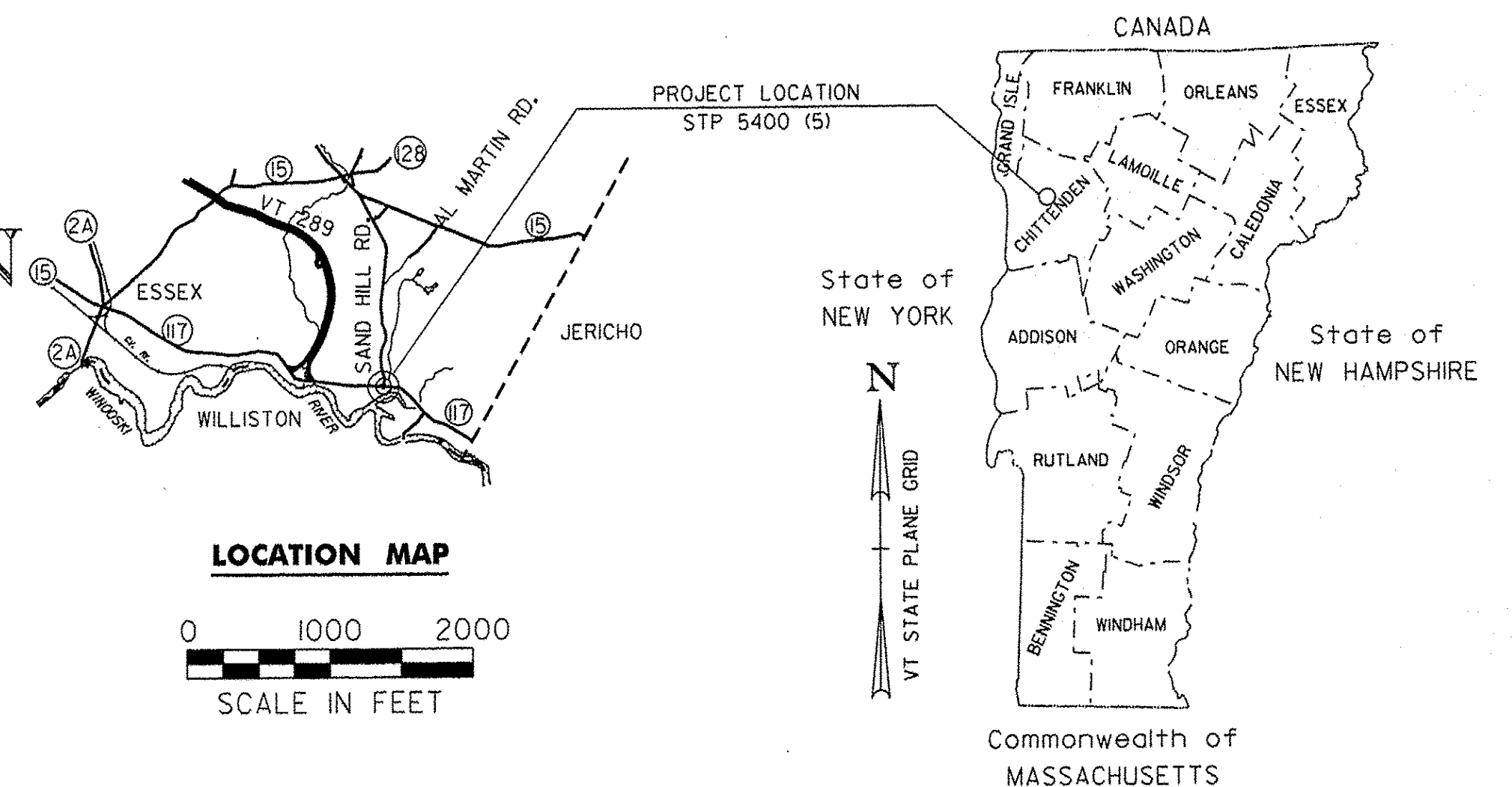
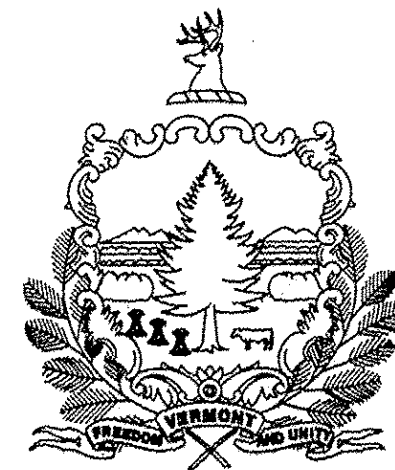


INDEX OF SHEETS
SEE SHEET 2

STATE OF VERMONT AGENCY OF TRANSPORTATION



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

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	<i>David Hosking</i> 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.	

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.

TRAFFIC DATA

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

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)

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

0 100 200
SCALE IN FEET

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. Marsh* 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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11	DRAINAGE DETAIL SHEET
12	EARTHWORKS SHEET
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17	TIE SHEET
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19	CONSTRUCTION APPROACH SIGNING
20-23	LAYOUT AND PROFILE SHEETS AND BANKING DIAGRAMS
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28-29	EPSC EXISTING CONDITIONS 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

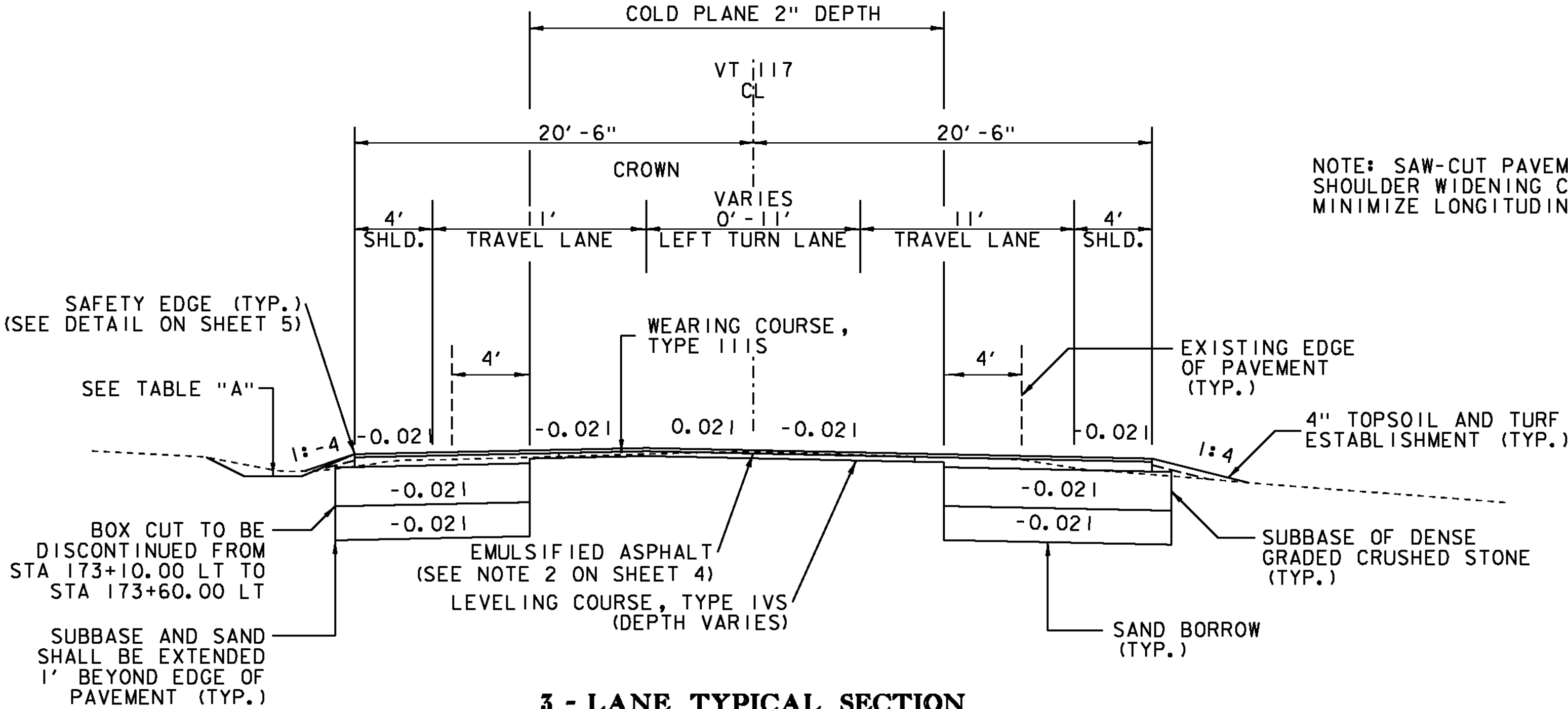
TYPICAL SECTIONS

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

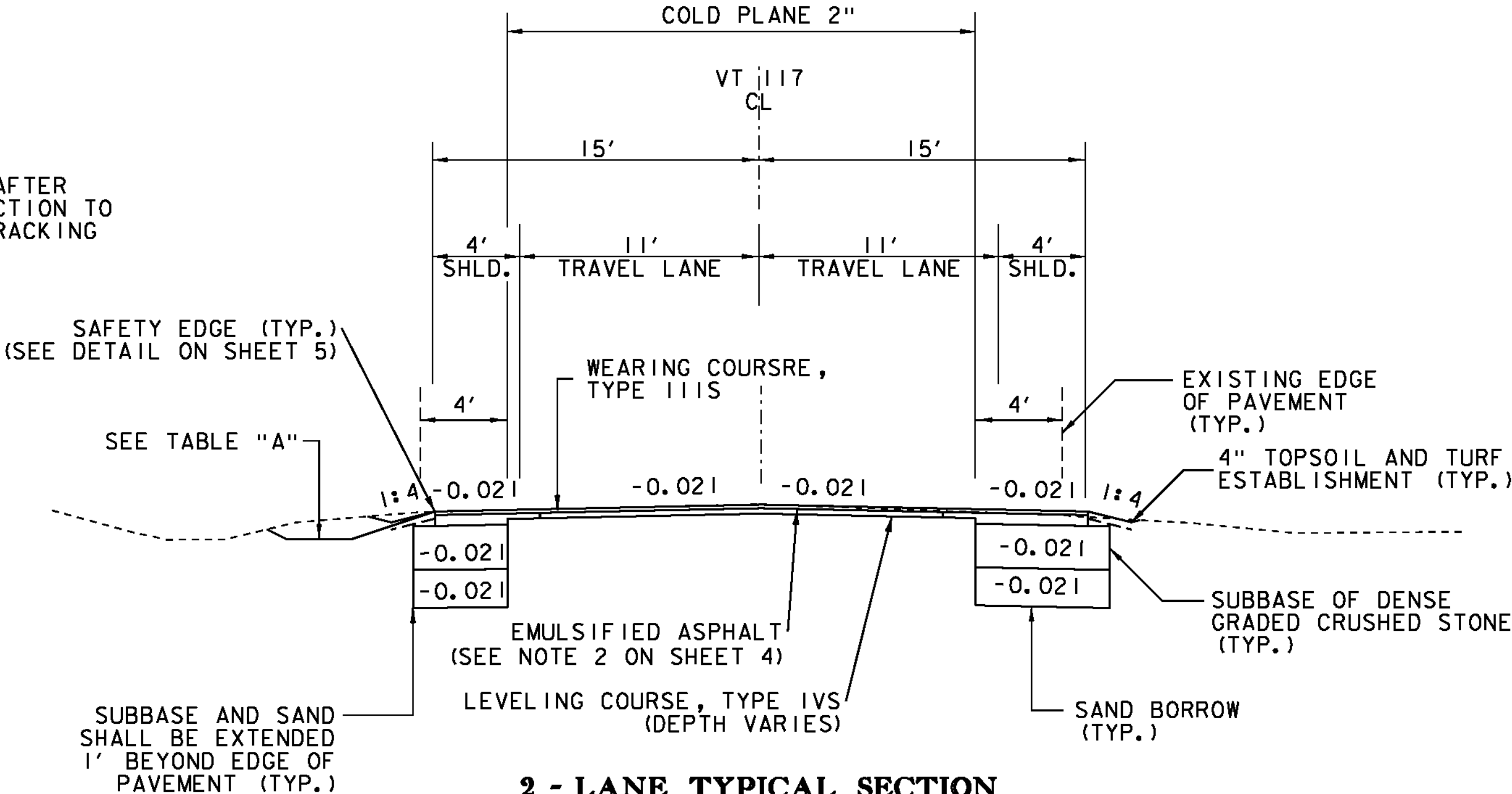
NOTE: SAW-CUT PAVEMENT AFTER
SHOULDER WIDENING COMPACTION TO
MINIMIZE LONGITUDINAL CRACKING



3 - LANE TYPICAL SECTION

VT ROUTE 117

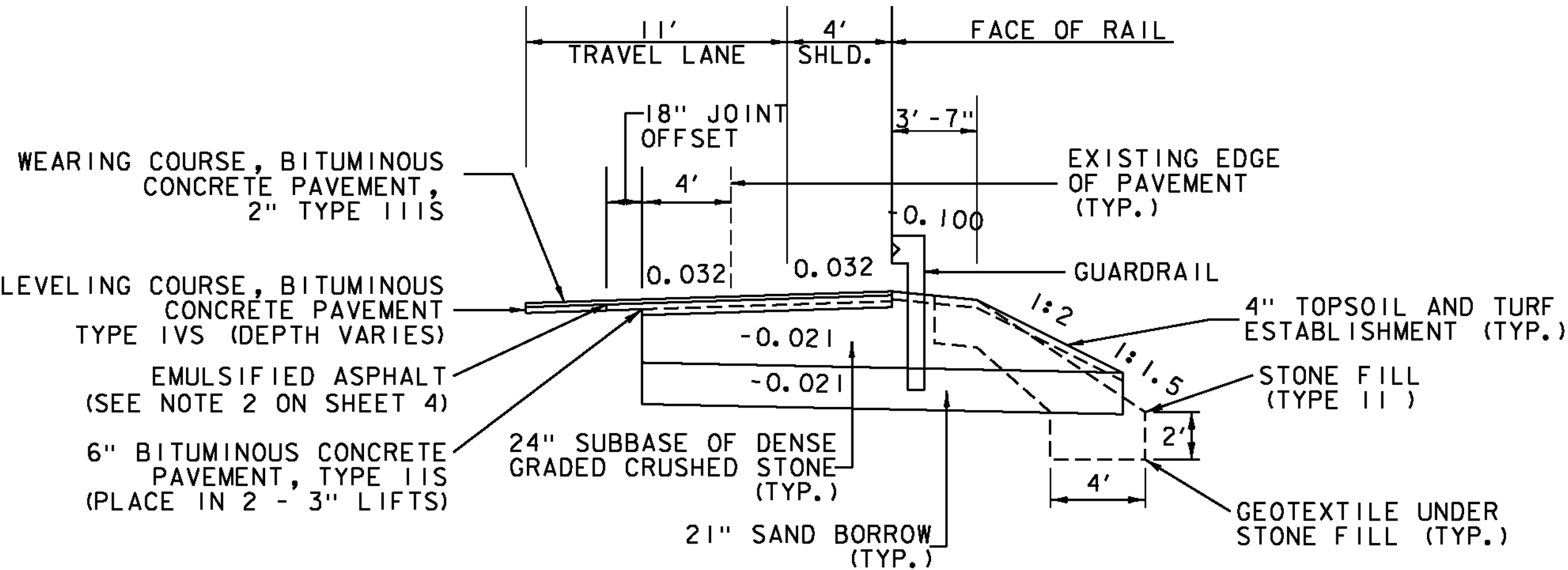
STA 167+50.00 - 175+75.00



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

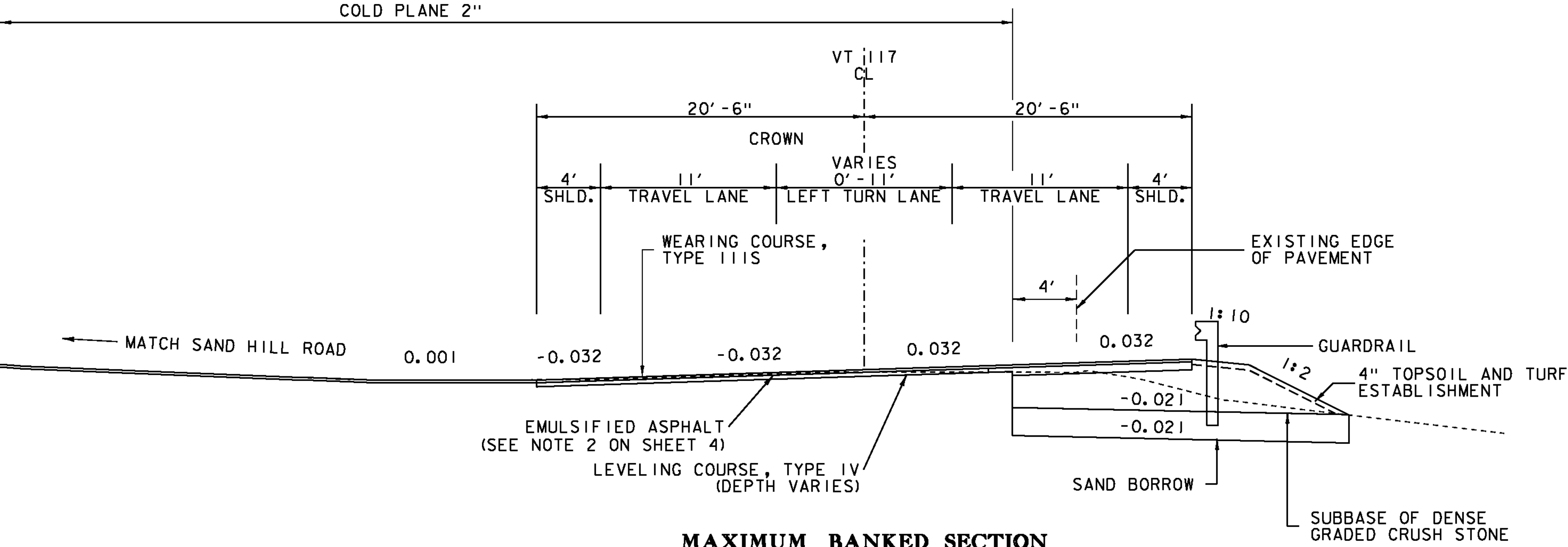
MATERIAL TOLERANCES	
PAVEMENT (TOTAL DEPTH):	+/- 1/4 in
SUBBASE (TOTAL DEPTH):	+/- 1 in
SAND (TOTAL DEPTH):	+/- 1 in

SEEDING FORMULA

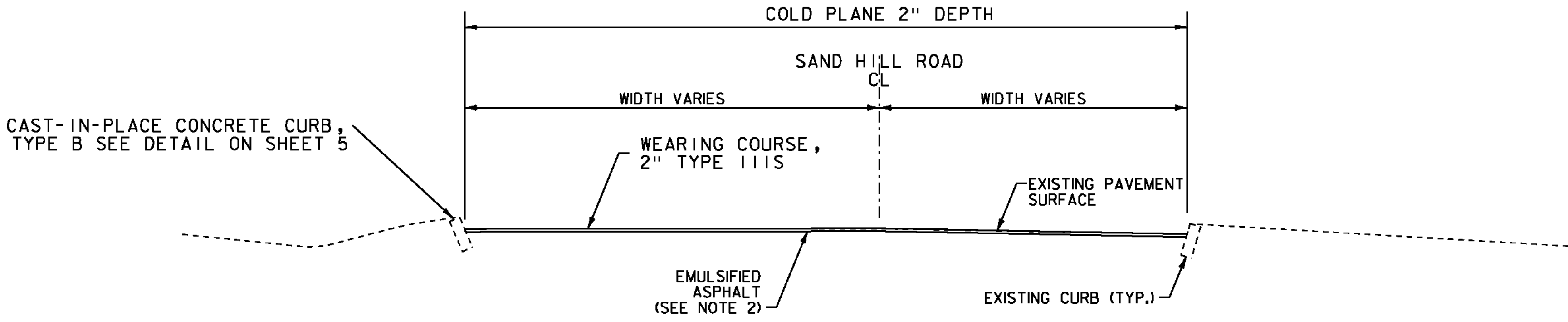
SEE EPSC DETAILS SHEET 2 FOR THE SEEDING FORMULA.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION PRACTICES SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORATION'S 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND IT'S LATEST REVISIONS.
2. 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.
3. MARKER POSTS: TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.
4. SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD B-5.
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.
6. 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.
7. 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.
8. 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.
9. ANY DISCREPENCIES BETWEEN THESE DRAWINGS AND ACTUAL FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
10. 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.
11. 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.

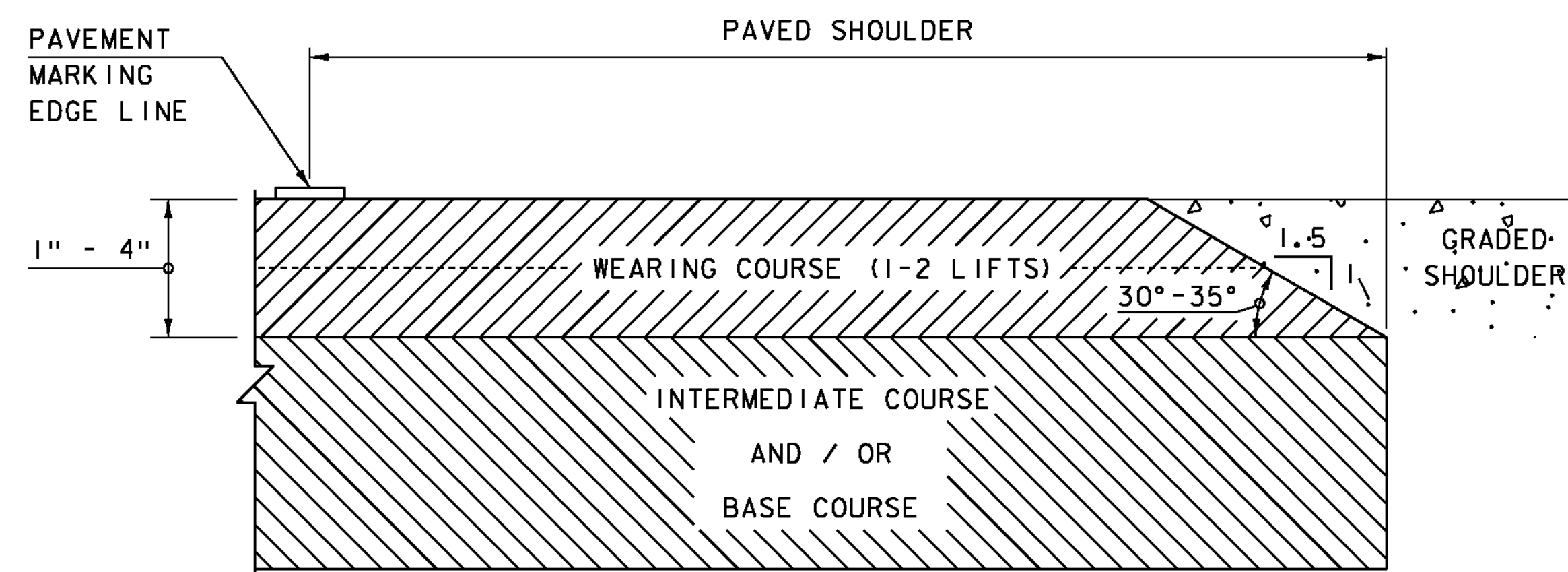


**MAXIMUM BANKED SECTION
VT ROUTE 117 - SAND HILL ROAD**



**COLD PLANE TYPICAL SECTION
SAND HILL ROAD**

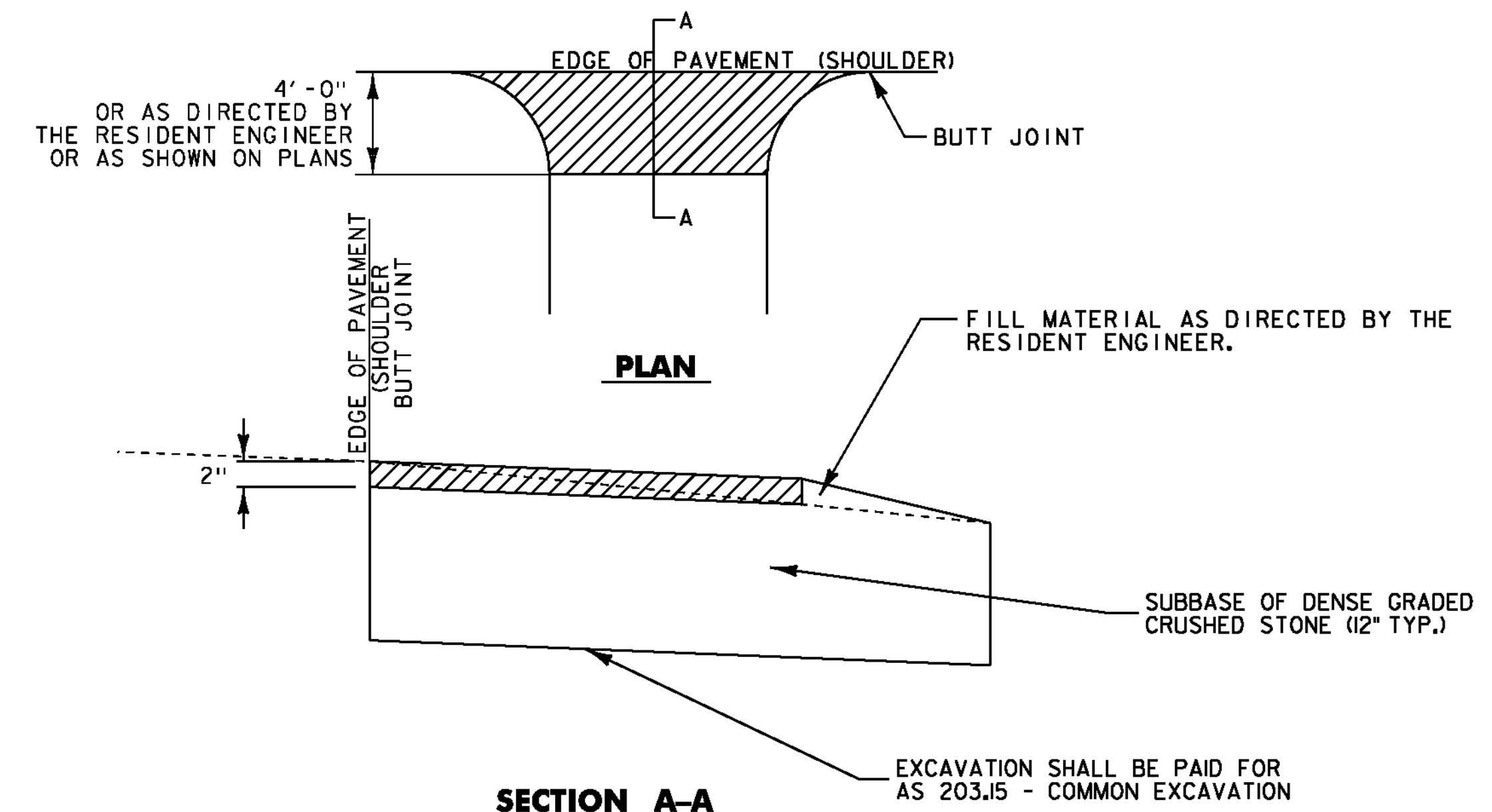
PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002+yp.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
TYPICAL SHEET 2	SHEET 4 OF 64



SAFETY EDGE DETAIL

NOT TO SCALE

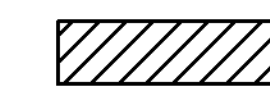
NOTE: LEVELING COURSE MAY INCLUDE THE "SAFETY EDGE" AT THE CONTRACTOR'S CHOICE.



SECTION A-A

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

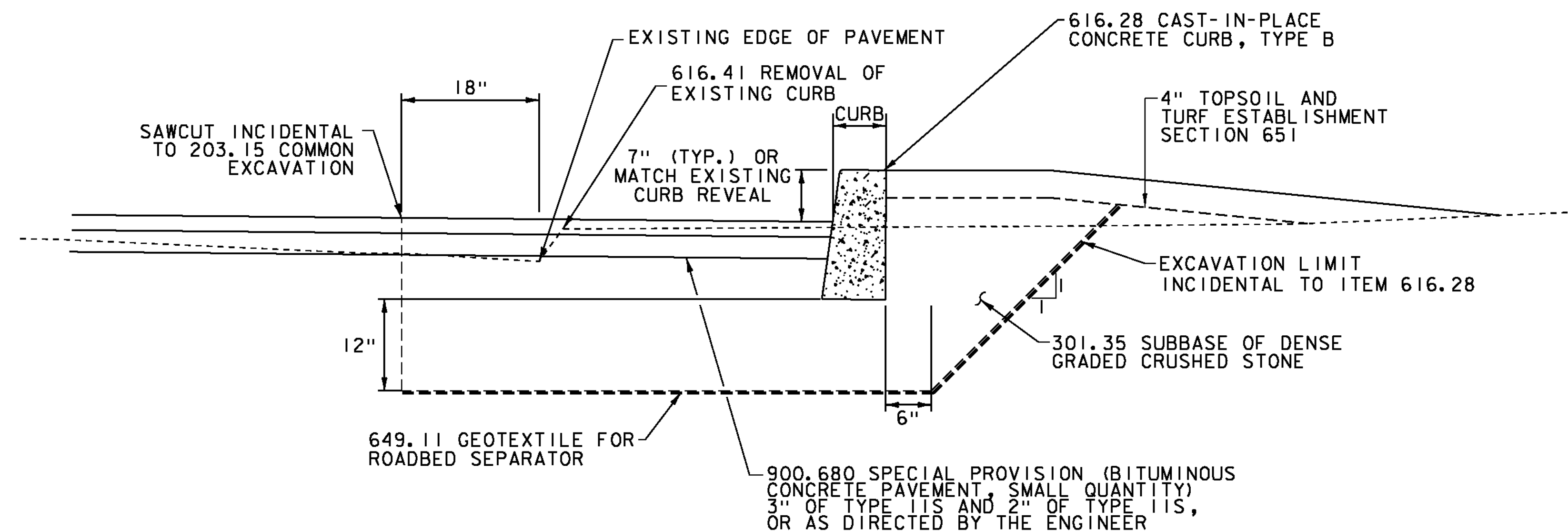
DRIVE LOCATION SUMMARY

 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: t97d002+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)**

**TYPICAL GRATE INSTALLATION
IN DITCH (ELEVATION)**
NOT TO SCALE

ELEVATION VIEW

SIDE VIEW

TYPICAL PRECAST CATCH BASIN OR MANHOLE

**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

STATE OF VERMONT AGENCY OF TRANSPORTATION														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										
																	BEGIN OPTION BB										
								137						137		LF	18" RCP CLASS III	601.0815	-								
								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					PLOT DATE: 14-SEP-2012				
																		PROJECT LEADER: J. SCHULTZ					DRAWN BY: D. LYMAN				
																		DESIGNED BY: D. LYMAN					CHECKED BY: J. DEVLIN				
																		QUANTITY SHEET 1					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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 3

[illegible]

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

FILE NAME: +97d002frm.dgn	PLOT DATE: 14-SEP-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
QUANTITY SHEET 3	SHEET 9 OF 64

ITEM DETAIL SHEET

CURB				
BEGIN STATION	END STATION	POSITION		REMARKS
		LEFT FT	FT	
616.28 - CAST-IN-PLACE CONCRETE CURB, TYPE B				
172+74.00 LT	200+62.95 LT	66		42' RAD
200+50.37 RT	173+88.00 LT		45	30' RAD
SUBTOTAL		66	45	111
ROUNDING				4
TOTAL				115

DRAINAGE DETAIL SHEET

PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002frm.dgn	PLOT DATE: 14-SEP-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
DRAINAGE DETAIL SHEET	SHEET 11 OF 64

EARTHWORKS

FILE NAME: +97d002frm.dgn	PLOT DATE: 14-SEP-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
EARTHWORKS SHEET	SHEET 12 OF 64

RIGHT - OF - WAY DETAIL SHEET

[illegible]

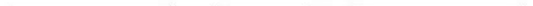
PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400(5)	
FILE NAME: r97d002Detail.xls	PLOT DATE:
PROJECT LEADER: J. SCHULTZ	DRAWN BY: M. TROTTIER
DESIGNED BY: D. LYMAN	CHECKED BY: E. PIERCE
R.O.W. DETAIL SHEET #1	SHEET 13 OF 64

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

RIGHT - OF - WAY DETAIL SHEET

[illegible][illegible]

PLOT DATE 02/16/12

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

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

PROJECT NAME:	ESSEX TOWN
PROJECT NUMBER:	STP 5400(5)
FILE NAME:	r97d002Detail.xls
PROJECT LEADER:	J. SCHULTZ
DESIGNED BY:	D. LYMAN
R.O.W. DETAIL SHEET #2	

PLOT DATE:
DRAWN BY: M. TROTTIER
CHECKED BY: E. PIERCE
SHEET 14 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 (28.2' - 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
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

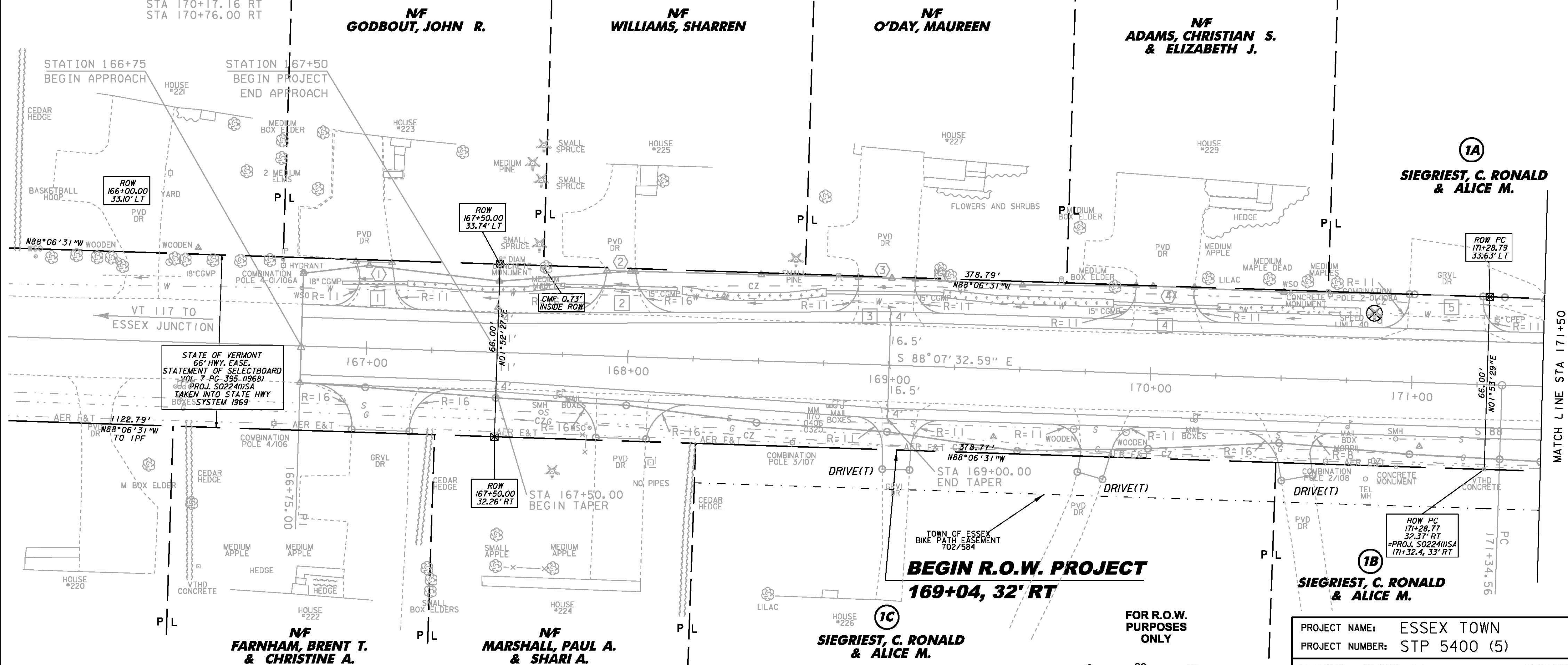
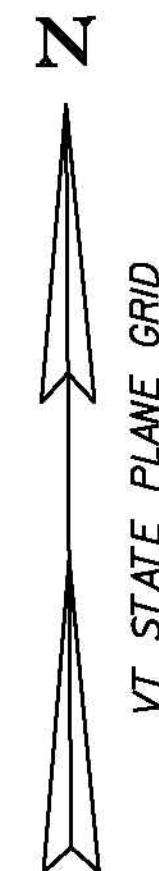
604.42 CHANGING ELEVATION OF SEWER MANHOLES

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



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

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"

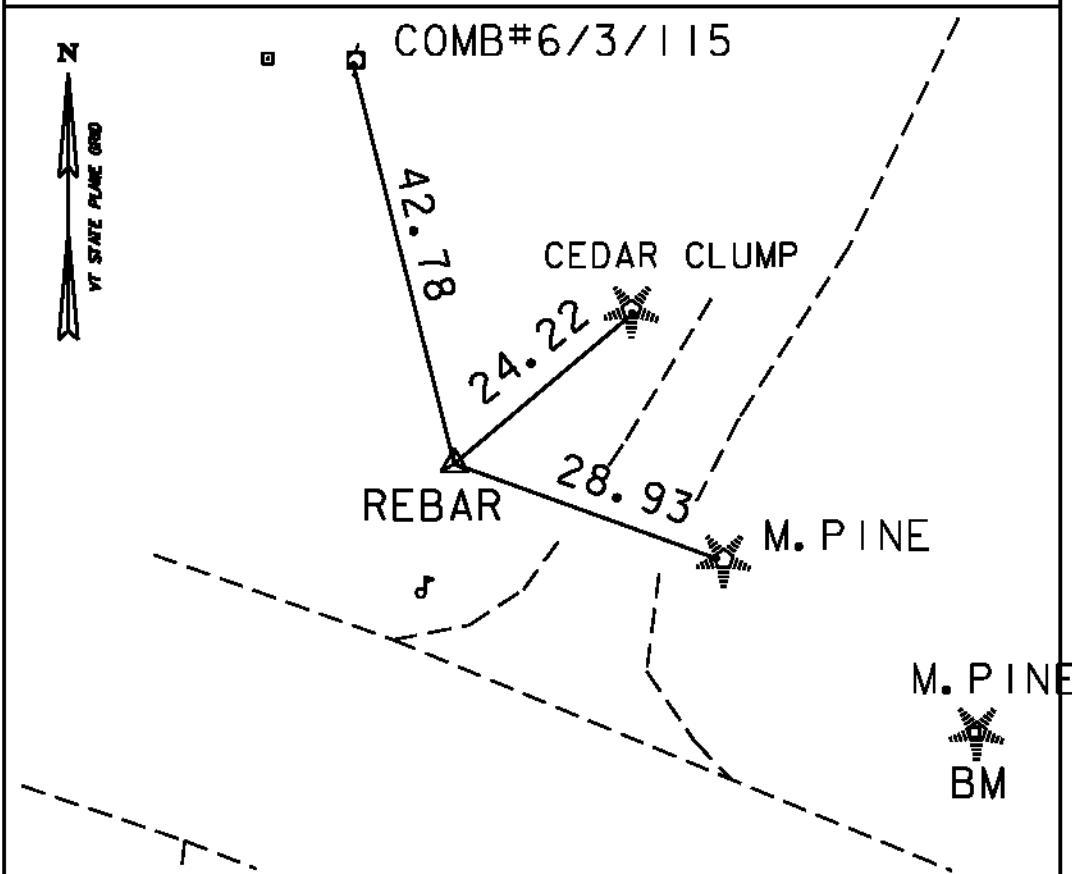
NORTH = 721774.180
EAST = 1496663.400
ELEV. = 303.740

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

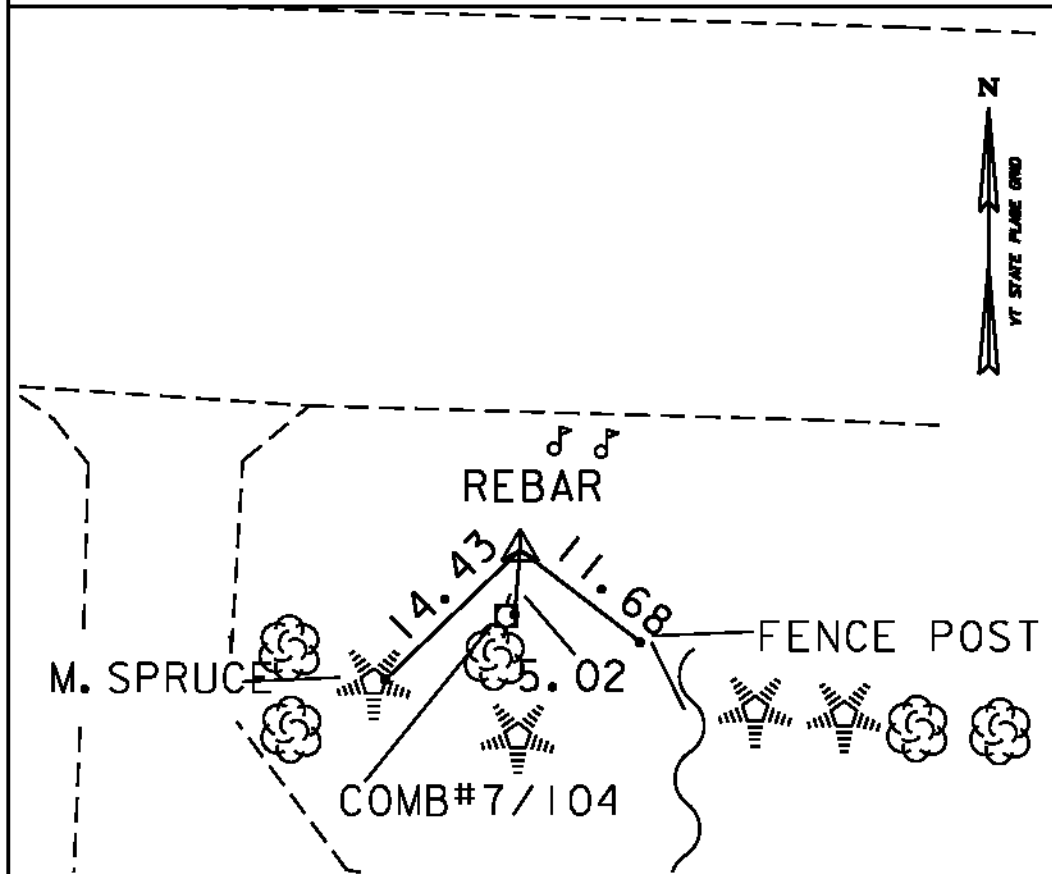
HVCTRL #3

NORTH = 721826.201
EAST = 1497996.502
ELEV. = 320.636



HVCTRL #4

NORTH = 721798.389
EAST = 1495942.221
ELEV. = 301.843



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

ALIGNMENT TIES

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

NORTH =
EAST =
ELEV. =

DATUM

VERTICAL NAVD 88

HORIZONTAL NAD 83 (96)

ADJUSTMENT Compass

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

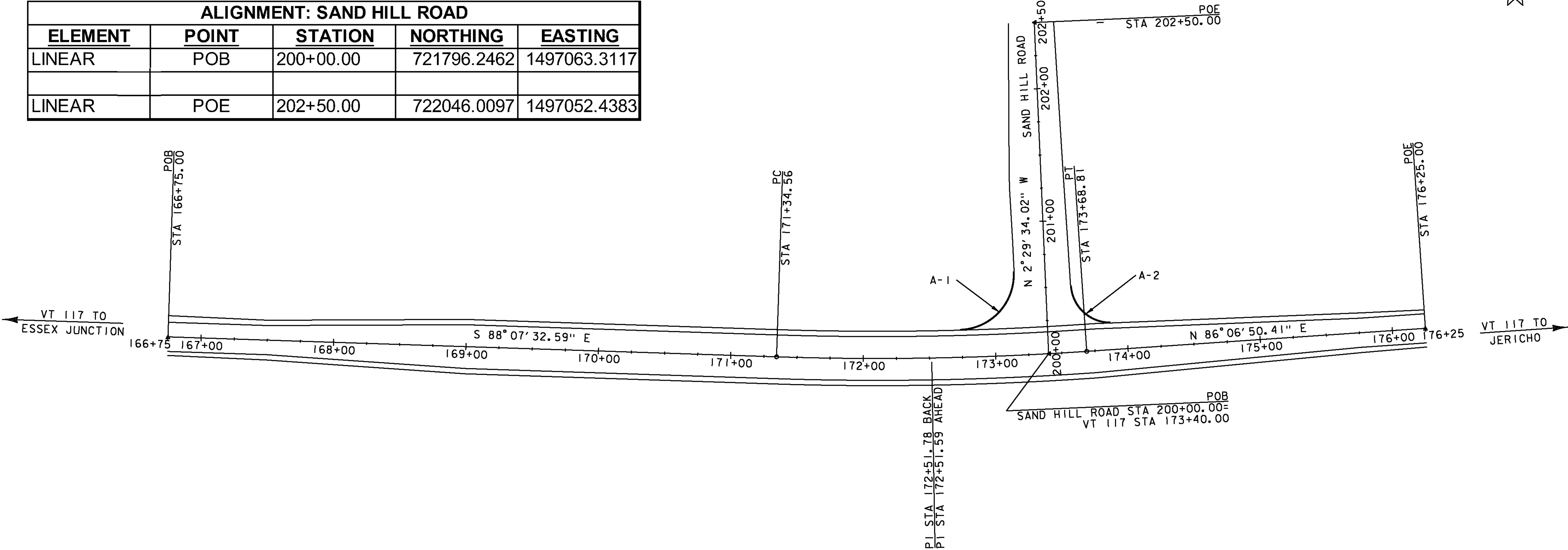
FILE NAME: t97d002frm.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
TIE SHEET

PLOT DATE: 24-AUG-2012
DRAWN BY: R. BULLOCK
CHECKED BY: P. HODGE
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

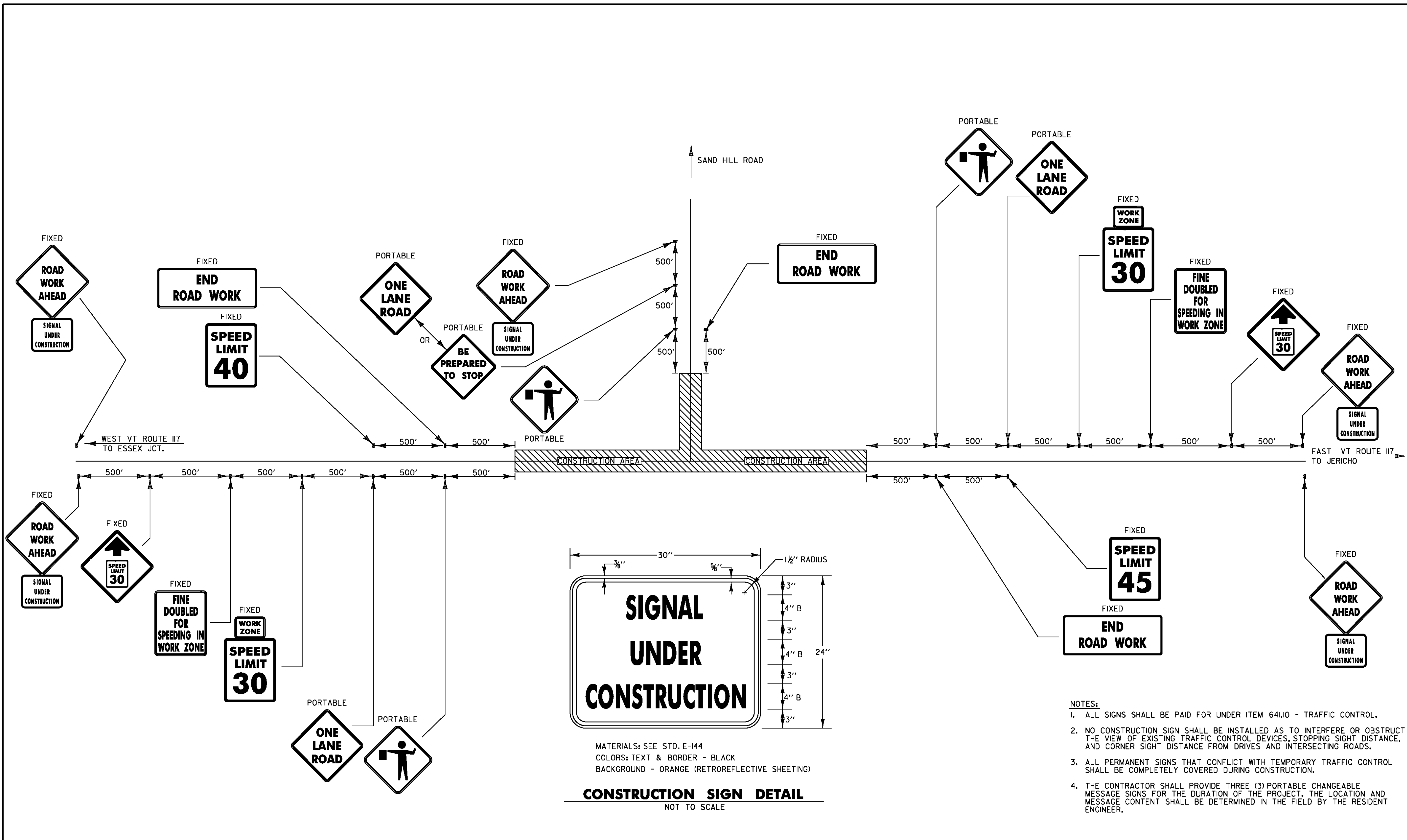
CURVE #1 DATA:	
RADIUS:	2330.00'
Δ:	5° 45' 36.99" LT.
Dc:	2° 27' 32.57"
LENGTH:	234.25'
TANGENT:	117.22'
EXTERNAL:	2.95'
BANK:	0.032

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										
<u>Curb ID</u>	<u>Type</u>	<u>Begin</u>			<u>End</u>			<u>Radius</u>	<u>Length</u>	<u>Remarks</u>
		<u>Station</u>	<u>Offset</u>	<u>Location</u>	<u>Station</u>	<u>Offset</u>	<u>Location</u>			
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	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002align.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
ALIGNMENT AND CURB LAYOUT SHEET	SHEET 18 OF 64



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 64110 - 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.

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

FILE NAME: +97d002frm.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
CONSTRUCTION APPROACH SIGNING

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 19 OF 64

CONSTRUCTION APPROACH SIGNING

NOT TO SCALE
SEE STD E-100 FOR SIGN PLACEMENT

617.12 RELOCATE MAILBOX, MULTIPLE SUPPORT

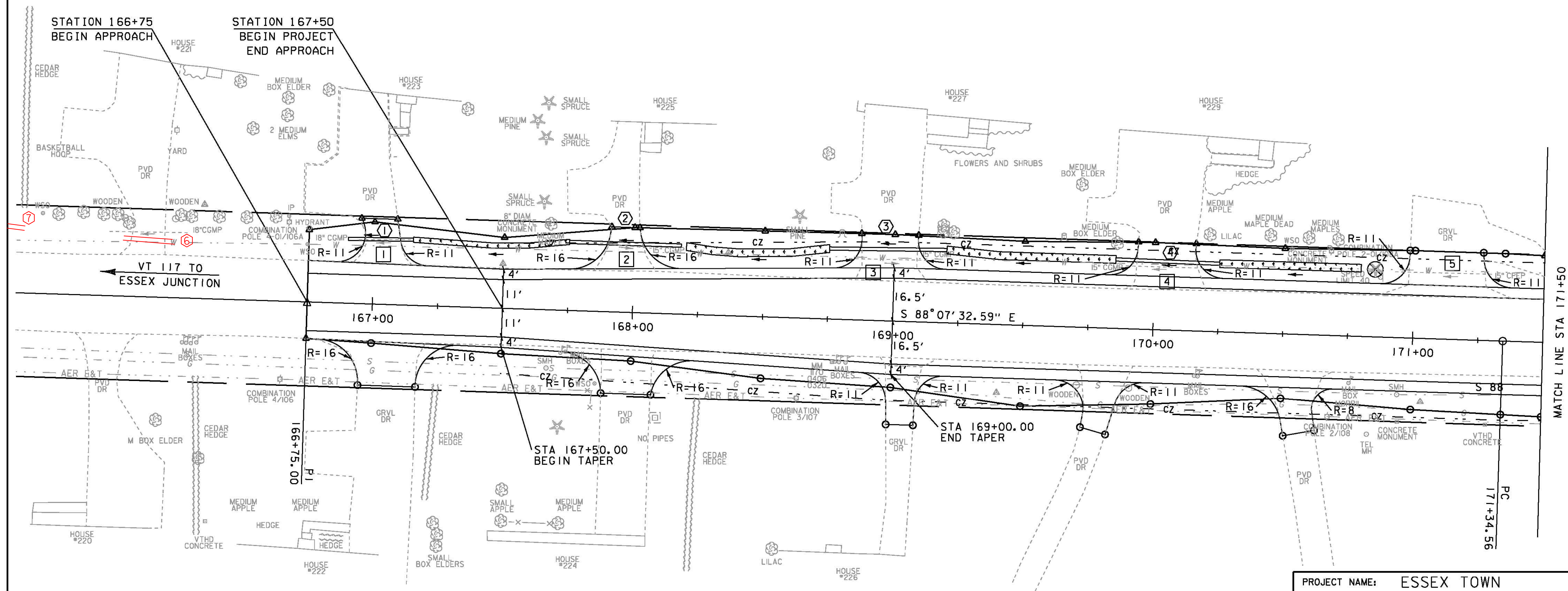
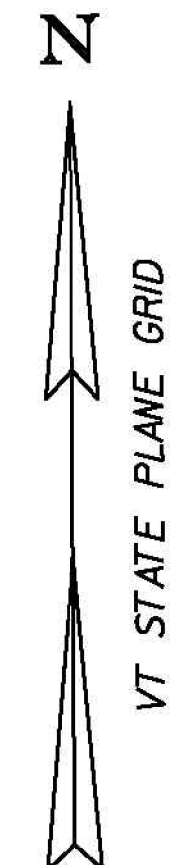
STA 167+73.83 RT	STA 168+78 RT
STA 170+17.16 RT	STA 171+13 RT
STA 170+76.00 RT	

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

GRASS CHANNEL

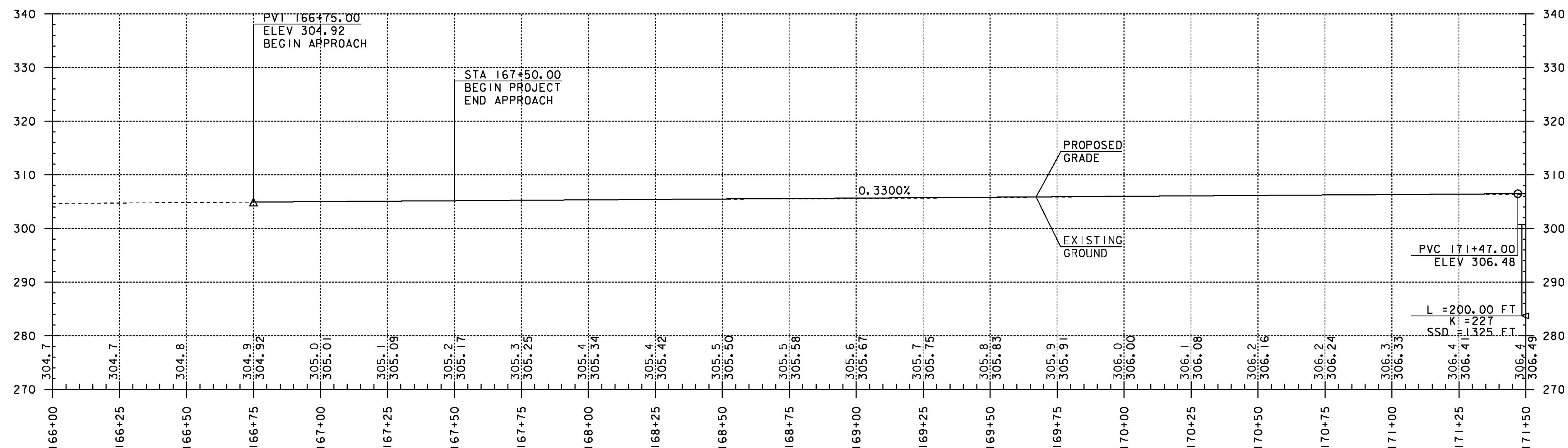
170+35 LT
171+19 RT

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

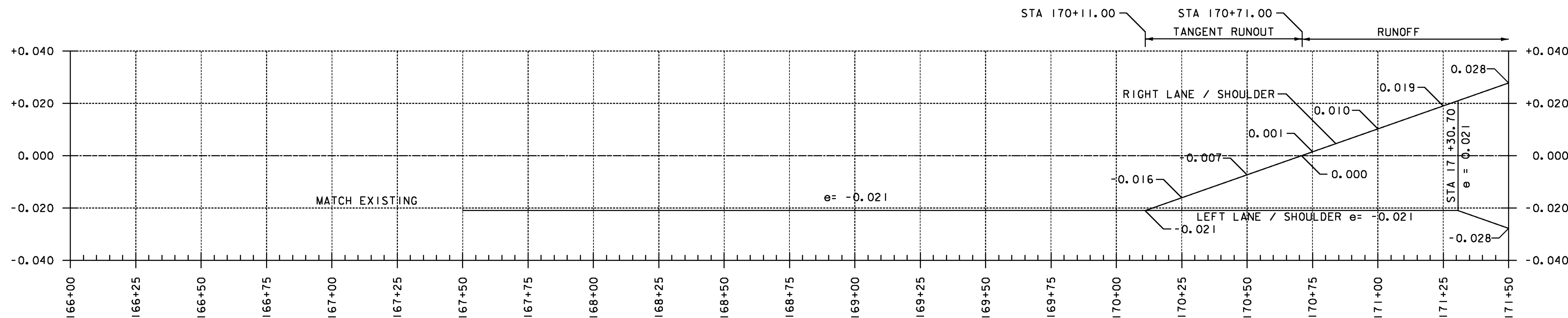


0 20 40
SCALE IN FEET

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 20 OF 64

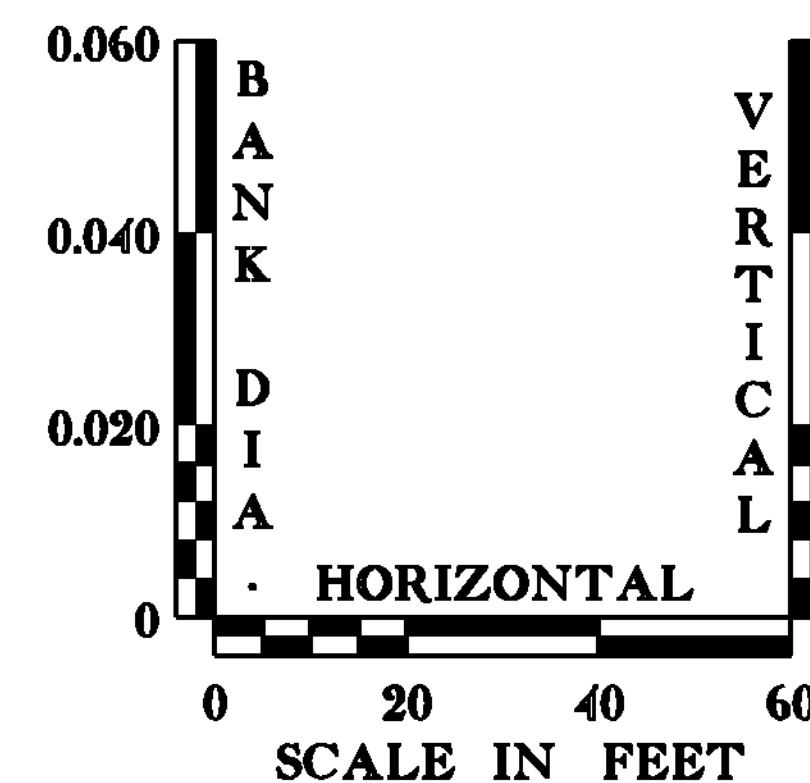


PROFILE



BANKING DIAGRAM

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.



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

STATION 202+50
END APPROACH

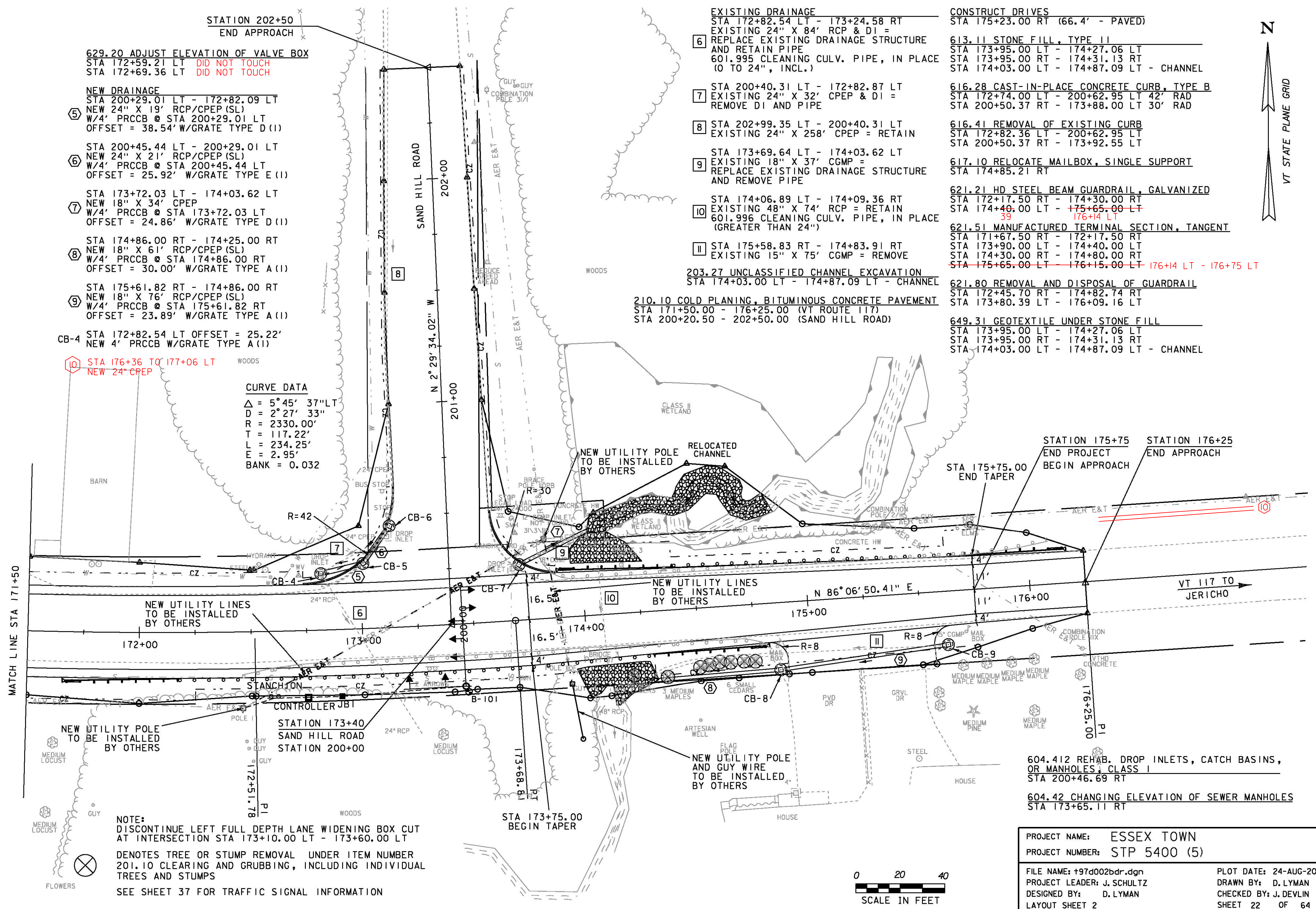
629.20 ADJUST ELEVATION OF VALVE BOX
STA 172+59.21 LT DID NOT TOUCH
STA 172+69.36 LT DID NOT TOUCH

- NEW DRAINAGE**
- ⑤ 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 (I)
- ⑥ 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 (I)
- ⑦ 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 (I)
- ⑧ 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 (I)
- ⑨ 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 (I)

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

⑩ STA 176+36 TO 177+06 LT
NEW 24" CPEP

CURVE DATA
Δ = 5° 45' 37" LT
D = 2° 27' 33"
R = 2330.00'
T = 117.22'
L = 234.25'
E = 2.95'
BANK = 0.032



- EXISTING DRAINAGE**
STA 172+82.54 LT - 173+24.58 RT
EXISTING 24" X 84' RCP & DI =
⑥ REPLACE EXISTING DRAINAGE STRUCTURE AND RETAIN PIPE
601.995 CLEANING CULV. PIPE, IN PLACE (0 TO 24", INCL.)
- ⑦ STA 200+40.31 LT - 172+82.87 LT
EXISTING 24" X 32' CPEP & DI =
REMOVE DI AND PIPE
- ⑧ STA 202+99.35 LT - 200+40.31 LT
EXISTING 24" X 258' CPEP = RETAIN
- ⑨ STA 173+69.64 LT - 174+03.62 LT
EXISTING 18" X 37' CGMP =
REPLACE EXISTING DRAINAGE STRUCTURE AND REMOVE PIPE
- ⑩ 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")
- II 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
176+14 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 176+14 LT - 176+75 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

STATION 175+75
END PROJECT
BEGIN APPROACH

STATION 176+25
END APPROACH

- 604.412 REHAB. DROP INLETS, CATCH BASINS, OR MANHOLES, CLASS I
STA 200+46.69 RT
- 604.42 CHANGING ELEVATION OF SEWER MANHOLES
STA 173+65.11 RT

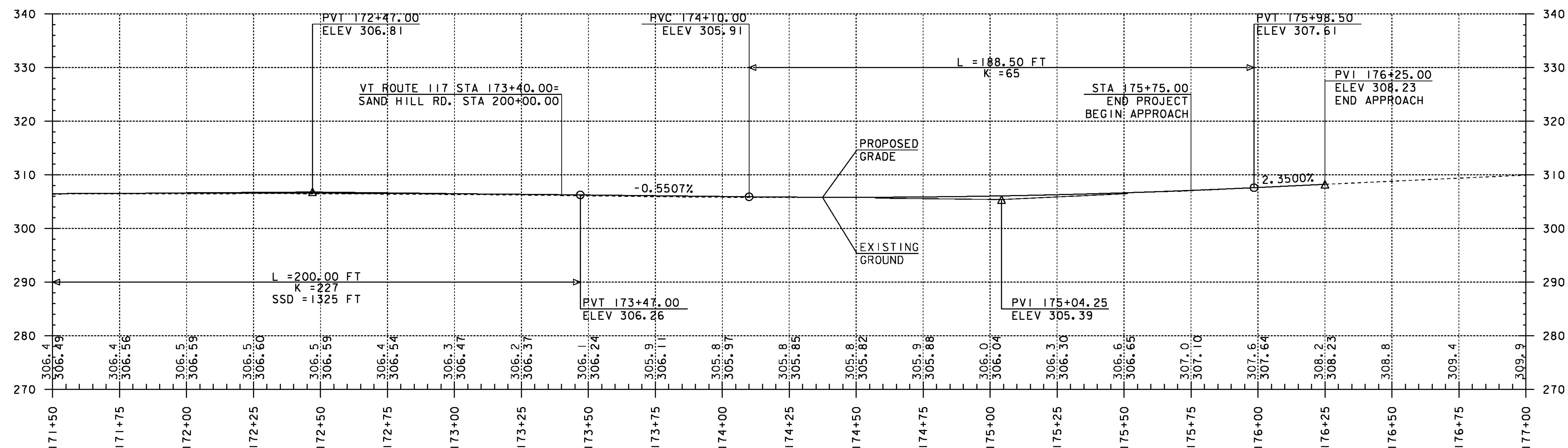
NOTE:
DISCONTINUE LEFT FULL DEPTH LANE WIDENING BOX CUT AT INTERSECTION STA 173+10.00 LT - 173+60.00 LT

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

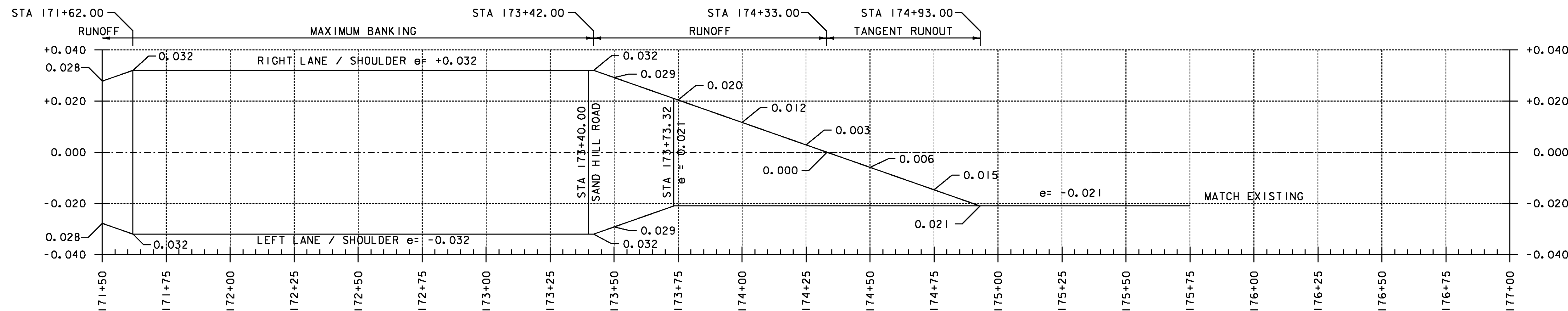
SEE SHEET 37 FOR TRAFFIC SIGNAL INFORMATION



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 2		SHEET 22	OF 64

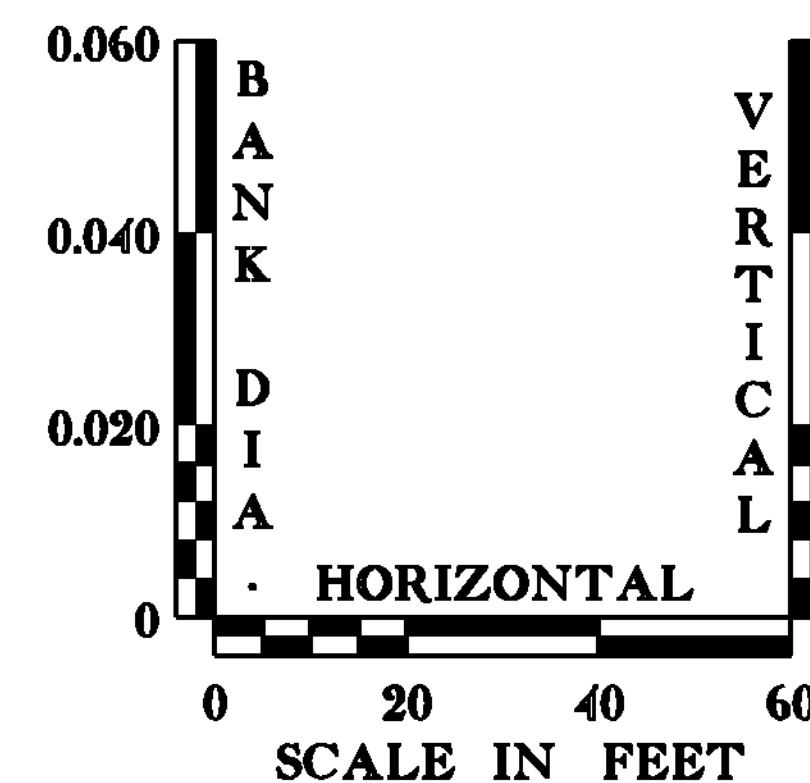


PROFILE



BANKING DIAGRAM

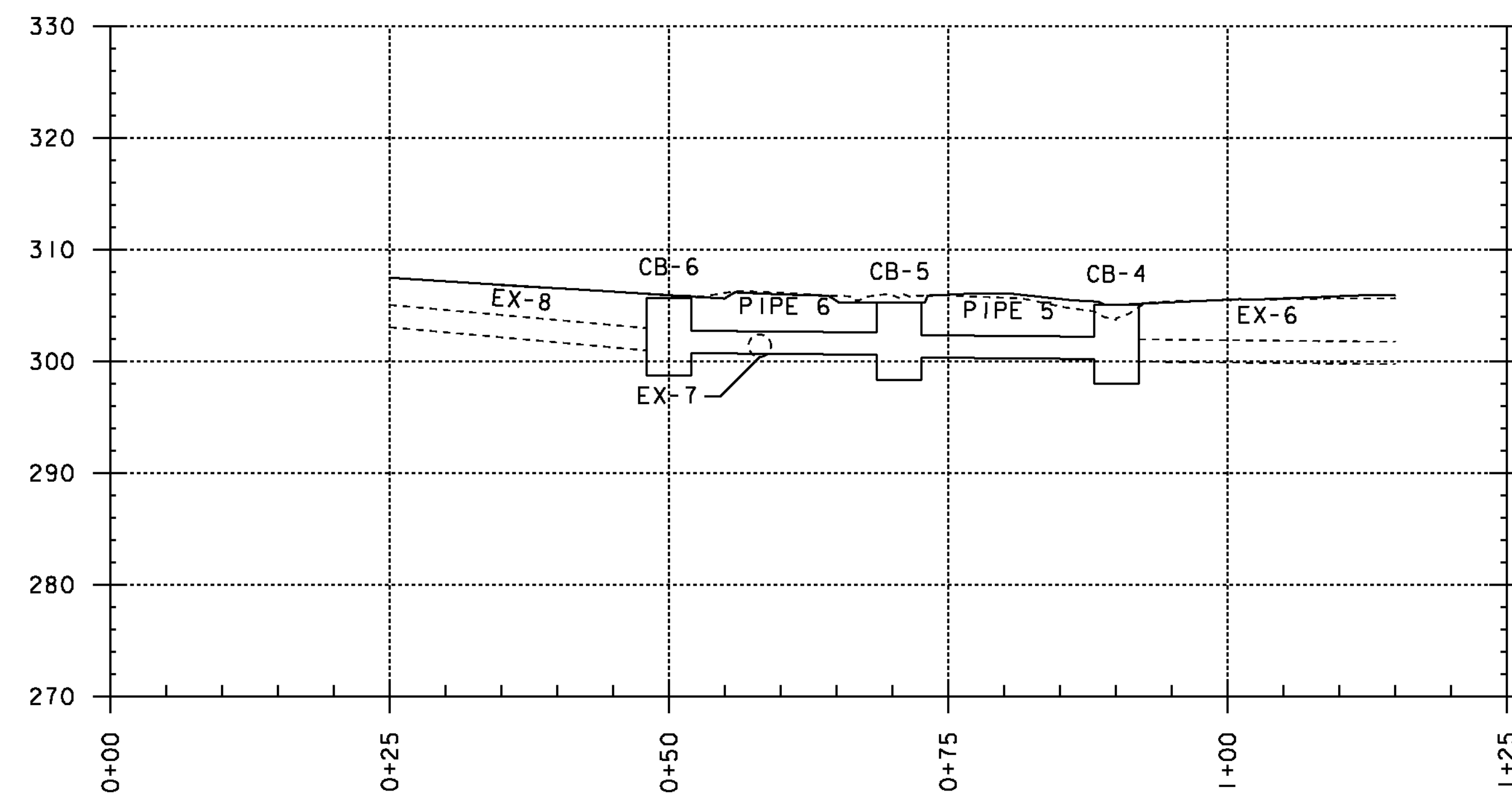
THE ELEVATIONS SHOWN TO THE NEAREST TENTH ARE
THE OLD GROUND ALONG PROPOSED CENTERLINE.
THE ELEVATIONS SHOWN TO THE NEAREST HUNDRETH ARE
THE FINISHED GRADE ALONG THE PROPOSED CENTERLINE.



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

FILE NAME: +97d002pro.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 - PROFILE SHEET 2

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 23 OF 64



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'

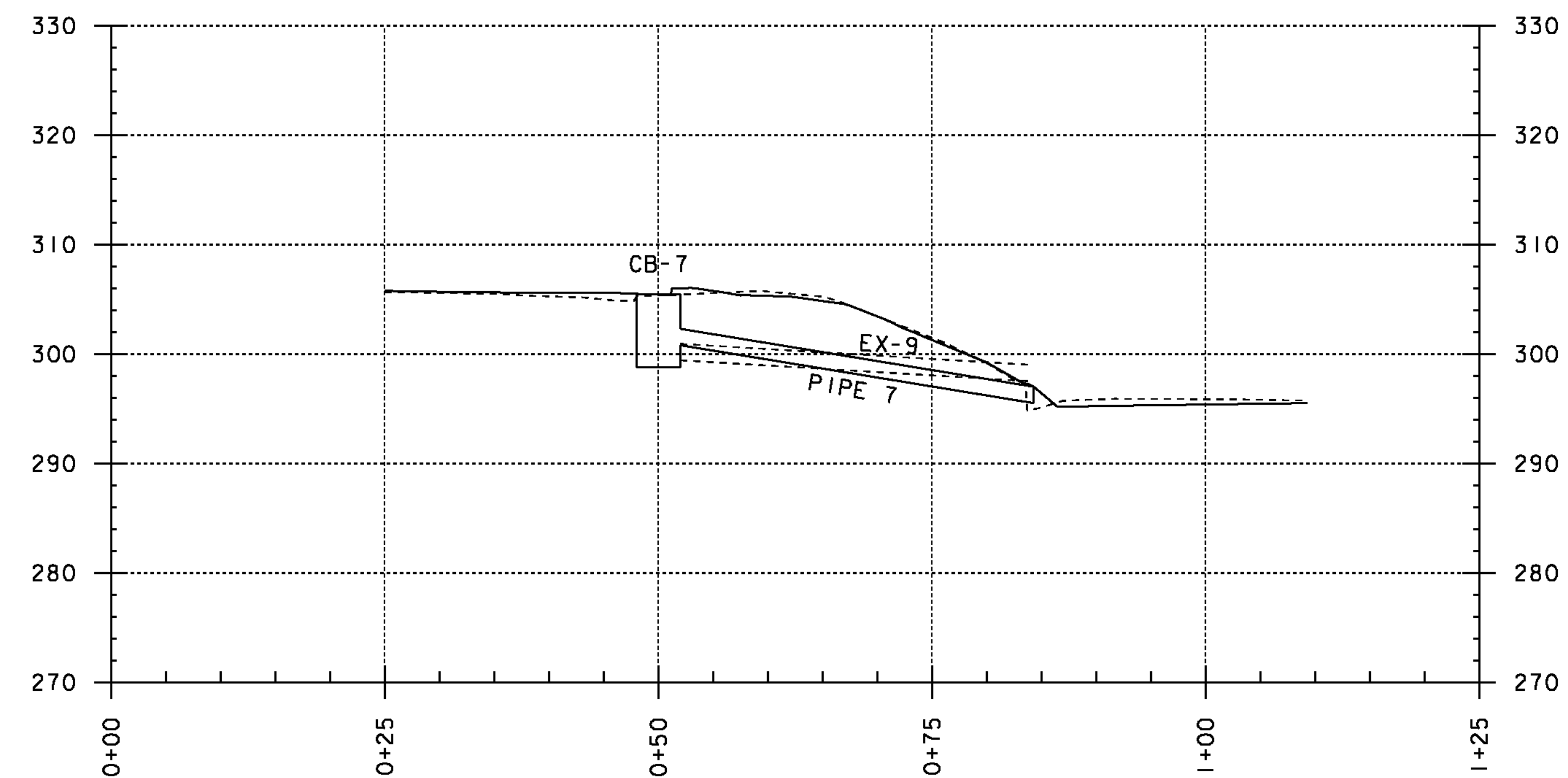
CB-4
GRATE TYPE A (1)
STA 172+82.09 LT
OFFSET = 25.22'
RIM ELEV= 305.04'
DIAMETER= 4.00'
DEPTH= 7.08'
SUMP = 2.00'
INV IN = 300.20'
INV OUT= 299.96'

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"

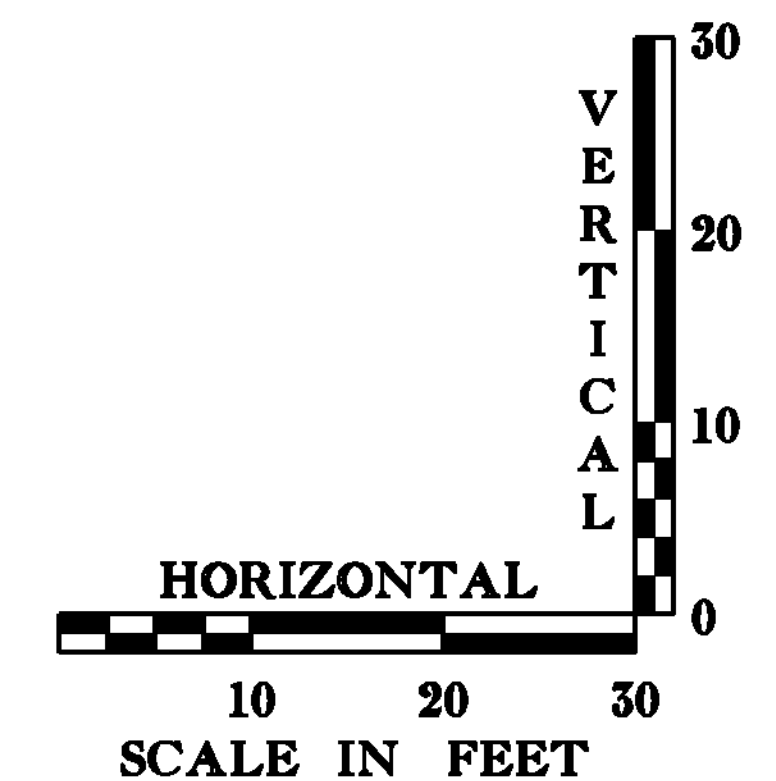
PIPE 5
STA 200+29.01 LT-
STA 172+82.09 LT
SLOPE= 0.87%
TYPE: OPTION PIPE
LENGTH= 19.41'
DIAMETER= 24.00"

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

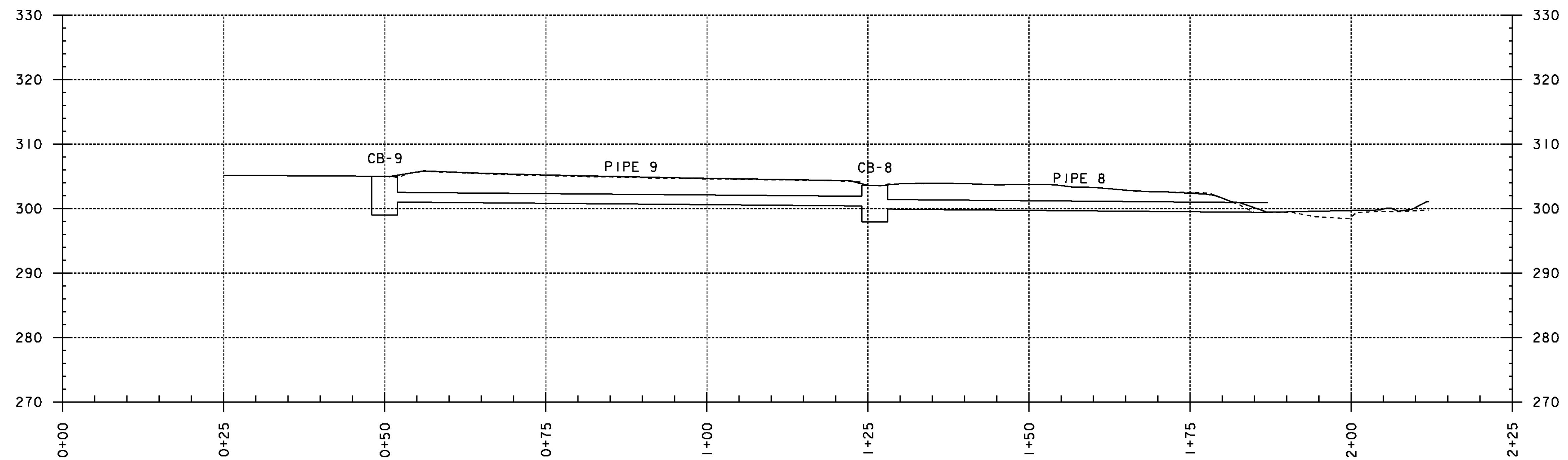


CB-7
GRATE TYPE D (1)
STA 173+72.03 LT
OFFSET = 24.86'
RIM ELEV= 305.45'
DIAMETER= 4.00'
DEPTH= 6.65'
SUMP = 2.00'
INV OUT= 300.80'

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: t97d002pro.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

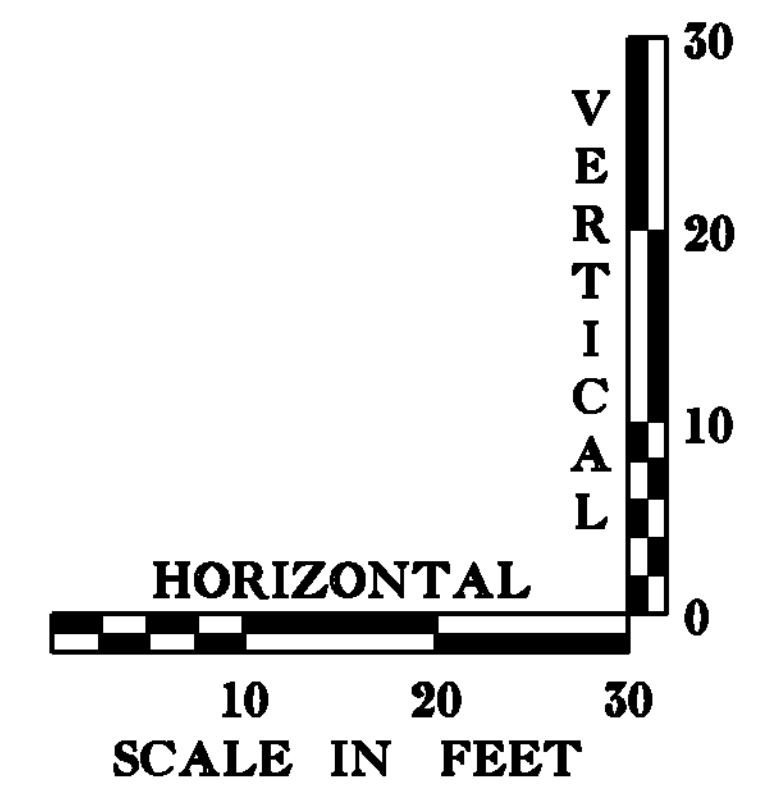


CB-9
GRATE TYPE A (1)
STA 175+61.82 RT
OFFSET = 23.89'
RIM ELEV= 305.00'
DIAMETER= 4.00'
DEPTH= 6.00'
SUMP = 2.00'
INV OUT=301.00'

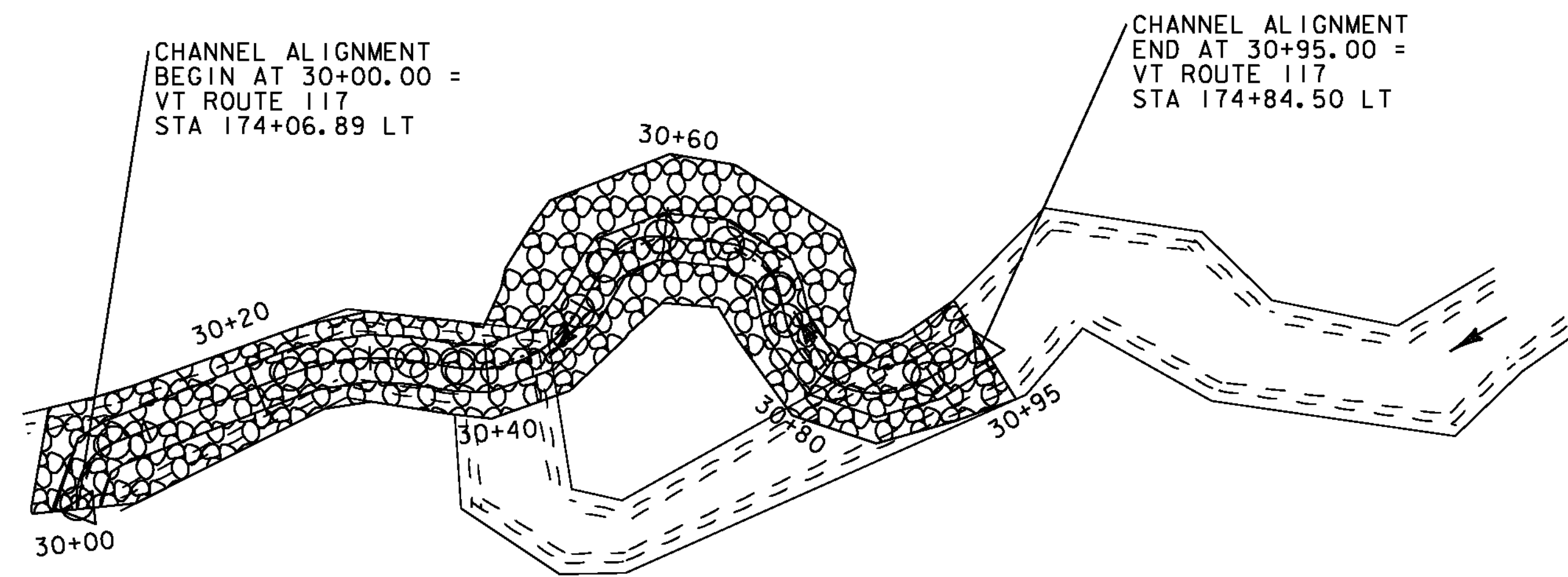
CB-8
GRATE TYPE A (1)
STA 174+86.00 RT
OFFSET = 30.00'
RIM ELEV= 303.57'
DIAMETER= 4.00'
DEPTH= 5.67'
SUMP = 2.00'
INV IN = 300.40'
INV OUT= 299.90'

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

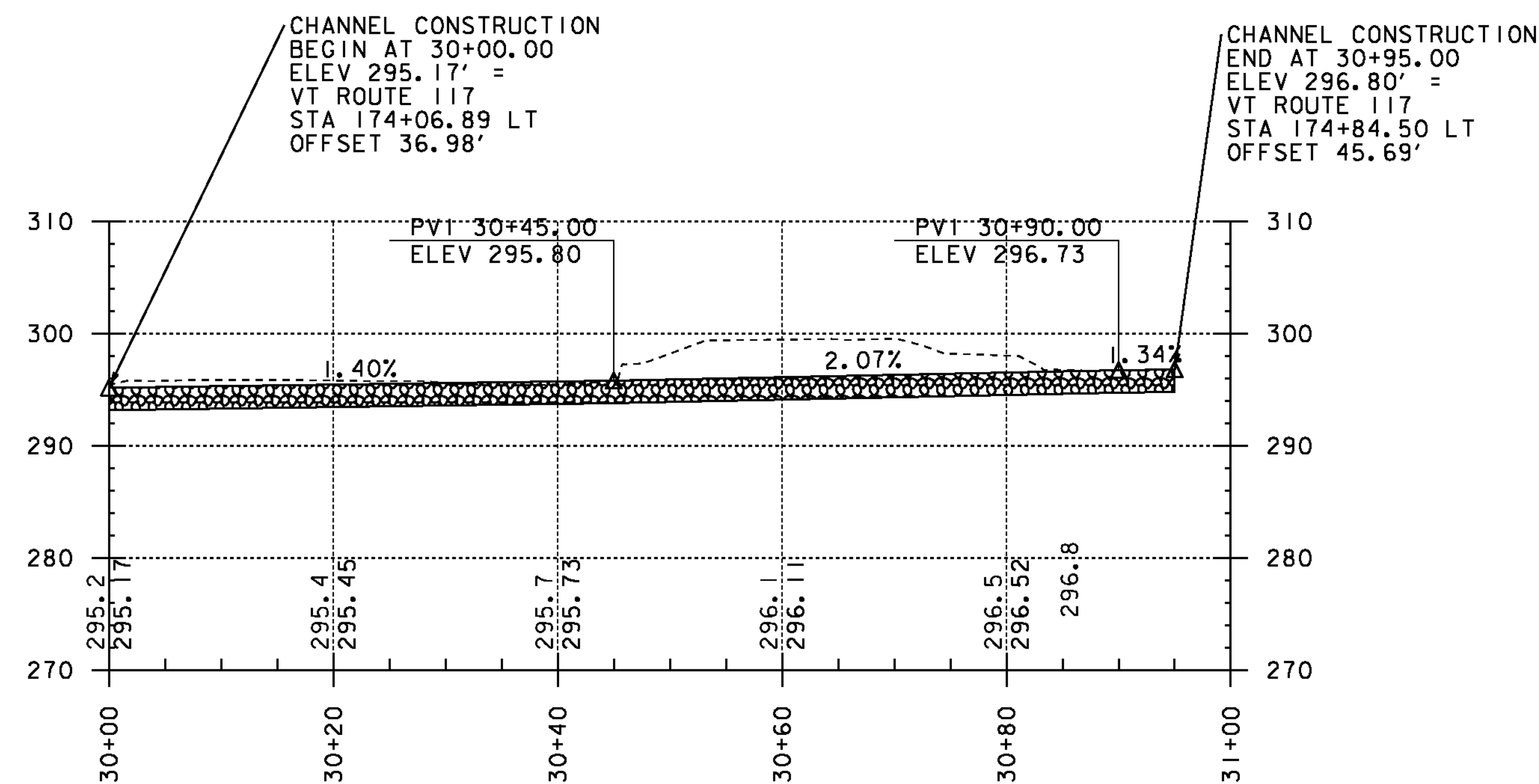
PIPE 8
STA 174+86.00 RT-
STA 174+25.00 RT
SLOPE= 0.84%
TYPE: OPTION PIPE
LENGTH= 61.01'
DIAMETER= 18.00"
INV OUT= 299.40'



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



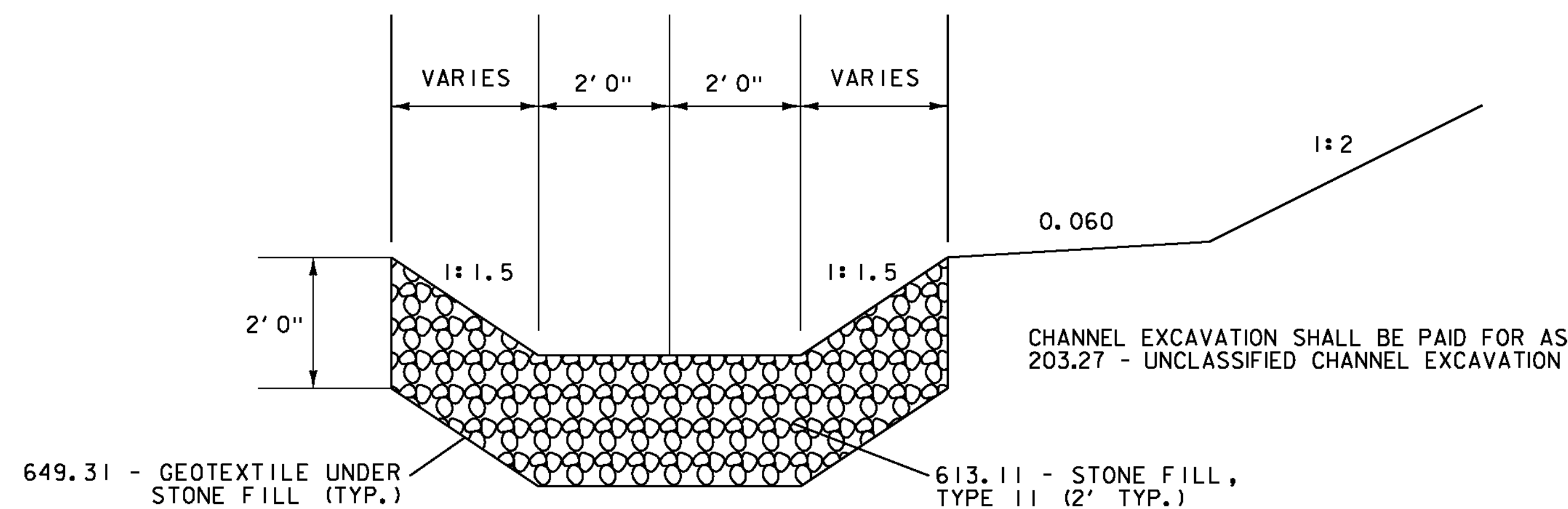
CHANNEL PLAN



CHANNEL PROFILE

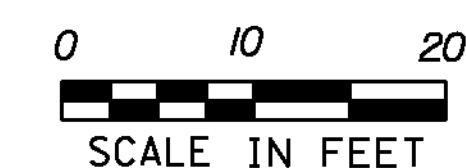
ALIGNMENT: PROPOSED CHANNEL				
ELEMENT	POINT	STATION	NORTHING	EASTING
LINEAR	POB	30+00.00	721837.5059	1497127.56
CURVE #1	PC	30+00.49	721837.9897	1497127.51
	PI	30+04.29	721841.7753	1497127.126
	PT	30+06.99	721843.1549	1497130.672
CURVE #2	PC	30+23.08	721848.988	1497145.665
	PI	30+28.46	721850.9383	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 CONSTRUCITON 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

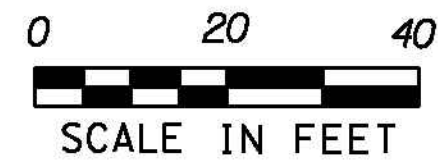
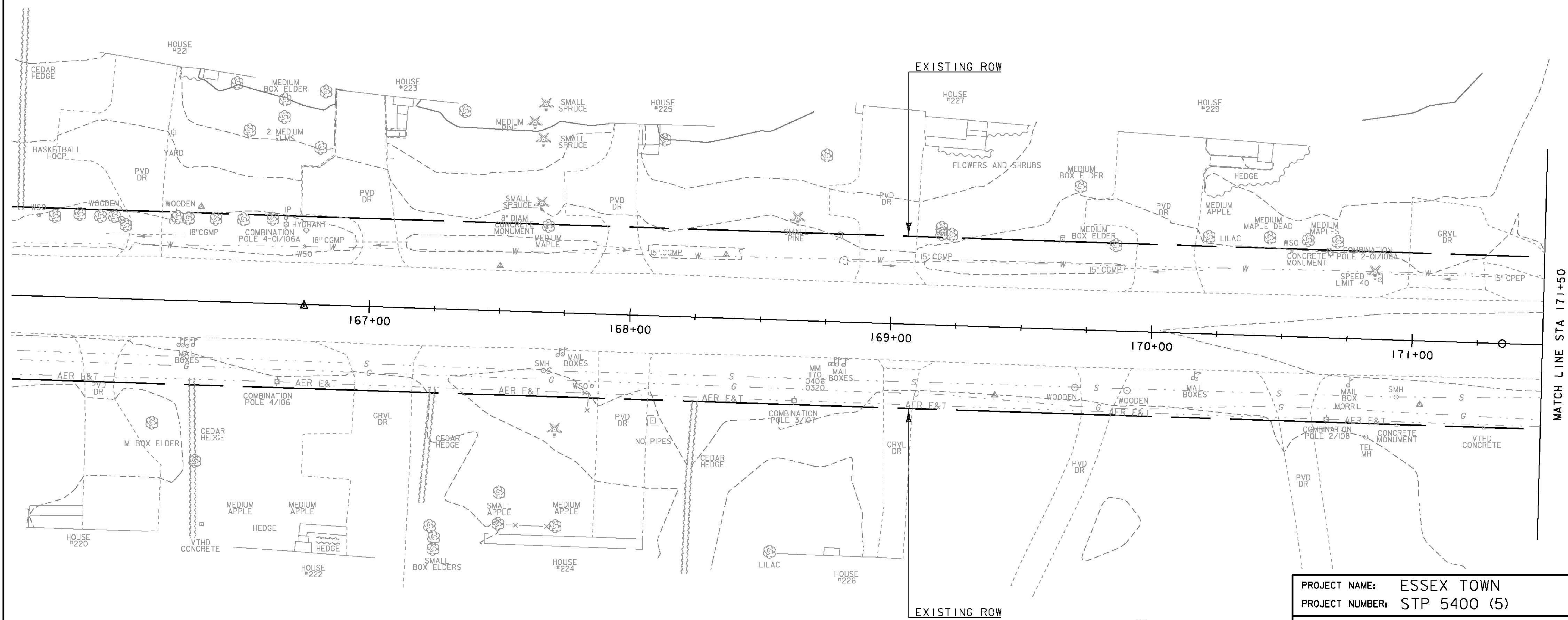
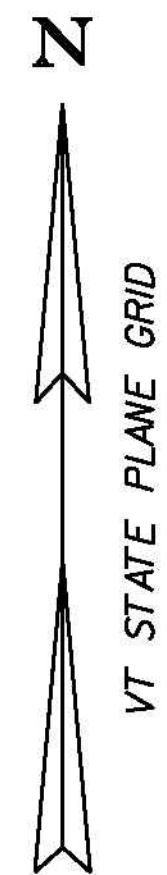
1.5.2 OFF-SITE ACTIVITIES

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.

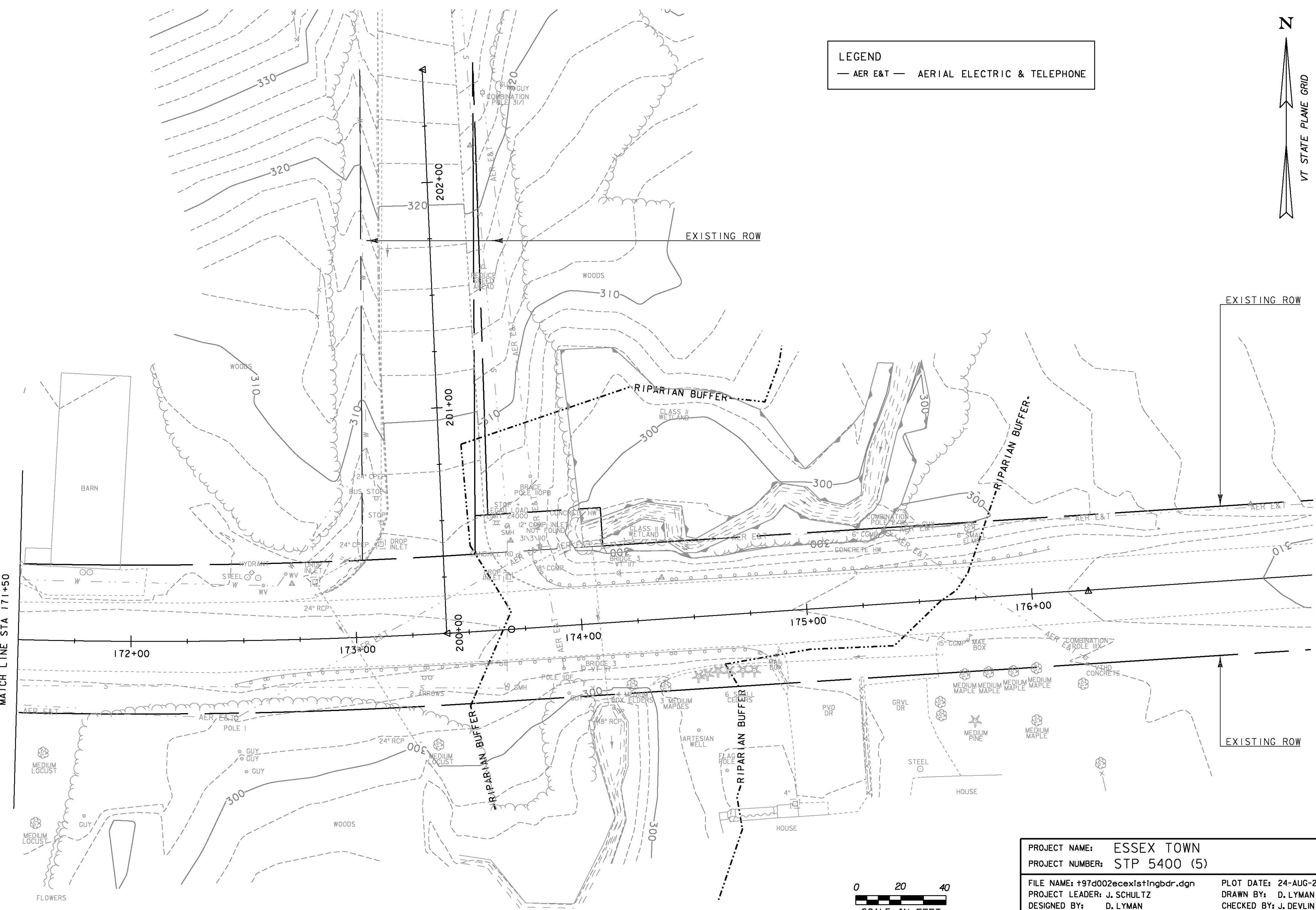
PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002ecnarrative.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
EPSC NARRATIVE	SHEET 27 OF 64

LEGEND

— AER E&T — AERIAL ELECTRIC & TELEPHONE

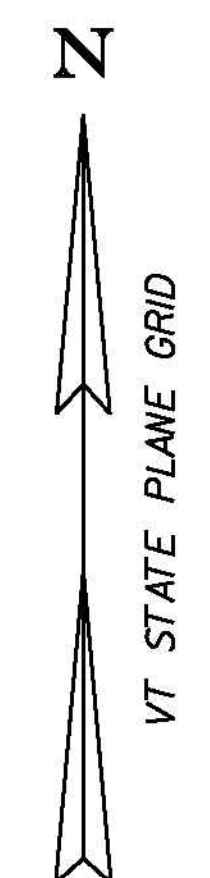


PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002ecexistingbdr.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
EPSC EXISTING CONDITIONS SHEET 1	SHEET 28 OF 64



MATCH LINE STA 171+50

LEGEND
— AER E&T — AERIAL ELECTRIC & TELEPHONE

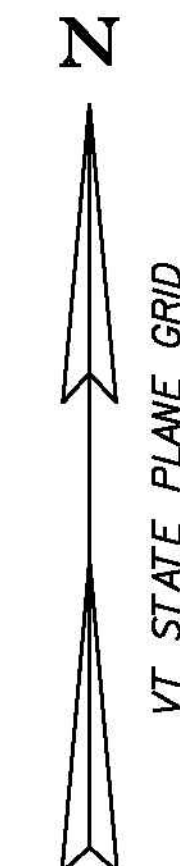


PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002ecexistingbdr.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
EPSC EXISTING CONDITIONS SHEET 2	SHEET 29 OF 64

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

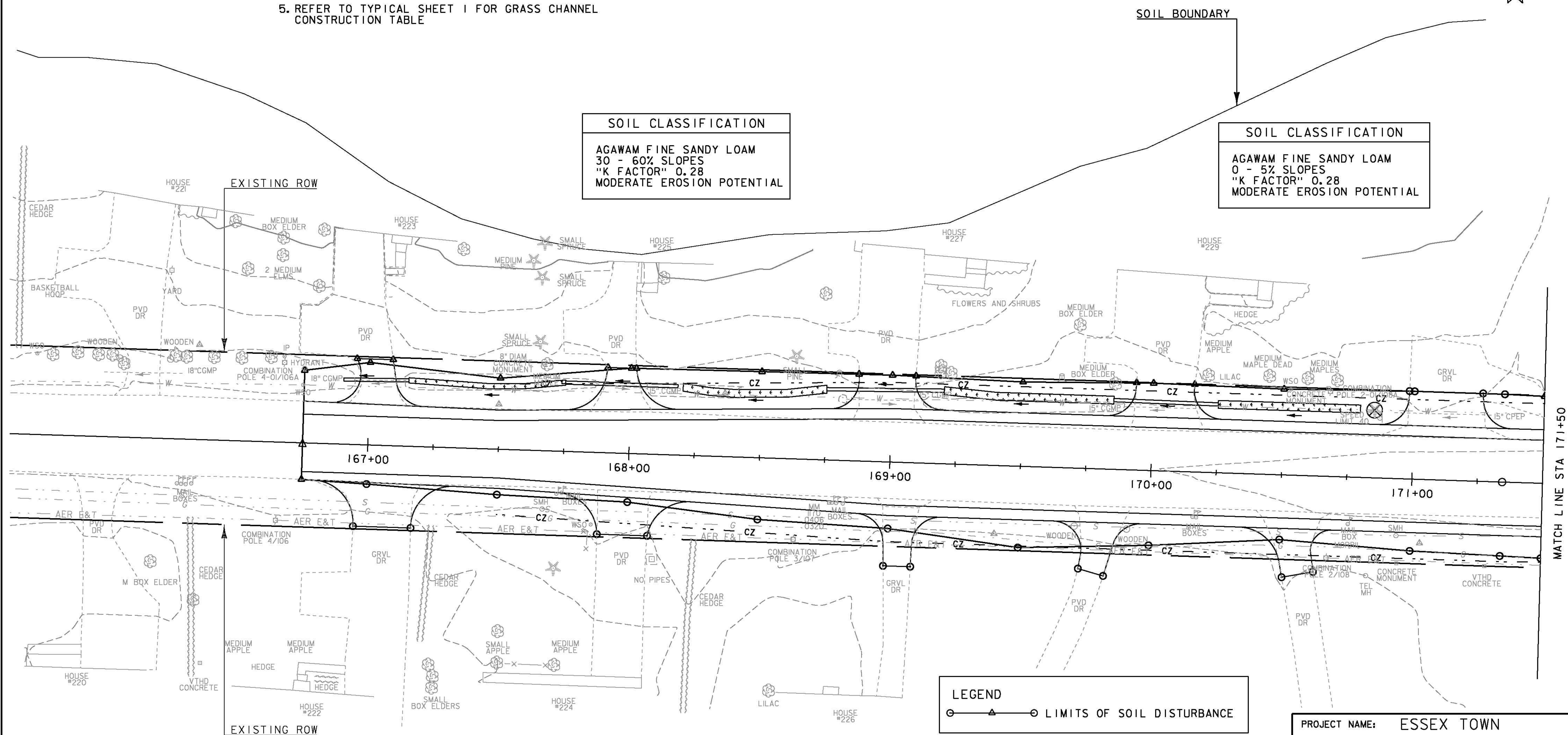


SOIL CLASSIFICATION

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

0 20 40
SCALE IN FEET

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

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

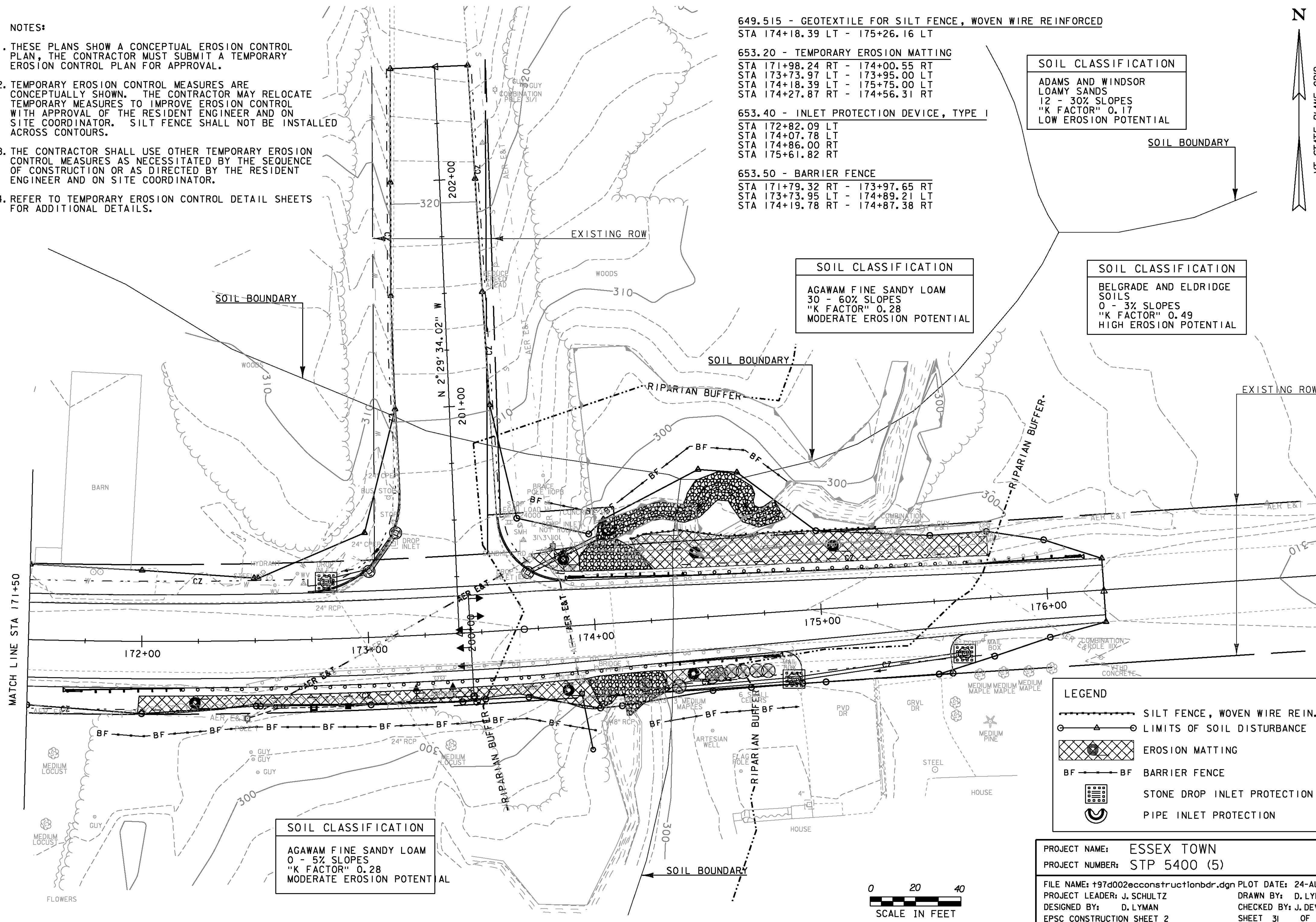
AGAWAM FINE SANDY LOAM
0 - 5% SLOPES
"K FACTOR" 0.28
MODERATE EROSION POTENTIAL

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: t97d002econstructionbdr.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

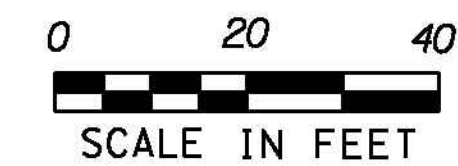
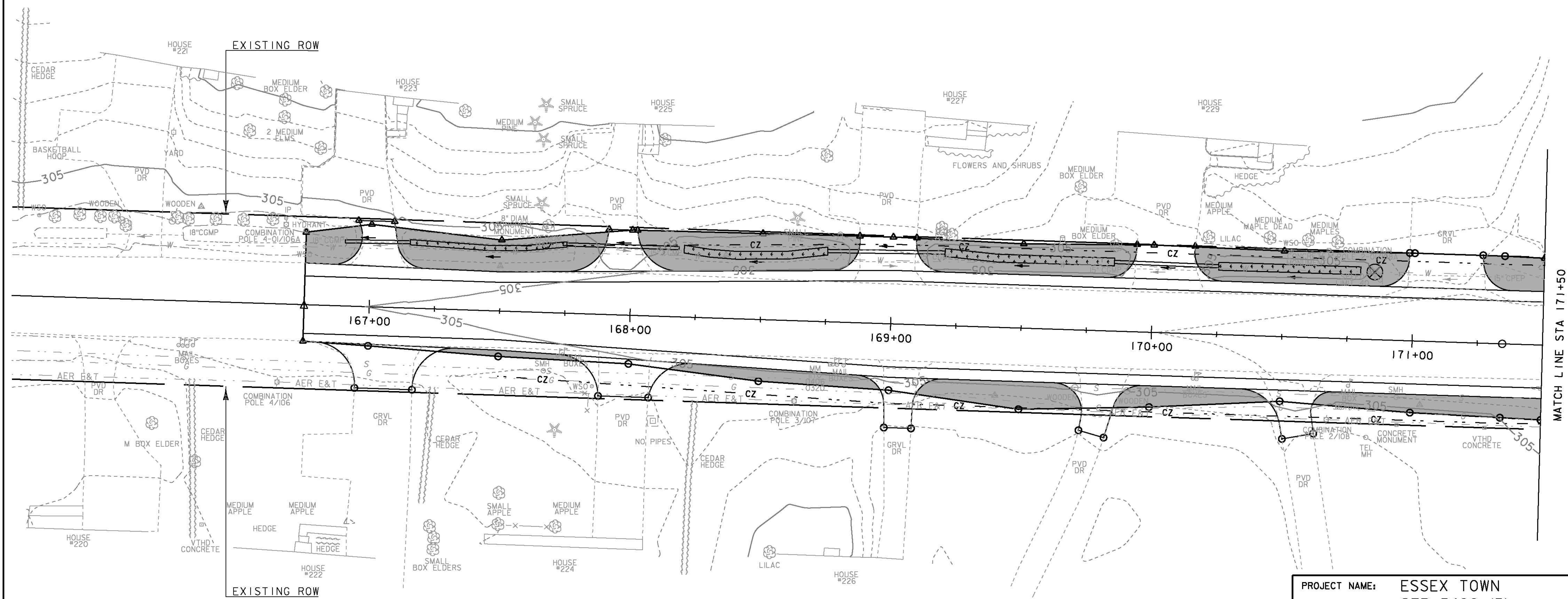
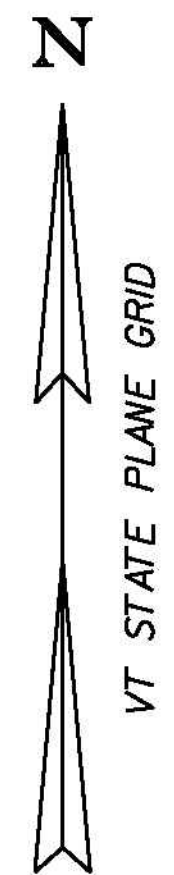


LEGEND

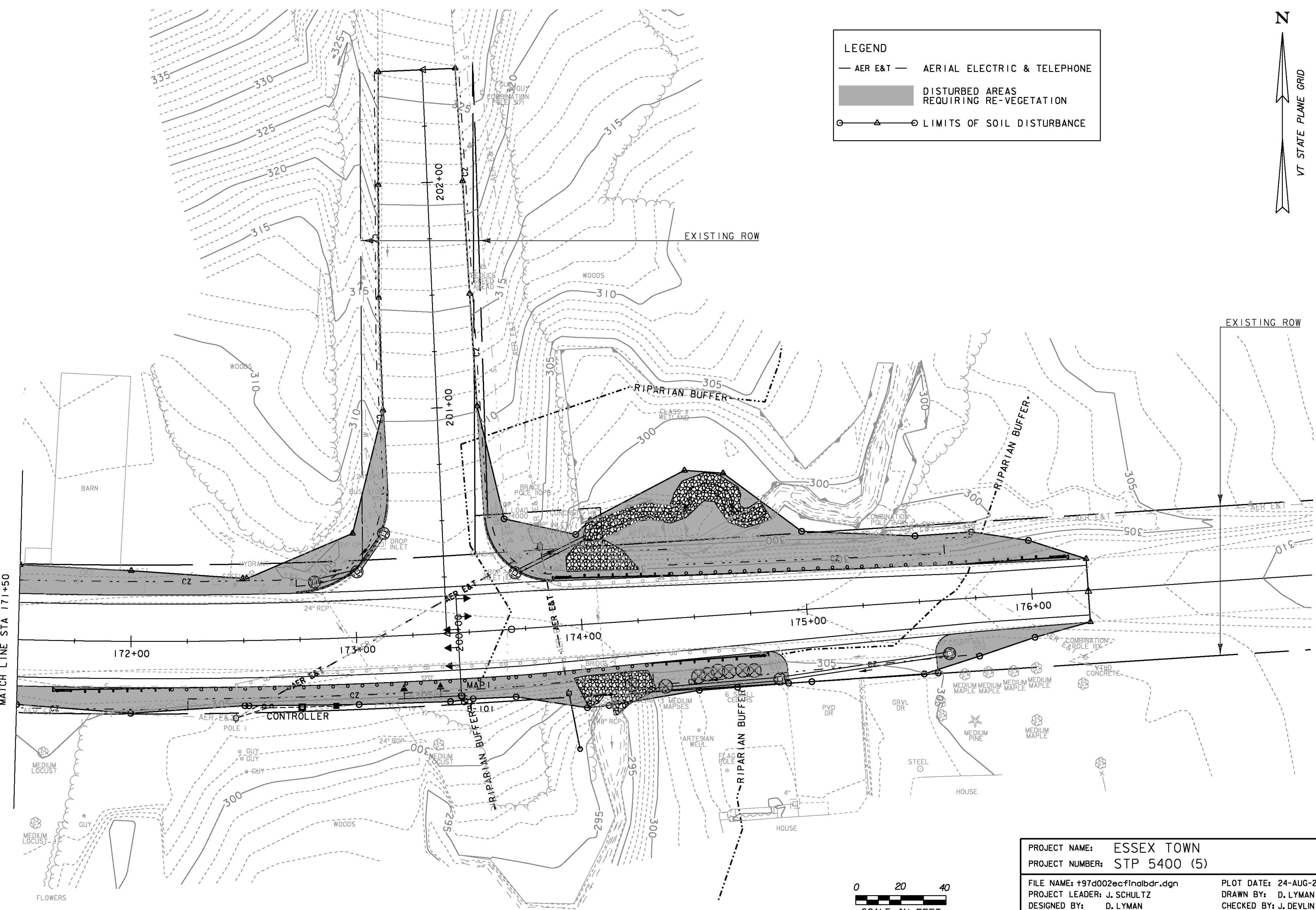
— AER E&T — AERIAL ELECTRIC & TELEPHONE

■ DISTURBED AREAS
REQUIRING RE-VEGETATION

○ — △ — ○ LIMITS OF SOIL DISTURBANCE

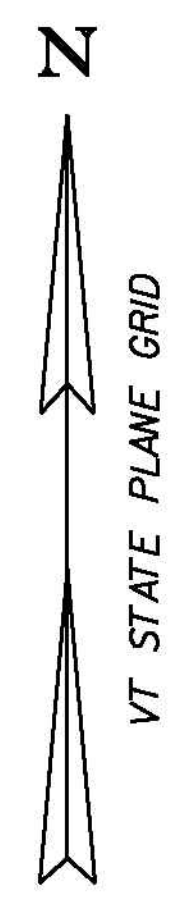


PROJECT NAME:	ESSEX TOWN	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	DRAWN BY:	D. LYMAN
FILE NAME:	+97d002ecf1nalbdr.dgn	CHECKED BY:	J. DEVLIN
PROJECT LEADER:	J. SCHULTZ	SHEET	32 OF 64
DESIGNED BY:	D. LYMAN		
EPSC FINAL CONDITIONS SHEET 1			

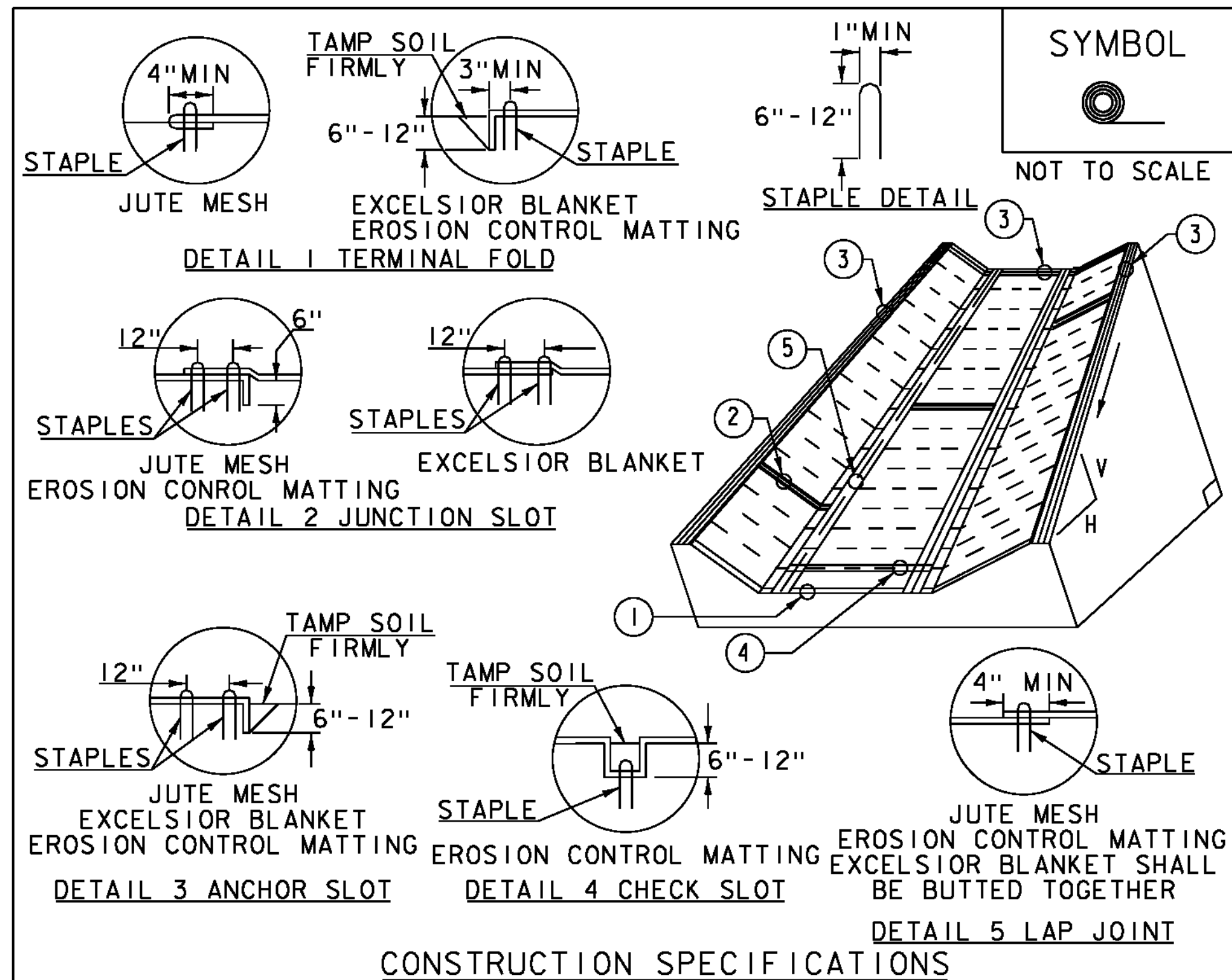


LEGEND

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



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



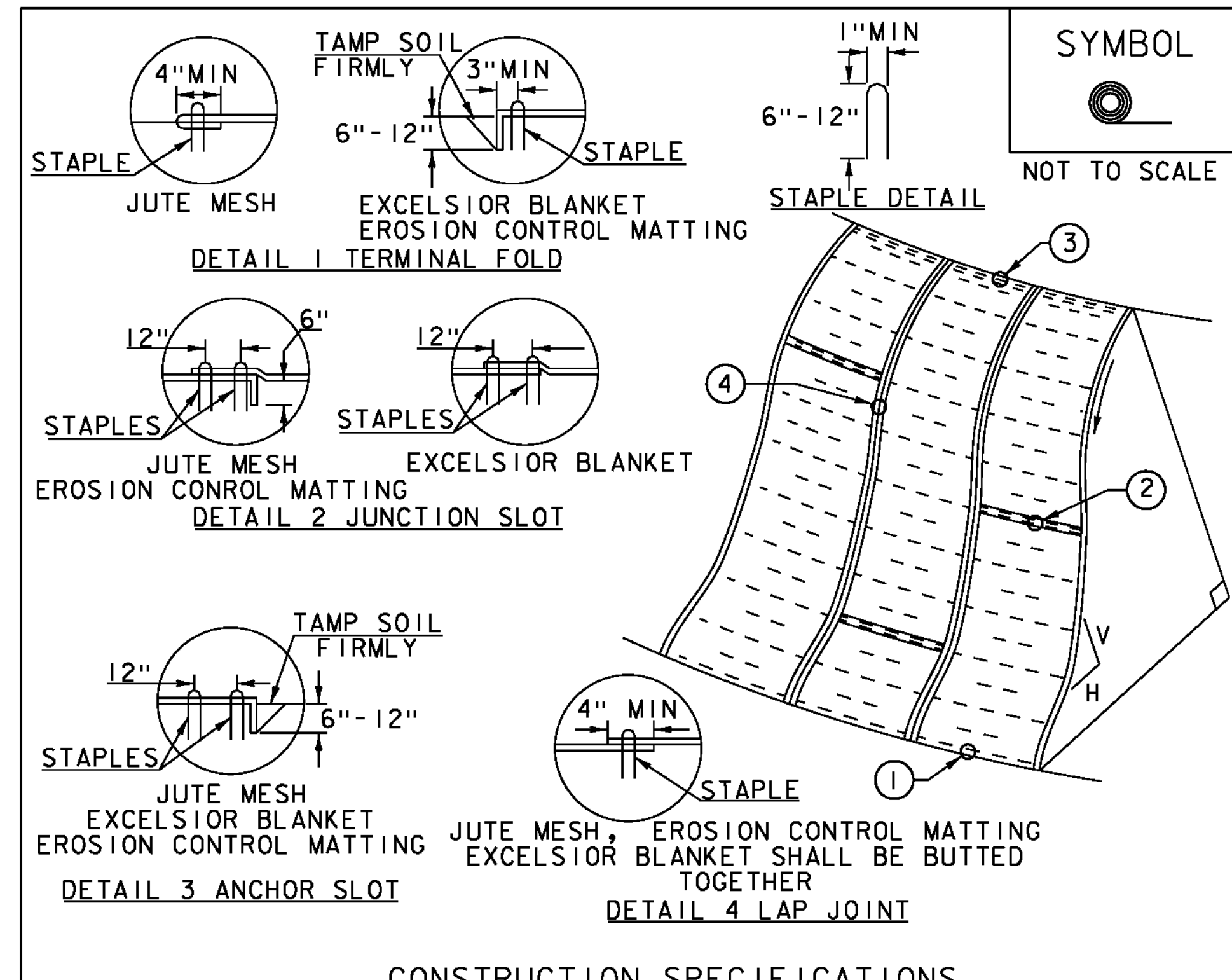
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO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

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

ROLLED EROSION
CONTROL PRODUCT
(RECP) DITCH

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

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



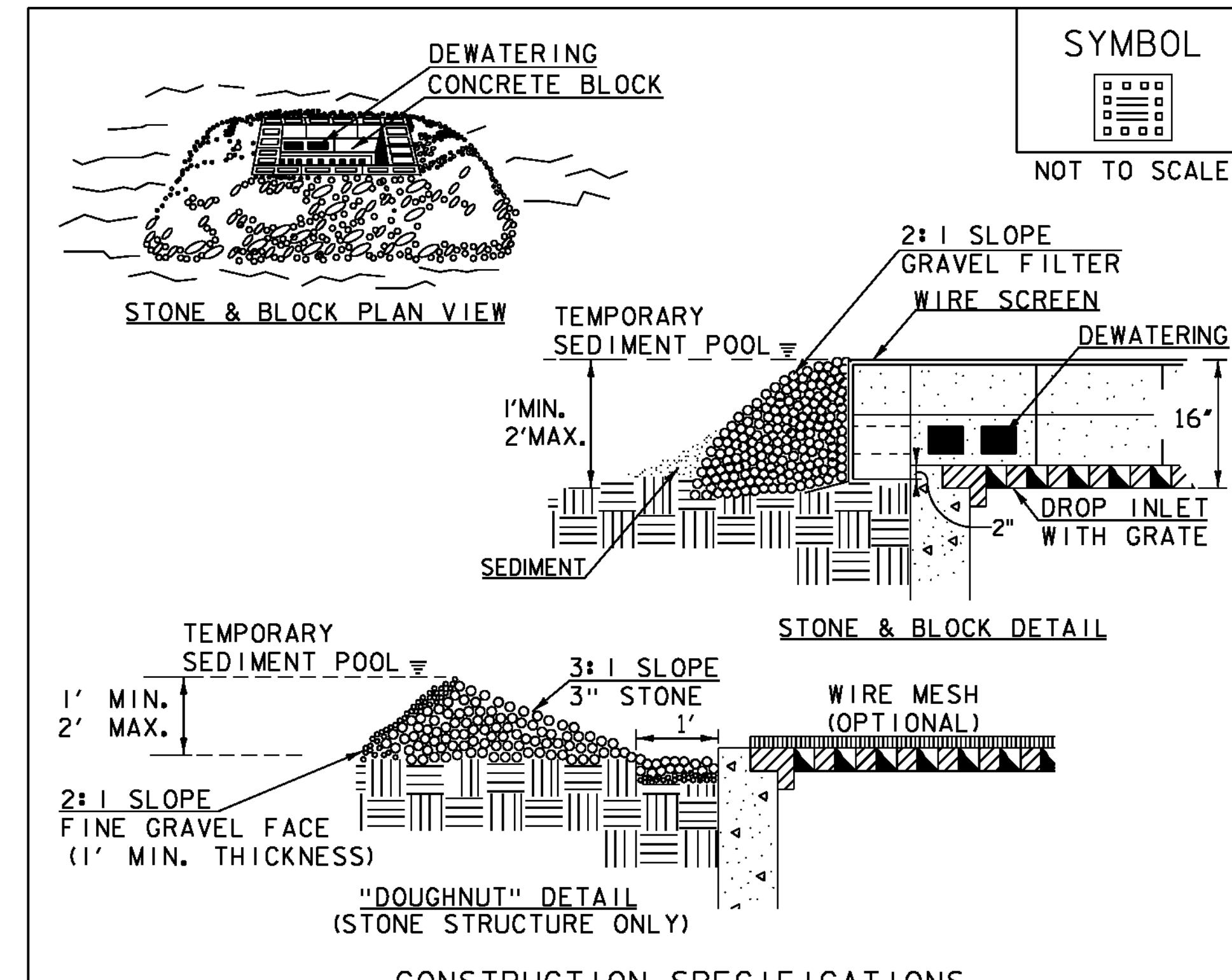
1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

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

ROLLED EROSION
CONTROL PRODUCT
(RECP) SIDE SLOPE

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

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF



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

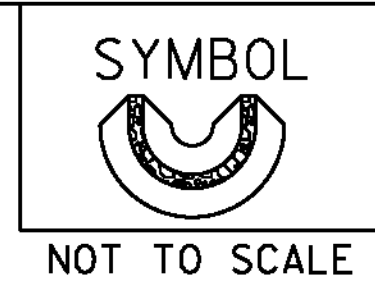
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR
EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM
THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL
GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH
SECTION 653 FOR INLET PROTECTION DEVICE, TYPE 1 (PAY
ITEM 653.40).

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 2009	WHF

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

FILE NAME: t97d002ecdeta1s.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
EPSC DETAILS SHEET 1

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 34 OF 64

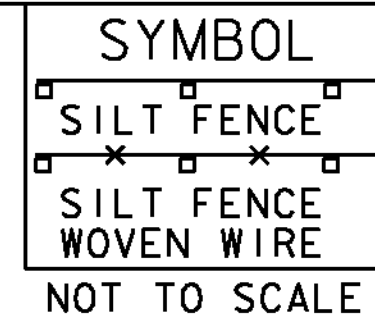


1. USE 2" TO 3" STONE. FILTERING STONE SHALL BE 3/4".
2. PLACE STONE OVER GEOTEXTILE.
3. ONCE THE AREAS UPSTREAM FROM THE CHECK DAM ARE STABILIZED WITH VEGETATION, THE SEDIMENT TRAPPED BEHIND THE DAM SHALL BE DISPOSED OF IN AN APPROVED WASTE AREA.
4. THE CHECK DAM(S) SHALL BE FLATTENED AND GRADED IN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

PIPE INLET PROTECTION

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

REVISIONS	
MARCH 6, 2008	WHF
JANUARY 13, 2009	WHF



1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

SILT FENCE

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).

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

VAOT RURAL AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
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					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
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			

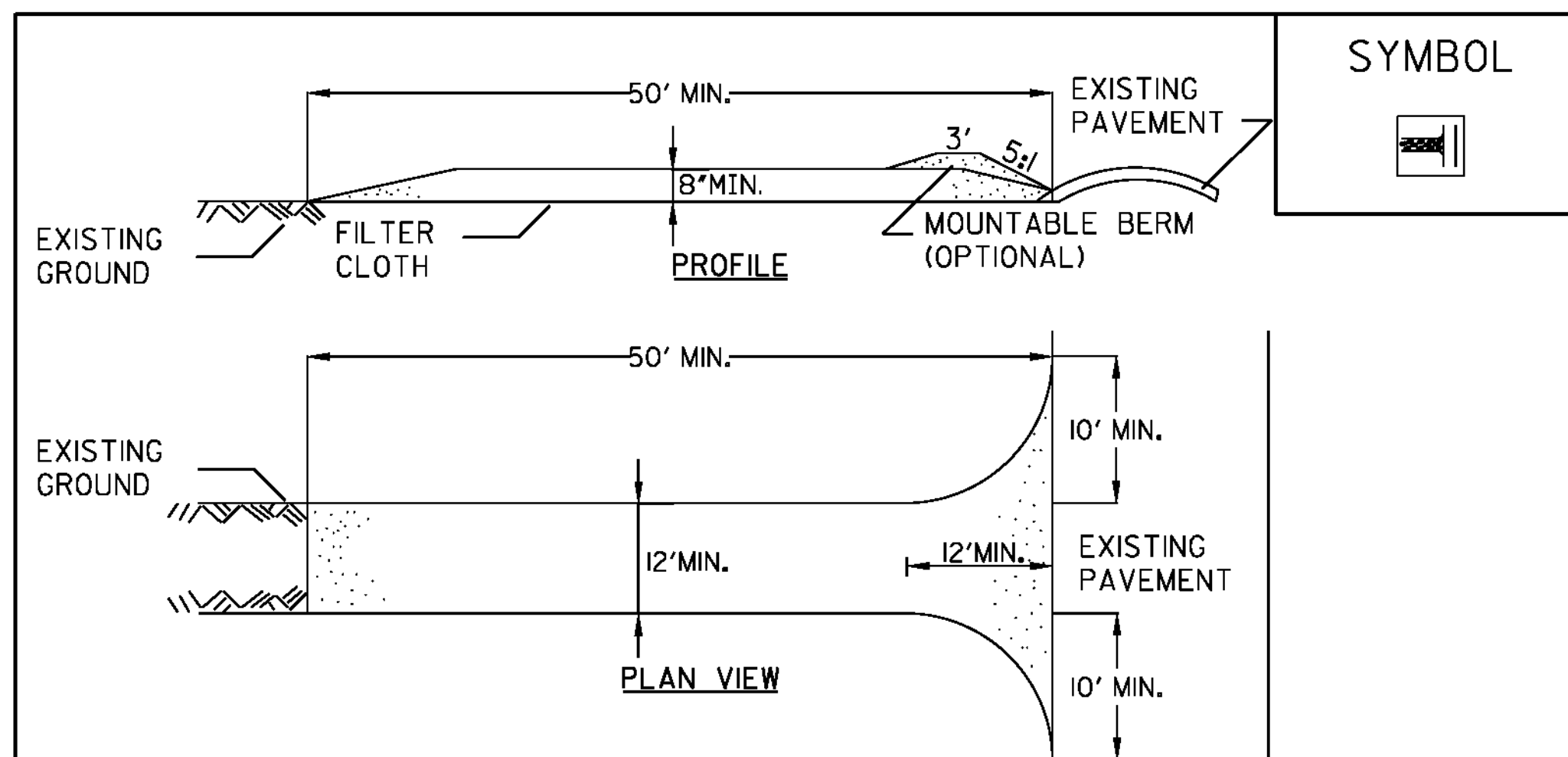
SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	<i>FOLLOW</i>	PELLETIZED	<i>FOLLOW</i>
500 LBS/AC	<i>MANUFACTURER</i>	2 TONS/AC	<i>MANUFACTURER</i>

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. 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
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

Turf Establishment

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

FILE NAME: +97d002ecdeta11s.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 2	SHEET 35 OF 64



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.

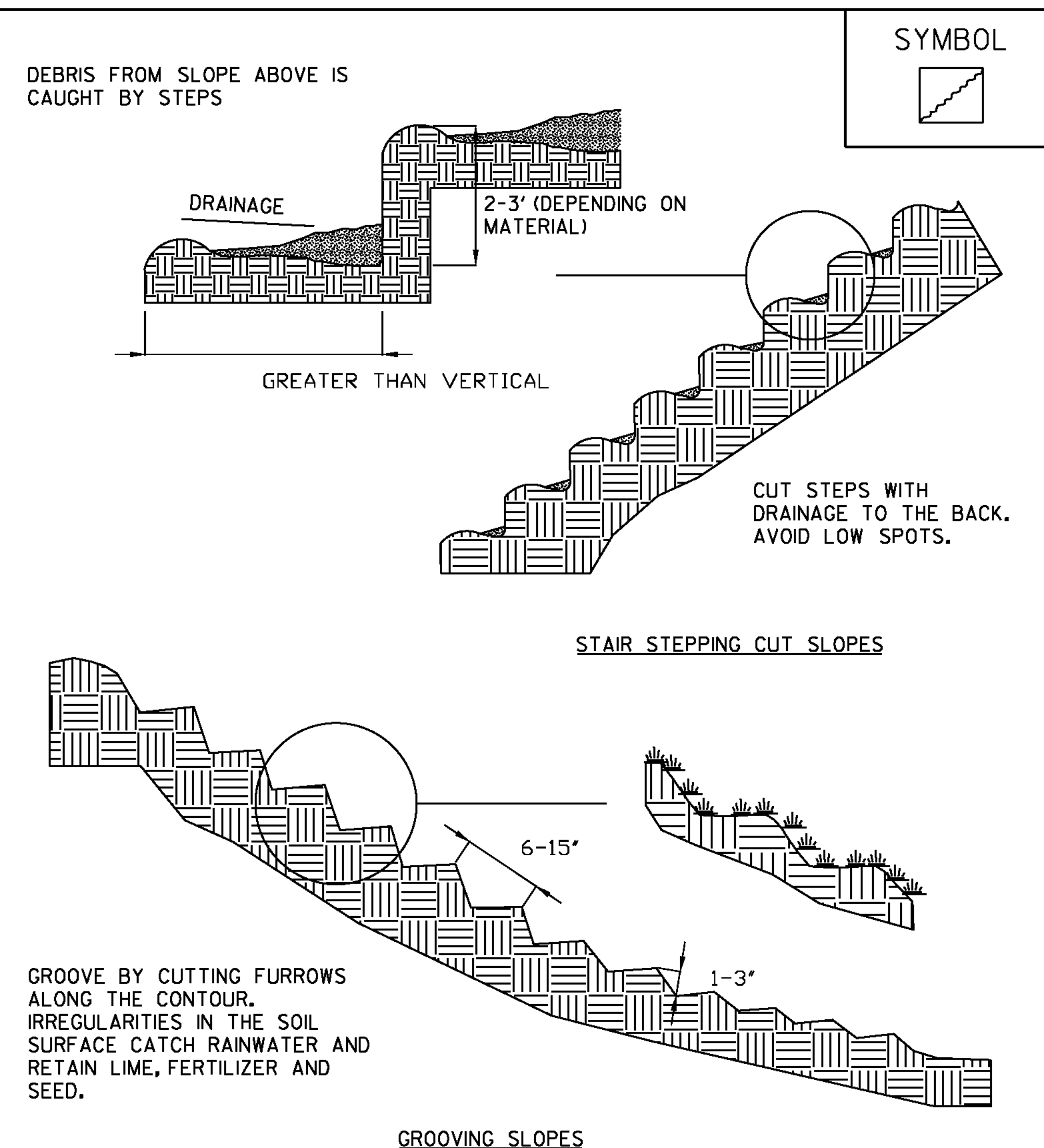
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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



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

SURFACE ROUGHENING
DETAILS

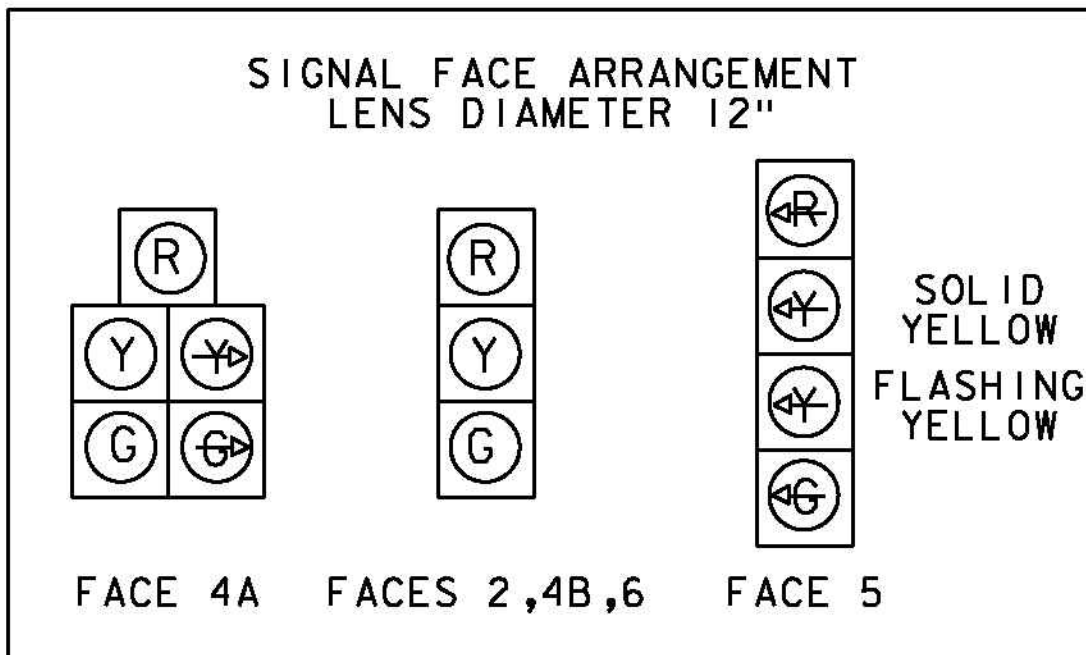
NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION
PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF
NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS ITEM SHALL BE CONSIDERED INCIDENTAL TO THE MATERIAL ITEM SPECIFIED

PROJECT NAME:	ESSEX TOWN
PROJECT NUMBER:	STP 5400 (5)
FILE NAME: t97d002ecdetails.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 3	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 (MAPI)	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

CONTROLLER TIMING CHART

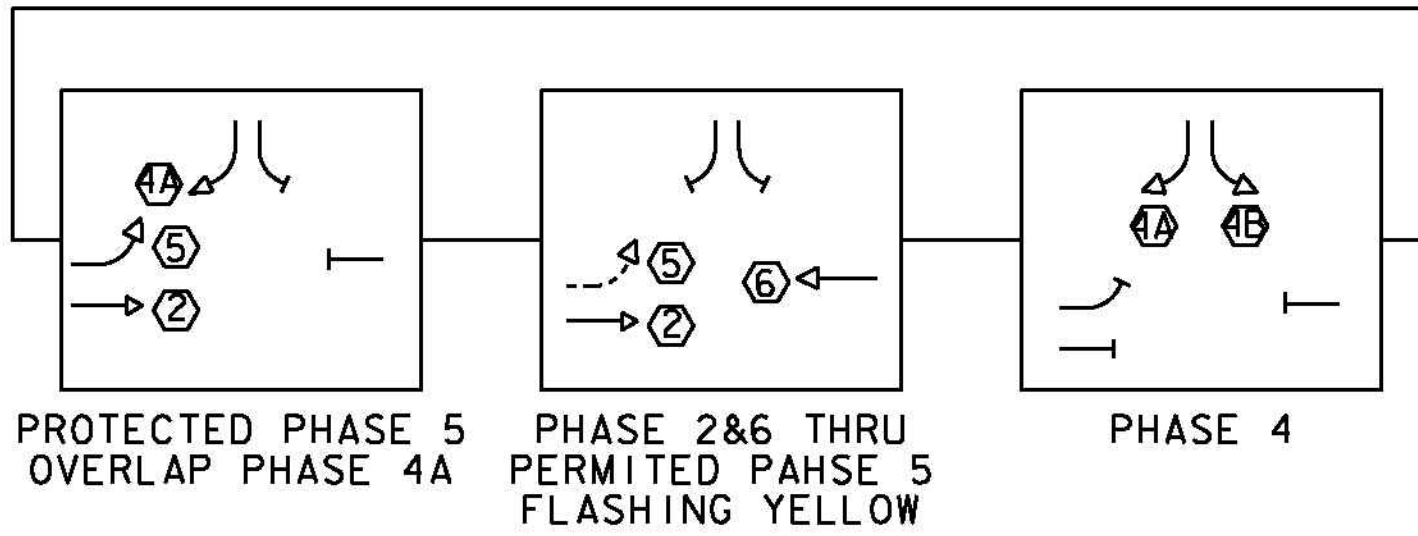
VT ROUTE I17 & SAND HILL ROAD (TH*4)	VTI17	SH	VTI17	VTI17			
PHASE	1	2	3	4	5	6	7
TRAFFIC MOVEMENT	->	->	->	->	->	->	->
MINIMUM GREEN	8	5	5	8			
MAXIMUM 1 GREEN	39	9	7	26			
MAXIMUM 2 GREEN	32	16	5	21			
MAXIMUM 3 GREEN	42	6	5	31			
YELLOW CLEARANCE	4	4	4	4			
ALL RED CLEARANCE	2	2	2	2			
VEH. EXTENSION	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

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 MAPI	62'		SIGNAL/LIGHTING
JBI TO MAPI	62'		VIDEO
MAPI STUB (OPPOSITE SIDE)	5'		FUTURE USE
SUBTOTALS	195'	81'	
ROUNDING	5'	4'	
TOTALS	200'	85'	

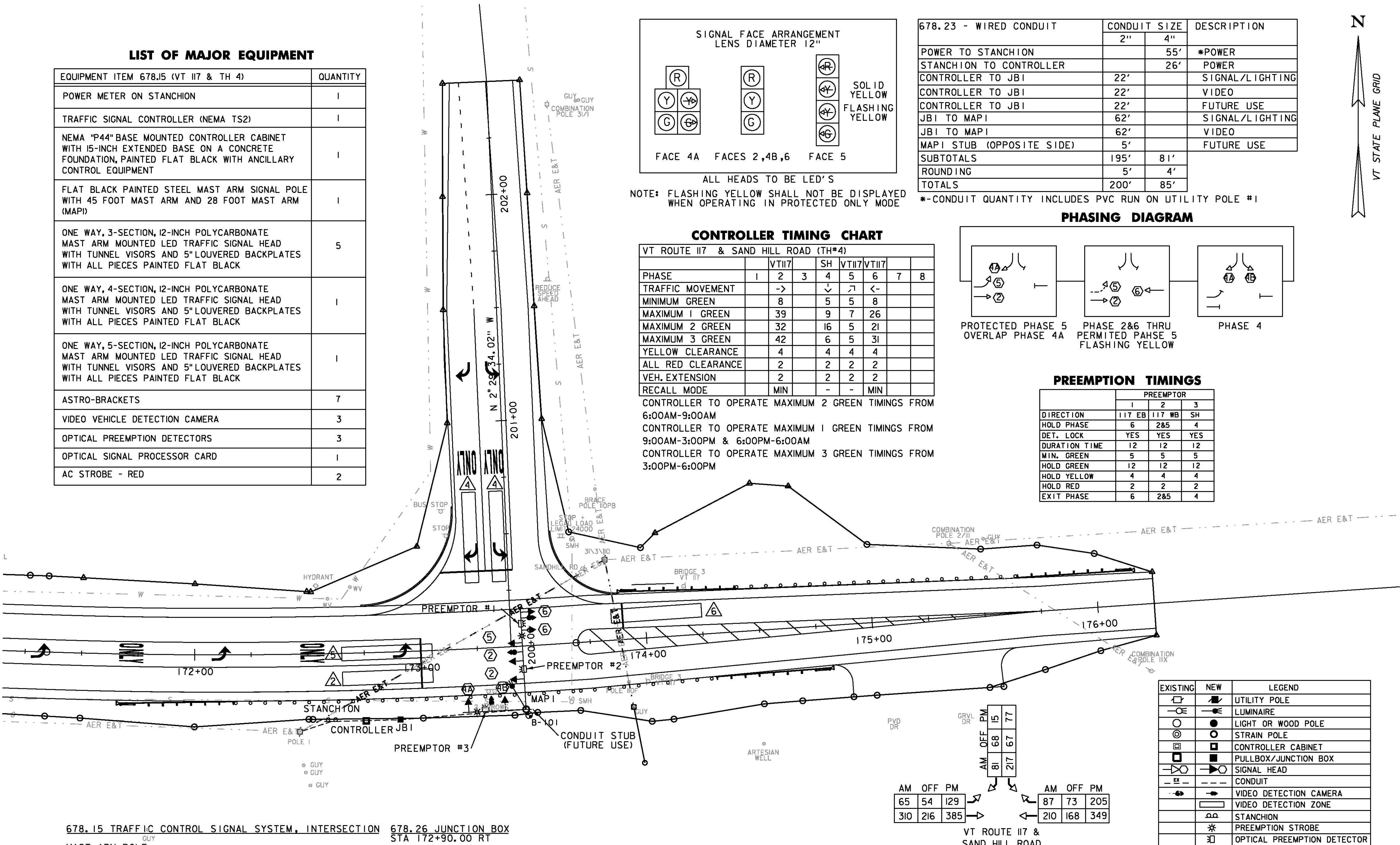
*-CONDUIT QUANTITY INCLUDES PVC RUN ON UTILITY POLE #1

PHASING DIAGRAM



PREEMPTION TIMINGS

	PREEMPTOR		
	1	2	3
DIRECTION	I17 EB	I17 WB	SH
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

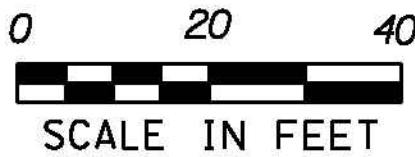


678.15 TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION
MAST ARM POLE
STA 173+45.00 RT (28.00' RT)
CABINET/CONTROLLER
STA 172+75.00 RT (30.00' RT)
POWER STANCHION
STA 172+60.00 RT (30.00' RT)

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

AM	OFF	PM
65	54	129
310	216	385

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 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.

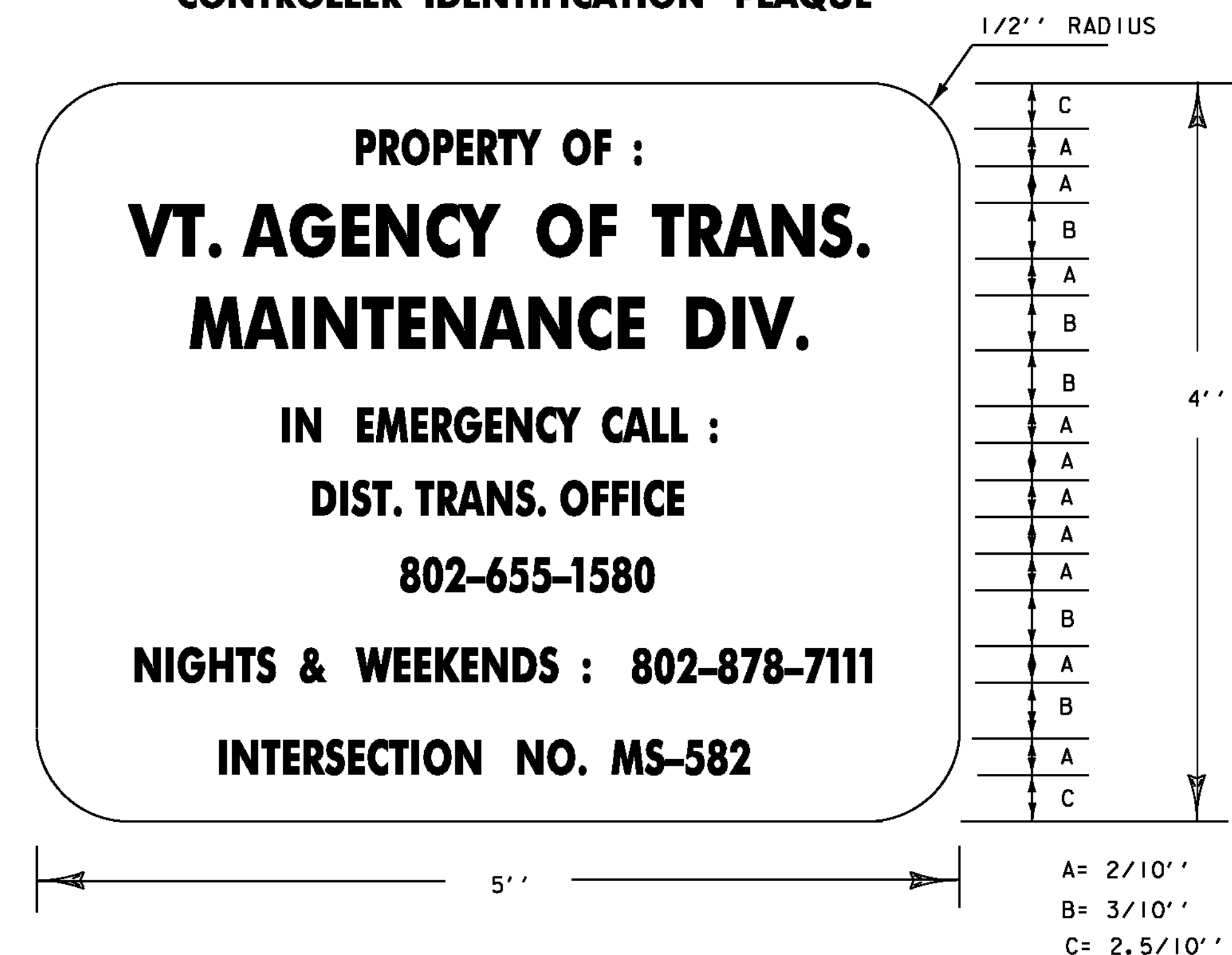
F. MAST ARM FOUNDATIONS

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	PLOT DATE: 24-AUG-2012
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DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
TRAFFIC SIGNAL NOTES	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
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002traf.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
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

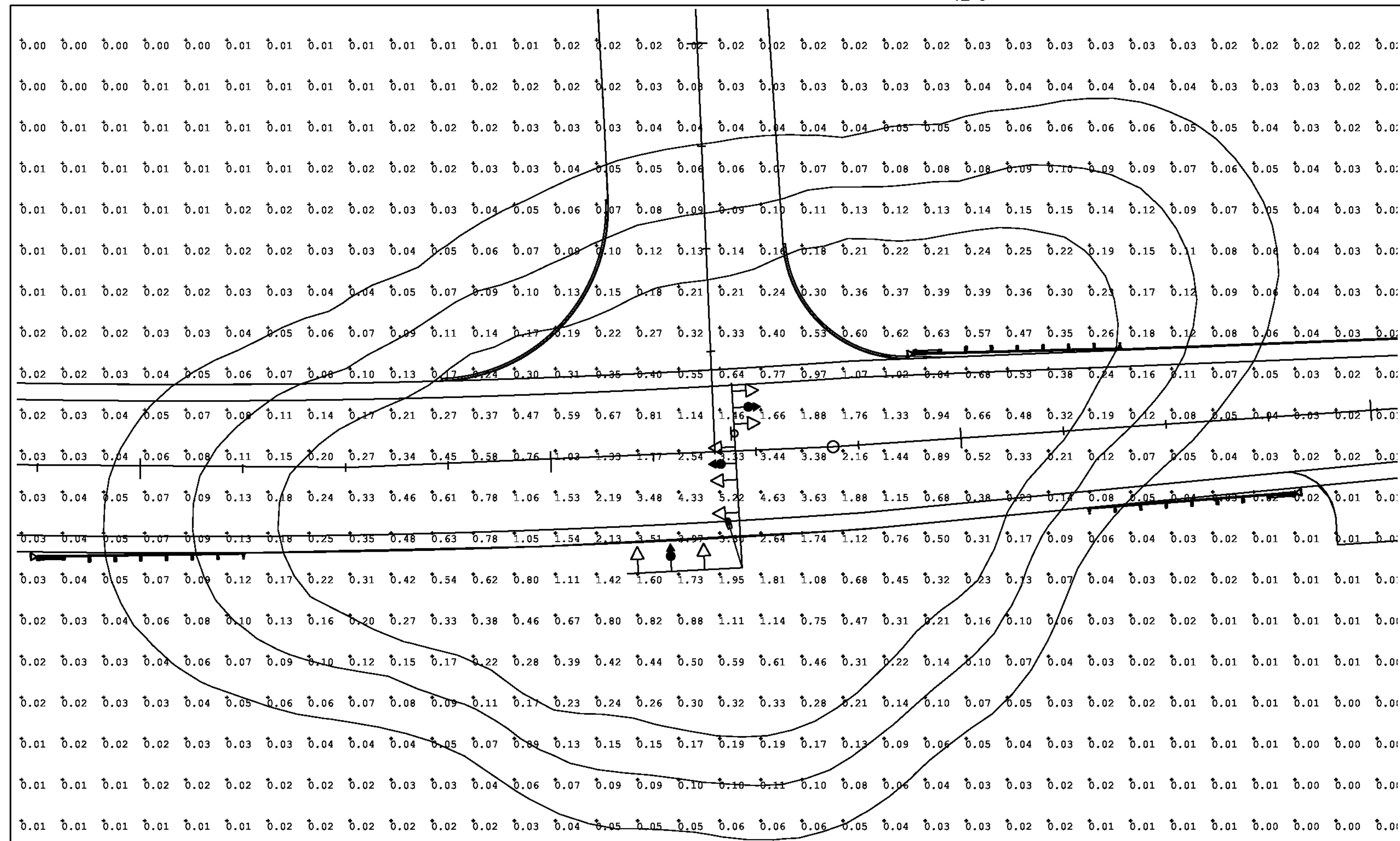
ALL CONDUIT MUST INCLUDE A GROUNDING CONDUCTOR. RIGID STEEL CONDUIT SHALL BE PROPERLY CONNECTED AT THE JOINTS SO AS TO BE WATERTIGHT AND MAINTAIN ELECTRICAL CONTINUITY AND HAVE GROUNDING BUSHINGS SO AS TO ACT AS A GROUNDING CONDUCTOR. ALUMINUM WIRE SHALL NOT BE USED FOR GROUND WIRE.

GENERAL

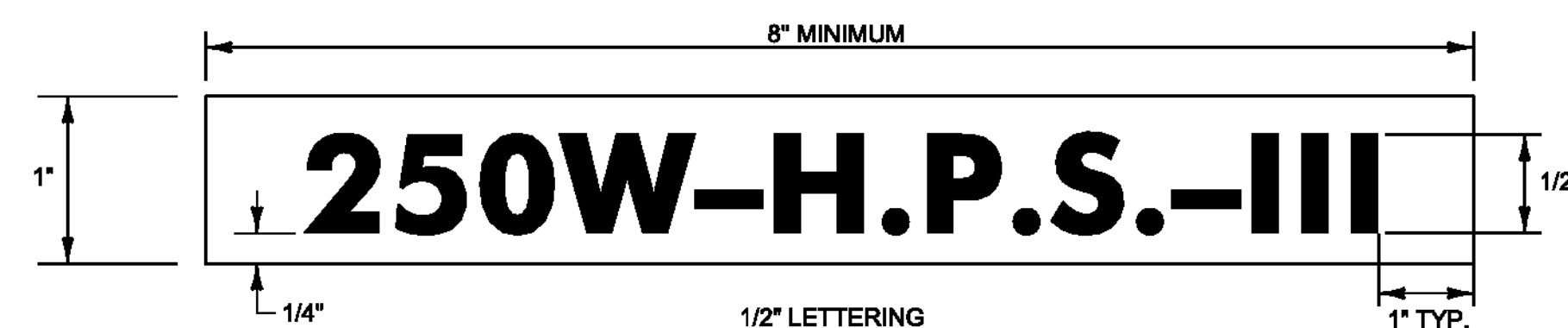
THE LOAD ON EACH BRANCH OF A THREE WIRE CIRCUIT SHALL BE AS BALANCED AS POSSIBLE. LOAD TO NEUTRAL.

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.

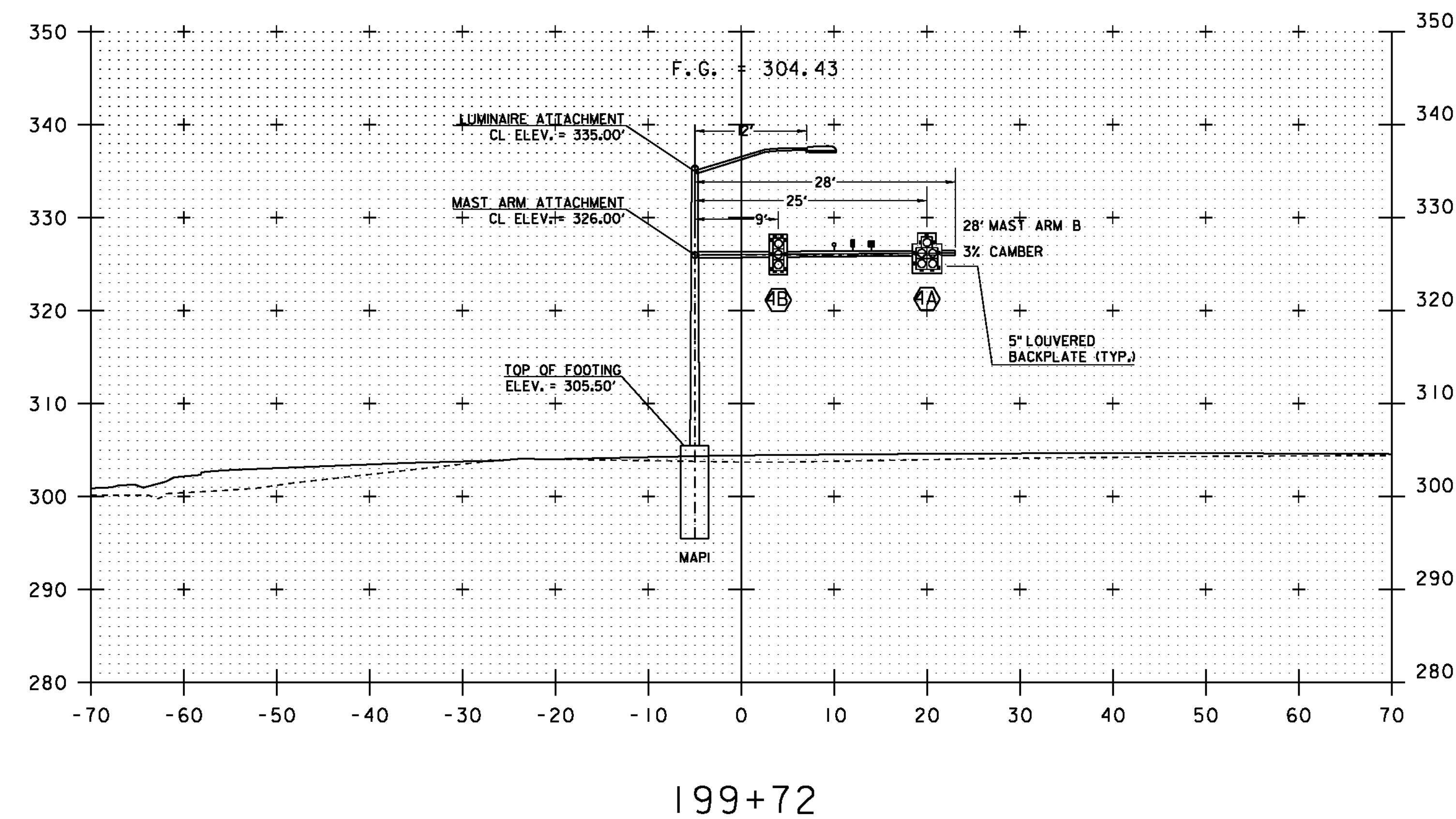
DETAIL FOR TAGS ATTACHED TO STREET LIGHT POLES

NOT TO SCALE

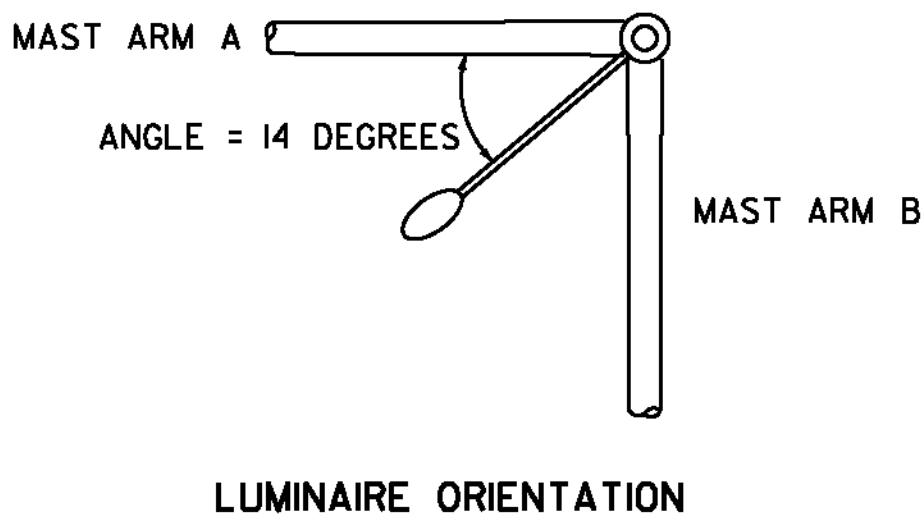
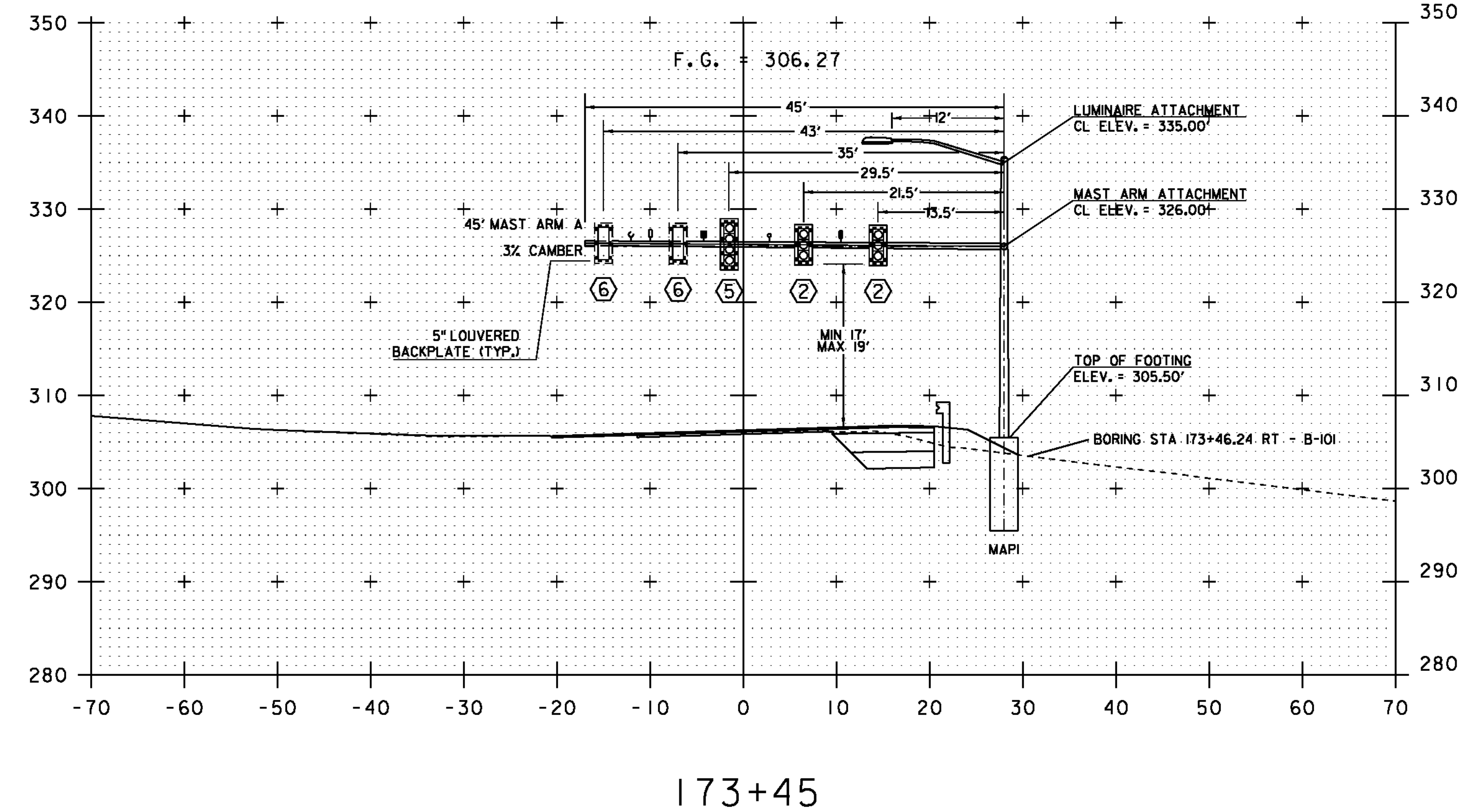
PROJECT NAME:	ESSEX TOWN
PROJECT NUMBER:	STP 5400 (5)

FILE NAME: t97d002traf.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: M. LACROIX
DESIGNED BY: M. LACROIX	CHECKED BY: J. DEVLIN
STREET LIGHTING PLAN AND NOTES	SHEET 40 OF 64

MAST ARM #2
LOOKING SOUTH ON
SAND HILL ROAD

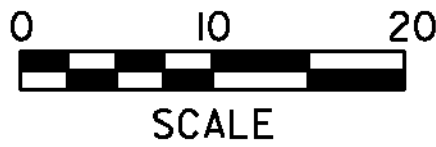


MAST ARM #1
LOOKING EAST ON
VT 117



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

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

<u>R.O.D. (%)</u>	<u>ROCK DESCRIPTION</u>
<25	VERY POOR
25 to 50	POOR
51 to 75	FAIR
76 to 90	GOOD
>90	EXCELLENT

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

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

▼	WATER ELEVATION
STANDARD	STANDARD PENETRATION BORING
OS	AUGER BORING
S	ROD SOUNDING
N	SAMPLE
	STANDARD PENETRATION TEST
	BLOW COUNT PER FOOT FOR:
	2" O.D. SAMPLER
	1 3/8" I.D. SAMPLER
	HAMMER WEIGHT OF 140 LBS.
	HAMMER FALL OF 30"
VS	FIELD VANE SHEAR TEST
US	UNDISTURBED SOIL SAMPLE
B	BLAST
DC	DIAMOND CORE
MD	MUD DRILL
WA	WASH AHEAD
HSA	HOLLOW STEM AUGER
AX	CORE SIZE 1 1/8"
BX	CORE SIZE 1 5/8"
NX	CORE SIZE 2 7/8"
M	DOUBLE TUBE CORE BARREL USED
L	LIQUID LIMIT
PL	PLASTIC LIMIT
PI	PLASTICITY INDEX
NP	NON PLASTIC
D	MOISTURE CONTENT (DRY WGT. BASIS)
M	DRY
D	MOIST
MTW	MOIST TO WET
W	WET
SAT	SATURATED
BO	BOULDER
GR	GRAVEL
SA	SAND
SI	SILT
CL	CLAY
HP	HARDPAN
LE	LEDGE
NLTD	NO LEDGE TO DEPTH
CNPF	CAN NOT PENETRATE FURTHER
TLOB	TO LEDGE OR BOULDER
NR	NO RECOVERY
REC	RECOVERY
%REC.	PERCENT RECOVERY
ROD	ROCK QUALITY DESIGNATION
CBR	CALIFORNIA BEARING RATIO
<	LESS THAN
>	GREATER THAN
R	REFUSAL (>100)

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	mitc	MULTICOLORED
or	ORANGE		



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

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 RIG: LAG TRACK RIG w/AUTO HAMMER
BORING TYPE: HOLLOW STEM AUGER
SAMPLE TYPE: SPLIT BARREL
CHECKED BY: CAA

DEPTH (ft)	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. (%)	GRAVEL (%)	SAND (%)	FINES (%)	LL (%)	PI (%)
5		A-2-4, SiSa, brn, Moist, Rec. = 1.0 ft	16	8.6	13.6	65.7	20.7	16	4
		Field Note, No Recovery, Stone in end of sampler	6						
		A-3, Sa, brn, Moist, Rec. = 1.6 ft	5	7.2	1.8	91.5	6.7		
10		A-3, Sa, brn, Moist, Rec. = 1.6 ft	7	8.4	1.3	89.4	9.3		
		A-2-4, Sa, gry, Moist, Rec. = 1.5 ft	8	9.9	2.3	79.1	18.6		
		A-2-4, SiSa, gry, Moist, Rec. = 1.4 ft	9	15.8	2.0	68.2	29.8		
		A-2-4, Sa, gry, Wet, Rec. = 1.3 ft	8	23.1	1.1	86.1	12.8		
		A-2-4, SiSa, brn, Wet, Rec. = 1.3 ft	7	23.4	2.2	76.7	21.1		
15		A-3, Sa, brn, Wet, Rec. = 2.0 ft	6	22.2	1.5	94.1	4.4		
		A-3, Sa, brn, Wet, Rec. = 2.0 ft	6	26.1	0.2	97.5	2.3		
		A-1-b, Sa, brn, Wet, Rec. = 0.7 ft	3	23.5	9.5	84.4	6.1		
		Field Note, Tough drilling in Cobbles and gravel material at 22.5 ft.							
25		A-3, Sa, brn, Wet, Rec. = 0.5 ft	11	20.0	5.6	90.8	3.6		
		A-4, SaSi (HP), gry, Moist, Rec. = 1.3 ft		10.1	18.9	29.2	51.9		
		A-1-b, GrSa, gry, Wet, Rec. = 1.1 ft	39	14.1	32.4	54.5	13.1		
30		Hole stopped @ 32.0 ft							
		DRILLER'S NOTE: 1. Possible water table at 12.0 ft							

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

1. THE SUBSURFACE EXPLORATIONS SHOWN HEREIN WAS MADE ON AUGUST 10, 2007 BY THE AGENCY.
2. SOIL AND ROCK CLASSIFICATIONS, PROPERTIES AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION FROM AVAILABLE SUBSURFACE INFORMATION BY THE AGENCY AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
3. OBSERVED WATER LEVELS AND/OR CONDITIONS INDICATED ARE AS RECORDED AT THE TIME OF EXPLORATION AND MAY VARY ACCORDING TO THE PREVAILING RAINFALL, METHODS OF EXPLORATION AND OTHER FACTORS.
4. ENGINEERING 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.

BEDROCK (LEDGE) - ROCK IN ITS NATIVE LOCATION OF INDEFINITE THICKNESS.
BOULDER - A ROCK FRAGMENT WITH AN AVERAGE DIMENSION >12 INCHES.
COBBLE - ROCK FRAGMENTS WITH AN AVERAGE DIMENSION BETWEEN 3 AND 12 INCHES.
GRAVEL - ROUNDED PARTICLES OF ROCK $<3"$ AND $> 0.075"$ (*10 SIEVE).
SAND - PARTICLES OF ROCK $< 0.075"$ (*10 SIEVE) AND $> 0.0025"$ (*200 SIEVE).
SILT - SOIL $< 0.0025"$ (*200 SIEVE), NON OR SLIGHTLY PLASTIC AND EXHIBITS NO STRENGTH WHEN AIR-DRIED.
CLAY - FINE GRAINED SOIL, EXHIBITS PLASTICITY WHEN MOIST AND CONSIDERABLE STRENGTH WHEN AIR-DRIED.
VARVED - ALTERNATE LAYERS OF SILT AND CLAY.
HARDPAN - EXTREMELY DENSE SOIL, CEMENTED LAYER, NOT SOFTENED WHEN WET.
MUCK - SOFT ORGANIC SOIL (CONTAINING $> 10\%$ ORGANIC MATERIAL).
MOISTURE CONTENT - WEIGHT OF WATER DIVIDED BY DRY WEIGHT OF SOIL.
FLOWING SAND - GRANULAR SOIL SO SATURATED (LOOSE) THAT IT FLOWS INTO DRILL CASING DURING EXTRACTION OF WASH ROD.
STRIKE - ANGLE FROM MAGNETIC NORTH TO LINE OF INTERSECTION OF BED WITH A HORIZONTAL PLANE.
DIP - INCLINATION OF BED WITH A HORIZONTAL PLANE.

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

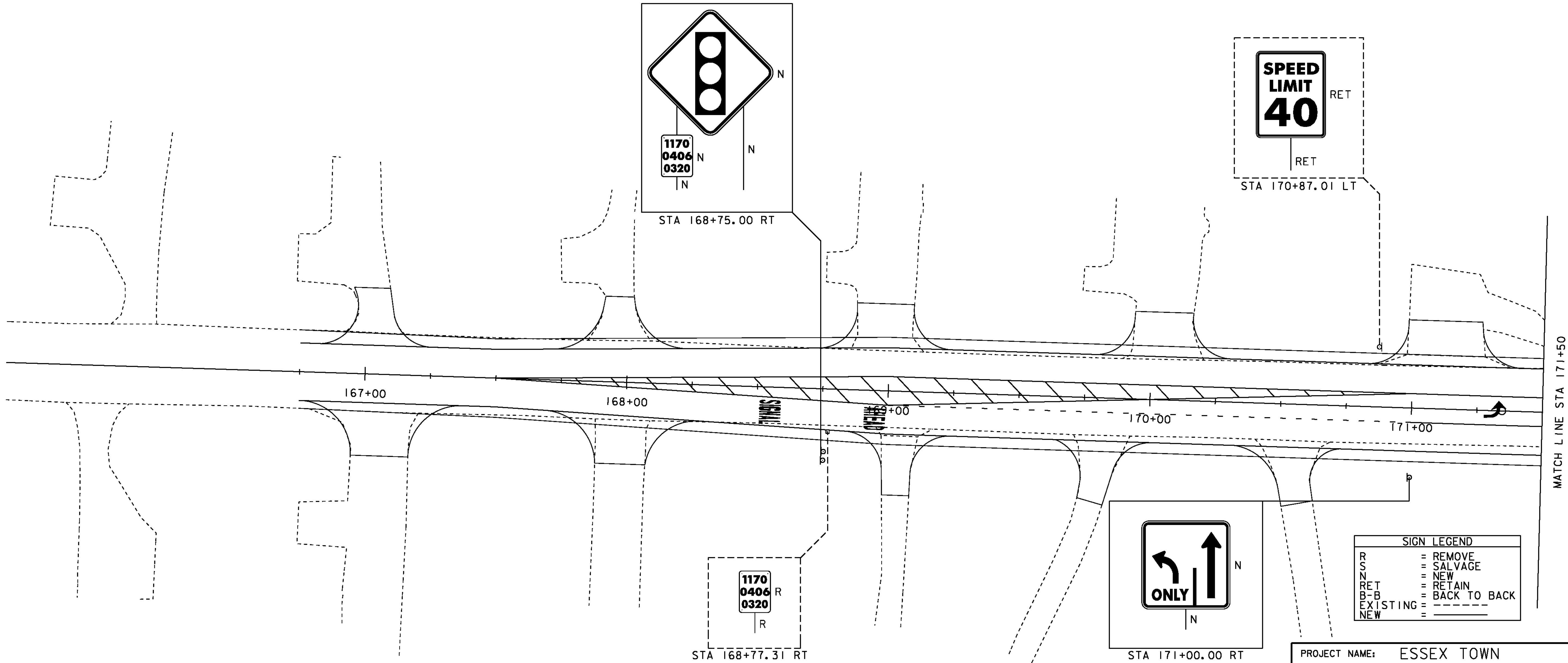
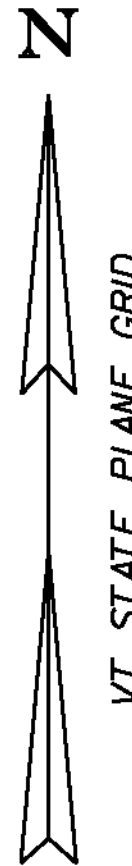
646.456 - DURABLE 8" YELLOW LINE, RECESSED POLYUREA
STA 167+80.25 LT - 167+82.56 RT (SOLID-DIAGONAL)
STA 167+93.90 LT - 167+97.24 RT (SOLID-DIAGONAL)
STA 168+07.54 LT - 168+11.92 RT (SOLID-DIAGONAL)
STA 168+21.18 LT - 168+26.60 RT (SOLID-DIAGONAL)
STA 168+34.82 LT - 168+41.28 RT (SOLID-DIAGONAL)
STA 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



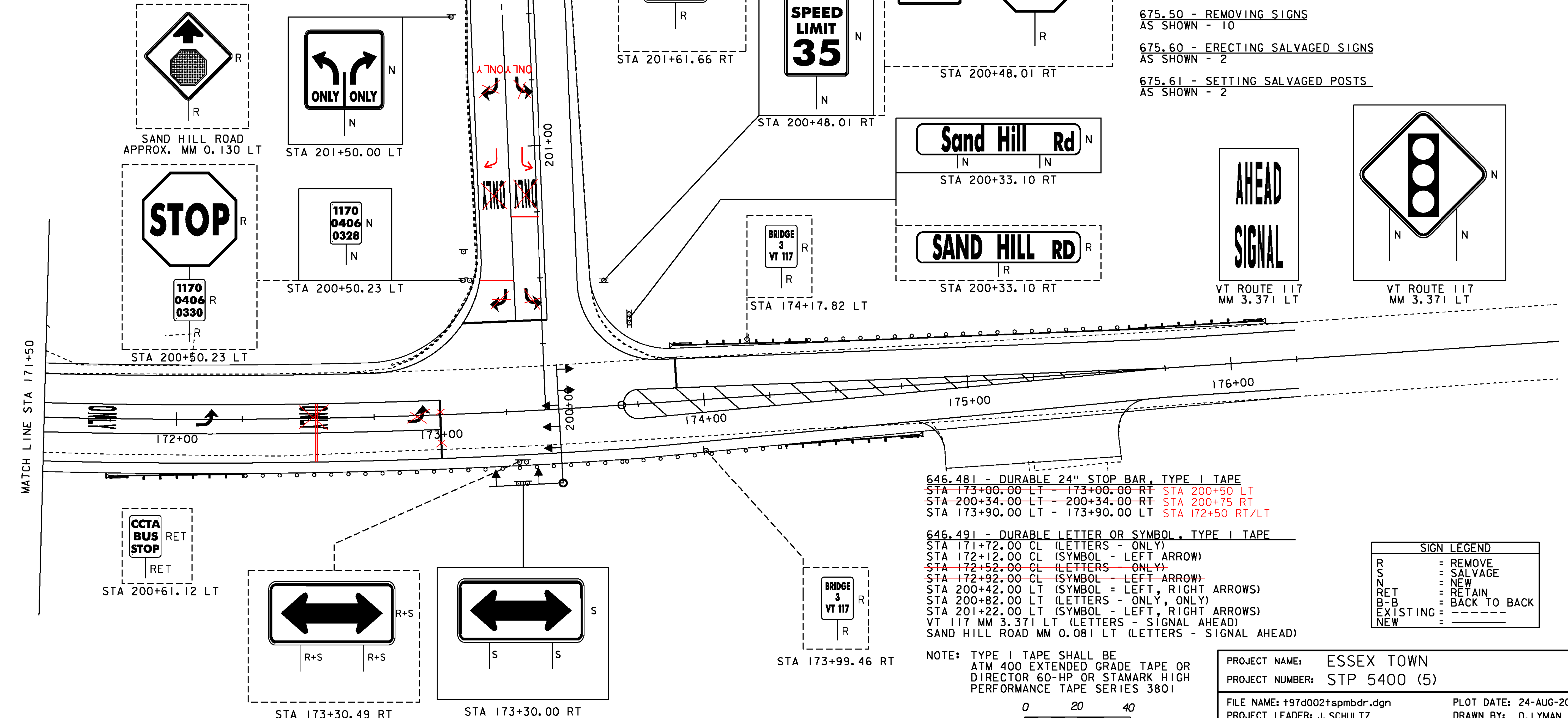
0 20 40
SCALE IN FEET

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

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

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

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



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

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

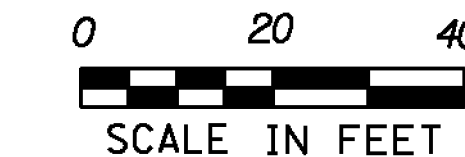
646.481 - DURABLE 24" STOP BAR, TYPE I TAPE
~~STA 173+00.00 LT - 173+00.00 RT~~ STA 200+50 LT
~~STA 200+34.00 LT - 200+34.00 RT~~ STA 200+75 RT
~~STA 173+90.00 LT - 173+90.00 LT~~ STA 172+50 RT/LT

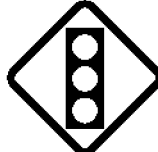
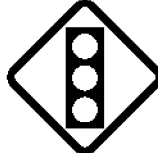
646.491 - DURABLE LETTER OR SYMBOL, TYPE I TAPE
STA 171+72.00 CL (LETTERS - ONLY)
STA 172+12.00 CL (SYMBOL - LEFT ARROW)
~~STA 172+52.00 CL (LETTERS - ONLY)~~
~~STA 172+92.00 CL (SYMBOL - LEFT ARROW)~~
STA 200+42.00 LT (SYMBOL = LEFT, RIGHT ARROWS)
STA 200+82.00 LT (LETTERS - ONLY, ONLY)
STA 201+22.00 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	= _____

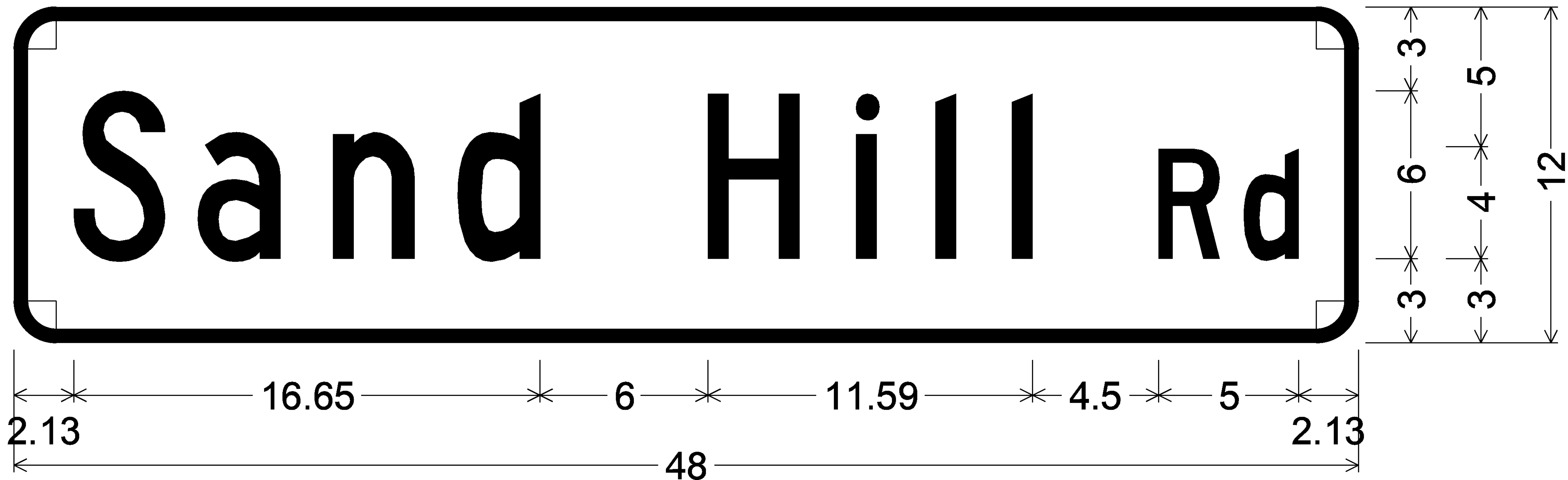
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)
FILE NAME: +97d002+spmbdr.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
TSPM LAYOUT SHEET 2
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 45 OF 64



STATE OF VERMONT AGENCY OF TRANSPORTATION				TRAFFIC SIGN SUMMARY SHEET 1																																					
MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS			NEW & SALVAGED SIGNS				EXIST POST		NEW SIGN POSTS																												REMARKS	SIGN DETAIL	
											NO. OF POSTS	FLANGED CHANNEL			SQUARE STEEL (In)					TUBULAR ALUMINUM Ø (In)			TUBULAR STEEL Ø (In)				W-SHAPE STEEL				RE- USE SIGN POST	DETAIL ON SHEET NUMBER	STD. SHEET NUMBER								
		lb/ft			2.0	2.0	2.5	ANCHOR	SLEEVE	3.0		4.0	4.0 MOD	FOUND- ATION	3.0	3.5	4.0	5.0	FTG. SIZE		WEIGHT	POST SIZE																			
		1.12	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"																					
		OPTION ITEMS																																							
168+75.00 RT		I	36	36	9.00						2					X		X															SIGNAL AHEAD SIGN, MUTCD W3-3		SHSM						
168+75.00 RT		I	6	10	0.42						N/A					N/A																	MILEMARKER SIGN, SHALL BE MOUNTED ON LEFT POST OF THE SIGNAL AHEAD SIGN		E-138						
171+00.00 RT		I	30	30	6.25						1					X		X																ADVANCE INTERSECTION LANE CONTROL SIGN, VR-921 MIRRORRED		E-145A					
173+30.00 RT		I						1			2							2																	TWO DIRECTION LARGE ARROW SIGN, MUTCD W1-7		SHSM				
VT ROUTE 117 MM 3.371 LT		I	36	36	9.00						2					X		X																SIGNAL AHEAD SIGN, MUTCD W3-3		SHSM					
200+33.10 RT		I	48	12	4.00						2					X		X																SAND HILL ROAD STREET NAME SIGN, MUTCD D-3	48	N/A					
200+50.23 LT		I	6	10	0.42						1					X		X																MILEMARKER SIGN		E-138					
200+48.01 RT		I						1			1					X		X																	LEGAL LOAD LIMIT SIGN, VR-017		E-141				
200+48.01 RT		I	24	30	5.00						N/A					N/A																		SPEED LIMIT SIGN, MUTCD R2-1 SHALL BE MOUNTED BELOW LEGAL LOAD LIMIT SIGN, VR-017		SHSM					
SHSM = FHWA'S STANDARD HIGHWAY SIGNS & MARKINGS												FT	FT	FT	FT	FT	FT		EA	LB	LB	LB			LB	LB	LB	LB													
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE VTRANS "SIGN POST DESIGN GUIDELINE."												FT			FT					LB			EA	LB			EA	EA	LB												
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TRAFFIC SIGN SUMMARY SHEET 2

PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002+ssum.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
TRAFFIC SIGN SUMMARY SHEET 2	SHEET 47 OF 64



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

ALL DIMENSIONS IN INCHES

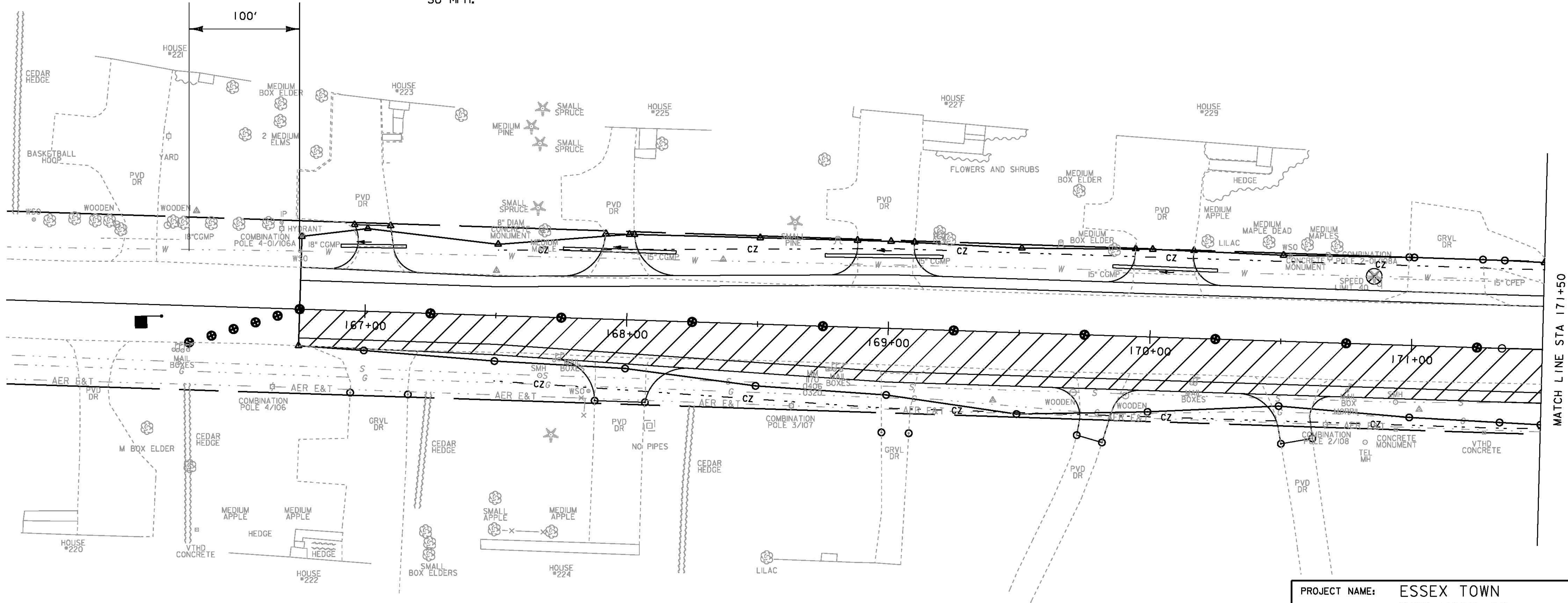
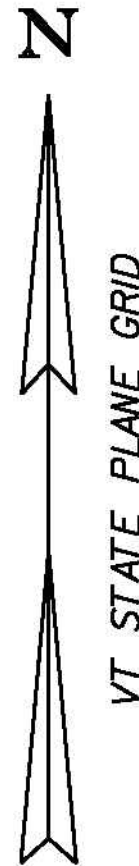
PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: t97d002frm.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
TRAFFIC SIGN DETAIL SHEET	SHEET 48 OF 64

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

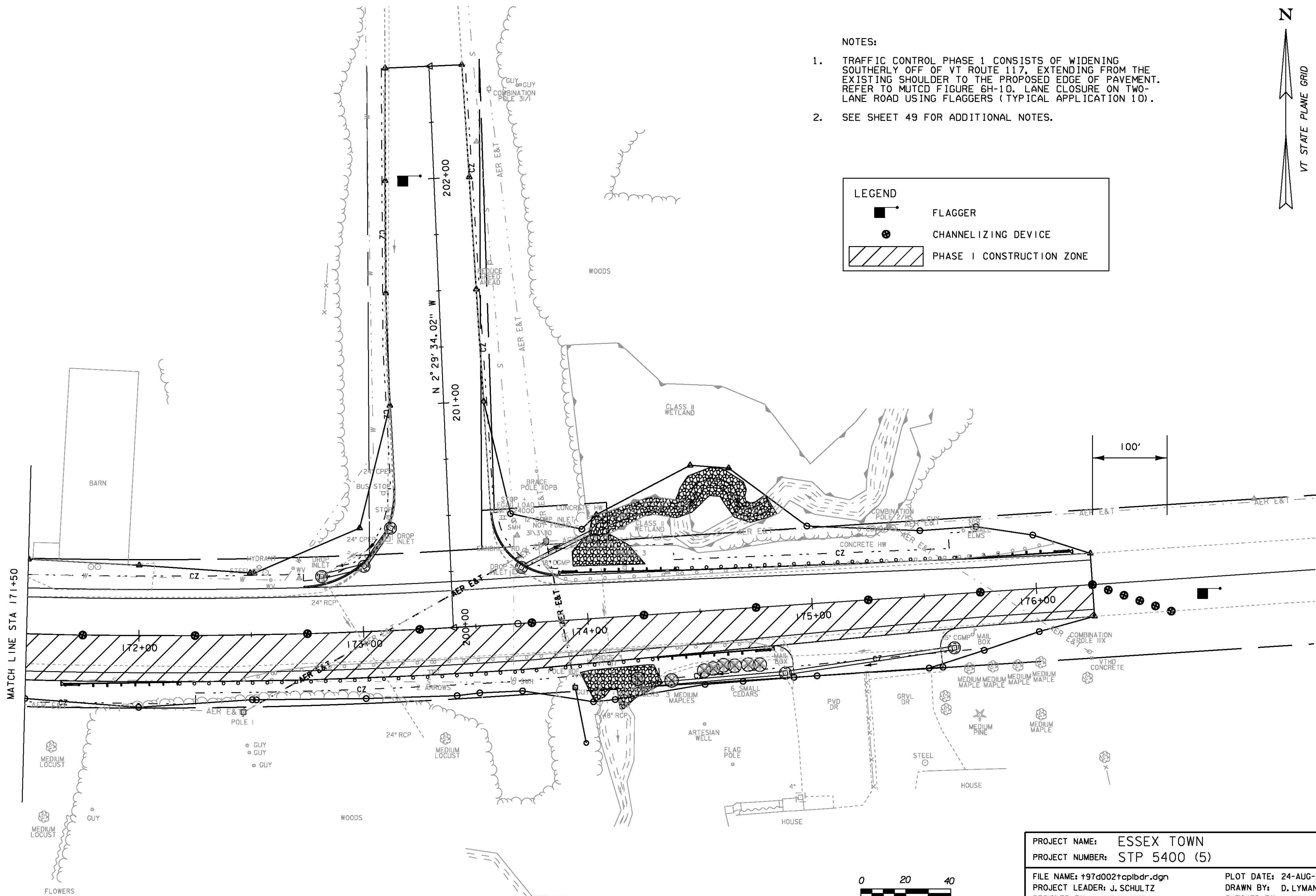
- FLAGGER
- CHANNELIZING DEVICE
- PHASE I CONSTRUCTION ZONE



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

FILE NAME: t97d002+cp1bdr.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
TC PHASE I LAYOUT SHEET I

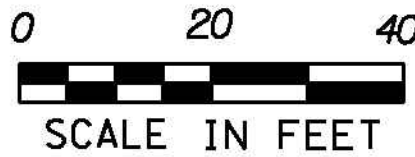
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 49 OF 64



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

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.

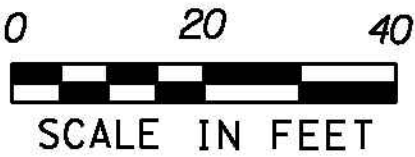
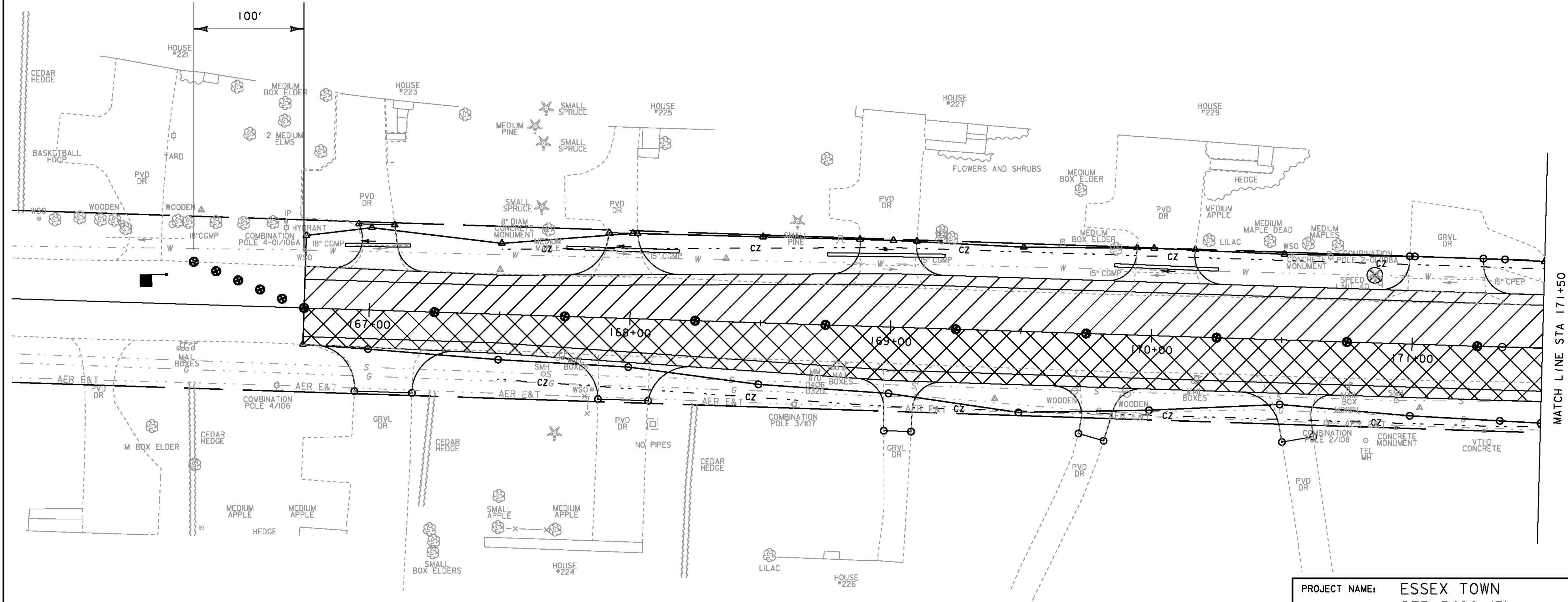
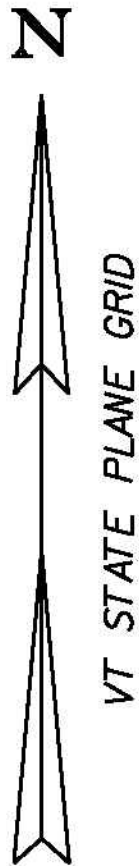
LEGEND

 FLAGGER

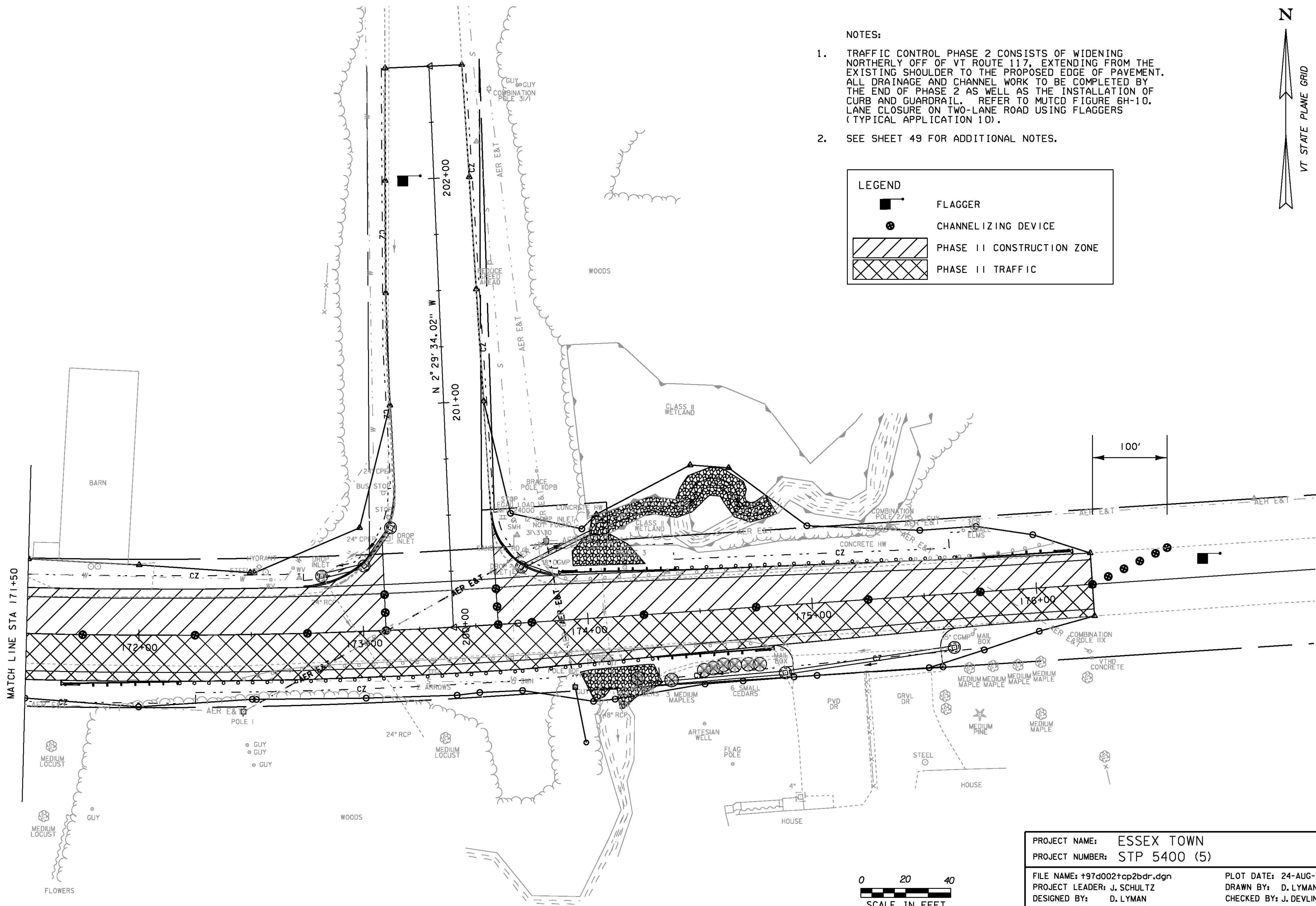
 CHANNELIZING DEVICE

 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.

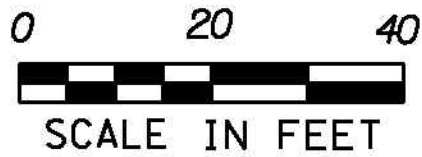
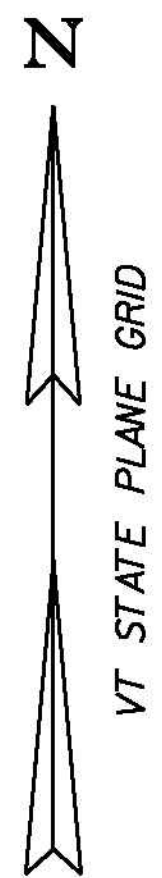
LEGEND

FLAGGER

CHANNELIZING DEVICE

PHASE II CONSTRUCTION ZONE

PHASE II TRAFFIC

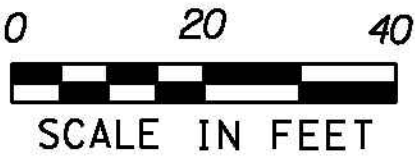
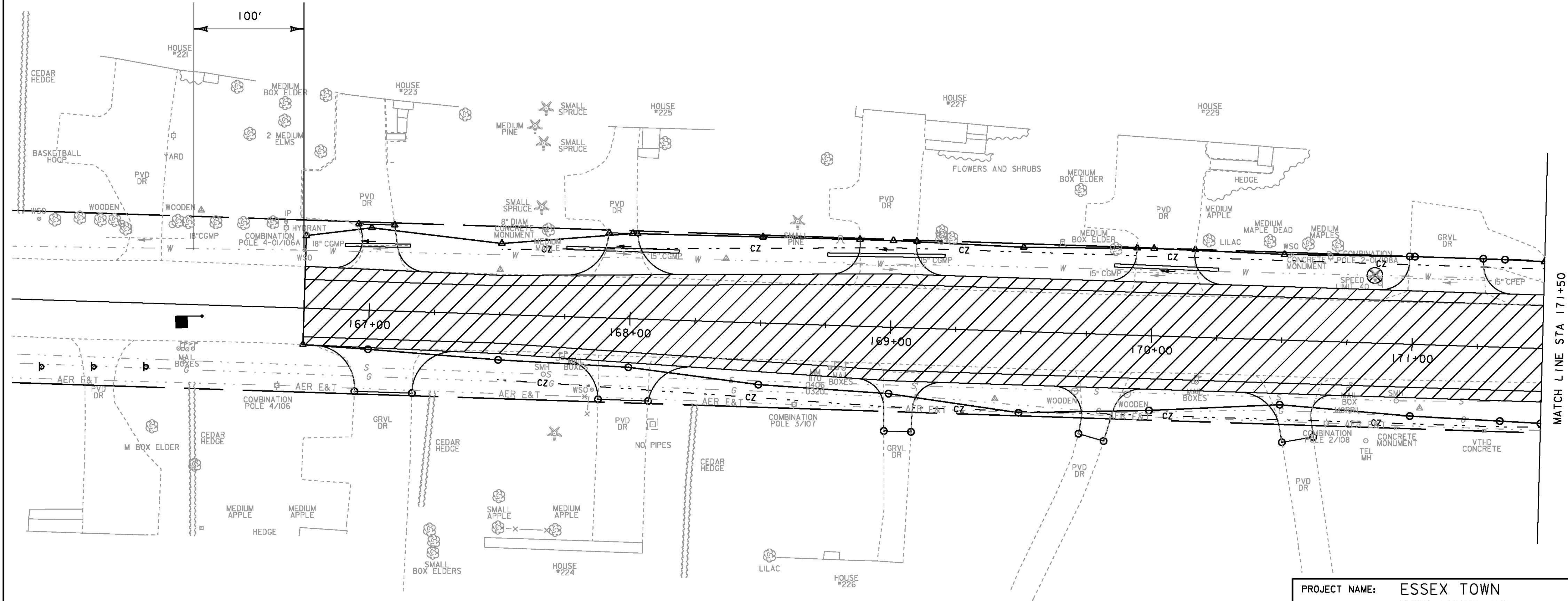
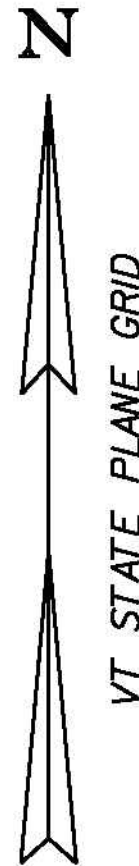
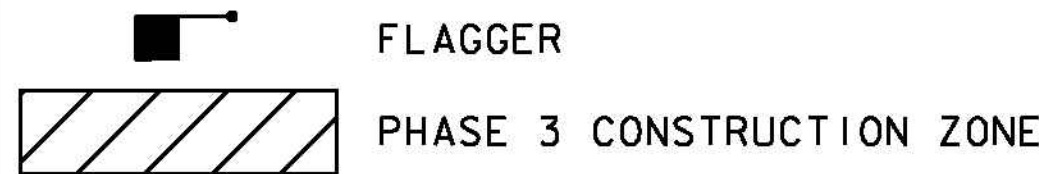


PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002+cp2bdr.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
TC PHASE 2 LAYOUT SHEET 2	SHEET 52 OF 64

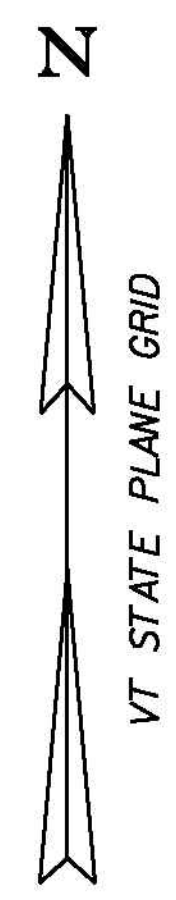
NOTES:

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



PROJECT NAME:	ESSEX TOWN	PLOT DATE:	24-AUG-2012
PROJECT NUMBER:	STP 5400 (5)	DRAWN BY:	D. LYMAN
FILE NAME:	+97d002+cp3bdr.dgn	CHECKED BY:	J. DEVLIN
PROJECT LEADER:	J. SCHULTZ	SHEET	53 OF 64
DESIGNED BY:	D. LYMAN		
TC PHASE 3 LAYOUT SHEET I			



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.

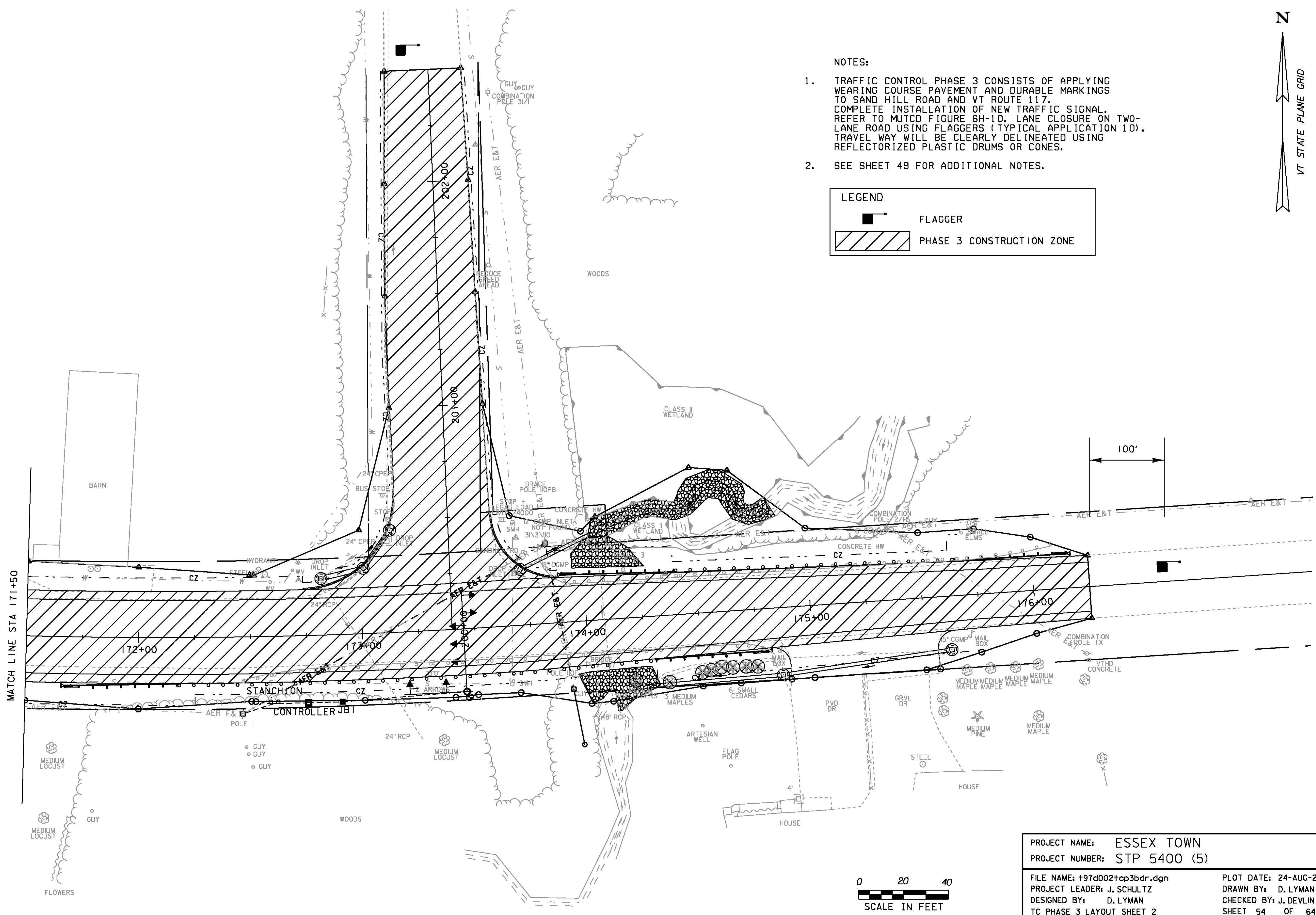
LEGEND

■

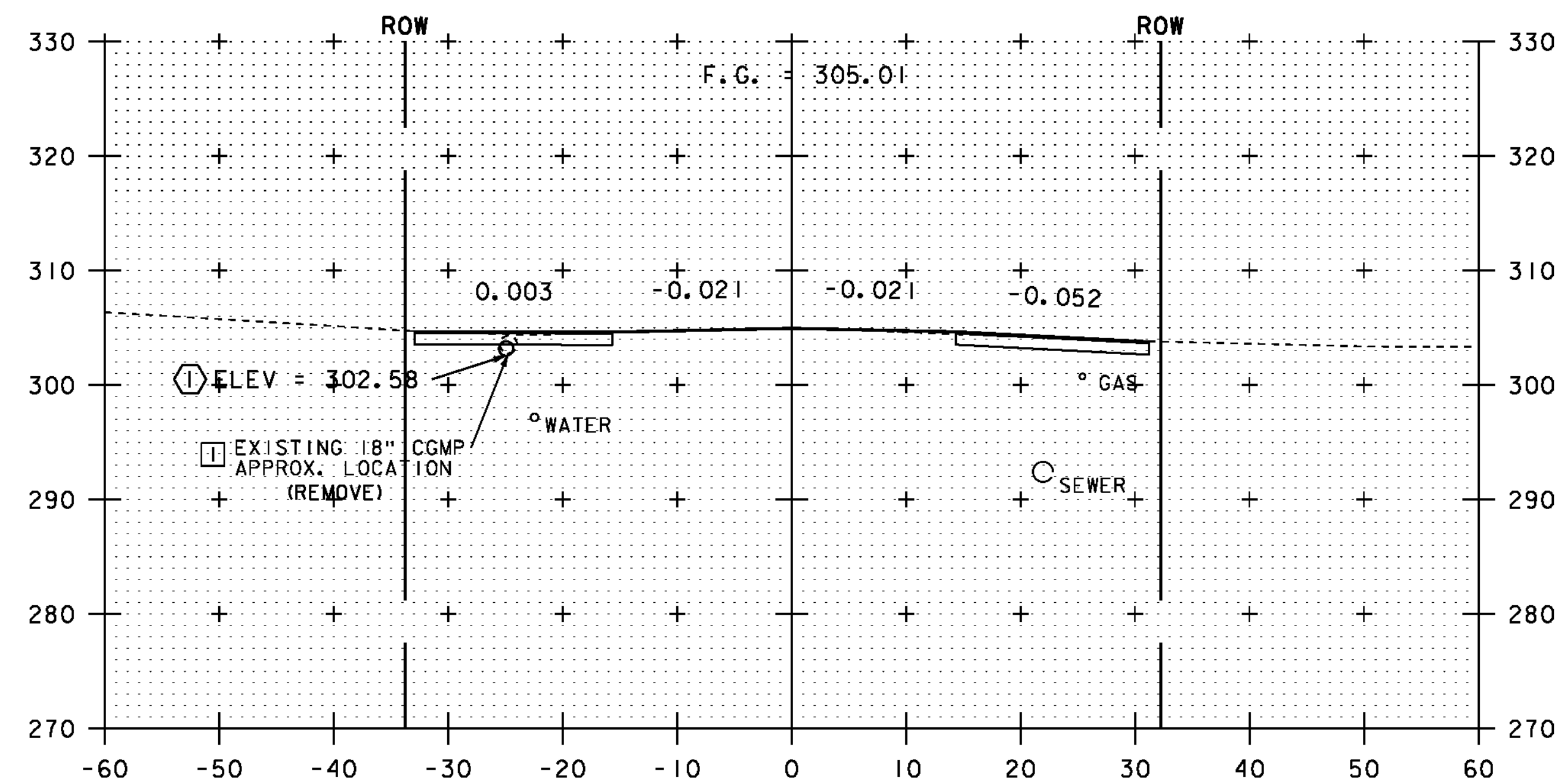
FLAGGER

▨

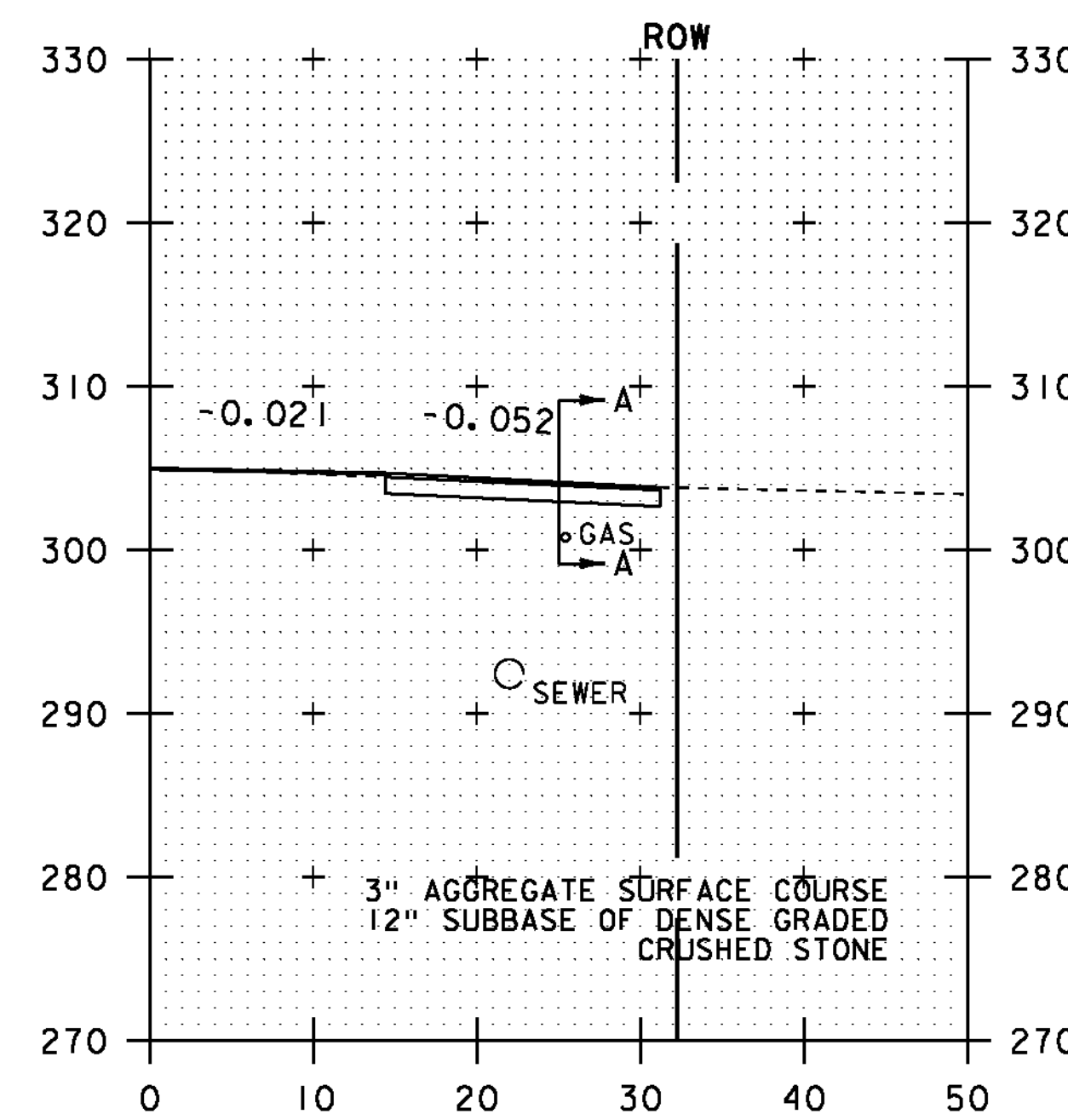
PHASE 3 CONSTRUCTION ZONE



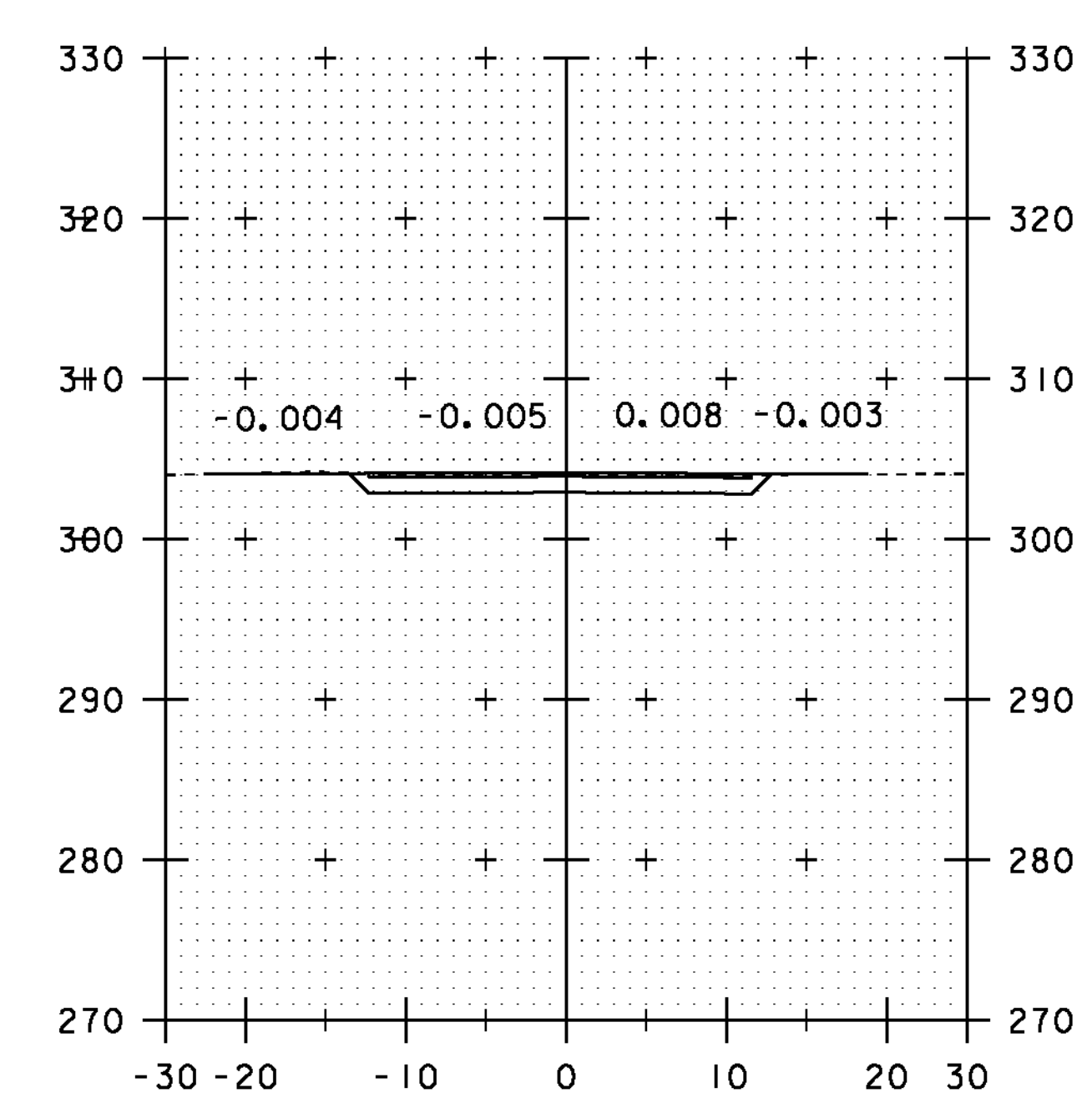
PROJECT NAME: ESSEX TOWN	
PROJECT NUMBER: STP 5400 (5)	
FILE NAME: +97d002+cp3bdr.dgn	PLOT DATE: 24-AUG-2012
PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
TC PHASE 3 LAYOUT SHEET 2	SHEET 54 OF 64



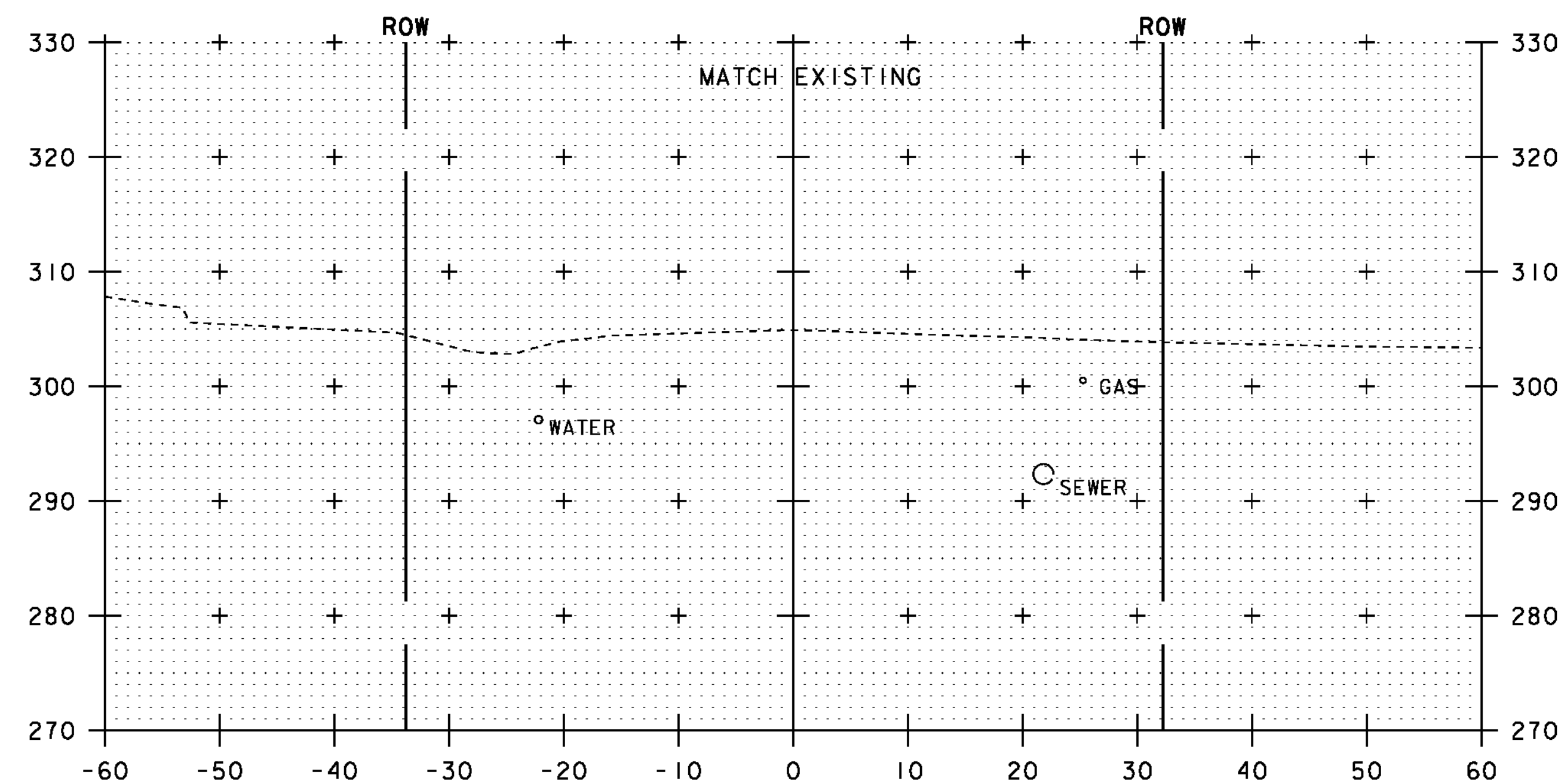
167+00



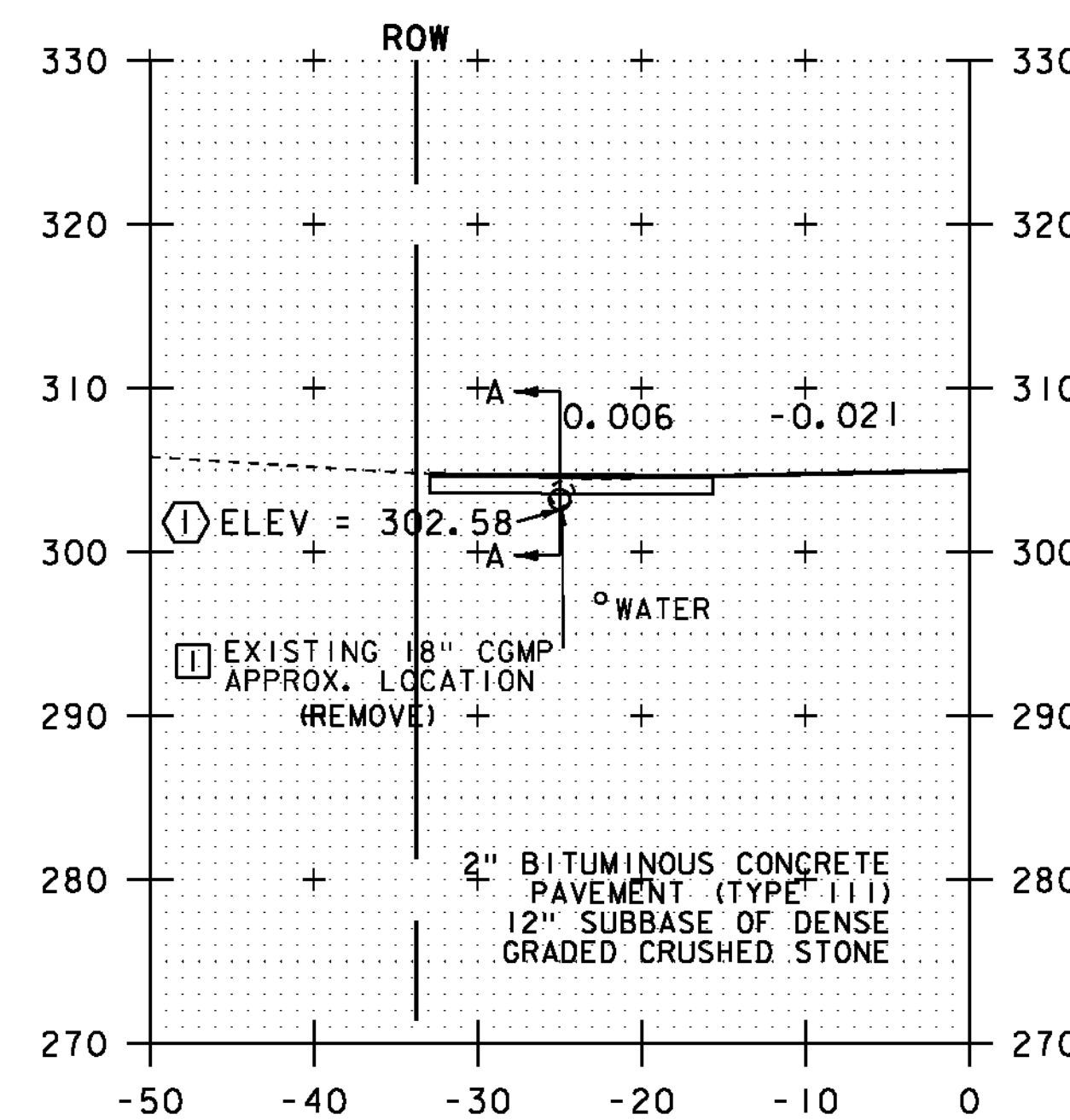
167+06
GRAVEL DRIVE RT



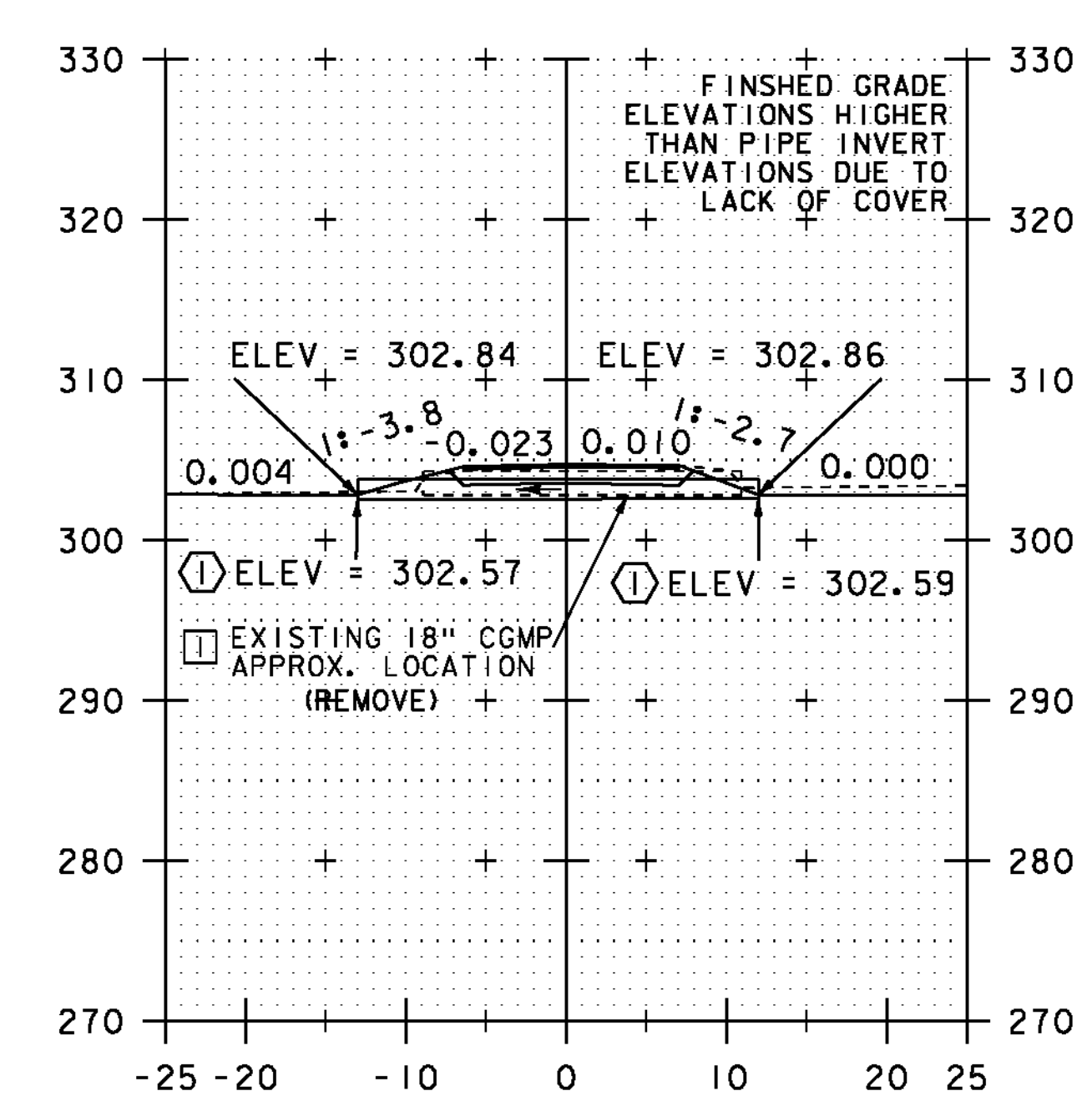
SECTION A-A



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

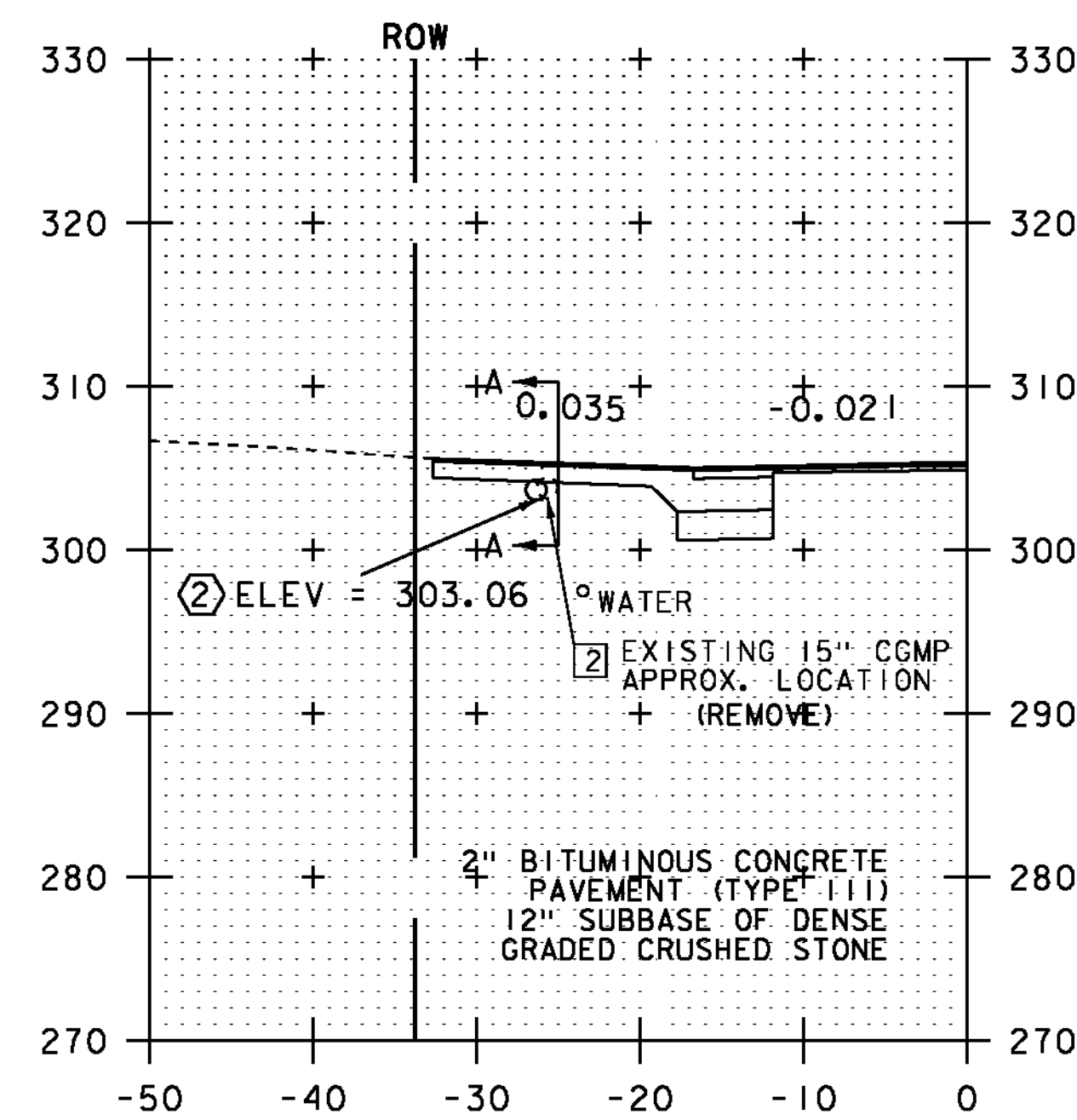
0 10 20
SCALE IN FEET

STA. 166+75 TO STA. 167+06

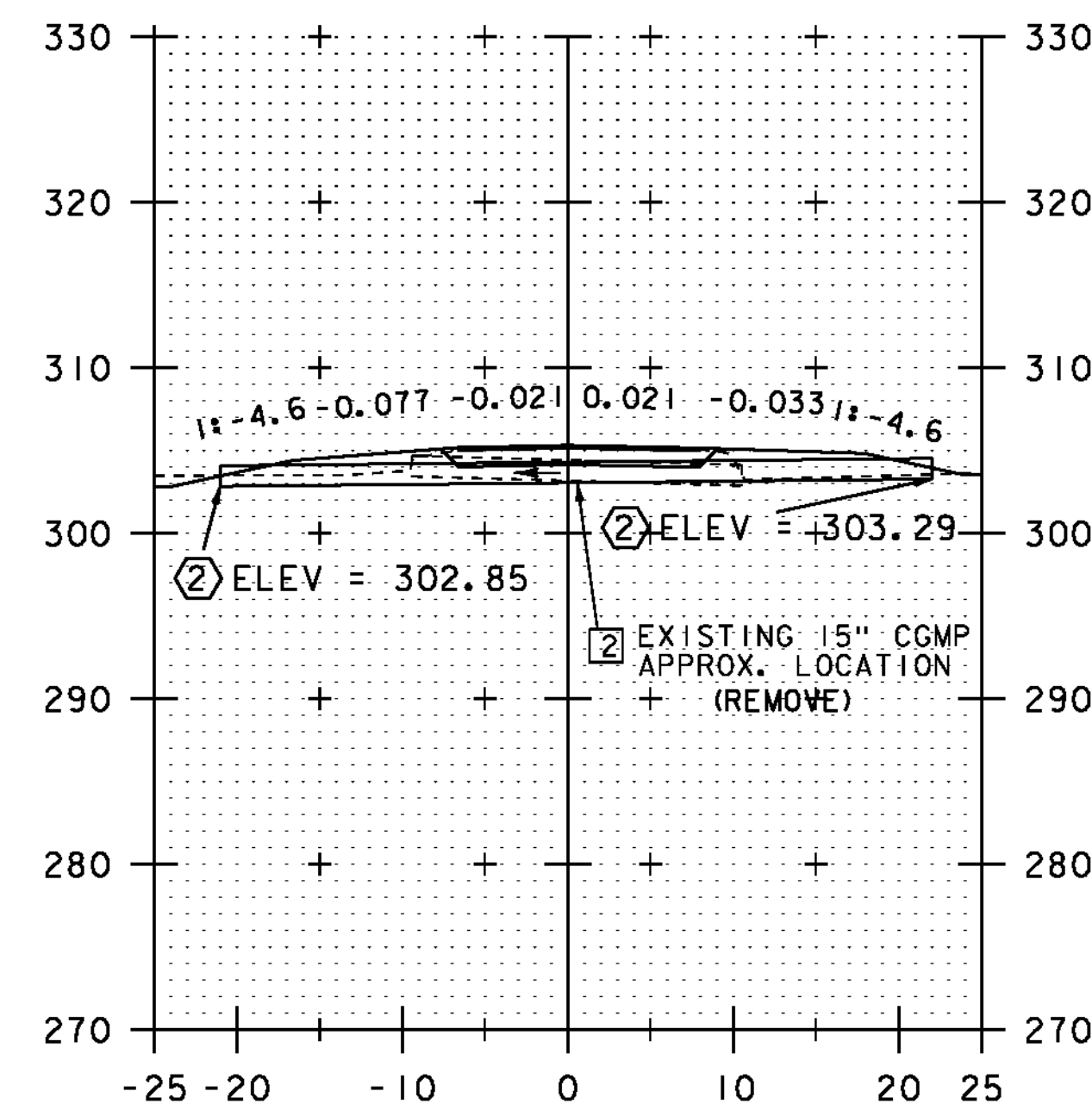
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 1

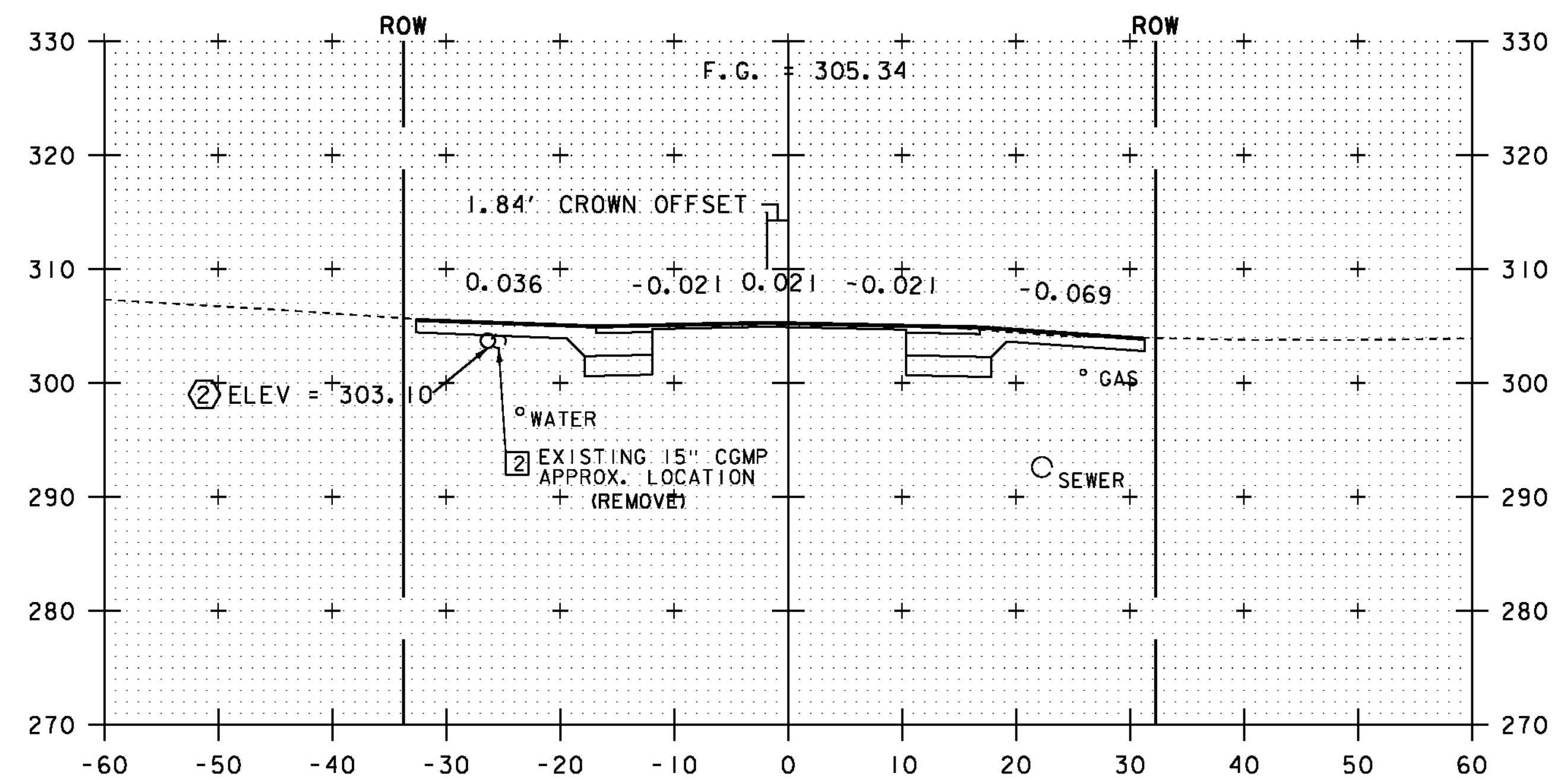
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 55 OF 64



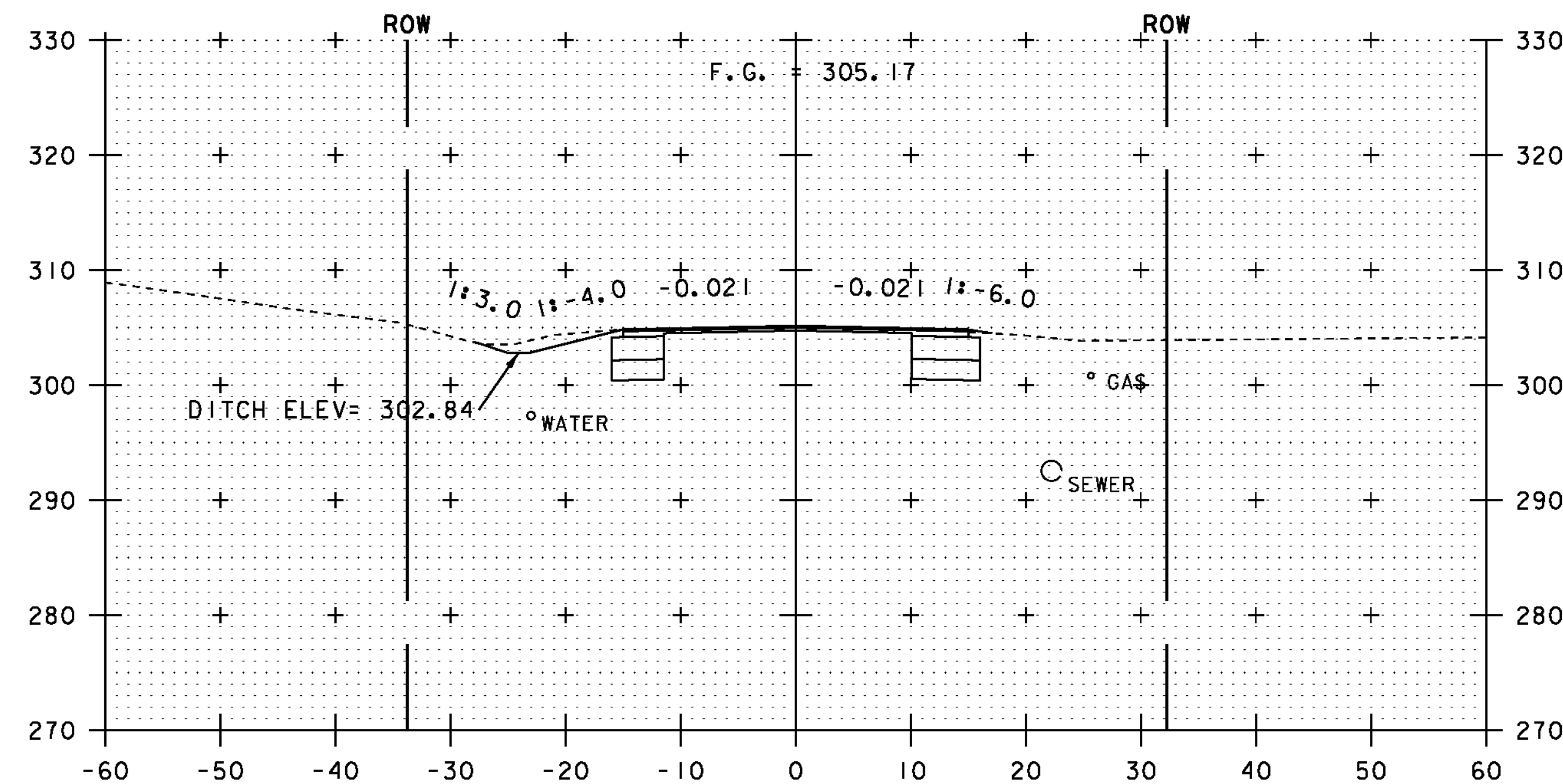
167+96
PAVED DRIVE LT



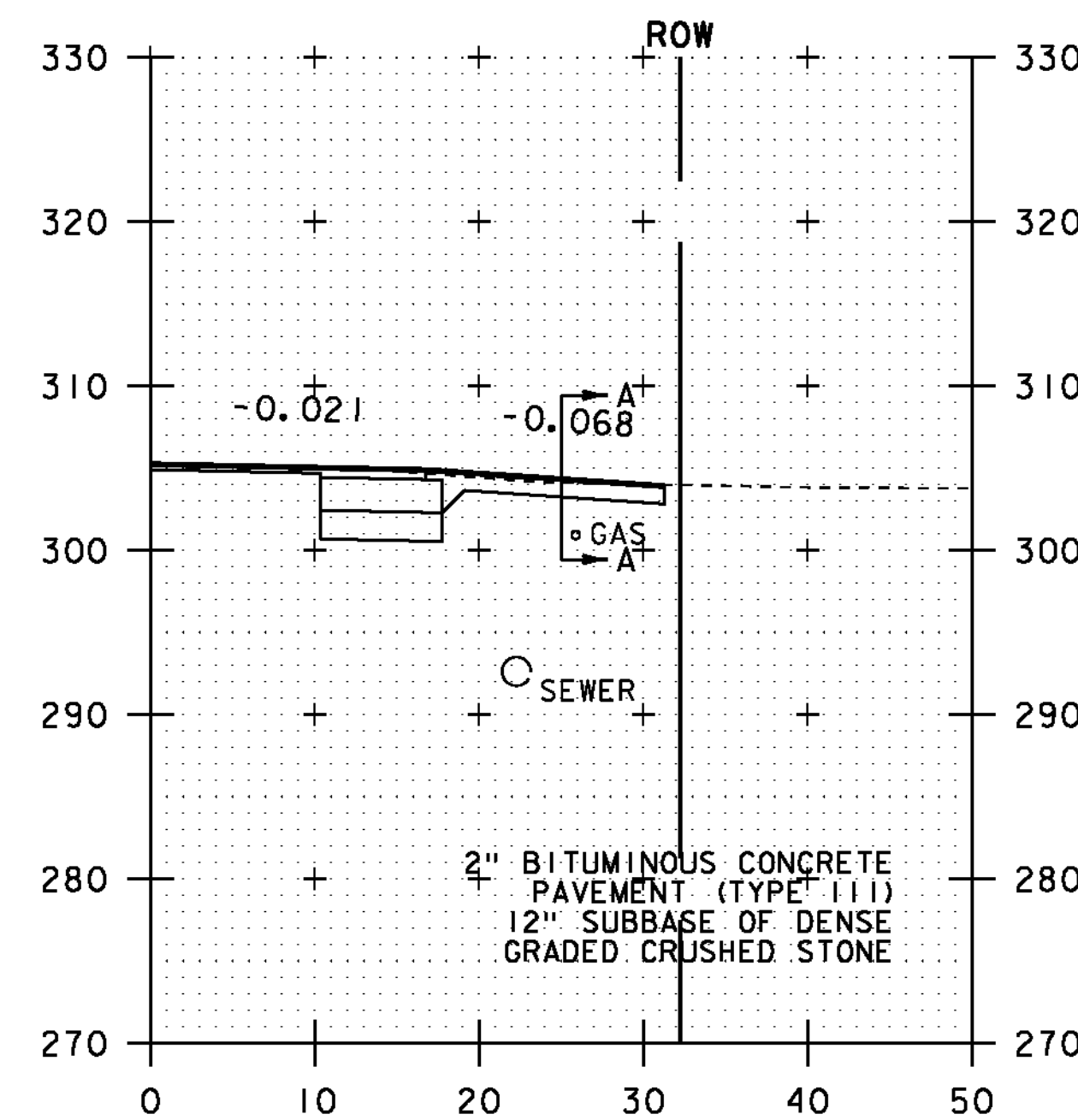
SECTION A-A



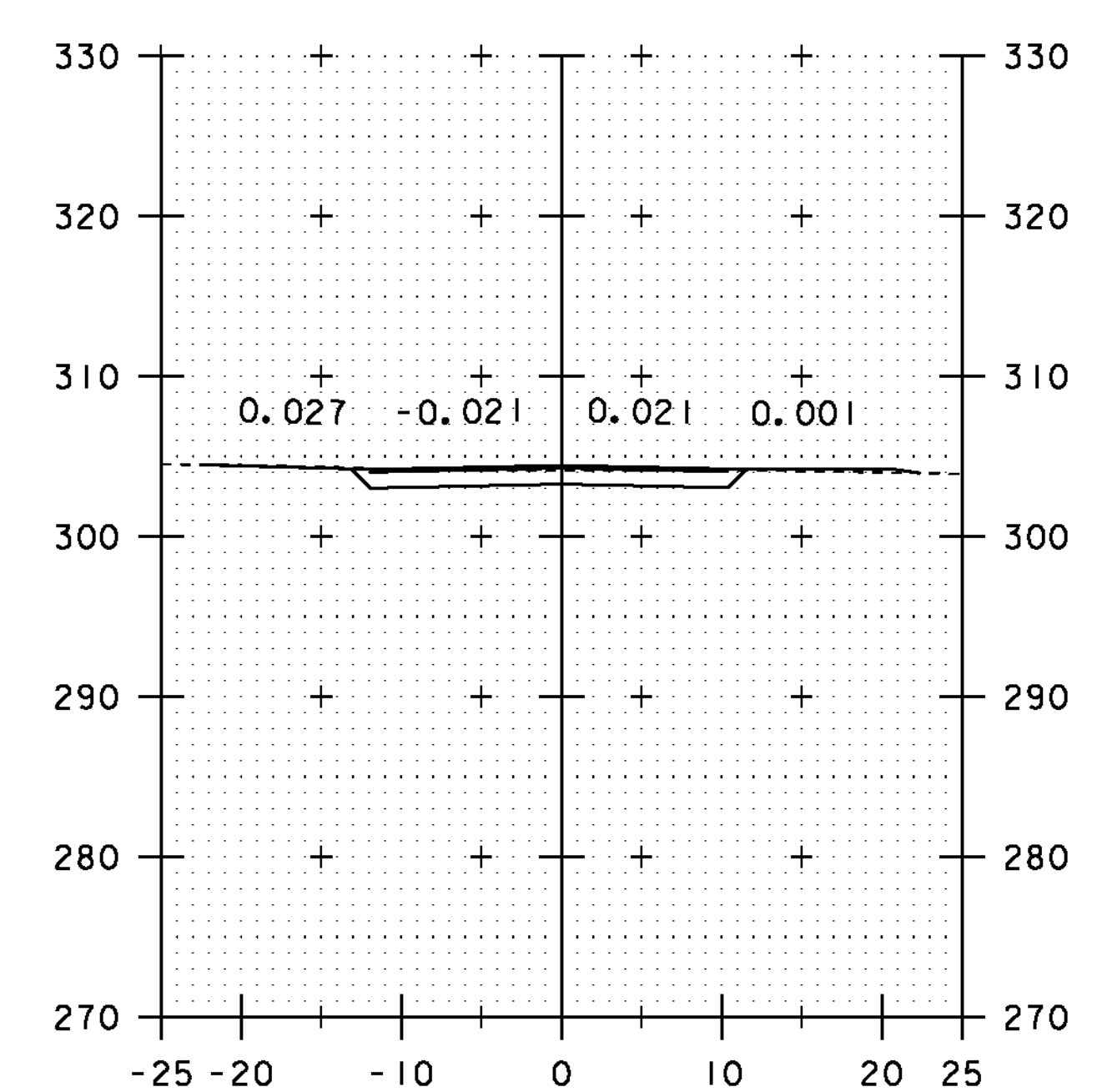
168+00



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

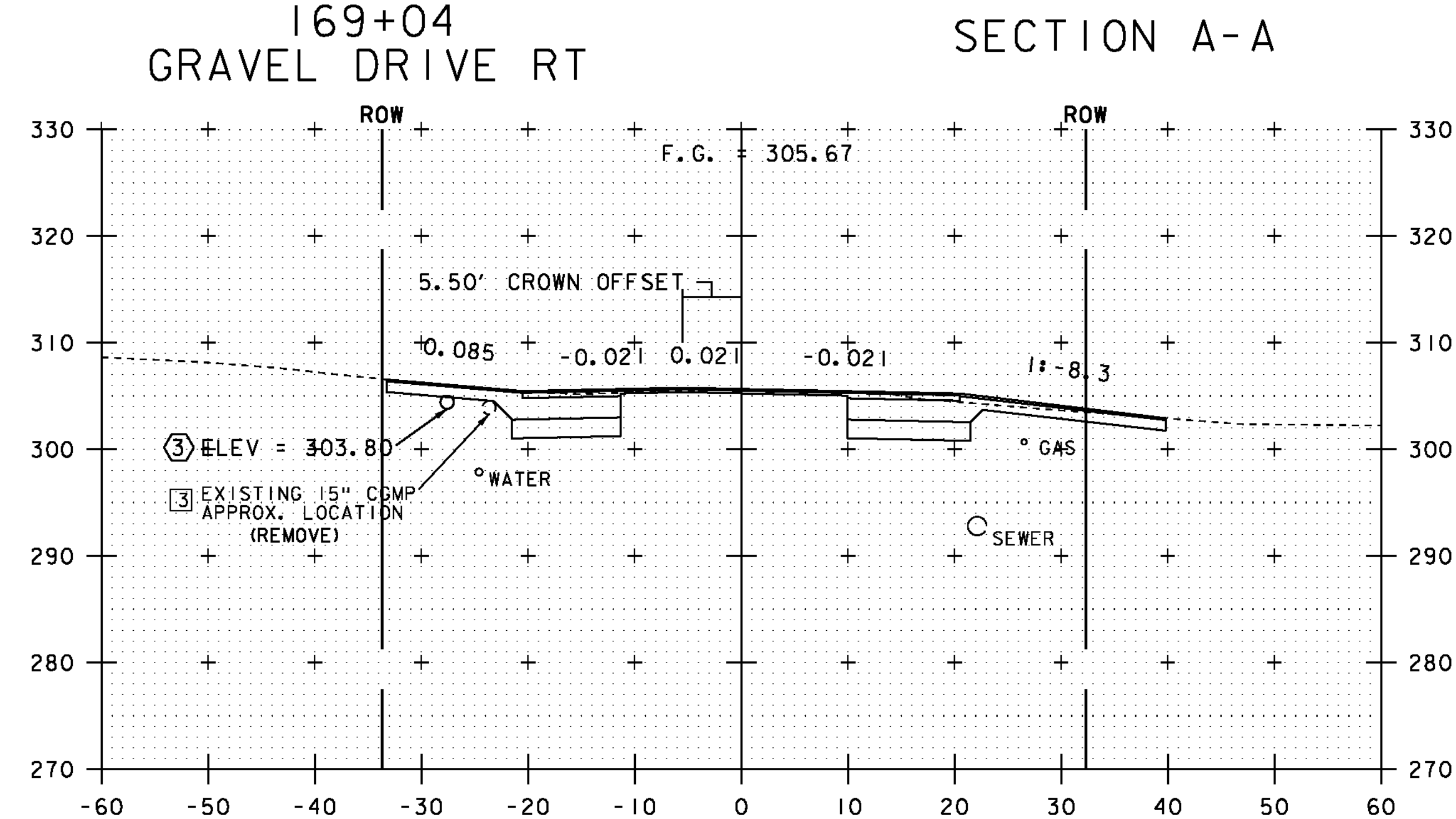
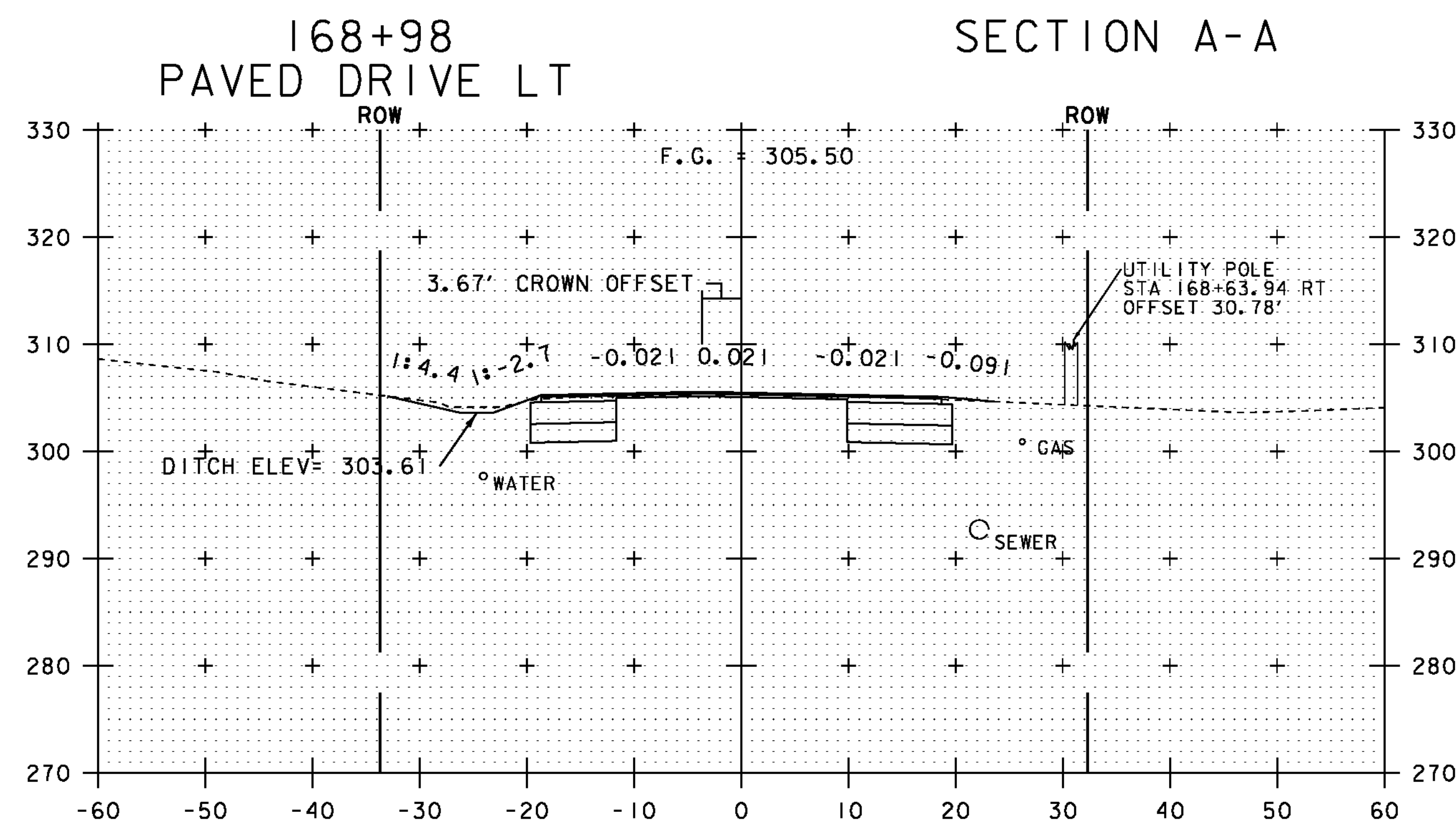
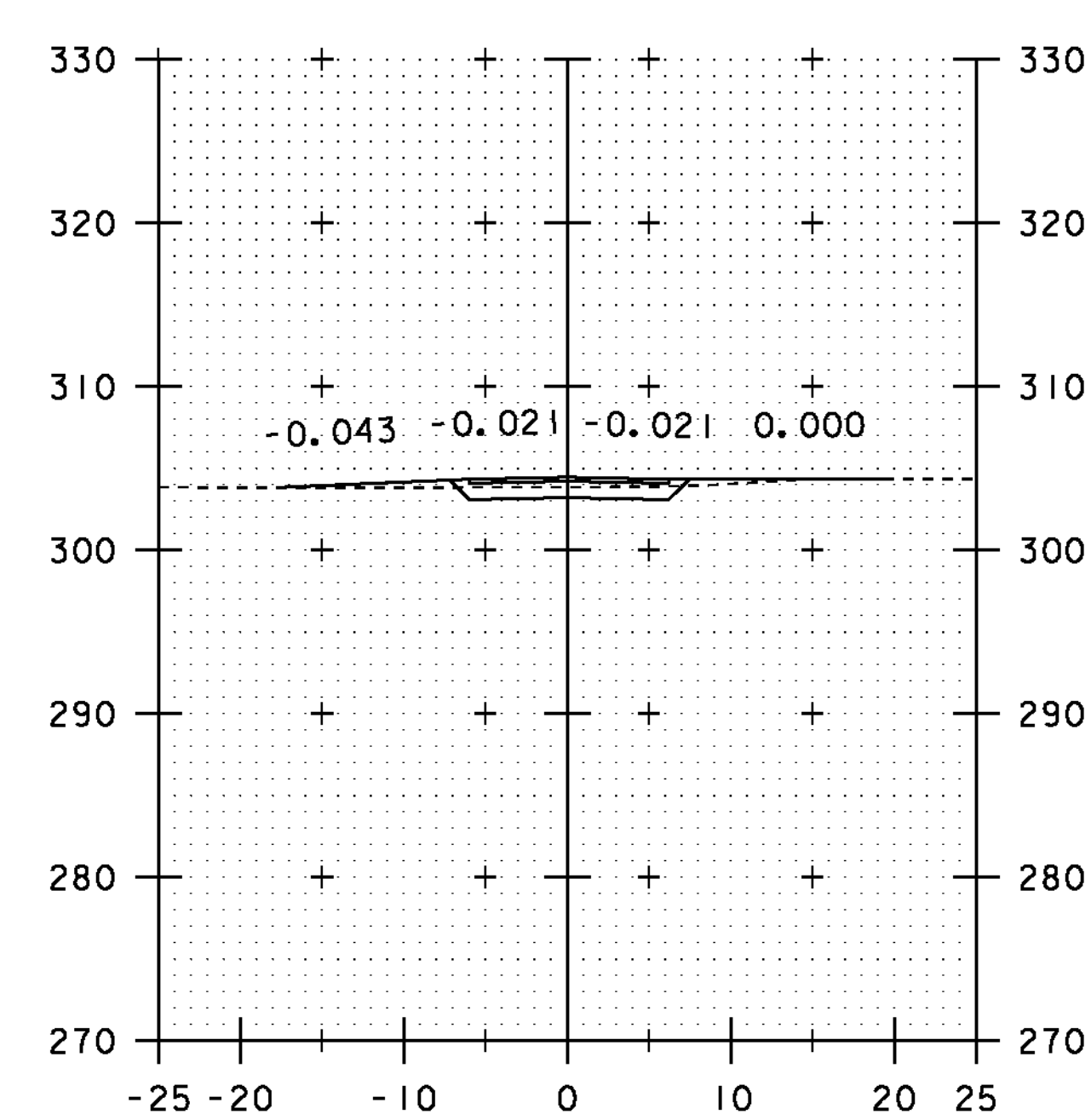
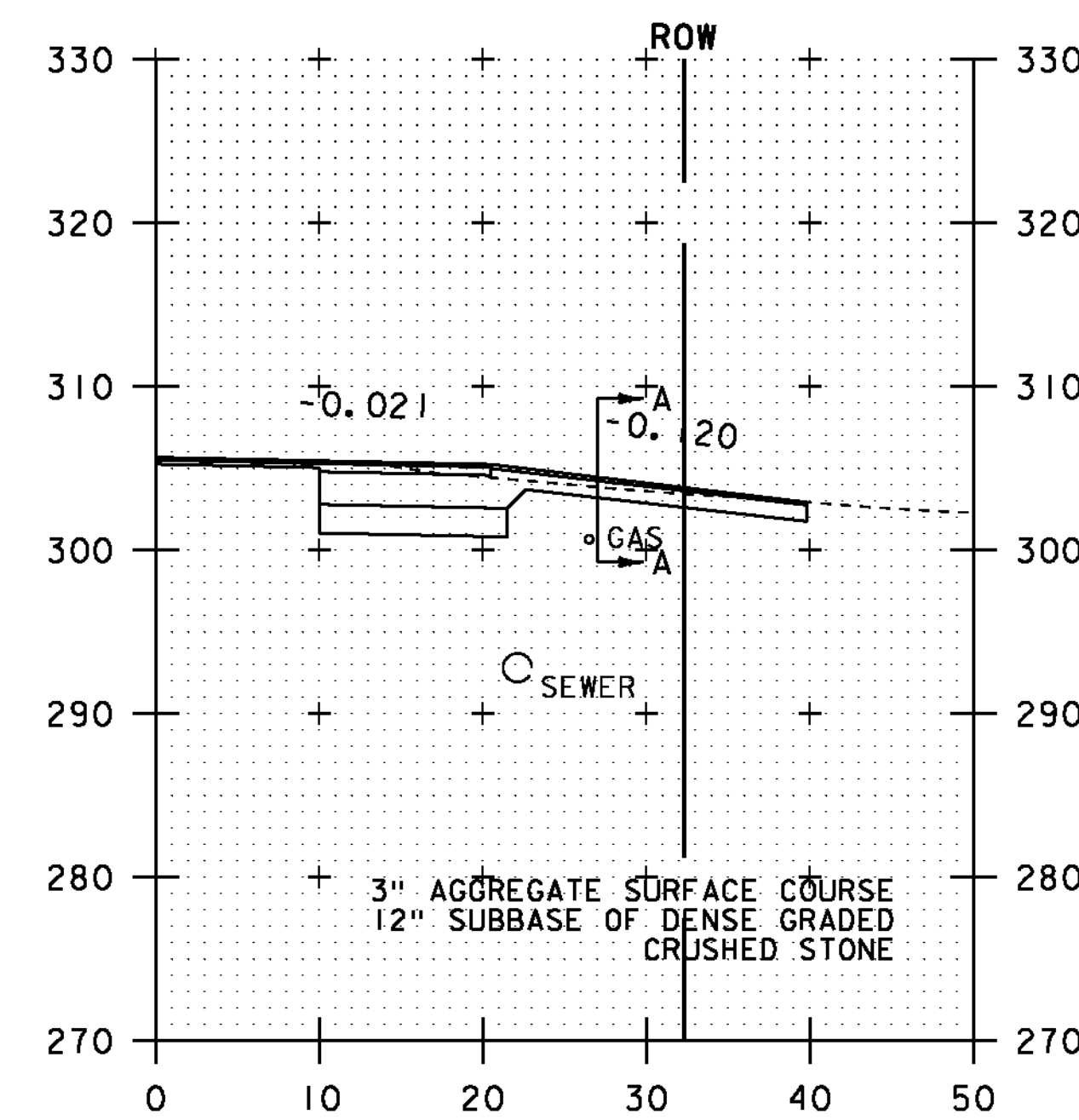
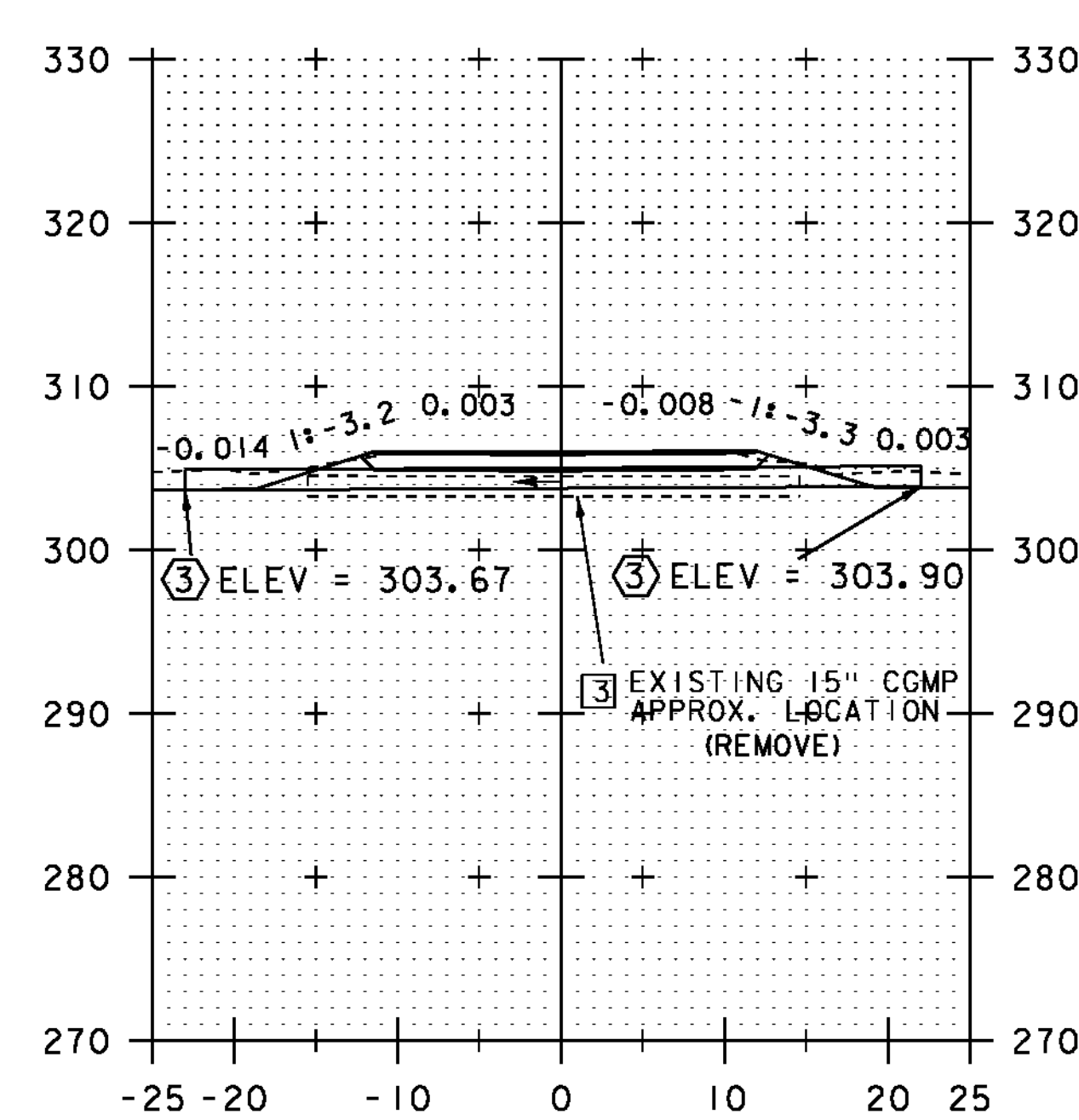
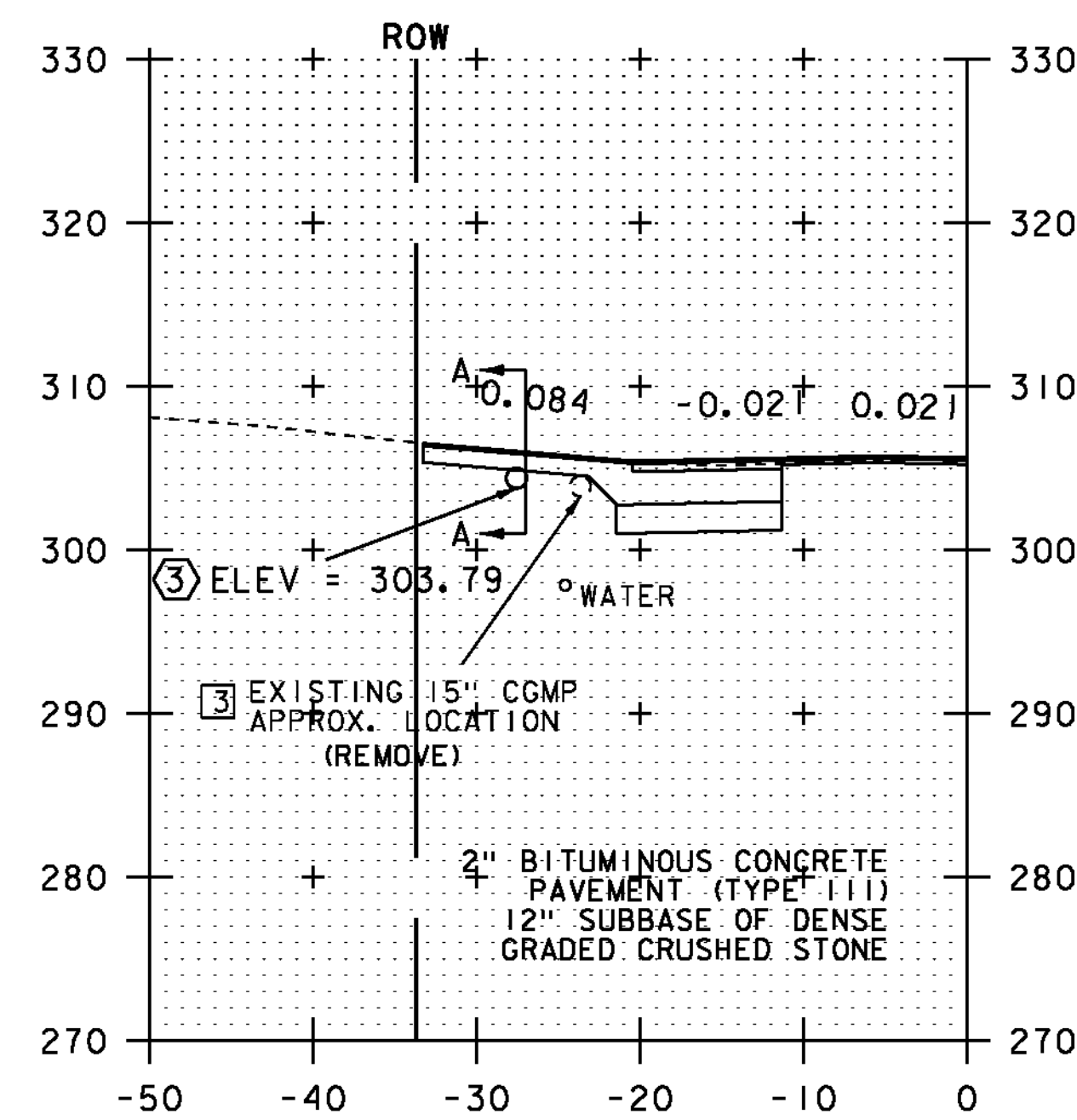
0 10 20
SCALE IN FEET

STA. 167+50 TO STA. 168+00

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

FILE NAME: t97d002xsl.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



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

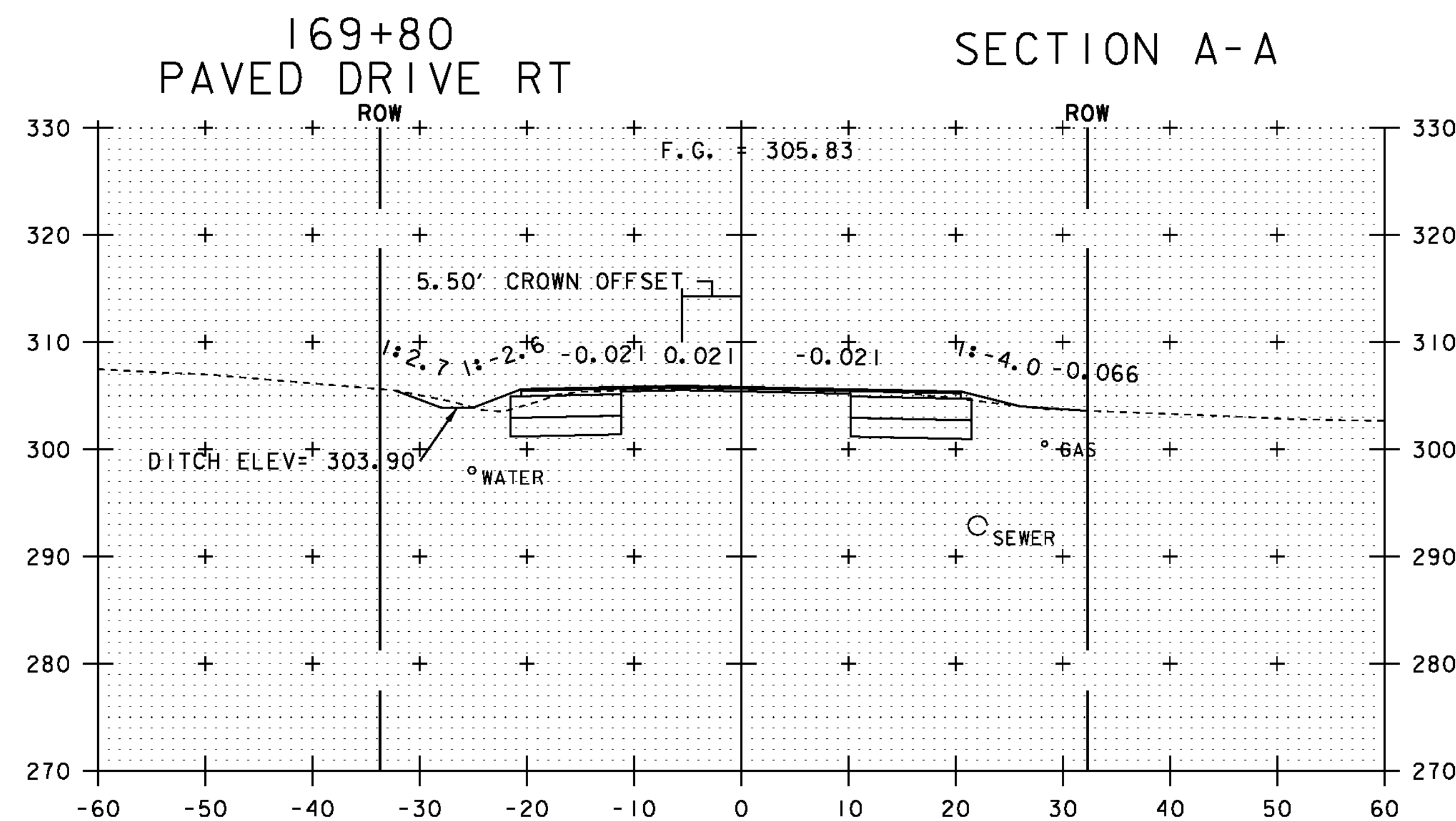
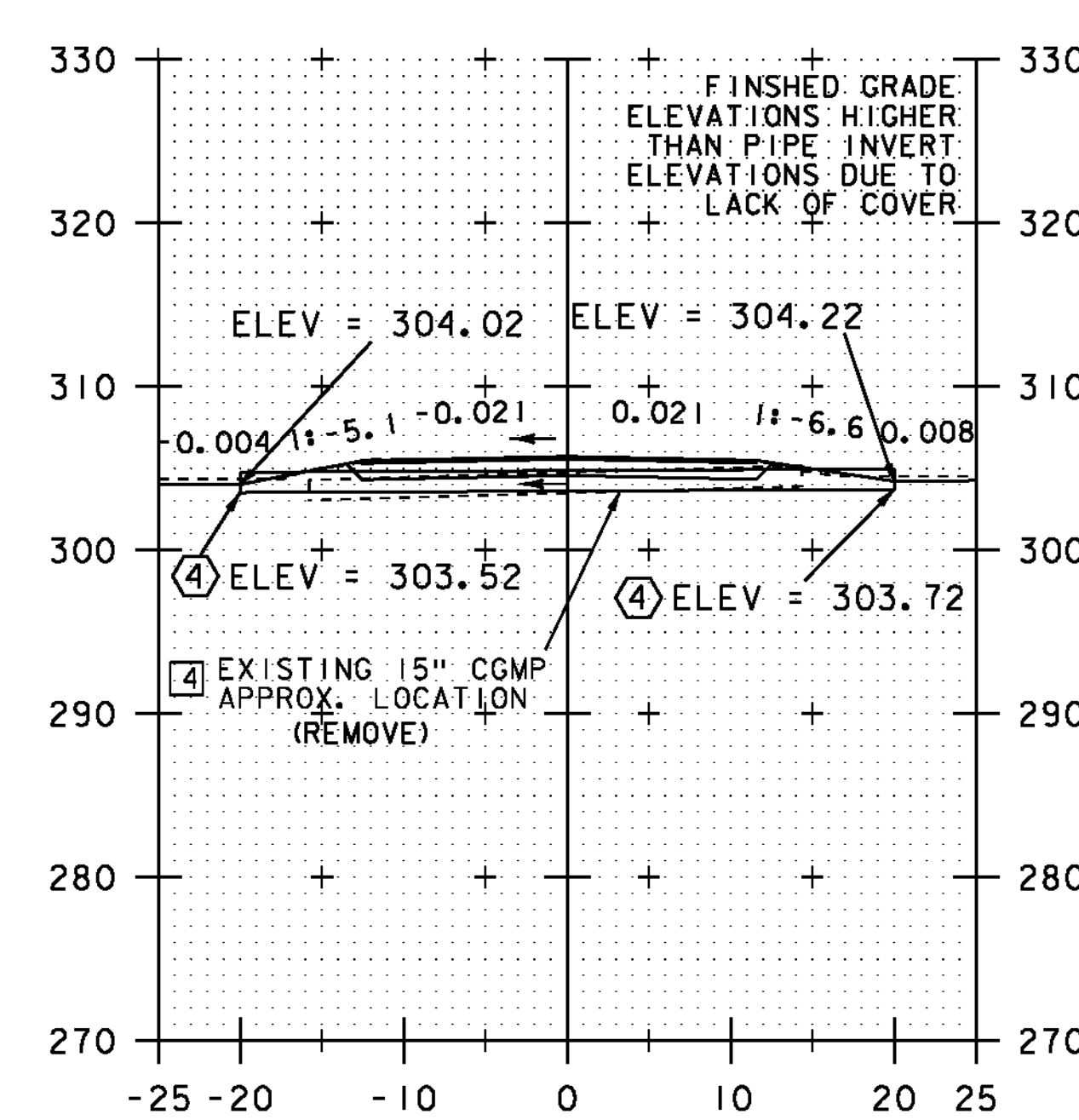
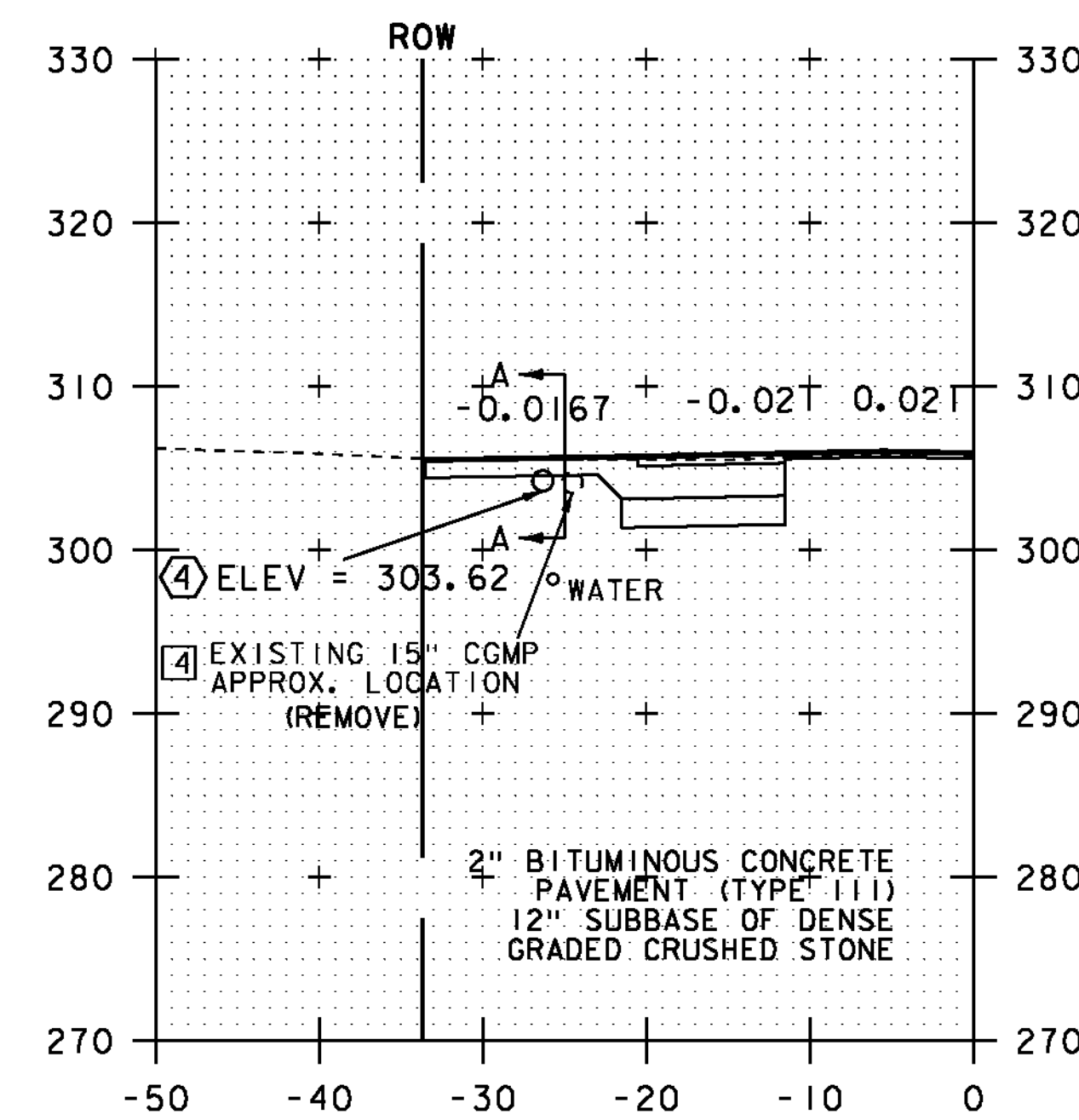
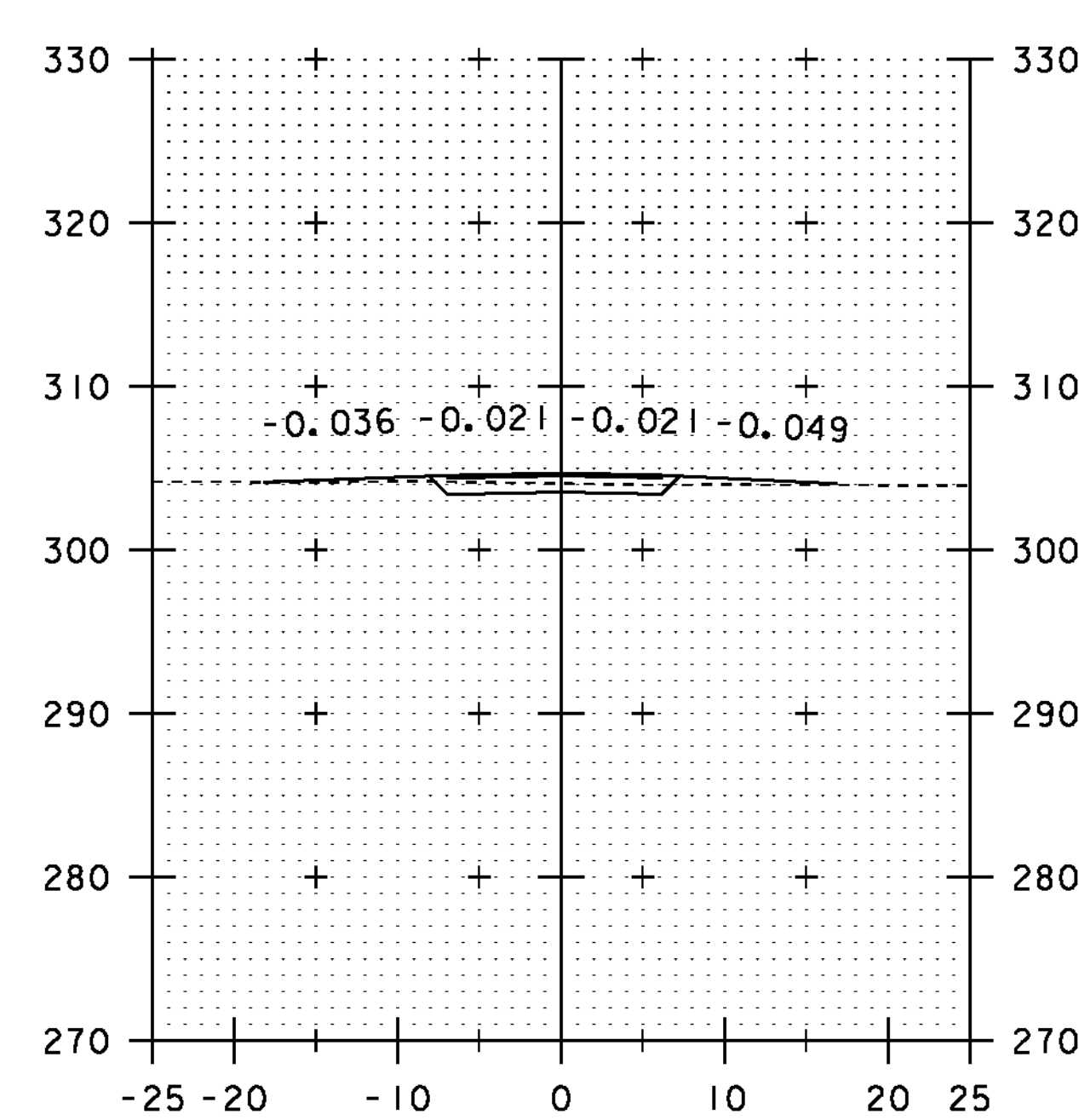
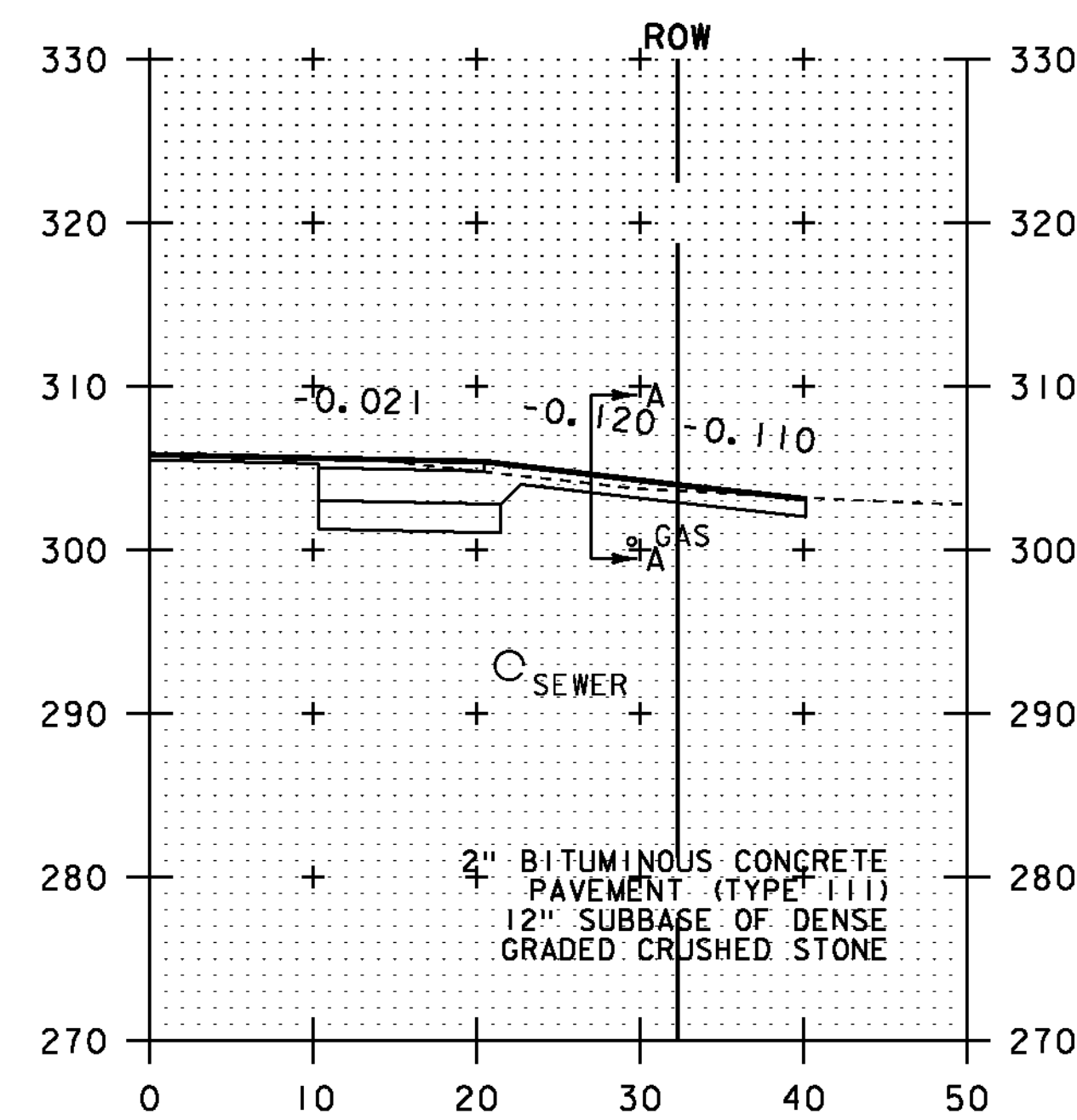
0 10 20
SCALE IN FEET

STA. 168+50 TO STA. 169+04

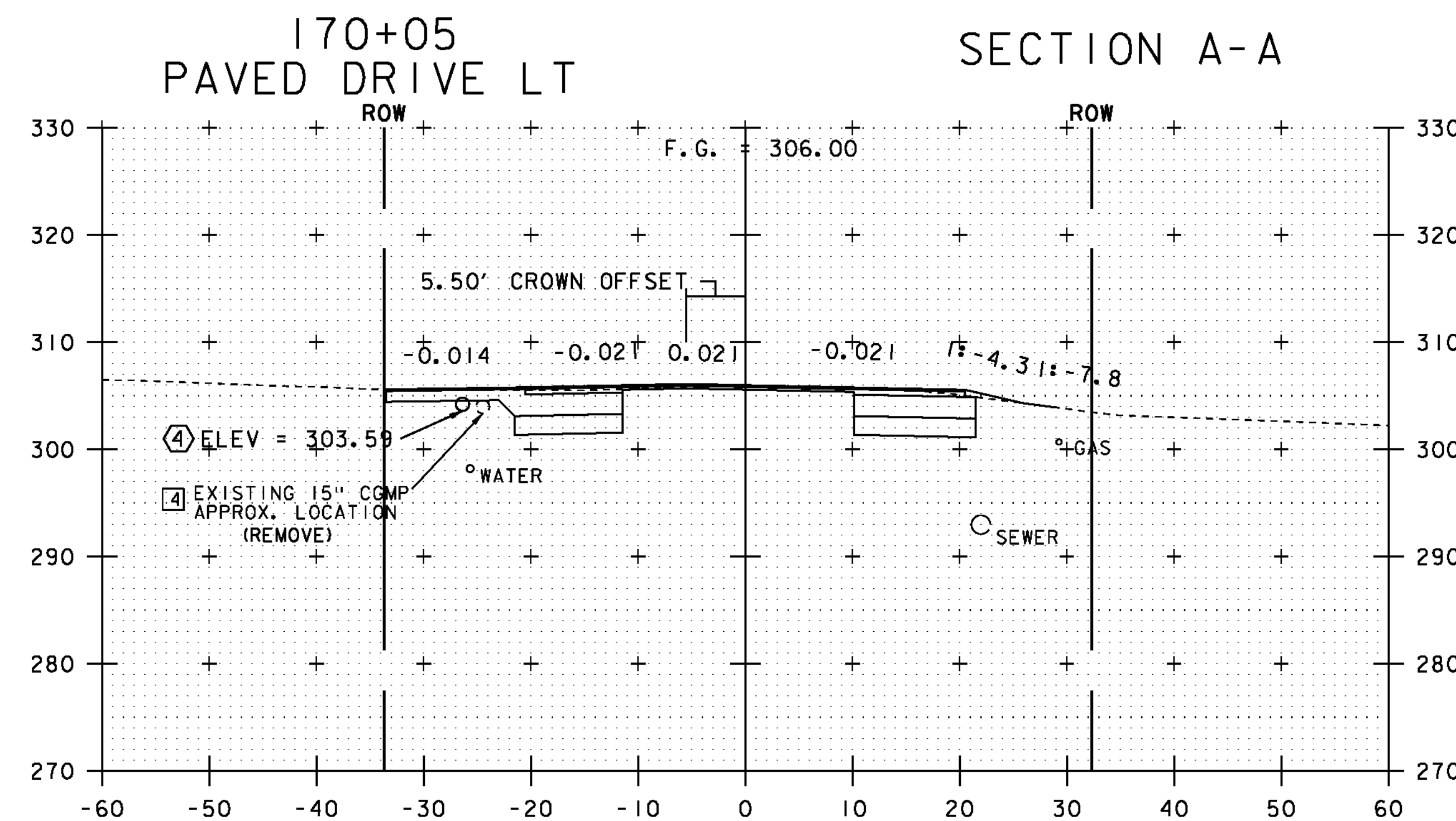
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002xsl.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+50



170+00

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

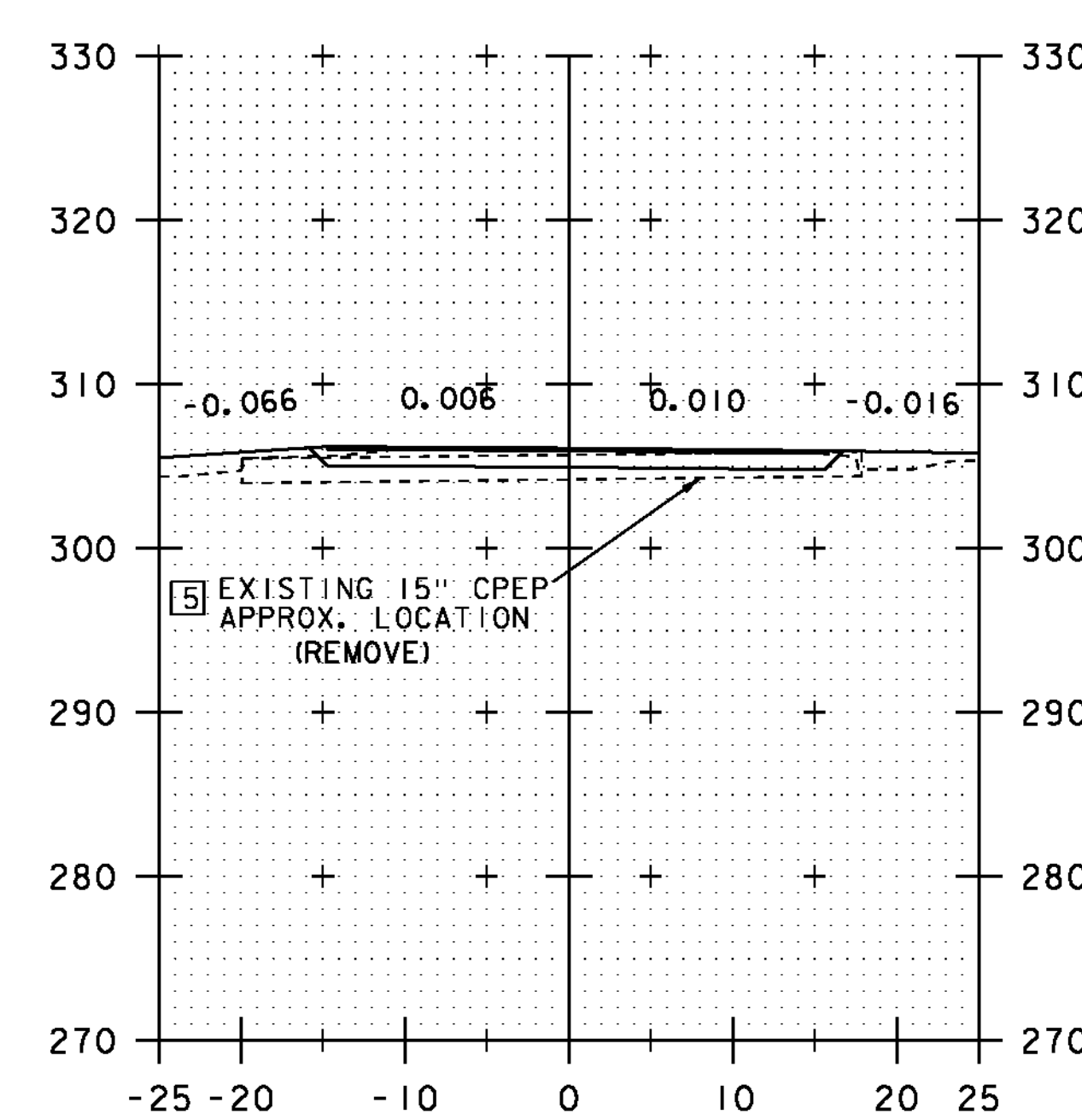
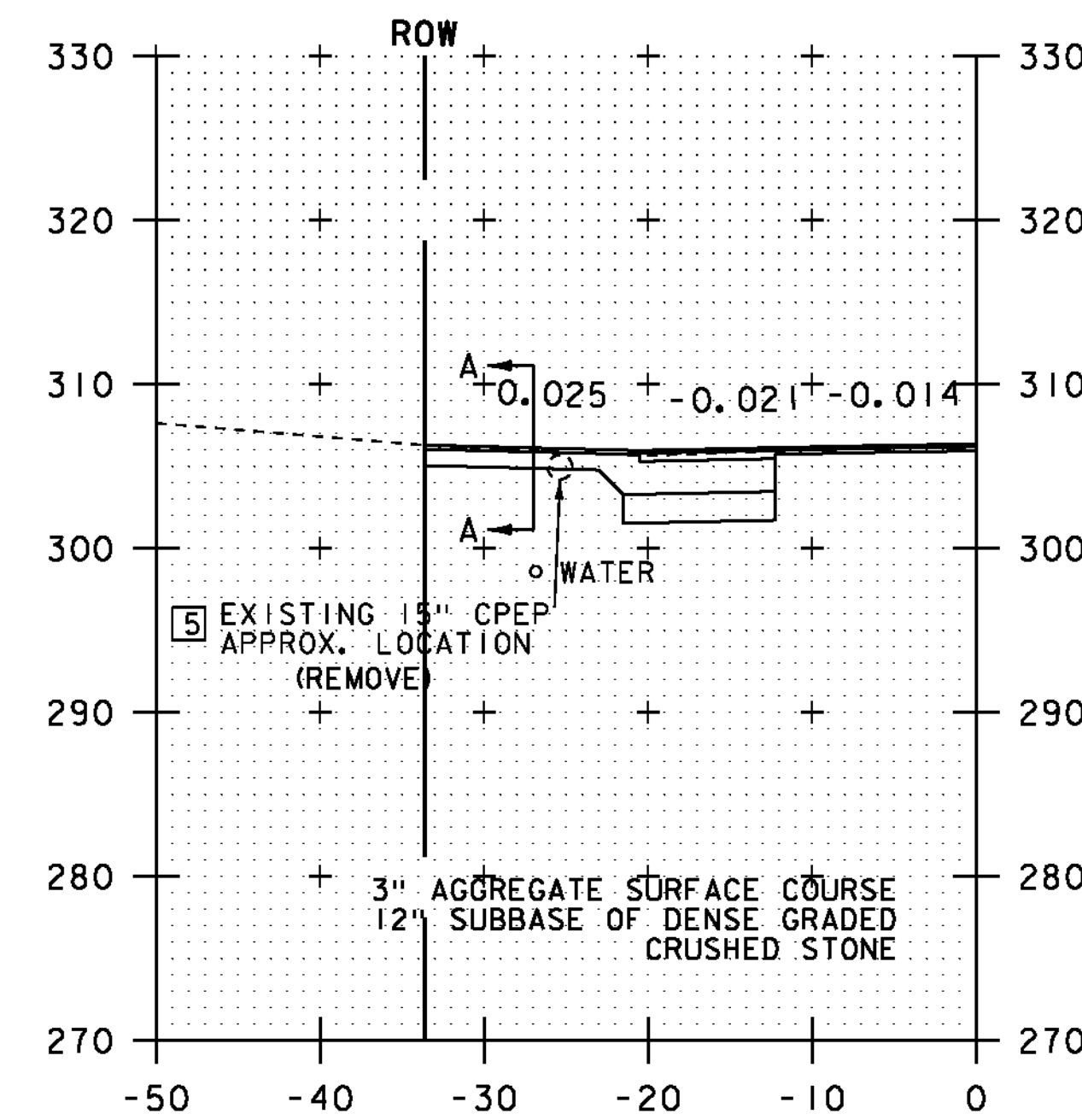
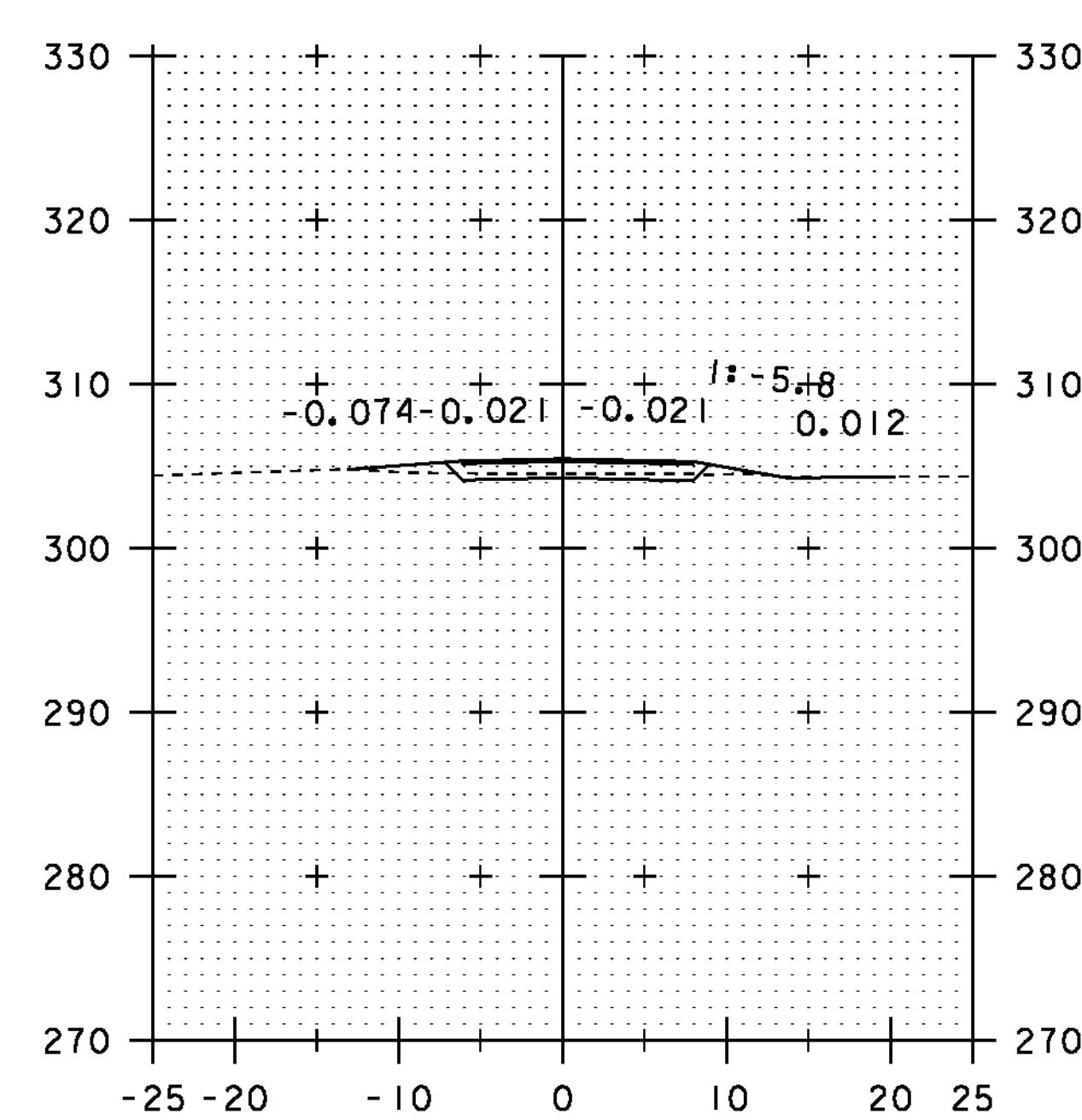
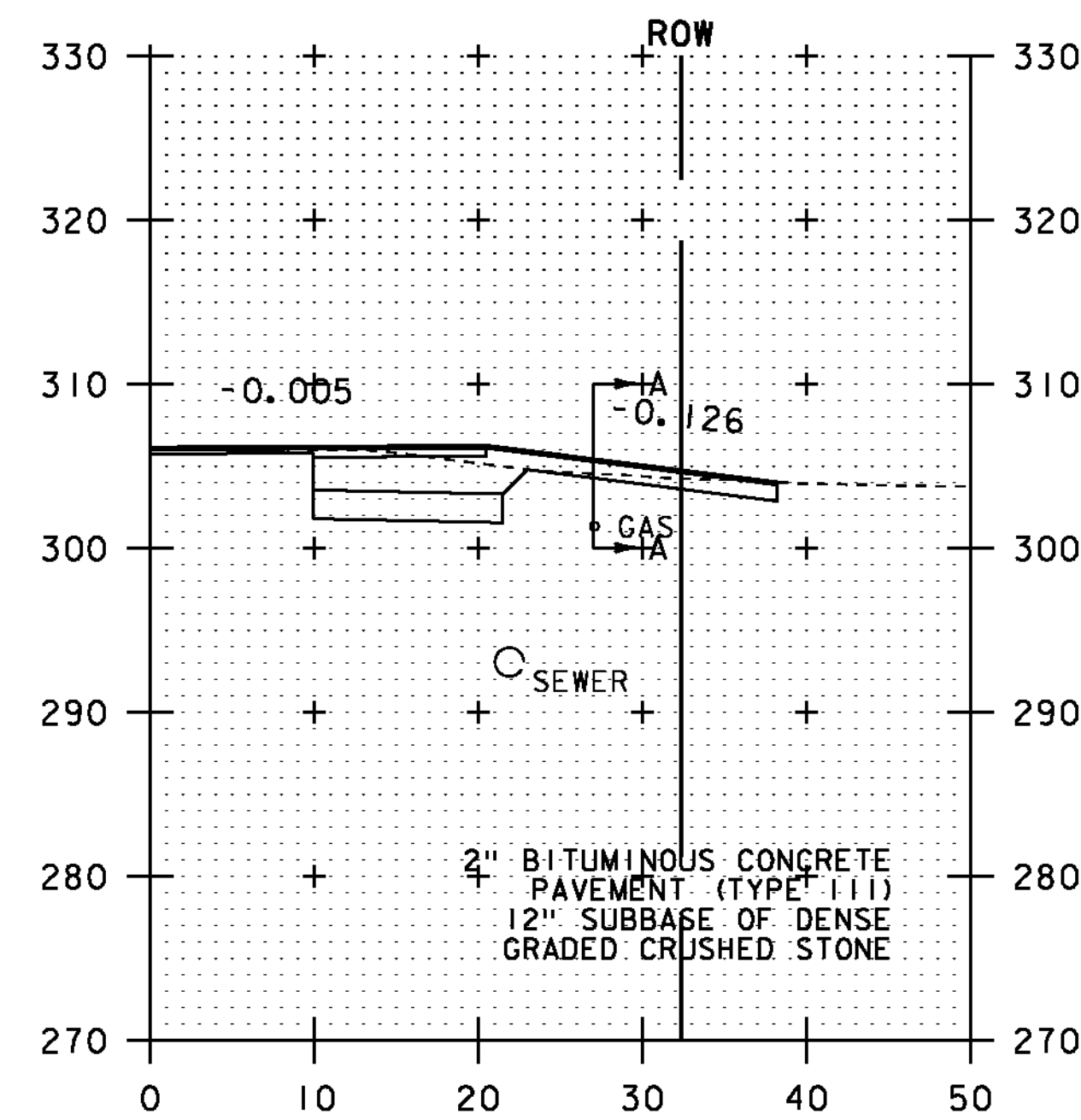
0 10 20
SCALE IN FEET

STA. 169+50 TO STA. 170+05

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

FILE NAME: t97d002xsl.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

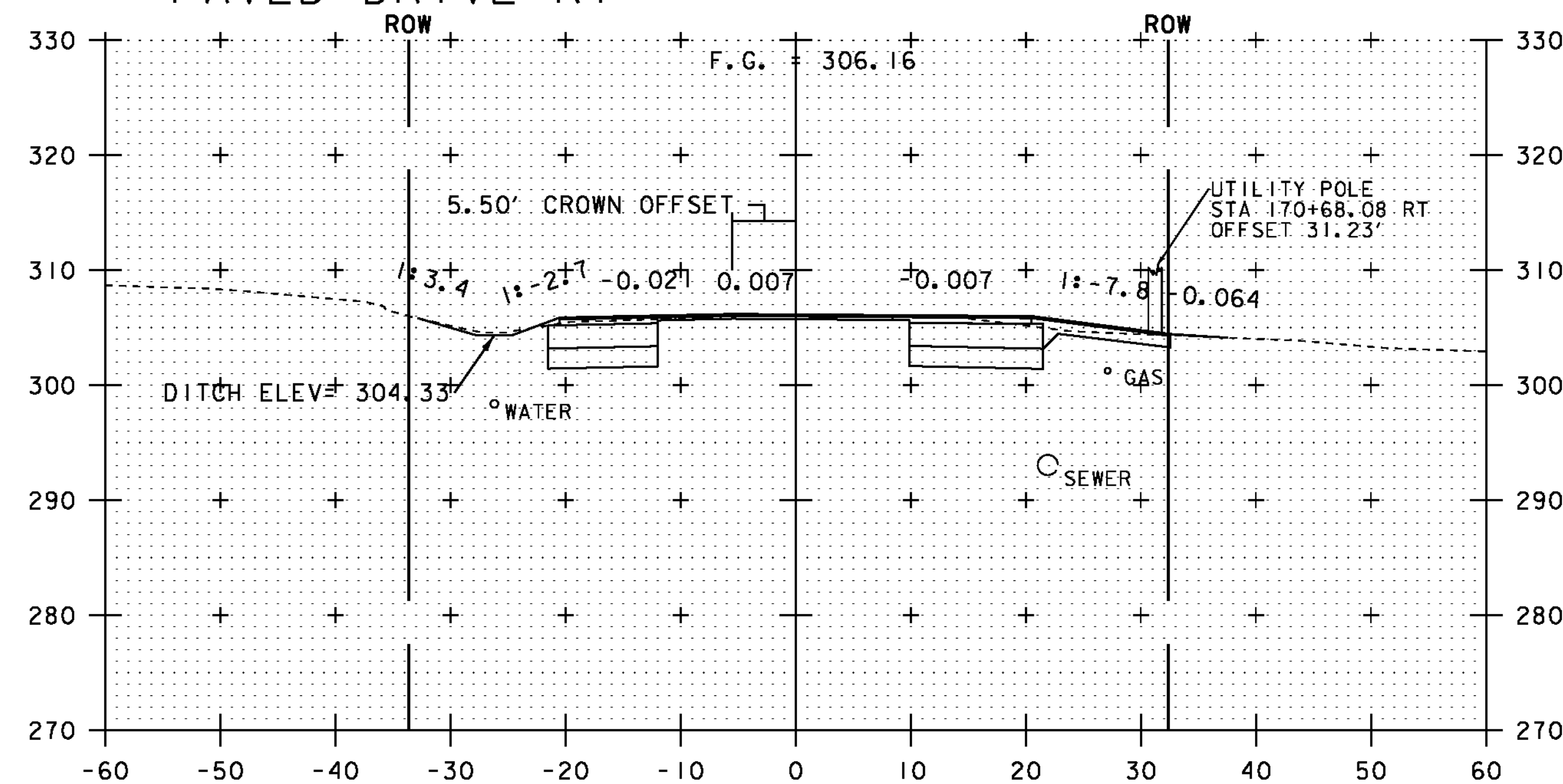


170+56
PAVED DRIVE RT

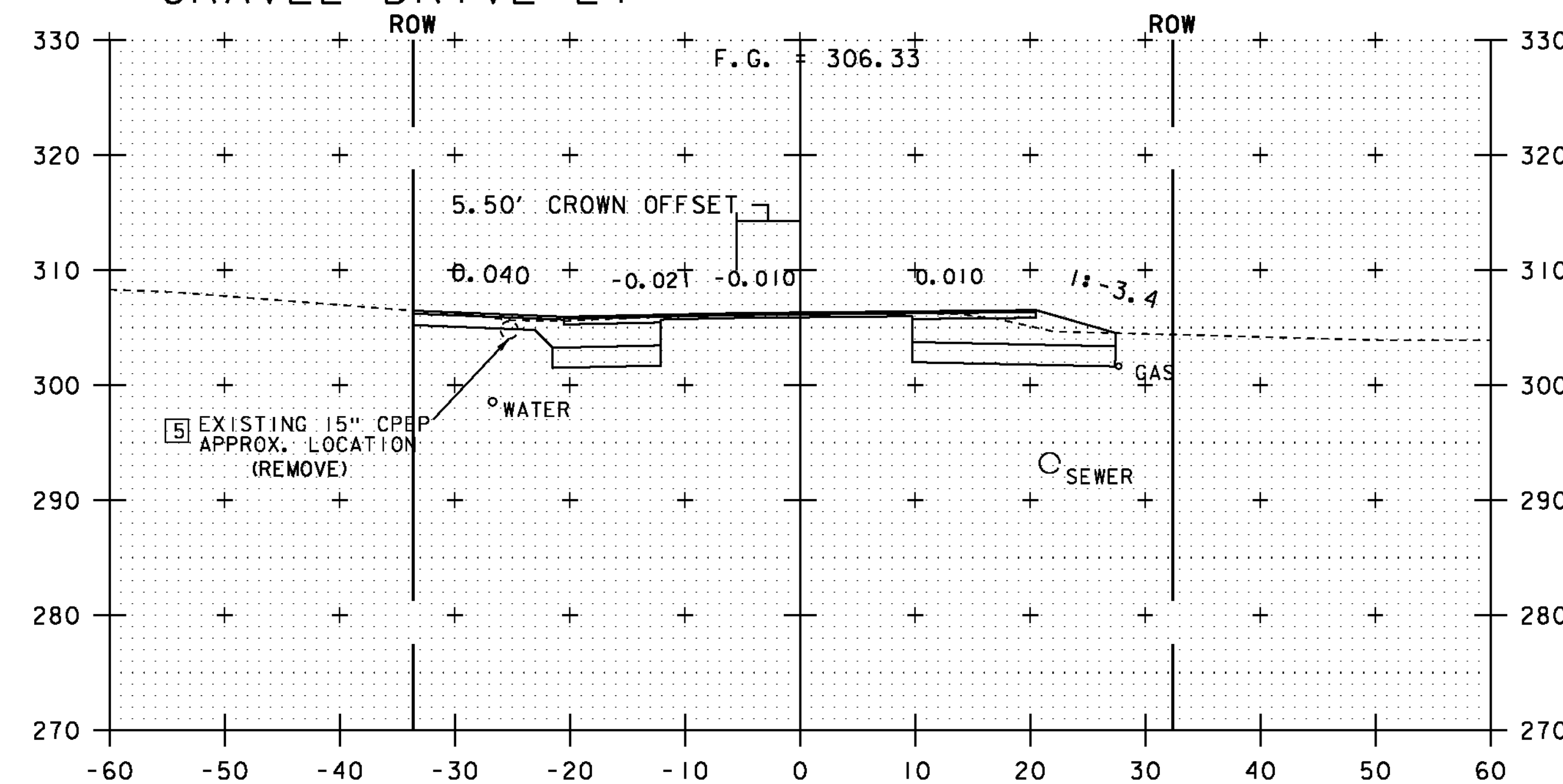
SECTION A-A

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

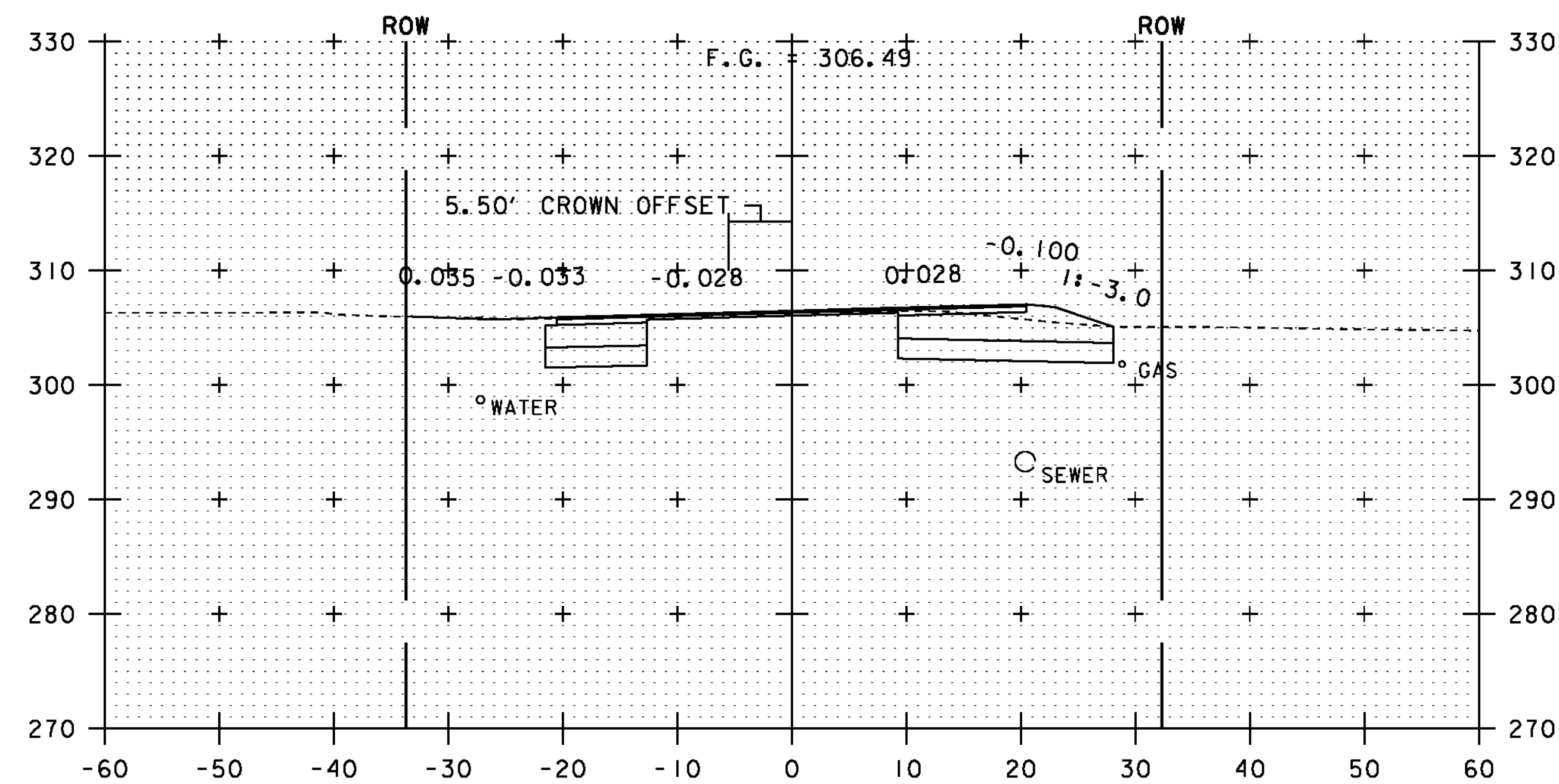
0 10 20
SCALE IN FEET

STA. 170+50 TO STA. 171+12

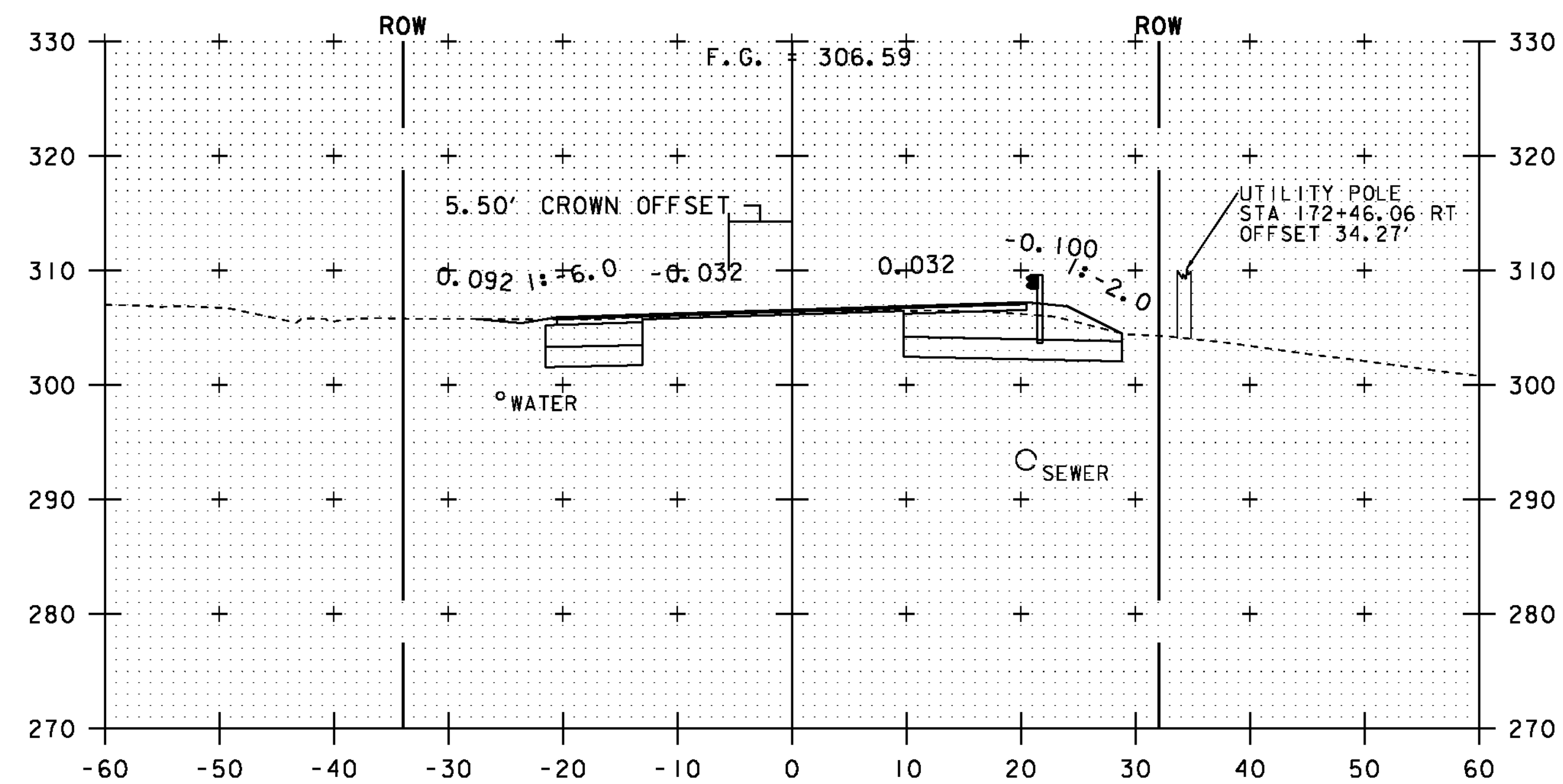
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 5

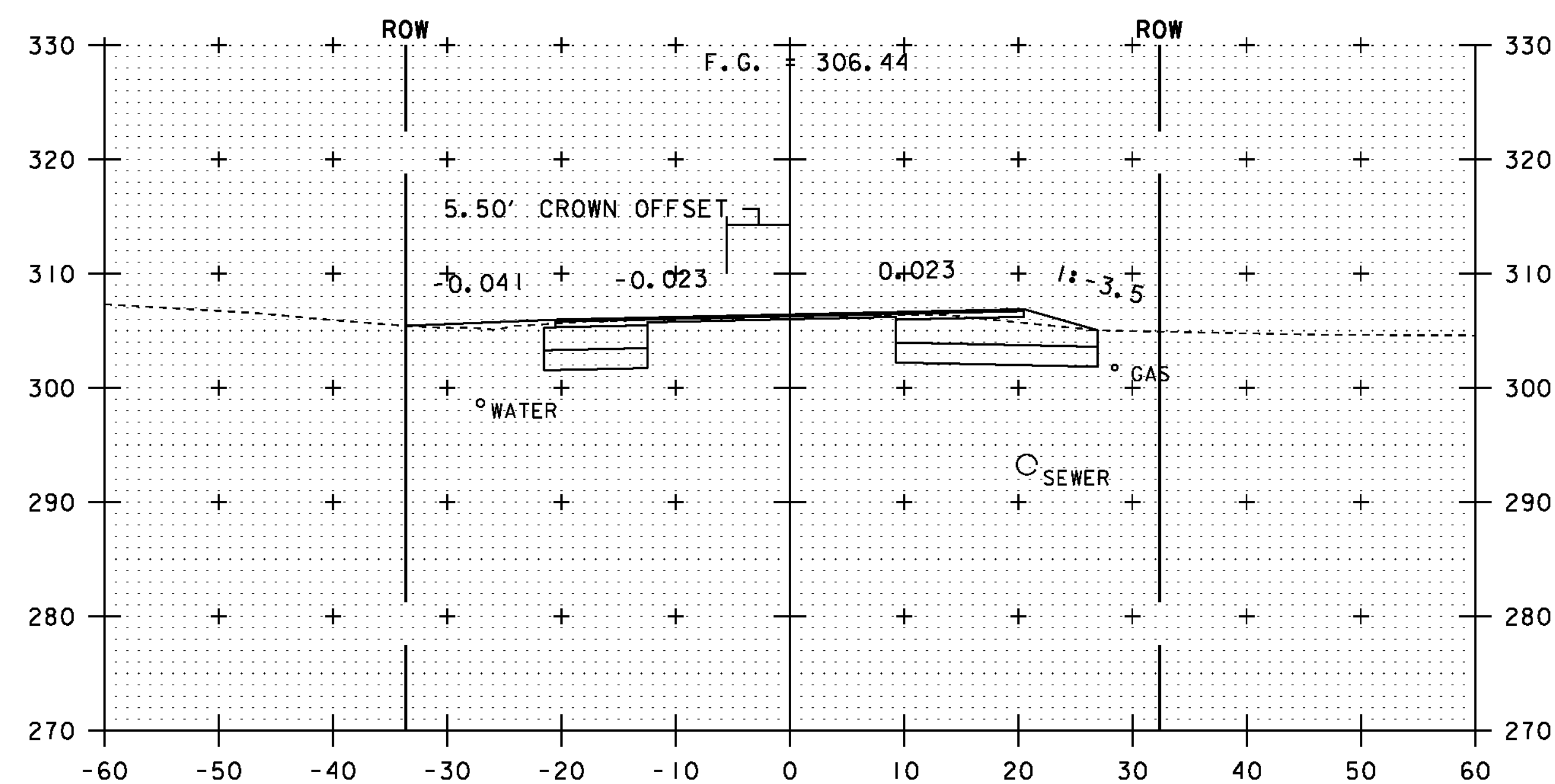
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 59 OF 64



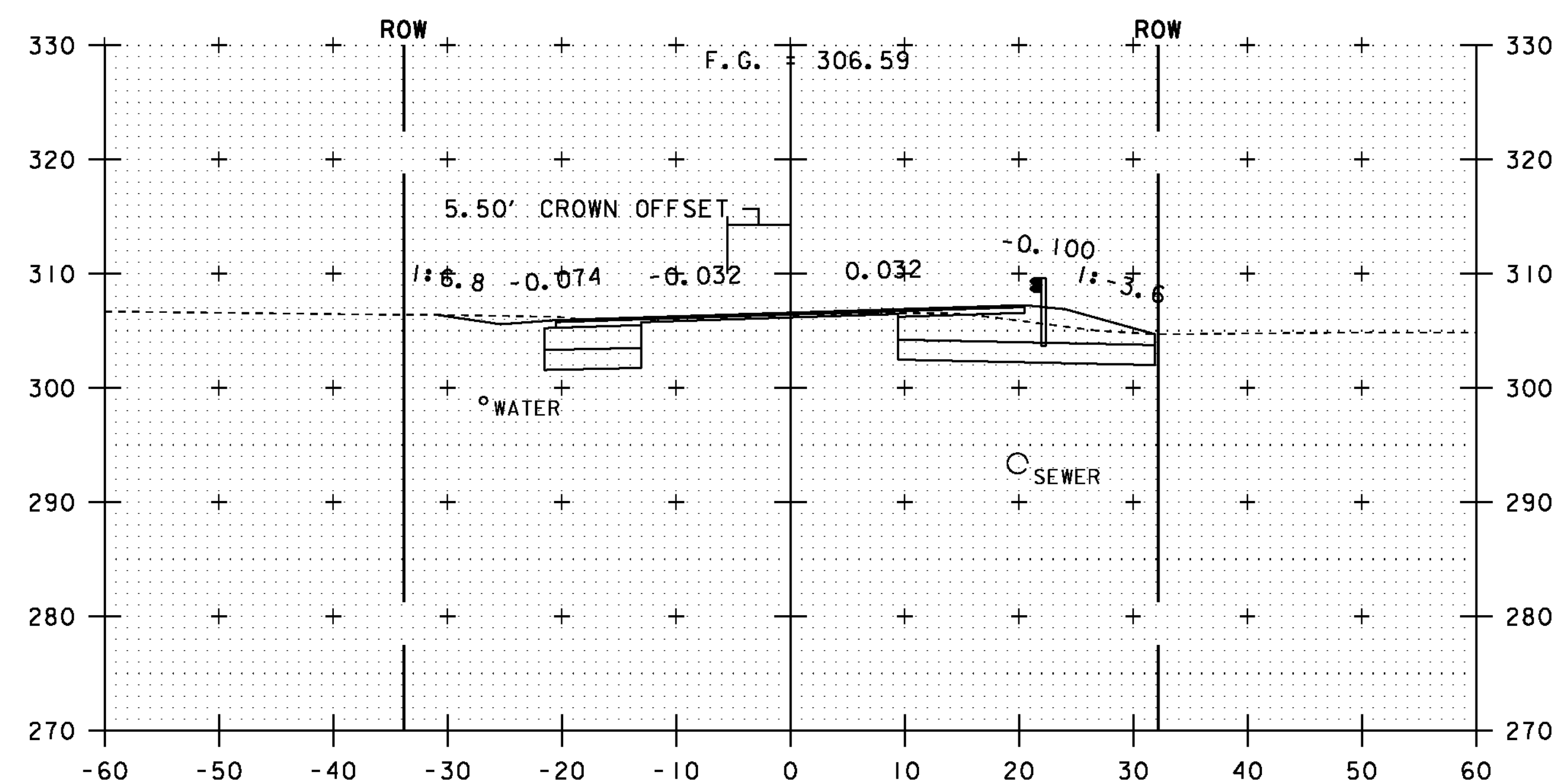
171+50



172+50



PC 171+34.56



172+00

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

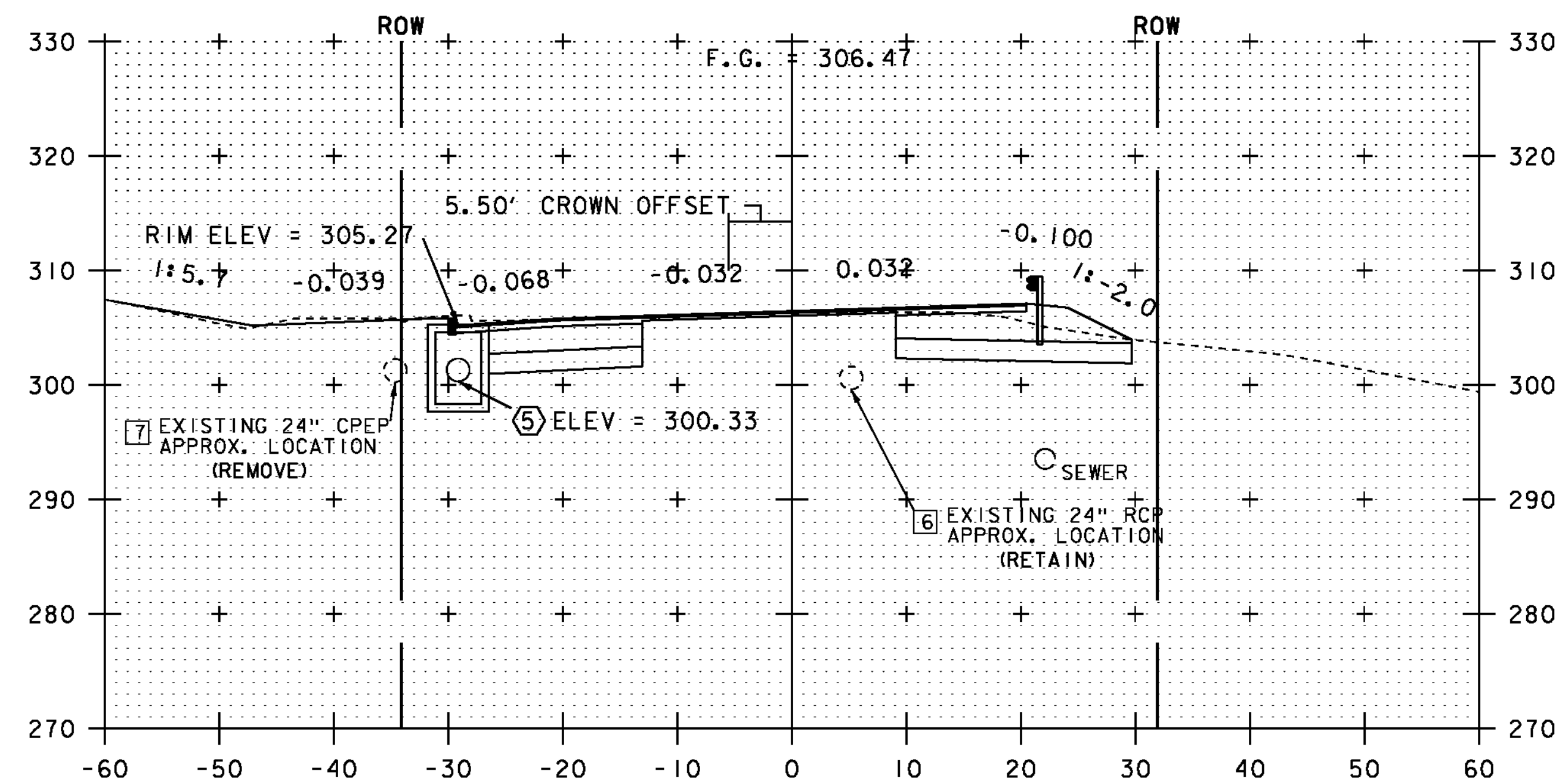
0 10 20
SCALE IN FEET

STA. 171+34.56 TO STA. 172+50

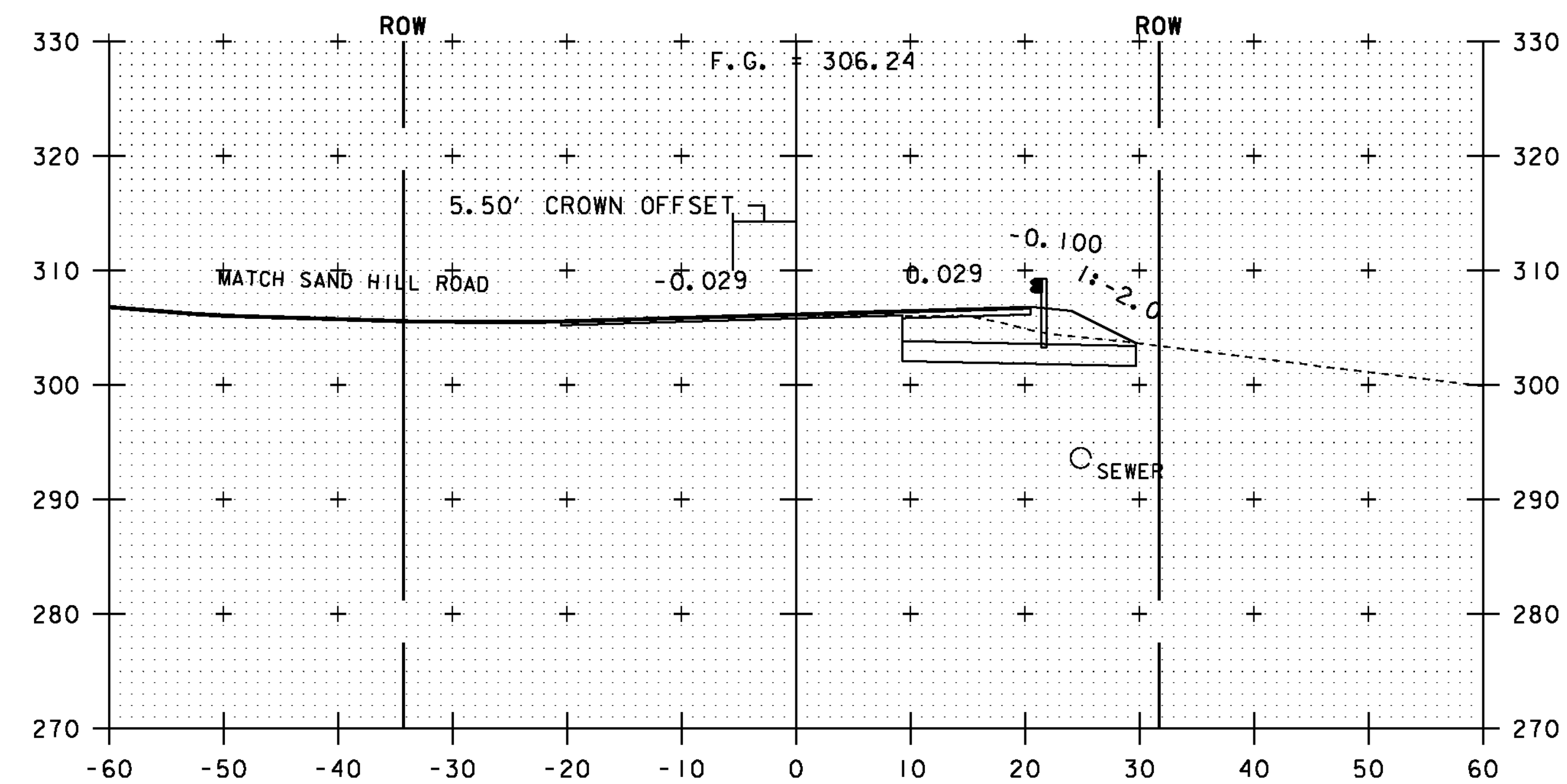
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 6

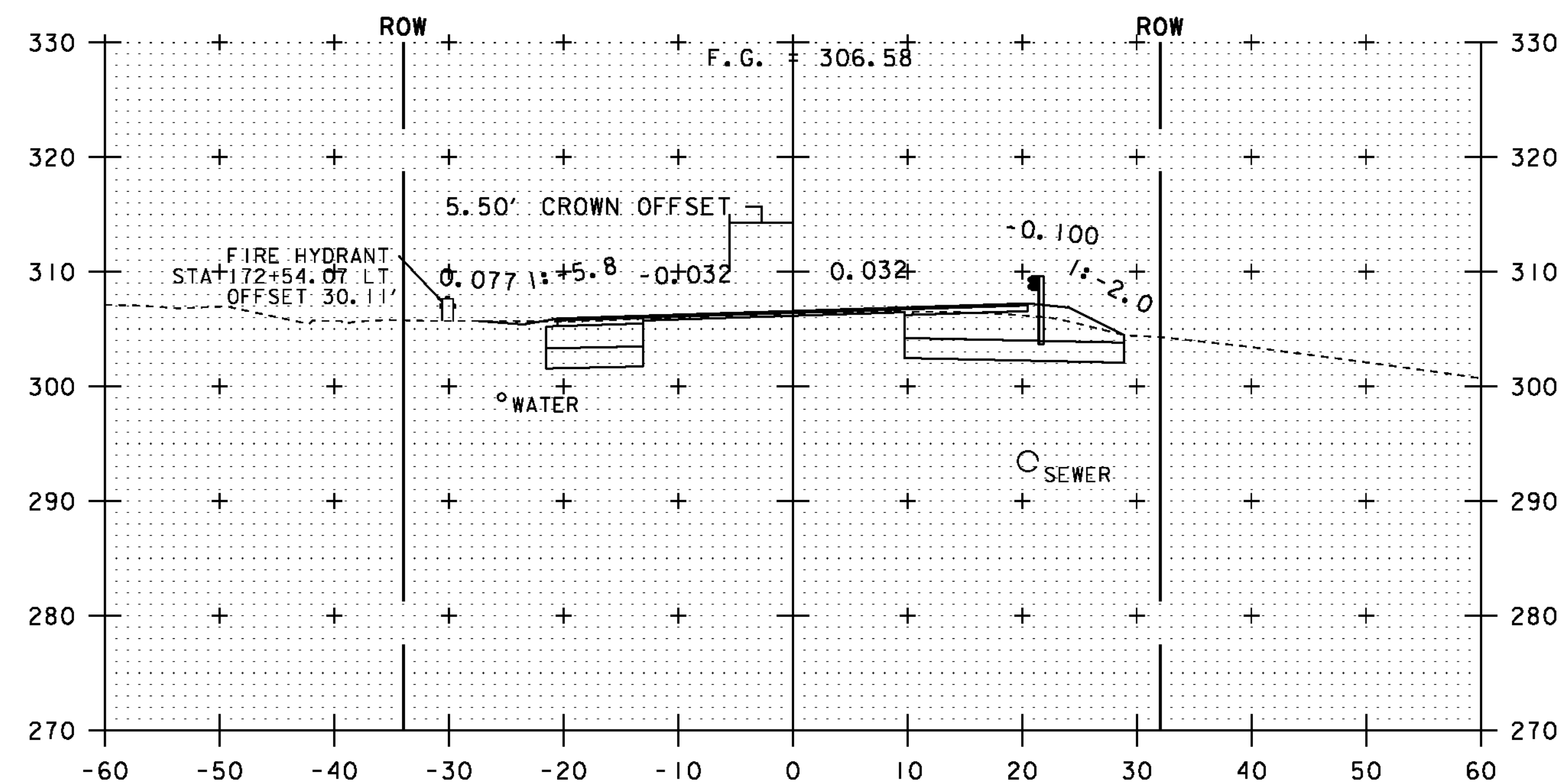
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 60 OF 64



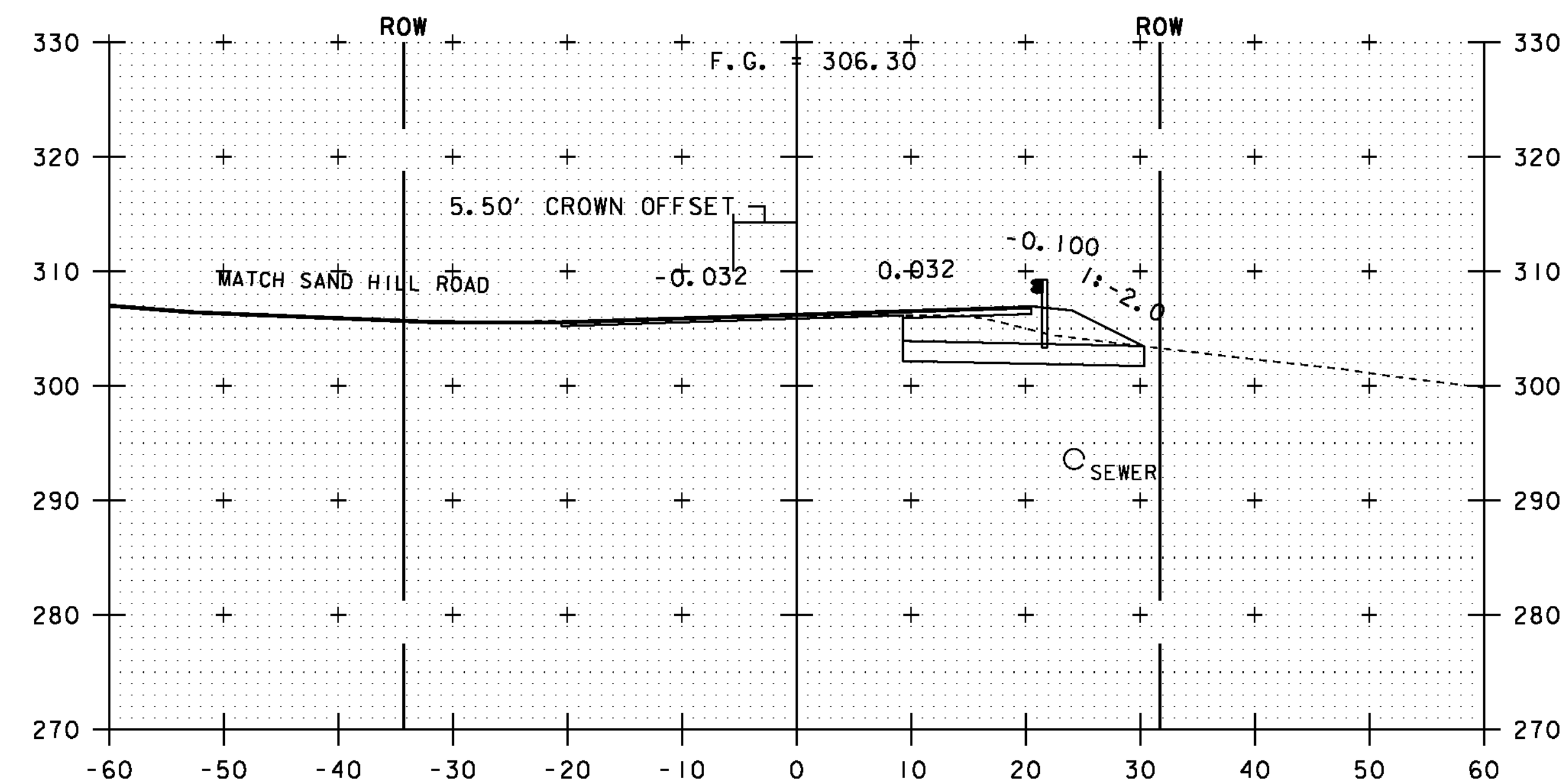
173+00



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

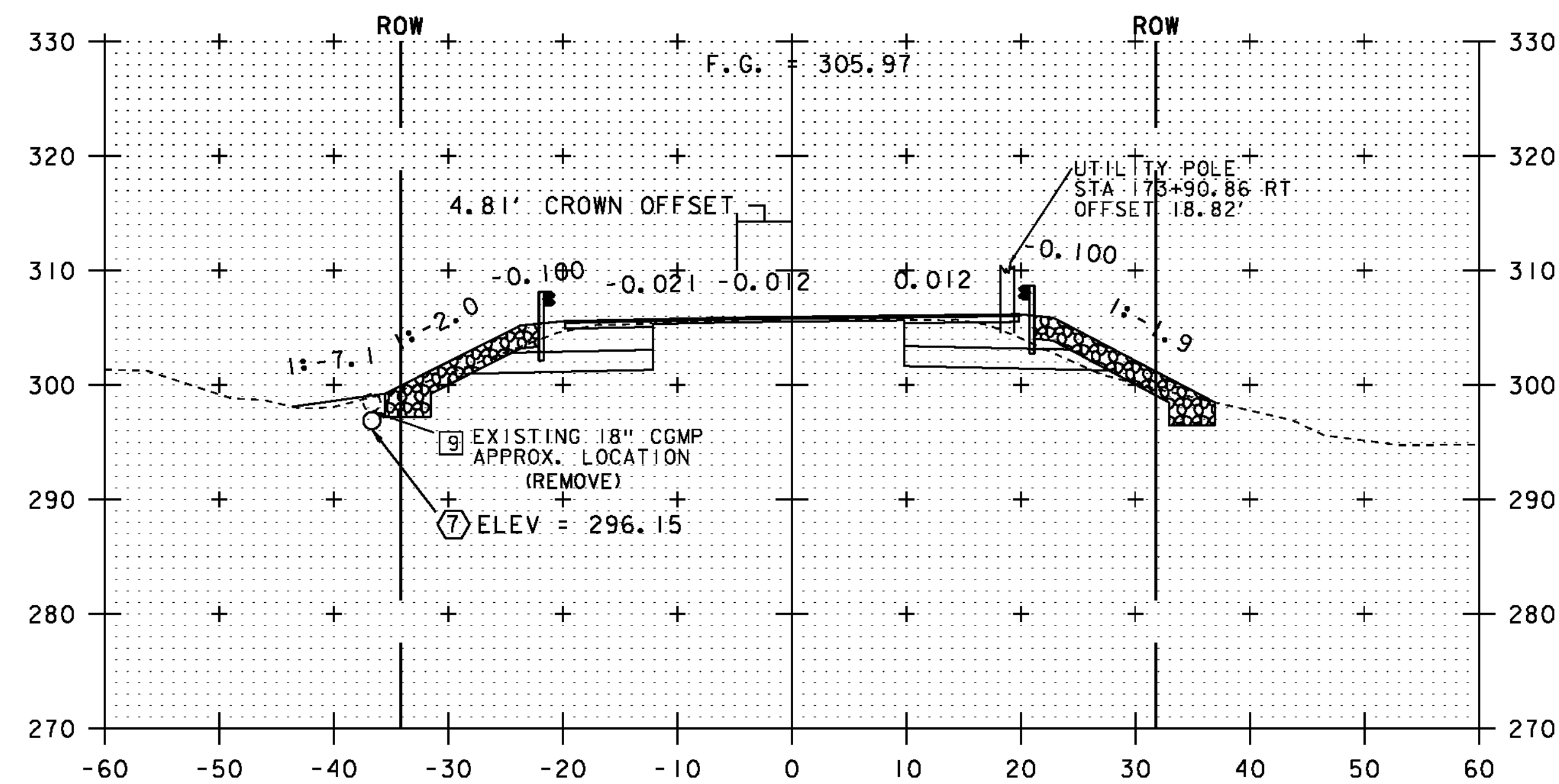
0 10 20
SCALE IN FEET

STA. 172+51.78 TO STA. 173+50

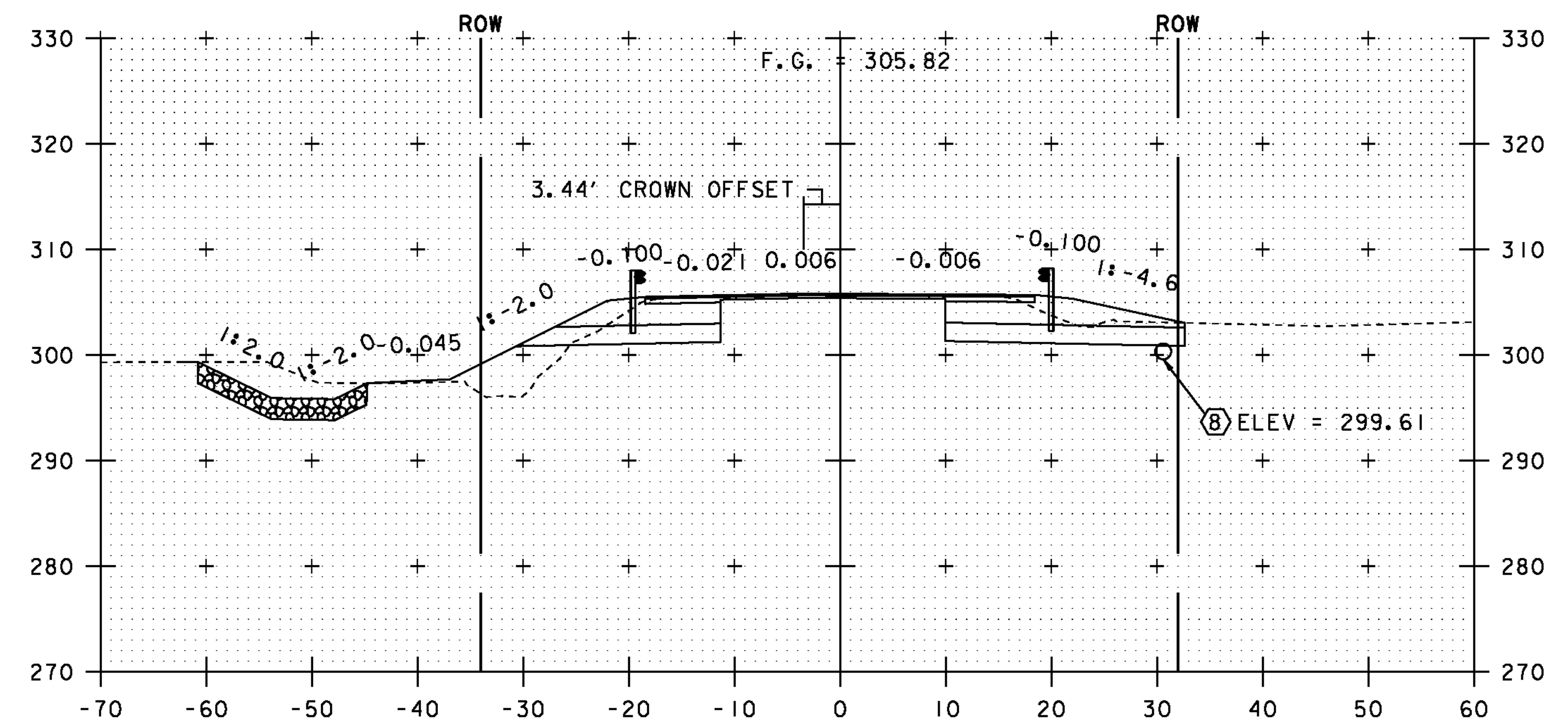
PROJECT NAME: ESSEX TOWN
PROJECT NUMBER: STP 5400 (5)

FILE NAME: t97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 7

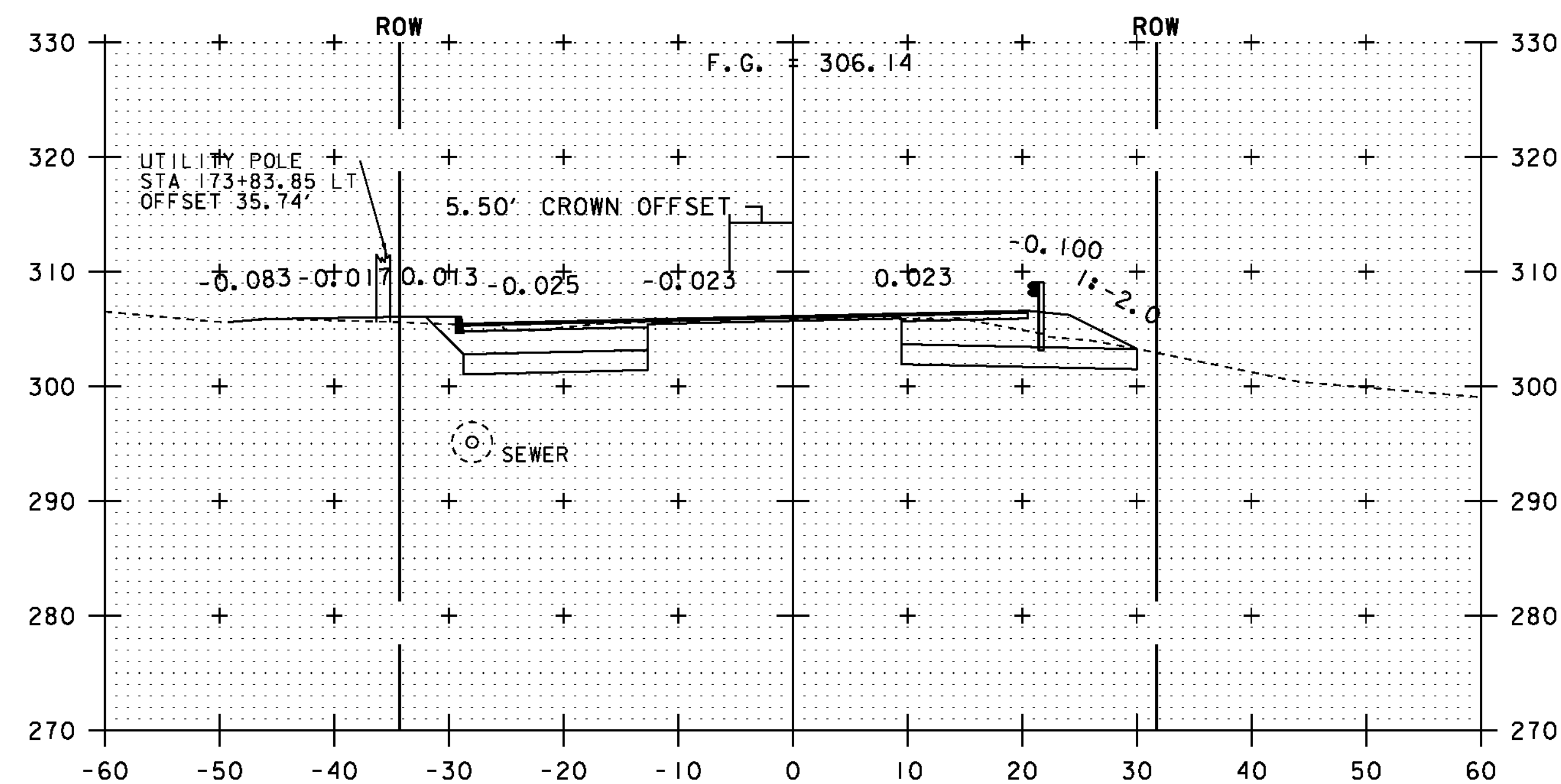
PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 61 OF 64



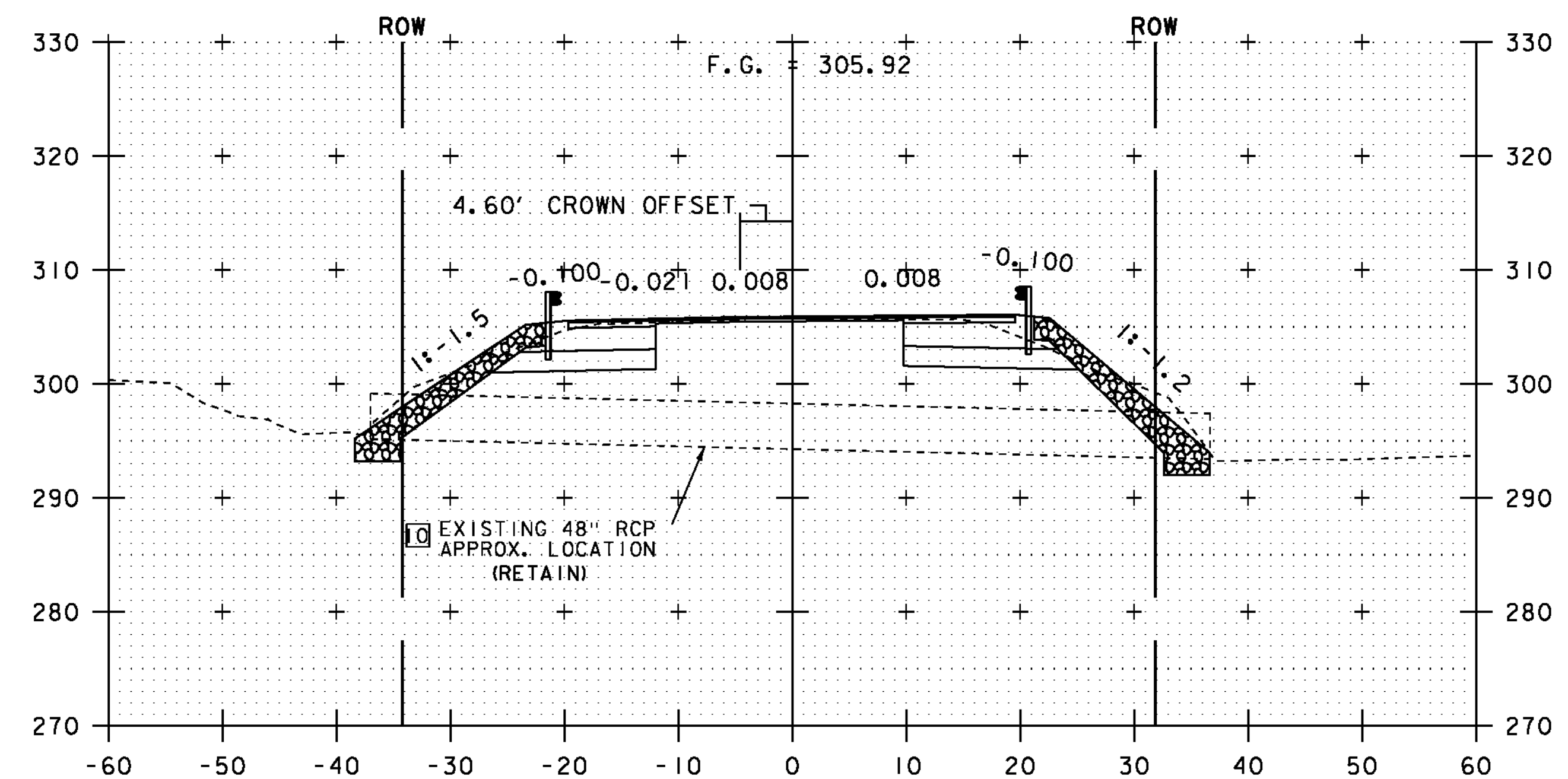
174+00



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

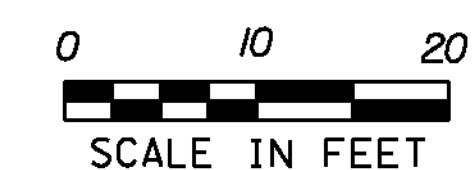
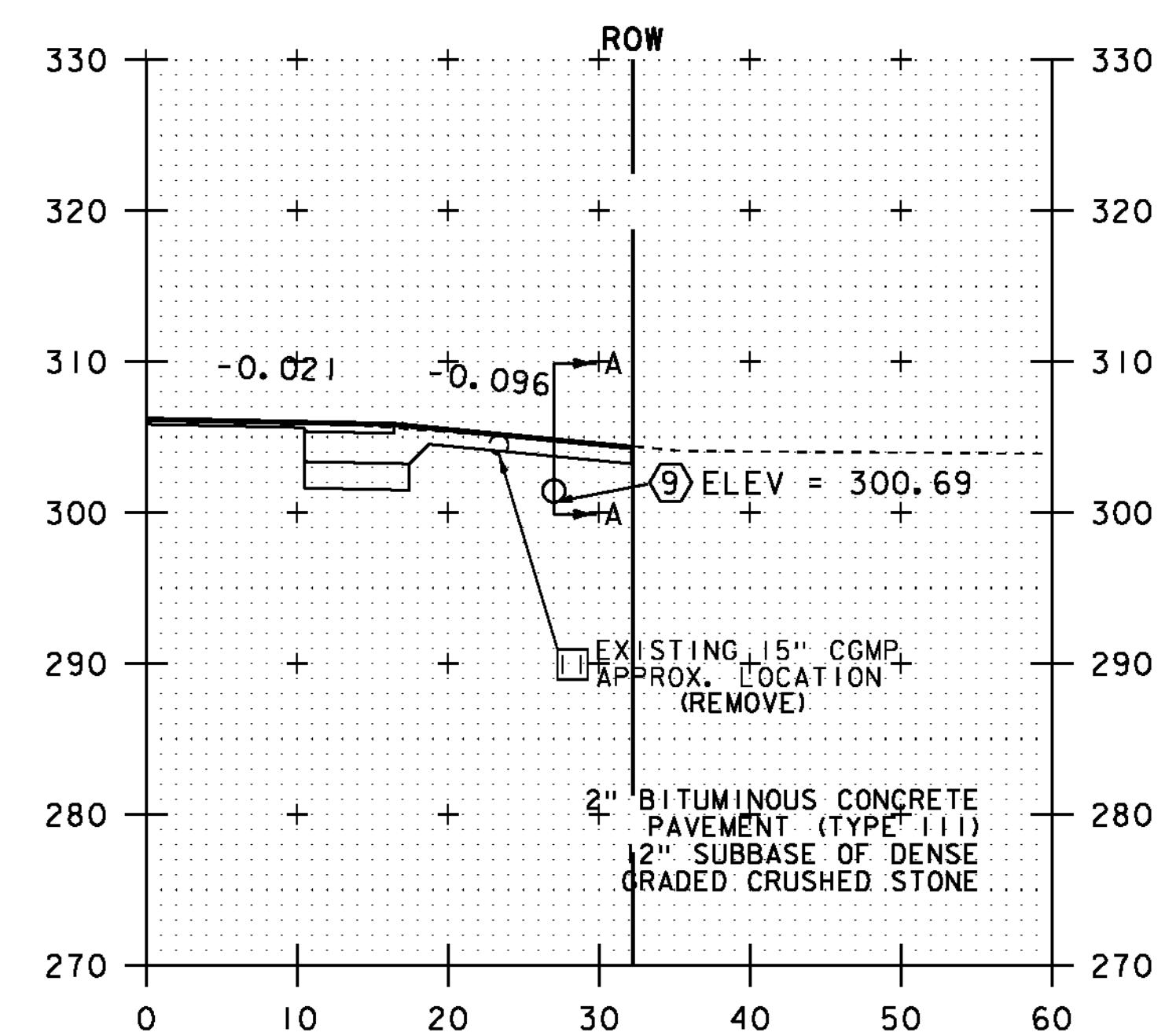
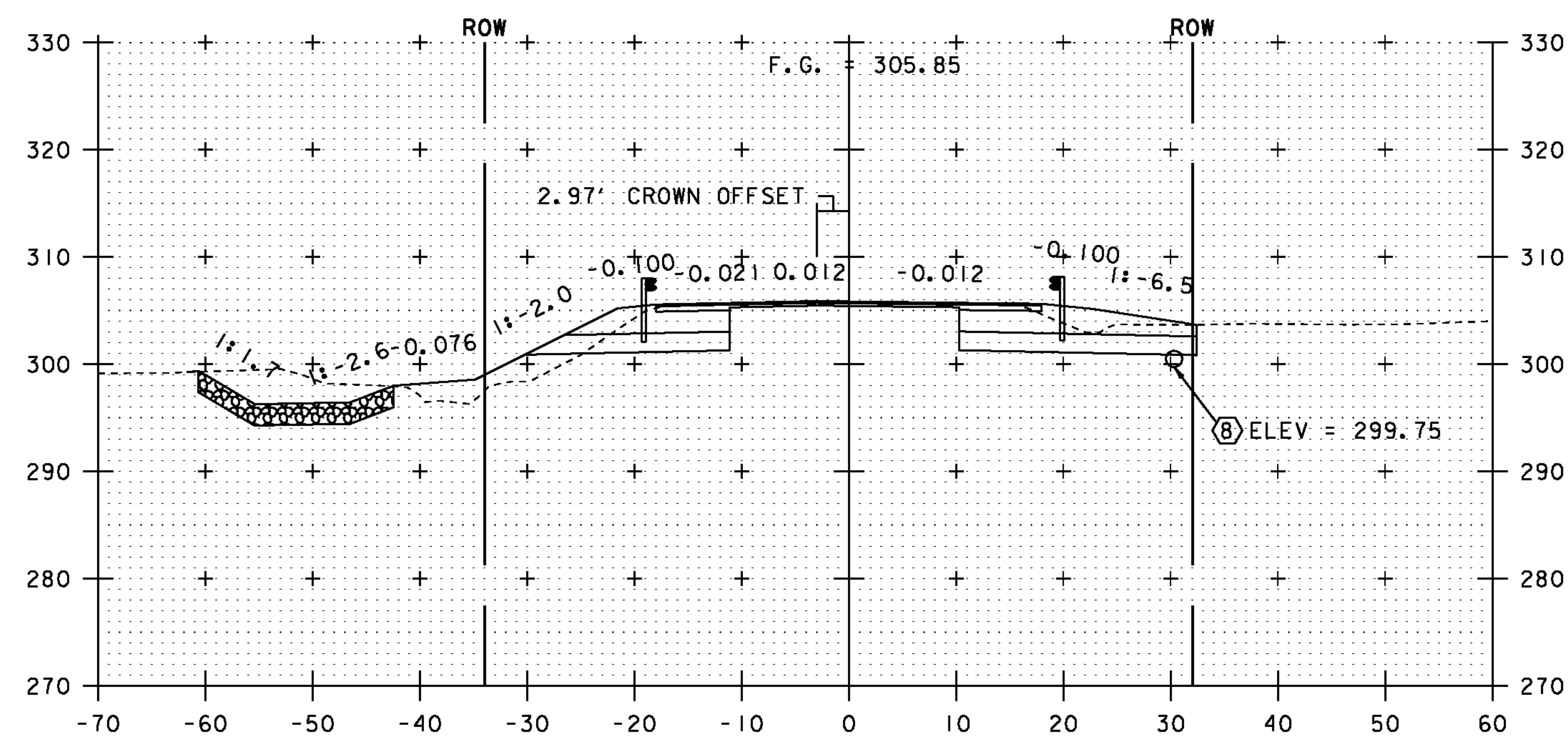
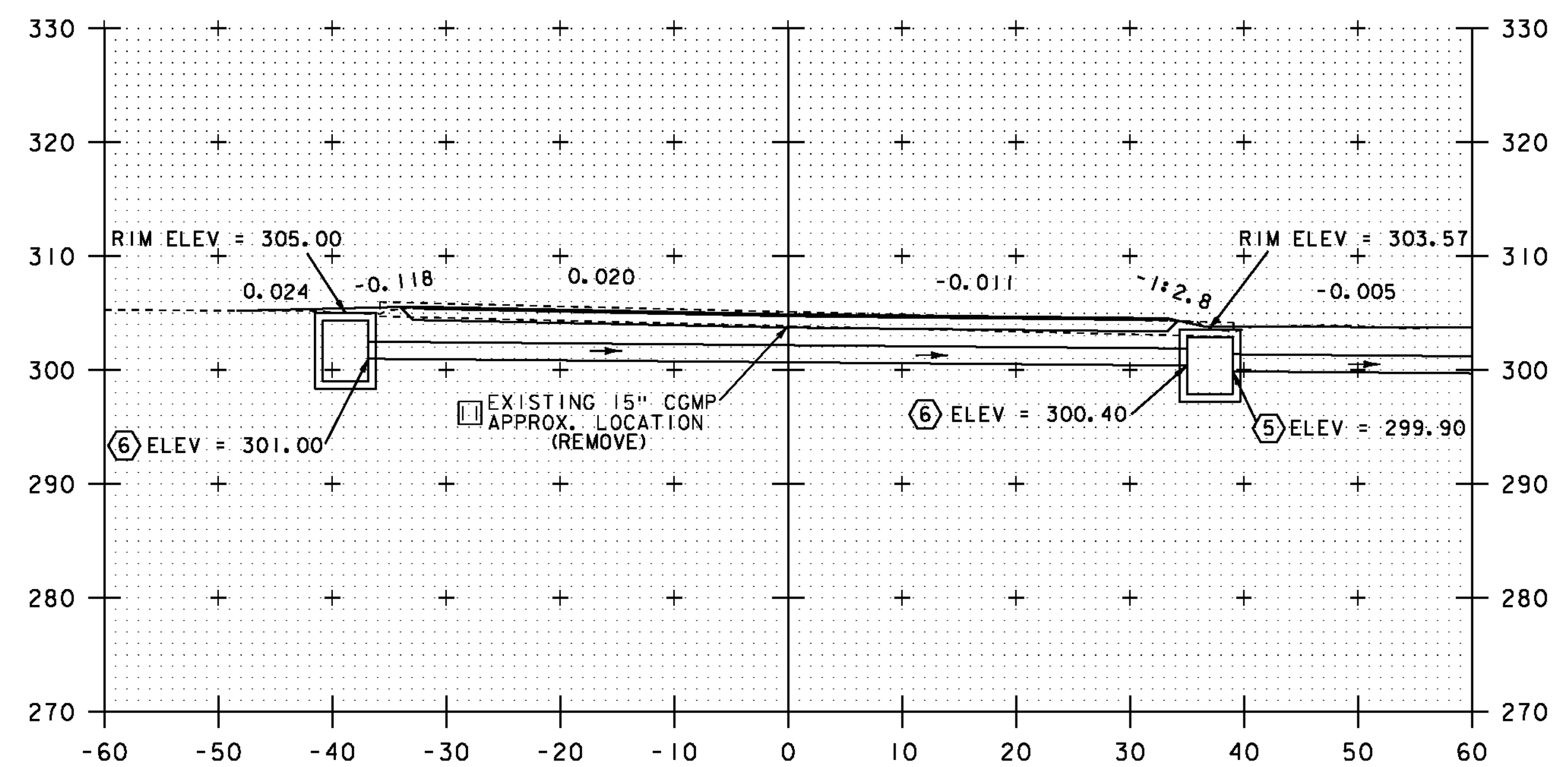
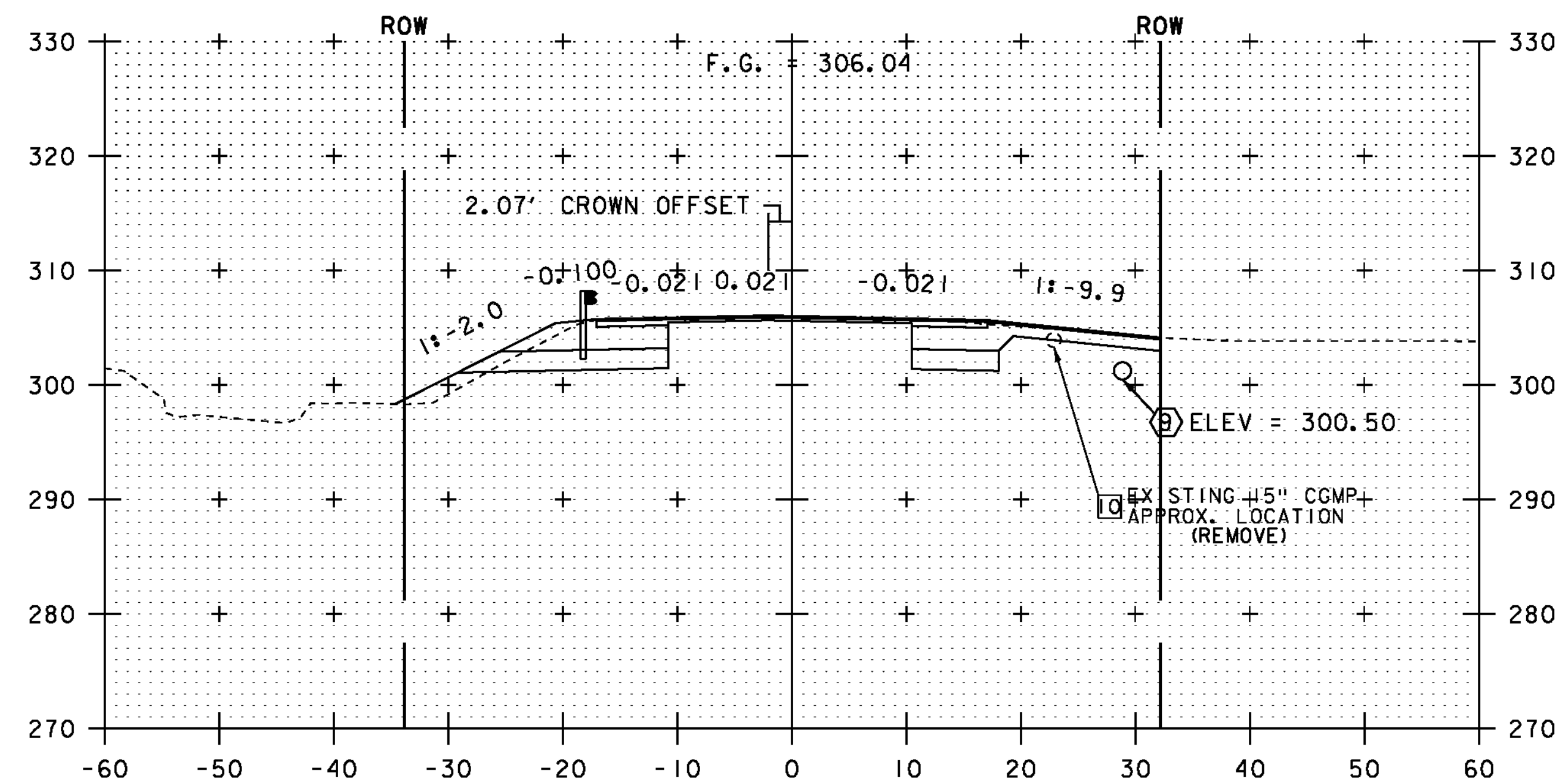
0 10 20
SCALE IN FEET

STA. 173+68.81 TO STA. 174+50

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

FILE NAME: t97d002xsl.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

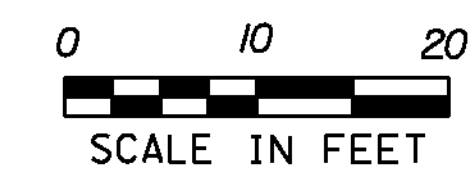
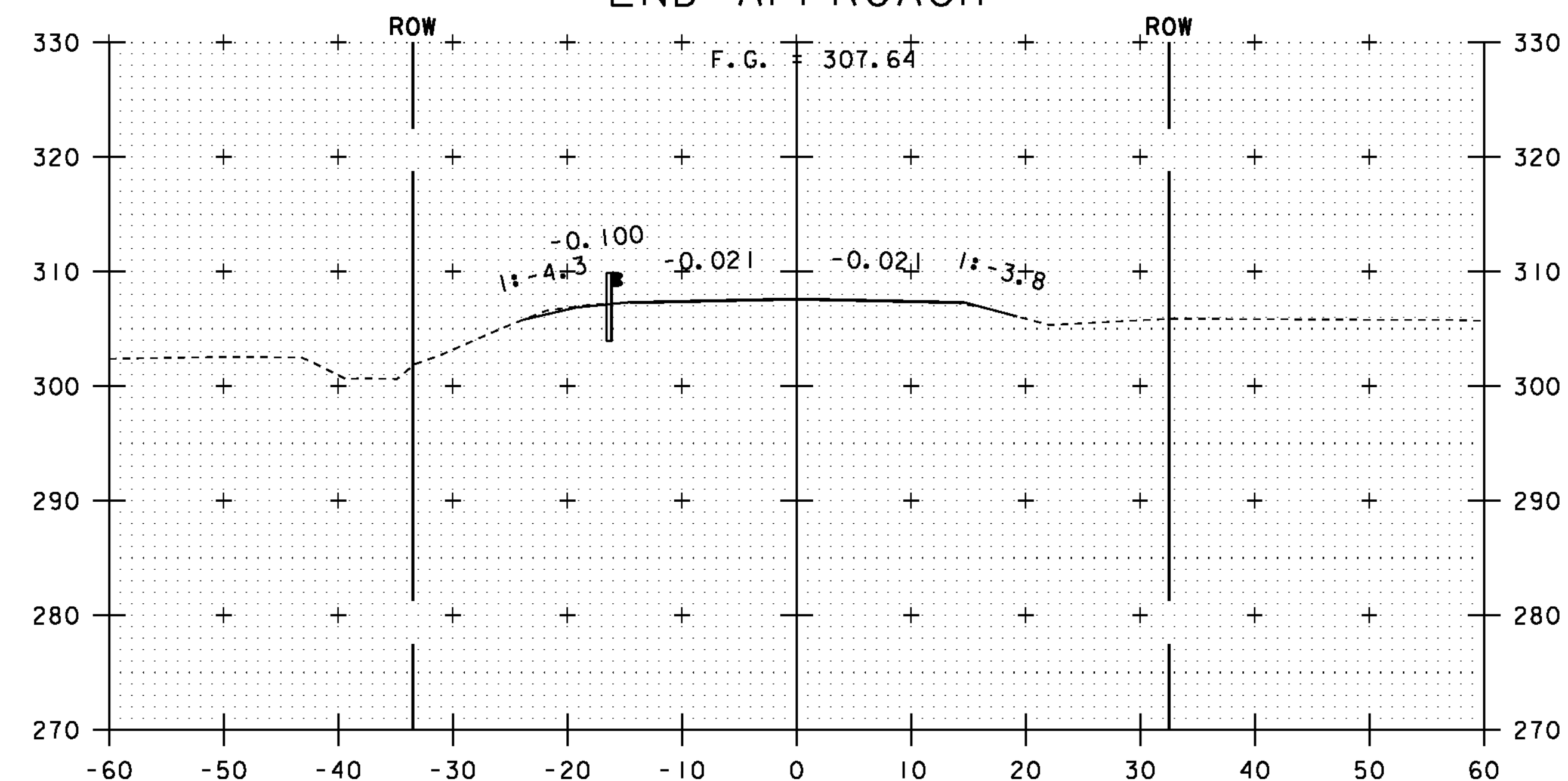
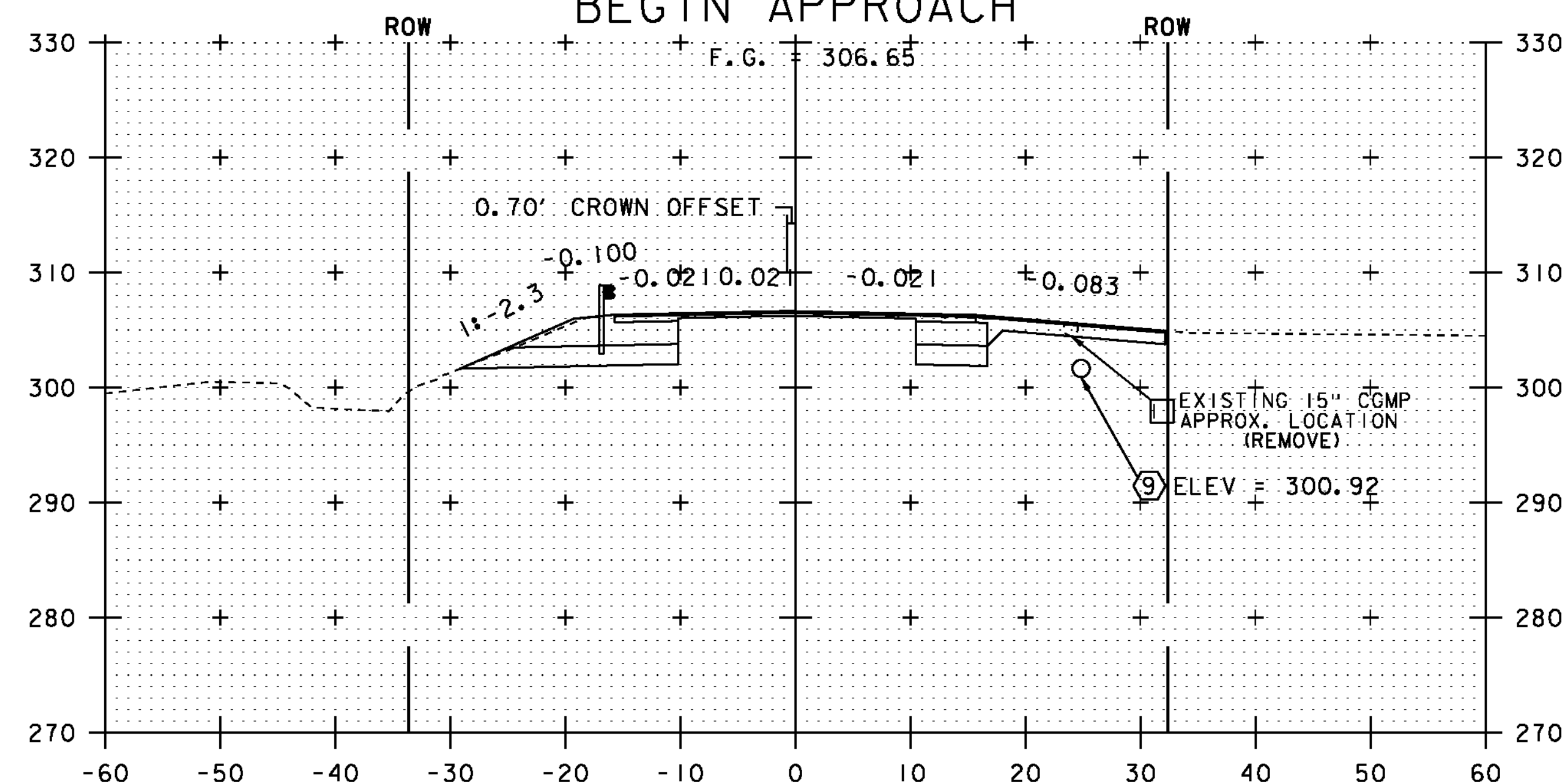
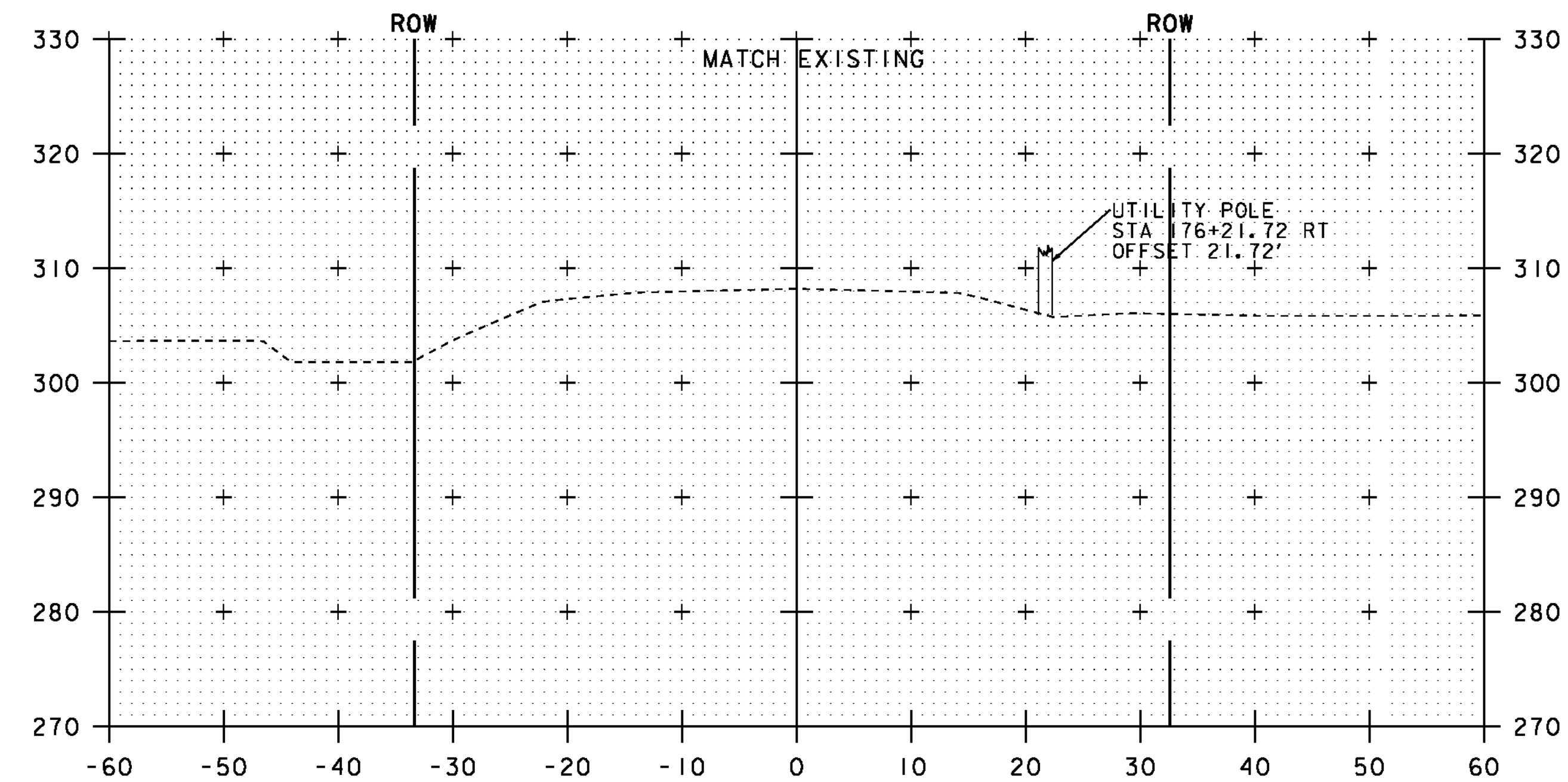
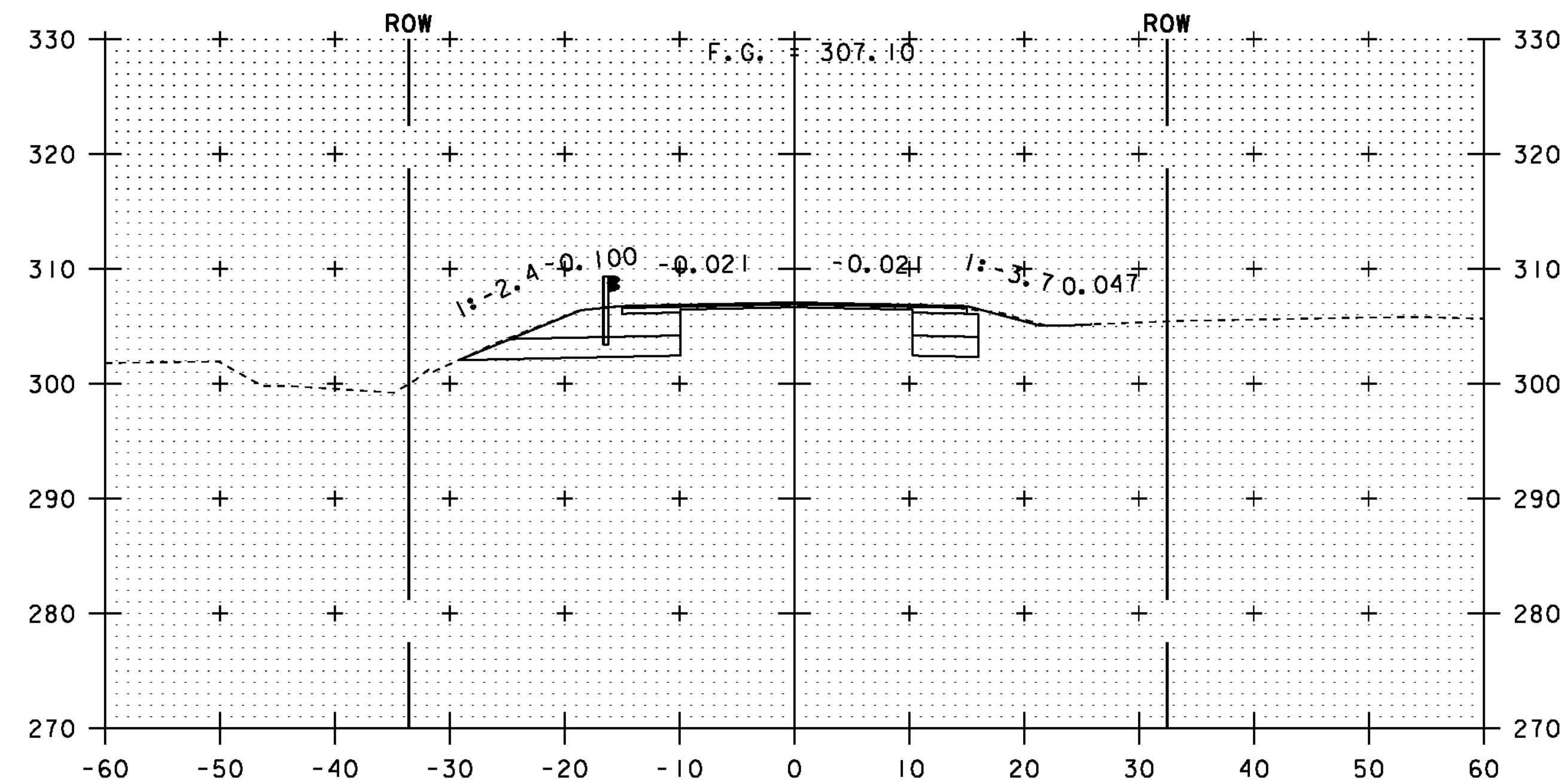


STA. 174+67 TO STA. 175+23

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

FILE NAME: t97d002xsl.dgn
PROJECT LEADER: J. SCHULTZ
DESIGNED BY: D. LYMAN
VT ROUTE 117 CROSS SECTION SHEET 9

PLOT DATE: 24-AUG-2012
DRAWN BY: D. LYMAN
CHECKED BY: J. DEVLIN
SHEET 63 OF 64



STA. 175+50 TO STA. 176+25

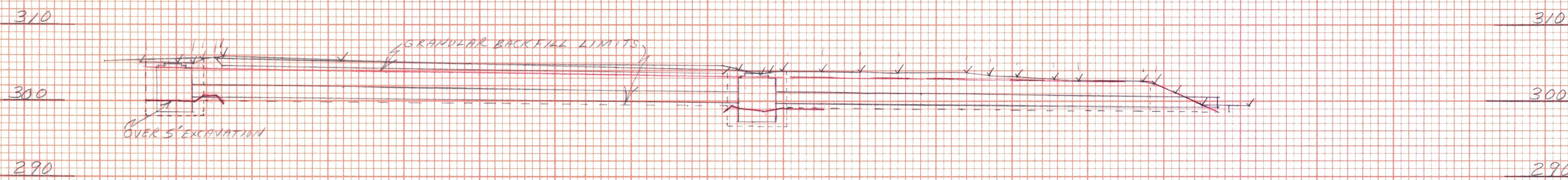
PROJECT NAME: ESSEX TOWN	FILE NAME: t97d002xsl.dgn	PLOT DATE: 24-AUG-2012
PROJECT NUMBER: STP 5400 (5)	PROJECT LEADER: J. SCHULTZ	DRAWN BY: D. LYMAN
	DESIGNED BY: D. LYMAN	CHECKED BY: J. DEVLIN
	VT ROUTE 117 CROSS SECTION SHEET 10	SHEET 64 OF 64

DATE	BY	DATE	BY
FINAL SURVEY	BY	DATE	BY
NOTE BOOK	DATE	BY	DATE
NO.	NO.	NO.	NO.

DATE	BY	DATE	BY
ORIGINAL SURVEY	BY	DATE	BY
NOTE BOOK	DATE	BY	DATE
NO.	NO.	NO.	NO.

CB 9 PIPE 9
175+61.8 RT 175+86 RT
4.83 DIA 18" CPEP

CB 8 PIPE 8
174+86 RT 174+25 RT
4.83 DIA 18" CPEP



T.E. 47705' CB 9
 $(5)(3.92)(3.14) = 241.25 CF$
 $((2+1.8)/2(6.4/12) + ((1.8+2.6)/2(1.1/12)))(3.92)(3.14)(1.5) = 141.86 CF$
 $(1.56)(0.8)(0.2)(0.40)(1.0)(0.25) = 0.25 CF$
TOTAL T.E. CB #9 = $241.25 + 141.86 = 383.11 CF$

T.E. 47705' CB 8
 $(5)(3.92)(3.14) = 241.25 CF$
 $((2+2.5)/2(0.5/12) + (2.5+2.3)/2(1.1/12) + (2.3+2)/2(3.2/12) + (2+2.5)/2(2.5/12) + (2.5+2.3)/2(0.6/12))(3.92)(3.14)(1.5) = 162.12 CF$
 $(2.185)(0.8)(0.2)(0.31)(0.15)(0.88) = 0.25 CF$
TOTAL T.E. CB #8 = $241.25 + 162.12 = 403.37 CF$

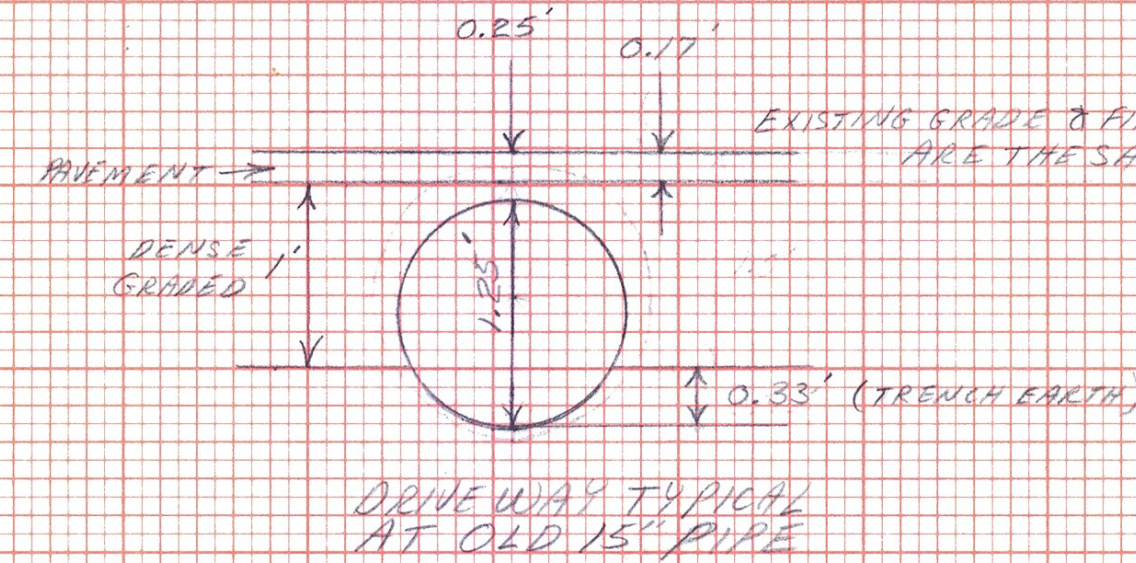
T.E. 47705' PIPE 9
 $(5)(3.92)(3.14) = 241.25 CF$
 $((2+1.8)/2(6.4/12) + ((1.8+2.6)/2(1.1/12)))(3.92)(3.14)(1.5) = 141.86 CF$
 $(1.56)(0.8)(0.2)(0.40)(1.0)(0.25) = 0.25 CF$
TOTAL T.E. PIPE #9 = $241.25 + 141.86 = 383.11 CF$

T.E. 47705' PIPE 8
 $(5)(3.92)(3.14) = 241.25 CF$
 $((2+2.5)/2(0.5/12) + (2.5+2.3)/2(1.1/12) + (2.3+2)/2(3.2/12) + (2+2.5)/2(2.5/12) + (2.5+2.3)/2(0.6/12))(3.92)(3.14)(1.5) = 162.12 CF$
 $(2.185)(0.8)(0.2)(0.31)(0.15)(0.88) = 0.25 CF$
TOTAL T.E. PIPE #8 = $241.25 + 162.12 = 403.37 CF$

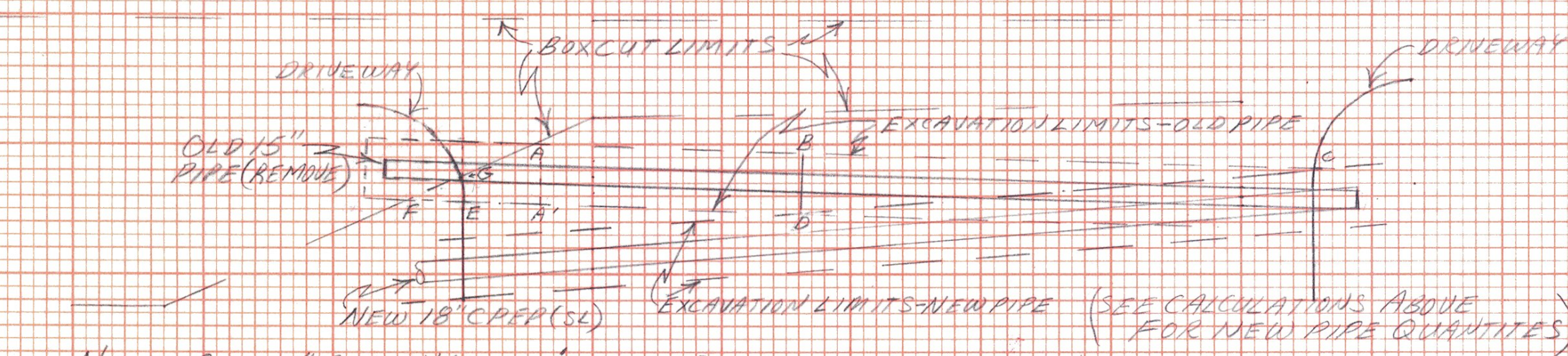
11 175+50.83 RT - 174+83.91 RT
EXISTING 15' X 75' C&G (REMOVE)

PIPE #8 GRANULAR BACKFILL FOR STRUCTURES
 $((47.8 \times 4) + 4 \times 9)/2(4.5) = 241.4 CF$ MINUS PIPE $(47.8 \times 6)(.75)^2(3.14) = 95.02 CF$
 $(241.4 - 95.02)(1.2) = 146.38 CF$

PIPE #9 GRANULAR BACKFILL FOR STRUCTURES
 $((40.4 \times 4) + 4 \times 9)/2(4.5) = 126.72 CF$ MINUS PIPE $(40.4 \times 6)(.75)^2(3.14) = 124.34 CF$
 $(126.72 - 124.34)(1.2) = 2.86 CF$



CB #8 & 9 GRANULAR BACKFILL FOR STRUCTURES
 $(6.4)(3.92)(3.14) = 308.80 CF$ MINUS CB $(6.4)(2.42)(3.14) = 117.69 CF$
 $(308.80 - 117.69)(1.2) = 193.11 CF$



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

AREA F-G-E-F $(4.2 \times 2.0 \times 1.5)/2 = 6.3 CF$
 A-B-D-A $(20.0 \times 4.5 \times 0.33)/2 = 14.85 CF$
 A-A'-E-G-A $(4.5 \times 3.0 \times 1.8)(0.33) = 6.4 CF$
 B-C-D-B $(8.8 \times 4.5 \times 0.33)/2 = 6.6 CF$
TOTAL = 34.15 CF

DEDUCT PIPE $45'((11 \times 0.33)/2) = 8.2 CF$
 $(34.15 - 8.2)/27 = 1.0 CF$ T.E.

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

ESSEX TOWN STP 5400(5)
DRAINAGE SHEET 1

ESSEX TOWN STP 5400(12)

KEI 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

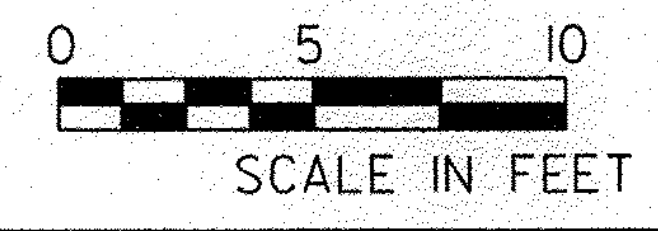
BOXCUT LIMITS

CURB EXCAVATION LIMITS

200+00

173+60 173+68 173+78 173+88

174+0



PROJECT NAME:	ESSEX TOWN	PLOT
PROJECT NUMBER:	STP 5400 (5)	DRAWN
FILE NAME:	+97d002bdr_5scale.dgn	CHECKED
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

