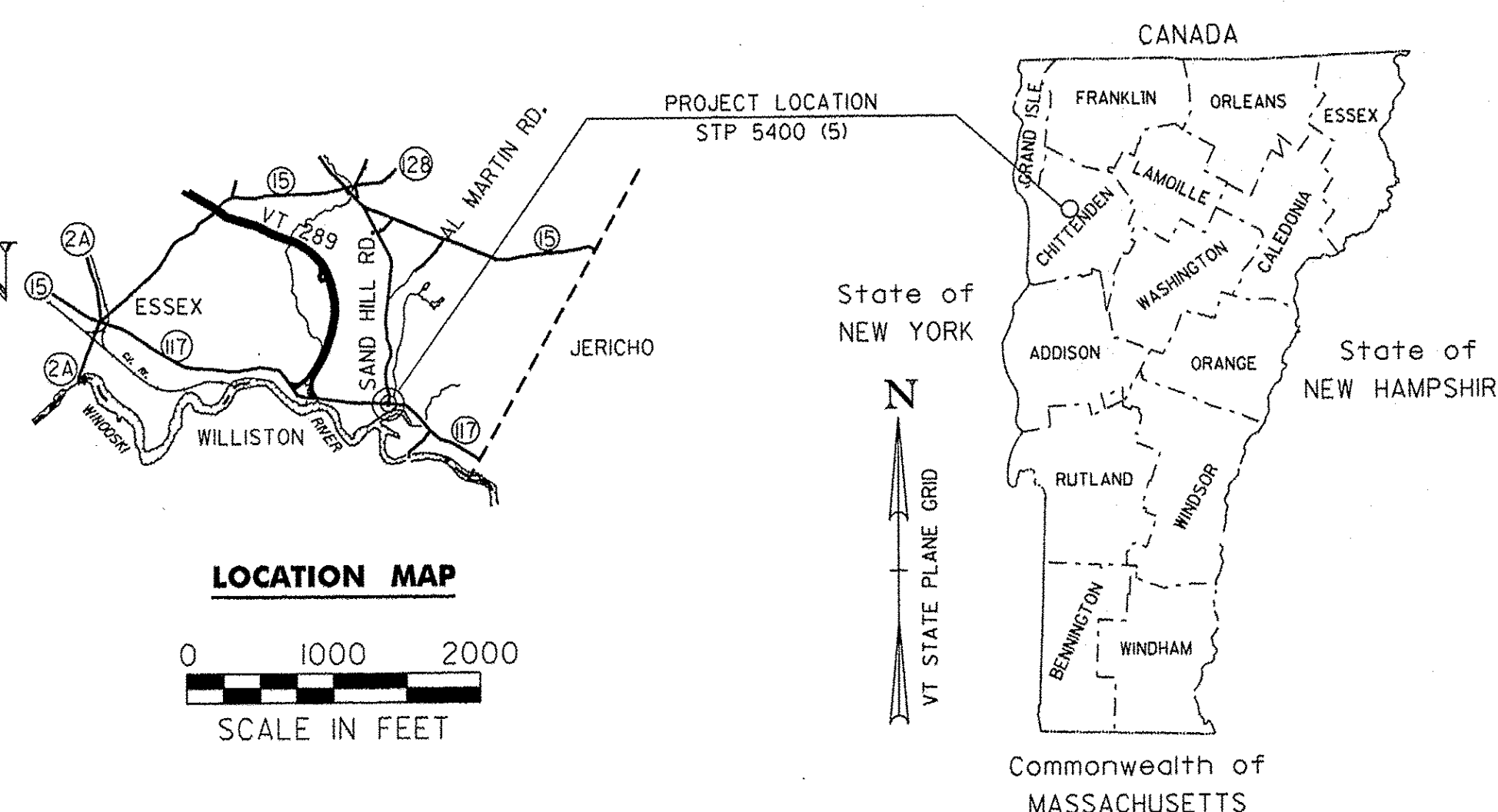
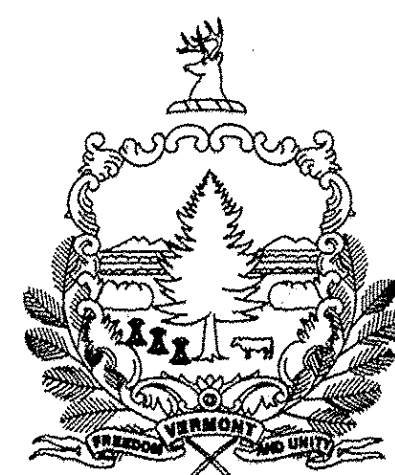


INDEX OF SHEETS
SEE SHEET 2

STATE OF VERMONT AGENCY OF TRANSPORTATION



RECORD PLANS

CONTRACTOR: COURTLAND CONSTRUCTION CORP. - MILTON, VT

RESIDENT ENGINEER: DAVID HOSKING

CONSTRUCTION BEGAN: APRIL 29, 2013

CONSTRUCTION COMPLETE: OCTOBER 17, 2014

RECORD PLANS BY: DAVID HOSKING & CRAIG PIERCE

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY David Hosking RESIDENT ENGINEER

DATE 7/7/15

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found by contacting Vtrans Records Management.

PROPOSED IMPROVEMENT TOWN OF ESSEX COUNTY OF CHITTENDEN VT ROUTE 117 - PRINCIPAL ARTERIAL

TRAFFIC DATA

PROJECT BEGINS AT A POINT, APPROXIMATELY 590 FEET (MM 3.172) WESTERLY OF THE INTERSECTION OF SAND HILL ROAD (TH #4) AND VT ROUTE 117 AND EXTENDS EASTERLY 825 FEET (MM 3.329).

LENGTH OF ROADWAY, VT ROUTE 117: 825 FEET = 0.156 MILES
LENGTH OF PROJECT: 825 FEET = 0.156 MILES

THE PROJECT SHALL CONSIST OF WIDENING SHOULDERS, THE INSTALLATION OF A NEW LEFT-TURN LANE ON VT ROUTE 117, GUARDRAIL, A NEW TRAFFIC CONTROL SIGNAL, PAVEMENT, MARKINGS, AND OTHER RELATED ITEMS.

LOCATION	AADT		DHV	ADTT	%T	%D	ESALS	ESALS	V
	2013	2033	2013	2013	2013	2013	(2013-2033)	(2013-2053)	(MPH)
VT ROUTE 117 WEST APPROACH	7,600	8,000	970	270	1.3	59	1,830,000	4,314,000	40
VT ROUTE 117 EAST APPROACH	8,800	9,300	1,100	290	1.1	54	1,962,000	4,638,000	40
SAND HILL ROAD NORTH APPROACH	3,800	4,100	480	120	2.9	78	778,000	1,829,000	35

**STA 167+50.00 VT 117
BEGIN PROJECT
END APPROACH**

**STA 166+75.00 VT 117
BEGIN APPROACH**

**STA 202+50.00 TH 4
END APPROACH
ROADWAY CONSTRUCTION**

**STA 175+75.00 VT 117
END PROJECT
BEGIN APPROACH**

**STA 176+25.00 VT 117
END APPROACH**

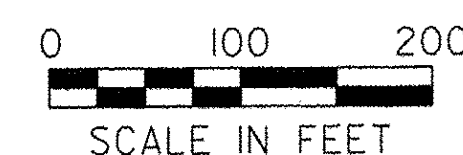
QUALITY ASSURANCE PROGRAM: LEVEL 2

CONVENTIONAL SYMBOLS

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

SURVEYED BY : R. GILMAN
SURVEYED DATE : 02-27-2002

DATUM
VERTICAL : NAVD88
HORIZONTAL : NAD83(1996)



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

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 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.

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Kevin A. Marchia DATE 8/27/12

PROJECT MANAGER : J. SCHULTZ

PROJECT NAME : ESSEX TOWN
PROJECT NUMBER : STP 5400 (5)

SHEET 1 OF 64 SHEETS

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STANDARDS LIST

B-11	UNDERDRAIN - ROCK SUBGRADE, SLOPE STABILIZ.	6/1/1994
B-12	SIDE ROAD INTERSECTION, DEPRESSED RAMP	6/1/1994
B-5	SLOPE GRADING, EMBANKMENTS, MUCK	6/1/1994
B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	7/8/2005
C-10	CURBING	2/11/2008
D-1	PRECAST REINFORCED CONCRETE DROP INLET DETAILS	6/1/1994
D-11	STEEL OR IRON GRATES & COVERS (TYPE A)	6/1/1994
D-15	PRECAST REINF CONC. MH-GRATES, CAST IRON GRATE WITH FRAME, TYPE	6/1/1994
D-16	DRAINAGE DETAILS INCLUDING DROP INLETS, IRON GRATE TYPE B&C, CON	6/1/1994
D-20	HIGHWAY CROSSING FOR UNDERGROUND UTILITIES	3/3/2003
D-3	TREATED GUTTERS	6/1/1994
D-4	VARIOUS DRAINAGE DETAILS	8/13/2007
E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	1/2/2004
E-101	CONSTRUCTION SIGN DETAILS	5/30/2003
E-102	CONSTRUCTION SIGN DETAILS	6/30/2003
E-102A	CONSTRUCTION SIGN DETAILS	5/1/2004
E-103	MAINLINE TRAFFIC CONTROL DIVIDED HIGHWAY ONE LANE CLOSED	3/1/2004
E-106	TRAFFIC CONTROL- MISCELLANEOUS DETAILS	3/1/2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	6/30/2003
E-107A	BREAKAWAY BARRICADE DETAILS	6/8/2009
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	6/8/2009
E-108A	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS FOR PAVING	6/8/2009
E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	8/8/1995
E-111	MINOR MAINTENANCE OPERATIONS	3/11/1997
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-123	GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS	3/16/2004

E-127	ROUTE MARKINGS AT RURAL INTERSECTIONS	8/8/1995
E-136B	STATE ROUTE MARKER SIGN DETAILS	8/8/1995
E-138	MILE MARKER DETAILS - STATE & TOWN HIGHWAYS	5/30/2003
E-140	REGULATORY SIGN DETAILS	8/30/1996
E-141	REGULATORY SIGN DETAILS	9/20/1995
E-142	REGULATORY SIGN DETAILS	9/20/1995
E-144	REGULATORY SIGN DETAILS	3/29/1999
E-145A	REGULATORY SIGN DETAILS - LANE USE CONTROL SIGNS	12/23/1994
E-152	WARNING SIGN DETAILS	5/1/2004
E-164	SQUARE STEEL SIGN POST	6/8/2009
E-170	TRAFFIC CONTROL SIGNALS PEDESTAL POST MOUNTED	11/4/1999
E-171A	TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS	8/9/1995
E-171B	TRAFFIC CONTROL SIGNALS MISC. DETAILS	8/9/1995
E-171C	TRAFFIC CONTROL SIGNALS CANTILEVER MOUNTING DETAILS	8/9/1995
E-172	VEHICLE DETECTOR LOOP DETAILS	8/9/1995
E-173	PULL BOXES AND JUNCTION BOXES	8/9/1995
E-175	POWER DROP STANCHIONS	6/8/2009
E-180A	STREET LIGHTING DETAILS	8/9/1995
E-180B	STREET LIGHTING DETAILS	8/9/1995
E-191	PAVEMENT MARKING DETAILS	2/1/1999
E-192	PAVEMENT MARKING DETAILS	10/12/2000
E-193	PAVEMENT MARKING DETAILS	8/18/1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	1/3/2000
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11/15/2002
J-3	MAIL BOX SUPPORT DETAILS	8/7/1995

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

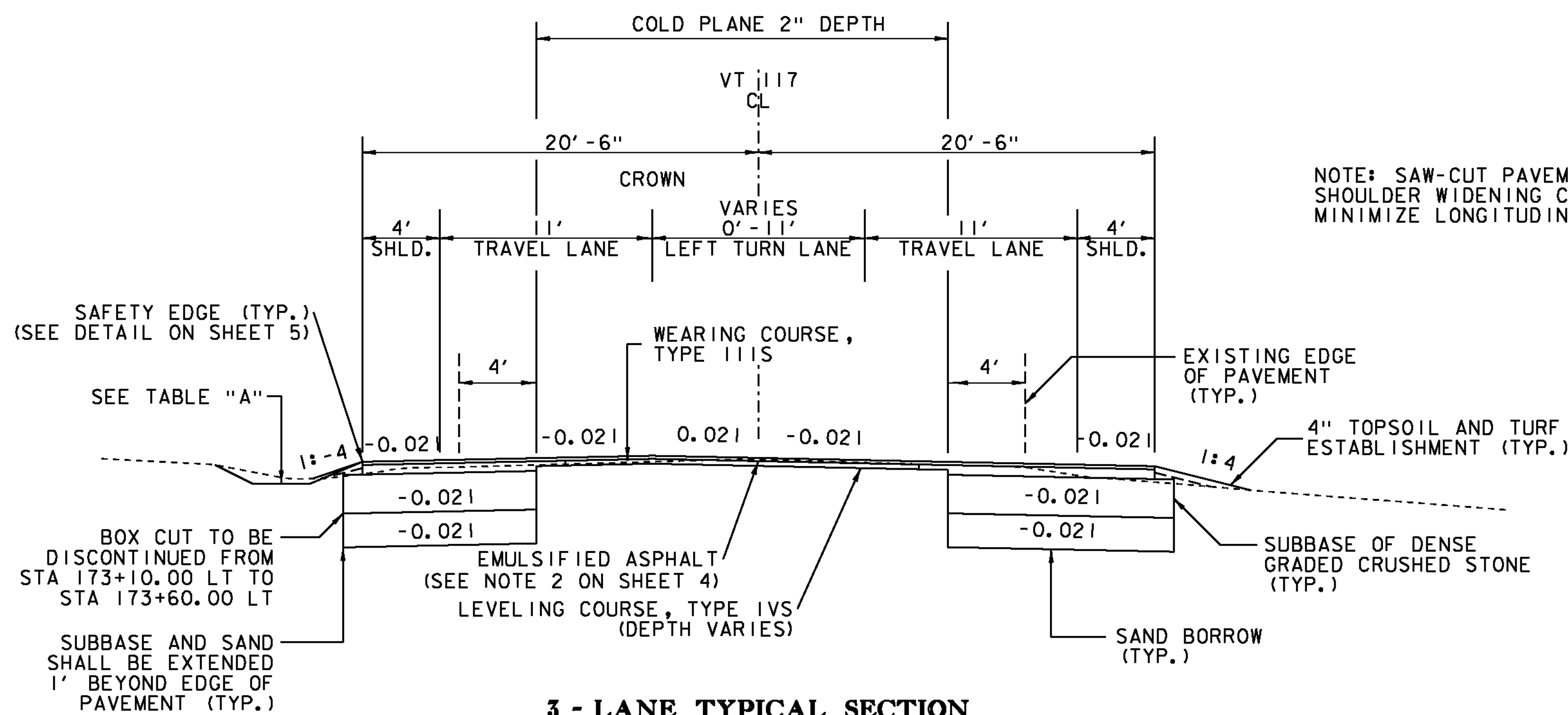
FILE NAME: +97d002frm.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
INDEX OF SHEETS	SHEET 2 OF 64

**VT ROUTE 117
TYPICAL SECTIONS**

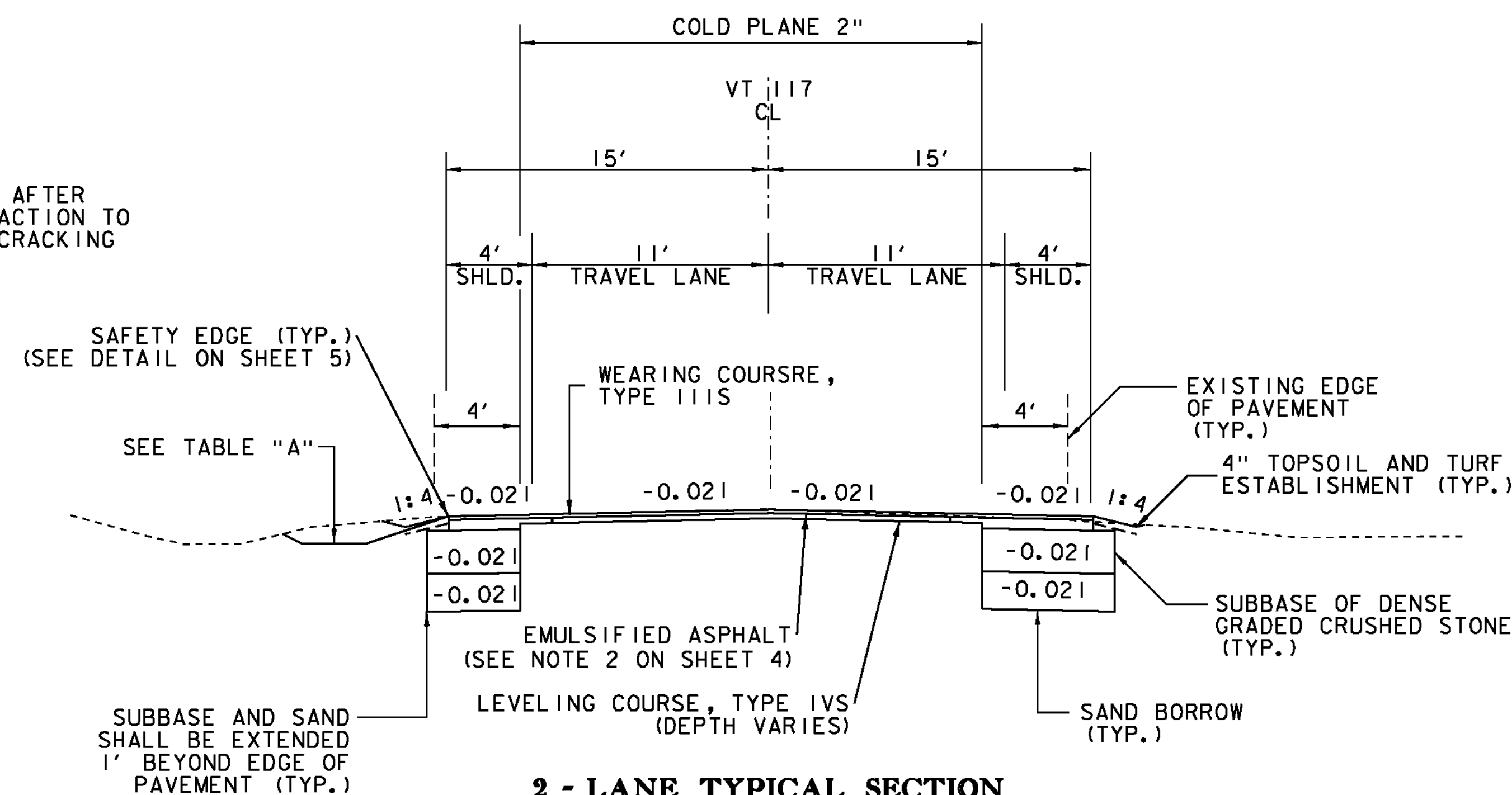
NOT TO SCALE

WEARING COURSE - 2" TYPE 111S SUPERPAVE BITUMINOUS CONCRETE PAVEMENT
INTERMEDIATE COURSE - 3" TYPE 11S BITUMINOUS CONCRETE PAVEMENT
BASE COURSE - 3" TYPE 11S BITUMINOUS CONCRETE PAVEMENT
LEVELING COURSE - TYPE IVS BITUMINOUS CONCRETE PAVEMENT (DEPTH VARIES)
24" SUBBASE OF DENSE GRADED CRUSHED STONE
21" SAND BORROW

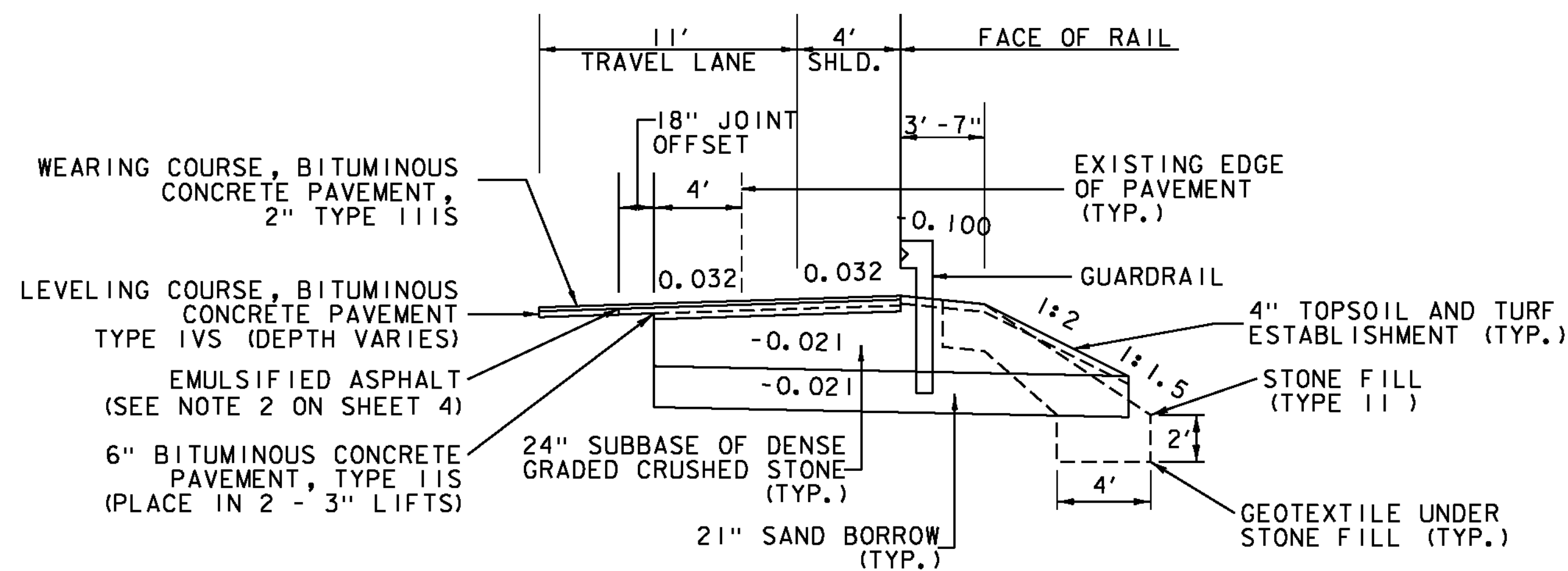
MATERIAL TOLERANCES	
PAVEMENT (TOTAL DEPTH):	+/- 1/4 in
SUBBASE (TOTAL DEPTH):	+/- 1 in
SAND (TOTAL DEPTH):	+/- 1 in



**3 - LANE TYPICAL SECTION
VT ROUTE 117
STA 167+50.00 - 175+75.00**



**2 - LANE TYPICAL SECTION
VT ROUTE 117
STA 166+75.00 - 167+50.00
STA 175+75.00 - 176+25.00**



**GUARDRAIL & PAVEMENT JOINT DETAIL
VT ROUTE 117**

GRASS CHANNEL TABLE "A"				
STATIONS	FORESLOPE	WIDTH (FT)	DEPTH (FT)	BACKSLOPE
167+15.00 - 167+75.00, LT	1:4	2	2.0	1:3
168+20.00 - 168+75.00, LT	1:3	3	1.5	1:3
169+20.00 - 169+85.00, LT	1:3	3	1.5	1:3
170+25.00 - 170+80.00, LT	1:3	3	1.4	1:4

NOTE: GRASS CHANNELS LISTED ARE NEW STORMWATER TREATMENT PRACTICES (DISCHARGE PERMIT #6300-INDS)

CLEAR ZONE TABLE	
APPROACH	DISTANCE (FT)
VT ROUTE 117 3-LANE TYPICAL SECTION	14*
VT ROUTE 117 2-LANE TYPICAL SECTION	14*
VT ROUTE 117 GUARDRAIL TYPICAL SECTION	5**

* DISTANCE MEASURED FROM EDGE OF TRAVELED LANE
** DISTANCE MEASURED FROM THE FACE OF GUARDRAIL

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002+yp.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
TYPICAL SHEET 1

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 3 OF 64

**VT ROUTE 117
TYPICAL SECTIONS**

NOT TO SCALE

2" TYPE 111S BITUMINOUS CONCRETE PAVEMENT (1 - 2" PAVEMENT LIFT)
6" TYPE 111S BITUMINOUS CONCRETE PAVEMENT (2 - 3" PAVEMENT LIFTS)
TYPE 1VS BITUMINOUS CONCRETE PAVEMENT (DEPTH VARIES)
24" SUBBASE OF DENSE GRADED CRUSHED STONE
21" SAND BORROW

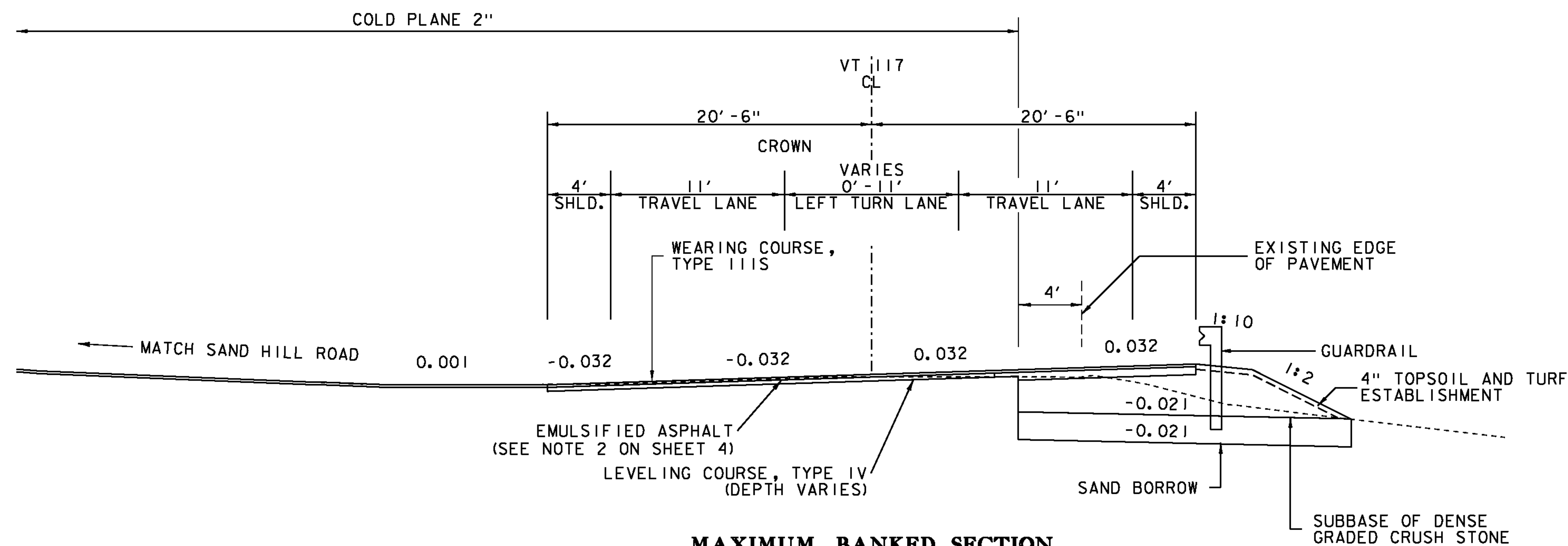
MATERIAL TOLERANCES	
PAVEMENT (TOTAL DEPTH):	+/- 1/4 in
SUBBASE (TOTAL DEPTH):	+/- 1 in
SAND (TOTAL DEPTH):	+/- 1 in

SEEDING FORMULA

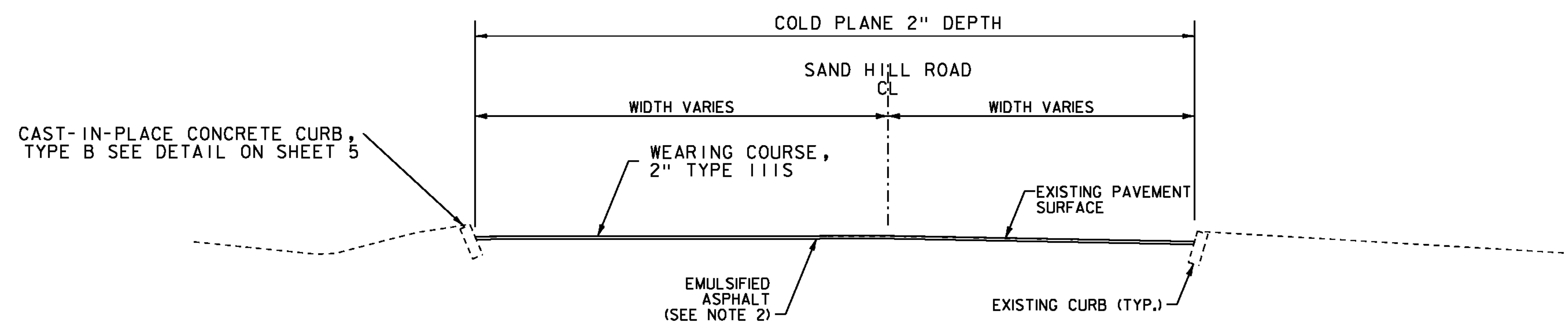
SEE EPSC DETAILS SHEET 2 FOR THE SEEDING FORMULA.

GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION PRACTICES SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND IT'S LATEST REVISIONS.
- TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.080 G/SY ON ALL MILLED SURFACES AND AT A RATE OF 0.040 G/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT, OR AS DIRECTED BY THE ENGINEER.
- MARKER POSTS: TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.
- SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD B-5.
- ALL BURIED UTILITIES ARE EXISTING, THE LOCATIONS ARE APPROXIMATE AND ARE TO REMAIN UNDISTURBED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY COMPANIES INVOLVED AND SHALL DIG TEST PITS AS REQUIRED TO VERIFY LOCATIONS. ALL TEST PITS SHALL BE AUTHORIZED BY THE ENGINEER AND SHALL BE PAID UNDER ITEM 204.22 TRENCH EXCAVATION OF EARTH, EXPLORATORY. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY EXCAVATION. THE CONTRACTOR SHALL VERIFY LOCATION, ELEVATIONS AND DIMENSIONS OF THE EXISTING UTILITY LINES PRIOR TO CONSTRUCTION. THERE WILL BE NO EXTRA COMPENSATION PAID TO THE CONTRACTOR FOR ANY INCONVENIENCE CAUSED BY WORKING AROUND AND WITH THE UTILITY COMPANIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL ARRANGEMENTS FOR ANCHORING, SUPPORTING AND/OR RELOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. ALL COSTS SHALL BE INCLUDED IN THE UNIT PRICES BID. IN THE CASE OF DAMAGE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL REPAIRS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF THE EXISTING FEATURES AND STRUCTURES WITHIN AND ADJACENT TO THE WORK. IN THE CASE OF DAMAGE, THE REPAIRS OR REPLACEMENT SHALL BE COMPLETED AT THE SOLE EXPENSE OF THE CONTRACTOR AND AS APPROVED BY THE ENGINEER.
- ALL WORK MUST COMPLY WITH FEDERAL, STATE AND LOCAL REGULATIONS AND IN THE CASE THERE ARE CONFLICTING REGULATIONS THE MORE CONSERVATIVE OR STRICTER REGULATION WILL TAKE PRECEDENCE.
- ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ANY EXISTING STRUCTURES OR PIPES, WHICH CONNECT TO PIPES THAT ARE SPECIFIED TO BE PLUGGED, FILLED OR ABANDONED. IN THE EVENT THAT ADJOINING STRUCTURES OR PIPES ARE FOUND IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ALL SUCH WORK SHALL BE PAID UNDER ITEM 204.22 TRENCH EXCAVATION OF EARTH, EXPLORATORY.
- FIELD OBSERVATION OF EXISTING DRAINAGE PIPE #10 (48" REINFORCED CONCRETE PIPE) SHOWED A SINK HOLE LOCATED APPROXIMATELY 10' FROM THE INLET END OF THE PIPE. IT IS ANTICIPATED THAT THE FIRST SECTION (10' +/-) MAY HAVE TO BE REPAIRED OR REPLACED. ALL SUCH WORK SHALL BE PAID UNDER ITEM 601.996 CLEANING CULV. PIPE, IN-PLACE (GREATER THAN 24"). IT IS NOT ANTICIPATED THAT THE ENTIRE PIPE WILL HAVE TO BE REPLACED, BUT STRICTLY CLEANED FROM SEDIMENT AND DEBRIS.



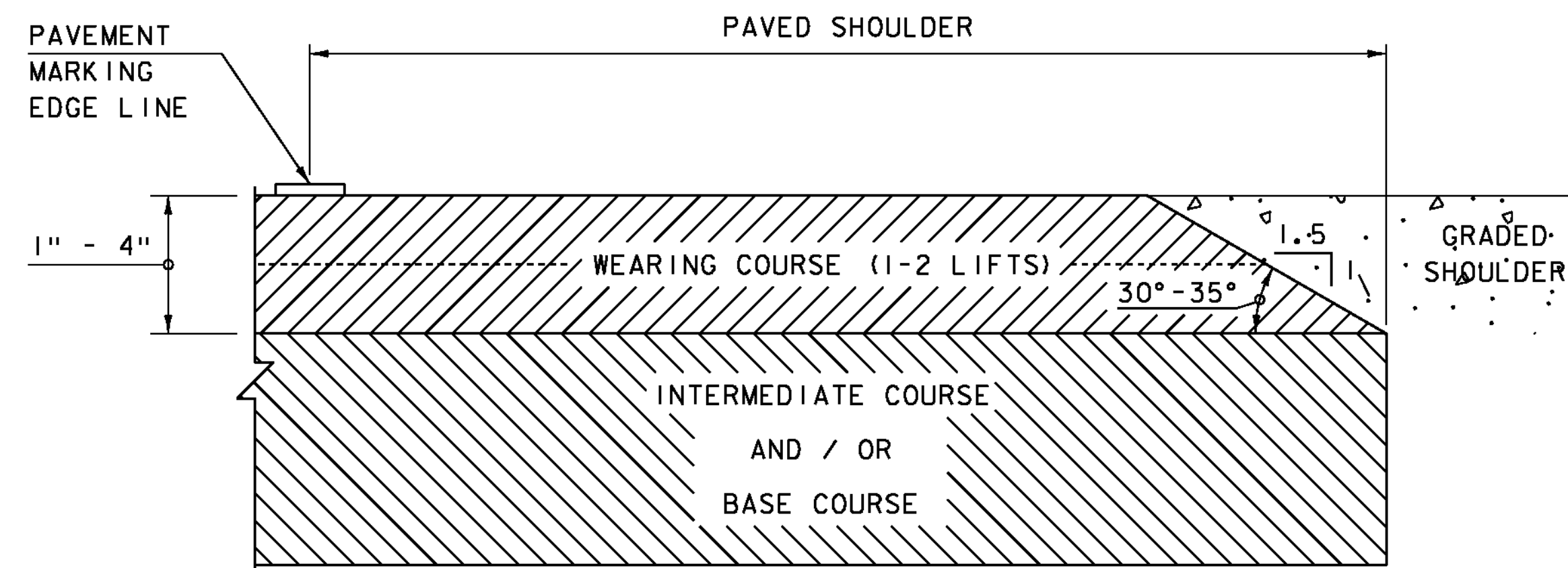
**MAXIMUM BANKED SECTION
VT ROUTE 117 - SAND HILL ROAD**



**COLD PLANE TYPICAL SECTION
SAND HILL ROAD**

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

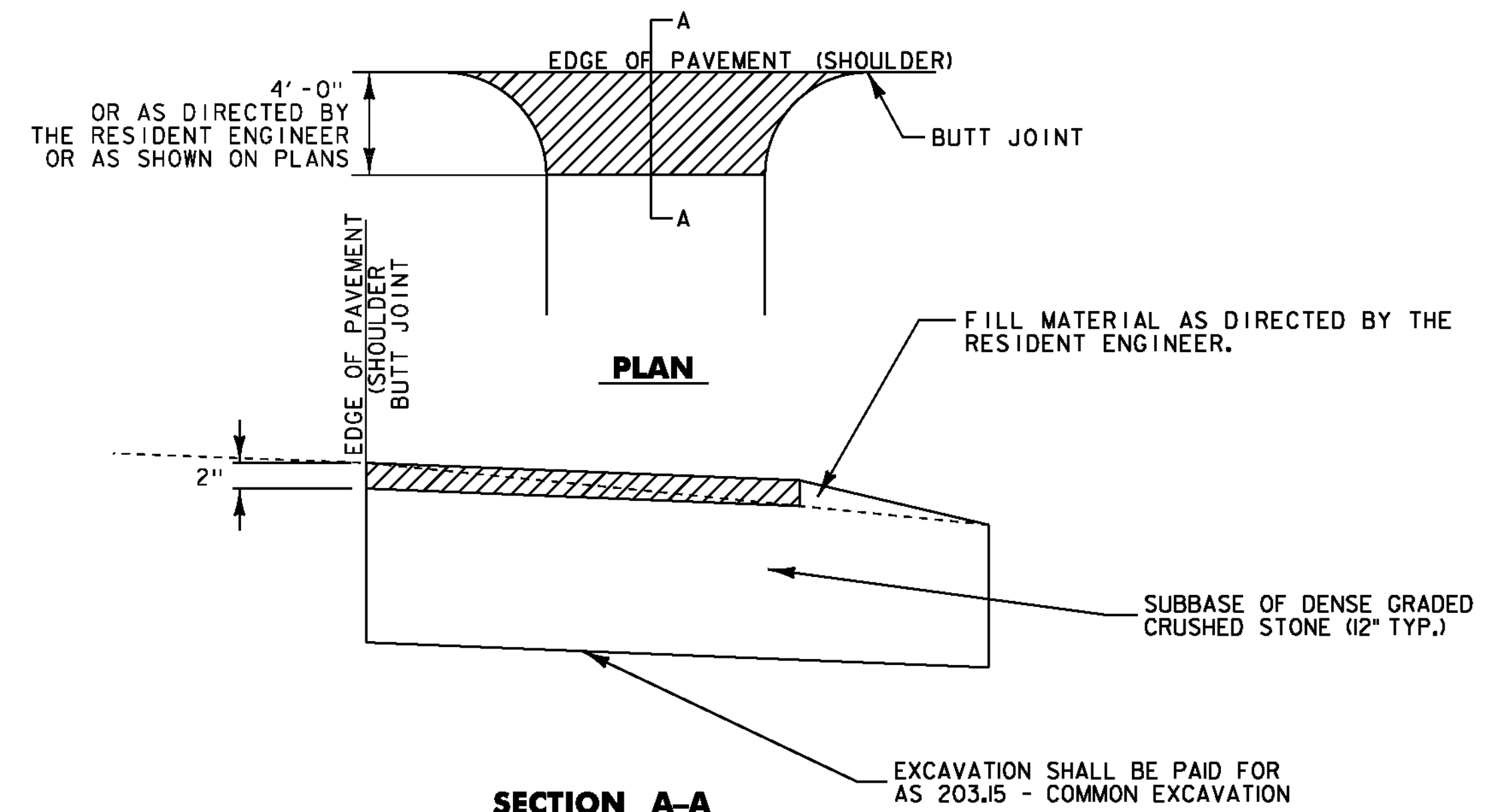
FILE NAME: +97d002+yp.dgn PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
TYPICAL SHEET 2 SHEET 4 OF 64



SAFETY EDGE DETAIL

NOT TO SCALE

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



SECTION A-A

EXCAVATION SHALL BE PAID FOR AS 203.15 - COMMON EXCAVATION

STATION	QUANTITY (SY)
167+06.00 RT	17.6 SY
169+04.00 RT	9.3 SY
171+12.00 LT	17.2 SY

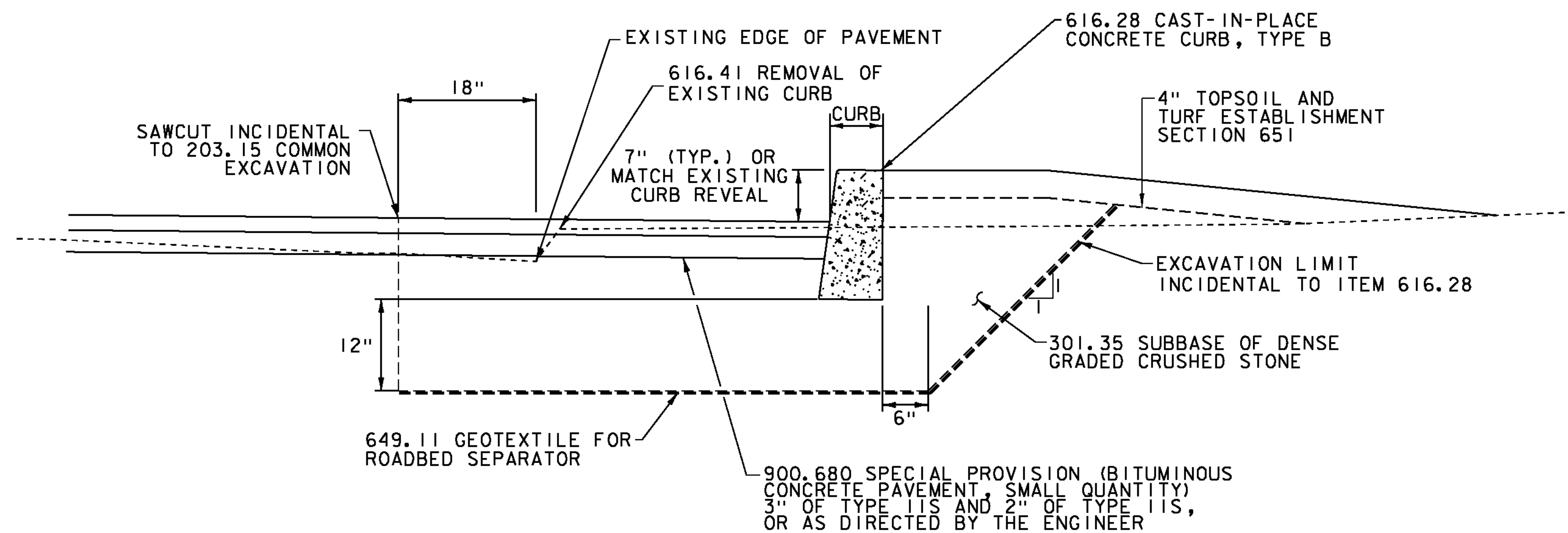
DRIVE LOCATION SUMMARY

AREAS FOR 900.675 - SPECIAL PROVISION (HAND-PLACED BIT. CONC. MATERIAL, DRIVES)

ITEM NO. 900.675 - SPECIAL PROVISION (HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES) NOT TO SCALE

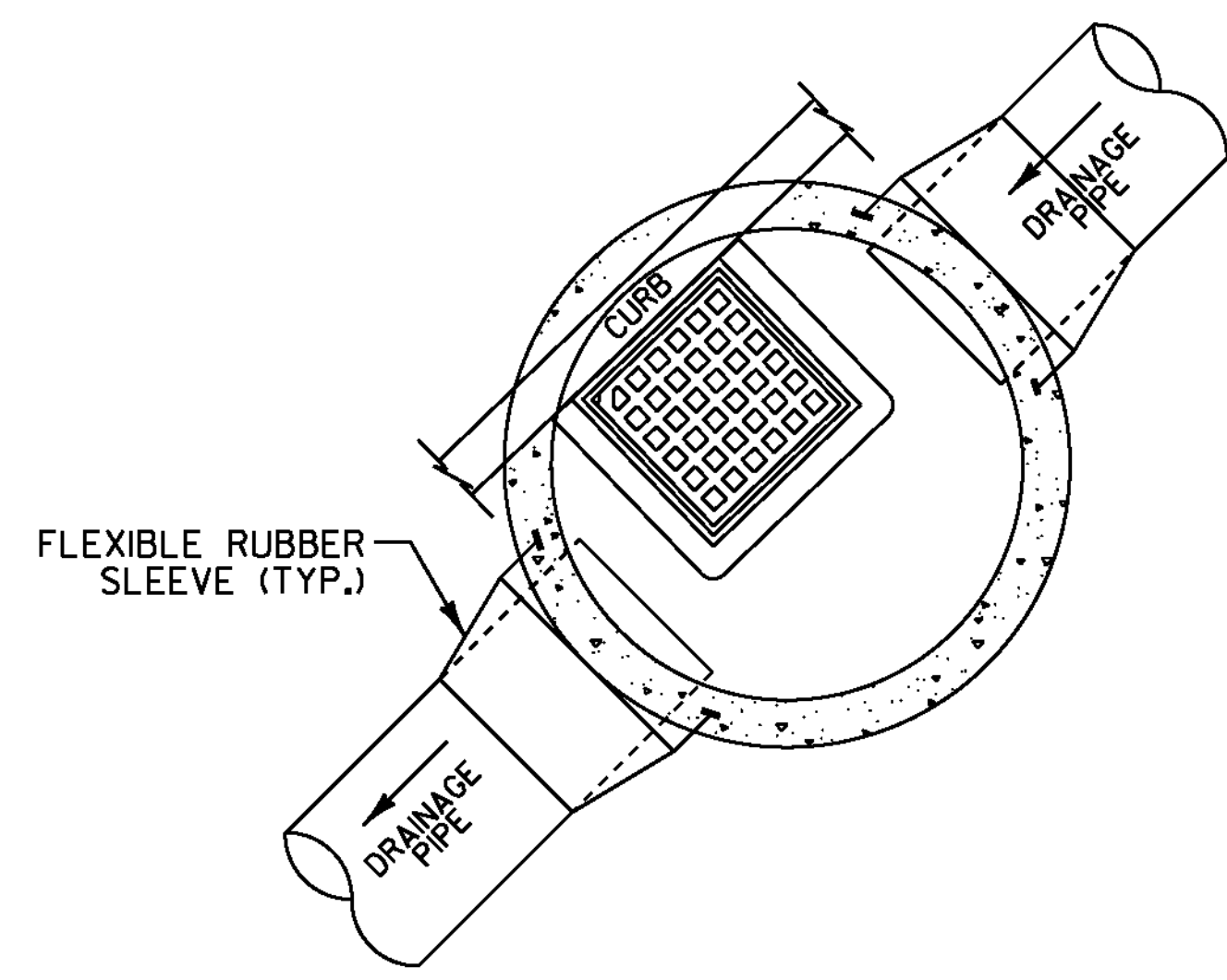
CAST-IN-PLACE CONCRETE CURB, TYPE B DETAIL

STA 172+74.00 LT - 200+62.95 LT
 STA 200+50.37 RT - 173+88.00 LT
 NOT TO SCALE

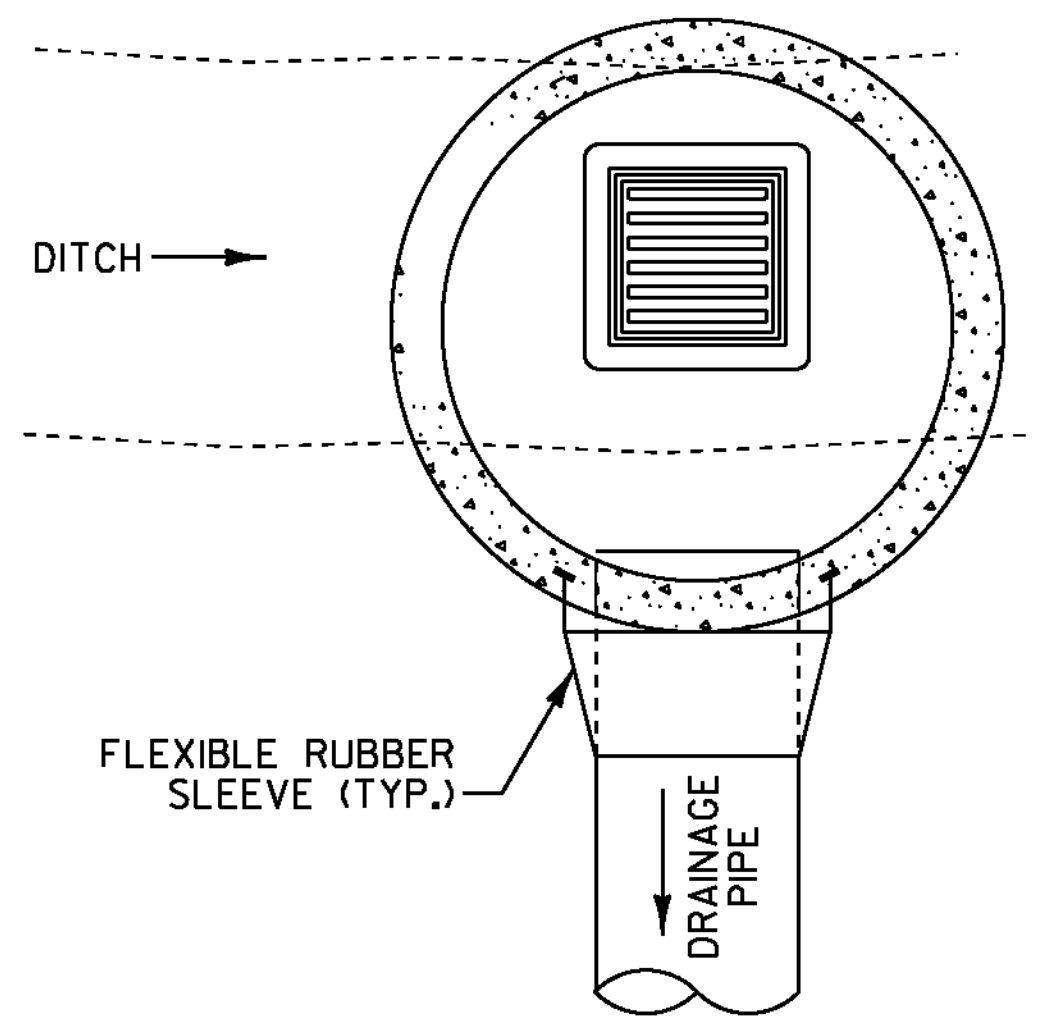


NOTE: MATCH PROPOSED CURB INTO EXISTING CURB AT 200+62.95 LT & 200+50.37 RT

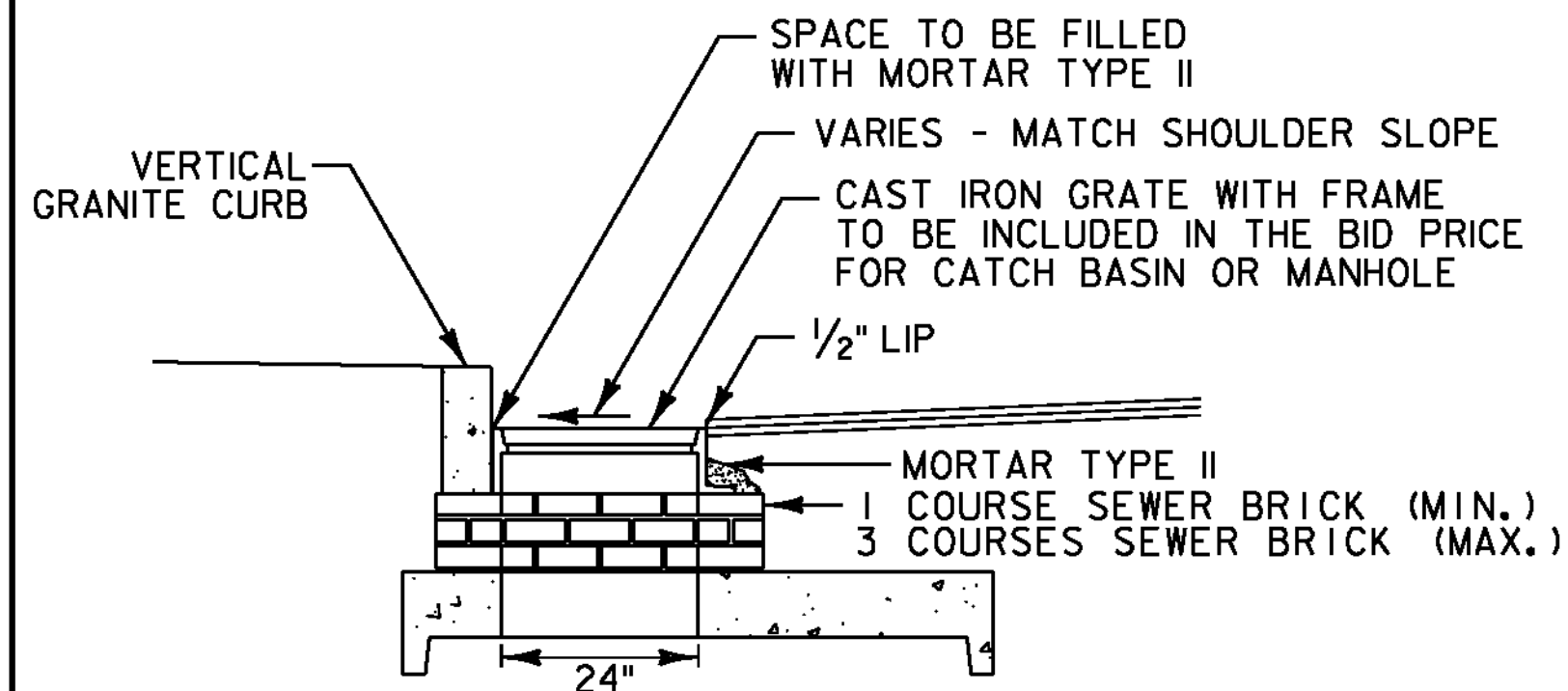
PROJECT NAME: ESSEX TOWN	PLOT DATE: 24-AUG-2012
PROJECT NUMBER: STP 5400 (5)	DRAWN BY: D. LYMAN
FILE NAME: +97d002+yp.dgn	CHECKED BY: J. DEVLIN
PROJECT LEADER: J. SCHULTZ	SHEET 5 OF 64
DESIGNED BY: D. LYMAN	
TYPICAL SHEET 3	



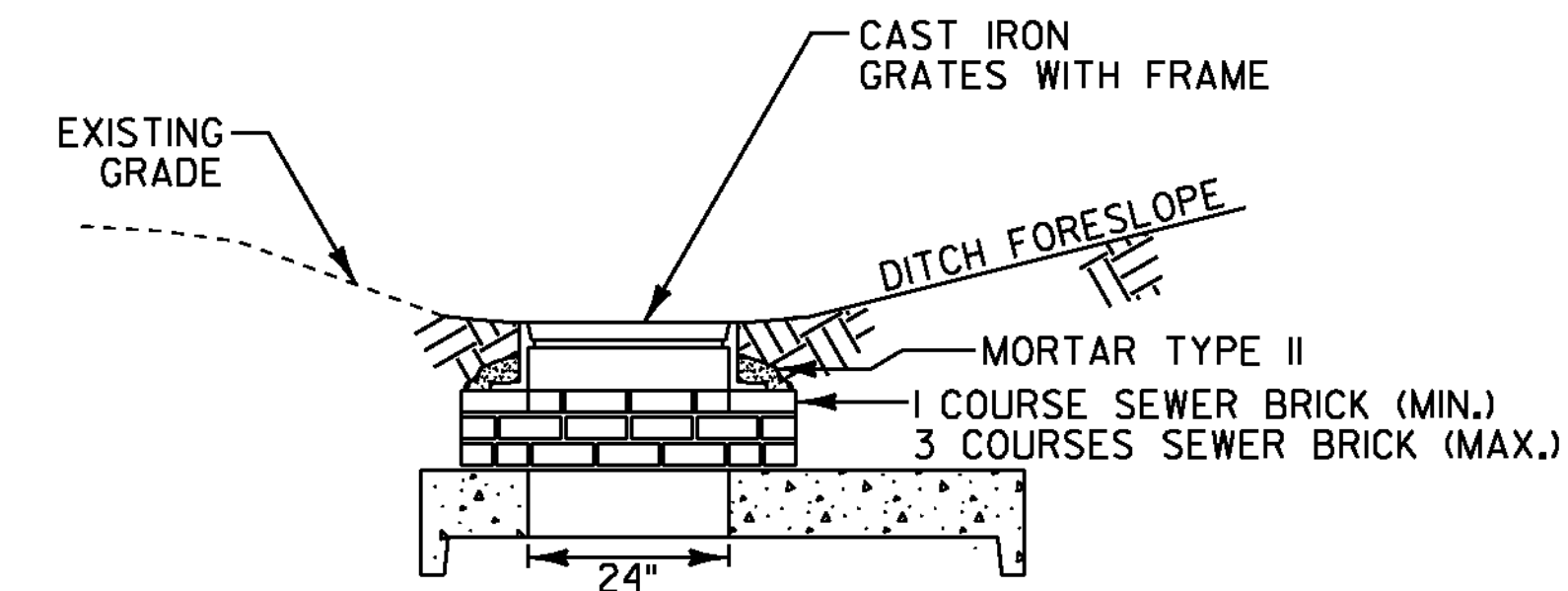
CATCH BASIN ALONG CURB (PLAN)
NOT TO SCALE



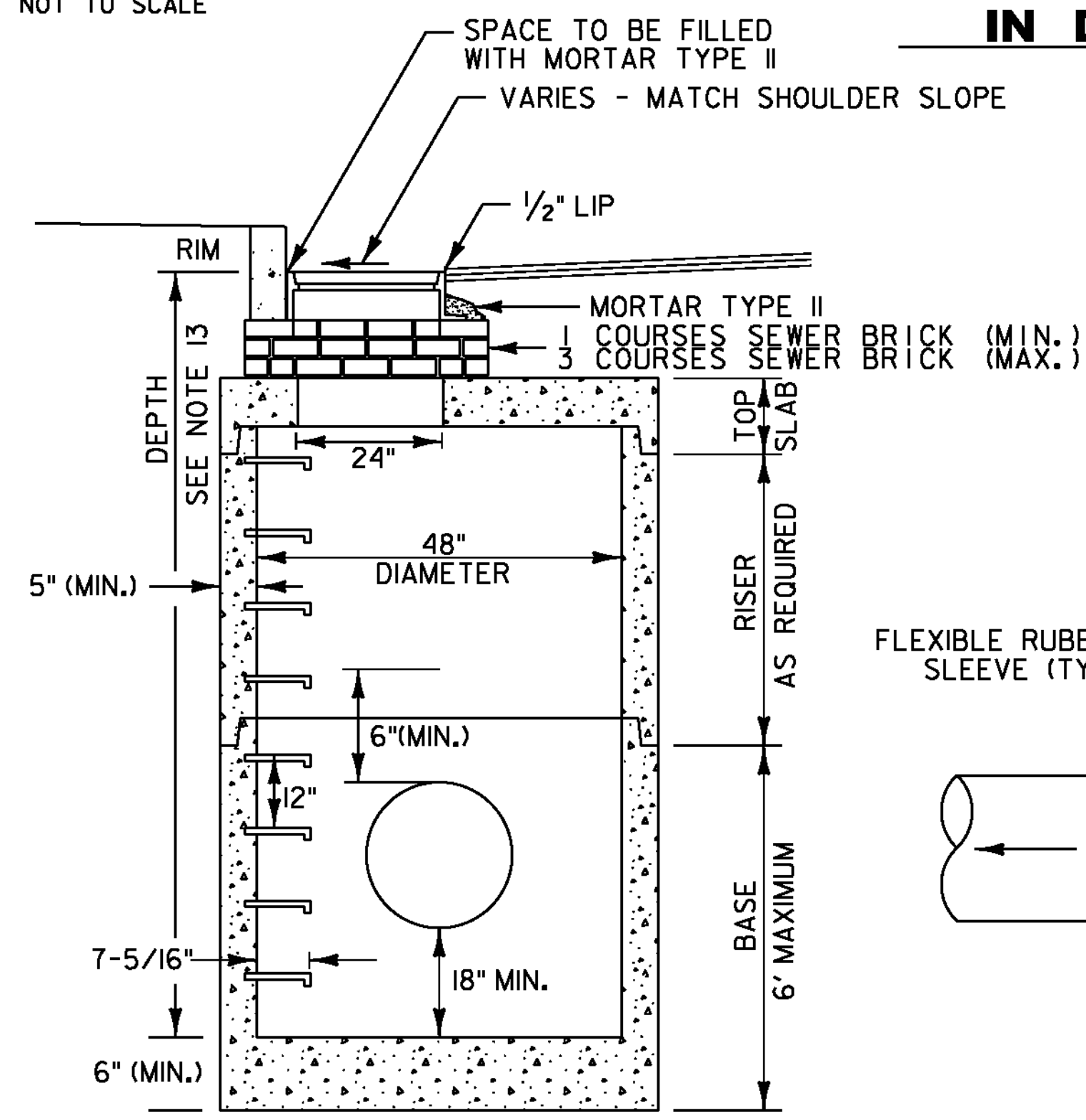
CATCH BASIN IN DITCH (PLAN)
NOT TO SCALE



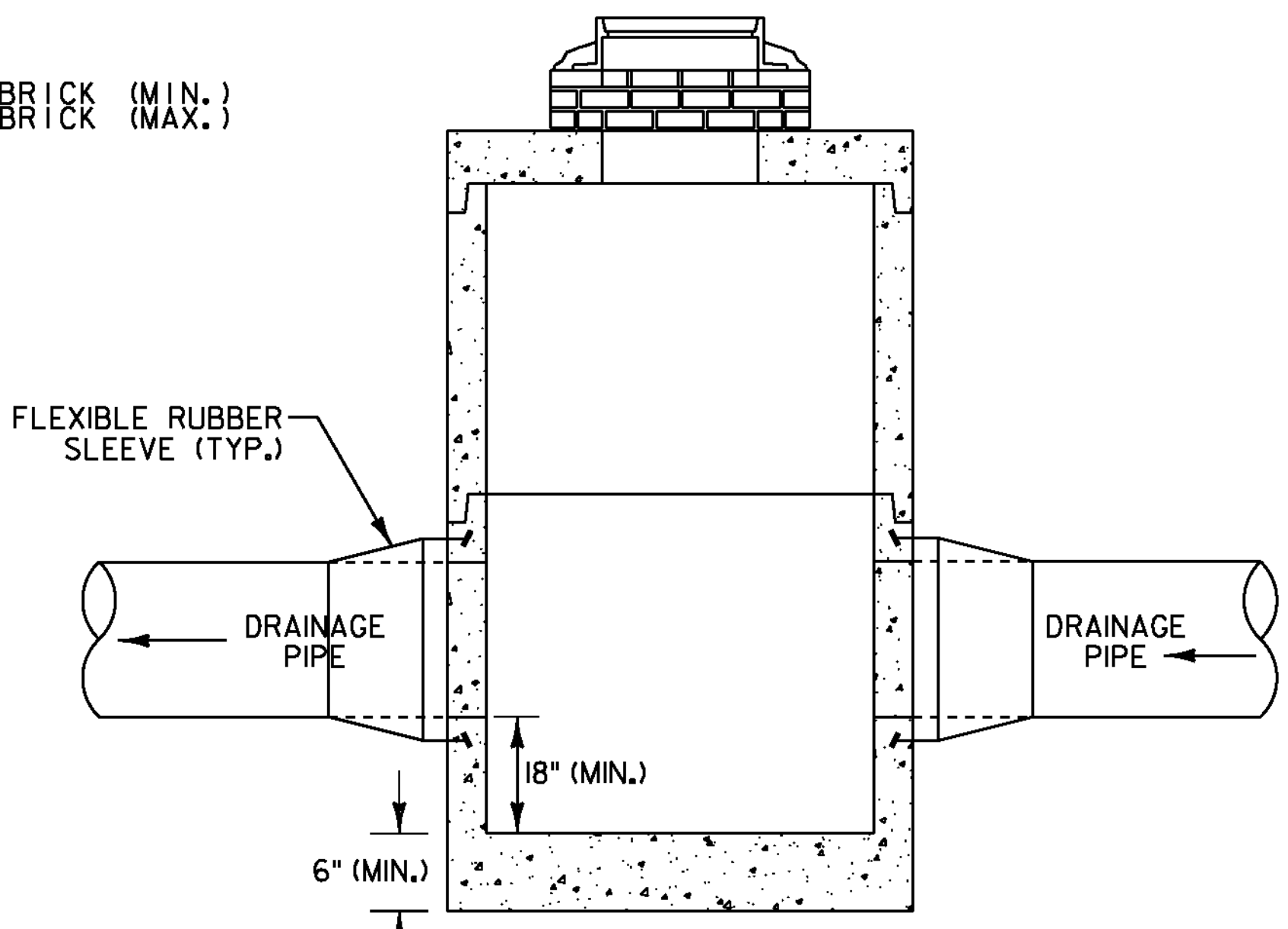
TYPICAL GRATE INSTALLATION WITH VERTICAL GRANITE CURB (ELEVATION)
NOT TO SCALE



TYPICAL GRATE INSTALLATION IN DITCH (ELEVATION)
NOT TO SCALE

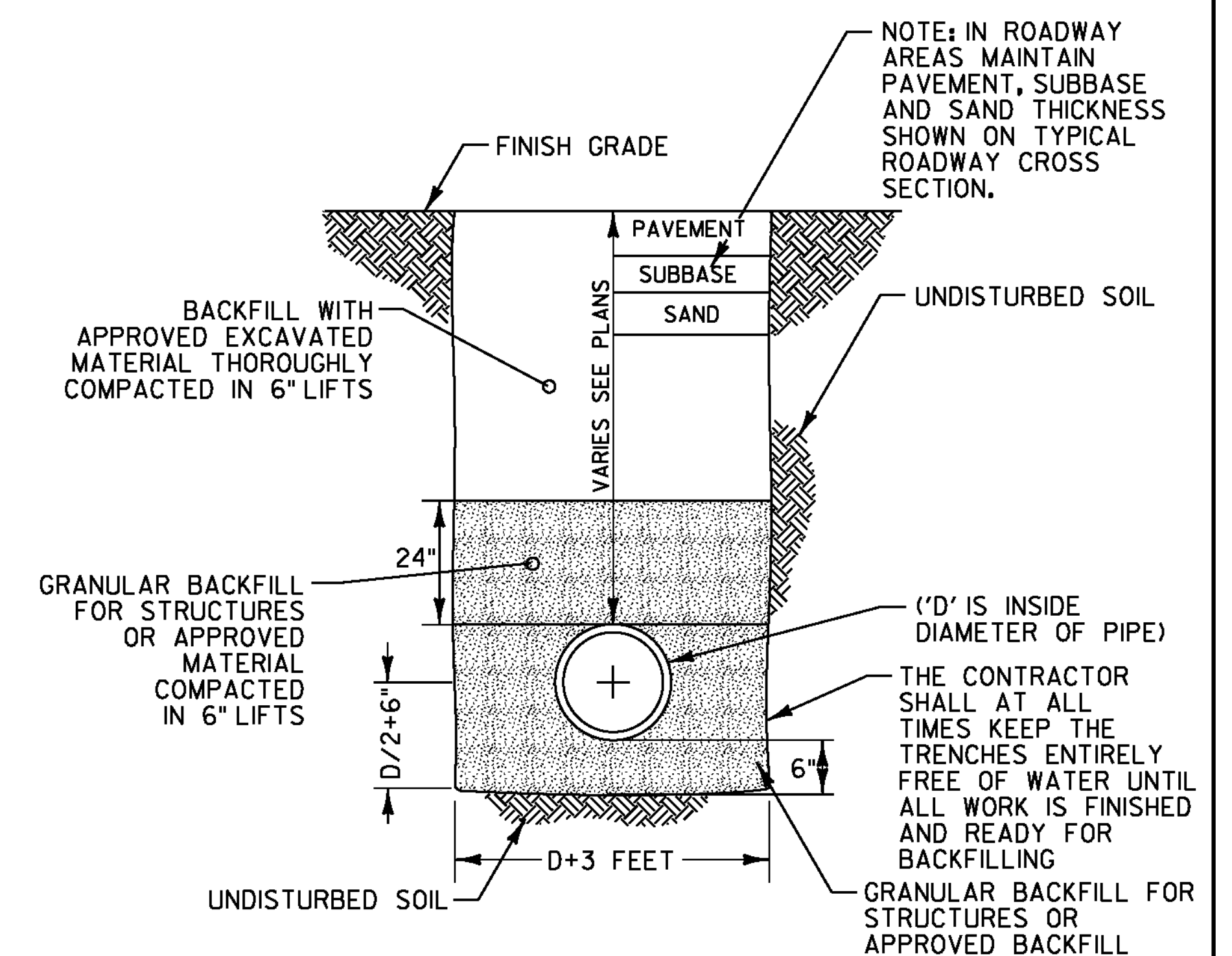


ELEVATION VIEW



SIDE VIEW

TYPICAL PRECAST CATCH BASIN OR MANHOLE
NOT TO SCALE



TYPICAL STORM DRAIN AND PIPE SLEEVE TRENCH
NOT TO SCALE

GENERAL NOTES: PRECAST REINFORCED CONCRETE CATCH BASINS

1. PRECAST CONCRETE SECTIONS SHALL CONFORM TO SUBSECTION 705.04 OF THE STANDARD SPECIFICATIONS.
2. MINIMUM CONCRETE COMPRESSIVE STRENGTH: 5,000 PSI AT 28-DAYS.
3. STEEL REINFORCING SHALL CONFORM TO ASTM A185 OR A82 FOR HS-25 LOADING.
4. MANHOLE STEPS SHALL BE 14" WIDE STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC AND SHALL BE CAST INTO MANHOLE SECTIONS BY THE PRECAST CONCRETE MANUFACTURER. MANHOLE STEPS IN THE RISER SHALL ALIGN WITH THE MANHOLE STEPS IN BASE OF THE STRUCTURE.
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 (1 COURSE MIN, 3 COURSES MAX).
8. FLAT SLAB TOPS SHALL BE USED FOR ALL CATCH BASINS 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. PAYMENT FOR INSTALLATION OF THE CATCH BASINS SHALL BE MADE UNDER THE PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE ITEM (604.20).
13. DEPTH AS SHOWN ON THE DRAINAGE DETAIL SHEET AND DRAINAGE PROFILE SHEETS IS DEFINED AS THE VERTICAL DISTANCE BETWEEN RIM ELEVATION AND THE BOTTOM OF SUMP.

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002frm.dgn PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
DRAINAGE STRUCTURE DETAIL SHEET SHEET 6 OF 64

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES						
						ROADWAY	LANDSCAPING	EROSION CONTROL	UTILITIES (NO FED./STATE PART.)	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS		
						1					1		LS	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.10	-			203.15 COMMON EXCAVATION		
						3250					3250		CY	COMMON EXCAVATION	203.15	78	3027	CY	VT ROUTE 117		
						100					100		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27	6	145	CY	DRIVES		
						850					850		CY	SAND BORROW	203.31	19	3172	CY	SUB TOTAL		
						360					360		CY	TRENCH EXCAVATION OF EARTH	204.20	14	78	CY	ROUNDING		
						15					15		CY	TRENCH EXCAVATION OF ROCK	204.21	3	3250	CY	TOTAL		
						1					1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22	-			210.10 COLD PLANING, BITUMINOUS PAVEMENT		
						120					120		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	8	2449	SY	VT ROUTE 117		
						3600					3600		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10	91	1060	SY	SAND HILL ROAD		
						1750					1750		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	38	3509	SY	SUB TOTAL		
						7					7		CY	AGGREGATE SURFACE COURSE	401.10	0.5	91	SY	ROUNDING		
						40					40		CWT	EMULSIFIED ASPHALT	404.65	4	3600	SY	TOTAL		
						1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50	-			301.35 SUBBASE OF DENSE GRADED CRUSHED STONE		
														BEGIN OPTION AA					1517	CY	VT ROUTE 117
						153					153		LF	15" PCCSP .064 (2-2/3 X 1/2)	601.0410	-	152	CY	DRIVES		
						153					153		LF	15" CPEP	601.0910	-	43	CY	CAST-IN-PLACE CONCRETE CURB, TYPE B		
														END OPTION AA					1712	CY	SUBTOTAL
														BEGIN OPTION BB					38	CY	ROUNDING
						137					137		LF	18" RCP CLASS III	601.0815	-	1750	CY	TOTAL		
						137					137		LF	18" CPEP(SL)	601.2615	-					
														END OPTION BB							
														BEGIN OPTION CC							
						40					40		LF	24" RCP CLASS III	601.0825	-					
						40					40		LF	24" CPEP(SL)	601.2620	-					
														END OPTION CC							
						34					34		LF	18" CPEP	601.0915	-					
						84					84		LF	CLEANING CULV. PIPE, IN-PLACE [0 TO 24 IN., INCL.]	601.995	-					
						74					74		LF	CLEANING CULV. PIPE, IN-PLACE [GREATER THAN 24 IN.]	601.996	-					
						6					6		EACH	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE	604.20	-					
									1		1		EACH	REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS I	604.412	-					
									2		2		EACH	CHANGING ELEVATION OF SEWER MANHOLES	604.42	-					
						15					15		HR	POWER BROOM RENTAL, TYPE II	608.31	EST					
						160					160		MGAL	DUST CONTROL WITH WATER	609.10	EST					
						1					1		TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15	EST					
						140					140		CY	STONE FILL, TYPE II	613.11	7					
						115					115		LF	CAST-IN-PLACE CONCRETE CURB, TYPE B	616.28	4					
						125					125		LF	REMOVAL OF EXISTING CURB	616.41	3					
						4					4		EACH	RELOCATE MAILBOX, SINGLE SUPPORT	617.10	-					
						3					3		EACH	RELOCATE MAILBOX, MULTIPLE SUPPORT	617.12	-					
						5					5		EACH	YIELDING MARKER POSTS	619.17	EST					

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002frm.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
QUANTITY SHEET 1

PLOT DATE: 14-SEP-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 7 OF 64

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
						ROADWAY	LANDSCAPING	EROSION CONTROL	UTILITIES (NO FED./STATE PART.)	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
						337.5					337.5		LF	HD STEEL BEAM GUARDRAIL, GALVANIZED	621.21	-			
						4					4		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51	-			
						485					485		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80	5			
									3		3		EACH	ADJUST ELEVATION OF VALVE BOX	629.20	-			
						100					100		HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST			
						3000					3000		HR	FLAGGERS	630.15	120			
										1	1		LS	FIELD OFFICE, ENGINEERS	631.10	-			
										1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16	-			
										1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17	-			
										3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26	-			
						1					1		LS	MOBILIZATION/DEMOBILIZATION	635.11	-			
						1					1		LS	TRAFFIC CONTROL	641.10	-			
						3					3		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	-			
						2650					2650		LF	DURABLE 4 INCH WHITE LINE, RECESSED POLYUREA	646.406	36			
						3375					3375		LF	DURABLE 4 INCH YELLOW LINE, RECESSED POLYUREA	646.416	57			
						305					305		LF	DURABLE 8 INCH YELLOW LINE, RECESSED POLYUREA	646.456	6			
						66					66		LF	DURABLE 24 INCH STOP BAR, TYPE I TAPE	646.481	1			
						56					56		EACH	DURABLE LETTER OR SYMBOL, TYPE I TAPE	646.491	-			
						5300					5300		LF	TEMPORARY 4 INCH WHITE LINE	646.600	72			
						6750					6750		LF	TEMPORARY 4 INCH YELLOW LINE	646.610	114			
						132					132		LF	TEMPORARY 24 INCH STOP BAR	646.680	2			
						112					112		EACH	TEMPORARY LETTER OR SYMBOL	646.690	-			
						100					100		SY	GEOTEXTILE FOR ROADBED SEPARATOR	649.11	10			
						210					210		SY	GEOTEXTILE UNDER STONE FILL	649.31	12			
								40			40		SY	GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED	649.515	4			
							50				50		LB	SEED	651.15	EST			
							300				300		LB	FERTILIZER	651.18	EST			
							1				1		TON	AGRICULTURAL LIMESTONE	651.20	EST			
							1				1		TON	HAY MULCH	651.25	EST			
							225				225		CY	TOPSOIL	651.35	7			
								1			1		LS	EPSC PLAN	652.10	-			
								65			65		HR	MONITORING EPSC PLAN	652.20	-			
								1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30	-			
								400			400		SY	TEMPORARY EROSION MATTING	653.20	8			
								60			60		CY	VEHICLE TRACKING PAD	653.35	EST			
								4			4		EACH	INLET PROTECTION DEVICE, TYPE I	653.40	-			
								425			425		LF	BARRIER FENCE	653.50	5			
						68.97					68.97		SF	TRAFFIC SIGNS, TYPE A	675.20	-			
						189					189		LF	SQUARE TUBE SIGN POST AND ANCHOR	675.341	-			
						11					11		EACH	REMOVING SIGNS	675.50	-			

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002frm.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
QUANTITY SHEET 2

PLOT DATE: 14-SEP-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 8 OF 64

ITEM DETAIL SHEET

CURB					SIDEWALK					GUARD RAIL						UNDERDRAIN										
BEGIN STATION	END STATION	POSITION		REMARKS	BEGIN STATION	END STATION	POSITION		REMARKS	BEGIN STATION	END STATION	POSITION		END TREATMENT		BEGIN STATION	END STATION	TYPE	POSITION	DIA IN	LENGTH FT	TRENCH		GRAN BK FILL CY	FB EA	MKR PST EA
		LEFT FT	RIGHT FT				LEFT SF	RIGHT SF				LEFT FT	RIGHT FT	BEGIN EA	END EA							EARTH CY	ROCK CY			
616.28 - CAST-IN-PLACE CONCRETE CURB, TYPE B										621.21 - HD STEEL BEAM GUARDRAIL, GALVANIZED																
172+74.00 LT	200+62.95 LT	66		42' RAD																						
200+50.37 RT	173+88.00 LT		45	30' RAD								125'			1	1										
SUBTOTAL		66	45	111								125	212.5	337.5												
ROUNDING				4																						
TOTAL				115																						
										621.51 - MANUFACTURED TERMINAL SECTION, TANGENT																
										171+67.50 RT	172+17.50 RT				1											
										173+90.00 LT	174+40.00 LT					1										
										174+30.00 RT	174+80.00 RT					1										
										175+65.00 LT	176+15.00 LT															
										TOTAL					4											

PROJECT NAME: ESSEX TOWN
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ITEM DETAIL SHEET
PLOT DATE: 14-SEP-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 10 OF 64

DRAINAGE DETAIL SHEET

STATION	STATION	POS.	PIPE NUMBER	INLET/OUTLET TYPE		DITCH		PIPE ARCH			PIPE					ALLOWABLE OPTIONS						PIPE ELBOW NO. DEG	ES EA	CB EA	DEPTH DI FT	CONC CLASS B CY	REINF STEEL LBS	DI GRATE TYPE	CHAN ELEV EA	CRM CY	TRENCH EXCAVATION		COMM EXC CY	UNC CHAN EXC CY	STRUCT EXCAV CY	GRAN BK FILL STRUCT CY	GRAN BORR CY	EROS MATT SY	STONE FILL		MARKER POSTS		REMARKS
				INLET	OUTLET	IN	OUT	SPAN IN	RISE IN	L FT	D IN	L FT	PCCSP TH	CAAP TH	RCP CL TH	CSP TH	CPEP SL	CPEP	EARTH CY	ROCK CY	CY										CY	CY							CY	CY	CY	CY	
EXISTING DRAINAGE																																											
167+13.93	166+94.09	LT-LT	1																																		REMOVE 18" X 20" PIPE						
167+86.59	168+06.53	LT-LT	2																																	REMOVE 15" X 20" PIPE							
168+82.53	169+12.57	LT-LT	3																																	REMOVE 15" X 30" PIPE							
169+88.96	170+18.86	LT-LT	4																																	REMOVE 15" X 30" PIPE							
170+91.89	171+29.67	LT-LT	5																																	REMOVE 15" X 38" PIPE							
172+82.54	173+24.58	LT-RT	6	DI	OL																															RETAIN 24" PIPE AND REMOVE DI 601.995 CLEANING CULV. PIPE, IN-PLACE (0 TO 24") REMOVE 24" X 32" PIPE AND DI							
200+40.31	172+82.87	LT-LT	7	DI	DI																															RETAIN 24" PIPE							
202+99.35	200+40.31	LT-LT	8	DI	DI																															REMOVE 18" X 37" PIPE AND DI							
173+69.64	174+03.62	LT-LT	9	DI	OL																															RETAIN 48" PIPE 601.996 CLEANING CULV. PIPE, IN-PLACE (> 24") REMOVE 15" X 75" PIPE							
174+06.89	174+09.36	LT-RT	10	CH	CH																																						
175+58.83	174+83.91	RT-RT	11																																								
PROPOSED DRAINAGE																																											
167+15.00	166+90.00	LT-LT	1							15	25	X																								DRIVE PIPE							
168+18.00	167+75.00	LT-LT	2							15	43	X																								DRIVE PIPE							
169+20.00	168.75.00	LT-LT	3							15	45	X																								DRIVE PIPE							
170+25.00	169+85.00	LT-LT	4							15	40	X																							DRIVE PIPE								
200+29.01	172+82.09	LT-LT	5	CB-5	CB-4					24	19		III	X																						4' DIAMETER PRC CATCH BASIN @ 200+29.01 LT							
200+45.44	200+29.01	LT-LT	6	CB-6	CB-5					24	21		III	X																						4' DIAMETER PRC CATCH BASIN @ 200+45.44 LT ATTACH EXISTING PIPE #8 TO NEW CATCH BASIN #6							
173+72.03	174+03.62	LT-LT	7	CB-7	OL					18	34																									4' DIAMETER PRC CATCH BASIN @ 173+72.03 LT							
174+86.00	174+25.00	RT-RT	8	CB-8	OL					18	61		III	X																						4' DIAMETER PRC CATCH BASIN @ 174+86.00 RT							
175+61.82	174+86.00	RT-RT	9	CB-9	CB-8					18	76		III	X																						4' DIAMETER PRC CATCH BASIN @ 175+61.82 RT							
172+82.54		LT	CB-4																																	4' DIAMETER PRC CATCH BASIN @ 172+82.54 LT ATTACH EXISTING PIPE #6 TO NEW CATCH BASIN #4							
TOTALS										15"	153'	CPEP / PCCSP																															
										18"	34'	CPEP																															
										18"	137'	CPEP (SL) / RCP CLASS III																															
										24"	40'	CPEP (SL) / RCP CLASS III																															

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)
FILE NAME: t97d002frm.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
DRAINAGE DETAIL SHEET
PLOT DATE: 14-SEP-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET II OF 64

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EARTHWORKS

																				SUMMARY AND BALANCES																			
		TOTAL EXCAVATION EARTH AND ROCK		ROCK EXCAVATION		EMBANKMENT						TOTAL EXCAVATION EARTH AND ROCK		ROCK EXCAVATION		EMBANKMENT								STATION TO STATION		TOT EXC. EARTH & ROCK C.Y.	ROCK EXCAV C.Y.	EMBANK C.Y.	EXCESSES		ACUMULATIVE EXCESSES								
STATION	DIST	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	STATION	DIST	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	STATION	DIST	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	STATION TO STATION	TOT EXC. EARTH & ROCK C.Y.	ROCK EXCAV C.Y.	EMBANK C.Y.	EXCESSES		ACUMULATIVE EXCESSES	
FT.		S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	FT.		S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	FT.		S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.	S.F.	C.Y.					CUT	FILL	CUT	FILL		
VT ROUTE 117																																							
166+75	25	0		0		0																																	
167+00	50	0	48	0		0	0																																
167+50	50	52	101	0		0	4																																
168+00	50	57	128	0		4	4																																
168+50	50	80	158	0		1	1																																
169+00	50	90	166	0		0	5																																
169+50	50	89	166	0		6	7																																
170+00	50	91	167	0		1	2																																
170+50	50	89	167	0		0	0																																
171+00	50	103	195	0		0	0																																
171+50	50	108	211	0		0	0																																
172+00	50	120	208	0		0	0																																
172+50	50	105	232	0		0	0																																
173+00	50	146	192	0		3	0																																
173+50	50	62	194	0		0	5																																
174+00	50	147	240	0		6	34																																
174+50	50	112	181	0		31	35																																
175+00	50	83	149	0		7	6																																
175+50	25	78	74	0		0	0																																
175+75	25	81	38	0		0	0																																
176+00	25	1	0	0		0	0																																
176+25		0	0	0		0	0																																

REMARKS

EARTH AND ROCK EXCAVATION	3027	CY
SOLID ROCK EXCAVATION	0	CY
EARTH EXCAVATION	3027	CY
PLANIMETERED FILL	98	CY
LESS FACTORED SOLID ROCK	0	CY
LESS DISPLACEMENT OF ANY LARGE STRUCTURES	0	CY
NET PLANIMETERED FILL	98	CY
FACTOR	1.15	
PLANIMETERED FILL INCLUDING FACTOR	113	CY
MATERIALS AVAILABLE FOR FILLS		
EARTH EXCAVATION	3027	CY
UNCLASSIFIED CHANNEL EXCAVATION	95	CY
TRENCH EXCAVATION (EARTH AND ROCK) X 60%	225	CY
DRIVE EXCAVATION	145	CY
TOTAL MATERIAL AVAILABLE FOR FILL		
TOTAL FILL INCLUDING FACTOR	113	CY
TOTAL MATERIAL FOR FILL	3492	CY
BORROW	0	CY
EXCESS EXCAVATION	3379	CY

PROJECT NAME: ESSEX TOWN
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FILE NAME: +97d002frm.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
EARTHWORKS SHEET

PLOT DATE: 14-SEP-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 12 OF 64

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA				REMARKS	
					AREA±	AREA±	TYPE	(T)/(P)	AREA ±	TITLE	DATE	TOWN / CITY	BOOK		PAGE
1A	SIEGRIEST, C. RONALD & ALICE M.	9	171+52 LT	171+95 LT						CONDEMNATION	02/06/12	ESSEX	863	39-40	EXCEPT & RESERVE BUILDING AND GUARD POSTS
			172+41 LT	TH4 201+04 LT			CONST	(T)	780 SF						
			172+68 LT	172+91 LT			SLOPE	(T)	25 SF						
			172+75.00 LT	TH4 200+50.00 LT			HIGHWAY	(P)	229 SF						
			TH4 200+48 LT	TH4 200+63 LT			SLOPE	(T)	25 SF						
1B		8, 9	170+56 RT	173+92 RT			DRIVE	(T)							12.2' WIDE MM 0323
			171+79 RT	173+92 RT			INSTALL	(T)	1,733 SF						BF
			173+78 RT	173+92 RT			SLOPE	(P)	23 SF						
1C		8	169+04 RT				DRIVE	(T)							10.4' WIDE MM 0320
			169+80 RT				DRIVE	(T)							10.0' WIDE MM 0321
2	STATE OF VERMONT FORMERLY JUVAN, KAZIMIR & MAJDA	9	TH4 200+52 RT	TH4 200+85 RT			SLOPE	(T)	107 SF	WDOE	08/31/11	ESSEX	852	383-385	INCLUDES BF
			TH4 201+17 RT	173+98 LT			CONST	(T)	396 SF						BF
			174+10 LT	174+89 LT			INSTALL	(T)	720 SF						INCLUDES TEMP EC
			174+11.63 LT	175+04 LT			CHANNEL	(P)	1,856 SF						EC
			175+00 LT	175+26 LT			INSTALL	(T)	15 SF						
3	KARIC, MUNIB & DUDUA	9	173+92 RT	173+98 RT			INSTALL	(T)	60 SF	WDOE	12/02/11	ESSEX	858	651-652	BF
			173+92 RT	174+20 RT			SLOPE	(P)	150 SF						INCLUDES STONE FILL
			173+92 RT	173+96 RT			INSTALL & MAINT	(P)							GUY WIRE & ANCHOR
			174+20 RT	175+20 RT			INSTALL & MAINT	(P)	290 SF						CULVERT, CATCH BASIN & STONE FILL
			174+20 RT	174+87 RT			INSTALL	(T)	677 SF						BF
			174+48 RT												W-1 MONITOR WELL
4	STATE OF VERMONT FORMERLY TOWN OF ESSEX	9	TH4 200+34.3 CL	TH4 202+50 CL			APPROACH	(T)		QC		ESSEX			TH4 SAND HILL ROAD
			TH4 200+51.56 RT	TH4 202+53.94 RT											PARCEL TO BE CONVEYED TO TOWN OF ESSEX, 575 SF±
			173+78 RT	173+92 RT			SLOPE	(P)	23 SF						
5	GREEN MOUNTAIN POWER CORP.	8, 9	167+50 CL	175+75 CL											UTILITY EASEMENTS
6	TELEPHONE OPERATING COMPANY OF VERMONT LLC	8, 9	167+50 CL	175+75 CL											UTILITY EASEMENTS

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION	DATE
1	6, 9	PARCEL 3 KARIC - ADD NOTE TO MONITOR WELL. COMPLETED BY: MT PER C.O. 9753 APPROVED BY: HP	11/09/11

PLAN LEGEND

	EXISTING RIGHT-OF-WAY		TOE OF SLOPE
	TAKING WITH ACCESS		TOP OF CUT
	TAKING WITHOUT ACCESS		SLOPE RIGHT
	CLEAR ZONE		CONSTRUCTION RIGHT
	PROPERTY LINE		PROJECT DEMARCATION FENCE

BF	-BARRIER FENCE
EC	-EROSION CONTROL
(P)	-PERMANENT
(T)	-TEMPORARY
DR.	-DRAINAGE RIGHT
DIT.	-DITCHING RIGHT
CH.	-CHANNEL RIGHT
DRIVE	-DRIVE RIGHT
CUL.	-CULVERT RIGHT
C&T	-CLEARING & TRIMMING RIGHT
SR	-SLOPE RIGHT
UE	-UTILITY EASEMENT

APPROVED: HARRY PETROVS DATE: 03-29-11
CHIEF, PLANS & TITLES

PLOT DATE 02/16/12

PROJECT NAME:	ESSEX TOWN	FILE NAME:	r97d002Detail.xls	PLOT DATE:	
PROJECT NUMBER:	STP 5400(5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	M. TROTTIER
		DESIGNED BY:	D. LYMAN	CHECKED BY:	E. PIERCE
		R.O.W. DETAIL SHEET #1		SHEET	13 OF 64

210.10 COLD PLANING, BITUMINOUS CONCRETE PAVEMENT
 STA 166+75.00 - 171+50.00

CONSTRUCT DRIVES
 STA 167+03.00 LT (13.8' - PAVED)
 STA 167+96.00 LT (10.8' - PAVED)
 STA 167+98.00 RT (19.2' - PAVED)
 STA 168+98.00 LT (21.8' - PAVED)
 STA 169+80.00 RT (10.0' - PAVED)
 STA 170+05.00 LT (22.3' - PAVED)
 STA 170+56.00 RT (12.2' - PAVED)

401.10 AGGREGATE SURFACE COURSE
 STA 167+06.00 RT (22.0' - GRAVEL DRIVE)
 STA 169+04.00 RT (10.4' - GRAVEL DRIVE)
 STA 171+12.00 LT (28.12' - GRAVEL DRIVE)

900.675 SPECIAL PROVISION
 (HAND PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES)
 STA 167+06.00 RT (PAVED DRIVE APRON)
 STA 169+04.00 RT (PAVED DRIVE APRON)
 STA 171+12.00 LT (PAVED DRIVE APRON)

617.10 RELOCATE MAILBOX, SINGLE SUPPORT
 STA 168+78.37 RT
 STA 168+79.95 RT
 STA 168+82.50 RT

617.12 RELOCATE MAILBOX, MULTIPLE SUPPORT
 STA 167+73.83 RT
 STA 170+17.16 RT
 STA 170+76.00 RT

NEW DRAINAGE
 ① STA 167+15.00 LT - 166+90.00 LT
 NEW 15" X 25' PCCSP/CPEP

② STA 168+18.00 LT - 167+75.00 LT
 NEW 15" X 43' PCCSP/CPEP

③ STA 169+20.00 LT - 168+75.00 LT
 NEW 15" X 45' PCCSP/CPEP

④ STA 170+25.00 LT - 169+85.00 LT
 NEW 15" X 40' PCCSP/CPEP

EXISTING DRAINAGE
 ① STA 166+94.09 LT - 167+13.93 LT
 EXISTING 18" X 20' CGMP = REMOVE

② STA 167+86.59 LT - 168+06.53 LT
 EXISTING 15" X 20' CGMP = REMOVE

③ STA 168+82.53 LT - 169+12.57 LT
 EXISTING 15" X 30' CGMP = REMOVE

④ STA 169+88.96 LT - 170+18.86 LT
 EXISTING 15" X 30' CGMP = REMOVE

⑤ STA 170+91.89 LT - 171+29.67 LT
 EXISTING 15" X 38' CPEP = REMOVE

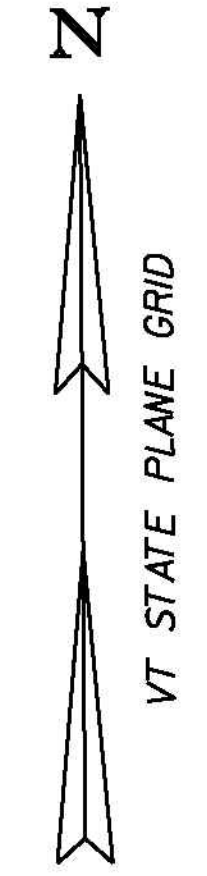
NEW STORMWATER TREATMENT PRACTICE
 GRASS CHANNEL 1-A
 DISCHARGE PERMIT #6300-INDS
 STA 167+15.00 LT - 167+75.00 LT
 STA 168+20.00 LT - 168+75.00 LT
 STA 169+20.00 LT - 169+85.00 LT
 STA 170+25.00 LT - 170+80.00 LT



604.42 CHANGING ELEVATION OF SEWER MANHOLES
 STA 170+94.60 RT

629.20 ADJUST ELEVATION OF VALVE BOX
 STA 170+52.67 LT

DENOTES TREE OR STUMP
 REMOVAL PAID UNDER ITEM
 NUMBER 201.10 CLEARING
 AND GRUBBING, INCLUDING
 INDIVIDUAL TREES AND
 STUMPS



NF
GODBOUT, JOHN R.

NF
WILLIAMS, SHARREN

NF
O'DAY, MAUREEN

NF
**ADAMS, CHRISTIAN S.
 & ELIZABETH J.**

①A
**SIEGRIEST, C. RONALD
 & ALICE M.**

STATE OF VERMONT
 66' HWY. EASE
 STATEMENT OF SELECTBOARD
 VOL. 7 PG. 395 (1968)
 PROJ. S0224IUSA
 TAKEN INTO STATE HWY
 BOARD SYSTEM 1969

**BEGIN R.O.W. PROJECT
 169+04, 32' RT**

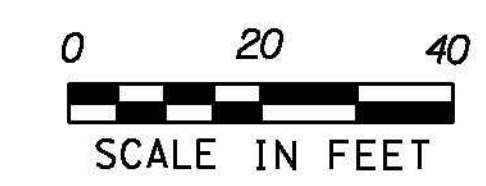
①B
**SIEGRIEST, C. RONALD
 & ALICE M.**

NF
**FARNHAM, BRENT T.
 & CHRISTINE A.**

NF
**MARSHALL, PAUL A.
 & SHARI A.**

①C
**SIEGRIEST, C. RONALD
 & ALICE M.**

FOR R.O.W.
 PURPOSES
 ONLY



PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)

FILE NAME: r97d002lay1.dgn
 PROJECT LEADER: J. SCHULTZ
 DESIGNED BY: D. LYMAN
 R.O.W. LAYOUT SHEET 1

PLOT DATE: 24-AUG-2012
 DRAWN BY: D. LYMAN
 CHECKED BY: J. DEVLIN
 SHEET 15 OF 64

☒ CALCULATED R.O.W. POINT

MATCH LINE STA 171+50

629.20 ADJUST ELEVATION OF VALVE BOX
 STA 172+59.21 LT
 STA 172+69.36 LT

NEW DRAINAGE
 STA 200+29.01 LT - 172+82.09 LT
 NEW 24" X 19" RCP/CPEP (SL)
 W/4' PRCCB @ STA 200+29.01 LT
 OFFSET = 38.54' W/GRATE TYPE D (1)

STA 200+45.44 LT - 200+29.01 LT
 NEW 24" X 21" RCP/CPEP (SL)
 W/4' PRCCB @ STA 200+45.44 LT
 OFFSET = 25.92' W/GRATE TYPE E (1)

STA 173+72.03 LT - 174+03.62 LT
 NEW 18" X 34" CPEP
 W/4' PRCCB @ STA 173+72.03 LT
 OFFSET = 24.86' W/GRATE TYPE D (1)

STA 174+86.00 RT - 174+25.00 RT
 NEW 18" X 61" RCP/CPEP (SL)
 W/4' PRCCB @ STA 174+86.00 RT
 OFFSET = 30.00' W/GRATE TYPE A (1)

STA 175+61.82 RT - 174+86.00 RT
 NEW 18" X 76" RCP/CPEP (SL)
 W/4' PRCCB @ STA 175+61.82 RT
 OFFSET = 23.89' W/GRATE TYPE A (1)

CB-4 STA 172+82.54 LT OFFSET = 25.22'
 NEW 4" PRCCB W/GRATE TYPE A (1)

SIEGRIEST, C. RONALD & ALICE M.
 CURVE DATA
 $\Delta = 5^{\circ}45'37''$ LT
 $D = 2^{\circ}27'33''$
 $R = 2330.00'$
 $T = 117.22'$
 $L = 234.25'$
 $E = 2.95'$
 $BANK = 0.032$

20' WIDE WATER LINE EASEMENT SHOWN ON TOWN OF ESSEX PLAN SLIDE 432 DATED 2007 NO DEED FOUND

DO NOT DISTURB GUARD POSTS

END MAINT. AGREE. ZONE
 TH4 200+34.3 CL
 L=13.8'

BEGIN MAINT. AGREE. ZONE
 TH4 200+20.5 CL

SIEGRIEST, C. RONALD & ALICE M.

NOTE:
 DISCONTINUE LEFT FULL DEPTH LANE WIDENING BOX CUT AT INTERSECTION STA 173+10.00 LT - 173+60.00 LT
 DENOTES TREE OR STUMP REMOVAL UNDER ITEM NUMBER 201.10 CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS
 SEE SHEET 37 FOR TRAFFIC SIGNAL INFORMATION

TH4 HWY. EASE. 50' PER PROJECT PLANS M5400(1) APPROACH(T)

STATE OF VT WDOE PROJ. M5400(1) V.139 P.18 (1978) TO BE CONVEYED TO THE TOWN OF ESSEX

TOWN OF ESSEX 20' WIDE CONSTRUCTION EASEMENT 168/291

JUVAN, KAZIMIR & MAJDA

TH4 200+51.68 20.45' RT - PROJ. M5400(1) 10+50.25' RT

TH4 200+50.00 35.30' LT

TH4 200+51.56 14.79' RT

ROW R=2,253.49' L=46.35'

ROW 173+54.77 34.32' LT

ROW PT 173+51.00 34.30' LT

ROW 173+03.96 34.13' LT

ROW R=2,253.49' L=28.54'

ROW R=2,319.49' L=225.48'

ROW 173+51.26 36.70' RT

ROW 173+51.26 36.70' RT

ROW 173+51.26 36.70' RT

ROW 173+51.26 36.70' RT

ROW 173+51.26 36.70' RT

ROW 173+51.26 36.70' RT

ROW 173+51.26 36.70' RT

ROW 173+51.26 36.70' RT

EXISTING DRAINAGE
 STA 172+82.54 LT - 173+24.58 RT
 EXISTING 24" X 84' RCP & DI =
 REPLACE EXISTING DRAINAGE STRUCTURE AND RETAIN PIPE
 601.995 CLEANING CULV. PIPE, IN PLACE (0 TO 24", INCL.)

STA 200+40.31 LT - 172+82.87 LT
 EXISTING 24" X 32' CPEP & DI =
 REMOVE DI AND PIPE

STA 202+99.35 LT - 200+40.31 LT
 EXISTING 24" X 258' CPEP = RETAIN

STA 173+69.64 LT - 174+03.62 LT
 EXISTING 18" X 37' CGMP =
 REPLACE EXISTING DRAINAGE STRUCTURE AND REMOVE PIPE

STA 174+06.89 LT - 174+09.36 RT
 EXISTING 48" X 74' RCP = RETAIN
 601.996 CLEANING CULV. PIPE, IN PLACE (GREATER THAN 24")

STA 175+58.83 RT - 174+83.91 RT
 EXISTING 15" X 75' CGMP = REMOVE

203.27 UNCLASSIFIED CHANNEL EXCAVATION
 STA 174+03.00 LT - 174+87.09 LT - CHANNEL

210.10 COLD PLANING, BITUMINOUS CONCRETE PAVEMENT
 STA 171+50.00 - 176+25.00 (VT ROUTE 117)
 STA 200+20.50 - 202+50.00 (SAND HILL ROAD)

CONSTRUCT DRIVES
 STA 175+23.00 RT (66.4' - PAVED)
 613.11 STONE FILL, TYPE II
 STA 173+95.00 LT - 174+27.06 LT
 STA 173+95.00 RT - 174+31.13 RT
 STA 174+03.00 LT - 174+87.09 LT - CHANNEL

616.28 CAST-IN-PLACE CONCRETE CURB, TYPE B
 STA 172+74.00 LT - 200+62.95 LT 42' RAD
 STA 200+50.37 RT - 173+88.00 LT 30' RAD

616.41 REMOVAL OF EXISTING CURB
 STA 172+82.36 LT - 200+62.95 LT
 STA 200+50.37 RT - 173+92.55 LT

617.10 RELOCATE MAILBOX, SINGLE SUPPORT
 STA 174+85.21 RT

621.21 HD STEEL BEAM GUARDRAIL, GALVANIZED
 STA 172+17.50 RT - 174+30.00 RT
 STA 174+40.00 LT - 175+65.00 LT

621.51 MANUFACTURED TERMINAL SECTION, TANGENT
 STA 171+67.50 RT - 172+17.50 RT
 STA 173+90.00 LT - 174+40.00 LT
 STA 174+30.00 RT - 174+80.00 RT
 STA 175+65.00 LT - 176+15.00 LT

621.80 REMOVAL AND DISPOSAL OF GUARDRAIL
 STA 172+45.70 RT - 174+82.74 RT
 STA 173+80.39 LT - 176+09.16 LT

649.31 GEOTEXTILE UNDER STONE FILL
 STA 173+95.00 LT - 174+27.06 LT
 STA 173+95.00 RT - 174+31.13 RT
 STA 174+03.00 LT - 174+87.09 LT - CHANNEL

END R.O.W. PROJECT
 175+26, 34' LT

STATION 175+75 END PROJECT
 END APPROACH

STATION 176+25 END APPROACH
 BEGIN PROJECT

STA 175+75.00 END TAPER

ROW 176+00.00 33.47' LT

STATE OF VERMONT - 66' HWY. EASE. STATEMENT OF SELECTBOARD VOL 7 PG 395 (1968) PROJ. S0224(1)SA TAKEN INTO STATE HWY SYSTEM 1969 VT 117 TO JERICO

ROW 176+22.46 32.61' RT - PROJ. S0224(1)SA 176+26, 33' RT

299.28' N86°19'18"E TO VTHD BND PROJ. S0224(1)SA 179+26, 33' RT

ROW 176+22.46 32.61' RT - PROJ. S0224(1)SA 176+26, 33' RT

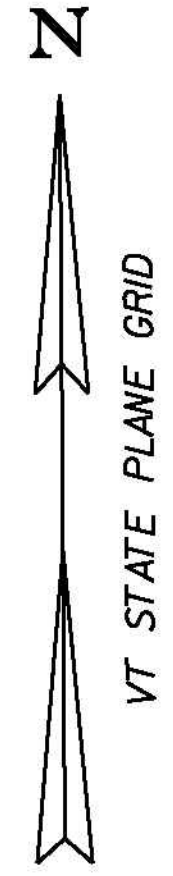
604.412 REPAIR, DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS I
 STA 200+46.68 RT

604.42 CHANGING ELEVATION OF SEWER MANHOLES
 STA 173+65.11 RT

PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)

FILE NAME: r97d002lay2.dgn
 PROJECT LEADER: J. SCHULTZ
 DESIGNED BY: D. LYMAN
 R.O.W. LAYOUT SHEET 2

PLOT DATE: 24-AUG-2012
 DRAWN BY: D. LYMAN
 CHECKED BY: J. DEVLIN
 SHEET 16 OF 64



⊗ TREE/SHRUB TO BE REMOVED
 ⊠ CALCULATED R.O.W. POINT

FOR R.O.W. PURPOSES ONLY



MATCH LINE STA 171+50

GPS CONTROL POINTS

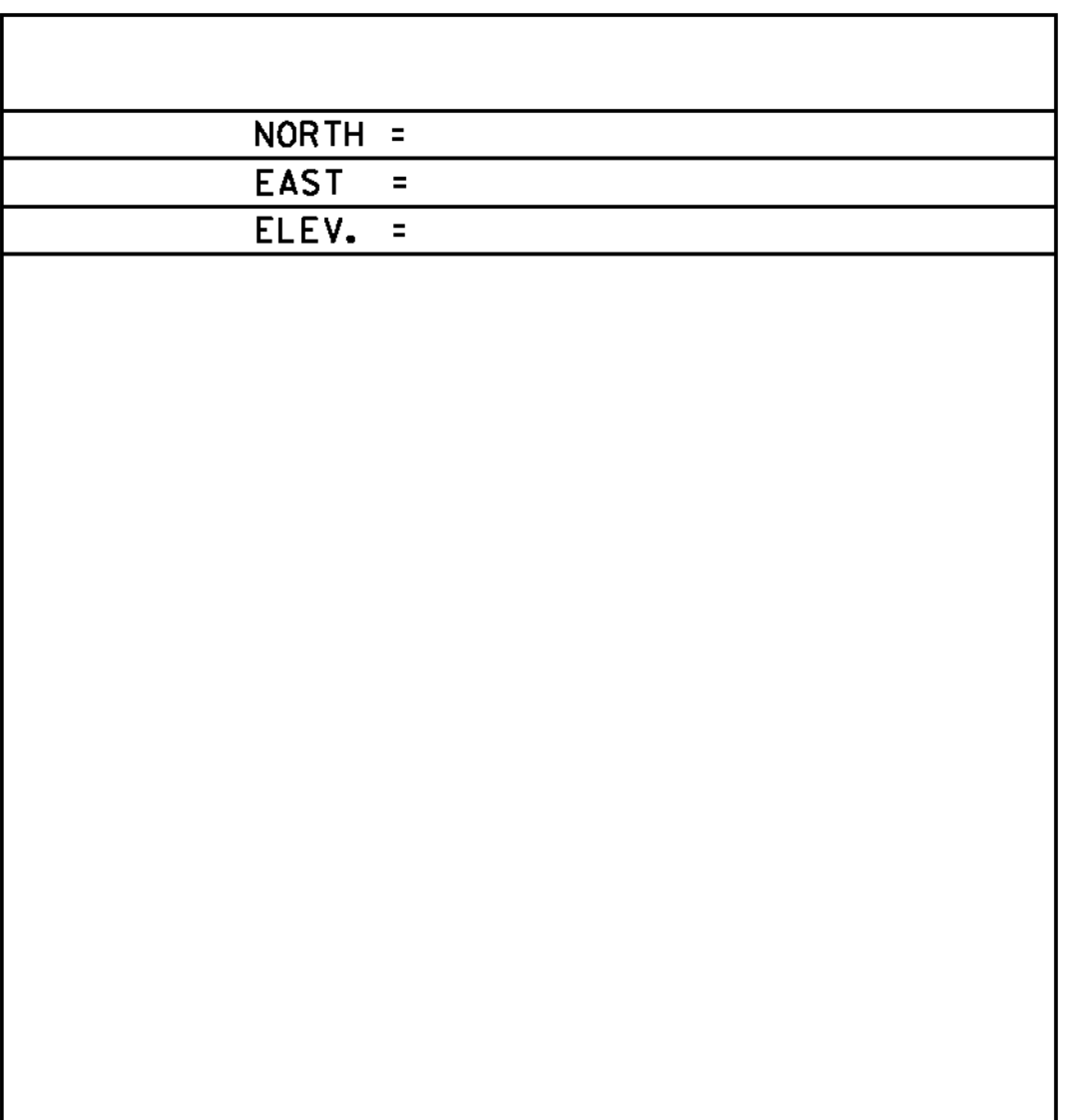
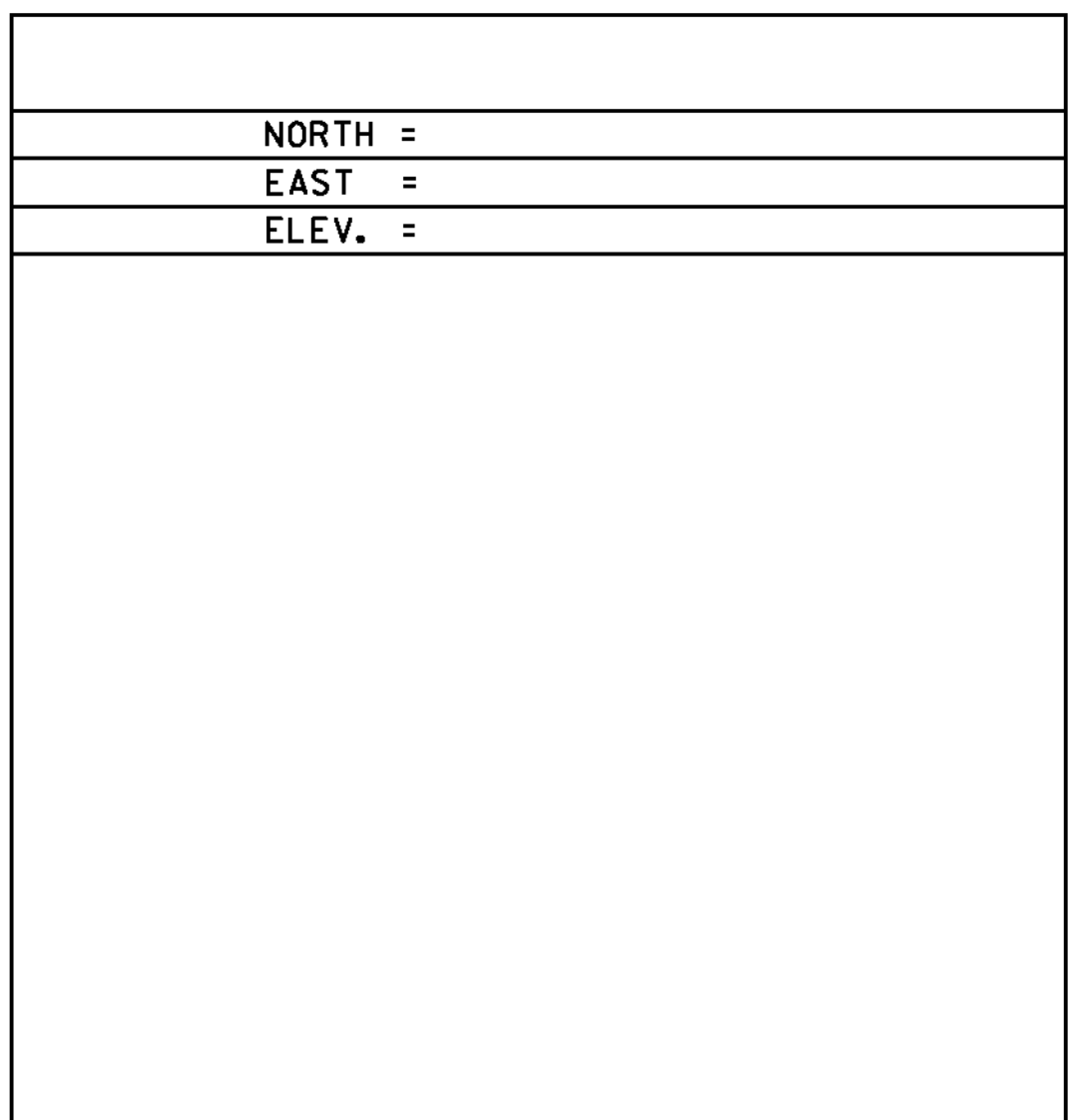
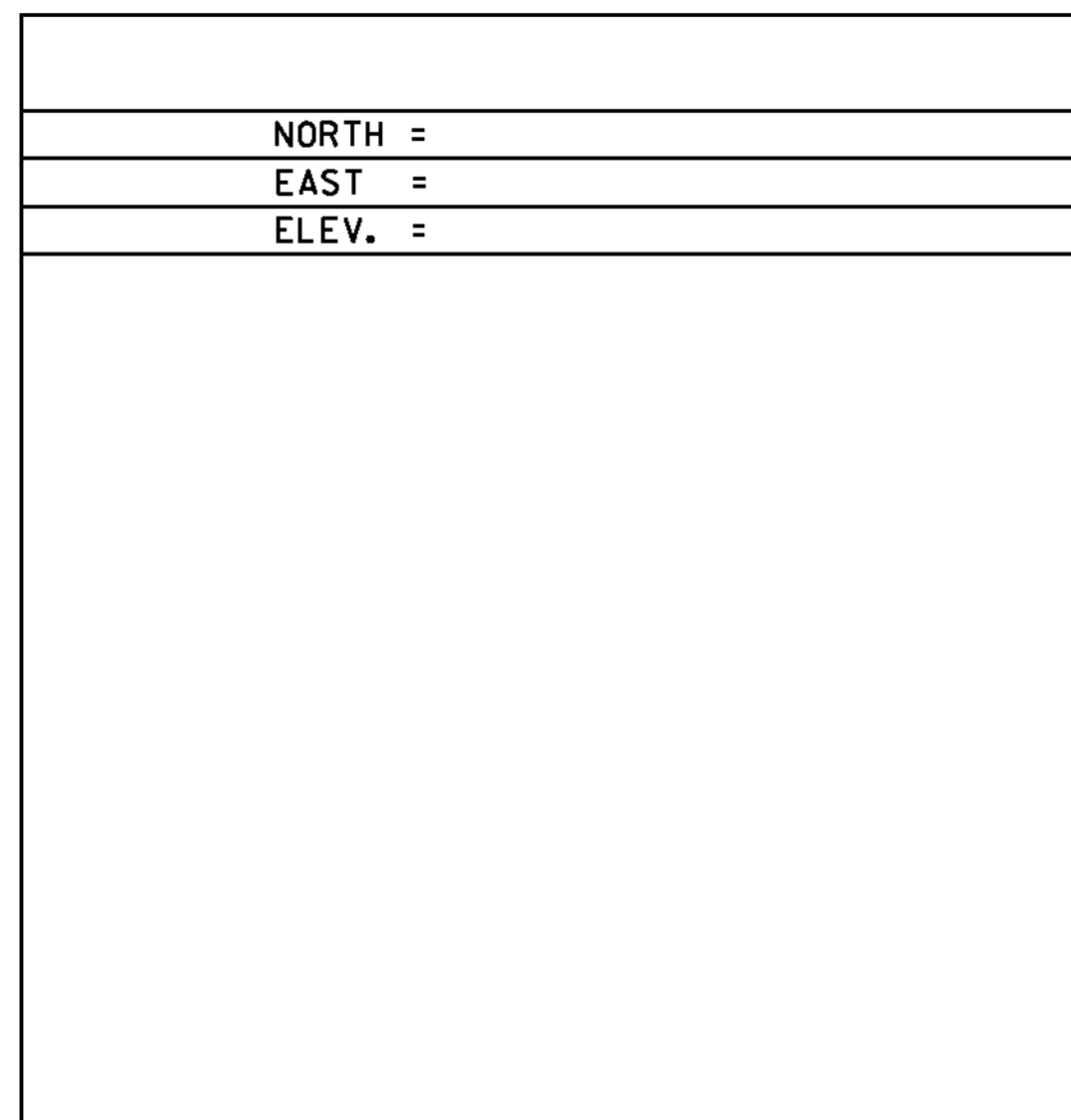
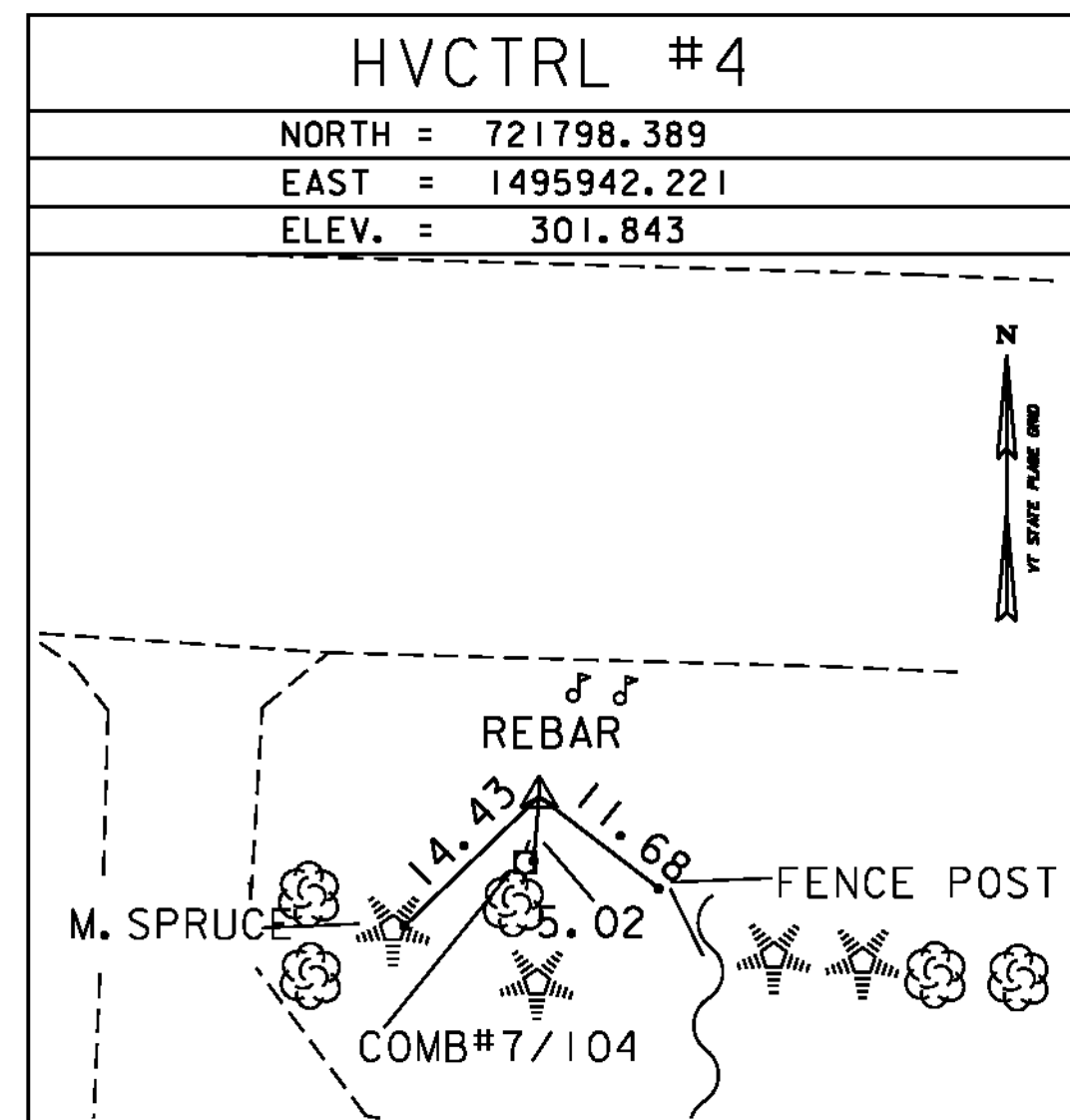
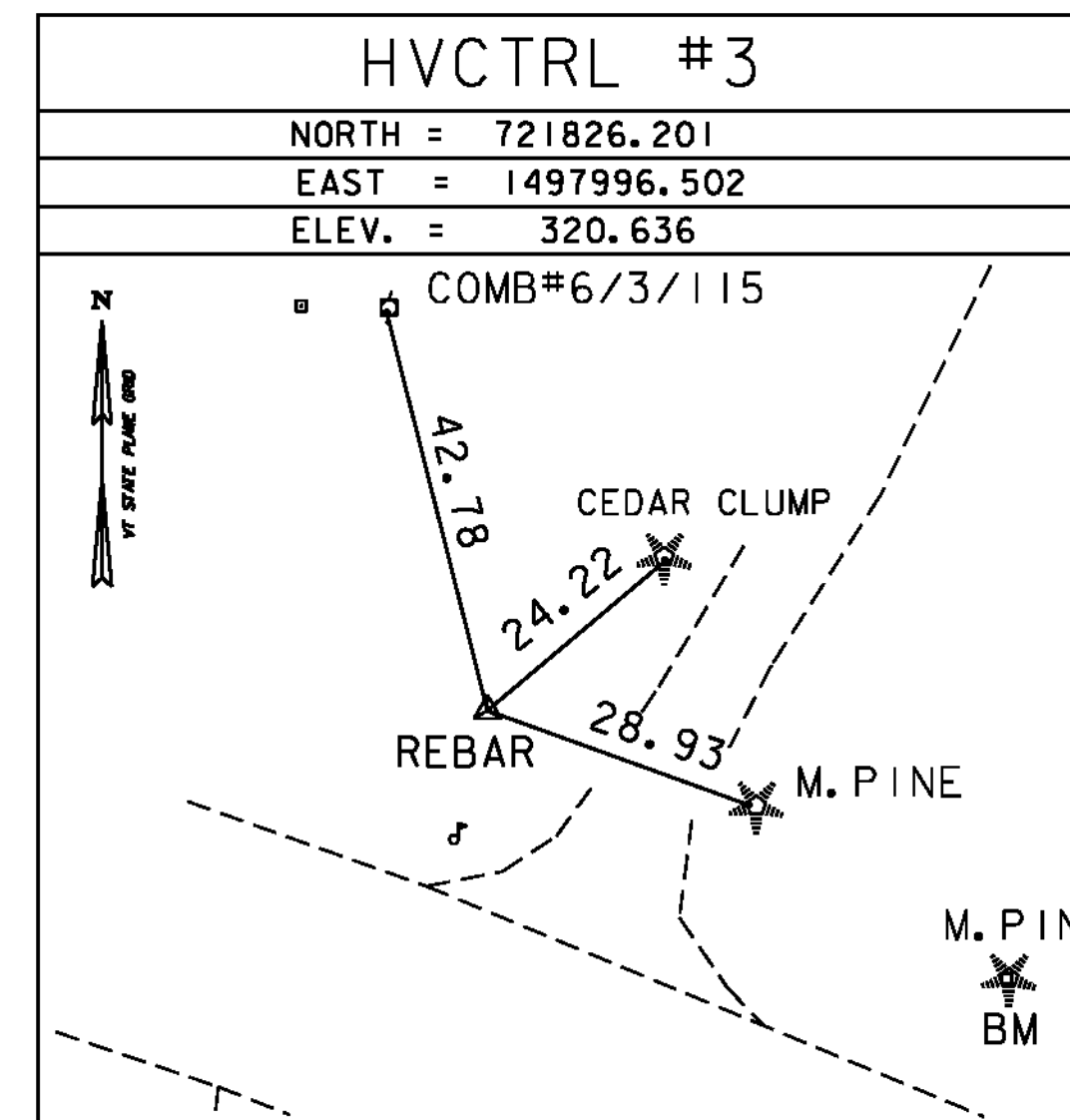
HVCTRL #1
 CGS TRIANGULATION STATION DISC
 "SAND HILL AZ"
 NORTH = 721888.412
 EAST = 1494838.808
 ELEV. = 300.229

GENERAL LOCATION, ESSEX, VT. OWNERSHIP, ROBIN K. RUSSELL, 191 RIVER ROAD, ESSEX JUNCTION, VT 05452. TO REACH FROM THE INTERSECTION OF VT ROUTE 117 AND THE VT ROUTE 289 OFF RAMP AT A TRAFFIC LIGHT GO EAST ALONG VT ROUTE 117 FOR 0.7 MI (1.1 KM) TO THE INTERSECTION OF GREENFIELD ROAD LEFT. CONTINUE STRAIGHT AHEAD AND GO EAST ALONG VT ROUTE 117 FOR 0.05 MI (0.08 KM) TO THE SITE OF THE MARK ON THE LEFT IN A LAWN IN FRONT OF HOUSE NO 191. THE MARK IS SET FLUSH WITH THE GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.4 M (4.6 FT) DEEP. IT IS 9.4 M (30.8 FT) NORTH OF AND ABOUT 0.4 M (1.3 FT) HIGHER THAN THE CENTERLINE OF VT ROUTE 117, 5.0 M (16.4 FT) EAST OF THE CENTERLINE OF A GRAVEL DRIVE WHICH LEADS TO HOUSE NO 191, 25.0 M (82.0 FT) SOUTHWEST OF THE SOUTHEAST CORNER OF HOUSE NO 191, 23.5 M (77.1 FT) SOUTH SOUTHEAST OF THE SOUTHWEST CORNER OF THE ATTACHED GARAGE ON HOUSE NO 191, AND 17.3 M (56.8 FT) EAST OF POLE NO 99X/12-01.

HVCTRL #2
 VTAT SURVEY DISC
 "SAND HILL"
 NORTH = 721774.180
 EAST = 1496663.400
 ELEV. = 303.740

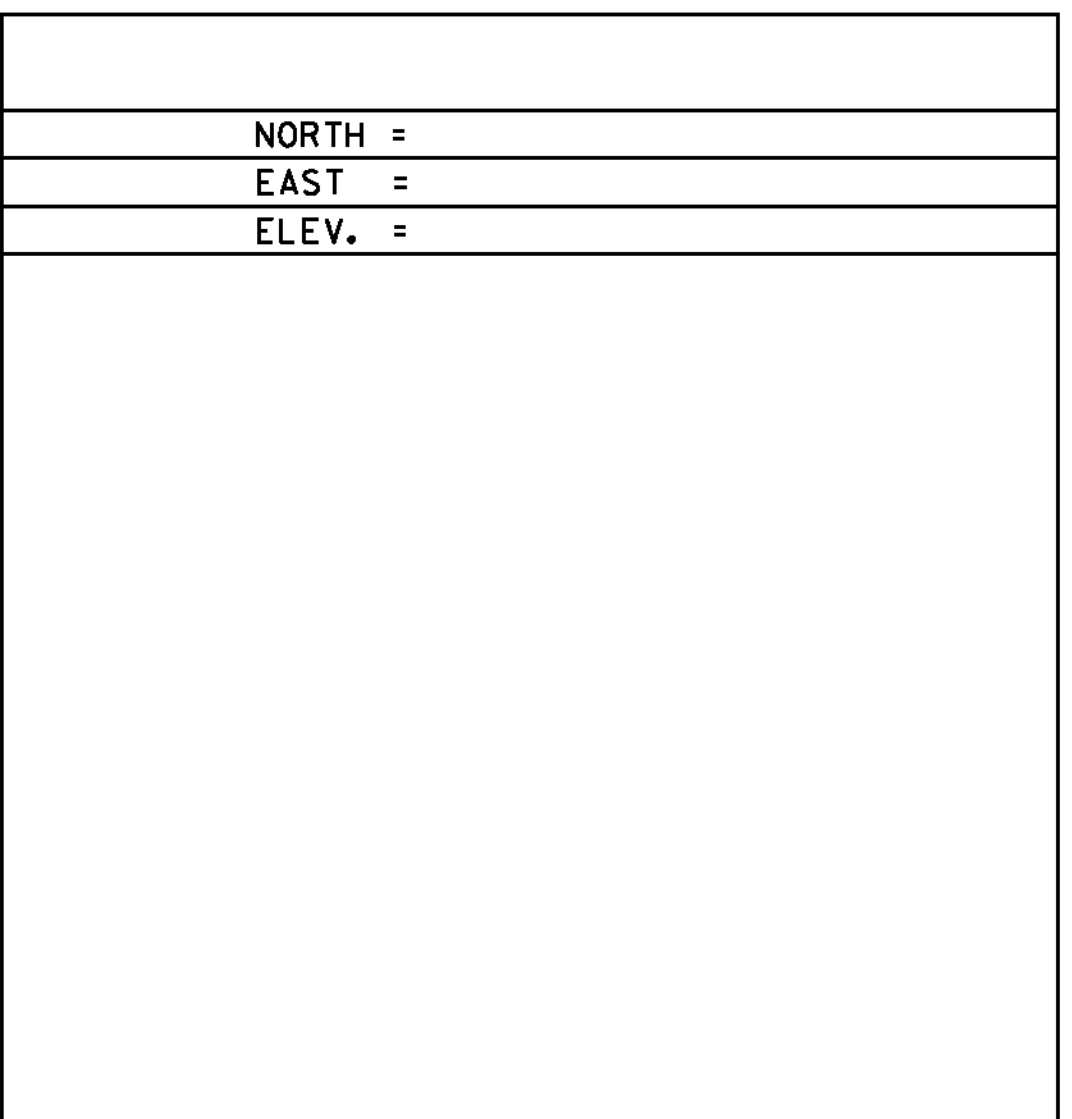
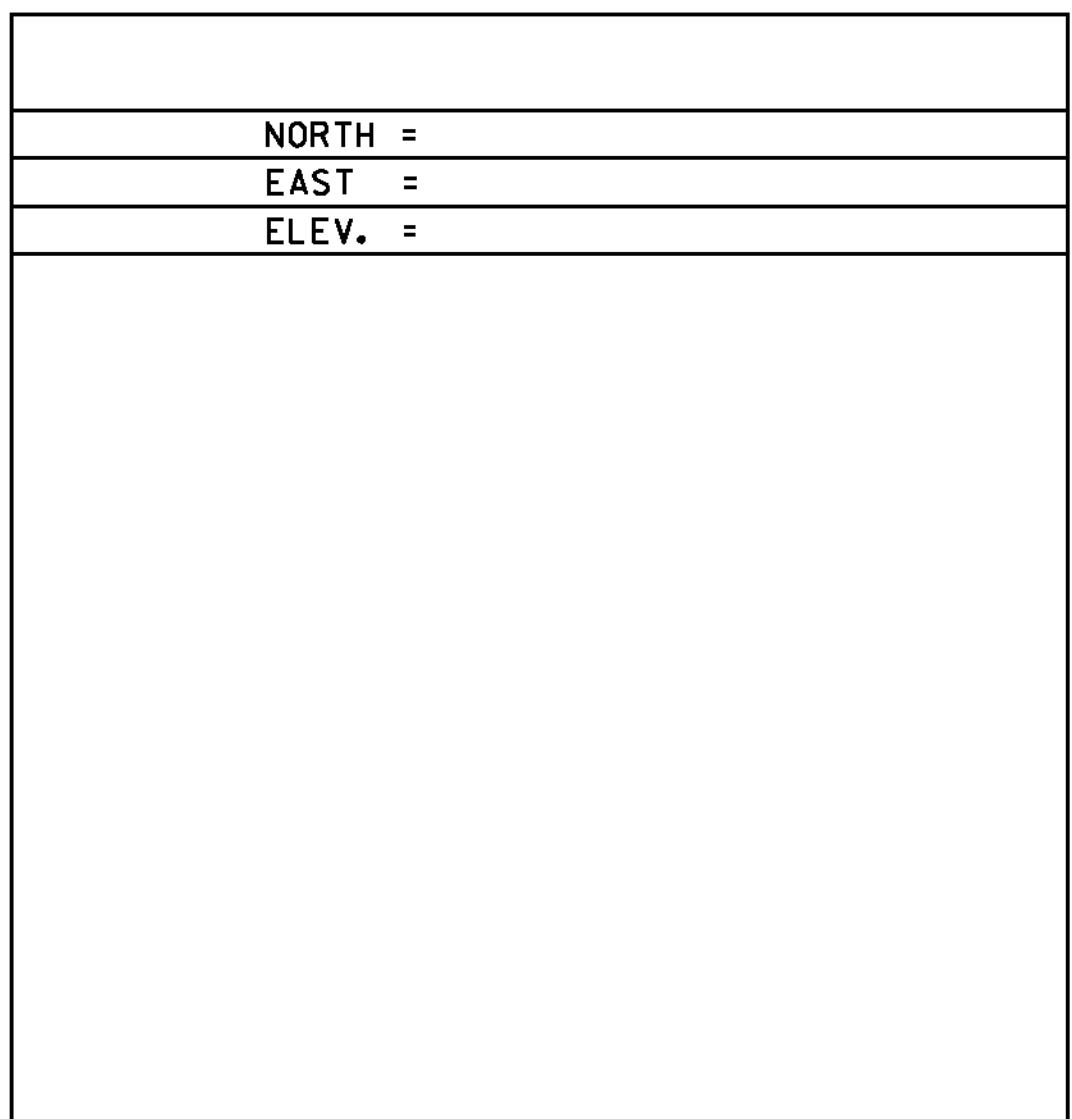
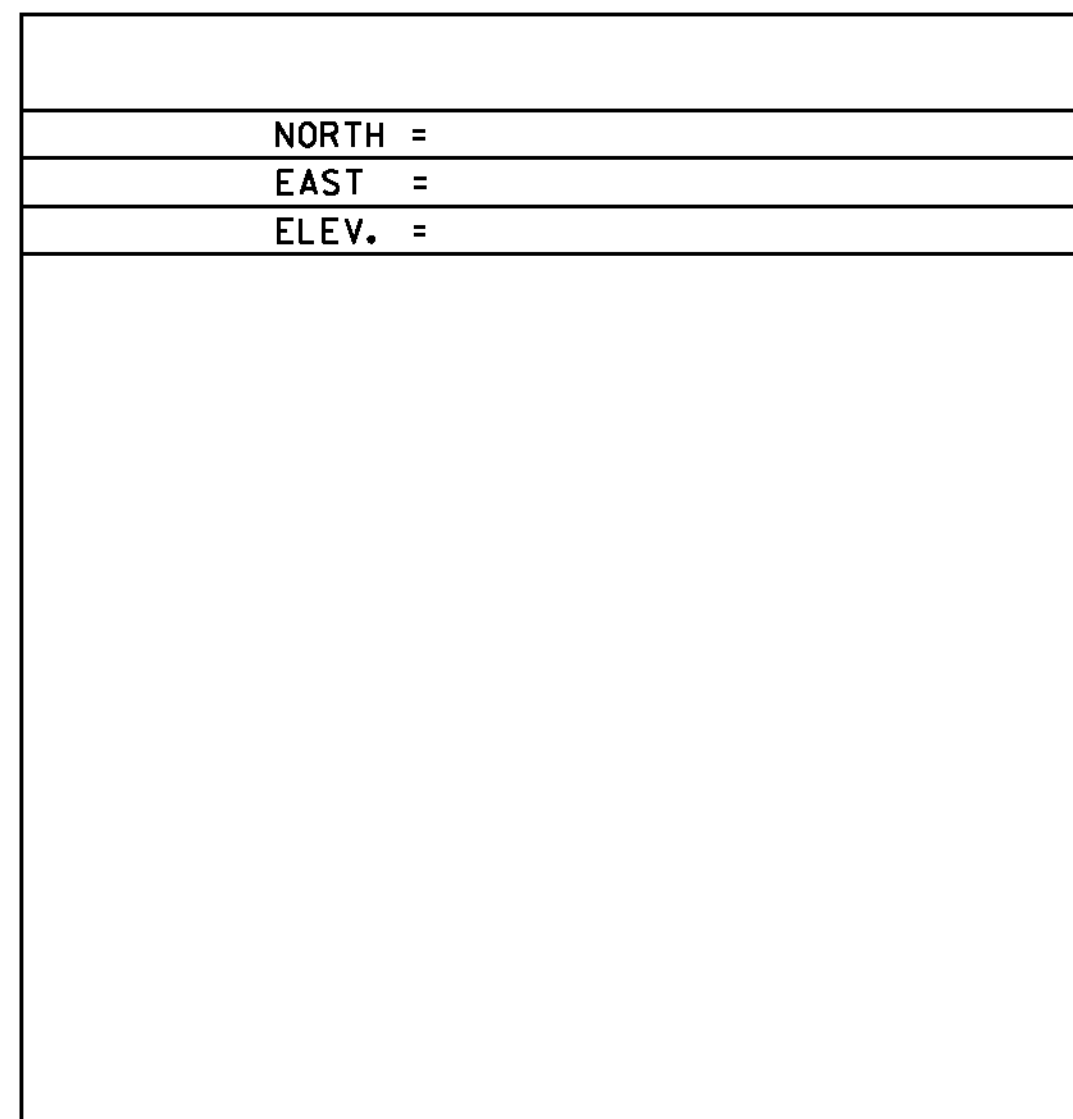
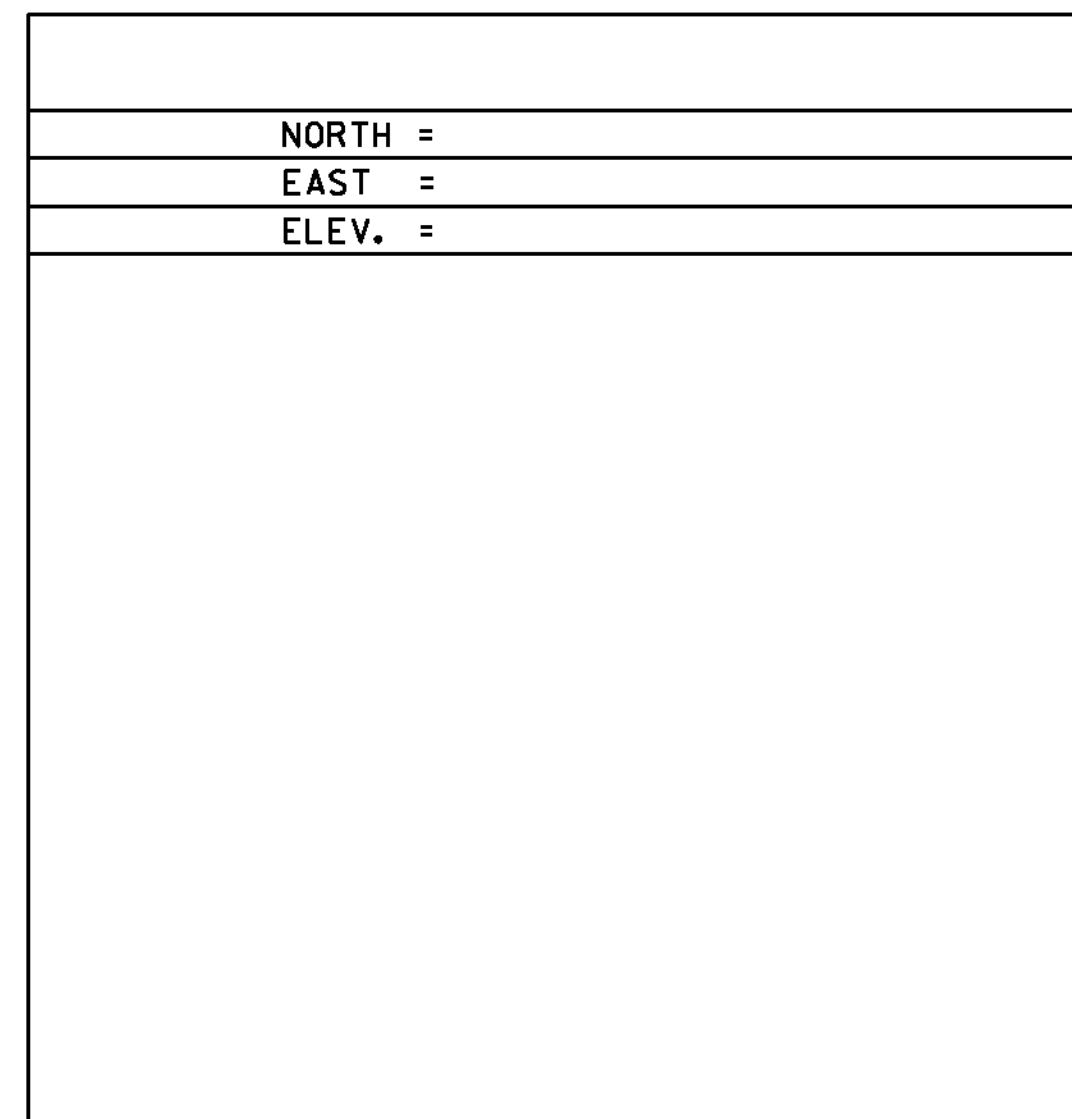
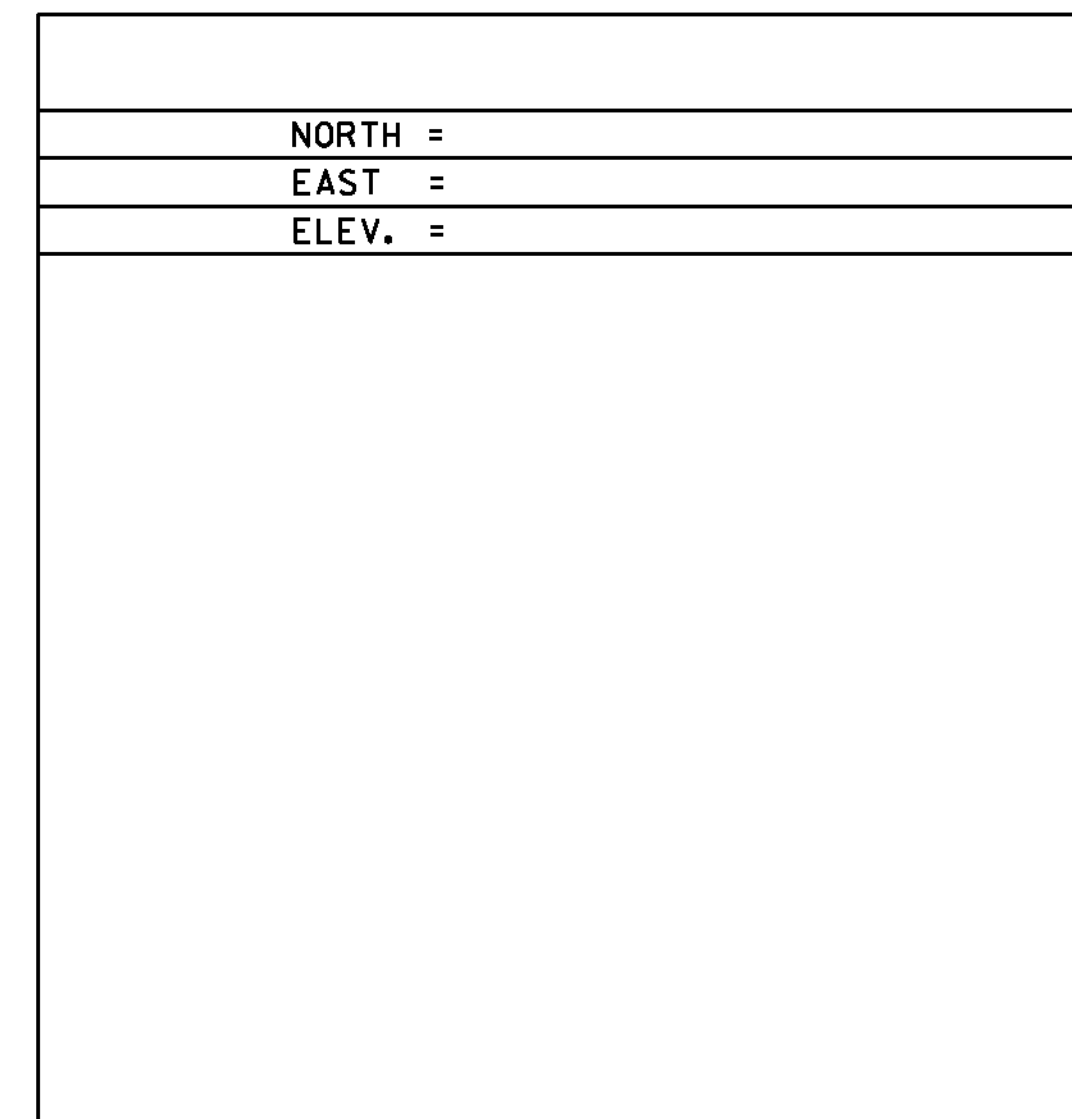
GENERAL LOCATION, ESSEX, VT. OWNERSHIP, RON SIEGRIEST, 228 RIVER ROAD, ESSEX JUNCTION, VT 05452. TO REACH FROM THE INTERSECTION OF VT ROUTE 117 AND THE VT ROUTE 289 OFF RAMP AT A TRAFFIC LIGHT GO EAST ALONG VT ROUTE 117 FOR 1.1 MI (1.8 KM) TO THE SITE OF THE MARK ON THE RIGHT IN A LAWN. IT IS ABOUT 0.1 MI (0.2 KM) WEST OF THE INTERSECTION OF VT ROUTE 117 AND SAND HILL ROAD. THE MARK IS SET FLUSH WITH THE GROUND SURFACE IN THE TOP OF A 30 CM DIAMETER CONCRETE MONUMENT POURED 1.4 M (4.6 FT) DEEP. IT IS 8.2 M (26.9 FT) SOUTH OF AND ABOUT 0.5 M (1.6 FT) LOWER THAN THE CENTERLINE OF VT ROUTE 117, 12.0 M (39.4 FT) WEST OF THE CENTERLINE OF A PAVED DRIVE WHICH LEADS TO HOUSE NO 228, 22.0 M (72.2 FT) NORTHEAST OF THE NORTHEAST CORNER OF HOUSE NO 226, AND 23.0 M (75.5 FT) EAST OF POLE NO 3/107.

TRAVERSE TIES



* MAIN TRAVERSE COMPLETED: FEB. 27, 2002 BY R. GILMAN PC, P. WINTERS, & D. BREER

ALIGNMENT TIES



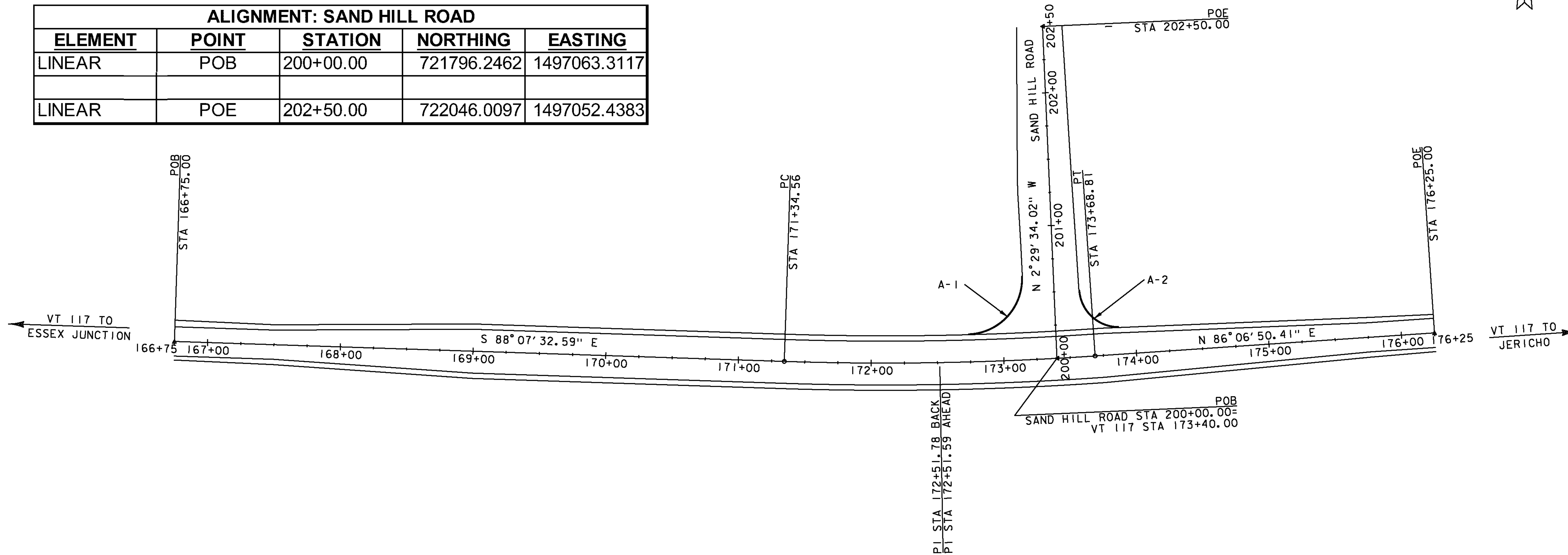
DATUM
 VERTICAL NAVD 88
 HORIZONTAL NAD 83 (96)
 ADJUSTMENT Compass

PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)
 FILE NAME: +97d002frm.dgn PLOT DATE: 24-AUG-2012
 PROJECT LEADER: J. SCHULTZ DRAWN BY: R. BULLOCK
 DESIGNED BY: D. LYMAN CHECKED BY: P. HODGE
 TIE SHEET SHEET 17 OF 64

ALIGNMENT: VT ROUTE 117				
ELEMENT	POINT	STATION	NORTHING	EASTING
LINEAR	POB	166+75.00	721808.9524	1496398.6396
CURVE #1	PC	171+34.56	721793.9219	1496857.9513
	PI	172+51.78	721790.0880	1496975.1115
	PT	173+68.81	721798.0323	1497092.0650
LINEAR	POE	176+25.00	721815.3948	1497347.6670

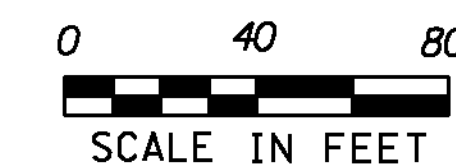
CURVE #1 DATA:	
RADIUS:	2330.00'
Δ:	5° 45' 36.99" LT.
Dc:	2° 27' 32.57"
LENGTH:	234.25'
TANGENT:	117.22'
EXTERNAL:	2.95'
BANK:	0.032

ALIGNMENT: SAND HILL ROAD				
ELEMENT	POINT	STATION	NORTHING	EASTING
LINEAR	POB	200+00.00	721796.2462	1497063.3117
LINEAR	POE	202+50.00	722046.0097	1497052.4383

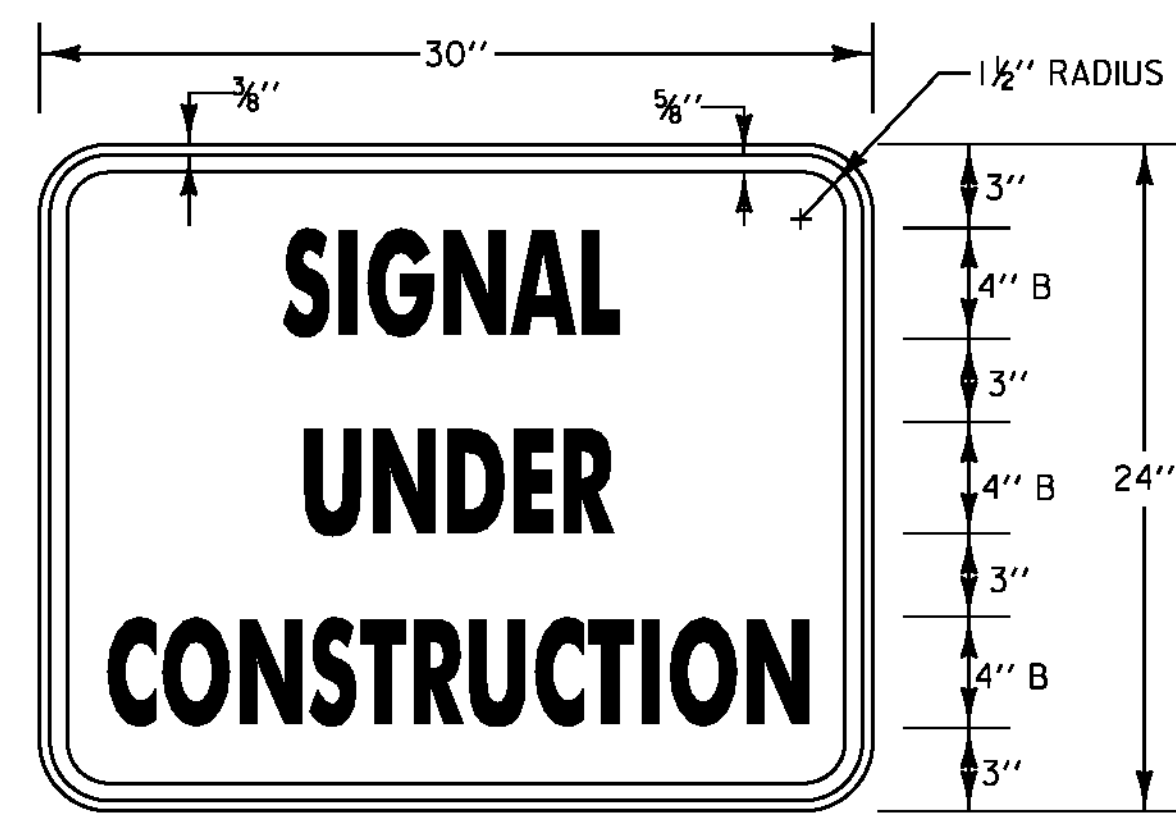
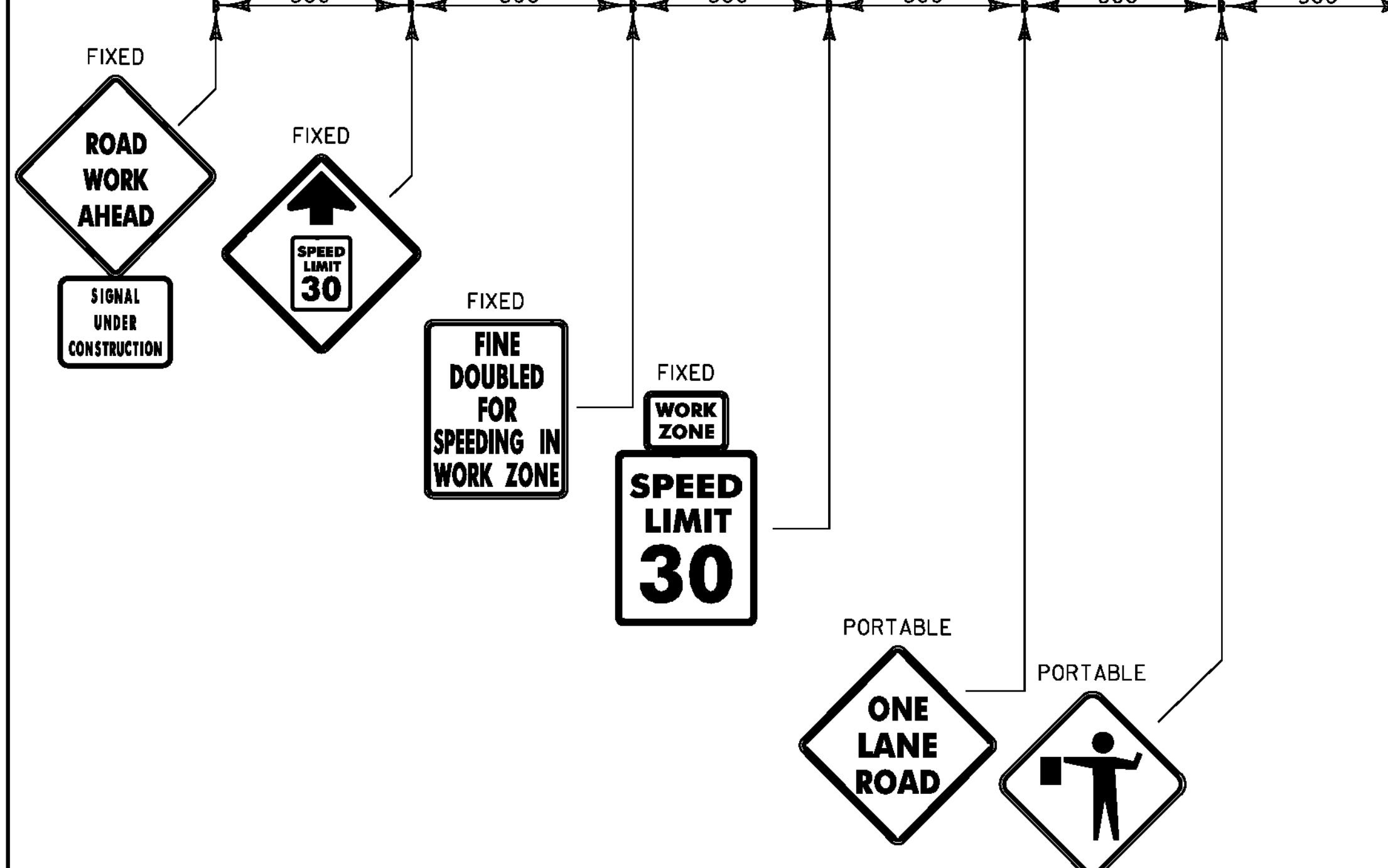
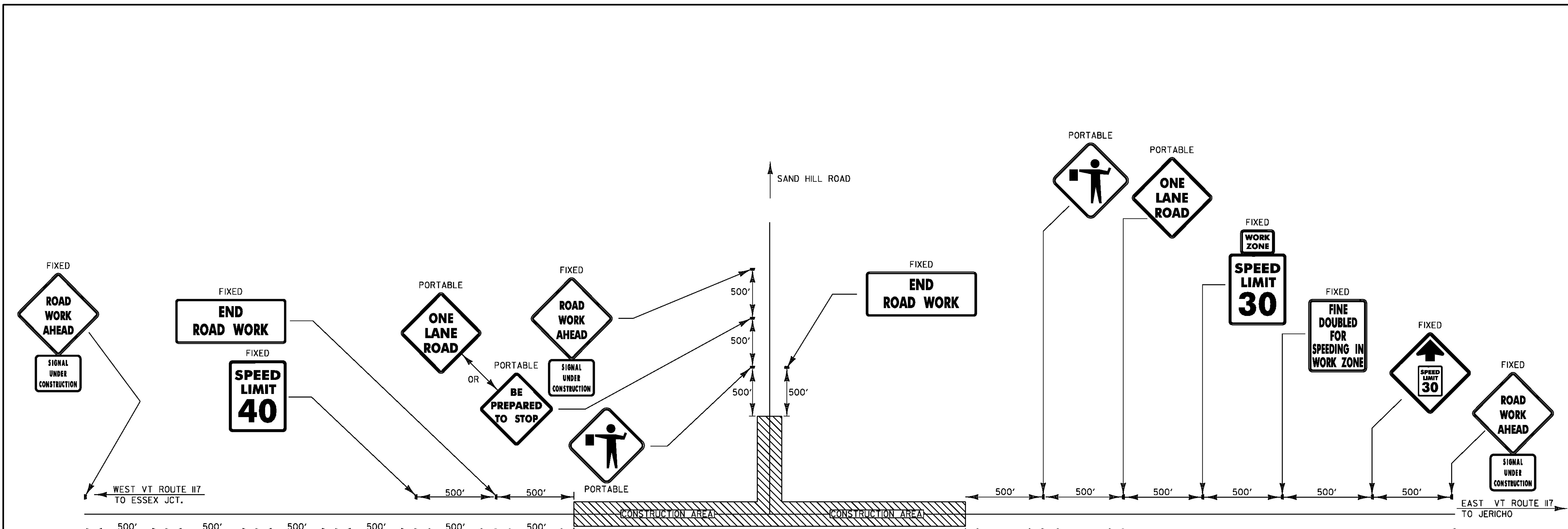


ROADWAY CURB LOCATIONS										
Curb ID	Type	Begin			End			Radius	Length	Remarks
		Station	Offset	Location	Station	Offset	Location			
Roadway Curbing										
A-1	Vertical	174+72.00	20.60'	LT.	200+62.94	23.43'	LT.	42.00'	66.44'	Taper to 1" reveal per Std. C-10 at Begin Station, match existing curb at End Station
A-2	Vertical	173+88.00	20.24'	LT.	200+50.37	18.85'	RT.	30.00'	44.97'	Taper to 1" reveal per Std. C-10 at Begin Station, match existing curb at End Station

*All Station & Offsets are at the face of curb.



PROJECT NAME:	ESSEX TOWN	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	DRAWN BY:	D. LYMAN
FILE NAME:	+97d002allgn.dgn	CHECKED BY:	J. DEVLIN
PROJECT LEADER:	J. SCHULTZ	ALIGNMENT AND CURB LAYOUT SHEET	SHEET 18 OF 64
DESIGNED BY:	D. LYMAN		



MATERIALS: SEE STD. E-144
 COLORS: TEXT & BORDER - BLACK
 BACKGROUND - ORANGE (RETROREFLECTIVE SHEETING)

CONSTRUCTION SIGN DETAIL
 NOT TO SCALE

- NOTES:**
1. ALL SIGNS SHALL BE PAID FOR UNDER ITEM 641.10 - TRAFFIC CONTROL.
 2. NO CONSTRUCTION SIGN SHALL BE INSTALLED AS TO INTERFERE OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES, STOPPING SIGHT DISTANCE, AND CORNER SIGHT DISTANCE FROM DRIVES AND INTERSECTING ROADS.
 3. ALL PERMANENT SIGNS THAT CONFLICT WITH TEMPORARY TRAFFIC CONTROL SHALL BE COMPLETELY COVERED DURING CONSTRUCTION.
 4. THE CONTRACTOR SHALL PROVIDE THREE (3) PORTABLE CHANGEABLE MESSAGE SIGNS FOR THE DURATION OF THE PROJECT. THE LOCATION AND MESSAGE CONTENT SHALL BE DETERMINED IN THE FIELD BY THE RESIDENT ENGINEER.

CONSTRUCTION APPROACH SIGNING
 NOT TO SCALE
 SEE STD E-100 FOR SIGN PLACEMENT

PROJECT NAME: ESSEX TOWN	PLOT DATE: 24-AUG-2012
PROJECT NUMBER: STP 5400 (5)	DRAWN BY: D. LYMAN
FILE NAME: +97d002frm.dgn	CHECKED BY: J. DEVLIN
PROJECT LEADER: J. SCHULTZ	SHEET 19 OF 64
DESIGNED BY: D. LYMAN	
CONSTRUCTION APPROACH SIGNING	

210.10 COLD PLANING, BITUMINOUS CONCRETE PAVEMENT
 STA 166+75.00 - 171+50.00

CONSTRUCT DRIVES
 STA 167+03.00 LT (13.8' - PAVED)
 STA 167+96.00 LT (10.9' - PAVED)
 STA 167+98.00 RT (19.2' - PAVED)
 STA 168+98.00 LT (21.8' - PAVED)
 STA 169+80.00 RT (10.0' - PAVED)
 STA 170+05.00 LT (22.3' - PAVED)
 STA 170+56.00 RT (12.2' - PAVED)

401.10 AGGREGATE SURFACE COURSE
 STA 167+06.00 RT (22.0' - GRAVEL DRIVE)
 STA 169+04.00 RT (10.4' - GRAVEL DRIVE)
 STA 171+12.00 LT (28.2' - GRAVEL DRIVE)

900.675 SPECIAL PROVISION
 (HAND PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES)
 STA 167+06.00 RT (PAVED DRIVE APRON)
 STA 169+04.00 RT (PAVED DRIVE APRON)
 STA 171+12.00 LT (PAVED DRIVE APRON)

617.10 RELOCATE MAILBOX, SINGLE SUPPORT
 STA 168+78.37 RT 170+75 RT
 STA 168+79.95 RT
 STA 168+82.50 RT

617.12 RELOCATE MAILBOX, MULTIPLE SUPPORT
 STA 167+73.83 RT STA 168+78 RT
 STA 170+17.16 RT STA 171+13 RT
 STA 170+76.00 RT

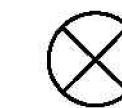
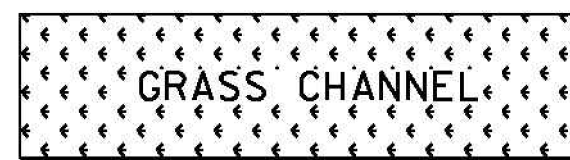
NEW DRAINAGE
 ① STA 167+15.00 LT - 166+90.00 LT
 NEW 15" X 25' PCCSP/GPEP
 ② STA 168+18.00 LT - 167+75.00 LT
 NEW 15" X 43' PCCSP/GPEP
 ③ STA 169+20.00 LT - 168+75.00 LT
 NEW 15" X 45' PCCSP/GPEP
 ④ STA 170+25.00 LT - 169+85.00 LT
 NEW 15" X 40' PCCSP/GPEP

EXISTING DRAINAGE
 ① STA 166+94.09 LT - 167+13.93 LT
 EXISTING 18" X 20' CGMP = REMOVE
 ② STA 167+86.59 LT - 168+06.53 LT
 EXISTING 15" X 20' CGMP = REMOVE
 ③ STA 168+82.53 LT - 169+12.57 LT
 EXISTING 15" X 30' CGMP = REMOVE
 ④ STA 169+88.96 LT - 170+18.86 LT
 EXISTING 15" X 30' CGMP = REMOVE
 ⑤ STA 170+91.89 LT - 171+29.67 LT
 EXISTING 15" X 38' CPEP = REMOVE

⑥ STA 166+13 - 166+43 LT
 NEW 15" X 30' CPEP

⑦ STA 165+47 - 165+67 LT
 NEW 15" X 20' CPEP

NEW STORMWATER TREATMENT PRACTICE
 GRASS CHANNEL I-A
 DISCHARGE PERMIT #6300-INDS
 STA 167+15.00 LT - 167+75.00 LT
 STA 168+20.00 LT - 168+75.00 LT
 STA 169+20.00 LT - 169+85.00 LT
 STA 170+25.00 LT - 170+80.00 LT

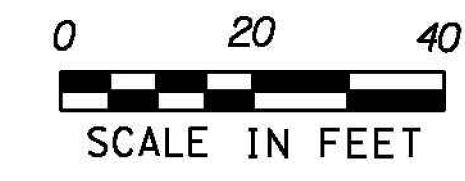
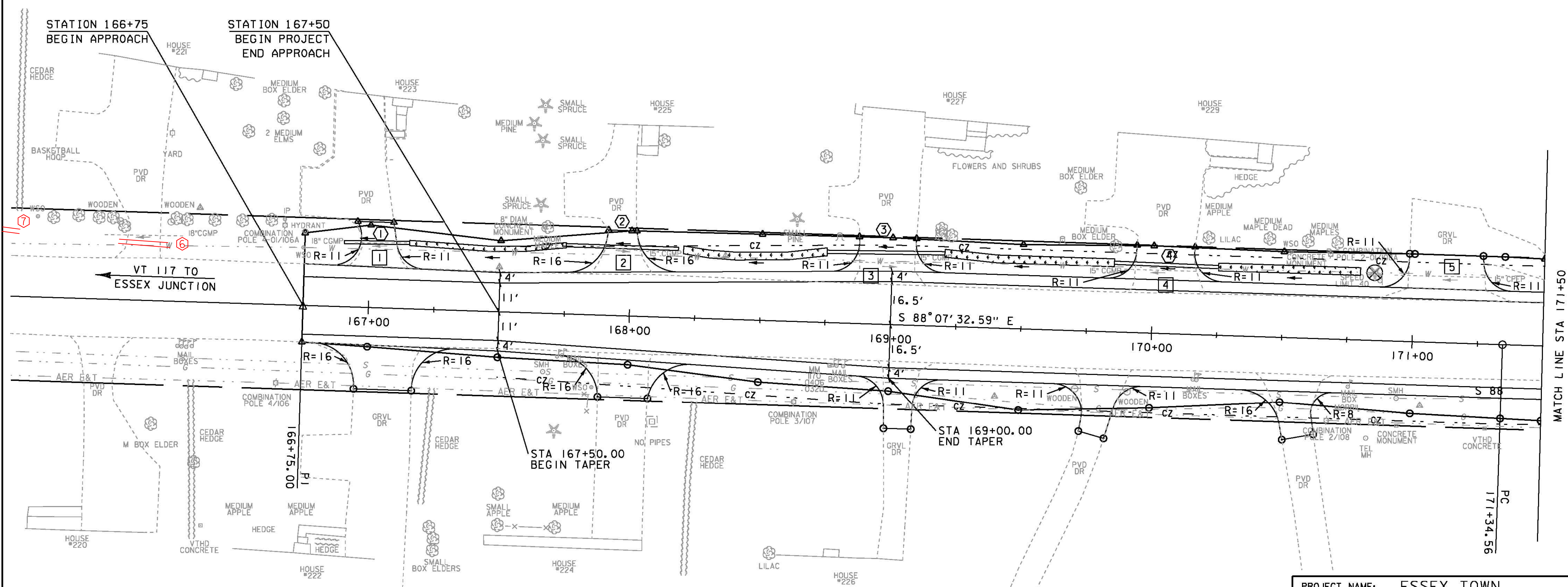
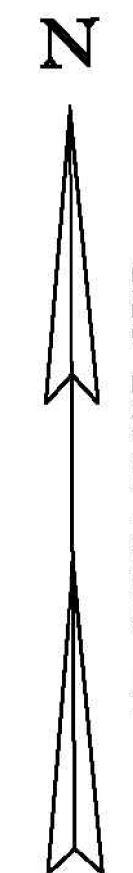


DENOTES TREE OR STUMP
 REMOVAL PAID UNDER ITEM
 NUMBER 201.10 CLEARING
 AND GRUBBING, INCLUDING
 INDIVIDUAL TREES AND
 STUMPS

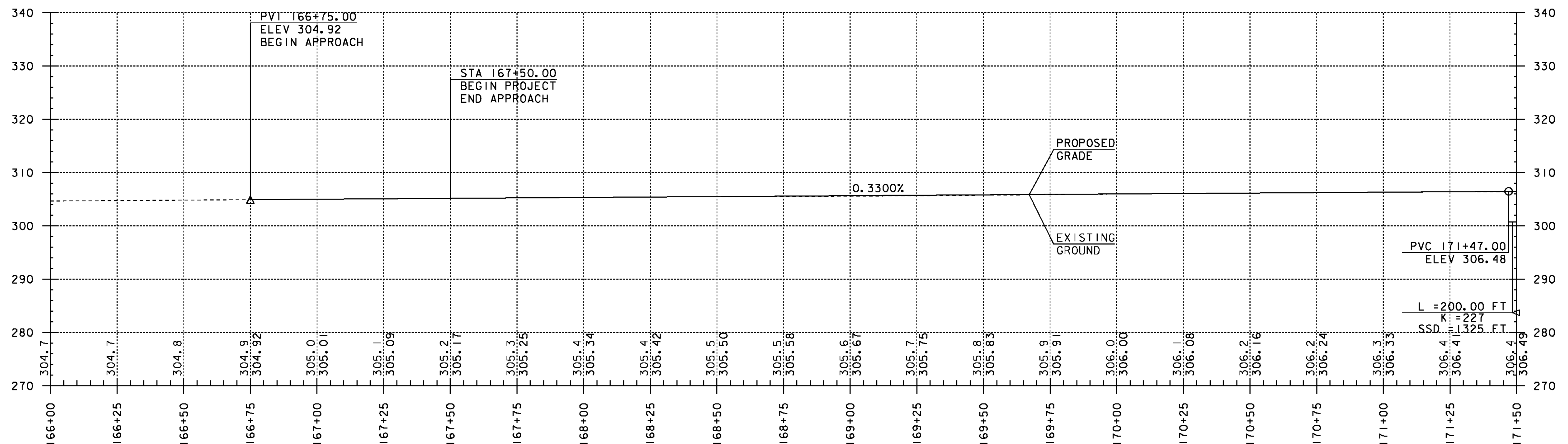
604.42 CHANGING ELEVATION OF SEWER MANHOLES
 STA 170+94.60 RT

629.20 ADJUST ELEVATION OF VALVE BOX
 STA 170+52.67 LT

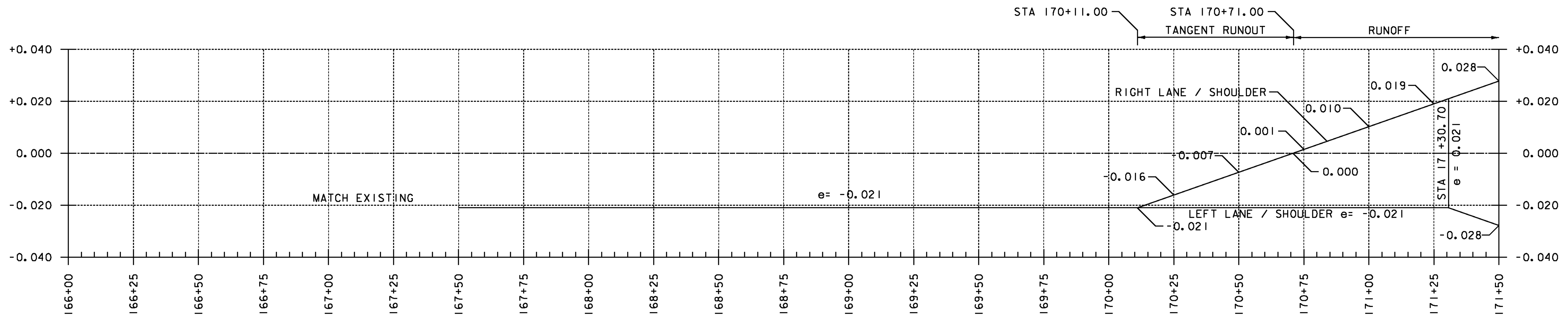
170+35 LT
 171+19 RT



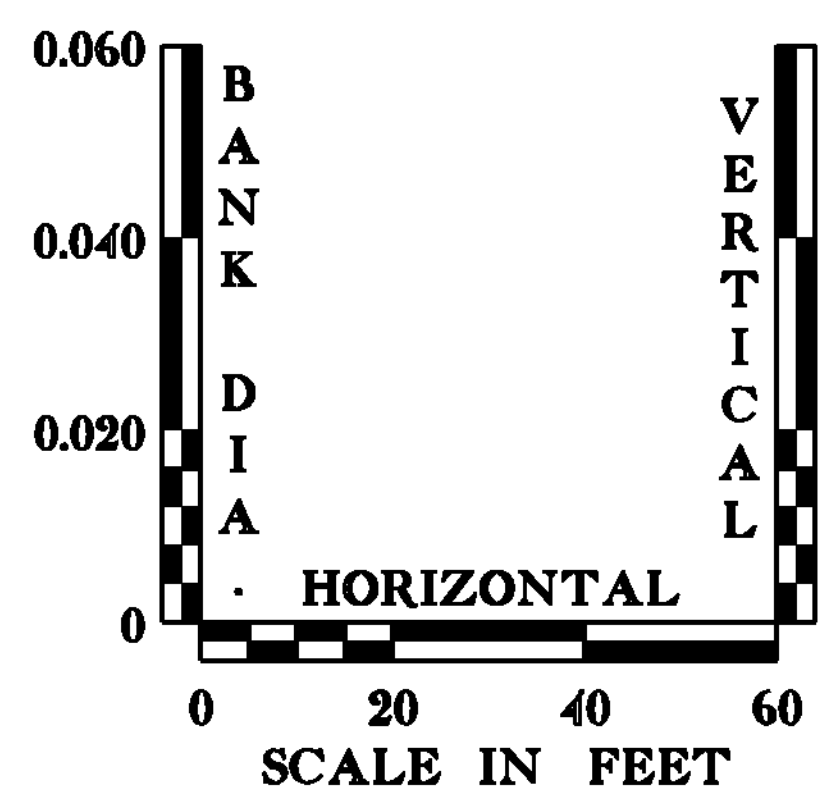
PROJECT NAME:	ESSEX TOWN	FILE NAME:	t97d002bdr.dgn	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	D. LYMAN
		DESIGNED BY:	D. LYMAN	CHECKED BY:	J. DEVLIN
		LAYOUT SHEET 1		SHEET 20	OF 64



PROFILE

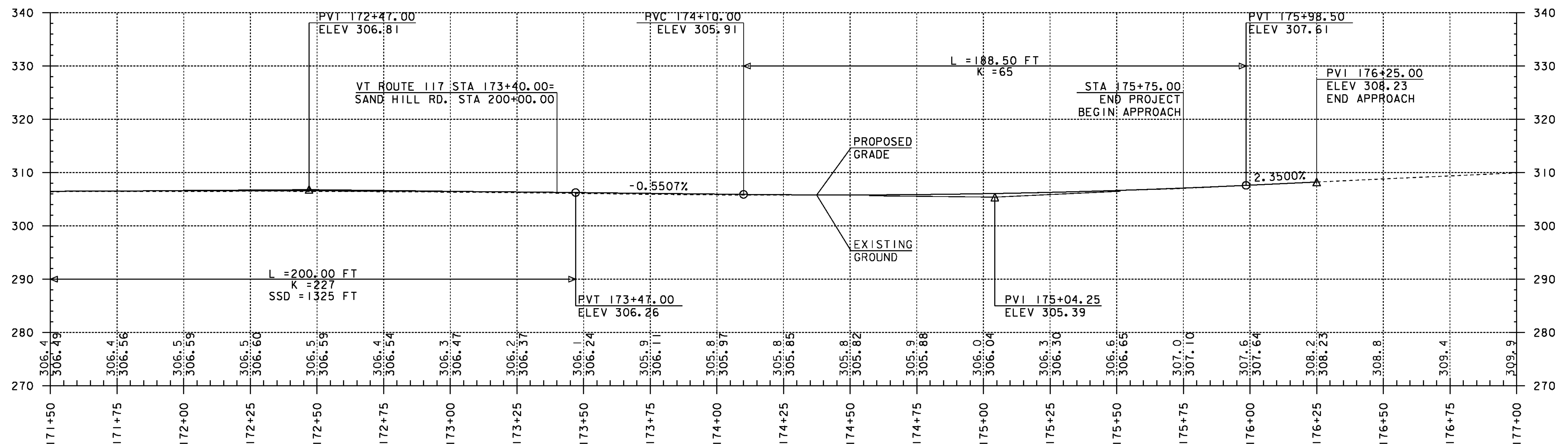


BANKING DIAGRAM

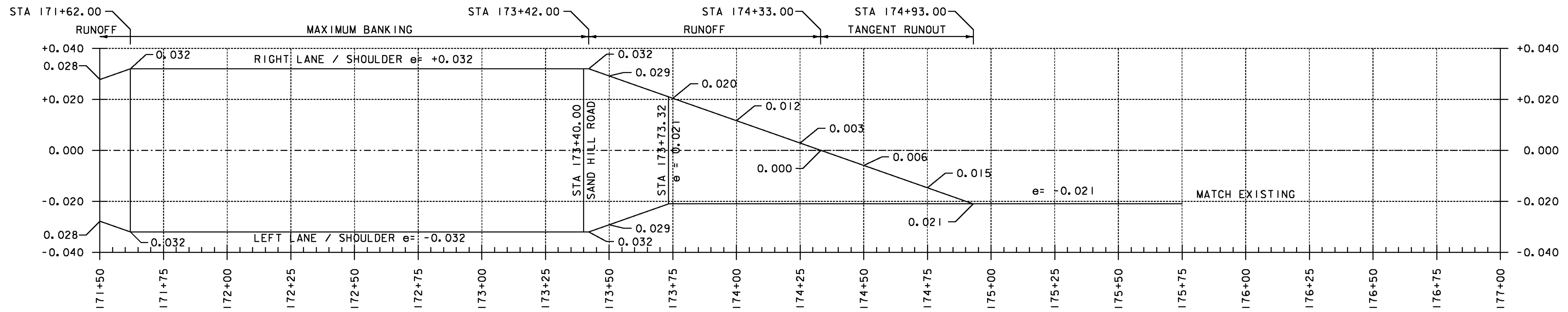


PROJECT NAME:	ESSEX TOWN	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	DRAWN BY:	D. LYMAN
FILE NAME:	+97d002pro.dgn	DESIGNED BY:	D. LYMAN
PROJECT LEADER:	J. SCHULTZ	CHECKED BY:	J. DEVLIN
VT ROUTE 117 - PROFILE SHEET 1		SHEET	21 OF 64

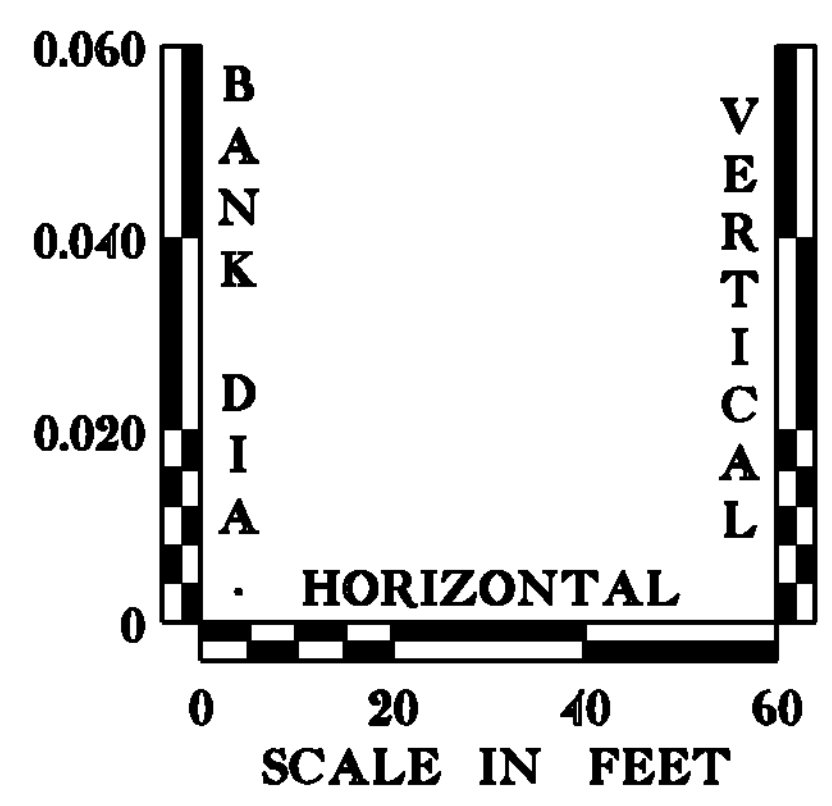
THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE OLD GROUND ALONG PROPOSED CENTERLINE. THE ELEVATIONS SHOWN TO THE NEAREST HUNDRETH ARE THE FINISHED GRADE ALONG THE PROPOSED CENTERLINE.



PROFILE

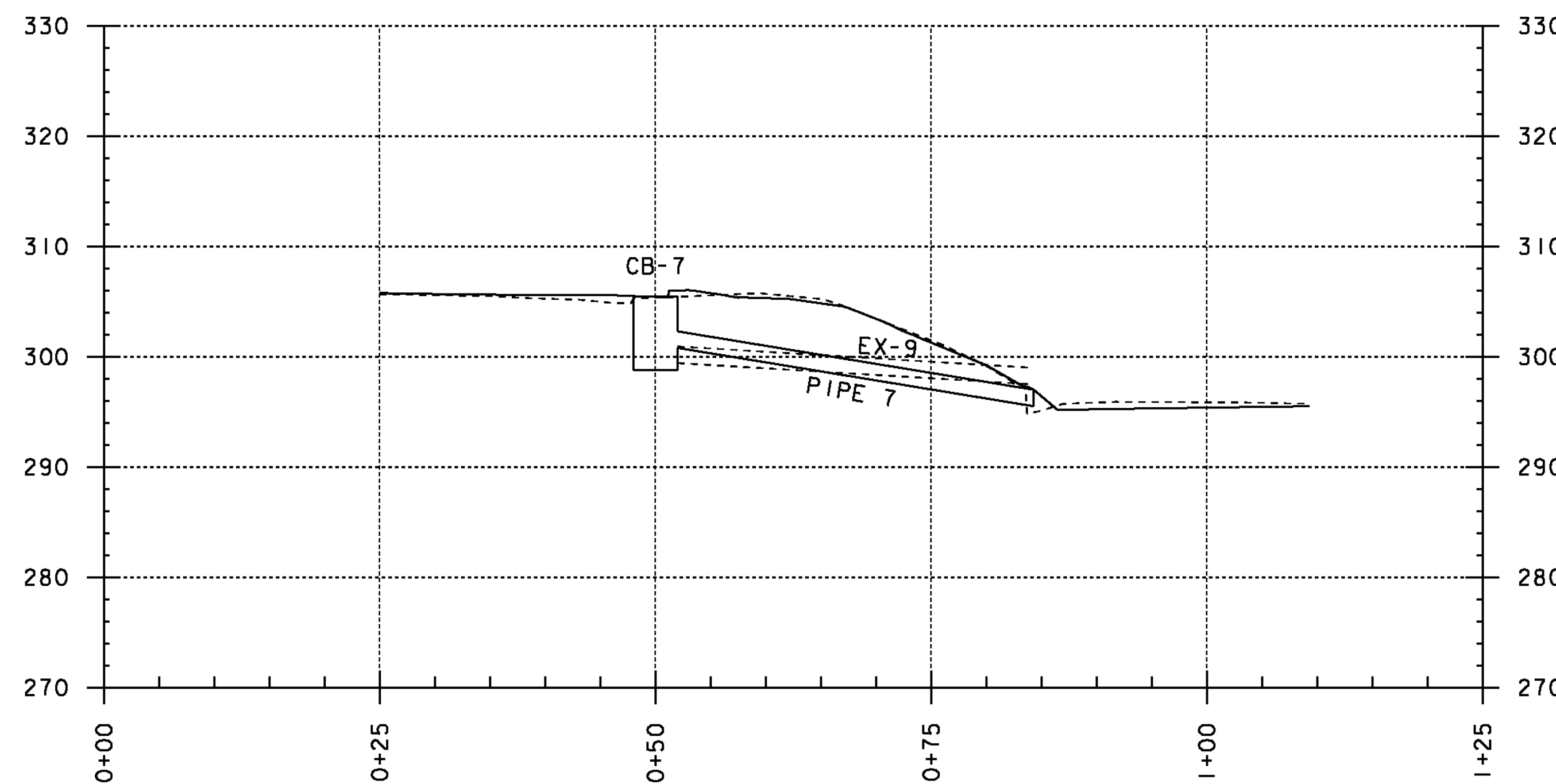
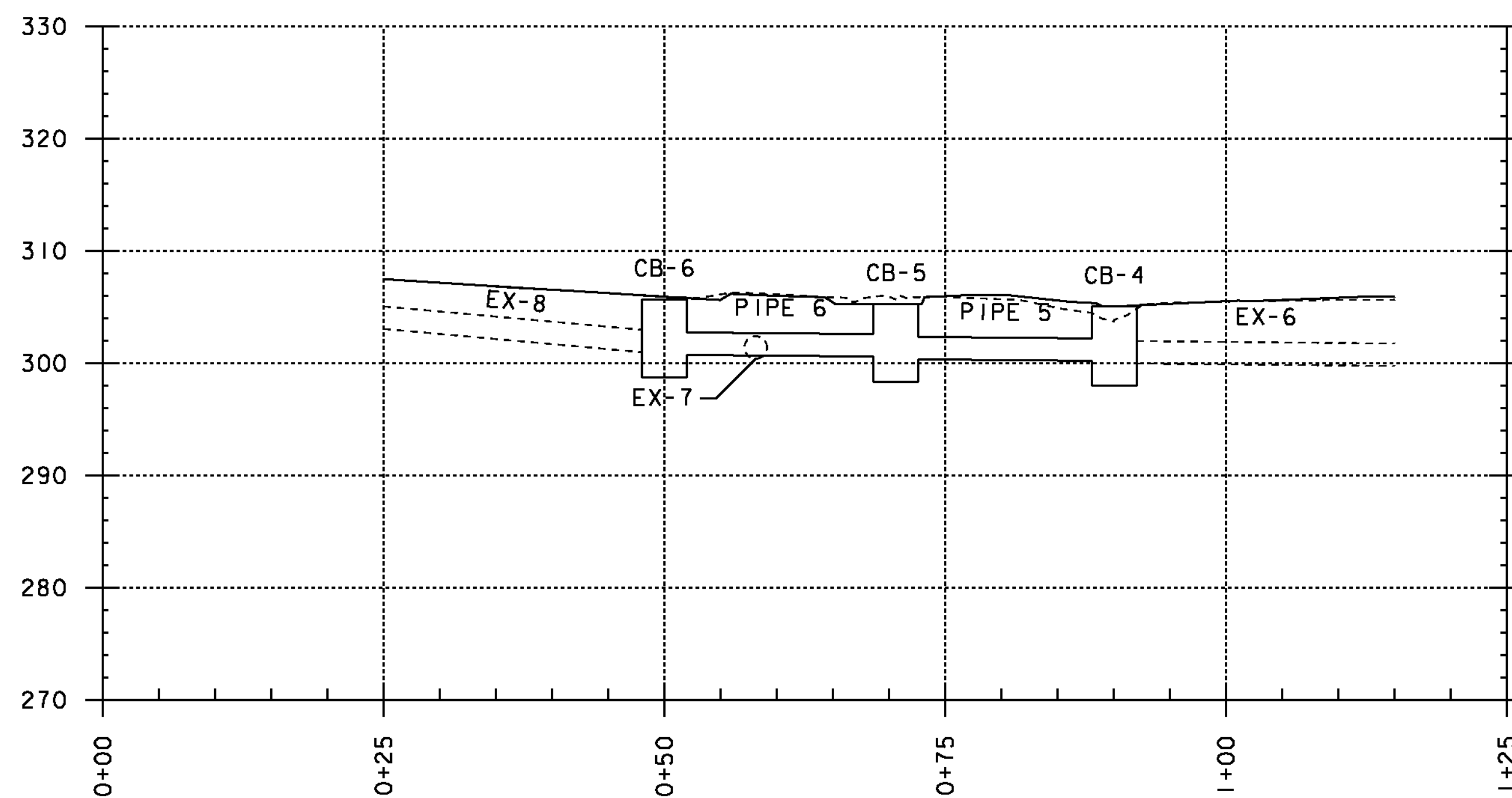


BANKING DIAGRAM



PROJECT NAME:	ESSEX TOWN	FILE NAME:	+97d002pro.dgn	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	D. LYMAN
		DESIGNED BY:	D. LYMAN	CHECKED BY:	J. DEVLIN
		VT ROUTE 117 - PROFILE SHEET 2		SHEET	23 OF 64

THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE THE OLD GROUND ALONG PROPOSED CENTERLINE.
 THE ELEVATIONS SHOWN TO THE NEAREST HUNDRETH ARE THE FINISHED GRADE ALONG THE PROPOSED CENTERLINE.



CB-6
 GRATE TYPE E (1)
 STA 200+45.44 LT
 OFFSET = 25.92'
 RIM ELEV= 305.68'
 DIAMETER= 4.00'
 DEPTH= 6.96'
 SUMP = 2.00'
 INV IN = 300.97'
 INV OUT= 300.72'

CB-5
 GRATE TYPE D (1)
 STA 200+29.01 LT
 OFFSET = 38.54'
 RIM ELEV= 305.27'
 DIAMETER= 4.00'
 DEPTH= 6.94'
 SUMP = 2.00'
 INV IN = 300.58'
 INV OUT= 300.33'

CB-4
 GRATE TYPE A (1)
 STA 172+82.09 LT
 OFFSET = 25.22'
 RIM ELEV= 305.04'
 DIAMETER= 4.00'
 DEPTH= 7.08'
 SUMP = 2.00'
 INV IN = 300.20'
 INV OUT= 299.96'

CB-7
 GRATE TYPE D (1)
 STA 173+72.03 LT
 OFFSET = 24.86'
 RIM ELEV= 305.45'
 DIAMETER= 4.00'
 DEPTH= 6.65'
 SUMP = 2.00'
 INV OUT= 300.80'

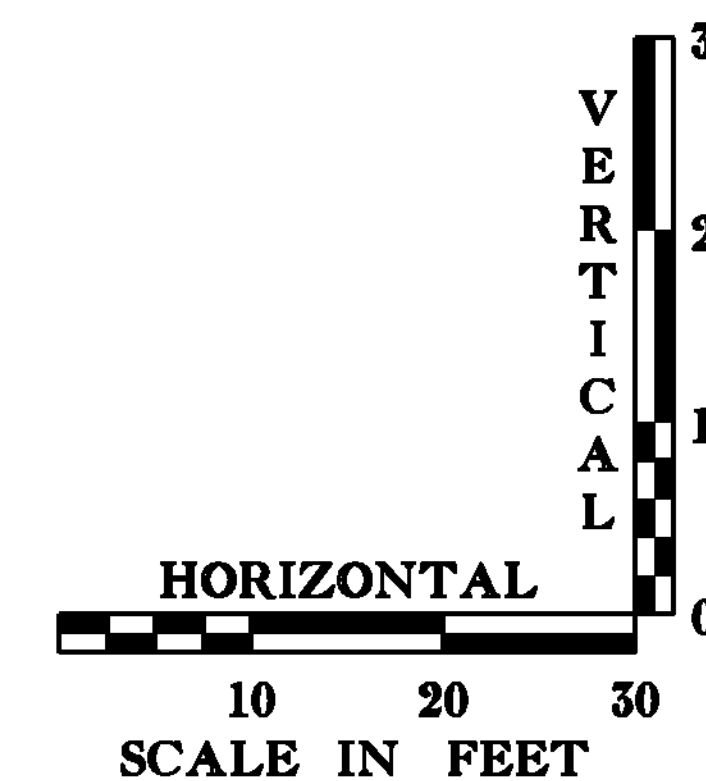
EX-8
 STA 203+00.61 LT-
 STA 200+45.44 LT
 SLOPE= 9.03%
 TYPE: CPEP
 LENGTH= 254.45'
 DIAMETER= 24.00"

PIPE 6
 STA 200+45.44 LT-
 STA 200+29.01 LT
 SLOPE= 0.87%
 TYPE: OPTION PIPE
 LENGTH= 20.64'
 DIAMETER= 24.00"

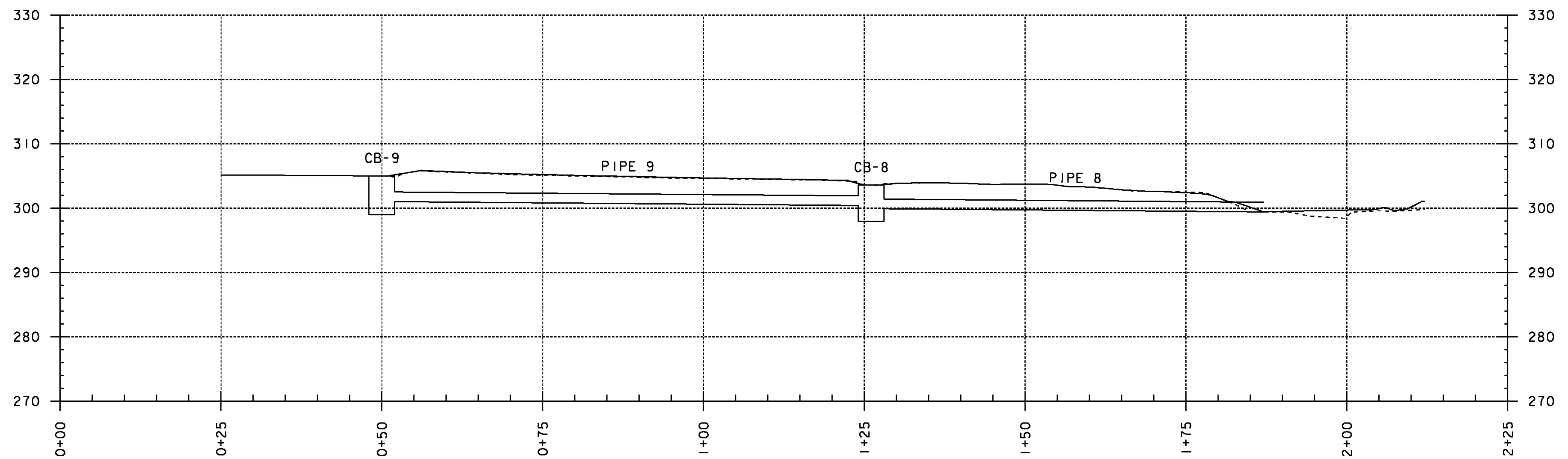
PIPE 5
 STA 200+29.01 LT-
 STA 172+82.09 LT
 SLOPE= 0.87%
 TYPE: OPTION PIPE
 LENGTH= 19.41'
 DIAMETER= 24.00"

EX-6
 STA 172+82.09 LT-
 STA 173+24.58 RT
 SLOPE= 0.95%
 TYPE: RCP
 LENGTH= 85.15'
 DIAMETER= 24.00"

PIPE 7
 STA 173+72.03 LT-
 STA 174+03.62 LT
 SLOPE= 16.39%
 TYPE: OPTION
 LENGTH= 34.29'
 DIAMETER= 18.00"
 INV OUT= 295.51'



PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002pro.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
VT ROUTE 117 - DRAINAGE PROFILE SHEET 1	SHEET 24 OF 64

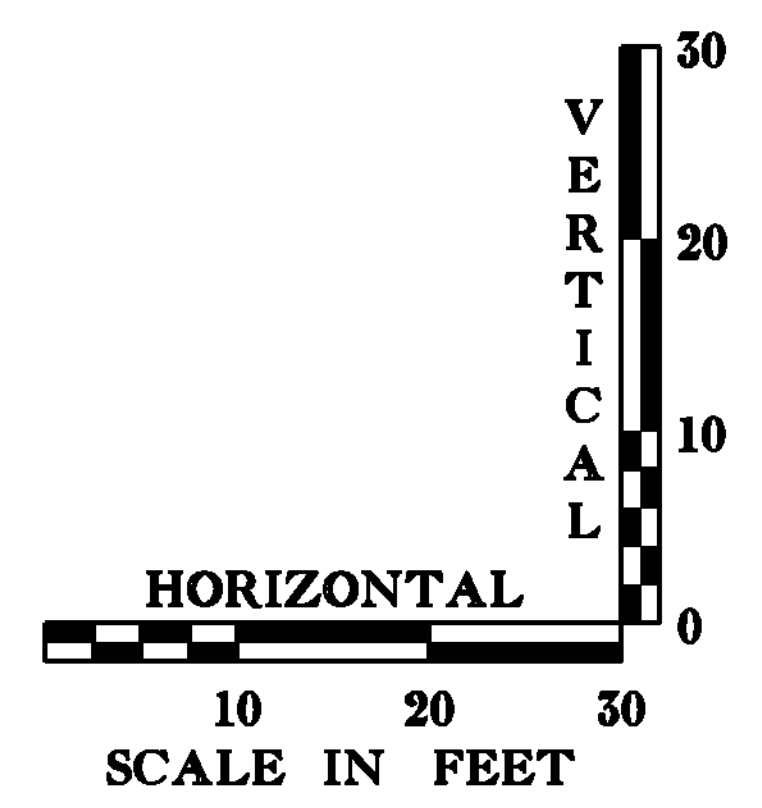


CB-9
 GRATE TYPE A (1)
 STA 175+61.82 RT
 OFFSET = 23.89'
 RIM ELEV= 305.00'
 DIAMETER= 4.00'
 DEPTH= 6.00'
 SUMP = 2.00'
 INV OUT=301.00'

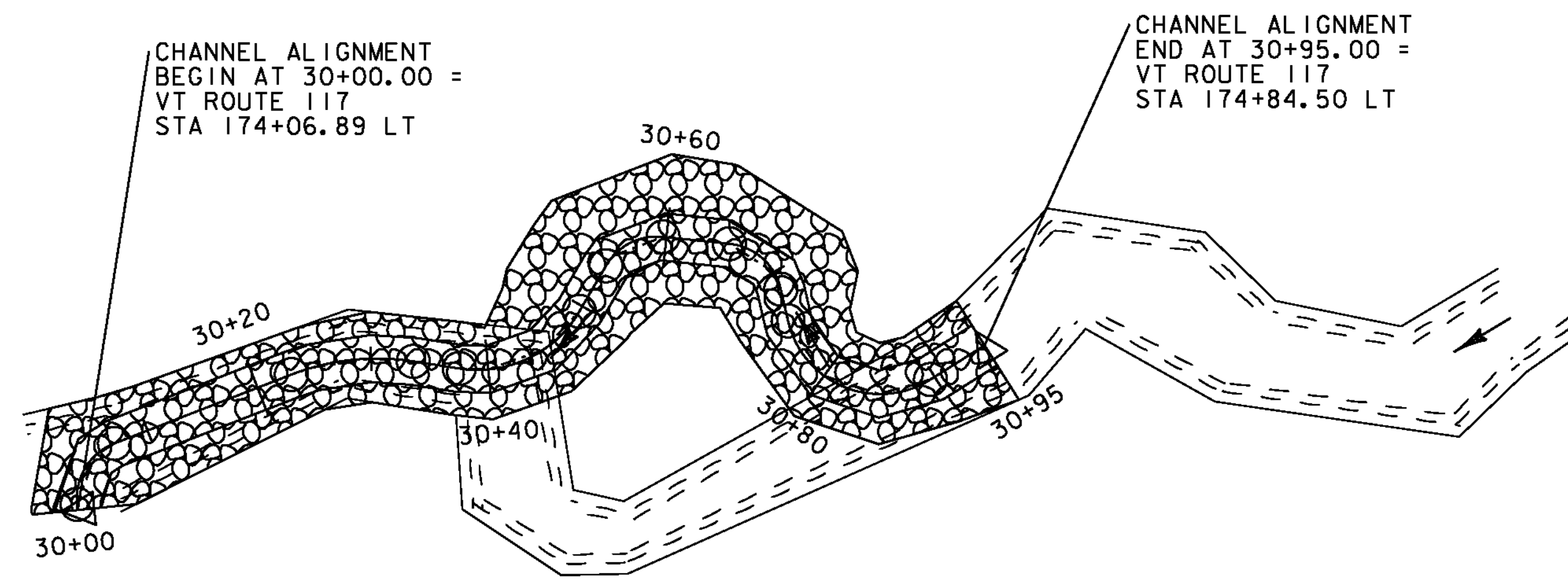
CB-8
 GRATE TYPE A (1)
 STA 174+86.00 RT
 OFFSET = 30.00'
 RIM ELEV= 303.57'
 DIAMETER= 4.00'
 DEPTH= 5.67'
 SUMP = 2.00'
 INV IN = 300.40'
 INV OUT= 299.90'

PIPE 9
 STA 175+61.82 RT-
 STA 174+86.00 RT
 SLOPE= 0.83%
 TYPE: OPTION PIPE
 LENGTH= 76.07'
 DIAMETER= 18.00"

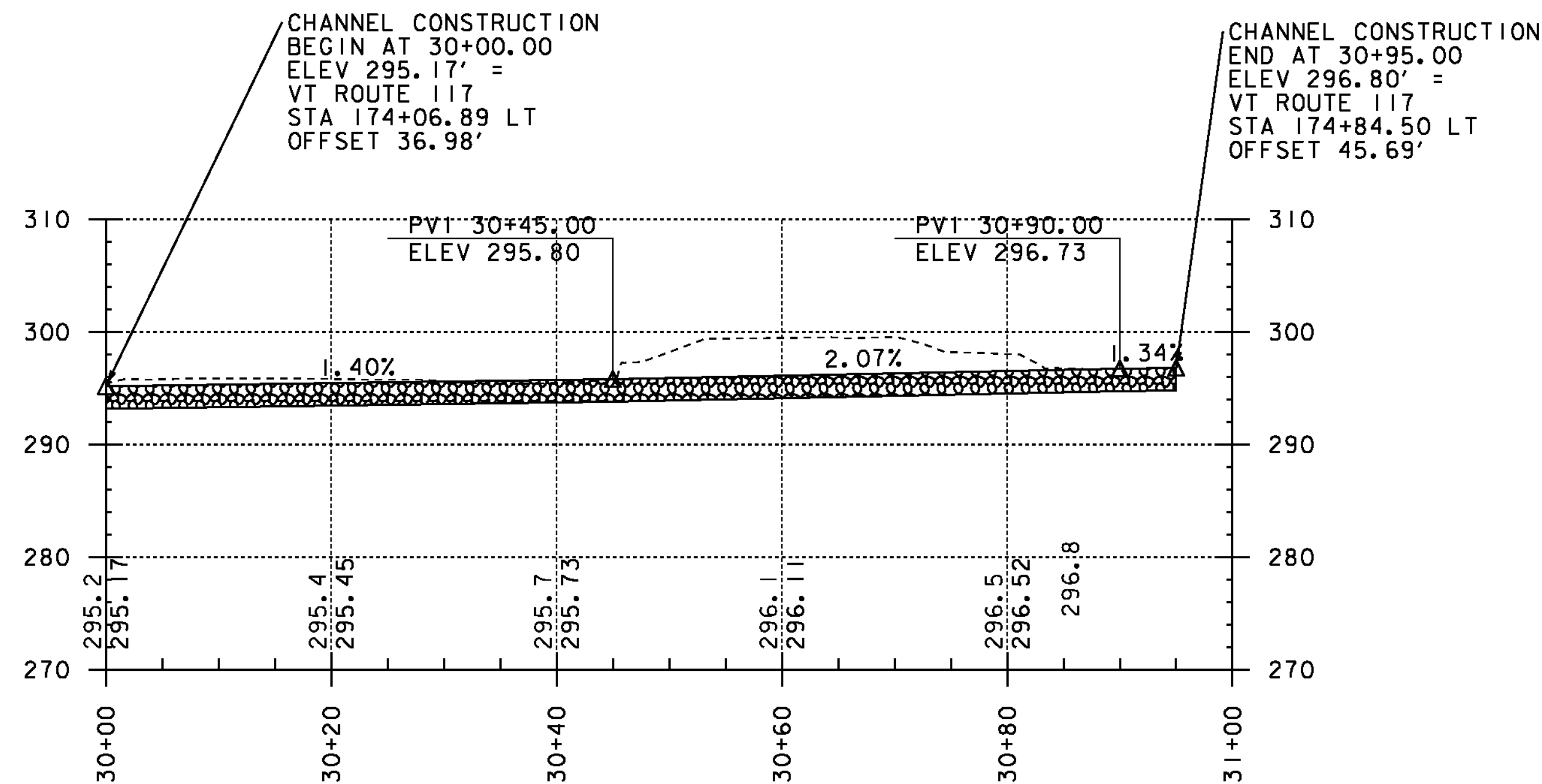
PIPE 8
 STA 174+86.00 RT-
 STA 174+25.00 RT
 SLOPE= 0.84%
 TYPE: OPTION PIPE
 LENGTH= 61.01'
 DIAMETER= 18.00"
 INV OUT= 299.40'



PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002pro.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
VT ROUTE 117 - DRAINAGE PROFILE SHEET 2	SHEET 25 OF 64



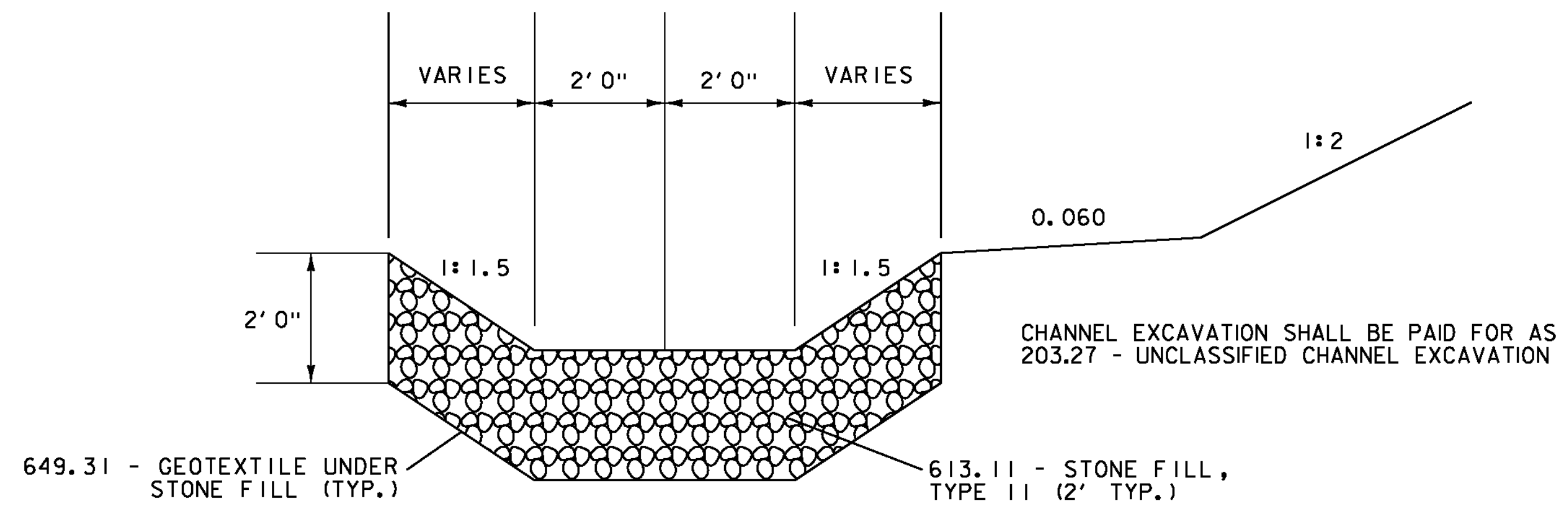
CHANNEL PLAN



CHANNEL PROFILE

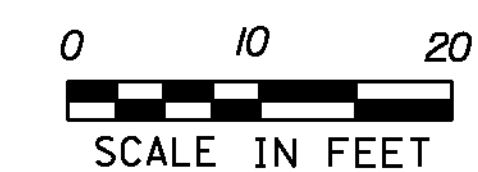
ALIGNMENT: PROPOSED CHANNEL				
ELEMENT	POINT	STATION	NORTHING	EASTING
LINEAR	POB	30+00.00	721837.5059	1497127.56
CURVE #1	PC	30+00.49	721837.9897	1497127.51
	PI	30+04.29	721841.7753	1497127.126
	PT	30+06.99	721843.1549	1497130.672
CURVE #2	PC	30+23.08	721848.988	1497145.665
	PI	30+28.46	721850.9383	1497150.678
	PT	30+33.59	721850.111	1497155.992
CURVE #3	PC	30+37.53	721849.5049	1497159.886
	PI	30+44.35	721848.4558	1497166.627
	PT	30+49.50	721854.3491	1497170.063
CURVE #4	PC	30+53.97	721858.212	1497172.315
	PI	30+57.20	721861.0018	1497173.942
	PT	30+59.71	721860.6665	1497177.154
CURVE #5	PC	30+65.36	721860.0799	1497182.774
	PI	30+68.93	721859.7091	1497186.326
	PT	30+71.56	721856.2289	1497187.127
CURVE #6	PC	30+74.32	721853.5408	1497187.746
	PI	30+85.59	721842.5548	1497190.276
	PT	30+89.58	721848.5699	1497199.811
LINEAR	POE	30+95.00	721851.4629	1497204.397

CURVE #1 DATA:	
RADIUS:	5.00'
Δ:	74° 32' 36.98" RT.
Dc:	1154° 54' 56.12"
LENGTH:	6.51'
TANGENT:	3.81'
CURVE #2 DATA:	
RADIUS:	20.00'
Δ:	30° 06' 20.73" RT.
Dc:	286° 28' 44.03"
LENGTH:	10.51'
TANGENT:	5.38'
CURVE #3 DATA:	
RADIUS:	10.00'
Δ:	68° 36' 09.71" LT.
Dc:	572° 57' 28.06"
LENGTH:	11.97'
TANGENT:	6.82'
CURVE #4 DATA:	
RADIUS:	5.00'
Δ:	65° 42' 53.08" RT.
Dc:	1145° 54' 56.12"
LENGTH:	5.73'
TANGENT:	3.23'
CURVE #5 DATA:	
RADIUS:	5.00'
Δ:	71° 04' 24.60" RT.
Dc:	1154° 54' 56.12"
LENGTH:	6.20'
TANGENT:	3.57'
CURVE #6 DATA:	
RADIUS:	8.00'
Δ:	109° 16' 43.43" LT.
Dc:	716° 11' 50.08"
LENGTH:	15.26'
TANGENT:	11.27'



TYPICAL CHANNEL SECTION

30+00.00 - 30+95.00
VT ROUTE 117
STA 174+06.89 LT - 174+84.50 LT
NOT TO SCALE



PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002+yp.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
CHANNEL RELOCATION DETAIL SHEET

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 26 OF 64

EROSION CONTROL NARRATIVE

1.1 PROJECT DESCRIPTION

THE PROJECT IS LOCATED AT THE INTERSECTION OF VT ROUTE 117 AND TOWN HIGHWAY #4 (SAND HILL ROAD). WORK TO BE PERFORMED INCLUDES THE INSTALLATION OF A TRAFFIC SIGNAL, CONSTRUCTION OF A VT ROUTE 117 EASTBOUND LEFT TURN LANE, ROADWAY RESURFACING, AND DRAINAGE IMPROVEMENTS INCLUDING STREAM RELOCATION.

NOTE: AREA OF DISTURBANCE SHALL INCLUDE LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, INCLUDING ANY WASTE, STAGING AND BORROW AREAS WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS.

TOTAL AREA OF DISTURBANCE IS APPROXIMATELY 1.62 ACRES.

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

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE PROPERTY SURROUNDING THE PROJECT SITE CONSISTS OF A BALANCE BETWEEN WELL ESTABLISHED WOODED AREAS AS WELL AS RESIDENTIAL DEVELOPMENT. THESE RESIDENTIAL LOTS HAVE WELL ESTABLISHED LAWNS AND SCATTERED LANDSCAPING FEATURES. THE PROJECT SITE WILL RECEIVE RUNOFF FROM AREAS NORTH OF VT ROUTE 117. AREAS SOUTH OF VT ROUTE 117 WILL PRIMARILY DRAIN AWAY FROM THE PROJECT SITE AND ULTIMATELY DISCHARGE TO THE WINOOSKI RIVER. ALL RUNOFF FROM THESE OFF-SITE AREAS HAVE BEEN CONSIDERED IN DRAINAGE DESIGN CALCULATIONS.

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

EAST OF THE INTERSECTION AN UNNAMED TRIBUTARY OF THE WINOOSKI RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE UNNAMED TRIBUTARY CROSSING IS LOCATED APPROXIMATELY 167 FEET WEST OF THE END PROJECT STATION. THE TRIBUTARY DRAINAGE AREA AT THE CULVERT CROSSING IS APPROXIMATELY 1.1 SQUARE MILES. VT ROUTE 117 CONVEYS WATER THROUGH A SERIES OF ROAD SIDE DITCHES AND DRIVE CULVERTS. THERE ARE CLASS II WETLANDS LOCATED ON THE NORTH AND THE SOUTH BOUNDARIES OF THE TRIBUTARY. THE WETLANDS TO THE NORTH ARE APPROXIMATELY 6500 SQUARE FEET IN SIZE AND THE WETLANDS TO THE SOUTH ARE ROUGHLY 1750 SQUARE FEET. ALONG SAND HILL ROAD THERE ARE MULTIPLE DROP INLETS THAT COLLECT THE ROADWAY AND LIMITED OFFSITE RUNOFF THAT ULTIMATELY CONVEY THIS WATER TO THE WINOOSKI RIVER.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF WOODS, BRUSH, AND GRASSED AREAS. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY THE ROADWAY CONSTRUCTION ACTIVITIES. 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 CHITTENDEN, VERMONT. SOILS ON THE PROJECT SITE ARE AGAWAM FINE SANDY LOAMS, 0% TO 5% SLOPES AND 30% TO 60% SLOPES, "K FACTOR" = 0.28. THE SOIL IS CONSIDERED TO HAVE MODERATE EROSION POTENTIAL. THERE IS ALSO A PORTION OF THE PROJECT SITE WHICH HAS BELGRADE AND ELDRIDGE SOILS, 0% - 3% SLOPES, "K FACTOR" = 0.49. THE SOIL IS CONSIDERED TO HAVE HIGH EROSION POTENTIAL.

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: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: UNNAMED TRIBUTARY OF THE WINOOSKI RIVER
WETLANDS: YES, CLASS II WETLANDS ARE PRESENT AND WILL BE AFFECTED BY THE PROJECT.

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. 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) IS TYPICALLY USED TO PHYSICALLY MARK SITE BOUNDARIES. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, BARRIER FENCE SHALL BE USED INSTEAD OF PROJECT DEMARCATION FENCE WITHIN 100 FEET OF A WATER RESOURCE (STREAM, BROOK, LAKE, POND, WETLAND, ETC.)

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 CONTRACTOR'S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES, OR AS DIRECTED BY THE ENGINEER.

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.

STONE DROP INLET PROTECTION WILL BE USED ON ALL PROPOSED DRAINAGE STRUCTURES AS PROPOSED ON THE EPSC PLAN. PIPE INLET PROTECTION WILL BE USED AT THE INLET OF AN EXISTING 48" CULVERT AS PROPOSED ON THE EPSC PLAN.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN. BECAUSE THIS PROJECT FALLS UNDER THE CGP 3-9020, WOVEN WIRE REINFORCED SILT FENCE SHALL BE USED INSTEAD OF SILT FENCE WITHIN 100 FEET UPSLOPE OF RECEIVING WATERS.

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. EXISTING OFF SITE CONDITIONS WILL NATURALLY DIVERT PORTIONS OF STORMWATER RUNOFF PRIOR TO REACHING THE SITE.

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.

CHECK DAMS ARE NOT PROPOSED; HOWEVER THEY MAY BE UTILIZED AS DIRECTED BY THE ENGINEER.

1.4.7 CONSTRUCT PERMANENT CONTROLS

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

TYPE II STONE FOR SLOPE LINING AND CHANNEL PROTECTION

SEED AND MULCH

DRAINAGE INLETS AND PIPING

GRASS CHANNELS (DISCHARGE PERMIT #6300-INDS)

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

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

WINTER WORK IS NOT ANTICIPATED ON THE PROJECT.

1.4.10 STABILIZE SOIL AT FINAL GRADE

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

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

1.4.11 DE-WATERING ACTIVITIES

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

BASED ON THE CONTRACTOR'S PHASING, DEWATERING ASSOCIATED WITH THE STREAM RELOCATION BETWEEN STATIONS 174+06.89 LT - 174+84.50 LT MAY BE REQUIRED.

1.4.12 INSPECT YOUR SITE

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

1.5 SEQUENCE AND STAGING

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

1.5.1 CONSTRUCTION SEQUENCE

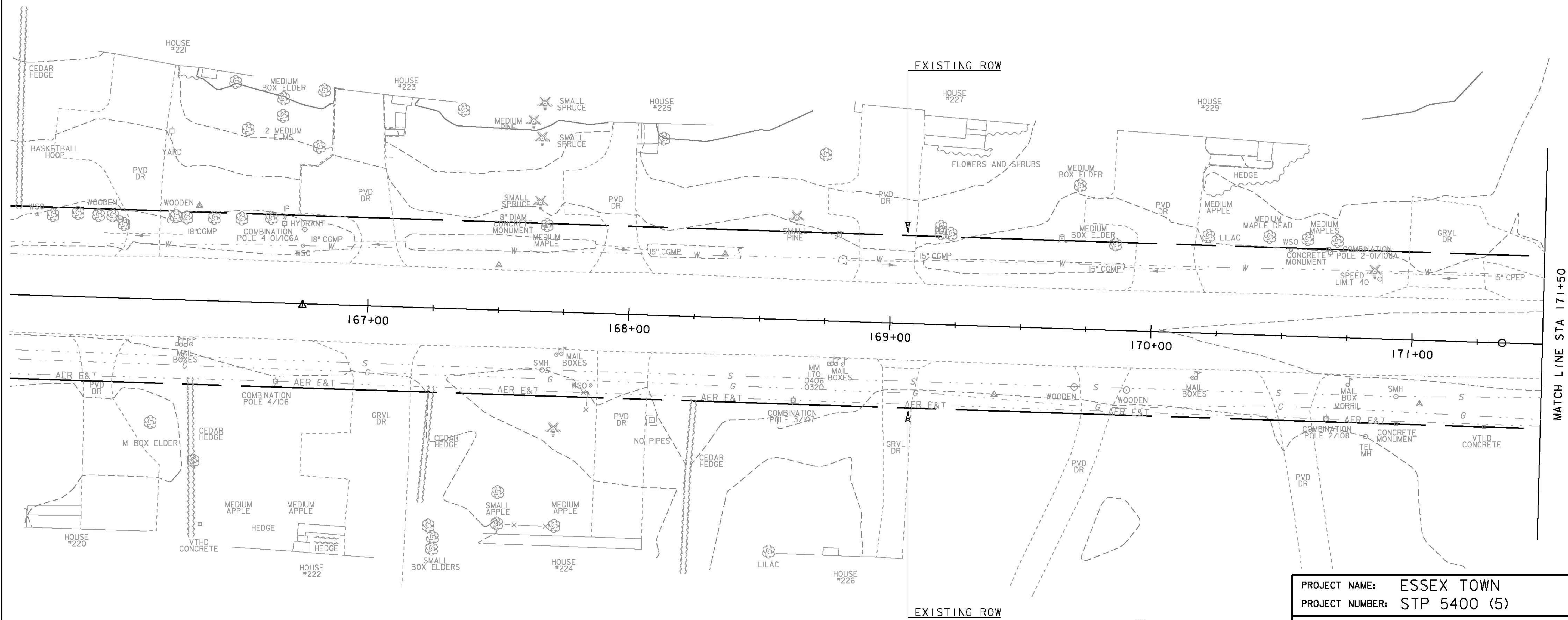
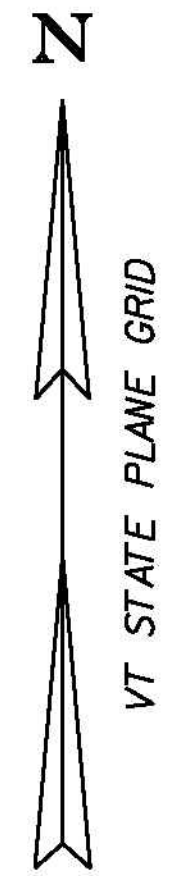
1.5.2 OFF-SITE ACTIVITIES

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

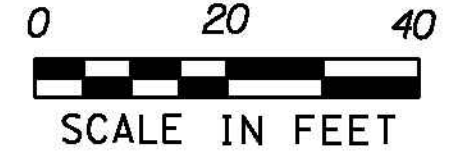
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002ecnarrative.dgn PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
EPSC NARRATIVE SHEET 27 OF 64

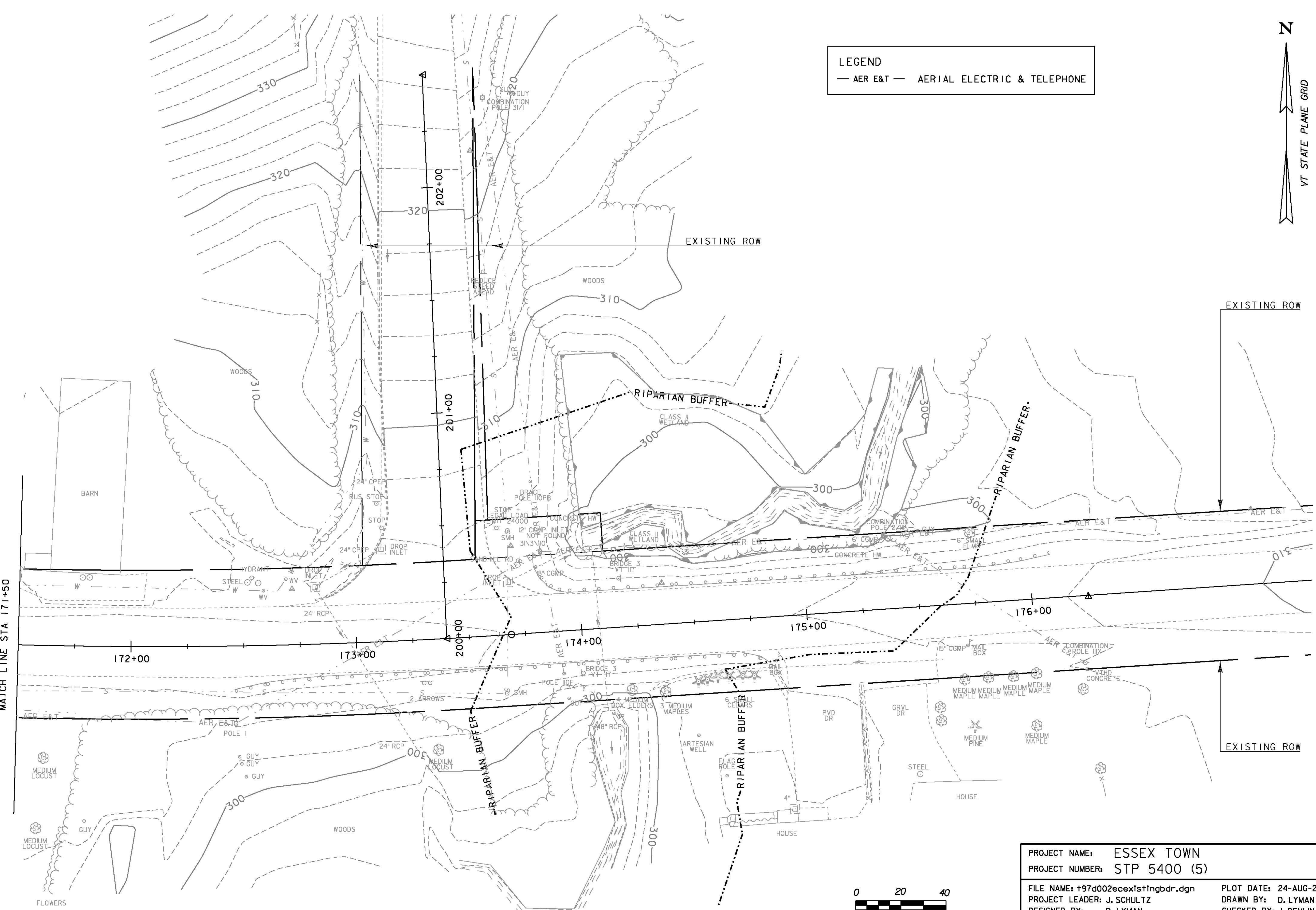
LEGEND
 — AER E&T — AERIAL ELECTRIC & TELEPHONE



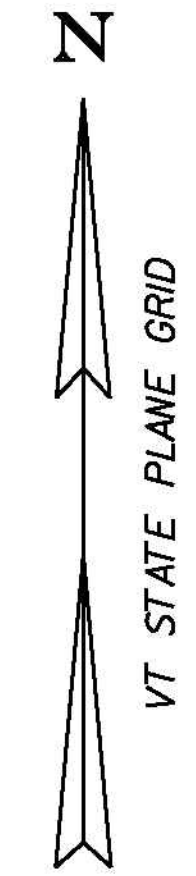
MATCH LINE STA 171+50



PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)
 FILE NAME: +97d002ecexistingbdr.dgn PLOT DATE: 24-AUG-2012
 PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
 DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
 EPSC EXISTING CONDITIONS SHEET 1 SHEET 28 OF 64



LEGEND
 — AER E&T — AERIAL ELECTRIC & TELEPHONE



MATCH LINE STA 171+50

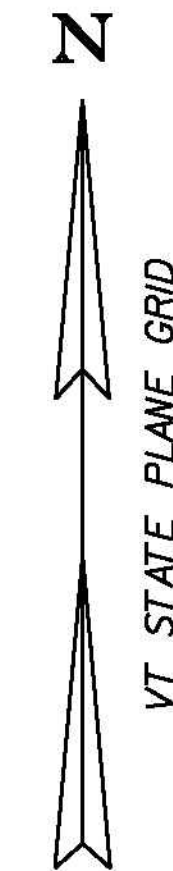
PROJECT NAME:	ESSEX TOWN	FILE NAME:	+97d002ecexistingbdr.dgn	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	D. LYMAN
		DESIGNED BY:	D. LYMAN	CHECKED BY:	J. DEVLIN
			EPSC EXISTING CONDITIONS SHEET 2		SHEET 29 OF 64



NOTES:

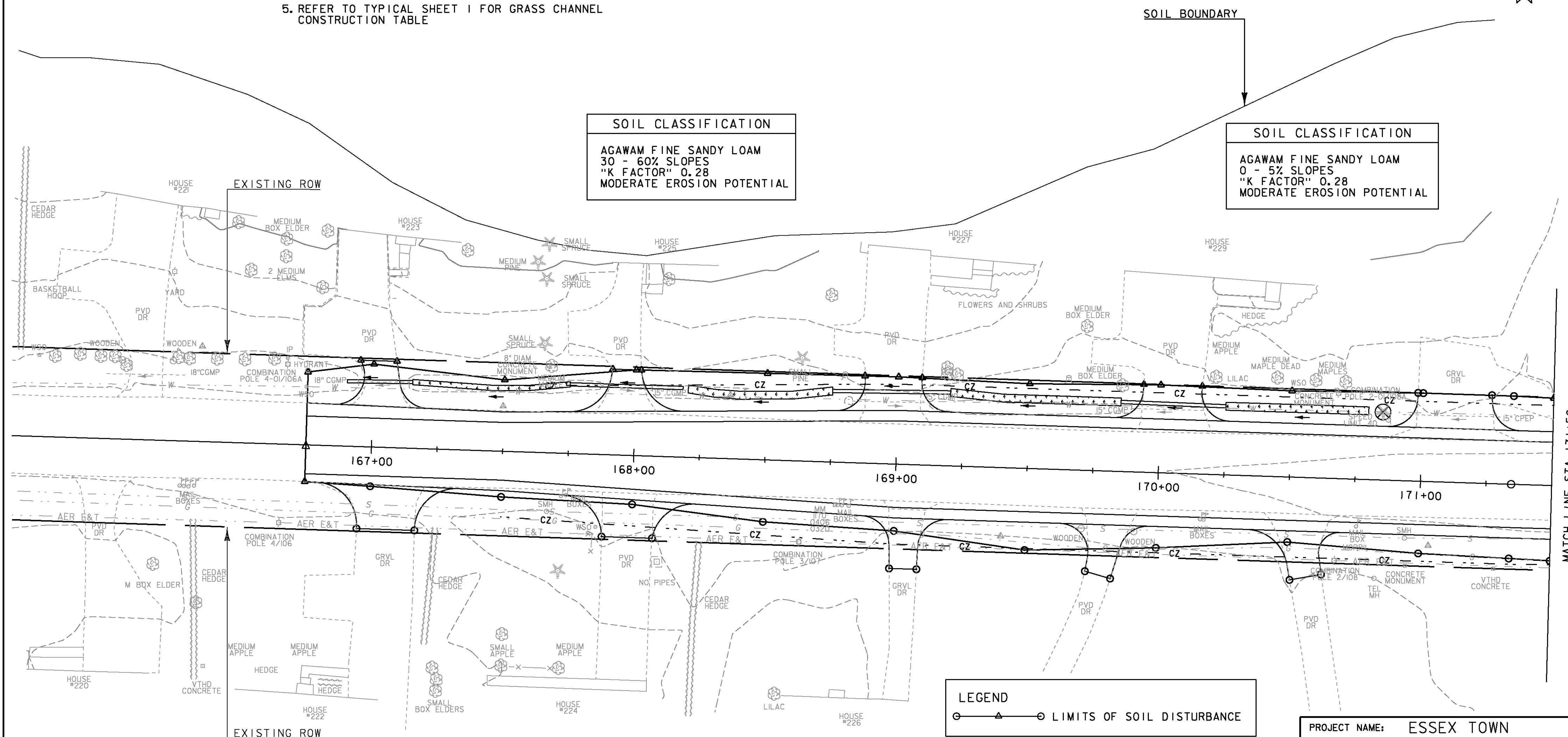
1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN. THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.
5. REFER TO TYPICAL SHEET 1 FOR GRASS CHANNEL CONSTRUCTION TABLE

NEW STORMWATER TREATMENT PRACTICE
 GRASS CHANNEL 1-A
 DISCHARGE PERMIT #6300-INDS
 STA 167+15.00 LT - 167+75.00 LT
 STA 168+20.00 LT - 168+75.00 LT
 STA 169+20.00 LT - 169+85.00 LT
 STA 170+25.00 LT - 170+80.00 LT

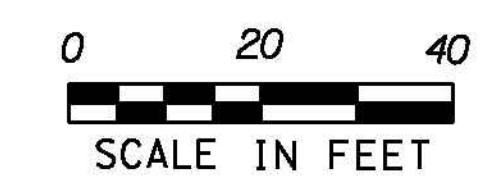


SOIL CLASSIFICATION
 AGAWAM FINE SANDY LOAM
 30 - 60% SLOPES
 "K FACTOR" 0.28
 MODERATE EROSION POTENTIAL

SOIL CLASSIFICATION
 AGAWAM FINE SANDY LOAM
 0 - 5% SLOPES
 "K FACTOR" 0.28
 MODERATE EROSION POTENTIAL



LEGEND
 ○ — △ — ○ LIMITS OF SOIL DISTURBANCE



PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)
 FILE NAME: +97d002econstructionbdr.dgn PLOT DATE: 24-AUG-2012
 PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
 DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
 EPSC CONSTRUCTION SHEET 1 SHEET 30 OF 64

MATCH LINE STA 171+50

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
2. TEMPORARY EROSION CONTROL MEASURES ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE TEMPORARY MEASURES TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR.
4. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.

649.515 - GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED
 STA 174+18.39 LT - 175+26.16 LT

653.20 - TEMPORARY EROSION MATTING
 STA 171+98.24 RT - 174+00.55 RT
 STA 173+73.97 LT - 173+95.00 LT
 STA 174+18.39 LT - 175+75.00 LT
 STA 174+27.87 RT - 174+56.31 RT

653.40 - INLET PROTECTION DEVICE, TYPE I
 STA 172+82.09 LT
 STA 174+07.78 LT
 STA 174+86.00 RT
 STA 175+61.82 RT

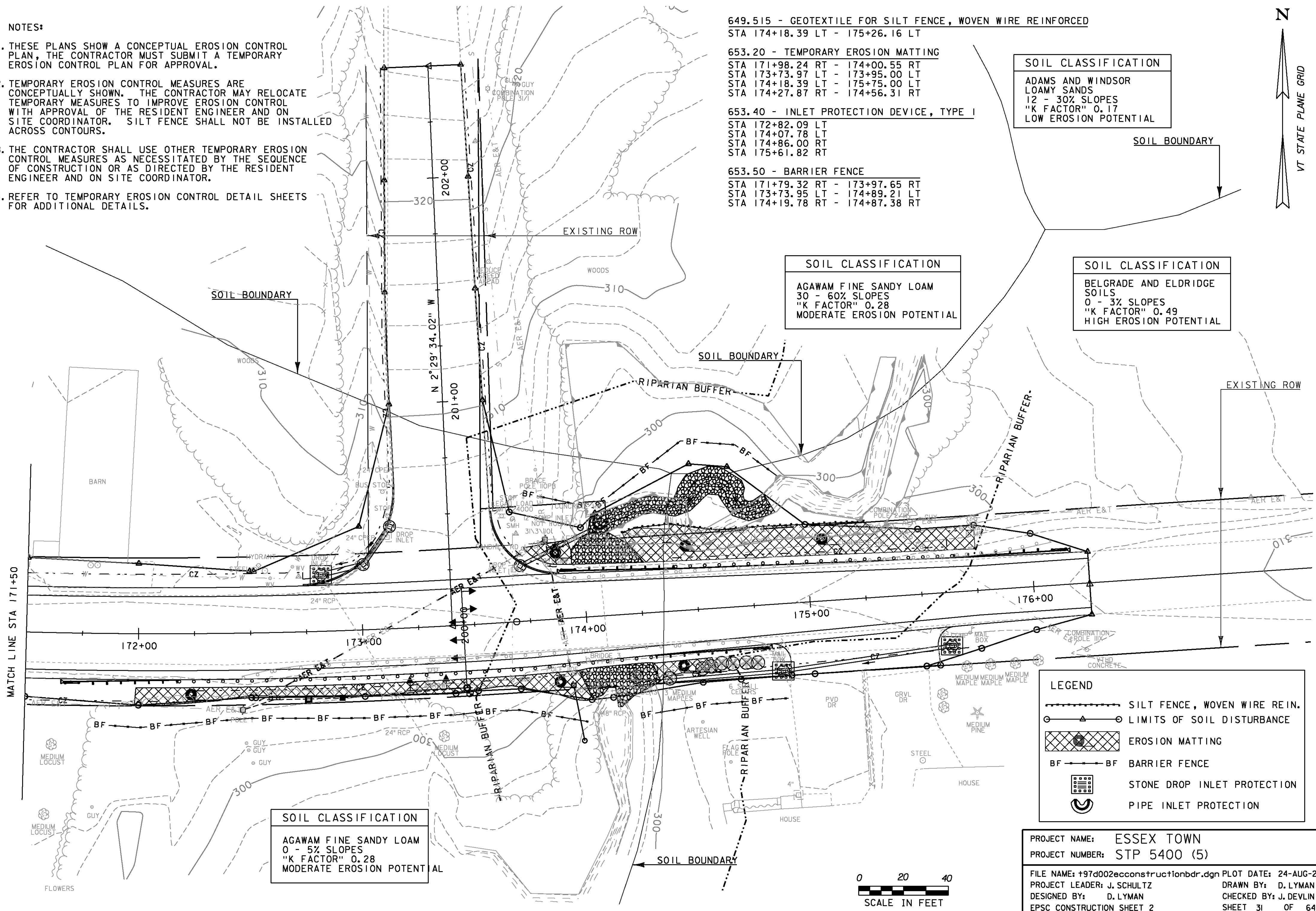
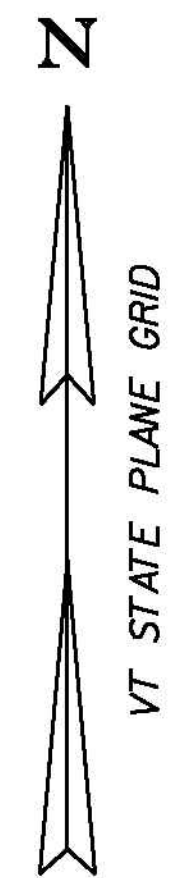
653.50 - BARRIER FENCE
 STA 171+79.32 RT - 173+97.65 RT
 STA 173+73.95 LT - 174+89.21 LT
 STA 174+19.78 RT - 174+87.38 RT

SOIL CLASSIFICATION
 ADAMS AND WINDSOR
 LOAMY SANDS
 12 - 30% SLOPES
 "K FACTOR" 0.17
 LOW EROSION POTENTIAL

SOIL CLASSIFICATION
 AGAWAM FINE SANDY LOAM
 30 - 60% SLOPES
 "K FACTOR" 0.28
 MODERATE EROSION POTENTIAL

SOIL CLASSIFICATION
 BELGRADE AND ELDRIDGE
 SOILS
 0 - 3% SLOPES
 "K FACTOR" 0.49
 HIGH EROSION POTENTIAL

SOIL CLASSIFICATION
 AGAWAM FINE SANDY LOAM
 0 - 5% SLOPES
 "K FACTOR" 0.28
 MODERATE EROSION POTENTIAL


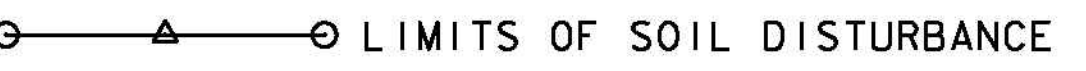



LEGEND

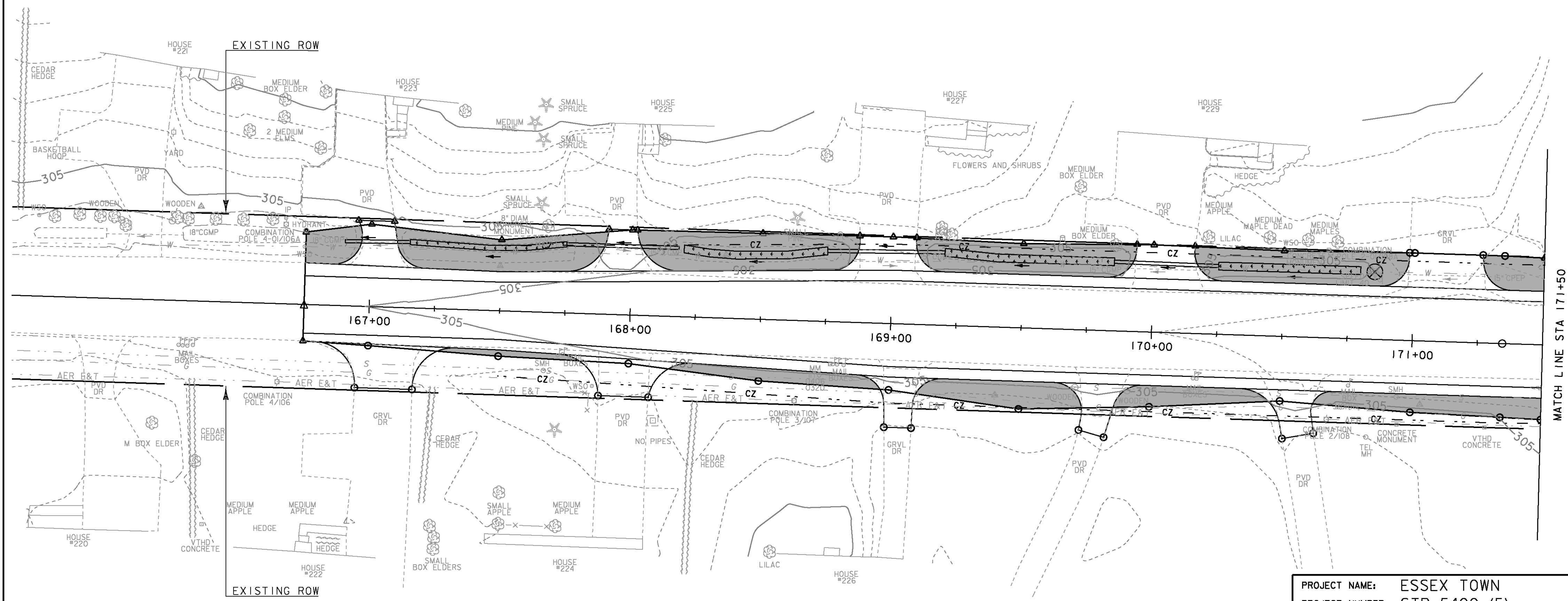
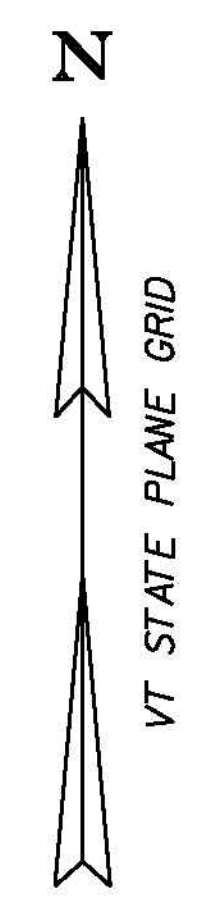
- △--- SILT FENCE, WOVEN WIRE REIN.
- LIMITS OF SOIL DISTURBANCE
- ▨ EROSION MATTING
- BF---BF BARRIER FENCE
- ⊞ STONE DROP INLET PROTECTION
- ⊞ PIPE INLET PROTECTION

PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)
 FILE NAME: +97d002eeconstructionbdr.dgn PLOT DATE: 24-AUG-2012
 PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
 DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
 EPSC CONSTRUCTION SHEET 2 SHEET 31 OF 64

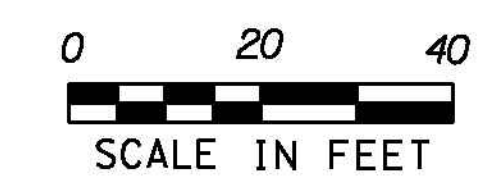
LEGEND

- AER E&T — AERIAL ELECTRIC & TELEPHONE
-  DISTURBED AREAS REQUIRING RE-VEGETATION
-  LIMITS OF SOIL DISTURBANCE

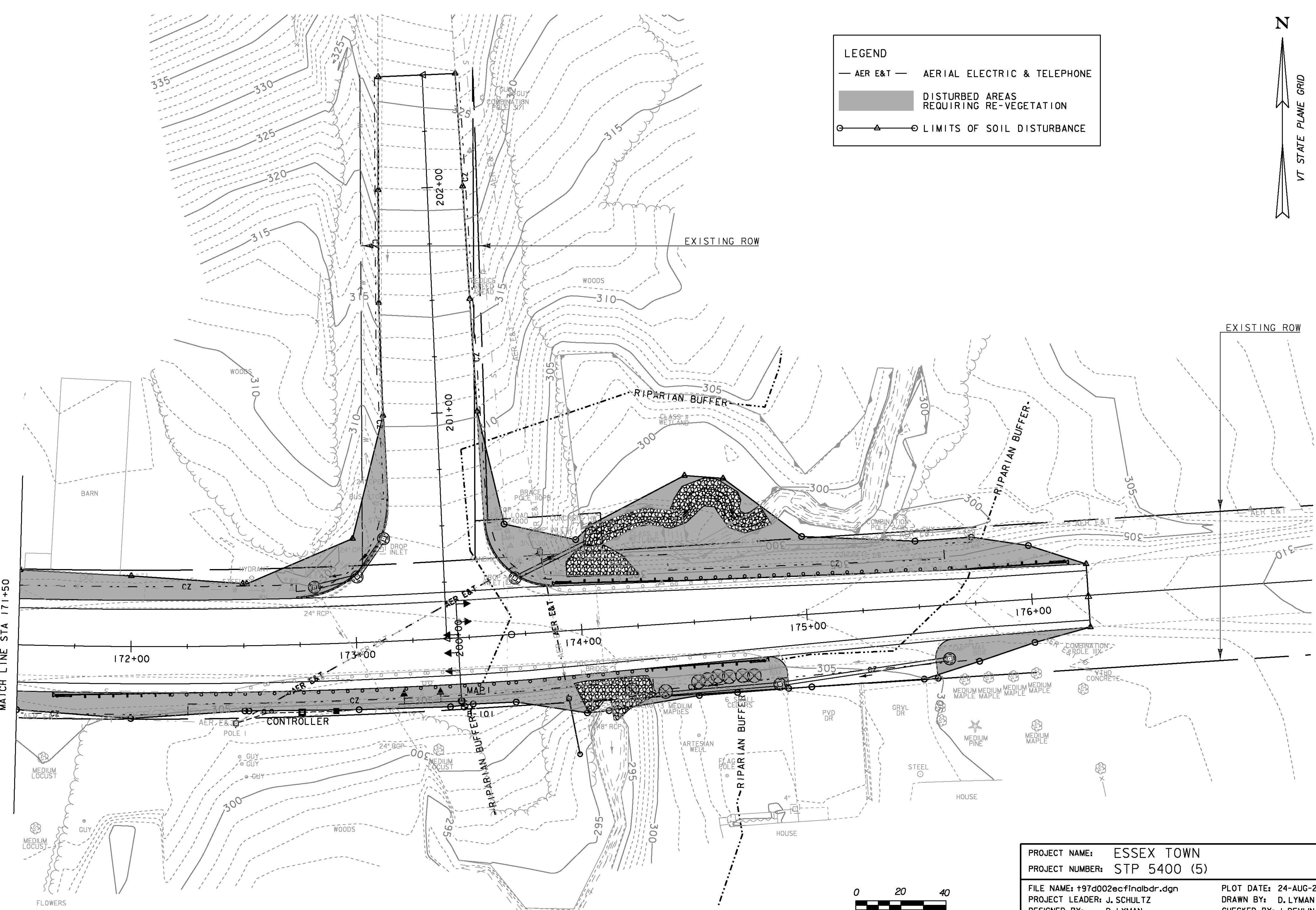
 GRASS CHANNEL



MATCH LINE STA 171+50

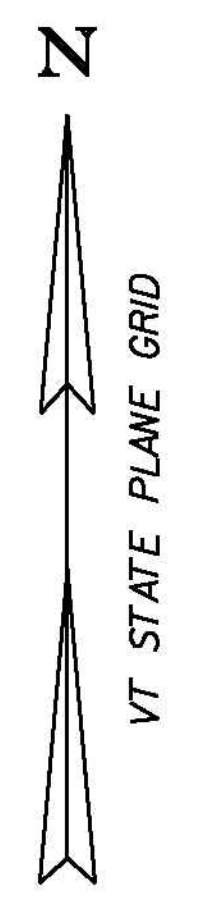


PROJECT NAME: ESSEX TOWN	PLOT DATE: 24-AUG-2012
PROJECT NUMBER: STP 5400 (5)	DRAWN BY: D. LYMAN
FILE NAME: +97d002ecf1nalbdr.dgn	CHECKED BY: J. DEVLIN
PROJECT LEADER: J. SCHULTZ	SHEET 32 OF 64
DESIGNED BY: D. LYMAN	
EPSC FINAL CONDITIONS SHEET 1	



LEGEND

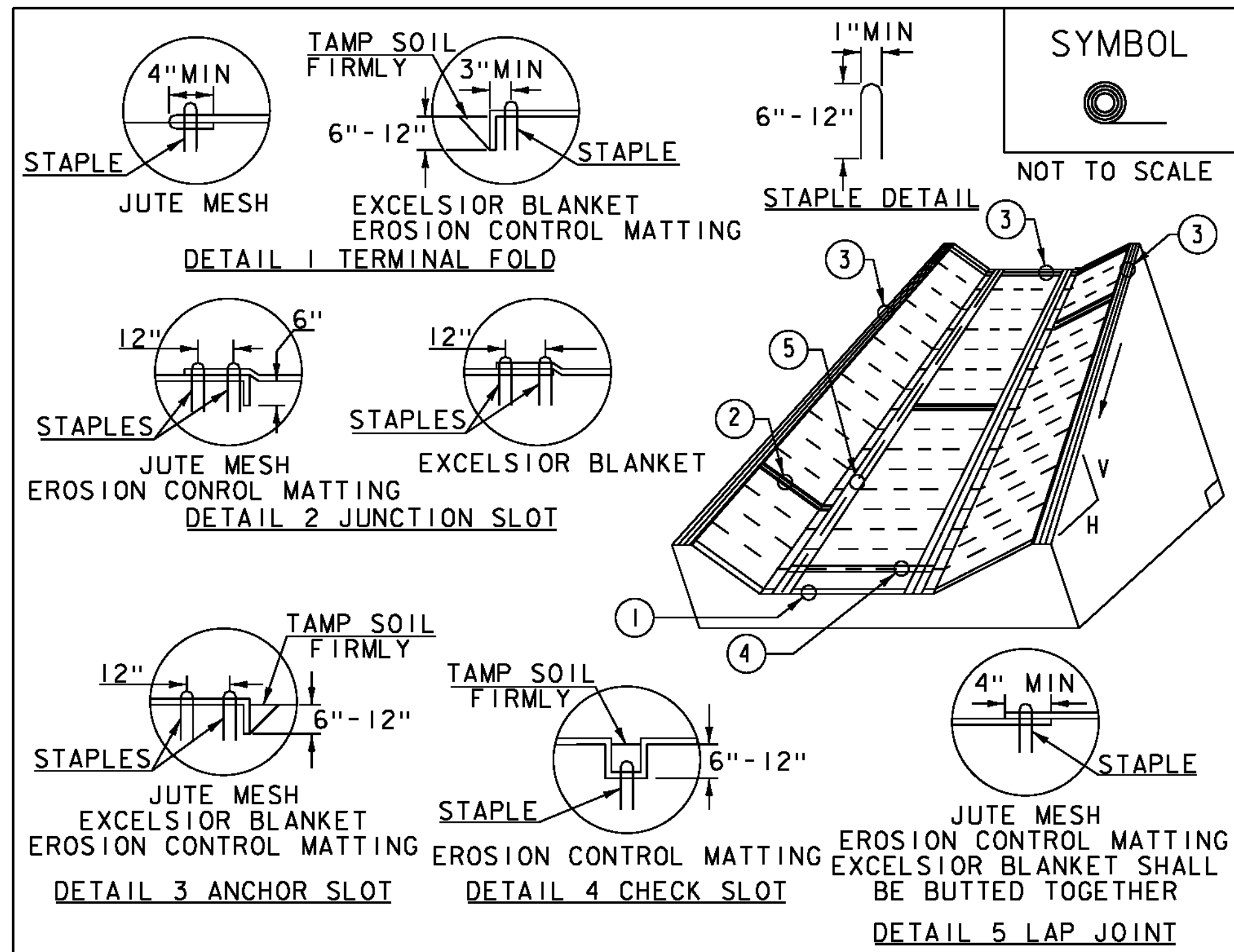
- AER E&T — AERIAL ELECTRIC & TELEPHONE
- ▒ DISTURBED AREAS REQUIRING RE-VEGETATION
- △—○ LIMITS OF SOIL DISTURBANCE



MATCH LINE STA 171+50



PROJECT NAME:	ESSEX TOWN	FILE NAME:	+97d002ecf1nalbdr.dgn	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	D. LYMAN
		DESIGNED BY:	D. LYMAN	CHECKED BY:	J. DEVLIN
			EPSC FINAL CONDITIONS SHEET 2		SHEET 33 OF 64



CONSTRUCTION SPECIFICATIONS

1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

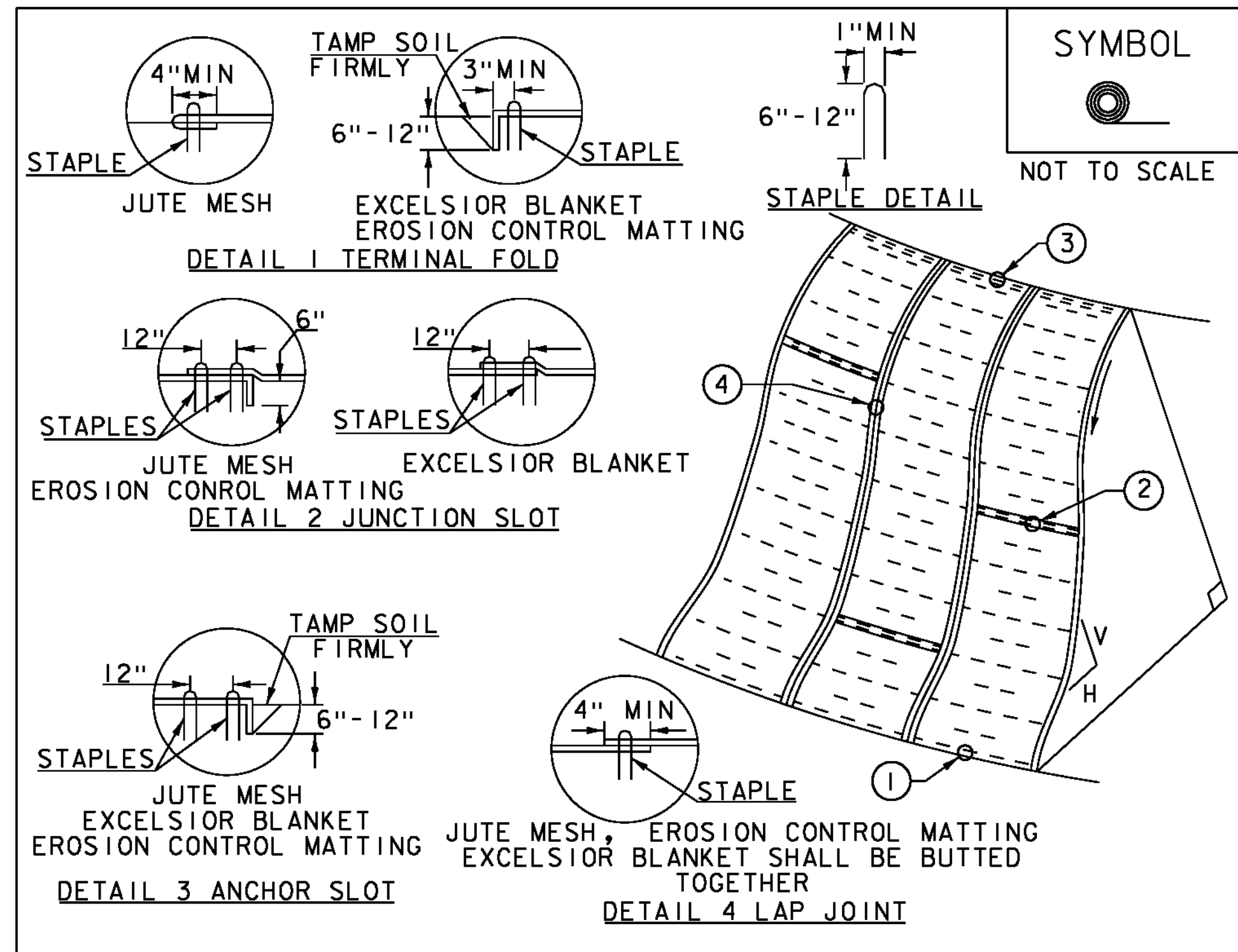
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

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

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

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



CONSTRUCTION SPECIFICATIONS

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

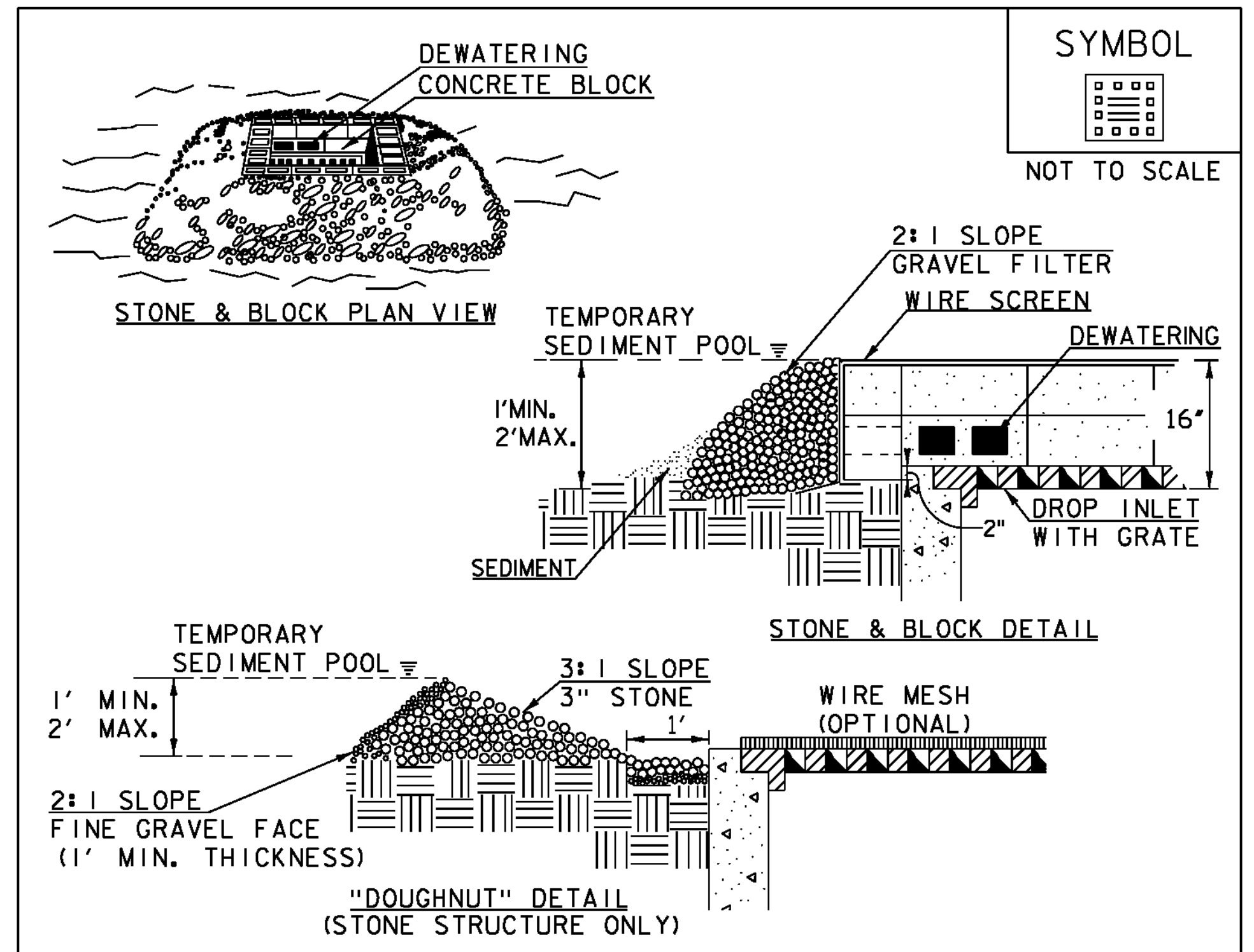
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

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

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

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF



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

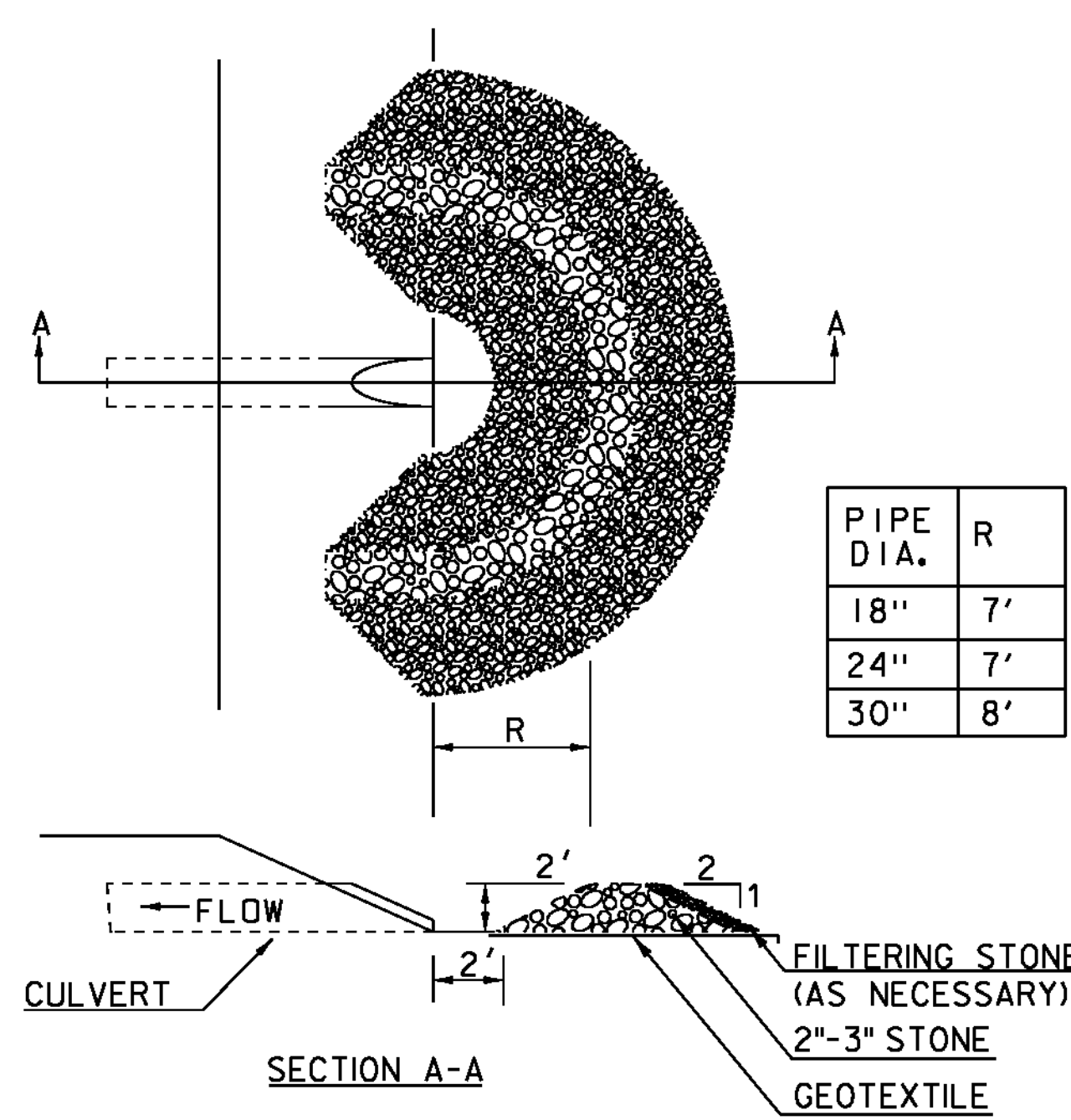
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE 1 (PAY ITEM 653.40).

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 2009	WHF

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002ecdetails.dgn PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
EPSC DETAILS SHEET 1 SHEET 34 OF 64



SYMBOL

 NOT TO SCALE

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

CONSTRUCTION SPECIFICATIONS

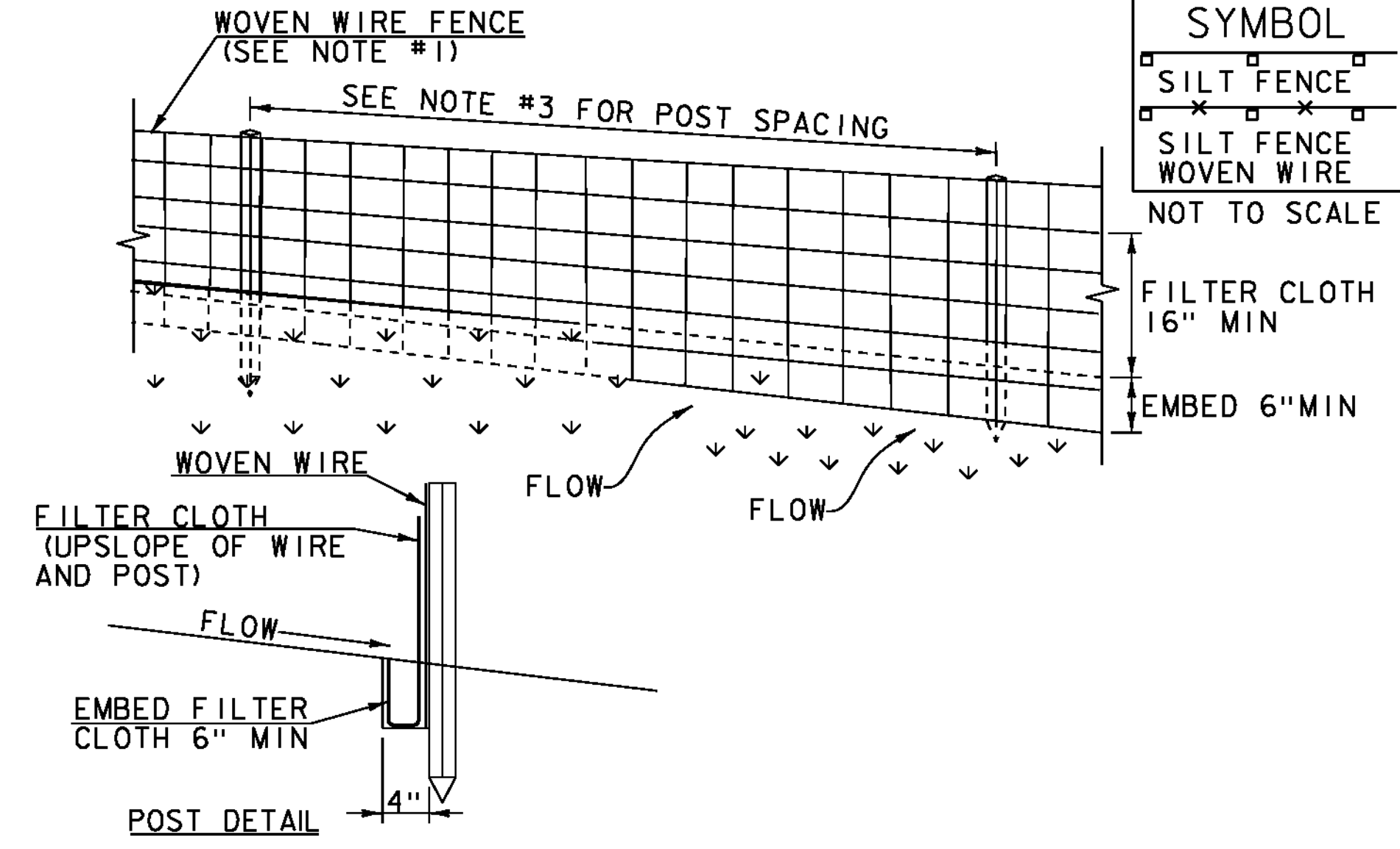
- USE 2" TO 3" STONE. FILTERING STONE SHALL BE 3/4".
- PLACE STONE OVER GEOTEXTILE.
- ONCE THE AREAS UPSTREAM FROM THE CHECK DAM ARE STABILIZED WITH VEGETATION, THE SEDIMENT TRAPPED BEHIND THE DAM SHALL BE DISPOSED OF IN AN APPROVED WASTE AREA.
- THE CHECK DAM(S) SHALL BE FLATTENED AND GRADED IN A MANNER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

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

PIPE INLET PROTECTION

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 2009	WHF

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR INLET PROTECTION DEVICE, TYPE 1 (PAY ITEM 653.40).



SYMBOL

 NOT TO SCALE

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, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

VAOT RURAL AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX					
% WEIGHT	LBS/AC		NAME	GERM %	PURITY %
	BROADCAST	HYDROSEED			
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	FOLLOW	PELLETIZED	FOLLOW
500 LBS/AC	MANUFACTURER	2 TONS/AC	MANUFACTURER

CONSTRUCTION GUIDANCE

- RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
- ALL SEED MIXTURES: 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.
- TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, 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

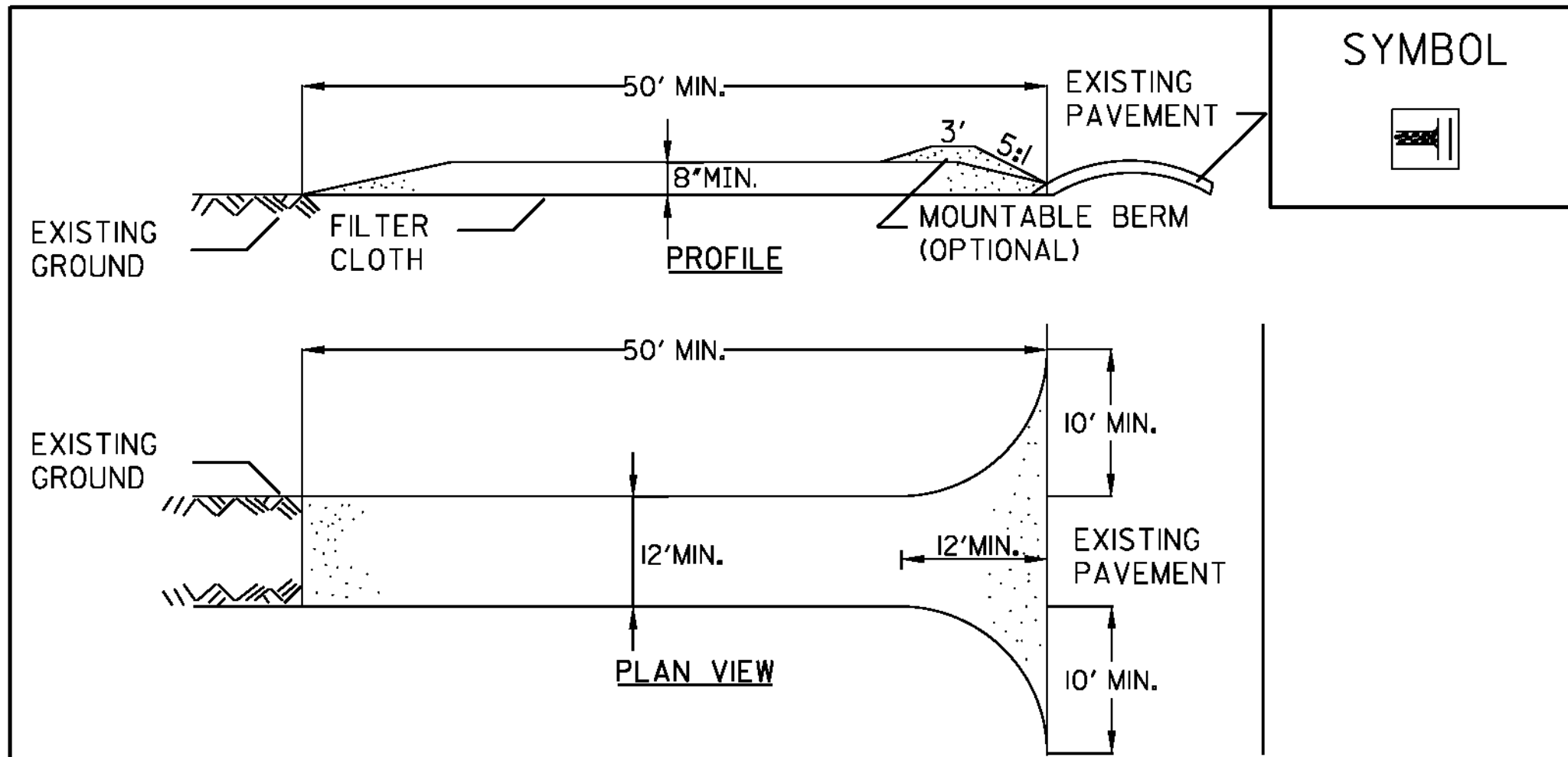
TURF ESTABLISHMENT

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF

PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002ecdetails.dgn
 PROJECT LEADER: J. SCHULTZ
 DESIGNED BY: D. LYMAN
 EPSC DETAILS SHEET 2

PLOT DATE: 24-AUG-2012
 DRAWN BY: D. LYMAN
 CHECKED BY: J. DEVLIN
 SHEET 35 OF 64



SYMBOL



CONSTRUCTION SPECIFICATIONS

1. STONE SIZE - USE 1-4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH APPLIES).
3. THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT 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.

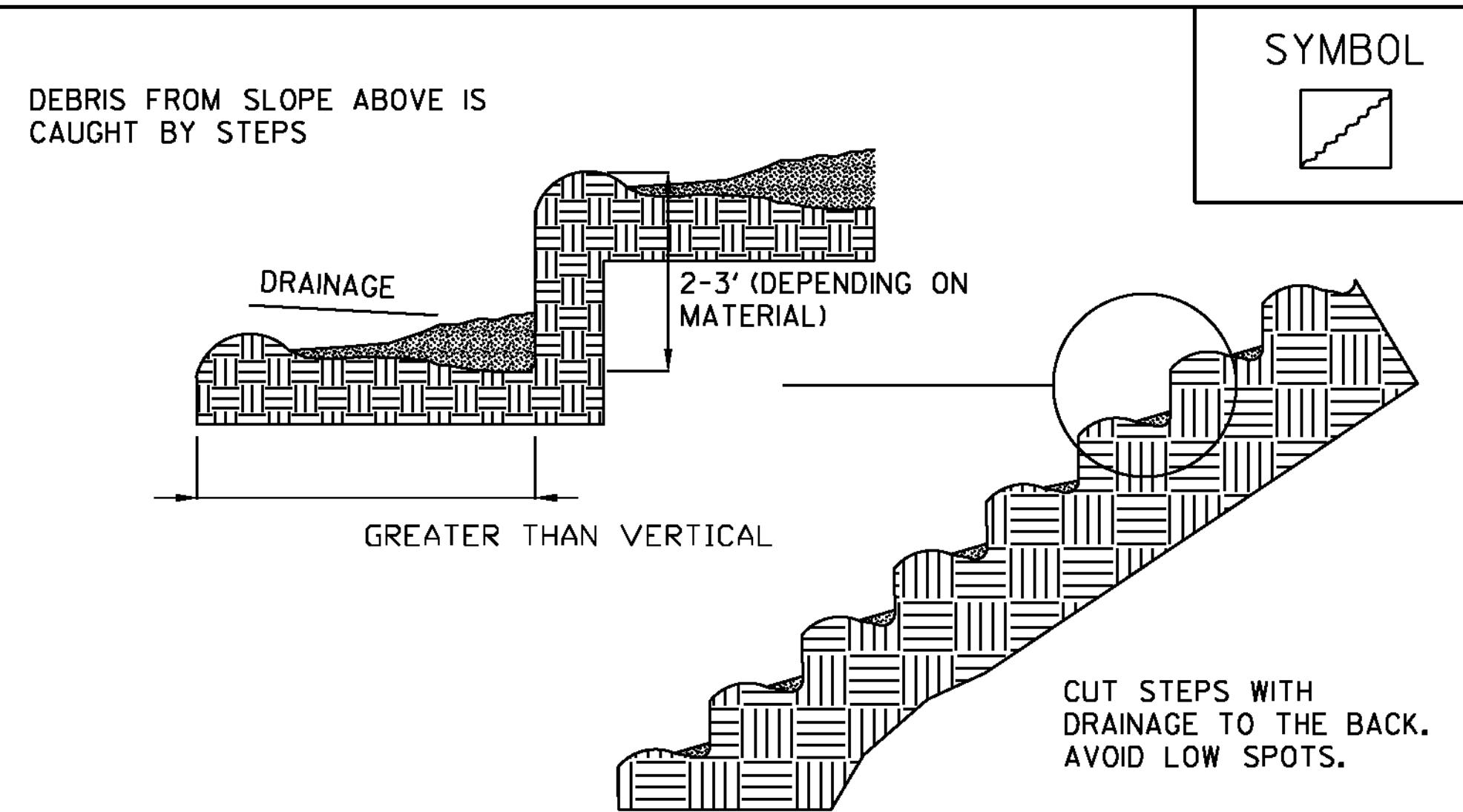
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

**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 ITEM SHALL BE PAID FOR UNDER ITEM
653.35 VEHICLE TRACKING PAD

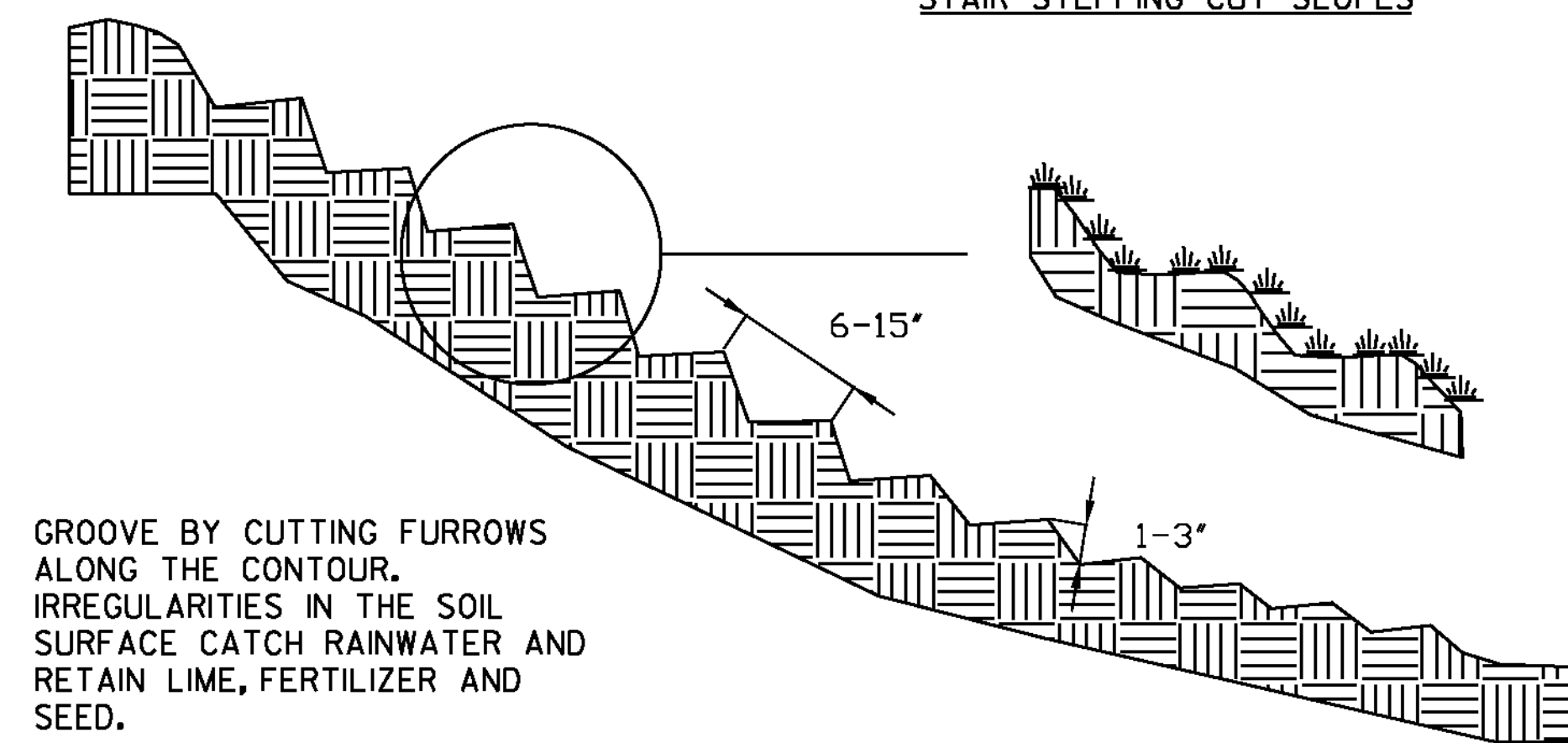
REVISIONS	
FEBRUARY 9, 2007	WHF
MARCH 8, 2007	JMF



SYMBOL



STAIR STEPPING CUT SLOPES



GROOVING SLOPES

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

**SURFACE ROUGHENING
DETAILS**

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

THIS ITEM SHALL BE CONSIDERED INCIDENTAL TO THE MATERIAL ITEM SPECIFIED

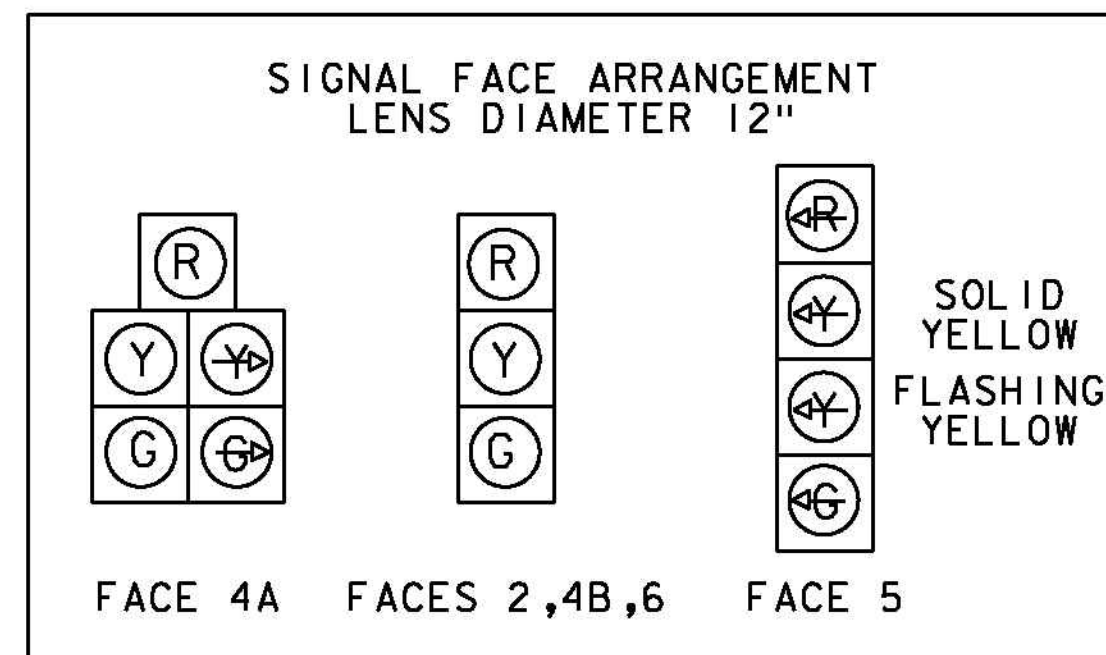
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002ecdetails.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
EPSC DETAILS SHEET 3

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 36 OF 64

LIST OF MAJOR EQUIPMENT

EQUIPMENT ITEM 678J5 (VT I17 & TH 4)	QUANTITY
POWER METER ON STANCHION	1
TRAFFIC SIGNAL CONTROLLER (NEMA TS2)	1
NEMA "P44" BASE MOUNTED CONTROLLER CABINET WITH 15-INCH EXTENDED BASE ON A CONCRETE FOUNDATION, PAINTED FLAT BLACK WITH ANCILLARY CONTROL EQUIPMENT	1
FLAT BLACK PAINTED STEEL MAST ARM SIGNAL POLE WITH 45 FOOT MAST ARM AND 28 FOOT MAST ARM (MAP1)	1
ONE WAY, 3-SECTION, 12-INCH POLYCARBONATE MAST ARM MOUNTED LED TRAFFIC SIGNAL HEAD WITH TUNNEL VISORS AND 5" LOUVERED BACKPLATES WITH ALL PIECES PAINTED FLAT BLACK	5
ONE WAY, 4-SECTION, 12-INCH POLYCARBONATE MAST ARM MOUNTED LED TRAFFIC SIGNAL HEAD WITH TUNNEL VISORS AND 5" LOUVERED BACKPLATES WITH ALL PIECES PAINTED FLAT BLACK	1
ONE WAY, 5-SECTION, 12-INCH POLYCARBONATE MAST ARM MOUNTED LED TRAFFIC SIGNAL HEAD WITH TUNNEL VISORS AND 5" LOUVERED BACKPLATES WITH ALL PIECES PAINTED FLAT BLACK	1
ASTRO-BRACKETS	7
VIDEO VEHICLE DETECTION CAMERA	3
OPTICAL PREEMPTION DETECTORS	3
OPTICAL SIGNAL PROCESSOR CARD	1
AC STROBE - RED	2

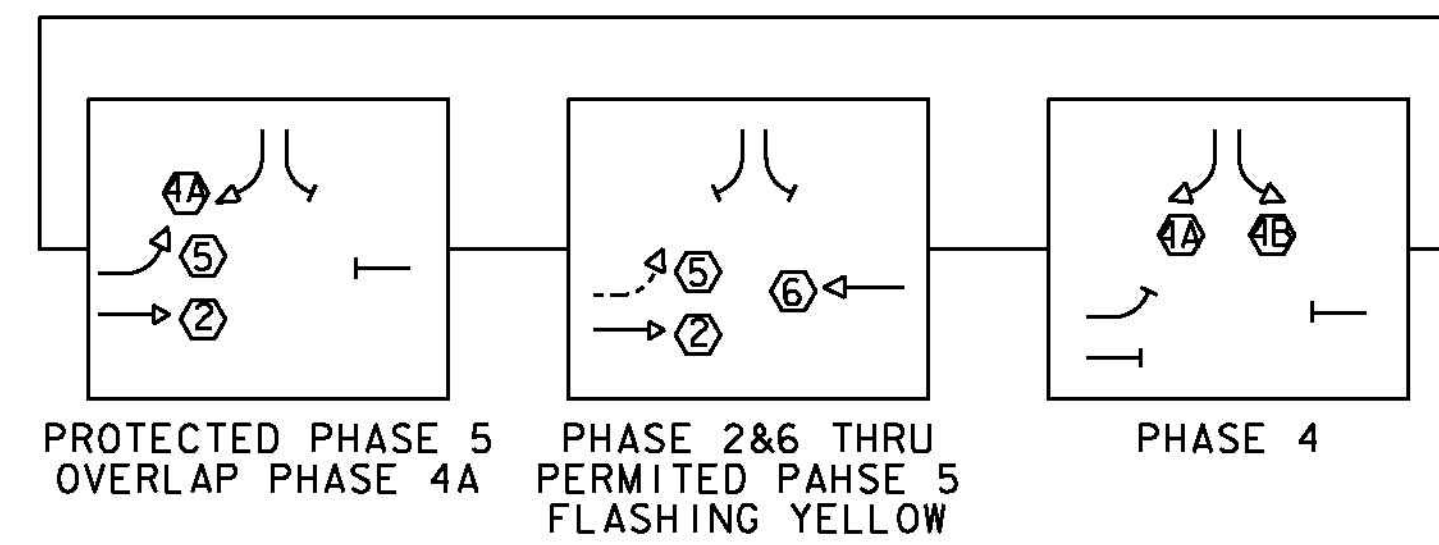


ALL HEADS TO BE LED'S
NOTE: FLASHING YELLOW SHALL NOT BE DISPLAYED WHEN OPERATING IN PROTECTED ONLY MODE

678.23 - WIRED CONDUIT	CONDUIT SIZE		DESCRIPTION
	2"	4"	
POWER TO STANCHION		55'	*POWER
STANCHION TO CONTROLLER		26'	POWER
CONTROLLER TO JBI	22'		SIGNAL/LIGHTING
CONTROLLER TO JBI	22'		VIDEO
CONTROLLER TO JBI	22'		FUTURE USE
JBI TO MAP1	62'		SIGNAL/LIGHTING
JBI TO MAP1	62'		VIDEO
MAP1 STUB (OPPOSITE SIDE)	5'		FUTURE USE
SUBTOTALS	195'	81'	
ROUNDING	5'	4'	
TOTALS	200'	85'	

*-CONDUIT QUANTITY INCLUDES PVC RUN ON UTILITY POLE #1

PHASING DIAGRAM



CONTROLLER TIMING CHART

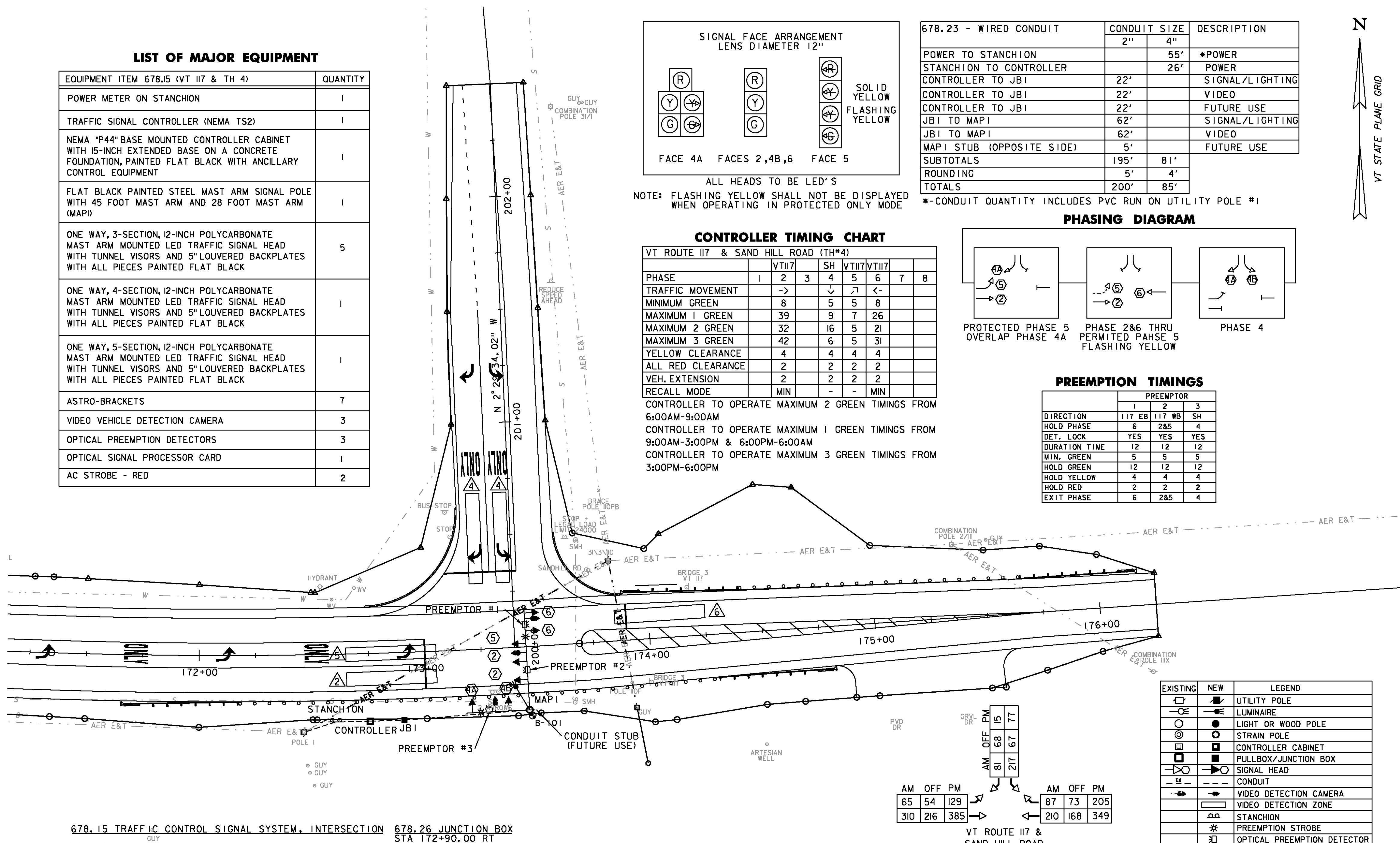
VT ROUTE I17 & SAND HILL ROAD (TH#4)

PHASE	1	2	3	4	5	6	7	8
TRAFFIC MOVEMENT	->			↓	↖	<		
MINIMUM GREEN	8			5	5	8		
MAXIMUM 1 GREEN	39			9	7	26		
MAXIMUM 2 GREEN	32			16	5	21		
MAXIMUM 3 GREEN	42			6	5	31		
YELLOW CLEARANCE	4			4	4	4		
ALL RED CLEARANCE	2			2	2	2		
VEH. EXTENSION	2			2	2	2		
RECALL MODE		MIN				MIN		

CONTROLLER TO OPERATE MAXIMUM 2 GREEN TIMINGS FROM 6:00AM-9:00AM
CONTROLLER TO OPERATE MAXIMUM 1 GREEN TIMINGS FROM 9:00AM-3:00PM & 6:00PM-6:00AM
CONTROLLER TO OPERATE MAXIMUM 3 GREEN TIMINGS FROM 3:00PM-6:00PM

PREEMPTION TIMINGS

DIRECTION	PREEMPTOR		
	1	2	3
HOLD PHASE	6	2&5	4
DET. LOCK	YES	YES	YES
DURATION TIME	12	12	12
MIN. GREEN	5	5	5
HOLD GREEN	12	12	12
HOLD YELLOW	4	4	4
HOLD RED	2	2	2
EXIT PHASE	6	2&5	4



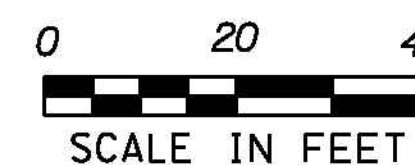
678.15 TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION
MAST ARM POLE
STA 173+45.00 RT (28.00' RT)
CABINET/CONTROLLER
STA 172+75.00 RT (30.00' RT)
POWER STANCHION
STA 172+60.00 RT (30.00' RT)

678.26 JUNCTION BOX
STA 172+90.00 RT
679.47 BRACKET ARM
STA 173+45.00 RT - 250W - HPS SEMI-CUTOFF (MAP1)
679.50 LUMINAIRE
STA 173+45.00 RT - 250W - HPS SEMI-CUTOFF (MAP1)

AM	OFF	PM
65	54	129
310	216	385

AM	OFF	PM
87	73	205
210	168	349

VT ROUTE I17 & SAND HILL ROAD
2013
AVERAGE WEEKDAY TRAFFIC

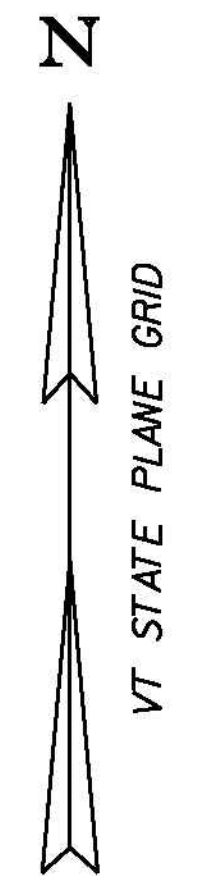


EXISTING	NEW	LEGEND
○	●	UTILITY POLE
○	○	LUMINAIRE
○	○	LIGHT OR WOOD POLE
○	○	STRAIN POLE
□	□	CONTROLLER CABINET
□	□	PULLBOX/JUNCTION BOX
○	○	SIGNAL HEAD
---	---	CONDUIT
○	○	VIDEO DETECTION CAMERA
□	□	VIDEO DETECTION ZONE
○	○	STANCHION
*	*	PREEMPTION STROBE
□	□	OPTICAL PREEMPTION DETECTOR

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002traf.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
TRAFFIC LAYOUT SHEET

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 37 OF 64



TRAFFIC SIGNAL NOTES

A. NEW SIGNAL EQUIPMENT

1. ALL SIGNAL HEADS SHALL HAVE POLYCARBONATE SECTIONS AND LENSES. THE SIGNAL HEADS SHALL HAVE FLAT BLACK HOUSINGS AND VISORS.
2. ALL SIGNAL HEADS SHALL HAVE BLACK LOUVERED BACK PLATES, AND SHALL HAVE SAFETY CABLES.
3. THE TRAFFIC SIGNAL CONTROLLER AND RELATED EQUIPMENT SHALL BE MANUFACTURED BY ECONOLITE CONTROL PRODUCTS, INC. OR NAZTEC, INC. CONTROLLER SHALL BE (NEMA TS2) IN A NEMA P44 TRAFFIC CONTROL CABINET WITH BASE EXTENSION INSTALLED AT THE LOCATION SHOWN ON TRAFFIC LAYOUT SHEET. THE CONCRETE BASE FOR THE CONTROLLER CABINET SHALL HAVE A 18" X 12" OPENING FOR TRAFFIC SIGNAL CONDUIT LOCATED IN THE CENTER.
4. ALL SIGNAL HEADS SHALL HAVE RED, YELLOW AND GREEN LED SIGNALS WITH A VISIBLE BEAM SPREAD OF 80 DEGREES OFF AXIS.
5. THE EMERGENCY VEHICLE PREEMPTION SYSTEM SHALL BE AN OPTICALLY ACTIVATED SYSTEM. THE SYSTEM WILL INCLUDE ALL NECESSARY INTERFACE BOARDS, WIRING, DETECTORS, AND CONFIRMATION LIGHTS.
6. ALL SIGNAL EQUIPMENT SHALL BE PAINTED FLAT BLACK IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
7. ALL SIGNAL EQUIPMENT AND MAST ARM SIGNS SHALL HAVE SAFETY CABLES.

B. SIGNAL OPERATION

1. SWITCH-OVER TO NEW SIGNAL SYSTEM SHALL NOT BE DONE DURING PEAK TRAFFIC PERIODS. UNIFORMED TRAFFIC OFFICERS SHALL CONTROL TRAFFIC DURING SWITCH-OVER.
2. ALL SIGNALS SHALL DWELL ON THE VT 117 THRU MOVEMENT.
3. THE VT 117 THRU PHASE SHALL BE USED FOR THE START-UP PHASE FOLLOWING FLASHING OPERATION.
4. SIGNAL TIMING SHOWN ON THE PLANS MAY REQUIRE FINE-TUNING IN THE FIELD BASED ON TRAFFIC OBSERVATION AND/OR ADDITIONAL FIELD STUDIES.

C. PULLBOXES AND JUNCTION BOXES

1. PULLBOXES AND JUNCTION BOXES ARE DETAILED ON STANDARD E-173. MINIMUM JUNCTION BOX SIZE SHALL BE 18" X 12" X 12", OR LARGER AS REQUIRED BY THE ELECTRICAL CODE.
2. THE LOGO ON PULLBOXES / JUNCTION BOXES SHALL BE "TRAFFIC SIGNAL"
3. ALL PULLBOXES / JUNCTION BOXES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 678.

D. TRAFFIC SIGNAL CONDUIT

1. ALL TRAFFIC SIGNAL WIRED CONDUIT SHALL BE 2-INCH OR 4 INCH SCHEDULE 80.
2. ALL TRAFFIC SIGNAL CONDUIT WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 678.
3. TRAFFIC SIGNAL WIRED CONDUIT SHALL ENTER THE CONTROLLER CABINET THROUGH THE OPENING IN THE CONCRETE BASE, CONDUIT SHALL NOT BE CAST IN CONCRETE.

E. VIDEO DETECTION CAMERAS

1. VIDEO VEHICLE DETECTORS SHALL BE PLACED SO THAT OCCLUSION IS MINIMIZED AND PHASING IS NOT AFFECTED.
2. VIDEO VEHICLE DETECTION AREAS SHALL EXTEND 5 FT PAST THE STOP BAR.
3. VIDEO VEHICLE DETECTION SYSTEM SHALL BE ECONOLITE AUTOSCOPE ENCORE OR ITERIS VERSICAM OR TRAFICON VIP SERIES.

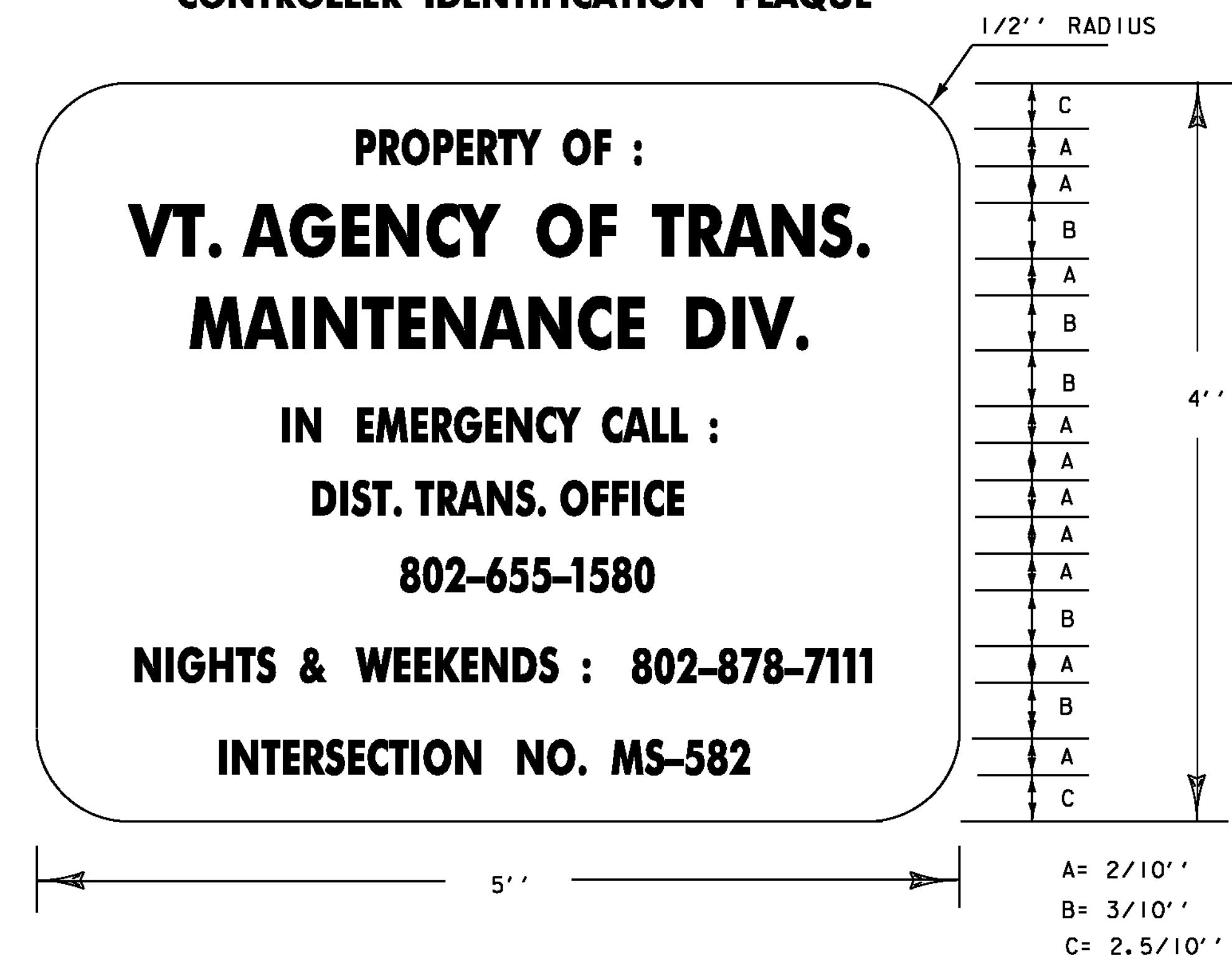
F. MAST ARM FOUNDATIONS

1. SEE THE SPECIAL PROVISIONS AND THE CONTRACT DOCUMENTS FOR THE GEOTECHNICAL ANALYSIS.

G. GENERAL

1. TRAFFIC SIGNAL HEADS SHALL BE SECURELY COVERED UNTIL THEY ARE FULLY OPERATIONAL.
2. THE CONTRACTOR SHALL ACQUIRE ALL THE NECESSARY PERMITS AND MAKE ALL NECESSARY ARRANGEMENTS WITH THE UTILITY COMPANY TO PROVIDE A PERMANENT POWER SUPPLY TO THE TRAFFIC SIGNAL EQUIPMENT, IF APPLICABLE. THE ROUTING OF POWER TO THE INTERSECTION SHALL BE SUCH THAT THE STATE HAS FULL RESPONSIBILITY FROM THE TRANSFORMER THROUGH THE SIGNAL. NO INTERVENING OWNERSHIP/RESPONSIBILITY SHALL BE ALLOWED.
3. THE CONTRACTOR SHALL RETURN ANY SALVAGED SIGNS TO THE VTRANS TRAFFIC SHOP IN BERLIN PRIOR TO PROJECT COMPLETION. COORDINATE THROUGH RUSS VELANDER AT 802-828-3535.

CONTROLLER IDENTIFICATION PLAQUE



LEGEND: - BLACK (NON-REFL.) - STAMPED PRIOR TO PAINTING
BACKGROUND: NATURAL ALUMINUM OR BRASS SURFACE

NOTES:

- 1.) THE PLAQUE SHALL BE MOUNTED ON ALL TRAFFIC SIGNAL CONTROLLER CABINETS. IT SHALL BE FASTENED TO THE CONTROLLER CABINET IN SUCH A MANNER AS TO BE NOT EASILY REMOVED, SUCH AS WELDED, RIVETED OR BOLTED WITH VANDAL PROOF BOLTS.
- 2.) THE LETTERS SHALL BE PUNCHED OR STAMPED, SUCH STAMPING SHALL PENETRATE AT LEAST 1/2 THE BASE MATERIAL THICKNESS.
- 3.) THE BASE MATERIAL FOR THE PLAQUE SHALL BE BRASS OR ALUMINUM WITH A MINIMUM THICKNESS OF 0.100 INCHES.

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002traf.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
TRAFFIC SIGNAL NOTES

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 38 OF 64

TRAFFIC SIGNAL GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2011, AND ITS LATEST REVISIONS.
2. OVERHEAD SIGN/SIGNAL SUPPORTS SHALL CONFORM TO AASHTO'S PUBLICATION ENTITLED "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", DATED 2009 OR ITS LATEST REVISION.
3. THE DESIGN CALCULATIONS SHALL TAKE INTO ACCOUNT THE FOLLOWING CRITERIA:
 - STRUCTURE CRITERIA
DESIGN LIFE: 50 YEARS
WIND LOAD - 90 MPH, UNLESS SPECIAL SITE CONDITIONS DICTATE
ICE LOAD PER AASHTO'S PUBLICATION ENTITLED "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", DATED 2009
 - FATIGUE CRITERIA
FATIGUE CATEGORY:
1 FOR MAST ARM SIGN STRUCTURES, 2 FOR SIGNAL MAST ARMS
VORTEX SHEDDING: INCLUDE
NATURAL WIND GUSTS: INCLUDE
TRUCK INDUCED WIND GUSTS: INCLUDE FOR ROADWAYS WHERE SPEED LIMIT IS 40 MPH OR GREATER.
GALLOPING: DO NOT INCLUDE IN DESIGN CALCULATIONS
 - FOUNDATION CRITERIA
CONCRETE: CONCRETE, HIGH PERFORMANCE CLASS B, STATE OF VERMONT, AGENCY OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, SECTION 501.
REINFORCING STEEL: STATE OF VERMONT, AGENCY OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, SUBSECTION 713.01.
ALLOWABLE BEARING CAPACITY: TO BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH MREI 10-01
INTERNAL SOIL FRICTION ANGLE, ϕ : TO BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH MREI 10-01
4. ANCHOR BOLTS
FOUR STAINLESS STEEL ANCHOR BOLTS WITH TWO HEXAGON NUTS, ONE WASHER AND ONE LOCK WASHER PER BOLT SHALL BE FURNISHED WITH EACH POLE. ANCHOR BOLT PLATES, WHEN USED, SHALL ALSO BE STAINLESS STEEL. SEE STATE OF VERMONT, AGENCY OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, SUBSECTION 714.09.
5. FLANGE BOLTS
ALL FLANGE BOLTS AND HEX NUTS SHALL BE HIGH STRENGTH STEEL AND SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, SUBSECTION 714.05.
6. HORIZONTAL AND VERTICAL MEMBERS
STEEL TUBES SHALL BE FORMED AND WELDED WITH ONE CONTINUOUS LONGITUDINAL WELD ONLY. AFTER FORMING AND WELDING THEY SHALL BE COLD ROLLED TO ENSURE UNIFORMITY OF SIZE AND SMOOTHNESS OF WELD. THERE SHALL BE NO TRANSVERSE WELDING EXCEPT AT THE FLANGE CONNECTIONS AND POLE BASE PLATES, WHERE THE TUBES SHALL TELESCOPE THE FLANGES AND PLATES AND BE CONTINUOUSLY WELDED BOTH SIDES, INSIDE AND OUT TO WITHSTAND THE FULL TRANSFER OF THE BENDING STRENGTH TO THE BOLTS. OPTIONALLY, THE MEMBERS MAY BE A SERIES OF TWO OR THREE DIFFERENT DIAMETER PIPES WELDED TOGETHER. STEEL TUBES SHALL BE CONSTRUCTED FROM MATERIALS CONFORMING TO STATE OF VERMONT, AGENCY OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, SUBSECTION 752.02.
7. GALVANIZING
ALL STEEL COMPONENTS, EXCEPT CONCRETE REINFORCING AND STAINLESS STEEL HARDWARE, ARE TO BE HOT DIPPED GALVANIZED AFTER FABRICATION. THE ASSEMBLIES SHALL BE DESIGNED AND FABRICATED TO PERMIT GALVANIZING ON ALL INTERIOR AND EXTERIOR SURFACES AND SHALL BE FREE OF POCKETS AND OTHER STRUCTURAL OBSTRUCTIONS THAT WILL NOT PERMIT PROPER DEPOSITION OF ZINC COATING. GALVANIZING SHALL BE IN ACCORDANCE WITH STATE OF VERMONT, AGENCY OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED 2011, SUBSECTION 752.02.
8. WELDING
ALL DESIGN DETAILS, WORKMANSHIP, PROCEDURES AND INSPECTION SHALL CONFORM TO VTRANS SPECIFICATIONS SUBSECTION 506.10.

9. FOUNDATIONS

- A. FOUNDATIONS SHALL BE DESIGNED IN ACCORDANCE WITH THE MREI 10-01 GUIDELINES ISSUED BY THE AGENCY.
 - B. FOUNDATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING NOTES:
 1. EXCEPT FOR THE UPPERMOST 2 FT OF SOIL, THE DRILLED SHAFT FOUNDATION SHALL BE POURED AGAINST UNDISTURBED MATERIAL; THE TOP 2 FT OF SOIL SHALL BE NEGLECTED FOR DESIGN PURPOSES. A DISPOSABLE CIRCULAR CONCRETE FORM, IF USED, SHALL NOT BE PLACED DEEPER THAN 2FT, IN ORDER NOT TO REDUCE THE FRICTION BETWEEN THE SOIL AND THE CONCRETE.
 2. BACKFILL MATERIAL PLACED ADJACENT TO THE FOUNDATION SHALL MEET THE REQUIREMENTS FOR GRANULAR BACKFILL FOR STRUCTURES, VTRANS SPECIFICATION SUBSECTION 704.08. BACKFILL MATERIAL SHALL BE COMPACTED AS DESCRIBED IN VTRANS' CONSTRUCTION SPECIFICATIONS SUBSECTION 204.08.
 3. CONCRETE FOR THE FOUNDATION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 501, HPC STRUCTURAL CONCRETE. THE CONCRETE SPECIFICATIONS MAY NEED TO BE ADJUSTED FOR CONSTRUCTABILITY ISSUES. HOWEVER, IF REQUIRED, THE CONTRACTOR SHALL SUBMIT ANY CHANGES TO THE CONCRETE SPECIFICATION FOR REVIEW BY THE VTRANS PROJECT MANAGER.
 4. STEEL PILES SHALL MEET THE REQUIREMENTS OF SECTION 505.
 5. WHEN THE DESIGN DEPTH OF A FOUNDATION CANNOT BE OBTAINED DUE TO UNFORESEEN FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR THE MANUFACTURER TO OBTAIN A REVISED FOUNDATION DESIGN. SUCH A REVISION SHALL BE SUBMITTED TO THE VERMONT AGENCY OF TRANSPORTATION PROJECT MANAGER AND MAY REQUIRE UP TO A 4 WEEK REVIEW PERIOD BY VTRANS.
 - C. SIGNALS/SIGNS SHALL BE INSTALLED AND LEVELED AND POLES SHALL BE PLUMB PRIOR TO PLACING GROUT UNDER POLE BASE. GROUT MATERIAL SHALL BE NON-SHRINKING MORTAR CONFORMING TO SUBSECTION 707.03.
10. EACH OVERHEAD TRAFFIC SIGNAL/SIGN SUPPORT SHALL BE GROUNDED. THE GROUND SHALL CONSIST OF:
- A. AN INTERNAL GROUND LUG OPPOSITE THE HAND HOLE.
 - B. A #6 AWG (MIN.) SOFT DRAWN COPPER GROUNDING ELECTRODE CONDUCTOR.
 - C. A 5/8 IN. X 8 FT (MIN) COPPER CLAD GROUNDING ELECTRODE. THE RESISTANCE TO GROUND SHALL BE 25 OHMS OR LESS. ADDITIONAL GROUNDING ELECTRODES MAY BE REQUIRED (MINIMUM SPACING SHALL BE 6 FT). WHEN A POWER SERVICE, METER AND DISCONNECT ARE ATTACHED TO A POLE, THERE SHALL BE A CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE METER AND DISCONNECT WHICH MAY RUN INTERNAL TO THE UPRIGHT, THROUGH THE 1/2 IN. FLEXIBLE TUBING IN THE CONCRETE BASE TO THE REQUIRED GROUNDING ELECTRODE(S). THE GROUNDING ELECTRODE CONDUCTOR FROM THE POLE GROUNDING LUG, CONTROLLER CABINET AND/OR LUMINAIRE MAY ATTACH TO THIS CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE SERVICE METER AND DISCONNECT. THE CONTRACTOR SHALL PERFORM A RESISTANCE TO GROUND TEST ON THE CONTINUOUS GROUNDING ELECTRODE CONDUCTOR FROM THE SERVICE METER AND DISCONNECT, AND PROVIDE A WRITTEN STATEMENT TO THE AREA ELECTRICAL INSPECTOR THAT THE GROUNDING ELECTRODE CONDUCTOR IS CONTINUOUS FROM THE SERVICE METER AND DISCONNECT AND THE RESISTANCE TO GROUND IS 25 OHMS OR LESS.
11. HORIZONTAL MEMBERS SHALL BE CAMBERED AND THE VERTICAL POLES BACK RAKED (WHERE APPLICABLE) TO THE ANTICIPATED DEAD LOAD DEFLECTION PLUS THE CAMBER, IF ANY, SPECIFIED ON THE PLANS.

12. AN EQUIVALENT ALTERNATE DESIGN MAY BE SUBSTITUTED FOR THE DETAILS AND MATERIALS SHOWN.
13. THE DETAILS OF DESIGN FOR THE STRUCTURE AND FOUNDATION ARE TO BE SUPPLIED BY THE CONTRACTOR AND/OR BY THE MANUFACTURER, THE STRUCTURE SHALL BE DESIGNED TO RESIST THE MAXIMUM LOADING AS OUTLINED IN THE AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2). ALL DESIGN CALCULATIONS FOR THE STRUCTURE AND THE FOUNDATION SHALL BE CHECKED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VERMONT PRIOR TO SUBMITTAL OF THE FABRICATION DRAWINGS TO THE VERMONT AGENCY OF TRANSPORTATION.
14. THE CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF THE DESIGN CALCULATIONS TO THE VERMONT AGENCY OF TRANSPORTATION, PROJECT MANAGER, SHOWING THE FOLLOWING INFORMATION FOR EACH OF THE VERTICAL AND HORIZONTAL COMPONENTS OF THE STRUCTURE AND FOUNDATION:
 - A. THE DESIGN AXIAL AND SHEAR FORCES AND BENDING AND TORSIONAL MOMENTS ACTING AT THE TOP OF THE FOUNDATION.
 - B. THE DESIGN AXIAL, BENDING AND SHEAR STRESSES AND THE COMBINED STRESS RATIO.
 - C. THE ALLOWABLE AXIAL, BENDING, AND SHEAR STRESSES.
 - D. ITEMS A, B, C SHALL BE SHOWN FOR EACH OF THE GROUP LOADINGS (I, II, III) AND FOR THE BASIC WIND LOAD APPLIED TO THE TWO CASES OUTLINED IN THE AASHTO STANDARD SPECIFICATIONS (SEE NOTE 2) SECTION 1.2.5 (D) (4).
 - E. FAILURE TO SUPPLY THE PROPER DESIGN INFORMATION SHALL BE CAUSE FOR REJECTION OF THE STRUCTURE.
 - F. A MINIMUM OF FOUR (4) WEEKS SHALL BE REQUIRED FOR REVIEW BY THE VERMONT AGENCY OF TRANSPORTATION.
 - G. EVERY MEMBER AND CONNECTION IN AN OVERHEAD TRAFFIC SIGNAL SUPPORT SHALL BE DESIGNED TO PROVIDE ADDITIONAL RESIDUAL CAPACITY FOR FUTURE MODIFICATION EQUIVALENT TO A 5-SECTION TRAFFIC SIGNAL HEAD WITH A 5 INCH LOUVERED BACKPLATE LOCATED ON THE OUTERMOST EXTENT OF THE MAST ARM.
15. FABRICATION DRAWINGS (6 COPIES OF EACH) SHALL BE SUBMITTED TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, PROJECT MANAGER FOR APPROVAL PRIOR TO FABRICATION. THE FABRICATION DRAWINGS SHALL INCLUDE THE FOLLOWING INFORMATION:
 - A. DETAILED DRAWING OF EACH COMPONENT OF THE STRUCTURE.
 - B. MATERIAL SPECIFICATION FOR EACH COMPONENT OF THE STRUCTURE, EITHER BY COMPLETE SPECIFICATION OR REFERENCE TO APPLICABLE ASTM STANDARDS.
 - C. NOTATION OF PROJECT NAME, PROJECT NUMBER, ROUTE NUMBER, AND STRUCTURE STATIONING (TO BE INCLUDED ON EACH SHEET).
 - D. DETAILS FOR LOCATION OF SIGNS/SIGNALS AND ATTACHMENT HARDWARE FOR THE SUPPORT STRUCTURE.
 - E. ALL ELEVATIONS AND DIMENSIONS NECESSARY TO PROVIDE A COMPLETE SET OF RECORD PLANS.
 - F. DEAD LOAD DEFLECTION AND CAMBER INFORMATION.
 - G. WELDING DETAILS AND PROCEDURES ARE REQUIRED FOR ALL WELDS. PROCEDURES SHALL BE SUBMITTED FOR APPROVAL WITH REFERENCE TO EACH WELD IDENTIFIED ON THE FABRICATION DRAWINGS. (SEE SUBSECTION 506.10).
16. THE TRAFFIC SIGNALS SHALL BE MOUNTED TO THE ARM OR POLE USING A FIXED MOUNT SYSTEM, UNLESS OTHERWISE NOTED ON THE CROSS SECTION SHEET. FOR SIGNALS MOUNTED ON A MAST ARM, THE MAST ARM AND MOUNTING POINT SHALL BE IN THE MIDDLE OF THE SIGNAL HEAD.
17. BASE PLATES SHALL BE STAMPED WITH THE VERTICAL POLE DIAMETER, HEIGHT, YIELD STRENGTH, GAUGE AND THE HORIZONTAL MEMBER DIAMETER, LENGTH, YIELD STRENGTH, AND GAUGE. ALTERNATELY, THE INFORMATION MAY BE STAMPED ON A METAL TAG RIVETED TO THE POLE NEAR THE HAND HOLE.
18. SEE STANDARD E-171A FOR ADDITIONAL NOTES. SEE SHEET 43 FOR BORING INFORMATION.

PROJECT NAME: ESSEX TOWN
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DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
TRAFFIC SIGNAL GENERAL NOTES SHEET 39 OF 64

STREET LIGHTING PLAN AND NOTES

LUMINAIRE TYPE:
LENS FINISH: DROP LENS GLASS
HOUSING: ALUMINUM

LAMP TYPE:
TYPE: 250W HIGH PRESSURE SODIUM

ANSI/IES TYPE:
LONGITUDINAL CLASSIFICATION: MEDIUM
ROADWAY CLASSIFICATION: TYPE III
OPTICS: SEMI-CUTOFF

LUMINAIRE:
GE CATALOG NO. M2RR25S
COOPER LIGHTING - STREETWORKS OVX25SXX3EG
LUMEC HELIOS HBS-250HPS-MS3F

LAMP:
250W HPS

MOUNTING HEIGHT:
30'-0"

BRACKET ARM LENGTH:
12'-0"

CONCRETE BASES

WHEN CONCRETE BASES ARE INSTALLED IN SLOPING GROUND, THE GREATEST EXPOSED HEIGHT TO KEEP ALL OF THE TOP ABOVE GROUND MUST BE DOUBLED AND THEN ADDED TO THE MINIMUM DEPTH FOR THE TOTAL BASE DEPTH.

CARE SHOULD BE TAKEN WHERE CONCRETE BASES, DRAINAGE STRUCTURES OR UTILITIES ARE CLOSE TOGETHER.

POLES, ANCHOR BASES AND ARM

ALL NEW STREET LIGHTS POLES AND LUMINAIRE ARMS SHOULD BE ALUMINUM IN ACCORDANCE WITH SUBSECTION 753.01(B).

ALL STREET LIGHT POLES SHALL HAVE A FRANGIBLE OR BREAKAWAY DEVICE (TRANSFORMER BASE, UNLESS NOTED ON THE PLANS.

LUMINAIRES

ALUMINUM, COBRA HEAD TYPE, 250 WATT HIGH PRESSURE SODIUM (HPS), TYPE 3 DISTRIBUTION, GE CATALOG NO. M2RR25S OR COOPER LIGHTING - STREETWORKS OVX25SXX3EG OR LUMEC HELIOS HBS-250HPS-MS3F

PULLBOXES

POLYMER CONCRETE AND REINFORCED FIBERGLASS U.L. LISTED PULLBOXES SHALL BE INSTALLED WITH HEAVY DUTY COVERS.

CONDUIT SLEEVE

THE SLEEVE SHALL EXTEND TO WITHIN 2 FEET OF THE SIDE OF A CONCRETE BASE OR PULLBOX. WHERE NO CONCRETE BASE OR PULLBOX IS PRESENT, THE SLEEVE SHALL EXTEND 4 FEET BEYOND THE OUTSIDE EDGE OF SHOULDER OR FACE OF CURB. BACKFILLING AROUND A SLEEVE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. THE SLEEVE SHALL BE SCHEDULE 80.

WIRE

ALL WIRING BETWEEN THE METER AND/OR POWER SOURCE AND THE FIRST POLE AND/OR PULLBOX AND BETWEEN POLES AND/OR PULLBOXES SHALL BE COPPER AND SIZE AS SPECIFIED ON THE PLANS. ALL WIRE SHALL HAVE TYPE XHHW INSULATION OR EQUIVALENT.

GROUNDING

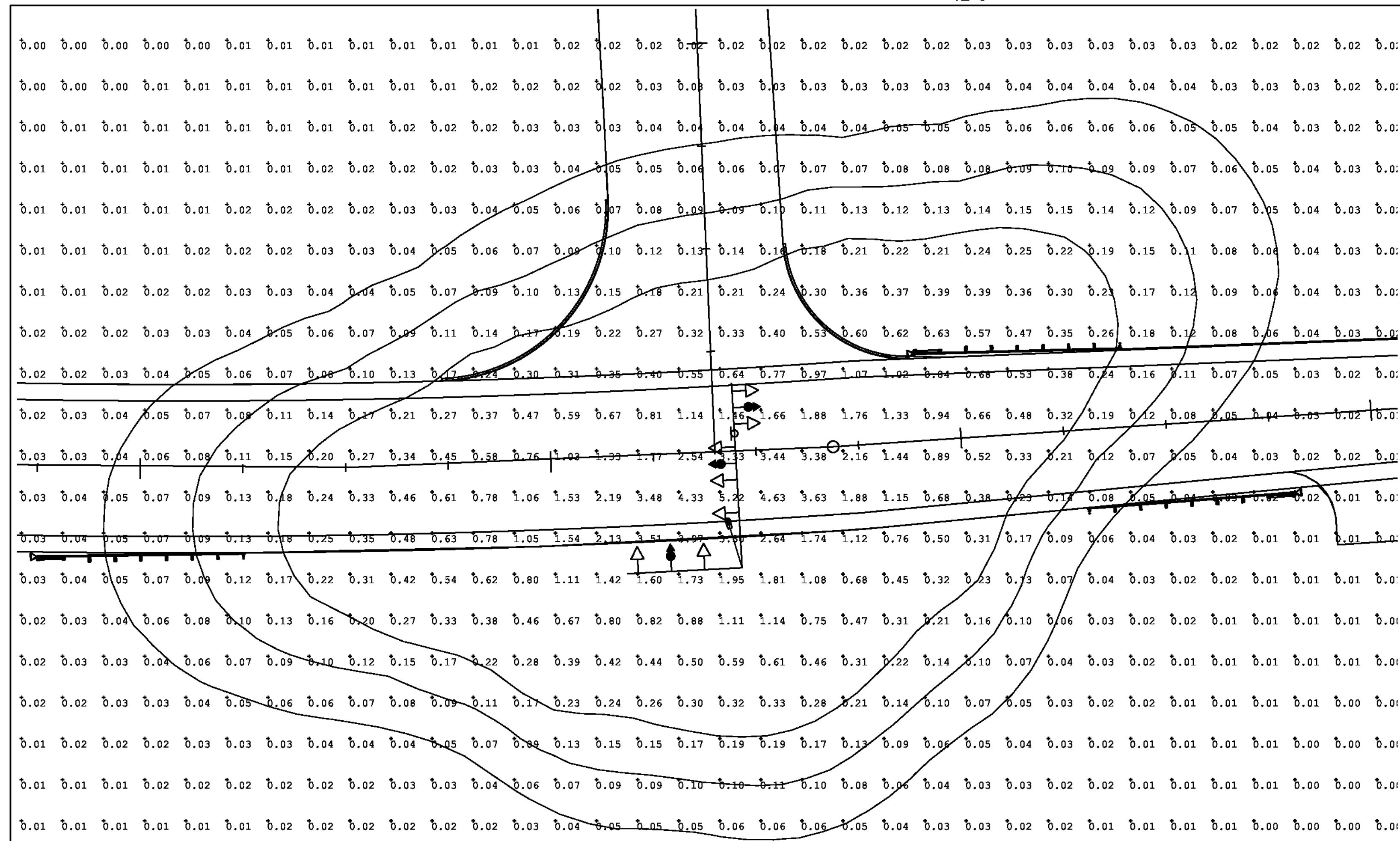
ALL CONDUIT MUST INCLUDE A GROUNDING CONDUCTOR. RIGID STEEL CONDUIT SHALL BE PROPERLY CONNECTED AT THE JOINTS SO AS TO BE WATERTIGHT AND MAINTAIN ELECTRICAL CONTINUITY AND HAVE GROUNDING BUSHINGS SO AS TO ACT AS A GROUNDING CONDUCTOR. ALUMINUM WIRE SHALL NOT BE USED FOR GROUND WIRE.

GENERAL

THE LOAD ON EACH BRANCH OF A THREE WIRE CIRCUIT SHALL BE AS BALANCED AS POSSIBLE. LOAD TO NEUTRAL.

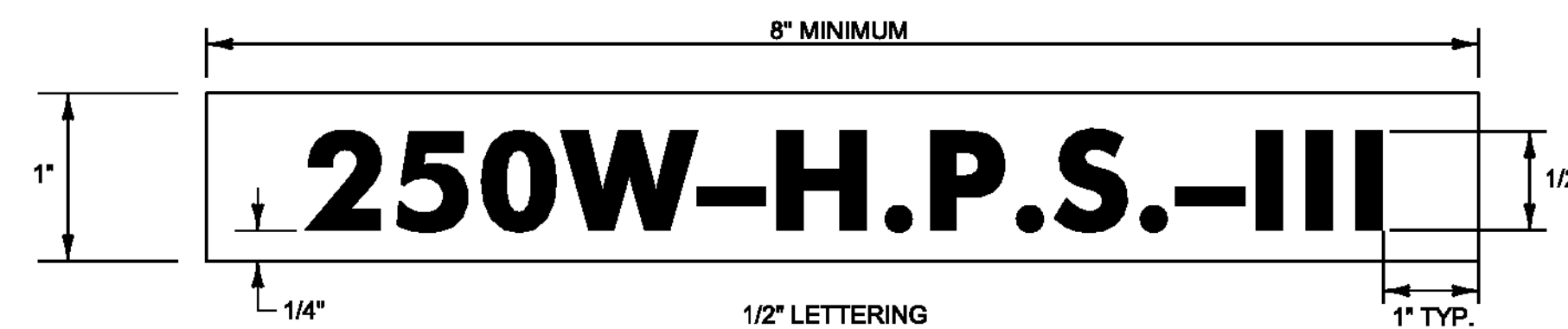
THE LAST CONCRETE POLE BASE AT THE END OF EACH CIRCUIT AND SOME PULLBOXES SHALL HAVE A CONDUIT SWEEP WITH CAP INSTALLED FOR FUTURE USE.

ALL CONNECTING HARDWARE (NUTS, BOLTS, ETC.) SHALL BE STAINLESS STEEL.



LIGHTING PLAN

1" = 20'



LEGEND: BLACK OR WHITE (NON-REFLECTIVE) - STAMPED PRIOR TO PRINTING/PAINTING.
BACKGROUND: NATURAL ALUMINUM OR FLAT BLACK SURFACE, THE SAME AS POLE FINISH.

NOTES:

1. THE TAG SHALL BE MOUNTED ON ALL STREET LIGHT POLES IN SUCH A MANNER AS NOT TO BE EASILY REMOVED, SUCH AS WELDED, RIVETED, OR BOLTED WITH VANDAL PROOF BOLTS.
2. THE LETTERS SHALL BE PUNCHED, STAMPED, ENGRAVED, OR PHOTO-ETCHED. PUNCHING, STAMPING OR ENGRAVING SHALL PENETRATE AT LEAST 1/2 THE BASE MATERIAL THICKNESS.
3. THE BASE MATERIAL FOR THE TAG SHALL BE ALUMINUM WITH A MINIMUM THICKNESS OF 0.10 INCHES.
4. THE TAG SHALL BE ATTACHED TO THE POLE ABOVE THE HANDHOLE, 6 INCHES MAXIMUM, IF THE POLE HAS A TRANSFORMER BASE, ATTACH TAG TO COVER.

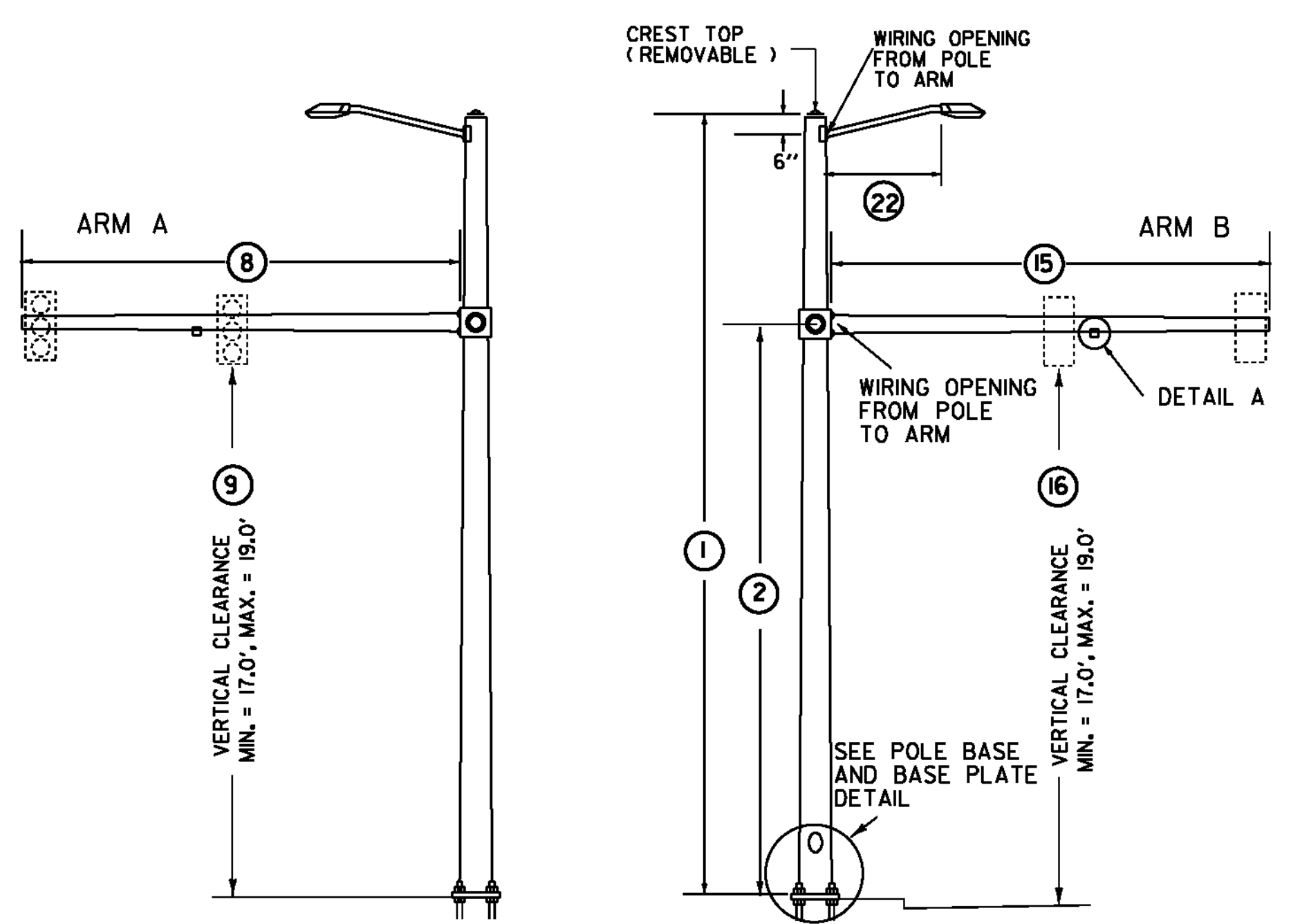
DETAIL FOR TAGS ATTACHED TO STREET LIGHT POLES

NOT TO SCALE

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002traf.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: M. LACROIX
STREET LIGHTING PLAN AND NOTES

PLOT DATE: 24-AUG-2012
DRAWN BY: M. LACROIX
CHECKED BY: J. DEVLIN
SHEET 40 OF 64

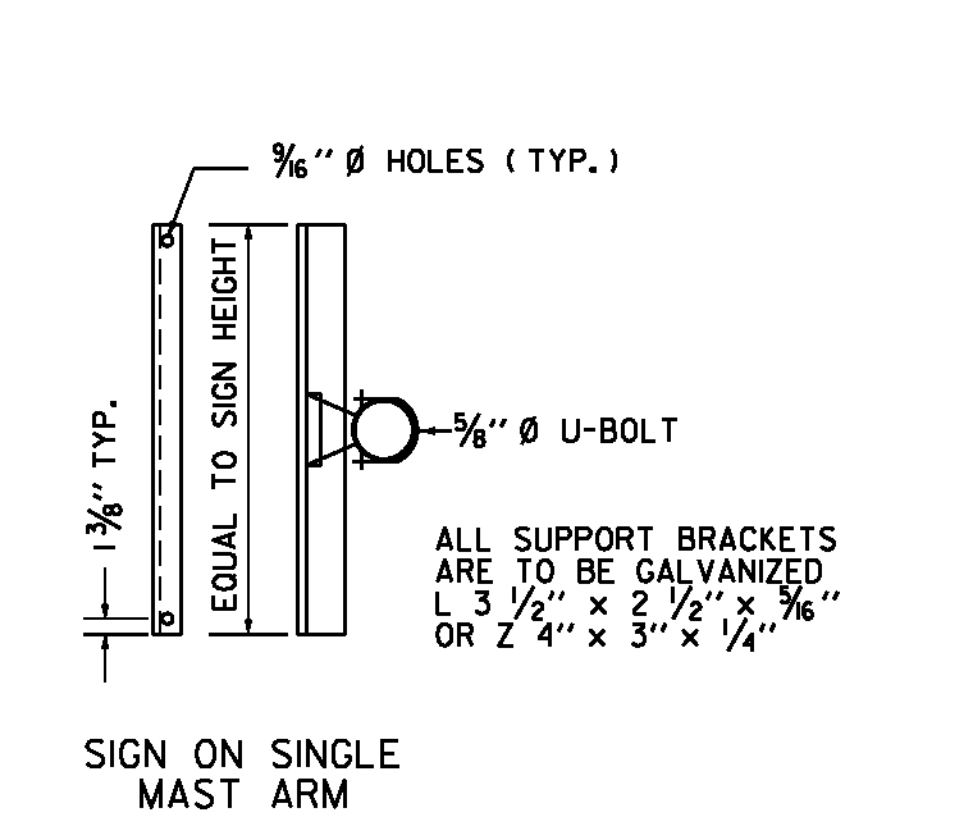
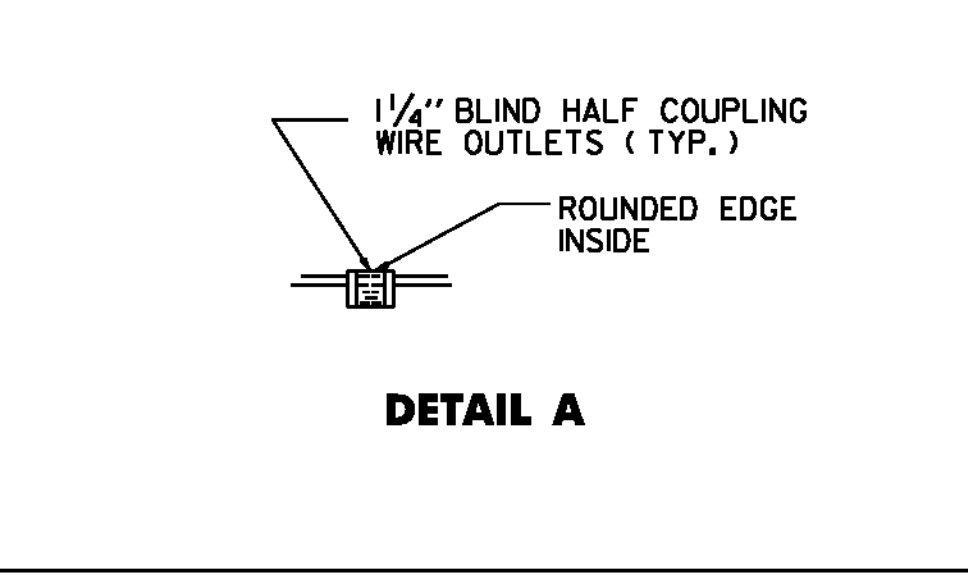


MAPI

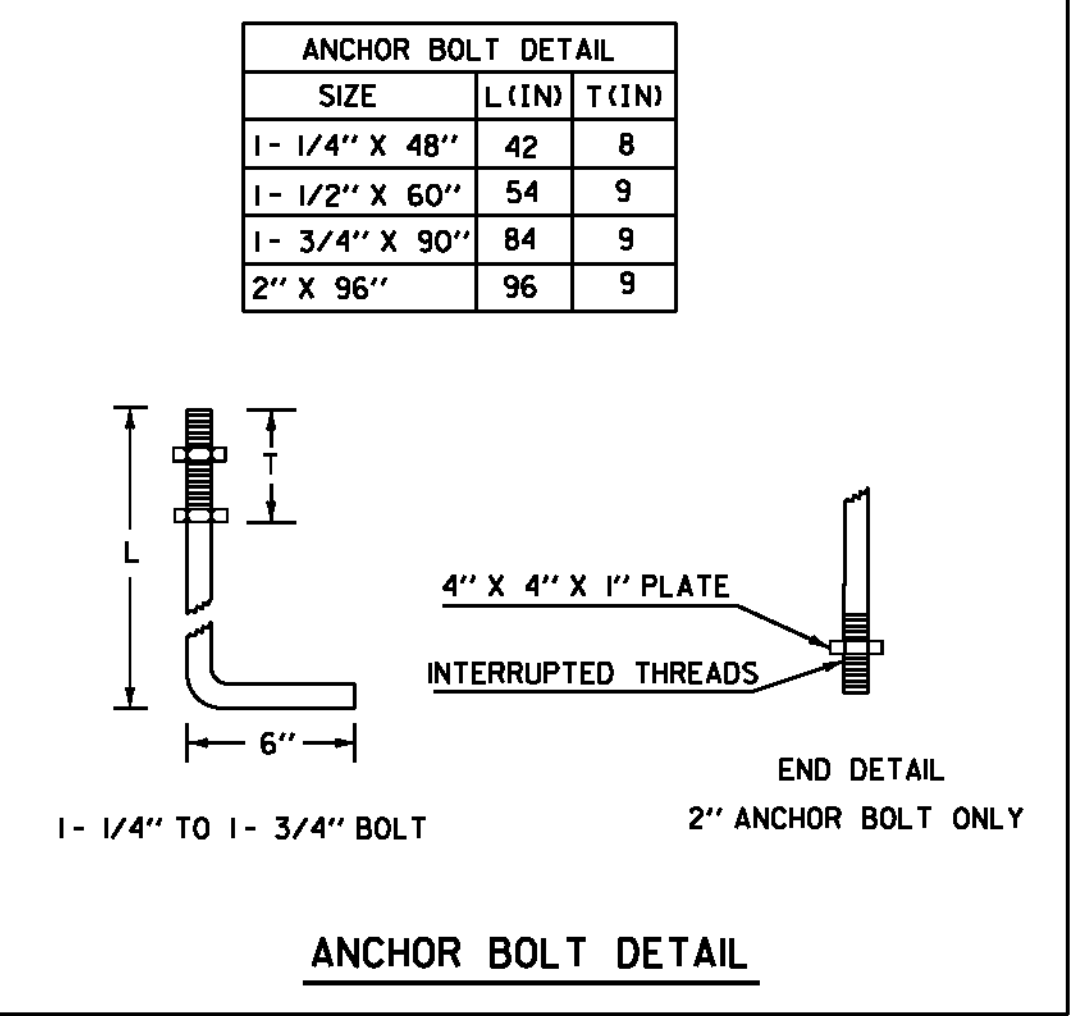
POLE BASE DIAMETER (3)
 POLE GAUGE (4)
 POLE TAPER RATE (5)

ARM B DIAMETER (10)
 ARM B GAUGE (11)
 ARM B TAPER RATE (12)

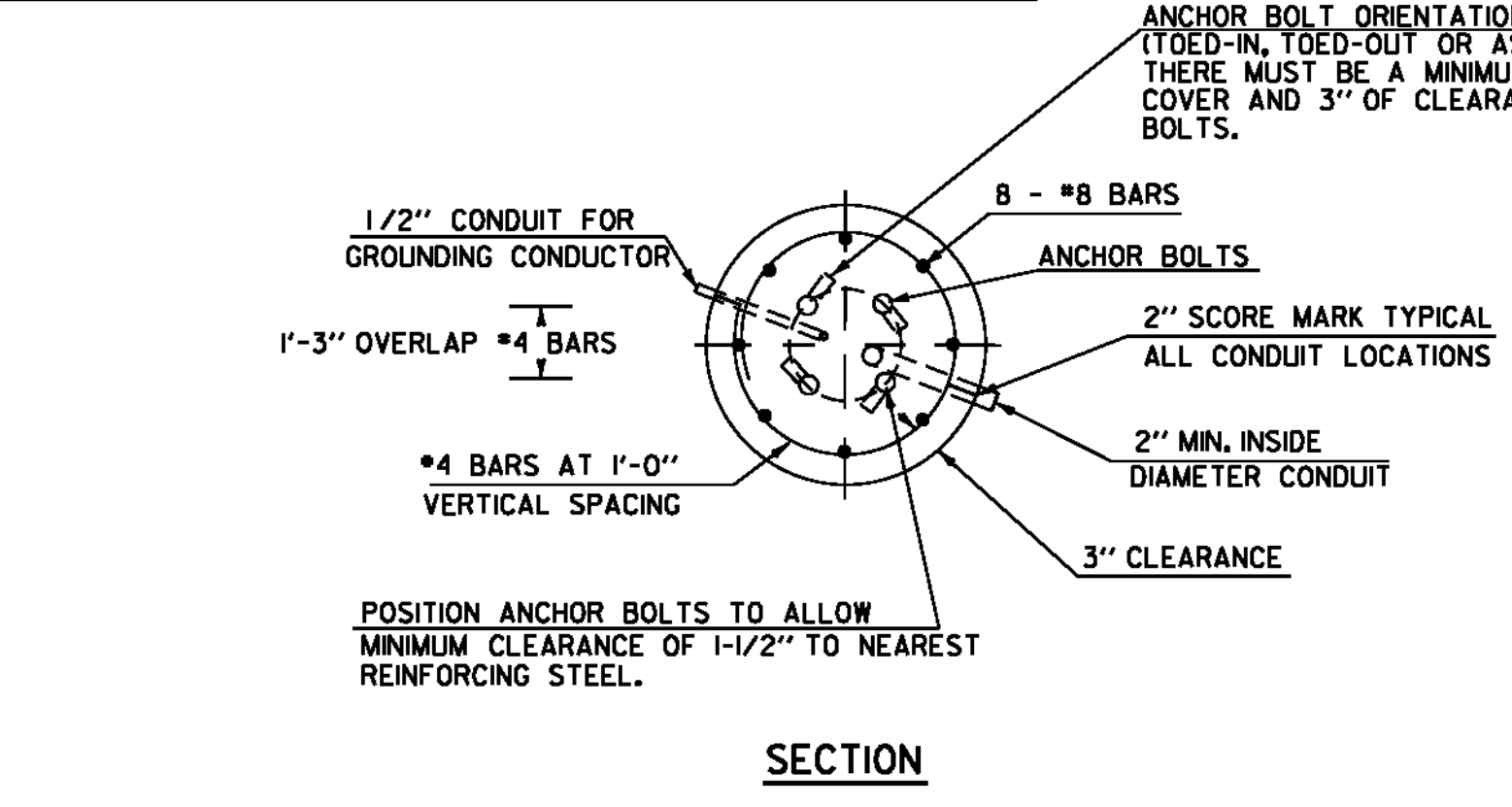
ARM A DIAMETER (17)
 ARM A GAUGE (18)
 ARM A TAPER RATE (19)



SIGN BRACKET DETAILS

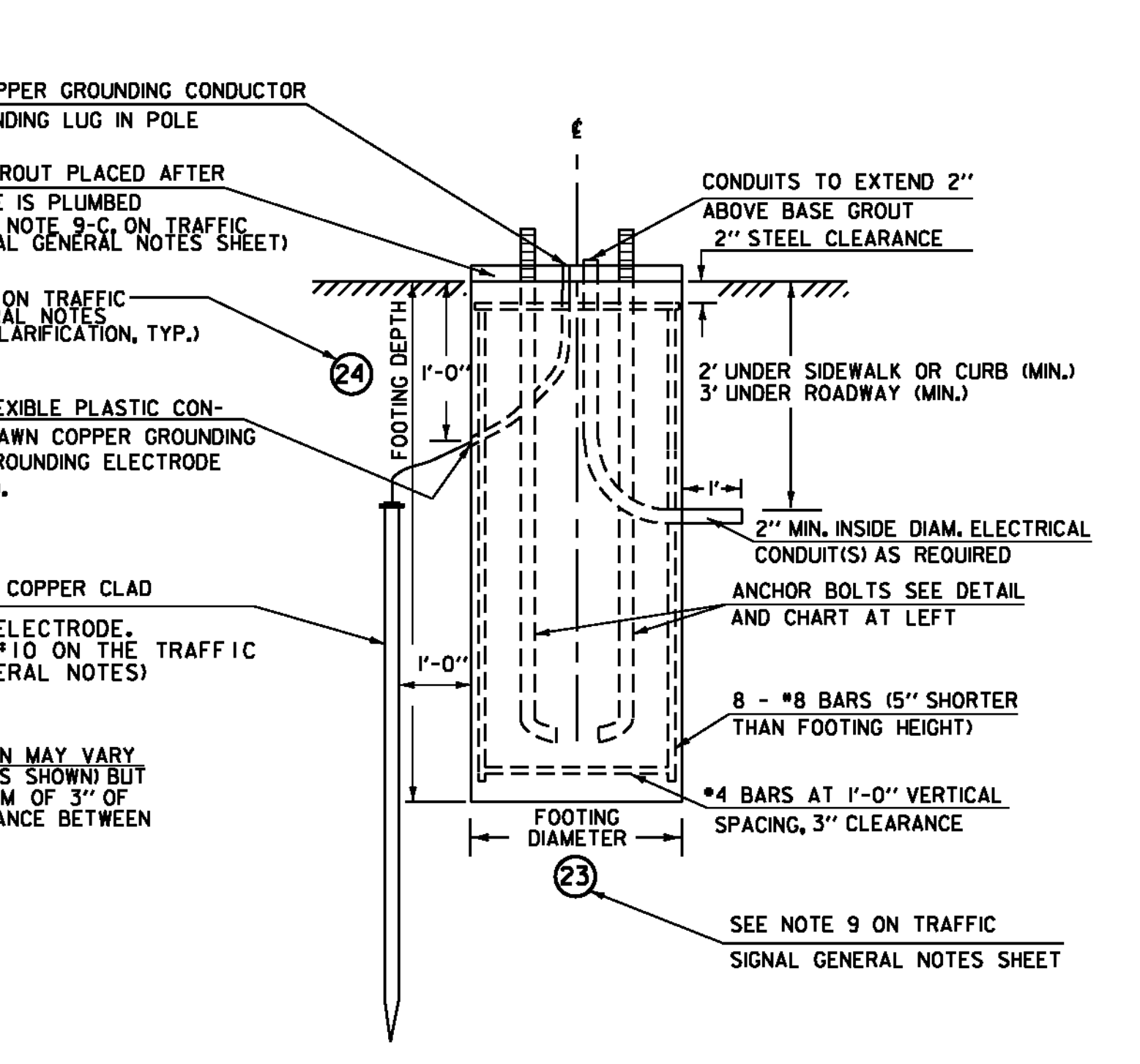


ANCHOR BOLT DETAIL



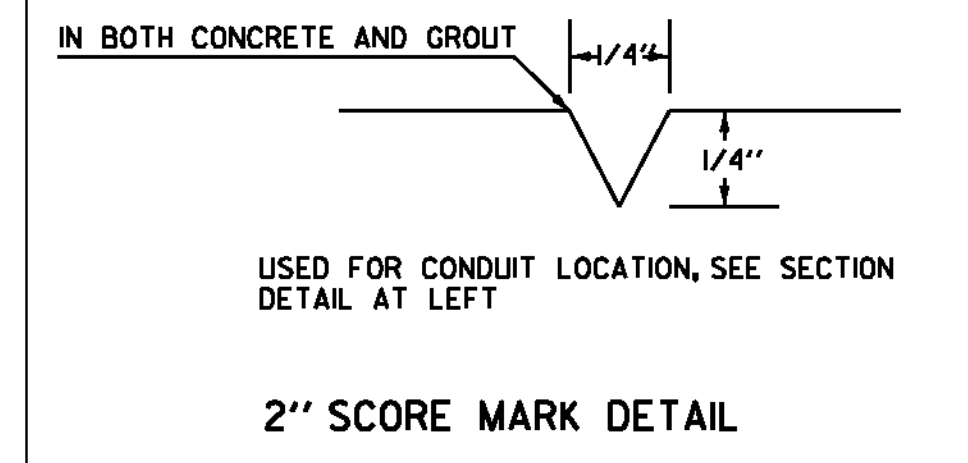
CANTILEVER FOOTING DETAIL

(DRILLED SHAFT)

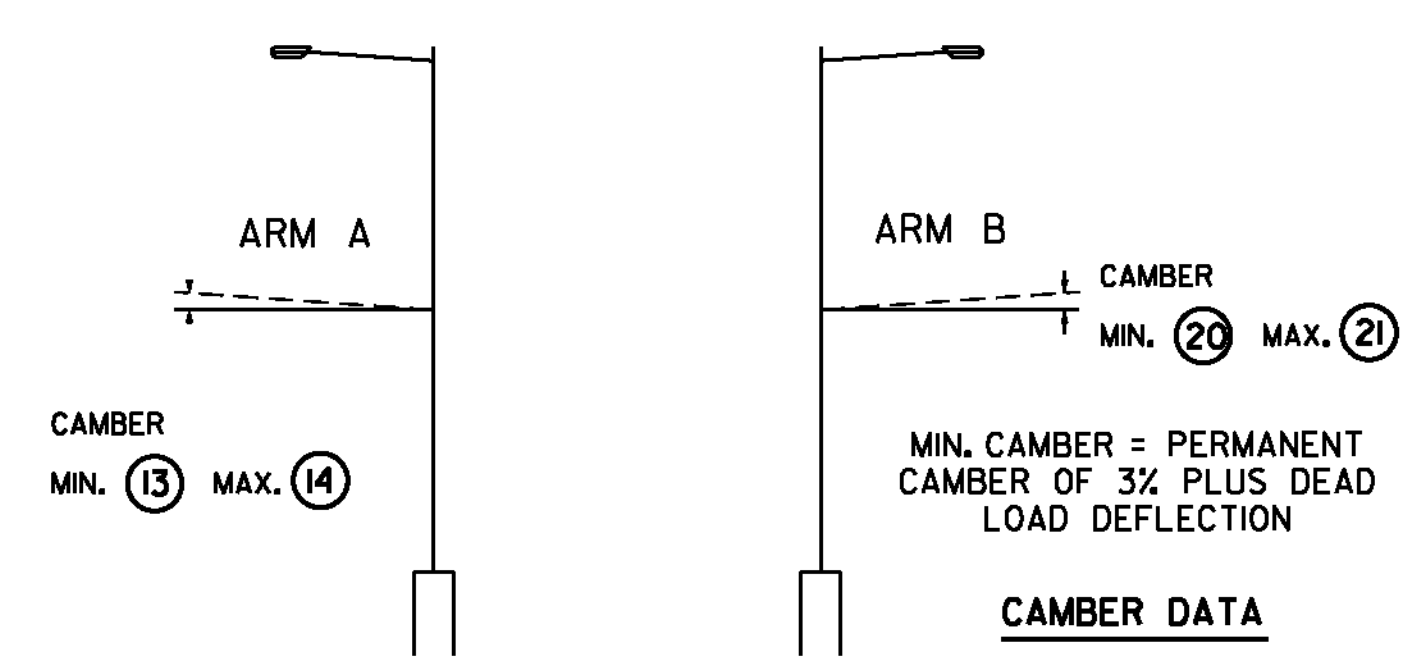


ELEVATION

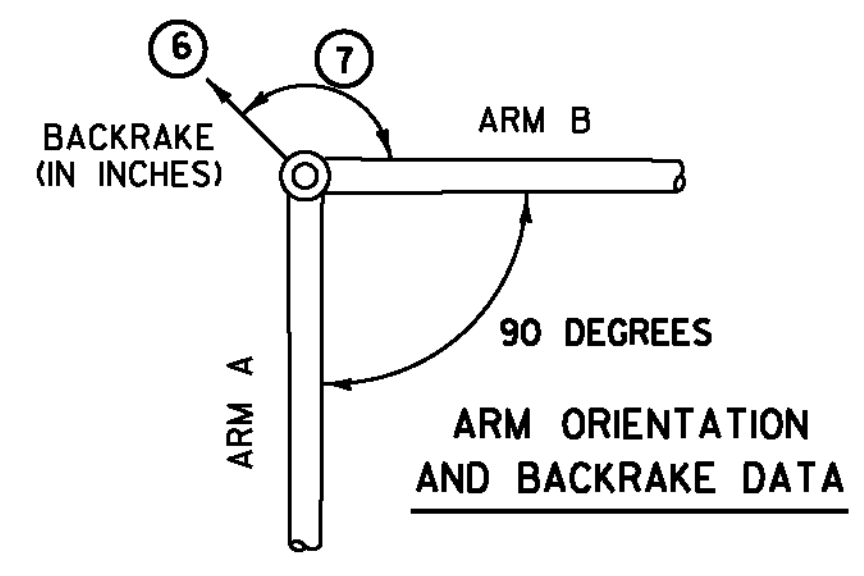
N.T.S. (TYP.)



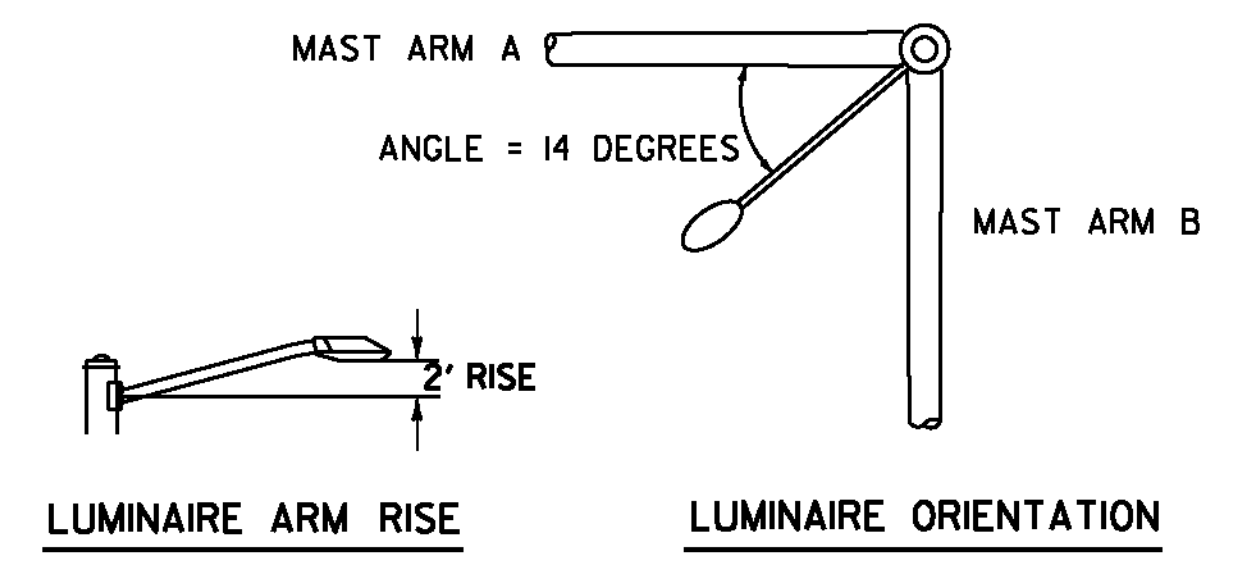
2" SCORE MARK DETAIL



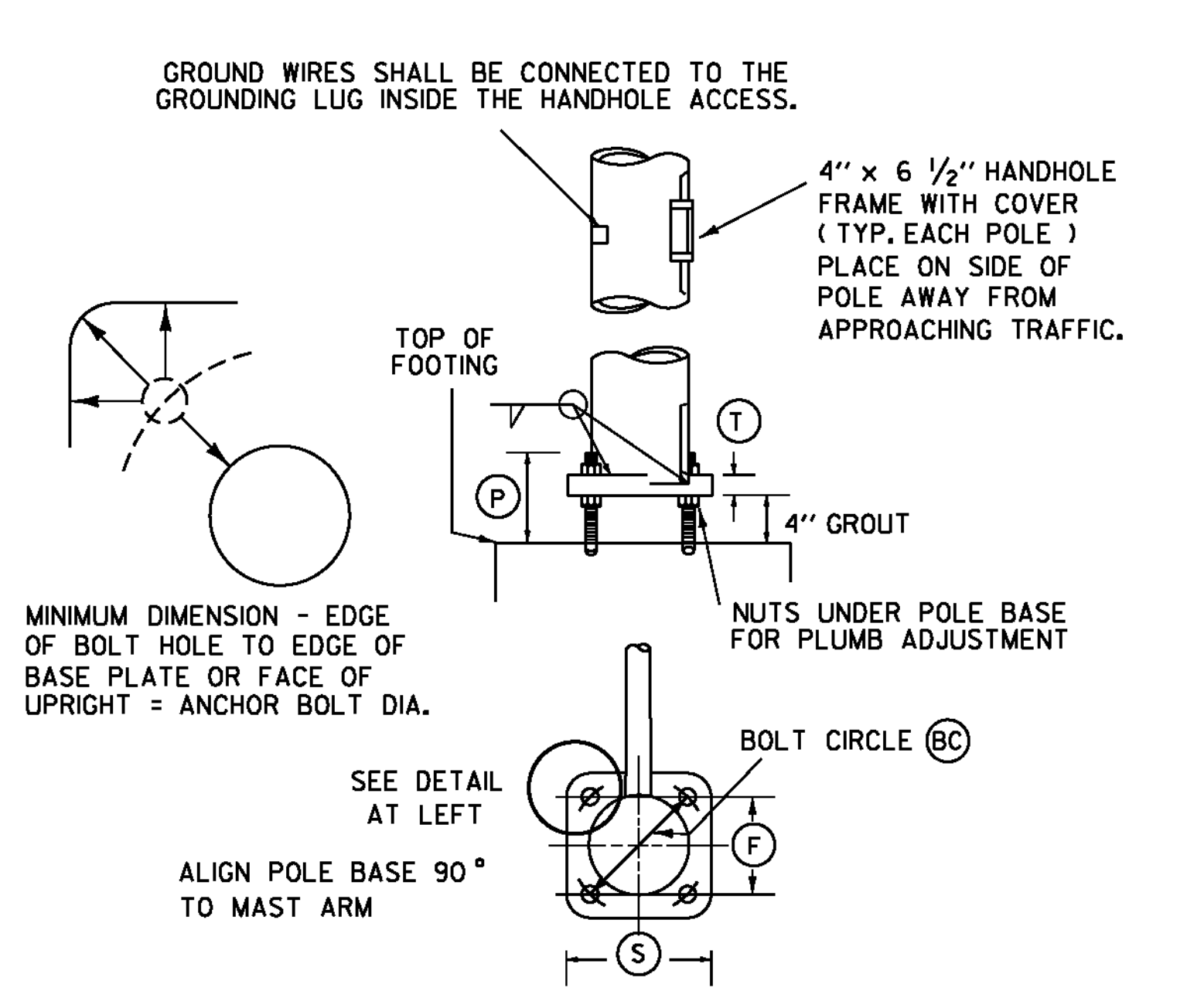
CAMBER DATA



ARM ORIENTATION AND BACKRAKE DATA



LUMINAIRE ARM RISE LUMINAIRE ORIENTATION



POLE BASE AND BASE PLATE DETAIL

POLE	POLE DATA							ARM DATA														FOOTING DATA		BASE PLATE / BOLT DATA							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(BC)	(F)	(S)	(T)	(P)	ANCHOR BOLT SIZE	
MAPI	30	20.5						45																							

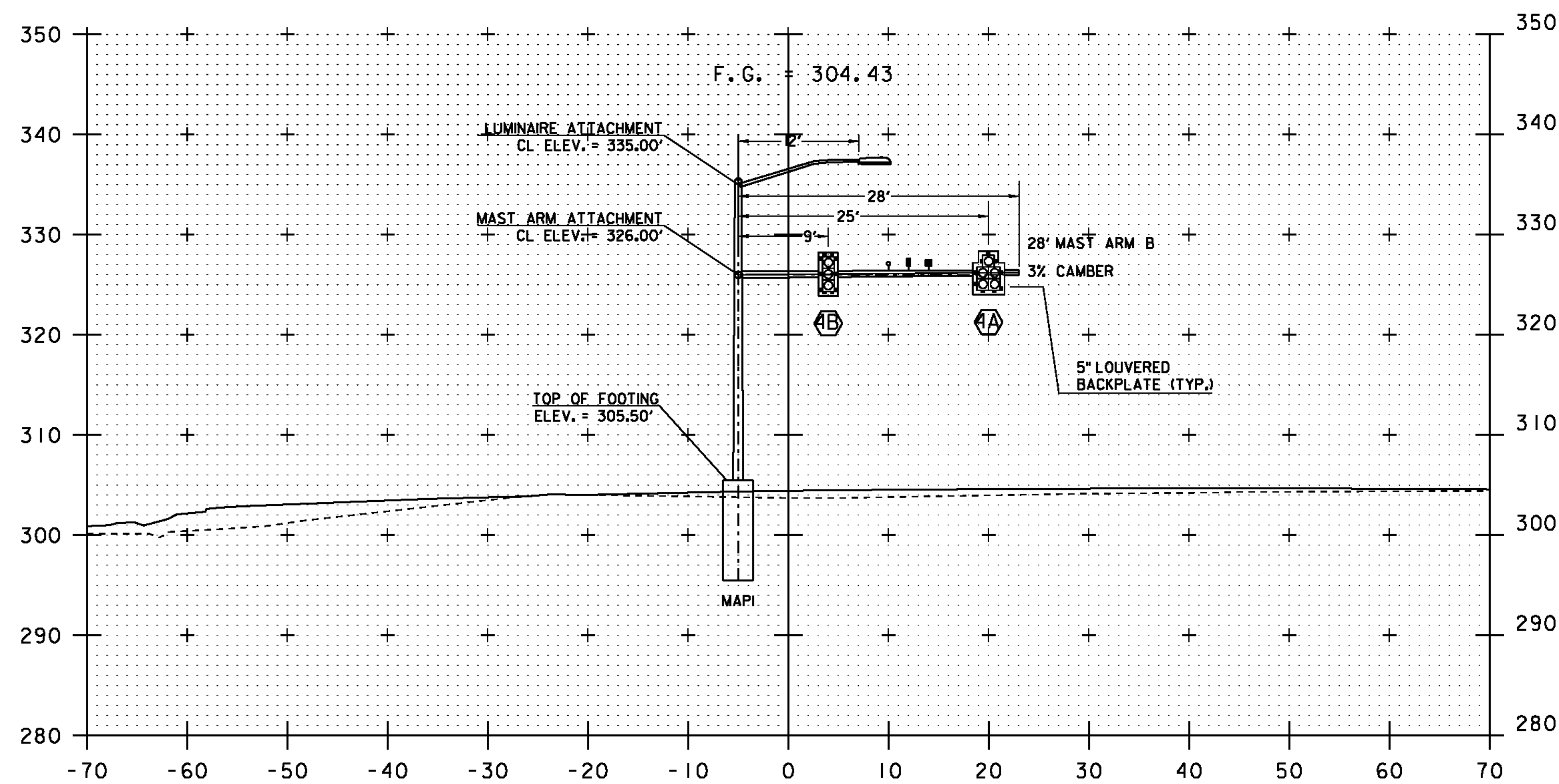
NOTE:
 DETAILS
 NTS

DOUBLE MAST ARM CANTILEVER FOOTING DETAIL SHEET

PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)
 FILE NAME: t97d002traf.dgn
 PROJECT LEADER: J. SCHULTZ
 DESIGNED BY: D. LYMAN
 MAST ARM CANTILEVER FOOTING DETAILS

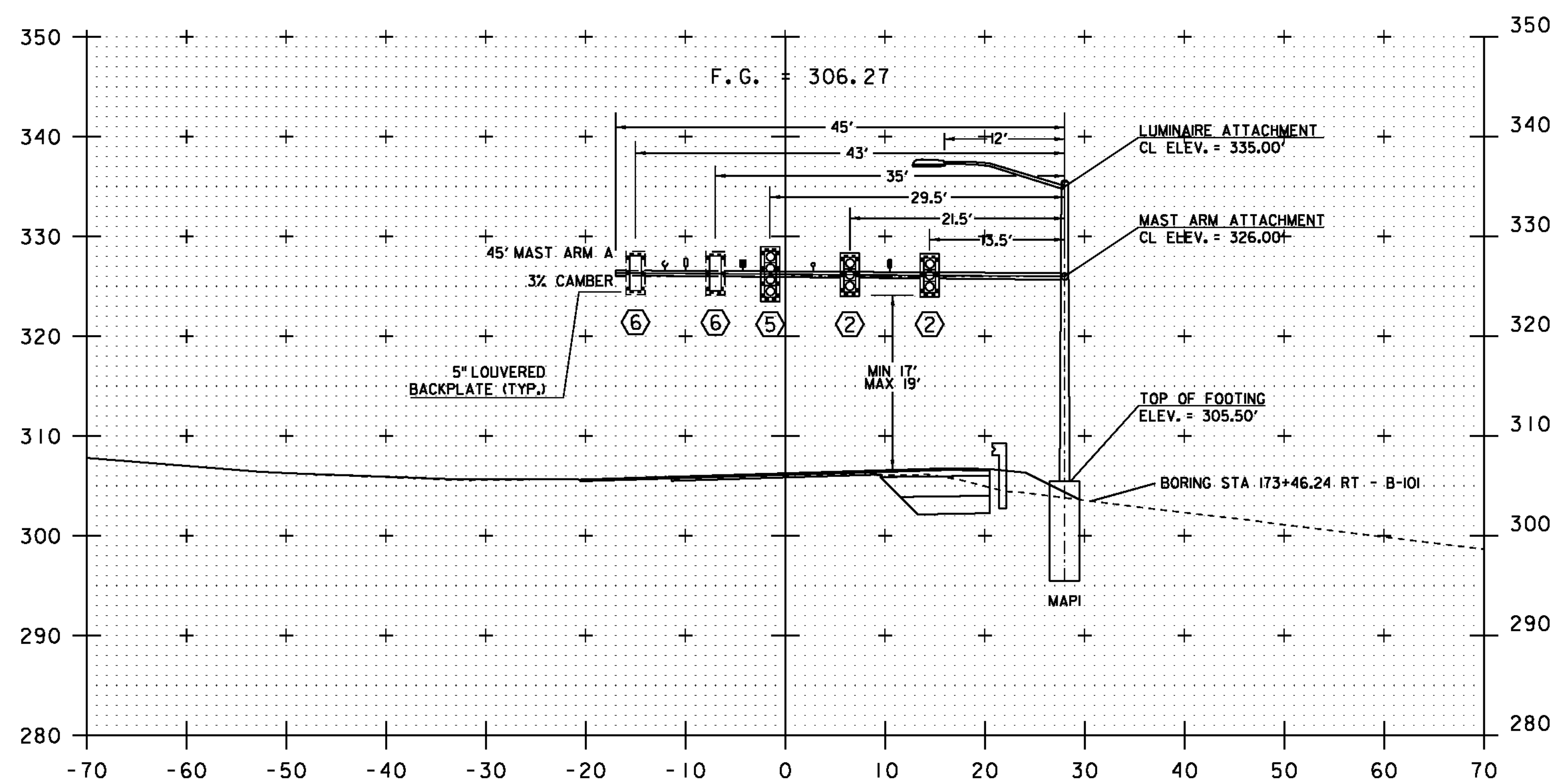
PLOT DATE: 24-AUG-2012
 DRAWN BY: D. LYMAN
 CHECKED BY: J. DEVLIN
 SHEET 41 OF 64

MAST ARM #2
LOOKING SOUTH ON
SAND HILL ROAD

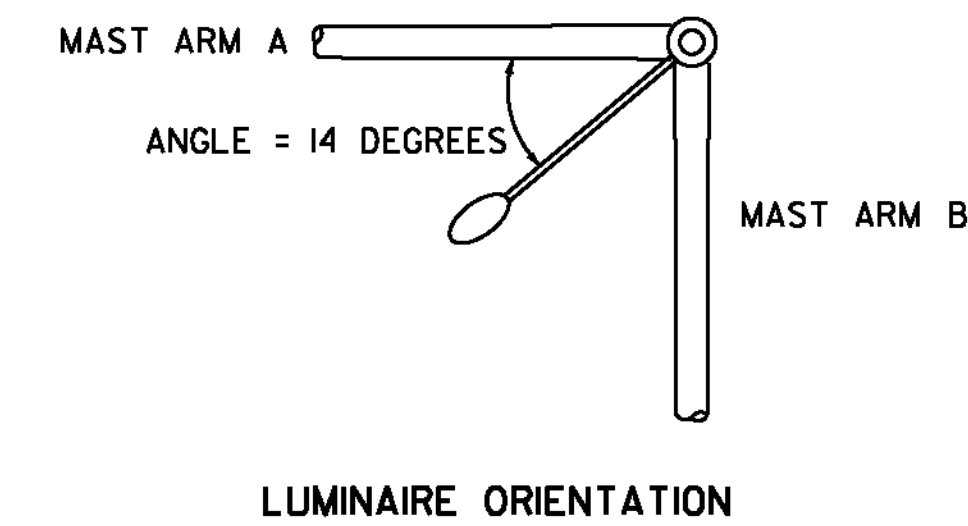


199+72

MAST ARM #1
LOOKING EAST ON
VT 117



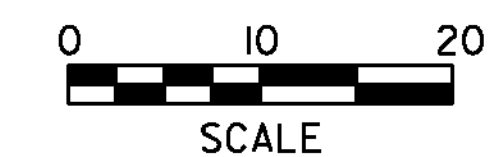
173+45



NOTES :

1. ALL MAST ARM FOOTINGS SHALL INCLUDE A 4" REVEAL. ELEVATIONS SHOWN IN CROSS-SECTIONS ARE APPROXIMATE FINAL GRADE ELEVATIONS FOR CONTRACTOR BIDDING PURPOSES ONLY. ACTUAL FOOTING ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO SUBMITTING WORKING DRAWINGS.
2. MAST ARM FOOTING SIZES ARE NOT TO SCALE. FOOTING DESIGNS SHALL BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH SOIL CONDITIONS AND ACTUAL MAST ARM LOADINGS TRANSMITTED TO THE TOP OF THE FOOTINGS.
3. PLEASE REFER TO SHEET 43 FOR BORING INFORMATION. FOR ADDITIONAL INFORMATION PLEASE REFER TO THE GEOTECHNICAL REPORT IN THE CONTRACT DOCUMENTS.
4. SIGNAL HEADS SHALL BE MOUNTED ON THE VERTICAL CENTER OF THE MAST ARM.

NEW	LEGEND
?	VIDEO DETECTION CAMERA
⚡	PREEMPTION STROBE
⚡	OPTICAL PREEMPTION DETECTOR



PROJECT NAME:	ESSEX TOWN
PROJECT NUMBER:	STP 5400 (5)
FILE NAME:	+97d002traf.dgn
PROJECT LEADER:	J. SCHULTZ
DESIGNED BY:	D. LYMAN
MAST ARM CROSS SECTION SHEET	
PLOT DATE:	24-AUG-2012
DRAWN BY:	D. LYMAN
CHECKED BY:	J. DEVLIN
SHEET	42 OF 64

SOIL CLASSIFICATION

AASHTO

- A1 GRAVEL AND SAND
- A2 SILTY OR CLAYEY GRAVEL AND SAND
- A3 FINE 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 1/2" 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 1/8"
- BX CORE SIZE 1/4"
- NX CORE SIZE 3/8"
- 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 TO LEDGE OR BOULDER
- 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	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		



STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH SECTION
SUBSURFACE INFORMATION

BORING NUMBER: B-101
SHEET 1 of 1
DATE STARTED: 8/10/07
DATE COMPLETED: 8/10/07

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
		PROJECT NAME: ESSEX TOWN SITE NAME: VT117/TH4 STATION: 173+46.24 OFFSET: 30.64 VTSPG: N 721767.45 ft E 1497074.31 ft							
		PROJECT NUMBER: STP 5400(5) SITE NUMBER: POLE BASE GROUND ELEVATION: 303.44 ft GROUNDWATER DEPTH: Hole Cave in at 16.0 ft PROJECT PIN NUMBER: 97D002							
		BORING CREW CREW CHIEF: PORTER DRILLER: PORTER LOGGER: WERNER							
		BORING RIG: LAG TRACK RIG w/AUTO HAMMER BORING TYPE: HOLLOW STEM AUGER SAMPLE TYPE: SPLIT BARREL CHECKED BY: CAA							
0		A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft	16	8.6	13.6	65.7	20.7		
1		Field Note, No Recovery, Stone in end of sampler	6						
2		A-3, Sa, brn, Moist, Rec. = 1.6 ft	5	7.2	1.8	91.5	6.7		
3		A-3, Sa, brn, Moist, Rec. = 1.6 ft	7	8.4	1.3	89.4	9.3		
4		A-2-4, Sa, gry, Moist, Rec. = 1.5 ft	8	9.9	2.3	79.1	18.6		
5		A-2-4, SiSa, gry, Moist, Rec. = 1.4 ft	9	15.8	2.0	68.2	29.8		
6		A-2-4, Sa, gry, Wet, Rec. = 1.3 ft	8	23.1	1.1	86.1	12.8		
7		A-2-4, SiSa, brn, Wet, Rec. = 1.3 ft	7	23.4	2.2	76.7	21.1		
8		A-3, Sa, brn, Wet, Rec. = 2.0 ft	6	22.2	1.5	94.1	4.4		
9		A-3, Sa, brn, Wet, Rec. = 2.0 ft	6	26.1	0.2	97.5	2.3		
10		A-1-b, Sa, brn, Wet, Rec. = 0.7 ft	3	23.5	9.5	84.4	6.1		
11		Field Note, Tough drilling in Cobbles and gravel material at 22.5 ft.							
12		A-3, Sa, brn, Wet, Rec. = 0.5 ft	11	20.0	5.6	90.8	3.6		
13		A-4, SaSi (HP), gry, Moist, Rec. = 1.3 ft		10.1	18.9	29.2	51.9	16	4
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30		A-1-b, GrSa, gry, Wet, Rec. = 1.1 ft	39	14.1	32.4	54.5	13.1		
31		Hole stopped @ 32.0 ft							
32		DRILLER'S NOTE: 1. Possible water table at 12.0 ft							

LOG OF BORING ESSEX TOWN STP 5400(5).GPJ VT AOT.GBT 6/30/09

GENERAL NOTES

- THE SUBSURFACE EXPLORATIONS SHOWN HEREIN WAS MADE ON AUGUST 10, 2007 BY THE AGENCY.
- SOIL AND ROCK CLASSIFICATIONS, PROPERTIES AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION FROM AVAILABLE SUBSURFACE INFORMATION BY THE AGENCY AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
- 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.

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.

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002frm.dgn PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN CHECKED BY: J. DEVLIN
BORING SHEET SHEET 43 OF 64

646.406 - DURABLE 4" WHITE LINE, RECESSED POLYUREA
 STA 166+75.00 LT - 171+50.00 LT (SOLID)
 STA 166+75.00 RT - 171+50.00 RT (SOLID)
 STA 169+00.00 RT - 171+00.00 RT (DOTTED)
 STA 171+00.00 RT - 171+50.00 RT (SOLID)

646.416 - DURABLE 4" YELLOW LINE, RECESSED POLYUREA
 STA 166+75.00 LT - 167+50.00 LT (SOLID-DOUBLE)
 STA 167+50.00 LT - 171+50.00 LT (SOLID-DOUBLE)
 STA 167+50.00 RT - 171+00.00 LT (SOLID-DOUBLE)

646.491 - DURABLE LETTER OR SYMBOL, TYPE I TAPE
 STA 168+75.00 RT (LETTERS - SIGNAL AHEAD)
 STA 171+32.00 CL (SYMBOL - LEFT ARROW)

NOTE: TYPE I TAPE SHALL BE
 ATM 400 EXTENDED GRADE TAPE OR
 DIRECTOR 60-HP OR STAMARK HIGH
 PERFORMANCE TAPE SERIES 3801

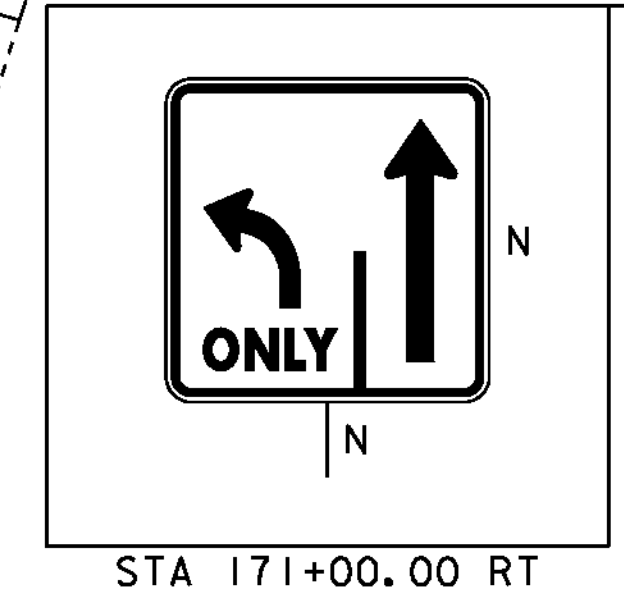
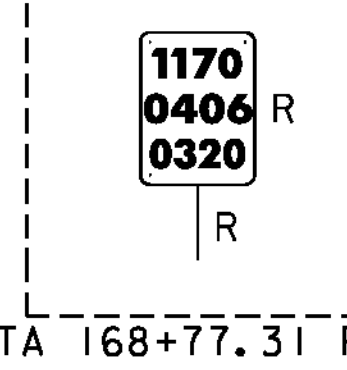
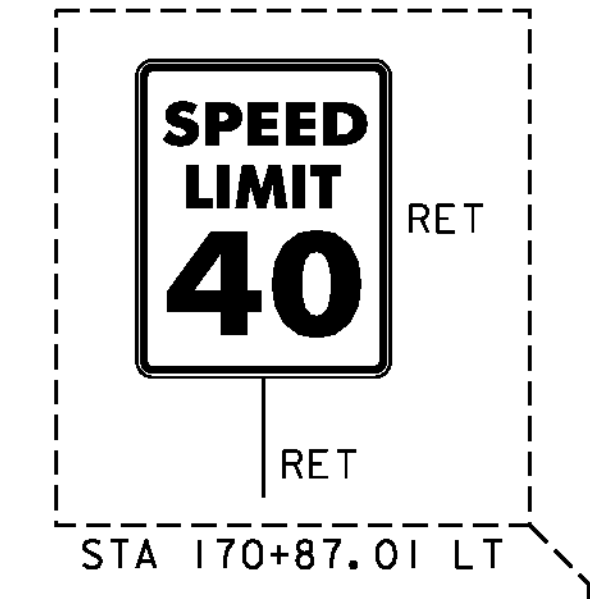
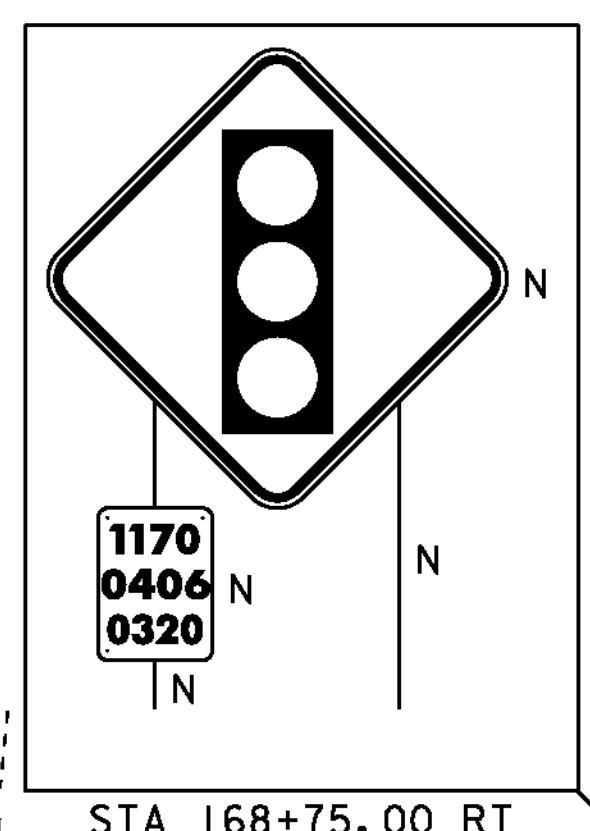
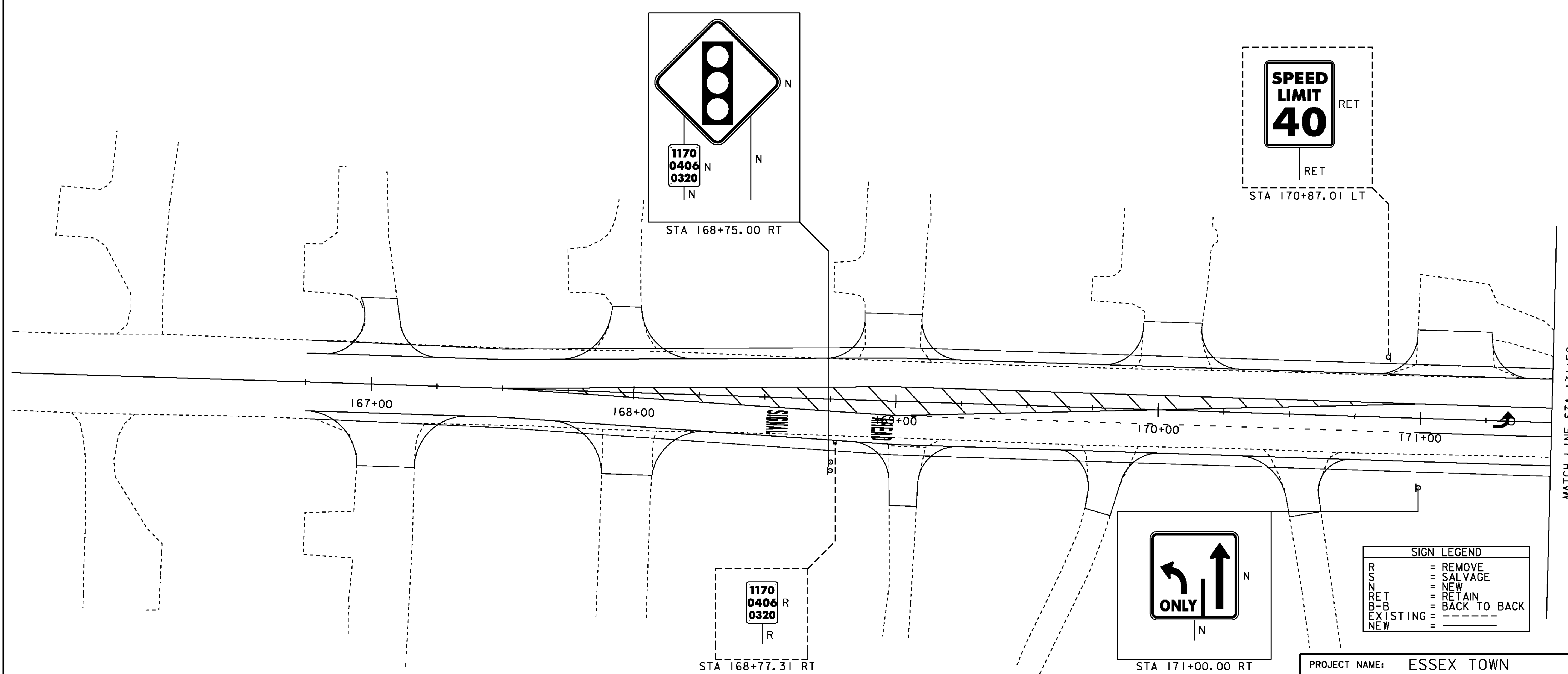
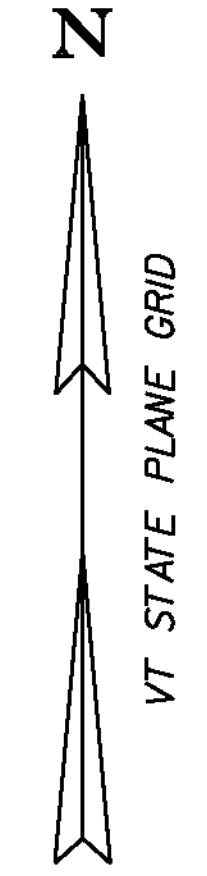
646.456 - DURABLE 8" YELLOW LINE, RECESSED POLYUREA
 STA 167+80.25 LT - 167+82.56 RT (SOLID-DIAGONAL)
 STA 167+93.90 LT - 167+97.24 RT (SOLID-DIAGONAL)
 STA 168+07.54 LT - 168+11.92 RT (SOLID-DIAGONAL)
 STA 168+21.18 LT - 168+26.60 RT (SOLID-DIAGONAL)
 STA 168+34.82 LT - 168+41.28 RT (SOLID-DIAGONAL)
 STA 168+48.46 LT - 168+55.96 RT (SOLID-DIAGONAL)
 STA 168+62.11 LT - 168+70.64 RT (SOLID-DIAGONAL)
 STA 168+75.75 LT - 168+85.32 RT (SOLID-DIAGONAL)
 STA 168+89.39 LT - 169+00.00 RT (SOLID-DIAGONAL)
 STA 169+03.14 LT - 169+13.40 RT (SOLID-DIAGONAL)
 STA 169+17.28 LT - 169+26.81 RT (SOLID-DIAGONAL)
 STA 169+31.43 LT - 169+40.21 RT (SOLID-DIAGONAL)
 STA 169+45.57 LT - 169+53.62 RT (SOLID-DIAGONAL)
 STA 169+59.71 LT - 169+67.02 RT (SOLID-DIAGONAL)
 STA 169+73.85 LT - 169+80.43 RT (SOLID-DIAGONAL)
 STA 169+87.99 LT - 169+93.83 RT (SOLID-DIAGONAL)
 STA 170+02.14 LT - 170+07.24 LT (SOLID-DIAGONAL)
 STA 170+16.28 LT - 170+20.64 LT (SOLID-DIAGONAL)
 STA 170+30.42 LT - 170+34.05 LT (SOLID-DIAGONAL)
 STA 170+44.56 LT - 170+47.45 LT (SOLID-DIAGONAL)
 STA 170+58.71 LT - 170+60.86 LT (SOLID-DIAGONAL)
 STA 170+72.85 LT - 170+74.26 LT (SOLID-DIAGONAL)

646.600 - TEMPORARY 4" WHITE LINE
 STA 166+75.00 LT - 171+50.00 LT (SOLID)
 STA 166+75.00 RT - 171+50.00 RT (SOLID)
 STA 169+00.00 RT - 171+00.00 RT (DOTTED)
 STA 171+00.00 RT - 171+50.00 RT (SOLID)

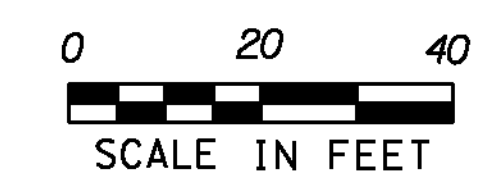
646.610 - TEMPORARY 4" YELLOW LINE
 STA 166+75.00 LT - 167+50.00 LT (SOLID-DOUBLE)
 STA 167+50.00 LT - 171+50.00 LT (SOLID-DOUBLE)
 STA 167+50.00 RT - 171+00.00 LT (SOLID-DOUBLE)

646.690 - TEMPORARY LETTER OR SYMBOL
 STA 168+75.00 RT (LETTERS - SIGNAL AHEAD)
 STA 171+32.00 CL (SYMBOL - LEFT ARROW)

675.50 - REMOVING SIGNS
 AS SHOWN - I

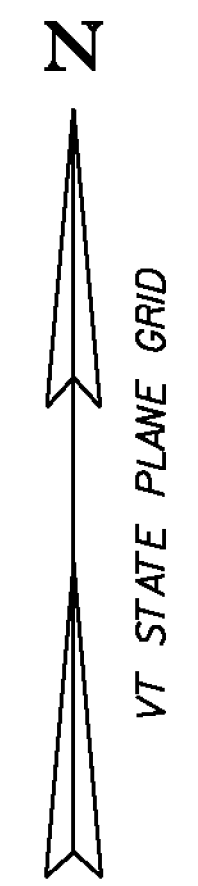


SIGN LEGEND	
R	= REMOVE
S	= SALVAGE
N	= NEW
RET	= RETAIN
B-B	= BACK TO BACK
EXISTING	=
NEW	=



PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)
 FILE NAME: +97d002+spmbdr.dgn
 PROJECT LEADER: J. SCHULTZ
 DESIGNED BY: D. LYMAN
 TSPM LAYOUT SHEET I
 PLOT DATE: 24-AUG-2012
 DRAWN BY: D. LYMAN
 CHECKED BY: J. DEVLIN
 SHEET 44 OF 64

MATCH LINE STA 171+50



646.406 - DURABLE 4" WHITE LINE, RECESSED POLYUREA
 STA 171+50.00 LT - 202+50.00 LT (SOL ID)
 STA 171+50.00 RT - 173+00.00 RT (SOL ID)
 STA 171+50.00 RT - 176+25.00 RT (SOL ID)
 STA 200+34.00 LT - 201+50.00 LT (SOL ID)
 STA 201+50.00 LT - 202+50.00 LT (DOTTED)
 STA 202+50.00 RT - 176+25.00 LT (SOL ID)

646.416 - DURABLE 4" YELLOW LINE, RECESSED POLYUREA
 STA 171+50.00 LT - 173+00.00 LT (SOL ID-DOUBLE)
 STA 200+34.00 RT - 202+50.00 LT (SOL ID-DOUBLE)
 STA 173+69.50 LT - 175+75.00 LT (SOL ID-DOUBLE)
 STA 173+69.50 RT - 175+75.00 RT (SOL ID-DOUBLE)
 STA 175+75.00 LT - 176+25.00 LT (SOL ID-DOUBLE)

646.456 - DURABLE 8" YELLOW LINE, RECESSED POLYUREA
 STA 173+75.00 LT - 173+85.71 RT (SOL ID-DIAGONAL)
 STA 173+89.54 LT - 173+99.47 RT (SOL ID-DIAGONAL)
 STA 174+04.08 LT - 174+13.23 RT (SOL ID-DIAGONAL)
 STA 174+18.63 LT - 174+27.00 RT (SOL ID-DIAGONAL)
 STA 174+33.17 LT - 174+40.76 RT (SOL ID-DIAGONAL)
 STA 174+47.71 LT - 174+54.52 RT (SOL ID-DIAGONAL)
 STA 174+62.25 LT - 174+68.29 RT (SOL ID-DIAGONAL)
 STA 174+76.79 LT - 174+82.05 RT (SOL ID-DIAGONAL)
 STA 174+91.34 LT - 174+95.81 RT (SOL ID-DIAGONAL)
 STA 175+05.88 LT - 175+09.58 RT (SOL ID-DIAGONAL)
 STA 175+20.42 LT - 175+23.34 RT (SOL ID-DIAGONAL)
 STA 175+34.96 LT - 175+37.11 RT (SOL ID-DIAGONAL)

646.600 - TEMPORARY 4" WHITE LINE
 STA 171+50.00 LT - 202+50.00 LT (SOL ID)
 STA 171+50.00 RT - 173+00.00 RT (SOL ID)
 STA 171+50.00 RT - 176+25.00 RT (SOL ID)
 STA 200+34.00 LT - 201+50.00 LT (SOL ID)
 STA 201+50.00 LT - 202+50.00 LT (DOTTED)
 STA 202+50.00 RT - 176+25.00 LT (SOL ID)

646.610 - TEMPORARY 4" YELLOW LINE
 STA 171+50.00 LT - 173+00.00 LT (SOL ID-DOUBLE)
 STA 200+34.00 RT - 202+50.00 LT (SOL ID-DOUBLE)
 STA 173+69.50 LT - 175+75.00 LT (SOL ID-DOUBLE)
 STA 173+69.50 RT - 175+75.00 RT (SOL ID-DOUBLE)
 STA 175+75.00 LT - 176+25.00 LT (SOL ID-DOUBLE)

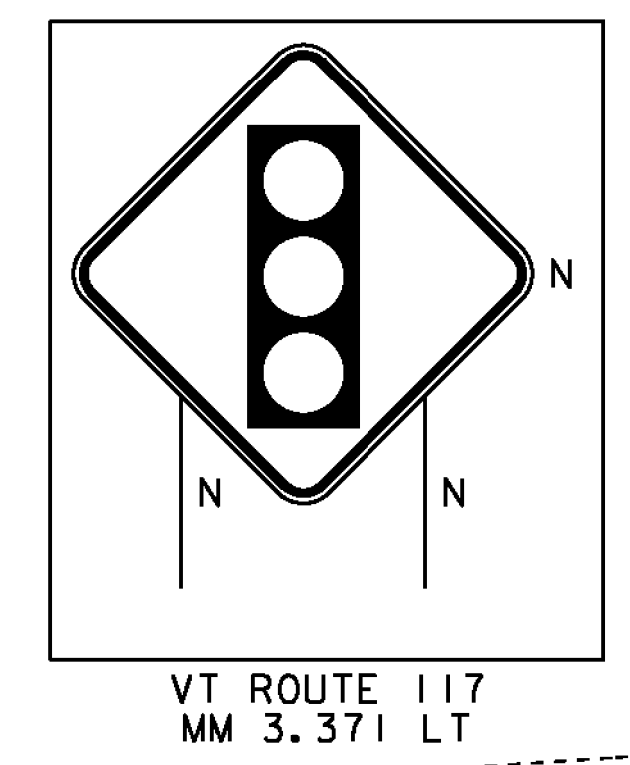
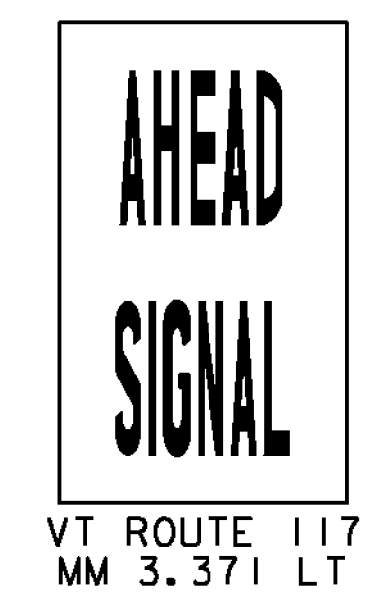
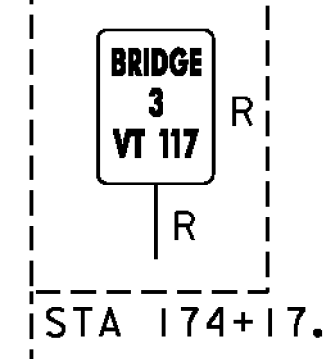
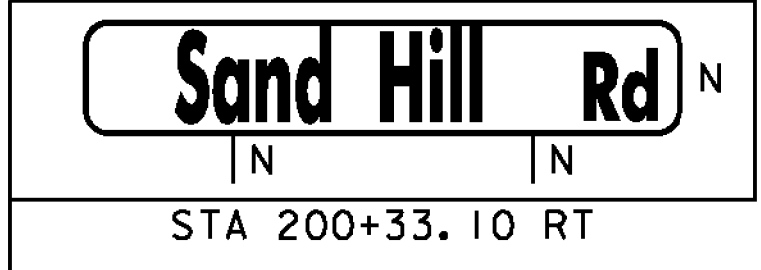
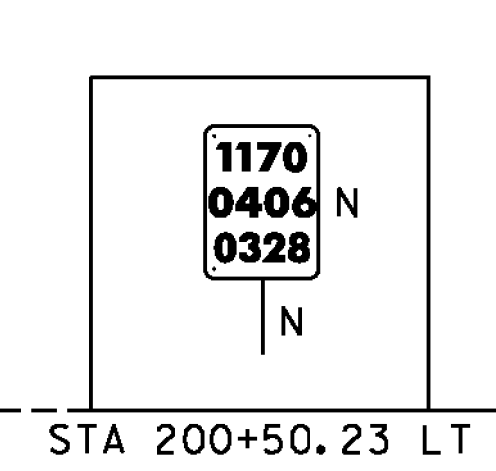
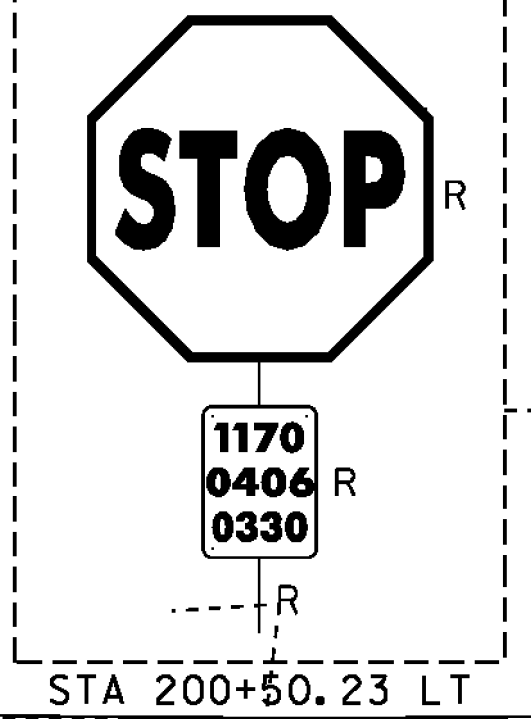
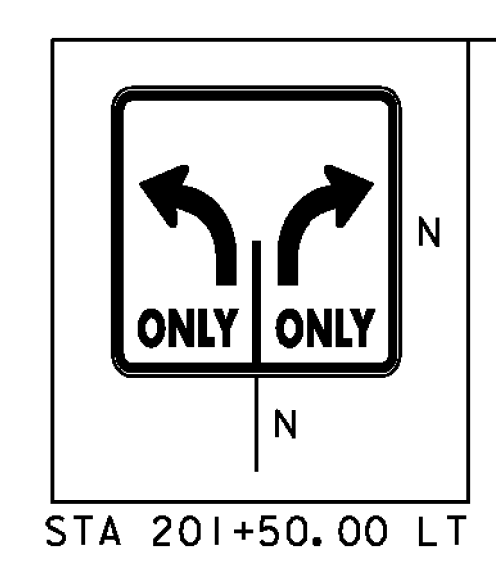
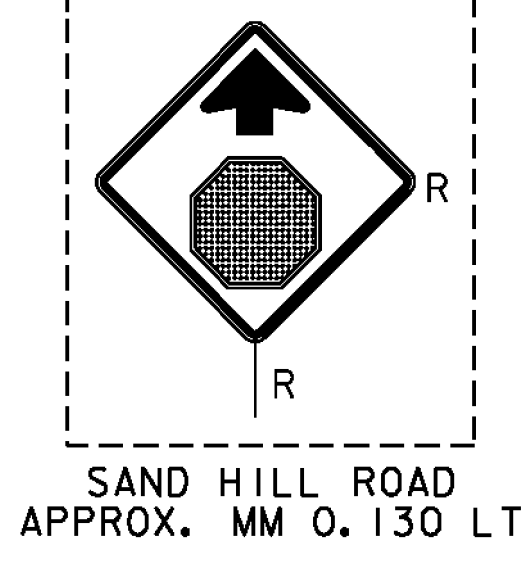
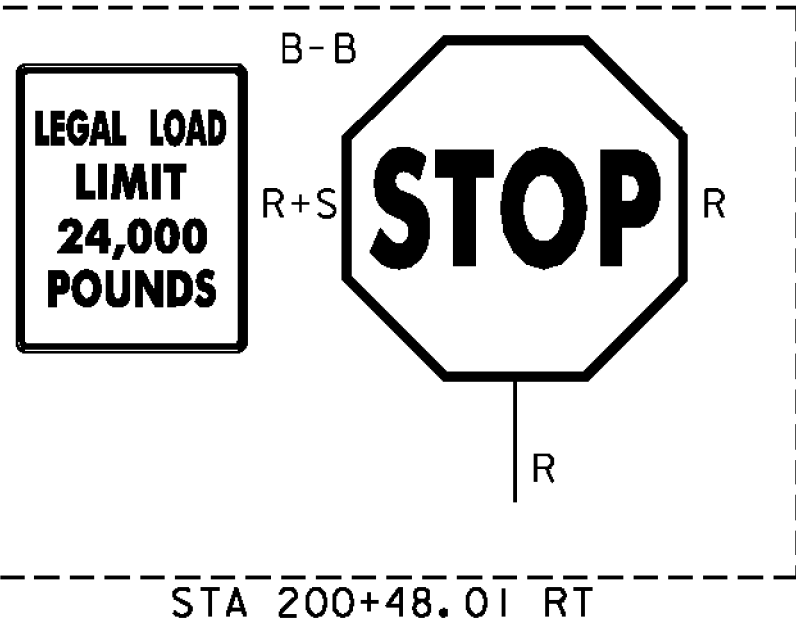
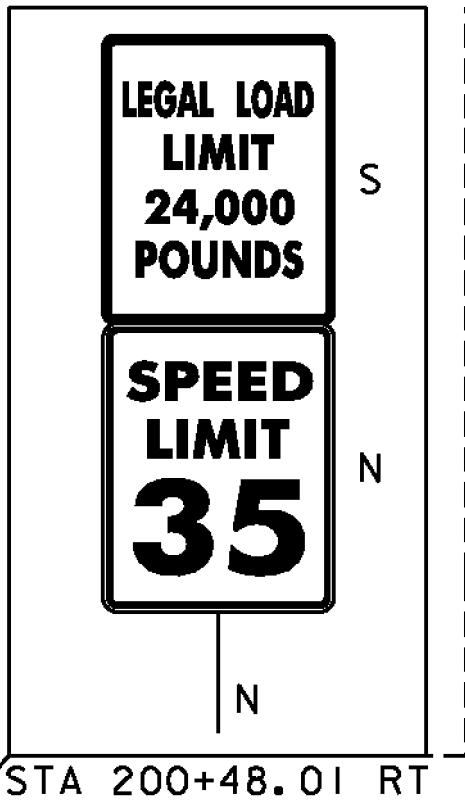
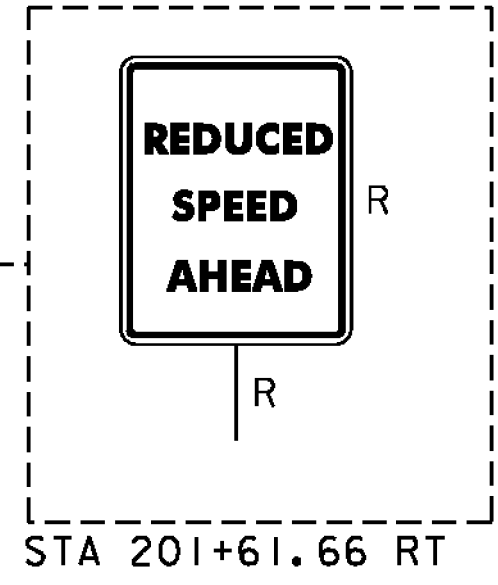
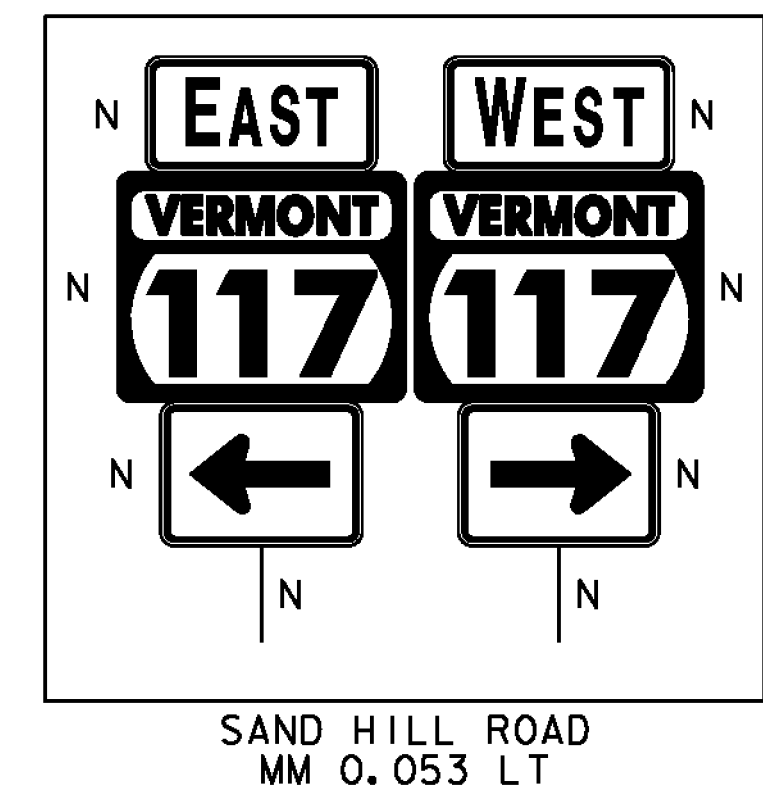
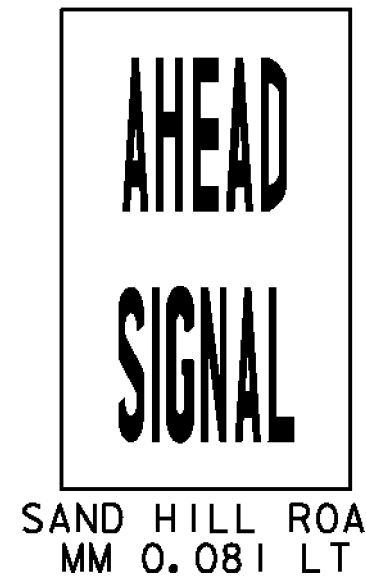
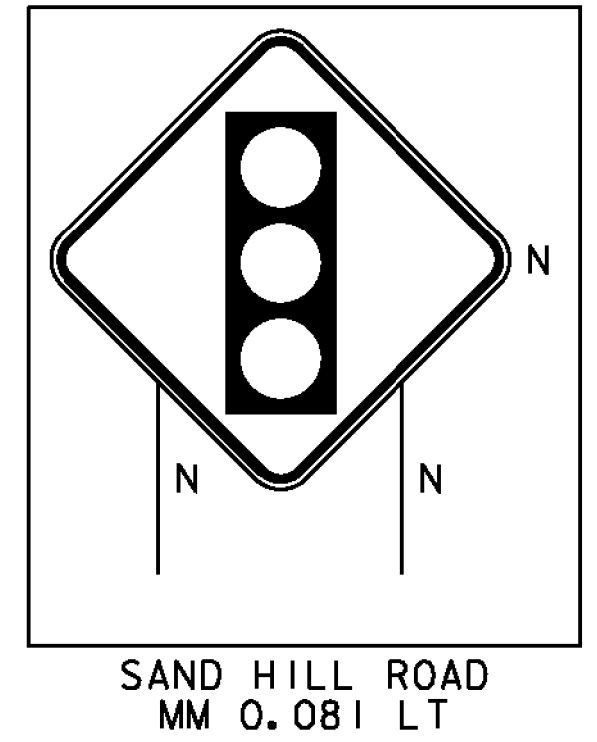
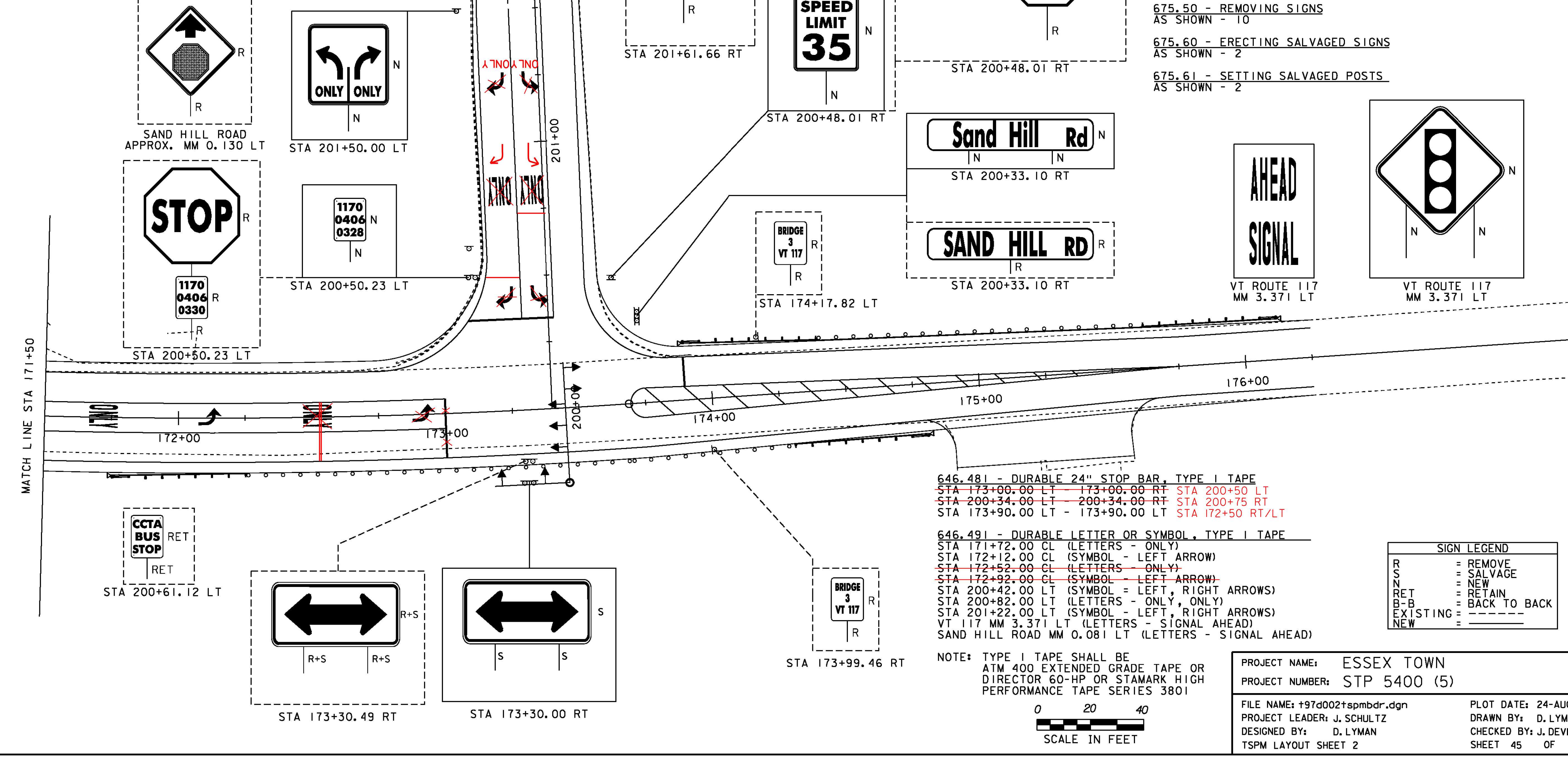
646.680 - TEMPORARY 24" STOP BAR
 STA 173+00.00 LT - 173+00.00 RT
 STA 200+34.00 LT - 200+34.00 RT
 STA 173+90.00 LT - 173+90.00 LT

646.690 - TEMPORARY LETTER OR SYMBOL
 STA 171+72.00 CL (LETTERS - ONLY)
 STA 172+12.00 CL (SYMBOL - LEFT ARROW)
 STA 172+52.00 CL (LETTERS - ONLY)
 STA 172+92.00 CL (SYMBOL - LEFT ARROW)
 STA 200+42.00 LT (SYMBOL = LEFT, RIGHT ARROWS)
 STA 200+82.00 LT (LETTERS - ONLY, ONLY)
 STA 201+22.00 LT (SYMBOL - LEFT, RIGHT ARROWS)

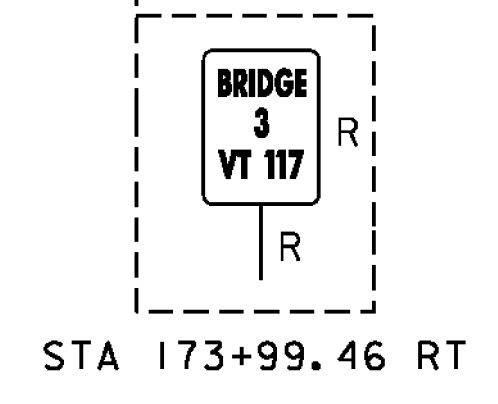
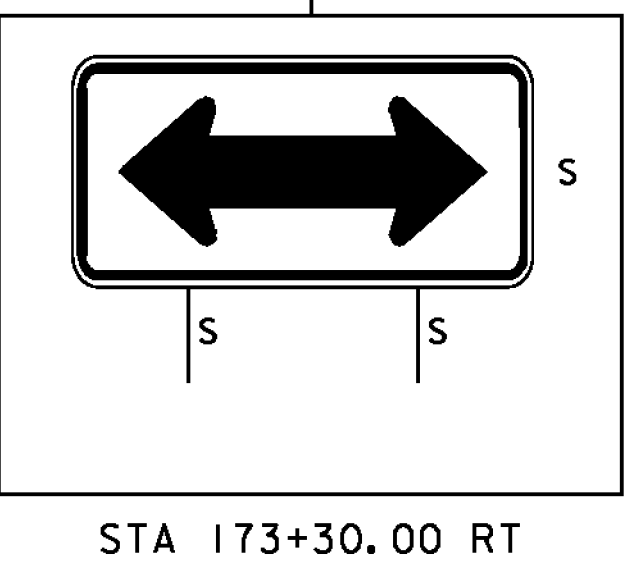
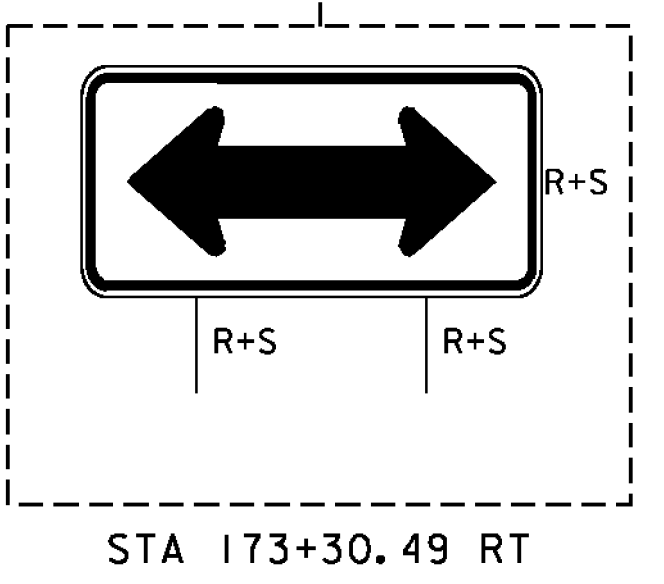
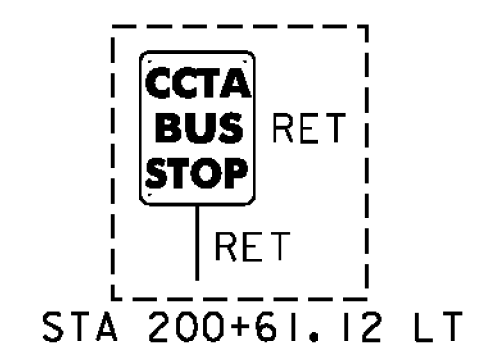
675.50 - REMOVING SIGNS
 AS SHOWN - 10

675.60 - ERECTING SALVAGED SIGNS
 AS SHOWN - 2

675.61 - SETTING SALVAGED POSTS
 AS SHOWN - 2



MATCH LINE STA 171+50

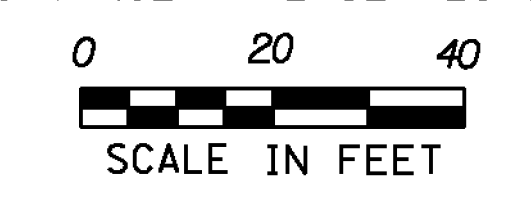


646.481 - DURABLE 24" STOP BAR, TYPE I TAPE
~~STA 173+00.00 LT - 173+00.00 RT~~ STA 200+50 LT
~~STA 200+34.00 LT - 200+34.00 RT~~ STA 200+75 RT
~~STA 173+90.00 LT - 173+90.00 LT~~ STA 172+50 RT/LT

646.491 - DURABLE LETTER OR SYMBOL, TYPE I TAPE
 STA 171+72.00 CL (LETTERS - ONLY)
 STA 172+12.00 CL (SYMBOL - LEFT ARROW)
~~STA 172+52.00 CL (LETTERS - ONLY)~~
~~STA 172+92.00 CL (SYMBOL - LEFT ARROW)~~
 STA 200+42.00 LT (SYMBOL = LEFT, RIGHT ARROWS)
 STA 200+82.00 LT (LETTERS - ONLY, ONLY)
 STA 201+22.00 LT (SYMBOL - LEFT, RIGHT ARROWS)
 VT 117 MM 3.371 LT (LETTERS - SIGNAL AHEAD)
 SAND HILL ROAD MM 0.081 LT (LETTERS - SIGNAL AHEAD)

NOTE: TYPE I TAPE SHALL BE ATM 400 EXTENDED GRADE TAPE OR DIRECTOR 60-HP OR STAMARK HIGH PERFORMANCE TAPE SERIES 3801

SIGN LEGEND	
R	= REMOVE
S	= SALVAGE
N	= NEW
RET	= RETAIN
B-B	= BACK TO BACK
EXISTING	= -----
NEW	= _____

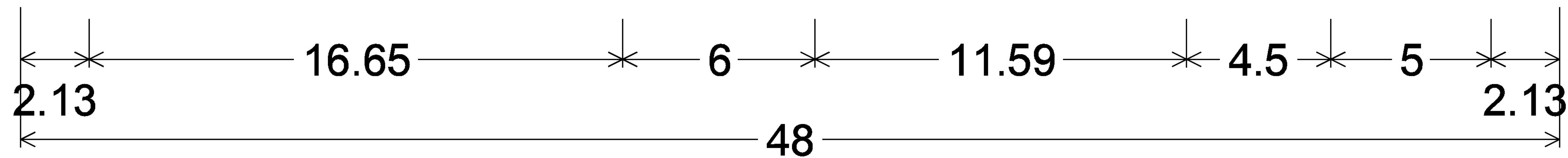
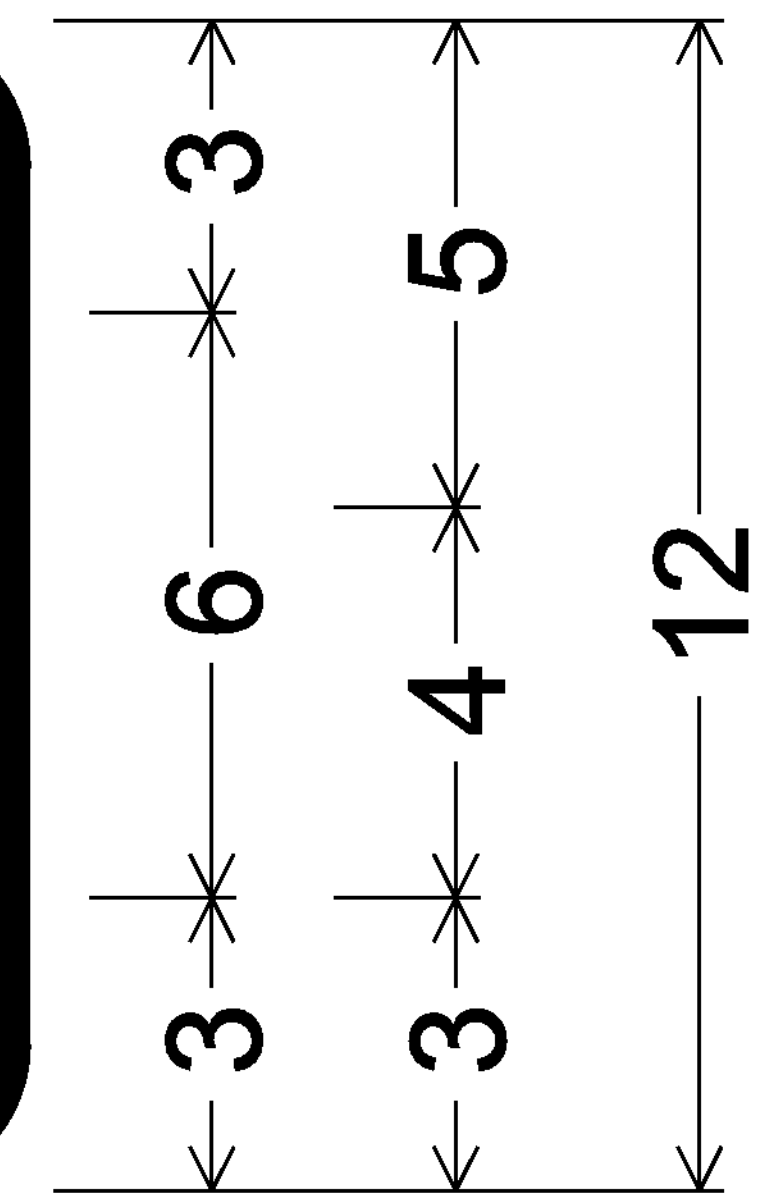
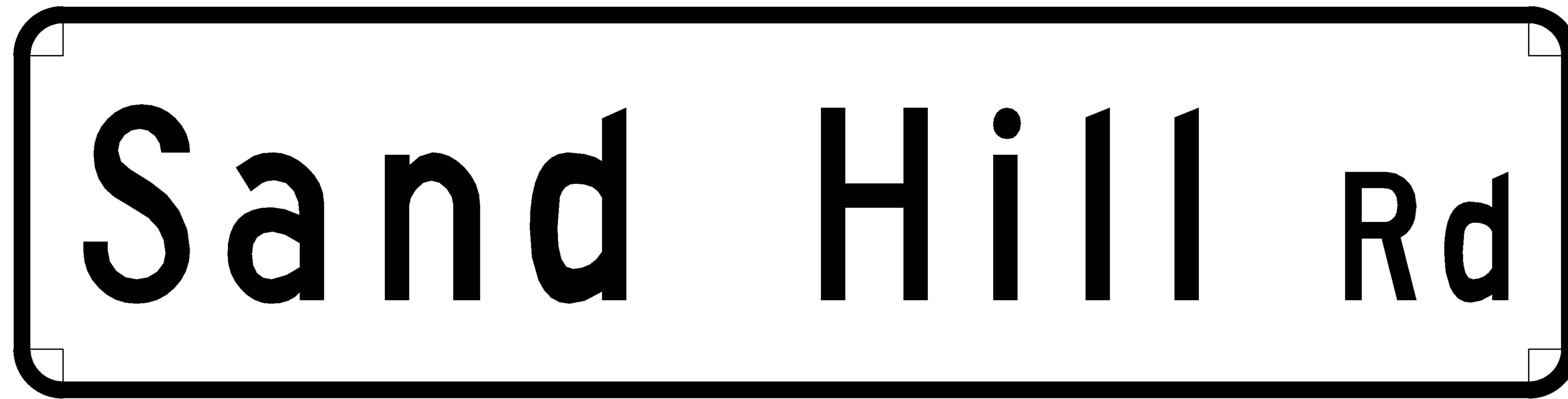


PROJECT NAME:	ESSEX TOWN	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	DRAWN BY:	D. LYMAN
FILE NAME:	+97d002+spmbdr.dgn	CHECKED BY:	J. DEVLIN
PROJECT LEADER:	J. SCHULTZ	SHEET	45 OF 64
DESIGNED BY:	D. LYMAN	TSPM LAYOUT SHEET	2

TRAFFIC SIGN SUMMARY SHEET 2

MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS		NEW & SALVAGED SIGNS				EXIST POST RETAIN	NO. OF POSTS	NEW SIGN POSTS																REMARKS	SIGN DETAIL			
		E A	WIDTH (In)	HEIGHT (In)	"A"	"B"	SALV SIGN			SALV TIS	FLANGED CHANNEL			SQUARE STEEL (In)			TUBULAR ALUMINUM Ø (In)			TUBULAR STEEL Ø (In)				W-SHAPE STEEL			DETAIL ON SHEET NUMBER	STD. SHEET NUMBER		
											lb/ft			2.0	2.0	2.5	3.0	4.0	4.0 MOD	3.0	3.5	4.0	5.0	FTG. SIZE	WEIGHT				POST SIZE	
											1.2	2.0	3.0	2.16	2.42	3.35	1.3	1.7	1.7	7.6	9.0	10.8	14.6	24"	30"					
20I+50.00 LT		1	36	30	7.50				1				X		X												ADVANCE INTERSECTION LANE CONTROL SIGN, VR-925	E-145A		
SAND HILL ROAD MM 0.053 LT		2	24	12	4.00				N/A				N/A														CARDINAL DIRECTION MARKER SIGNS, M3-2 & M3-4 SHALL BE MOUNTED ABOVE VT ROUTE 117 STATE ROUTE MARKER SIGNS, GREEN LEGEND AND BORDER, WHITE BACKGROUND	SHSM		
SAND HILL ROAD MM 0.053 LT		2	30	24	10.00				2				X		X										2-B	VT ROUTE 117 STATE ROUTE MARKER SIGNS, GREEN LEGEND AND BORDER, WHITE BACKGROUND	E-136B			
SAND HILL ROAD MM 0.053 LT		2	21	15	4.38				N/A				N/A														DIRECTION ARROW SIGNS, M6-1 SHALL BE MOUNTED BELOW VT ROUTE 117 STATE ROUTE MARKER SIGNS, GREEN LEGEND AND BORDER, WHITE BACKGROUND	SHSM		
SAND HILL ROAD MM 0.081 LT		1	36	36	9.00				2				X		X												SIGNAL AHEAD SIGN, MUTCD W3-3	SHSM		
TOTAL TSS SHEET 1				34.09	2								9	105																
TOTAL TSS SHEET 2				34.88	0								0	75																
ROUNDING																														
SHSM = FHWA'S STANDARD HIGHWAY SIGNS & MARKINGS												FT	FT	FT	FT	FT	FT	EA	LB	LB	LB	LB	LB	LB	LB	EA	EA	EA	EA	EA
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."																														
TOTALS				SF 68.97	SF 2																									

PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)
 FILE NAME: t97d002tssum.dgn
 PROJECT LEADER: J. SCHULTZ
 DESIGNED BY: D. LYMAN
 TRAFFIC SIGN SUMMARY SHEET 2
 PLOT DATE: 24-AUG-2012
 DRAWN BY: D. LYMAN
 CHECKED BY: J. DEVLIN
 SHEET 47 OF 64



1.50" Radius, 0.50" Border, White on Green;
[Sand Hill Rd] C;

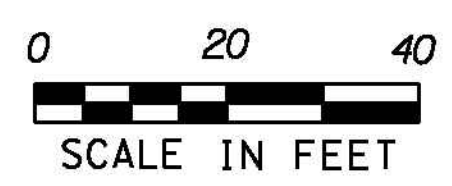
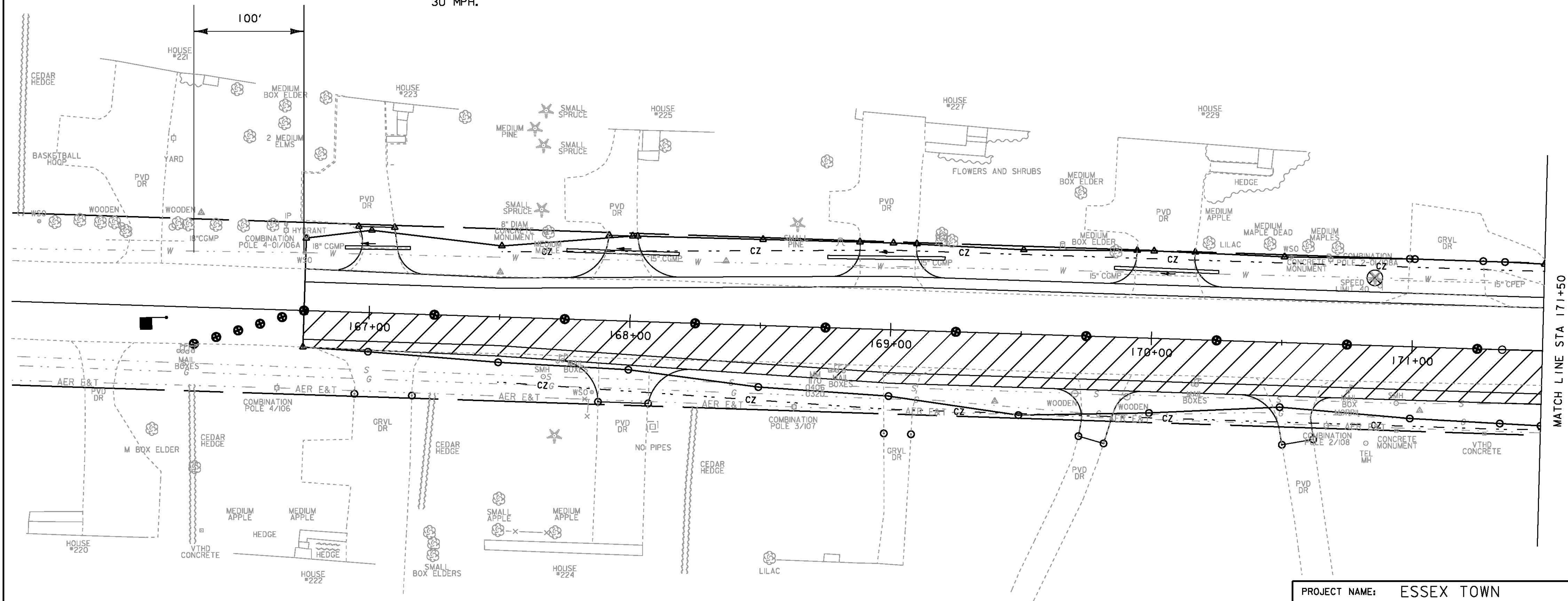
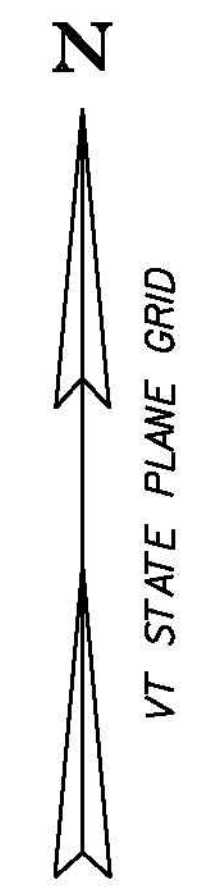
ALL DIMENSIONS IN INCHES

PROJECT NAME: ESSEX TOWN	PLOT DATE: 24-AUG-2012
PROJECT NUMBER: STP 5400 (5)	DRAWN BY: D. LYMAN
FILE NAME: +97d002frm.dgn	CHECKED BY: J. DEVLIN
PROJECT LEADER: J. SCHULTZ	SHEET 48 OF 64
DESIGNED BY: D. LYMAN	
TRAFFIC SIGN DETAIL SHEET	

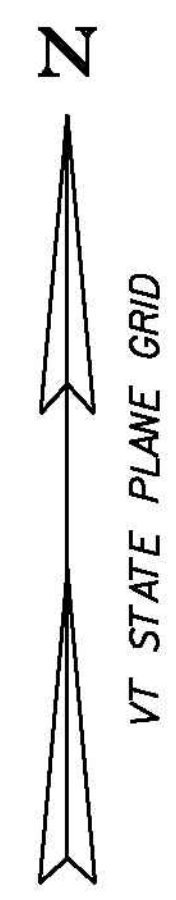
NOTES:

1. TRAFFIC CONTROL PHASE 1 CONSISTS OF WIDENING SOUTHERLY OFF OF VT ROUTE 117, EXTENDING FROM THE EXISTING SHOULDER TO THE PROPOSED EDGE OF PAVEMENT. REFER TO MUTCD FIGURE 6H-10. LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS (TYPICAL APPLICATION 10).
2. TEMPORARY LANE AND/OR SHOULDER CLOSURES SHALL BE ALLOWED DURING WORKING HOURS. VT ROUTE 117 AND SAND HILL ROAD SHALL BE RESTORED TO FULL CAPACITY AT THE CLOSE OF DAILY CONSTRUCTION ACTIVITIES. SEE STANDARD E-108 FOR LONGITUDINAL DROP-OFF DETAILS.
3. ADDITIONAL TRAFFIC CONTROL WARNING SIGNS MAY BE REQUIRED AND SHALL BE INSTALLED AS REQUESTED BY THE RESIDENT ENGINEER PER THE MUTCD. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC., SHALL BE PAID UNDER CONTRACT ITEM 641.10.
4. ACCESS TO RESIDENTIAL DRIVES, COMMERCIAL DRIVES, AND TOWN HIGHWAYS SHALL BE MAINTAINED THROUGHOUT THE PROJECT'S DURATION.
5. SIGNS SHALL BE COVERED OR REMOVED WHEN NOT APPLICABLE.
6. ADDITIONAL DENSE GRADED CRUSHED STONE MAY BE REQUIRED TO RESTORE ROADWAY TO FULL CAPACITY AT THE CLOSE OF DAILY CONSTRUCTION ACTIVITIES AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 641.10.
7. THE POSTED SPEED LIMIT FOR ALL PHASES OF WORK SHALL BE 30 MPH.

LEGEND	
	FLAGGER
	CHANNELIZING DEVICE
	PHASE I CONSTRUCTION ZONE



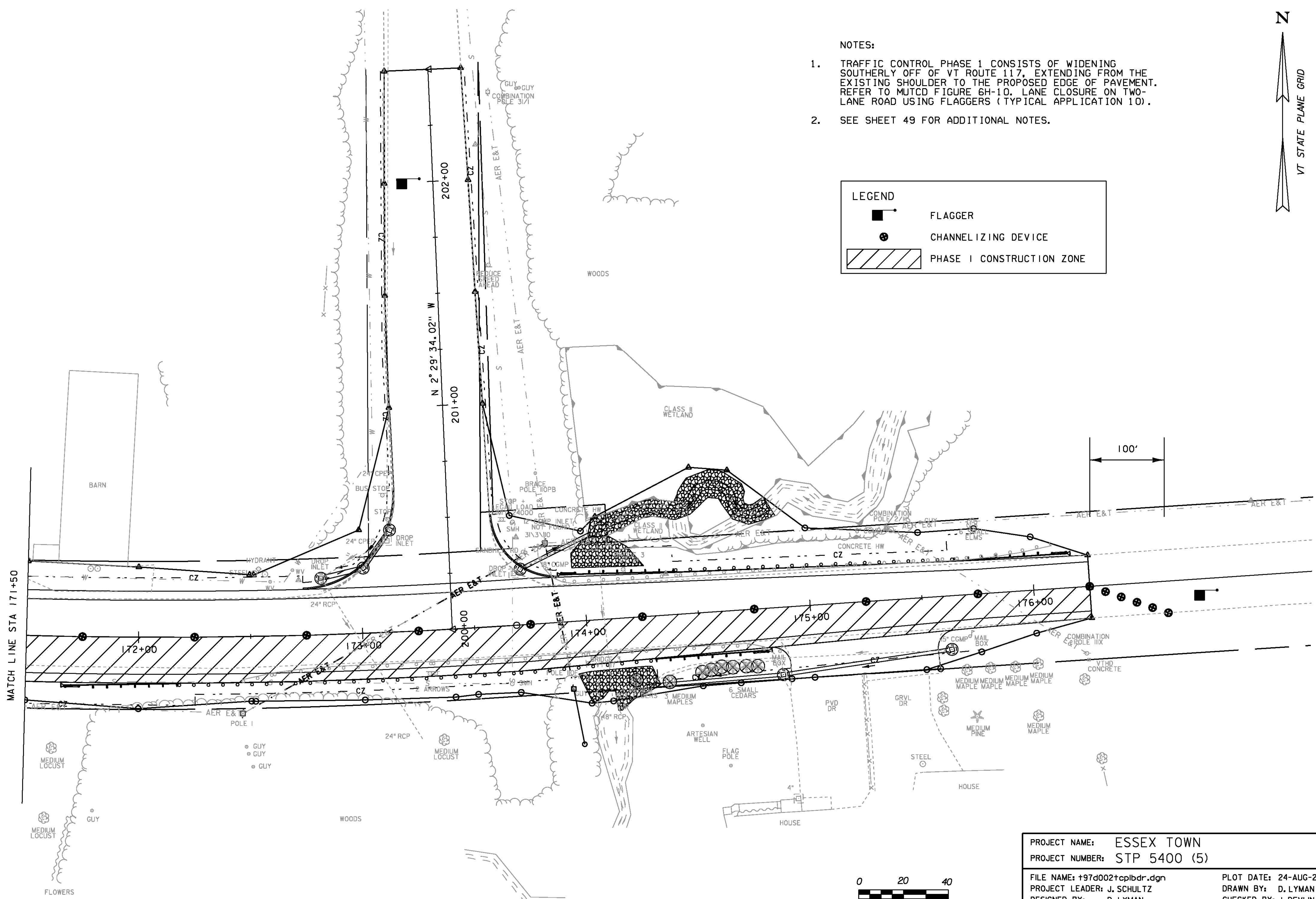
PROJECT NAME: ESSEX TOWN	PLOT DATE: 24-AUG-2012
PROJECT NUMBER: STP 5400 (5)	DRAWN BY: D. LYMAN
FILE NAME: +97d002+cp1bdr.dgn	CHECKED BY: J. DEVLIN
PROJECT LEADER: J. SCHULTZ	SHEET 49 OF 64
DESIGNED BY: D. LYMAN	
TC PHASE I LAYOUT SHEET I	



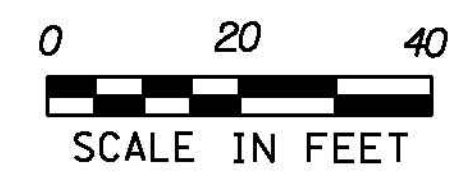
NOTES:

1. TRAFFIC CONTROL PHASE 1 CONSISTS OF WIDENING SOUTHERLY OFF OF VT ROUTE 117, EXTENDING FROM THE EXISTING SHOULDER TO THE PROPOSED EDGE OF PAVEMENT. REFER TO MUTCD FIGURE 6H-10, LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS (TYPICAL APPLICATION 10).
2. SEE SHEET 49 FOR ADDITIONAL NOTES.

LEGEND	
	FLAGGER
	CHANNELIZING DEVICE
	PHASE I CONSTRUCTION ZONE



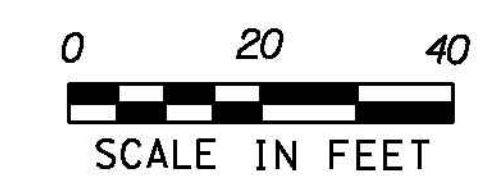
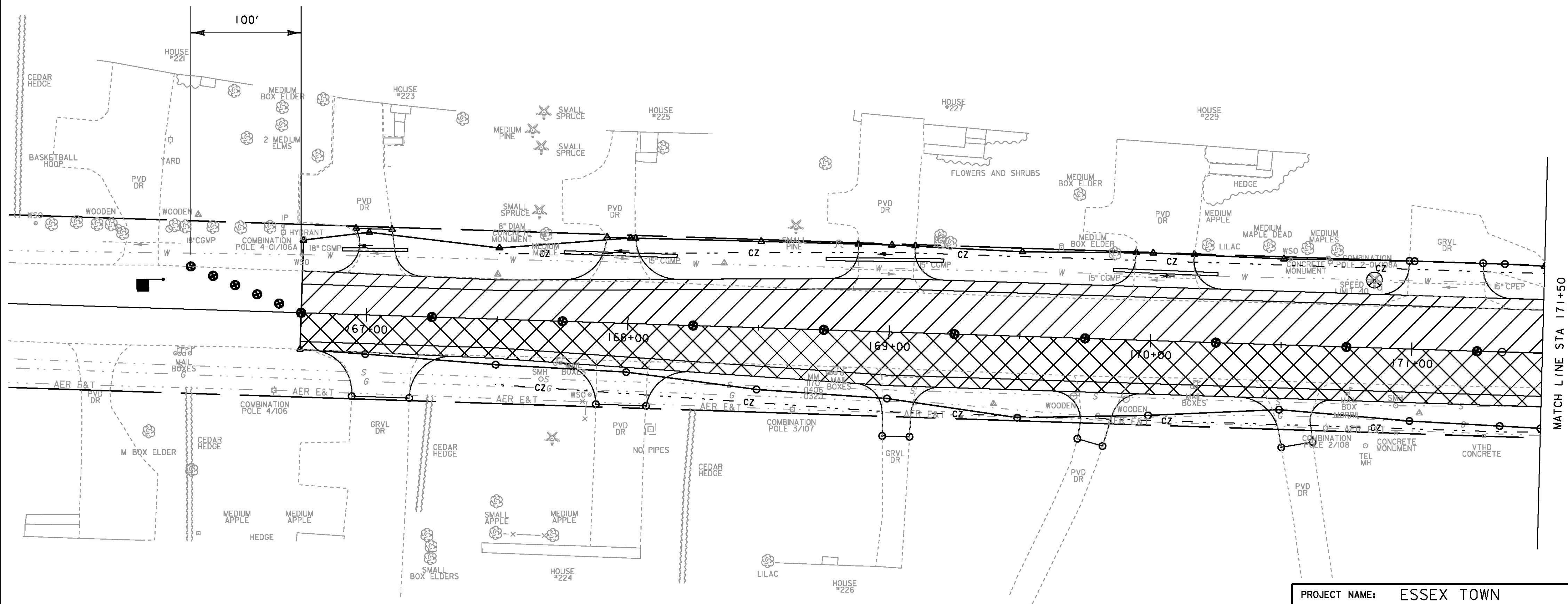
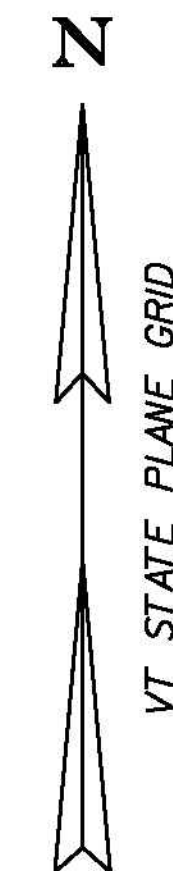
PROJECT NAME:	ESSEX TOWN	FILE NAME:	+97d002+cp1bdr.dgn	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	D. LYMAN
		DESIGNED BY:	D. LYMAN	CHECKED BY:	J. DEVLIN
		TC PHASE I LAYOUT SHEET 2		SHEET 50	OF 64



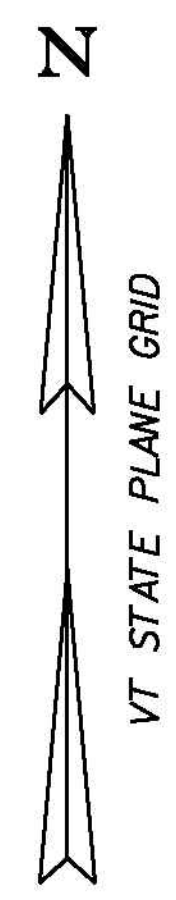
NOTES:

1. TRAFFIC CONTROL PHASE 2 CONSISTS OF WIDENING NORTHERLY OFF OF VT ROUTE 117, EXTENDING FROM THE EXISTING SHOULDER TO THE PROPOSED EDGE OF PAVEMENT. ALL DRAINAGE AND CHANNEL WORK TO BE COMPLETED BY THE END OF PHASE 2 AS WELL AS THE INSTALLATION OF CURB AND GUARDRAIL. REFER TO MUTCD FIGURE 6H-10. LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS (TYPICAL APPLICATION 10).
2. SEE SHEET 49 FOR ADDITIONAL NOTES.

LEGEND	
	FLAGGER
	CHANNELIZING DEVICE
	PHASE II CONSTRUCTION ZONE
	PHASE II TRAFFIC



PROJECT NAME:	ESSEX TOWN	FILE NAME:	+97d002+cp2bdr.dgn	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	D. LYMAN
		DESIGNED BY:	D. LYMAN	CHECKED BY:	J. DEVLIN
		TC PHASE 2 LAYOUT SHEET 1		SHEET 51	OF 64

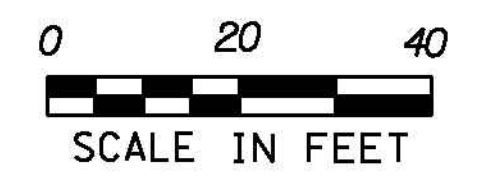
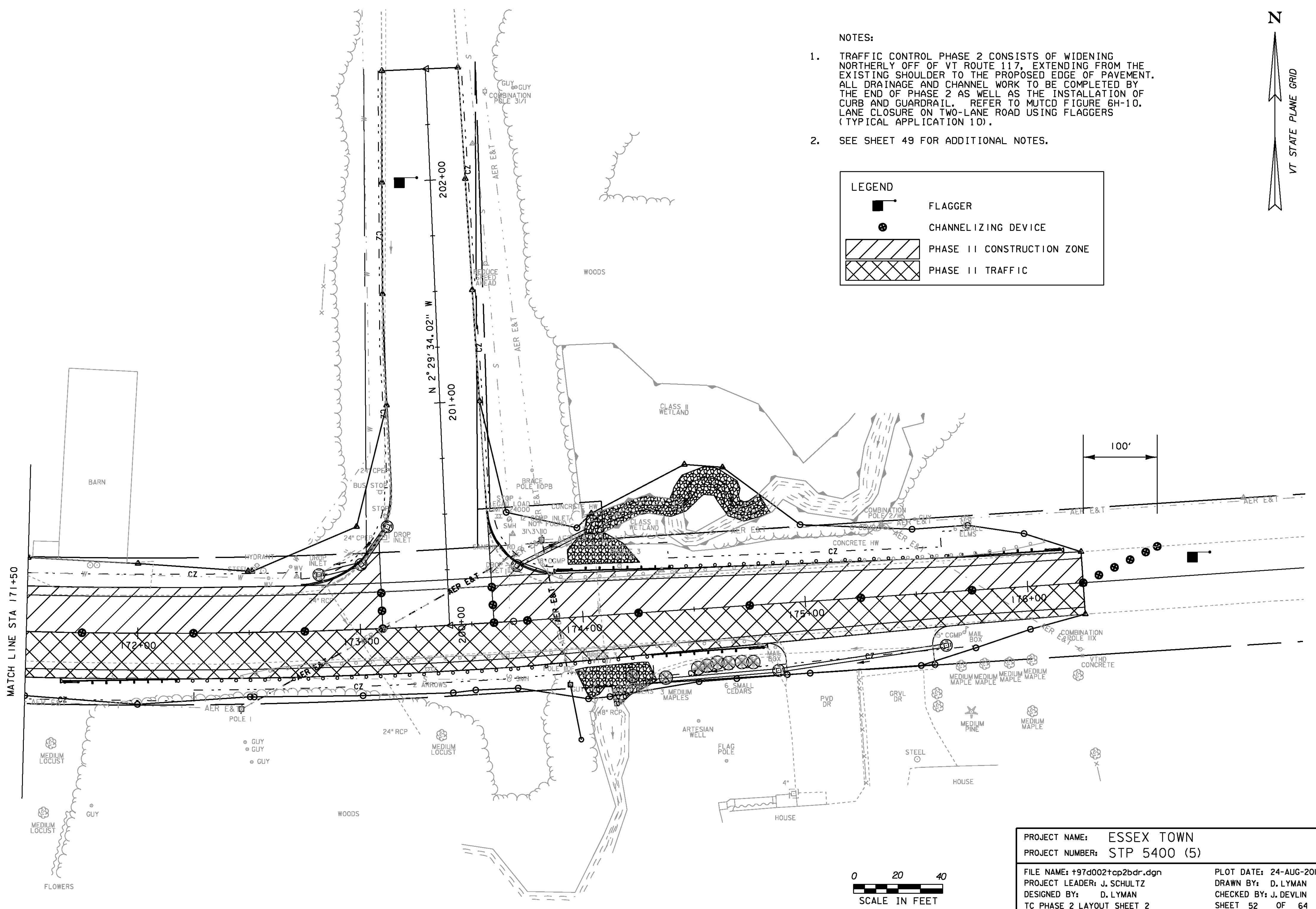


NOTES:

1. TRAFFIC CONTROL PHASE 2 CONSISTS OF WIDENING NORTHERLY OFF OF VT ROUTE 117, EXTENDING FROM THE EXISTING SHOULDER TO THE PROPOSED EDGE OF PAVEMENT. ALL DRAINAGE AND CHANNEL WORK TO BE COMPLETED BY THE END OF PHASE 2 AS WELL AS THE INSTALLATION OF CURB AND GUARDRAIL. REFER TO MUTCD FIGURE 6H-10. LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS (TYPICAL APPLICATION 10).
2. SEE SHEET 49 FOR ADDITIONAL NOTES.

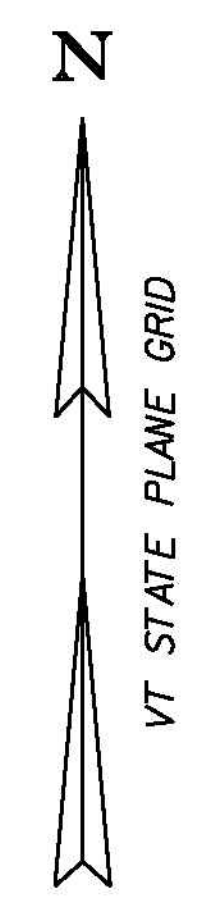
LEGEND

- FLAGGER
- CHANNELIZING DEVICE
- PHASE II CONSTRUCTION ZONE
- PHASE II TRAFFIC





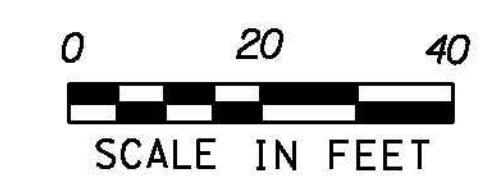
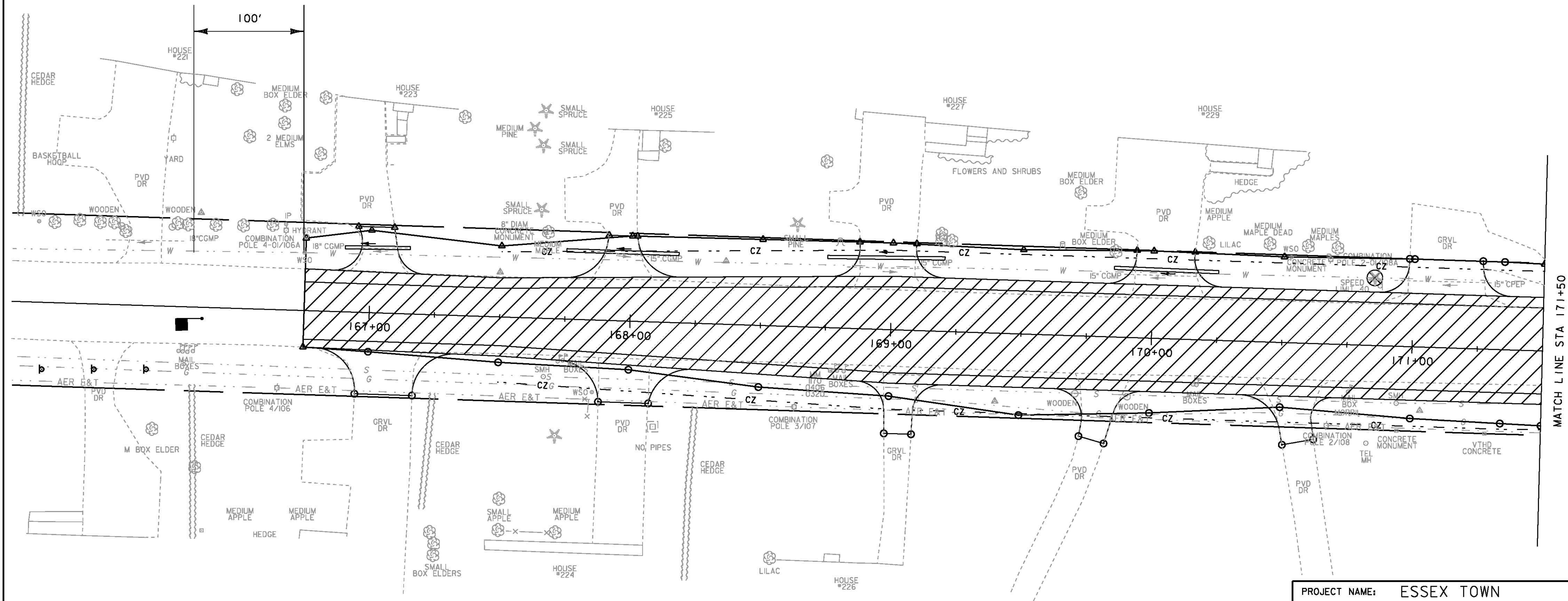
PROJECT NAME:	ESSEX TOWN	FILE NAME:	+97d002+cp2bdr.dgn	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	D. LYMAN
		DESIGNED BY:	D. LYMAN	CHECKED BY:	J. DEVLIN
		TC PHASE 2 LAYOUT SHEET 2		SHEET 52	OF 64

- NOTES:
1. TRAFFIC CONTROL PHASE 3 CONSISTS OF APPLYING WEARING COURSE PAVEMENT AND DURABLE MARKINGS TO SAND HILL ROAD AND VT ROUTE 117. COMPLETE INSTALLATION OF NEW TRAFFIC SIGNAL. REFER TO MUTCD FIGURE 6H-10. LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS (TYPICAL APPLICATION 10). TRAVEL WAY WILL BE CLEARLY DELINEATED USING REFLECTORIZED PLASTIC DRUMS OR CONES.
 2. SEE SHEET 49 FOR ADDITIONAL NOTES.



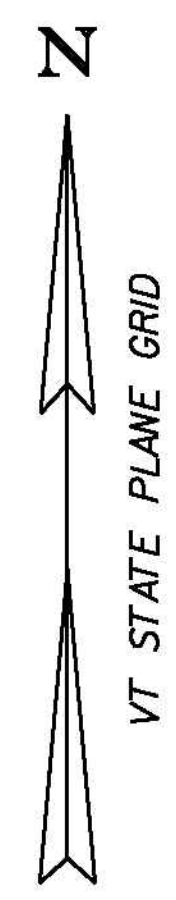
LEGEND

 FLAGGER
 PHASE 3 CONSTRUCTION ZONE



PROJECT NAME: ESSEX TOWN
 PROJECT NUMBER: STP 5400 (5)
 FILE NAME: +97d002+cp3bdr.dgn
 PROJECT LEADER: J. SCHULTZ
 DESIGNED BY: D. LYMAN
 TC PHASE 3 LAYOUT SHEET 1



PLOT DATE: 24-AUG-2012
 DRAWN BY: D. LYMAN
 CHECKED BY: J. DEVLIN
 SHEET 53 OF 64

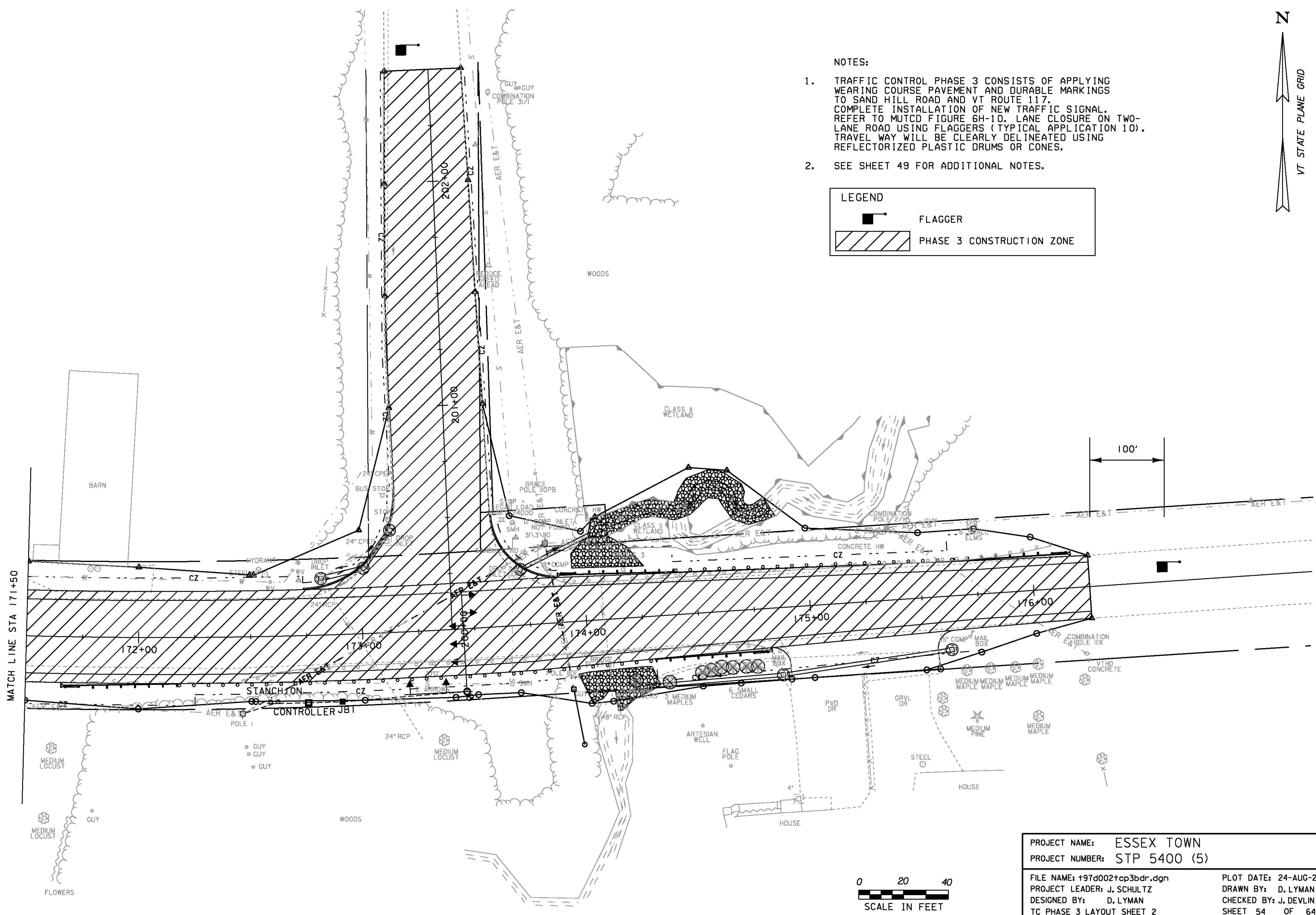


NOTES:

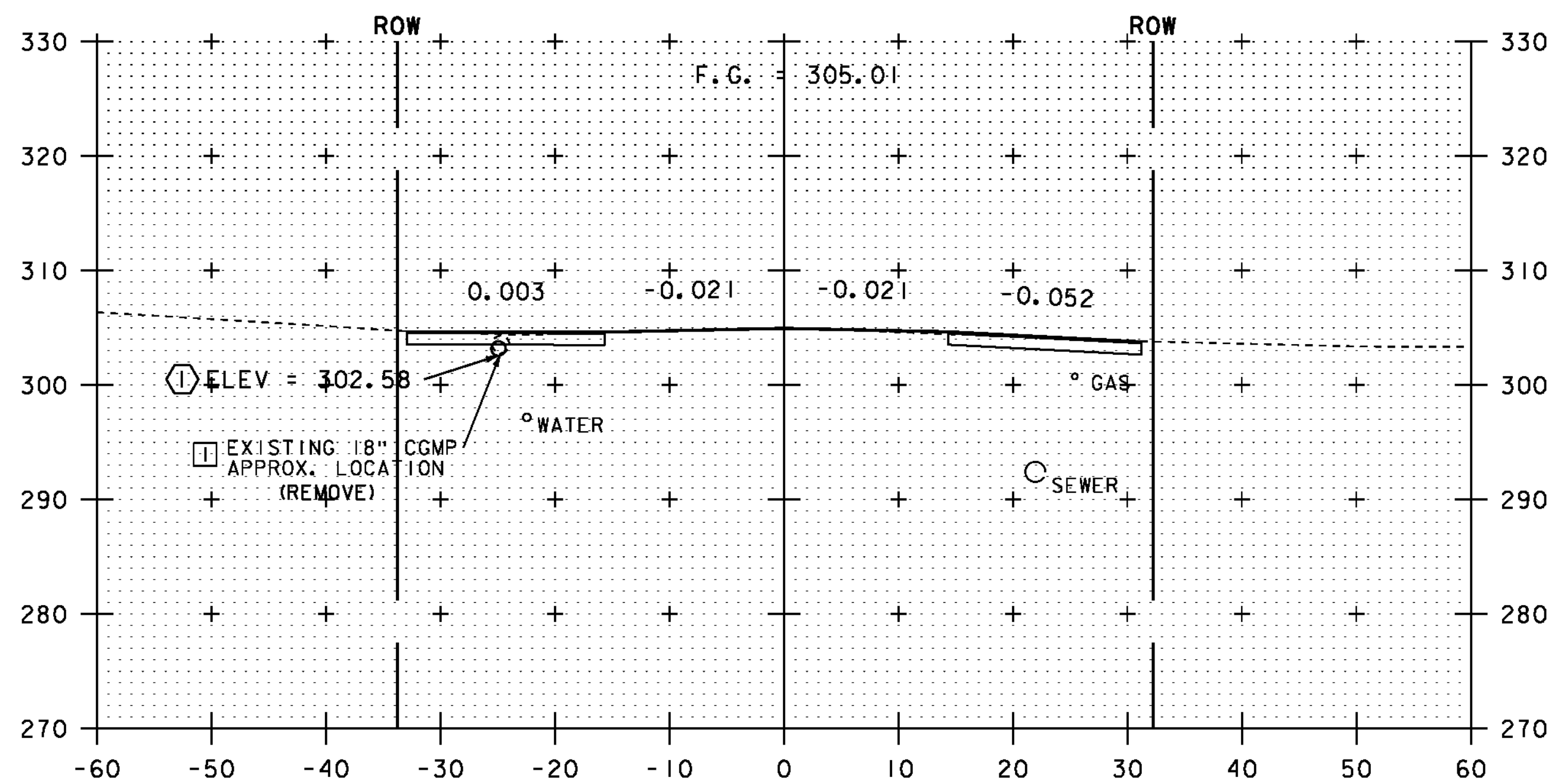
1. TRAFFIC CONTROL PHASE 3 CONSISTS OF APPLYING WEARING COURSE PAVEMENT AND DURABLE MARKINGS TO SAND HILL ROAD AND VT ROUTE 117. COMPLETE INSTALLATION OF NEW TRAFFIC SIGNAL. REFER TO MUTCD FIGURE 6H-10. LANE CLOSURE ON TWO-LANE ROAD USING FLAGGERS (TYPICAL APPLICATION 10). TRAVEL WAY WILL BE CLEARLY DELINEATED USING REFLECTORIZED PLASTIC DRUMS OR CONES.
2. SEE SHEET 49 FOR ADDITIONAL NOTES.

LEGEND

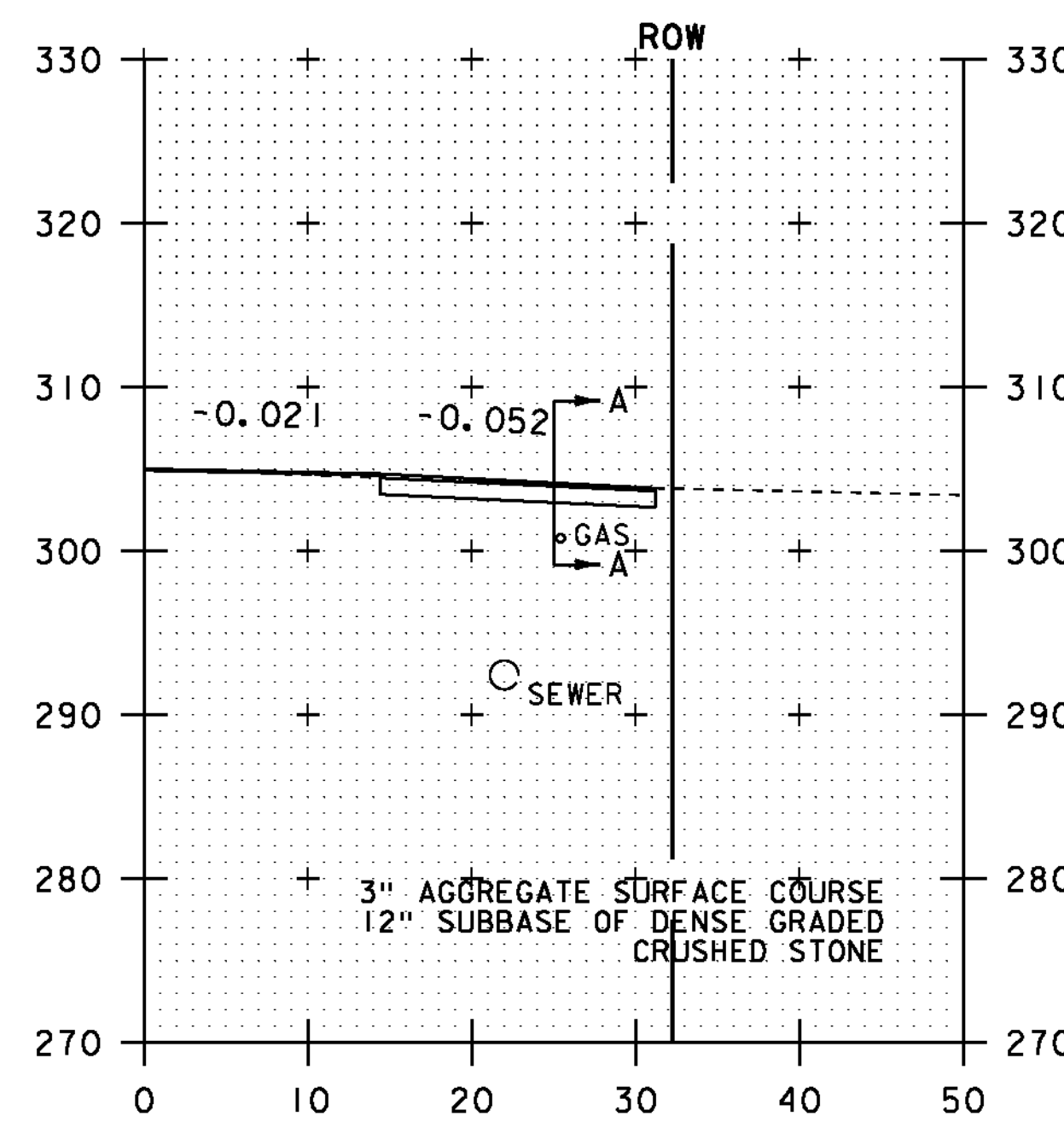
 FLAGGER
 PHASE 3 CONSTRUCTION ZONE



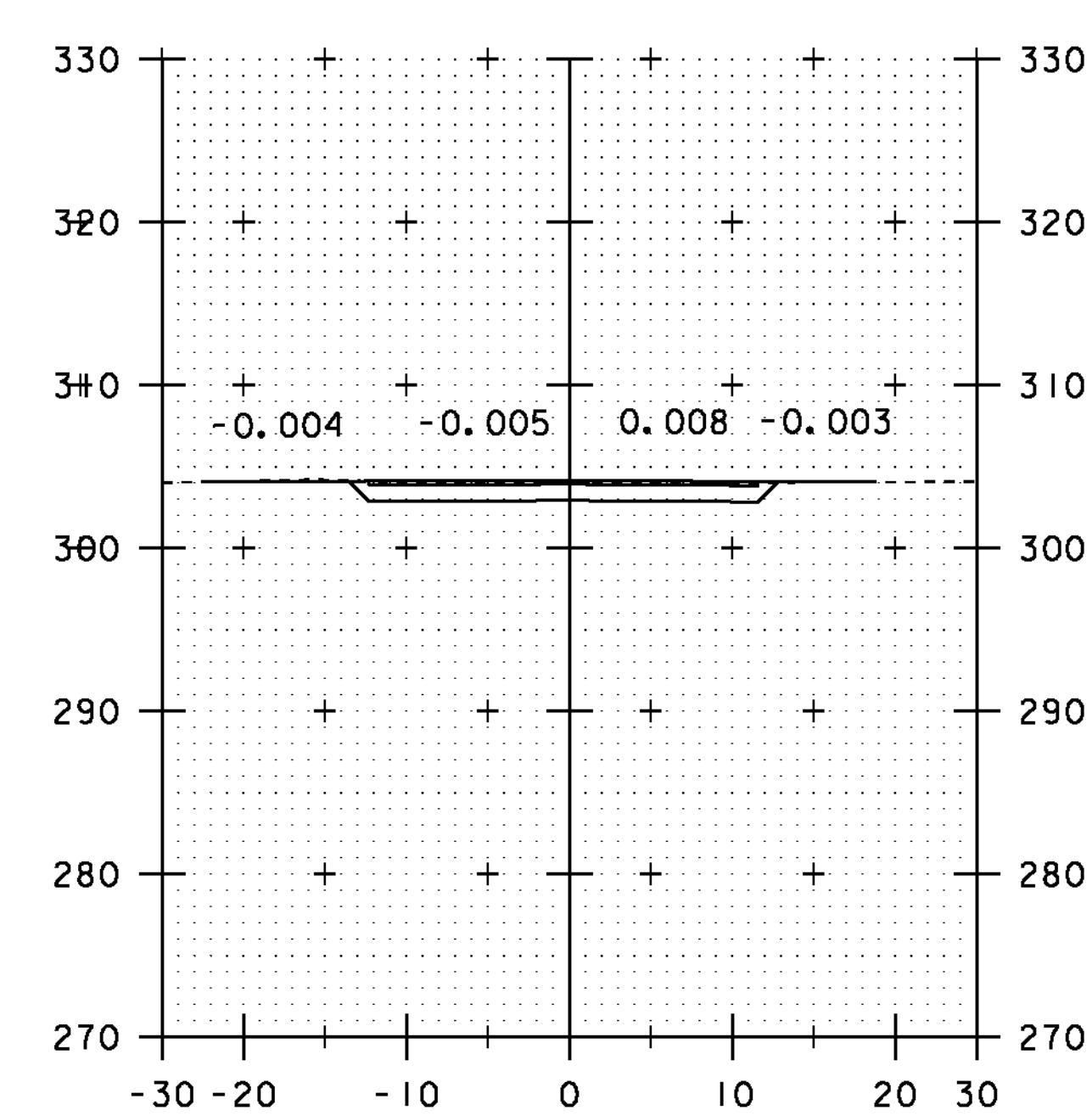
PROJECT NAME:	ESSEX TOWN	FILE NAME:	+97d002+cp3bdr.dgn	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	PROJECT LEADER:	J. SCHULTZ	DRAWN BY:	D. LYMAN
		DESIGNED BY:	D. LYMAN	CHECKED BY:	J. DEVLIN
		TC PHASE 3 LAYOUT SHEET 2		SHEET 54	OF 64



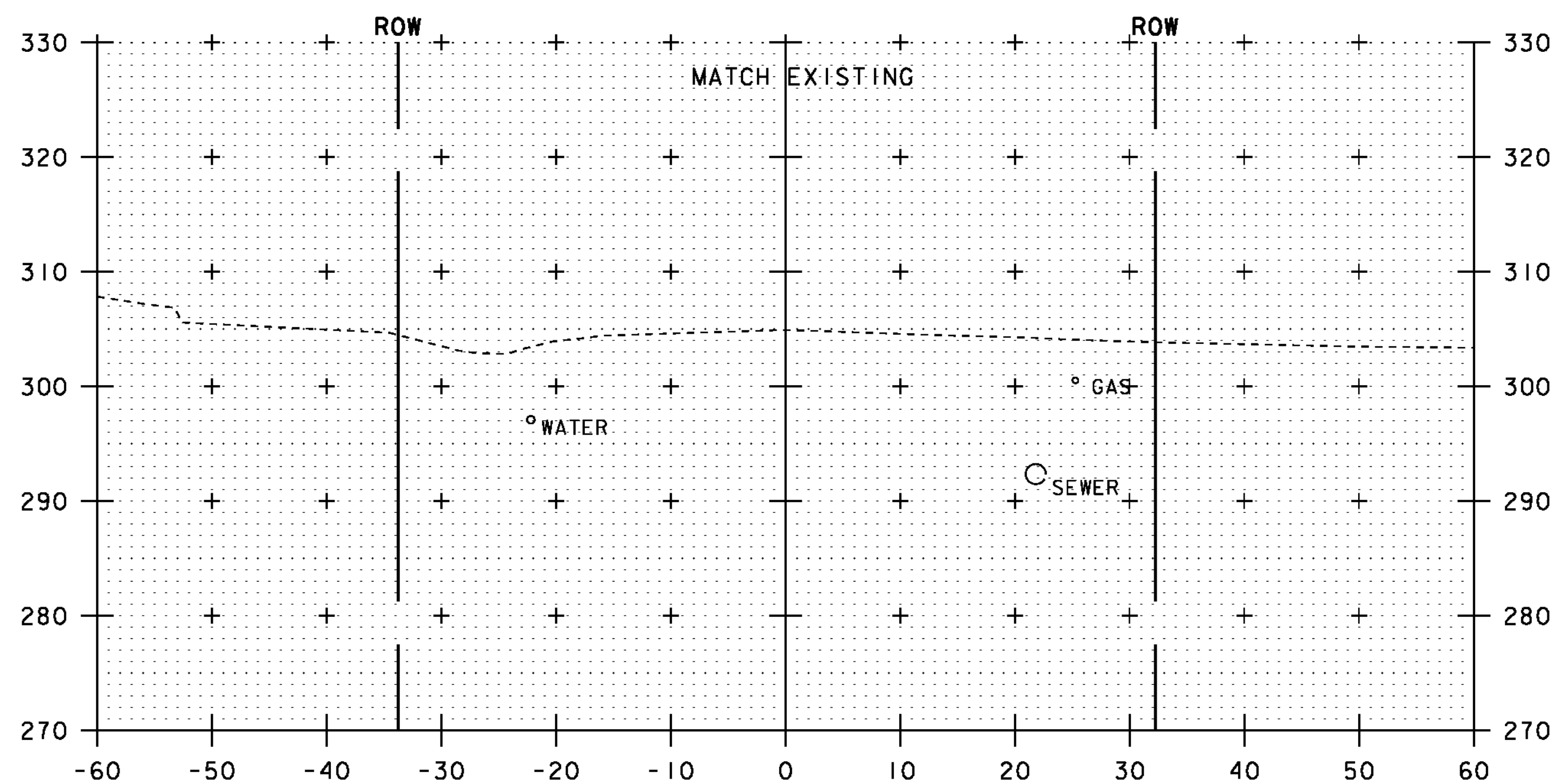
167+00



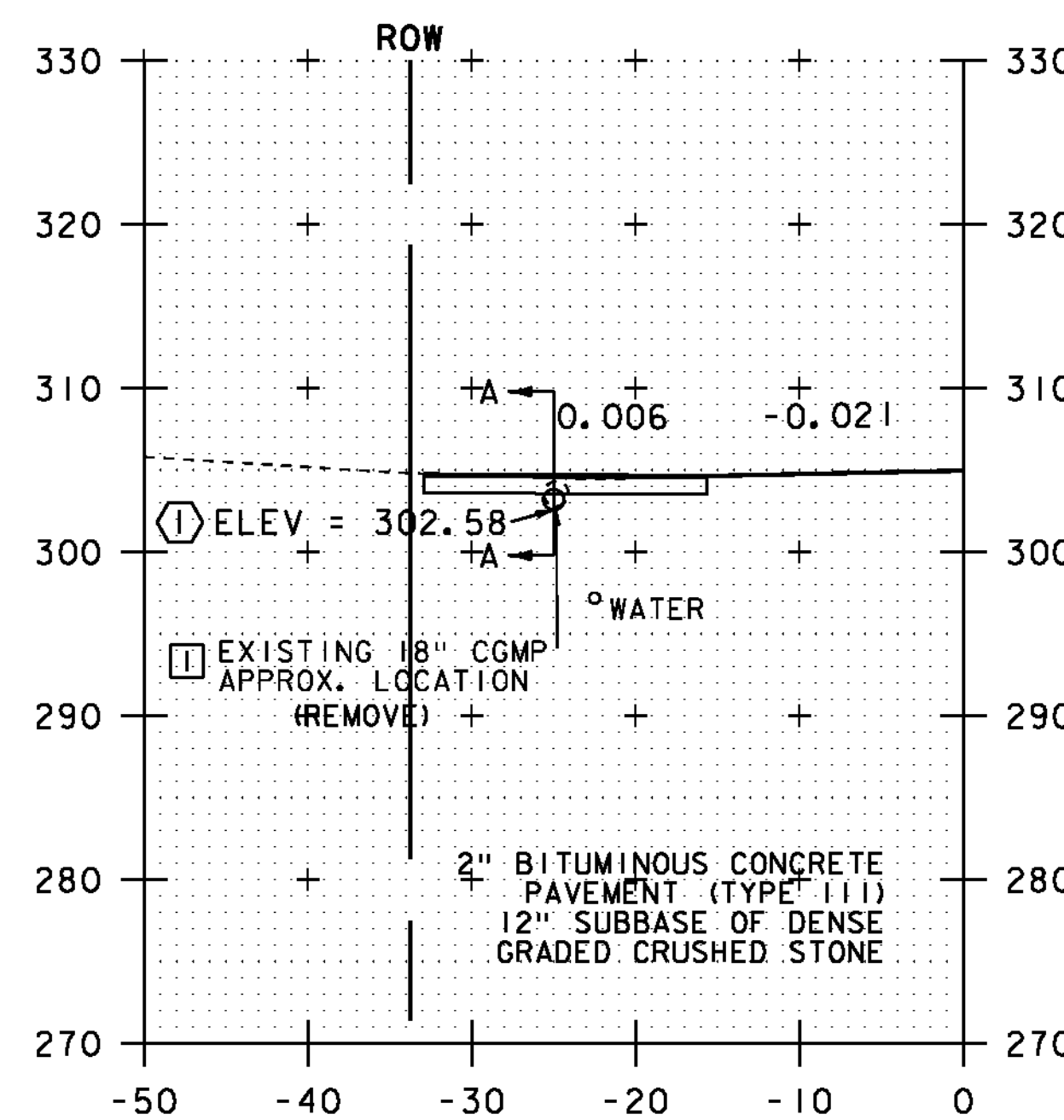
167+06
GRAVEL DRIVE RT



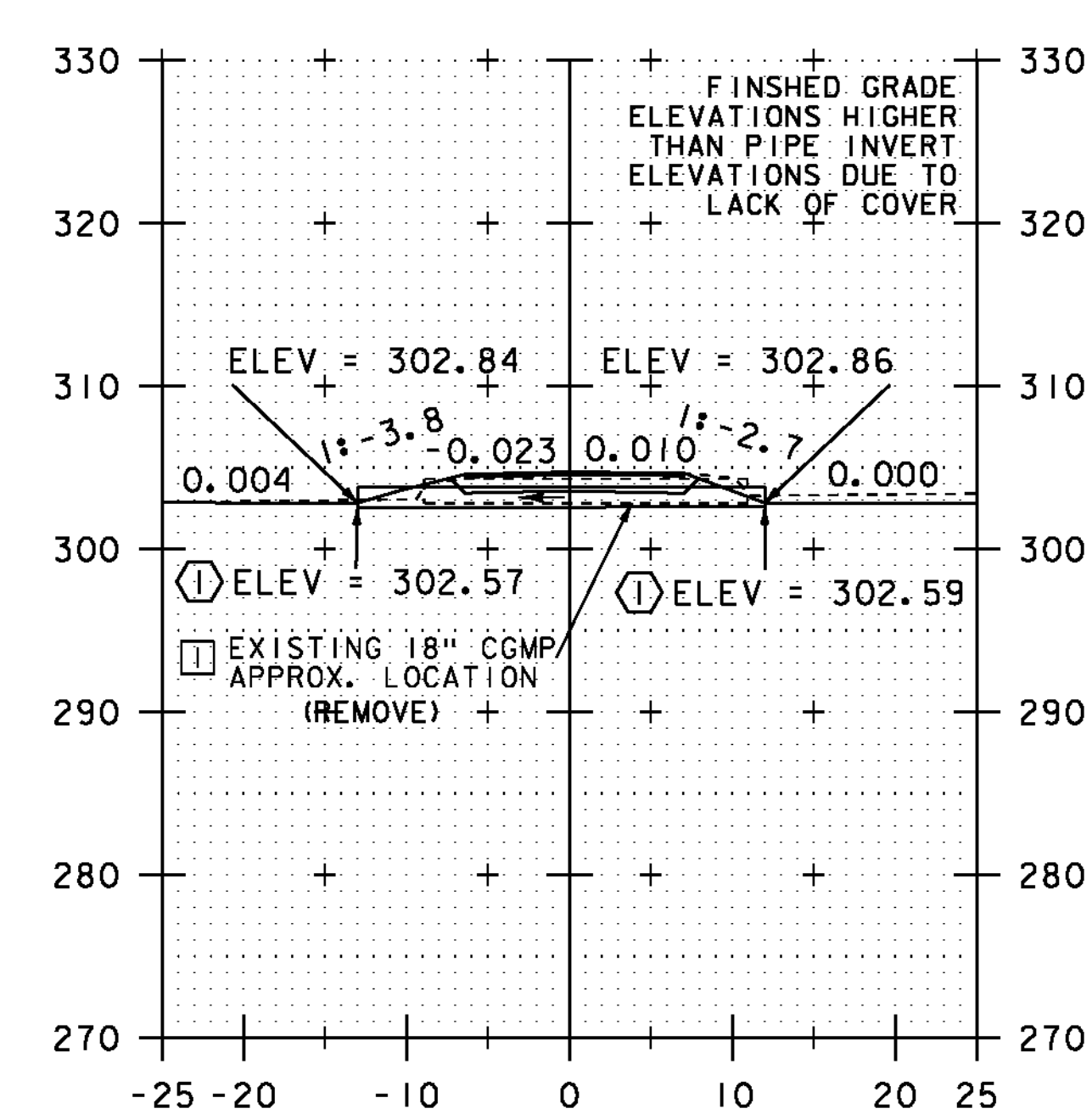
SECTION A-A



166+75
BEGIN APPROACH

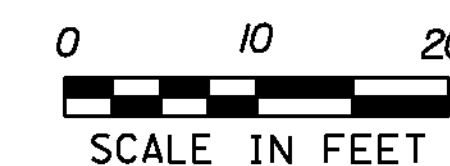


167+03
PAVED DRIVE LT



SECTION A-A

NOTE:
ALL BURIED UTILITIES ARE EXISTING,
THE LOCATIONS ARE APPROXIMATE
AND ARE TO REMAIN UNDISTURBED

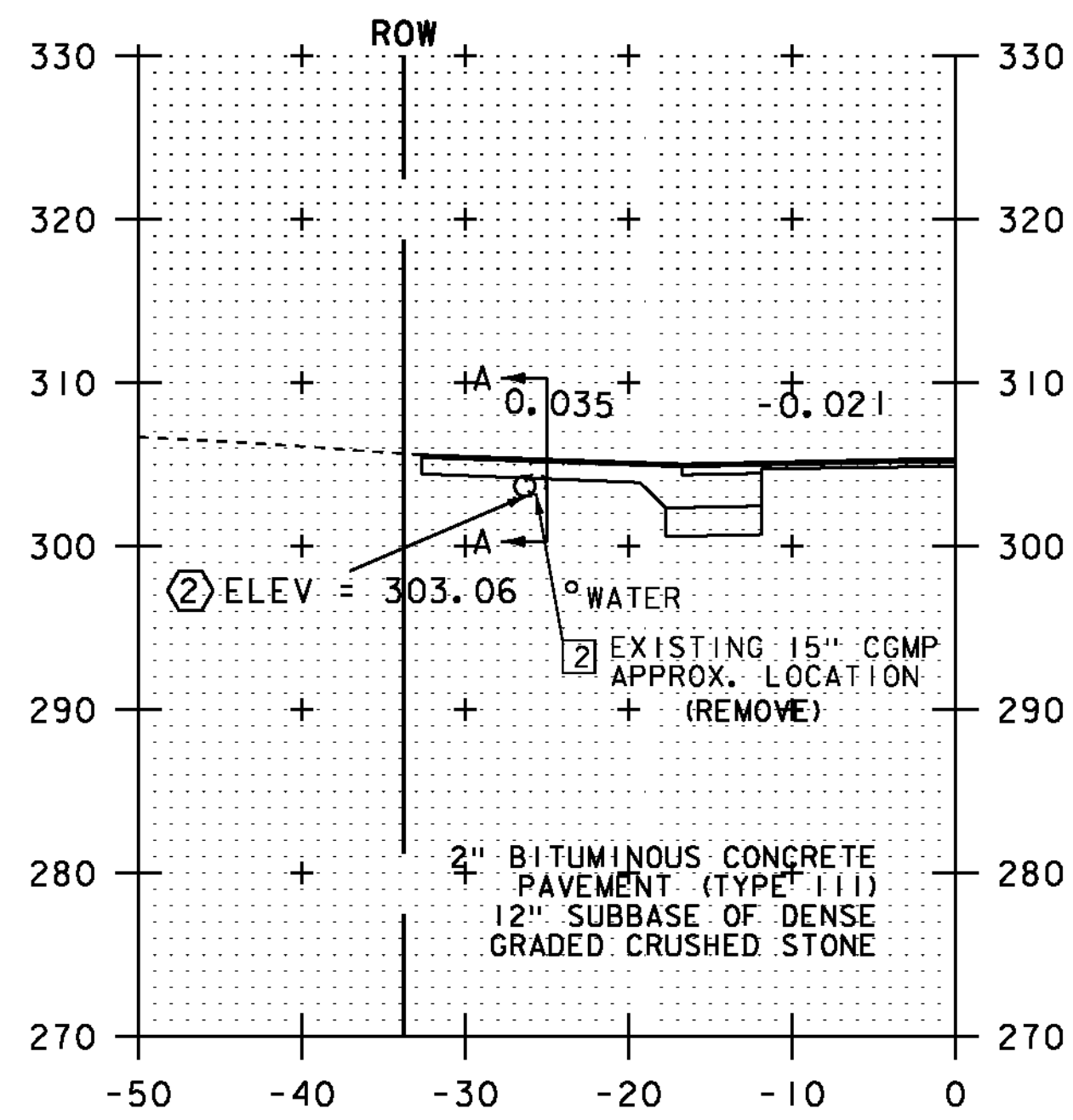


STA. 166+75 TO STA. 167+06

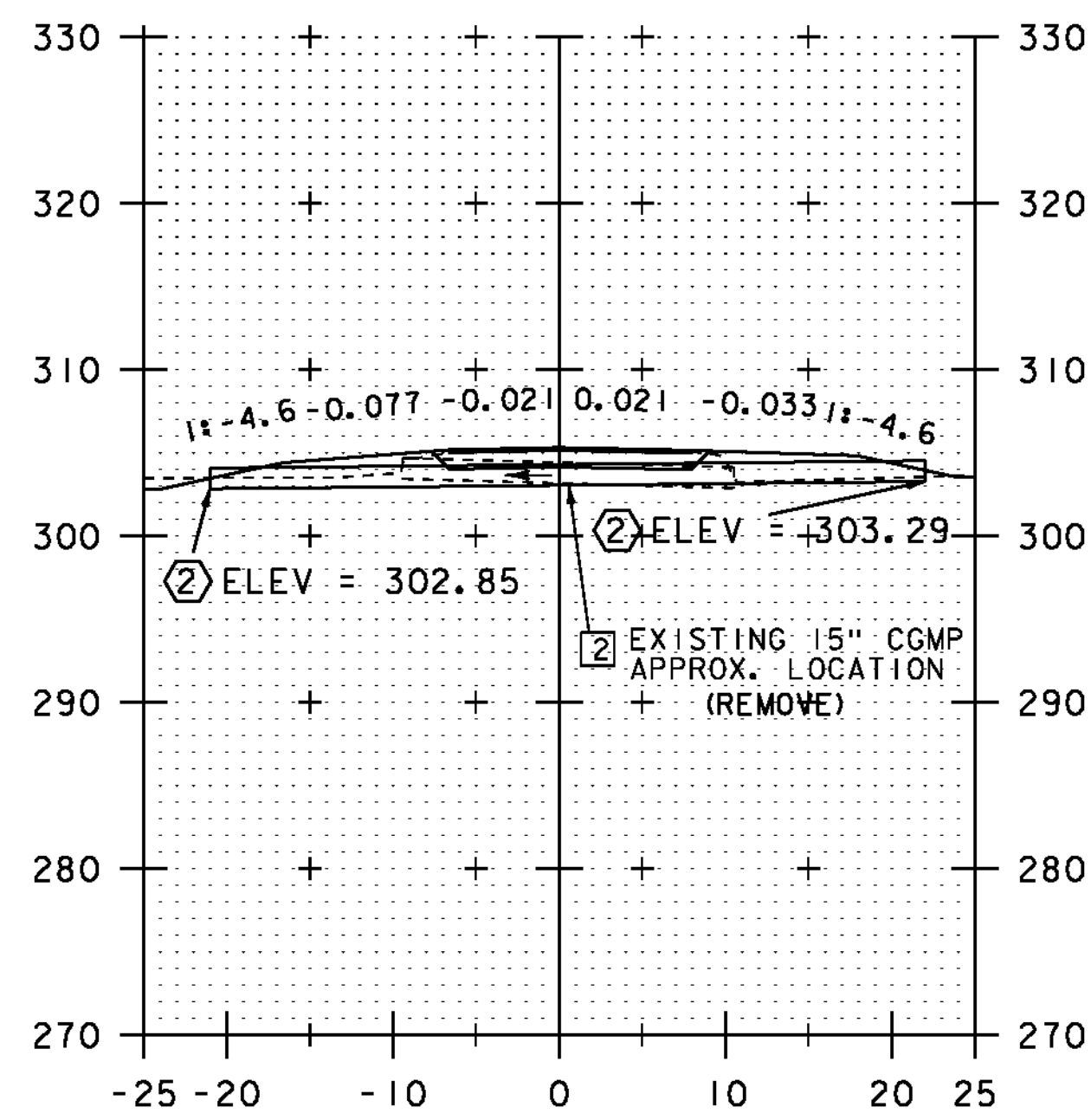
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 1

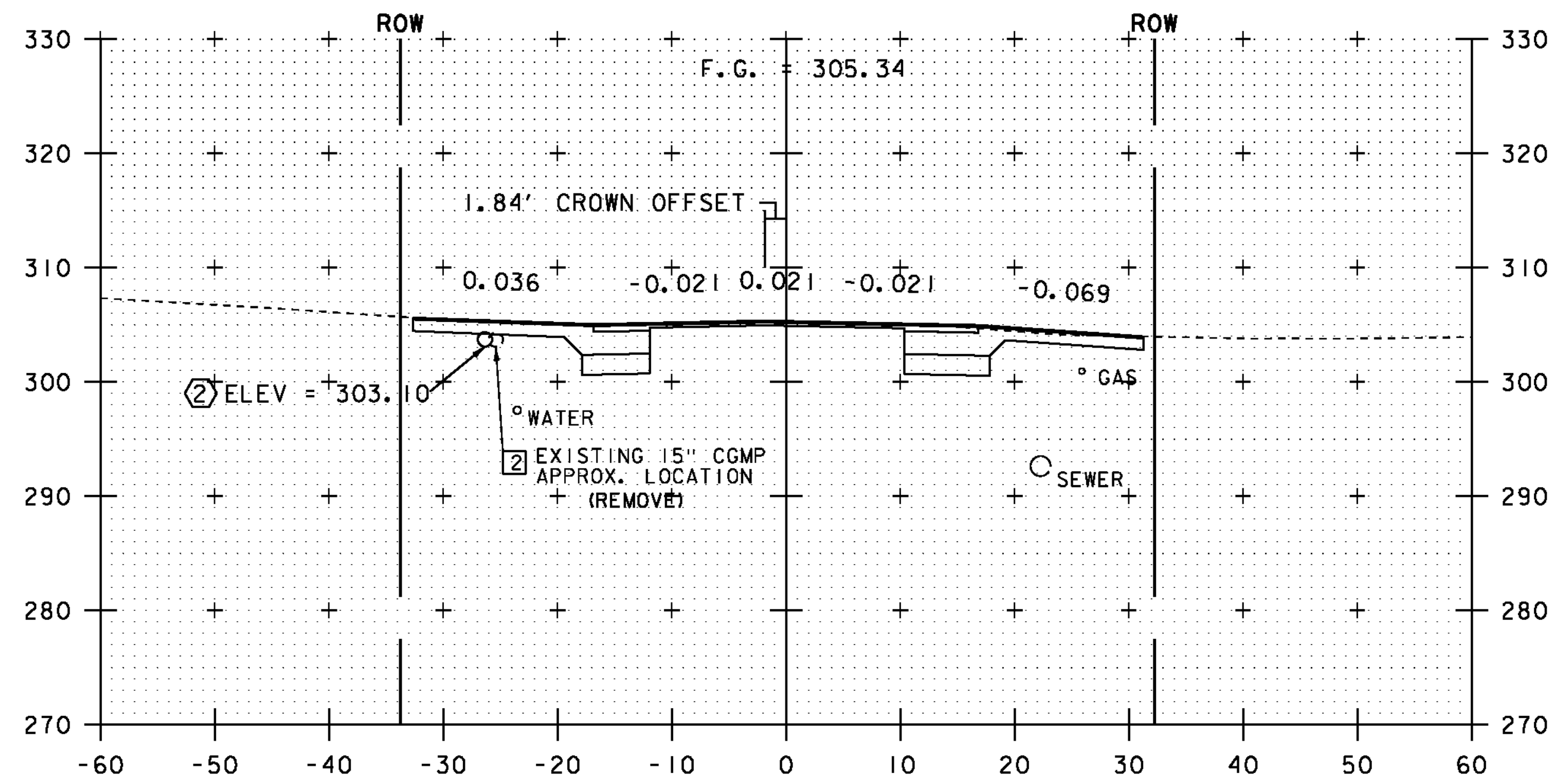
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 55 OF 64



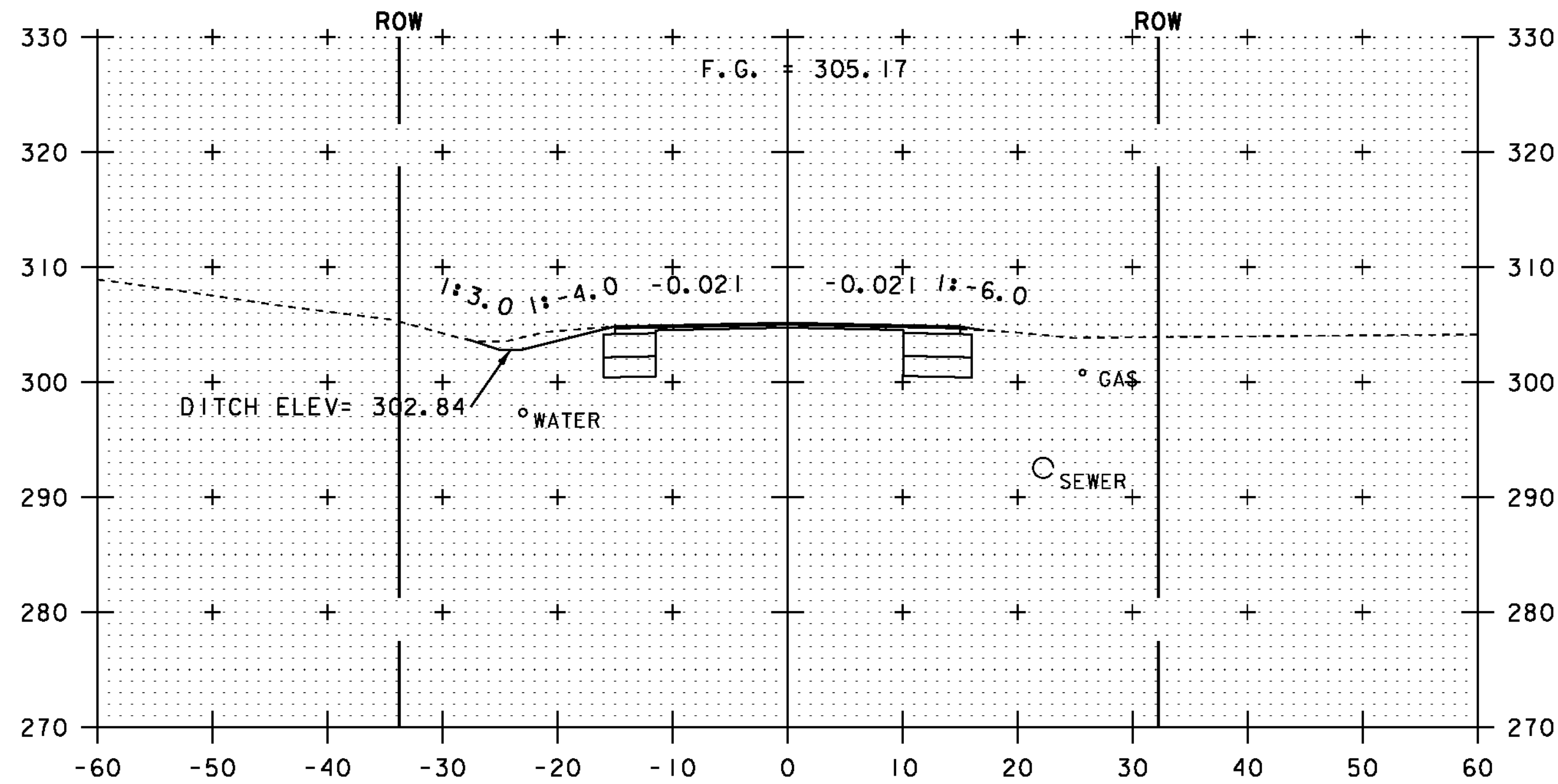
167+96
PAVED DRIVE LT



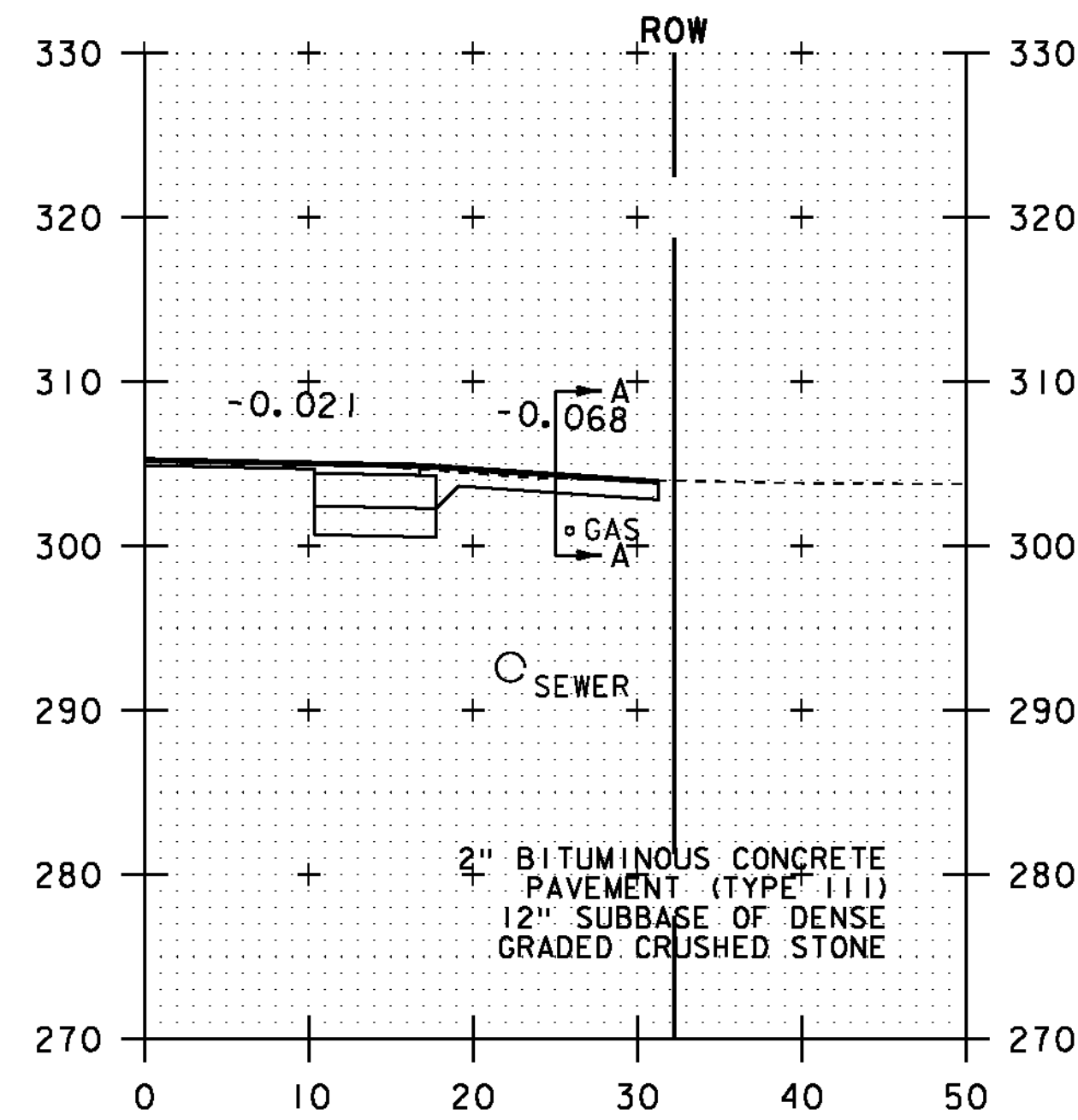
SECTION A-A



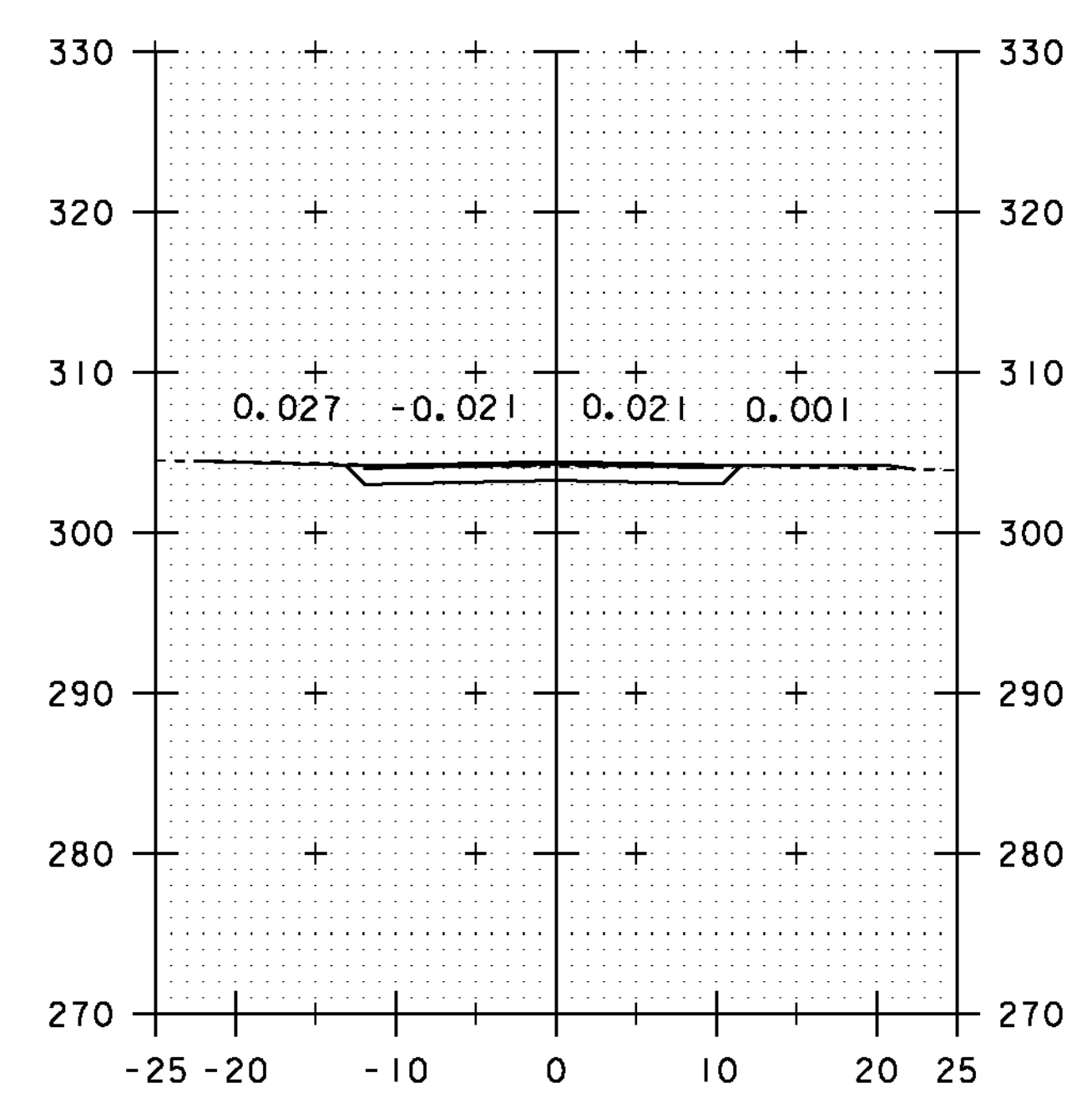
168+00



167+50
END APPROACH
BEGIN PROJECT

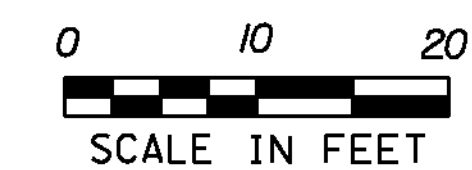


167+98
PAVED DRIVE RT



SECTION A-A

NOTE:
ALL BURIED UTILITIES ARE EXISTING,
THE LOCATIONS ARE APPROXIMATE
AND ARE TO REMAIN UNDISTURBED

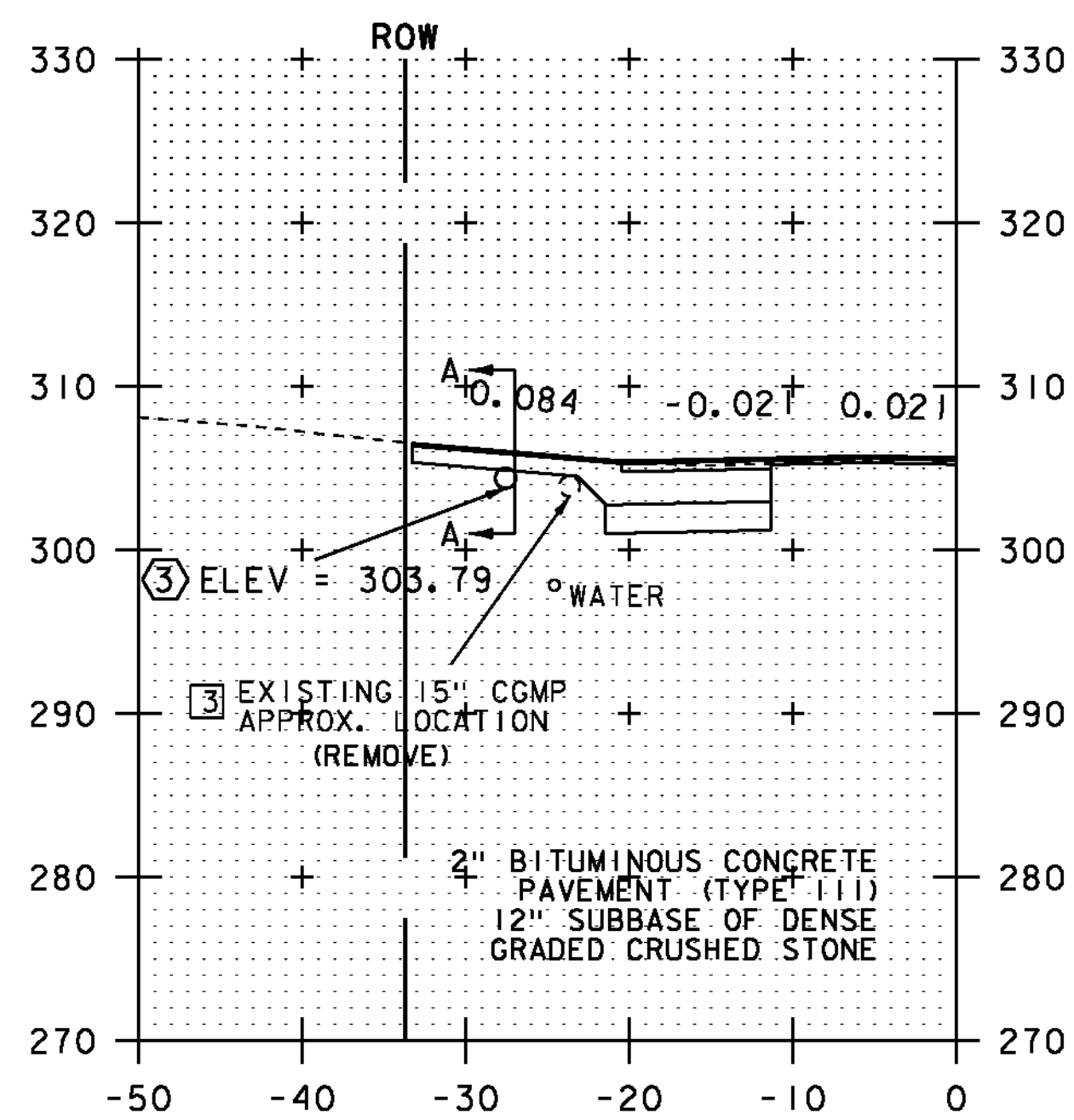


STA. 167+50 TO STA. 168+00

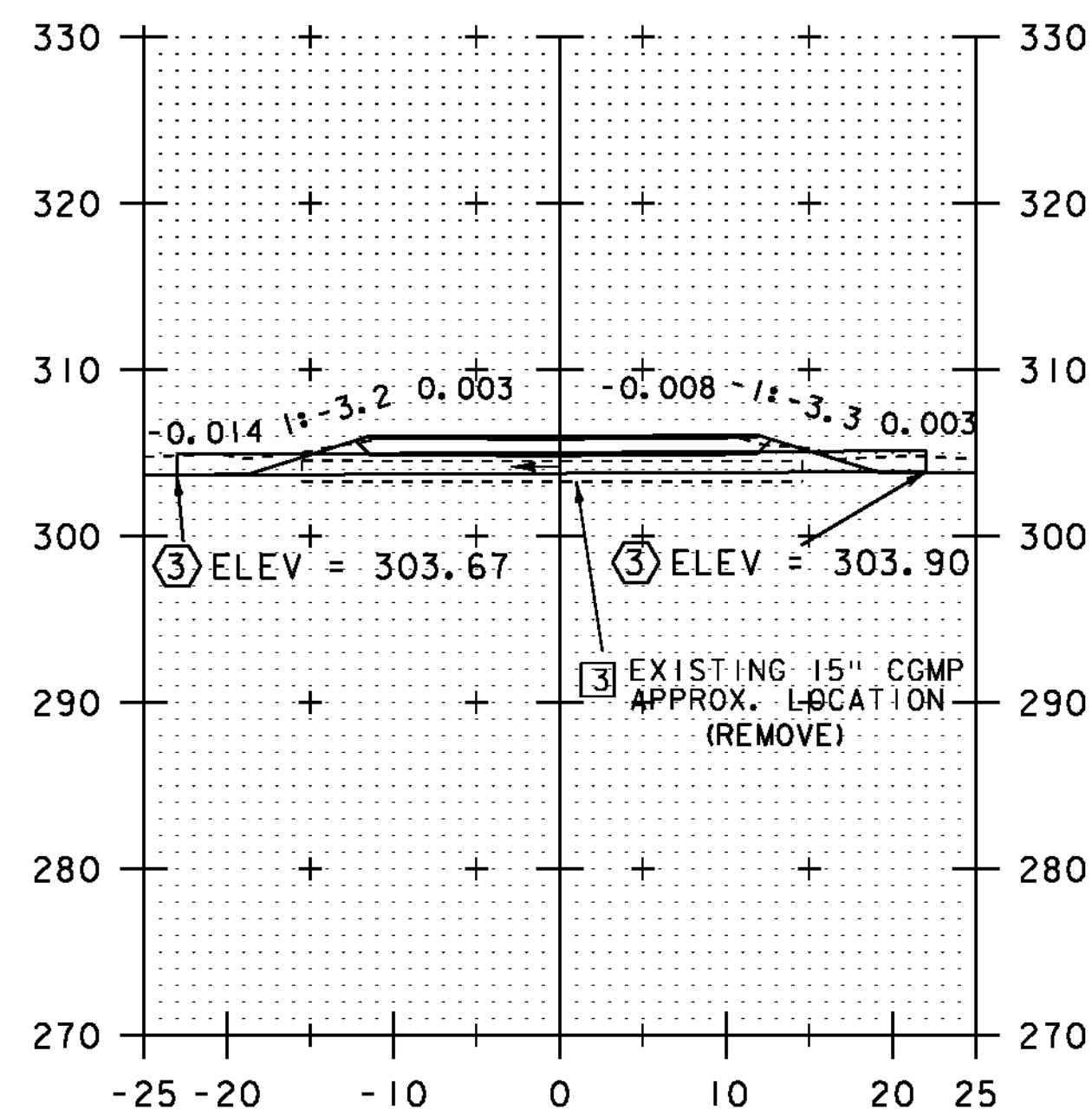
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 2

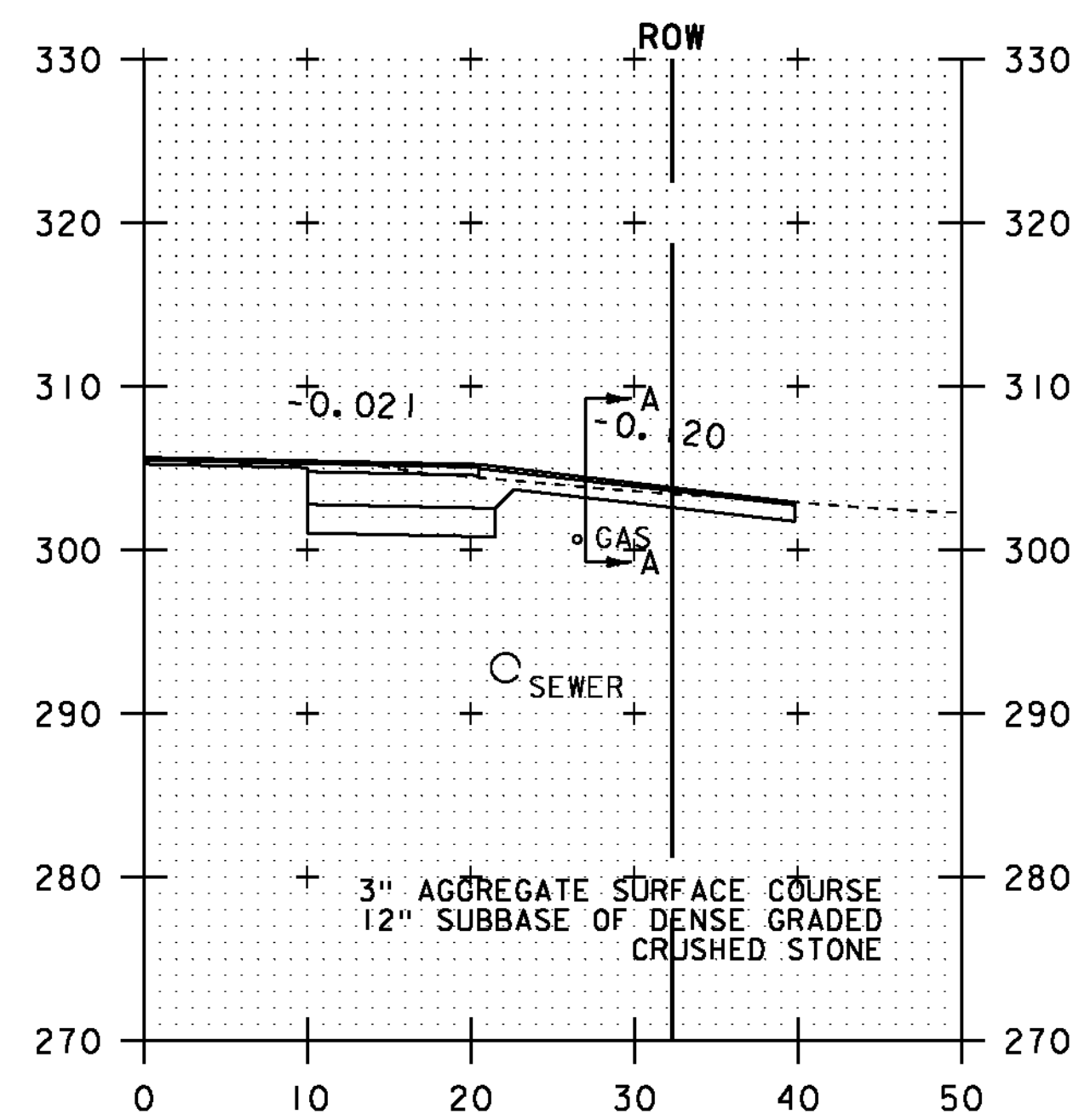
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 56 OF 64



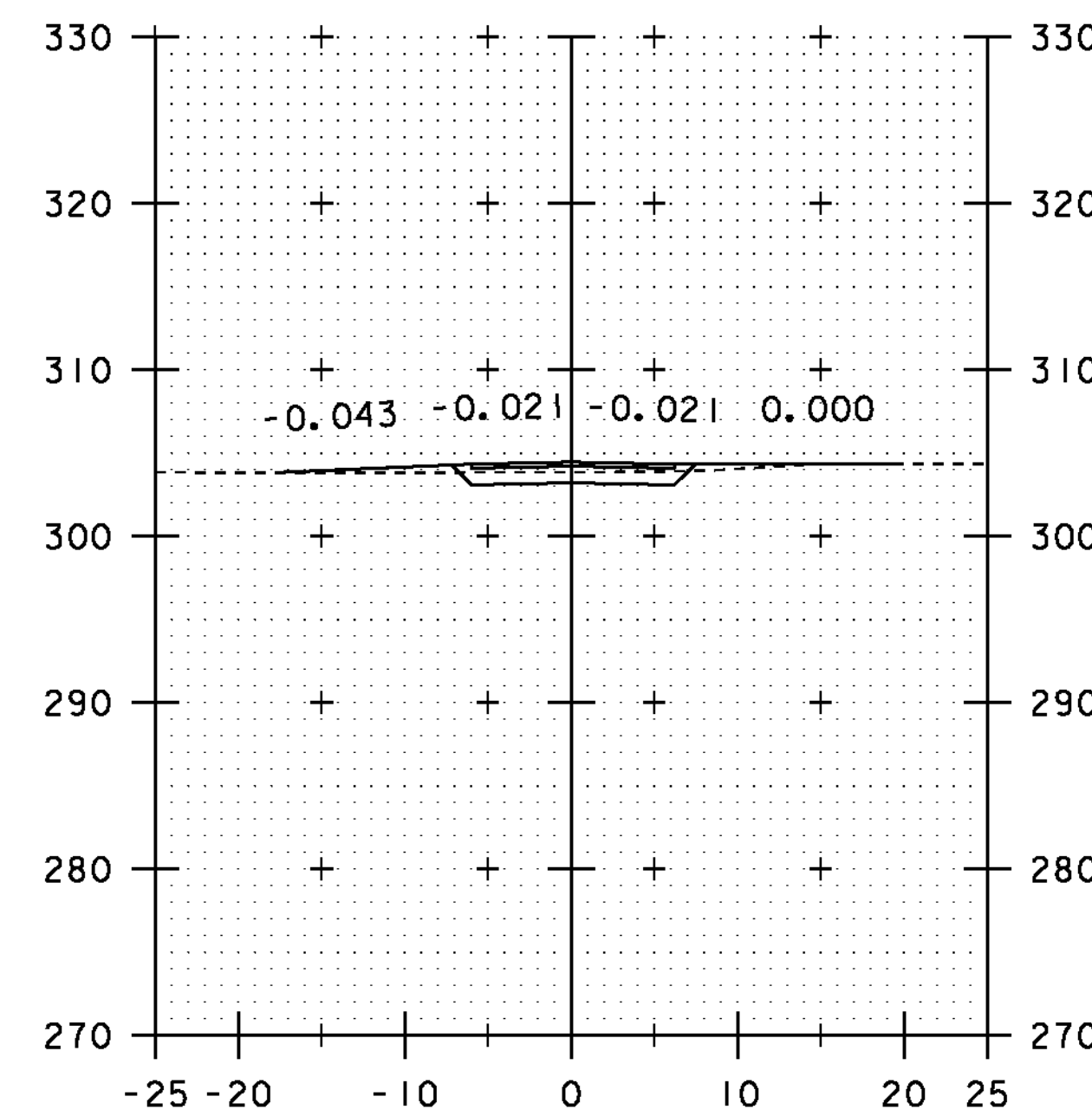
168+98
PAVED DRIVE LT



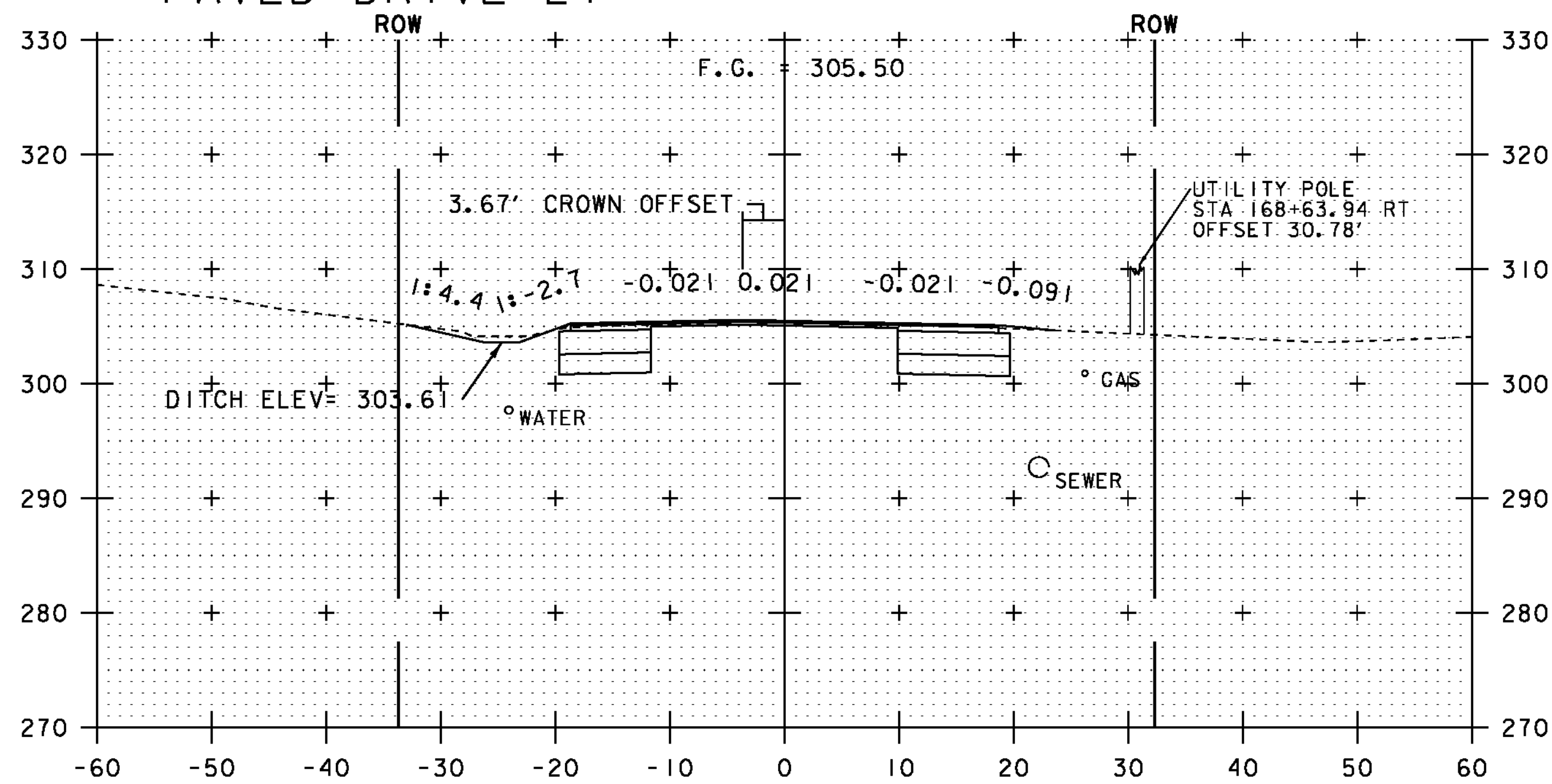
SECTION A-A



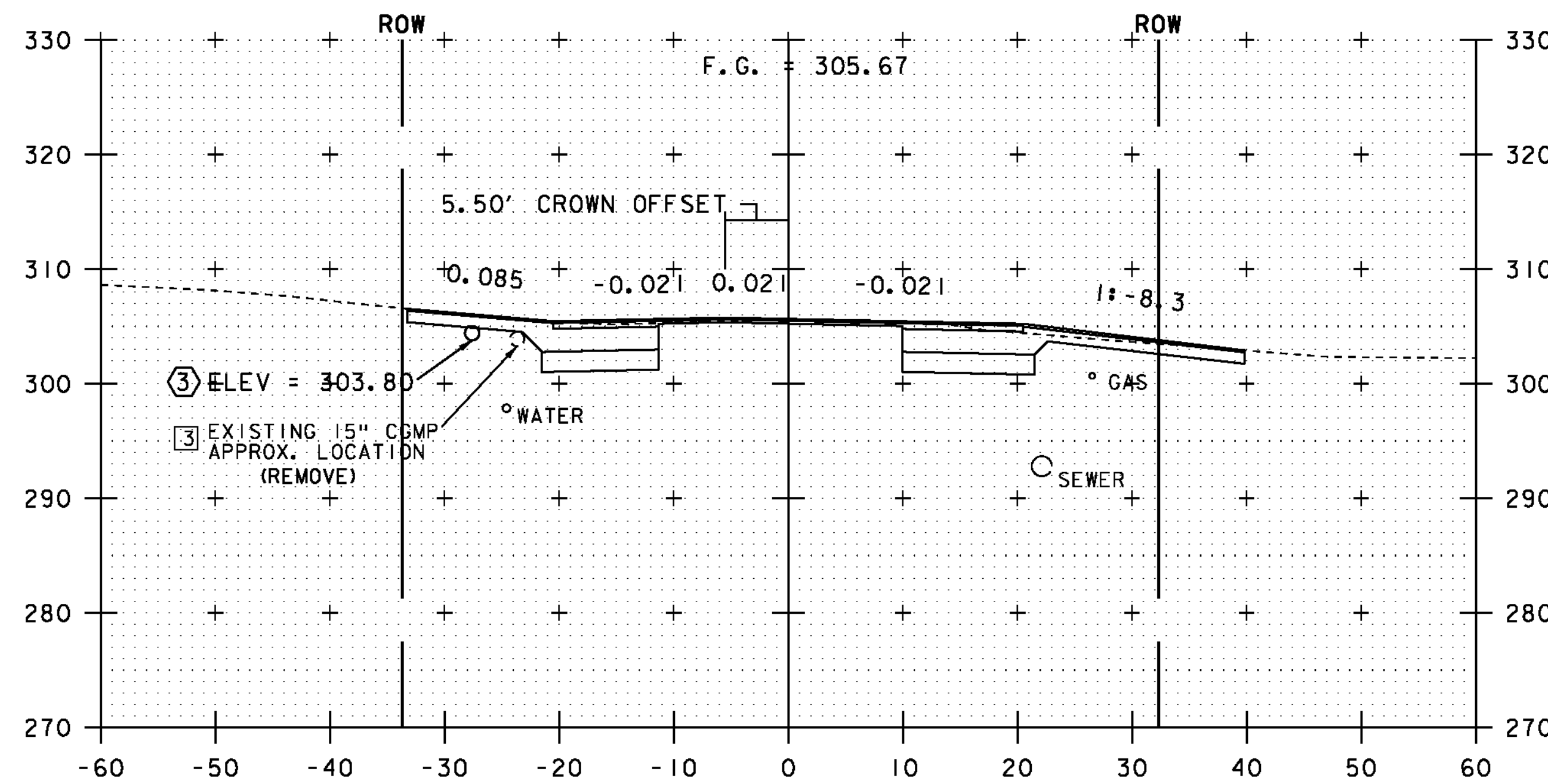
169+04
GRAVEL DRIVE RT



SECTION A-A

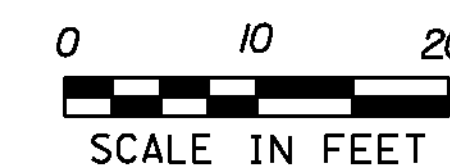


168+50



169+00

NOTE:
ALL BURIED UTILITIES ARE EXISTING,
THE LOCATIONS ARE APPROXIMATE
AND ARE TO REMAIN UNDISTURBED

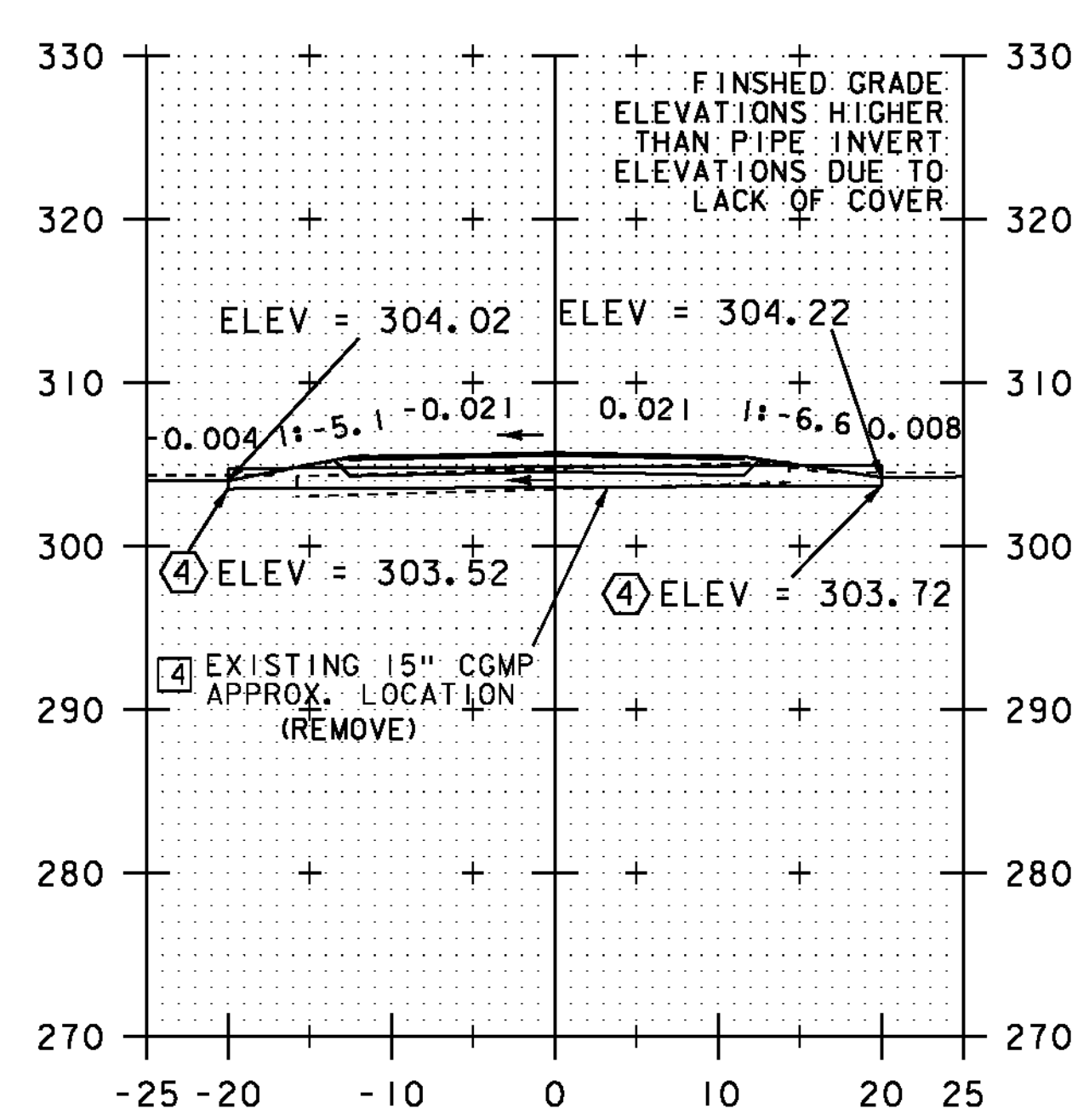
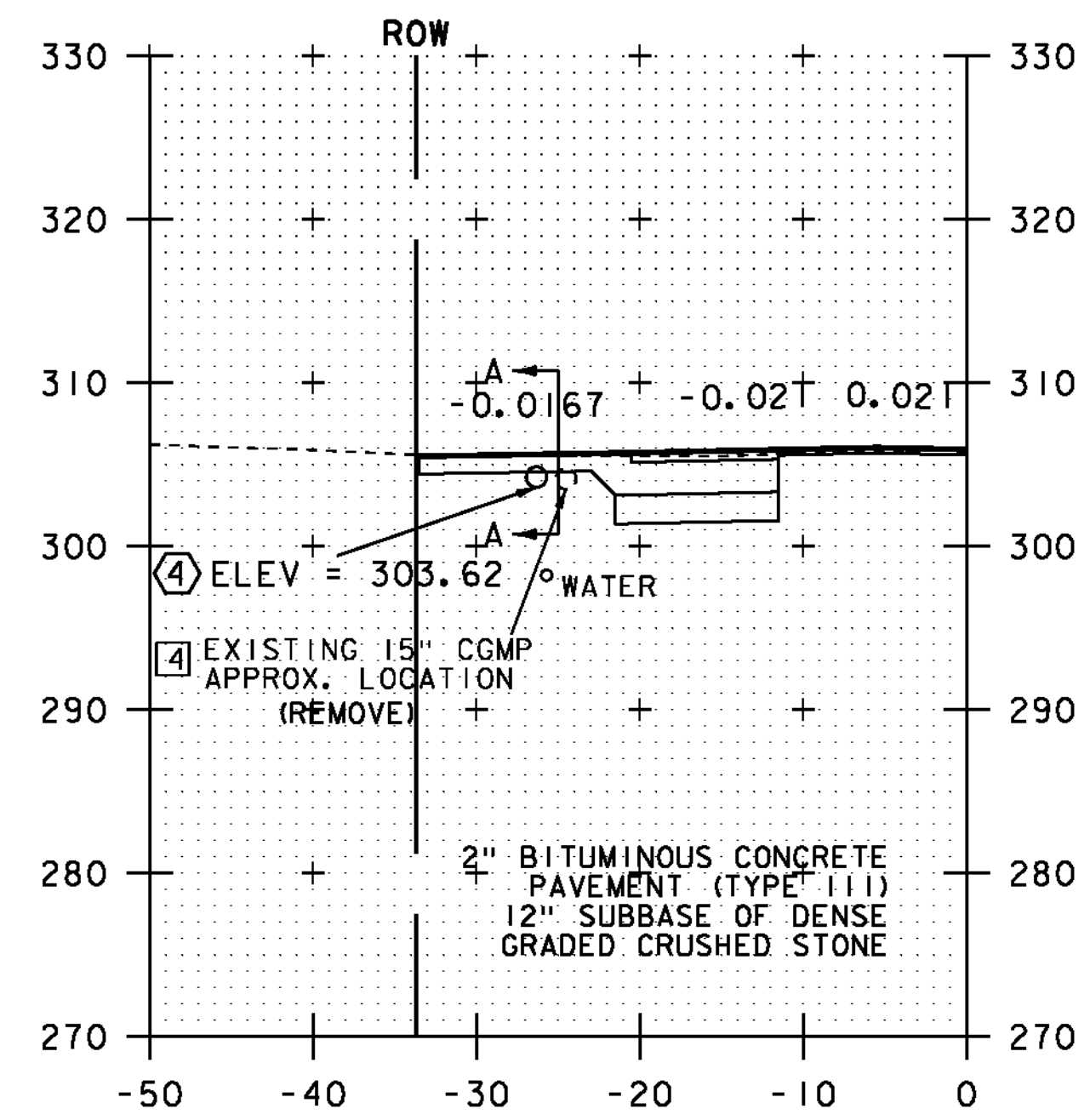
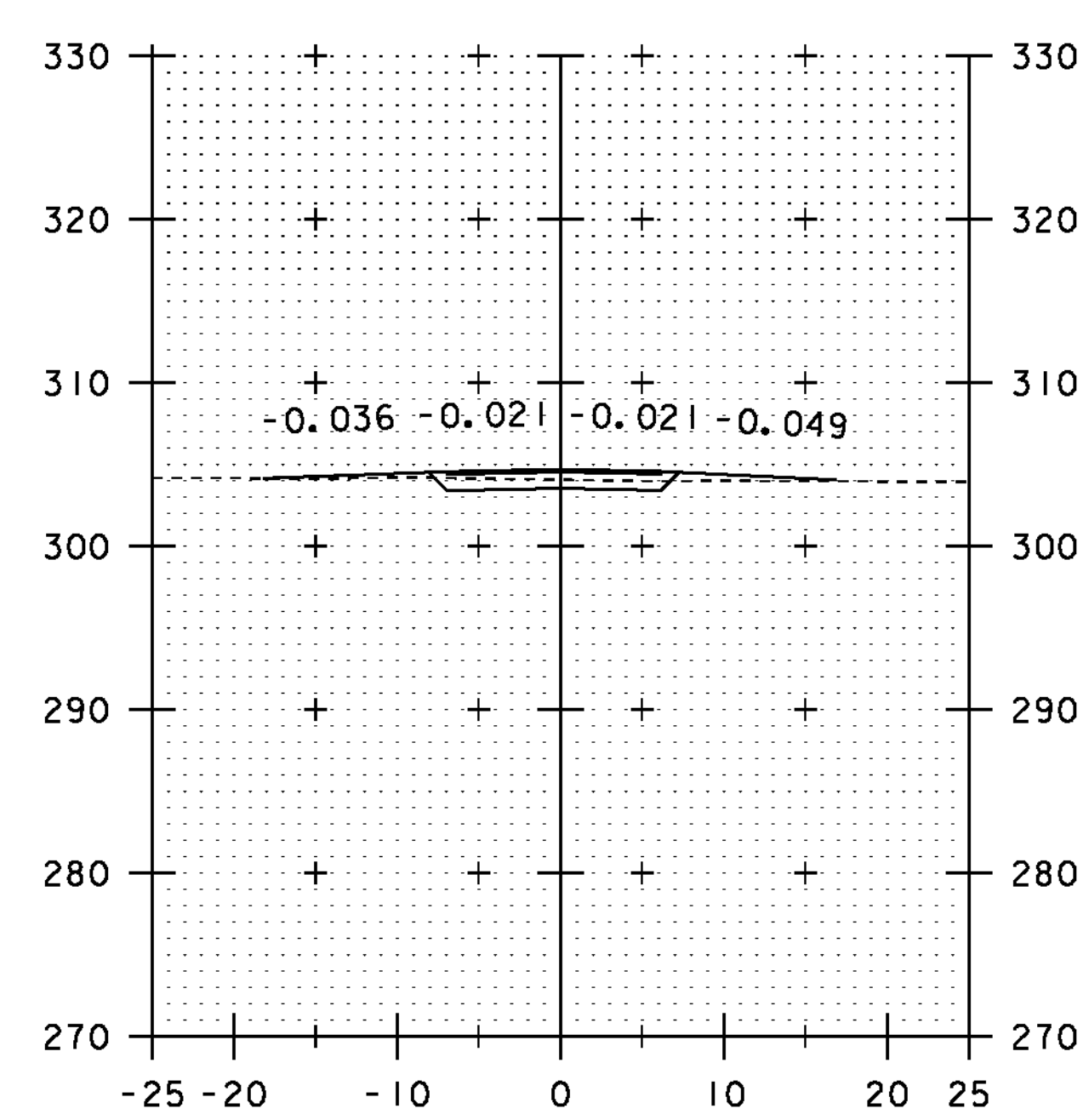
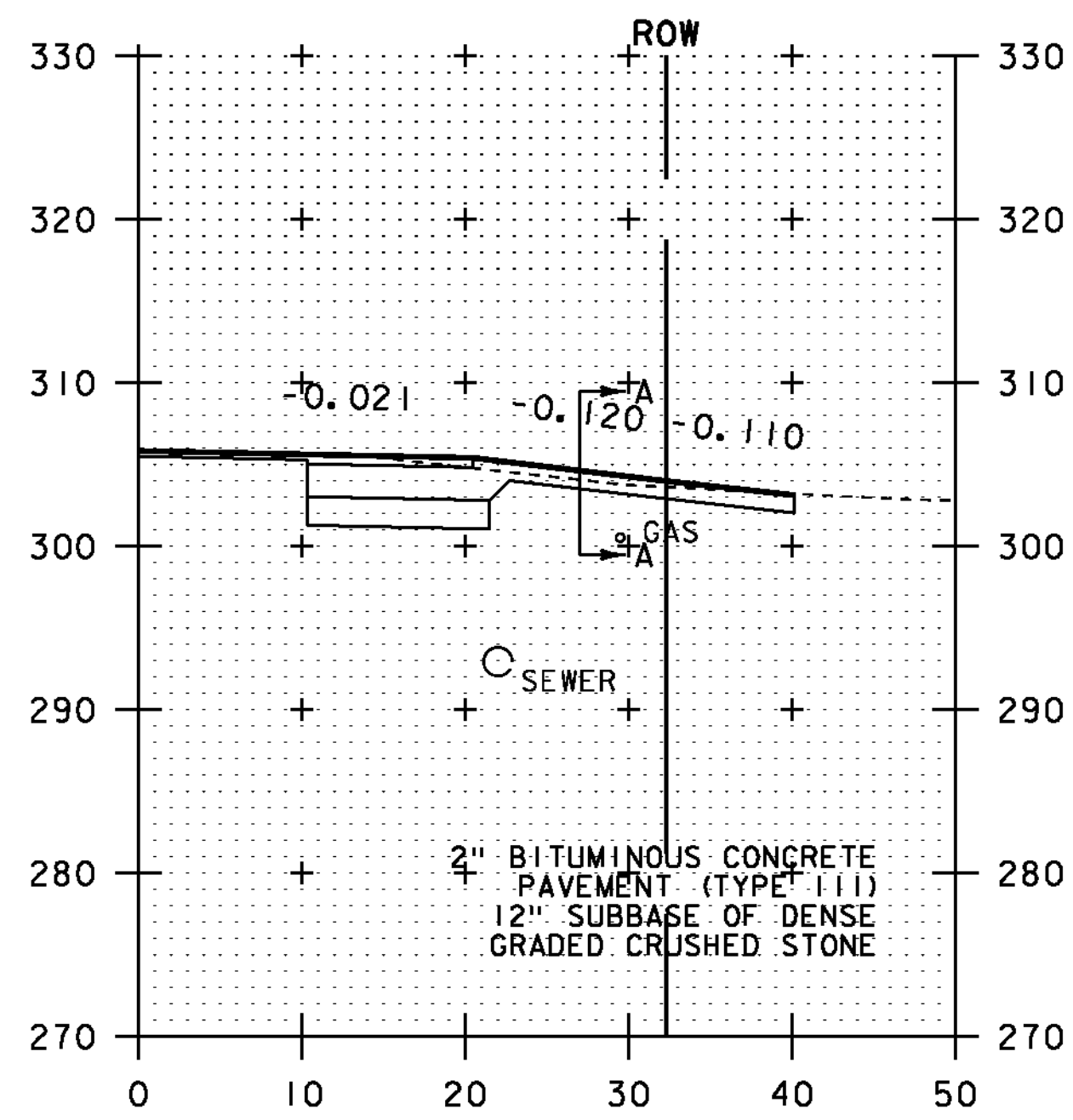


STA. 168+50 TO STA. 169+04

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 3

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 57 OF 64

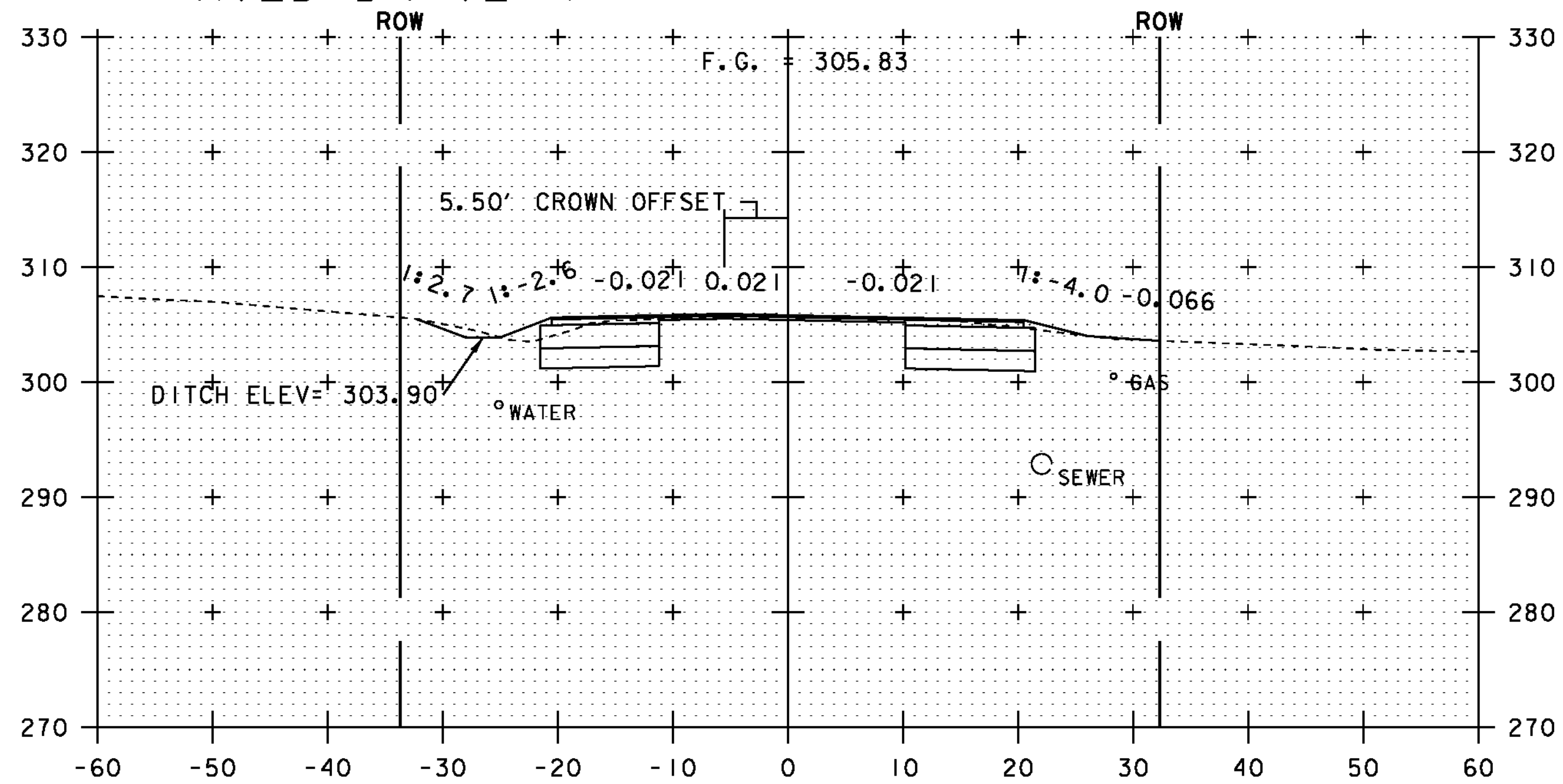


169+80
PAVED DRIVE RT

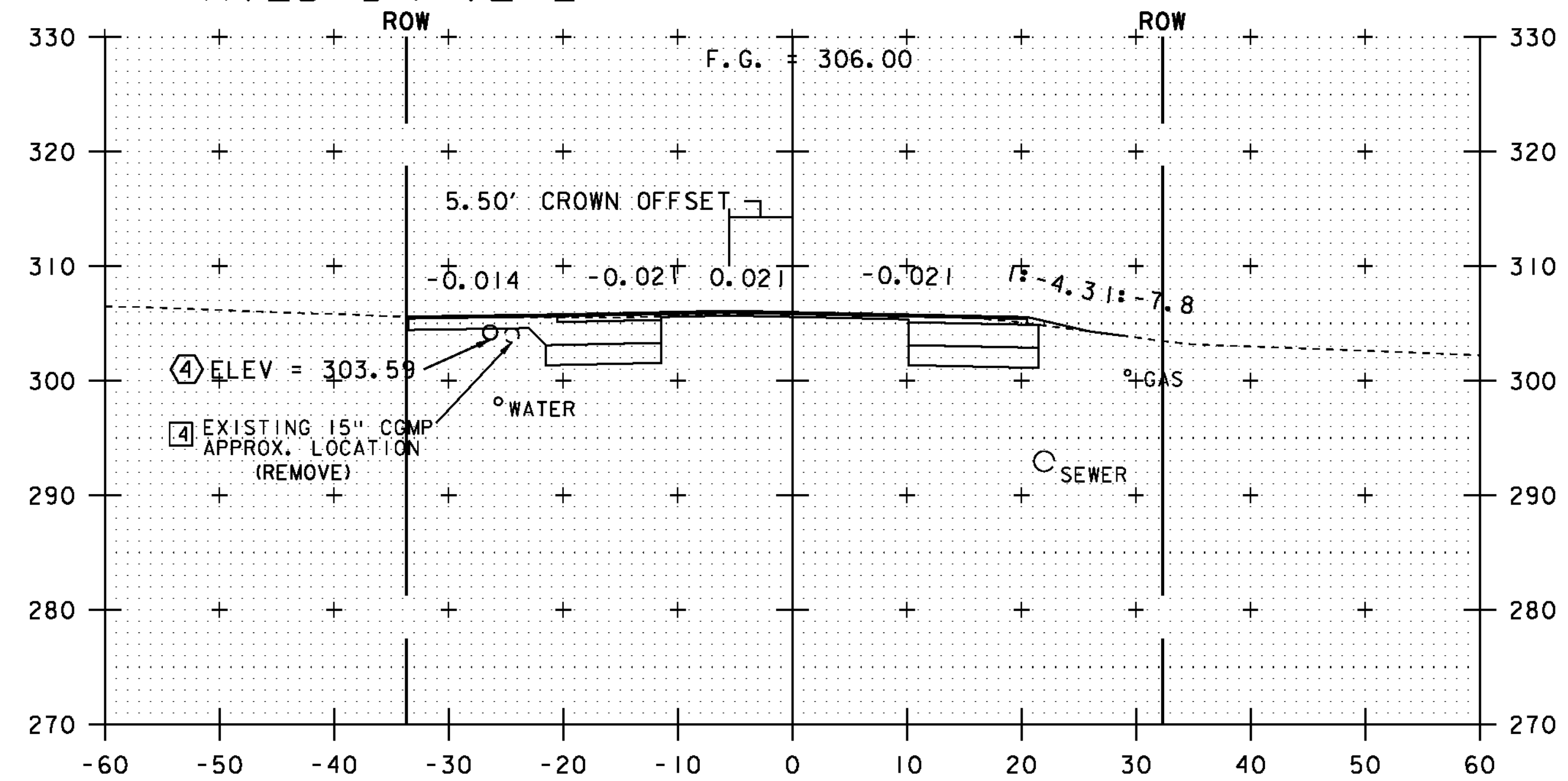
SECTION A-A

170+05
PAVED DRIVE LT

SECTION A-A

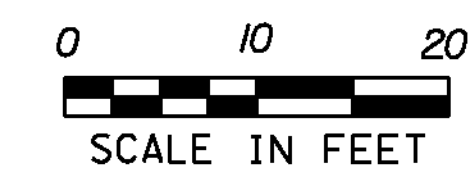


169+50



170+00

NOTE:
ALL BURIED UTILITIES ARE EXISTING,
THE LOCATIONS ARE APPROXIMATE
AND ARE TO REMAIN UNDISTURBED

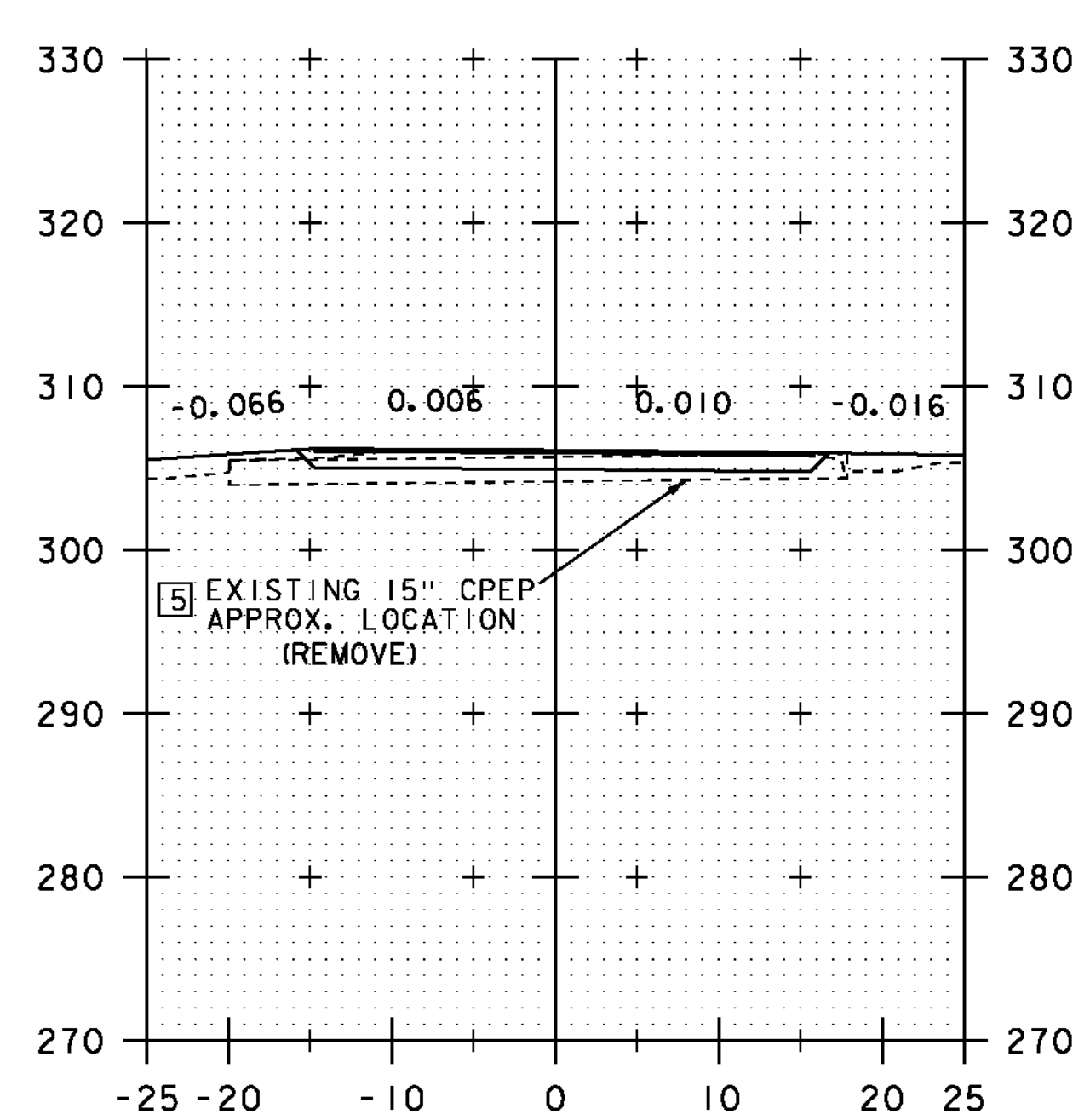
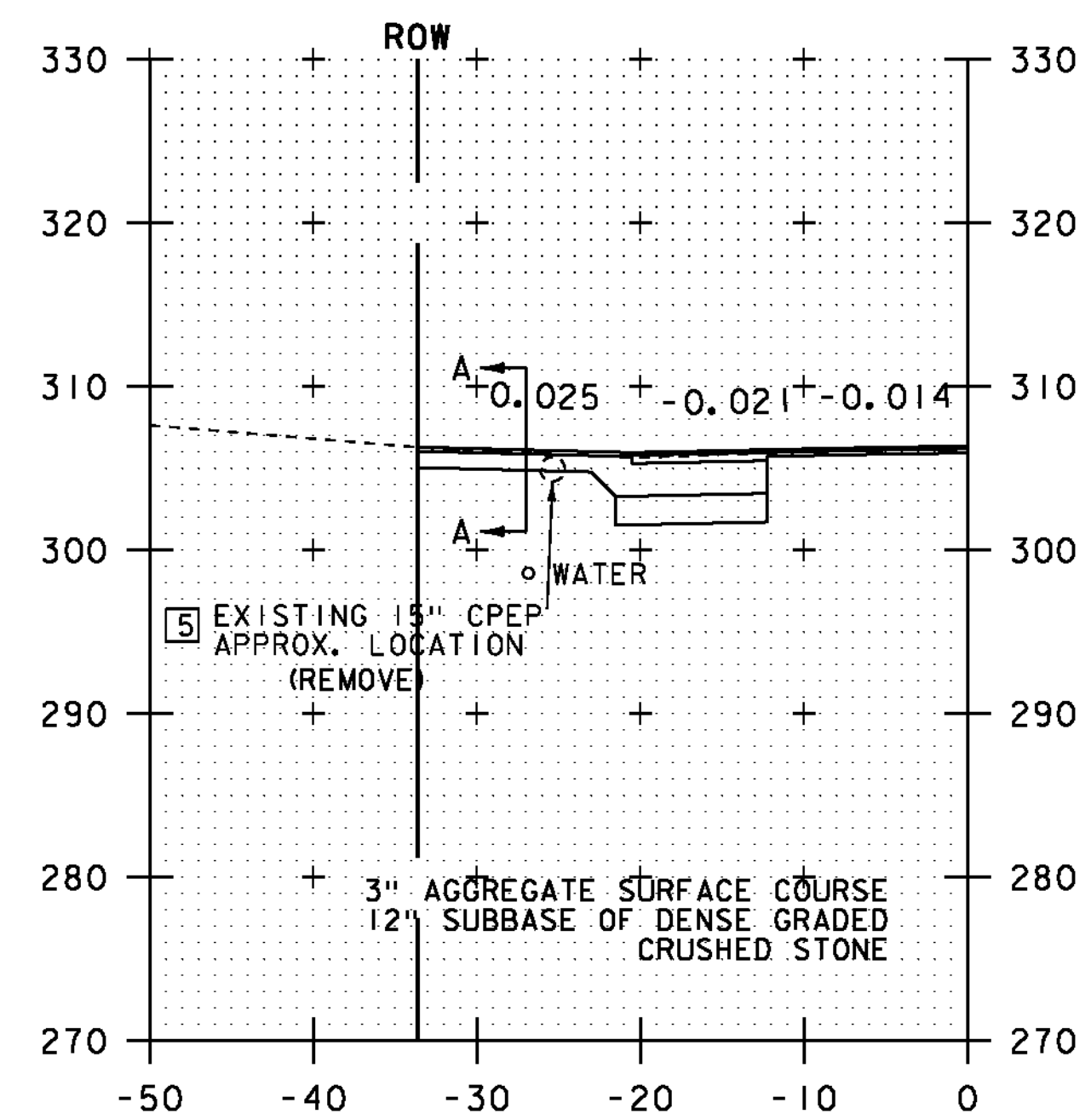
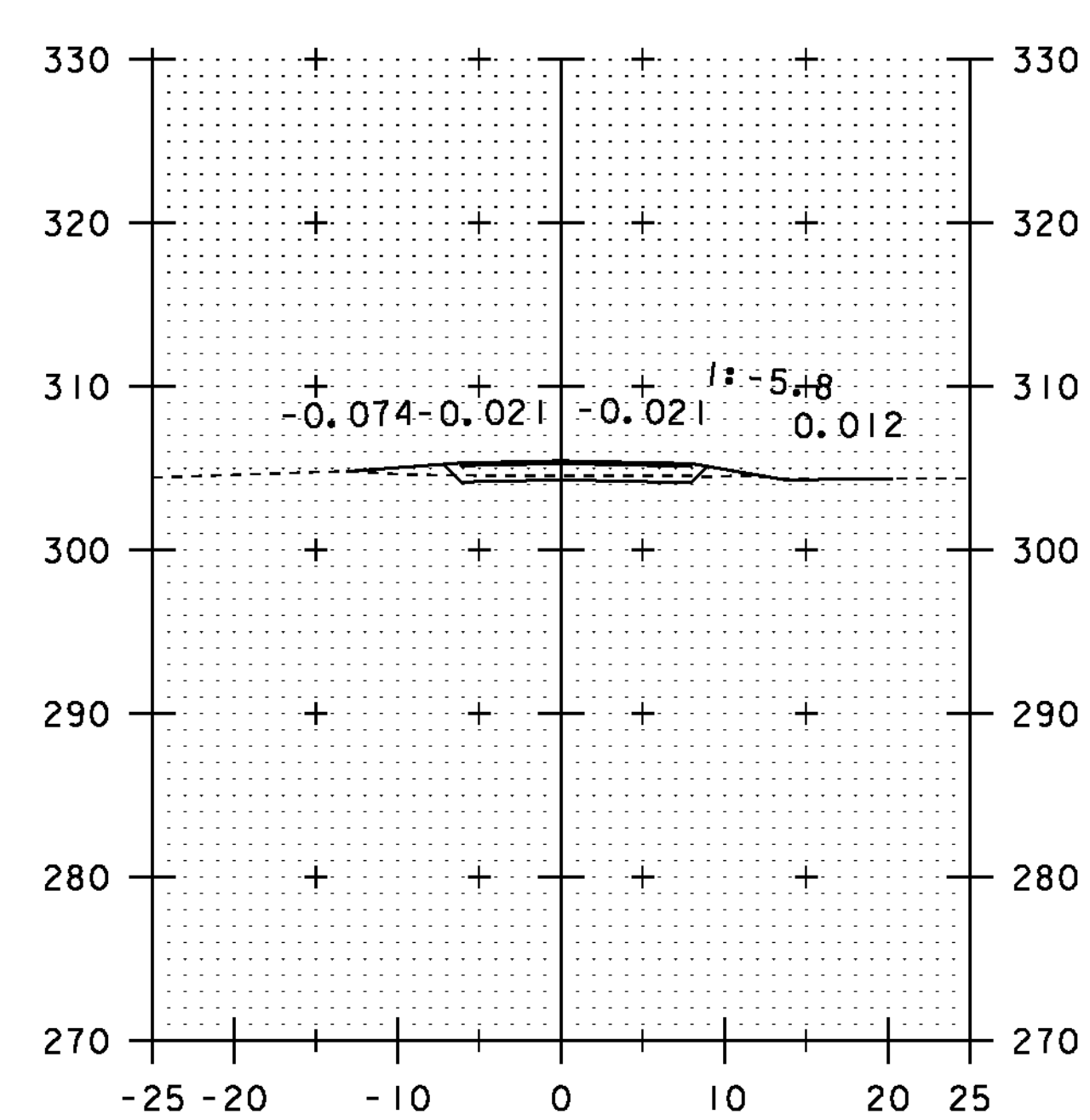
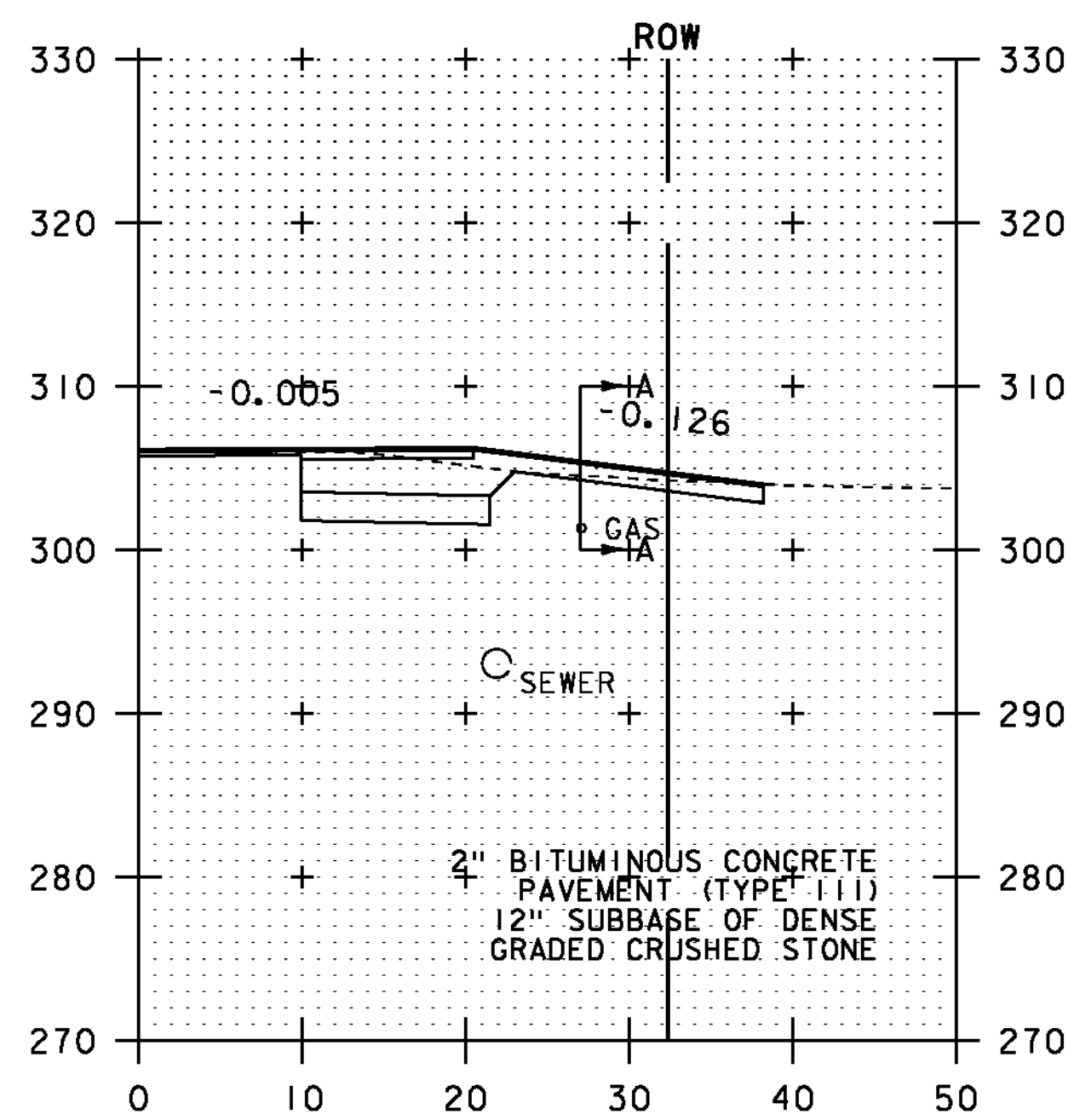


STA. 169+50 TO STA. 170+05

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 4

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 58 OF 64

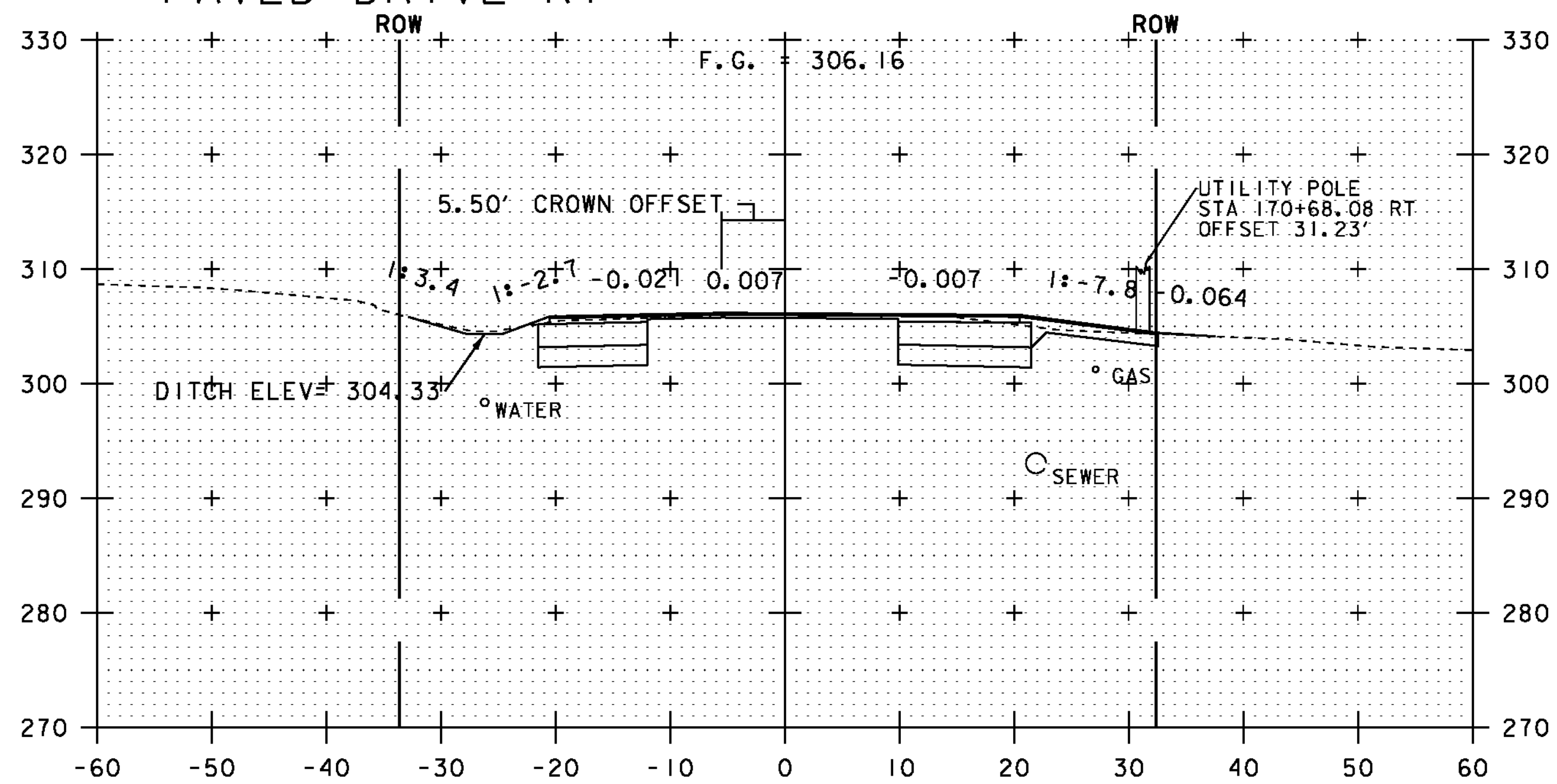


170+56
PAVED DRIVE RT

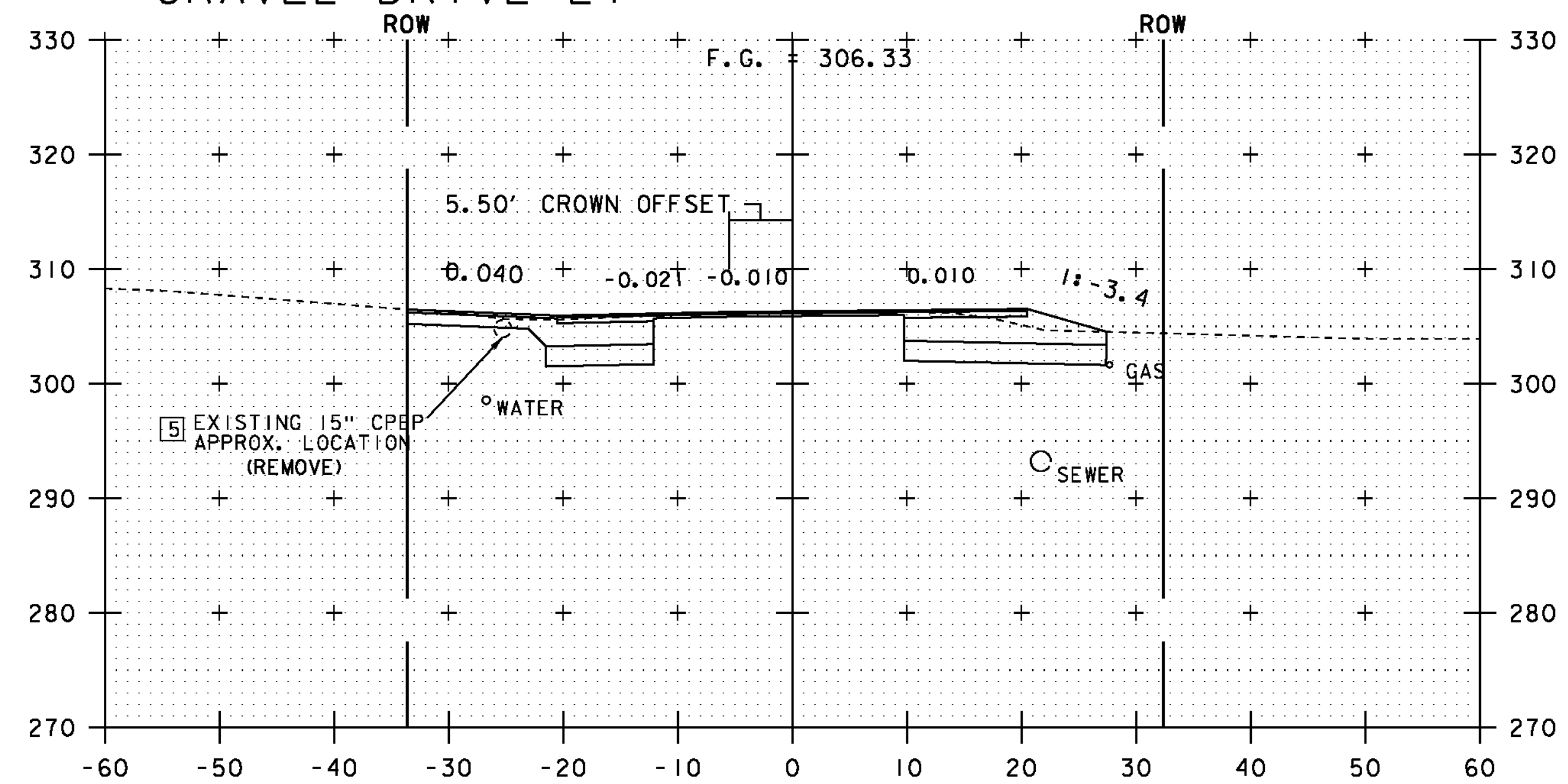
SECTION A-A

171+12
GRAVEL DRIVE LT

SECTION A-A

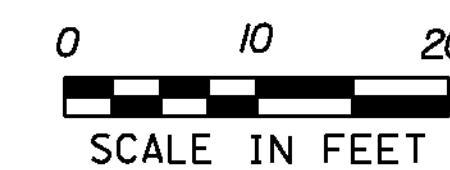


170+50



171+00

NOTE:
ALL BURIED UTILITIES ARE EXISTING,
THE LOCATIONS ARE APPROXIMATE
AND ARE TO REMAIN UNDISTURBED

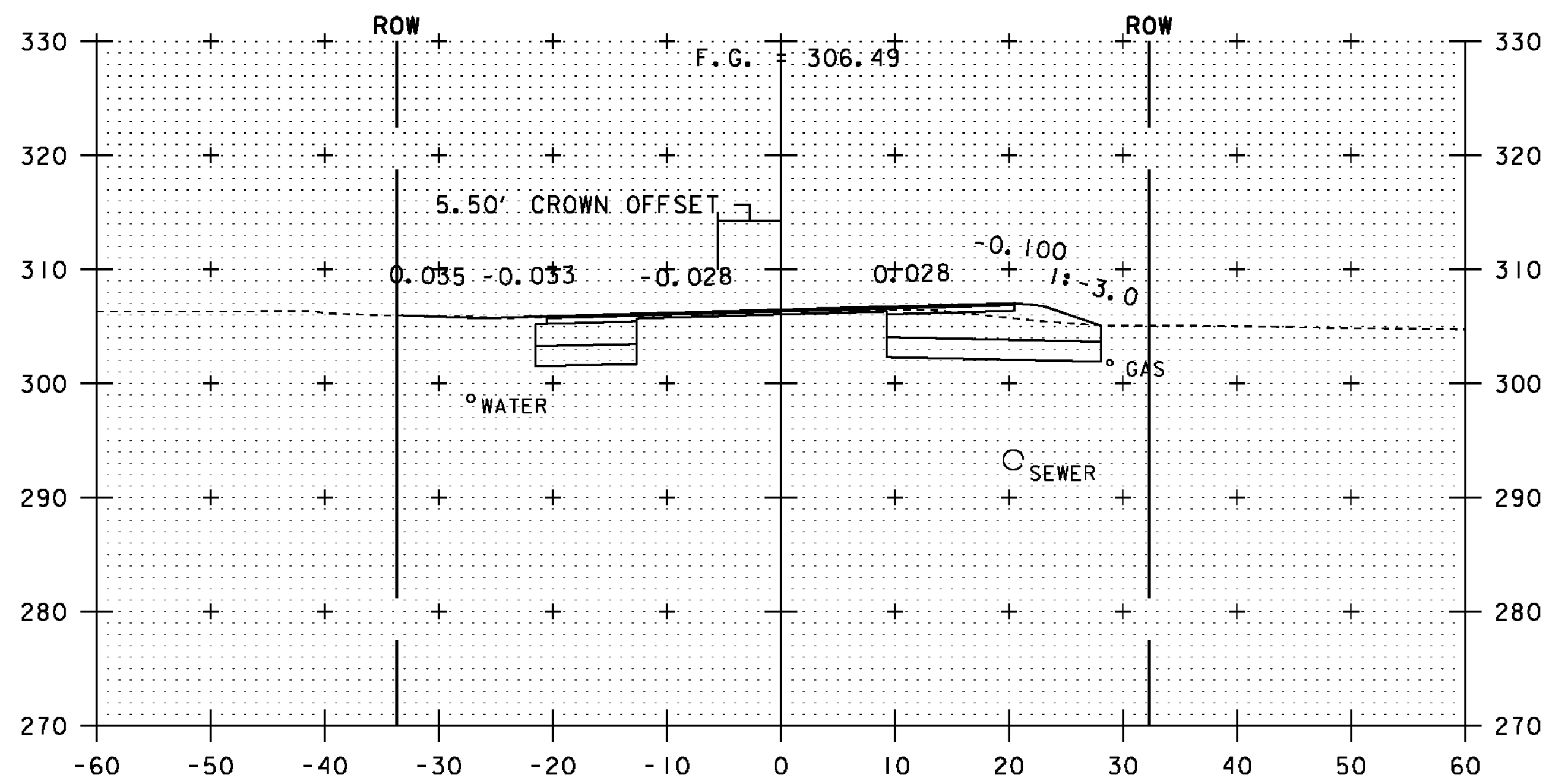


STA. 170+50 TO STA. 171+12

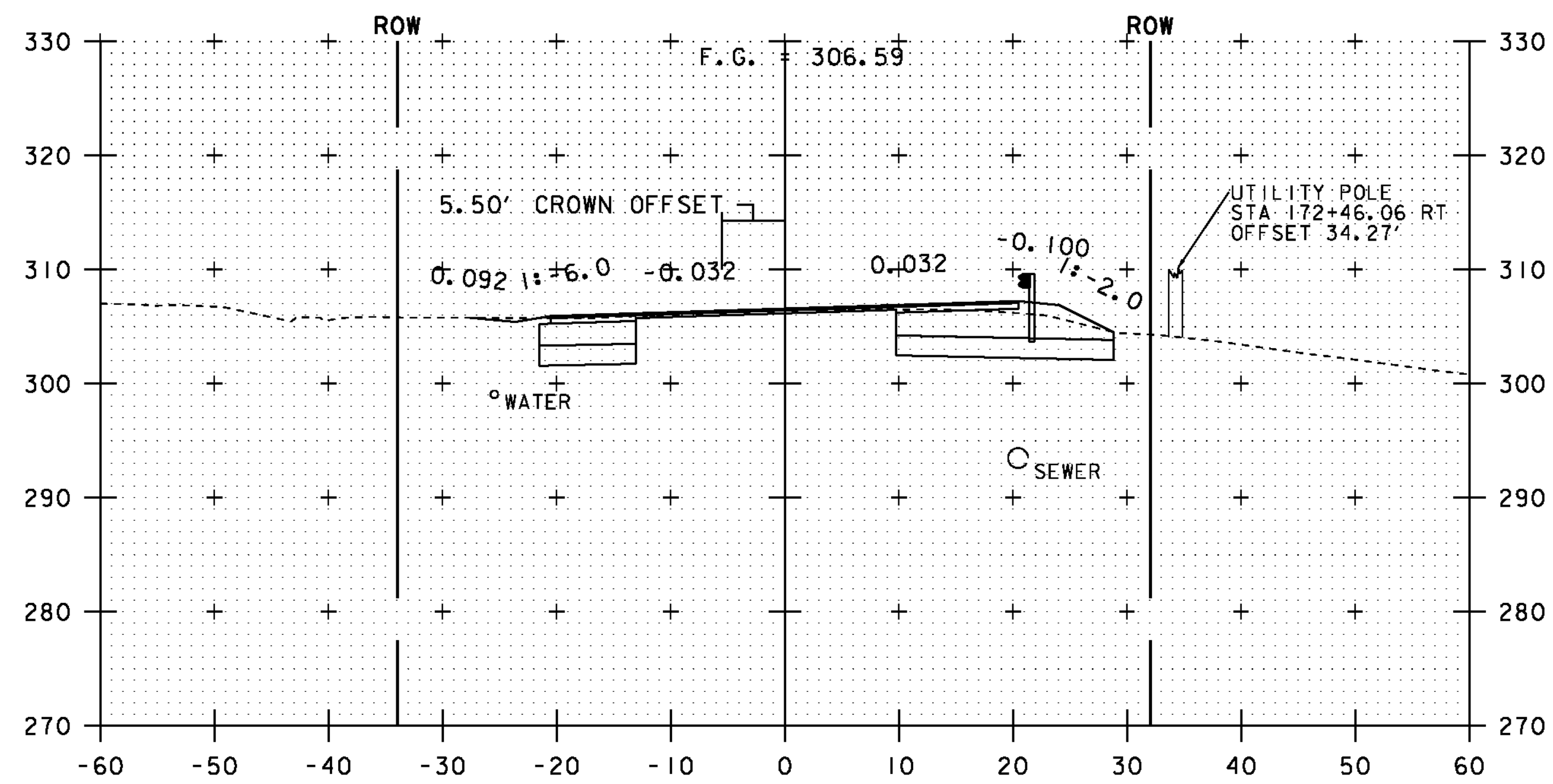
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 5

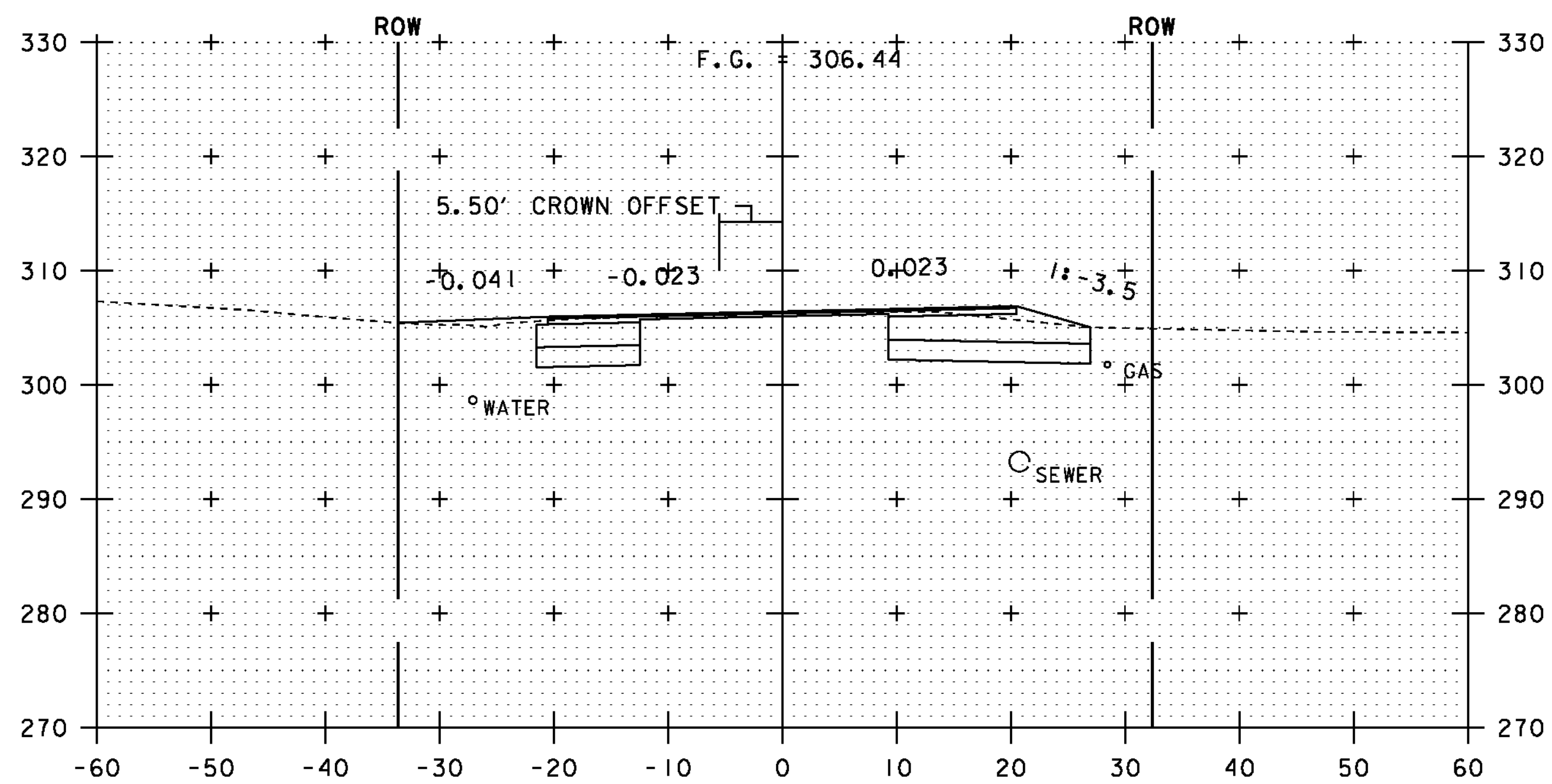
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 59 OF 64



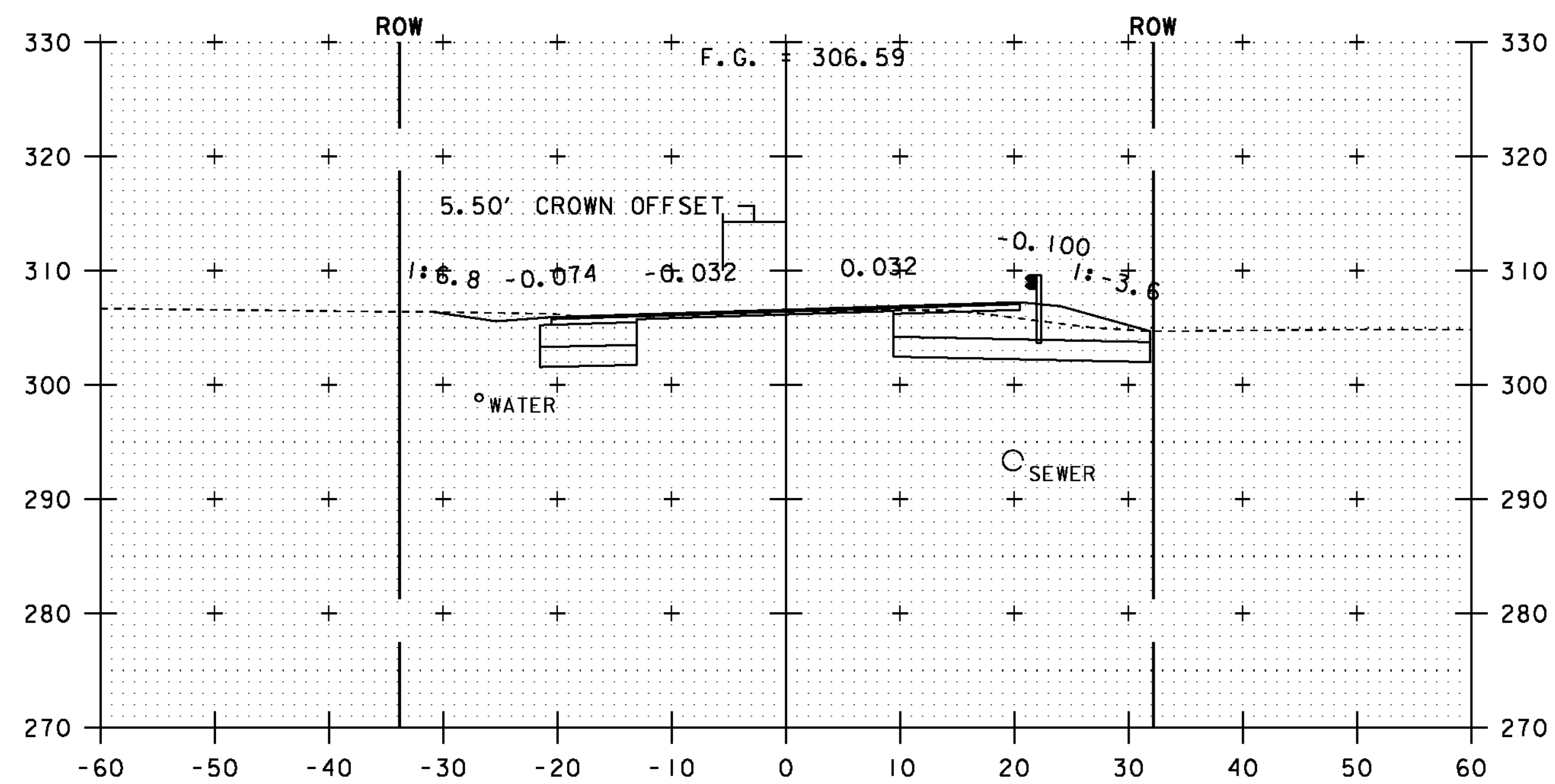
171+50



172+50

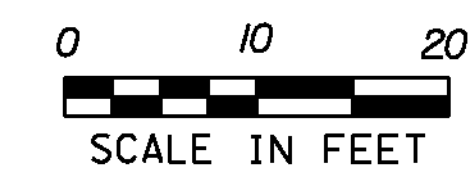


PC 171+34.56



172+00

NOTE:
ALL BURIED UTILITIES ARE EXISTING,
THE LOCATIONS ARE APPROXIMATE
AND ARE TO REMAIN UNDISTURBED

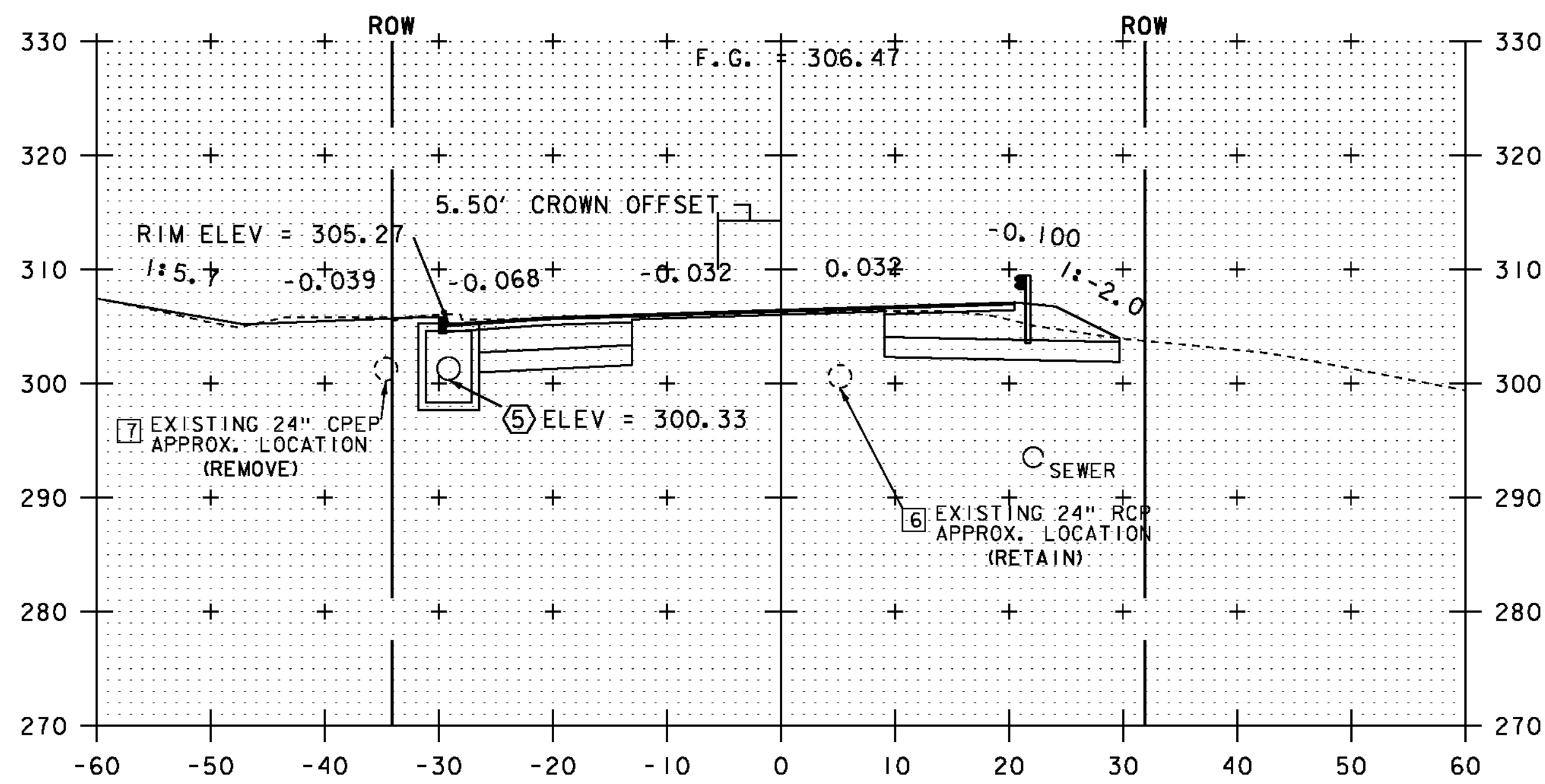


STA. 171+34.56 TO STA. 172+50

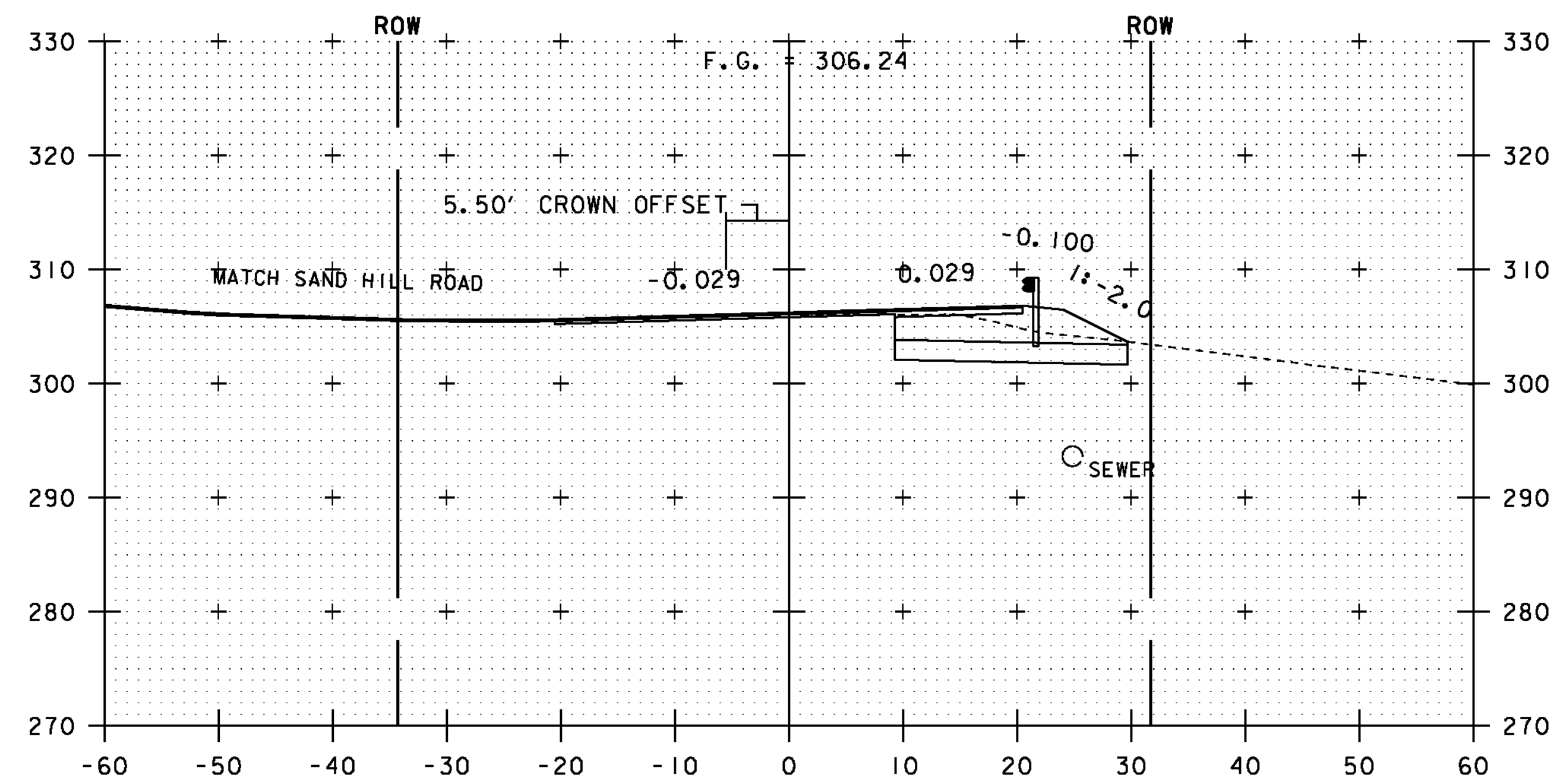
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 6

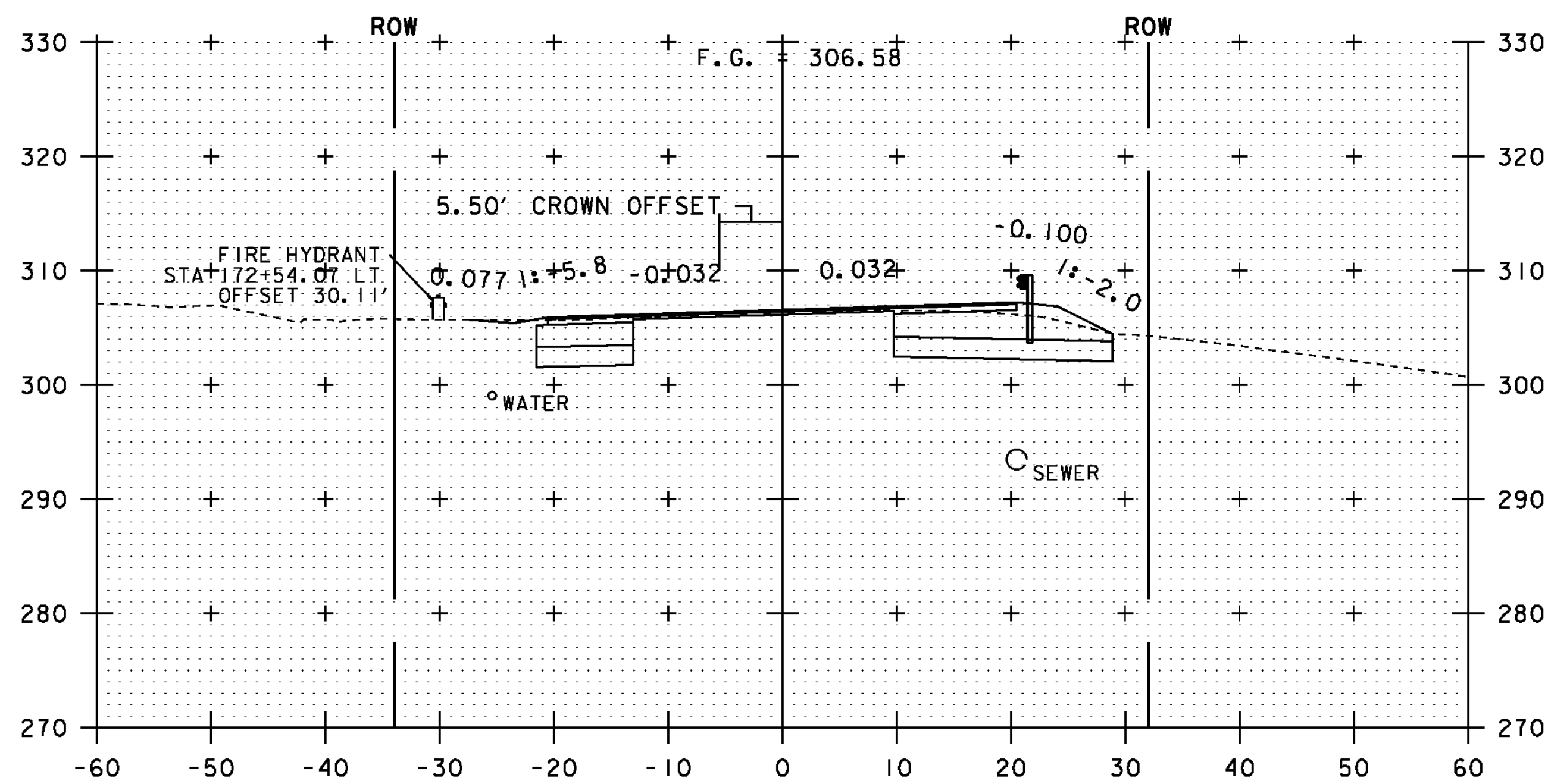
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 60 OF 64



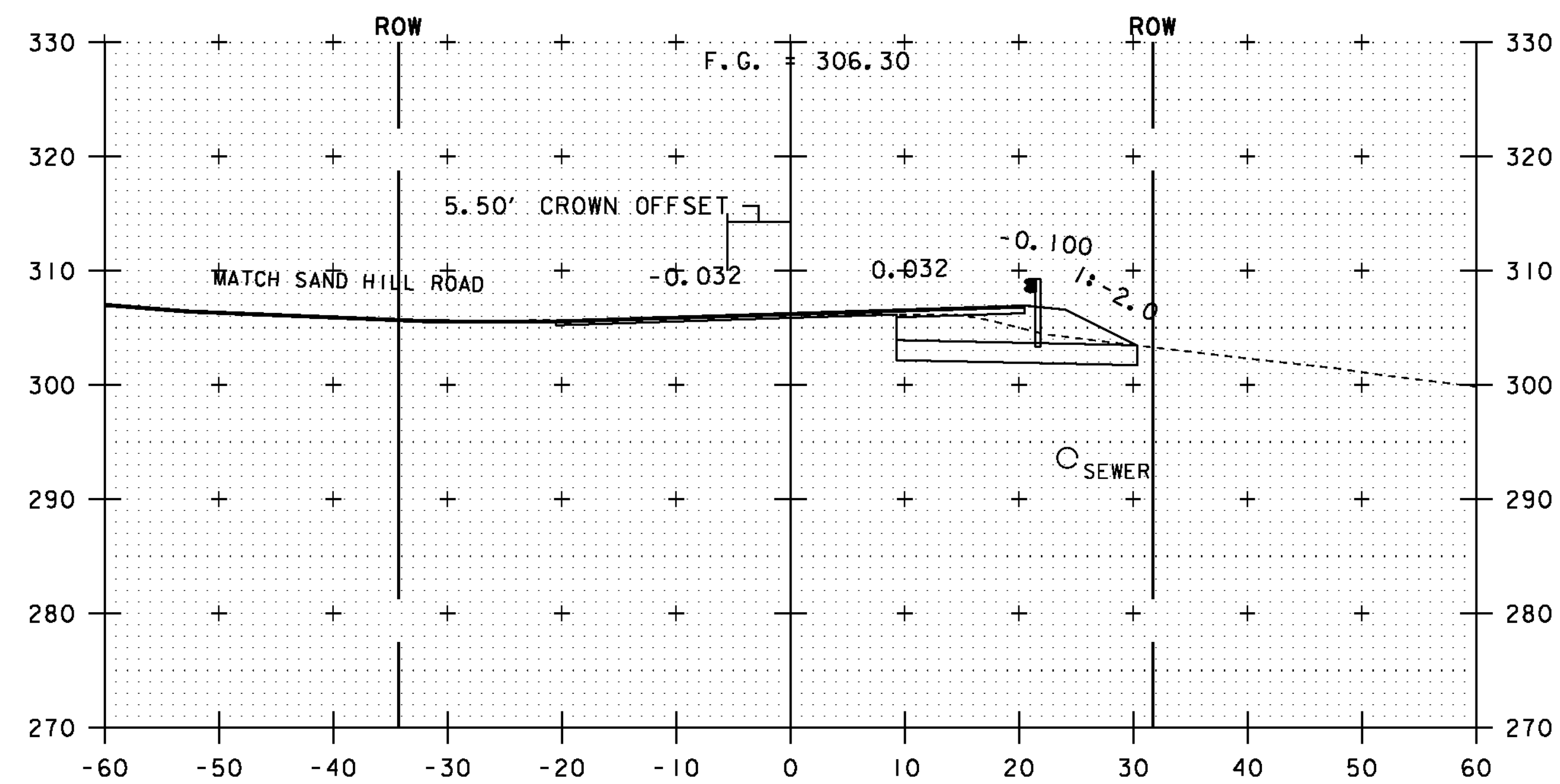
173+00



173+50

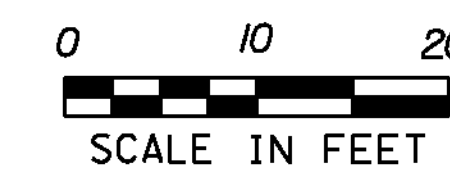


PI 172+51.78



173+40
SAND HILL ROAD

NOTE:
ALL BURIED UTILITIES ARE EXISTING,
THE LOCATIONS ARE APPROXIMATE
AND ARE TO REMAIN UNDISTURBED

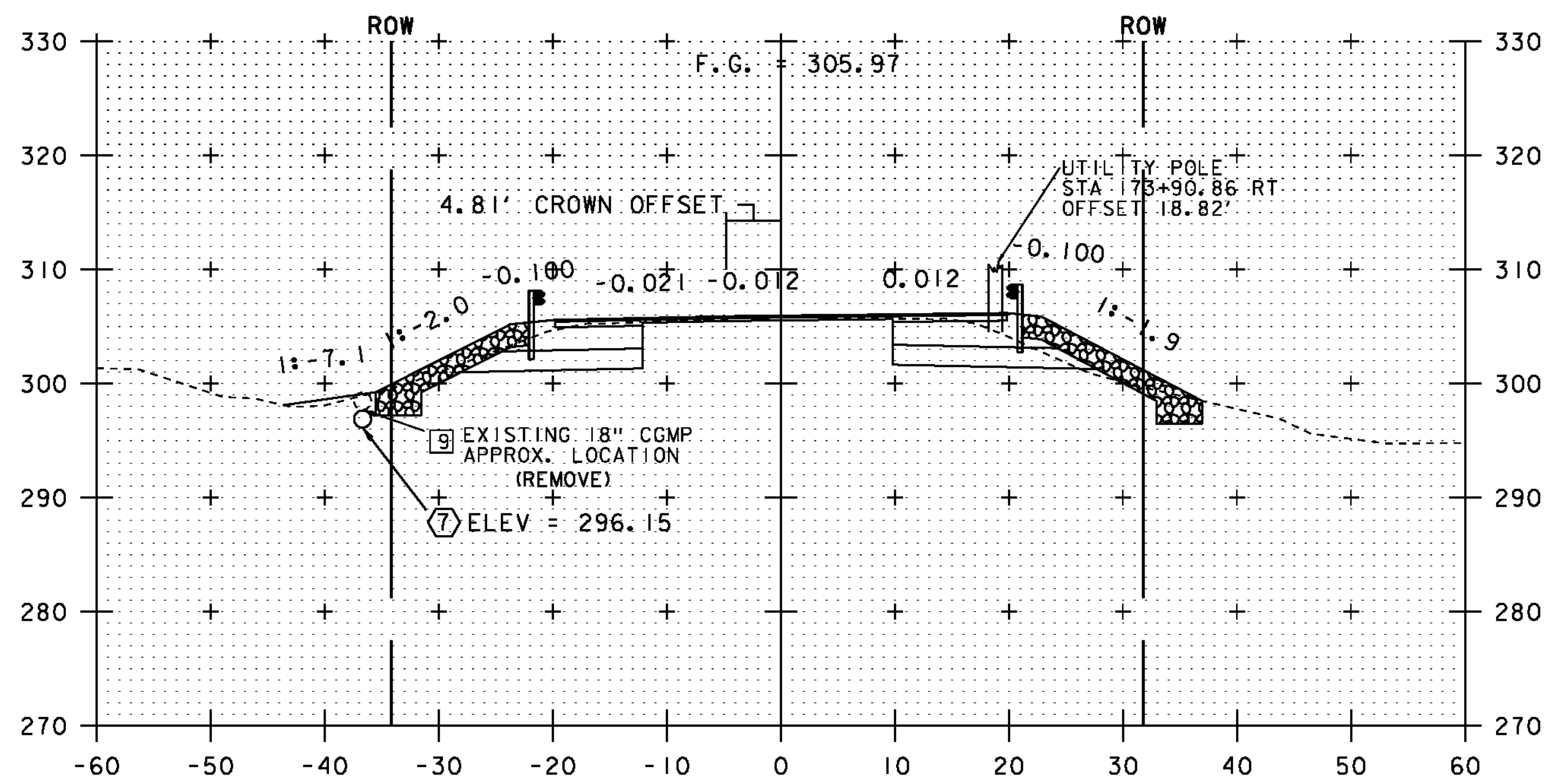


STA. 172+51.78 TO STA. 173+50

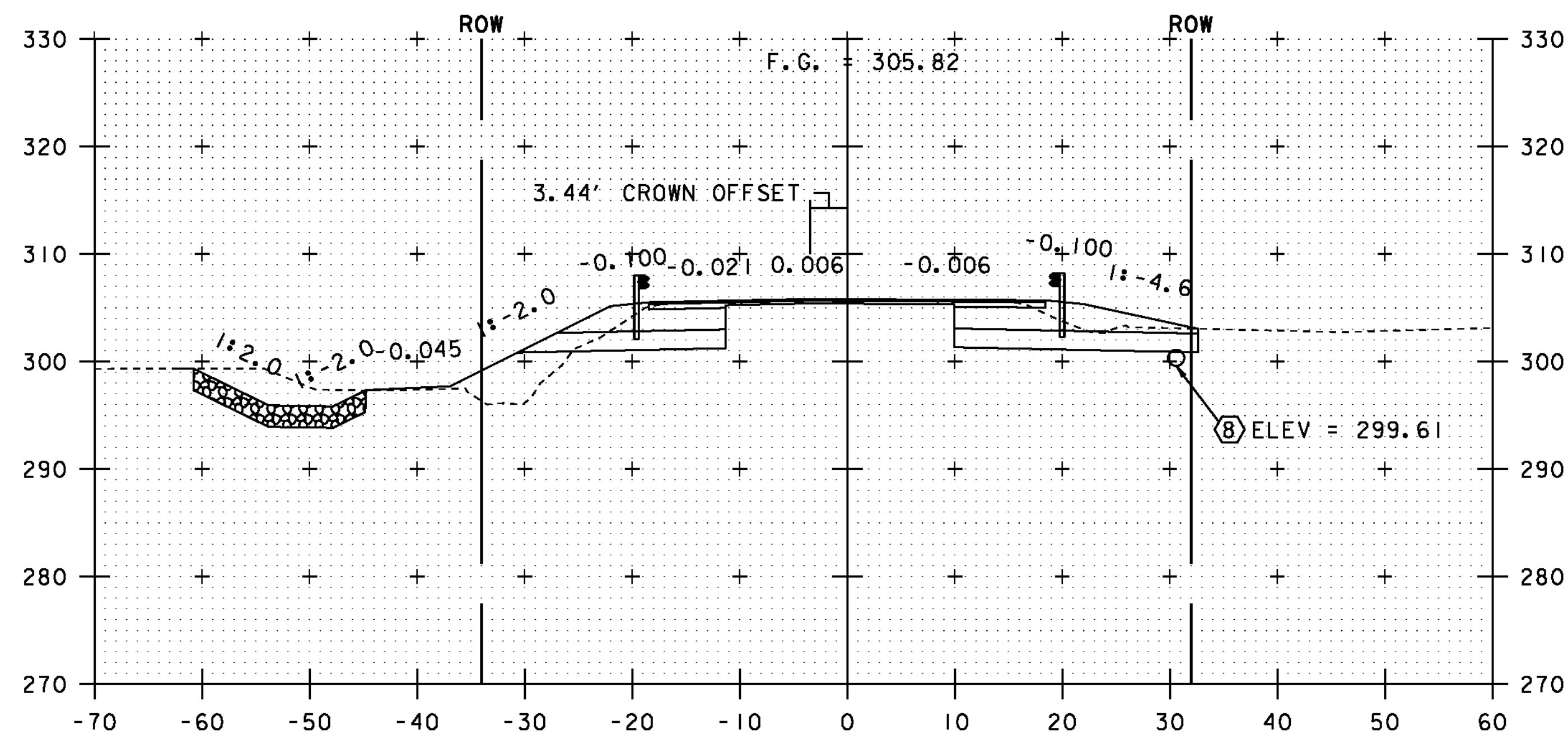
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 7

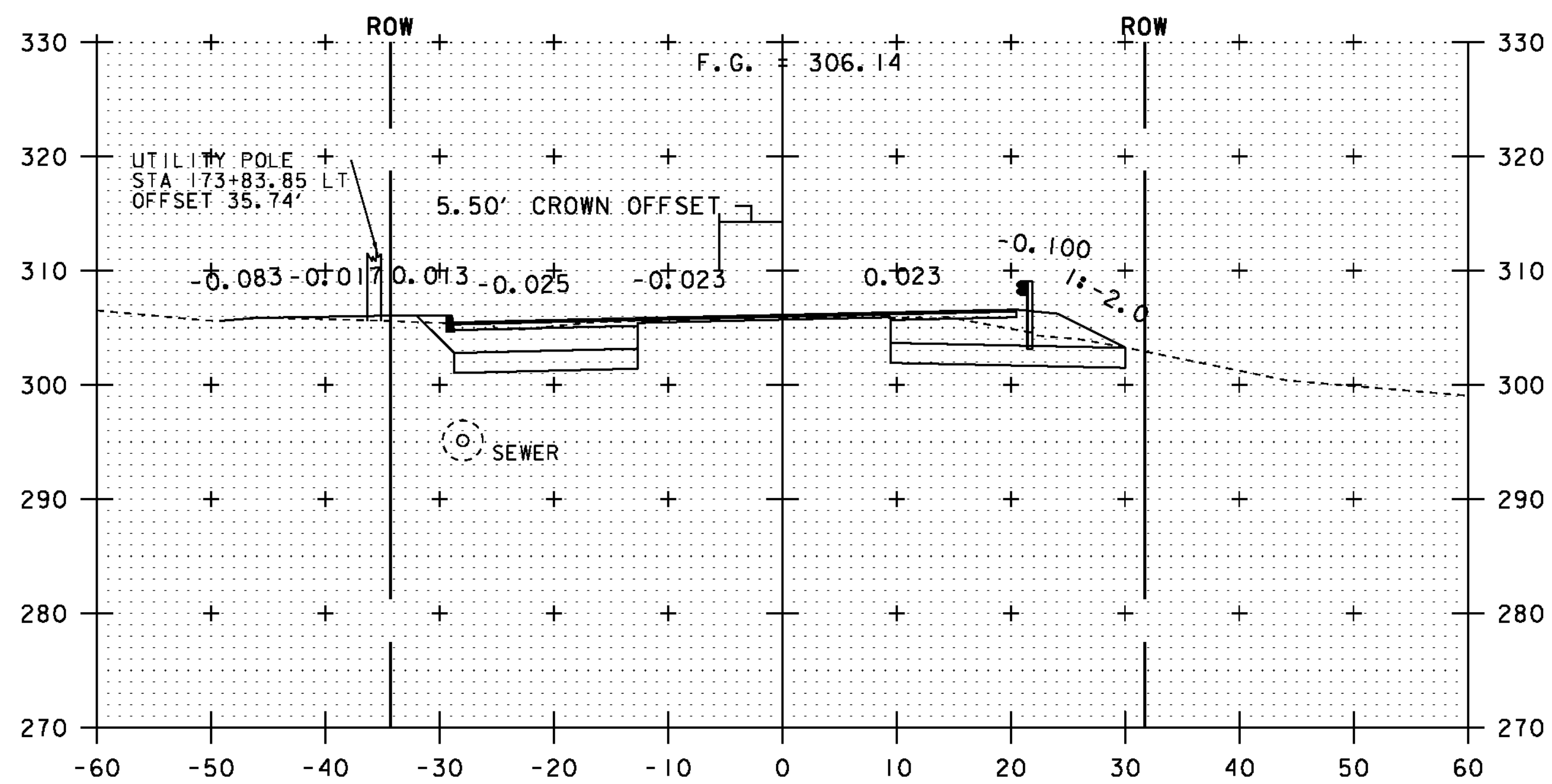
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 61 OF 64



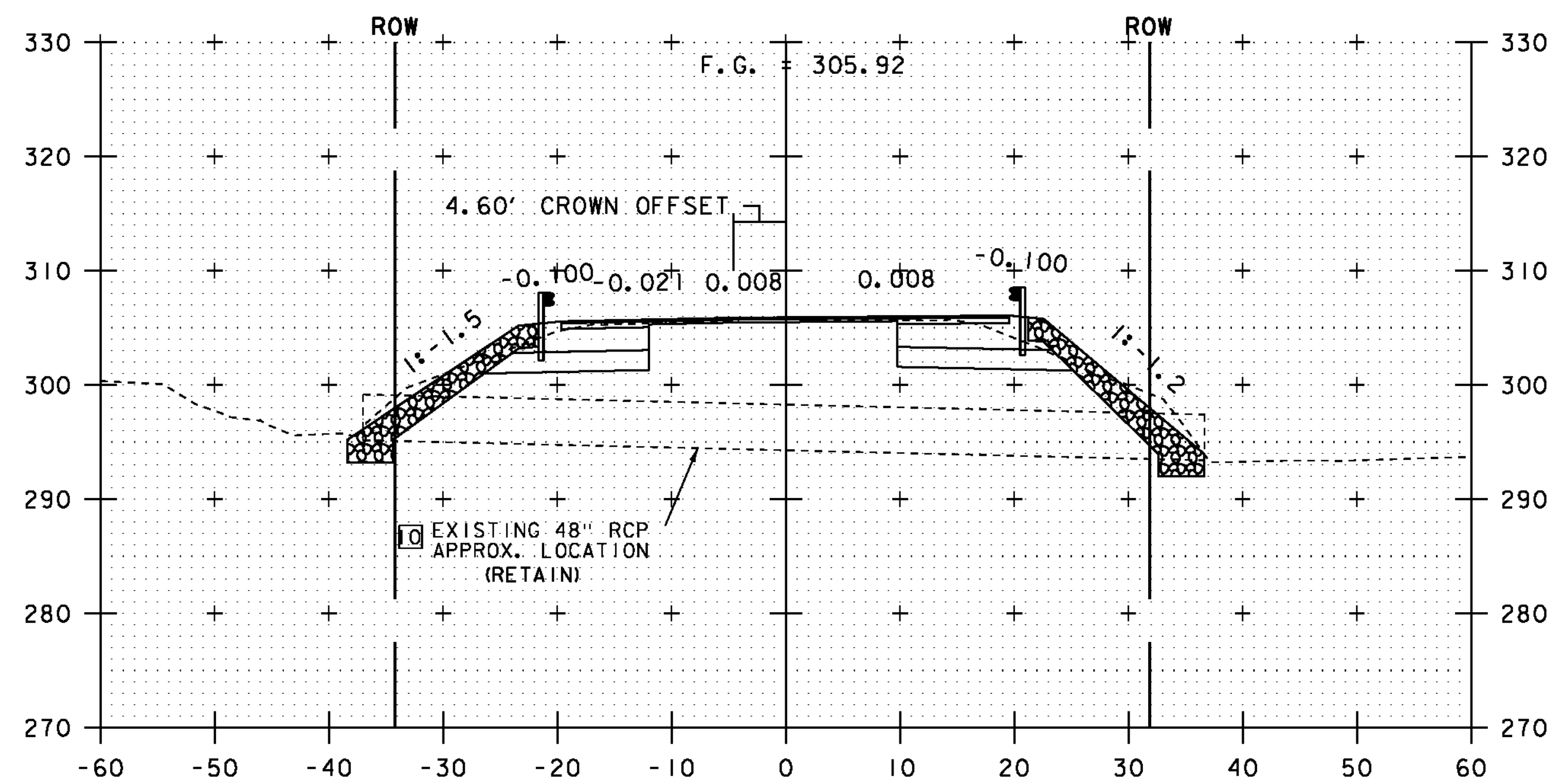
174+00



174+50

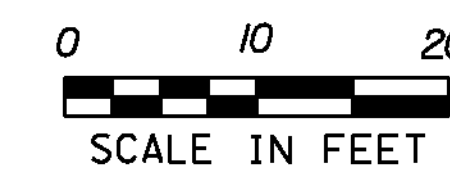


PT 173+68.81



174+08.13
SKEWED -2°21'21.24"
48" DIAMETER CULVERT

NOTE:
ALL BURIED UTILITIES ARE EXISTING,
THE LOCATIONS ARE APPROXIMATE
AND ARE TO REMAIN UNDISTURBED

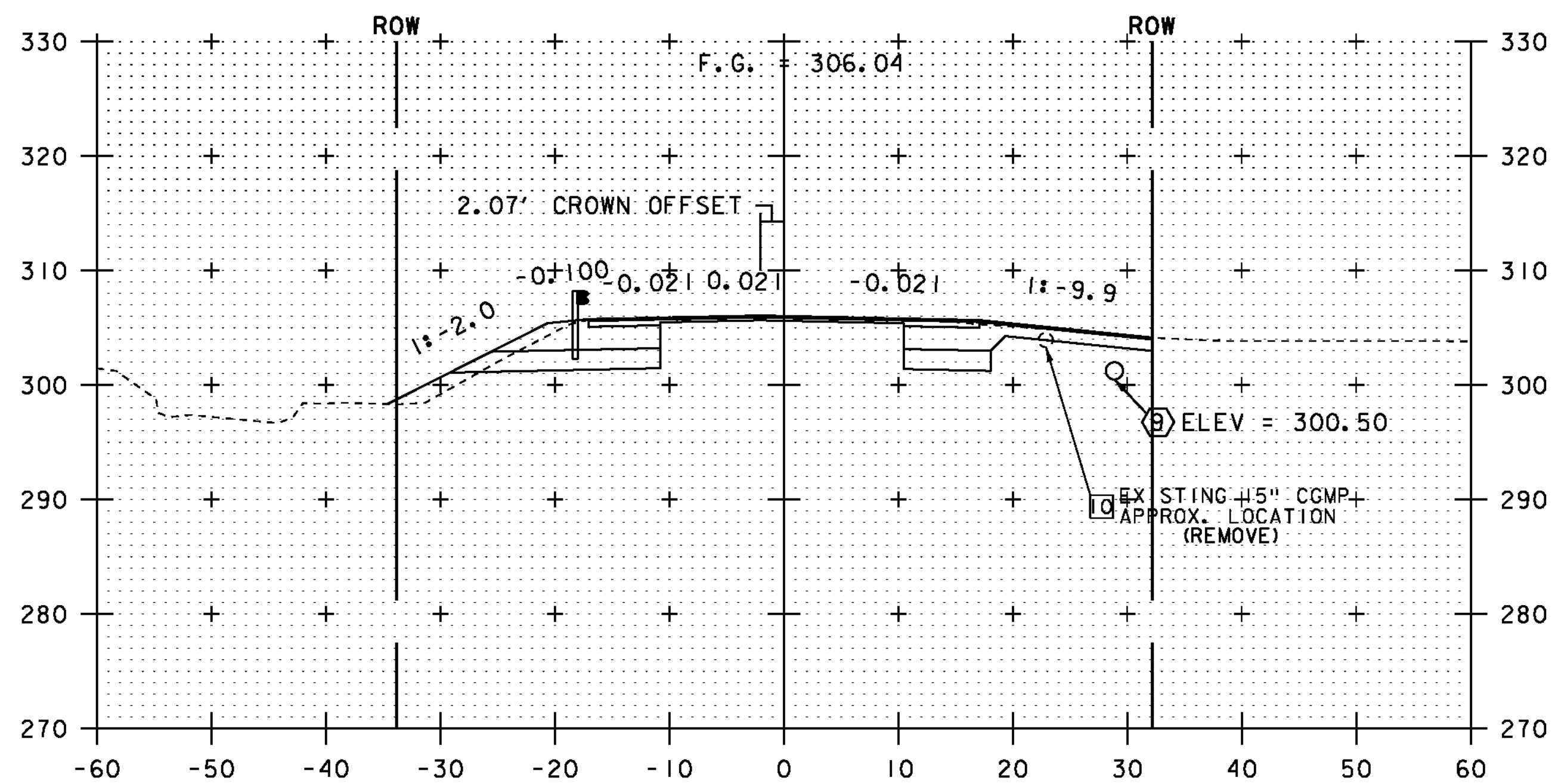


STA. 173+68.81 TO STA. 174+50

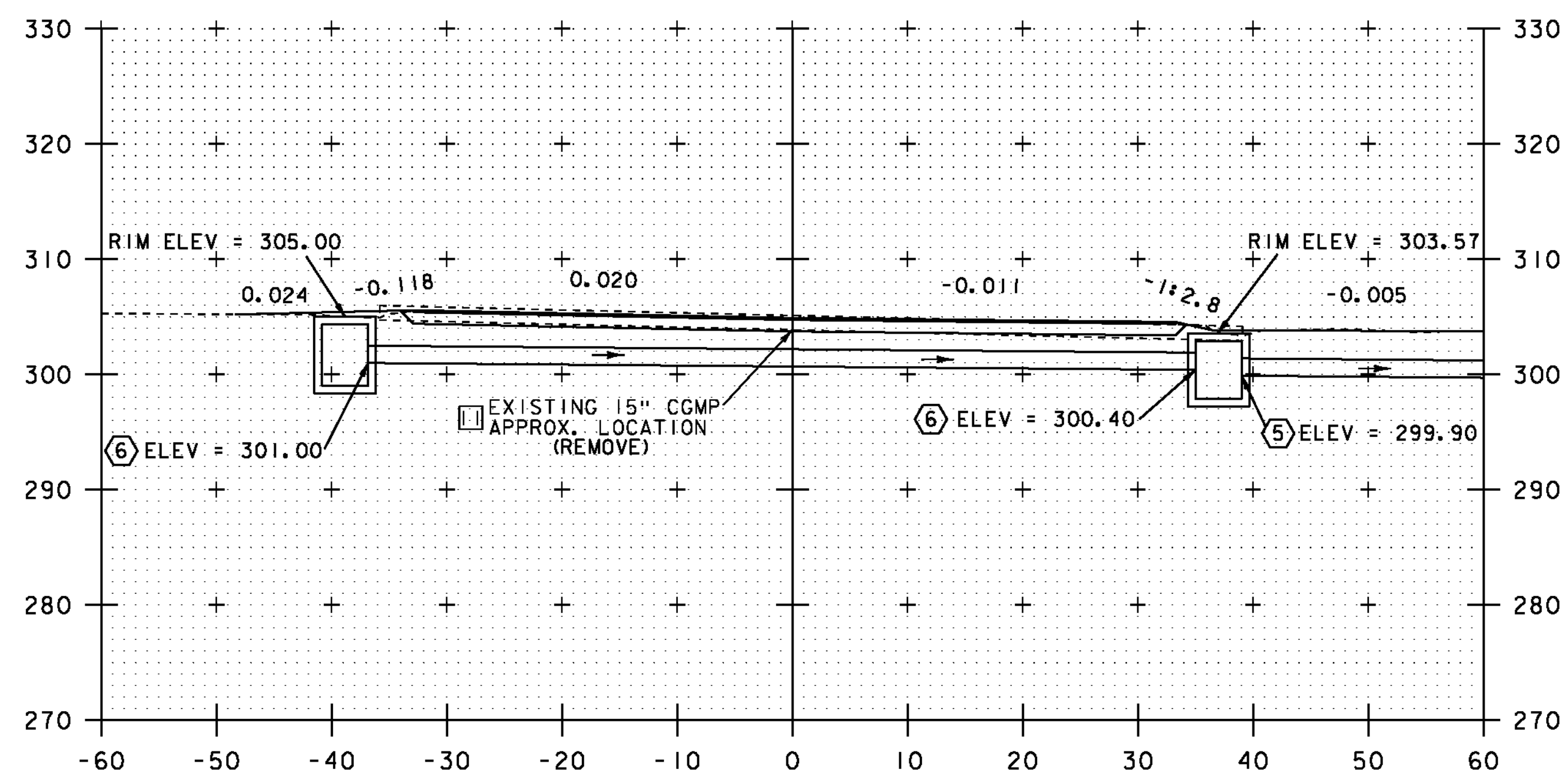
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 8

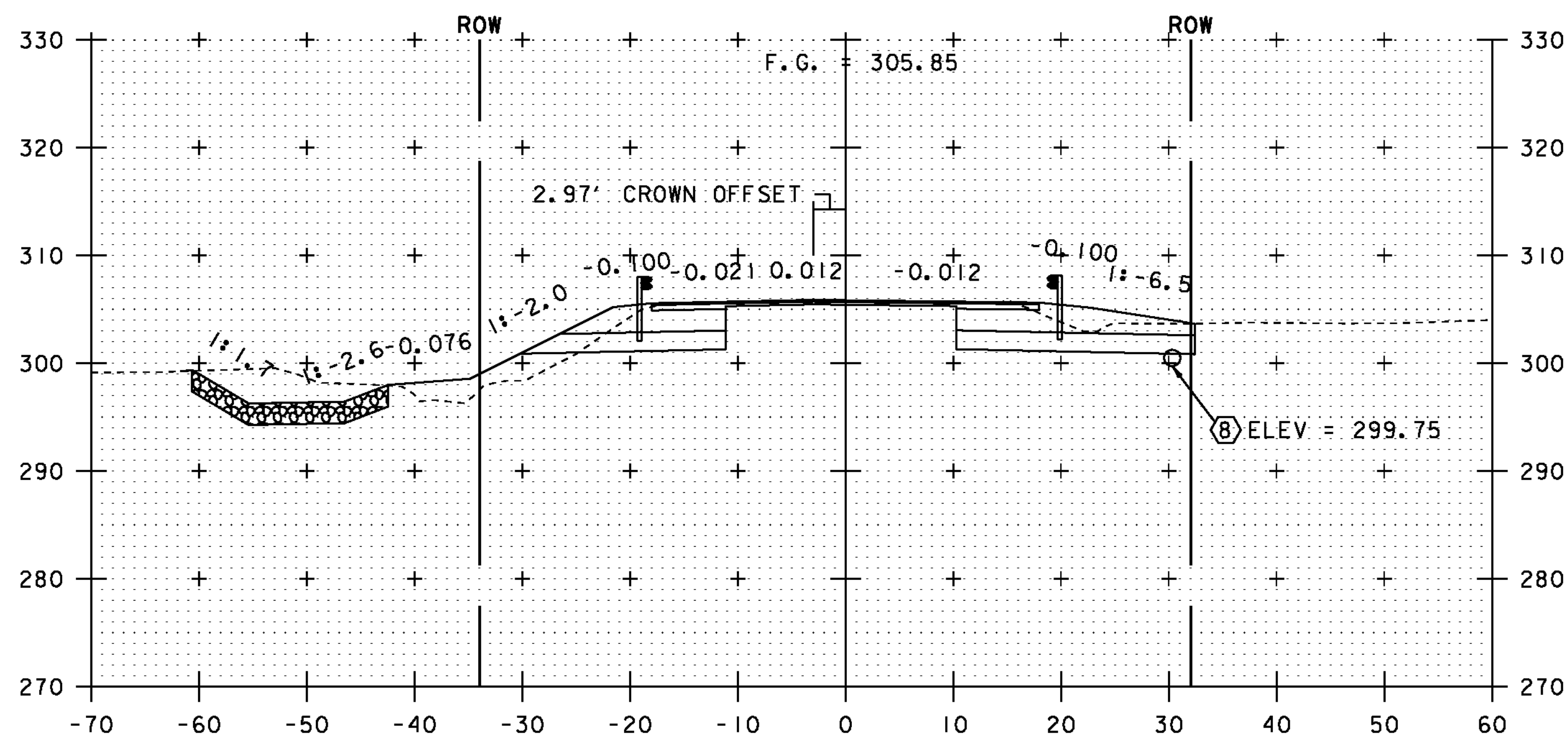
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 62 OF 64



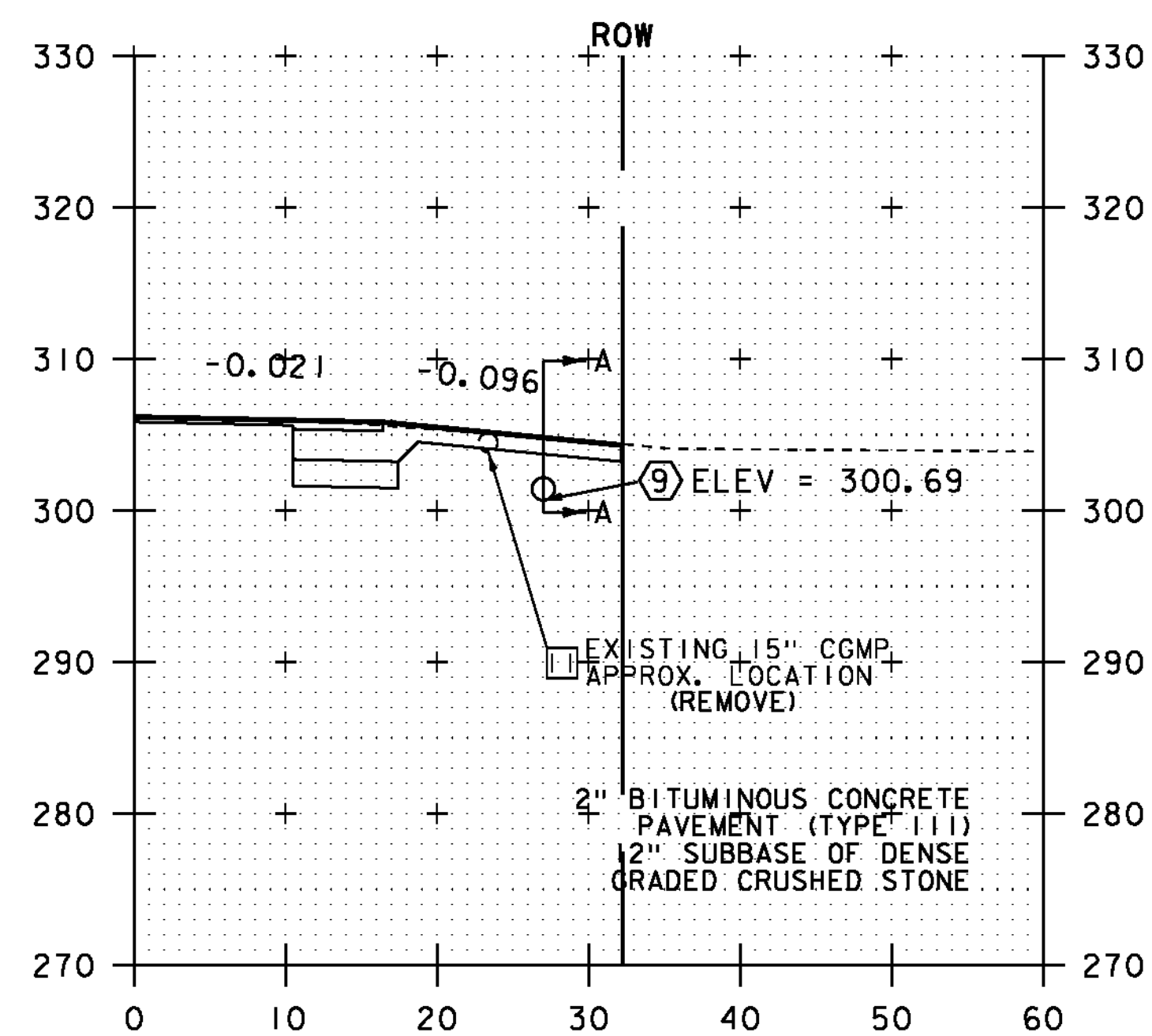
175+00



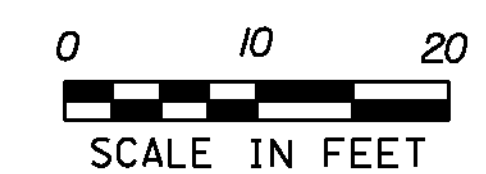
SECTION A-A



174+67

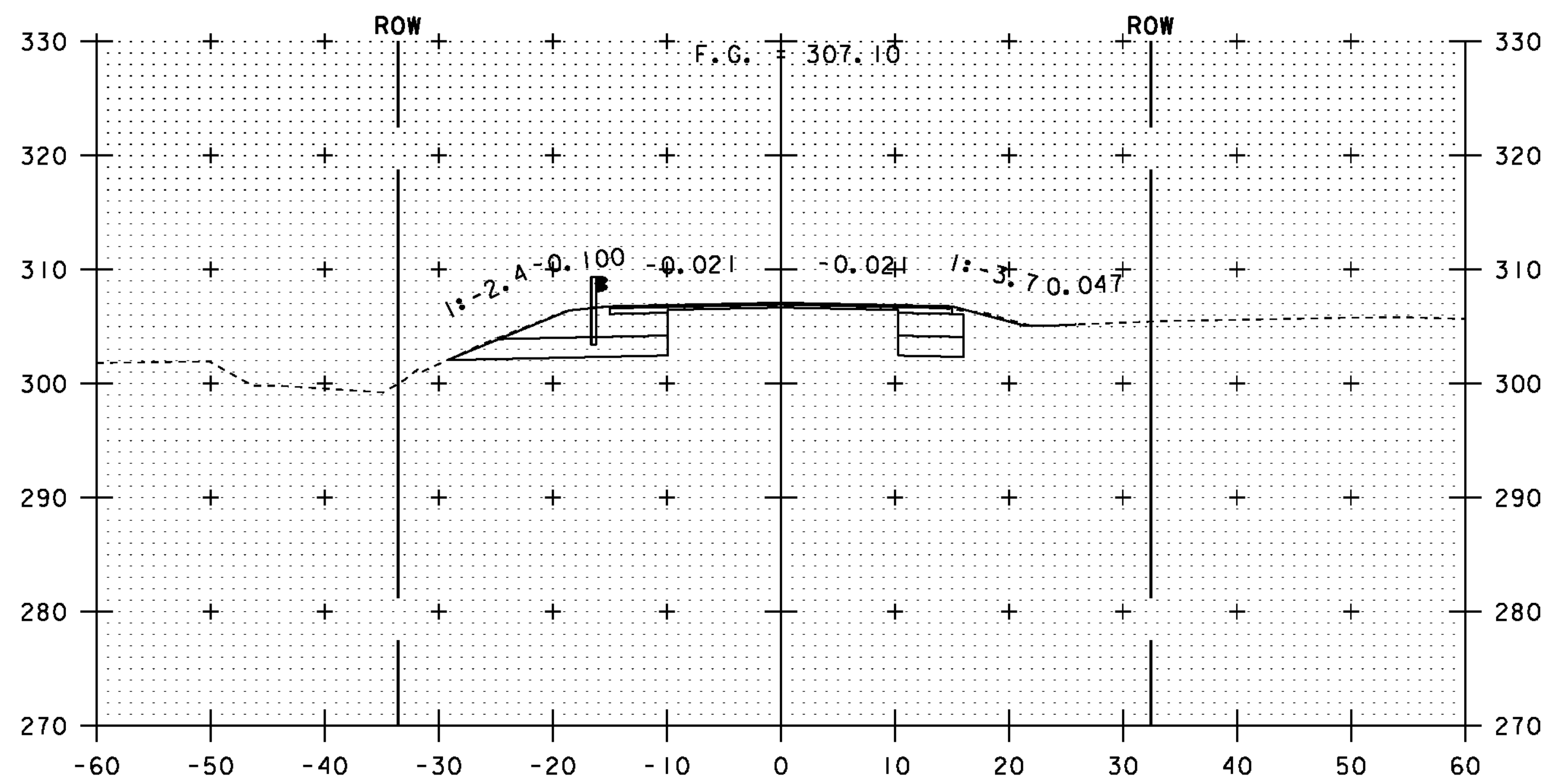


175+23
PAVED DRIVE RT

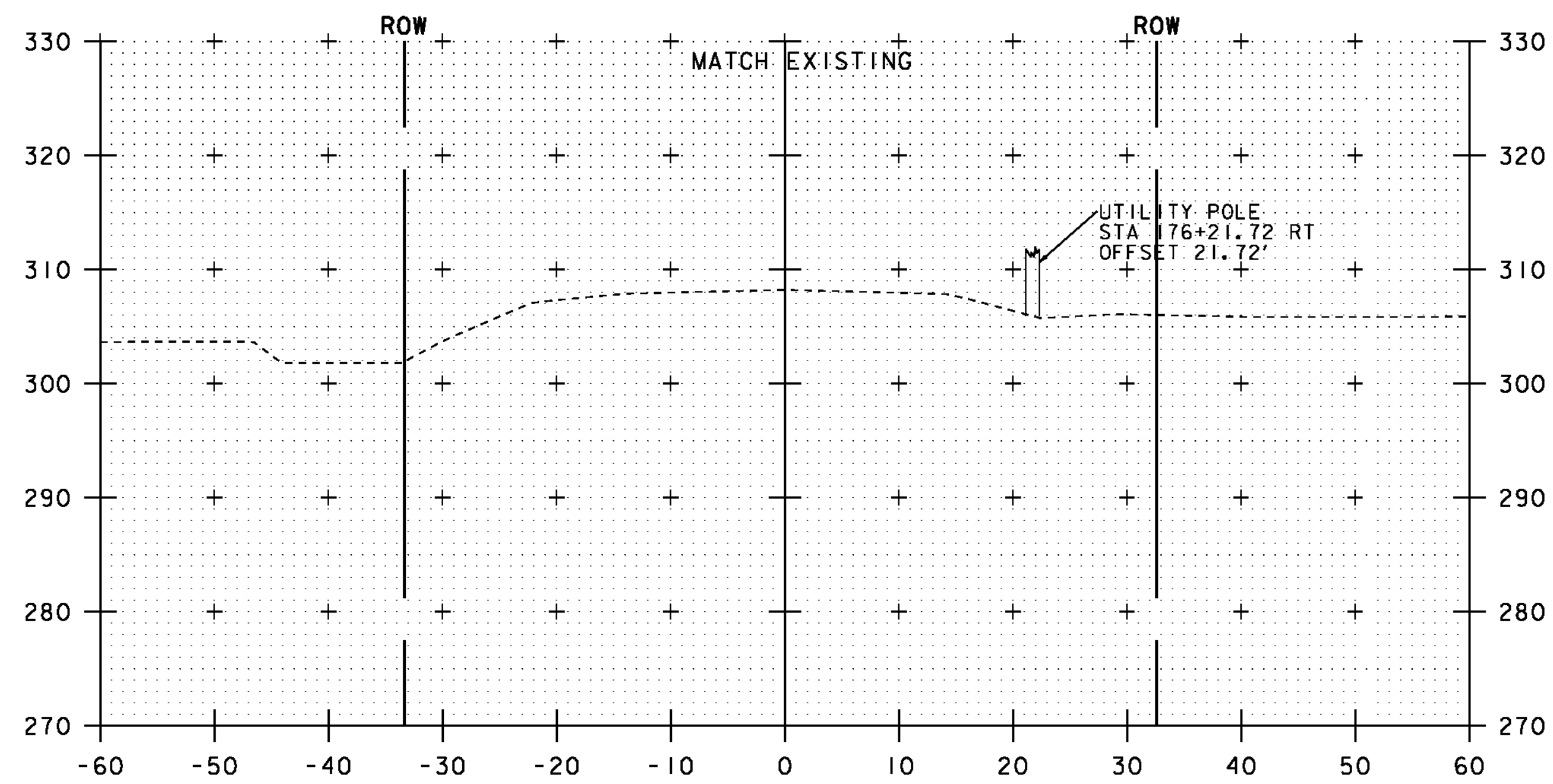


STA. 174+67 TO STA. 175+23

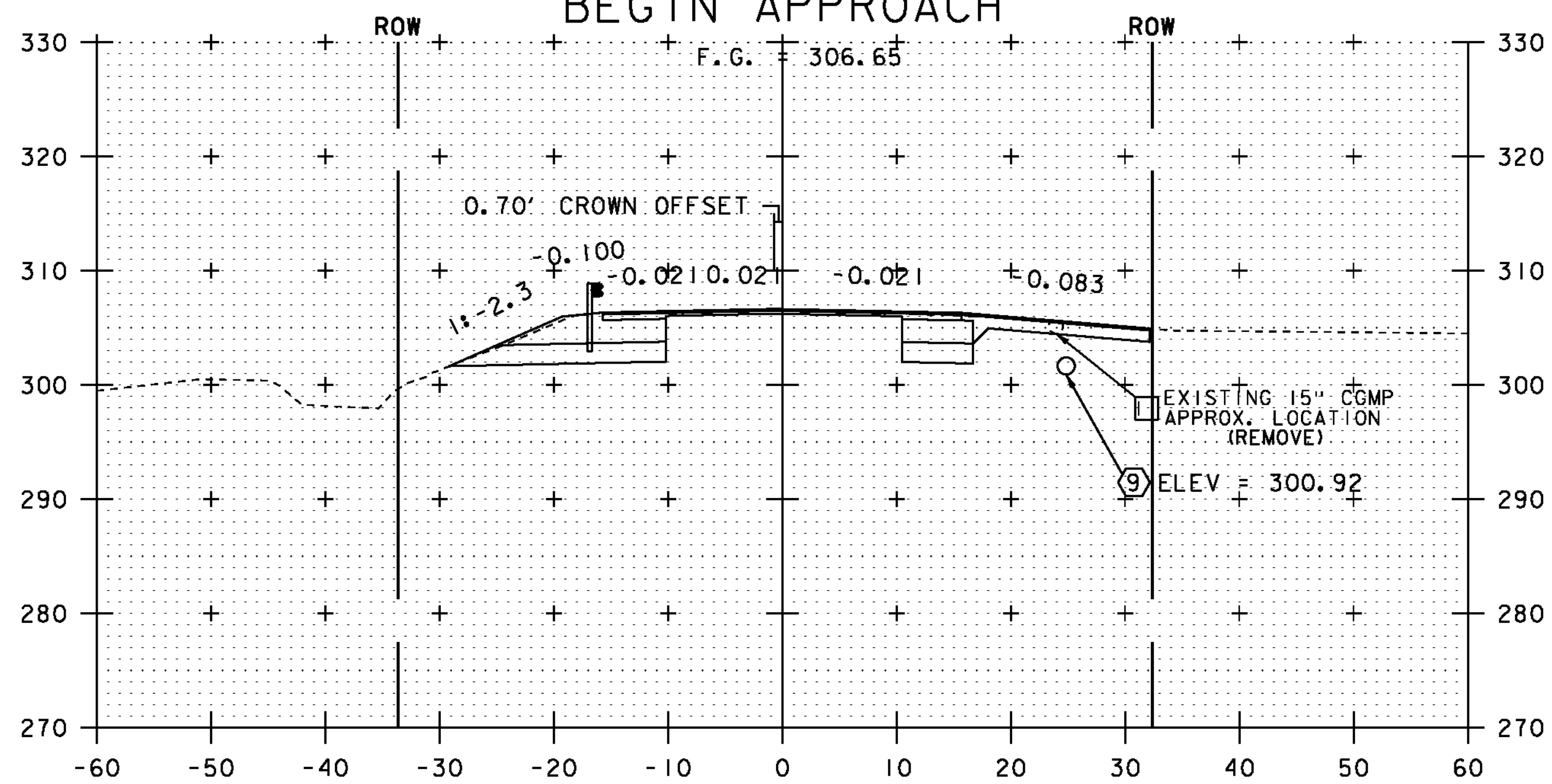
PROJECT NAME: ESSEX TOWN	PROJECT NUMBER: STP 5400 (5)
FILE NAME: +97d002xsl.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
VT ROUTE 117 CROSS SECTION SHEET 9	SHEET 63 OF 64



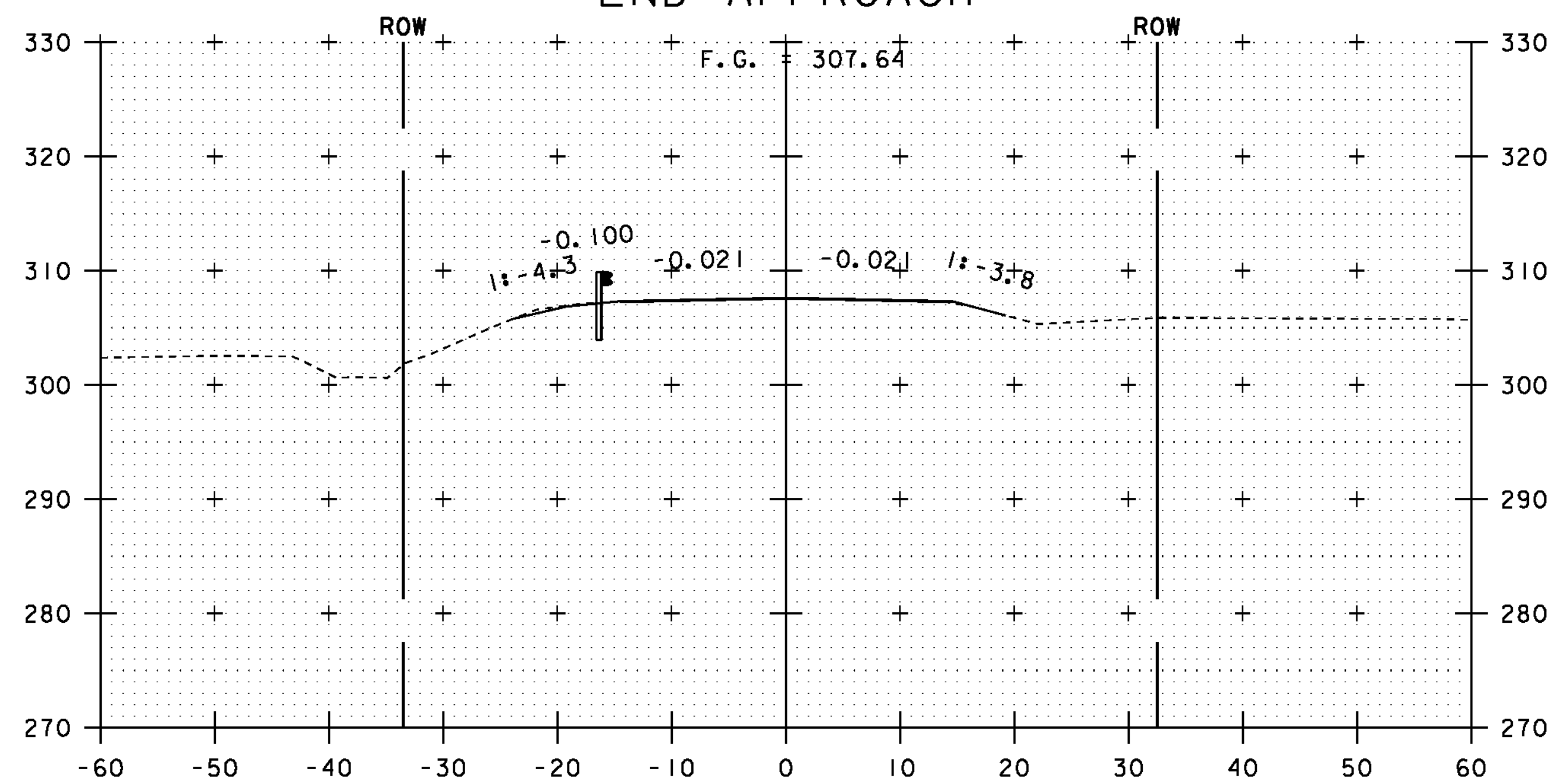
175+75
END PROJECT
BEGIN APPROACH



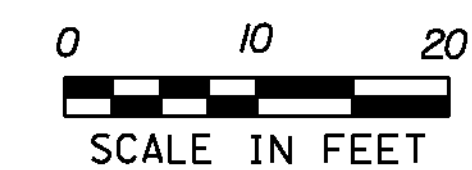
176+25
END APPROACH



175+50



176+00



STA. 175+50 TO STA. 176+25

PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: +97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 10

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 64 OF 64

CB 9 PIPE 9 CB 8 PIPE 8
 175+61.8 RT 175+61.8 - 174+86 RT 174+86 RT 174+86 - 174+25 RT
 4.83 DIA 18" CPEP 4.83 DIA 18" CPEP

SPH
2-20-14

SUMMARY

TRENCH EX ITEM 204.20

- ① CB#9 : 141.19 cy
- ② CB#8 : 141.94 cy
- ③ OLD PIPE : 2.41 cy
- ④ PIPE #9 : 50.52 cy
- ⑤ PIPE #8 : 39.05 cy

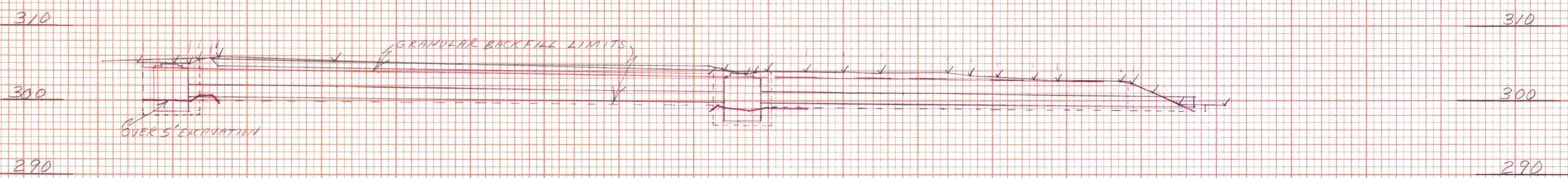
TOTAL TRENCH EX : 277.11

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TOTAL TRENCH EX : 277.11



$T.E. \text{ UNDER } CB\ 9 = (5)(3.92)(3.14) = 241.25\ CF$
 $T.E. \text{ UNDER } CB\ 8 = (5)(3.92)(3.14) = 241.25\ CF$
 $TOTAL\ T.E.\ CB\ \#9 = (241.25 + 141.86)(1.21) = 114.19\ CY$
 $TOTAL\ T.E.\ CB\ \#8 = (241.25 + 162.12)(1.21) = 144.24\ CY$

$T.E. \text{ UNDER } PIPE\ 9 = (5)(15) \left[\frac{1}{2}(1.2) + (5)(2) \right] + (5)(15) \left[\frac{1}{2}(1.2) + (5)(2) \right] + (5)(15) \left[\frac{1}{2}(1.2) + (5)(2) \right] + (5)(15) \left[\frac{1}{2}(1.2) + (5)(2) \right] = 1357.88\ CF$
 $TOTAL\ T.E.\ PIPE\ \#9 = (1357.88 + 6.08)(1.21) = 50.52\ CY$

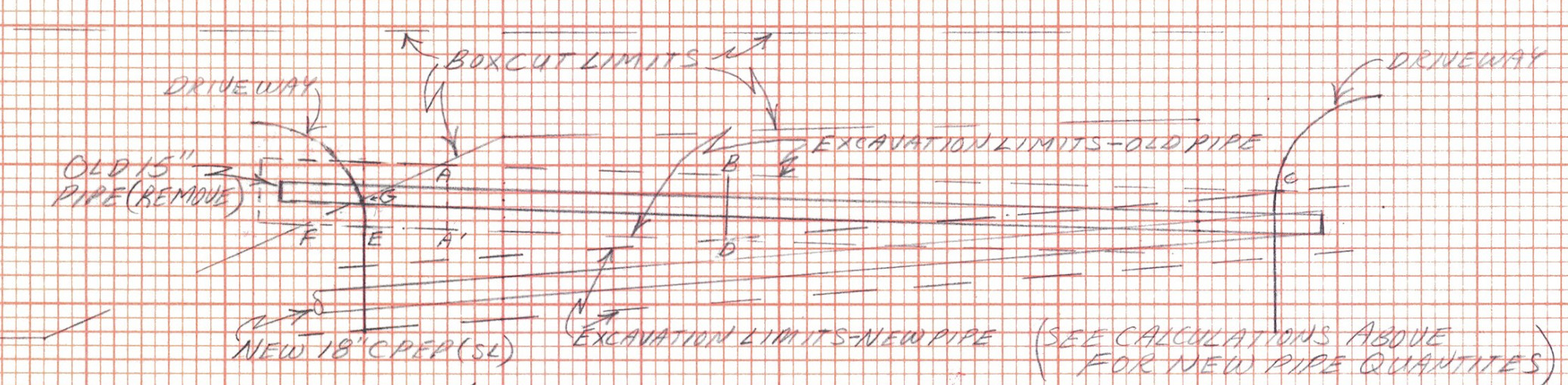
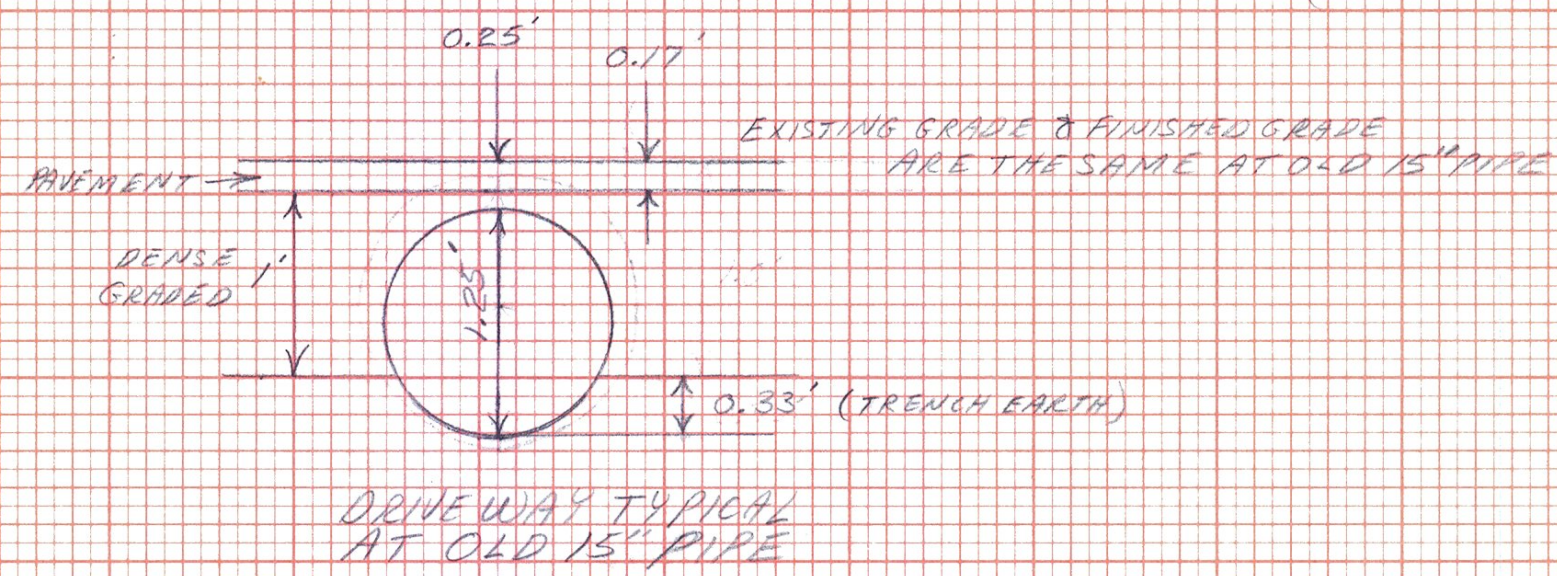
$T.E. \text{ UNDER } PIPE\ 8 = (4.7)(15) \left[\frac{1}{2}(1.2) + (4.9)(2) \right] + (4.9)(15) \left[\frac{1}{2}(1.2) + (4.9)(2) \right] + (4.9)(15) \left[\frac{1}{2}(1.2) + (4.9)(2) \right] + (4.9)(15) \left[\frac{1}{2}(1.2) + (4.9)(2) \right] = 1054.30\ CF$
 $TOTAL\ T.E.\ PIPE\ \#8 = (1054.30)(1.21) = 39.05\ CY$

II 175+50.83 RT - 174+83.91 RT
 EXISTING 15" X 75" CMP (REMOVE)

PIPE #8 GRANULAR BACKFILL FOR STRUCTURES
 $(17.8 \times 4) + (4 \times 9) \left[\frac{1}{2}(4.5) \right] = 941.4\ CF$ MINUS PIPE $(17.8 \times 6) \left[\frac{1}{2}(4.5) \right] = 95.02\ CF$
 $(941.4 - 95.02)(1.21) = 31.35\ CY$

PIPE #9 GRANULAR BACKFILL FOR STRUCTURES
 $(10.4 \times 4) \left[\frac{1}{2}(4.5) \right] = 1267.2\ CF$ MINUS PIPE $(10.4 \times 6) \left[\frac{1}{2}(4.5) \right] = 124.34\ CF$
 $(1267.2 - 124.34)(1.21) = 12.33\ CY$

C.B. #8 & 9 GRANULAR BACKFILL FOR STRUCTURES
 $(6.4)(3.92)(3.14) = 308.80\ CF$ MINUS CB $(6.4)(2.42)(3.14) = 117.69\ CF$
 $(308.80 - 117.69)(1.21) = 12.16\ CY$



NOTE: OLD 15" PIPE HAD 0.25' OF COVER FOR ENTIRE LENGTH

AREA F-G-E-F $(4.2 \times 2.0 \times 1.5) \left[\frac{1}{2} \right] = 6.3\ CF$
 A-B-D-A-A $(20.0 \times 4.5 \times 0.33) = 29.7\ CF$
 A-A'-E-G-A $(4.5 \times 2.0) \left[\frac{1}{2} \right] (6)(0.33) = 6.4\ CF$
 B-C-D-B $(9.8 \times 4.5 \times 0.33) \left[\frac{1}{2} \right] = 29.6\ CF$
 DEDUCT PIPE $45' \left[\frac{1}{2} \right] (11 \times 0.33) \left[\frac{1}{2} \right] = 8.2\ CF$
 $(72.0 - 8.2) \left[\frac{1}{2} \right] = 2.4\ CY\ T.E.$

H.W. Norton
 6/2013
 9/2013
 9/13/2013

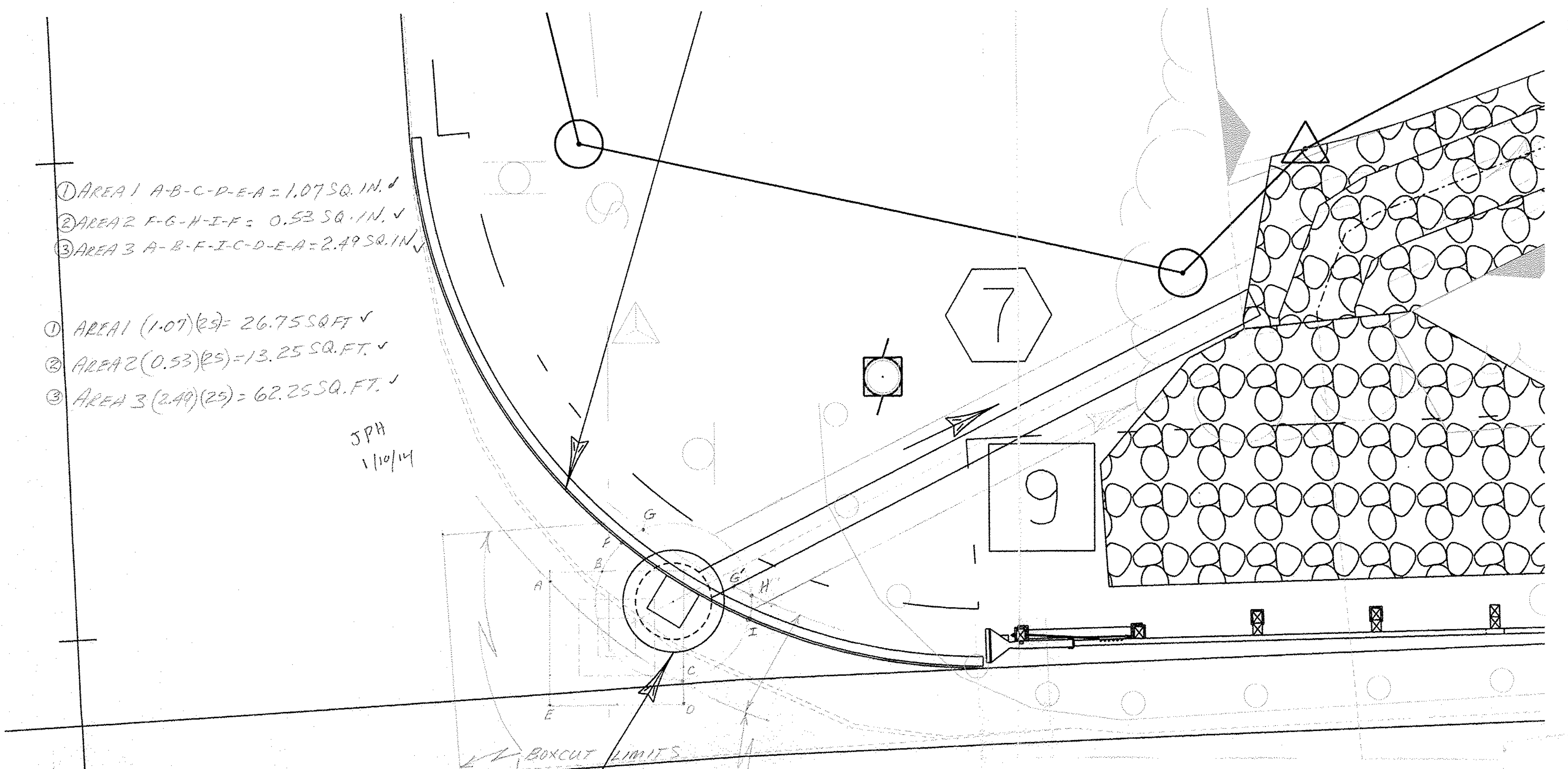
ESSEX TOWN SFP 5400(5)
 DRAINAGE SHEET 1

ESSEX TOWN SFP 5400(5) RCI 2024 HANELL

- ① AREA 1 A-B-C-D-E-A = 1.07 SQ. IN. ✓
- ② AREA 2 F-G-H-I-F = 0.53 SQ. IN. ✓
- ③ AREA 3 A-B-F-I-C-D-E-A = 2.49 SQ. IN. ✓

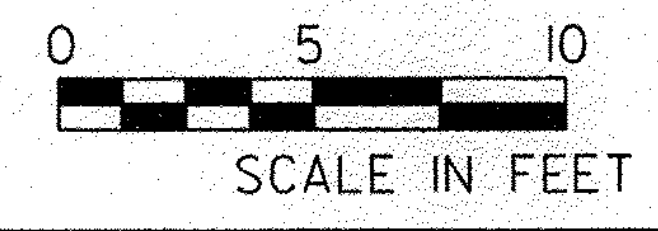
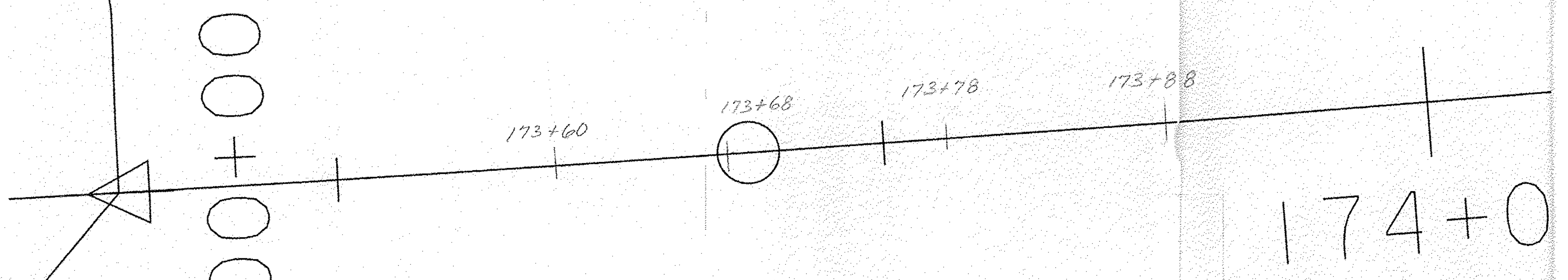
- ① AREA 1 (1.07)(25) = 26.75 SQ. FT. ✓
- ② AREA 2 (0.53)(25) = 13.25 SQ. FT. ✓
- ③ AREA 3 (2.49)(25) = 62.25 SQ. FT. ✓

JPH
1/10/14



CB-7

CURB EXCAVATION LIMITS



PROJECT NAME:	ESSEX TOWN	PLOT
PROJECT NUMBER:	STP 5400 (5)	DRAWN
FILE NAME:	+97d002bdr_5scale.dgn	CHECKEL
PROJECT LEADER:	J. SCHULTZ	SHEET
DESIGNED BY:	D. LYMAN	
INTERSECTION:	NE & NW CORNERS	

R=42

CB-6

7

6

CB-5

5

CB-4

6

173+00

