REVIEWER NOTES

1. THE PROJECT INCLUDES A ROAD CLOSURE WITH A DETOUR RATHER THAN A TEMPORARY BRIDGE. BECAUSE OF THE LENGTH OF THE DETOUR, IT IS PROPOSED THAT THE CLOSURE BE NO LONGER THAN 8-12 TOTAL DAYS.

2. RIGHT OF WAY WILL NEED TO BE ACQUIRED IN ORDER TO COMPLETE THE PROJECT.

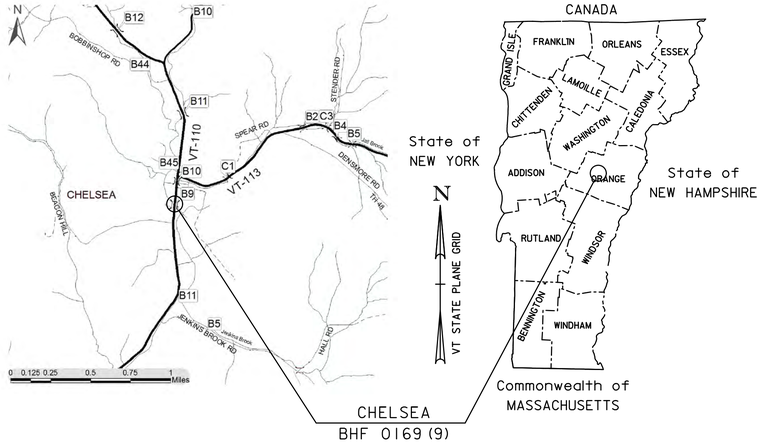
3. OVERHEAD UTILITIES ARE IN CLOSE PROXIMITY TO THE EASTERN FASCIA OF THE BRIDGE AND NEED TO BE RELOCATED FOR CERTAIN CONSTRUCTION OPERATIONS.

4. A SIMPLIFIED PAVEMENT DESIGN HAS BEEN DONE FOR THIS PROJECT.

5. EXISTING LIGHTING WILL BE REHABILITATED AND REPLACED IN THE CONTRACT. A SPECIAL FINANCE AND MAINTENANCE AGREEMENT WILL BE REQUIRED TO CONSTRUCT THE SIDEWALK AND ORNAMENTAL LIGHTING ON THIS PROJECT.

6. A PARTIAL SET OF GENERAL NOTES IS INCLUDED TO CAPTURE SOME UNIQUE PROJECT PROVISIONS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF CHELSEA
COUNTY OF ORANGE

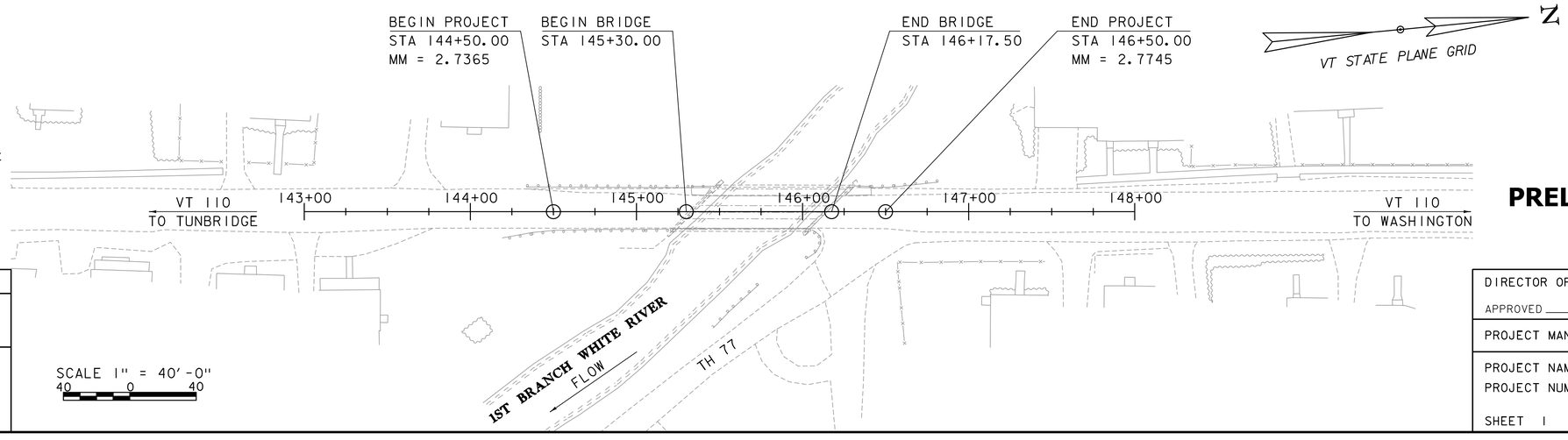
ROUTE NO : VT ROUTE 110, RURAL MAJOR COLLECTOR

BRIDGE NO : 9

PROJECT LOCATION: 0.2 MILES SOUTH OF THE JUNCTION WITH VT ROUTE 113

PROJECT DESCRIPTION: REMOVAL AND REPLACEMENT OF THE DECK AND SUPERSTRUCTURE OF BRIDGE 9

LENGTH OF STRUCTURE: 87.50 FEET
LENGTH OF ROADWAY: 112.50 FEET
LENGTH OF PROJECT: 200.00 FEET



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

QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : R. GILMAN
SURVEYED DATE : 05-21-2012

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)

PRELIMINARY PLANS
7/1/2015

DIRECTOR OF PROJECT DELIVERY
APPROVED _____ DATE _____

PROJECT MANAGER : JENNIFER FITCH, P.E.

PROJECT NAME : CHELSEA
PROJECT NUMBER : BHF 0169(9)

SHEET 1 OF 43 SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
LRFD

INDEX OF SHEETS

PLAN SHEETS

STANDARDS LIST

STRUCTURES DETAIL SHEETS

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: June 2015

DRAINAGE AREA : 37.8 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous, with mixed forest and open land cover
STREAM CHARACTERISTICS : Sinuous, incised and alluvial
NATURE OF STREAMBED : Mostly cobbles and gravel

PEAK FLOW DATA

Q 2.33 =	1,900 cfs	Q 50 =	6,250 cfs
Q 10 =	3,250 cfs	Q 100 =	8,200 cfs
Q 25 =	4,800 cfs	Q 500 =	16,980 cfs

DATE OF FLOOD OF RECORD: Unknown
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV.: Unknown
NATURAL STREAM VELOCITY : @ Q50 = 7.8 fps
ICE CONDITIONS : Moderate
DEBRIS: Light to moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: < 1%
HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span steel beam bridge with concrete deck
YEAR BUILT: 1936
CLEAR SPAN(NORMAL TO STREAM): 55'
VERTICAL CLEARANCE ABOVE STREAMBED: 8' (Ave. low beam elev. 808.1')
WATERWAY OF FULL OPENING: 345 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace superstructure
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	807.2'	VELOCITY =	7.8 fps
Q10 =	810.4'	"	8.4 fps
Q25 =	812.0'	"	9.7 fps
Q50 =	812.7'	"	10.1 fps
Q100 =	813.5'	"	10.7 fps

LONG TERM STREAMBED CHANGES: None apparent

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q10
RELIEF ELEVATION: 809.0'
DISCHARGE OVER ROAD @Q100: 5070 cfs

UPSTREAM STRUCTURE

TOWN: Chelsea — DISTANCE: 1,400'
HIGHWAY # : TH 44 — STRUCTURE #: 45
CLEAR SPAN: 27' — CLEAR HEIGHT: 9'
YEAR BUILT: 1921 — FULL WATERWAY:
STRUCTURE TYPE: Single span steel beam bridge

DOWNSTREAM STRUCTURE

TOWN: Chelsea — DISTANCE: 3,500'
HIGHWAY # : TH 3 — STRUCTURE #: 11
CLEAR SPAN: 30' — CLEAR HEIGHT: 9'
YEAR BUILT: 1926 — FULL WATERWAY:
STRUCTURE TYPE: Single span concrete T-beam bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span bridge with concrete deck

CLEAR SPAN(NORMAL TO STREAM): 55'
VERTICAL CLEARANCE ABOVE STREAMBED: 9'
WATERWAY OF FULL OPENING: 360 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	807.2'	VELOCITY=	7.8 fps
Q10 =	810.3'	"	8.4 fps
Q25 =	811.9'	"	9.7 fps
Q50 =	812.7'	"	10.1 fps
Q100 =	813.5'	"	10.7 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q10
RELIEF ELEVATION: 809.0'
DISCHARGE OVER ROAD @Q100: 4930 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 808.5'
VERTICAL CLEARANCE: @ Q50 = -4.2' (Water up to beams below Q10.)

SCOUR: Maximum contraction scour = 2' up to Q200. Any new substructure should be designed to be freestanding 6' below stream bed. Record plans show existing abutments are.
REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

		DEPTH OR ELEVATION:
AVERAGE DAILY FLOW:	-	
ORDINARY LOW WATER:	-	-
ORDINARY HIGH WATER:	-	See other plan sheets.

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge. Road to be closed with a detour.
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_P:	3.0 INCH
3. DESIGN SPAN	L:	81.10 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. CONCRETE, HIGH PERFORMANCE CLASS AA	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. CONCRETE, CLASS C	f'_c:	---
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y:	50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	---
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	---
16. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	55.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	0.45
18. PILE RESISTANCE FACTOR	ϕ:	---
19. LATERAL PILE DEFLECTION	Δ:	---
20. BASIC WIND SPEED	V_{3s}:	100 MPH
21. MINIMUM GROUND SNOW LOAD	p_g:	0.05 K/FT²
22. SEISMIC DATA — PGA: 8 %g	S_s:	18 %g
	S_1:	5 %g
23.		
24.		
25.		
26.		

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

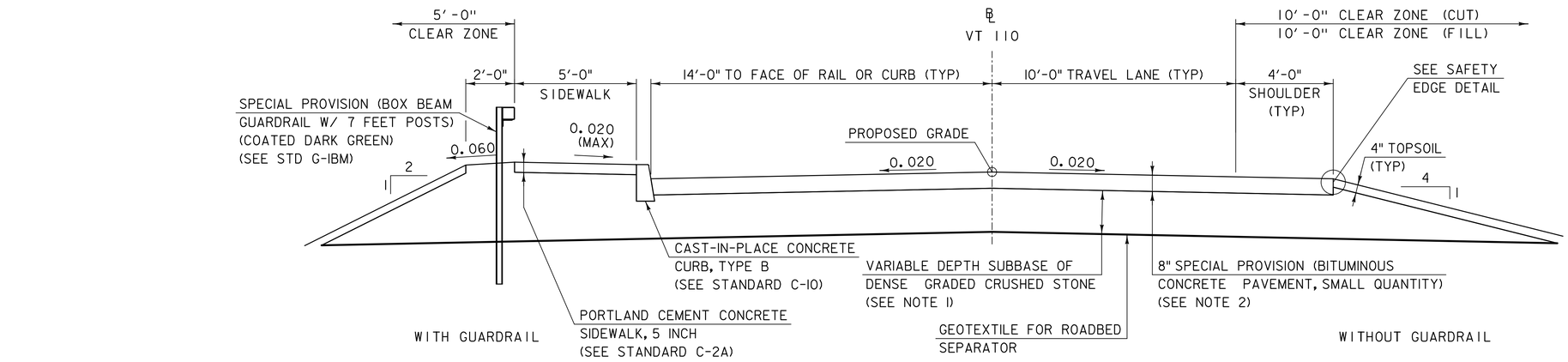
YEAR	ADT	DHV	% D	% T	ADTT
2015	1500	190	52	0.6	170
2035	1600	200	52	0.9	270

20 year ESAL for flexible pavement from 2015 to 2035 : 1001000
40 year ESAL for flexible pavement from 2015 to 2055 : 2418000
Design Speed : 30 mph

PROJECT NAME: **CHELSEA**
PROJECT NUMBER: **BHF 0169(9)**

FILE NAME: **z12c150pi.dgn**
PROJECT LEADER: **J. OLUND**
DESIGNED BY: **J. OLUND**
PRELIMINARY INFORMATION SHEET

PLOT DATE: 7/1/2015
DRAWN BY: **S. MORGAN**
CHECKED BY: **B. TOOTHAKER**
SHEET 2 OF 43



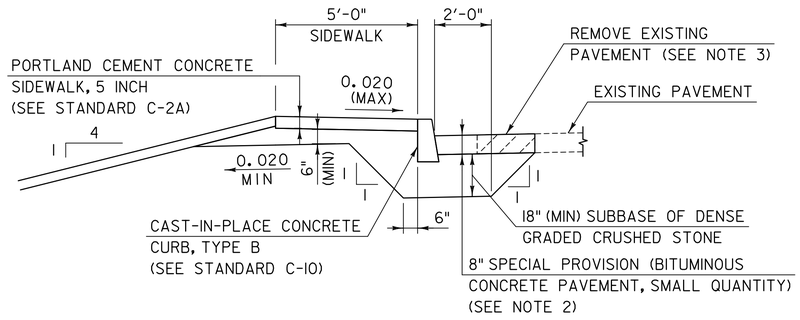
ROADWAY TYPICAL SECTION

SCALE 3/8" = 1′-0"

MATERIAL TOLERANCES (IF USED ON PROJECT)	
SURFACE	
- PAVEMENT (TOTAL THICKNESS)	+/- 1/4"
- AGGREGATE SURFACE COURSE	+/- 1/2"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"

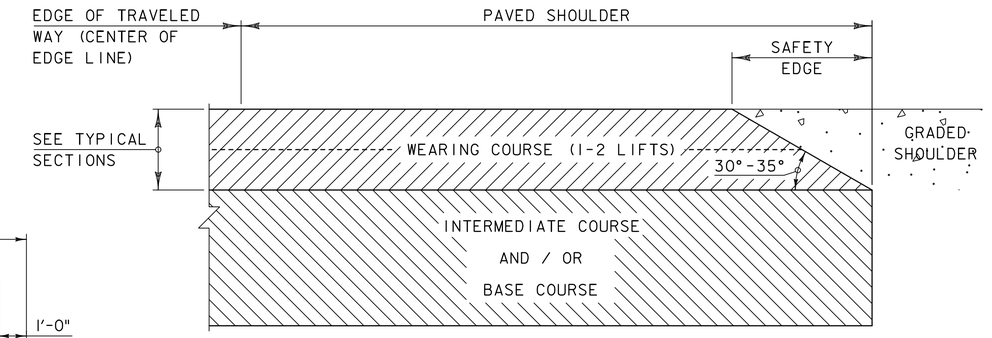
NOTES:

1. A MINIMUM OF 18" SUBBASE SHALL BE PLACED IF EXISTING SUBBASE MATERIAL NEAR EDGES OF EXISTING PAVEMENT IS DETERMINED TO BE UNSUITABLE BY THE ENGINEER.
2. 1 1/2" TYPE IVS OVER
   1 1/2" TYPE IVS OVER
   2 1/2" TYPE IIS OVER
   2 1/2" TYPE IIS.
3. REMOVAL OF EXISTING PAVEMENT ADJACENT TO PROPOSED SIDEWALK AND BEYOND THE PROJECT LIMITS WILL BE PAID UNDER ITEM 203.15, "COMMON EXCAVATION."



CURB AND SIDEWALK SECTION - LT

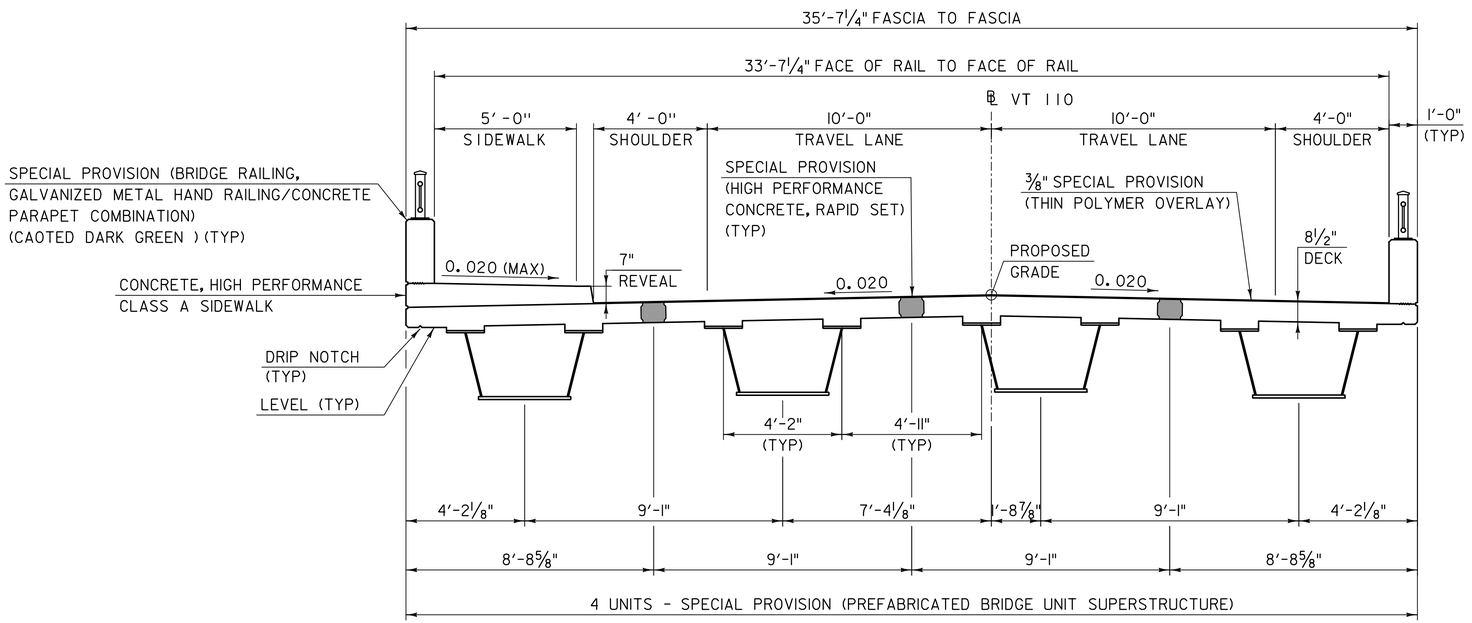
SCALE 3/8" = 1′-0"
STA 146+50.00, LT TO STA 147+48.01, LT



SAFETY EDGE DETAIL

NOT TO SCALE

1. LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.
2. THE EDGE OF PAVEMENT SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE 30 TO 35 DEGREE ANGLE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.
3. THE PAVED SHOULDER EXTENDS FROM THE EDGE OF TRAVELED WAY TO THE EDGE OF THE WEARING COURSE, INCLUDING THE "SAFETY EDGE".



BRIDGE TYPICAL SECTION

SCALE 3/8" = 1′-0"

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y. LIN INTERNATIONAL

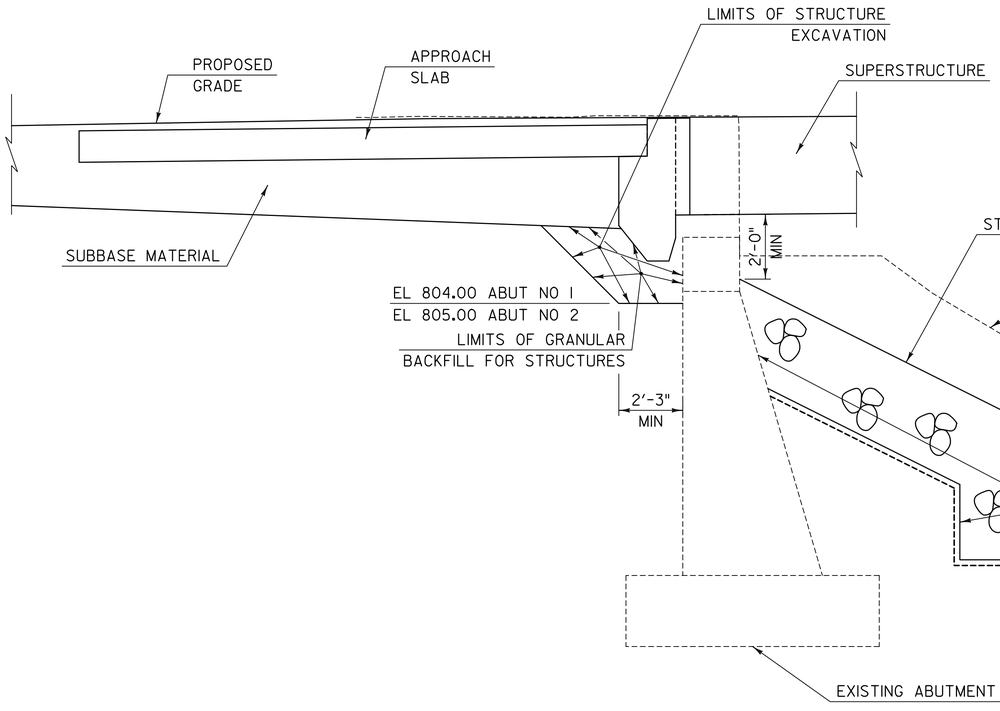
FILE NAME: z12c150typl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TYPICAL SECTIONS AND DETAILS 1

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J.OLUND
SHEET 3 OF 43

TO BE DRAFTED
FOR FINAL PLANS

ABUTMENT REMOVAL LIMITS

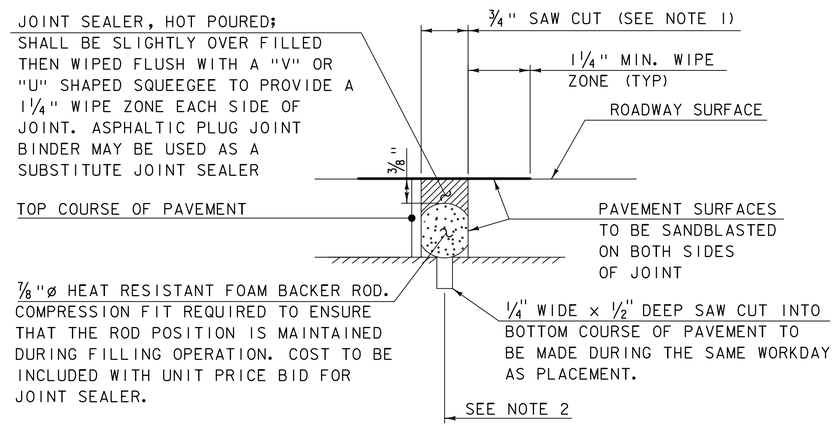
SCALE: 3/8" = 1'-0"



TYPICAL EARTHWORK SECTION

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

NOTE: ACTUAL LIMITS OF STRUCTURE EXCAVATION TO BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION." EXCAVATION BY THE CONTRACTOR OUTSIDE THESE LIMITS WILL BE AT THE EXPENSE OF THE CONTRACTOR.

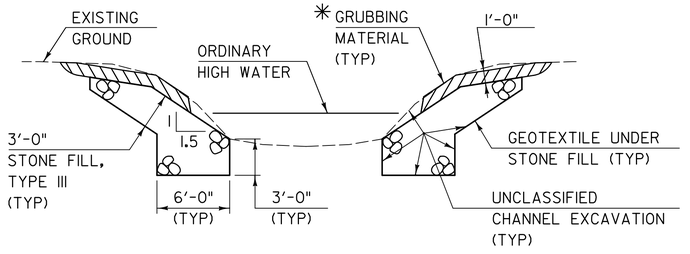


ITEM 524.11, "JOINT SEALER, HOT POURED"
SAWED PAVEMENT JOINT DETAIL

NOT TO SCALE

1. JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER.

2. SAWED PAVEMENT JOINTS SHALL BE LOCATED BETWEEN THE APPROACH SLABS AND EACH END OF THE BRIDGE AND BETWEEN THE APPROACH SLABS AND ANY PAVED APRONS.



TYPICAL CHANNEL SECTION

(NOT TO SCALE)

* GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T·Y·LIN INTERNATIONAL

FILE NAME: zl2cl50typ2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TYPICAL SECTIONS AND DETAILS 2

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 4 OF 43

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, WITH ITS LATEST REVISIONS AND THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION WITH INTERIMS THROUGH 2013.

2. ALL PRECAST CONCRETE ELEMENTS SHALL BE FABRICATED WITHIN TOLERANCES DEFINED ON THE PLANS AND IN THE PRECAST/PRESTRESSED CONCRETE INSTITUTE TOLERANCE MANUAL FOR PRECAST AND PRESTRESSED CONCRETE CONSTRUCTION, MNL 135-00, AND ITS LATEST REVISIONS.

3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 45°F, UNLESS OTHERWISE NOTED.

4. THE CONTRACTOR SHALL LOCATE UNDERGROUND SEWER AND WATER LINES AHEAD OF THE BRIDGE CLOSURE PERIOD. PAYMENT WILL BE MADE UNDER ITEM 204.22, "TRENCH EXCAVATION OF EARTH, EXPLORATORY."

EARTHWORK AND RELATED ITEMS

5. CLEARING AND GRUBBING SHALL BE IN ACCORDANCE WITH SECTION 201. PAYMENT WILL BE INCIDENTAL TO ALL OTHER CONTRACT ITEMS.

6. UNDERGROUND TELEPHONE CONDUITS AND CORRESPONDING MARKER POSTS WITHIN PROJECT LIMITS SHALL BE REMOVED AND DISPOSED. PAYMENT WILL BE CONSIDERED INCIDENTAL TO RELATED EXCAVATION ITEMS.

7. NO ONSITE DISPOSAL OF WASTE MATERIALS SHALL BE ALLOWED.

8. STAGING AREAS TO BE USED OUTSIDE THE BRIDGE CLOSURE PERIOD SHALL BE LOCATED OUTSIDE THE LIMITS OF THE FLOODPLAIN. EQUIPMENT, TEMPORARY MATERIAL STOCKPILES, AND TEMPORARY STAGING LOCATED WITHIN THE FLOODPLAIN DURING THE BRIDGE CLOSURE PERIOD SHALL BE REMOVED FROM THE PROJECT AREA WHEN CHANNEL BANKS ARE ANTICIPATED TO OVERTOP DUE TO HEAVY RAINFALL.

9. THE EXISTING SUPERSTRUCTURE SHALL BE REMOVED IN ITS ENTIRETY. THE CONTRACTOR SHALL PROVIDE SHIELDING OR ALTERNATE METHODS TO AVOID DROPPING REMOVED MATERIALS INTO THE CHANNEL. THE EXISTING ABUTMENTS SHALL BE PARTIALLY REMOVED TO LIMITS SHOWN ON "TYPICAL SECTIONS AND DETAILS 2". PAYMENT FOR REMOVAL WILL BE MADE UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE."

10. THE EXISTING STRUCTURAL STEEL ON THIS PROJECT WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.

11. THE "STONE FILL, TYPE III" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE SUPERSTRUCTURE IS SET.

CONCRETE

12. CONCRETE FOR THE BRIDGE RAILING AND PORTIONS OF SIDEWALK ON THE SUPERSTRUCTURE AND APPROACH SLABS MAY BE CAST INTEGRALLY WITH PRECAST BRIDGE UNITS AND PRECAST APPROACH SLABS PRIOR TO ARRIVING ONSITE. THE WEIGHT AND LOCATION OF THE ADDITIONAL LOAD SHALL BE CONSIDERED AND DOCUMENTED IN ERECTION PLANS SUBMITTED WITH PRECAST BRIDGE UNITS AND PRECAST APPROACH SLABS.

13. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL CONCRETE SURFACES EXPOSED IN THE FINAL CONDITION. APPLICATION OF THE SEALER SHALL BE COMPLETED WITHIN 40 DAYS OF ORIGINAL CONCRETE PLACEMENT.

14. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".

15. ALL REINFORCING STEEL SHALL MEET THE REQUIREMENTS FOR LEVEL II CORROSION RESISTANCE IN ACCORDANCE WITH SECTION 507.

16. MINIMUM CLEAR COVER SHALL BE AS FOLLOWS:
    - ALONG TOP SURFACE OF SUPERSTRUCTURE: 2 ½ INCH
    - ALONG BOTTOM SURFACE OF SUPERSTRUCTURE: 1 ¾ INCH
    - ALONG BACK FACES OF WALLS AGAINST EARTH: 2 INCH
    - ELSEWHERE UNLESS OTHERWISE INDICATED: 3 INCH

17. TEST BARS SHALL BE PROVIDED IN ACCORDANCE WITH THE "VERMONT AGENCY OF TRANSPORTATION MATERIAL SAMPLING MANUAL" AVAILABLE ON THE AGENCY WEBSITE. A MINIMUM OF TWO TEST SECTIONS ARE REQUIRED FOR EACH SIZE, BRAND, AND GRADE OR TYPE OF REINFORCING. SEE THE MANUAL FOR ACCEPTABLE DIMENSIONS OF TEST SECTIONS. ALL COSTS ASSOCIATED WITH PROVIDING BARS FOR TESTING SHALL BE INCLUDED IN THE BID PRICE FOR EACH 540.10, 900.675, "SPECIAL PROVISION (PRECAST BRIDGE UNIT SUPERSTRUCTURE)", AND 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)" CONTRACT ITEM AS APPROPRIATE.

18. ALL COSTS ASSOCIATED WITH FURNISHING AND FIELD-INSTALLING THE APPROACH SLAB LONGITUDINAL CLOSURE POUR REINFORCING BARS SHALL BE INCLUDED IN THE BID PRICE FOR THE APPROPRIATE PRECAST CONCRETE APPROACH SLAB PAY ITEM.

19. CONCRETE FOR APPROACH SLAB LONGITUDINAL CLOSURE POURS AND ABUTMENT PILE CAVITIES SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)."

20. THE CONTRACTOR SHALL SUBMIT A GROUTING PROCEDURE PROPOSAL TO THE ENGINEER, INCLUDING THE PREMIX BRAND NAME FOR APPROVAL.

PRECAST ABUTMENTS

21. CONCRETE COMPRESSIVE STRENGTH: f'c = 5,000 PSI.

22. IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS, THEN THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE PROVIDED ON THE FABRICATION DRAWINGS.

23. POST-TENSIONING AND ASSOCIATED ITEMS ARE ONLY REQUIRED IF THE PILE CAP IS CONSTRUCTED OF MORE THAN ONE UNIT. ANY POST-TENSIONING STRANDS AND CONDUIT SHALL ADHERE TO THE REQUIREMENTS OF SECTION 510 – PRESTRESSED CONCRETE. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 232. PAYMENT FOR GALVANIZED ANCHOR ASSEMBLIES, DUCTS, AND POST-TENSIONING STRANDS WILL BE MADE UNDER THE APPROPRIATE PRECAST CONCRETE PAY ITEM.

24. PROPOSED SEQUENCE OF CONSTRUCTION
    A.

25. ALTERNATE SEQUENCE OF CONSTRUCTION MAY BE SUBMITTED FOR APPROVAL BY THE PROJECT MANAGER.

PREFABRICATED BRIDGE UNITS (PBU'S)

26. CONCRETE FOR PBU DECKS SHALL MEET THE REQUIREMENTS OF "CONCRETE, HIGH PERFORMANCE CLASS A".

27. METHOD OF FORMING THE DECK CLOSURE POUR SHALL BE DETERMINED BY THE CONTRACTOR. THE FORMS SHALL BE REMOVABLE AND ABLE TO ACCOMMODATE DIFFERENTIAL CAMBER AND SETTING TOLERANCES. FORM SUPPORTS SHALL NOT PENETRATE THROUGH THE TOP OF THE POUR UNLESS APPROVED BY THE ENGINEER.

28. CONCRETE RETARDING ADMIXTURE SHALL BE APPLIED TO FORMWORK FOR SLAB EDGES TO BECOME IN CONTACT WITH HIGH PERFORMANCE CONCRETE, RAPID SET TO PROVIDE A ROUGHENED SURFACE. ALTERNATE METHODS OF ACHIEVING A ROUGHENED SURFACE, GENERALLY CONSISTENT WITH SAND BLASTED SURFACES, MAY BE PROPOSED. ALL SUCH SURFACES SHALL BE POWER WASHED WITH WATER PRIOR TO INSTALLATION.

29. UNLESS NOTED OTHERWISE, ALL NEW STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270 GRADE 50.

30. INTERIOR AND EXTERIOR SURFACES OF GIRDERS, INCLUDING BEARING STIFFENERS, INTERNAL CROSS FRAMES, AND FLANGE LATERAL BRACING, SHALL BE PAINTED WITH A SYSTEM 1 – OZ/E/U PAINT IN ACCORDANCE WITH ITEM 900.645, "SPECIAL PROVISION (QC/QA CLEANING AND PAINTING STRUCTURAL COMPONENTS)." FAYING SURFACES OF CONNECTIONS SHALL REMAIN FREE OF PAINT. THE PAINT SHALL BE ???, FEDERAL STANDARD 595, COLOR CHIP ?????.

31. THE USE OF STAY IN PLACE CORRUGATED METAL FORMS (SIPCMF) WILL BE ALLOWED FOR USE BETWEEN TOP FLANGES OF THE SAME STEEL TUB GIRDER. SUBSECTION 501.09(k)(4) SHALL NOT APPLY.

PRECAST APPROACH SLABS

32. CONCRETE COMPRESSIVE STRENGTH: f'c = 5,000 PSI.

33. CONCRETE RETARDING ADMIXTURE SHALL BE APPLIED TO FORMWORK FOR SLAB EDGES TO BECOME IN CONTACT WITH HIGH PERFORMANCE CONCRETE, RAPID SET TO PROVIDE A ROUGHENED SURFACE. ALTERNATE METHODS OF ACHIEVING A ROUGHENED SURFACE, GENERALLY CONSISTENT WITH SAND BLASTED SURFACES, MAY BE PROPOSED. ALL SUCH SURFACES SHALL BE POWER WASHED WITH WATER PRIOR TO INSTALLATION.

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y. LIN INTERNATIONAL

FILE NAME: z12cl50notes.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: J. OLUND
GENERAL NOTES

PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: B. TOOTHAKER
SHEET 5 OF 43

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

- UGU — UTILITY (GENERIC-UNKNOWN)
- UT — TELEPHONE
- UE — ELECTRIC
- UC — 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)

- 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

- CLEAR ZONE (CZ)
- PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

- TOP OF CUT SLOPE
- TOE OF FILL SLOPE
- STONE FILL
- BOTTOM OF DITCH ℄
- CULVERT PROPOSED
- STRUCTURE SUBSURFACE
- PROJECT DEMARCATION FENCE (PDF)
- BARRIER FENCE (BF)
- TREE PROTECTION ZONE (TPZ)
- STRIPING LINE REMOVAL
- SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINES

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

EPSC LAYOUT PLAN SYMBOLOGY

EPSC MEASURES

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

SEE EPSC DETAIL SHEETS FOR ADDITIONAL SYMBOLOGY

ENVIRONMENTAL RESOURCES

- 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

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

CONVENTIONAL TOPOGRAPHIC SYMBOLOGY

EXISTING FEATURES

- 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

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(10)

FILE NAME: zl2cl50legend.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: T. POULIN
CONVENTIONAL SYMBOLOGY LEGEND

PLOT DATE: 7/1/2015
DRAWN BY: T. POULIN
CHECKED BY: J. OLUND
SHEET 6 OF 43

GPS CONTROL POINTS

HVCTRL #1

HORSESHOE

NORTH = 548435.580
EAST = 1651309.730
ELEV. = 874.340

GENERAL LOCATION, CHELSEA, VT. OWNERSHIP, RICHARD D. GILMAN, CHELSEA, VT. 05038.
TO REACH FROM THE INTERSECTION OF VT ROUTES 110 AND 113 IN CHELSEA VILLAGE GO NORTH ALONG VT ROUTE 110 FOR 1.3 MI (2.1 KM) TO THE MARK ON THE LEFT. THE MARK IS SET FLUSH WITH GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT. IT IS 7.5 M (24.6 FT) WEST OF AND ABOUT 0.3 M (1.0 FT) HIGHER THAN THE CENTERLINE OF VT ROUTE 110, 4.6 M (15.1 FT) SOUTHEAST OF POLE NO. 342A/471, 16.2 M (53.1 FT) SOUTHWEST OF POLE NO. 209, AND 0.4 M (1.3 FT) EAST OF A FIBERGLASS WITNESS POST.

HVCTRL #2

VENISON

NORTH = 547447.660
EAST = 1652079.250
ELEV. = 852.560

GENERAL LOCATION, CHELSEA, VT.
TO REACH FROM THE INTERSECTION OF VT ROUTES 110 AND 113 IN CHELSEA VILLAGE GO NORTH ALONG VT ROUTE 110 FOR 1.1 MI (1.8 KM) TO THE MARK ON THE LEFT IN A FIELD. THE MARK IS SET FLUSH WITH GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT. IT IS 7.5 M (24.6 FT) WEST SOUTHWEST OF THE CENTERLINE OF VT ROUTE 110, 27.7 M (90.9 FT) NORTHWEST OF THE CENTER OF THE NORTH END OF THE VT ROUTE 110 BRIDGE OVER THE FIRST BRANCH, AND 24.4 M (80.1 FT) NORTH NORTHWEST OF POLE NO. 477.

MAIN TRAVERSE TIES

HVCTRL #8

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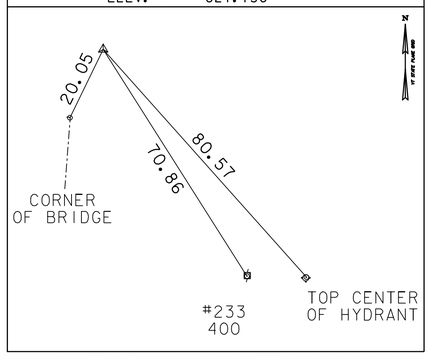
EAST = 1654118.648
ELEV. = 821.730



HVCTRL #9

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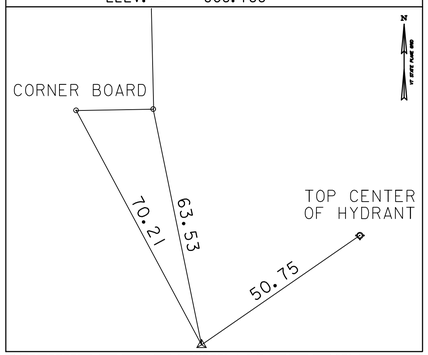
EAST = 1653998.659
ELEV. = 806.766



* MAIN TRAVERSE COMPLETED 5/11/2012 BY R. GILMAN P.C. & P. WINTERS & C. CYR

GPS CONTROL POINTS

HVCTRL #11

CHELSEA

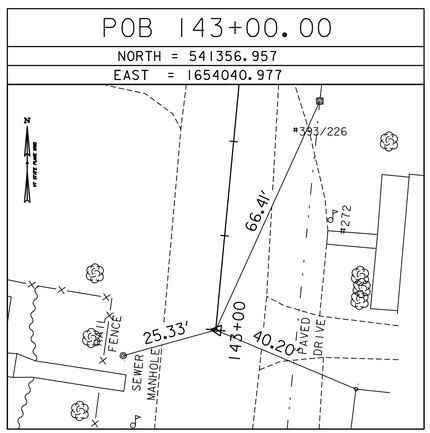
NORTH = 539486.250
EAST = 1654461.700
ELEV. = 797.500

GENERAL LOCATION, CHELSEA, VT.
TO REACH FROM THE INTERSECTION OF VT ROUTES 110 AND 113 IN CHELSEA VILLAGE GO SOUTH ALONG VT ROUTE 110 FOR 0.5 MI (0.8 KM) TO THE INTERSECTION OF A PAVED ROAD LEFT. TURN LEFT AND GO EAST ALONG THE PAVED ROAD FOR 0.05 MI (0.08 KM) TO THE CHELSEA SEWER PLANT AND THE INTERSECTION OF A GRAVEL ROAD RIGHT, LEADING TO THE TOWN SAND PILE AND LITTLE LEAGUE FIELD. TURN RIGHT AND GO SOUTH ALONG THE GRAVEL ROAD FOR ABOUT 50 M (164.0 FT) TO THE SITE OF THE MARK ON THE LEFT BETWEEN THE LITTLE LEAGUE FIELD BACKSTOP AND A CHAIN LINK FENCE WHICH SURROUNDS THE SEWER PLANT. THE MARK IS SET FLUSH WITH GROUND SURFACE IN THE TOP OF THE SOUTHWEST END OF A LONG NARROW ROCK OUTCROP. IT IS 17.5 M (57.4 FT) EAST OF AND ABOUT 0.3 M (1.0 FT) HIGHER THAN THE CENTERLINE OF THE GRAVEL ROAD, 17.3 M (56.8 FT) SOUTH OF THE SOUTHWEST CORNER OF THE SEWER PLANT BUILDING, 4.7 M (15.4 FT) NORTHWEST OF THE NORTHEAST END OF THE BACKSTOP, 2.5 M (8.2 FT) SOUTHWEST OF THE SOUTH CORNER OF THE PHILIP BUTCH FARNHAM MEMORIAL STONE MONUMENT, AND 6.1 M (20.0 FT) SOUTH SOUTHWEST OF A FIBERGLASS WITNESS POST IN AN ANGLE POINT IN THE CHAIN LINK FENCE. RECOVERED IN GOOD CONDITION BY VTGS 3/12/1998.

ALIGNMENT TIES

POB 143+00.00

NORTH = 541356.957
EAST = 1654040.977



POE STA 148+00.00

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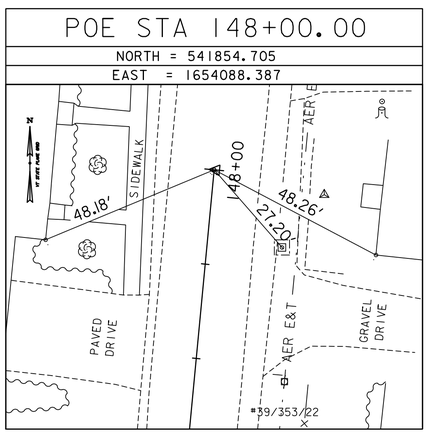
EAST = 1654088.387



DATUM

VERTICAL NAVD 88
HORIZONTAL NAD 83 (07)
ADJUSTMENT COMPASS

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NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TYLIN INTERNATIONAL

FILE NAME: zl2cl50t1.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TIE SHEET

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 7 OF 43

PARTIAL REMOVAL OF STRUCTURE
145+30.00 - 146+17.50

PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH
145+15.00, LT - 147+24.02, LT
145+50.00, LT - 147+65.21, LT

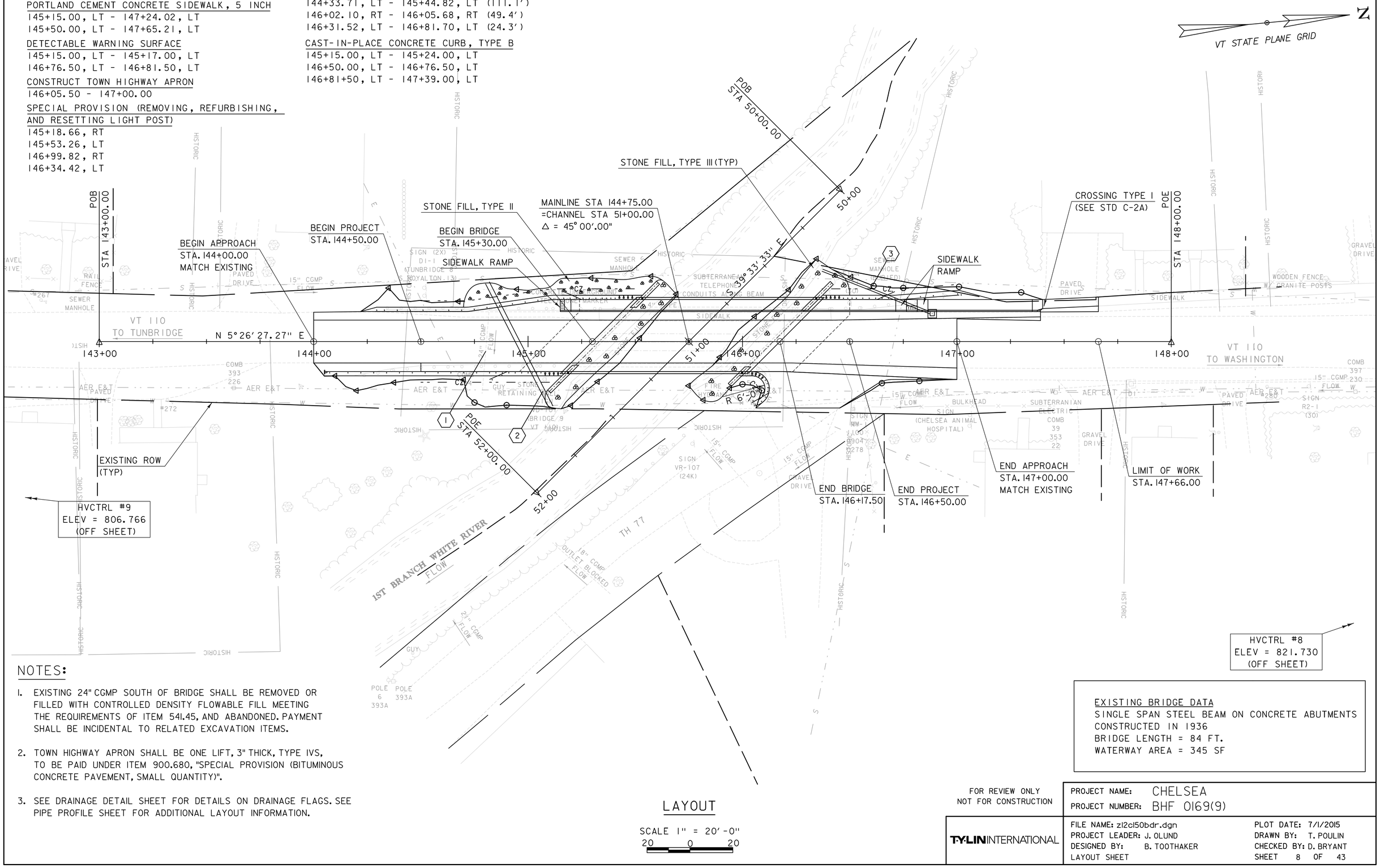
DETECTABLE WARNING SURFACE
145+15.00, LT - 145+17.00, LT
146+76.50, LT - 146+81.50, LT

CONSTRUCT TOWN HIGHWAY APRON
146+05.50 - 147+00.00

SPECIAL PROVISION (REMOVING, REFURBISHING, AND RESETTING LIGHT POST)
145+18.66, RT
145+53.26, LT
146+99.82, RT
146+34.42, LT

REMOVAL AND DISPOSAL OF GUARDRAIL
144+19.22, RT - 145+19.34,RT (100.5')
144+33.71, LT - 145+44.82, LT (111.1')
146+02.10, RT - 146+05.68, RT (49.4')
146+31.52, LT - 146+81.70, LT (24.3')

CAST-IN-PLACE CONCRETE CURB, TYPE B
145+15.00, LT - 145+24.00, LT
146+50.00, LT - 146+76.50, LT
146+81+50, LT - 147+39.00, LT



NOTES:

1. EXISTING 24" CGMP SOUTH OF BRIDGE SHALL BE REMOVED OR FILLED WITH CONTROLLED DENSITY FLOWABLE FILL MEETING THE REQUIREMENTS OF ITEM 541.45, AND ABANDONED. PAYMENT SHALL BE INCIDENTAL TO RELATED EXCAVATION ITEMS.

2. TOWN HIGHWAY APRON SHALL BE ONE LIFT, 3" THICK, TYPE IVS, TO BE PAID UNDER ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".

3. SEE DRAINAGE DETAIL SHEET FOR DETAILS ON DRAINAGE FLAGS. SEE PIPE PROFILE SHEET FOR ADDITIONAL LAYOUT INFORMATION.

LAYOUT

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

EXISTING BRIDGE DATA
SINGLE SPAN STEEL BEAM ON CONCRETE ABUTMENTS
CONSTRUCTED IN 1936
BRIDGE LENGTH = 84 FT.
WATERWAY AREA = 345 SF

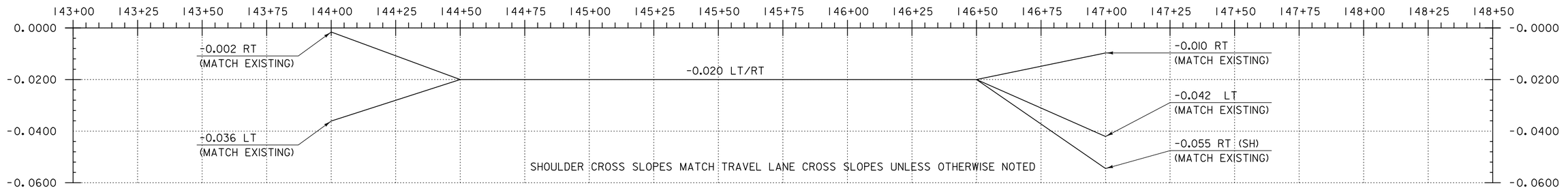
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y.LIN INTERNATIONAL

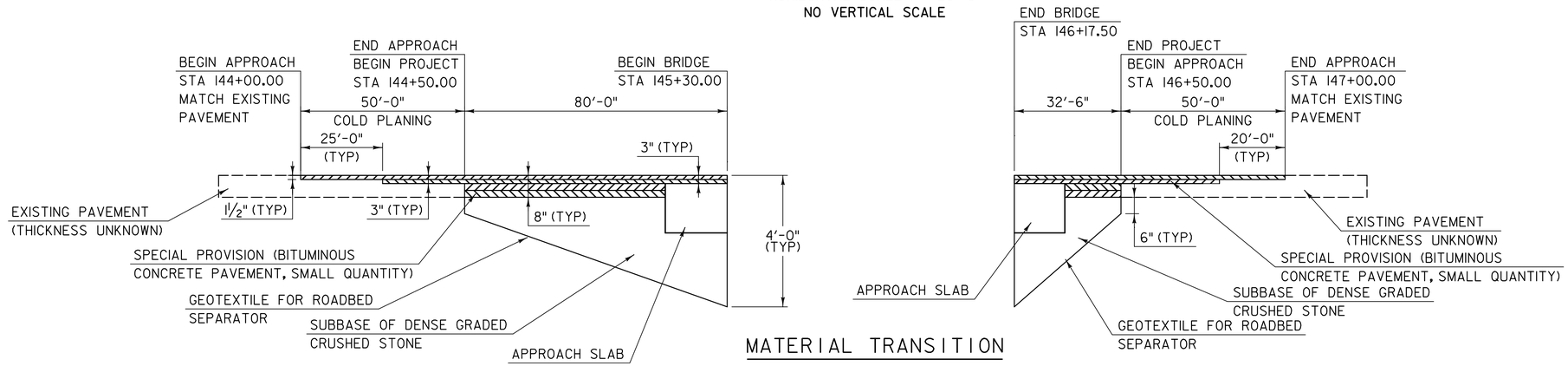
FILE NAME: z12cl50bdr.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
LAYOUT SHEET

PLOT DATE: 7/1/2015
DRAWN BY: T. POULIN
CHECKED BY: D. BRYANT
SHEET 8 OF 43



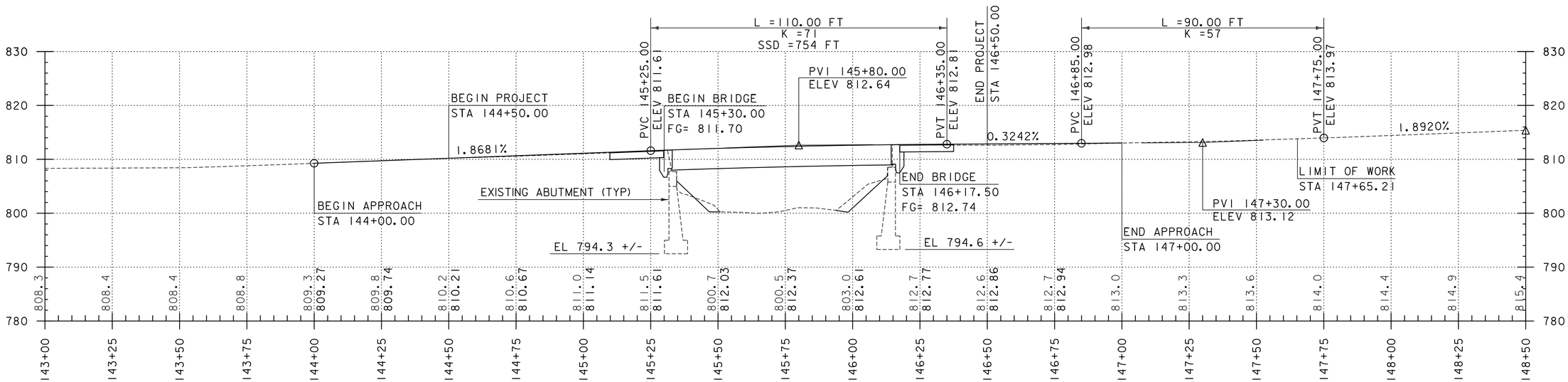
VT 110 BANKING DIAGRAM

HORIZONTAL SCALE 1" = 20'-0"
NO VERTICAL SCALE



MATERIAL TRANSITION

HORIZONTAL SCALE 1" = 20'-0"
NO VERTICAL SCALE



VT 110 PROFILE

HORIZONTAL SCALE 1" = 20'-0"
VERTICAL SCALE 1" = 10'-0"

NOTES:

1. GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG ℄ L
2. GRADES SHOWN TO THE NEAREST HUNDREDTH ARE FINISH GRADE ALONG ℄ L

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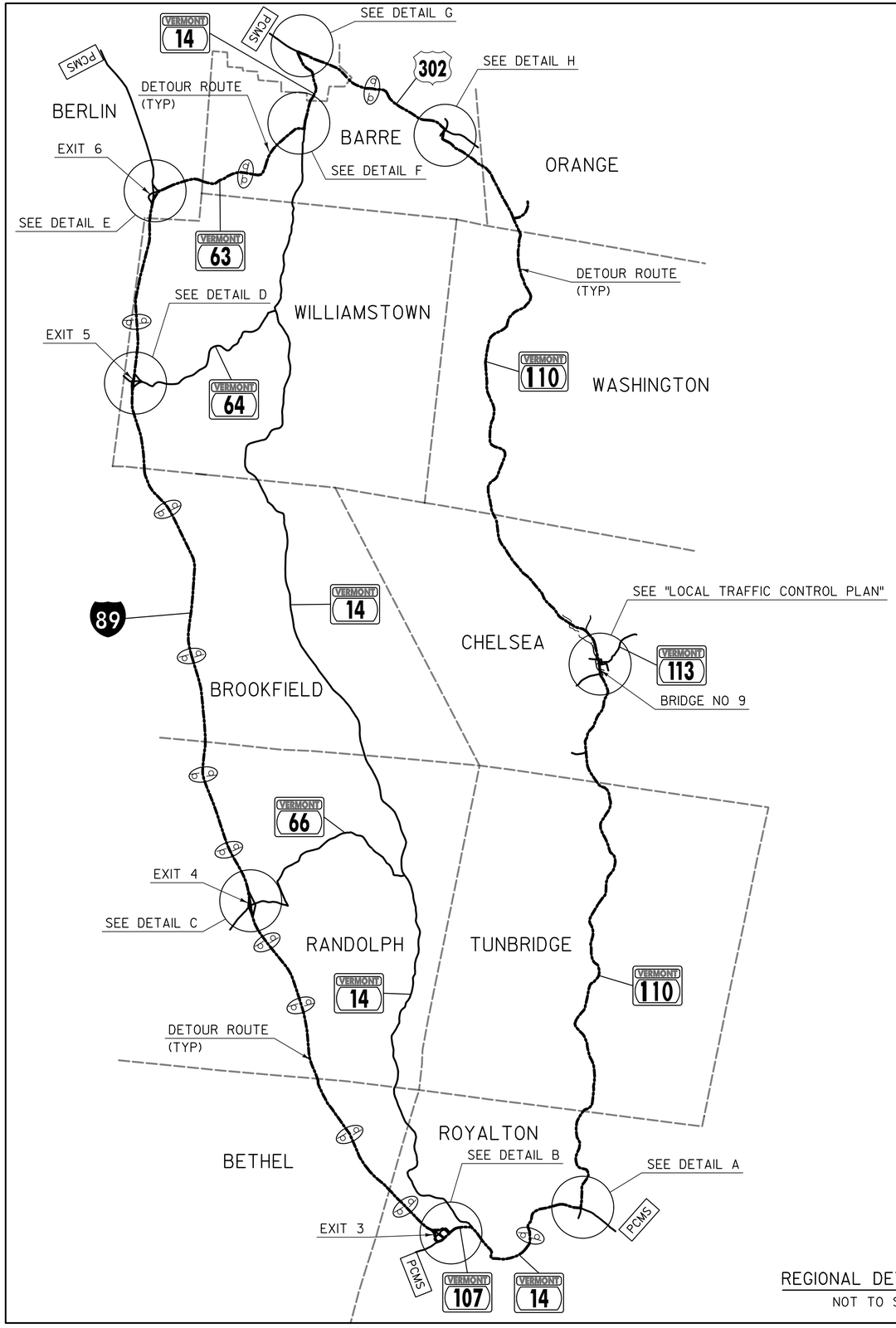
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

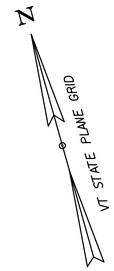
T.Y. LIN INTERNATIONAL

FILE NAME: z12cl50pro.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
PROFILE AND BANKING DETAIL SHEET

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: D. BURHANS
SHEET 9 OF 43



REGIONAL DETOUR MAP
NOT TO SCALE



REGIONAL DETOUR NOTES:

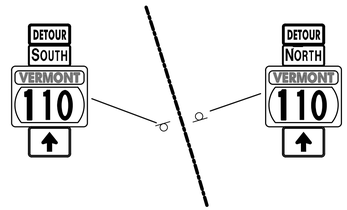
1. TRAFFIC WILL BE MAINTAINED ON A REGIONAL DETOUR AS SHOWN ON THE REGIONAL DETOUR MAP. DETOUR SIGNING IS THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT FOR ALL TEMPORARY TRAFFIC CONTROL DEVICES AND FOR IMPLEMENTING AND MAINTAINING THE DETOUR, INCLUDING, BUT NOT LIMITED TO SIGNS, AND PORTABLE CHANGEABLE MESSAGE SIGNS WILL BE MADE UNDER ITEM 900.645 "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)."

2. WHERE PRACTICAL, DETOUR ROUTE MARKERS AND ANY ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED ADJACENT TO EXISTING ROUTE MARKERS. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO BLOCK EXISTING TRAFFIC CONTROL SIGN ASSEMBLIES OR TO INTERFERE WITH STOPPING SIGHT DISTANCE AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS. THE CONTRACTOR SHALL MAINTAIN AT LEAST 200 FEET BETWEEN SIGN ASSEMBLIES WHEREEVER POSSIBLE.

3. ANY SIGNS THAT CONFLICT WITH THE BRIDGE CLOSURE DETOUR SHALL BE COVERED FOR THE DURATION OF THE BRIDGE CLOSURE. TREES AND SHRUBS WITHIN EXISTING RIGHT OF WAY AND OTHERWISE INTERFERING WITH VISIBILITY OF EXISTING SIGNS OR PROPOSED DETOUR SIGNS SHALL BE TRIMMED ACCORDINGLY. PAYMENT FOR SUCH COVERS AND TRIMMING WILL BE MADE UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".

4. FOUR PCMS IN SUPPORT OF THE REGIONAL DETOUR SHALL BE PLACED 14 DAYS PRIOR TO THE START OF CONSTRUCTION AT LOCATIONS SHOWN TO WARN OF IMPENDING DETOURS AND REMAIN THROUGH THE DURATION OF THE BRIDGE CLOSURE PERIOD.

5. SEE REGIONAL TRAFFIC CONTROL PLANS 2 THROUGH 4 FOR DETAILS A THROUGH H. ALL DISTANCES MEASURED ON THESE PLANS ARE APPROXIMATE AND MAY VARY IN THE FIELD.



CONFIRMATORY ROUTE MARKER ASSEMBLY
NOT TO SCALE

LEGEND:

- CONFIRMATION ROUTE MARKER ASSEMBLY
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN
- DETOUR ROUTE

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

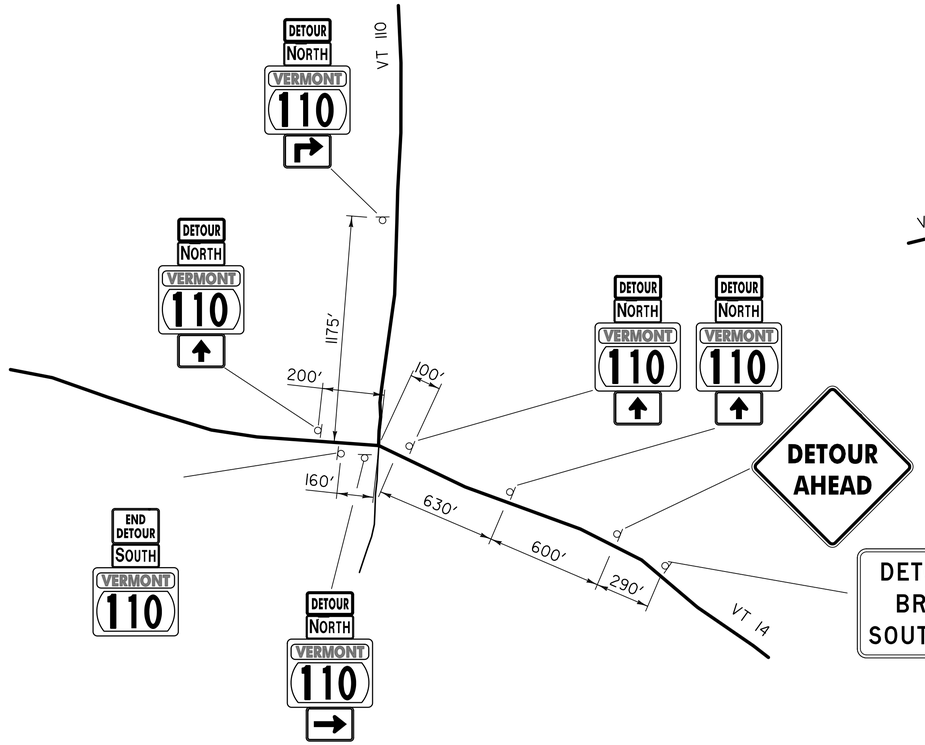
T.Y.LIN INTERNATIONAL

FILE NAME: z12cl50regdtrl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: A. GREENLAW
REGIONAL TRAFFIC CONTROL PLAN 1

PLOT DATE: 7/1/2015
DRAWN BY: P. MCCLURE
CHECKED BY: K. DUCHARME
SHEET 10 OF 43

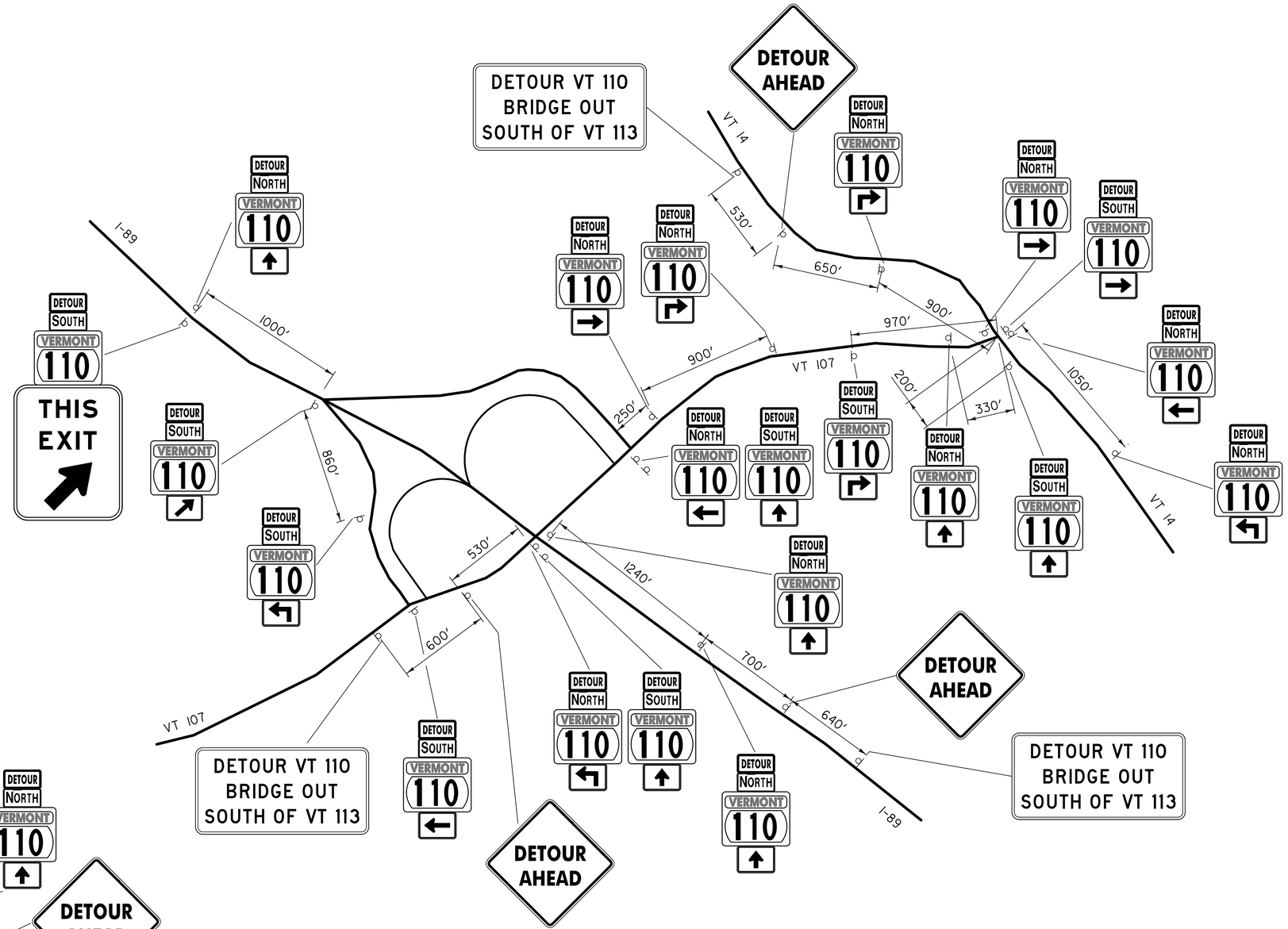
N

VT STATE PLANE GRID



DETAIL A - VT 110 & VT 14

NOT TO SCALE



DETAIL B - I-89 EXIT 3

NOT TO SCALE

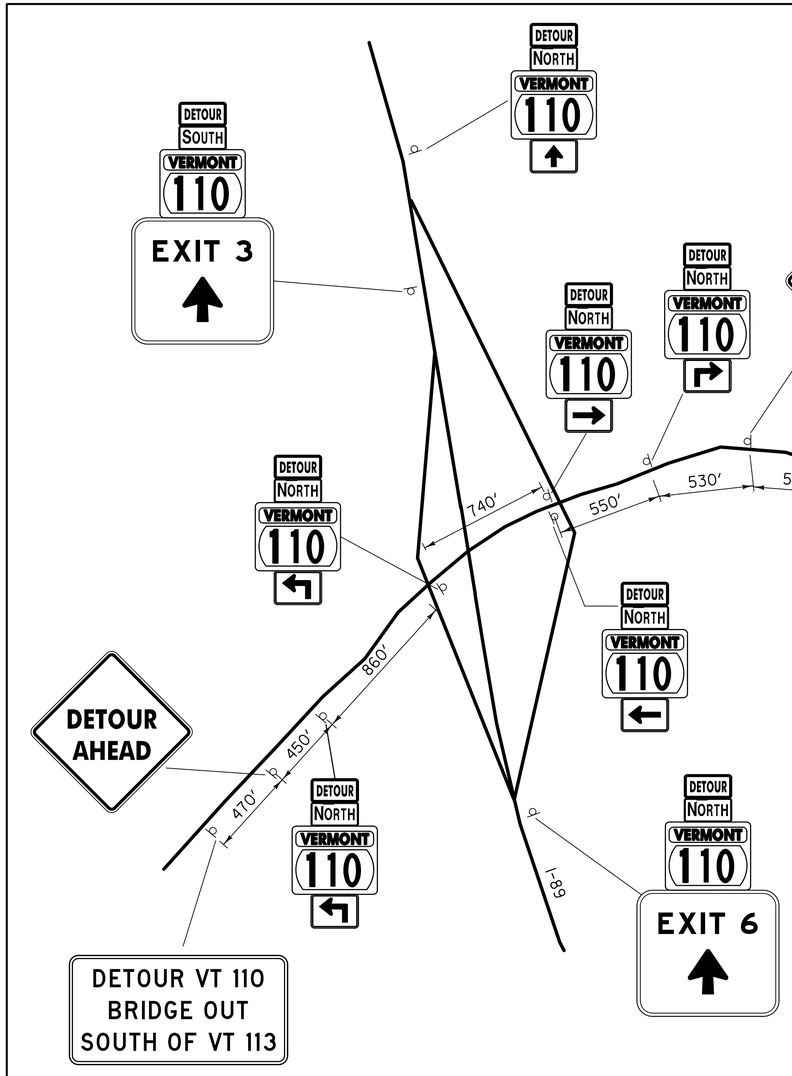
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TYLIN INTERNATIONAL

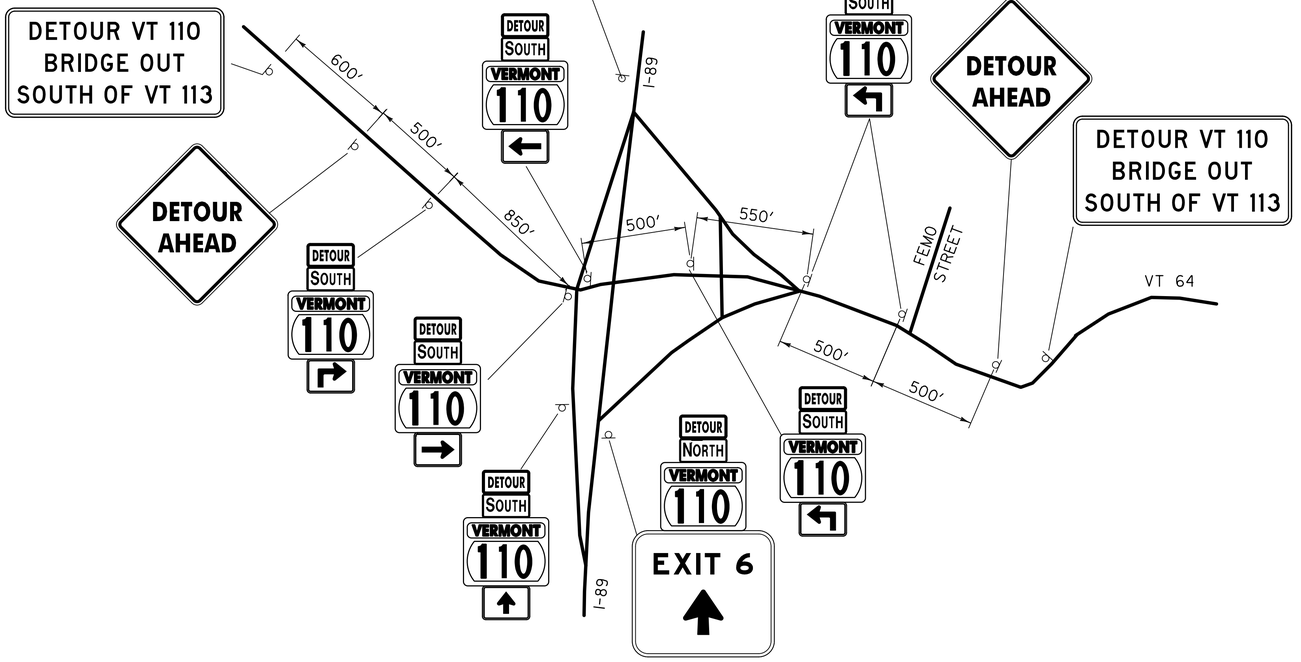
FILE NAME: zl2cl50regdtr2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: A. GREENLAW
REGIONAL TRAFFIC CONTROL PLAN 2

PLOT DATE: 7/1/2015
DRAWN BY: P. MCCLURE
CHECKED BY: K. DUCHARME
SHEET 11 OF 43



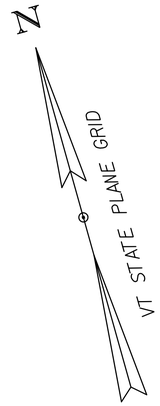
DETAIL C - I-89 EXIT 4

NOT TO SCALE



DETAIL D - I-89 EXIT 5

NOT TO SCALE



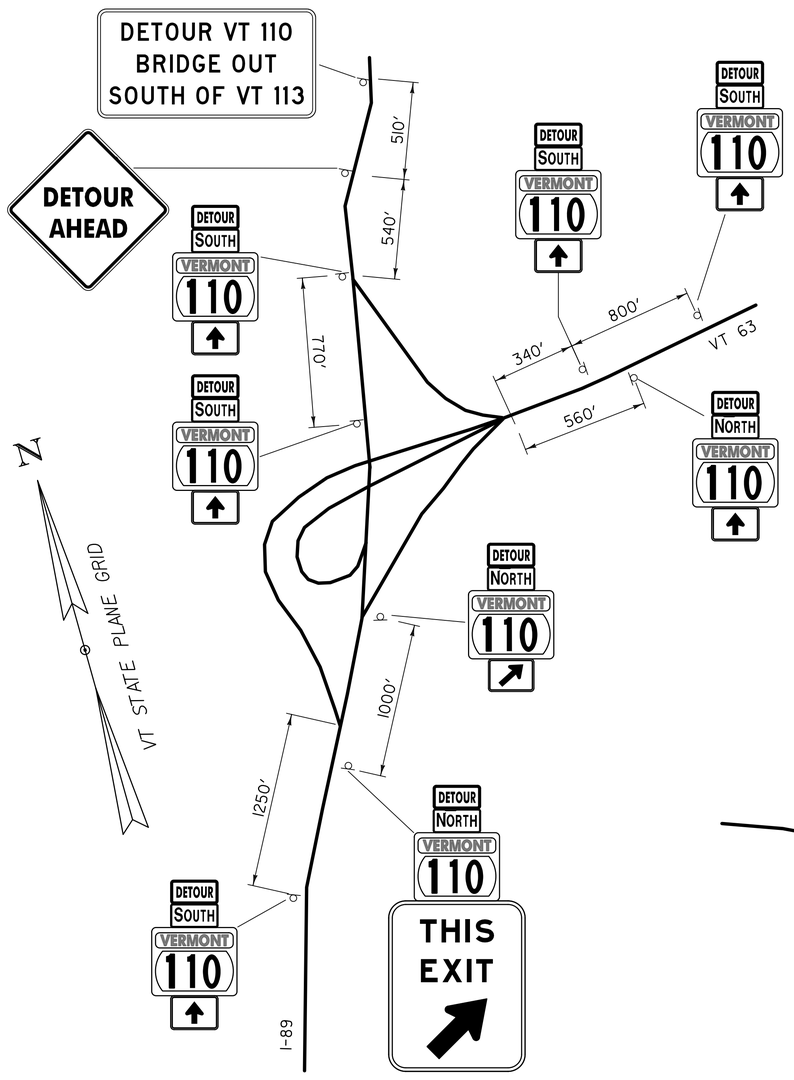
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y. LIN INTERNATIONAL

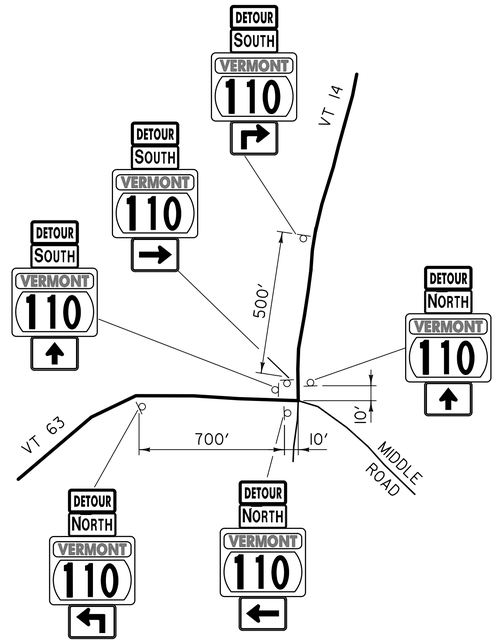
FILE NAME: z12cl50regdtr3.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: A. GREENLAW
REGIONAL TRAFFIC CONTROL PLAN 3

PLOT DATE: 7/1/2015
DRAWN BY: P. MCCLURE
CHECKED BY: K. DUCHARME
SHEET 12 OF 43



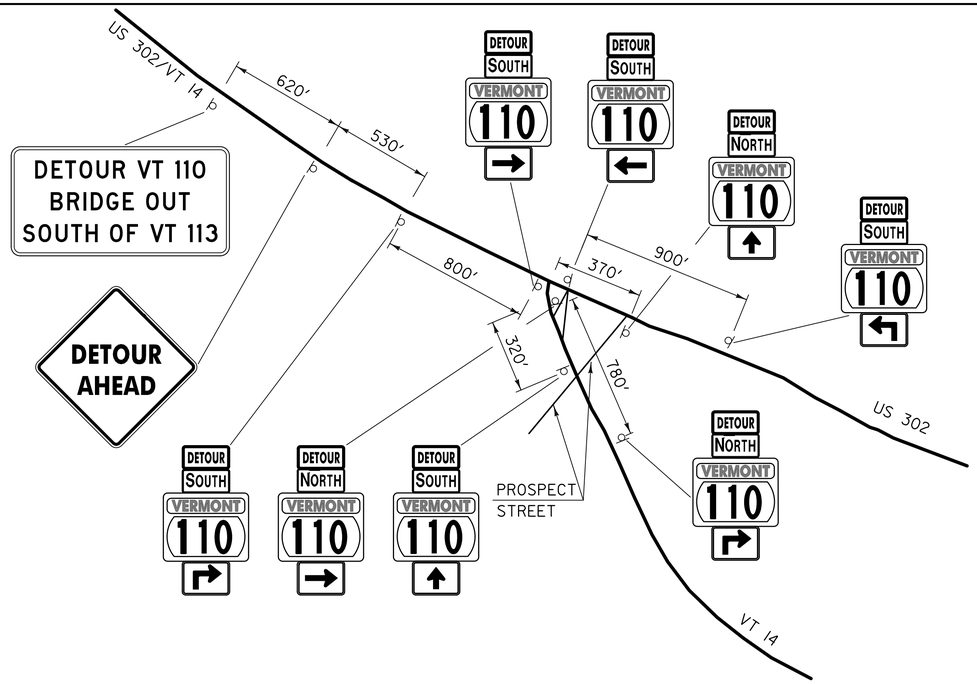
DETAIL E - I-89 EXIT 6

NOT TO SCALE



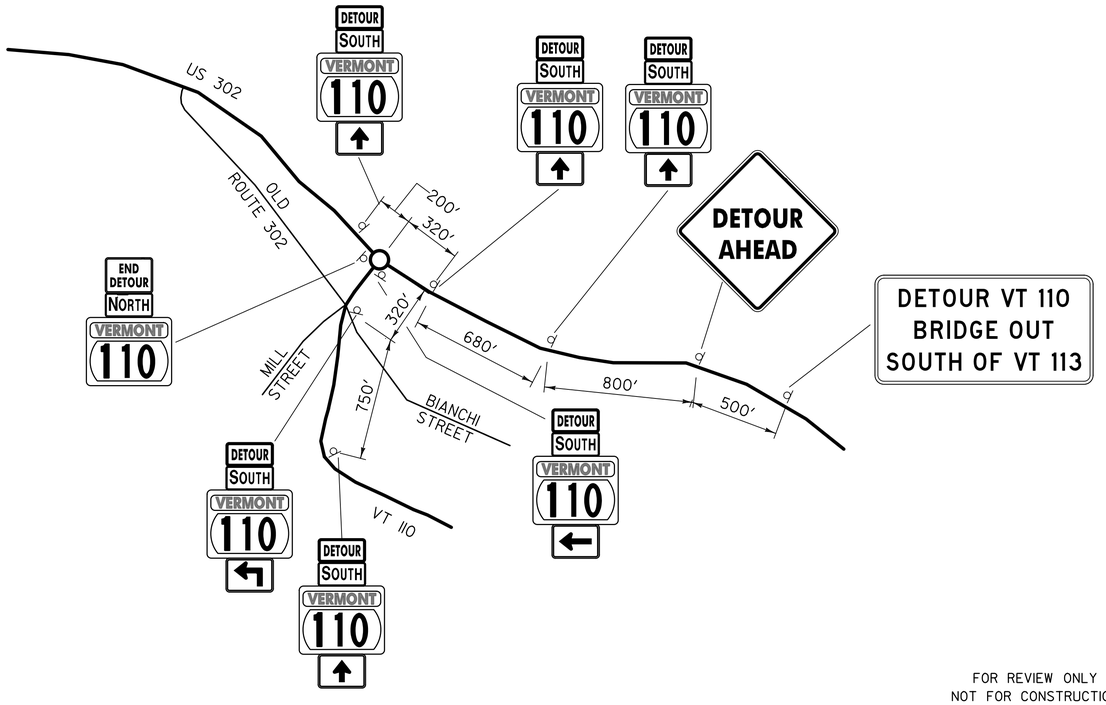
DETAIL F - VT 63 & VT 14

NOT TO SCALE



DETAIL G - VT 14 & US 302

NOT TO SCALE



DETAIL H - VT 110 - US 302

NOT TO SCALE

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TYLIN INTERNATIONAL

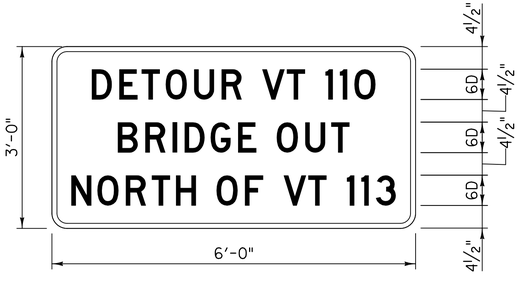
FILE NAME: zl2cl50regdtr4.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: A. GREENLAW
REGIONAL TRAFFIC CONTROL PLAN 4

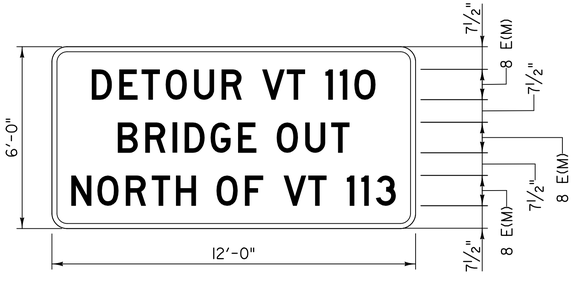
PLOT DATE: 7/1/2015
DRAWN BY: P. MCCLURE
CHECKED BY: K. DUCHARME
SHEET 13 OF 42

DETOUR SIGN SUMMARY

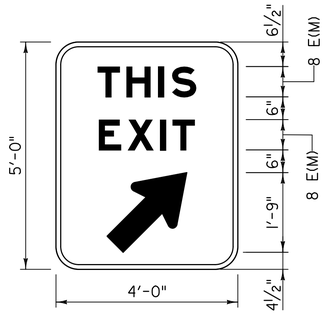
SIGN DESIGNATION	SIZE OF SIGN WIDTH (IN)	SIZE OF SIGN HEIGHT (IN)	SIGN LEGEND	NUMBER OF SIGNS REQ'D	REMARKS
MI-5	24	24	VERMONT 110	63	MOUNT BELOW M3-2 OR M3-4
	45	36		35	
M3-2	24	12	NORTH	30	MOUNT BELOW M4-8 OR M4-8a
	36	18		18	
M3-4	24	12	SOUTH	33	MOUNT BELOW M4-8 OR M4-8a
	36	18		18	
M4-8	24	12	DETOUR	61	MOUNT ABOVE THE M3-2 OR M3-4
	36	18		35	
M4-8A	24	18	END DETOUR	2	MOUNT ABOVE THE M3-2 OR M3-4
M5-IL	21	15		11	MOUNT BELOW THE MI-5
M5-IR	21	15		9	MOUNT BELOW THE MI-5
M5-2R	30	21		2	MOUNT BELOW THE MI-5
M6-IL	30	21		8	MOUNT BELOW THE MI-5
				1	
M6-IR	21	15		9	MOUNT BELOW THE MI-5
				0	
M6-3	21	15		23	MOUNT BELOW THE MI-5
	30	21		26	
RII-2	48	30	ROAD CLOSED	2	

SIGN DESIGNATION	SIZE OF SIGN WIDTH (IN)	SIZE OF SIGN HEIGHT (IN)	SIGN LEGEND	NUMBER OF SIGNS REQ'D	REMARKS
RII-4	60	30	ROAD CLOSED TO THRU TRAFFIC	2	
W20-2	36	36	DETOUR AHEAD	10	
	48	48		1	
W20-3	36	36	ROAD CLOSED 500 FT	2	
W20-3	36	36	ROAD CLOSED 1000 FT	2	
SP-1	72	36	DETOUR VT 110 BRIDGE OUT NORTH OF VT 113	10	
	120	54		1	TYPE B
SP-2	48	60	THIS EXIT	2	
SP-3	54	48	EXIT 3	2	
SP-4	54	48	EXIT 6	2	

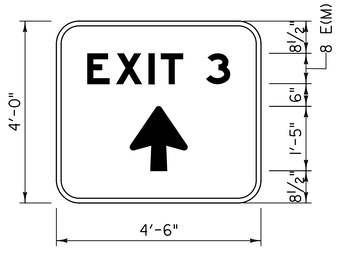




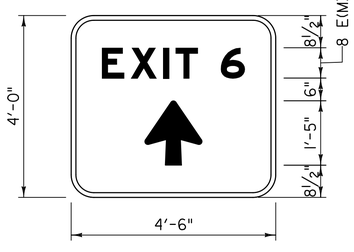
SP-1



SP-2



SP-3



SP-4

MESSAGES FOR PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) FOR REGIONAL DETOUR

TWO WEEKS PRIOR TO CLOSURE

MESSAGE 1	MESSAGE 2	MESSAGE 3	
VT 110 S	CHELSEA	MMMM DD	(DATE) **
BRIDGE	NORTH OF	TO	
CLOSED	VT 113	MMMM DD	(DATE) **

DURING BRIDGE CLOSURE

MESSAGE 1	MESSAGE 2
VT 110 S	CHELSEA
BRIDGE	NORTH OF
CLOSED	VT 113

** MONTH SHALL BE SPELLED OUT. EXAMPLE: JUNE 10, NOT 06/10

SIGN NOTES:

1. COLORS FOR THE MI-5, M3-2, AND M3-4 SIGNS SHALL MATCH THE COLORS SHOWN ON VTRANS STD. E-136B.
2. COLORS FOR THE M5-IL, M5-IR, M5-2L, M6-IL, AND M6-IR, M6-2L AND THE M6-3 SIGNS SHALL BE A BLACK ARROW AND BORDER ON RETROREFLECTIVE FLUORESCENT ORANGE BACKGROUND.
3. COLORS FOR THE M4-8 AND M4-8A SIGNS SHALL BE BLACK TEXT AND BORDER ON RETRORELFECTIVE FLUORESCENT ORANGE BACKGROUND.
4. THE MI-5, M3-2, AND THE M3-4 SIGNS SHALL BECOME THE PROPERTY OF THE STATE AFTER THEY ARE REMOVED FROM THE DETOUR. THE CONTRACTOR SHALL DELIVER THE SIGNS TO THE VTRANS MAINTENANCE FACILITY IN ROYALTON ALL COSTS ASSOCIATED WITH PROVIDING THE SIGNS TO THE STATE WILL BE MADE UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL INCLUSIVE)."
5. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PLACED OFF THE EDGE OF THE ROADWAY, OUTSIDE THE CLEAR ZONE, BUT SHALL BE VISIBLE FROM THE ROADWAY. ANY VEGETATION THAT INTERFERES WITH VISIBILITY OF THE PCMS SHALL BE REMOVED. PAYMENT FOR REMOVAL OF THE VEGETATION SHALL BE INCIDENTAL TO ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)." WHEN PLACED BEHIND GUARDRAIL, THE BOTTOM OF THE SIGN FACE SHALL BE ABOVE THE TOP OF THE GUARDRAIL.

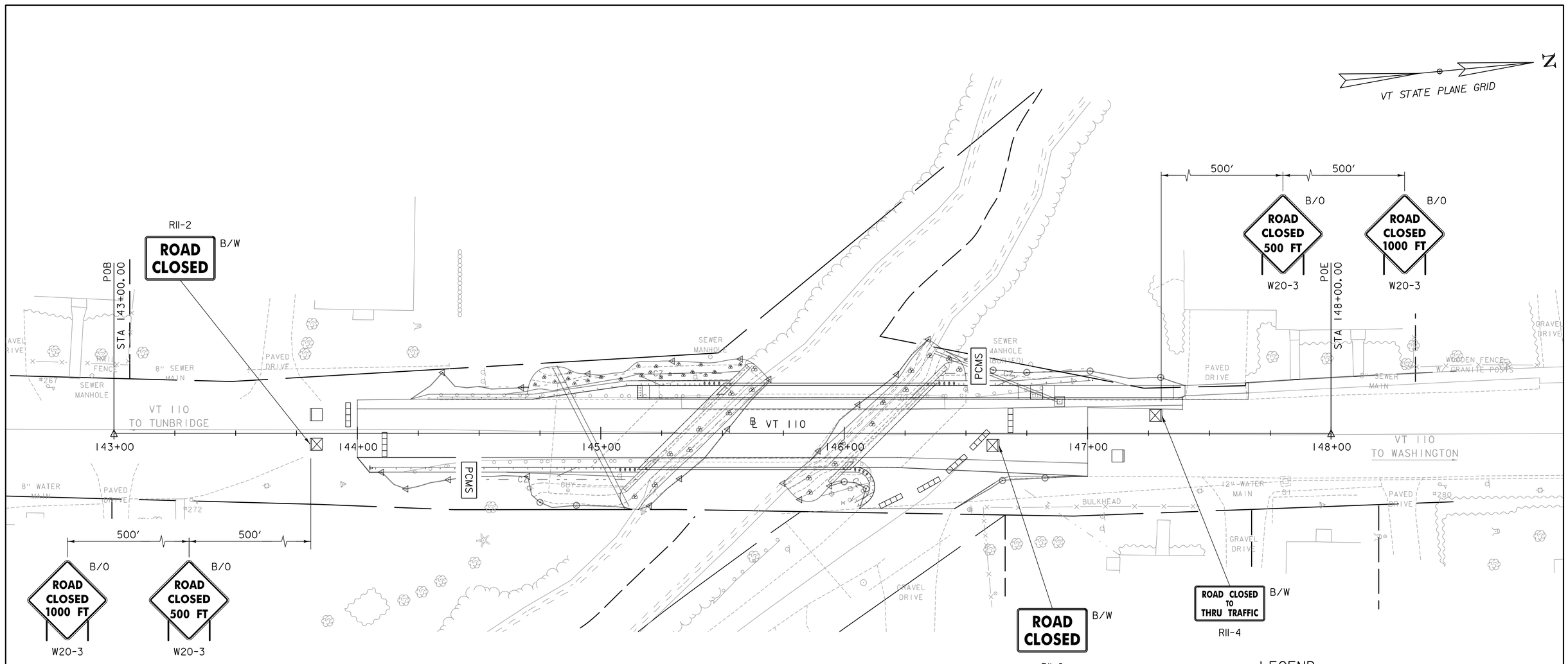
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TYLIN INTERNATIONAL

FILE NAME: z12cl50regdtr5.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: A. GREENLAW
REGIONAL TRAFFIC CONTROL PLAN 5

PLOT DATE: 7/1/2015
DRAWN BY: P. MCCLURE
CHECKED BY: K. DUCHARME



NOTES:

1. SEE REGIONAL TRAFFIC CONTROL PLANS FOR ADDITIONAL NOTES AND REQUIREMENTS.
2. THE LAYOUT AND QUANTITY OF TRAFFIC CONTROL DEVICES SHOWN IS CONCEPTUAL. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A DETAILED SITE SPECIFIC TRAFFIC CONTROL PLAN IDENTIFYING BRIDGE CLOSURE METHODS AND SIGN LOCATIONS IN ACCORDANCE WITH SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE).
3. PAYMENT FOR ALL TEMPORARY TRAFFIC CONTROL DEVICES INCLUDING, BUT NOT LIMITED TO, SIGNS, POSTS, BARRICADES, TEMPORARY TRAFFIC BARRIER, AND PORTABLE CHANGEABLE MESSAGE SIGNS, WILL BE MADE UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)."
4. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE PLACED NEAR EACH END OF THE BRIDGE 14 DAYS PRIOR TO THE START OF CONSTRUCTION TO WARN OF IMPENDING DETOURS. THESE PCMS SHALL TURNED OFF AND REMOVED FROM THE SITE OR DEPLOYED TO LOCATIONS SPECIFIED BY THE ENGINEER ONCE CONSTRUCTION HAS BEGUN.
5. ACCESS TO ALL EXISTING DRIVES AND SIDE ROADS, SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION.
6. TYPE III MODIFIED BARRICADE SHALL BE TYPE III BARRICADE WITH THE ASSOCIATED SIGNING MOUNTED ON IT. ALL BARRICADES SHALL MEET "NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM" (NCHRP) REPORT 350 OR THE "AMERICAN ASSOCIATION OF STATE AND HIGHWAY TRANSPORTATION OFFICIALS" (AASHTO) "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH). THE APPROPRIATE RESOURCE SHALL BE DETERMINED AS DESCRIBED IN THE MASH PUBLICATION.

LEGEND:

☐	TYPE III BARRICADE
☒	TYPE III MODIFIED BARRICADE
▭▭▭	TRAFFIC BARRIER
B/O	BLACK LETTERING ON ORANGE BACKGROUND
B/W	BLACK LETTERING ON WHITE BACKGROUND
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN

PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) TEXT - AT BRIDGE

MESSAGE 1	MESSAGE 2
BRIDGE	**MMMM DD**
CLOSED	**TO**
	MMMM DD

LOCAL TRAFFIC CONTROL PLAN

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

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TYLIN INTERNATIONAL

FILE NAME: zl2cl50localdtr.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
LOCAL TRAFFIC CONTROL PLAN

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 15 OF 43

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE DETAIL SHEET

STATION	STATION	POS.	ASKEW	INLET/OUTLET TYPE		DITCH		PIPE ARCH			PIPE		ALLOWABLE OPTIONS						PIPE ELBOW	ES	CB		DEPTH DI	CONC CLASS B	REINF STEEL	DI GRATE	CHAN ELEV	CRM	TRENCH EXCAVATION		COMM EXC	UNC CHAN EXC	STRUCT EXCAV	GRAN BKFILL STRUCT	GRAN BORR	EROS MATT	STONE FILL		MARKER POSTS				REMARKS
				INLET	OUTLET	IN	OUT	SPAN	RISE	L	D	L	PCCSP	CAAP	RCP	CSP	CPEP	PCCSP PI										EARTH	ROCK									LT	RT			
			NO. DEG.					IN	IN	FT	IN	FT	TH	TH	CL	TH	SL	TH	NO. DEG.	EA	EA		FT	CY	LBS	TYPE	EA	CY	CY	CY	CY	CY	CY	CY	SY	CY	TYPE	EA	EA			
144+79	144+83	RT/LT	4.8095	DITCH	DITCH																																				1	REMOVE OR FILL AND ABANDON EXISTING 24" CGMP
144+81	145+11	LT/RT	27.129	DITCH	RIVER						24	65					X											69.4														2	INSTALL NEW 24" PIPE
146+37	146+87	LT	68.401	PRCDI	RIVER						12	52.9		0.06			X	0.064				1	7.5			E			37.8													3	INSTALL NEW 12" PIPE AND PRCDI

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

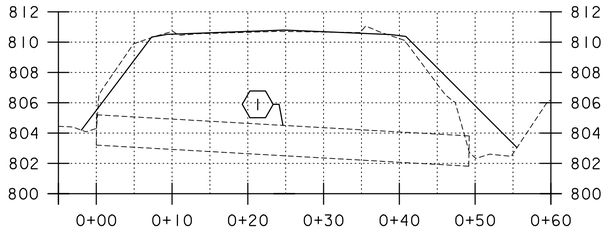
T.Y. LIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: z12C150drn.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
DRAINAGE DETAIL SHEET

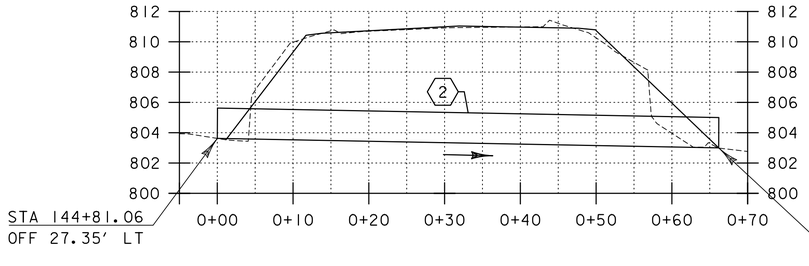
PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 16 OF 43

P1



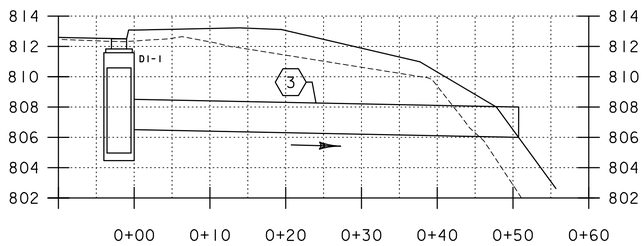
1
SLOPE = 2.83%
REMOVE EXISTING PIPE
TYPE: CGMP
LENGTH = 49.2 FT
DIAMETER = 24 IN
INV. IN = 803.21
INV. OUT= 801.82

P2



2
SLOPE = 0.82%
NEW PIPE
TYPE: CPEP (SL)
LENGTH = 65.0 FT
DIAMETER = 24 IN
INV. IN = 803.53
INV. OUT= 803.00

P3



3
SLOPE = 0.94%
NEW PIPE
TYPE: OPTION PIPE AA
LENGTH = 53.3 FT
DIAMETER = 12 IN
INV. IN = 806.50
INV. OUT= 806.00

DI-1
GRATE: TYPE E
RIM EL = 812.43
DEPTH = 7.5 FT

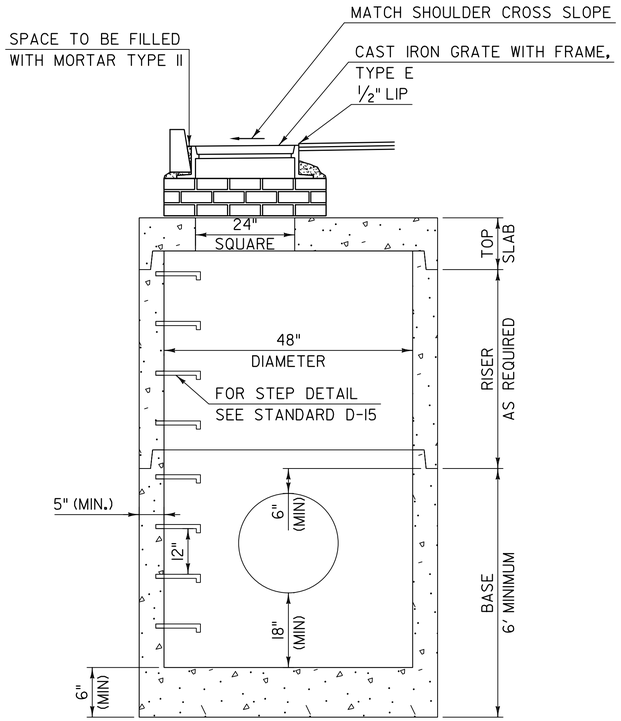
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

T.Y.LIN INTERNATIONAL

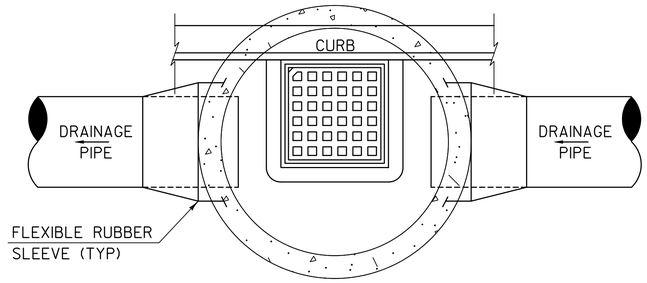
PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: zl2cl50pipepro.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
PIPE PROFILE SHEET

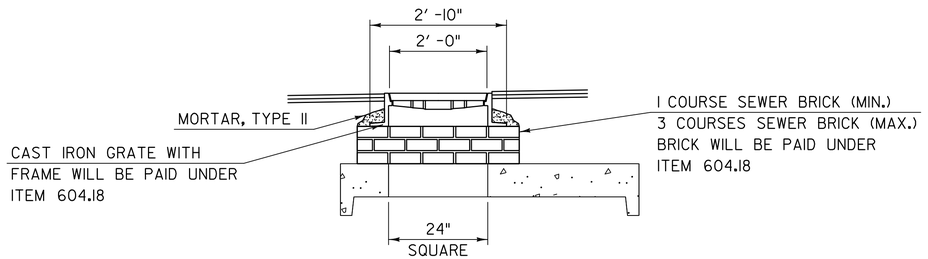
PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 17 OF 43



ELEVATION VIEW



DROP INLET PLAN VIEW



ELEVATION OF GRATE INSTALLATION

PRECAST REINFORCED CONCRETE DROP INLET (PRCDI)

NOT TO SCALE

PRECAST CONCRETE DROP INLET NOTES:

1. PRECAST CONCRETE SECTIONS SHALL CONFORM TO STANDARD SPECIFICATION SECTION 604.
2. CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 541 FOR CONCRETE, CLASS A.
3. DROP INLETS SHALL BE DESIGNED FOR HL93 LOADING.
4. MANHOLE STEPS SHALL BE 14" WIDE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC CONFORMING TO ASTM C-478 AND SHALL BE CAST INTO MANHOLE SECTIONS BY THE PRECAST CONCRETE MANUFACTURER.
5. FACE OF PIPE SHALL NOT PROJECT MORE THAN 2" OR LESS THAN 1" FROM INSIDE WALL OF STRUCTURE.
6. ALL STRUCTURES WITH MULTIPLE PIPES SHALL HAVE A MINIMUM OF 12" OF OUTSIDE SURFACE BETWEEN HOLES, NO MORE THAN 75% OF A HORIZONTAL CROSS-SECTION SHALL BE HOLES, AND THERE SHALL BE NO HOLES CLOSER THAN 3" TO JOINTS.
7. FITTING FRAME TO FINAL GRADE MAY BE DONE WITH BRICK OR PRECAST CONCRETE GRADE RINGS OF APPROPRIATE THICKNESS (3 COURSES MAX).
8. FLAT SLAB TOPS SHALL BE USED FOR ALL DROP INLETS, UNLESS OTHERWISE PERMITTED BY THE ENGINEER.
9. ALL PIPE INVERTS AND PENETRATION ANGLES SHALL BE FIELD VERIFIED PRIOR TO PRECASTING.
10. PRECAST SECTIONS SHALL HAVE A TONGUE AND GROOVE JOINT AND BE ASSEMBLED USING A BUTYL RUBBER OR APPROVED EQUAL SEALANT.
11. PROVIDE FLEXIBLE RUBBER SLEEVES CONFORMING TO ASTM C-923, RESILIENT, OF SIZE REQUIRED, FOR EACH PIPE CONNECTING TO STRUCTURE. SLEEVES SHALL BE CAST INTO PRECAST STRUCTURE BY THE MANUFACTURER FOR ALL PIPE PENETRATIONS.
12. DROP INLET GRATE ORIENTATION SHALL BE IN ACCORDANCE WITH STANDARD DETAIL D-15 FOR TYPE E GRATES.
13. PAYMENT FOR INSTALLATION OF THE DROP INLETS WILL BE MADE UNDER ITEM 604.18, "PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE."

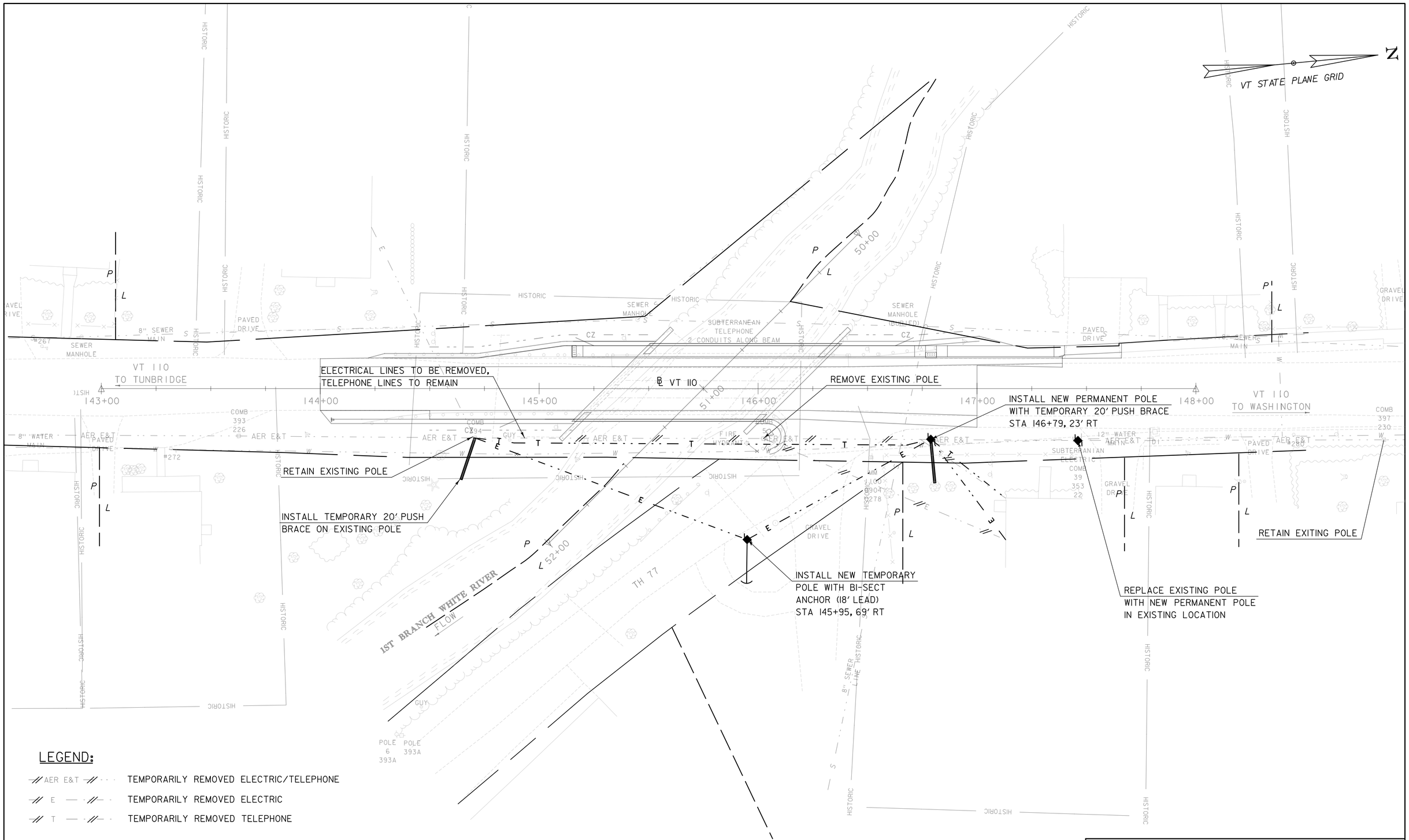
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

T.Y. LIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: zl2cl50drndet.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
PRECAST DROP INLET DETAILS

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: D. BRYANT
SHEET 18 OF 43



LEGEND:

- AER E&T — TEMPORARILY REMOVED ELECTRIC/TELEPHONE
- E — TEMPORARILY REMOVED ELECTRIC
- T — TEMPORARILY REMOVED TELEPHONE

NOTE: UTILITY RELOCATION EFFORTS SHOWN ON THIS SHEET ARE PERFORMED BY OTHERS AND ARE PROVIDED HEREIN FOR INFORMATION ONLY TO REFLECT CHANGED SITE CONDITIONS.

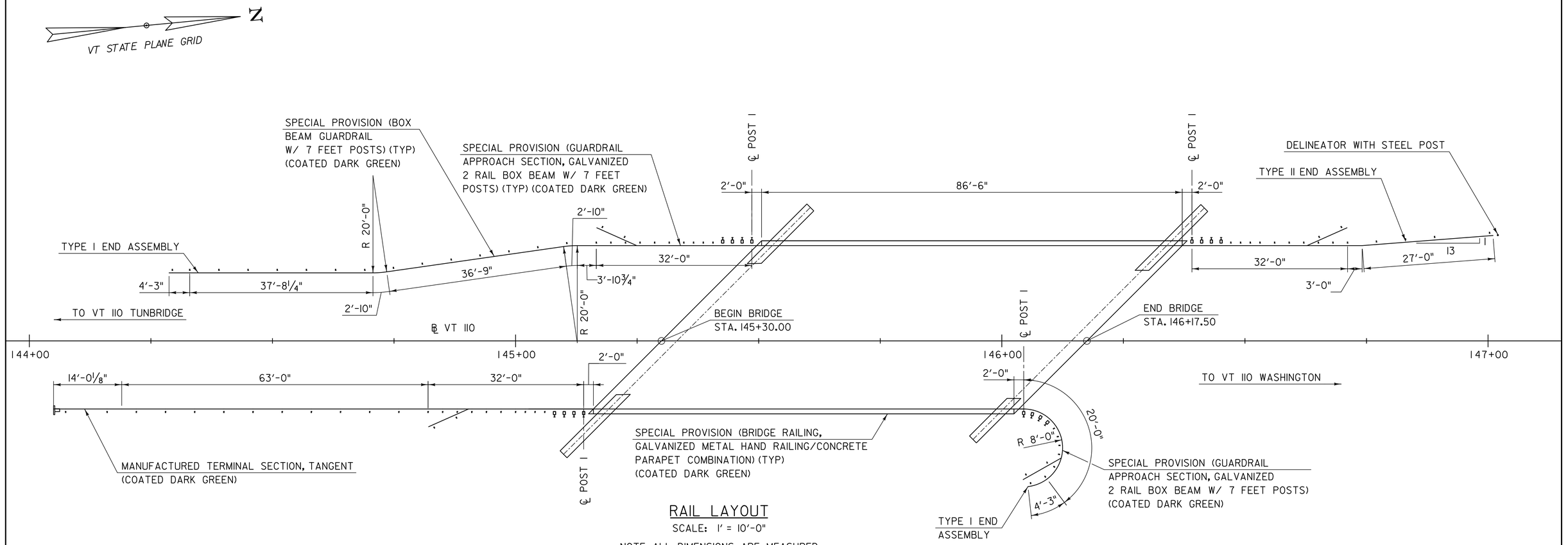
UTILITY RELOCATION LAYOUT

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

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

T.Y. LIN INTERNATIONAL

PROJECT NAME:	CHELSEA
PROJECT NUMBER:	BHF 0169(9)
FILE NAME:	z12cl50ut1l.dgn
PROJECT LEADER:	J. OLUND
DESIGNED BY:	L. WHEELER
UTILITY RELOCATION LAYOUT	
PLOT DATE:	7/1/2015
DRAWN BY:	B. TOOTHAKER
CHECKED BY:	J. OLUND
SHEET	19 OF 43



RAIL LAYOUT

SCALE: 1" = 10'-0"

NOTE: ALL DIMENSIONS ARE MEASURED HORIZONTALLY ALONG FACE OF RAIL.

SPECIAL PROVISION (BOX BEAM GUARDRAIL W/ 7 FEET POSTS) (COATED DARK GREEN)
STA 144+19.00 RT - 144+82.00 RT
STA 144+28.74 LT - 145+16.60 LT
STA 146+05.38 RT - 146+09.29 RT
STA 146+71.10 LT - 147+01.02 LT

SPECIAL PROVISION (GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM W/ 7 FEET POSTS) (COATED DARK GREEN)
STA 144+82.00 RT - 145+16.00 RT
STA 145+16.60 LT - 145+50.60 LT
STA 146+02.50 RT - 146+09.29 RT
STA 146+37.10 LT - 146+71.10 LT

SPECIAL PROVISION (BRIDGE RAILING, GALVANIZED METAL HAND RAILING/CONCRETE PARAPET COMBINATION) (COATED DARK GREEN)
STA. 145+16.00 RT - 146+02.50 RT
STA. 145+50.60 LT - 146+37.10 LT

MANUFACTURED TERMINAL SECTION, TANGENT (COATED DARK GREEN)
STA 144+04.99 RT - 144+19.00 RT

REVIEWER NOTE:
FINAL GEOMETRY OF BRIDGE RAIL TO BE COORDINATED WITH HISTORICS.

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y.LIN INTERNATIONAL

FILE NAME: z12c150raillay.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
RAIL LAYOUT SHEET

PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. HOWE
SHEET 20 OF 43

4 INCH WHITE LINE (4" WL)

STA 144+00.00, LT - 146+74.00, LT
STA 144+00.00, RT - 146+09.36, RT
STA 146+43.51, RT - 146+74.00, RT
STA 146+84.00, LT - 147+39.00, LT
STA 146+84.00, RT - 147+00.00, RT

4 INCH YELLOW LINE (4" YL)

STA 144+00.00 - 146+30.00 (DOUBLE CENTERLINE)
STA 146+70.00 - 146+74.00 (DOUBLE CENTERLINE)
STA 146+84.00 - 147+00.00 (DOUBLE CENTERLINE)

24 INCH STOP BAR

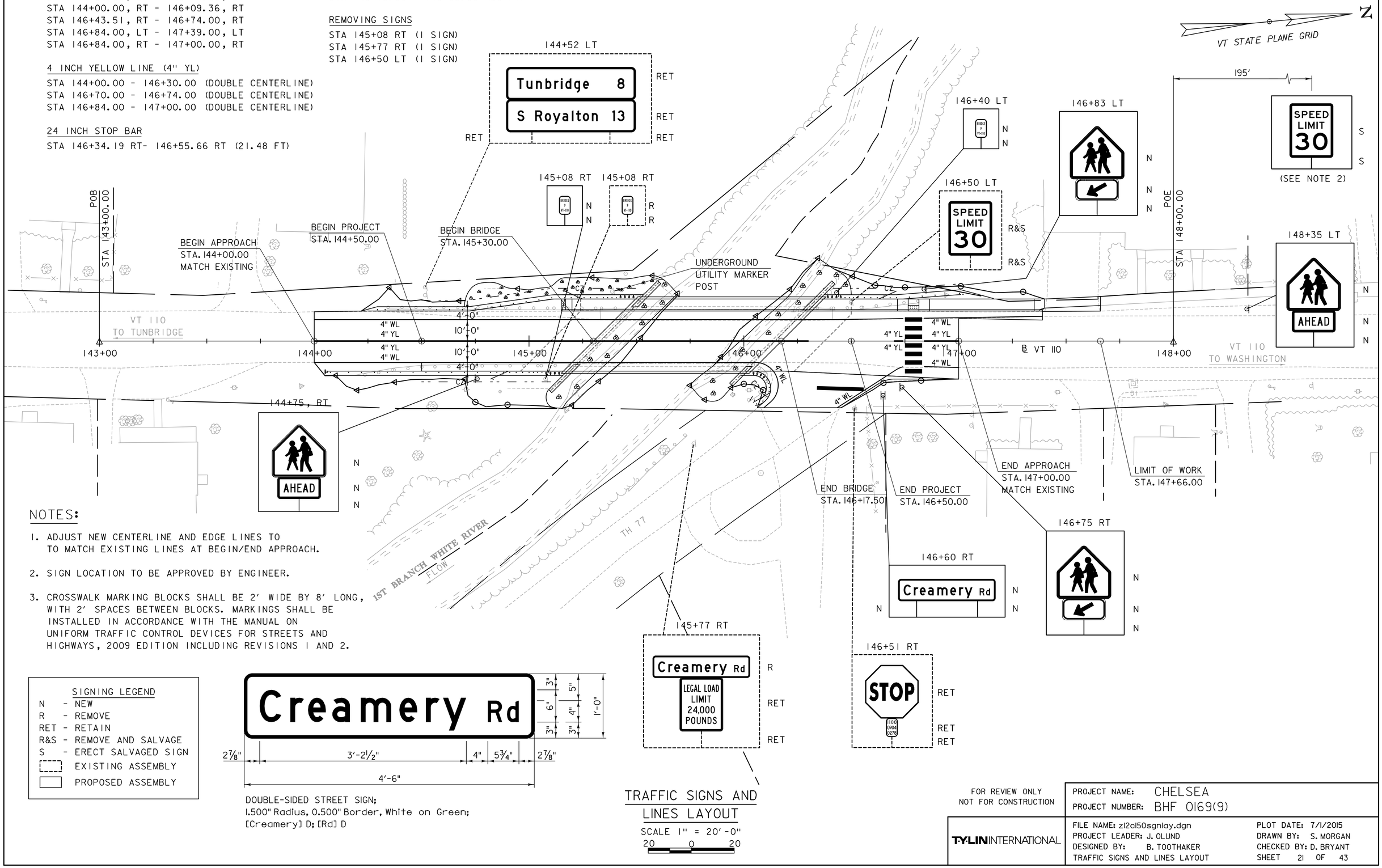
STA 146+34.19 RT- 146+55.66 RT (21.48 FT)

CROSSWALK MARKING

STA 146+75.00 - 146+83.00 (56 FT)

REMOVING SIGNS

STA 145+08 RT (1 SIGN)
STA 145+77 RT (1 SIGN)
STA 146+50 LT (1 SIGN)



NOTES:

1. ADJUST NEW CENTERLINE AND EDGE LINES TO TO MATCH EXISTING LINES AT BEGIN/END APPROACH.
2. SIGN LOCATION TO BE APPROVED BY ENGINEER.
3. CROSSWALK MARKING BLOCKS SHALL BE 2' WIDE BY 8' LONG, WITH 2' SPACES BETWEEN BLOCKS. MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 2009 EDITION INCLUDING REVISIONS 1 AND 2.

SIGNING LEGEND

N	- NEW
R	- REMOVE
RET	- RETAIN
R&S	- REMOVE AND SALVAGE
S	- ERECT SALVAGED SIGN
[ ]	EXISTING ASSEMBLY
[ ]	PROPOSED ASSEMBLY

DOUBLE-SIDED STREET SIGN;
1.500" Radius, 0.500" Border, White on Green;
[Creamery] D; [Rd] D

TRAFFIC SIGNS AND LINES LAYOUT

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

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y. LIN INTERNATIONAL

FILE NAME: z12cl50sgnlay.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TRAFFIC SIGNS AND LINES LAYOUT

PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: D. BRYANT
SHEET 21 OF 43

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST		NEW SIGN POSTS																						REMARKS	SIGN DETAIL	
		EACH	WIDTH (in)	HEIGHT (in)	"A"	"B"	SALV SIGN	SALV TIS	RETAIN	SALVAGE	NO. OF POST	FLANGED CHANNEL (LB / FT)			SQUARE STEEL (in) (LB / FT)			ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (IN) (LB / FT)			FOUNDATION	TUBULAR STEEL Ø (IN) (LB / FT)				W-SHAPE STEEL FTG. SIZE		WEIGHT	POST SIZE	SIGN FRAME REQUIRED		DETAIL ON SHEET NUMBER	STANDARD SHEET NUMBER
												1.12	2.00	3.00	1.75 1.88	2.00 2.42	2.50 3.35			3.00 1.30	4.00 1.70	4.0 MOD 1.70		3.00 7.60	3.50 9.00	4.00 10.80	5.00 14.60	24"	30"						
OPTION ITEMS																																			
144+75, RT		1	36.0	36.0	9.0						1.0						14.0	1.0														STANDARD HIGHWAY SIGNS AND MARKINGS S1-1; FLOURESCENT YELLOW GREEN		
		1	24.0	12.0	2.0																											STANDARD HIGHWAY SIGNS AND MARKINGS W16-9P; FLOURESCENT YELLOW GREEN		
145+08, RT		1	6.0	10.0	0.4						1.0					7.0		1.0																T-42
146+40, LT		1	6.0	10.0	0.4						1.0					7.0		1.0																T-42
146+60, RT		1	54.0	12.0	4.5						2.0					10.0		2.0																21	
146+75, RT		1	36.0	36.0	9.0						1.0						12.0	1.0														STANDARD HIGHWAY SIGNS AND MARKINGS S1-1; FLOURESCENT YELLOW GREEN		
		1	21.0	15.0	2.2																											STANDARD HIGHWAY SIGNS AND MARKINGS W16-7P; FLOURESCENT YELLOW GREEN		
146+83, LT		1	36.0	36.0	9.0						1.0						12.0	1.0														STANDARD HIGHWAY SIGNS AND MARKINGS S1-1; FLOURESCENT YELLOW GREEN		
		1	21.0	15.0	2.2																											STANDARD HIGHWAY SIGNS AND MARKINGS W16-7P; FLOURESCENT YELLOW GREEN		
148+35, LT		1	36.0	36.0	9.0						1.0						12.0	1.0														STANDARD HIGHWAY SIGNS AND MARKINGS S1-1; FLOURESCENT YELLOW GREEN		
		1	24.0	12.0	2.0																											STANDARD HIGHWAY SIGNS AND MARKINGS W16-9P; FLOURESCENT YELLOW GREEN		
N/A		1	24.0	30.0			1.0			1.0								1.0														LOCATION TO BE APPROVED BY ENGINEER		
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."												FT .	FT .	FT .	FT .	FT 34.	FT 50.	XXXXX XXXXX XXXXX XXXXX XXXXX	EA .	LB .	LB .	LB .		LB .	LB .	LB .	LB .							
	TOTALS				SF 49.7	SF .	EA. 1.	SF .	XXXXXXXXXX XXXXXXXXXX XXXXXXXXXX			FT .			FT 84.					LB .			EA.	LB .				EA. .	EA. .	LB .						

PROJECT NAME:	CHELSEA
PROJECT NUMBER:	BHF 0169(9)
FILE NAME:	z12C150sgnsum.dgn
PROJECT LEADER:	J. OLUND
DESIGNED BY:	B. TOOTHAKER
TRAFFIC SIGN SUMMARY SHEET	
PLOT DATE:	7/1/2015
DRAWN BY:	B. TOOTHAKER
CHECKED BY:	D. BRYANT
SHEET	22 OF 43

SOIL CLASSIFICATION

AASHTO	
A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.Q.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

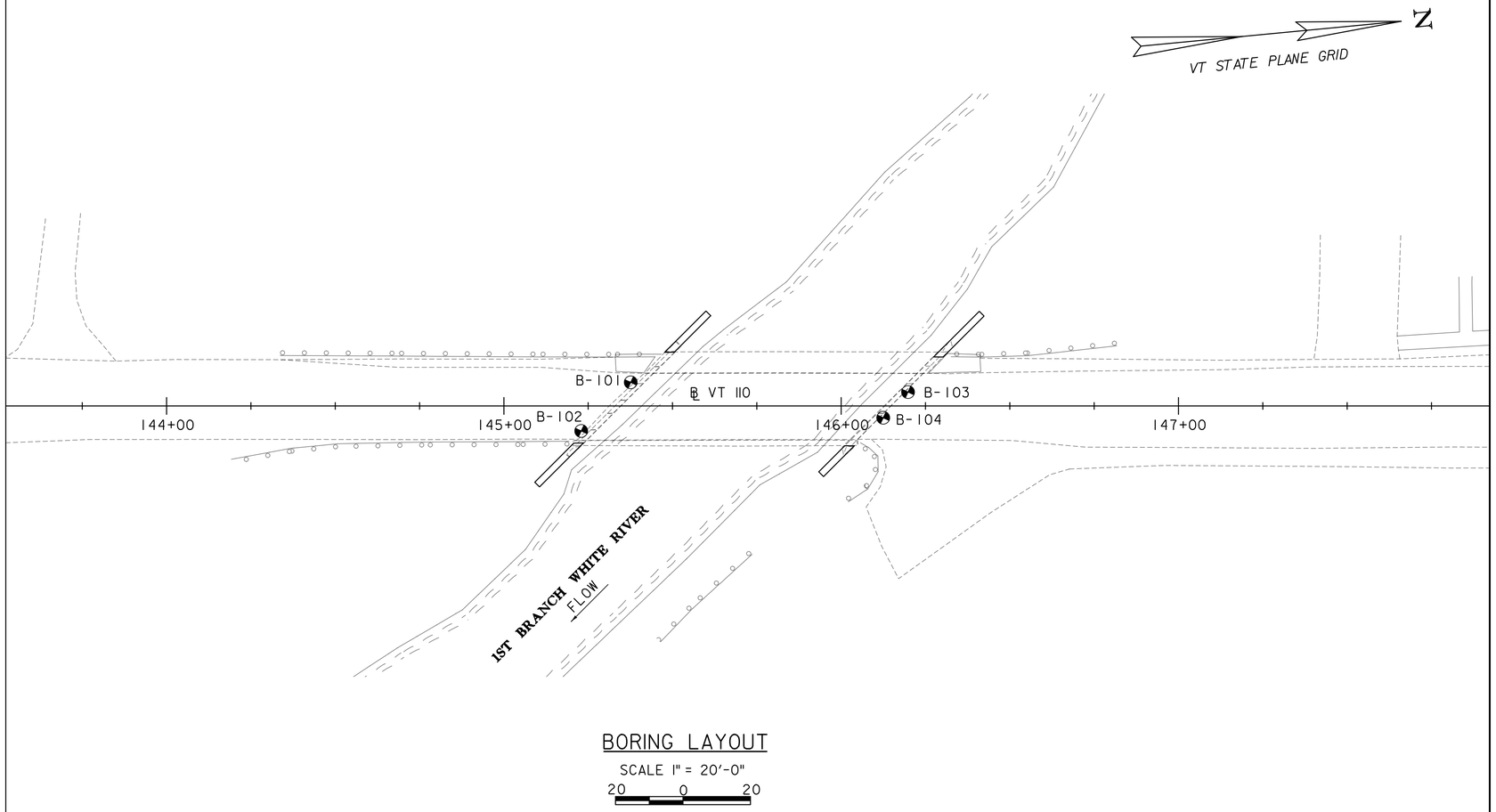
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

▼	Water Elevation
⊗	Standard Penetration Boring
⊕	Auger Boring
⊙	Rod Sounding
S	Sample
N	Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
Si	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TLOB	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		



BORING LAYOUT

SCALE 1" = 20'-0"

20 0 20

BORING CHART

HOLE NO.	SURV. STATION	OFFSET	GROUND ELEV.	ELEV. TLOB
B-101	145+37.5	7.0' LT	811.5	794.4
B-102	145+23.0	7.4' RT	811.5	794.2
B-103	146+20.0	4.1' LT	812.5	794.1
B-104	146+12.5	3.5' RT	812.5	793.6

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.

BOULDER - A rock fragment with an average dimension > 12 inches.

COBBLE - Rock fragments with an average dimension between 3 and 12 inches.

GRAVEL - Rounded particles of rock < 3" and > 0.0787" (#10 sieve).

SAND - Particles of rock < 0.0787" (#10 sieve) and > 0.0029" (#200 sieve).

SILT - Soil < 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.

CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.

HARDPAN - Extremely dense soil, cemented layer, not softened when wet.

MUCK - Soft organic soil (containing > 10% organic material.

MOISTURE CONTENT - Weight of water divided by dry weight of soil.

FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.

STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.

DIP - Inclination of bed with a horizontal plane.

GENERAL NOTES

1. The subsurface explorations shown herein were made between April 17, 2015 and May 5, 2015 by the Agency.
2. Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
3. Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
4. Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
5. Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

PROJECT NAME: CHELSEA

PROJECT NUMBER: BHF 0169(9)

FILE NAME: zl2cl50bor.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: VTRANS
BORING INFORMATION & LAYOUT

PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND
SHEET 23 OF 43

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

CHELSEA
BHF 0169(9)
VT-110 BR-9

Boring No.: **B-101**
Page No.: 1 of 1
Pin No.: 12C150
Checked By: MLM

Boring Crew: JUDKINS, HOOK, NIETO
Date Started: 4/17/15 Date Finished: 4/27/15
VTSPG NAD83: N 541594.15 ft E 1654056.56 ft
Station: 145+37.5 Offset: -7.00
Ground Elevation: 811.5 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	5 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACK	C_e = 1.46

Groundwater Observations

Date	Depth (ft)	Notes
04/27/15	9.3	Before drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 1.67 ft								
		A-1-b, GrSa, brn, Moist, Rec. = 0.8 ft, Cleaned out with Roller cone.				10-11-8 (19)	11.2	25.4	58.0	16.6
		A-1-b, GrSa, brn, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample. Cleaned out with Roller cone.				6-5-4-6 (9)	13.1	31.1	54.9	14.0
5		A-2-4, SiGrSa, brn, Moist, Rec. = 1.0 ft, Cleaned out with Roller cone.				8-16-32-24 (48)	20.5	26.7	50.5	22.8
		A-2-4, SiSa, brn, MTW, Rec. = 1.6 ft, Cleaned out with Roller cone.				17-22-8-12 (30)	26.7	12.6	63.7	23.7
10		Field Note:, No Recovery				5-3-3-3 (6)				
		A-2-4, Sa, Dk/brn, MTW, Rec. = 0.1 ft, Cleaned out with Roller cone.				3-3-2-3 (5)	36.7	6.1	79.6	14.3
		A-1-b, GrSa, Dk/gry, Moist, Rec. = 0.6 ft				8-R@5.0" (R)	15.0	39.9	48.9	11.2
15		Field Note:, Drilled a 4 inch diameter Concrete Core, Rec. = 2.8 ft								
BOTTOM OF EXISTING ABUT NO I EL 794.4 +\-		Visual Description:, Broken Rock 17 ft. - 17.1 ft., gry-blk, Moist	1 (55)	98 (63)	6	Top of Bedrock @ 17.1 ft				
20		17.1 ft - 22.1 ft, Gray, Meta-limestone and dark gray phyllitic mica-schist with some Quartz veins. Hard, Very slightly weathered, Good rock, NXMDC, RMR = 62, Notes: Some brown discoloration along joints.			6 6 6 6					
25		22.1 ft - 27.1 ft, Gray, Meta-limestone and dark gray phyllitic mica-schist with some Quartz veins. Hard, Very slightly weathered, Good rock, NXMDC, RMR = 69, Notes: 22.1'-22.5' Quartz vein, 22.5' -22.7' Meta-Limestone, 22.7'-25.4' Mica Schist. Then Meta-Limestone to end of run. Some brown discoloration on joint surfaces.	2 (55)	100 (94)	5 5 5 5 5					
		Hole stopped @ 27.1 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_e is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 CHELSEA BHF 0169(9).GPJ VERMONT AOT.GDT 6/18/15

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y. LIN INTERNATIONAL

FILE NAME: z12c150blogl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: VTRANS
BORING LOGS I

PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND
SHEET 24 OF 43

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

CHELSEA
BHF 0169(9)
VT-110 BR-9

Boring No.: **B-102**
Page No.: 1 of 1
Pin No.: 12C150
Checked By: MLM

Boring Crew: JUDKINS, NIETO, HOOK
Date Started: 4/30/15 Date Finished: 5/05/15
VTSPG NAD83: N 541578.30 ft E 1654069.48 ft
Station: 145+23.0 Offset: 7.40
Ground Elevation: 811.5 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	5 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 45C SKID	C_e = 1.33

Groundwater Observations		
Date	Depth (ft)	Notes
		Not taken.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 1.23 ft								
		A-1-b, GrSa, brn, Moist, Rec. = 1.2 ft, Lab Note: Broken Rock was within sample.				13-11-9-10 (20)	6.4	40.2	47.7	12.1
		A-1-b, GrSa, brn, Moist, Rec. = 0.9 ft, Lab Note: Broken Rock was within sample. Cleaned out with roller cone.				6-13-13-5 (26)	10.4	43.6	46.3	10.1
5		Visual Description:, Broken Rock pieces (Granite) with sand, gry-Lt/brn, Moist, Rec. = 0.2 ft				9-8-8-6 (16)	9.9			
		Field Note:, Continued drilling to locate Concrete & Bedrock. No samples were taken. This area was a mixture of gravel and sand.								
10										
15		Field Note:, NXMDC, Concrete core, Rec. = 2.1 ft								
		17.3 ft - 22.3 ft, Gray, Meta-Limestone, with few Quartz veins. Hard, Slightly weathered, Fair rock, NXMDC, RMR = 49, Notes: Vertical joint in Meta-limestone at 21.0'-22.1', Yellow-orange staining and rust staining along joints.	1 (55)	82 (26)	3 5 3 4 5	Top of Bedrock @ 17.3 ft				
20										
		22.3 ft - 27.3 ft, Gray, Meta-Limestone, and dark gray Phyllitic Mica-Schist with some Quartz veins. Hard, Very slightly weathered, Good rock, NXMDC, RMR = 63, Notes: Yellow-orange staining along joints.	2 (55)	100 (76)	3 4 3 4 4					
25										
		Hole stopped @ 27.3 ft								

BOTTOM OF EXISTING ABUT NO I
EL 794.2 +\-

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_e is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 CHELSEA BHF 0169(9).GPJ VERMONT AOT.GDT 6/18/15

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: zl2cl50blog2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: VTRANS
BORING LOGS 2

PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND
SHEET 25 OF 43

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

CHELSEA
BHF 0169(9)
VT-110 BR-9

Boring No.: **B-103**
Page No.: 1 of 1
Pin No.: 12C150
Checked By: MLM

Boring Crew: JUDKINS, NIETO, DIAGNAULT
Date Started: 4/27/15 Date Finished: 4/28/15
VTSPG NAD83: N 541675.72 ft E 1654067.21 ft
Station: 146+20.0 Offset: -4.10
Ground Elevation: 812.5 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	5 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACK	C$_e$ = 1.46

Groundwater Observations

Date	Depth (ft)	Notes
04/28/15	10.2	Before drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 1.4 ft								
		A-1-b, GrSa, brn-Lt/brn, Moist, Rec. = 0.7 ft, Cleaned out with Roller cone.				9-8-9 (17)	13.0	29.4	54.6	16.0
		A-1-a, SaGr, brn, Moist, Rec. = 0.2 ft, Lab Note: Broken Rock was within sample. Cleaned out with Roller cone.				7-7-6-6 (13)	11.2	67.8	25.9	6.3
5		A-1-b, GrSa, brn, Moist, Rec. = 0.4 ft, Cleaned out with Roller cone.				5-5-5-6 (10)	13.1	36.4	49.4	14.2
		A-1-a, SaGr, brn, Moist, Rec. = 0.4 ft, Lab Note: Broken Rock was within sample. Cleaned out with Roller cone.				11-7-15-14 (22)	9.8	61.0	32.7	6.3
		A-1-b, GrSa, Dk/brn, Moist, Rec. = 0.3 ft, NXDC, Cleaned out casing.				10-8-10-13 (18)	14.9	36.0	46.7	17.3
10		A-1-a, SaGr, brn-white, Moist, Rec. = 0.6 ft, Lab Note: Broken Rock was within sample. NXDC, Cleaned out casing.				9-15-22-33 (37)	14.1	55.6	35.6	8.8
		Field Note:, No Recovery				28-14-10-9 (24)				
15		A-1-a, SaGr, brn, Moist, Rec. = 0.3 ft, Lab Note: Broken Rock was within sample. NXDC, Cleaned out casing.				R@3.5" (R)	8.7	58.3	31.0	10.7
		Field Note:, Drilled a 4 inch diameter Concrete Core, Rec. = 1.6 ft								
BOTTOM OF EXISTING ABUT NO 2		Field Note:, NXDC, Appears to be Boulder & Cobbles				18-R@5.0" (R)	7.8	60.9	26.2	12.9
EL 795.6 +\-		A-1-a, SaGr, Dk/gry, Moist, Rec. = 0.4 ft, Lab Note: Broken & some Weathered Rock pieces were within sample.								
		18.4 ft - 23.4 ft, Gray, Meta-limestone and dark gray phyllitic mica-schist with some Quartz veins. Hard, Very slightly weathered, Good rock, NXMDC, RMR = 62, Notes: 18.4'-19.5' Meta-Limestone, 19.5'-23.4' Schist with Quartz veins. Some brown discoloration along joints.	1 (55)	100 (62)	4 4 4 5 5	Top of Bedrock @ 18.4 ft				
20		23.4 ft - 26.0 ft, Gray, Meta-limestone and gray phyllitic mica-schist with some Quartz veins. Hard, Slightly weathered, Poor rock, NXMDC, RMR = 39, Notes: Brown and yellow staining along Quartz joint at 24.0'-24.75'.	2 (60)	52 (0)	4 11 16					
25		26.0 ft - 28.4 ft, Alternating gray meta-limestone and dark gray phyllitic mica-schist Hard, Slightly weathered, Fair rock, NXMDC, RMR = 54, Notes: Yellow/brown discoloration along joints.	3 (45-55)	48 (60)	5 4					
		Hole stopped @ 28.4 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C$_e$ is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 CHELSEA BHF 0169(9).GPJ VERMONT AOT.GDT 6/18/15

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TYLIN INTERNATIONAL

FILE NAME: zl2cl50blog3.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: VTRANS
BORING LOGS 3

PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND
SHEET 26 OF 43

STATE OF VERMONT
AGENCY OF TRANSPORTATION
CONSTRUCTION AND
MATERIALS BUREAU
CENTRAL LABORATORY

BORING LOG

CHELSEA
BHF 0169(9)
VT-110 BR-9

Boring No.: **B-104**
Page No.: 1 of 1
Pin No.: 12C150
Checked By: MLM

Boring Crew: JUDKINS, HOOK, NIETO
Date Started: 4/29/15 Date Finished: 4/30/15
VTSPG NAD83: N 541667.68 ft E 1654074.11 ft
Station: 146+12.5 Offset: 3.50
Ground Elevation: 812.5 ft

	Casing	Sampler
Type:	WB	SS
I.D.:	5 in	1.5 in
Hammer Wt:	N.A.	140 lb.
Hammer Fall:	N.A.	30 in.
Hammer/Rod Type:	Auto/AWJ	
Rig:	CME 55 TRACK	C_e = 1.46

Groundwater Observations

Date	Depth (ft)	Notes
04/30/15	10.1	Before drilling.

Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Core Rec. % (RQD %)	Drill Rate minutes/ft	Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 1.0 ft								
		A-1-b, GrSa, blk-brn, Moist, Rec. = 1.1 ft				9-10-9-8 (19)	7.3	27.5	58.0	14.5
		A-1-b, GrSa, blk-brn, Moist, Rec. = 0.5 ft				6-6-3-3 (9)	15.3	32.8	54.9	12.3
5		A-1-b, SaGr, brn, Moist, Rec. = 0.5 ft, Lab Note: Broken Rock was within sample.				2-1-3-8 (4)	8.4	49.2	40.8	10.0
		A-1-b, SaGr, brn, Moist, Rec. = 0.2 ft, Lab Note: Broken Rock was within sample. NXDC, Cleaned out casing.				6-9-28-10 (37)	11.3	46.3	42.5	11.2
10		A-2-4, GrSa, brn, MTW, Rec. = 0.5 ft, Lab Note: Broken Rock was within sample. Pieces of Wood were within sample. NXDC, Cleaned out casing.				9-7-5-5 (12)	27.9	22.0	58.0	20.0
		Field Note:, No Recovery, Stone in sampler. NXDC, Cleaned out casing.				30-R@3.5" (R)				
		Field Note:, No Recovery, NXDC, Cleaned out casing.				R@2.5" (R)				
15		Field Note:, No Recovery				R@3.5" (R)				
		Field Note:, Drilled a 4 inch diameter Concrete Core, Rec. = 3.6 ft, NXDC concrete core on the last 0.5 feet.								
BOTTOM OF EXISTING ABUT NO 2 EL 793.6 +\-		18.9 ft - 23.9 ft, Gray, Meta-Limestone, and dark gray Phyllitic Biotite and Muscovite Mica-Schist with Quartz veins. Hard, Slightly weathered, Fair rock, NXMDC, RMR = 54, Notes: Yellow-orange staining and rust staining present on joints.	1 (50)	94 (61)	2 5 3 3 3	Top of Bedrock @ 18.9 ft				
20										
25		23.9 ft - 28.9 ft, Gray, Meta-Limestone, and gray Phyllitic Mica-Schist with Quartz veins. Hard, Very slightly weathered, Fair rock, NXMDC, RMR = 58, Notes: Prominent Quartz vein at 26.8'-27.3', Yellow-brown staining present on joints.	2 (50)	100 (75)	4 4 4 4 4					
		Hole stopped @ 28.9 ft								

Notes:
1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. C_e is the hammer energy correction factor.
3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.

BORING LOG 2 CHELSEA BHF 0169(9).GPJ VERMONT AOT.GDT 6/18/15

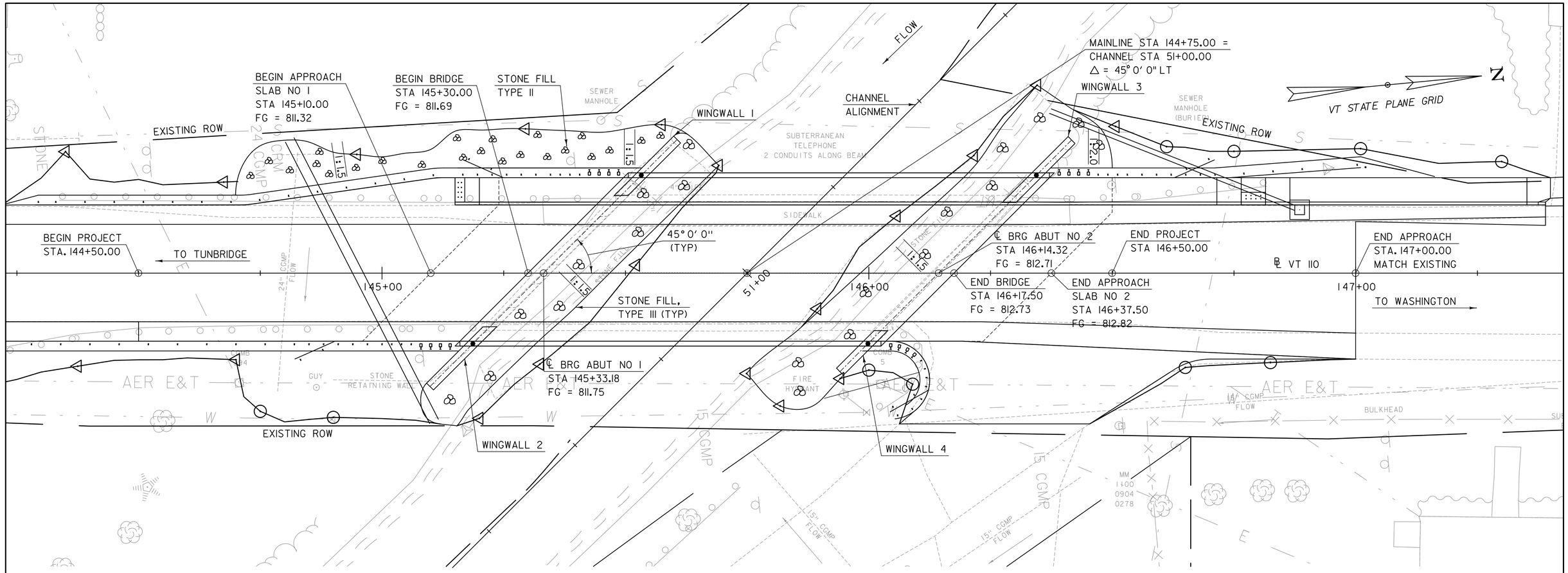
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: zl2cl50blog4.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: VTRANS
BORING LOGS 4

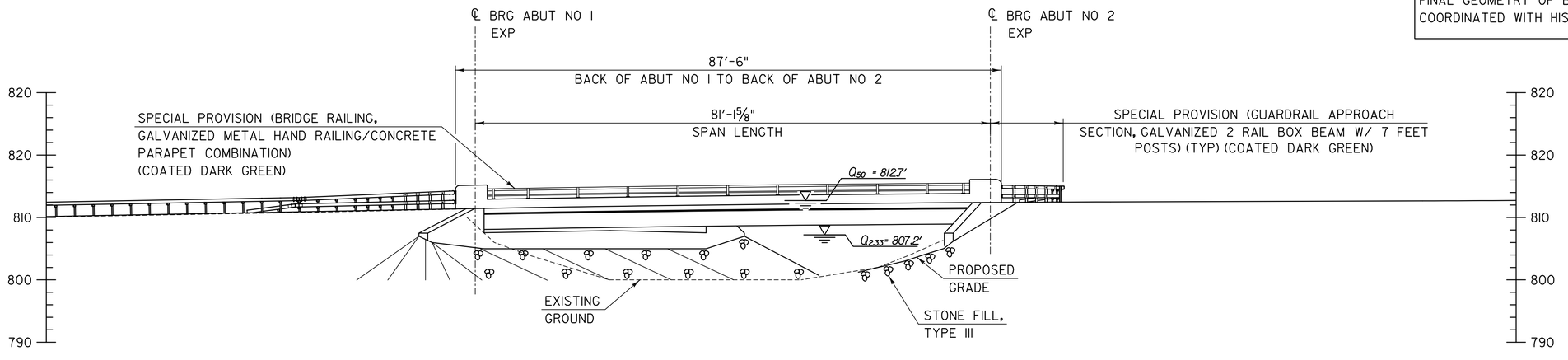
PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND
SHEET 27 OF 43



PLAN

SCALE: 1" = 10'-0"

REVIEWER NOTE:
FINAL GEOMETRY OF BRIDGE RAIL TO BE COORDINATED WITH HISTORICS.



ELEVATION

SCALE: 1" = 10'-0"

SCALE 1" = 10'-0"
10 0 10

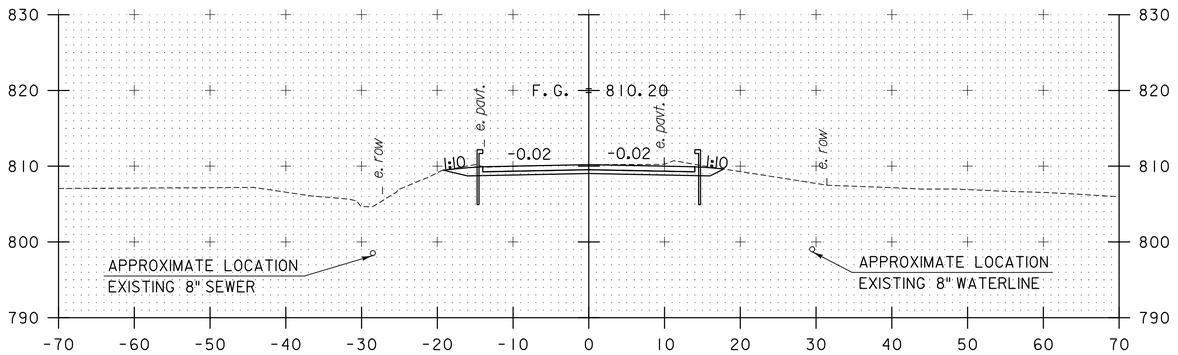
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

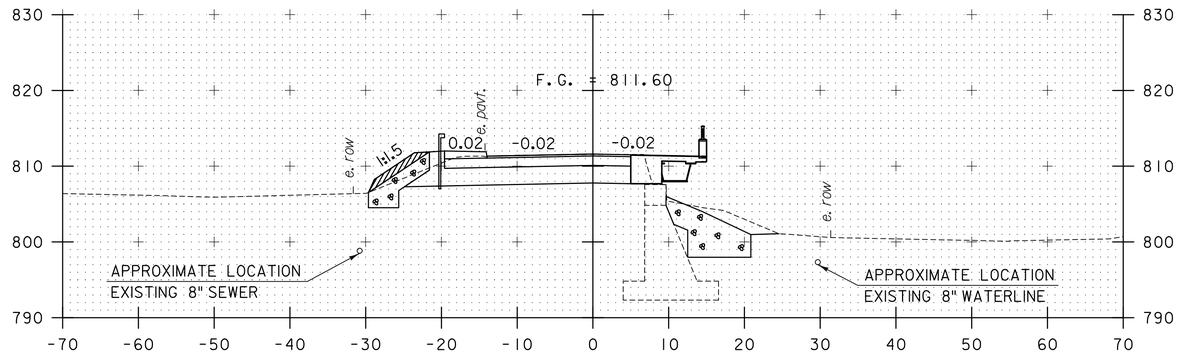
T.Y.LIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

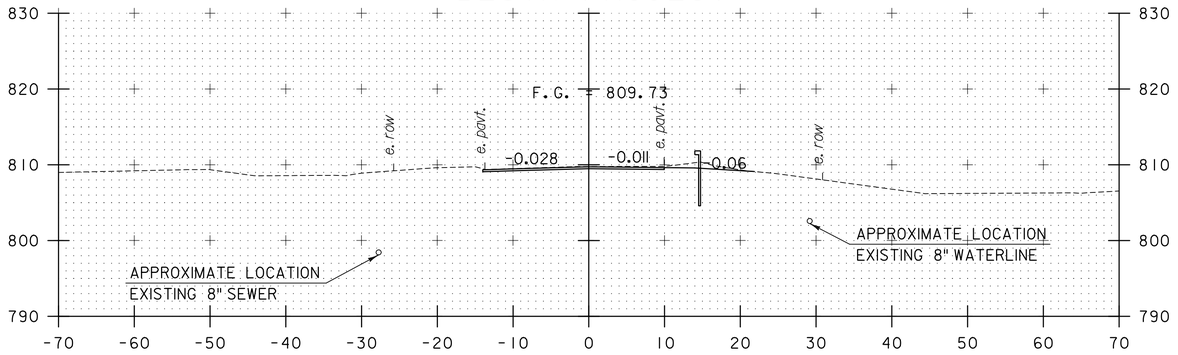
FILE NAME: z12cl50pe.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
PLAN AND ELEVATION

PLOT DATE: 7/1/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND

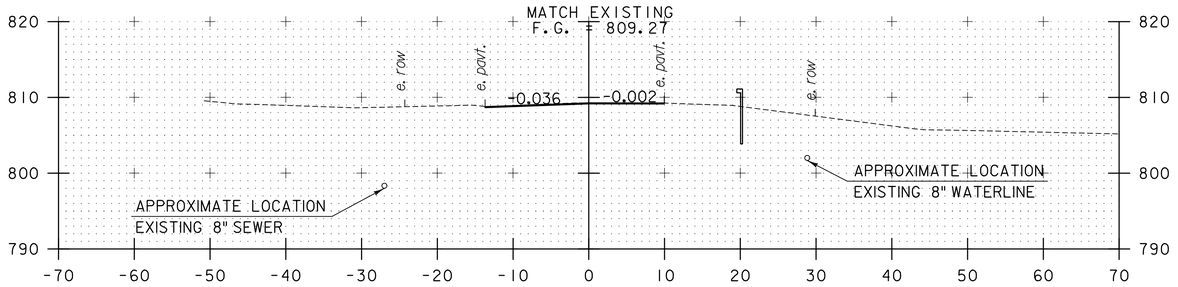




144+50
BEGIN PROJECT

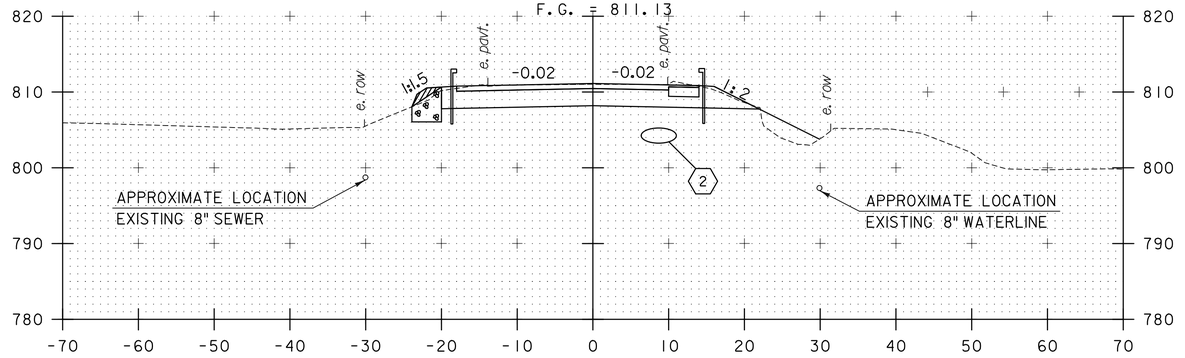


144+25

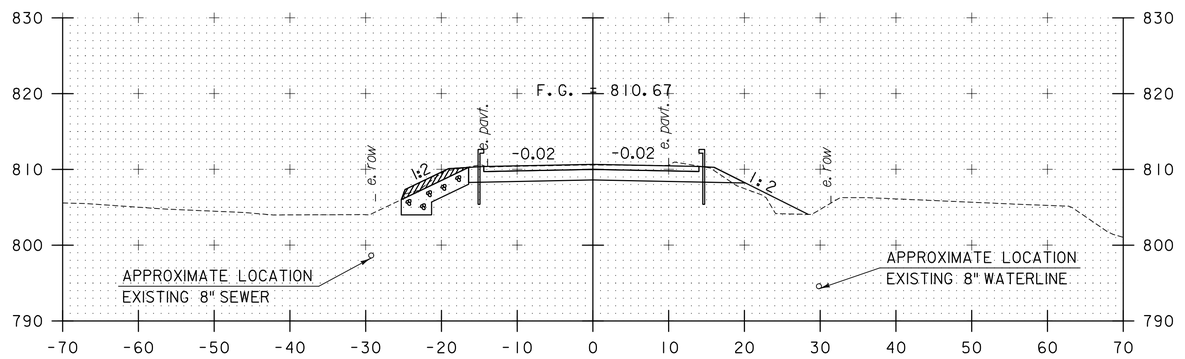


144+00
BEGIN APPROACH

145+25



145+00



144+75

STA. 144+00 TO STA. 145+25

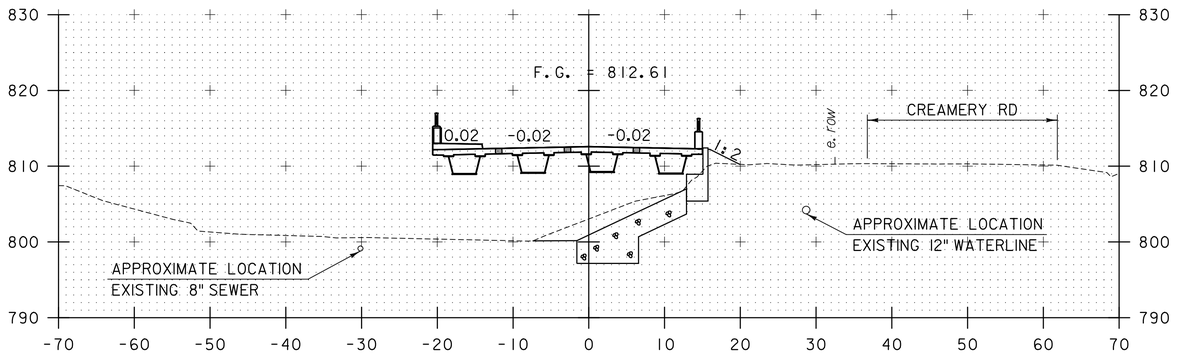
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

T.Y.LIN INTERNATIONAL

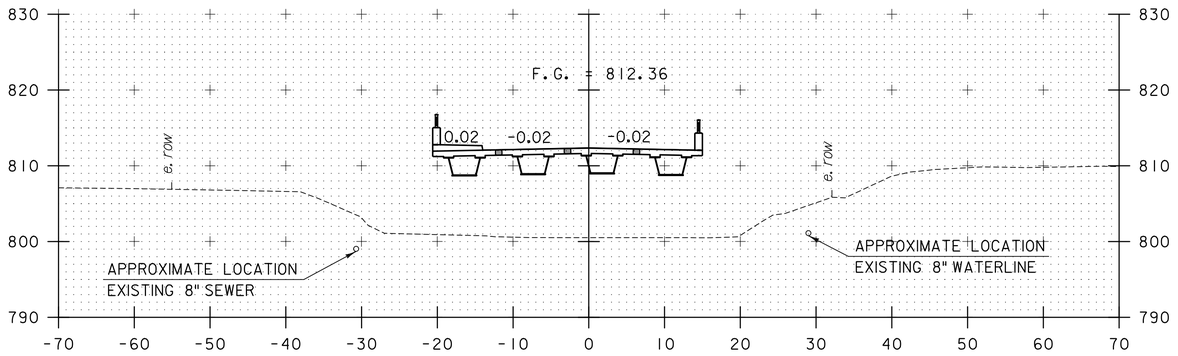
PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: z12c150xs.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
VT 110 CROSS SECTIONS 1

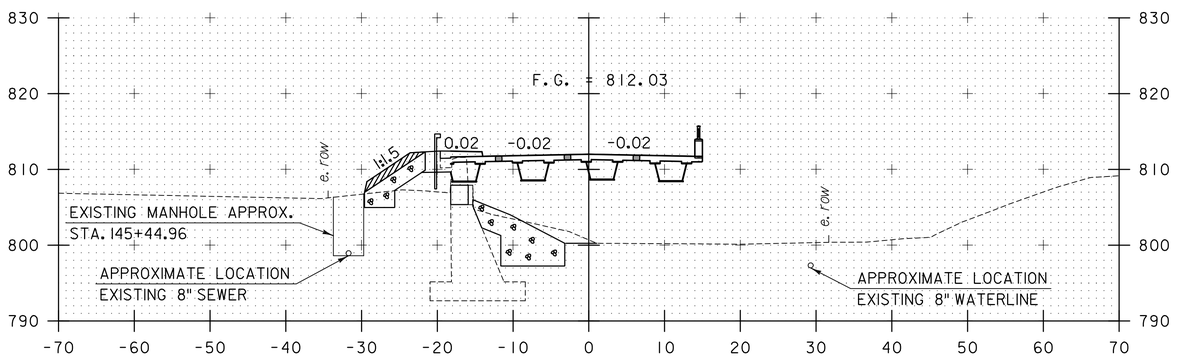
PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: T. POULIN
SHEET 29 OF 43



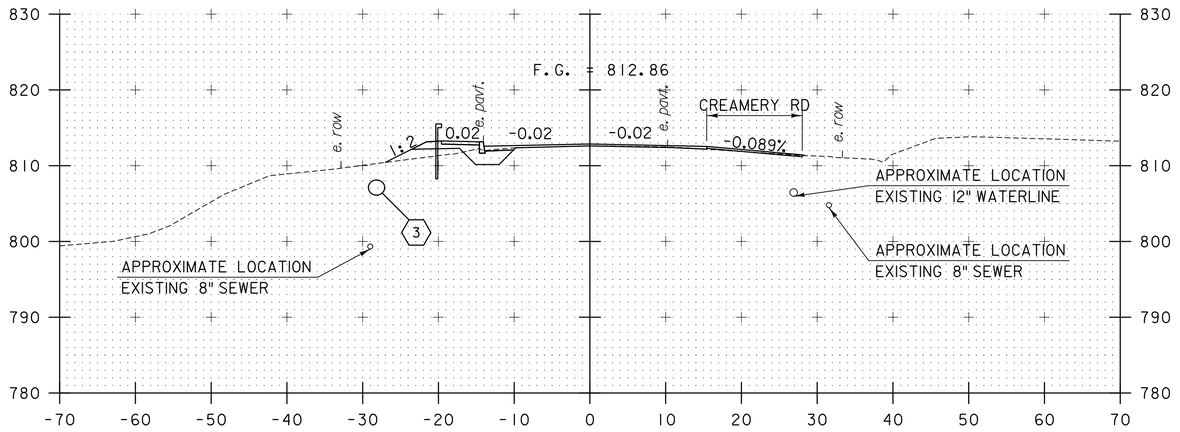
146+00



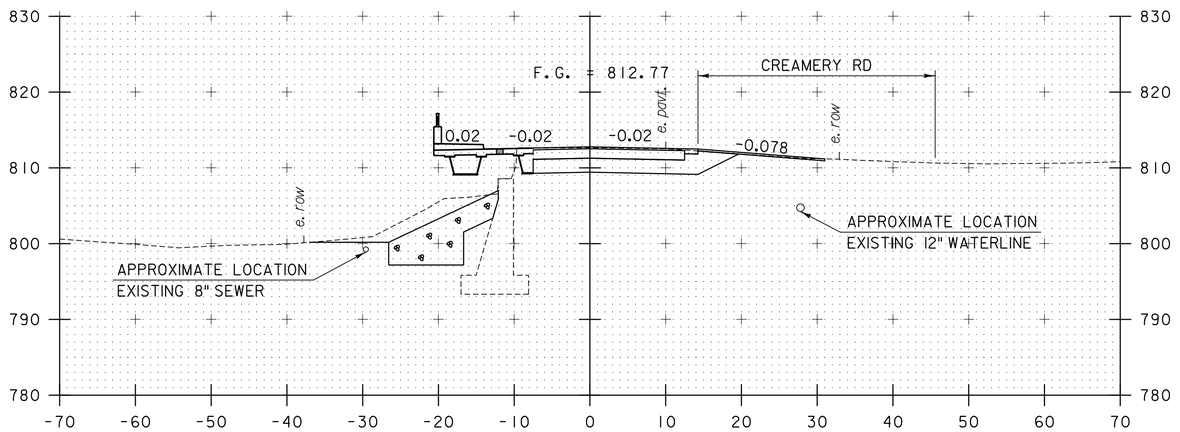
145+75



145+50
BEGIN BRIDGE STA. 145+30.00



146+50
END PROJECT



146+25
END BRIDGE STA. 146+17.50

STA. 145+50 TO STA. 146+50

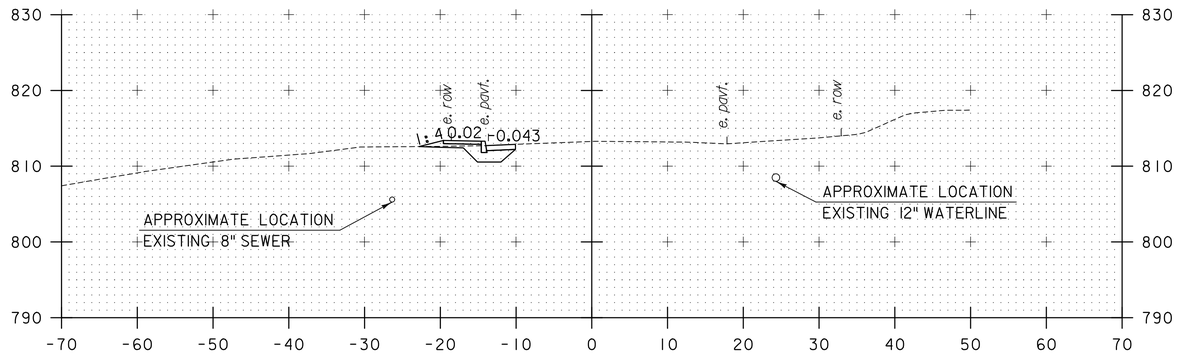
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

T.Y. LIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: z12cl50xs.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
VT 110 CROSS SECTIONS 2

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: T. POULIN
SHEET 30 OF 43



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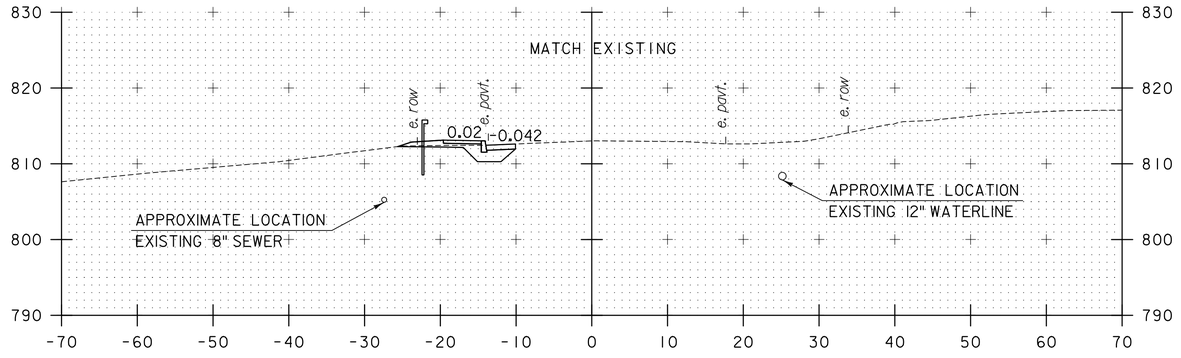
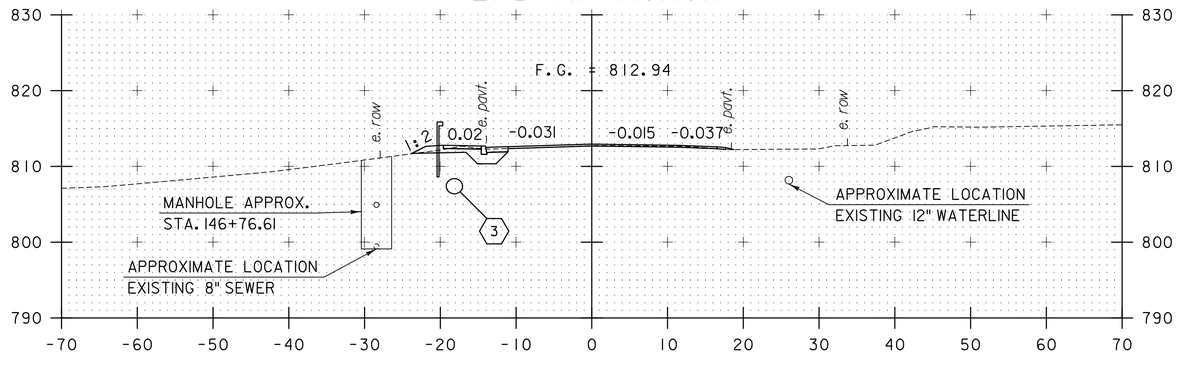
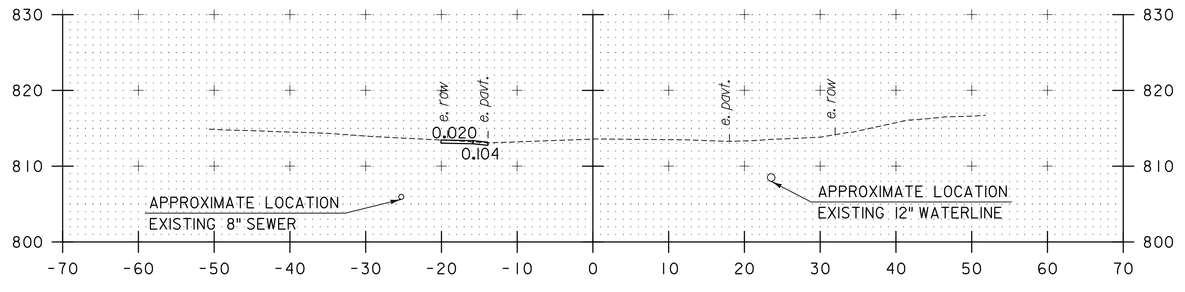


147+00
END APPROACH



146+75



147+50

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

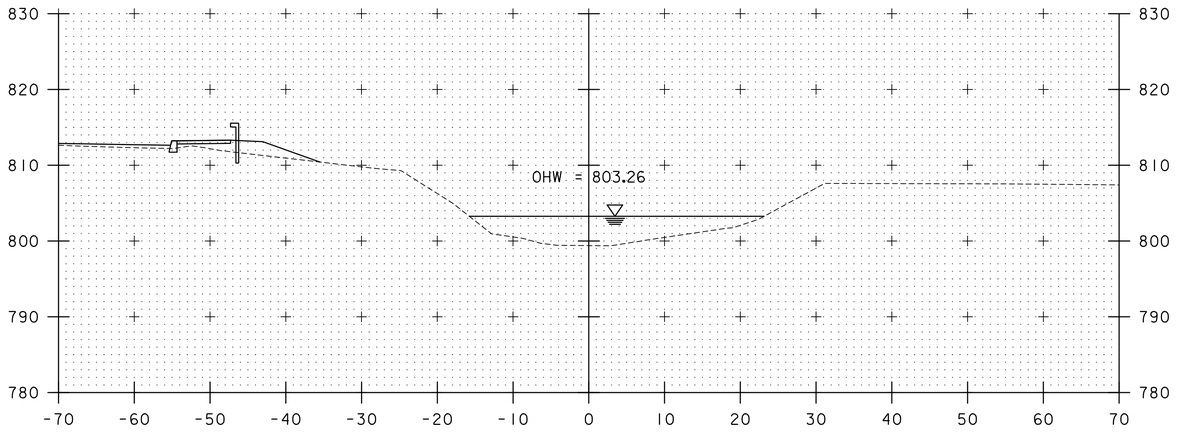
PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TYLIN INTERNATIONAL

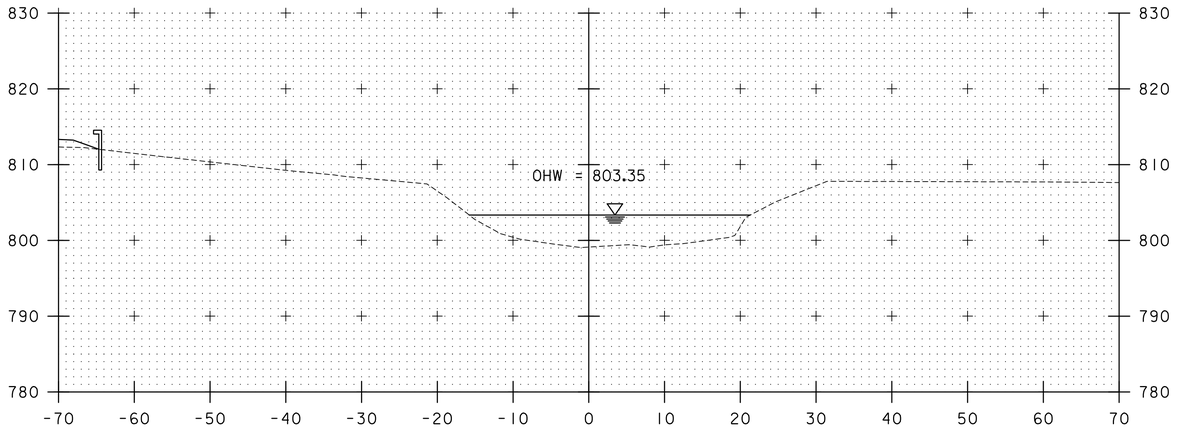
FILE NAME: zl2cl50xs.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
VT 110 CROSS SECTIONS 3

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: T. POULIN
SHEET 31 OF 43

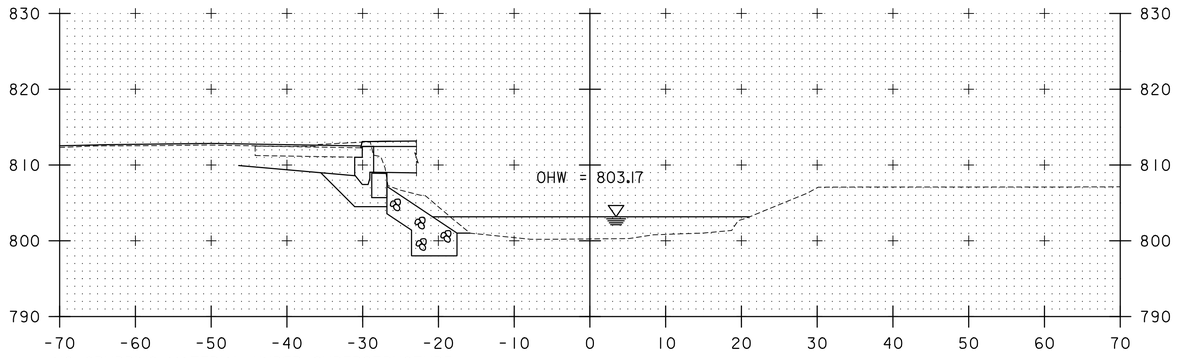
STA. 146+75 TO STA. 147+50



50+25

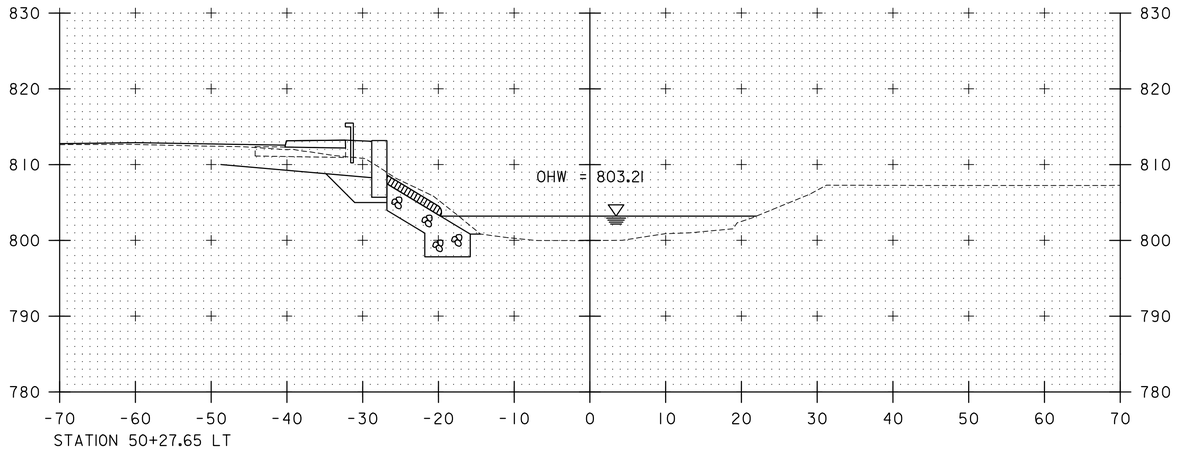


50+00



NO GRUBBING MATERIAL UNDER SUPERSTRUCTURE

50+50



STATION 50+27.65 LT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE III
BEGIN GRUBBING MATERIAL

50+40

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

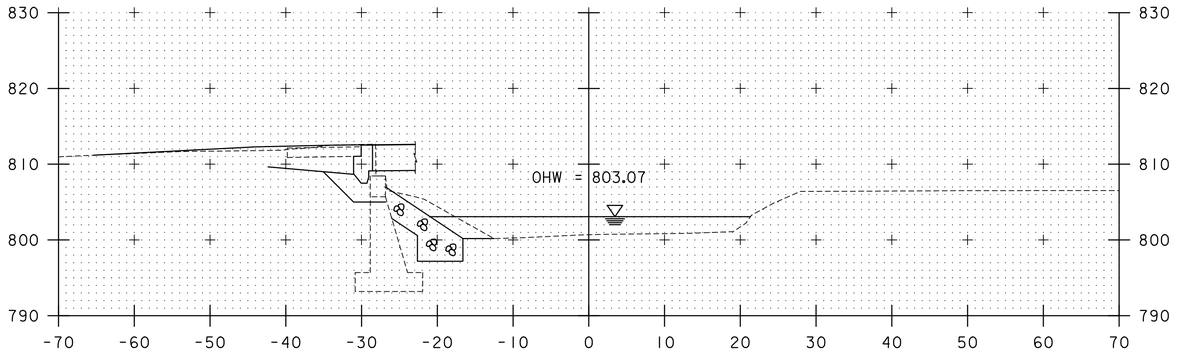
PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TY·LIN INTERNATIONAL

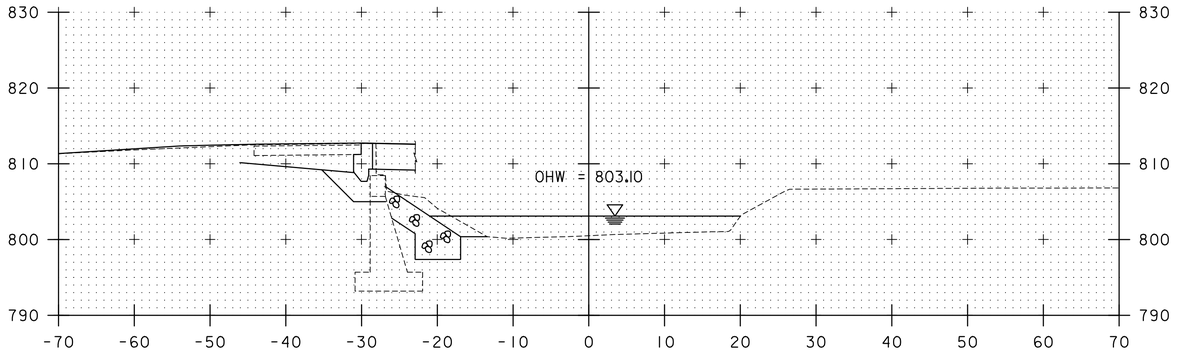
FILE NAME: zl2cl50chanxs.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: T. POULIN
CHANNEL SECTIONS I

PLOT DATE: 7/1/2015
DRAWN BY: T. POULIN
CHECKED BY: J. OLUND
SHEET 32 OF 43

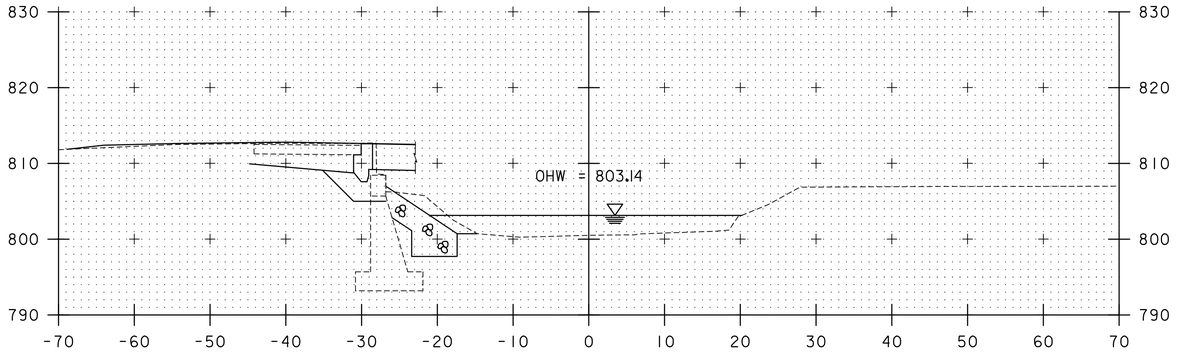
STA. 50+00 TO STA. 50+50



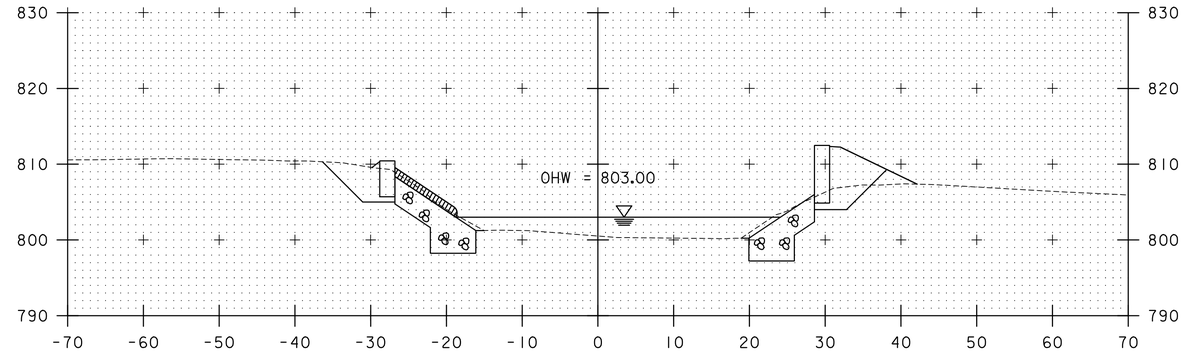
50+80



50+70

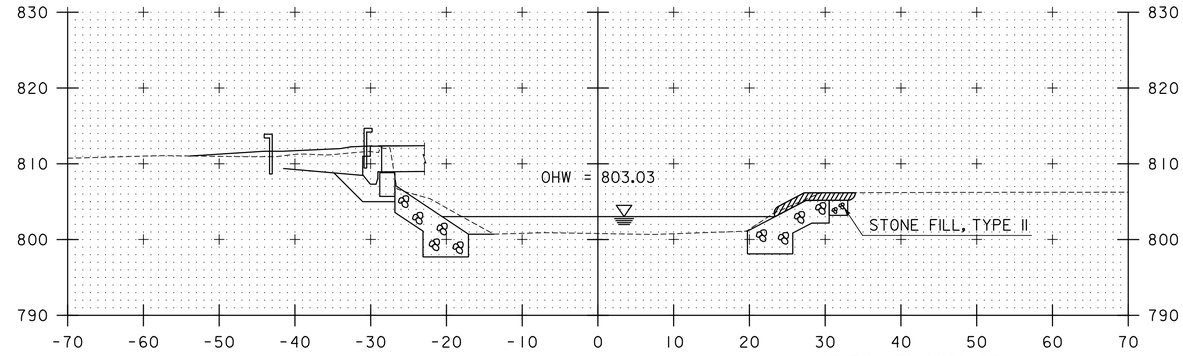


50+60



NO GRUBBING MATERIAL BENEATH SUPERSTRUCTURE

51+00



50+90

STATION 50+88.30 RT
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN GEOTEXTILE UNDER STONE FILL
BEGIN STONE FILL, TYPE III
BEGIN GRUBBING MATERIAL

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

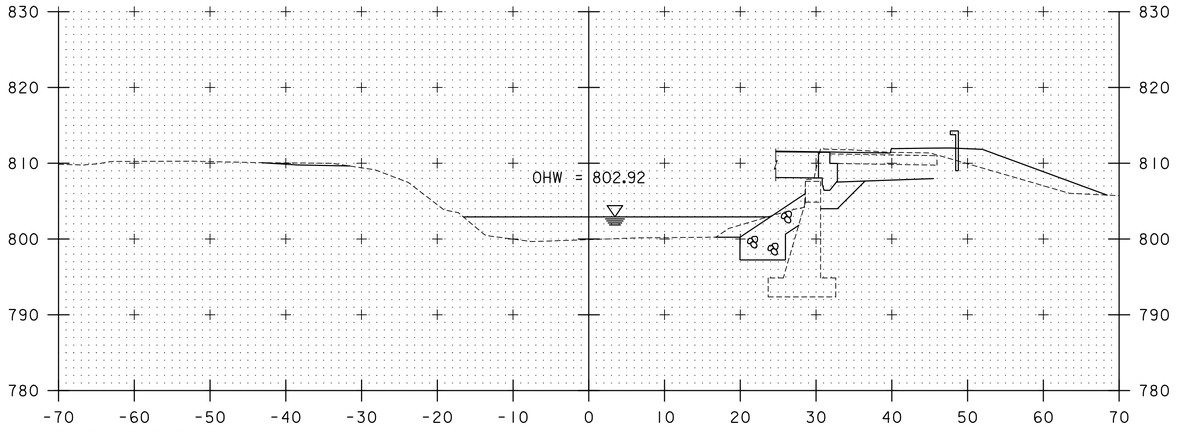
STA. 50+60 TO STA. 51+00

T.Y.LIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

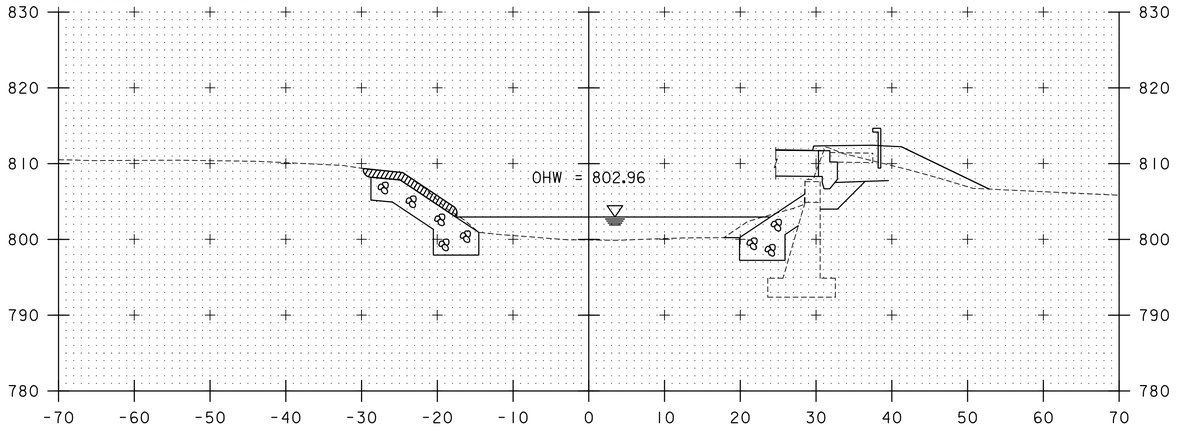
FILE NAME: z12cl50chanxs.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: T. POULIN
CHANNEL SECTIONS 2

PLOT DATE: 7/1/2015
DRAWN BY: T. POULIN
CHECKED BY: J. OLUND
SHEET 33 OF 43

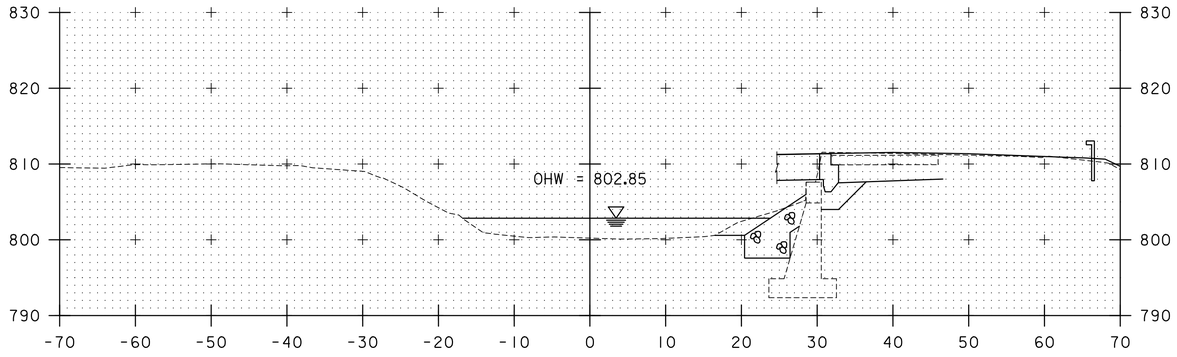


STATION 51+15.09 LT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE III
END GRUBBING MATERIAL

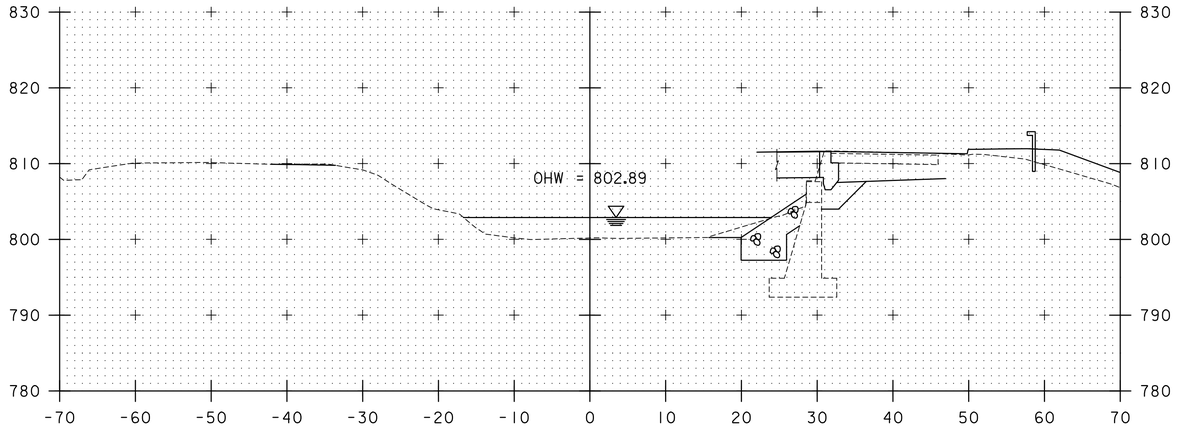
51+20



51+10



51+40



51+30

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

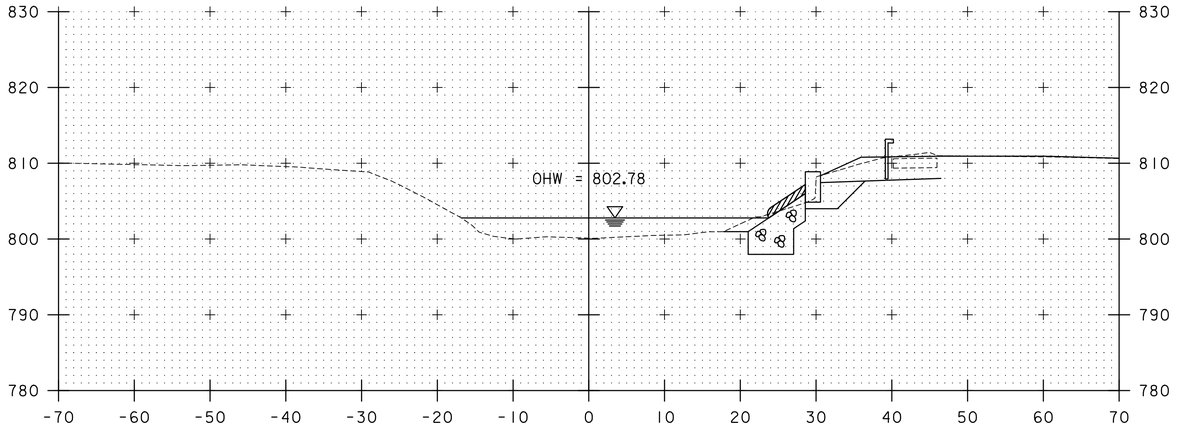
STA. 51+10 TO STA. 51+40

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

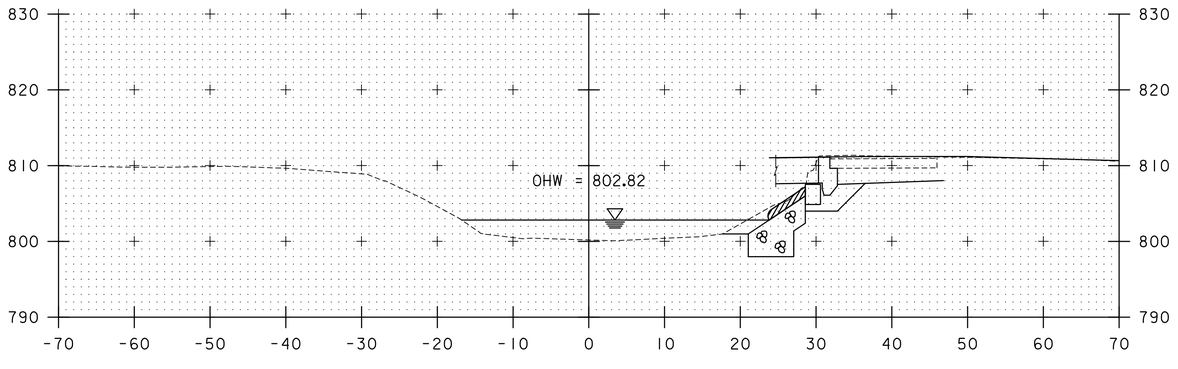
TYLIN INTERNATIONAL

FILE NAME: zl2cl50chanxs.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: T. POULIN
CHANNEL SECTIONS 3

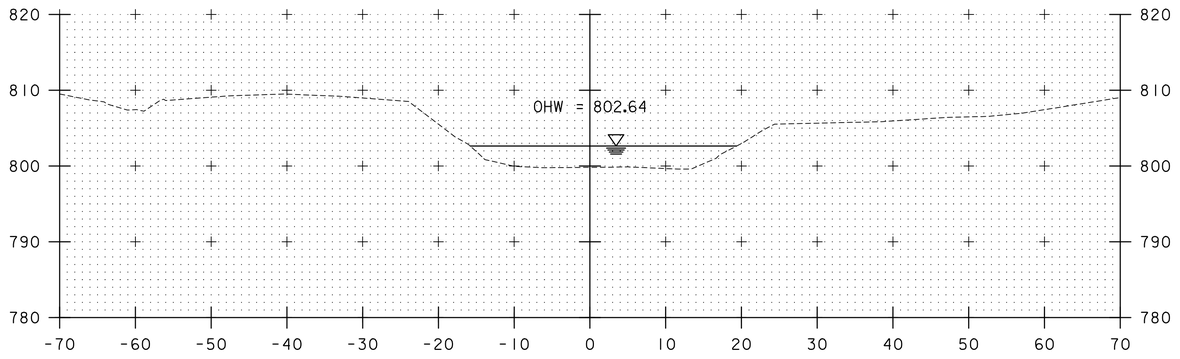
PLOT DATE: 7/1/2015
DRAWN BY: T. POULIN
CHECKED BY: J. OLUND
SHEET 34 OF 43



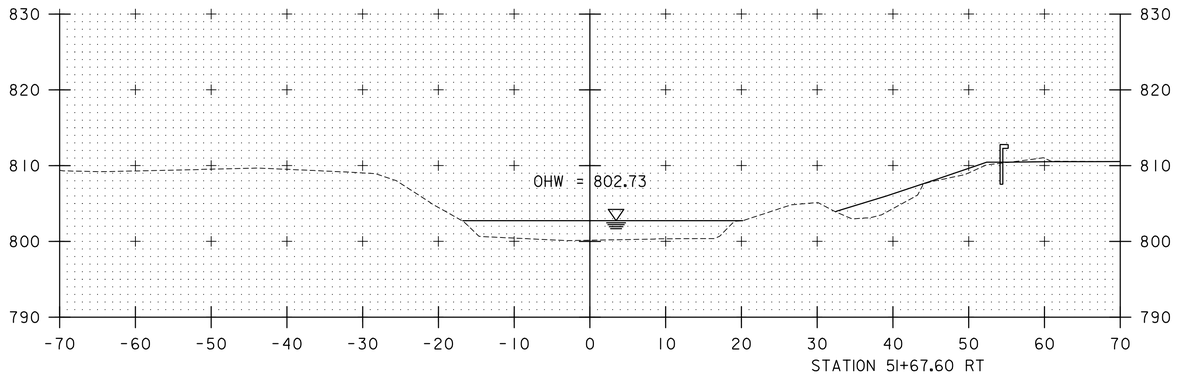
51+60



51+50



52+00



51+75

STATION 51+67.60 RT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE III
END GRUBBING MATERIAL

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

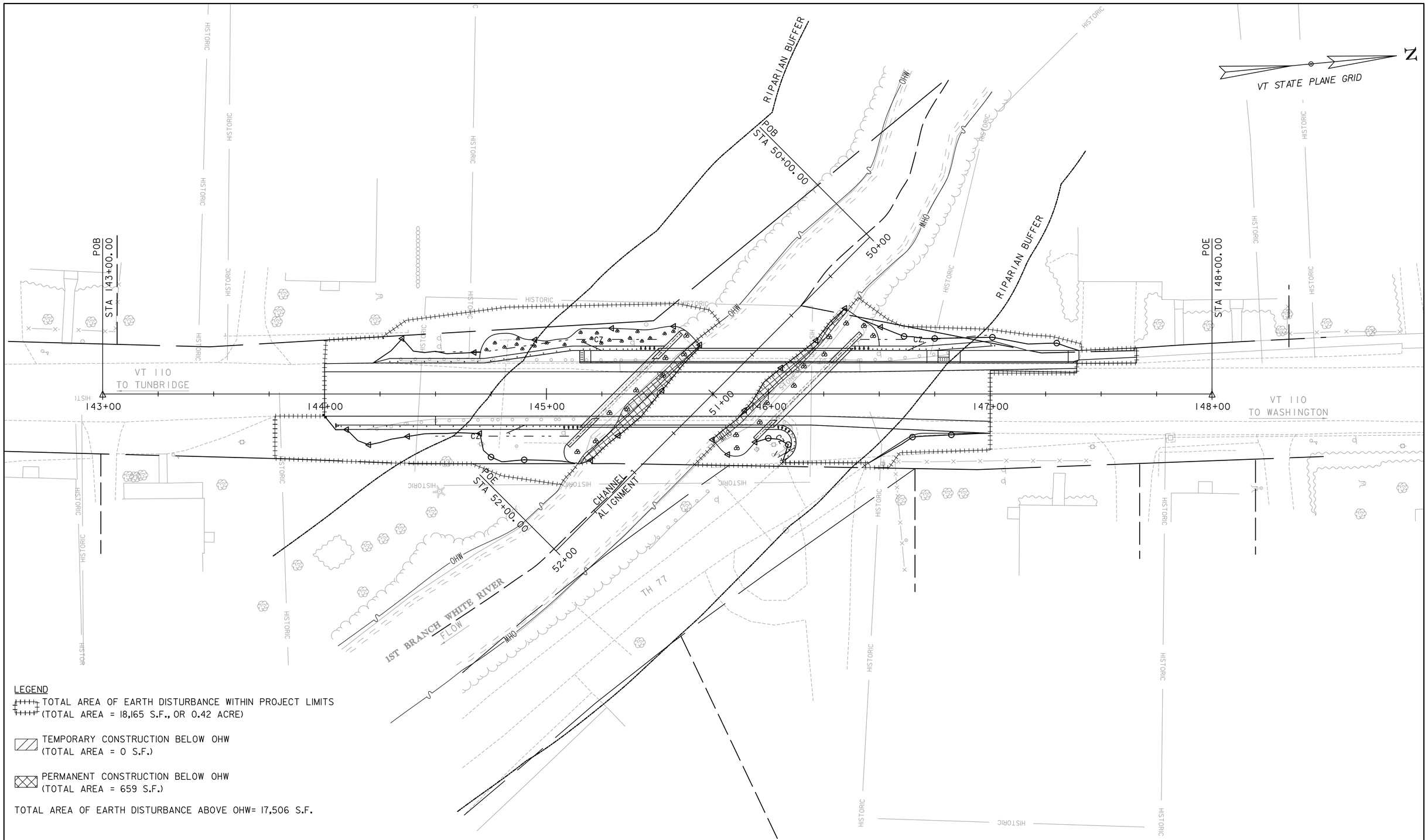
STA. 51+50 TO STA. 52+00

TYLIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: zl2cl50chanxs.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: T. POULIN
CHANNEL SECTIONS 4

PLOT DATE: 7/1/2015
DRAWN BY: T. POULIN
CHECKED BY: J. OLUND
SHEET 35 OF 43



LEGEND

TOTAL AREA OF EARTH DISTURBANCE WITHIN PROJECT LIMITS
(TOTAL AREA = 18,165 S.F., OR 0.42 ACRE)

TEMPORARY CONSTRUCTION BELOW OHW
(TOTAL AREA = 0 S.F.)

PERMANENT CONSTRUCTION BELOW OHW
(TOTAL AREA = 659 S.F.)

TOTAL AREA OF EARTH DISTURBANCE ABOVE OHW= 17,506 S.F.

TOTAL PERMANENT IMPACT AREA OF CLASS II WETLANDS = 0 S.F.

TOTAL TEMPORARY IMPACT AREA OF CLASS II WETLANDS = 0 S.F.

TOTAL PERMANENT IMPACT AREA OF WETLAND BUFFER = 0 S.F.

TOTAL TEMPORARY IMPACT AREA OF WETLAND BUFFER = 0 S.F.

RESOURCE SITE PLAN

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

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y. LIN INTERNATIONAL

FILE NAME: z12cl50r1.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
RESOURCE SITE PLAN

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 36 OF 43

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE PARTIAL REPLACEMENT OF BRIDGE 9 ON VT-110 IN THE TOWN OF CHELSEA. THE SUPERSTRUCTURE WILL BE REPLACED WITH FOUR PREFABRICATED BRIDGE UNITS, SPANNING 81'-1¼" OVER THE FIRST BRANCH OF THE WHITE RIVER, ON EXISTING ABUTMENTS ALONG THE SAME ALIGNMENT. BRIDGE 9 IS APPROXIMATELY 0.2 MILES SOUTH OF THE JUNCTION WITH VT-113 IN CHELSEA. WORK WILL INVOLVE REMOVAL OF EXISTING BRIDGE SUPERSTRUCTURE, WIDENING EXISTING ABUTMENTS, AND CONSTRUCTION OF BRIDGE SUPERSTRUCTURE. BRIDGE REPLACEMENT WILL INCLUDE TEMPORARY DETOUR, CHANNEL WORK, AND APPROACH WORK.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA AS SHOWN ON THE ATTACHED EPSC PLAN. THE AREA OF DISTURBANCE DOES NOT INCLUDE WASTE, BORROW OR STAGING AREAS. THE CONTRACTOR IS RESPONSIBLE FOR WASTE, BORROW, AND STAGING AREAS, AS WELL AS THE MATERIAL STOCKPILE, REFUELING AND MAINTENANCE AREAS. A MAP SHALL BE ATTACHED IF NECESSARY.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.42 ACRES. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE LOCAL AREA IS GENERALLY FLAT GROUND ON DEVELOPED LAND. VT-110 GENERALLY RUNS SOUTH TO NORTH. TH-77 INTERSECTS VT-110 IN CLOSE PROXIMITY TO THE BRIDGE, AND IS A GRAVEL ROAD WITH A PAVED APRON.

THERE IS ONE PAVED DRIVE WITHIN THE PROJECT SITE ALONG VT-110. ALL OTHER NEARBY STRUCTURES AND RESIDENCES ARE BEYOND THE PROJECT LIMITS.

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

THE FIRST BRANCH OF THE WHITE RIVER IS THE ONLY SOURCE OF WATER WITHIN THE PROJECT SITE. THE RIVER IS CLASSIFIED AS SINUOUS, INCISED, AND ALLUVIAL. THE STREAM BED CONSISTS OF MOSTLY GRAVEL AND COBBLES. THE DRAINAGE AREA IS 37.8 SQUARE MILES. THERE ARE NO EXISTING DROP INLETS IN THE PROJECT SITE, AND ONE EXISTING 24" CULVERT CONNECTING OPEN ROADSIDE CHANNELS ON EITHER SIDE OF VT-110, WHICH ULTIMATELY FLOWS INTO THE RIVER. RIVER IS LIKELY TO OVERTOP CHANNEL BANKS DURING HIGH RAIN EVENTS.

THE PROJECT IS LOCATED WITHIN A FLOODPLAIN.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF GRASS AND BRUSH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL, TYPE III AS SPECIFIED ON THE PLANS. 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 ORANGE, VERMONT. SOILS ON THE PROJECT SITE ARE: HADLEY VERY FINE SANDY LOAM, 0% TO 3% SLOPES, "K FACTOR" = 0.49; AND MERRIMAC FINE SANDY LOAM, 0%-3% SLOPES, "K FACTOR" = 0.24.

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 (MULTIPLE AREAS - SEE EPSC - EXISTING CONDITIONS LAYOUT FOR LOCATIONS)
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: FIRST BRANCH OF THE WHITE RIVER
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. 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 POLLUTION 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 SPECIFIC 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 APPROVED 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.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

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 CONTRACTORS PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

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 EPSC PLAN AND DETAIL SHEETS.

FILTER CURTAIN WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND DETAIL SHEETS.

DROP INLET PROTECTION WILL BE MAINTAINED THROUGH THE DURATION OF CONSTRUCTION AS PROPOSED ON THE EPSC PLAN AND DETAIL SHEETS.

PIPE INLET PROTECTION WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND DETAIL SHEETS.

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 CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT; THEREFORE DIVERSION MEASURES ARE NOT ANTICIPATED TO BE NEEDED.

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.

THE PROJECT AREA IS RELATIVELY FLAT; THEREFORE CHECK STRUCTURES ARE NOT ANTICIPATED TO BE NEEDED.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS.

SEED AND MULCH WILL BE USED AS PERMANENT CONTROLS TO STABILIZE EXPOSED SOIL. STONE FILL WILL BE USED TO STABILIZE THE SLOPES AND STREAMBED AROUND ABUTMENTS.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE.

THE USE OF SURFACE ROUGHENING IS NOT ANTICIPATED FOR THIS PROJECT.

THE USE OF TEMPORARY EROSION MATTING (BIODEGRADABLE) DURING CONSTRUCTION IS NOT ANTICIPATED.

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.

SHOULD EARTH DISTURBANCE BE PERFORMED OUTSIDE THE CONSTRUCTION SEASON, A WINTER EROSION AND SEDIMENT CONTROL PLAN DESCRIBING ALTERNATIVE STABILIZATION METHODS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO AUGUST 15 FOR APPROVAL.

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, TEMPORARY EROSION MATTING (BIODEGRADABLE) OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

THE USE OF PERMANENT EROSION CONTROL MATTING IS NOT ANTICIPATED FOR THIS PROJECT.

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.

TREATMENT OF DEWATERING COFFERDAM IS NOT ANTICIPATED.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS.

1.5 SEQUENCE AND STAGING

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

STAGING AREAS TO BE USED OUTSIDE THE BRIDGE CLOSURE PERIOD SHALL BE LOCATED OUTSIDE THE LIMITS OF THE FLOODPLAIN. EQUIPMENT, TEMPORARY MATERIAL STOCKPILES, AND TEMPORARY STAGING LOCATED WITHIN THE FLOODPLAIN DURING THE BRIDGE CLOSURE PERIOD SHALL BE REMOVED FROM THE PROJECT AREA WHEN CHANNEL BANKS ARE ANTICIPATED TO OVERTOP DUE TO HEAVY RAINFALL.

1.5.1 CONSTRUCTION SEQUENCE

1.5.2 OFF-SITE ACTIVITIES

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

WASTE, BORROW, AND STAGING AREAS MUST BE APPROVED BY THE VTRANS ENVIRONMENTAL SECTION.

NO ONSITE DISPOSAL OF WASTE MATERIALS SHALL BE ALLOWED. THE CONTRACTOR IS ENCOURAGED TO USE EXEMPT SITES FOR EARTHEN AND/OR SOLID WASTES. INFORMATION REGARDING EXEMPT SITES MAY BE FOUND ON THE VTRANS ENVIRONMENTAL WEBSITE AT http://vtransengineering.vermont.gov/bureaus/pdb/environmental/off-site-activity.

1.5.3 UPDATES

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y.LIN INTERNATIONAL

FILE NAME: z12cl50epscnar.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC NARRATIVE

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 37 OF 43

MERRIMAC FINE SANDY LOAM
0%-3% SLOPES
K= 0.24

HADLEY VERY FINE SANDY LOAM
0%-3% SLOPES
K= 0.49

SOIL TYPE: WATER

HADLEY VERY FINE SANDY LOAM
0%-3% SLOPES
K= 0.49

VT STATE PLANE GRID

JARVIS, JEREMIAH J. AND EMMY L.

McCULLOUGH, MAURICE & BEVERLY

NEWMAN, EMILY & GORDON

McELHANEY, JANET

McCULLOUGH, STEVEN

SUNNYBROOK HOLDINGS, LLC

PRESTON, ARNOLD
PRESTON, ARLENE

TOWN OF CHELSEA

BUTTON, ROBERT, JR.

1ST BRANCH WHITE RIVER

RIPARIAN BUFFER

BEGIN PROJECT
STA. 144+50.00

BEGIN APPROACH
STA. 144+00.00
MATCH EXISTING

BEGIN BRIDGE
STA. 145+30.00

POB
STA 50+00.00

POE
STA 52+00.00

END APPROACH
STA. 147+00.00
MATCH EXISTING

END BRIDGE
STA. 146+17.50

END PROJECT
STA. 146+50.00

LIMIT OF WORK
STA. 147+66.00

VT 110
TO TUNBRIDGE

VT 110
TO WASHINGTON

143+00 144+00 145+00 146+00 147+00 148+00

GRASS

WATER

GRASS/
BRUSH

PAVED DRIVE

GRAVEL DRIVE

WOOD RAIL FENCE

WOODEN FENCE W/ GRANITE POSTS

STONE RETAINING WALL

BULKHEAD

CHANNEL ALIGNMENT

STONE FILL (TYP)

TH 77

#267

#272

#280

POLE 393A

MERRIMAC FINE SANDY LOAM
0%-3% SLOPES
K= 0.24

EPSC - EXISTING SITE PLAN

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

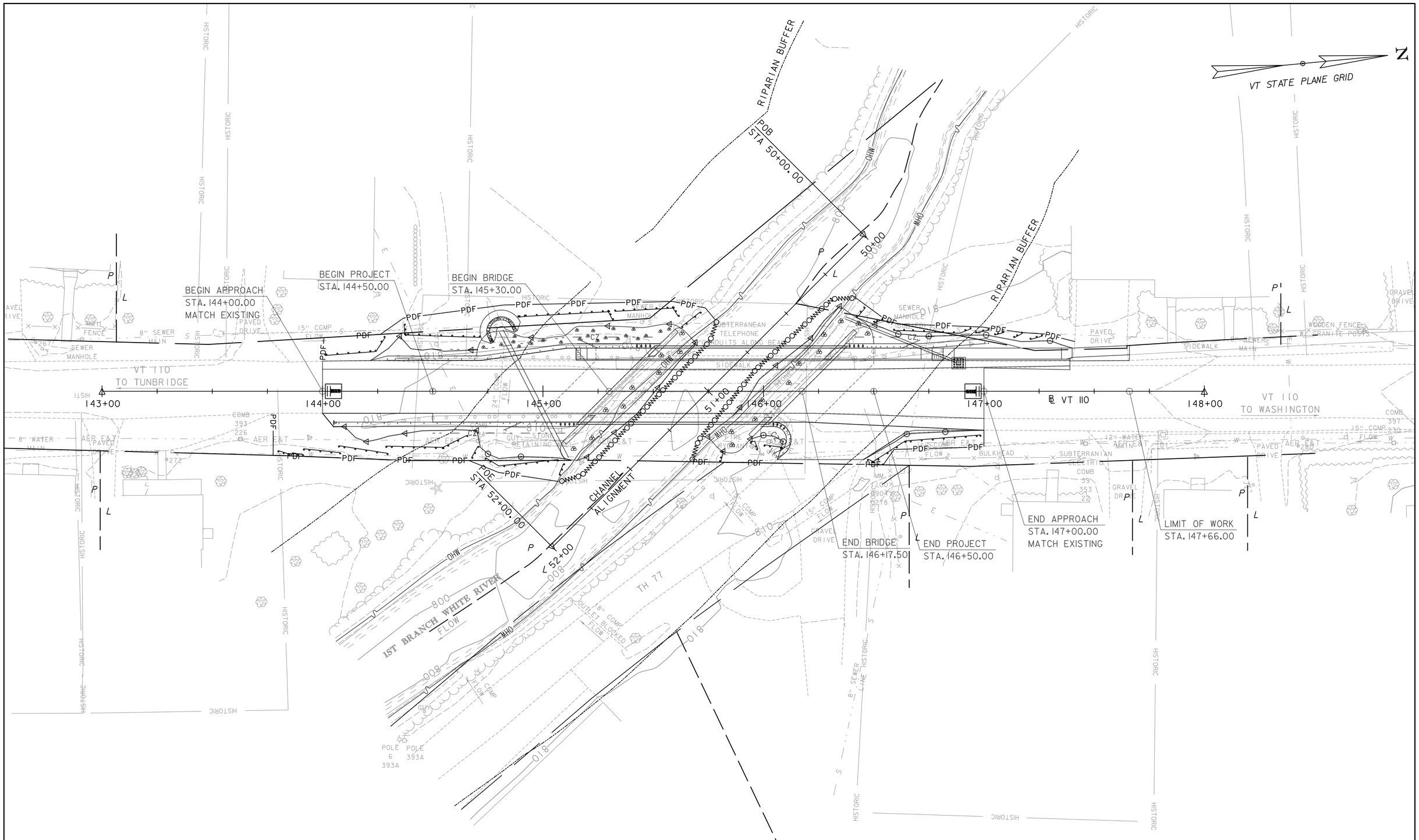
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

T.Y. LIN INTERNATIONAL

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

FILE NAME: z12cl50ero.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC EXISTING SITE PLAN

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 38 OF 43



EPSC - CONSTRUCTION SITE PLAN

SCALE 1" = 20'-0"

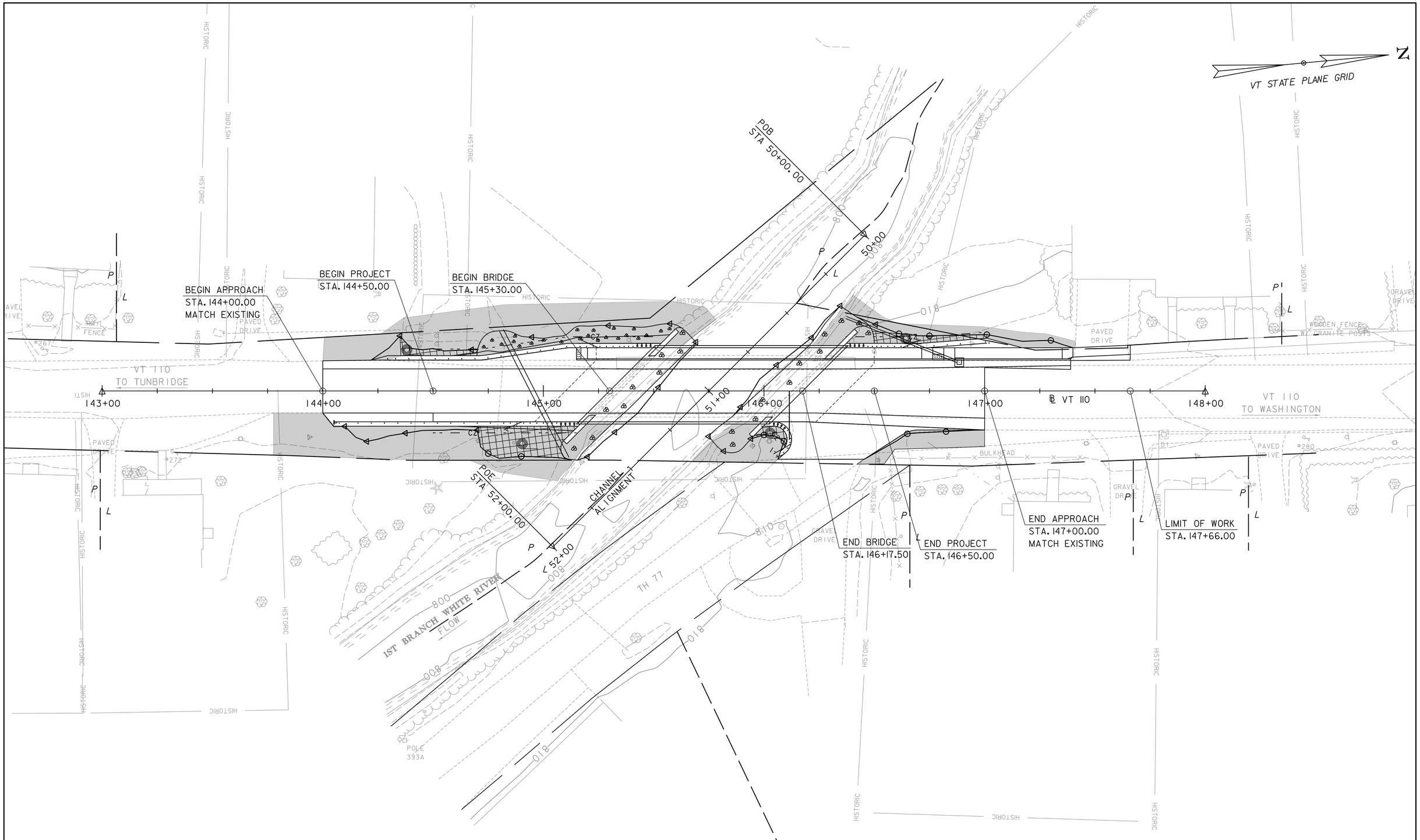
20 0 20

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME:	CHELSEA
PROJECT NUMBER:	BHF 0169(9)

TYLIN INTERNATIONAL

FILE NAME: z12c150ero.dgn	PLOT DATE: 7/1/2015
PROJECT LEADER: J. OLUND	DRAWN BY: B. TOOTHAKER
DESIGNED BY: B. TOOTHAKER	CHECKED BY: D. BRYANT
EPSC CONSTRUCTION SITE PLAN	SHEET 39 OF 43



NOTE: CONTOURS REFLECT EXISTING CONDITIONS. FINAL CONTOURS WILL BE SIMILAR. SEE CROSS SECTION SHEETS FOR FINAL GRADES.

EPSC - FINAL SITE PLAN

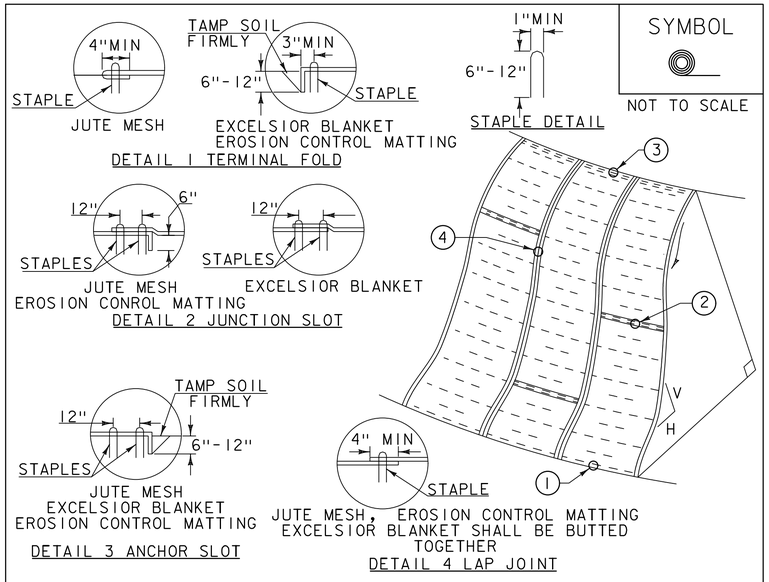
SCALE 1" = 20'-0"
20 0 20

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME:	CHELSEA
PROJECT NUMBER:	BHF 0169(9)

TYLIN INTERNATIONAL

FILE NAME: z12c150ero.dgn	PLOT DATE: 7/1/2015
PROJECT LEADER: J. OLUND	DRAWN BY: B. TOOTHAKER
DESIGNED BY: B. TOOTHAKER	CHECKED BY: D. BRYANT
EPSC FINAL SITE PLAN	SHEET 40 OF 43



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

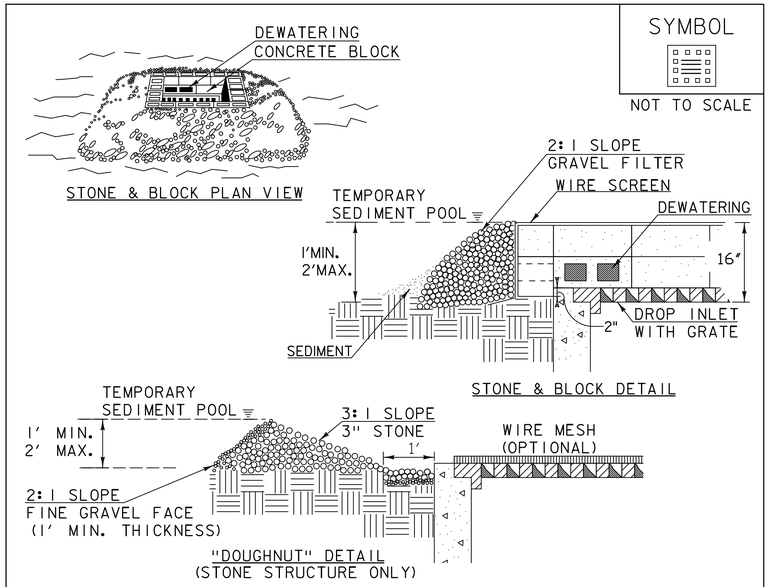
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 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



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2" MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR ½" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL ½"- ¾" IN DIAMETER PLACED 2" BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1' THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3" STONE AS SHOWN ON THE DRAWINGS.
5. MAXIMUM DRAINAGE AREA 1 ACRE

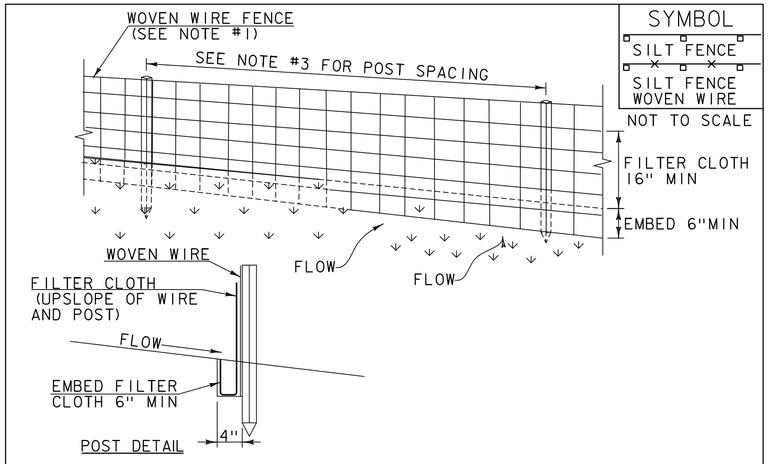
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STONE & BLOCK DROP INLET PROTECTION

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 INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 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

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

TYLIN INTERNATIONAL

FILE NAME: z12cl50epscdet.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC DETAILS 1

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 41 OF 43

VAOT URBAN LAWN MIX						
	LBS/AC					
WEIGHT	BROADCAST	HYDROSEED	NAME	LATIN NAME	GERM	PURITY
42.5%	34	68	CREEPING RED FESCUE	FESTUCA RUBRA X RUBRA	85%	98%
20.0%	16	32	PERENNIAL RYE GRASS	LOLIUM PERENNE	90%	95%
32.5%	26	52	KENTUCKY BLUE GRASS	POA PRATENSIS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	LOLIUM MULTIFLORUM	85%	95%
100%	80	160				

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 URBAN AREA MIX SHALL NOT BE USED IN WETLANDS OR ANY WATERS OF THE STATE OF VERMONT.
2. SEED MIX: USE ONLY AS INDICATED IN THE PLANS.
3. SEED MIX: 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 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

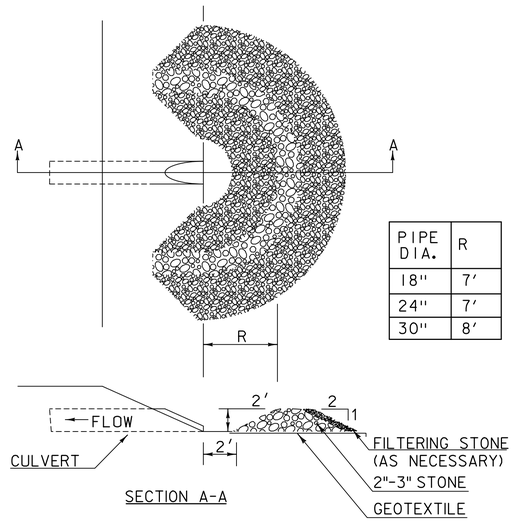
TURF ESTABLISHMENT

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

REVISIONS		
JANUARY 22, 2015	WHF	

SYMBOL

NOT TO SCALE



PIPE DIA.	R
18"	7'
24"	7'
30"	8'

CONSTRUCTION SPECIFICATIONS

1. USE 2" TO 3" STONE. FILTERING STONE SHALL BE 3/4".
2. PLACE STONE OVER GEOTEXTILE.
3. ONCE THE AREAS UPSTREAM FROM THE CHECK DAM ARE STABILIZED WITH VEGETATION, THE SEDIMENT TRAPPED BEHIND THE DAM SHALL BE DISPOSED OF IN AN APPROVED WASTE AREA.
4. THE CHECK DAM(S) SHALL BE FLATTENED AND GRADED IN A MANNER WHICH PROTECTS THE AREA FROM EROSION AND CHANNEL BLOCKAGE . (GEOTEXTILE MUST BE REMOVED).
5. THE GEOTEXTILE MUST BE DISPOSED OF APPROPRIATELY.
6. THE AREA CONTRIBUTING TO THE CHECK DAM SHALL NOT EXCEED 4 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: ILLINOIS USDA-NRCS
ORIGINALLY DEVELOPED BY USDA-NRCS

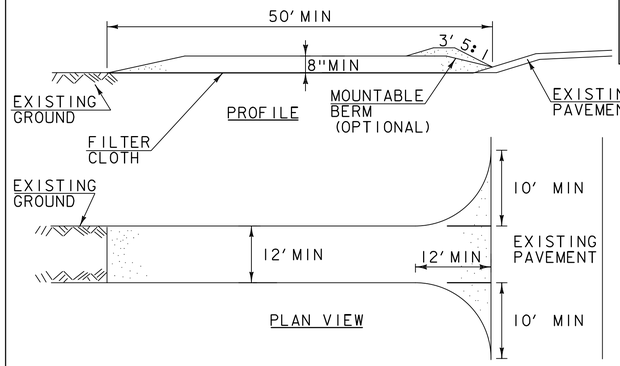
PIPE INLET PROTECTION

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY ITEM 653.40).

REVISIONS		
MARCH 6, 2008	WHF	
JANUARY 13, 2009	WHF	

SYMBOL

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

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

STABILIZED CONSTRUCTION ENTRANCE

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 VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS		
MARCH 24, 2008	WHF	
JANUARY 13, 2009	WHF	

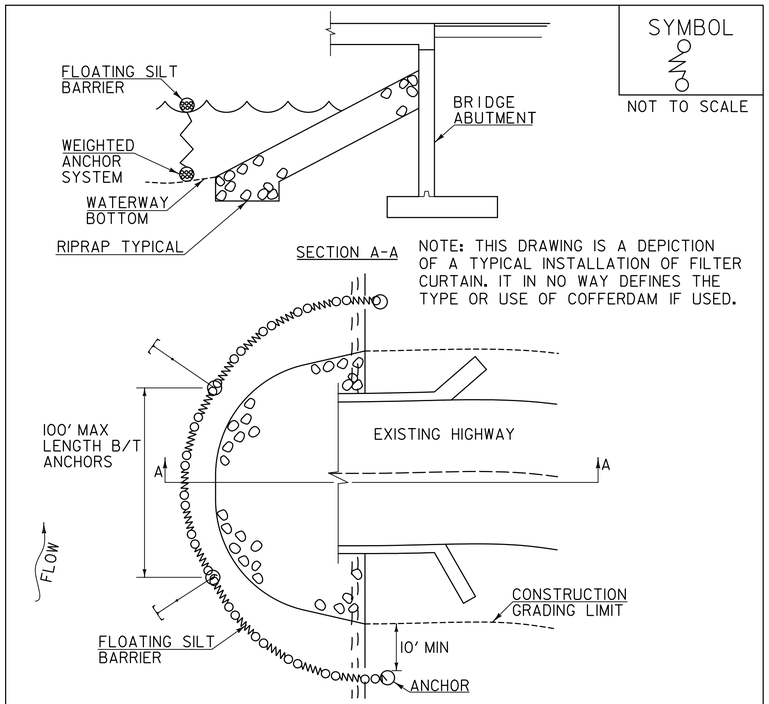
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

T.Y. LIN INTERNATIONAL

FILE NAME: z12cl50epscdet.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC DETAILS 2

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 42 OF 43



CONSTRUCTION SPECIFICATIONS

1. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FEET/SECOND.
2. MAXIMUM 100' LENGTH BETWEEN ANCHORS.
3. LAST SECTION SHALL TERMINATE A MINIMUM OF 10' BEYOND LIMIT OF DISTURBANCE.
4. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE WHICH ALLOWS THE CURTAIN TO CONFORM TO THE BOTTOM OF THE WATERWAY.
5. THE CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE MINIMIZING THE ESCAPE OF SEDIMENTS INTO WATERWAY.

FILTER CURTAIN

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.61).

REVISIONS	
APRIL 1, 2008	WHF
JANUARY 13, 2009	WHF
SEPTEMBER 4, 2009	WHF

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: CHELSEA
PROJECT NUMBER: BHF 0169(9)

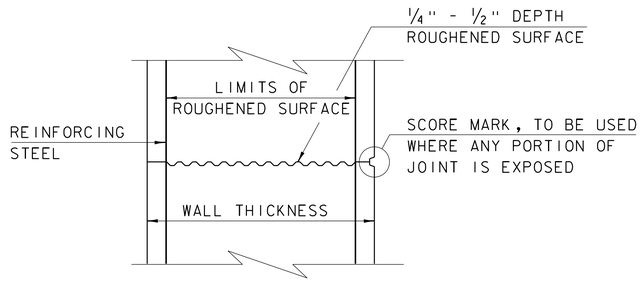
T.Y.LIN INTERNATIONAL

FILE NAME: z12cl50epscdet.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC DETAILS 3

PLOT DATE: 7/1/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 43 OF 43

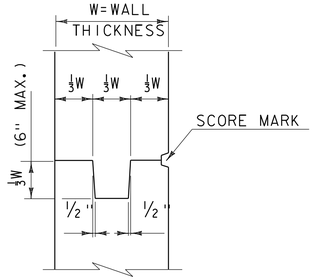
CONCRETE GENERAL NOTES

1. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" x 1"
2. REINFORCING STEEL SIZE AND SPACING SHOWN IN THE PLANS IS BASED ON 60 KSI STEEL, UNLESS NOTED OTHERWISE. WITH THE ENGINEER'S PERMISSION, BAR SIZE AND SPACING MAY BE MODIFIED ACCORDING TO THE LATEST AASHTO LRFD BRIDGE DESIGN SPECIFICATION AND STRUCTURES DESIGN MANUAL WHEN USING HIGHER STRENGTH STEEL.

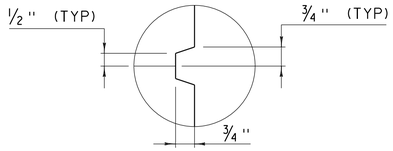


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

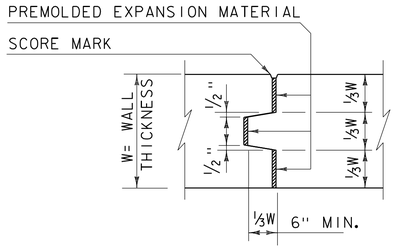
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



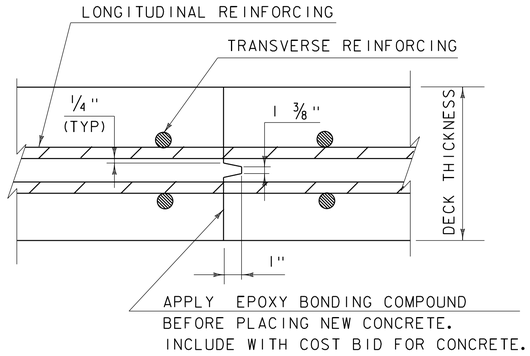
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



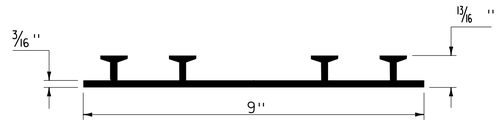
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



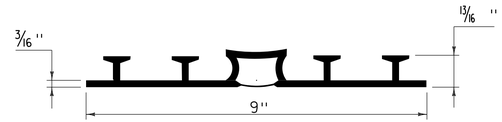
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

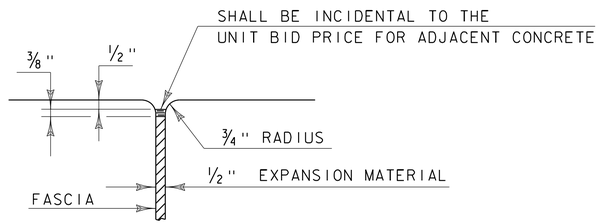
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



P.V.C. WATERSTOP FOR EXPANSION JOINTS
(NOT TO SCALE)

PAYMENT FOR THE P.V.C. WATERSTOP SHALL BE INCIDENTAL TO THE UNIT BID PRICE FOR THE ADJACENT CONCRETE.

OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



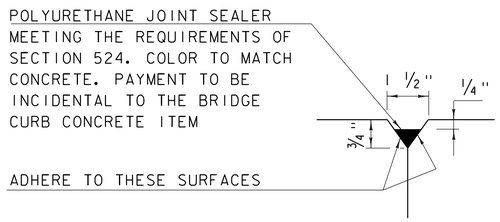
JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
FEBRUARY 9, 2012	REBAR SUBSTITUTION ALLOWANCE ADDED TO CONCRETE GENERAL NOTES.

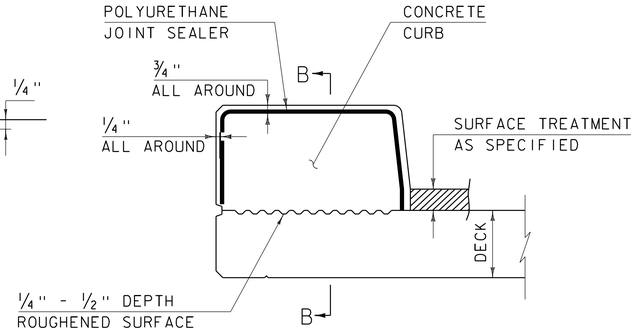
CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-501.00

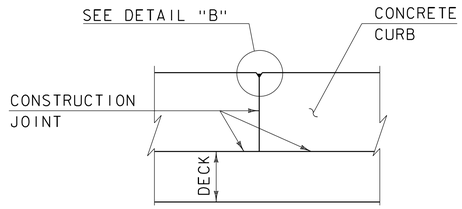


DETAIL "B"
(NOT TO SCALE)

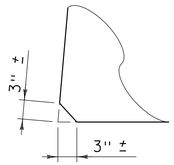


CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

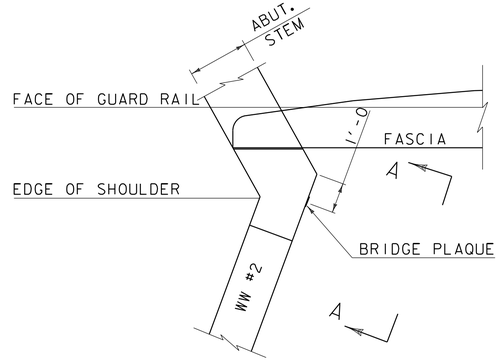
1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



SECTION B - B
(NOT TO SCALE)



ACUTE ANGLE CLIP DETAIL
(NOT TO SCALE)



PLAN

CONCRETE CURB JOINT NOTES

1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.

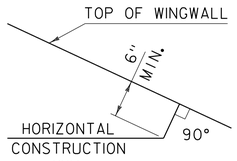
2. IF THE CONTRACTOR CHOOSES NOT TO USE AN APPROVED SHRINKAGE REDUCING ADMIXTURE, THE CURBS SHALL BE CONSTRUCTED WITH CONSTRUCTION JOINTS SPACED AT A MAXIMUM OF 15'-0" CENTER TO CENTER AND 2'-0" MINIMUM FROM THE CENTER OF NEAREST BRIDGE RAILING POST.

3. ON MULTI-SPAN CONTINUOUS SUPERSTRUCTURES, REGARDLESS OF WHETHER APPROVED SHRINKAGE REDUCING ADMIXTURE IS USED, CURB JOINTS SHALL BE LOCATED OVER THE CENTERLINE OF PIERS AND 7'-0" EACH SIDE OF THE CENTERLINE OF EACH PIER.

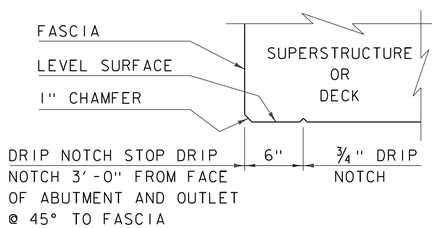
4. WHEN CURB JOINTS ARE USED THE CURBS SHALL BE PLACED IN ALTERNATE SECTIONS WITH A MINIMUM OF 48 HOUR DELAY BETWEEN ADJACENT PLACEMENTS.

5. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THROUGH CURB CONSTRUCTION JOINTS. CURB STIRRUP BARS SHALL BE TURNED AS NECESSARY TO MAINTAIN COVER IN THE FLARED CURB ENDS.

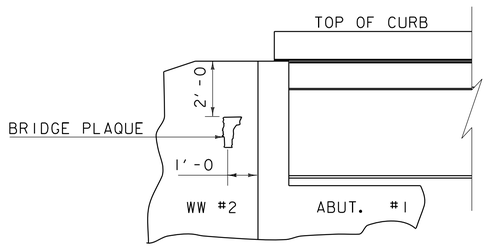
6. THE JOINT SPACING AND DETAILS SHOWN SHALL APPLY TO SIDEWALKS WHEN SHOWN IN THE PLANS.



HORIZONTAL WINGWALL CONSTRUCTION JOINT
(NOT TO SCALE)



DRIP NOTCH DETAIL
(NOT TO SCALE)



VIEW "A - A"

BRIDGE PLAQUE
(NOT TO SCALE)

THE BRIDGE PLAQUE WILL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AT ABUTMENT #1 ON THE RIGHT SIDE AS SHOWN OR AS DIRECTED BY THE ENGINEER.

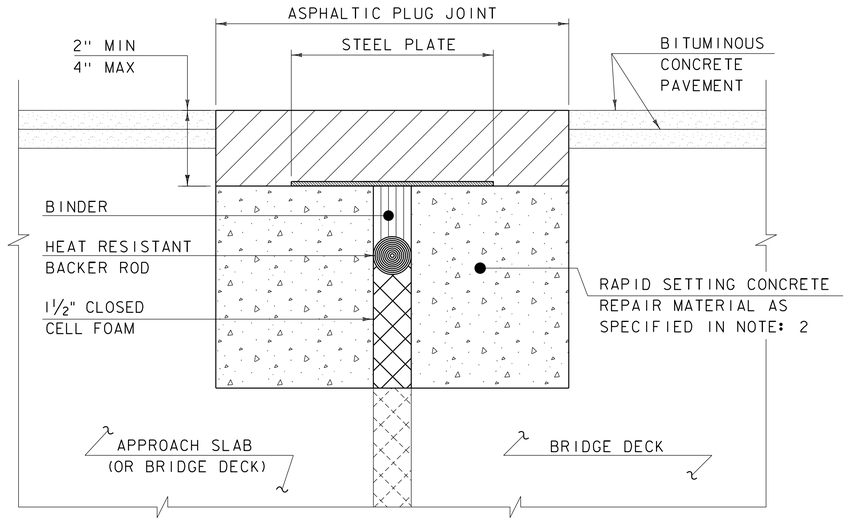
PAYMENT FOR INSTALLATION OF THE BRIDGE PLAQUE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED AND ADDED TWO DETAILS
OCTOBER 10, 2012	MODIFIED HORZ. JOINT WINGWALL ADD 6" MIN. DIMENSION

CONCRETE DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL SD-502.00



ASPHALTIC PLUG JOINT DETAIL - REHAB

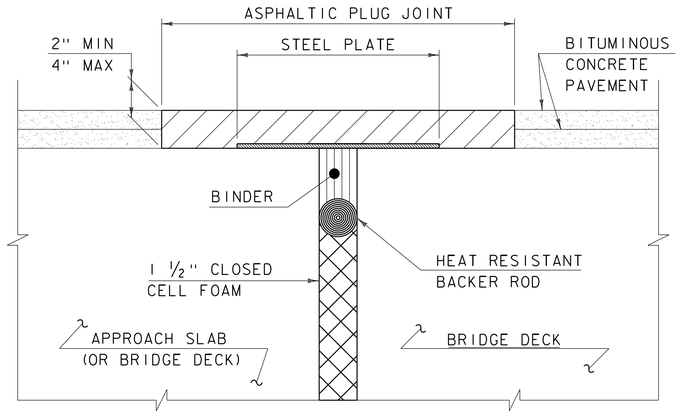
NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL BE INCLUDED IN THE BID PRICE OF ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.

2. THE CONTRACTOR SHALL REPLACE REMOVED MATERIAL THAT IS LESS THAN 4" FROM FINISHED GRADE WITH ASPHALTIC PLUG JOINT MATERIAL MEETING THE REQUIREMENTS OF SUBSECTION 707.15. ALL REMOVED MATERIAL THAT IS GREATER THAN 4 INCHES FROM FINISHED GRADE SHALL BE REPLACED WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE MEETING THE REQUIREMENTS OF SUBSECTION 780.04.

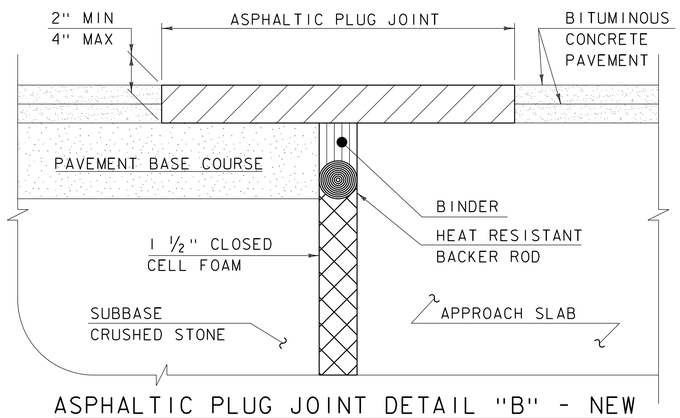
3. REINFORCING STEEL NOT SHOWN FOR CLARITY.

4. PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. THE STEEL PLATES MAY BE OMITTED WHERE THE ENGINEER DETERMINES THAT THE APPROACH SLAB OR BRIDGE DECK WILL PROVIDE INADEQUATE SUPPORT AND WHERE VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.



ASPHALTIC PLUG JOINT DETAIL "A" - NEW

NOTE:
PLACE 1/4" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRE-STAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.



ASPHALTIC PLUG JOINT DETAIL "B" - NEW

ASPHALTIC PLUG JOINT NOTES

INSTALLATION:

1. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT, MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. REMOVE THE BITUMINOUS CONCRETE PAVEMENT FULL DEPTH AS SHOWN ON THE PLANS. THE PAVEMENT SHALL BE DRY AND SAW CUT TO THE LIMITS REQUIRED TO PLACE THE JOINT. A PNEUMATIC HAMMER AND CHISEL MAY BE USED ADJACENT TO THE CURB ONLY WHEN SAW CUTTING IS NOT POSSIBLE.
3. BLAST CLEAN THE JOINT AREA OF DEBRIS, ASPHALT AND SHEET MEMBRANE. THOROUGHLY DRY THE JOINT AREA WITH COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.
5. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.
6. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

WEATHER LIMITATIONS

APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL OR AS RECOMMENDED BY THE MANUFACTURER:

1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.

DETAILS ON THIS SHEET ARE NOT TO SCALE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
AUGUST 29, 2011	ADD DETAIL "B" AND REV. NOTES

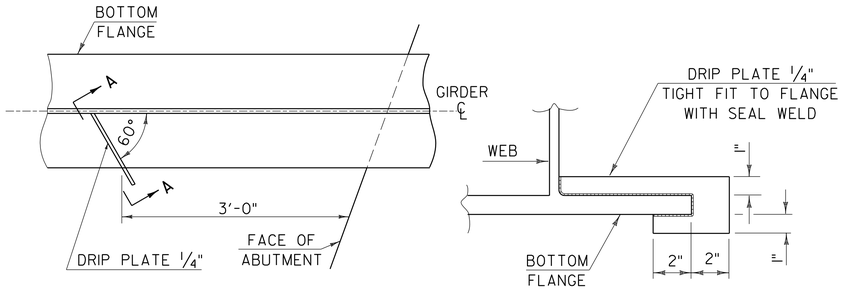
BRIDGE JOINT
ASPHALTIC PLUG

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - DIVISION

STRUCTURES DETAIL
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

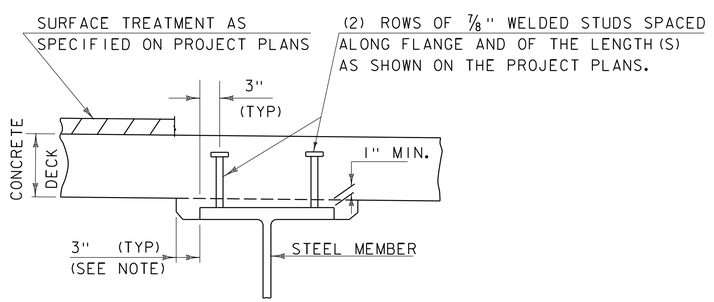
1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SUBSECTION 506.19, UNLESS OTHERWISE SPECIFIED.
2. ALL HOLES IN THE WEBS OF THE FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.19.
3. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.10.
4. ANY CONNECTIONS THAT ARE NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
5. STRUCTURAL STEEL MEMBERS DESIGNATED "CVN" IN THE PLANS SHALL BE CHARPY V-NOTCH TESTED IN ACCORDANCE WITH SUBSECTION 714.01 OF THE STANDARD SPECIFICATIONS.
6. ENDS OF GIRDERS ARE TO BE VERTICAL IN THEIR FINAL POSITION.
7. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE GIRDERS SHALL BE TAKEN AS DIRECTED BY THE RESIDENT ENGINEER FOR USE IN DETERMINING FINISHED GRADES.



PLAN DRIP PLATE

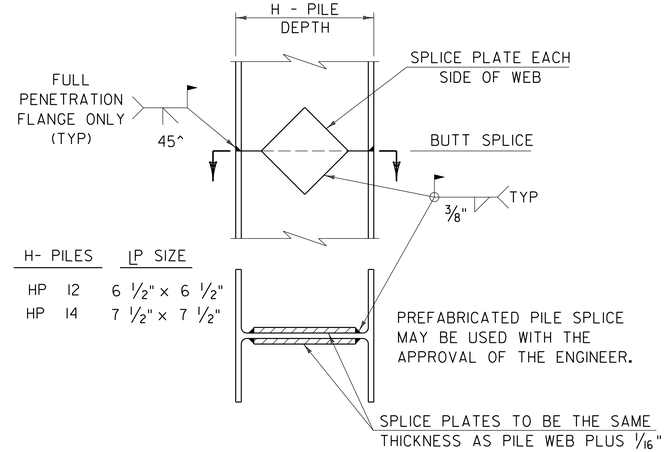
SECTION A - A

NOTE: DRIP PLATES SHALL BE PLACED ON OUTSIDE EDGE OF FASCIA GIRDERS ON THE HIGH SIDE OF ALL PIERS AND ABUTMENTS OR AS INDICATED ON PROJECT PLANS.



NOTE:
THE 3" HORIZONTAL SECTION MAY BE ELIMINATED FOR FORMING SYSTEMS DESIGNED FOR THE CONSTRUCTION OF VERTICAL HAUNCHES. ANY VOIDS RESULTING FROM FORMING SYSTEM ELEMENTS SHALL BE FILLED WITH JOINT SEALER, POLYURETHANE MEETING THE REQUIREMENTS OF SECTION 524. THE COST OF THE JOINT SEALER, POLYURETHANE SHALL BE INCIDENTAL TO THE ADJACENT CONCRETE.

HAUNCH AND SHEAR CONNECTOR DETAIL



H- PILES	LP SIZE
HP 12	6 1/2" x 6 1/2"
HP 14	7 1/2" x 7 1/2"

DETAIL OF PILE SPLICE

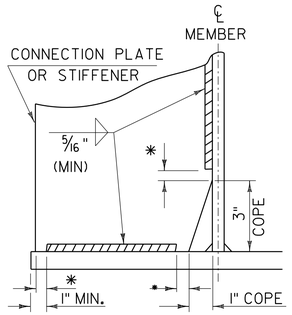
DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
JUNE 4, 2010	MODIFIED NOTES

STRUCTURAL STEEL DETAILS & NOTES

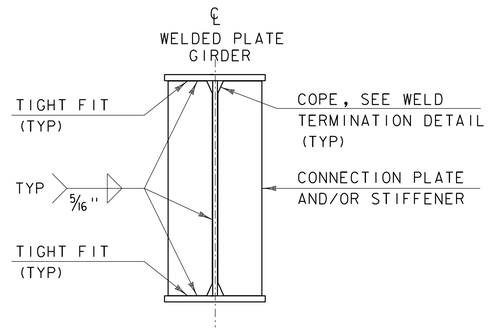
VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL
SD-601.00



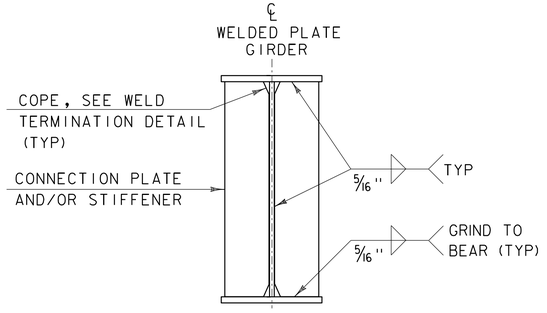
WELD TERMINATION AND COPING DETAILS FOR STEEL MEMBERS

*NO WELD FOR 3/8" MIN. 7/8" MAX. (EXCEPT MUST MAINTAIN 1" MINIMUM FROM EDGE OF FLANGE)

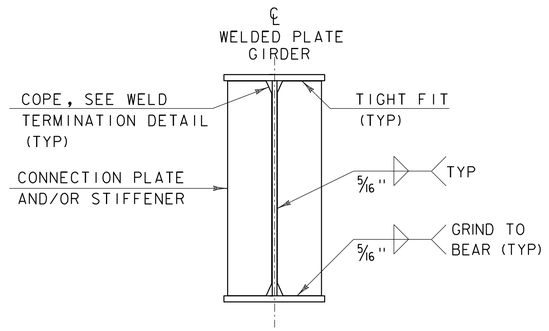


INTERMEDIATE CONNECTION PLATES AND/OR STIFFENERS FOR WELDED PLATE GIRDERS

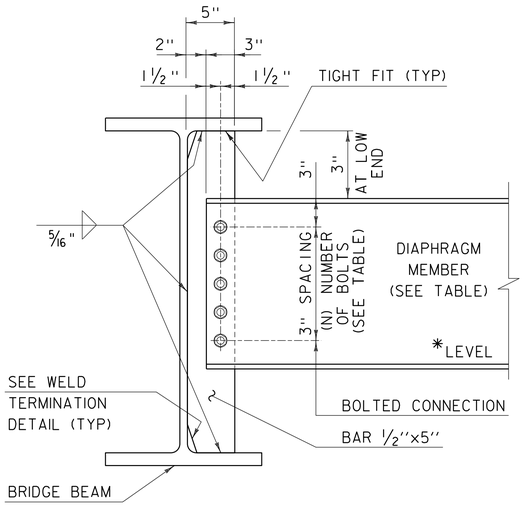
INTERMEDIATE DETAIL IS ONLY USED WHEN PLATE DOES NOT OCCUR AT AN ABUTMENT OR PIER.



ABUTMENT BEARING STIFFENERS AND/OR CONNECTION PLATES FOR WELDED PLATE GIRDERS



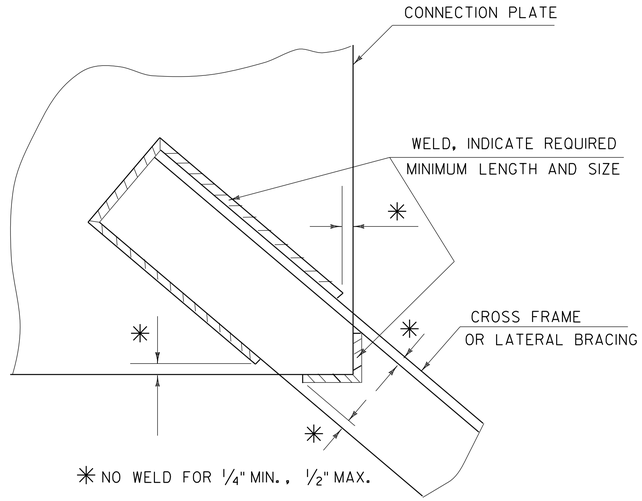
PIER BEARING STIFFENERS AND/OR CONNECTION PLATES FOR WELDED PLATE GIRDERS



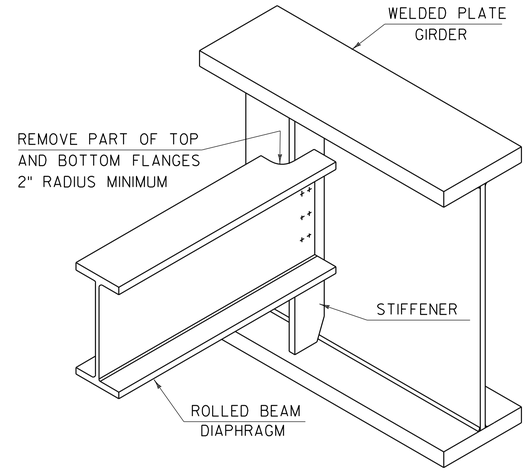
DEPTH		DIAPHRAGM MEMBER	(N) BOLTS
ROLLED BEAM	24" 30"	C15x33.9	4
	31" 36"	MC18x42.7	5
	37" 42"	W21x44	6
PLATE GIRDER WEB	31" 36"	W27x84	7
	37" 42"	W33x118	9
	43" 48"	W36x135	10

INTERMEDIATE DIAPHRAGMS FOR 24" TO 48" BRIDGE BEAMS

* IF CLEARANCE CANNOT BE MET, DIAPHRAGM MAY BE SLOPED.



WELD LOCATION DETAIL AT CROSS FRAMES AND LATERAL BRACING



SEE CONTRACT DRAWINGS FOR SIZES OF MEMBERS AND CONNECTION DETAILS

ROLLED BEAM USED AS DIAPHRAGM

DETAILS ON THIS SHEET ARE "NOT TO SCALE" UNLESS NOTED OTHERWISE.

REVISIONS	
MAY 7, 2010	APPROVED FOR USE BY VAOT STRUCTURES SECTION
MAY 2, 2011	ADD INTERMEDIATE DIAPHRAGMS DETAIL & ADD NOT TO SCALE NOTE

STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES

VERMONT AGENCY OF TRANSPORTATION
STRUCTURES - SECTION

STRUCTURES DETAIL SD-602.00