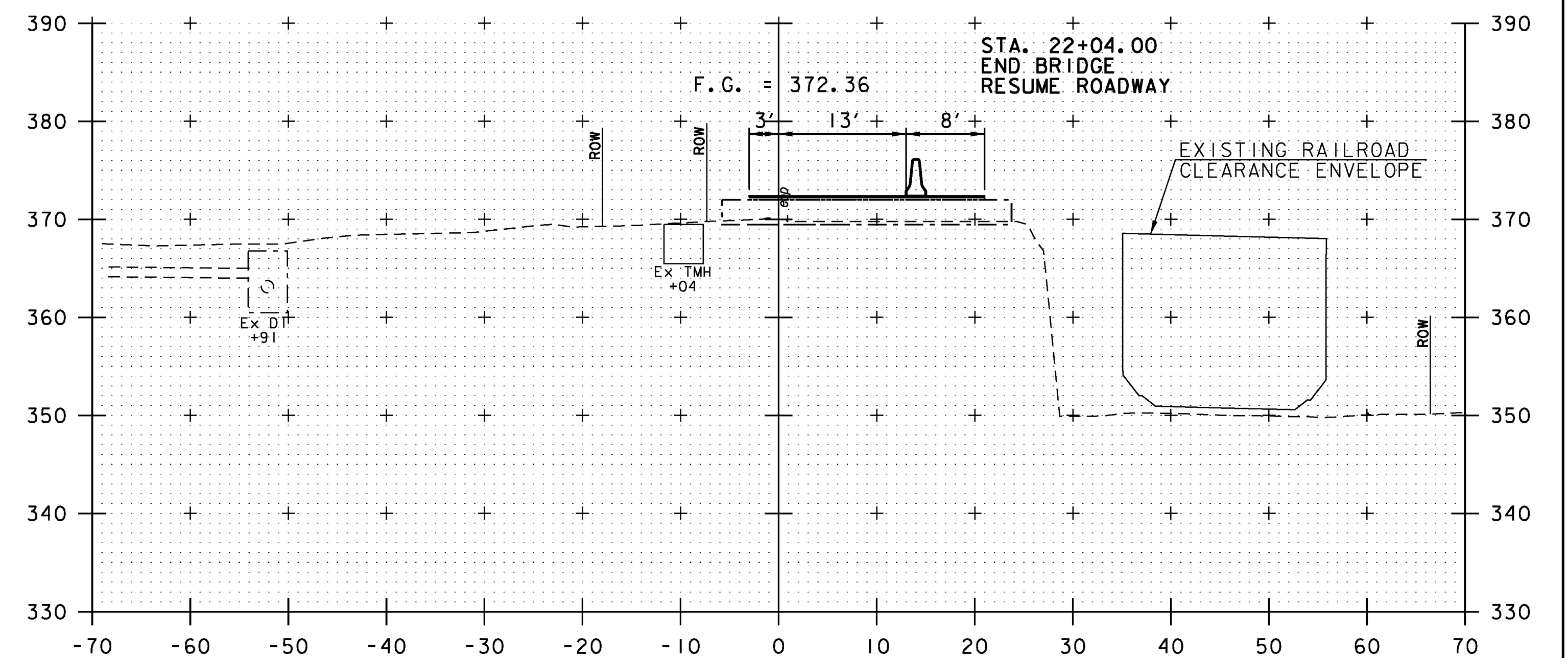
21+75



22+25



21+50



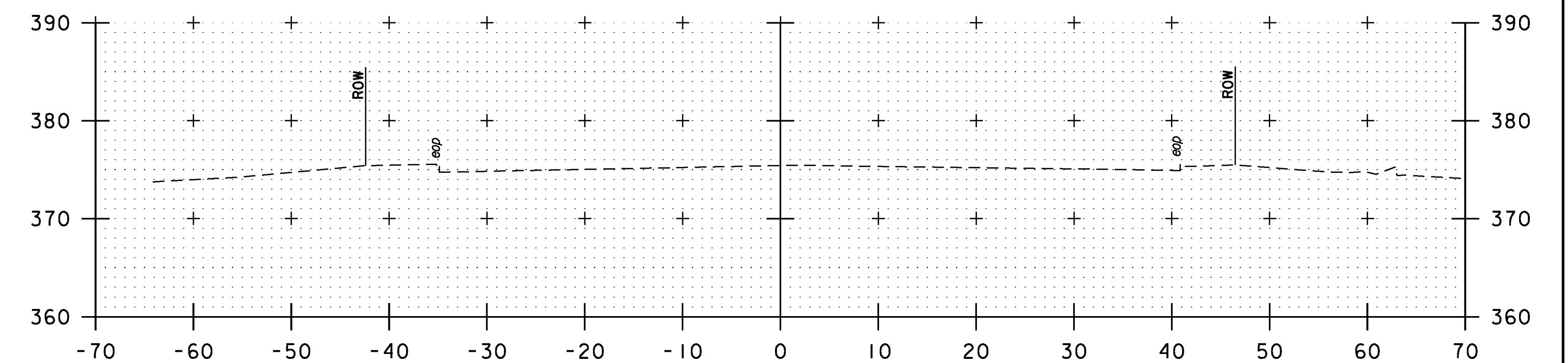
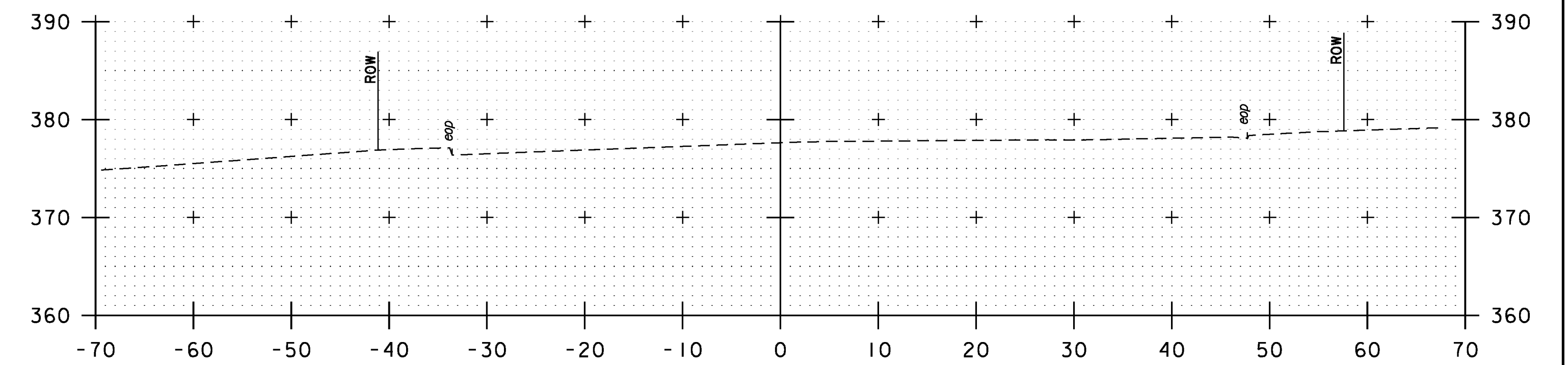
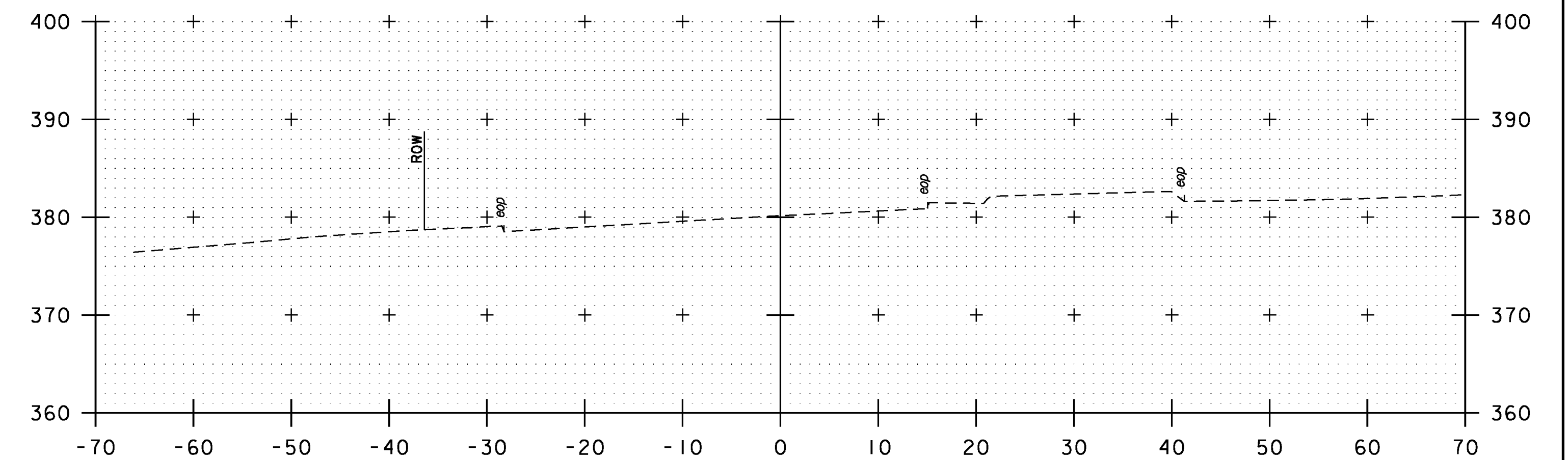
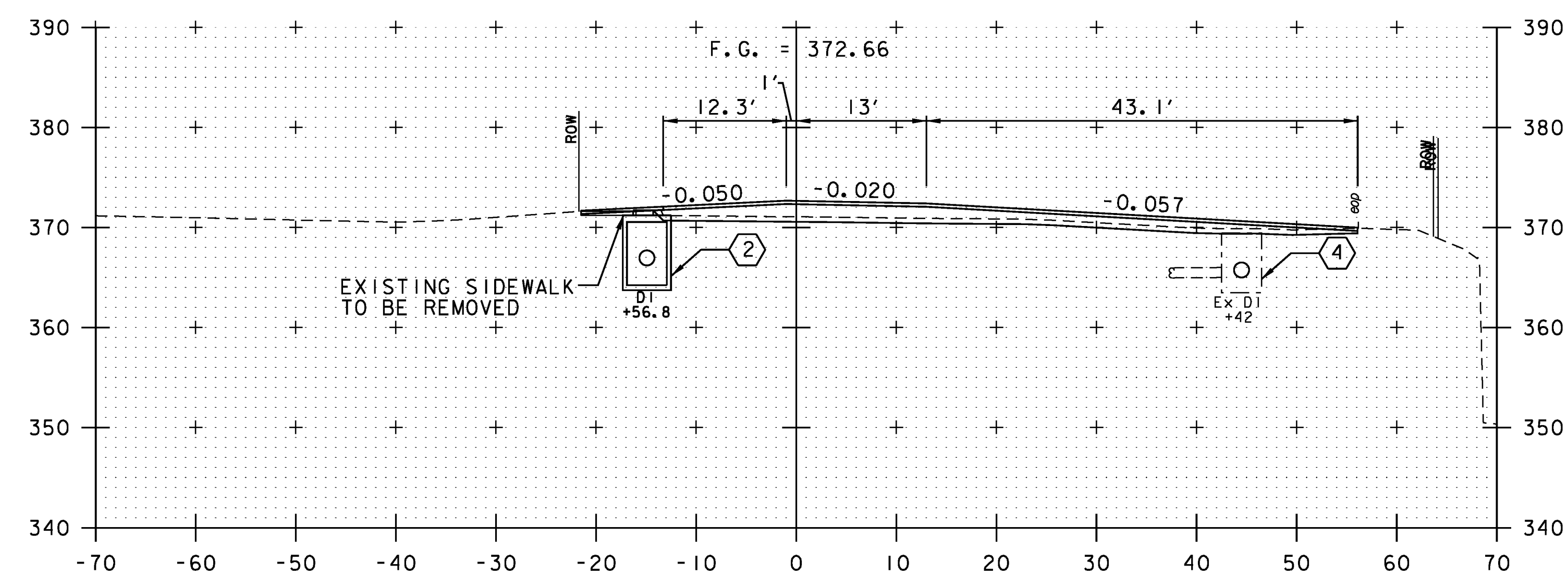
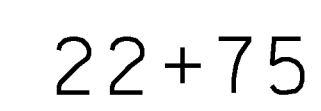
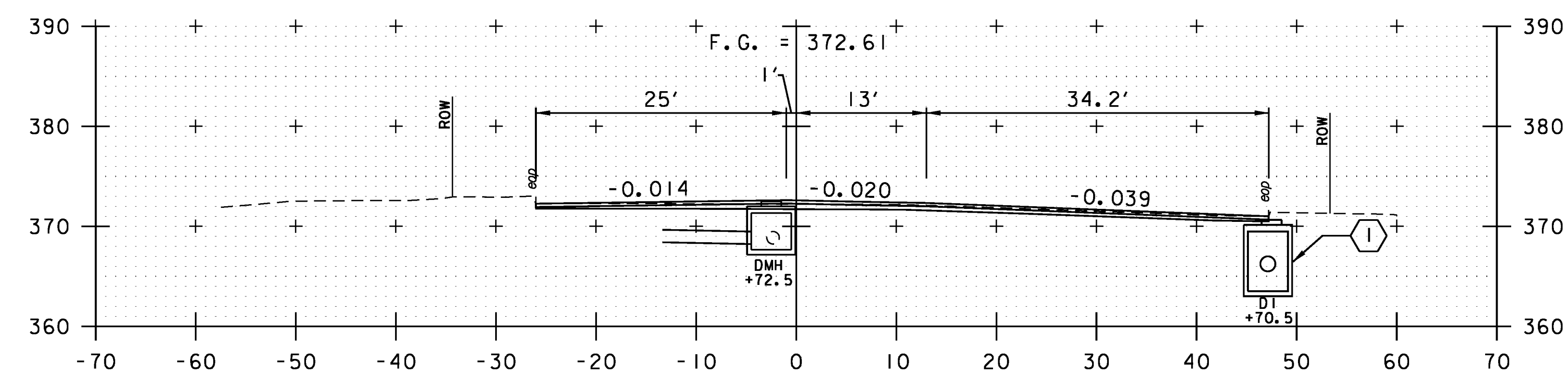
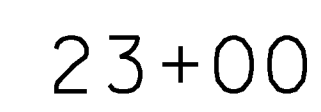
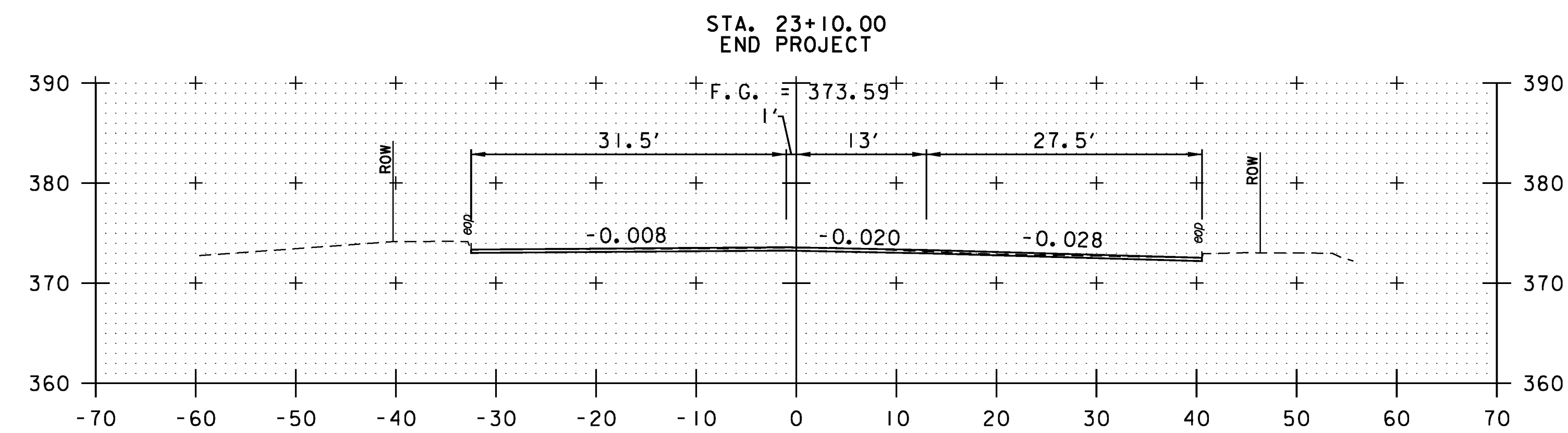
22+00

# MERCHANTS ROW

PROJECT NAME: MIDDLEBURY	
PROJECT NUMBER: EWP3(I)	
FILE NAME: z17b016_MERCHANTS_XS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETRICK
CROSS SECTIONS (SHEET 6 OF 7)	SHEET 53 OF 54







MERCHANTS ROW

PROJECT NAME:	MIDDLEBURY
PROJECT NUMBER:	EWP3(1)

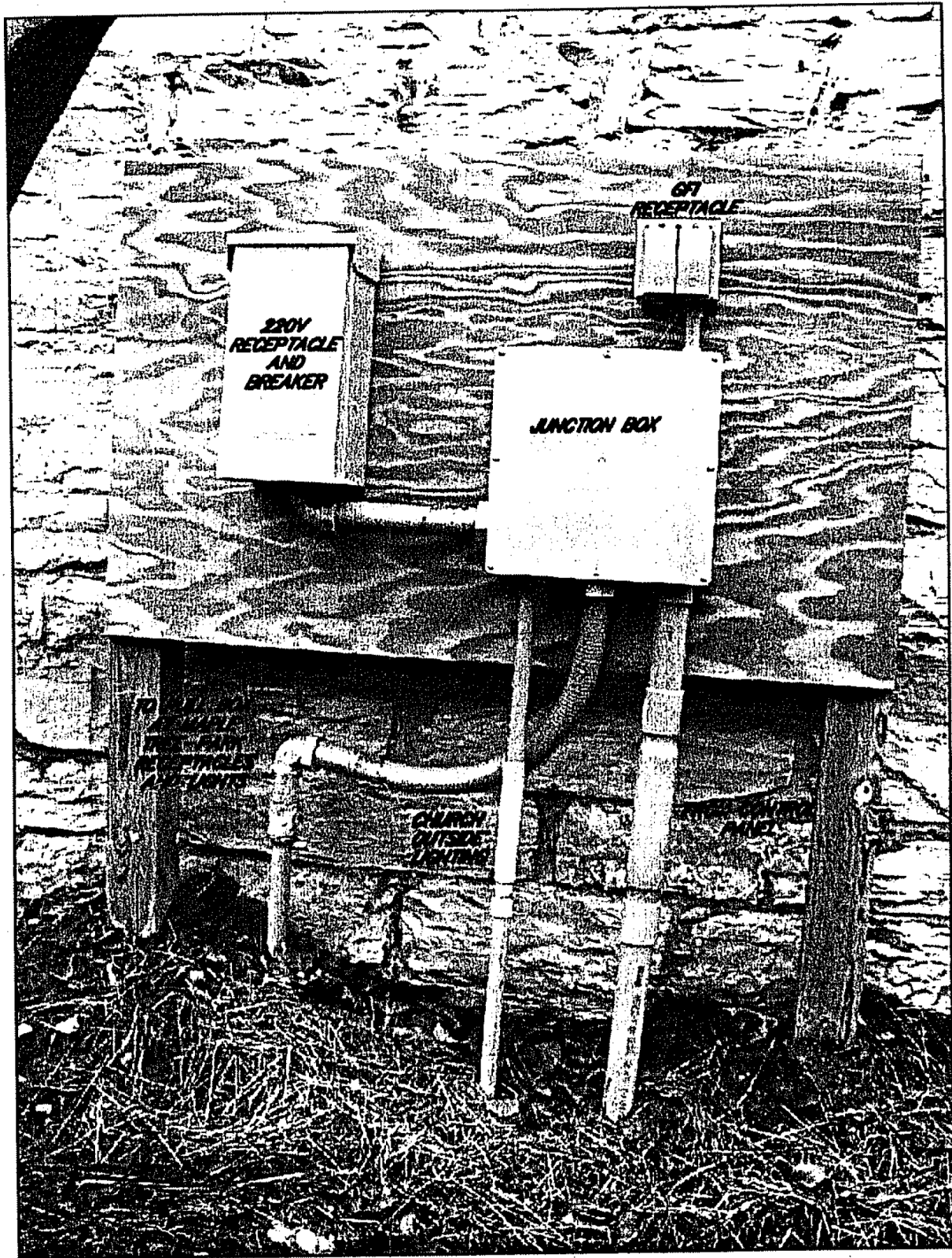
FILE NAME: z17b016_MERCHANTS_XS.dgn	PLOT DATE: 5/19/2017
PROJECT LEADER: A.P. GUYETTE	DRAWN BY: D.M. PECK
DESIGNED BY: D.M. PECK	CHECKED BY: E.P. DETRICK
CROSS SECTIONS (SHEET 7 OF 7)	SHEET 54 OF 54











CHURCH PANEL DETAIL

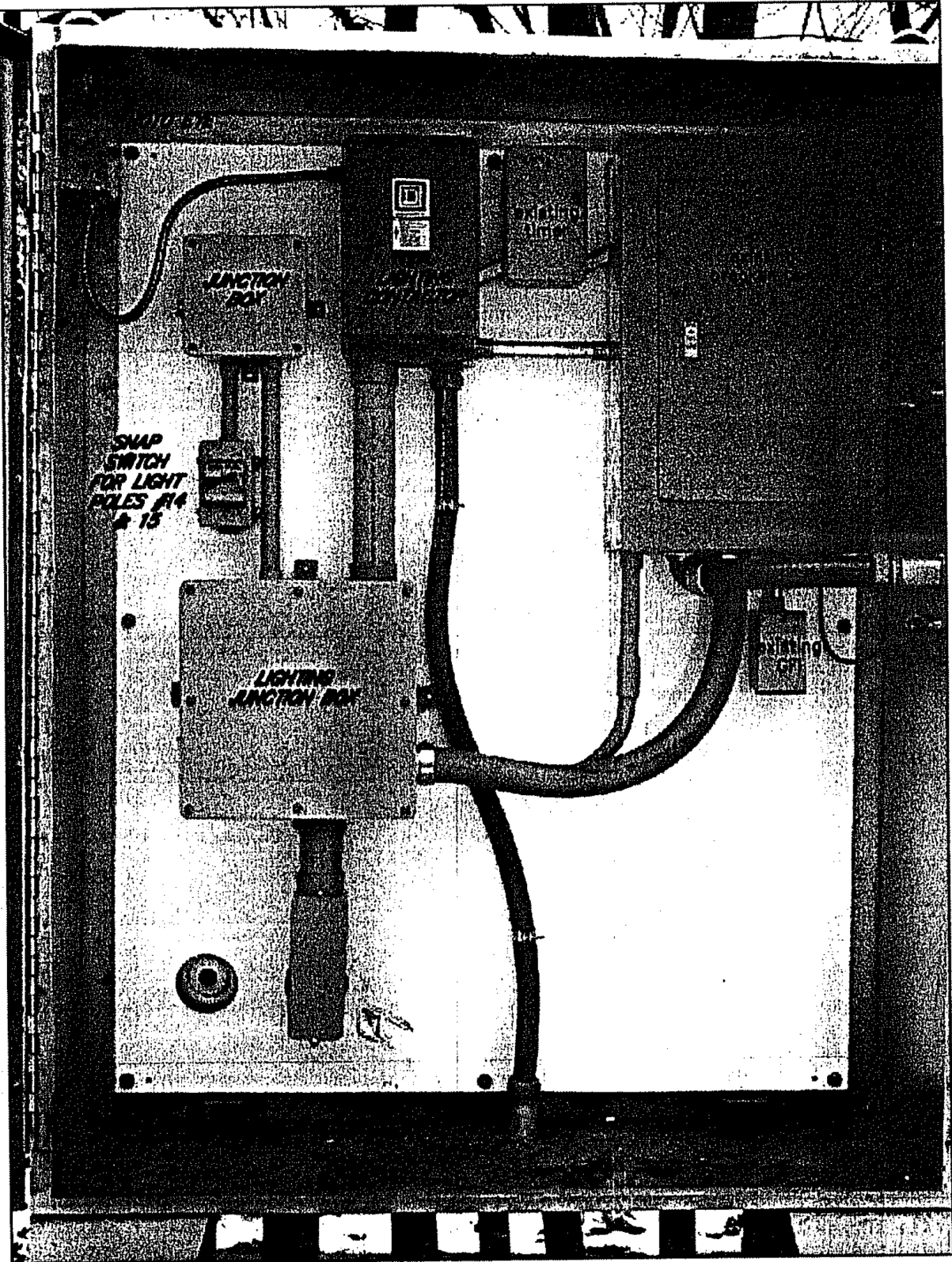
PROVIDE AND INSTALL (3) NEW 240V 20 AMP BREAKERS TO FIT EXISTING NQDD 120V PANEL. REFER TO LUMINAIRE SCHEDULE FOR CIRCUITING OF FIXTURES. ALL NEW CIRCUITS WILL BE CONTROLLED BY PHOTO EYE. (3) CIRCUIT BREAKERS SHALL BE PROVIDED FOR LUMINAIRE CIRCUITS.

PROVIDE NEW SNAP SWITCH TO DISCONNECT LUMINAIRES #14, #15, ALLOWING LUMINAIRES #11, #12 TO REMAIN ON.

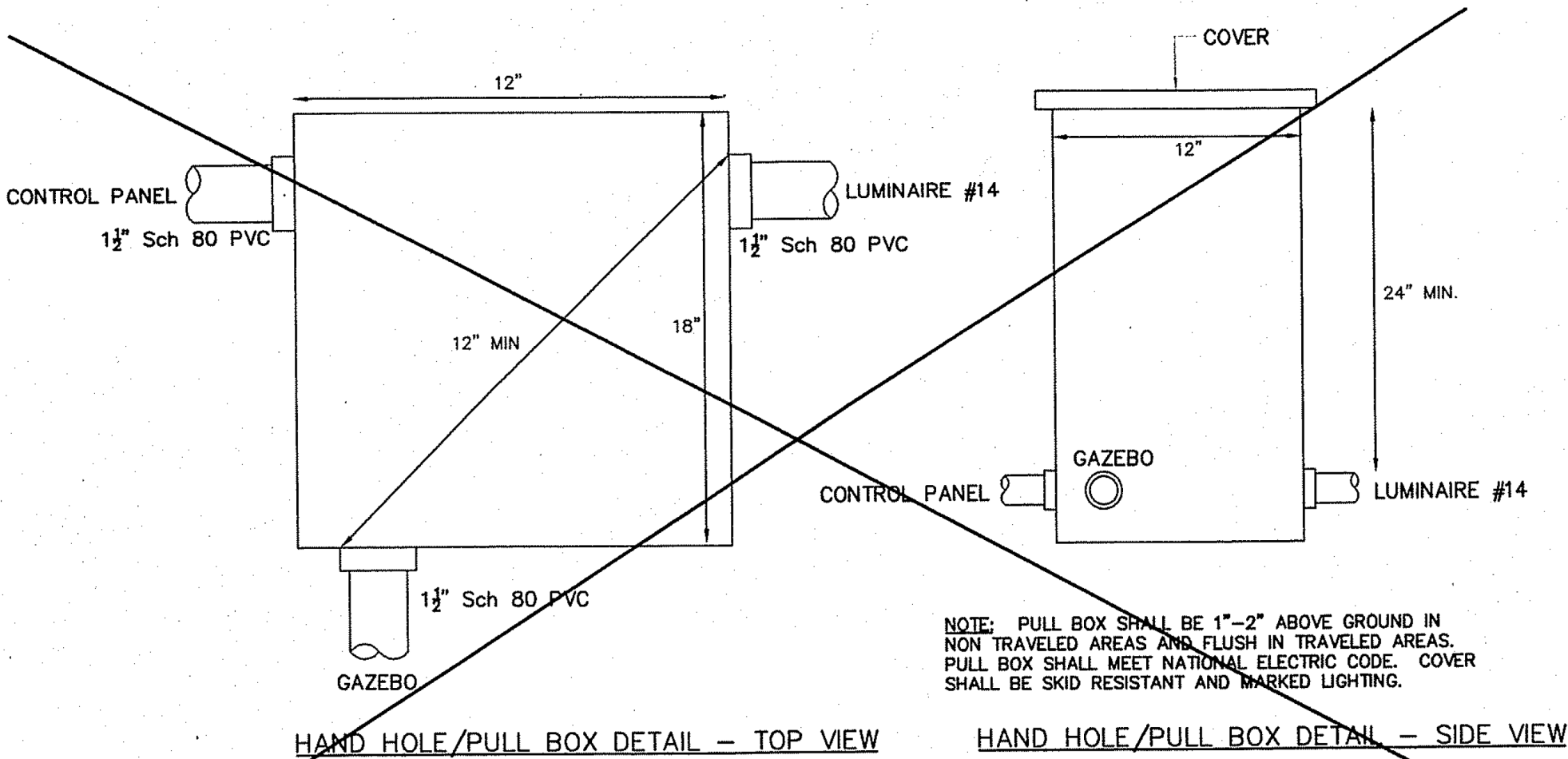
CALL 1-888-DIG SAFE PRIOR TO ALL EXCAVATION, AS WELL AS APPROPRIATE TOWN PERSONNEL FOR CONFIRMATION OF EXISTING UTILITIES.

A COMPLETE AS-BUILT DOCUMENT SHALL BE PROVIDED TO THE ENGINEER-OF-RECORD OF ALL LOCATIONS OF CONDUIT, CONDUIT SIZING AND WIRE SIZING.

RECEPTACLES ON LIGHT POLES ONLY ENERGIZED WHEN POLES ARE LIT.



CONTROL PANEL DETAIL



ELECTRICAL PANEL SCHEDULE: EXISTING

VOLTAGE: 240/120 Vac  
AMPERAGE: 100 A

LOCATION: TOWN GREEN  
MAKE: SQUARE D  
CATALOG NO: NQDD12M100CU

FED FROM: POWER PANEL  
FEED DATA: XXXXX

LOAD DESCRIPTION	CKT. BKR.	CKT. NO.	CKT. BKR.	LOAD DESCRIPTION
TIME CLOCK	1P-15A	1	2	1P-15A SPARE
SITE LIGHTS	1P-15A	3	4	1P-15A SPARE
SPARE	1P-15A	5	6	1P-15A GFI
SPARE	1P-20A	7	8	1P-20A SPARE
MAIN DISCONNECT	2P-100A	9	10	1P-20A SPARE
		11	12	1P-20A SPARE

NOTES:

LUMINAIRE SCHEDULE			
Luminaire No.	Circuit No.	Pole Base	Notes
8	1	Existing. Recessed pole next to existing metal pole to be removed.	
1	1	New	
2	1	New	
3	1	Existing	
4	1	Existing	
5	1	Existing	
6	1	New	
7	1	Existing. Recessed.	
9	1	New	
11	2	New	
12	2	Existing wooden pole to be removed.	
14	2	New	Switched
15	2	New	Switched
16	3	New	
17	3	New	
18	3	Existing	

CONDUIT SCHEDULE					
From Luminaire No.	To Luminaire No.	Conduit Size/Type	Conductors	Spare Conductors	Notes
8	1	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
1	2	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
1	4	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
4	3	Existing	(3) #4, #4 GG	None	
4	5	Existing	(3) #4, #4 GG (3) #10, #12 GG	None	Power for Fountain Included
5	Pull Box	Existing	(3) #4, #4 GG (3) #10, #12 GG	None	Power for Fountain Included
Pull Box	6	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
6	7	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
7	9	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
Pull Box	Existing	Existing	(3) #4, #4 GG (3) #10, #12 GG	None	
11	12	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
12	15	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	Stub for future
14	15	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
14	Exist Control Panel	1-1/2" Sch 80 PVC	(6) #4, #4 GG	None	
Control Panel	Church Panel	1-1/2" Sch 80 PVC	(6) #5, #4 GG	None	
Church Panel	Pull Box	Existing	(2) #4, #4 GG	None	
Control Panel	18	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
16	17	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	
17	18	1-1/2" Sch 80 PVC	(3) #4, #4 GG	None	

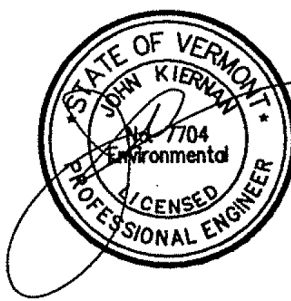
ELECTRICAL PANEL SCHEDULE: REVOKED PANEL				
VOLTAGE: 240/120 Vac AMPERAGE: 100 A		LOCATION: TOWN GREEN MAKE: SQUARE D CATALOG NO: NQDD12M100CU		FED FROM: POWER PANEL FEED DATA: XXXXX
LOAD DESCRIPTION	CKT. BKR.	CKT. NO.	CKT. BKR.	LOAD DESCRIPTION
1A-TIME CLOCK/GFI 1B-PARK SITE LIGHTS	2020	1	2	220
3A-POST AND MAPLE TREE RECEPTACLE 3B-FOUNTAIN	2020	3	4	220
SUB PANEL / CHURCH PANEL	250	5	6	220
MAIN STREET, POST OFFICE STREET LIGHTS	220	7	8	220
MAIN BREAKER	2100	9	10	220
		11	12	
		13		
		15		

NOTES:

## RECORD DRAWING

Record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result. The location of items shown without labeled measurements are to be considered as approximate; do not scale the drawing to determine the actual location. All record drawing information is shown in *italics*.

REVISIONS



THE DRAWINGS FOR THIS PROJECT SHALL NOT BE REUSED OR ALTERED IN ANY WAY WITHOUT THE WRITTEN APPROVAL AND AUTHORITY OF THE ENGINEER. ANY REVISIONS SHALL BE MADE BY THE ENGINEER AND NOTED IN THE REVISION BLOCK.

© 2004  
PHELPS ENGINEERING, INC.

SCALE: SHOWN DR. BY: JS SHEET NO. 2R OF 3R  
DATE: 12/6/04 CK'D BY: JK

PHELPS ENGINEERING, INC.  
FROG HOLLOW MILL  
3 Mill St., P.O. Box 367  
Middlebury, Vt. 05753  
Telephone (802) 388-7829

TOWN OF MIDDLEBURY  
VILLAGE AREA  
HISTORICAL LIGHTING PLAN  
MIDDLEBURY, VERMONT

DETAILS AND NOTES



O:\acad-2002\2002-Land-Drawings\2004\200403\200403detrec.dwg, 12/09/2004 10:43:37 AM



SUBMITTAL



Submittal number	9.0	Date	05/24/2017
Project	Middlebury EWP3 Temp Brdg	10 Main Street Middlebury, VT 05753	
Project number	2017012		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	Timothy Pockette, PE
Topic	Waterline Insulation		

Submitter	JOHN W. WHITTAKER III
Reviewer	Timothy Pockette, PE
Cc	Joel Perrigo

Date submitted	05/24/2017	Submission due date	
Released for review		Review due date	05/26/2017
Date returned		Required on site date	
Date closed			

Notes
The attached submittal is for the preinsulation of pipe to be delivered on site for the waterline installation. This is a super hot lead time item. Please review and comment so that purchases can be made.

Vermont Agency of Transportation  
Accepted  
By Joel Perrigo at 12:48 pm, May 26, 2017

SUBMITTAL REVIEW

☒ REVIEWED AND APPROVED BUT ONLY FOR CONFORMANCE TO THE CONSTRUCTION CONTRACT DOCUMENTS

☐ REJECTED

☐ REVISE AND RESUBMIT

☐ APPROVED AS NOTED

CORRECTIONS OR COMMENTS MADE DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR OR HIS DESIGNER FROM COMPLIANCE WITH PROFESSIONAL REQUIREMENTS OR FOR RESPONSIBILITY FOR THE ADEQUACY OF THE SUBMITTAL INFORMATION. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH INDUSTRY STANDARDS AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. VHB HAS NOT CONDUCTED A DETAILED REVIEW OF THE SUBMITTAL AND HAS NOT PERFORMED CALCULATIONS OR ASSESSED THE ADEQUACY OF LOADS, DESIGN CRITERIA, QUANTITIES, DIMENSIONS, ETC. APPROVAL OF THE SUBMITTAL DOES NOT CONSTITUTE VHB'S APPROVAL OF ANY CONSTRUCTION MEANS, METHODS OR TECHNIQUES. THESE REMAIN THE RESPONSIBILITY OF THE CONTRACTOR.



Engineers | Scientists | Planners | Designers  
40 IDX Drive  
Building 100, Suite 200  
South Burlington, VT 05403  
Phone 802-497-6100

Job Number: EWP3(1)

Reviewed By: A. Guyette

Date: 05/26/2017

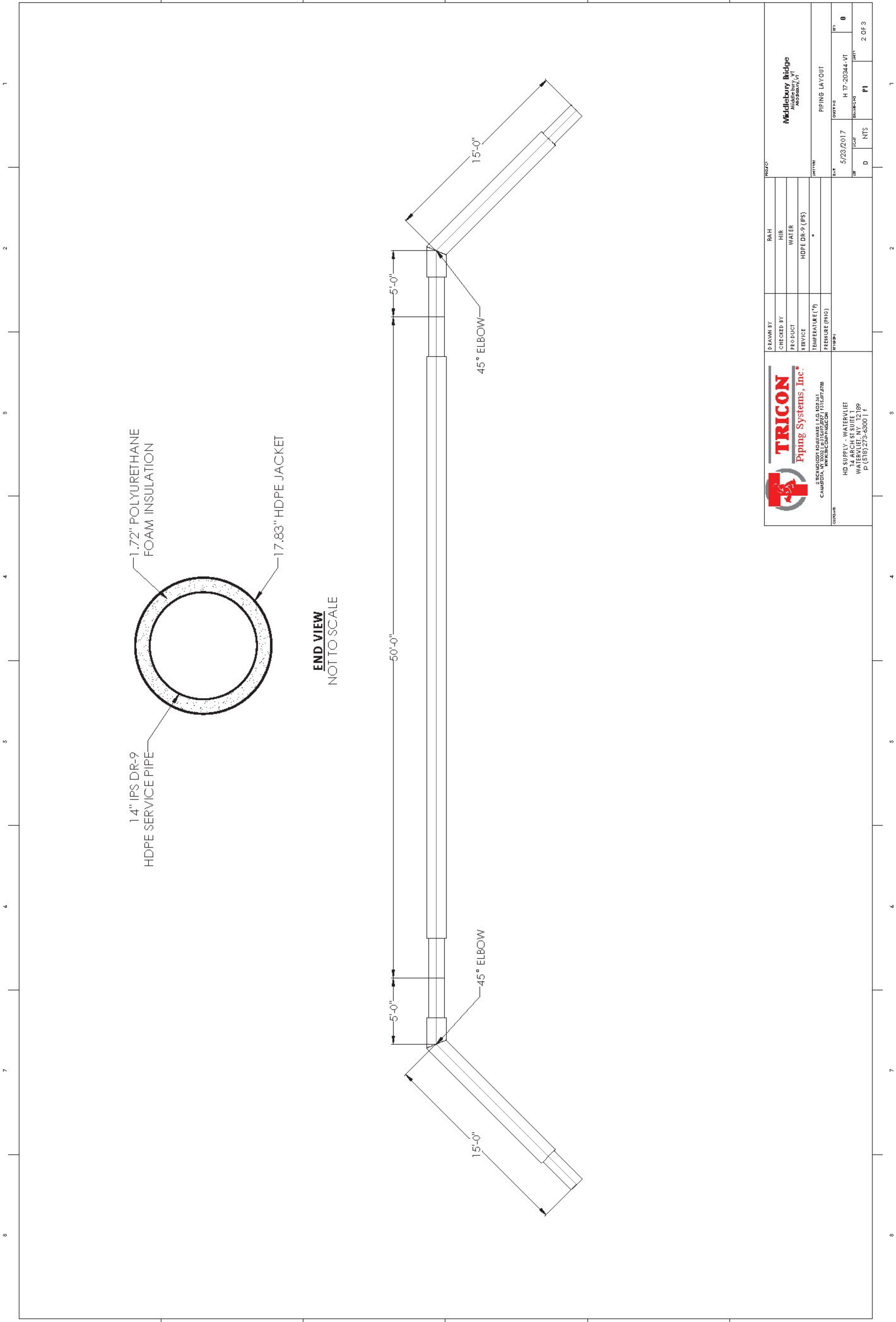


Middlebury Bridge  
Middlebury, VT

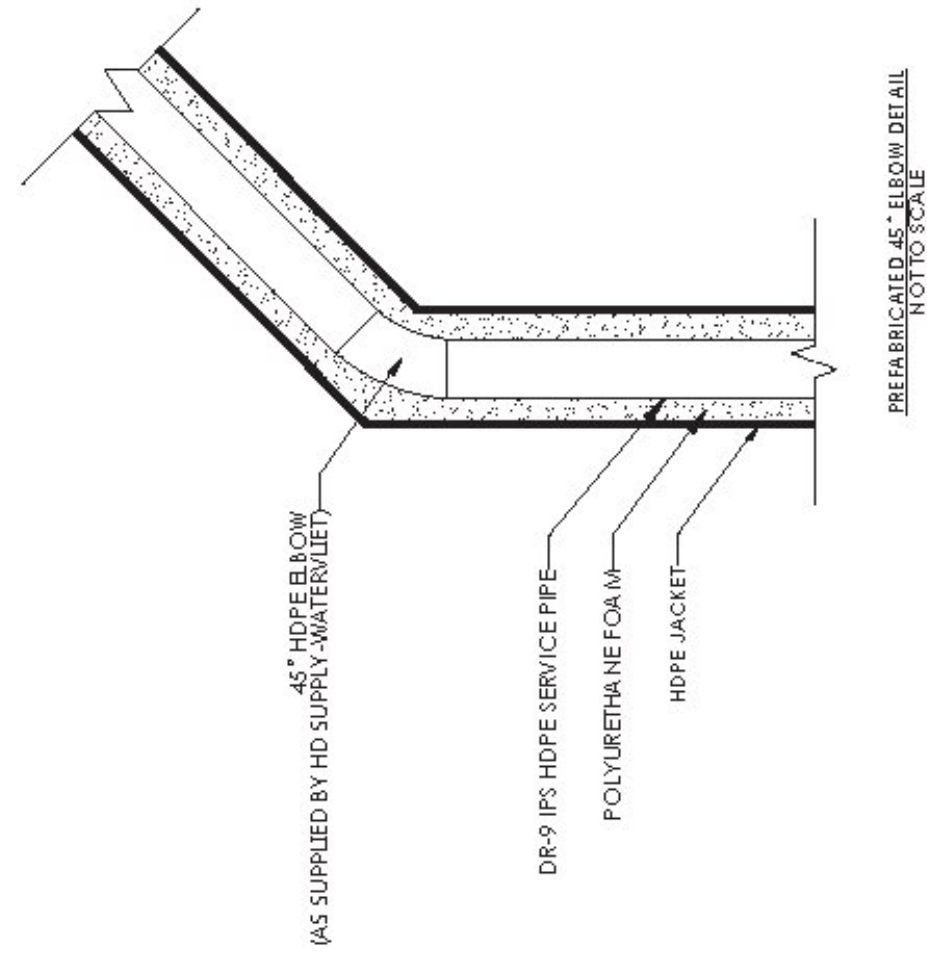
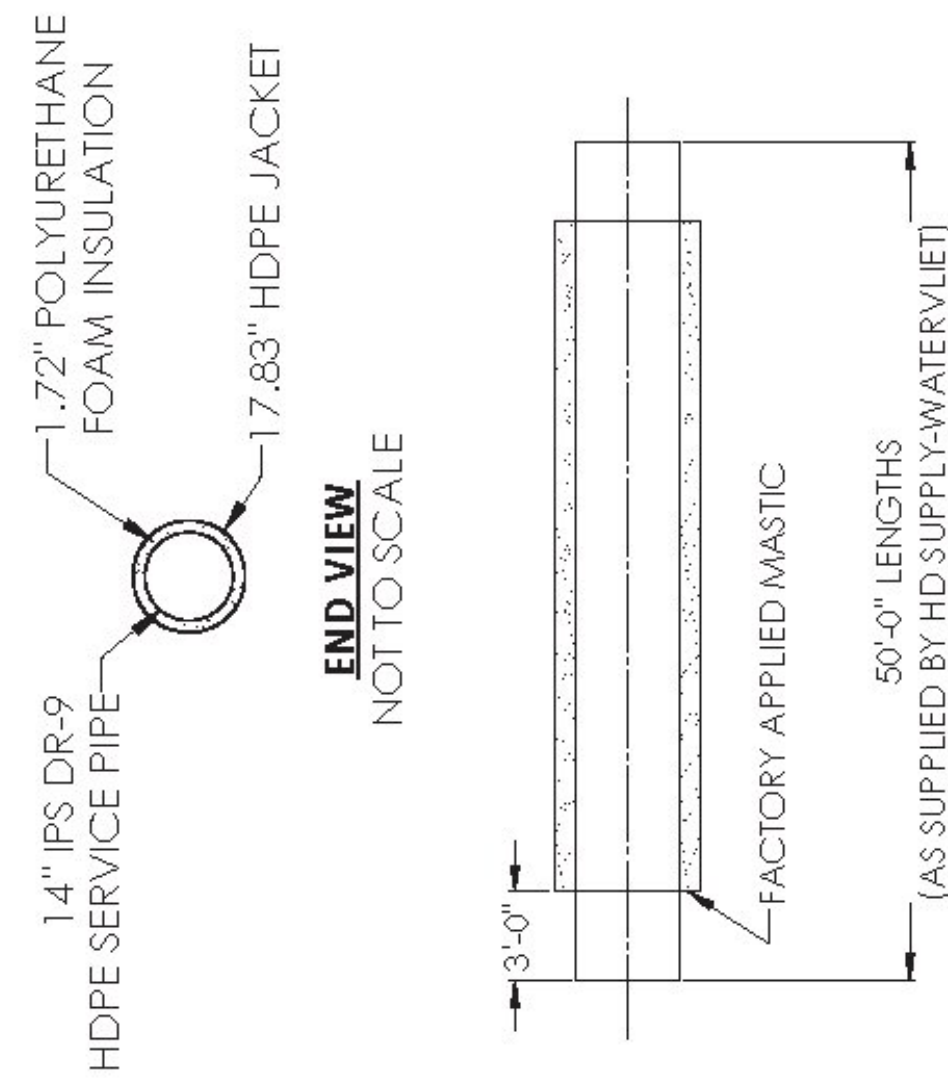
SHEET INDEX				
SHEET	DWG. NO.	SHEET TITLE	REV. NO.	DATE
1	T1	TITLE SHEET	0	5/23/2017
2	P1	PIPING LAYOUT	0	5/23/2017
3	D1	DETAIL SHEET	0	5/23/2017

 TRICON Piping Systems, Inc. 31 TECHNOLOGY DRIVE   100-100-001 CAMDEN, NJ 08311 WWW.TRICONP.COM		DRAWN BY: BAH CHECKED BY: HIR PRODUCT: WATER SERVICE: HDPE DR-9 (PS) TEMPERATURE (°F): PRESSURE (PSI): WV200		PROJECT: Middlebury Bridge Middlebury, VT 05750
OWNER: HD SUPPLY WATER VALVE WATERVILLE, NY 12189 P (518) 273-6600		DATE: 5/23/2017 BY: D FOR: H		TITLE SHEET SHEET NO. 11 OF 3











SUBMITTAL



Submittal number	10.0	Date	05/24/2017
Project	Middlebury EWP3 Temp Brdg	10 Main Street Middlebury, VT 05753	
Project number	2017012		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	Timothy Pockette, PE
Topic	Waterline Fittings and Valves		

Submitter	JOHN W. WHITTAKER III
Reviewer	Timothy Pockette, PE
Cc	Joel Perrigo

Date submitted	05/24/2017	Submission due date	
Released for review		Review due date	05/26/2017
Date returned		Required on site date	
Date closed			

Notes
The attached fittings and valve are for the temporary waterline to be installed. Please confirm all fittings are acceptable.

SUBMITTAL REVIEW

☐ REVIEWED AND APPROVED BUT ONLY FOR CONFORMANCE TO THE CONSTRUCTION CONTRACT DOCUMENTS

☐ REJECTED

☐ REVISE AND RESUBMIT

☒ APPROVED AS NOTED

CORRECTIONS OR COMMENTS MADE DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR OR HIS DESIGNER FROM COMPLIANCE WITH PROFESSIONAL REQUIREMENTS OR FOR RESPONSIBILITY FOR THE ADEQUACY OF THE SUBMITTAL INFORMATION. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH INDUSTRY STANDARDS AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. VHB HAS NOT CONDUCTED A DETAILED REVIEW OF THE SUBMITTAL AND HAS NOT PERFORMED CALCULATIONS OR ASSESSED THE ADEQUACY OF LOADS, DESIGN CRITERIA, QUANTITIES, DIMENSIONS, ETC. APPROVAL OF THE SUBMITTAL DOES NOT CONSTITUTE VHB'S APPROVAL OF ANY CONSTRUCTION MEANS, METHODS OR TECHNIQUES. THESE REMAIN THE RESPONSIBILITY OF THE CONTRACTOR.



Engineers | Scientists | Planners | Designers  
40 IDX Drive  
Building 100, Suite 200  
South Burlington, VT 05403  
Phone 802-497-6100

Job Number:

Reviewed By:

Date:

EWP3(1)

A. Guyette

06/05/2017

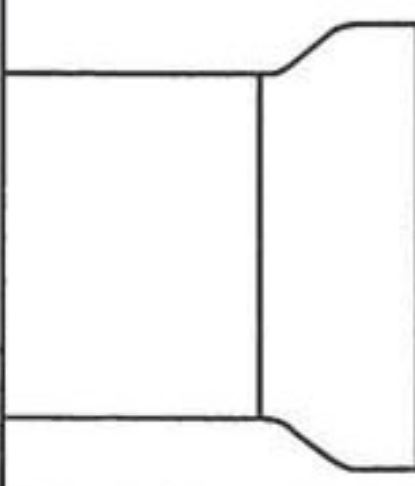
Vermont Agency of Transportation

Accepted

By Joel Perrigo at 9:06 am, Jun 06, 2017



866.DIP.Pipe



TYTON JOINT® Pipe

2013 EDITION

P 3

## TYTON JOINT Pipe

TYTON JOINT is U.S. Pipe's trademark for pipe with a push-on type connection. Simplicity, sturdiness and water-tightness of the system are built into the system by design. Convincing proof of its worldwide acceptance is shown by the fact that more than 95% of the pipe now sold by U.S. Pipe is TYTON JOINT Pipe.

TYTON JOINT Pipe is available in sizes 3" through 64". Sizes 3" through 42" are available in nominal 18-foot laying lengths. 6" through 24" sizes along with sizes 48" through 64" are available in nominal 20-foot laying lengths.

TYTON JOINT Pipe in sizes 4" through 36" are UL Listed and sizes 4" through 16" are FM Approved.

When TYTON JOINT Pipe are used for bridge crossings or other above-ground installations, each length of pipe must be supported in a manner to restrict both vertical and horizontal movement.

TYTON® Gasket is the only accessory required when installing TYTON JOINT Pipe. It is a circular rubber gasket which has a modified bulb shape in cross section. Gaskets are furnished in accordance with ANSI/AWWA C111/A21.1. Composition and dimensions of the gasket have been carefully engineered to ensure a water-tight and lasting seal. The standard TYTON Gasket is manufactured of SBR - styrene butadiene rubber. Gaskets of special elastomers may be ordered for special applications. The gasket contour and bell socket contour ensure that the gasket will remain seated during proper assembly of the pipe. When joint restraint is required for push-on joint pipe, two options are available from U.S. Pipe. For joint restraint of 4" through 24", FIELD LOK 350® Gaskets may be used and for joint restraint for 30" and 36", FIELD LOK® Gaskets may be used. FIELD LOK 350 Gaskets are rated for 350 psi in sizes 4" through 24". In addition, for 4" through 36" sizes, TR FLEX Pipe and Fittings may be used and for 30" through 64" sizes, HP LOK® Pipe and Fittings may be used. TR FLEX Pipe and Fittings are rated for working pressures for 350 psi in 4" through 24" sizes, 250 psi in sizes 30" through 36" and for HP LOK Pipe and Fittings, the working pressure is 350 psi for 30" through 64". For higher pressure applications contact your U.S. Pipe representative. Complete details on both FIELD LOK 350 Gaskets and TR FLEX Pipe and Fittings can be found on our website, [www.uspipe.com](http://www.uspipe.com).

**NOTE:** U.S. Pipe qualifies for Federal Procurement under Public Law No. 94-580, Section 6002, known as the Resource Recovery Act of 1976, since, due to modern technology, recycled iron and steel scrap is used to a large degree in our Ductile Iron Pipe production.

*The plain end of the pipe is furnished beveled or with a quarter ellipse on the edge to allow assembly. More than 40 years of successful experience have proved its sealing capabilities. Hydrostatic tests have shown that the system will withstand pressures far in excess of rated pressures.*

TYTON®, TYTON JOINT®, TR FLEX® and FIELD LOK 350® are Registered Trademarks of U.S. Pipe and Foundry Company, LLC.

### ANSI/AWWA Standards

#### ANSI/AWWA C151/A21.5, Ductile-Iron Pipe, Centrifugally Cast for Water.

Ductile Iron TYTON JOINT Pipe is centrifugally cast in metal molds in accordance with ANSI/AWWA C151/A21.5.

The asphaltic outside coating is in accordance with ANSI/AWWA C151/A21.51.

As specified in ANSI/AWWA C151/A21.51, pipe weights have been calculated using standard barrel weights and weights of bells being produced.

#### ANSI/AWWA C104/A21.4, Cement-Mortar Lining For Ductile-Iron Pipe and Fittings For Water.

The cement-mortar lining and inside coating are in accordance with ANSI/AWWA C104/ A21.4. Special linings and/or coatings can be furnished for specific conditions.

#### ANSI/AWWA C111/A21.11, Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.

TYTON® Gaskets are furnished in accordance with ANSI/AWWA C111/A21.11.

#### ANSI/AWWA C105/A21.5, Polyethylene Encasement for Ductile Iron Pipe Systems.

If specifiers and users believe that corrosive soils will be encountered where our products are to be installed, please refer to ANSI/AWWA C105/A21.5, for proper external protection procedures.

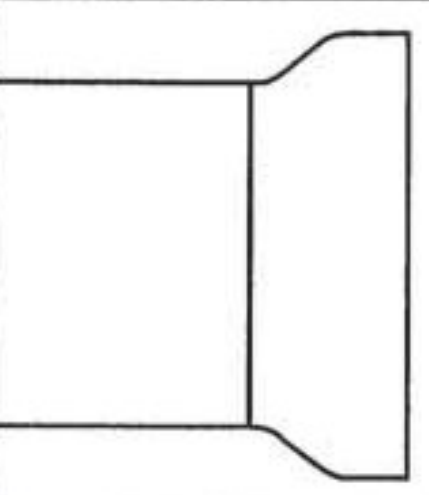
#### ASTM A746-03 "Standard specification for Ductile Iron Gravity Sewer Pipe."

#### ASTM A716-08 "Standard Specification for Ductile Iron Culvert Pipe."

#### ASTM A536 "Standard Specification for Ductile Iron Castings."



866.DIP.Pipe



TYTON JOINT® Pipe

NSF

2013 EDITION

P 14

Thickness Class – Thicknesses, Dimensions and Weight (cont.)

SIZE Inches	THICKNESS CLASS	THICKNESS Inches	OUTSIDE DIAMETER* Inches	18-FOOT LAYING LENGTH		20-FOOT LAYING LENGTH
				BARREL WEIGHT PER FOOT Pounds	WEIGHT PER LENGTH† Pounds	WEIGHT PER LENGTH† Pounds
10	50	0.29	11.10	30.1	570	630
10	51	0.32	11.10	33.2	625	690
10	52	0.35	11.10	36.2	680	750
10	53	0.38	11.10	39.2	730	810
10	54	0.41	11.10	42.1	785	870
10	55	0.44	11.10	45.1	840	930
10	56	0.47	11.10	48.0	890	990
12	50	0.31	13.20	38.4	725	800
12	51	0.34	13.20	42.0	790	875
12	52	0.37	13.20	45.6	855	945
12	53	0.40	13.20	49.2	920	1015
12	54	0.43	13.20	52.8	985	1090
12	55	0.46	13.20	56.3	1045	1160
12	56	0.49	13.20	59.9	1110	1230
14	50	0.33	15.30	47.5	910	1005
14	51	0.36	15.30	51.7	985	1090
14	52	0.39	15.30	55.9	1060	1170
14	53	0.42	15.30	60.1	1135	1255
14	54	0.45	15.30	64.2	1210	1340
14	55	0.48	15.30	68.4	1285	1420
14	56	0.51	15.30	72.5	1360	1505
16	50	0.34	17.40	55.8	1065	1175
16	51	0.37	17.40	60.6	1150	1275
16	52	0.40	17.40	65.4	1240	1370
16	53	0.43	17.40	70.1	1325	1465
16	54	0.46	17.40	74.9	1410	1560
16	55	0.49	17.40	79.7	1495	1655
16	56	0.52	17.40	84.4	1580	1750

NOTE: Thicknesses and dimensions of 3" through 64" Ductile Iron pipe conform to ANSI/AWWA C151/A21.51. Weights may vary from the standard because of differences in bell weights.

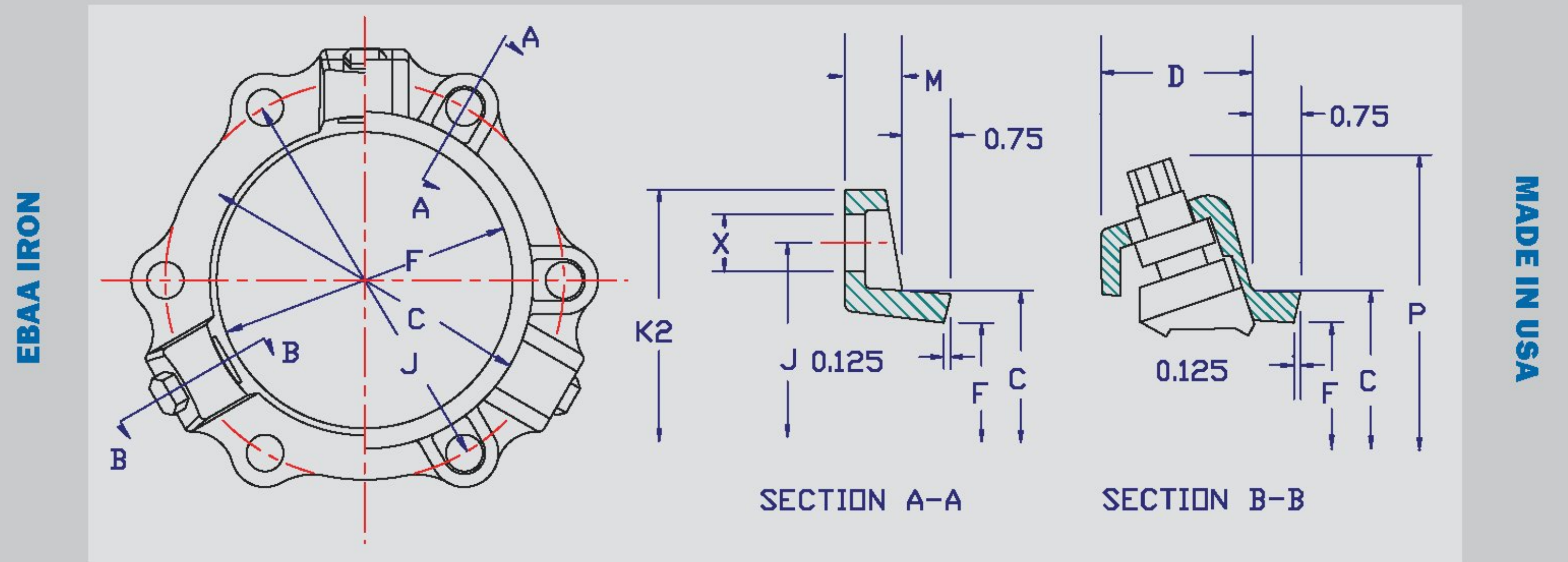
*Tolerance of O.D. of spigot end: 3-12 in., ±0.06 in.; 14-24 in., +0.05 in., -0.08 in.; 30-48 in., +0.08 in., -0.06 in.; 54-64 in., +0.04 in., -0.10 in.

† Including bell; calculated weight of pipe rounded off to nearest 5 lbs.

Table continued on next page.



Series 1100 Submittal Reference Drawing



Nominal Pipe Size	Series Number									Wedge QTY.	Bolt QTY.	Weight (LBS.)	Pressure Rating (PSI)
		C	D	F	M	P*	X	J	K2				
3	1103	4.48	2.27	4.06	0.62	9.06	0.750	6.19	7.69	2	4	6.1	350
4	1104	5.92	2.27	4.90	0.75	9.90	0.875	7.50	9.12	2	4	7.6	350
6	1106	8.02	2.27	7.00	0.88	12.00	0.875	9.50	11.12	3	6	11.8	350
8	1108	10.17	2.31	9.15	1.00	14.15	0.875	11.75	13.37	4	6	14.9	350
10	1110	12.22	2.37	11.20	1.00	16.20	0.875	14.00	15.62	6	8	23.9	350
12	1112	14.32	2.37	13.30	1.25	18.30	0.875	16.25	17.88	8	8	31.2	350
14	1114	16.40	2.69	15.44	1.50	20.94	0.875	18.75	20.25	10	10	49.7	350
16	1116	18.50	2.69	17.54	1.56	22.90	0.875	21.00	22.50	12	12	56.4	350
18	1118	20.60	2.69	19.64	1.63	25.00	0.875	23.25	24.75	12	12	63.6	250
20	1120	22.70	2.69	21.74	1.69	27.10	0.875	25.50	27.00	14	14	71.0	250
24	1124	26.90	3.20	25.94	1.81	32.64	0.875	30.00	31.50	16	16	128.7	250
30	1130	33.29	3.20	32.17	2.25	38.87	1.125	36.88	39.12	20	20	190.7	250
36	1136	39.59	3.20	38.47	2.25	45.17	1.125	43.75	46.00	24	24	226.5	250
42	1142	45.79	4.56	44.67	3.88	55.57	1.375	50.62	53.48	28	28	518.9	250
48	1148	52.09	4.56	50.97	3.88	61.87	1.375	57.50	60.36	32	32	608.3	250

* With Twist-Off Nuts twisted off.

Important Notes

NOTE: Dimensions are in inches and are subject to change without notice.

- The Series 1100 MEGALUG should not be used on plain end fittings.
- If encased in concrete, polyethylene wrap must be used to prevent concrete intrusion into the wedge pocket.
- For test pressures above the rated pressures shown, contact EBAA for recommendations, such as tandem restraint for high pressure applications.
- If you experience the need to install the Series 1100 MEGALUG in an unconventional manner please consult our engineering department.
- The Series 1100 MEGALUG is intended for use on ductile iron pipe. The restraint can be used on grey iron pipe if the pipe is not severely corroded and is in sound condition and has an outside diameter that can be accommodated. For more information on the use of the MEGALUG restraint on grey iron pipe ask for Connections Bulletin DI-1.
- EBAA-Seal™ Mechanical Joint Gaskets are provided with 30 inch through 48 inch MEGALUG restraints. These are required on the above referenced sizes to accommodate the pressure ratings and safety factors shown.
- Extra length T-bolts are provided with the 42 inch and 48 inch sizes to facilitate easier assembly of the mechanical joint.
- All Series 1100 MEGALUG components are made of ductile iron conforming to ASTM A536. The wedges are heat treated to a hardness range of 370 to 470 BHN.
- LISTINGS AND APPROVALS: Sizes 3 inch through 24 inch are listed by Underwriters Laboratories, Inc. Category HJKF "Fittings, Retainer Type" with a deflection angle of 5 degrees (3 inch through 12 inch) and 2½ degrees (14 inch through 24 inch). The listing file number is EX2836. Sizes 3 inch through 12 inch are Factory Mutual approved.

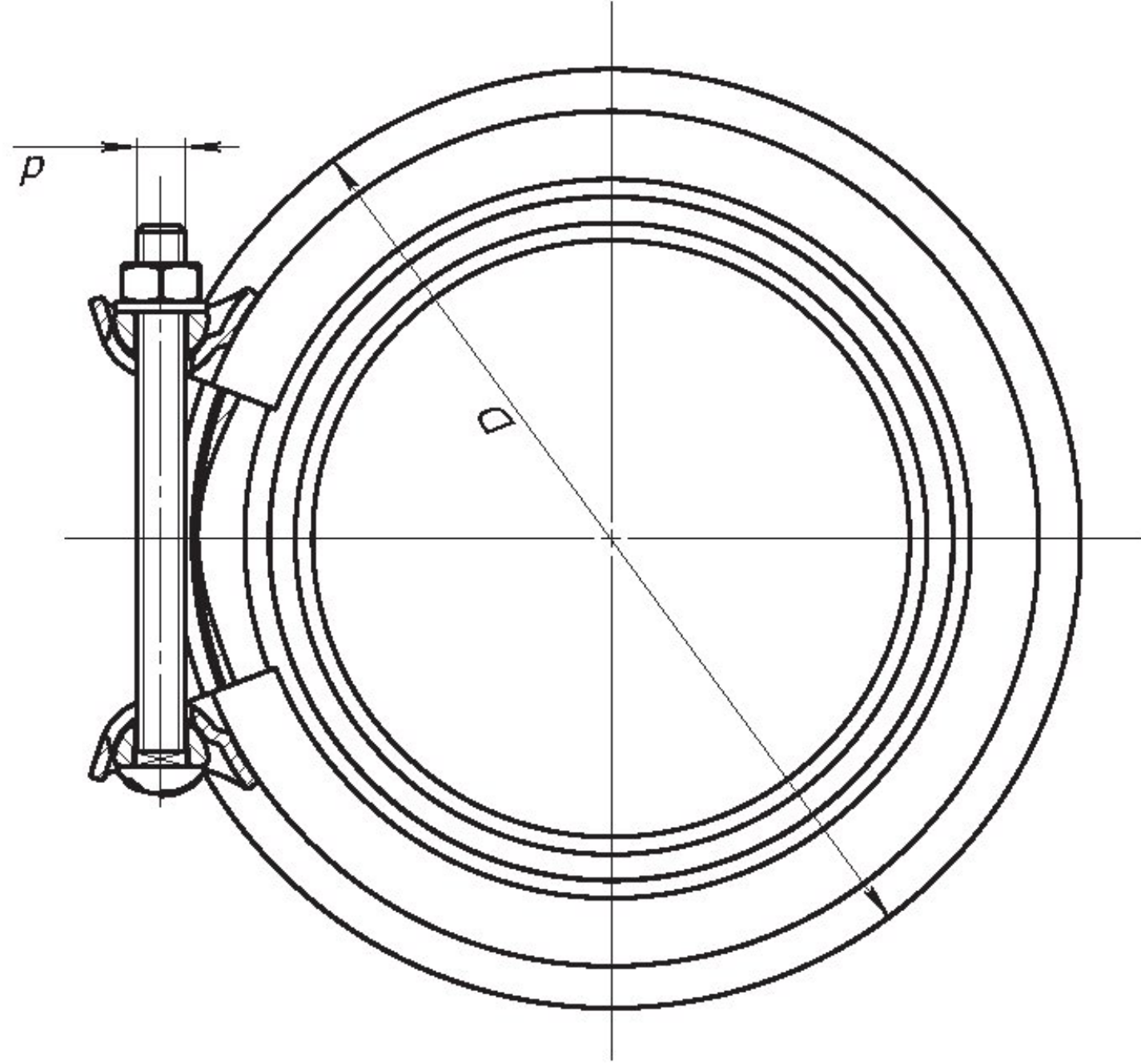
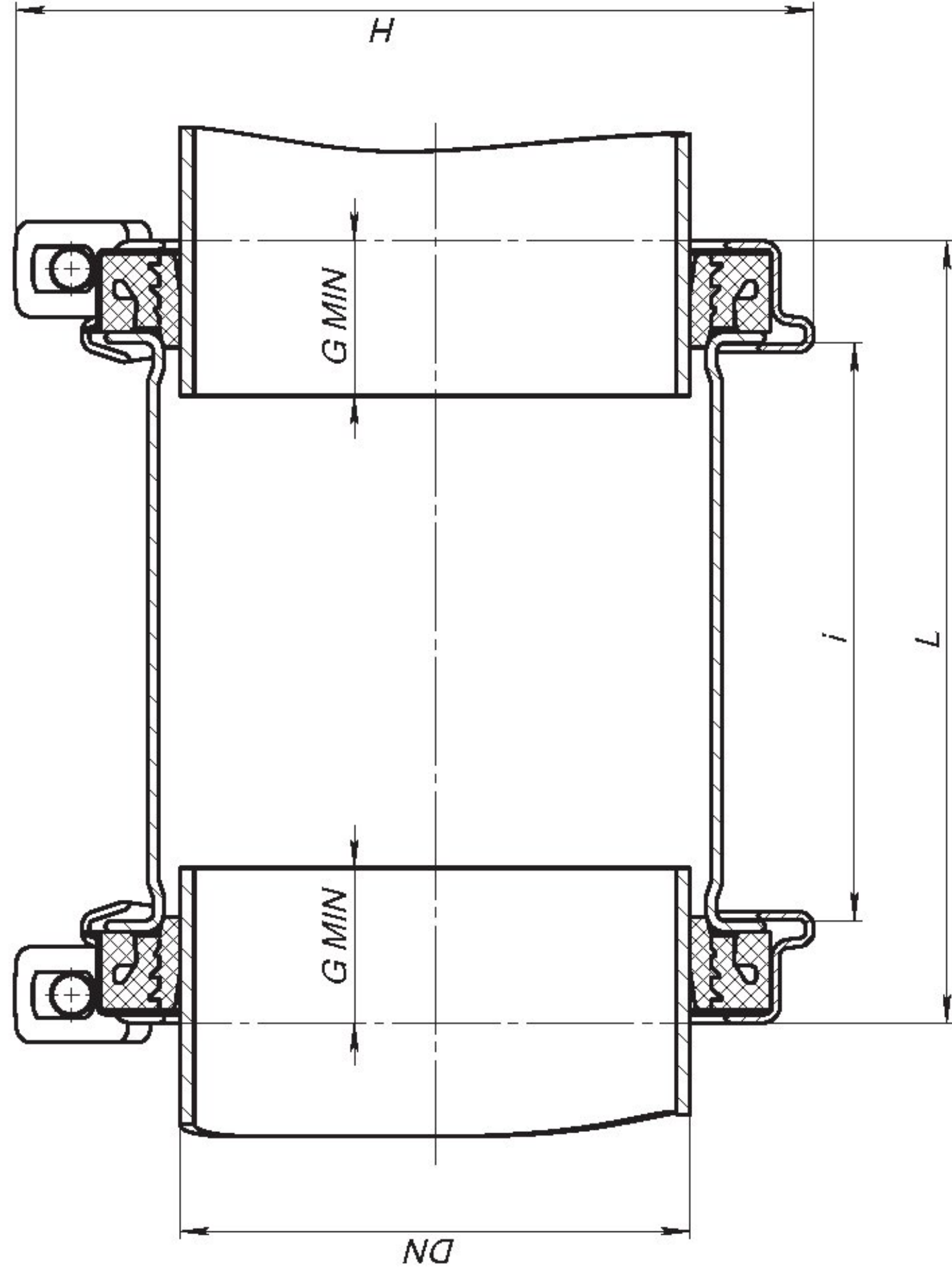


## ELECTROFUSION FITTINGS



FOR REFERENCE ONLY





REVISIONS				
REV.	DESCRIPTION	DRAWN	APPROVED	DATE
P	ECO 14000124	Galina E.	Tzah Gr.	30.11.2014

Material:  UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: N7 GENERAL TOLERANCES: LINEAR: 0 - 50 - +0.2 50 - 100 - +0.3 100 - 500 - +0.5 500 - 1000 - +1.0 ANGULAR: - +0.5° HOLES: 0 - 10 - +0.2/-0.05 10 - 50 - +0.3/-0.1 HOLE PLACES: - ± 0.05  BREAK SHARP EDGES AND CORNERS, DEBURR	see notes		Weight: see table		Part Name: HYMAX 1.5"-12"		Scale 1:5
	Design	25.04.2013	Date	Name	Catalog No.		DO NOT SCALE DRAWING
	Check	25.04.2013	Tzah Gr.		Drawing No.		
	Appr.	25.04.2013	Avi Ch.		SD860-56-01_015-12		
KRAUSZ				Confidential Information: All rights reserved to Krausz Industries Ltd. This document may not be copied, reproduced, displayed, modified or used in any way, whether in whole or in part, without the express prior written consent of Krausz Industries Ltd.			Size A3



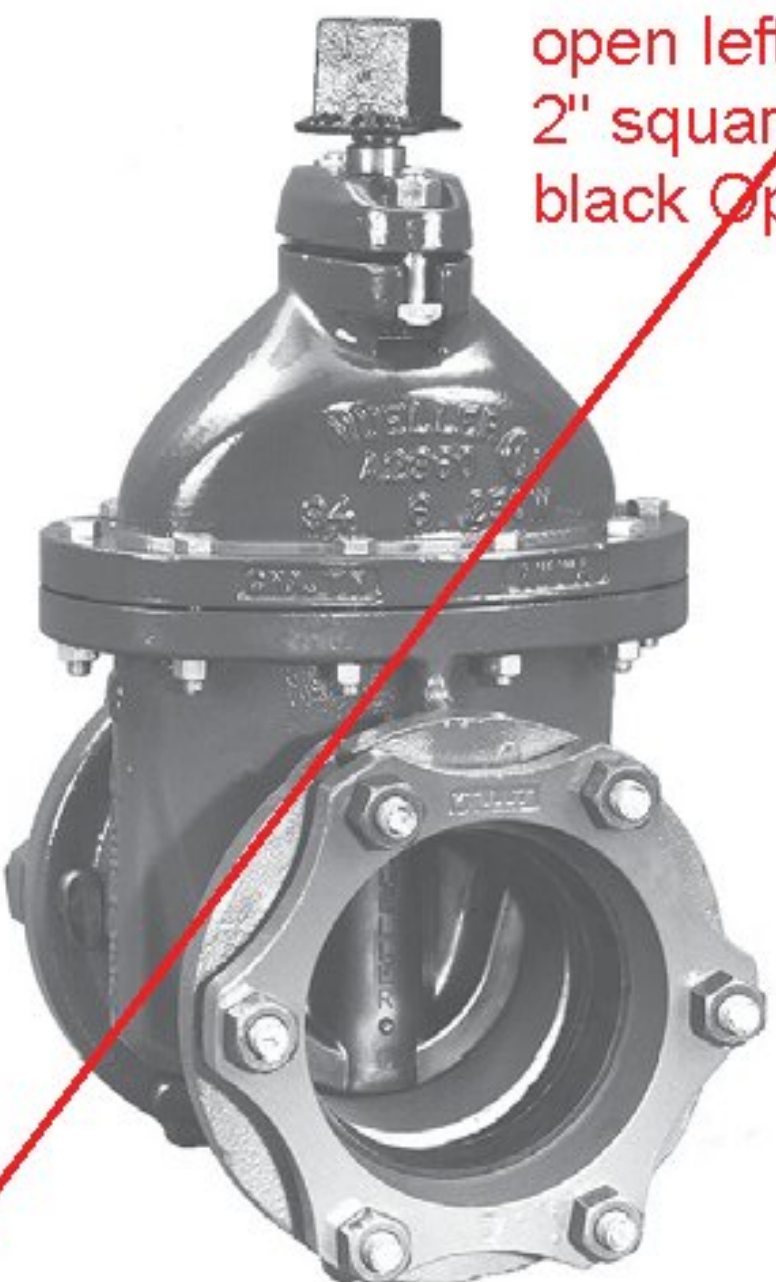




Rev. 9-09 Shaded area indicates change.

- ❑ Catalog number—  
A-2360-20 Mechanical joint ends (with accessories unassembled)  
A-2360-23 Mechanical joint ends (less accessories)  
A-2360-25 Mechanical joint ends (with transition gaskets accessories unassembled)
- ❑ Sizes – 2", 3", 4", 6", 8", 10", 12"
- ❑ Meets or exceeds all applicable requirements of ANSI/AWWA C509 Standard, UL Listed, FM Approved, and certified to ANSI/NSF 61.
- ❑ Standard mechanical joint ends comply with ANSI/AWWA C111
- ❑ Iron body with nominal 10 mils MUELLER® Pro-Gard™ Fusion Epoxy Coated interior and exterior surfaces
- ❑ Epoxy coating meets or exceeds all applicable requirements of ANSI/AWWA C550 Standard and is certified to ANSI/NSF 61
- ❑ Iron wedge, symmetrical & fully encapsulated with molded rubber; no exposed iron
- ❑ Non-rising stem (NRS)
- ❑ Triple O-ring seal stuffing box (2 upper & 1 lower O-rings), with fourth O-ring serving as dirt seal††
- ❑ 2" square wrench nut (optional handwheel available)—open left or open right
- ❑ 250 psig (1723 kPa) maximum working pressure, 500 psig (3447 kPa) static test pressure
- ❑ 3"-12" sizes – UL Listed, FM Approved: 200 psig (1379 kPa)

††Dirt seal on 4"-12" valves



open left  
2" square  
black Op nut

A-2360-20 M.J. accessories  
shipped unassembled

Options

See page 10.40 for more information on Resilient Wedge Gate Valve options

- ❑ Position indicators
- ❑ Stainless steel fasteners: Type 316
- ❑ ASTM B98-C66100/H02 stem
- ❑ Handwheel

Resilient wedge gate valve parts

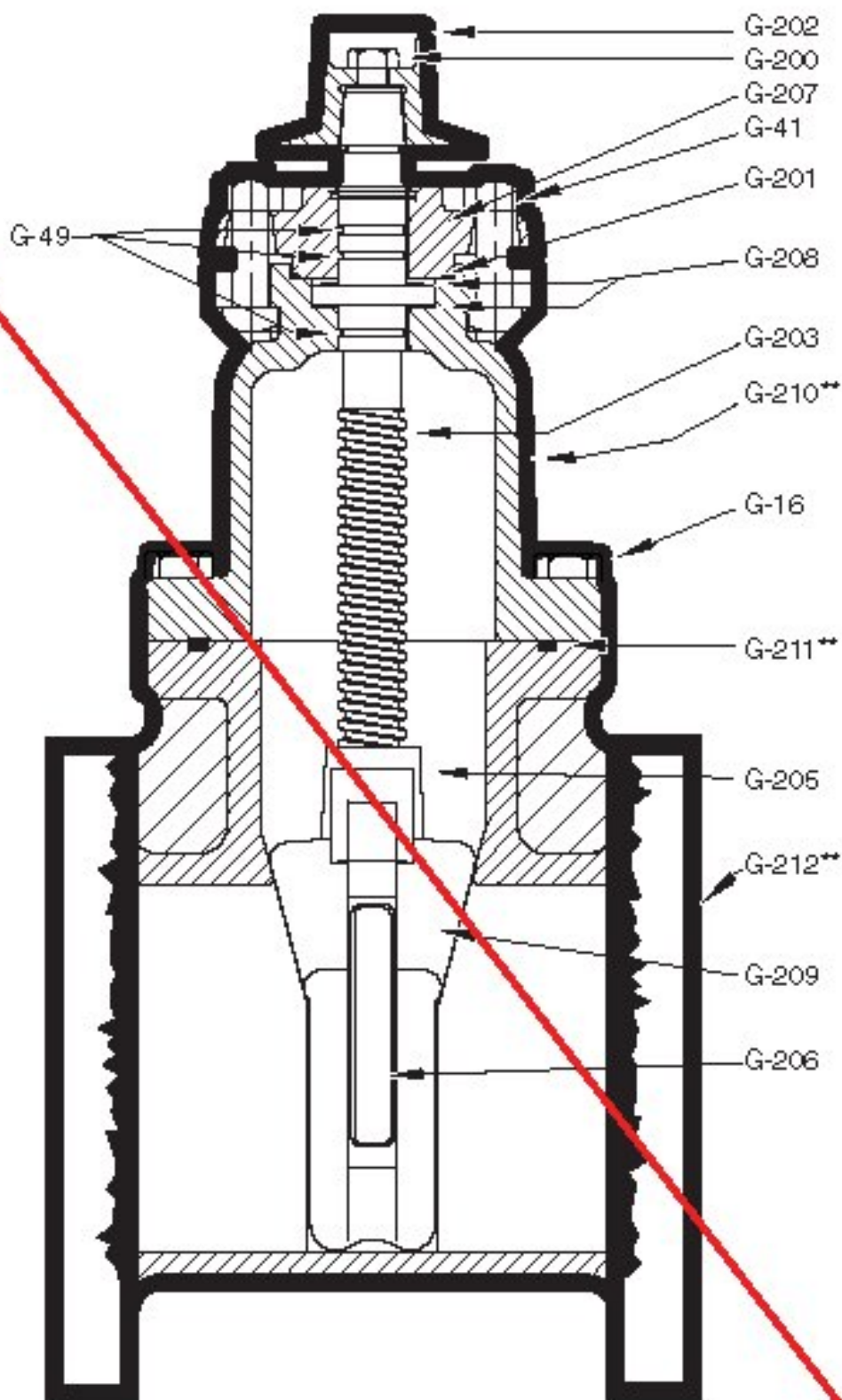
Catalog Part No.	Description	Material	Material Standard
G-16	Bonnet Bolts & Nuts	Stainless Steel	Type 304
G-41	Stuffing Box Bolts & Nuts	Stainless Steel	Type 304
G-49	Stem O-rings (3)	Rubber	
G-200	Wrench Nut Cap Screw	Stainless Steel	Type 304
G-201	Stuffing Box Seal	Rubber	
G-202	Wrench Nut	Cast Iron	ASTM A126 CL.B
G-203	Stem	Bronze	ASTM B138
G-204	Hand Wheel	Cast Iron	ASTM A126 CL.B
G-205	Stem Nut	Bronze	ASTM B62
G-206	Guide Cap Bearings	Celcon	
G-207	Stuffing Box with dirt seal††	Cast Iron, Rubber	ASTM A126 CL.B
G-208	Anti-fiction Washer (2)	Celcon	
G-209	Wedge, Rubber Encapsulation	Cast Iron* Rubber	ASTM A126 CL.B
G-210**	Bonnet	Cast Iron ♦	ASTM A126 CL.B
G-211**	Bonnet O-ring	Nitrite	
G-212**	Body	Cast Iron ♦	ASTM A126 CL.B

* Fully encapsulated in molded rubber with no iron exposed

** Previous to 1999 these parts on 4"-12" valves were designed with a gasket instead of an O-ring and with additional bolts (2"-3" sizes retain neoprene gasket design affecting these parts). Confirm the type of seal when ordering a replacement gasket or O-ring.

††Dirt seal on 4"-12" valves

♦ Body and bonnet of 12" valves are ductile iron standard wall thickness in compliance with C509.





Rev. 5-17 Shaded area indicates changes

- ☐ Catalog number
  - A-2361-20** Mechanical joint ends (with accessories unassembled)
  - A-2361-23** Mechanical joint ends (less accessories)
  - A-2361-25** Mechanical joint ends (with transition gaskets accessories unassembled)
- ☐ Sizes – 3", 4", 6", 8", 10", **12"**
- ☐ Meets or exceeds all applicable requirements of ANSI/AWWA C515*** Standard, UL 262 Listed, FM 1120/1130 Approved, and certified to ANSI/NSF 61 & 372
- ☐ Standard mechanical joint ends comply with ANSI/AWWA C111
- ☐ Iron body with nominal 10 mils MUELLER® Pro-Gard® Fusion Bonded Epoxy Coated interior and exterior surfaces
- ☐ Epoxy coating meets or exceeds all applicable requirements of ANSI/AWWA C550 Standard
- ☐ Iron wedge, symmetrical and fully encapsulated with molded rubber; no exposed iron
- ☐ Non-rising stem (NRS)
- ☐ Triple O-ring seal (2 above the thrust collar and 1 below)
- ☐ 2" square wrench nut - open left or open right
- ☐ 350 psig (2400 kPa/24 barg) maximum working pressure; 700 psig (4800 kPa/48 barg) static test pressure
- ☐ UL Listed, FM Approved: 350 psig (2400 kPa/24 barg)
- ☐ Mueller valves are designed for potable water applications

open left  
2" square  
black Op nut



A-2361-20 shown

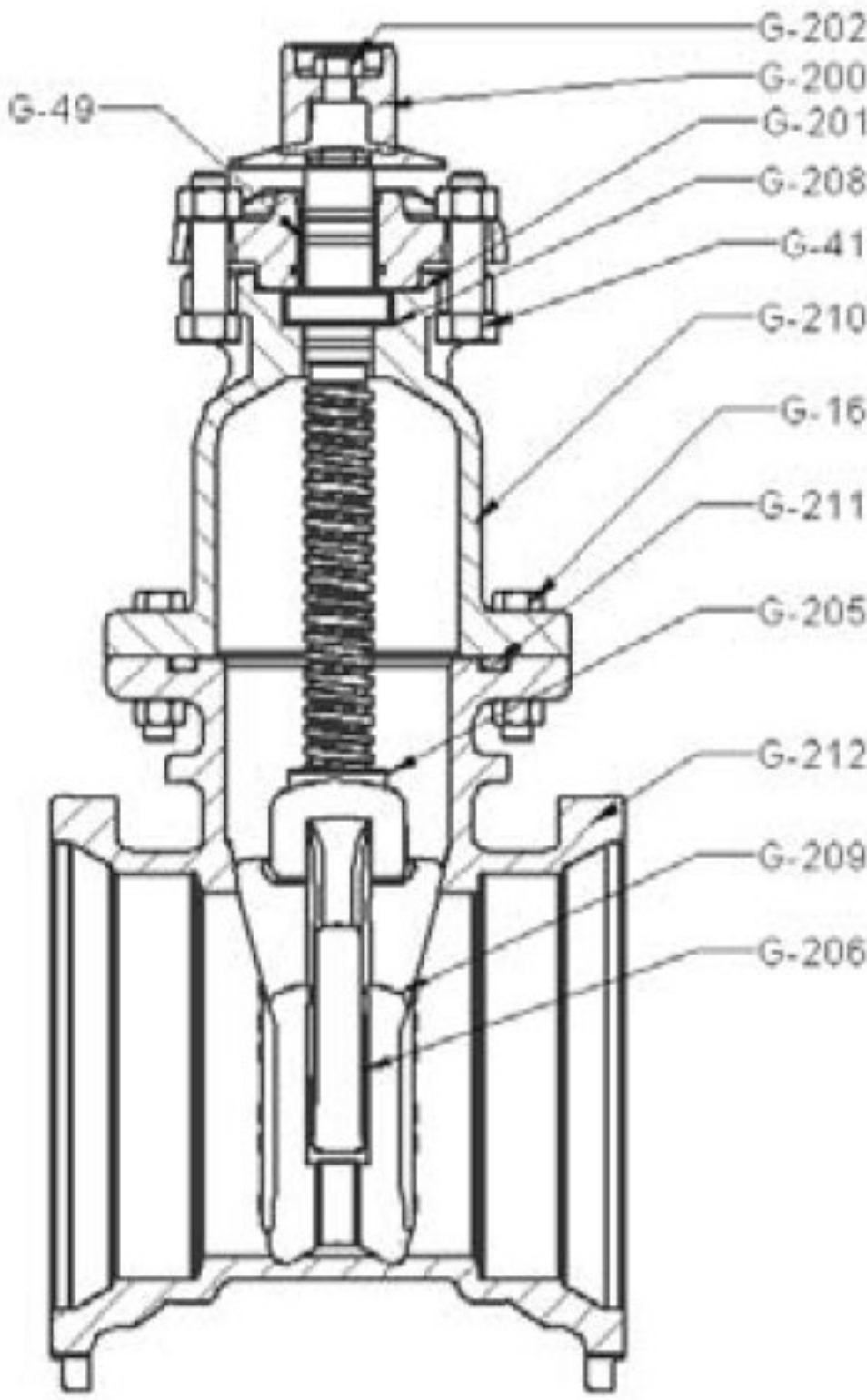
Options

See page 10.54 for more information on Resilient Wedge Gate Valve options

- ☐ Position indicators
- ☐ Stainless steel stem: Type 304, Type 316
- ☐ EPDM Disc and o-rings
- ☐ ASTM B98-C66100/H02 stem
- ☐ Handwheel

Resilient wedge gate valve parts

Catalog Part Number	Description	Material	Material Standard
G-16	Bonnet Bolts & Nuts	316 Stainless Steel	ASTM F593 (bolt) ASTM F594 (nut)
G-41	Stuffing Box Bolts & Nuts	316 Stainless Steel	ASTM F593 (bolt) ASTM F594 (nut)
G-49	Stem O-rings (3)	Nitrile	ASTM D2000
G-200	Wrench Nut Cap Screw	316 Stainless Steel	ASTM F593
G-201	Stuffing Box O-ring	Nitrile	ASTM D2000
G-202	Wrench Nut	Ductile Iron	ASTM A536 ▼
G-203	Stem	Bronze	ASTM B138
G-204	Hand Wheel (not shown)	Cast Iron +	ASTM A126 CL.B
G-205	Stem Nut	Bronze	ASTM B584
G-206	Guide Cap Bearings	Acetal	-
G-207	Stuffing Box with dirt seal ++	Ductile Iron** Nitrile	ASTM A536 ▼ ASTM D2000
G-208	Anti-friction Washers (2)	Acetal	-
G-209	Wedge, Rubber Encapsulation	Ductile Iron* SBR	ASTM A536 ▼ ASTM D2000
G-210	Bonnet	Ductile Iron	ASTM A536 ▼
G-211	Bonnet O-ring +++	Nitrile	ASTM D2000
G-212	Body	Ductile Iron	ASTM A536 ▼



++ Dirt seal on 4"-12" valves  
+++ 3" valves use a bonnet gasket  
*Fully encapsulated in molded rubber with no iron exposed; 3" discs are cast iron ASTM A126 Class B  
▼ Material strength ASTM A536 65-45 minimum  
+ Manufacturer's option to change material to ductile iron ASTM A536  
** 3" stuffing boxes are cast iron ASTM A126 class B+  
*** 3" valves meet or exceed all applicable requirements of ANSI/AWWA C509 Standard



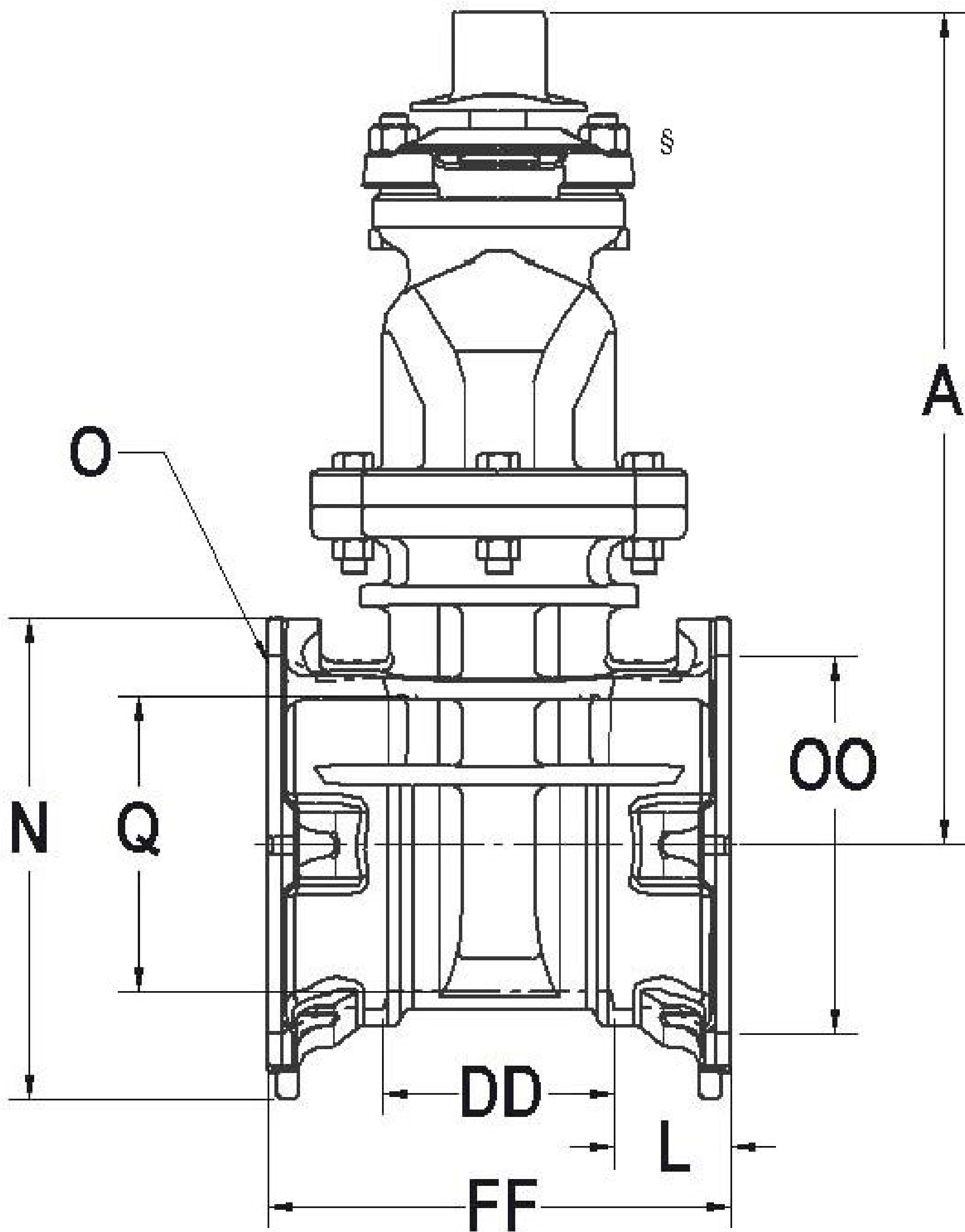
3"- 12" A-2361 RESILIENT WEDGE  
GATE VALVES - M.J. x M.J.



10.5

Page Inserted by VHB

Shaded area indicates change Rev. 2-17



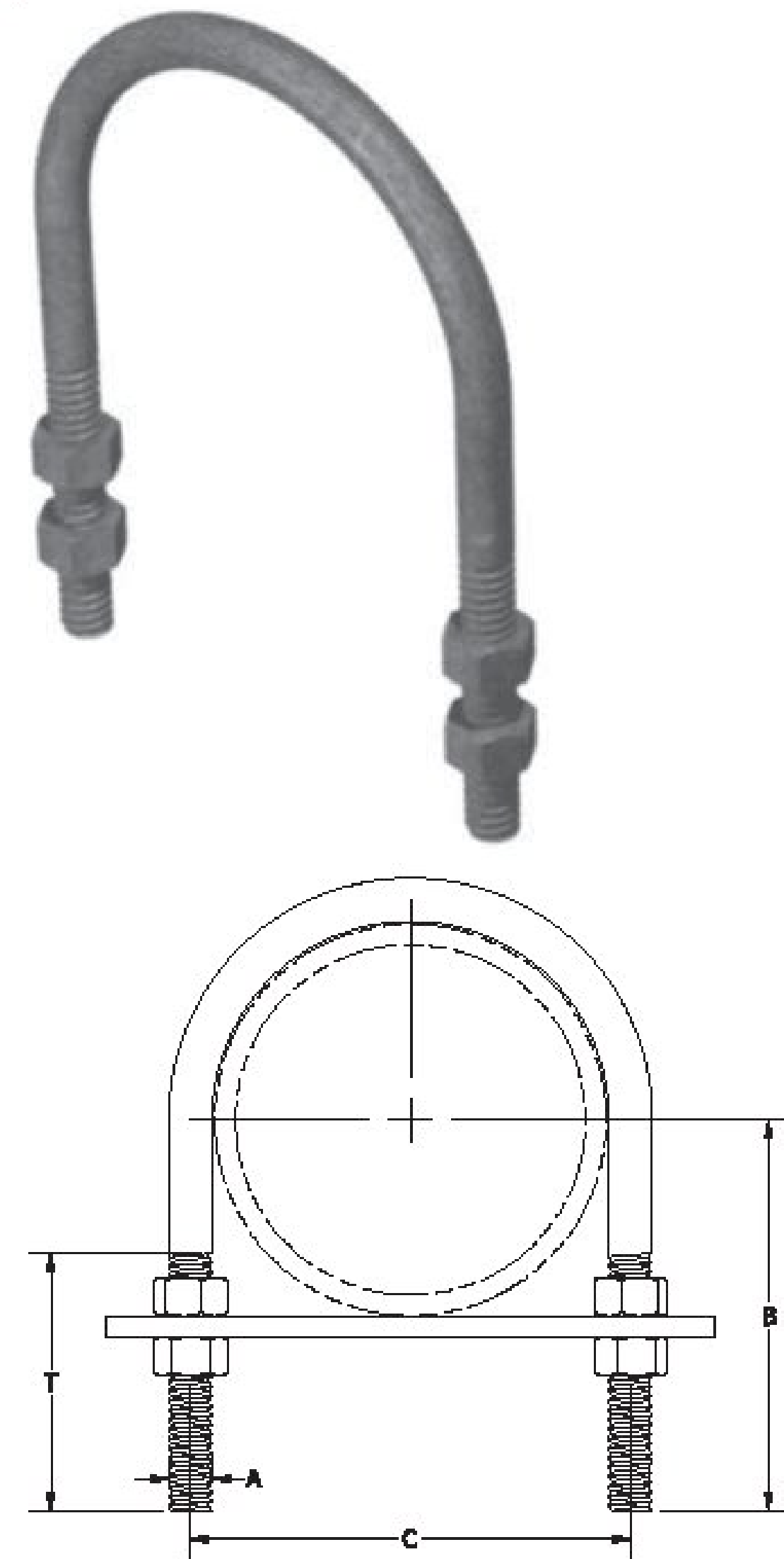
Dimensions

Dimension	Nominal Size					
	3"	4"	6"	8"	10"	12"
A	12.38	14.19	18.00	21.50	25.50	28.62
FF	9.62	9.50	10.00	10.50	11.50	12.00
L	2.50	2.50	2.50	2.50	2.50	2.50
N	7.50	8.40	10.41	12.68	15.24	18.024
O (number and size of holes)	4-- .88	4-- .88	6-- .88	6-- .88	8-- .88	8-- .88
DD	4.62	4.50	5.00	5.50	6.50	7.00
Q	3.30	4.30	6.30	8.30	10.30	12.30
OO (bolt circle diameter)	6.19	7.50	9.50	11.75	14.00	16.25
Turns to open	11	14	20.5	26.5	33.0	38.5
Weight*	83	70	112	162	238	303

*All dimensions are in inches. All weights include accessories are in pounds and are approximate.



FIG. 165  
~~FIG. 166~~



## U-BOLT

### U-BOLT FOR A.W.W.A. DI PIPE

**MATERIAL:** Carbon steel or 304/316 stainless steel.  
**FINISH:** Black, electro or hot-dip galvanized.  
**SERVICE:** For support, anchor or guide of heavy loads.  
**ORDERING:** Specify pipe size, figure number and finish. Each u-bolt is furnished with four FIG. #785 hex nuts.  
**APPROVALS:** MSS SP-58 TYPE 24  
FS WW-H-171E TYPE 24

PIPE SIZE	A	B	C	T	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
1/2	1/4	2 3/4	1 3/16	2 3/8	0.11	485
3/4	1/4	2 3/4	1 3/8	2 3/8	0.12	485
1	1/4	2 3/4	1 5/8	2 3/8	0.12	485
1 1/4	3/8	2 7/8	2 1/16	2 3/8	0.28	1220
1 1/2	3/8	3	2 3/8	2 1/2	0.30	1220
2	3/8	3 1/4	2 13/16	2 1/2	0.33	1220
2 1/2	1/2	3 3/4	3 7/16	3	0.73	2260
3	1/2	4	4 1/16	3	0.78	2260
3 1/2	1/2	4 1/4	4 9/16	3	0.84	2260
4	1/2	4 1/2	5 1/16	3	0.90	2260
5	1/2	5	6 1/8	3	1.01	2260
6	5/8	6 1/8	7 3/8	3 3/4	1.97	3620
8	5/8	7 1/8	9 3/8	3 3/4	2.33	3620
10	3/4	8 3/8	11 5/8	4	4.91	5420
12	7/8	9 3/8	13 3/4	4 1/4	7.73	7540
14	7/8	10 1/4	15	4 1/4	8.28	7540
16	7/8	11 1/4	17	4 1/4	9.15	7540
18	1	12 5/8	19 1/8	4 3/4	13.48	9920
20	1	13 3/8	21 1/8	4 3/4	14.57	9920
24	1	15 5/8	25 1/8	4 3/4	16.87	9920
30	1	18 5/8	31 1/8	4 3/4	19.00	9920

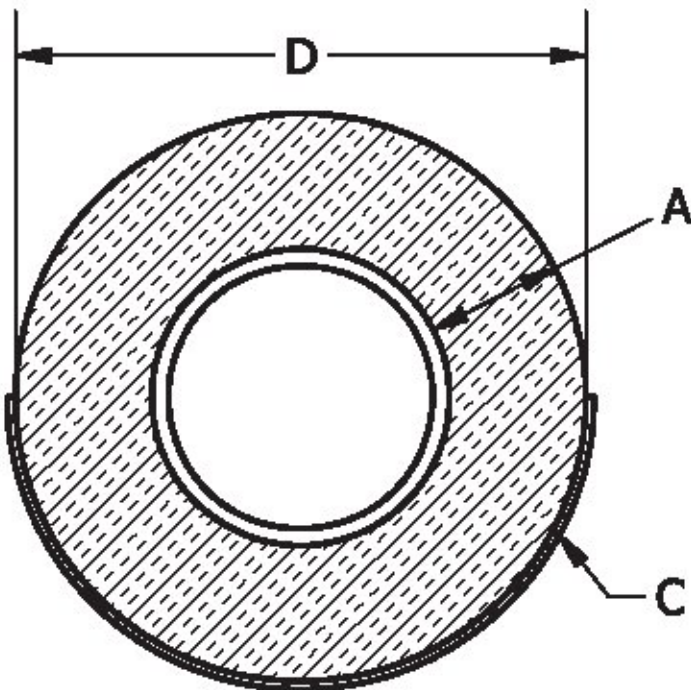
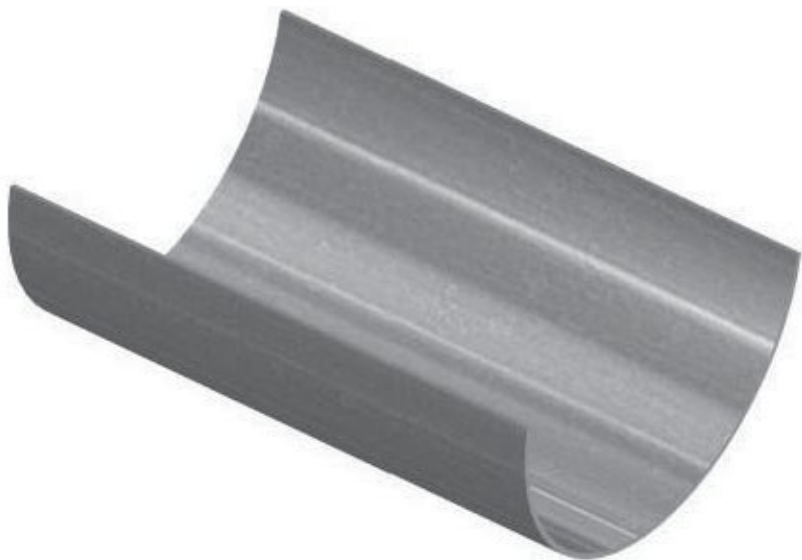
DI PIPE SIZE	A	B	C	T	WEIGHT EACH, LBS.	MAX. REC. LOAD, LBS.
3	1/2	4 1/4	4 5/8	3 1/4	0.84	2260
4	1/2	4 3/4	5 7/16	3 1/4	1.06	2260
6	5/8	6 1/4	7 3/4	4	2.23	3620
8	5/8	7 3/8	9 7/8	4	2.60	3620
10	3/4	8 5/8	12	4 1/4	4.49	5420
12	7/8	9 7/8	14 1/4	4 1/2	7.15	7540
14	7/8	11	16 3/8	5	8.10	7540
16	7/8	12	18 1/2	5	9.00	7540
18	1	13 3/8	20 5/8	5 1/2	13.20	9920
20	1	14 1/2	22 3/4	5 5/8	14.40	9920
24	1	16 5/8	27	5 3/4	16.80	9920
30	1	19 5/8	33 1/4	6	22.00	9920



FIG. 300  
~~FIG. 302~~

PIPE COVERING PROTECTION SHIELD  
PIPE COVERING PROTECTION SHIELD  
WITH 5/16" HOLE

MATERIAL: Carbon steel or 304/316 stainless steel.  
FINISH: Galvanized.  
SERVICE: For use on the outside of foam or fiber glass insulation.  
ORDERING: Specify shield size and figure number. FIG. #816 plated round head machine screws sold separately for use with the FIG. #302 shield with 5/16" hole.



SHIELD SIZE NO.	LENGTH	STOCK SIZE "C"	DIA. "D"	HANGER SIZE	WEIGHT PER 100, LBS.
0	12	24ga	1 7/8	1 1/2	25
1	12	24ga	2 3/8	2	31
2	12	24ga	2 7/8	2 1/2	37
3	12	18ga	3 1/2	3	93
4	12	18ga	4	3 1/2	103
5	12	18ga	4 1/2	4	118
6	12	18ga	5	5	133
7	12	18ga	5 9/16	5	147
8	12	18ga	6 5/8	6	165
9	12	18ga	7 5/8	8	190
10	12	18ga	8 5/8	8	210
13	12	18ga	9 5/8	10	235
14	12	18ga	10 3/4	10	265
15	12	18ga	11 3/4	12	295
16	12	18ga	12 3/4	12	315
17	12	16ga	14	14	445
18	12	16ga	15	16	446
19	12	16ga	16	16	490
20	12	16ga	17	18	515
21	12	16ga	18	18	550
22	12	16ga	19	20	570
23	12	16ga	20	20	635
24	12	16ga	21	24	645
25	12	16ga	22	24	660
26	12	16ga	23	24	700
27	12	16ga	24	24	785
28	12	16ga	26	30	790
29	12	16ga	27	30	805
30	12	16ga	28	30	860

SHIELD SIZE SELECTION TABLE FOR TUBING					
TUBING SIZE	A - Insulation Thickness				
	1/2	3/4	1	1 1/2	2
1/2	0	1	2	4	5
3/4	0	1	2	4	6
1	1	2	3	4	6
1 1/4	1	2	3	5	7
1 1/2	2	3	3	5	7
2	3	4	4	6	8
2 1/2	4	5	5	7	8
3	5	6	6	8	9
3 1/2	6	7	7	8	9
4	7	7	8	9	10
5	8	8	9	10	13
6	9	9	10	13	14

Number 21 Shield for 17.83" od  
HDPE Insulation Jacket

SHIELD SIZE SELECTION TABLE FOR PIPE					
PIPE SIZE	A - Insulation Thickness				
	1/2	3/4	1	1 1/2	2
1/2	0	1	-	-	-
3/4	1	1	2	4	6
1	1	2	3	5	7
1 1/4	2	3	3	6	7
1 1/2	2	3	4	6	7
2	3	4	5	7	8
2 1/2	4	5	6	7	8
3	5	6	7	8	9
3 1/2	-	-	8	9	10
4	-	-	8	9	10
5	-	-	9	10	13
6	-	-	10	13	14
8	-	-	14	15	16
10	-	-	16	17	18
12	-	-	18	19	20
14	-	-	19	20	21
16	-	-	21	22	23
18	-	-	23	24	25
20	-	-	25	26	27
24	-	-	28	29	30





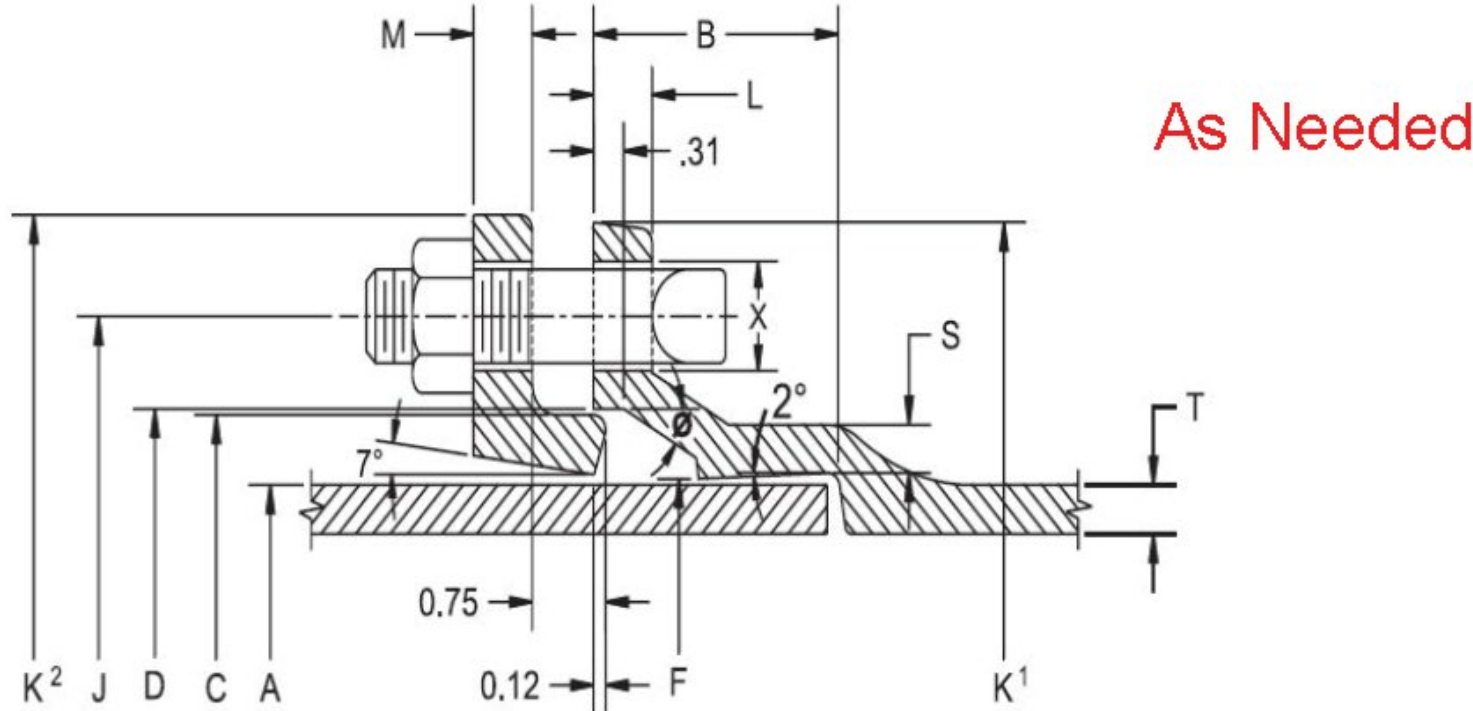
☐ DOMESTIC

☐ NON-DOMESTIC

SUBMITTAL: C153 MECHANICAL JOINT PRODUCT

(Current revisions for the noted Standards apply)

- SIZES:2" through 64" (2" not included in ANSI/AWWA C153 standard)
- STANDARDS:ANSI/AWWA C153/A21.53, NFPA13/24, 3"-16" UL and 3"-10" FM listed & approved (File - Tyler Union)
- MATERIAL:Cast of ASTM A536 qualified ductile iron. Date code is cast on and required for traceability.
- PRESSURE RATING:*Flanged fittings rated at 250 psi. Mechanical joints 2" – 24" rated at 350 psi and 30" – 48" at 250 psi.  
*Note: With rubber annular ring flange gasket, 2" – 24" Flanged fittings can be rated at 350 psi.  
Note: Wyes over 12" are not pressure rated. Contact Tyler Union for rating in your application.
- DEFLECTION:Max joint deflection 2"– 12", 5° and 14"– 48", 3°. Reduces by 50% at nominal pipe & fitting diameters
- NSF-61 & NSF372:Meets all requirements including Annex G, Tyler Union's Underwriters Laboratory listing MH16439.
- ASPHALT COATING:Per ANSI/AWWA C104/A21.4 and ANSI/AWWA C153/A21.53.
- CEMENT LINING:Per ANSI/AWWA C104/A21.4, with double cement lining.
- EPOXY COATING:Fusion bonded epoxy per ANSI/AWWA C116/A21.16. Additional coatings available upon request.
- BARE FITTINGS:Available upon request.
- FASTENERS:High strength low alloy weathering steel per ANSI/AWWA C111/A21.11 and ASTM A242
- INSTALLATION:Install per AWWA C600/C651 using pipe conforming to ANSI/AWWA C151/A21.51 or AWWA C900/905.

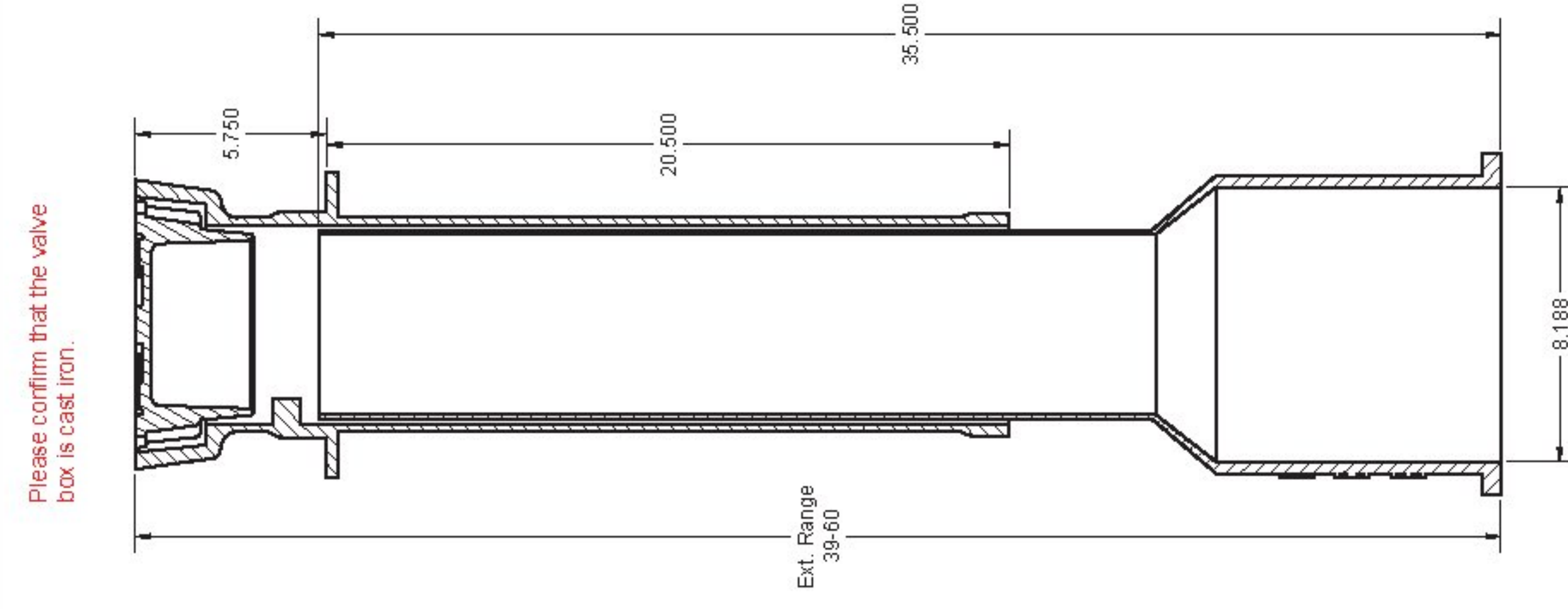


NOMINAL JOINT DIMENSIONS IN INCHES														BOLTS	
Size Inches	A Dia. DI Pipe	B Hub Depth	C Dia. GLAND	D Dia.	F Dia.	J Dia. GLAND	K' Dia.	K² Dia. GLAND	L	M GLAND	S	T	X	Size	Qty.
2	2.51	2.50	3.50	3.60	2.61	4.75	6.19	6.89	0.58	0.62	0.36	0.30	3/4	5/8x3.0	2
3	3.96	2.50	4.84	4.94	4.06	6.19	7.62	7.69	0.58	0.62	0.39	0.33	3/4	5/8x3.0	4
4	4.80	2.50	5.92	6.02	4.90	7.50	9.06	9.12	0.60	0.75	0.39	0.34	7/8	3/4x3.5	4
6	6.90	2.50	8.02	8.12	7.00	9.50	11.06	11.12	0.63	0.88	0.43	0.36	7/8	3/4x3.5	6
8	9.05	2.50	10.17	10.27	9.15	11.75	13.31	13.37	0.66	1.00	0.45	0.38	7/8	3/4x4.0	6
10	11.10	2.50	12.22	12.34	11.20	14.00	15.62	15.62	0.70	1.00	0.47	0.40	7/8	3/4x4.0	8
12	13.20	2.50	14.32	14.44	13.30	16.25	17.88	17.88	0.73	1.00	0.49	0.42	7/8	3/4x4.0	8
14	15.30	3.50	16.40	16.54	15.44	18.75	20.31	20.25	0.79	1.25	0.55	0.47	7/8	3/4x4.5	10
16	17.40	3.50	18.50	18.64	17.54	21.00	22.56	22.50	0.85	1.31	0.58	0.50	7/8	3/4x4.5	12
18	19.50	3.50	20.60	20.74	19.64	23.25	24.83	24.75	1.00	1.38	0.68	0.54	7/8	3/4x4.5	12
20	21.60	3.50	22.70	22.84	21.74	25.50	27.08	27.00	1.02	1.44	0.69	0.57	7/8	3/4x4.5	14
24	25.80	3.50	26.90	27.04	25.94	30.00	31.58	31.50	1.02	1.56	0.75	0.61	7/8	3/4x5.0	16
30	32.00	4.50	33.29	33.46	32.17	36.88	39.12	39.12	1.31	2.00	0.82	0.66	1-1/8	1x6.0	20
36	38.30	4.50	39.59	39.76	38.47	43.75	46.00	46.00	1.45	2.00	1.00	0.74	1-1/8	1x6.0	24
42	44.50	4.50	45.79	45.96	44.67	50.62	53.12	53.12	1.45	2.00	1.25	0.82	1-3/8	1-1/4x6.5	28
48	50.80	4.50	52.09	52.26	50.97	57.50	60.00	60.00	1.45	2.00	1.35	0.90	1-3/8	1-1/4x6.5	32
54	Available on Request														
60	Available on Request														
64	Available on Request														

Anniston: 1501 W 17th St. • Anniston, AL 36201 • (800) 226-7601  
Corona: 1001 El Camino Ave. • Corona, CA 92879 • (866) 527-8471  
Tyler: 11910 CR 492 • Tyler, Texas 75706 • (800) 527-8478  
Dallas: 1201 Ave. S. Suite100 • Grande Prairie, TX 75050

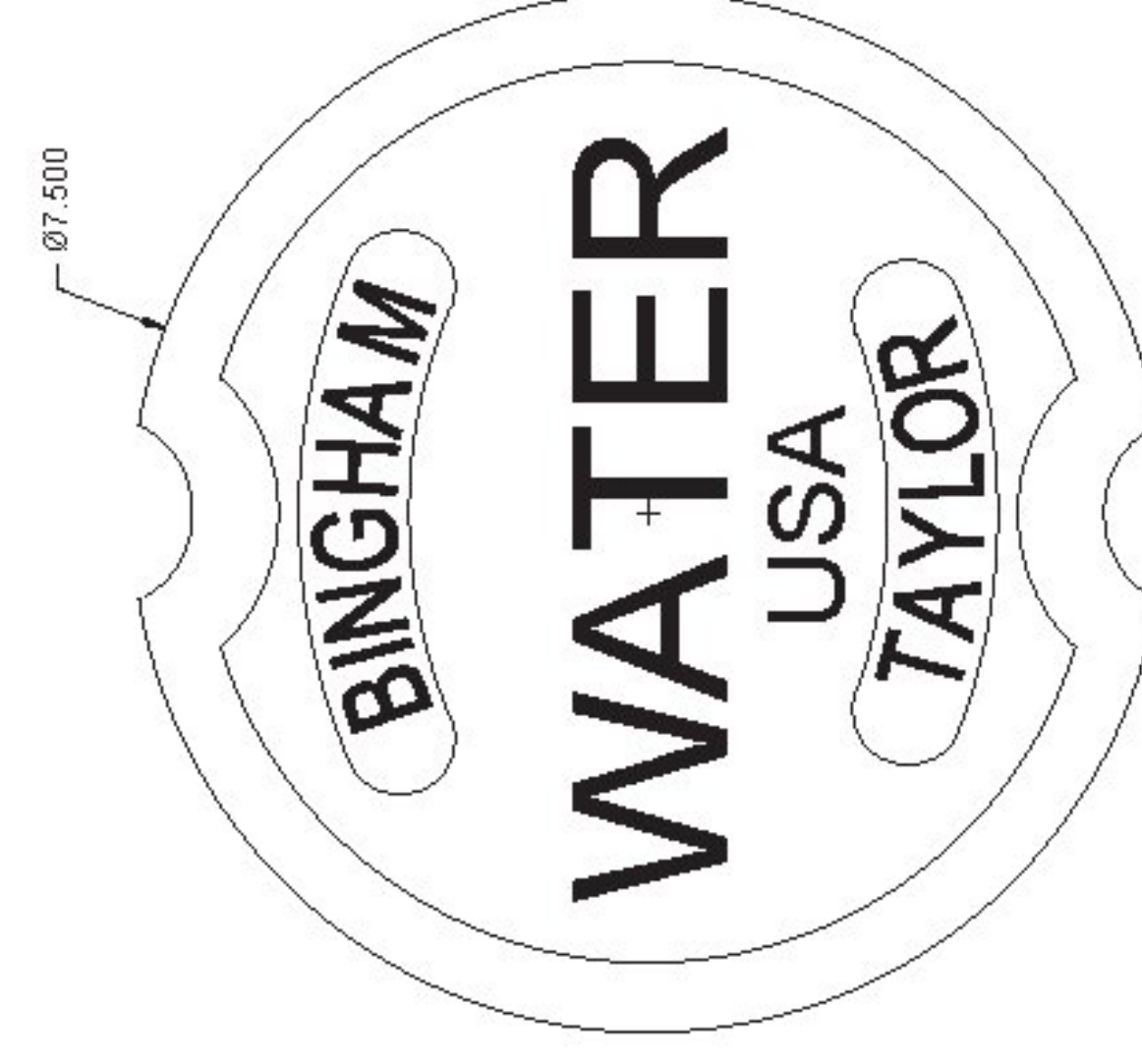
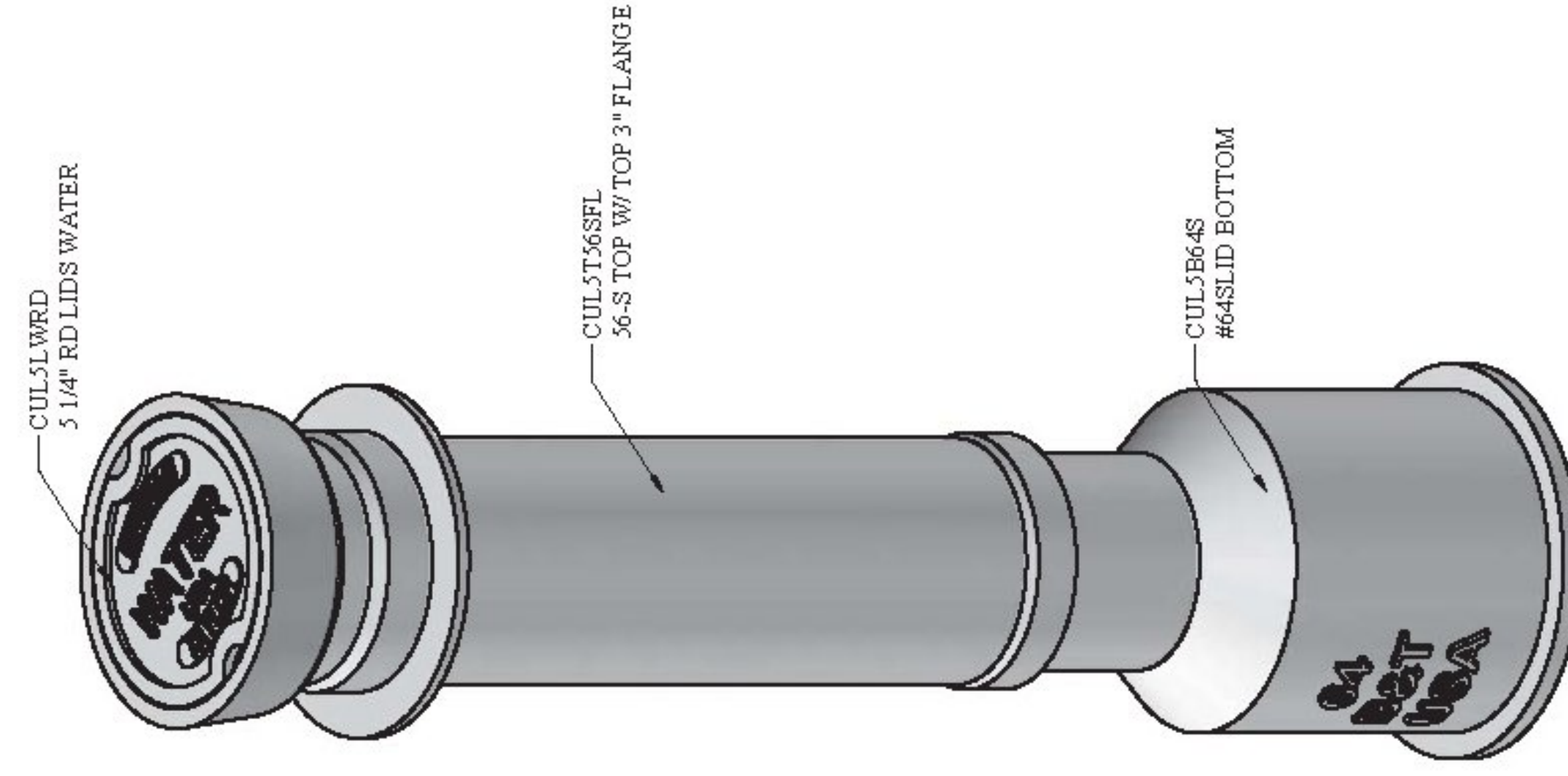
Elmer: 701 Kenyon Ave. Elmer, New Jersey 03318  
New Lenox: 2200 West Haven • New Lenox, IL 60451  
Portland: 15670 N. Lombard St. • Portland, OR 97203  
Oxford: 1800 Greenbrier Dear Road • Anniston, AL 36207





Please confirm that the valve box is cast iron.

As Needed



NOTES- ALL EDGES HAVE A 1/16 RADIUS  
TOLERANCE  $\pm .0625$

	REV.	DATE	COMMENT
	A		RELEASED
		<b>BINGHAM &amp; TAYLOR</b>	
 <b>Bingham &amp; Taylor</b> EST. 1968		<b>I5B5664SWFL USA</b>	
#5664S TOP FLANGE		DRAWN:	D REED
DOMESTIC-USA VALVE BOX		CHECKED:	4/29/14
WATER 39-60 EXT		QUANTITY:	103 lbs
APPROVED:		DATE:	
APPROVED:		DATE:	

## Preliminary



SUBMITTAL



Submittal number	05	Date	05/19/2017
Project	Middlebury Temp Bridges		
Project number	2017012		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	
Topic	Precast Drainage Structure Shop Drawings		

Submitter	
Reviewer	
Cc	

Date submitted	05/19/2017	Submission due date	
Released for review		Review due date	05/23/2017
Date returned		Required on site date	
Date closed			

Notes
Shop drawings for the 3ea new drainage structures.

SHOP DRAWING REVIEW

☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATION AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED

☐ REVISE AND RESUBMIT

☒ APPROVED AS NOTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

Engineers | Scientists | Planners | Designers  
40 IDX Drive  
Building 100, Suite 200  
South Burlington, VT 05403  
Phone 802-497-6100

Job Number: EWVP3(1)  
Reviewed By: D. Peck  
Date: 05/26/2017

Approved AsNoted

BY: Joel Perrigo

DATE: 05/26/2017

RESUBMIT: No

RECEIVED: May 19, 2017

CKD BY: _____

STATE OF VERMONT  
AGENCY OF TRANSPORTATION

02.0 - Precast Drainage Structures Shop Drawings (10/16)



File 5.1.2

Contractor: **Kubricky Construction**  
 Job Name: **Middlebury EWP3(1)**  
 Location: **Middlebury, Vt.**  
 Job # **169-17** Date: **5/18/2017**  
 Drawn By: **JH**

CAMP Precast Concrete Products  
 78 Precast Road, Milton, VT 05475  
 Phone (802) 893-2401 Fax (802) 893-2402

Typically VTrans calls for 18" min sump, but this is ok for the temporary structure.

Neenah Type "D" does not conform with VTrans STD for a Type "D" (See D-15). Comparable Neenah Grate would be Type "H" (Catalog No. R-3589-A)

**Product I.D. DI 12+10.1 Diameter: 48"**  
 Invert: **No** Ladders: **No** Coating: **No** Access Size: **24"**  
 Cast Iron / Hatch: **Neenah R-3589 24" x 24" x 8" Frame and Type D Grate (3**

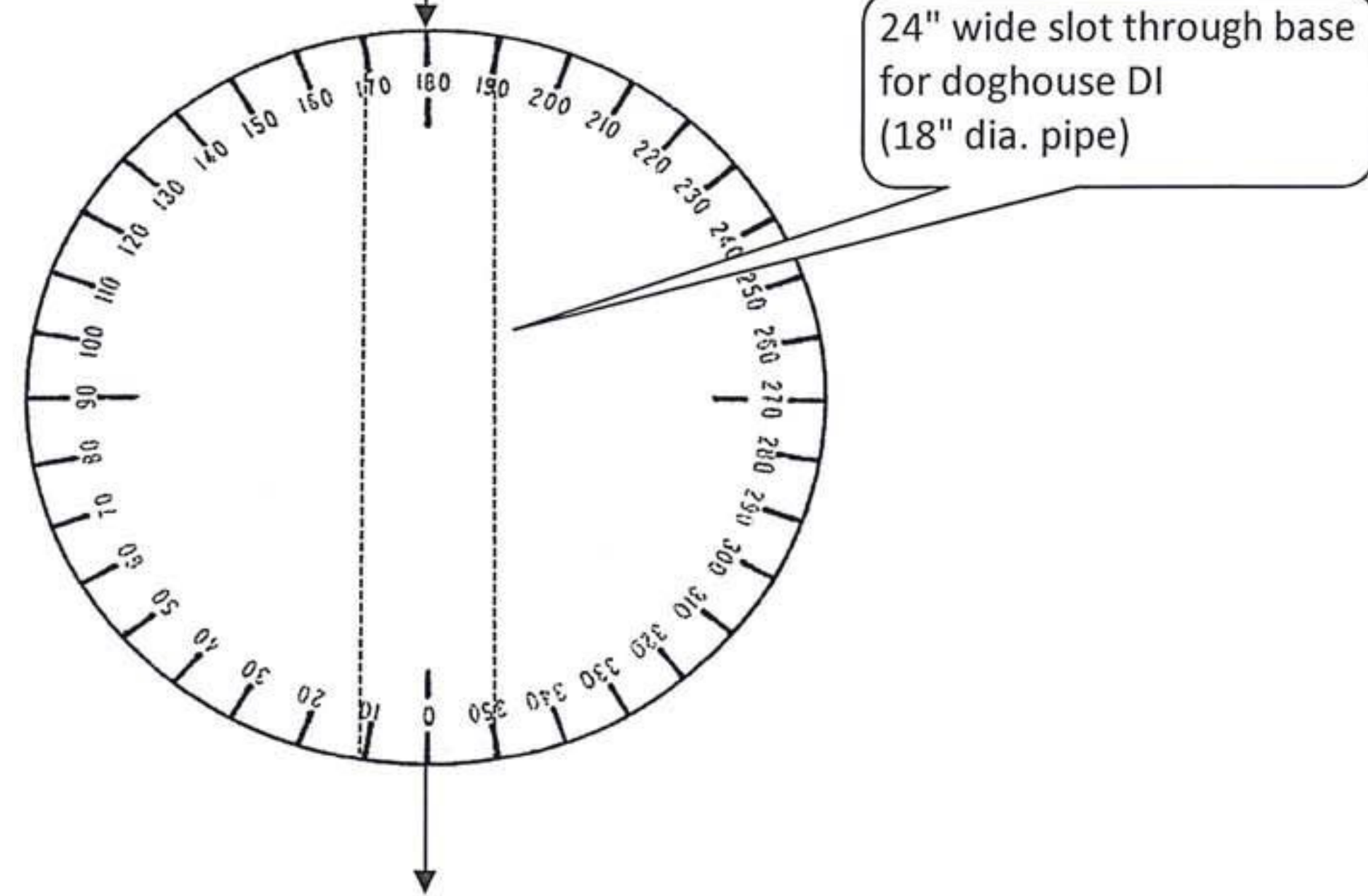
Rim:	<b>370.35</b>	Cone:		Riser#1:		Riser#4:	
Inv. Out:	<b>364.00</b>	Cover:	<b>18"</b>	Riser#2:		Riser#5:	
Diff:	<b>6.35</b>	Base:	<b>4'</b>	Riser#3:		Riser#6:	
Sump:	<b>0.25</b>						
Gross V.F.:	<b>6.60</b>	Angle	<b>0</b>		<b>180</b>		
C.I. Height:	<b>0.67</b>	Boot:	<b>24" dia. Doghouse</b>		<b>24" dia. Doghouse</b>		
Net V.F.:	<b>5.93</b>	Dist. Up:	<b>24" to top of DH</b>		<b>24" to top of DH</b>		
Brick Space:	<b>0.43</b>	Pipe Type:	<b>HDPE (assumed)</b>		<b>HDPE (assumed)</b>		
Actual V.F.:	<b>5.50</b>	Pipe Size:	<b>18"</b>		<b>18"</b>		

Quality Control	Prepour	Form Cleaning:		Form Release:	
		Rein. Steel:	<b>Std. Spec.</b>	Form Closure:	
		Block Out:		Rein. Size:	
		Comments:		Q.C. by/date:	
Quality Control	Postpour	Finish:		Br	
		Invert:		La	
		Coating:		Bo	
		Comments:		y/date:	

Existing Survey identifies it as an existing 18" clay pipe.

Special Info / Comments:		<b>**VT AOT Specs. including 8" thick base**</b>	
Mix #:		Wt.:	
Mold #:		YDS ³	
		<b>**Cast Iron Certs. Required**</b>	

**BASE**





File 5.1.2

Contractor:	Kubricky Construction
Job Name:	Middlebury EWP3(1)
Location:	Middlebury, Vt.
Job #	169-17
Date:	5/18/2017
Drawn By:	JH

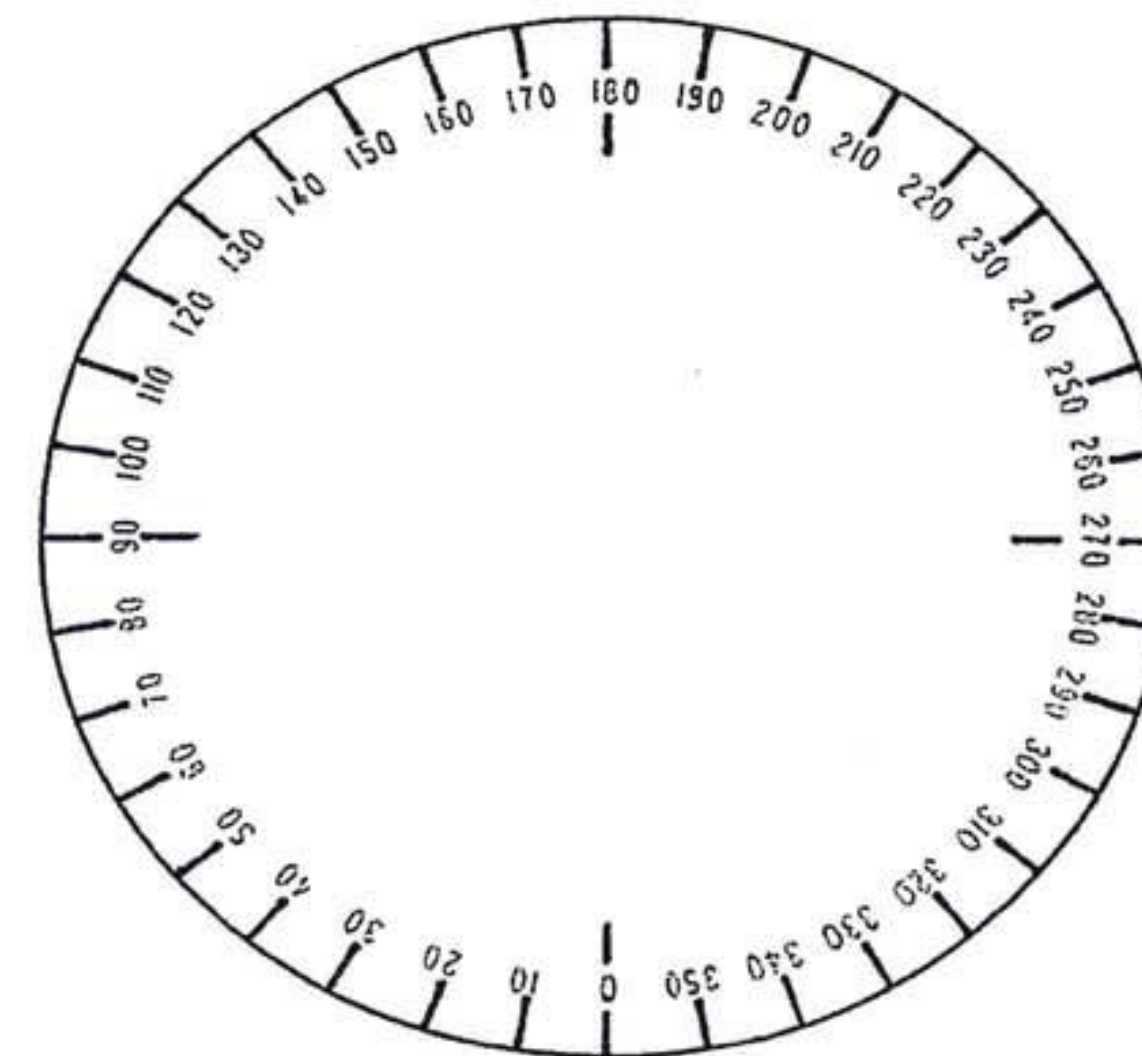
Typically VTrans calls for 18" mins sump, but this is ok for the temporary structure.

Neenah Type D grate does not conform with VTrans Type D (See D-15). Neenah Type Grate that best resembles VTrans Standard is Type H. (Catalog No. R-3589-A)

**Product I.D.** DI 22+70.5 **Diameter:** 48"  
**Invert:** No **Ladders:** No **Coating:** No **Access Size:** 24"  
**Cast Iron / Hatch:** Neenah R-3589 24" x 24" x 8" Frame and Type D Grate (3

Rim:	370.65	Cone:		Riser#1:		Riser#4:	
Inv. Out:	365.50	Cover:	12"	Riser#2:		Riser#5:	
Diff:	5.15	Base:	4'	Riser#3:		Riser#6:	
Sump:	0.75						
Gross V.F.:	5.90	Angle	0				
C.I. Height:	0.67	Boot:	8022				
Net V.F.:	5.23	Dist. Up:	18" to ctr				
Brick Space:	0.23	Pipe Type:	HDPE				
Actual V.F.	5.00	Pipe Size:	18"				
Quality Control	Prepour	Form Cleaning:					
		Rein. Steel:	Std.	Spec.			
		Block Out:					
		Comments:	Q.C. by/date:				
	Postpour	Finish:					
		Invert:					
		Coating:					
		Comments:	Q.C. by/date:				
Special Info / Comments:			**VT AOT Specs. including 8" thick base**				
Mix #:		Wt.:	**Cast Iron Certs. Required**				
Mold #:		YDS ³					

BASE



18" HDPE up 18" to center  
elev. 365.50



File 5.1.2

Contractor: **Kubricky Construction**  
 Job Name: **Middlebury EWP3(1)**  
 Location: **Middlebury, Vt.**  
 Job # **169-17** Date: **5/18/2017**  
 Drawn By: **JH**

Typically VTrans calls for  
 18" mins sump, but this  
 is ok for the temporary  
 structure.

Should be Neenah  
 Type "H" grate.  
 (Catalog No.  
 R-3589-A)

CAMP Precast Concrete  
 78 Precast Road, Milton, VT 05406  
 Phone (802) 893-2401 Fax (802) 893-1542

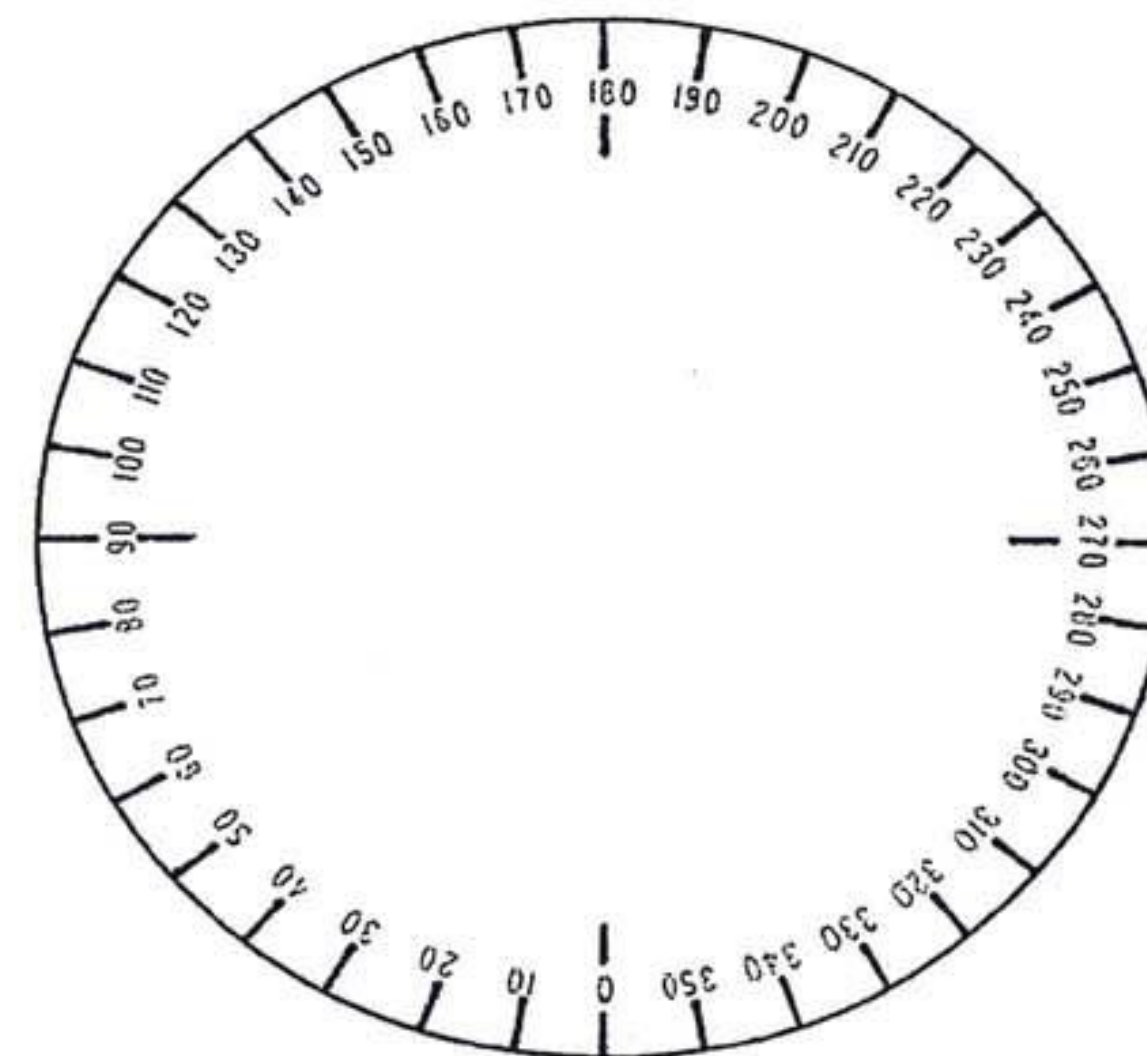
**Product I.D. DI 22+56.8** Diameter: **48"**  
 Invert: **No** Ladders: **No** Coating: **No** Access Size: **24" x 24"**  
 Cast Iron / Hatch: **Neenah R-3589 24" x 24" x 8" Frame and Type ☒ Grate (3-flange)**

Rim:	<b>371.70</b>	Cone:		Riser#1:		Riser#4:	
Inv. Out:	<b>366.20</b>	Cover:	<b>18"</b>	Riser#2:		Riser#5:	
Diff:	<b>5.50</b>	Base:	<b>4'</b>	Riser#3:		Riser#6:	
Sump:	<b>1.00</b>						
Gross V.F.:	<b>6.50</b>	Angle	<b>0</b>				
C.I. Height:	<b>0.67</b>	Boot:	<b>8022</b>				
Net V.F.:	<b>5.83</b>	Dist. Up:	<b>21" to ctr</b>				
Brick Space:	<b>0.33</b>	Pipe Type:	<b>HDPE</b>				
Actual V.F.	<b>5.50</b>	Pipe Size:	<b>18"</b>				

Quality Control	Prepour	Form Cleaning:		Form Release:	
		Rein. Steel:	<b>Std. Spec.</b>	Form Closure:	
	Postpour	Block Out:		Rein. Size:	
		Comments:		Q.C. by/date:	
Quality Control	Prepour	Finish:		Bricking:	
		Invert:		Ladders:	
	Postpour	Coating:		Boots:	
		Comments:		Q.C. by/date:	

Special Info / Comments:		<b>**VT AOT Specs. including 8" thick base**</b>	
Mix #:		Wt.:	
Mold #:		YDS ³	

**BASE**

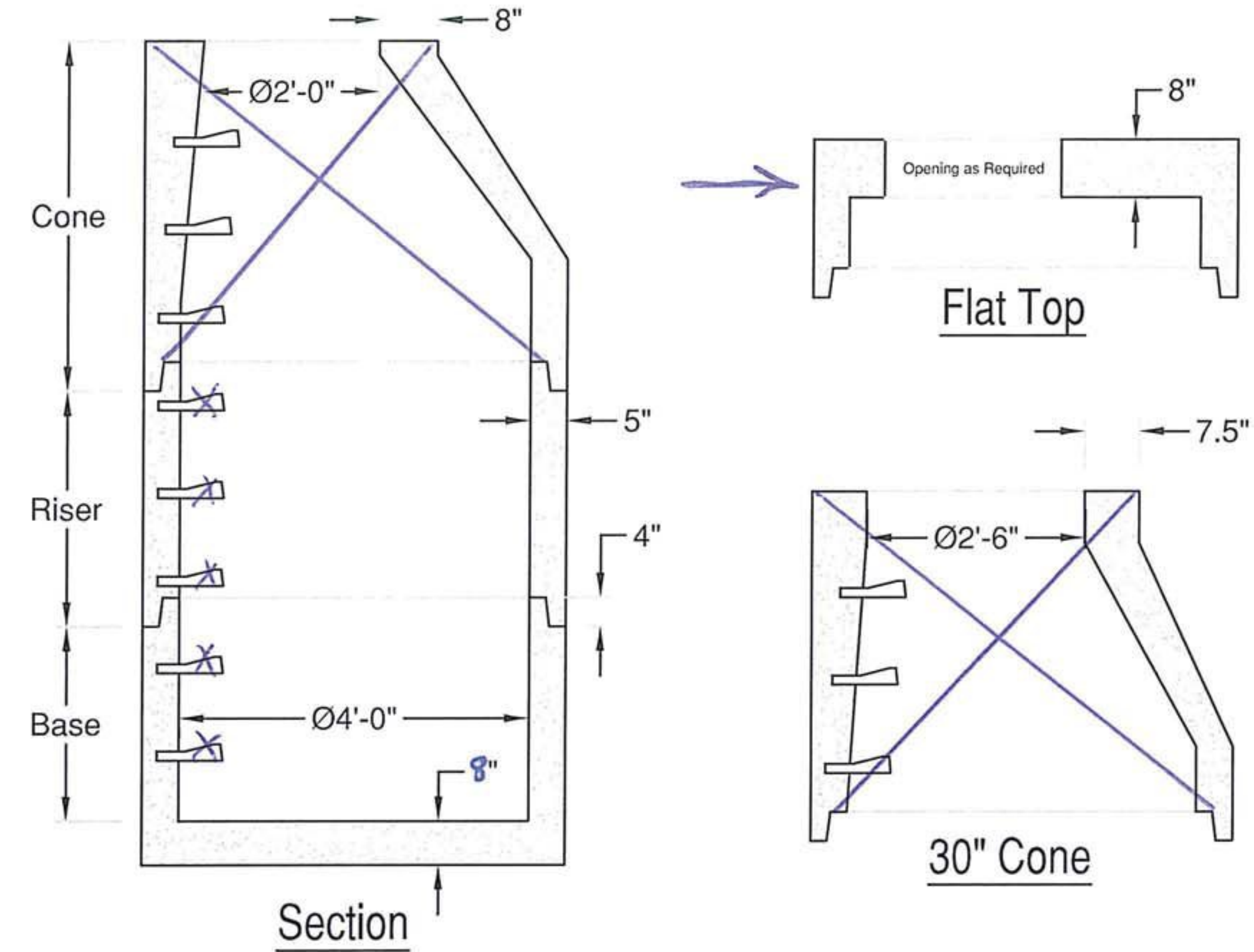


18" HDPE up 21" to center  
 elev. 366.20



# 48" Diameter Manhole

94 Gal. / Vertical ft.



### FLAT TOP SECTION

Height	Item #	Weight
1'-0"	MH48-12FT	1,650 lbs
1'-6"	MH48-18FT	2,080 lbs

Standard Heights Shown - Other Heights Available

### RISER SECTION

Height	Item #	Weight
1'-0"	MH48-12R	860 lbs
2'-0"	MH48-24R	1,710 lbs
3'-0"	MH48-36R	2,570 lbs
4'-0"	MH48-48R	3,420 lbs

Standard Heights Shown - Other Heights Available

### BASE SECTION

Height	Item #	Weight
2'-0"	MH48-24B	3,070 lbs
3'-0"	MH48-36B	3,880 lbs
4'-0"	MH48-48B	4,720 lbs
5'-0"	MH48-60B	5,560 lbs
6'-0"	MH48-72B	6,400 lbs

Standard Heights Shown - Other Heights Available

### 24" Cone

Height	Item #	Weight
3'-0"	MH48-24C36	2,680 lbs
3'-6"	MH48-24C42	3,120 lbs
4'-0"	MH48-24C48	3,560 lbs
4'-6"	MH48-24C54	4,000 lbs
5'-0"	MH48-24C60	4,440 lbs

### 30" Cone

Height	Item #	Weight
3'-0"	MH48-30C36	2,660 lbs
3'-6"	MH48-30C42	3,100 lbs
4'-0"	MH48-30C48	3,540 lbs
5'-0"	MH48-30C60	4,420 lbs

### SPECIFICATIONS:

- Concrete Minimum Strength 5000psi @ 28 days
- Joints sealed with Butyl sealant
- Monolithic Construction
- Meets ASTM C478
- H-20 Loading
- Weights Subject to Variation

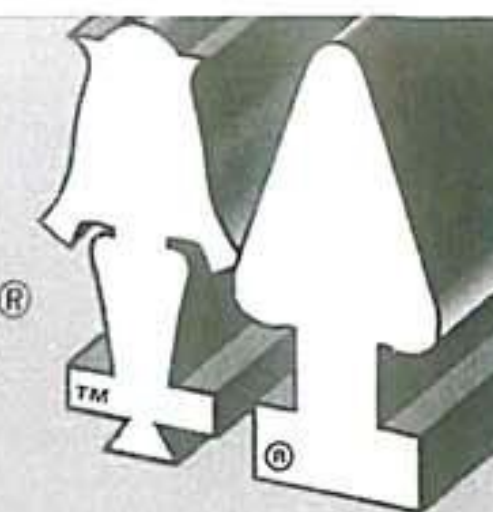


PRECAST CONCRETE PRODUCTS  
78 PRECAST ROAD MILTON, VT 05468 • 802.893.2401  
TOLL FREE 1.888.299.2401 FAX 802.893.1542





The Company With Connections®



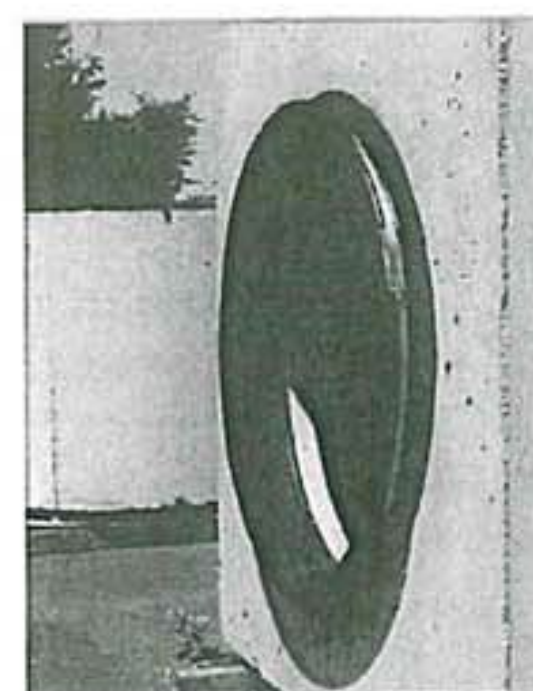
A BOOT STYLE CONNECTOR FOR CORRUGATED OR SMOOTH WALL PIPE

## Z•LOK STM

### Z•LOK STM

The **Z•LOK STM CONNECTOR** was designed by A-LOK Products, Inc. to address the need for a boot style connector for large diameter pipe. This makes it ideally suited for stormwater application. Available for 6"-102" pipes.

The **Z•LOK STM Pipe to Manhole Connector** is a flexible connector specifically engineered to produce a positive watertight seal for pipes entering precast concrete structures and the structure itself.



**Z•LOK STM Connector**  
cast into storm structure.

### MATERIAL

The **Z•LOK STM CONNECTOR** is molded from an EPDM compound engineered to conform with the requirements of section 4.1.1 of ASTM C-923. Alternative compounds are available for unusual applications upon special order.

All stainless steel hardware is in compliance with section 4.2, "Mechanical Devices" of ASTM C-923.

### KEY ADVANTAGES

The **Z•LOK STM CONNECTOR** assures a positive watertight connection and provides up to 15° of omnidirectional deflection and 1.50" of vertical or horizontal movement without loss of seal, providing greater flexibility in the design and installation of pipelines and structures. These design features of the **Z•LOK STM CONNECTOR** prevent infiltration due to shear caused by settlement or ground movement.

Once fastened, immediate backfilling is possible enhancing project safety and overcomes the normal problems encountered with water, running sand and other unstable trench conditions.

When casting the **Z•LOK STM CONNECTOR** into the structure, making it an integral part of the wall, 50% of the opportunity for infiltration is eliminated.

### PRODUCT REFERENCES

#### A.) ASTM C-923

Resilient Connector Between Reinforced Concrete Manholes Structures, Pipe and Laterals.

#### B.) ASTM C-1478

Resilient Connectors Between Reinforced Concrete Storm Sewers Structures, Pipes and Laterals.

#### C.) ASTM C-1244

Standard Test Method For Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test.

### PERFORMANCE STANDARD

The **Z•LOK STM Connector** meets or exceeds all material and test requirements of ASTM C-923-00: "Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals".

See following chart:

#### RESILIENT TEST REQUIREMENTS OF A.S.T.M. C-923

TEST	RESULTS	ASTM METHOD
Chemical resistance 1 N Sulfuric acid 1 N Hydrochloric Acid	no weight loss no weight loss	at 22°C for 48h
Tensile strength	1200 psi or 8.5 MPa, min	D 412
Elongation at break	350% min.	
Hardness	±5 from mfg's. specified hardness	D 2240 (Shore A durometer)
Accelerated oven-aging	decr. of 15%, max. of original tensile strength, decr. of 20% max. of elongation	D 573, 70±1°C for 7 days
Compression set	decr. of 25%, max. of original deflection	D 395, Method B, at 70°C for 22h
Water absorption	increase of 10%, max. of original by weight	D 471, immerse 0.75 by 2-in. or 19 by 25-mm Specimen in distilled water at 70°C for 48h
Ozone resistance	rating 0	D 1171
Low-temp brittle point	no fracture at -40°C	D 746
Tear resistance	200 lbf/in. or 34 kn/m	D 624, Method B

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## ○ PRODUCT SPECIFICATIONS

A flexible pipe to manhole connector shall be used whenever a pipe penetrates into a precast concrete manhole or structure.

The connector shall be the **Z•LOK STM CONNECTOR** as manufactured by **A•LOK PRODUCTS, INC.**, Tullytown, PA, or approved equal.

The design of the connector shall provide a flexible, watertight seal between the pipe and concrete structure. The connector shall assure that a seal is made between:

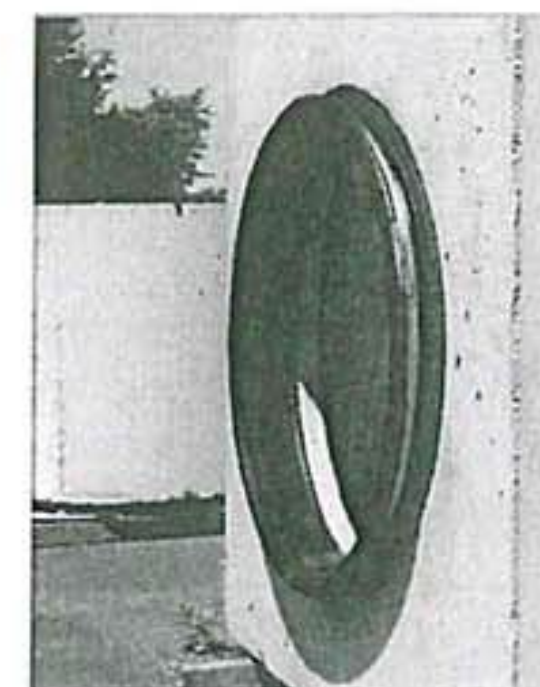
(1) The connector and the structure wall by casting the connector integrally with the structure wall during the manufacturing process in a manner that it will not pull out during pipe coupling.

(2) The seal between the connector and the pipe shall be made by compressing the connector against the outside circumference of the smooth wall pipe or against the inside walls of the valley of the corrugated pipe by means of a stainless steel take-down clamp.

The connector shall be made from materials that conform to the physical and chemical requirements outlined in Section 4, "Materials and Manufacture" of ASTM C-923 "Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals", and the overall design will meet or exceed Section 7, "Test Methods and Requirements" of ASTM C-923 and ASTM C-1478.

The connector shall be sized specifically for the type of pipe being used and shall be installed in accordance with the recommendations of the manufacturer.

## ○ FIELD INSTALLATION INSTRUCTIONS



### CORRUGATED PIPE

#### FIELD INSTALLATION

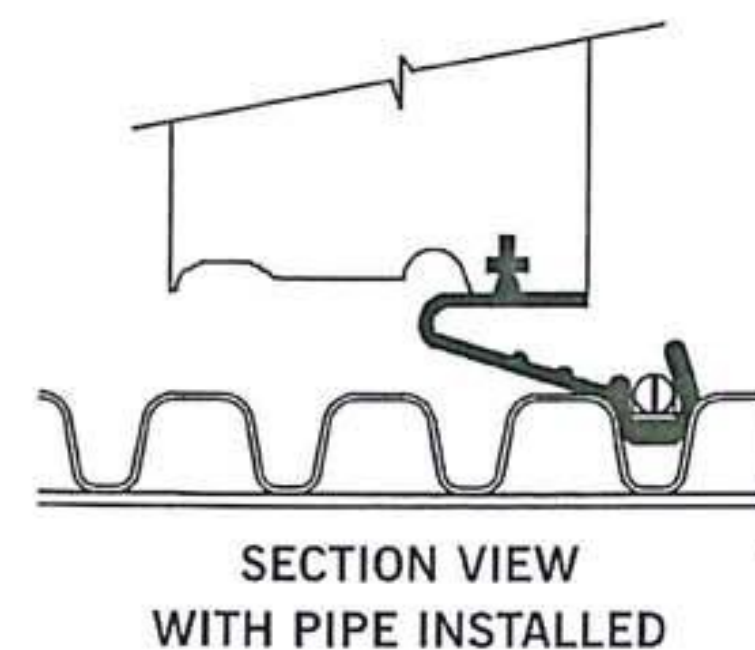
**STEP 1:**  
Z•LOK STM Connector cast into storm structure.



**STEP 2:**  
Pipe is centered through the connector. The Stainless Steel Clamp is centered above the valley of pipe making sure the fastening points are positioned in the two cutout areas of the rubber connector.



**STEP 3:**  
Stainless Steel Clamp is **tightened equally** about the take-up point to 60 in./lbs. This action compresses the rubber against the side walls of the pipe valley and a watertight connection is formed.

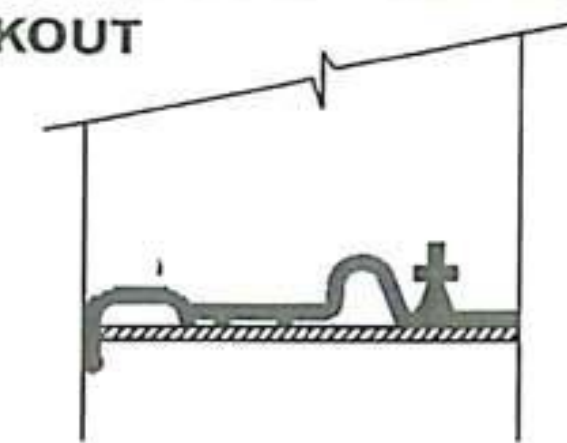


**IMPORTANT:** After groove of pipe is centered in gasket tighten stainless steel clamp equally to 60 in. lbs. with an A•LOK Torque Wrench.

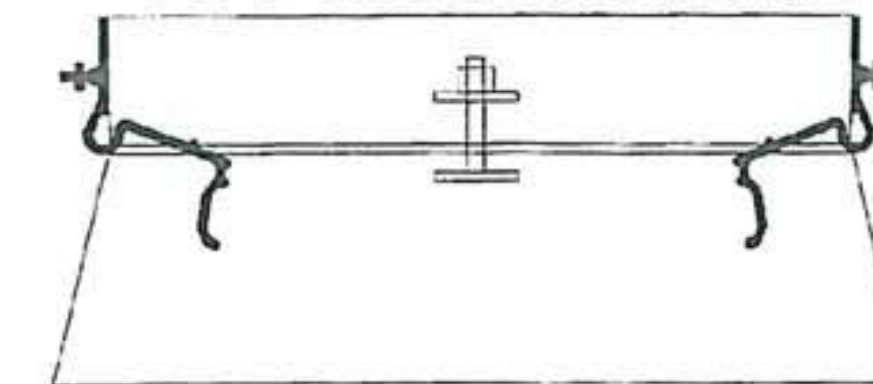
## ○ PRECAST INSTALLATION INSTRUCTIONS

### ONE-PIECE WEDGE KNOCKOUT For 6" Flatwall

Pull connector over one-piece Wedge Knockout Hole Former as shown.

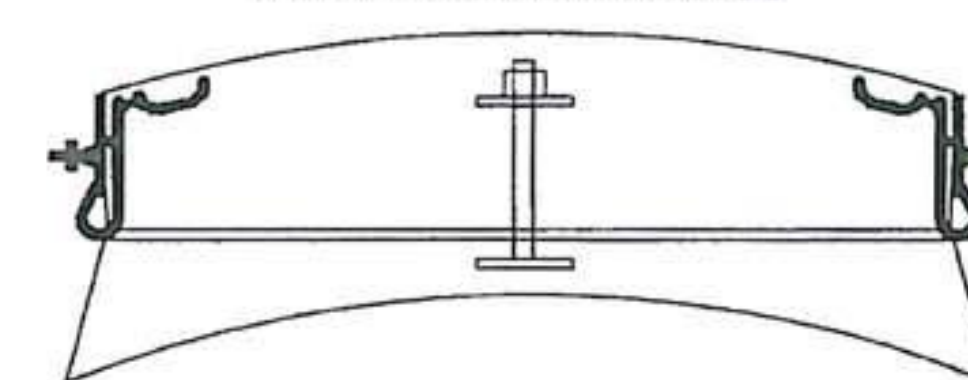


### TWO-PIECE MANDREL For 8" Flatwall and above



1. Stretch gasket over outside mandrel half, with cut-outs positioned at 3 and 9 o'clock.
2. Force gasket down inside mandrel before installing in form.
3. Use coil nut to tighten gasket and mandrels together.

### TWO-PIECE MANDREL For Round Manholes



## ○ FIELD INSTALLATION INSTRUCTIONS



### SMOOTH WALL PIPE

#### FIELD INSTALLATION

**STEP 1:**  
Z•LOK STM Connector cast into storm structure.

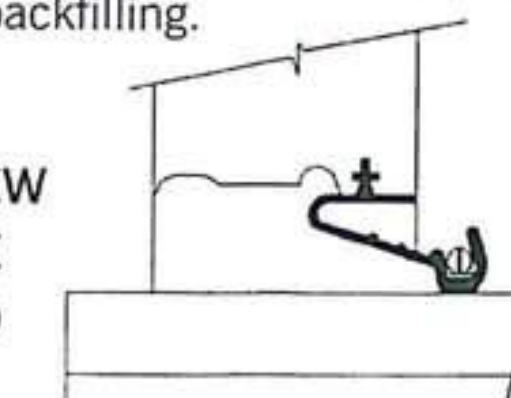


**STEP 2:**  
Pipe is inserted and centered within the connector to obtain proper mechanical seal.



**STEP 3:**  
Stainless Steel Clamp is tightened equally about the take-up point to 60 in./lbs, insuring a watertight connection. This should be done prior to any pipe deflection or backfilling.

#### SECTION VIEW WITH PIPE INSTALLED





## Z-LOK STM CONNECTORS

### CORRUGATED PIPE DATA

FLATWALL CONNECTORS ARE MARKED (C-F) ROUNDWALL CONNECTORS ARE MARKED (C-R)  
CORRUGATED Z-LOK STM CONNECTORS HAVE NOTCHES LOCATED AT 3 & 9 FOR TAKE-DOWN CLAMP ADJUSTMENT.

Z-LOK STM PART #	PIPE SIZE	MAX. O.D.	Z-LOK STM MANDREL PART#	Z-LOK STM CLAMP SIZE
ZS-8016-C-F	12" CPP	15.00"	SM-8016-F	CL-EV12L
ZS-8016-C-R			SM-8016-R	
ZS-8019-C-F	15" CPP	17.75"	SM-8019-F	CL-EV15-18L
ZS-8019-C-R			SM-8019-R	
ZS-8022-C-F	18" CPP	21.47"	SM-8022-F	CL-EV15-18L
ZS-8022-C-R			SM-8022-R	
ZS-8029-C-F	24" CPP	27.80"	SM-8029-F	CL-EV24L
ZS-8029-C-R			SM-8029-R	
ZS-8031-C-F	24" HANCOR ONLY	28.40"	SM-8031-F	CL-EV24H
ZS-8031-C-R			SM-8031-R	
ZS-8039-C-F	30" CPP	35.50"	SM-8039-F	CL-EV30H
ZS-8039-C-R			SM-8039-R	
ZS-8045-C-F	36" CPP	41.75"	SM-8045-F	CL-EV36H
ZS-8045-C-R			SM-8045-R	

18" HOPE →

CORRUGATED POLYETHYLENE PIPE (CPP) NEEDS THE EV CLAMP DESIGN.

NOTE: NEED TO INDICATE WHEN ORDERING IF GASKETS ARE FOR ROUND OR FLATWALL

EXAMPLE: ZS-XXXX-C-F = CORRUGATED FOR FLATWALL STRUCTURES

ZS-XXXX-C-R = CORRUGATED FOR ROUND STRUCTURES

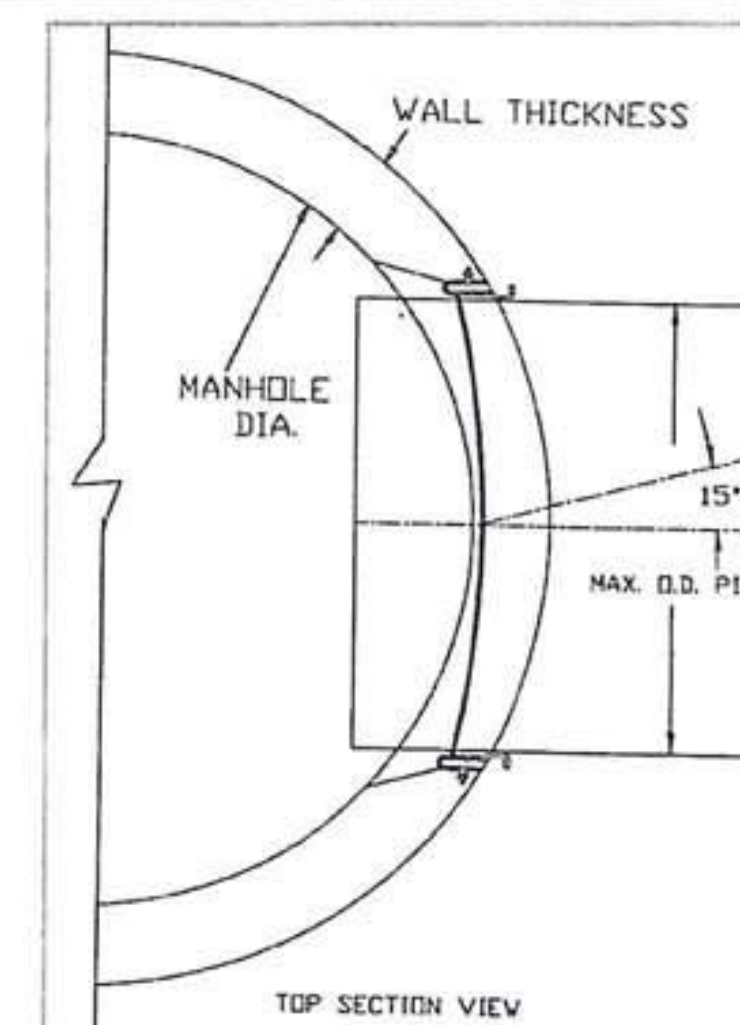
NOTE: ZS-8031 WOULD BE FOR 24" HANCOR PIPE BECAUSE OF THE LARGER VALLEY ON THE PIPE.

## COMPONENT IDENTIFICATION FOR Z-LOK STM CONNECTORS

Z-LOK STM PART#	PIPE SIZE	MAX. O.D.	Z-LOK STM MANDREL PART #	Z-LOK STM CLAMP SIZE
ZS-8029-C-F	24" CPP		SM-8029-F	CL-EV24L

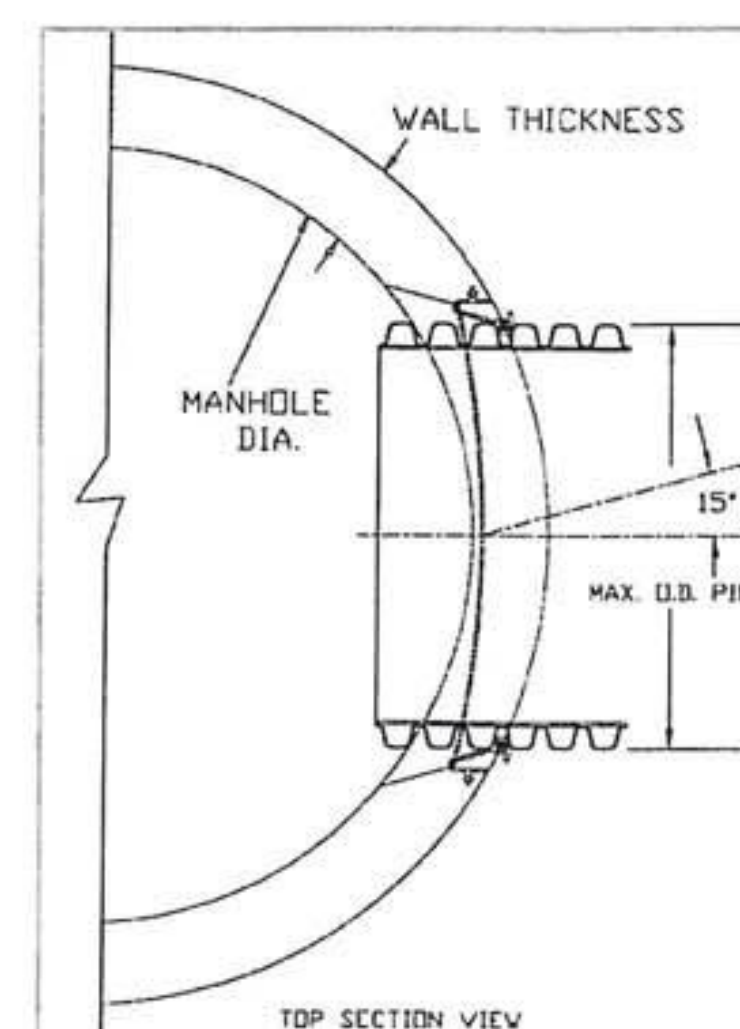
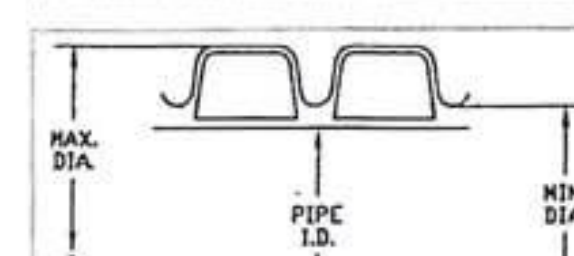
## Smooth Wall Pipe

MANHOLE DIA.	MAX. O.D. PIPE
48" DIA. 5" WALL	28 IN.
60" DIA. 6" WALL	30 IN.
72" DIA. 7" WALL	37 IN.
84" DIA. 8" WALL	44 IN.
96" DIA. 9" WALL	51 IN.



## Corrugated Pipe

MANHOLE DIA.	MAX. O.D. PIPE
48" DIA. 5" WALL	28 IN.
60" DIA. 6" WALL	30 IN.
72" DIA. 7" WALL	37 IN.
84" DIA. 8" WALL	44 IN.
96" DIA. 9" WALL	51 IN.







**CONSEAL™**  
Concrete Sealants INC.

**CS102**

Butyl Rubber Sealant For All Precast Structures;  
Meets Specs.

### APPLICATIONS

For self-sealing joints in: Manholes, Concrete Vaults, Septic Tanks, Concrete Pipe, Box Culverts, Utility Vaults, Burial Vaults, and Vertical Panel Structures.

### SEALING PROPERTIES

- Provides permanently flexible watertight joints.
- Low to high temperature workability: 30°F to 120°F (-1°C to 48°C)
- Rugged service temperature: -30°F to +200°F (-34°C to +93°C)
- Excellent chemical and mechanical adhesion to clean, dry surfaces.
- Sealed Joints will not shrink, harden or oxide upon aging.
- No priming normally necessary. When confronted with difficult installation conditions, such as wet concrete or temperatures below 40°F (4°C), priming the concrete will improve the bonding action. Consult Concrete Sealants for the proper primer to meet your application.

### HYDROSTATIC STRENGTH

ConSeal CS-102 meets the hydrostatic performance requirement as set forth in ASTM C-990 section 10.1 (Performance requirement: 10psi for 10 minutes in straight alignment – in plant, quality control test for joint materials.)

### SPECIFICATIONS

ConSeal CS-102 meets or exceeds the requirements of Federal Specification SS-S-210 (210-A), AASHTO M-198B, and ASTM C-990-91.



# PRODUCT SPECIFICATIONS



**CONSEAL™**  
Concrete Sealants INC.

**CS102**

Butyl Rubber Sealant For All Precast Structures;  
Meets Specs.

## PHYSICAL PROPERTIES

	Spec	Required*	CS 102
Hydrocarbon blend content % by weight	ASTM D4 (mod.)	50% min.	51%
Inert mineral filler % by weight	AASHTO T111	30% min.	35%
Volatile Matter % by weight	ASTM D6	2% max.	1.2
Specific Gravity, 77°F	ASTM D71	1.15-1.50	1.25
Ductility, 77°F	ASTM D113	5.0 min.	10
Penetration, cone 77°F, 150 gm. 5 sec.	ASTM D217	50-100	55-60
Penetration, cone 32°F, 150 gm. 5 sec.	ASTM D217	40 mm	40-65
Flash Point, C.O.C., °F	ASTM D92	350°F min.	450°F
Fire point, C.O.C., °F	ASTM D92	375°F min.	475°F

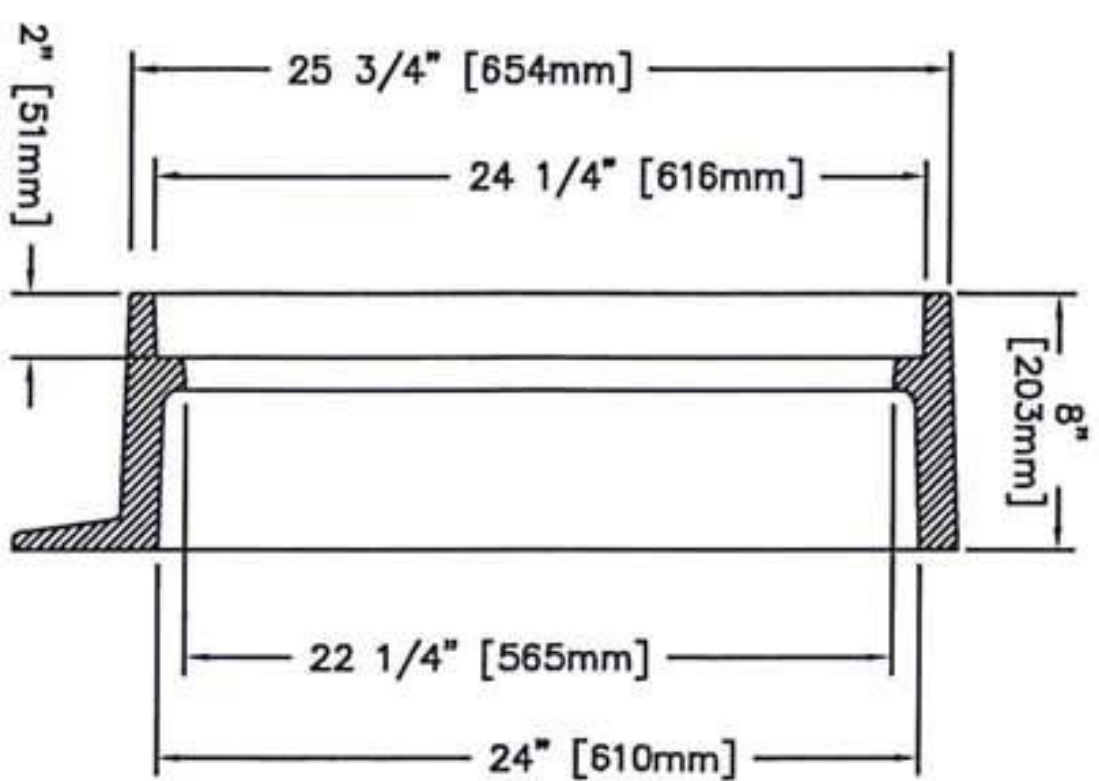
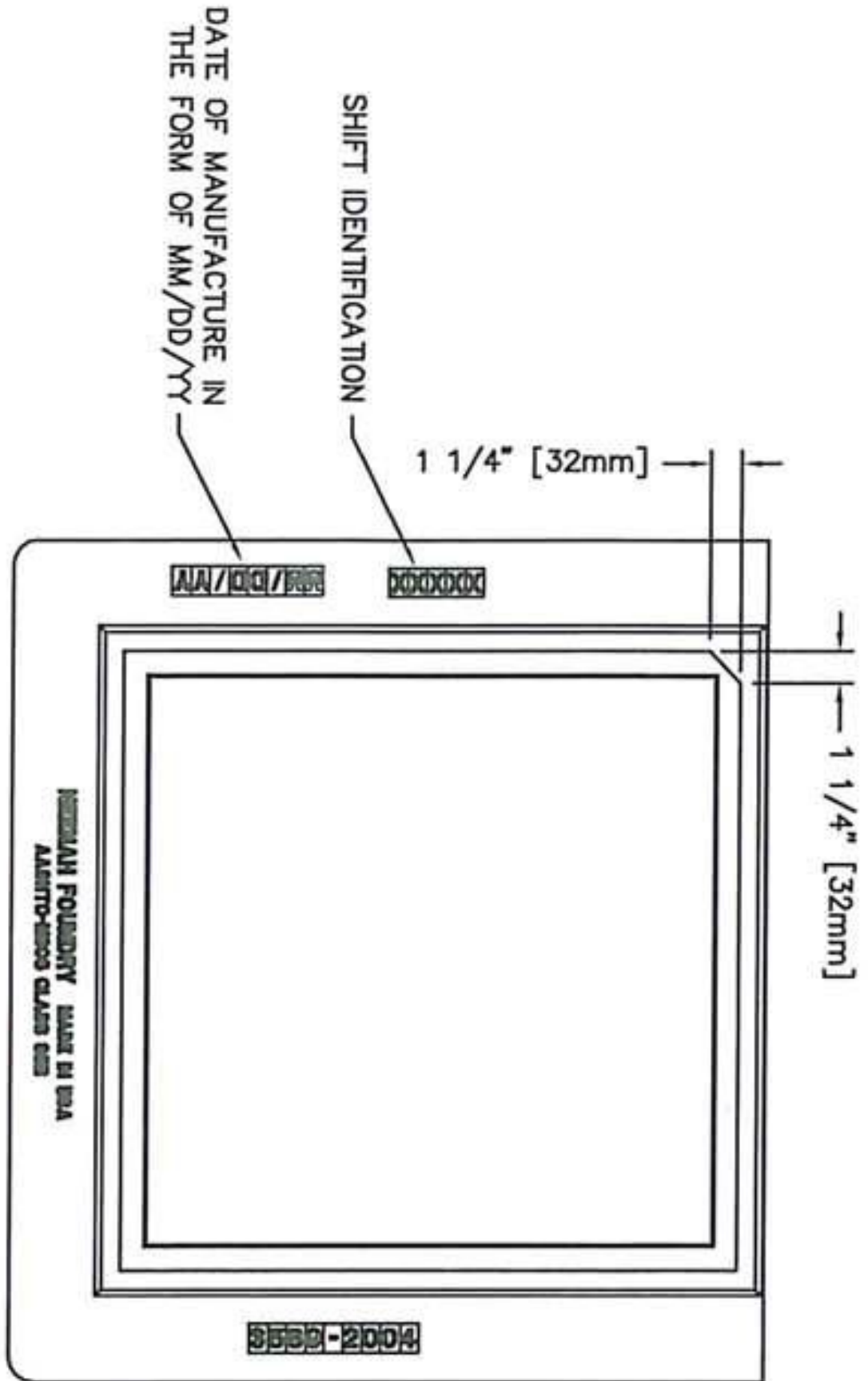
## IMMERSION TESTING

- 30-Day Immersion Testing: No visible deterioration when tested in 5% Caustic Potash, 5% Hydrochloric Acid, 5% Sulfuric Acid, and 5% saturated Hydrogen Sulfide. *
- One Year Immersion Testing: No visible deterioration when tested in 5% Formaldehyde, 5% Formic Acid, 5% Sulfuric Acid, 5% Hydrochloric Acid, 5% Sodium Hydroxide, 5% Hydrogen Sulfide and 5% Potassium Hydroxide.
- Requirements of ASTM C-990 Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

## LIMITED WARRANTY

This information is presented in good faith, but we cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, may be used. We accept no responsibility for results obtained by the application of this information or the safety and suitability of our products, either alone or in combination with other products. Users are advised to make their own tests to determine the safety and suitability of each such product or product combinations for their own purposes. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for this own particular use. We sell this product without warranty, and buyers and users assume all responsibility and liability for loss or damage arising from the handling and use of this product, whether used alone or in combination with other products.

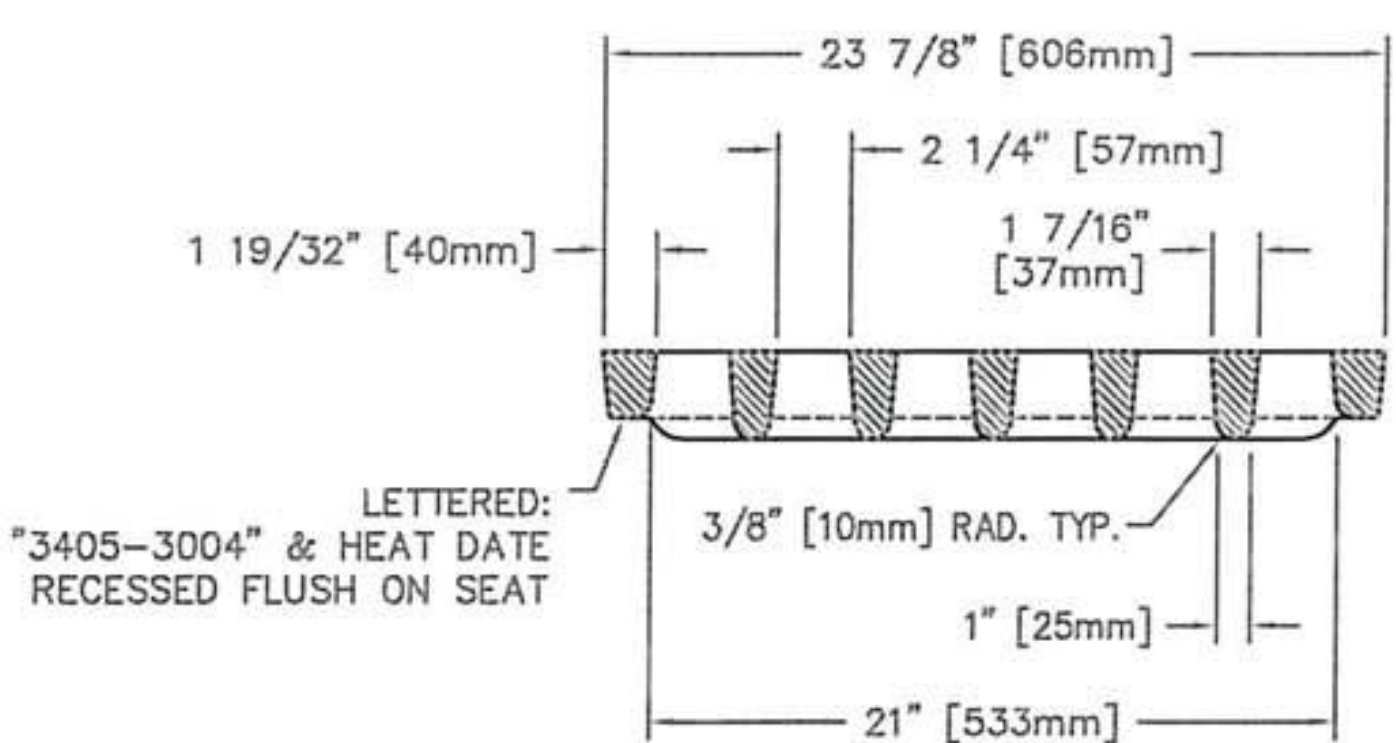
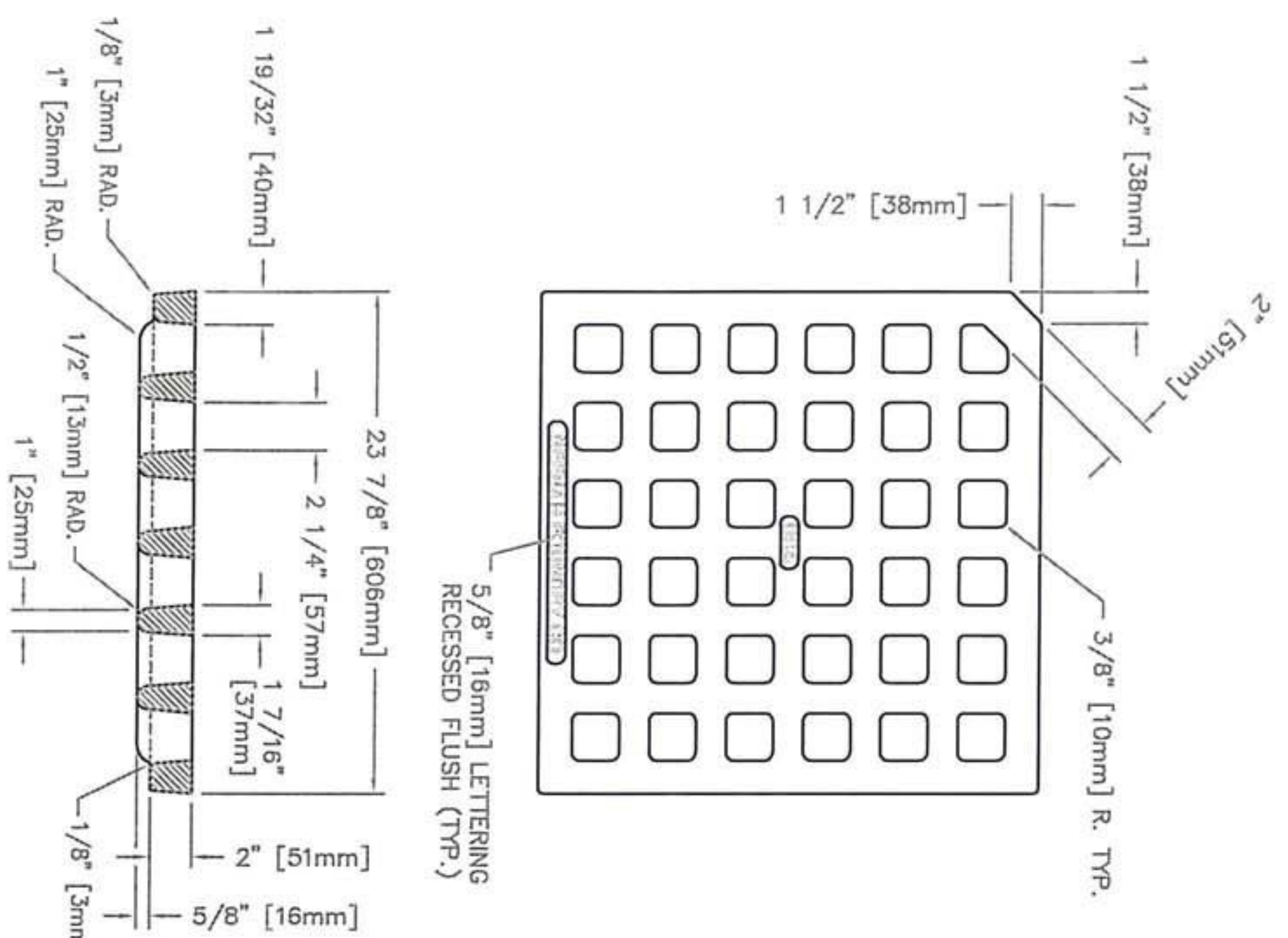




NOTE: ALL DIMENSIONS ARE SHOWN IN ENGLISH AND [METRIC].  
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B  
FINISH: NOT PAINTED  
WEIGHT: 262#

DR.	LMA	SCALE	TITLE
CH.		1/8"=1"	R-3589
APP.		DM CHK.	NEENAH FOUNDRY COMPANY
DATE 06-20-2007			NEENAH FOUNDRY COMPANY





Doesn't match  
information above.

NOTE: ALL DIMENSIONS SHOWN ARE IN ENGLISH AND [METRIC]  
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B  
FREE OPEN AREA: 1.2 SQ. FT.  
FINISH: NO PAINT  
WEIGHT: APPROX. 201 #

		SCALE	TITLE
DWG.	E. REMME	1/8" = 1"	R-3405-A
CAL.			TYPE "A" GRATE
APP.			
DATE	11-29-99	DWG CHK.	
A	11-15-00	ADDED LETTERING	NEENAH FOUNDRY COMPANY KENOSHA WISCONSIN 53146
B		REVISION	 NF - 34053004 B
C		REVISION	
D		REVISION	
E		REVISION	



# SUBMITTAL



Submittal number	15.0	Date	06/02/2017
Project	Middlebury EWP3 Temp Brdg	10 Main Street Middlebury, VT 05753	
Project number	2017012		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	Timothy Pockette, PE
Topic	Temp Bridge Precast Abutment Shop Drawings		

Submitter	JOHN W. WHITTAKER III
Reviewer	Timothy Pockette, PE
Cc	Joel Perrigo

Date submitted	06/02/2017	Submission due date	06/06/2017
Released for review		Review due date	
Date returned		Required on site date	
Date closed			

Notes
Temp bridge abutments shop drawings.

The fabrication drawings have been reviewed for Main Street only. Merchants Row is required to be resubmitted.

Vermont Agency of Transportation  
**Accepted**

By Joel Perrigo at 9:42 am, Jun 09, 2017

## SHOP DRAWING REVIEW

- ☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATION AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.
- ☐ REJECTED      ☐ REVISE AND RESUBMIT      ☒ APPROVED AS NOTED (Main Street only)

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.



Engineers | Scientists | Planners | Designers  
40 IDX Drive  
Building 100, Suite 200  
South Burlington, VT 05403  
Phone 802-497-6100

Job Number: EWP3(1)  
Reviewed By: VHB  
Date: 06/09/2017



JOSEPH P. CARRARA & SONS, INC.

LETTER OF TRANSMITTAL

2464 CASE STREET  
MIDDLEBURY, VERMONT 05753

TEL (802) 388-6363  
FAX (802) 388-9010

TO: Kubricky Construction Corporation  
269 Ballard Road  
Wilton, NY 12831

DATE :	May 24, 2017	JOB NO. :	23516-017
ATTENTION :	John Whittaker		
RE :	Main Street & Merchants Row Bridges		
	Middlebury, VT		
	Kubricky Letter of Intent 5/15/17		
	P 518-792-5864	F 518-792-2458	

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans  Samples  Specifications

☐ Copy of Letter ☐ Change Order ☐ Other: _____

COPIES	DATE	NO.	DESCRIPTION
1			Lifting Loop Calcs.
1			Shop Drawings

THESE ARE TRANSMITTED as checked below :

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 20 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS:

John,

Whatever you can do to expedite review would be appreciated.

COPY TO :

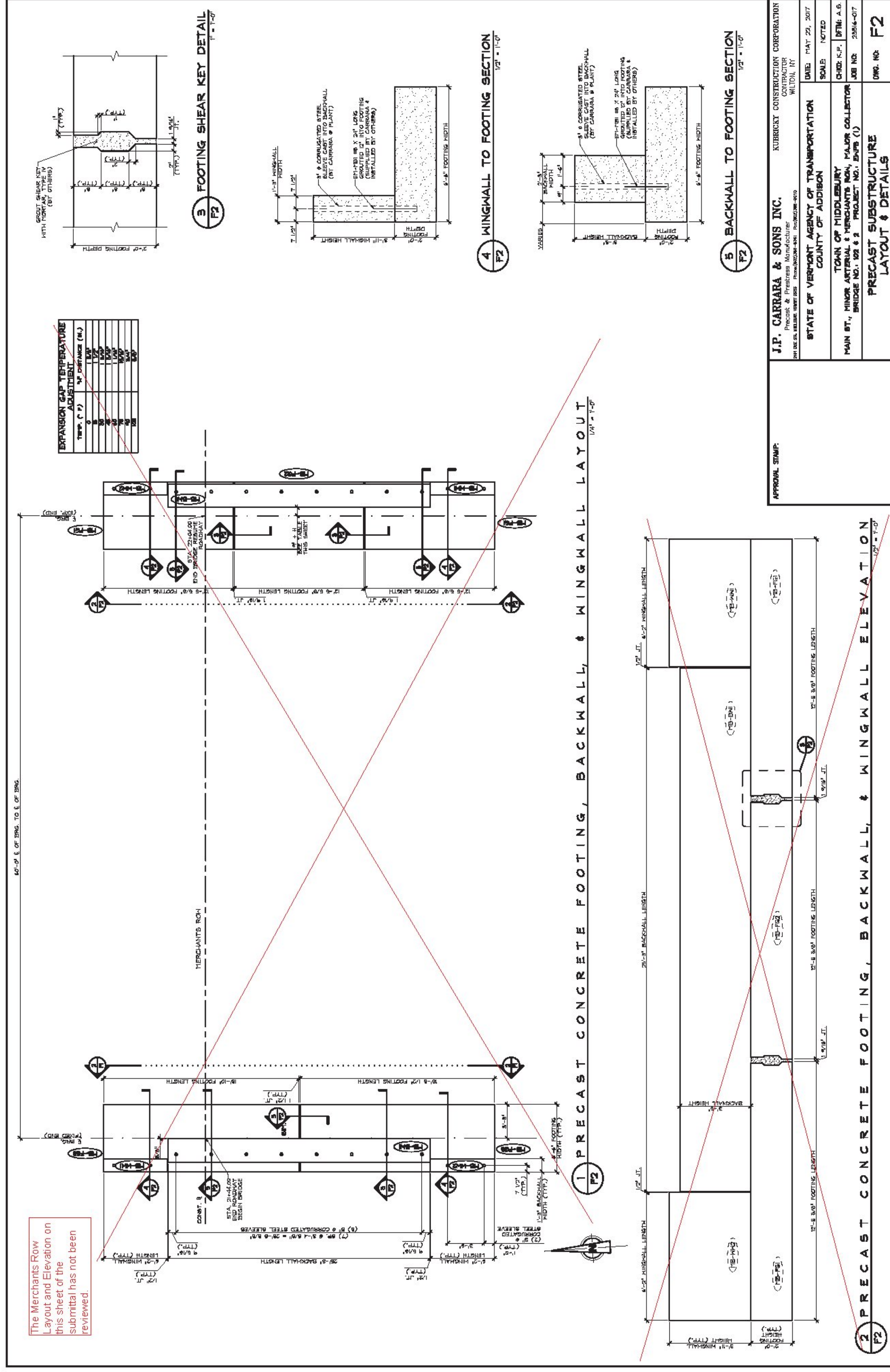
SIGNED : Michael A. Davis

If enclosures are not as noted, please notify us at once.











This sheet of the submittal has not been reviewed.

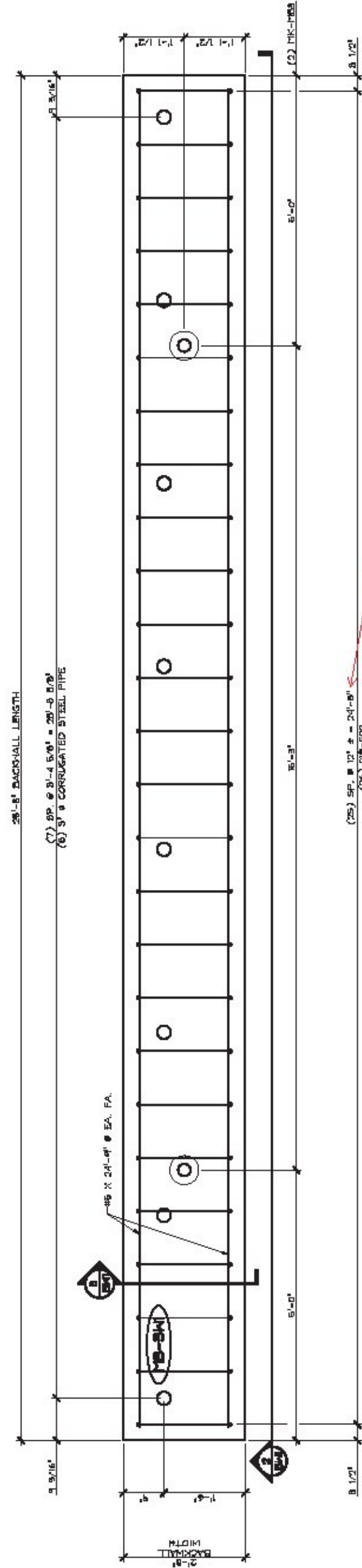






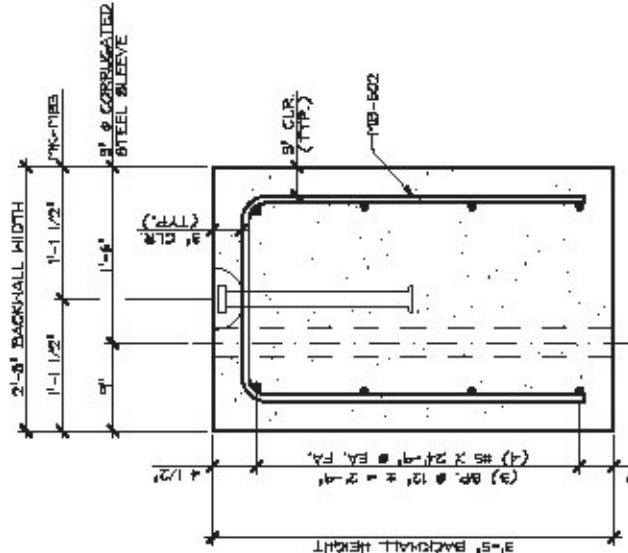




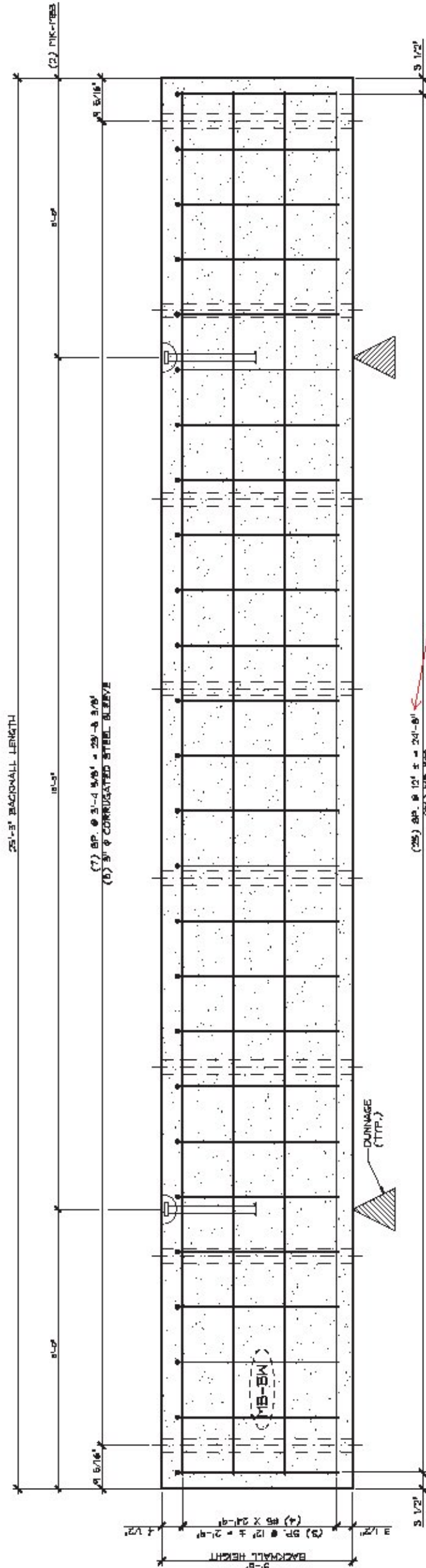


1 PLAN VIEW IN FORM  
SCALE: 1/4" = 1'-0"

SPACE AS NECESSARY  
TO AVOID 3" DIA  
CORRUGATED STEEL  
PIPE.



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



2 BACKWALL ELEVATION  
SCALE: 1/4" = 1'-0"

SPACE AS NECESSARY  
TO AVOID 3" DIA  
CORRUGATED STEEL  
PIPE.

REINFORCING BARS (REBAR) SHALL BE 1/2" DIA. 60,000 PSI YIELD STRENGTH. ALL BARS SHALL BE WELDED TOGETHER AT JOINTS. ALL BARS SHALL BE WELDED TO THE FORMWORK AT JOINTS. ALL BARS SHALL BE WELDED TO THE FORMWORK AT JOINTS.

ITEM	QTY	UNIT	PRICE	TOTAL
1	1	LINEAL FOOT	1.00	1.00
2	1	LINEAL FOOT	1.00	1.00
3	1	LINEAL FOOT	1.00	1.00
4	1	LINEAL FOOT	1.00	1.00
5	1	LINEAL FOOT	1.00	1.00
6	1	LINEAL FOOT	1.00	1.00
7	1	LINEAL FOOT	1.00	1.00
8	1	LINEAL FOOT	1.00	1.00
9	1	LINEAL FOOT	1.00	1.00
10	1	LINEAL FOOT	1.00	1.00

APPROVAL STAMP

J.P. CARRARA & SONS INC.  
Precast & Prestress Manufacturing  
1000 S. 10TH AVE. SUITE 100  
MILWAUKEE, WI 53211

STATE OF VERMONT  
COUNTY OF ADDISON

TOWN OF MIDDLEBURY  
BRIDGE NO. 102 & 2  
PROJECT NO. 102-102

DATE: MAY 22, 2017  
SCALE: 1/4" = 1'-0"  
JOB NO. 102-102

PRECAST BACKWALL DETAILS  
DWG. NO. BWI





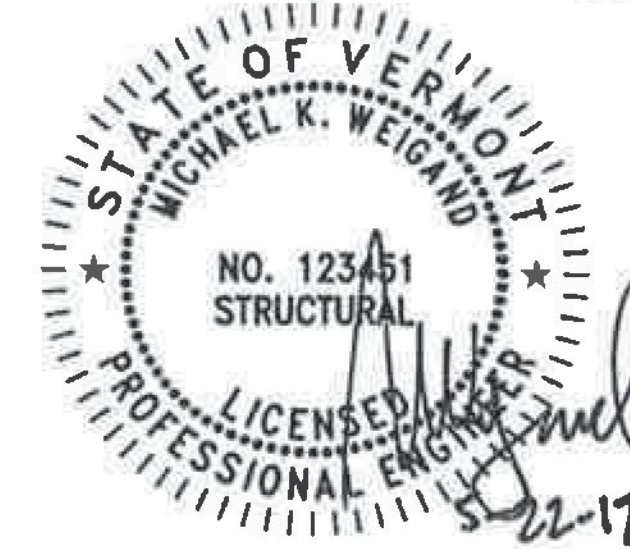


v2

MAIN ST. BRIDGE 102 &amp; MEMPHIS RIVER BRIDGE 2

TEMPORARY BRIDGES

PROJECT EWP3 (1)

MIDDLEBURY, VTPRECAST CONCRETE LIFT DESIGN CALCULATIONS* PRECAST FOOTINGS

$$f'_{ci} = 3500 \text{ psi} \quad f'_c = 5000 \text{ psi}$$

$$\text{Weight}_{\text{lift}} = 18.30 \text{ T}$$

THERE ARE (4) LIFT LOCATIONS & BASED ON 60° MINIMUM SLING  
ANGLE WITH HORIZONTAL

$$\text{DESIGN / LIFT LOCATION} = \frac{18.30 \text{ T} \times 2}{(4)(0.866)} = 10.6 \text{ K}$$

FROM ATTACHED PRODUCT LITERATURE USE 8-TON X 10' LONG

SWIFT LIFT ANCHORS, SWL (4:1 S.F.) = 16,000 LB., etc.



▷ PRECAST BACKWALLS

$$f'_{ci} = 3500 \text{ PSI} \quad f'_c = 5000 \text{ PSI}$$

$$W_{\text{MAX}} = 14.56 \text{ T}$$

TWO (2) LIFT LOCATIONS & BASED ON A 60° MINIMUM SUNG  
ANGLE WITH THE HORIZONTAL,

$$\text{DESIGN LOAD / LIFT LOCATION} = \frac{14.56 \text{ T} \times 2}{(2)(0.866)} = 16.8 \text{ KIPS}$$

FROM ATTACHED PRODUCT INFORMATION, USE 20 TAN  $\times$  19  $\frac{3}{4}$ " SWIFT

$$\text{LIFT ANCHORS, SWL (4:1 S.F.)} = 40,000 \text{ LB}, \text{ O.K.}$$

ALSO CHECK ANCHORS USING PCI FIGURE 6.15.7A, CASE 3 (ANCHORED)  
FOR FREE EDGES ON (2) OPPOSITE SIDES:

$$\begin{aligned} \phi P_c &= \phi 2.67 \times \sqrt{f'_c} (x_1)(y_1 + 2d_e) \\ &= (0.85)(2.67)(1.0)(3500)^{0.5} (27)(0 + 2(20 \frac{5}{16})) / 1000 \\ &= 147.3 \text{ K} \end{aligned}$$

$$\text{WHERE } \phi = 0.85$$

$$\lambda = 1.0$$

$$f'_c = 3500 \text{ PSI}$$

$$x_1 = 27"$$

$$y_1 = 0$$

$$d_e = 19 \frac{3}{4} + \frac{9}{16} = 20 \frac{3}{16}"$$

$$\text{FOR SWL (4:1 S.F.)} = \frac{147.3}{4} = 36.8 \text{ K} > 16.8 \text{ K}$$

O.K. ✓



PRECAST WINGWALLS

$$f'_{ci} = 3500 \text{ PSI} \quad f'_c = 5000 \text{ PSI}$$

$$W_{T_{\max}} = 2.26 \text{ T}$$

• FOR STRIPPING/HANDLING

THERE ARE (4) LIFT LOCATIONS AND BASED ON  $60^\circ$  MINIMUM SLING  
ANGLE WITH THE HORIZONTAL

$$\text{DESIGN LOAD/LIFT LOCATION} = \frac{2.26 \text{ T} \times 2}{(4)(0.866)} = 1.3 \text{ K}$$

FROM ATTACHED PRODUCT LITERATURE, USE (4) 2-TON  $\times 6\frac{3}{4}"$

$$\text{SWIFT LIFT ANCHORS, SWL (4:1 S.F.)} = 4,000 \text{ LBS.} \quad \checkmark \text{ O.K.}$$

• FOR ROLLUP & ERECTION

ROLLUP PANELS ABOUT BOTTOM EDGE OF PANEL. PLACE (2) LIFT  
ANCHORS IN TOP EDGE OF PANEL.

• CHECK TOP ANCHORS FOR SHEAR:

$$\text{SHEAR LOAD/LIFT ANCHOR} = \frac{2.26 \text{ T} \times 2}{(2)(2)} = 1.13 \text{ K}$$

FROM ATTACHED PRODUCT LITERATURE FOR DAYTON SUPERIOR,

USE (2) 2-TON  $\times 6\frac{3}{4}"$  SWIFT LIFT ANCHORS w/ SHEAR BARS

$$\text{SWL (4:1 S.F.)} = 2.8 \text{ K} > 1.13 \text{ K, O.K.}$$

CONSERVATIVE AS THIS IS BASED ON 8" WALL THICKNESS VS. 1'-3"

• CHECK TOP LIFT ANCHORS IN TENSION:

THERE ARE (2) LIFT ANCHORS IN TOP EDGE

$$\text{LOAD/LIFT ANCHOR} = \frac{2.26 \text{ T} \times 2}{2} = 2.3 \text{ K}$$

FROM ATTACHED PRODUCT LITERATURE FOR DAYTON,

USE (2) 2-TON  $\times 6\frac{3}{4}"$  SWIFT LIFT ANCHORS

$$\text{SWL (4:1 S.F.)} = 4,000 \text{ LBS} > 2.3 \text{ K}$$



ALSO CHECK TOP LIFT ANCHORS IN TENSION USING

PCI FIGURE 6.15.7A, CASE 3 (ATTACHED)

$$\begin{aligned}\phi P_c &= \phi 2.67 \lambda \sqrt{f'_c} (k_1) (b_s + 2l_e) \\ &= (0.85)(2.67)(1.0)(3500)^{0.5}(15") (0 + 2(6\frac{3}{4} + \frac{7}{16})) \\ &= 29.0k\end{aligned}$$

$$F_{en\ SWL(4:1\ S.F.)} = \frac{29.0k}{4} = 7.2k$$

HOWEVER, LIFT ANCHORS

CAPACITY IS LIMITED

TO 4.0k > 2.3k



# Swift Lift® System



## P-52 Swift Lift® Anchor Tensile and Shear Capacity

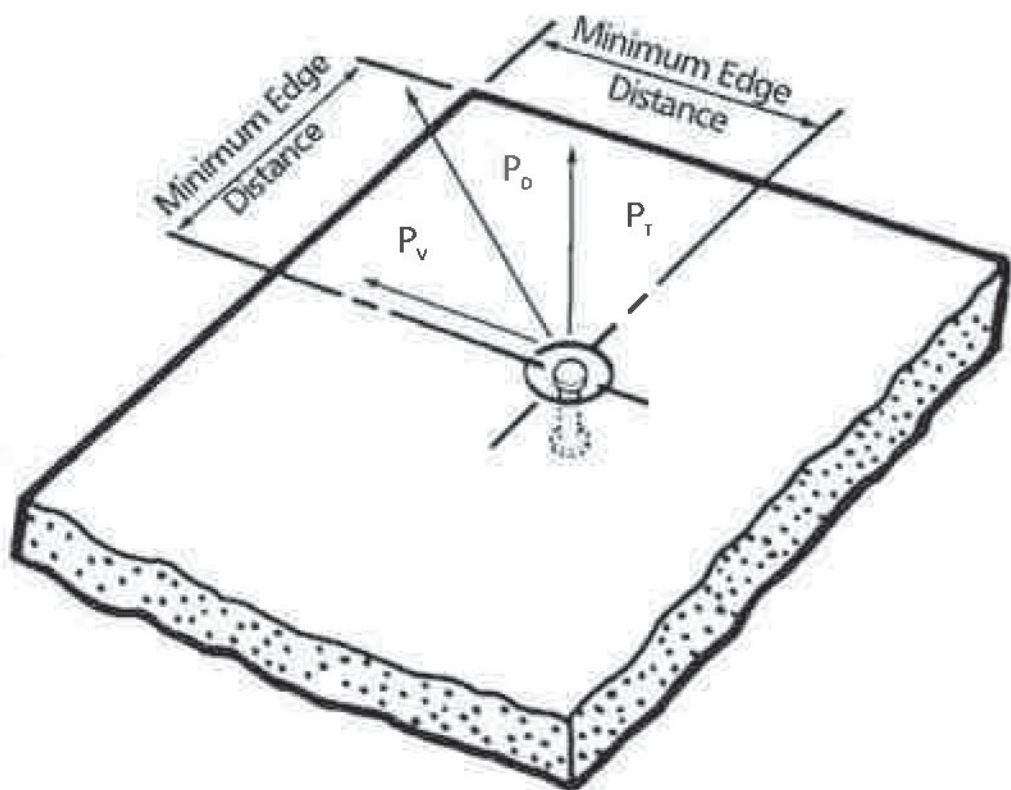
When anchors are used in the face of thin concrete elements

The following table lists the P-52 Swift Lift Anchors that are currently manufactured. Other sizes and lengths are available on special order. However, the sizes and lengths of anchors shown will handle the majority of flat precast concrete elements.

When the P-52 Swift Lift Anchor is properly embedded in normal weight concrete, the tabulated working loads are applicable for any direction of load. This applies even if the direction of load is parallel to the axis of the anchor, perpendicular to it or at any other angle.

Minimum distance between anchors is twice the minimum edge distance.

It is critical to remember that in order to obtain the safe working loads listed in the table below, the normal weight concrete must have obtained the minimum concrete strength shown, prior to initial load application.

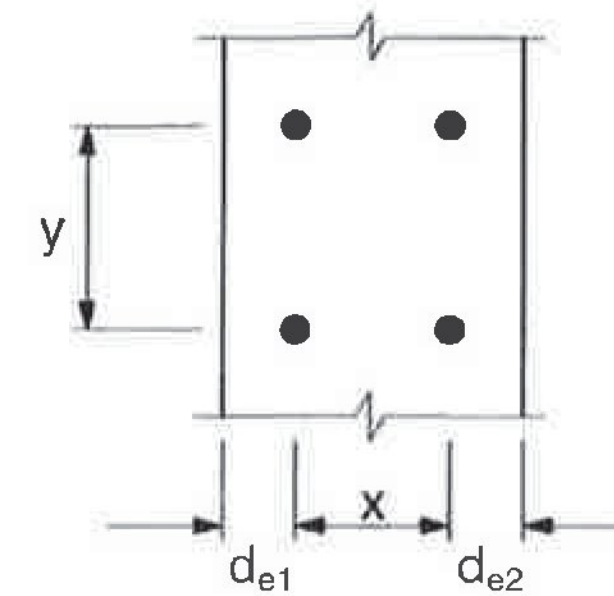


Swift Lift Anchor Ton x Length	Safe Working Load	Minimum Concrete Strength	Minimum Edge Distance
1 ton x 2-5/8"	1,700 lbs.	3,500 psi	8"
1 ton x 3-3/8"	2,000 lbs.	2,200 psi	10"
1 ton x 4-3/8"	2,000 lbs.	1,600 psi	10"
1 ton x 8"	2,000 lbs.	1,600 psi	10"
1 ton x 9-1/2"	2,000 lbs.	1,600 psi	10"
2 ton x 2-3/4"	2,100 lbs.	3,500 psi	8"
2 ton x 3-3/8"	2,900 lbs.	3,500 psi	10"
2 ton x 5-1/2"	4,000 lbs.	1,600 psi	13"
2 ton x 6"	4,000 lbs.	1,600 psi	13"
2 ton x 6-3/4"	4,000 lbs.	1,600 psi	13"
2 ton x 11"	4,000 lbs.	1,600 psi	14"
4 ton x 3-3/4"	4,000 lbs.	3,500 psi	12"
4 ton x 4-1/4"	4,900 lbs.	3,500 psi	13"
4 ton x 4-3/4"	5,800 lbs.	3,500 psi	14"
4 ton x 5-1/2"	7,400 lbs.	3,500 psi	17"
4 ton x 5-3/4"	7,900 lbs.	3,500 psi	17"
4 ton x 7-1/8"	8,000 lbs.	1,800 psi	20"
4 ton x 9-1/2"	8,000 lbs.	1,600 psi	17"
4 ton x 14"	8,000 lbs.	1,600 psi	18"
4 ton x 19"	8,000 lbs.	1,600 psi	20"
8 ton x 4-3/4"	6,400 lbs.	3,500 psi	16"
8 ton x 6-3/4"	11,200 lbs.	3,500 psi	21"
8 ton x 10"	16,000 lbs.	3,500 psi	19"
8 ton x 13-3/8"	16,000 lbs.	1,600 psi	23"
8 ton x 26-3/4"	16,000 lbs.	1,600 psi	27"
20 ton x 10"	25,000 lbs.	3,500 psi	24"
20 ton x 19-3/4"	40,000 lbs.	3,500 psi	31"

Safe Working Loads provide a factor of safety of approximately 4 to1 in normal weight concrete. Safe Working Load is based on anchor setback from face of concrete "X" dimension, as shown on page 26.



Figure 6.15.7A (continued) Design tensile strength for  $h \geq h_{min}$ ,  $\phi P_{c1}$ —Case 3



x and y are the overall dimensions (width and length) of the stud group.

**Case 3: Free edges on two opposite sides**

$$\phi P_{c1} = \phi 2.67 \lambda \sqrt{f'_c} (x_1)(y_1 + 2\ell_e)$$

$$\phi = 0.85$$

where:  $x_1$  and  $y_1$  are the dimensions of the flat bottom of the part of the truncated pyramid.

For Case 3:  $x_1 = x + d_{e1} + d_{e2}$   $y_1 = y$

Note: Table values are based on

$\lambda = 1.0$  and  $f'_c = 5000$  psi;

for different material properties, multiply table

values by  $\lambda \sqrt{f'_c / 5000}$

$\ell_e$ in.	$y_1$ , in.	$x_1$ , in.	Design tensile strength, $\phi P_{c1}$ (kips)														
			2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
3	0	2	4	6	8	9	11	13	15	17	19	21	23	25	27	29	
	2	3	5	8	10	13	15	18	21	23	25	28	31	33	36	39	
	4	3	7	9	13	16	19	23	25	29	32	35	39	42	45	48	
	6	4	8	11	15	19	23	27	31	35	39	42	46	50	54	58	
	8	5	9	13	18	23	27	31	36	41	45	49	54	59	63	67	
	10	5	10	15	21	25	31	36	41	46	51	57	61	67	72	77	
	12	6	11	17	23	29	35	41	46	52	58	63	69	75	81	87	
	14	7	13	19	25	32	39	45	51	58	64	71	77	83	90	96	
16	7	14	21	28	35	42	49	57	63	71	77	85	92	99	106		
4	0	3	5	8	10	13	15	18	21	23	25	28	31	33	36	39	
	2	3	7	9	13	16	19	23	25	29	32	35	39	42	45	48	
	4	4	8	11	15	19	23	27	31	35	39	42	46	50	54	58	
	6	5	9	13	18	23	27	31	36	41	45	49	54	59	63	67	
	8	5	10	15	21	25	31	36	41	46	51	57	61	67	72	77	
	10	6	11	17	23	29	35	41	46	52	58	63	69	75	81	87	
	12	7	13	19	25	32	39	45	51	58	64	71	77	83	90	96	
	14	7	14	21	28	35	42	49	57	63	71	77	85	92	99	106	
16	8	15	23	31	39	46	54	61	69	77	85	92	100	108	115		
6	0	4	8	11	15	19	23	27	31	35	39	42	46	50	54	58	
	2	5	9	13	18	23	27	31	36	41	45	49	54	59	63	67	
	4	5	10	15	21	25	31	36	41	46	51	57	61	67	72	77	
	6	6	11	17	23	29	35	41	46	52	58	63	69	75	81	87	
	8	7	13	19	25	32	39	45	51	58	64	71	77	83	90	96	
	10	7	14	21	28	35	42	49	57	63	71	77	85	92	99	106	
	12	8	15	23	31	39	46	54	61	69	77	85	92	100	108	115	
	14	9	17	25	33	42	50	59	67	75	83	92	100	109	117	125	
16	9	18	27	36	45	54	63	72	81	90	99	108	117	125	135		
8	0	5	10	15	21	25	31	36	41	46	51	57	61	67	72	77	
	2	6	11	17	23	29	35	41	46	52	58	63	69	75	81	87	
	4	7	13	19	25	32	39	45	51	58	64	71	77	83	90	96	
	6	7	14	21	28	35	42	49	57	63	71	77	85	92	99	106	
	8	8	15	23	31	39	46	54	61	69	77	85	92	100	108	115	
	10	9	17	25	33	42	50	59	67	75	83	92	100	109	117	125	
	12	9	18	27	36	45	54	63	72	81	90	99	108	117	125	135	
	14	9	19	29	39	48	58	67	77	87	96	106	115	125	135	144	
16	10	21	31	41	51	61	72	82	92	103	113	123	133	143	154		



**P59 Swift Lift® Shear Bar**  
**P59 Swift Lift® Smooth Wire Shear Bar**

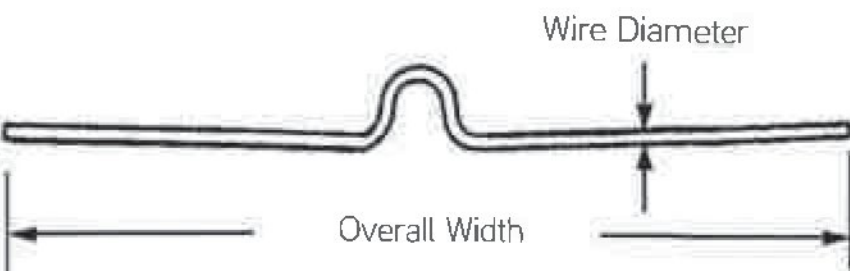
Dayton Superior Swift Lift Shear Bars (P59) are utilized when edge lifting precast elements. The shear bar is secured tightly to the recess plug and at the time of lift helps to transfer the shear load deeper into the concrete. The P59 Smooth Wire Shear Bar is designed to snap into the built-in clips on the P54 recess plug. The standard shear bar is fabricated from rebar and must be securely wired tightly to the Swift Lift recess plugs.

**To Order:**  
Specify: (1) quantity, (2) name, (3) system size.

**Example:**  
200, P59 Swift Lift Shear Bars, 4-Ton.



**P59 Swift Lift Shear Bar**  
**1-Ton and 8-Ton**



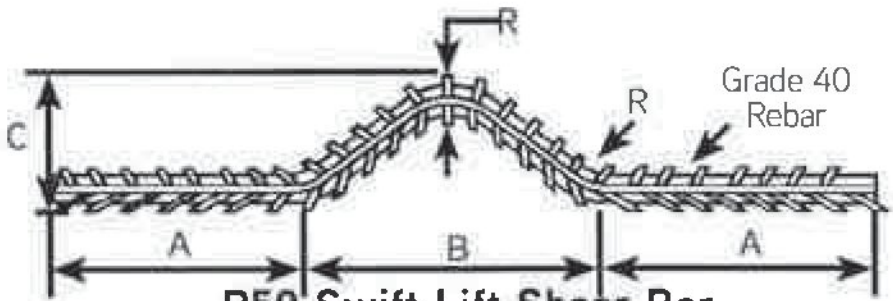
**P59 Swift Lift Smooth Wire Shear Bar**  
**2-Ton and 4-Ton**

Anchor Safe Working Load	Shear Bar Type	Overall Width	Minimum Anchor Length	Wall Thickness	Minimum Corner Distance	Safe Working Load
1	Rebar	19"	4-3/4"	5"	15"	1,750 lbs.
1	Rebar	19"	4-3/4"	5-1/2"	16"	2,000 lbs.
1	Wire	19"	4-3/4"	6"	17"	2,000 lbs.
2	Wire	24"	6-3/4"	5"	15"	1,750 lbs.
2	Wire	24"	6-3/4"	5-1/2"	16"	2,200 lbs.
2	Wire	24"	6-3/4"	6"	17"	2,600 lbs.
2	Wire	24"	6-3/4"	7"	19"	2,700 lbs.
2	Wire	24"	6-3/4"	8"	21"	2,800 lbs.
4	Wire	30"	9-1/2"	5-1/2"	16"	2,100 lbs.
4	Wire	30"	9-1/2"	6"	17"	2,200 lbs.
4	Wire	30"	9-1/2"	7"	19"	2,600 lbs.
4	Wire	30"	9-1/2"	8"	21"	2,800 lbs.
8	Rebar	34"	13-3/8"	8"	19"	5,600 lbs.
8	Rebar	34"	13-3/8"	9"	21"	6,700 lbs.

Safe Working Load provides a factor of safety of approximately 4 to 1 in 4,500 psi normal weight concrete.

**P59 Shear Bar Dimensions**

Anchor Rated Load (Tons)	A	B	C	R	Rebar Size
1	7" 178 mm	5" 127 mm	2 1/2" 64 mm	1" 25 mm	#4 #10M
2	9" 229 mm	7" 178 mm	3" 76 mm	1 1/8" 37 mm	#4 #10M
4	10" 254 mm	9" 229 mm	3 3/4" 95 mm	1 3/4" 44 mm	#4 #10M
8	12" 305 mm	10" 254 mm	3 3/4" 95 mm	2 1/4" 57 mm	#6 #20M



**P59 Swift Lift Shear Bar**  
**1-Ton and 8-Ton**



SUBMITTAL



Submittal number	23.0	Date	07/11/2017
Project	Middlebury EWP3 Temp Brdg	10 Main Street Middlebury, VT 05753	
Project number	2017012		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	Timothy Pockette, PE
Topic	Pedestrian Bridge Shop Drawings		

Submitter	JOHN W. WHITTAKER III
Reviewer	Timothy Pockette, PE
Cc	Joel Perrigo

Date submitted	07/11/2017	Submission due date	
Released for review		Review due date	07/12/2017
Date returned		Required on site date	
Date closed			

Notes
Please review and approve to expedite fabrication.

SHOP DRAWING REVIEW

☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR THE CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☒ FURNISH AS CORRECTED

☐ REVISE AND RESUBMIT

☐ REJECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

40 IDX Drive  
Building 100, Suite 200  
South Burlington, VT 05403  
802.497.6100 | www.vhb.com

PROJECT NUMBER: EWP3(1)

REVIEWED BY: VHB

DATE: July 18, 2017

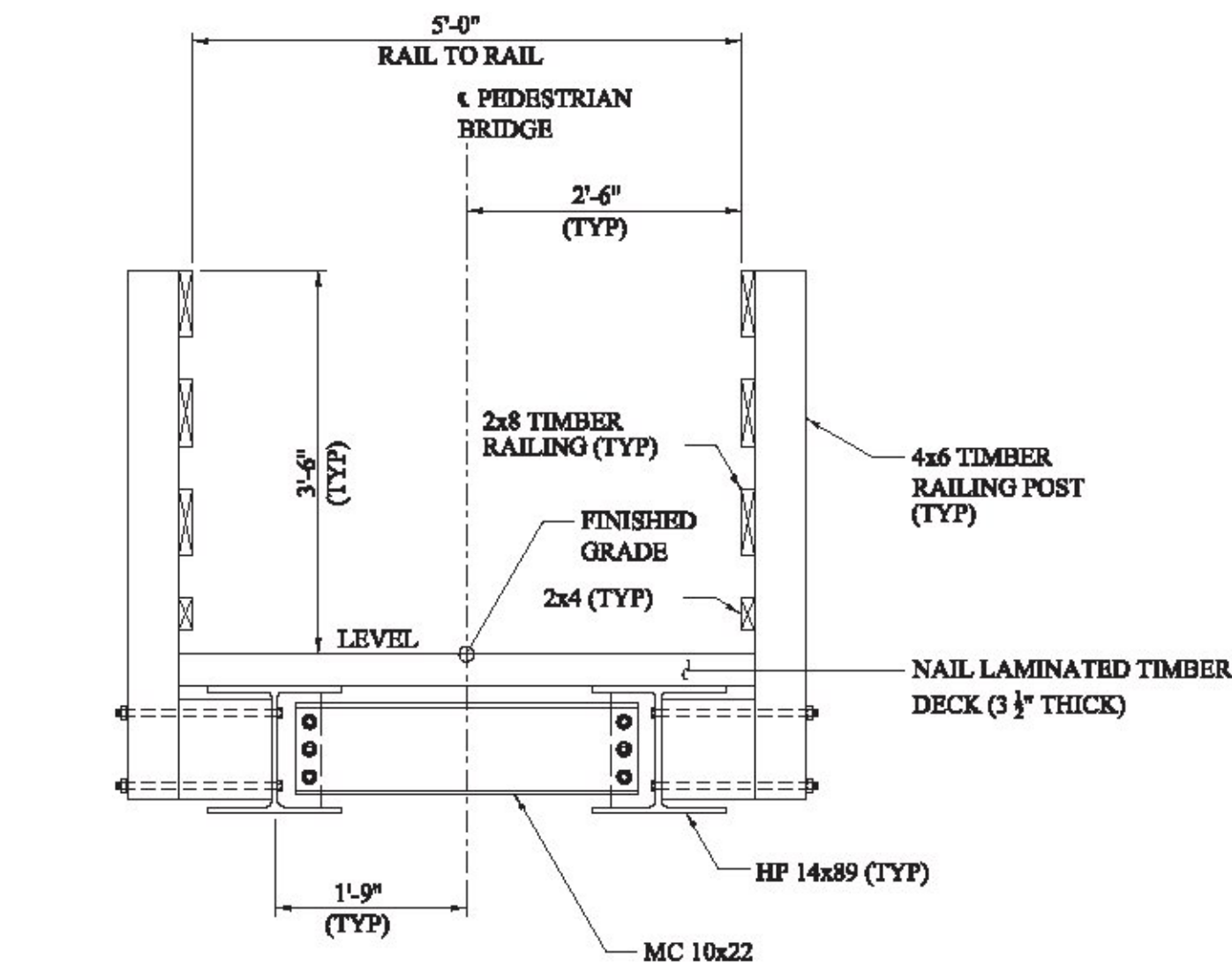
Vermont Agency of Transportation

Accepted as Noted

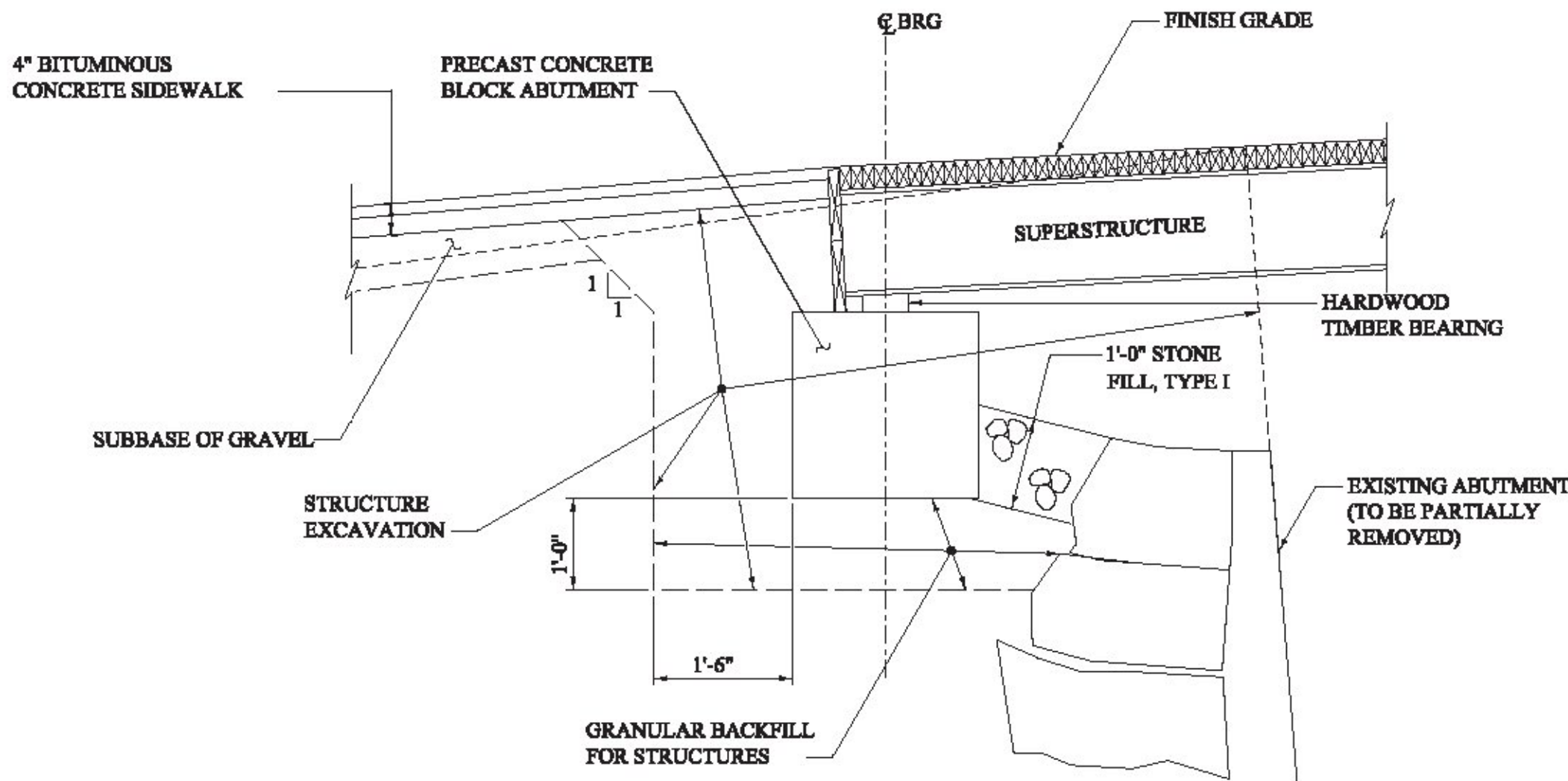
By Joel Perrigo at 4:03 pm, Jul 18, 2017



7/11/2017 9:07:54 AM



TYPICAL TEMPORARY PEDESTRIAN BRIDGE SECTION  
SCALE 1/2"=1'-0"



TEMPORARY PEDESTRIAN BRIDGE  
ABUTMENT EARTHWORKS TYPICAL SECTION  
SCALE 1/2"=1'-0"

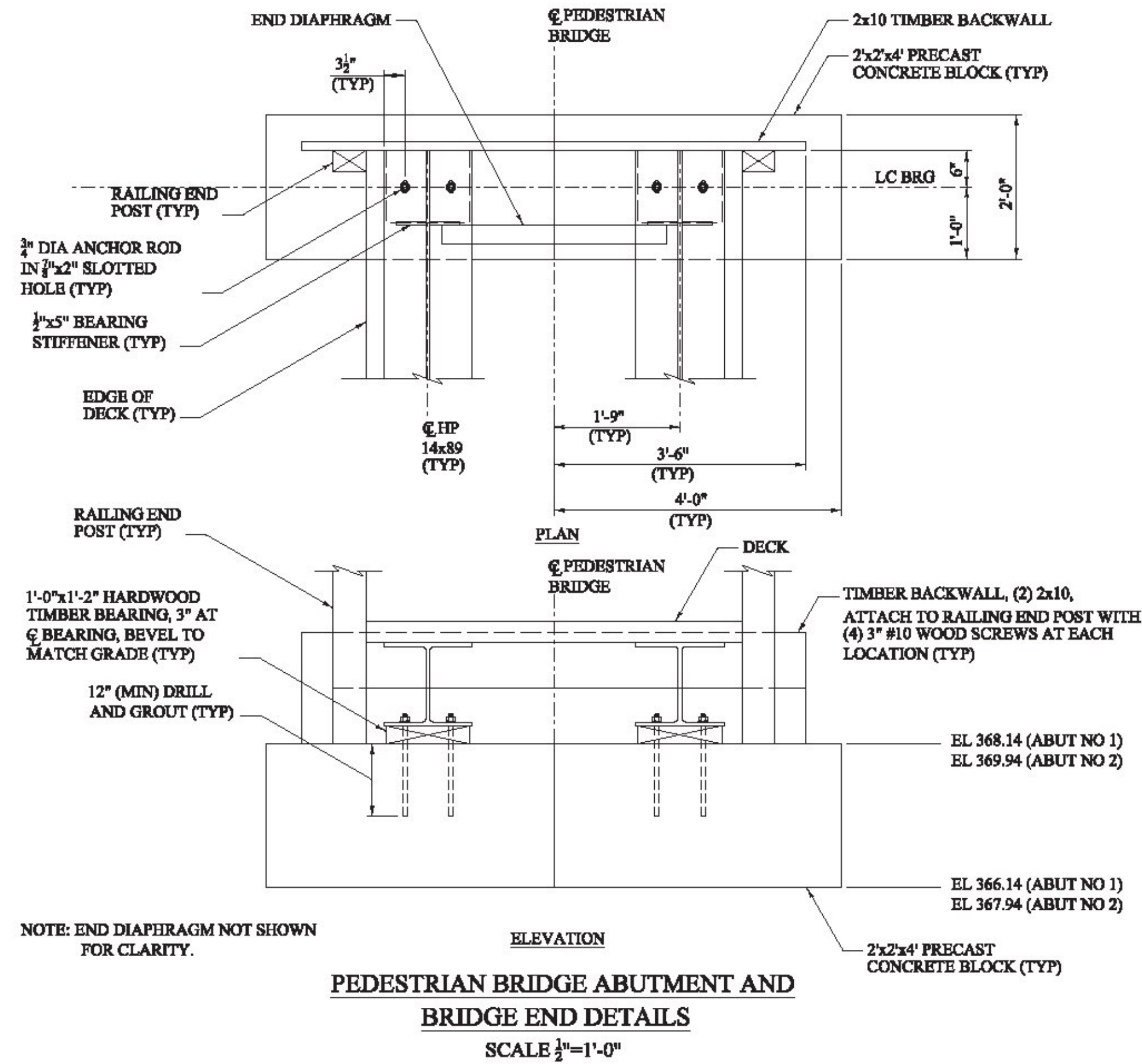


KUBRICKY CONSTRUCTION CORP.

REVISIONS			KUBRICKY CONSTRUCTION			
NO.	DATE	BY	CONTRACT No. EWP8(1)			
1			MIDDLEBURY			
2			PEDESTRIAN BRIDGE SHOP DRAWINGS			
3			DESIGNED	PAW	CHECKED	DATE
4			JWW	JWW	11/11/17	11/11/17
5			DRAWING NO. PB-01			



7/11/2017 9:07:55 AM



NOTES:

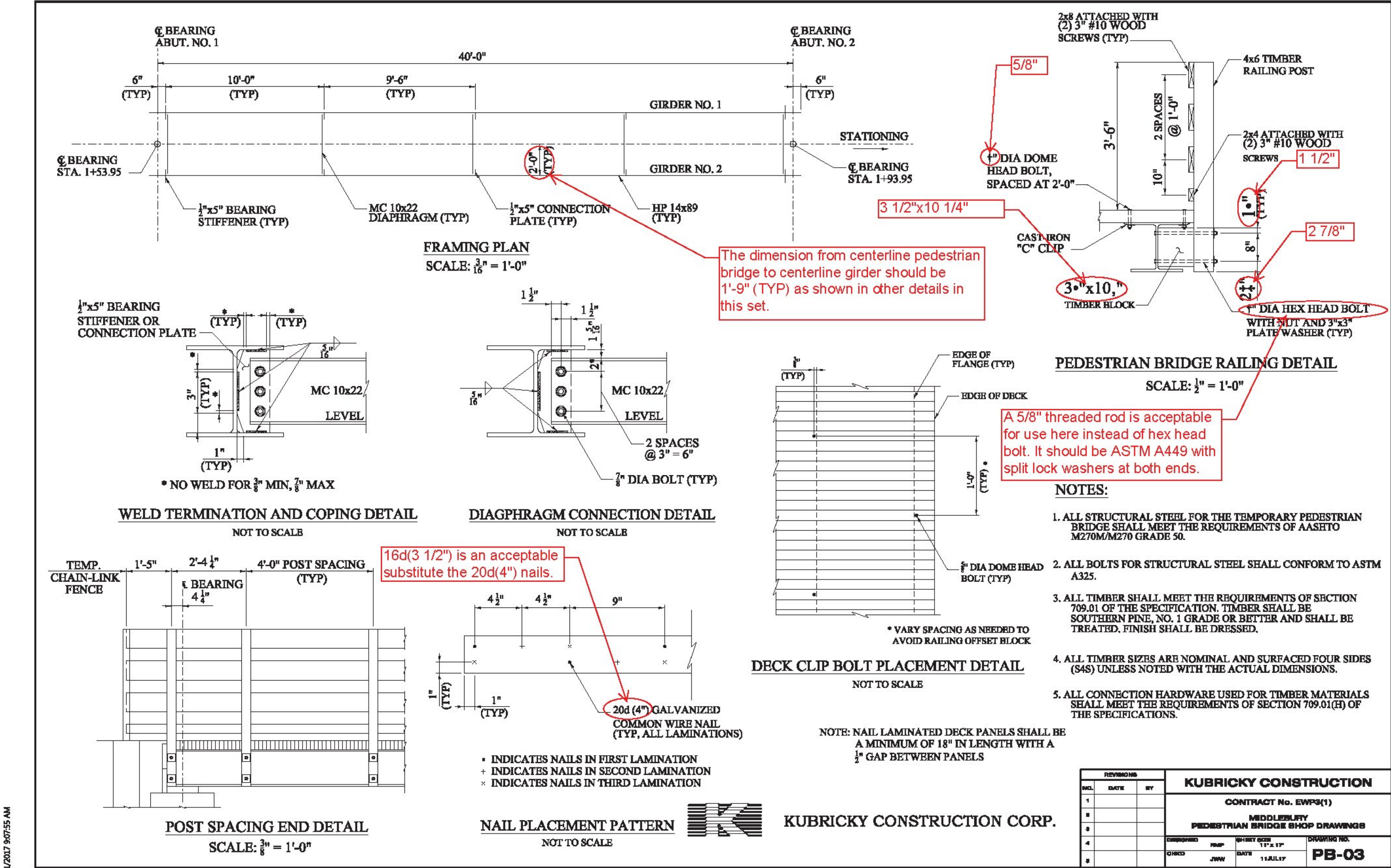
1. PRECAST CONCRETE BLOCKS SHALL BE OF THE DIMENSIONS SHOWN WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSL
2. ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 36.
3. HOLES FOR ANCHOR RODS SHALL BE DRILLED TO A MINIMUM OF 1" LARGER DIAMETER THAN THE ROD AND SET WITH MORTAR, TYPE IV.



KUBRICKY CONSTRUCTION CORP.

REVISIONS			KUBRICKY CONSTRUCTION			
NO.	DATE	BY	CONTRACT No. EWP8(1)			
1			MIDDLEBURY			
2			PEDESTRIAN BRIDGE SHOP DRAWINGS			
3			DESIGNED	PAID	DRAWN	CHECKED
4			DATE	DATE	DATE	DATE
5						







SUBMITTAL



Submittal number	19.1	Date	06/26/2017
Project	Middlebury EWP3 Temp Brdg	10 Main Street Middlebury, VT 05753	
Project number	2017012		
Spec section			
Subsection		Status	Open
Current action	Submitted	Ball in court	Timothy Pockette, PE
Topic	Merchants Row Abutment Precast		

Submitter	JOHN W. WHITTAKER III
Reviewer	Timothy Pockette, PE
Cc	Joel Perrigo

Date submitted	06/26/2017	Submission due date	
Released for review		Review due date	06/27/2017
Date returned		Required on site date	
Date closed			

Notes
Revised plans based on previous comments.

SHOP DRAWING REVIEW

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATION AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED

☐ REVISE AND RESUBMIT

☐ APPROVED AS NOTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.



Engineers | Scientists | Planners | Designers  
40 IDX Drive  
Building 100, Suite 200  
South Burlington, VT 05403  
Phone 802-497-6100

Job Number: EWP3(1)

Reviewed By: VHB

Date: 06/26/2017

Approved

BY: Joel Perrigo

DATE: 06/27/2017

RESUBMIT: No

RECEIVED: June 27, 2017

CKD BY:

STATE OF VERMONT  
AGENCY OF TRANSPORTATION

19.1 - Merchants Row Abutment Precast (VHB Review)



J.P. Carrara & Sons, Inc.

2464 CASE STREET, MIDDLEBURY, VT 05753  
T (802) 388-6363F (802) 388-9010

Submittal Notes

To:Kubricky Construction Corporation

From:Mike Davis

Fax:

Pages:

Phone:518-410-3858

Date:6/26/17

Re:Merchant's Row Bridge

Attn:P

Rev. #1 Shop Drawings

Approved

BY:Joel Perrigo

DATE:06/27/2017

RESUBMIT:No

RECEIVED:June 27, 2017

CKD BY:

STATE OF VERMONT  
AGENCY OF TRANSPORTATION

☐ Urgent

☒ For Review

☒ Please Comment

☐ Please Reply

☒ For Your Use

Revision #1 Submittal - J. P. Carrara & Sons' Submittal Notes

Transmittal Notes to Accompany Merchant's Row Shop Drawing Submission:

1. We looked at drilling into footing and found no interference w/ the shear key or reinforcing.

2. Per the Mabey manufacturer, the 25'-3" back wall length is insignificant.

3. The label for MB-FG1 is correct per JPC drawing.

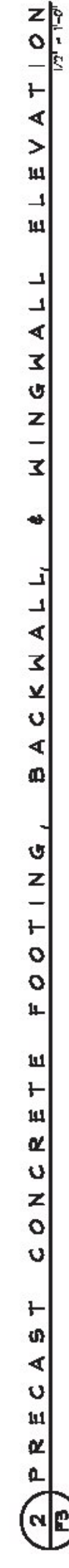
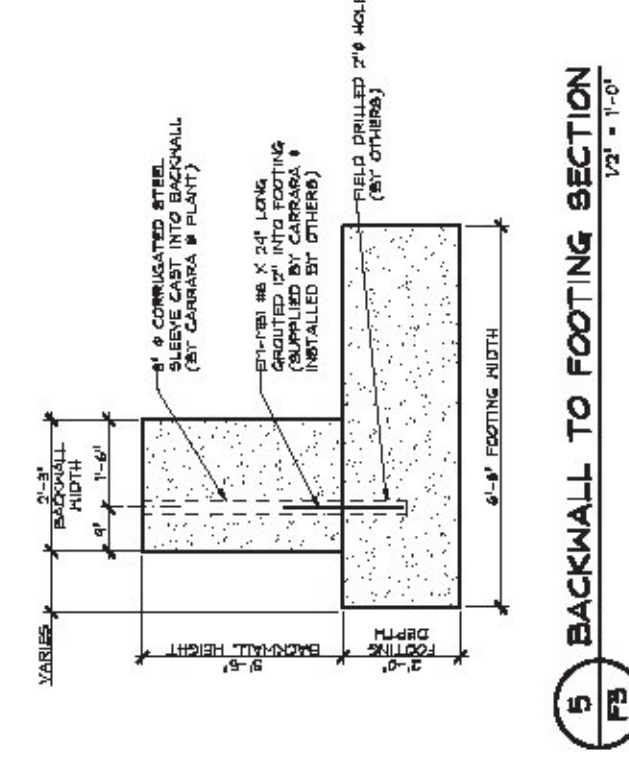
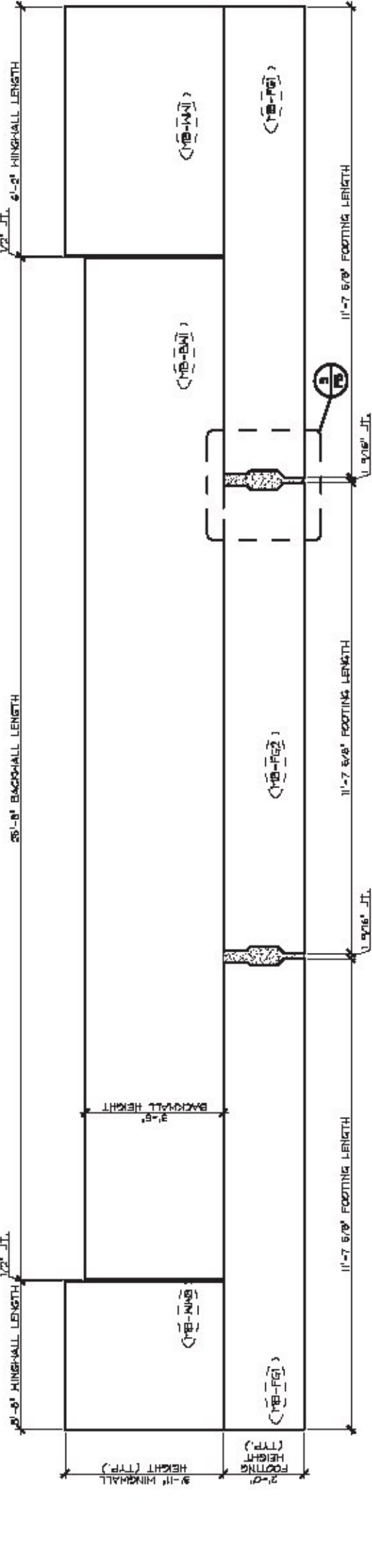
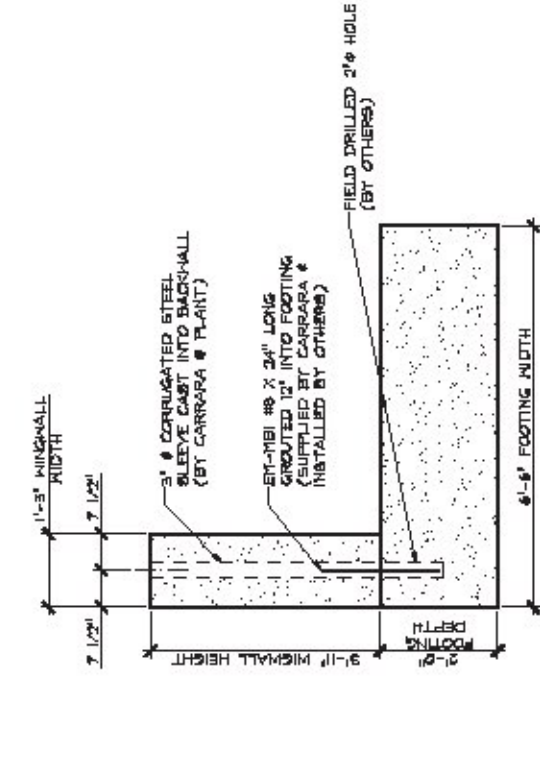
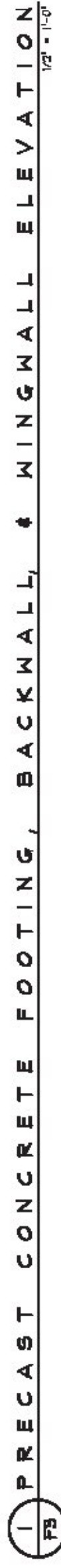
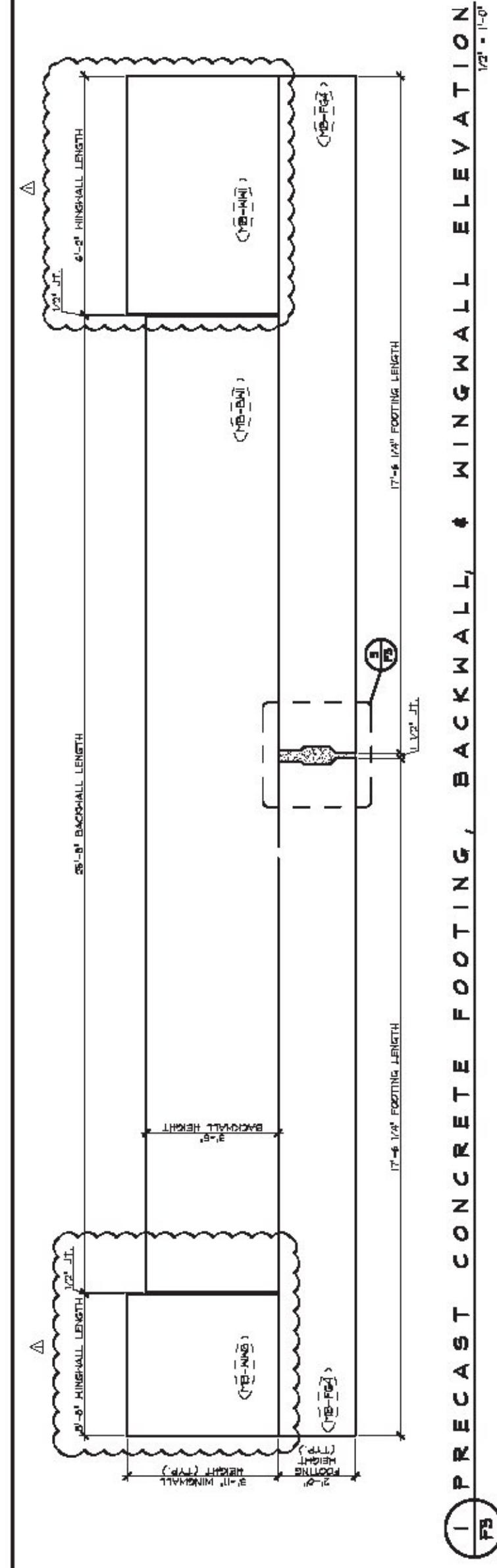
4. The label for MB-FG4 is correct per JPC drawing and the designation FG3 for the sheet is correct.

5. We have added note to move reinforcing bars as necessary to avoid interference with dowel sleeves.



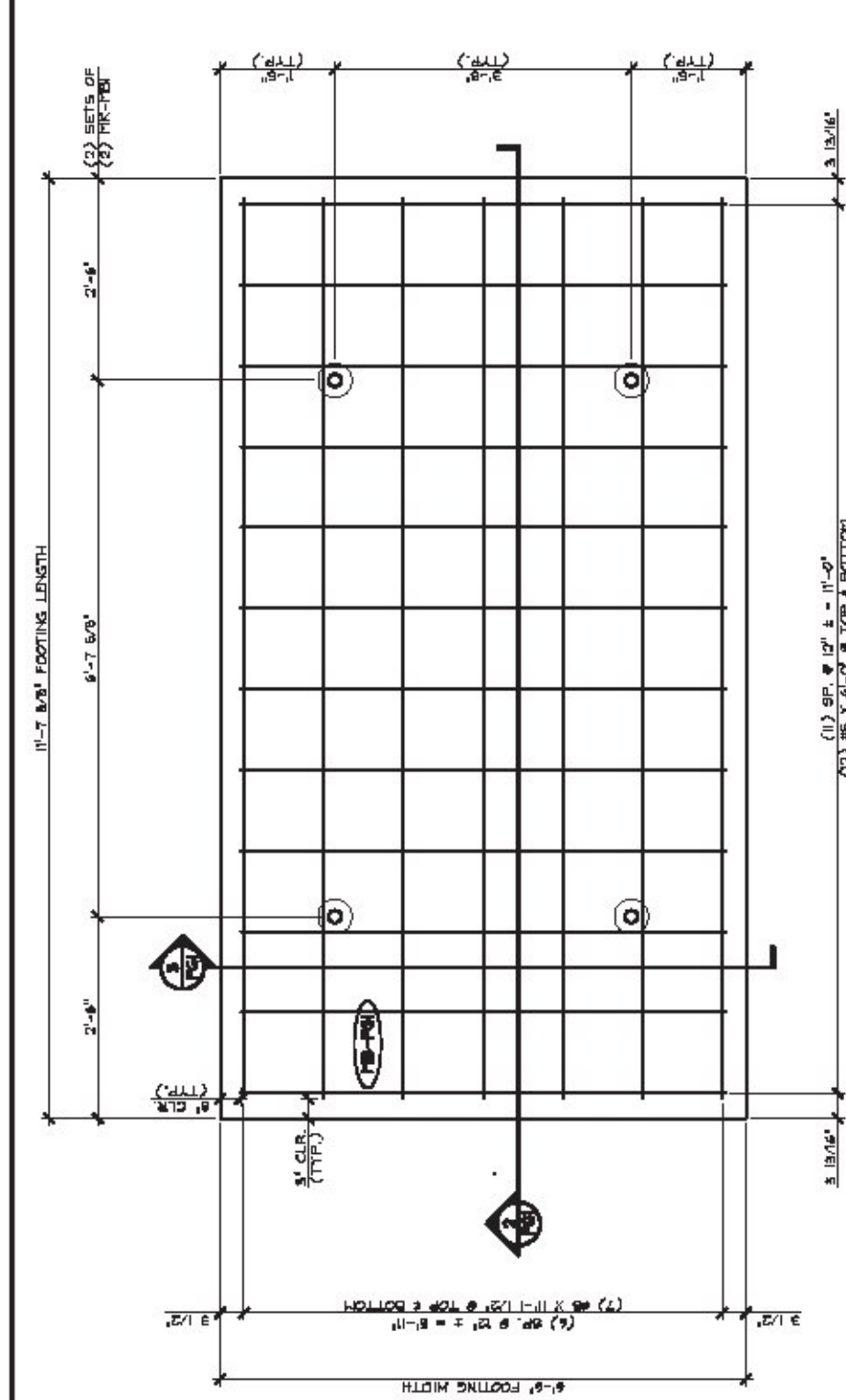




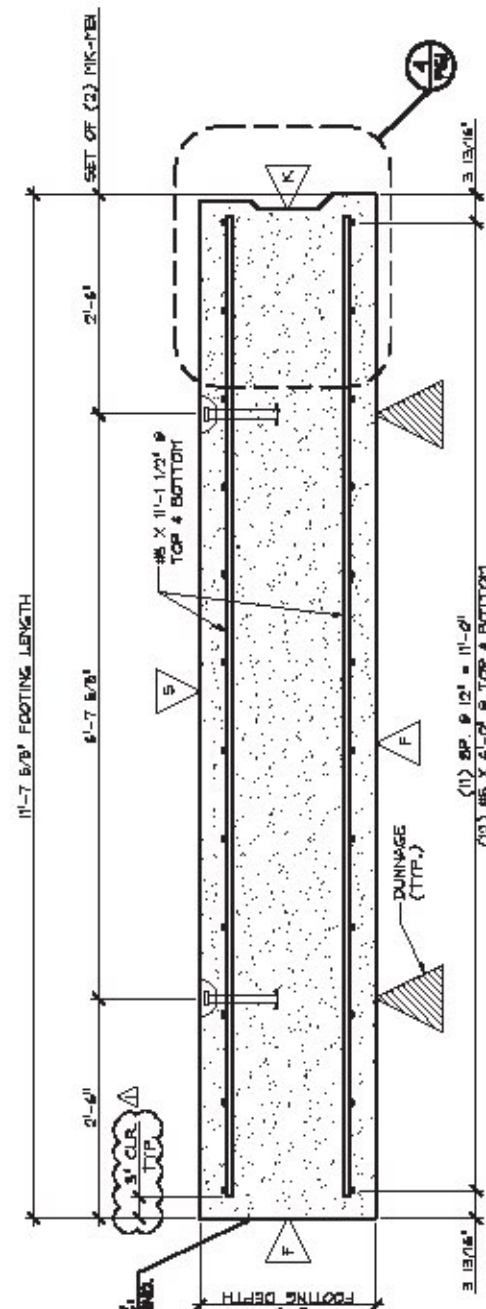


APPROVAL STAMP:		<b>J.P. CARRARA &amp; SONS INC.</b> 2041 101 ST. HUBERT, QUE. J5R 2M6 TEL: 514-381-1000 FAX: 514-381-9532		<b>KURBEST CONSTRUCTION CORPORATION</b> 1000 WATSON RD.	
<b>Approved</b> BY: Jack Frenco DATE: 06/27/2017		STATE OF VERMONT COUNTY OF ADDISON		DIME, JUNE 27, 2017 SCALE: NOTED	
DRAWING: No. REVISION: No. JOB NO:		TOWN OF MIDDLEBURY MERCHANTS B&M PROJECT NO. 2495 (1)		SHEET NO. 1 OF 1 JOB NO: 3354-017	
STATE OF VERMONT OFFICE OF THE REGISTRAR		PRECAST SUBSTRUCTURE ELEVATIONS & SECTIONS		DWG. NO. <b>F3</b>	

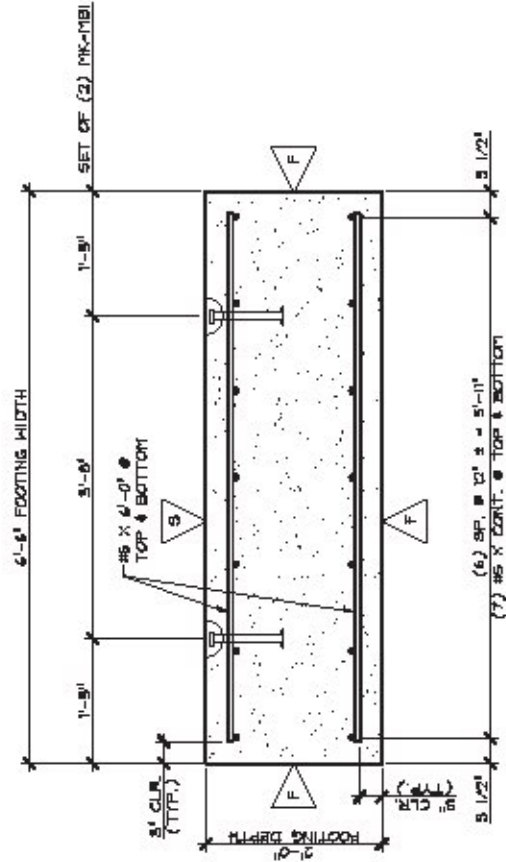




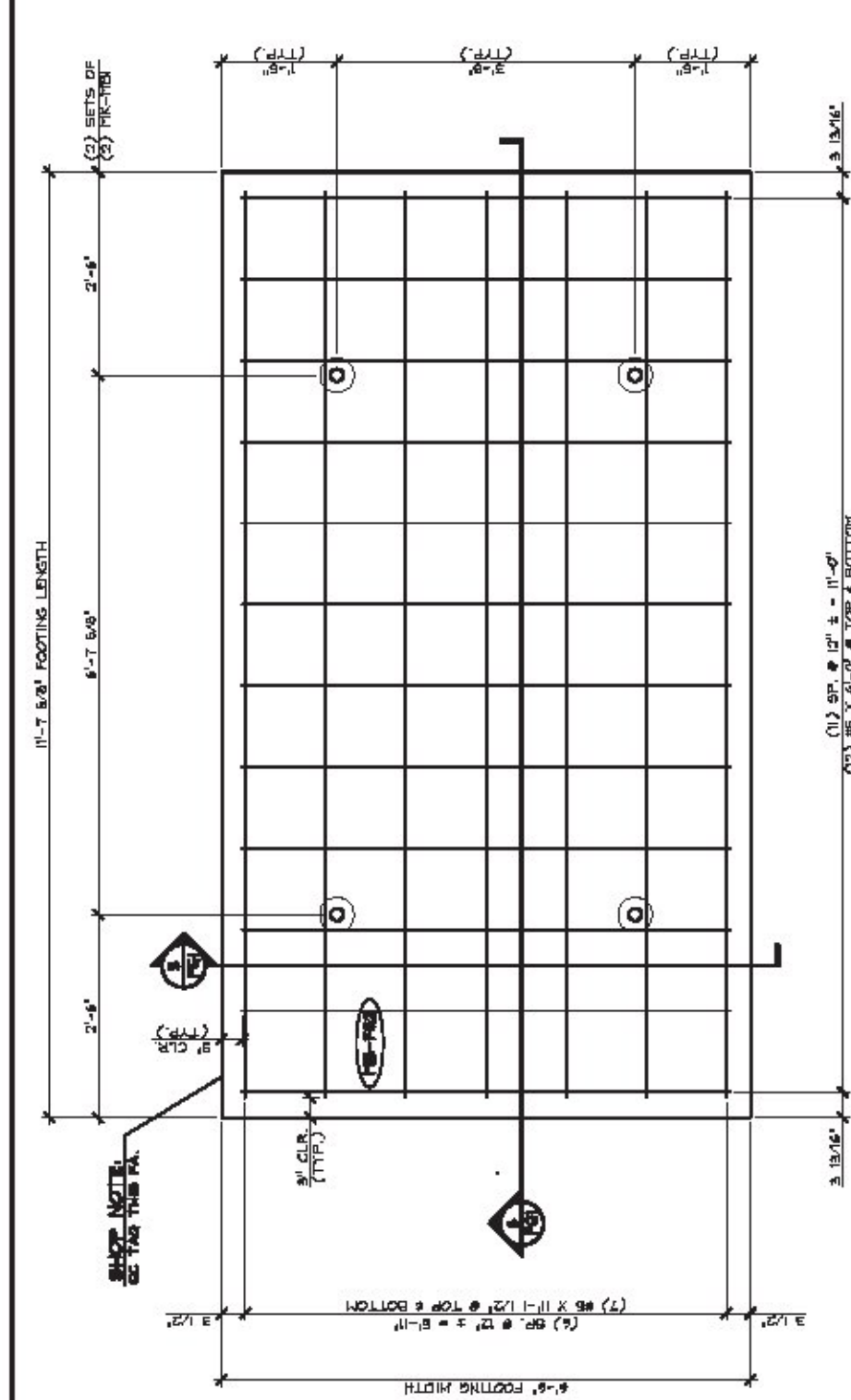
1 PLAN VIEW IN FORM  
SCALE = 1/4" = 1'-0"



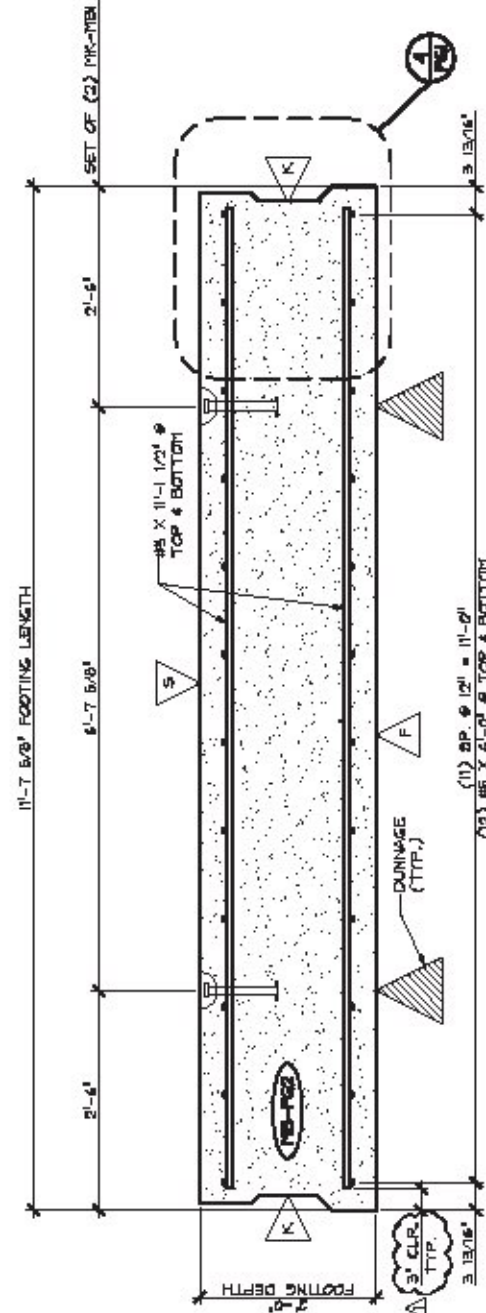
2 LONGITUDINAL SECTION  
SCALE = 1/4" = 1'-0"



3 TRANSVERSE SECTION (TYPICAL)  
SCALE = 1/4" = 1'-0"



5 PLAN VIEW IN FORM  
SCALE = 1/4" = 1'-0"



6 LONGITUDINAL SECTION  
SCALE = 1/4" = 1'-0"

SEE NOTE 1  
FOR REINFORCEMENT  
DETAILS AND  
CONCRETE  
STRENGTH

SEE NOTE 2  
FOR REINFORCEMENT  
DETAILS AND  
CONCRETE  
STRENGTH

SEE NOTE 3  
FOR REINFORCEMENT  
DETAILS AND  
CONCRETE  
STRENGTH

MARK: MB-FG1 QTY: 2 WT: 11.34 T VOL: 5.60 CY

MARK: MB-FG2 QTY: 1 WT: 11.34 T VOL: 5.60 CY

ITEM	MARK	DESCRIPTION	QTY / CY
1	MB-FG1	12' X 8' X 3' PRECAST CONCRETE FOOTING	2
2	MB-FG2	12' X 8' X 3' PRECAST CONCRETE FOOTING	1
3	MB-FG3	12' X 8' X 3' PRECAST CONCRETE FOOTING	1
4	MB-FG4	12' X 8' X 3' PRECAST CONCRETE FOOTING	1
5	MB-FG5	12' X 8' X 3' PRECAST CONCRETE FOOTING	1
6	MB-FG6	12' X 8' X 3' PRECAST CONCRETE FOOTING	1

J.P. CARRARA & SONS INC.  
Precast & Prestress Manufacturers  
1000 S. 10th Street, Suite 100  
Wilton, NJ 07095

STATE OF VERMONT AGENCY OF TRANSPORTATION  
COUNTY OF ADDISON

DATE: JUNE 21, 2017  
SCALE: 1/4" = 1'-0"

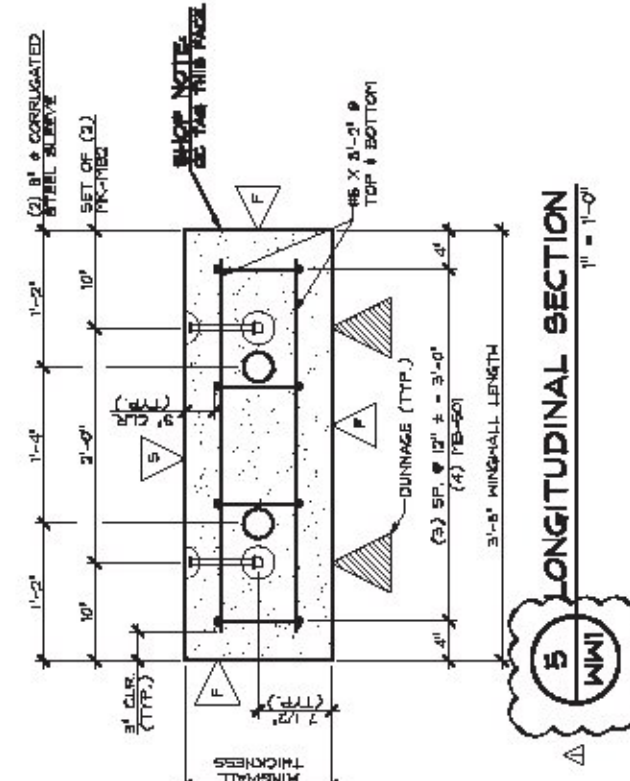
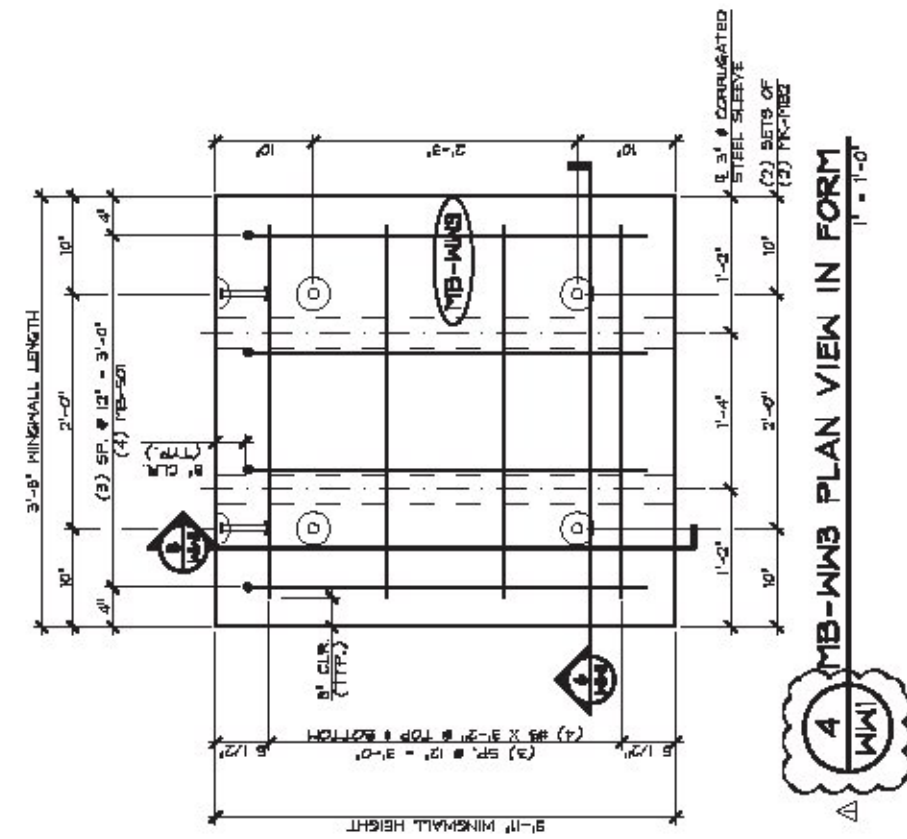
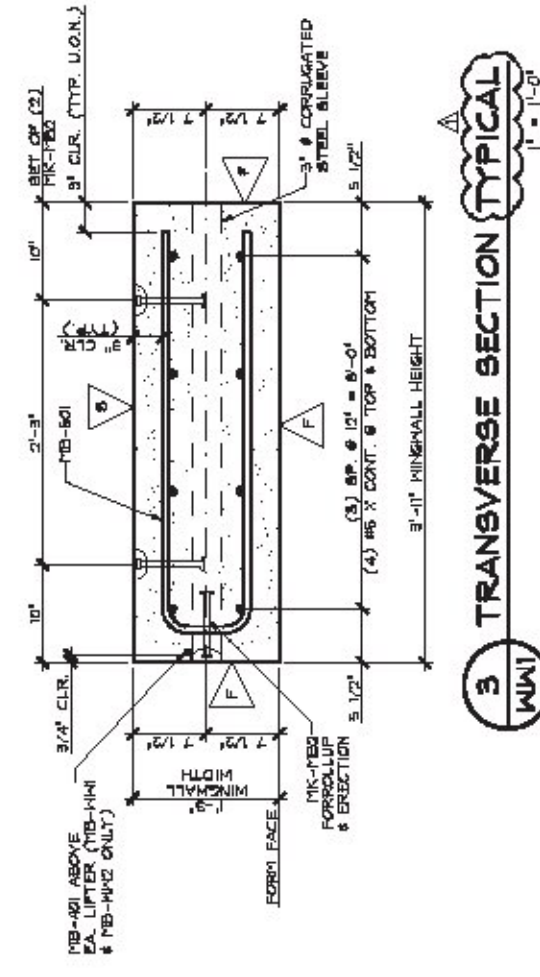
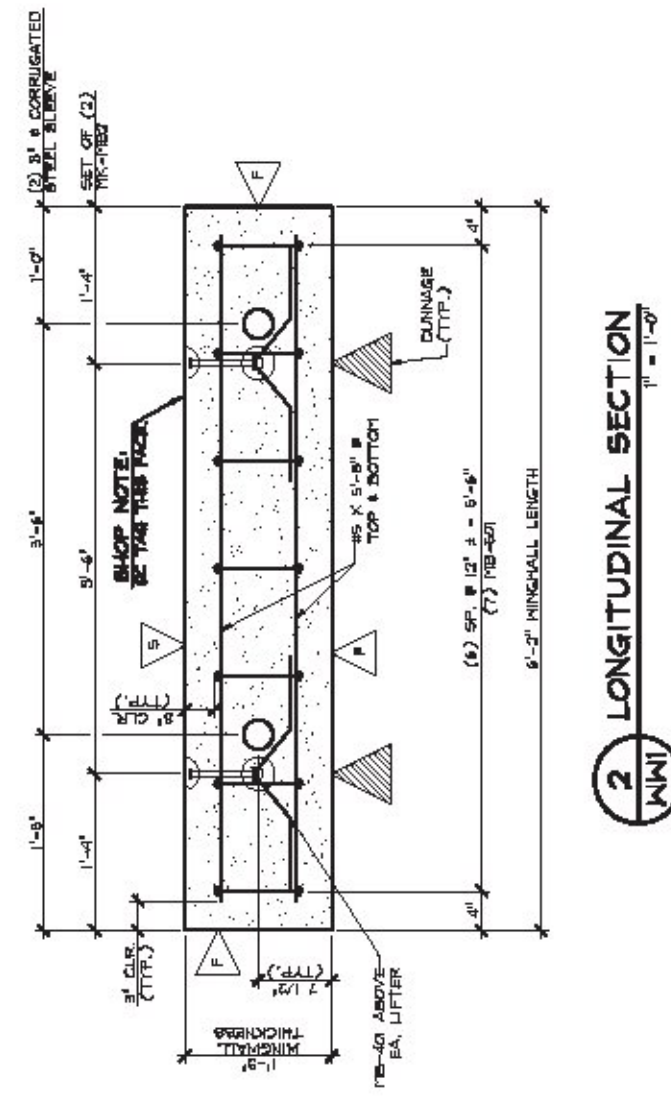
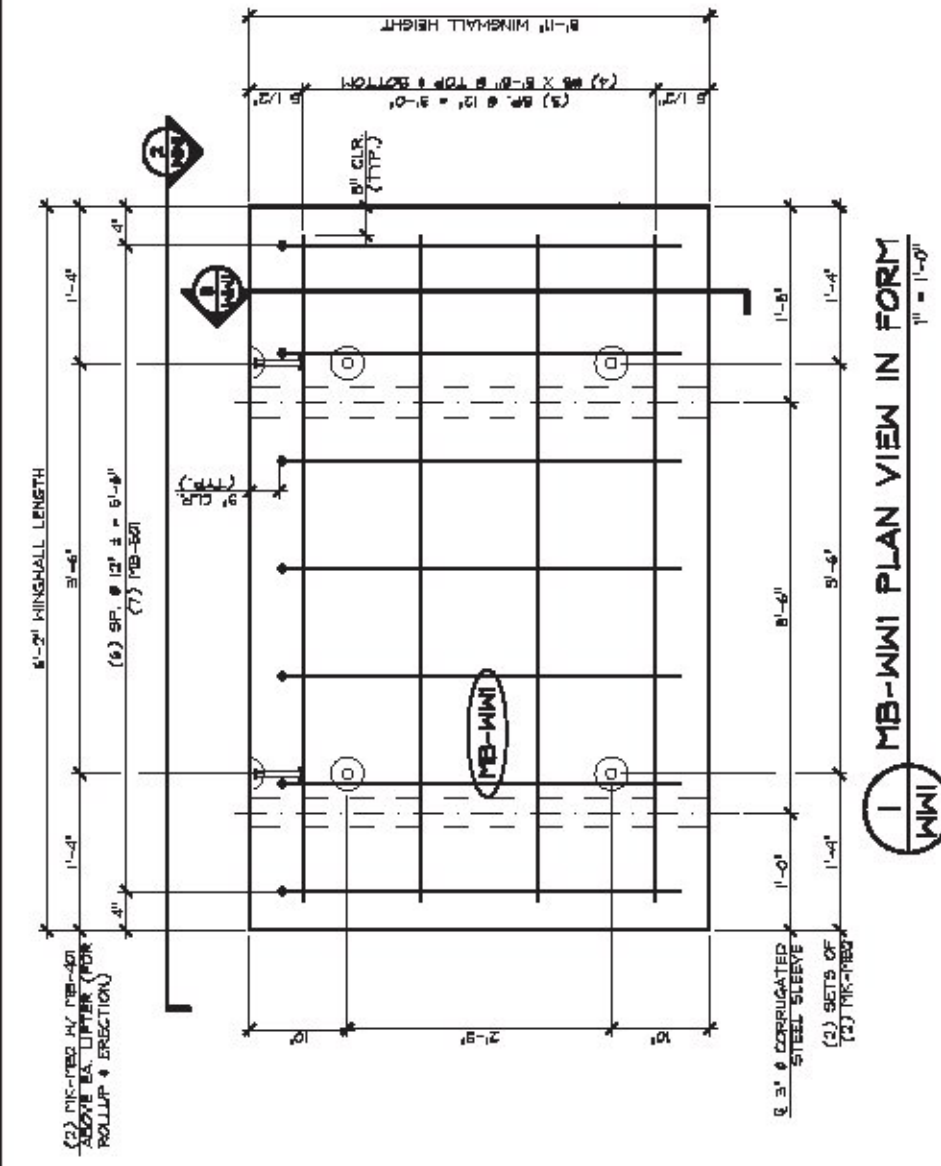
PROJECT: TOWN OF MIDDLEBURY  
BRIDGE NO. 100  
JOB NO. 2594-07

PRECAST FOOTING DETAILS  
DWG. NO. FG1







[illegible]

<b>APPROVAL STAMP:</b>   <b>Approved</b>          Job Range          DATE: 06/28/2017          REVIEWED: June 27, 2017          CDD BY:		<b>J.P. CARRARA &amp; SONS INC.</b> Precast & Prestress Manufacturer 1000 W. 10th Street, Suite 100, Phoenixville, PA 19380-4001 TEL: 610.368.8800 FAX: 610.368.8801		<b>KURBEST CONSTRUCTION CORPORATION</b> CONTRACTOR 1000 W. 10th Street, Suite 100, Phoenixville, PA 19380-4001 TEL: 610.368.8800 FAX: 610.368.8801	
<b>STATE OF VERMONT</b> DEPT. OF TRANSPORTATION PROJECT NO. 2 BRIDGE NO. 1089 (1)		<b>STATE OF VERMONT</b> DEPT. OF TRANSPORTATION PROJECT NO. 2 BRIDGE NO. 1089 (1)		DATE: JUNE 27, 2017 SOLES NOTED JOB C.P. DTN: 4.6 JOB EN: 334-0-7 DRG. NO. <b>W1</b>	







3'-0"

2'-0"

4'-0"

1500 PSI  
4000 PSI  
(CST) REQUIRED

1'-0"

2'-0"

4'-0"

1500 PSI  
4000 PSI  
(CST) REQUIRED

2'-0"

2'-0"

1'-0"

1500 PSI  
4000 PSI  
(CST) REQUIRED

2'-0"

2'-0"

1'-0"

1500 PSI  
4000 PSI  
(CST) REQUIRED

PRECAST WINGWALLS

PRECAST BACKWALLS

MERCHANT STREET MISCELLANEOUS MATERIALS			REMARKS
ITEM	QUANTITY	DESCRIPTION	
1	15.00	15' X 8' X 4' BLACK STEEL (200# FOR TIEBARS)	
2	20	15' X 8' X 4' BLACK STEEL	
3	20	15' X 8' X 4' BLACK STEEL	
4	20	15' X 8' X 4' BLACK STEEL	
5	20	15' X 8' X 4' BLACK STEEL	
6	20	15' X 8' X 4' BLACK STEEL	
7	20	15' X 8' X 4' BLACK STEEL	
8	20	15' X 8' X 4' BLACK STEEL	
9	20	15' X 8' X 4' BLACK STEEL	
10	20	15' X 8' X 4' BLACK STEEL	
11	20	15' X 8' X 4' BLACK STEEL	
12	20	15' X 8' X 4' BLACK STEEL	
13	20	15' X 8' X 4' BLACK STEEL	
14	20	15' X 8' X 4' BLACK STEEL	
15	20	15' X 8' X 4' BLACK STEEL	
16	20	15' X 8' X 4' BLACK STEEL	
17	20	15' X 8' X 4' BLACK STEEL	
18	20	15' X 8' X 4' BLACK STEEL	
19	20	15' X 8' X 4' BLACK STEEL	
20	20	15' X 8' X 4' BLACK STEEL	
21	20	15' X 8' X 4' BLACK STEEL	
22	20	15' X 8' X 4' BLACK STEEL	
23	20	15' X 8' X 4' BLACK STEEL	
24	20	15' X 8' X 4' BLACK STEEL	
25	20	15' X 8' X 4' BLACK STEEL	

APPROVAL STAMP

Approved

By: [Signature]

Date: 06/27/2017

Record: 06/27/2017

CDD BY: [Signature]

STATE OF VERMONT  
AGENCY OF TRANSPORTATION

J.P. CARRARA & SONS INC.

President & President Manufacturer

1000 S. VERMONT ST. FARMINGTON, VERMONT 05401

STATE OF VERMONT AGENCY OF TRANSPORTATION

COUNTY OF ADDISON

TOWN OF MIDDLEBURY

VERMONT HIGHWAY DEPARTMENT

BRIDGE NO. 2 PROJECT

DRAWN: JUNE 21, 2017

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

DATE: 06/27/2017

JOB NO. 2594-07

DWG. NO. M1

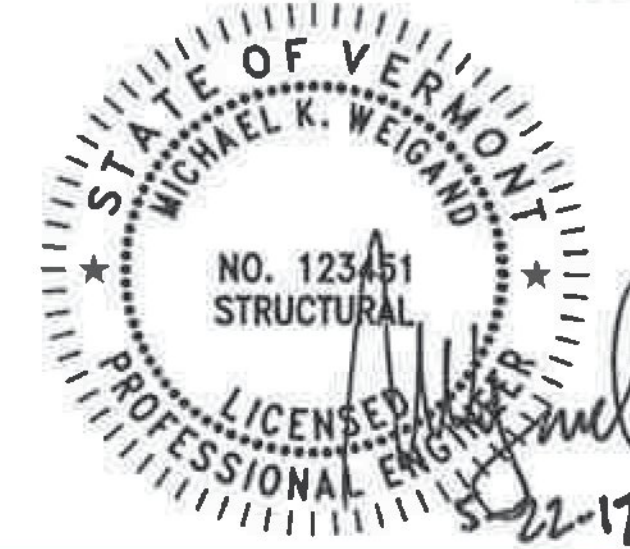


v2

MAIN ST. BRIDGE 102 &amp; MEMPHIS RIVER BRIDGE 2

TEMPORARY BRIDGES

PROJECT EWP3 (1)

MIDDLEBURY, VT

Vermont Agency of Transportation  
**Accepted**

By Joel Perrigo at 3:25 pm, Jun 27, 2017

### PRECAST CONCRETE LIFT DESIGN CALCULATIONS

* PRECAST FOOTINGS

$$f'_{ci} = 3500 \text{ psi} \quad f'_c = 5000 \text{ psi}$$

$$W_{\text{lift, max}} = 18.30 \text{ T}$$

THERE ARE (4) LIFT LOCATIONS & BASED ON 60° MINIMUM SLING  
ANGLE WITH HORIZONTAL

$$\text{DESIGN / LIFT LOCATION} = \frac{18.30 \text{ T} \times 2}{(4)(0.866)} = 10.6 \text{ K}$$

FROM ATTACHED PRODUCT LITERATURE USE 8-TON X 10' LONG

SWIFT LIFT ANCHORS, SWL (4:1 S.F.) = 16,000 LB., etc.



▷ PRECAST BACKWALLS

$$f'_{ci} = 3500 \text{ PSI} \quad f'_c = 5000 \text{ PSI}$$

$$W_{\text{MAX}} = 14.56 \text{ T}$$

TWO (2) LIFT LOCATIONS & BASED ON A 60° MINIMUM SUNG  
ANGLE WITH THE HORIZONTAL,

$$\text{DESIGN LOAD / LIFT LOCATION} = \frac{14.56 \text{ T} \times 2}{(2)(0.866)} = 16.8 \text{ KIPS}$$

FROM ATTACHED PRODUCT INFORMATION, USE 20 TAN  $\times$  19  $\frac{3}{4}$ " SWIFT

$$\text{LIFT ANCHORS, SWL (4:1 S.F.)} = 40,000 \text{ LB, OK}$$

ALSO CHECK ANCHORS USING PCI FIGURE 6.15.7A, CASE 3 (ANCHORS)  
FOR FREE EDGES ON (2) OPPOSITE SIDES:

$$\begin{aligned} \phi P_c &= \phi 2.67 \times \sqrt{f'_c} (x_1)(y_1 + 2d_e) \\ &= (0.85)(2.67)(1.0)(3500)^{0.5} (27)(0 + 2(20 \frac{5}{16})) / 1000 \\ &= 147.3 \text{ K} \end{aligned}$$

$$\text{WHERE } \phi = 0.85$$

$$\lambda = 1.0$$

$$f'_c = 3500 \text{ PSI}$$

$$x_1 = 27"$$

$$y_1 = 0$$

$$d_e = 19 \frac{3}{4} + \frac{9}{16} = 20 \frac{3}{16}"$$

$$\text{FOR SWL (4:1 S.F.)} = \frac{147.3}{4} = 36.8 \text{ K} > 16.8 \text{ K}$$

OK ✓



▷ PRECAST WINGWALLS

$$f'_{ci} = 3500 \text{ PSI} \quad f'_c = 5000 \text{ PSI}$$

$$W_{T_{\max}} = 2.26 \text{ T}$$

◦ FOR STRIPPING/HANDLING

TURNS ARE (4) LIFT LOCATIONS AND BASED ON  $60^\circ$  MINIMUM SLING  
ANGLE WITH THE HORIZONTAL

$$\text{DESIGN LOAD/LIFT LOCATION} = \frac{2.26 \text{ T} \times 2}{(4)(0.866)} = 1.3 \text{ K}$$

FROM ATTACHED PRODUCT LITERATURE, USE (4) 2-TON  $\times 6\frac{3}{4}"$

$$\text{SWIFT LIFT ANCHORS, SWL (4:1 S.F.)} = 4,000 \text{ LBS.} \quad \checkmark \text{ O.K.}$$

◦ FOR ROLLUP & ERECTION

ROLLUP PANELS ABOUT BOTTOM EDGE OF PANEL. PLACE (2) LIFT  
ANCHORS IN TOP EDGE OF PANEL.

• CHECK TOP ANCHORS FOR SHEAR:

$$\text{SHEAR LOAD/LIFT ANCHOR} = \frac{2.26 \text{ T} \times 2}{(2)(2)} = 1.13 \text{ K}$$

FROM ATTACHED PRODUCT LITERATURE FOR DAYTON SUPERIOR,

USE (2) 2-TON  $\times 6\frac{3}{4}"$  SWIFT LIFT ANCHORS w/ SHEAR BARS

$$\text{SWL (4:1 S.F.)} = 2.8 \text{ K} > 1.13 \text{ K, O.K.}$$

CONSERVATIVE AS THIS IS BASED ON 8" WALL THICKNESS VS. 1'-3"

• CHECK TOP LIFT ANCHORS IN TENSION:

TURNS ARE (2) LIFT ANCHORS IN TOP EDGE

$$\text{LOAD/LIFT ANCHOR} = \frac{2.26 \text{ T} \times 2}{2} = 2.3 \text{ K}$$

FROM ATTACHED PRODUCT LITERATURE FOR DAYTON,

USE (2) 2-TON  $\times 6\frac{3}{4}"$  SWIFT LIFT ANCHORS

$$\text{SWL (4:1 S.F.)} = 4,000 \text{ LBS} > 2.3 \text{ K}$$



ALSO CHECK TOP LIFT ANCHORS IN TENSION USING

PCI FIGURE 6.15.7A, CASE 3 (ATTACHED)

$$\begin{aligned}\phi P_c &= \phi 2.67 \lambda \sqrt{f'_c} (k_1) (b_s + 2l_e) \\ &= (0.85)(2.67)(1.0)(3500)^{0.5}(15") (0 + 2(6\frac{3}{4} + \frac{7}{16})) \\ &= 29.0k\end{aligned}$$

$$F_{en\ SWL(4:1\ S.F.)} = \frac{29.0k}{4} = 7.2k$$

HOWEVER, LIFT ANCHORS

CAPACITY IS LIMITED

TO 4.0k > 2.3k



# Swift Lift® System



## P-52 Swift Lift® Anchor Tensile and Shear Capacity

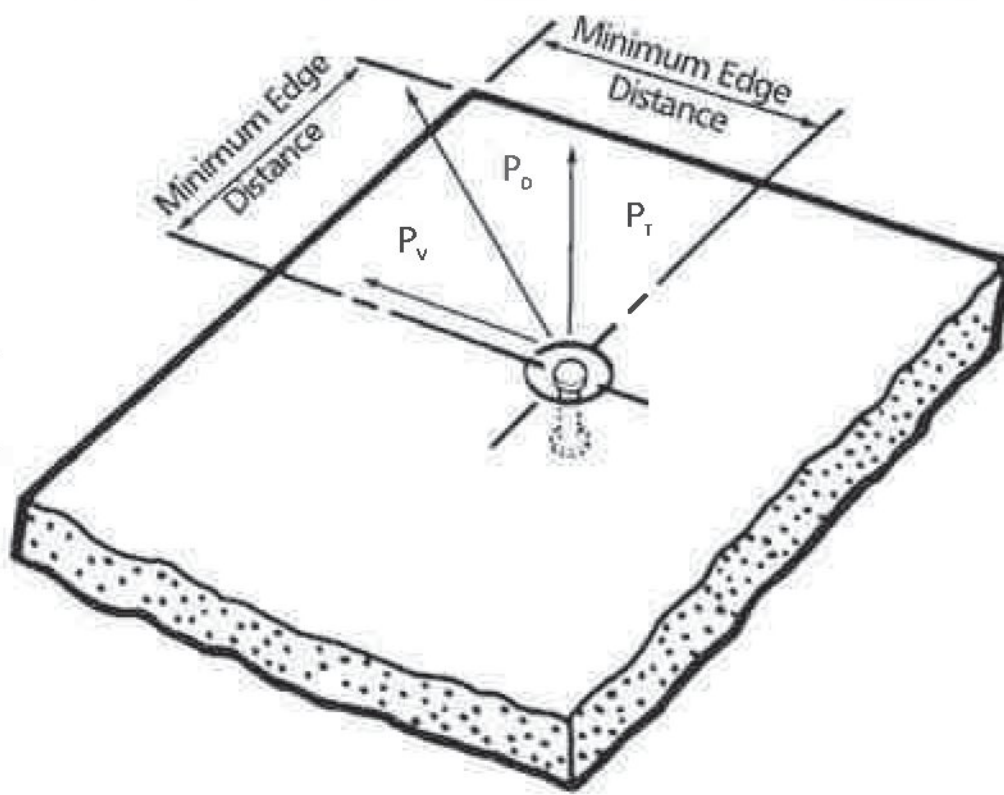
When anchors are used in the face of thin concrete elements

The following table lists the P-52 Swift Lift Anchors that are currently manufactured. Other sizes and lengths are available on special order. However, the sizes and lengths of anchors shown will handle the majority of flat precast concrete elements.

When the P-52 Swift Lift Anchor is properly embedded in normal weight concrete, the tabulated working loads are applicable for any direction of load. This applies even if the direction of load is parallel to the axis of the anchor, perpendicular to it or at any other angle.

Minimum distance between anchors is twice the minimum edge distance.

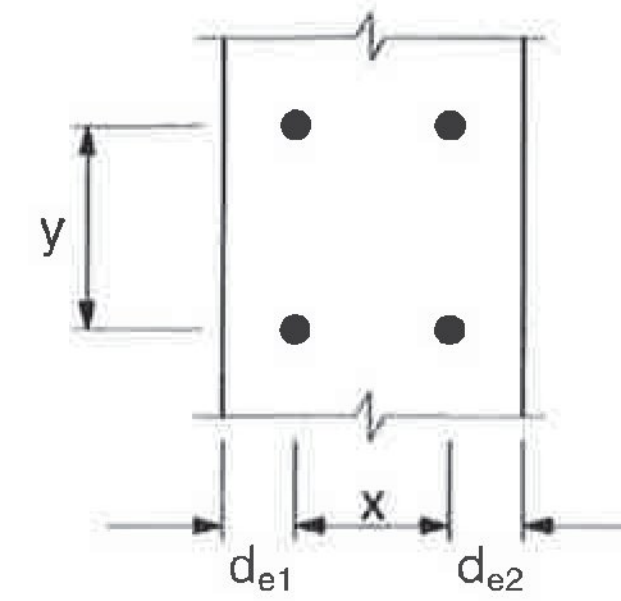
It is critical to remember that in order to obtain the safe working loads listed in the table below, the normal weight concrete must have obtained the minimum concrete strength shown, prior to initial load application.



Swift Lift Anchor Ton x Length	Safe Working Load	Minimum Concrete Strength	Minimum Edge Distance
1 ton x 2-5/8"	1,700 lbs.	3,500 psi	8"
1 ton x 3-3/8"	2,000 lbs.	2,200 psi	10"
1 ton x 4-3/8"	2,000 lbs.	1,600 psi	10"
1 ton x 8"	2,000 lbs.	1,600 psi	10"
1 ton x 9-1/2"	2,000 lbs.	1,600 psi	10"
2 ton x 2-3/4"	2,100 lbs.	3,500 psi	8"
2 ton x 3-3/8"	2,900 lbs.	3,500 psi	10"
2 ton x 5-1/2"	4,000 lbs.	1,600 psi	13"
2 ton x 6"	4,000 lbs.	1,600 psi	13"
2 ton x 6-3/4"	4,000 lbs.	1,600 psi	13"
2 ton x 11"	4,000 lbs.	1,600 psi	14"
4 ton x 3-3/4"	4,000 lbs.	3,500 psi	12"
4 ton x 4-1/4"	4,900 lbs.	3,500 psi	13"
4 ton x 4-3/4"	5,800 lbs.	3,500 psi	14"
4 ton x 5-1/2"	7,400 lbs.	3,500 psi	17"
4 ton x 5-3/4"	7,900 lbs.	3,500 psi	17"
4 ton x 7-1/8"	8,000 lbs.	1,800 psi	20"
4 ton x 9-1/2"	8,000 lbs.	1,600 psi	17"
4 ton x 14"	8,000 lbs.	1,600 psi	18"
4 ton x 19"	8,000 lbs.	1,600 psi	20"
8 ton x 4-3/4"	6,400 lbs.	3,500 psi	16"
8 ton x 6-3/4"	11,200 lbs.	3,500 psi	21"
8 ton x 10"	16,000 lbs.	3,500 psi	19"
8 ton x 13-3/8"	16,000 lbs.	1,600 psi	23"
8 ton x 26-3/4"	16,000 lbs.	1,600 psi	27"
20 ton x 10"	25,000 lbs.	3,500 psi	24"
20 ton x 19-3/4"	40,000 lbs.	3,500 psi	31"

Safe Working Loads provide a factor of safety of approximately 4 to1 in normal weight concrete. Safe Working Load is based on anchor setback from face of concrete "X" dimension, as shown on page 26.



Figure 6.15.7A (continued) Design tensile strength for  $h \geq h_{min}$ ,  $\phi P_{c1}$ —Case 3

x and y are the overall dimensions (width and length) of the stud group.

**Case 3: Free edges on two opposite sides**

$$\phi P_{c1} = \phi 2.67 \lambda \sqrt{f'_c} (x_1)(y_1 + 2\ell_e)$$

$$\phi = 0.85$$

where:  $x_1$  and  $y_1$  are the dimensions of the flat bottom of the part of the truncated pyramid.

For Case 3:  $x_1 = x + d_{e1} + d_{e2}$   $y_1 = y$

Note: Table values are based on

$\lambda = 1.0$  and  $f'_c = 5000$  psi;

for different material properties, multiply table

values by  $\lambda \sqrt{f'_c / 5000}$

$\ell_e$ in.	$x_1$ , $y_1$ , in.	Design tensile strength, $\phi P_{c1}$ (kips)														
		2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
3	0	2	4	6	8	9	11	13	15	17	19	21	23	25	27	29
	2	3	5	8	10	13	15	18	21	23	25	28	31	33	36	39
	4	3	7	9	13	16	19	23	25	29	32	35	39	42	45	48
	6	4	8	11	15	19	23	27	31	35	39	42	46	50	54	58
	8	5	9	13	18	23	27	31	36	41	45	49	54	59	63	67
	10	5	10	15	21	25	31	36	41	46	51	57	61	67	72	77
	12	6	11	17	23	29	35	41	46	52	58	63	69	75	81	87
	14	7	13	19	25	32	39	45	51	58	64	71	77	83	90	96
16	7	14	21	28	35	42	49	57	63	71	77	85	92	99	106	
4	0	3	5	8	10	13	15	18	21	23	25	28	31	33	36	39
	2	3	7	9	13	16	19	23	25	29	32	35	39	42	45	48
	4	4	8	11	15	19	23	27	31	35	39	42	46	50	54	58
	6	5	9	13	18	23	27	31	36	41	45	49	54	59	63	67
	8	5	10	15	21	25	31	36	41	46	51	57	61	67	72	77
	10	6	11	17	23	29	35	41	46	52	58	63	69	75	81	87
	12	7	13	19	25	32	39	45	51	58	64	71	77	83	90	96
	14	7	14	21	28	35	42	49	57	63	71	77	85	92	99	106
16	8	15	23	31	39	46	54	61	69	77	85	92	100	108	115	
6	0	4	8	11	15	19	23	27	31	35	39	42	46	50	54	58
	2	5	9	13	18	23	27	31	36	41	45	49	54	59	63	67
	4	5	10	15	21	25	31	36	41	46	51	57	61	67	72	77
	6	6	11	17	23	29	35	41	46	52	58	63	69	75	81	87
	8	7	13	19	25	32	39	45	51	58	64	71	77	83	90	96
	10	7	14	21	28	35	42	49	57	63	71	77	85	92	99	106
	12	8	15	23	31	39	46	54	61	69	77	85	92	100	108	115
	14	9	17	25	33	42	50	59	67	75	83	92	100	109	117	125
16	9	18	27	36	45	54	63	72	81	90	99	108	117	125	135	
8	0	5	10	15	21	25	31	36	41	46	51	57	61	67	72	77
	2	6	11	17	23	29	35	41	46	52	58	63	69	75	81	87
	4	7	13	19	25	32	39	45	51	58	64	71	77	83	90	96
	6	7	14	21	28	35	42	49	57	63	71	77	85	92	99	106
	8	8	15	23	31	39	46	54	61	69	77	85	92	100	108	115
	10	9	17	25	33	42	50	59	67	75	83	92	100	109	117	125
	12	9	18	27	36	45	54	63	72	81	90	99	108	117	125	135
	14	9	19	29	39	48	58	67	77	87	96	106	115	125	135	144
16	10	21	31	41	51	61	72	82	92	103	113	123	133	143	154	



**P59 Swift Lift® Shear Bar**  
**P59 Swift Lift® Smooth Wire Shear Bar**

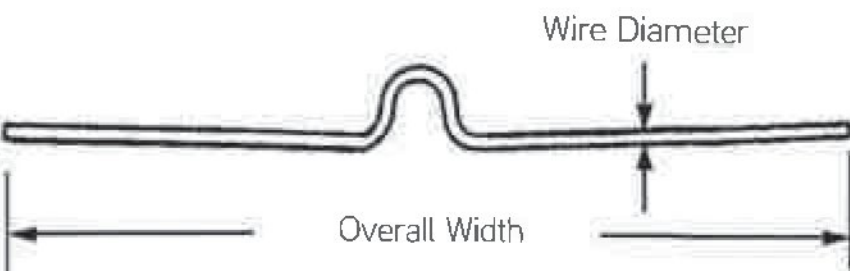
Dayton Superior Swift Lift Shear Bars (P59) are utilized when edge lifting precast elements. The shear bar is secured tightly to the recess plug and at the time of lift helps to transfer the shear load deeper into the concrete. The P59 Smooth Wire Shear Bar is designed to snap into the built-in clips on the P54 recess plug. The standard shear bar is fabricated from rebar and must be securely wired tightly to the Swift Lift recess plugs.

**To Order:**  
Specify: (1) quantity, (2) name, (3) system size.

**Example:**  
200, P59 Swift Lift Shear Bars, 4-Ton.



**P59 Swift Lift Shear Bar**  
**1-Ton and 8-Ton**



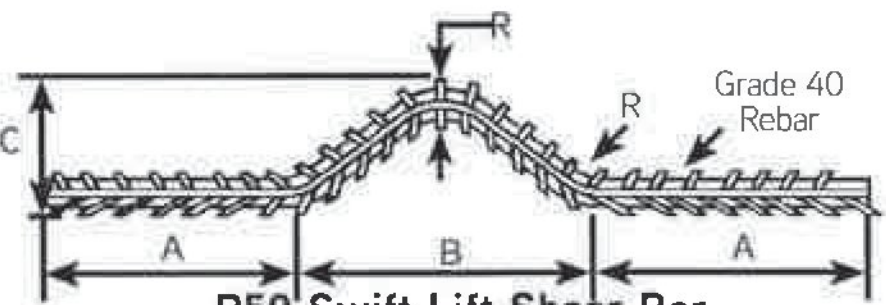
**P59 Swift Lift Smooth Wire Shear Bar**  
**2-Ton and 4-Ton**

Anchor Safe Working Load	Shear Bar Type	Overall Width	Minimum Anchor Length	Wall Thickness	Minimum Corner Distance	Safe Working Load
1	Rebar	19"	4-3/4"	5"	15"	1,750 lbs.
1	Rebar	19"	4-3/4"	5-1/2"	16"	2,000 lbs.
1	Wire	19"	4-3/4"	6"	17"	2,000 lbs.
2	Wire	24"	6-3/4"	5"	15"	1,750 lbs.
2	Wire	24"	6-3/4"	5-1/2"	16"	2,200 lbs.
2	Wire	24"	6-3/4"	6"	17"	2,600 lbs.
2	Wire	24"	6-3/4"	7"	19"	2,700 lbs.
2	Wire	24"	6-3/4"	8"	21"	2,800 lbs.
4	Wire	30"	9-1/2"	5-1/2"	16"	2,100 lbs.
4	Wire	30"	9-1/2"	6"	17"	2,200 lbs.
4	Wire	30"	9-1/2"	7"	19"	2,600 lbs.
4	Wire	30"	9-1/2"	8"	21"	2,800 lbs.
8	Rebar	34"	13-3/8"	8"	19"	5,600 lbs.
8	Rebar	34"	13-3/8"	9"	21"	6,700 lbs.

Safe Working Load provides a factor of safety of approximately 4 to 1 in 4,500 psi normal weight concrete.

**P59 Shear Bar Dimensions**

Anchor Rated Load (Tons)	A	B	C	R	Rebar Size
1	7" 178 mm	5" 127 mm	2 1/2" 64 mm	1" 25 mm	#4 #10M
2	9" 229 mm	7" 178 mm	3" 76 mm	1 1/8" 37 mm	#4 #10M
4	10" 254 mm	9" 229 mm	3 3/4" 95 mm	1 3/4" 44 mm	#4 #10M
8	12" 305 mm	10" 254 mm	3 3/4" 95 mm	2 1/4" 57 mm	#6 #20M



**P59 Swift Lift Shear Bar**  
**1-Ton and 8-Ton**