

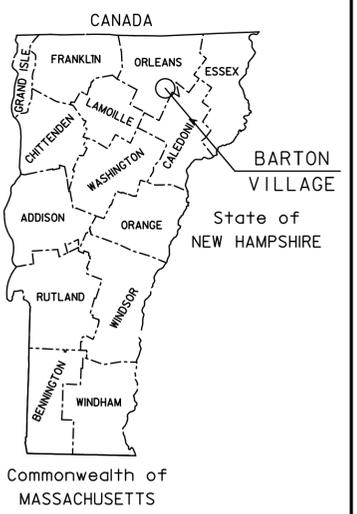
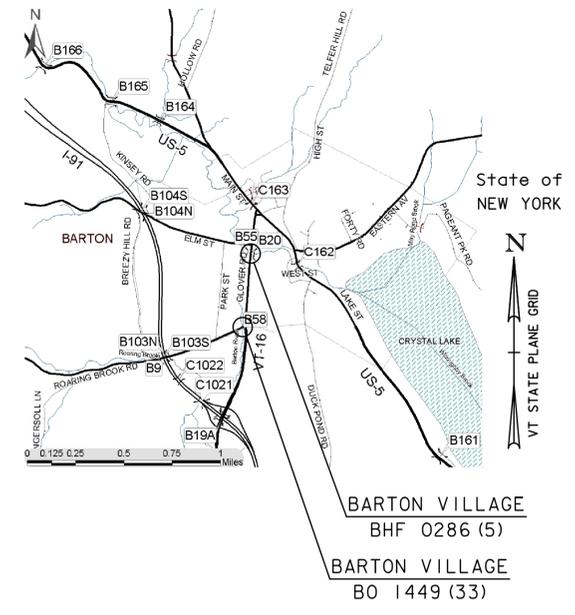
SUMMARY OF SHEETS
 GENERAL PROJECT SHEETS: 1 - 6
 BO 1449 (33) SHEETS: 7 - 55
 BHF 0286 (5) SHEETS: 56 - 111

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

VILLAGE OF BARTON
 COUNTY OF ORLEANS



BARTON VILLAGE BO 1449 (33)

ROUTE NO : TH 4 (ROARING BROOK RD) , RURAL MINOR COLLECTOR, CLASS 2 TOWN HIGHWAY

BRIDGE NO : 58

PROJECT LOCATION: AT THE INTERSECTION OF TH-4 AND VT ROUTE 16

PROJECT DESCRIPTION: REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH A NEW STRUCTURE.

LENGTH OF STRUCTURE: 68.13 FEET
 LENGTH OF ROADWAY: 221.87 FEET
 LENGTH OF PROJECT: 290.00 FEET

BARTON VILLAGE BHF 0286 (5)

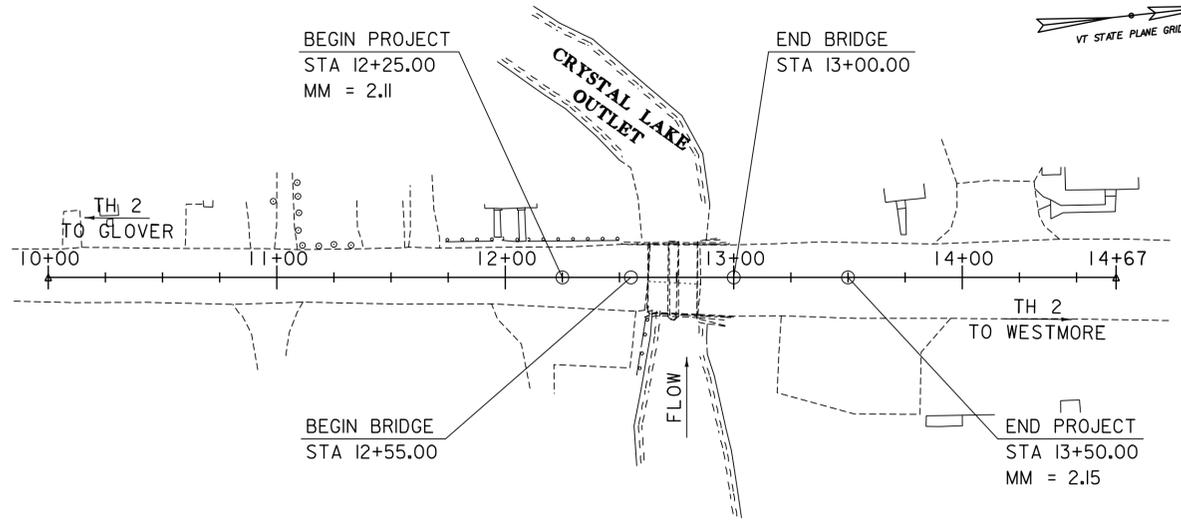
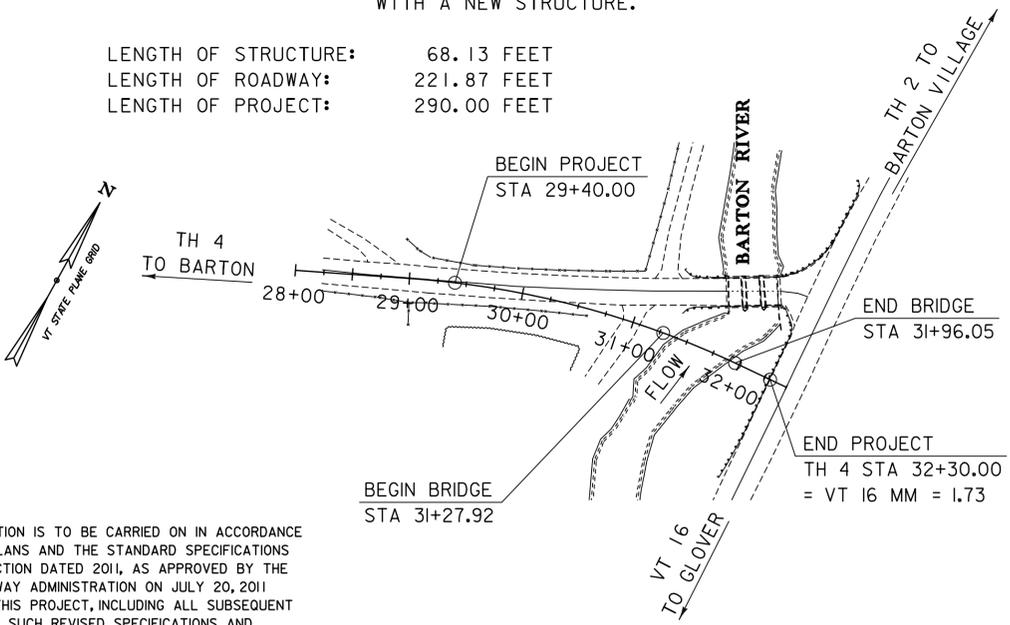
ROUTE NO : TH 2 (GLOVER ROAD) , URBAN MAJOR COLLECTOR, CLASS 1 TOWN HIGHWAY

BRIDGE NO : 20

PROJECT LOCATION: 0.2 MILES SOUTH OF JUNCTION WITH US ROUTE 5

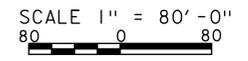
PROJECT DESCRIPTION: REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH A NEW STRUCTURE ON EXISTING ALIGNMENT.

LENGTH OF STRUCTURE: 45.00 FEET
 LENGTH OF ROADWAY: 80.00 FEET
 LENGTH OF PROJECT: 125.00 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 : 06/12; 04/13; 04/14	
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD 83 (2011)



FINAL PLANS
5/20/2015

TYLIN INTERNATIONAL

DIRECTOR OF PROJECT DELIVERY	
APPROVED _____	DATE _____
PROJECT MANAGER : DOUG BONNEAU, P.E.	
PROJECT NAME : BARTON VILLAGE	
PROJECT NUMBER : BO 1449 (33) & BHF 0286 (5)	
SHEET 1 OF 111 SHEETS	

COMPOSITE QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES											TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
											BO 1449(33) BRIDGE 58	BHF 0286(5) BRIDGE 20	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
											738	283	1021		CY	COMMON EXCAVATION	203.15				
											675	140	815		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
											57		57		CY	EXCAVATION OF SURFACES AND PAVEMENTS	203.28				
											230		230		CY	SAND BORROW	203.31				
												113	113		CY	TRENCH EXCAVATION OF EARTH	204.20				
											1	1	2		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
											150	180	330		CY	STRUCTURE EXCAVATION	204.25				
											110	105	215		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
											268	410	678		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
											681	158	839		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
											11.2		11.2		CY	AGGREGATE SURFACE COURSE	401.10				
											9	4.7	13.7		CWT	EMULSIFIED ASPHALT	404.65				
											1	1	2		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
												1	1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 20)	504.10				
											1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 58)	504.10				
											340	660	1000		LF	STEEL PILING, HP 12 X 74	505.16				
											2	2	4		EACH	DYNAMIC PILE LOADING TEST	505.45				
											477	315	792		LF	GROUTING SHEAR KEYS	510.24				
											10	7	17		GAL	WATER REPELLENT, SILANE	514.10				
											60	60	120		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
											190	167	357		SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10				
											65	86	151		LF	JOINT SEALER, HOT POURED	524.11				
											150		150		LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	525.44				
												86	86		LF	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	525.45				
												1	1		LS	MAINTENANCE OF STRUCTURES AND APPROACHES (BRIDGE 20)	527.10				
											1		1		LS	MAINTENANCE OF STRUCTURES AND APPROACHES (BRIDGE 58)	527.10				
											1		1		EACH	REMOVAL OF STRUCTURE (1290 SF - EST) (BRIDGE 58)	529.15				
												1	1		EACH	PARTIAL REMOVAL OF STRUCTURE (800 SF - EST) (BRIDGE 20)	529.20				
											18	18	36		EACH	BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD	531.16				
																BEGIN OPTION AA					
												1	1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) (BRIDGE 20)	540.10				
												1	1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1) (BRIDGE 20)	900.645				
																END OPTION AA					
																BEGIN OPTION BB					
											1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) (BRIDGE 58)	540.10				
											1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1) (BRIDGE 58)	900.645				
																END OPTION BB					

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLINTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33) & BHF 0286(5)

FILE NAME: z\3\078q\tycomp.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
COMPOSITE QUANTITY SHEET 1

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 2 OF III

COMPOSITE QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES												TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
												BO 1449(33) BRIDGE 58	BHF 0286(5) BRIDGE 20	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
													2	2		EACH	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	604.18				
												20	20	40		HR	POWER GRADER RENTAL	608.15				
												20	20	40		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
												20	20	40		HR	TRUCK RENTAL	608.37				
												20	20	40		HR	LOADER RENTAL, TYPE I	608.40				
												25	25	50		MGAL	DUST CONTROL WITH WATER	609.10				
												19	3	22		CY	STONE FILL, TYPE I	613.10				
													70	70		CY	STONE FILL, TYPE II	613.11				
												595		595		CY	STONE FILL, TYPE III	613.12				
													1	1		EACH	WOOD MARKER POSTS	619.15				
												159	68	227		LF	REMOVAL OF EXISTING FENCE	620.55				
												163		163		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21				
													26	26		LF	BOX BEAM GUARDRAIL	621.30				
													1	1		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51				
												2		2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
												4		4		EACH	GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM	621.737				
												25		25		LF	REMOVE AND RESET GUARDRAIL	621.75				
												246		246		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
												40	40	80		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
												100	100	200		HR	FLAGGERS	630.15				
												0.5	0.5	1		LS	FIELD OFFICE, ENGINEERS	631.10				
												0.5	0.5	1		LS	TESTING EQUIPMENT, CONCRETE	631.16				
												0.5	0.5	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
												1500	1500	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
												520	520	1040		HR	EMPLOYEE TRAINEESHIP	634.10				
												0.5	0.5	1		LS	MOBILIZATION/DEMobilIZATION	635.11				
												376	660	1036		LF	4 INCH WHITE LINE	646.20				
												299	500	799		LF	4 INCH YELLOW LINE	646.21				
												14.3		14.3		LF	24 INCH STOP BAR	646.26				
												4		4		EACH	LETTER OR SYMBOL	646.30				
												61.2		61.2		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85				
												1020		1020		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11				
												760	120	880		SY	GEOTEXTILE UNDER STONE FILL	649.31				
												220	68	288		SY	GEOTEXTILE FOR SILT FENCE	649.51				
												222	113	335		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
												17.6	4.6	22.2		LB	SEED	651.15				
												1.9	1	2.9		LB	SEED, WINTER RYE	651.17				
												147	39	186		LB	FERTILIZER	651.18				
												0.6	0.2	0.8		TON	AGRICULTURAL LIMESTONE	651.20				
												0.6	0.2	0.8		TON	HAY MULCH	651.25				

FOR REVIEW ONLY
NOT FOR CONSTRUCTION



PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33) & BHF 0286(5)

FILE NAME: z\3\078q\tycomp.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
COMPOSITE QUANTITY SHEET 3

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 4 OF III

COMPOSITE QUANTITY SHEET 4

SUMMARY OF ESTIMATED QUANTITIES											TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES				
											BO 1449(33) BRIDGE 58	BHF 0286(5) BRIDGE 20	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
											62	41	103		CY	TOPSOIL	651.35				
											210		210		SY	GRUBBING MATERIAL	651.40				
												1	1		LS	EPSC PLAN (BRIDGE 20)	652.10				
											1		1		LS	EPSC PLAN (BRIDGE 58)	652.10				
											20	10	30		HR	MONITORING EPSC PLAN	652.20				
												1	1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.) (BRIDGE 20)	652.30				
											1		1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.) (BRIDGE 58)	652.30				
											45	30	75		CY	VEHICLE TRACKING PAD	653.35				
												5	5		EACH	INLET PROTECTION DEVICE, TYPE I	653.40				
											960	374	1334		LF	PROJECT DEMARCATION FENCE	653.55				
											18		18		EACH	DECIDUOUS SHRUBS (CORNUS SERICEA) (CONT.) (24 INCH)	656.35				
											2.9		2.9		MGAL	LANDSCAPE WATERING	656.65				
											52.3	0.6	52.9		SF	TRAFFIC SIGNS, TYPE A	675.20				
											162	12	174		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
											6	2	8		EACH	REMOVING SIGNS	675.50				
											3		3		EACH	ERECTING SALVAGED SIGNS	675.60				
											2		2		EACH	SETTING SALVAGED POSTS	675.61				
											10	10	20		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608				
												318	318		CY	SPECIAL PROVISION (MANAGEMENT OF PETROLEUM CONTAMINATED SOILS)	900.608				
												4	4		EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM)	900.620				
												5	5		EACH	SPECIAL PROVISION (MONITORING WELL)	900.620				
												32	32		LF	SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES)	900.640				
											552		552		LF	SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS) (21" x 36")	900.640				
												360	360		LF	SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS)(15" X 48")	900.640				
												1	1		LS	SPECIAL PROVISION (CONSTRUCTION VIBRATION AND CRACK MONITORING)	900.645				
											0.5	0.5	1		LS	SPECIAL PROVISION (CPM SCHEDULE)	900.645				
												1	1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE) (BRIDGE 20)	900.645				
											1		1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE) (BRIDGE 58)	900.645				
												1	1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I.) (BRIDGE 20)	900.650				
											1		1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I.) (BRIDGE 58)	900.650				
											1	1	2		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650				
											1	1	2		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
											298	168	466		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLININTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33) & BHF 0286(5)

FILE NAME: z\3\078q\tycomp.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
COMPOSITE QUANTITY SHEET 4

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 5 OF 11

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

VILLAGE OF BARTON
COUNTY OF ORLEANS

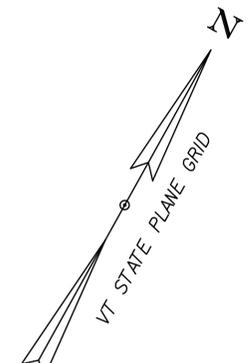
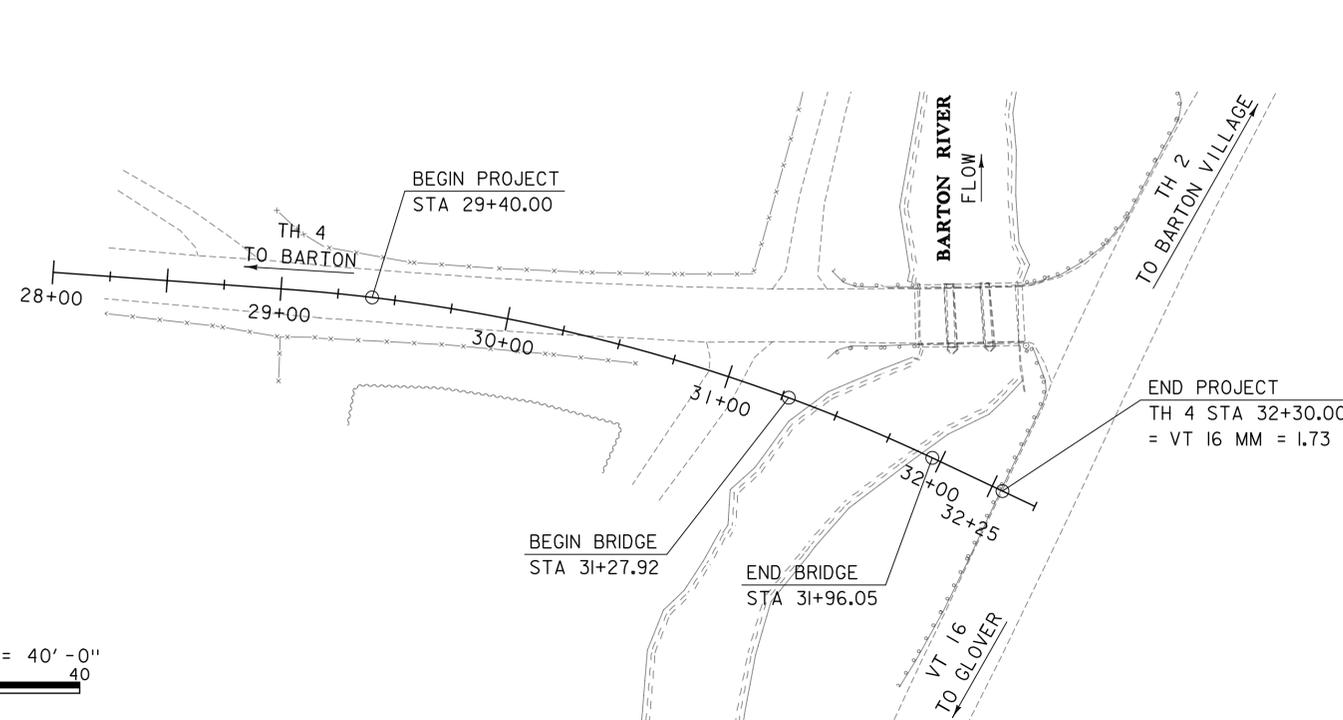
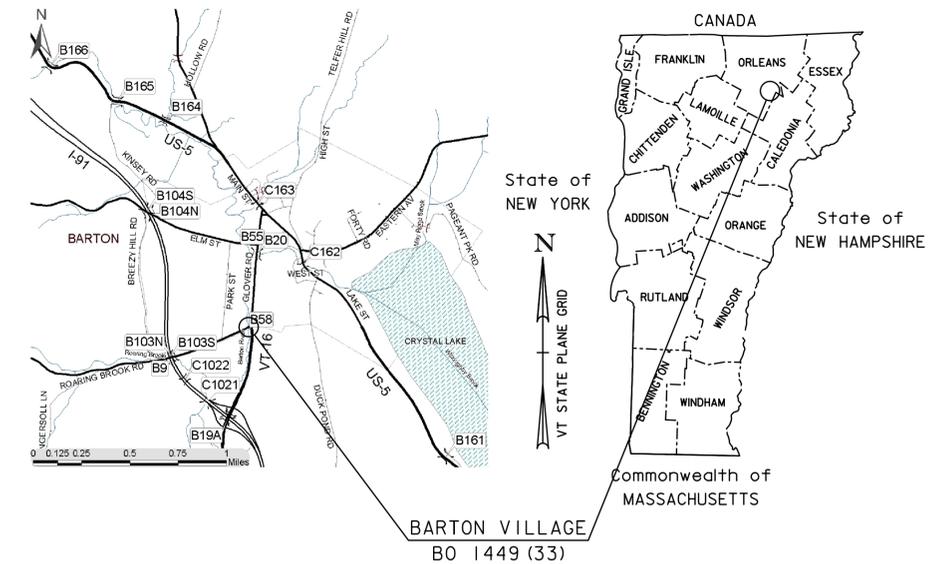
ROUTE NO : TH 4 (ROARING BROOK RD) , RURAL MINOR COLLECTOR , CLASS 2 TOWN HIGHWAY

BRIDGE NO : 58

PROJECT LOCATION: AT THE INTERSECTION OF TH-4 AND VT ROUTE 16

PROJECT DESCRIPTION: REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT WITH A NEW STRUCTURE.

LENGTH OF STRUCTURE: 68.13 FEET
LENGTH OF ROADWAY: 221.87 FEET
LENGTH OF PROJECT: 290.00 FEET

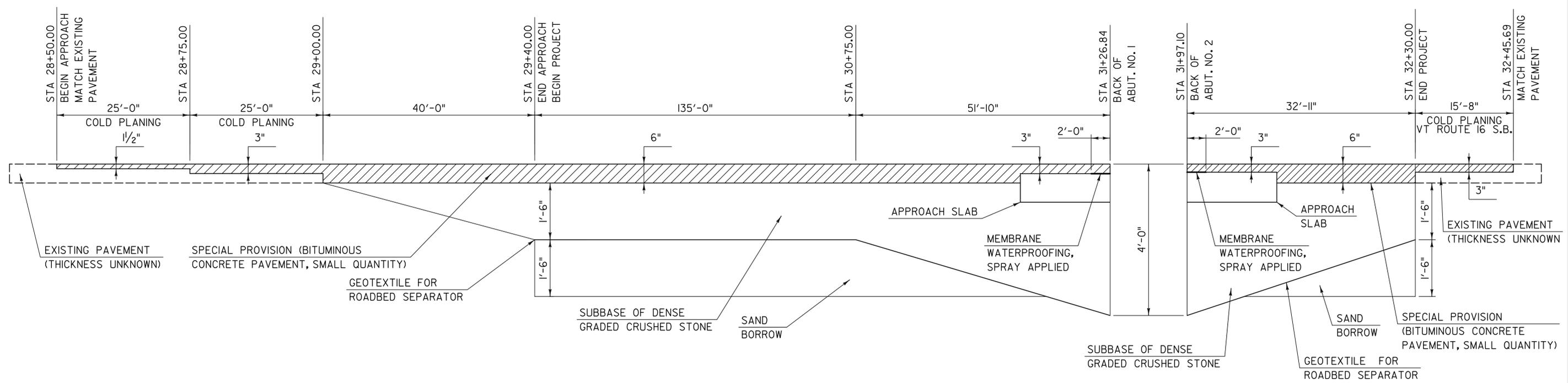


CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS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

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY : R. GILMAN	
SURVEYED DATE : 04/16/2013; 04/21/2014	
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD 83 (2011)

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

TYLINT INTERNATIONAL	DIRECTOR OF PROJECT DELIVERY
	APPROVED _____ DATE _____
	PROJECT MANAGER : DOUG BONNEAU , P.E.
	PROJECT NAME : BARTON VILLAGE PROJECT NUMBER : BO 1449 (33)
SHEET 7 OF 111 SHEETS	

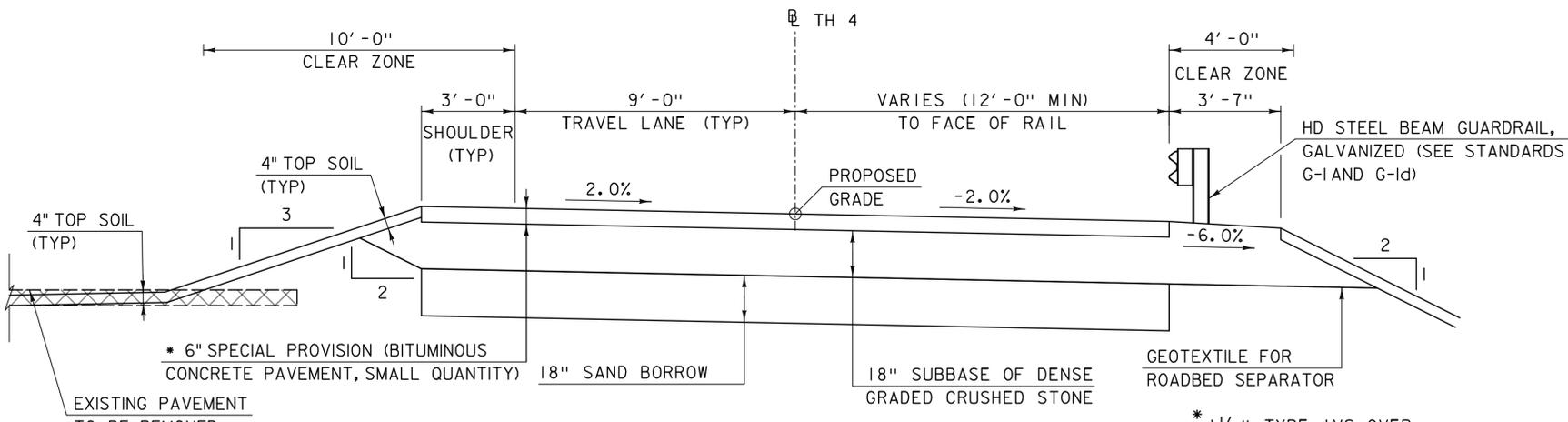


SUBBASE TAPER - WEST APPROACH

NOT TO SCALE
(ALONG BASELINE)

SUBBASE TAPER - EAST APPROACH

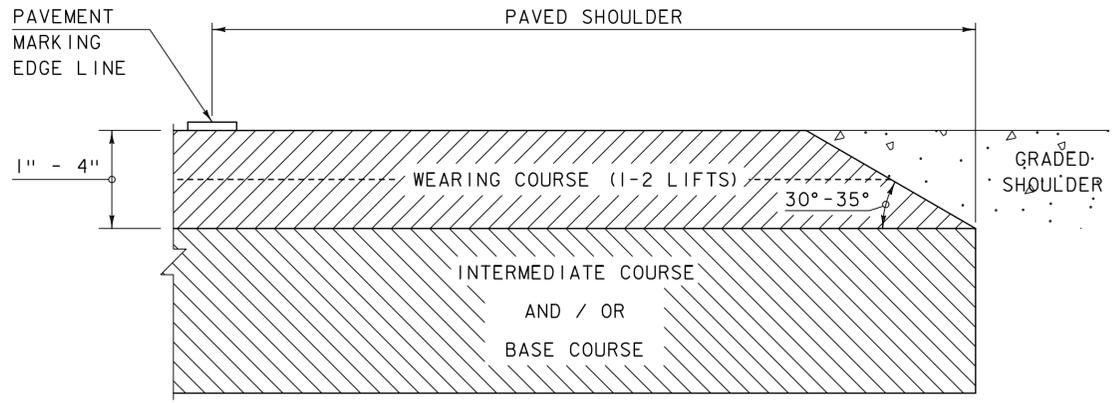
NOT TO SCALE
(ALONG BASELINE)



ROADWAY TYPICAL SECTION

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

* 1 1/2" TYPE IVS OVER
1 1/2" TYPE IVS OVER
3" TYPE IIS



SAFETY EDGE DETAIL

NOT TO SCALE

- NOTES:
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.

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

NOTE: EMULSIFIED ASPHALT SHALL BE APPLIED TO ALL COLD PLANED BITUMINOUS CONCRETE PAVEMENT SURFACES AT THE RATE OF 0.04 GAL/SY OR AS DIRECTED BY THE ENGINEER. EMULSIFIED ASPHALT SHALL ALSO BE APPLIED BETWEEN ALL LIFTS OF PAVEMENT. THE COST SHALL BE PAID UNDER ITEM 404.65, "EMULSIFIED ASPHALT".

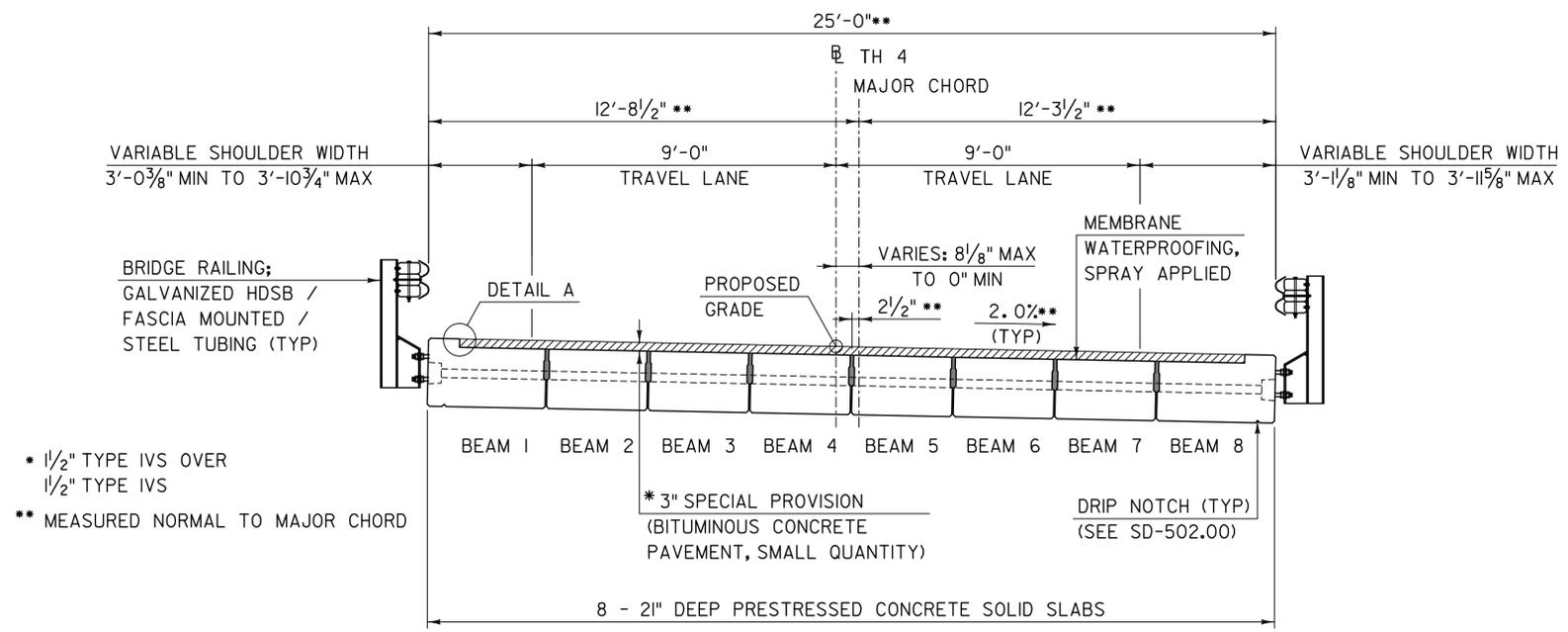
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

TYLIN INTERNATIONAL

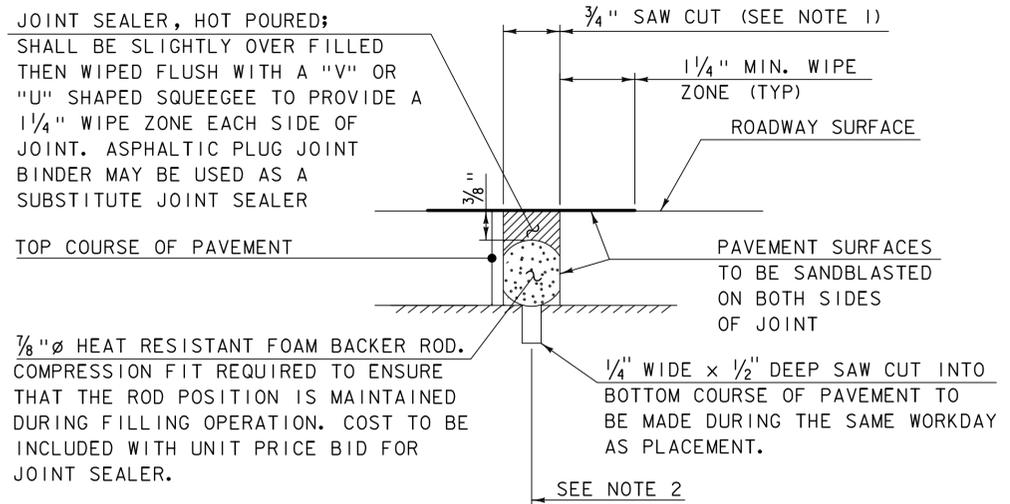
FILE NAME: z13j078typ1.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
ROADWAY TYPICAL SECTION AND DETAILS

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 9 OF 11



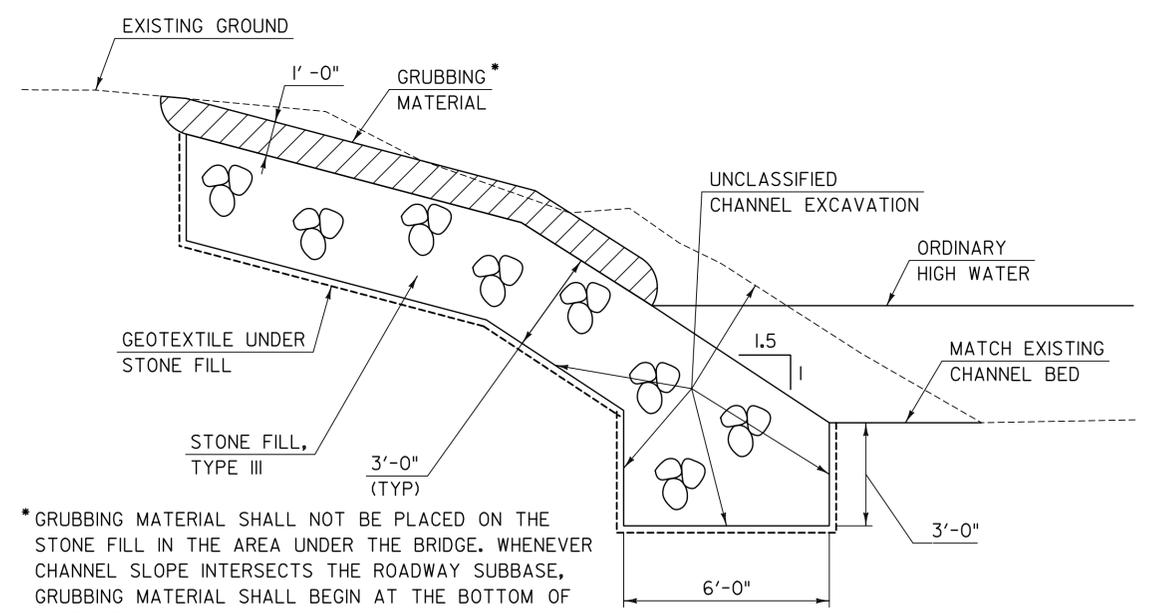
BRIDGE TYPICAL SECTION
SCALE: 3/8" = 1'-0"

* 1/2" TYPE IVS OVER
1/2" TYPE IVS
** MEASURED NORMAL TO MAJOR CHORD



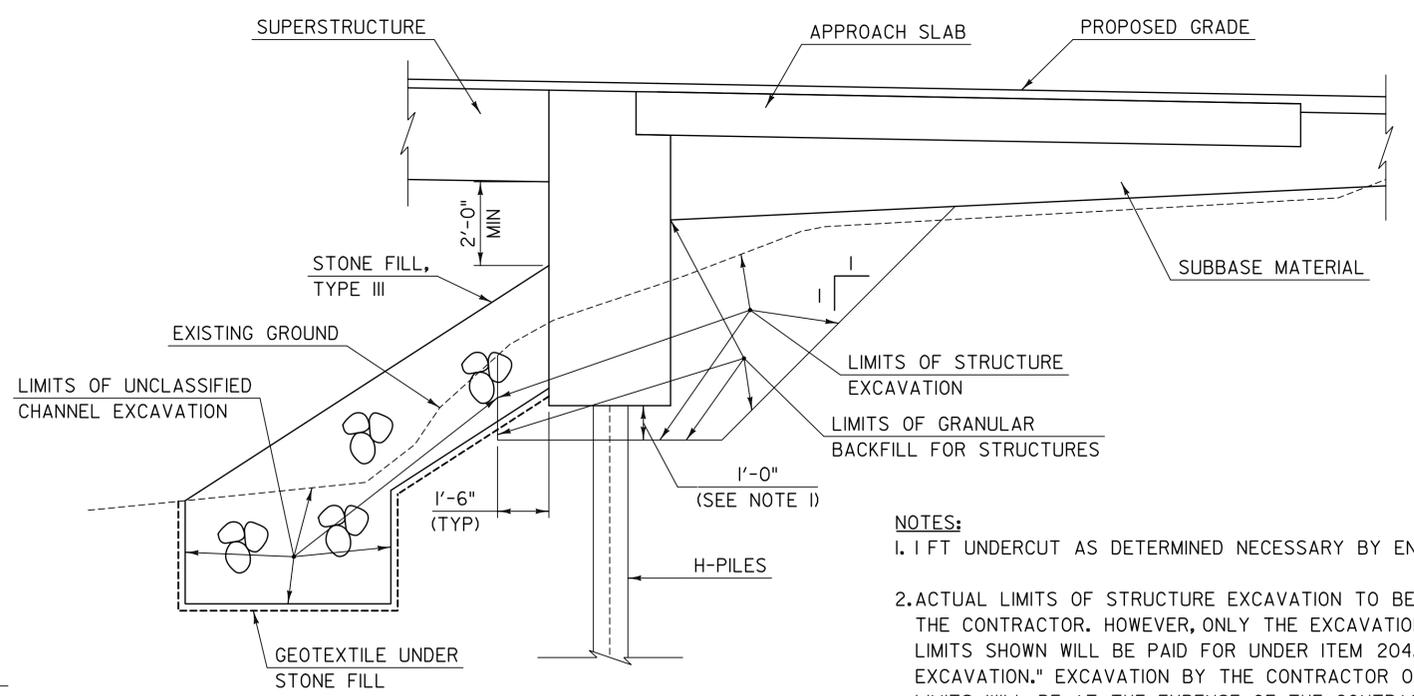
ITEM 524.11, "JOINT SEALER, HOT POURED"
SAWED PAVEMENT JOINT DETAIL
NOT TO SCALE

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 FOR DRIVES.



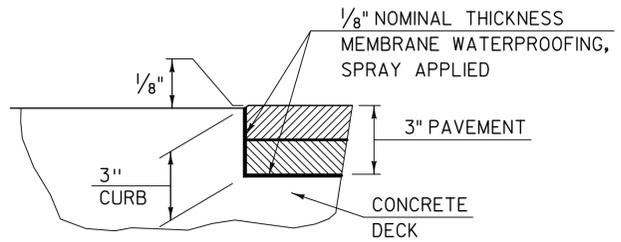
TYPICAL CHANNEL SECTION
SCALE: 3/8" = 1'-0"

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



TYPICAL EARTHWORK SECTION
SCALE: 3/8" = 1'-0"

- NOTES:**
1. 1 FT UNDERCUT AS DETERMINED NECESSARY BY ENGINEER.
 2. 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.



DETAIL A
NOT TO SCALE
(LEFT CURB SHOWN RIGHT CURB SIMILAR)

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE	
	PROJECT NUMBER: BO 1449(33)	
TYLIN INTERNATIONAL	FILE NAME: z13j078typ2.dgn	PLOT DATE: 5/20/2015
	PROJECT LEADER: J. OLUND	DRAWN BY: S. MORGAN
	DESIGNED BY: J. OLUND	CHECKED BY: T. POULIN
	BRIDGE TYPICAL SECTION AND DETAILS	SHEET 10 OF 11

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
						ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
						738					738		CY	COMMON EXCAVATION	203.15				
									675		675		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
						57					57		CY	EXCAVATION OF SURFACES AND PAVEMENTS	203.28				
						230					230		CY	SAND BORROW	203.31				
						1					1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
									150		150		CY	STRUCTURE EXCAVATION	204.25				
									110		110		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
						268					268		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
						681					681		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35				
						11.2					11.2		CY	AGGREGATE SURFACE COURSE	401.10				
						8			1		9		CWT	EMULSIFIED ASPHALT	404.65				
						1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
									1		1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 58)	504.10				
									340		340		LF	STEEL PILING, HP 12 X 74	505.16				
									2		2		EACH	DYNAMIC PILE LOADING TEST	505.45				
									477		477		LF	GROUTING SHEAR KEYS	510.24				
									10		10		GAL	WATER REPELLENT, SILANE	514.10				
									60		60		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
									190		190		SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10				
									65		65		LF	JOINT SEALER, HOT POURED	524.11				
									150		150		LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	525.44				
									1		1		LS	MAINTENANCE OF STRUCTURES AND APPROACHES (BRIDGE 58)	527.10				
									1		1		EACH	REMOVAL OF STRUCTURE (1290 SF - EST) (BRIDGE 58)	529.15				
									18		18		EACH	BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD	531.16				
														BEGIN OPTION BB					
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) (BRIDGE 58)	540.10				
									1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1) (BRIDGE 58)	900.645				
														END OPTION BB					
														BEGIN OPTION DD					
									1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2) (BRIDGE 58)	540.10				
									1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 2) (BRIDGE 58)	900.645				
														END OPTION DD					
														BEGIN OPTION FF					
									1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB 1) (BRIDGE 58)	540.10				
									1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB 1) (BRIDGE 58)	900.645				
														END OPTION FF					

EARTHWORKS SUMMARY		
738.0	CY	COMMON EXCAVATION (45*1.0)
113.0	CY	STRUCTURE EXCAVATION (150*0.75)
507.0	CY	UNCLASSIFIED CHANNEL EXCAVATION (675*0.75)
1358.0	CY	TOTAL FILL AVAILABLE
9.0	CY	TOTAL FILL REQUIRED
1349.0	CY	TOTAL WASTE
SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)		
193	TON	TYPE I/S
105	TON	TYPE I/S
298	TON	TOTAL

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PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z\3\078qty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
QUANTITY SHEET I

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET II OF III

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES											TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
						ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
														BEGIN OPTION HH					
									1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB 2)(BRIDGE 58)	540.10				
									1		1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB 2) (BRIDGE 58)	900.645				
														END OPTION HH					
						13					13		LF	24" CSP .064 (2-2/3 X 1/2)	601.0025				
						65					65		LF	CLEANING CULV. PIPE, IN-PLACE [0 TO 24 IN., INCL.]	601.995				
						20					20		HR	POWER GRADER RENTAL	608.15				
						20					20		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
						20					20		HR	TRUCK RENTAL	608.37				
						20					20		HR	LOADER RENTAL, TYPE I	608.40				
						25					25		MGAL	DUST CONTROL WITH WATER	609.10				
						19					19		CY	STONE FILL, TYPE I	613.10				
									595		595		CY	STONE FILL, TYPE III	613.12				
						159					159		LF	REMOVAL OF EXISTING FENCE	620.55				
						163					163		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21				
						2					2		EACH	ANCHOR FOR STEEL BEAM RAIL	621.60				
						4					4		EACH	GUARDRAIL APPROACH SECTION, GALV HD STEEL BEAM	621.737				
						25					25		LF	REMOVE AND RESET GUARDRAIL	621.75				
						246					246		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80				
						40					40		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
						100					100		HR	FLAGGERS	630.15				
										0.5	0.5		LS	FIELD OFFICE, ENGINEERS	631.10				
										0.5	0.5		LS	TESTING EQUIPMENT, CONCRETE	631.16				
										0.5	0.5		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
										1500	1500		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26				
							520				520		HR	EMPLOYEE TRAINEESHIP	634.10				
						0.5					0.5		LS	MOBILIZATION/DEMOBILIZATION	635.11				
						376					376		LF	4 INCH WHITE LINE	646.20				
						299					299		LF	4 INCH YELLOW LINE	646.21				
						14.3					14.3		LF	24 INCH STOP BAR	646.26				
						4					4		EACH	LETTER OR SYMBOL	646.30				
						61.2					61.2		SF	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85				
						1020					1020		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11				
									760		760		SY	GEOTEXTILE UNDER STONE FILL	649.31				
								220			220		SY	GEOTEXTILE FOR SILT FENCE	649.51				
								222			222		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61				
								17.6			17.6		LB	SEED	651.15				
								1.9			1.9		LB	SEED, WINTER RYE	651.17				
								147			147		LB	FERTILIZER	651.18				
								0.6			0.6		TON	AGRICULTURAL LIMESTONE	651.20				

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PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z\3\078qty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
QUANTITY SHEET 2

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 12 OF 11

QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
						ROADWAY	TRAINING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
								0.6			0.6		TON	HAY MULCH	651.25				
						62					62		CY	TOPSOIL	651.35				
									210		210		SY	GRUBBING MATERIAL	651.40				
								1			1		LS	EPSC PLAN (BRIDGE 58)	652.10				
								20			20		HR	MONITORING EPSC PLAN	652.20				
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.) (BRIDGE 58)	652.30				
								45			45		CY	VEHICLE TRACKING PAD	653.35				
								960			960		LF	PROJECT DEMARCATION FENCE	653.55				
								18			18		EACH	DECIDUOUS SHRUBS (CORNUS SERICEA) (CONT.) (24 INCH)	656.35				
								2.9			2.9		MGAL	LANDSCAPE WATERING	656.65				
						52.3					52.3		SF	TRAFFIC SIGNS, TYPE A	675.20				
						162					162		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341				
						6					6		EACH	REMOVING SIGNS	675.50				
						3					3		EACH	ERECTING SALVAGED SIGNS	675.60				
						2					2		EACH	SETTING SALVAGED POSTS	675.61				
									10		10		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608				
									552		552		LF	SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS) (21" x 36")	900.640				
									0.5		0.5		LS	SPECIAL PROVISION (CPM SCHEDULE)	900.645				
						1					1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE) (BRIDGE 58)	900.645				
									1		1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I.) (BRIDGE 58)	900.650				
						1					1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650				
						1					1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
						248			50		298		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

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FILE NAME: z\3\078qty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
QUANTITY SHEET 3

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 13 OF 111

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES										TOTALS		DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
							APPROACH SLABS	ABUTMENT #1	ABUTMENT #2	SUPERSTRUCTURE	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
								527	148		675	CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27			
								85	65		150	CY	STRUCTURE EXCAVATION	204.25			
								55	55		110	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30			
							0.4			0.6	1	CWT	EMULSIFIED ASPHALT	404.65			
								0.5	0.5		1	LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 58)	504.10			
								170	170		340	LF	STEEL PILING, HP 12 X 74	505.16			
								1	1		2	EACH	DYNAMIC PILE LOADING TEST	505.45			
										477	477	LF	GROUTING SHEAR KEYS	510.24			
								2	2	6	10	GAL	WATER REPELLENT, SILANE	514.10			
							60				60	LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10			
							10			180	190	SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10			
							65				65	LF	JOINT SEALER, HOT POURED	524.11			
										150	150	LF	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	525.44			
										1	1	LS	MAINTENANCE OF STRUCTURES AND APPROACHES (BRIDGE 58)	527.10			
										1	1	EACH	REMOVAL OF STRUCTURE (1290 SF - EST) (BRIDGE 58)	529.15			
										18	18	EACH	BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD	531.16			
													BEGIN OPTION BB				
								1			1	LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) (BRIDGE 58)	540.10			
								1			1	LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1) (BRIDGE 58)	900.645			
													END OPTION BB				
													BEGIN OPTION DD				
									1		1	LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2) (BRIDGE 58)	540.10			
									1		1	LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 2) (BRIDGE 58)	900.645			
													END OPTION DD				
													BEGIN OPTION FF				
							1				1	LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB 1) (BRIDGE 58)	540.10			
							1				1	LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB 1) (BRIDGE 58)	900.645			
													END OPTION FF				
													BEGIN OPTION HH				
							1				1	LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB 2) (BRIDGE 58)	540.10			
							1				1	LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB 2) (BRIDGE 58)	900.645			
													END OPTION HH				
								310	285		595	CY	STONE FILL, TYPE III	613.12			
								390	370		760	SY	GEOTEXTILE UNDER STONE FILL	649.31			
								120	90		210	SY	GRUBBING MATERIAL	651.40			
							5	2.5	2.5		10	CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608			
										552	552	LF	SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS) (21" x 36")	900.640			
										0.5	0.5	LS	SPECIAL PROVISION (CPM SCHEDULE)	900.645			

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TYLININTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078qty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: D. MYERS
BRIDGE QUANTITY SHEET 1

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 14 OF 11

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/PRESTRESSED 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 40°F, UNLESS OTHERWISE NOTED.
4. NO ADJUSTMENTS TO THE BITUMINOUS WEARING SURFACE ON THE BRIDGE SHALL BE MADE TO ACCOUNT FOR THE DIFFERENCE BETWEEN BEAM CAMBER AND THE THEORETICAL ROADWAY PROFILE. THE WEARING SURFACE ON THE BRIDGE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER OF ADJACENT BEAMS.
5. ITEM 520.10, "MEMBRANE WATERPROOFING, SPRAY APPLIED" SHALL BE APPLIED TO THE BRIDGE DECK AND EXTEND ON TO THE APPROACH SLABS TWO FEET BEYOND THE BEGIN/END OF BRIDGE LIMITS.
6. THE CONTRACTOR SHALL LOCATE UNDERGROUND SEWER AND WATER LINES AHEAD OF THE BRIDGE CLOSURE PERIOD. PAYMENT SHALL BE MADE UNDER ITEM 204.22, "TRENCH EXCAVATION OF EARTH, EXPLORATORY."

EARTHWORK AND RELATED ITEMS

7. CLEARING AND GRUBBING SHALL BE IN ACCORDANCE WITH SECTION 201. PAYMENT SHALL BE INCIDENTAL TO ALL OTHER CONTRACT ITEMS.
8. THE EXISTING STRUCTURE SHALL BE REMOVED IN ITS ENTIRETY. GRANITE BLOCKS SHALL BE REMOVED BY A MEANS THAT AVOIDS DAMAGE TO THE GRANITE. ALL REMOVED GRANITE BLOCKS FROM THE EXISTING STRUCTURE SHALL BE DELIVERED TO THE LYONS PROPERTY AT 127 ROARING BROOK RD. COORDINATE THE DELIVERY WITH MR. LYONS BY CALLING 802-525-4724. ALL REMAINING PORTIONS OF THE REMOVED EXISTING STRUCTURE SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE EXISTING PIER AND ABUTMENTS SHALL BE REMOVED TO THE LOWER OF THE STREAMBED ELEVATION OR THE LIMITS NEEDED FOR STONE FILL, TYPE III PLACEMENT. ANY VOIDS RESULTING FROM PIER REMOVAL SHALL BE FILLED WITH STONE FILL, TYPE I. PAYMENT FOR REMOVAL, ANY NECESSARY FILL MATERIAL, AND DELIVERY OF GRANITE BLOCKS SHALL BE MADE UNDER ITEM 529.15, "REMOVAL OF STRUCTURE."
9. EXISTING BRIDGE REMOVAL SHALL OCCUR PRIOR TO PLACEMENT OF STONE FILL WITHIN THE CHANNEL IN ORDER TO MAINTAIN EXISTING WATERWAY WIDTH DURING CONSTRUCTION.
10. THE "STONE FILL, TYPE III" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE PRESTRESSED SLABS ARE SET.
11. THE CONTRACTOR MAY SUBSTITUTE SUBBASE MATERIAL FOR THE SAND BORROW SHOWN ON THE PLANS. THE SUBBASE MATERIAL SHALL MEET THE TYPE SPECIFIED IN THE CONTRACT AND PLACED TO MEET THE SUBBASE SPECIFICATIONS. ALL COSTS ASSOCIATED WITH THE SUBSTITUTION SHALL BE INCIDENTAL TO 203.31 "SAND BORROW".
12. JAPANESE KNOTWOOD PLANTS HAVE BEEN IDENTIFIED WITHIN THE PROJECT SITE LIMITS. WHEN THIS PLANT IS LOCATED WITHIN EXCAVATION LIMITS REQUIRED OF THE PROJECT, EXCAVATION SHALL EXTEND TO A MINIMUM OF 6 FT BELOW ORIGINAL GROUND SURFACE. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION REGARDING DISPOSAL OF EXCAVATED MATERIAL AND EQUIPMENT CLEANING. ALL EXCAVATION, DISPOSAL, AND EQUIPMENT CLEANING NECESSARY TO COMPLETE THE REMOVAL OF JAPANESE KNOTWOOD WITHIN PROJECT EXCAVATION LIMITS SHALL NOT BE PAID SEPARATELY AND IS INCIDENTAL TO RELATED EXCAVATION ITEMS.

CONCRETE

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, 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS)(21" x 36")", 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 EACH 540.10 AND/OR 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)" CONTRACT ITEM AS APPROPRIATE.
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.

H-PILES

21. THE PILES SHALL BE HP 12 X 74.
22. TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04(F).
23. THE PILES SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 320 KIPS AND TO A MINIMUM DEPTH OF 25 FT BELOW THE BOTTOM OF ABUTMENT.
24. A MINIMUM OF ONE DYNAMIC PILE LOADING TEST SHALL BE CONDUCTED AT EACH ABUTMENT. PAYMENT WILL BE MADE UNDER ITEM 505.45, "DYNAMIC PILE LOADING TEST." MORE TESTS MAY BE REQUIRED BY THE ENGINEER.
25. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.
26. IN ADDITION TO PILE INSTALLATION TOLERANCES IDENTIFIED IN SUBSECTION 505.04(B), THE TOPS OF THE PILES AFTER DRIVING SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE CONTRACTOR SHALL DEMONSTRATE HOW THE TOLERANCES WILL BE MET TO THE SATISFACTION OF THE ENGINEER. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.

PRECAST ABUTMENTS

27. DESIGN VALUES
 - a. CONCRETE COMPRESSIVE STRENGTH: $f'c = 5,000$ PSI.
 - b. POST-TENSIONING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW RELAXATION, 7-WIRE STRANDS.
 - c. JACKING FORCE PER STRAND = 47 KIPS.
 - d. THERE SHALL BE 1 POST-TENSIONING STRAND PER DUCT.
 - e. APPARENT MODULUS OF ELASTICITY = 28,500 KSI.
28. 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.
29. 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. PAYMENT FOR GALVANIZED ANCHOR ASSEMBLIES, DUCTS, AND POST-TENSIONING STRANDS SHALL BE MADE UNDER EACH 540.10 AND/OR 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)" CONTRACT ITEM AS APPROPRIATE. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 232.
30. CORRUGATED STEEL PIPES IN THE PRECAST ABUTMENTS FOR PILE AND ANCHOR BOLT CAVITIES SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01, COATED IN ACCORDANCE WITH AASHTO M 218, TYPE 1. ALL COSTS ASSOCIATED WITH FURNISHING AND PLACING THE CORRUGATED STEEL PIPES SHALL BE INCLUDED IN THE BID PRICE FOR EACH 540.10 AND/OR 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)" CONTRACT ITEM AS APPROPRIATE.
31. PROPOSED SEQUENCE OF CONSTRUCTION
 - A. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.
 - B. DRIVE PILES.
 - C. PLACE PRECAST ABUTMENTS
 - D. IF MORE THAN ONE UNIT:
 - i. INSTALL TRANSVERSE STRANDS AND EPOXY BOND VERTICAL SHEAR KEYS.
 - ii. USE A CALIBRATED JACK TO TENSION STRANDS TO 3 KIPS EACH TO REMOVE SAG.
 - iii. CHECK ALIGNMENT OF PILE CAP UNITS.
 - iv. FILL PILE CAVITIES.
 - v. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK, OPERATED BY QUALIFIED PERSONNEL WHO HAVE PREVIOUS EXPERIENCE IN POST-TENSIONING.
 - E. GROUT ANCHOR RODS IN ABUTMENT ANCHOR ROD CAVITIES.
 - F. PILE CAVITY CONCRETE SHALL ATTAIN A COMPRESSIVE STRENGTH OF 3,500 PSI BEFORE ABUTMENT BACKFILL IS PLACED AND SUPERSTRUCTURE IS ERECTED.

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

PRESTRESSED SOLID SLABS

33. ALL PRESTRESSED CONCRETE SOLID SLABS, REGARDLESS OF WIDTH, SHALL BE PAID FOR UNDER ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS) (21" x 36")."
34. DESIGN VALUES
 - f. CONCRETE COMPRESSIVE STRENGTH: $f'c = 9,000$ PSI.
 - g. CONCRETE COMPRESSIVE STRENGTH AT RELEASE: $f'ci = 6,000$ PSI.
 - h. PRESTRESSING AND POST-TENSIONING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW RELAXATION, 7-WIRE STRANDS.
 - i. JACKING FORCE PER PRESTRESSING STRAND = 44 KIPS.
 - j. JACKING FORCE PER POST-TENSIONING STRAND = 47 KIPS.
 - k. THERE SHALL BE 2 POST-TENSIONING STRANDS PER DUCT.
 - l. APPARENT MODULUS OF ELASTICITY = 28,500 KSI.
 - m. ANTICIPATED CAMBER

MIDSPAN CAMBER AT RELEASE	1.63 INCH
MIDSPAN CAMBER AT END OF CONSTRUCTION	2.36 INCH
LONG-TERM MIDSPAN CAMBER	1.96 INCH
35. POST-TENSIONING STRAND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 510 – PRESTRESSED CONCRETE. PAYMENT FOR GALVANIZED ANCHOR ASSEMBLIES, DUCTS, AND POST-TENSIONING STRANDS SHALL BE MADE UNDER ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS) (21" x 36")."
36. DUE TO STABILITY CONCERNS AT THE ABUTMENTS DURING THE ERECTION OF THE SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT THE ERECTION PLAN A MINIMUM OF 30 WORKING DAYS PRIOR TO THE BRIDGE CLOSURE PERIOD. UNDER NO CIRCUMSTANCES SHALL A BRIDGE CLOSURE PERIOD BEGIN PRIOR TO HAVING AN ACCEPTED ERECTION PLAN.
37. PROPOSED SEQUENCE OF SUPERSTRUCTURE CONSTRUCTION:
 - a. LAY OUT WORKING LINES THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING, MEASURED FROM A SINGLE WORKING POINT. THE WORKING LINES SHALL BE BASED ON THE NOMINAL PRESTRESSED SLAB WIDTHS.
 - b. VERIFY BRIDGE SEAT ELEVATIONS AND TAKE CORRECTIVE ACTION IF NECESSARY.
 - c. POWER WASH ALL SURFACES THAT WILL BE IN CONTACT WITH GROUT.
 - d. INSTALL BEARINGS.
 - e. ERECT THE PRESTRESSED SLABS TO FIT WITHIN THE WORKING LINES.
 - f. ADJUST THE EXTERIOR SLABS TO FIT SNUG AGAINST THE CORK ON THE INTERIOR OF CHEEK WALLS.
 - g. INSTALL HARDWOOD WEDGES BETWEEN ADJACENT SLABS TO MAINTAIN PROPER JOINT OPENING (A MINIMUM OF ONE WEDGE AT EACH TRANSVERSE POST-TENSIONING LOCATION).
 - h. INSTALL BACKER ROD BELOW THE BOTTOM OF THE KEYWAY.
 - i. INSTALL POST-TENSIONING STRANDS AND TENSION TO 3 KIPS TO REMOVE SAG AND SEAT CHUCK.
 - j. GROUT SHEAR KEYS AND ANCHOR ROD SLEEVES.
 - k. FULLY TENSION TRANSVERSE POST-TENSIONING STRANDS. POST-TENSIONING OF TRANSVERSE STRANDS WILL BE PERMITTED ONCE SHEAR KEY GROUT HAS REACHED A MINIMUM OF 600 PSI. THE GROUT NEED NOT BE CURED FOR THREE DAYS PRIOR TO COMMENCING POST-TENSIONING. THE CONTRACTOR SHALL MOLD AND CURE A SUFFICIENT NUMBER OF GROUT CUBES FOR TESTING, DURING PLACEMENT OF THE GROUT.

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

PRECAST APPROACH SLABS

39. CONCRETE COMPRESSIVE STRENGTH: $f'c = 5,000$ PSI.
40. 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: BARTON VILLAGE PROJECT NUMBER: BO 1449(33)
TYLIN INTERNATIONAL	FILE NAME: z13j078notes.dgn PROJECT LEADER: J. OLUND DESIGNED BY: J. OLUND GENERAL NOTES
	PLOT DATE: 5/20/2015 DRAWN BY: S. MORGAN CHECKED BY: D. MYERS SHEET 16 OF 11

GPS CONTROL POINTS

HVCTRL #1

ASHTON AZ MK
 NORTH = 814450.470
 EAST = 1722648.050
 ELEV. = 894.650

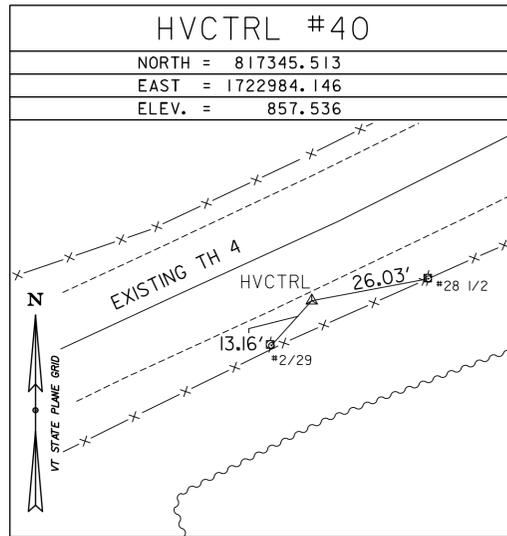
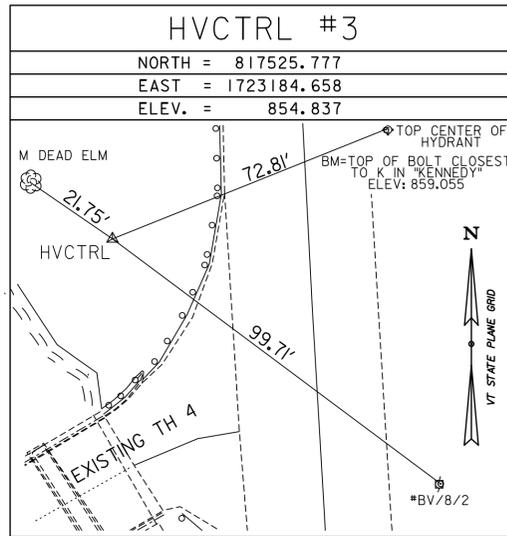
BARTON, VT. AT THE DISTRICT 9 BARTON GARAGE IN THE LAWN AREA NORTHEAST OF THE FUEL PUMP AND NORTHWEST OF THE GARAGE OFFICE. IT IS 29.8 M N OF THE WEST CORNER OF THE GARAGE, 20.4 M NW OF THE NORTH CORNER OF THE GARAGE, 24.9 M W OF A 10 CM DIAMETER VERTICAL METAL PIPE, 23.3 M NNE OF THE NORTH CORNER OF THE CONCRETE FUEL PUMP ISLAND BASE, 29.5 M E OF POLE NO 1, 20.4 M SW OF A R-O-W FENCE, AND 6.6 M SW OF A FIBERGLASS WITNESS AT AN ELECTRICAL RISER.

HVCTRL #2

A06024
 NORTH = 817121.730
 EAST = 1723280.400
 ELEV. = 865.270

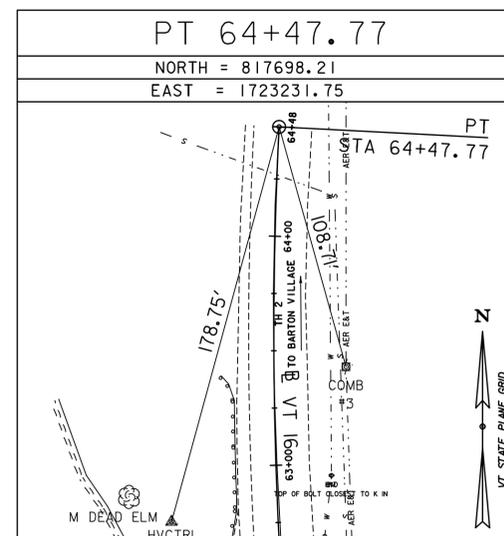
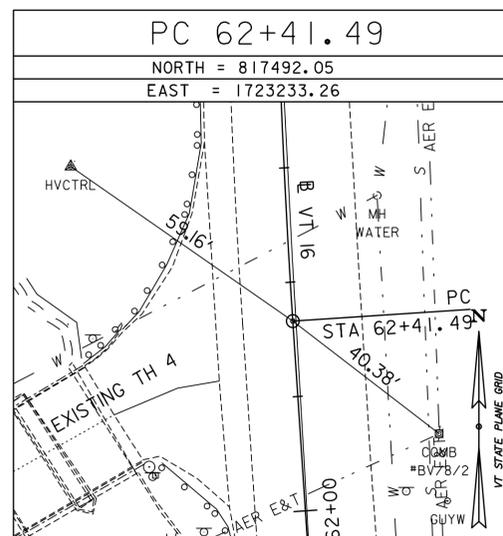
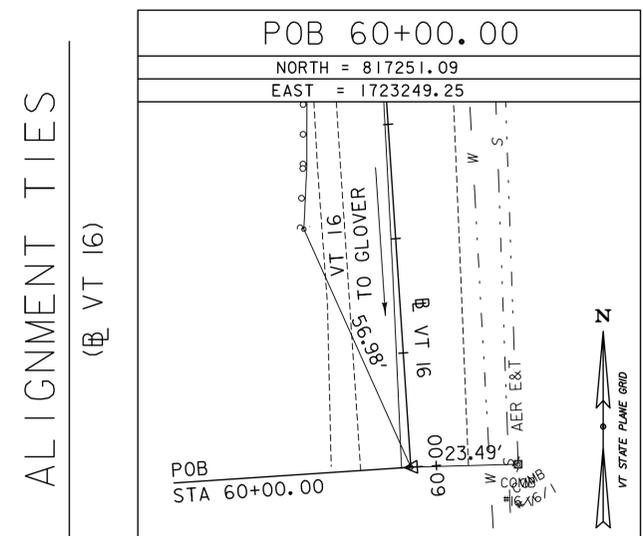
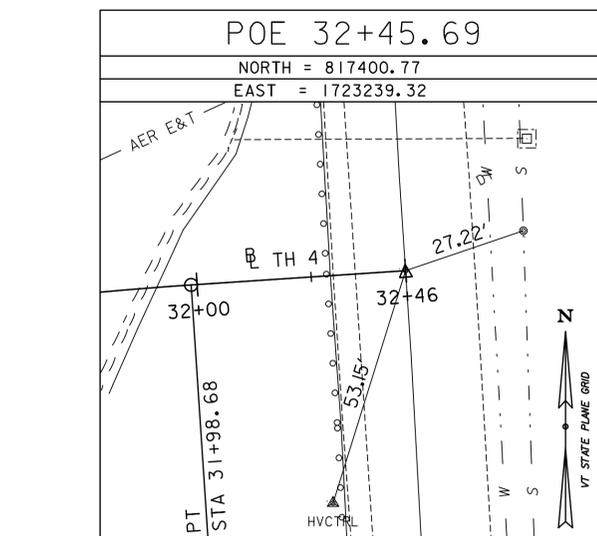
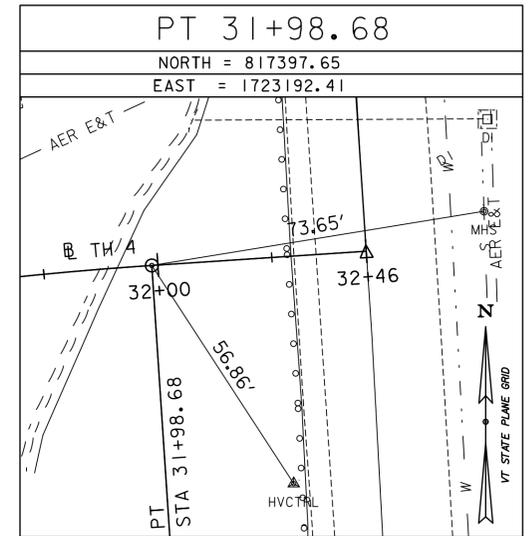
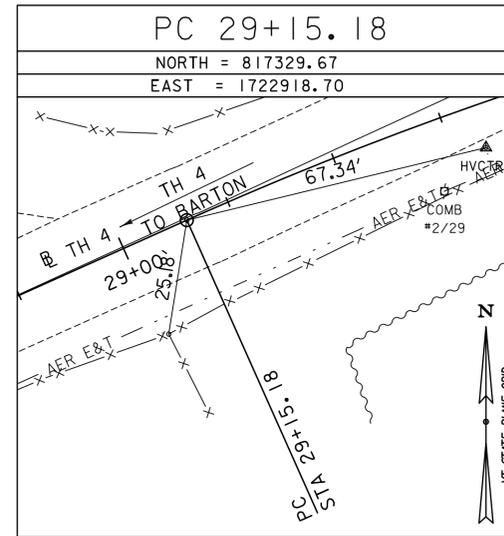
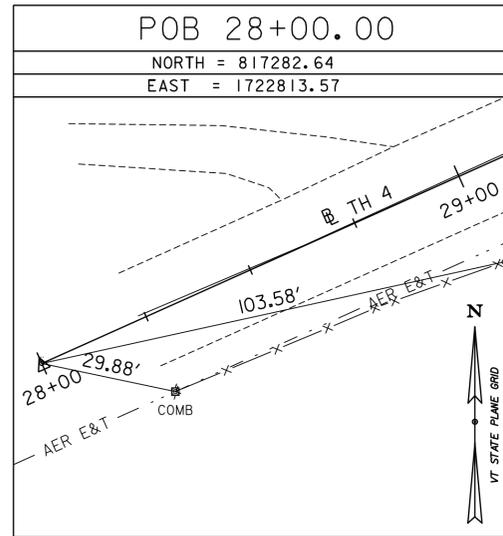
BARTON VT. ABOUT 120 M (393.7 FT) SOUTH OF THE VT ROUTE 16 INTERSECTION WITH ROARING BROOK ROAD, 10.9 M (35.8 FT) EAST OF AND ABOUT 1.0 M (3.3 FT) HIGHER THAN THE CL OF VT ROUTE 16, 39.6 M (129.9 FT) SOUTH OF POLE NO B/8/01, 24.6 M (80.7 FT) SOUTH WESTWEST OF THE MOST WESTERLY OF TWO POSTS FOR A WELCOME TO BARTON SIGN, 51.2 M (168.0 FT) NORTH OF THE NORTHWEST CORNER OF HOUSE NO 527, AND 1.5 M (4.9 FT) SOUTH OF A BARBED WIRE FENCE CORNER. NOTE, MARK IS INTERVISIBLE WITH MARK ASHTON AZIMUTH MK.

TRAVERSE TIES



ALIGNMENT TIES

(@ TH 4)



DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83(2011)
ADJUSTMENT	COMPASS

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 NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

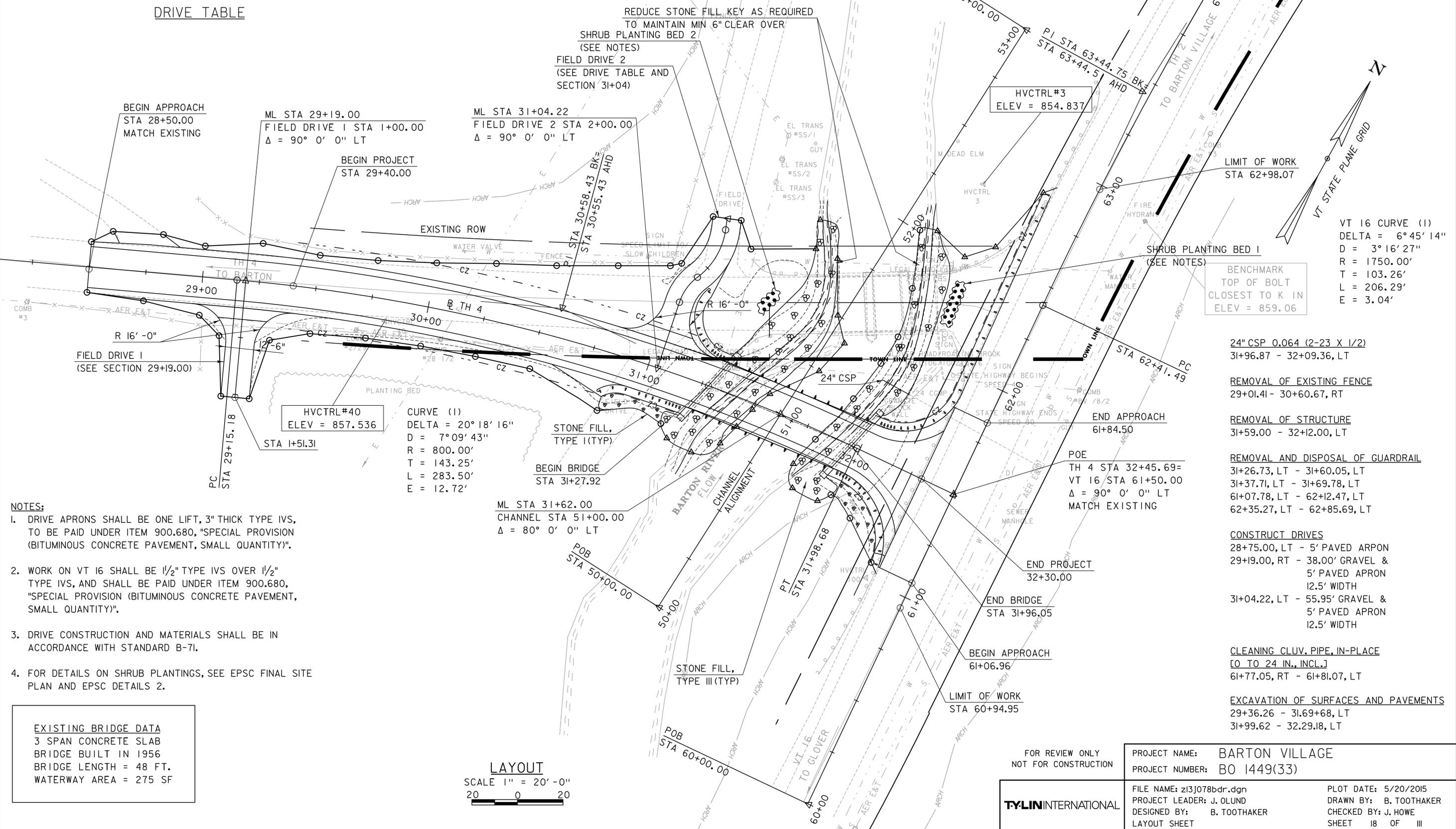
FILE NAME: z13j078t1.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 TIE SHEET

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. OLUND
 SHEET 17 OF 11

FIELD DRIVE NUMBER	CURVE 1	CURVE 2	POE	WIDTH
2	PC = 2+30.28 PRC = 2+44.01 R = 22.25'	PRC = 2+44.01 PT = 2+68.79 R = 31.25'	2+73.81	12.50'

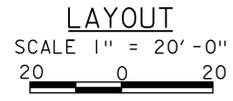
NOTE: DISTANCES MEASURED ALONG BASELINE OF DRIVE, AWAY FROM TH 4

DRIVE TABLE



- NOTES:**
- DRIVE APRONS SHALL BE ONE LIFT, 3" THICK TYPE IVS, TO BE PAID UNDER ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".
 - WORK ON VT 16 SHALL BE 1/2" TYPE IVS OVER 1/2" TYPE IVS, AND SHALL BE PAID UNDER ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".
 - DRIVE CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH STANDARD B-71.
 - FOR DETAILS ON SHRUB PLANTINGS, SEE EPSC FINAL SITE PLAN AND EPSC DETAILS 2.

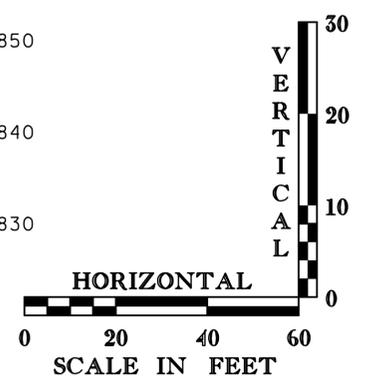
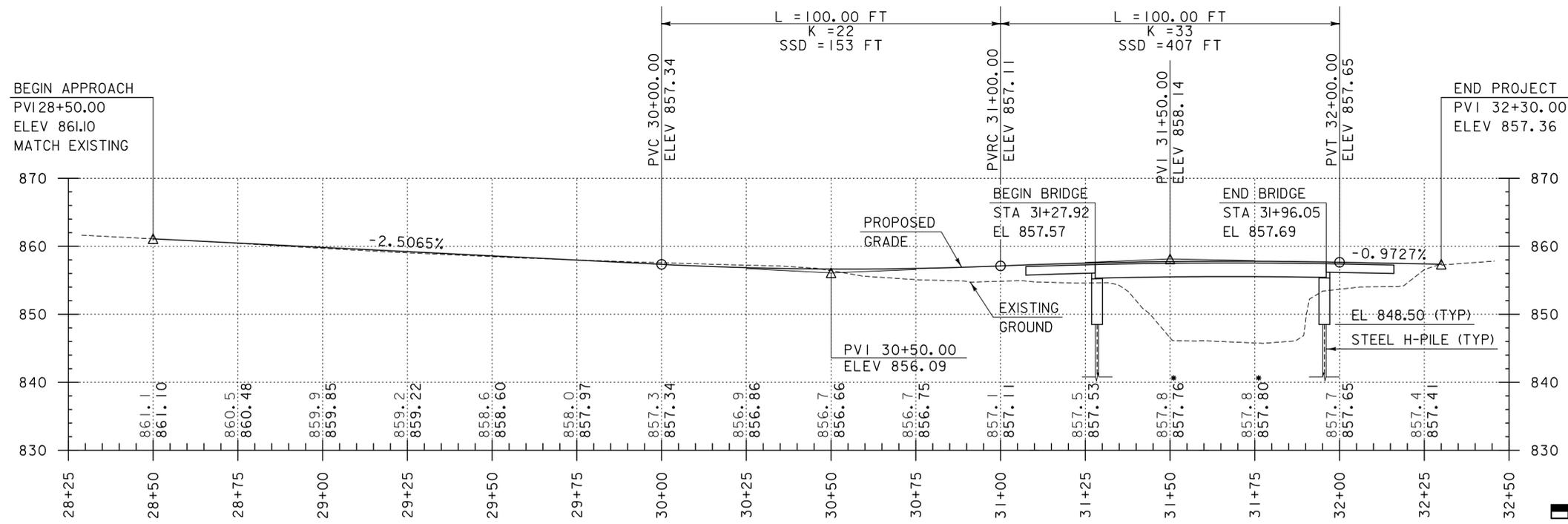
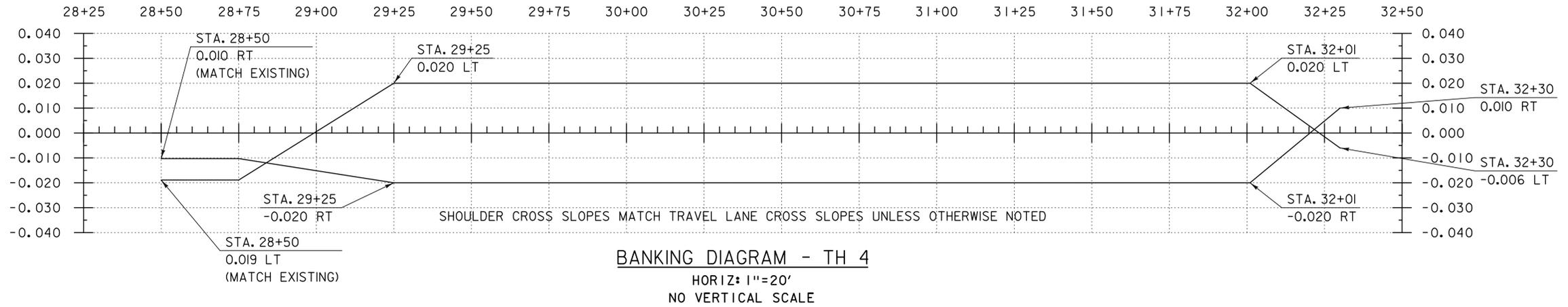
EXISTING BRIDGE DATA
 3 SPAN CONCRETE SLAB
 BRIDGE BUILT IN 1956
 BRIDGE LENGTH = 48 FT.
 WATERWAY AREA = 275 SF



VT 16 CURVE (1)
 DELTA = 6° 45' 14"
 D = 3° 16' 27"
 R = 1750.00'
 T = 103.26'
 L = 206.29'
 E = 3.04'

- 24" CSP 0.064 (2-23 X 1/2)
31+96.87 - 32+09.36, LT
- REMOVAL OF EXISTING FENCE
29+01.41 - 30+60.67, RT
- REMOVAL OF STRUCTURE
31+59.00 - 32+12.00, LT
- REMOVAL AND DISPOSAL OF GUARDRAIL
31+26.73, LT - 31+60.05, LT
31+37.71, LT - 31+69.78, LT
61+07.78, LT - 62+12.47, LT
62+35.27, LT - 62+85.69, LT
- CONSTRUCT DRIVES
28+75.00, LT - 5' PAVED ARPON
29+19.00, RT - 38.00' GRAVEL &
5' PAVED APRON
12.5' WIDTH
31+04.22, LT - 55.95' GRAVEL &
5' PAVED APRON
12.5' WIDTH
- CLEANING CLUV. PIPE, IN-PLACE
[O TO 24 IN., INCL.]
61+77.05, RT - 61+81.07, LT
- EXCAVATION OF SURFACES AND PAVEMENTS
29+36.26 - 31.69+68, LT
31+99.62 - 32.29+18, LT

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE
	PROJECT NUMBER: BO 1449(33)
TYLIN INTERNATIONAL	FILE NAME: z13j078bdr.dgn
	PROJECT LEADER: J. OLUND
	DESIGNED BY: B. TOOTHAKER
	LAYOUT SHEET
	PLOT DATE: 5/20/2015
	DRAWN BY: B. TOOTHAKER
	CHECKED BY: J. HOWE
	SHEET 18 OF 11

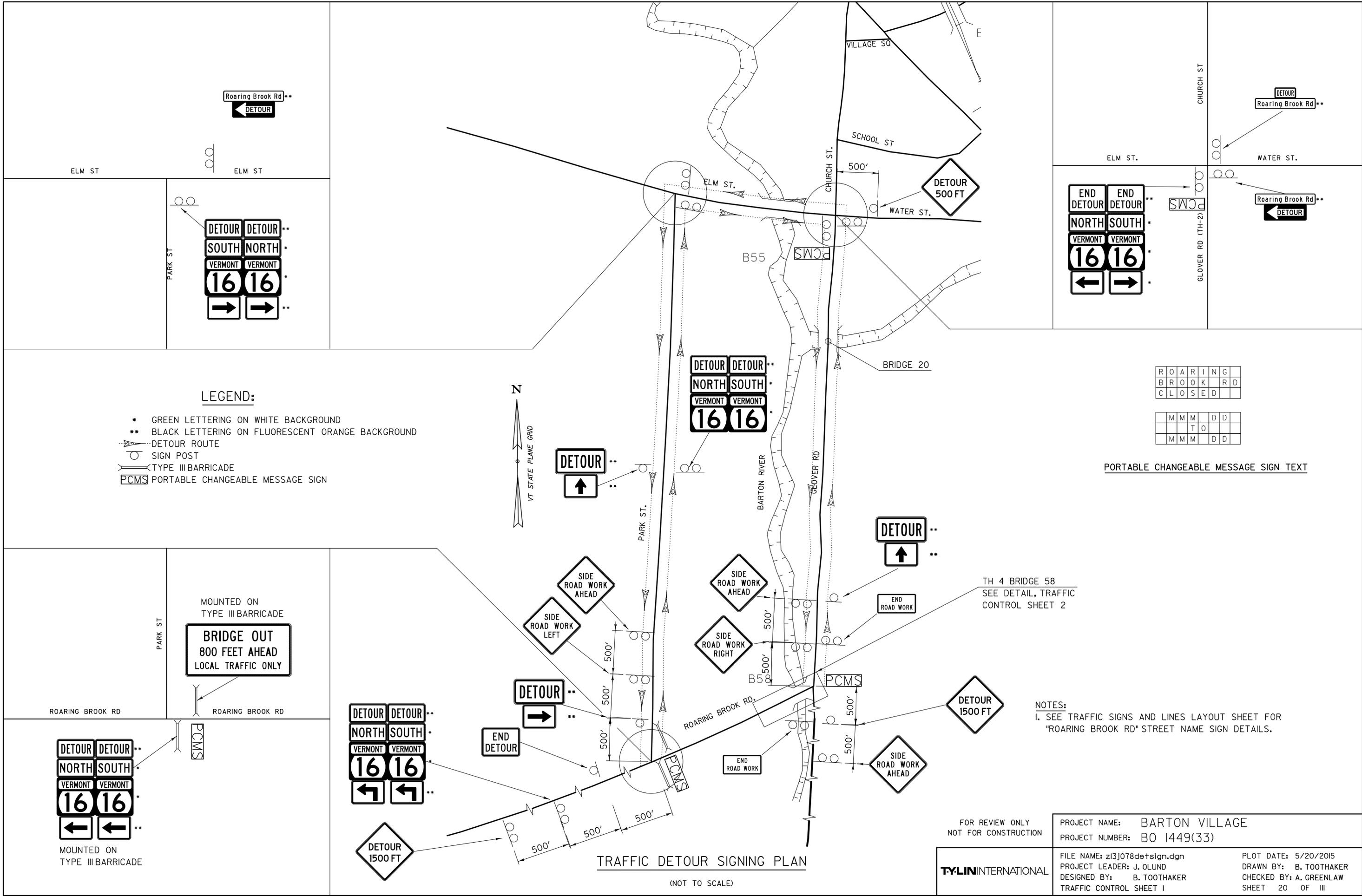


*PROPOSED GRADE ELEVATIONS WITHIN THE BRIDGE LIMITS ARE THEORETICAL AND ACTUAL ELEVATIONS WILL BE A RESULT OF BEAM CAMBER. SEE PROJECT NOTES FOR ADDITIONAL INFORMATION.

NOTE:
GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG \square
GRADES SHOWN TO THE NEAREST HUNDREDTH ARE PROPOSED GRADE ALONG \square

PROFILE - TH 4
SCALE: HORIZONTAL: 1"=20'
VERTICAL: 1"=10'

TYLIN INTERNATIONAL	FOR REVIEW ONLY NOT FOR CONSTRUCTION	
	PROJECT NAME: BARTON VILLAGE PROJECT NUMBER: BO 1449(33)	FILE NAME: z13j078pro.dgn PROJECT LEADER: J. OLUND DESIGNED BY: B. TOOTHAKER PROFILE AND BANKING DIAGRAM SHEET
	PLOT DATE: 5/20/2015 DRAWN BY: B. TOOTHAKER CHECKED BY: J. HOWE SHEET 19 OF 11	



LEGEND:

- * GREEN LETTERING ON WHITE BACKGROUND
- ** BLACK LETTERING ON FLUORESCENT ORANGE BACKGROUND
- DETOUR ROUTE
- SIGN POST
- TYPE III BARRICADE
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN

R	O	A	R	I	N	G
B	R	O	O	K	R	D
C	L	O	S	E	D	

M	M	M	D	D
		T	O	
M	M	M	D	D

PORTABLE CHANGEABLE MESSAGE SIGN TEXT

NOTES:
 1. SEE TRAFFIC SIGNS AND LINES LAYOUT SHEET FOR "ROARING BROOK RD" STREET NAME SIGN DETAILS.

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 NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

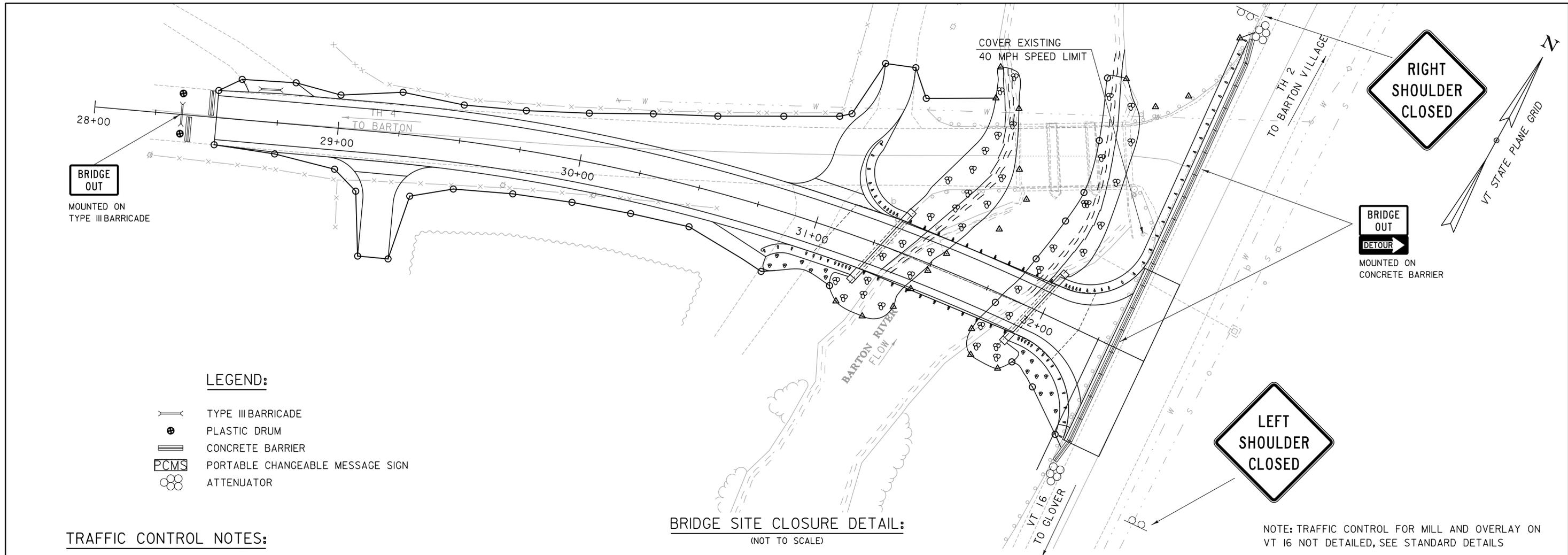
TYLIN INTERNATIONAL

FILE NAME: z13j078de+sign.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 TRAFFIC CONTROL SHEET 1

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: A. GREENLAW
 SHEET 20 OF 33

TRAFFIC DETOUR SIGNING PLAN

(NOT TO SCALE)



LEGEND:

- TYPE III BARRICADE
- PLASTIC DRUM
- CONCRETE BARRIER
- PORTABLE CHANGEABLE MESSAGE SIGN
- ATTENUATOR

TRAFFIC CONTROL NOTES:

1. TRAFFIC WILL BE MAINTAINED WITH AN OFFSITE DETOUR ALONG ROARING BROOK RD, PARK ST, AND ELM ST, SUCH AS THE ONE SHOWN ON TRAFFIC CONTROL SHEET I. DETOUR SIGNING IS THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT FOR ALL TEMPORARY TRAFFIC CONTROL DEVICES FOR IMPLEMENTING THE DETOUR AND SITE SPECIFIC CLOSURE, INCLUDING BUT NOT LIMITED TO SIGNS, BARRICADES, AND MESSAGE BOARDS, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)."
2. THE DETOUR SHOWN ON THESE PLANS IS CONCEPTUAL. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A DETAILED SITE SPECIFIC TRAFFIC CONTROL PLAN IDENTIFYING BRIDGE CLOSURE METHODS AND SIGN LOCATIONS PRIOR TO THE BEGINNING OF CONSTRUCTION.
3. DURING THE ROAD CLOSURE PERIOD, ALL "LEGAL LOAD LIMIT 24,000 POUNDS" SIGNS ALONG THE DETOUR ROUTE SHALL BE COVERED.
4. NEW FIELD DRIVE I SHALL BE CONSTRUCTED PRIOR TO CLOSING EXISTING FIELD DRIVE SOUTHWEST OF BRIDGE NEAR STATION 31+00, RT. PROPERTY OWNER ACCESS TO NEW DRIVE SHALL BE MAINTAINED DURING CONSTRUCTION.
5. WHERE PRACTICAL, DETOUR ROUTE MARKERS AND ANY ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED ADJACENT TO EXISTING ROUTE MARKERS AND MODIFIED TRAFFIC CONTROL SIGN ASSEMBLIES. 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 WHENEVER POSSIBLE.
6. TREES AND SHRUBS WITHIN EXISTING RIGHT OF WAY AND OTHERWISE INTERFERING WITH VISIBILITY OF EXISTING OR PROPOSED DETOUR SIGNS SHALL BE TRIMMED ACCORDINGLY. COSTS FOR SUCH TRIMMING SHALL BE PAID UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
7. ONE PCMS SIGN EACH SHALL BE PLACED AT THE CHURCH ST/ELM ST INTERSECTION AND ONE AT THE ROARING BROOK RD/GLOVER RD INTERSECTION 14 DAYS PRIOR TO THE START OF CONSTRUCTION TO WARN OF IMPENDING DETOURS. THESE SHALL THEN BE DEPLOYED TO LOCATIONS SPECIFIED BY THE ENGINEER ONCE CONSTRUCTION HAS BEGUN, IF NECESSARY.

BRIDGE SITE CLOSURE DETAIL:
(NOT TO SCALE)

NOTE: TRAFFIC CONTROL FOR MILL AND OVERLAY ON VT 16 NOT DETAILED, SEE STANDARD DETAILS

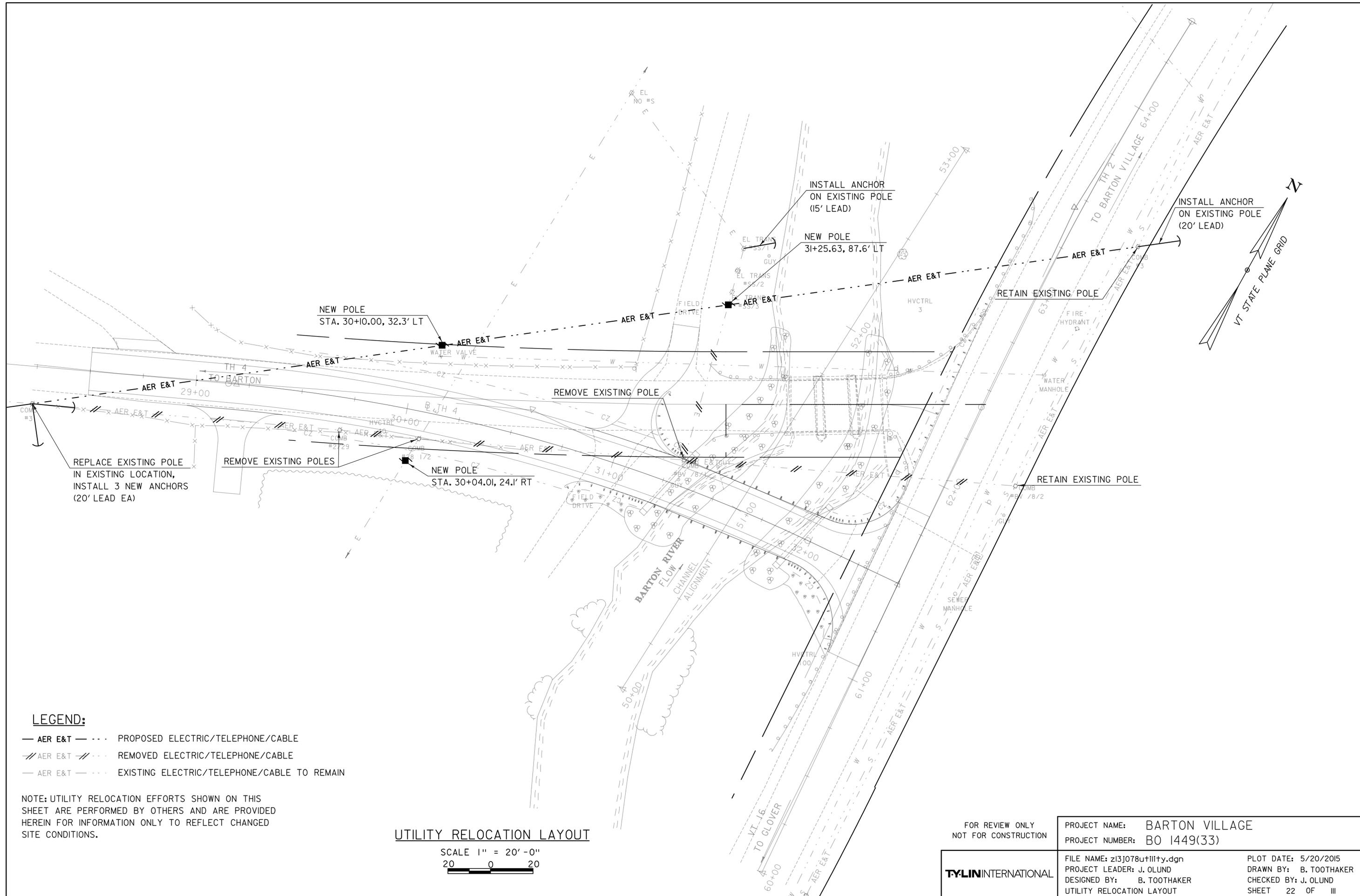
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TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078de+sign2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TRAFFIC CONTROL SHEET 2

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: A. GREENLAW
SHEET 21 OF 111



LEGEND:

- AER E&T — PROPOSED ELECTRIC/TELEPHONE/CABLE
- // AER E&T // REMOVED ELECTRIC/TELEPHONE/CABLE
- AER E&T — EXISTING ELECTRIC/TELEPHONE/CABLE TO REMAIN

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

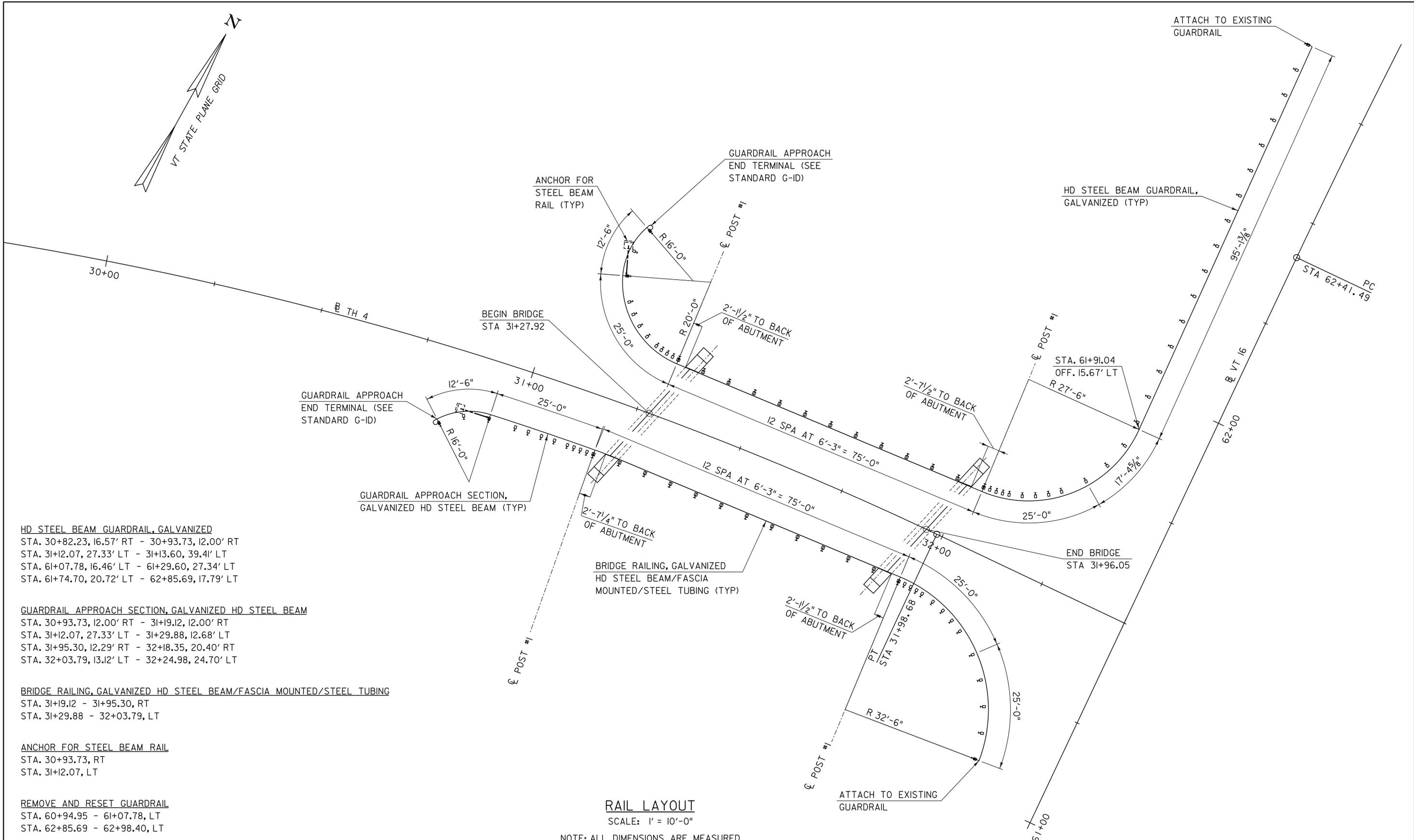
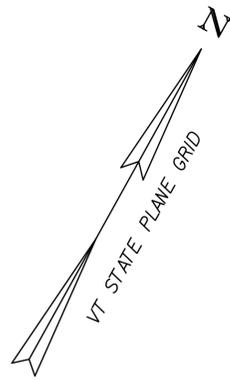
FOR REVIEW ONLY
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PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

TYLININTERNATIONAL

FILE NAME: z\3\078u\111ty.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 UTILITY RELOCATION LAYOUT

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. OLUND
 SHEET 22 OF 111



HD STEEL BEAM GUARDRAIL, GALVANIZED
 STA. 30+82.23, 16.57' RT - 30+93.73, 12.00' RT
 STA. 31+12.07, 27.33' LT - 31+13.60, 39.41' LT
 STA. 61+07.78, 16.46' LT - 61+29.60, 27.34' LT
 STA. 61+74.70, 20.72' LT - 62+85.69, 17.79' LT

GUARDRAIL APPROACH SECTION, GALVANIZED HD STEEL BEAM
 STA. 30+93.73, 12.00' RT - 31+19.12, 12.00' RT
 STA. 31+12.07, 27.33' LT - 31+29.88, 12.68' LT
 STA. 31+95.30, 12.29' RT - 32+18.35, 20.40' RT
 STA. 32+03.79, 13.12' LT - 32+24.98, 24.70' LT

BRIDGE RAILING, GALVANIZED HD STEEL BEAM/FASCIA MOUNTED/STEEL TUBING
 STA. 31+19.12 - 31+95.30, RT
 STA. 31+29.88 - 32+03.79, LT

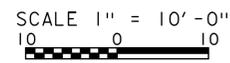
ANCHOR FOR STEEL BEAM RAIL
 STA. 30+93.73, RT
 STA. 31+12.07, LT

REMOVE AND RESET GUARDRAIL
 STA. 60+94.95 - 61+07.78, LT
 STA. 62+85.69 - 62+98.40, LT

RAIL LAYOUT

SCALE: 1" = 10'-0"

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



FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

FILE NAME: z\3\078r\allay.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 RAIL LAYOUT SHEET

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. HOWE
 SHEET 23 OF 111

4 INCH WHITE LINE (4" WL)
 31+20.00 - 32+30.00, LT
 31+20.00 - 32+30.00, RT
 61+05.50 - 61+23.14, LT
 61+70.79 - 62+80.75, LT

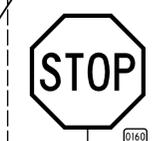
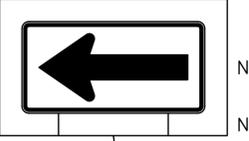
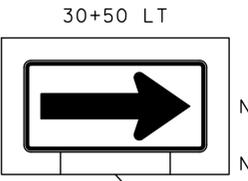
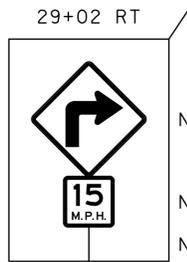
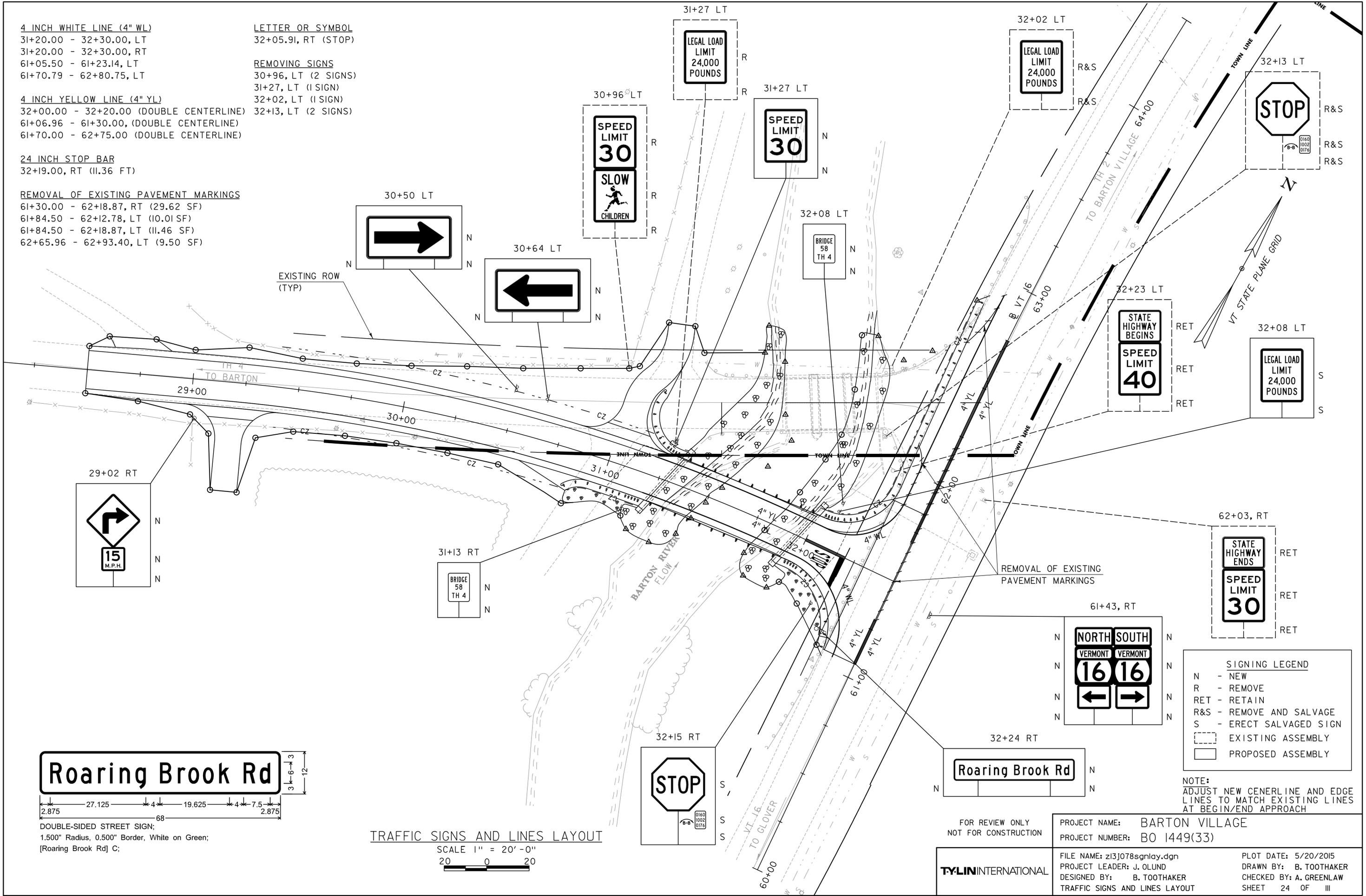
4 INCH YELLOW LINE (4" YL)
 32+00.00 - 32+20.00 (DOUBLE CENTERLINE)
 61+06.96 - 61+30.00, (DOUBLE CENTERLINE)
 61+70.00 - 62+75.00 (DOUBLE CENTERLINE)

LETTER OR SYMBOL
 32+05.91, RT (STOP)

REMOVING SIGNS
 30+96, LT (2 SIGNS)
 31+27, LT (1 SIGN)
 32+02, LT (1 SIGN)
 32+13, LT (2 SIGNS)

24 INCH STOP BAR
 32+19.00, RT (11.36 FT)

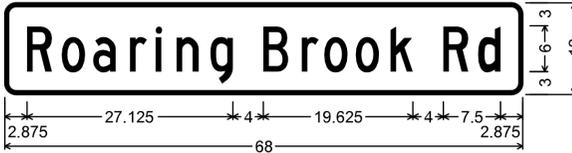
REMOVAL OF EXISTING PAVEMENT MARKINGS
 61+30.00 - 62+18.87, RT (29.62 SF)
 61+84.50 - 62+12.78, LT (10.01 SF)
 61+84.50 - 62+18.87, LT (11.46 SF)
 62+65.96 - 62+93.40, LT (9.50 SF)



SIGNING LEGEND

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

NOTE:
 ADJUST NEW CENTERLINE AND EDGE LINES TO MATCH EXISTING LINES AT BEGIN/END APPROACH



DOUBLE-SIDED STREET SIGN;
 1,500" Radius, 0,500" Border, White on Green;
 [Roaring Brook Rd] C;

TRAFFIC SIGNS AND LINES LAYOUT
 SCALE 1" = 20' - 0"
 20 0 20

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

TYLIN INTERNATIONAL

FILE NAME: z13j078sgnlay.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 TRAFFIC SIGNS AND LINES LAYOUT

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: A. GREENLAW
 SHEET 24 OF 111

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

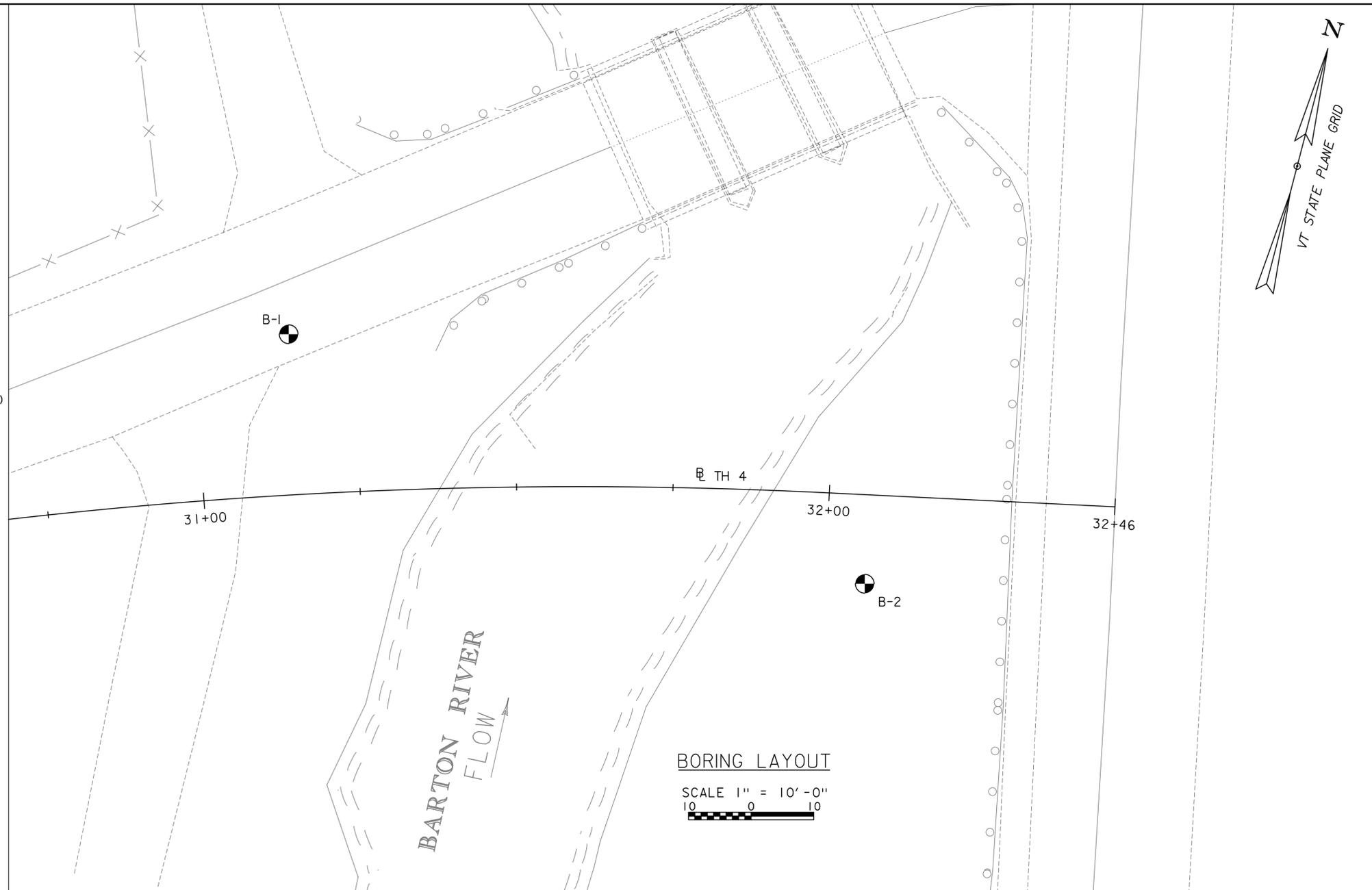
DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

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 To 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)

COLOR

bik	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" = 10'-0"
10 0 10

GENERAL NOTES

- The subsurface explorations shown herein were made between January 20, 2014 and February 3, 2014 by GeoDesign, Inc.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by GeoDesign, Inc. and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- 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.
- Engineering judgement 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 judgement by the Contractor.
- 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.
- 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.

BORING LAYOUT

HOLE NO.	STATION	OFFSET	NORTHING	EASTING	GROUND ELEVATION	TLOB ELEVATION
B-1	31+15.00	25.6', LT	817413.0	1723105.0	857.0	811.5
B-2 (OW)	32+06.35	14.2', RT	817384.0	1723201.0	854.0	807.5

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 > 0.075" (#10 sieve).
- SAND** - Particles of rock < 0.075" (#10 sieve) and > 0.0025" (#200 sieve).
- SILT** - Soil < 0.0025" (#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.

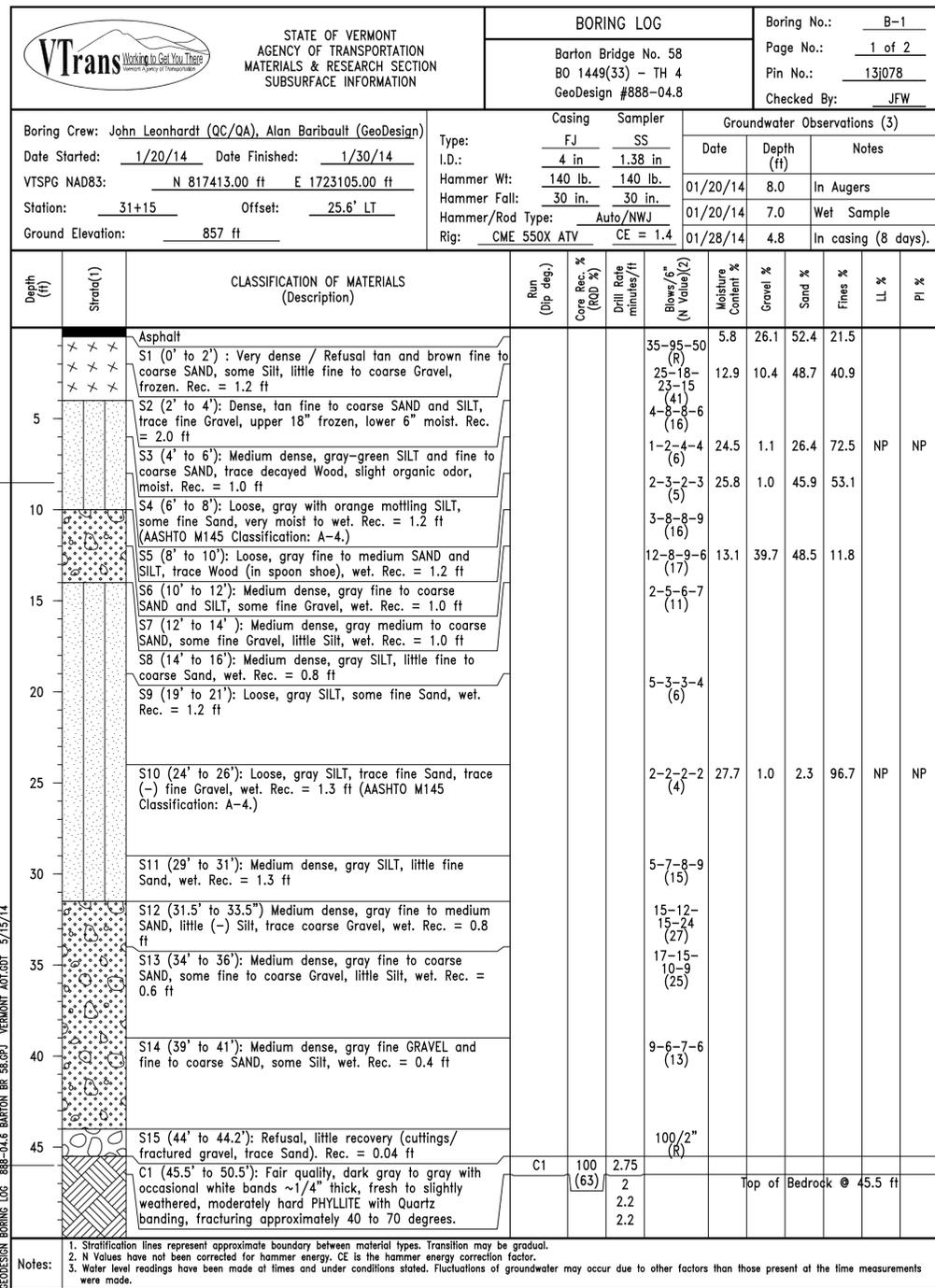
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NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078bor.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: J. OLUND
BORING INFORMATION & LAYOUT SHEET

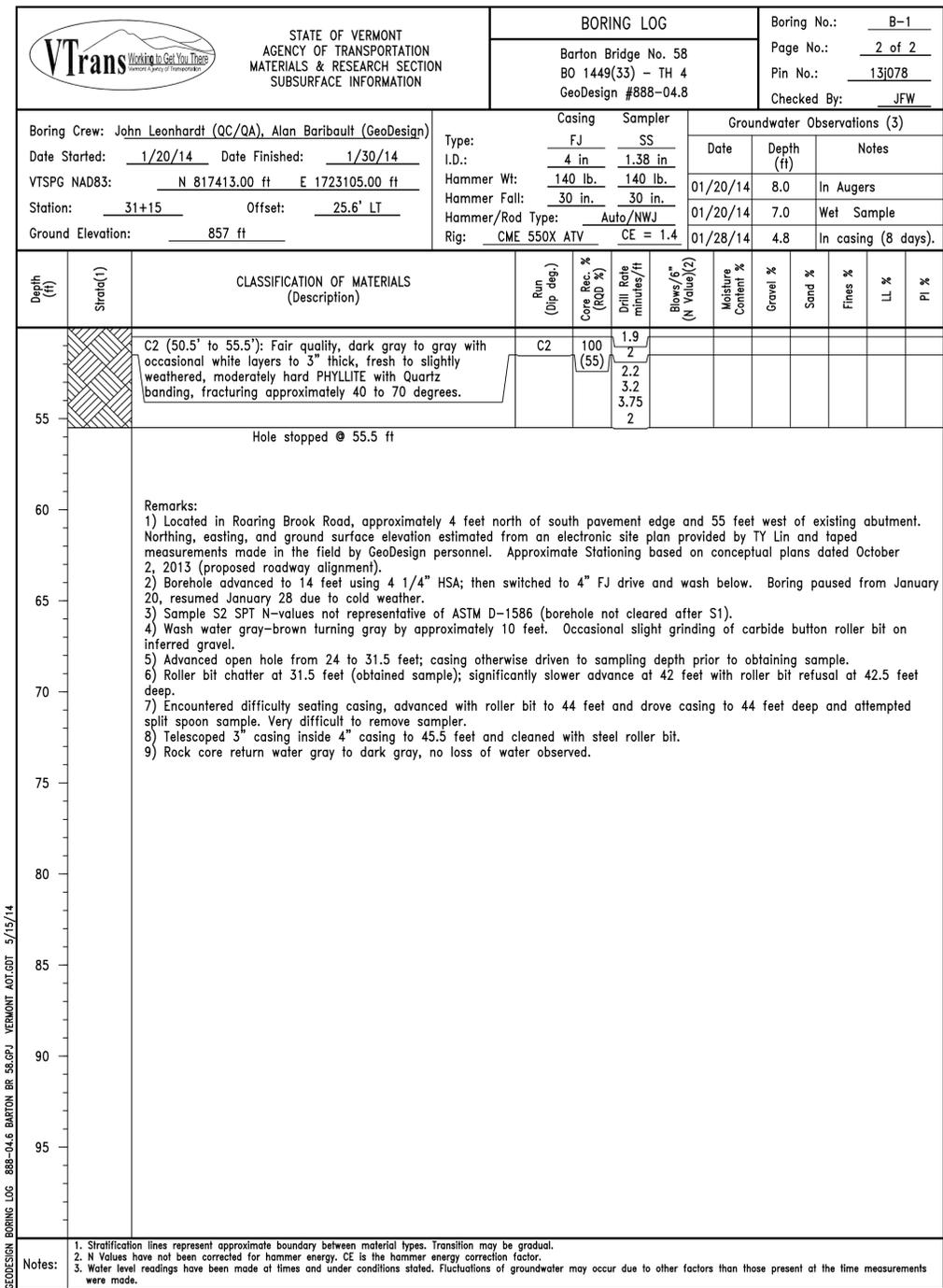
PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 27 OF 111



BOTTOM OF ABUT NO 1
 EL 848.50

ESTIMATED BOTTOM OF
 PILE AT ABUT NO 1
 EL 811.0

GEODESIC BORING LOC. 888-04.6 BARTON BR. 56.GPJ VERMONT AOT.GDT 5/15/14



GEODESIC BORING LOC. 888-04.6 BARTON BR. 56.GPJ VERMONT AOT.GDT 5/15/14

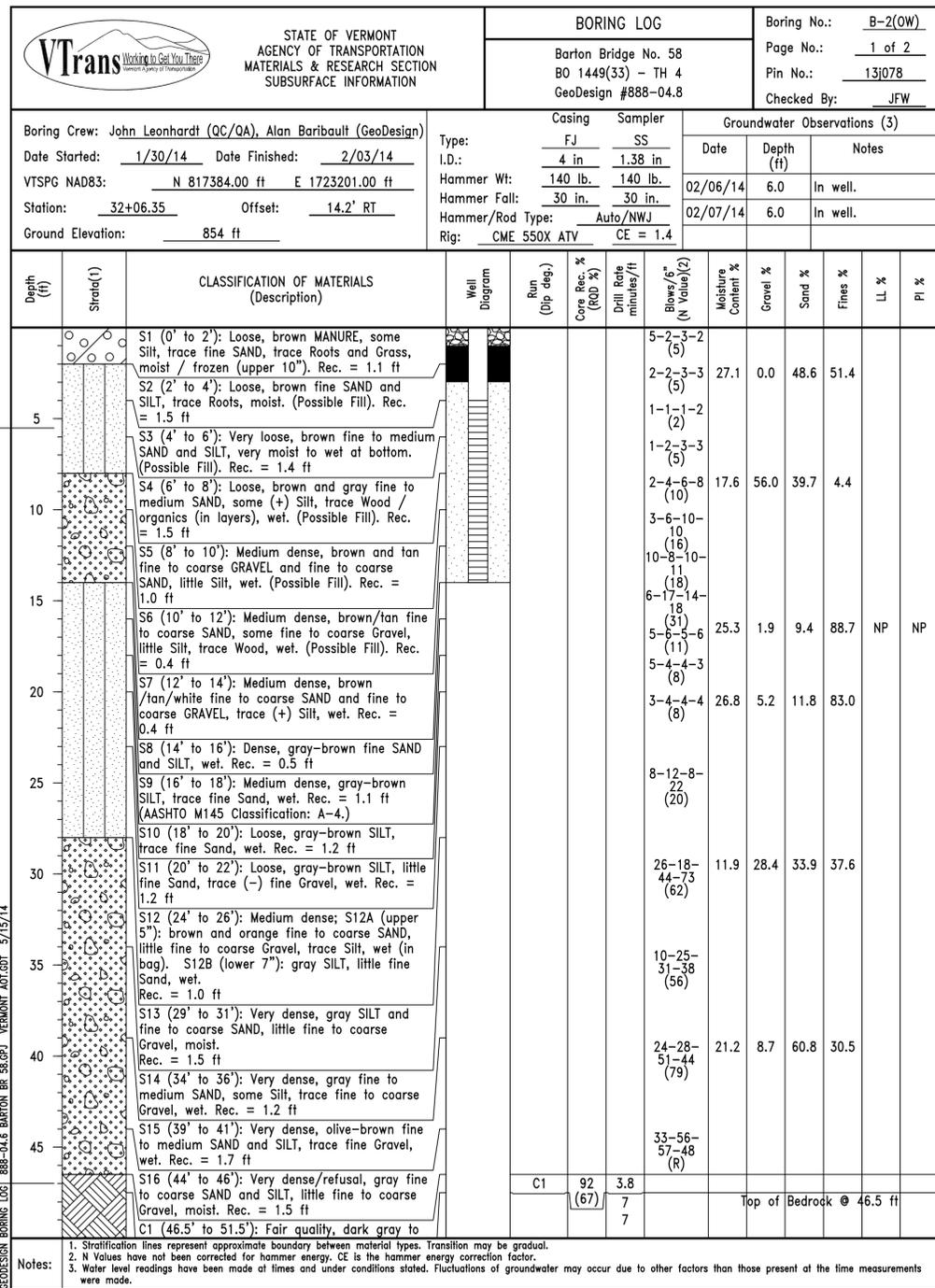
FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

TYLIN INTERNATIONAL

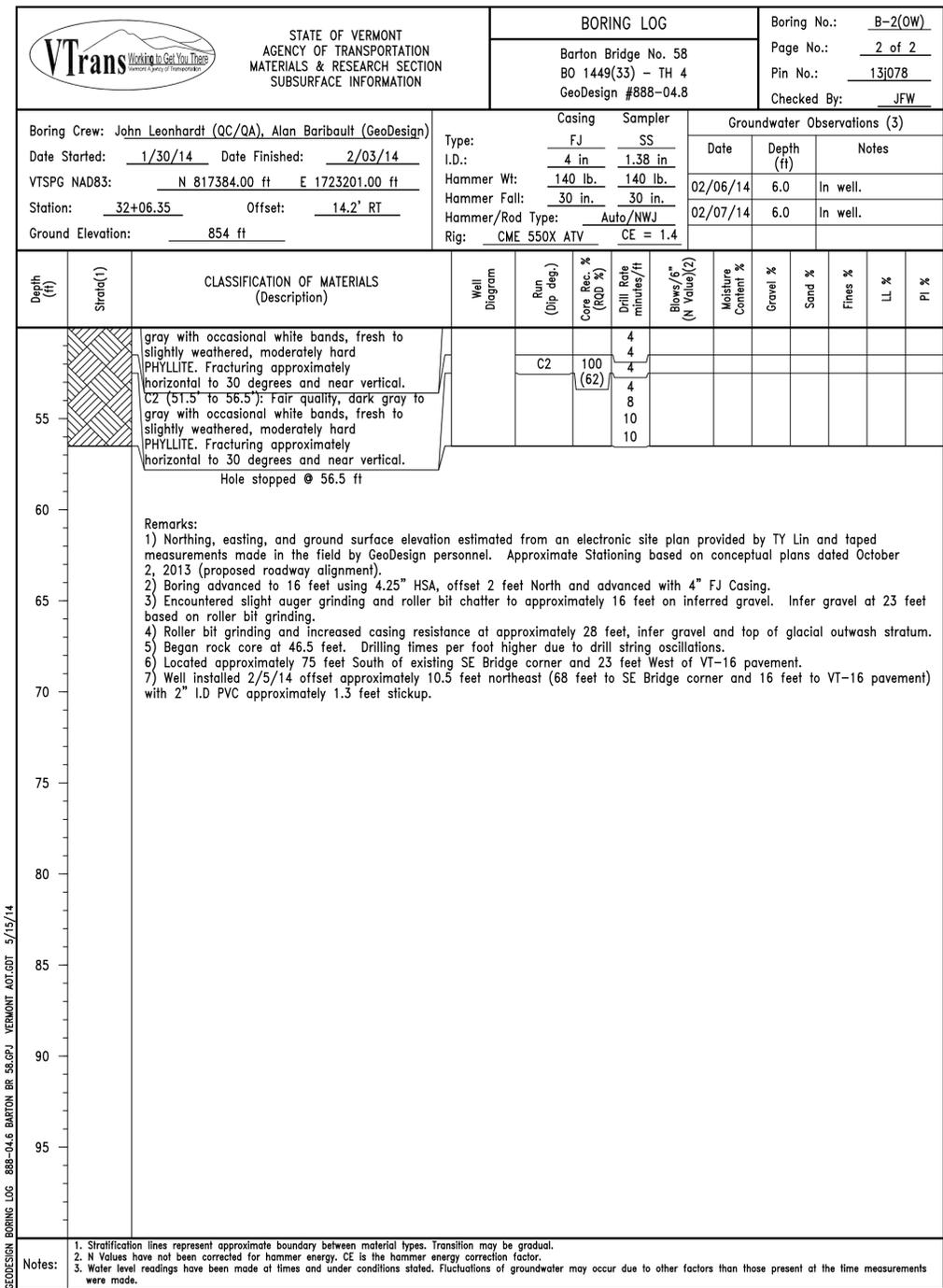
FILE NAME: z13j078blogl.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: J. OLUND
 BORING LOG I

PLOT DATE: 5/20/2015
 DRAWN BY: S. MORGAN
 CHECKED BY: T. POULIN
 SHEET 28 OF III



BOTTOM OF ABUT NO 2
EL 848.50

ESTIMATED BOTTOM OF
PILE AT ABUT NO 2
EL 807.0



Remarks:
1) Northing, easting, and ground surface elevation estimated from an electronic site plan provided by TY Lin and taped measurements made in the field by GeoDesign personnel. Approximate Stationing based on conceptual plans dated October 2, 2013 (proposed roadway alignment).
2) Boring advanced to 16 feet using 4.25" HSA, offset 2 feet North and advanced with 4" FJ Casing.
3) Encountered slight auger grinding and roller bit chatter to approximately 16 feet on inferred gravel. Infer gravel at 23 feet based on roller bit grinding.
4) Roller bit grinding and increased casing resistance at approximately 28 feet, infer gravel and top of glacial outwash stratum.
5) Began rock core at 46.5 feet. Drilling times per foot higher due to drill string oscillations.
6) Located approximately 75 feet South of existing SE Bridge corner and 23 feet West of VT-16 pavement.
7) Well installed 2/5/14 offset approximately 10.5 feet northeast (68 feet to SE Bridge corner and 16 feet to VT-16 pavement) with 2" I.D. PVC approximately 1.3 feet stickup.

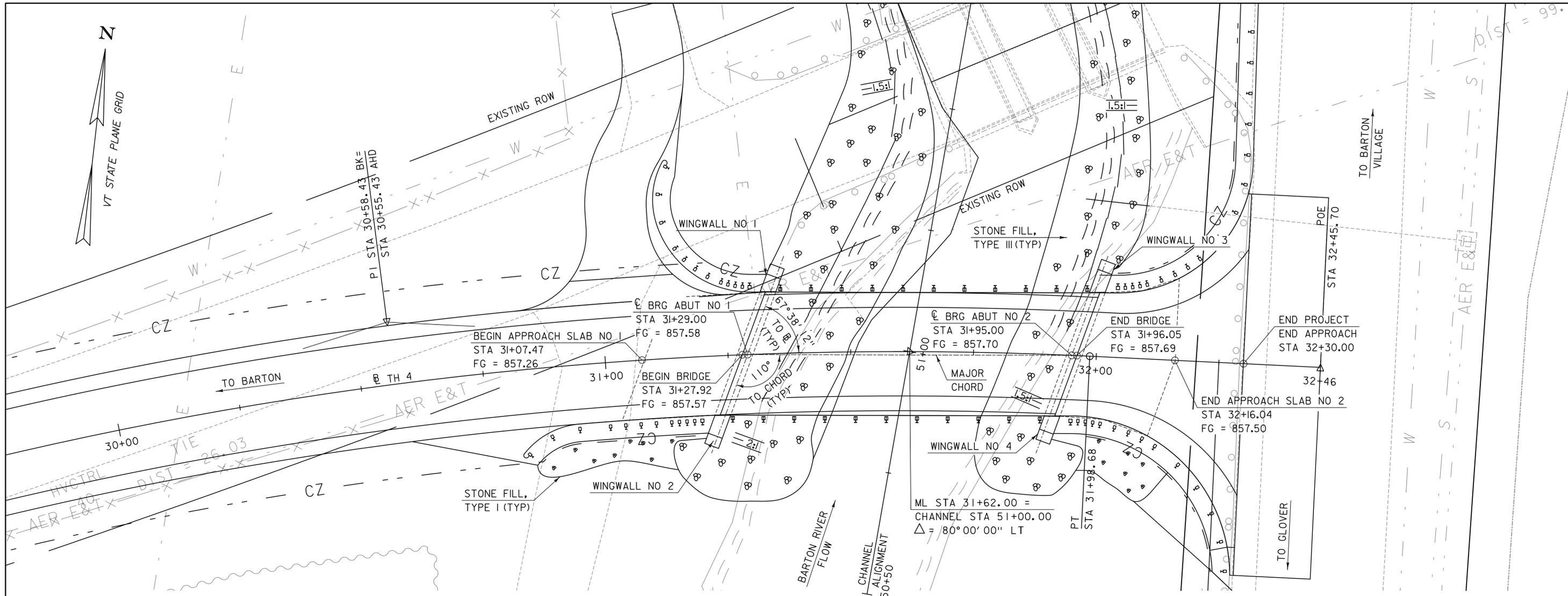
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

TYLIN INTERNATIONAL

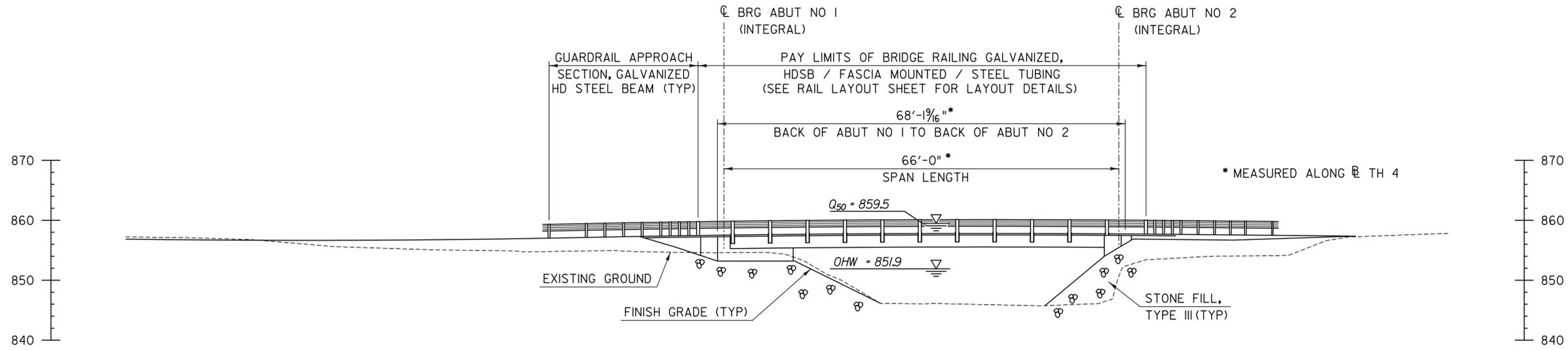
FILE NAME: z13j078blog2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: J. OLUND
BORING LOG 2

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 29 OF 111



PLAN

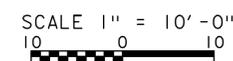
SCALE: 1" = 10'-0"



ELEVATION

SCALE: 1" = 10'-0"

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NOT FOR CONSTRUCTION

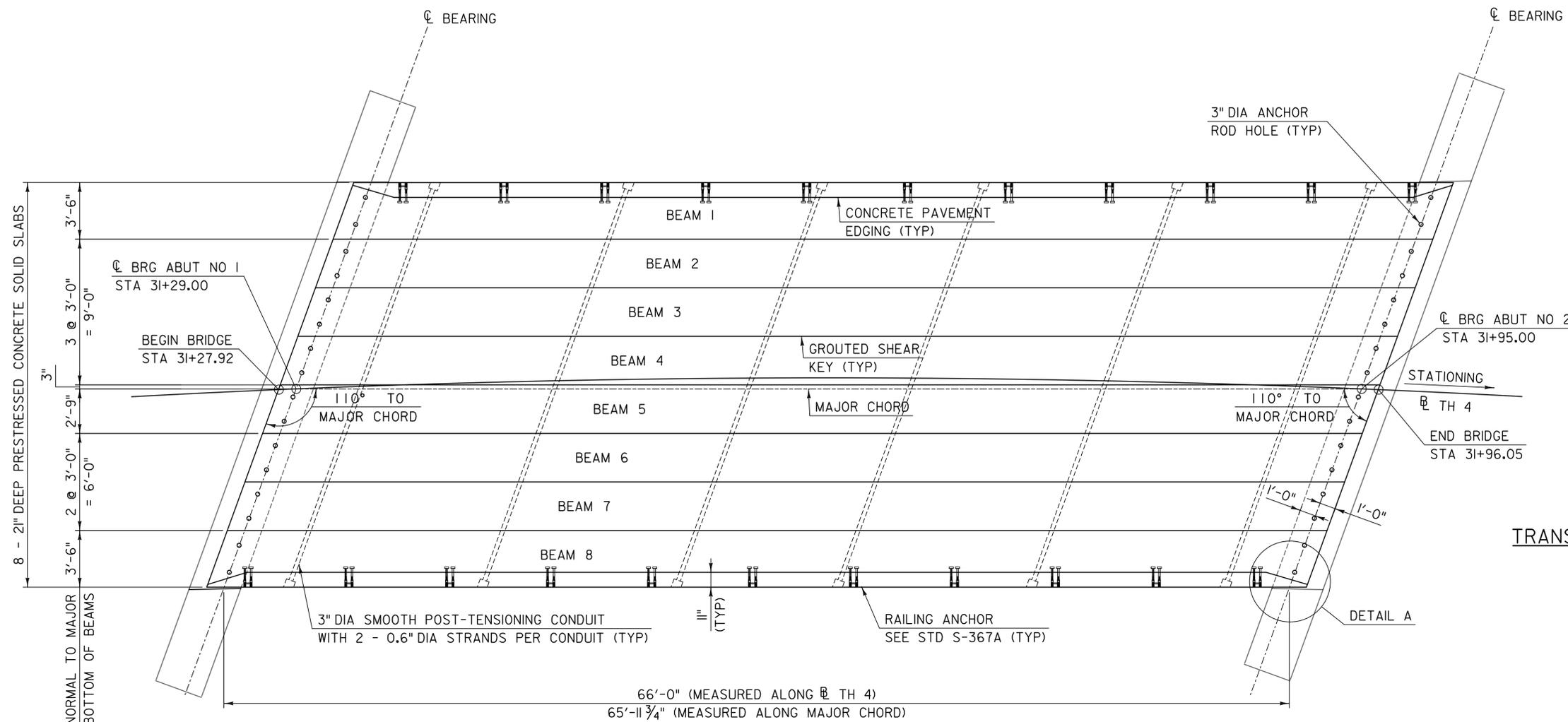


TYLIN INTERNATIONAL

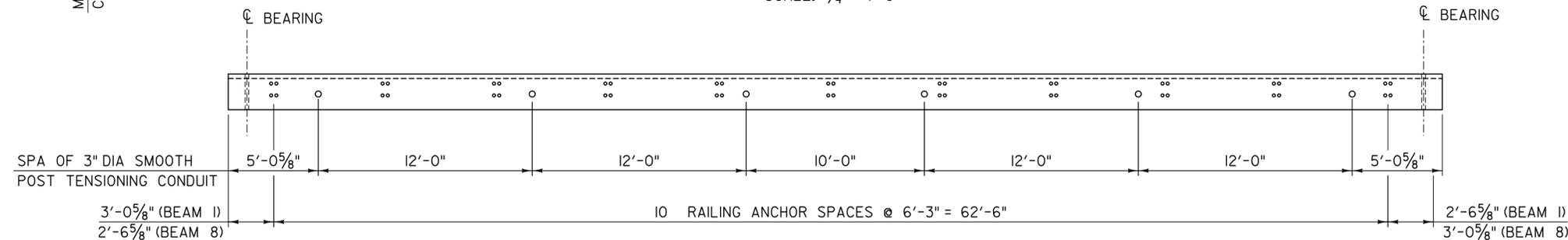
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078pe.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: J. OLUND
PLAN & ELEVATION

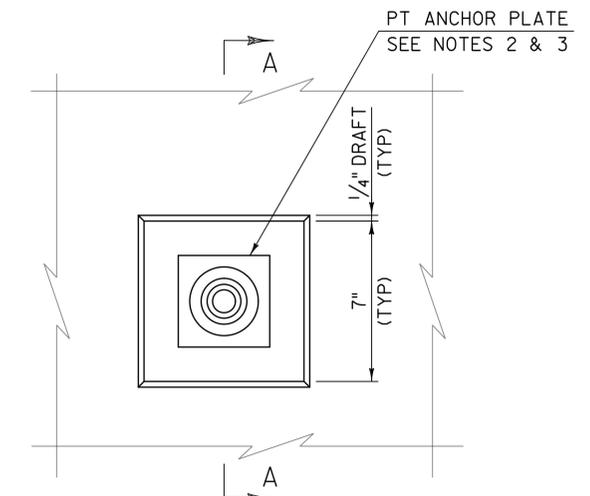
PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 30 OF 111



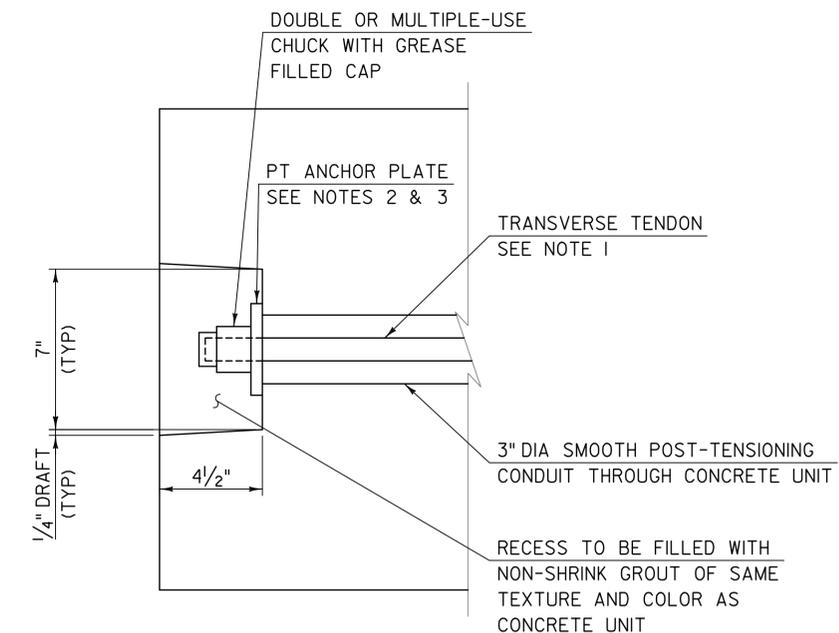
FRAMING PLAN
SCALE: 1/4" = 1'-0"



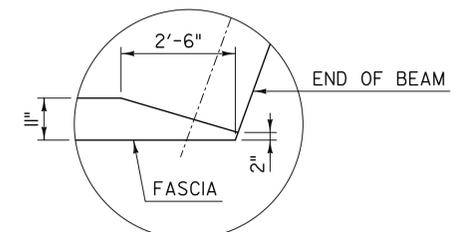
SLAB ELEVATION
SCALE: 1/4" = 1'-0"



TRANSVERSE POST-TENSIONING DETAIL ELEVATION
SCALE: 3" = 1'-0"



TRANSVERSE POST-TENSIONING DETAIL SECTION A-A
SCALE: 3" = 1'-0"



DETAIL A

NOTES:

1. TRANSVERSE TENDONS SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF STRAND, EXCEPT AT ANCHORAGE LOCATIONS. EACH STRAND SHALL BE TENSIONED TO 47 KIPS FOR 0.6 DIA STRAND.
2. ANCHOR PLATES SHALL CONFORM TO AASHTO M 270M/M 270, GRADE 345 (GRADE 50) AND BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111M/M 111.
3. ANCHOR PLATES FOR TRANSVERSE POST-TENSIONING ARE TO BE DESIGNED BY THE FABRICATOR FOR THE SPECIFIC POST-TENSIONING SYSTEM USED. DETAILS FOR THE ANCHOR PLATE SHALL BE PROVIDED ON THE FABRICATION DRAWINGS.

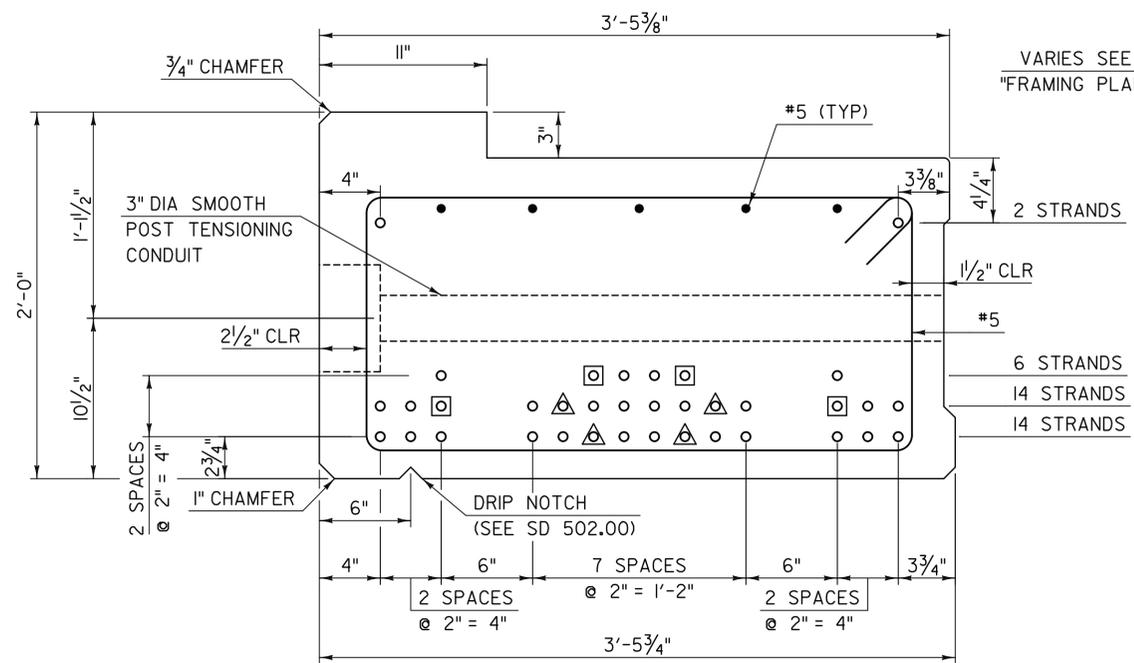
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TYLININTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078supl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: D. MYERS
FRAMING PLAN

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 31 OF 111

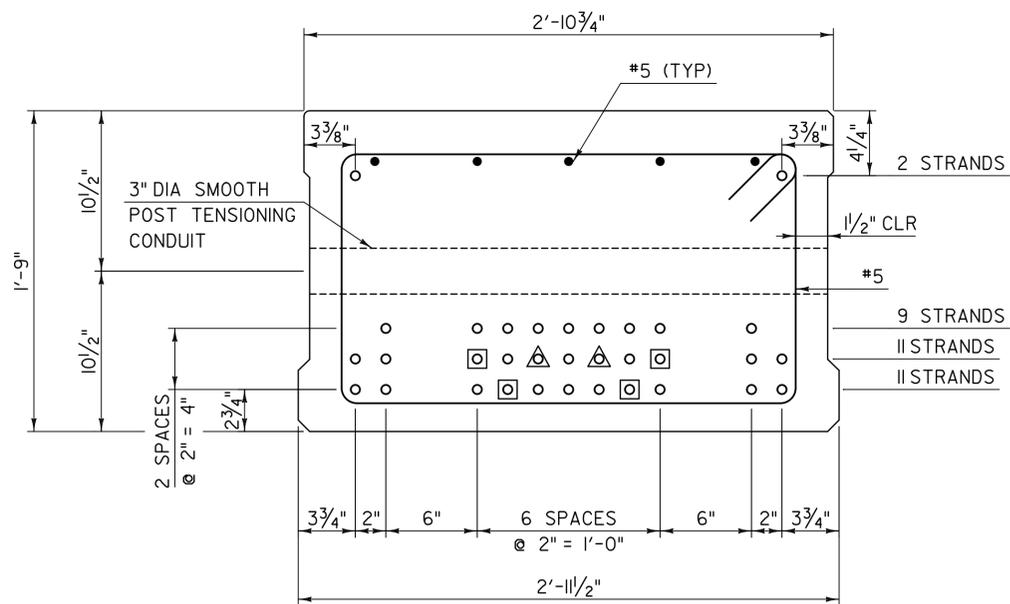


TYPICAL EXTERIOR SECTION

SCALE: 2" = 1'-0"

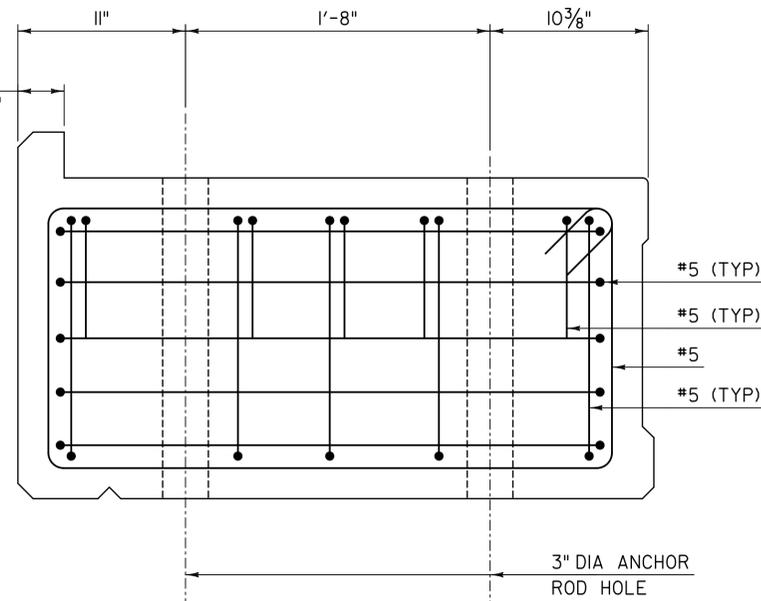
LEGEND:

- △ DEBONDED 6'-0" EACH END
- DEBONDED 12'-0" EACH END
- 0.6" PRESTRESSING STRAND
- REINFORCING STEEL (TYP)



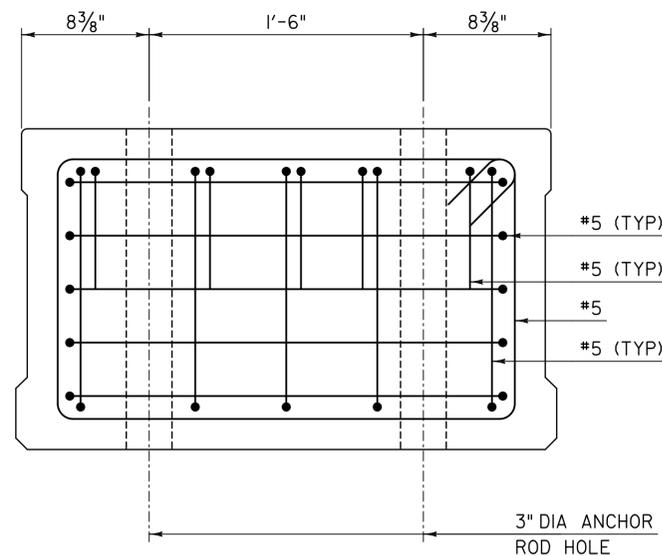
TYPICAL INTERIOR SECTION

SCALE: 2" = 1'-0"



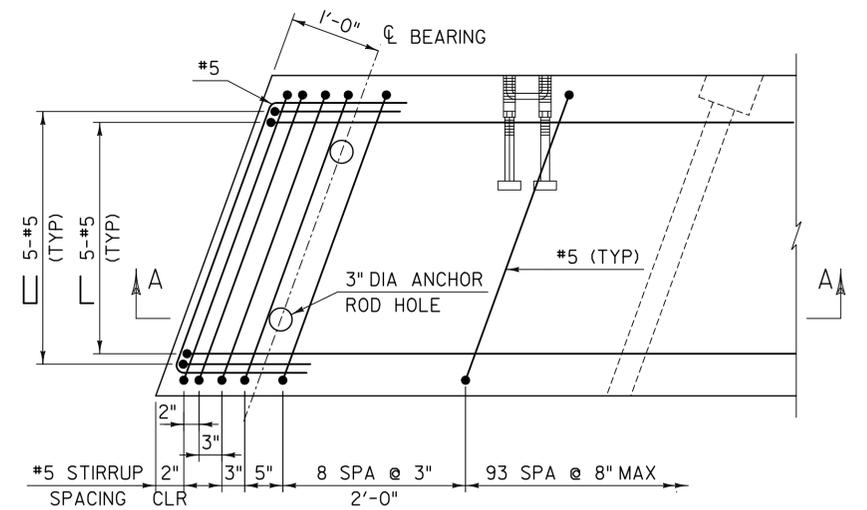
END ELEVATION EXTERIOR BEAM

SCALE: 2" = 1'-0"
(PRESTRESSING STRAND NOT SHOWN FOR CLARITY)



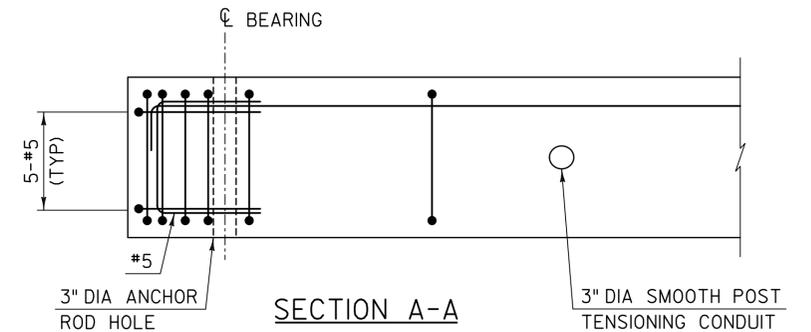
END ELEVATION INTERIOR BEAM

SCALE: 2" = 1'-0"
(PRESTRESSING STRAND NOT SHOWN FOR CLARITY)



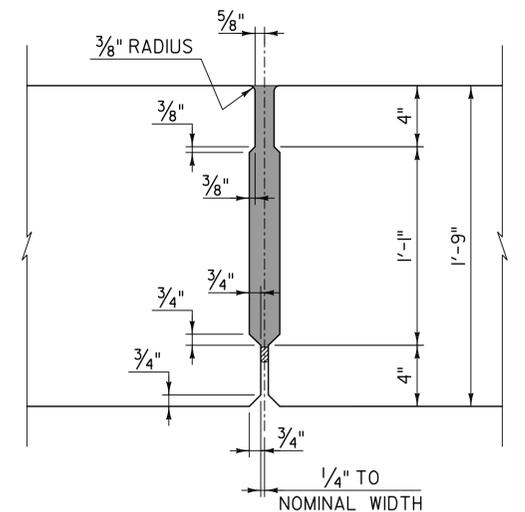
TYPICAL END REINFORCING PLAN

SCALE: 1" = 1'-0"
(EXTERIOR BEAM SHOWN, INTERIOR SIMILAR)
(PRESTRESSING STRAND NOT SHOWN FOR CLARITY)



SECTION A-A

SCALE: 1" = 1'-0"
(PRESTRESSING STRAND NOT SHOWN FOR CLARITY)



SHEAR KEY DETAIL

SCALE: 2" = 1'-0"

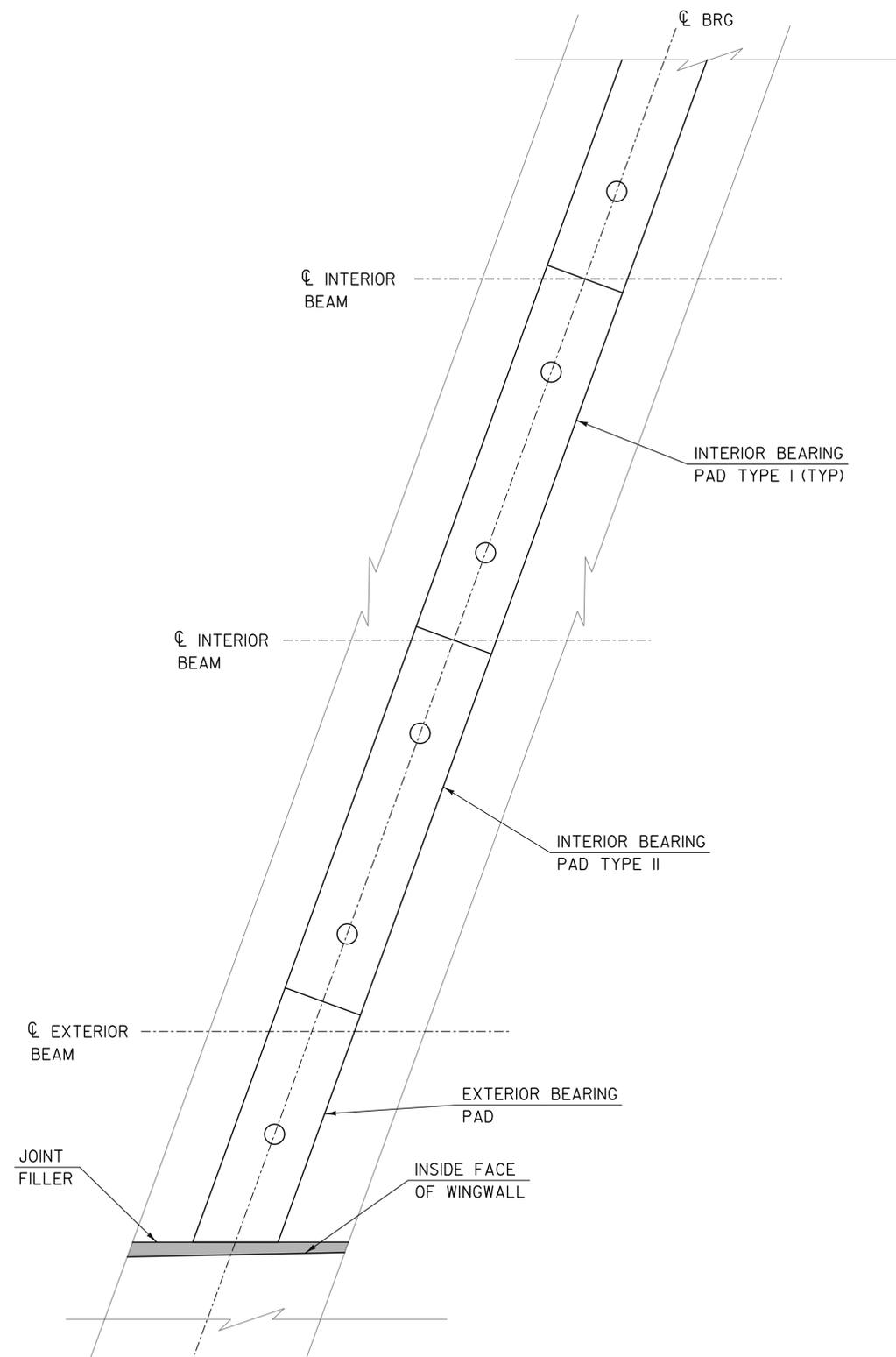
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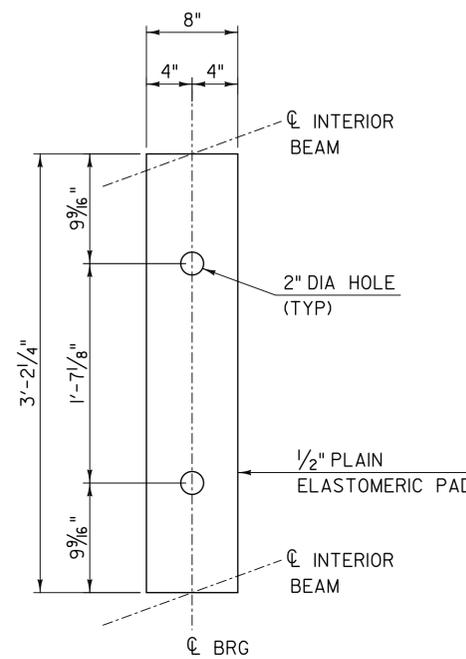
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078sup2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: D. MYERS
SUPERSTRUCTURE DETAILS

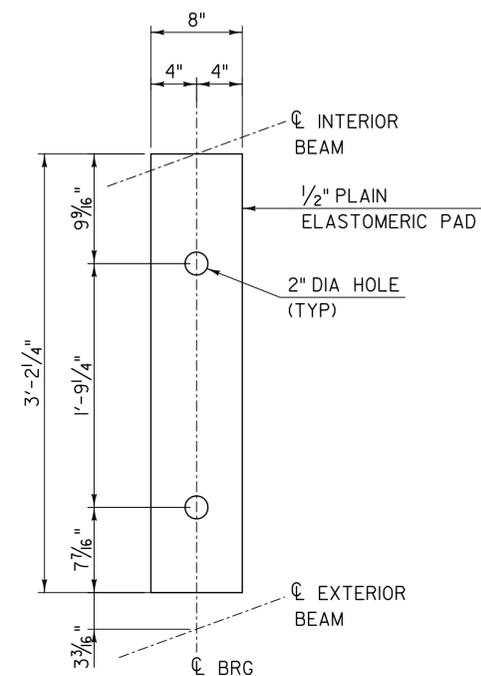
PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 32 OF 111



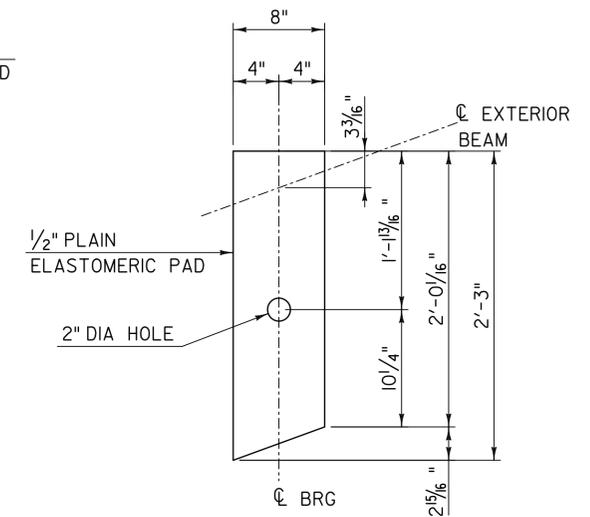
BEARING LAYOUT
SCALE: 1/2" = 1'-0"



INTERIOR BEARING PAD TYPE I DETAIL
SCALE: 1/2" = 1'-0"
(5 REQUIRED PER ABUTMENT)



INTERIOR BEARING PAD TYPE II DETAIL
SCALE: 1/2" = 1'-0"
(2 REQUIRED PER ABUTMENT)



EXTERIOR BEARING PAD DETAIL
SCALE: 1/2" = 1'-0"
(2 REQUIRED PER ABUTMENT)

NOTES:

1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.
2. THE PLAIN ELASTOMERIC BEARING PADS WERE DESIGNED WITH A SHEAR MODULUS OF 110 PSI +/- 15%.

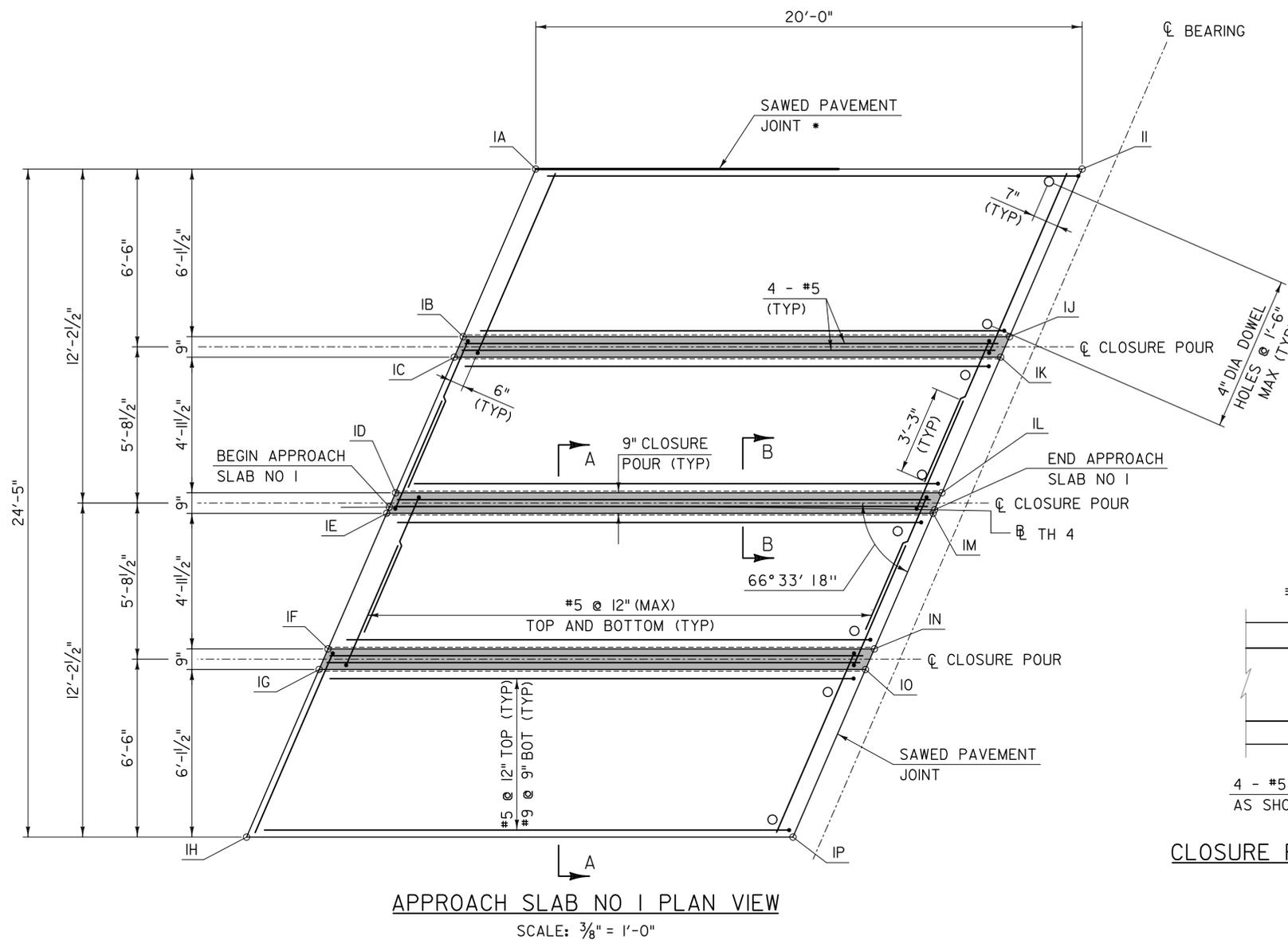
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TYLIN INTERNATIONAL

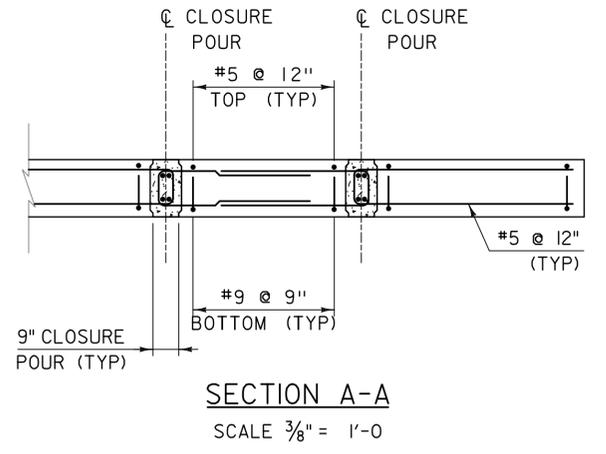
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078sup3.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: D. MYERS
BEARING DETAILS

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND
SHEET 33 OF 111

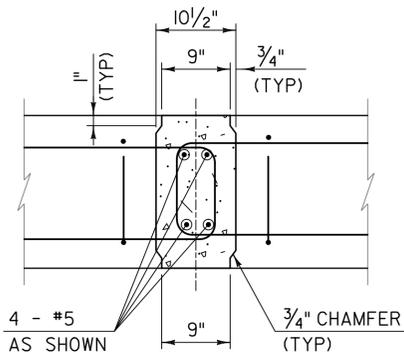


APPROACH SLAB NO 1 PLAN VIEW
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE 3/8" = 1'-0

LAYOUT AND BOTTOM ELEVATIONS			
	STATION	OFFSET	BOTTOM ELEVATION
IA	31+13.33	12.33 LT	856.04
∅ CENTER CLOSURE POUR BEGIN AS NO 1	31+08.03	0.15 LT	855.72
IH	31+02.56	12.00 RT	855.41
II	31+33.02	12.56 LT	856.37
∅ CENTER CLOSURE POUR END AS NO 1	31+28.02	0.25 LT	856.05
IP	31+22.87	12.03 RT	855.74

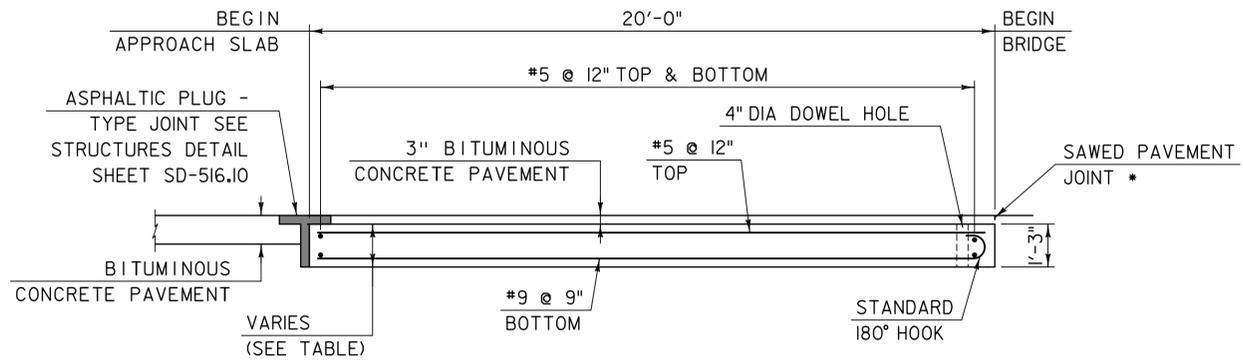


CLOSURE POUR DETAIL SECTION B-B
SCALE 1" = 1'-0

APPROACH SLAB THICKNESSES	
	THICKNESS
IA	15 5/8"
IB	15 1/2"
IC	15 1/2"
ID	15 3/8"
IE	15 3/8"
IF	15 1/4"
IG	15 1/4"
IH	15"
II - IP	15"

NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING UNIFORM CONTACT BETWEEN THE APPROACH SLAB AND THE SUBBASE MATERIAL TO THE SATISFACTION OF THE ENGINEER. THE FABRICATION DRAWINGS SHALL INDICATE THE MEANS AND METHODS NECESSARY TO INSTALL THE APPROACH SLABS TO THE ELEVATIONS SPECIFIED.
- APPROACH SLAB REINFORCING STEEL SHOWN IS TYPICAL FOR EACH PANEL.
- COORDINATE APPROACH SLAB DOWEL HOLE LOCATIONS WITH #8 BARS EXTENDING FROM ABUTMENTS.
- BOTTOM OF SLAB ELEVATIONS SHALL BE LINEARLY INTERPOLATED BY THE CONTRACTOR BETWEEN POINTS PROVIDED IN THE LAYOUT AND BOTTOM ELEVATIONS TABLE.



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

* SAWED PAVEMENT JOINTS SHALL BE FULL WIDTH OF BRIDGE AT BEGIN/END BRIDGE AND ALONG EDGE OF APPROACH SLAB AT ALL PAVED APRONS

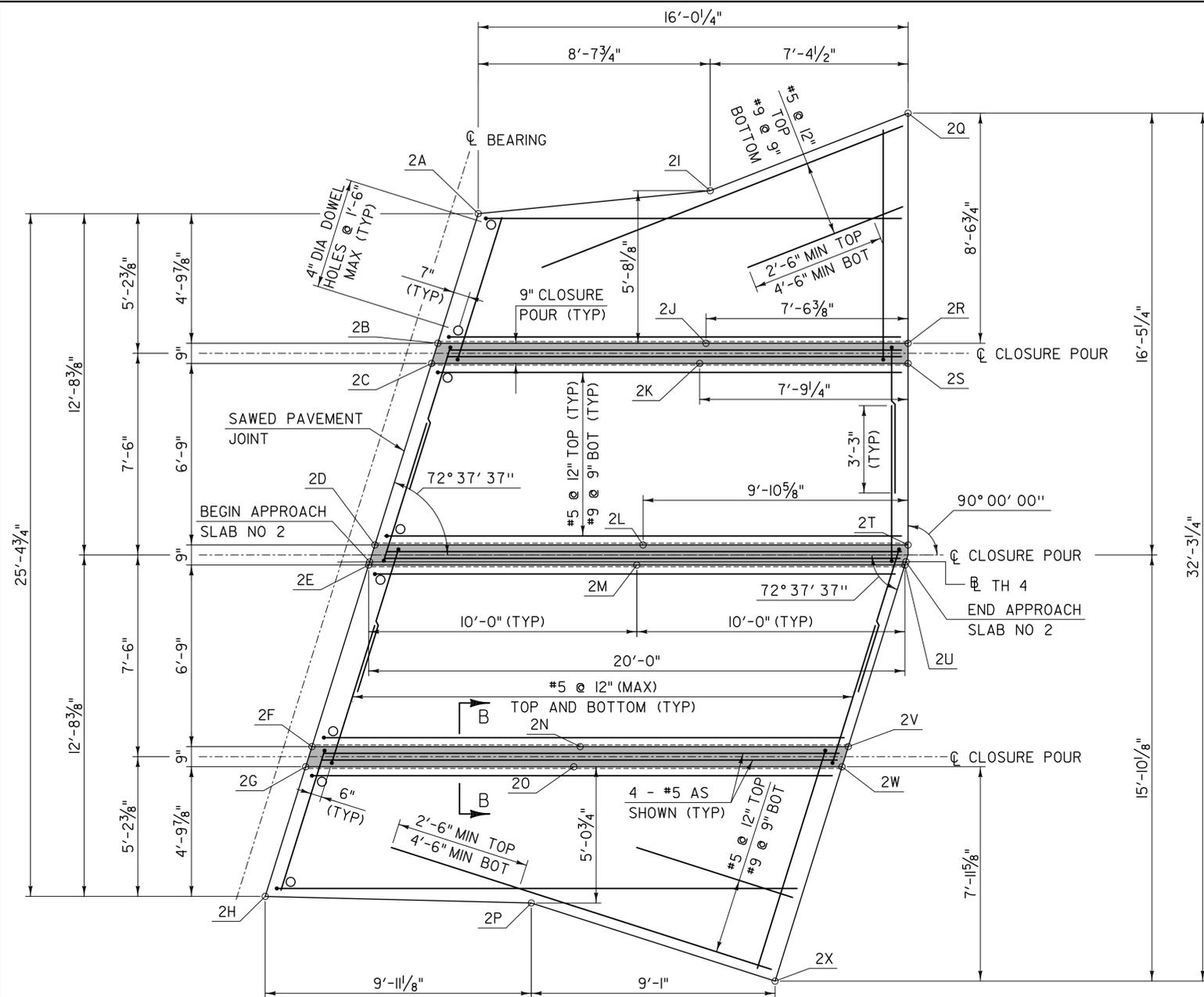
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TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

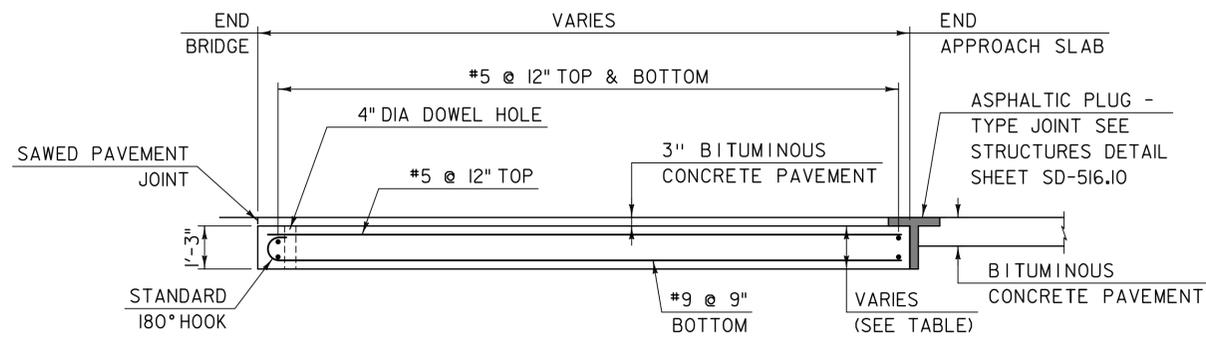
FILE NAME: z13j078sup4.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: D. MYERS
APPROACH SLAB DETAILS I

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: C. TAYLOR
SHEET 34 OF 111



APPROACH SLAB NO 2 PLAN VIEW

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



APPROACH SLAB ELEVATION VIEW

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

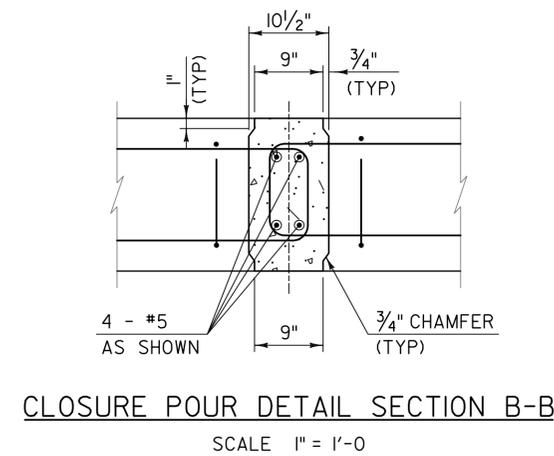
NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING UNIFORM CONTACT BETWEEN THE APPROACH SLAB AND THE SUBBASE MATERIAL TO THE SATISFACTION OF THE ENGINEER. THE FABRICATION DRAWINGS SHALL INDICATE THE MEANS AND METHODS NECESSARY TO INSTALL THE APPROACH SLABS TO THE ELEVATIONS SPECIFIED.
2. APPROACH SLAB REINFORCING STEEL SHOWN IS TYPICAL FOR EACH PANEL.
3. COORDINATE APPROACH SLAB DOWEL HOLE LOCATIONS WITH #8 BARS EXTENDING FROM ABUTMENTS.
4. BOTTOM OF SLAB ELEVATIONS SHALL BE LINEARLY INTERPOLATED BY THE CONTRACTOR BETWEEN POINTS PROVIDED IN THE LAYOUT AND BOTTOM ELEVATIONS TABLE.

LAYOUT AND BOTTOM ELEVATIONS			
	STATION	OFFSET	BOTTOM ELEVATION
2A	32+00.10	12.95 LT	856.37
CL CENTER CLOSURE POUR @ BEGIN AS NO 2	31+96.13	0.26 LT	856.18
2H	31+92.05	12.42 RT	855.97
2Q	32+16.13	16.68 LT	856.09
CL CENTER CLOSURE POUR @ END AS NO 2	32+16.13	0.25 LT	855.71
2X	32+11.17	15.59 RT	855.46

APPROACH SLAB THICKNESSES

	THICKNESS
2A - 2H	15"
2I	15 1/2"
2J	16 1/8"
2K	16 1/4"
2L	16 5/8"
2M	16 3/4"
2N	16 7/8"
2O	16 7/8"
2P	16 3/4"
2Q	15"
2R	16 3/4"
2S	16 7/8"
2T	18 1/8"
2U	18 1/4"
2V	19 1/4"
2W	19 3/8"
2X	20"



CLOSURE POUR DETAIL SECTION B-B

SCALE 1" = 1'-0"

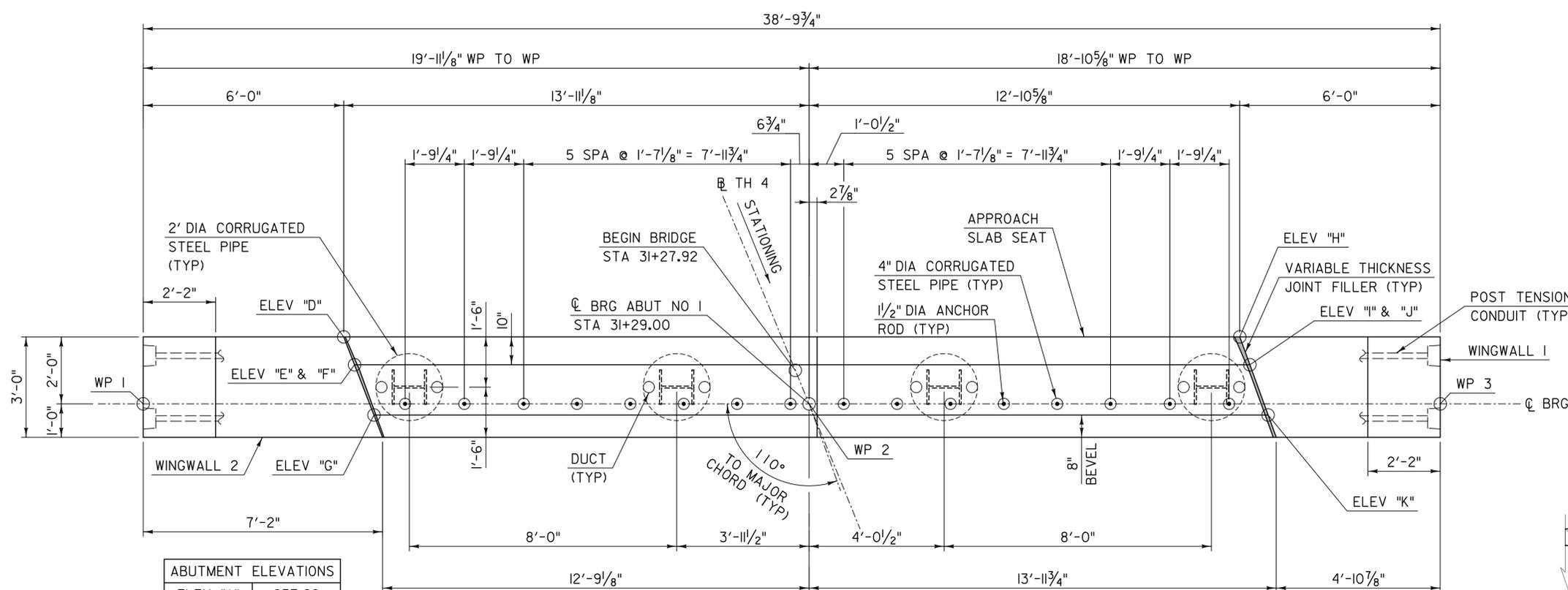
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

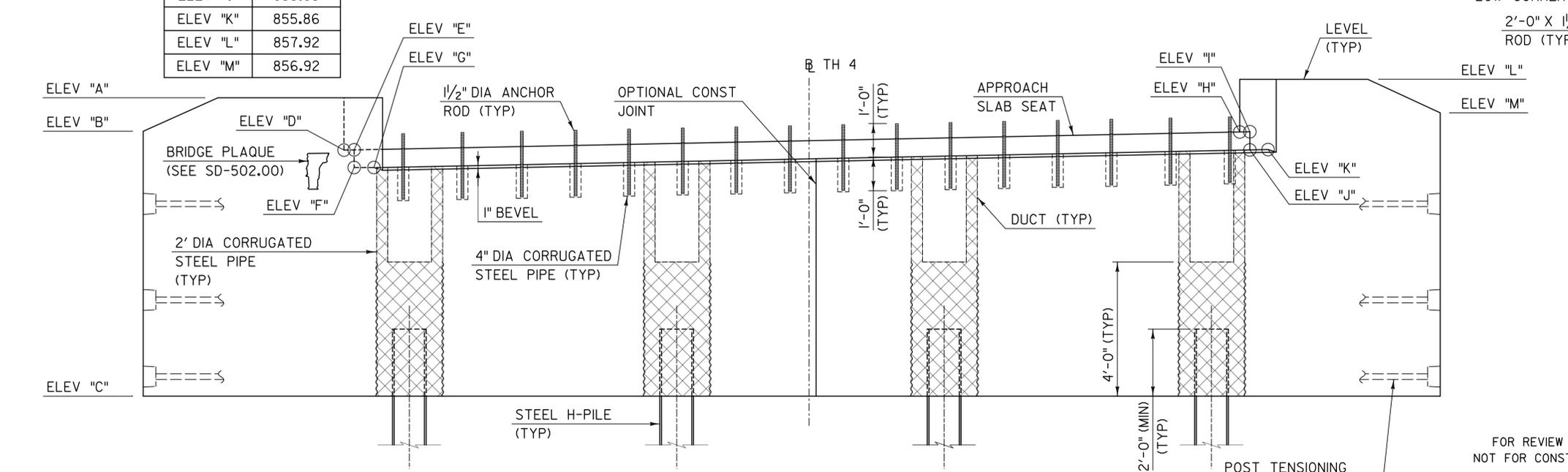
TYLIN INTERNATIONAL

FILE NAME: z13j078sup5.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: D. MYERS
APPROACH SLAB DETAILS 2

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: C. TAYLOR
SHEET 35 OF 111

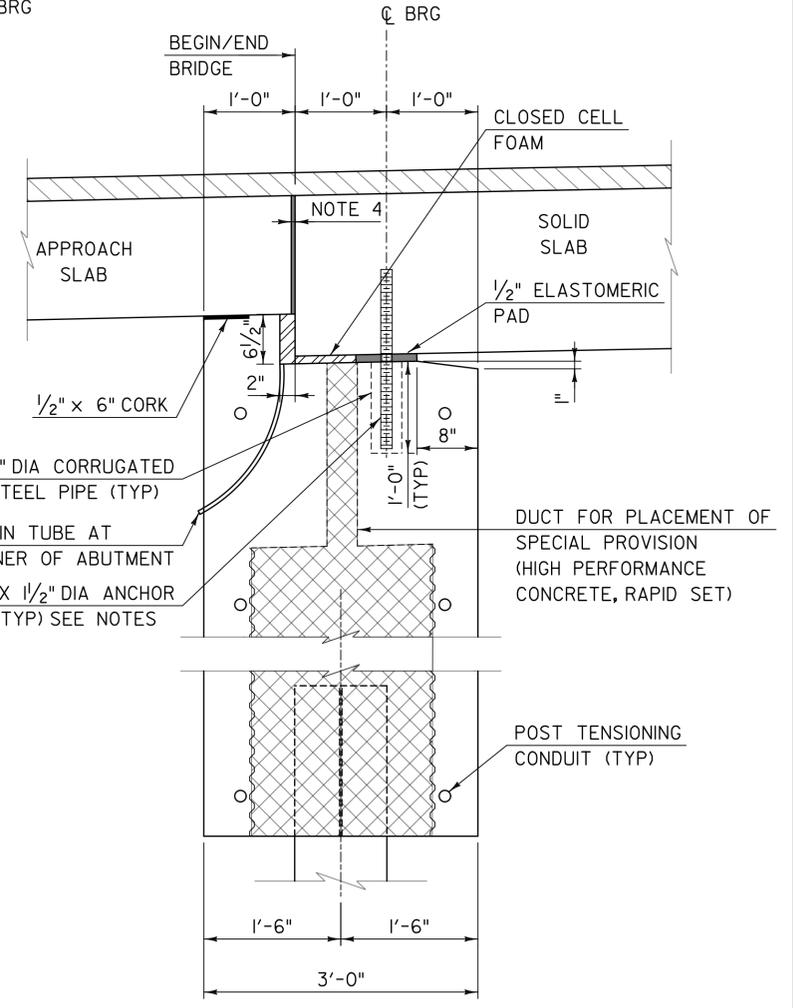


ABUTMENT NO 1 - PLAN
SCALE: 1/2" = 1'-0"



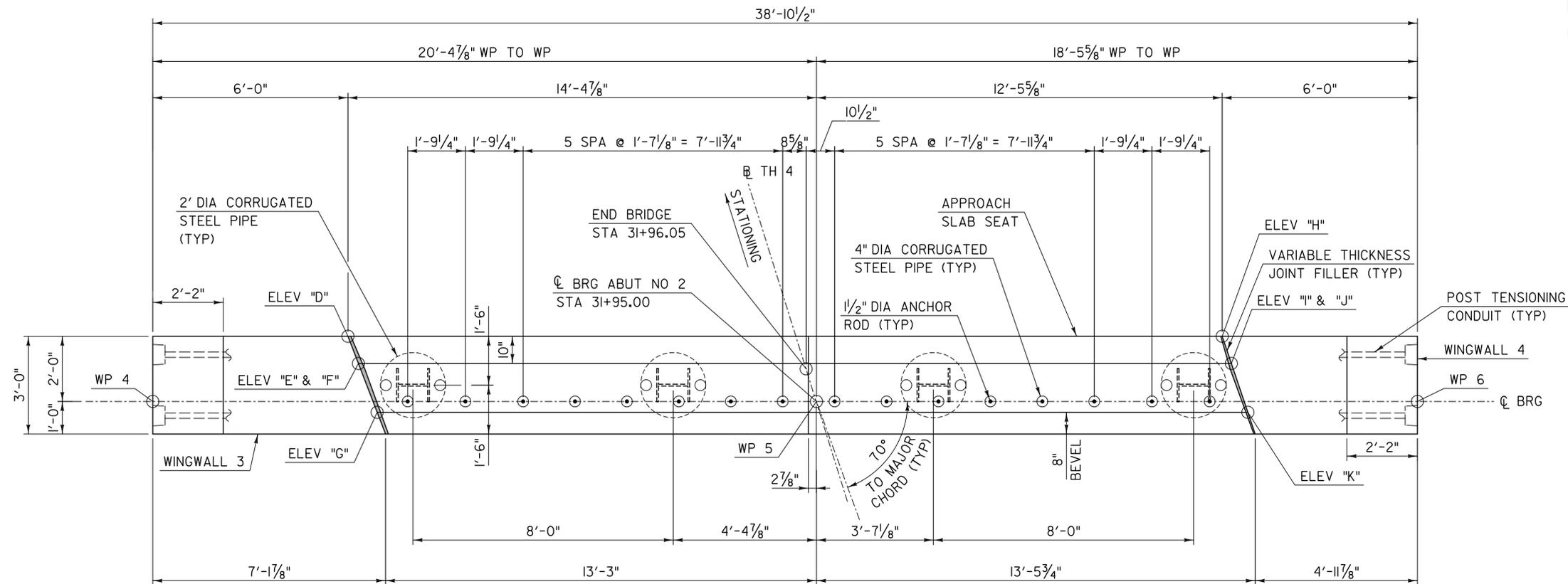
ABUTMENT NO 1 - ELEVATION
SCALE: 1/2" = 1'-0"

- NOTES:**
- ANCHOR RODS SHALL BE ASTM F1554 GRADE 105, GALVANIZED, AND SHALL MEET THE REQUIREMENTS OF SUBSECTION 714.08.
 - ANCHOR RODS SHALL BE INCIDENTAL TO ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS) (21" X 36)".
 - DUCTS FOR FILLING PILE CAVITIES SHALL BE SPACED ON OPPOSITE SIDES OF PILE CAVITY AND A MINIMUM OF 2" CLEAR FROM STEEL PIPES FOR ANCHOR RODS.
 - APPROACH SLABS SHALL BE INSTALLED FLUSH WITH END OF SOLIDS SLABS. ALL GAPS BETWEEN END OF APPROACH SLAB AND SOLIDS SLABS GREATER THAN 1/4" SHALL BE FILLED WITH MORTAR, TYPE IV. PAYMENT IS INCIDENTAL TO EACH APPROACH SLAB 540.10 OR 900.645, "SPECIAL PROVISION (CONTRACTOR - FABRICATED PRECAST CONCRETE STRUCTURES)" CONTRACT ITEM AS APPROPRIATE.



ABUTMENT - TYPICAL SECTION
SCALE: 1" = 1'-0"

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE	PLOT DATE: 5/20/2015
	PROJECT NUMBER: BO 1449(33)	
TYLIN INTERNATIONAL	FILE NAME: z13j078sub1.dgn	CHECKED BY: C. TAYLOR
	PROJECT LEADER: J. OLUND	SHEET 36 OF 111
	DESIGNED BY: D. MYERS	
ABUTMENT I PLAN, ELEVATION, & SECTION		

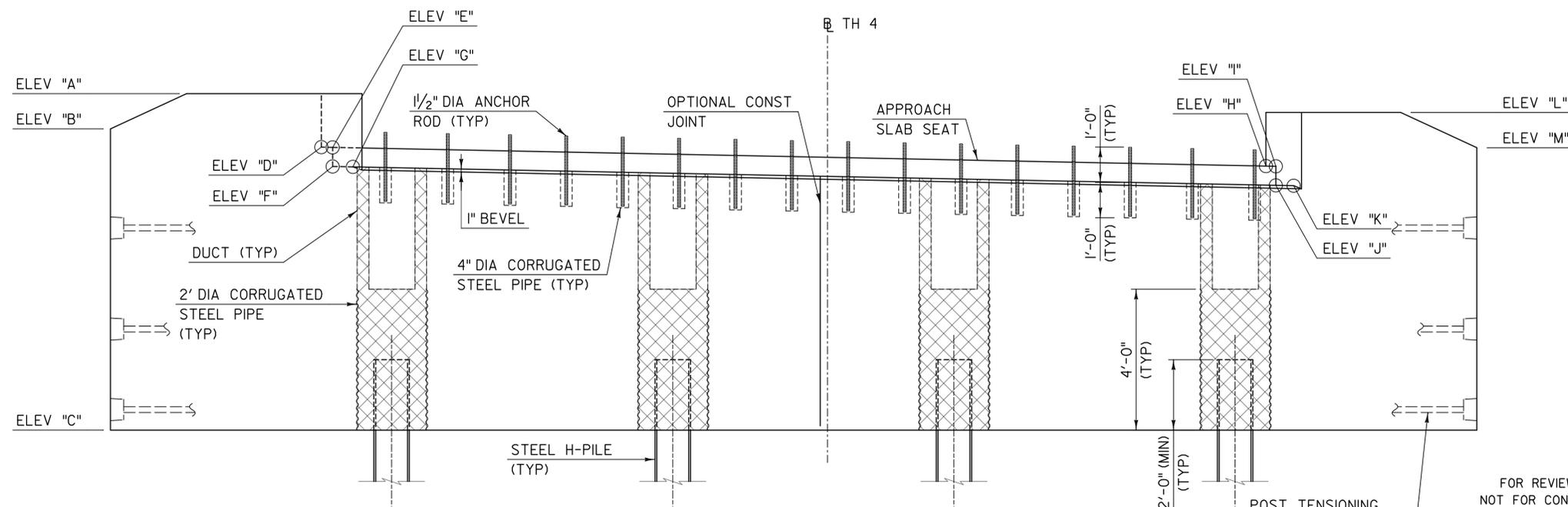


NOTES:
 1. SEE "ABUTMENT 1 PLAN, ELEVATION, & SECTION" FOR SECTION AND NOTES.

ABUTMENT NO 2 - PLAN

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

ABUTMENT ELEVATIONS	
ELEV "A"	857.92
ELEV "B"	856.92
ELEV "C"	848.50
ELEV "D"	856.36
ELEV "E"	856.37
ELEV "F"	855.83
ELEV "G"	855.86
ELEV "H"	855.96
ELEV "I"	855.97
ELEV "J"	855.43
ELEV "K"	855.46
ELEV "L"	857.52
ELEV "M"	856.52



ABUTMENT NO 2 - ELEVATION

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

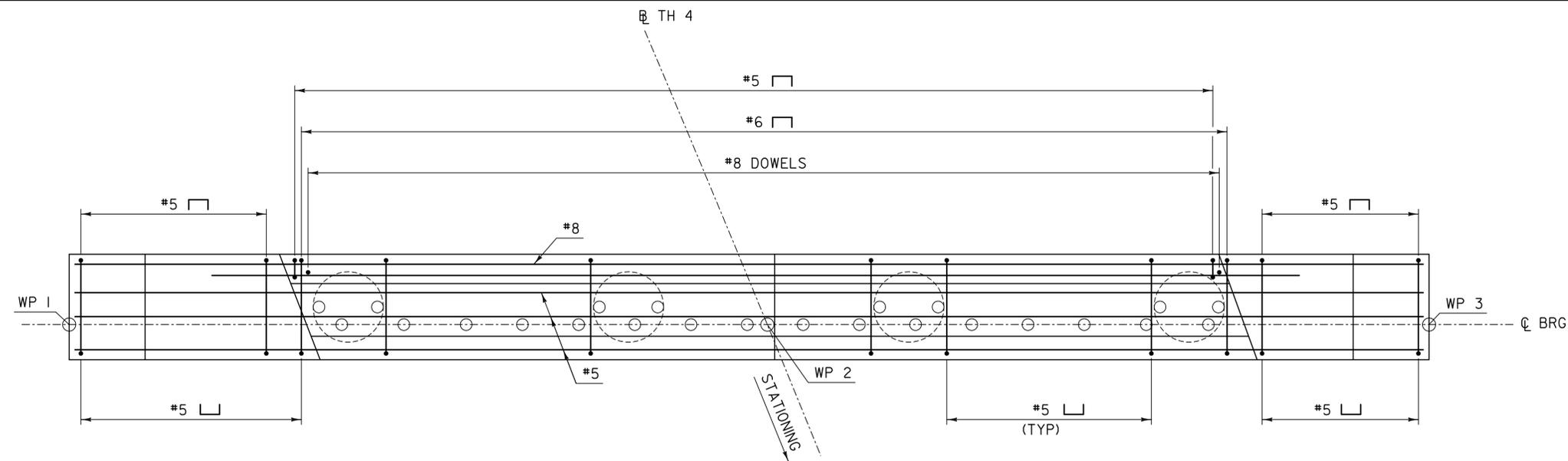
FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

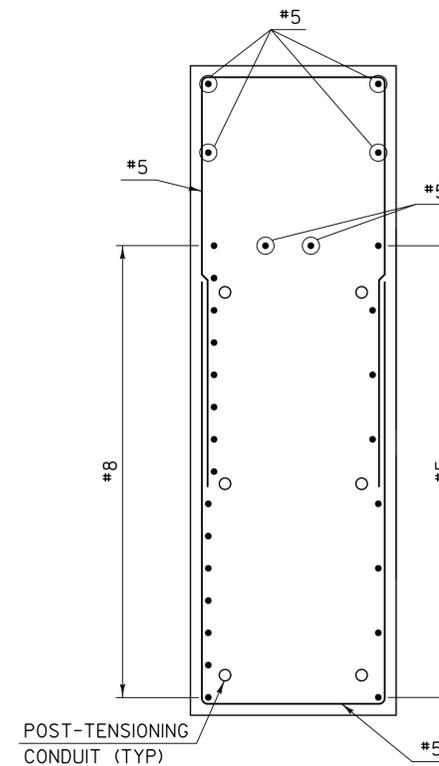
FILE NAME: z13j078sub2.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: D. MYERS
 ABUTMENT 2 PLAN AND ELEVATION

PLOT DATE: 5/20/2015
 DRAWN BY: S. MORGAN
 CHECKED BY: C. TAYLOR
 SHEET 37 OF 111



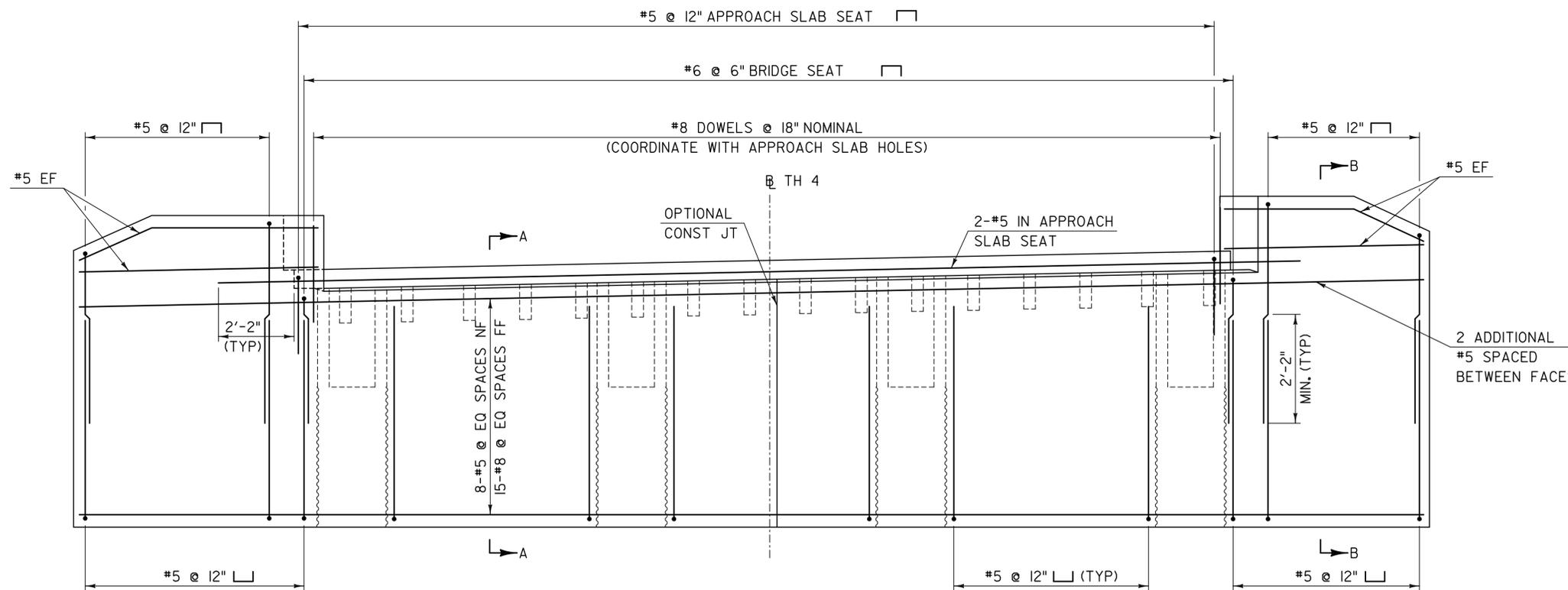
ABUTMENT REINFORCING PLAN

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



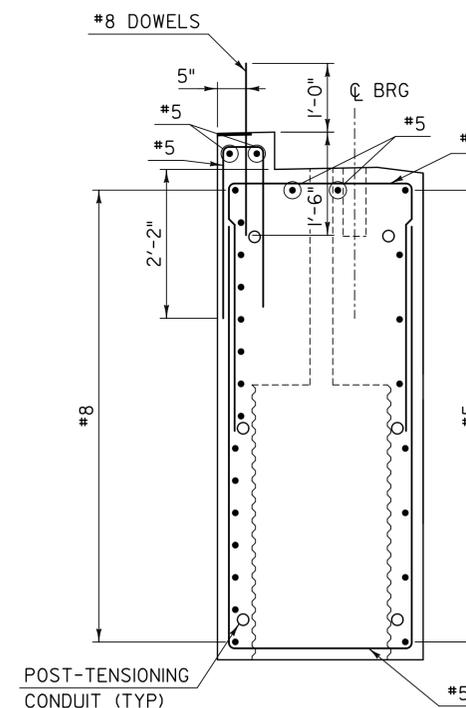
SECTION B-B

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



ABUTMENT REINFORCING ELEVATION

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



SECTION A-A

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

NOTES:

1. ABUTMENT NO 1 SHOWN; ABUTMENT NO 2 SIMILAR.
2. POST-TENSIONING AND PILES NOT SHOWN FOR CLARITY.

NOTE:

NF = NEAR FACE
 FF = FAR FACE
 EF = EACH FACE
 SPLICES NOT DETAILED
 SHALL BE DESIGNED.

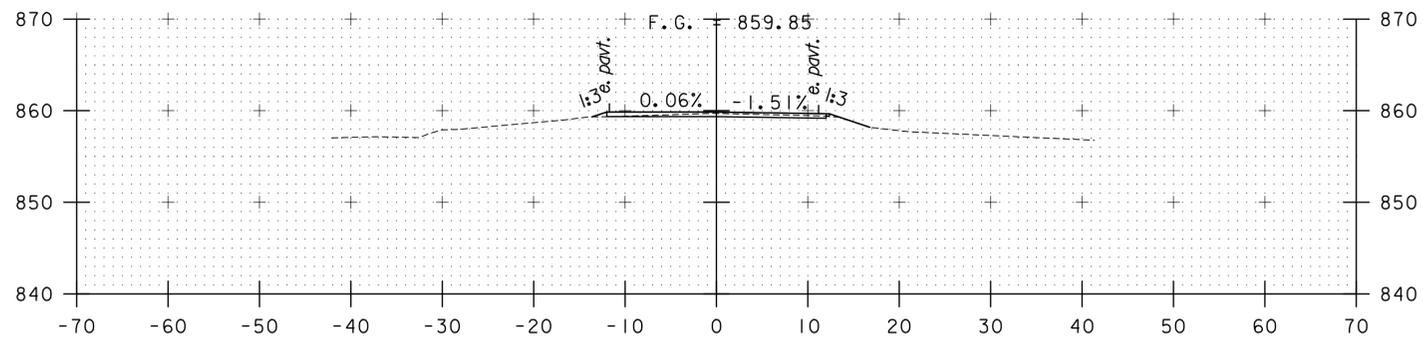
FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

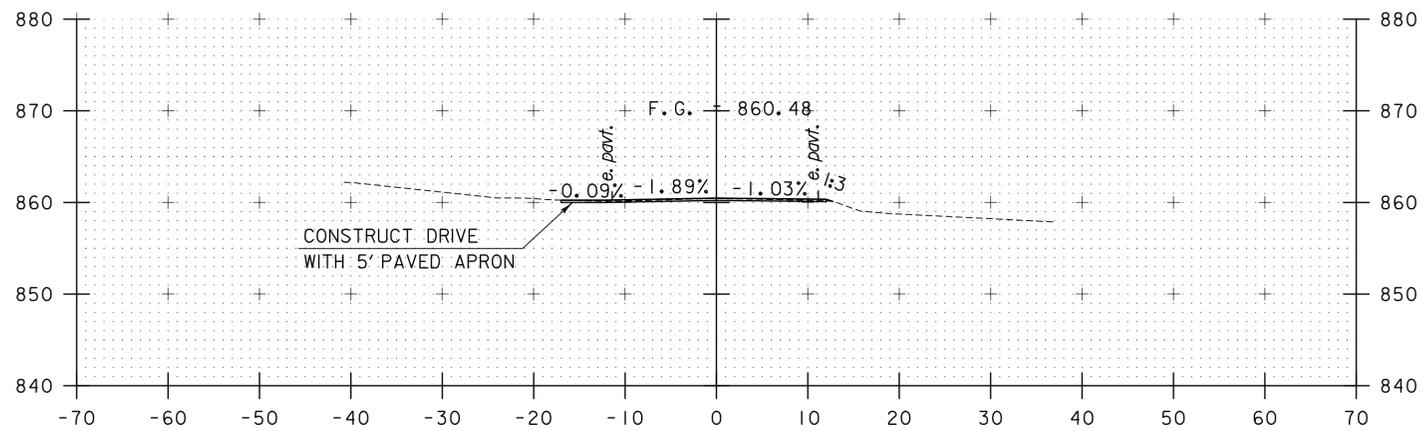
PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078sub3.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: D. MYERS
 ABUTMENT REINFORCING

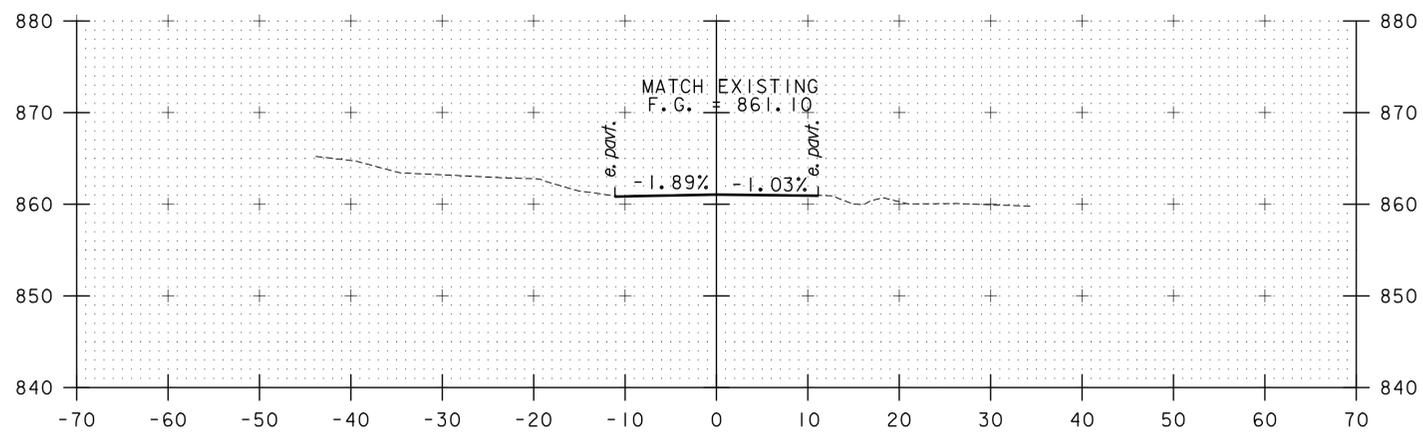
PLOT DATE: 5/20/2015
 DRAWN BY: S. MORGAN
 CHECKED BY: C. TAYLOR
 SHEET 38 OF 111



29+00

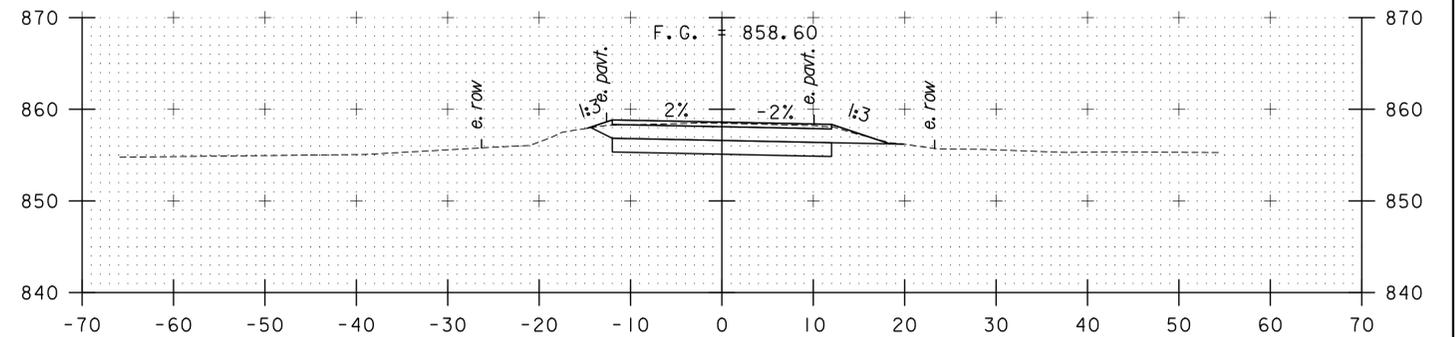


28+75



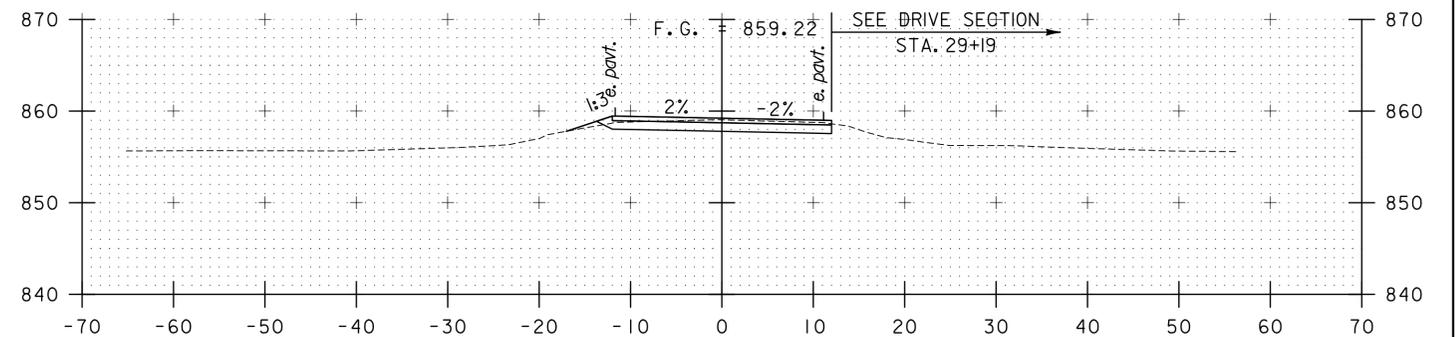
28+50

BEGIN APPROACH STA 28+50.00

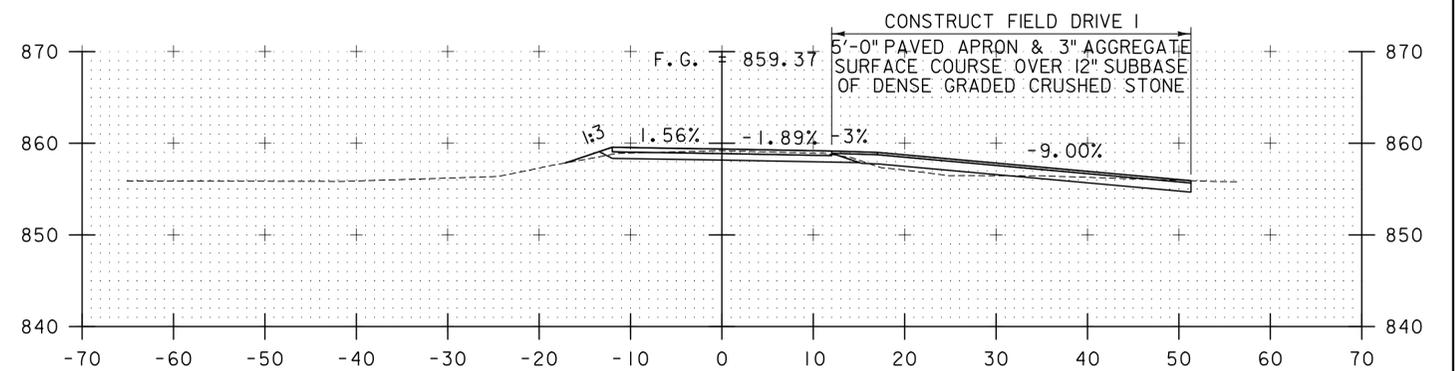


29+50

BEGIN PROJECT STA 29+40.00



29+25



29+19

STA. 28+50 TO STA. 29+50

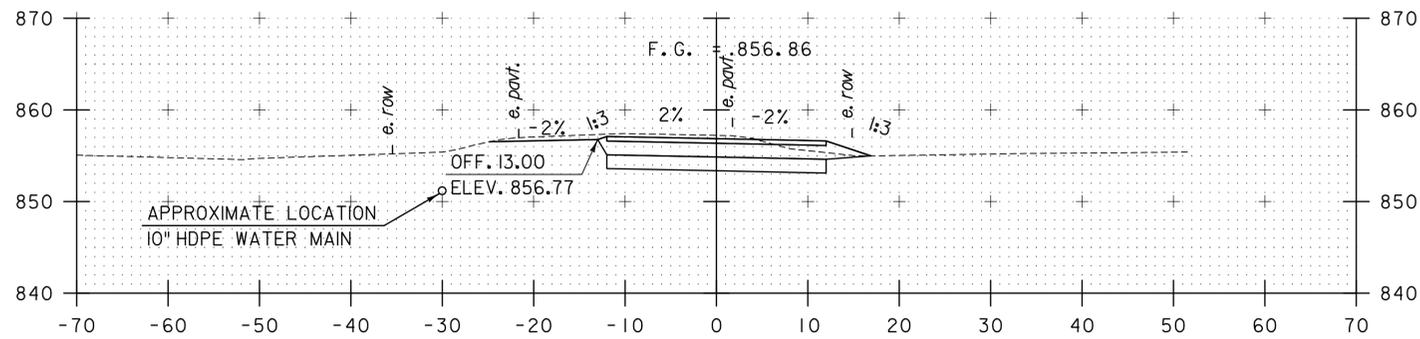
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLINTERNATIONAL

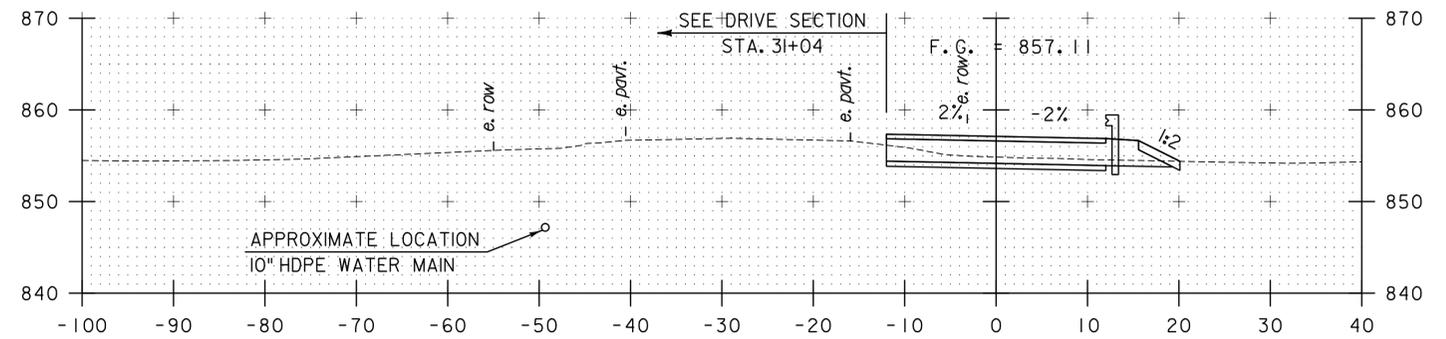
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078xsl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TH4 CROSS SECTIONS I

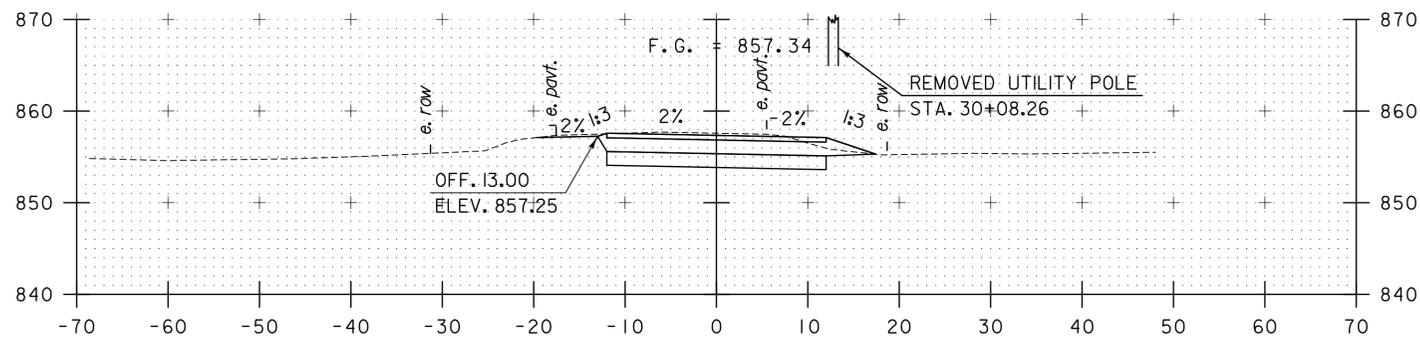
PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 39 OF 111



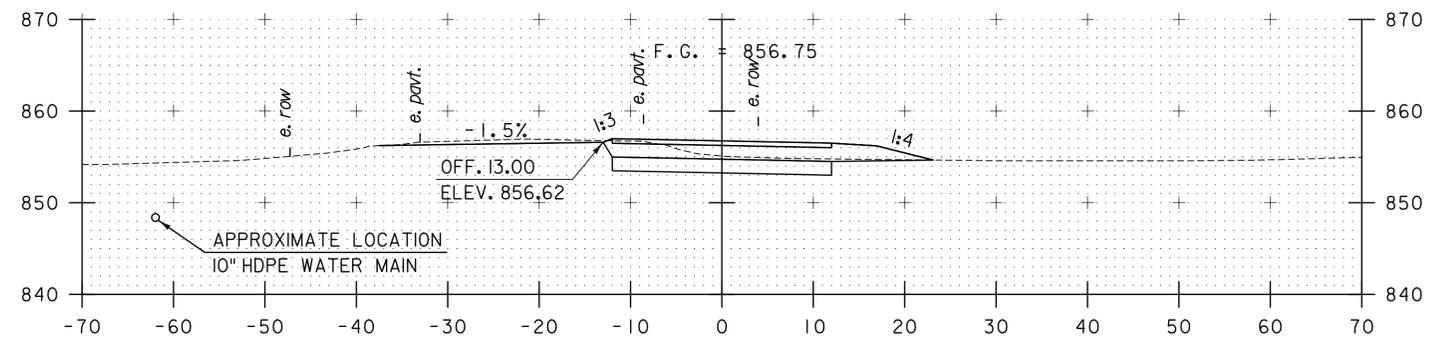
30+25



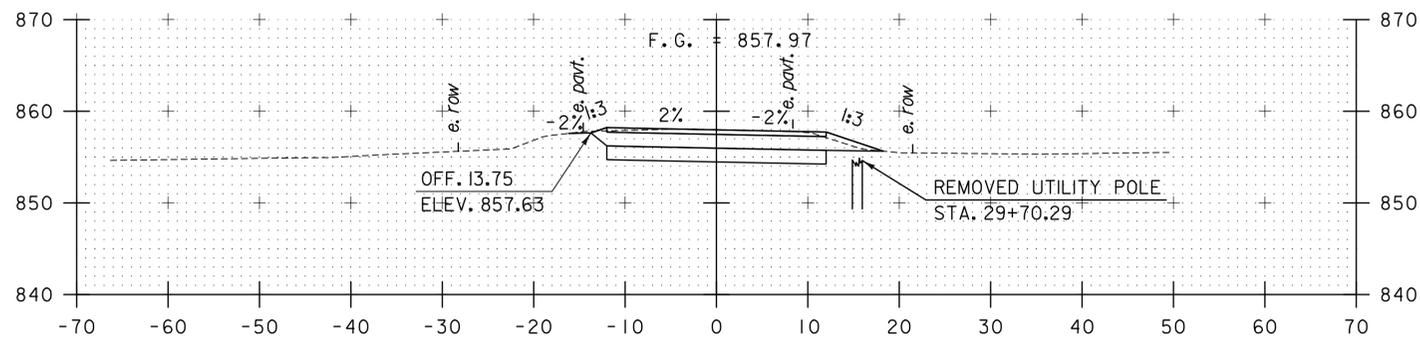
31+00



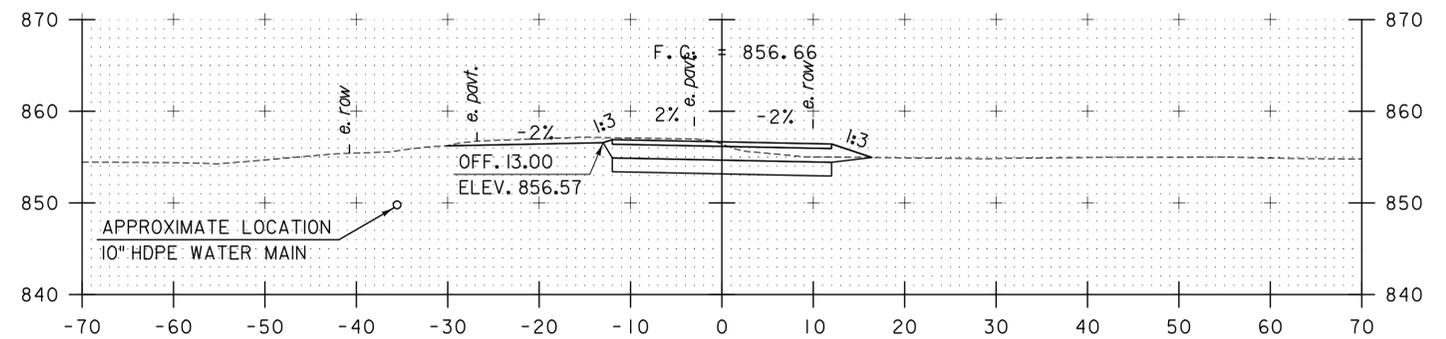
30+00



30+75



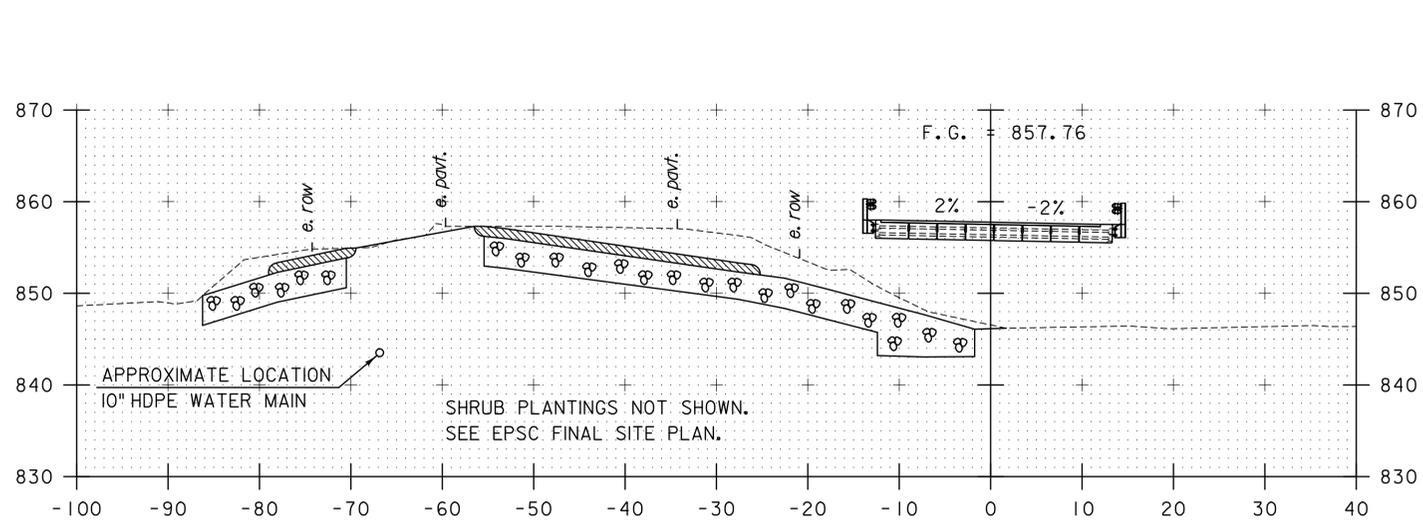
29+75



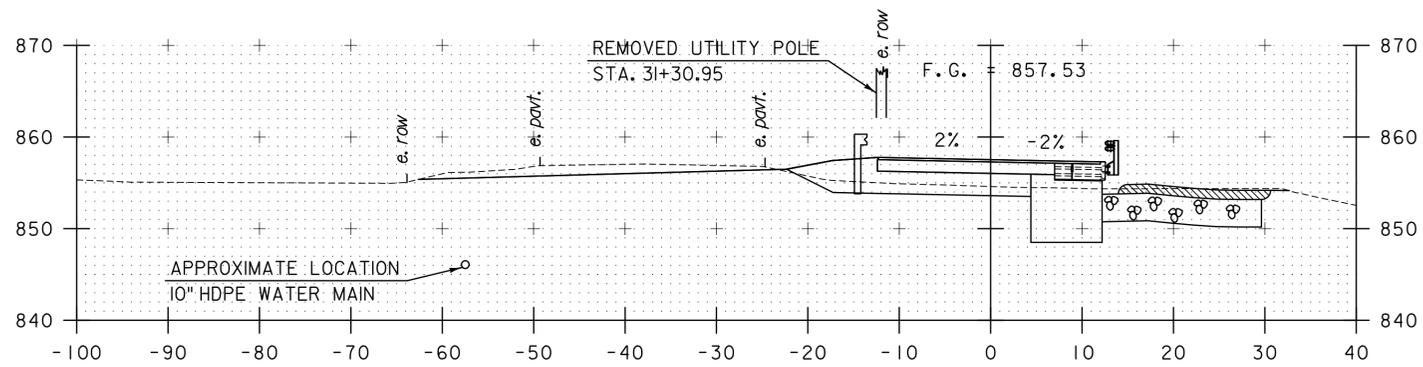
30+50

STA. 29+75 TO STA. 31+00

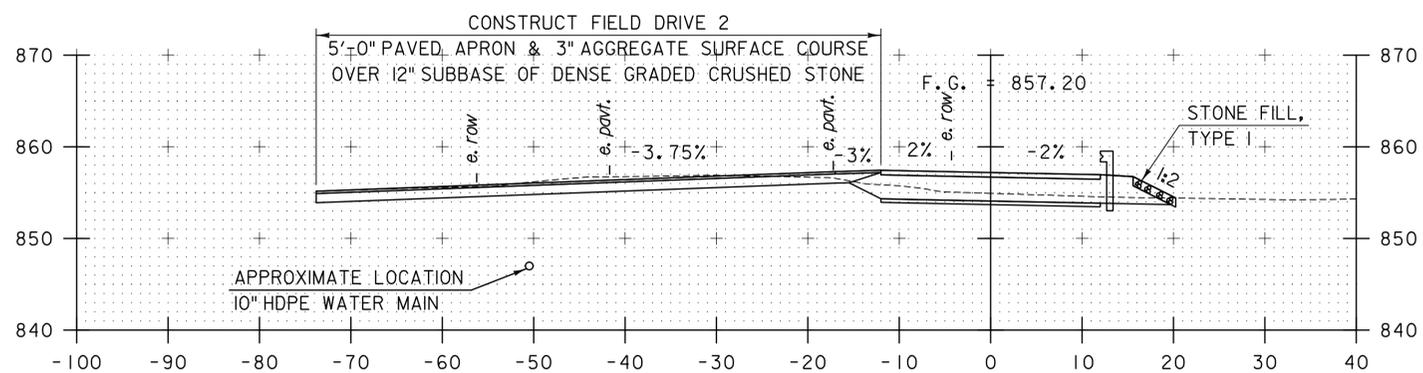
FOR REVIEW ONLY NOT FOR CONSTRUCTION TYL INTERNATIONAL	PROJECT NAME: BARTON VILLAGE PROJECT NUMBER: BO 1449(33)
	FILE NAME: z13j078xsl.dgn PROJECT LEADER: J. OLUND DESIGNED BY: B. TOOTHAKER TH4 CROSS SECTIONS 2



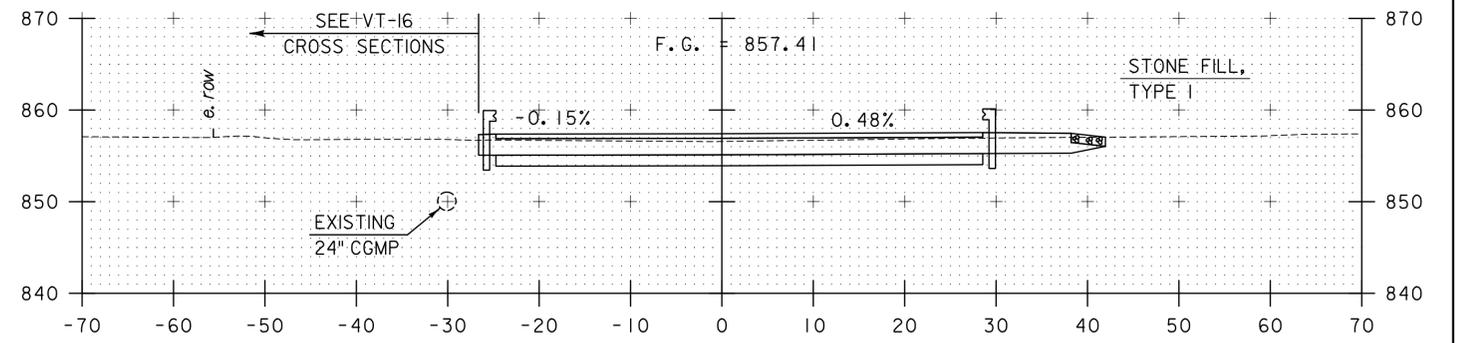
31+50
BEGIN BRIDGE STA 31+27.92



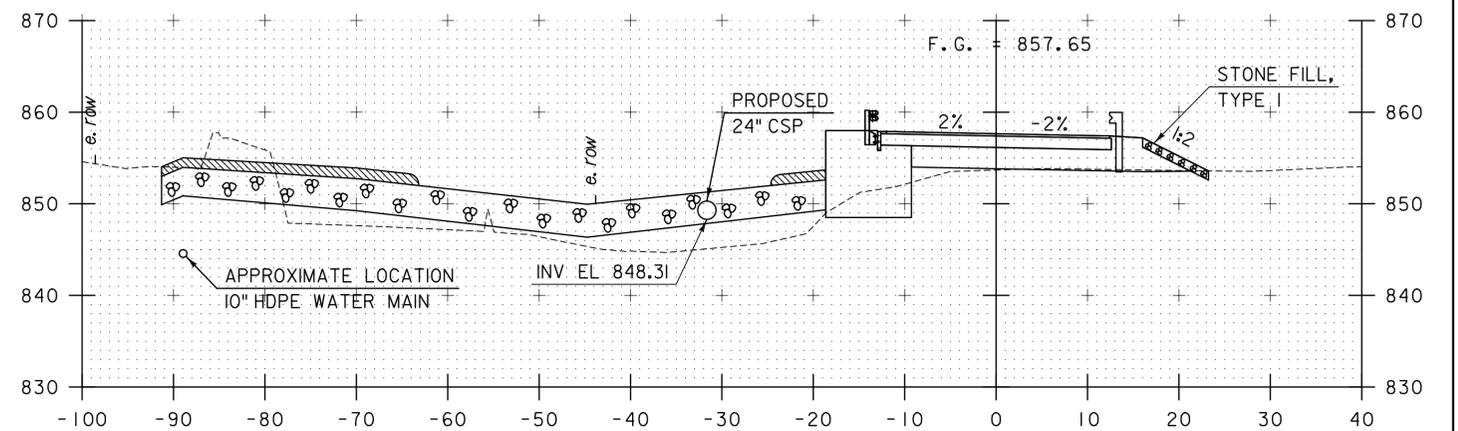
31+25



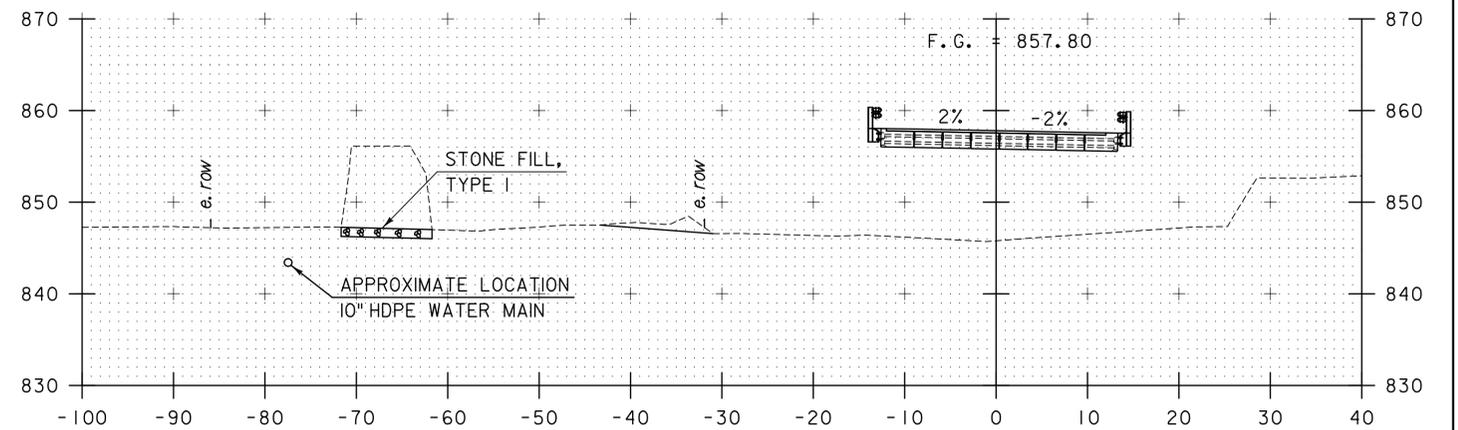
31+04
(FOLLOWS CENTERLINE OF DRIVE)



32+25



32+00
END BRIDGE STA 31+96.05



31+75

STA. 31+04 TO STA. 32+25

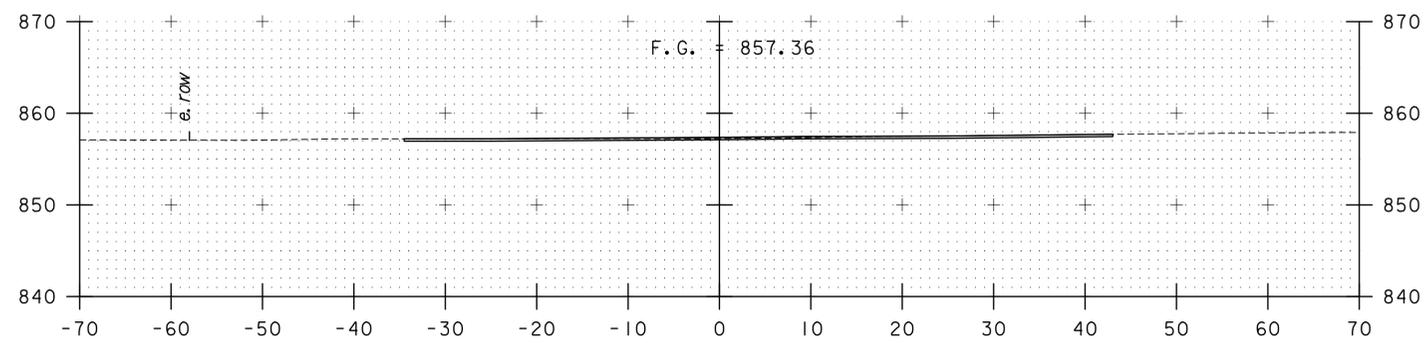
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078xsl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TH4 CROSS SECTIONS 3

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 41 OF 111



32+30
END PROJECT STA 32+30.00

STA. 32+30 TO STA. 32+30

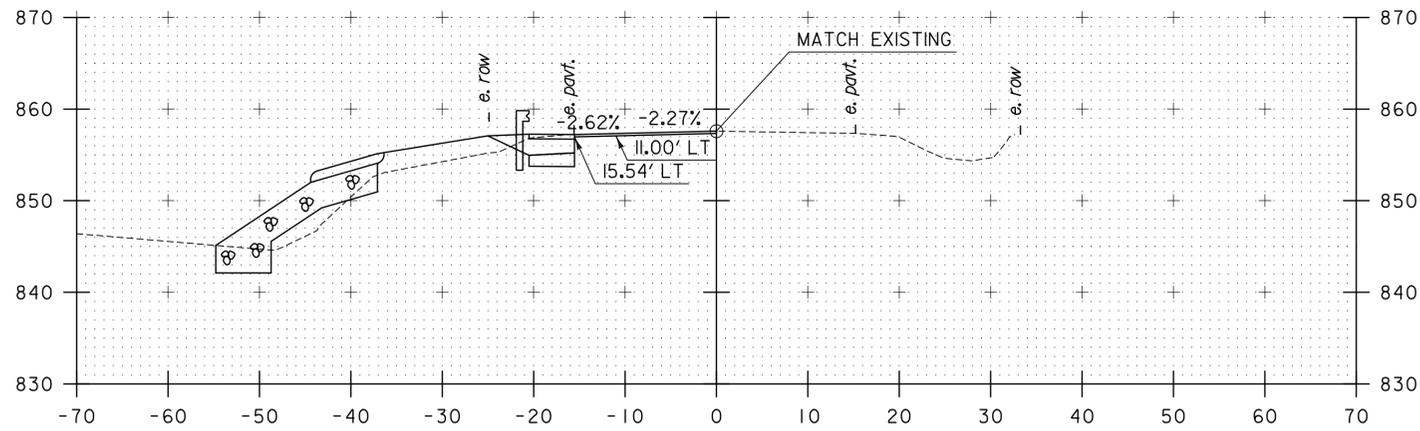
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

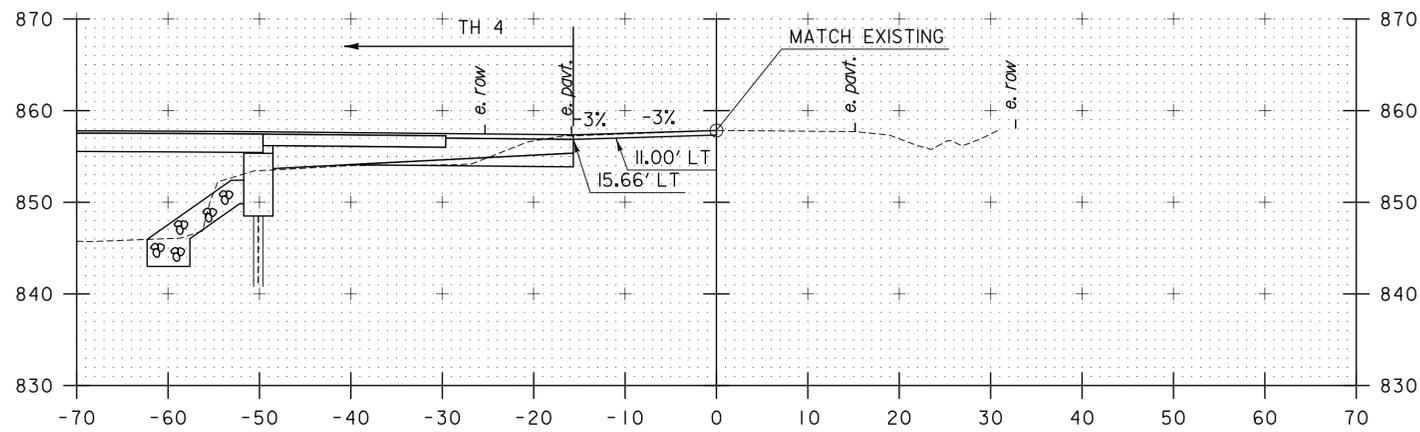
TYLININTERNATIONAL

FILE NAME: z\3\078\ysl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TH4 CROSS SECTIONS 4

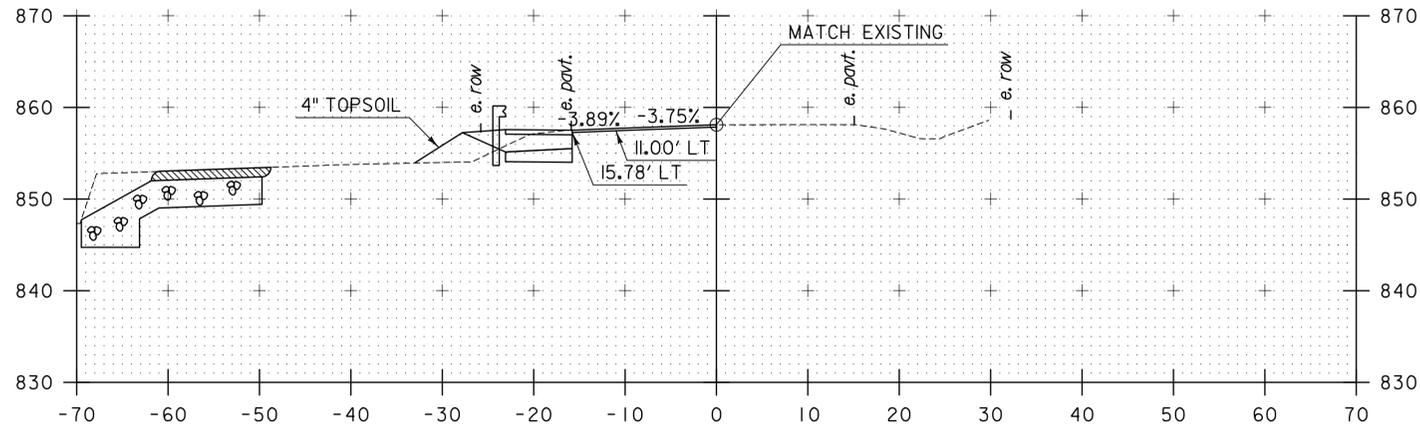
PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 42 OF 111



61+75



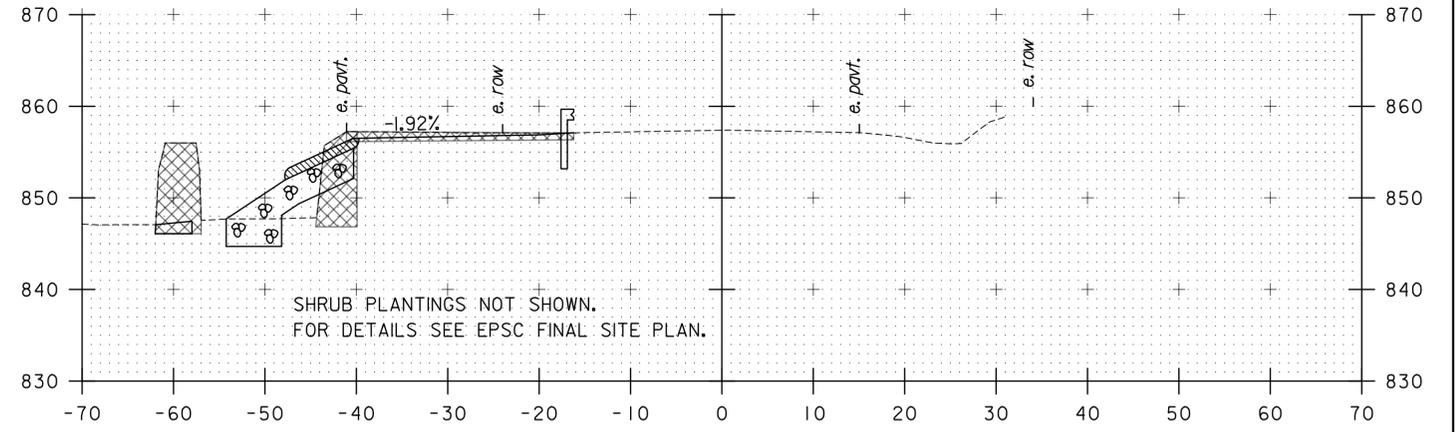
61+50



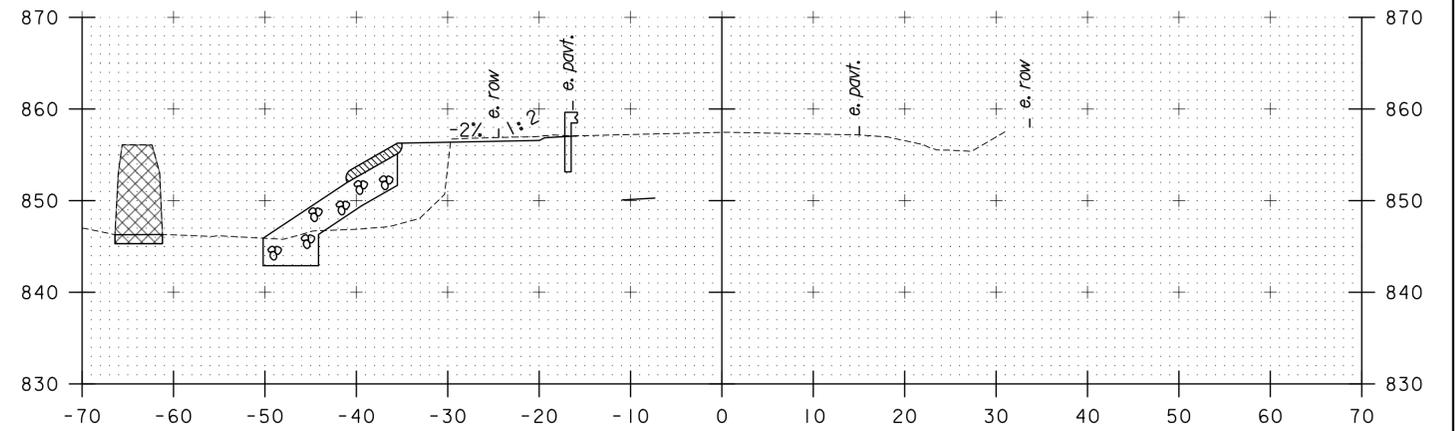
61+25

BEGIN APPROACH STA 61+06.96
LIMIT OF WORK STA 60+94.95

NOTES: WATER AND SEWER
LINES BELOW VT 16 RIGHT
DITCH NOT SHOWN.

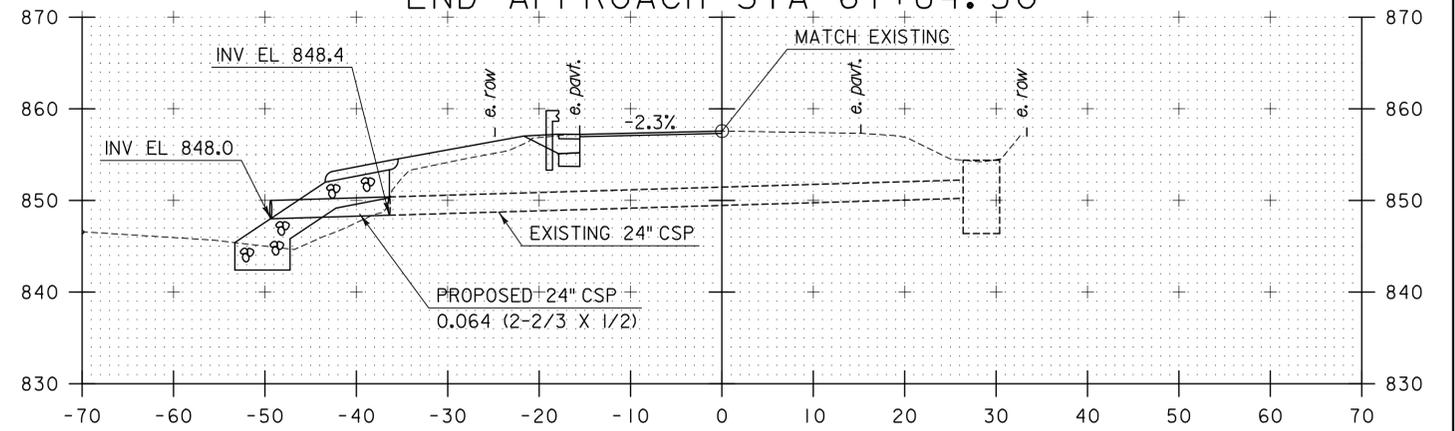


62+25



62+00

END APPROACH STA 61+84.50



61+79

SKewed 3° 31' 48" BACK RIGHT

STA. 61+25 TO STA. 62+25

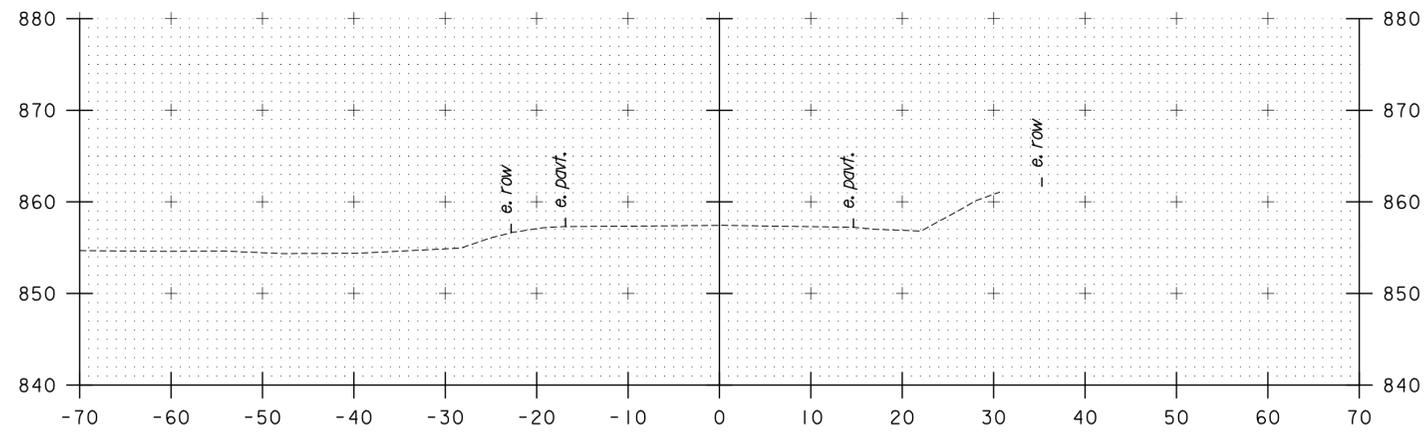
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

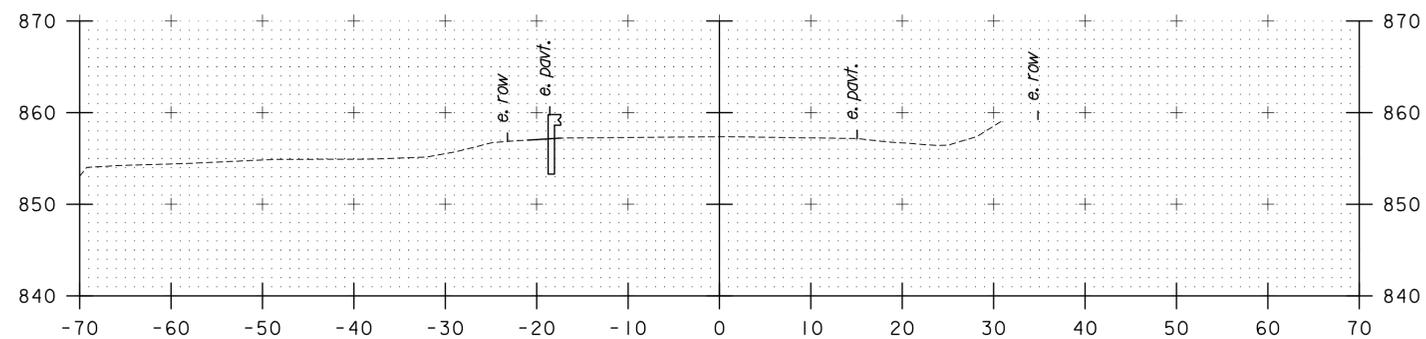
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078xs2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
VT16 CROSS SECTIONS I

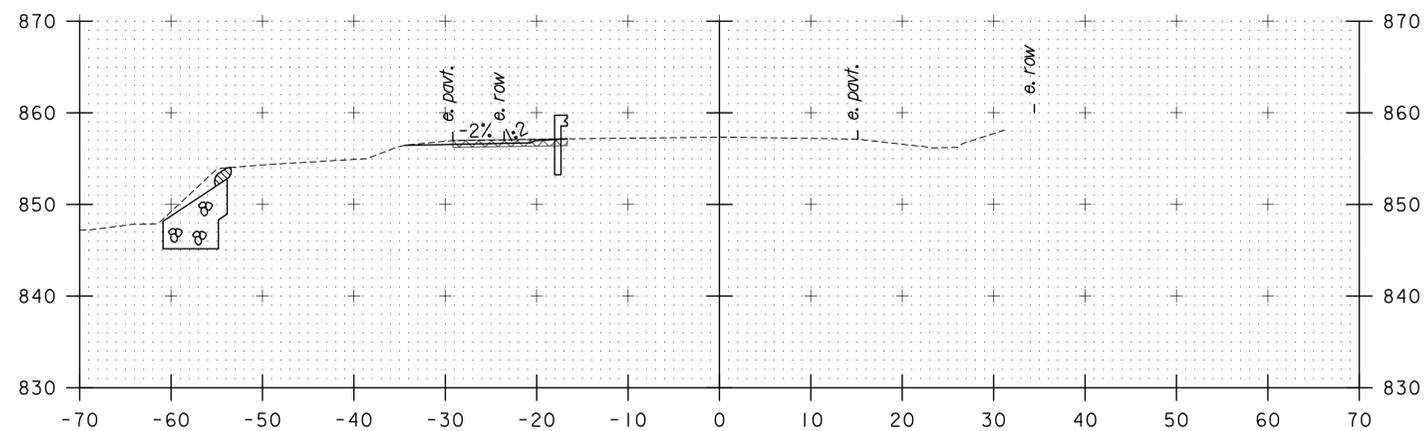
PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 43 OF 111



63+00
LIMIT OF WORK STA 62+90.28



62+75



62+50

STA. 62+50 TO STA. 63+00

NOTES: WATER AND SEWER LINES BELOW
VT 16 RIGHT DITCH NOT SHOWN.

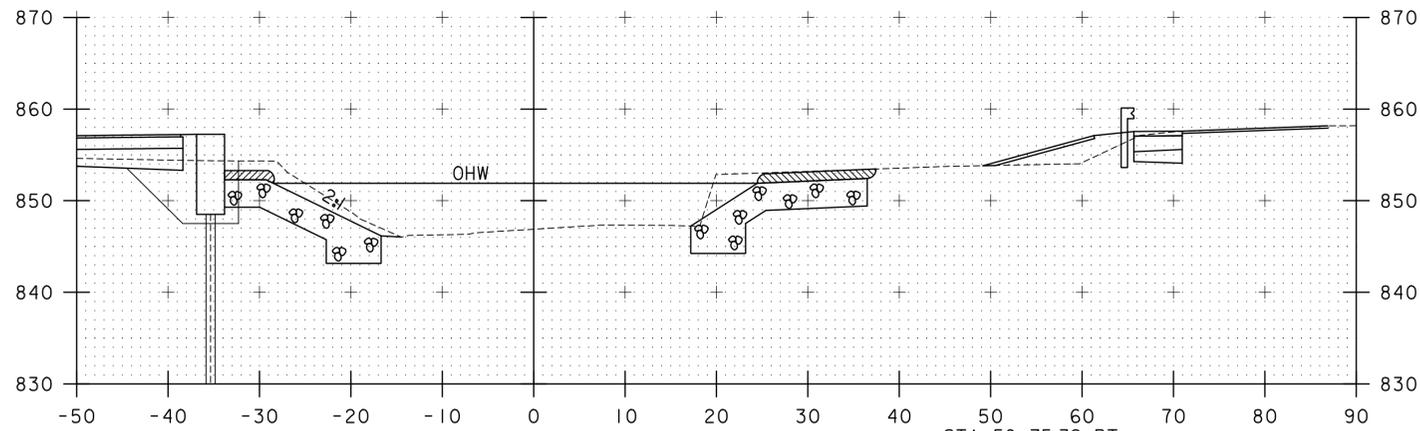
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLINTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z\3\078xs2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
VT16 CROSS SECTIONS 2

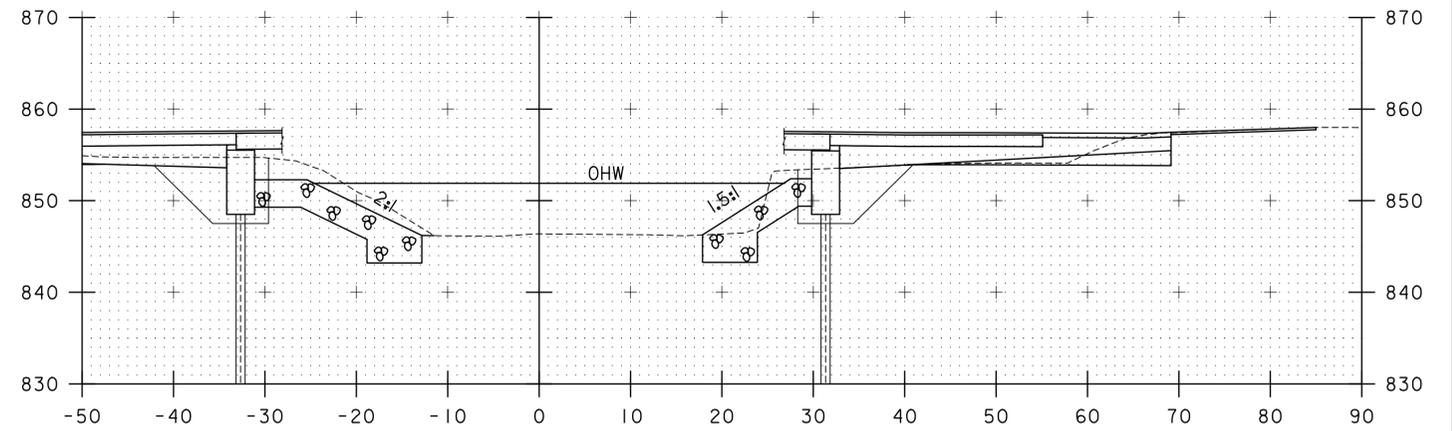
PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 44 OF 111



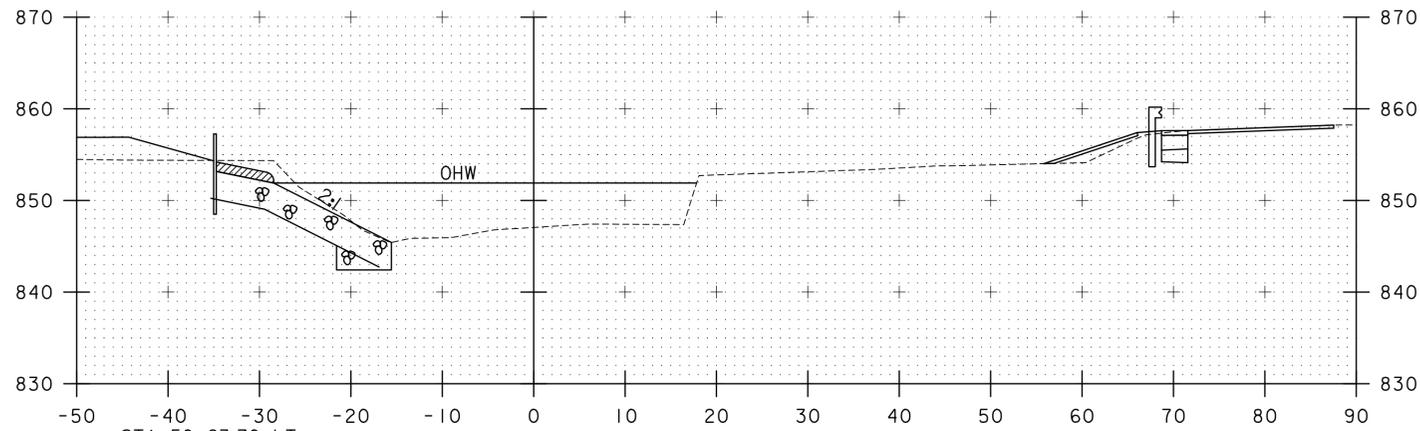
NO GRUBBING MATERIAL BENEATH SUPERSTRUCTURE

50+80

STA 50+75.39, RT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 BEGIN GEOTEXTILE UNDER STONE FILL
 BEGIN STONE FILL, TYPE III
 BEGIN GRUBBING MATERIAL

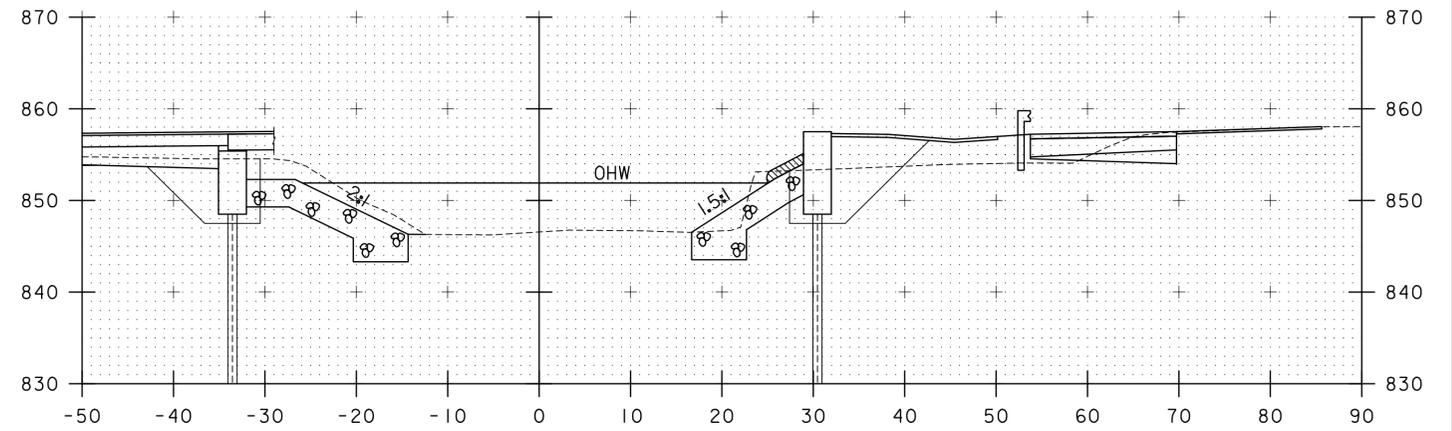


50+95



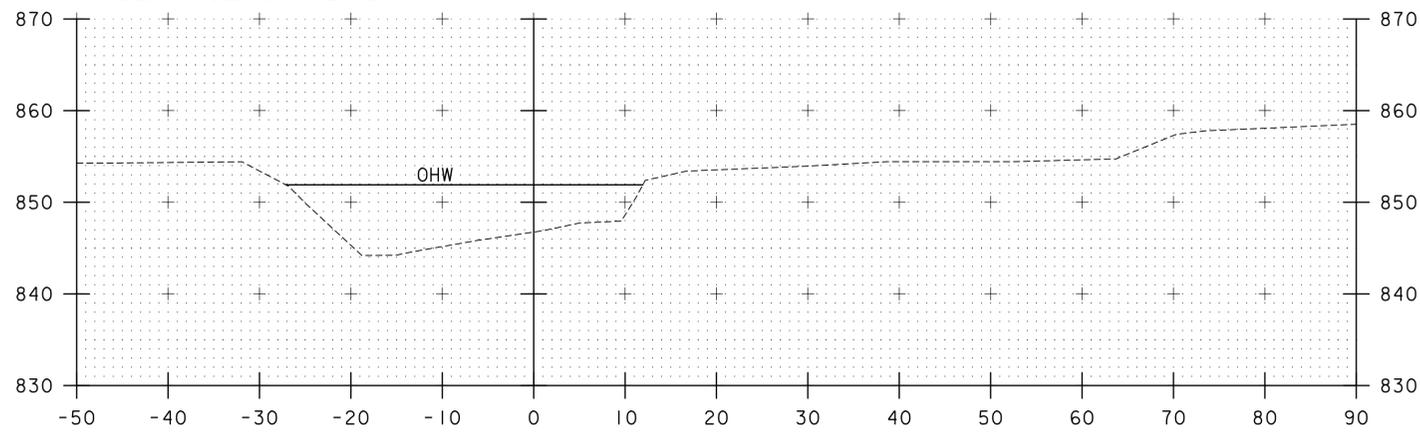
STA 50+63.70, LT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 BEGIN GEOTEXTILE UNDER STONE FILL
 BEGIN STONE FILL, TYPE III
 BEGIN GRUBBING MATERIAL

50+75

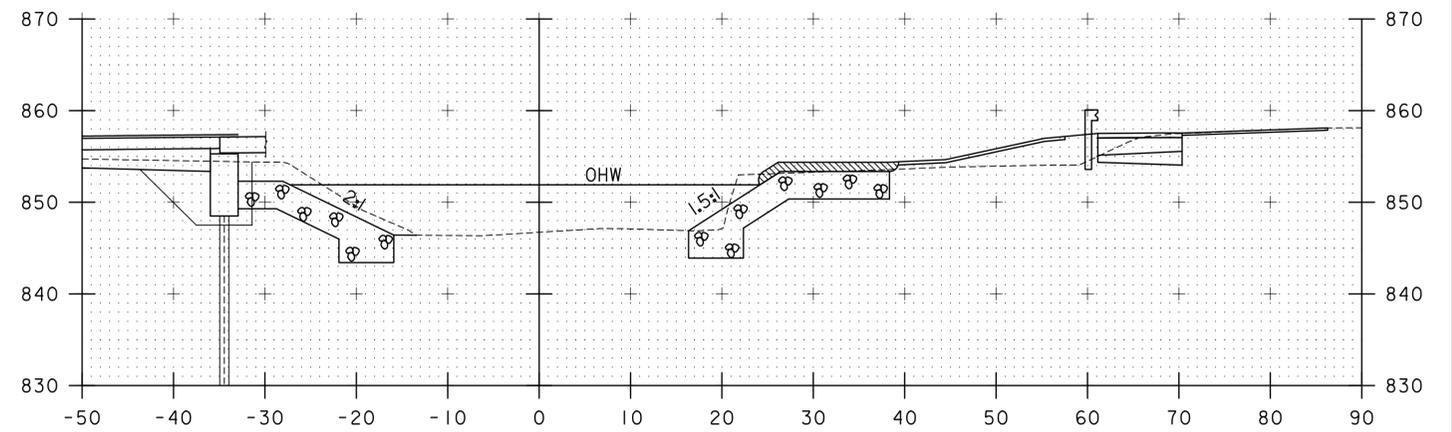


NO GRUBBING MATERIAL BENEATH SUPERSTRUCTURE

50+90



50+50



50+85

STA. 50+50 TO STA. 50+95

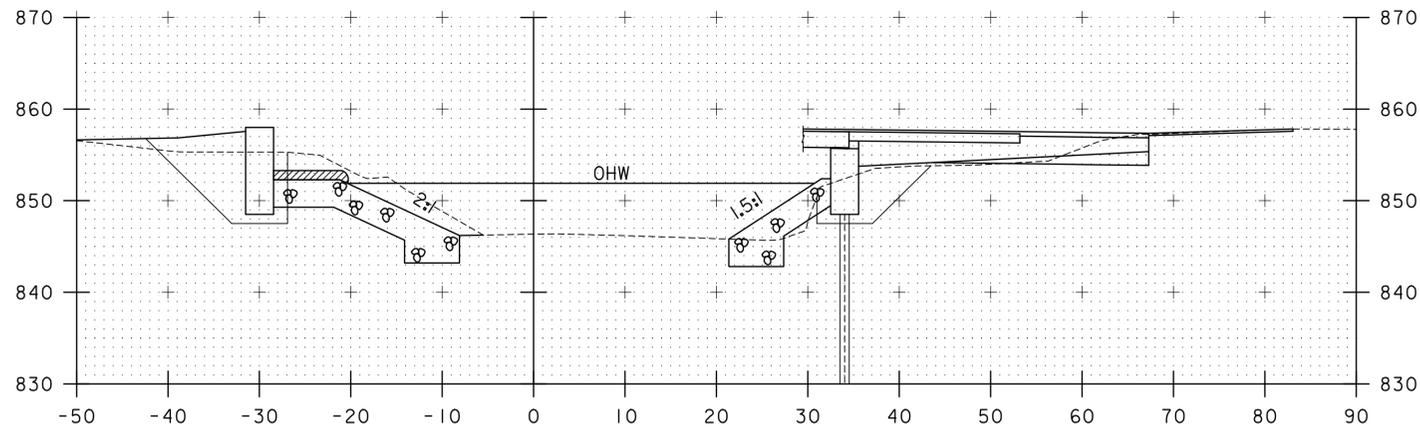
FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

TYLINTERNATIONAL

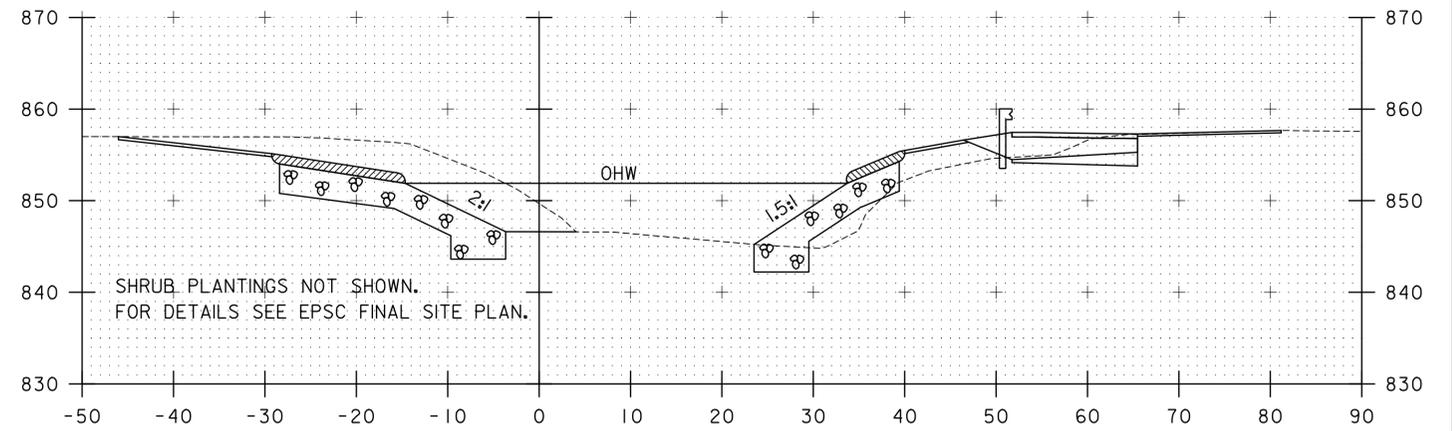
PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

FILE NAME: z\3\078xschnl.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 CHANNEL CROSS SECTIONS 1

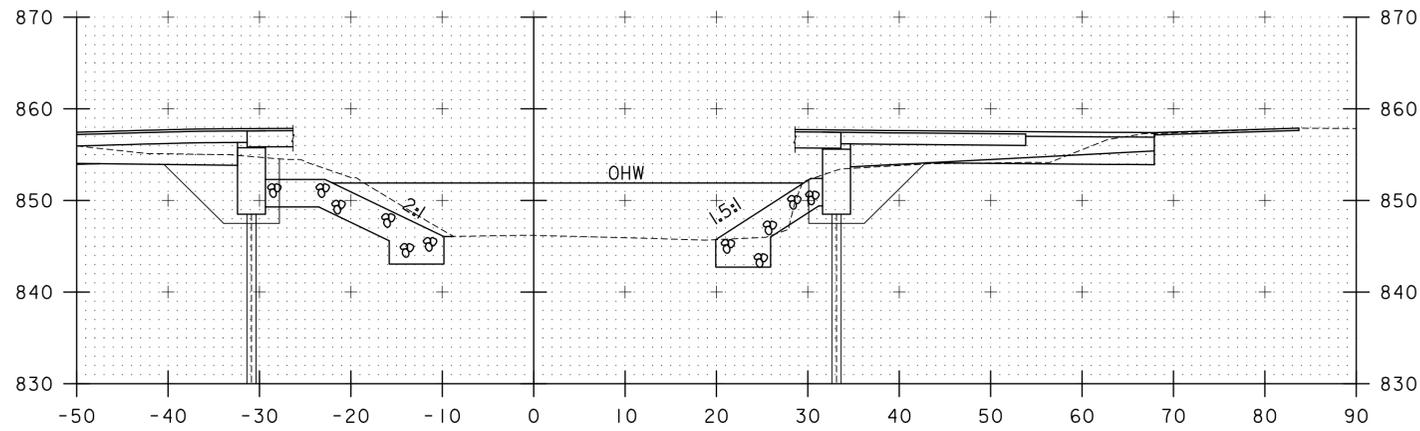
PLOT DATE: 5/20/2015
 DRAWN BY: J. OLUND
 CHECKED BY: T. POULIN
 SHEET 45 OF III



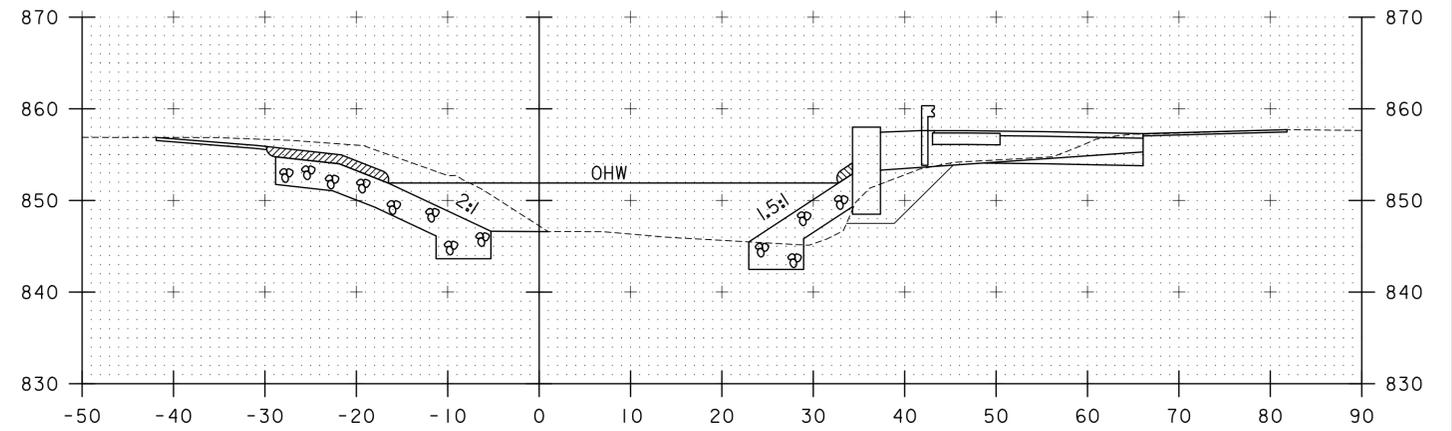
51+10



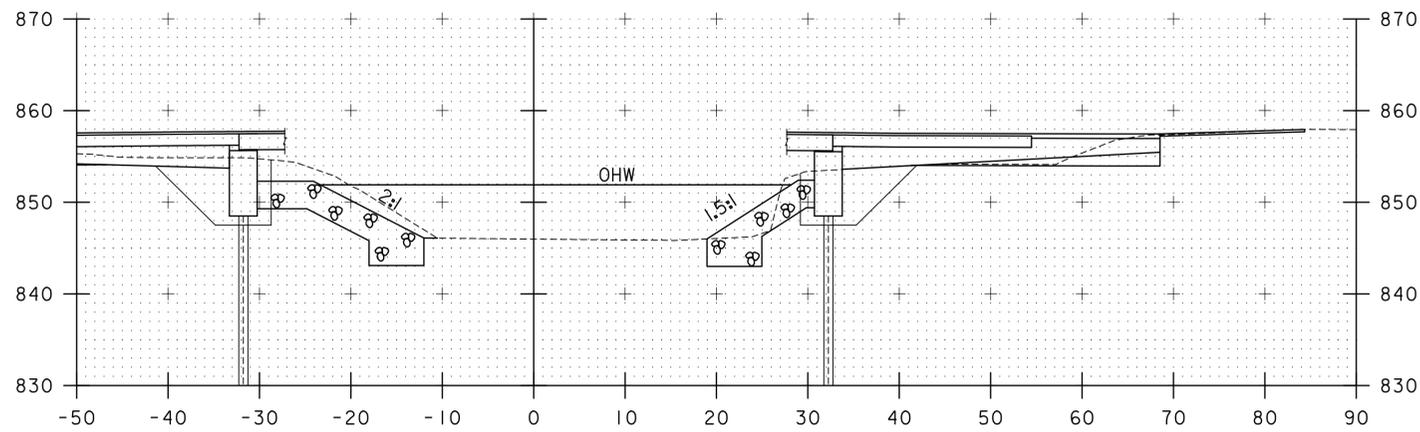
51+25



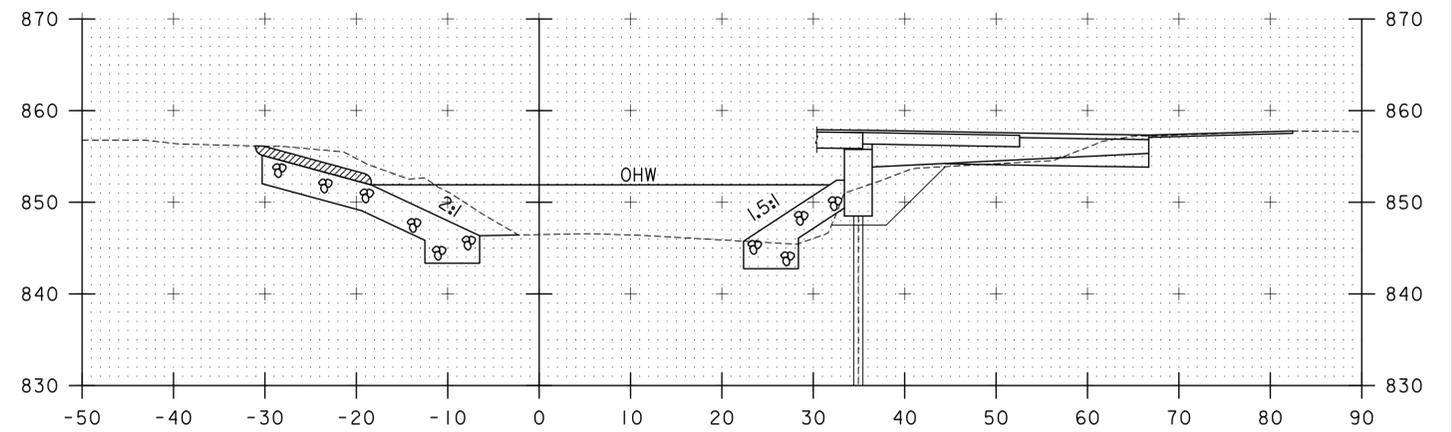
51+05



51+20



51+00



51+15

STA. 51+00 TO STA. 51+25

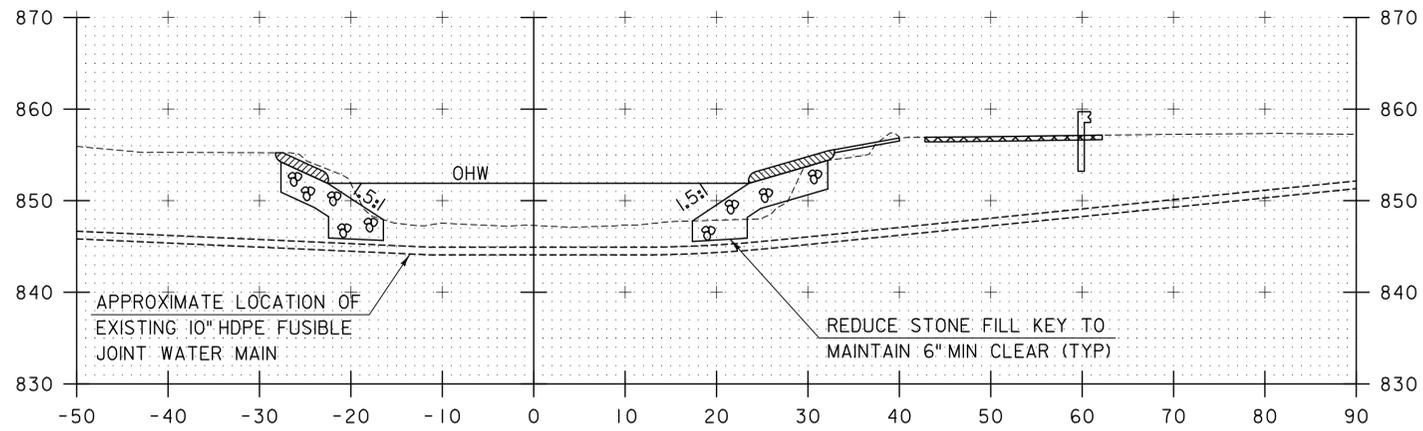
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

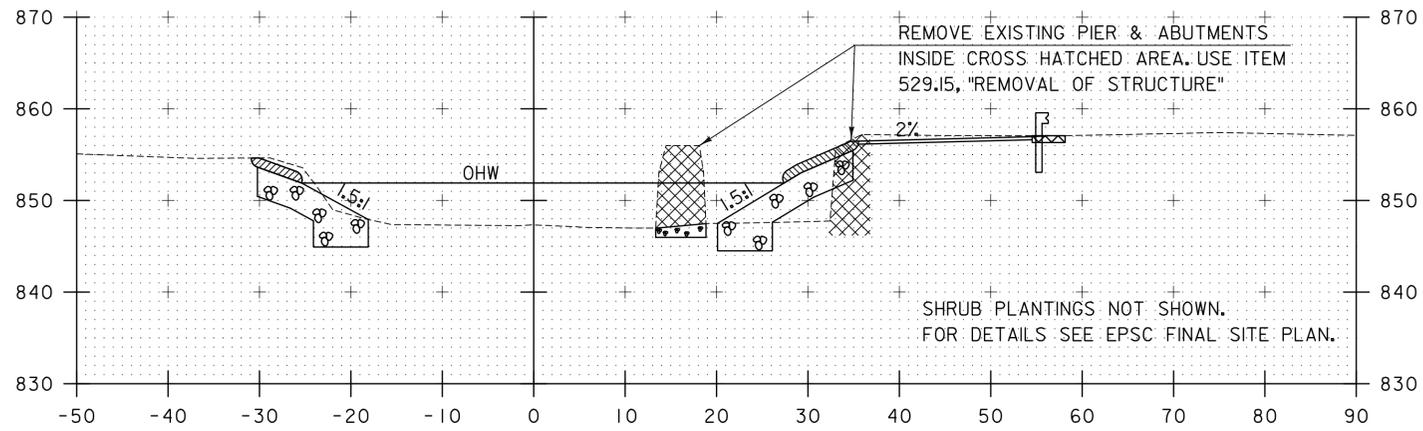
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078xschnl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
CHANNEL CROSS SECTIONS 2

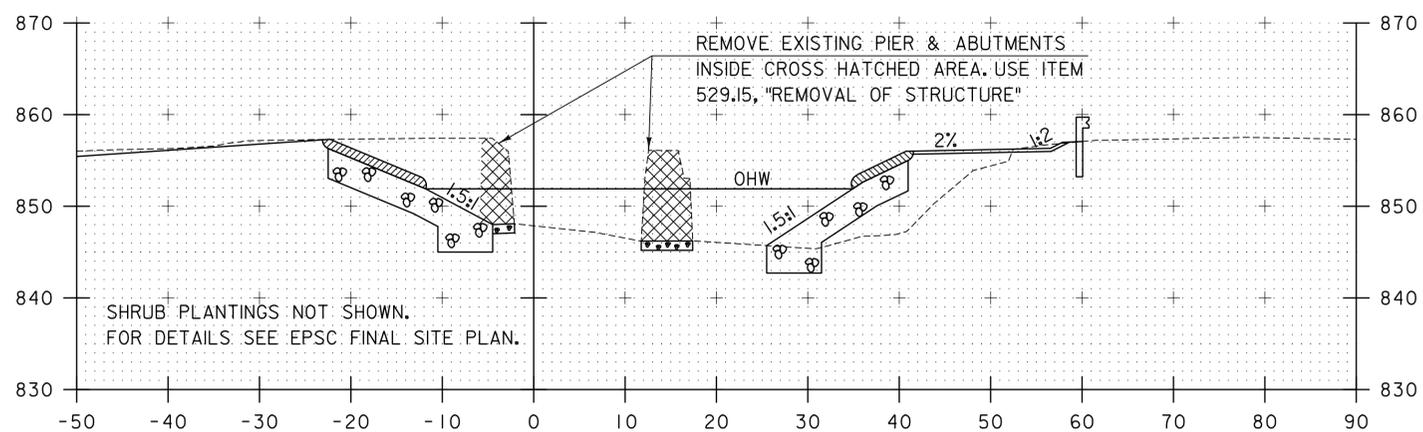
PLOT DATE: 5/20/2015
DRAWN BY: J. OLUND
CHECKED BY: T. POULIN
SHEET 46 OF 111



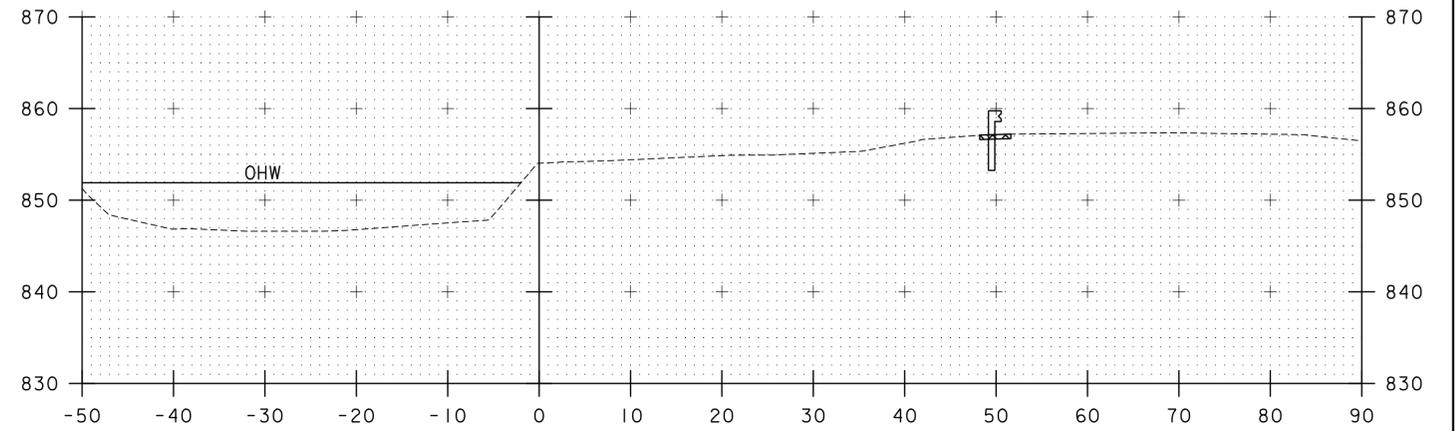
51+78.16
SKEWED SECTION



51+75

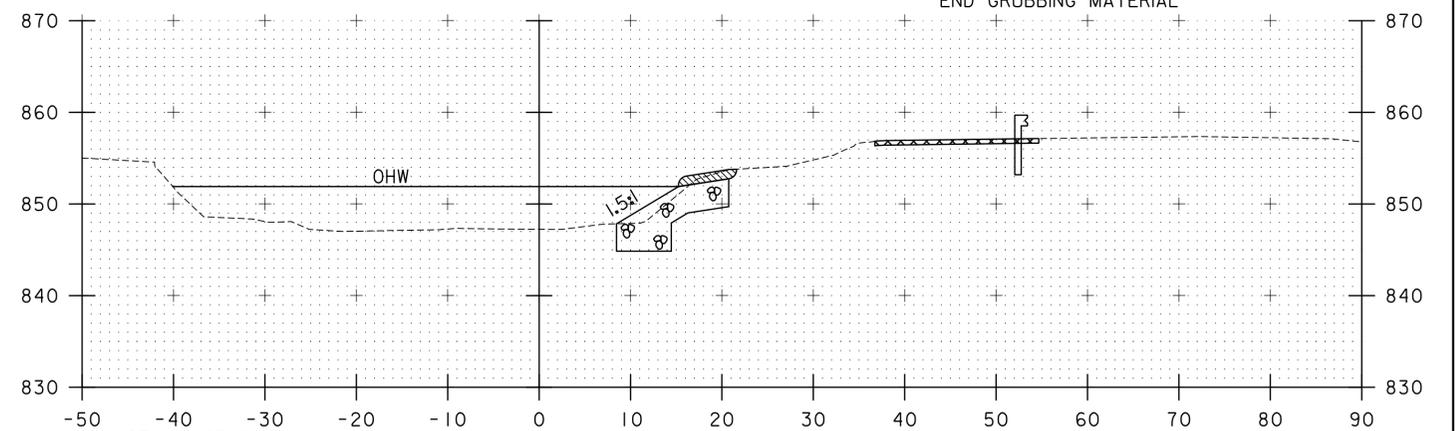


51+50



52+25

STA 52+04.73, RT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE III
END GRUBBING MATERIAL



52+00

STA 51+83.I2, LT
END UNCLASSIFIED CHANNEL EXCAVATION
END GEOTEXTILE UNDER STONE FILL
END STONE FILL, TYPE III
END GRUBBING MATERIAL

STA. 51+50 TO STA. 52+25

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078xschnl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
CHANNEL CROSS SECTIONS 3

PLOT DATE: 5/20/2015
DRAWN BY: J. OLUND
CHECKED BY: T. POULIN
SHEET 47 OF III

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 58 ON TH-4 IN BARTON VILLAGE. BRIDGE 58 WILL BE REPLACED WITH EIGHT, 21 INCH DEEP PRE-STRESSED CONCRETE SOLID SLABS, SPANNING 66 FEET OVER THE BARTON RIVER, ON NEW ABUTMENTS ON A NEW ALIGNMENT. BRIDGE 58 IS APPROXIMATELY 50 FT WEST OF THE INTERSECTION OF ROARING BROOK RD (TH-4) AND GLOVER RD (TH-2). WORK WILL INVOLVE REMOVAL OF EXISTING BRIDGE STRUCTURE, CONSTRUCTION OF NEW ABUTMENTS AND CONSTRUCTION OF BRIDGE SUPERSTRUCTURE. BRIDGE REPLACEMENT WILL INCLUDE TEMPORARY DETOUR, CHANNEL RECONSTRUCTION, 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 0.67 ACRES. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS GENERALLY FLAT GROUND IN FARMLAND. TH-4 GENERALLY RUNS WEST TO EAST. ALL TOWN HIGHWAY ROADS WITHIN OR NEAR THE PROJECT LIMITS ARE BITUMINOUS CONCRETE.

WITHIN THE PROJECT SITE ALONG ROARING BROOK RD (TH-4), THERE ARE THREE GRAVEL DRIVES. THERE ARE NO RESIDENCES OR STRUCTURES ON EITHER SIDE OF THE STREET. LAND IMMEDIATELY ADJACENT TO THE PROJECT IS PASTURE AND/OR FARMLAND.

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

THE BARTON RIVER IS THE ONLY WATER SOURCE ON THE PROJECT. THE OUTLET IS CLASSIFIED AS SINUOUS, AND INCISED. THE STREAM BED CONSISTS OF SMALL GRAVEL, FINE SAND, AND SILT. THE DRAINAGE AREA IS 36.7 SQUARE MILES. THERE IS ONE DROP INLET ON VT-16, WHICH DRAINS INTO BARTON RIVER WITHIN THE PROJECT LIMITS - THE DROP INLET IS OUTSIDE OF PROJECT CONSTRUCTION LIMITS AND UPHILL OF THE ANTICIPATED CONSTRUCTION ACTIVITIES.

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 ORLEANS, VERMONT. SOILS ON THE PROJECT SITE ARE: 33A MOOSILAUKE VERY FINE SANDY LOAM, 0% TO 3% SLOPES, "K FACTOR" = 0.24; 60A RUMNEY FINE SANDY LOAM, FREQUENTLY FLOODED, 0% - 2% SLOPES, "K FACTOR" = 0.28; AND 18D - BUCKLAND FINE SANDY LOAM, VERY STONY, 15-35% SLOPES, "K FACTOR" = 0.43.

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 (TWO AREAS - SEE EPSC - EXISTING CONDITIONS LAYOUT FOR LOCATIONS)
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: BARTON 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.

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 EROSION 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.

BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

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

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

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, BIODEGRADABLE EROSION CONTROL MATTING 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.

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.

1.5.3 UPDATES

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE

PROJECT NUMBER: BO 1449(33)

TYLININTERNATIONAL

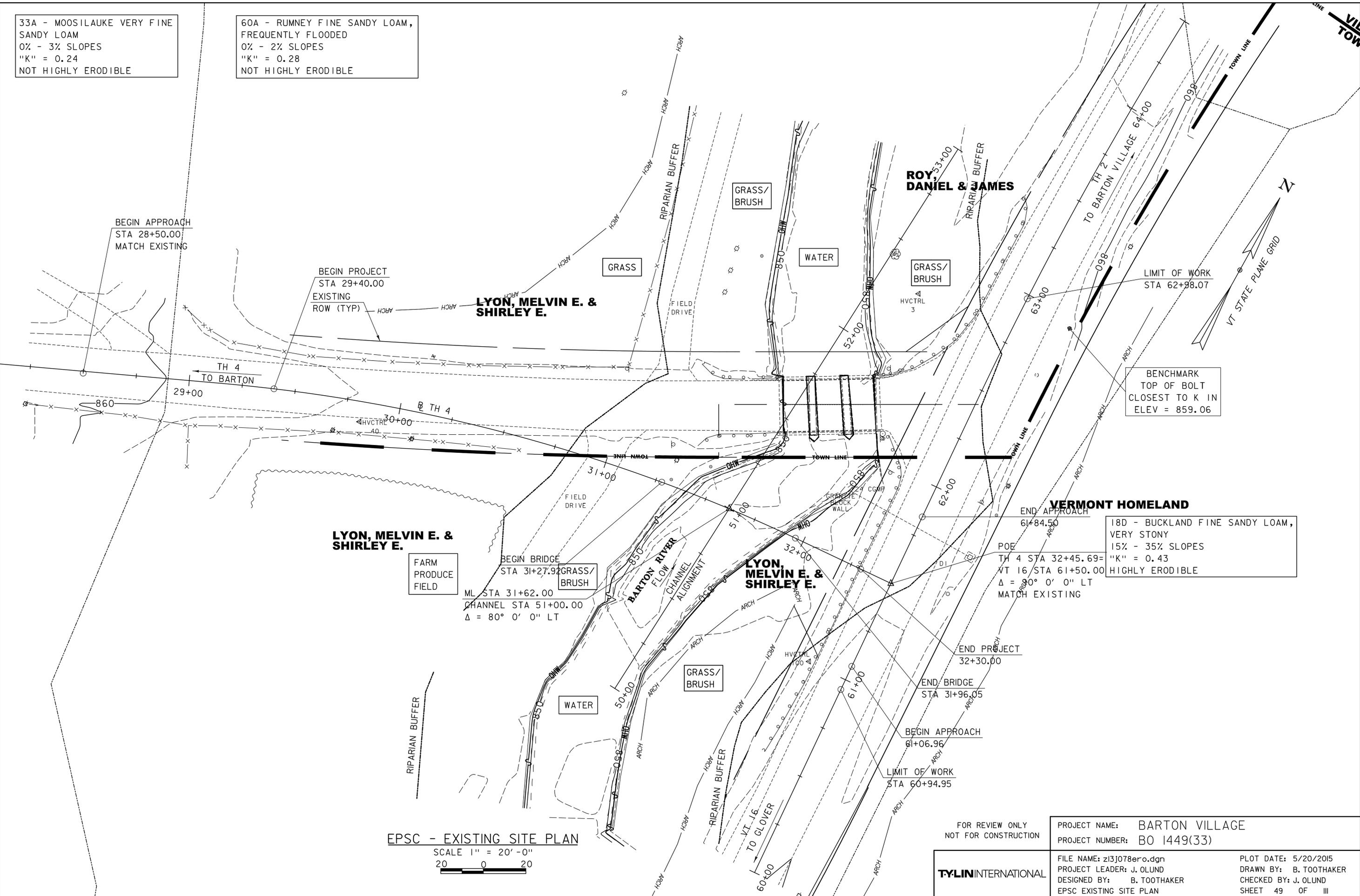
FILE NAME: z13j078epsonar.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC PLAN NARRATIVE

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 48 OF 111

33A - MOOSILAUKE VERY FINE SANDY LOAM
 0% - 3% SLOPES
 "K" = 0.24
 NOT HIGHLY ERODIBLE

60A - RUMNEY FINE SANDY LOAM,
 FREQUENTLY FLOODED
 0% - 2% SLOPES
 "K" = 0.28
 NOT HIGHLY ERODIBLE

18D - BUCKLAND FINE SANDY LOAM,
 VERY STONY
 15% - 35% SLOPES
 "K" = 0.43
 HIGHLY ERODIBLE



BEGIN APPROACH
 STA 28+50.00
 MATCH EXISTING

BEGIN PROJECT
 STA 29+40.00
 EXISTING
 ROW (TYP)

LYON, MELVIN E. &
 SHIRLEY E.

ROY,
 DANIEL & JAMES

LIMIT OF WORK
 STA 62+98.07

BENCHMARK
 TOP OF BOLT
 CLOSEST TO K IN
 ELEV = 859.06

LYON, MELVIN E. &
 SHIRLEY E.

FARM
 PRODUCE
 FIELD

BEGIN BRIDGE
 STA 31+27.92
 ML STA 31+62.00
 CHANNEL STA 51+00.00
 $\Delta = 80^\circ 0' 0''$ LT

LYON,
 MELVIN E. &
 SHIRLEY E.

VERMONT HOMELAND

END APPROACH
 STA 61+84.50
 P.O.E.
 TH 4 STA 32+45.69 =
 VT 16 STA 61+50.00
 $\Delta = 80^\circ 0' 0''$ LT
 MATCH EXISTING

END PROJECT
 STA 32+30.00

END BRIDGE
 STA 31+96.05

BEGIN APPROACH
 STA 61+06.96

LIMIT OF WORK
 STA 60+94.95

EPSC - EXISTING SITE PLAN
 SCALE 1" = 20' - 0"
 20 0 20

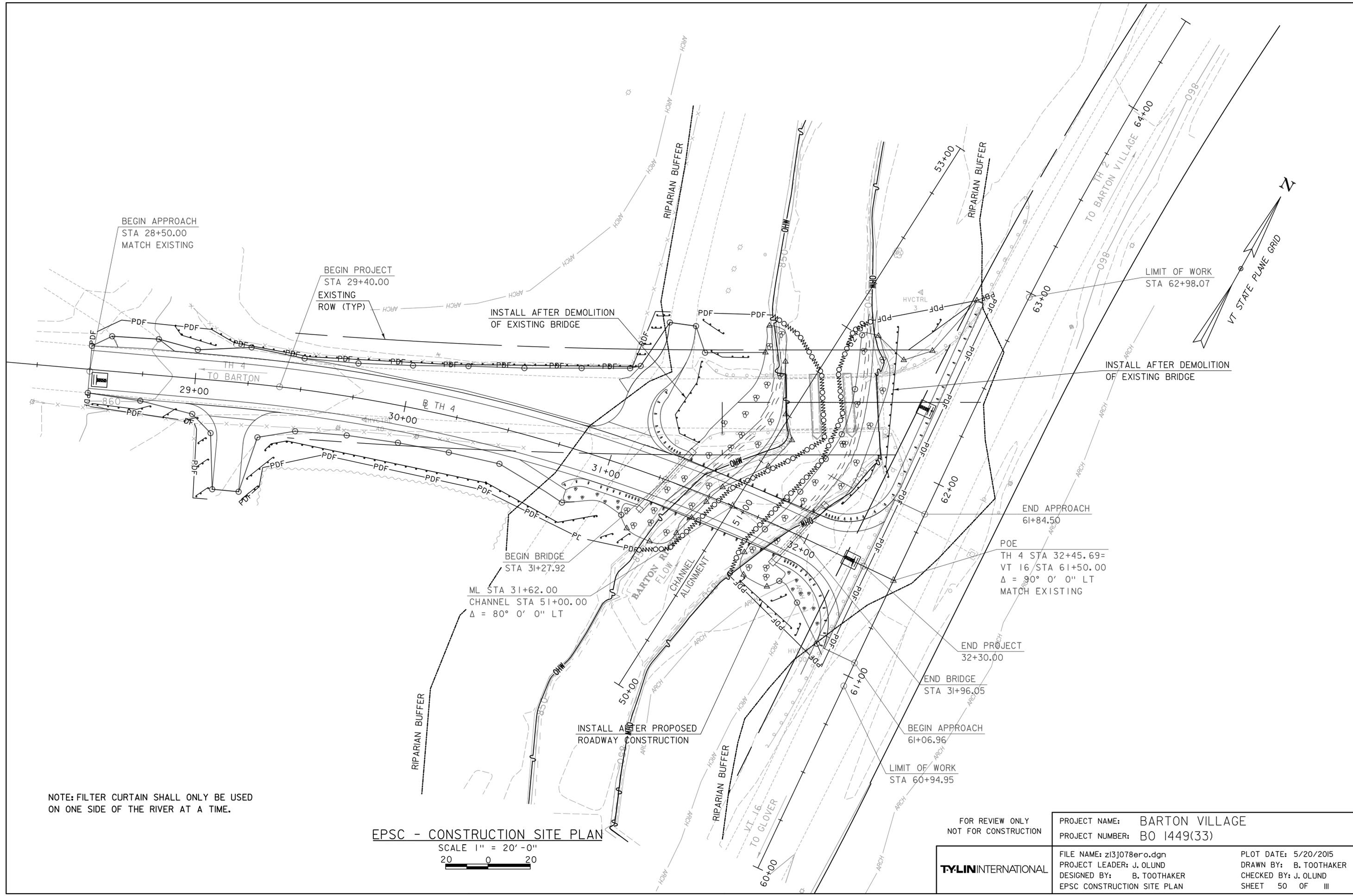
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 NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078ero.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 EPSC EXISTING SITE PLAN

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. OLUND
 SHEET 49 OF 111



BEGIN APPROACH
STA 28+50.00
MATCH EXISTING

BEGIN PROJECT
STA 29+40.00
EXISTING
ROW (TYP)

INSTALL AFTER DEMOLITION
OF EXISTING BRIDGE

LIMIT OF WORK
STA 62+98.07

INSTALL AFTER DEMOLITION
OF EXISTING BRIDGE

END APPROACH
61+84.50

POE
TH 4 STA 32+45.69=
VT 16 STA 61+50.00
 $\Delta = 90^\circ 0' 0''$ LT
MATCH EXISTING

BEGIN BRIDGE
STA 31+27.92

ML STA 31+62.00
CHANNEL STA 51+00.00
 $\Delta = 80^\circ 0' 0''$ LT

END PROJECT
32+30.00

END BRIDGE
STA 31+96.05

BEGIN APPROACH
61+06.96

LIMIT OF WORK
STA 60+94.95

INSTALL AFTER PROPOSED
ROADWAY CONSTRUCTION

NOTE: FILTER CURTAIN SHALL ONLY BE USED
ON ONE SIDE OF THE RIVER AT A TIME.

EPSC - CONSTRUCTION SITE PLAN

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

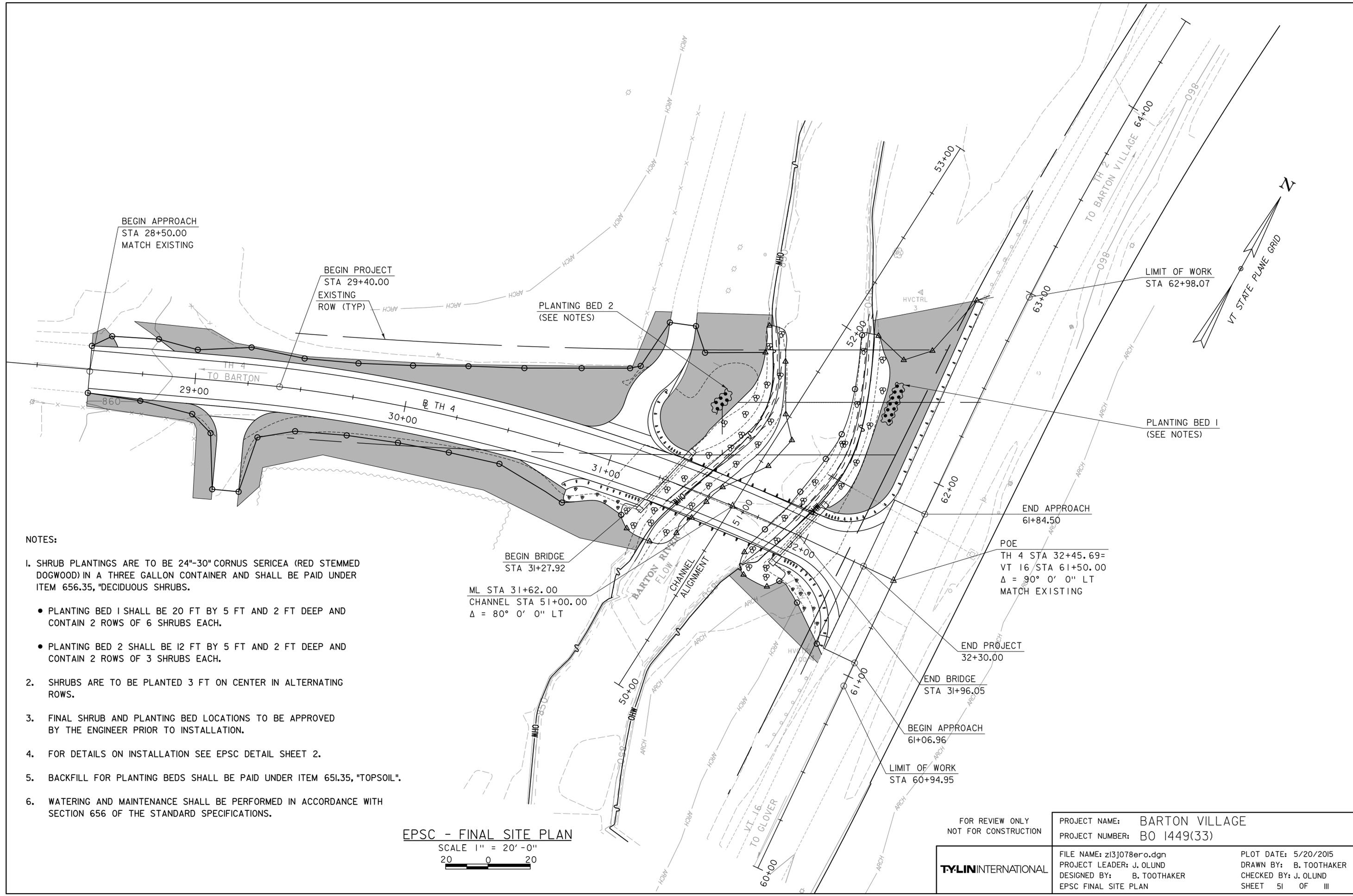
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TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

FILE NAME: z13j078ero.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC CONSTRUCTION SITE PLAN

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 50 OF 111



NOTES:

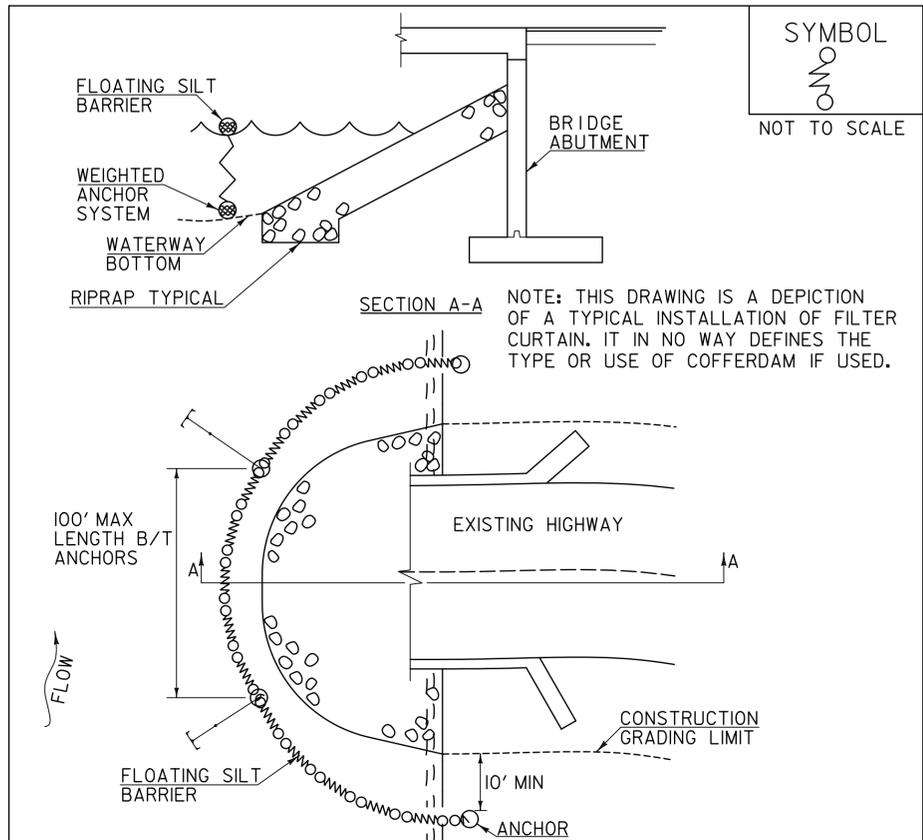
1. SHRUB PLANTINGS ARE TO BE 24"-30" CORNUS SERICEA (RED STEMMED DOGWOOD) IN A THREE GALLON CONTAINER AND SHALL BE PAID UNDER ITEM 656.35, "DECIDUOUS SHRUBS."
 - PLANTING BED 1 SHALL BE 20 FT BY 5 FT AND 2 FT DEEP AND CONTAIN 2 ROWS OF 6 SHRUBS EACH.
 - PLANTING BED 2 SHALL BE 12 FT BY 5 FT AND 2 FT DEEP AND CONTAIN 2 ROWS OF 3 SHRUBS EACH.
2. SHRUBS ARE TO BE PLANTED 3 FT ON CENTER IN ALTERNATING ROWS.
3. FINAL SHRUB AND PLANTING BED LOCATIONS TO BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
4. FOR DETAILS ON INSTALLATION SEE EPSC DETAIL SHEET 2.
5. BACKFILL FOR PLANTING BEDS SHALL BE PAID UNDER ITEM 651.35, "TOPSOIL".
6. WATERING AND MAINTENANCE SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 656 OF THE STANDARD SPECIFICATIONS.

EPSC - FINAL SITE PLAN
 SCALE 1" = 20'-0"
 20 0 20

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION



PROJECT NAME: BARTON VILLAGE	
PROJECT NUMBER: BO 1449(33)	
FILE NAME: z\3\078ero.dgn	PLOT DATE: 5/20/2015
PROJECT LEADER: J. OLUND	DRAWN BY: B. TOOTHAKER
DESIGNED BY: B. TOOTHAKER	CHECKED BY: J. OLUND
EPSC FINAL SITE PLAN	SHEET 51 OF 111



SYMBOL

 NOT TO SCALE

- 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

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.6).

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

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

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

CONSTRUCTION GUIDANCE

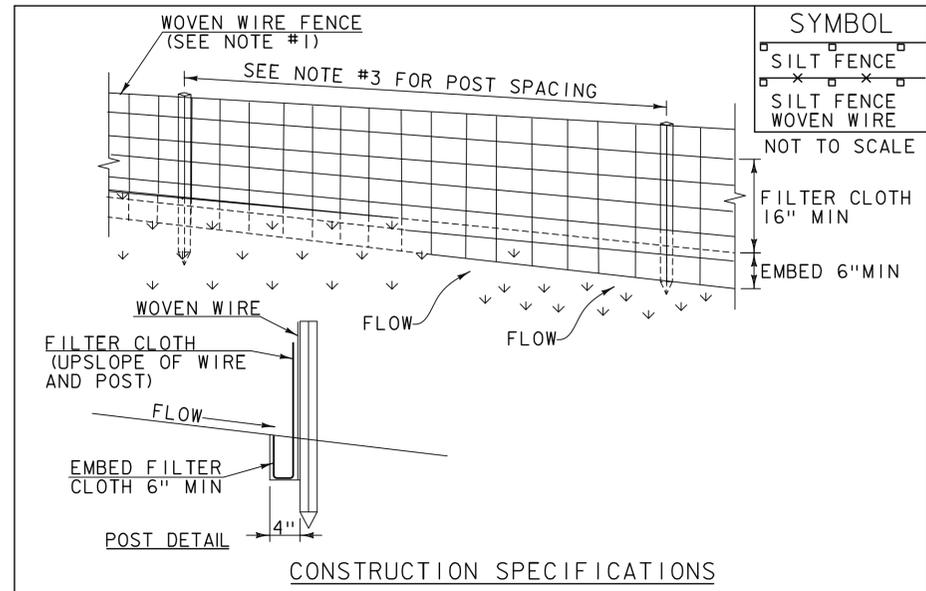
1. SEED MIX: THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER ON WHICH SEED MIX TO USE.
2. SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED PROPOSED FOR USE WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED.
7. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 651 FOR SEED (PAY ITEM 651.5)

REVISIONS	
JANUARY 12, 2015	WHF



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, MIRAF1100X, 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 649.5) 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

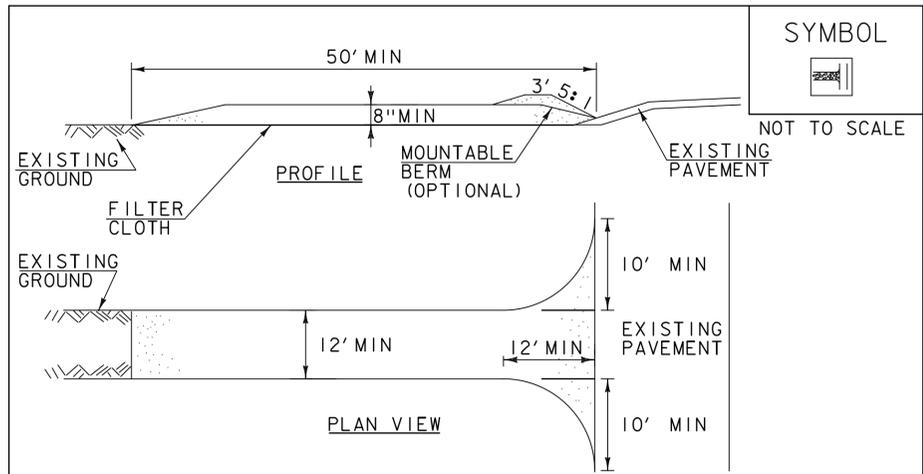
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PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BO 1449(33)

TYLIN INTERNATIONAL

FILE NAME: z13j078epscode1.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 EPSC DETAIL SHEET 1

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. OLUND
 SHEET 52 OF 111



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.

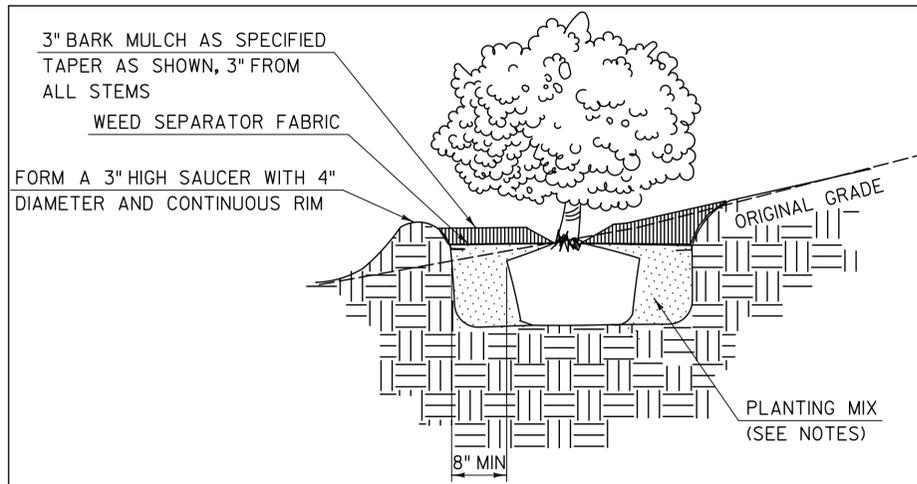
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**STABILIZED
CONSTRUCTION
ENTRANCE**

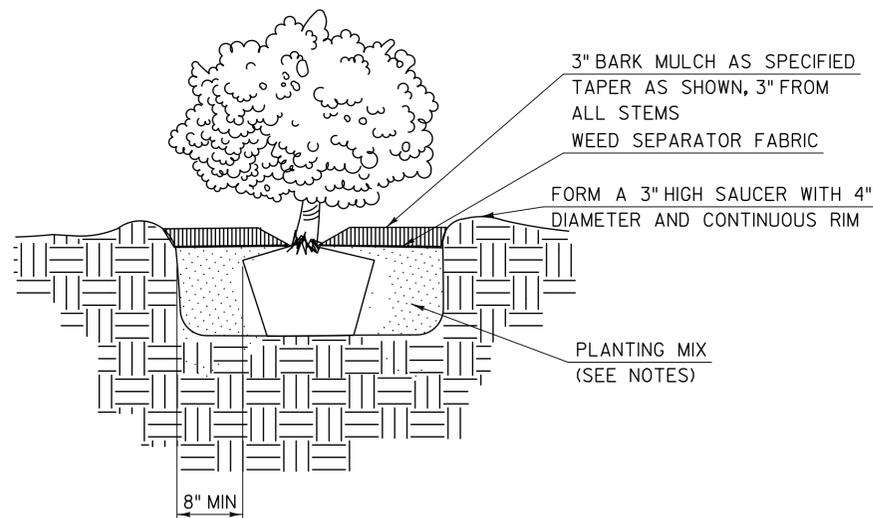
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR
EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM
THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL
GUIDANCE.

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



SHRUB PLANTING ON SLOPES DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

NOTE: BACK FILL WITH PLANTING MIX OF HALF TOPSOIL, ONE QUARTER COMPOST, AND ONE QUARTER NATIVE MATERIAL AS APPROVED BY THE RESIDENT ENGINEER. PAYMENT SHALL BE MADE UNDER ITEM 651.35, "TOPSOIL". TAMP TO REMOVE AIR POCKETS AND WATER IMMEDIATELY AFTER PLANTING. SHRUBS MUST RECEIVE A MINIMUM OF 5 GALLONS AT EACH WATERING, TWICE WEEKLY DURING THE ESTABLISHMENT PERIOD.

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BO 1449(33)

TYLININTERNATIONAL

FILE NAME: z13j078epsdet.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC DETAIL SHEET 2

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 53 OF 111

STATE OF VERMONT AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT BRIDGE PROJECT

VILLAGE OF BARTON
COUNTY OF ORLEANS

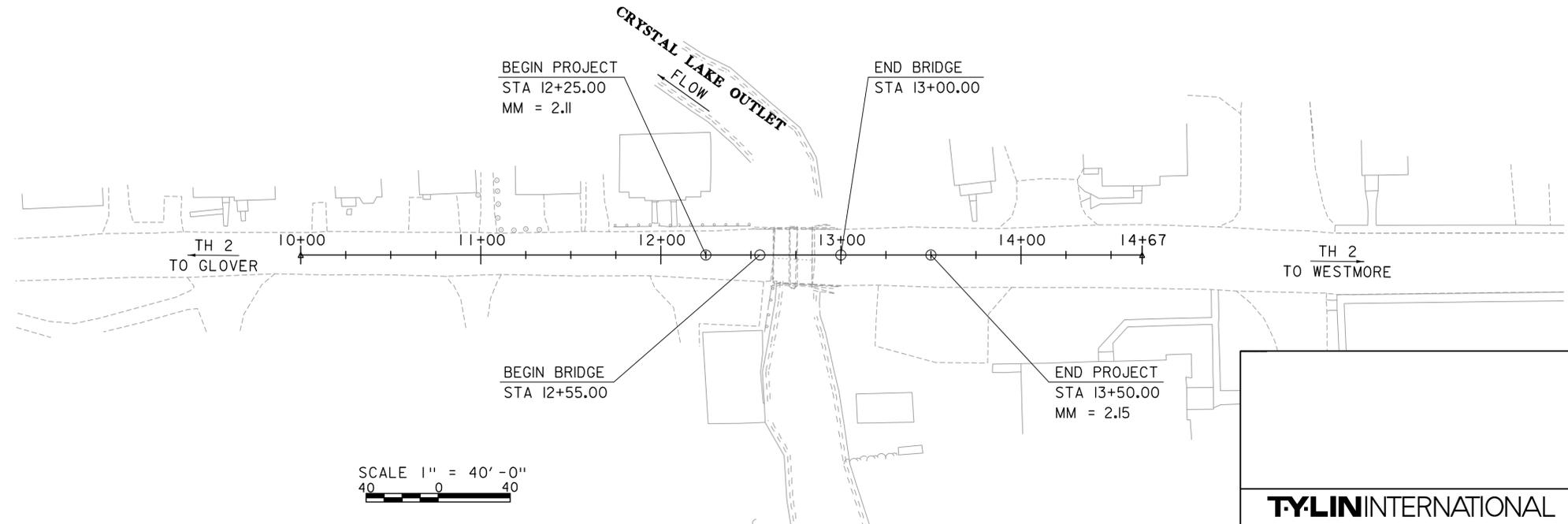
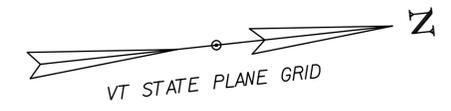
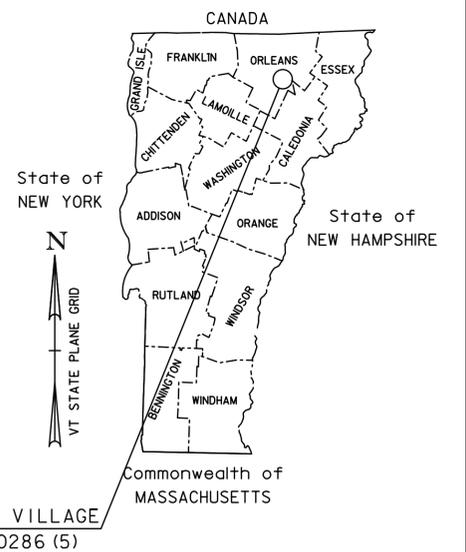
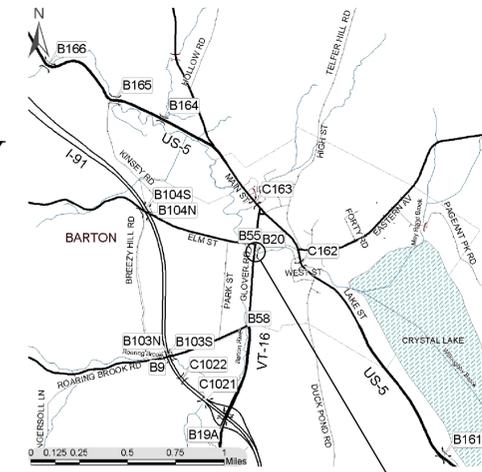
ROUTE NO : TH 2 (GLOVER ROAD) , URBAN MAJOR COLLECTOR, CLASS I TOWN HIGHWAY

BRIDGE NO : 20

PROJECT LOCATION: 0.2 MILES SOUTH OF JUNCTION WITH US ROUTE 5

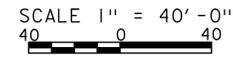
PROJECT DESCRIPTION: REMOVAL OF EXISTING STRUCTURE AND REPLACEMENT
WITH A NEW STRUCTURE ON EXISTING ALIGNMENT.

LENGTH OF STRUCTURE: 45.00 FEET
LENGTH OF ROADWAY: 80.00 FEET
LENGTH OF PROJECT: 125.00 FEET

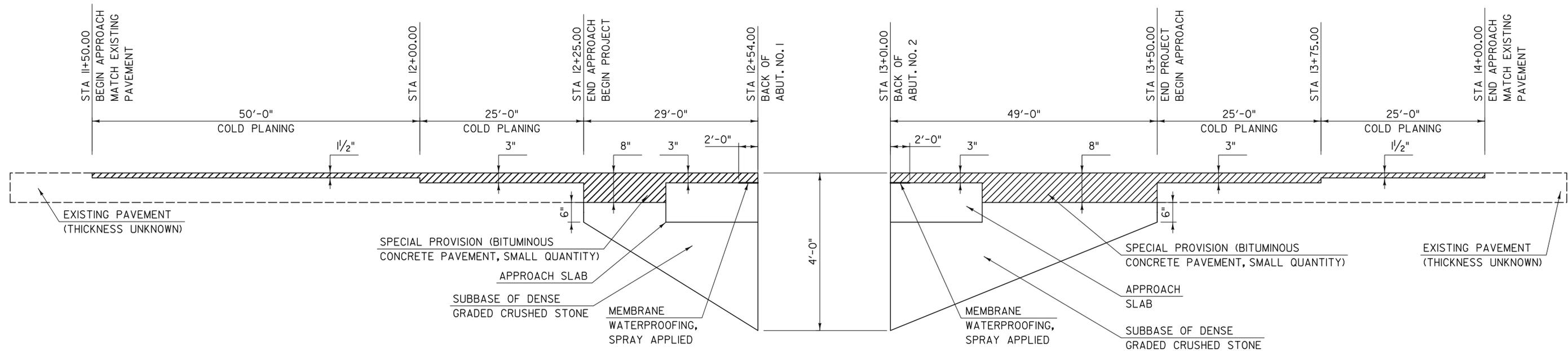


CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS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

QUALITY ASSURANCE PROGRAM : LEVEL 2	
SURVEYED BY : R. GILMAN	
SURVEYED DATE : 6/01/2012	
DATUM	
VERTICAL	NAVD88
HORIZONTAL	NAD83 (96)



DIRECTOR OF PROJECT DELIVERY	
APPROVED _____	DATE _____
PROJECT MANAGER : DOUG BONNEAU, P.E.	
PROJECT NAME :	BARTON VILLAGE
PROJECT NUMBER :	BHF 0286 (5)
SHEET 56 OF 111 SHEETS	

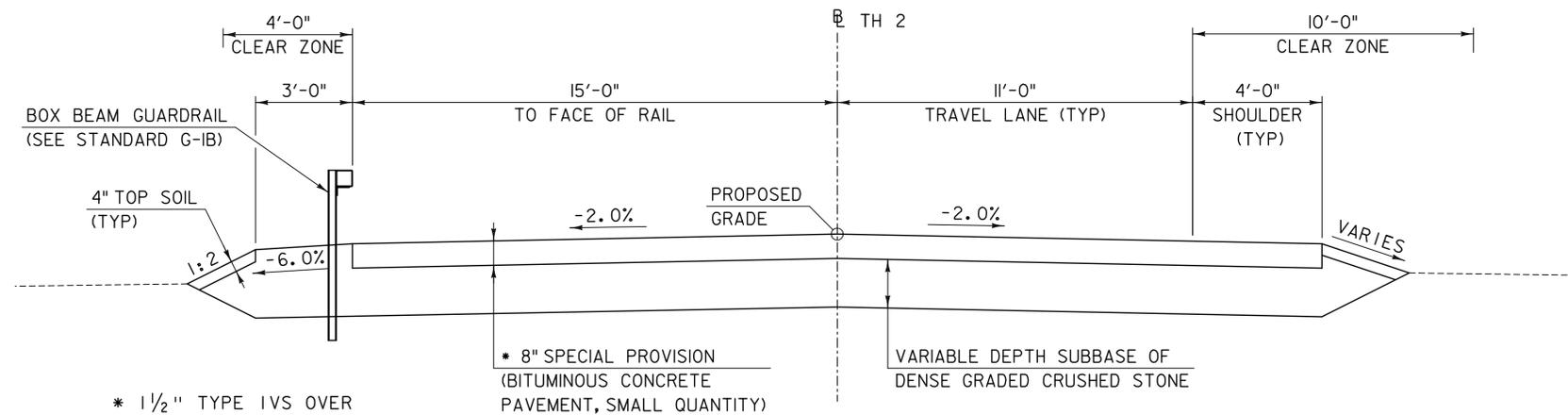


SUBBASE TAPER - SOUTH APPROACH

NOT TO SCALE
(ALONG BASELINE)

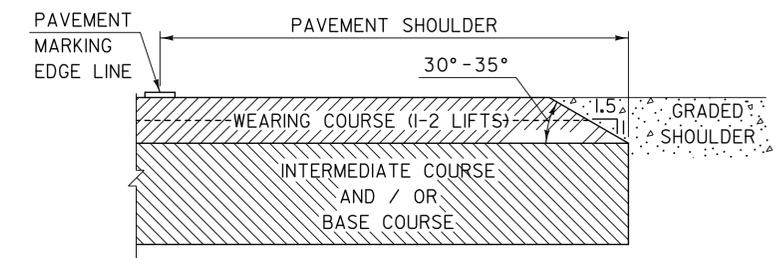
SUBBASE TAPER - NORTH APPROACH

NOT TO SCALE
(ALONG BASELINE)



ROADWAY TYPICAL SECTION

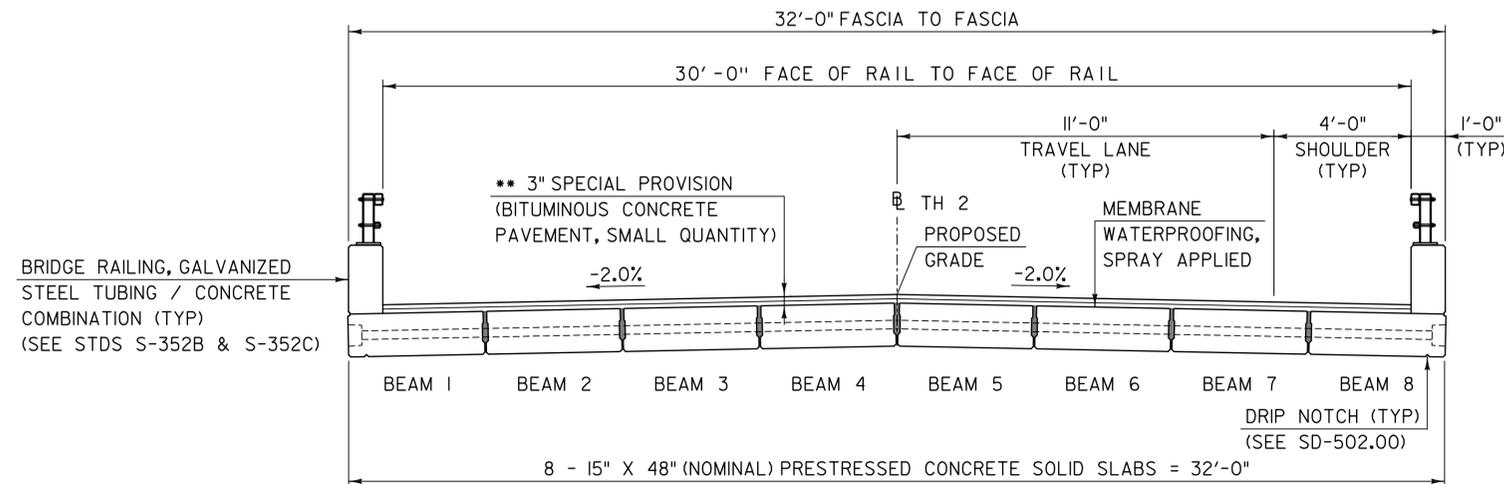
SCALE: 3/8" = 1'-0"



SAFETY EDGE DETAIL

NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.

NOTE: EMULSIFIED ASPHALT SHALL BE APPLIED TO ALL COLD PLANED BITUMINOUS CONCRETE PAVEMENT SURFACES AT THE RATE OF 0.04 GAL/SY OR AS DIRECTED BY THE ENGINEER. EMULSIFIED ASPHALT SHALL ALSO BE APPLIED BETWEEN ALL LIFTS OF PAVEMENT. THE COST SHALL BE PAID UNDER ITEM 404.65, "EMULSIFIED ASPHALT".



BRIDGE TYPICAL SECTION

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

** 1/2" TYPE IVS OVER 1/2" TYPE IVS

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

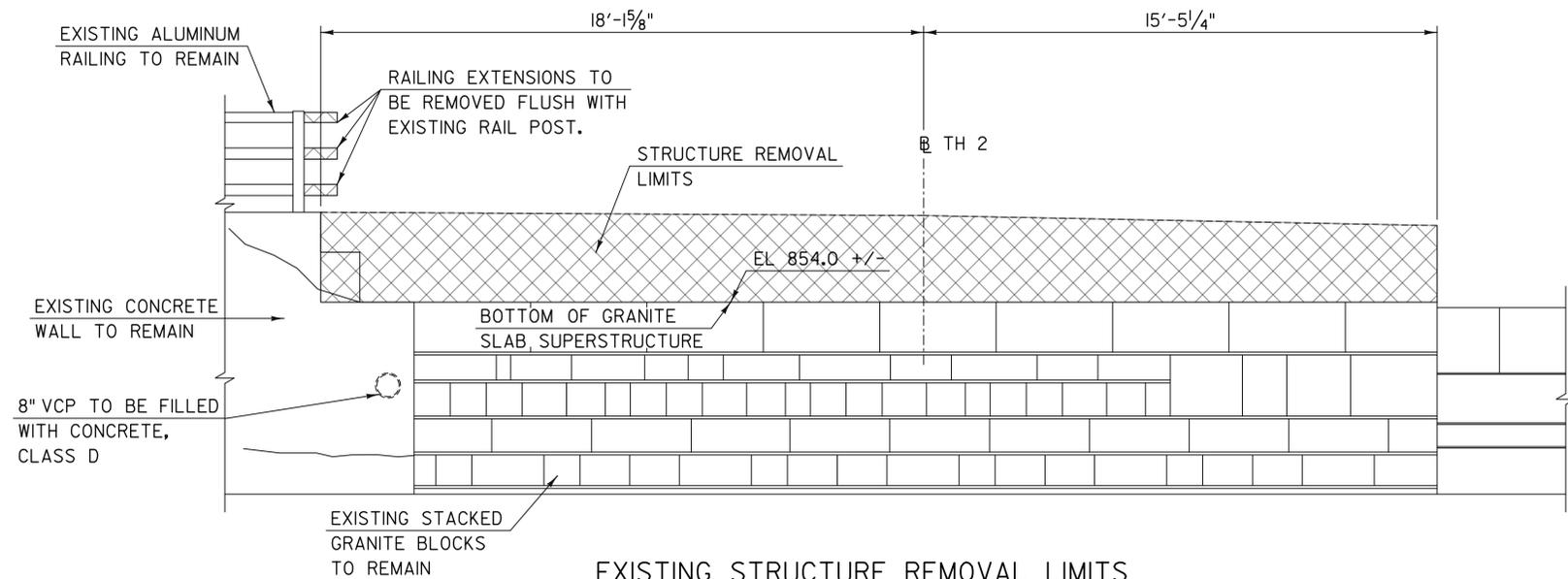
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

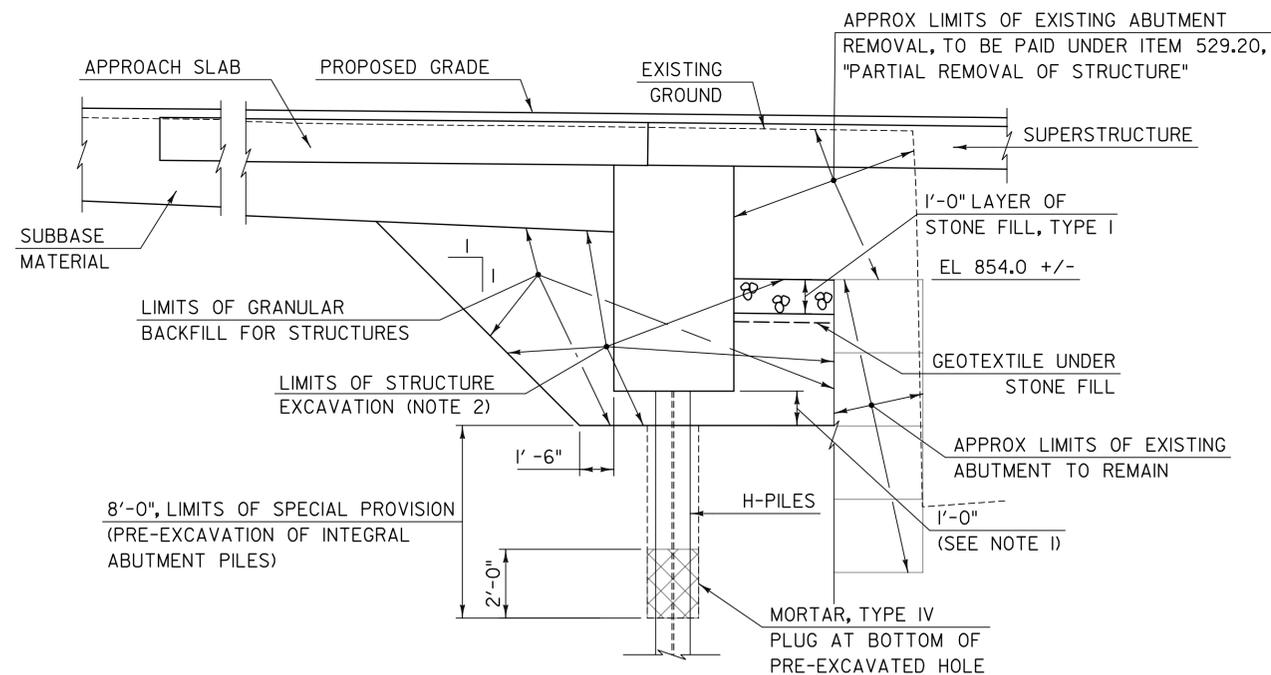
FILE NAME: z12j172+typ1.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TYPICAL SECTIONS AND DETAILS I

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 58 OF 111



**EXISTING STRUCTURE REMOVAL LIMITS
ABUTMENT NO 1 ELEVATION**

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

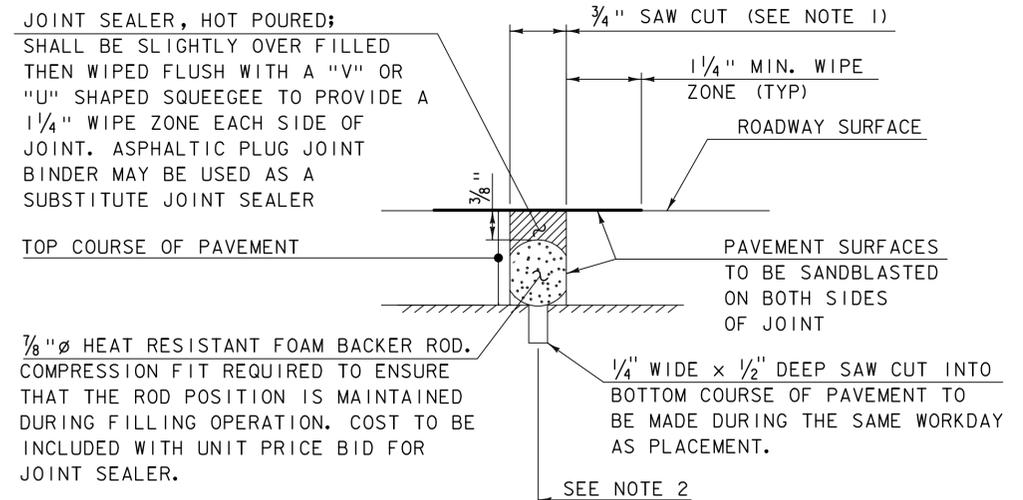


EARTHWORK TYPICAL SECTION - ABUTMENT NO 1

NOT TO SCALE

NOTES:

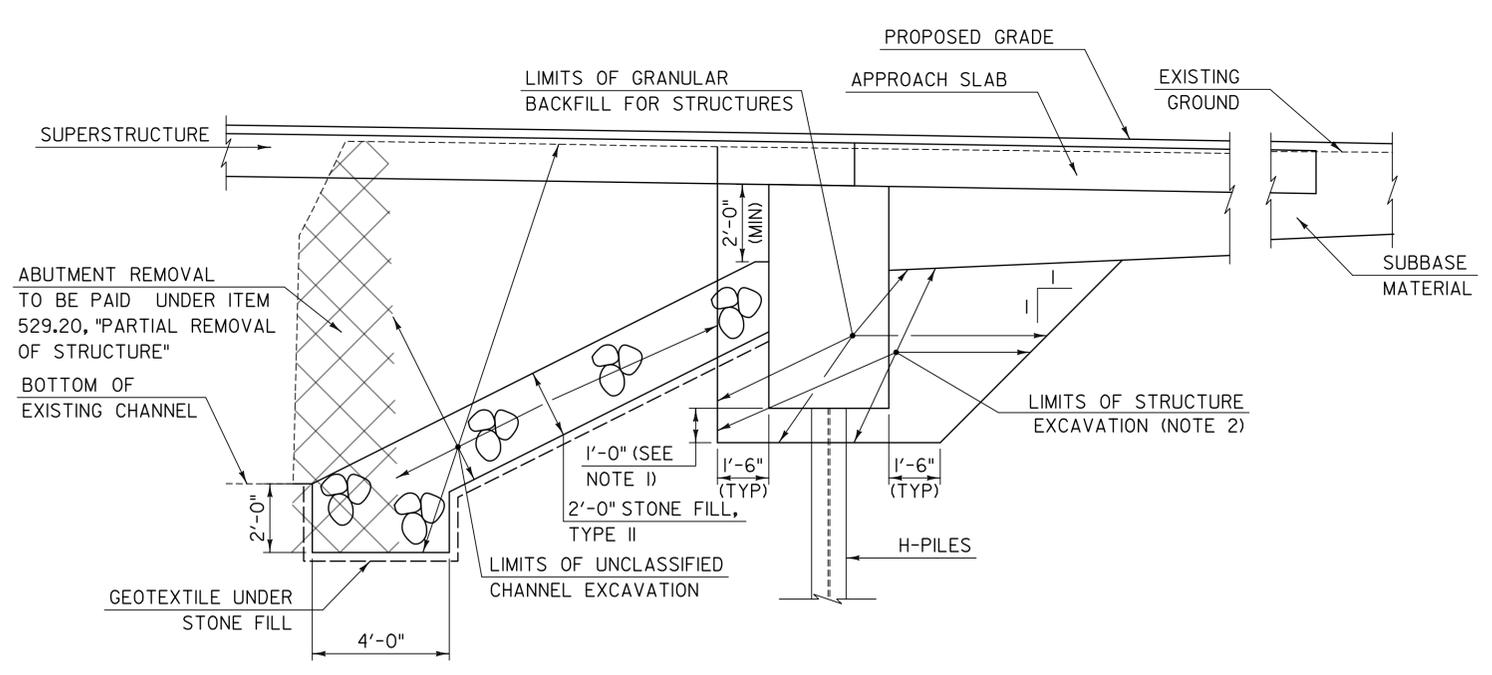
- ONE FOOT UNDERCUT AS DETERMINED NECESSARY BY THE ENGINEER.
- ACTUAL LIMITS OF STRUCTURE EXCAVATION TO BE DETERMINED BY THE CONTRACTOR. HOWEVER, ONLY THE EXCAVATION BETWEEN THE LIMITS SHOWN WILL BE PAID FOR UNDER ITEM 204.25, "STRUCTURE EXCAVATION." EXCAVATION BY THE CONTRACTOR OUTSIDE THESE LIMITS WILL BE AT THE EXPENSE OF THE CONTRACTOR.



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

NOT TO SCALE

- 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.
- 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 FOR DRIVES.



EARTHWORK TYPICAL SECTION - ABUTMENT NO 2

NOT TO SCALE

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE	
	PROJECT NUMBER: BHF 0286(5)	
TYLIN INTERNATIONAL	FILE NAME: z12j172+yp2.dgn	PLOT DATE: 5/20/2015
	PROJECT LEADER: J. OLUND	DRAWN BY: S. MORGAN
	DESIGNED BY: J. OLUND	CHECKED BY: T. POULIN
	TYPICAL SECTIONS AND DETAILS 2	SHEET 59 OF 111

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	ROADWAY (NO FEDERAL/STATE)	TRAINING	EROSION CONTROL	WELL, PUMP, ETC. (NO FEDERAL/STATE)	BRIDGE	BRIDGE (NO FEDERAL/STATE)	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
283								283		CY	COMMON EXCAVATION	203.15						
					140			140		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27						
113								113		CY	TRENCH EXCAVATION OF EARTH	204.20						
1								1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22						
					180			180		CY	STRUCTURE EXCAVATION	204.25						
					105			105		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30						
410								410		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10						
158								158		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35						
3.7					1			4.7		CWT	EMULSIFIED ASPHALT	404.65						
1								1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50						
					1			1		LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 20)	504.10						
					660			660		LF	STEEL PILING, HP 12 X 74	505.16						
					2			2		EACH	DYNAMIC PILE LOADING TEST	505.45						
					315			315		LF	GROUTING SHEAR KEYS	510.24						
					7			7		GAL	WATER REPELLENT, SILANE	514.10						
					60			60		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10						
					167			167		SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10						
					86			86		LF	JOINT SEALER, HOT POURED	524.11						
					86			86		LF	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	525.45						
					1			1		LS	MAINTENANCE OF STRUCTURES AND APPROACHES (BRIDGE 20)	527.10						
					1			1		EACH	PARTIAL REMOVAL OF STRUCTURE (800 SF - EST) (BRIDGE 20)	529.20						
					18			18		EACH	BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD	531.16						
											BEGIN OPTION AA							
					1			1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) (BRIDGE 20)	540.10						
					1			1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1) (BRIDGE 20)	900.645						
											END OPTION AA							
											BEGIN OPTION CC							
					1			1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2) (BRIDGE 20)	540.10						
					1			1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 2) (BRIDGE 20)	900.645						
											END OPTION CC							
											BEGIN OPTION EE							
					1			1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB 1) (BRIDGE 20)	540.10						
					1			1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB 1) (BRIDGE 20)	900.645						
											END OPTION EE							
											BEGIN OPTION GG							
					1			1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB 2) (BRIDGE 20)	540.10						
					1			1		LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB 2) (BRIDGE 20)	900.645						
											END OPTION GG							

EARTHWORKS SUMMARY

283	CY	COMMON EXCAVATION (283*1.0)
113	CY	TRENCH EXCAVATION FOR DRAINAGE ITEMS (113*1.0)
135	CY	STRUCTURE EXCAVATION (180*0.75)
105	CY	UNCLASSIFIED CHANNEL EXCAVATION (140*0.75)
636	CY	SUBTOTAL
222	CY	LESS CONTAMINATED SOILS FROM COMMON EXCAVATION (222)
72	CY	LESS CONTAMINATED SOILS FROM STRUCTURE EXCAVATION (72)
342	CY	TOTAL FILL AVAILABLE
0	CY	TOTAL FILL REQUIRED
342	CY	TOTAL WASTE

SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)

132	TON	TYPE I/S
36	TON	TYPE I/S
168	TON	TOTAL

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

FILE NAME: z12j172qty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
QUANTITY SHEET 1

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 60 OF 111

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	ROADWAY (NO FEDERAL/STATE)	TRAINING	EROSION CONTROL	WELL, PUMP, ETC. (NO FEDERAL/STATE)	BRIDGE	BRIDGE (NO FEDERAL/STATE)	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
											BEGIN OPTION II							
35								35		LF	12" CAAP .060 (2-2/3 X 1/2)	601.0205						
35								35		LF	12" PCCSP .064 (2-2/3 X 1/2)	601.0405						
35								35		LF	12" CPEP(SL)	601.2605						
											END OPTION II							
											BEGIN OPTION JJ							
54								54		LF	18" CAAP .060 (2-2/3 X 1/2)	601.0215						
54								54		LF	18" PCCSP .064 (2-2/3 X 1/2)	601.0415						
54								54		LF	18" CPEP(SL)	601.2615						
											END OPTION JJ							
122								122		LF	CLEANING CULV. PIPE, IN-PLACE [GREATER THAN 24 IN.]	601.996						
2								2		EACH	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	604.18						
20								20		HR	POWER GRADER RENTAL	608.15						
20								20		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25						
20								20		HR	TRUCK RENTAL	608.37						
20								20		HR	LOADER RENTAL, TYPE I	608.40						
25								25		MGAL	DUST CONTROL WITH WATER	609.10						
						3		3		CY	STONE FILL, TYPE I	613.10						
						70		70		CY	STONE FILL, TYPE II	613.11						
1								1		EACH	WOOD MARKER POSTS	619.15						
68								68		LF	REMOVAL OF EXISTING FENCE	620.55						
26								26		LF	BOX BEAM GUARDRAIL	621.30						
1								1		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51						
40								40		HR	UNIFORMED TRAFFIC OFFICERS	630.10						
100								100		HR	FLAGGERS	630.15						
							0.5	0.5		LS	FIELD OFFICE, ENGINEERS	631.10						
							0.5	0.5		LS	TESTING EQUIPMENT, CONCRETE	631.16						
							0.5	0.5		LS	TESTING EQUIPMENT, BITUMINOUS	631.17						
							1500	1500		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26						
		520						520		HR	EMPLOYEE TRAINEESHIP	634.10						
0.5								0.5		LS	MOBILIZATION/DEMOBILIZATION	635.11						
660								660		LF	4 INCH WHITE LINE	646.20						
500								500		LF	4 INCH YELLOW LINE	646.21						
						120		120		SY	GEOTEXTILE UNDER STONE FILL	649.31						
				68				68		SY	GEOTEXTILE FOR SILT FENCE	649.51						
				113				113		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61						
				4.6				4.6		LB	SEED	651.15						
				1				1		LB	SEED, WINTER RYE	651.17						
				39				39		LB	FERTILIZER	651.18						
				0.2				0.2		TON	AGRICULTURAL LIMESTONE	651.20						

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

FILE NAME: z12j172qty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
QUANTITY SHEET 2

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 61 OF 111

QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
ROADWAY	ROADWAY (NO FEDERAL/STATE)	TRAINING	EROSION CONTROL	WELL, PUMP, ETC. (NO FEDERAL/STATE)	BRIDGE	BRIDGE (NO FEDERAL/STATE)	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
			0.2					0.2		TON	HAY MULCH	651.25						
41								41		CY	TOPSOIL	651.35						
			1					1		LS	EPSC PLAN (BRIDGE 20)	652.10						
			10					10		HR	MONITORING EPSC PLAN	652.20						
			1					1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.) (BRIDGE 20)	652.30						
			30					30		CY	VEHICLE TRACKING PAD	653.35						
			5					5		EACH	INLET PROTECTION DEVICE, TYPE I	653.40						
			374					374		LF	PROJECT DEMARCATION FENCE	653.55						
0.6								0.6		SF	TRAFFIC SIGNS, TYPE A	675.20						
12								12		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341						
2								2		EACH	REMOVING SIGNS	675.50						
					10			10		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608						
	222					96		318		CY	SPECIAL PROVISION (MANAGEMENT OF PETROLEUM CONTAMINATED SOILS)	900.608						
4								4		EACH	SPECIAL PROVISION (GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM)	900.620						
				5				5		EACH	SPECIAL PROVISION (MONITORING WELL)	900.620						
					32			32		LF	SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES)	900.640						
					360			360		LF	SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS)(15" X 48")	900.640						
					1			1		LS	SPECIAL PROVISION (CONSTRUCTION VIBRATION AND CRACK MONITORING)	900.645						
					0.5			0.5		LS	SPECIAL PROVISION (CPM SCHEDULE)	900.645						
1								1		LS	SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE) (BRIDGE 20)	900.645						
					1			1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE) (N.A.B.I.) (BRIDGE 20)	900.650						
1								1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650						
1								1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650						
123					45			168		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680						

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLININTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172qty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
QUANTITY SHEET 3

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 62 OF 111

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
							APPROACH SLABS	ABUTMENT NO. 1	ABUTMENT NO. 2	SUPERSTRUCTURE	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS	
									140		140	CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27				
								95	85		180	CY	STRUCTURE EXCAVATION	204.25				
								65	40		105	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30				
							0.5			0.5	1	CWT	EMULSIFIED ASPHALT	404.65				
								0.5	0.5		1	LS	FURNISHING EQUIPMENT FOR DRIVING PILING (BRIDGE 20)	504.10				
								330	330		660	LF	STEEL PILING, HP 12 X 74	505.16				
								1	1		2	EACH	DYNAMIC PILE LOADING TEST	505.45				
										315	315	LF	GROUTING SHEAR KEYS	510.24				
								1	1	5	7	GAL	WATER REPELLENT, SILANE	514.10				
							60				60	LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
							14			153	167	SY	MEMBRANE WATERPROOFING, SPRAY APPLIED	520.10				
							86				86	LF	JOINT SEALER, HOT POURED	524.11				
										86	86	LF	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	525.45				
										1	1	LS	MAINTENANCE OF STRUCTURES AND APPROACHES (BRIDGE 20)	527.10				
										1	1	EACH	PARTIAL REMOVAL OF STRUCTURE (800 SF - EST) (BRIDGE 20)	529.20				
										18	18	EACH	BEARING DEVICE ASSEMBLY, PLAIN ELASTOMERIC PAD	531.16				
													BEGIN OPTION AA					
								1			1	LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 1) (BRIDGE 20)	540.10				
								1			1	LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 1) (BRIDGE 20)	900.645				
													END OPTION AA					
													BEGIN OPTION CC					
									1		1	LS	PRECAST CONCRETE STRUCTURE (ABUTMENT NO. 2) (BRIDGE 20)	540.10				
									1		1	LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (ABUTMENT NO. 2) (BRIDGE 20)	900.645				
													END OPTION CC					
													BEGIN OPTION EE					
							1				1	LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB 1) (BRIDGE 20)	540.10				
							1				1	LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB 1) (BRIDGE 20)	900.645				
													END OPTION EE					
													BEGIN OPTION GG					
							1				1	LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB 2) (BRIDGE 20)	540.10				
							1				1	LS	SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE) (APPROACH SLAB 2) (BRIDGE 20)	900.645				
													END OPTION GG					
								3			3	CY	STONE FILL, TYPE I	613.10				
									70		70	CY	STONE FILL, TYPE II	613.11				
								8	112		120	SY	GEOTEXTILE UNDER STONE FILL	649.31				
							5	3	2		10	CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)	900.608				
								32			32	LF	SPECIAL PROVISION (PRE-EXCAVATION OF INTEGRAL ABUTMENT PILES)	900.640				
										360	360	LF	SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS)(15" X 48")	900.640				

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TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172qty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
BRIDGE QUANTITY SHEET I

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 63 OF III

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/PRESTRESSED 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 40°F, UNLESS OTHERWISE NOTED.
4. NO ADJUSTMENTS TO THE BITUMINOUS WEARING SURFACE ON THE BRIDGE SHALL BE MADE TO ACCOUNT FOR THE DIFFERENCE BETWEEN BEAM CAMBER AND THE THEORETICAL ROADWAY PROFILE. THE WEARING SURFACE ON THE BRIDGE SHALL BE SHIMMED TRANSVERSELY AS NECESSARY TO ACCOUNT FOR POTENTIAL DIFFERENTIAL CAMBER OF ADJACENT BEAMS.
5. ITEM 520.10, "MEMBRANE WATERPROOFING, SPRAY APPLIED" SHALL BE APPLIED TO THE BRIDGE DECK AND EXTEND ON TO THE APPROACH SLABS TWO FEET BEYOND THE BEGIN/END OF BRIDGE LIMITS.
6. THE CONTRACTOR SHALL LOCATE UNDERGROUND SEWER AND WATER LINES AHEAD OF THE BRIDGE CLOSURE PERIOD. PAYMENT SHALL BE MADE UNDER ITEM 204.22, "TRENCH EXCAVATION OF EARTH, EXPLORATORY."

EARTHWORK AND RELATED ITEMS

7. PETROLEUM CONTAMINATED SOILS ARE PRESENT WITHIN THE APPROACH EMBANKMENTS SOUTH OF THE CHANNEL. THE PROJECT IS WITHIN A DOCUMENTED HAZARDOUS WASTE SITE, IDENTIFIED AS SITE NUMBER 20053433 – REDINGTON GARAGE. PAYMENT FOR EXCAVATION EFFORTS OF ANY SOILS SOUTH OF THE CHANNEL SHALL BE MADE UNDER RESPECTIVE EXCAVATION ITEMS. SAFE HANDLING, TREATMENT, AND OTHER PROVISIONS RELATED TO CONTAINMENT AND DISPOSAL OF CONTAMINATED SOILS SHALL BE MADE UNDER ITEM 900.608, "SPECIAL PROVISION (MANAGEMENT OF PETROLEUM CONTAMINATED SOILS)."
8. MULTIPLE MONITORING WELLS AND OXYGEN RELEASE COMPOUND (ORC) WELLS ARE PRESENT WITHIN THE ANTICIPATED WORK LIMITS. PAYMENT FOR REPLACEMENT OF WELLS THAT ARE DAMAGED OR DISTURBED BETWEEN STATIONS 12+25 AND 13+25 AND TRANSVERSELY BOUND BY THE LIMITS OF THE PROJECT DEMARCATION FENCE SHOWN ON THE EPSC CONSTRUCTION SITE PLAN SHEET SHALL BE MADE UNDER ITEM 900.620, "SPECIAL PROVISION (MONITORING WELL)." BASED UPON AVAILABLE SURVEY, IT APPEARS THREE MONITORING WELLS AND TWO ORC WELLS WILL REQUIRE REPLACEMENT. REPLACEMENT OF WELLS DAMAGED OR DISTURBED OUTSIDE THESE LIMITS SHALL BE AT THE CONTRACTORS EXPENSE. MONITORING WELL INSTALLATION SHALL OCCUR WITHIN A 14 DAY PERIOD IMMEDIATELY FOLLOWING THE BRIDGE CLOSURE PERIOD UTILIZING DAILY LANE CLOSURES.
9. THE APPROACHES MAY BE UNDERLAIN BY OR CONTAIN REMNANTS FROM A PREEXISTING CONCRETE WEARING SURFACE. PAYMENT FOR EXCAVATION AND REMOVAL SHALL BE MADE UNDER THE APPROPRIATE EXCAVATION ITEM IDENTIFIED ON THE "TYPICAL SECTIONS AND DETAILS 2" SHEET.
10. THE EXISTING SUPERSTRUCTURE SHALL BE REMOVED IN ITS ENTIRETY. THE EXISTING SOUTHERN ABUTMENT SHALL BE PARTIALLY REMOVED TO LIMITS SHOWN ON "TYPICAL SECTIONS AND DETAILS 2". THE EXISTING PIER AND NORTHERN ABUTMENT SHALL BE REMOVED TO THE LOWER OF THE STREAMBED ELEVATION OR THE LIMITS NEEDED FOR STONE FILL, TYPE II PLACEMENT. ANY VOIDS RESULTING FROM PIER REMOVAL SHALL BE FILLED WITH STONE FILL, TYPE I. PAYMENT FOR REMOVAL AND ANY NECESSARY FILL MATERIAL SHALL BE MADE UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE."
11. THE "STONE FILL, TYPE I" AND "STONE FILL, TYPE II" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE PRESTRESSED SLABS ARE SET.

CONCRETE

12. CONCRETE FOR THE BRIDGE RAILING SHALL BE CAST ON SITE AND WET CURED FOR SEVEN DAYS. FORMWORK AND REINFORCING STEEL MAY BE ASSEMBLED PRIOR TO ERECTING BEAMS. CONCRETE FOR THE BRIDGE RAILING SHALL ATTAIN A STRENGTH OF 4,000 PSI PRIOR TO BEING USED ADJACENT TO TRAFFIC.
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, 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS)(15" x 48")", AND 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)" CONTRACT ITEM AS APPROPRIATE.

18. MECHANICAL BAR CONNECTORS, GROUTED BAR CONNECTORS, AND ANY OTHER REINFORCING STEEL CONNECTORS REQUIRED OF THE PROJECT SHALL MEET THE REQUIREMENTS OF SUBSECTION 713.02, BE ASSEMBLED IN THE FIELD BY THE CONTRACTOR, AND WITNESSED BY THE ENGINEER. THE CONTRACTOR SHALL ALSO PROVIDE 3 ASSEMBLED CONNECTORS PER SIZE FOR TESTING IN ACCORDANCE WITH SUBSECTION 713.02.
19. ALL COSTS ASSOCIATED WITH FURNISHING AND FIELD-INSTALLING THE APPROACH SLAB CLOSURE POUR REINFORCING BARS AND WINGWALL NO. 2 REINFORCING BARS SHALL BE INCLUDED IN THE BID PRICE FOR EACH 540.10 AND/OR 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)" CONTRACT ITEM AS APPROPRIATE.

20. CONCRETE FOR LONGITUDINAL APPROACH SLAB CLOSURE POURS, ABUTMENT PILE CAVITIES, AND WINGWALL NO. 2 CONSTRUCTION SHALL MEET THE REQUIREMENTS OF ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET) (FPQ)."

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

H-PILES

22. THE PILES SHALL BE HP 12 X 74.
23. TO PREVENT DAMAGE TO THE PILES, PILE SHOES ARE REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04(F).
24. THE PILES SHALL BE DRIVEN TO A NOMINAL RESISTANCE OF 190 KIPS AND TO A MINIMUM DEPTH OF 28 FT BELOW THE BOTTOM OF ABUTMENT.
25. A MINIMUM OF ONE DYNAMIC PILE LOADING TEST SHALL BE CONDUCTED AT EACH ABUTMENT. PAYMENT WILL BE MADE UNDER ITEM 505.45, "DYNAMIC PILE LOADING TEST." MORE TESTS MAY BE REQUIRED BY THE ENGINEER.
26. FOR ESTIMATING PURPOSES, THE PILE TIP ELEVATIONS WERE ASSUMED AS SHOWN ON THE BORING LOGS. THE ACTUAL IN PLACE LENGTHS MAY VARY.
27. IN ADDITION TO PILE INSTALLATION TOLERANCES IDENTIFIED IN SUBSECTION 505.04(B), THE TOPS OF THE PILES AFTER DRIVING SHALL NOT VARY FROM THE POSITION SHOWN ON THE PLANS BY MORE THAN 3 INCHES. THE CONTRACTOR SHALL DEMONSTRATE HOW THE TOLERANCES WILL BE MET TO THE SATISFACTION OF THE ENGINEER. THESE MEASURES SHALL BE DEMONSTRATED IN A SUBMITTAL TO BE ACCEPTED BEFORE PILE DRIVING COMMENCES.
28. THE PILE LOCATIONS AT ABUTMENT NO. 1 SHALL BE PRE-EXCAVATED TO A MINIMUM DEPTH OF 8 FEET BELOW THE BOTTOM OF ABUTMENT. AFTER PILE INSTALLATION, THE RESULTING ANNULAR SPACE BETWEEN PILE AND PRE-EXCAVATED HOLE SHALL BE FILLED WITH A 2 FT THICK PLUG OF MORTAR, TYPE IV AT THE BOTTOM OF THE EXCAVATED LIMIT AND SAND CONFORMING TO SUBSECTION 703.03 FOR THE REMAINING PRE-EXCAVATED VOID. PAYMENT FOR PRE-EXCAVATION, MORTAR, TYPE IV, AND SAND SHALL BE MADE UNDER ITEM 900.640, "SPECIAL PROVISION (PRE-EXCAVATION FOR INTEGRAL ABUTMENT PILES)."

PRECAST ABUTMENTS

29. DESIGN VALUES
 - a. CONCRETE COMPRESSIVE STRENGTH: f'c = 5,000 PSI.
 - b. POST-TENSIONING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW RELAXATION, 7-WIRE STRANDS.
 - c. JACKING FORCE PER STRAND = 47 KIPS.
 - d. THERE SHALL BE 1 POST-TENSIONING STRAND PER DUCT.
 - e. APPARENT MODULUS OF ELASTICITY = 28,500 KSI.
30. 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.
31. 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. PAYMENT FOR GALVANIZED ANCHOR ASSEMBLIES, DUCTS, AND POST-TENSIONING STRANDS SHALL BE MADE UNDER EACH 540.10 AND/OR 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)" CONTRACT ITEM AS APPROPRIATE. GALVANIZE ANCHOR ASSEMBLIES AFTER FABRICATION IN ACCORDANCE WITH AASHTO M 232.
32. CORRUGATED STEEL PIPES IN THE PRECAST ABUTMENTS FOR PILE AND ANCHOR BOLT CAVITIES SHALL MEET THE REQUIREMENTS OF SUBSECTION 711.01, COATED IN ACCORDANCE WITH AASHTO M 218, TYPE 1. ALL COSTS ASSOCIATED WITH FURNISHING AND PLACING THE CORRUGATED STEEL PIPES SHALL BE INCLUDED IN THE BID PRICE FOR EACH 540.10 AND/OR 900.645, "SPECIAL PROVISION (CONTRACTOR-FABRICATED PRECAST CONCRETE STRUCTURE)" CONTRACT ITEM AS APPROPRIATE.

33. PROPOSED SEQUENCE OF CONSTRUCTION
 - A. PREPARE AND GRADE FOUNDATION TO REQUIRED ELEVATION.
 - B. DRIVE PILES.
 - C. PLACE PRECAST ABUTMENTS
 - D. IF MORE THAN ONE UNIT:
 - i. INSTALL TRANSVERSE STRANDS AND EPOXY BOND VERTICAL SHEAR KEYS.
 - ii. USE A CALIBRATED JACK TO TENSION STRANDS TO 3 KIPS EACH TO REMOVE SAG.
 - iii. CHECK ALIGNMENT OF PILE CAP UNITS.
 - iv. FILL PILE CAVITIES.

- v. STRESS POST-TENSIONING STRANDS USING A CALIBRATED JACK, OPERATED BY QUALIFIED PERSONNEL WHO HAVE PREVIOUS EXPERIENCE IN POST-TENSIONING.
- E. FORM AND CAST WINGWALL 2.
- F. GROUT ANCHOR RODS IN ABUTMENT ANCHOR ROD CAVITIES.
- G. PILE CAVITY AND WINGWALL CONCRETE SHALL ATTAIN A COMPRESSIVE STRENGTH OF 3,500 PSI BEFORE ABUTMENT BACKFILL IS PLACED AND SUPERSTRUCTURE IS ERECTED.

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

PRESTRESSED SOLID SLABS

35. DESIGN VALUES
 - a. CONCRETE COMPRESSIVE STRENGTH: f'c = 9,000 PSI.
 - b. CONCRETE COMPRESSIVE STRENGTH AT RELEASE: f'ci = 6,000 PSI.
 - c. PRESTRESSING AND POST-TENSIONING STRANDS: 0.6 INCH DIAMETER, 270 KSI, LOW RELAXATION, 7-WIRE STRANDS.
 - d. JACKING FORCE PER PRESTRESSING STRAND = 47 KIPS.
 - e. JACKING FORCE PER POST-TENSIONING STRAND = 47 KIPS.
 - f. THERE SHALL BE 2 POST-TENSIONING STRANDS PER DUCT.
 - g. APPARENT MODULUS OF ELASTICITY = 28,500 KSI.
 - h. ANTICIPATED CAMBER

MIDSPAN CAMBER AT RELEASE	0.98 INCH
MIDSPAN CAMBER AT END OF CONSTRUCTION	1.41 INCH
LONG-TERM MIDSPAN CAMBER	1.23 INCH

36. POST-TENSIONING STRAND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 510 – PRESTRESSED CONCRETE. PAYMENT FOR GALVANIZED ANCHOR ASSEMBLIES, DUCTS, AND POST-TENSIONING STRANDS SHALL BE MADE UNDER ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS)(15" x 48")."

37. DUE TO STABILITY CONCERNS AT THE ABUTMENTS DURING THE ERECTION OF THE SUPERSTRUCTURE, THE CONTRACTOR SHALL SUBMIT THE ERECTION PLAN A MINIMUM OF 30 WORKING DAYS PRIOR TO THE BRIDGE CLOSURE PERIOD. UNDER NO CIRCUMSTANCES SHALL A BRIDGE CLOSURE PERIOD BEGIN PRIOR TO HAVING AN ACCEPTED ERECTION PLAN.

38. THE METHOD OF FORMING FOR SUBSEQUENT POURS AFTER PLACING PRECAST/PRESTRESSED SUPERSTRUCTURE UNITS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR IS ENCOURAGED TO WORK WITH THE FABRICATOR IF ADDITIONAL SUPPORTS MAY BE REQUIRED. IN NO CASE SHALL THE CONTRACTOR ATTACH ADDITIONAL FORM OR SCREED SUPPORTS BY DRILLING OR SIMILAR MEANS INTO ANY PRECAST/PRESTRESSED SUPERSTRUCTURE UNIT.

39. PROPOSED SEQUENCE OF SUPERSTRUCTURE CONSTRUCTION:
 - a. LAY OUT WORKING LINES THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING, MEASURED FROM A SINGLE WORKING POINT. THE WORKING LINES SHALL BE BASED ON THE NOMINAL PRESTRESSED SLAB WIDTHS.
 - b. VERIFY BRIDGE SEAT ELEVATIONS AND TAKE CORRECTIVE ACTION IF NECESSARY.
 - c. POWER WASH ALL SURFACES THAT WILL BE IN CONTACT WITH GROUT.
 - d. INSTALL BEARINGS.
 - e. ERECT THE PRESTRESSED SLABS TO FIT WITHIN THE WORKING LINES.
 - f. ADJUST THE EXTERIOR SLABS TO FIT SNUG AGAINST THE CORK ON THE INTERIOR OF CHEEK WALLS.
 - g. INSTALL HARDWOOD WEDGES BETWEEN ADJACENT SLABS TO MAINTAIN PROPER JOINT OPENING (A MINIMUM OF ONE WEDGE AT EACH TRANSVERSE POST-TENSIONING LOCATION).
 - h. INSTALL BACKER ROD BELOW THE BOTTOM OF THE KEYWAY.
 - i. INSTALL POST-TENSIONING STRANDS AND TENSION TO 3 KIPS TO REMOVE SAG AND SEAT CHUCK.
 - j. GROUT ANCHOR BOLT DUCTS.
 - k. GROUT SHEAR KEYS.
 - l. FULLY TENSION TRANSVERSE POST-TENSIONING STRANDS. POST-TENSIONING OF TRANSVERSE STRANDS WILL BE PERMITTED ONCE SHEAR KEY GROUT HAS REACHED A MINIMUM OF 600 PSI. THE GROUT NEED NOT BE CURED FOR THREE DAYS PRIOR TO COMMENCING POST-TENSIONING. THE CONTRACTOR SHALL MOLD AND CURE A SUFFICIENT NUMBER OF GROUT CUBES FOR TESTING, DURING PLACEMENT OF THE GROUT.

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

PRECAST APPROACH SLABS

41. CONCRETE COMPRESSIVE STRENGTH: f'c = 5,000 PSI.
42. 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.

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NOT FOR CONSTRUCTION

TYLININTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172notes.dgn	PLOT DATE: 5/20/2015
PROJECT LEADER: J. OLUND	DRAWN BY: S. MORGAN
DESIGNED BY: J. OLUND	CHECKED BY: B. TOOTHAKER
GENERAL NOTES	SHEET 66 OF 111

GPS CONTROL POINTS

HVCTRL #1
 ASHTON AZ MK
 NORTH = 814450.530
 EAST = 1722647.960
 ELEV. = 894.620

BARTON, VT. AT THE DISTRICT 9 BARTON GARAGE IN THE LAWN AREA NORTHEAST OF THE FUEL PUMP AND NORTHWEST OF THE GARAGE OFFICE. IT IS 29.8 M N OF THE WEST CORNER OF THE GARAGE, 20.4 M NW OF THE NORTH CORNER OF THE GARAGE, 24.9 M W OF A 10 CM DIAMETER VERTICAL METAL PIPE, 23.3 M NNE OF THE NORTH CORNER OF THE CONCRETE FUEL PUMP ISLAND BASE, 29.5 M E OF POLE NO 1, 20.4 M SW OF A R-O-W FENCE, AND 6.6 M SW OF A FIBERGLASS WITNESS AT AN ELECTRICAL RISER.

HVCTRL #2
 A06024
 NORTH = 817121.810
 EAST = 1723280.340
 ELEV. = 865.150

BARTON VT. ABOUT 120 M (393.7 FT) SOUTH OF THE VT ROUTE 16 INTERSECTION WITH ROARING BROOK ROAD, 10.9 M (35.8 FT) EAST OF AND ABOUT 1.0 M (3.3 FT) HIGHER THAN THE CL OF VT ROUTE 16, 39.6 M (129.9 FT) SOUTH OF POLE NO B/8/01, 24.6 M (80.7 FT) SOUTH SOUTHWEST OF THE MOST WESTERLY OF TWO POSTS FOR A WELCOME TO BARTON SIGN, 51.2 M (168.0 FT) NORTH OF THE NORTHWEST CORNER OF HOUSE NO 527, AND 1.5 M (4.9 FT) SOUTH OF A BARBED WIRE FENCE CORNER. NOTE, MARK IS INTERVISIBLE WITH MARK ASHTON AZIMUTH MK.

TRAVERSE TIES

HVCTRL #3
 NORTH = 817902.734
 EAST = 1723218.425
 ELEV. = 856.622

NOT TIED

HVCTRL #4
 NORTH = 818935.664
 EAST = 1723340.955
 ELEV. = 858.151

HVCTRL #5
 NORTH = 819891.510
 EAST = 1723403.545
 ELEV. = 860.872

* MAIN TRAVERSE COMPLETED 6/1/2012 BY R. GILMAN P.C. & P. WINTERS & C. CYR

ALIGNMENT TIES

POB 10+00.00
 NORTH = 819162.349
 EAST = 1723342.509

POE 14+67.30
 NORTH = 819262.995
 EAST = 1723392.746

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (96)
ADJUSTMENT	COMPASS

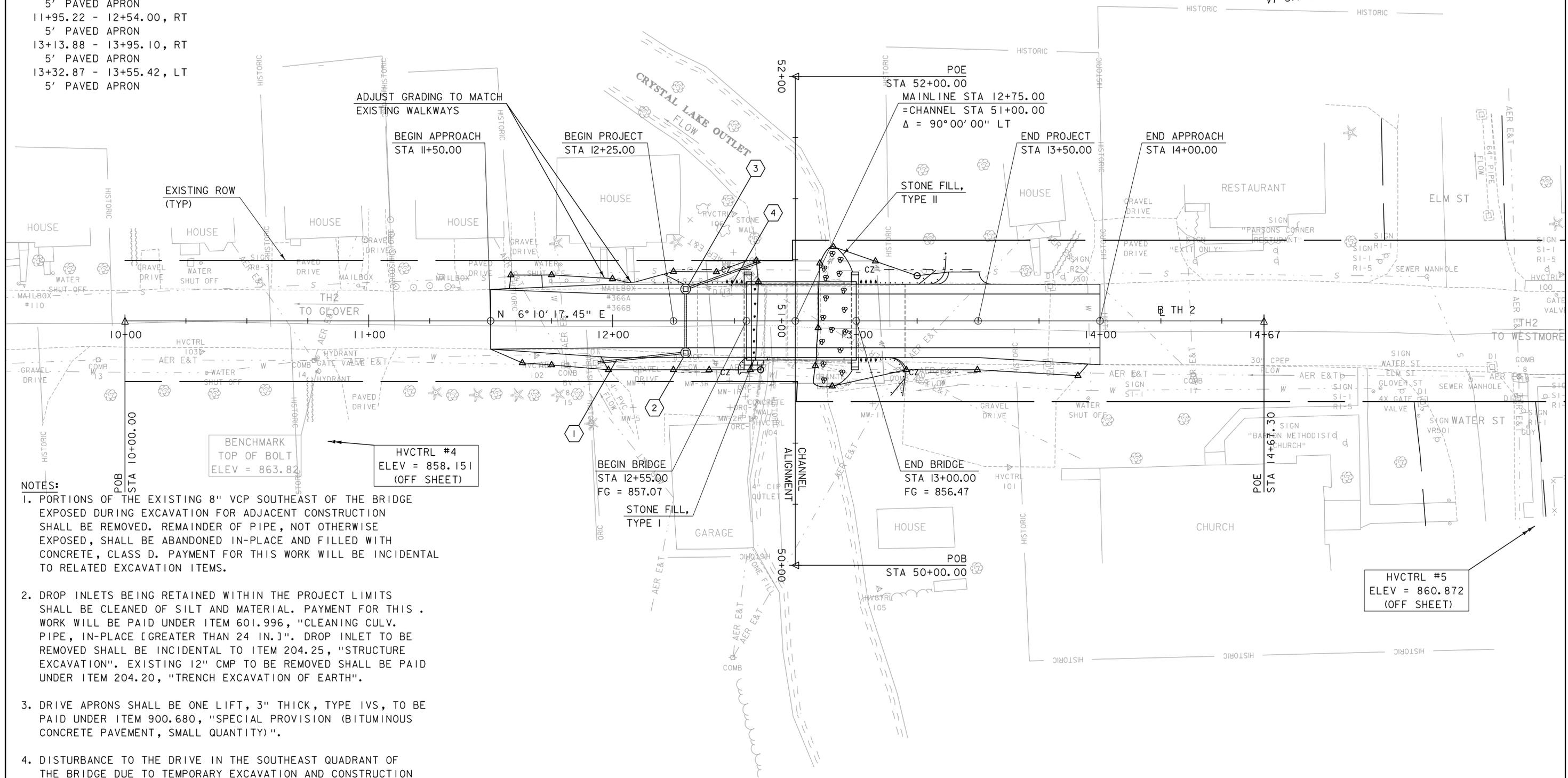
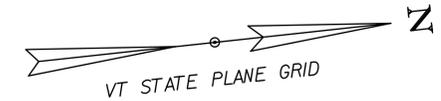
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TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE	
PROJECT NUMBER: BHF 0286(5)	
FILE NAME: z12j1721.dgn	PLOT DATE: 5/20/2015
PROJECT LEADER: J. OLUND	DRAWN BY: S. MORGAN
DESIGNED BY: J. HOWE	CHECKED BY: B. TOOTHAKER
TIE SHEET	SHEET 67 OF 111

REMOVAL OF EXISTING FENCE
 11+73.86 - 12+49.72, LT
 PARTIAL REMOVAL OF STRUCTURE
 12+61 - 12+86
 CLEANING CULV. PIPE, IN-PLACE [GREATER THAN 24 IN.]
 12+87.41, RT - 13+77.85, RT
 13+78.68, RT - 13+79.73, LT
 CONSTRUCT DRIVES
 11+57.74 - 11+71.27, LT
 5' PAVED APRON
 11+95.22 - 12+54.00, RT
 5' PAVED APRON
 13+13.88 - 13+95.10, RT
 5' PAVED APRON
 13+32.87 - 13+55.42, LT
 5' PAVED APRON

EXISTING BRIDGE DATA
 2 SPAN GRANITE SLAB ON LOOSE STONE ABUTMENTS
 CONSTRUCTED IN 1919
 BRIDGE LENGTH = 21 FT.
 WATERWAY AREA = 130 SF



- NOTES:**
1. PORTIONS OF THE EXISTING 8" VCP SOUTHEAST OF THE BRIDGE EXPOSED DURING EXCAVATION FOR ADJACENT CONSTRUCTION SHALL BE REMOVED. REMAINDER OF PIPE, NOT OTHERWISE EXPOSED, SHALL BE ABANDONED IN-PLACE AND FILLED WITH CONCRETE, CLASS D. PAYMENT FOR THIS WORK WILL BE INCIDENTAL TO RELATED EXCAVATION ITEMS.
 2. DROP INLETS BEING RETAINED WITHIN THE PROJECT LIMITS SHALL BE CLEANED OF SILT AND MATERIAL. PAYMENT FOR THIS WORK WILL BE PAID UNDER ITEM 601.996, "CLEANING CULV. PIPE, IN-PLACE [GREATER THAN 24 IN.]". DROP INLET TO BE REMOVED SHALL BE INCIDENTAL TO ITEM 204.25, "STRUCTURE EXCAVATION". EXISTING 12" CMP TO BE REMOVED SHALL BE PAID UNDER ITEM 204.20, "TRENCH EXCAVATION OF EARTH".
 3. DRIVE APRONS SHALL BE ONE LIFT, 3" THICK, TYPE IVS, TO BE PAID UNDER ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)".
 4. DISTURBANCE TO THE DRIVE IN THE SOUTHEAST QUADRANT OF THE BRIDGE DUE TO TEMPORARY EXCAVATION AND CONSTRUCTION EFFORTS BEYOND THE PROPOSED PAVED APRON SHALL BE REPAIRED AND/OR RECONSTRUCTED IN ACCORDANCE WITH STANDARD B-71. PAYMENT FOR RECONSTRUCTION OF THE GRAVEL DRIVE SHALL BE MADE UNDER RELATED CONTRACT ITEMS.
 5. SEE DRAINAGE DETAIL SHEET FOR DETAILS ON DRAINAGE FLAGS. SEE TH2 CROSS SECTIONS SHEET 2 FOR ADDITIONAL LAYOUT INFORMATION.

BENCHMARK
 TOP OF BOLT
 ELEV = 863.82

HVCTRL #4
 ELEV = 858.151
 (OFF SHEET)

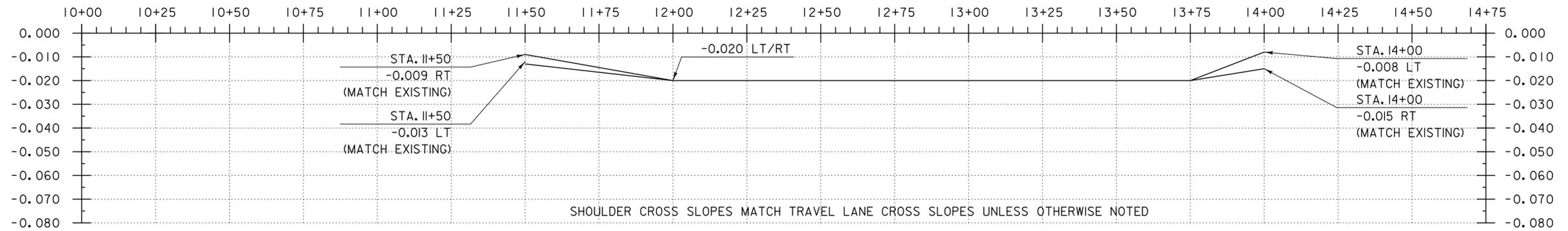
HVCTRL #5
 ELEV = 860.872
 (OFF SHEET)

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

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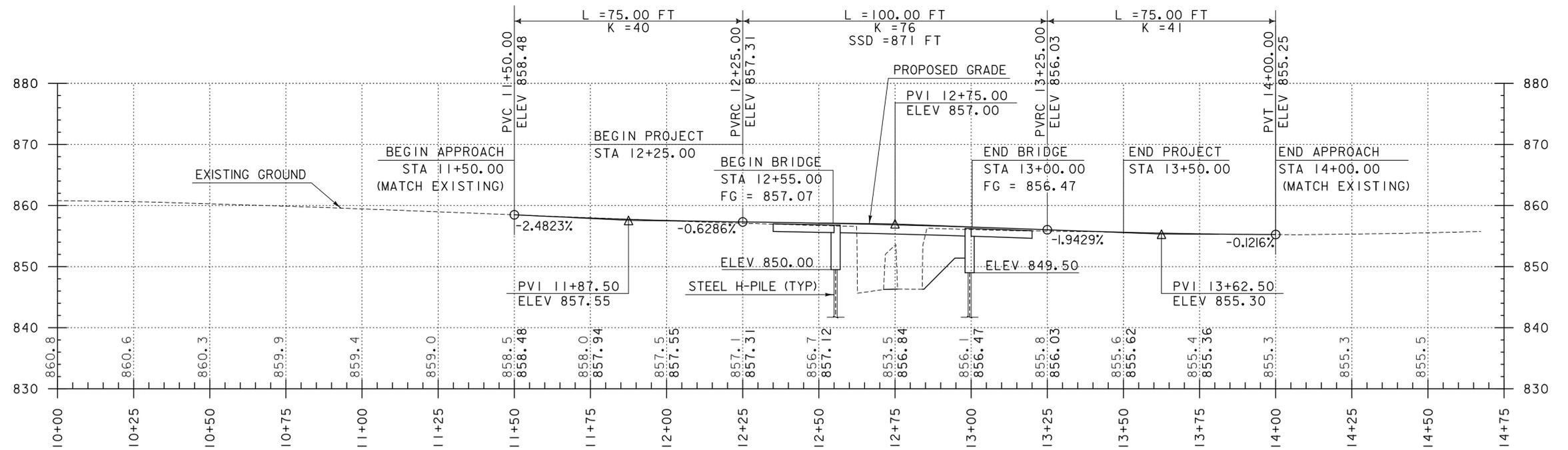
TYLIN INTERNATIONAL

PROJECT NAME:	BARTON VILLAGE	FILE NAME:	z12j172bdr.dgn	PLOT DATE:	5/20/2015
PROJECT NUMBER:	BHF 0286(5)	PROJECT LEADER:	J. OLUND	DRAWN BY:	B. TOOTHAKER
		DESIGNED BY:	B. TOOTHAKER	CHECKED BY:	J. HOWE
		LAYOUT SHEET		SHEET	68 OF 111



BANKING DIAGRAM - TH 2

HORIZ: 1"=20'
NO VERTICAL SCALE



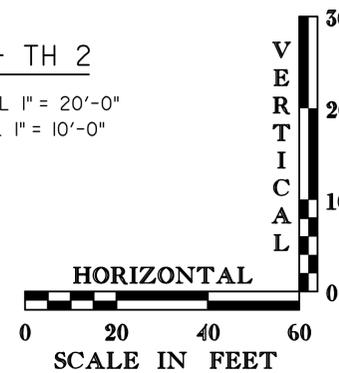
NOTE:

GRADES SHOWN TO THE NEAREST TENTH ARE EXISTING GROUND ALONG

GRADES SHOWN TO THE NEAREST HUNDREDTH ARE PROPOSED GRADE ALONG

PROFILE - TH 2

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



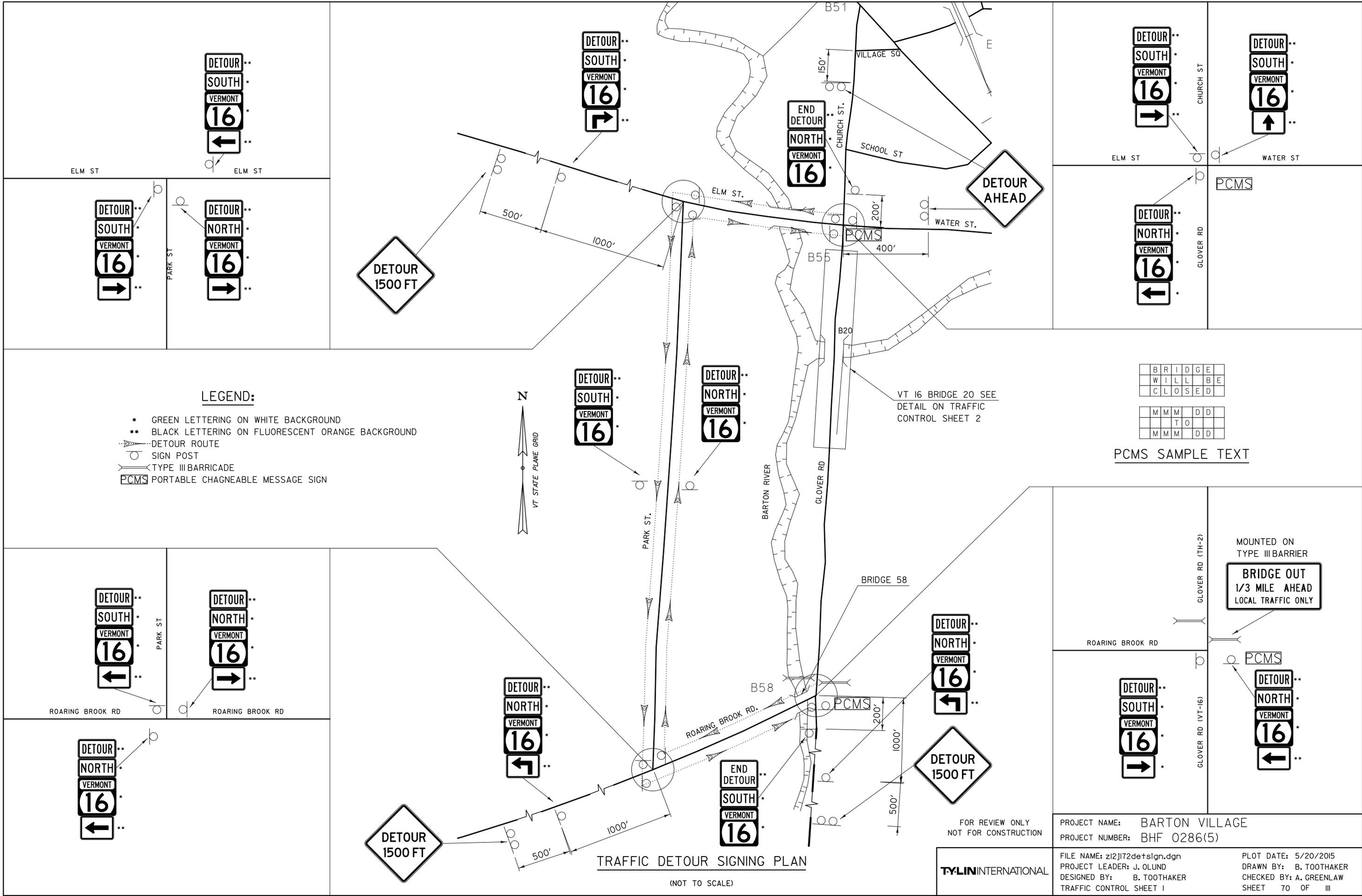
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TYLINT INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172pro.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
PROFILE AND BANKING DETAIL SHEET

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 69 OF 111



LEGEND:

- * GREEN LETTERING ON WHITE BACKGROUND
- ** BLACK LETTERING ON FLUORESCENT ORANGE BACKGROUND
- DETOUR ROUTE
- SIGN POST
- TYPE III BARRICADE
- PCMS PORTABLE CHAGNEABLE MESSAGE SIGN



BRIDGE
WILL BE
CLOSED

M M M D D D
T O
M M M D D D

PCMS SAMPLE TEXT

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

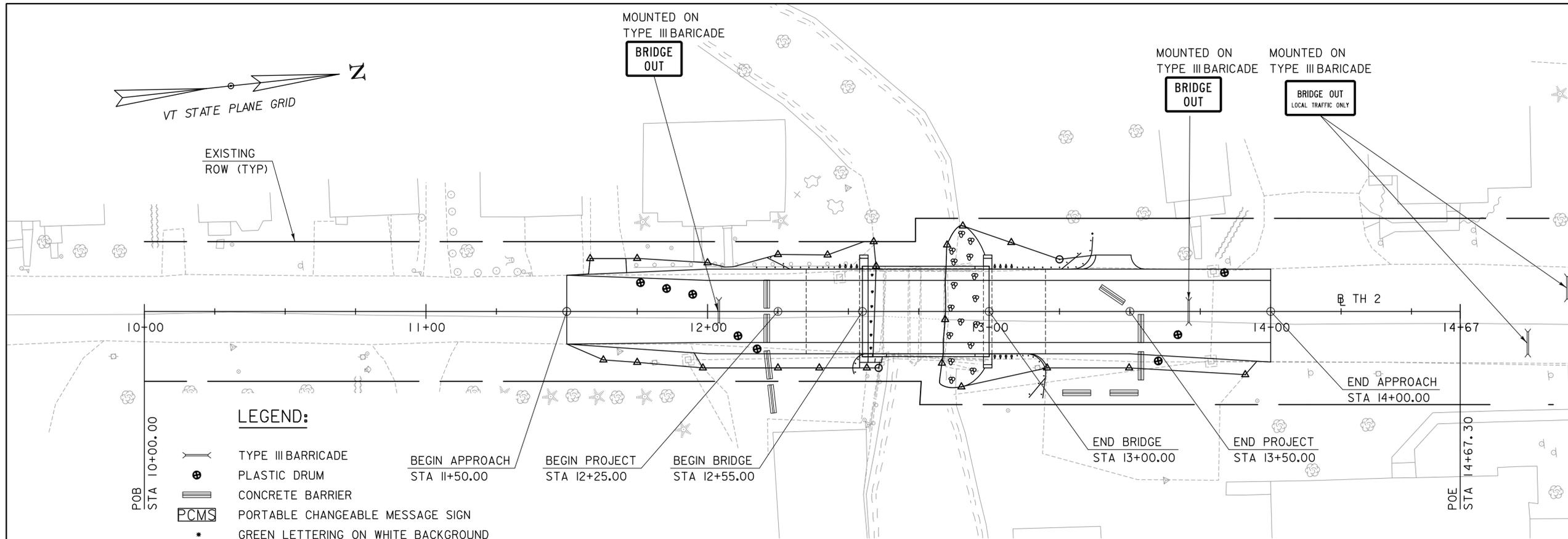
TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172de+sign.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TRAFFIC CONTROL SHEET 1

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: A. GREENLAW
SHEET 70 OF 111

TRAFFIC DETOUR SIGNING PLAN
(NOT TO SCALE)



BRIDGE SITE CLOSURES DETAIL

(NOT TO SCALE)

TRAFFIC CONTROL NOTES:

1. TRAFFIC WILL BE MAINTAINED WITH AN OFFSITE DETOUR ALONG ROARING BROOK RD, PARK ST, AND ELM ST, SUCH AS THE ONE SHOWN ON TRAFFIC CONTROL SHEET 1. DETOUR SIGNING IS THE RESPONSIBILITY OF THE CONTRACTOR. PAYMENT FOR ALL TEMPORARY TRAFFIC CONTROL DEVICES FOR IMPLEMENTING THE DETOUR AND SITE SPECIFIC CLOSURE, INCLUDING BUT NOT LIMITED TO SIGNS, BARRICADES, AND MESSAGE BOARDS, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)."
2. THE DETOUR SHOWN ON THESE PLANS IS CONCEPTUAL. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A DETAILED SITE SPECIFIC TRAFFIC CONTROL PLAN IDENTIFYING BRIDGE CLOSURE METHODS AND SIGN LOCATIONS PRIOR TO THE BEGINNING OF CONSTRUCTION.
3. DURING THE ROAD CLOSURE PERIOD, ALL "LEGAL LOAD LIMIT 24,000 POUNDS" SIGNS ALONG THE DETOUR ROUTE SHALL BE COVERED.
4. ACCESS TO ALL EXISTING DRIVES AND SIDE ROADS, EXCEPT DRIVE ACCESS TO GARAGE IN SOUTH EAST QUADRANT, SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF CONSTRUCTION.
5. WHERE PRACTICAL, DETOUR ROUTE MARKERS AND ANY ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED ADJACENT TO EXISTING ROUTE MARKERS AND MODIFIED TRAFFIC CONTROL SIGN ASSEMBLIES. 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 WHENEVER POSSIBLE.
6. TREES AND SHRUBS WITHIN EXISTING RIGHT OF WAY AND OTHERWISE INTERFERING WITH VISIBILITY OF EXISTING OR PROPOSED DETOUR SIGNS SHALL BE TRIMMED ACCORDINGLY. COSTS FOR SUCH TRIMMING SHALL BE PAID UNDER ITEM 900.645, "SPECIAL PROVISION (TRAFFIC CONTROL, ALL-INCLUSIVE)".
7. ONE PCMS SIGN EACH SHALL BE PLACED AT THE CHURCH ST/ELM ST INTERSECTION AND ONE AT THE ROARING BROOK RD/GLOVER RD INTERSECTION 14 DAYS PRIOR TO THE START OF CONSTRUCTION TO WARN OF IMPENDING DETOURS. THESE SHALL THEN BE DEPLOYED TO LOCATIONS SPECIFIED BY THE ENGINEER ONCE CONSTRUCTION HAS BEGUN, IF NECESSARY.

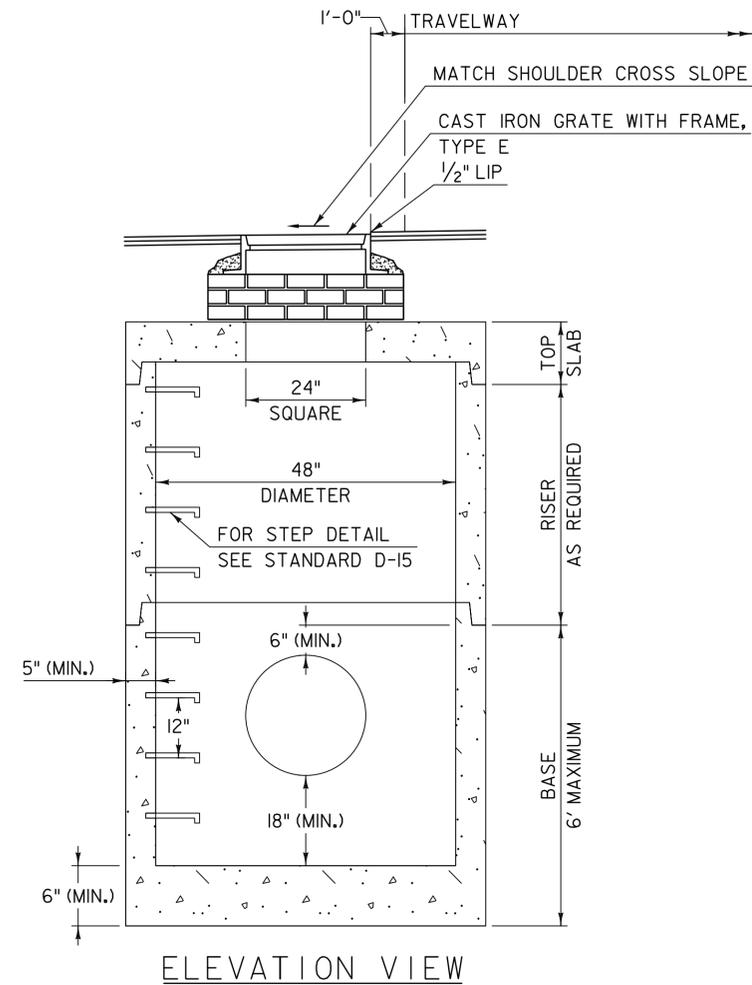
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NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

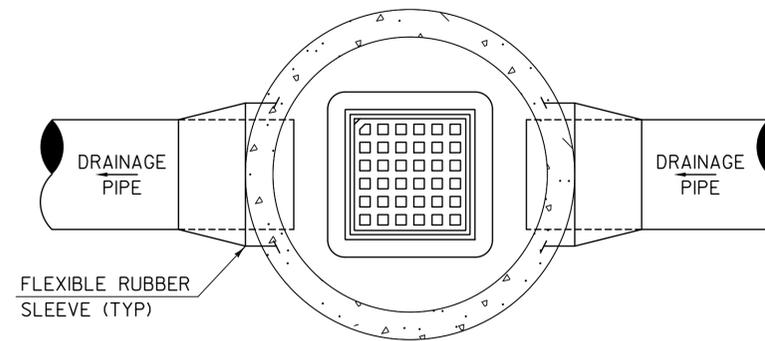
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172de+sign2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TRAFFIC CONTROL SHEET 2

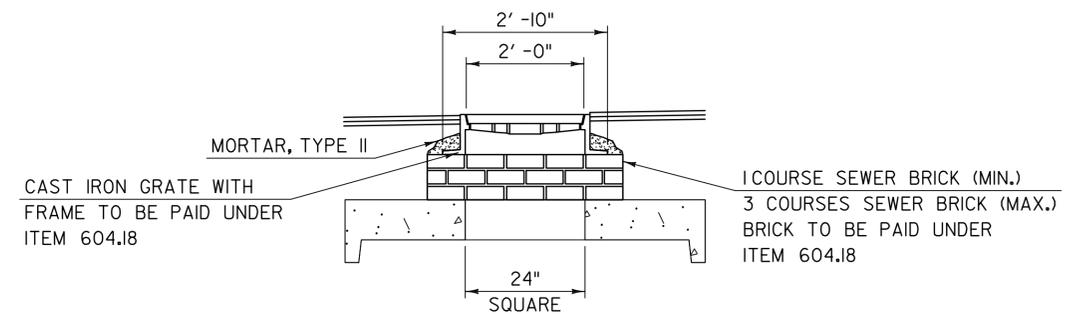
PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: A. GREENLAW
SHEET 71 OF 111



ELEVATION VIEW



DROP INLET PLAN VIEW



ELEVATION OF GRATE INSTALLATION

PRECAST REINFORCED CONCRETE DROP INLET (PRCDI)
NOT TO SCALE

PRECAST CONCRETE DROP INLET AND MANHOLE 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 SHALL BE MADE UNDER ITEM 604.18, "PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE."

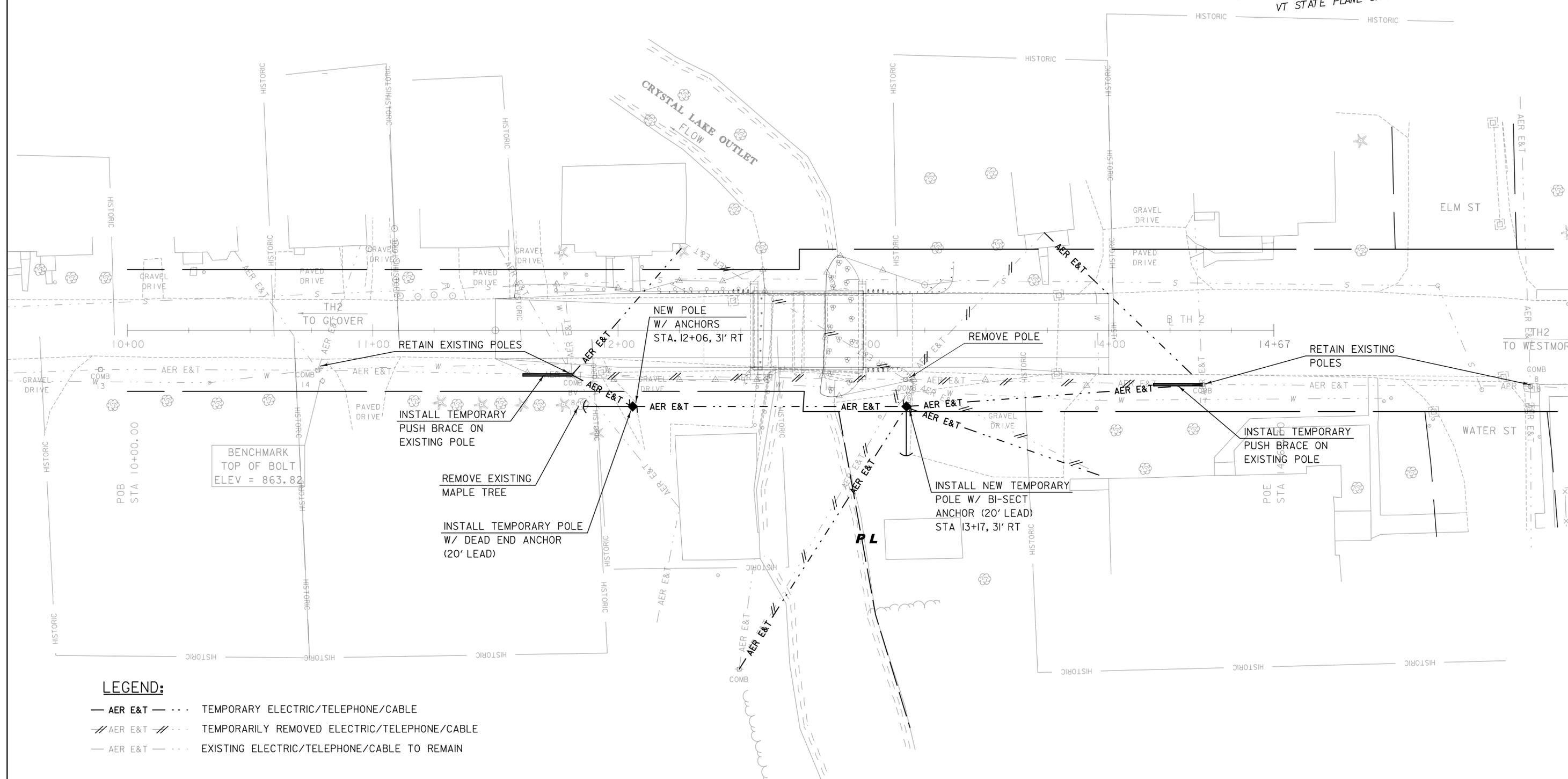
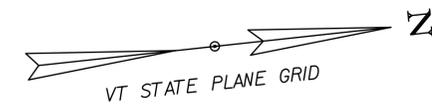
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLININTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172drnde.t.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: D. BRYANT
PRECAST DROP INLET DETAILS

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 72 OF 111



LEGEND:

- AER E&T — . . . TEMPORARY ELECTRIC/TELEPHONE/CABLE
- //AER E&T// . . . TEMPORARILY REMOVED ELECTRIC/TELEPHONE/CABLE
- AER E&T — . . . EXISTING ELECTRIC/TELEPHONE/CABLE TO REMAIN

NOTE: UTILITY RELOCATION AND TREE REMOVAL 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

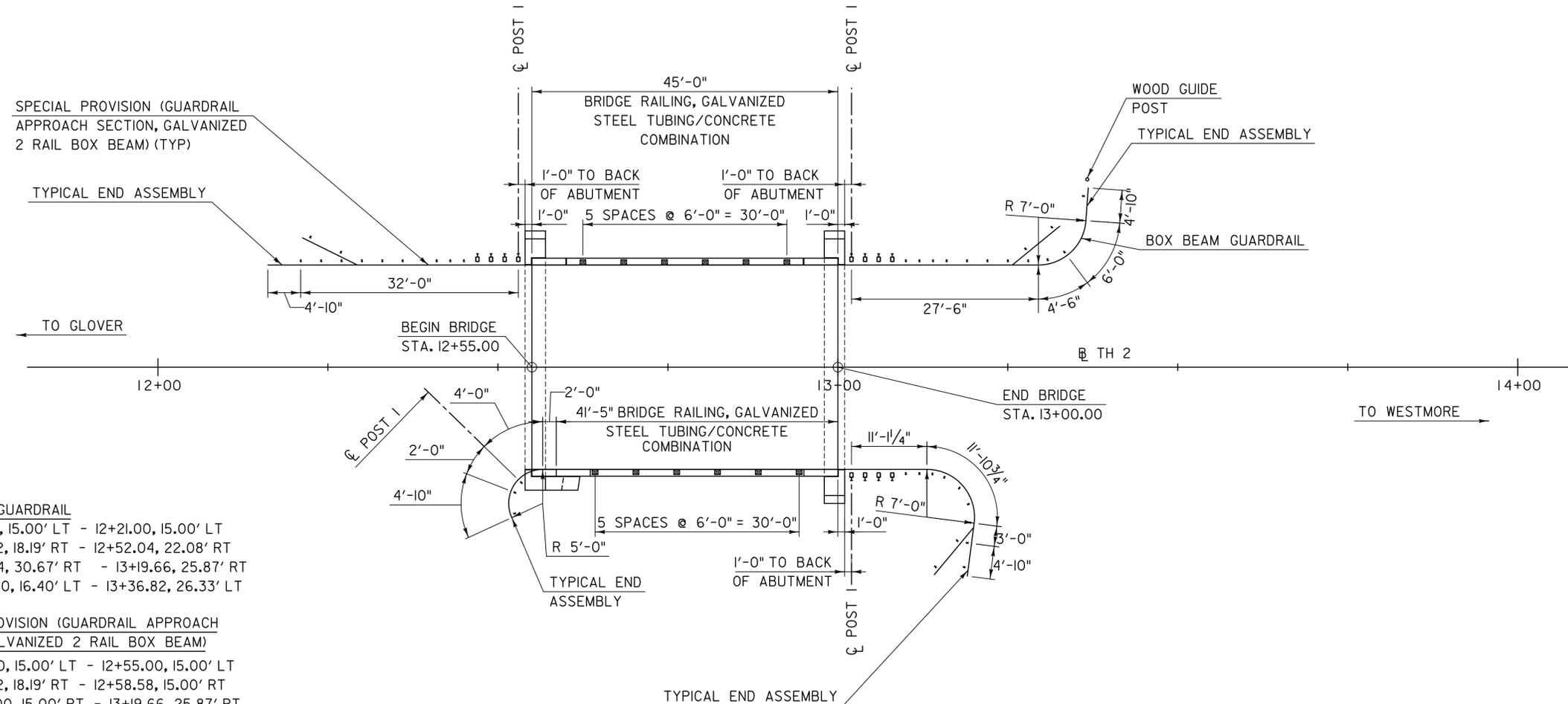
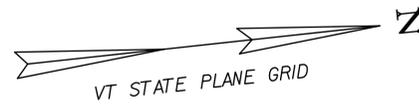
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

TYLININTERNATIONAL

FILE NAME: z12j172u+llty.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: S. MORGAN
UTILITY RELOCATION LAYOUT

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND
SHEET 73 OF 111



BOX BEAM GUARDRAIL
 STA 12+16.17, 15.00' LT - 12+21.00, 15.00' LT
 STA 12+51.92, 18.19' RT - 12+52.04, 22.08' RT
 STA 13+19.04, 30.67' RT - 13+19.66, 25.87' RT
 STA 13+33.70, 16.40' LT - 13+36.82, 26.33' LT

SPECIAL PROVISION (GUARDRAIL APPROACH SECTION, GALVANIZED 2 RAIL BOX BEAM)
 STA 12+21.00, 15.00' LT - 12+55.00, 15.00' LT
 STA 12+51.92, 18.19' RT - 12+58.58, 15.00' RT
 STA 13+00.00, 15.00' RT - 13+19.66, 25.87' RT
 STA 13+00.00, 15.00' LT - 13+33.70, 16.40' LT

BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION
 STA. 12+55.00 - 13+00.00, LT
 STA. 12+58.58 - 13+00.00, RT

WOOD MARKER POST
 STA. 13+36.68, LT

RAIL LAYOUT

SCALE: 1' = 10'-0"

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

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

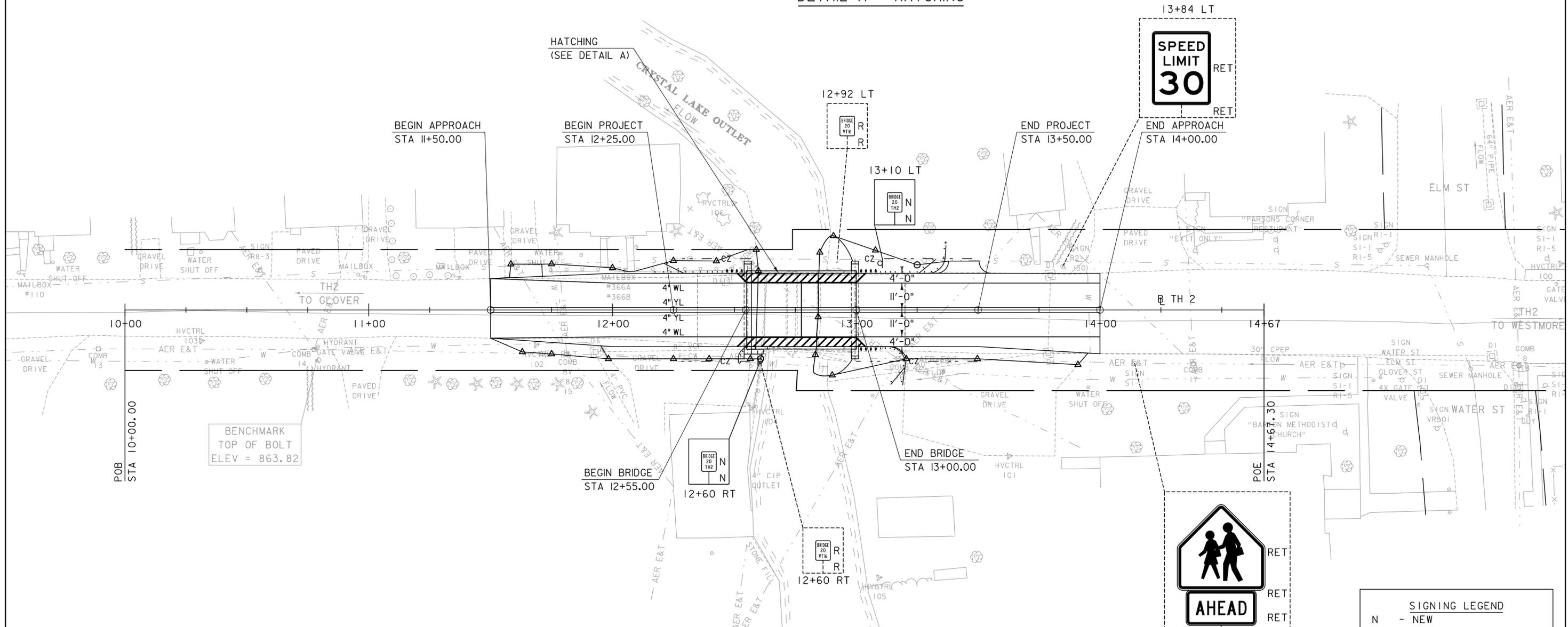
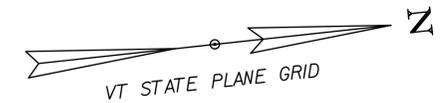
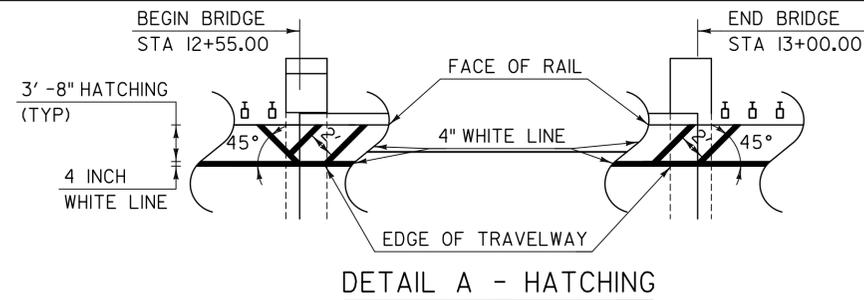
TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172rallay.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: J. HOWE
 RAIL LAYOUT SHEET

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. OLUND
 SHEET 74 OF 111

4 INCH WHITE LINE
 11+50.00 - 14+00.00, LT
 11+50.00 - 14+00.00, RT
 12+51.00 - 13+04.00, LT (79.28 LF HATCHING)
 12+51.00 - 13+04.00, RT (79.28 LF HATCHING)
 4 INCH YELLOW LINE
 11+50.00 - 14+00.00 (DOUBLE CENTERLINE)
 REMOVING SIGNS
 12+60, RT
 12+92, LT



TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, STATION OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS		EXIST POST		NEW SIGN POSTS					SIGN DETAIL			
		EACH	WIDTH (in)	HEIGHT (in)	"A"	"B"	SALV SIGN	SALV TIS	RETAIN	SALVAGE	NO OF			REMARKS	DETAIL ON SHEET NUMBER	STANDARD SHEET NUMBER
											POST	1.75	2.00			
12+60, RT	BRIDGE 20 TH2	1	6.0	8.0	0.3					1.0	6.0		1.0		E-134	
13+10, LT	BRIDGE 20 TH2	1	6.0	8.0	0.3					1.0	6.0		1.0		E-134	
		TOTALS									12					

TRAFFIC SIGNS AND LINES LAYOUT
 SCALE 1" = 20'-0"
 20 0 20

SIGNING LEGEND	
N	- NEW
R	- REMOVE
RET	- RETAIN
R&S	- REMOVE AND SALVAGE
S	- ERECT SALVAGED SIGN
[Dashed Box]	- EXISTING ASSEMBLY
[Solid Box]	- PROPOSED ASSEMBLY

NOTE:
 ADJUST NEW CENTERLINE AND EDGE LINES TO MATCH EXISTING LINES AT BEGIN/END APPROACH

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

FILE NAME: z12j172sgnlayout.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 TRAFFIC SIGNS AND LINES LAYOUT

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: A. GREENLAW
 SHEET 75 OF 111

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

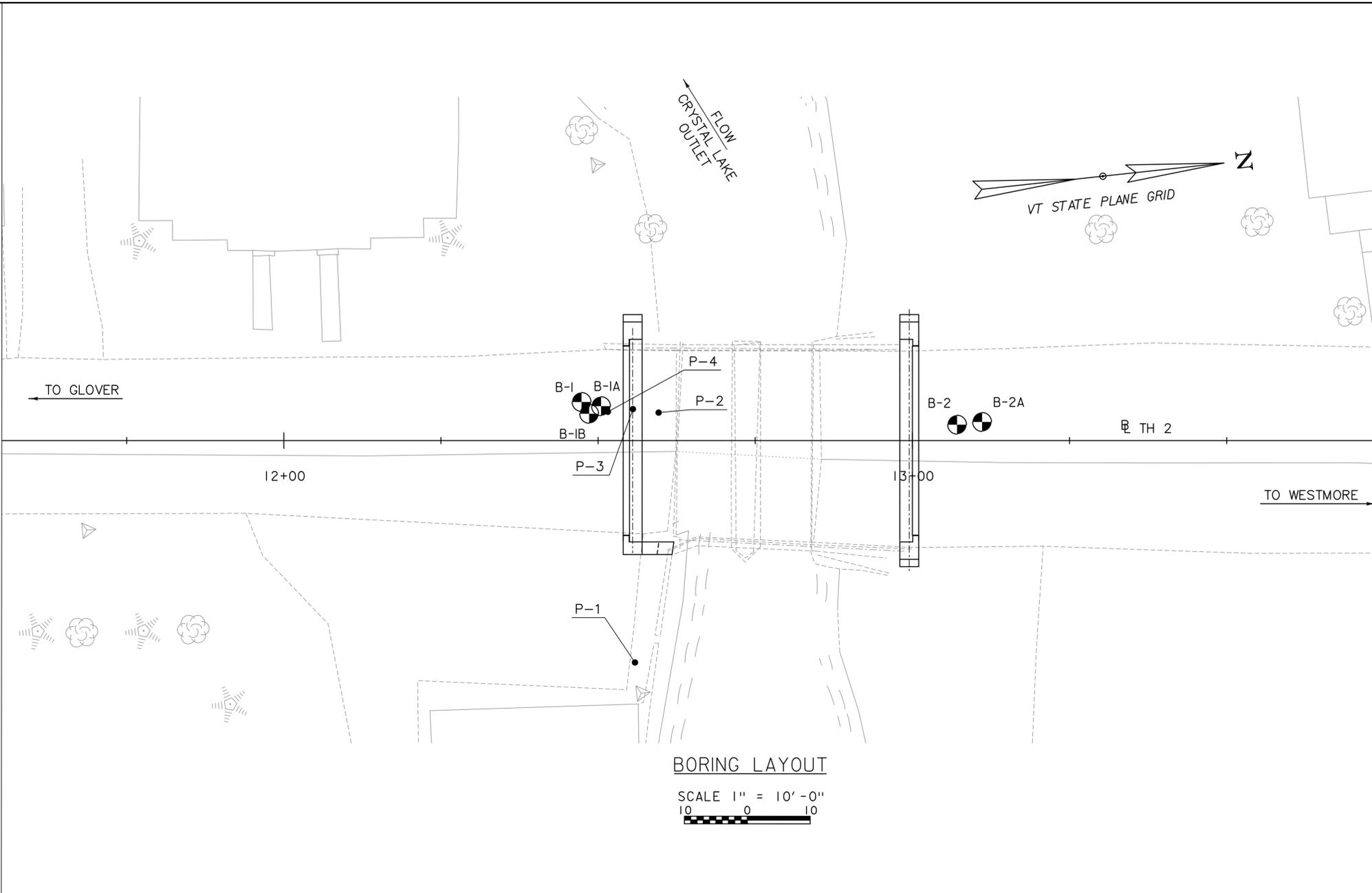
- ▼ Water Elevation
- ⊕ Standard Penetration Boring
- ⊕ Auger Boring
- ⊕ Rod Sounding
- ⊕ Sample
- N Standard Penetration Test Blow Count Per Foot For: 2" O.D. Sampler 1 3/8" I.D. Sampler Hammer Weight Of 140 Lbs. Hammer Fall Of 30"
- VS Field Vane Shear Test
- US Undisturbed Soil Sample
- B Blast
- DC Diamond Core
- MD Mud Drill
- WA Wash Ahead
- HSA Hollow Stem Auger Core Size 1 1/8"
- AX Core Size 1 1/8"
- BX Core Size 1 3/8"
- 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 To Ledge Or Boulder
- NR No Recovery
- Rec. Recovery
- %Rec. Percent Recovery
- ROD Rock Quality Designation
- CBR California Bearing Ratio
- < Less Than
- > Greater Than
- R Refusal (N > 100)

COLOR

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

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 > 0.075" (#10 sieve).
- SAND - Particles of rock < 0.075" (#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.



BORING LAYOUT

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

GENERAL NOTES

- The subsurface explorations shown herein were made between February 4, 2014 and February 28, 2014 by GeoDesign, Inc.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by GeoDesign, Inc. and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- 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.
- Engineering judgement 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 judgement by the Contractor.
- 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.
- 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.

BORING LAYOUT

HOLE NO.	STATION	OFFSET	NORTHING	EASTING	GROUND ELEVATION	ELEVATION TLOB
B-1	12+47.4	6.1, LT	819409.0	1723363.0	856.0	-
B-1A	12+50.5	5.5, LT	819412.0	1723364.0	856.0	-
B-1B	12+48.6	4.3, LT	819410.0	1723365.0	856.0	-
B-2	13+07.1	2.5, LT	819468.0	1723373.0	856.0	-
B-2A	13+11.1	3.0, LT	819472.0	1723373.0	856.0	-
P-1	12+55.9	35.2, RT	819413.0	1723405.0	856.0	-
P-2	12+59.6	4.4, LT	819421.0	1723366.0	856.0	-
P-3	12+55.5	5.0, LT	819417.0	1723365.0	856.0	-
P-4	12+51.6	4.6, LT	819413.0	1723365.0	856.0	-

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

FILE NAME: z12j172bor.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: J. OLUND
BORING INFORMATION & LAYOUT SHEET

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: B. TOOTHAKER
SHEET 76 OF 111

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-1					
				Barton Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9		Page No.: 1 of 2 Pin No.: 12j172 Checked By: JFW/DTH					
Boring Crew: J.Leonhardt (QC/QA), A. Baribault (GeoDesign)		Casing Sampler		Groundwater Observations (3)							
Date Started: 2/04/14 Date Finished: 2/07/14		Type: FJ SS		Date	Depth (ft)	Notes					
VTSPG NAD83: N 819409.00 ft E 1723363.00 ft		Hammer Wt: 140 lb. 140 lb.		02/04/14		See Remark 2.					
Station: 12+47.4 Offset: 6.1 LT		Hammer Fall: 30 in. 30 in.									
Ground Elevation: 856 ft		Hammer/Rod Type: Auto/NWJ									
		Rig: CME 550X ATV CE = 1.4									
Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate (min/ft)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %
5	x x x	S1 (0.5' to 2'): Refusal, light brown fine to coarse SAND, some Silt, little fine Gravel, frozen. Rec. = 0.4 ft PID = 6.2 (Ross=0)					100/5" (6)				
	x x x	S2 (2' to 4'): Dense, brown/tan fine to medium SAND and SILT, little (-) fine to coarse Gravel, frozen. Lower 8" mostly frozen Sand and Silt. Rec. = 1.5 ft PID = 0.1 (Ross=0)					73-17-29-33 (46)		13.0	46.0	41.0
	x x x	S3 (4' to 6'): Medium dense, brown fine to coarse SAND, some Silt, little fine Gravel, trace (+) Brick, wet. Rec. = 1.3 ft PID = 0.6 (Ross=0.8)					8-6-7-4 (13)				
	x x x	S4 (6' to 8'): Very dense, brown fine to coarse SAND, some Silt, wet. Rec. = 1.0 ft PID = 0.1 (Ross=0)					1-20-34-47 (54)				
10		S5 (8' to 10'): Loose, gray-brown fine to medium SAND and SILT, trace Brick (in upper 2'), wet. Strong petroleum odor. Rec. = 1.2 ft PID = 1957 (Ross=730)					2-3-2-1 (5)		3.0	74.0	23.0
		S6 (10' to 12'): Loose, gray fine to medium SAND, little (+) Silt, trace fine Gravel, trace Wood/Organic Fibers, wet. Strong petroleum odor. Rec. = 1.5 ft PID = 873 (Ross=327)					2-4-3-4 (7)				
15		S7 (12' to 14'): Loose, gray and brown layered fine to coarse SAND, little (-) Silt, stratified with trace Wood/Organic Fibers, wet. Strong petroleum odor. Rec. = 1.3 ft PID = 1622 (Ross=486)					2-4-6-3 (10)				
		S8 (14' to 16'): Medium dense, gray fine to coarse SAND and SILT, trace Wood, wet. Significant petroleum odor. Rec. = 1.1 ft PID = 44 (Ross=18)					4-5-3-3 (8)		44.0	17.0	39.0
		S9 (16' to 18'): Loose, gray/white fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, trace Wood, wet. Slight petroleum odor. (Probable Slough) Rec. = 0.2 ft PID = 72 (Ross=104)					4-4-4-5 (8)				
25		S10 (18' to 20'): Loose, gray fine to coarse SAND and SILT, some fine Gravel, wet. Rec. = 0.6 ft PID = 58 (Ross=7.5)					4-4-5-5 (9)				
		S11 (20' to 22'): Loose, gray SILT, some fine Sand, wet. Rec. = 1.4 ft PID = 9.5 (Ross=0.6)									
		S12 (24' to 26'): Loose, gray SILT, some fine Sand, wet. Rec. = 0.8 ft PID = 9.2 (Ross=0.6)									
30		S13 (29' to 31'): Loose, gray SILT, some fine Sand, wet. Rec. = 1.1 ft PID = 10.2 (Ross=0)					3-4-4-3 (8)		3.0	23.0	74.0
		S14 (34' to 36'): Medium dense, gray SILT, some fine Sand, wet. Rec. = 1.1 ft PID = 1.1 (Ross=0.1)					5-6-6-7 (12)				
40		S15 (39' to 41'): Medium dense, gray SILT, little fine Sand, wet. Rec. = 1.0 ft PID = 2.8 (Ross=0.2)					5-6-6-5 (12)		5.0	3.0	92.0
45		S16 (44' to 46'): Refusal, gray SILT, little fine Sand, trace fine Gravel (in spoon shoe, likely fractured rock). Rec. = 0.8 ft PID = 0 (Ross=0)		C1	44	1.5	6-60/3" (R)				
		C1A (44.8' to 47'): BOULDER.					1.8				
		C1B (47' to 48.8'): Gray fine SAND and SILT, wet. PID Not Recorded					0.1				
		S17 (49' to 51'): Medium dense, gray SILT, some fine Sand, wet.					0.1	3-6-9-9			
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.											

BOTTOM OF ABUT NO 1
EL 850.00

GEODESIGN BORING LOG 888-04.7 BARTON BR 20.GPJ VERMONT AOT.GDT 5/12/14

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-1					
				Barton Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9		Page No.: 2 of 2 Pin No.: 12j172 Checked By: JFW/DTH					
Boring Crew: J.Leonhardt (QC/QA), A. Baribault (GeoDesign)		Casing Sampler		Groundwater Observations (3)							
Date Started: 2/04/14 Date Finished: 2/07/14		Type: FJ SS		Date	Depth (ft)	Notes					
VTSPG NAD83: N 819409.00 ft E 1723363.00 ft		Hammer Wt: 140 lb. 140 lb.		02/04/14		See Remark 2.					
Station: 12+47.4 Offset: 6.1 LT		Hammer Fall: 30 in. 30 in.									
Ground Elevation: 856 ft		Hammer/Rod Type: Auto/NWJ									
		Rig: CME 550X ATV CE = 1.4									
Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (ROD %)	Drill Rate (min/ft)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %
		Rec. = 1.0 ft					(15)				
55		Hole stopped @ 51.5 ft									
60		Remarks: 1) Borehole advanced to 4 feet with 4.25" HSA, then to 29 feet with 4" FJ casing, open hole to 44.8 feet. Telescoped 3" FJ casing to 44.8 feet prior to start of rock core. 2) Moisture observations below 4 feet deep may not accurately reflect insitu conditions due to continuously adding water during borehole advance. 3) Strong petroleum odor observed from 8 to 14 feet, decreasing thereafter. Samples S5 through S8 preserved for VOC laboratory testing. 4) Slight roller bit grinding from 16 to 20 feet deep. 5) Wash water brown, turning gray-brown at approximately 12 feet. 6) Approximately 2.2 feet of boulder cored in C1, total penetration 4 feet (1.8 feet through soil). Also recovered approximately 9" of soil (gray fine SAND and SILT, wet). 7) Advanced 3" casing to refusal at 51.5 feet deep. While attempting to remove casing for attachment of washing tee, shoe wedged and casing broke at approximately 41 feet deep. 8) Borehole abandoned at 51.5 feet deep. Tremie grout to bottom of hole to backfill prior to removing casing. 9) Grout mix consisted on +/- 35 gallons water, 94 pounds Type I/II Portland Cement, 25 pounds Bentonite Powder. 10) Samples S1 through S16 screened in the field with an Ion Science PhoCheck 1000 model PID calibrated to a 100 PPM Isobutylene standard. Samples S1 through S16 also screened by Ross Environmental with PhoCheck Tiger calibrated to a benzene standard. 11) All sample descriptions shown are per the Burmister classification system and are based on visual descriptions made in the field by GeoDesign personnel. Where applicable, laboratory testing results shown are from testing performed by GeoTesting Express, with the Gravel/Sand/Fines breakdown shown per AASHTO M145. 12) Northing, easting, and ground surface elevation are estimated from an electronic site plan provided by TY Lin and taped measurements made from existing features in the field by GeoDesign personnel.									
85		ESTIMATED BOTTOM OF PILE AT ABUT NO 1 EL 770.0									
90											
95											
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.											

GEODESIGN BORING LOG 888-04.7 BARTON BR 20.GPJ VERMONT AOT.GDT 5/12/14

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

FILE NAME: z12j172blogl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: J. OLUND
BORING LOG I

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 77 OF III

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-1B					
Barton Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9		Page No.: 1 of 2		Pin No.: 121172					
Checked By: JFW/DTH		Boring Crew: J.Leonhardt (QC/QA), A. Baribault (GeoDesign)		Casing Sampler					
Date Started: 2/25/14 Date Finished: 2/28/14		Type: FJ SS		Groundwater Observations (3)					
VTSPG NAD83: N 819410.00 ft E 1723365.00 ft		I.D.: 4 in 1.38 in		Date	Depth (ft)				
Station: 12+48.6 Offset: 4.3 LT		Hammer Wt: 140 lb. 140 lb.		02/25/14	See Remark 1.				
Ground Elevation: 856 ft		Hammer Fall: 30 in. 30 in.							
		Hammer/Rod Type: Auto/NWJ							
		Rig: CME 550X ATV CE = 1.4							
Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Drill Rate (minutes/ft)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %
0-10	x x x	Inferred Fill from Boring B-1							
10-20	x x x	Inferred Silty Sand from Boring B-1							
20-80.3	x x x	Inferred Sandy Silt from Boring B-1							

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

BOTTOM OF ABUT NO 1
EL 850.00

GEODESIGN BORING LOG 888-04.7 BARTON BR 20.GPJ VERMONT AOT.GDT 5/12/14

ESTIMATED BOTTOM OF PILE
AT ABUT NO 1
EL 770.0

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-1B					
Barton Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9		Page No.: 2 of 2		Pin No.: 121172					
Checked By: JFW/DTH		Boring Crew: J.Leonhardt (QC/QA), A. Baribault (GeoDesign)		Casing Sampler					
Date Started: 2/25/14 Date Finished: 2/28/14		Type: FJ SS		Groundwater Observations (3)					
VTSPG NAD83: N 819410.00 ft E 1723365.00 ft		I.D.: 4 in 1.38 in		Date	Depth (ft)				
Station: 12+48.6 Offset: 4.3 LT		Hammer Wt: 140 lb. 140 lb.		02/25/14	See Remark 1.				
Ground Elevation: 856 ft		Hammer Fall: 30 in. 30 in.							
		Hammer/Rod Type: Auto/NWJ							
		Rig: CME 550X ATV CE = 1.4							
Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)	Run (Dip deg.)	Drill Rate (minutes/ft)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %
0-54		S1 (54' to 56'): Medium dense, gray SILT, some fine Sand, wet. (PID = 64.5 PPM). Rec. = 1.0 ft			10-13-15-14 (28)				
54-59		S2 (59' to 61'): Medium dense, gray SILT, some fine Sand, wet. (PID = 25.0 PPM). Rec. = 0.8 ft			11-17-9-5 (26)				
59-64		S3 (64' to 66'): Very dense, gray SILT and fine SAND, wet. (PID = 24.9 PPM). Rec. = 1.7 ft			27-40-48-53 (88)		1.0	46.0	53.0
64-69		S4 (69' to 72'): Very dense, gray SILT, little fine Sand, trace coarse Gravel (1 pc near top of sample, in extra bag), wet. (PID = 1.0 PPM). Rec. = 1.7 ft			13-27-43-67 (70)		1.0	9.0	90.0
69-78		C1A (75'-75.5'): BOULDER. C1B (75.5'-78') Inferred soil.							
78-80.3		S5 (78' to 78.8'): Refusal, gray fine to coarse SAND, some Silt, little fine to coarse Gravel, very moist. (PID = 1.1 PPM). Rec. = 0.5 ft		1.3 0.4 0.3	20-100/4" (R)				
80.3-80.3		S6 (79' top 80.3'): Very dense, gray fine to coarse GRAVEL, some fine to coarse Sand, some Silt, moist. (PID = 2.5 PPM). Rec. = 1.2 ft			5-20-60-100/4" (80)	47.0	23.0	30.0	
Hole stopped @ 80.3 ft									
Remarks: 1) Boring advanced to define depth to bedrock after casing forced termination of B-1. For stratigraphy above 54 feet, refer to log of B-1. Sample moisture observations may not reflect actual insitu conditions due to wash-drive drilling methods. 2) First attempt resulted in auger refusal at 8"; boring advanced to 5 feet deep with HSA, wash and drive to 14 feet and casing moved out of alignment due to possible cobbles or obstruction between 8 and 10 feet deep. Hole reamed with HSA and casing reset prior to continuing. 3) No sampling or environmental screening performed. Strong petroleum odor and sheen on wash water return from approximately 8 to 14 feet deep. 4) Wash water return brown turning gray-brown and then gray by 19 feet. Polymer E-Z Mud added to drilling fluid at approximately 25 feet deep. 5) Driller noted change in roller bit resistance from 61 to 61.5 feet deep. 6) Encountered roller bit resistance at 72.5 feet deep. Switched to a carbide button roller bit and advanced borehole to 75 feet with occasional slight chatter and consistent advancement rate (4 min/foot) through inferred boulder. 7) Installed 3-inch FJ Casing with spin shoe to 62 feet in open hole, advanced while spinning/washing to 75 feet. Advanced rock core to 78 feet through inferred soil from 75.5 to 78 feet. 8) All sample descriptions shown are per the Burmister classification system and are based on visual descriptions made in the field by GeoDesign personnel. Where applicable, laboratory testing results shown are from testing performed by GeoTesting Express, with the Gravel/Sand/Fines breakdown shown per AASHTO M145. 9) Northing, easting, and ground surface elevation are estimated from an electronic site plan provided by TY Lin and taped measurements made from existing features in the field by GeoDesign personnel.									

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

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)



FILE NAME: z12j172bloglb.dgn PLOT DATE: 5/20/2015
PROJECT LEADER: J. OLUND DRAWN BY: S. MORGAN
DESIGNED BY: J. OLUND CHECKED BY: T. POULIN
BORING LOG 3 SHEET 79 OF 111

VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-2			
		Barton Bridge #20		Page No.: 1 of 3					
		BHF 0286 (5) - TH-2 (VT-16)		Pin No.: 121172					
		GeoDesign #888-04.9		Checked By: JFW/DTH					
Boring Crew: J.Leonhardt (QC/QA), J. Wimet (GeoDesign)		Casing Sampler		Groundwater Observations (3)					
Date Started: 2/11/14 Date Finished: 2/25/14		Type: AUGER SS		Date Depth Notes					
VTSPG NAD83: N 819468.00 ft E 1723373.00 ft		I.D.: 4 in 1.38 in		02/11/14 See Remark 2.					
Station: 13+07.1 Offset: 2.5 LT		Hammer Wt: 140 lb. 140 lb.							
Ground Elevation: 856 ft		Hammer Fall: 30 in. 30 in.							
		Hammer/Rod Type: Auto/NWJ							
		Rig: CME 550X ATV CE = 1.4							
Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Blow/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %
0		6" Asphalt							
0		6" Concrete							
0		S1 (2' to 4'): Very dense, light brown with gray and dark brown fine to coarse SAND, some (+) Silt, trace fine Gravel, frozen to moist. (PID = 4.5 PPM) Rec. = 2.0 ft			25-53-36-24 (89)		9.0	46.0	45.0
5		S2 (4' to 6'): Medium dense, dark brown to brown fine to coarse SAND (grading to fine to medium Sand) and SILT, trace fine Gravel, slightly moist. (PID = 1.9 PPM) Rec. = 2.0 ft			4-5-6-4 (11)				
10		S3 (6' to 8'): Loose, S3A - Top 6": Dark brown fine to coarse SAND and SILT, little fine Gravel, wet. S3B - Bottom 2": Gray fine SAND and SILT, some fine to coarse Gravel, wet. (PID = 1.0 PPM) Rec. = 0.8 ft			50/3" (R)		64.0	24.0	12.0
10		S4 (8' to 10'): Refusal, piece of fractured coarse GRAVEL stuck in spoon tip. (INFERRED BOULDER FILL) Rec. = 0.1 ft			8-58-11 (69)				
15		S5 (10' to 12'): Very dense, dark brown fine to coarse SAND and fine to coarse GRAVEL, little Silt, trace Organics, wet. (PID = 0.6 PPM) Rec. = 0.7 ft			10-12-8-16 (20)				
15		S6 (12' to 14'): Medium dense, dark brown fine to coarse SAND and fine GRAVEL, little (-) Silt, wet. (PID = 0.5 PPM) Rec. = 0.4 ft			9-26-12-19 (45)				
20		S7 (14' to 16'): Dense, gray-brown fine to coarse SAND and fine GRAVEL, little Silt, wet. (PID = 0.9 PPM) Rec. = 0.4 ft			6-5-5-4 (10)				
20		S8 (16' to 18'): Medium dense, gray SILT, some fine Sand, wet. (PID = 0.8 PPM) Rec. = 0.8 ft			4-4-5-5 (9)		5.0	30.0	65.0
25		S9 (18' to 20'): Loose, gray SILT, some fine Sand, wet. (PID = 0.6 PPM) Rec. = 0.8 ft			5-6-6-6 (12)				
25		S10 (20' to 22'): Medium dense, gray SILT, some fine Sand, wet. (PID = 0.5 PPM) Rec. = 1.1 ft			5-5-6-4 (11)				
30		S11 (24' to 26'): Medium dense, gray SILT, some fine Sand, wet. (PID = 0.4 PPM) Rec. = 1.3 ft							
30		S12 (29' to 31'): Medium dense, gray SILT, little fine Sand, wet. (PID = 0.3 PPM) Rec. = 1.4 ft			6-5-5-4 (10)		5.0	10.0	85.0
35		S13 (34' to 36'): Medium dense, gray SILT, little fine Sand, wet. (PID = 0.3 PPM) Rec. = 1.3 ft			5-5-5-4 (10)				
40		S14 (39' to 41'): Loose, gray SILT, little fine Sand, wet. Rec. = 1.0 ft			5-5-4-3 (9)				
45		S15 (44' to 46'): Medium dense, gray SILT, little fine Sand, wet. Rec. = 1.3 ft			10-9-9-8 (18)		2.0	8.0	90.0
45		S16 (49' to 51'): Medium dense, gray SILT, little fine Sand, wet. Rec.			5-9-10-				

BOTTOM OF ABUT NO 2 EL 849.50

GEODESIGN BORING LOG: 888-04.7 BARTON BR 20.0PZ VERMONT AUT.GDT 5/12/14

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.
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VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-2			
		Barton Bridge #20		Page No.: 2 of 3					
		BHF 0286 (5) - TH-2 (VT-16)		Pin No.: 121172					
		GeoDesign #888-04.9		Checked By: JFW/DTH					
Boring Crew: J.Leonhardt (QC/QA), J. Wimet (GeoDesign)		Casing Sampler		Groundwater Observations (3)					
Date Started: 2/11/14 Date Finished: 2/25/14		Type: AUGER SS		Date Depth Notes					
VTSPG NAD83: N 819468.00 ft E 1723373.00 ft		I.D.: 4 in 1.38 in		02/11/14 See Remark 2.					
Station: 13+07.1 Offset: 2.5 LT		Hammer Wt: 140 lb. 140 lb.							
Ground Elevation: 856 ft		Hammer Fall: 30 in. 30 in.							
		Hammer/Rod Type: Auto/NWJ							
		Rig: CME 550X ATV CE = 1.4							
Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Blow/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %
55		= 0.7 ft			10 (19)				
55		S17 (54' to 56'): Dense, gray SILT, little fine Sand, wet. Rec. = 0.6 ft			13-15-16-19 (NA)				
60		S18 (59' to 61'): Dense, gray SILT, little fine Sand, wet. Rec. = 0.8 ft			12-20-22-13 (NA)				
65		S19A (64' to 64.8'): Refusal, gray fine to coarse SAND, some Silt, little fine to coarse Gravel, wet. Rec. = 1.3 ft			7-48-50/5" (R)		23.0	40.0	37.0
65		S19B (64.8' to 65.4'): Refusal, gray SILT, little fine Sand, wet.							
70		S20 (69' to 71'): Very dense, gray SILT, little fine Sand wet. (PID = 4.7 PPM) Rec. = 1.7 ft			24-39-56-75 (95)			13.0	87.0
75		C1A (72.5' to 74.5'): Phyllite & Limestone Boulder.		C1 (20-50)	77	2			
75		C1B (74.5' to 75'): Glacial Till.							
75		C2A (75' to 77.1'): Limestone Boulder.		C2 (20-60)	70	1			
75		C2B (77.1' to 78'): Inferred soil (no recovery). Hole stopped @ 78.0 ft				1.8			
80						1.8			
80						0.8			
85		ESTIMATED BOTTOM OF PILE AT ABUT NO 2 EL 769.5							

GEODESIGN BORING LOG: 888-04.7 BARTON BR 20.0PZ VERMONT AUT.GDT 5/12/14

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
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VT Trans		STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: B-2				
		Barton Bridge #20		Page No.: 3 of 3						
		BHF 0286 (5) - TH-2 (VT-16)		Pin No.: 121172						
		GeoDesign #888-04.9		Checked By: JFW/DTH						
Boring Crew: J.Leonhardt (QC/QA), J. Wimet (GeoDesign)		Casing Sampler		Groundwater Observations (3)						
Date Started: 2/11/14 Date Finished: 2/25/14		Type: AUGER SS		Date Depth Notes						
VTSPG NAD83: N 819468.00 ft E 1723373.00 ft		I.D.: 4 in 1.38 in		02/11/14 See Remark 2.						
Station: 13+07.1 Offset: 2.5 LT		Hammer Wt: 140 lb. 140 lb.								
Ground Elevation: 856 ft		Hammer Fall: 30 in. 30 in.								
		Hammer/Rod Type: Auto/NWJ								
		Rig: CME 550X ATV CE = 1.4								
Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Blow/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %	
105		Remarks: 1) First attempt ended in refusal at 6 inches deep on concrete. Note piece of rebar in drill cuttings. Move 4 feet north and auger through 6 inches of asphalt and 6 inches of concrete. Borehole advanced with 4.25" HSA to 4 feet deep prior to switching to 4" O.D. casing and wash-drive drilling methods. 2) Moisture observations below 6 feet deep may not accurately reflect insitu conditions due to continuously adding water during borehole advance. 3) Note frequent rig chatter from 8 to 10 feet deep through possible bouldery/cobby soils. 4) Driller advanced casing to 20 feet deep. Borehole progressed open-hole with the roller bit below 20 feet deep. 5) Note approximately 8 inches of slough at the bottom of the borehole prior to sampling S17 at 54 feet deep. Pound sampler through slough with 6 blows of the hammer. SPT N-value not per ASTM Standard. 6) After sampling S17, drive 4-inch casing to 40 feet deep prior to continuing advancement of the borehole. 7) Driller notes roller bit appears to be bouncing on denser soils beginning at 59 feet deep. 8) Note approximately 18 inches of slough at the bottom of the borehole prior to sampling S18 at 59 feet deep. Pound sampler through slough with 10 blows of the hammer. SPT N-value not per ASTM Standard. 9) After sampling S18, drive 4-inch casing to 50 feet deep. Driller infers casing to have broken at 35 feet deep during advance. Driller telescopes through 4-inch casing with 3-inch casing and drives to 64 feet deep prior to continuing sampling. Pause drilling from 2/14 through 2/24 due to weather and equipment delays. 10) Inferred Bedrock or possible boulders with soil infilling of joints approximately 6 inches thick below 72.5 feet deep. 11) Borehole backfilled with grout, approximately 50gal water, 188 pounds type I/II portland cement, and 40 pounds bentonite powder. 12) Samples S1 through S13 screened in the field with an Ion Science PhoCheck 1000 model PID calibrated to a 100 PPM isobutylene standard. 13) All sample descriptions shown are per the Burmister classification system and are based on visual descriptions made in the field by GeoDesign personnel. Where applicable, laboratory testing results shown are from testing performed by GeoTesting Express, with the Gravel/Sand/Fines breakdown shown per AASHTO M145. 14) Northing, easting, and ground surface elevation are estimated from an electronic site plan provided by TY Lin and taped measurements made from existing features in the field by GeoDesign personnel.								

GEODESIGN BORING LOG: 888-04.7 BARTON BR 20.0PZ VERMONT AUT.GDT 5/12/14

Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual.
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FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

FILE NAME: z12j172blog2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: J. OLUND
BORING LOG 4

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 80 OF III

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG Barton Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9		Boring No.: <u>B-2A</u> Page No.: <u>1 of 1</u> Pin No.: <u>12j172</u> Checked By: <u>JFW/DTH</u>													
Boring Crew: <u>J.Leonhardt (QC/QA), A. Baribault (GeoDesign)</u> Date Started: <u>2/25/14</u> Date Finished: <u>2/25/14</u> VTSPG NAD83: <u>N 819472.00 ft E 1723373.00 ft</u> Station: <u>13+11.1</u> Offset: <u>3.0 LT</u> Ground Elevation: <u>856 ft</u>		Casing Sampler Type: <u>AUGER</u> <u>3" SS</u> I.D.: <u>4.25 in</u> <u>2.5 in</u> Hammer Wt: <u>140 lb.</u> <u>140 lb.</u> Hammer Fall: <u>30 in.</u> <u>30 in.</u> Hammer/Rod Type: <u>Auto/NWJ</u> Rig: <u>CME 550X ATV</u> <u>CE = 1.4</u>		Groundwater Observations (3) <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Depth (ft)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>02/25/14</td> <td>7.0</td> <td>Wet sample at 7'</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		Date	Depth (ft)	Notes	02/25/14	7.0	Wet sample at 7'						
Date	Depth (ft)	Notes															
02/25/14	7.0	Wet sample at 7'															
Depth (ft)	Strata(1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %										
5	X X X	S1 (2' to 4'): Light brown fine to coarse SAND, some fine to coarse Gravel, little to some silt, trace Brick, frozen. Rec. = 2.0 ft	35-56-62-67														
	X X X	S2 (4' to 6'): Light brown fine to coarse SAND, some Silt, little fine to coarse Gravel, trace Brick, frozen. Rec. = 1.5 ft	9-10-13-10														
	X X X	S3 (6' to 8'): Loose, brown fine SAND and SILT, moist (upper 12") to wet (lower 12"). Rec. = 2.0 ft	8-6-3-3														
10	X X X	S4 (8 to 10'): Very loose, brown to gray-brown SILT, some fine Sand, little Wood and Organics, wet. Inferred recent alluvium. Upper 2" Possible Fill (no separate sample). Rec. = 2.0 ft	1-2-3-2														
Hole stopped @ 10.0 ft																	
Remarks: 1) Split spoon samples were taken using a 3" O.D. split spoon to collect sample for resistivity testing. Sample S4 not cleaned out prior to sampling (augers at 6 feet). 2) Approximately 6" Asphalt, significant auger grinding from 6" to 10" through inferred concrete (no rebar encountered) with smooth drilling thereafter. 3) Borehole backfilled with cuttings and capped with asphalt cold patch. 4) Northing, easting, and ground surface elevation are estimated from an electronic site plan provided by TY Lin and taped measurements made from existing features in the field by GeoDesign personnel.																	
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.																	

BOTTOM OF ABUT NO 2
EL 849.50

GEODESIGN BORING LOG 888-04.7 BARTON BR 20.GPJ VERMONT AOT.GDT 5/12/14

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE PROJECT NUMBER: BHF 0286(5)		
	<table style="width:100%;"> <tr> <td style="width:50%;"> FILE NAME: z12j172blog2a.dgn PROJECT LEADER: J. OLUND DESIGNED BY: J. OLUND BORING LOG 5 </td> <td style="width:50%;"> PLOT DATE: 5/20/2015 DRAWN BY: S. MORGAN CHECKED BY: T. POULIN SHEET 81 OF 111 </td> </tr> </table>	FILE NAME: z12j172blog2a.dgn PROJECT LEADER: J. OLUND DESIGNED BY: J. OLUND BORING LOG 5	PLOT DATE: 5/20/2015 DRAWN BY: S. MORGAN CHECKED BY: T. POULIN SHEET 81 OF 111
FILE NAME: z12j172blog2a.dgn PROJECT LEADER: J. OLUND DESIGNED BY: J. OLUND BORING LOG 5	PLOT DATE: 5/20/2015 DRAWN BY: S. MORGAN CHECKED BY: T. POULIN SHEET 81 OF 111		

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <u>P-1</u>													
		Barton Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9		Page No.: <u>1 of 1</u>													
Boring Crew: <u>J.Leonhardt (QC/QA), A. Baribault (GeoDesign)</u> Date Started: <u>2/25/14</u> Date Finished: <u>2/25/14</u> VTSPG NAD83: <u>N 819413.00 ft E 1723405.00 ft</u> Station: <u>12+55.9</u> Offset: <u>35.2 RT</u> Ground Elevation: <u>856 ft</u>		Casing: <u>S.S.A</u> Sampler: <u>NA</u> Type: <u>S.S.A</u> I.D.: <u>2.25 in</u> Hammer Wt: <u>N.A.</u> Hammer Fall: <u>N.A.</u> Hammer/Rod Type: <u>CME 550X ATV</u> Rig: <u>CE =</u>		Groundwater Observations (3) <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Depth (ft)</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		Date	Depth (ft)	Notes									
Date	Depth (ft)	Notes															
Depth (ft)	Strat(1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %										
5		No sampling performed. Auger probe only.															
10																	
15																	
20		Hole stopped @ 18.5 ft No refusal															
25		Remarks: 1) SSA Probe performed to evaluate the heel of existing retaining wall. No samples obtained. 2) Slight grinding in upper 3 feet, smooth advance thereafter. Terminated at 18.5 feet with no refusal 3) Northing, easting, and ground surface elevation are estimated from an electronic site plan provided by TY Lin and taped measurements made from existing features in the field by GeoDesign personnel.															
30																	
35																	
40																	
45																	
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.																	

GEODESIGN BORING LOG 888-04.7 BARTON BR 20.GPJ VERMONT AOT.GDT 5/12/14

 FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

 PROJECT NAME: **BARTON VILLAGE**
 PROJECT NUMBER: **BHF 0286(5)**


FILE NAME: z12j172plogl.dgn	PLOT DATE: 5/20/2015
PROJECT LEADER: J. OLUND	DRAWN BY: S. MORGAN
DESIGNED BY: J. OLUND	CHECKED BY: T. POULIN
BORING LOG 6	SHEET 82 OF 111

STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG		Boring No.: <u>P-3</u>			
		Barton Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9		Page No.: <u>1 of 1</u> Pin No.: <u>12j172</u> Checked By: <u>JFW/DTH</u>			
Boring Crew: <u>J.Leonhardt (QC/QA), A. Baribault (GeoDesign)</u> Date Started: <u>2/25/14</u> Date Finished: <u>2/25/14</u> VTSPG NAD83: <u>N 819417.00 ft E 1723365.00 ft</u> Station: <u>12+55.5</u> Offset: <u>5.0 LT</u> Ground Elevation: <u>856 ft</u>		Casing: <u>S.S.A</u> Sampler: <u>NA</u> Type: <u>S.S.A</u> I.D.: <u>2.25 in</u> Hammer Wt: <u>N.A.</u> Hammer Fall: <u>N.A.</u> Hammer/Rod Type: <u>CME 550X ATV</u> Rig: <u>CE =</u>	Groundwater Observations (3)				
Depth (ft)	Strata(1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %
		No sampling performed. Auger probe only.					
5		Hole stopped @ 2.9 ft Auger Refusal					
10		Remarks: 1) SSA Probe performed to evaluate the footing of existing bridge. No samples obtained. 2) Significant grinding from approximately 2.5 to 2.9 feet, with refusal at approximately 2.9 feet. 3) Northing, easting, and ground surface elevation are estimated from an electronic site plan provided by TY Lin and taped measurements made from existing features in the field by GeoDesign personnel.					
15							
20							
25							
30							
35							
40							
45							
Notes:		1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.					

BOTTOM OF ABUT NO 1
EL 850.00

GEODESIGN BORING LOG 888-04.7 BARTON BR 20.GPJ VERMONT AOT.GDT 5/12/14

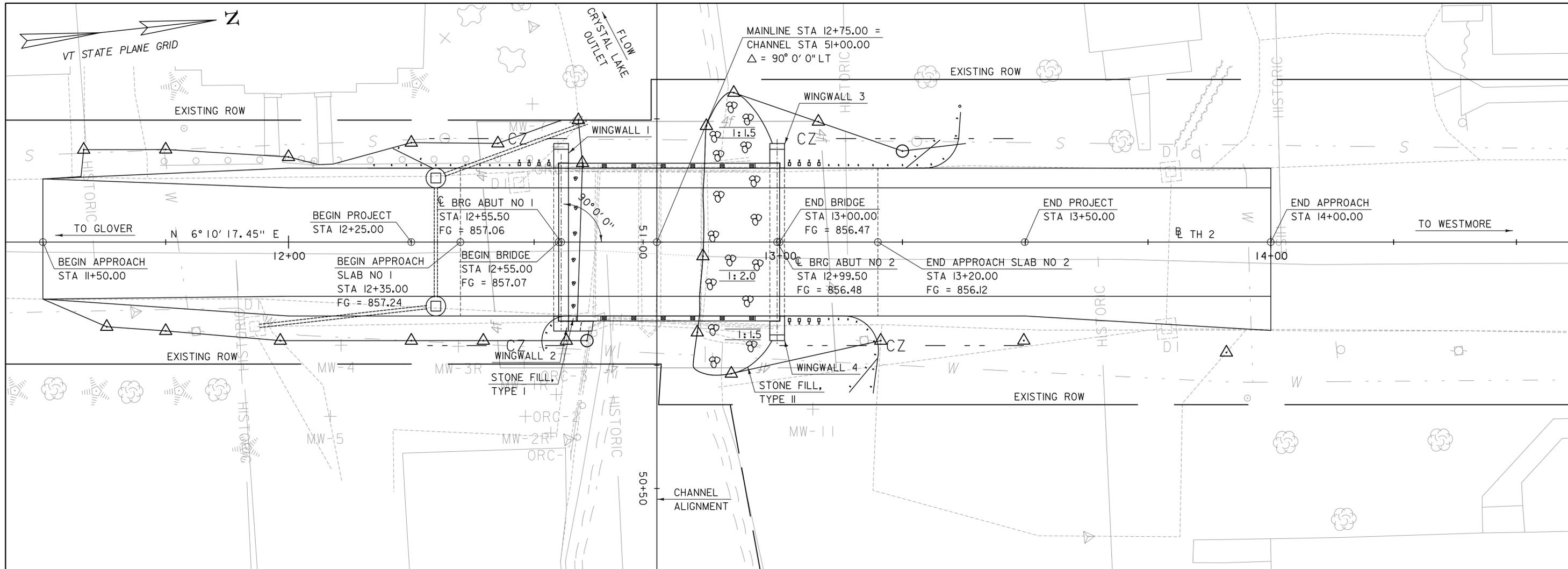
FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE PROJECT NUMBER: BHF 0286(5)
	FILE NAME: z12j172plog3.dgn PROJECT LEADER: J. OLUND DESIGNED BY: J. OLUND BORING LOG 8
	PLOT DATE: 5/20/2015 DRAWN BY: S. MORGAN CHECKED BY: T. POULIN SHEET 84 OF 111

 STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION		BORING LOG Barton Bridge #20 BHF 0286 (5) - TH-2 (VT-16) GeoDesign #888-04.9		Boring No.: P-4 Page No.: 1 of 1 Pin No.: 12j172 Checked By: JFW/DTH													
Boring Crew: J.Leonhardt (QC/QA), A. Baribault (GeoDesign) Date Started: 2/25/14 Date Finished: 2/25/14 VTSPG NAD83: N 819413.00 ft E 1723365.00 ft Station: 12+51.6 Offset: 4.6 LT Ground Elevation: 856 ft		Casing Sampler Type: S.S.A NA I.D.: 2.25 in Hammer Wt: N.A. N.A. Hammer Fall: N.A. N.A. Hammer/Rod Type: Rig: CME 550X ATV CE =		Groundwater Observations (3) <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Date</th> <th>Depth (ft)</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		Date	Depth (ft)	Notes									
Date	Depth (ft)	Notes															
Depth (ft)	Strata(1)	CLASSIFICATION OF MATERIALS (Description)	Blows/6" (N Value)(2)	Moisture Content %	Gravel %	Sand %	Fines %										
5		No sampling performed. Auger probe only.															
10		Hole stopped @ 8.0 ft Auger Refusal															
15		Remarks: 1) SSA Probe performed to evaluate the footing of existing bridge. No samples obtained. 2) Significant grinding from approximately 2.5 to 3 feet, occasional grinding thereafter. Encountered refusal at approximately 8 feet. 3) Northing, easting, and ground surface elevation are estimated from an electronic site plan provided by TY Lin and taped measurements made from existing features in the field by GeoDesign personnel.															
20																	
25																	
30																	
35																	
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Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.																	

BOTTOM OF ABUT NO 1
EL 850.00

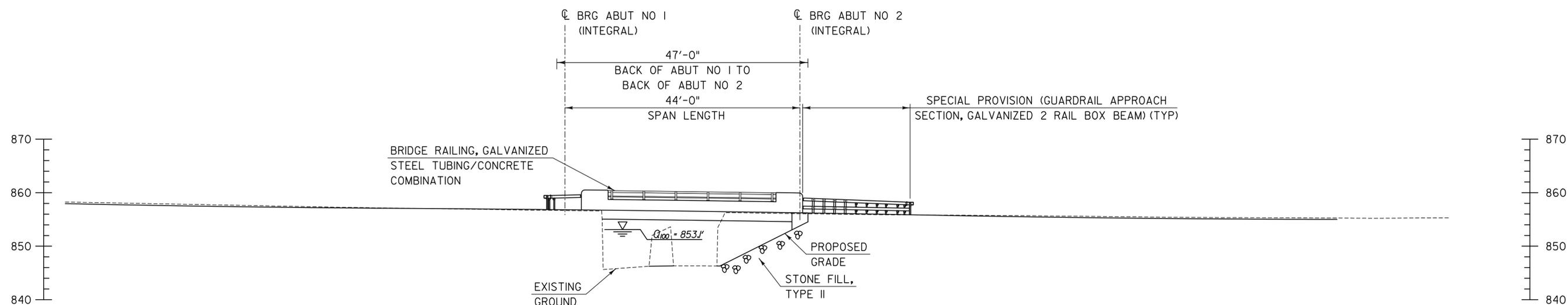
GEODESIGN BORING LOG 888-04.7 BARTON BR 20.GPJ VERMONT AOT.GDT 5/12/14

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE PROJECT NUMBER: BHF 0286(5)		
	<table style="width:100%;"> <tr> <td style="width:50%;"> FILE NAME: z12j172plog4.dgn PROJECT LEADER: J. OLUND DESIGNED BY: J. OLUND BORING LOG 9 </td> <td style="width:50%;"> PLOT DATE: 5/20/2015 DRAWN BY: S. MORGAN CHECKED BY: T. POULIN SHEET 85 OF 111 </td> </tr> </table>	FILE NAME: z12j172plog4.dgn PROJECT LEADER: J. OLUND DESIGNED BY: J. OLUND BORING LOG 9	PLOT DATE: 5/20/2015 DRAWN BY: S. MORGAN CHECKED BY: T. POULIN SHEET 85 OF 111
FILE NAME: z12j172plog4.dgn PROJECT LEADER: J. OLUND DESIGNED BY: J. OLUND BORING LOG 9	PLOT DATE: 5/20/2015 DRAWN BY: S. MORGAN CHECKED BY: T. POULIN SHEET 85 OF 111		



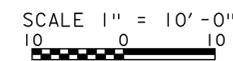
PLAN

SCALE: 1" = 10'-0"



ELEVATION

SCALE: 1" = 10'-0"



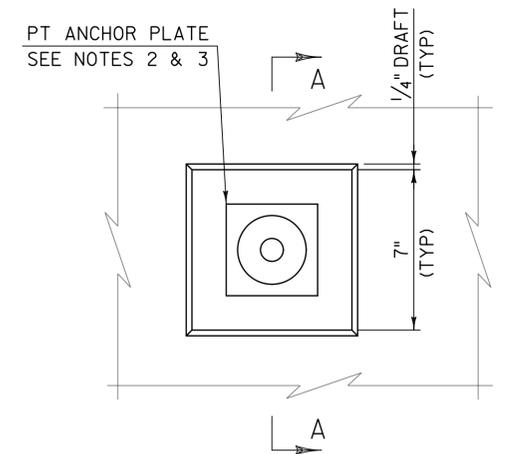
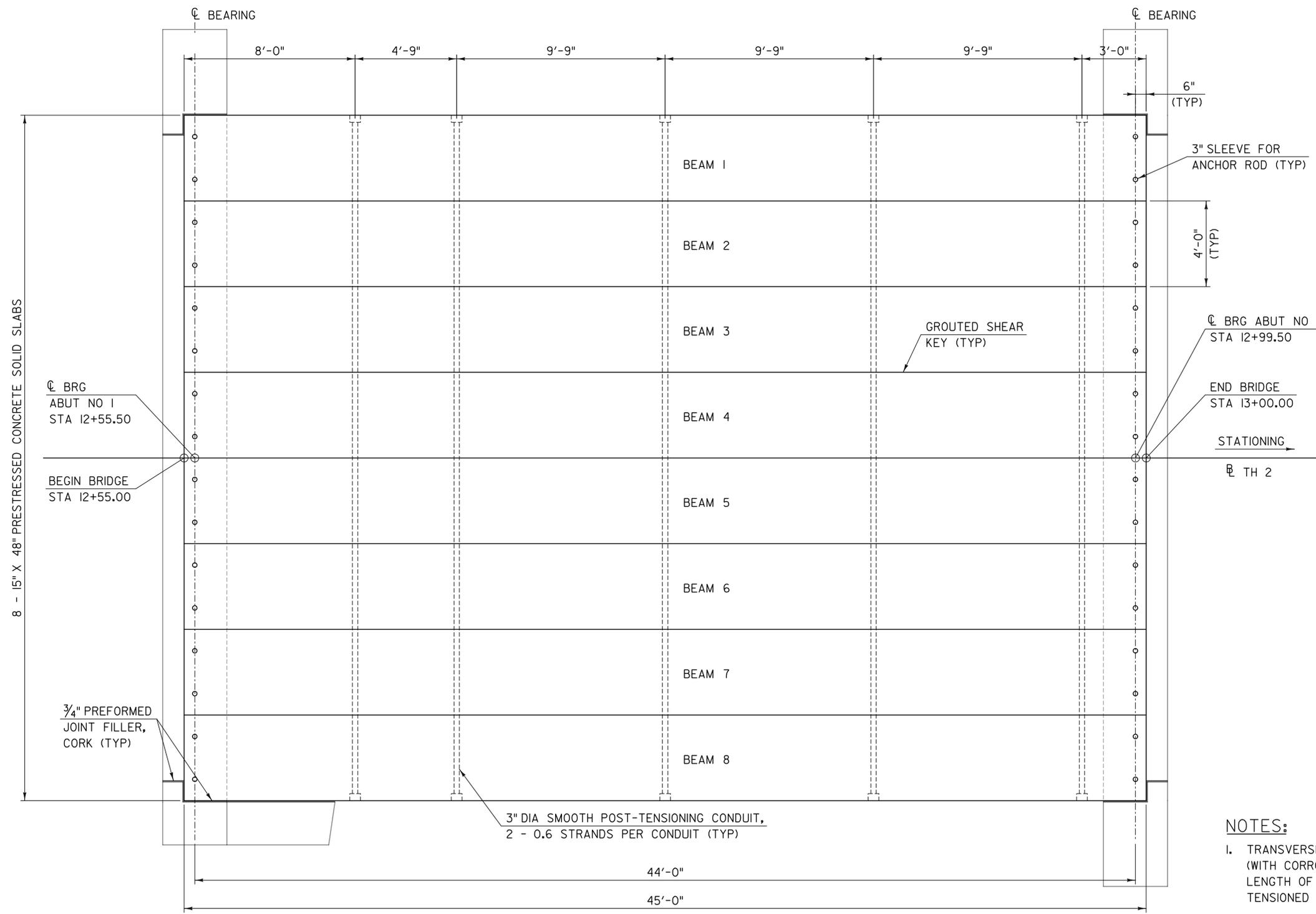
FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

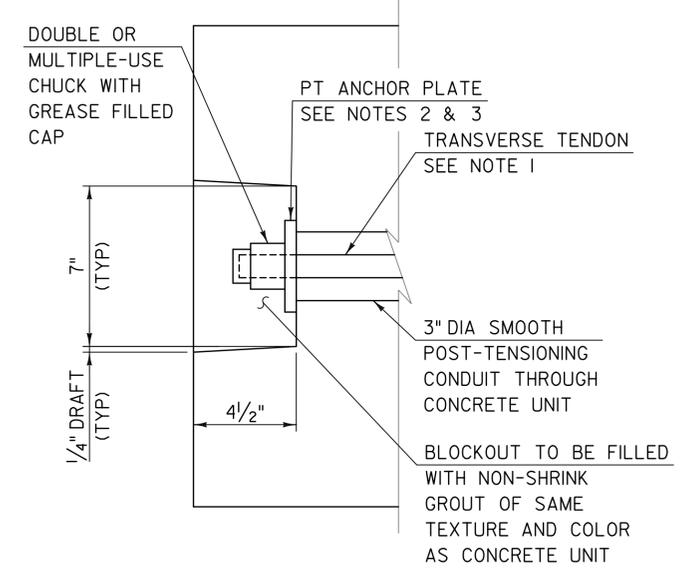
PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172pe.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: J. OLUND
 PLAN & ELEVATION

PLOT DATE: 5/20/2015
 DRAWN BY: S. MORGAN
 CHECKED BY: T. POULIN
 SHEET 86 OF 111



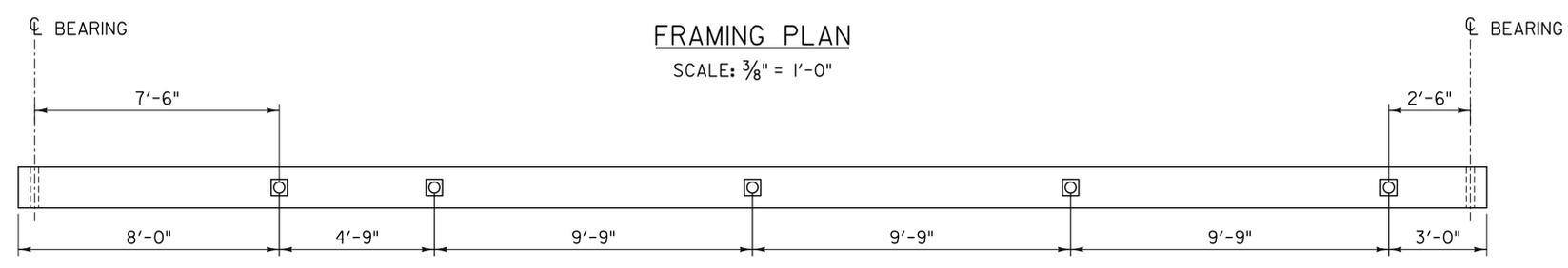
TRANSVERSE POST-TENSIONING
DETAIL ELEVATION
SCALE: 3" = 1'-0"



TRANSVERSE POST-TENSIONING DETAIL
SECTION A-A
SCALE: 3" = 1'-0"

NOTES:

1. TRANSVERSE TENDONS SHALL BE COVERED BY SEAMLESS POLYPROPYLENE SHEATH (WITH CORROSION INHIBITOR GREASE BETWEEN SHEATH AND STRAND) FOR THE LENGTH OF STRAND, EXCEPT AT ANCHORAGE LOCATIONS. EACH STRAND SHALL BE TENSIONED TO 47 KIPS.
2. ANCHOR PLATES SHALL CONFORM TO AASHTO M 270M/M 270, GRADE 345 (GRADE 50) AND BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111M/M 111.
3. ANCHOR PLATES FOR TRANSVERSE POST-TENSIONING ARE TO BE DESIGNED BY THE FABRICATOR FOR THE SPECIFIC POST-TENSIONING SYSTEM USED. DETAILS FOR THE ANCHOR PLATE SHALL BE PROVIDED ON THE FABRICATION DRAWINGS.

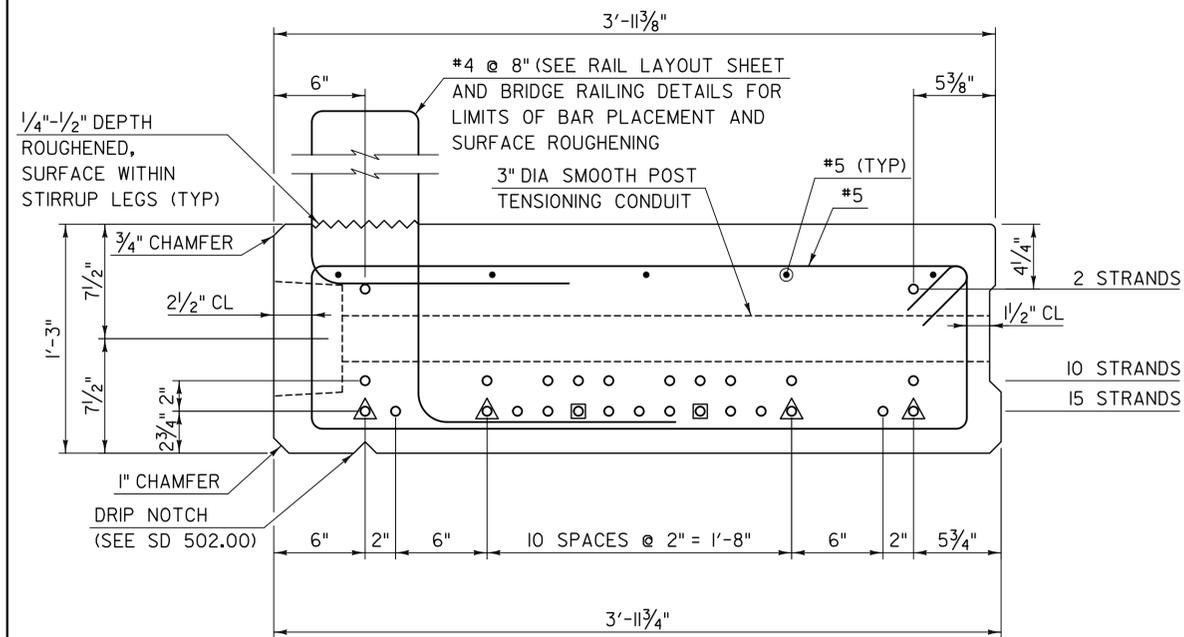


SLAB ELEVATION
SCALE: 3/8" = 1'-0"

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME:	BARTON VILLAGE
PROJECT NUMBER:	BHF 0286(5)
FILE NAME:	z12j172supl.dgn
PROJECT LEADER:	J. OLUND
DESIGNED BY:	B. TOOTHAKER
FRAMING PLAN	
PLOT DATE:	5/20/2015
DRAWN BY:	S. MORGAN
CHECKED BY:	T. POULIN
SHEET	87 OF 111

TYLININTERNATIONAL

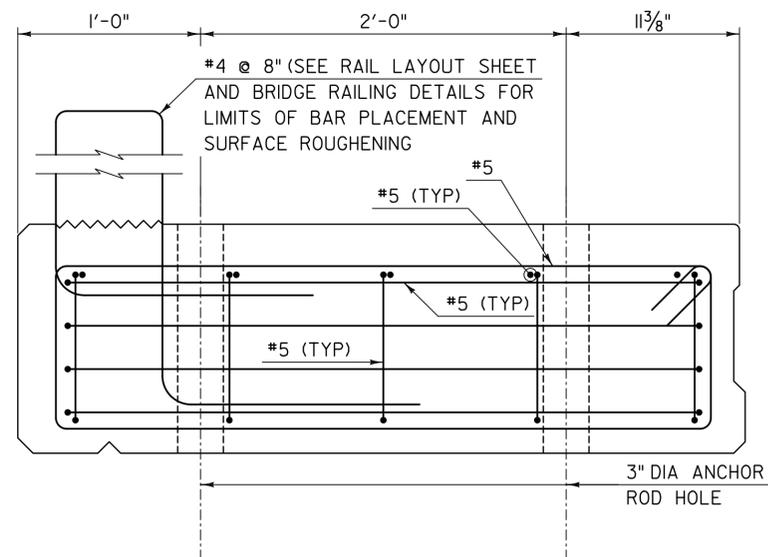


TYPICAL EXTERIOR SECTION

SCALE: 2" = 1'-0"

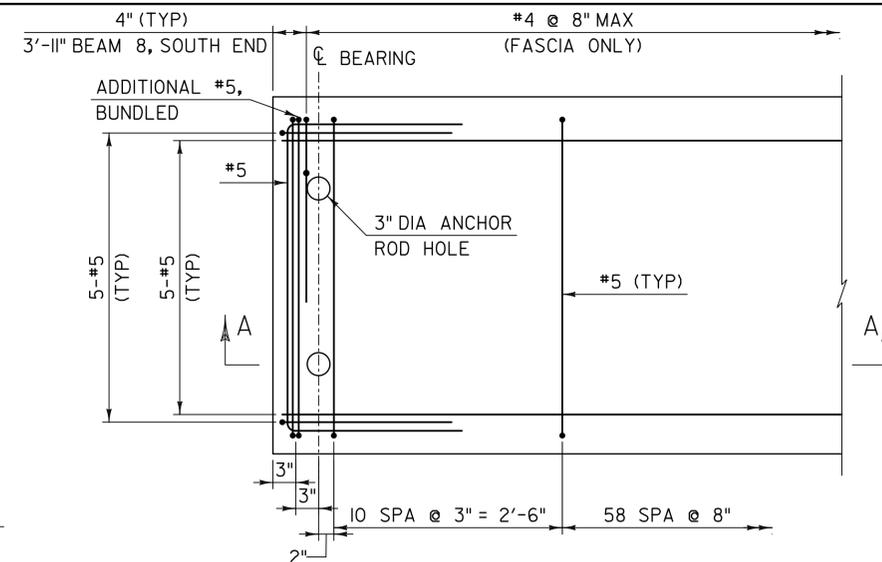
LEGEND

- △ DEBONDED 8'-0" EACH END
- DEBONDED 12'-0" EACH END
- 0.6" PRESTRESSING STRAND
- REINFORCING STEEL (TYP)



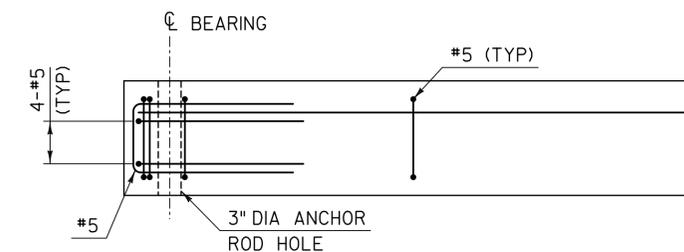
END ELEVATION EXTERIOR BEAM

SCALE: 2" = 1'-0"
(PRESTRESSING STRAND NOT SHOWN FOR CLARITY)



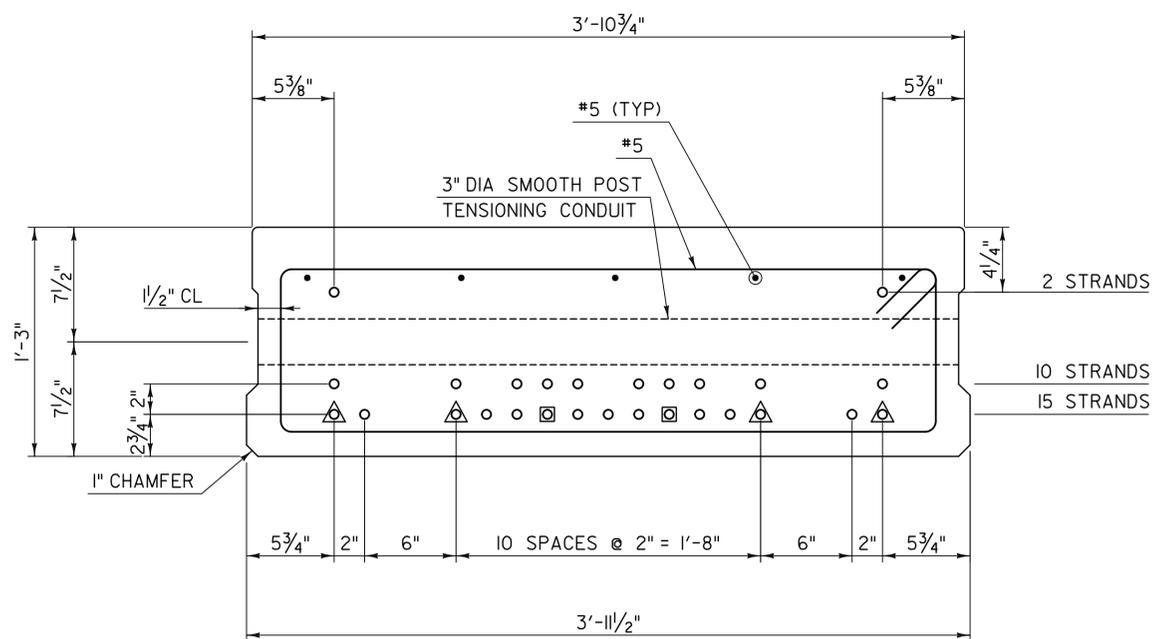
TYPICAL END REINFORCEMENT PLAN

SCALE: 1" = 1'-0"
(PRESTRESSING STRAND NOT SHOWN FOR CLARITY)



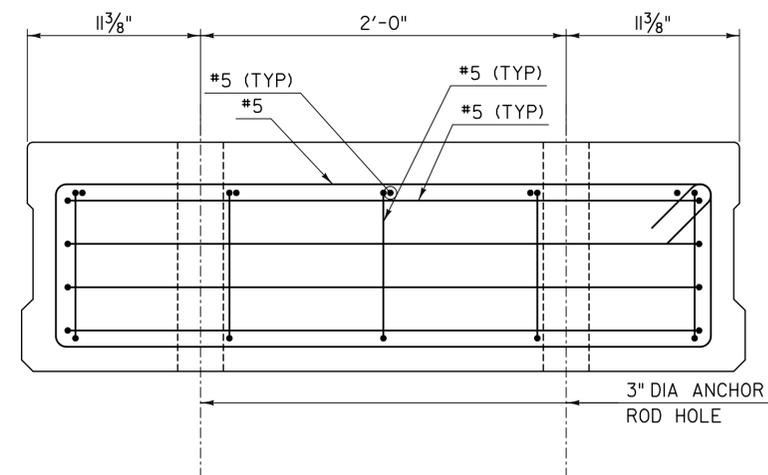
SECTION A-A

SCALE: 1" = 1'-0"
(PRESTRESSING STRAND NOT SHOWN FOR CLARITY)



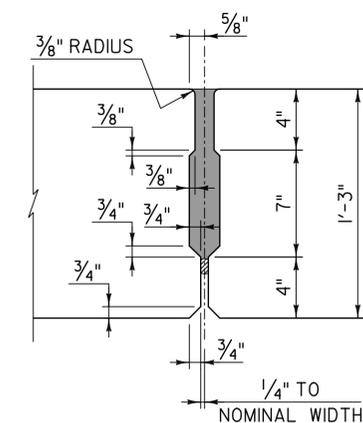
TYPICAL INTERIOR SECTION

SCALE: 2" = 1'-0"



END ELEVATION INTERIOR BEAM

SCALE: 2" = 1'-0"
(PRESTRESSING STRAND NOT SHOWN FOR CLARITY)



SHEAR KEY DETAIL

SCALE: 2" = 1'-0"

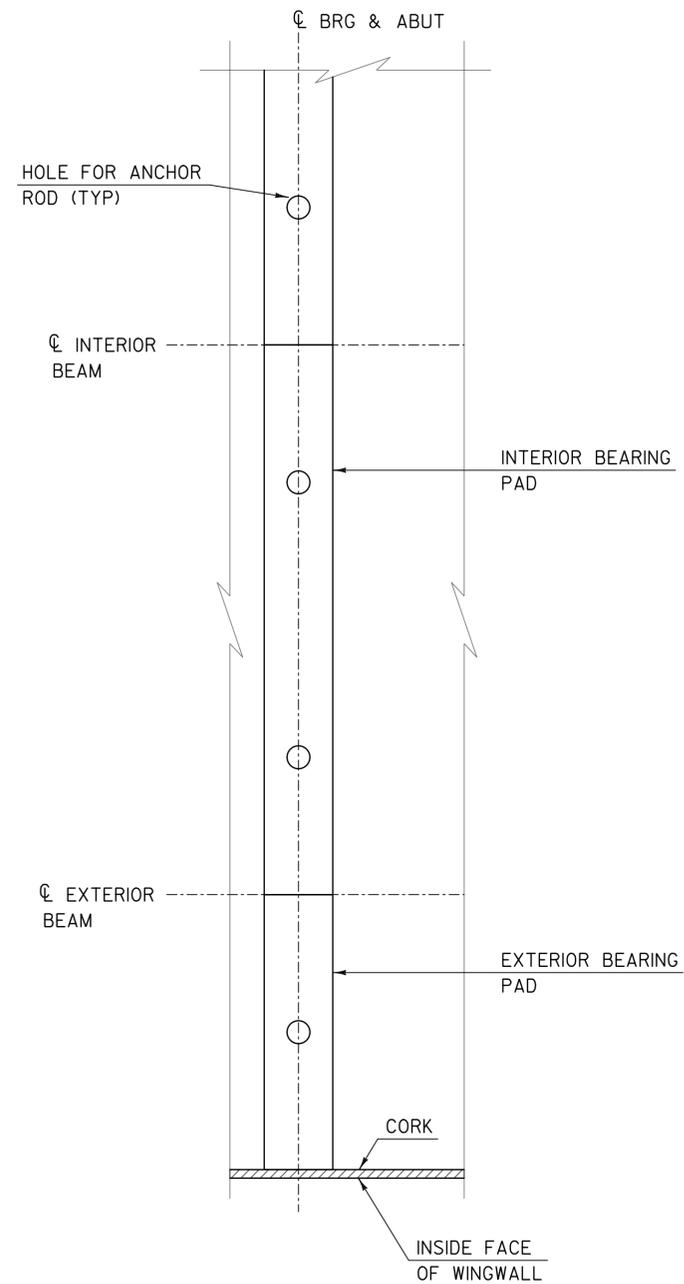
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLININTERNATIONAL

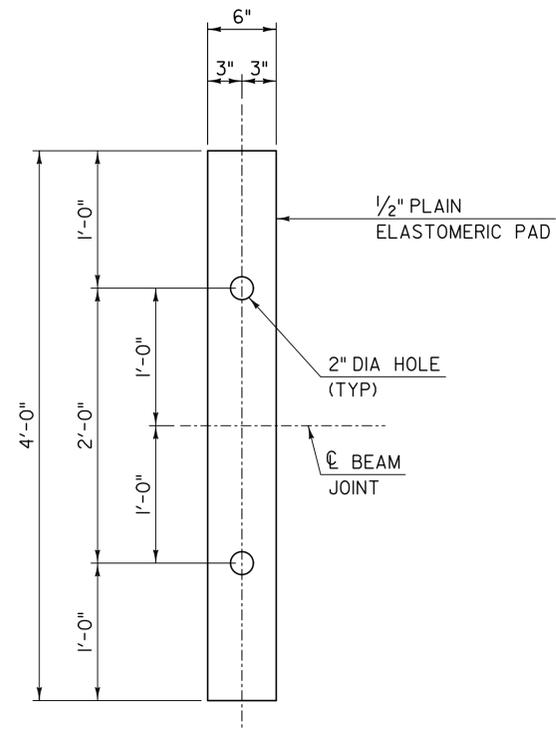
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172sup2.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
SUPERSTRUCTURE DETAILS

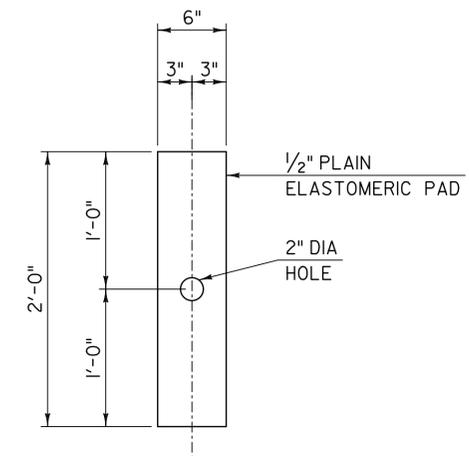
PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 88 OF 111



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



INTERIOR BEARING DETAIL
SCALE: 1/2" = 1'-0"
(7 REQUIRED PER ABUTMENT)

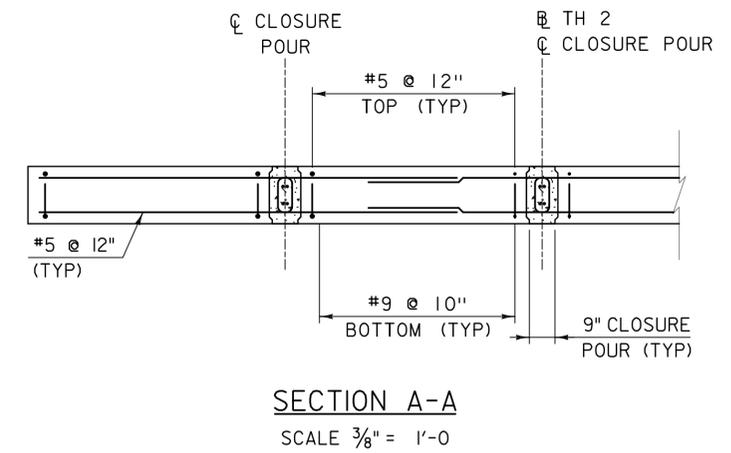
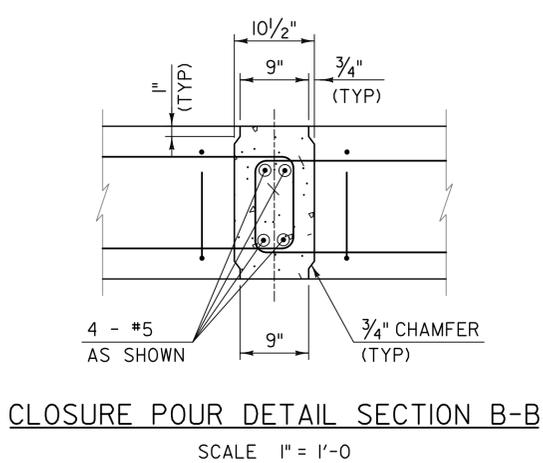
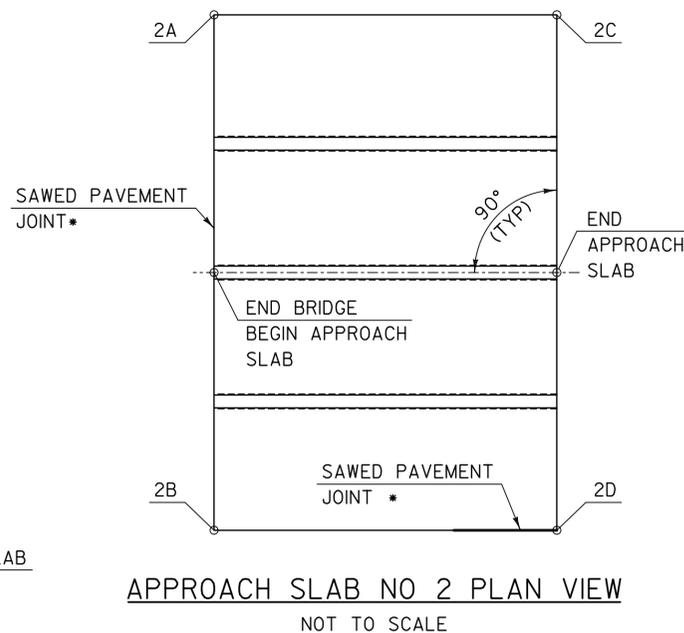
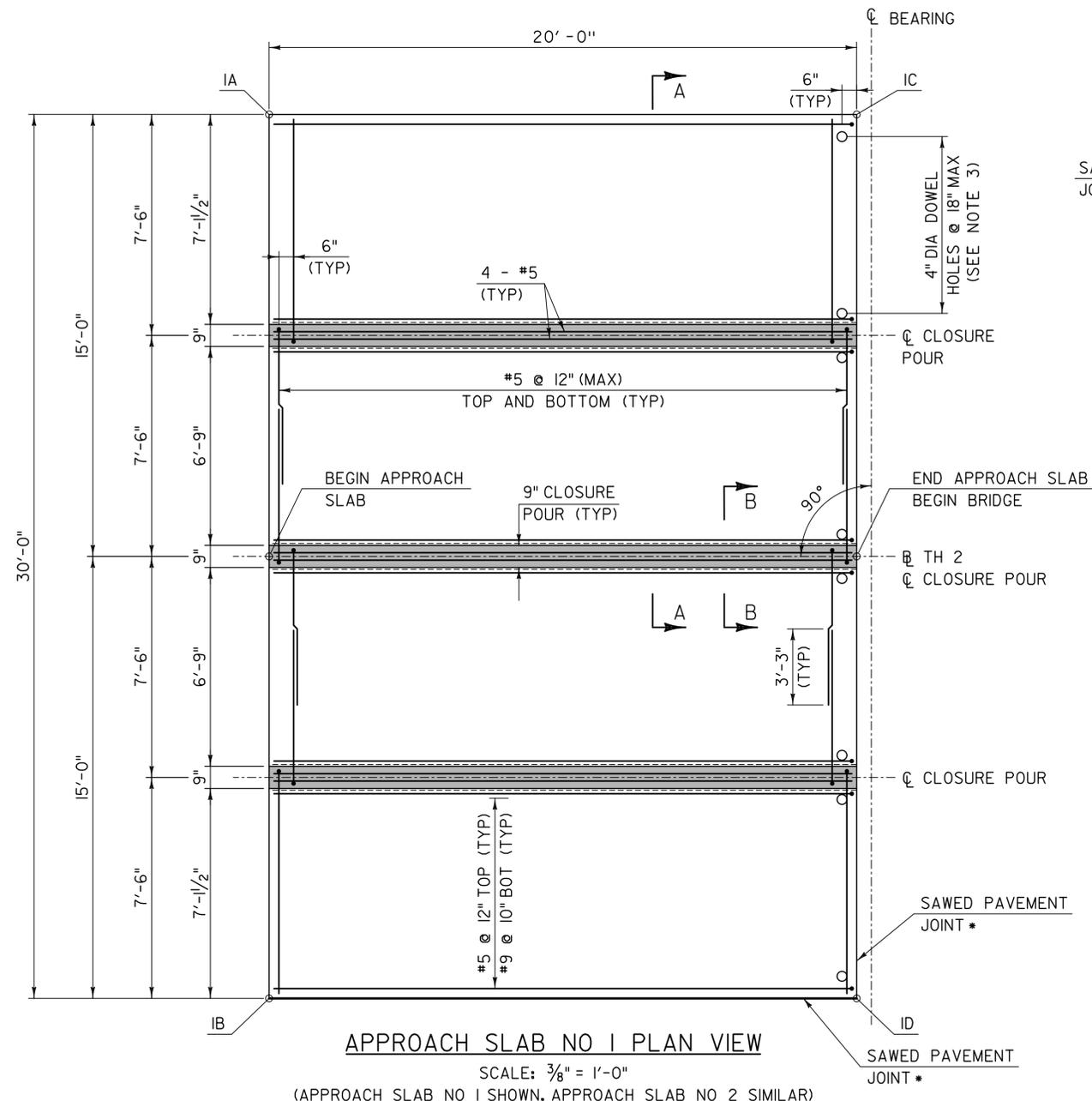


EXTERIOR BEARING DETAIL
SCALE: 1/2" = 1'-0"
(2 REQUIRED PER ABUTMENT)

NOTES:

1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF SECTIONS 531 AND 731.
2. THE PLAIN ELASTOMERIC BEARING PADS WERE DESIGNED WITH A SHEAR MODULUS OF 110 PSI +/- 15%.

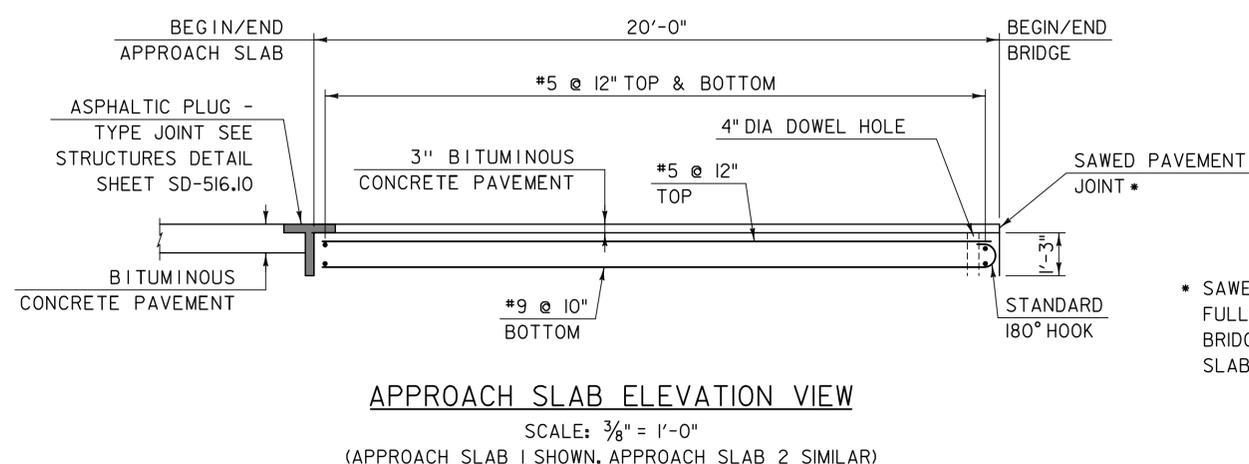
FOR REVIEW ONLY NOT FOR CONSTRUCTION TYLIN INTERNATIONAL	PROJECT NAME: BARTON VILLAGE PROJECT NUMBER: BHF 0286(5)
	FILE NAME: z12j172sup3.dgn PROJECT LEADER: J. OLUND DESIGNED BY: B. TOOTHAKER BEARING DETAILS



APPROACH SLAB NO 1			
	STATION	OFFSET	ELEVATION
IA	12+35.00	15.00 LT	855.44
BEGIN AS #1	12+35.00	0.00	855.74
IB	12+35.00	15.00 RT	855.44
IC	12+55.00	15.00 LT	855.24
END AS #1	12+55.00	0.00	855.54
ID	12+55.00	15.00 RT	855.24

APPROACH SLAB NO 2			
	STATION	OFFSET	ELEVATION
2A	13+00.00	15.00 LT	854.65
BEGIN AS #2	13+00.00	0.00	854.95
2B	13+00.00	15.00 RT	854.65
2C	13+20.00	15.00 LT	854.32
END AS #2	13+20.00	0.00	854.62
2D	13+20.00	15.00 RT	854.32

APPROACH SLAB ELEVATIONS
 ALL ELEVATIONS ARE BOTTOM OF SLAB

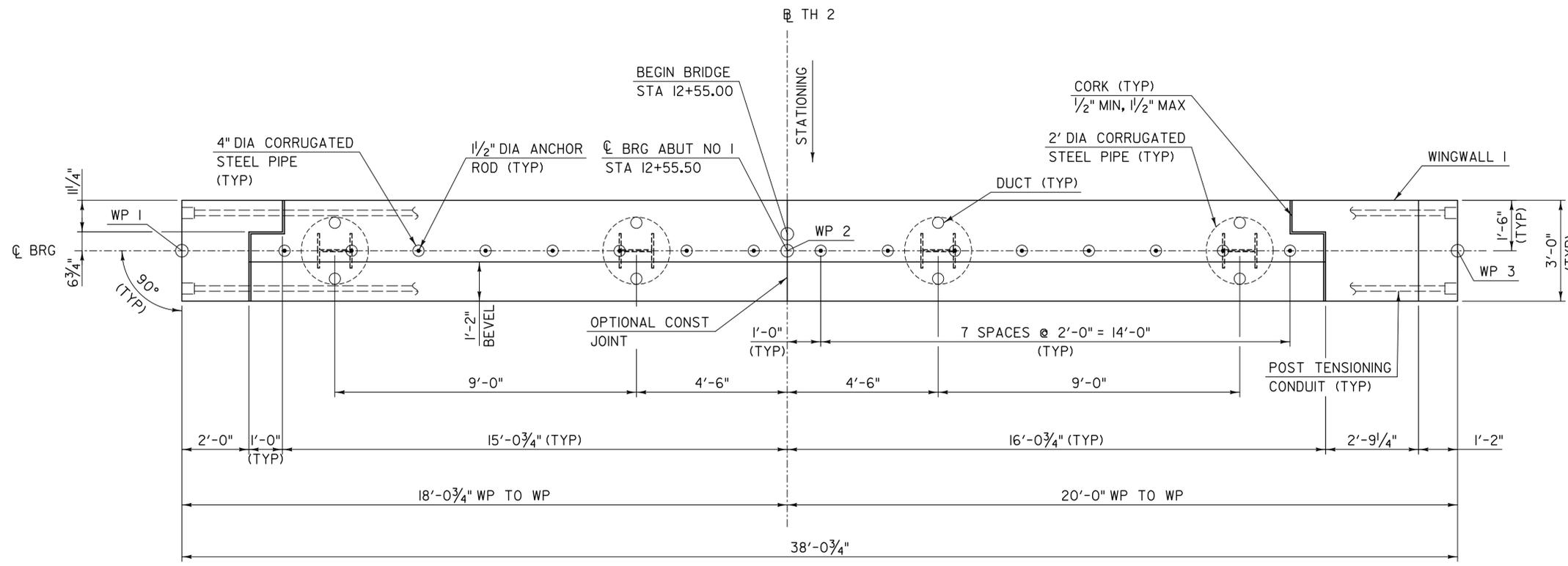


NOTES:

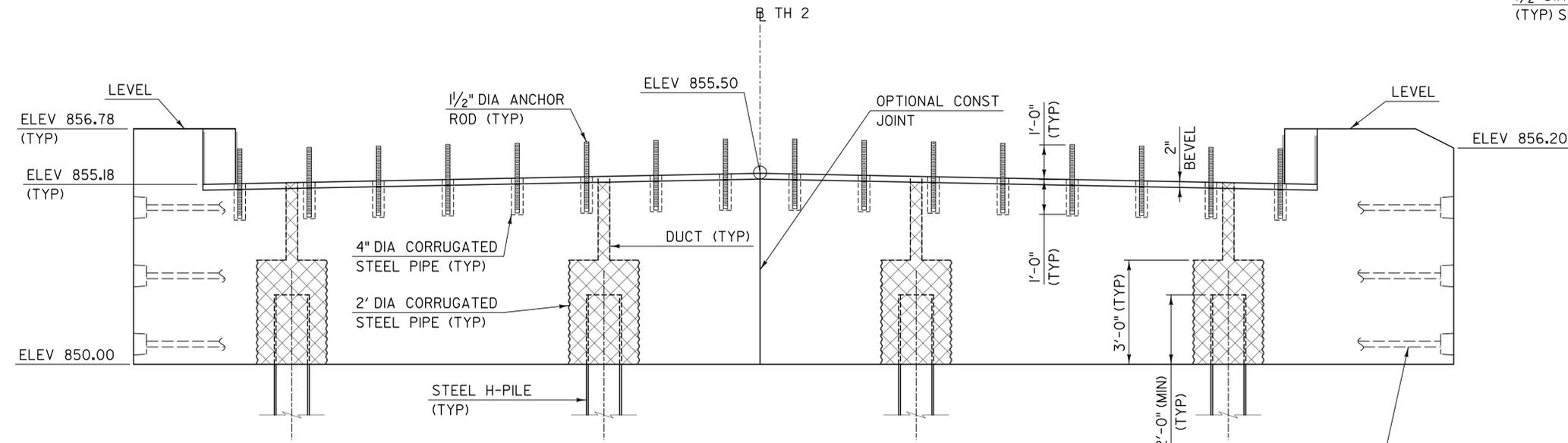
- CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING UNIFORM CONTACT BETWEEN THE APPROACH SLAB AND THE SUBBASE MATERIAL TO THE SATISFACTION OF THE ENGINEER. THE FABRICATION DRAWINGS SHALL INDICATE THE MEANS AND METHODS NECESSARY TO INSTALL THE APPROACH SLABS TO THE ELEVATIONS SPECIFIED.
- APPROACH SLAB REINFORCING STEEL SHOWN IS TYPICAL FOR EACH PANEL.
- COORDINATE APPROACH SLAB DOWEL HOLE LOCATIONS WITH #8 BARS EXTENDING FROM ABUTMENTS.

* SAWED PAVEMENT JOINTS SHALL BE FULL WIDTH OF BRIDGE AT BEGIN/END BRIDGE AND ALONG EDGE OF APPROACH SLAB AT ALL PAVED APRONS.

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE	PLOT DATE: 5/20/2015
	PROJECT NUMBER: BHF 0286(5)	
TYLIN INTERNATIONAL	FILE NAME: z12j172sup4.dgn	DRAWN BY: S. MORGAN
	PROJECT LEADER: J. OLUND	CHECKED BY: J. OLUND
	DESIGNED BY: B. TOOTHAKER	SHEET 90 OF 111



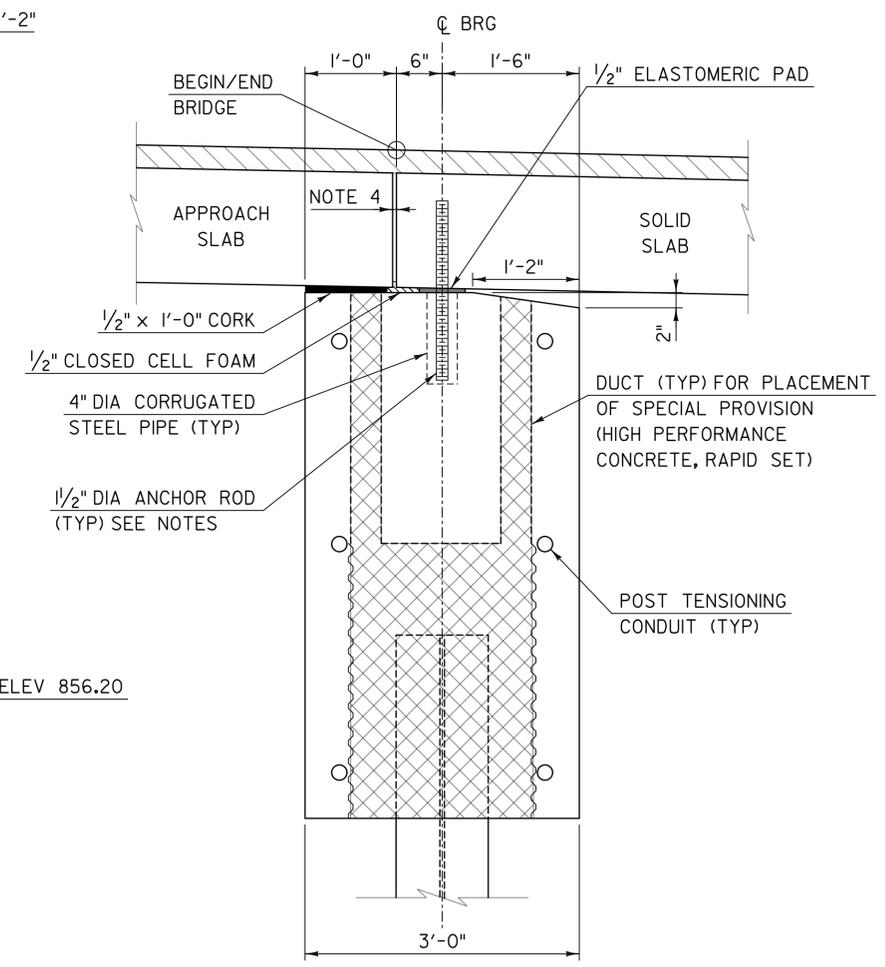
ABUTMENT NO 1 - PLAN
SCALE: 1/2" = 1'-0"



ABUTMENT NO 1 - ELEVATION
SCALE: 1/2" = 1'-0"

NOTES:

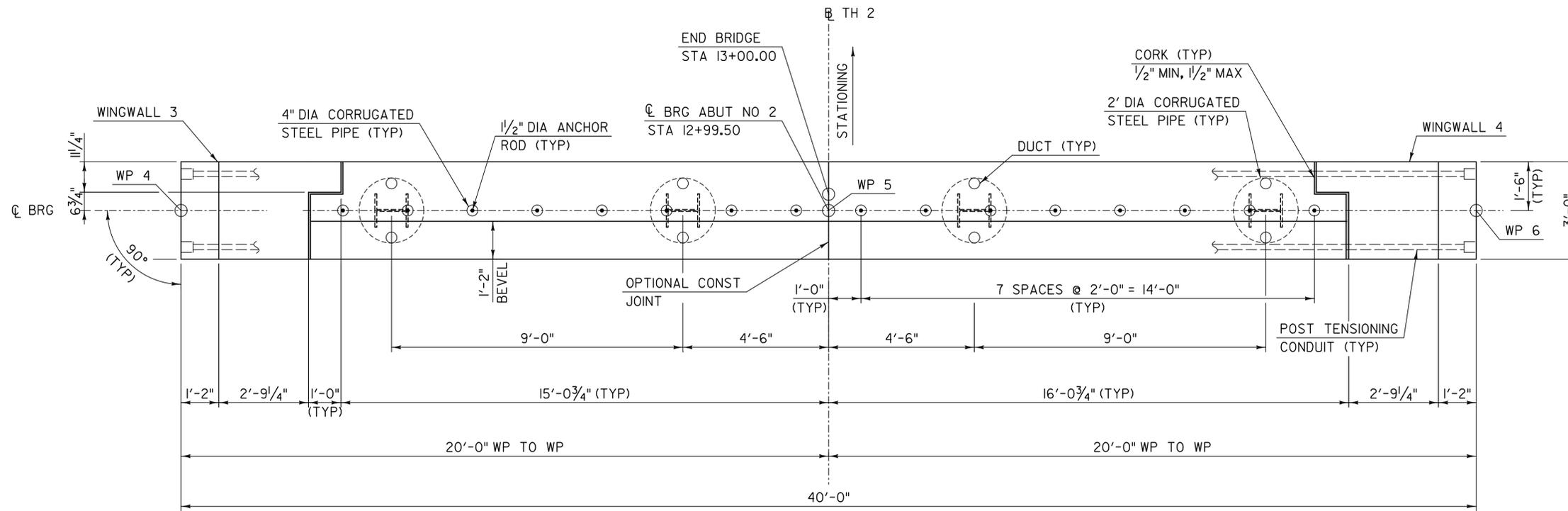
- ANCHOR RODS SHALL BE ASTM F1554 GRADE 105, GALVANIZED, AND SHALL MEET THE REQUIREMENTS OF SUBSECTION 714.08.
- ANCHOR RODS SHALL BE INCIDENTAL TO ITEM 900.640, "SPECIAL PROVISION (PRESTRESSED CONCRETE SOLID SLABS) (15" X 48)".
- DUCTS FOR FILLING PILE CAVITIES SHALL BE SPACED ON OPPOSITE SIDES OF PILE CAVITY AND A MINIMUM OF 2" CLEAR FROM STEEL PIPES FOR ANCHOR RODS.
- APPROACH SLABS SHALL BE INSTALLED FLUSH WITH END OF SOLIDS SLABS. ALL GAPS BETWEEN END OF APPROACH SLAB AND SOLIDS SLABS GREATER THAN 1/4" SHALL BE FILLED WITH MORTAR, TYPE IV. PAYMENT IS INCIDENTAL TO EACH APPROACH SLAB 540.10 OR 900.645, "SPECIAL PROVISION (CONTRACTOR - FABRICATED PRECAST CONCRETE STRUCTURES)" CONTRACT ITEM AS APPROPRIATE.



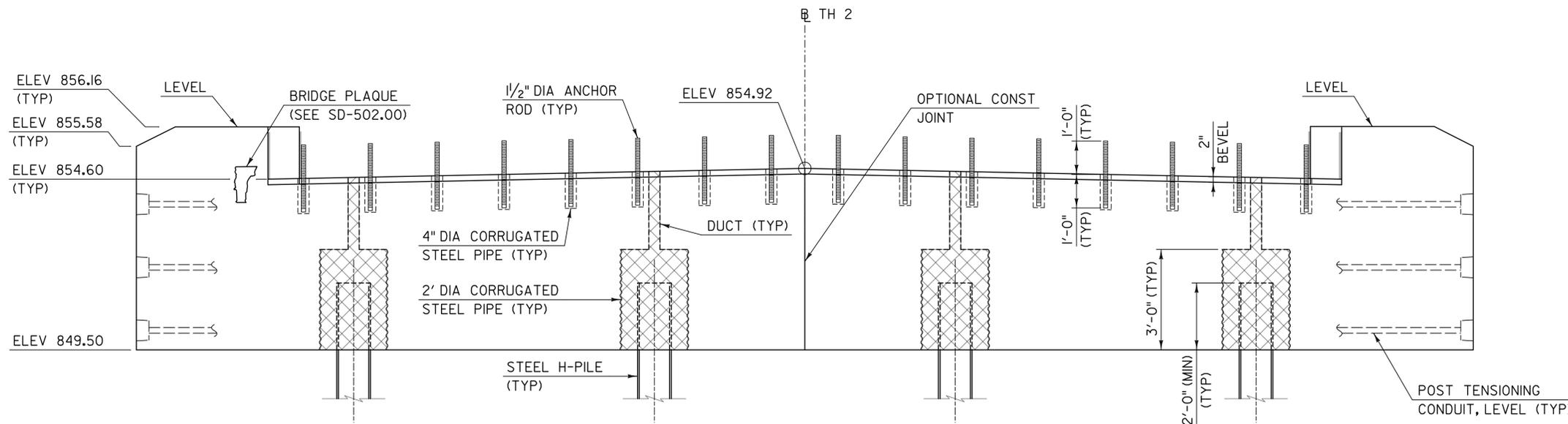
ABUTMENT - TYPICAL SECTION
SCALE: 1" = 1'-0"

<p>FOR REVIEW ONLY NOT FOR CONSTRUCTION</p> <p>TYLININTERNATIONAL</p>	PROJECT NAME: BARTON VILLAGE	PLOT DATE: 5/20/2015
	PROJECT NUMBER: BHF 0286(5)	DRAWN BY: S. MORGAN
	FILE NAME: z12j172sub.l.dgn	DESIGNED BY: B. TOOTHAKER
ABUTMENT I PLAN, ELEVATION, & SECTION		SHEET 91 OF 111

NOTE:
 I. SEE "ABUTMENT 1 PLAN, ELEVATION, & SECTION" FOR SECTION AND NOTES.



ABUTMENT NO 2 - PLAN
 SCALE: 1/2" = 1'-0"



ABUTMENT NO 2 - ELEVATION
 SCALE: 1/2" = 1'-0"

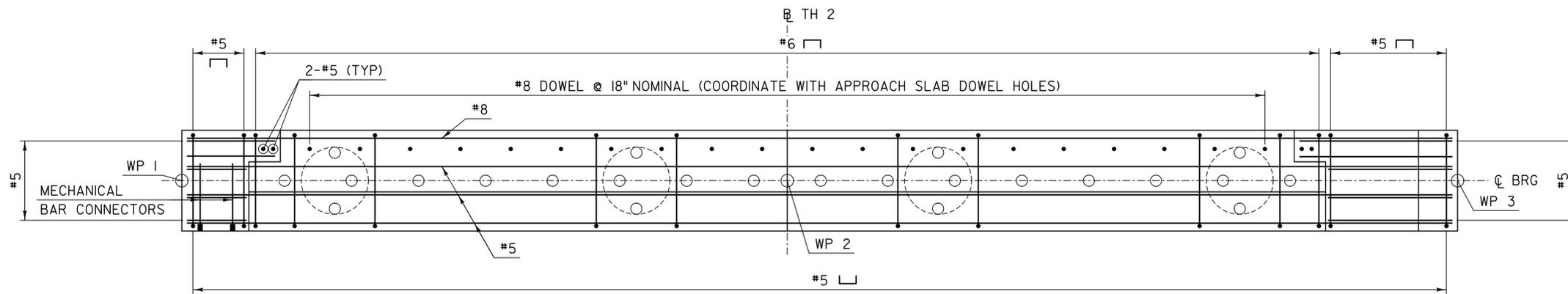
FOR REVIEW ONLY
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PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

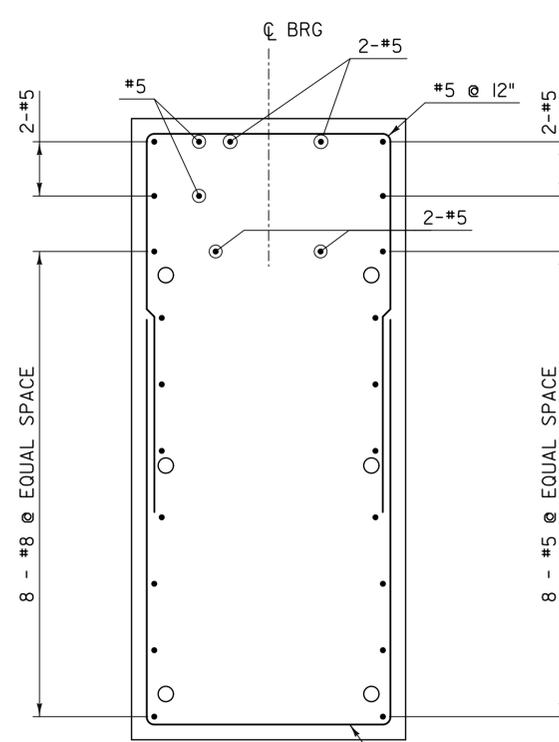
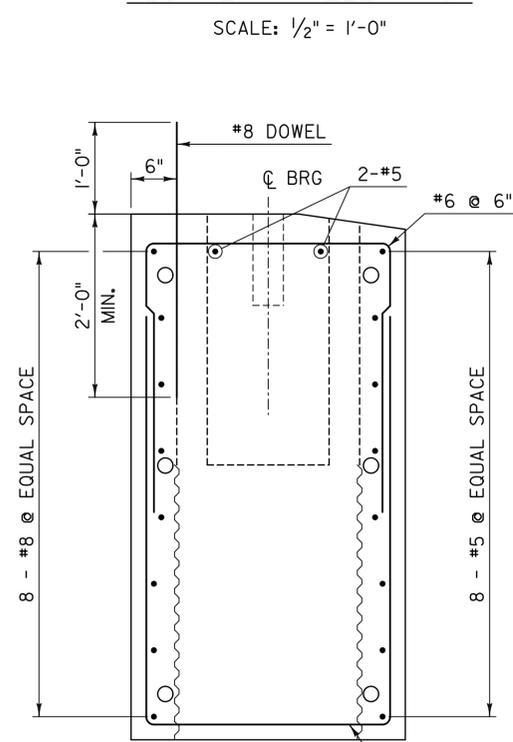
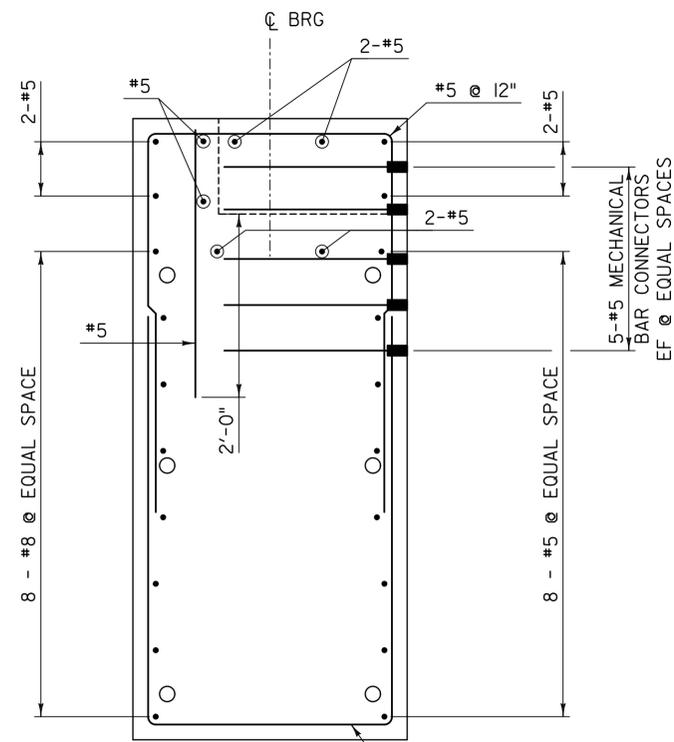
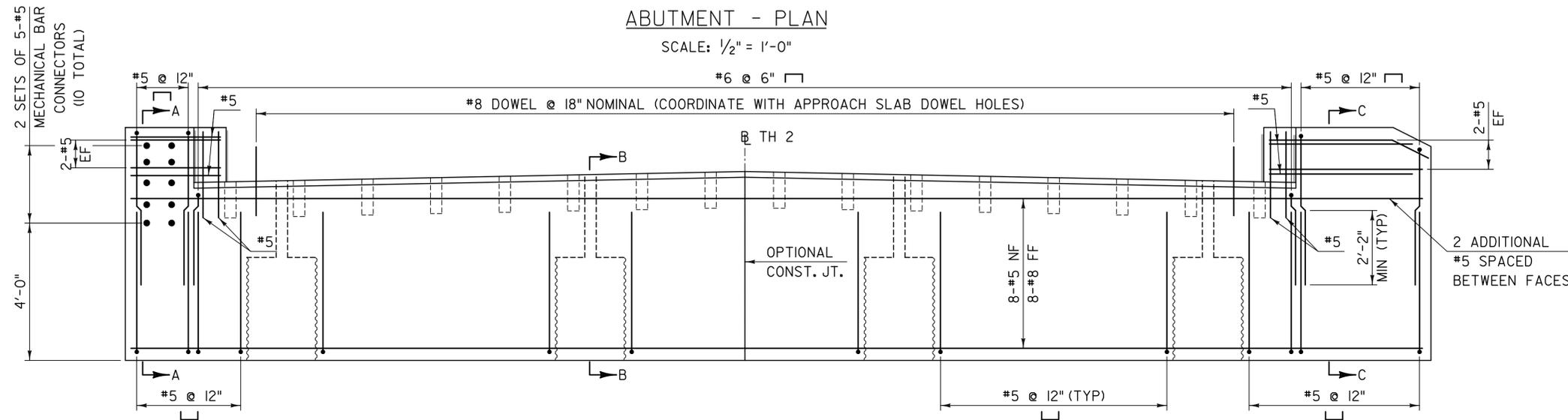
FILE NAME: z12j172sub.2.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 ABUTMENT 2 PLAN AND ELEVATION

PLOT DATE: 5/20/2015
 DRAWN BY: S. MORGAN
 CHECKED BY: C. TAYLOR
 SHEET 92 OF 111



NOTES:

1. ABUTMENT NO 1 SHOWN, ABUTMENT NO 2 SIMILAR.
2. REINFORCEMENT FOR WINGWALL NO 3 AND WINGWALL NO 4 SIMILAR TO WINGWALL NO 1.
3. POST-TENSIONING AND PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.



NOTE:

- NF = NEAR FACE
- FF = FAR FACE
- EF = EACH FACE
- SPLICES NOT DETAILED SHALL BE DESIGNED.

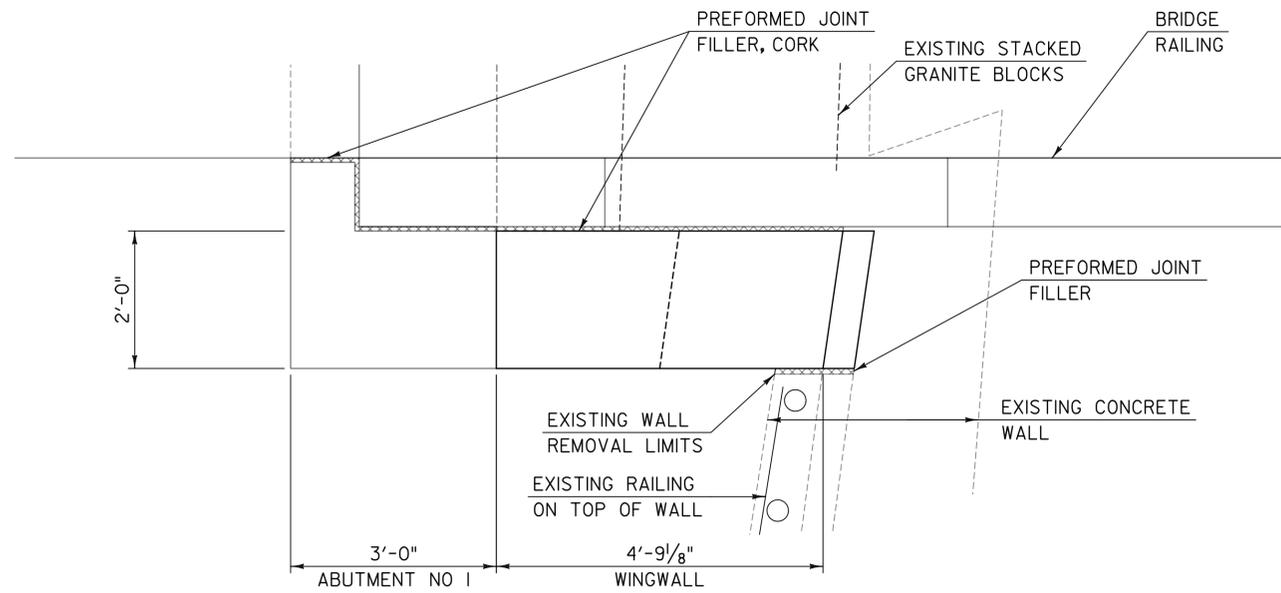
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TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

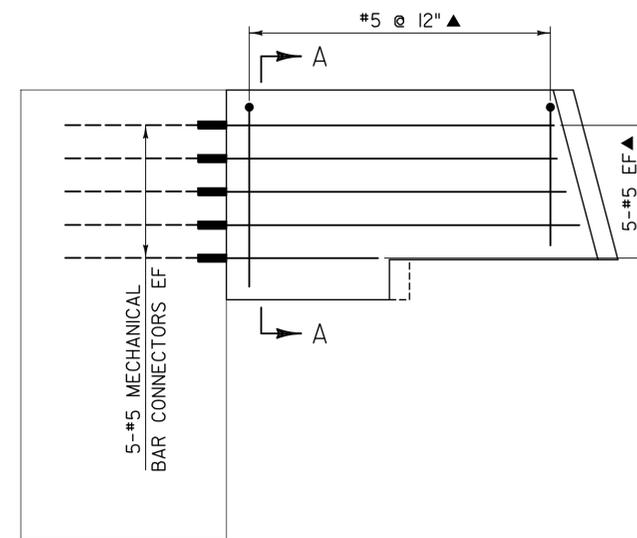
FILE NAME: z12j172sub_3.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
ABUTMENT REINFORCEMENT

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: C. TAYLOR
SHEET 93 OF 111



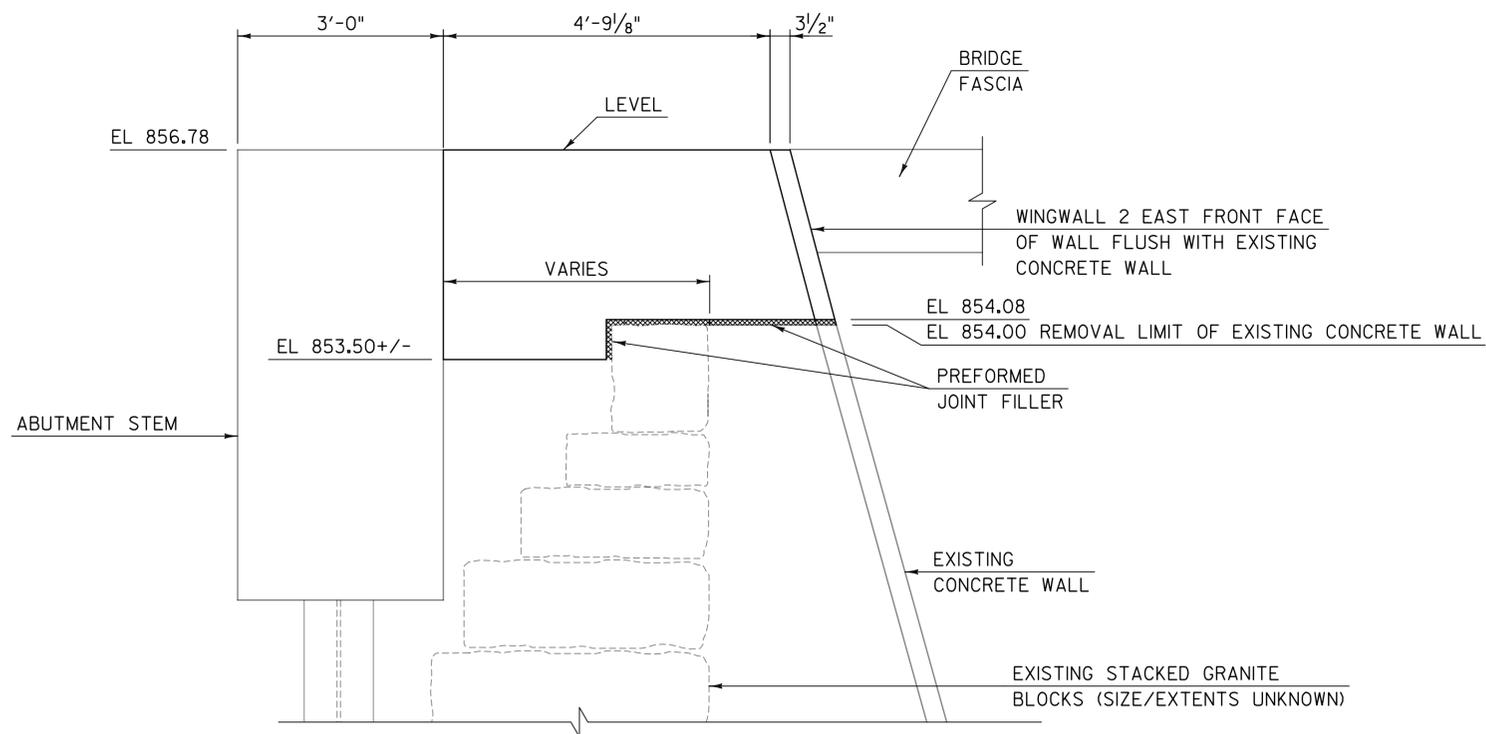
WINGWALL 2 - PLAN

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



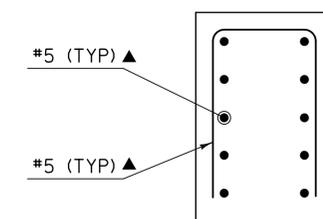
WINGWALL 2 REINFORCEMENT

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



WINGWALL 2 - ELEVATION

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

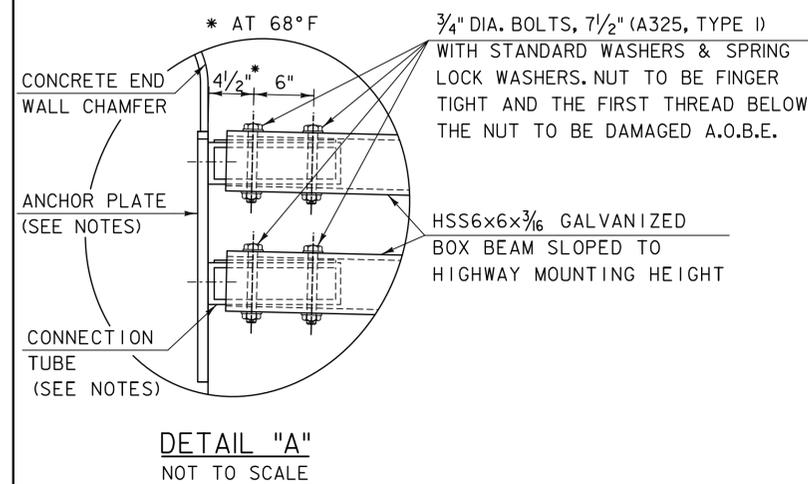
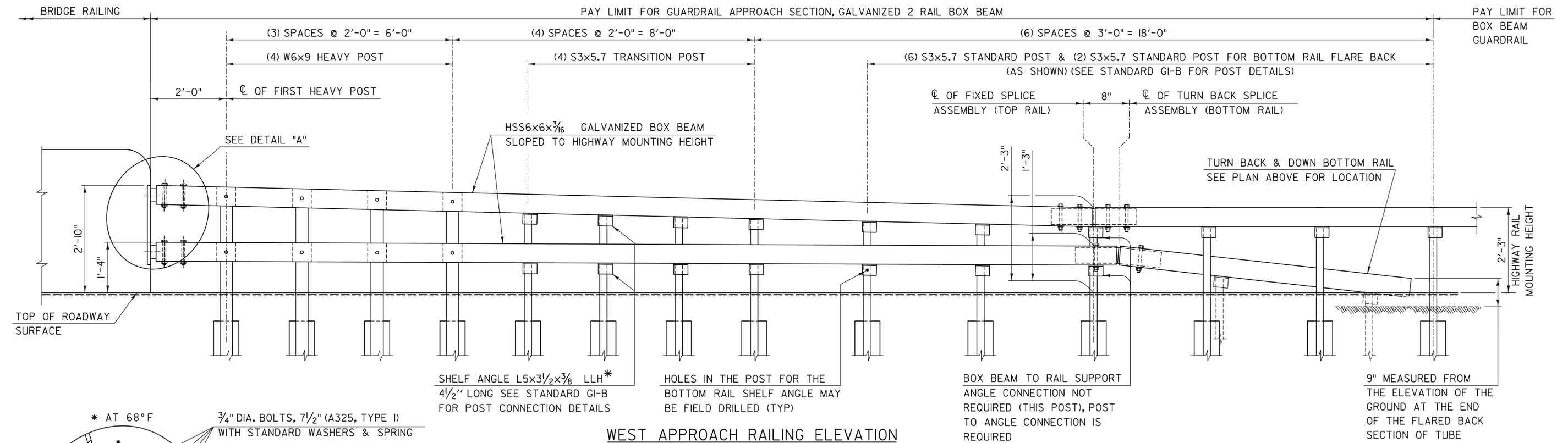
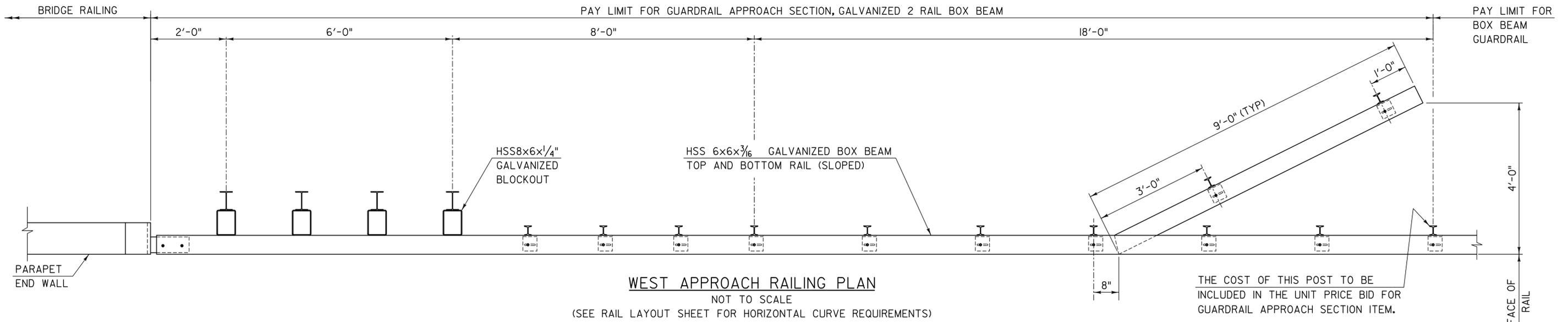


SECTION A-A

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

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

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE	
	PROJECT NUMBER: BHF 0286(5)	
TYLIN INTERNATIONAL	FILE NAME: z12j172sub_4.dgn	PLOT DATE: 5/20/2015
	PROJECT LEADER: J. OLUND	DRAWN BY: S. MORGAN
	DESIGNED BY: B. TOOTHAKER	CHECKED BY: XXXXX
	WINGWALL NO 2 DETAILS	SHEET 94 OF 111

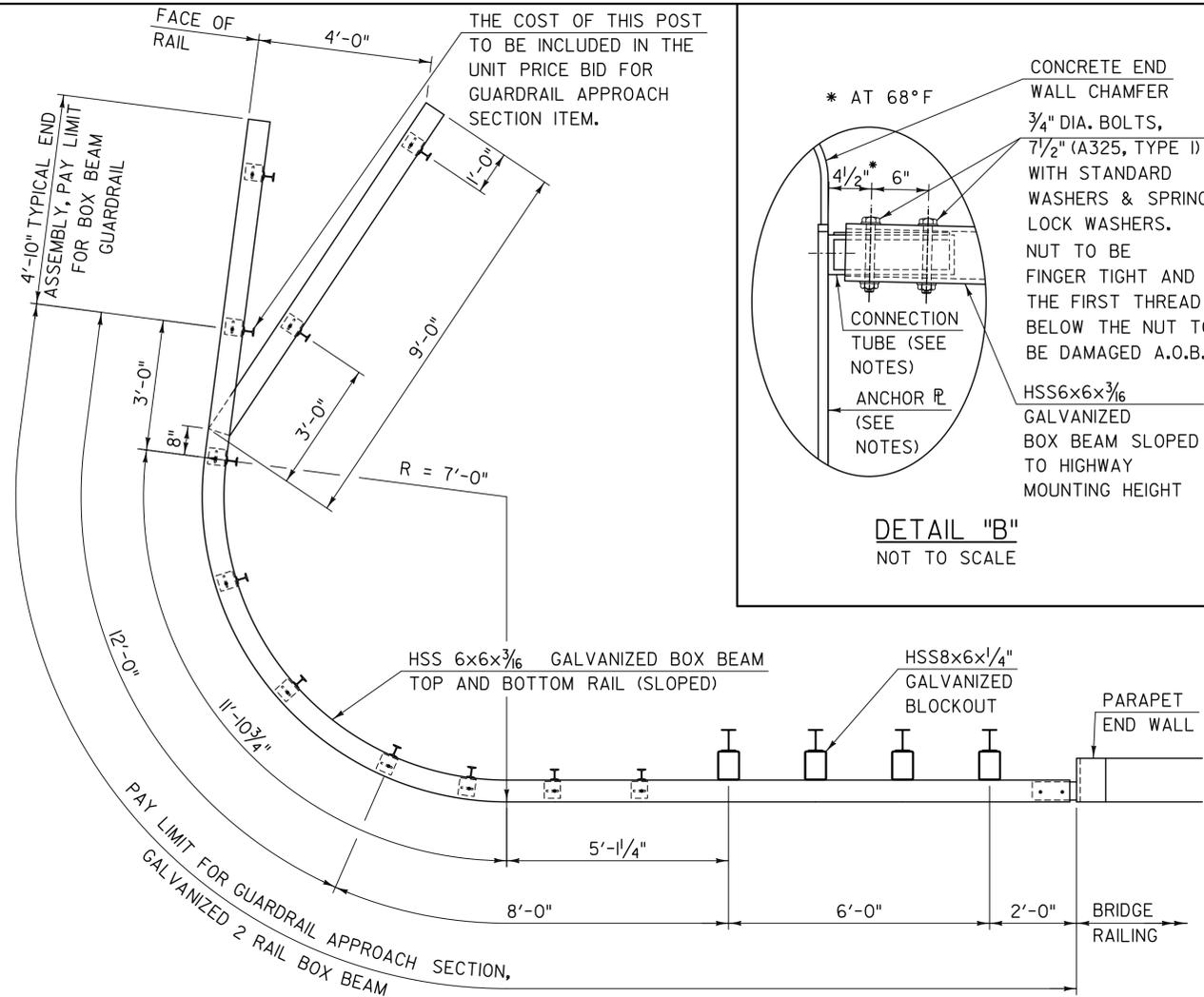


- NOTES:**
- FOR "FIXED SPLICE TUBE", "FIXED SPLICE BAR", "FIXED SPLICE TUBE ASSEMBLY", AND "FIXED SPLICE BAR ASSEMBLY" DETAILS, SEE STANDARD S-364C.
 - FOR "TURN BACK SPLICE TUBE DETAIL" AND "TURN BACK SPLICE TUBE ASSEMBLY" DETAILS, SEE STANDARD S-364D.
 - FOR "HEAVY POST DETAIL" AND "TRANSITION POST DETAIL", SEE STANDARD S-364D.
 - FOR DETAILS OF TYPICAL END ASSEMBLY AND BOX BEAM GUARDRAIL SEE STANDARD G-1B.
 - SEE BRIDGE RAILING DETAILS FOR ANCHOR PLATE AND CONNECTION TUBE DETAILS.

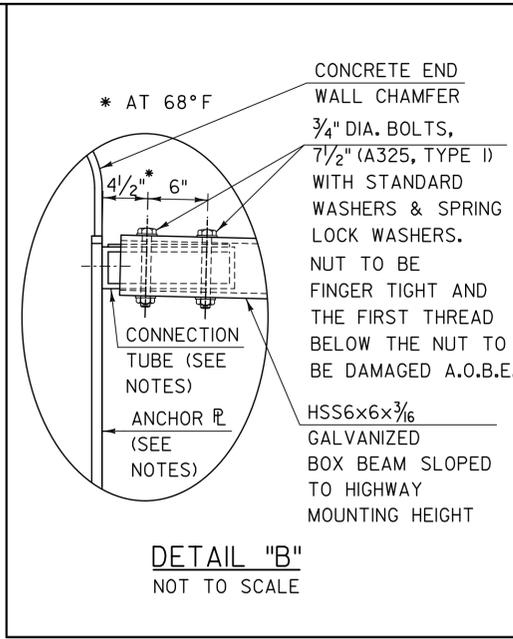
FOR REVIEW ONLY NOT FOR CONSTRUCTION TYLIN INTERNATIONAL	PROJECT NAME: BARTON VILLAGE PROJECT NUMBER: BHF 0286(5)
	FILE NAME: z12j172sup6.dgn PROJECT LEADER: J. OLUND DESIGNED BY: B. TOOTHAKER APPROACH RAILING DETAILS I

NOTE:

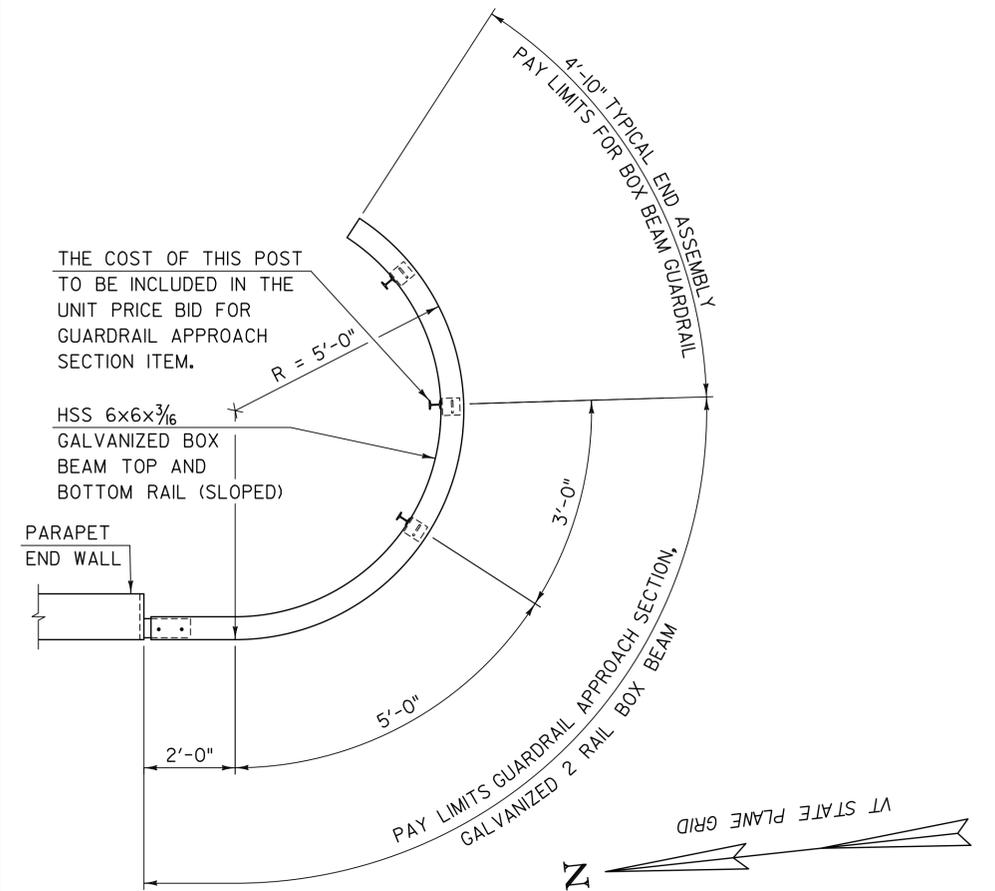
I. FOR NOTES AND DETAIL "A", SEE APPROACH RAILING DETAILS 1 SHEET.



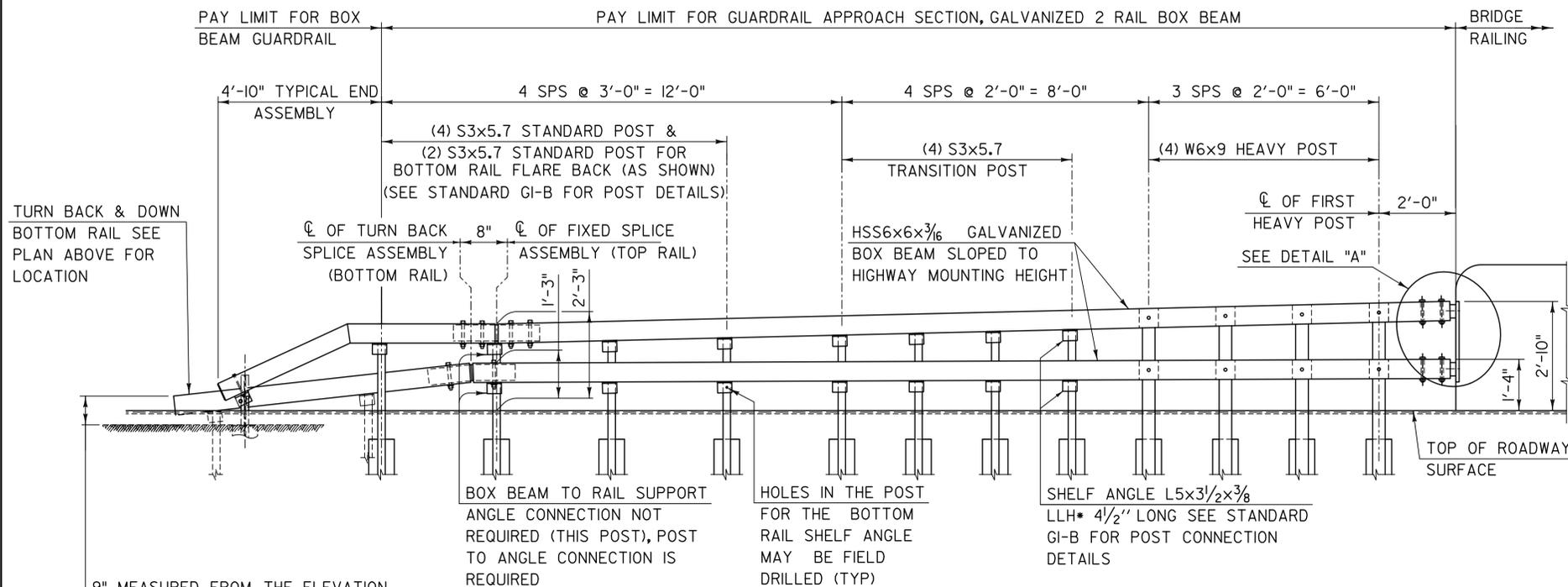
NORTHEAST APPROACH RAILING PLAN
NOT TO SCALE



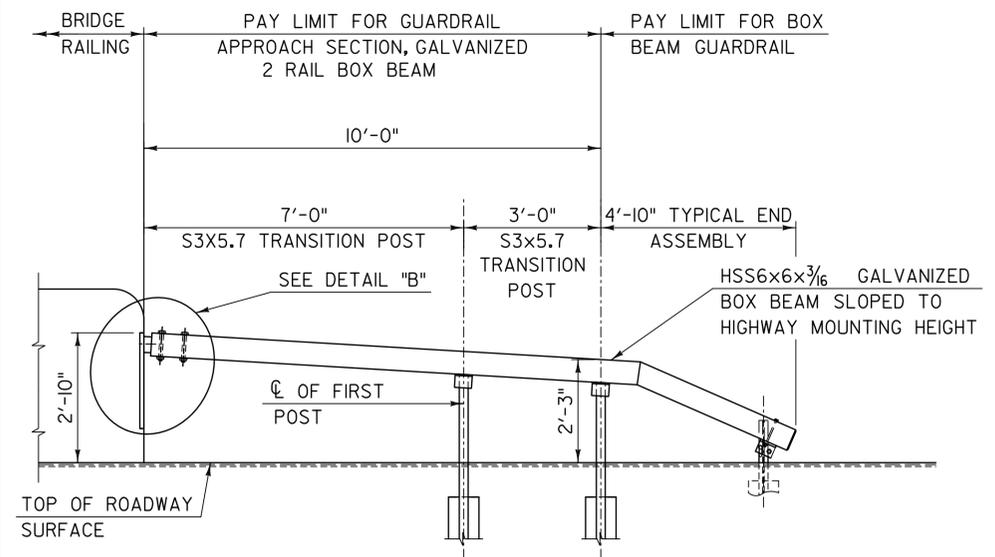
DETAIL "B"
NOT TO SCALE



SOUTHEAST APPROACH RAILING PLAN
NOT TO SCALE



NORTHEAST APPROACH RAILING ELEVATION
NOT TO SCALE



SOUTHEAST APPROACH RAILING ELEVATION
NOT TO SCALE

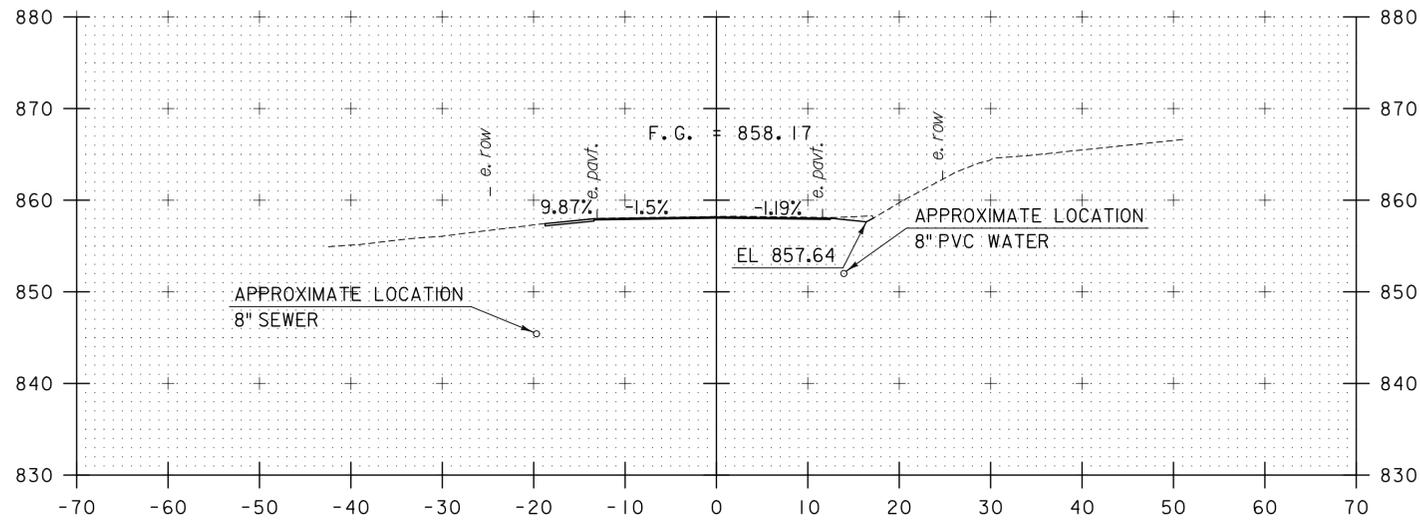
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

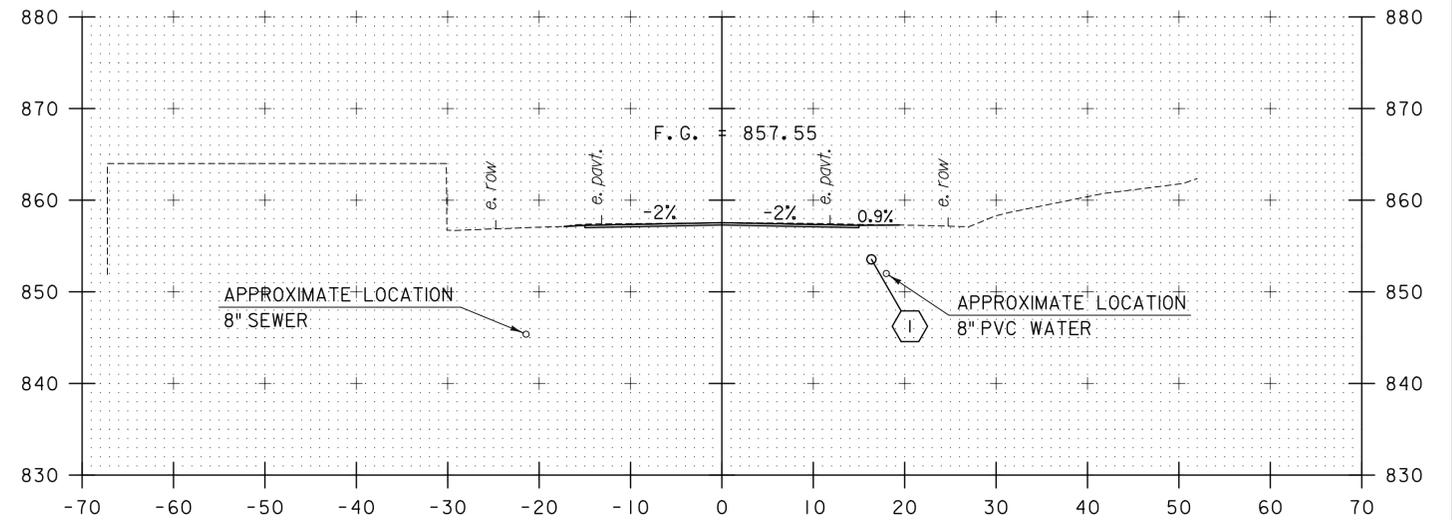
TYLIN INTERNATIONAL

FILE NAME: z12j172sup7.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
APPROACH RAILING DETAILS 2

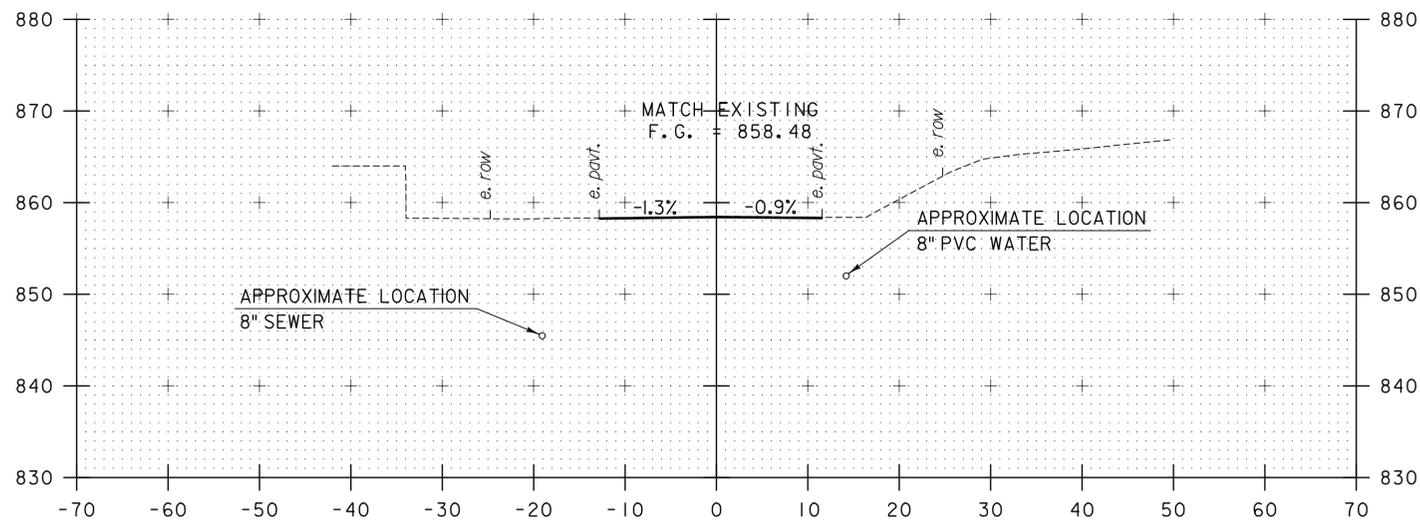
PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: J. OLUND
SHEET 97 OF 111



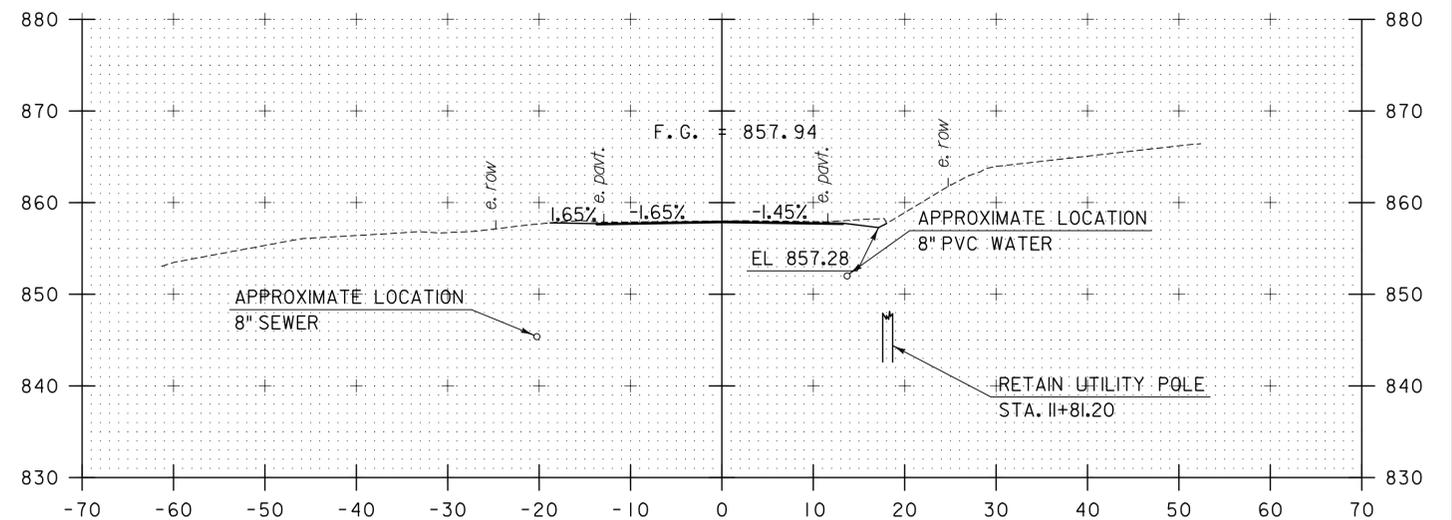
11+63



12+00



11+50
BEGIN APPROACH



11+75

STA. 11+50 TO STA. 12+00

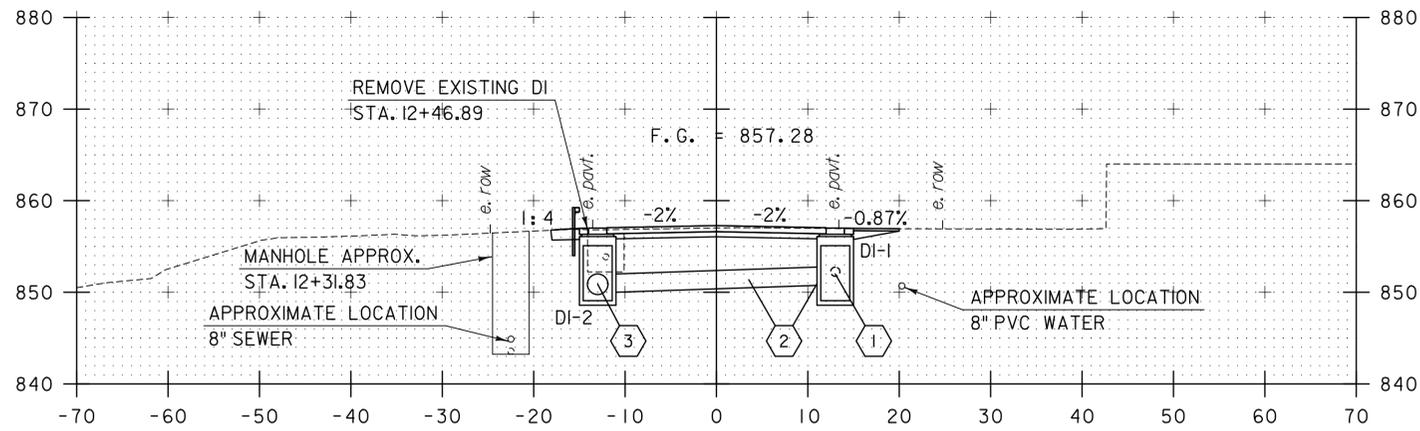
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

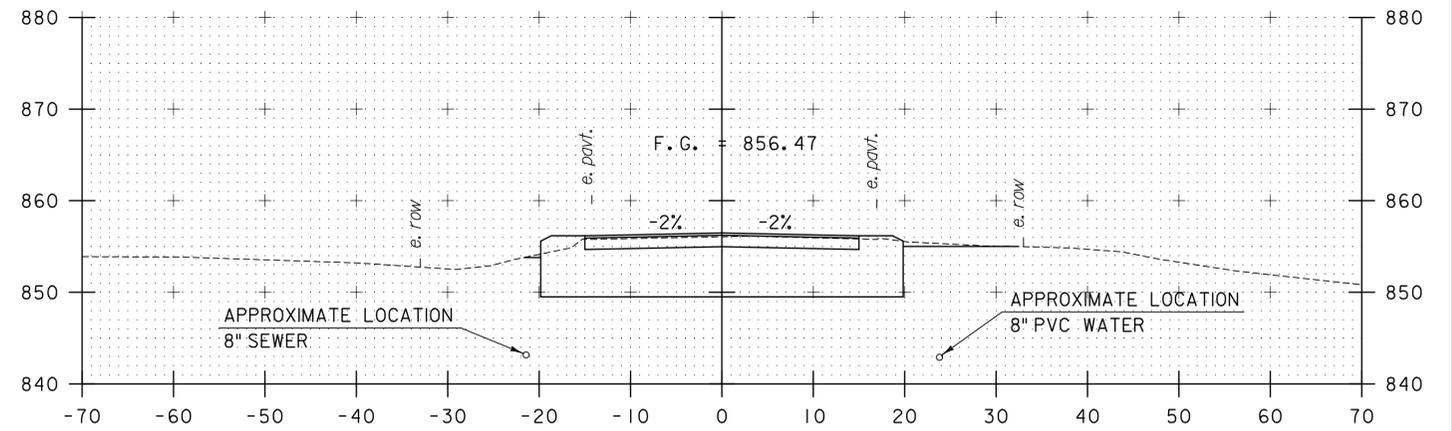
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172xsl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TH2 CROSS SECTIONS I

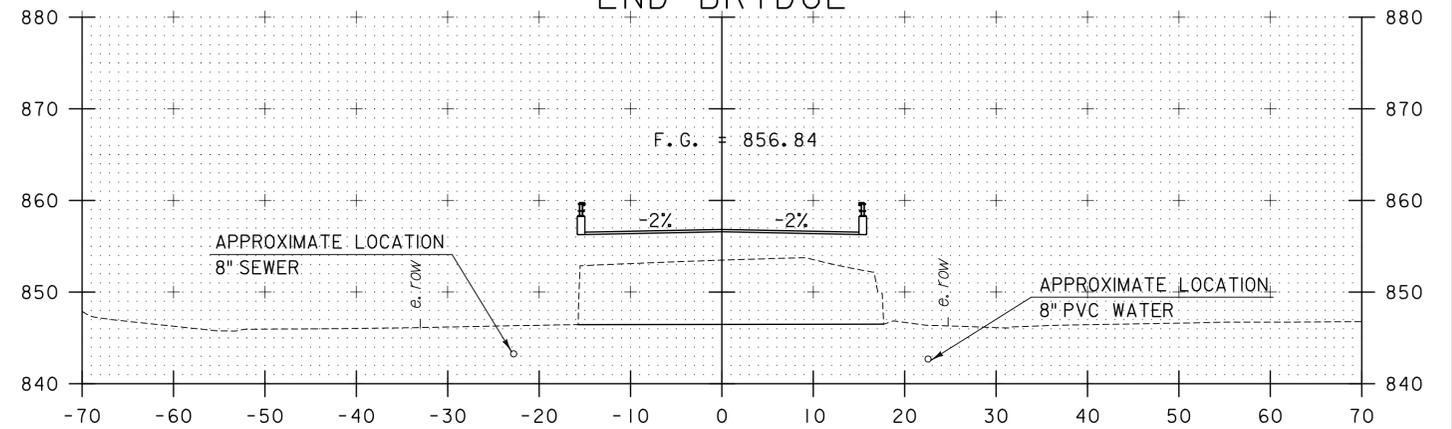
PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 98 OF 111



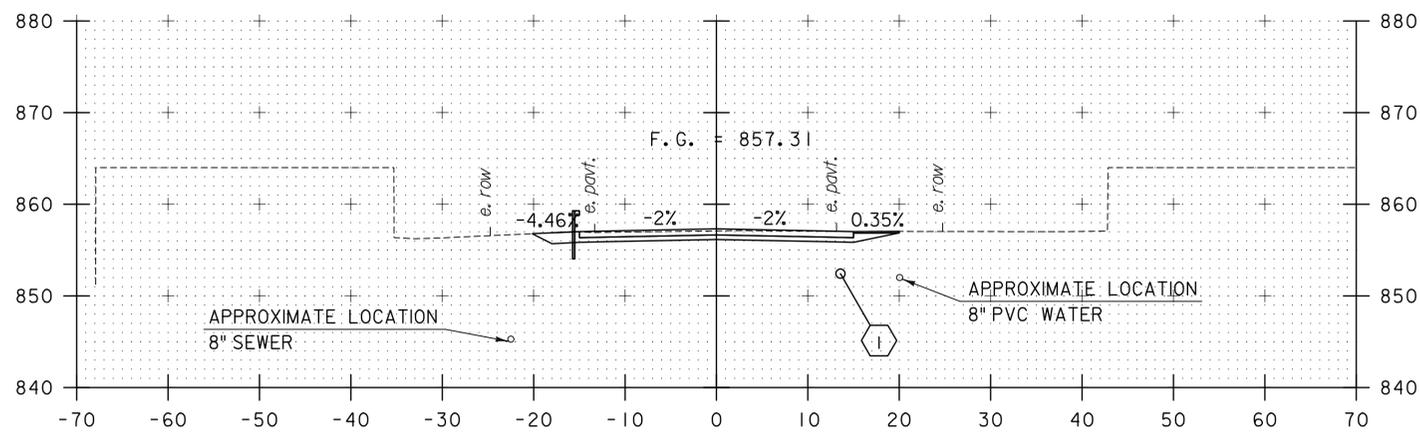
12+30



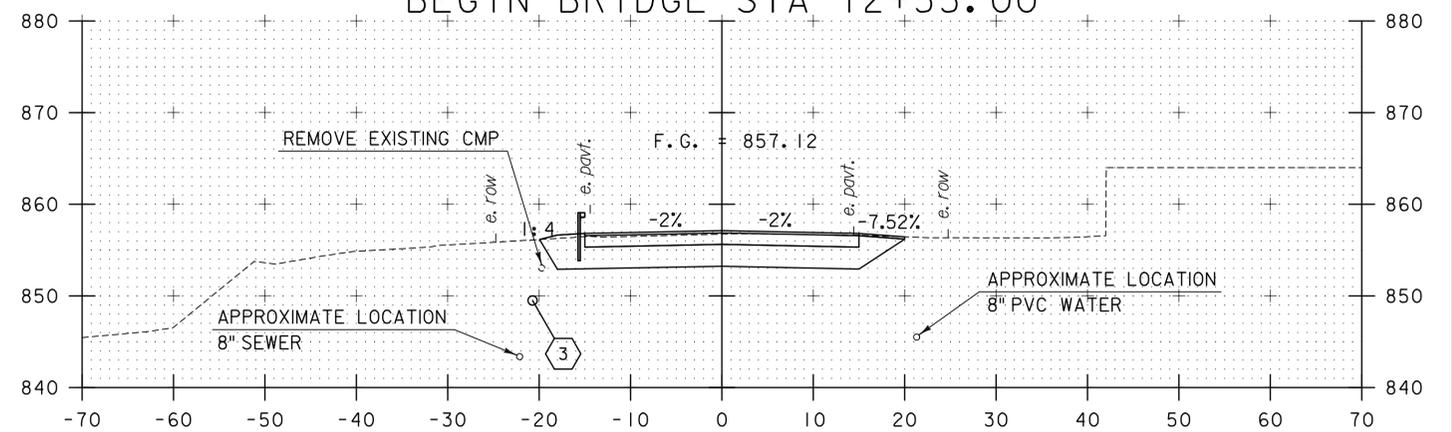
13+00
END BRIDGE



12+75
BEGIN BRIDGE STA 12+55.00



12+25
BEGIN PROJECT



12+50

STA. 12+25 TO STA. 13+00

①

SLOPE = 5.48%
NEW PIPE
TYPE: OPTION PIPE
LENGTH = 34.7 FT
DIAMETER = 12 IN
INV. IN = 853.63
INV. OUT = 851.75

②

DI-1
GRATE = TYPE E
RIM EL = 857.02
DEPTH = 8.48

②

SLOPE = 3.36%
NEW PIPE
TYPE: OPTION PIPE
LENGTH = 22.3 FT
DIAMETER = 18 IN
INV. IN = 850.75
INV. OUT = 850.00

③

DI-2
GRATE = TYPE E
RIM EL = 857.02
DEPTH = 8.48

③

SLOPE = 4.52%
NEW PIPE
TYPE: OPTION PIPE
LENGTH = 31.2 FT
DIAMETER = 18 IN
INV. IN = 849.75
INV. OUT = 848.34

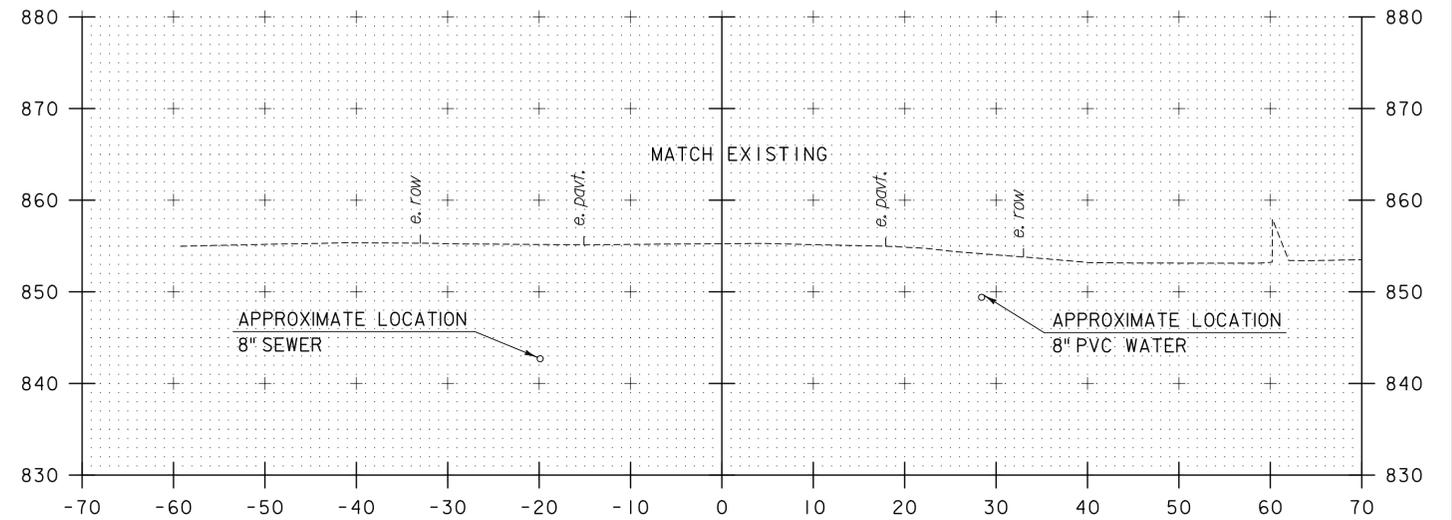
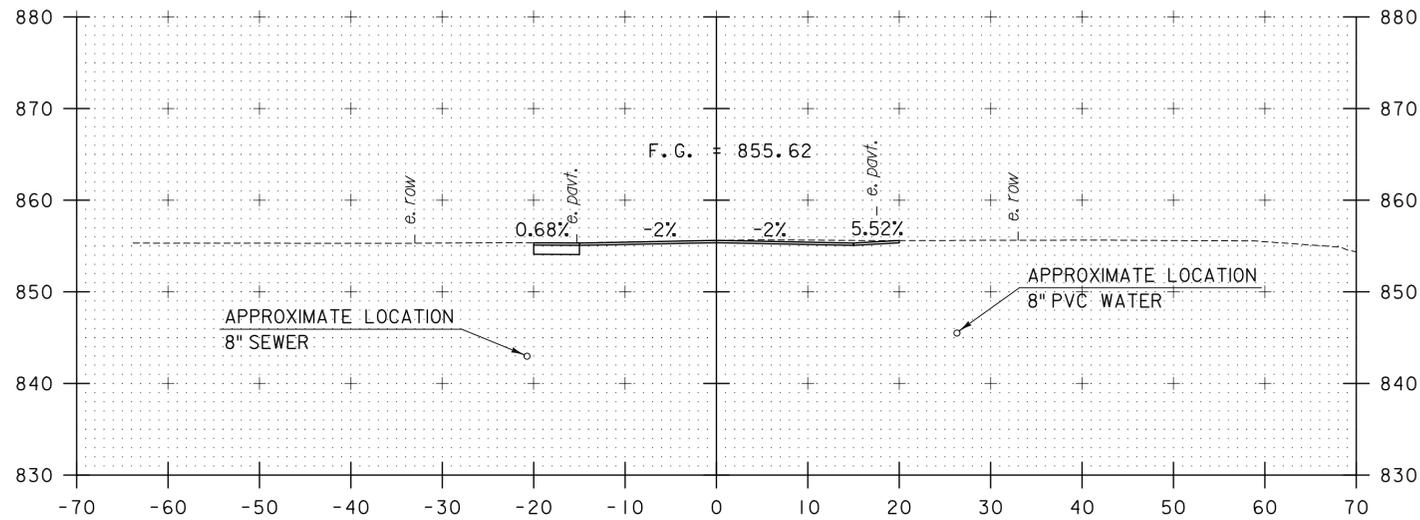
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TYLINTERNATIONAL

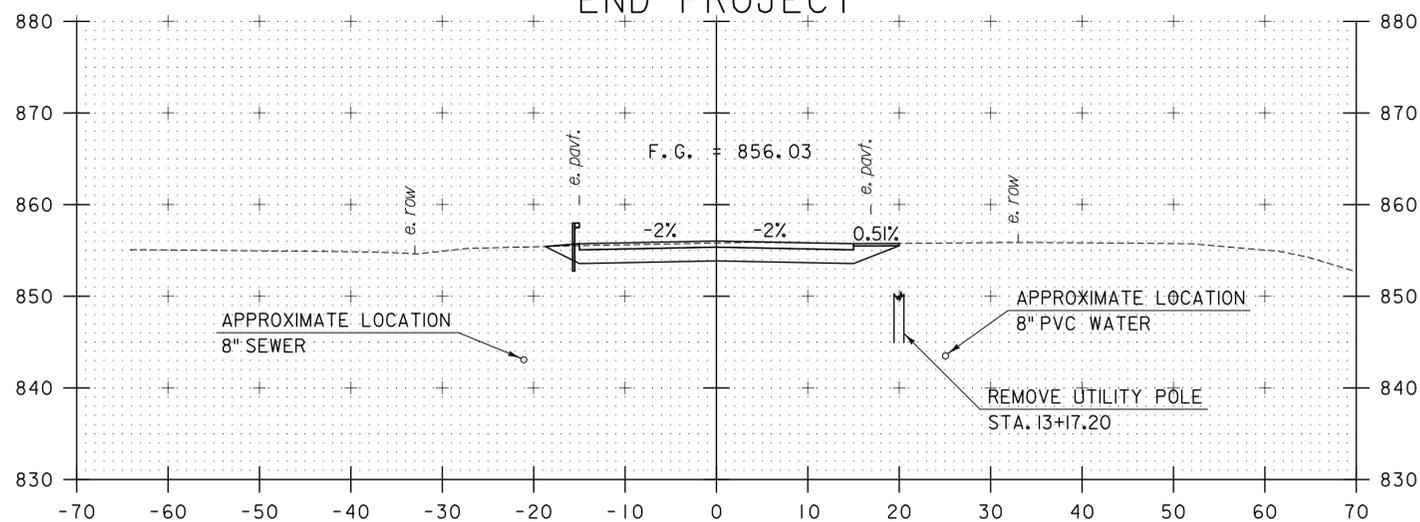
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172xsl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TH2 CROSS SECTIONS 2

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 99 OF 111

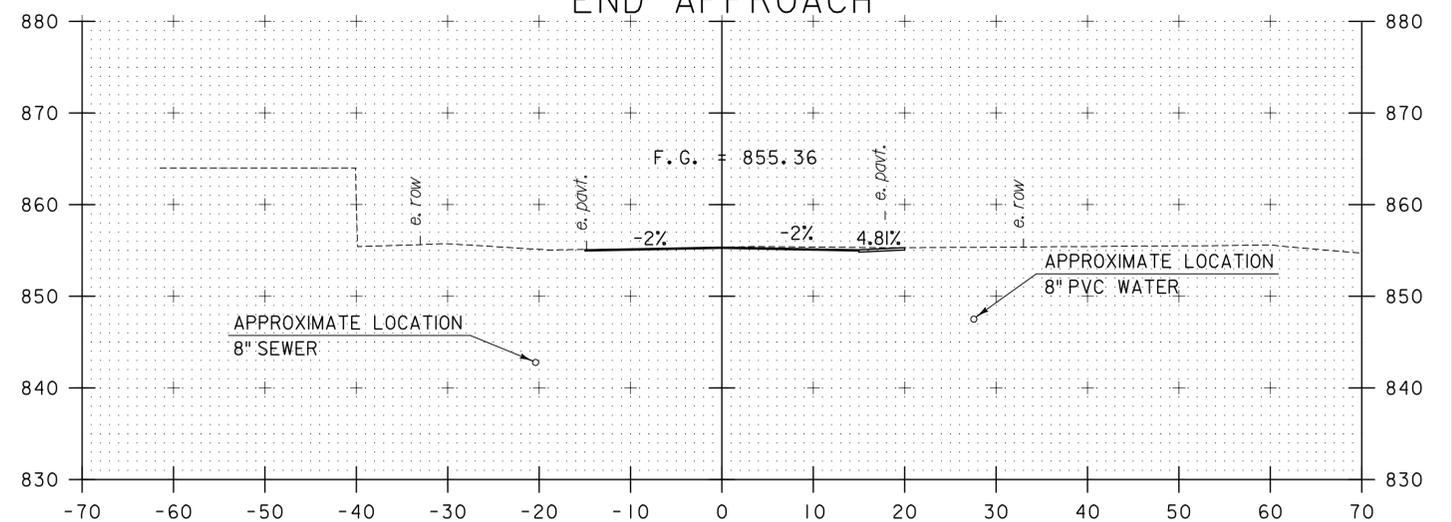


13+50
END PROJECT



13+25

14+00
END APPROACH



13+75

STA. 13+25 TO STA. 14+00

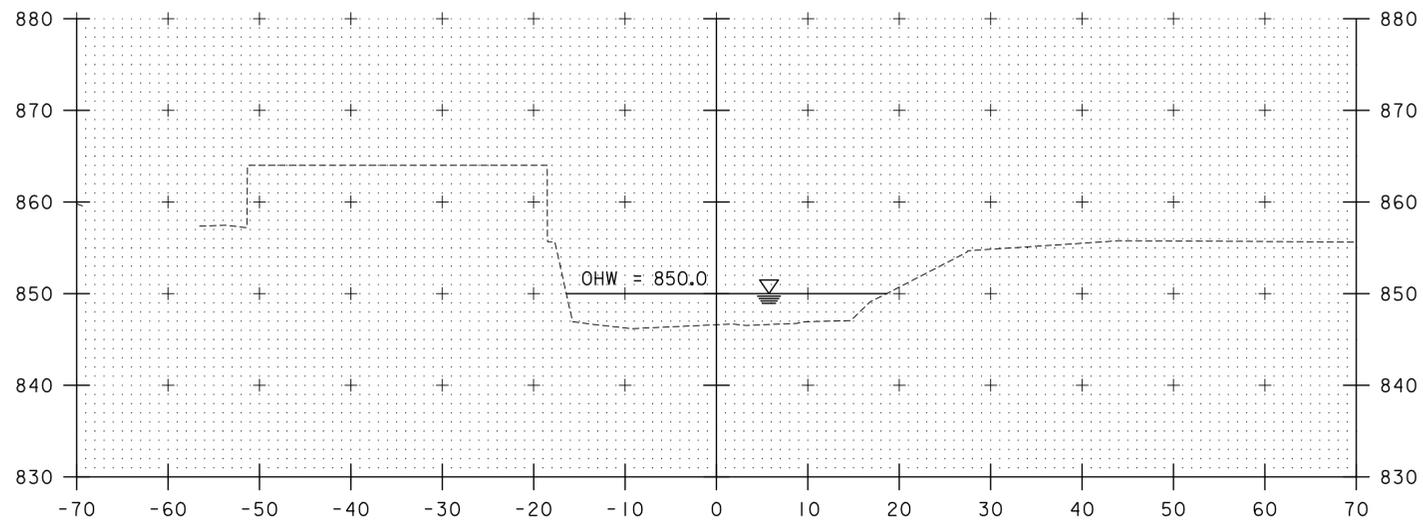
FOR REVIEW ONLY
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TYLININTERNATIONAL

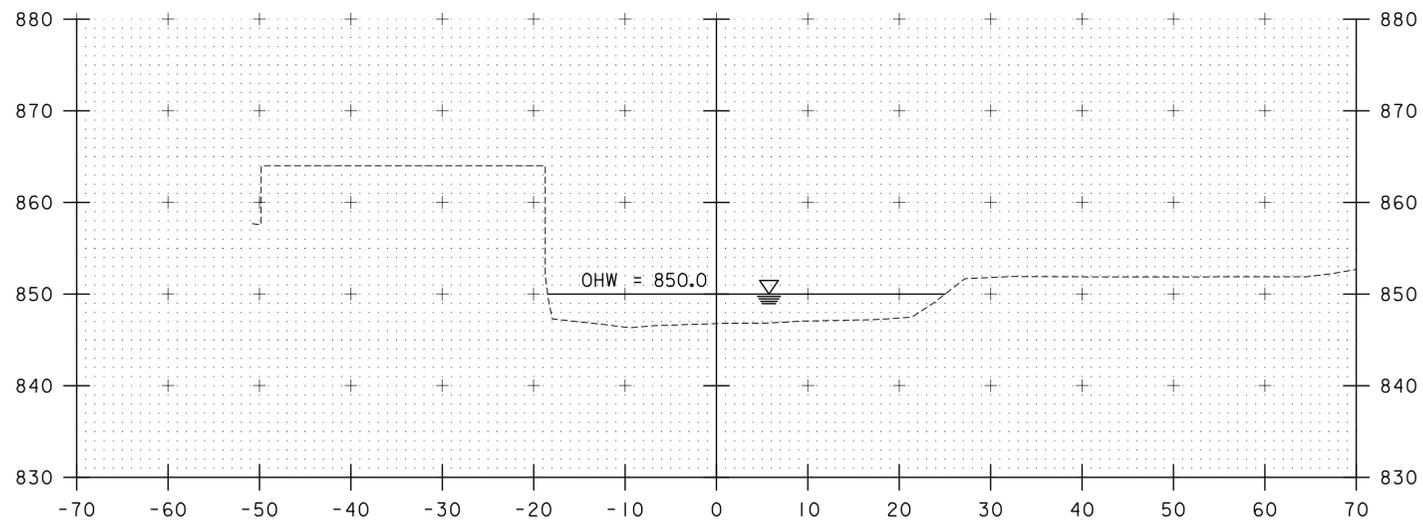
PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172xsl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
TH2 CROSS SECTIONS 3

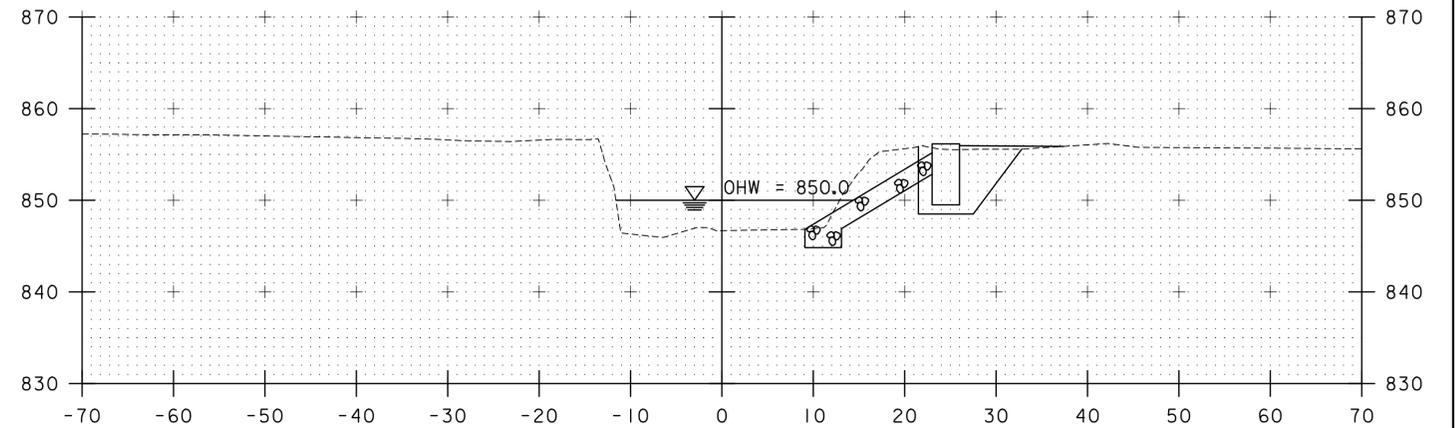
PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. HOWE
SHEET 100 OF 111



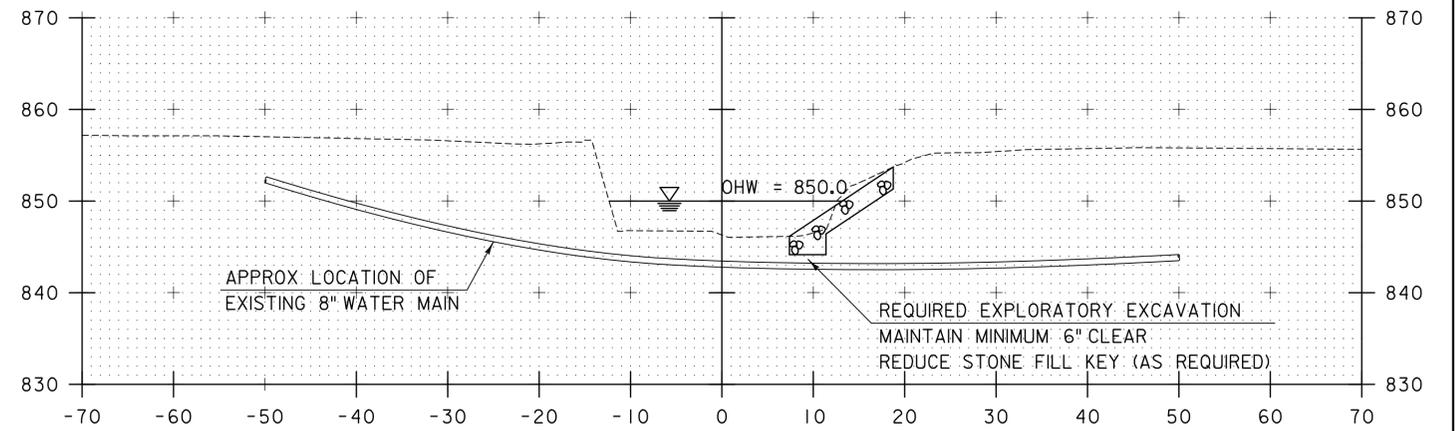
50+50



50+25



50+80



50+75

STATION 50+72.98 RT
 BEGIN UNCLASSIFIED CHANNEL EXCAVATION
 BEGIN GEOTEXTILE UNDER STONE FILL
 BEGIN STONE FILL, TYPE II

STA. 50+25 TO STA. 50+80

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

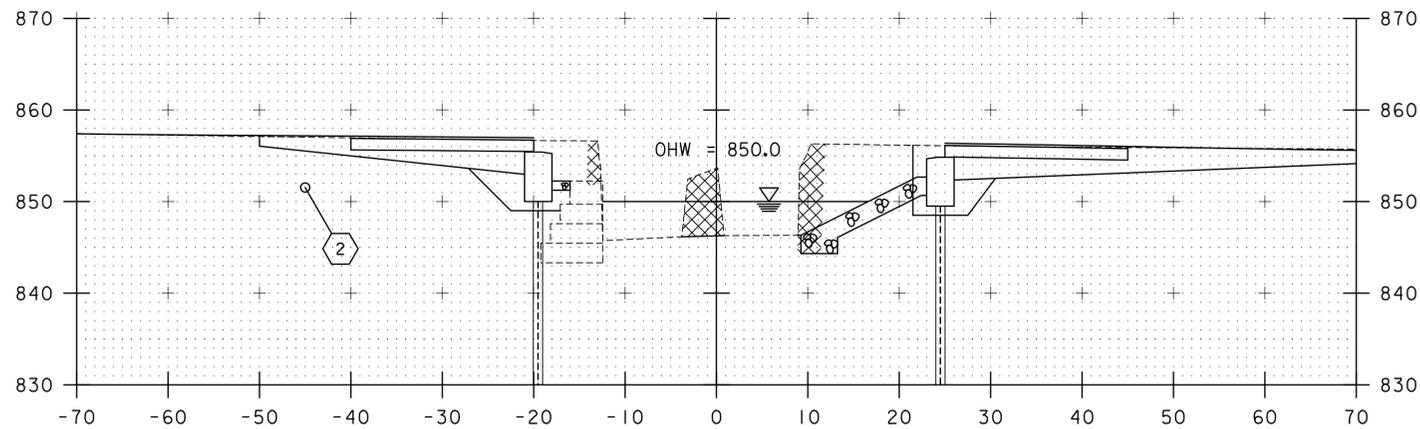
SCALE 1" = 10' - 0"
 10 0 10

TYLIN INTERNATIONAL

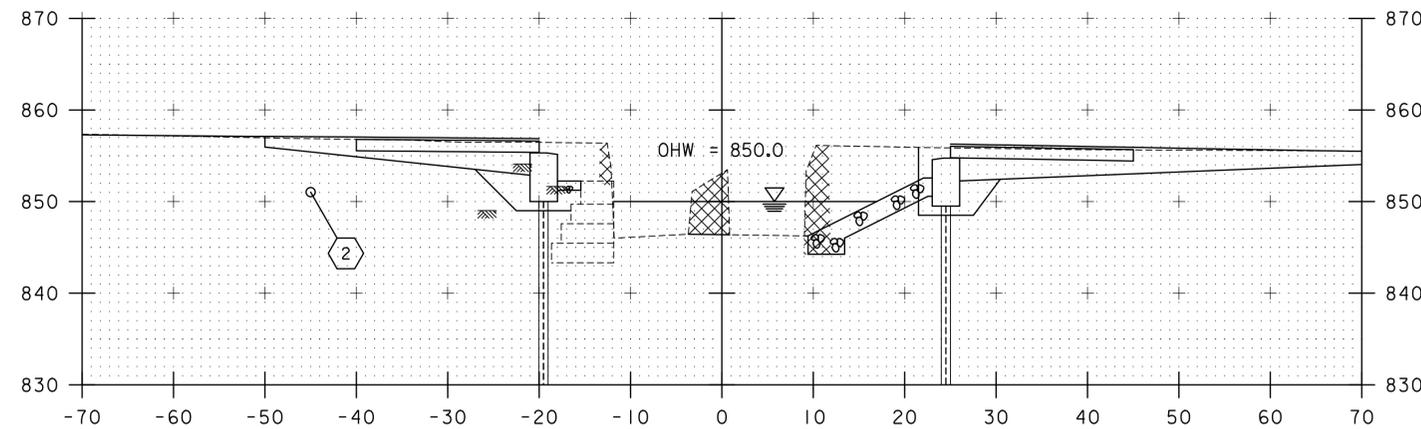
PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172xschnl.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: J. OLUND
 CHANNEL CROSS SECTIONS I

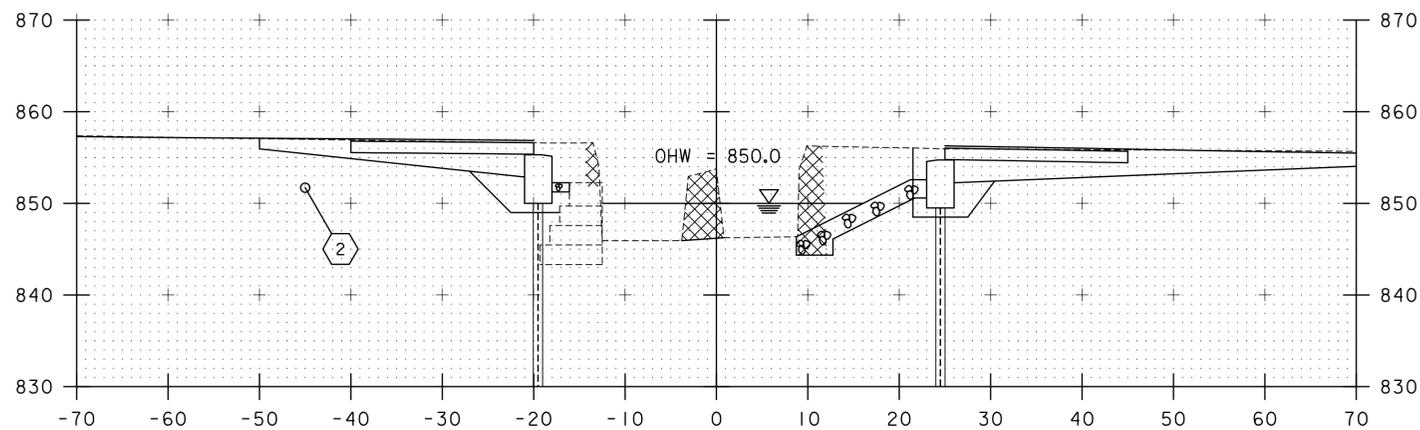
PLOT DATE: 5/20/2015
 DRAWN BY: S. MORGAN
 CHECKED BY: T. POULIN
 SHEET 101 OF 111



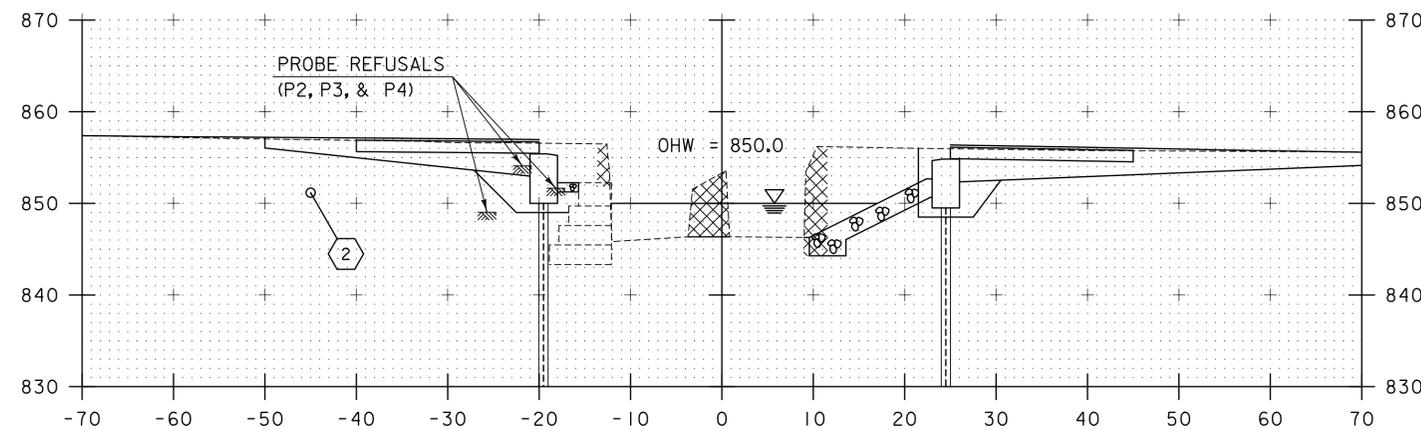
50+95



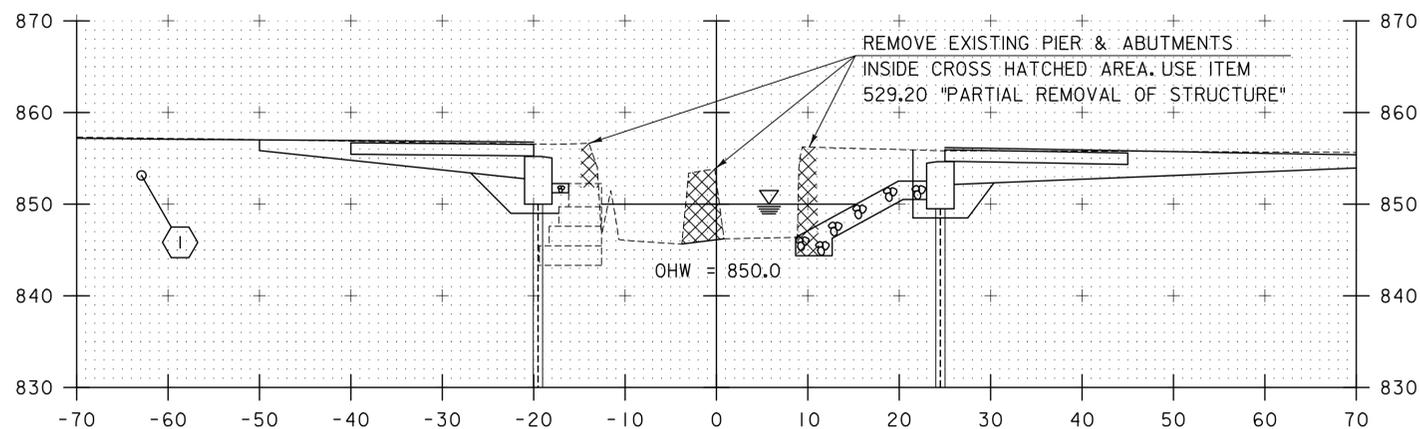
51+10



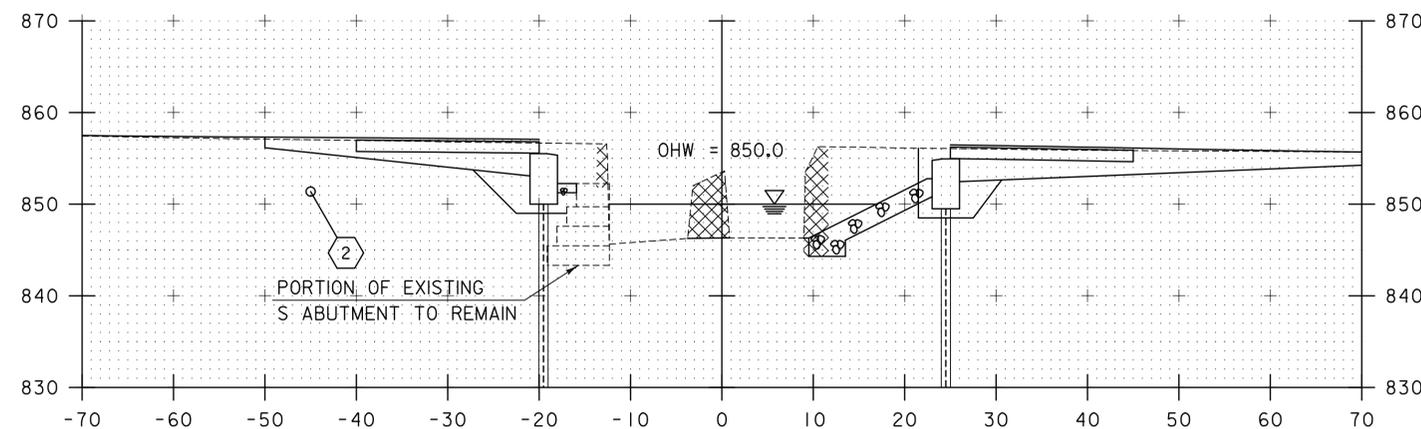
50+90



51+05



50+85



51+00

STA. 50+85 TO STA. 51+10

STATION 50+84.10 LT
BEGIN STONE FILL, TYPE I

NOTE: GRANITE BLOCKS COMPRISING THE EXISTING SOUTHERN ABUTMENT SHOWN HEREIN ARE GRAPHICAL ONLY. NO ASSURANCE IS GIVEN TO THE DEPTH, WIDTH, OR HEIGHT OF GRANITE BLOCKS.

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

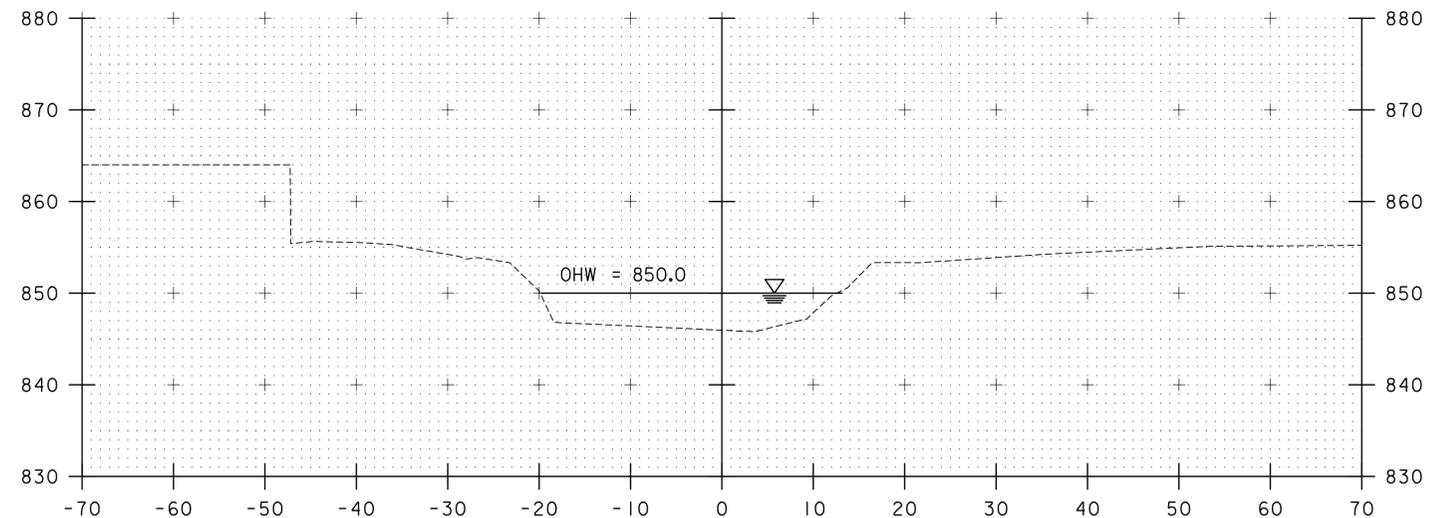
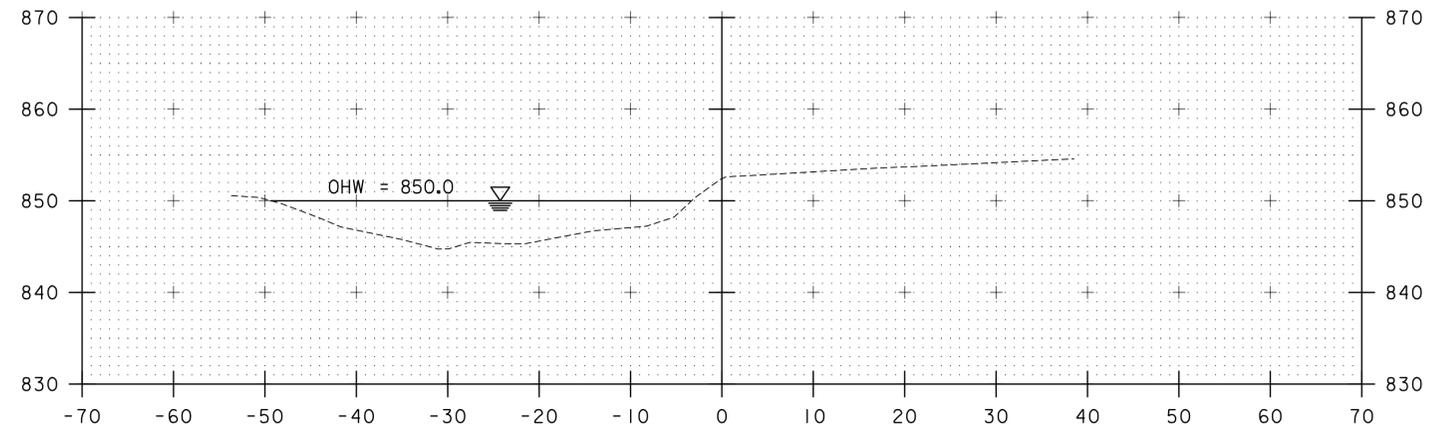
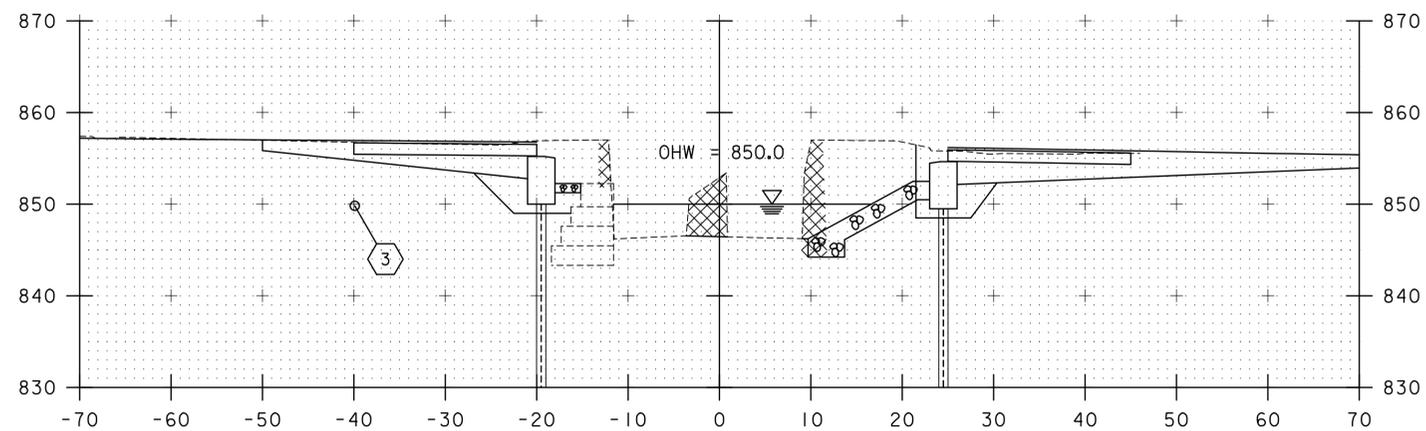
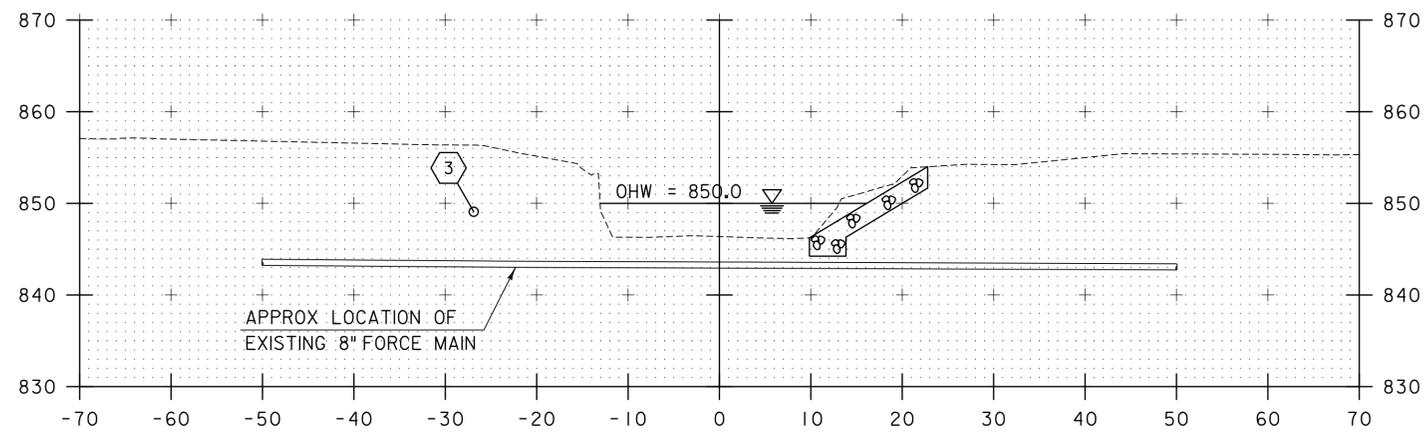
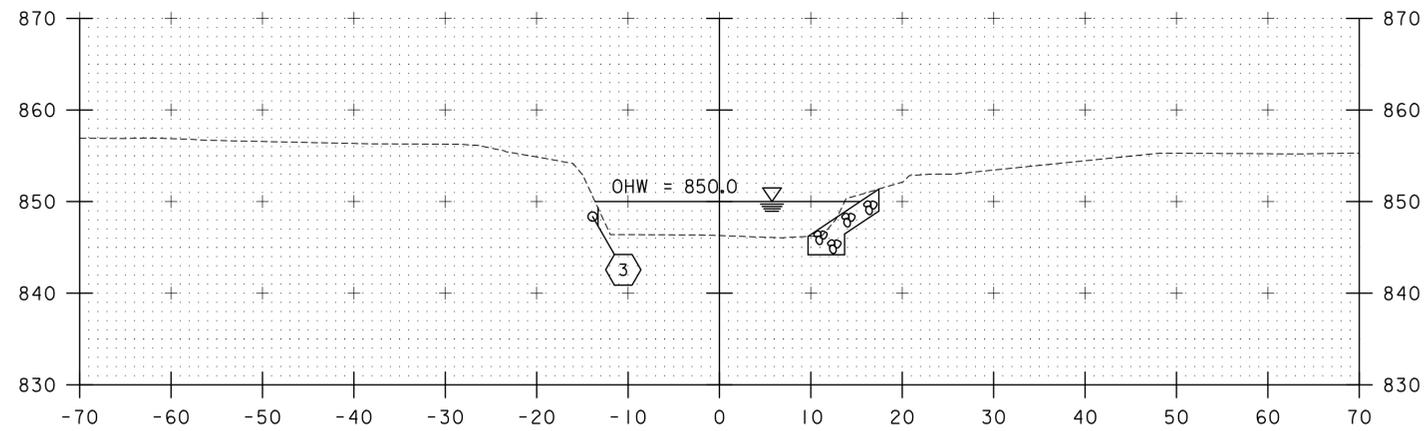
TYLIN INTERNATIONAL

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PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172xschnl.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: J. OLUND
CHANNEL CROSS SECTIONS 2

PLOT DATE: 5/20/2015
DRAWN BY: S. MORGAN
CHECKED BY: T. POULIN
SHEET 102 OF 111



STATION 50+30.40 RT
 END UNCLASSIFIED CHANNEL EXCAVATION
 END GEOTEXTILE UNDER STONE FILL
 END STONE FILL, TYPE II

STA. 51+15 TO STA. 51+75

NOTE: GRANITE BLOCKS COMPRISING THE EXISTING SOUTHERN ABUTMENT SHOWN HEREIN ARE GRAPHICAL ONLY. NO ASSURANCE IS GIVEN TO THE DEPTH, WIDTH, OR HEIGHT OF GRANITE BLOCKS.

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

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

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172xschnl.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: J. OLUND
 CHANNEL CROSS SECTIONS 3

PLOT DATE: 5/20/2015
 DRAWN BY: S. MORGAN
 CHECKED BY: T. POULIN
 SHEET 103 OF 111

EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE 20 ON TH-2 IN BARTON VILLAGE. BRIDGE 20 WILL BE REPLACED WITH EIGHT PRESTRESSED CONCRETE SOLID SLAB BEAMS, SPANNING 44 FEET OVER THE CRYSTAL LAKE OUTLET, ON NEW ABUTMENTS ALONG THE SAME ALIGNMENT. BRIDGE 20 IS APPROXIMATELY 250 FT SOUTH OF THE INTERSECTION OF ELM ST (TH-5), CHURCH ST (TH-2), WATER ST (TH-5), AND GLOVER RD (TH-2). WORK WILL INVOLVE REMOVAL OF EXISTING BRIDGE STRUCTURE, CONSTRUCTION OF NEW ABUTMENTS AND CONSTRUCTION OF BRIDGE SUPERSTRUCTURE. BRIDGE REPLACEMENT WILL INCLUDE TEMPORARY DETOUR, CHANNEL RECONSTRUCTION, 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 0.28 ACRES. IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS GENERALLY FLAT GROUND ON DEVELOPED LAND. TH-2 GENERALLY RUNS SOUTH TO NORTH. ALL TOWN HIGHWAY ROADS WITHIN OR NEAR THE PROJECT LIMITS ARE BITUMINOUS CONCRETE.

WITHIN THE PROJECT SITE ALONG GLOVER RD (TH-2), THERE ARE TWO GRAVEL DRIVES AND A GRAVEL PARKING AREA FOR A CHURCH. THERE ARE RESIDENCES AND/OR STRUCTURES ON BOTH SIDES OF THE STREET ALONG THE ENTIRE PROJECT.

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

THE CRYSTAL LAKE OUTLET IS THE ONLY WATER SOURCE ON THE PROJECT. THE OUTLET IS CLASSIFIED AS PERENNIAL, SINUOUS, AND ALLUVIAL. THE STREAM BED CONSISTS OF GRAVEL AND COBBLES AND LIKELY CONTAINS SAND AND SILT AT OR NEAR THE SURFACE. THE DRAINAGE AREA IS 23.8 SQUARE MILES. THERE ARE A NUMBER OF DROP INLETS ON SITE DRAINING FROM THE ROADWAY TO THE OUTLET. FLOWS TO THE SITE ARE REDUCED BY STORAGE IN CRYSTAL LAKE UPSTREAM. WATER MAY BACK UP THROUGH THE SITE FROM THE BARTON RIVER DURING HIGH WATER.

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 II 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 ORLEANS, VERMONT. SOILS ON THE PROJECT SITE ARE 104B URBAN LAND-ADAMS-NICHOLVILLE COMPLEX, 15% TO 25% SLOPES, "K FACTOR" = 0.49.

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: CRYSTAL LAKE OUTLET
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

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 EROSION 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 OR TEMPORARY EROSION MATTING IS NOT ANTICIPATED FOR THIS PROJECT.

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.

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.

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.

1.5.3 UPDATES

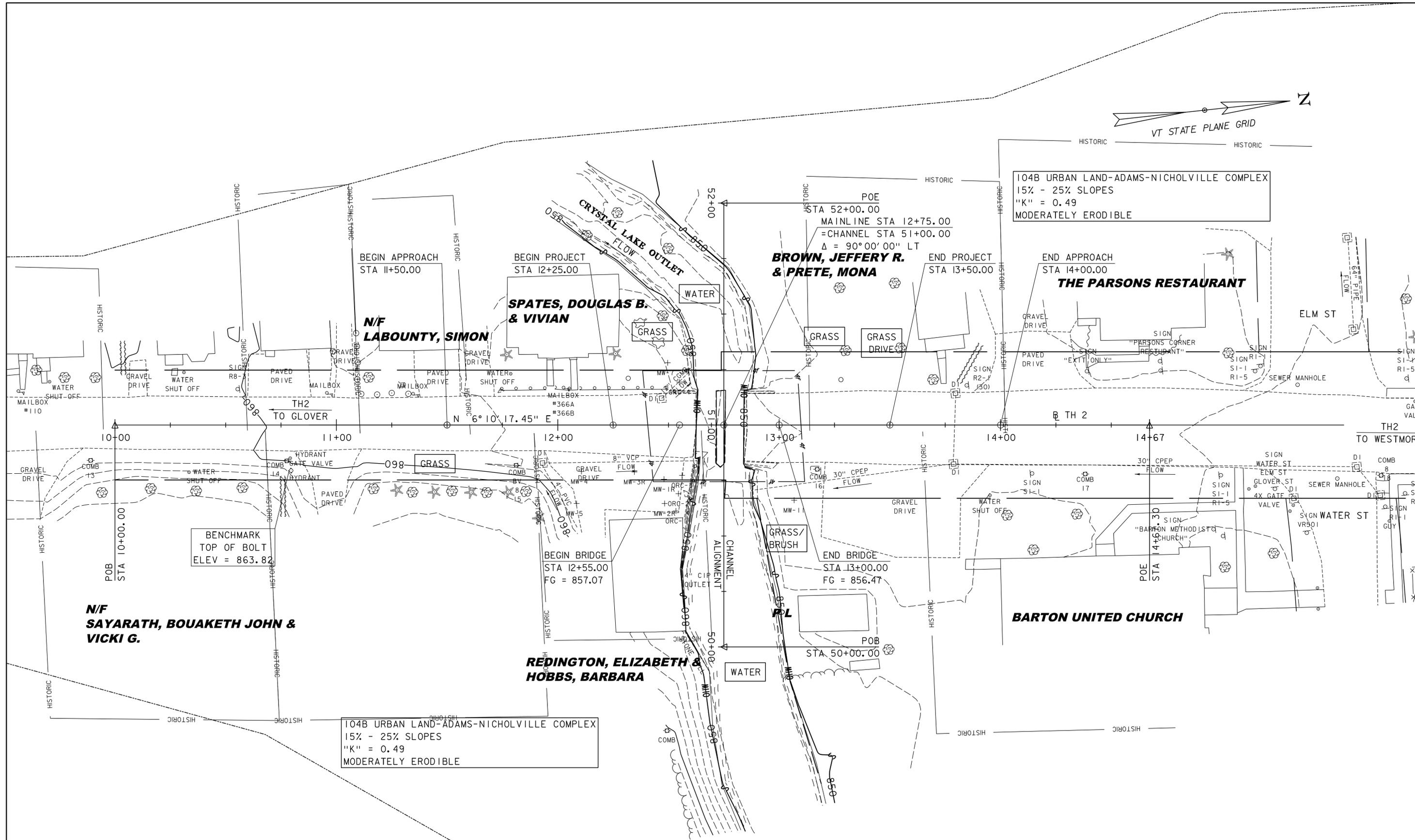
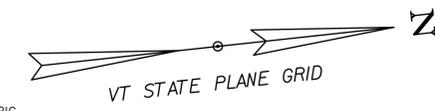
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

TYLININTERNATIONAL

PROJECT NAME: BARTON VILLAGE
PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172epschnr.dgn
PROJECT LEADER: J. OLUND
DESIGNED BY: B. TOOTHAKER
EPSC NARRATIVE

PLOT DATE: 5/20/2015
DRAWN BY: B. TOOTHAKER
CHECKED BY: J. OLUND
SHEET 104 OF 111



EPSC - EXISTING SITE PLAN

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

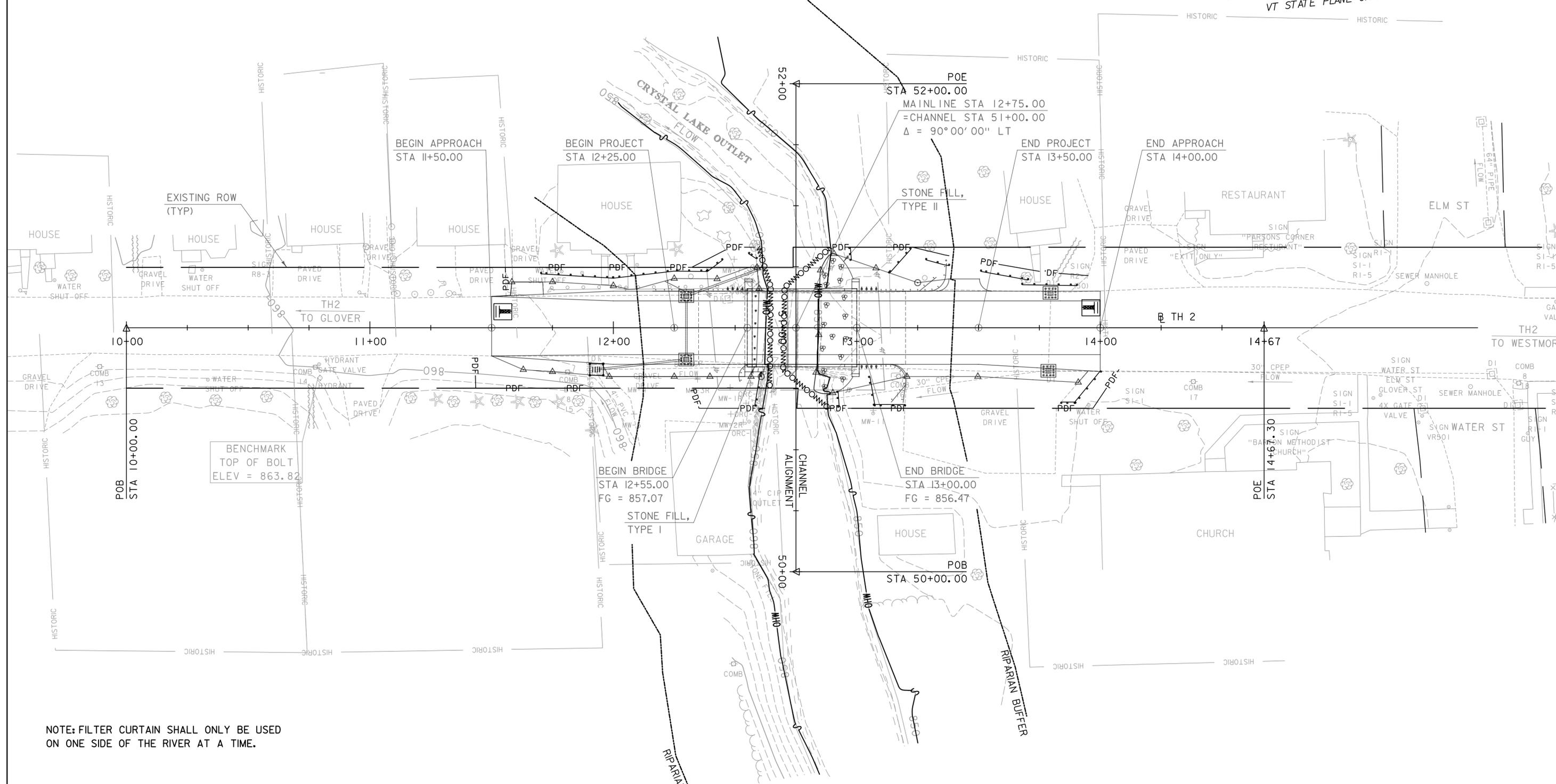
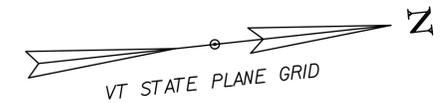
FOR REVIEW ONLY
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TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172ero.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: J. OLUND
 EPSC EXISTING SITE PLAN

PLOT DATE: 5/20/2015
 DRAWN BY: S. MORGAN
 CHECKED BY: D. BRYANT
 SHEET 105 OF 111



NOTE: FILTER CURTAIN SHALL ONLY BE USED ON ONE SIDE OF THE RIVER AT A TIME.

EPSC - CONSTRUCTION SITE PLAN

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

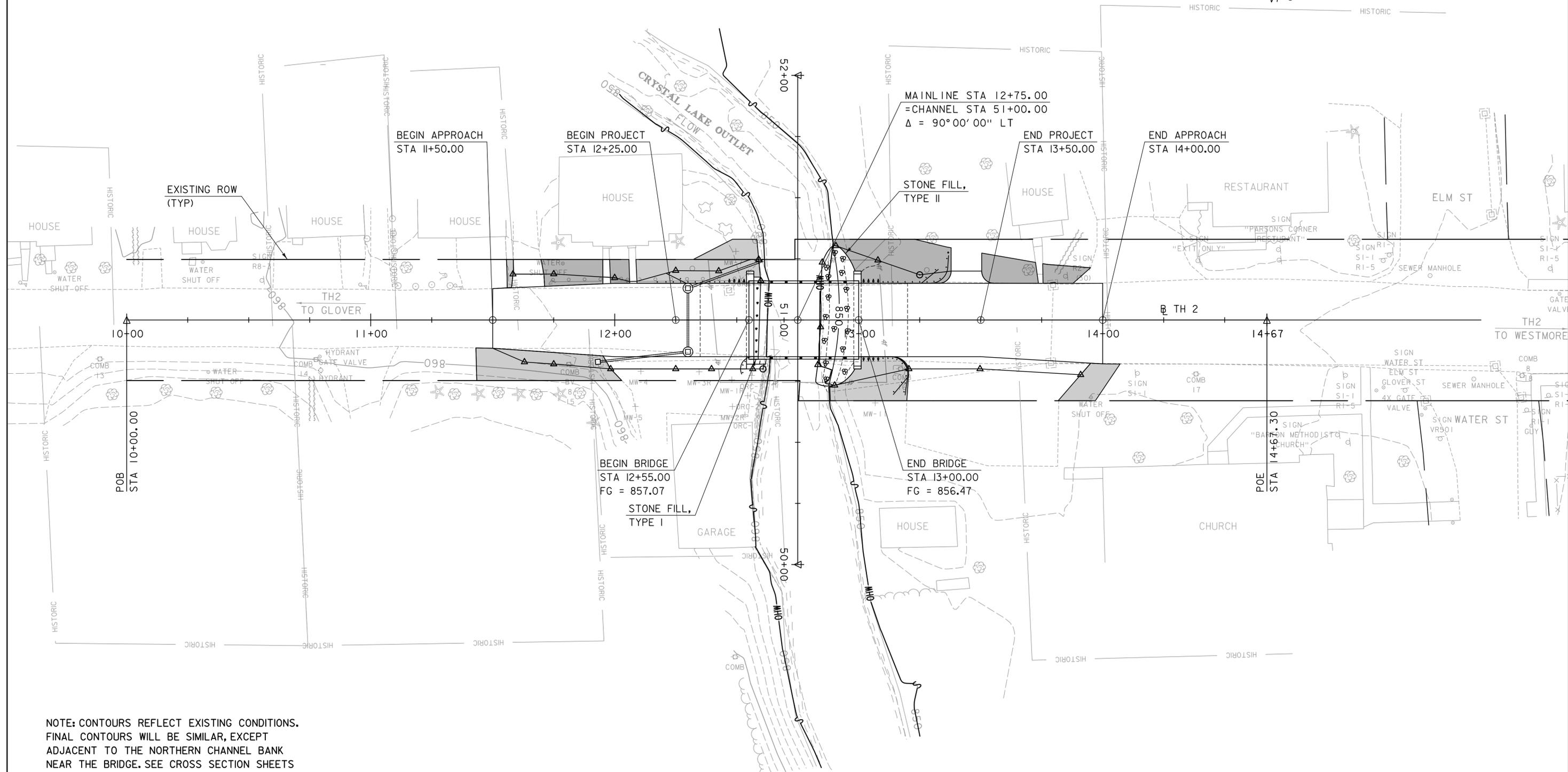
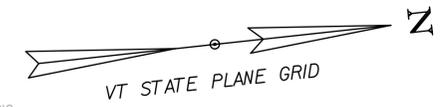
FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172ero.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 EPSC CONSTRUCTION SITE PLAN

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. OLUND
 SHEET 106 OF 111



NOTE: CONTOURS REFLECT EXISTING CONDITIONS. FINAL CONTOURS WILL BE SIMILAR, EXCEPT ADJACENT TO THE NORTHERN CHANNEL BANK NEAR THE BRIDGE. SEE CROSS SECTION SHEETS FOR FINAL GRADES.

EPSC - FINAL SITE PLAN

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

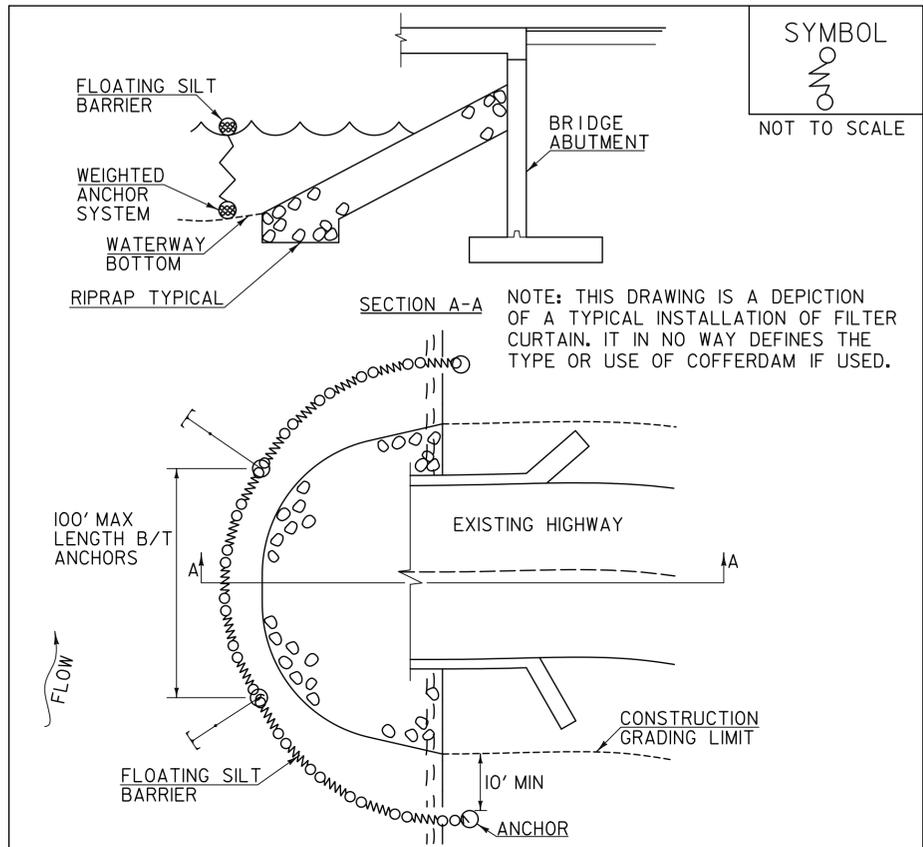
FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

TYLIN INTERNATIONAL

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

FILE NAME: z12j172ero.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 EPSC FINAL SITE PLAN

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. OLUND
 SHEET 107 OF 111



SYMBOL

 NOT TO SCALE

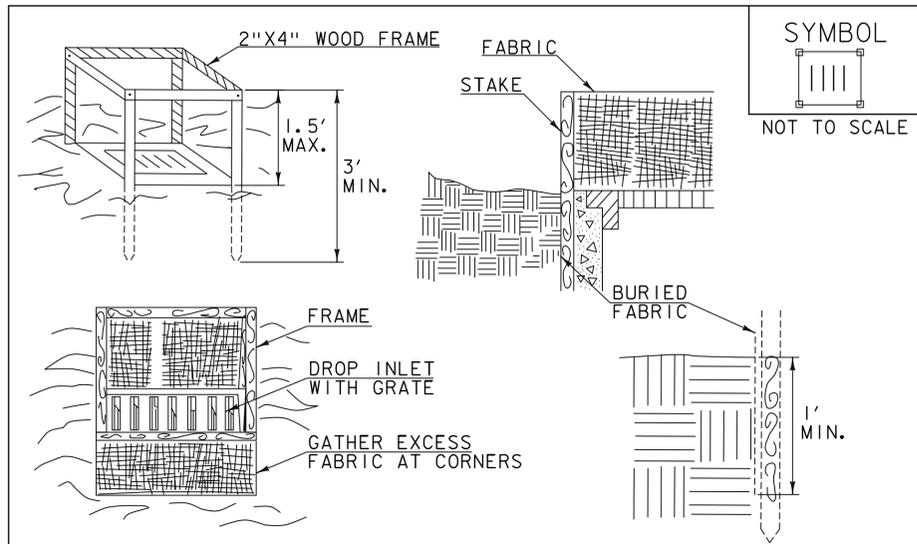
CONSTRUCTION SPECIFICATIONS

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

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

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 FOR GEOTEXTILE FOR FILTER CURTAIN (PAY ITEM 649.6).



SYMBOL

 NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. FILTER FABRIC SHALL HAVE AN APPARENT OPENING SIZE OF 40-85. BURLAP MAY BE USED FOR SHORT TERM APPLICATIONS.
2. CUT FABRIC FROM A CONTINUOUS ROLL TO ELIMINATE JOINTS. IF JOINTS ARE NEEDED THEY WILL BE OVERLAPPED TO THE NEXT STAKE.
3. STAKE MATERIALS WILL BE STANDARD 2" x 4" WOOD OR EQUIVALENT METAL WITH A MINIMUM LENGTH OF 3'.
4. SPACE STAKES EVENLY AROUND INLET 3' APART AND DRIVE A MINIMUM 18" DEEP. SPANS GREATER THAN 3' MAY BE BRIDGED WITH THE USE OF WIRE MESH BEHIND THE FILTER FABRIC FOR SUPPORT.
5. FABRIC SHALL BE EMBEDDED 1' MINIMUM BELOW GROUND AND BACKFILLED. IT SHALL BE SECURELY FASTENED TO THE STAKES AND FRAME.
6. A 2" x 4" WOOD FRAME SHALL BE COMPLETED AROUND THE CREST OF THE FABRIC FOR OVER FLOW STABILITY.
7. MAXIMUM DRAINAGE AREA 1 ACRE

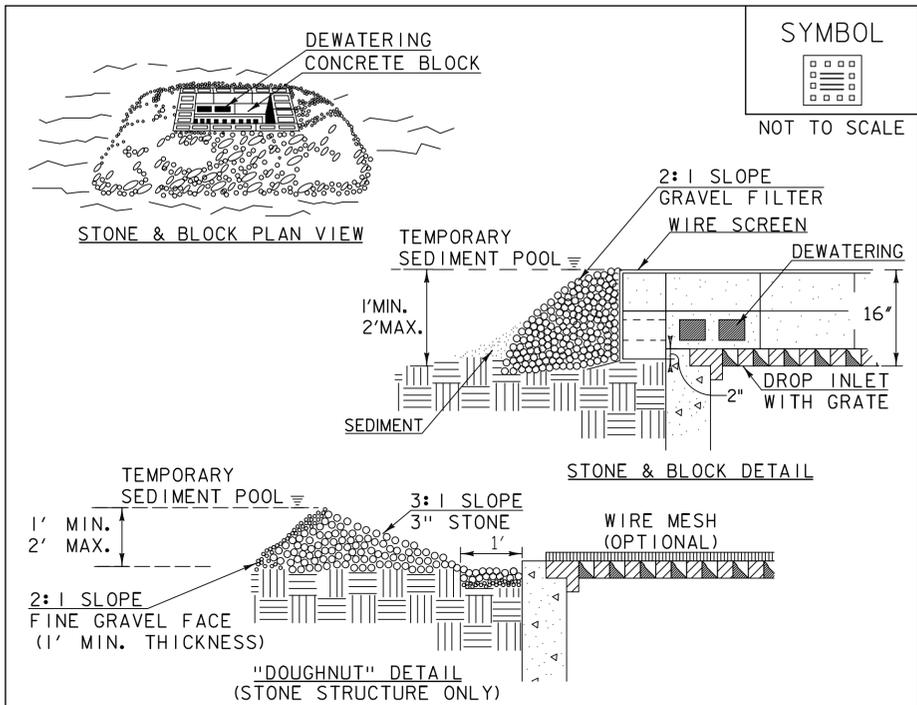
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
 ORIGINALLY DEVELOPED BY USDA-NRCS
 VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**FILTER FABRIC
 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 7, 2008	WHF
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 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2" - 3/4" 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

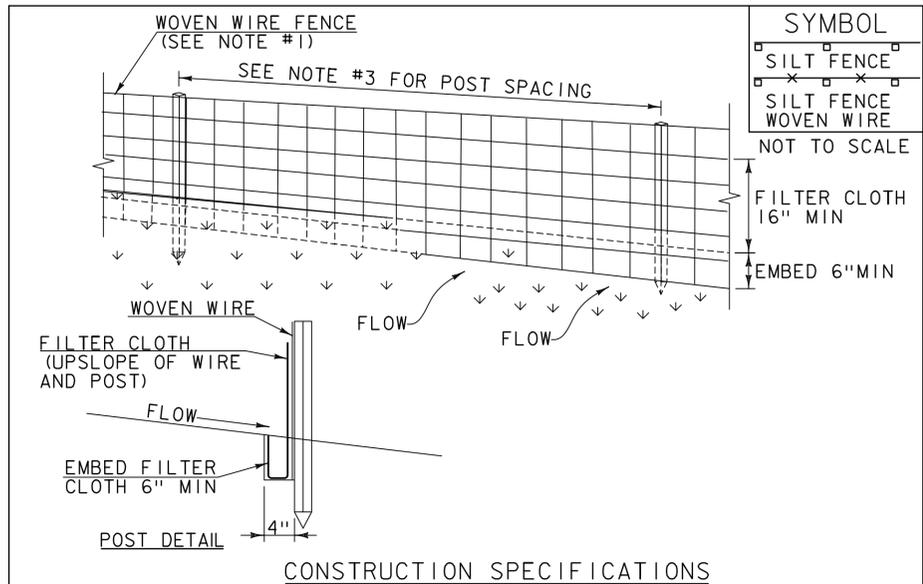
FOR REVIEW ONLY
 NOT FOR CONSTRUCTION

PROJECT NAME: BARTON VILLAGE
 PROJECT NUMBER: BHF 0286(5)

TYLIN INTERNATIONAL

FILE NAME: z12j172epsdet.dgn
 PROJECT LEADER: J. OLUND
 DESIGNED BY: B. TOOTHAKER
 EPSC DETAIL SHEET 1

PLOT DATE: 5/20/2015
 DRAWN BY: B. TOOTHAKER
 CHECKED BY: J. OLUND
 SHEET 108 OF 111



- CONSTRUCTION SPECIFICATIONS**
- 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.
 - FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
 - 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'.
 - 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.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

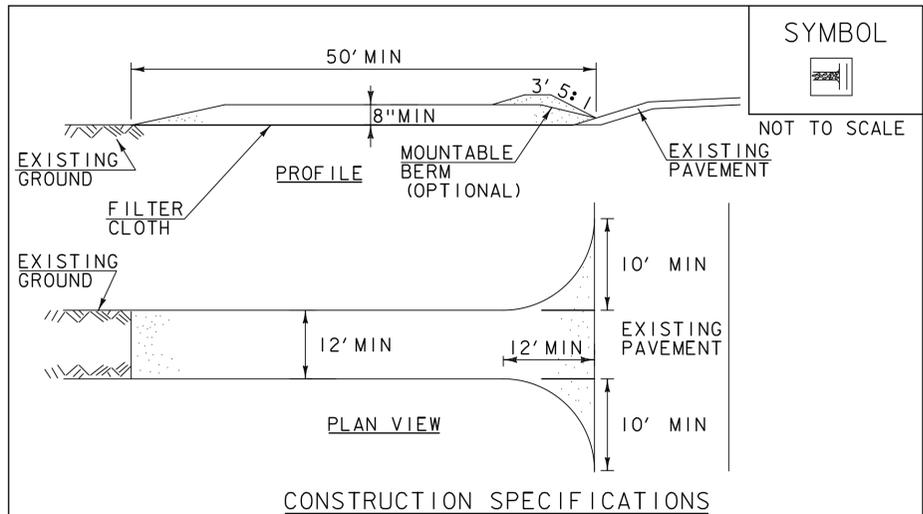
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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.

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

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).



- CONSTRUCTION SPECIFICATIONS**
- STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
 - LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
 - THICKNESS- NOT LESS THAN 8".
 - WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
 - GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
 - 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.
 - 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.
 - WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
 - 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.

REVISIONS		
MARCH 24, 2008	WHF	
JANUARY 13, 2009	WHF	

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

VAOT URBAN LAWN MIX						
WEIGHT	LBS/AC		NAME	LATIN NAME	GERM	PURITY
	BROADCAST	HYDROSEED				
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

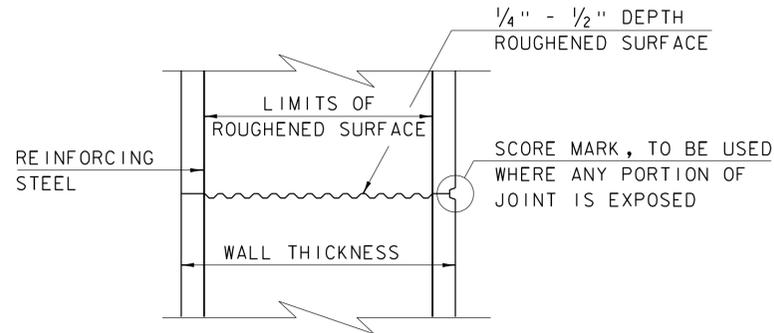
- CONSTRUCTION GUIDANCE**
- SEED MIX: THE URBAN AREA MIX SHALL NOT BE USED IN WETLANDS OR ANY WATERS OF THE STATE OF VERMONT.
 - SEED MIX: USE ONLY AS INDICATED IN THE PLANS.
 - SEED MIX: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
 - FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
 - 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.
 - 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
 - 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 651.5)		REVISIONS	
		JANUARY 22, 2015	WHF

FOR REVIEW ONLY NOT FOR CONSTRUCTION	PROJECT NAME: BARTON VILLAGE	FILE NAME: z12j172epsdet.dgn	PLOT DATE: 5/20/2015
	PROJECT NUMBER: BHF 0286(5)		DRAWN BY: B. TOOTHAKER
TYLIN INTERNATIONAL		DESIGNED BY: B. TOOTHAKER	CHECKED BY: J. OLUND
		EPSC DETAIL SHEET 2	SHEET 109 OF 111

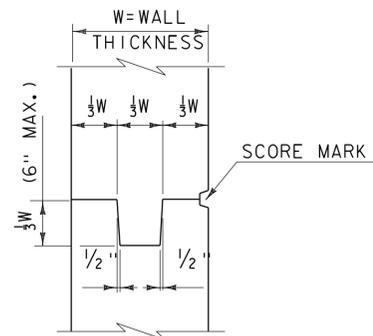
CONCRETE GENERAL NOTES

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.

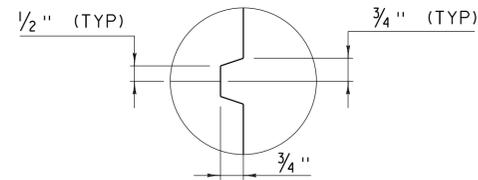


TYPICAL HORIZONTAL CONSTRUCTION JOINT
(NOT TO SCALE)

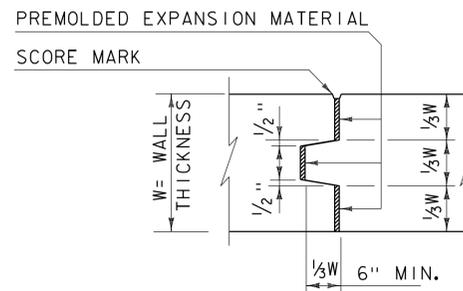
1. THE SURFACE OF THE CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND FREE OF LAITANCE.
2. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, ALL CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED.



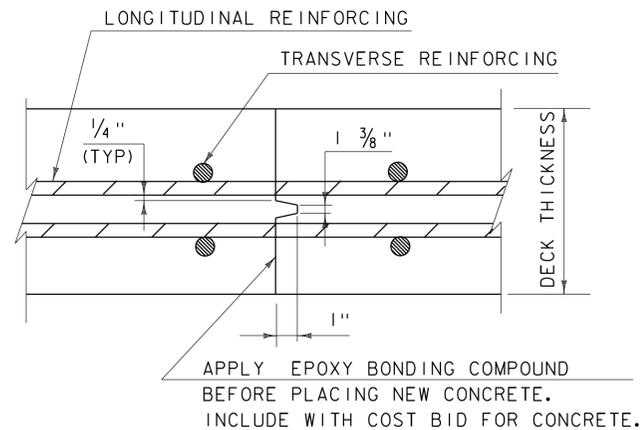
TYPICAL CONCRETE CONSTRUCTION JOINT
(NOT TO SCALE)



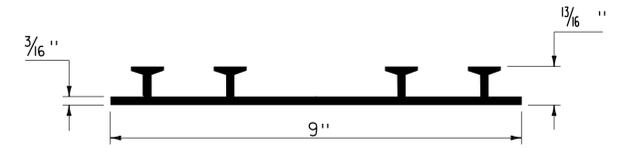
SCORE MARK DETAIL
(NOT TO SCALE)



TYPICAL CONCRETE EXPANSION JOINT
(NOT TO SCALE)



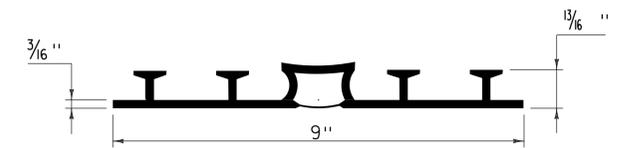
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS
(NOT TO SCALE)



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.

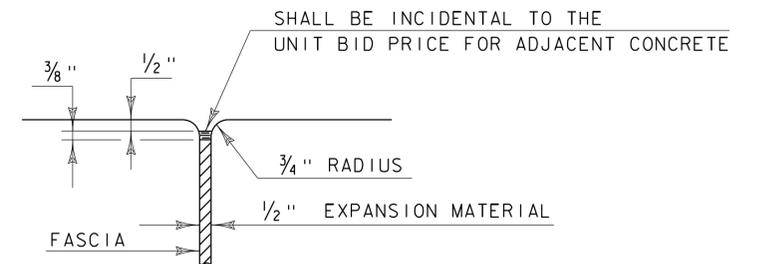
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



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.

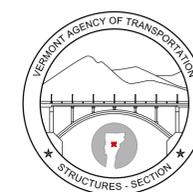
OTHER CONFIGURATIONS OF WATERSTOP MAY BE USED UPON APPROVAL OF THE ENGINEER.



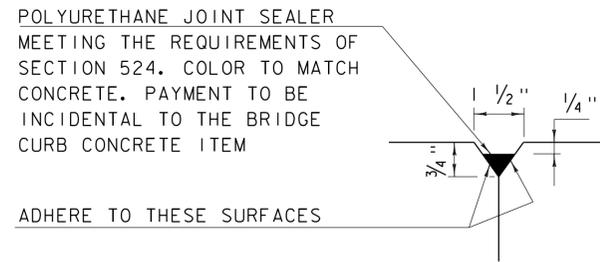
JOINT BETWEEN FASCIA AND WINGWALL
(NOT TO SCALE)

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

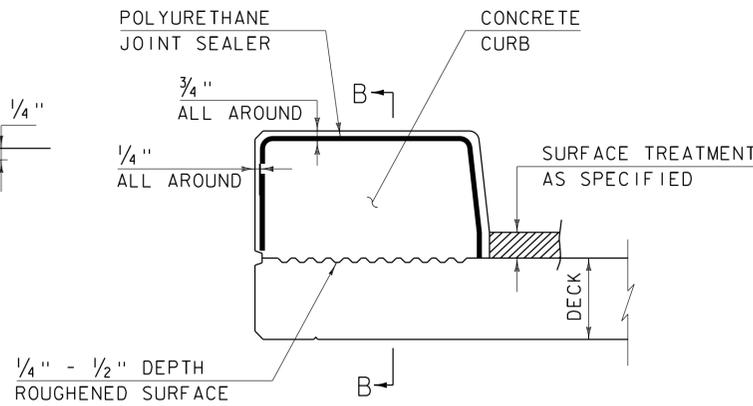
**CONCRETE
DETAILS AND NOTES**



**STRUCTURES
DETAIL
SD-501.00**

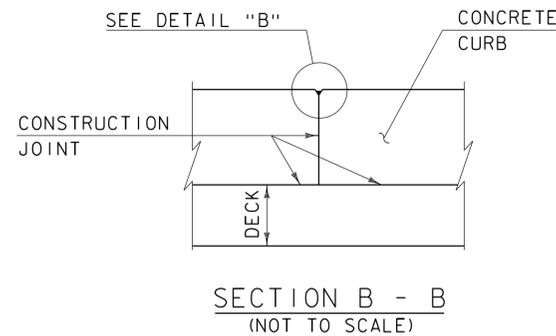


DETAIL "B"
(NOT TO SCALE)

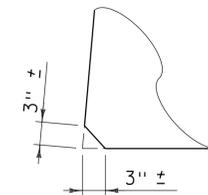


CONCRETE CURB JOINT SECTION
(NOT TO SCALE)

1. SEE TYPICAL HORIZONTAL CONSTRUCTION JOINT DETAIL FOR ADDITIONAL INFORMATION



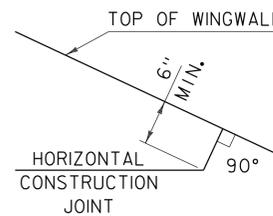
SECTION B - B
(NOT TO SCALE)



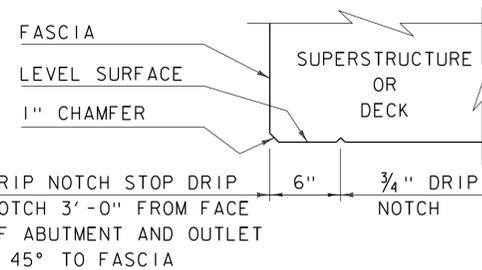
ACUTE ANGLE
CLIP DETAIL
(NOT TO SCALE)

CONCRETE CURB JOINT NOTES

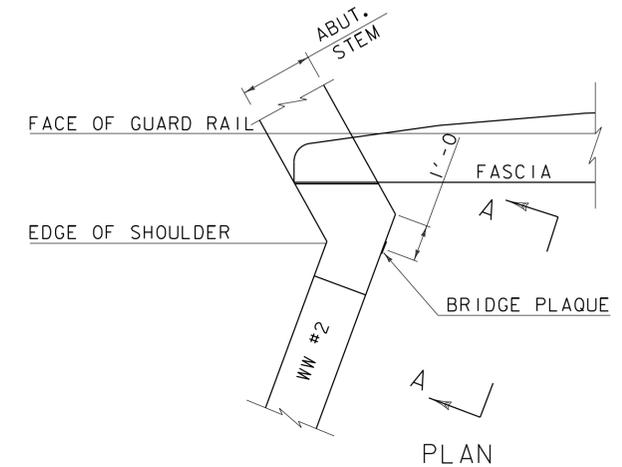
1. CONCRETE CURBS MAY BE PLACED IN ONE CONTINUOUS OPERATION IF AN APPROVED SHRINKAGE REDUCING ADMIXTURE LISTED IN THE SPECIAL PROVISIONS IS USED WITH THE CONCRETE MIX DESIGN. PAYMENT FOR THE SHRINKAGE REDUCING ADMIXTURE WILL BE INCIDENTAL TO THE BRIDGE CURB CONCRETE ITEM.
2. IF THE CONTRACTOR CHOOSES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



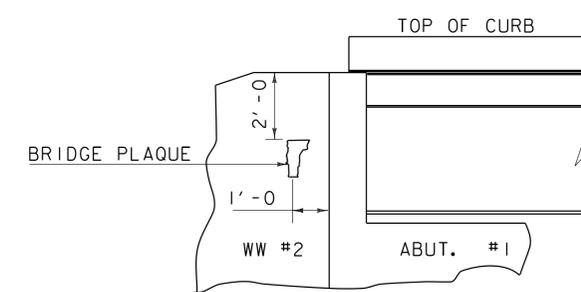
HORIZONTAL WINGWALL
CONSTRUCTION JOINT
(NOT TO SCALE)



DRIP NOTCH DETAIL
(NOT TO SCALE)



PLAN



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



STRUCTURES
DETAIL
SD-502.00

ASPHALTIC PLUG JOINT NOTES

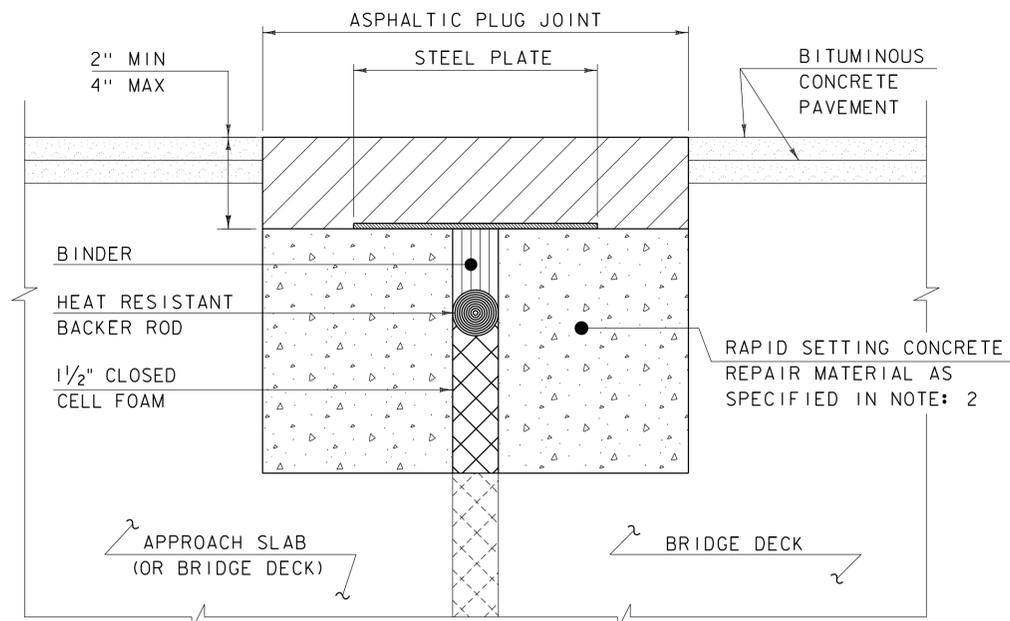
INSTALLATION:

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:

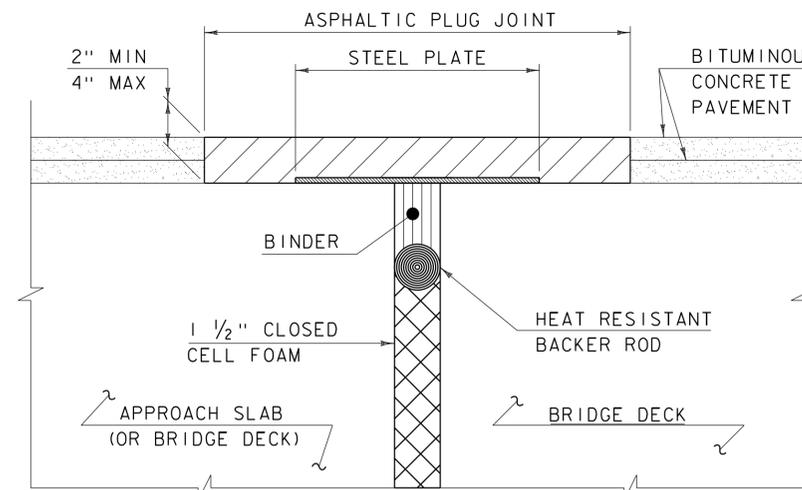
1. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG F) AND RISING.
2. THE ROAD SURFACE IS DRY.
3. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG JOINT DETAIL - REHAB

NOTES:

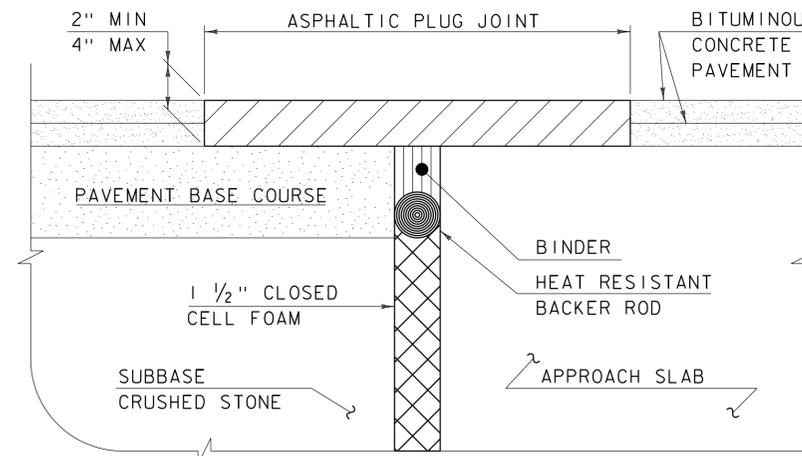
1. THE CONTRACTOR SHALL REMOVE ALL ASPHALTIC PLUG JOINT MATERIAL AND DETERIORATED CONCRETE AS DIRECTED BY THE ENGINEER. REMOVAL OF THE FIRST 4 INCHES OF MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 516.10 BRIDGE EXPANSION JOINT, ASPHALTIC PLUG. ANY REMOVAL OF MATERIAL GREATER THAN 4 INCHES SHALL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

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

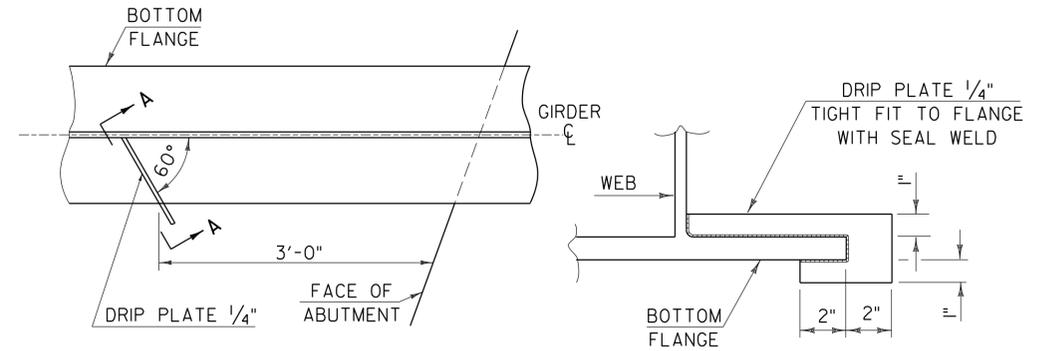
BRIDGE JOINT
ASPHALTIC PLUG



STRUCTURES
DETAIL
SD-516.10

STRUCTURAL STEEL GENERAL NOTES:

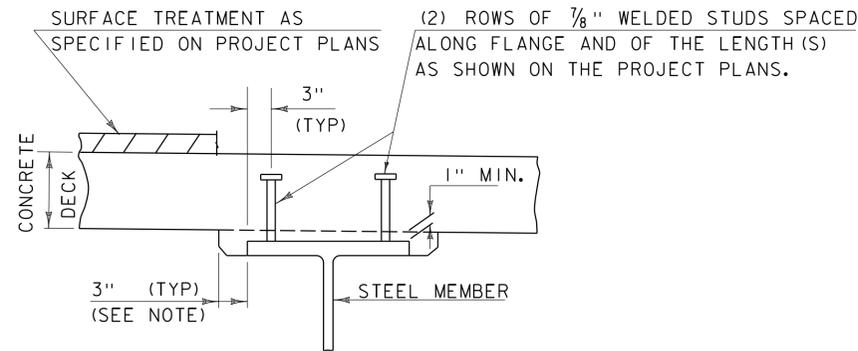
1. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER HIGH-STRENGTH BOLTS IN 15/16" DIAMETER HOLES, PER SUBSECTION 506.I9, UNLESS OTHERWISE SPECIFIED.
2. ALL HOLES IN THE WEBS OF THE FASCIA GIRDERS THAT ARE NOT OTHERWISE FILLED, SHALL BE FILLED WITH EITHER BUTTON HEAD OR HEX HEAD BOLTS. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SUBSECTION 506.I9.
3. ALL WELDING SHALL CONFORM TO THE PROVISIONS OF SUBSECTION 506.I0.
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

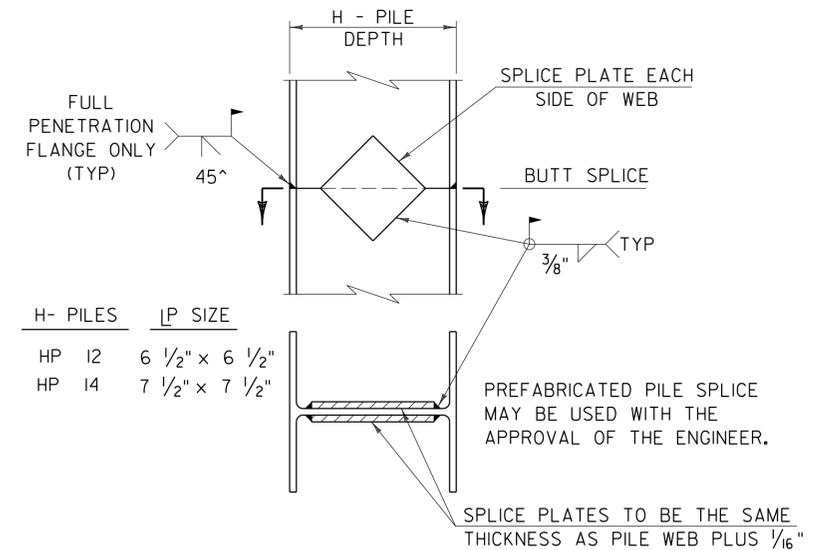
SECTION A - A

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

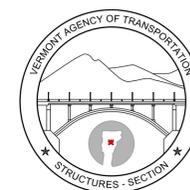


DETAIL OF PILE SPLICE

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



STRUCTURES DETAIL SD-601.00