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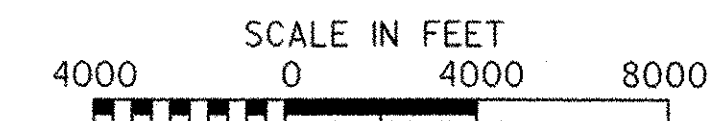
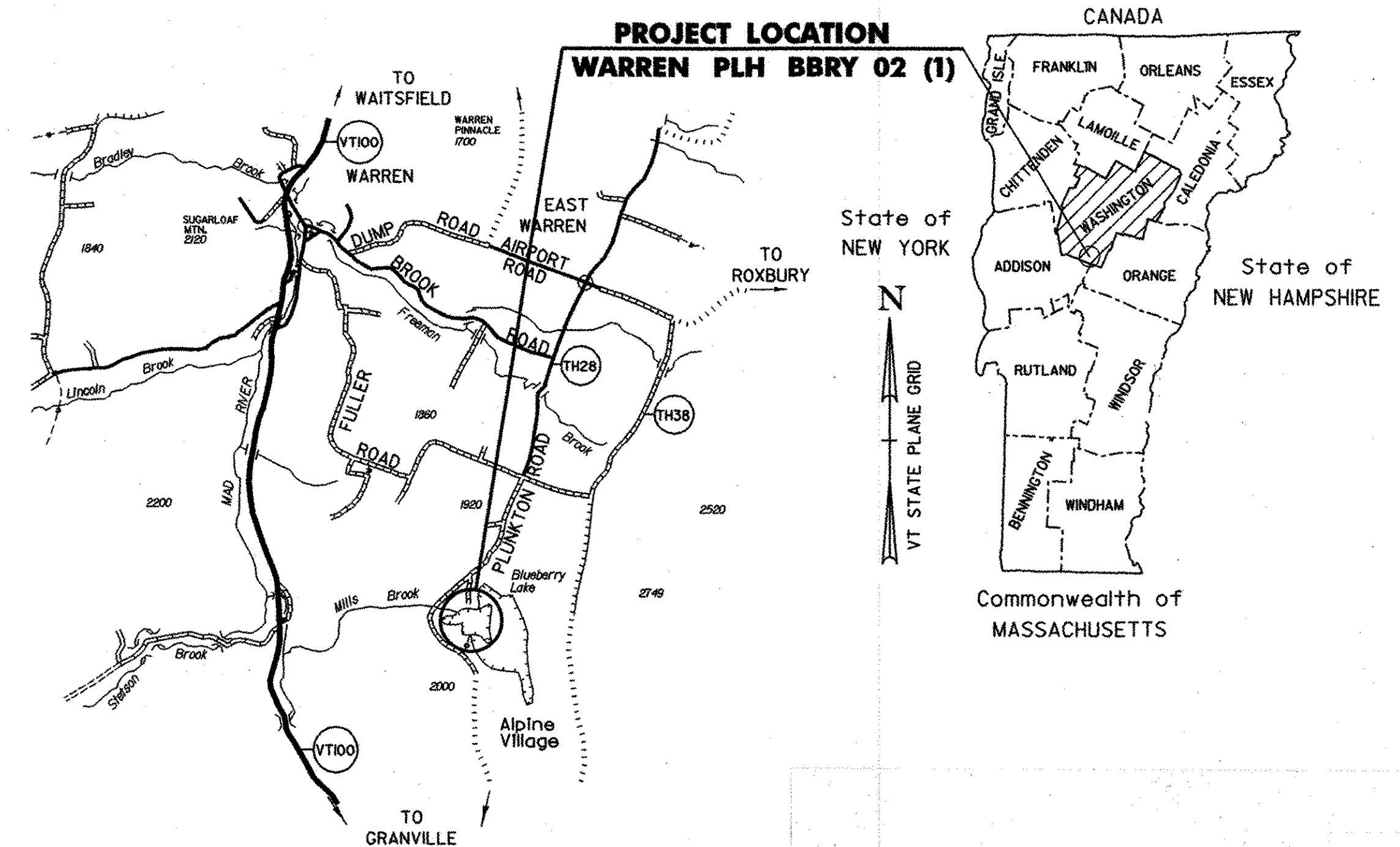
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E-155	WARNING SIGN DETAILS	08/08/95
G-1D	STEEL BEAM GUARDRAIL APPROACH END TERMINAL STEEL BEAM GUARDRAIL TRAILING END TERMINAL ANCHOR FOR STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER	01/03/00
G-18	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	06/01/94
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# BLUEBERRY LAKE DAM REHABILITATION PROPOSED IMPROVEMENT DAM PROJECT TOWN OF WARREN COUNTY OF WASHINGTON



ROUTE NO : TH 28 CLASS 3  
FUNCTIONAL CLASSIFICATION: LOCAL ROAD

PROJECT LOCATION : BEGINNING ON TH NO. 28 APPROXIMATELY 2.3 MILES SOUTH OF THE INTERSECTION OF BROOK ROAD IN THE TOWN OF WARREN AND EXTENDING SOUTH 700 FEET ALONG TH 28.

PROJECT DESCRIPTION : REMOVAL AND REPLACEMENT OF EXISTING PRINCIPAL SPILLWAY, LOW-LEVEL POND DRAIN, OUTLET PIPES AND OUTLET HEADWALL. REMOVAL AND REPLACEMENT OF THE EMERGENCY SPILLWAY CULVERTS, AND RECONSTRUCT A SECTION OF TH 28.

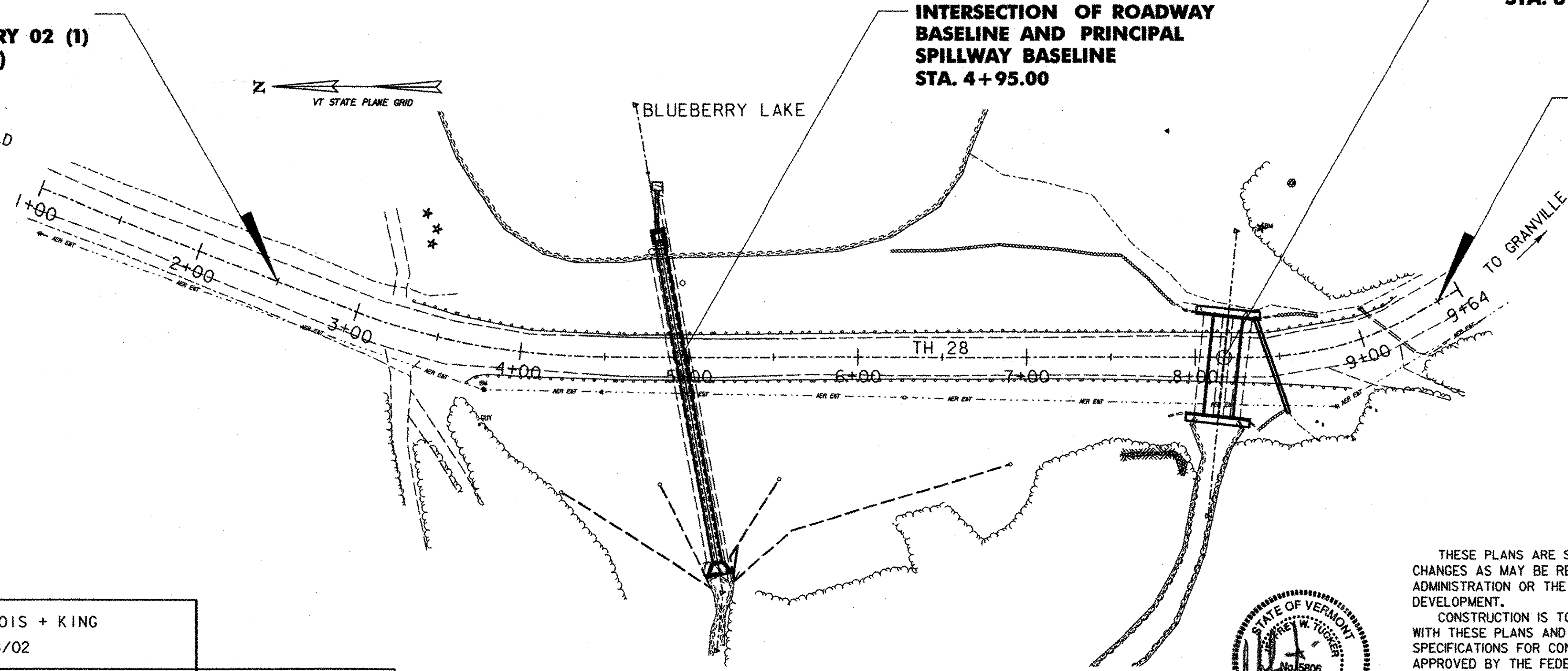
LENGTH OF PROJECT : 700.00 FEET.

**BEGIN PROJECT  
WARREN PLH BBRY 02 (1)  
(MATCH EXISTING)  
STA. 2+50.00**

**INTERSECTION OF ROADWAY  
BASELINE AND PRINCIPAL  
SPILLWAY BASELINE  
STA. 4+95.00**

**INTERSECTION OF ROADWAY  
BASELINE AND EMERGENCY  
SPILLWAY BASELINE  
STA. 8+17.14**

**END PROJECT  
WARREN PLH BBRY 02 (1)  
(MATCH EXISTING)  
STA. 9+50.00**

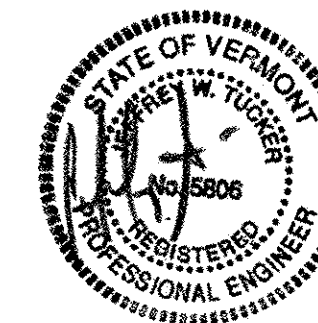
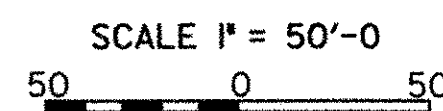


**CONVENTIONAL SYMBOLS**

COUNTY LINE	— — — — —
TOWN LINE	— — — — —
LIMITS OF ACCESS	— — — — —
POINT OF ACCESS	X
FENCE LINE	X — X — X — X —
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 : DUBOIS + KING  
SURVEYED DATE : 8/02

DATUM  
VERTICAL ASSUMED  
HORIZONTAL NAD 83



THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROJECT DEVELOPMENT.  
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE VTRANS STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2000, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2000 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

**RECORD PLANS**

CONTRACTOR: KINGSBURY CONSTRUCTION - WAITSFIELD, VT  
RESIDENT ENGINEER: DAVID F. HALE  
CONSTRUCTION BEGAN: JULY 17, 2003  
CONSTRUCTION COMPLETE: *October 19, 2004*  
RECORD PLANS BY: DAVID F. HALE  
I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.  
BY: *David F. Hale* RESIDENT ENGINEER  
DATE: *1/2/06*

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

D & K DRAWING #11240

TOWN OF WARREN  
CHAIRPERSON, BOARD OF SELECTMEN  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DIRECTOR OF PROGRAM DEVELOPMENT  
APPROVED *David F. Hale* DATE *5/22/03*  
PROJECT NAME : WARREN  
PROJECT NUMBER : PLH BBRY 02 (1)  
SHEET 1 OF 24 SHEETS

PLOTTED 05/21/2003

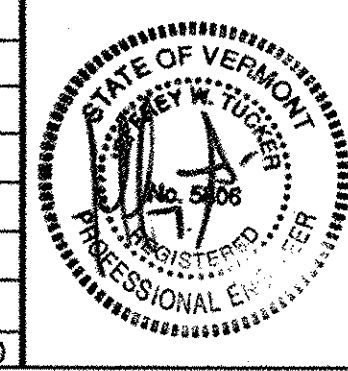
# QUANTITY SHEET

PRINCIPAL SPILLWAY, OPTION #1, CAST-IN-PLACE

NO.	ITEM	UNIT	QUANTITY BREAKDOWN						TOTAL
			PRINCIPAL SPILLWAY	EMERGENCY SPILLWAY	EROSION CONTROL		TRAFFIC CONTROL	FULL E & C	
201.10	CLEARING & GRUBBING (INCL. INDIV. TREE & STUMPS)	LS	0.5	0.5					1
203.15	COMMON EXCAVATION (MOD)	CY	8650	1165					9815
203.30	EARTH BORROW (MOD - BORROW SITE)	CY	2050						2050
203.32	GRANULAR BORROW (MOD - TOE DRAIN FILTER MATERIAL)	CY	378						378
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY		45					45
204.40	COFFERDAM (MOD)	LS	1						1
301.25	SUBBASE OF CRUSHED GRAVEL (COARSE GRADED) (MOD.)	CY	25						25
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	CY	150	105					255
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE (MOD.)	CY	25						25
401.10	AGGREGATE SURFACE COURSE	CY	90						90
501.25	CONCRETE, CLASS B (MOD - FLY ASH)	CY	152	30					182
507.15	REINFORCING STEEL	LB	28600	2000					30600
529.15	REMOVAL OF STRUCTURE (MOD - EMERGENCY SPILLWAY)	EA		1					1
529.15	REMOVAL OF STRUCTURE (MOD - PRINCIPAL SPILLWAY)	EA	1						1
540.10	PRECAST CONCRETE BOX (MOD - TWIN CELL BOX CULVERT)	LS		1					1
601.0920	24' CPEP	LF	25	60					85
601.5824	24' CPEP ELBOW	EA	1						1
604.50	STEEL GRATE (MOD - TRASH RACK)	EA	1						1
605.10	6' UNDERDRAIN (MOD)	LF	75						75
605.90	UNDERDRAIN RISER	EA	1						1
605.95	UNDERDRAIN FLUSHING BASIN	EA	1						1
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR			24				24
609.15	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	TON					1		1
613.10	STONE FILL, TYPE I	CY	190						190
613.11	STONE FILL, TYPE II	CY	100	50					150
620.70	SNOW FENCE (MOD)	LF	1120						1120
621.20	STEEL BEAM GUARDRAIL	LF	350	150					500
621.80	REMOVAL AND DISPOSAL OF GUARDRAIL	LF	350	150					500
621.90	TEMPORARY TRAFFIC BARRIER	LF					60		60
629.26	GATE VALVE (MOD - SLUICE GATE)	EA	1						1
631.10	FIELD OFFICE - ENGINEERS (MOD)	LS						1	1
631.16	TESTING EQUIPMENT - CONCRETE	LS						1	1
631.25	FIELD OFFICE - TELEPHONE (N.A.B.I.)	LU						1	1
635.10	MOBILIZATION	LS	1						1
641.10	TRAFFIC CONTROL	LS					1		1
649.31	GEOTEXTILE UNDER STONE FILL	SY	74	70					144
649.51	GEOTEXTILE FOR SILT FENCE	SY	480						480
651.15	SEED	LB	60						60
651.17	SEED - WINTER RYE	LB			60				60
651.18	FERTILIZER	LB	500						500
651.20	AGRICULTURAL LIMESTONE	TON			2				2
651.25	HAY MULCH	TON			2				2
651.26	HAY BALES FOR EROSION CONTROL (MOD - SAND BAGS)	EA			200				200
651.35	TOPSOIL	CY	270						270
652.10	EROSION & SEDIMENT CONTROL PLAN	LS			1				1
652.20	MONITORING EROSION & SEDIMENT CONTROL PLAN	HR			40				40
652.30	FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN (N.A.B.I.)	LU			1				1

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

NO.	DATE	REVISIONS	BY	CK'D



TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 QUANTITY SHEET

DRAWN BY SRP	DATE MAY 2003
CHECKED BY Jut	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11291
SHEET 2 OF 24	

PLOTTED 05/21/2003

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# QUANTITY SHEET

PRINCIPAL SPILLWAY, OPTION #2, REINFORCED CONCRETE PIPE

NO.	ITEM	UNIT	QUANTITY BREAKDOWN						TOTAL
			PRINCIPAL SPILLWAY	EMERGENCY SPILLWAY	EROSION CONTROL		TRAFFIC CONTROL	FULL E & C	
201.10	CLEARING & GRUBBING (INCL. INDIV. TREE & STUMPS)	LS	0.5	0.5					1
203.15	COMMON EXCAVATION (MOD)	CY	8650	1165					9815
203.30	EARTH BORROW (MOD - BORROW SITE)	CY	2050						2050
203.32	GRANULAR BORROW (MOD - TOE DRAIN FILTER MATERIAL)	CY	378						378
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY		45					45
204.40	COFFERDAM (MOD)	LS	1						1
301.25	SUBBASE OF CRUSHED GRAVEL (MOD.)	CY	25						25
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	CY	150	105					255
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE (MOD.)	CY	25						25
401.10	AGGREGATE SURFACE COURSE	CY	90						90
501.25	CONCRETE, CLASS B (MOD - FLY ASH)	CY	25	30					55
501.30	CONCRETE, CLASS C (SLAB)	CY	51						51
507.15	REINFORCING STEEL	LB	7100	2000					9100
540.10	PRECAST CONCRETE BOX (MOD - TWIN CELL BOX CULVERT)	LS		1					1
529.15	REMOVAL OF STRUCTURE (MOD - EMERGENCY SPILLWAY)	EA		1					1
529.15	REMOVAL OF STRUCTURE (MOD - PRINCIPAL SPILLWAY)	EA	1						1
601.0846	36" RCP CLASS IV	LF	195						195
601.0920	24" CPEP	LF	25	60					85
601.5824	24" CPEP ELBOW	EA	1						1
604.50	STEEL GRATE (MOD - TRASH RACK)	EA	1						1
605.10	6" UNDERDRAIN (MOD)	LF	75						75
605.90	UNDERDRAIN RISER	EA	1						1
605.95	UNDERDRAIN FLUSHING BASIN	EA	1						1
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR			24				24
609.15	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	TON					1		1
613.11	STONE FILL, TYPE I	CY	190						190
613.11	STONE FILL, TYPE II	CY	100	50					150
620.70	SNOW FENCE (MOD)	LF	1120						1120
621.20	STEEL BEAM GUARDRAIL	LF	350	150					500
621.80	REMOVAL AND DISPOSAL OF GUARDRAIL	LF	350	150					500
621.90	TEMPORARY TRAFFIC BARRIER	LF				60			60
629.26	GATE VALVE (MOD - SLUICE GATE)	EA	1						1
631.10	FIELD OFFICE - ENGINEERS (MOD)	LS					1		1
631.16	TESTING EQUIPMENT - CONCRETE	LS					1		1
631.25	FIELD OFFICE - TELEPHONE	LU					1		1
635.10	MOBILIZATION	LS	1						1
641.10	TRAFFIC CONTROL	LS				1			1
649.31	GEOTEXTILE UNDER STONE FILL	SY	74	70					144
649.51	GEOTEXTILE FOR SILT FENCE	SY	480						480
651.15	SEED	LB	60						60
651.17	SEED - WINTER RYE	LB			60				60
651.18	FERTILIZER	LB	500						500
651.20	AGRICULTURAL LIMESTONE	TON			2				2
651.25	HAY MULCH	TON			2				2
651.26	HAY BALES FOR EROSION CONTROL (MOD - SAND BAGS)	EA			200				200
651.35	TOPSOIL	CY	270						270
652.10	EROSION & SEDIMENT CONTROL PLAN	LS			1				1
652.20	MONITORING EROSION & SEDIMENT CONTROL PLAN	HR			40				40
652.30	FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN	LU			1				1

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

NO.	DATE	REVISIONS	BY	CK'D



TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 QUANTITY SHEET

DRAWN BY SRP	DATE MAY 2003
CHECKED BY	PROJ. NO. R16663
PROJ. ENG.	DRAW. NO. 11292
SHEET 3 OF 24	

PLOTTED 06/16/2003

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# QUANTITY SHEET

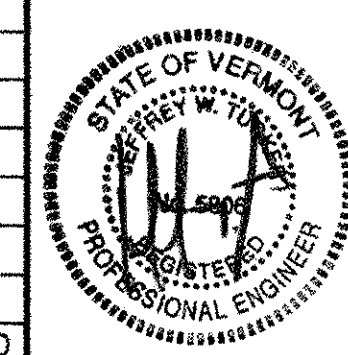
PRINCIPAL SPILLWAY OPTION # 3 WITHOUT EMERGENCY SPILLWAY

NO.	ITEM	UNIT	QUANTITY BREAKDOWN					TOTAL
			SPILLWAY		EROSION CONTROL		TRAFFIC CONTROL	
201.10	CLEARING & GRUBBING ( INCL. INDIV. TREE & STUMPS)	LS	1.0					1
203.15	COMMON EXCAVATION (MOD)	CY	8650					8650
203.30	EARTH BORROW (MOD - BORROW SITE)	CY	2050					2050
203.32	GRANULAR BORROW (MOD - TOE DRAIN FILTER MATERIAL)	CY	378					378
208.40	COFFERDAM (MOD)	LS	1					1
301.25	SUBBASE OF CRUSHED GRAVEL (COARSE GRADED) (MOD.)	CY	25					25
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	CY	150					150
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE (MOD.)	CY	25					25
401.10	AGGREGATE SURFACE COURSE	CY	90					90
501.25	CONCRETE, CLASS B (MOD - FLY ASH)	CY	152					152
507.15	REINFORCING STEEL	LB	28600					28600
529.15	REMOVAL OF STRUCTURE (MOD - PRINCIPAL SPILLWAY)	EA	1					1
601.0920	24" CPEP	LF	25					25
601.5824	24" CPEP ELBOW	EA	1					1
604.50	STEEL GRATE (MOD - TRASH RACK)	EA	1					1
605.10	6" UNDERDRAIN (MOD)	LF	75					75
605.90	UNDERDRAIN RISER	EA	1					1
605.95	UNDERDRAIN FLUSHING BASIN	EA	1					1
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR			24			24
609.15	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	TON				1		1
613.10	STONE FILL, TYPE I	CY	190					190
613.11	STONE FILL, TYPE II	CY	100					100
620.70	SNOW FENCE (MOD)	LF	1120					1120
621.20	STEEL BEAM GUARDRAIL	LF	350					350
621.80	REMOVAL AND DISPOSAL OF GUARDRAIL	LF	350					350
621.90	TEMPORARY TRAFFIC BARRIER	LF				60		60
629.26	GATE VALVE (MOD - SLUICE GATE)	EA	1					1
631.10	FIELD OFFICE - ENGINEERS (MOD)	LS					1	1
631.16	TESTING EQUIPMENT - CONCRETE	LS					1	1
631.25	FIELD OFFICE - TELEPHONE (N.A.B.I.)	LU					1	1
635.10	MOBILIZATION	LS	1					1
641.10	TRAFFIC CONTROL	LS				1		1
649.31	GEOTEXTILE UNDER STONE FILL	SY	74					74
649.51	GEOTEXTILE FOR SILT FENCE	SY	480					480
651.15	SEED	LB	60					60
651.17	SEED - WINTER RYE	LB			60			60
651.18	FERTILIZER	LB	500					500
651.20	AGRICULTURAL LIMESTONE	TON			2			2
651.25	HAY MULCH	TON			2			2
651.26	HAY BALES FOR EROSION CONTROL (MOD - SAND BAGS)	EA			200			200
651.35	TOPSOIL	CY	270					270
652.10	EROSION & SEDIMENT CONTROL PLAN	LS			1			1
652.20	MONITORING EROSION & SEDIMENT CONTROL PLAN	HR			40			40
652.30	FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN (N.A.B.I.)	LU			1			1

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CK'D



TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 QUANTITY SHEET

DRAWN BY SRP	DATE MAY 2003
CHECKED BY <i>JWT</i>	PROJ. NO. R16663
PROJ. ENG.	DRAW. NO. 1294
SHEET 5 OF 24	

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# QUANTITY SHEET

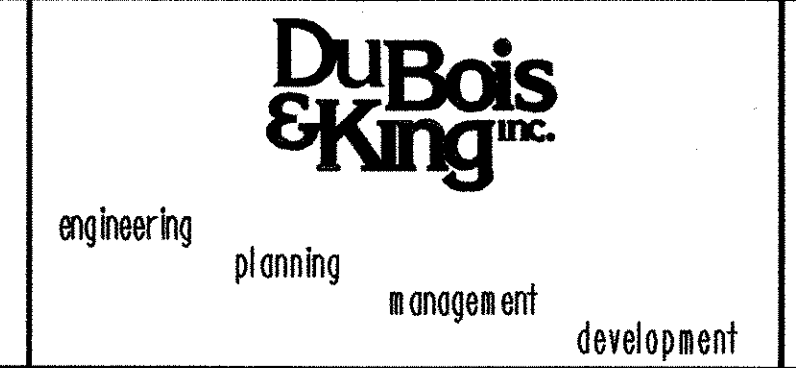
PRINCIPAL SPILLWAY, OPTION #4, PRECAST BOX CULVERT

NO.	ITEM	UNIT	QUANTITY BREAKDOWN						TOTAL
			PRINCIPAL SPILLWAY	EMERGENCY SPILLWAY	EROSION CONTROL		TRAFFIC CONTROL	FULL E & C	
201.10	CLEARING & GRUBBING (INCL. INDIV. TREE & STUMPS)	LS	0.5	0.5					1
203.15	COMMON EXCAVATION (MOD)	CY	8650	1165					9815
203.30	EARTH BORROW (MOD - BORROW SITE)	CY	2050						2050
203.32	GRANULAR BORROW (MOD - TOE DRAIN FILTER MATERIAL)	CY	378						378
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY		45					45
209.40	COFFERDAM (MOD)	LS	1						1
301.25	SUBBASE OF CRUSHED GRAVEL (Coarse Graded) (MOD)	CY	25						25
301.26	SUBBASE OF CRUSHED GRAVEL (FINE GRADED)	CY	150	105					255
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE (MOD.)	CY	25						25
401.10	AGGREGATE SURFACE COURSE	CY	90						90
501.25	CONCRETE, CLASS B (MOD - FLY ASH)	CY	25	30					55
501.30	CONCRETE, CLASS C (SLAB)	CY	50						50
507.15	REINFORCING STEEL	LB	7100	2000					9100
529.15	REMOVAL OF STRUCTURE (MOD - EMERGENCY SPILLWAY)	EA		1					1
529.15	REMOVAL OF STRUCTURE (MOD - PRINCIPAL SPILLWAY)	EA	1						1
540.10	PRECAST CONCRETE BOX (4' X 3' CULVERT)	LS	1						1
540.10	PRECAST CONCRETE BOX (MOD - TWIN CELL BOX CULVERT)	LS		1					1
601.0920	24" CPEP	LF	25	60					85
601.5824	24" CPEP ELBOW	EA	1						1
604.50	STEEL GRATE (MOD - TRASH RACK)	EA	1						1
605.10	6" UNDERDRAIN (MOD)	LF	75						75
605.90	UNDERDRAIN RISER	EA	1						1
605.95	UNDERDRAIN FLUSHING BASIN	EA	1						1
608.25	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	HR			24				24
609.15	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	TON					1		1
613.10	STONE FILL, TYPE I	CY	190						190
613.11	STONE FILL, TYPE II	CY	100	50					150
620.70	SNOW FENCE (MOD)	LF	1120						1120
621.20	STEEL BEAM GUARDRAIL	LF	350	150					500
621.80	REMOVAL AND DISPOSAL OF GUARDRAIL	LF	350	150					500
621.90	TEMPORARY TRAFFIC BARRIER	LF					60		60
629.26	GATE VALVE (MOD - SLUICE GATE)	EA	1						1
631.10	FIELD OFFICE - ENGINEERS (MOD)	LS						1	1
631.16	TESTING EQUIPMENT - CONCRETE	LS						1	1
631.25	FIELD OFFICE - TELEPHONE (N.A.B.I.)	LU						1	1
635.10	MOBILIZATION	LS	1						1
641.10	TRAFFIC CONTROL	LS					1		1
649.31	GEOTEXTILE UNDER STONE FILL	SY	74	70					144
649.51	GEOTEXTILE FOR SILT FENCE	SY	480						480
651.15	SEED	LB	60						60
651.17	SEED - WINTER RYE	LB			60				60
651.18	FERTILIZER	LB	500						500
651.20	AGRICULTURAL LIMESTONE	TON			2				2
651.25	HAY MULCH	TON			2				2
651.26	HAY BALES FOR EROSION CONTROL (MOD - SAND BAGS)	EA			200				200
651.35	TOPSOIL	CY	270						270
652.10	EROSION & SEDIMENT CONTROL PLAN	LS			1				1
652.20	MONITORING EROSION & SEDIMENT CONTROL PLAN	HR			40				40
652.30	FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN (N.A.B.I.)	LU			1				1

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

NO.	DATE	REVISIONS	BY	CK'D

PLOTTED 06/16/2003



TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 QUANTITY SHEET

DRAWN BY SRP	DATE MAY 2003
CHECKED BY	PROJ. NO. R16663
PROJ. ENG.	DRAW. NO. 11294
SHEET 5A OF 24	

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HVCTRL NO. 2 DISC #64-459L N.F.S.  
 HVCTRL BM DISC #64-459L N.F.S.  
 ELEVATION 1575.32

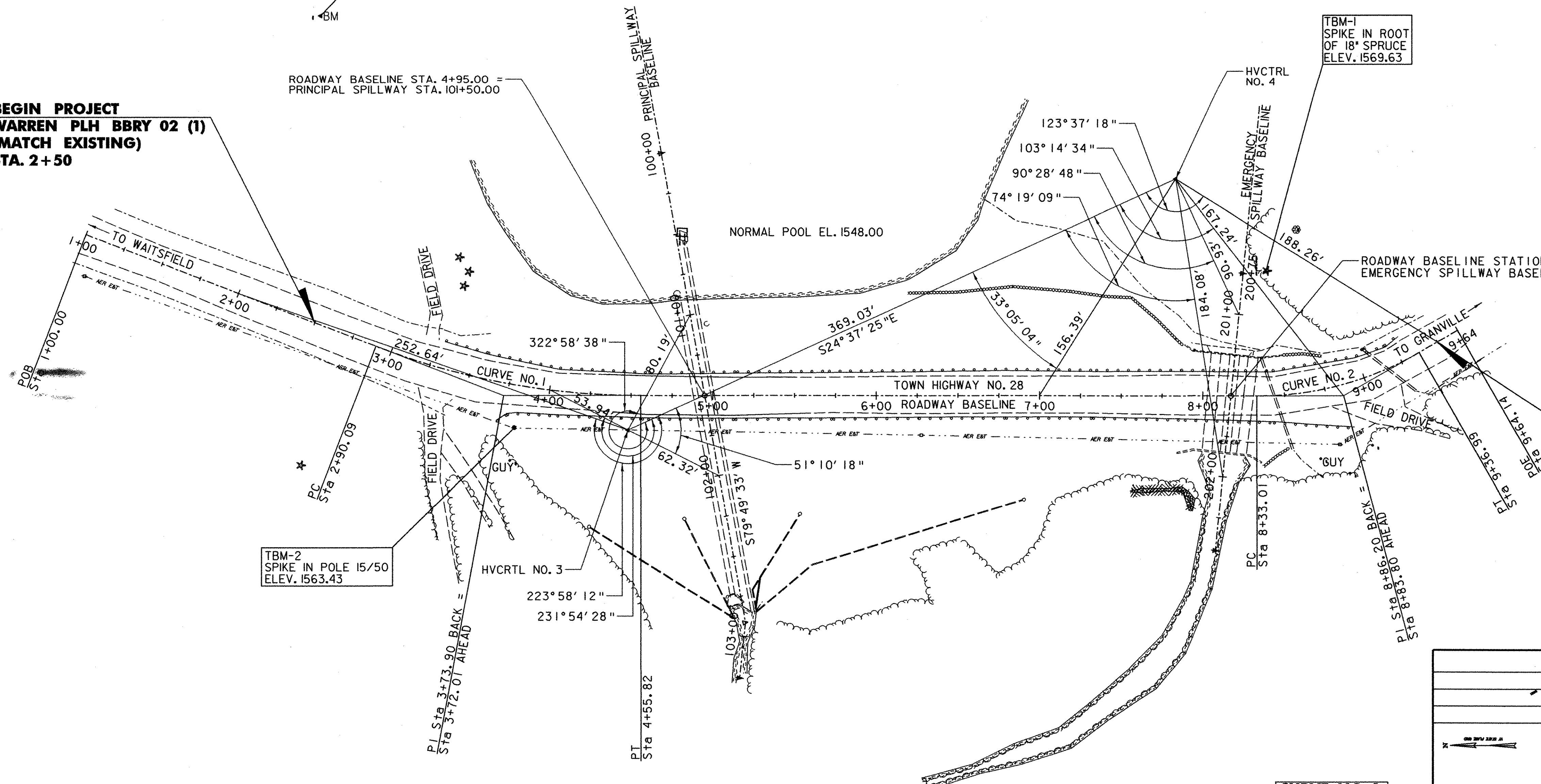
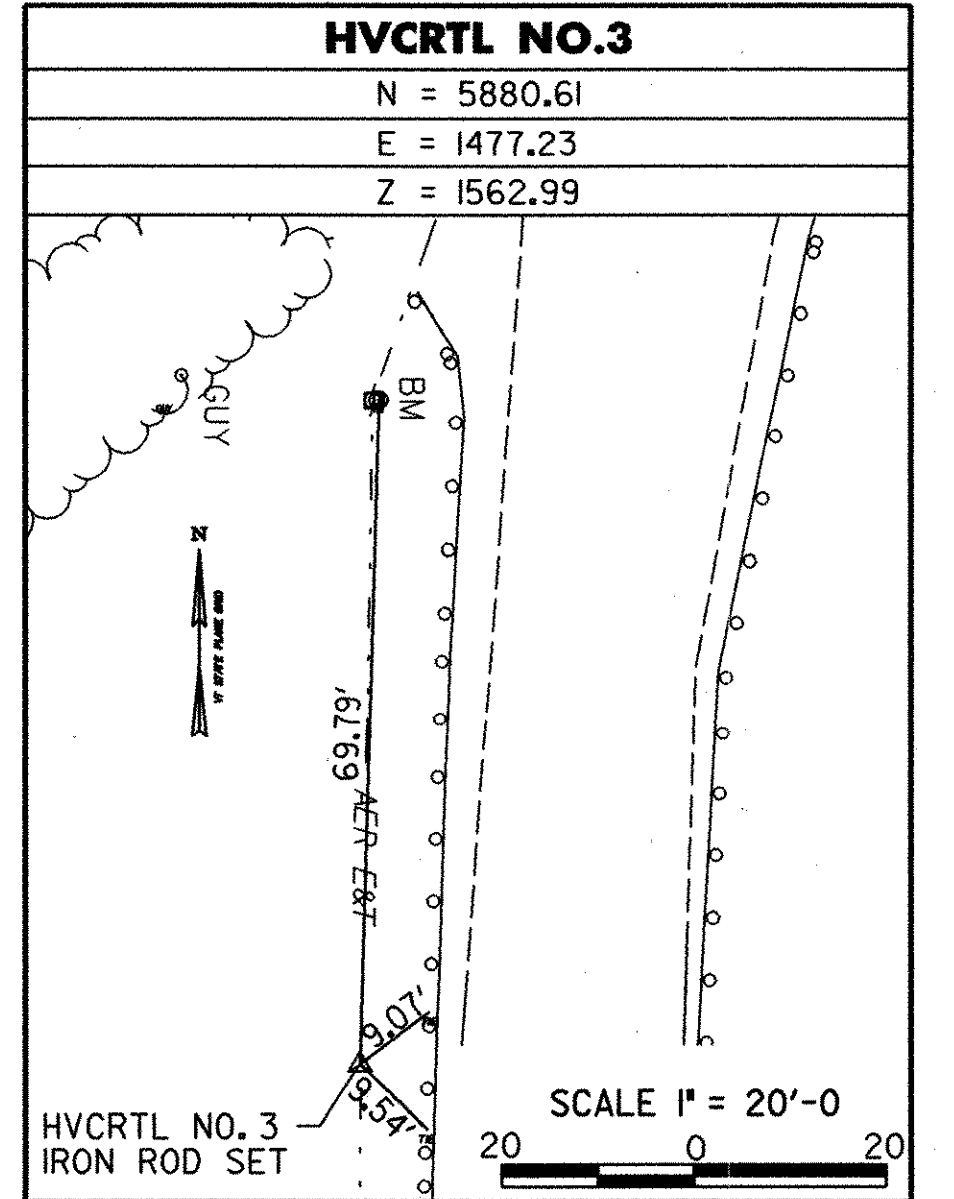
TBM-1 SPIKE IN ROOT OF 18" SPRUCE  
 ELEV. 1569.63

ROADWAY BASELINE STA. 4+95.00 =  
 PRINCIPAL SPILLWAY STA. 101+50.00

ROADWAY BASELINE STATION STA. 8+17.14 =  
 EMERGENCY SPILLWAY BASELINE STA. 201+50.00

**BEGIN PROJECT**  
**WARREN PLH BBRY 02 (1)**  
**(MATCH EXISTING)**  
**STA. 2+50**

**END PROJECT**  
**WARREN PLH BBRY 02 (1)**  
**(MATCH EXISTING)**  
**STA. 9+50**



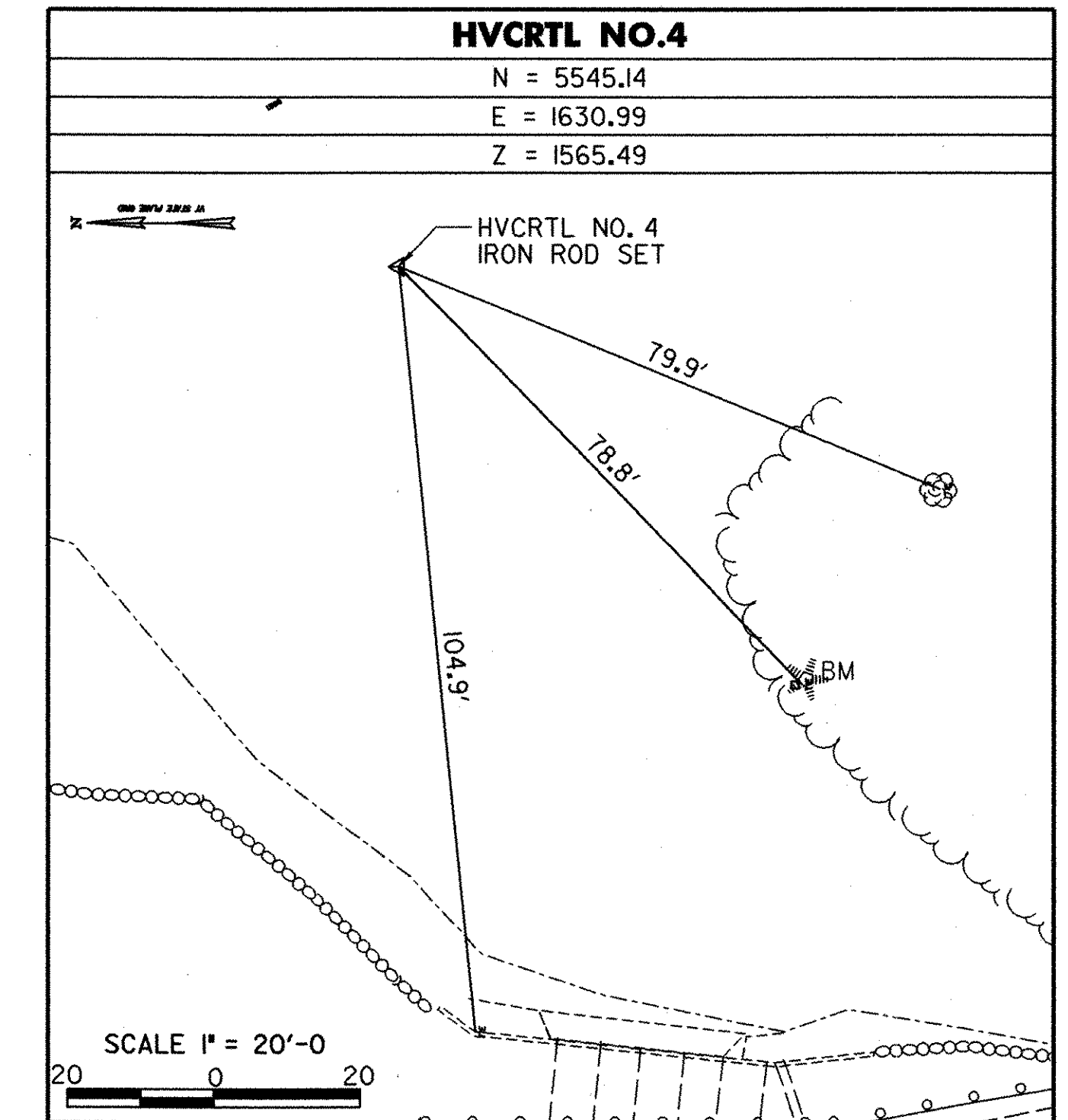
TBM-2 SPIKE IN POLE 15/50  
 ELEV. 1563.43

**CURVE NO. 1**  
 $\Delta = 21^{\circ}06'04''$   
 $D = 12^{\circ}43'57''$   
 $R = 450.00'$   
 $T = 83.81'$   
 $L = 165.73'$   
 $E = 7.74'$

**CURVE NO. 2**  
 $\Delta = 29^{\circ}47'14''$   
 $D = 28^{\circ}38'53''$   
 $R = 200.00'$   
 $T = 53.19'$   
 $L = 103.98'$   
 $E = 6.95'$

**TIE SHEET**

SCALE 1" = 40'-0"



**LEGEND**

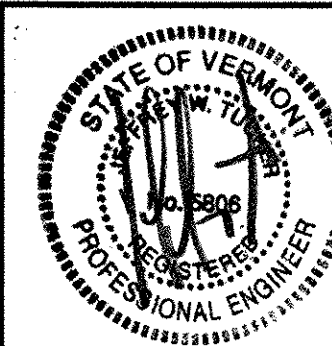
- TREE LINE
- STONE WALL
- EDGE ROADWAY
- EDGE OF WATER
- GUARDRAIL
- CULVERTS
- BENCH MARKS
- CONTROL POINTS (HVCRTL)
- TREES
- AERIAL ELEC. & TEL.
- UTILITIES POLE

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

LAYOUT COORDINATES				
STA. 1+00.00	POB	N 6212.31	E 1596.84	
STA. 2+90.09	PC	N 6034.91	E 1528.58	
STA. 3+73.90	PI	N 5956.69	E 1498.48	
STA. 4+48.41	HVCRTL NO.3	N 5880.61	E 1477.23	
STA. 4+55.82	PT	N 5872.87	E 1498.56	
STA. 4+95.00	INT PS	N 5833.69	E 1498.59	
STA. 7+83.67	HVCRTL NO.4	N 5545.14	E 1630.99	
STA. 8+17.14	INT ES	N 5511.54	E 1498.90	
STA. 8+33.01	PC	N 5495.68	E 1498.92	
STA. 8+86.20	PI	N 5442.49	E 1498.97	
STA. 9+36.99	PT	N 5396.35	E 1525.44	
STA. 9+64.14	POE	N 5372.79	E 1538.95	

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CK'D



**DuBois & King INC.**  
 engineering planning management development

TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 TIE SHEET

DRAWN BY SJB	DATE MAY 2003
CHECKED BY JWT	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11295
SHEET 6 OF 24	

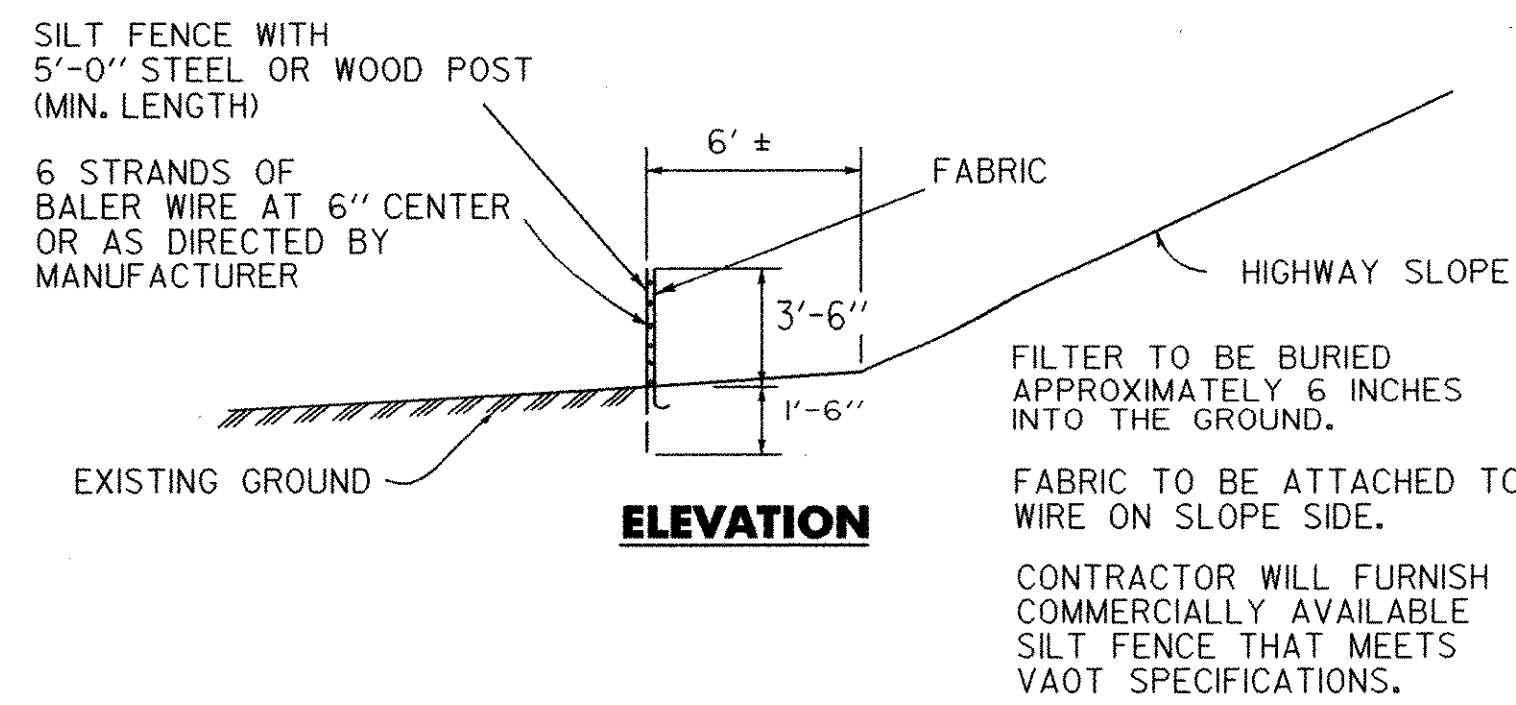


**SEEDING FORMULA  
RURAL AREAS**

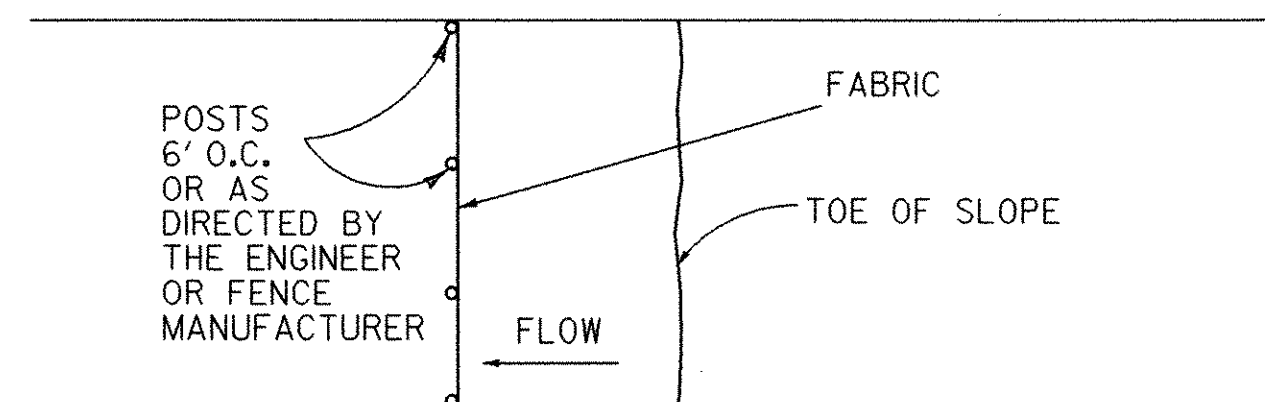
% WT.	LBS./A.	NAME	PUR %	GERM %
37.5	22.5	CREeping RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYEGRASS	95	85
100.0	60.0			

**GENERAL NOTES**

- SEED MIXTURE: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE ENGINEER.
- FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 500 LBS./ACRE. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).
- AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
- HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
- TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
- MARKER POSTS: TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.
- SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.
- PAY LIMITS OF SAND BORROW: WHEN USED IN CONJUNCTION WITH UNDERDRAIN - SEE STANDARD SHEET D - 2.

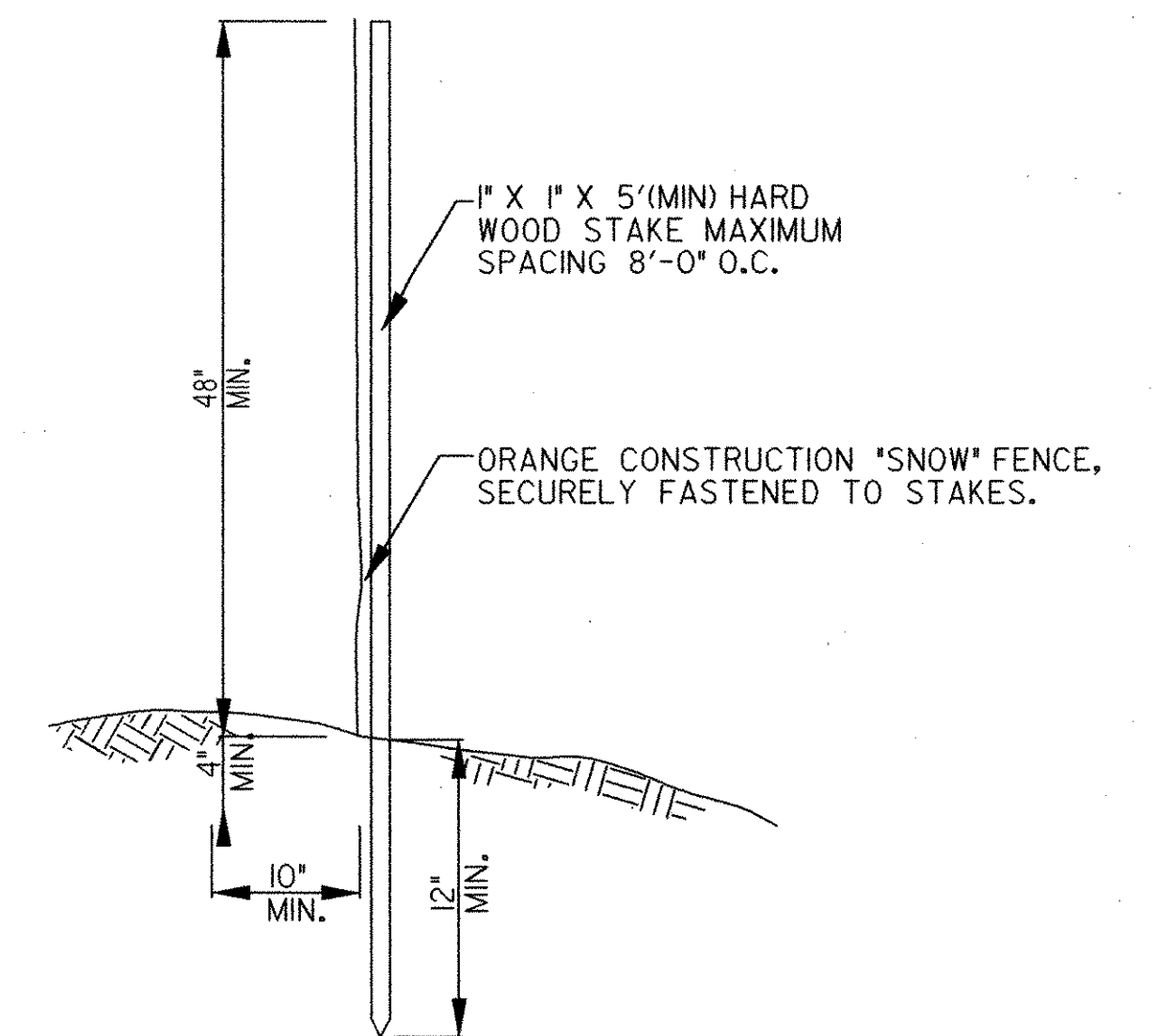


**ELEVATION**

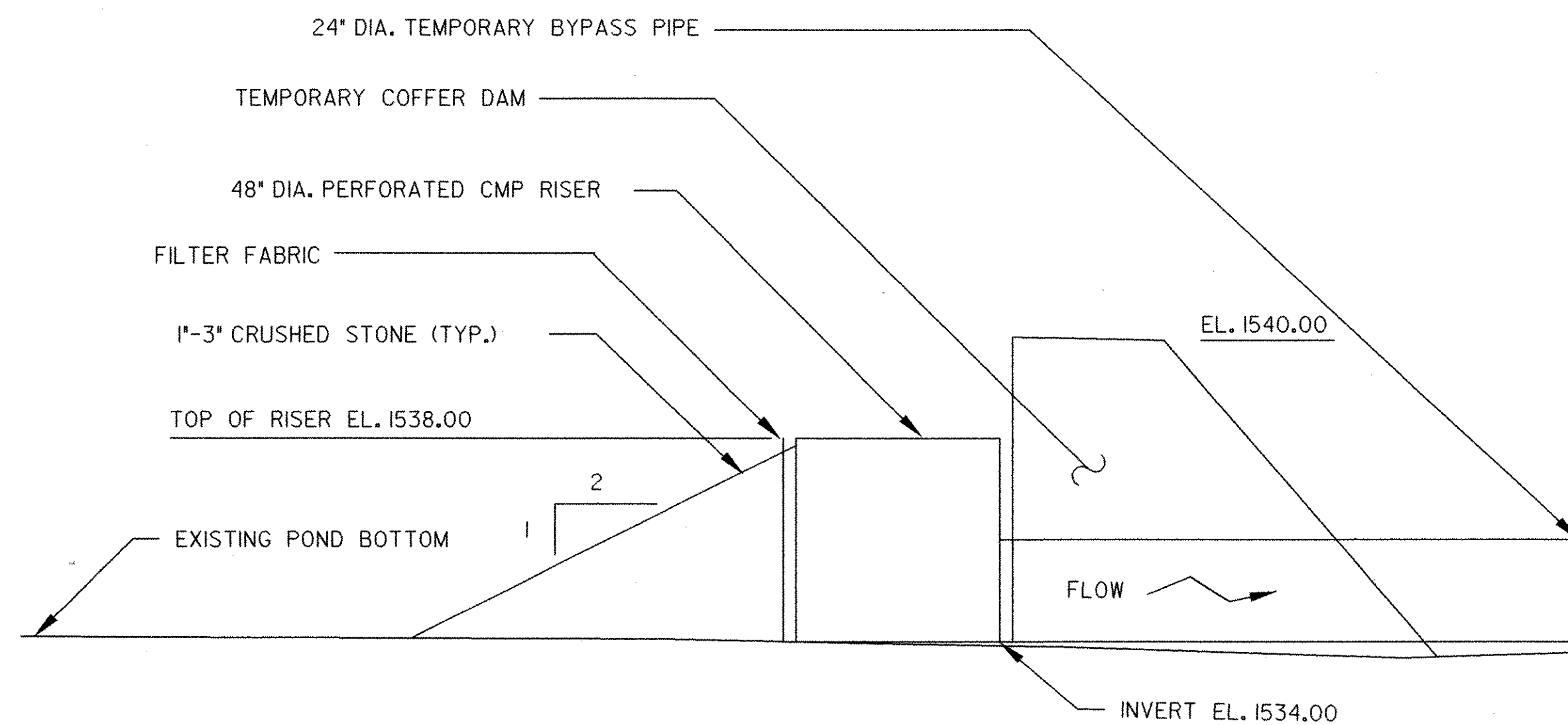


**PLAN**

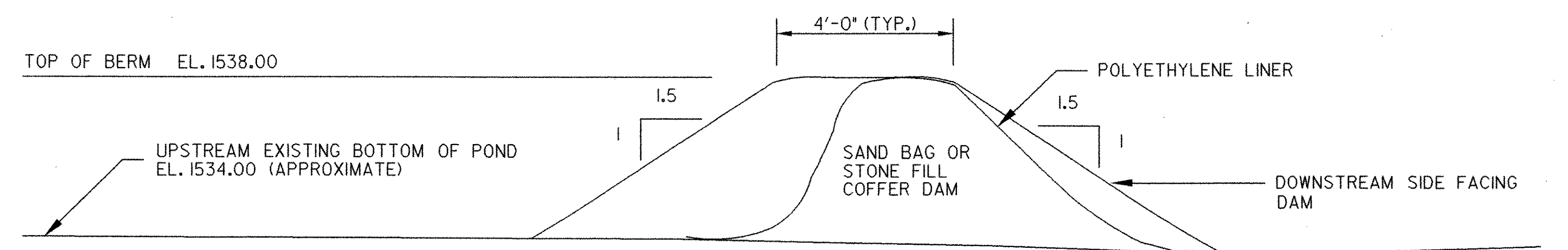
**SILT FENCE  
NOT TO SCALE**



**CONSTRUCTION BARRIER FENCE  
NOT TO SCALE**

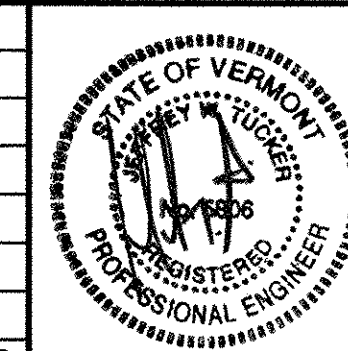


**TEMPORARY COFFERDAM BASIN  
NOT TO SCALE**



**SECTION THROUGH TEMPORARY COFFERDAM  
WITH POLYETHYLENE LINER  
NOT TO SCALE**

NO.	DATE	REVISIONS	BY	CK'D

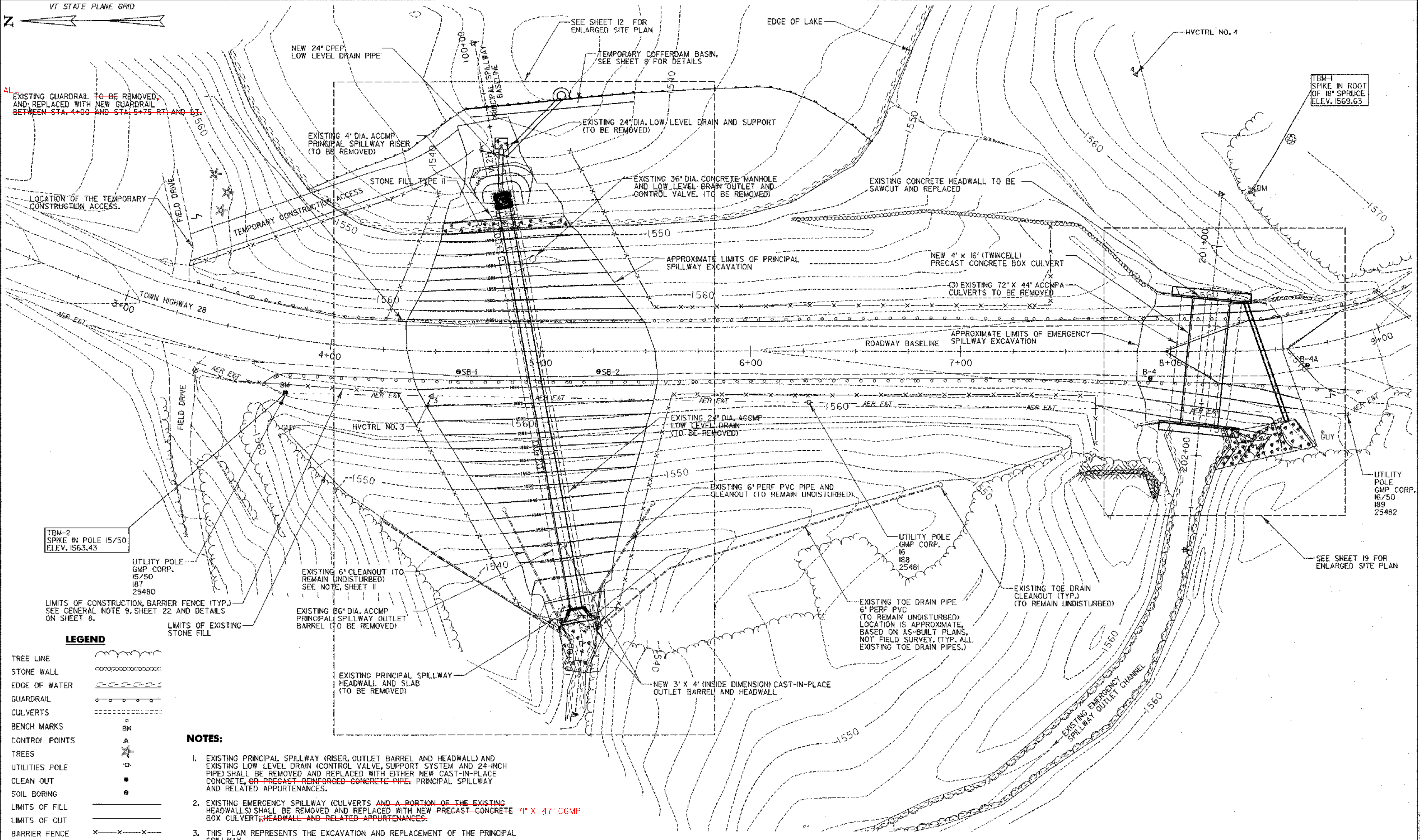


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TOWN OF WARREN  
WARREN, VERMONT  
BLUEBERRY LAKE DAM  
REHABILITATION PROJECT  
EROSION CONTROL SHEET

DRAWN BY ASJ	DATE MAY 2003
CHECKED BY Jut	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11297
SHEET 8 OF 24	

ALL EXISTING GUARDRAIL TO BE REMOVED, AND REPLACED WITH NEW GUARDRAIL BETWEEN STA. 4+00 AND STA. 5+75 RT. AND LT.



LOCATION OF THE TEMPORARY CONSTRUCTION ACCESS.

FIELD DRIVE

TOWN HIGHWAY 28

FIELD DRIVE

TBM-2 SPIKE IN POLE 15/50 ELEV. 1563.43

UTILITY POLE GMP CORP. 15/50 187 25480

LIMITS OF CONSTRUCTION, BARRIER FENCE (TYP.) SEE GENERAL NOTE 9, SHEET 22 AND DETAILS ON SHEET 8.

- LEGEND**
- TREE LINE
  - STONE WALL
  - EDGE OF WATER
  - GUARDRAIL
  - CULVERTS
  - BENCH MARKS
  - CONTROL POINTS
  - TREES
  - UTILITIES POLE
  - CLEAN OUT
  - SOIL BORING
  - LIMITS OF FILL
  - LIMITS OF CUT
  - BARRIER FENCE
  - SILT FENCE
  - HAY BALES
  - ROCK OUTCROPPING

**NOTES:**

1. EXISTING PRINCIPAL SPILLWAY (RISER, OUTLET BARREL AND HEADWALL) AND EXISTING LOW LEVEL DRAIN (CONTROL VALVE, SUPPORT SYSTEM AND 24-INCH PIPE) SHALL BE REMOVED AND REPLACED WITH EITHER NEW CAST-IN-PLACE CONCRETE, OR PRECAST REINFORCED CONCRETE PIPE, PRINCIPAL SPILLWAY AND RELATED APPURTENANCES.
2. EXISTING EMERGENCY SPILLWAY (CULVERTS AND A PORTION OF THE EXISTING HEADWALLS) SHALL BE REMOVED AND REPLACED WITH NEW PRECAST CONCRETE 71" X 47" CGMP BOX CULVERT, HEADWALL AND RELATED APPURTENANCES.
3. THIS PLAN REPRESENTS THE EXCAVATION AND REPLACEMENT OF THE PRINCIPAL SPILLWAY.

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

SCALE 1" = 20'-0"

PLOTTED 05/21/2003

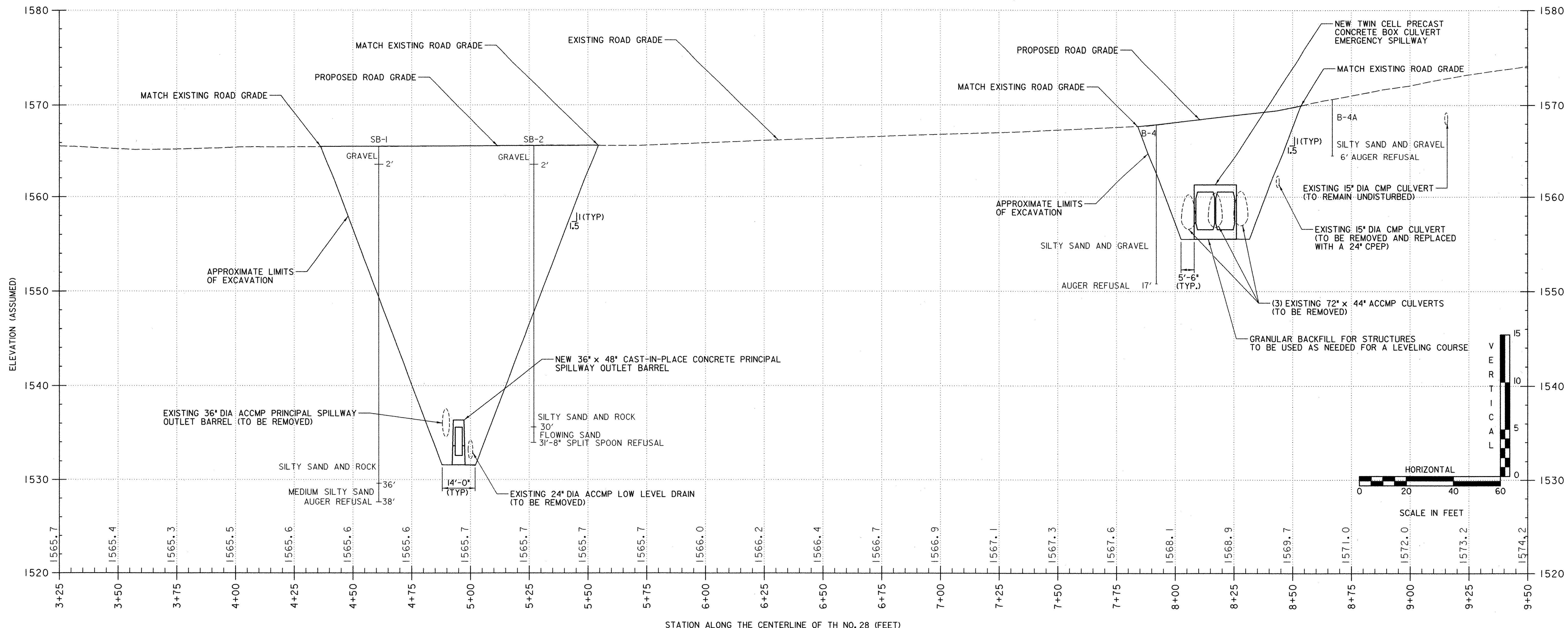
NO.	DATE	REVISIONS	BY	CK'D



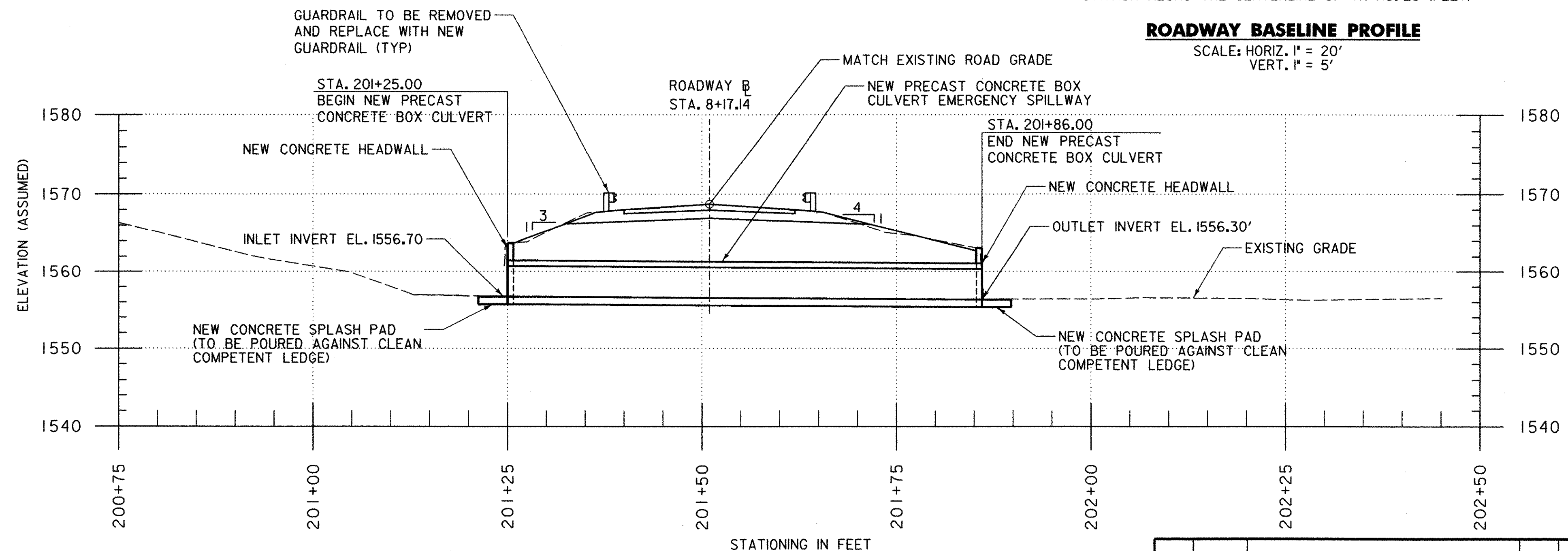
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 engineering planning management development

TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 SITE PLAN

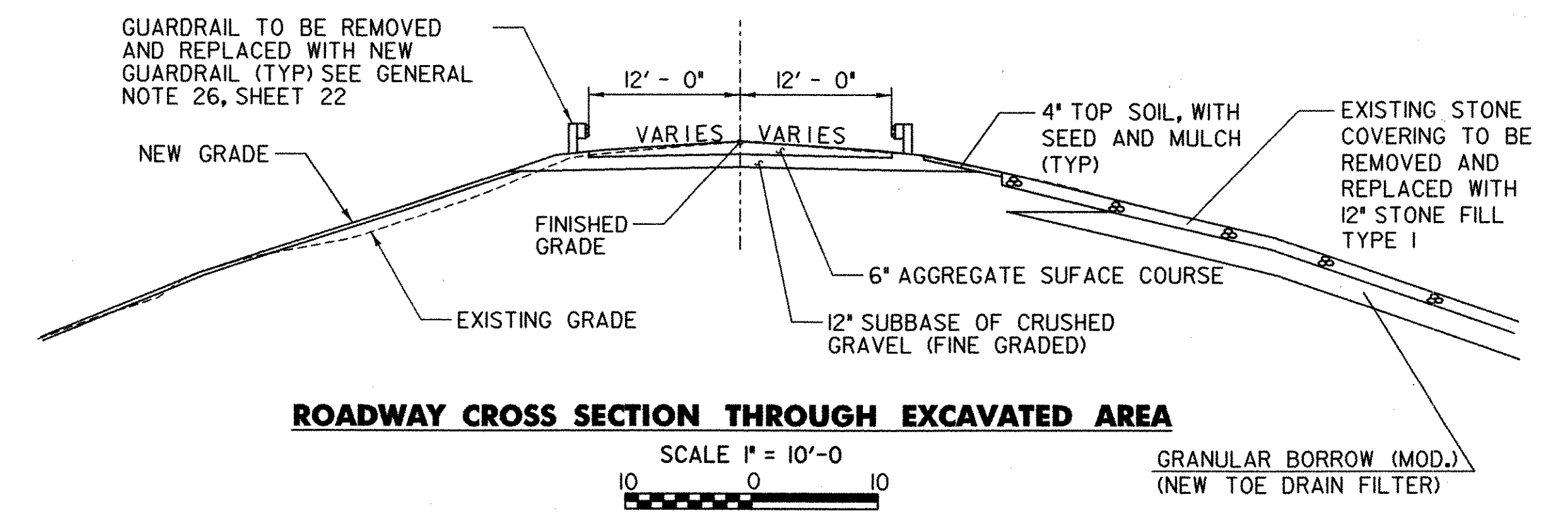
DRAWN BY EBS	DATE MAY 2003
CHECKED BY JW	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11298
SHEET 9 OF 24	



**ROADWAY BASELINE PROFILE**  
 SCALE: HORIZ. 1" = 20'  
 VERT. 1" = 5'



**EMERGENCY SPILLWAY (PROFILE)**  
 SCALE 1" = 10'-0"  
 10 0 10

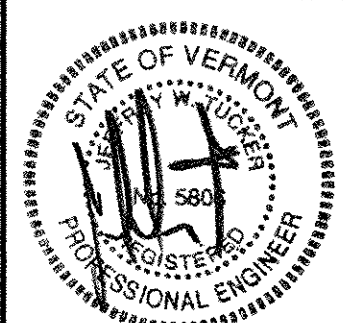


**ROADWAY CROSS SECTION THROUGH EXCAVATED AREA**  
 SCALE 1" = 10'-0"  
 10 0 10

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CK'D



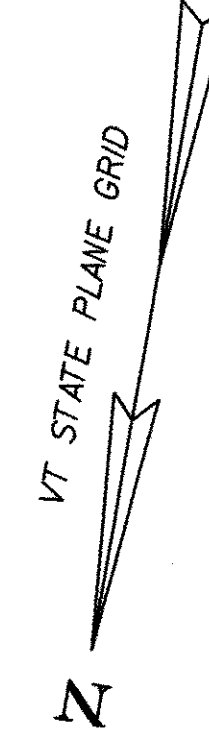
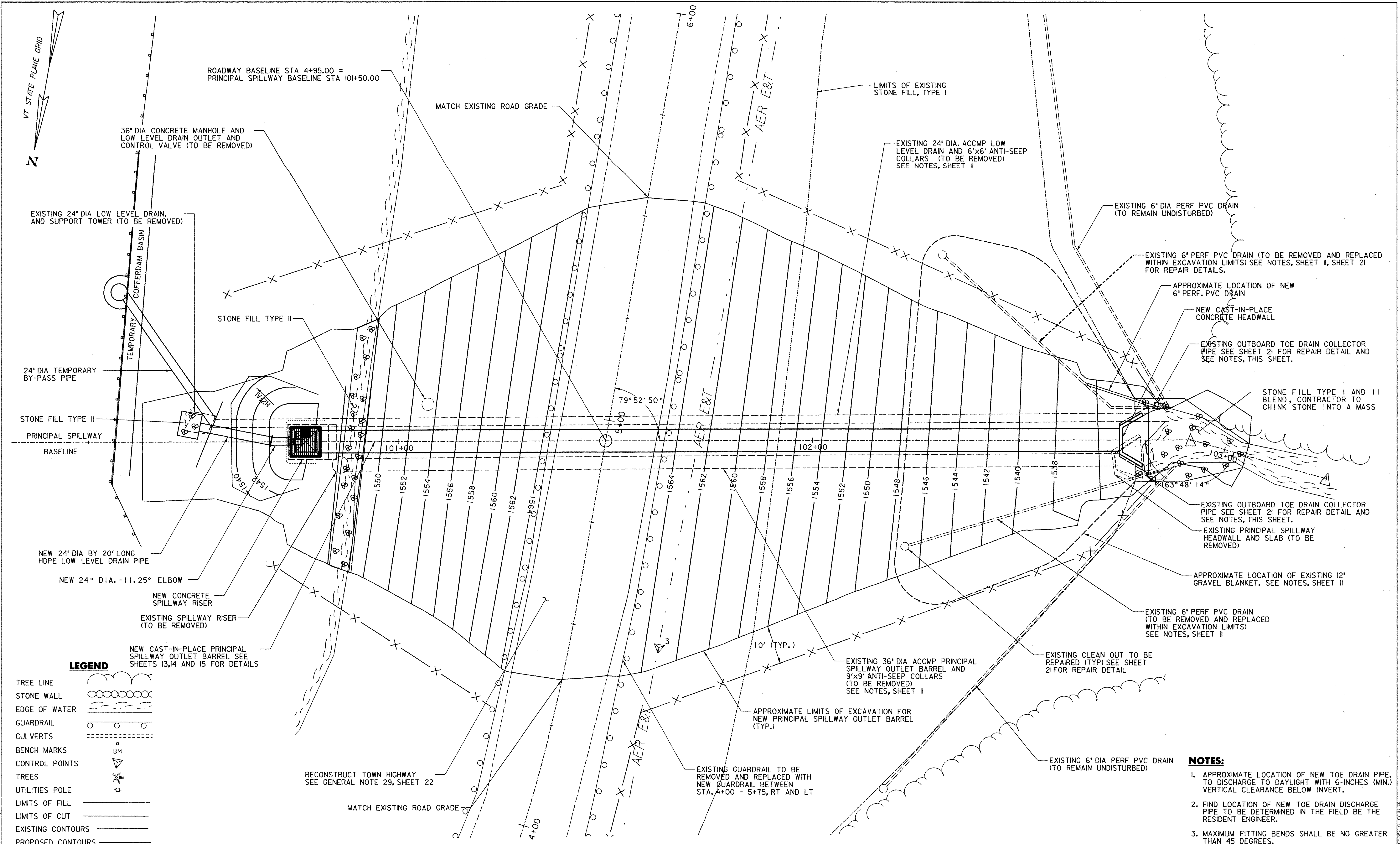
**DuBois & King, Inc.**  
 engineering planning management development

TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 ROADWAY PROFILE SHEET

DRAWN BY EBS	DATE MAY 2003
CHECKED BY [Signature]	PROJ. NO. R16663
PROJ. ENG. [Signature]	DRAW. NO. 11299
SHEET 10 OF 24	

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ROADWAY BASELINE STA 4+95.00 =  
PRINCIPAL SPILLWAY BASELINE STA 101+50.00

MATCH EXISTING ROAD GRADE

LIMITS OF EXISTING  
STONE FILL, TYPE I

EXISTING 24" DIA. ACCMP LOW  
LEVEL DRAIN AND 6'x6' ANTI-SEEP  
COLLARS (TO BE REMOVED)  
SEE NOTES, SHEET II

EXISTING 6" DIA PERF PVC DRAIN  
(TO REMAIN UNDISTURBED)

EXISTING 6" PERF PVC DRAIN (TO BE REMOVED AND REPLACED  
WITHIN EXCAVATION LIMITS) SEE NOTES, SHEET II, SHEET 21  
FOR REPAIR DETAILS.

APPROXIMATE LOCATION OF NEW  
6" PERF. PVC DRAIN

NEW CAST-IN-PLACE  
CONCRETE HEADWALL

EXISTING OUTBOARD TOE DRAIN COLLECTOR  
PIPE SEE SHEET 21 FOR REPAIR DETAIL AND  
SEE NOTES, THIS SHEET.

STONE FILL TYPE I AND II  
BLEND, CONTRACTOR TO  
CHINK STONE INTO A MASS

EXISTING OUTBOARD TOE DRAIN COLLECTOR  
PIPE SEE SHEET 21 FOR REPAIR DETAIL AND  
SEE NOTES, THIS SHEET.

EXISTING PRINCIPAL SPILLWAY  
HEADWALL AND SLAB (TO BE  
REMOVED)

APPROXIMATE LOCATION OF EXISTING 12"  
GRAVEL BLANKET. SEE NOTES, SHEET II

EXISTING 6" PERF PVC DRAIN  
(TO BE REMOVED AND REPLACED  
WITHIN EXCAVATION LIMITS)  
SEE NOTES, SHEET II

EXISTING CLEAN OUT TO BE  
REPAIRED (TYP) SEE SHEET  
21 FOR REPAIR DETAIL

EXISTING 6" DIA PERF PVC DRAIN  
(TO REMAIN UNDISTURBED)

EXISTING 36" DIA ACCMP PRINCIPAL  
SPILLWAY OUTLET BARREL AND  
9'x9' ANTI-SEEP COLLARS  
(TO BE REMOVED)  
SEE NOTES, SHEET II

APPROXIMATE LIMITS OF EXCAVATION FOR  
NEW PRINCIPAL SPILLWAY OUTLET BARREL  
(TYP.)

EXISTING GUARDRAIL TO BE  
REMOVED AND REPLACED WITH  
NEW GUARDRAIL BETWEEN  
STA. 4+00 - 5+75, RT AND LT

RECONSTRUCT TOWN HIGHWAY  
SEE GENERAL NOTE 29, SHEET 22

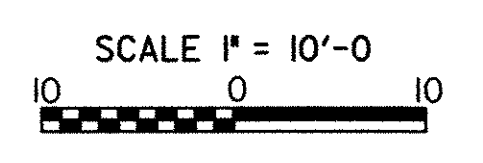
MATCH EXISTING ROAD GRADE

**PRINCIPAL SPILLWAY LAYOUT PLAN**

**LEGEND**

- TREE LINE
- STONE WALL
- EDGE OF WATER
- GUARDRAIL
- CULVERTS
- BENCH MARKS
- CONTROL POINTS
- TREES
- UTILITIES POLE
- LIMITS OF FILL
- LIMITS OF CUT
- EXISTING CONTOURS
- PROPOSED CONTOURS
- BARRIER FENCE
- SILT FENCE

DATUM  
VERTICAL ASSUMED  
HORIZONTAL NAD 83



PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CK'D

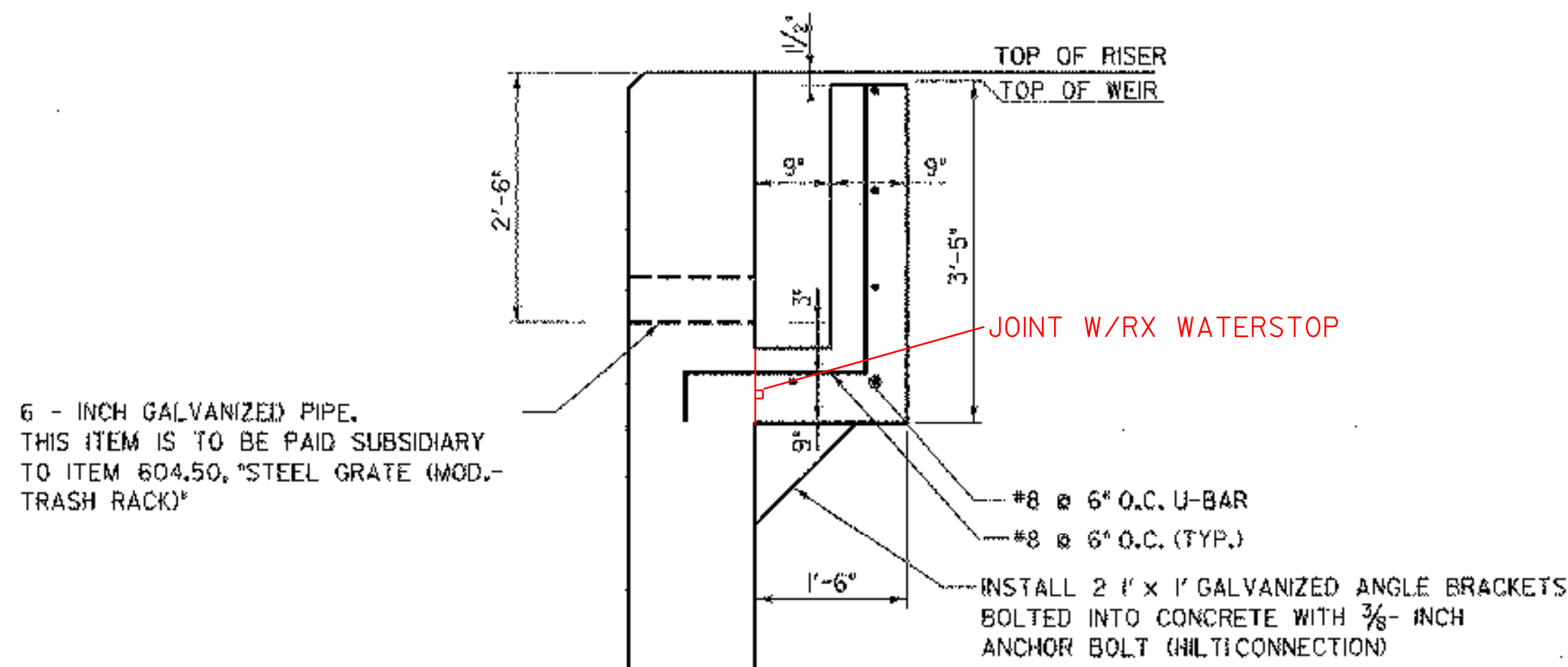


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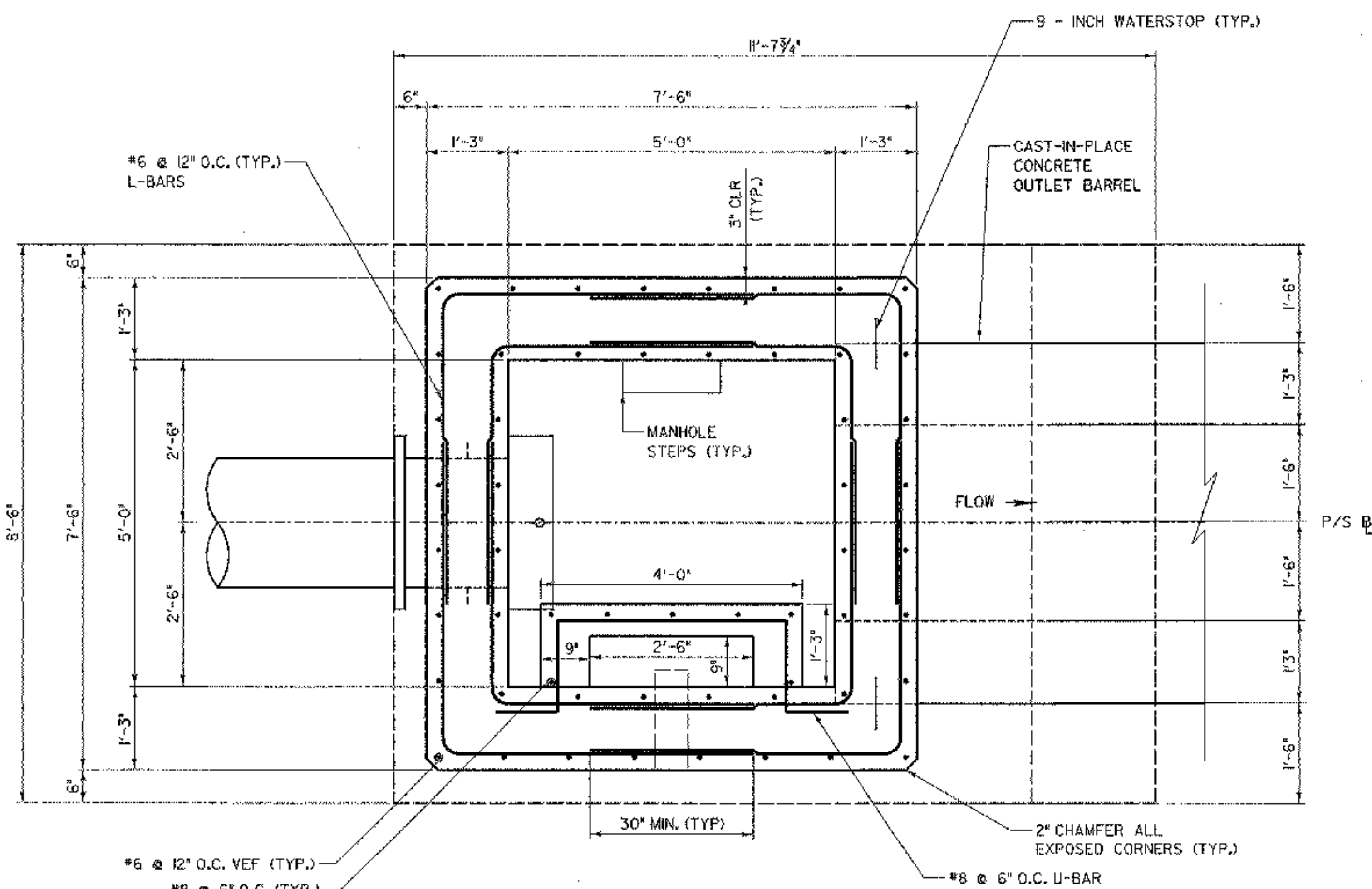
TOWN OF WARREN  
WARREN, VERMONT  
BLUEBERRY LAKE DAM  
REHABILITATION PROJECT  
PRINCIPAL SPILLWAY LAYOUT SHEET

DRAWN BY SJB	DATE MAY 2003
CHECKED BY JWT	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11301
SHEET 12 OF 24	

- NOTES:**
- APPROXIMATE LOCATION OF NEW TOE DRAIN PIPE, TO DISCHARGE TO DAYLIGHT WITH 6-INCHES (MIN.) VERTICAL CLEARANCE BELOW INVERT.
  - FIND LOCATION OF NEW TOE DRAIN DISCHARGE PIPE TO BE DETERMINED IN THE FIELD BE THE RESIDENT ENGINEER.
  - MAXIMUM FITTING BENDS SHALL BE NO GREATER THAN 45 DEGREES.



**BELOW SURFACE WITHDRAWAL**  
SCALE 3/4" = 1'-0"

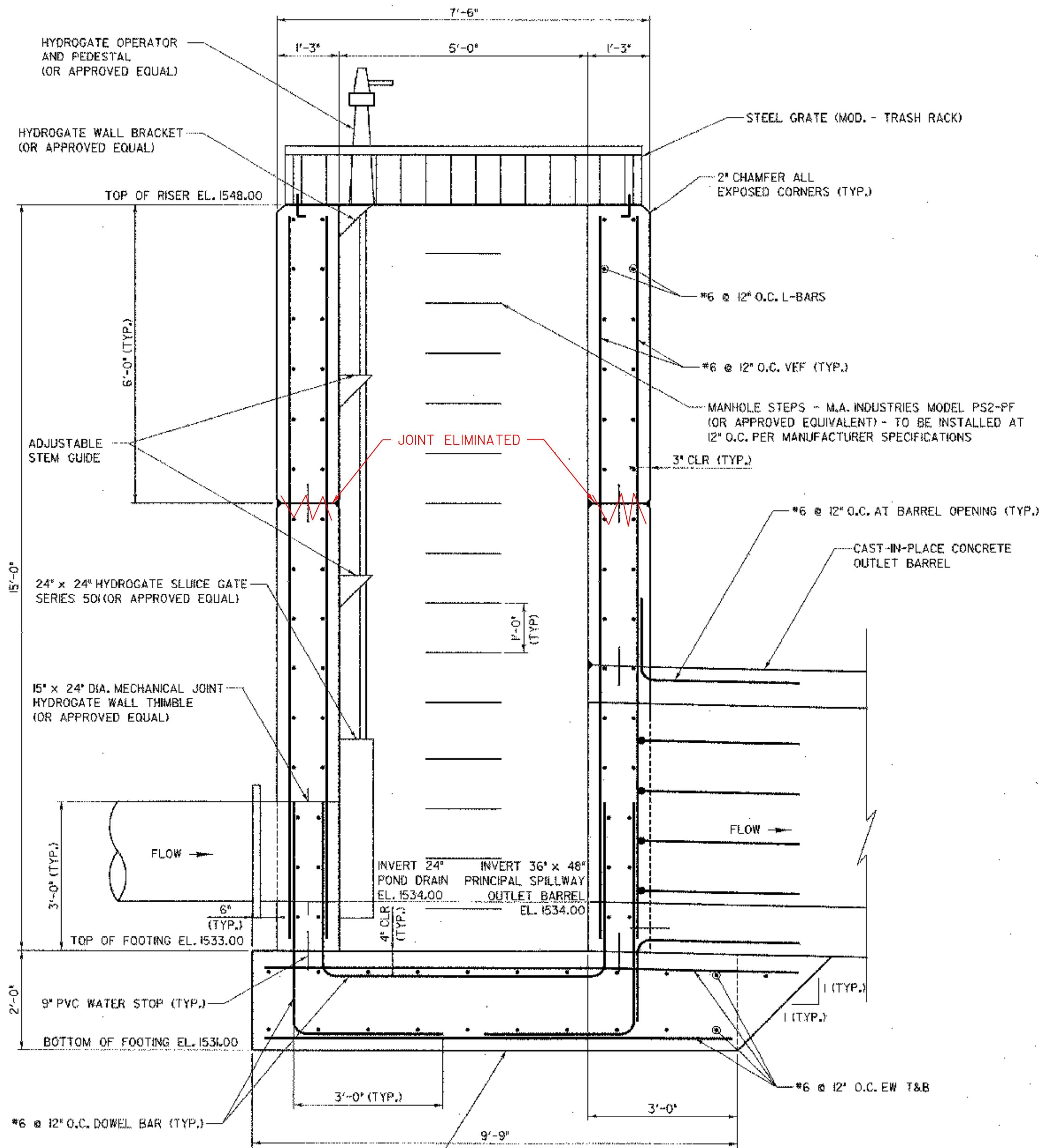


**PRINCIPAL SPILLWAY RISER (PLAN)**  
SCALE 3/4" = 1'-0"

**NOTE:**

1. THE SLUICE GATE SHALL FIELD ADJUSTED UPON FILLING OF THE LAKE, UNDER THE DIRECTION OF THE RESIDENT ENGINEER.
2. PVC WATERSTOP ALONG ALL JOINTS SHALL BE WELDED TO MANUFACTURER'S RECOMMENDATIONS TO FORM A CONTINUOUS WATERSTOP

DATUM	ASSUMED
VERTICAL	NAD 83
HORIZONTAL	



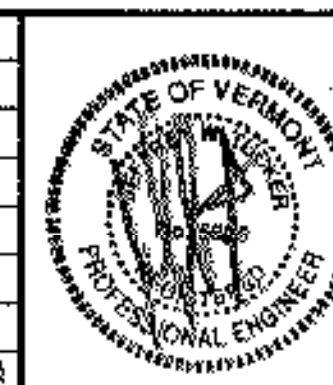
**PRINCIPAL SPILLWAY RISER (SECTION)**  
SCALE 3/4" = 1'-0"

**REINFORCING LEGEND**

- EW = EACH WAY
- HEF = HORIZONTAL EACH FACE
- VEF = VERTICAL EACH FACE
- T+B = TOP AND BOTTOM
- CLR = CLEAR COVER

C = CONSTRUCTION JOINT

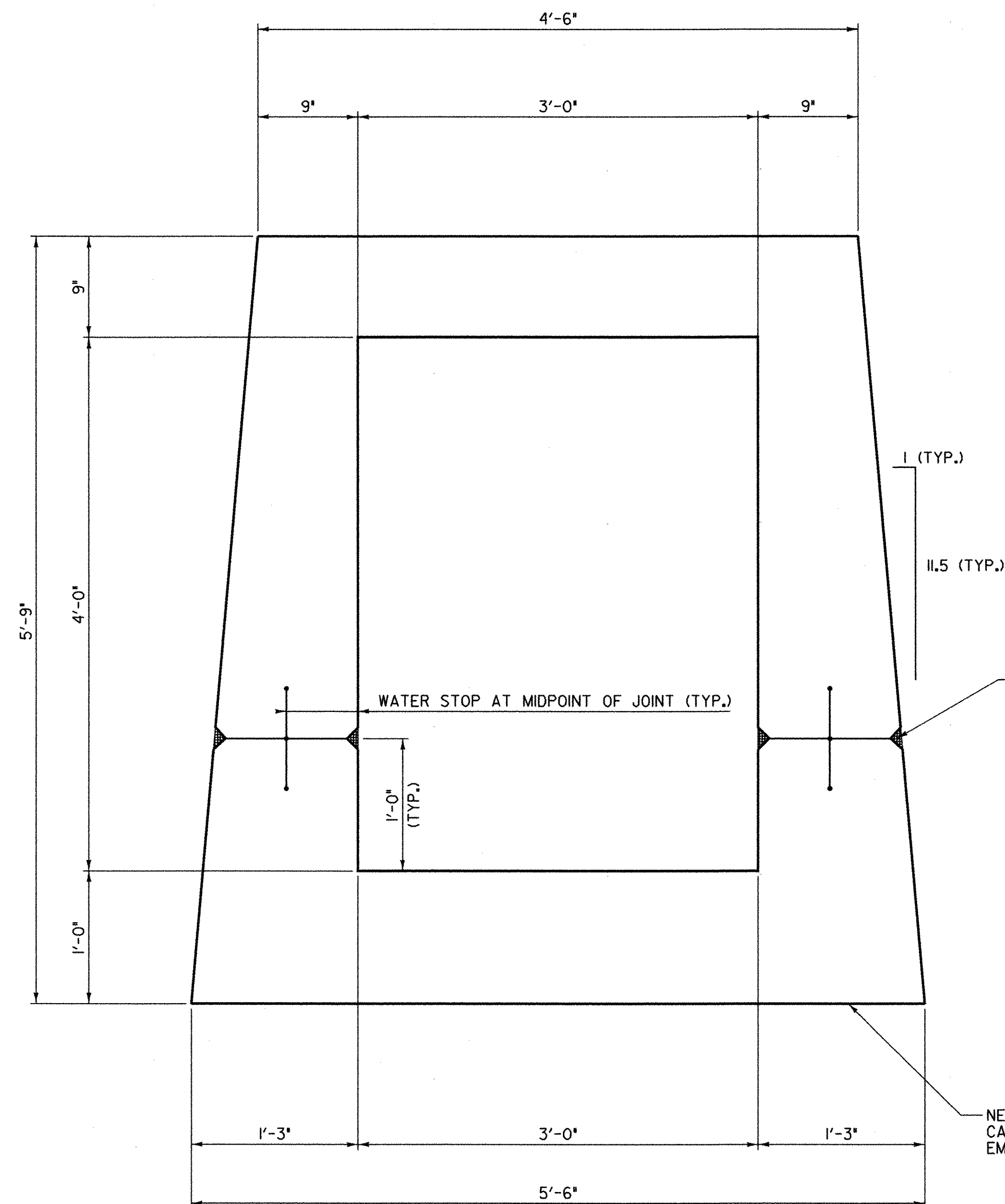
NO.	DATE	REVISIONS	BY	CHK'D



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TOWN OF WARREN  
WARREN, VERMONT  
BLUEBERRY LAKE DAM  
REHABILITATION PROJECT  
PRINCIPAL SPILLWAY RISER DETAIL SHEET

DESIGNED BY	DATE
DRY	MAY 2003
CHECKED BY	PROJ. NO.
SRP	R16663
PROJ. ENG.	DRAW. NO.
SRP	11802
SHEET 13	OF 24

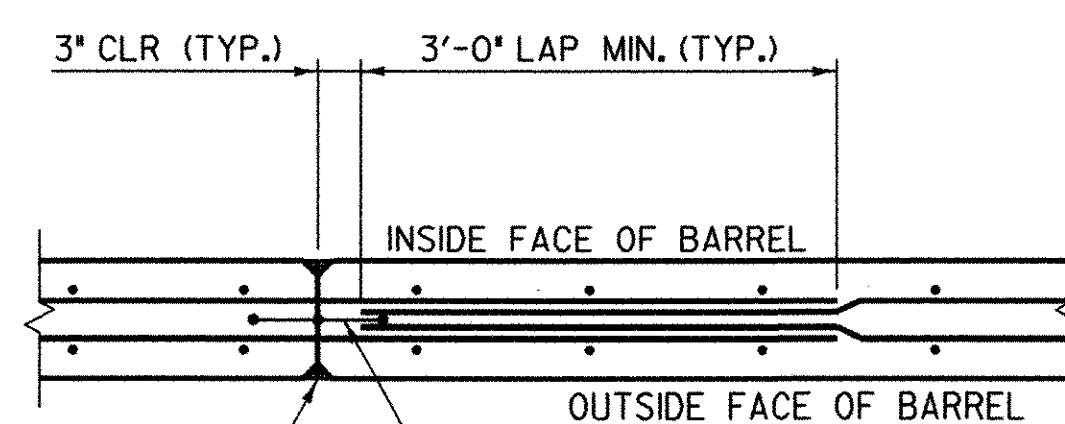


ALL EXTERIOR CONSTRUCTION JOINTS TO BE SEALED WITH \*SIKAFLEX -1a\* OR APPROVED EQUAL (TYP.) TO BE PAID SUBSIDIARY TO ITEM 501.25 \*CONCRETE, CLASS B\* (TYPICAL FOR RISER SECTION AT JOINT)

NEW OUTLET BARREL TO BE CAST ON COMPACTED ORIGINAL EMBANKMENT MATERIAL

**OUTLET BARREL SECTION (LAYOUT)**

SCALE 1/2" = 1'-0"

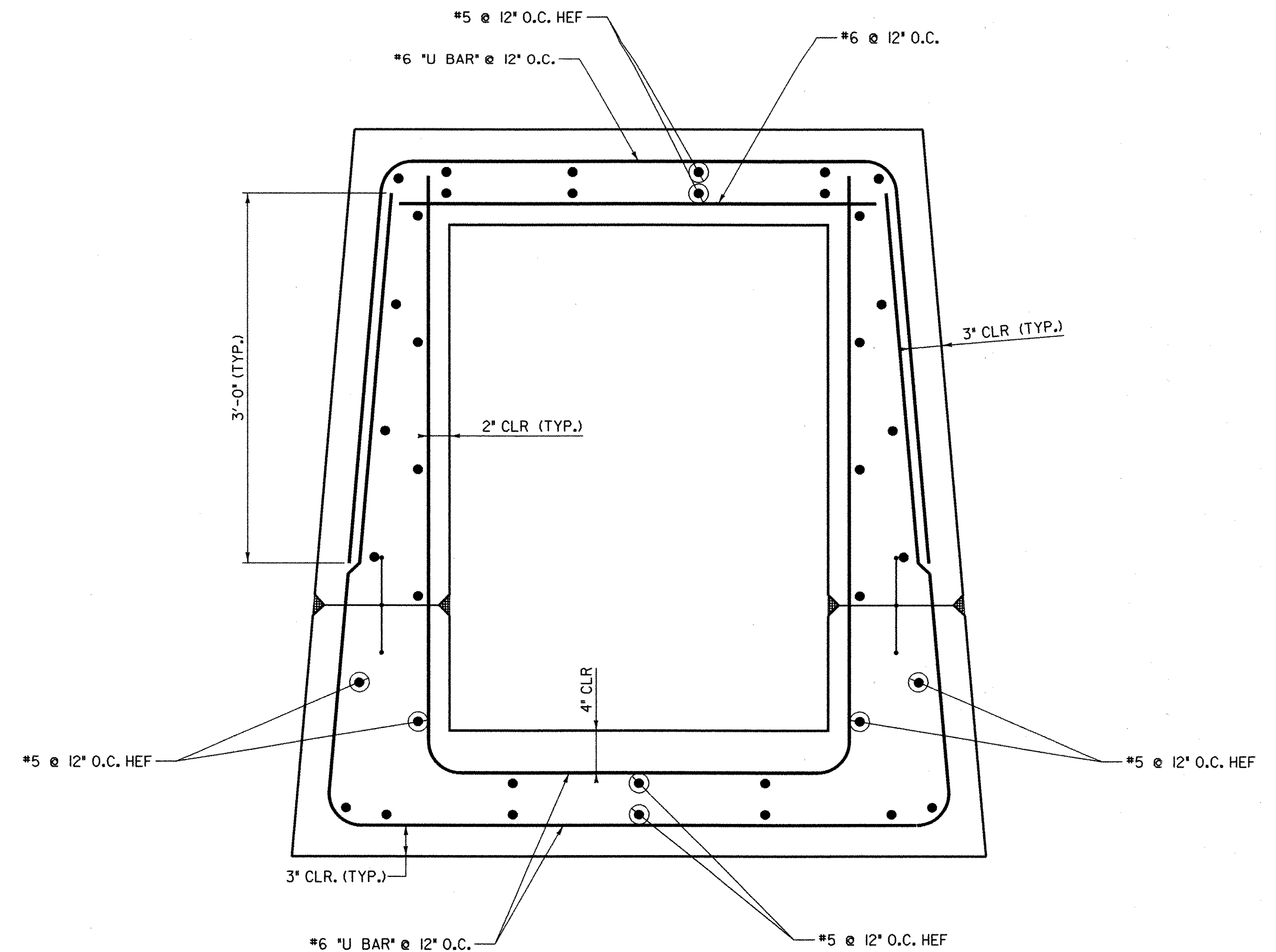


ALL EXTERIOR CONSTRUCTION JOINTS TO BE SEALED WITH \*SIKAFLEX -1a\* OR APPROVED EQUAL (TYP.)

**TYPICAL CONSTRUCTION JOINT**

NOT TO SCALE

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83



**OUTLET BARREL SECTION (REINFORCING)**

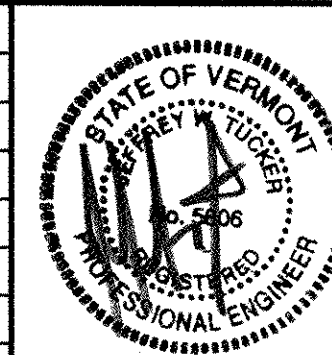
SCALE 1/2" = 1'-0"

**REINFORCING LEGEND**

EW = EACH WAY  
 HEF = HORIZONTAL EACH FACE  
 VEF = VERTICAL EACH FACE  
 T+B = TOP AND BOTTOM  
 CLR = CLEAR COVER

C  
 J = CONSTRUCTION JOINT

NO.	DATE	REVISIONS	BY	CK'D



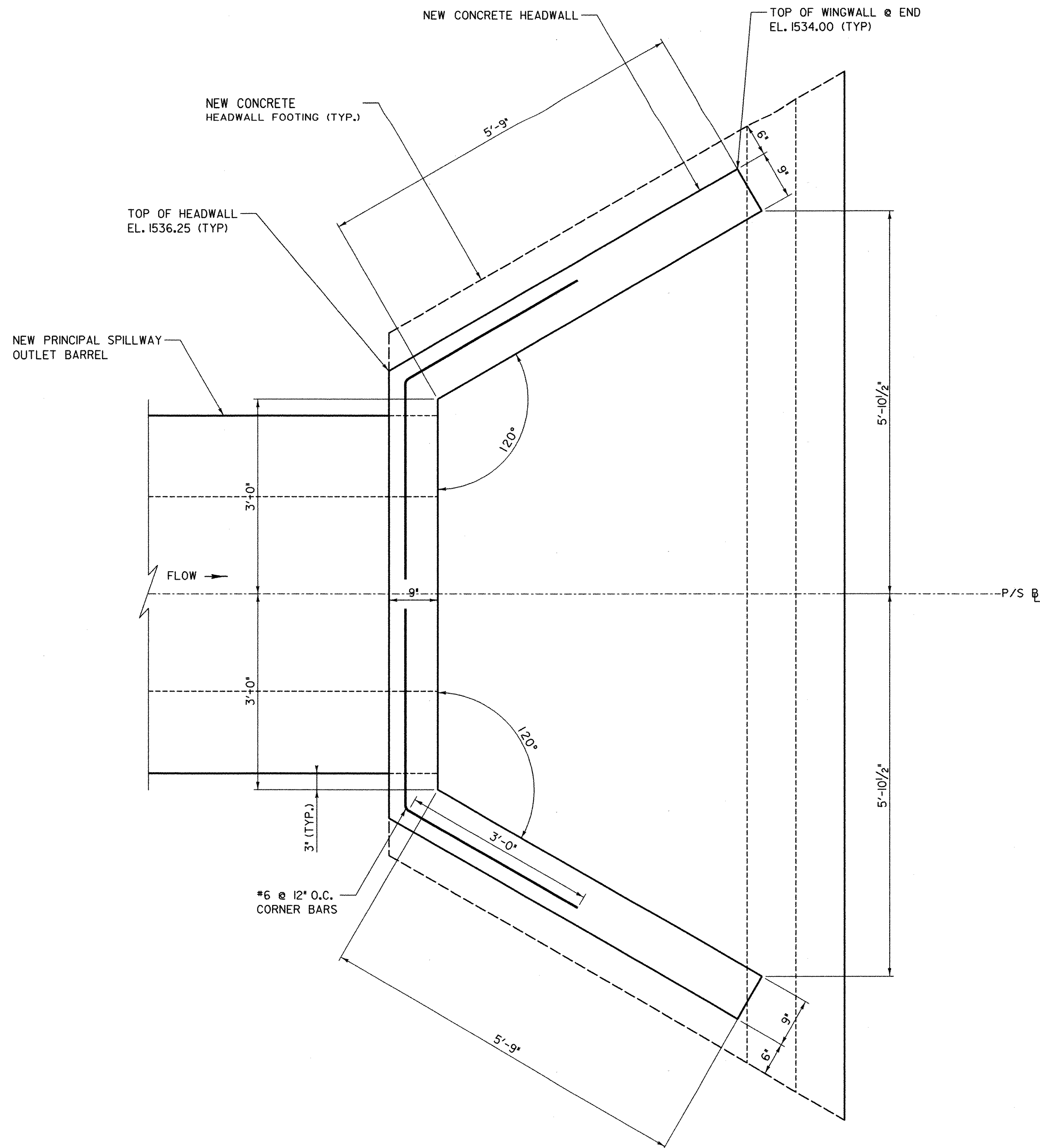
**DuBois & King Inc.**  
 engineering planning management development

TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 PRINCIPAL SPILLWAY  
 OUTLET BARREL DETAIL SHEET

DRAWN BY EBS	DATE MAY 2003
CHECKED BY JW	PROJ. NO. RI6663
PROJ. ENG. SRP	DRAW. NO. 11303
SHEET 14	OF 24

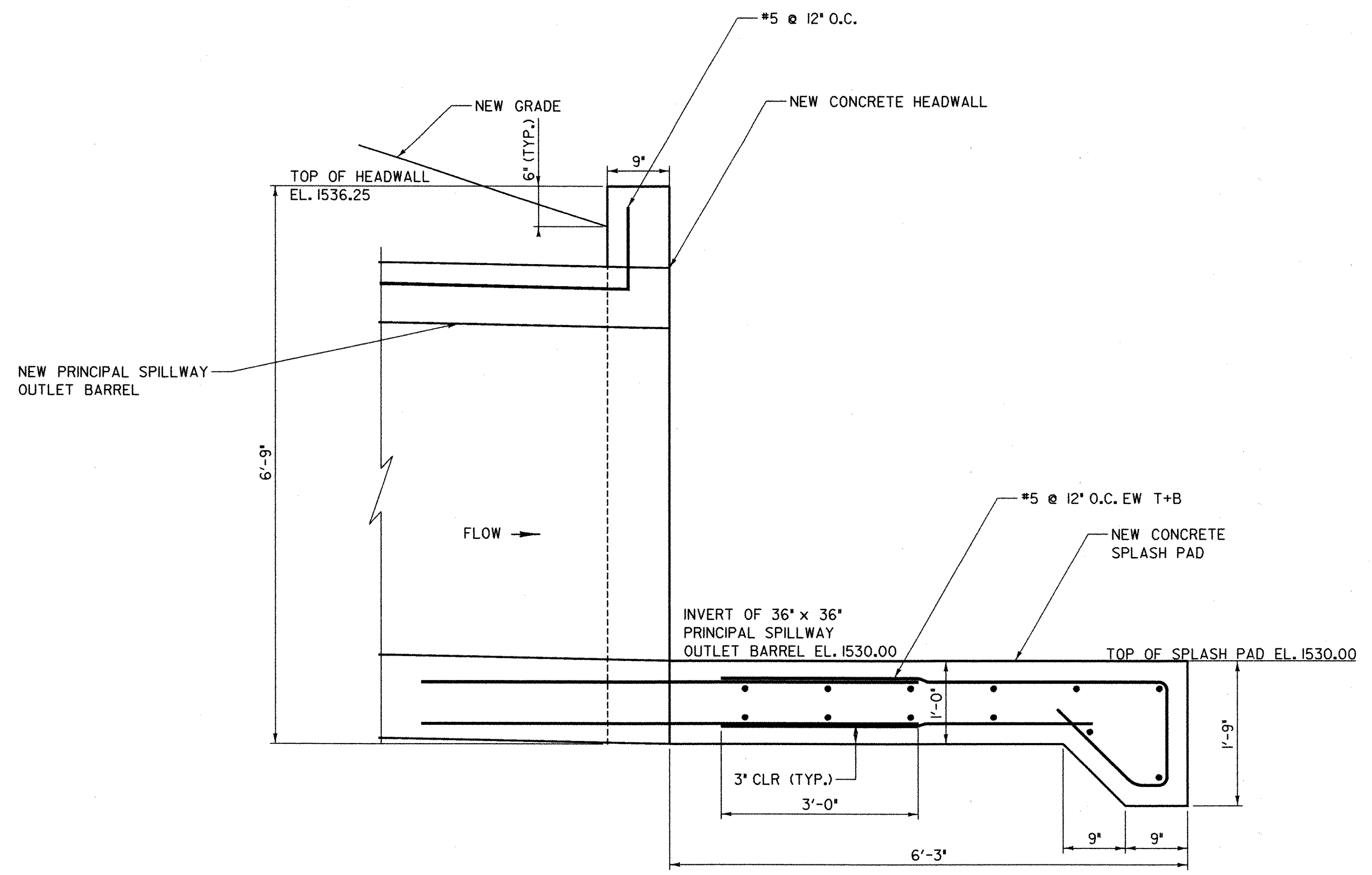
PLOTTED 05/21/2003

05/21/2003 11:42:03 AM



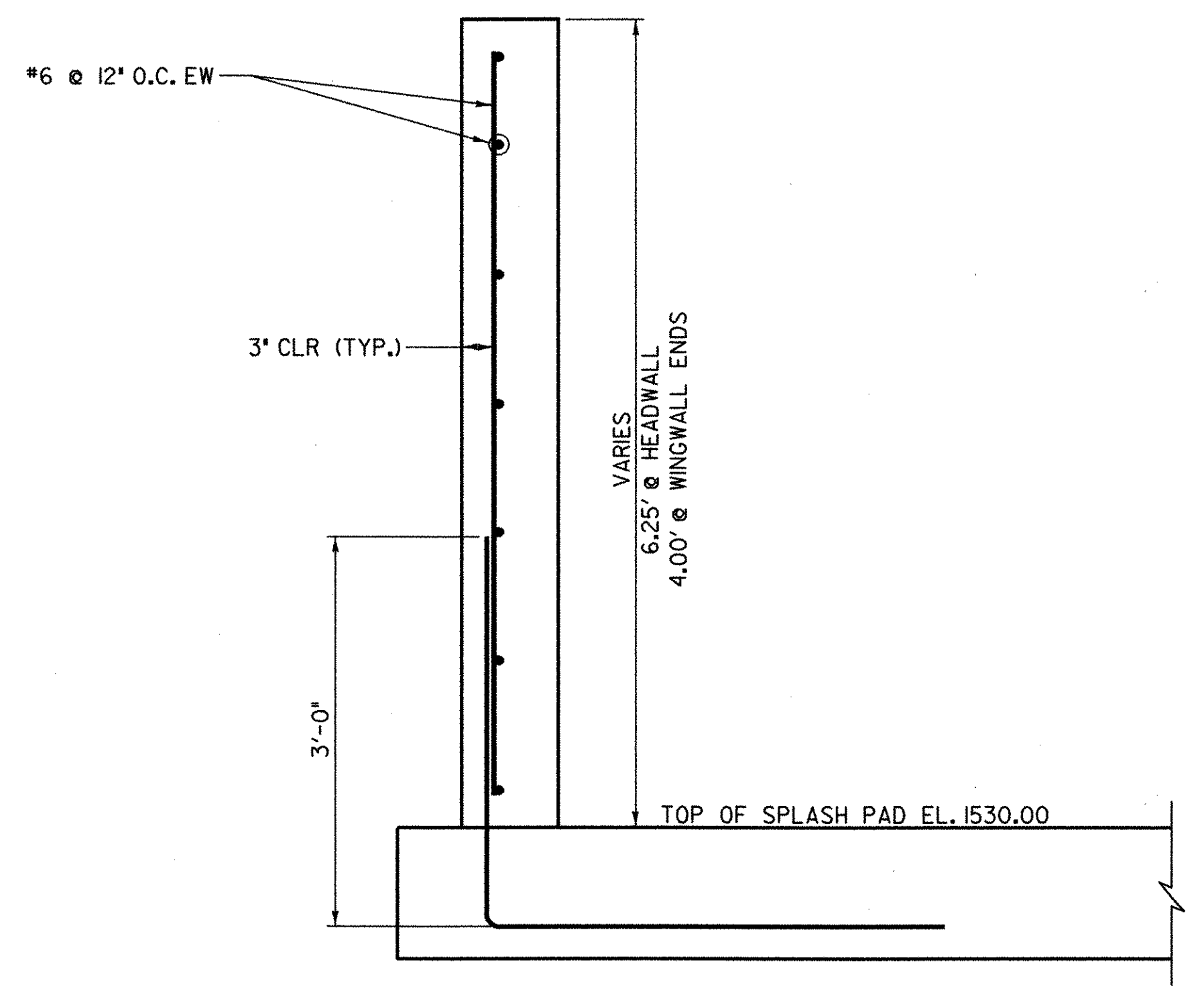
**PRINCIPAL SPILLWAY OUTLET (PLAN)**

SCALE 1" = 1'-0"



**PRINCIPAL SPILLWAY OUTLET (SECTION)**

SCALE 1" = 1'-0"



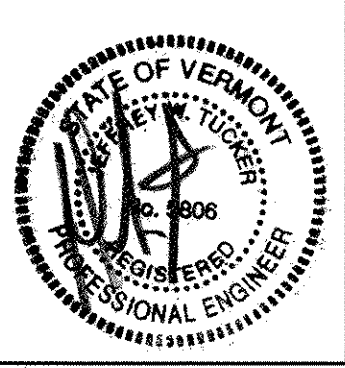
**PRINCIPAL SPILLWAY OUTLET WINGWALL (SECTION)**

SCALE 1" = 1'-0"

DATUM	
VERTICAL	ASSUMED
HORIZONTAL	NAD 83

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CK'D

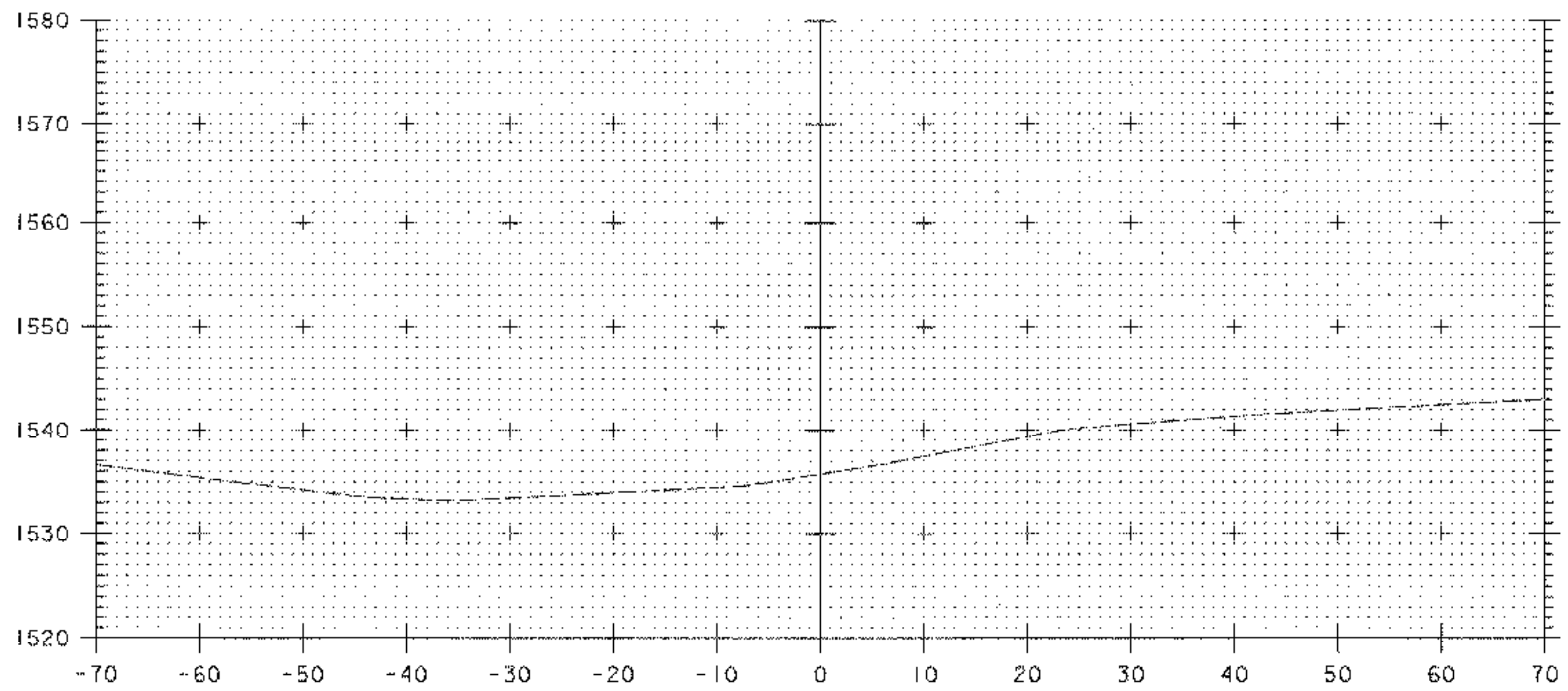


**DuBois & King, Inc.**  
 engineering planning management development

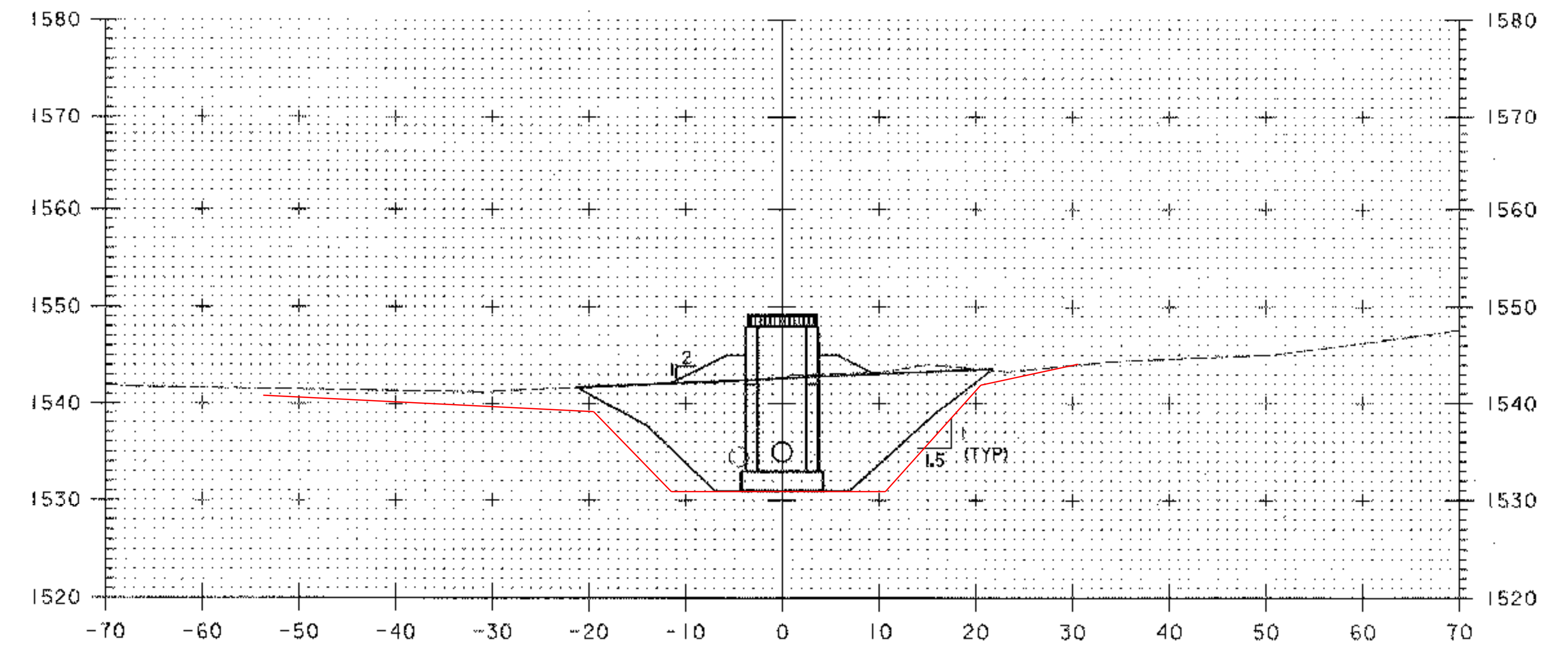
TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 PRINCIPAL SPILLWAY OUTLET  
 HEADWALL DETAIL SHEET

DRAWN BY	ASJ	DATE	MAY 2003
CHECKED BY	JWT	PROJ. NO.	R16663
PROJ. ENG.	SRP	DRAW. NO.	11301
SHEET 15		OF 24	

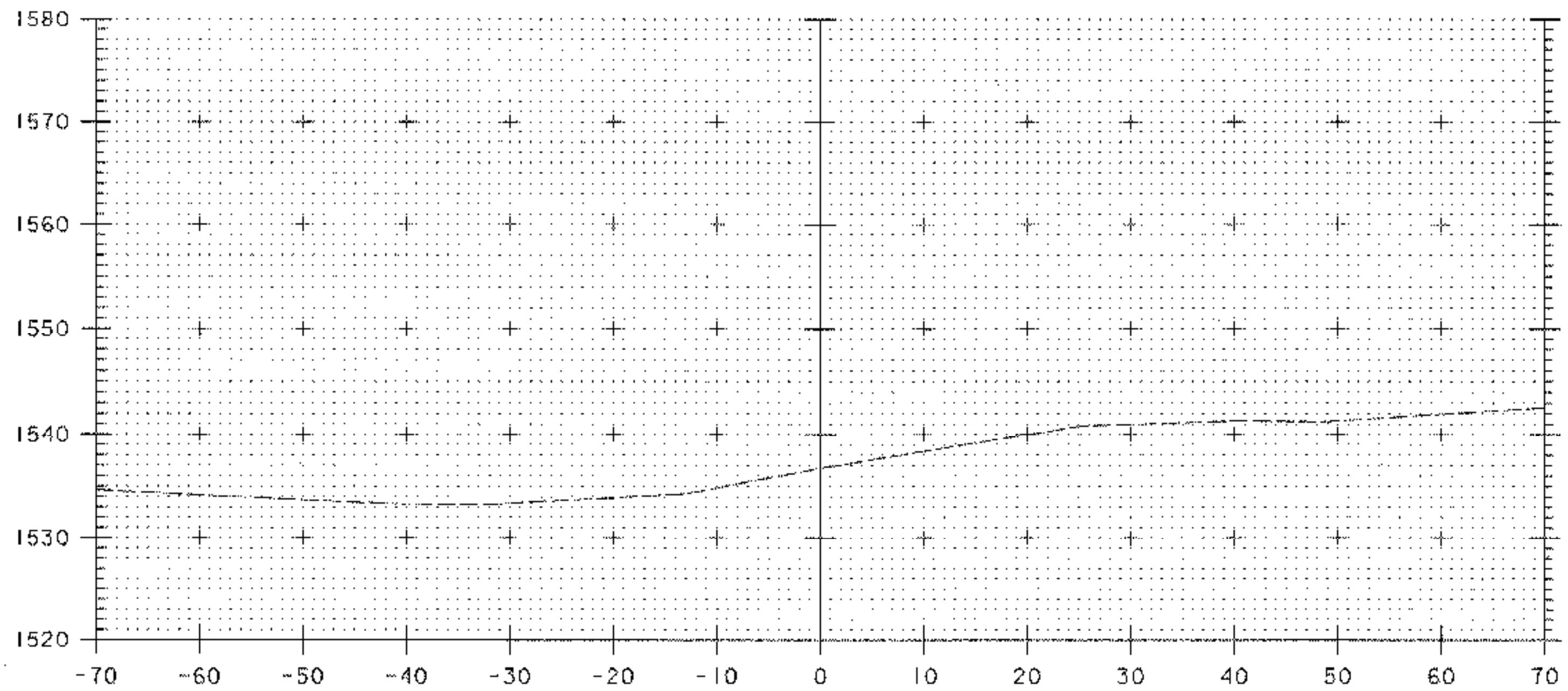
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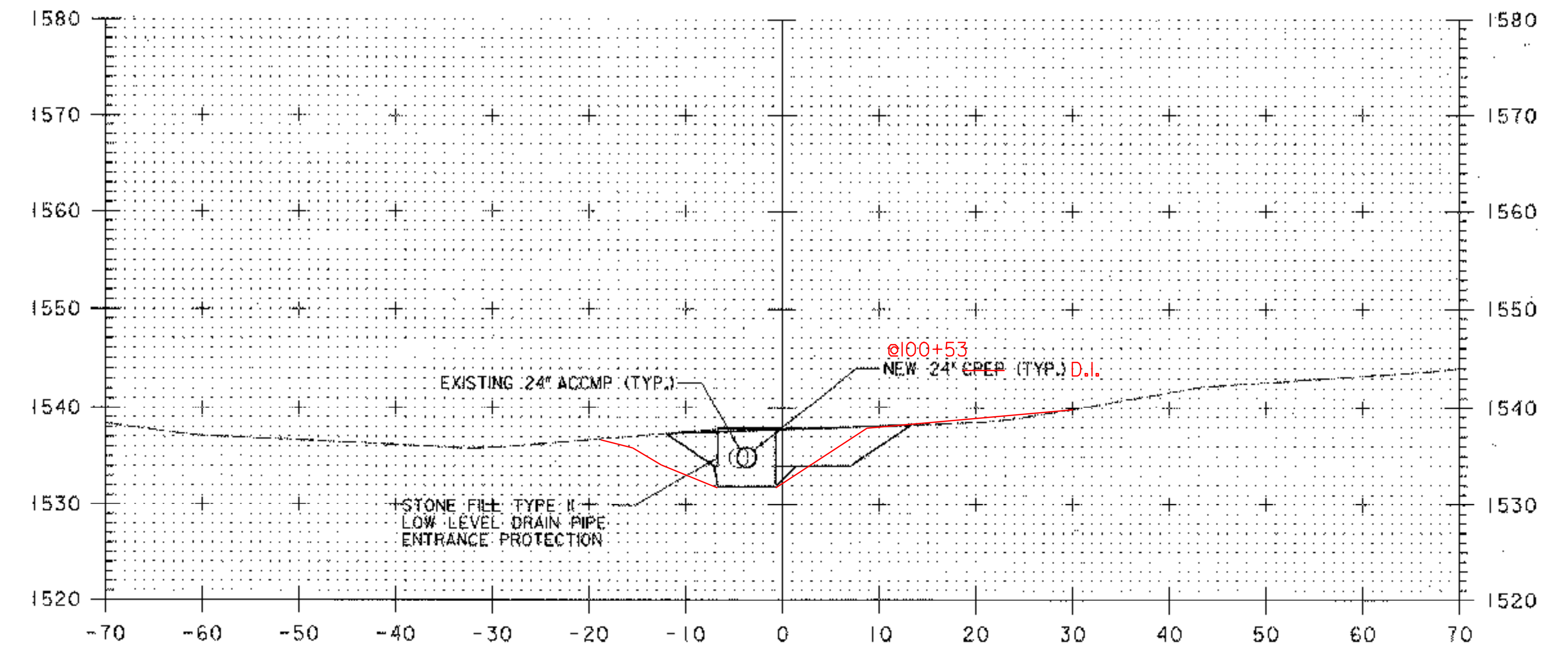
100+25



100+75



100+00



100+50

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

SCALE 1" = 10'-0"

PLOTTED 05/21/2003

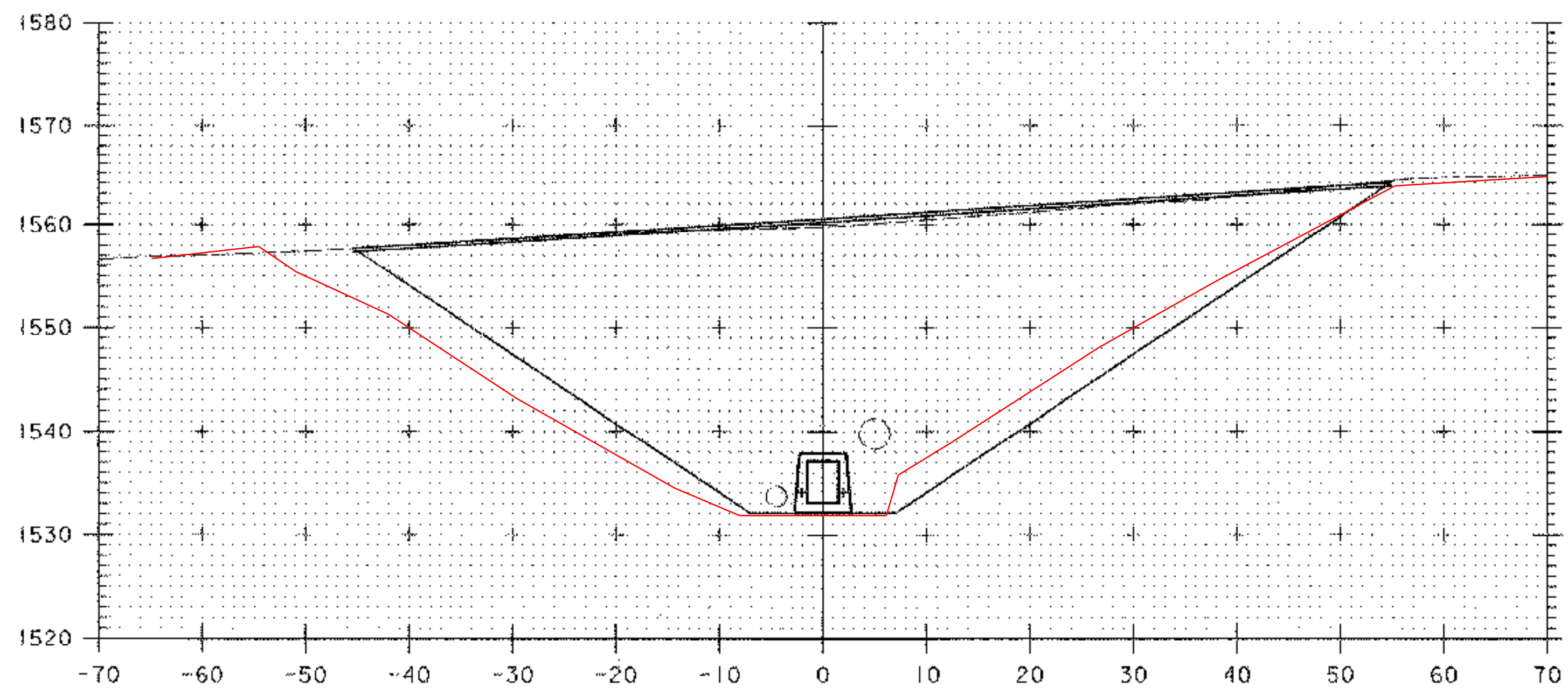
NO.	DATE	REVISIONS	BY	CK'D



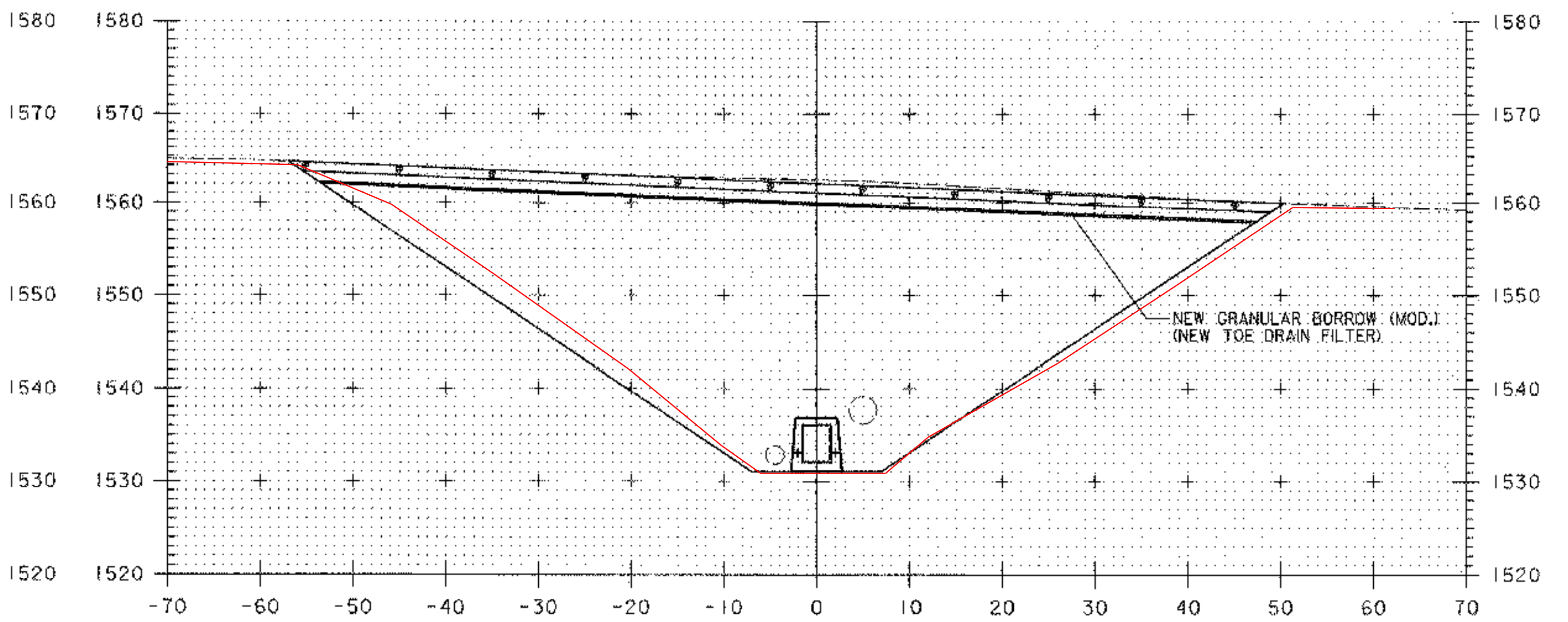
**DuBois & King**  
 INC.  
 engineering planning management development

TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 PRINCIPAL SPILLWAY CROSS SECTIONS

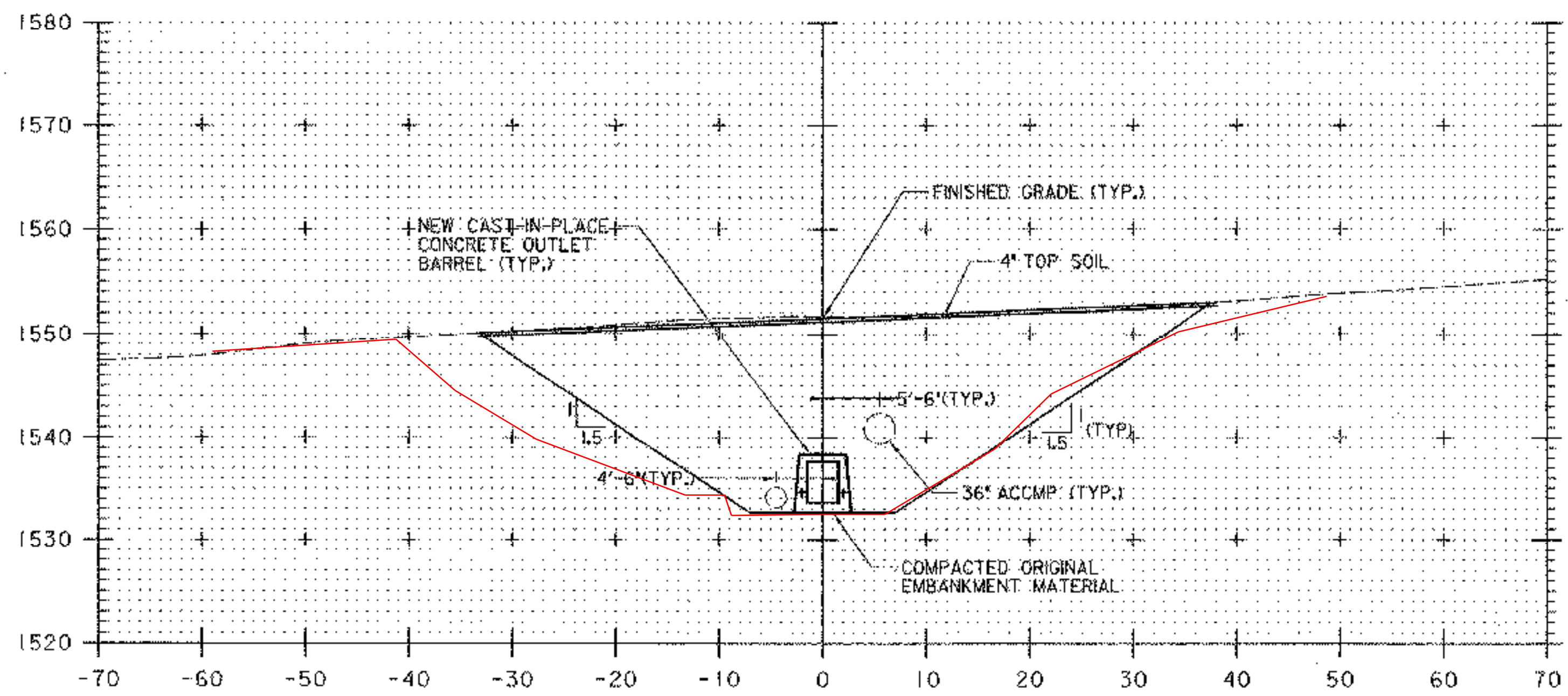
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CHECKED BY JWT	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11205
SHEET 16 OF 24	



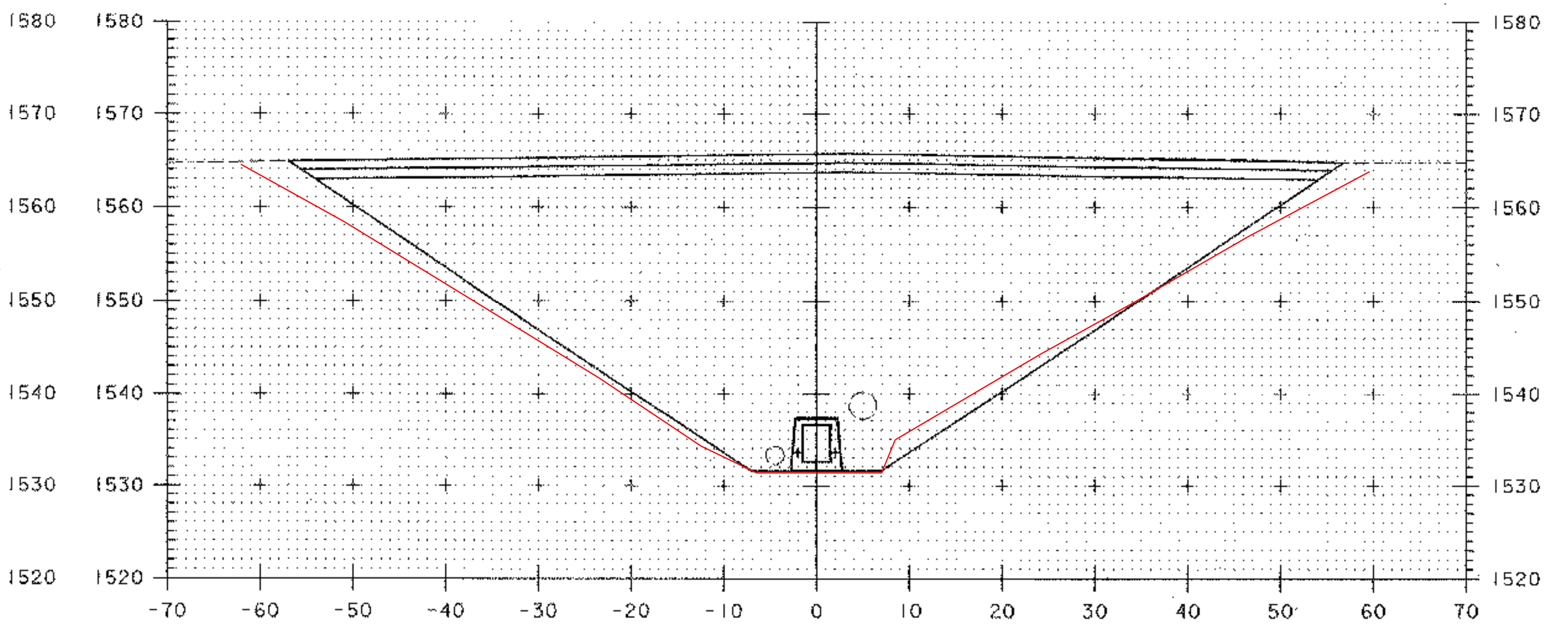
101+25



101+75



101+00



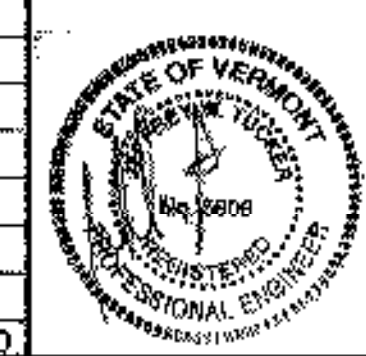
101+50

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

SCALE 1" = 10'-0"

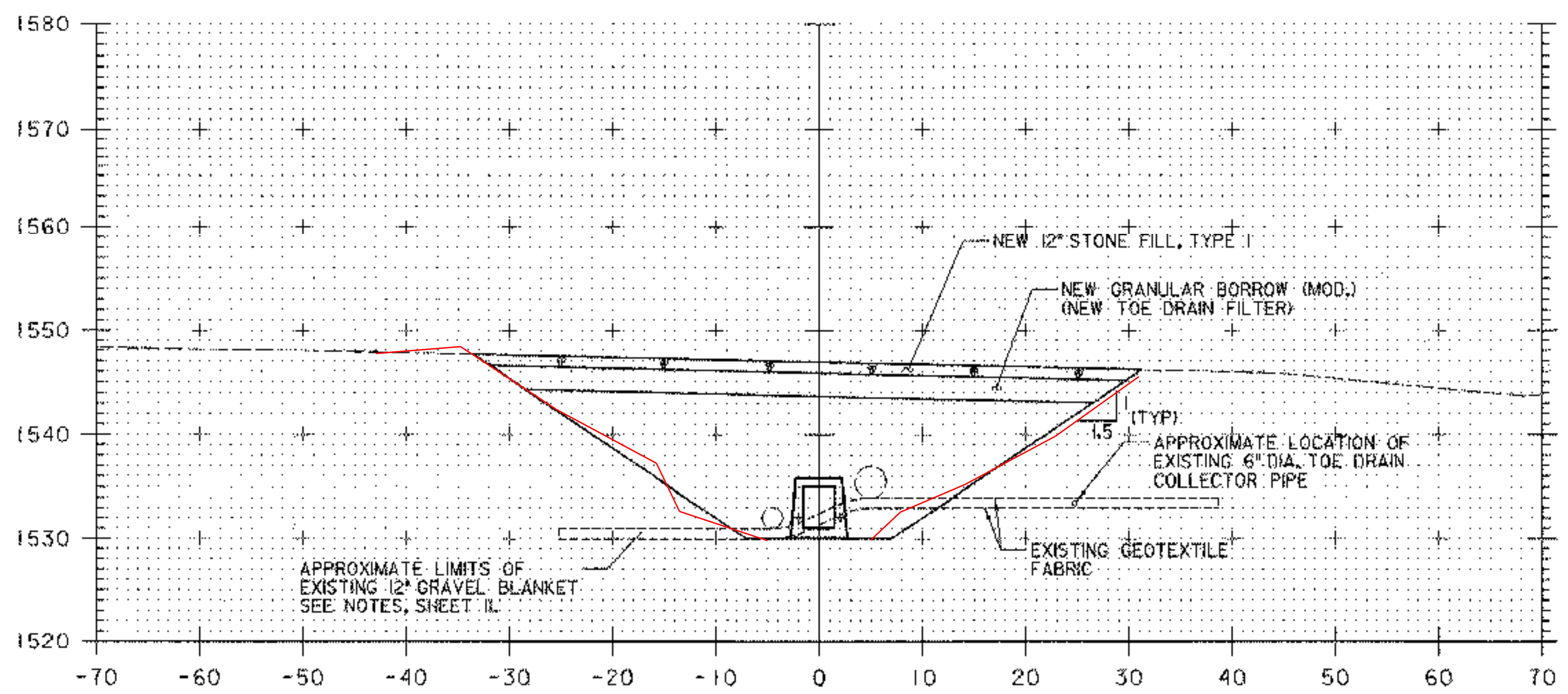
PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CHK'D

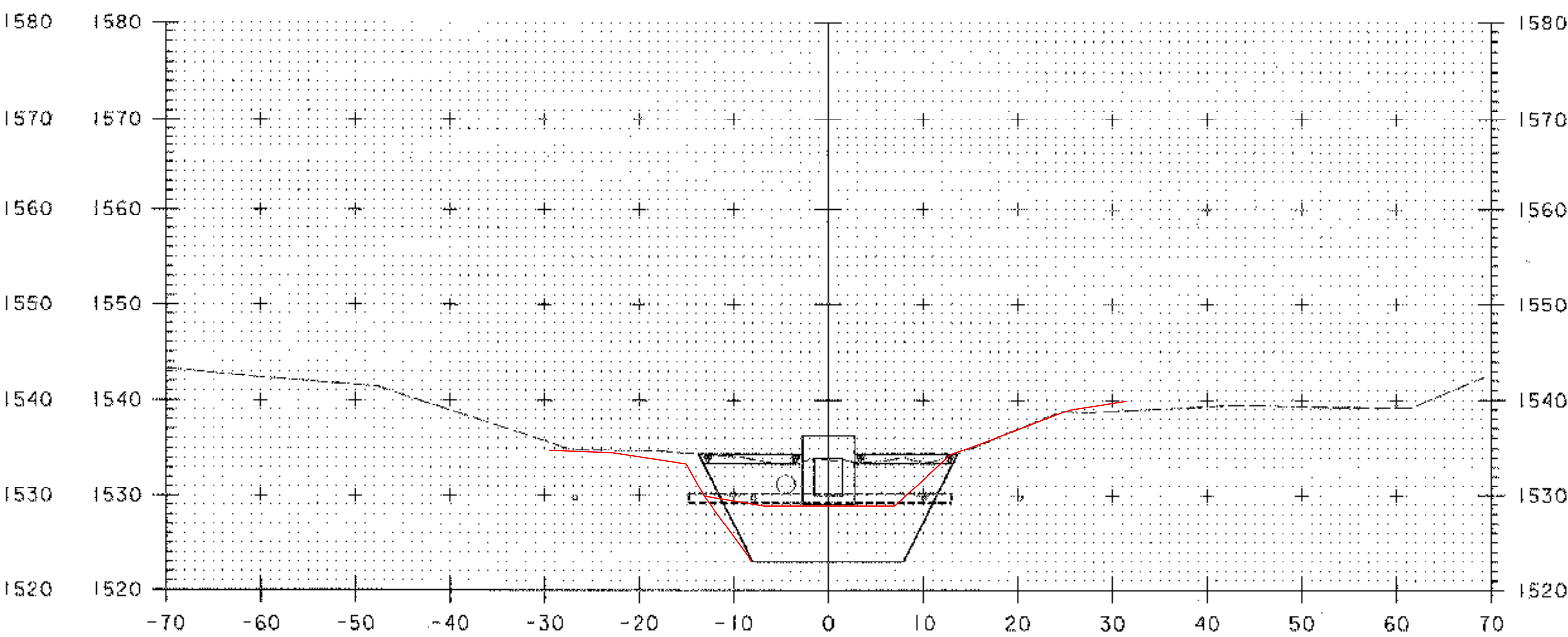


TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 PRINCIPAL SPILLWAY CROSS SECTIONS

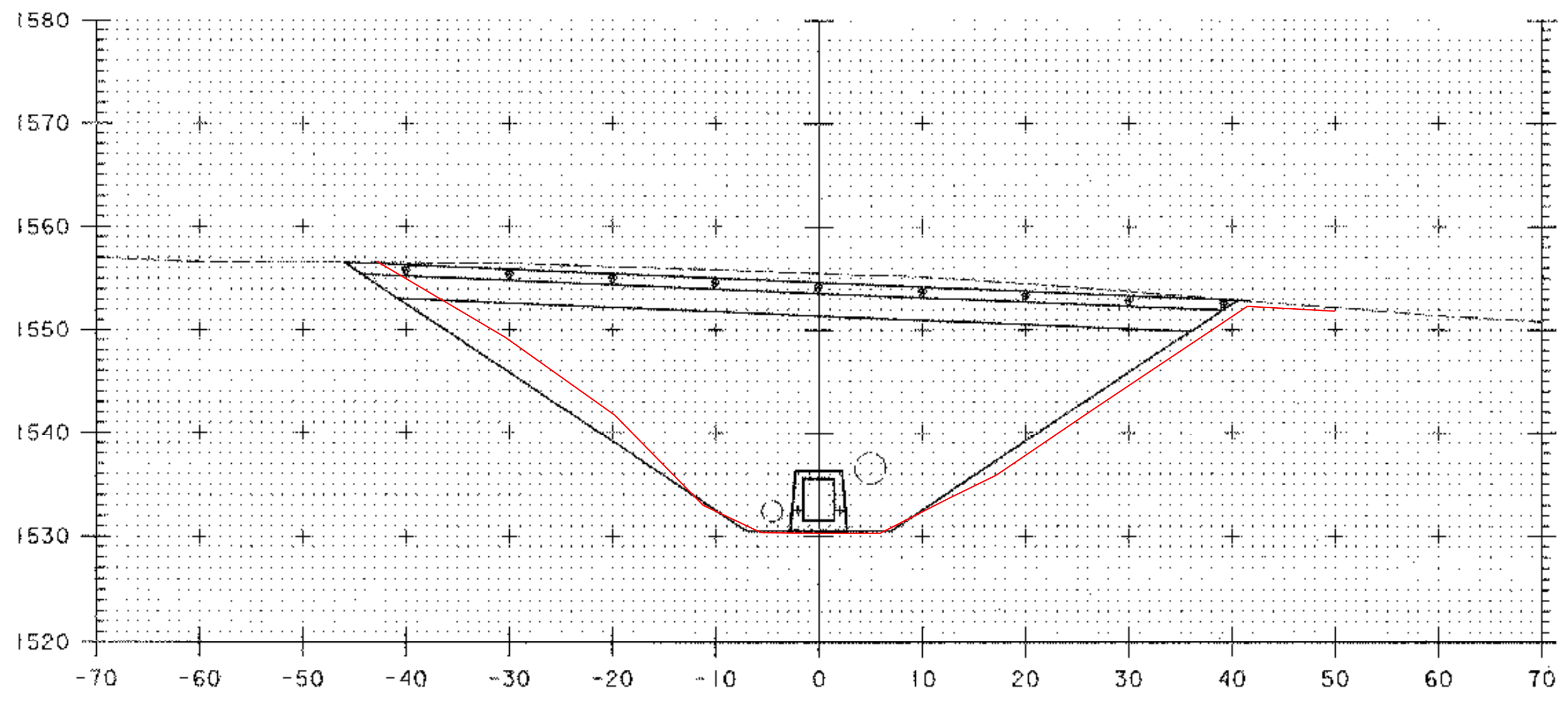
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CHECKED BY JW	PROJECT NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11306
SHEET 17 OF 24	



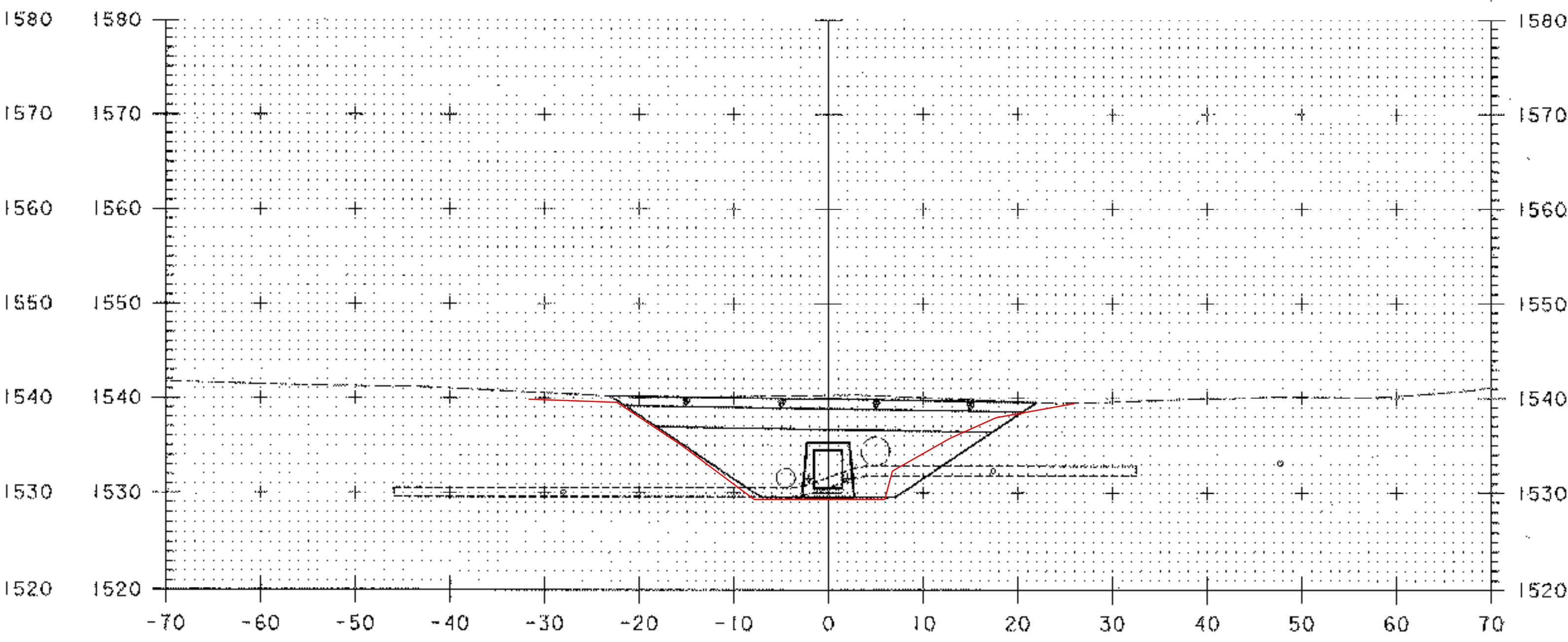
102+25



102+75



102+00



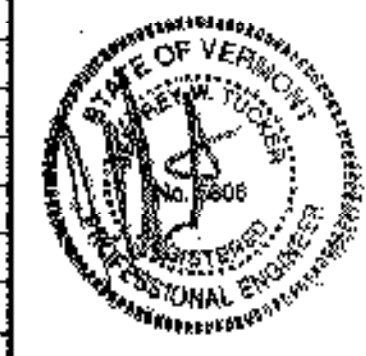
102+50

DATUM  
 VERTICAL ASSUMED  
 HORIZONTAL NAD 83

SCALE 1" = 10'-0"

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CK'D



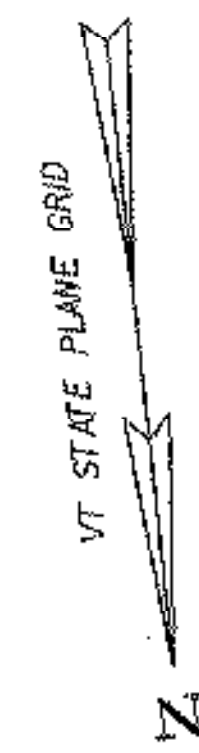
**DuBois & King Inc.**  
 engineering planning management development

TOWN OF WARREN  
 WARREN, VERMONT  
 BLUEBERRY LAKE DAM  
 REHABILITATION PROJECT  
 PRINCIPAL SPILLWAY CROSS SECTIONS

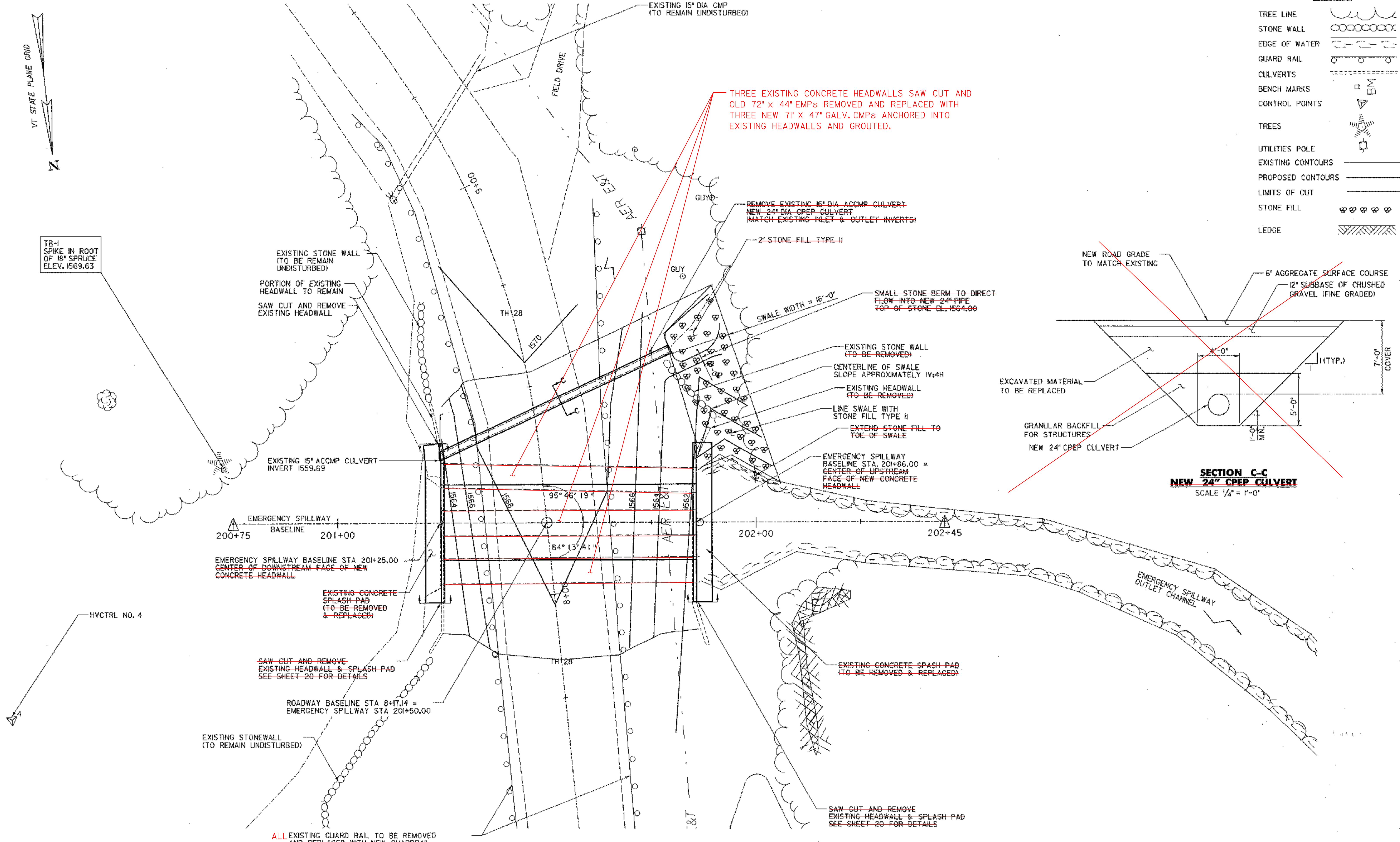
DRAWN BY SJB	DATE MAY 2003
CHECKED BY JWA	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11307
SHEET 18 OF 24	

**LEGEND**

- TREE LINE
- STONE WALL
- EDGE OF WATER
- GUARD RAIL
- CULVERTS
- BENCH MARKS
- CONTROL POINTS
- TREES
- UTILITIES POLE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- LIMITS OF CUT
- STONE FILL
- LEDGE



TB-1 SPIKE IN ROOT OF 18" SPRUCE ELEV. 1569.63



THREE EXISTING CONCRETE HEADWALLS SAW CUT AND OLD 72" x 44" EMPs REMOVED AND REPLACED WITH THREE NEW 71" x 47" GALV. CMPs ANCHORED INTO EXISTING HEADWALLS AND GROUTED.

REMOVE EXISTING 15" DIA. ACCMP CULVERT  
NEW 24" DIA. CPEP CULVERT  
(MATCH EXISTING INLET & OUTLET INVERTS)

2' STONE FILL TYPE II

SMALL STONE BERM TO DIRECT FLOW INTO NEW 24" PIPE  
TOP OF STONE EL. 1564.00

EXISTING STONE WALL (TO BE REMOVED)

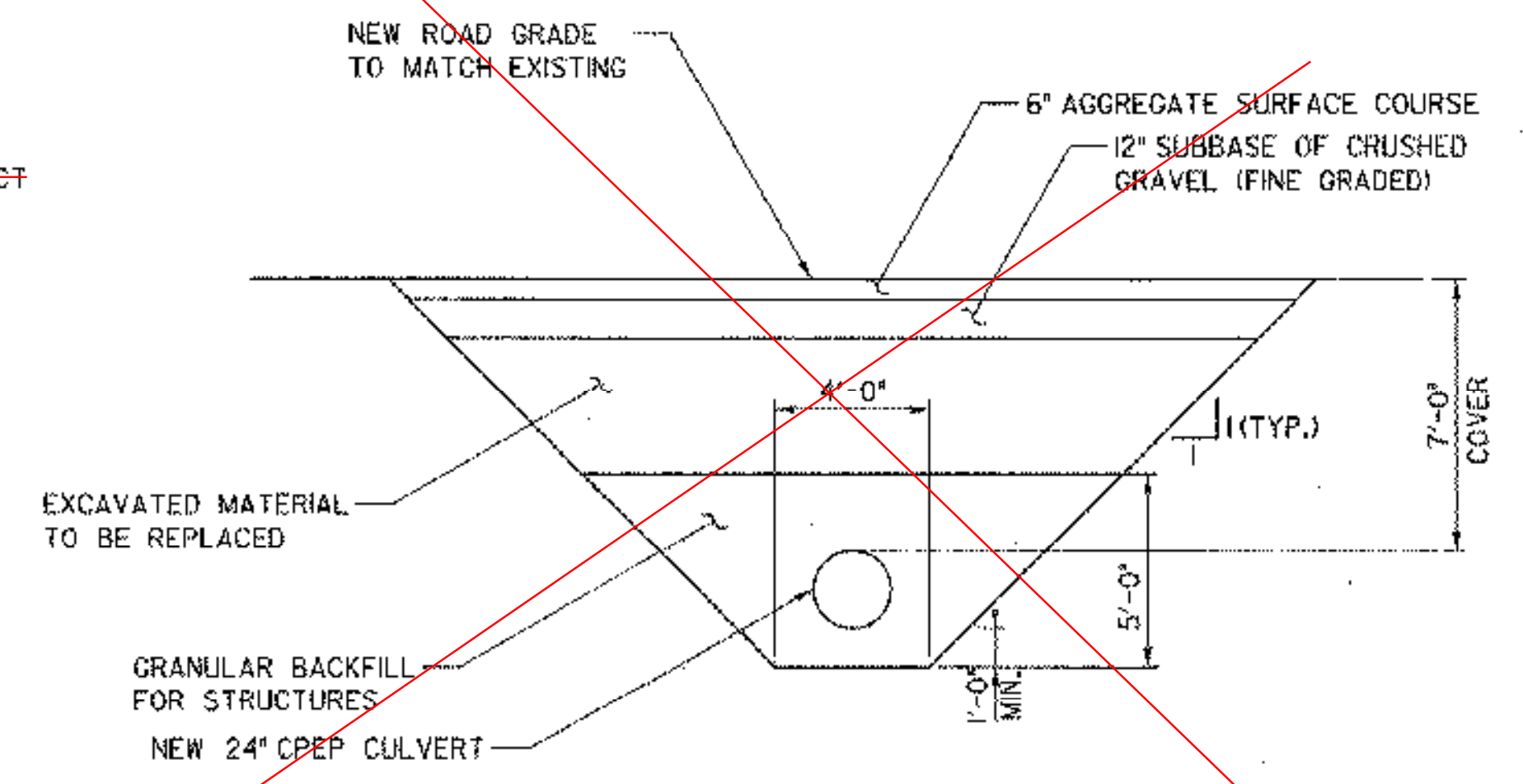
CENTERLINE OF SWALE SLOPE APPROXIMATELY 1V:4H

EXISTING HEADWALL (TO BE REMOVED)

LINE SWALE WITH STONE FILL TYPE II

EXTEND STONE FILL TO TOE OF SWALE

EMERGENCY SPILLWAY BASELINE STA. 201+86.00 = CENTER OF UPSTREAM FACE OF NEW CONCRETE HEADWALL



**SECTION C-C**  
**NEW 24" CPEP CULVERT**  
SCALE 1/4" = 1'-0"

EMERGENCY SPILLWAY BASELINE  
200+75 201+00

EMERGENCY SPILLWAY BASELINE STA 201+25.00  
CENTER OF DOWNSTREAM FACE OF NEW CONCRETE HEADWALL

EXISTING CONCRETE SPLASH PAD (TO BE REMOVED & REPLACED)

SAW CUT AND REMOVE EXISTING HEADWALL & SPLASH PAD SEE SHEET 20 FOR DETAILS

ROADWAY BASELINE STA 8+17.14 = EMERGENCY SPILLWAY STA 201+50.00

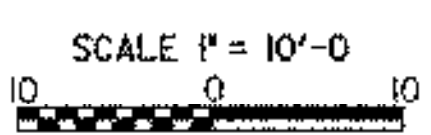
EXISTING STONEMALL (TO REMAIN UNDISTURBED)

EXISTING CONCRETE SPLASH PAD (TO BE REMOVED & REPLACED)

SAW CUT AND REMOVE EXISTING HEADWALL & SPLASH PAD SEE SHEET 20 FOR DETAILS

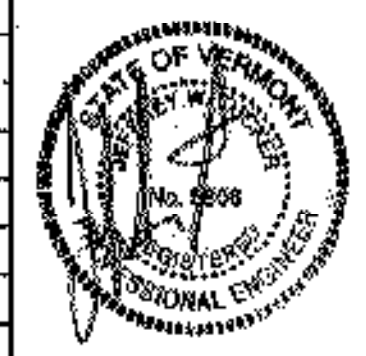
ALL EXISTING GUARD RAIL TO BE REMOVED AND REPLACED WITH NEW GUARDRAIL BETWEEN STA. 7+50 TO STA. 8+75 RT AND LT

DATUM	ASSUMED
VERTICAL	NAD 83
HORIZONTAL	



PLOTTED 05/21/2003

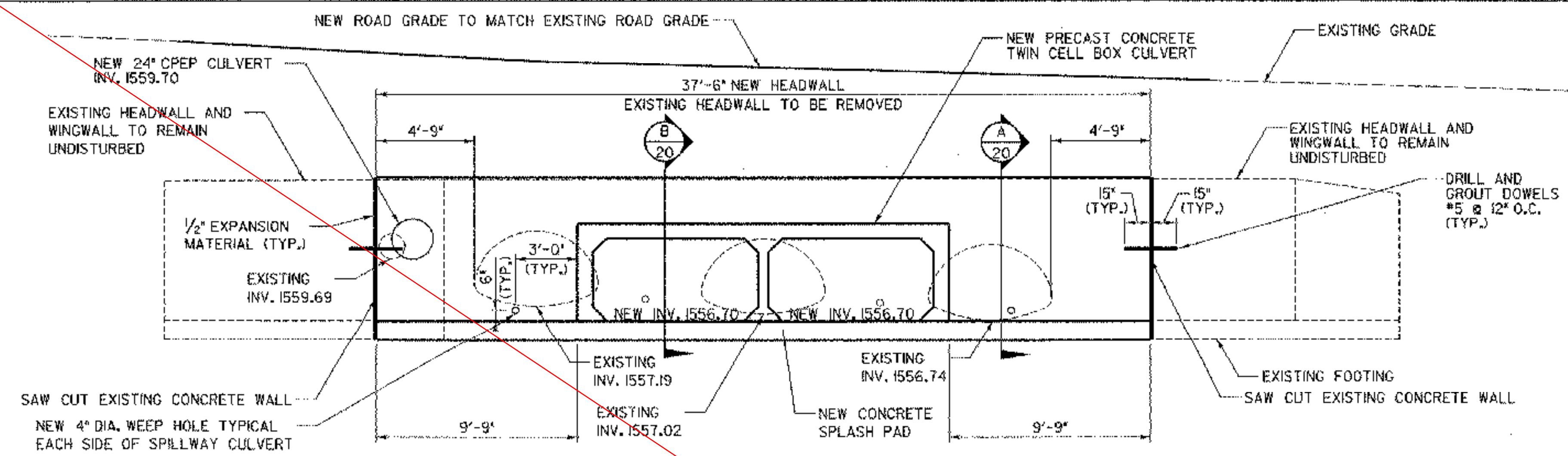
NO.	DATE	REVISIONS	BY	CHK'D



**DuBois & King INC.**  
engineering planning management development

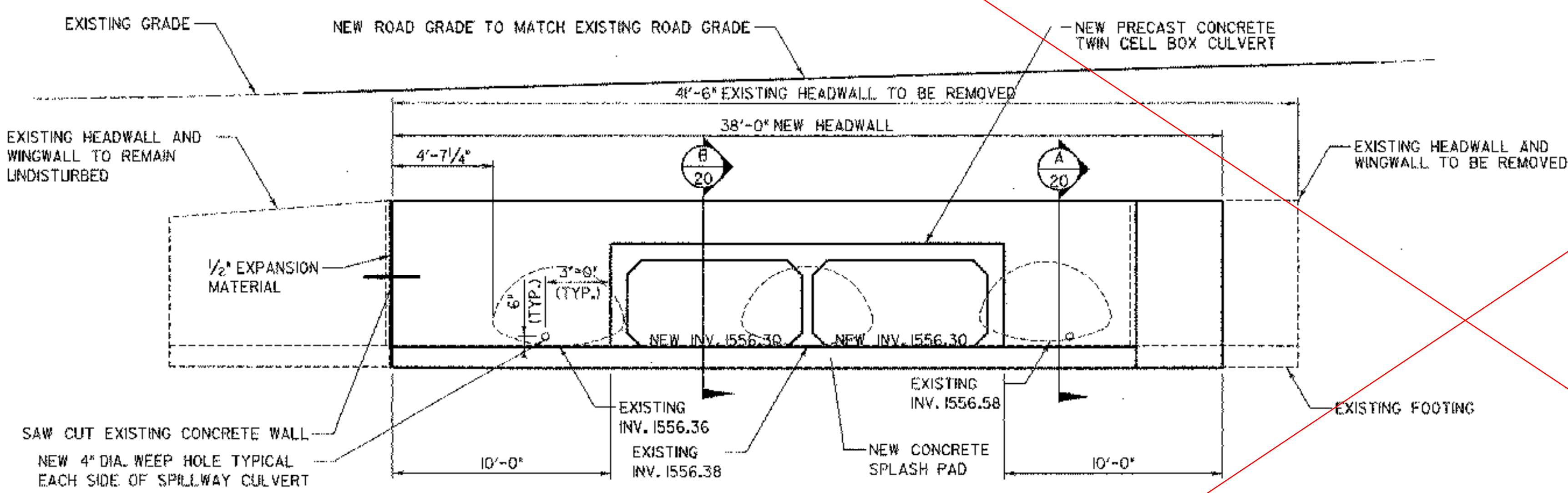
TOWN OF WARREN  
WARREN, VERMONT  
BLUEBERRY LAKE DAM REHABILITATION PROJECT  
EMERGENCY SPILLWAY LAYOUT SHEET

DRAWN BY	DATE
SSB	MAY 2003
CHECKED BY	PROJ. NO.
JWT	R16663
PROJ. ENG.	DRAW. NO.
SRP	11308
SHEET	19 OF 24

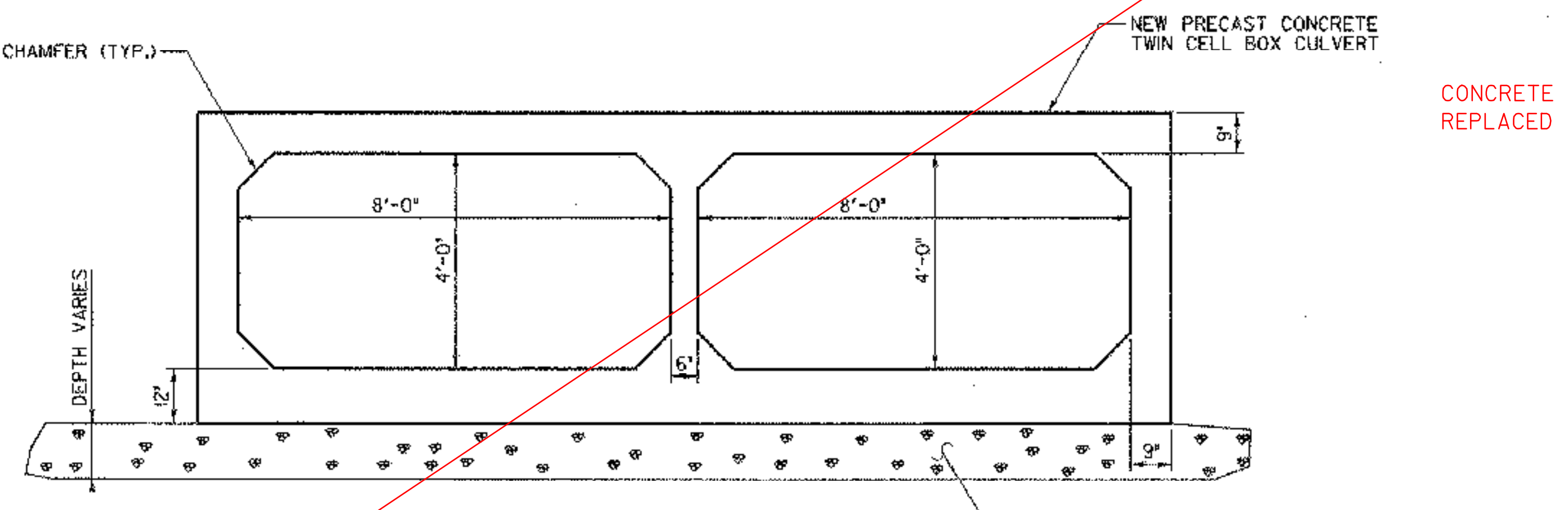


**EMERGENCY SPILLWAY UPSTREAM (ELEVATION)**  
SCALE 1/4" = 1'-0"

- NOTES**
- EXISTING 72" x 44" ACCMP CULVERTS TO BE REMOVED
  - EXISTING 15" ACCMP CULVERT TO BE REMOVED



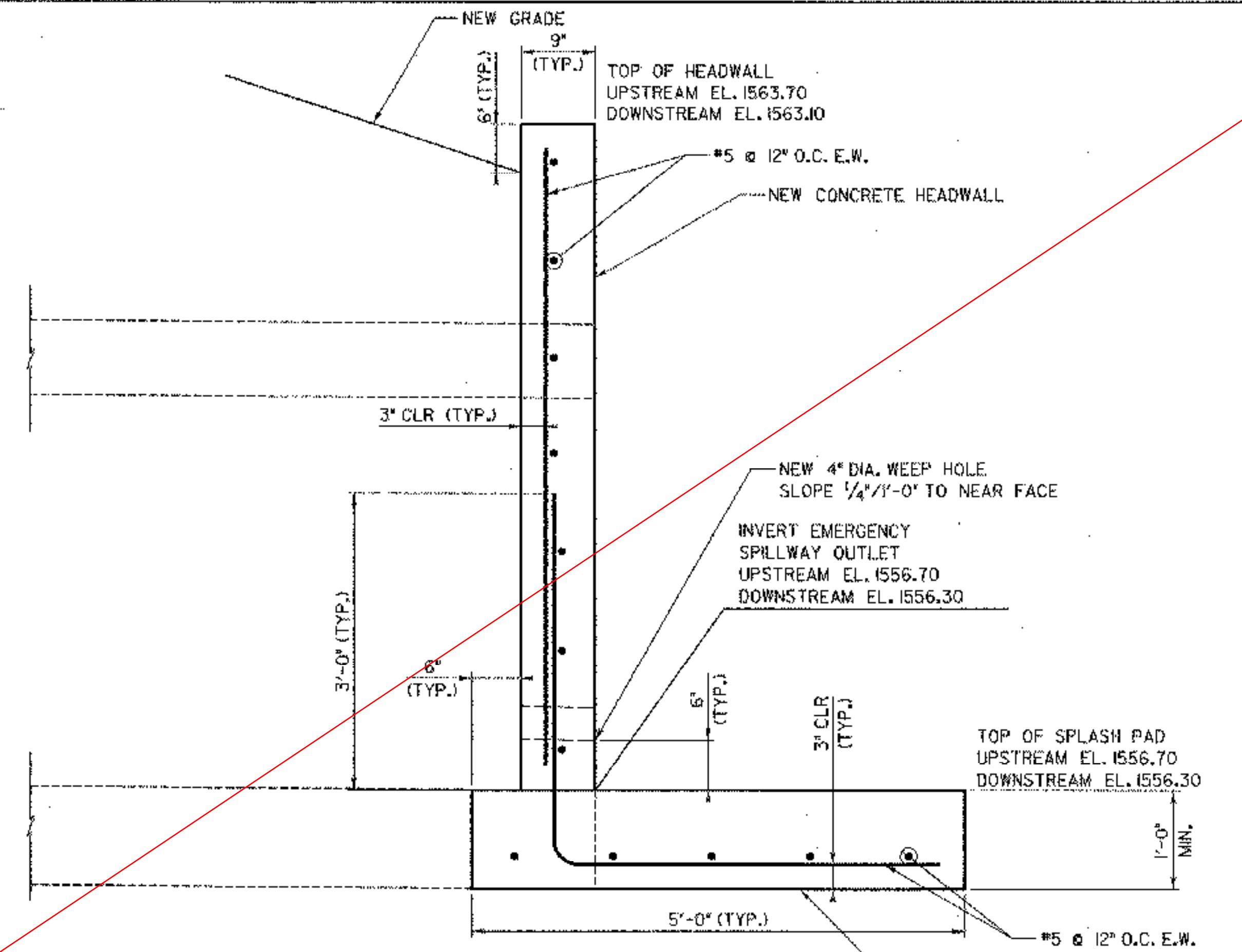
**EMERGENCY SPILLWAY DOWNSTREAM (ELEVATION)**  
SCALE 1/4" = 1'-0"



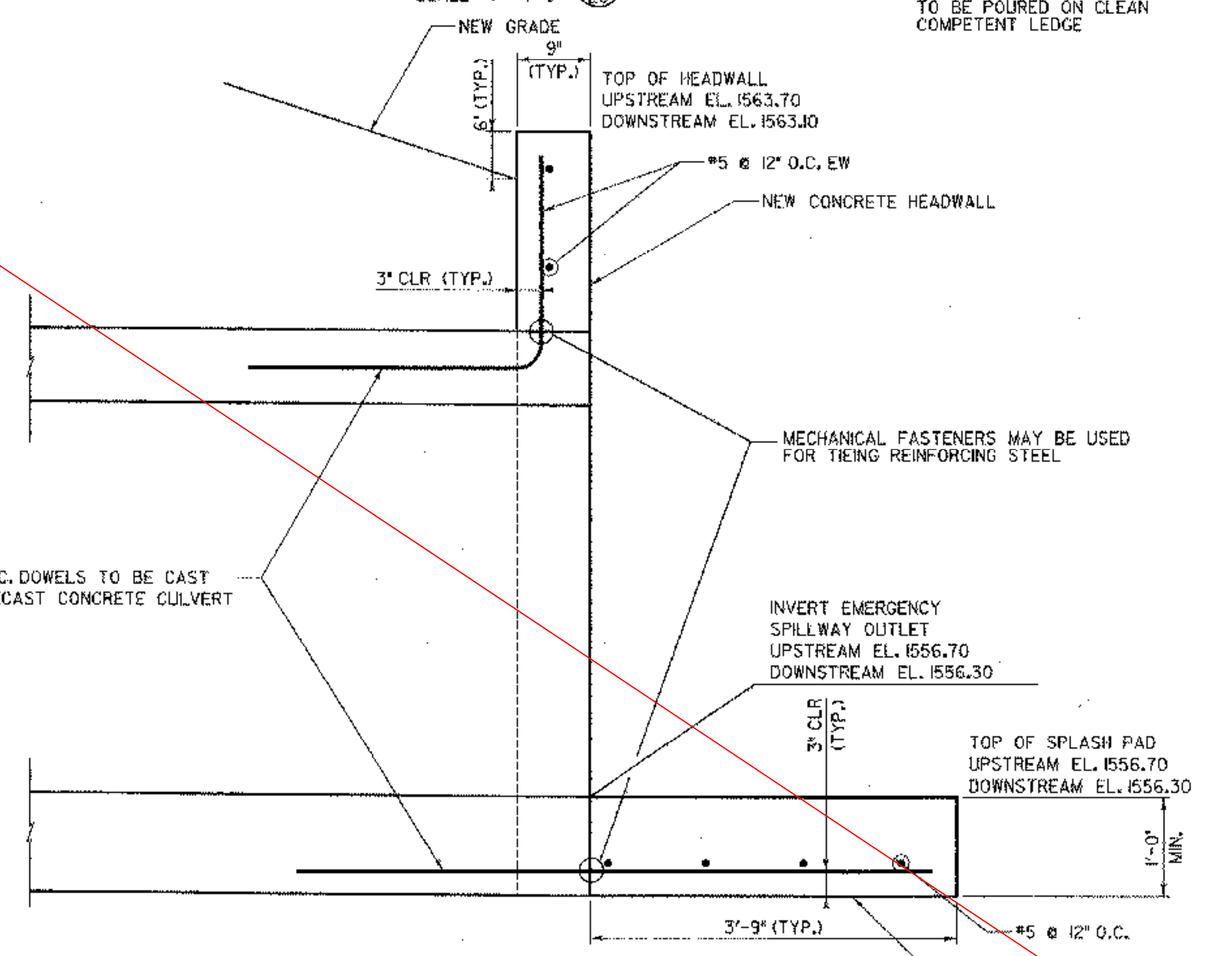
**EMERGENCY SPILLWAY OUTLET (SECTION)**  
SCALE 1/8" = 1'-0"

CONCRETE CULVERT NOT USED  
REPLACED BY 71" X 47" CGMP

#5 @ 12" O.C. DOWELS TO BE CAST  
IN THE PRECAST CONCRETE CULVERT



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

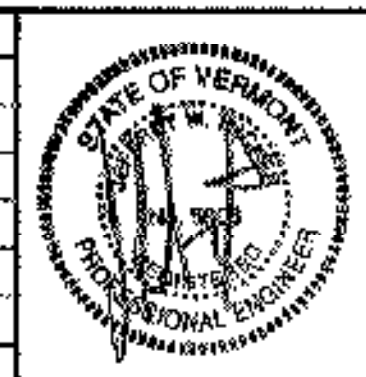


**SECTION B-B**  
SCALE 1" = 1'-0"

DATUM	ASSUMED
VERTICAL	NAD 83
HORIZONTAL	

PLOTTED 05/21/2003

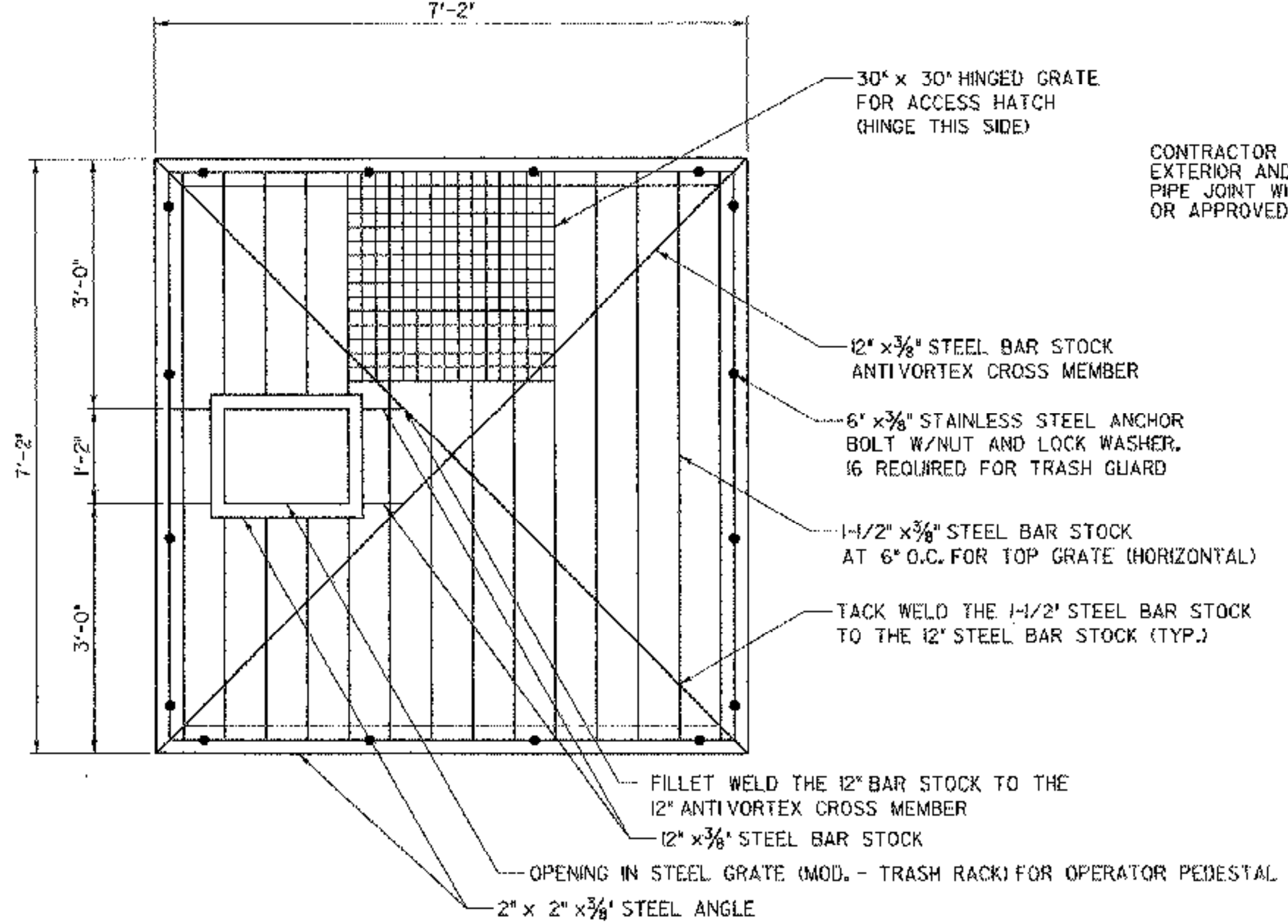
NO.	DATE	REVISIONS	BY	CHK'D



**DuBois & King**  
INC.  
engineering planning management development

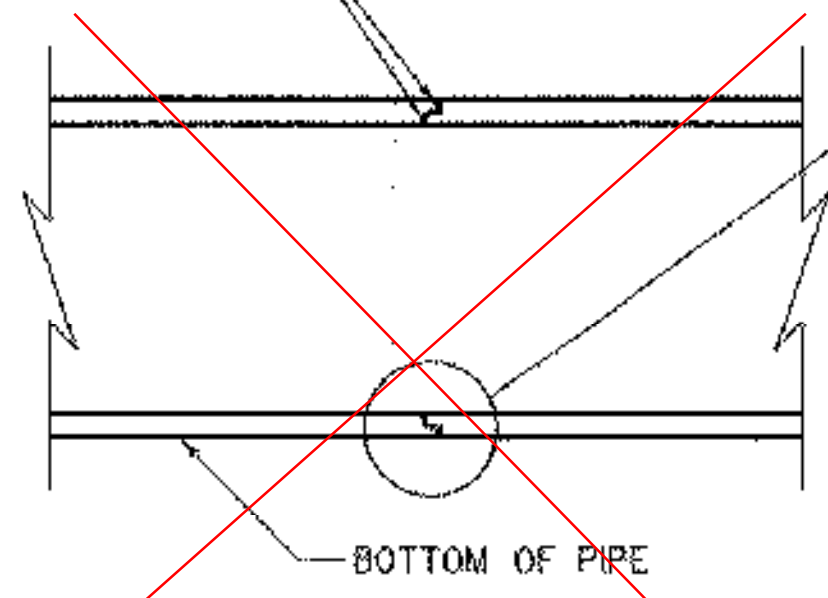
TOWN OF WARREN  
WARREN, VERMONT  
BLUEBERRY LAKE DAM  
REHABILITATION PROJECT  
EMERGENCY SPILLWAY ELEVATION  
AND DETAILS SHEET

DRAWN BY	EBS	DATE	MAY 2003
CHECKED BY	JWS	PROJ. NO.	R16663
PROJ. ENG.	SRP	DRAW. NO.	11309
SHEET			20 OF 24

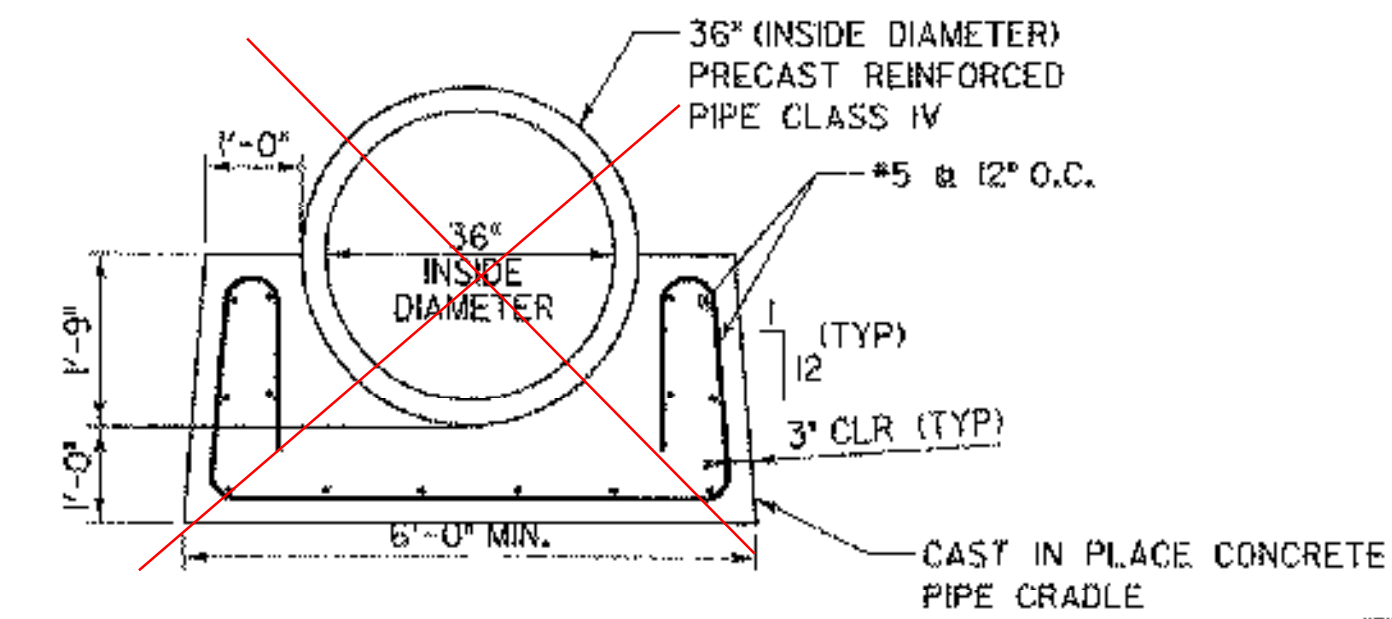


**PLAN**

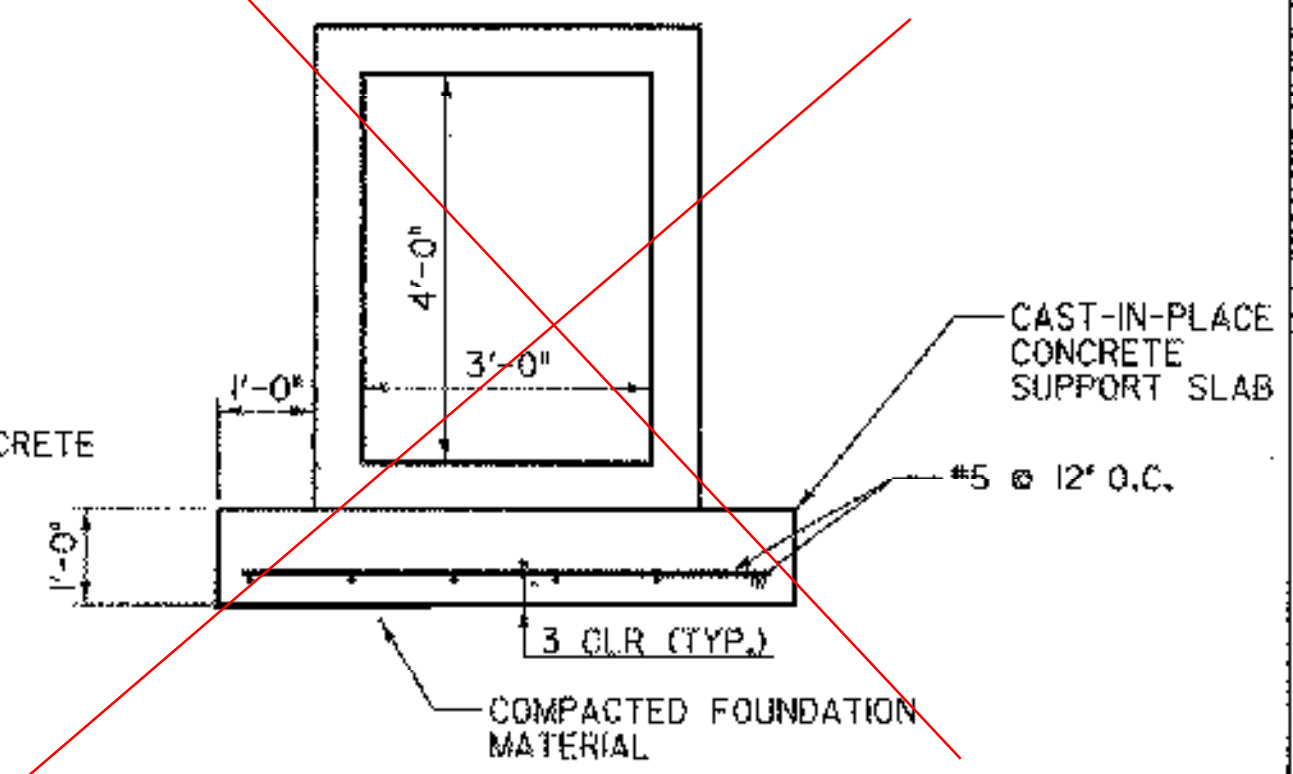
CONTRACTOR SHALL FILL EXTERIOR AND INTERIOR OF PIPE JOINT WITH SIKA FLEX 10 OR APPROVED EQUAL



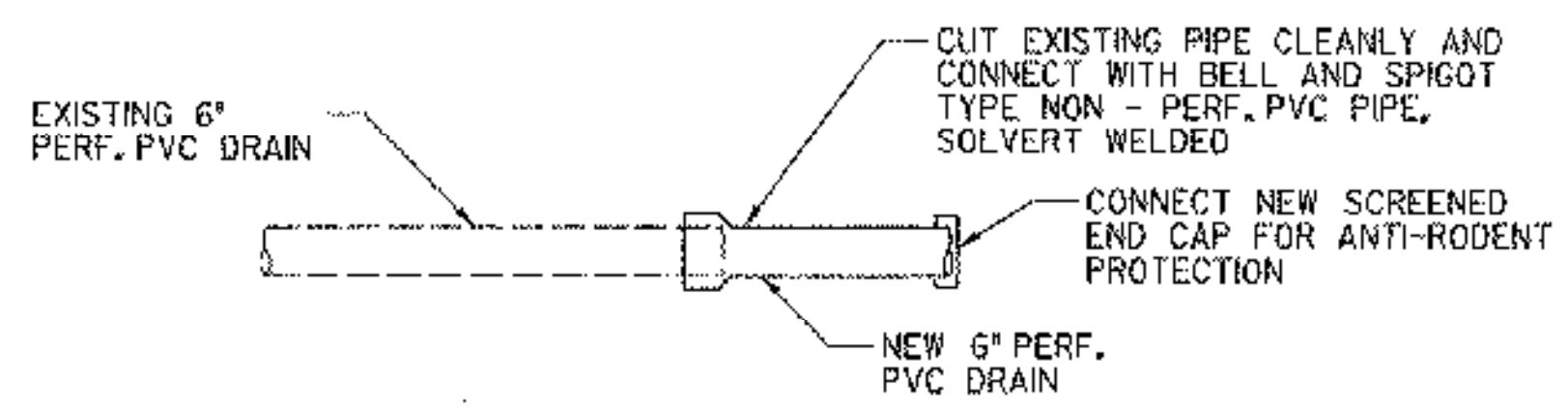
**OUTLET BARREL CONNECTION (BID OPTION #2)**  
SCALE 1/2" = 1'-0"



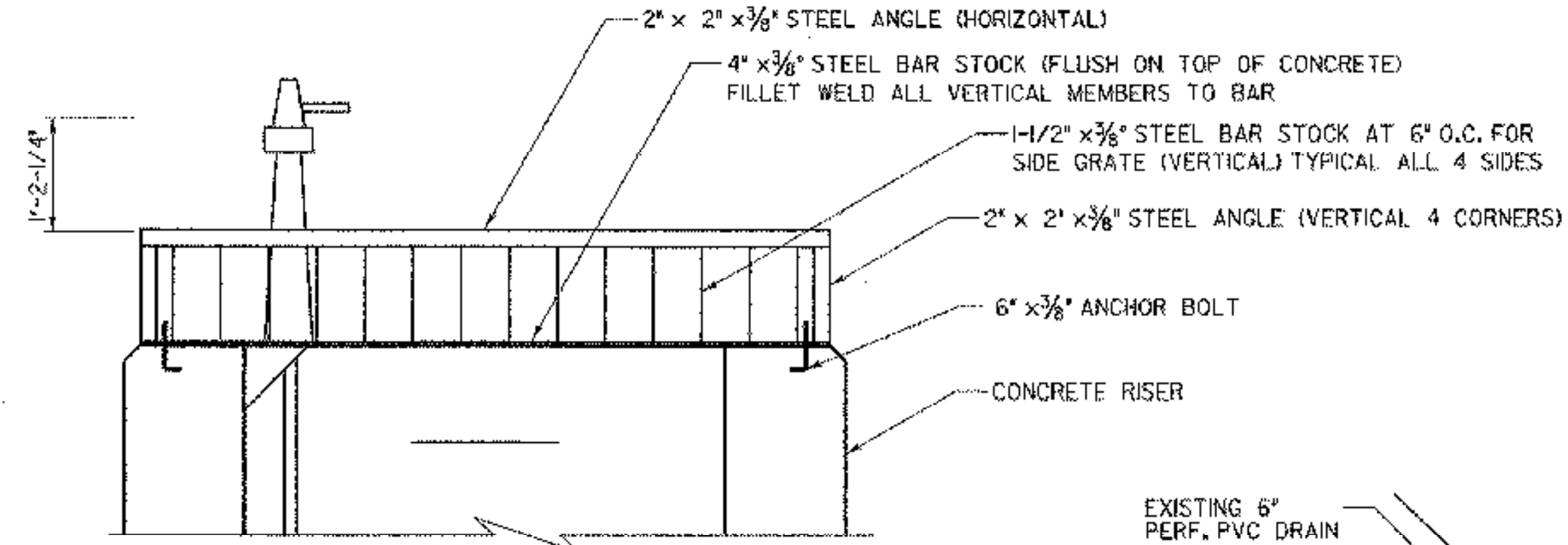
**NEW 36" RCP CULVERT (SECTION) (BID OPTION #2)**  
SCALE 1/2" = 1'-0"



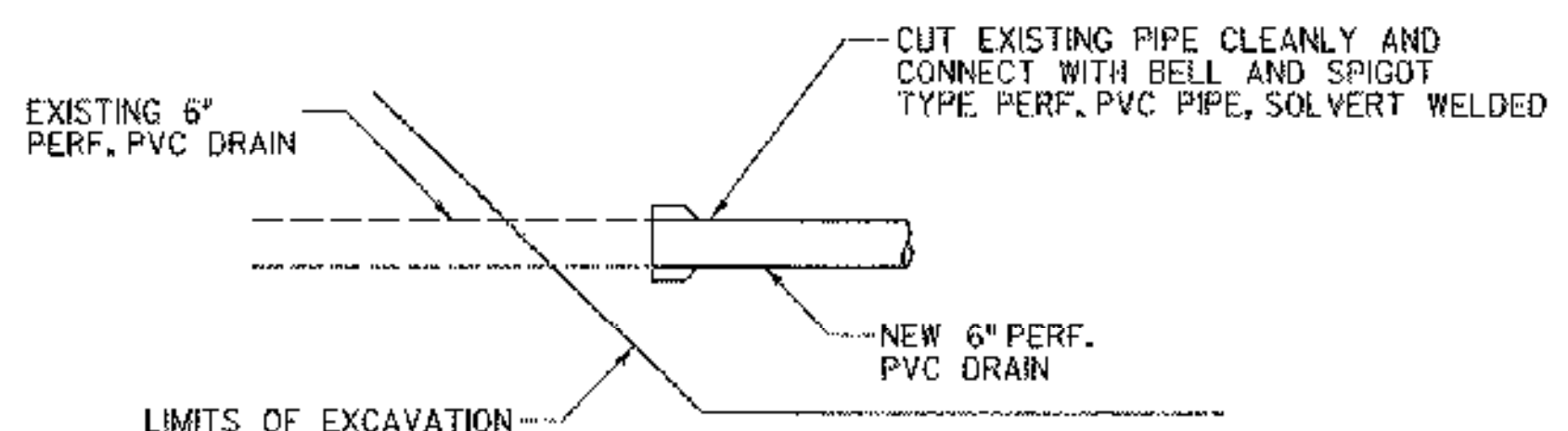
**NEW 4' x 3' PRECAST BOX CULVERT (SECTION) (BID OPTION #4)**  
SCALE 1/2" = 1'-0"



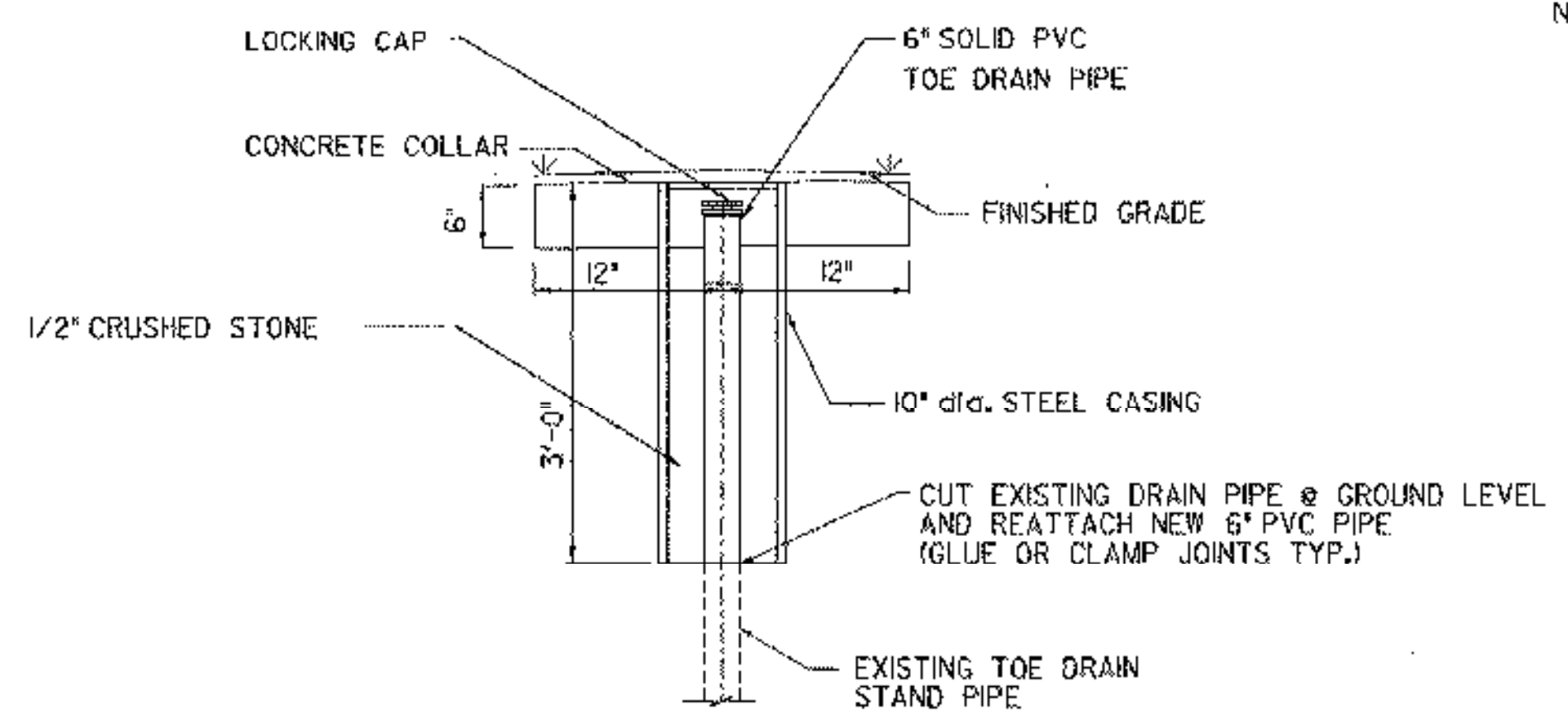
**OUTBOARD TOE DRAIN COLLECTOR PIPE REPAIR DETAIL**  
NOT TO SCALE



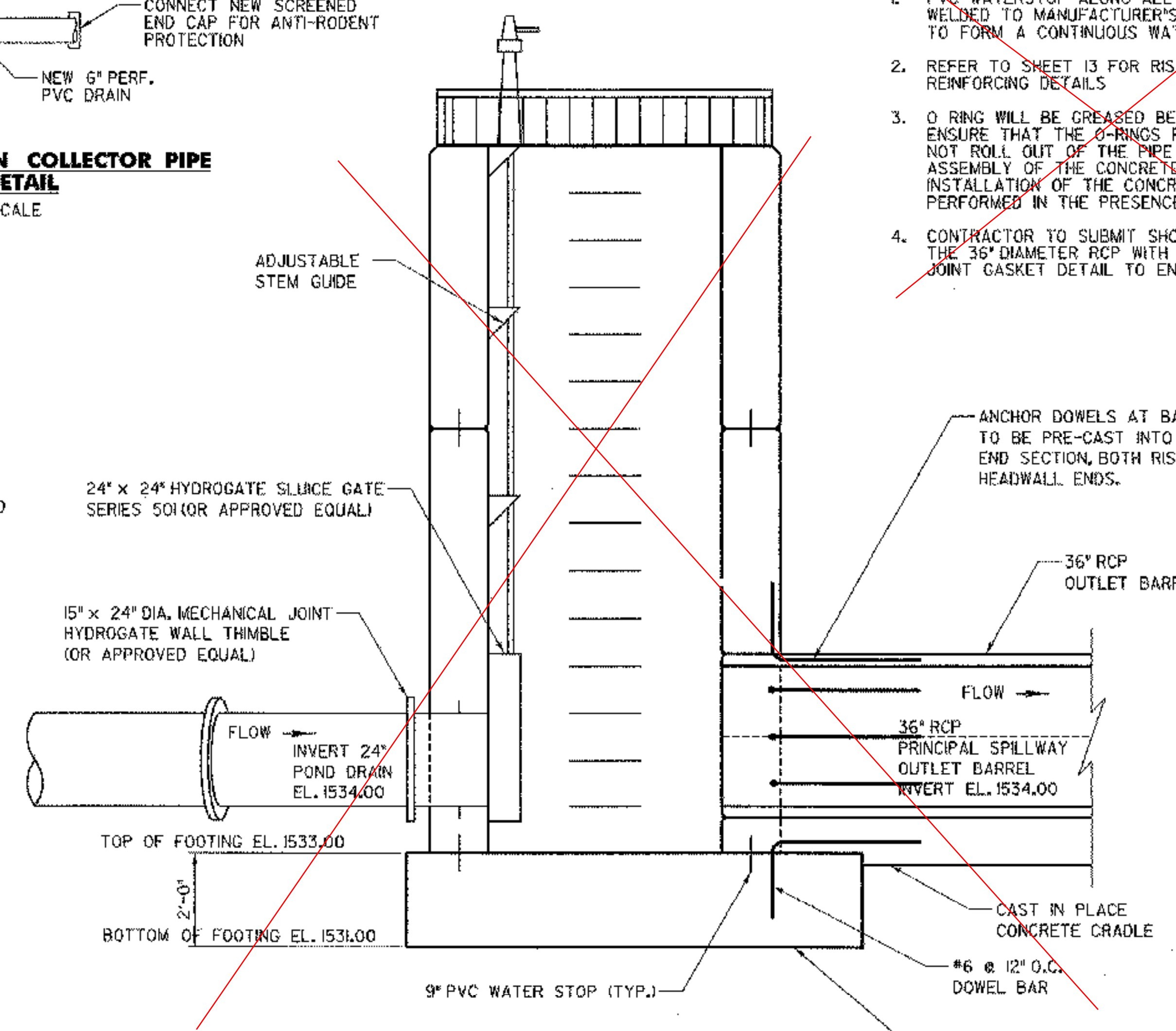
**SECTION STEEL GRATE (MOD. - TRASH RACK)**  
SCALE 3/4" = 1'-0"



**6" PERF. PVC TOE DRAIN COLLECTOR PIPE REPAIR DETAIL**  
NOT TO SCALE



**TOE DRAIN CLEANOUT REPAIR DETAIL**  
NOT TO SCALE



**PRINCIPAL SPILLWAY RISER (SECTION) (BID OPTION #2)**  
SCALE 1/2" = 1'-0"

- NOTE:**
- PVC WATERSTOP ALONG ALL JOINTS SHALL BE WELDED TO MANUFACTURER'S RECOMMENDATIONS TO FORM A CONTINUOUS WATERSTOP
  - REFER TO SHEET 13 FOR RISER & FOOTING REINFORCING DETAILS
  - O RING WILL BE GREASED BEFORE INSTALLATION. ENSURE THAT THE O-RINGS REMAIN IN AND DO NOT ROLL OUT OF THE PIPE GROOVE DURING THE ASSEMBLY OF THE CONCRETE PIPE SECTION. INSTALLATION OF THE CONCRETE PIPE WILL BE PERFORMED IN THE PRESENCE OF THE ENGINEER.
  - CONTRACTOR TO SUBMIT SHOP DRAWINGS OF THE 36" DIAMETER RCP WITH ALL ANCHOR AND JOINT GASKET DETAIL TO ENGINEER FOR APPROVAL.

DATUM	ASSUMED
VERTICAL	ASSUMED
HORIZONTAL	NAD 83

PLOTTED 06/16/2003

NO.	DATE	REVISIONS	BY	CHK'D

**DuBois & King INC.**  
engineering planning management development

TOWN OF WARREN  
WARREN, VERMONT  
BLUEBERRY LAKE DAM  
REHABILITATION PROJECT  
MISCELLANEOUS DETAIL SHEET

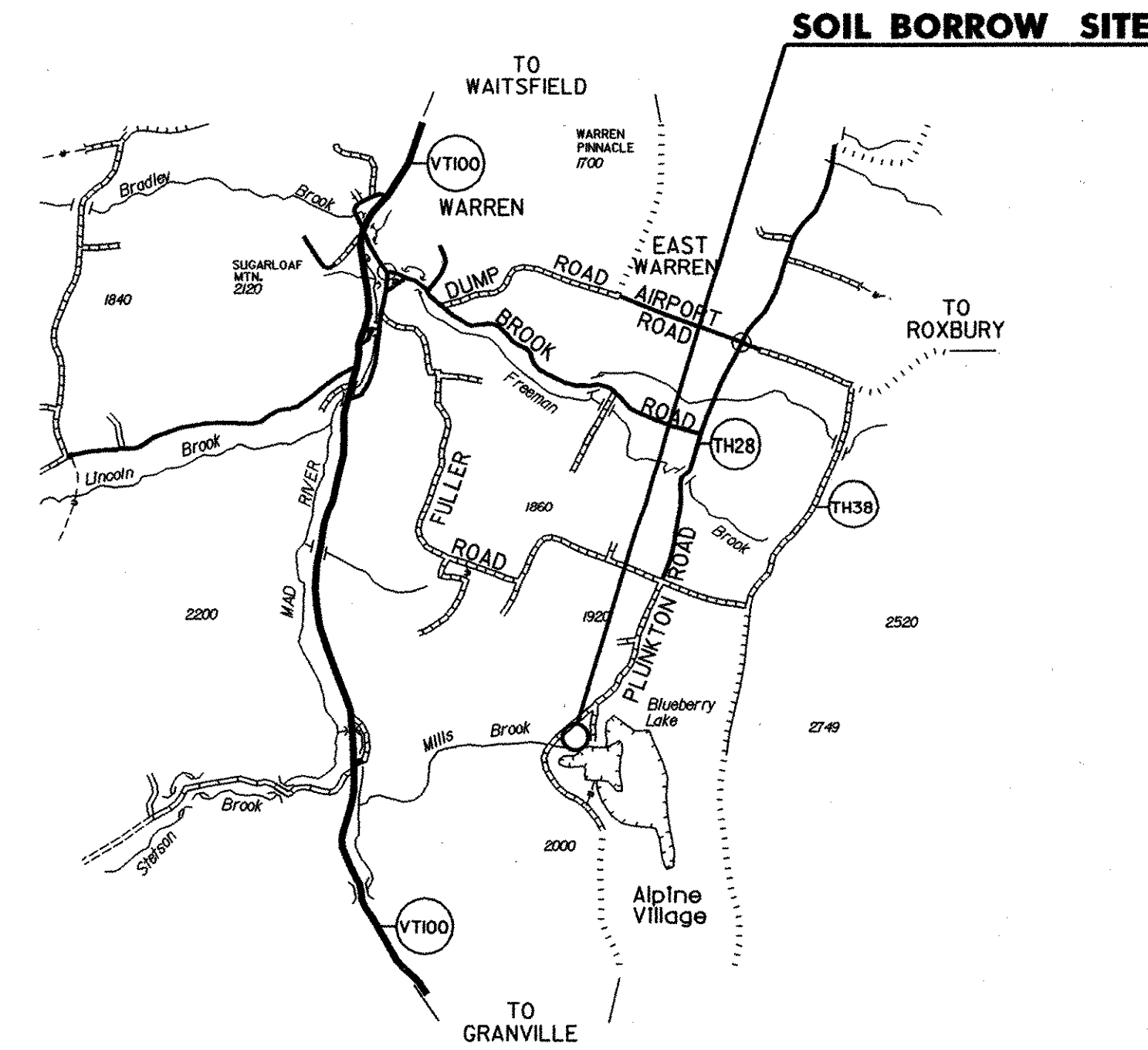
DRAWN BY	EBS	DATE	MAY 2003
CHECKED BY		PROJ. NO.	R16663
PROJ. ENG.		DRAW. NO.	#310
SHEET			21 OF 24



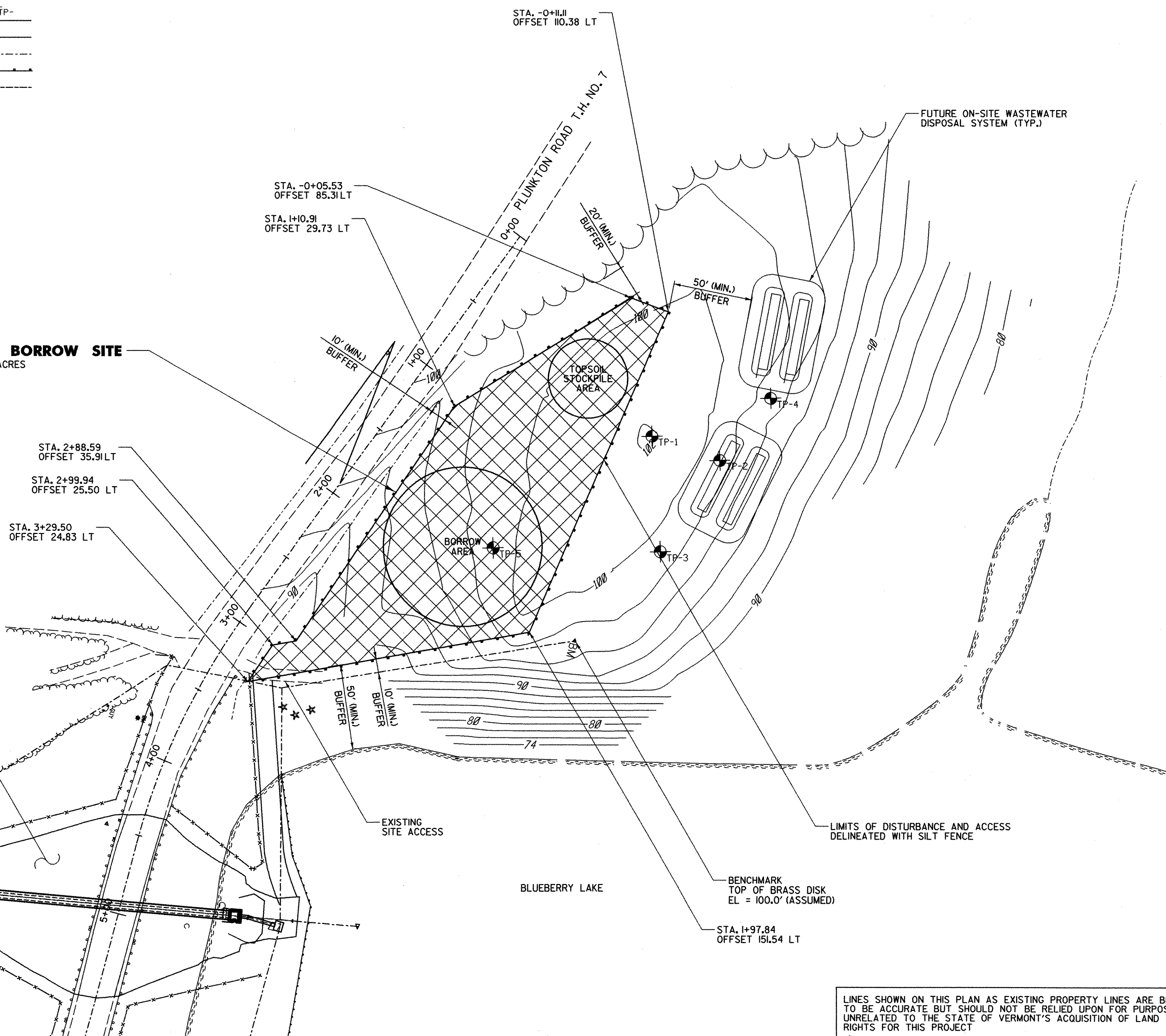


**LEGEND**

- TREE LINE
- STONE WALL
- EDGE OF WATER
- GUARD RAIL
- CULVERTS
- BENCH MARKS
- CONTROL POINTS
- TREES
- UTILITIES POLE
- CLEAN OUT
- TEST PIT
- LIMITS OF FILL
- LIMITS OF CUT
- DRAINAGE SWALE
- SILT FENCE
- PROPERTY LINE



**EARTH BORROW SITE**  
0.57 ACRES



**NEW DAM PROJECT**

**BORROW SITE NOTES:**

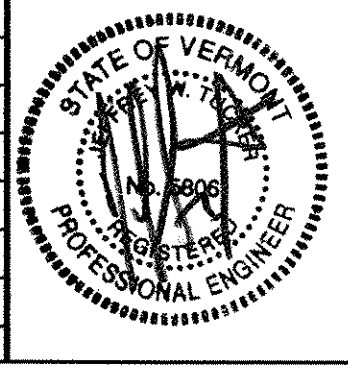
1. THE LAND OF THE BORROW SITE AREA IS OWNED BY OTHERS, NOT THE TOWN OF WARREN. A TEMPORARY CONSTRUCTION EASEMENT HAS BEEN OBTAINED TO ALLOW FOR ITS TEMPORARY USE. THE CONTRACTOR SHALL READ AND UNDERSTAND THE CONSTRUCTION CONDITIONS OF THIS EASEMENT. THE BOUNDARY SURVEY WAS PERFORMED BY SOUTH MOUNTAIN SURVEYING AND MAPPING OF BRISTOL, VERMONT AND IS TITLED "PROPOSED SUBDIVISION OF LANDS BELONGING TO THE TRUST FOR PUBLIC LAND" DATED FEBRUARY 3, 2003.
2. THE PURPOSE OF THIS PLAN IS TO SHOW AN OPTIONAL BORROW SITE LOCATION FOR USE BY THE CONTRACTOR. THE CONTRACTOR HAS THE OPTION OF USING APPROXIMATELY 2,000 C.Y. OF EARTH BORROW (MOD. BORROW SITE) TO THE NORTH EXCLUSIVELY FOR FILL IN THE RECONSTRUCTION OF BLUEBERRY LAKE DAM.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING ITEMS IN THE EVENT THAT THE CONTRACTOR CHOOSES TO USE THE BORROW SITE.
  - A) THE CONTRACTOR SHALL LIMIT HIS USE OF THE PROPERTY TO THE AREA DESIGNATED WITHIN THE LIMITS OF THE CONSTRUCTION EASEMENT. THE CONTRACTOR SHALL INSTALL A SILT FENCE AS DELINEATED ON THIS PLAN.
  - B) THE CONTRACTOR SHALL STOCKPILE TOPSOIL FOR RE-USE IN RECLAIMING THE SITE. THE CONTRACTOR SHALL FILL THE SOIL BORROW PIT AND RECLAIM THE SITE TO ITS ORIGINAL TOPOGRAPHIC GRADE AND CONTOUR. THE CONTRACTOR SHALL USE THE CLEAN MATERIAL EXCAVATED FROM THE DAM TO FILL THE BORROW PIT. NO STONE FILL OR WOODY DEBRIS SHALL BE USED TO RECLAIM THE SITE.
  - C) THE CLEAN MATERIAL EXCAVATED FROM THE DAM SHALL BE SPREAD ON-SITE AND ALLOWED TO DRY PRIOR TO PLACEMENT IN THE BORROW PIT FOR FINAL COMPACTION. WHEN DRY, THE EXCAVATED DAM MATERIALS SHALL BE PLACED IN THE BORROW PIT IN ONE FOOT LIFTS AND COMPACTED TO A 90% MODIFIED PROCTOR DENSITY.
  - D) THE BORROW SITE SHALL BE SEED, FERTILIZED, LIMED AND MULCHED TO PRODUCE A STRONG VEGETATIVE GROWTH. THE CONTRACTOR SHALL MAINTAIN A STRONG VEGETATIVE GROWTH IN THE DISTURBED AREAS OF THE BORROW SITE FOR A PERIOD OF ONE YEAR AFTER COMPLETION OF FINAL GRADING AND SEEDING.
4. EROSION CONTROL NOTES FOR THE BORROW SITE ARE SHOWN ELSEWHERE IN THESE PLANS. THE CONTRACTOR SHALL ABIDE BY ALL RELEVANT STATE AND FEDERAL REGULATIONS FOR EROSION AND SEDIMENT CONTROL AND PROTECTION OF WATER QUALITY AND SHORELINE ENCROACHMENTS.

LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT

**SITE PLAN**  
SCALE 1" = 40'-0"  
40 0 40

DATUM	ASSUMED
VERTICAL	NAD 83
HORIZONTAL	

NO.	DATE	REVISIONS	BY	CK'D



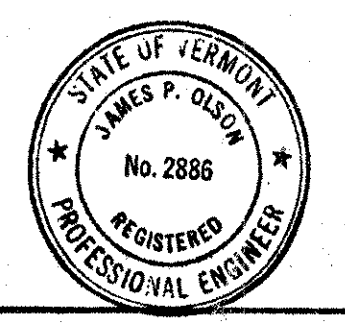
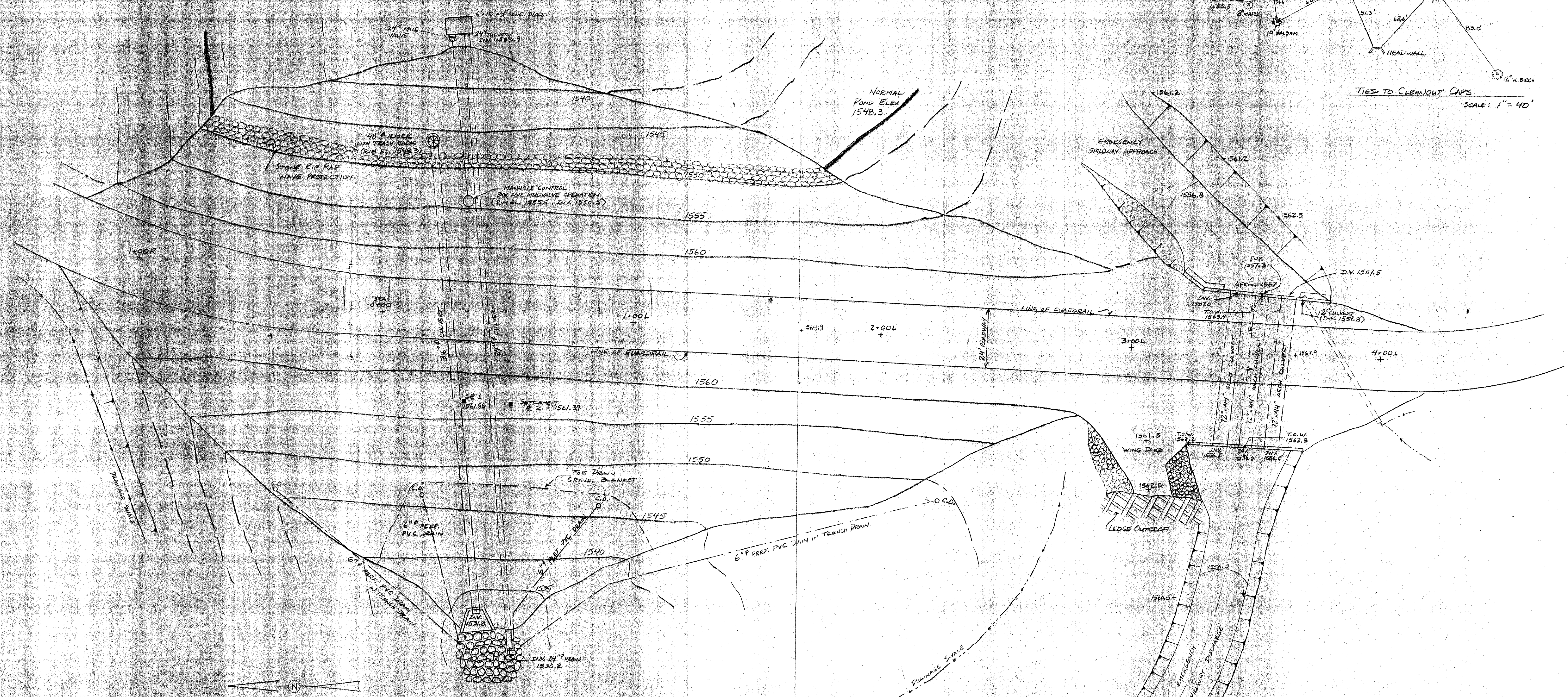
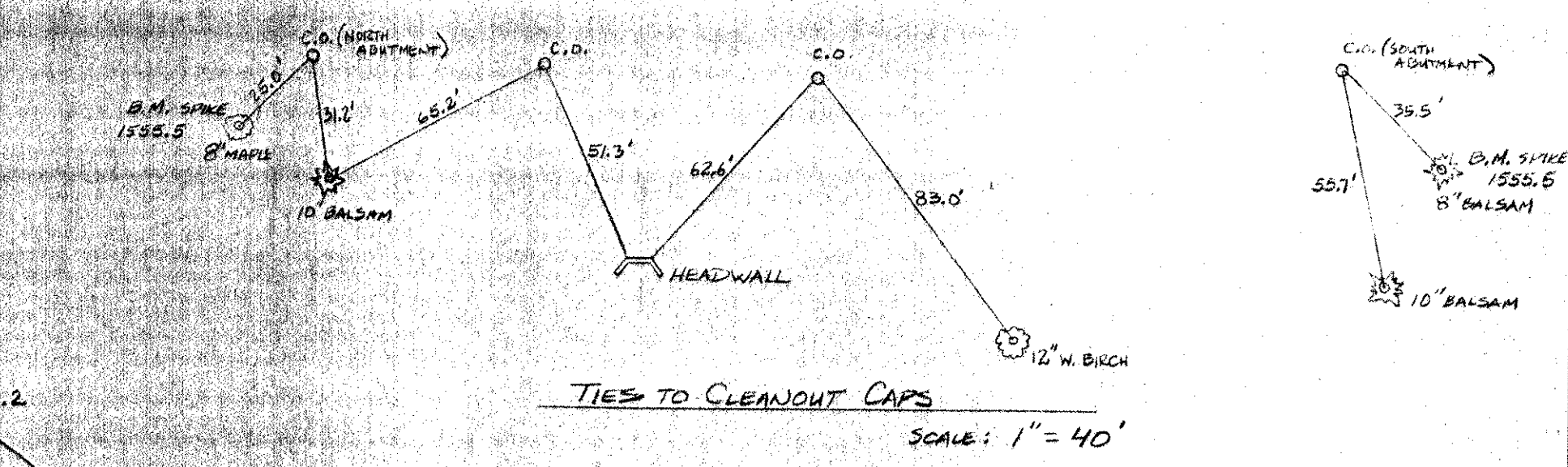
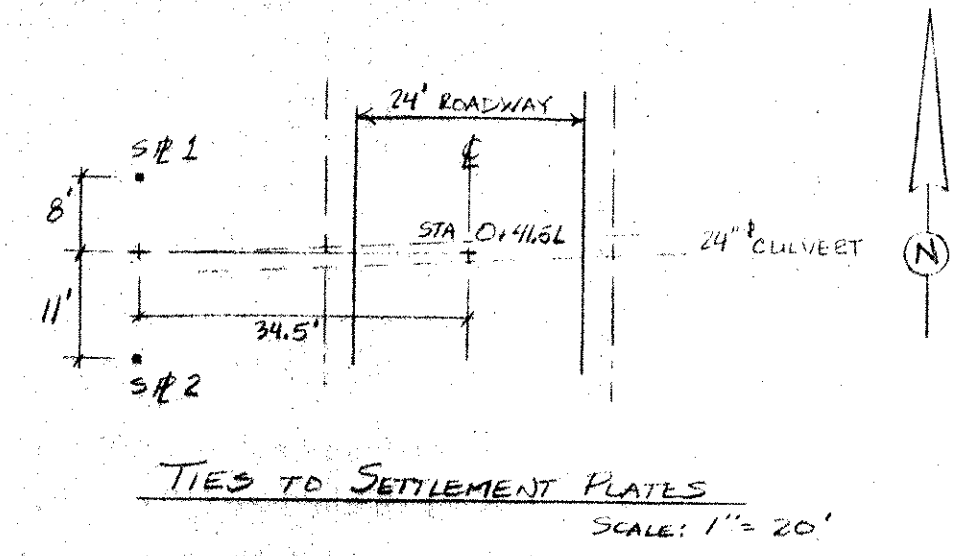
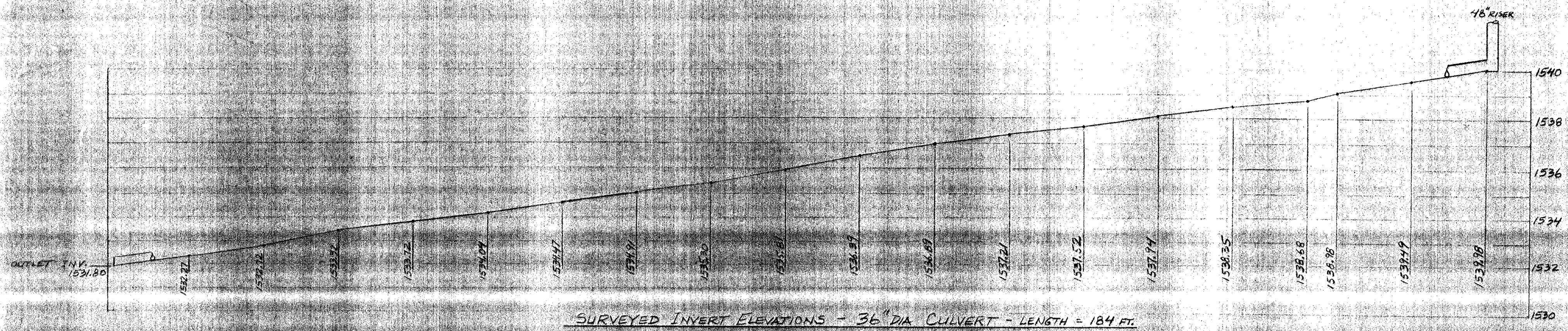
**DuBois & King, Inc.**  
engineering planning management development

TOWN OF WARREN  
WARREN, VERMONT  
BLUEBERRY LAKE DAM  
REHABILITATION PROJECT  
TEMPORARY CONSTRUCTION  
BORROW SITE PLAN

DRAWN BY	DATE
EBS	MAY 2003
CHECKED BY	PROJ. NO.
	R16663
PROJ. ENG.	DRAW. NO.
JWT	11313
SHEET	OF 24
24	24

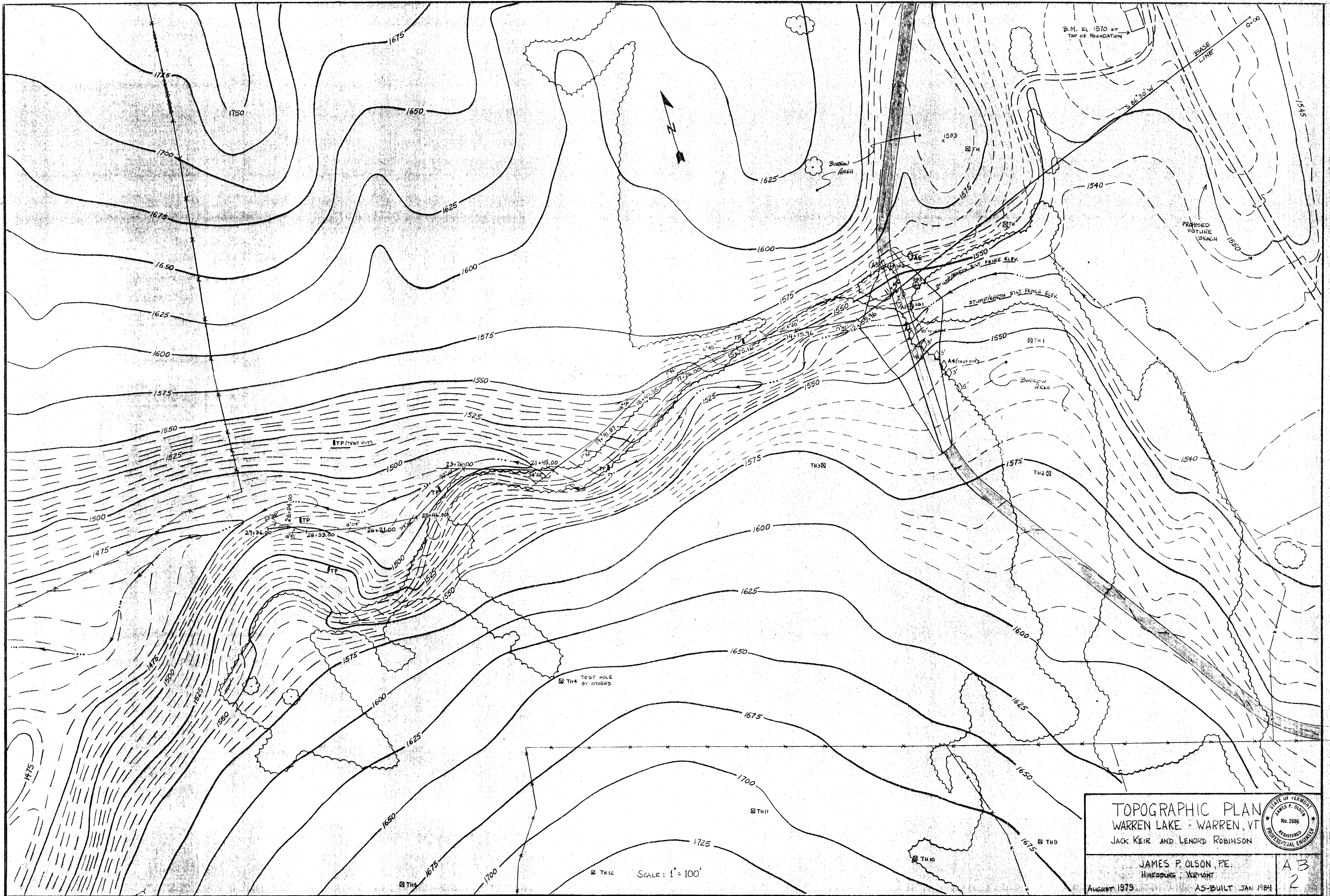
PLOTTED 05/21/2003

05/21/2003 11:24:05 AM



<b>EMBANKMENT AS-BUILT</b> WARREN LAKE - WARREN, VERMONT LENORD ROBINSON OWNER		
Date	Ch'kd	Revision
Drawn by	JPO	Date
Checked by		Scale
Approved by	JPO	Project No.
<b>CIVIL ENGINEERING ASSOCIATES, INC.</b> SHELBURNE, VERMONT		<b>SHEET</b> <b>AB</b> <b>1</b>

BRUNING 44-141-48837



<p>TOPOGRAPHIC PLAN WARREN LAKE - WARREN, VT JACK KEIR AND LENORD ROBINSON</p>		
<p>JAMES P. OLSON, P.E. HINESBURG, VERMONT</p>		
<p>AUGUST 1979</p>	<p>AS-BUILT JAN 1984</p>	<p>AB 2</p>



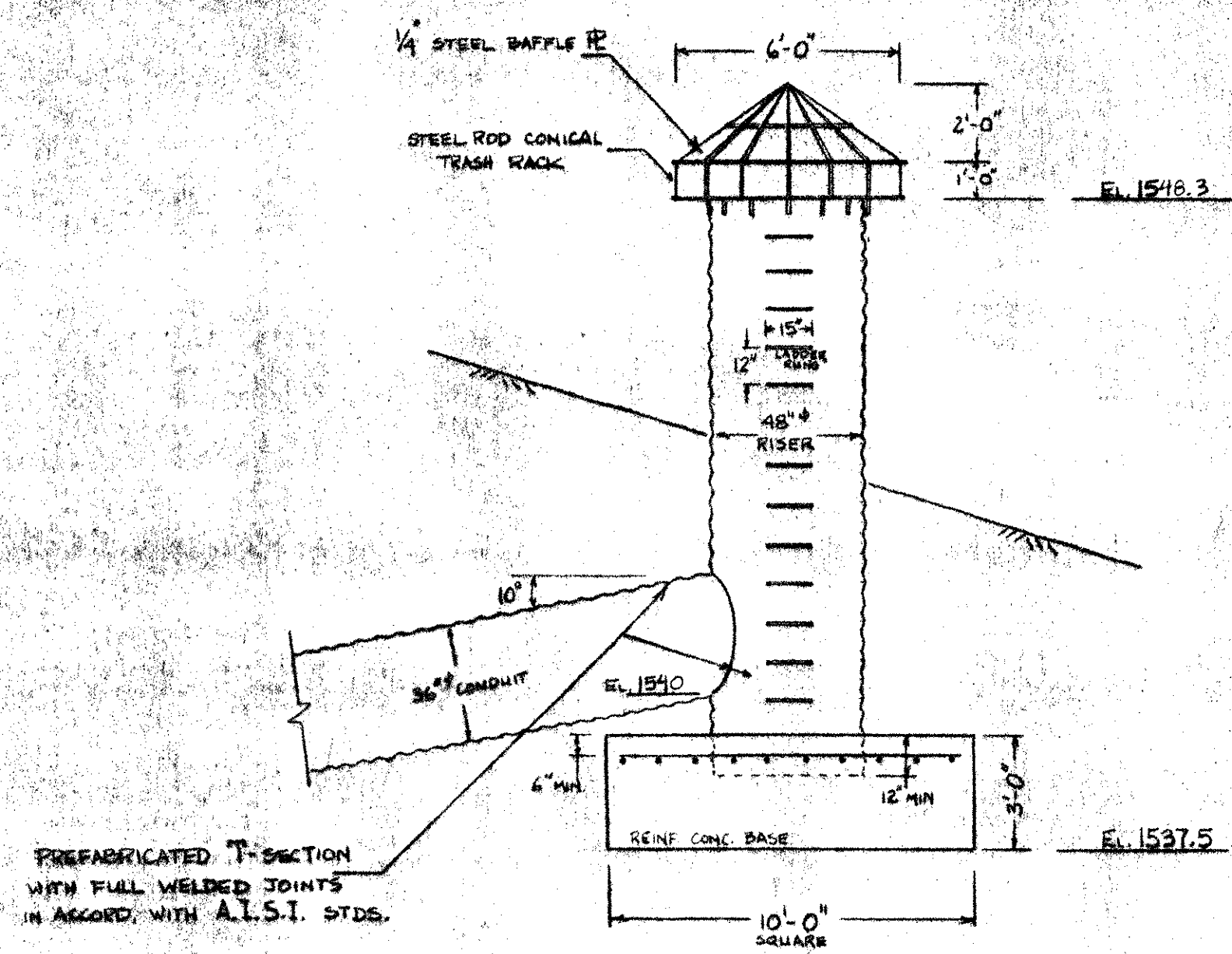
**TOPOGRAPHIC PLAN**  
**WARREN LAKE - WARREN, VT**  
 JACK KEIR AND LENORD ROBINSON

JAMES P. OLSON, P.E.  
 HINESBURG, VERMONT  
 August 1979 AS BUILT - Jan 1984

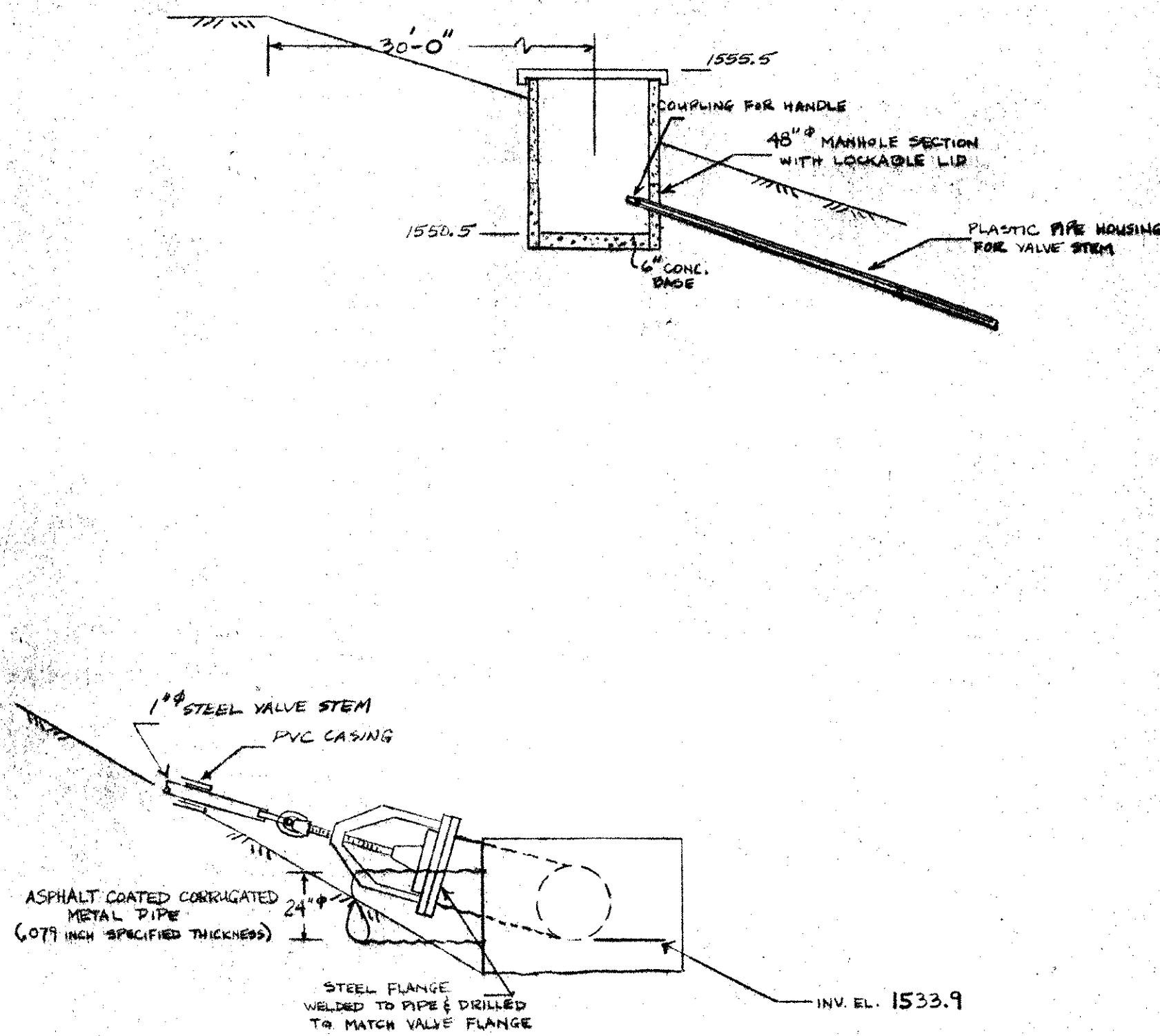
STATE OF VERMONT  
 JAMES P. OLSON  
 No. 2886  
 REGISTERED  
 PROFESSIONAL ENGINEER

AB  
 3

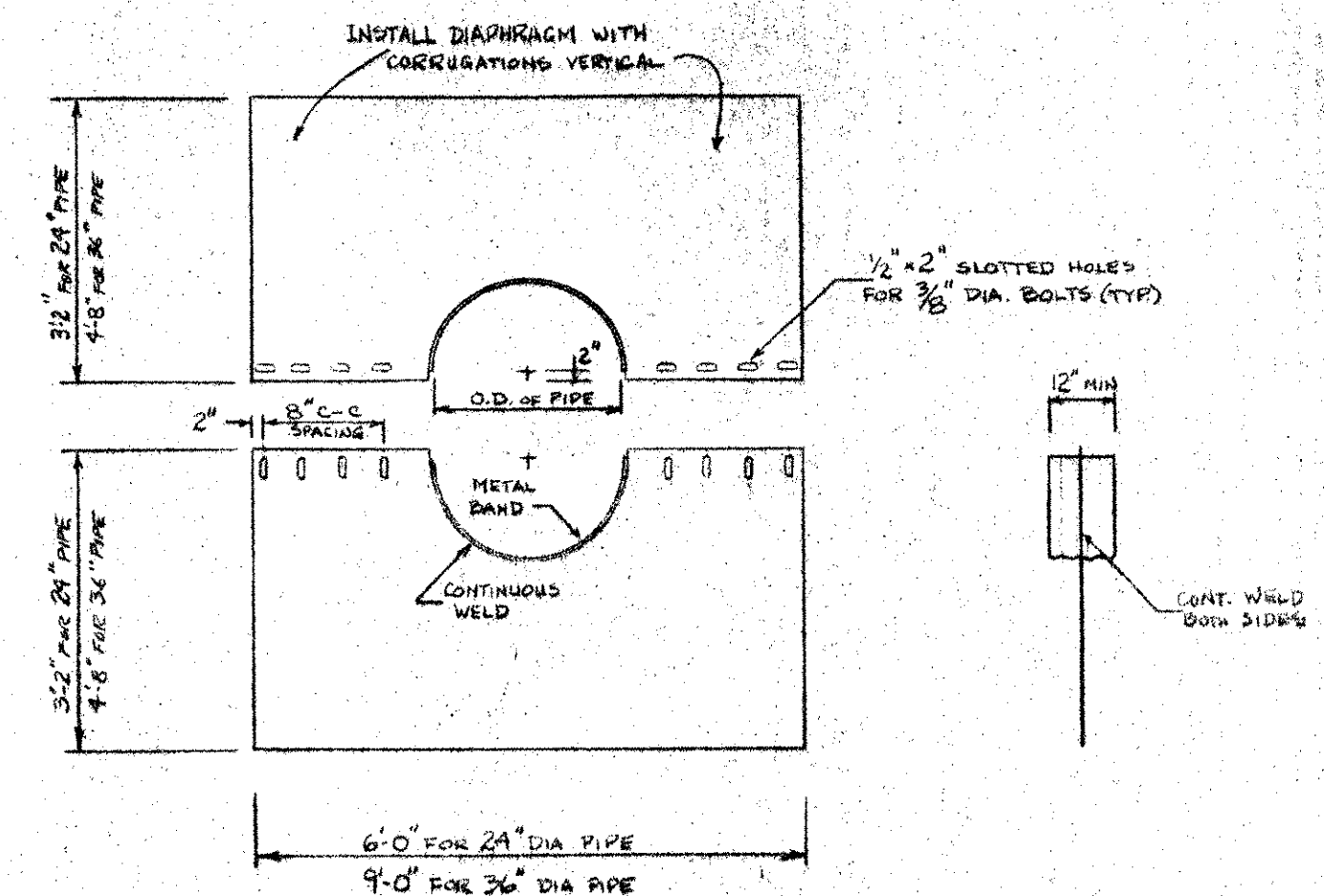




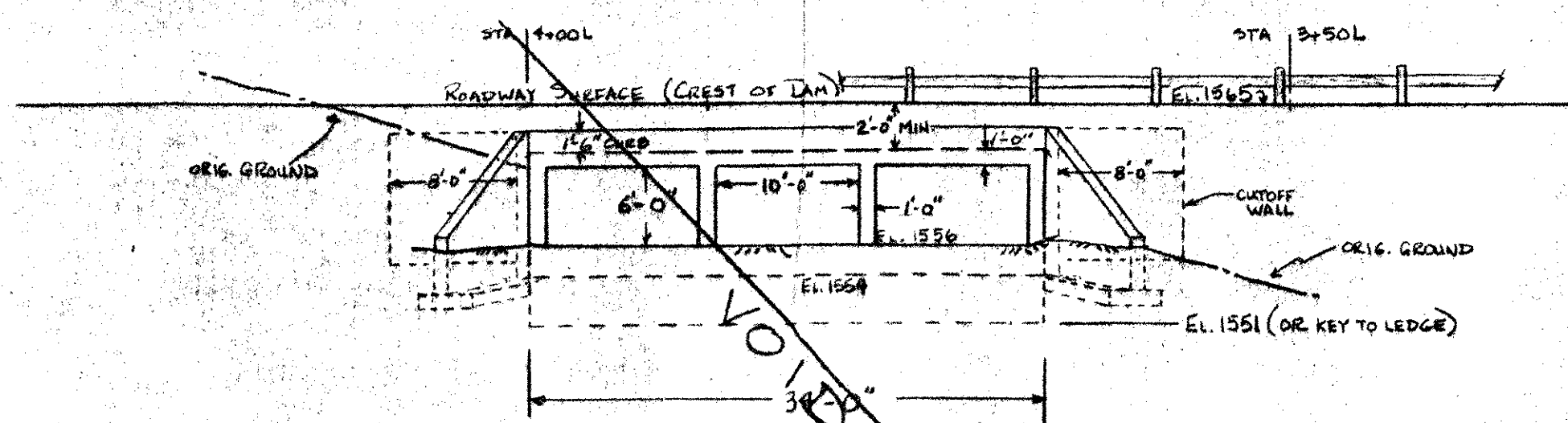
DETAIL OF DROP INLET SPILLWAY  
SCALE: 1" = 4'



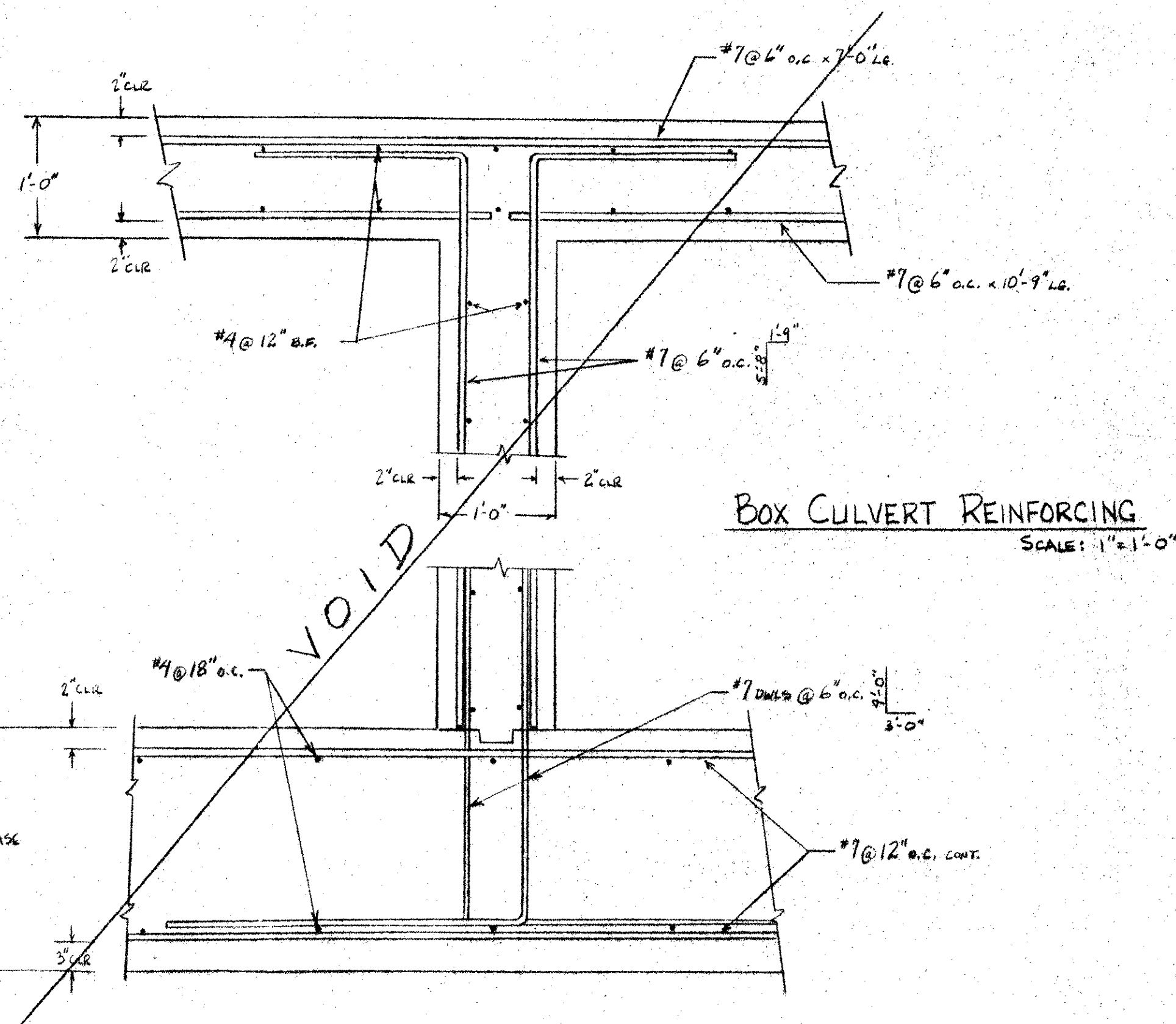
DETAIL OF EMERGENCY DRAIN VALVE  
SCALE: 1" = 4'



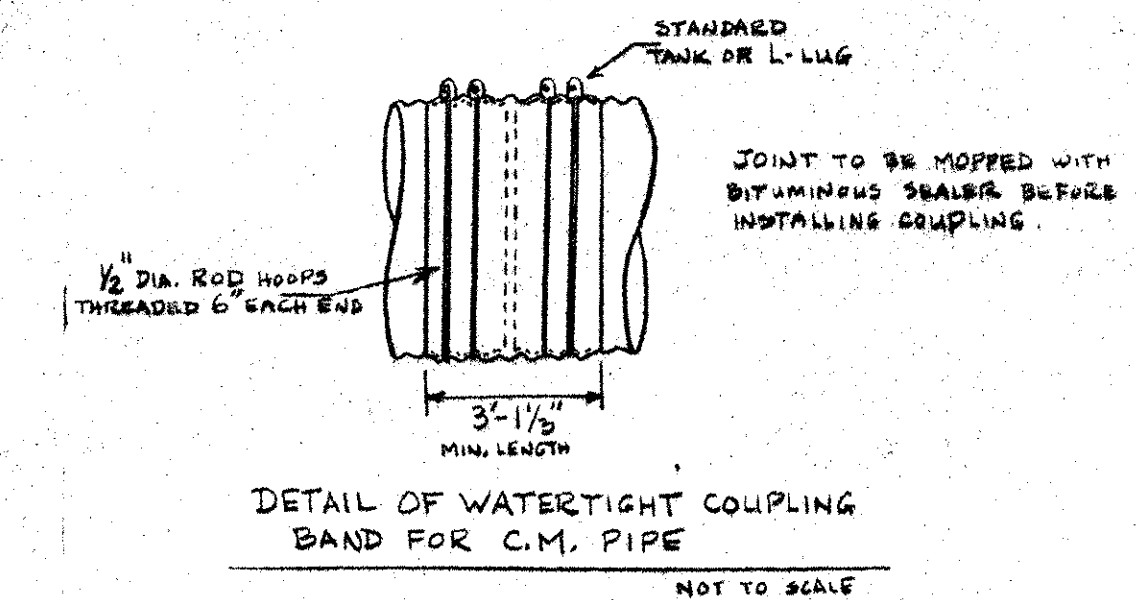
DETAILS OF CORRUGATED METAL DIAPHRAGMS  
SCALE: NONE



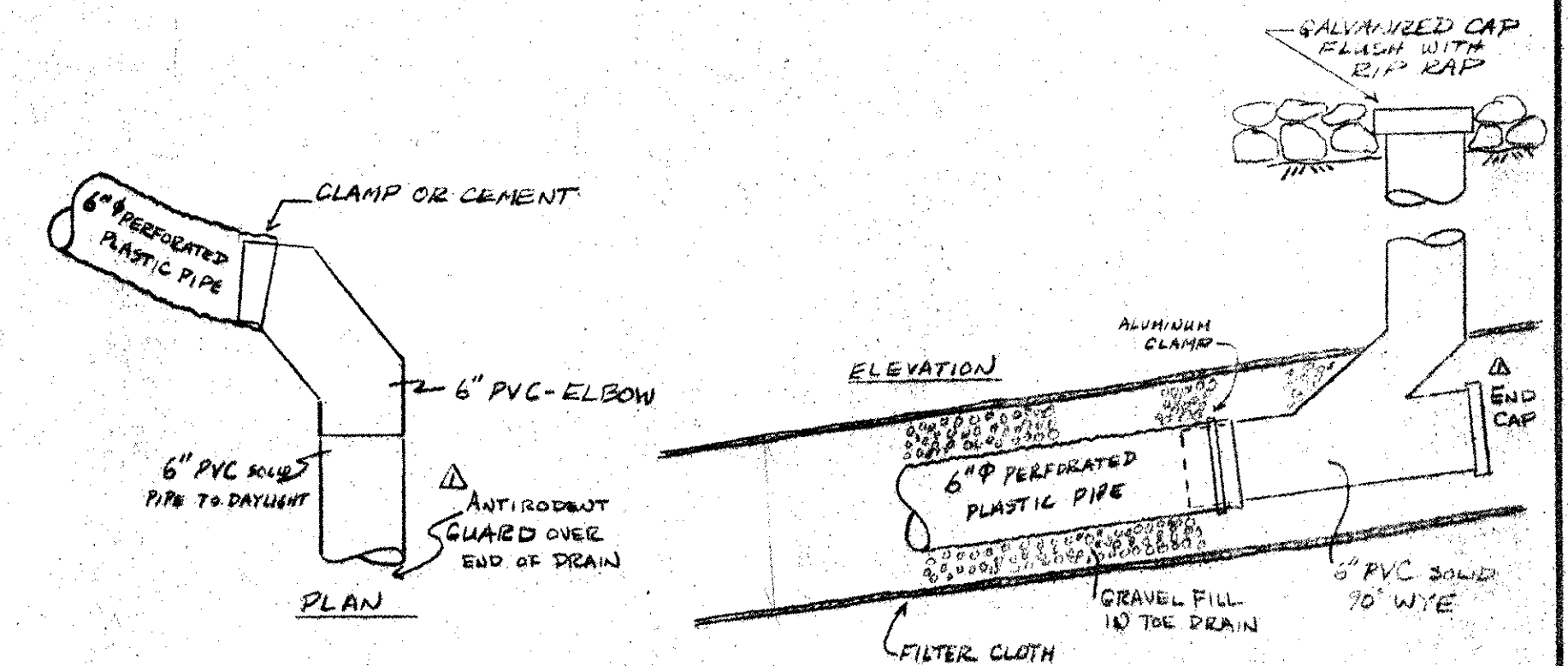
SECTION OF BOX CULVERT SPILLWAY  
SCALE: 1" = 10'



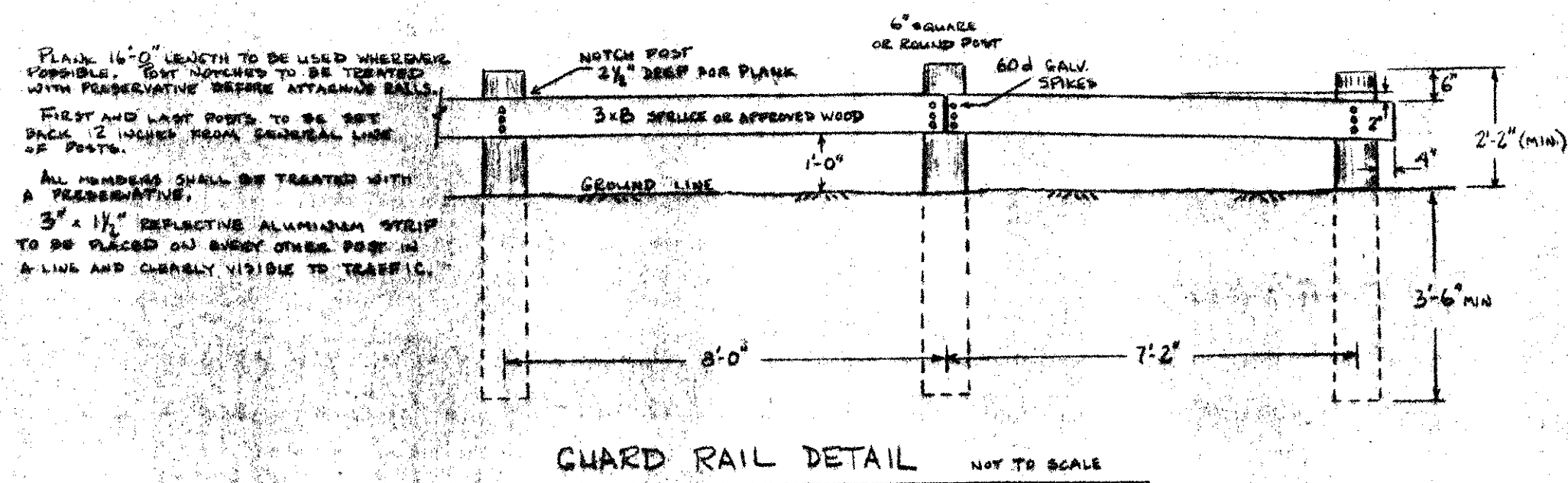
BOX CULVERT REINFORCING  
SCALE: 1" = 1'-0"



DETAIL OF WATERTIGHT COUPLING BAND FOR C.M. PIPE  
NOT TO SCALE



DETAILS OF TOE DRAIN COLLECTOR PIPE  
SCALE: 1" = 1'-0"



GUARD RAIL DETAIL  
NOT TO SCALE

SECTIONS AND DETAILS - II  
WARREN LAKE - WARREN, VT  
JACK KEIR AND LENORD ROBINSON

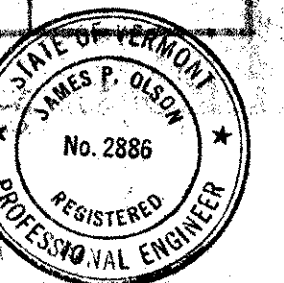
JAMES P. OLSON, P.E.  
HINESBURG, VERMONT

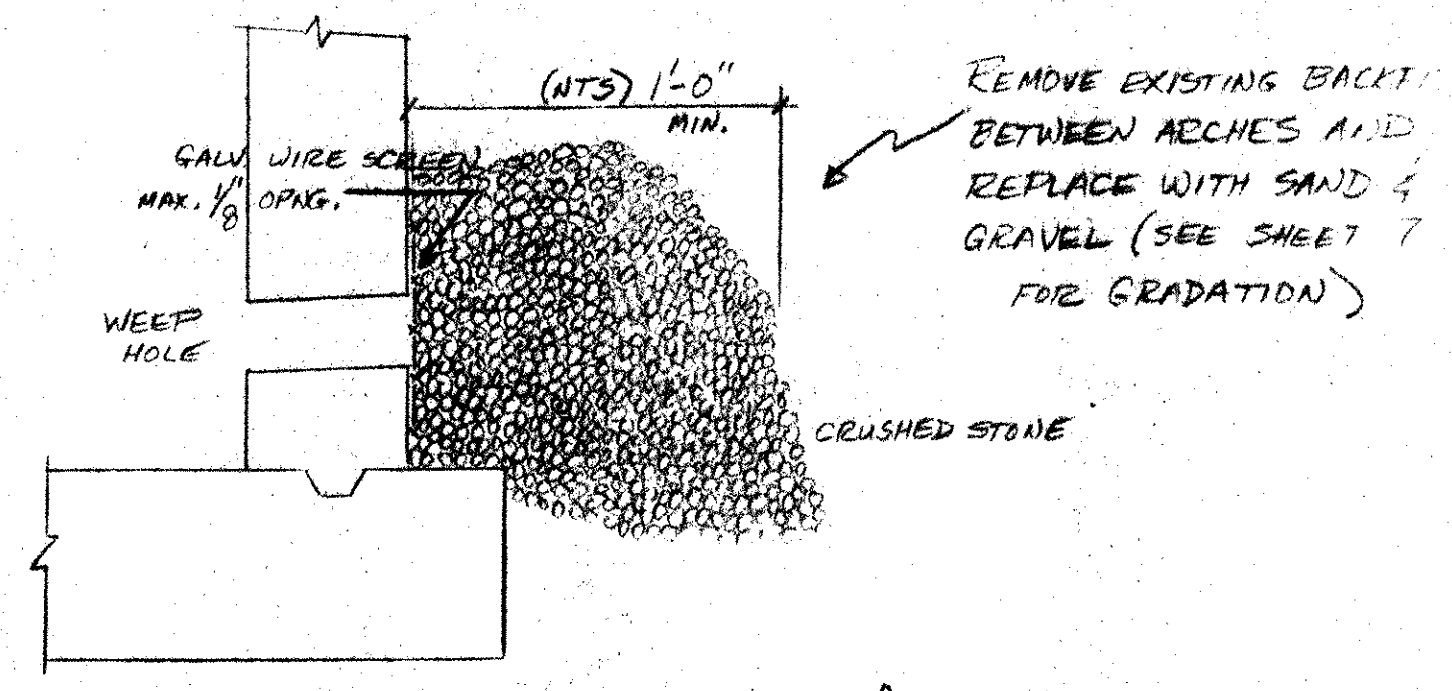
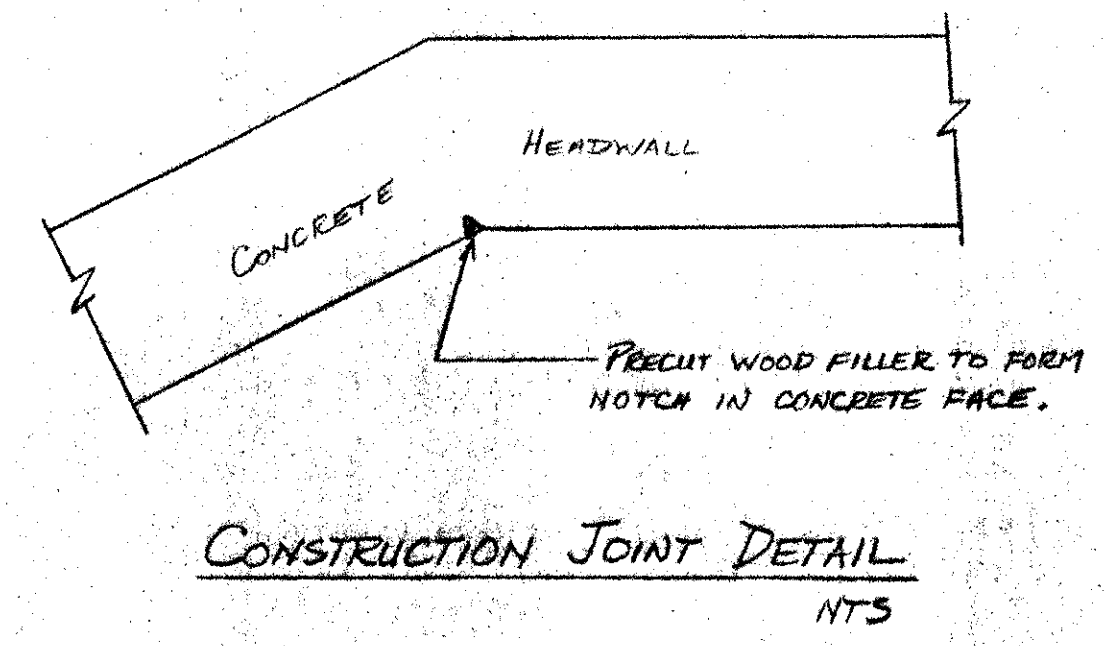
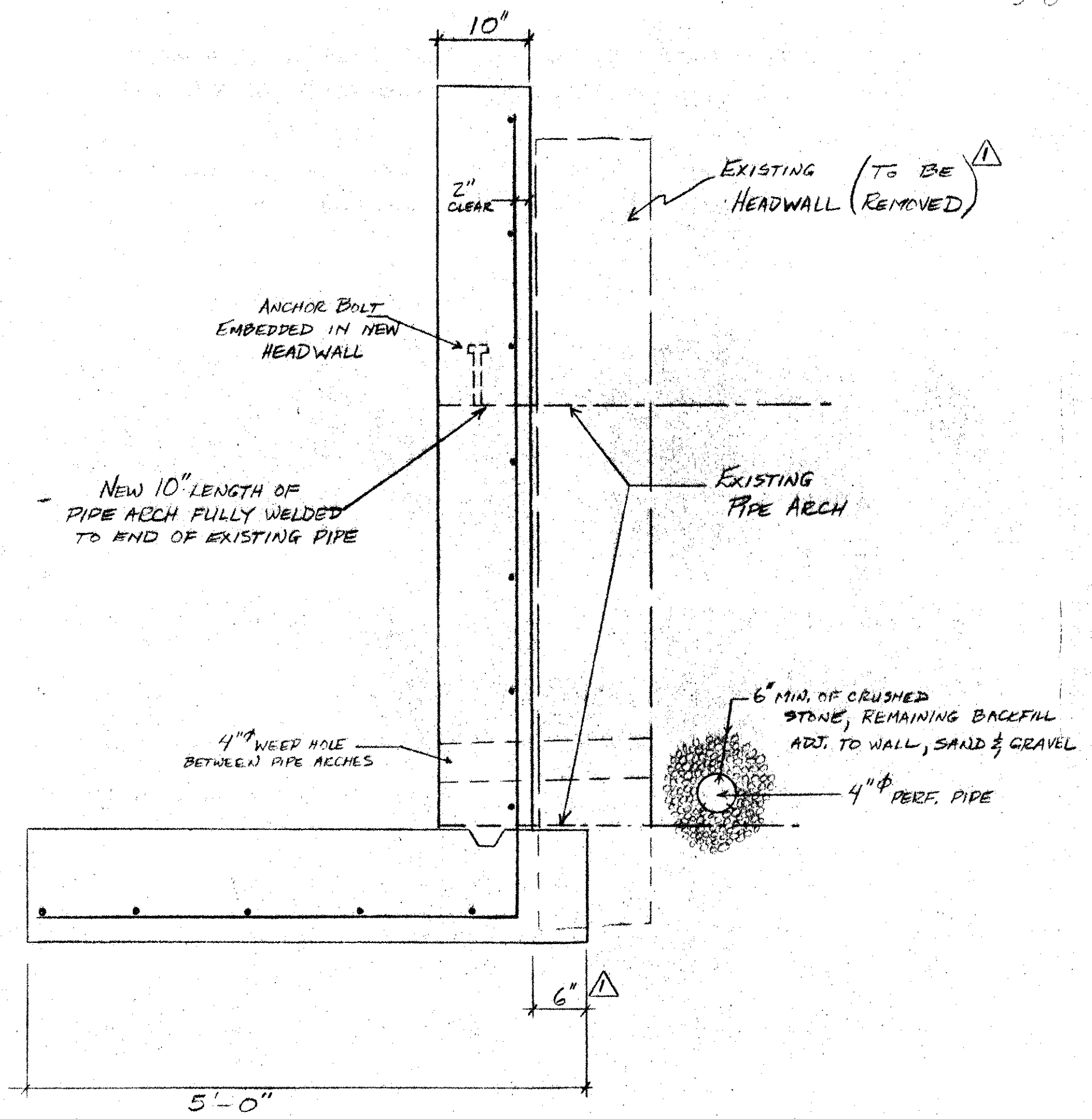
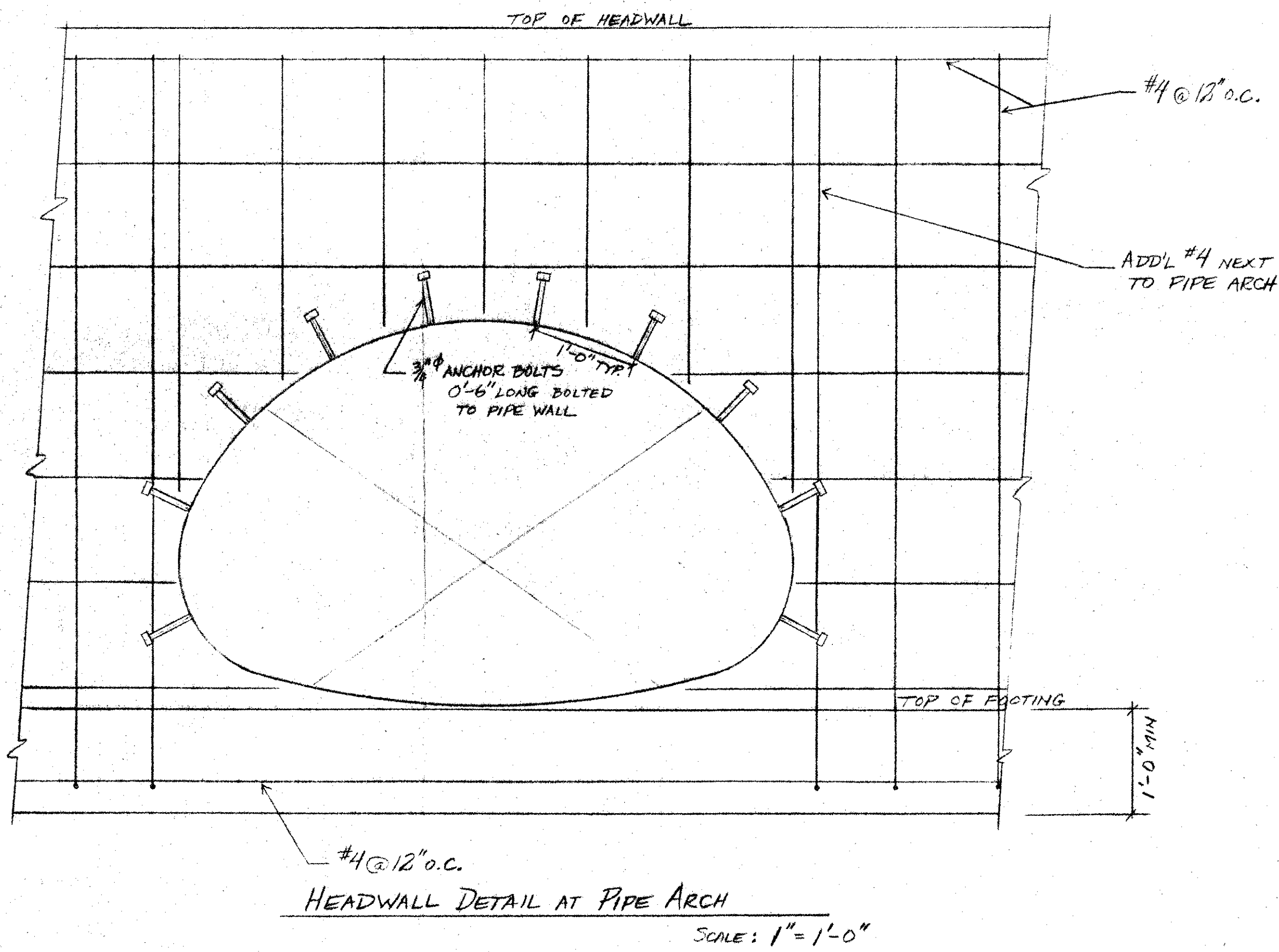
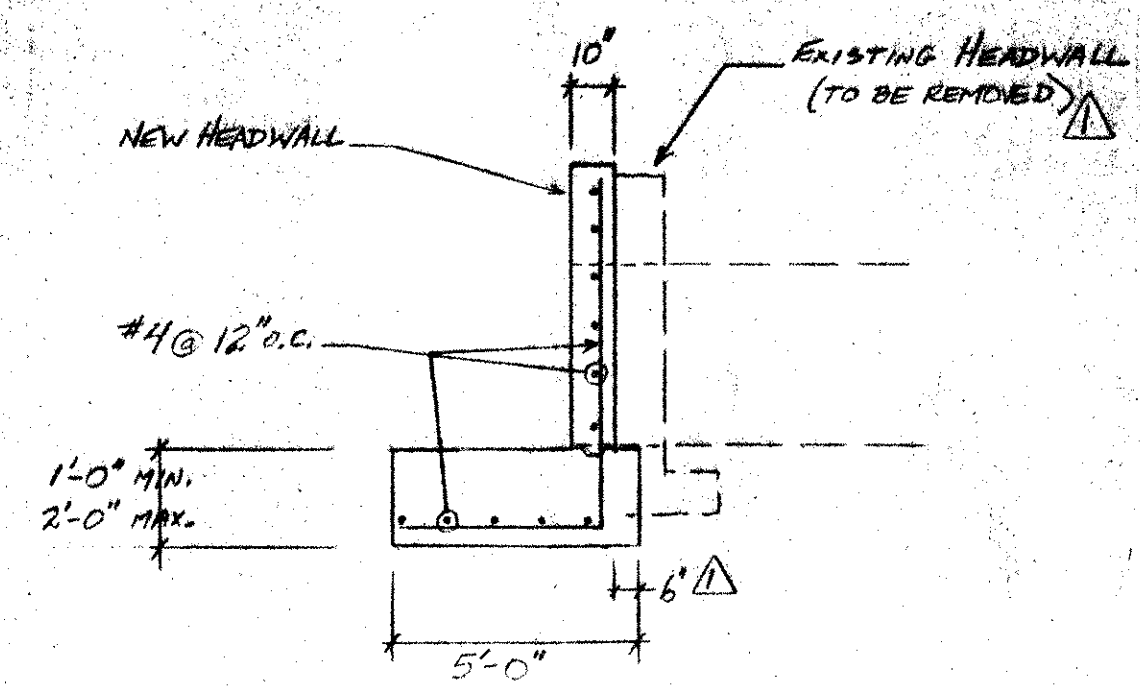
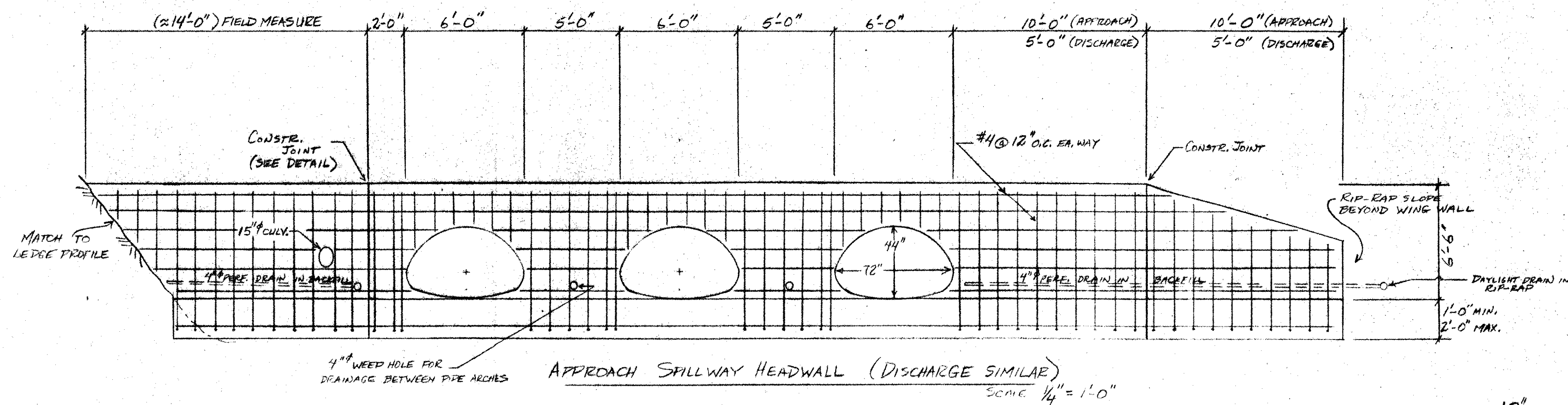
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AUGUST 1979  
REV. DEC. 77

AS BUILT JAN 1984





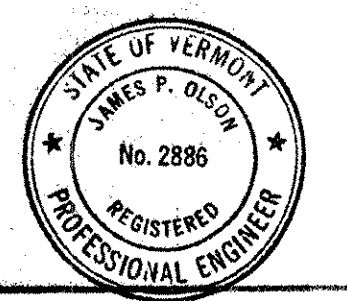
- NOTES:**
- AT WELDED SECTIONS, AREA WILL BE CLEANED WITH A WIRE BRUSH AND REFINISHED WITH ONE COAT OF BASIC LEAD SILICO-CHROMATE PRIMER, TYPE I AND TWO COATS OF BASIC LEAD SILICO-CHR. GRAY PAINT.
    - PRIMER MEETING REQ'TS OF VT HWY SPEC. ITEM 708.01 (b)
    - PAINT " " " " " " ITEM 708.02 (b)
  - IF DEPTH TO LEDGE PROHIBITS CONSTRUCTION OF 1'-0" MIN. THICKNESS FOOTING, THEN HEADWALL CAN BE CONSTRUCTED BY ANCHORING TO LEDGE WITH #5 DOWELS @ 12" O.C. GROUTED INTO PREDRILLED HOLES.
    - DEPTH OF EMBEDMENT = 30" MIN.
    - LAP DISTANCE TO WALL REINF. = 30" MIN.
  - REMOVE EXISTING BUTTRESSES ON DISCHARGE SPILLWAY HEADWALL BEFORE NEW CONSTRUCTION.
  - EXCAVATE FILL FROM BEHIND EXISTING WALLS AND INSTALL PERFORATED DRAIN.

- FOUNDATION FOR THE HEADWALLS WILL BE INSPECTED BY THE ENGINEER BEFORE PLACEMENT OF NEW CONCRETE.
- CONCRETE WILL BE MIN. 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS, WITH CRUSHED STONE AGGREGATE.
- REINFORCING STEEL WILL BE NEW, CLEAN DEFORMED BARS WITH A MIN. YIELD STRESS OF 40,000 PSI.
- THE NEW HEADWALL AND RELATED STRUCTURES WILL BE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.

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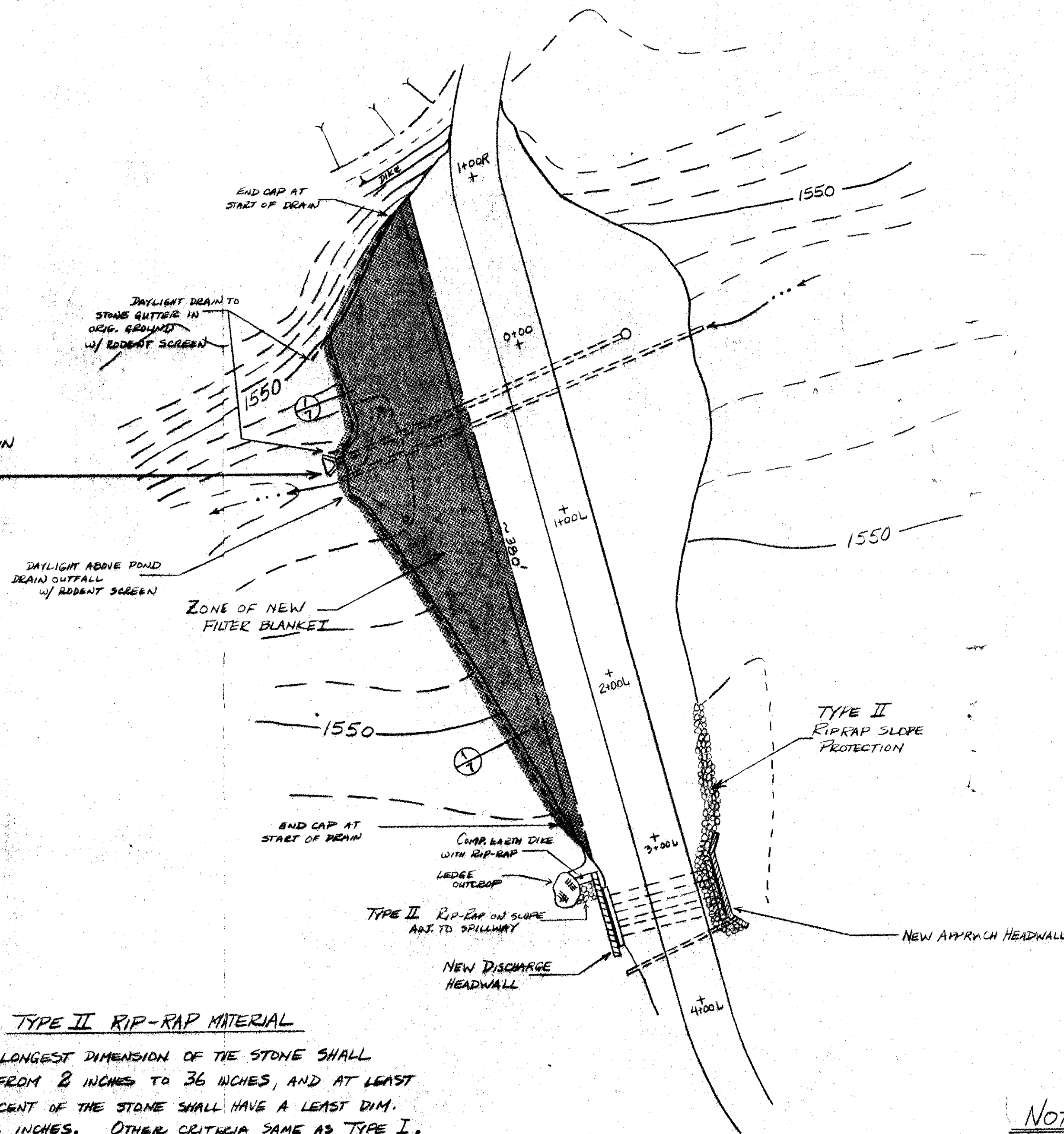
12/14/82 JPD		NOTES, DETAIL ADDED	
Date	Ch'kd	Revision	
Drawn by	JPD	Date	JUNE 1982
Checked by		Scale	AS NOTED
Approved by	JPD	Project No.	

PROPOSED REPAIR - SPILLWAY HEADWALLS  
WARREN LAKE - WARREN, VT.  
JACK KEIR AND LEROY ROBINSON  
JAMES P. OLSON, P.E. HINESBURG, VT.



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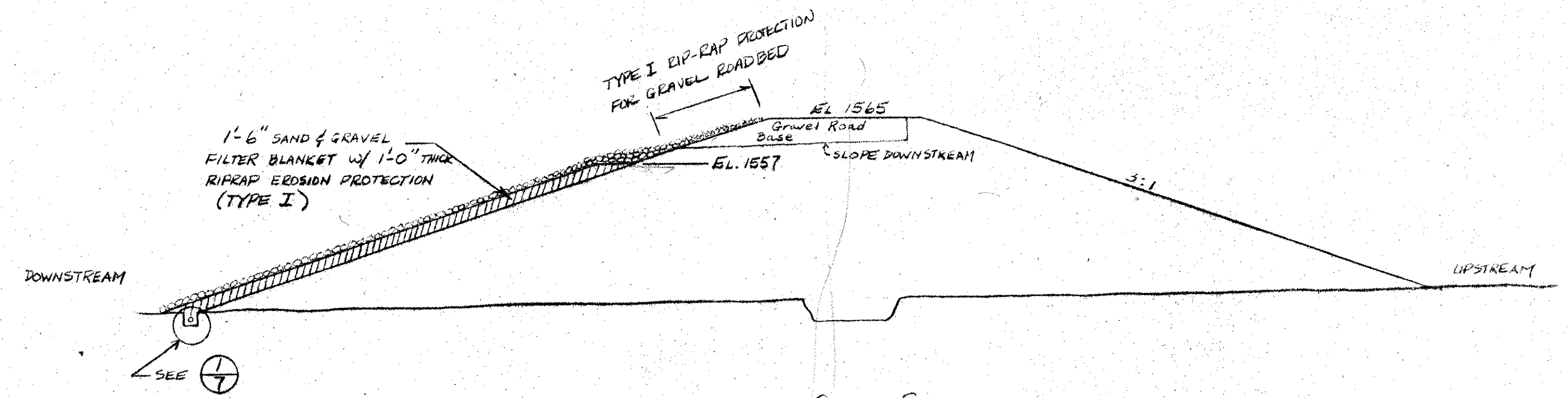
SAND & GRAVEL FILTER AND RIP-RAP SHALL BE PLACED AROUND THE POND DRAIN AND AROUND THE 36" DIA. CONDUIT.



**TYPE II RIP-RAP MATERIAL**

THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 2 INCHES TO 36 INCHES, AND AT LEAST 50 PERCENT OF THE STONE SHALL HAVE A LEAST DIM. OF 12 INCHES. OTHER CRITERIA SAME AS TYPE I.

EMBANMENT PLAN  
SCALE: 1" = 50'

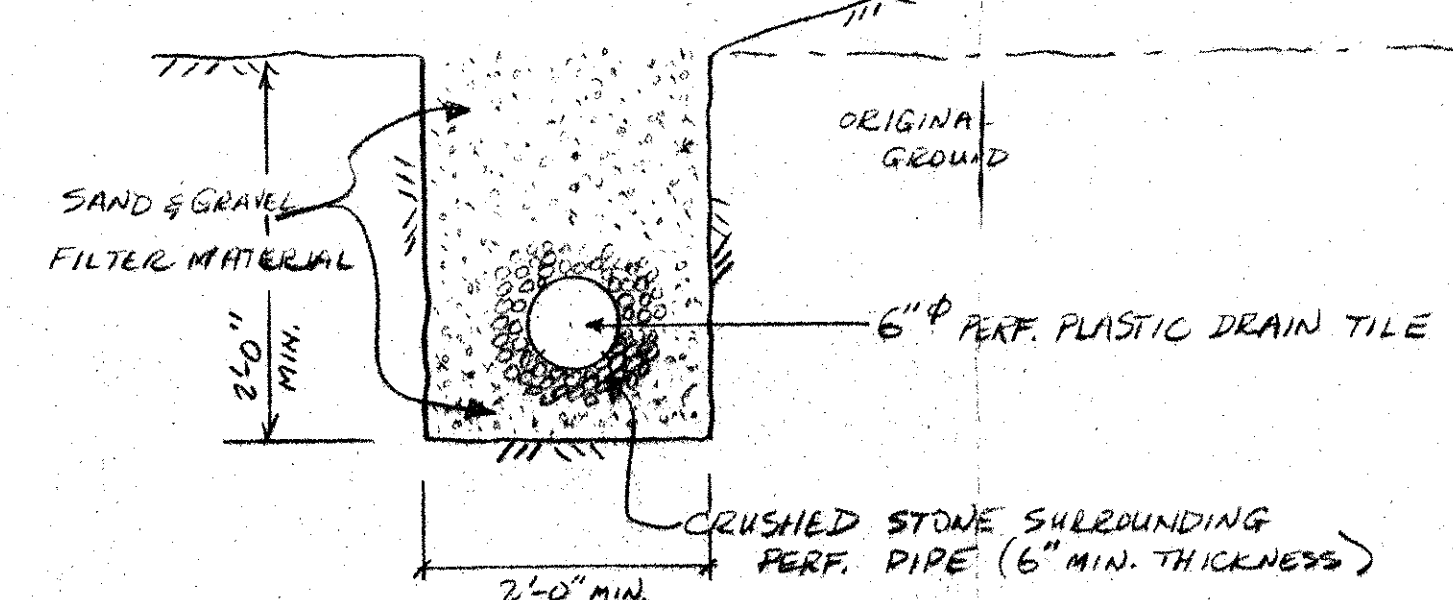
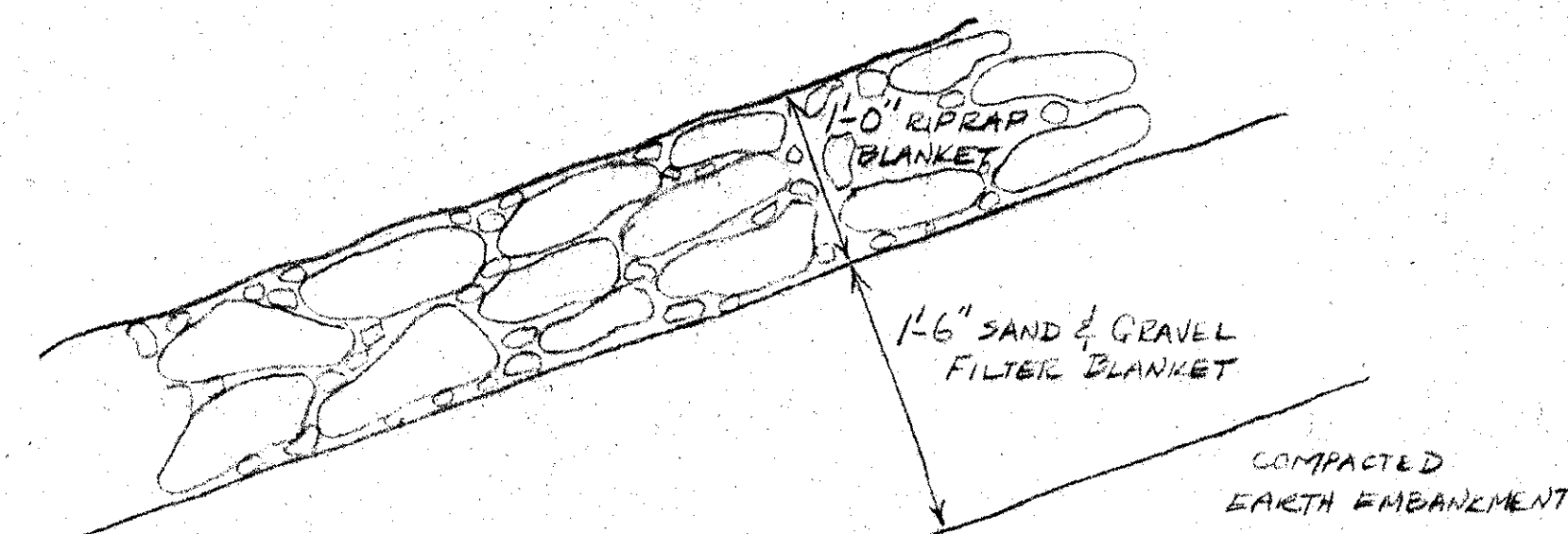


EMBANMENT CROSS SECTION

SCALE: 1" = 20'

**TYPE I RIP-RAP MATERIAL**

THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 1 INCH TO 12 INCHES AND AT LEAST 50 PERCENT OF THE STONE SHALL BE 4 INCHES IN LEAST DIMENSION. STONE SHALL BE APPROVED, HARD, ANGULAR, ROCK WITH LEAST DIMENSION NOT LESS THAN 1/3 ITS LONGEST DIM. GRADATION SHALL BE SUCH TO FORM A COMPACT MASS WHEN IN PLACE.



SECTION AT EMBANKMENT INTERFACE WITH NATURAL GROUND ~ DOWNSTREAM TOE  
SCALE: 1" = 1'-0"

**SAND & GRAVEL FILTER MATERIAL**

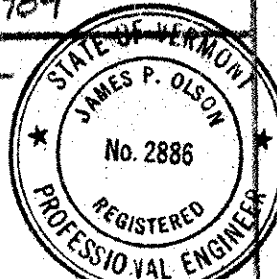
SIEVE SIZE	% FINER BY WGT.
2"	100%
1"	95-100
#4	20-55
#10	10-45
#40	0-25
#200	0-3

- NOTES:
- UP TO 5% PASSING #200 IS ACCEPTABLE IF FINES ARE NON-PLASTIC.
  - UNIFORMITY COEFF. MUST BE  $\geq 6$ .
  - THIS GRADATION SPEC. SATISFIES FILTER CRITERIA FOR  $D_{15}$  AND  $D_{85}$  SIZES OF FILTER AND PROTECTED SOIL. ACTUAL GRADATION CURVE FOR FILTER MAT'L WILL BE SUBMITTED TO VT. DEPT. OF WATER RESOURCES FOR APPROVAL.

- NOTES:
- THE EMBANKMENT FILL & RELATED STRUCTURES WILL BE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.
  - BEFORE PLACEMENT OF THE FILTER BLANKET, THE EMBANKMENT SURFACE WILL BE PREPARED BY REMOVING VEGETATION & SCRUBIFYING THE SURFACE TO PROVIDE A GOOD BOND BETWEEN THE EMBANKMENT SOIL & FILTER.
  - THE SAND & GRAVEL FILTER WILL BE COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS BEFORE COMPACTION. THE LAYERS WILL BE COMPACTED TO A DRY DENSITY EQUAL TO OR GREATER THAN 95% OF MAX. DRY DENSITY AS DETERMINED BY ASTM-698-78 METHOD C.
  - THE COMPACTED EARTH DIKE ADJACENT TO THE EMERGENCY SPILLWAY WILL BE BUILT ON PREPARED, ORIGINAL GROUND AND COMPACTED IN LAYERS NOT TO EXCEED 8 INCHES BEFORE COMPACTION TO AT LEAST 95% OF MAX. DRY DENSITY AS DETERMINED BY ASTM-698-78 METHOD A.

AS-BUILT JAN 1984

MODIFICATIONS TO EMBANKMENT  
WARREN LAKE - WARREN, VT.  
JACK KEIR AND LENORD ROBINSON



Date	7/6/82	Notes	DETAIL ADDED
Drawn by	JPO	Date	JUNE 1982
Checked by		Scale	AS NOTED
Approved by	JPO	Project No.	

JAMES P. OLSON, P.E.  
HINESBURG, VT.  
AB  
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