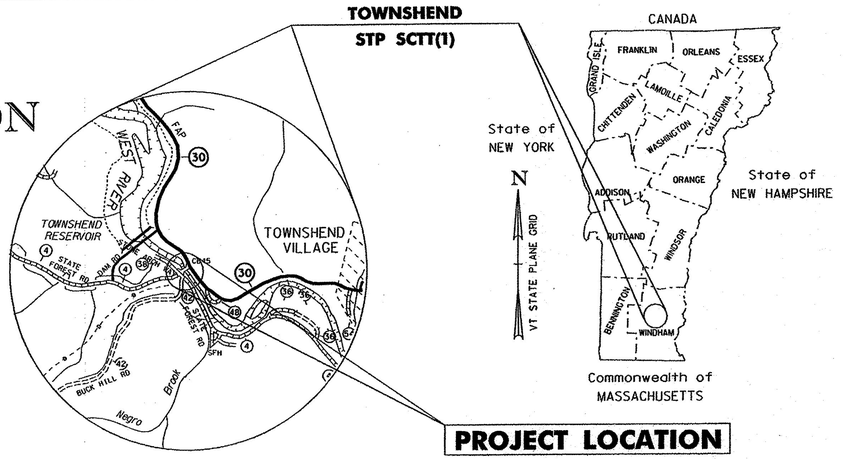
SEE SHEET 2 FOR INDEX OF SHEETS AND STANDARDS LIST

STATE OF VERMONT
AGENCY OF TRANSPORTATION



RECORD PLANS

CONTRACTOR: RENAUD BROTHERS, INC. - VERNON, VT

RESIDENT ENGINEER: CHAD GREENWOOD

CONSTRUCTION BEGAN: NOVEMBER 2, 2015

CONSTRUCTION COMPLETE: MAY 17, 2017

RECORD PLANS BY: CHAD GREENWOOD & 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 7/17/18

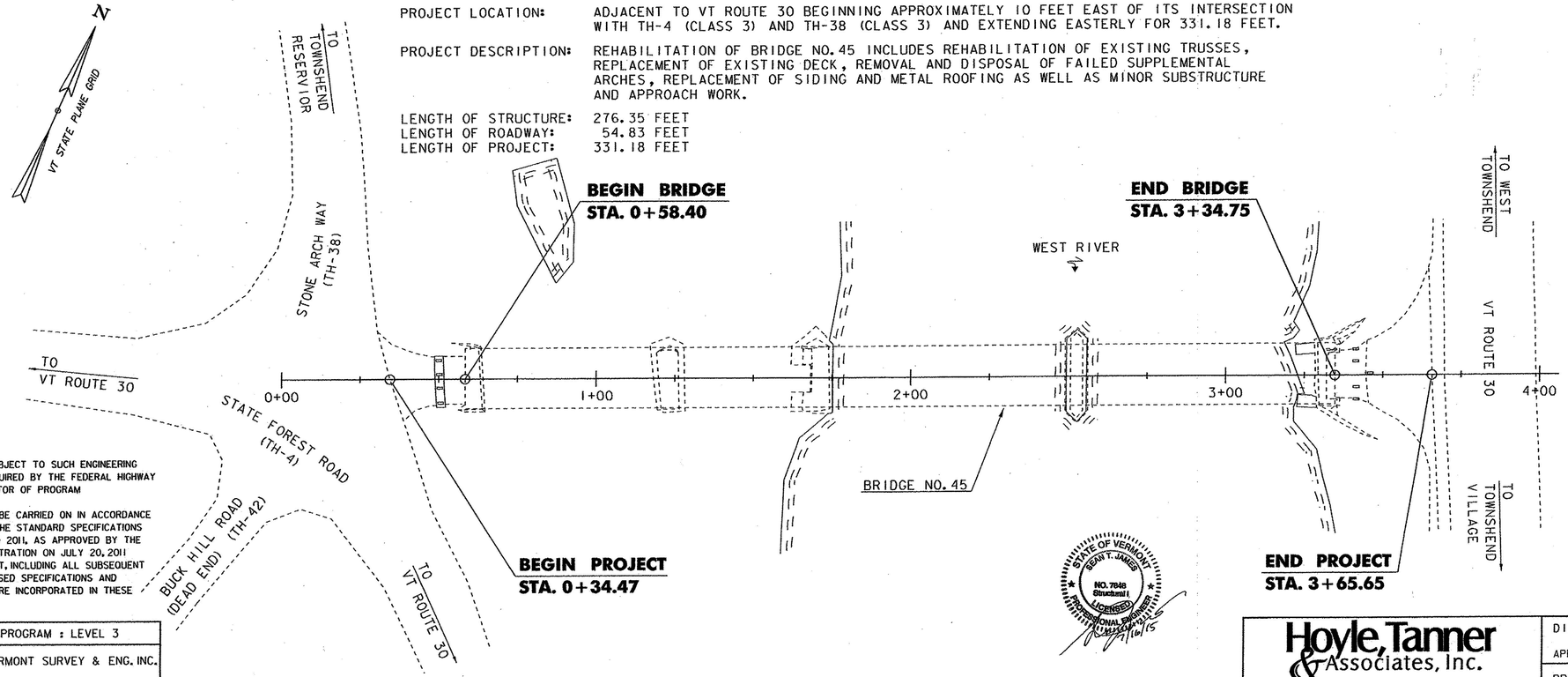
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF TOWNSHEND
COUNTY OF WINDHAM
SCOTT COVERED BRIDGE
BRIDGE NO. 45

PROJECT LOCATION: ADJACENT TO VT ROUTE 30 BEGINNING APPROXIMATELY 10 FEET EAST OF ITS INTERSECTION WITH TH-4 (CLASS 3) AND TH-38 (CLASS 3) AND EXTENDING EASTERLY FOR 331.18 FEET.

PROJECT DESCRIPTION: REHABILITATION OF BRIDGE NO. 45 INCLUDES REHABILITATION OF EXISTING TRUSSES, REPLACEMENT OF EXISTING DECK, REMOVAL AND DISPOSAL OF FAILED SUPPLEMENTAL ARCHES, REPLACEMENT OF SIDING AND METAL ROOFING AS WELL AS MINOR SUBSTRUCTURE AND APPROACH WORK.

LENGTH OF STRUCTURE: 276.35 FEET
LENGTH OF ROADWAY: 54.83 FEET
LENGTH OF PROJECT: 331.18 FEET



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

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.

STATE OF VERMONT SEAN T. JANES NO. 7848 Structural LICENSED PROFESSIONAL ENGINEER 7/16/15

SCALE: 1" = 20'-0"
0 20 40

QUALITY ASSURANCE PROGRAM : LEVEL 3	
SURVEYED BY : VERMONT SURVEY & ENG. INC.	
SURVEYED DATE : 7-26-2012	
DATUM	
VERTICAL	NAVD 88 (GEOID09)
HORIZONTAL	NAD 83 (CORS)

Hoyle, Tanner & Associates, Inc.
125 College St. 4th Floor Burlington, VT 05401
Telephone: 802-860-1331 Fax: 802-860-6499
Web Pages: www.hoyletanner.com

HTA PROJECT NO.	MODEL
904225	904225FSC

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE 7/16/2015

PROJECT MANAGER : M. D. SARGENT

PROJECT NAME : TOWNSHEND
PROJECT NUMBER : STP SCTT(1)

SHEET 1 OF 60 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

Version

INDEX OF SHEETS

PLAN SHEETS

STANDARDS LIST

E-119	UTILITY WORK ZONE	03-01-2004
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APRROACH SIGNING	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012

STRUCTURES DETAIL SHEETS

NONE

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: N/A

DRAINAGE AREA : N/A
CHARACTER OF TERRAIN : N/A
STREAM CHARACTERISTICS : N/A
NATURE OF STREAMBED : N/A

PEAK FLOW DATA

Q 2.33 =	N/A	Q 50 =	N/A
Q 10 =	N/A	Q 100 =	N/A
Q 25 =	N/A	Q 500 =	N/A

DATE OF FLOOD OF RECORD N/A
ESTIMATED DISCHARGE: N/A
WATER SURFACE ELEV.: N/A
NATURAL STREAM VELOCITY: N/A
ICE CONDITIONS : N/A
DEBRIS: N/A
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? N/A
IS ORDINARY RISE RAPID? N/A
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? N/A
IF YES, DESCRIBE:

WATERSHED STORAGE: N/A
HEADWATERS: N/A
UNIFORM: N/A
IMMEDIATELY ABOVE SITE: N/A

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: 4-SPAN COVERED BRIDGE
YEAR BUILT: 1870
CLEAR SPAN(NORMAL TO STREAM): 276.35'
VERTICAL CLEARANCE ABOVE STREAMBED: 17'-11"
WATERWAY OF FULL OPENING: N/A
DISPOSITION OF STRUCTURE: REHABILITATE
TYPE OF MATERIAL UNDER SUBSTRUCTURE: SANDY

WATER SURFACE ELEVATIONS AT:

Q2.33 =	N/A	VELOCITY =	N/A
Q10 =	N/A	"	N/A
Q25 =	N/A	"	N/A
Q50 =	N/A	"	N/A
Q100 =	N/A	"	N/A

LONG TERM STREAMBED CHANGES: N/A

IS THE ROADWAY OVERTOPPED BELOW Q100: N/A
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN:	TOWNSHEND	DISTANCE:	0.4 MI
HIGHWAY # :	N/A	STRUCTURE #:	N/A
CLEAR SPAN:	N/A	CLEAR HEIGHT:	N/A
YEAR BUILT:	N/A	FULL WATERWAY:	N/A
STRUCTURE TYPE:	USACOE TOWNSHEND DAM (NAT'L ID # VT00004)		

DOWNSTREAM STRUCTURE

TOWN:	TOWNSHEND	DISTANCE:	3.5 MI
HIGHWAY # :	VT RT 30	STRUCTURE #:	15
CLEAR SPAN:	446'	CLEAR HEIGHT:	N/A
YEAR BUILT:	1952	FULL WATERWAY:	N/A
STRUCTURE TYPE:	STEEL MULTI-BEAM		

PROPOSED STRUCTURE

STRUCTURE TYPE: REHABILITATED 4-SPAN COVERED BRIDGE

CLEAR SPAN(NORMAL TO STREAM): 276.35'
VERTICAL CLEARANCE ABOVE STREAMBED: 17'-11"
WATERWAY OF FULL OPENING: N/A

WATER SURFACE ELEVATIONS AT:

Q2.33 =	N/A	VELOCITY=	N/A
Q10 =	N/A	"	N/A
Q25 =	N/A	"	N/A
Q50 =	N/A	"	N/A
Q100 =	N/A	"	N/A

IS THE ROADWAY OVERTOPPED BELOW Q100: N/A
FREQUENCY: N/A
RELIEF ELEVATION: N/A
DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: N/A
VERTICAL CLEARANCE: N/A

SCOUR: N/A

REQUIRED CHANNEL PROTECTION: N/A

PERMIT INFORMATION

AVERAGE DAILY FLOW:	N/A	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	N/A	N/A
ORDINARY HIGH WATER:	N/A	N/A

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A
CLEAR SPAN (NORMAL TO STREAM): N/A
VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY AREA OF FULL OPENING: N/A

ADDITIONAL INFORMATION

DESIGN VALUES

1.	PEDESTRIAN DESIGN LIVE LOAD		35 PSF
2.	FUTURE PAVEMENT	d_p:	0.0 INCH
3.	DESIGN SPAN	L:	82.80 FT
4.	MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	- - -
5.	PRESTRESSING STRAND	f_y:	- - -
6.	PRESTRESSED CONCRETE STRENGTH	f'_c:	- - -
7.	PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	- - -
8.	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)	f'_c:	- - -
9.	CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	4.0 KSI
10.	CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11.	ULTRA HIGH PERFORMANCE CONCRETE	f'_c:	- - -
12.	REINFORCING STEEL	f_y:	- - -
13.	STRUCTURAL STEEL AASHTO M270 (WEATHERING)	f_y:	- - -
14.	SOIL UNIT WEIGHT	γ:	- - -
15.	NOMINAL BEARING RESISTANCE OF SOIL	q_n:	- - -
16.	SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	- - -
17.	NOMINAL BEARING RESISTANCE OF ROCK	q_n:	- - -
18.	ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	- - -
19.	PILE RESISTANCE FACTOR	ϕ:	- - -
20.	LATERAL PILE DEFLECTION	Δ:	- - -
21.	BASIC WIND SPEED	V_{3s}:	90 MPH
22.	MINIMUM GROUND SNOW LOAD	p_g:	0.05 K/FT²
23.	SEISMIC DATA PGA :	S_s:	- - -
		S_1:	- - -
24.	NOMINAL AXIAL PILE RESISTANCE		- - -
25.	PILE YIELD STRENGTH ASTM A572		- - -
26.	PILE SIZE		- - -
27.	EST. PILE LENGTH		- - -

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	N/A	N/A					
POSTING	N/A	N/A	N/A		N/A	N/A	N/A
OPERATING		N/A	N/A	N/A	N/A	N/A	
COMMENTS:							

AS BUILT "REBAR" DETAIL

LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
N/A	N/A	N/A	N/A	N/A	N/A	20 year ESAL for flexible pavement from N/A to N/A : N/A
N/A	N/A	N/A	N/A	N/A	N/A	40 year ESAL for flexible pavement from N/A to N/A : N/A
						Design Speed : N/A mph

Hoyle, Tanner & Associates, Inc.

HOYLE, TANNER PROJECT NO. 904225

PROJECT NAME: **TOWNSHEND**
PROJECT NUMBER: **STP SCTT (1)**

FILE NAME:	904225pi.xls	PLOT DATE:	7/13/2015
PROJECT LEADER:	M.D.SARGENT	DRAWN BY:	T.A.GELINAS
DESIGNED BY:	J.C.RIPLEY	CHECKED BY:	S.T.JAMES
PRELIMINARY INFORMATION SHEET		SHEET 2 OF 60	

8/13/2015
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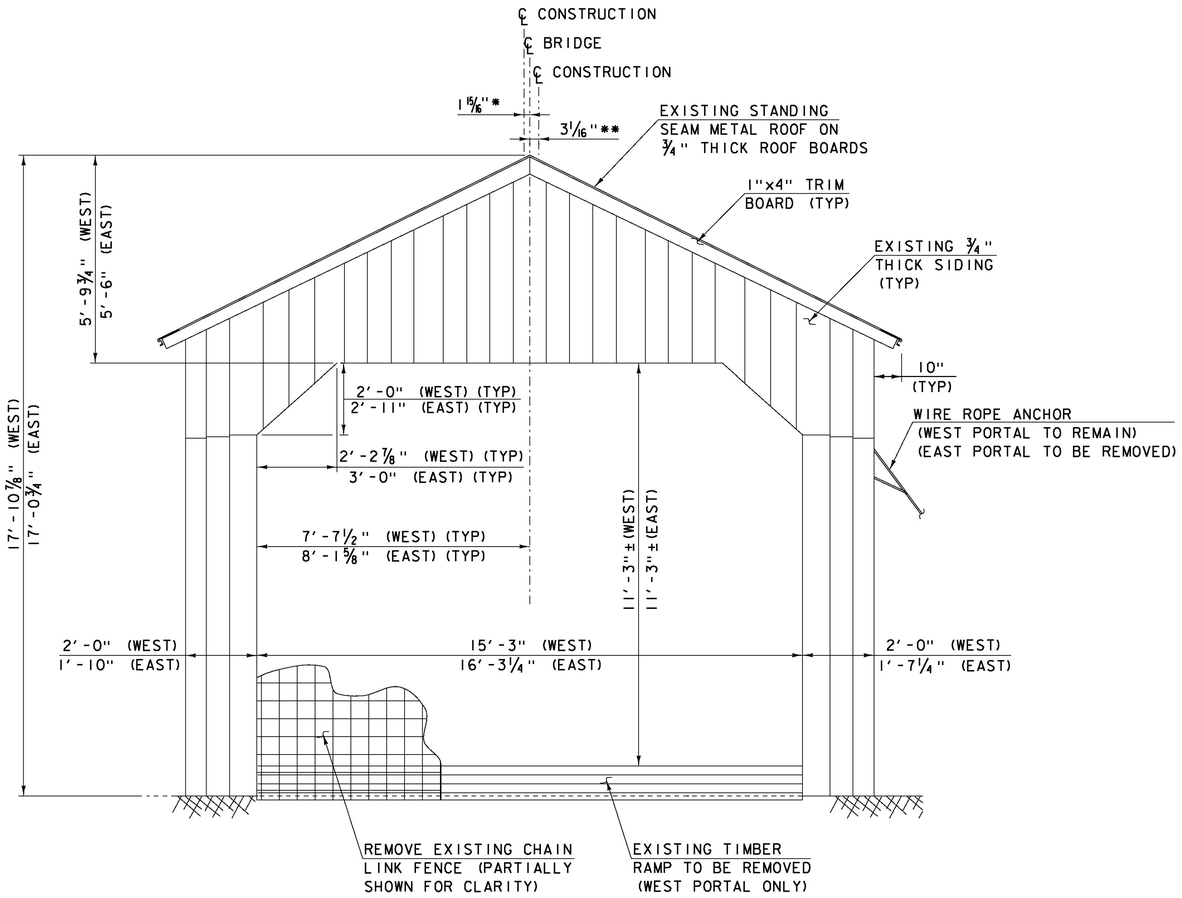
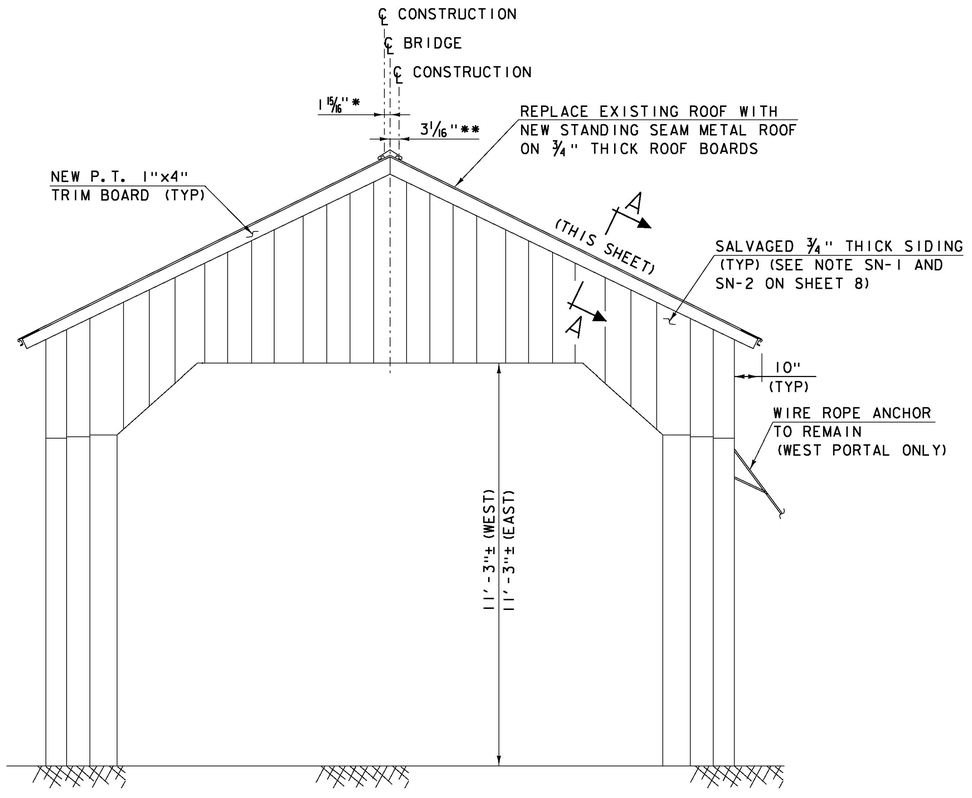


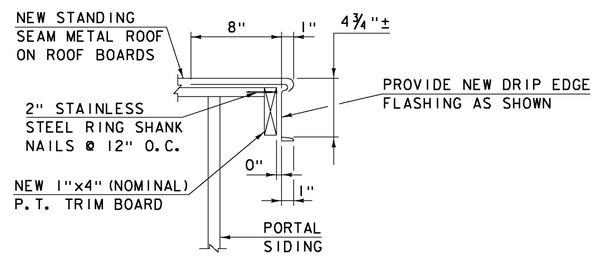
EXISTING PORTAL ELEVATION
(LOOKING EAST)

(WEST PORTAL SHOWN, EAST PORTAL SIMILAR)
SCALE: 1/4" = 1'-0"
* WEST PORTAL
** EAST PORTAL



PROPOSED PORTAL ELEVATION
(LOOKING EAST)

(WEST PORTAL SHOWN, EAST PORTAL SIMILAR)
SCALE: 1/4" = 1'-0"
* WEST PORTAL
** EAST PORTAL



SECTION A-A
NOT TO SCALE

DIMENSIONS OF TIMBER AND LUMBER MEMBERS SHOWN ON THE PLANS ARE THE ACTUAL SIZES UNLESS NOTED OTHERWISE.

NOTE

1. DIMENSIONS SHOWN ON THE EXISTING PORTAL ELEVATION SHALL BE MAINTAINED EXCEPT WHERE NOTED OTHERWISE IN THE PROPOSED PORTAL ELEVATION.

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225supl9

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225supl9.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EXIST. & PROP. PORTAL ELEVATIONS

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 3 OF 60

8/13/2015
10:22:20 AM
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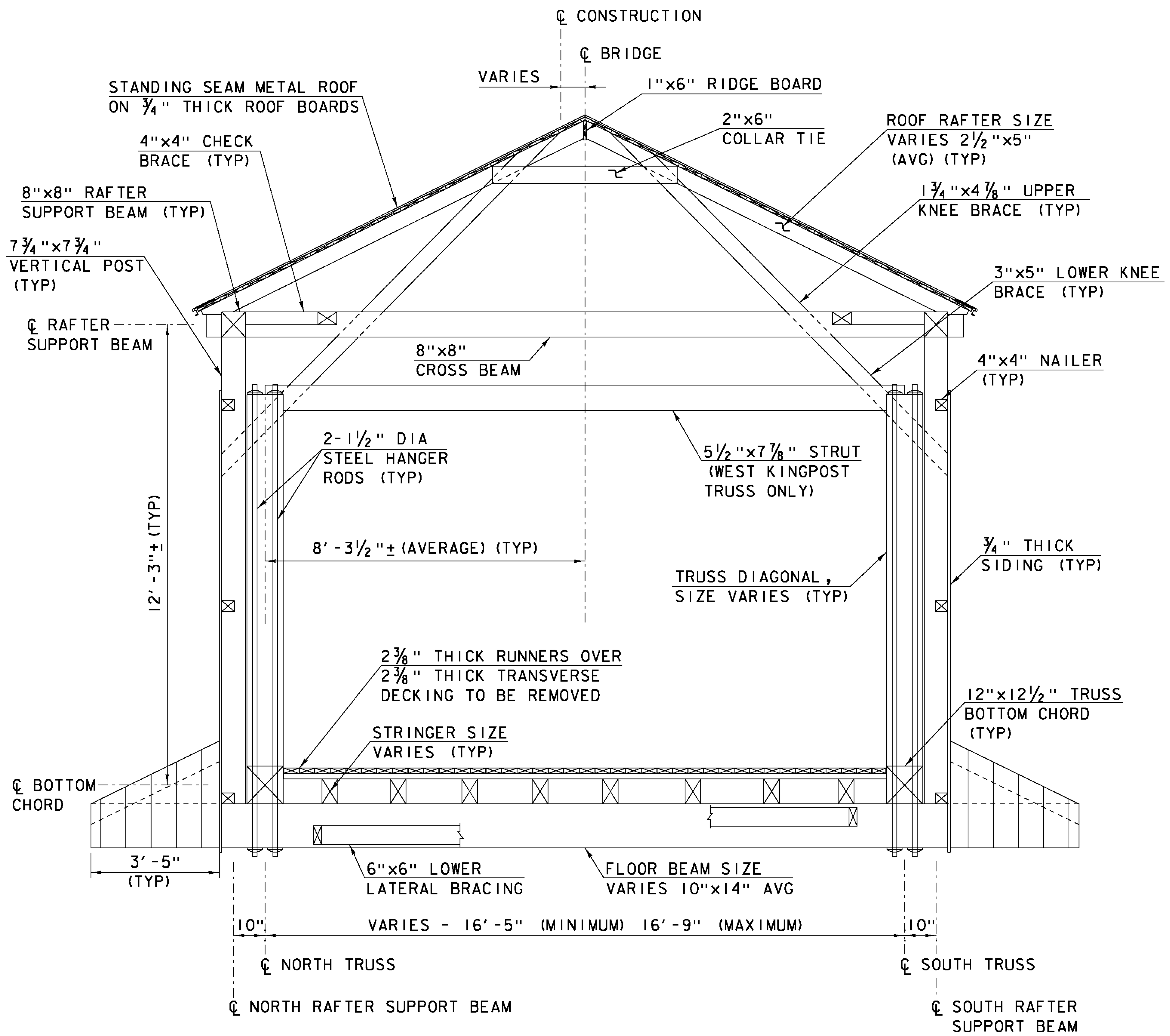
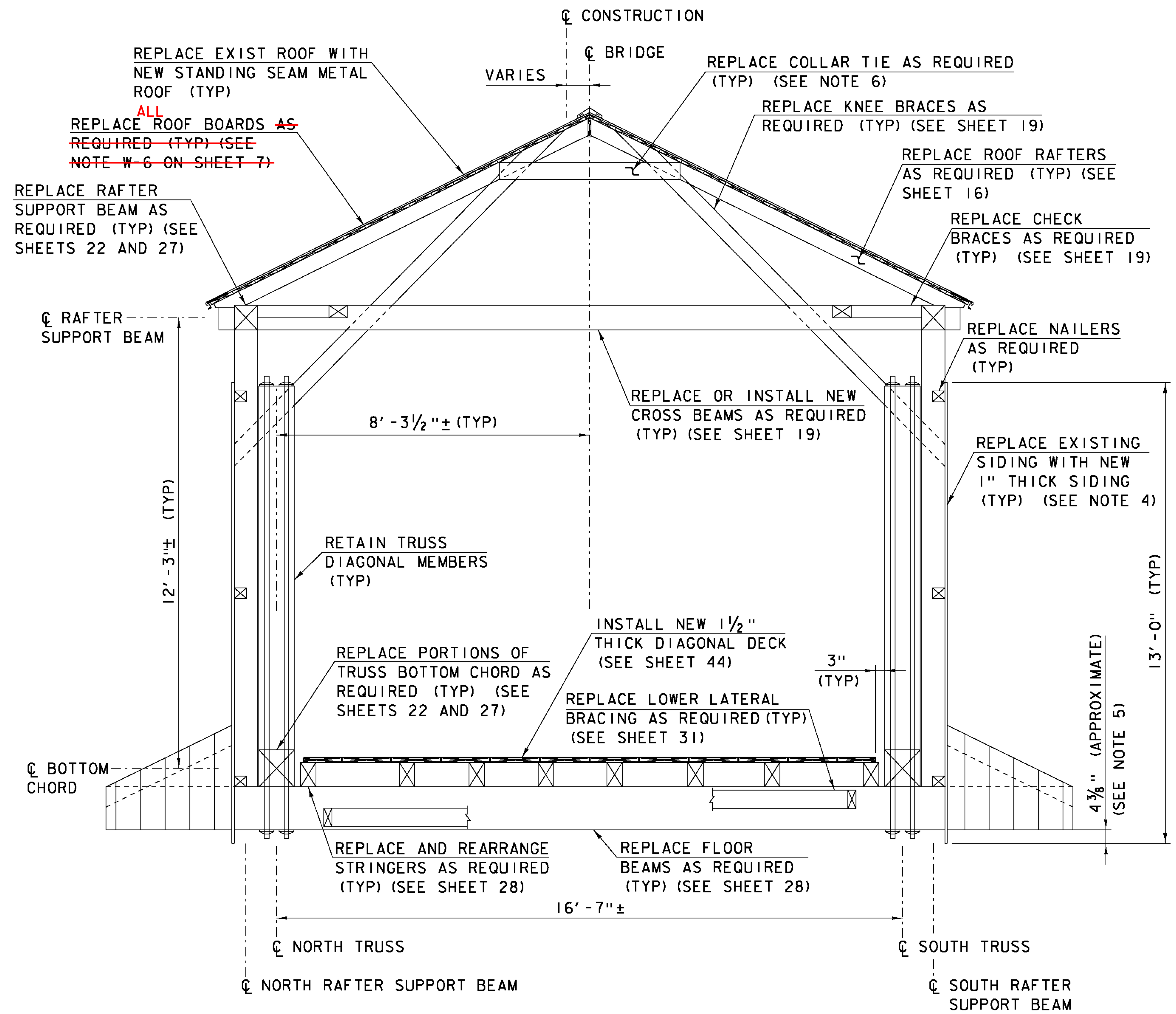


EXISTING TYPICAL KING POST BRIDGE SECTION
(LOOKING EAST)
SCALE: ¼" = 1'-0"



PROPOSED TYPICAL KING POST BRIDGE SECTION
(LOOKING EAST)
SCALE: ¼" = 1'-0"

NOTES

1. APPLY ENVIROMENTAL PROTECTION, CLEAR FIRE RETARDANT AND TERMITICIDE/INSECTICIDE/FUNGICIDE TO WOODEN BRIDGE MEMBERS IN ACCORDANCE WITH SPECIAL PROVISIONS, SECTION 900.
2. NEW SIDING SHALL BE INSTALLED ON THE ENTIRE LENGTH OF THE UPSTREAM AND DOWNSTREAM FASCIAS OF THE BRIDGE AND OUTRIGGERS UTILIZING EXISTING AND NEW SIDING SUPPORTS AS INDICATED ON THE PLANS OR AS ORDERED BY THE ENGINEER. ALL PORTAL AND END RETURN SIDING SHALL BE REINSTALLED WITH SALVAGED SIDING.
3. SIDING BOARDS SHALL CONSIST OF SINGLE VERTICAL PIECES AT ALL LOCATIONS AND AS SHOWN ON THE PLANS. HORIZONTAL JOINTS IN THE SIDING WILL NOT BE ALLOWED.
4. REFER TO SHEET 43 FOR SIDING CONNECTION DETAILS.
5. THE BOTTOM OF PROPOSED KING POST AND TOWN LATTICE SIDING SHALL LINE UP VERTICALLY. DIMENSION SHOWN IN THE PROPOSED SECTION IS BASED ON PROVIDING 3" OF SIDING BELOW LATTICE MEMBERS.
6. INDIVIDUAL COLLAR TIES NOTED FOR REPLACEMENT ARE NOT INCLUDED IN THESE PLANS. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO SAFELY REMOVE AND RE-USE EXISTING COLLAR TIES AT RAFTER REPLACEMENT LOCATIONS. COSTS FOR NEW COLLAR TIES WILL BE PAID UNDER ITEM 522.30, NONSTRUCTURAL LUMBER, UNTREATED.
7. SEE SHEET 11 FOR ESTIMATED LUMBER AND TIMBER QUANTITES.

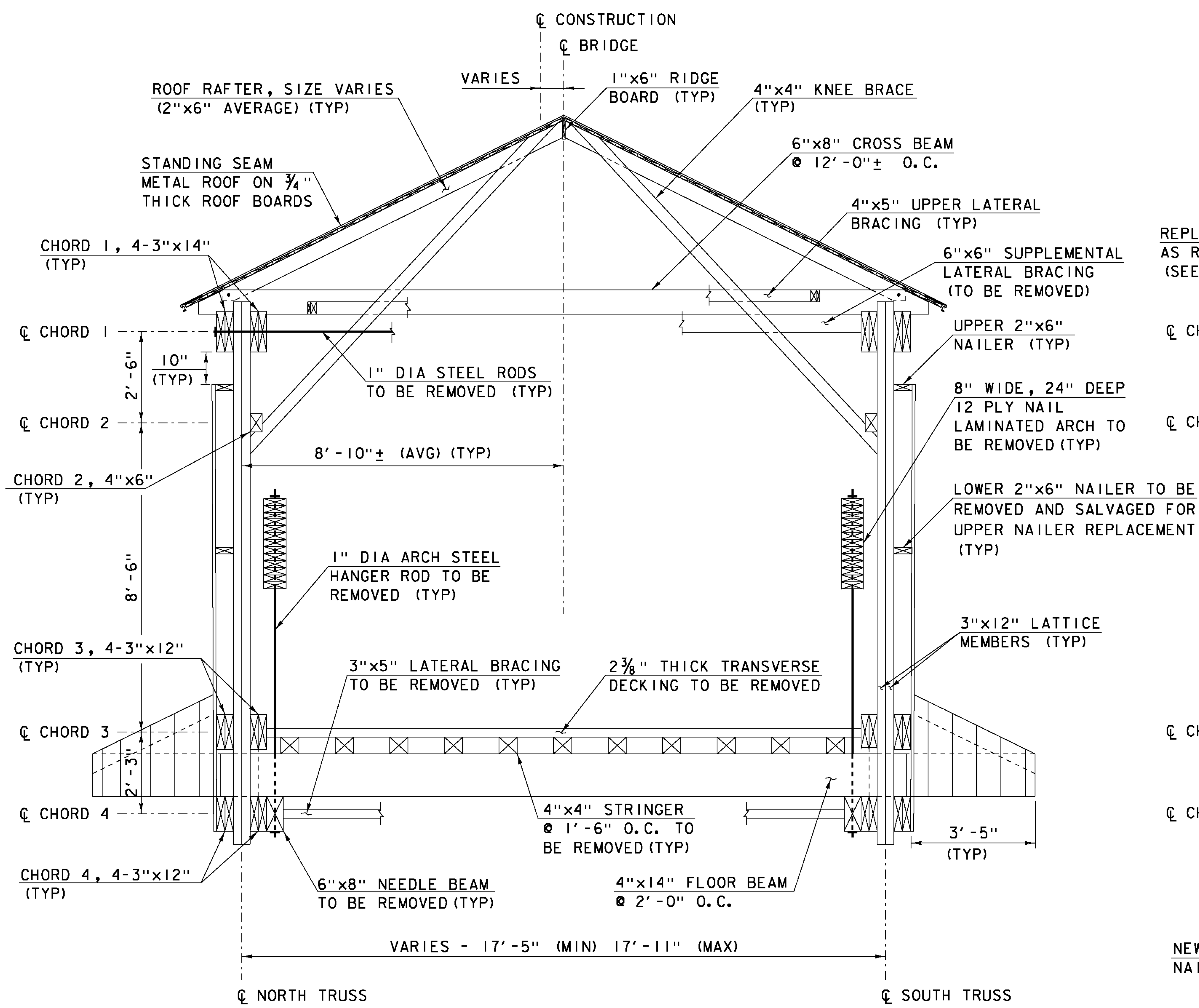
DIMENSIONS OF TIMBER AND LUMBER MEMBERS SHOWN ON THE PLANS ARE THE ACTUAL SIZES UNLESS NOTED OTHERWISE.

Hoyle, Tanner & Associates, Inc.

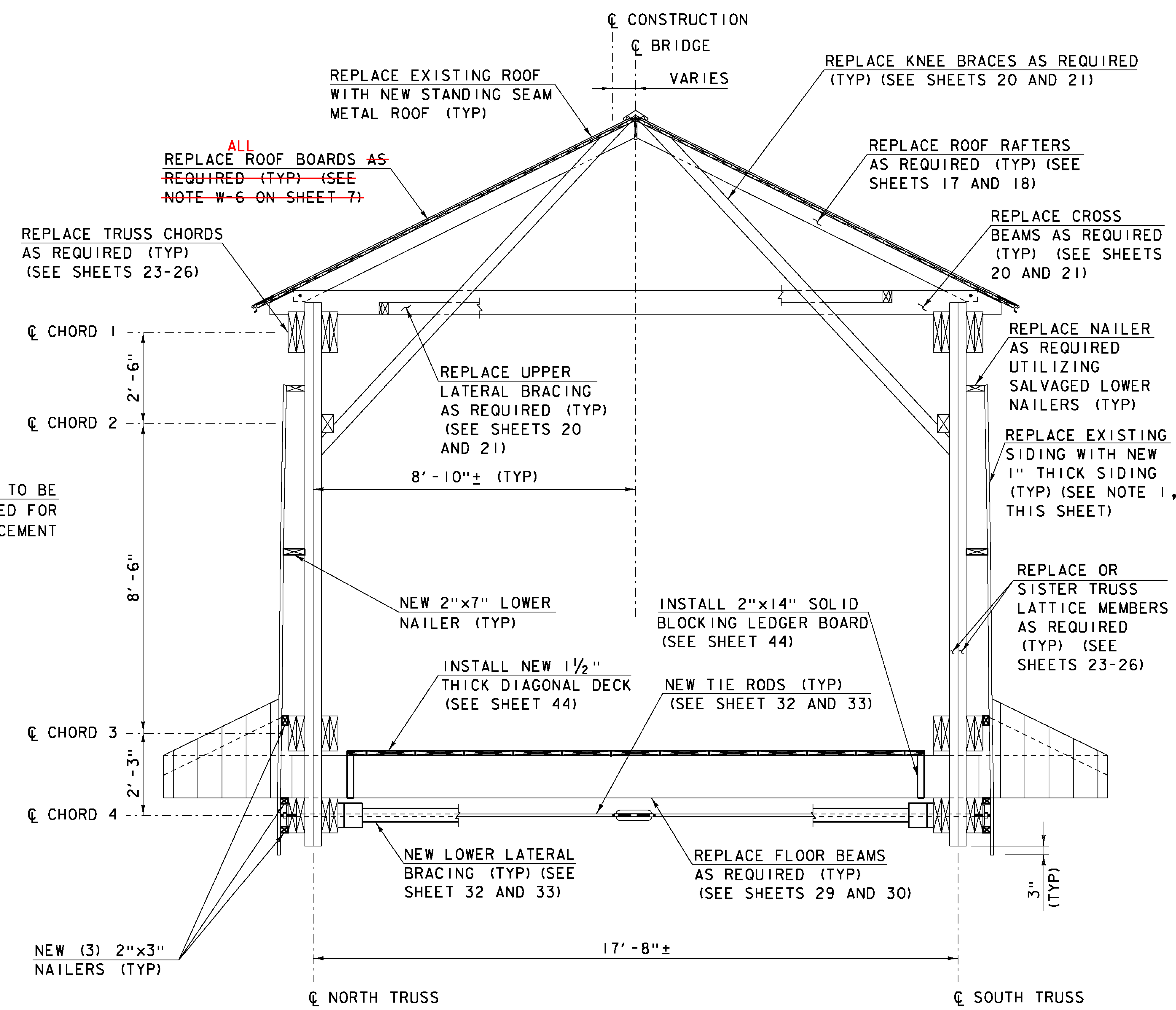
HTA PROJECT	MODEL
904225	904225sup21

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225sup21.dgn	PLOT DATE: 8/13/2015
PROJECT LEADER: M.D.SARGENT	DRAWN BY: T.A.GELINAS
DESIGNED BY: J.C.RIPLEY	CHECKED BY: S.T.JAMES
EXIST. & PROP. KING POST SECTIONS	SHEET 4 OF 60



EXISTING TYPICAL TOWN LATTICE BRIDGE SECTION
(LOOKING EAST)
SCALE: ¼" = 1'-0"



PROPOSED TYPICAL TOWN LATTICE BRIDGE SECTION
(LOOKING EAST)
SCALE: ¼" = 1'-0"

NOTE

1. SEE SHEET 4 FOR NOTES THAT APPLY TO THIS SHEET.

DIMENSIONS OF TIMBER AND LUMBER MEMBERS SHOWN ON THE PLANS ARE THE ACTUAL SIZES UNLESS NOTED OTHERWISE.

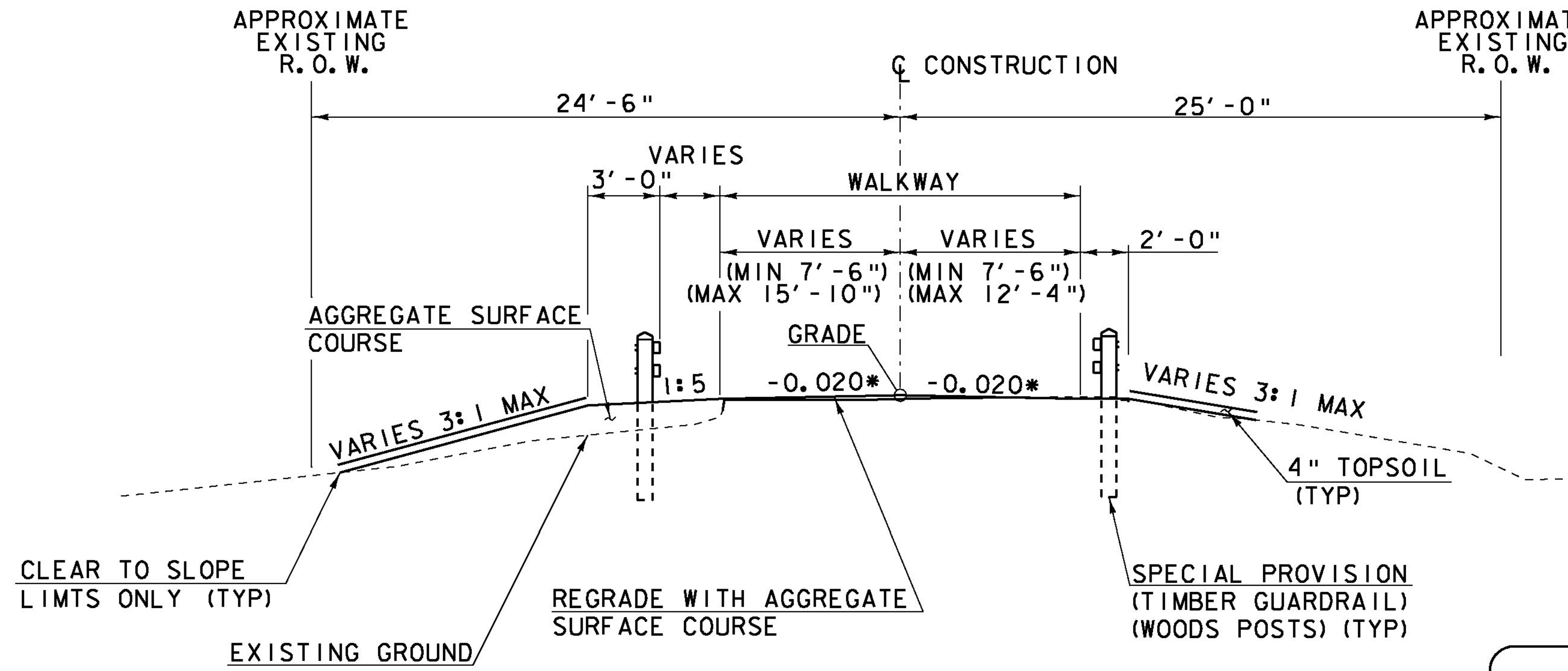
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sup20

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

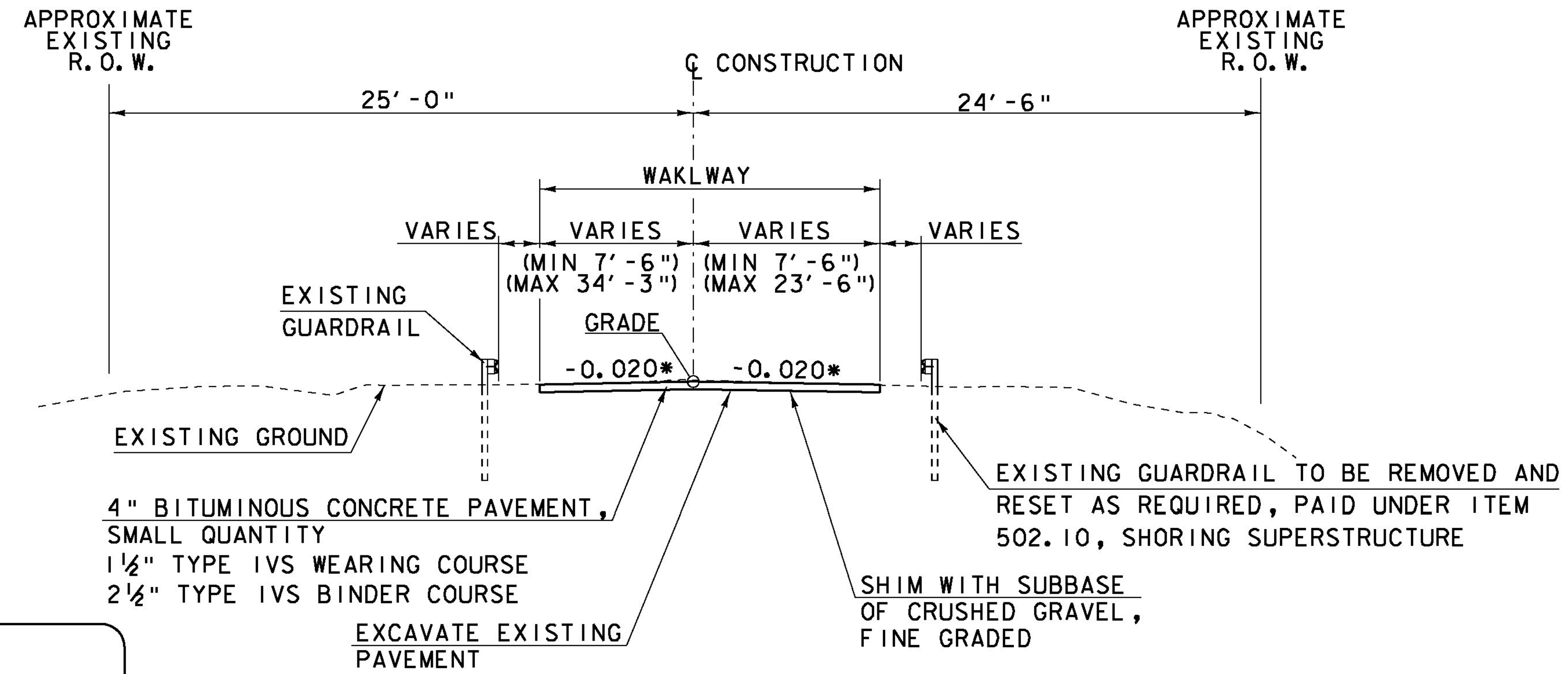
FILE NAME: 904225sup20.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EXIST. & PROP. TOWN LATTICE SECTIONS

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 5 OF 60



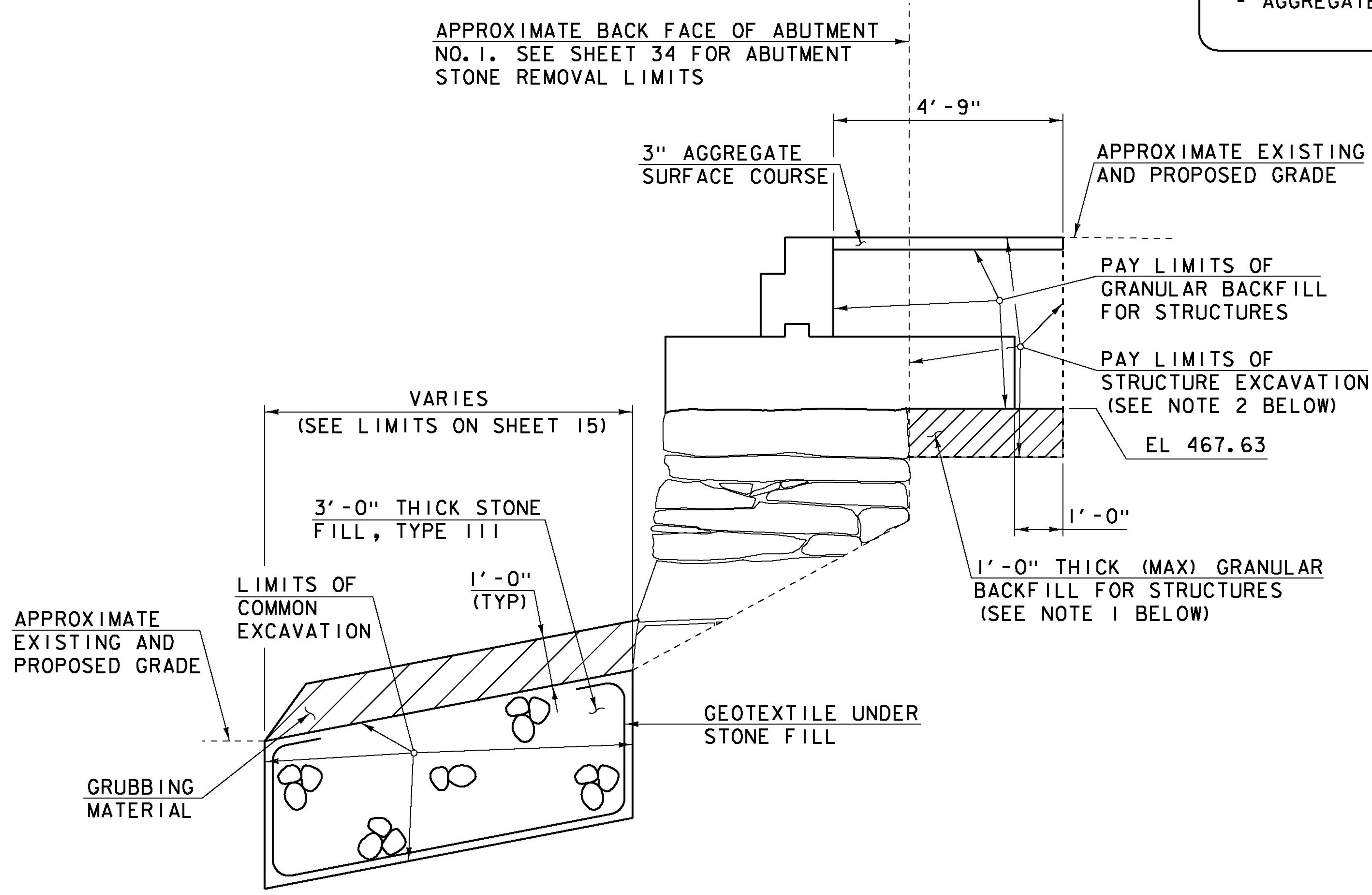
TYPICAL ROADWAY SECTION
WEST APPROACH
NOT TO SCALE

* TRANSITION TO 0% AT BRIDGE



TYPICAL ROADWAY SECTION
EAST APPROACH
NOT TO SCALE

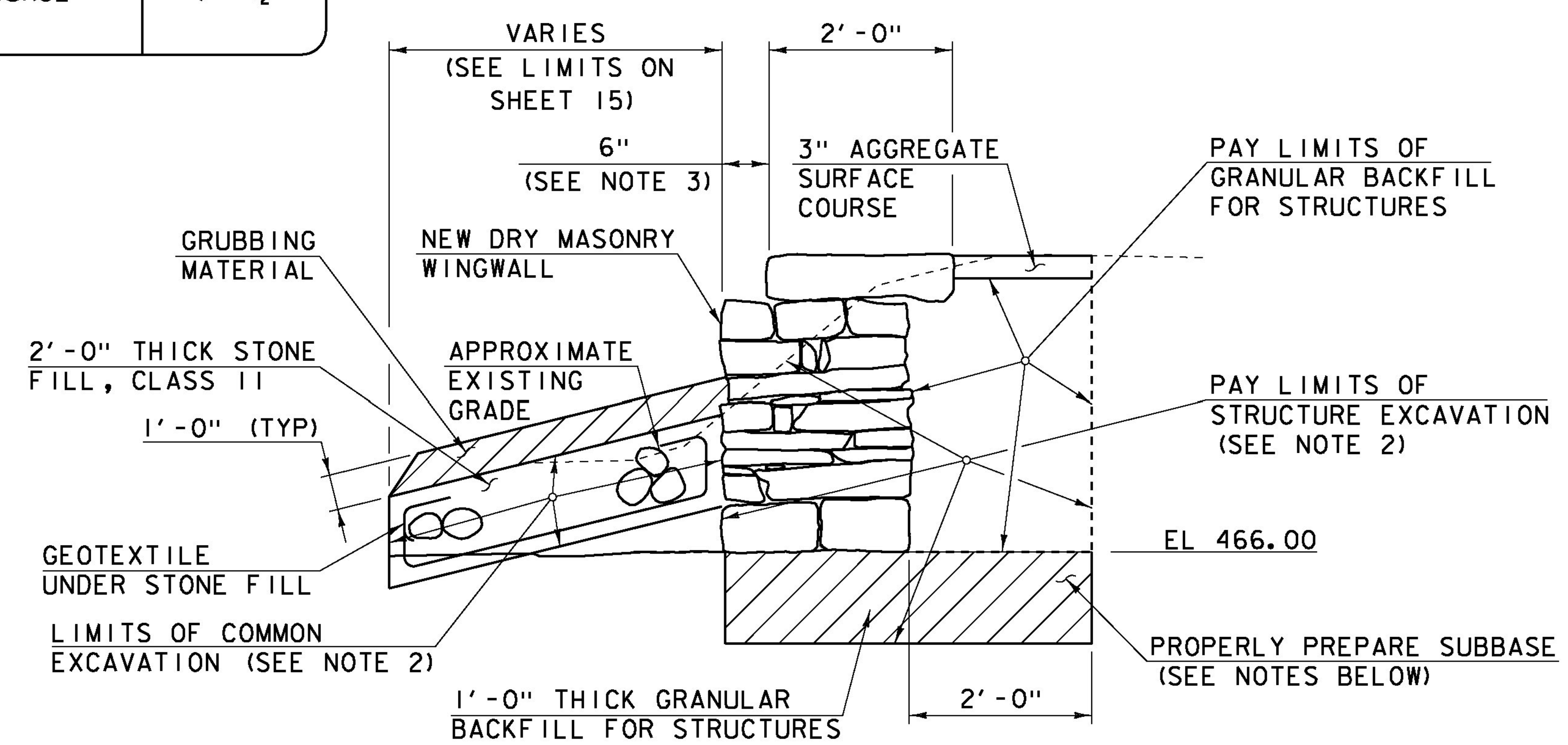
MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- ¼"
- AGGREGATE SURFACE COURSE	+/- ½"



NOTES
1. THE BACK FACE OF THE EXISTING STONE ABUTMENT IS UNKNOWN. IF ABUTMENT STONES ARE WITHIN THE BACKFILL LIMITS, SUBSTITUTE GRANULAR BACKFILL FOR CONCRETE SUBFOOTING.

2. REMOVAL OF EXISTING STONES ABOVE THE PROPOSED BOTTOM OF FOOTING (EXCEPT THOSE DETAILED ON SHEET 34) WILL BE PAID UNDER ITEM 203.16, SOLID ROCK EXCAVATION.

ABUTMENT NO. 1 TYPICAL EARTHWORK SECTION
SCALE: ½" = 1'-0"



NOTES
1. LIMITS OF EXISTING STONE WINGWALLS ARE UNKNOWN. IF NEW WINGWALL IS TO BE CONSTRUCTED ON EXISTING STONES ALL VOIDS IN EXISTING STONES SHALL BE FILLED WITH GRANULAR BACKFILL FOR STRUCTURES PRIOR TO CONSTRUCTION OF NEW WINGWALLS.

2. ROCKS ENCOUNTERED IN THE EXCAVATION CAN BE REUSED. PAYMENT FOR HANDLING OF ROCK FOR REUSE WILL BE INCIDENTAL TO PAY ITEM TEM 602.35, REBUILT STONE MASONRY. ROCK EXCAVATION WILL BE PAID UNDER PAY ITEM 203.16.

3. TOP STONES WILL BE SET BACK 6" FROM THE FRONT FACE OF THE WINGWALL.

WINGWALL NO. 1 AND NO. 2 TYPICAL EARTHWORK SECTION
NOT TO SCALE

Hoyle, Tanner & Associates, Inc.
HTA PROJECT 904225 | MODEL 904225TYP
PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)
FILE NAME: 904225TYP.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EARTHWORK TYPICALS
PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 6 OF 60

GENERAL

G-1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.

G-2. THE CONTRACTOR SHALL TAKE SPECIAL CARE AND PRECAUTION TO ENSURE THAT NO DEBRIS FALLS INTO THE WEST RIVER DURING CONSTRUCTION. ALL MATERIAL FALLING IN THE AREA BELOW AND ADJACENT TO THE BRIDGE SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AT NO COST TO THE STATE.

G-3. ALL WORK SHALL BE COMPLETED WITHIN THE EXISTING R.O.W LIMITS SHOWN IN THESE PLANS. THE RIGHT-OF-WAY SHOWN IS ASSUMED TO BE APPROXIMATELY CENTERED ABOUT THE CENTERLINE OF THE BRIDGE. NO PROVISIONS HAVE BEEN MADE FOR WORK OR ACTIVITIES BEYOND THE RIGHT-OF-WAY LIMITS. SHOULD THE CONTRACTOR REQUIRE ANY ADDITIONAL RIGHT-OF-WAY IT WILL BE THE RESPONSIBILTY OF THE CONTRACTOR TO OBTAIN ALL EASEMENTS, AND BEAR THE COSTS OF SUCH EASEMENTS WITHOUT FURTHER COMPENSATION FROM THE STATE.

G-4. THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTIONS AND OTHER INFORMATION AVAILABLE. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE CHECKED BY THE CONTRACTOR IN THE FIELD PRIOR TO COMMENCING THE WORK. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM THE DIMENSIONS AND DETAILS OF EXISTING BRIDGE FEATURES AND COMPONENTS PRIOR TO THE FABRICATION OF NEW BRIDGE COMPONENTS. ACTUAL WORK SHALL MATCH FIELD CONDITIONS UNLESS NOTED OTHERWISE. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

G-5. BRIDGE NO. 45 IS CLOSED TO ALL TRAFFIC AND SHALL REMAIN CLOSED FOR THE DURATION OF CONSTRUCTION.

G-6. EXCEPT AS NOTED OTHERWISE, ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE SHALL INCLUDE ANY REMOVAL WORK NECESSARY TO FACILITATE AND ACCOMPLISH THE SCOPE OF PROJECT WORK AS INDICATED BY THE CONTRACT DOCUMENTS AND DIRECTED BY THE ENGINEER INCLUDING: REMOVING AND DISPOSING SUPERSTRUCTURE MEMBERS AND PORTIONS OF MEMBERS; AS WELL AS REMOVING AND STOCKPILING MEMBERS AND PORTIONS OF MEMBERS FOR RE-USE, INCLUDING REMOVING AND STOCKPILING MEMBERS AND PORTIONS OF MEMBERS FOR THE CONTRACTOR'S METHODS OF REHABILITATION.

G-7. NO BURNING OF REMOVED MATERIALS AT THE PROJECT SITE WILL BE ALLOWED. THE EXISTING COVERED BRIDGE TIMBERS AND LUMBER MAY CONTAIN HAZARDOUS WOOD PRESERVATIVES. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS AND EMPLOYEES HARMLESS REGARDING THE CONTRACTOR'S HANDLING OF THESE MATERIALS AND SUBSEQUENT USE, RE-USE, OR DISPOSAL OF THESE MATERIALS.

G-8. SPECIAL CARE SHALL BE TAKEN TO AVOID DAMAGE TO MEMBERS THAT ARE TO REMAIN AND TO AVOID MOVEMENT OF THE TRUSS THAT COULD RESULT IN DISTORTION OR MISALIGNMENT OF THE TRUSS AND ITS JOINTS. MEMBERS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AS DIRECTED BY THE ENGINEER AT CONTRACTOR'S EXPENSE.

G-9. ALL JOINTS IN REPLACED MEMBERS SHALL MATCH THE EXISTING JOINT, INCLUDING ALL NAILS, BOLTS, TRUNNELS OR SCREWS REQUIRED UNLESS NOTED OTHERWISE.

G-10. ALL EXISTING MEMBERS SHOWN TO BE REPLACED ARE TO BE REPLACED "IN-KIND" WITH NEW MEMBERS IDENTICAL IN DIMENSIONS AND CONFIGURATIONS AS THE MEMBERS ORIGINALLY USED IN THE COVERED BRIDGE (INCLUDING MORTISES, TENONS, NOTCHES, HOLES, ETC.) UNLESS NOTED OTHERWISE IN THESE PLANS. SEE SHEET 11 FOR WOOD MATERIALS LIST.

G-11. THE CONTRACTOR'S COVERED BRIDGE SHORING SYSTEM FOR ITEM 502.10, SHORING SUPERSTRUCTURE, SHALL NOT SIGNIFICANTLY RESTRICT THE EXISTING WATERWAY OPENING OF THE WEST RIVER.

G-12 A THIRD PARTY SHALL HAVE ACCESS TO THE SALVAGED TIMBER FOR UP TO THIRTY DAYS FROM REMOVAL. MOST OF THE MATERIAL WILL BE AVAILABLE AS SALVAGE AS THE THIRD PARTY WILL CUT A MAXIMUM OF 6" ONLY FROM ONE END OF THE TIMBER. THIS IS A STUDY TO DETERMINE TREE RING DATA.

G-13 THE CONTRACTOR'S COVERED BRIDGE SHORING SYSTEM FOR ITEM 502.10, SHORING SUPERSTRUCTURE, SHALL BE COMPLETE AND IN PLACE FOR THE TOWN LATTICE SPANS BETWEEN PIERS 2 AND 3 AND PIER 3 AND ABUTMENT NO. 2 PRIOR TO JANUARY 15, 2016.

TIMBER CONNECTORS

TC-1. EXCEPT AS SPECIFIED IN THE STRUCTURAL STEEL NOTES, PAYMENT FOR STRUCTURAL LUMBER AND TIMBER AND NON-STRUCTURAL LUMBER QUANTITIES WILL INCLUDE FULL COMPENSATION FOR DETAILING, FURNISHING, TRANSPORTING, HANDLING, PLACING AND INSTALLING NEW TIMBER CONNECTORS WHICH ARE USED TO CONNECT NEW LUMBER AND TIMBER MEMBERS WITH NEW AND EXISTING LUMBER AND TIMBER MEMBERS.

TC-2. EXCEPT AS SPECIFIED IN THE STRUCTURAL STEEL NOTES, DETAILING, FURNISHING, TRANSPORTING, HANDLING, AND INSTALLING NEW AND REUSED TIMBER CONNECTORS WHICH ARE USED TO CONNECT EXISTING LUMBER AND TIMBER MEMBERS WILL BE INCLUDED UNDER PAY ITEM 900.645 SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

WOOD

W-1. ALL WOOD CONSTRUCTION SHALL COMPLY WITH THE LATEST AASHTO SPECIFICATIONS, THE NATIONAL DESIGN SPECIFICATION (NDS) AND SUPPLEMENT FOR WOOD CONSTRUCTION, AND THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) SPECIFICATION, 6TH EDITION.

W-2. THE MAXIMUM IN PLACE MOISTURE CONTENT OF THE WOOD USED SHALL BE AS FOLLOWS:

MEMBERS LESS THAN 5" THICK	16%
MEMBERS GREATER THAN 5" THICK	19%
TRUNNELS	10%

ALL HARDWOOD 2.5" AND THICKER AND BLACK LOCUST MAY BE GREEN

W-3. ALL NEW WOOD TRUNNELS SHALL BE MADE OF WHITE OAK. TRUNNELS SHALL BE DRIVEN IN A MANNER WHICH AVOIDS SPLITTING THE TRUNNELS OR THE MEMBER CONNECTED BY THEM. HOLES SHALL BE SIZED 1/16" IN DIAMETER SMALLER THAN THE TRUNNEL TO PROVIDE A FRICTION FIT. TRUNNELS SHALL BE DIPPED IN BOILED LINSEED OIL, MINERAL OIL OR AN APPROVED WAX PRIOR TO DRIVING. ALL NEW OR EXISTING WOOD TRUNNELS IN SOUND CONDITION THAT ARE TO BE RE-USED WITH PERMISSION OF THE RESIDENT ENGINEER FOR CONNECTING NEW OR REPLACED MEMBERS ARE CONSIDERED INCIDENTAL TO ITEM 522.20, STRUCTURAL LUMBER AND TIMBER, UNTREATED.

W-4. THE REPAIR OF APPROXIMATELY 99 SPLITS AND CHECKS IN EXISTING LATTICE AND 13 REPAIRS IN CHORD MEMBERS OF THE NORTH AND SOUTH TRUSSES SHALL BE MADE WITH AN APPROVED WOOD EPOXY TO ACHIEVE FULL STRENGTH OF THE REPAIRED MEMBER (PAY ITEM 900.620, SPECIAL PROVISION (WOOD EPOXY REPAIRS)). AN ADDITIONAL 13 ROTTED MEMBER REPAIRS (AS SHOWN ON "EPOXY REPAIR DETAIL" ON SHEET 45) ARE INCLUDED FOR BIDDING PURPOSES. SEE THE RECOMMENDED REPAIR SEQUENCE NOTES ON SHEET 42 AND SHEET 45 FOR MORE DETAILS AND INFORMATION.

W-5. EACH PIECE OF NEW LUMBER AND TIMBER SHALL BE GRADED, BY A RECOGNIZED LUMBER GRADING AGENCY. INDIVIDUAL PIECES SHALL BE STAMPED WITH A GRADE STAMP AT THE END GRAIN OF THE MEMBERS. MATERIAL CERTIFICATIONS SHALL BE SUBMITTED FOR ALL WOOD (EXCEPT BLACK LOCUST) IN ACCORDANCE WITH SECTION 709.

W-6. THE QUANTITY OF ITEM 522.30, NONSTRUCTURAL LUMBER, UNTREATED ASSUMES REPLACEMENT OF ALL UPSTREAM AND DOWNSTREAM SIDING AND 20% OF EXISTING ROOF BOARDS. THE CONTRACTOR AND RESIDENT ENGINEER SHALL JOINTLY INSPECT ALL ROOF BOARDS AFTER THE REMOVAL OF THE EXISTING METAL ROOF TO IDENTIFY ADDITIONAL MEMBERS TO BE REPLACED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL LUMBER DIMENSIONS AND SIZES REQUIRED FOR CONSTRUCTION.

W-7. THE QUANTITY OF ITEM 522.20, STRUCTURAL LUMBER AND TIMBER, UNTREATED ASSUMES REPLACEMENT OF 10 ADDITIONAL ROOF RAFTERS (5 FOR THE KING POST SPAN AND 5 FOR THE TOWN LATTICE SPAN), 5 KING POST STRINGERS, 5 TOWN LATTICE FLOOR BEAMS, 5 ADDITIONAL LATTICE MEMBERS AND 200 LF OF ADDITIONAL TOWN LATTICE CHORD (70 LF FOR CHORD 1 AND 130 LF FOR CHORDS 3 AND 4) FOR BIDDING PURPOSES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL LUMBER DIMENSIONS AND SIZES REQUIRED FOR CONSTRUCTION.

W-8. ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE) SHALL INCLUDE ALL COSTS ASSOCIATED WITH RE-INSTALLING STOCKPILED COMPONENTS (FROM ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE) ON THE SUPERSTRUCTURE; ALTERATIONS TO IN-PLACE MEMBERS REQUIRED FOR RE-USE/REHABILITATION OF THE SUPERSTRUCTURE; TEMPORARY BRACING AND BLOCKING; ALL LABOR, MATERIALS AND SUBMITTALS REQUIRED FOR THE REHABILITATION WORK (EXCEPT AS SPECIFIED BY OTHER CONTRACT ITEMS); STRAIGHTENING, PLUMBING, AND RE-ALIGNING THE TRUSSES; CAMBER RESTORATION; AND FURNISHING, AND INSTALLING NEW TRUNNELS AND THROUGH BOLTS WHERE NONE EXIST OR AS IDENTIFIED IN THE PLANS, AND PLUGGING BOLT HOLES IN CHORD MEMBERS AS IDENTIFIED IN THE PLANS AND AS DIRECTED BY THE ENGINEER.

W-9. ALL NUTS, BOLTS, WASHERS, AND SCREWS SHALL CONFORM TO ASTM A307, ALL NAILS AND SPIKES SHALL CONFORM TO ASTM F1667 AND BE DOUBLE HOT DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M 232M/M 232. STAINLESS STEEL NAILS ARE REQUIRED FOR THE SIDING.

W-10. ALL STRUCTURAL LUMBER AND TIMBER NOT SHOWN ON THE WOOD MATERIALS LIST TABLE ON SHEET 11 SHALL BE DOUGLAS FIR NO.1 OR BETTER. LIKEWISE, ALL HARDWOOD SHALL BE WHITE OAK NO.1 OR BETTER OR BLACK LOCUST WHERE THE SPECIES IS NOT NOTED.

W-11. ALL FIELD CUTS AND BORINGS OF TREATED WOOD SHALL BE TREATED WITH TWO COATS OF COPPER NAPHTHENATE LIBERALLY APPLIED PER SECTION 522.

W-12. EXISTING TRUSS, ROOF RAFTER, KNEE BRACING, CROSS BEAMS, UPPER LATERAL BRACING, AND LOWER LATERAL BRACING JOINTS SHALL BE REPLICATED ON ALL STRUCTURE MEMBERS TO BE REPLACED UNLESS NOTED OTHERWISE IN THE CONTRACT DRAWINGS.

W-13. ALL LAG BOLTS AND NUTS FOR THROUGH BOLTS SHALL BE TIGHTENED SNUGLY BUT NOT SO TIGHTLY AS TO CAUSE CRUSHING OF THE WOOD UNDER THE WASHER OR PLATE.

W-14. DIMENSIONS OF ALL LUMBER AND TIMBER MEMBERS SHOWN IN THESE PLANS ARE THE ACTUAL SIZES AFTER SEASONING UNLESS NOTED OTHERWISE IN THE CONTRACT DOCUMENTS.

W-15. ALL WOOD MEMBERS WITHIN 5 FT OF THE WINDOW OPENINGS SHALL BE COATED WITH TWO COATS OF THOMPSON WATERSEAL ADVANCED WOOD PROTECTOR BY THOMPSON'S COMPANY OR WOLMAN RAINCOAT CLEAR WATER REPELLENT BY RUSTOLEUM OR WATER REPELLENT CLEAR SEALER BY RECOCHEN INC. OR APPROVED EQUAL. PRIOR TO THE APPLICATION, ALL WOOD SURFACE SHALL BE FREE OF DIRT, MILDEW AND CONTAMINANTS. A TRIAL TEST SHALL BE DONE PRIOR TO APPLICATION FOR APPROVAL BY THE RESIDENT ENGINEER. ALL COST IS CONSIDERED SUBSIDIARY TO ITEM 900.645 SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

W-16. PRESERVATIVE TREATMENT FOR ITEM 522.25, STRUCTURAL LUMBER AND TIMBER, TREATED SHALL COMPLY WITH SUBSECTION 726.01 FOR TYPE III PENTACHLOROPHENOL TYPE C.

STRUCTURAL STEEL

S-1. EXCEPT AS NOTED OTHERWISE IN THE CONTRACT PLANS, ITEM 506.75, STRUCTURAL STEEL SHALL INCLUDE THE FOLLOWING:

- 4 KING POST ARCH HANGER RODS (ESTIMATED).
- CARRIAGE BOLTS INCLUDING OGEE WASHERS AND HEAVY SQUARE NUTS FOR KING POST AND TOWN LATTICE SPAN UPPER LATERAL BRACING AND KING POST AND TOWN LATTICE SPAN LOWER LATERAL BRACING.
- KING POST SPAN RODS AT TRUSS CONNECTION TO BOTTOM CHORD.
- KING POST BOLTS AT BOTTOM CHORD SPLICES AT ALL NEW AND EXISTING SPLICES.
- TOWN LATTICE SPAN LOWER LATERAL BRACING TIE RODS.
- TIE PLATES FOR THE KING POST SPAN INTERMEDIATE CROSS BEAMS.
- TOWN LATTICE AND KING POST KNEE BRACE CONNECTION HARDWARE.
- KING POST RAFTER SUPPORT BEAM BEARING DETAIL THREADED RODS.
- ANGLES AND BOLTS AT ABUTMENT NO. 1 POSTS.

FABRICATION DRAWINGS AND ERECTION PLAN SUBMITTALS ARE NOT REQUIRED FOR ITEM 506.75, STRUCTURAL STEEL.

S-2. ALL NEW STRUCTURAL STEEL SHOWN IN THE PLANS INCLUDING PLATES, BOLTS, LAG BOLTS, TURNBUCKLES, NUTS, WASHERS, RODS, ANGLES AND MISCELLANEOUS STEEL, SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M 232M/M 232 EXCEPT FOR PLATES WHICH SHALL BE GALVANIZED PER AASHTO M 111M/ M 111. ALL STEEL PLATES AND RODS SHALL BE ASTM A36.

S-3. EXPOSED ENDS OF ALL NEW STRUCTURAL STEEL AND HARDWARE SHALL BE COATED WITH 2 COATS OF A-H COAL TAR EPOXY 210 BY ANTI-HYDRO COMPANY, BITUMASTIC 300-M BY CARBOLINE, RUST-OLEUM C957 SYSTEM COAL TAR EPOXY OR OTHER EQUIVALENT APPROVED EQUAL COAL TAR EPOXY. ALL COST FOR THIS WORK IS CONSIDERED INCIDENTAL TO ITEM 506.75, STRUCTURAL STEEL.

TRAFFIC CONTROL

T-1. THE SOUTHBOUND LANE OF VT ROUTE 30 MAY BE TEMPORARILY CLOSED TO PROVIDE ADDITIONAL WORK AREA FOR THE CONTRACTOR AS REQUIRED. THE CONTRACTOR SHALL PROVIDE THE ENGINEER 48 HOURS ADVANCE NOTICE OF ANY TEMPORARY LANE CLOSURES. THE CONTRACTOR SHALL MAINTAIN ONE WAY ALTERNATING TRAFFIC THROUGH THE USE OF UNIFORMED TRAFFIC OFFICERS DURING THE NECESSARY WORK PERIOD (I.E. PAVEMENT OPERATIONS) AND RESTORE TWO LANES, TWO WAYS OF TRAFFIC AT ALL TIMES WHEN NO WORK IS BEING CONDUCTED.

T-2. CONSTRUCTION APPROACH SIGNING SHALL BE PER STANDARD T-10 AS SHOWN ON THE "TYPICAL APPROACH SIGNING" PLAN.

T-3. TRAFFIC SHALL BE CONTROLLED BY UNIFORMED OFFICERS DURING THE TEMPORARY LANE CLOSURE PER STANDARD E-119 AS SHOWN FOR THE "TWO LANE ROAD REQUIRING LANE CLOSURE (TA-10)" PLAN. ONLY W20-7a SHALL BE USED ON THIS STANDARD. ALL OTHER SIGNS SHALL BE AS NOTED IN NOTE T-2. A TRUCK MOUNTED ATTENUATOR IS NOT REQUIRED. IN ADDITION TO W20-7a SIGNS PROVIDE DRUMS CHANNELIZING DEVICES AS INDICATED IN THIS STANDARD.

T-4. ALL COST FOR PROVIDING, INSTALLING, MAINTAINING AND REMOVING ALL TRAFFIC CONTROL DEVICES AS INDICATED ABOVE SHALL BE PAID UNDER ITEM 641.10, TRAFFIC CONTROL.

RECOMMENDED SEQUENCE OF WORK

RS-1. INSTALL PORTABLE CONCRETE BARRIER AT THE VT ROUTE 30 APPROACH (EAST APPROACH) AND CONSTRUCTION WARNING SIGNS AND REFLECTORIZED PLASTIC DRUMS ON THE WEST APPROACH.

RS-2. REMOVE CHAIN LINK FENCES, EXISTING DECK, SIDING, AND TOWN LATTICE STRINGERS.

RS-3. INSTALL TEMPORARY SHORING TOWERS TO SUPPORT THE KING POST SPANS. ONCE THE KING POST SPANS ARE SHORED, INSTALL TOWN LATTICE SHORING FROM THE WEST APPROACH. FOUR (4) WEEKS PRIOR TO COMMENCEMENT OF THE WORK THE CONTRACTOR SHALL SUBMIT PLANS AND DESIGN CALCULATIONS FOR THE PROPOSED WORK TO THE RESIDENT ENGINEER IN ACCORDANCE WITH SECTION 105.

RS-4. PRIOR TO COMMENCEMENT OF REALIGNMENT OPERATIONS THE CONTRACTOR SHALL SUBMIT THE PROPOSED METHOD OF WORK TO THE RESIDENT ENGINEER IN ACCORDANCE WITH SECTION 105 OF STANDARD SPECIFICATIONS. (SEE ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE)).

RS-5. REPLACE AND INSTALL REMAINING NEW BRIDGE MEMBERS AS DETAILED IN CONTRACT DRAWINGS.

RS-6. COMPLETE SUBSTRUCTURE WORK.

RS-7. REMOVE TEMPORARY SHORING OR RE-ERECT BRIDGE.

RS-8. COMPLETE REMAINING WORK ITEMS AS DETAILED IN THE CONTRACT DOCUMENTS.

ENVIRONMENTAL PROTECTION

E-1. DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL CONDUCT OPERATIONS IN SUCH A MANNER AS TO PREVENT OR REDUCE TO A MINIMUM ANY DAMAGE TO ANY STREAM FROM POLLUTION BY DEBRIS, SEDIMENT, OR OTHER FOREIGN MATERIAL OR FROM MANIPULATION OF EQUIPMENT AND/OR MATERIALS IN OR NEAR SUCH STREAMS. THE CONTRACTOR SHALL NOT RETURN DIRECTLY TO A STREAM ANY WATER WHICH HAS BEEN USED FOR WASH PURPOSES OR OTHER SIMILAR OPERATIONS WHICH CAUSE THIS WATER TO BECOME POLLUTED WITH SAND, SILT, CEMENT, OIL, OR OTHER IMPURITIES. IF THE CONTRACTOR USES WATER FROM A STREAM, THE CONTRACTOR SHALL CONSTRUCT AN INTAKE OR TEMPORARY DAM REQUIRED TO PROTECT AND SUSTAIN AQUATIC LIFE.

SIDING

SN-1. THE ENTIRE UPSTREAM AND DOWNSTREAM SIDING SHALL BE CAREFULLY REMOVED FROM THE BRIDGE. ALL PROTRUDING NAILS IN THE SIDING SUPPORTS SHALL BE REMOVED AFTER SIDING REMOVAL. PORTIONS OF THE EXISTING SIDING ARE TO BE SALVAGED AND REUSED ON THE PORTAL AND END RETURNS AFTER JOINT INSPECTION BY THE ENGINEER AND THE CONTRACTOR. ALL COSTS FOR SALVAGING AND REINSTALLING SIDING ON THE PORTALS WILL BE PAID UNDER ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE). THE SALVAGED SIDING MUST MEET THE FOLLOWING REQUIREMENTS:

- BE FREE OF LOOSE OR MISSING KNOTS.
- HAVE ALL NAIL HOLES PLUGGED WITH A WOOD EPOXY.
- BE CONTINUOUS PIECES FREE OF CUP, SPLITS OR
- STORED UNDER COVER UNTIL IT IS REINSTALLED.

SN-2. ALL SIDING WITH THE EXCEPTION OF PORTAL SIDING SHALL BE INSTALLED WITH 2 ½" LONG (TRIM) OR 2" LONG (SIDING) STAINLESS STEEL RING SHANK NAILS. PORTAL SIDING SHALL BE INSTALLED WITH 2 ½" LONG GALVANIZED CUT NAILS.

SN-3. THE NEW SIDING SHALL BE CONTINUOUS FULL HEIGHT PIECES.

MOBILIZATION

MN-1. NO TEMPORARY OR PERMANENT EASEMENTS HAVE BEEN OBTAINED FOR THIS PROJECT.

MN-2. THE CONTRACTOR SHALL BE LIMITED TO MOBILIZATION WITHIN THE RIGHT-OF-WAY. ADDITIONAL MOBILIZATION AREAS REQUIRED BY THE CONTRACTOR SHALL BE COORDINATED BY THE CONTRACTOR WITH THE AFFECTED PROPERTY OWNER AND SHALL BE AT THE CONTRACTOR'S EXPENSE.

SUBSTRUCTURE REHABILITATION

SR-1. EXISTING CONCRETE ON PIER 1, PIER 2, PIER 3 AND ABUTMENT 2 SHALL BE INSPECTED FOR UNSOUND CONCRETE JOINTLY BY THE ENGINEER AND CONTRACTOR. ALL UNSOUND CONCRETE BEYOND WHAT IS IDENTIFIED IN THE PLANS SHALL BE REMOVED AND REPLACED IN ACCORDANCE WITH ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II UNLESS INDICATED OTHERWISE.

SR-2. REMOVAL OF THE DETERIORATED AND UNDERMINED CONCRETE FOOTING AT THE NORTHEAST CORNER OF PIER 2 SHALL BE PAID UNDER ITEM 529.25, REMOVAL OF CONCRETE OR MASONRY. PRIOR TO PLACING NEW CONCRETE, THE ENTIRE REPAIR AREA SHALL BE BLAST CLEANED AND SATURATED SURFACE-DRY.

SR-3. HOLES DRILLED IN EXISTING CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ITEM 507.16, DRILLING AND GROUTING DOWELS.

WINTER PROTECTION

WP-1. IF A WINTER SHUTDOWN IS UTILIZED, THE FOLLOWING CONDITIONS MUST BE MET:

A. THE BRIDGE SHALL HAVE AN EQUIVALENT WATER TIGHTNESS DURING THE SHUTDOWN TO WHAT IT CURRENTLY HAS.

B. SUFFICIENT SHORING SHALL REMAIN IN PLACE TO SUPPORT ALL BRIDGE DEAD, WIND AND SNOW LOADs.

C. ACCESS TO THE BRIDGE SHALL BE RESTRICTED WITH CHAIN LINK FENCE OR EQUIVALENT MEASURES APPROVED BY THE ENGINEER. COST FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO ITEM 502.10, SHORING SUPERSTRUCTURE.

TIMBER RAIL

TR-1. ITEM 900.640 SPECIAL PROVISION (TIMBER GUARD RAIL) (WOOD POSTS) SHALL INCLUDE RAILS, POSTS, SPACER PLATES, SPLICE PLATES, RAIL ASSEMBLY BOLTS, NUTS AND WASHERS AS APPROPRIATE. STEEL COMPONENTS SHALL MEET THE FOLLOWING REQUIREMENTS:

- ASTM A36: SPACER PLATES AND SPLICE PLATES.
- ASTM A307 GRADE A: RAIL BOLTS.
- ASTM F844: WASHERS.
- AASHTO M291: NUTS.

TR-2. ALL STEEL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION IN CONFORMANCE WITH AASHTO M 111M/M 111 AND AASHTO M232M/M 232. GALVANIZED SURFACES SHALL HAVE A UNIFORM APPEARANCE AND GALVANIZED MATERIAL SHALL BE PROPERLY STORED.

TR-3. STRUCTURAL TIMBER POSTS SHALL BE 6" X 8" (DRESSED) SOUTHERN PINE NO. 1 OR BETTER HAVING A MINIMUM ALLOWABLE BENDING STRESS OF 1350 PSI.

TR-4. STRUCTURAL TIMBER RAILS SHALL BE 4" X 6" (DRESSED) SOUTHERN PINE NO. 1 OR BETTER HAVING A MINIMUM ALLOWABLE BENDING STRESS OF 1650 PSI.

TR-5. ALL TIMBER RAILS AND POSTS SHALL BE TREATED IN ACCORDANCE WITH SUBSECTION 726.01 AND 726.04 USING A COPPER NAPHTHENATE SOLUTION. EXCESSIVE RESIDUAL PRESERVATIVE MATERIAL WILL BE REJECTED.

TR-6. EACH PIECE OF WOOD OR TIMBER SHALL BE GRADED, BY A RECOGNIZED LUMBER GRADING AGENCY. INDIVIDUAL PIECES SHOULD NOT BE STAMPED WITH A GRADE STAMP. A CERTIFICATE OF COMPLIANCE SHALL BE SUBMITTED FOR ALL WOOD.

CONCRETE AND REINFORCING STEEL

C-1. REINFORCING STEEL SHALL BE LEVEL I EPOXY COATED AND CONFORM TO SECTION 507 AND DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE" (CRSI).

C-2. WHEN EPOXY COATED REINFORCING IS CUT, THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REINFORCING STEEL IS NOT PERMITTED.

C-3. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT; ANY DOWNWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE ABOVE THE JOINT.

C-4. REINFORCING PLACEMENT TOLERANCES SHALL BE:
SPACING +/- 1"
CLEARANCE +/- $^1/_4$"

C-5. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE 2 ½" UNLESS NOTED OTHERWISE.

C-6. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1" UNLESS NOTED OTHERWISE.

C-7. THE PROPOSED CONCRETE FOR THE ABUTMENT A BACKWALL AND CAP, PIER 2, AND ABUTMENT B SHALL BE HIGH PERFORMANCE CONCRETE CLASS B AND PAID UNDER ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B.

C-8. ALL NEW AND EXISTING EXPOSED CONCRETE SURFACES SHALL BE SEALED AND STAINED. PAYMENT WILL BE MADE UNDER ITEM 900.625, SPECIAL PROVISION (CONCRETE STAINING AND SEALING).

TOWNSHEND DAM COORDINATION

D-1. TOWNSHEND DAM (NATION ID # VT00004) IS LOCATED APPROXIMATELY 0.4 MILES UPSTREAM FROM THE PROJECT LOCATION.

UTILITY OWNER INFORMATION
UNITED STATES ARMY CORPS OF ENGINEERS
CONTACT: DONNA VONDLE
PHONE: (802) 365-7703
EMAIL: DONNA.M.VINDLE@USACE.ARMY.MIL

D-2. ALL INSTREAM WORK SHALL BE COORDINATED WITH THE DAM OPERATOR 24 HOURS IN ADVANCE.

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, NCLUDING INDIVIDUAL TREES AND STUMPS	201.10				
						0.2				0.2		ACRE	THINNING AND TRIMMING	201.30				
						60				60		CY	COMMON EXCAVATION	203.15				
						5				5		CY	SOLID ROCK EXCAVATION	203.16				
						20				20		CY	EXCAVATION OF SURFACES AND PAVEMENTS	203.28				
						20				20		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
								25		25		CY	STRUCTURE EXCAVATION	204.25				
								20		20		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
						30				30		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
						10				10		CY	SUBBASE OF CRUSHED GRAVEL, FINE GRADED	301.26				
						7.5				7.5		CY	AGGREGATE SURFACE COURSE	401.10				
						1				1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
								11		11		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34				
								1		1		LS	SHORING SUPERSTRUCTURE	502.10				
								1		1		LS	STRUCTURAL STEEL	506.75				
								1630		1630		LB	REINFORCING STEEL, LEVEL I	507.11				
								50		50		LF	DRILLING AND GROUTING DOWELS	507.16				
								33		33		MFBM	STRUCTURAL LUMBER AND TIMBER, UNTREATED	522.20				
								3		3		MFBM	STRUCTURAL LUMBER AND TIMBER, TREATED	522.25				
								8.5		8.5		MFBM	NONSTRUCTURAL LUMBER, UNTREATED	522.30				
								90		90		LF	JOINT SEALER, POLYURETHANE	524.21				
								1		1		EACH	PARTIAL REMOVAL OF STRUCTURE	529.20				
								1		1		CY	REMOVAL OF CONCRETE OR MASONRY	529.25				
								25		25		SY	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14				
								10		10		CY	DRY MASONRY	602.20				
								3		3		CY	REBUILT STONE MASONRY	602.35				
								52		52		SY	REPAIRING STONE MASONRY	602.40				
							22			22		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
						15				15		CY	STONE FILL, TYPE II	613.11				
						50				50		CY	STONE FILL, TYPE III	613.12				
						2				2		EACH	ENERGY ABSORPTION ATTENUATOR, SAND-FILLED PLASTIC BARREL	621.57				
						100				100		LF	TEMPORARY TRAFFIC BARRIER	621.90				
						160				160		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
									1	1		LS	FIELD OFFICE, ENGINEERS	631.10				
									1000	1000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
						1				1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
						1				1		LS	TRAFFIC CONTROL	641.10				
						120				120		SY	GEOTEXTILE UNDER STONE FILL	649.31				
							65			65		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515				
							5			5		LB	SEED	651.15				

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Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225qty1

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225qty.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
QUANTITY SHEET #1

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

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
							20			20		LB	FERTILIZER	651.18				
							1			1		TON	HAY MULCH	651.25				
							15			15		CY	TOPSOIL	651.35				
						65				65		SY	GRUBBING MATERIAL	651.40				
							60			60		SY	TEMPORARY EROSION MATTING	653.20				
							10			10		CY	TEMPORARY STONE CHECK DAM, TYPE I	653.25				
							1			1		EACH	FILTER BAG	653.45				
							400			400		LF	PROJECT DEMARCATION FENCE	653.55				
								730		730		SY	METAL ROOFING	661.10				
								125		125		EACH	SPECIAL PROVISION (WOOD EPOXY REPAIRS)	900.620				
								20		20		GAL	SPECIAL PROVISION (CONCRETE STAINING AND SEALING)	900.625				
								28		28		LF	SPECIAL PROVISION (TIMBER GUARDRAIL) (WOOD POSTS)	900.640				
								1		1		LS	SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE)	900.645				
								1		1		LS	SPECIAL PROVISION (TIMBER COATING, ENVIRONMENTAL PROTECTION)	900.645				
								1		1		LS	SPECIAL PROVISION (TIMBER COATING, FIRE RETARDANT)	900.645				
								1		1		LS	SPECIAL PROVISION (TIMBER COATING, TEMITICIDE/INSECTICIDE/FUNGICIDE)	900.645				
						1				1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650				
						1				1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
						24				24		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225qty2

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225qty.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
QUANTITY SHEET #2

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 10 OF 60

8/13/2015
10:22:10 AM
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MINIMUM ALLOWABLE WOOD STRESSES

SPECIES	SIZE	GRADE	F_b (psi)	Ft (psi)	Fv (psi)	Fc (psi)	$Fc_{\perp}$ (psi)	E ($x10^6$ psi)
DOUGLAS FIR	2" - 4" THICK	NO. 1	1000	675	180	1500	625	1.7
DOUGLAS FIR	2" - 4" THICK	SEL. STR.	1500	1000	180	1700	625	1.9
DOUGLAS FIR	BEAMS & STRINGERS *	NO. 1	1350	675	170	925	625	1.6
DOUGLAS FIR	BEAMS & STRINGERS *	SEL. STR.	1600	950	170	1100	625	1.6
DOUGLAS FIR	POSTS & TIMBERS **	SEL. STR.	1500	1000	170	1150	625	1.6
DOUGLAS FIR	POSTS & TIMBERS**	NO. 1	1200	825	170	1000	625	1.6
SPRUCE PINE FIR	2" - 4" THICK	NO. 1	875	450	135	1150	425	1.4
WHITE OAK	2" - 4" THICK	NO. 1	875	500	220	900	800	1.0
WHITE OAK	POSTS & TIMBERS **	NO. 1	1050	700	205	825	800	1.0

* 5" & THICKER AND MORE THAN 2 IN. GREATER THAN THICKNESS (E.G. 12×18)

** 5" & THICKER AND NOT MORE THAN 2 IN. GREATER THAN THICKNESS (E.G. 7×8¾)

WOOD MATERIALS LIST

COMPONENT	EXISTING AVERAGE SIZE	PROPOSED ACTUAL SIZE	PROPOSED SPECIES & GRADE	FINISH
DECK	2 LAYERS OF 2 3/8" THICK	1 1/2" x 7 1/4"	DOUGLAS FIR NO. 1	S4S
ROOF BOARDS	3/4" THICK	3/4" THICK	EASTERN HEMLOCK COMMON PREMIUM	ROUGH SAWN
SIDING	3/4" THICK	1" THICK	EASTERN WHITE PINE COMMON PREMIUM	~~S4S~~ ROUGH SAWN
KING POST SPAN				
BLOCKING AND BEDDING TIMBERS	VARIES	VARIES	WHITE OAK NO. 1 OR BLACK LOCUST +	ROUGH SAWN
BOTTOM CHORD	12" x 12 1/2"	12" x 12 1/2"	DOUGLAS FIR SEL. STR.	ROUGH SAWN
CHECK BRACES	4" x 4"	4" x 4"	DOUGLAS FIR SEL. STR.	ROUGH SAWN
CROSS BEAM KNEE BRACE	3" x 5"	3" x 5"	DOUGLAS FIR NO. 1	ROUGH SAWN
CROSS BEAMS	8" x 8"	8" x 8"	DOUGLAS FIR NO. 1	ROUGH SAWN
END CROSS BEAMS	5 3/4" x 5 3/4"	5 3/4" x 5 3/4"	DOUGLAS FIR NO. 1	ROUGH SAWN
FLOOR BEAMS	10" x 14"	10" x 14"	DOUGLAS FIR NO. 1	ROUGH SAWN
INTERMEDIATE CROSS BEAMS	4" x 4"	4" x 4"	DOUGLAS FIR NO. 1	ROUGH SAWN
LOWER LATERAL BRACING	6" x 6"	6" x 6"	DOUGLAS FIR NO. 1	ROUGH SAWN
NAILERS	4" x 4"	4" x 4"	SPRUCE PINE FIR NO. 1	S1S
RAFTER KNEE BRACE	1 3/4" x 5"	1 3/4" x 5"	DOUGLAS FIR NO. 1	ROUGH SAWN
RAFTER SUPPORT BEAMS	8" x 8"	8" x 8"	DOUGLAS FIR NO. 1	ROUGH SAWN
RAFTERS	2 1/2" x 5"	2 1/2" x 5"	SPRUCE PINE FIR NO. 1	ROUGH SAWN
SLEEPER BEAMS	---	16" x 12"	P.T. DOUGLAS FIR NO. 1	S4S
STRINGERS	VARIES	5" x 8"	DOUGLAS FIR NO. 1	S1S - TOP FACE
SUPLEMENTAL BEARING RAFTERS	---	1 1/2" x 5 1/2"	SPRUCE PINE FIR NO. 1	ROUGH SAWN
SUPLEMENTAL RAFTERS	---	1 1/2" x 5 1/2"	SPRUCE PINE FIR NO. 1	ROUGH SAWN
VERTICAL POSTS	7 3/4" x 7 3/4"	7 3/4" x 7 3/4"	DOUGLAS FIR NO. 1	ROUGH SAWN
TOWN LATTICE SPAN				
BEDDING TIMBERS	VARIES	12"x12"	P.T. DOUGLAS FIR NO. 1	ROUGH SAWN
BLOCKING AND BEDDING TIMBERS	VARIES	VARIES	WHITE OAK NO. 1 OR BLACK LOCUST +	ROUGH SAWN
CHORD 1*	3" x 14"	3" x 14"	DOUGLAS FIR SEL. STR.	S2S - WIDE AND NARROW FACES
CHORD 2*	4" x 6"	4" x 6"	DOUGLAS FIR SEL. STR.	ROUGH SAWN
CHORD 3 AND 4*	3" x 12"	3" x 12"	DOUGLAS FIR SEL. STR.	S2S - WIDE AND NARROW FACES
CHORD 3 AND 4 NAILERS	---	2" x 3"	SPRUCE PINE FIR NO. 1	S1S - NARROW FACE
CROSS BEAMS	6" x 8"	6" x 8"	DOUGLAS FIR NO. 1	ROUGH SAWN
FLOOR BEAMS	4" x 14"	4" x 14"	DOUGLAS FIR NO. 1	S1S - TOP FACE
KNEE BRACES	4" x 4"	4" x 4"	DOUGLAS FIR NO. 1	ROUGH SAWN
LATTICE MEMBERS*	3" x 12"	3" x 12"	DOUGLAS FIR SEL. STR.	S1S - WIDE FACE
LOWER LATERAL BRACING	3 "x 5"	4 1/2" x 4 1/2"	DOUGLAS FIR SEL. STR.	ROUGH SAWN
LOWER NAILERS	2" x 6"	2" x 7"	SPRUCE PINE FIR NO. 1	S1S - NARROW FACE
RAFTERS	2" x 6"	2" x 6"	SPRUCE PINE FIR NO. 1	ROUGH SAWN
SISTER RAFTERS	---	1 1/2" x 5 1/2"	SPRUCE PINE FIR NO. 1	ROUGH SAWN
SLEEPER BEAMS	---	9" x 16"	P.T. DOUGLAS FIR NO. 1	S4S
UPPER LATERAL BRACING	4" x 5"	4" x 6"	DOUGLAS FIR SEL. STR.	ROUGH SAWN
UPPER NAILERS	2" x 6"	2" x 6"	SPRUCE PINE FIR NO. 1	S1S - NARROW FACE

* LATTICE AND CHORD MEMBERS SHALL BE FREE OF HEART CENTER. P.T. - PRESSURE TREATED

\+ MATERIAL CERTIFICATION IS NOT REQUIRED FOR BLACK LOCUST. SEE NOTE W-5 ON SHEET 7.

SEE NOTE W-2 ON SHEET 7 FOR MAXIMUM IN PLACE MOISTURE CONTENT.

NOTES

1. THE FOLLOWING MEMBERS ARE INCLUDED IN THE ESTIMATED LUMBER AND TIMBER QUANTITIES OF:

A. ITEM 522.20, STRUCTURAL LUMBER AND TIMBER, UNTREATED:

KING POST TRUSS:
- ROOF RAFTERS, SUPPLEMENTAL RAFTERS AND BEARING RAFTERS (0.490 MFBM)
- KNEE BRACES AND CHECK BRACES (0.097 MFBM)
- RAFTER SUPPORT BEAMS, CROSS BEAMS AND VERTICAL POSTS (0.770 MFBM)
- CHORD MEMBERS (0.896 MFBM)
- STRINGERS (1.304 MFBM)
- FLOOR BEAMS (0.940 MFBM)
- LOWER LATERAL BRACING (0.057 MFBM)
- HARDWOOD BLOCKING AND BEDDING TIMBERS (0.176 MFBM)
- NAILERS (0.220 MFBM)

TOWN LATTICE TRUSS:
- ROOF RAFTERS AND SUPPLEMENTAL RAFTERS (0.420 MFBM)
- KNEE BRACES (0.191 MFBM)
- UPPER LATERAL BRACING (0.128 MFBM)
- CROSS BEAMS (0.168 MFBM)
- CHORD MEMBERS (5.823 MFBM)
- LATTICE MEMBERS (3.750 MFBM)
- FLOOR BEAMS AND LEDGER BOARDS (4.989 MFBM)
- LOWER LATERAL BRACING (1.239 MFBM)
- HARDWOOD BLOCKING AND BEDDING TIMBERS (0.260 MFBM)
- NAILERS (0.853 MFBM)

TOTAL BRIDGE (KING POST AND TOWN LATTICE SPANS):
- DIAGONAL DECKING (9.924 MFBM)

B. ITEM 522.25, STRUCTURAL LUMBER AND TIMBER, TREATED:

KING POST TRUSS:
- SLEEPER BEAMS (0.288 MFBM)

TOWN LATTICE TRUSS:
- SLEEPER BEAMS (2.027 MFBM)

TOTAL BRIDGE (KING POST AND TOWN LATTICE SPANS):
- PORTAL TRIM BOARD (0.016 MFBM)

C. ITEM 522.30, NONSTRUCTURAL LUMBER, UNTREATED:

TOTAL BRIDGE (KING POST AND TOWN LATTICE SPANS):
- ROOF BOARDS (1.112 MFBM)
- SIDING (7.185 MFBM)

PROJECT NAME:	TOWNSHEND
PROJECT NUMBER:	STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225qty3

FILE NAME: 904225qty.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
TIMBER MEMBER SUMMARY

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 11 OF 60

8/13/2015
10:22:12 AM
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GENERAL INFORMATION

SYMBOLOGY LEGEND NOTE

THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOGY. THE SYMBOLOGY 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. SYMBOLOGY 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 STONE/WOOD
	RRSIG	RAILROAD SIGNAL
	RRSL	RAILROAD SWITCH LEVER
	S	TREE SOFTWOOD
	SAT	SATELLITE DISH
	SHRUB	SHRUB
	SIGN	SIGN
	STUMP	STUMP
	TEL	TELEPHONE POLE
	TIE	TIE
	TSIGN	SIGN W/DOUBLE POST
	VCTRL	CONTROL VERTICAL
	WELL	WELL
	WSO	WATER SHUT OFF

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 SYMBOLOGY

UNDERGROUND UTILITIES

SYMBOL	DESCRIPTION
UGU	UTILITY (GENERIC-UNKNOWN)
UT	TELEPHONE
UE	ELECTRIC
UTV	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)

SYMBOL	DESCRIPTION
AGU	UTILITY (GENERIC-UNKNOWN)
T	TELEPHONE
E	ELECTRIC
C	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 SYMBOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOGY

SYMBOL	DESCRIPTION
CZ	CLEAR ZONE
	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

SYMBOL	DESCRIPTION
	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
	TREE PROTECTION ZONE (TPZ)
	STRIPING LINE REMOVAL
	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

SYMBOL	DESCRIPTION
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/L	PROPERTY LINE (P/L)
SR SR SR	SLOPE RIGHTS
6f — 6f	6F PROPERTY BOUNDARY
4f — 4f	4F PROPERTY BOUNDARY
HAZ — HAZ	HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

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

ENVIRONMENTAL RESOURCES

SYMBOL	DESCRIPTION
	WETLAND BOUNDARY
	RIPARIAN BUFFER ZONE
	WETLAND BUFFER ZONE
	SOIL TYPE BOUNDARY
T&E	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

SYMBOL	DESCRIPTION
ARCH	ARCHEOLOGICAL BOUNDARY
HISTORIC DIST	HISTORIC DISTRICT BOUNDARY
HISTORIC	HISTORIC AREA
(H)	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

SYMBOL	DESCRIPTION
	ROAD EDGE PAVEMENT
	ROAD EDGE GRAVEL
	DRIVEWAY EDGE
	DITCH
	FOUNDATION
	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:	TOWNSHEND
PROJECT NUMBER:	STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	zl2j352legend

FILE NAME: 904225legend.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
CONVENTIONAL SYMBOLOGY LEGEND

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 12 OF 60

8/13/2015
10:22:13 AM
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GPS/NGS CONTROL POINTS

DUMMERSTON VT CORS ARP

PID DJ8953
N = 152472.46
E = 1631008.46
ELLIP HEIGHT = 413.23

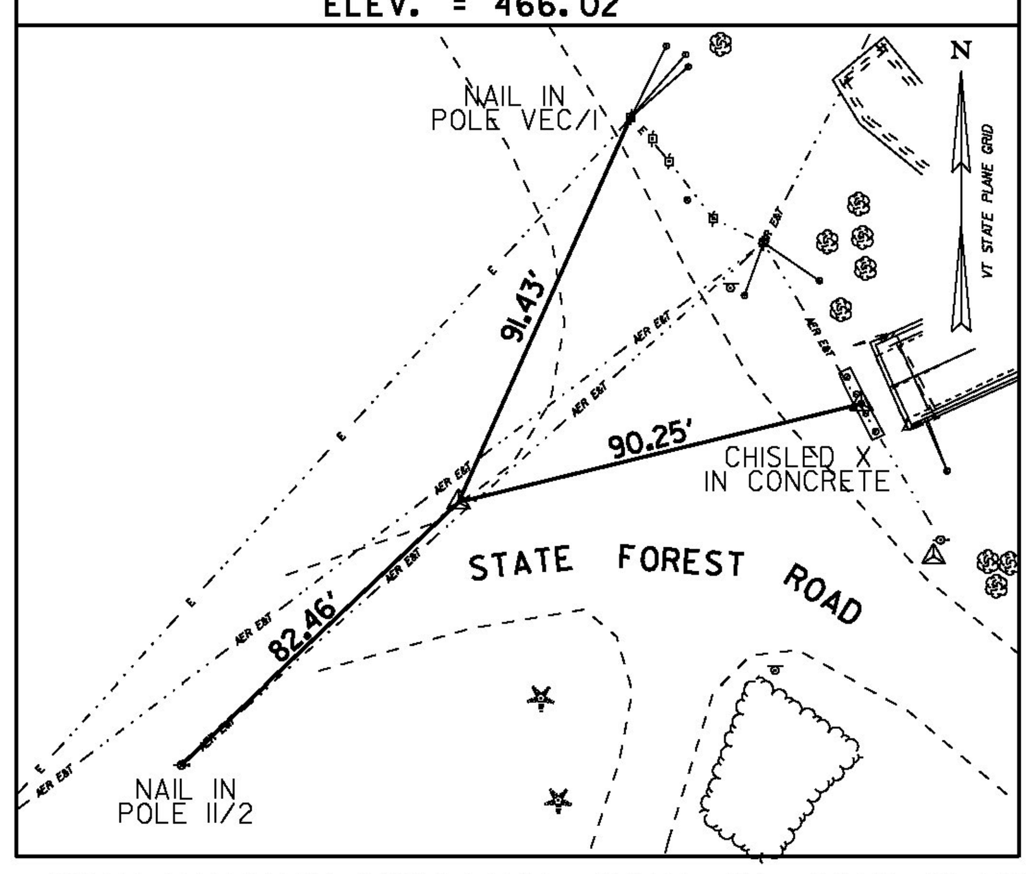
STATION IS A GPS CONTINOUSLY OPERATING REFERENCE STATION. STATION IS THE ANTENNA REFERENCE POINT OF THE GPS ANTENNA. LOCATED AT THE DUMMERSTON VERMONT DISTRICT 2 GARAGE, THE MONUMENT IS ATTACHED TO THE TOP FLANGE OF OF A (W 12X26) STEEL BEAM WHICH IS PART OF THE ROOF STRUCTURE FOR A TWO STORY STEEL FRAMED WOOD SIDED BUILDING WITH A 5 FT CONCRETE FOUNDATION BUILT IN 1986. THE MAST IS A 0.5 INCH DIA GALV PIPE THAT IS 108 INCHES LONG. THE MAST IS FITTED WITH A 5.5 X 5.5 X 1 INCH BASE PLATE THAT IS WELDED TO THE BOTOM OF THE MAST. THE BASE PLATE IS DRILLED AND TAPPED WITH (4) 3/8 INCH HOLES AND IS SECURED TO THE FLANGE OF THE STEEL BEAM WITH 4 3/8 INCH SS BOLTS. THE MAST PROJECTS THROUGH THE ROOF STRUCTURE, AND HAS BEEN WEATHER PROOFED.

TRAVERSE TIES

WORK COMPLETED BY VSE

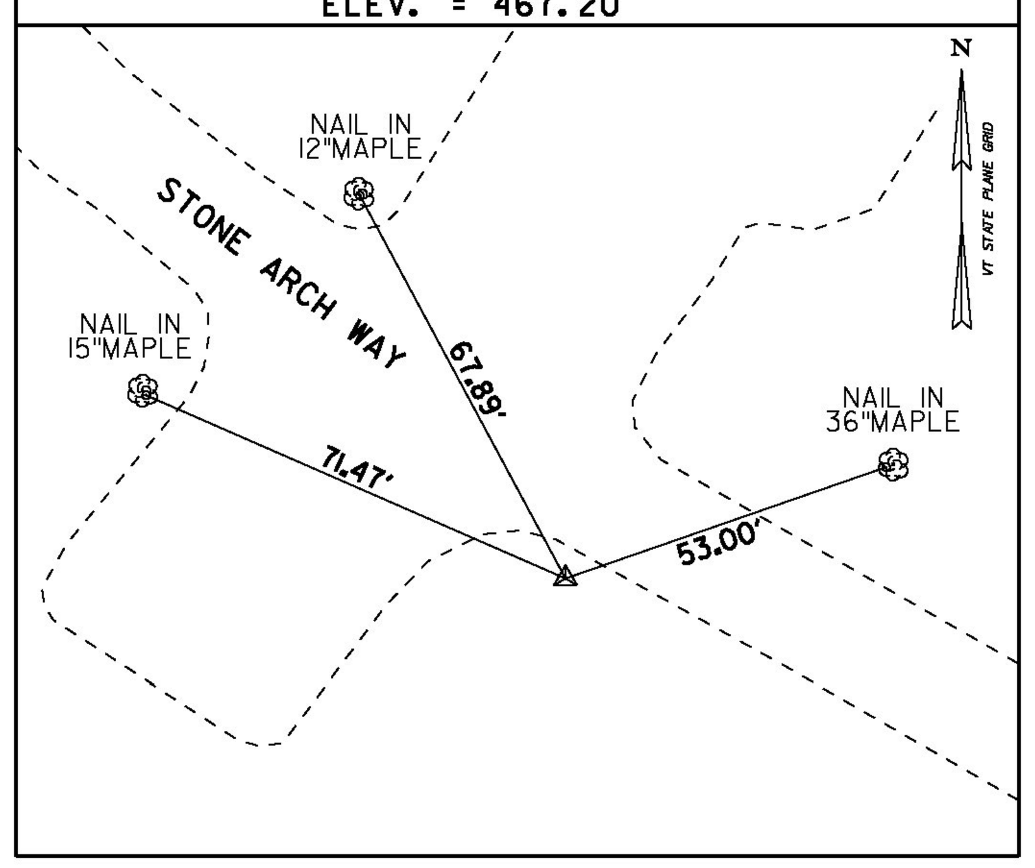
HVCTRL #1 5/8"REBAR SET FLUSH W/ YELLOW VSE CONTROL CAP

NORTH = 199920.75
EAST = 1587646.04
ELEV. = 466.02



HVCTRL #3 5/8"REBAR SET FLUSH W/ YELLOW VSE CONTROL CAP

NORTH = 200198.56
EAST = 1587405.61
ELEV. = 467.20



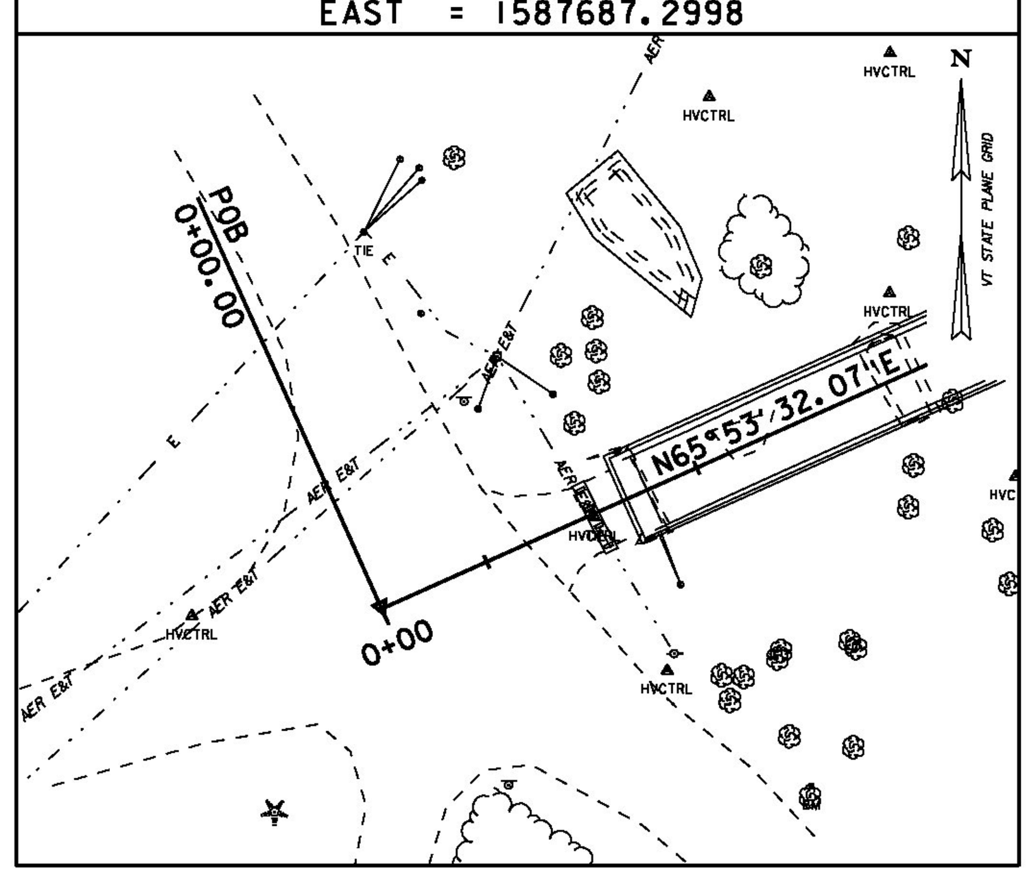
• MAIN TRAVERSE COMPLETED: APRIL 25, 2012 BY VSE, M. YEFCHAK-PC, M. BACKMAN

ALIGNMENT TIES

WORK COMPLETED BY HOYLE, TANNER

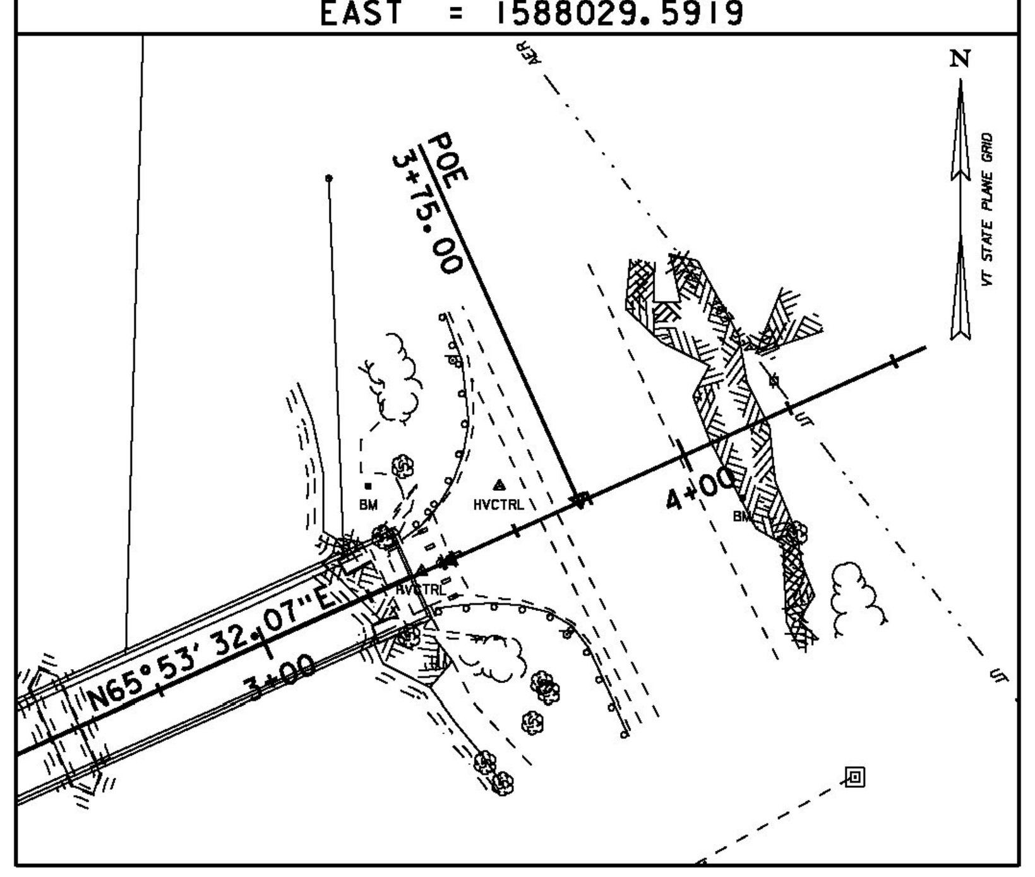
POB STA 0+00

TH-4
NORTH = 199922.2922
EAST = 1587687.2998



POE STA 3+75.00

VT ROUTE 30
NORTH = 200075.4625
EAST = 1588029.5919



NORTH =
EAST =

NORTH =
EAST =

NORTH =
EAST =

DATUM	
VERTICAL	NAVD 88(GEOID09) FT
HORIZONTAL	NAD 83(CORS) sFT
ADJUSTMENT	LSQ

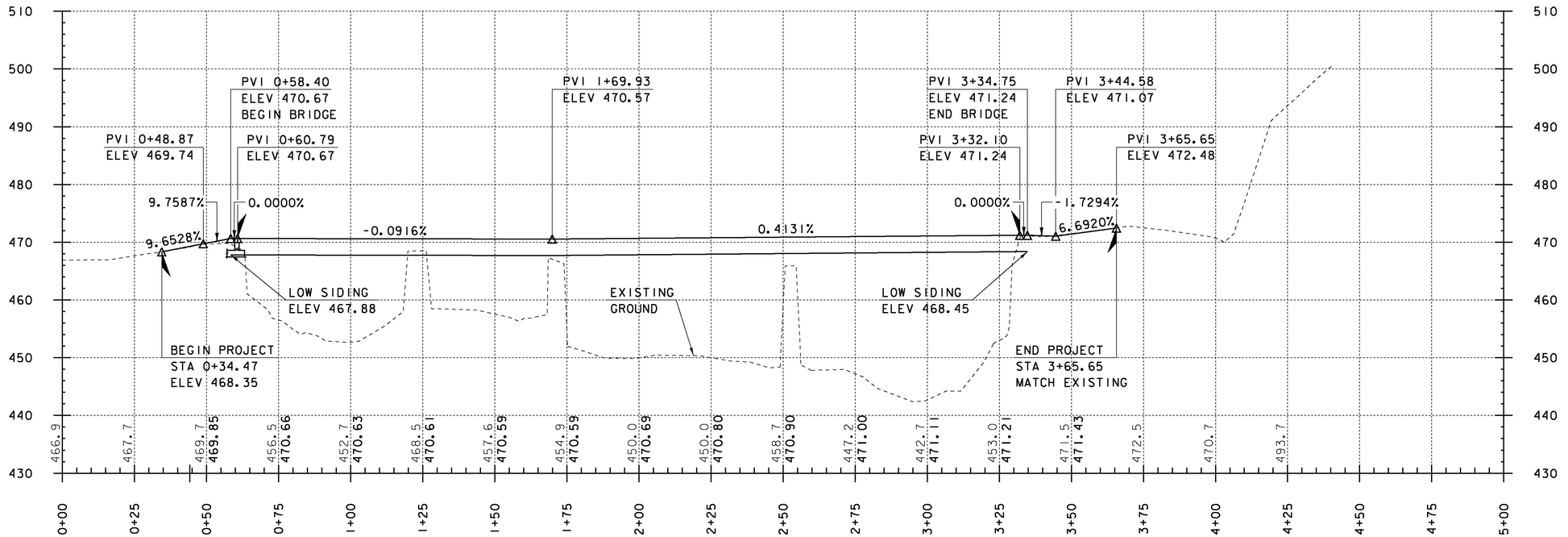
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225TIE

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225TIE.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: VSE/J.C.RIPLEY
TRANSVERSE & GEODETIC CONTROL INFO.

PLOT DATE: 8/13/2015
DRAWN BY: VSE/P.DUSTIN
CHECKED BY: VSE/S.T.JAMES
SHEET 13 OF 60



PROFILE

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'

NOTES

1. GRADES SHOWN TO THE NEAREST TENTH REPRESENT EXISTING GROUND ELEVATIONS ALONG THE CENTERLINE. GRADES SHOWN TO THE NEAREST HUNDREDTH REPRESENT PROPOSED GRADES ALONG THE CENTERLINE.

2. BEGIN AND END BRIDGE STATIONS ARE TAKEN TO THE FACE OF PORTAL SIDING.

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225PRO

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225pro.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
ROADWAY PROFILE

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 14 OF 60

8/13/2015
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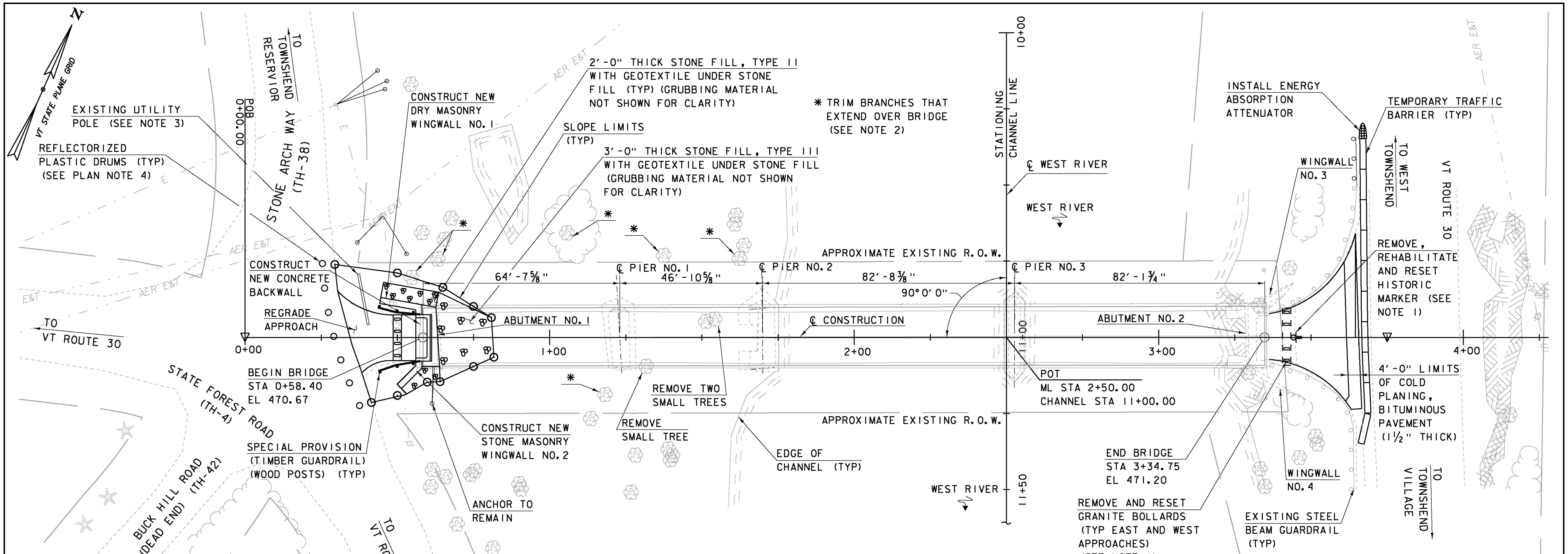
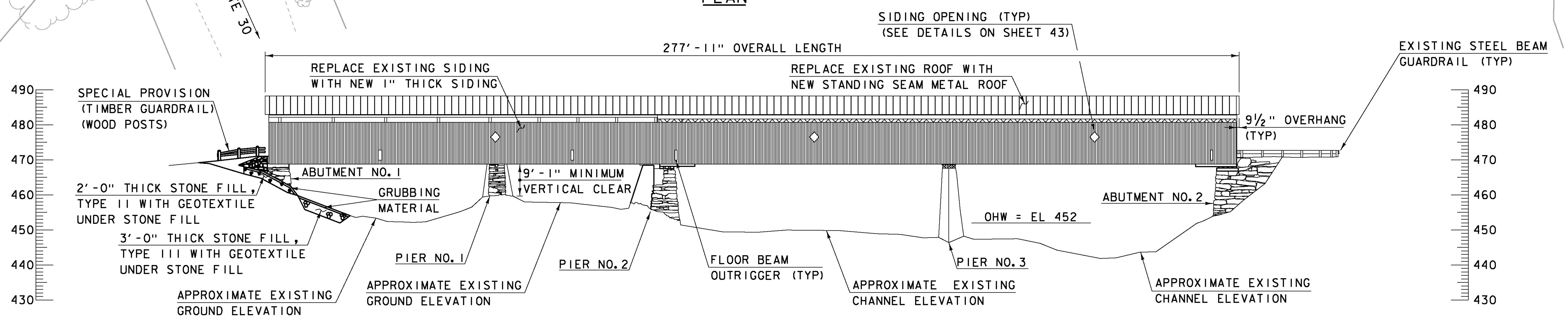


PLAN



ELEVATION AT DOWNSTREAM FASCIA

NOTES

1. SEE DETAILS ON SHEET 50.
2. ALL TREE BRANCHES THAT EXTEND WITHIN A VERTICAL PLANE 10 FEET BEYOND THE NORTH AND SOUTH EDGE OF THE BRIDGE SHALL BE CUT BACK TO THE TRUNK. ALL BRANCHES TO BE CUT SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO COMPLETING THE WORK. ALL WORK WILL BE PAID UNDER ITEM 201.30, THINNING AND TRIMMING.
3. REMOVE AND SALVAGE WOOD POLE AT WEST END OF BRIDGE TO UTILITY COMPANY. PAYMENT WILL BE INCLUDED IN ITEM 502.10, SHORING SUPERSTRUCTURE.
4. INSTALLATION, REMOVAL AND RESETTING REFLECTORIZED PLASTIC DRUMS AS SHOWN ON THE PLANS WILL BE PAID UNDER ITEM 641.10, TRAFFIC CONTROL.

SCALE: 1/16" = 1'-0"
0 8 16

Hoyle, Tanner & Associates, Inc.

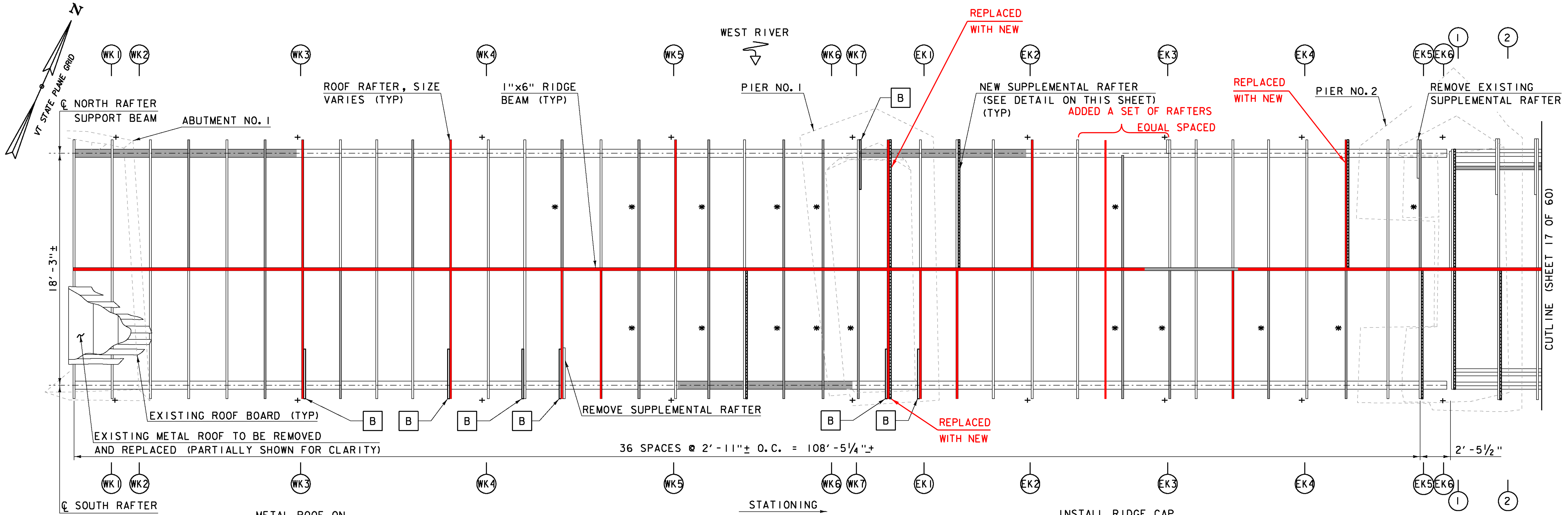
HTA PROJECT	MODEL
904225	904225gpe

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225gpe.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
GENERAL PLAN & ELEVATION

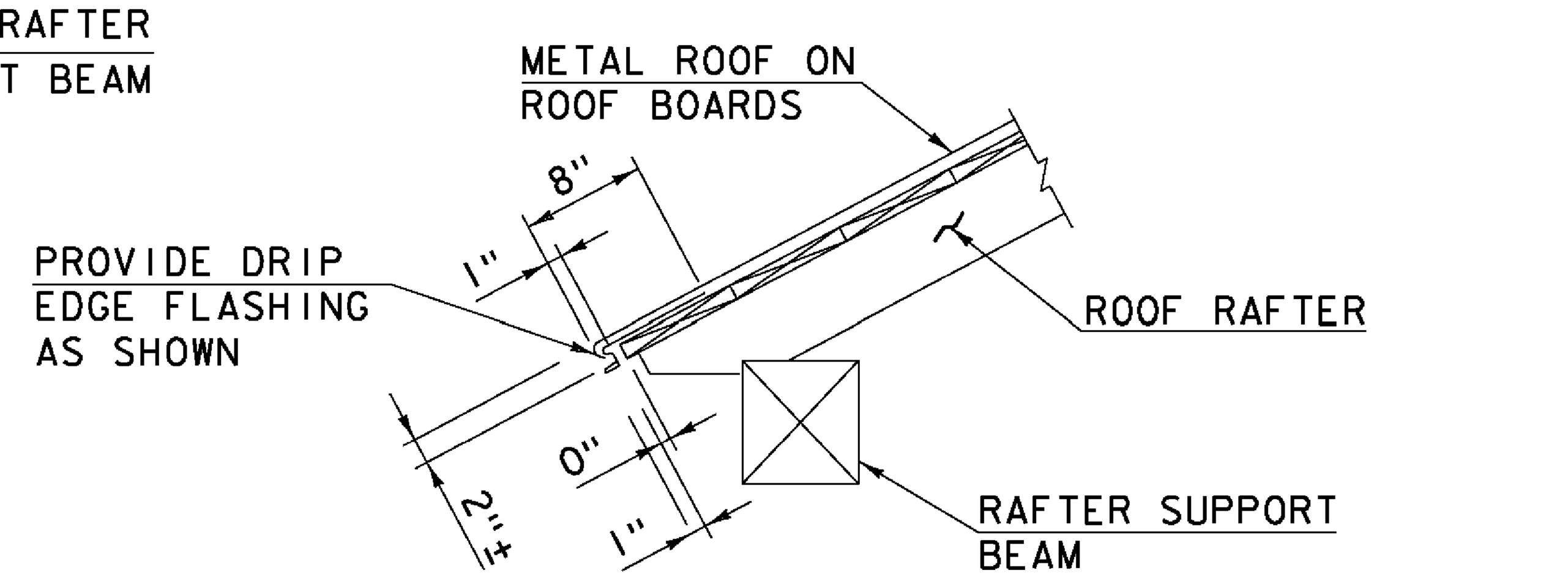
PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 15 OF 60

8/13/2015 10:22:18 AM k:\904225\cad\vtrp\outsheet\904225gpe.dgn



KING POST ROOF FRAMING PLAN

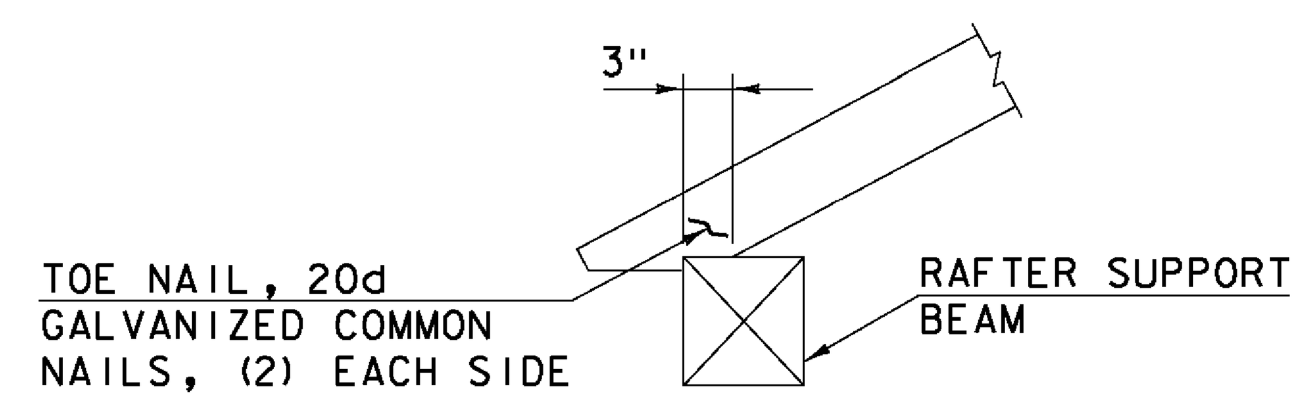
SCALE: ¼" = 1'-0"



NOTE
DRIP EDGE SUBSIDIARY TO ITEM 661.10, METAL ROOFING.

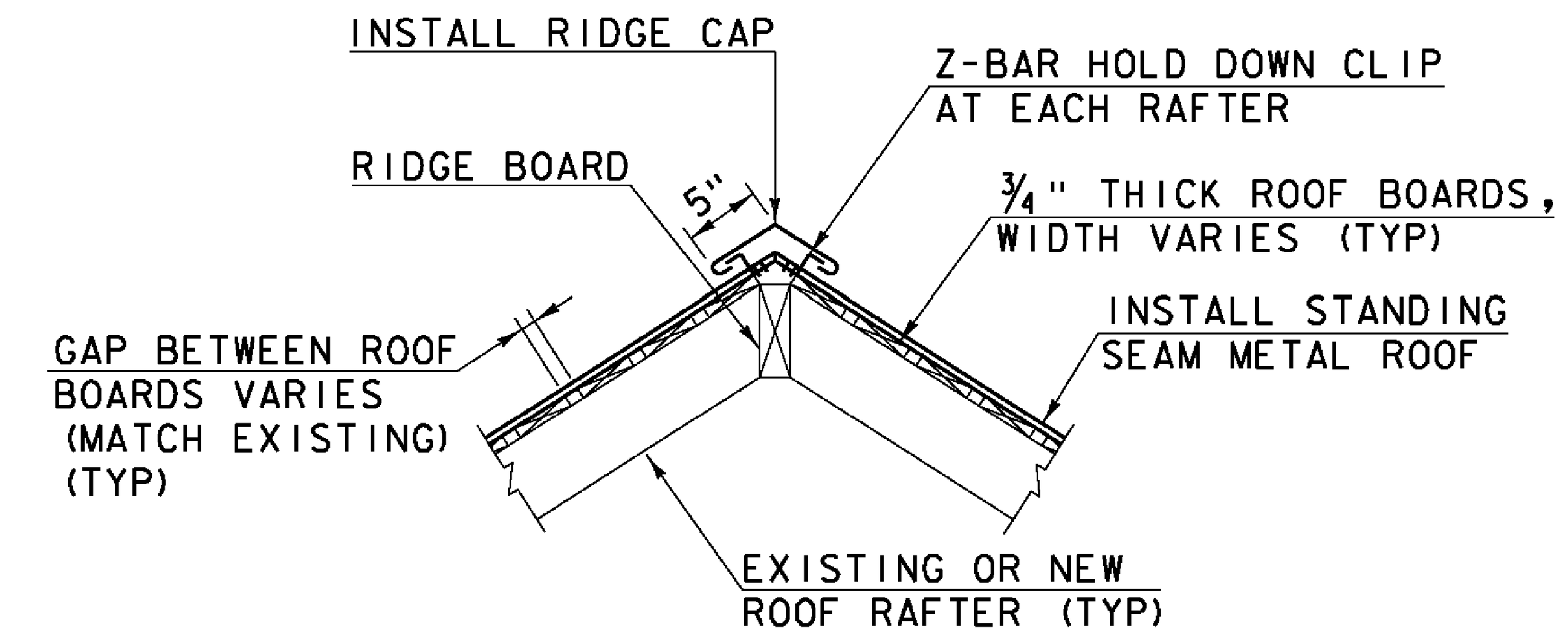
KING POST ROOF EAVE DETAIL

SCALE 1" = 1'-0"



KING POST RAFTER BEARING DETAIL

SCALE 1" = 1'-0"

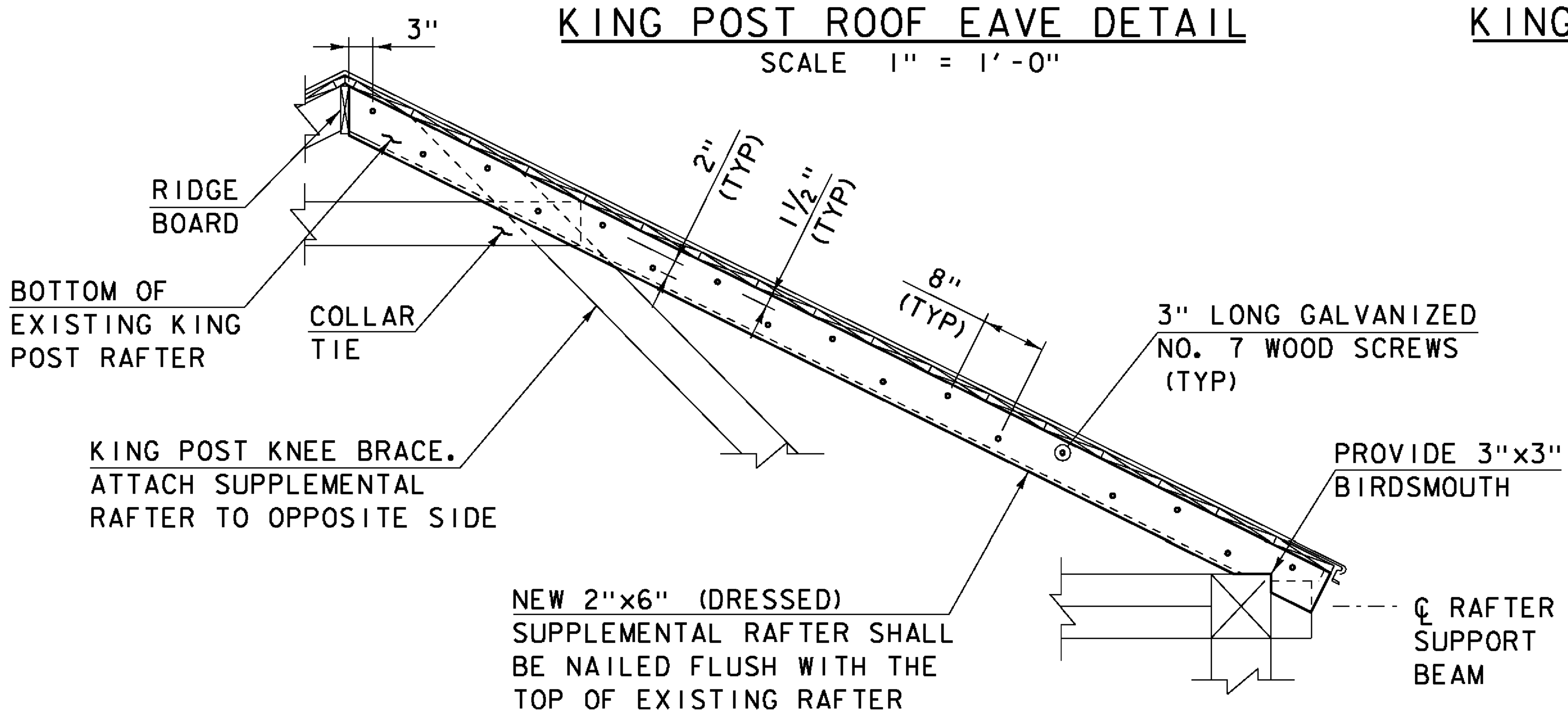


ROOF RIDGE DETAIL

SCALE 1" = 1'-0"

LEGEND

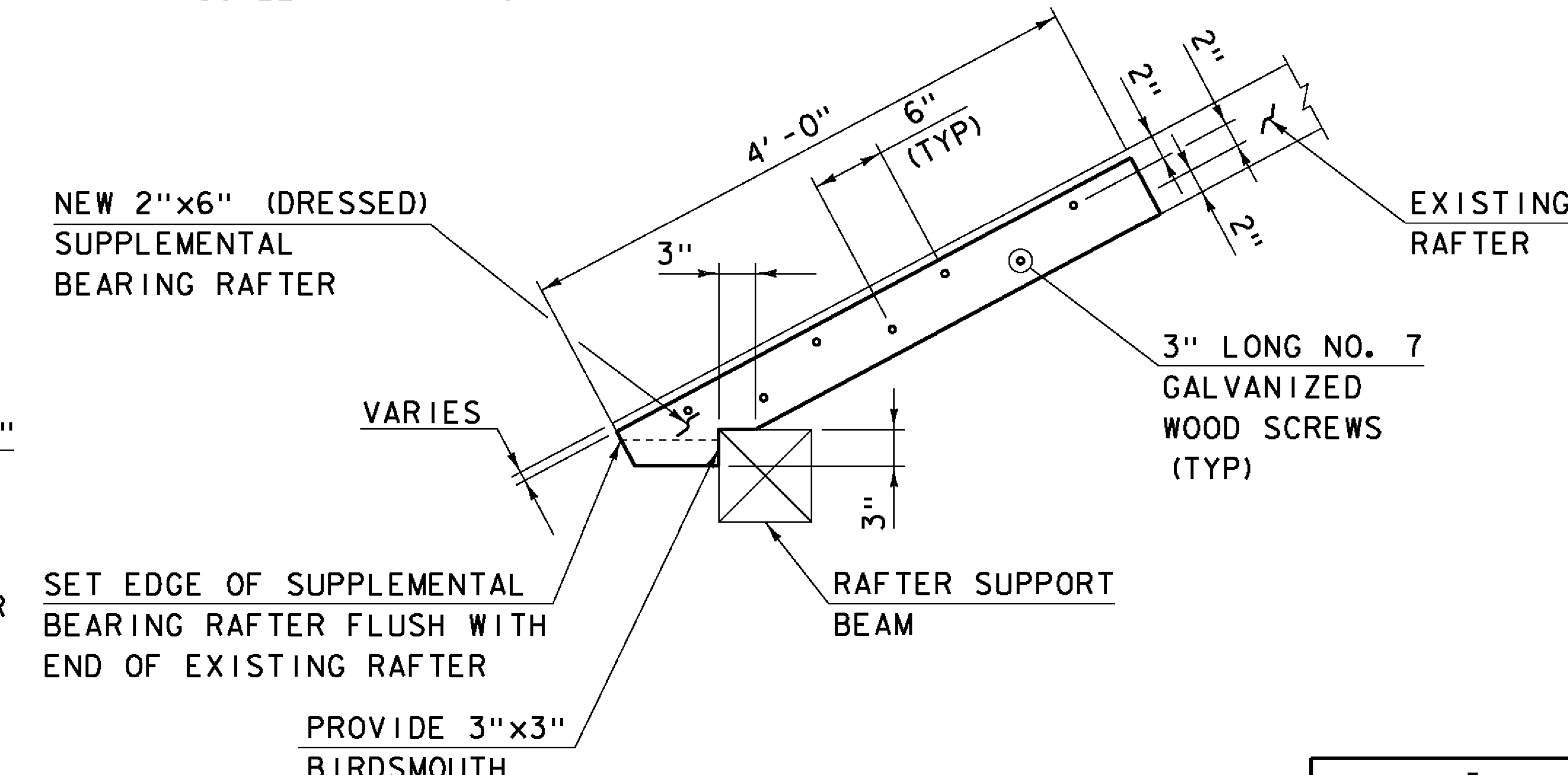
- PREDETERMINED MEMBER TO BE REPLACED
- NEW SUPPLEMENTAL RAFTERS (SEE DETAIL ON THIS SHEET)
- (XX) TRUSS NODE LOCATION
- + APPROXIMATE LOCATION OF CROSS BEAM (NOT SHOWN FOR CLARITY)
- B ADD SUPPLEMENTAL BEARING RAFTER (SEE DETAIL ON THIS SHEET)
- * REPLACED FOR STRENGTH NOT CONDITION



NOTE
FOR LOCATIONS, SEE ROOF FRAMING PLAN, THIS SHEET

KING POST SUPPLEMENTAL RAFTER DETAIL

SCALE: ¾" = 1'-0"



KING POST SUPPLEMENTAL BEARING RAFTER DETAIL

SCALE 1" = 1'-0"

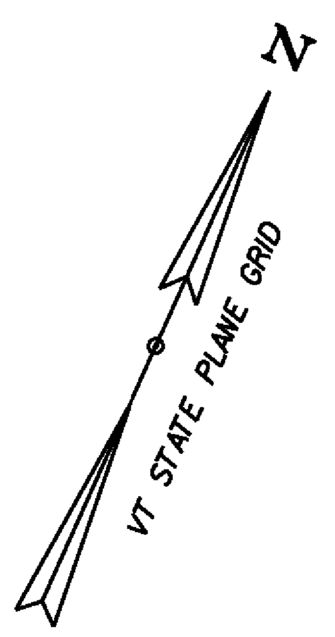
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225supl

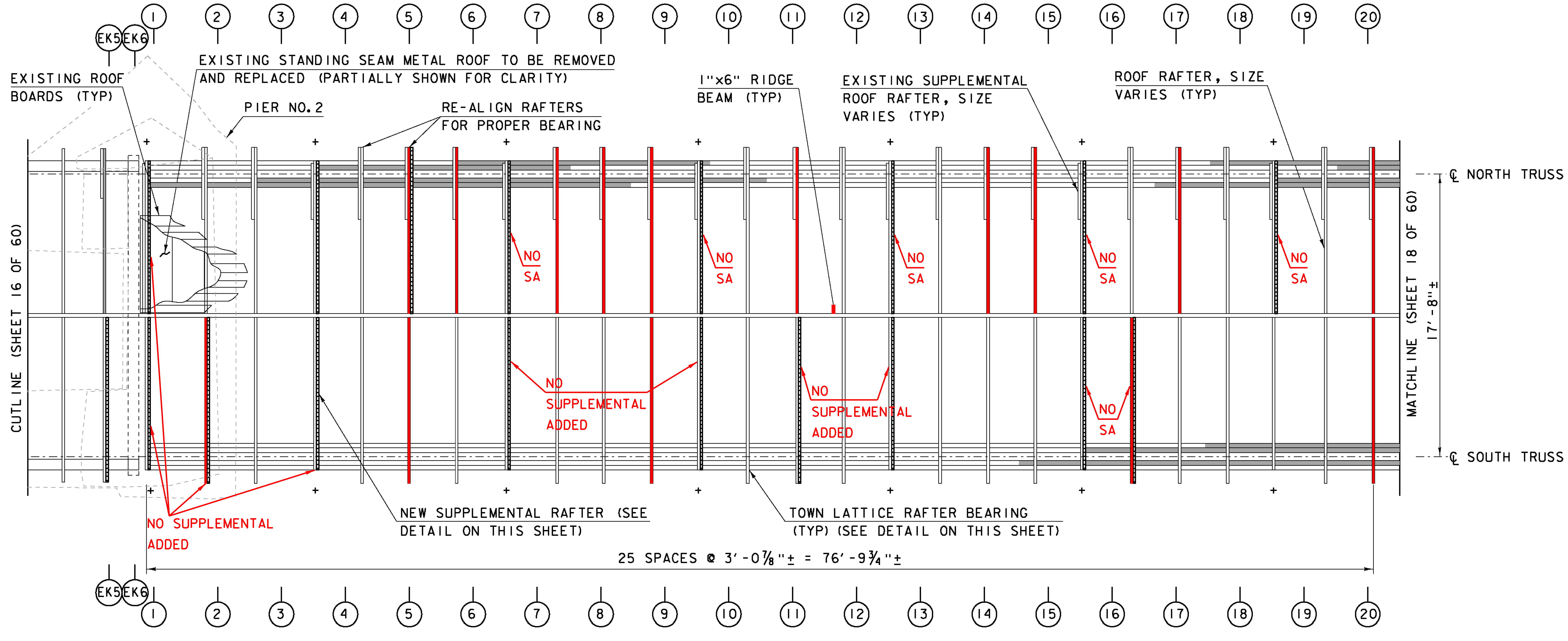
PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225supl.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
ROOF FRAMING PLAN & DETAILS (1 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 16 OF 60



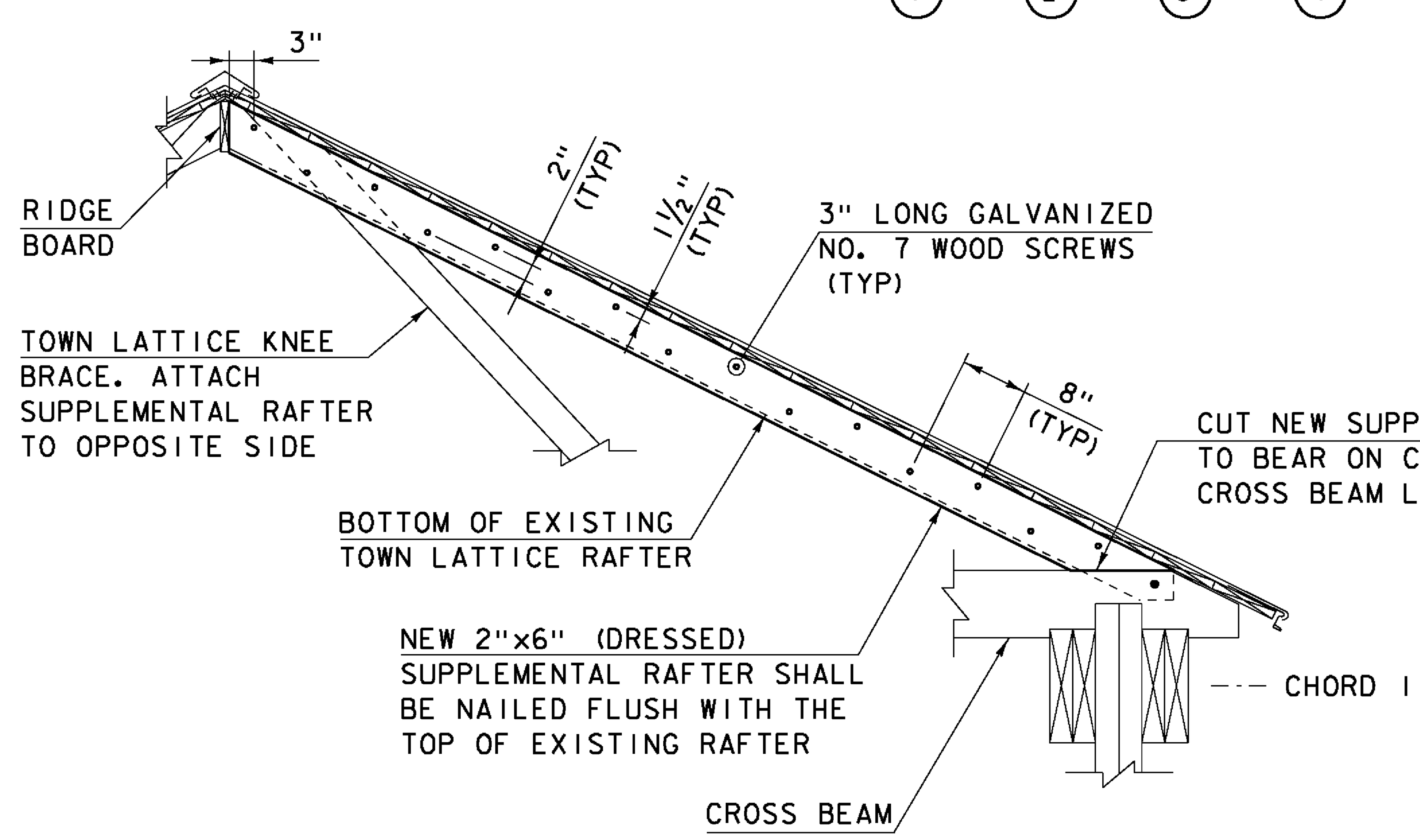
WEST RIVER



TOWN LATTICE ROOF FRAMING PLAN

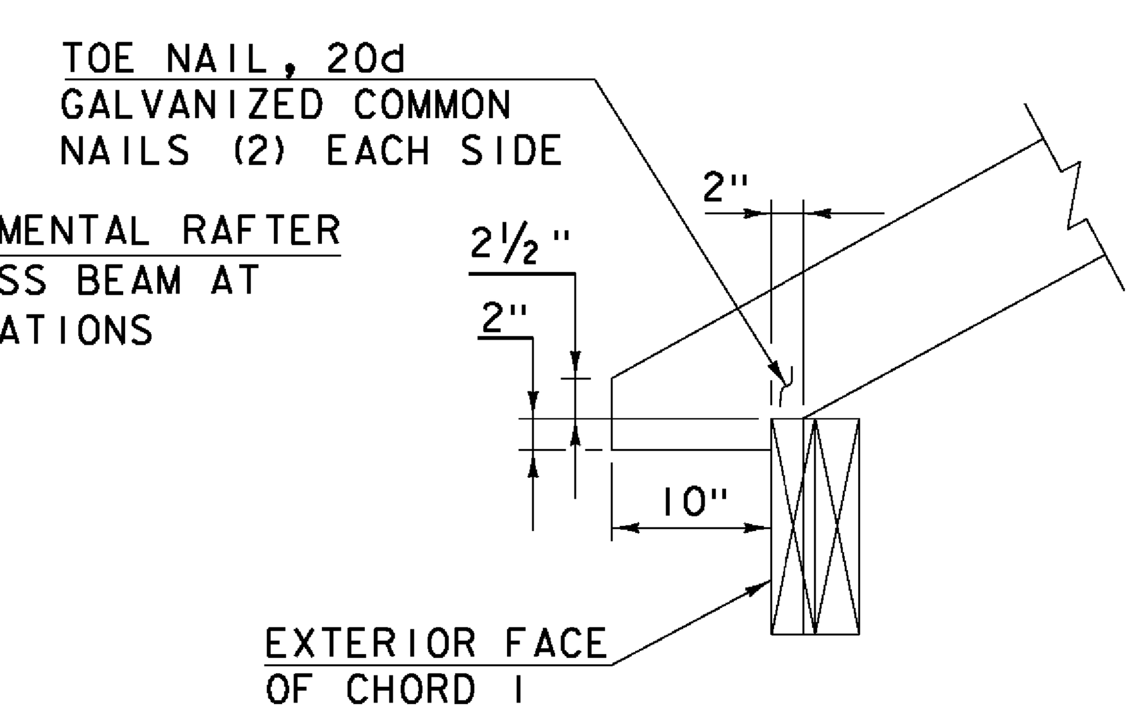
SCALE: ¼" = 1'-0"

SA: SUPPLEMENTAL ADDED



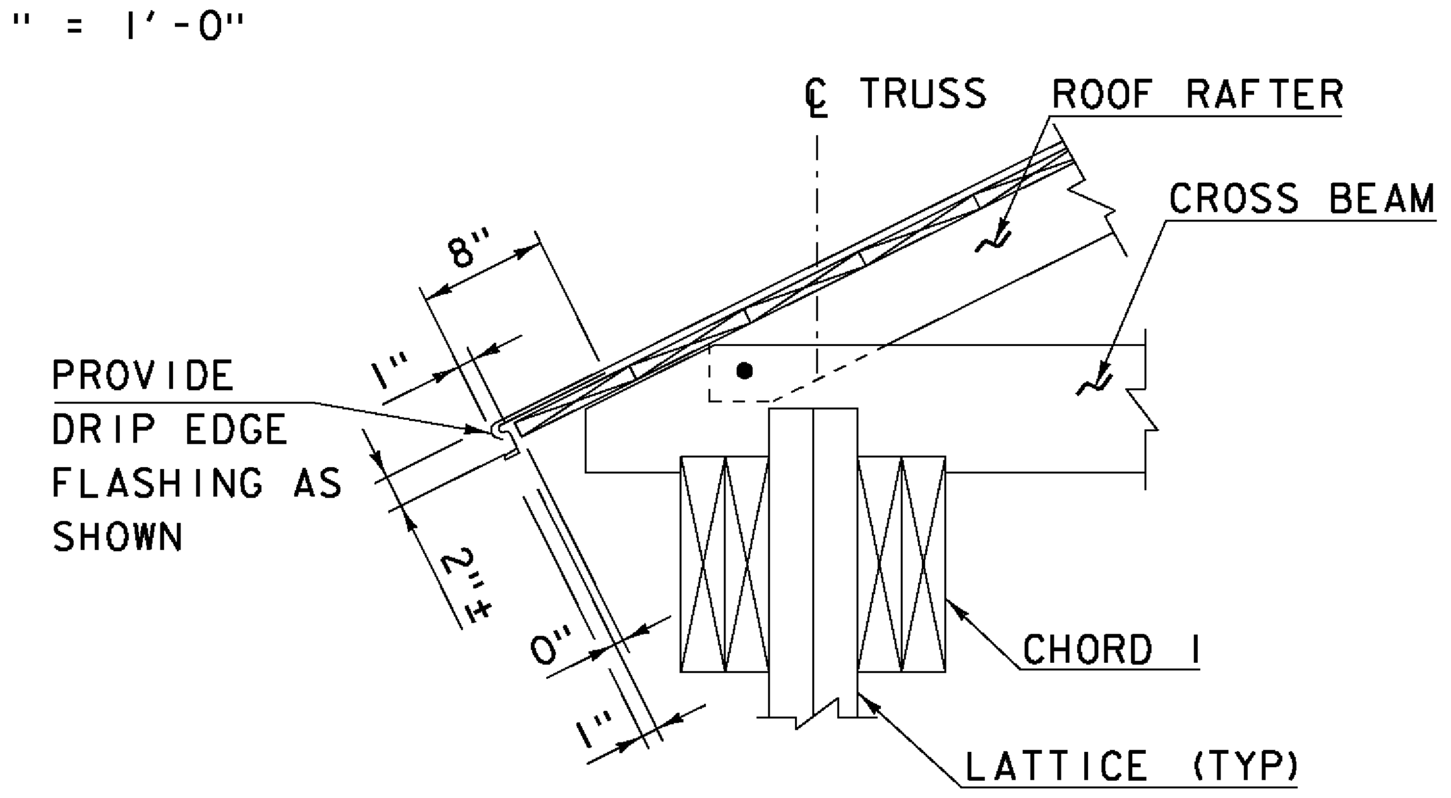
TOWN LATTICE SUPPLEMENTAL RAFTER DETAIL

SCALE: ¾" = 1'-0"



TOWN LATTICE RAFTER BEARING DETAIL

SCALE 1" = 1'-0"



NOTE

DRIP EDGE WILL BE INCIDENTAL TO ITEM 661.10, METAL ROOFING.

TOWN LATTICE ROOF EAVE DETAIL

SCALE: 1" = 1'-0"

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- NEW SUPPLEMENTAL RAFTERS (SEE DETAIL ON THIS SHEET)
- (XX) TRUSS NODE LOCATION
- + APPROXIMATE LOCATION OF CROSS BEAM (NOT SHOWN FOR CLARITY)

Hoyle, Tanner & Associates, Inc.

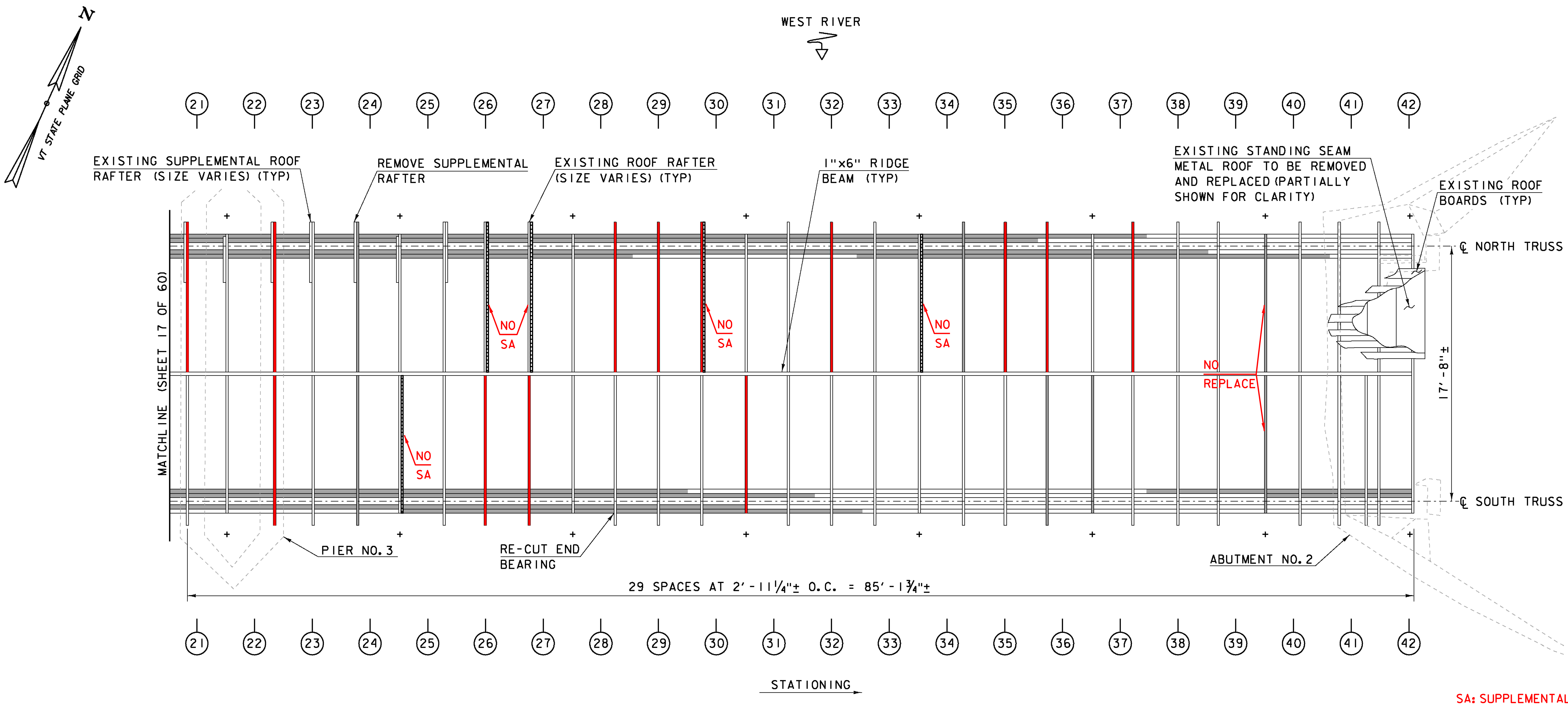
HTA PROJECT	MODEL
904225	904225sup2

PROJECT NAME: TOWNSHEND

PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225sup2.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
ROOF FRAMING PLAN & DETAILS (2 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 17 OF 60



TOWN LATTICE ROOF FRAMING PLAN

SCALE: ¼" = 1'-0"

SA: SUPPLEMENTAL ADDED

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- NEW SUPPLEMENTAL RAFTERS (SEE DETAIL ON SHEET 17)
- (XX) TRUSS NODE LOCATION
- + APPROXIMATE LOCATION OF CROSS BEAM (NOT SHOWN FOR CLARITY)

NOTE

1. SEE SHEET 17 FOR DETAILS PERTAINING TO THIS SHEET.

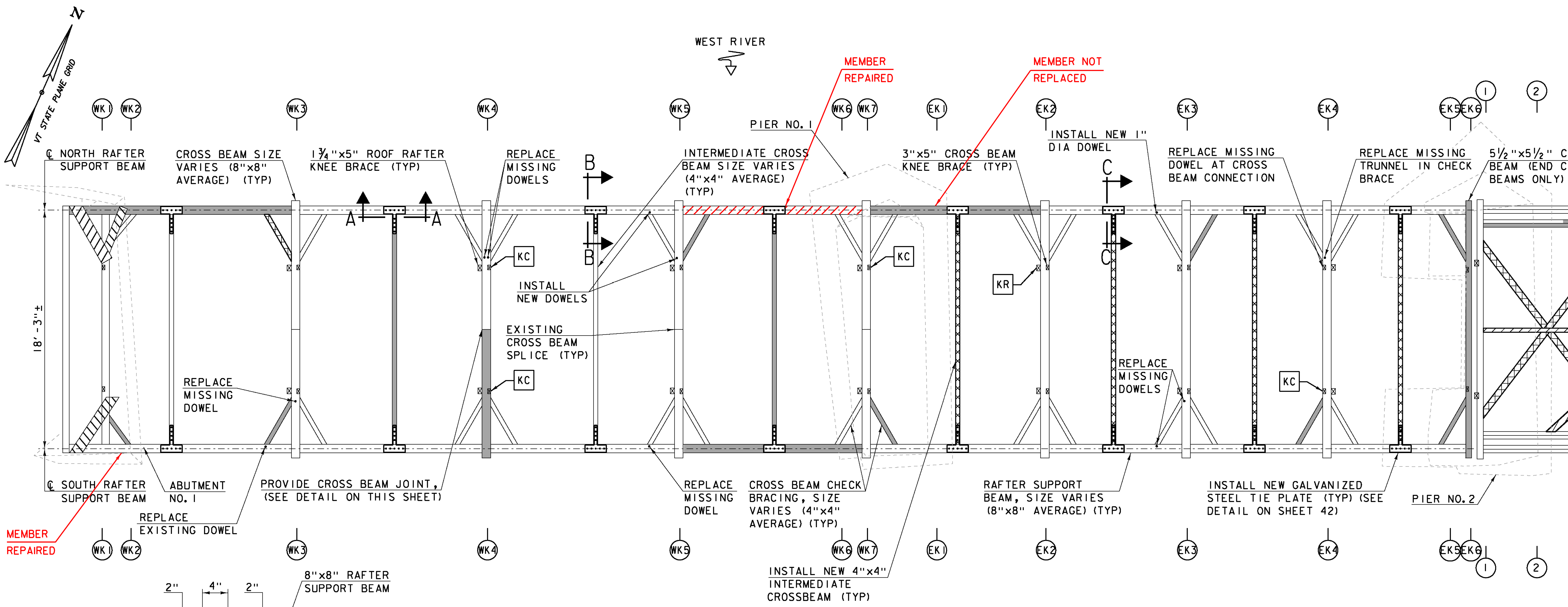
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sup3

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

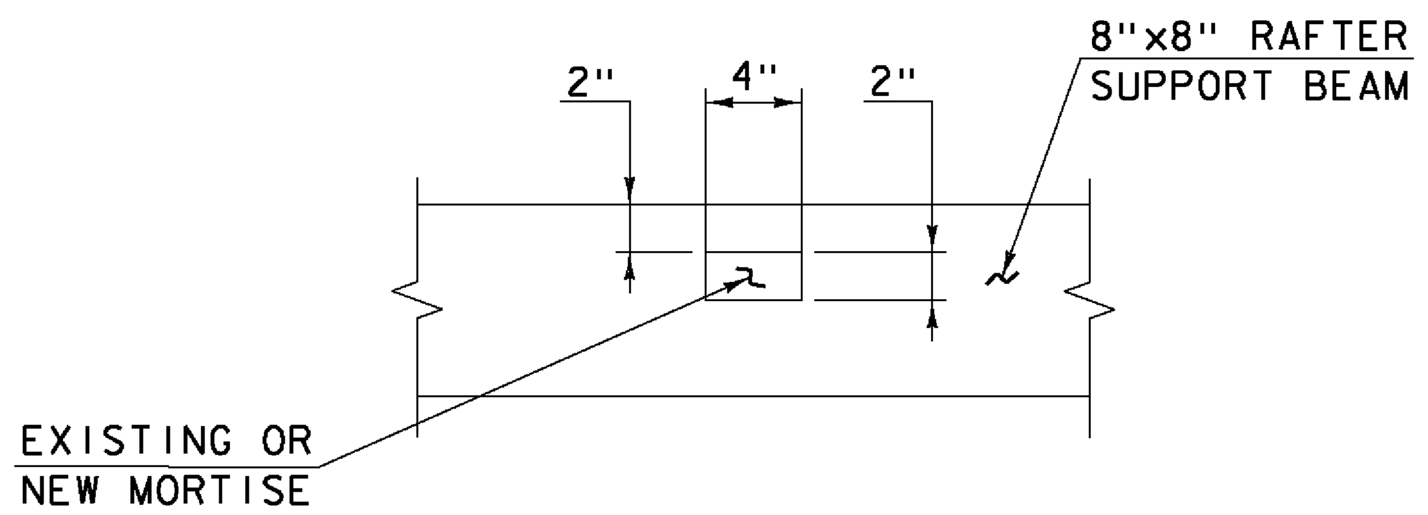
FILE NAME: 904225sup3.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
ROOF FRAMING PLAN & DETAILS (3 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 18 OF 60



KING POST UPPER LATERAL BRACING PLAN

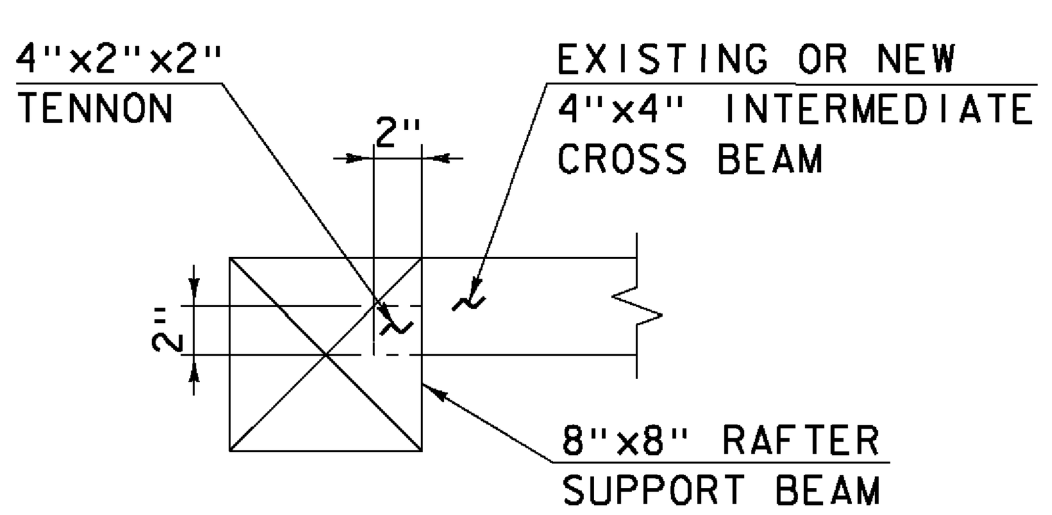
SCALE: 1/4" = 1'-0"



NOTE
GALVANIZED TIE PLATE NOT SHOWN FOR CLARITY.

SECTION A-A

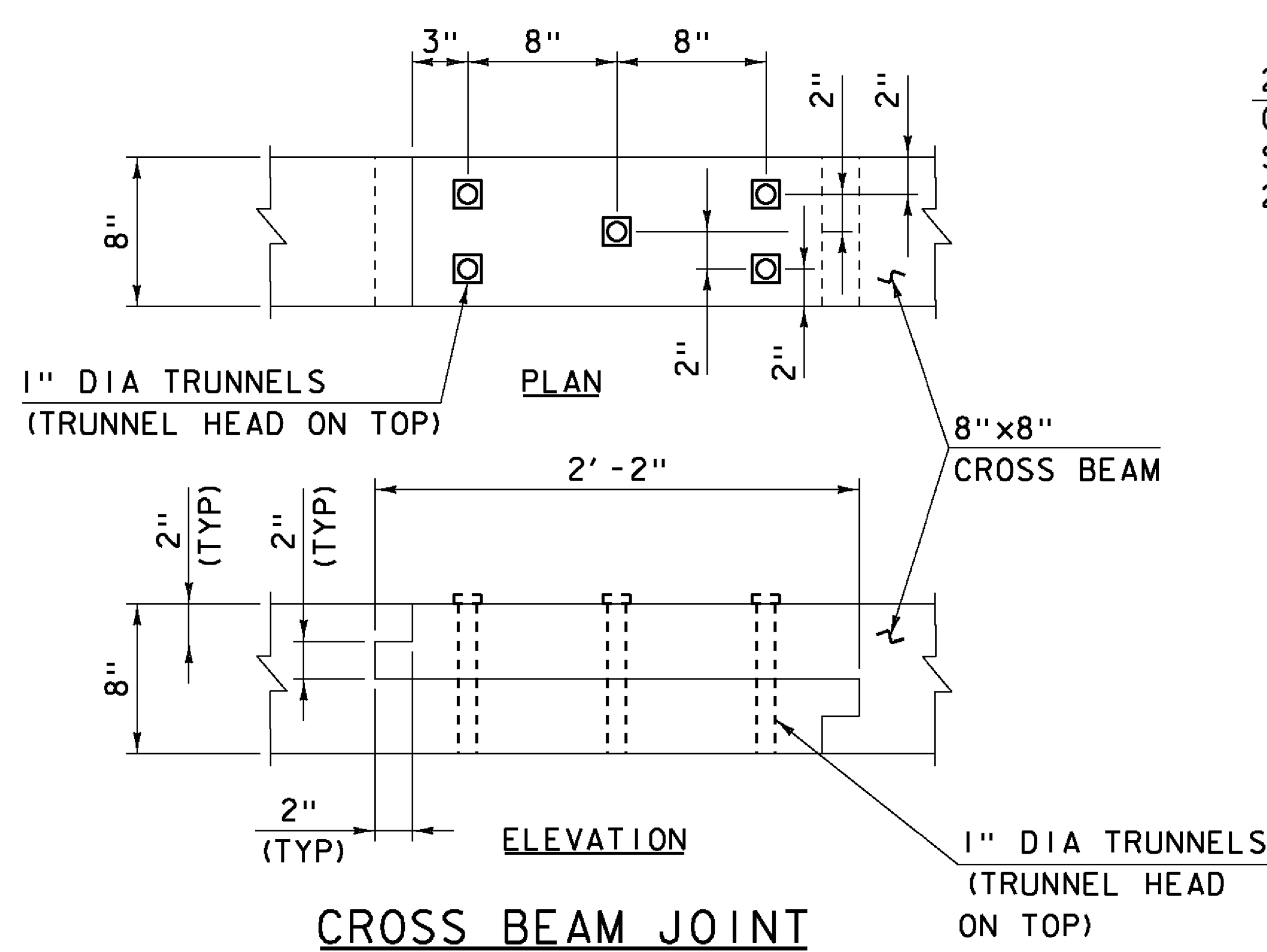
(WEST KING POST SPAN ONLY)
SCALE: 1 1/2" = 1'-0"



NOTE
GALVANIZED TIE PLATE NOT SHOWN FOR CLARITY.

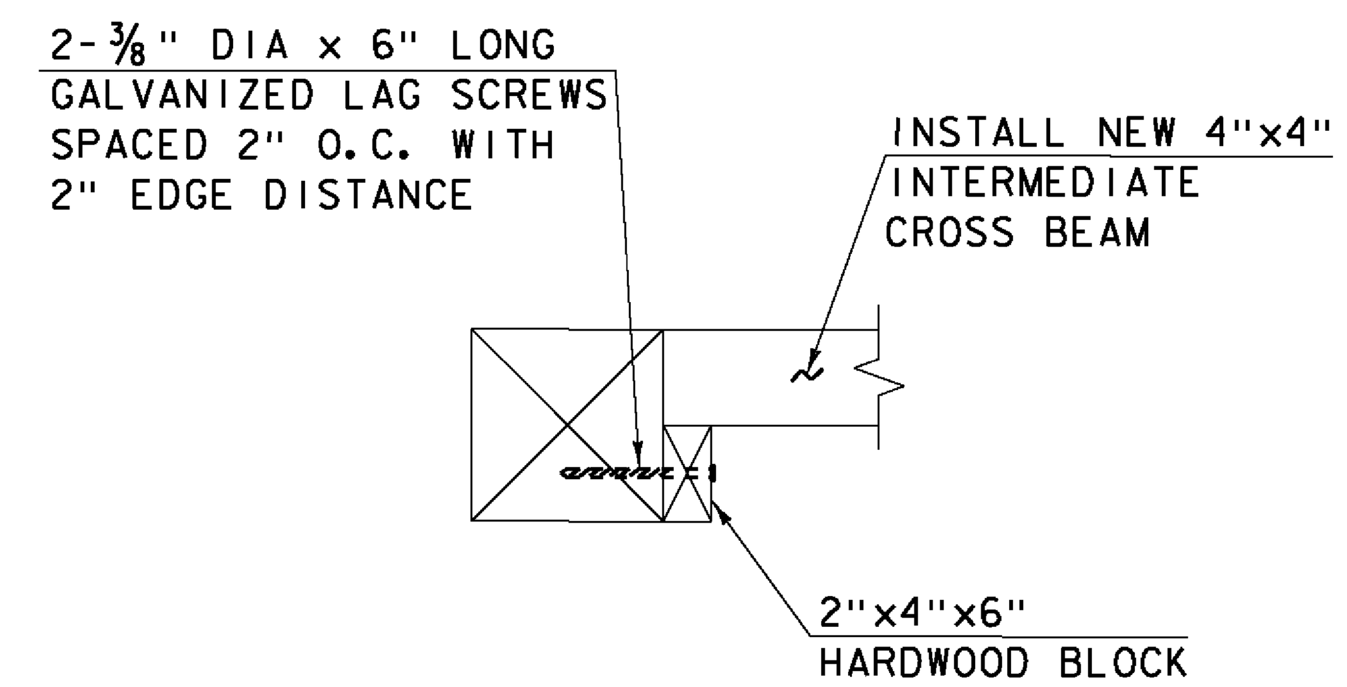
SECTION B-B

(WEST KING POST SPAN ONLY)
SCALE: 1 1/2" = 1'-0"



CROSS BEAM JOINT

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



NOTE
GALVANIZED TIE PLATE NOT SHOWN FOR CLARITY.

SECTION C-C

(EAST KING POST SPAN ONLY)
SCALE: 1 1/2" = 1'-0"

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- INSTALL NEW MEMBER
- KC — ADD NEW OR REPLACE EXISTING CROSS BEAM KNEE BRACE (SEE DETAIL ON SHEET 41)
- KR — ADD NEW OR REPLACE EXISTING RAFTER KNEE BRACE (SEE DETAIL ON SHEET 41)
- (XX) — TRUSS NODE LOCATION

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sup4

FILE NAME: 904225sup4.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
U. LAT. BRACING PLAN & DETAILS (1 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 19 OF 60

8/13/2015
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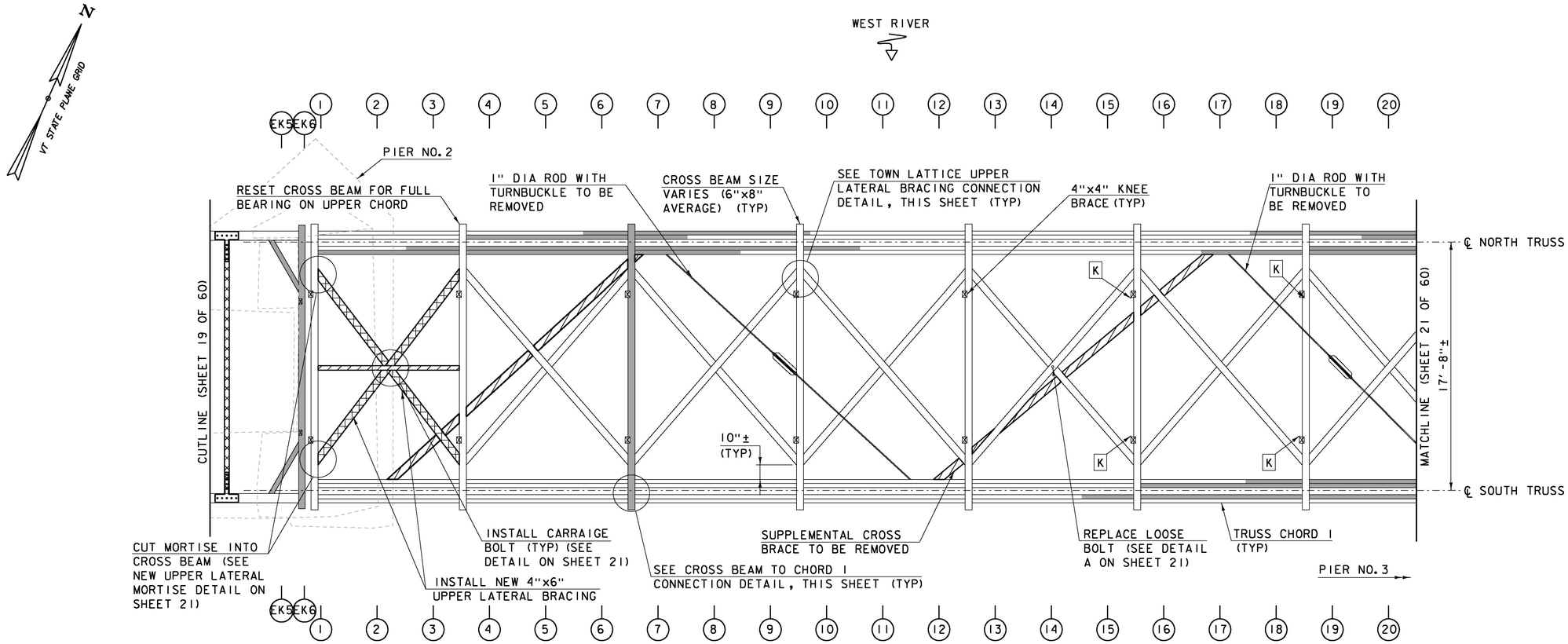
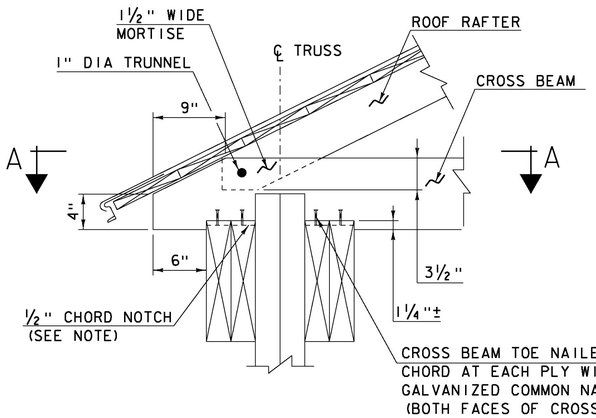




NOTE
THE TOP OF CHORD 1 WITHIN THE LIMITS OF THE CROSS BEAM SHALL BE NOTCHED BY ½".

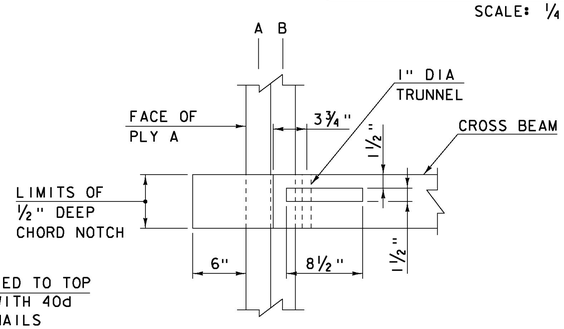
TOWN LATTICE CROSS BEAM TO CHORD 1 CONNECTION DETAIL

SCALE: 1½" = 1'-0"

STATIONING

TOWN LATTICE UPPER BRACING PLAN

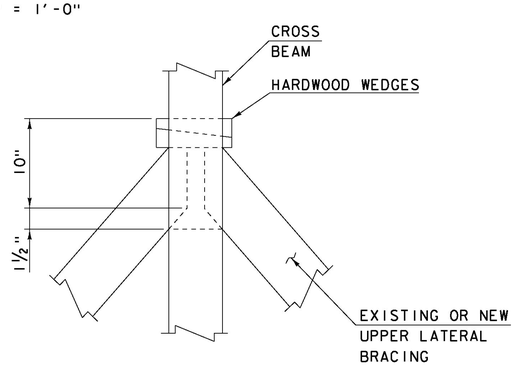
SCALE: ¼" = 1'-0"



NOTE
PLIES C AND D NOT SHOWN FOR CLARITY.

SECTION A-A

SCALE: 1½" = 1'-0"



TOWN LATTICE UPPER LATERAL BRACING CONNECTION DETAIL

SCALE: 1½" = 1'-0"

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- INSTALL NEW MEMBER
- K — REPLACE EXISTING KNEE BRACE (SEE DETIAL ON SHEET 41)
- XX — TRUSS NODE LOCATION

NOTES

1. ALL HOLES IN THE TOWN LATTICE UPPER CHORD MEMBERS FROM EXISTING METAL RODS AND SUPPLEMENTAL UPPER BRACING SHALL BE PLUGGED WITH A HARDWOOD DOWEL. PAYMENT WILL BE MADE UNDER ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).
2. SEE SHEET 21 FOR ADDITIONAL DETAILS THAT APPLY TO THIS SHEET.

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(I)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sup5

FILE NAME: 904225sup5.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES

U. LAT. BRACING PLAN & DETAILS (2 OF 3) SHEET 20 OF 60

8/13/2015
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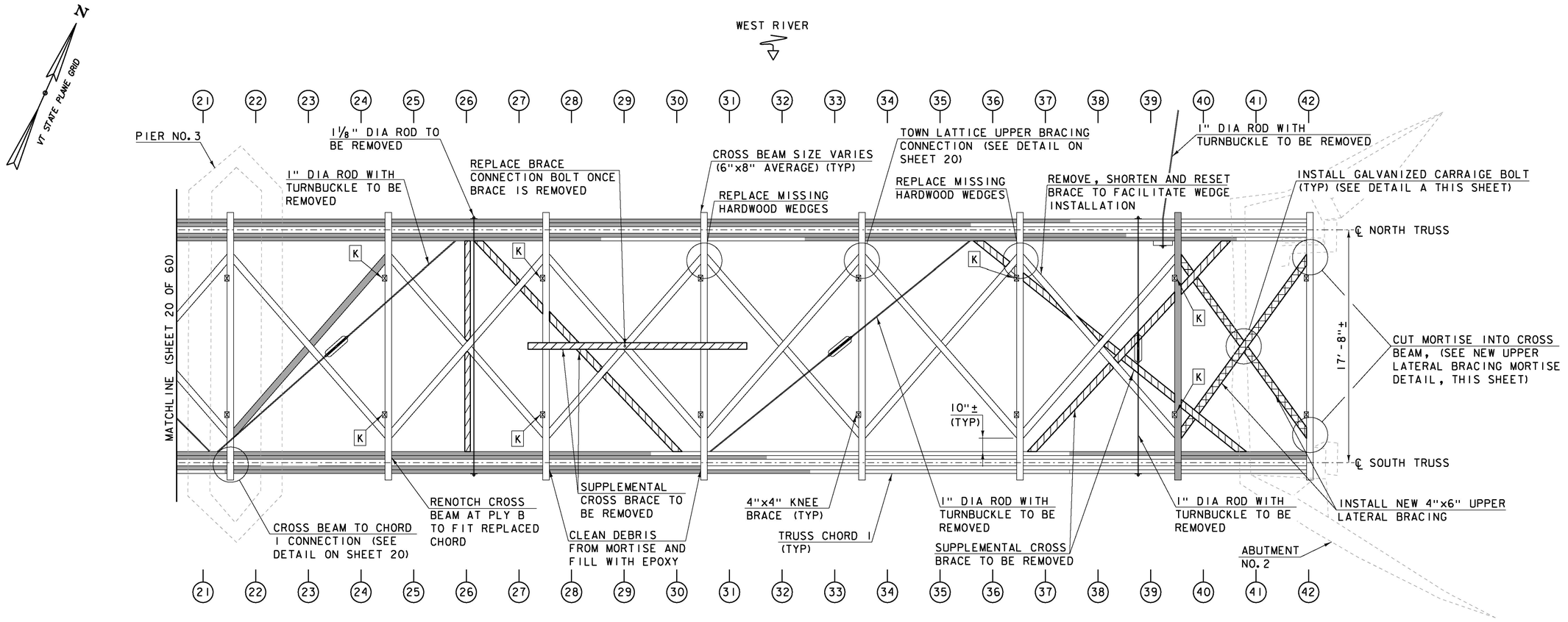
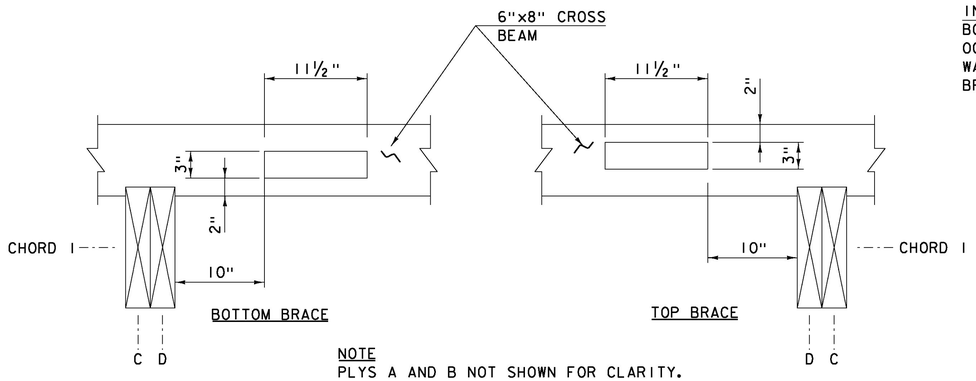


TOWN LATTICE UPPER BRACING PLAN

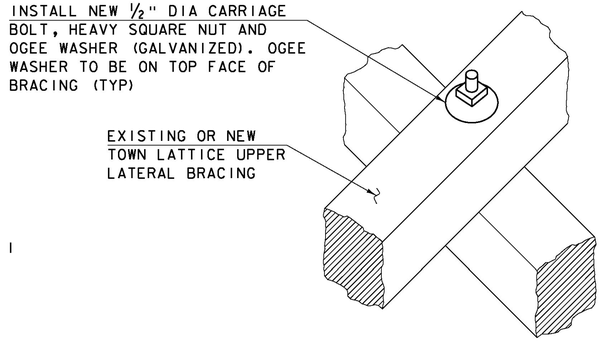
SCALE: 1/4" = 1'-0"



NOTE
PLYS A AND B NOT SHOWN FOR CLARITY.

TOWN LATTICE NEW UPPER LATERAL BRACING MORTISE DETAIL

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



DETAIL A

NOT TO SCALE

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- INSTALL NEW MEMBER
- K — REPLACE EXISTING KNEE BRACE (SEE DETAIL ON SHEET 41)
- XX — TRUSS NODE LOCATION

NOTE

1. SEE SHEET 20 FOR ADDITIONAL NOTES AND DETAILS THAT APPLY TO THIS SHEET.

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sup6

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225sup6.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES

U. LAT. BRACING PLAN & DETAILS (3 OF 3) SHEET 21 OF 60

8/13/2015
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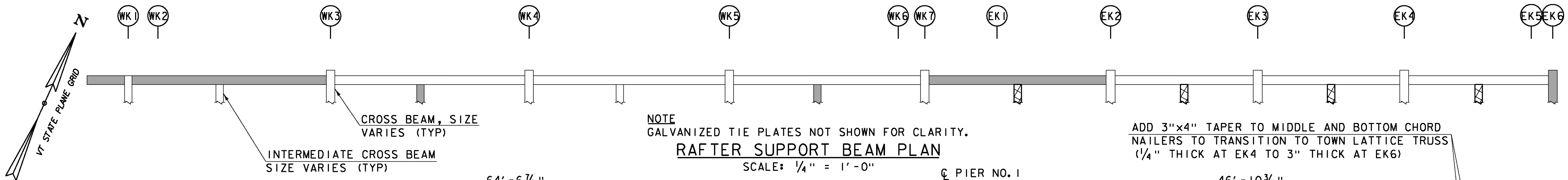
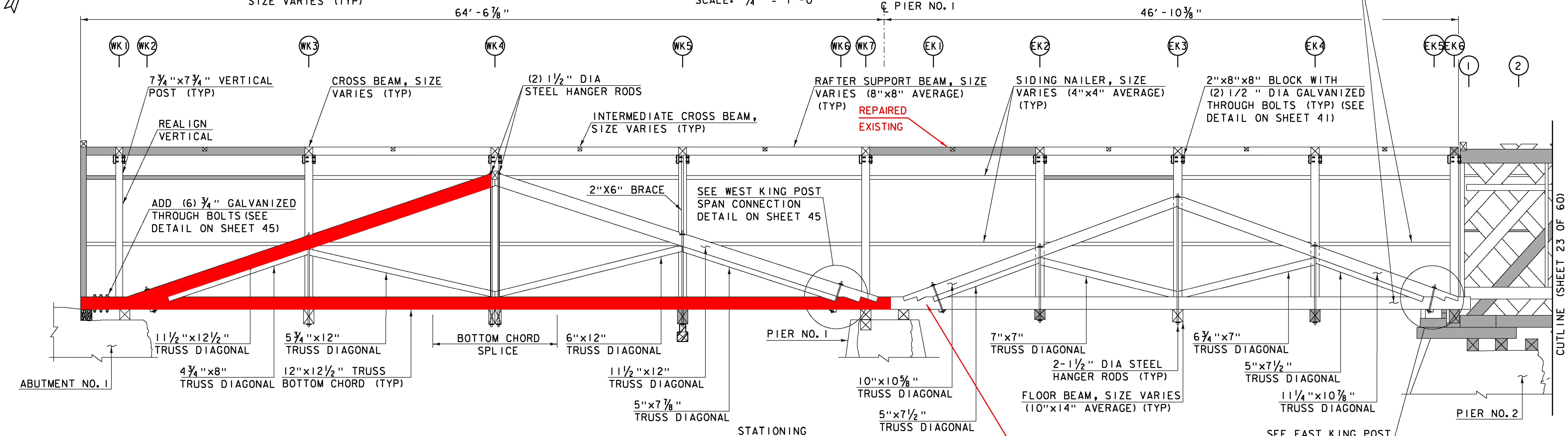


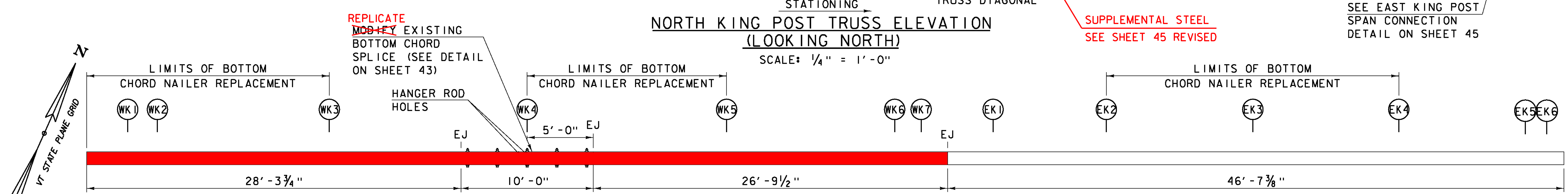
RAFTER SUPPORT BEAM PLAN

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



NORTH KING POST TRUSS ELEVATION
(LOOKING NORTH)

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



LOWER CHORD PLAN

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

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- INSTALL NEW MEMBER
- (XX) TRUSS NODE LOCATION
- EJ EXISTING CHORD JOINT
- NJ NEW CHORD JOINT

NOTE

1. ALL CHORD JOINT TO JOINT DISTANCES ARE APPROXIMATE. DIMENSIONS SHOWN IN THIS DRAWING WERE OBTAINED FROM LIMITED FIELD MEASUREMENTS AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO PLACING THE WOOD ORDER.

Hoyle, Tanner & Associates, Inc.

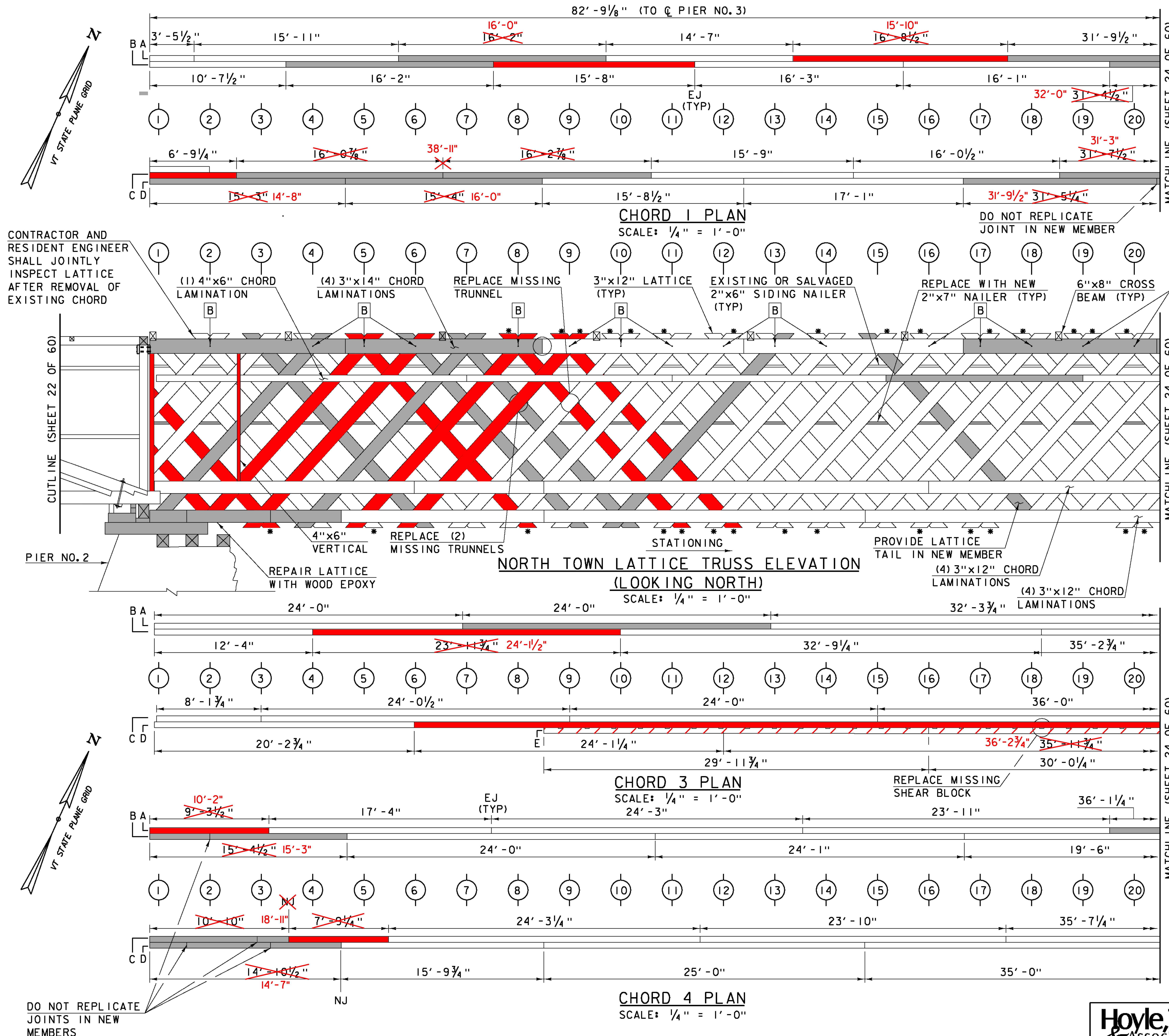
HTA PROJECT	MODEL
904225	904225sup7

PROJECT NAME: TOWNSHEND

PROJECT NUMBER: STP SCTT(1)

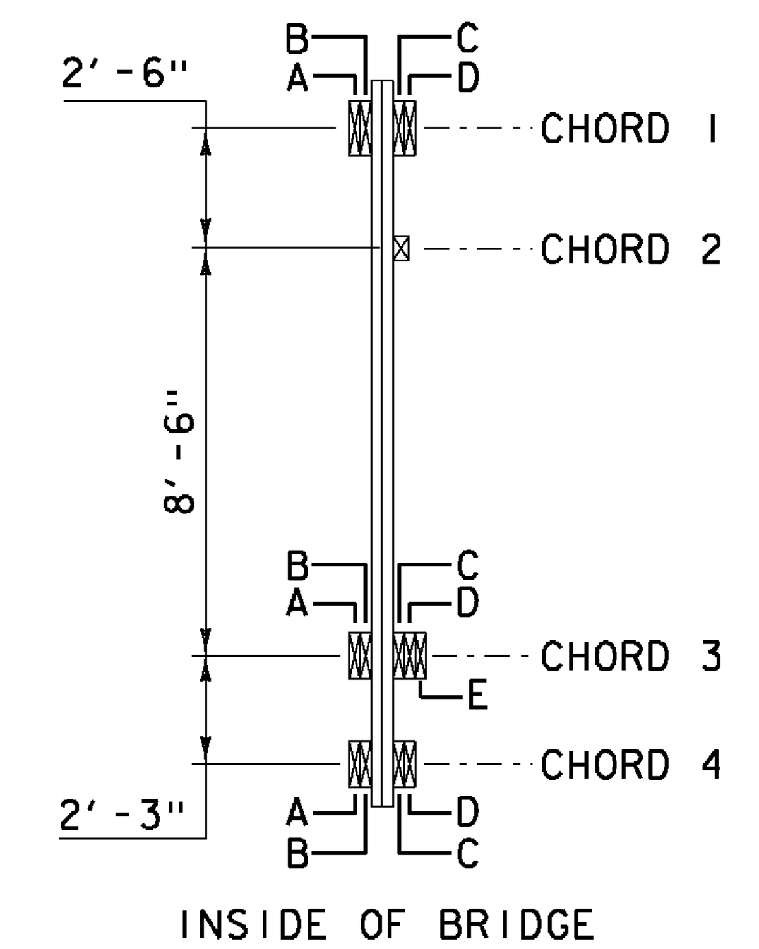
FILE NAME: 904225sup7.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
CHECKED BY: S.T.JAMES
NORTH TRUSS ELEVATION (1 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
SHEET 22 OF 60



NOTES

1. ALL CHORD JOINT TO JOINT DISTANCES ARE APPROXIMATE. DIMENSIONS SHOWN IN THIS DRAWING WERE OBTAINED FROM LIMITED FIELD MEASUREMENTS AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO PLACING THE WOOD ORDER.
2. RAFTERS, ARCHES, FLOOR BEAMS AND LATERAL BRACING NOT SHOWN FOR CLARITY.
3. REPLACEMENT OR ADDITION OF TRUNNEL AND THROUGH BOLT CONNECTIONS ARE INCLUDED IN ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE) (SEE NOTE W-8 ON SHEET 7).



TYPICAL TRUSS SECTION
SCALE: ¼" = 1'-0"

MEMBER REMOVED

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- (XX) TRUSS NODE LOCATION
- EJ EXISTING CHORD JOINT
- NJ NEW CHORD JOINT
- * DENOTES SPLIT IN LATTICE MEMBER TO BE REPAIRED (SEE DETAILS ON SHEET 42)
- B EXISTING THROUGH BOLT (SEE DETAIL ON SHEET 42)

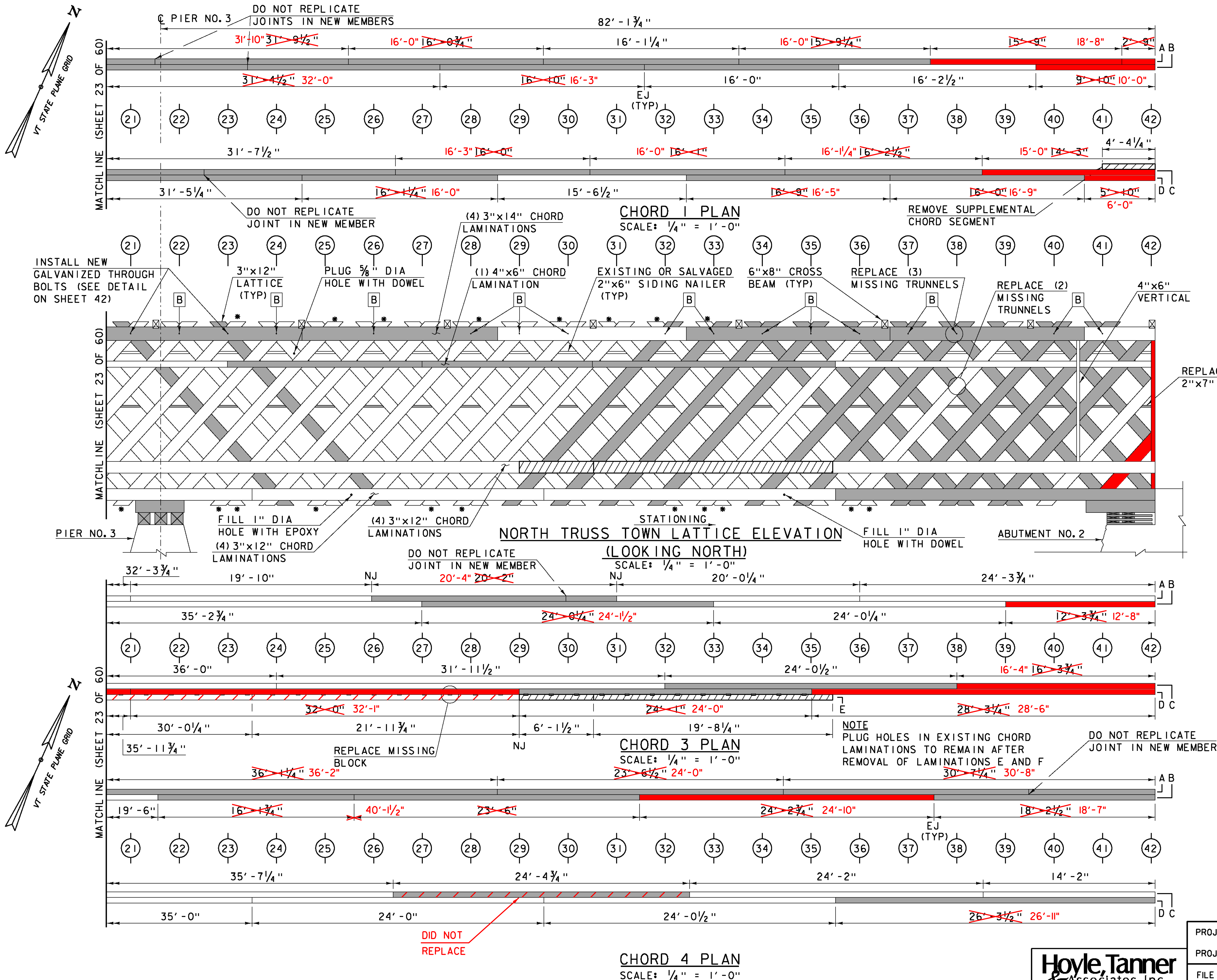
PROJECT NAME:	TOWNSHEND
PROJECT NUMBER:	STP SCTT(1)

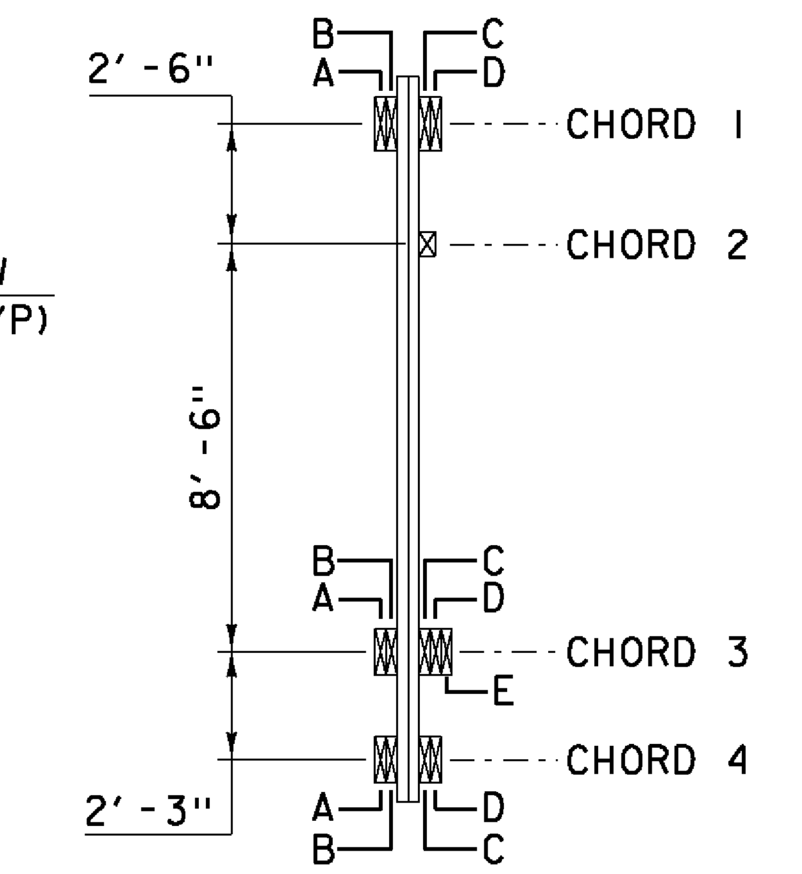
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sup8

FILE NAME: 904225sup8.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
NORTH TRUSS ELEVATION (2 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 23 OF 60





TYPICAL TRUSS SECTION

SCALE: ¼" = 1'-0"

NOTES

1. SEE SHEET 23 FOR NOTES THAT APPLY TO THIS SHEET.

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- (XX) TRUSS NODE LOCATION
- EJ EXISTING CHORD JOINT
- NJ NEW CHORD JOINT
- * DENOTES SPLIT IN LATTICE MEMBER TO BE REPAIRED (SEE DETAILS ON SHEET 42)
- B EXISTING THROUGH BOLT (SEE DETAIL ON SHEET 42)

Hoyle, Tanner & Associates, Inc.

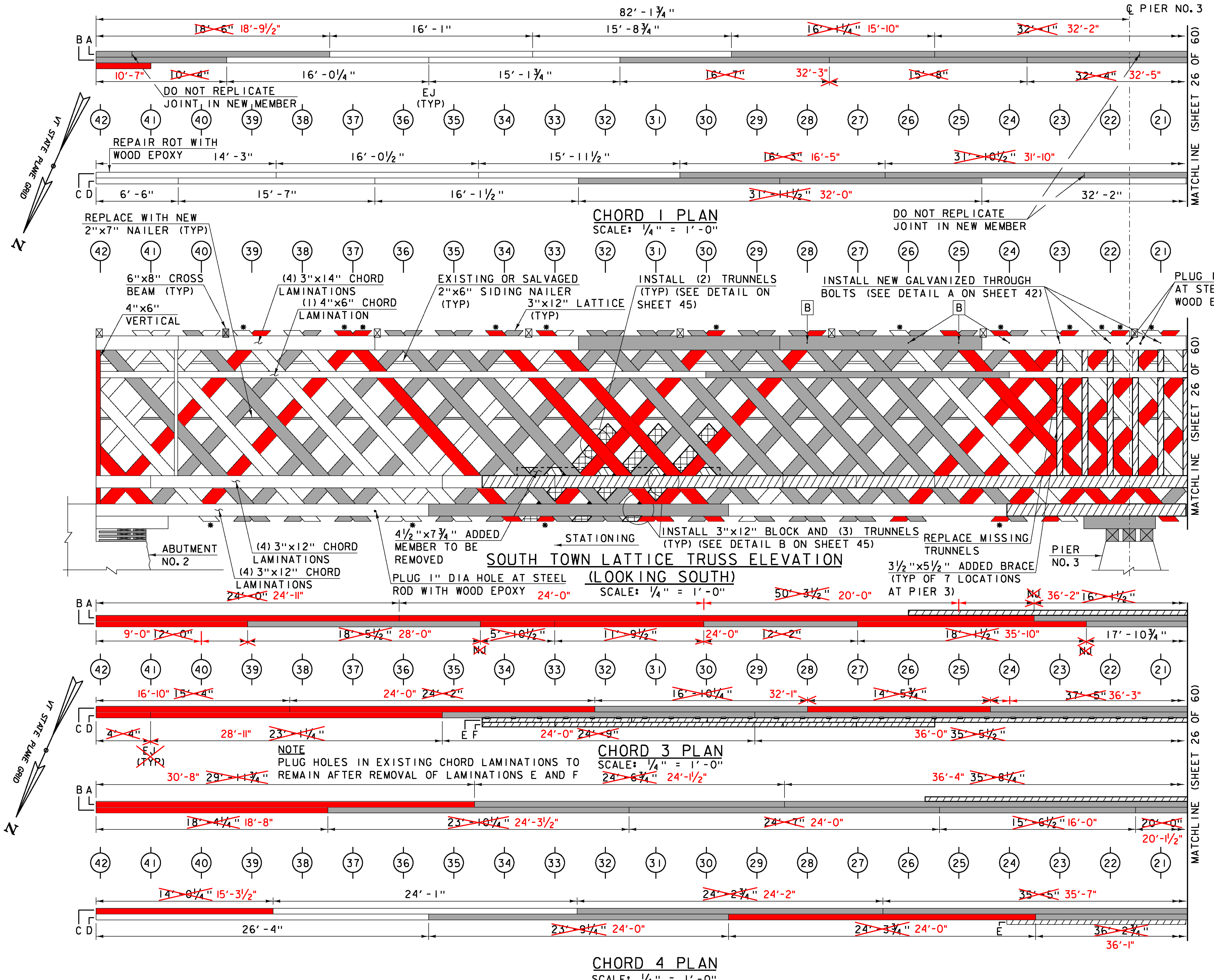
HTA PROJECT	MODEL
904225	904225sup9

PROJECT NAME: TOWNSHEND

PROJECT NUMBER: STP SCTT(1)

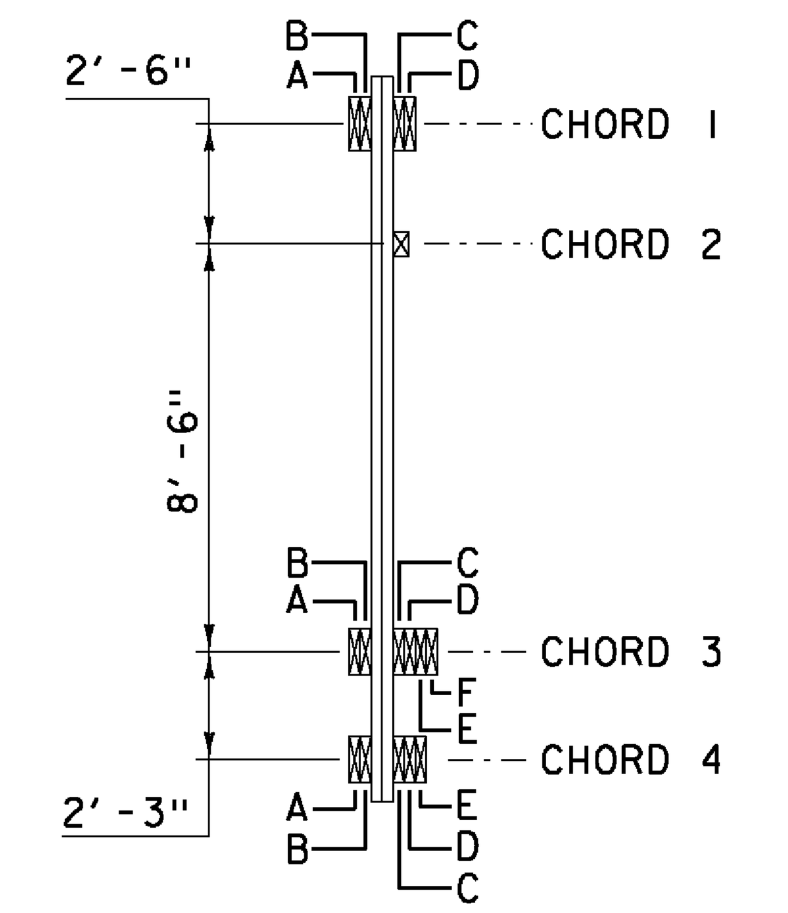
FILE NAME: 904225sup9.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
NORTH TRUSS ELEVATION (3 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 24 OF 60



NOTES

1. SEE SHEET 23 FOR NOTES THAT APPLY TO THIS SHEET.



TYPICAL TRUSS SECTION
SCALE: ¼" = 1'-0"

LEGEND

(solid grey)	PREDETERMINED MEMBER TO BE REPLACED
(hatched)	PREDETERMINED MEMBER TO BE REMOVED
(cross-hatched)	INSTALL NEW SISTER MEMBER (SEE DETAIL A AND DETAIL B ON SHEET 45)
(XX)	TRUSS NODE LOCATION
EJ	EXISTING CHORD JOINT
NJ	NEW CHORD JOINT
*	DENOTES SPLIT IN LATTICE MEMBER TO BE REPAIRED (SEE DETAILS ON SHEET 42)
B	EXISTING THROUGH BOLT (SEE DETAIL ON SHEET 42)

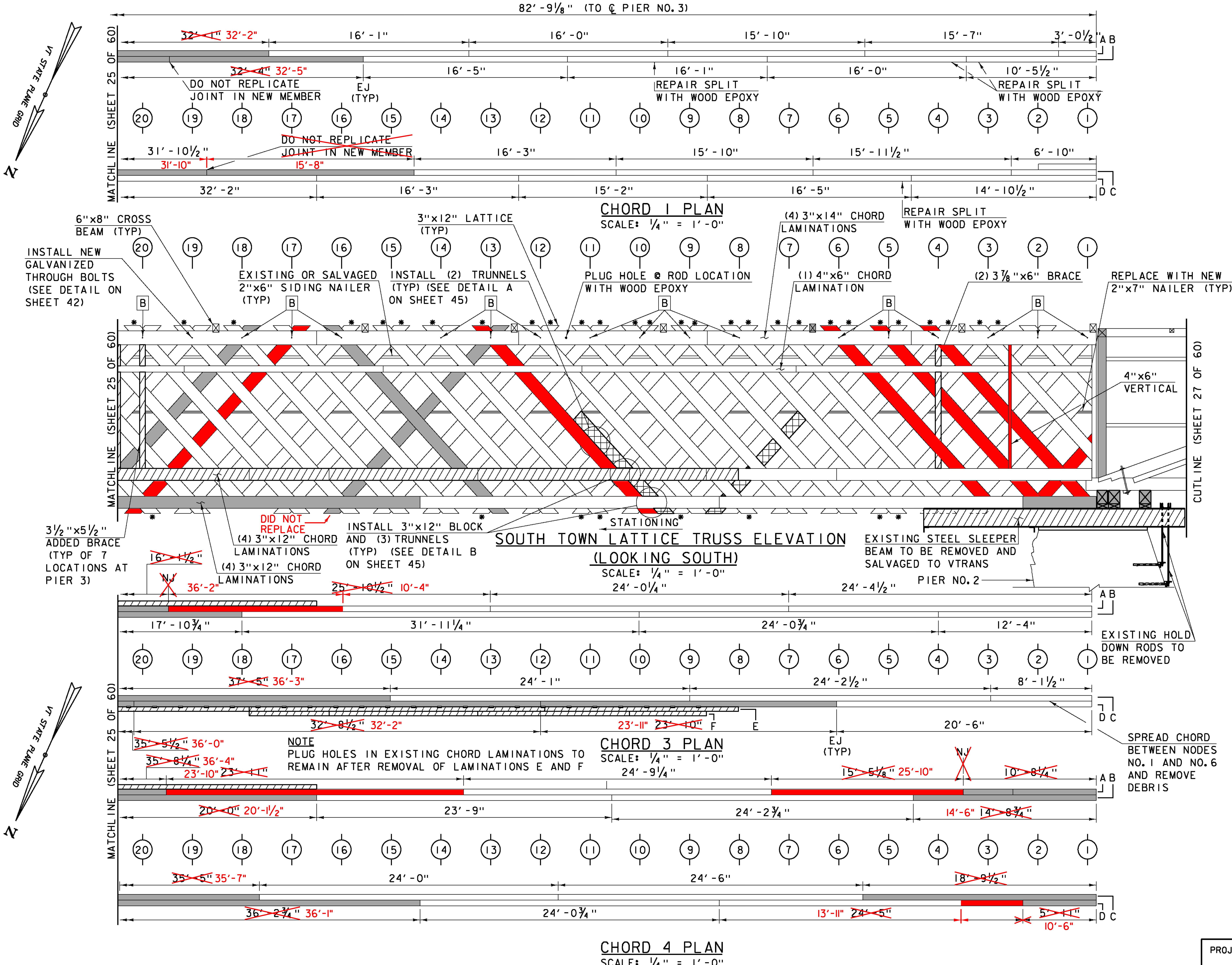
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225supl2

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

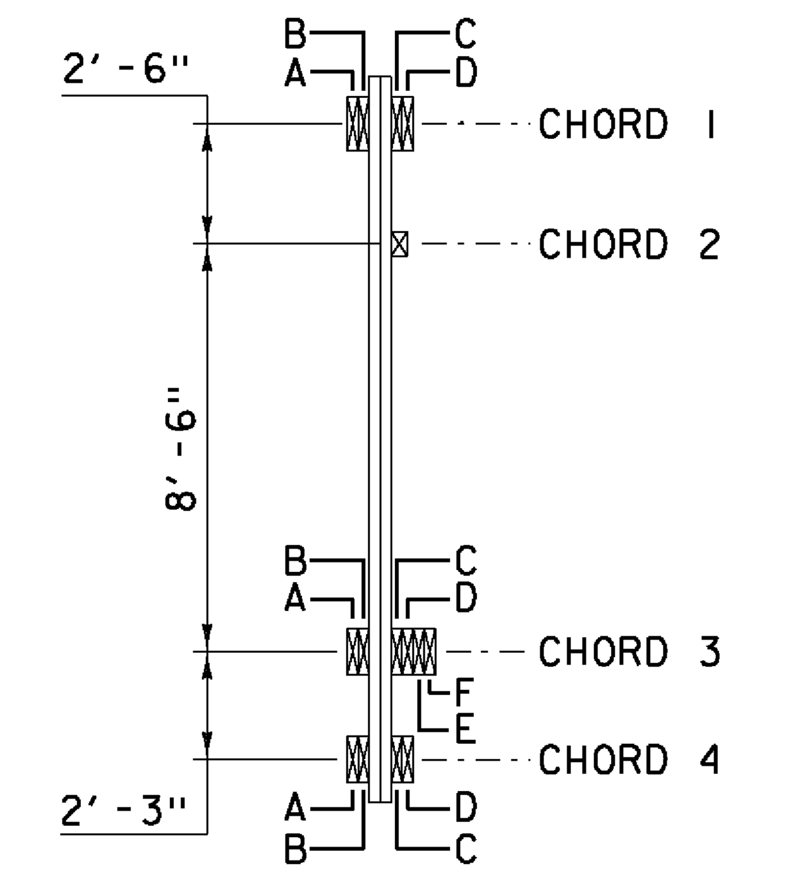
FILE NAME: 904225supl2.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
SOUTH TRUSS ELEVATION (1 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 25 OF 60



NOTES

1. SEE SHEET 23 FOR NOTES THAT APPLY TO THIS SHEET.



TYPICAL TRUSS SECTION
SCALE: 1/4" = 1'-0"

LEGEND

(grey bar)	PREDETERMINED MEMBER TO BE REPLACED
(hatched bar)	PREDETERMINED MEMBER TO BE REMOVED
(cross-hatched)	~~INSTALL~~ NO NEW SISTER MEMBER INSTALLED (SEE DETAIL A AND DETAIL B ON SHEET 45)
(XX)	TRUSS NODE LOCATION
EJ	EXISTING CHORD JOINT
NJ	NEW CHORD JOINT
*	DENOTES SPLIT IN LATTICE MEMBER TO BE REPAIRED (SEE DETAILS ON SHEET 42)
B	EXISTING THROUGH BOLT (SEE DETAIL ON SHEET 42)

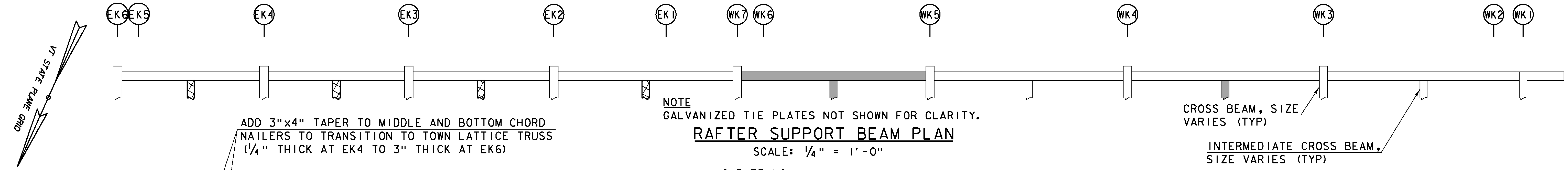
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225supl

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225supll.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
SOUTH TRUSS ELEVATION (2 OF 3)

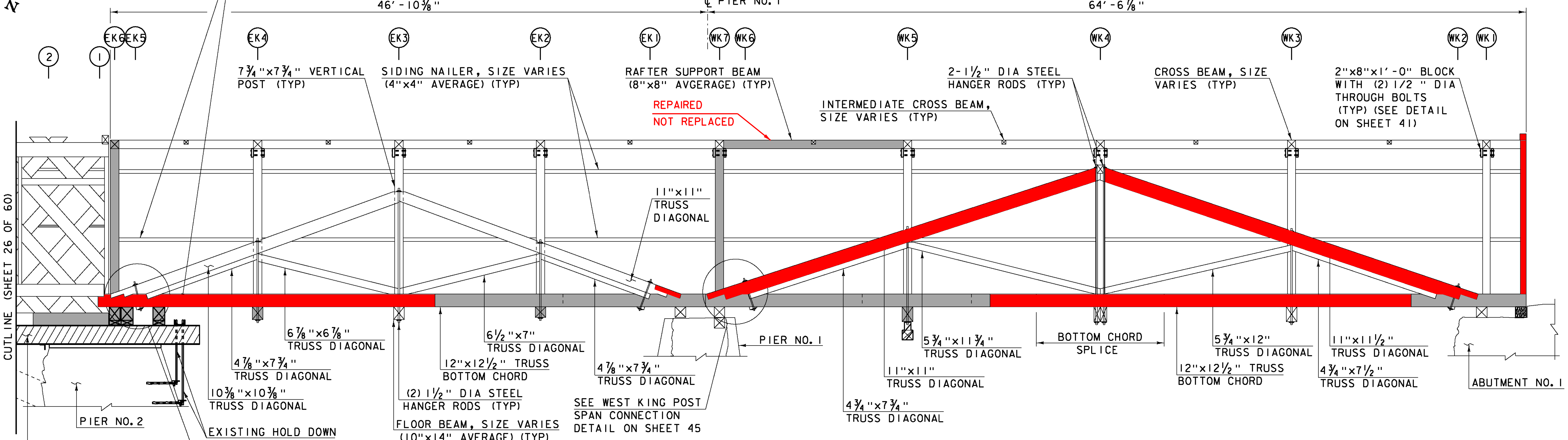
PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 26 OF 60



NOTE
GALVANIZED TIE PLATES NOT SHOWN FOR CLARITY.

RAFTER SUPPORT BEAM PLAN

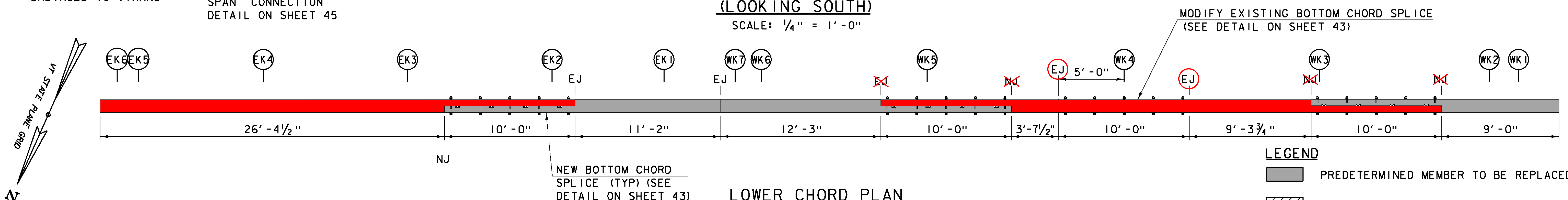
SCALE: 1/4" = 1'-0"



SOUTH KING POST TRUSS ELEVATION

(LOOKING SOUTH)

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



LOWER CHORD PLAN

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

LEGEND

(solid grey)	PREDETERMINED MEMBER TO BE REPLACED
(hatched)	PREDETERMINED MEMBER TO BE REMOVED
(cross-hatched)	INSTALL NEW MEMBER
(XX)	TRUSS NODE LOCATION
EJ	EXISTING CHORD JOINT
NJ	NEW CHORD JOINT

NOTES

1. SEE SHEET 22 FOR NOTES THAT APPLY TO THIS SHEET.

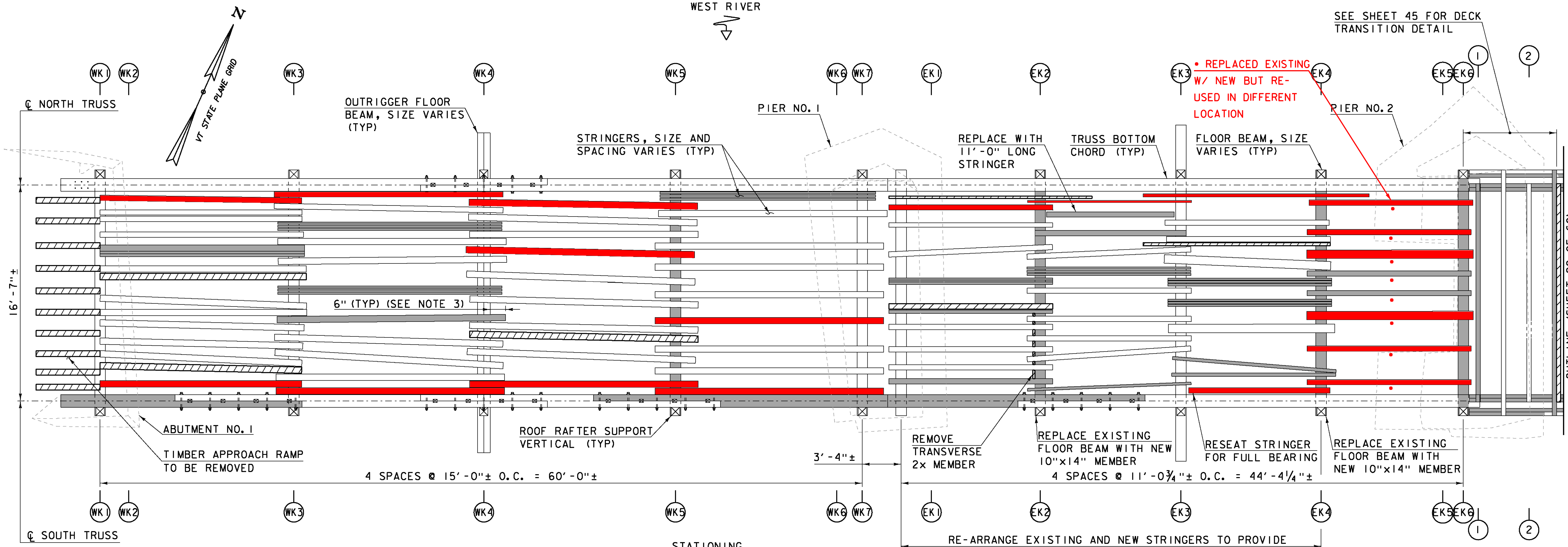
PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sup10

FILE NAME: 904225sup10.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
SOUTH TRUSS ELEVATION (3 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 27 OF 60



NOTE
LOWER LATERAL BRACING AND DECKING NOT SHOWN FOR CLARITY.

KING POST FLOOR FRAMING PLAN

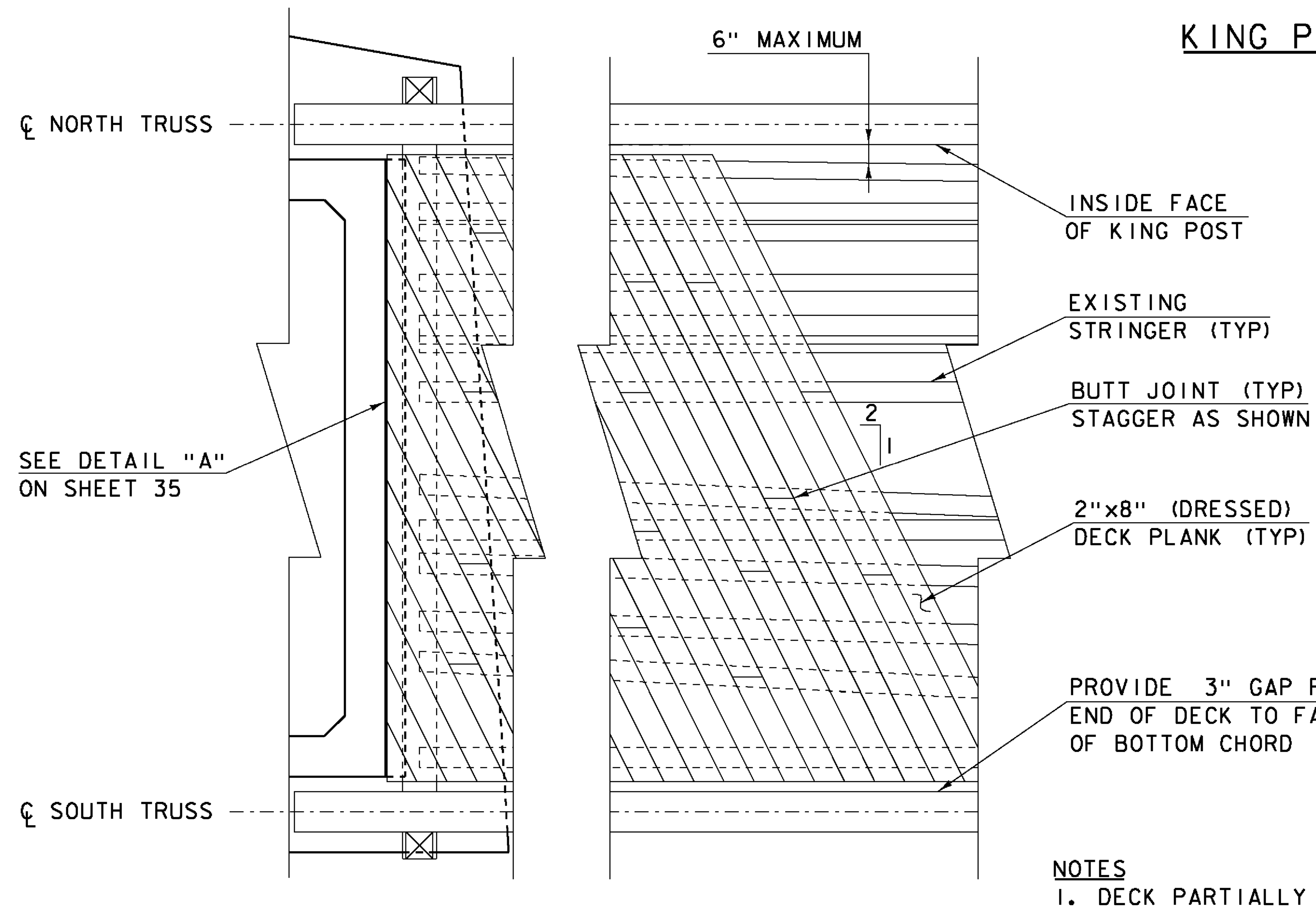
SCALE: ¼" = 1'-0"

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- (XX) TRUSS NODE LOCATION

NOTES

1. ALL EXISTING KING POST TRUSS STRINGERS SHOWN TO BE REPLACED, WHETHER A SINGLE, DOUBLE OR TRIPLE LAMINATED MEMBER, SHALL BE REPLACED WITH A NEW 5"x8" STRINGER.
2. NEW AND REMAINING STRINGERS BETWEEN NODES EK1 AND EK4 SHALL BE EQUALLY SPACED NOT TO EXCEED 2'-0" ON CENTER AND NOT MORE THAN 6" FROM FACE OF CHORD TO FACE OF STRINGER, COSTS INCLUDED UNDER ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).
3. PROVIDE 6" OVERHANG FOR NEW STRINGERS AT EACH END.



KING POST DECK DETAIL

SCALE: ⅜" = 1'-0"

NOTES
1. DECK PARTIALLY SHOWN FOR CLARITY.
2. SEE SHEET 44 FOR DECK PLANK ATTACHMENT DETAILS AND DECK SPIKE DETAILS.

Hoyle, Tanner & Associates, Inc.

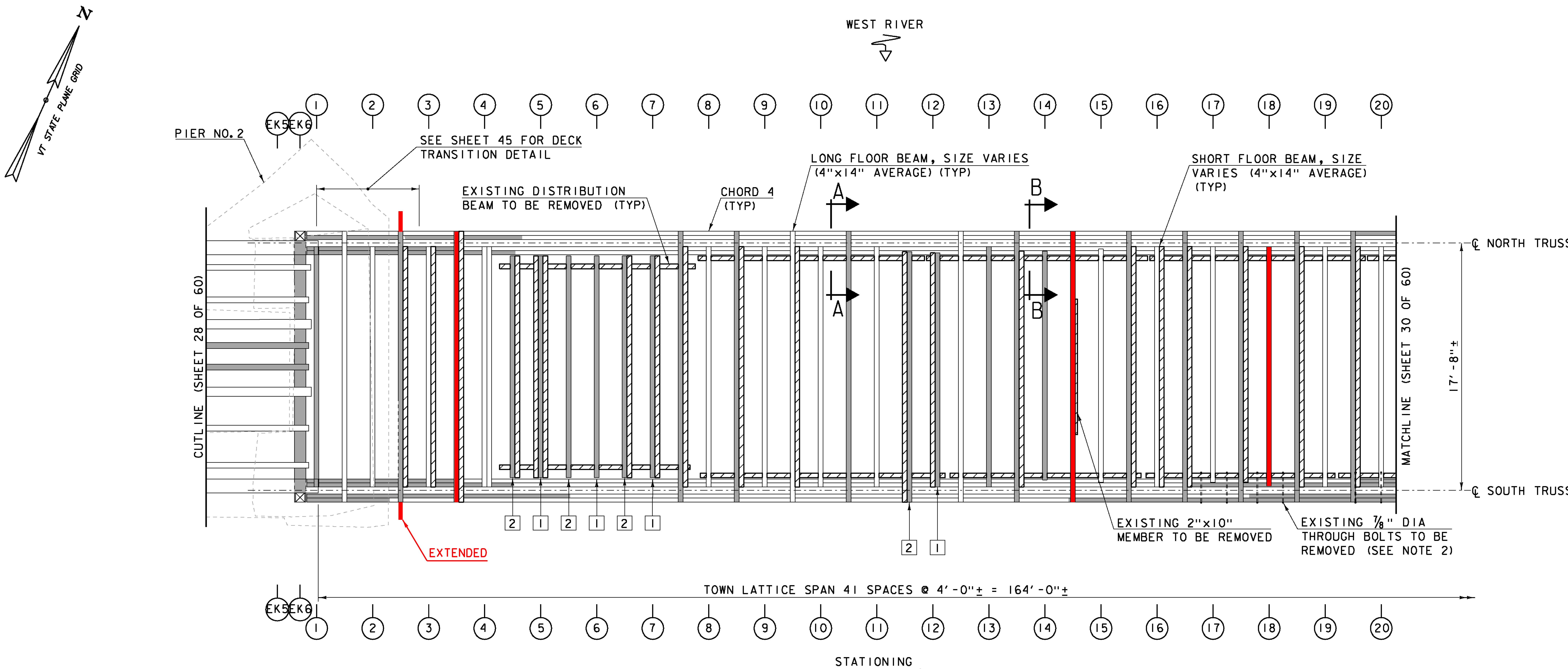
HTA PROJECT	MODEL
904225	904225supl3

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225supl3.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
FLOOR FRAMING PLAN & DETAILS (1 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES

8/13/2015 k:\904225\sup13.dgn



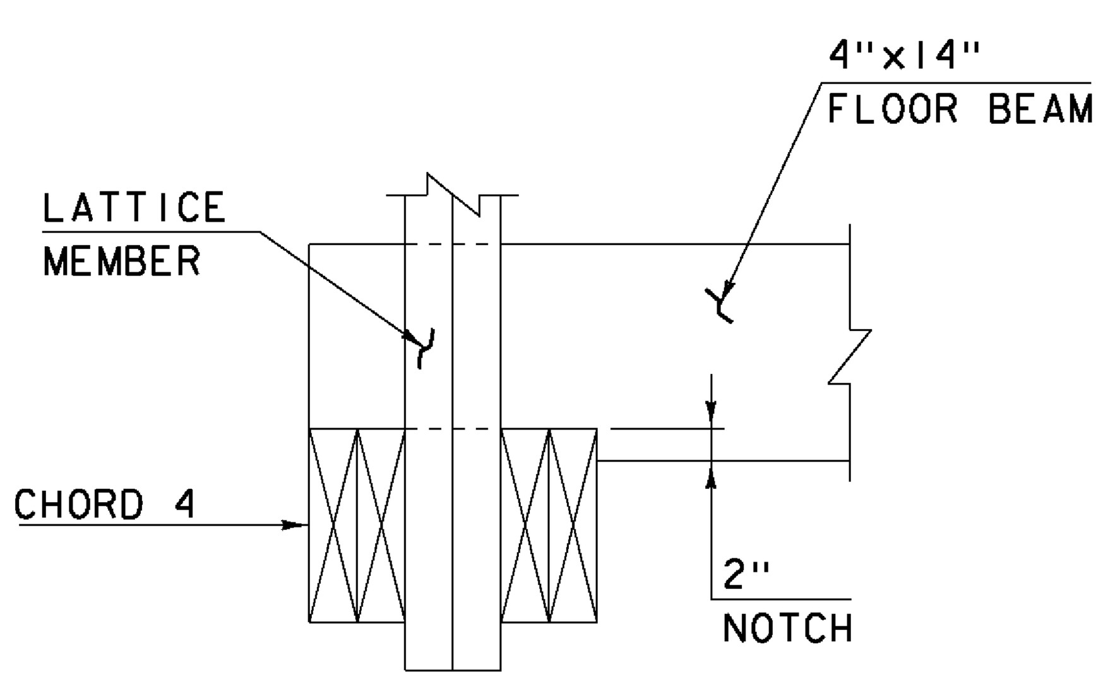
NOTE
LOWER LATERAL BRACING AND DECK NOT SHOWN FOR CLARITY.

TOWN LATTICE FLOOR FRAMING PLAN

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

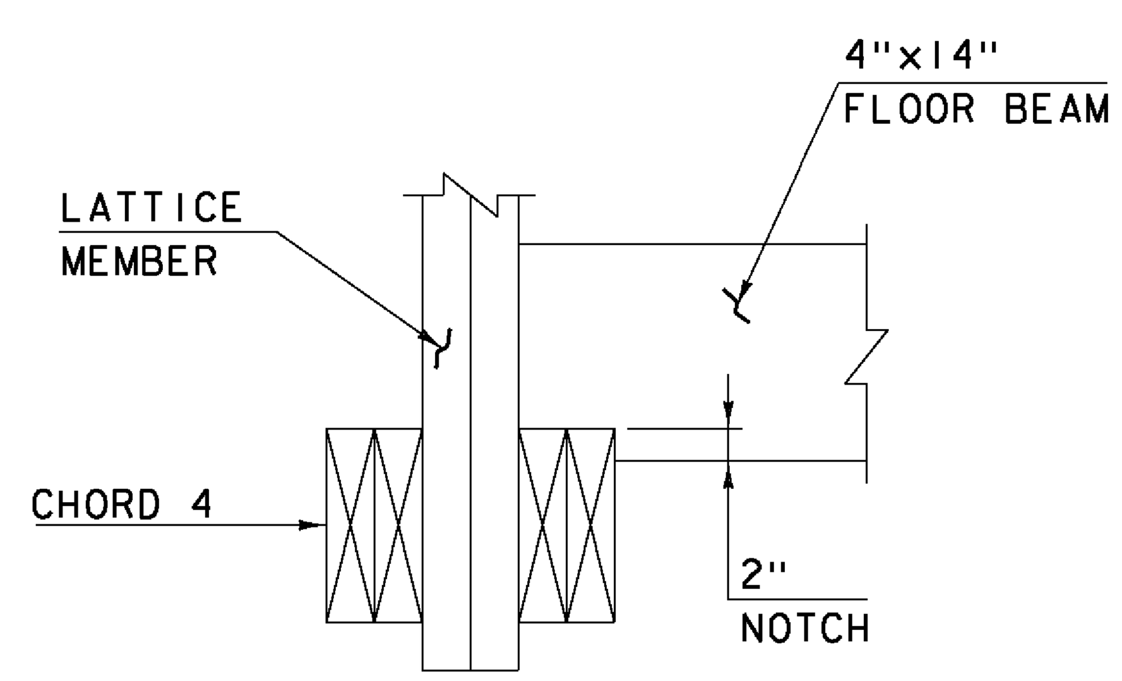
LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- (XX) TRUSS NODE LOCATION
- [1] REPLACE WITH NEW 17'-2" LONG FLOOR BEAM
- [2] REPLACE WITH NEW 19'-2" LONG FLOOR BEAM



SECTION A-A

SCALE: 1" = 1'-0"



SECTION B-B

SCALE: 1" = 1'-0"

NOTES

1. ALL EXISTING TOWN LATTICE STRINGERS (NOT SHOWN FOR CLARITY) ARE TO BE REMOVED. STRINGERS ARE 4"x4" ON AVERAGE. REMOVAL AND DISPOSAL IS PAID UNDER ITEM 529.20, PARTIAL REMOVAL OF BRIDGE STRUCTURE.
2. ALL THROUGH BOLT HOLES IN CHORD 4 SHALL BE FILLED WITH A WOOD DOWEL ONCE DISTRIBUTION BEAMS ARE REMOVED. PAID UNDER ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

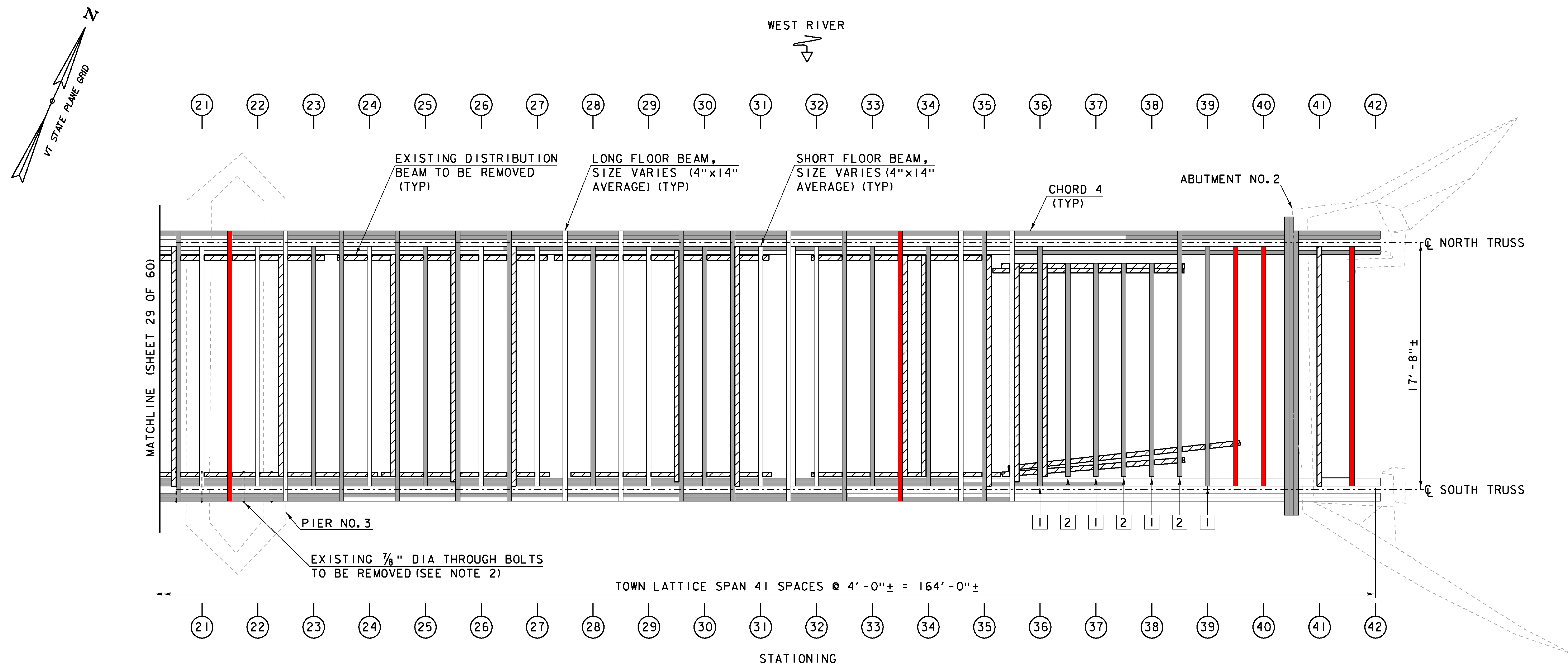
PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225supl4

FILE NAME: 904225supl4.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
FLOOR FRAMING PLAN & DETAILS (2 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 29 OF 60



NOTE
LOWER LATERAL BRACING AND DECK NOT SHOWN FOR CLARITY

TOWN LATTICE FLOOR FRAMING PLAN

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

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- XX TRUSS NODE LOCATION
- 1 REPLACE WITH NEW 17'-2" LONG FLOOR BEAM
- 2 REPLACE WITH NEW 19'-2" LONG FLOOR BEAM

NOTE

1. SEE SHEET 29 FOR NOTES AND DETAILS THAT APPLY TO THIS SHEET.

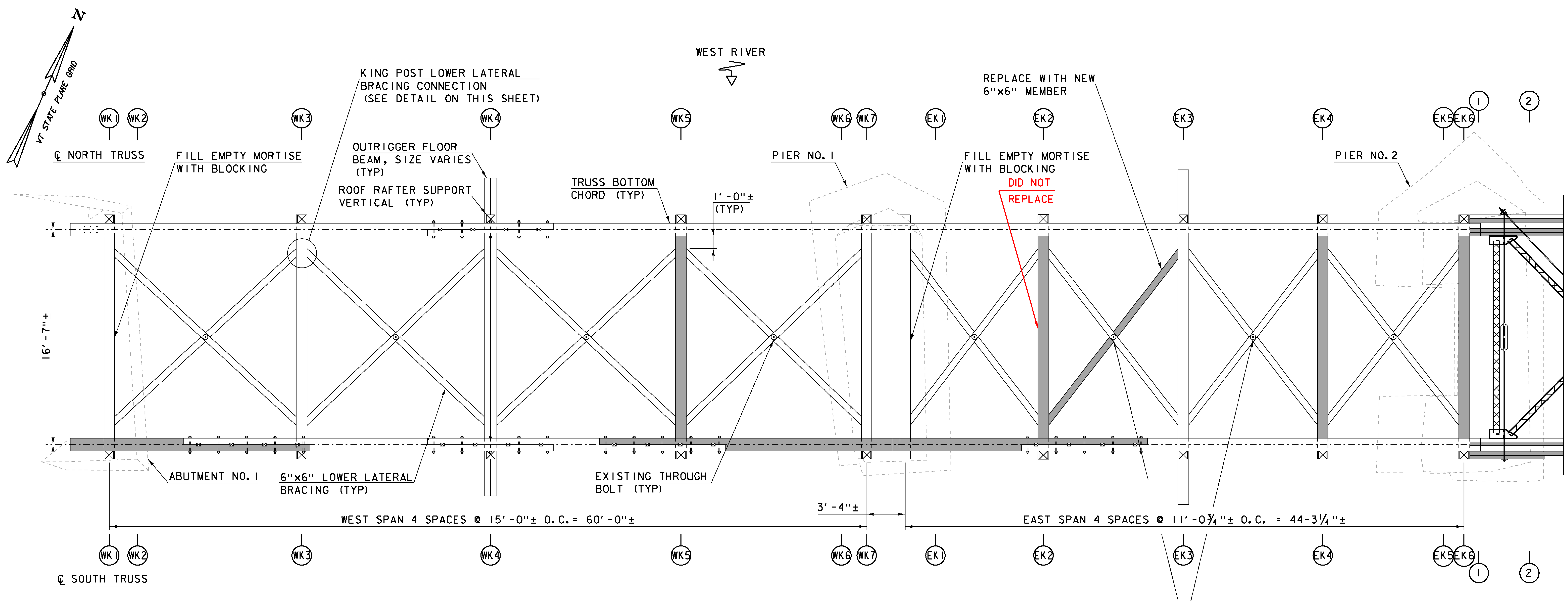
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sup15

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

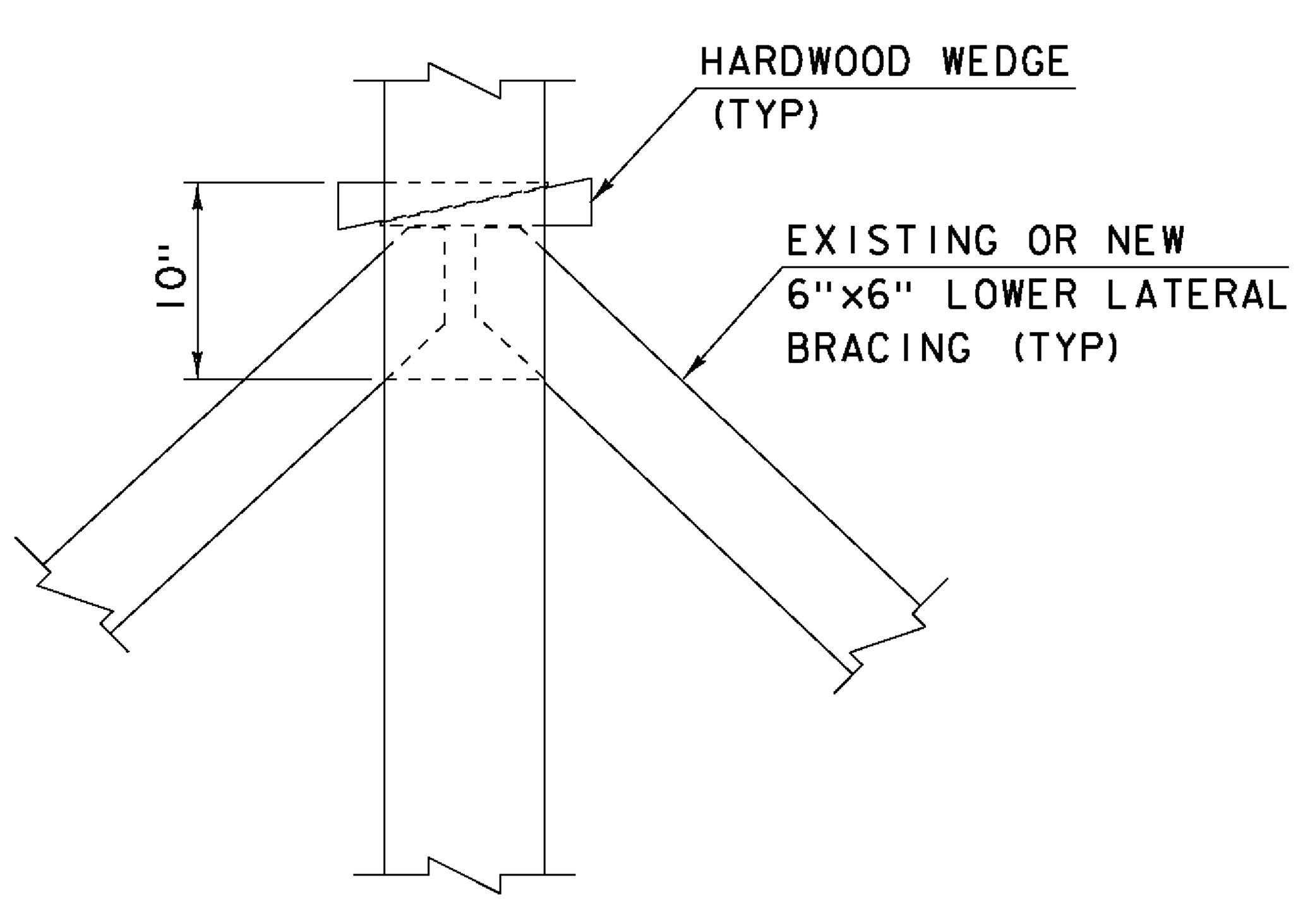
FILE NAME: 904225sup15.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
FLOOR FRAMING PLAN & DETAILS (3 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 30 OF 60


VT STATE PLANE GRID
N
WEST RIVER
KING POST LOWER LATERAL BRACING CONNECTION (SEE DETAIL ON THIS SHEET)
REPLACE WITH NEW 6"x6" MEMBER
WK1 WK2 WK3 WK4 WK5 WK6 WK7 EK1 EK2 EK3 EK4 EK5 EK6
1 2
℄ NORTH TRUSS
FILL EMPTY MORTISE WITH BLOCKING
OUTRIGGER FLOOR BEAM, SIZE VARIES (TYP)
ROOF RAFTER SUPPORT VERTICAL (TYP)
TRUSS BOTTOM CHORD (TYP)
1'-0"± (TYP)
PIER NO. 1
FILL EMPTY MORTISE WITH BLOCKING
DID NOT REPLACE
PIER NO. 2
16'-7"±
CUTLINE (SHEET 32 OF 60)
ABUTMENT NO. 1
6"x6" LOWER LATERAL BRACING (TYP)
EXISTING THROUGH BOLT (TYP)
3'-4"±
WEST SPAN 4 SPACES @ 15'-0"± O.C. = 60'-0"±
EAST SPAN 4 SPACES @ 11'-0¾"± O.C. = 44-3¼"±
℄ SOUTH TRUSS
STATIONING
REMOVE LOOSE SPIKE AND REPLACE WITH NEW ½" DIA GALVANIZED THROUGH BOLTS, OGEE WASHER AND HEAVY SQUARE NUT (SEE DETAIL ON THIS SHEET)
A B

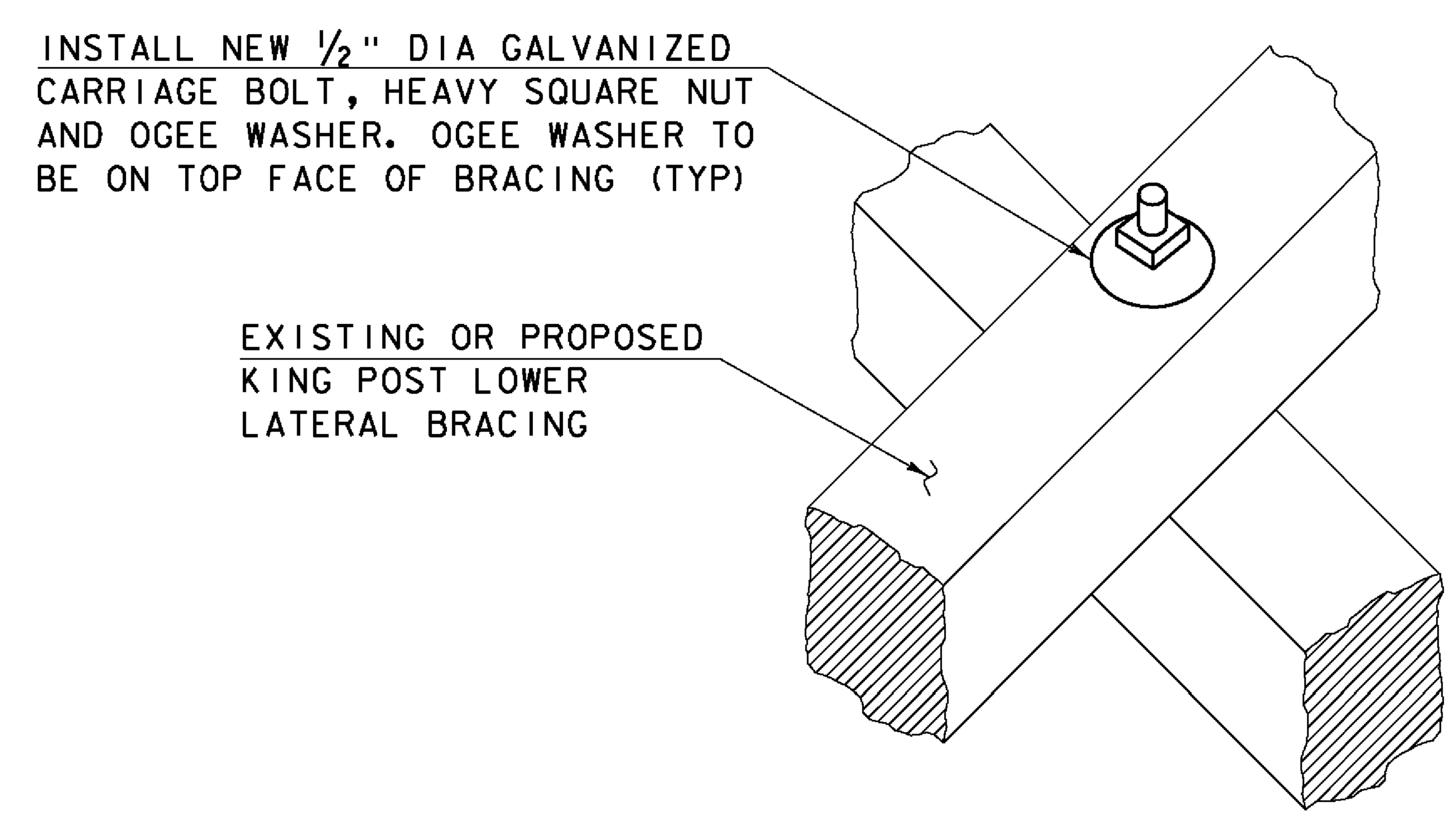
KING POST LOWER LATERAL BRACING PLAN

SCALE: ¼" = 1'-0"



KING POST LOWER LATERAL BRACING CONNECTION DETAIL

NOT TO SCALE



KING POST LOWER LATERAL BRACING CONNECTION DETAIL

NOT TO SCALE

LEGEND

- (grey bar) PREDETERMINED MEMBER TO BE REPLACED
- (XX) TRUSS NODE LOCATION

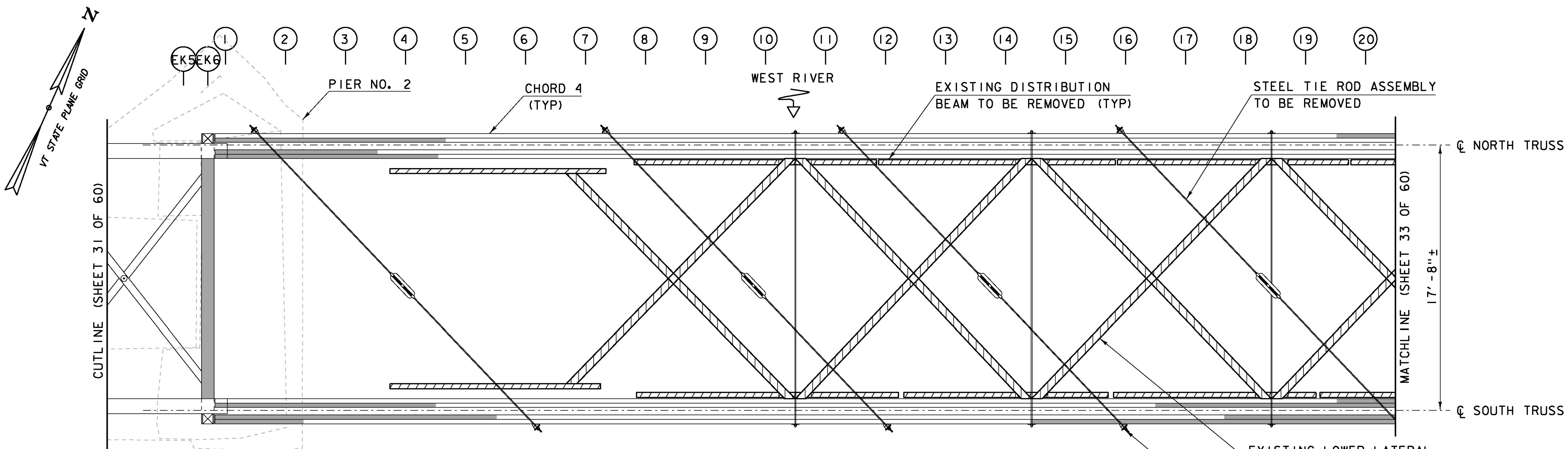
PROJECT NAME:	TOWNSHEND
PROJECT NUMBER:	STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT: 904225 — MODEL: 904225sup16

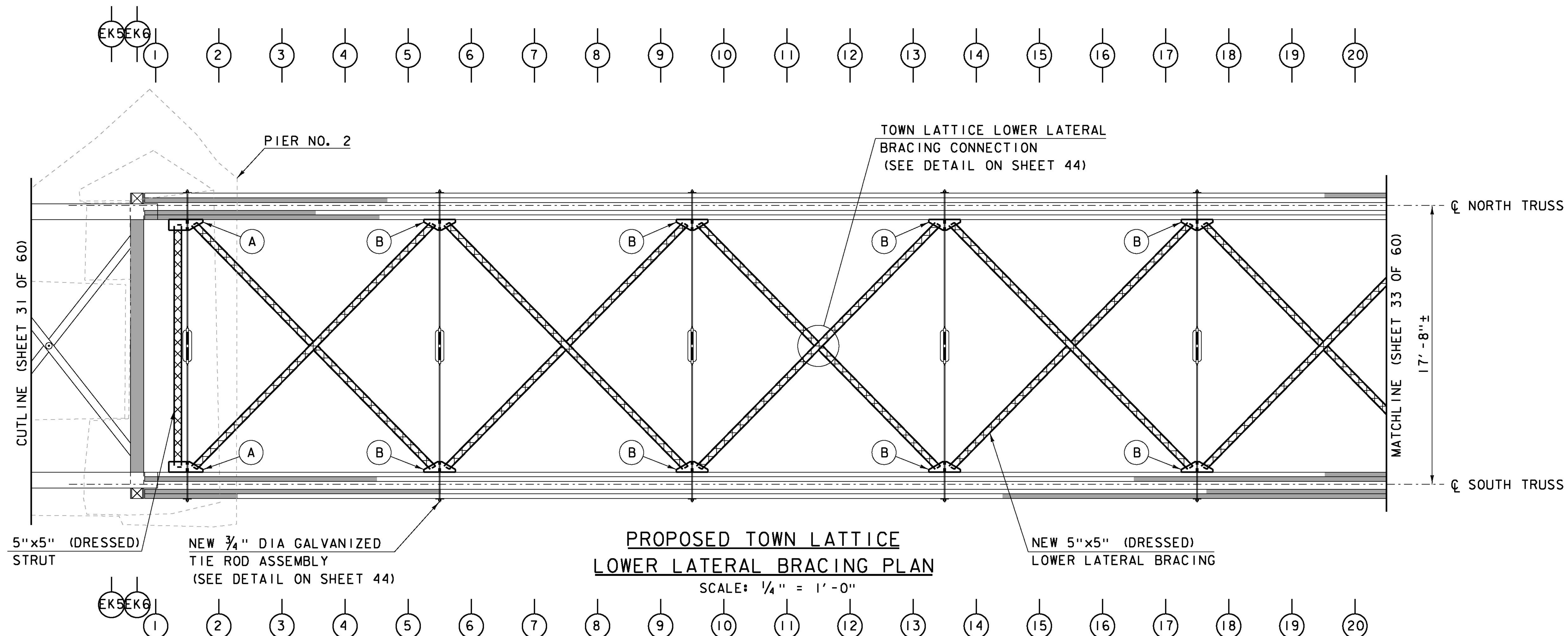
FILE NAME: 904225sup16.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
L. LAT. BRACING PLAN & DETAILS (1 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 31 OF 60



EXISTING TOWN LATTICE
LOWER LATERAL BRACING PLAN

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



PROPOSED TOWN LATTICE
LOWER LATERAL BRACING PLAN

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

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- INSTALL NEW MEMBER
- (XX) TRUSS NODE LOCATION
- (X) INSTALL NEW BEARING BLOCK TYPE (SEE DETAIL ON SHEET 44)

NOTE

1. PLUG ALL HOLES IN CHORD 4 AFTER REMOVAL OF EXISTING LOWER LATERAL BRACING WITH WOODEN DOWELS AND WILL BE PAID UNDER ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

PROJECT NAME:	TOWNSHEND
PROJECT NUMBER:	STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225supl7

FILE NAME: 904225supl7.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
L. LAT. BRACING PLAN & DETAILS (2 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 32 OF 60

8/13/2015
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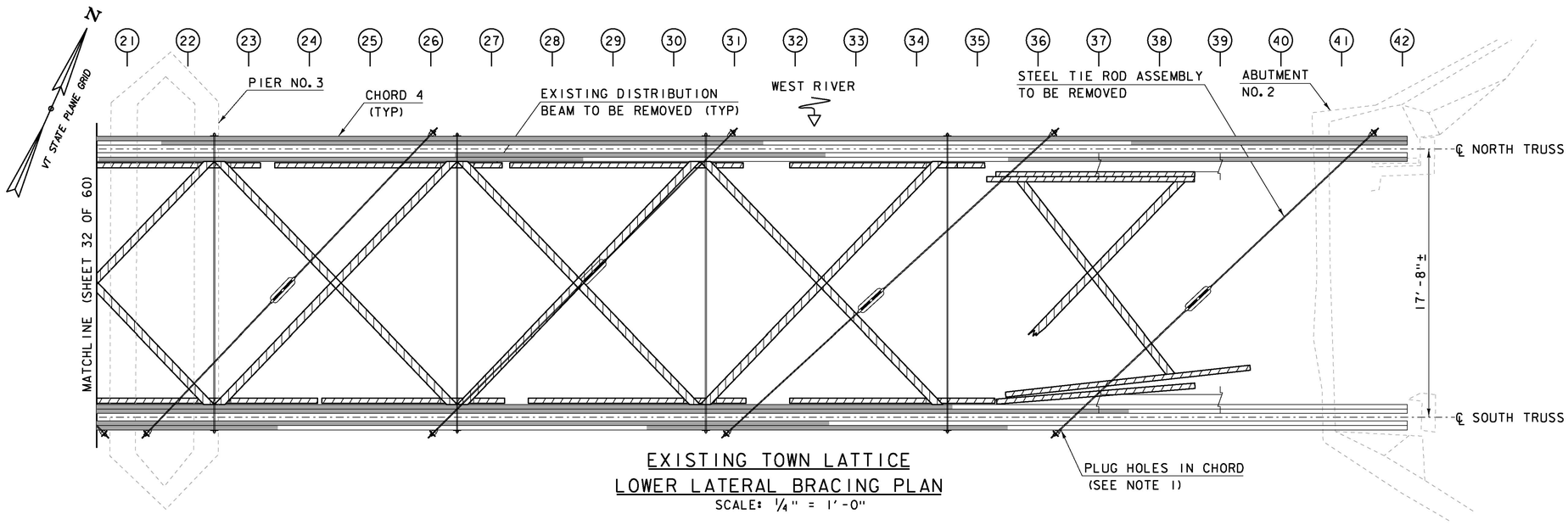
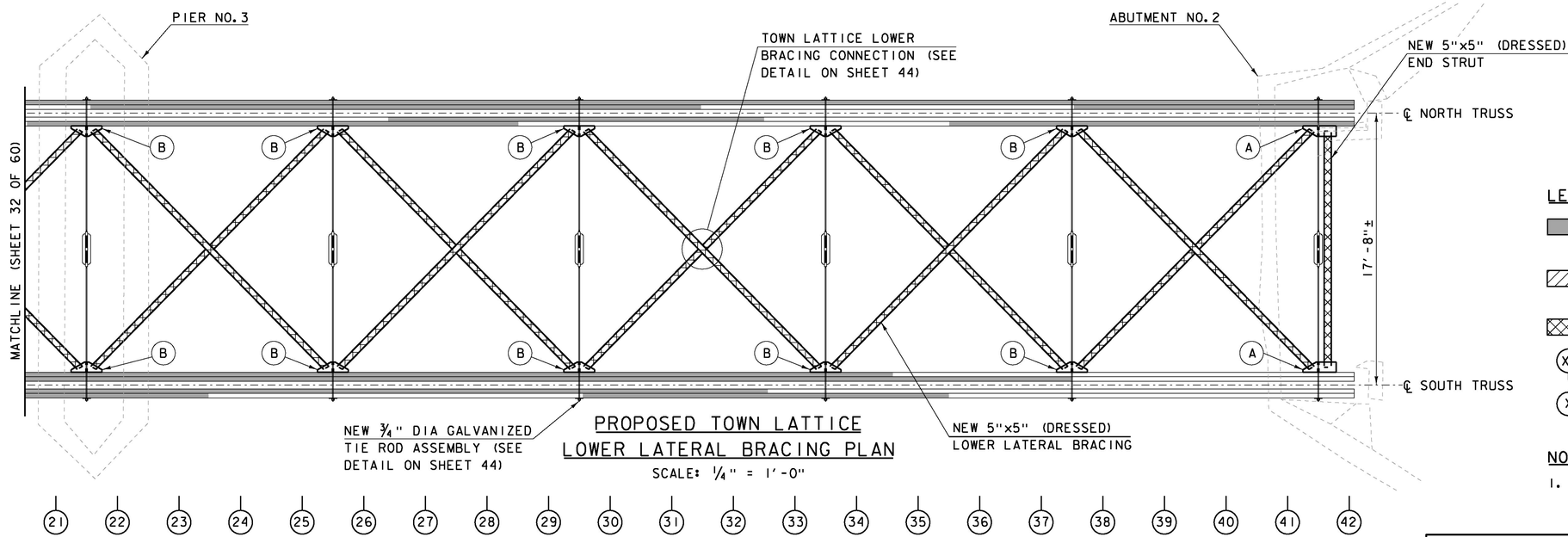


EXISTING TOWN LATTICE LOWER LATERAL BRACING PLAN

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



PROPOSED TOWN LATTICE LOWER LATERAL BRACING PLAN

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

LEGEND

- PREDETERMINED MEMBER TO BE REPLACED
- PREDETERMINED MEMBER TO BE REMOVED
- INSTALL NEW MEMBER
- (XX) TRUSS NODE LOCATION
- (X) INSTALL NEW BEARING BLOCK TYPE (SEE DETAIL ON SHEET 44)

NOTE

1. SEE SHEET 32 FOR NOTES THAT APPLY TO THIS SHEET.

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225supl8

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225supl8.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
L. LAT. BRACING PLAN & DETAILS (3 OF 3) SHEET 33 OF 60

8/13/2015
10:23:01 AM
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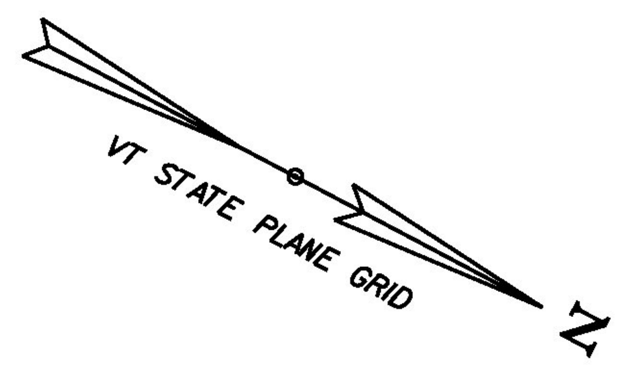
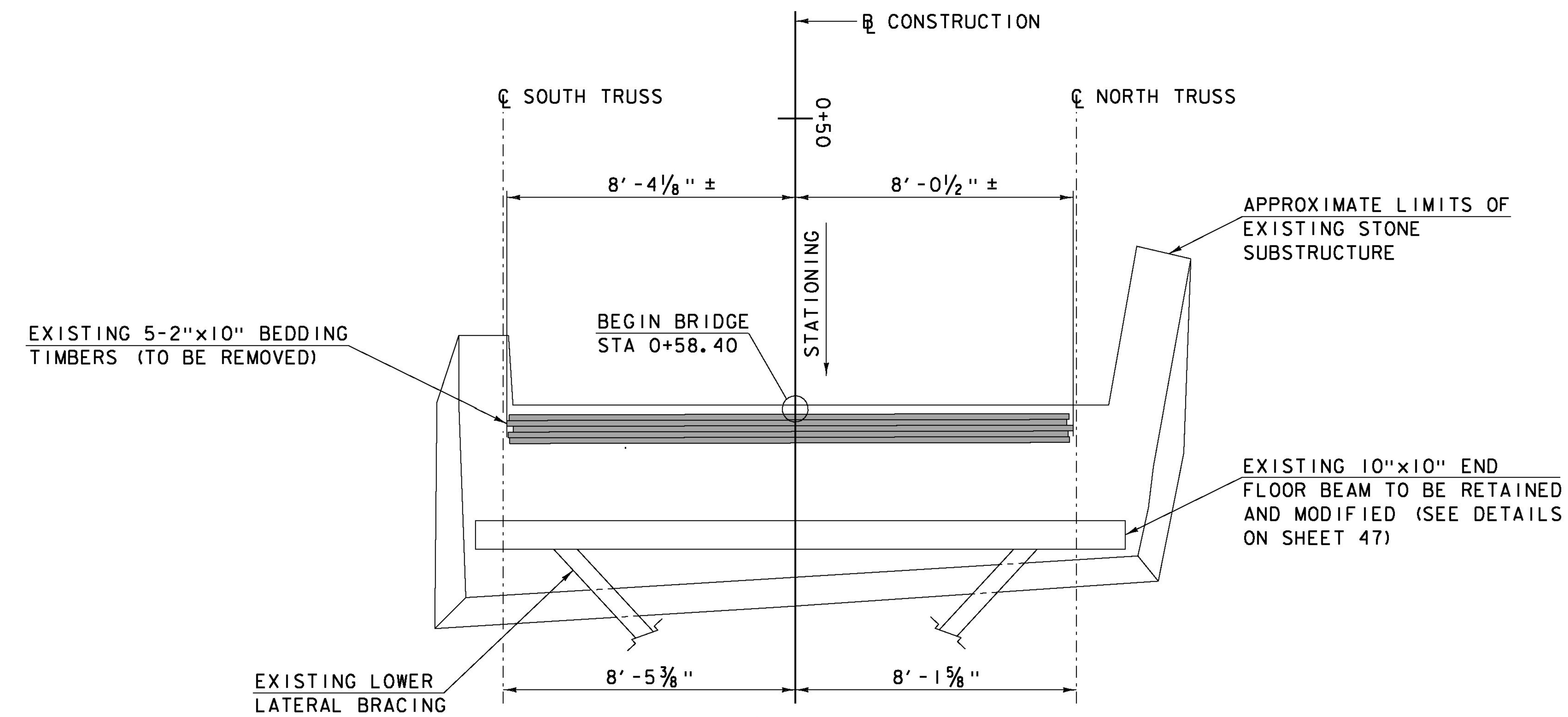




PLAN

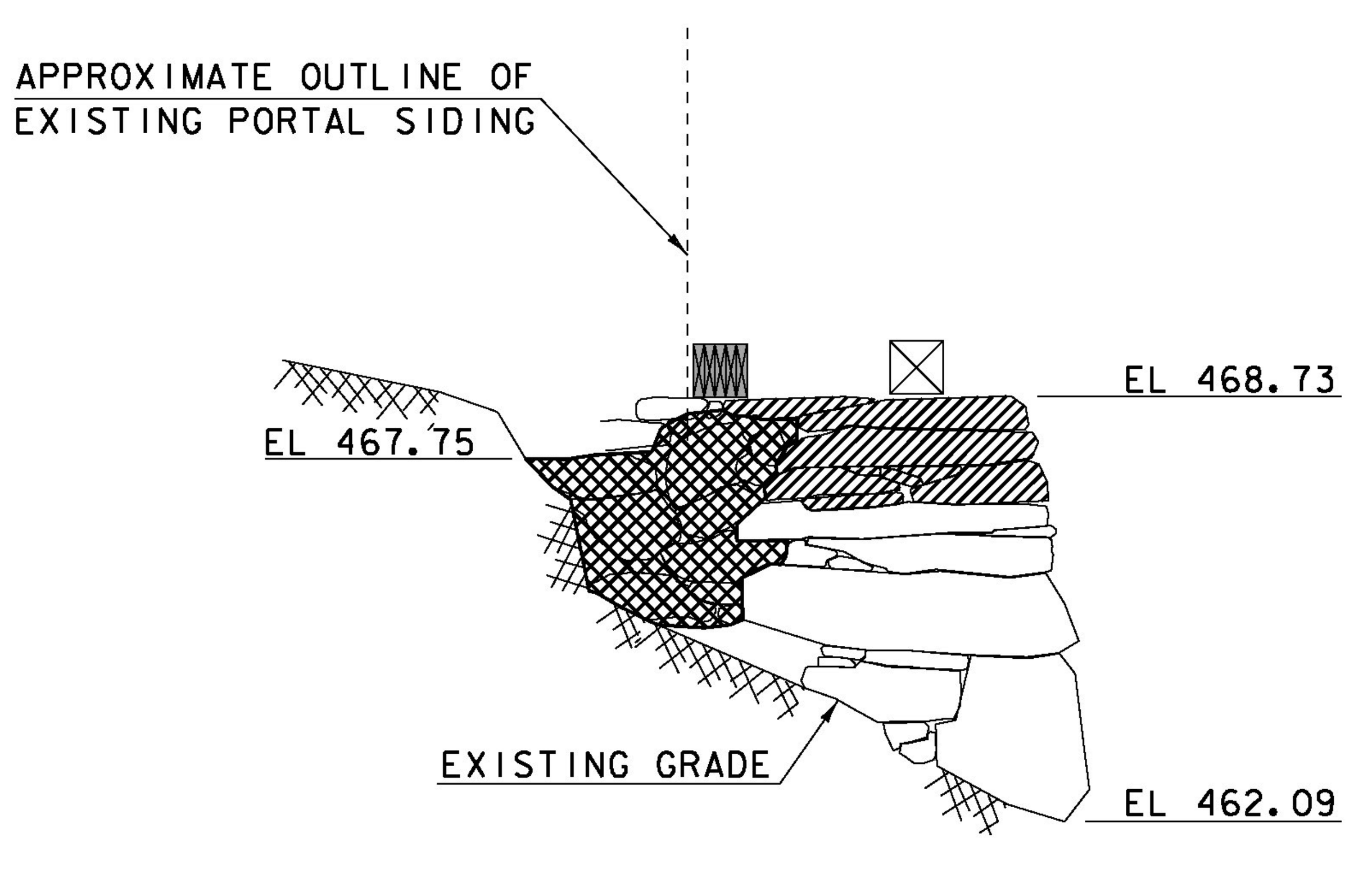
SCALE: ⅜" = 1'-0"

LEGEND

- PREDETERMINED MEMBER TO BE REMOVED
- STONE REMOVAL (PAID UNDER PARTIAL REMOVAL OF STRUCTURE (ITEM 529.20)
- REBUILT STONE MASONRY (ITEM 602.35)

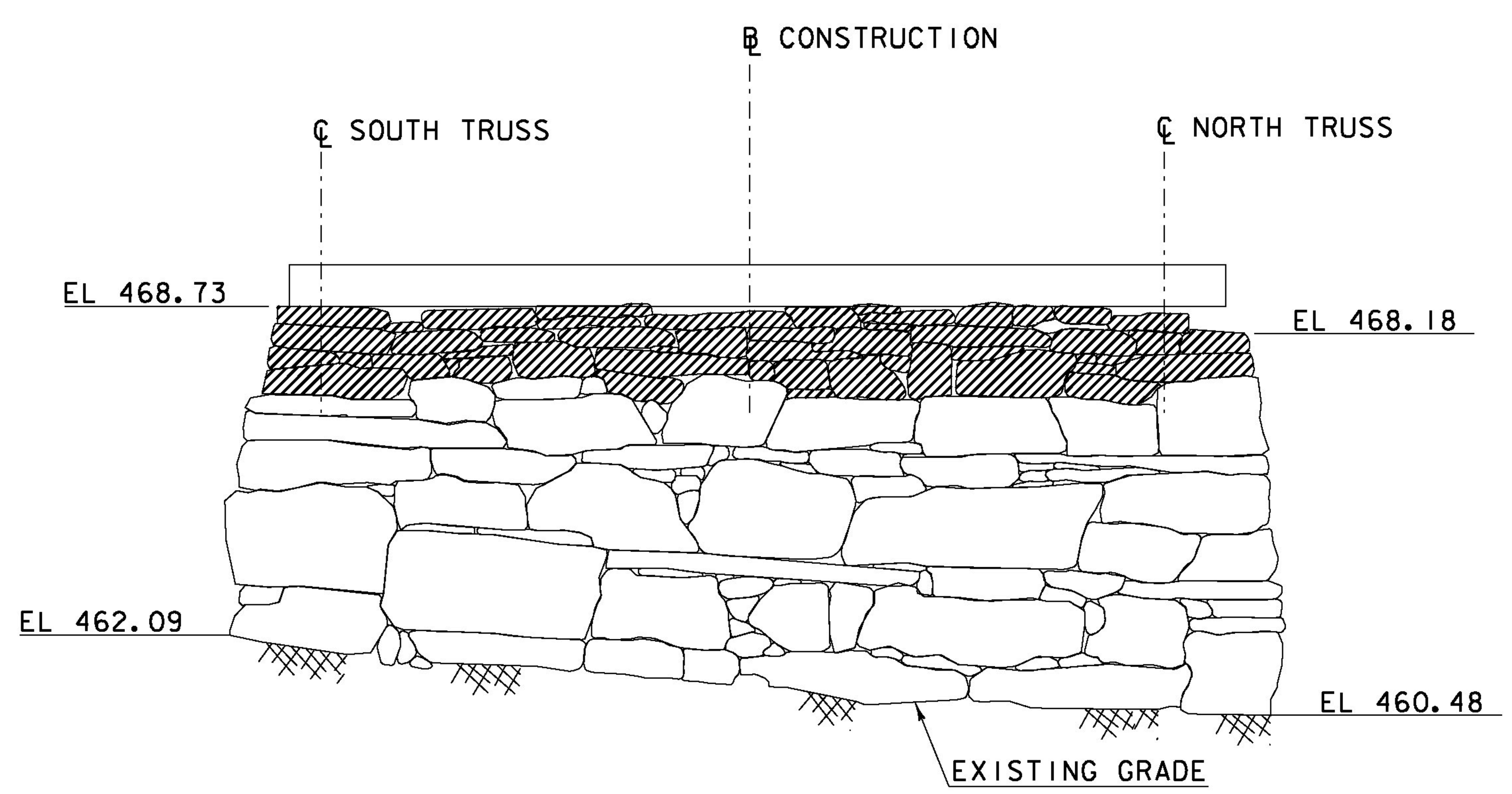
NOTE

1. LOWER LATERAL BRACING NOT SHOWN FOR CLARITY.



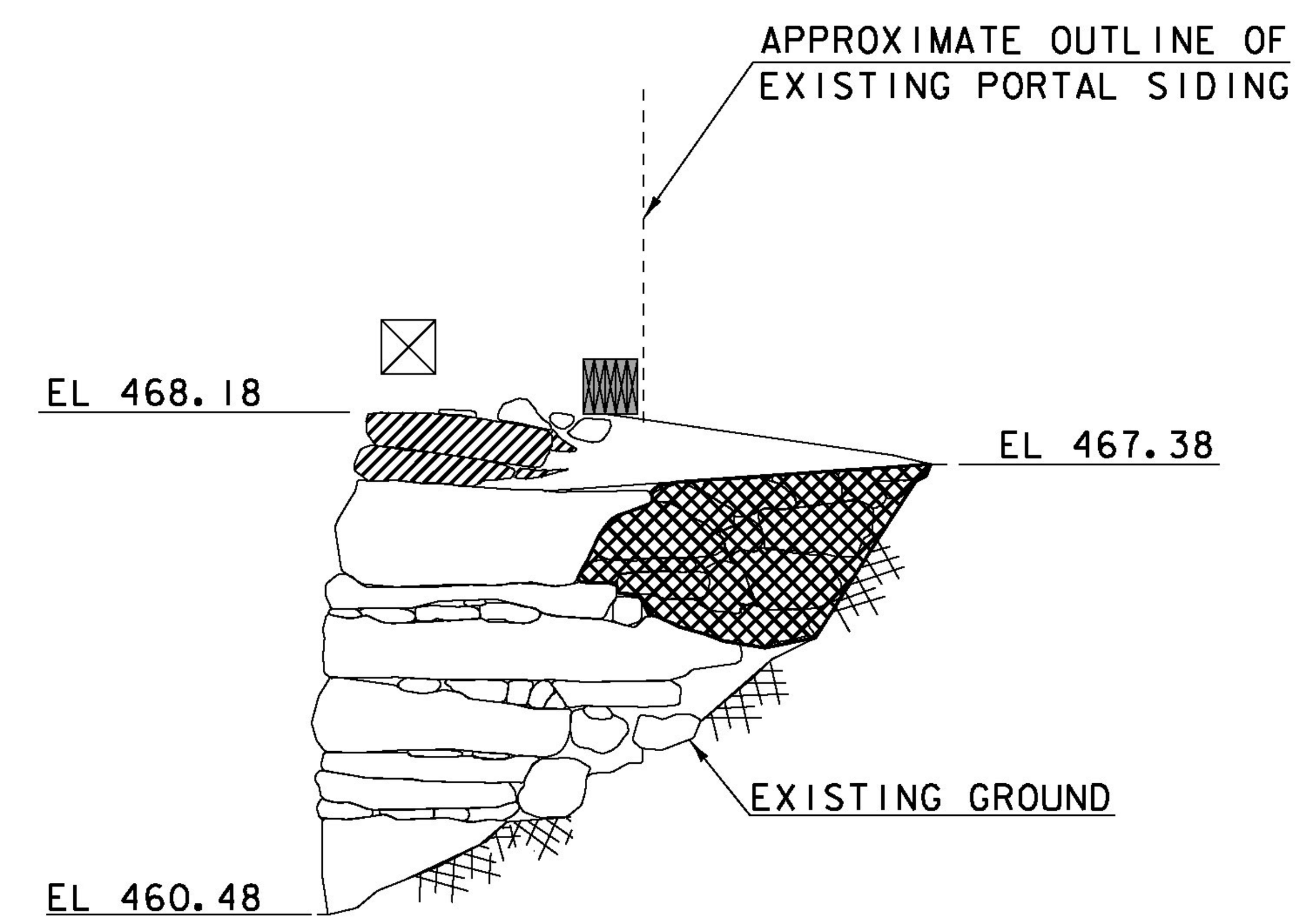
WINGWALL NO. 1 ELEVATION

SCALE: ⅜" = 1'-0"



ABUTMENT NO. 1 ELEVATION

SCALE: ⅜" = 1'-0"



WINGWALL NO. 2 ELEVATION

SCALE: ⅜" = 1'-0"

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sub1

FILE NAME: 904225sub1.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EXIST ABUT NO. 1 PLAN & ELEVATION

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 34 OF 60

8/13/2015
10:23:05 AM
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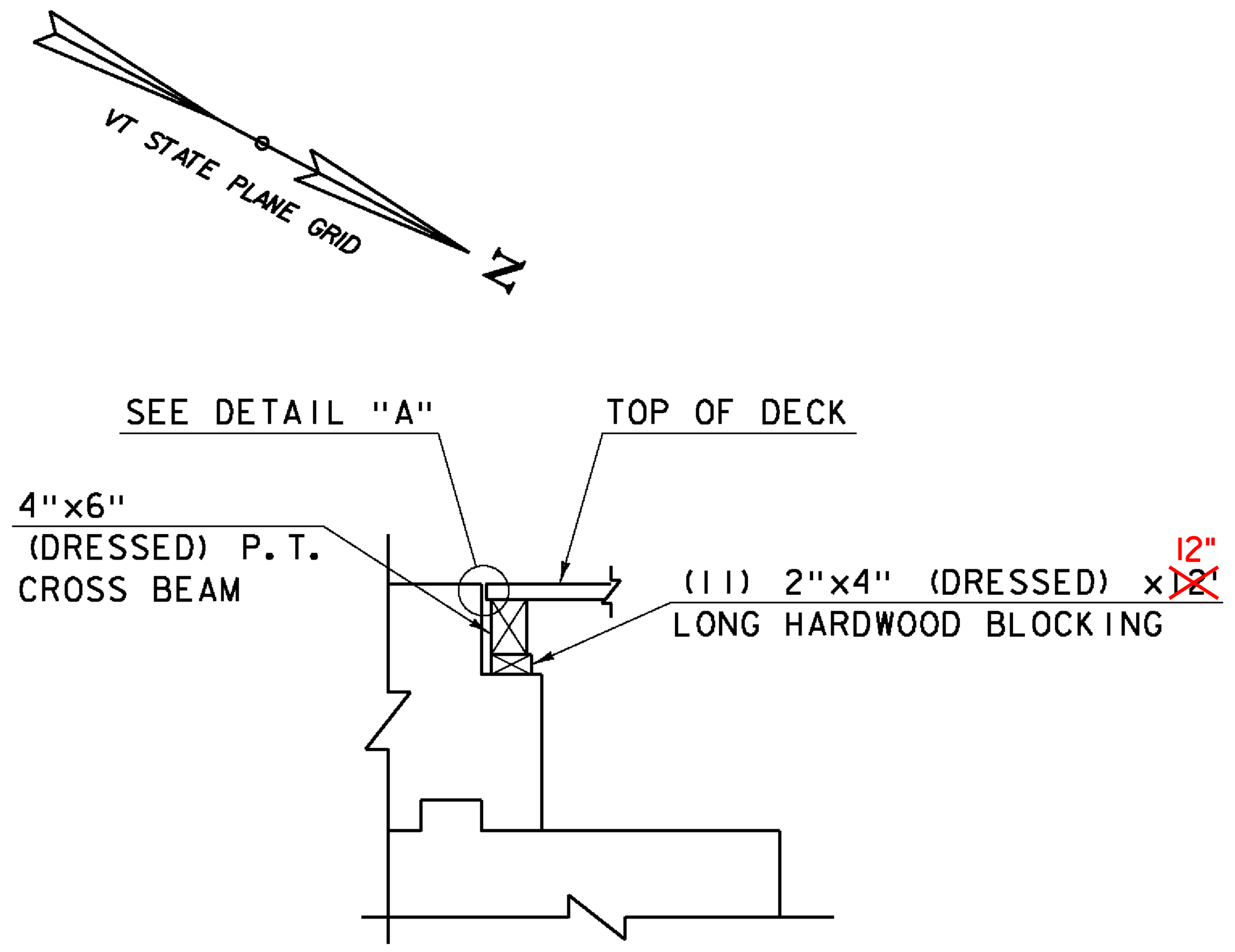
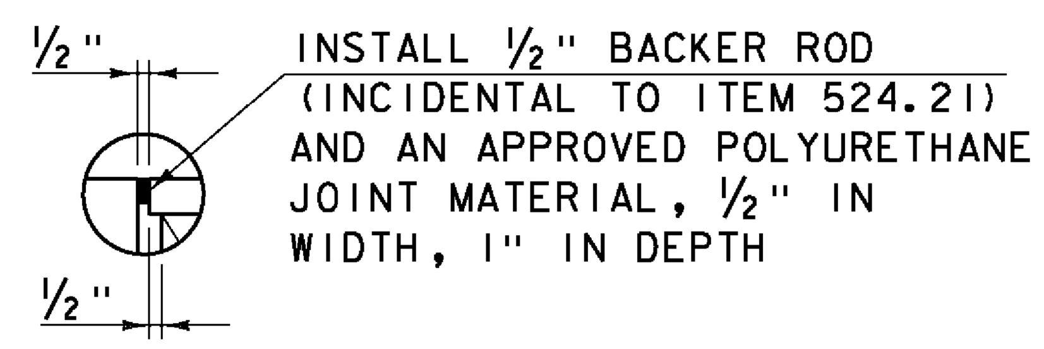
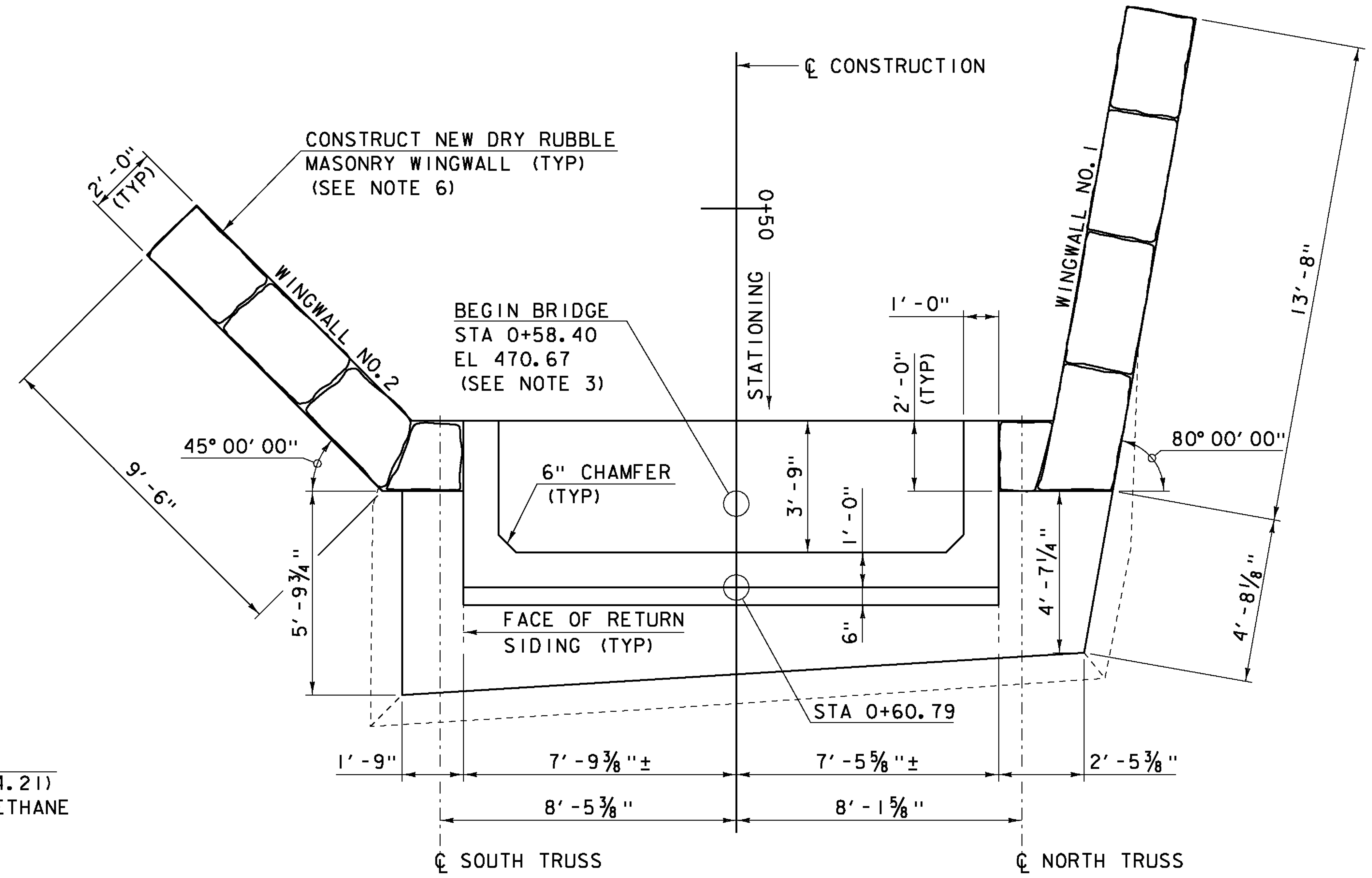


DECK END DETAIL
SCALE: ¾" = 1'-0"



DETAIL "A"
SCALE: 1½" = 1'-0"



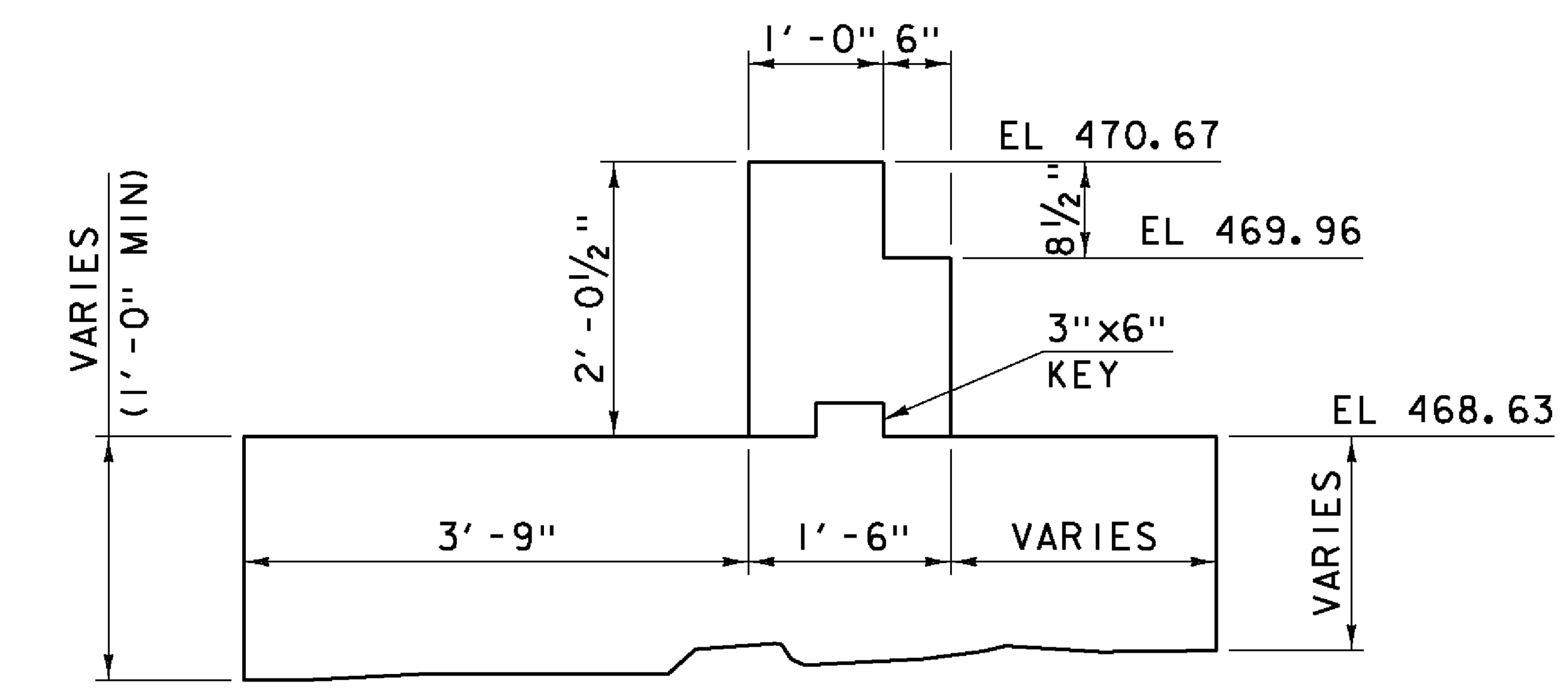
PLAN
SCALE: ⅜" = 1'-0"

NOTES

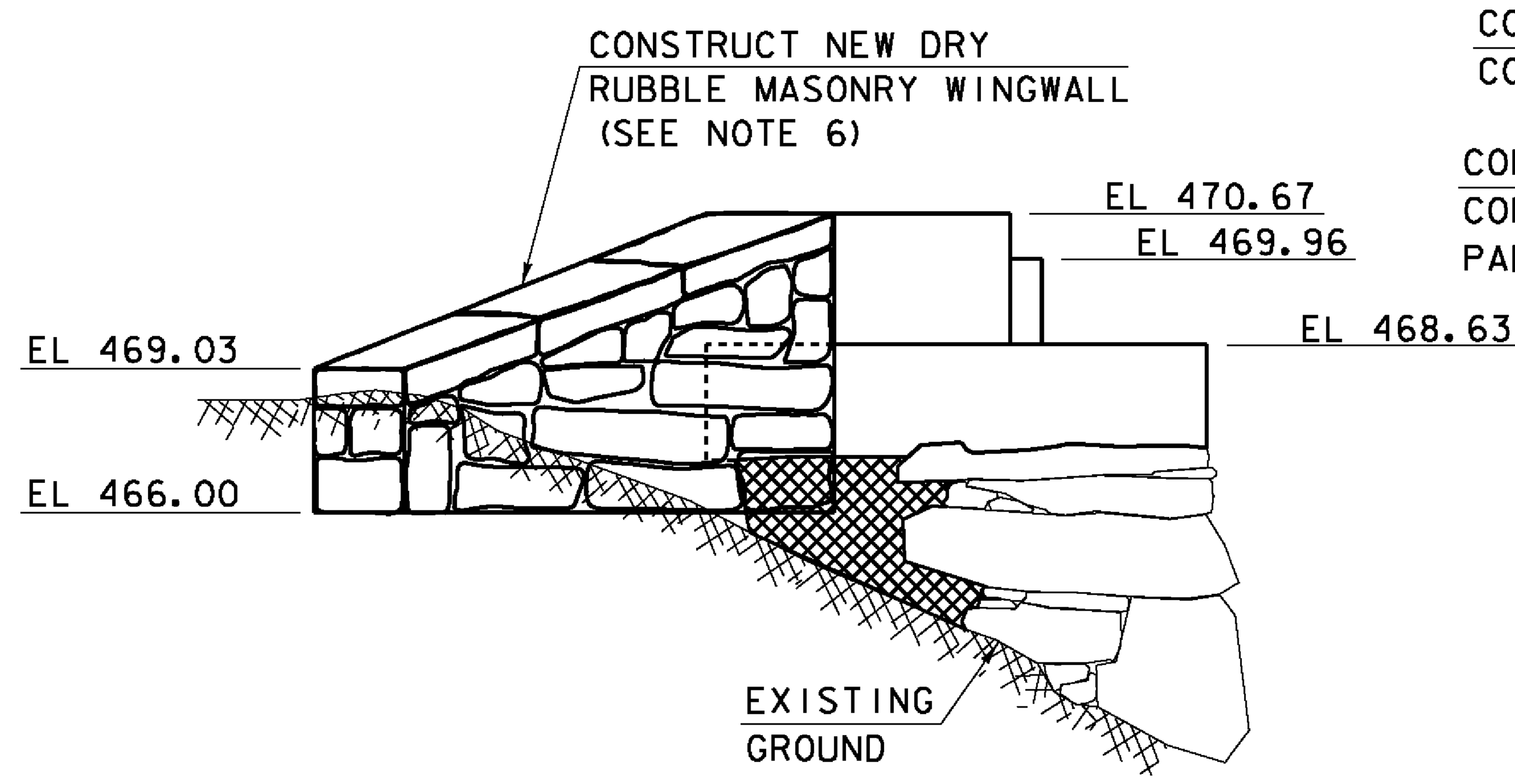
1. REMOVE AND RESET GRANITE AND CONCRETE BARRIER AT WEST END OF THE BRIDGE AS REQUIRED TO COMPLETE THE WORK. ALL COSTS INCLUDED IN ITEM 502.10, SHORING SUPERSTRUCTURE. SEE DETAIL ON SHEET 50.
2. FOR NEW BEDDING TIMBERS, SEE SHEET 47.
3. BEGIN BRIDGE STATION IS SET AT THE FACE OF PORTAL SIDING.
4. SEE SHEET 6 FOR LIMITS OF EXCAVATION AND BACKFILL.
5. STONE FILL TYPE II AND TYPE III NOT SHOWN FOR CLARITY.
6. NEW WINGWALL CONSTRUCTION WILL BE PAID UNDER ITEM 602.20, DRY MASONRY.

LEGEND

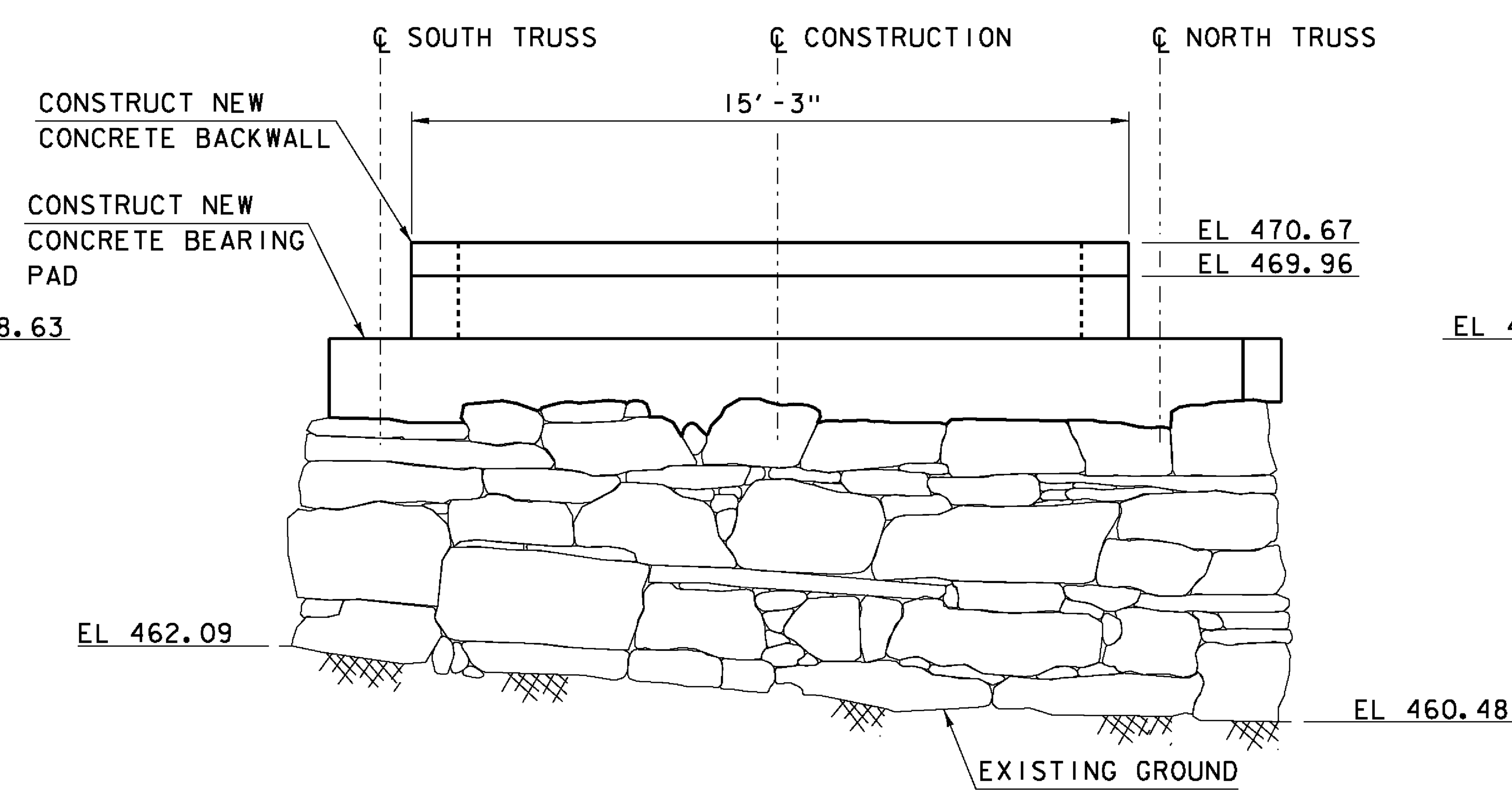
REBUILT STONE MASONRY (ITEM 602.35)



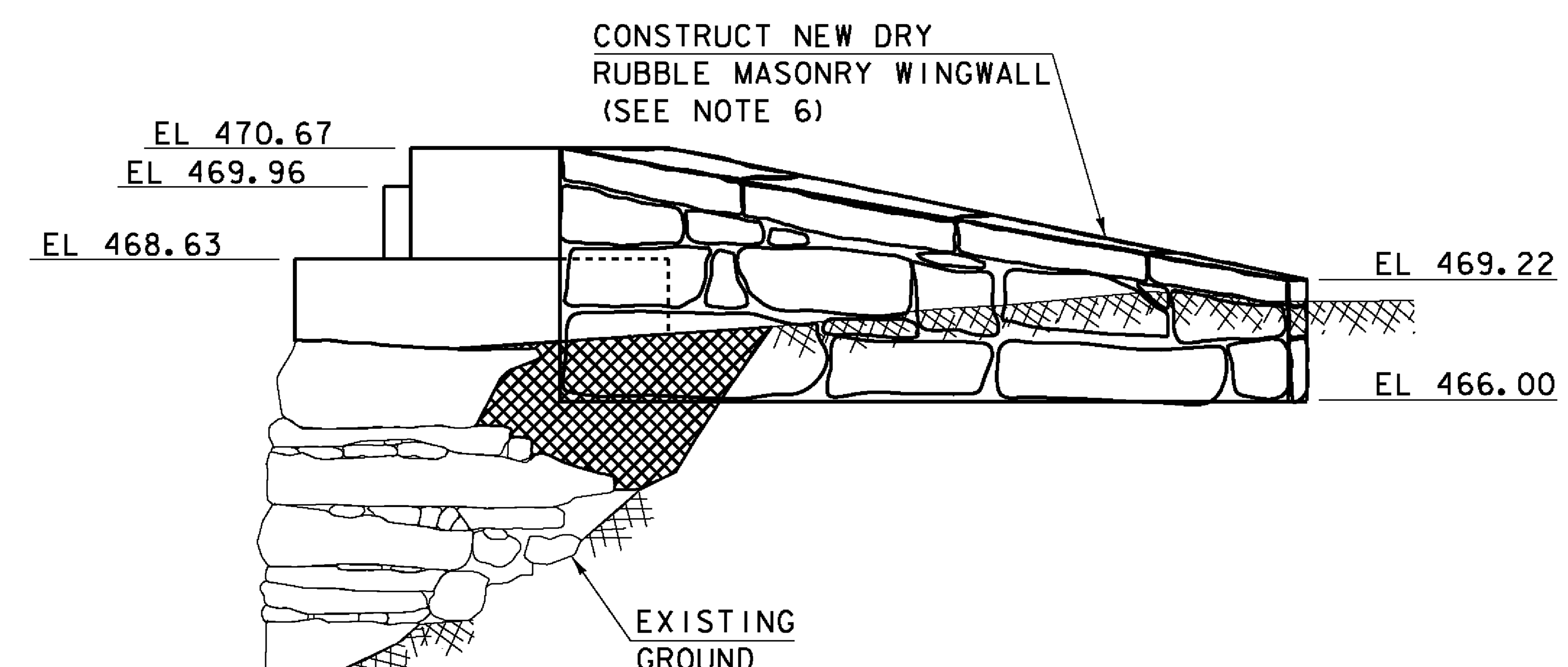
TYPICAL BACKWALL MASONRY SECTION
(THROUGH PEDESTAL)
SCALE: ¾" = 1'-0"



WINGWALL NO. 2 ELEVATION
SCALE: ⅜" = 1'-0"



ELEVATION
SCALE: ⅜" = 1'-0"



WINGWALL NO. 1 ELEVATION
SCALE: ⅜" = 1'-0"

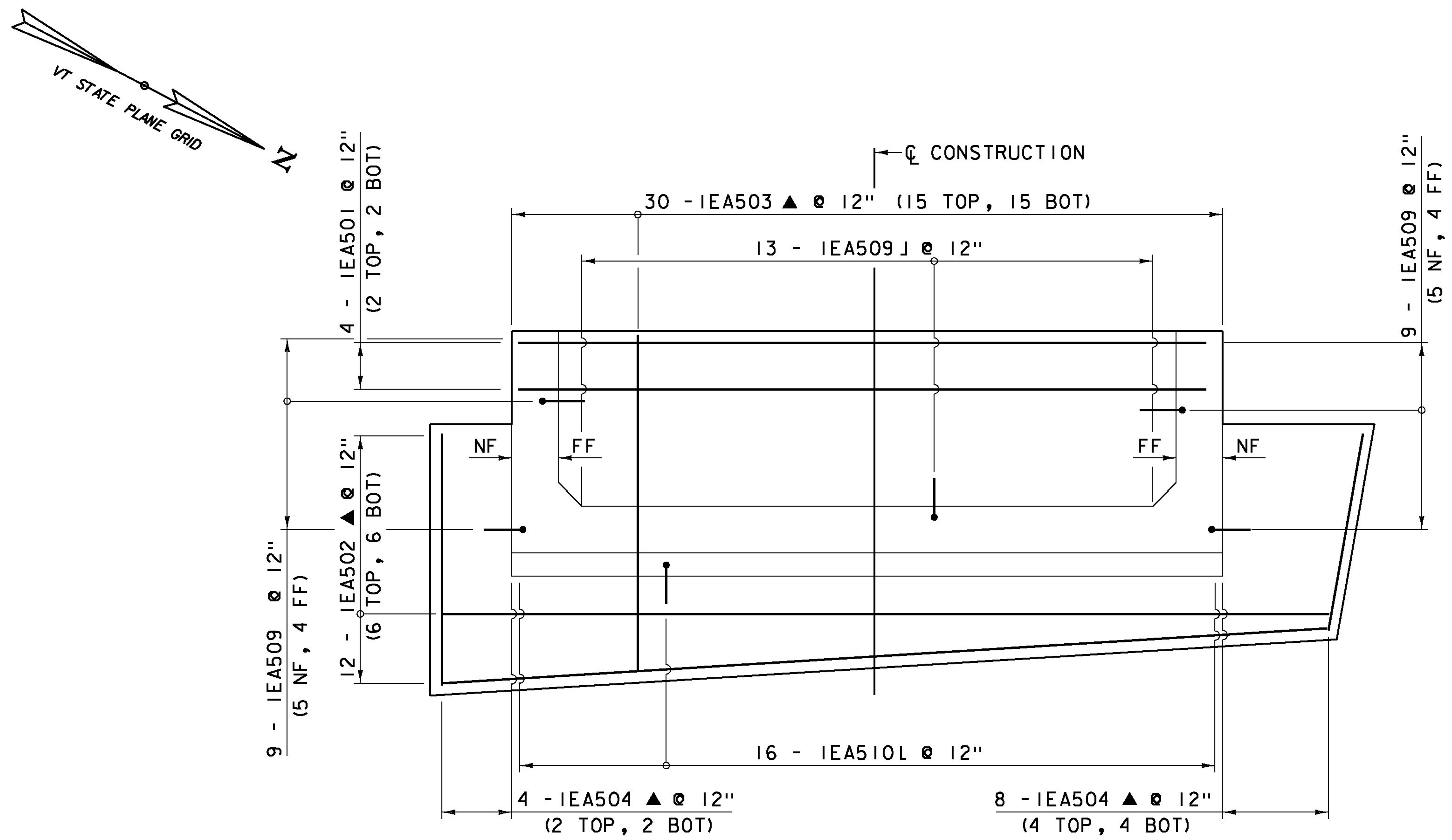
PROJECT NAME:	TOWNSHEND
PROJECT NUMBER:	STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sub1B

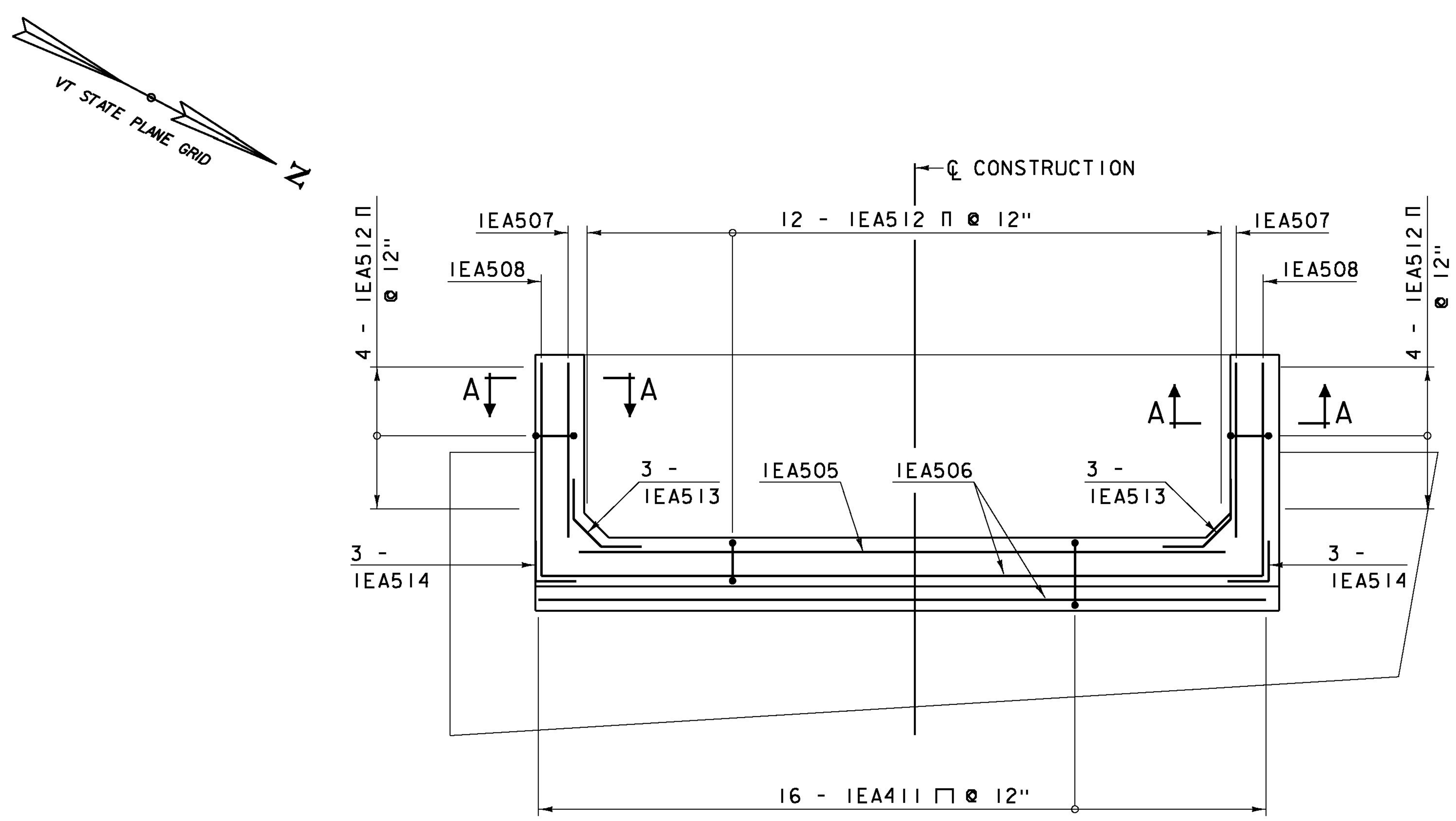
FILE NAME: 904225sub1B.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
PROP. ABUT NO. 1 PLAN & ELEVATION

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 35 OF 60



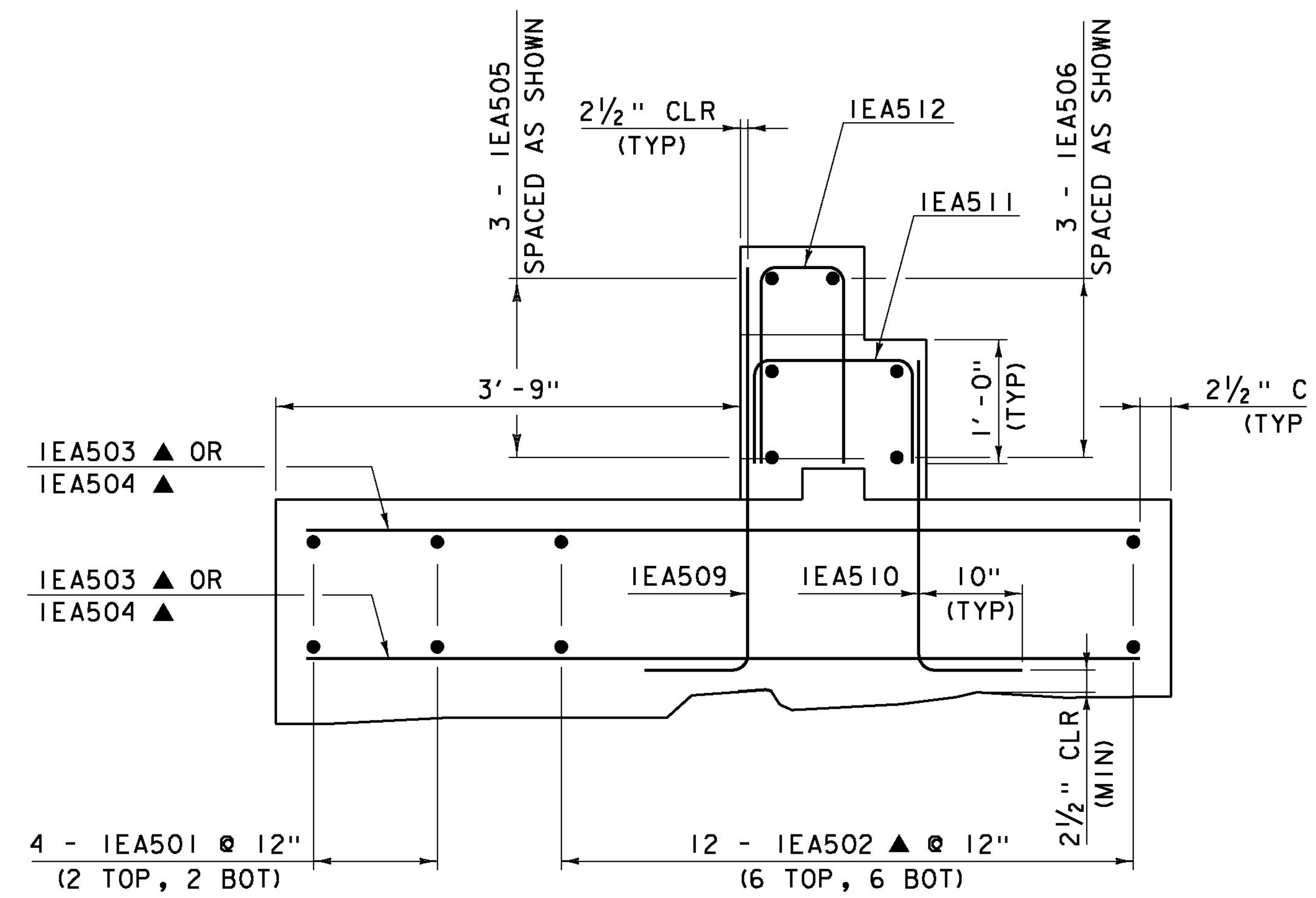
FOOTING REINFORCING PLAN

SCALE: ½" = 1'-0"



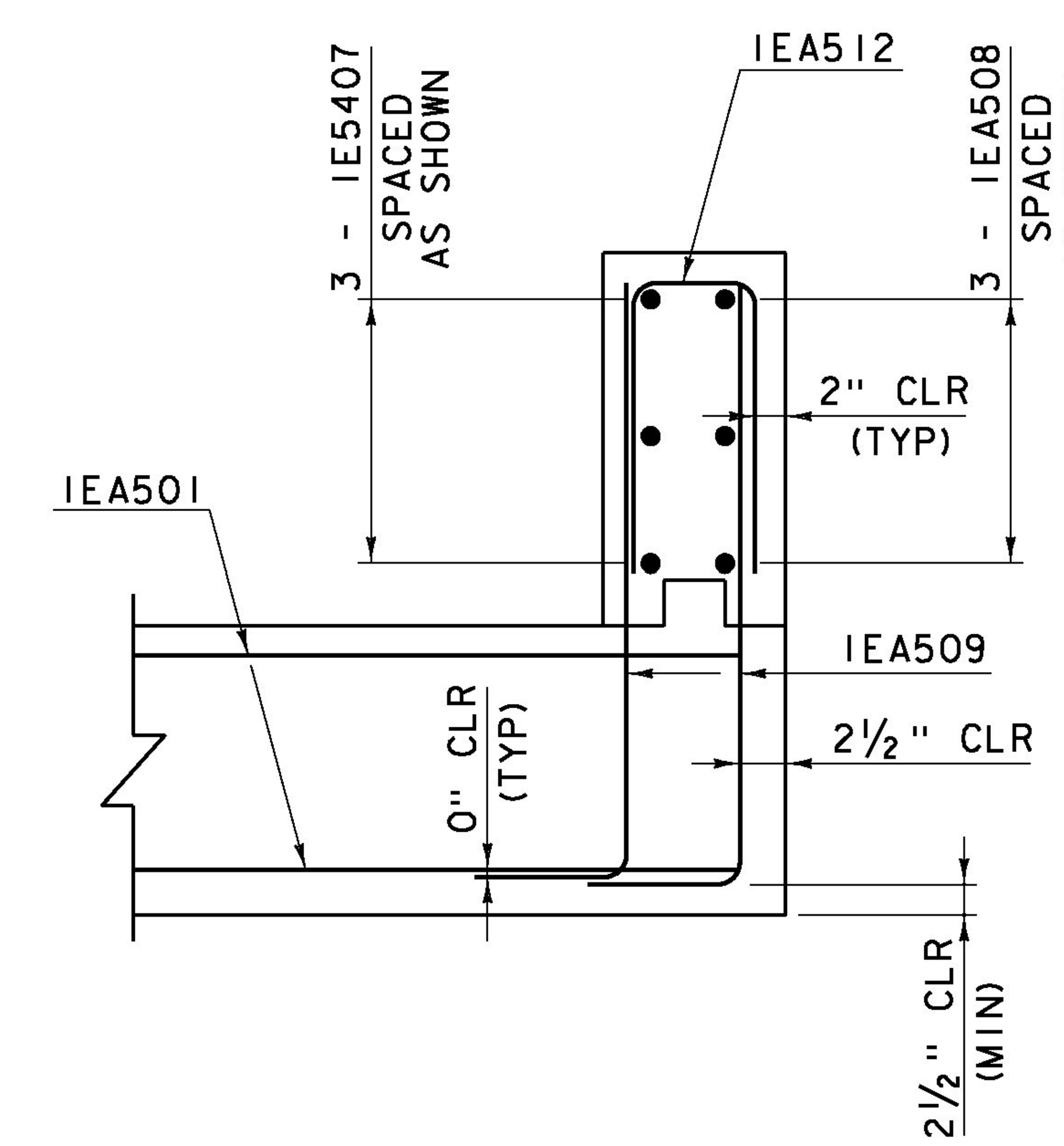
STEM REINFORCEING PLAN

SCALE: ½" = 1'-0"



TYPICAL BACKWALL REINFORCING SECTION

SCALE: 1" = 1'-0"



SECTION A-A

SCALE: 1" = 1'-0"

LEGEND

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

Hoyle, Tanner & Associates, Inc.

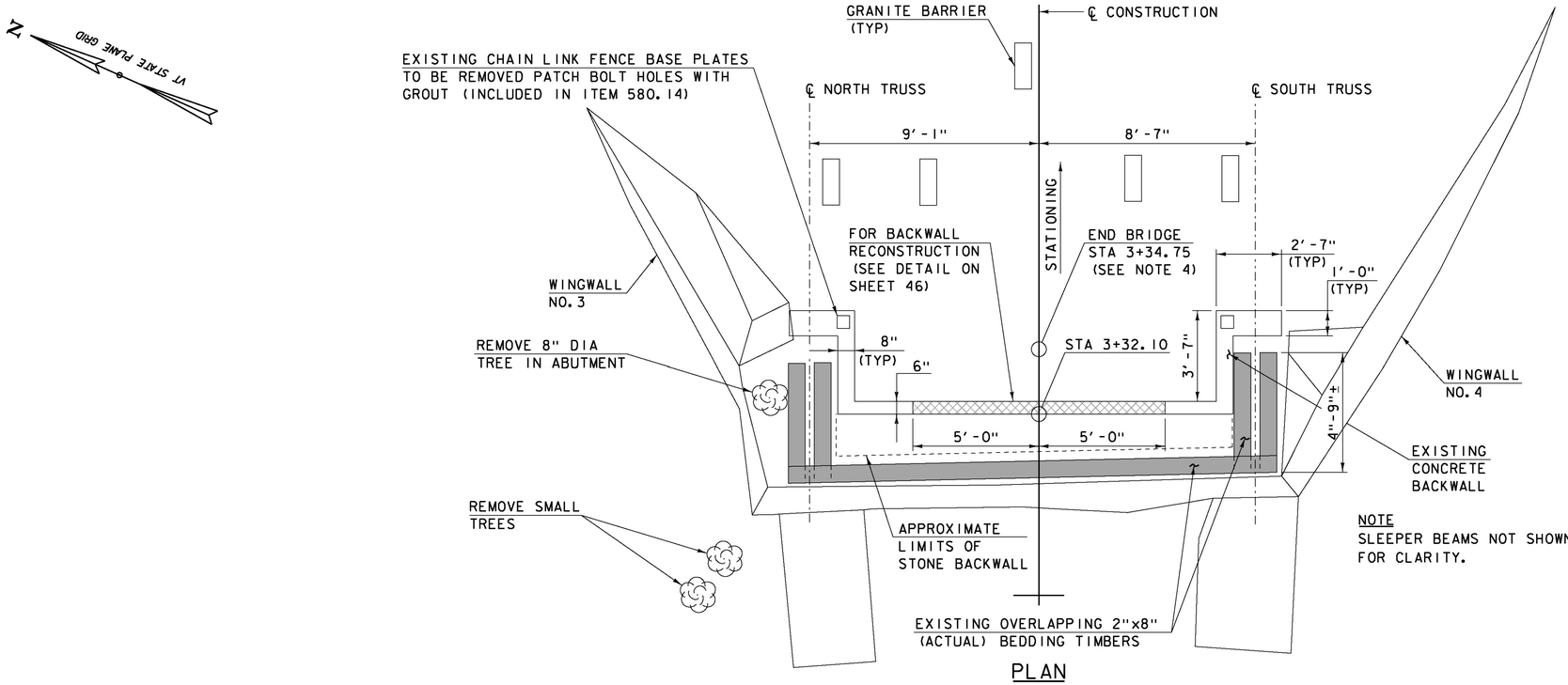
HTA PROJECT	MODEL
904225	904225subIC

PROJECT NAME: TOWNSHEND

PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225subIC.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
PROP. ABUT NO. 1 REINFORCING

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 36 OF 60



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

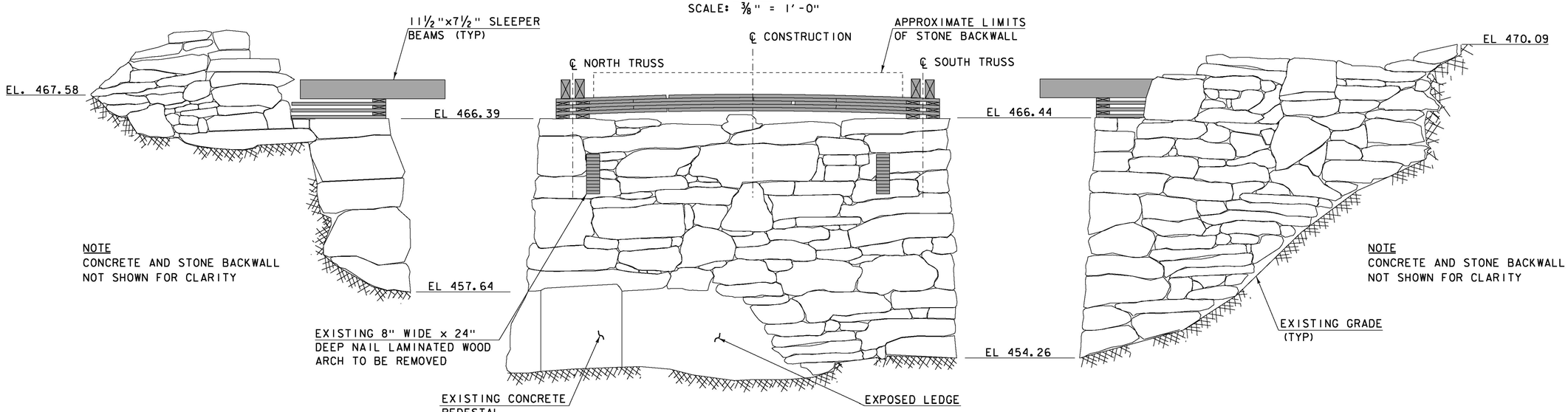
NOTES

1. REMOVE AND RESET GRANITE BARRIERS AS WELL AS REMOVE, REHABILITATE AND RESET HISTORIC MARKER AT EAST END OF BRIDGE AS REQUIRED TO COMPLETE THE WORK. PAYMENT WILL BE MADE UNDER ITEM 502.10, SHORING SUPERSTRUCTURE. (SEE DETAIL ON SHEET 50).
2. FOR NEW BEDDING TIMBERS, SEE SHEET 48. FOR NEW CONCRETE PEDESTALS, SEE SHEET 46.
3. ALL EXISTING STONE FACES INCLUDING WINGWALLS NO.3 AND NO.4 SHALL BE REPAIRED (SEE DETAILS ON SHEET 46). ALL COSTS PAID UNDER ITEM 602.40, REPAIRING STONE MASONRY.
4. END BRIDGE STATION IS SET AT THE FACE OF PORTAL SIDING.

LEGEND

PREDETERMINED MEMBER TO BE REMOVED

LIMITS OF REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II



WINGWALL NO.3
SCALE: 3/8" = 1'-0"

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

WINGWALL NO.4
SCALE: 3/8" = 1'-0"

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sub2

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225sub2.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
ABUT NO. 2 PLAN & ELEVATION

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 37 OF 60

8/13/2015
10:23:13 AM
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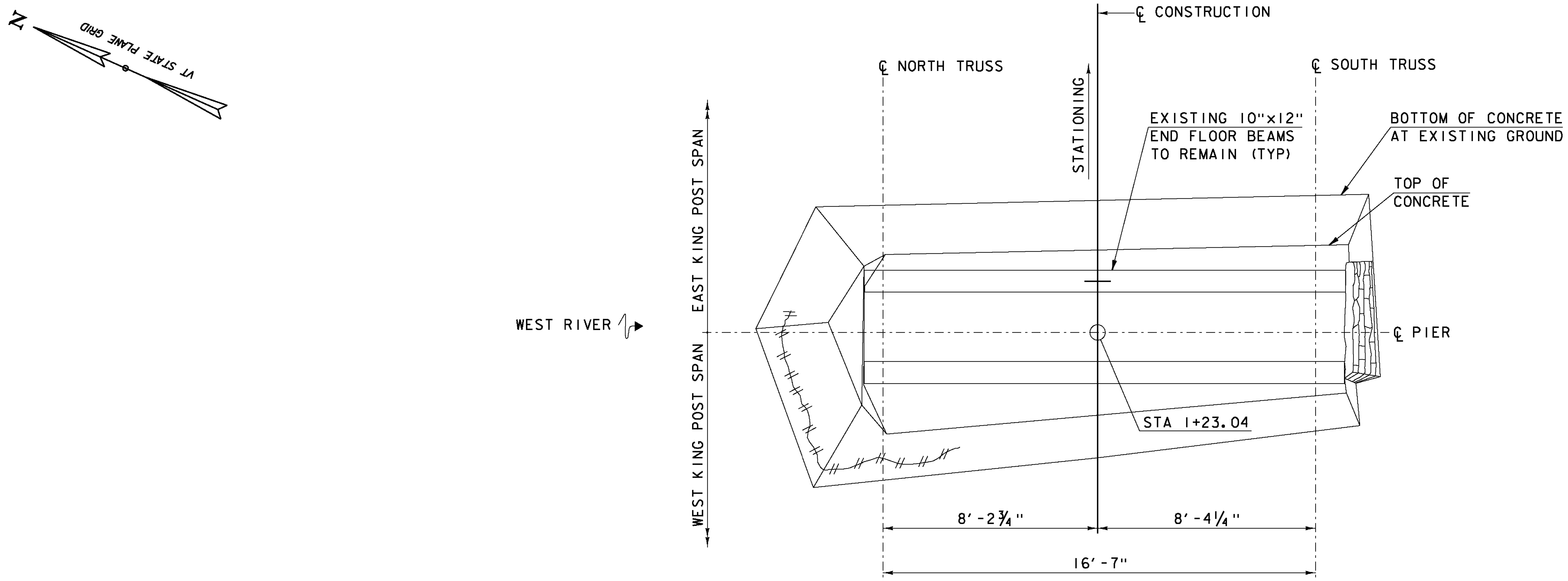


PLAN

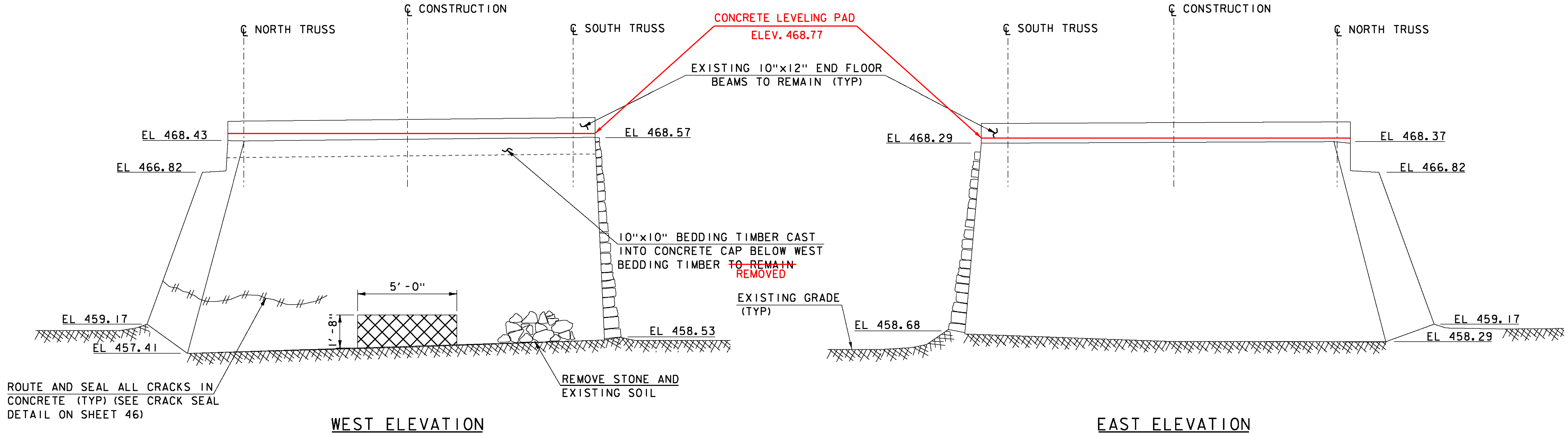
SCALE: ⅜" = 1'-0"

NOTES

1. CONTRACTOR SHALL SAND BLAST ALL CONCRETE SURFACES TO REMOVE ALL EFFLORESCENCE AND GRAFFITI. PAYMENT WILL BE MADE UNDER ITEM 900.625, SPECIAL PROVISION (CONCRETE STAINING AND SEALING). SAND BLASTING SHALL BE COMPLETED PRIOR TO ANY CONCRETE OR CRACK REPAIR.
2. FOR NEW BEDDING TIMBERS, SEE SHEET 46.
3. ALL EXPOSED CONCRETE SURFACES SHALL BE STAINED TO PROVIDE A UNIFORM APPEARANCE AFTER CLEANING AND REPAIRING. PAYMENT WILL BE MADE UNDER ITEM 900.625, SPECIAL PROVISION (CONRETE STAINING AND SEALING).

LEGEND

- LIMITS OF REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II
- ROUTE AND SEAL CRACKS (SEE CRACK SEAL DETAIL ON SHEET 46)



WEST ELEVATION (LOOKING EAST)

SCALE: ⅜" = 1'-0"

EAST ELEVATION (LOOKING WEST)

SCALE: ⅜" = 1'-0"

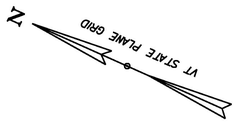
PROJECT NAME:	TOWNSHEND
PROJECT NUMBER:	STP SCTT(1)

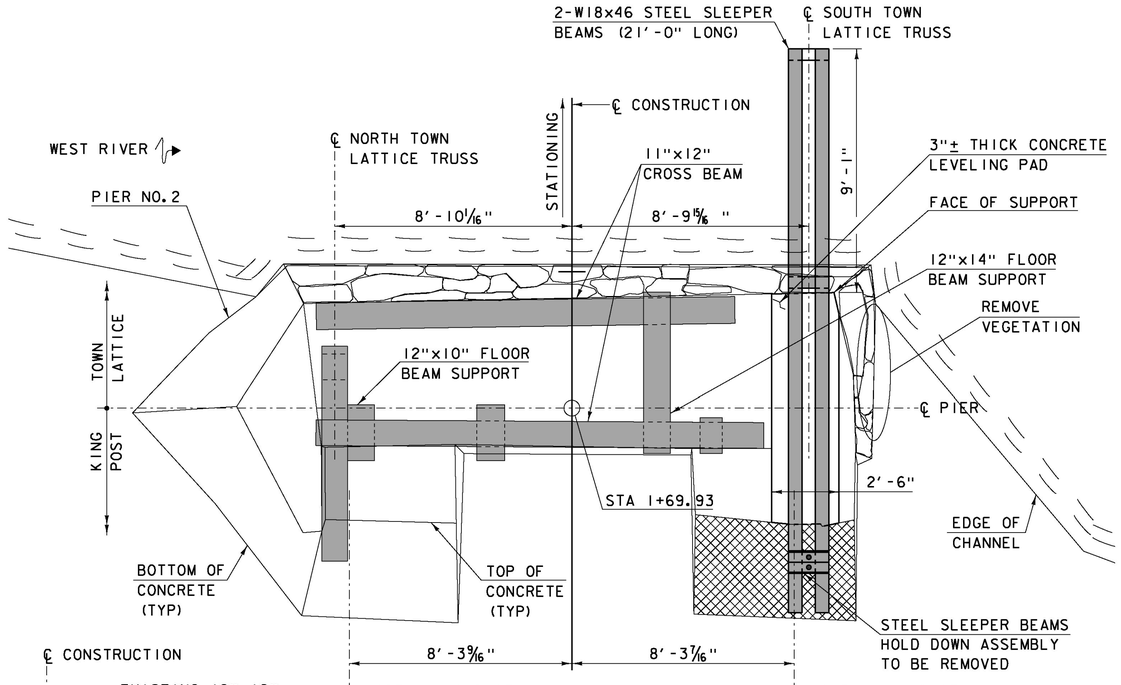
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sub3

FILE NAME: 904225sub3.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
PIER NO. 1 PLAN & ELEVATION

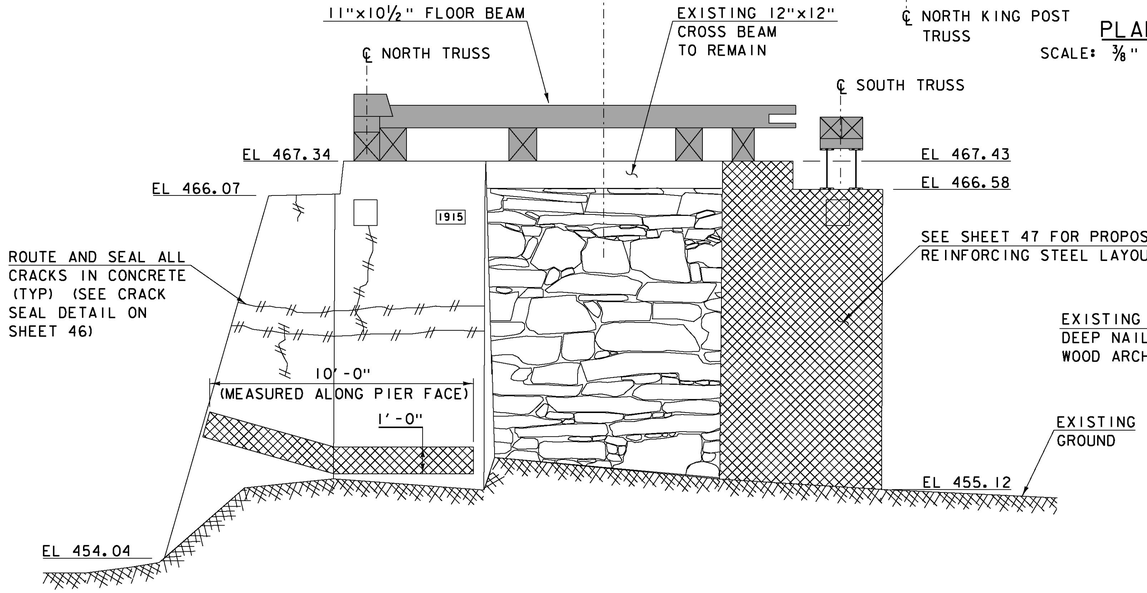
PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 38 OF 60





PLAN

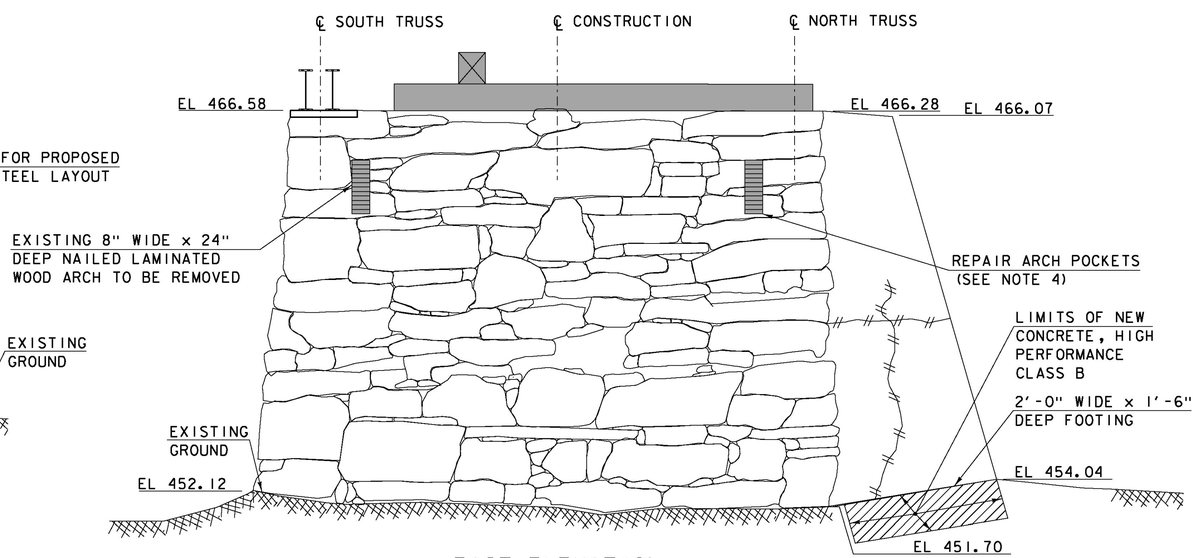
SCALE: 3/8" = 1'-0"



WEST ELEVATION

(LOOKING EAST)

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



EAST ELEVATION

(LOOKING WEST)

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

NOTES

1. CONTRACTOR SHALL SAND BLAST ALL CONCRETE SURFACES TO REMOVE ALL EFFLORESCENCE AND GRAFFITI. PAYMENT WILL BE MADE UNDER ITEM 900.625, SPECIAL PROVISION (CONCRETE STAINING AND SEALING). SAND BLASTING SHALL BE COMPLETED PRIOR TO ANY CONCRETE OR CRACK REPAIR.
2. FOR NEW BEDDING TIMBERS, SEE SHEET 48.
3. ALL EXPOSED CONCRETE SURFACES SHALL BE STAINED TO PROVIDE A UNIFORM APPEARANCE AFTER CLEANING AND REPAIRING. PAID AS ITEM 900.625, SPECIAL PROVISION (CONRETE STAINING AND SEALING).
4. ARCH POCKETS SHALL BE FILLED WITH STONES UTILIZING THE "STONE MASONRY REPAIR DETAIL" ON SHEET 46 AND WILL BE PAID FOR UNDER ITEM 602.40, REPAIRING STONE MASONRY.

LEGEND

- PREDETERMINED MEMBER TO BE REMOVED
- LIMITS OF REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II
- LIMITS OF REMOVAL OF CONCRETE OR MASONRY (ITEM 529.25)
- ### ROUTE AND SEAL CRACKS (SEE CRACK SEAL DETAIL ON SHEET 46)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sub4

PROJECT NAME: TOWNSHEND

PROJECT NUMBER: STP SCTT(I)

FILE NAME: 904225sub4.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
PIER NO. 2 PLAN & ELEVATION

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 39 OF 60

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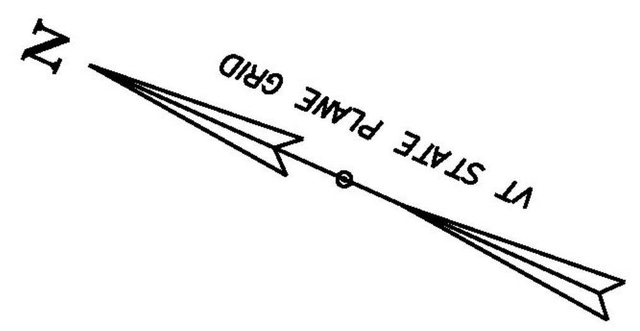
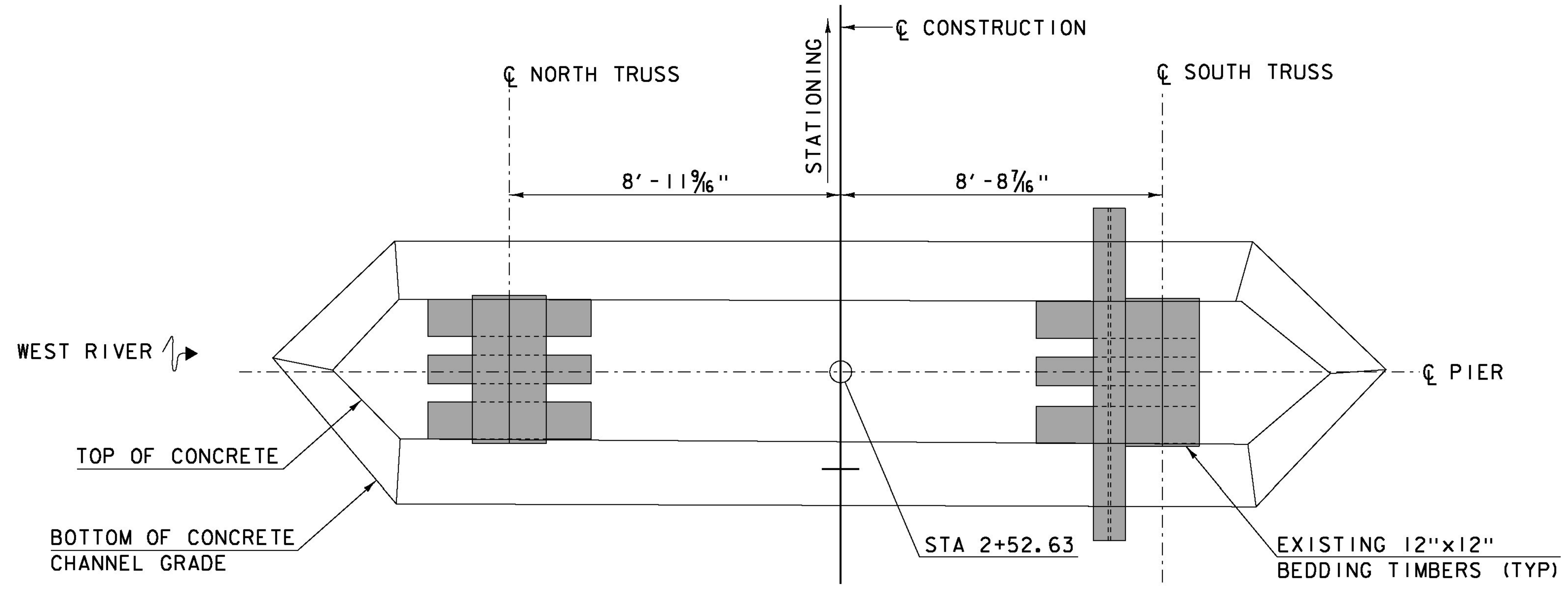
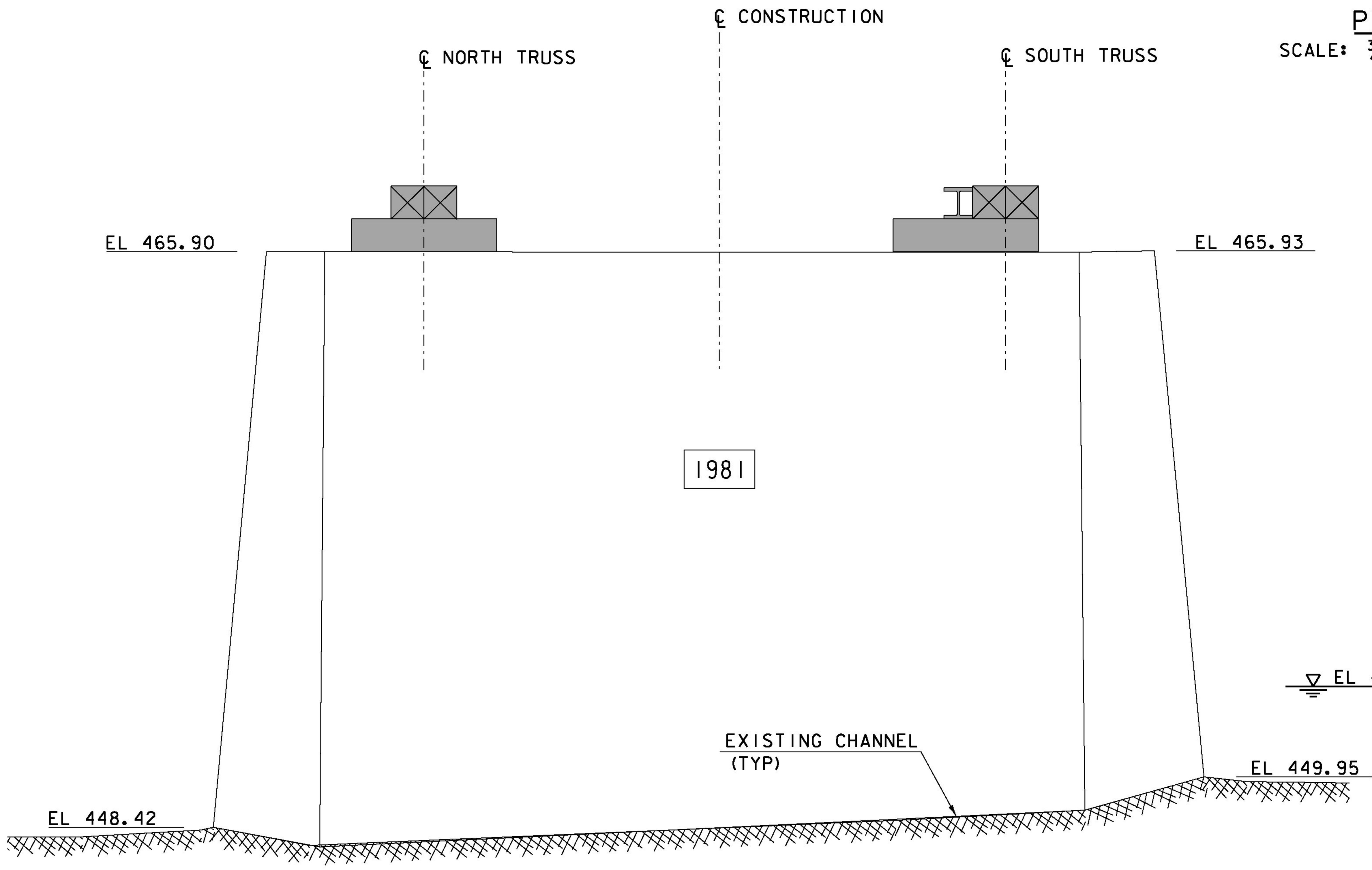
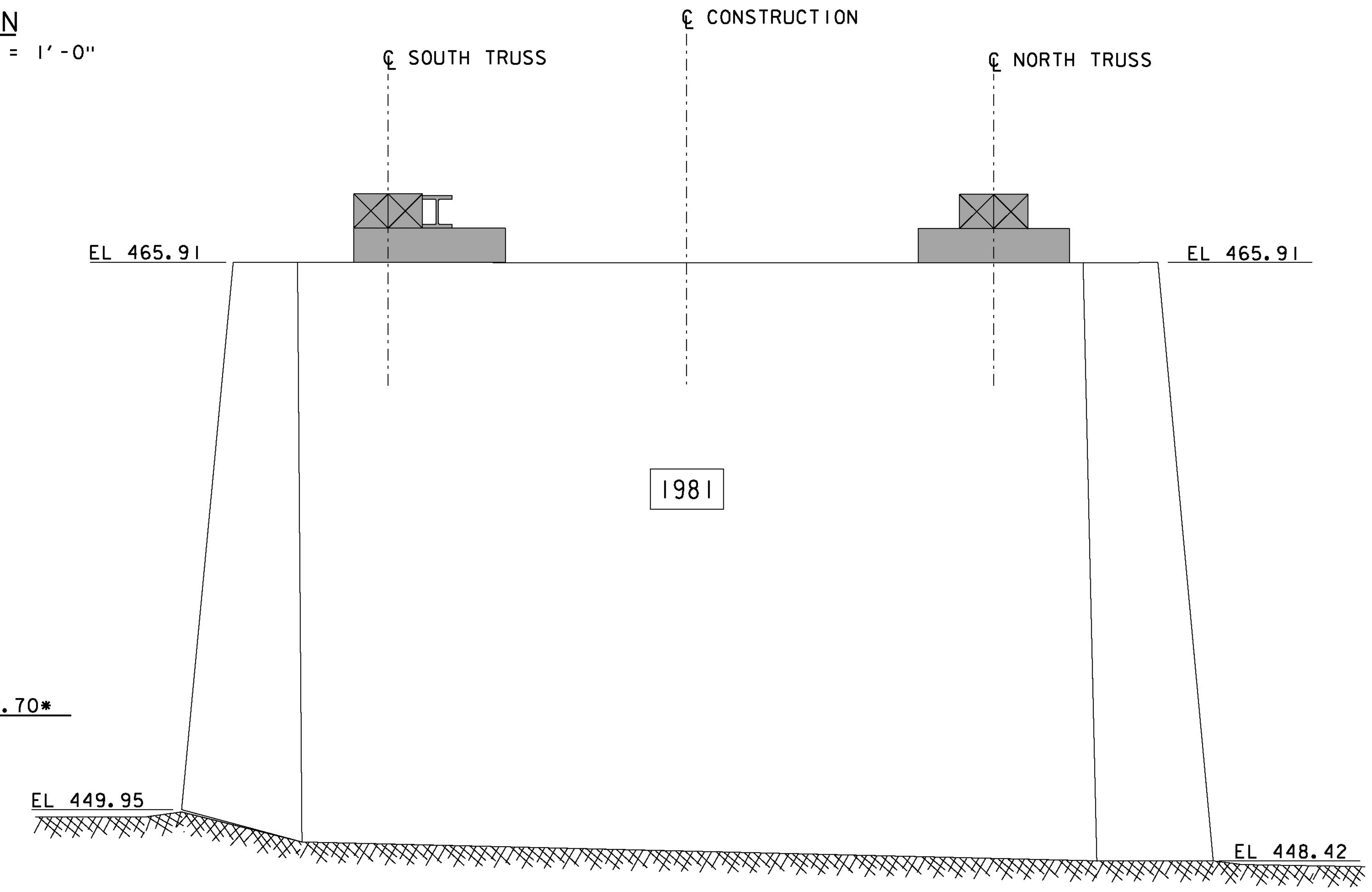




PLAN
SCALE: 3/8" = 1'-0"





* WATER SURFACE ELEVATION OBSERVED ON APRIL 23, 2012

WEST ELEVATION
(LOOKING EAST)
SCALE: 3/8" = 1'-0"

EAST ELEVATION
(LOOKING WEST)
SCALE: 3/8" = 1'-0"

NOTES

1. CONTRACTOR SHALL SAND BLAST ALL CONCRETE SURFACES TO REMOVE ALL EFFLORESCENCE AND GRAFFITI. PAYMENT WILL BE MADE UNDER ITEM 900.625, SPECIAL PROVISION (CONCRETE STAINING AND SEALING). SAND BLASTING SHALL BE COMPLETED PRIOR TO ANY CONCRETE OR CRACK REPAIR.
2. FOR NEW BEDDING TIMBERS AND PIER MODIFICATIONS, (SEE SHEET 48).
3. ALL EXPOSED CONCRETE SURFACES SHALL BE STAINED TO PROVIDE A UNIFORM APPEARANCE AFTER CLEANING AND REPAIRING. PAID AS ITEM 900.625, SPECIAL PROVISION (CONRETE STAINING AND SEALING).

LEGEND

PREDETERMINED MEMBER TO BE REMOVED

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225sub5

FILE NAME: 904225sub5.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
PIER NO. 3 PLAN & ELEVATION

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 40 OF 60

8/13/2015
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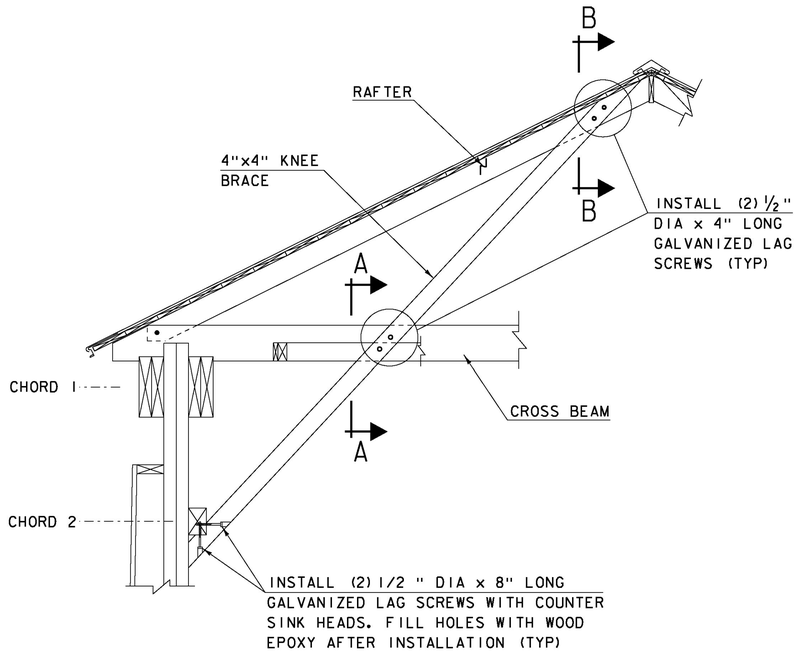
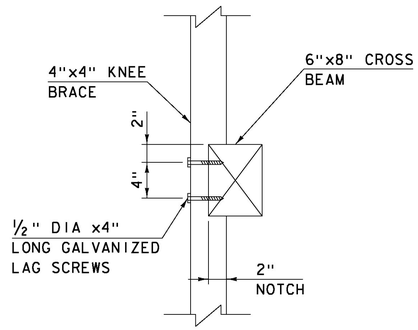


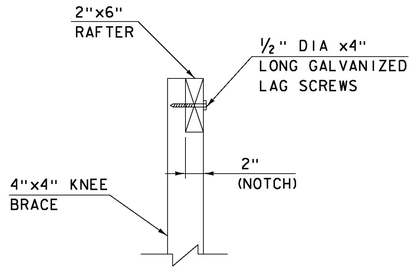
TYPICAL TOWN LATTICE KNEE BRACE DETAIL

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



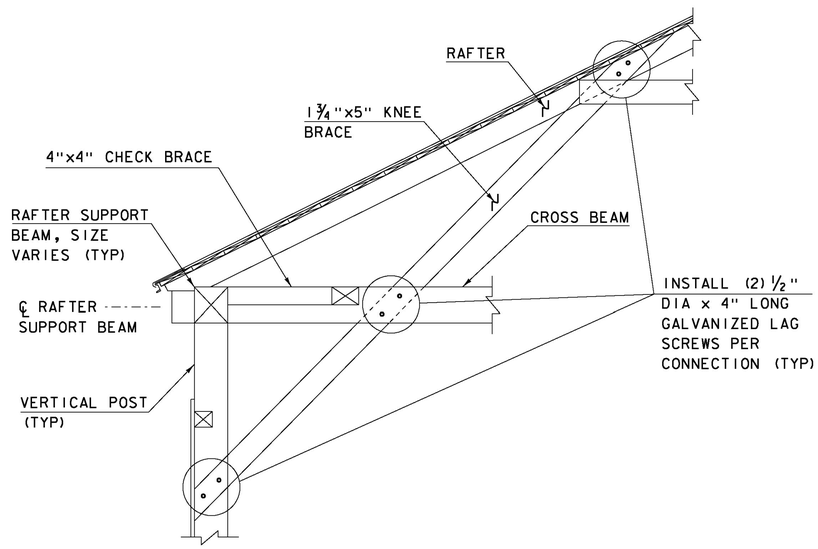
SECTION A-A

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



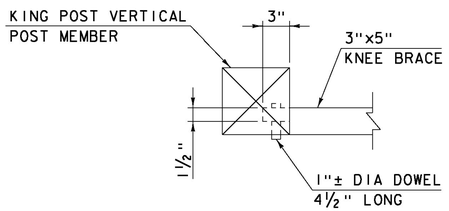
SECTION B-B

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



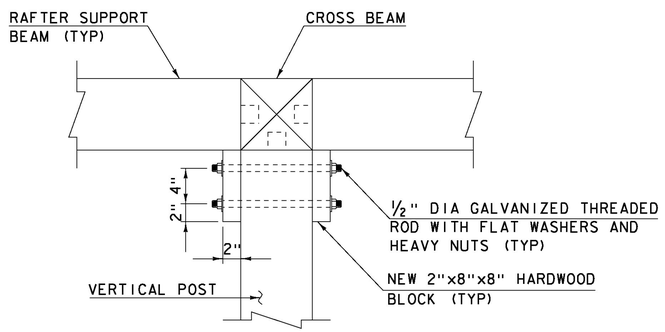
TYPICAL KING POST RAFTER KNEE BRACE DETAIL

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



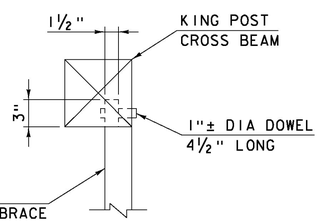
SECTION C-C

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



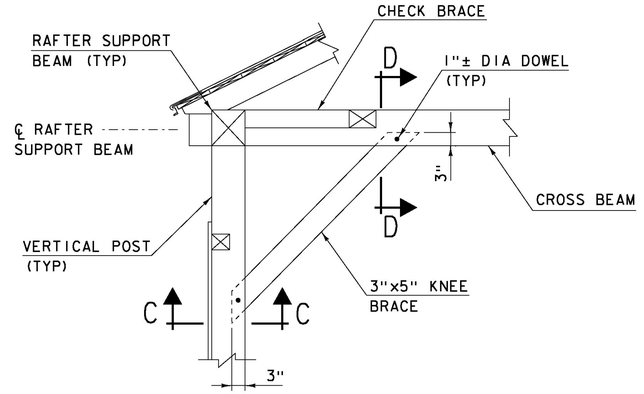
TYPICAL KING POST RAFTER SUPPPORT BEAM END BEARING DETAIL

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



SECTION D-D

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



TYPICAL KING POST CROSS BEAM KNEE BRACE DETAIL

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

NOTES

1. DIMENSIONS SHOWN ARE FOR BIDDING PURPOSES ONLY. ALL DIMENSIONS AND MEMBER SIZES SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING ALL TIMBER AND LUMBER. SEE NOTE G-4 ON SHEET 7 FOR MORE INFORMATION.

2. NEW DOWEL ORIENTATION TO MATCH EXISTING.

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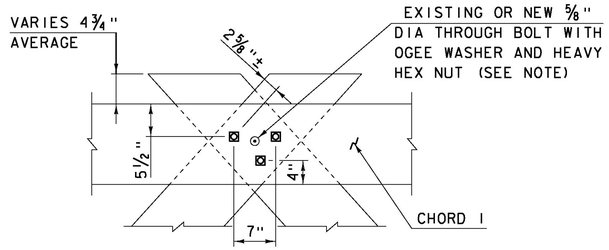
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225Detail1

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

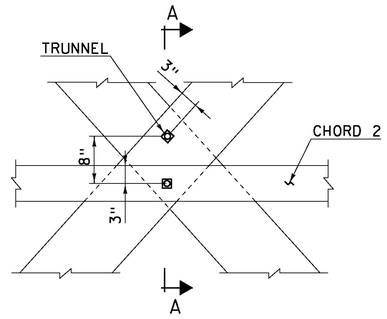
FILE NAME: 904225Detail1.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
STRUCTURAL DETAILS (1 OF 5)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 41 OF 60

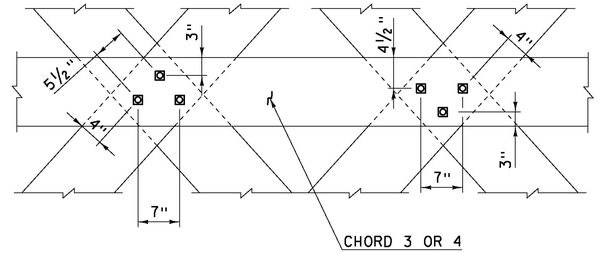


NOTE
THROUGH BOLTS REQUIRED WHERE SPECIFIED AND AT ALL LOCATIONS OF MEMBER REPLACEMENT AS IDENTIFIED ON SHEETS 23-26. NEW THROUGH BOLTS AND CORRESPONDING HARDWARE ARE TO BE GALVANIZED AND PAINTED WITH COAL TAR.

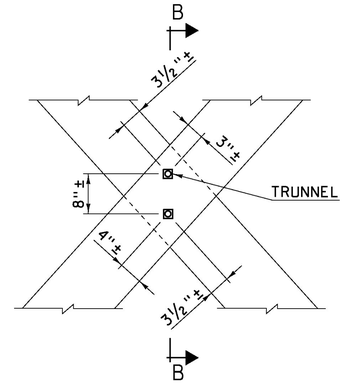
LATTICE TO CHORD 1 CONNECTION DETAIL
SCALE: 1½" = 1'-0"



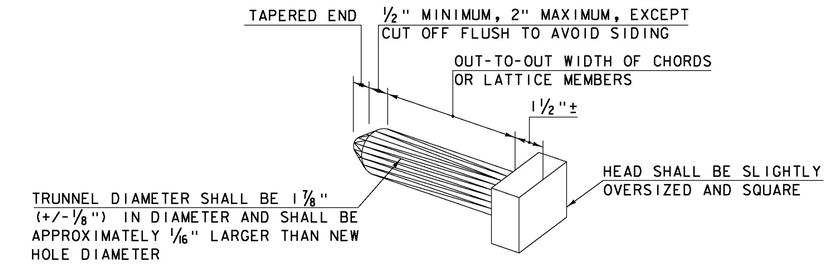
LATTICE TO CHORD 2 CONNECTION DETAIL
SCALE: 1" = 1'-0"



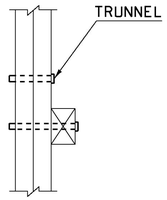
LATTICE TO CHORD 3 AND 4 CONNECTION DETAIL
SCALE: 1" = 1'-0"



TYPICAL LATTICE TO LATTICE CONNECTION DETAIL
SCALE: 1" = 1'-0"

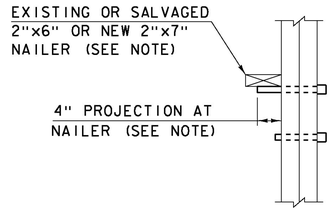


NEW TRUNNEL DETAIL
NOT TO SCALE

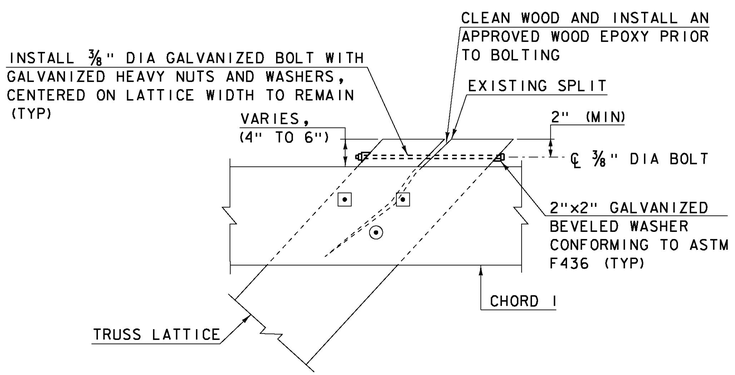


SECTION A-A
SCALE: 1" = 1'-0"

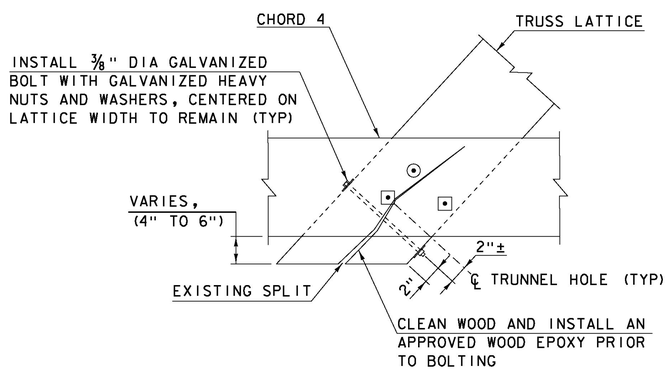
NOTE
AT CONNECTION WITHOUT NAILER PROJECTION SHOULD BE ½" MINIMUM TO 2" MAXIMUM.



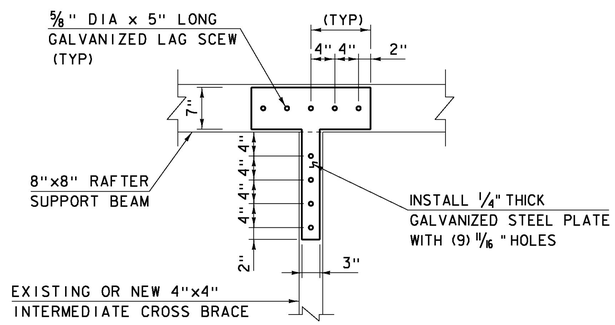
SECTION B-B
SCALE: 1" = 1'-0"



TOP END SPLIT LATTICE REPAIR DETAIL
SCALE: 1½" = 1'-0"



BOTTOM END SPLIT LATTICE REPAIR DETAIL
SCALE: 1½" = 1'-0"



STEEL TIE PLATE DETAIL
SCALE: 1" = 1'-0"

NOTES
1. SEE SHEET 41 FOR NOTES THAT APPLY TO THIS SHEET.
2. COSTS FOR TOP END AND BOTTOM END SPLIT LATTICE REPAIRS ARE INCLUDED IN ITEM 900.620, SPECIAL PROVISION (WOOD EPOXY REPAIRS) (SEE NOTE W-4 ON SHEET 7).

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Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225Detail2

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225Detail2.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
STRUCTURAL DETAILS (2 OF 5)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 42 OF 60

CAMBER NOTES

1. ALL VALUES IN CAMBER TABLE ARE MEASURED FROM A REFERENCE LINE THAT IS A STRAIGHT LEVEL LINE CONNECTING POINTS LOCATED AT THE TOP OF THE BOTTOM CHORD FROM ABUTMENT NO. 1 TO PIER NO. 2 FOR THE KING POST TRUSS AND AT THE TOP OF CHORD 3 FROM PIER NO. 2 TO ABUTMENT NO. 2 FOR THE TOWN LATTICE TRUSS. NEGATIVE VALUES INDICATE DOWN DIRECTIONS (SAG).

2. THE EXISTING COVERED BRIDGE SHALL BE JACKED AND BRACED AS REQUIRED PRIOR TO THE START OF REALIGNMENT OPERATIONS. INSTALLATION OF NEW TRUSS MEMBERS SHALL NOT BEGIN UNTIL REALIGNMENT OPERATIONS ARE COMPLETED. SEE NOTE RS-5 ON SHEET 7 FOR MORE INFORMATION.

3. THE CONTRACTOR SHALL JACK AND STRAIGHTEN THE TOWN LATTICE TRUSS TO A MAXIMUM 4" MIDSPAN CAMBER (AT CENTERLINE OF PIER NO. 3) PRIOR TO REPLACING TRUSS MEMBERS. CAMBER IN THE FINAL CONDITION SHALL BE MAINTAINED WITH BLOCKING AT PIER NO. 3. DUE TO THE CONDITION AND SAG OF THE EXISTING TOWN LATTICE TRUSSES, THE CONTRACTOR SHALL TAKE EXTREME CAUTION WHILE JACKING THE TRUSS AT PIER NO. 3. JACKING SHALL CEASE IMMEDIATELY IF DAMAGE TO THE TRUSS SUCH AS SPLITS OR CRACKS IN THE CHORD AND LATTICE OR SHEARING OF TRUNNELS IS SUSTAINED OR IS IMMINENT IN THE OPINION OF THE ENGINEER. THE TOP ELEVATION OF THE NEW PIER NO. 3 CONCRETE PEDESTALS AS DETAILED ON SHEET 48 SHALL BE SET IN THE FIELD UPON COMPLETION OF THE JACKING OPERATIONS.

4. THE KING POST TRUSSES SHALL BE CAMBERED TO 2" AT MIDSPAN BY ADJUSTING THE HANGER RODS. THE CONTRACTOR SHALL PAY SPECIAL ATTENTION TO AVOID DEFLECTIONS IN KING POST UPPER CHORD AND DIAGONAL MEMBERS DURING HANGER ROD ADJUSTMENT.

5. PAYMENT FOR ALL WORKS AS DETAILED IN NOTES 3 AND 4 WILL BE INCLUDED UNDER ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE). SEE SPECIAL PROVISION AND NOTE W-8 ON SHEET 7 FOR ADDITIONAL WORK TO BE PAID UNDER THIS PAY ITEM.

6. THE CONTRACTOR SHALL PROVIDE TO THE RESIDENT ENGINEER THE MEASUREMENTS OF THE AS-BUILT CAMBER. PAYMENT WILL BE MADE UNDER ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

EXISTING AND AS-BUILT KING POST TRUSS CAMBER (INCHES) *

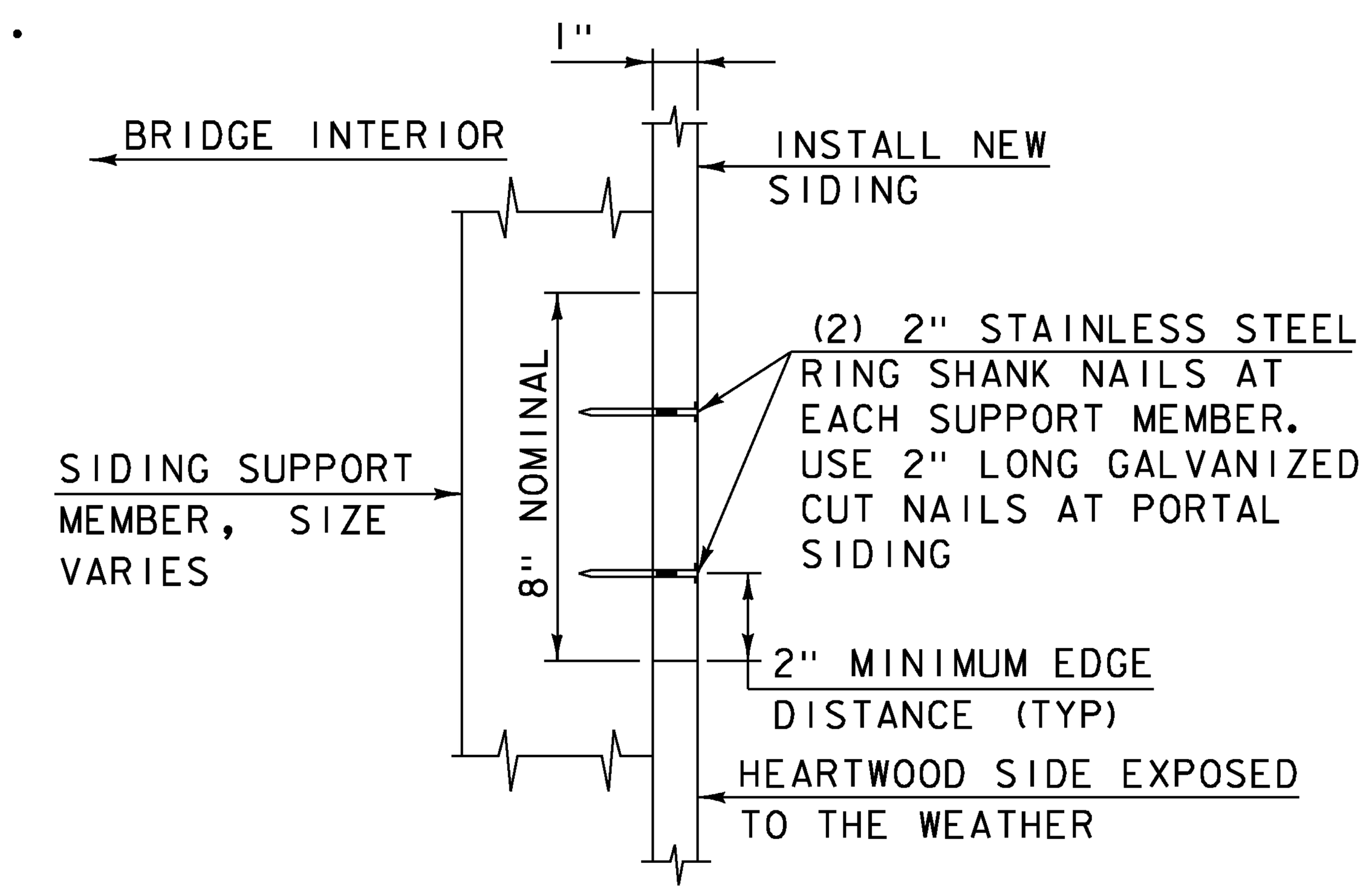
NODES	(1A)	(1B)	(2A)	(2B)	(3A)	(3B)
WK2	---	---	---	---	470.70	470.67
WK3	-1.16	-2.64			470.83	470.86
WK 4	-2.30	-5.16	2.0	2.0	470.93	470.96
WK5	-2.23	-2.64			470.89	470.93
WK6	-0.75	-0.12				
WK7	---	---	---	---	470.86	470.87
EK1	---	---	---	---	470.90	470.87
EK2	0.75	0.49			470.80	470.79
EK3	1.12	0.99	2.0	2.0	470.75	470.75
EK4	1.37	1.90			470.64	470.64
EK5	0.70	0.66			470.50	470.53
EK6	---	---	---	---	---	---

EXISTING AND AS-BUILT TOWN LATTICE TRUSS CAMBER (INCHES) *

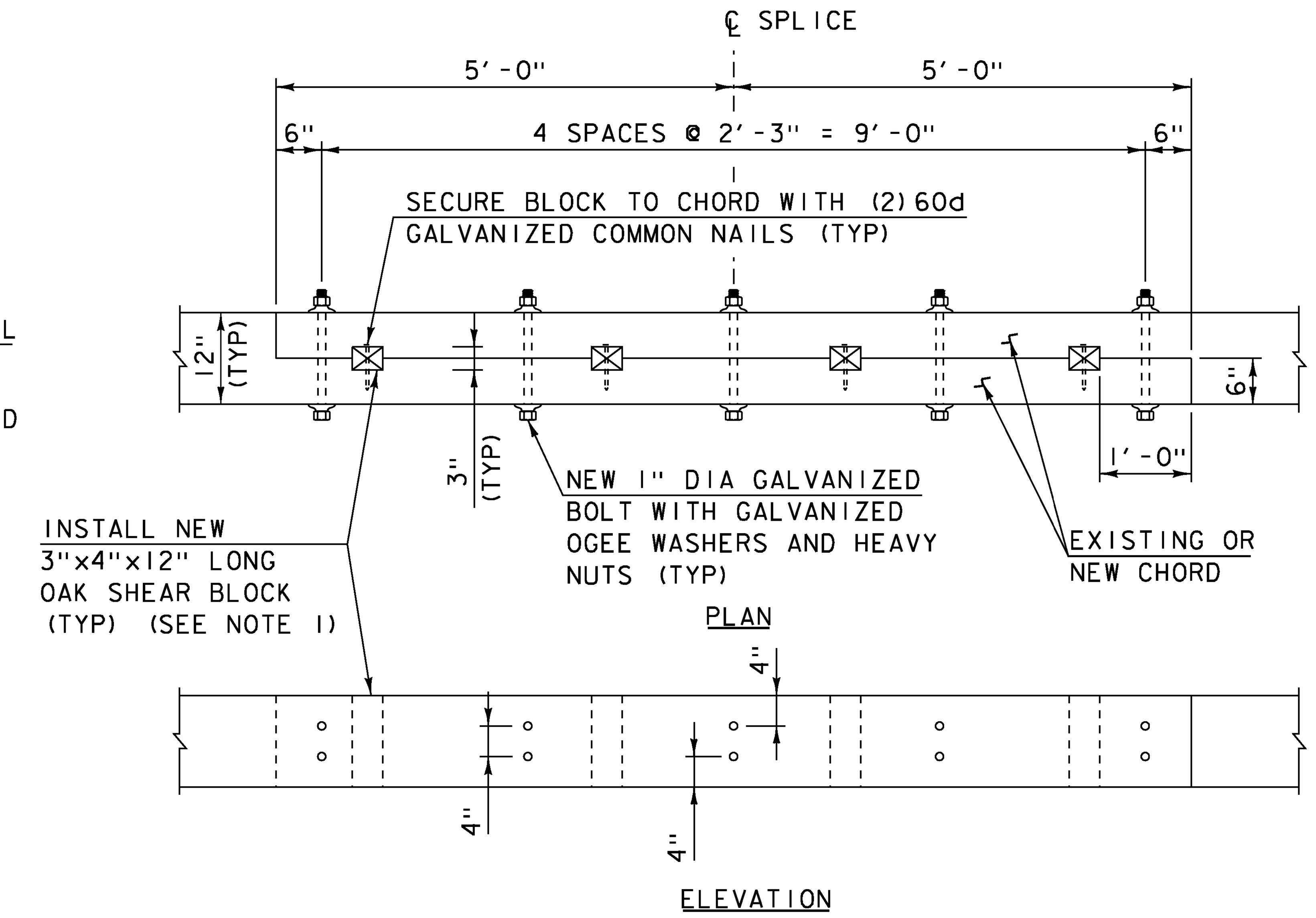
NODES	(1A)	(1B)	(2A)	(2B)	(3A)	(3B)
1	---	---	---	---	470.52	470.54
3	-0.77	-1.73			470.61	470.58
5	-1.55	-3.22			470.70	470.64
7	-2.92	-3.99			470.79	470.72
9	-4.30	-3.68			470.89	470.82
11	-6.39	-4.45			470.93	470.91
13	-7.04	-4.62			471.02	470.98
15	-7.34	-5.56			471.07	471.04
17	-8.11	-5.73			471.10	471.08
19	-9.49	-4.64			471.16	471.13
21	-9.54	-4.93	4.00	4.00	471.22	471.18
23	-10.67	-4.62	4.00	4.00	471.25	471.20
25	-11.81	-4.98			471.27	471.19
27	-12.22	-4.30			471.28	471.17
29	-12.76	-3.81			471.29	471.21
31	-11.25	-4.40			471.27	471.22
33	-9.26	-2.83			471.26	471.23
35	-6.80	-2.40			471.24	471.24
37	-4.33	-1.61			471.22	471.21
39	-2.35	-0.34			471.21	471.21
41	---	---	---	---	471.21	471.21

(1A) EXISTING CAMBER SOUTH TRUSS
(1B) EXISTING CAMBER NORTH TRUSS
(2A) PROPOSED CAMBER SOUTH TRUSS
(2B) PROPOSED CAMBER NORTH TRUSS
(3A) AS-BUILT CAMBER SOUTH TRUSS
(3B) AS-BUILT CAMBER NORTH TRUSS

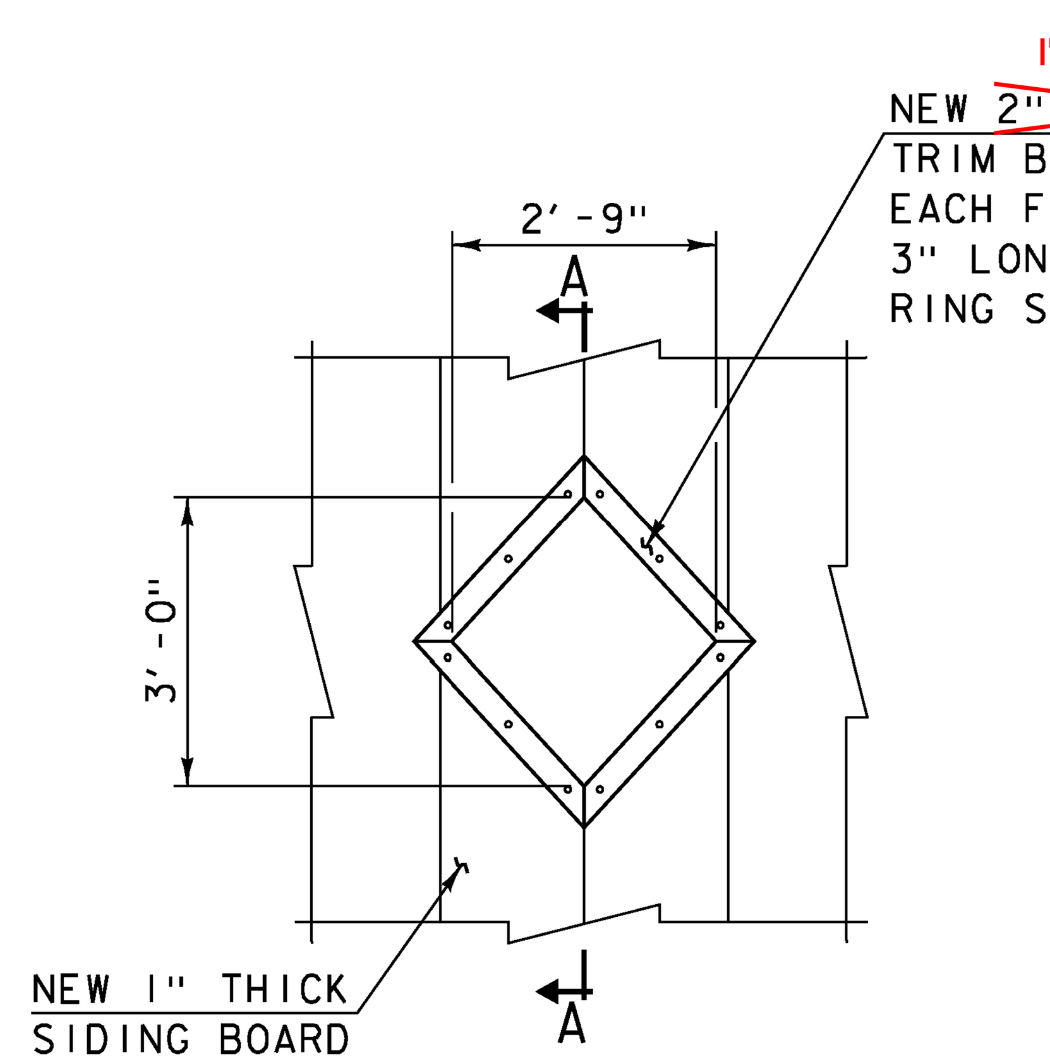
* NEGATIVE VALUES INDICATE SAG



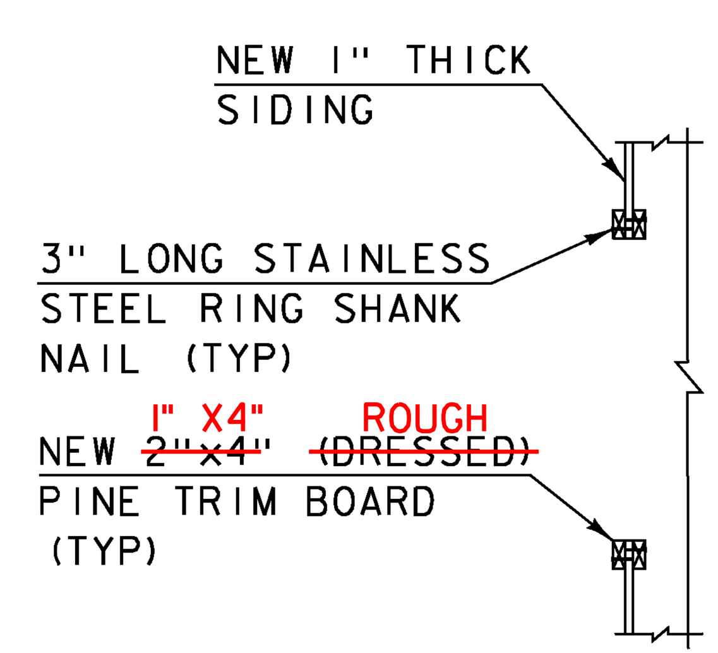
NEW SIDING DETAIL (PLAN VIEW)
SCALE: 3" = 1'-0"



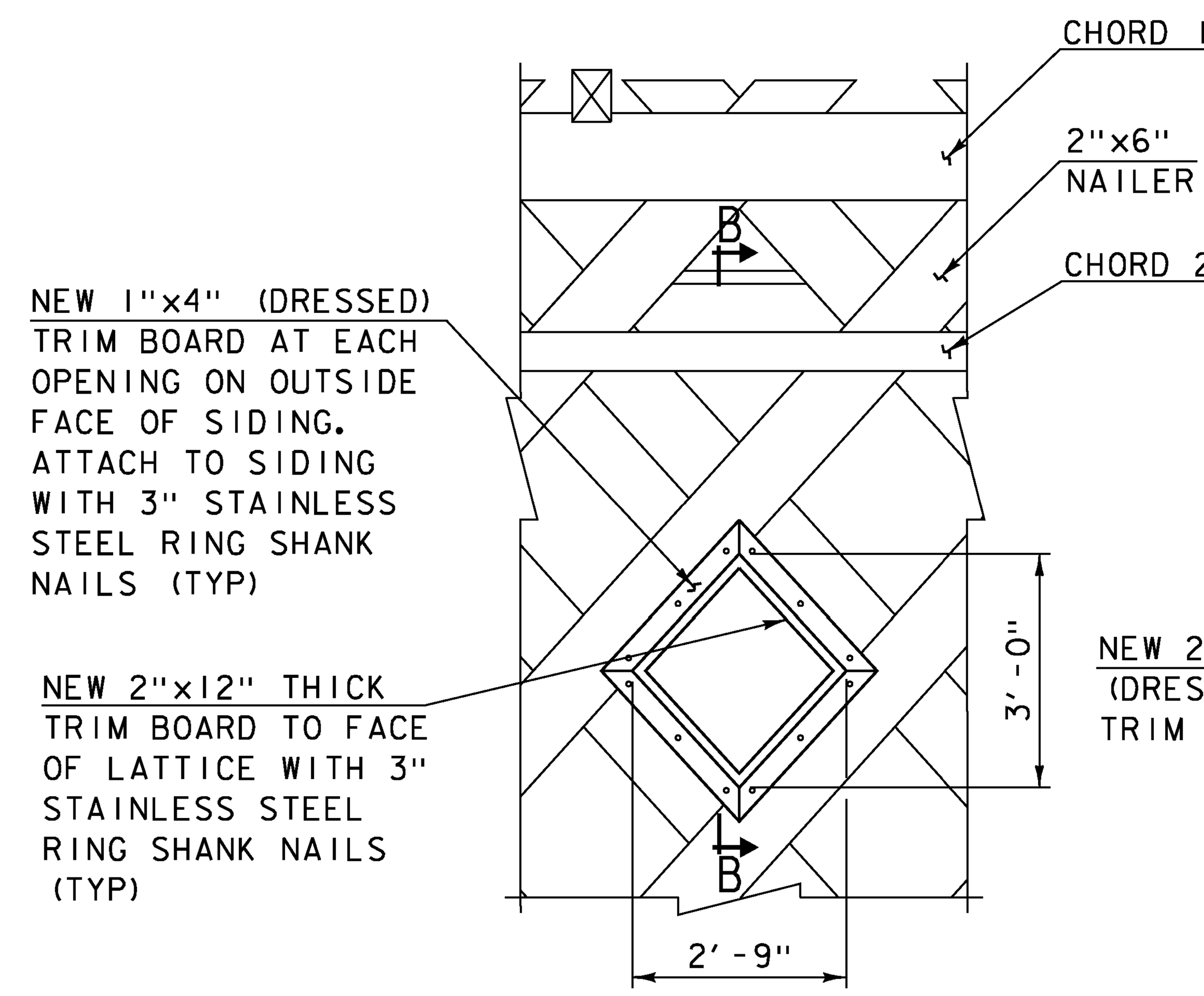
KING POST BOTTOM CHORD SPLICE
SCALE: 1" = 1'-0"



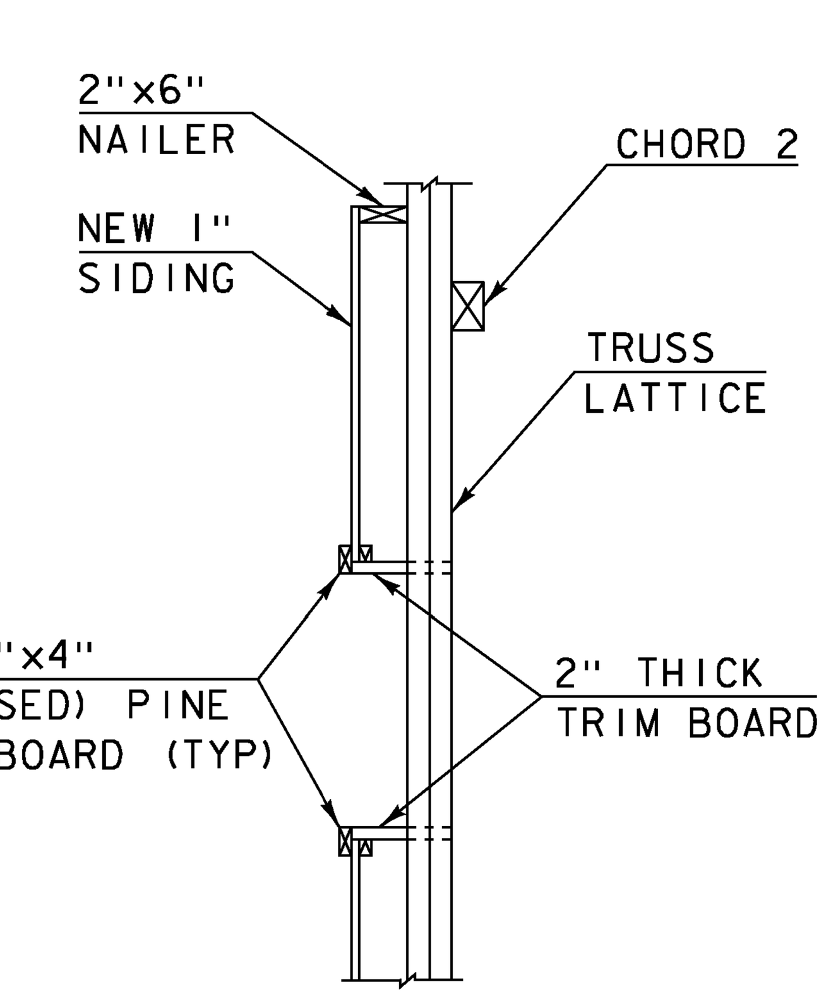
KING POST SIDING WINDOW DETAIL
SCALE: ½" = 1'-0"



SECTION A-A
SCALE: ½" = 1'-0"



TOWN LATTICE SIDING WINDOW DETAIL
SCALE: ½" = 1'-0"



SECTION B-B
SCALE: ½" = 1'-0"

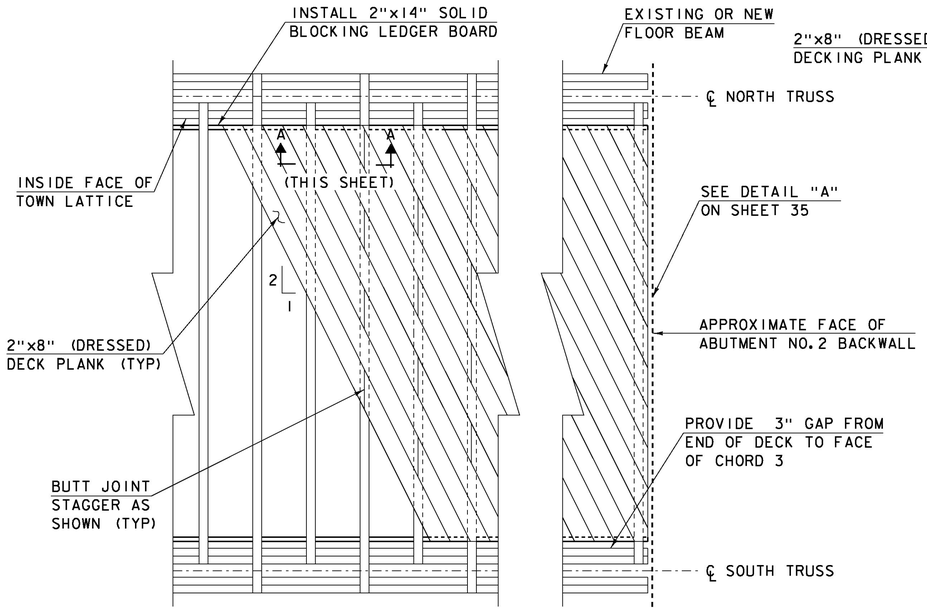
NOTES

1. A NEW 3" OAK BLOCK IS REQUIRED FOR ALL NEW AND EXISTING KING POST SPLICES. EXISTING BLOCKS ARE 1½" WIDE. AFTER THE BRIDGE IS ADEQUATELY SHORED AND DEAD LOAD STRESSES ARE RELEASED CONTRACTOR SHALL REMOVE ALL EXISTING KING POST SPLICE BLOCKS, ENLARGE EXISTING OR CUT NEW NOTCHES AND RE-DRIVE NEW 3" WIDE BLOCKS. COSTS FOR MODIFYING EXISTING SPLICES WILL BE INCLUDED IN ITEM 900.645, SPECIAL PROVISION (REHABILITATING COVERED BRIDGE SUPERSTRUCTURE).

2. SEE SHEET 41 FOR NOTES THAT APPLY TO THIS SHEET.

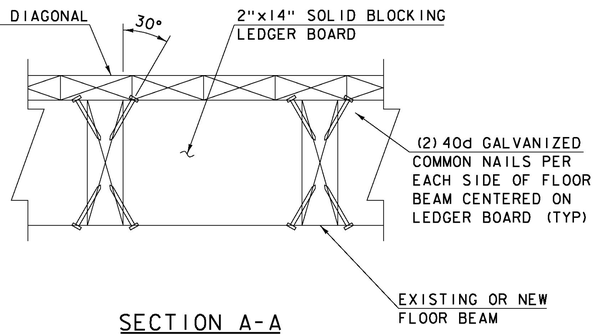
Hoyle, Tanner & Associates, Inc.
HTA PROJECT 904225 | MODEL 904225Detail3

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)
FILE NAME: 904225Detail3.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
STRUCTURAL DETAILS (3 OF 5)
PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES

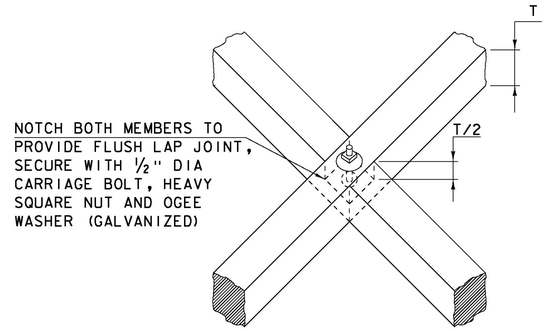


NOTE
DECK PARTIALLY SHOWN FOR CLARITY.

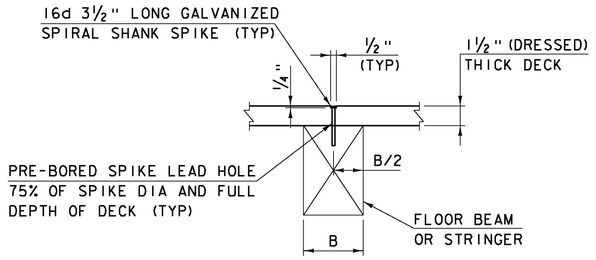
TOWN LATTICE DECK DETAIL
SCALE: 3/8" = 1'-0"



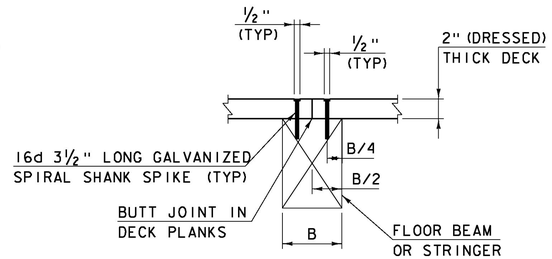
SECTION A-A
SCALE: 1 1/2" = 1'-0"



TOWN LATTICE LOWER LATERAL BRACING CONNECTION DETAIL
NOT TO SCALE

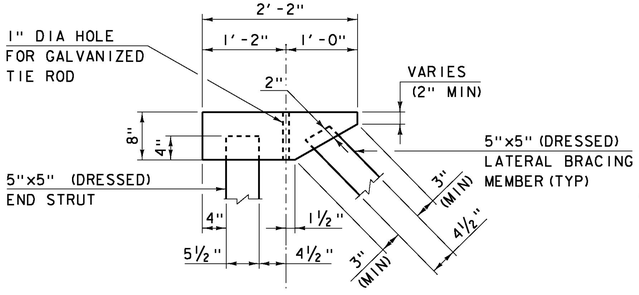


DECK PLANK OVER FLOOR BEAM OR STRINGER

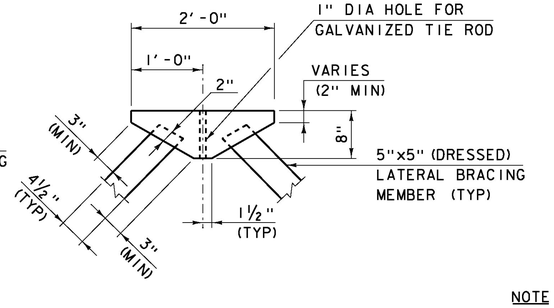


DECK PLANK BUTT JOINT OVER FLOOR BEAM OR STRINGER

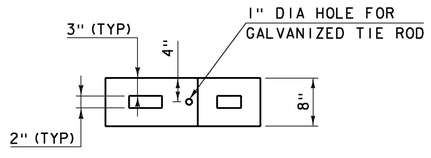
DECK SPIKE DETAILS
NOT TO SCALE



PLAN

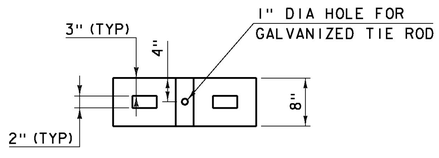


PLAN



ELEVATION

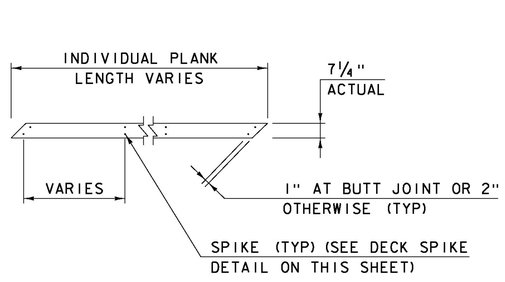
BEARING BLOCK TYPE "A"



ELEVATION

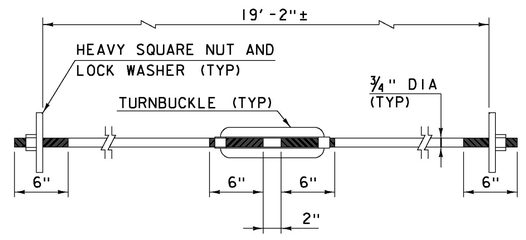
BEARING BLOCK TYPE "B"

BEARING BLOCK DETAILS
SCALE: 1" = 1'-0"



NOTE
STAGGER JOINTS ALONG FLOORBEAMS OR STRINGERS BY A MINIMUM OF ONE DECK PLANK MEASURED TRANSVERSELY OR 10' MINIMUM LONGITUDINALLY AS MEASURED ALONG THE DECK PLANK.

DECK PLANK ATTACHMENT



NOTE
TIGHTEN NUTS AND TURNBUCKLES SNUG BUT NOT SO TIGHT AS TO CAUSE CRUSHING OF WOOD BEHIND THE STEEL PLATES.

GALVANIZED TIE ROD ASSEMBLY
(11 REQUIRED)
SCALE: 1 1/2" = 1'-0"

NOTE
1. SEE SHEET 41 FOR NOTES THAT APPLY TO THIS SHEET.

8/13/2015
10:23:33 AM
k:\904225\cad\dgn\details\sht\904225detail4.dgn

Hoyle, Tanner & Associates, Inc.

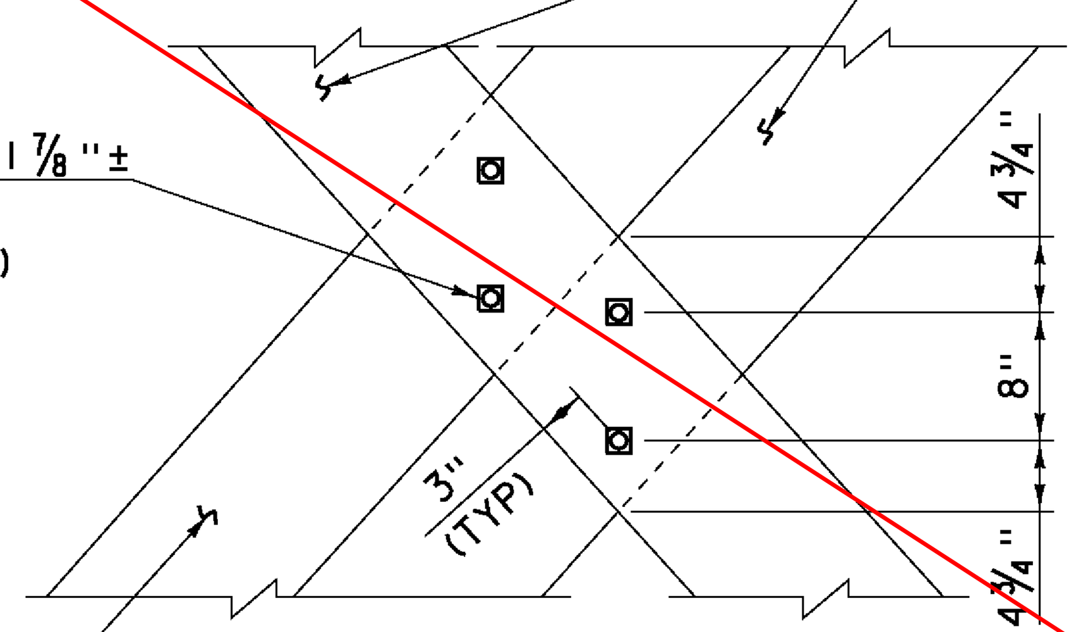
HTA PROJECT	MODEL
904225	904225Detail4

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

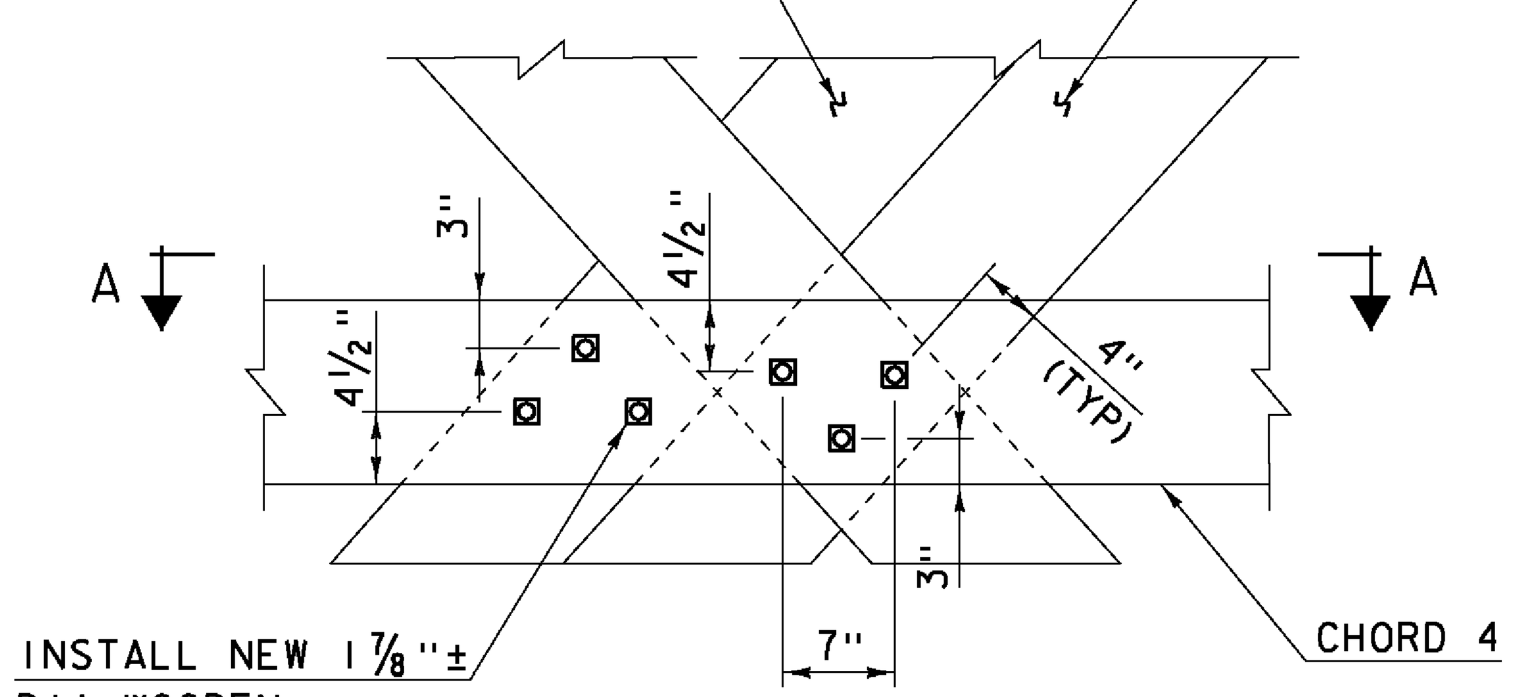
FILE NAME: 904225Detail4.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
STRUCTURAL DETAILS (4 OF 5)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 44 OF 60

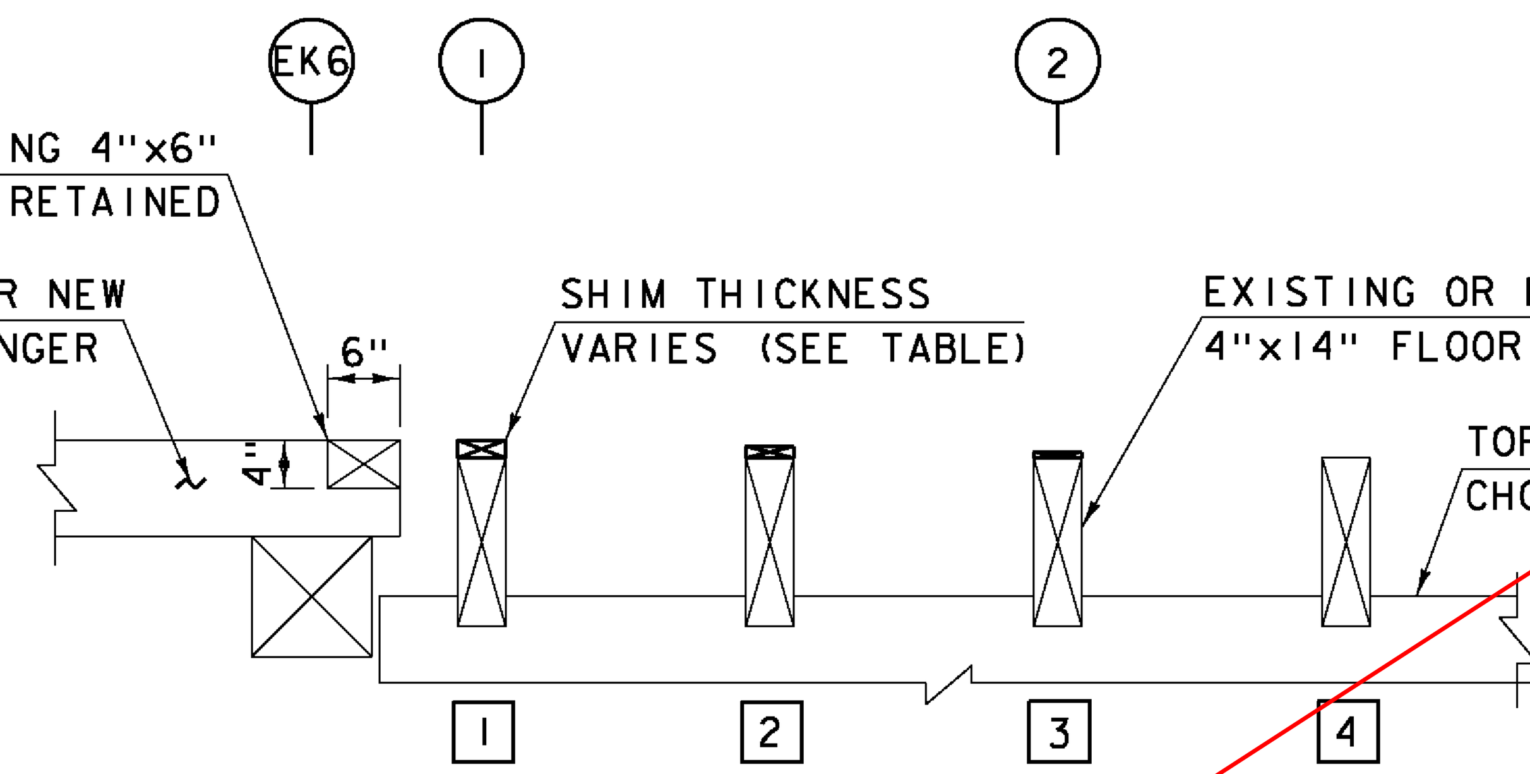
SEE REVISED
SHEET 45B



DETAIL A
SCALE: 1" = 1'-0"



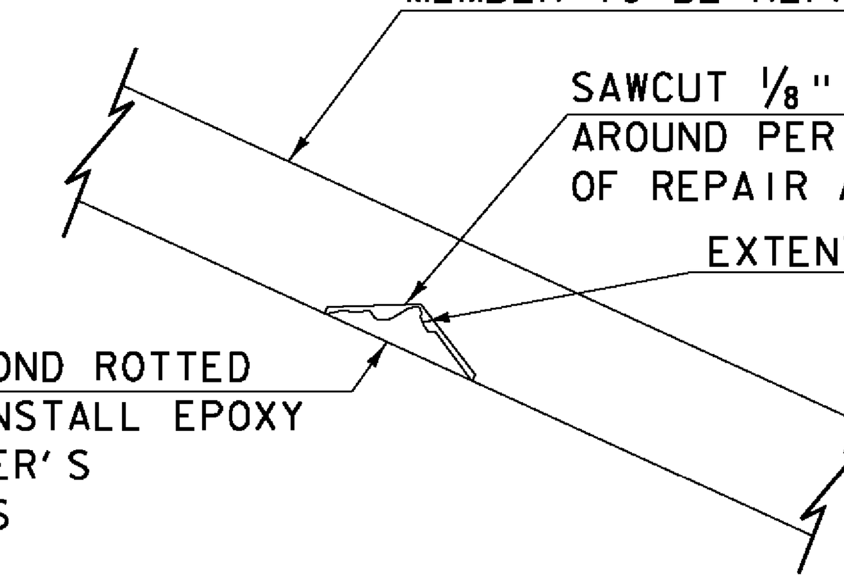
DETAIL B
SCALE: 1" = 1'-0"



FLOOR BEAM	SHIM THICKNESS (INCHES)
1	1.5
2	1
3	0.5
4	0

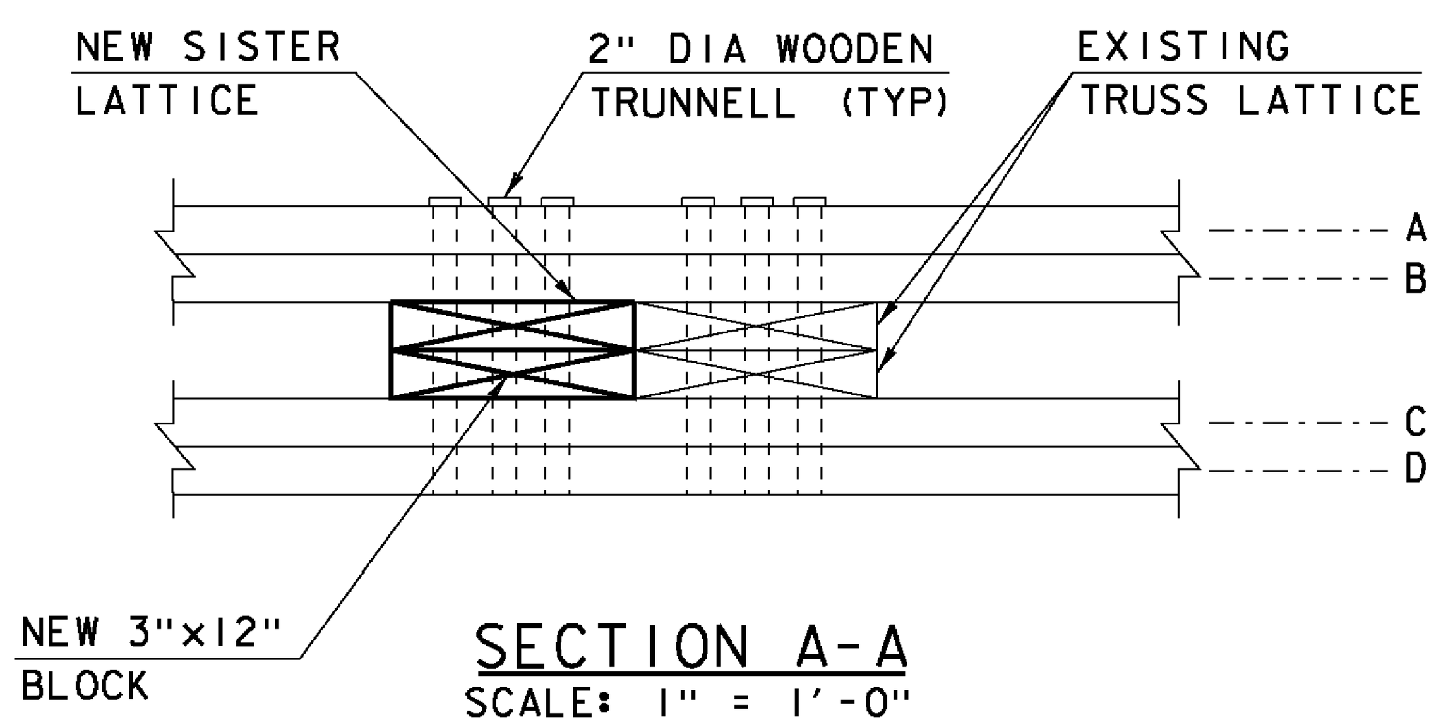
NOTE
GLUE SHIMS TO TOP OF FLOOR BEAM.

KING POST TO TOWN LATTACE
DECK TRANSITION DETAIL
SCALE: ¾" = 1'-0"

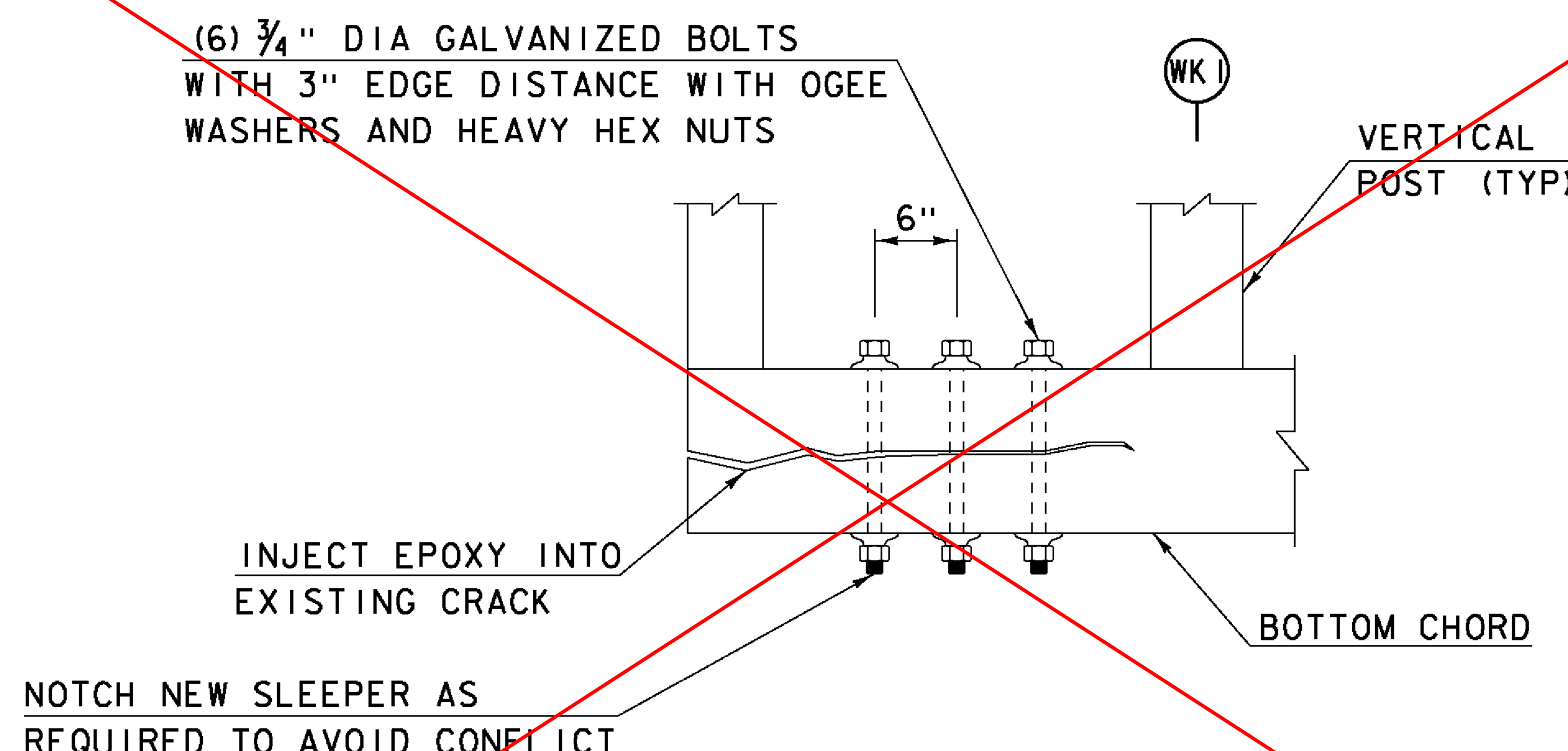


NOTE
RAFTER OR OTHER MEMBER WILL BE PAID UNDER ITEM 900.620,
SPECIAL PROVISION (WOOD EPOXY REPAIRS)

EPOXY REPAIR DETAIL
NOT TO SCALE



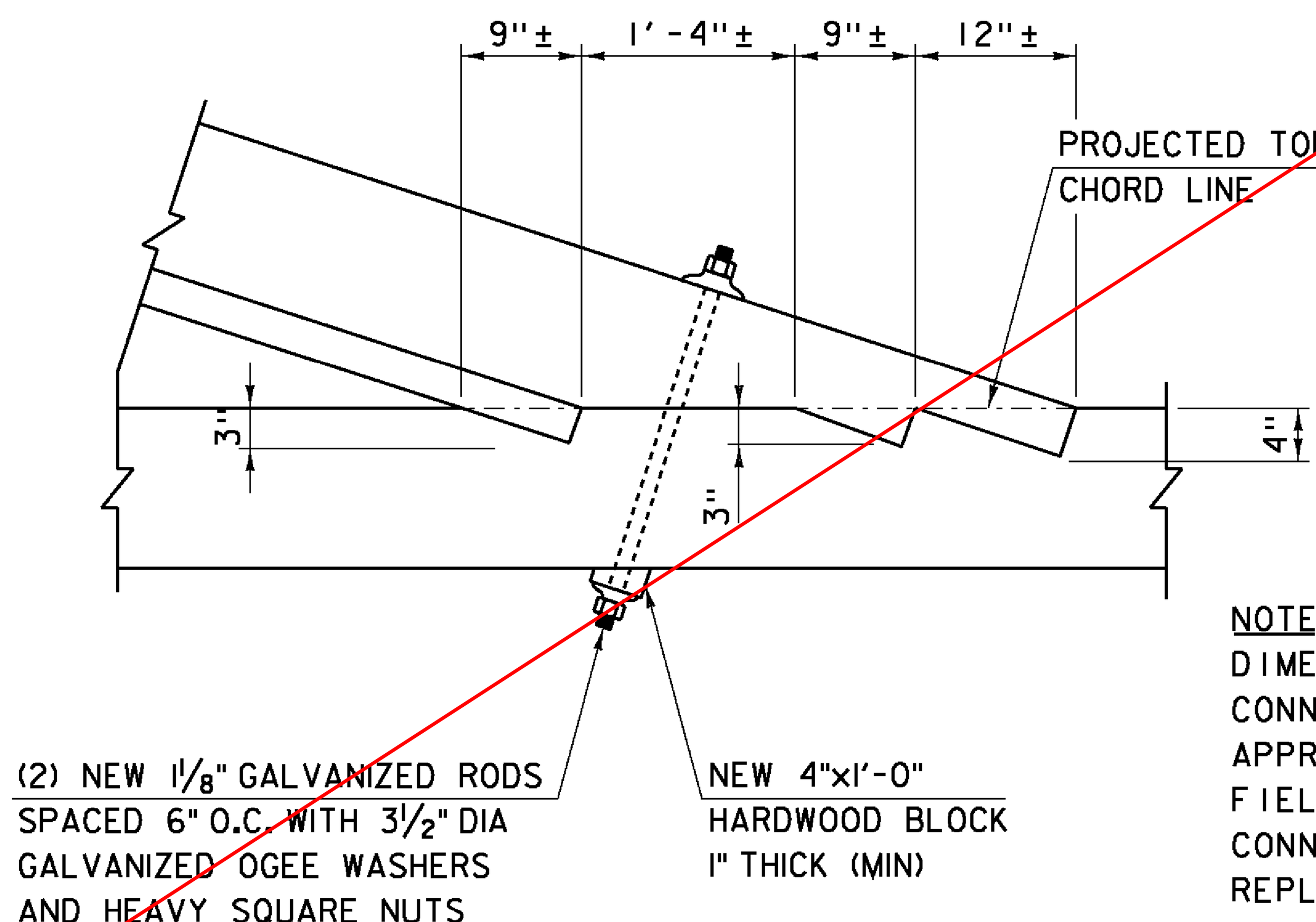
SECTION A-A
SCALE: 1" = 1'-0"



NORTH KING POST TRUSS
BOTTOM CHORD REPAIR DETAIL
SCALE: 1" = 1'-0"

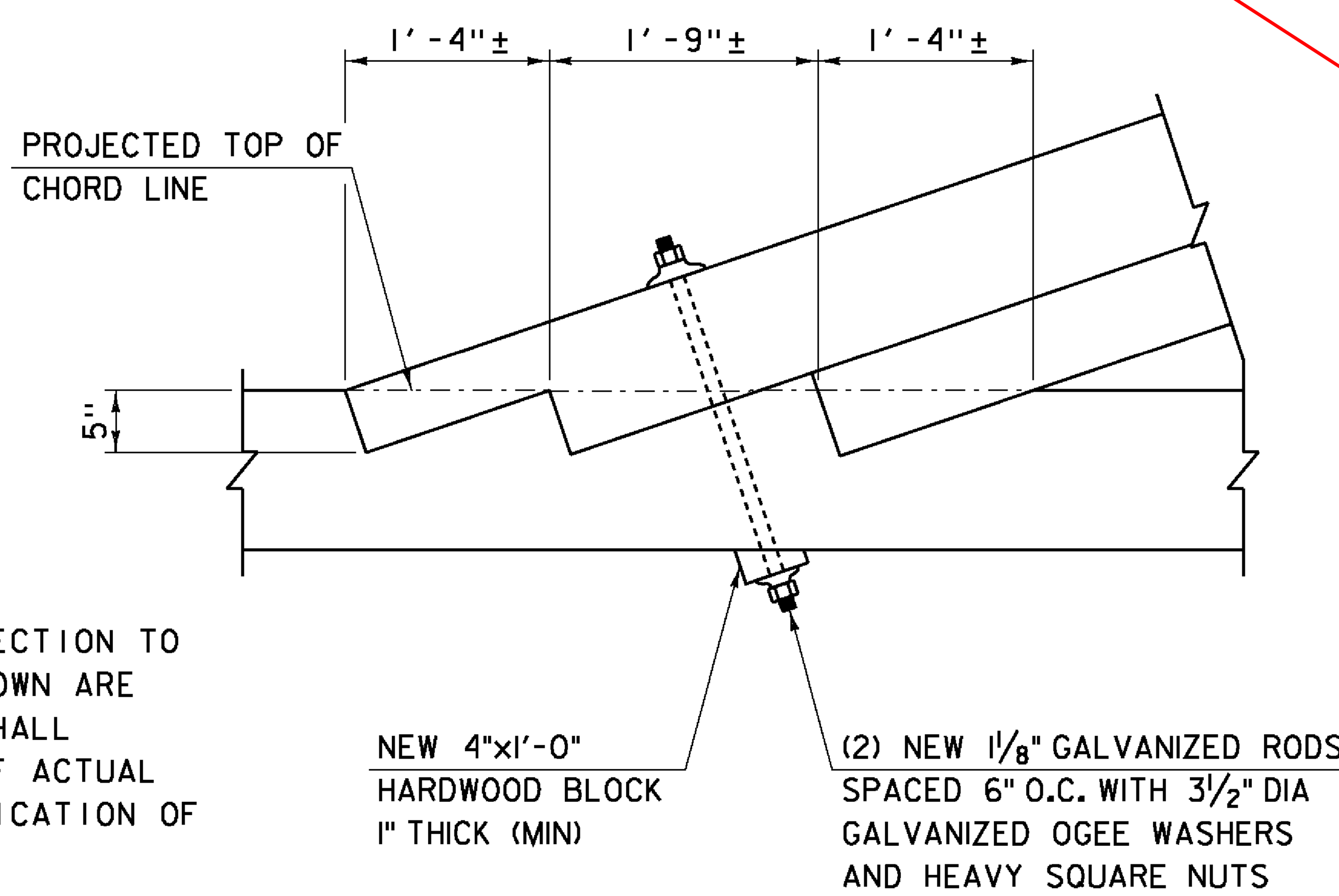
RECOMMENDED REPAIR SEQUENCE

1. IDENTIFIED ROTTED MATERIAL IN LUMBER AND TIMBER MEMBERS, IF LESS THAN 1 INCH IN DEPTH, SHALL BE REPAIRED AS SHOWN ABOVE ON THE "EPOXY REPAIR DETAIL". IF ROT IS GREATER THAN 1 INCH IN DEPTH, THE ENTIRE MEMBER SHALL BE REPLACED AS DIRECTED BY THE RESIDENT ENGINEER.
2. REMOVE ALL ROTTED MATERIAL TO A MINIMUM OF ¼" BEYOND EXTENT OF ROT. SAWCUT ¼" DEEP AROUND PERIMETER OF REPAIR AREA.
3. CLEAN EXISTING MEMBER OF ALL DIRT, SAWDUST, ETC. AND PREPARE SURFACE PER MANUFACTURER'S RECOMMENDATIONS.
4. INSTALL/INJECT APPROVED EPOXY REPAIR MATERIAL PER MANUFACTURER'S RECOMMENDATIONS, (PAID UNDER ITEM 900.620, SPECIAL PROVISION (WOOD EPOXY REPAIRS)). COLOR OF REPAIR MATERIAL TO MATCH EXISTING WOOD. A COMPLETED TEST SECTION SHALL BE MADE FOR APPROVAL BY THE RESIDENT ENGINEER.
5. INSTALL TWO GALVANIZED LAG SCREWS INTO EXISTING SPLIT THROUGH REPAIR MATERIAL (IF REQUIRED). SIZE OF LAG SCREWS TO BE DETERMINED BY THE RESIDENT ENGINEER.



EAST KINGPOST SPAN CONNECTION DETAIL
SCALE: 1" = 1'-0"

NOTE
DIMENSIONS VARY FROM CONNECTION TO CONNECTION. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF ACTUAL CONNECTIONS PRIOR TO FABRICATION OF REPLACEMENT ELEMENT.



WEST KINGPOST SPAN CONNECTION DETAIL
SCALE: 1" = 1'-0"

NOTE
1. SEE SHEET 41 FOR NOTES PERTAINING TO THIS SHEET.

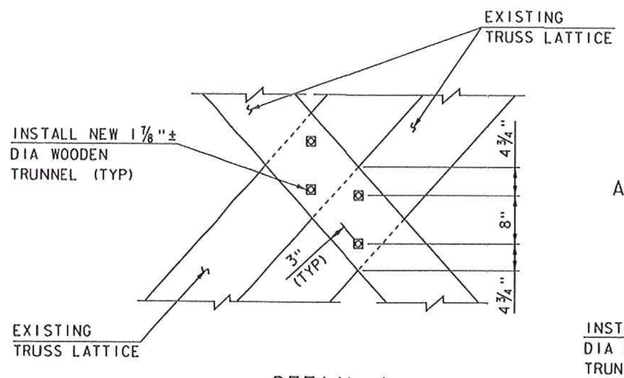
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225Detail5

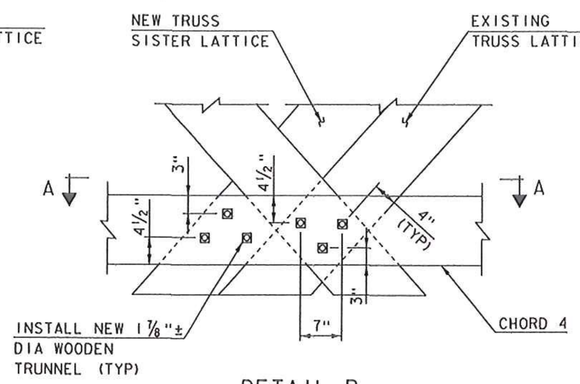
PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225Detail5.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
STRUCTURAL DETAILS (5 OF 5)

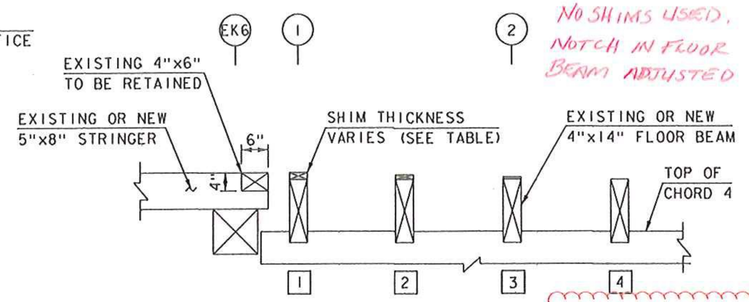
PLOT DATE: 8/13/2015
DRAWN BY: T.A.CELINAS
CHECKED BY: S.T.JAMES
SHEET 45A OF 60



DETAIL A
SCALE: 1" = 1'-0"



DETAIL B
SCALE: 1" = 1'-0"

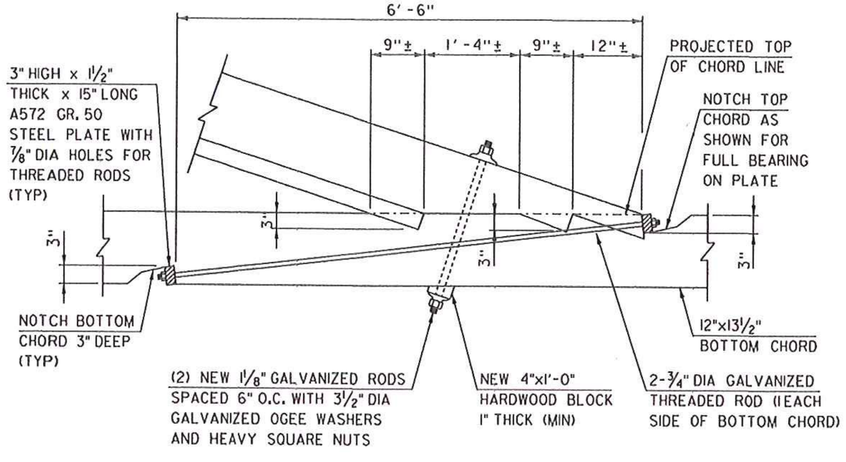


NO SHIMS USED, NOTCH IN FLOOR BEAM ADJUSTED

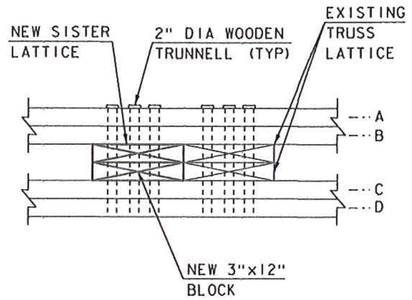
FLOOR BEAM	SHIM THICKNESS (INCHES)
1	1.5
2	1
3	0.5
4	0

NOTE
GLUE SHIMS TO TOP OF FLOOR BEAM.

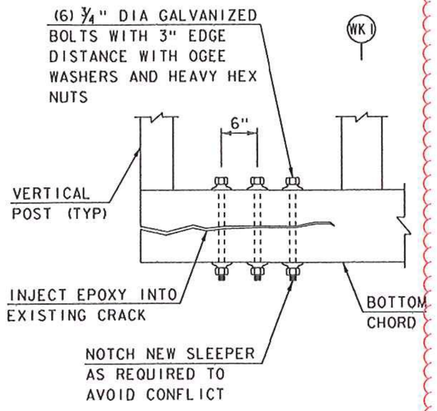
KING POST TO TOWN LATTACE DECK TRANSITION DETAIL
SCALE: 3/4" = 1'-0"



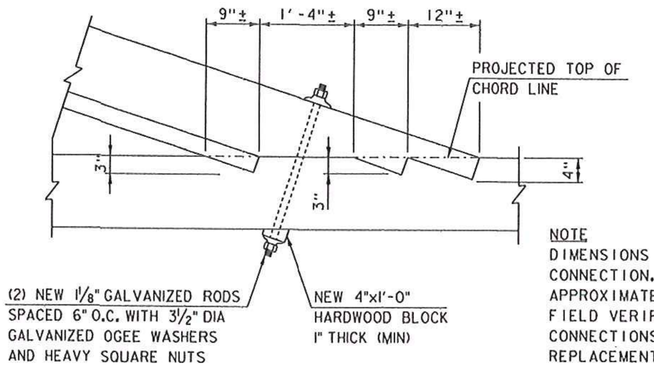
NORTH TRUSS CONNECTION DETAIL AT EK1 AND EK5 ⚠
SCALE: 1" = 1'-0"



SECTION A-A
SCALE: 1" = 1'-0"

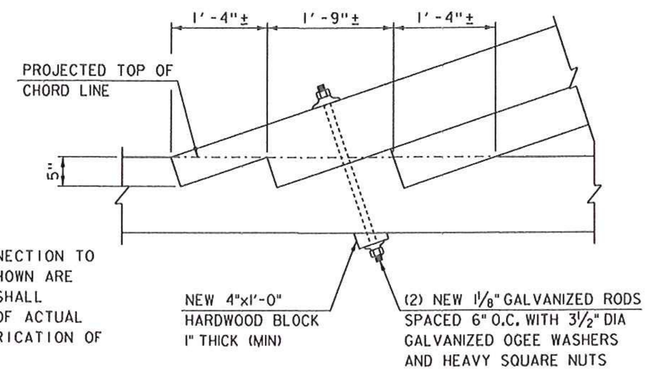


NORTH KING POST TRUSS BOTTOM CHORD REPAIR DETAIL
SCALE: 1" = 1'-0"

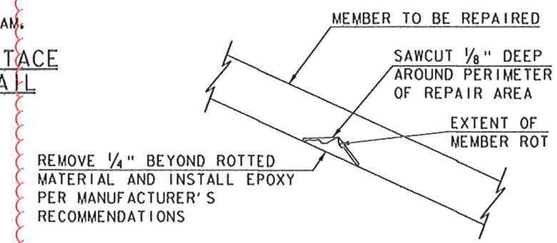


NOTE
DIMENSIONS VARY FROM CONNECTION TO CONNECTION. DIMENSIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF ACTUAL CONNECTIONS PRIOR TO FABRICATION OF REPLACEMENT ELEMENT.

EAST KINGPOST SPAN CONNECTION DETAIL
SCALE: 1" = 1'-0"



WEST KINGPOST SPAN CONNECTION DETAIL
SCALE: 1" = 1'-0"



NOTE
RAFTER OR OTHER MEMBER WILL BE PAID UNDER ITEM 900.620, SPECIAL PROVISION (WOOD EPOXY REPAIRS)

EPOXY REPAIR DETAIL
NOT TO SCALE

RECOMMENDED REPAIR SEQUENCE

1. IDENTIFIED ROTTED MATERIAL IN LUMBER AND TIMBER MEMBERS, IF LESS THAN 1 INCH IN DEPTH, SHALL BE REPAIRED AS SHOWN ABOVE ON THE "EPOXY REPAIR DETAIL". IF ROT IS GREATER THAN 1 INCH IN DEPTH, THE ENTIRE MEMBER SHALL BE REPLACED AS DIRECTED BY THE RESIDENT ENGINEER.
2. REMOVE ALL ROTTED MATERIAL TO A MINIMUM OF 1/4" BEYOND EXTENT OF ROT. SAWCUT 1/4" DEEP AROUND PERIMETER OF REPAIR AREA.
3. CLEAN EXISTING MEMBER OF ALL DIRT, SAWDUST, ETC. AND PREPARE SURFACE PER MANUFACTURER'S RECOMMENDATIONS.
4. INSTALL/INJECT APPROVED EPOXY REPAIR MATERIAL PER MANUFACTURER'S RECOMMENDATIONS, (PAID UNDER ITEM 900.620, SPECIAL PROVISION (WOOD\EPOXY REPAIRS)). COLOR OF REPAIR MATERIAL TO MATCH EXISTING WOOD. A COMPLETED TEST SECTION SHALL BE MADE FOR APPROVAL BY THE RESIDENT ENGINEER.
5. INSTALL TWO GALVANIZED LAG SCREWS INTO EXISTING SPLIT THROUGH REPAIR MATERIAL (IF REQUIRED). SIZE OF LAG SCREWS TO BE DETERMINED BY THE RESIDENT ENGINEER.

NOTE
1. SEE SHEET 41 FOR NOTES PERTAINING TO THIS SHEET.

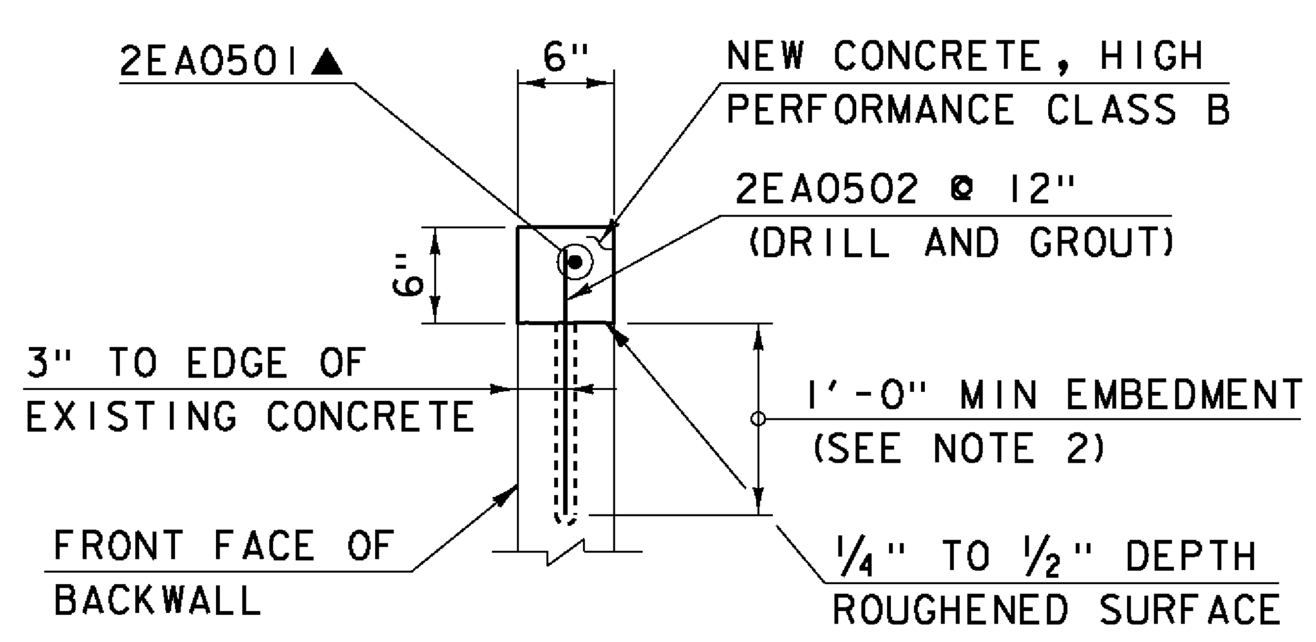
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225Detail5

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225Detail5.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
STRUCTURAL DETAILS (5 OF 5)

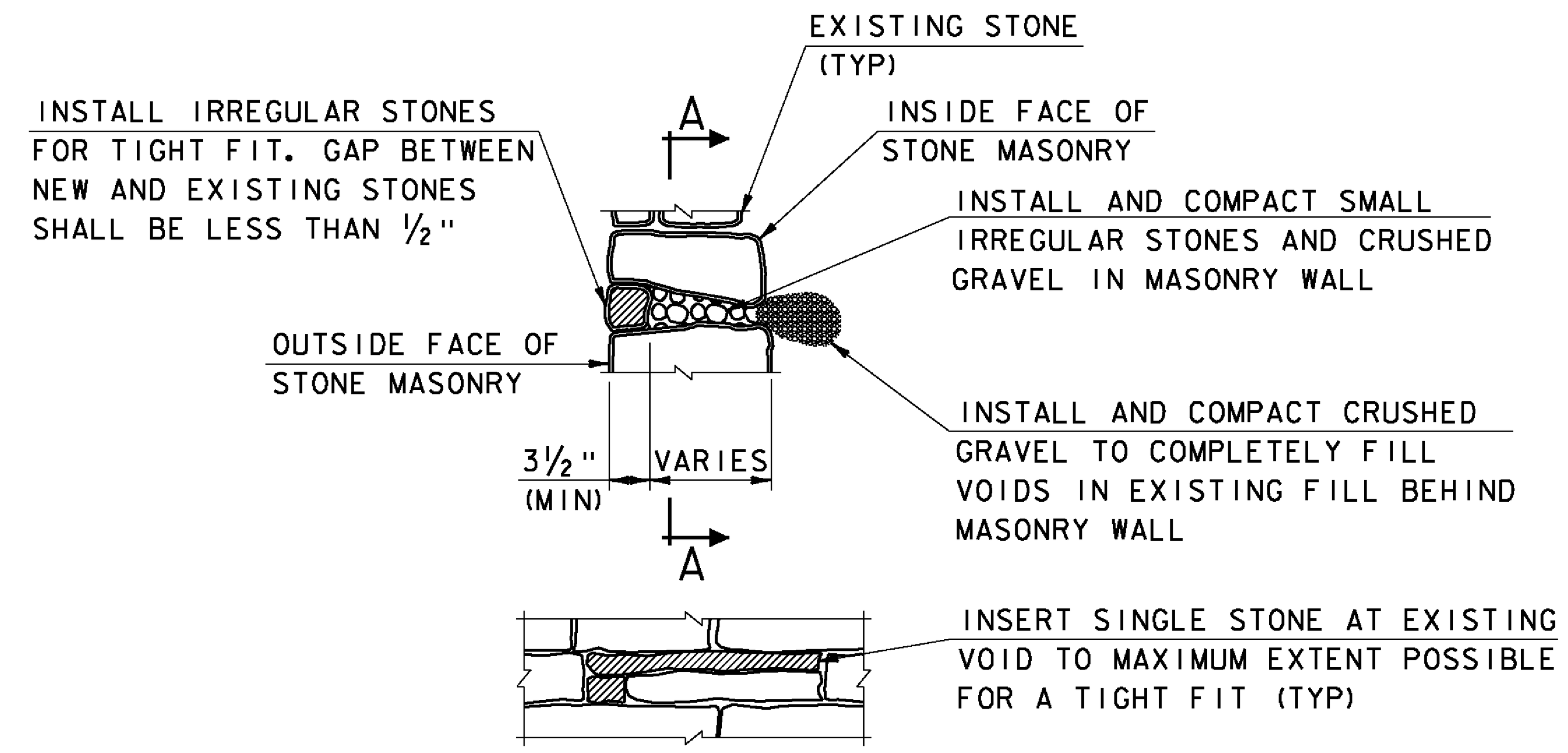
PLOT DATE: 7/1/2016
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 45B OF 60



NOTES
1. BACKWALL REPAIR WILL BE PAID UNDER ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, TYPE II.
2. DRILLING AND GROUTING WILL BE PAID UNDER ITEM 507.16, DRILLING AND GROUTING BARS.
3. SAWCUT EACH END OF REPAIR AREA. COST PAID UNDER ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, TYPE II.

ABUTMENT NO. 2 BACKWALL REPAIR DETAIL

SCALE: 1" = 1'-0"



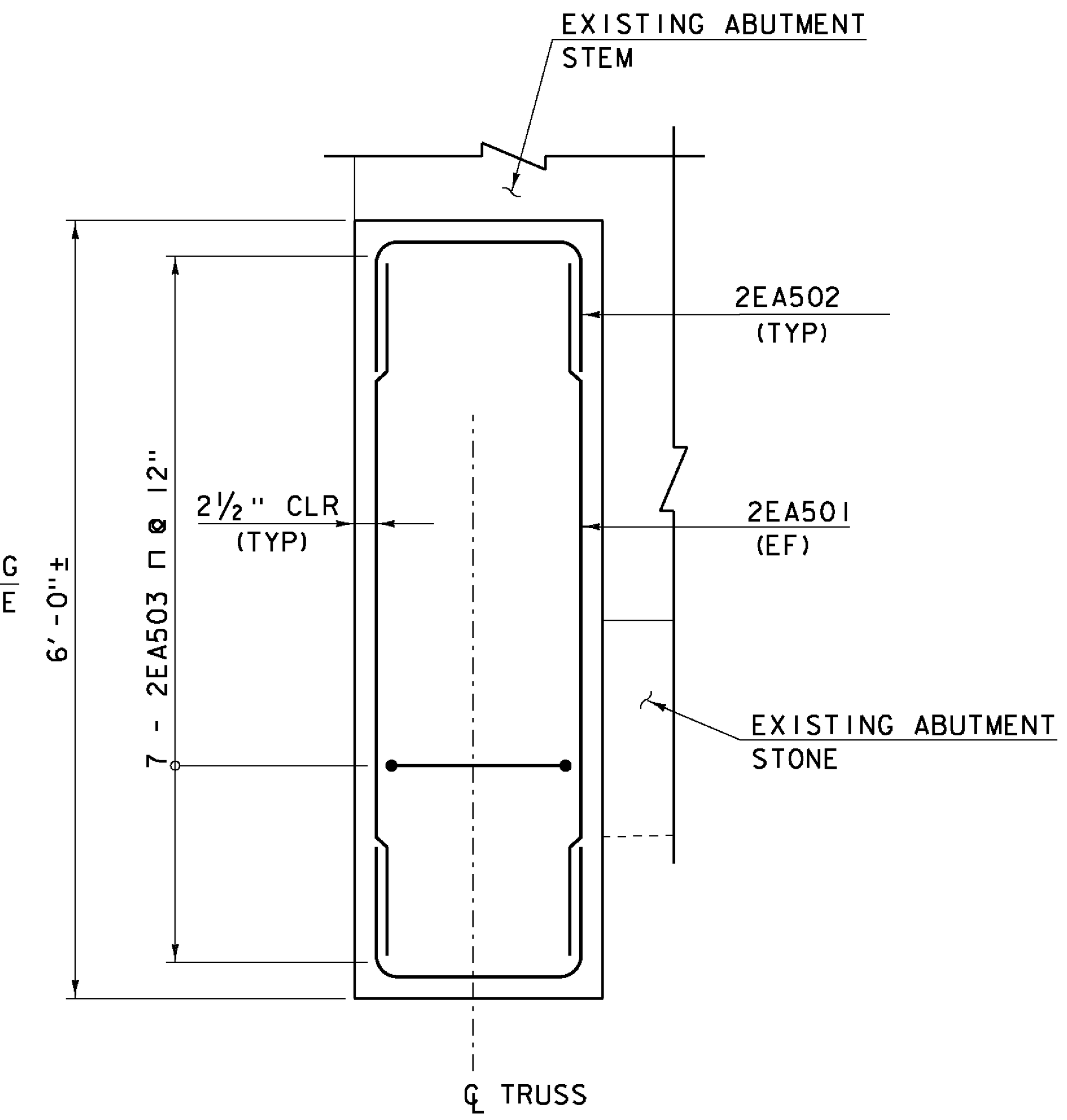
NOTE
WORK SHALL CONFORM TO AND BE PAID UNDER ITEM 602.40, REPAIRING STONE MASONRY

SECTION A-A

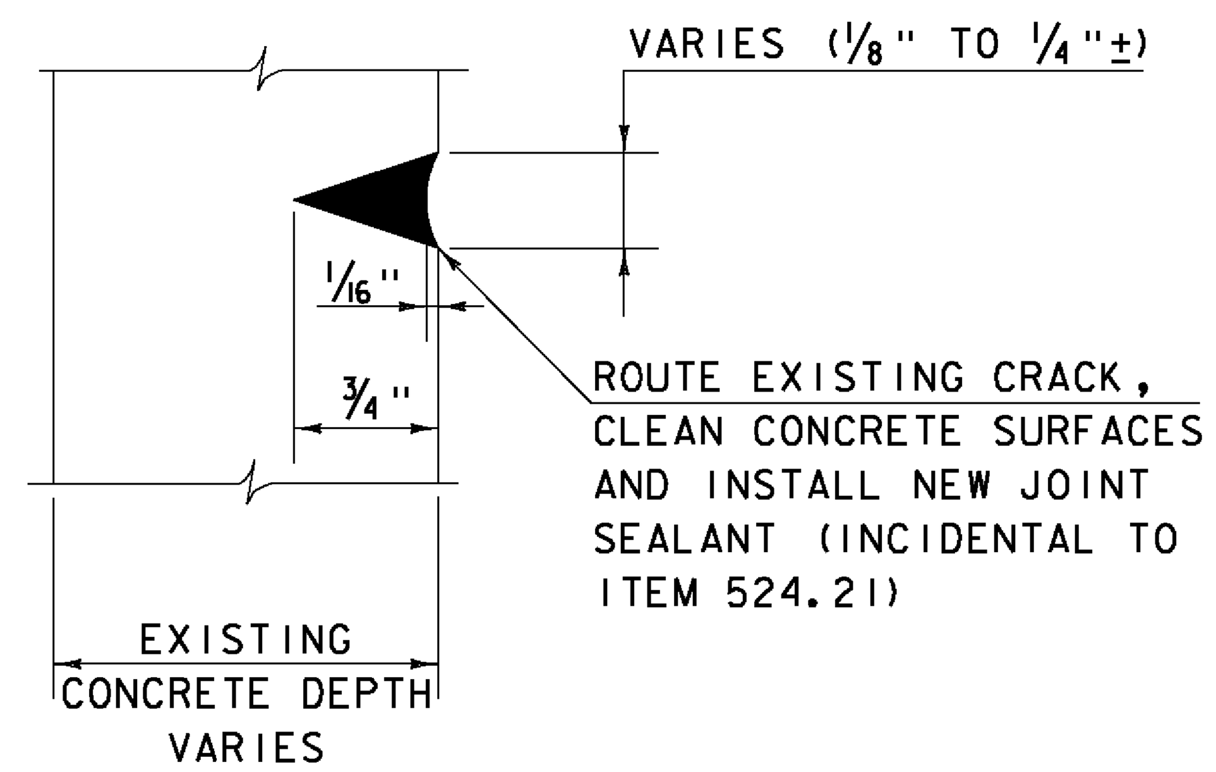
NOT TO SCALE

STONE MASONRY REPAIR DETAIL

NOT TO SCALE



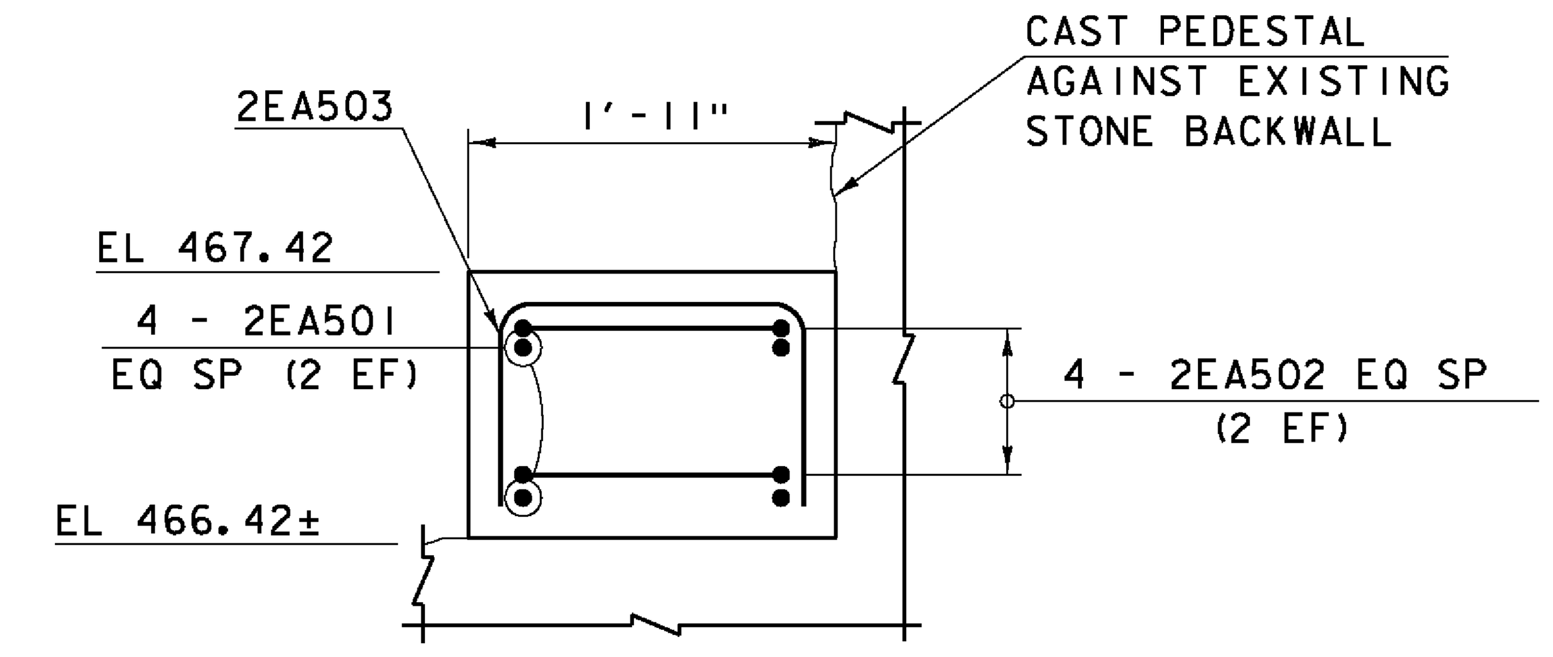
PLAN



NOTE
NEW JOINT SEALANT SHALL BE AN APPROVED ONE COMPONENT POLYURETHANE ELASTOMERIC SEALANT COMPLYING WITH ITEM 524.21, JOINT SEALER, POLYURETHANE.

CRACK SEAL DETAIL

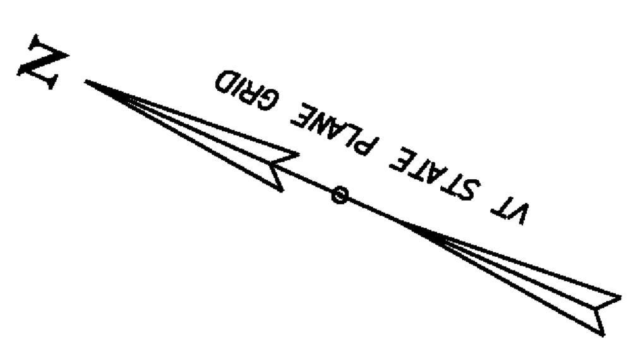
NOT TO SCALE

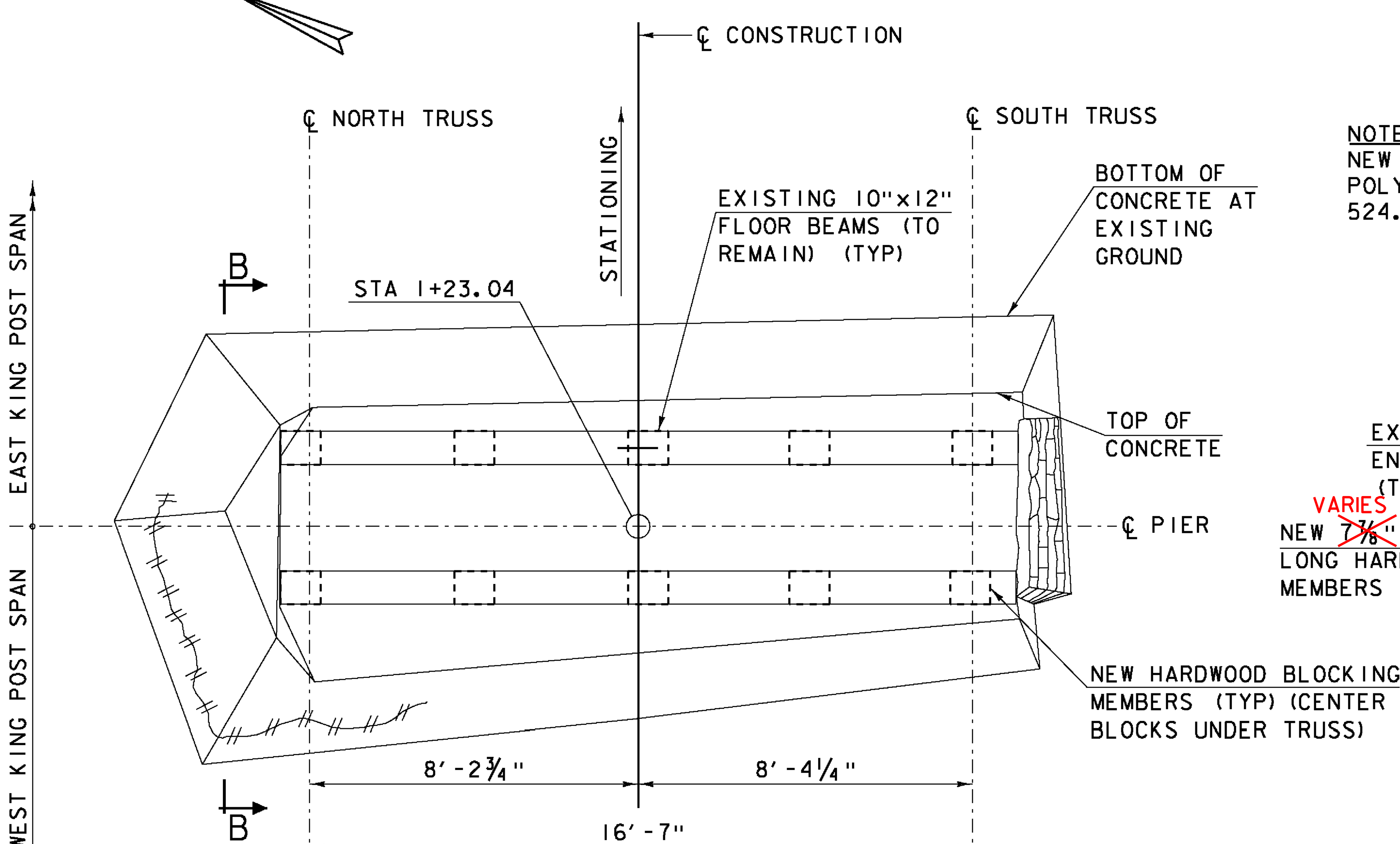


SECTION

ABUTMENT NO. 2 PEDESTAL REINFORCEMENT

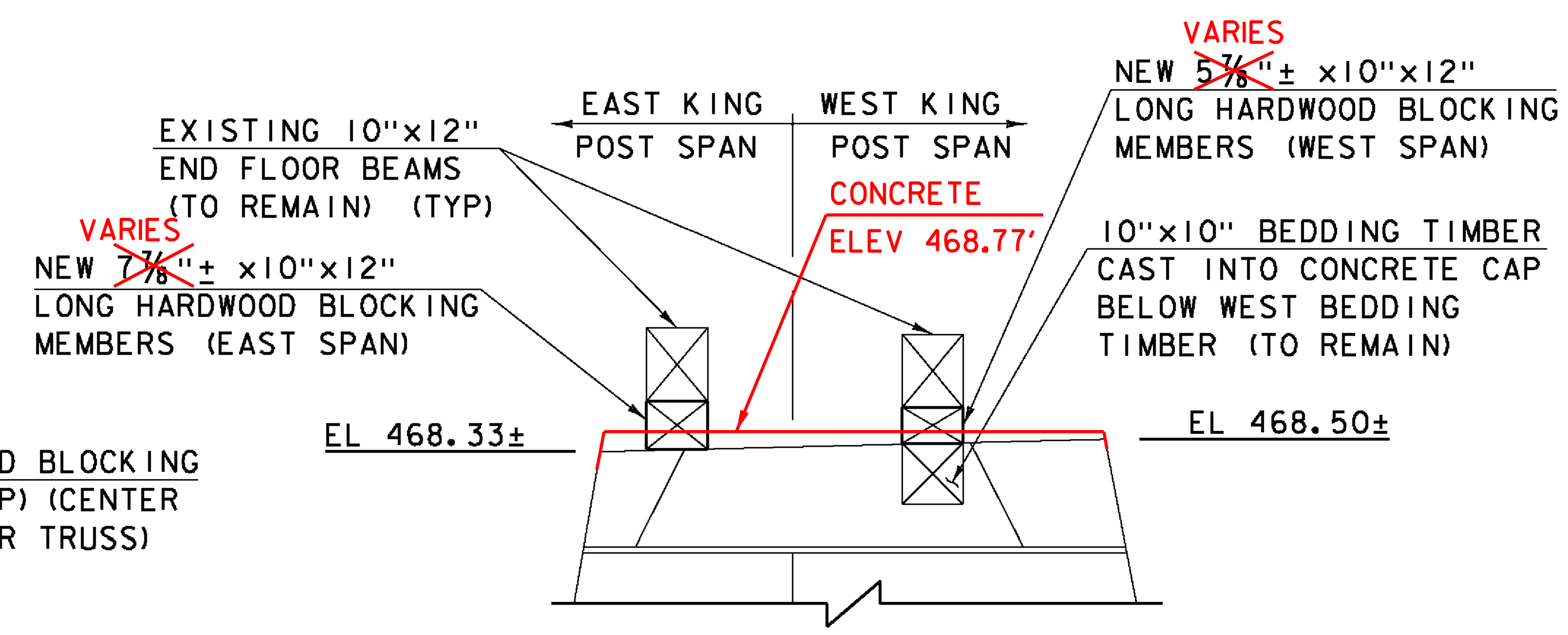
SCALE: 1" = 1'-0"





PIER NO. 1 PROPOSED BEDDING TIMBER DETAIL

SCALE: ⅜" = 1'-0"



SECTION B-B

SCALE: ½" = 1'-0"

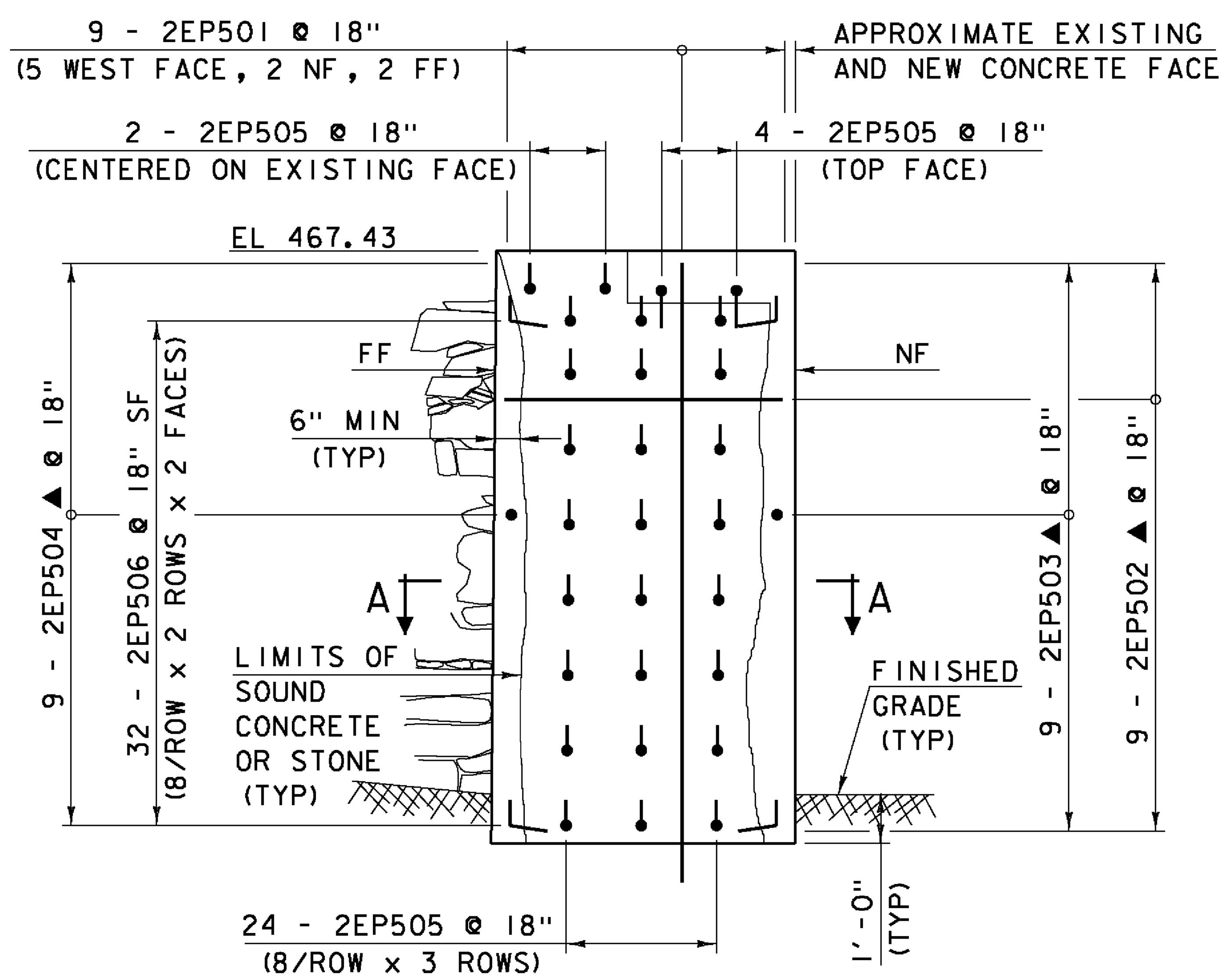
LEGEND
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

PROJECT NAME: TOWNSHEND	
PROJECT NUMBER: STP SCTT(1)	
FILE NAME: 904225ssDetail1.dgn	PLOT DATE: 8/13/2015
PROJECT LEADER: M.D.SARGENT	DRAWN BY: T.A.GELINAS
DESIGNED BY: J.C.RIPLEY	CHECKED BY: S.T.JAMES
SUBSTRUCTURE DETAILS (1 OF 3)	SHEET 46 OF 60

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225ssDetail1

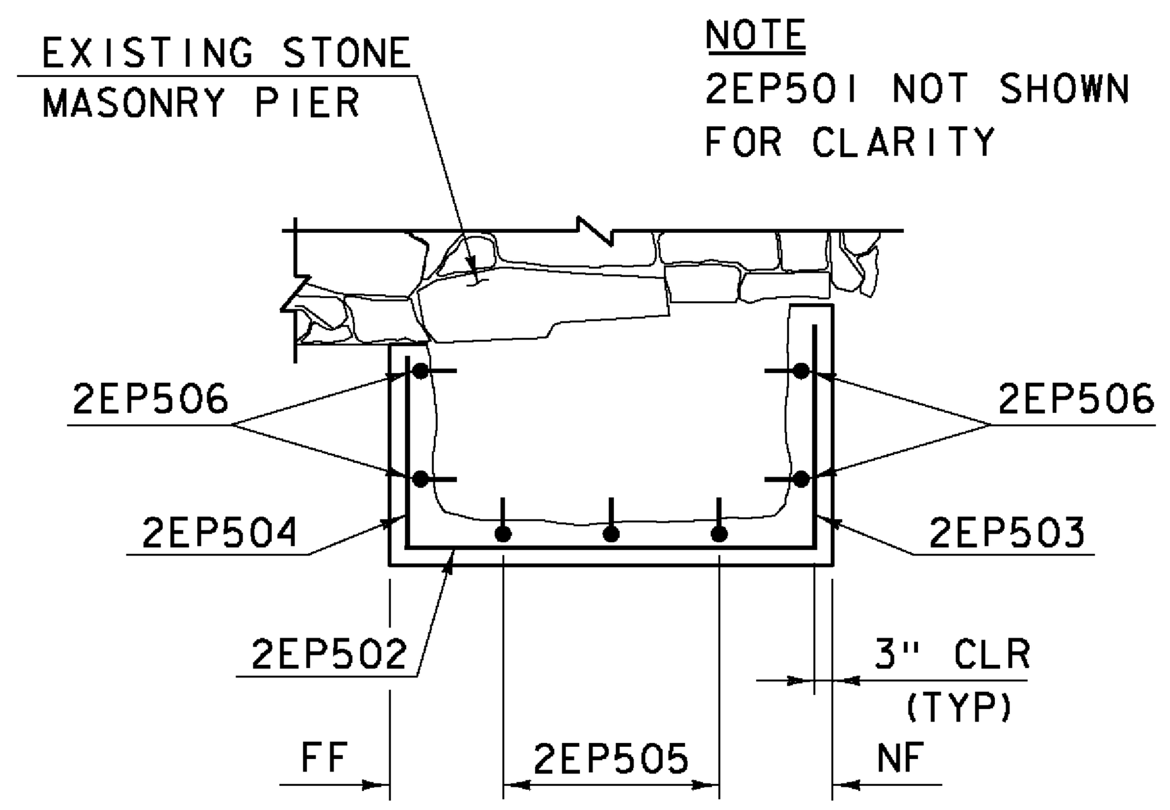
8/13/2015
10:25:45 AM
k:\904225\cadd\Pdf\Cutsheet\904225ssDetail1.dgn



PIER NO. 2 SOUTH PEDESTAL ELEVATION

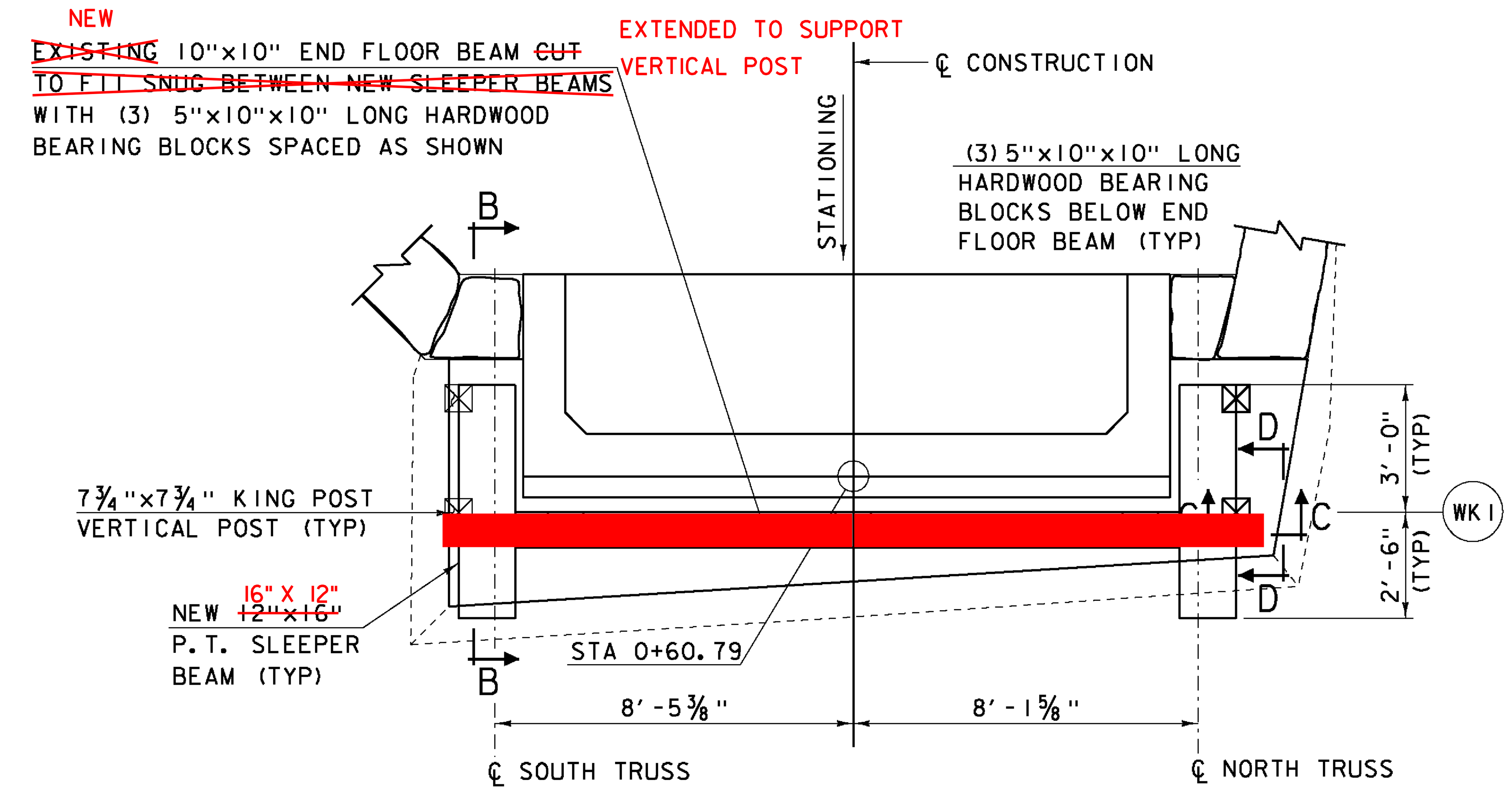
(WEST SIDE)

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



SECTION A-A

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

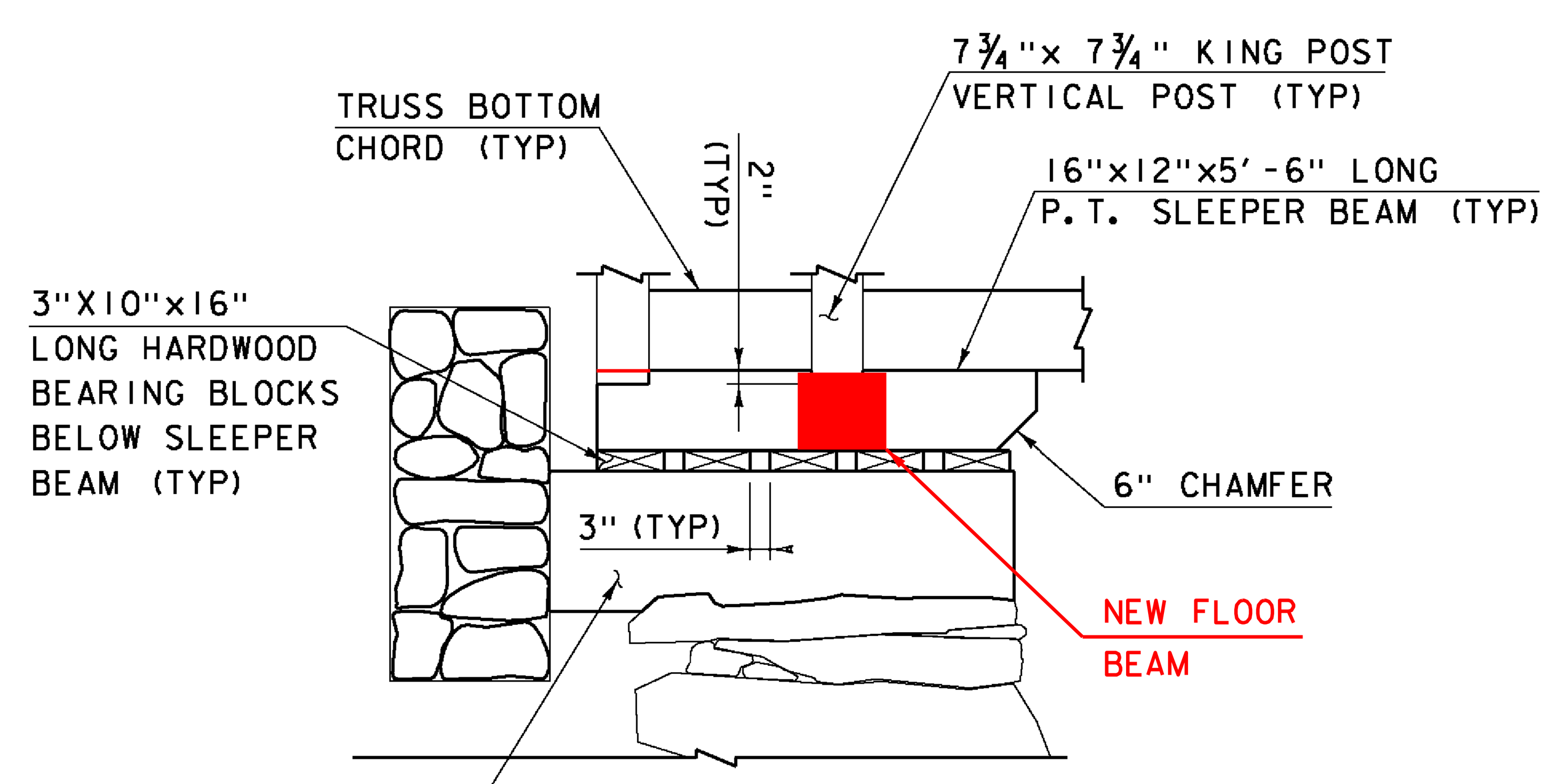


NOTE

NAILERS NOT SHOWN FOR CLARITY

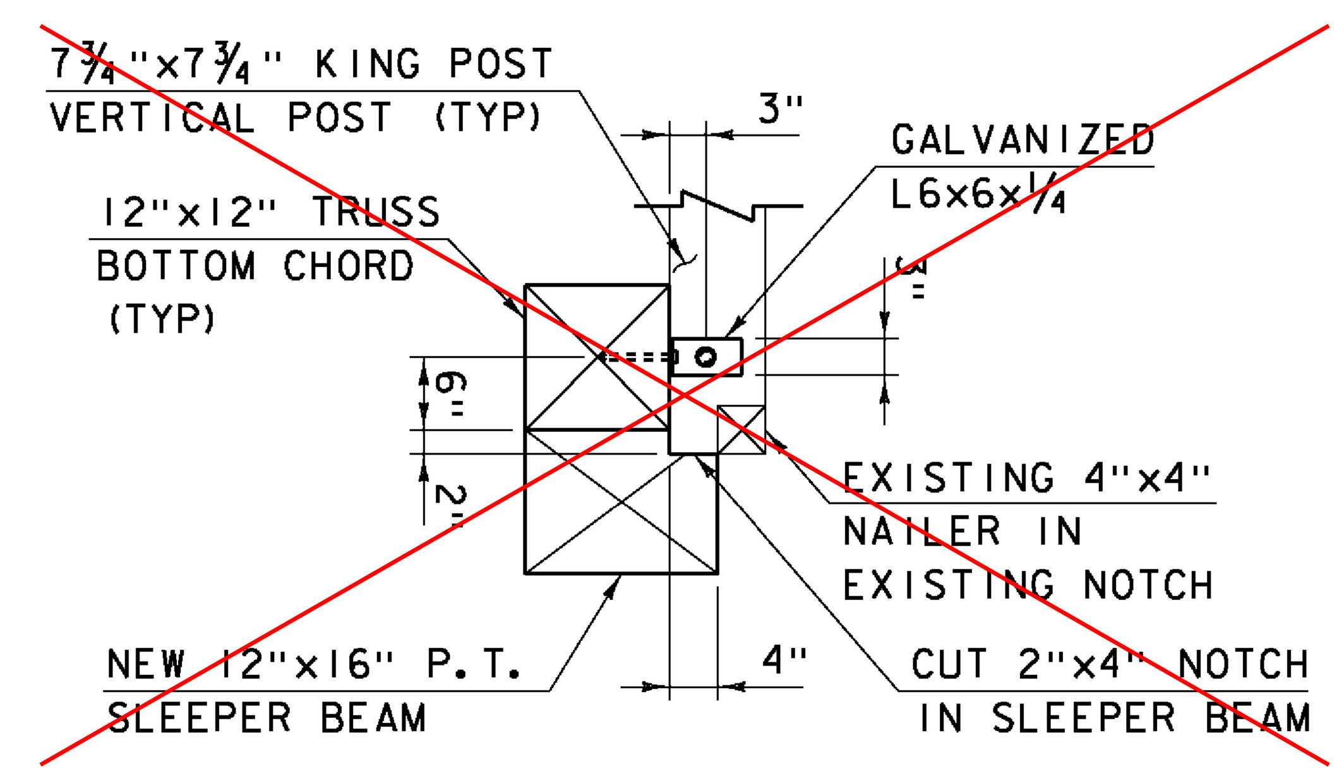
ABUTMENT NO. 1 PROPOSED BEDDING TIMBERS

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



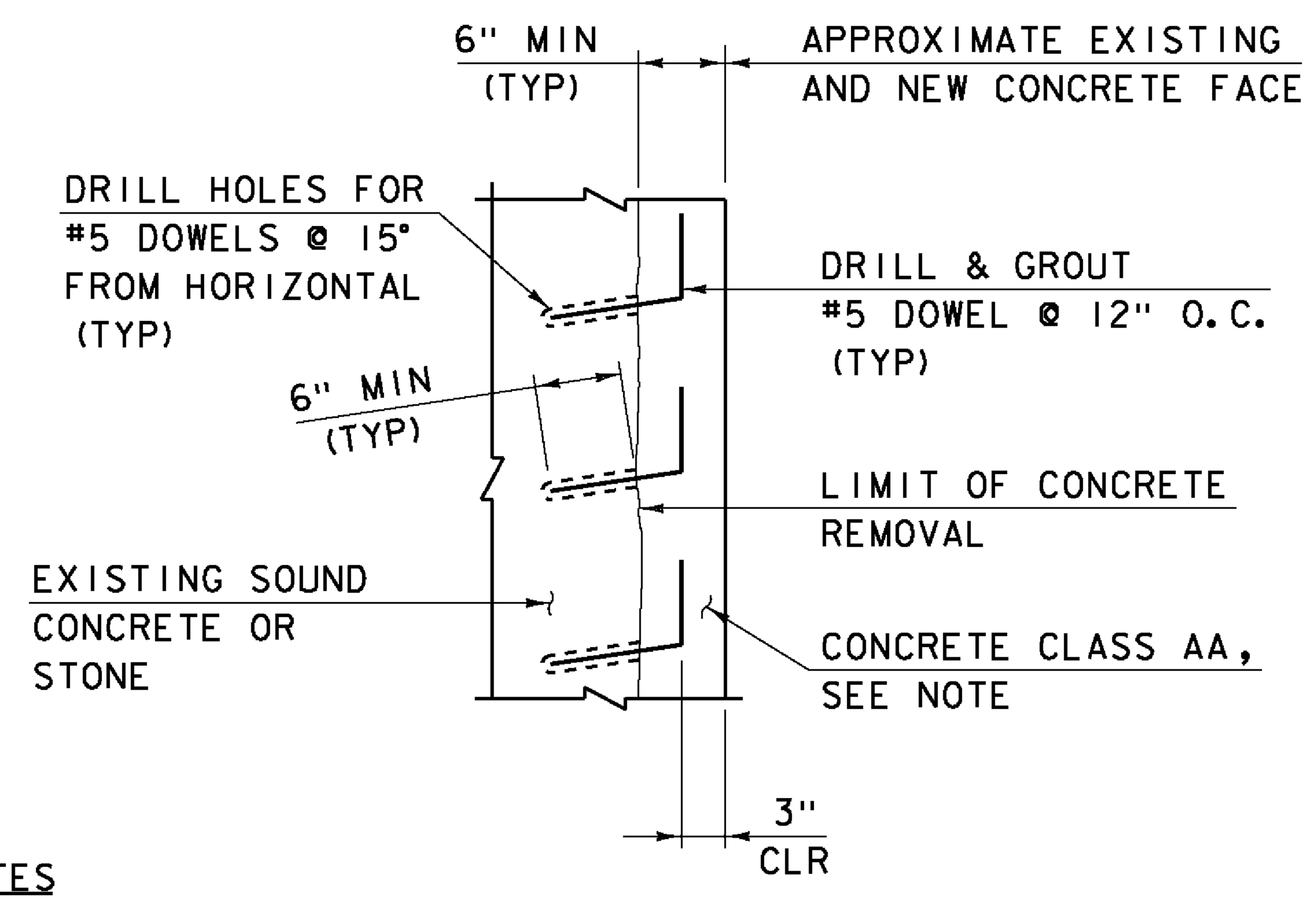
SECTION B-B

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



SECTION C-C

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

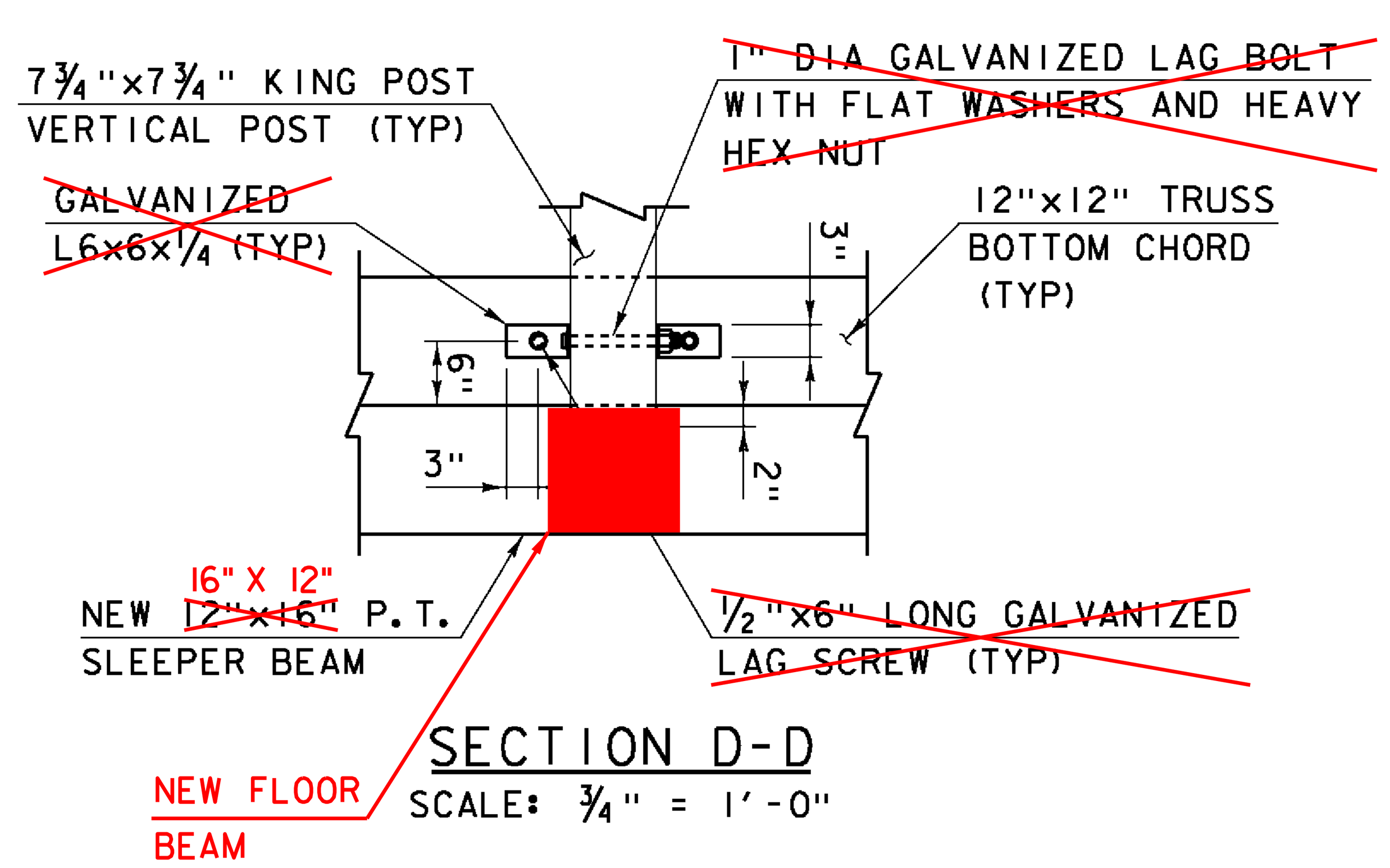


NOTES

1. PAYMENT FOR CONCRETE REPAIR WILL BE PAID UNDER ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II.
2. PAYMENT FOR INSTALLING DOWELS WILL BE PAID UNDER ITEM 507.16, DRILLING AND GROUTING DOWELS.

DOWELED CONCRETE REPAIR DETAIL

SCALE: 1" = 1'-0"



SECTION D-D

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

LEGEND

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

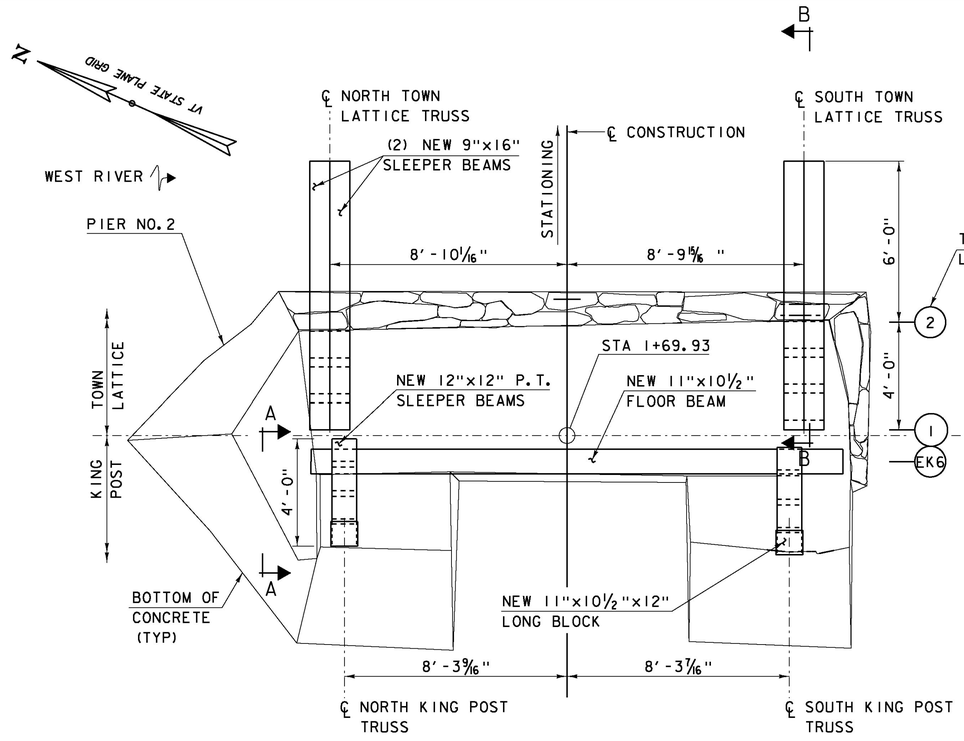
PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225ssDetail2

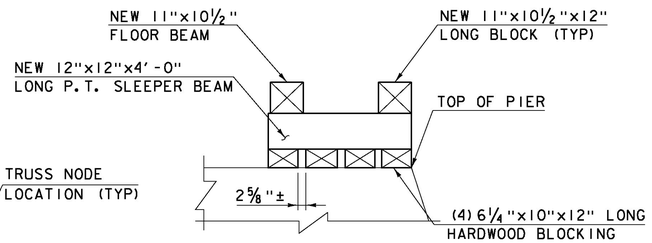
FILE NAME: 904225ssDetail2.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
SUBSTRUCTURE DETAILS (2 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 47 OF 60



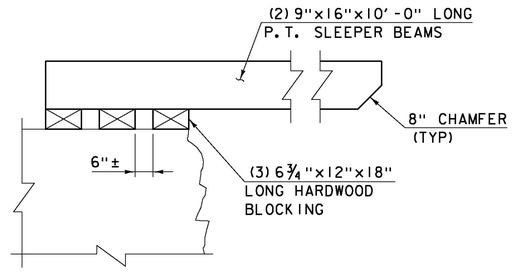
PIER NO. 2 PROPOSED BEDDING TIMBERS

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



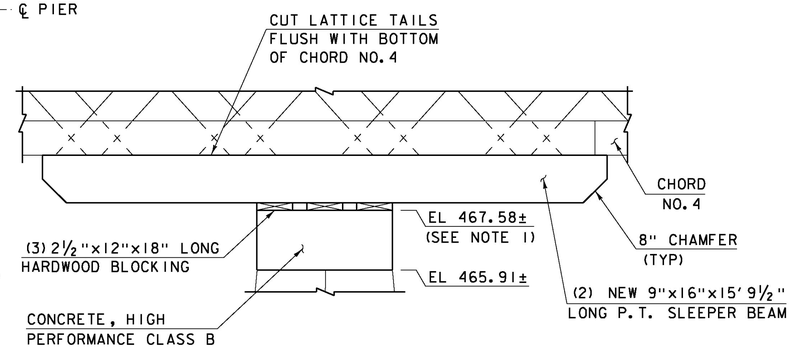
SECTION A-A

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



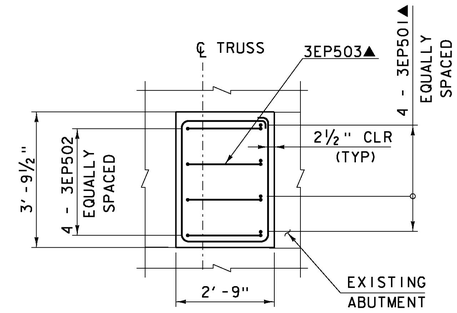
SECTION B-B

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

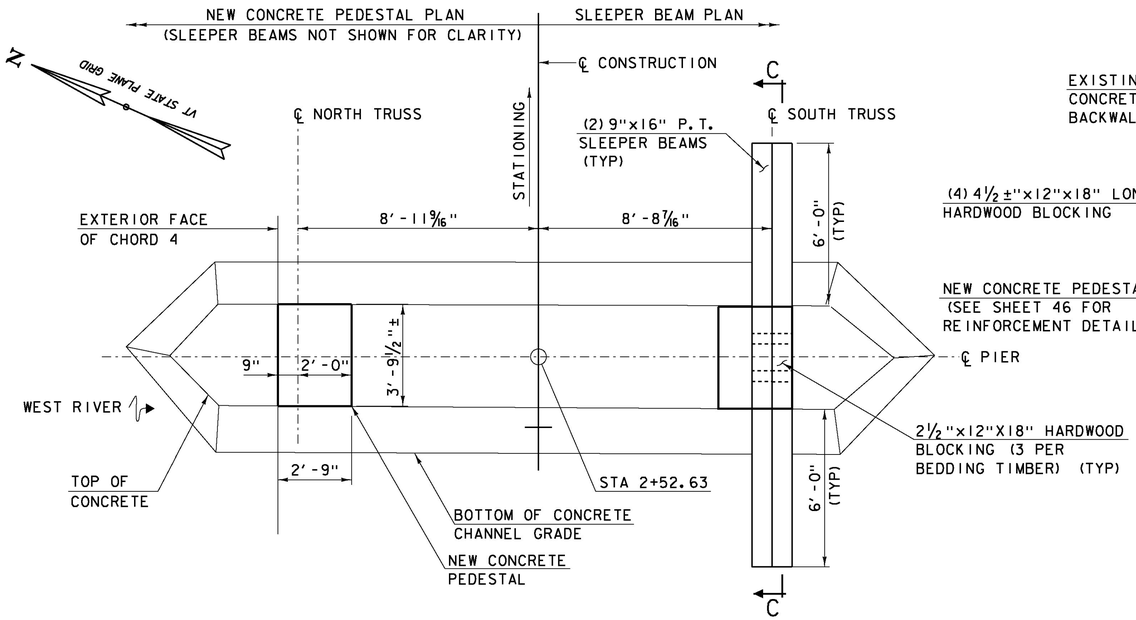


SECTION C-C

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

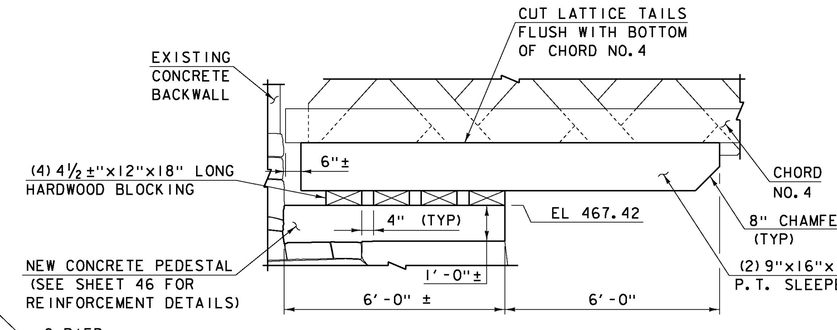


PLAN



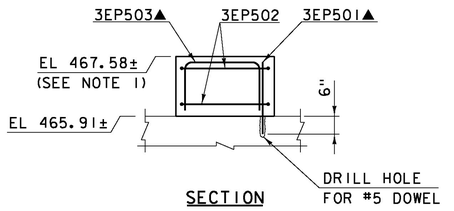
PIER NO. 3 PROPOSED BEDDING TIMBER PLAN

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



ABUTMENT NO. 2 PROPOSED BEDDING TIMBERS

(NORTH ELEVATION SHOWN, SOUTH ELEVATION SIMILAR)
SCALE: 1/2" = 1'-0"



SECTION

PIER NO. 3 PEDESTAL REINFORCEMENT

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

NOTE

1. FINAL ELEVATION TO BE SET IN FIELD UPON COMPLETION OF JACKING OPERATIONS. SEE CAMBER NOTES ON SHEET 43 FOR MORE INFORMATION.

LEGEND

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225ssDetail3

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225ssDetail3.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
SUBSTRUCTURE DETAILS (3 OF 3)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 48 OF 60

8/13/2015
10:23:45 AM
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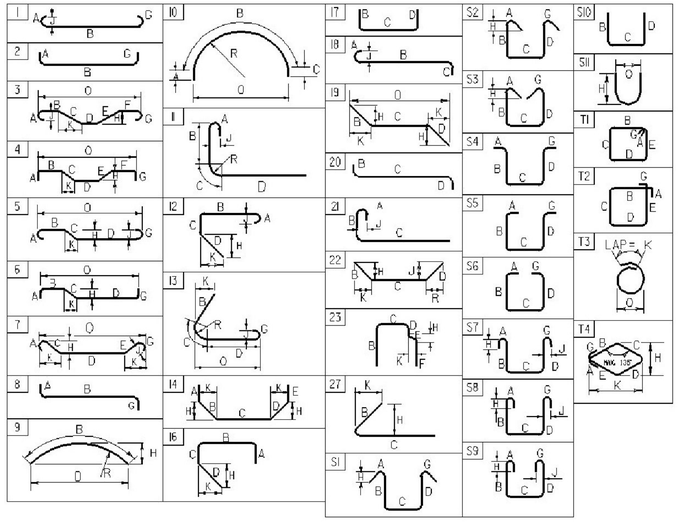
STATE OF VERMONT
AGENCY OF TRANSPORTATION

REINFORCING STEEL SCHEDULE

ITEM	EACH	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
	ABUTMENT NO. 1																
	4	5	14'- 10"	1EA501	STR												
▲	12	5	19'- 9"	1EA502	STR												
△ ▲	32	5	7'- 3"	1EA503	STR												
▲	12	5	7'- 3"	1EA504	STR												
	3	5	13'- 3"	1EA505	STR												
	3	5	14'- 10"	1EA506	STR												
	6	5	3'- 7"	1EA507	STR												
	6	5	4'- 10"	1EA508	STR												
	31	5	3'- 11"	1EA509	17		0'- 10"	3'- 1"	0'- 0"								
	16	5	3'- 3"	1EA510	17		0'- 10"	2'- 5"	0'- 0"								
	16	5	2'- 9"	1EA511	17		0'- 10"	1'- 1"	0'- 10"								
	21	5	3'- 9"	1EA512	17		1'- 7"	0'- 7"	1'- 7"								
	6	5	4'- 11"	1EA513	22		2'- 0"	0'- 11"	2'- 0"				1'- 5"	1'- 5"	1'- 5"	1'- 5"	
	6	5	4'- 0"	1EA514	17		2'- 0"	2'- 0"	0'- 0"								
	PIER NO. 2																
	9	5	11'- 4"	2EP01	STR												
	9	5	5'- 5"	2EP02	STR												
▲	9	5	5'- 4"	2EP03	STR												
▲	9	5	5'- 6"	2EP04	STR												
	30	5	1'- 3"	2EP05	17		0'- 6"	0'- 9"	0'- 0"								
	32	5	1'- 3"	2EP06	22		0'- 6"	0'- 9"	0'- 0"				0'- 5"	0'- 0"	0'- 2"	0'- 0"	
	PIER NO. 3																
▲	4	5	2'- 0"	3EP501	STR												
	2	5	12'- 0"	3EP502	T1	0'- 4"	2'- 4"	3'- 4"	2'- 4"	3'- 4"		0'- 4"					
▲	4	5	4'- 10"	3EP503	17		1'- 3"	2'- 4"	1'- 3"								
	ABUTMENT NO. 2																
	8	5	5'- 7"	2EA501	STR												
	8	5	2'- 4"	2EA502	17		0'- 10"	1'- 6"	0'- 0"								
	7	5	2'- 8"	2EA503	17		0'- 7"	1'- 6"	0'- 7"								

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



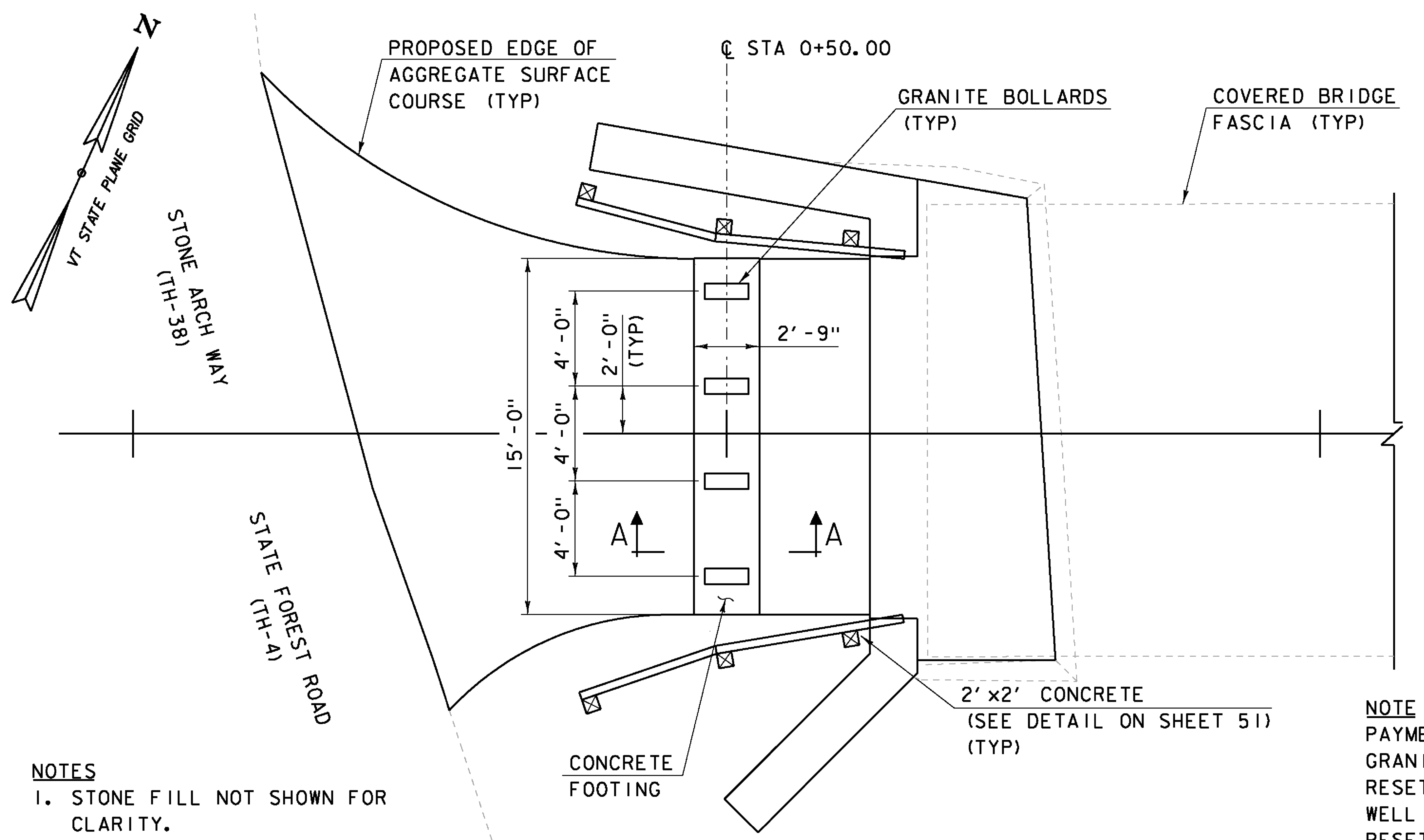
ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES^2	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

PROJECT NAME: **TOWNSHEND**
PROJECT NUMBER: **STP SCTT(1)**

FILE NAME: **904225reinf.xls**
PROJECT MANAGER: **M.D.SARGENT**
DESIGNED BY: **W.DURACK**
REINFORCING STEEL SCHEDULE SHEET #1

PLOT DATE: **4/10/2015**
DRAWN BY: **P.DUSTIN**
CHECKED BY: **S.T.JAMES**
SHEET **49** OF **60**



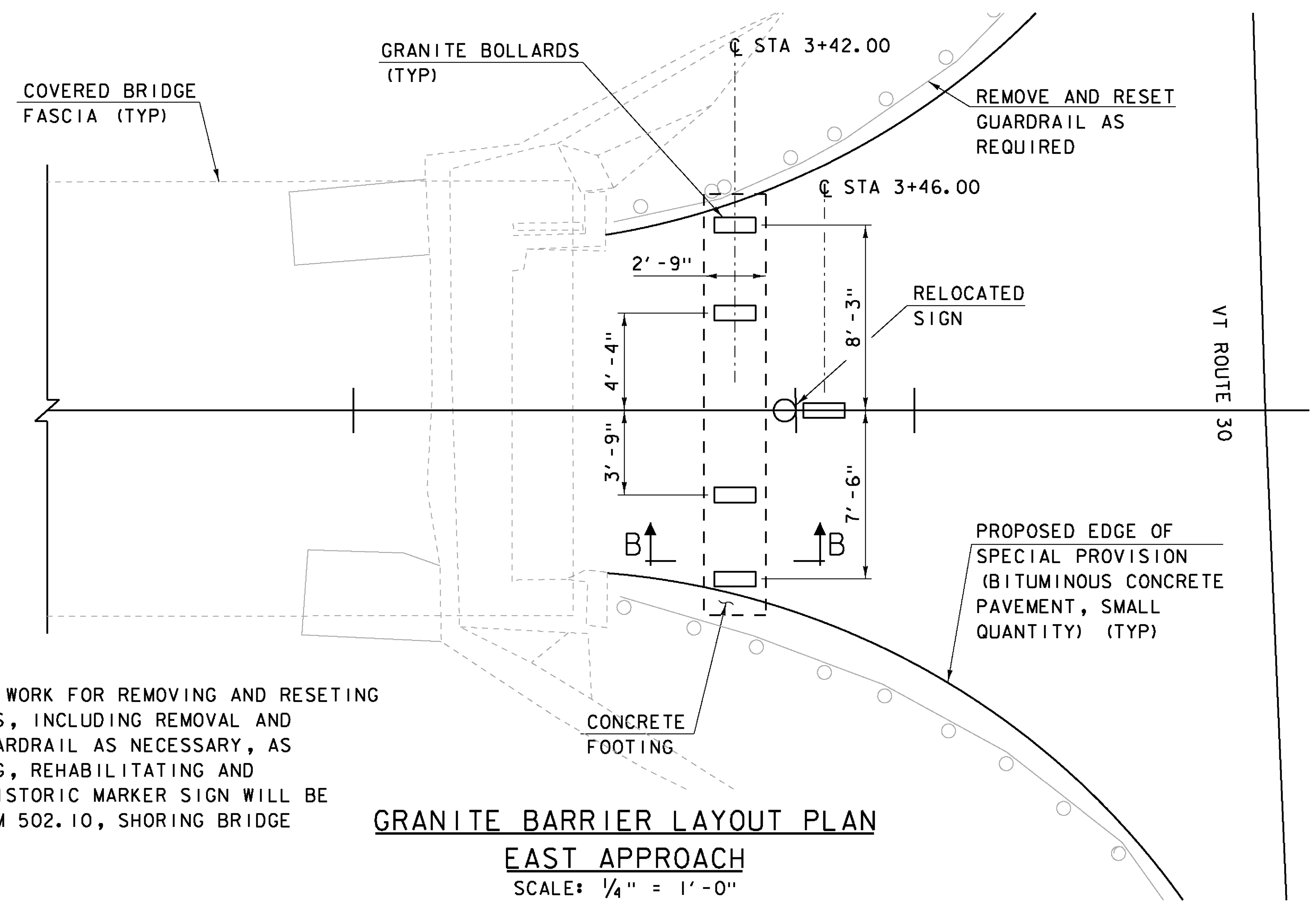
NOTES

1. STONE FILL NOT SHOWN FOR CLARITY.
2. ALL WORK FOR REMOVING AND RESETING GRANITE BOLLARDS IS INCLUDED IN ITEM 502.10, SHORING BRIDGE SUPERSTRUCTURE.

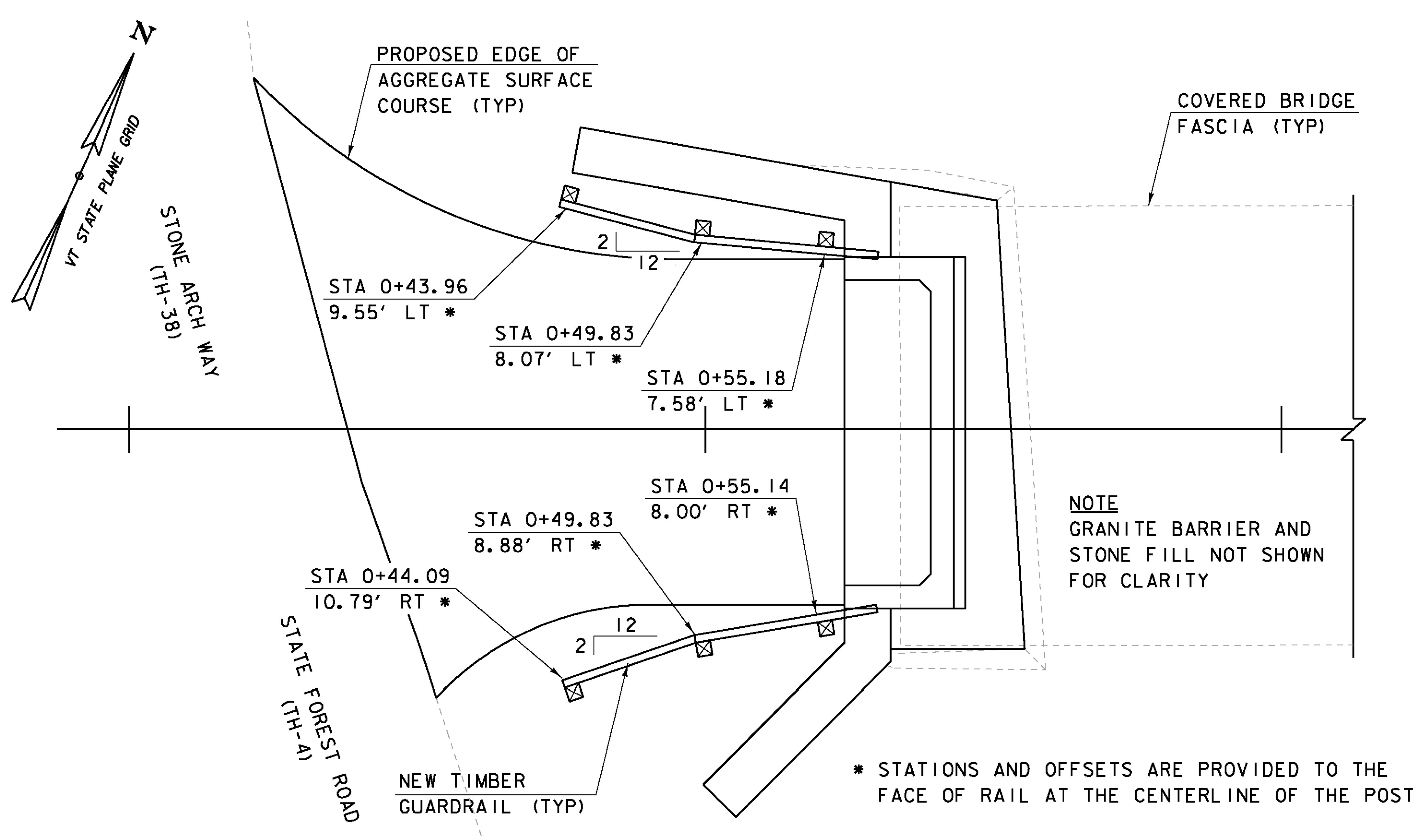
GRANITE BARRIER LAYOUT PLAN
WEST APPROACH
SCALE: ¼" = 1'-0"

NOTE

PAYMENT FOR ALL WORK FOR REMOVING AND RESETING GRANITE BOLLARDS, INCLUDING REMOVAL AND RESETTING OF GUARDRAIL AS NECESSARY, AS WELL AS REMOVING, REHABILITATING AND RESETTING THE HISTORIC MARKER SIGN WILL BE INCLUDED IN ITEM 502.10, SHORING BRIDGE SUPERSTRUCTURE



GRANITE BARRIER LAYOUT PLAN
EAST APPROACH
SCALE: ¼" = 1'-0"

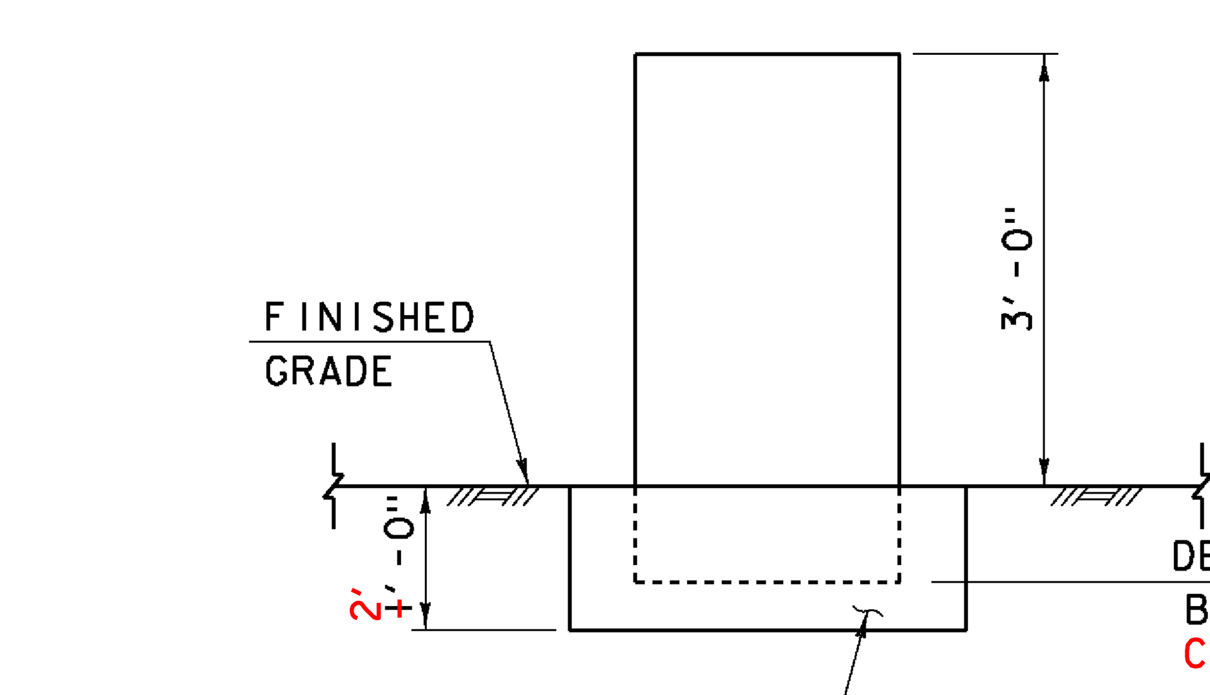


NOTE

GRANITE BARRIER AND STONE FILL NOT SHOWN FOR CLARITY

* STATIONS AND OFFSETS ARE PROVIDED TO THE FACE OF RAIL AT THE CENTERLINE OF THE POST

RAIL LAYOUT PLAN
SCALE: ¼" = 1'-0"



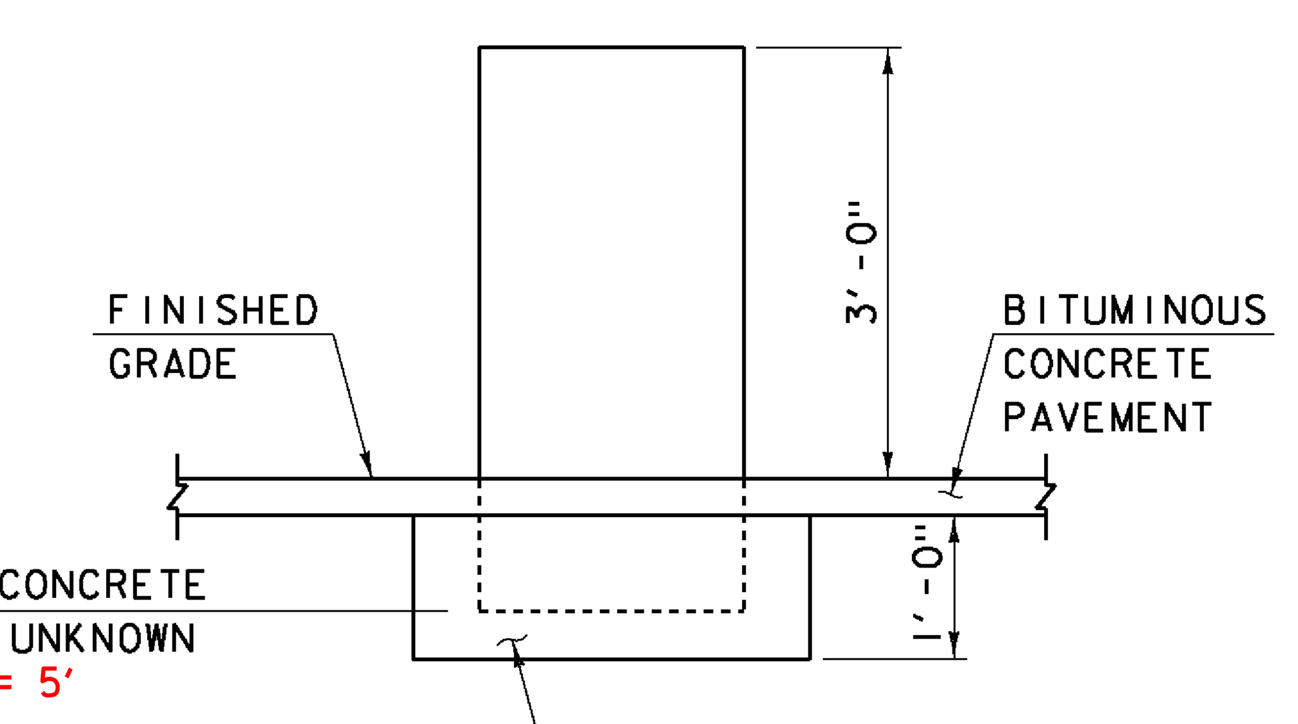
DEPTH OF CONCRETE BOLLARDS UNKNOWN
CONCRETE = 5' HEIGHT

CONCRETE FOOTING CONFORMING TO CONCRETE, HIGH PERFORMANCE CLASS B

NOTE

PAYMENT ALL WORK INCLUDING CONCRETE HIGH PERFORMANCE CLASS B WILL BE MADE UNDER ITEM 502.10, SHORING BRIDGE SUPERSTRUCTURE

SECTION A-A
SCALE: ¾" = 1'-0"



CONCRETE FOOTING CONFORMING TO CONCRETE, HIGH PERFORMANCE CLASS B

SECTION B-B
SCALE: ¾" = 1'-0"

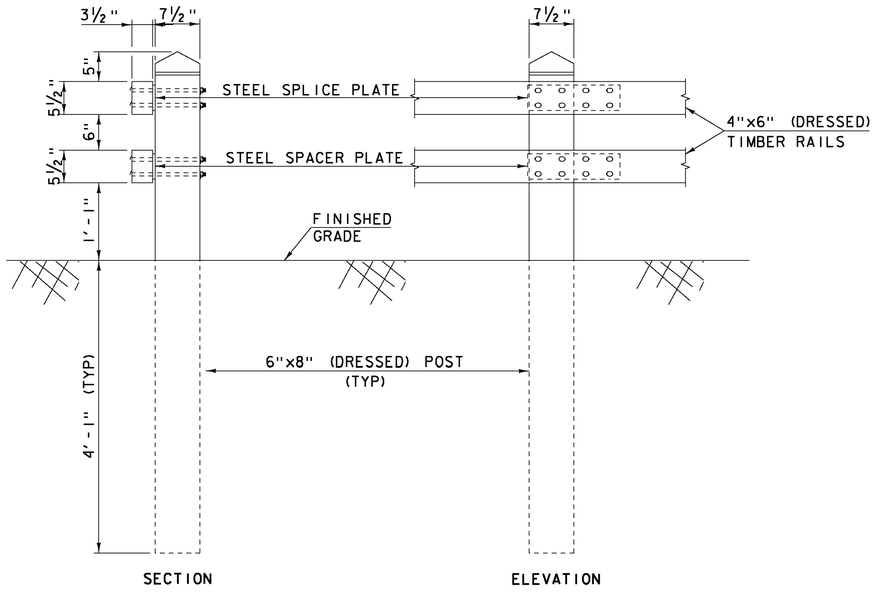
PROJECT NAME:	TOWNSHEND
PROJECT NUMBER:	STP SCTT(1)

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225rlay

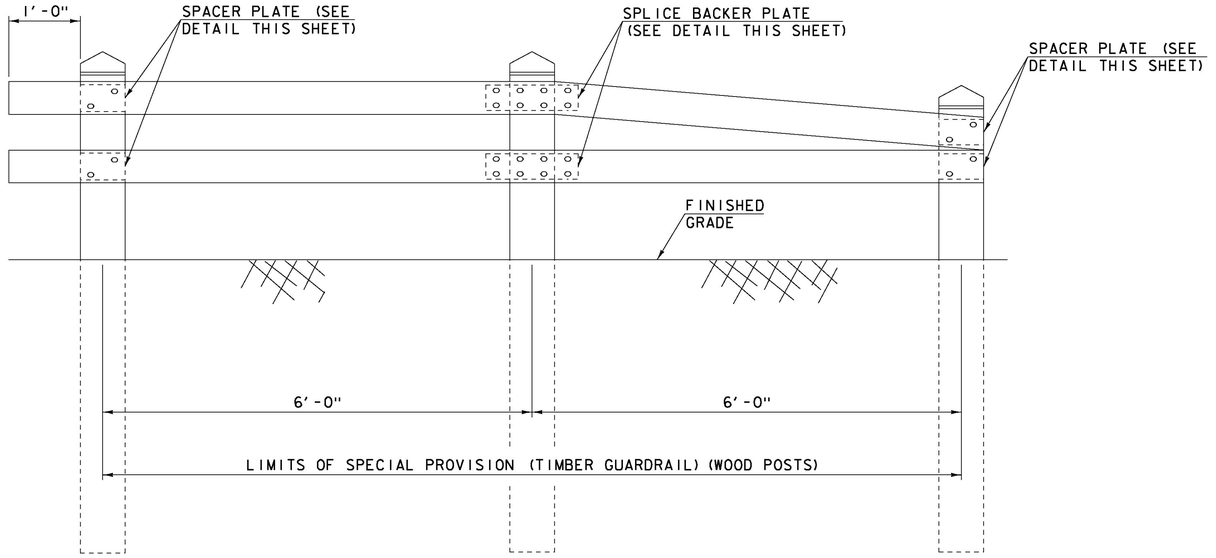
FILE NAME: 904225rlay.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
WEST APPROACH RAIL LAYOUT

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 50 OF 60



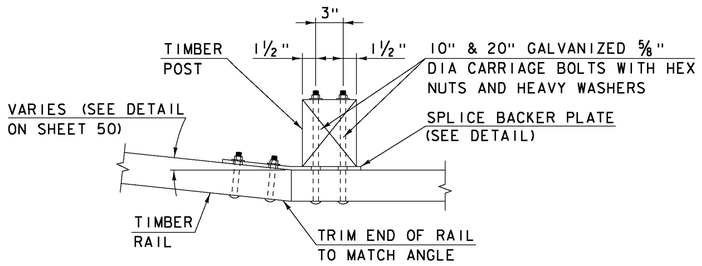
TIMBER APPROACH RAIL

SCALE: 1" = 1'-0"



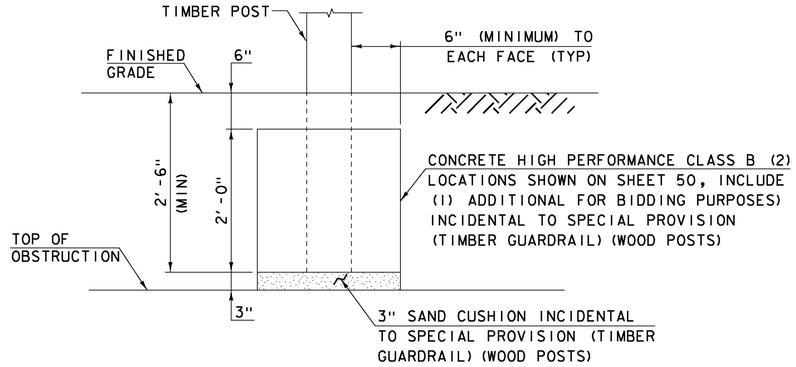
TYPICAL TIMBER RAIL ASSEMBLY ELEVATION

SCALE: 1" = 1'-0"



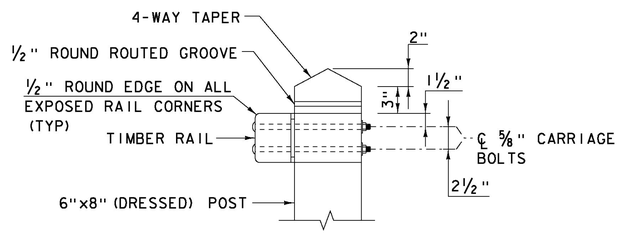
BENT SPLICE CONNECTION

SCALE: 1½" = 1'-0"



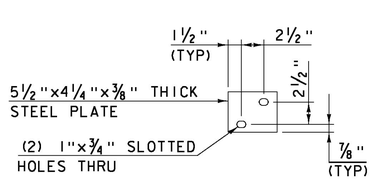
MODIFIED TIMBER RAIL POST INSTALLATION

SCALE: 1" = 1'-0"



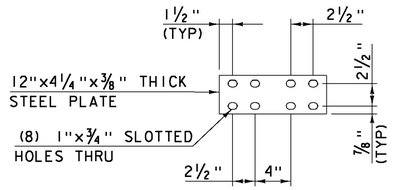
TIMBER POST DETAIL

SCALE: 1½" = 1'-0"



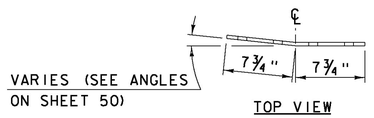
SPACER PLATE DETAIL

SCALE: 1½" = 1'-0"



SPLICE BACKER PLATE DETAIL

SCALE: 1½" = 1'-0"



BENT SPLICE BACKER PLATE DETAIL

SCALE: 1½" = 1'-0"

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225Brail

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225Brail.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
WEST APPROACH RAILING DETAILS

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 51 OF 60

8/13/2015
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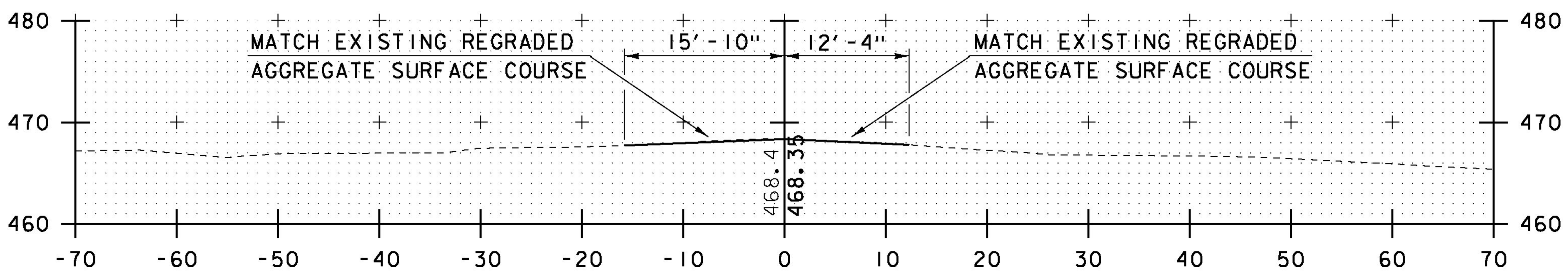

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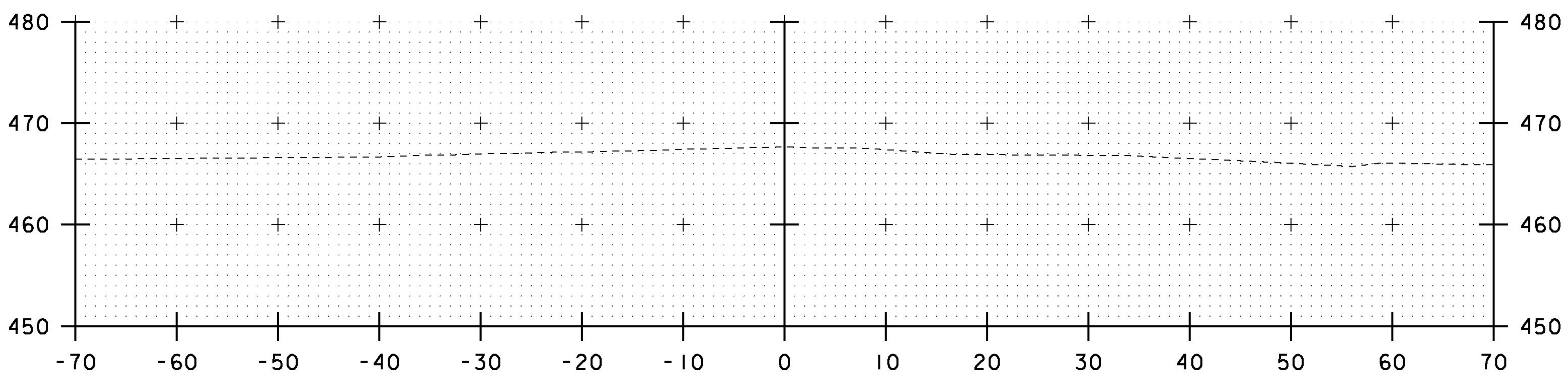

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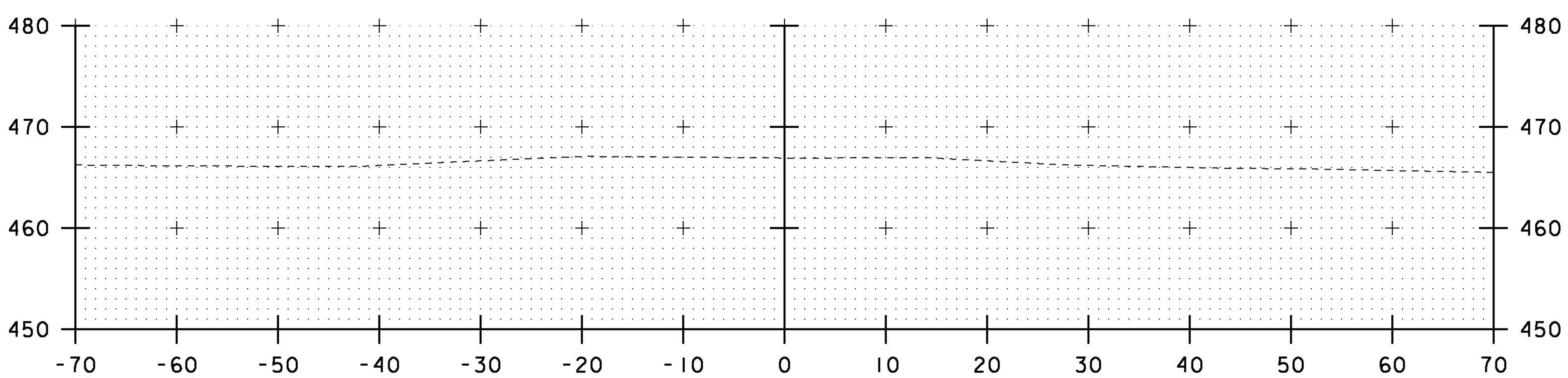

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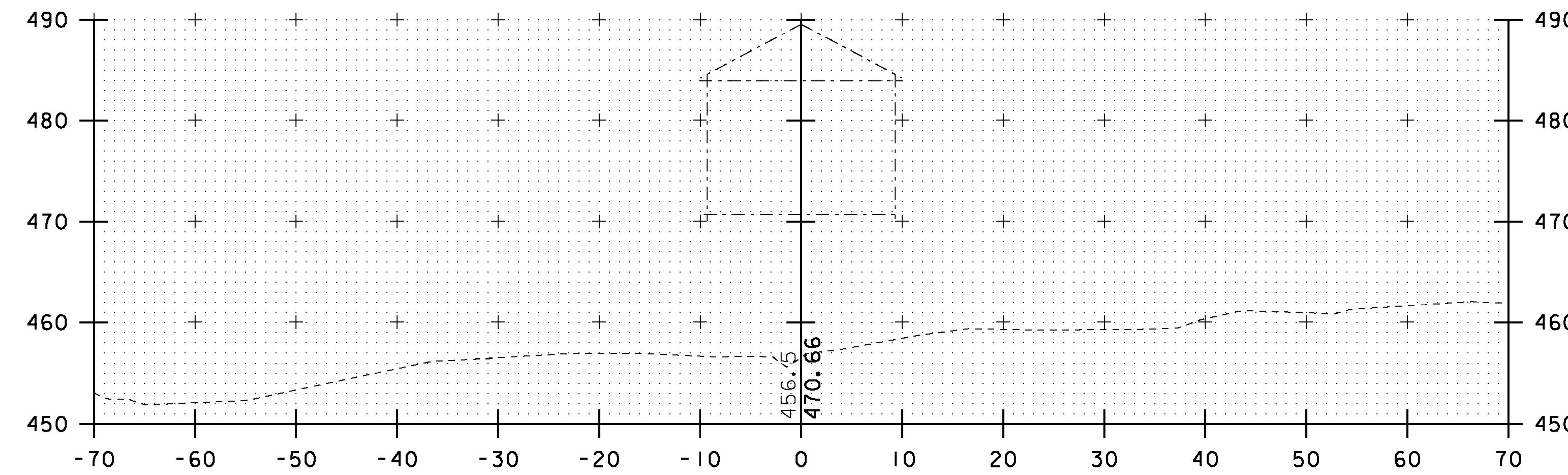

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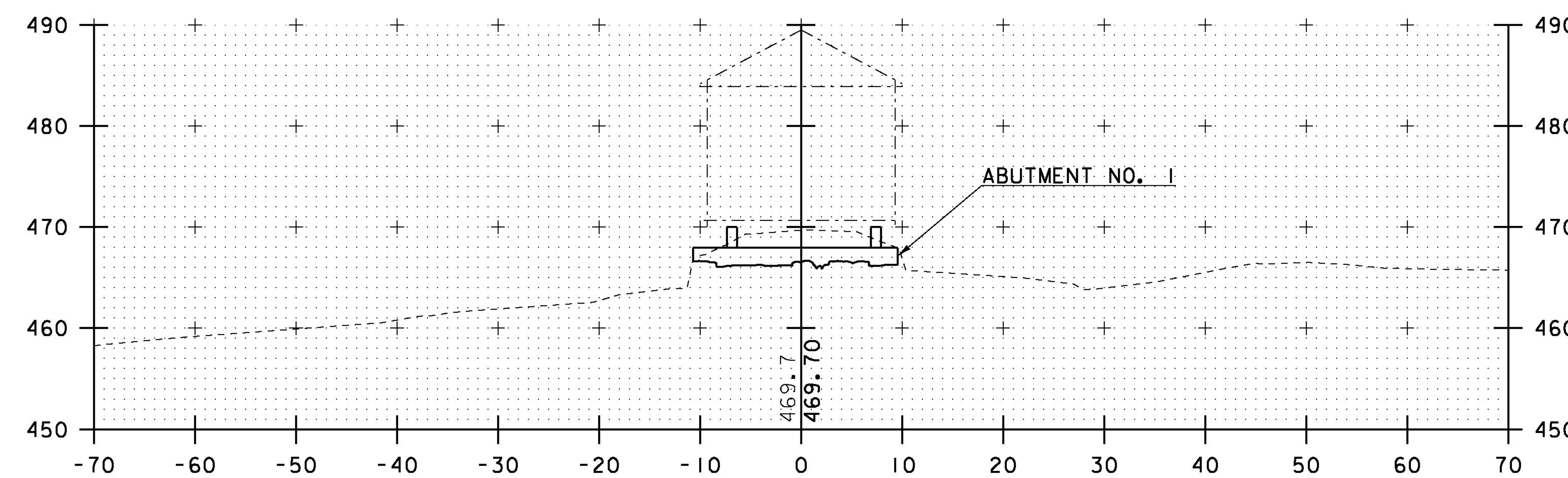

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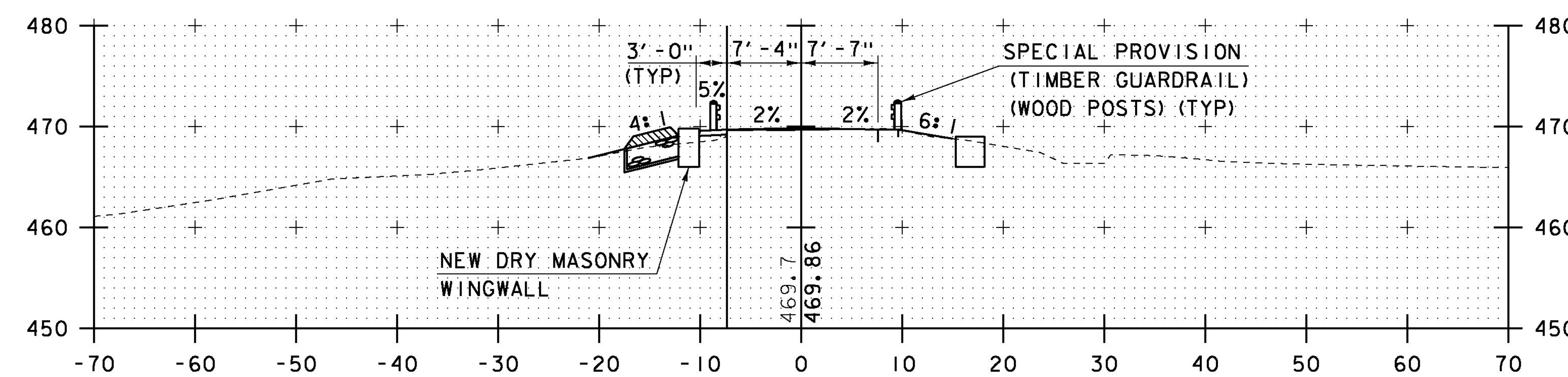

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SCALE 1" = 10'-0"

STA. 0+00 TO STA. 0+75

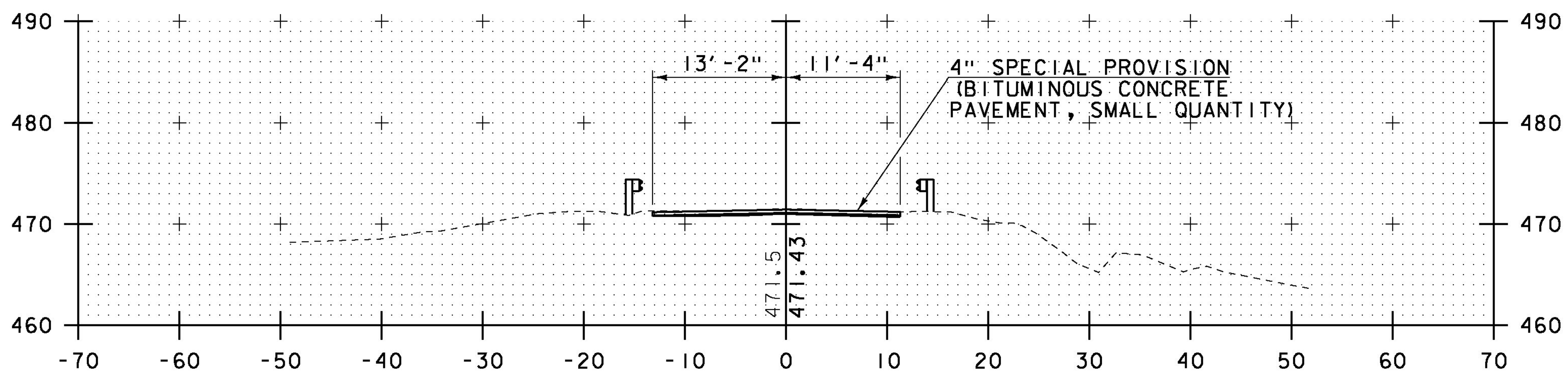
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225XSI

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225xsl.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
ROADWAY CROSS SECTIONS (1 OF 2)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 52 OF 60



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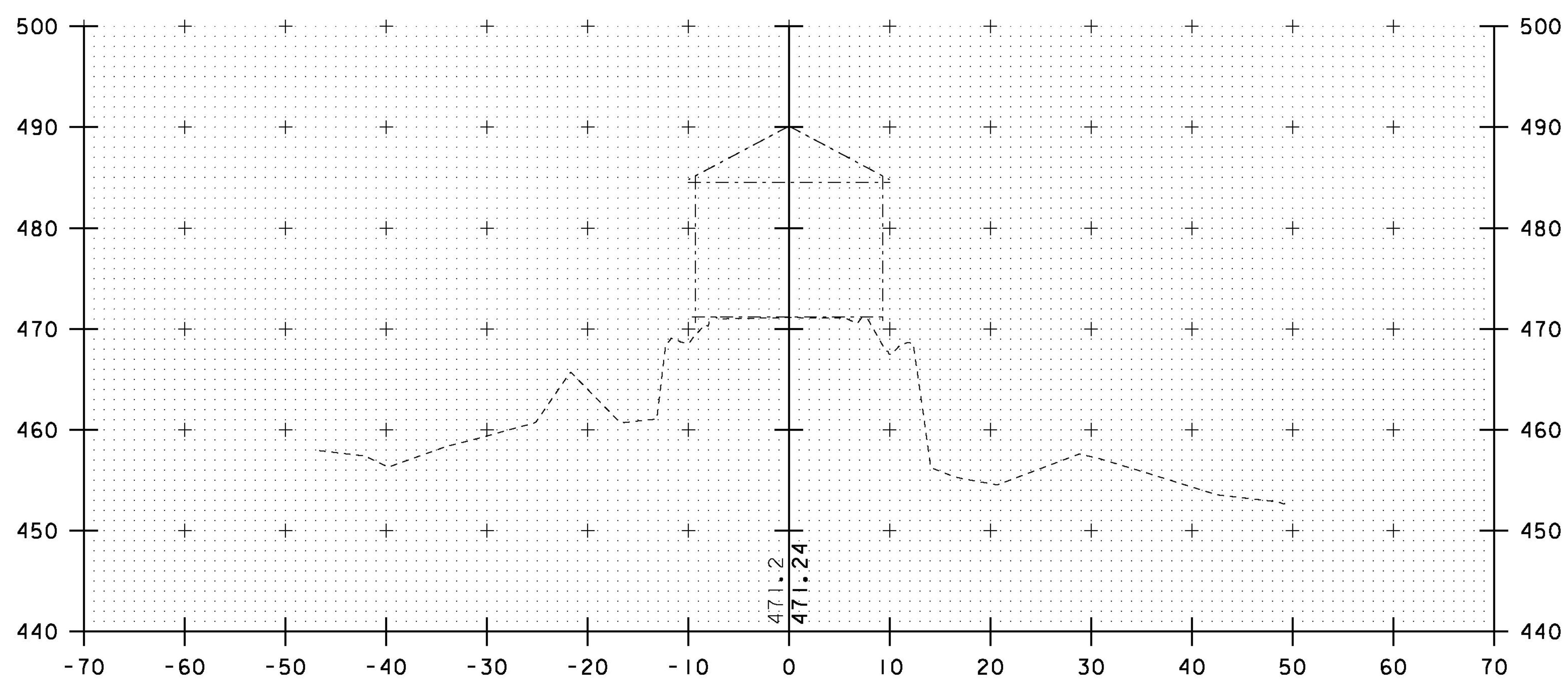

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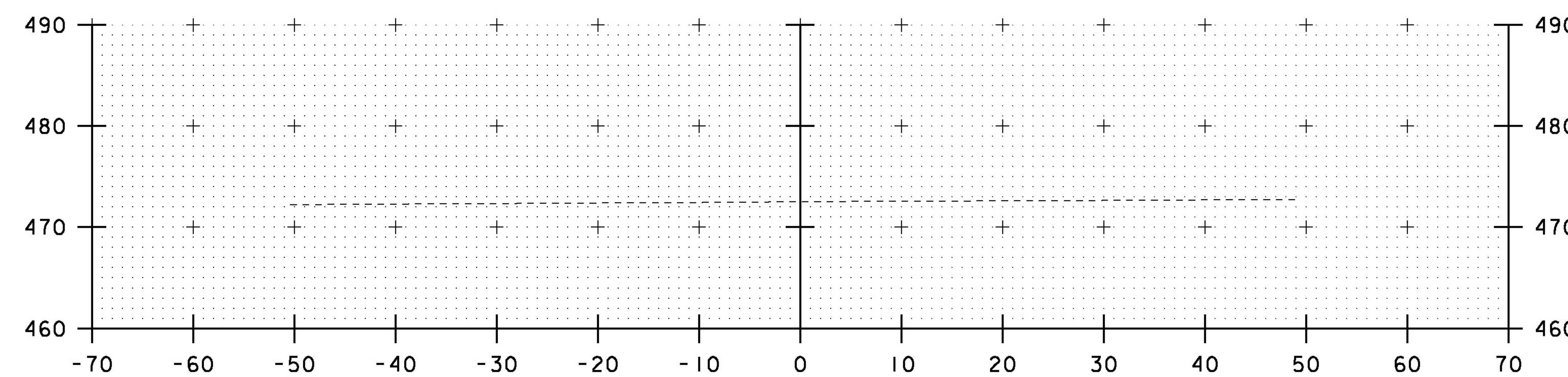
END BRIDGE



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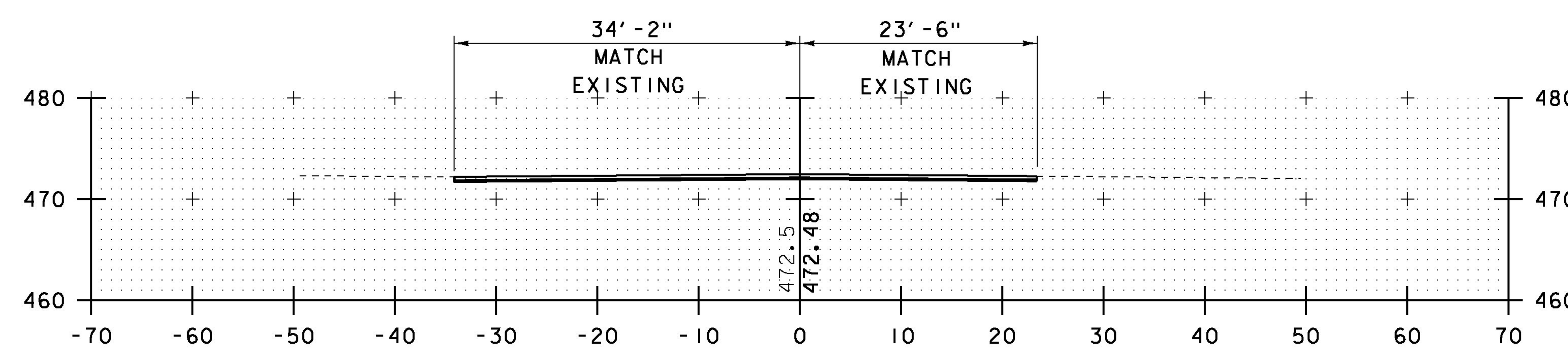

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END PROJECT

SCALE 1" = 10'-0"
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STA. 3+34.75 TO STA. 3+75

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225XS2

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225xsl.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
ROADWAY CROSS SECTIONS (2 OF 2)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
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8/13/2015
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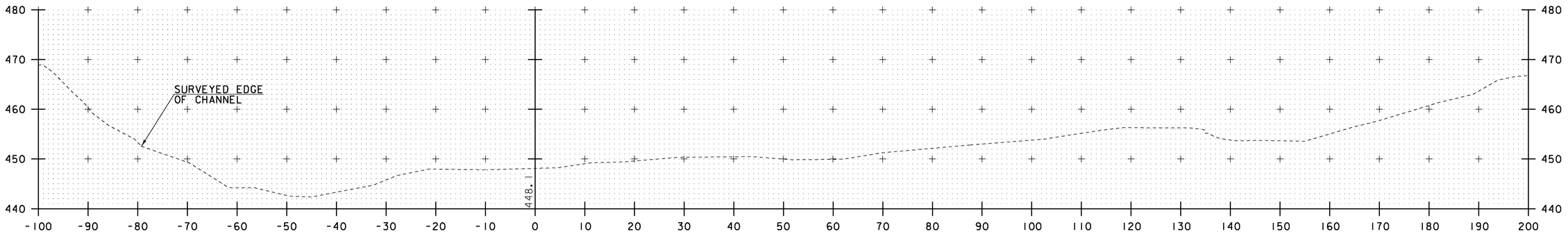
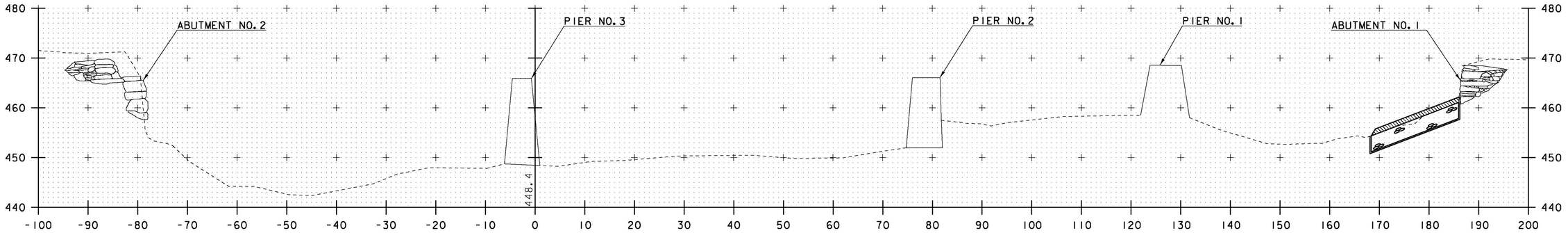


11+25

STA 11+14.53, RT 185.96
END COMMON EXCAVATION
STONE FILL, TYPE III
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



11+00

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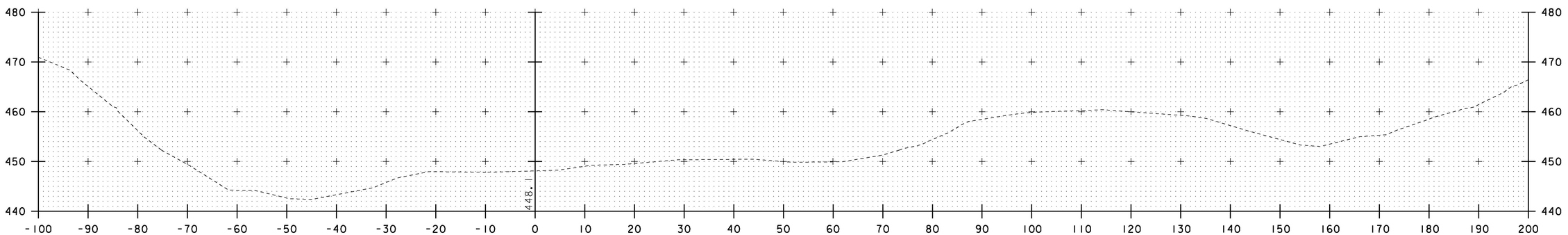
STONE FILL, TYPE III
GEOTEXTILE UNDER STONE FILL
GRUBBING MATERIAL



10+75

SCALE 1" = 10'-0"
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STA. 10+75 TO STA. 11+25

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225XS3

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225xsl.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
CHANNEL CROSS SECTIONS

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 54 OF 60

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EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REHABILITATION OF THE SCOTT COVERED BRIDGE (BRIDGE NO. 45) OVER THE WEST RIVER. THE PROJECT IS LOCATED IN THE TOWN OF TOWNSHEND, AND SPANS BETWEEN VT ROUTE 30 AND THE INTERSECTION OF TH 4 AND TH 38. THE BRIDGE IS CURRENTLY CLOSED TO ALL TRAFFIC AND WILL REMAIN CLOSED DURING CONSTRUCTION. UPON COMPLETION OF THE REHABILITATION, THE BRIDGE WILL BE OPEN TO PEDESTRIAN TRAFFIC ONLY. THE PROJECT CONSISTS OF REPLACING DETERIORATED BRIDGE MEMBERS, INSTALLATION OF NEW SIDING, AND INSTALLATION OF A NEW STANDING SEAM METAL ROOF, CONSTRUCTION OF A NEW BACKWALL AND WINGWALLS AT ABUTMENT NO. 1, INSTALLATION OF TIMBER APPROACH RAILING AT THE WEST APPROACH, REGRADING OF THE WEST APPROACH AND REPAVING OF THE EAST APPROACH.

THE AREA OF DISTURBANCE SHOWN IN THESE PLANS WITHIN THE PROJECT VICINITY IS APPROXIMATELY 0.1 ACRES. EARTH DISTURBANCE FOR ANY WASTE, STAGING AND BORROW AREAS WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS IS ESTIMATED TO BE 0.4 ACRES. TOTAL AREA OF DISTURBANCE AS SHOWN ON THE EPSC PLAN IS APPROXIMATELY 0.5 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS A VALLEY SOUTH OF THE TOWNSHEND DAM THAT IS WELL ESTABLISHED FOREST WITH BUSHES, SOFTWOODS AND HARDWOODS. VT ROUTE 30, STATE FOREST ROAD (TH 4) AND STONE ARCH WAY ARE ADJACENT TO THE PROJECT SITE. THERE ARE RESIDENCES TO THE WEST SIDE OF THE PROJECT WITH GRASS BUFFERS.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE WEST RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. WEST RIVER IS A TRIBUTARY OF THE CONNECTICUT RIVER. THE PROJECT IS LOCATED APPROXIMATELY 0.4 MILES SOUTH OF THE TOWNSHEND DAM. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 282 SQUARE MILES. THE BANKS ARE HEAVILY VEGETATED OR EXPOSED LEDGE IN THE PROJECT VICINITY. THE STREAMBED CONSISTS OF SAND, GRAVEL, COBBLES AND LEDGE. THE WIDTH OF THE WEST RIVER IS HIGHLY VARIABLE AND IS APPROXIMATELY 150 FEET IN THE SPRING AND 100 FEET IN THE DRYER MONTHS. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM NEARBY SLOPES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD AND SOFTWOODS TREES AS WELL AS UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY TEMPORARY CONSTRUCTION ACCESS, TREE TRIMMING AND SUBSTRUCTURE WORK. DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF WINDHAM, VERMONT. SOILS ON THE PROJECT SITE ARE ONDAWA FINE SANDY LOAM, 0% TO 3% SLOPES, K = 0.14 TO 14.17 ON/HR, OCCASIONALLY FLOODED TO THE WEST AND RAWSONVILLE-HOGBACK FINE SAND LOAMS, 25% TO 50% SLOPES, K = 0.01 TO 6.00 IN/HR, ROCKY TO THE EAST.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: YES
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: WEST RIVER
WETLANDS: NO

HISTORIC DISTRICT AREA IS LIMITED TO THE DIRECT FOOTPRINT OF THE SCOTT COVERED BRIDGE. THERE ARE NO OTHER KNOWN HISTORICAL OR ARCHEOLOGICAL AREAS IDENTIFIED WITHIN THE PROJECT LIMITS. ENDANGERED SPECIES ARE KNOWN TO OCCUR IN THE VICINITY OF THE PROJECT AND WITHIN THE LIMITS OF THE WEST RIVER. IN-STREAM WORK IS NOT PROPOSED IN THE RIVER AND NO IMPACT TO THE KNOWN STATE THREATENED SPECIES ARE EXPECTED.

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES BASED ON THE PROJECT IMPACT AREA. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED. PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

SOIL DISTURBANCE SHALL BE LIMITED TO THE SLOPE LIMITS AT ABUTMENTS NO. 1 AND NO. 2 AS DETAILED ON THE CONSTRUCTION CONDITIONS PLAN.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR'S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES ARE NOT ANTICIPATED FOR THIS PROJECT.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE CONSTRUCTION CONDITIONS PLAN OR USED AS NECESSARY.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCITON SITE.

THE DISTURBANCE AREA AT ABUTMENT NO. 1 IS AT A HIGHER ELEVATION THAN THE SURROUNDING LAND. THEREFORE, IT IS NOT ANTICIPATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS WILL BE INSTALLED AS PROPOSED ON THE CONSTRUCTION CONDITION PLAN, AT A MINIMUM.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

DUE TO THE NATURE OF THE REHABILITATION OF THE SCOTT COVERED BRIDGE, MINIMAL ROADWAY APPROACH WORK IS PROPOSED AND THERE WILL BE NO CHANGES TO THE IMPERVIOUS AREA OR INCREASED STORMWATER RUNOFF. THEREFORE, NO PERMANENT CONTROLS ARE USED.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

TEMPORARY MULCHING SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.
THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.
THE FOLLOWING REQUIREMENTS MUST BE ADHERED TO:

1. ENLARGED ACCESS POINTS STABILIZED TO PROVIDE FOR SNOW STOCKPILING.
2. A MINIMUM 25 FOOT BUFFER SHALL BE MAINTAINED FROM PERIMETER CONTROLS SUCH AS SILT FENCE.
3. IN AREAS OF DISTURBANCE THAT DRAIN TO A WATER BODY WITHIN 100 FEET, TWO ROWS OF SILT FENCE MUST BE INSTALLED ALONG THE CONTOUR.
4. SILT FENCE AND OTHER PRACTICES REQUIRING EARTH DISTURBANCE MUST BE INSTALLED AHEAD OF FROZEN GROUND.
5. MULCH USED FOR TEMPORARY STABILIZATION MUST BE APPLIED AT DOUBLE THE STANDARD RATE, OR A MINIMUM OF 3 INCHES WITH AN 80-90% COVER.
6. TO ENSURE COVER OF DISTURBED SOIL IN ADVANCE OF A MELT EVENT, AREAS OF DISTURBED SOIL MUST BE STABILIZED AT THE END OF EACH WORK DAY, WITH THE FOLLOWING EXCEPTIONS:
   - IF NO PRECIPITATION WITHIN 24 HOURS IS FORECAST AND WORK WILL RESUME IN THE SAME DISTURBED AREA WITHIN 24 HOURS, DAILY STABILIZATION IS NOT NECESSARY.
   - DISTURBED AREAS THAT COLLECT AND RETAIN RUNOFF, SUCH AS HOUSE FOUNDATIONS OR OPEN UTILITY TRENCHES.
7. PRIOR TO STABILIZATION, SNOW OR ICE MUST BE REMOVED TO LESS THAN 1 INCH THICKNESS.
8. USE STONE TO STABILIZE AREAS WHERE CONSTRUCTION VEHICLE TRAFFIC IS ANTICIPATED. STONE PATHS SHOULD BE 10—20 FEET WIDE TO ACCOMMODATE VEHICULAR TRAFFIC.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

SEDIMENT BASINS FOR SUBSTRUCTURE AND BACKWALL WORK ARE NOT ANTICIPATED TO BE USED SINCE THE DISTURBANCE AREA AT ABUTMENT NO. 1 IS AT A HIGHER ELEVATION THAN THE SURROUNDING LAND.

1.4.12 INSPECT YOUR SITE

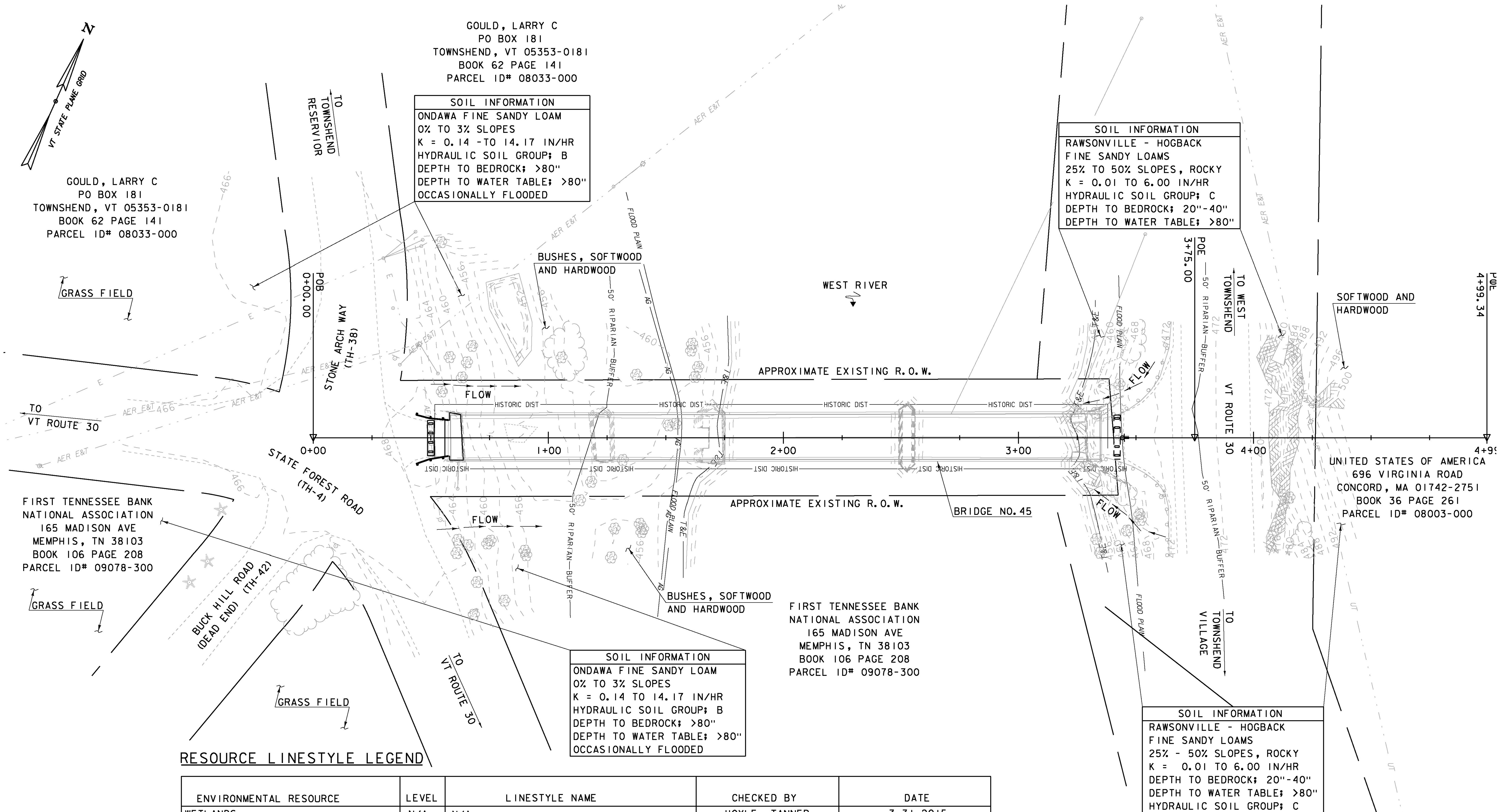
INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.



RESOURCE LINESTYLE LEGEND

ENVIRONMENTAL RESOURCE	LEVEL	LINESTYLE NAME	CHECKED BY	DATE
WETLANDS	N/A	N/A	HOYLE, TANNER	3-31-2015
HISTORIC/HISTORIC DISTRICT	LAHD	HISTORIC DIST. ——HISTORIC DIST——	HOYLE, TANNER	3-31-2015
ARCHAEOLOGICALLY SENSITIVE LAND	N/A	N/A	HOYLE, TANNER	3-31-2015
4F PROPERTY	N/A	N/A	HOYLE, TANNER	3-31-2015
6F PROPERTY	N/A	N/A	HOYLE, TANNER	3-31-2015
AGRICULTURAL LAND	LAAG	AGRICULT. LAND — AG —— AG —	HOYLE, TANNER	3-31-2015
FISH & WILDLIFE HABITAT	N/A	N/A	HOYLE, TANNER	3-31-2015
FLOOD PLAINS	LAFP	FLD. PLAINS —— FLOOD PLAIN ——	HOYLE, TANNER	3-31-2015
ENDANGERED SPECIES	LATE	THR. & END. SPEC. T&E —— T&E —	HOYLE, TANNER	3-31-2015
HAZARDOUS WASTE	N/A	N/A	HOYLE, TANNER	3-31-2015
STORMWATER	N/A	N/A	HOYLE, TANNER	3-31-2015
GREEN MOUNTAIN NATIONAL FOREST LAND	N/A	N/A	HOYLE, TANNER	3-31-2015

DATUM	
VERTICAL	NAVD 88(GEOID09) FT
HORIZONTAL	NAD 83(CORS) sFT
ADJUSTMENT	LSQ

SCALE: 1" = 20'-0"
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Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225ero2

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225ero2.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EPSC EXISTING SITE PLAN

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 56 OF 60

8/13/2015
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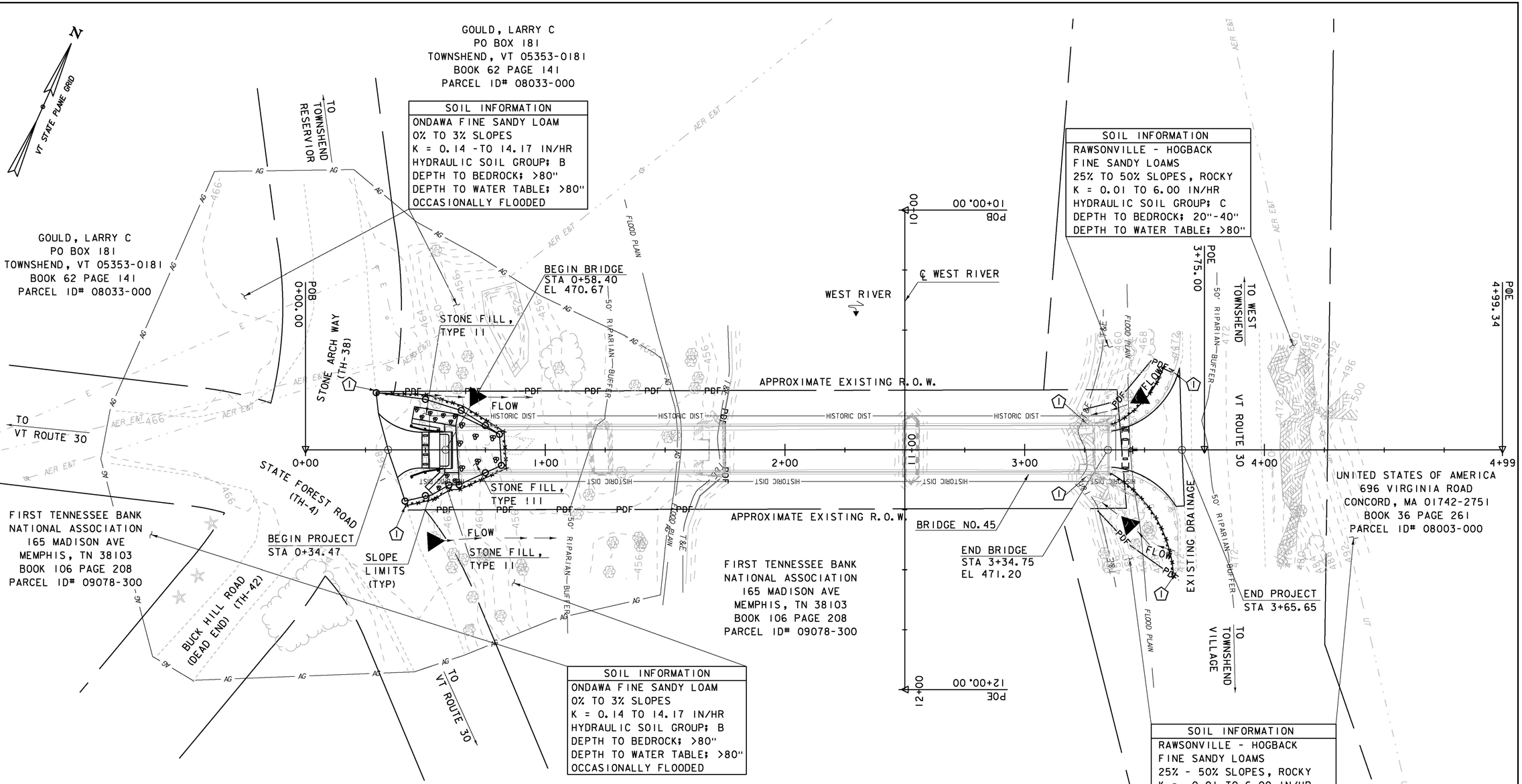

NOTES

1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR SHALL SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL. SEE SECTION 105 FOR REQUIREMENTS.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS, UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO EPSC DETAIL SHEETS FOR ADDITIONAL DETAILS.
5. REFER TO EPSC EXISTING SITE PLAN FOR DESCRIPTIONS OF LINE STYLE SYMBOLS.

LEGEND

- ① END OF SILT FENCE TURNED UPHILL TO CREATE PONDING
- STONE CHECK DAM
- PDF — PROJECT DEMARCATION FENCE
- SILT FENCE WOVEN WIRE
- TOE OF FILL SLOPE

SCALE: 1" = 20'-0"
20 0 20

DATUM	
VERTICAL	NAVD 88(GEOID09) FT
HORIZONTAL	NAD 83(CORS) sFT
ADJUSTMENT	LSQ

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225ero3

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(I)

FILE NAME: 904225ero3.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EPSC CONSTRUCTION SITE PLAN

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 57 OF 60

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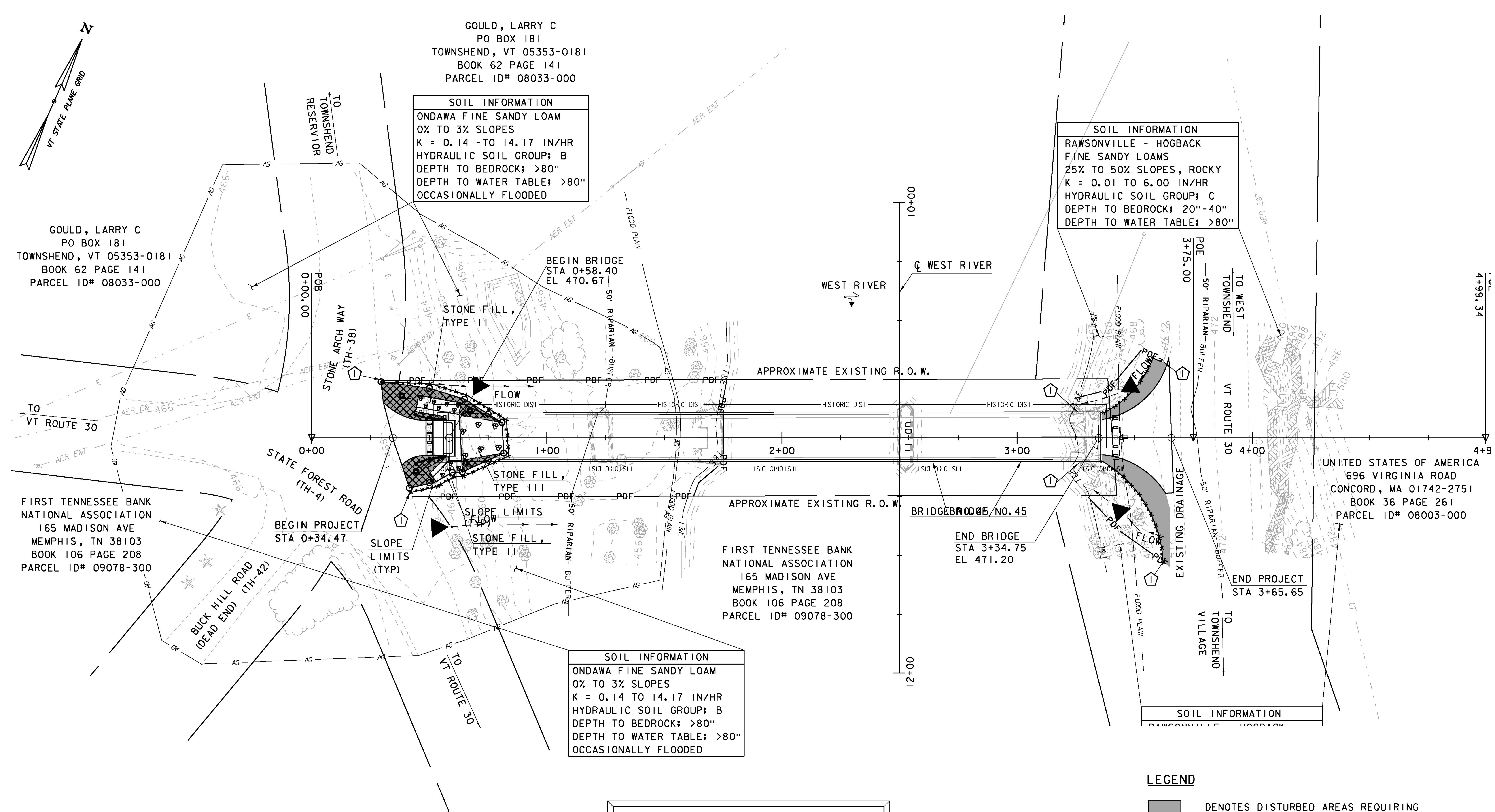


CONTOURS RELECT EXISTING CONDITIONS,
SEE CROSS SECTIONS FOR FINAL GRADING.

LEGEND

- DENOTES DISTURBED AREAS REQUIRING RE-VEGETATION. USE 4" OF TOPSOIL, HAY MULCH AND SEED
- TEMPORARY EROSION CONTROL MATTING
- STONE FILL

DATUM	
VERTICAL	NAVD 88(GEOID09) FT
HORIZONTAL	NAD 83(CORS) sFT
ADJUSTMENT	LSQ

SCALE: 1" = 20'-0"
20 0 20

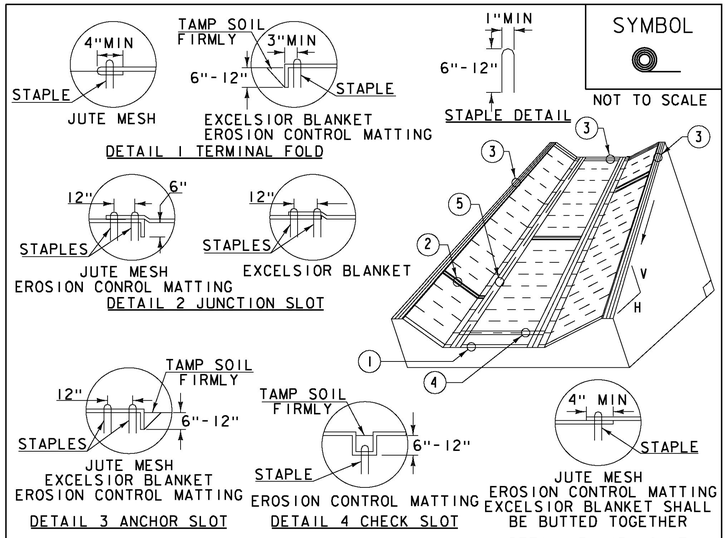
Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225ero4

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225ero4.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EPSC FINAL SITE PLAN

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 58 OF 60



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

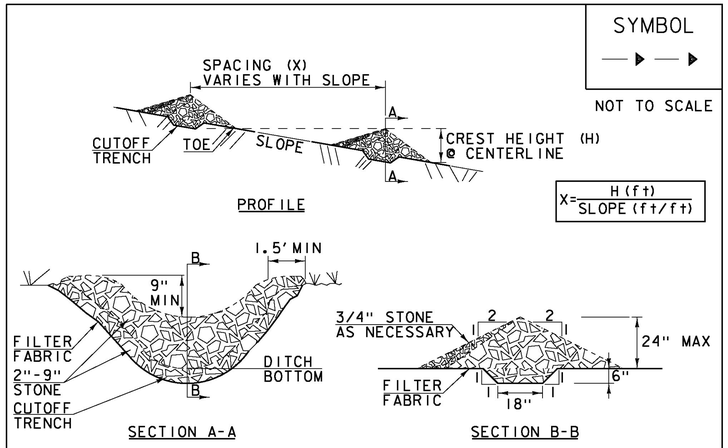
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) ~~OR PERMANENT EROSION MATTING (PAY ITEM 653.21).~~

REVISIONS	
MARCH 8, 2007	JMF
APRIL 16, 2007	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

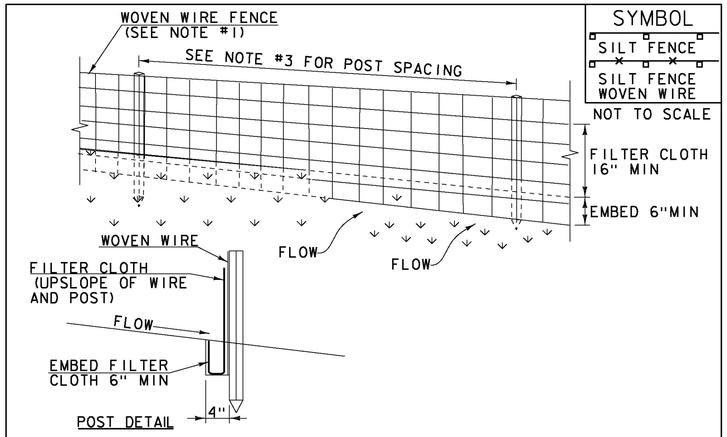
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 2009	WHF



SYMBOL
SILT FENCE
SILT FENCE WOVEN WIRE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- " FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR ~~GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR~~ GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225NoteErol

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225NoteErol.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EPSC DETAILS SHEET (1 OF 2)

PLOT DATE: 8/13/2015
DRAWN BY: T.A.GELINAS
CHECKED BY: S.T.JAMES
SHEET 59 OF 60

8/13/2015
10:24:20 AM
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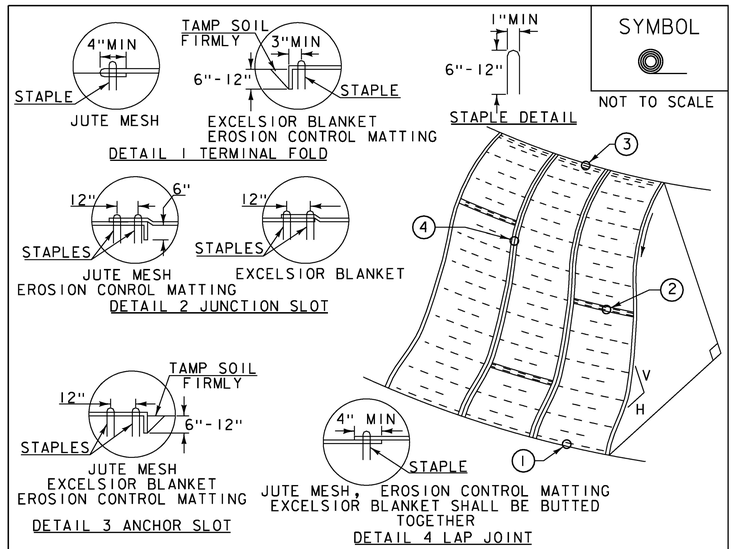

SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.

2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.

3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.

4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.

5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) ~~OR PERMANENT EROSION MATTING (PAY ITEM 653.21).~~

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF

VAOT LOW GROW/FINE FESCUE MIX						
	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
38%	57	95	CREEPING RED FESCUE	FESTUCA RUBRA VAR. RUBRA	90%	98%
29%	43.5	72.5	HARD FESCUE	FESTUCA LONGIFOLIA	85%	95%
15%	22.5	37.5	CHEWINGS FESCUE	FESTUCA RUBRA VAR. COMMUTATA	87%	95%
15%	22.5	37.5	ANNUAL RYEGRASS	LOLIUM MULTIFLORUM	90%	95%
3%	4.5	7.5	INERTS			
100%	150	250				

~~VAOT RURAL AREA MIX~~

	~~LBS/AC~~					
~~WEIGHT~~	~~BROADCAST~~	~~HYDROSEED~~	~~NAME~~	~~LATIN NAME~~	~~GERM~~	~~PURITY~~
~~37.5%~~	~~22.5~~	~~45~~	~~CREEPING RED FESCUE~~	~~FESTUCA RUBRA VAR. RUBRA~~	~~85%~~	~~98%~~
~~37.5%~~	~~22.5~~	~~45~~	~~TALL FESCUE~~	~~FESTUCA ARUNDINACEA~~	~~90%~~	~~95%~~
~~5.0%~~	~~3~~	~~6~~	~~RED TOP~~	~~AGROSTIS GIGANTEA~~	~~90%~~	~~95%~~
~~15.0%~~	~~9~~	~~18~~	~~WHITE FIELD CLOVER~~	~~TRIFOLIUM REPENS~~	~~85%~~	~~98%~~
~~5.0%~~	~~3~~	~~6~~	~~ANNUAL RYE GRASS~~	~~LOLIUM MULTIFLORUM~~	~~85%~~	~~95%~~
~~100%~~	~~60~~	~~120~~				

GENERAL AMENDMENT GUIDANCE		
FERTILIZER	LIME	
10/20/10	AG LIME	PELLITIZED
500 LBS/AC	2 TONS/AC	1 TONS/AC

CONSTRUCTION GUIDANCE

1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.

2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.

3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.

4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.

5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.

6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.

7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.15)

REVISIONS	
JANUARY 12, 2015	WHF

Hoyle, Tanner & Associates, Inc.

HTA PROJECT	MODEL
904225	904225NoteEro2

PROJECT NAME: TOWNSHEND
PROJECT NUMBER: STP SCTT(1)

FILE NAME: 904225NoteEro2.dgn
PROJECT LEADER: M.D.SARGENT
DESIGNED BY: J.C.RIPLEY
EPSC DETAILS SHEET (2 OF 2)

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DRAWN BY: T.A.GELINAS
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SHEET 60 OF 60

8/13/2015
10:24:22 AM
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