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BLUEBERRY LAKE DAM REHABILITATION PROPOSED IMPROVEMENT DAM PROJECT TOWN OF WARREN COUNTY OF WASHINGTON

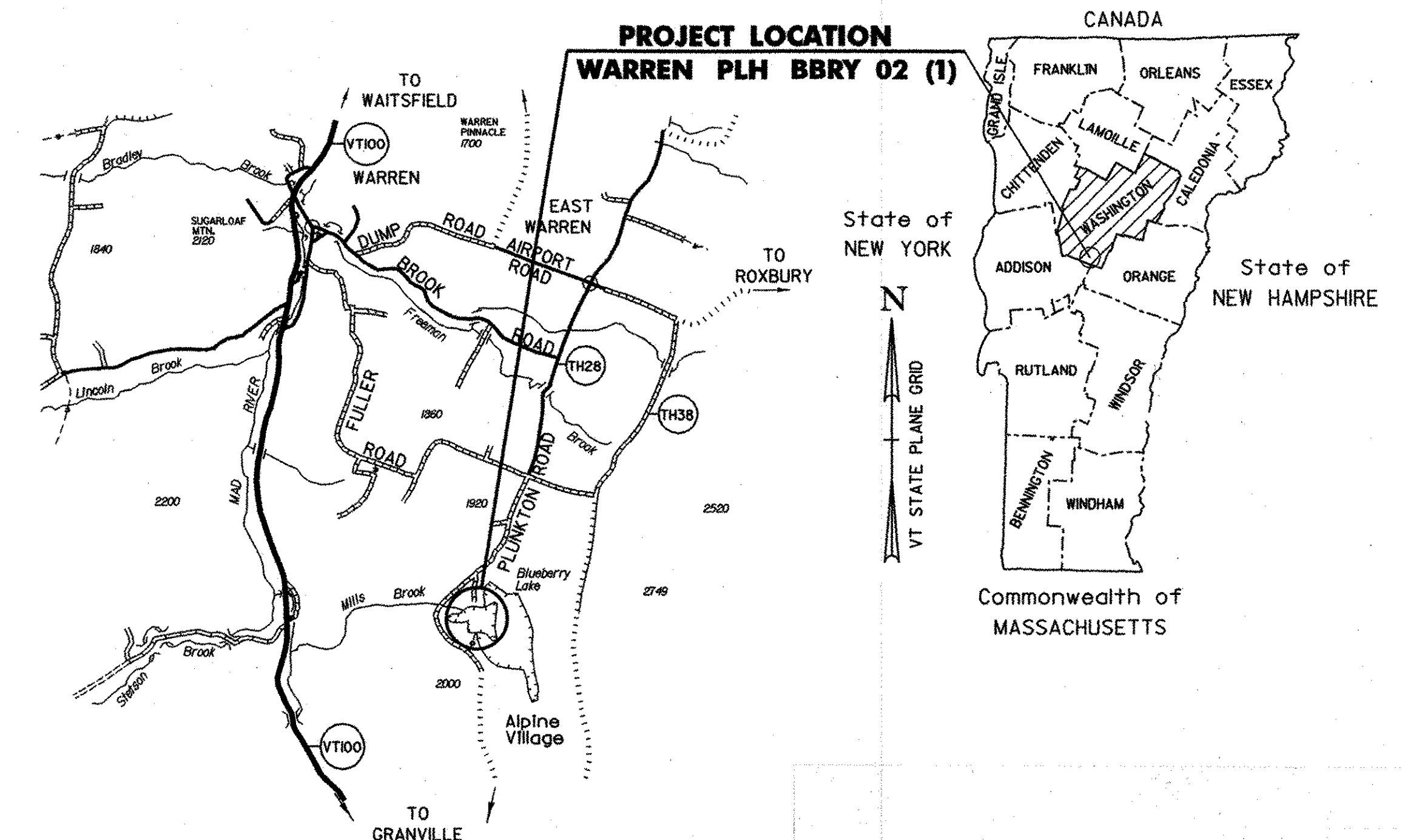
ROUTE NO : TH 28 CLASS 3

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 EMERGENCY
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

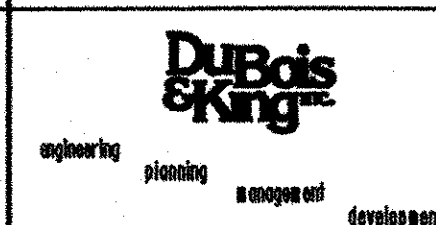
CONVENTIONAL SYMBOLS

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

SURVEYED BY : DUBOIS + KING
SURVEYED DATE : 8/02

DATUM

VERTICAL ASSUMED
HORIZONTAL NAD 83



SCALE 1" = 50'-0"
50 0 50



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 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

PLOTTED 05/21/2003

RECORD PLANS	
CONTRACTOR:	KINGSBURY CONSTRUCTION - WARREN, 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	RESIDENT ENGINEER
DATE	1/12/06
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.	

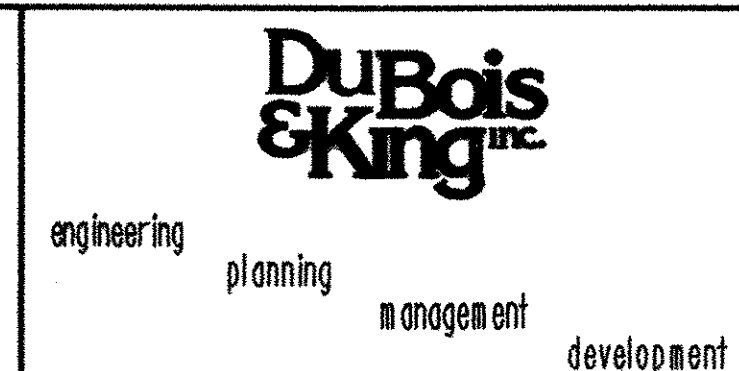
TOWN OF WARREN CHAIRPERSON, BOARD OF SELECTMEN	
APPROVED	DATE
DIRECTOR OF PROGRAM DEVELOPMENT	
APPROVED	DATE 5/22/03
PROJECT NAME : WARREN	
PROJECT NUMBER : PLH BBRY 02 (1)	
SHEET 1 OF 24 SHEETS	

D & K DRAWING #11410

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

DATUM

VERTICAL	<u>ASSUMED</u>
HORIZONTAL	<u>NAD 83</u>

[illegible]

DRAWN BY SRP	DATE MAY 2003
CHECKED BY <i>JWT</i>	PROJ. NO. RI6663
PROJ. ENG. <i>SRP</i>	DRAW. NO. 11291
SHEET 2 OF 24	

PRINCIPAL SPILLWAY, OPTION #2, REINFORCED CONCRETE PIPE

[illegible]

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engineering planning management development

TOWN OF WARREN
WARREN, VERMONT

BLUEBERRY LAKE DAM
REHABILITATION PROJECT

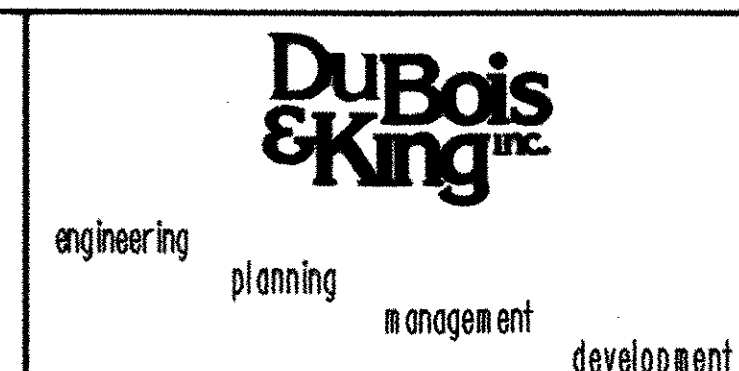
QUANTITY SHEET

DRAWN BY SRP	DATE MAY 2003
CHECKED BY	PROJ. NO. RI6663
PROJ. ENG.	DRAW. NO. 11292
SHEET 3 OF 24	

PRINCIPAL SPILLWAY OPTION # 3 WITHOUT EMERGENCY SPILLWAY

[illegible]

PLOTTED 05/21/2003



QUANTITY SHEET

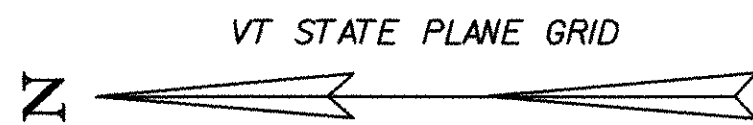
DRAWN BY SRP	DATE MAY 2003
CHECKED BY <i>JWT</i>	PROJ. NO. RI6663
PROJ. ENG.	DRAW. NO. <i>11294</i>
SHEET 5 OF 24	

PRINCIPAL SPILLWAY, OPTION #4, PRECAST BOX CULVERT

DATUM VERTICAL <u>ASSUMED</u> HORIZONTAL <u>NAD 83</u>	
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PLOTTED 06/16/2003

DuBois & King inc. engineering planning management development	TOWN OF WARREN WARREN, VERMONT BLUEBERRY LAKE DAM REHABILITATION PROJECT QUANTITY SHEET	DRAWN BY SRP	DATE MAY 2003
		CHECKED BY	PROJ. NO. RI6663
		PROJ. ENG.	DRAW. NO. II294
		SHEET 5A OF 24	

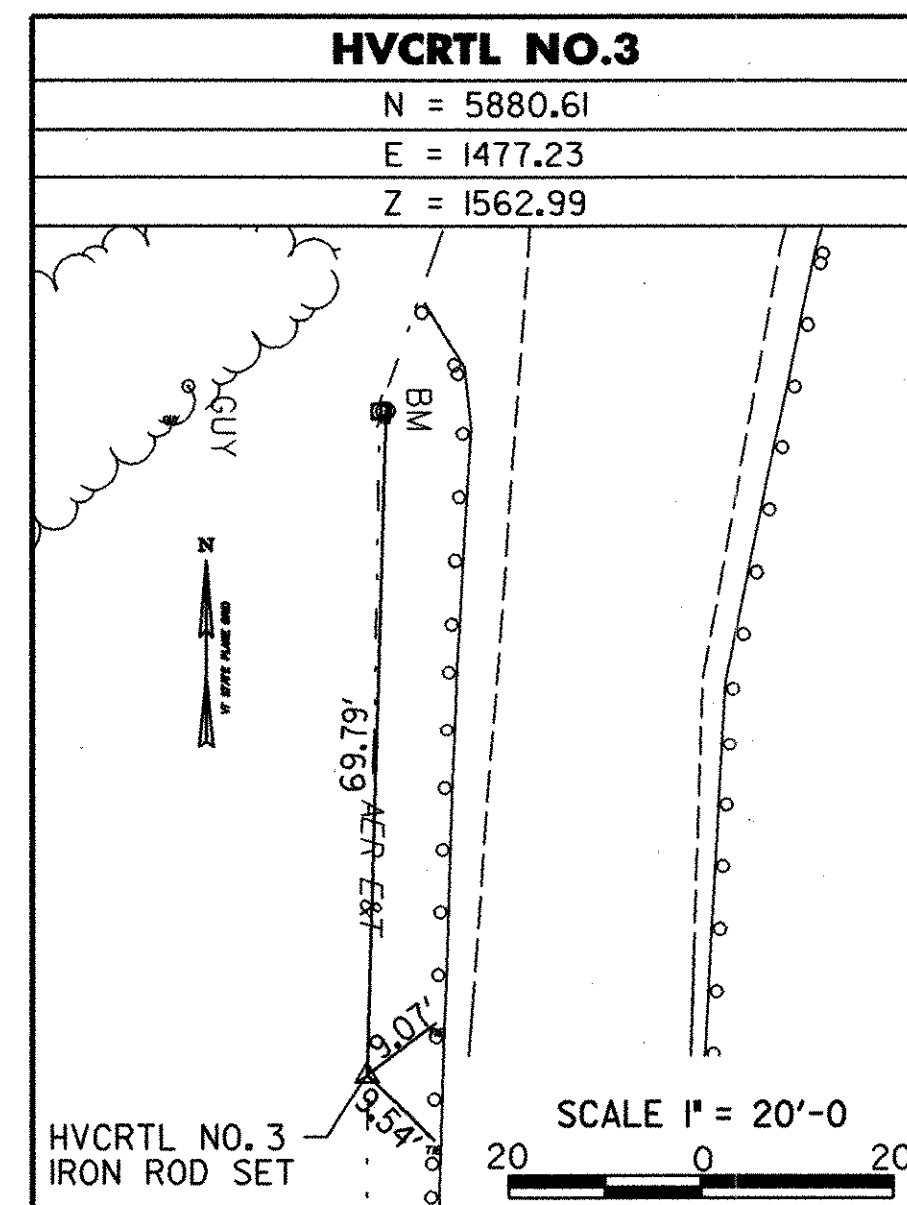


BEGIN PROJECT
WARREN PLH BBRY 02 (1)
(MATCH EXISTING)
STA. 2+50

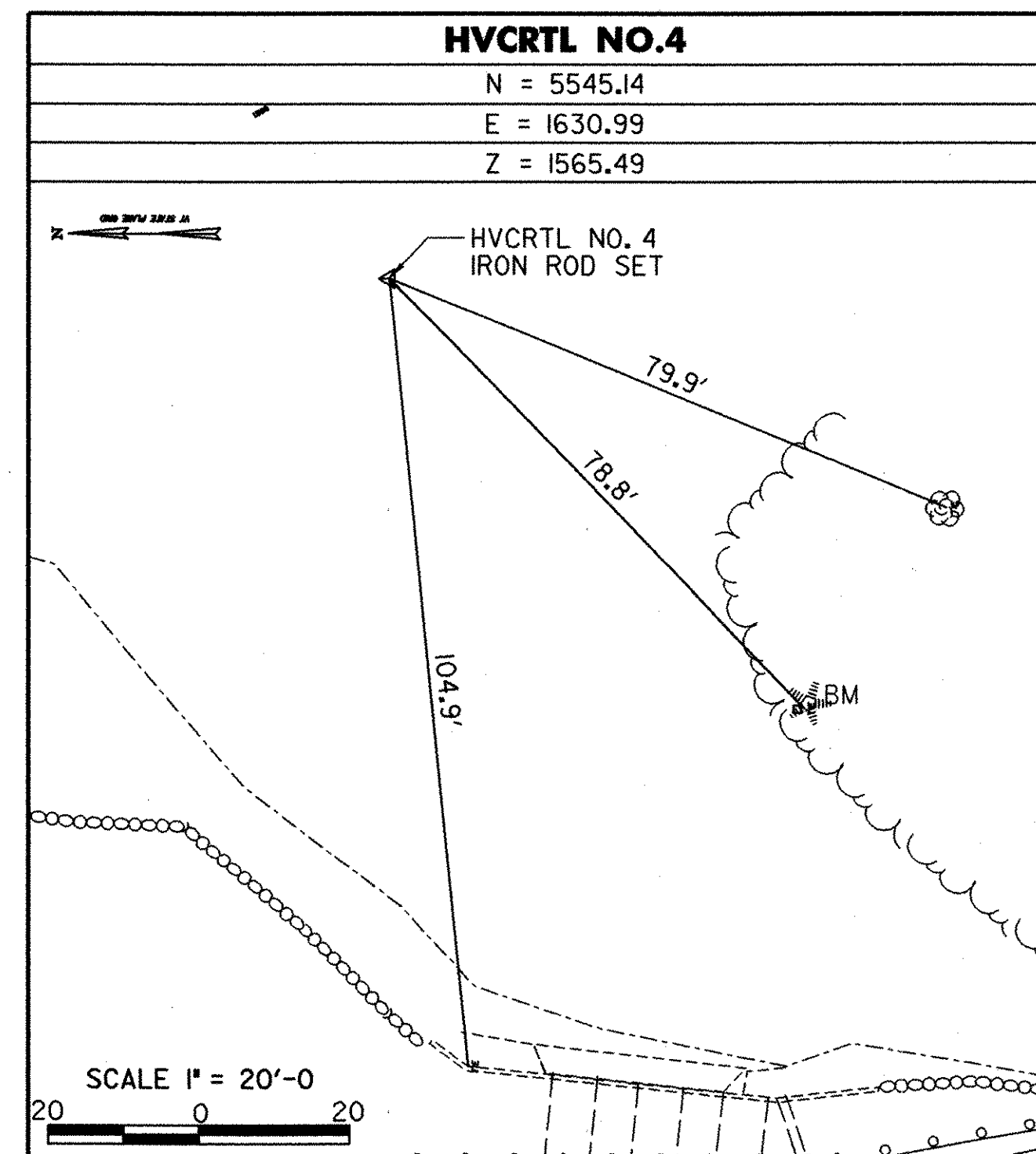
ROADWAY BASELINE STA. 4+95.00 =
PRINCIPAL SPILLWAY STA. 101+50.00

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



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



CURVE NO. 1
Δ = 21°06' 04"
D = 12°43' 57"
R = 450.00'
T = 83.81'
L = 165.73'
E = 7.74'

CURVE NO. 2
Δ = 29°47' 14"
D = 28°38' 53"
R = 200.00'
T = 53.19'
L = 103.98'
E = 6.95'

TIE SHEET

SCALE 1" = 40'-0"

LEGEND

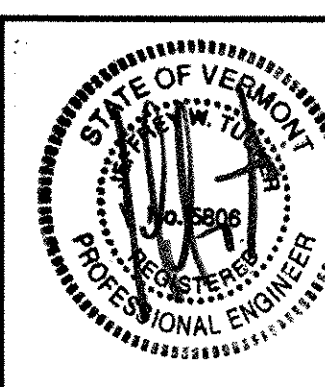
- TREE LINE
- STONE WALL
- EDGE ROADWAY
- EDGE OF WATER
- GUARDRAIL
- CULVERTS
- BENCH MARKS
- CONTROL POINTS (HVCTRL)
- TREES
- AERIAL ELEC. & TEL.
- UTILITIES POLE

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	HVCTRL 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	HVCTRL 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

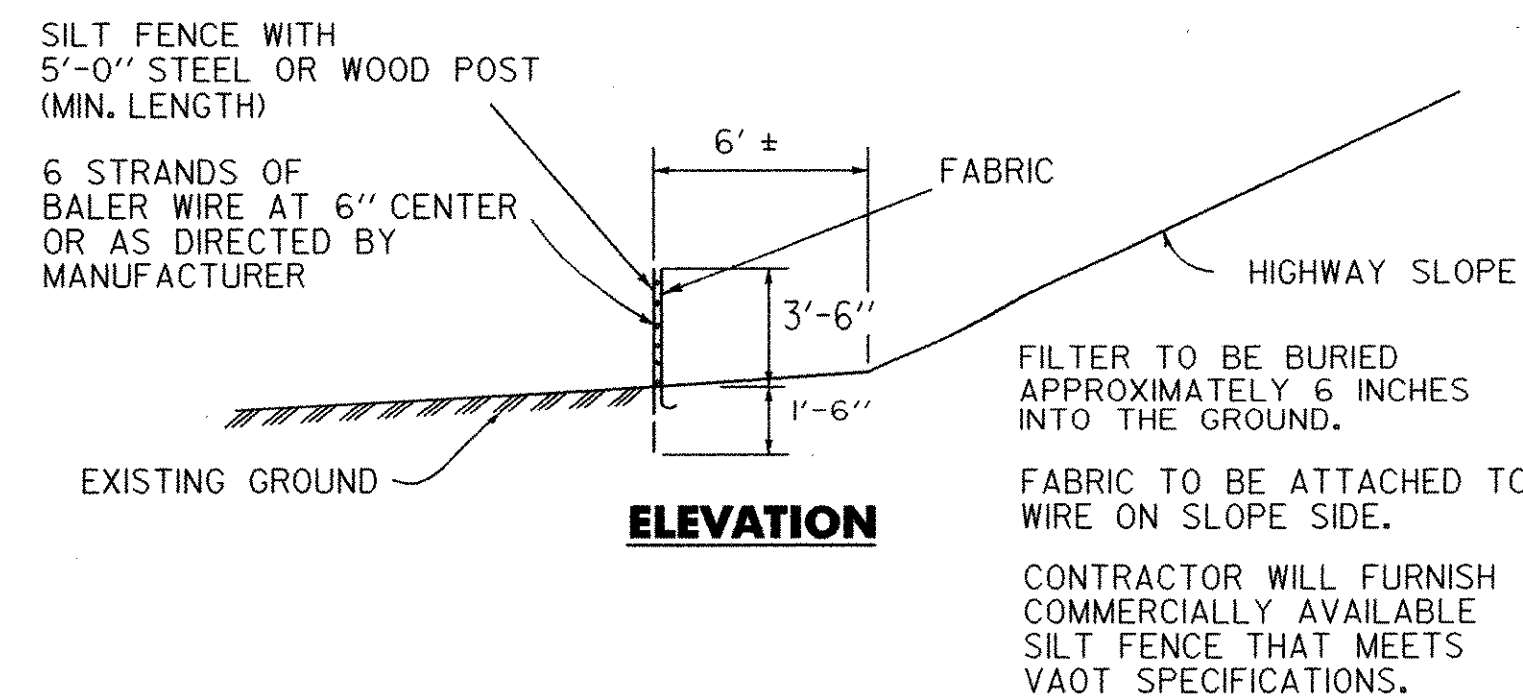
NO.	DATE	REVISIONS	BY	CK'D



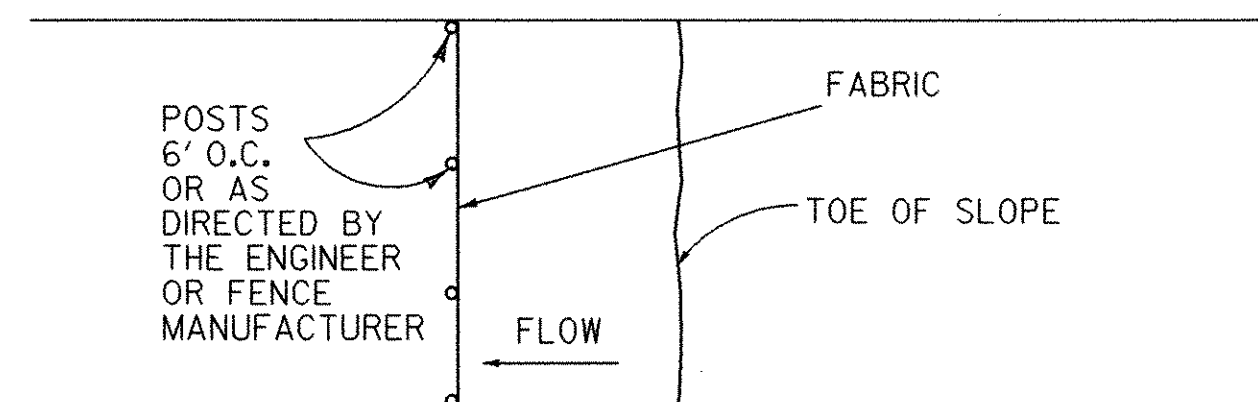
DuBois & King
INC.
engineering planning management development

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

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



ELEVATION



PLAN

SILT FENCE
NOT TO SCALE

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.

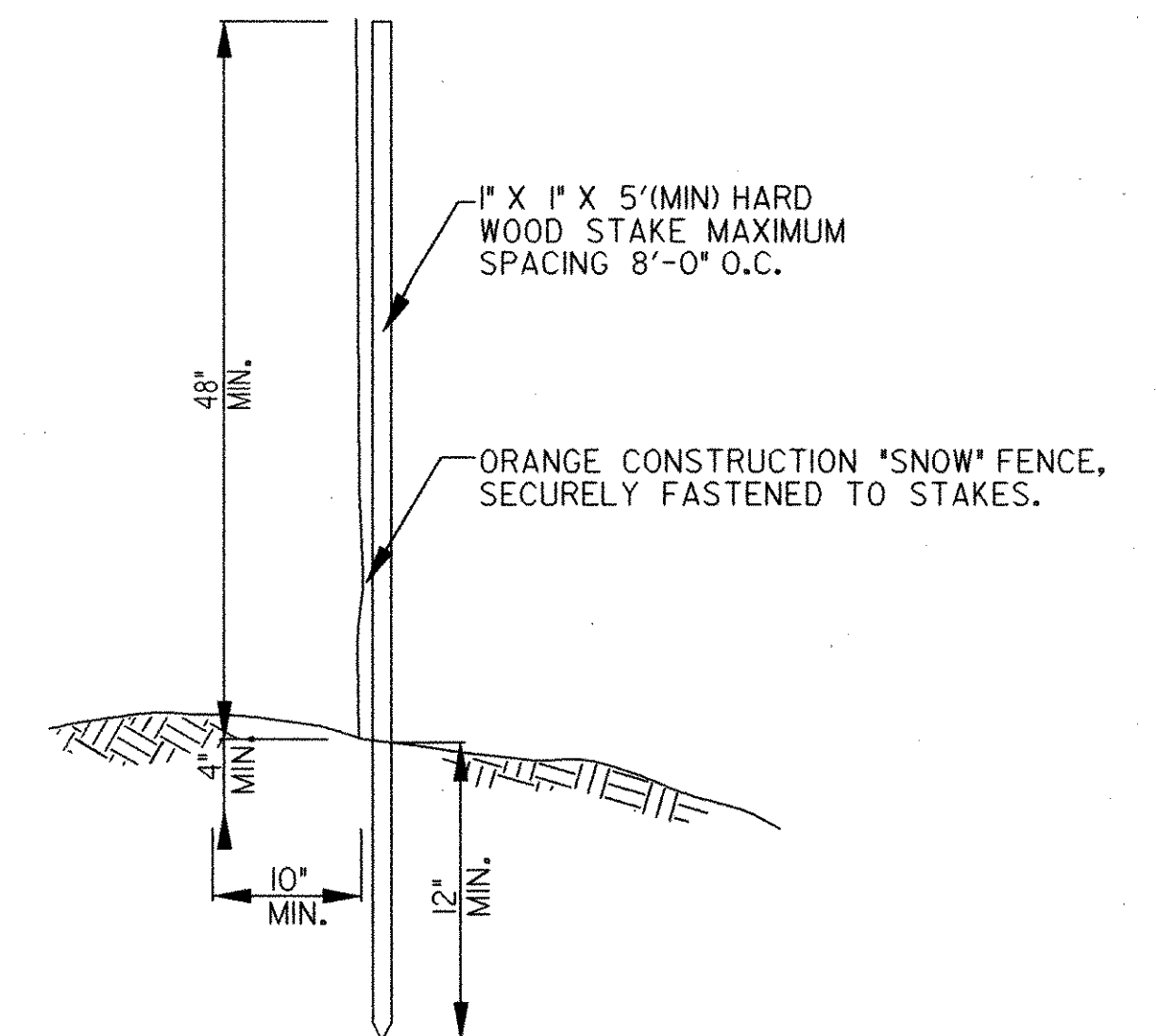
HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

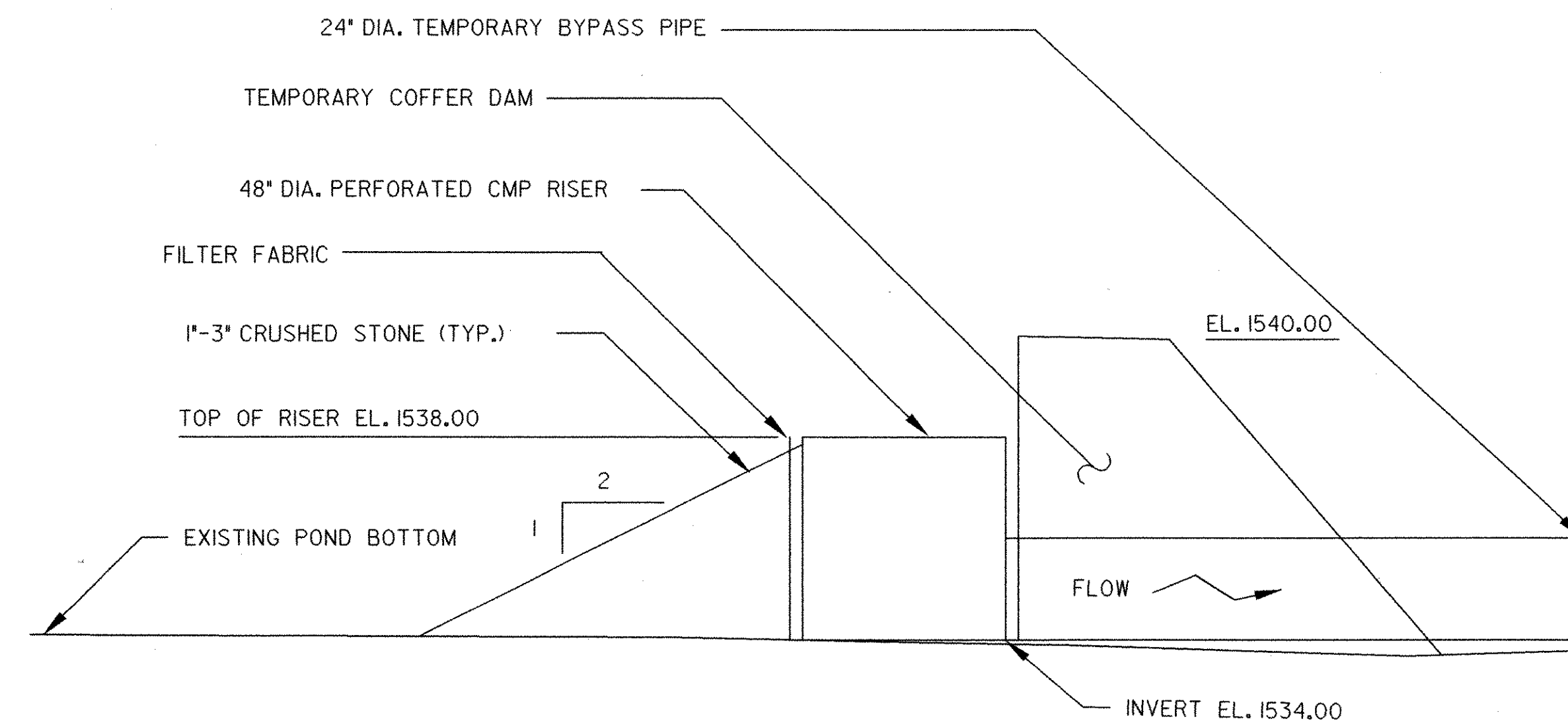
MARKER POSTS: TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.

SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.

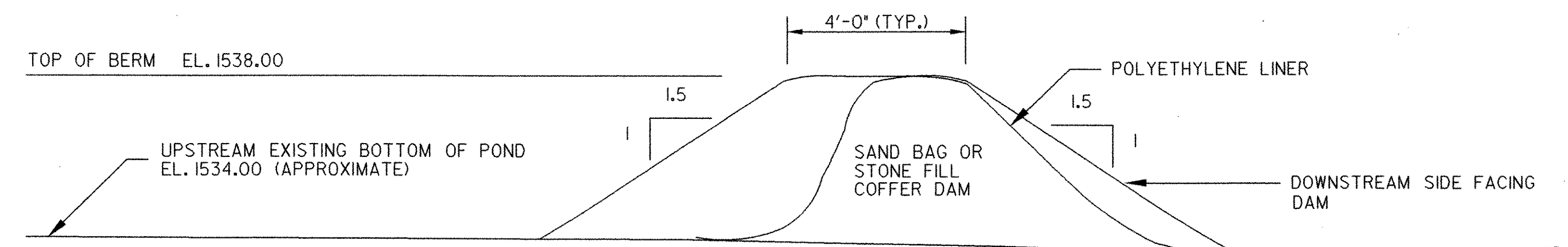
PAY LIMITS OF SAND BORROW: WHEN USED IN CONJUNCTION WITH UNDERDRAIN - SEE STANDARD SHEET D - 2.



CONSTRUCTION BARRIER FENCE
NOT TO SCALE



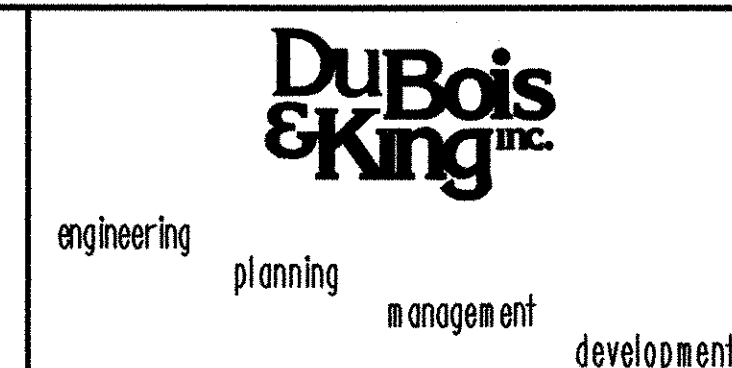
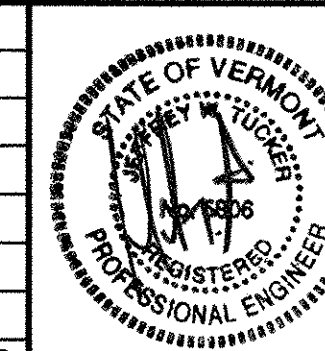
TEMPORARY COFFERDAM BASIN
NOT TO SCALE



SECTION THROUGH TEMPORARY COFFERDAM WITH POLYETHYLENE LINER
NOT TO SCALE

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CK'D

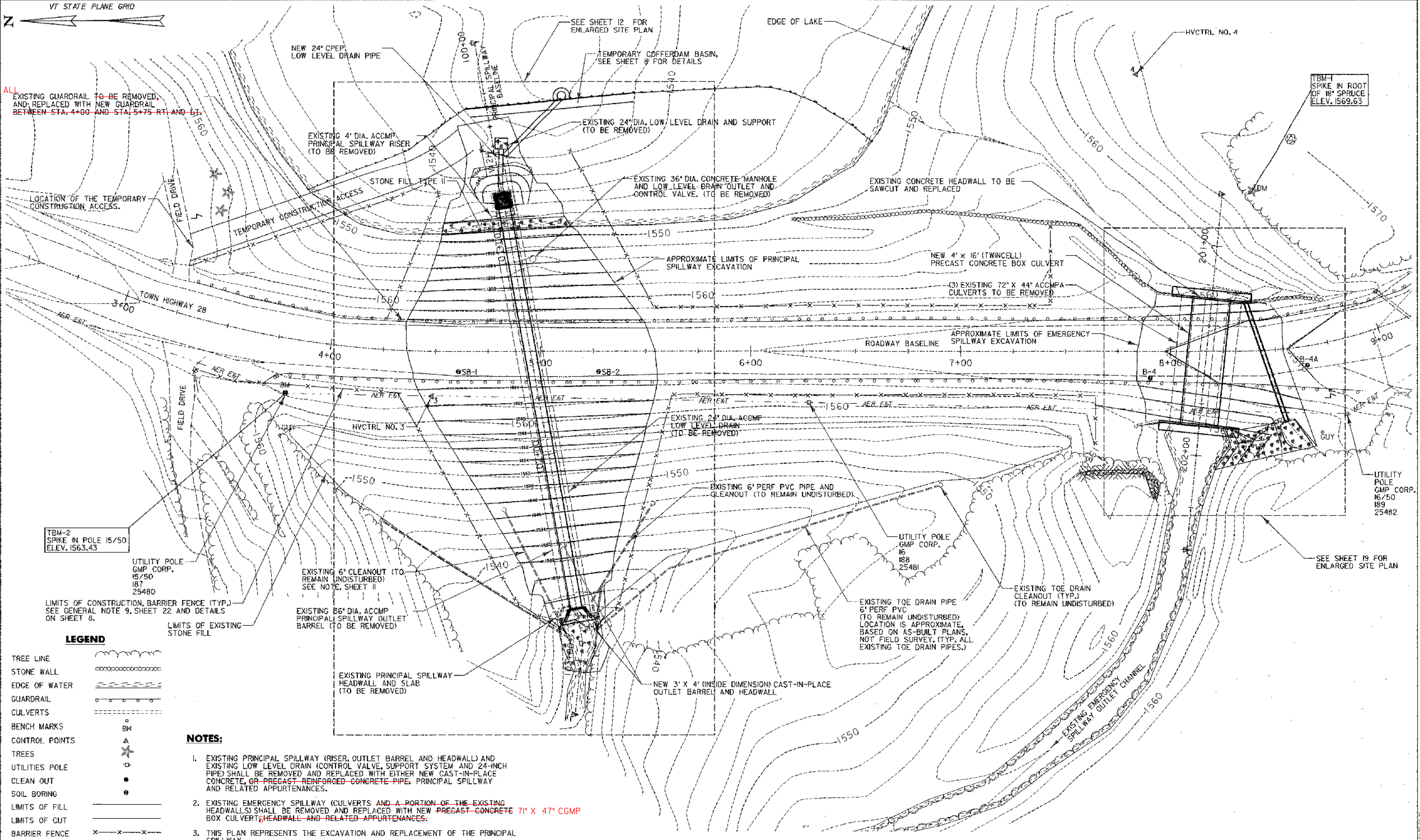


TOWN OF WARREN
WARREN, VERMONT

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.



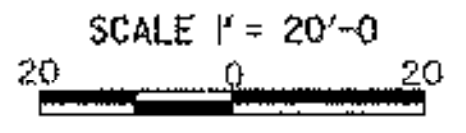
LEGEND

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:**
- 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.
 - 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 CULVERTS, HEADWALL AND RELATED APPURTENANCES.
 - THIS PLAN REPRESENTS THE EXCAVATION AND REPLACEMENT OF THE PRINCIPAL SPILLWAY.

DATUM

VERTICAL	ASSUMED
HORIZONTAL	NAD 83



PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CHK'D



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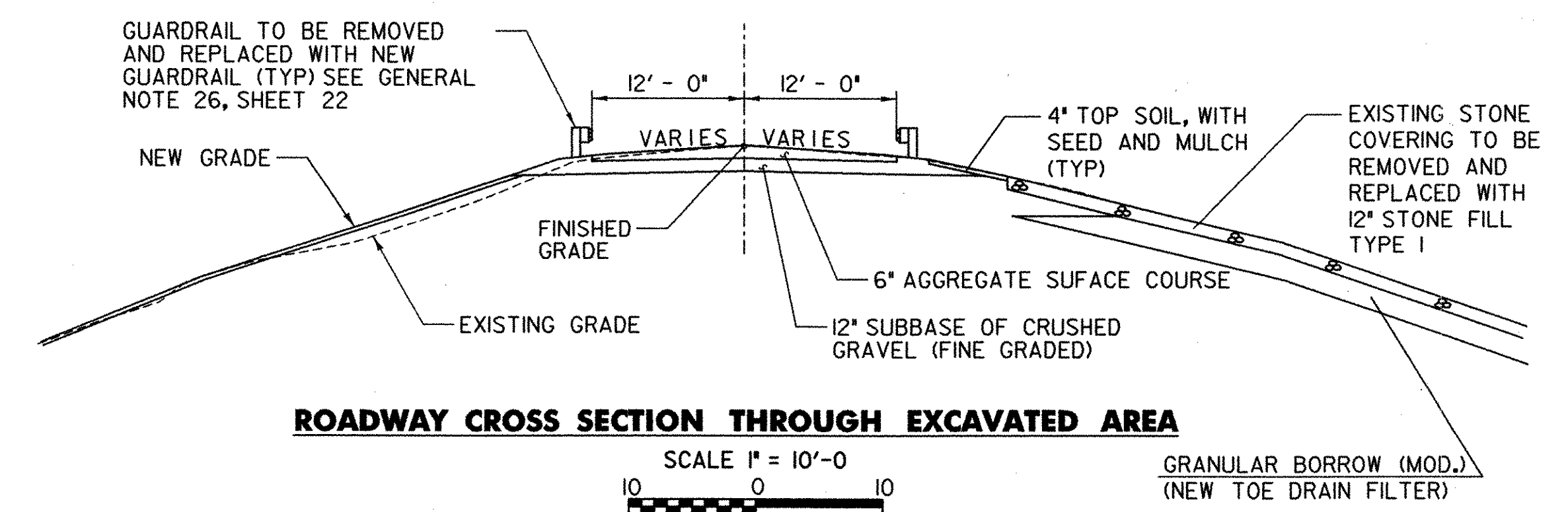
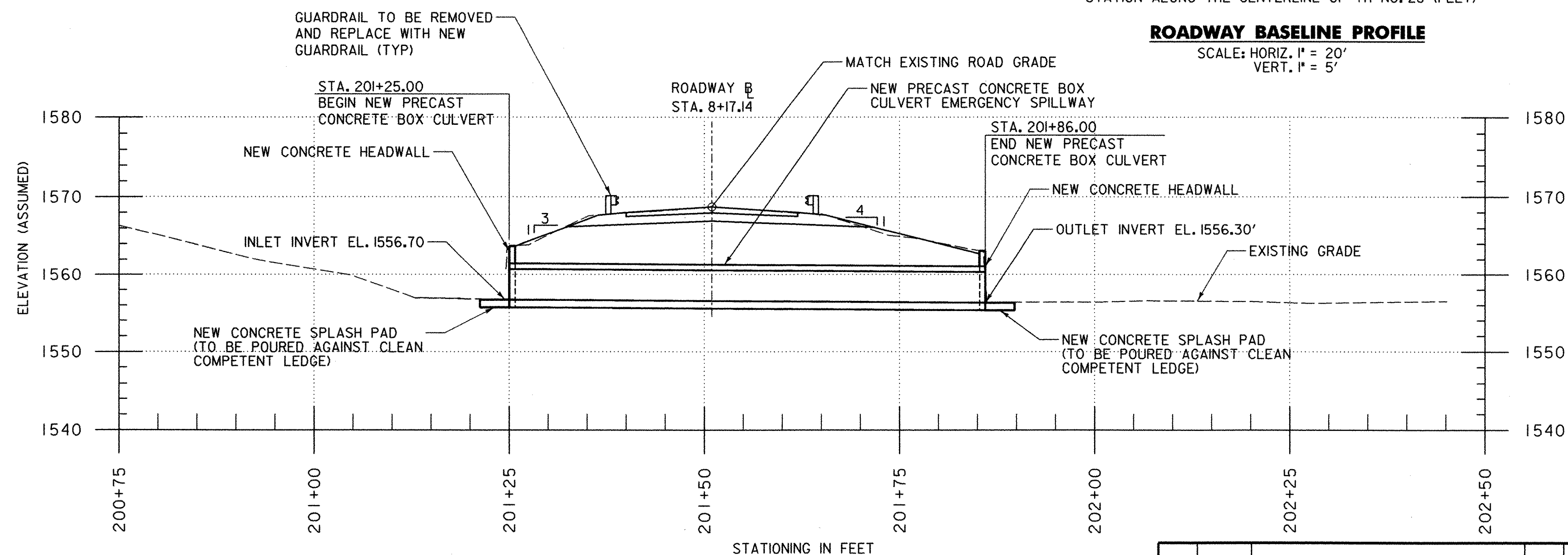
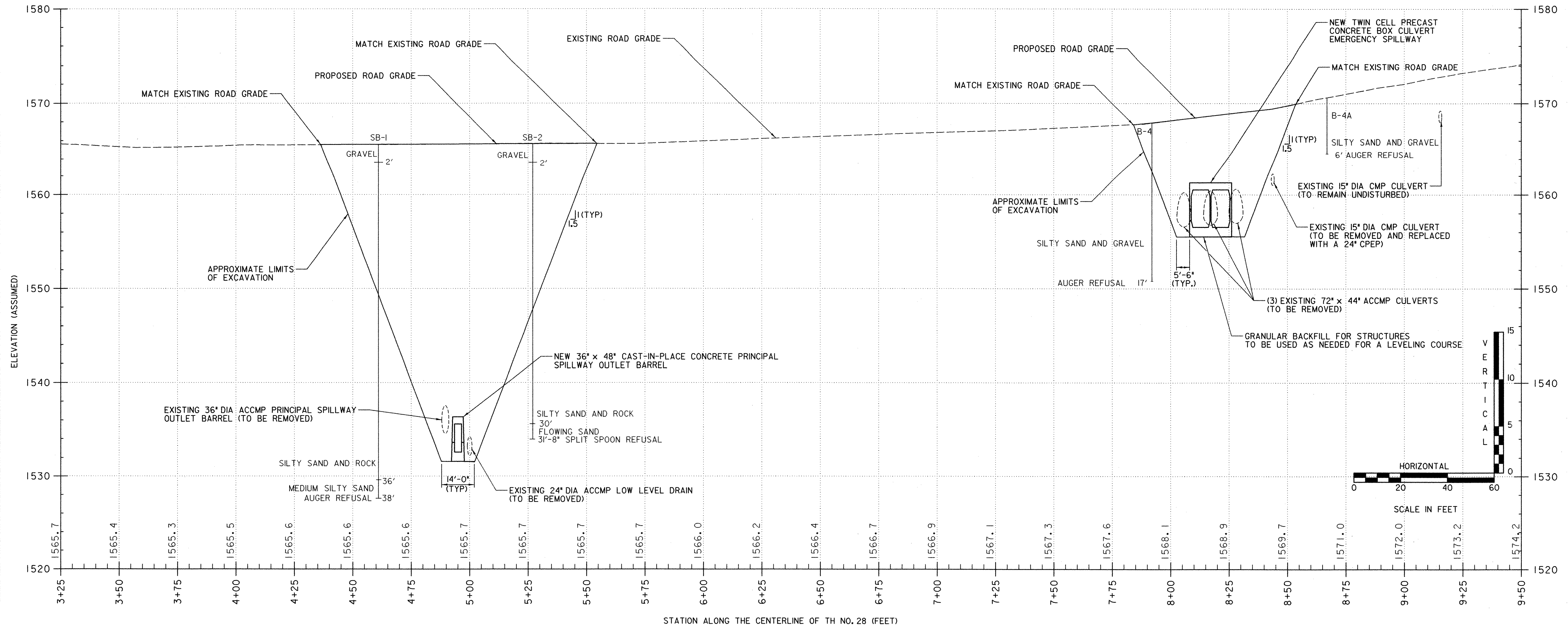
engineering planning management development

TOWN OF WARREN
WARREN, VERMONT

BLUEBERRY LAKE DAM
REHABILITATION PROJECT

SITE PLAN

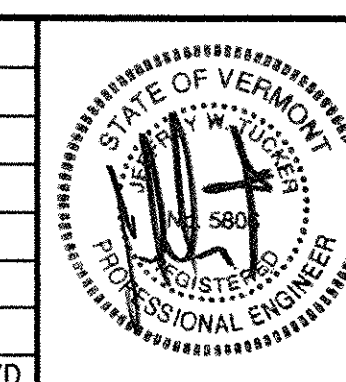
DRAWN BY EBS	DATE MAY 2003
CHECKED BY JW	PROJ. NO. RI6663
PROJ. ENG. SRP	DRAW. NO. 11298
SHEET 9	OF 24



DATUM
 VERTICAL ASSUMED
 HORIZONTAL NAD 83

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CK'D

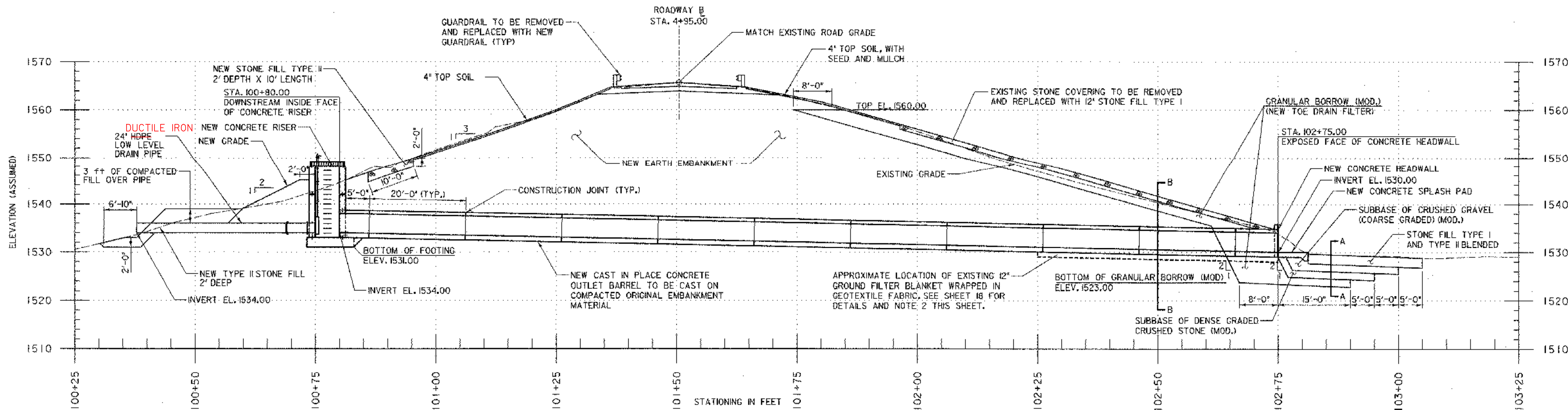


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 engineering planning management development

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

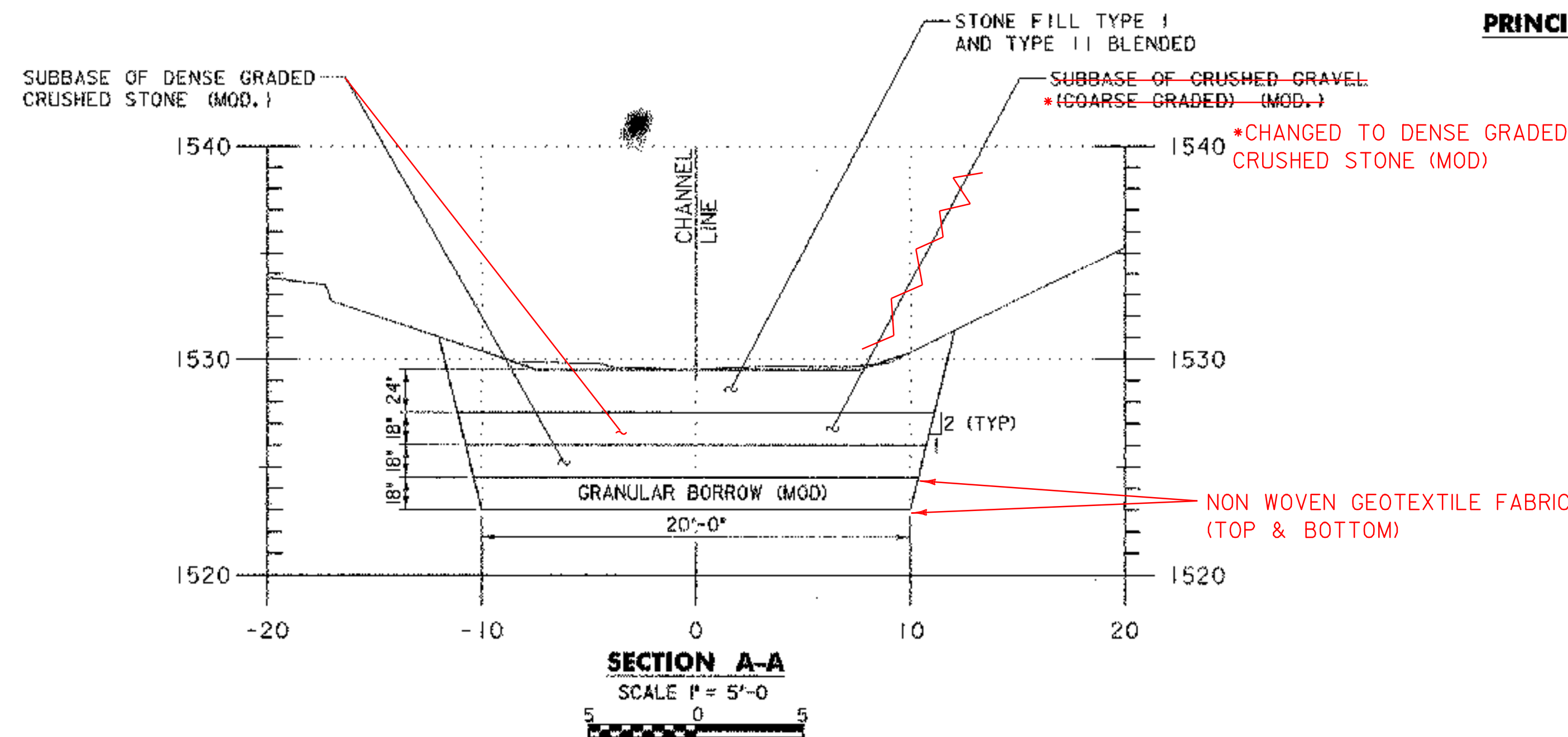
DRAWN BY EBS	DATE MAY 2003
CHECKED BY WT	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11299
SHEET 10	OF 24

1: 11/06/03 11:06:18 AM



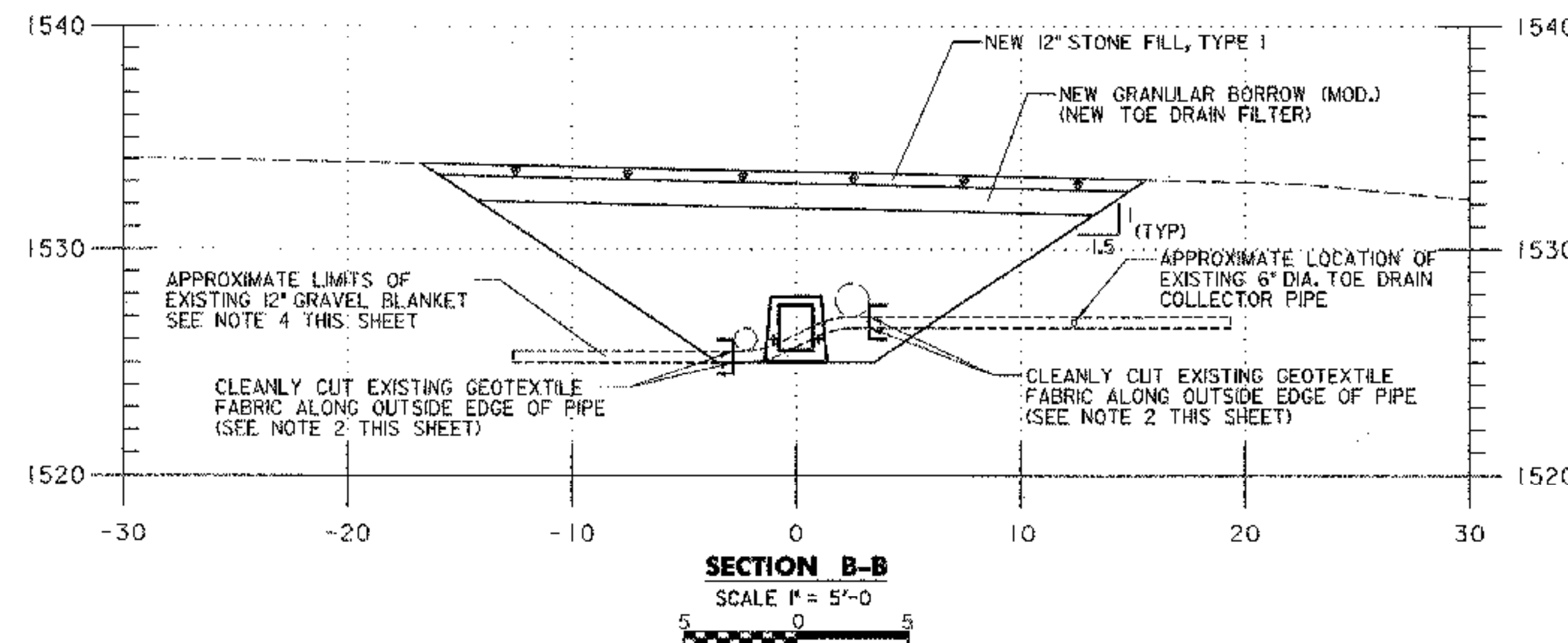
PRINCIPAL SPILLWAY (PROFILE)

SCALE 1" = 10'-0"



SECTION A-A

SCALE 1" = 5'-0"



SECTION B-B

SCALE 1" = 5'-0"

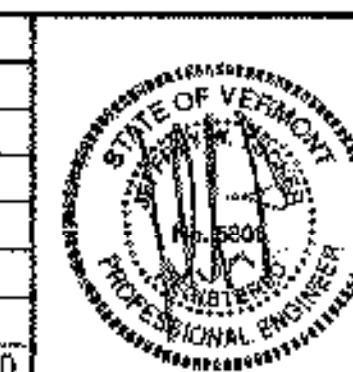
NOTES:

1. THE EXISTING DRAIN SYSTEM FOR THIS DAM CONSISTS OF THE FOLLOWING COMPONENTS: 18" SLOPE DRAIN, 12" GRAVEL FOUNDATION BLANKET, TRENCH DRAINS ALONG THE FOUNDATION AND ANTI-SEEP COLLARS AFFIXED TO BOTH OUTLET BARRELS. THE LOCATION OF THE DRAIN SYSTEM COMPONENTS SHOWN ON THESE PLANS IS APPROXIMATE, REFER TO 'AS-BUILT' DRAWINGS.
2. THE CONTRACTOR SHALL TAKE CARE WHEN EXCAVATING IN THE LOCATION OF THE EXISTING 12" GRAVEL BLANKET, SUCH THAT THE EXCAVATION EQUIPMENT DOES NOT TEAR THE EXISTING GEOTEXTILE FABRIC. EACH LAYER OF THE GEOTEXTILE FABRIC SHALL BE CUT CLEANLY ALONG THE EDGE OF THE PIPE AND FOLDED BACK. ONCE CONSTRUCTION WITHIN THE EXCAVATION TRENCH IS COMPLETE, THE GEOTEXTILE SHALL BE FOLDED TO WRAP THE EXISTING GRAVEL BLANKET AT THE EXCAVATION TRENCH SLOPE AND NEW EMBANKMENT WILL BE COMPACTED AGAINST THE GEOTEXTILE. SEE SECTION B-B ON FOR DETAILS. THIS WORK SHALL BE PAID UNDER ITEM 529.15 "REMOVAL OF STRUCTURE (MOD - PRINCIPAL SPILLWAY)".
3. THE CONTRACTOR SHALL ANTICIPATE EXPOSING THE TOE DRAIN COLLECTOR PIPES. THE EXISTING TOE DRAIN COLLECTOR PIPE SHALL BE CLEANLY CUT AND REPLACED WITH LIKE PVC PIPE, WITH "BELL AND SPIGOT" TYPE JOINTS. EACH JOINT SHALL BE CLEANED AND SOLVENT WELDED TO ENSURE SEPARATION DOES NOT OCCUR. THIS WORK SHALL BE PAID UNDER ITEM 605.10 "6-INCH UNDERDRAIN (MOD)".
4. THE CONTRACTOR SHALL ANTICIPATE EXPOSING ANTI-SEEP COLLARS ALONG EACH OUTLET BARREL AT A SPACING OF APPROXIMATELY 20 FEET, REFER TO 'AS-BUILT' DRAWINGS. THE CONTRACTOR SHALL TAKE CARE IN REMOVING THE ANTI-SEEP COLLARS TO AVOID DISTURBANCE OF THE UNDISTURBED EARTH EMBANKMENT BEYOND THE EXCAVATION LIMITS. IF THE EARTH EMBANKMENT IS DISTURBED, THE CONTRACTOR SHALL EXCAVATE AND RE-COMPACT THE DISTURBED AREA. THIS WORK SHALL BE PAID UNDER ITEM 529.15 "REMOVAL OF STRUCTURE (MOD - PRINCIPAL SPILLWAY)".

DATUM
VERTICAL ASSUMED
HORIZONTAL NAD 83

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CHK'D



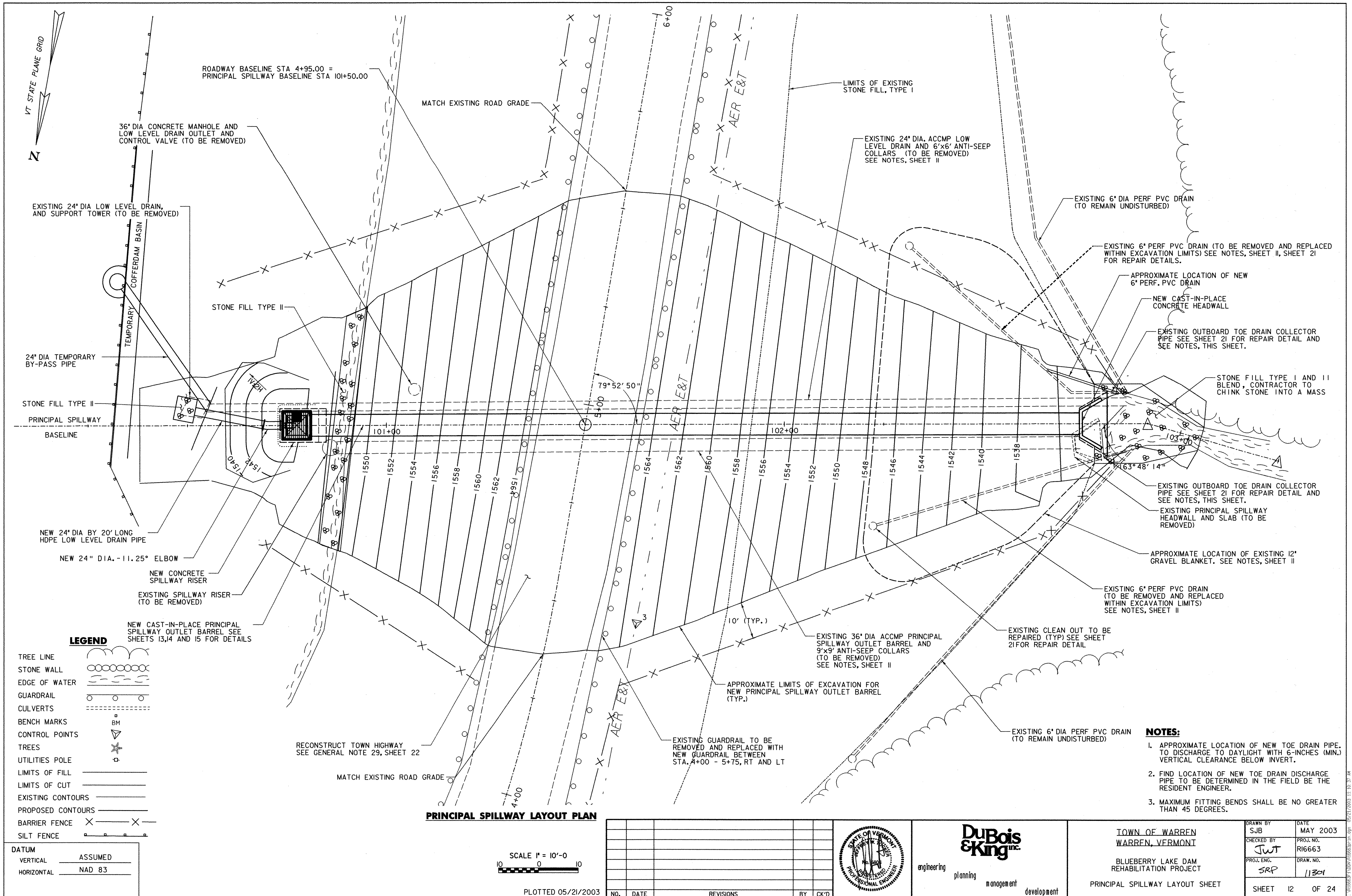
DuBois & King, Inc.
engineering planning management development

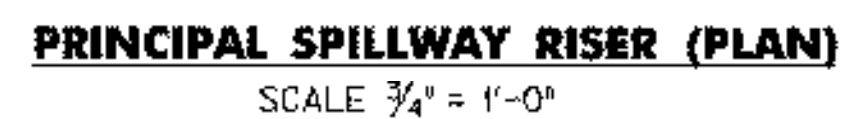
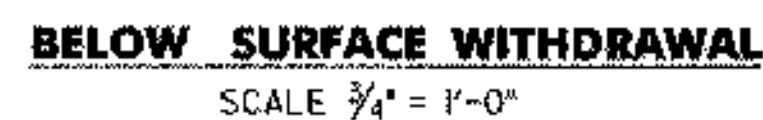
TOWN OF WARREN
WARREN, VERMONT

BLUEBERRY LAKE DAM
REHABILITATION PROJECT

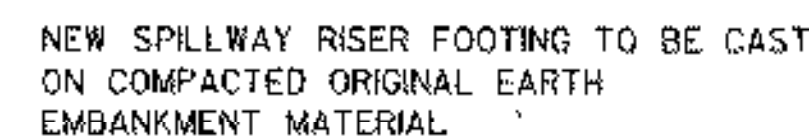
PRINCIPAL AND EMERGENCY SPILLWAY
PROFILE SHEET

DRAWN BY EBS	DATE MAY 2003
CHECKED BY JWS	PROJECT NO. R15663
PROJECT ENG. SRP	DRAW. NO. 11300
SHEET #	OF 24

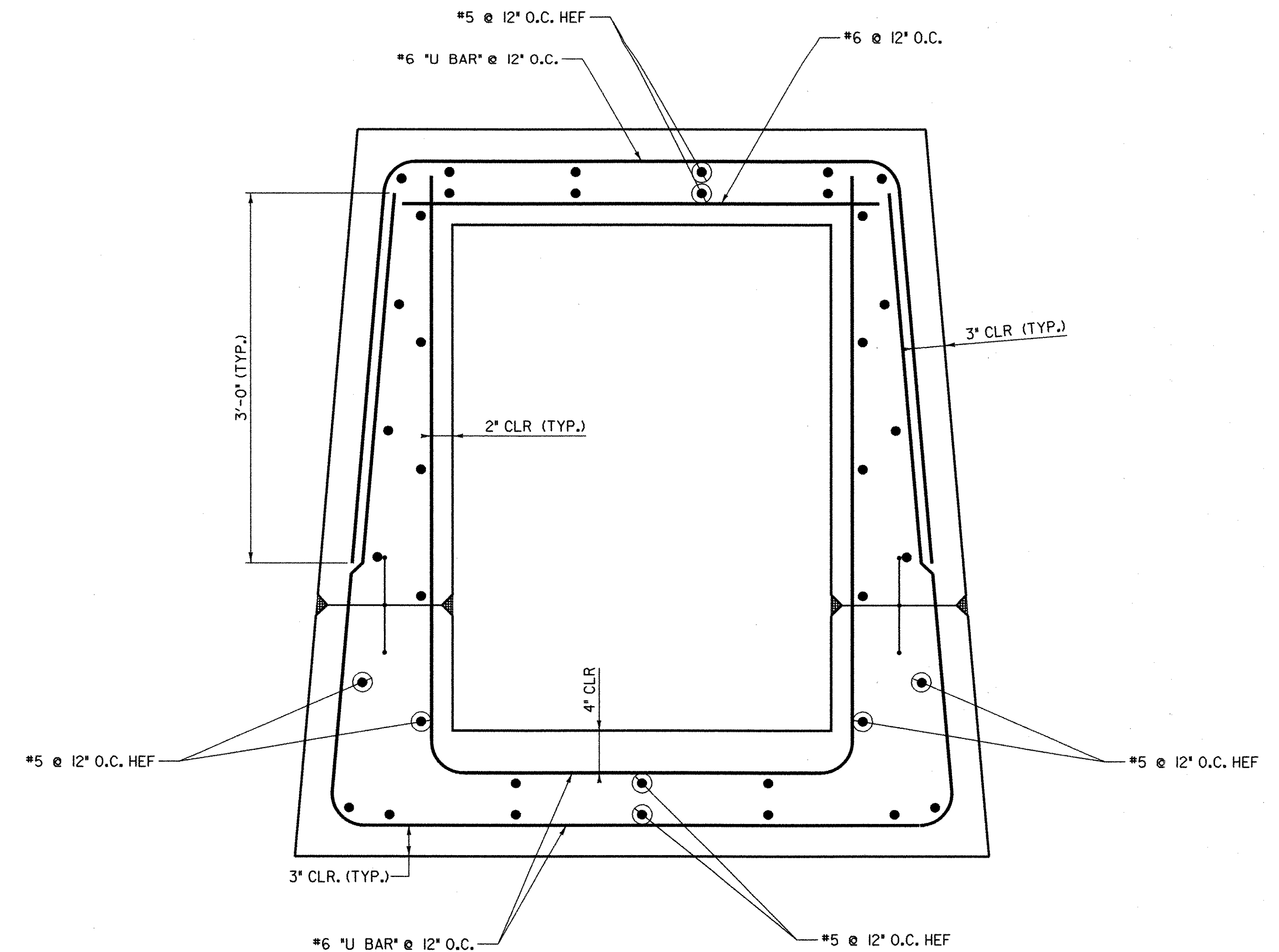




DATUM	
VERTICAL	ASSUMED
HORIZONTAL	NAD 83



SHEET 13 OF 24



SCALE $1\frac{1}{2}'' = 1'-0''$

SCALE $1\frac{1}{2}" = 1'-0"$



ALL EXTERIOR CONSTRUCTION JOINTS
TO BE SEALED WITH "SIKAFLEX -1d"
OR APPROVED EQUAL (TYP.)

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

C
J = CONSTRUCTION JOINT

**DuBois
& King Inc.**

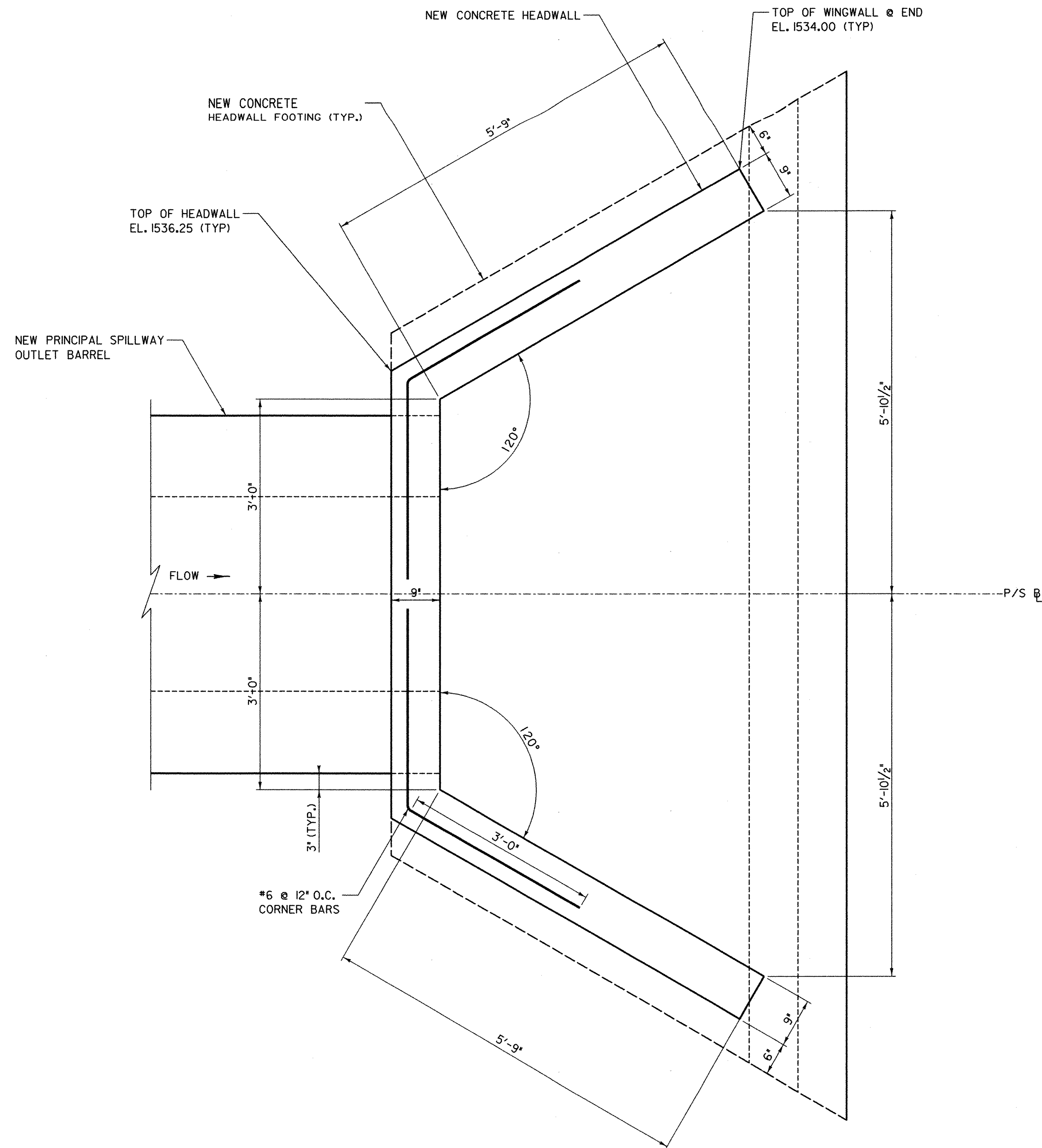
engineering
planning
management
development

TOWN OF WARREN
WARREN, VERMONT

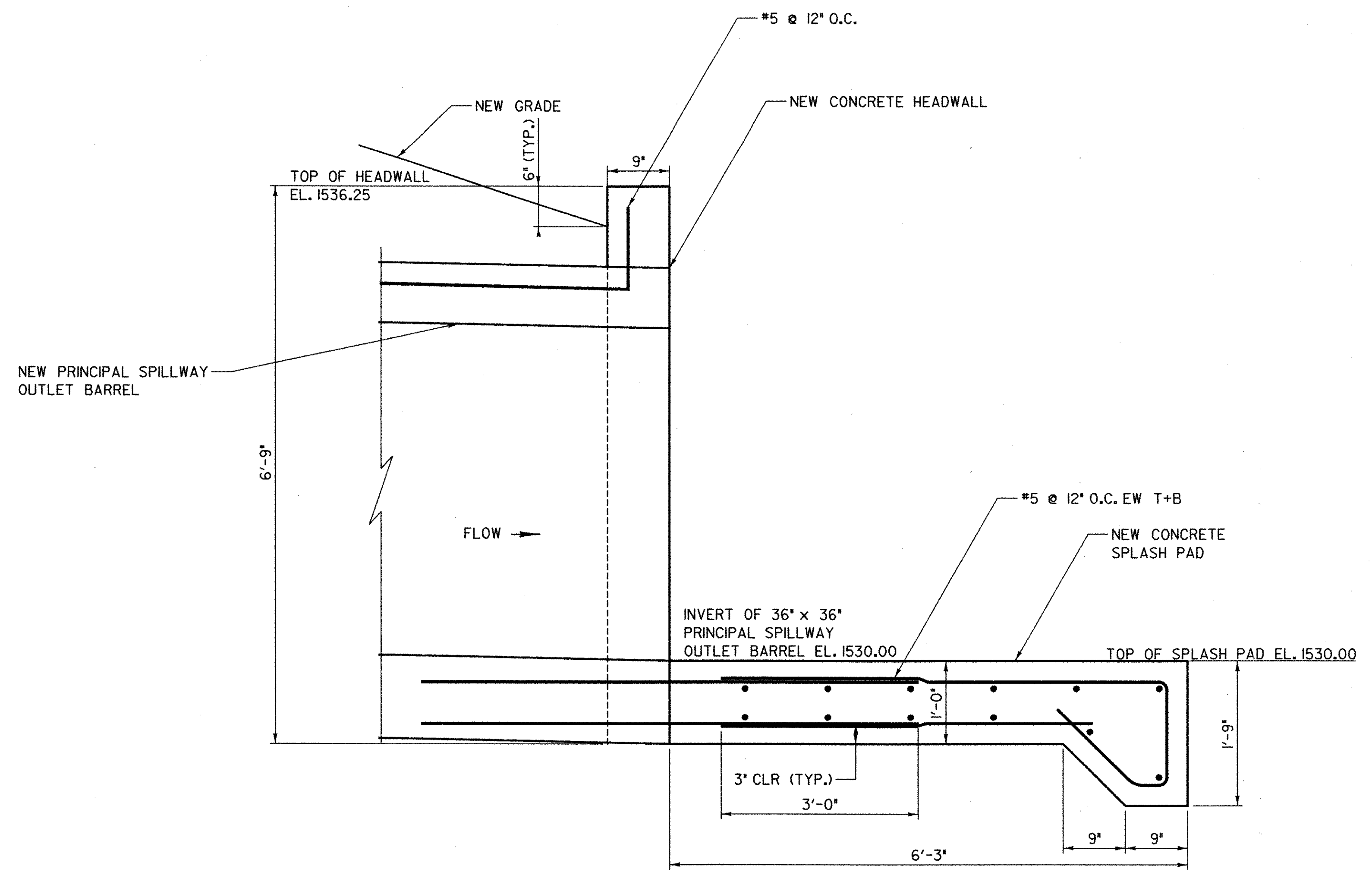
BLUEBERRY LAKE DAM
REHABILITATION PROJECT

PRINCIPAL SPILLWAY
OUTLET BARREL DETAIL SHEET

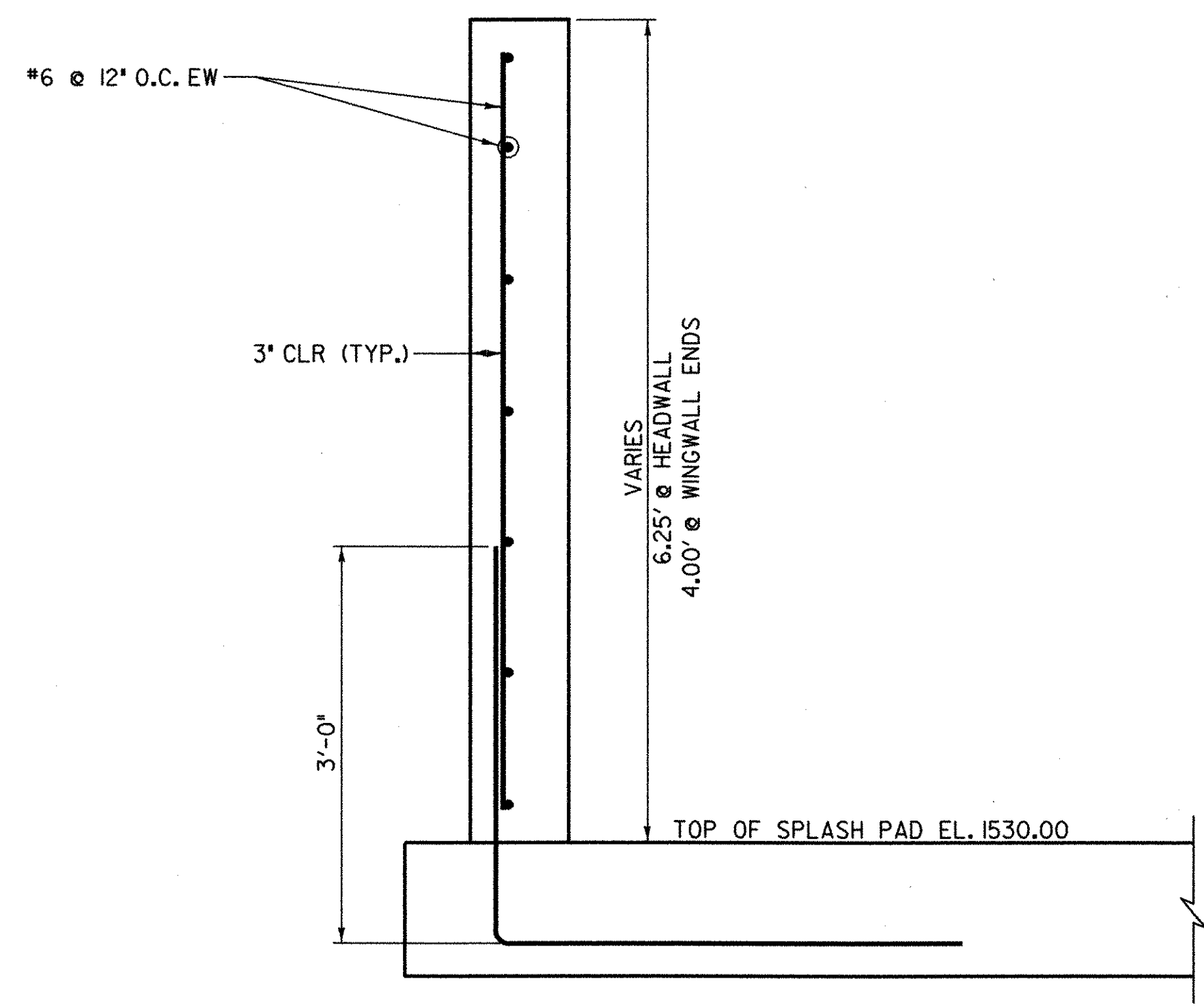
DRAWN BY EBS	DATE MAY 2003
CHECKED BY JW	PROJ. NO. RI6663
PROJ. ENG. SRP	DRAW. NO. 11303
SHEET 14 OF 24	



PRINCIPAL SPILLWAY OUTLET (PLAN)
SCALE 1" = 1'-0"



PRINCIPAL SPILLWAY OUTLET (SECTION)
SCALE 1" = 1'-0"

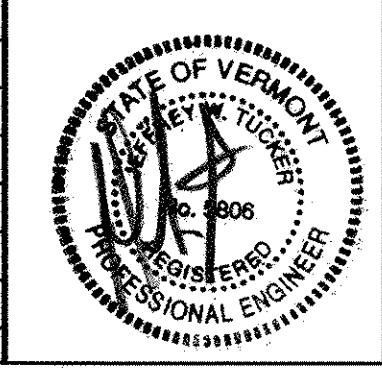


PRINCIPAL SPILLWAY OUTLET WINGWALL (SECTION)
SCALE 1" = 1'-0"

DATUM	ASSUMED
VERTICAL	
HORIZONTAL	NAD 83

PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CHK'D

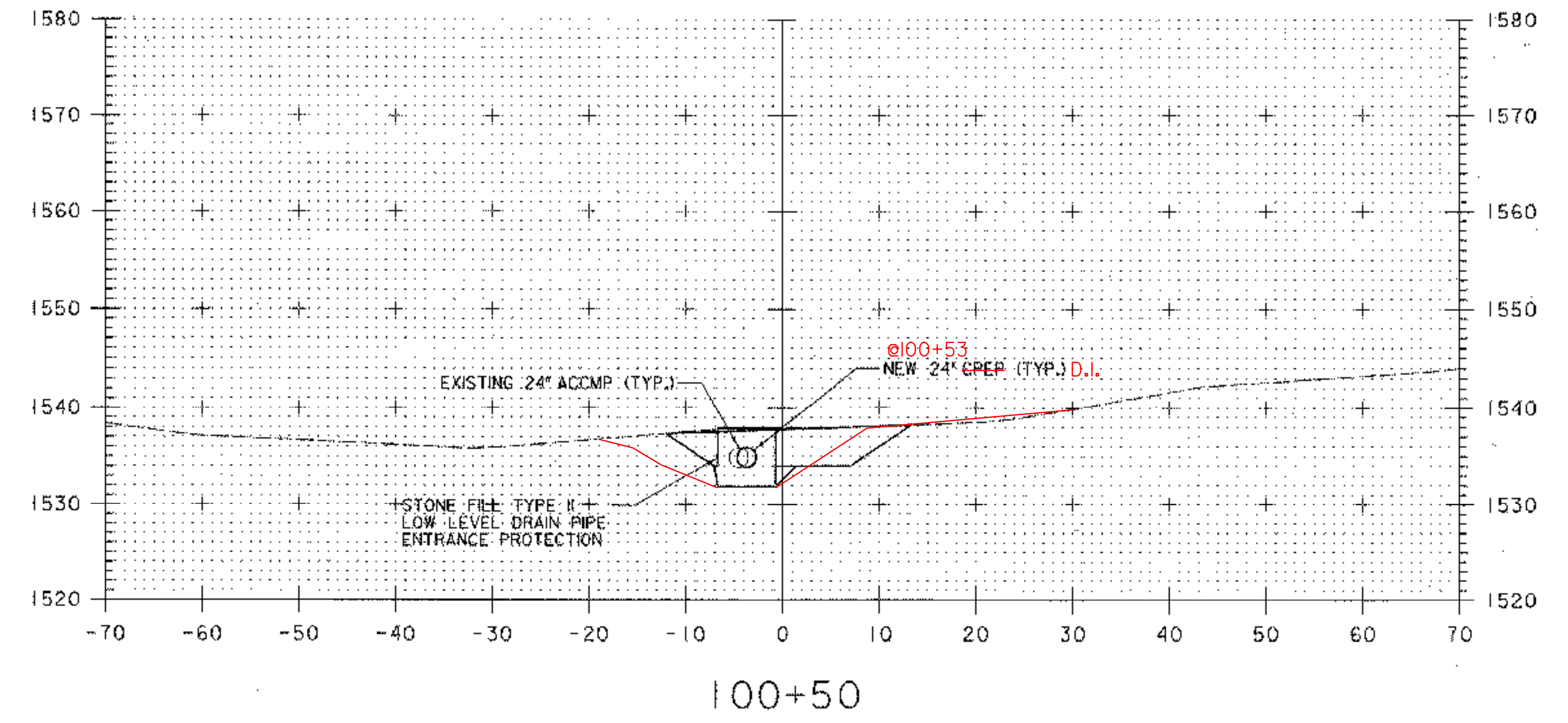
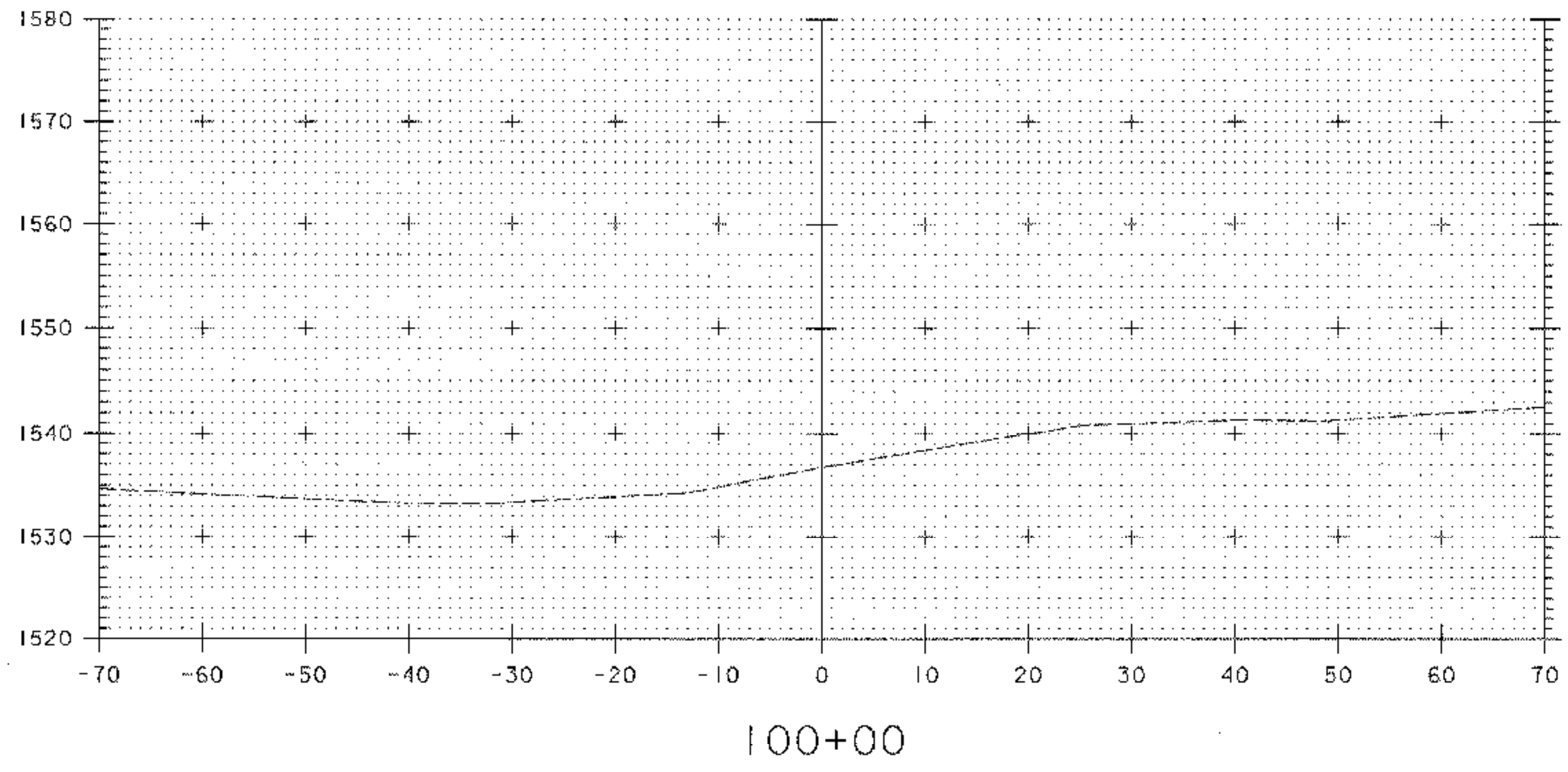
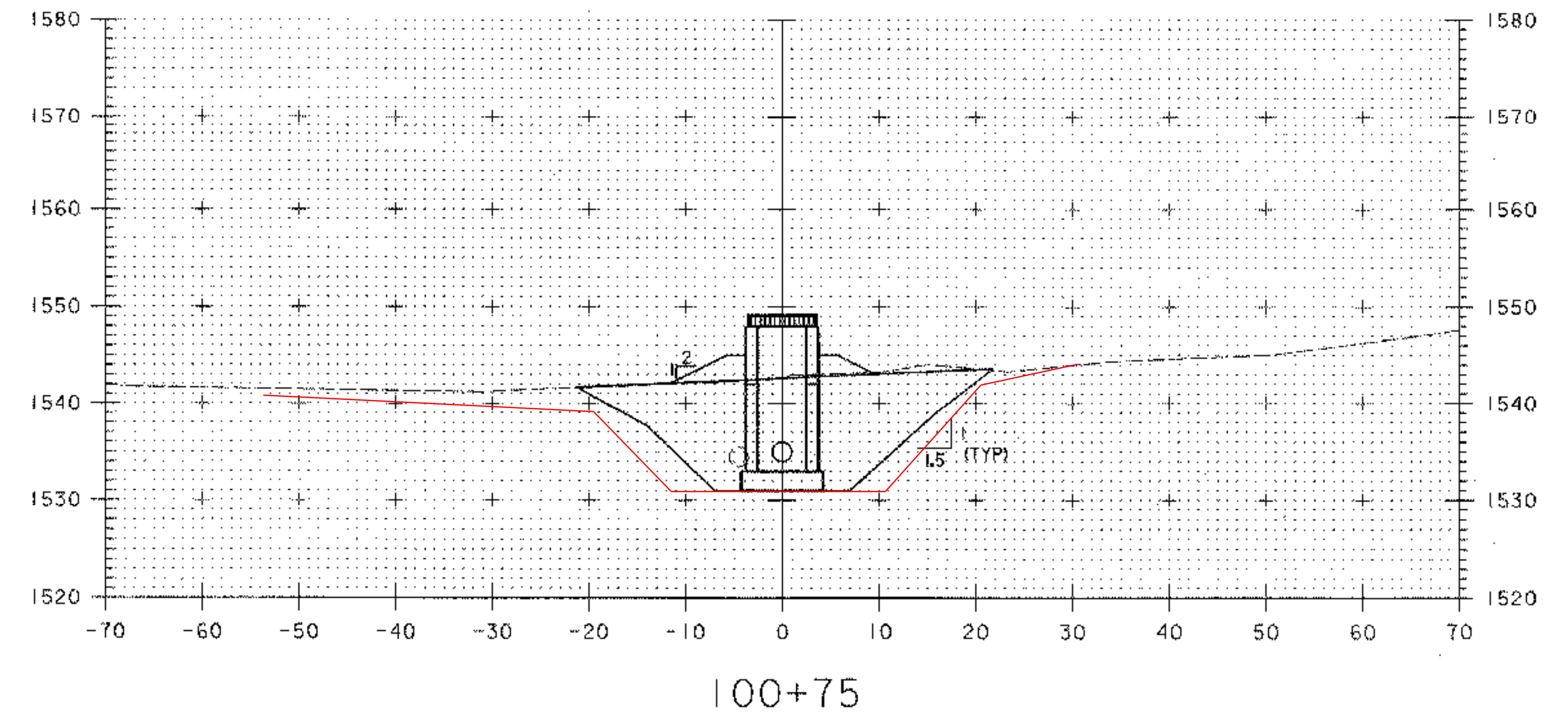
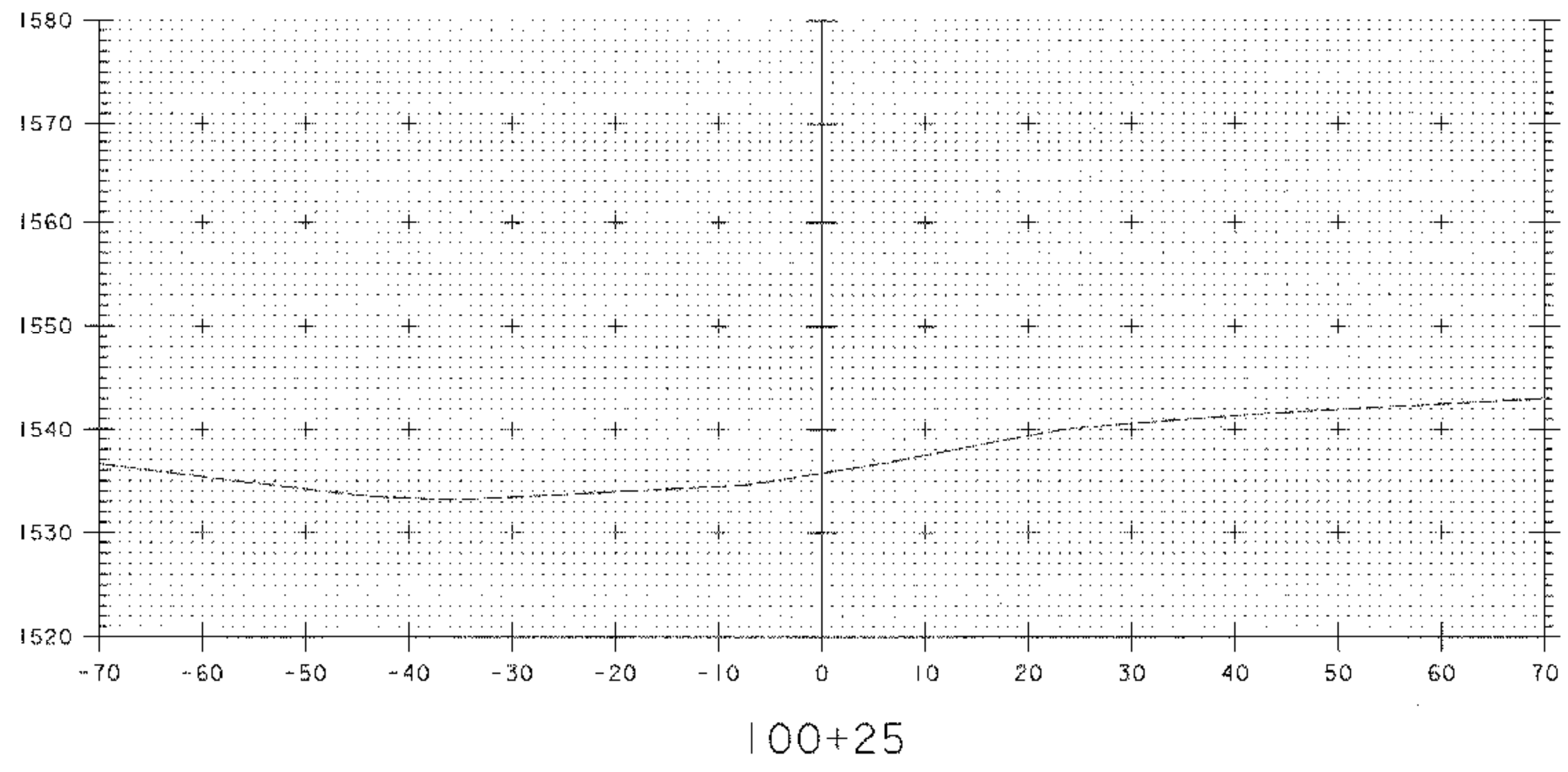


DuBois & King Inc.
engineering planning management development

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

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

05/21/2003 11:12:49 AM



DATUM
VERTICAL ASSUMED
HORIZONTAL NAD 83

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

PLOTTED 05/21/2003

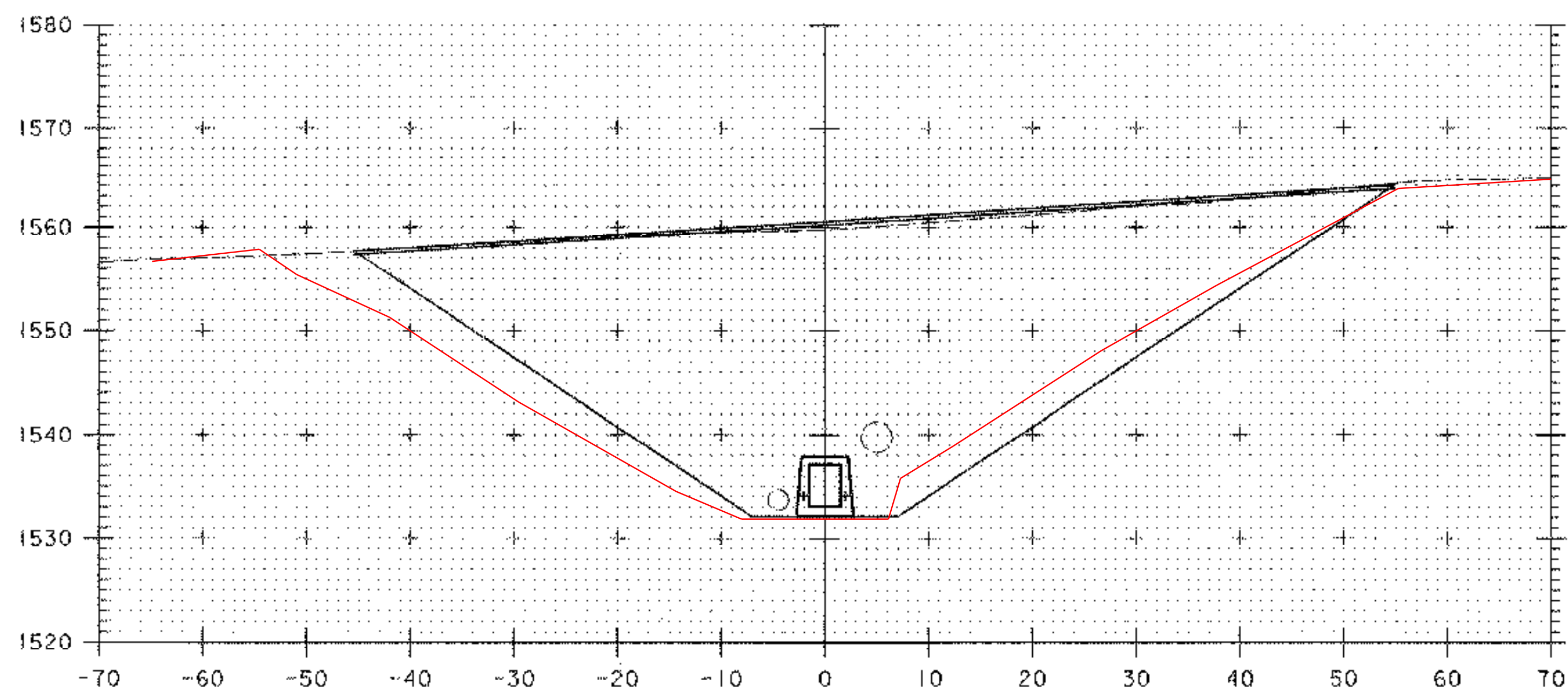
NO.	DATE	REVISIONS	BY	CHK'D



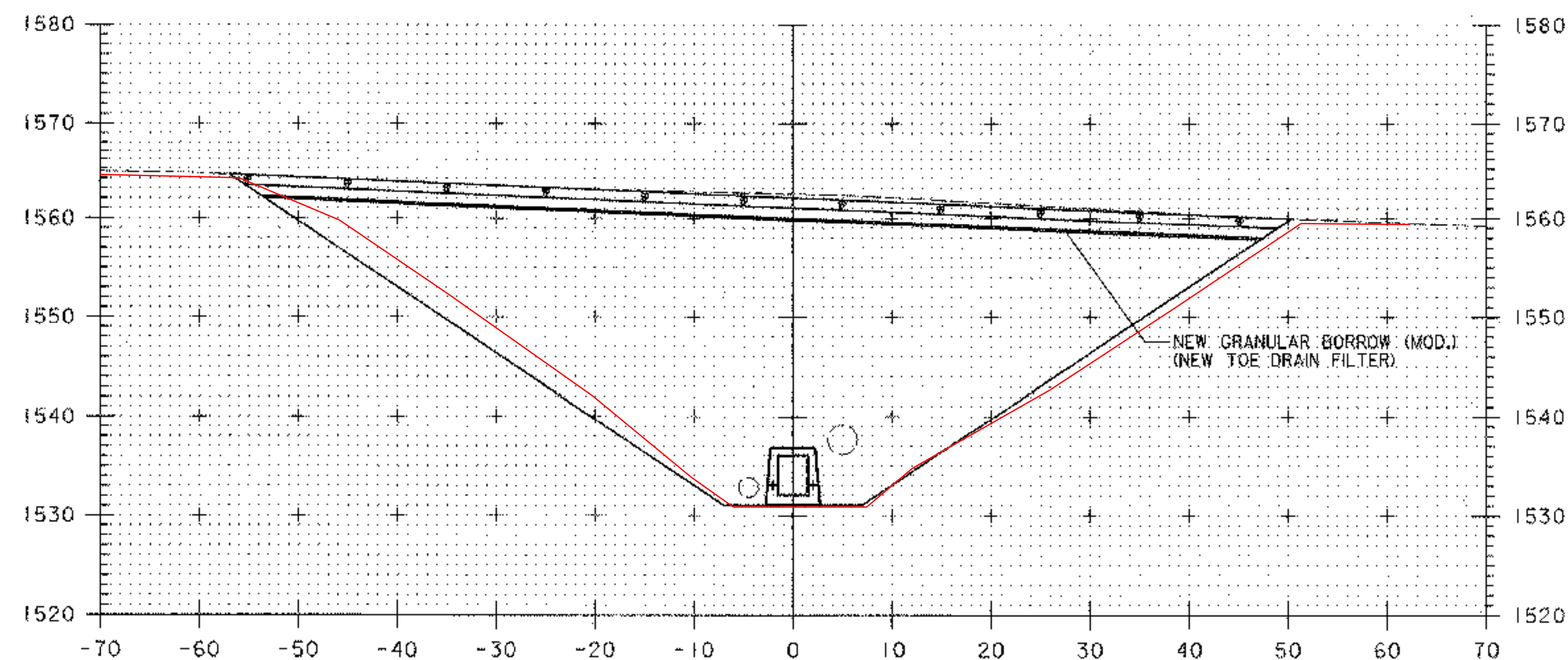
DuBois & King Inc.
engineering planning management development

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

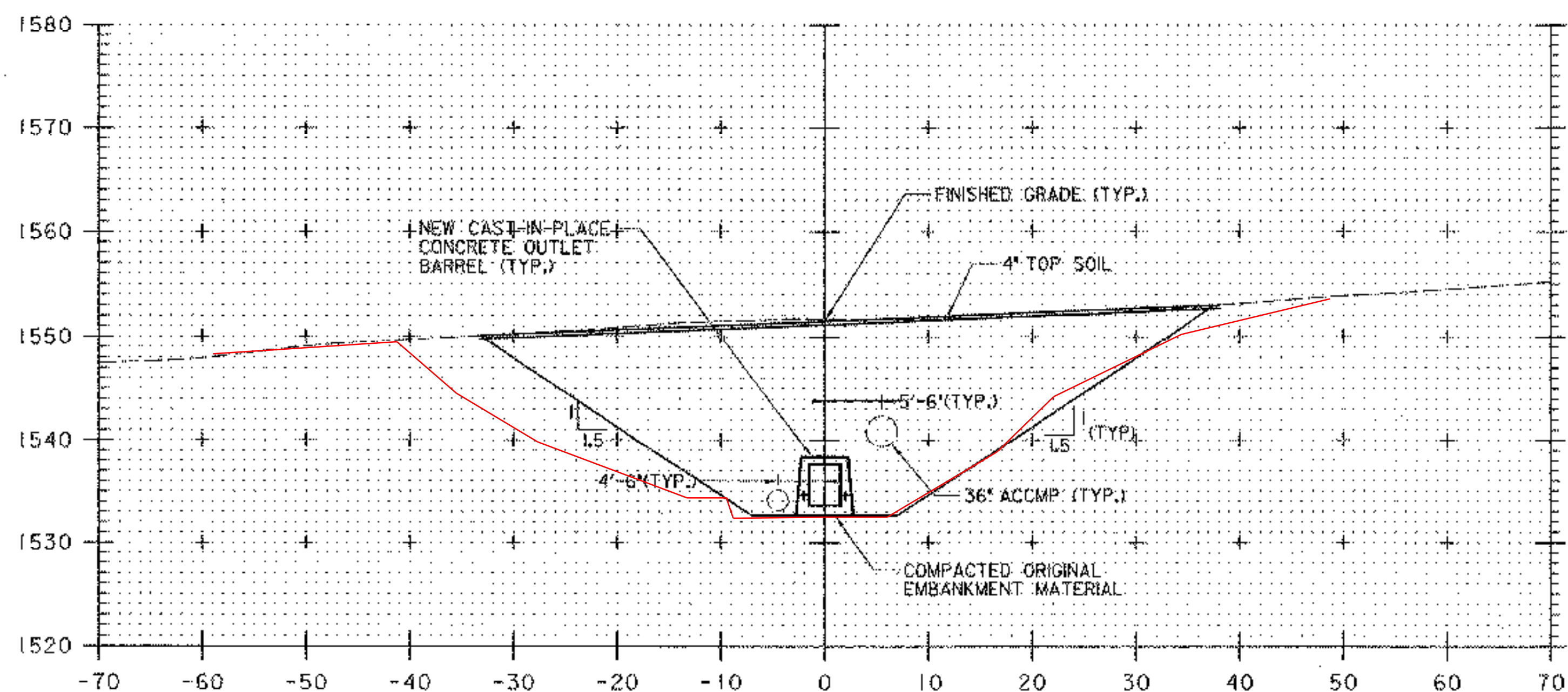
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CHECKED BY JW	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11205
SHEET 16	OF 24



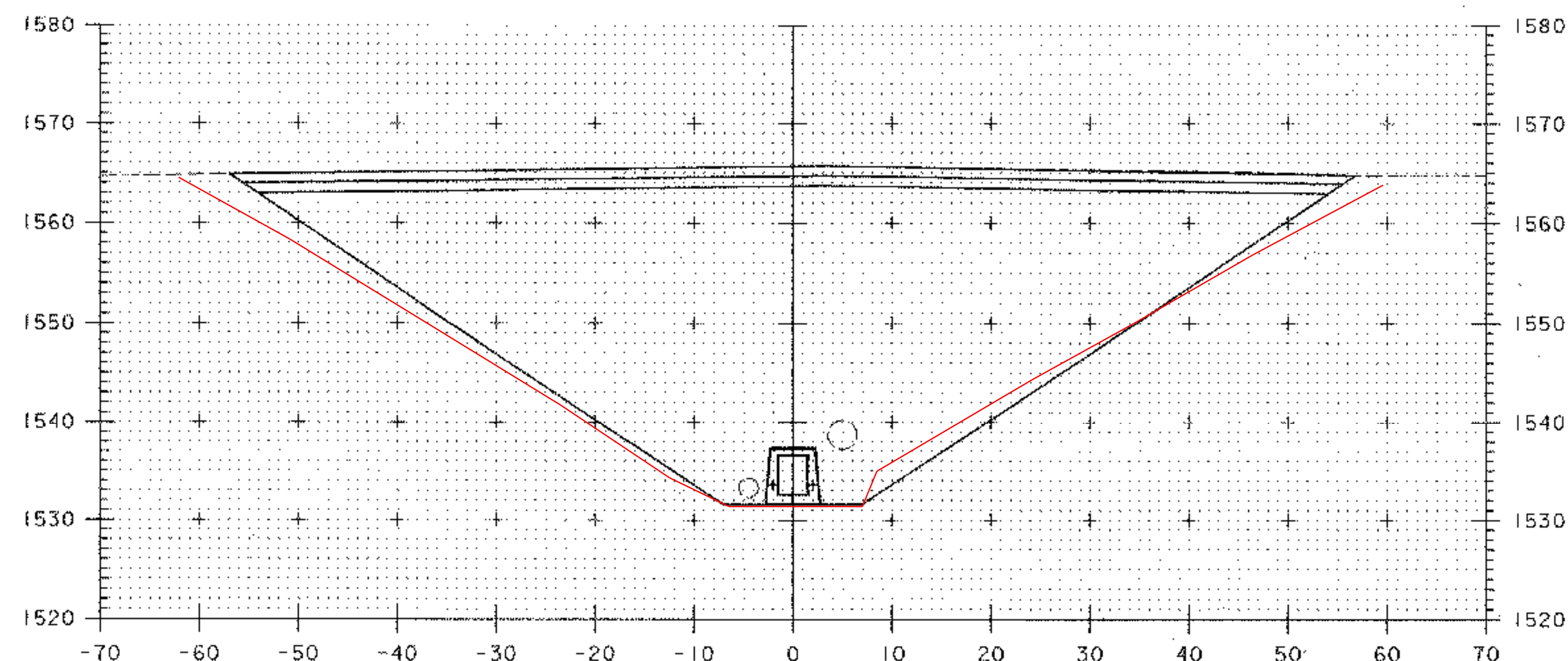
101+25



101+75



101+00



101+50

DATUM
VERTICAL ASSUMED
HORIZONTAL NAD 83

SCALE 1" = 10'-0"
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PLOTTED 05/21/2003

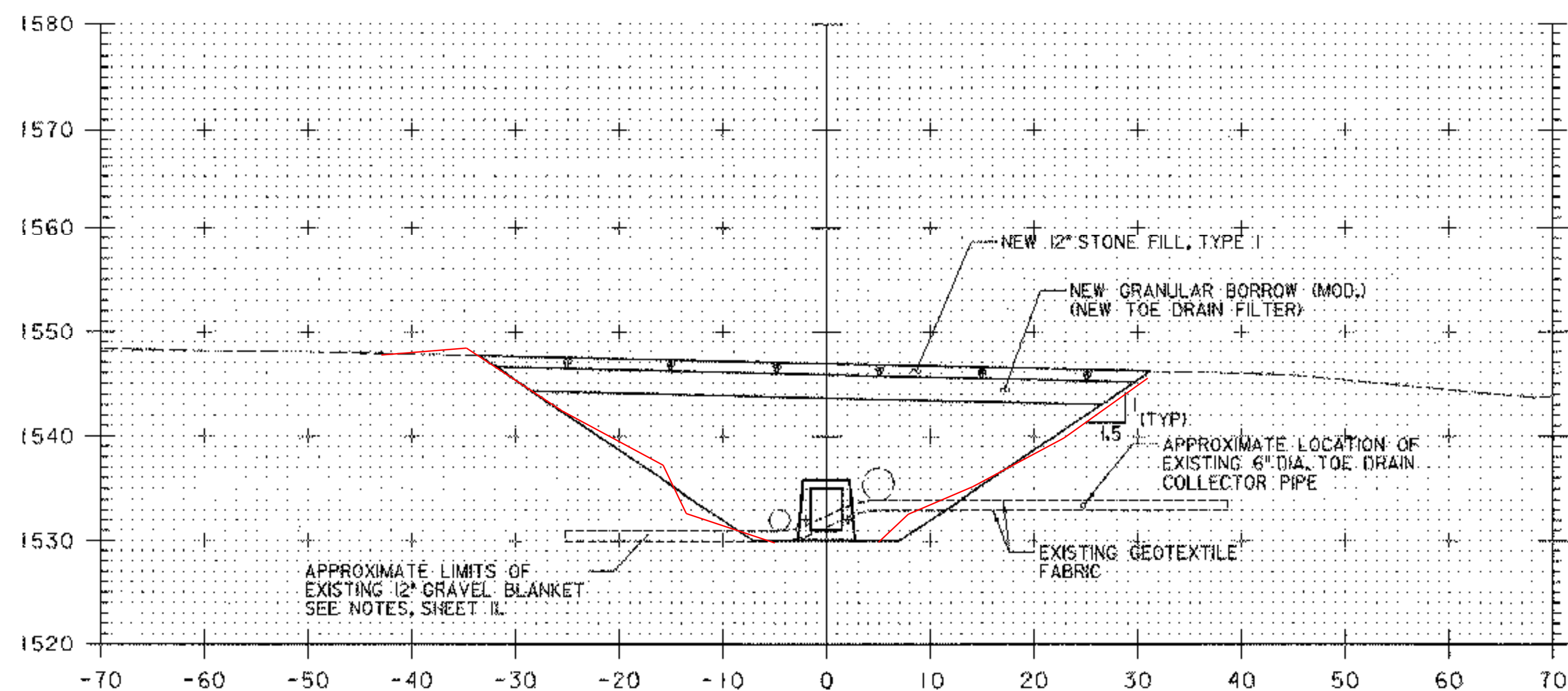
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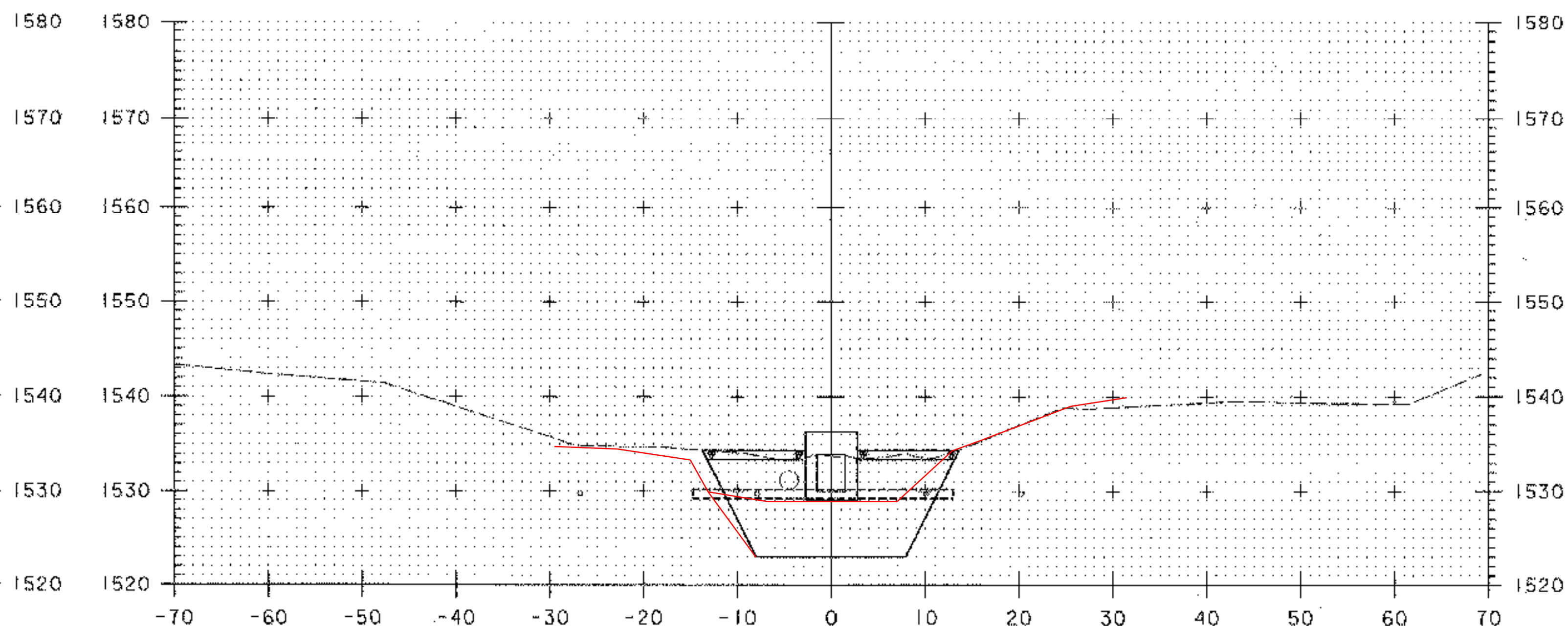
DuBois & King, Inc.
engineering planning management development

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

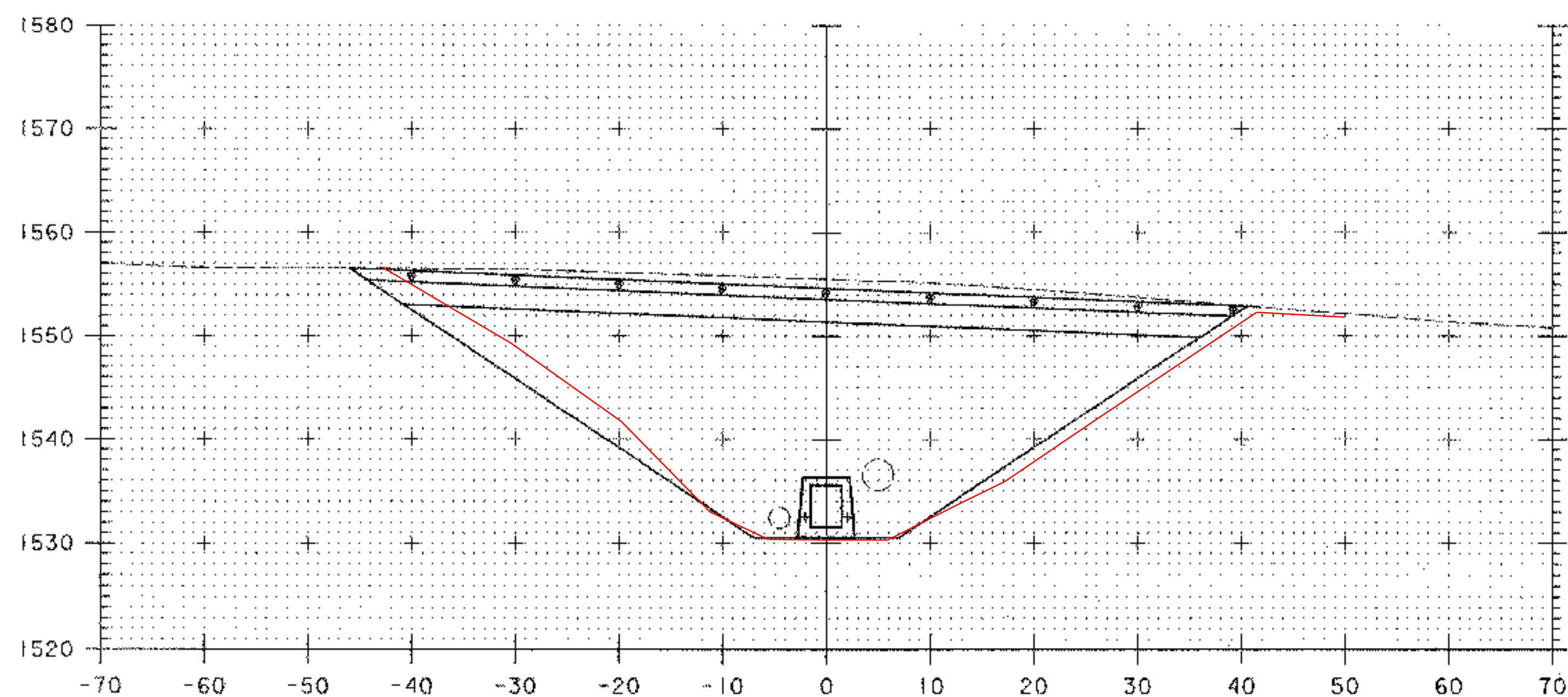
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SHEET 17	OF 24



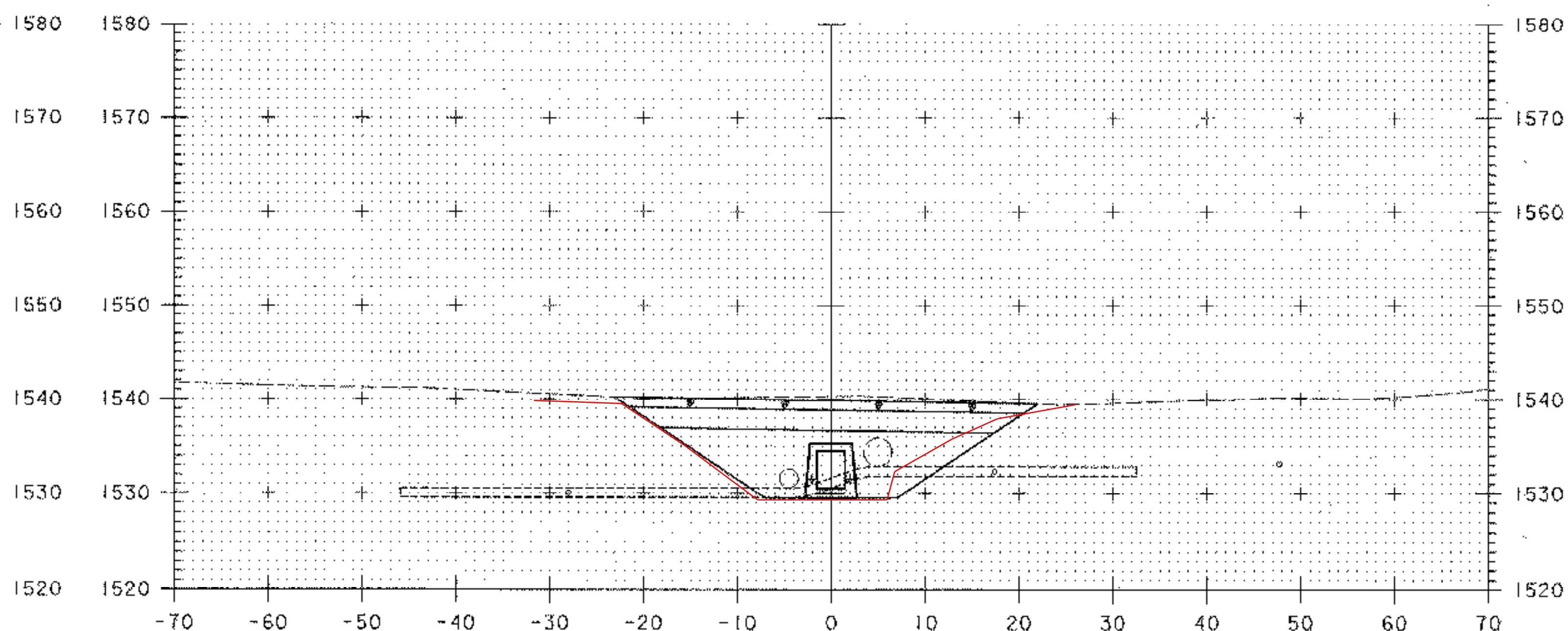
102+25



102+75



102+00



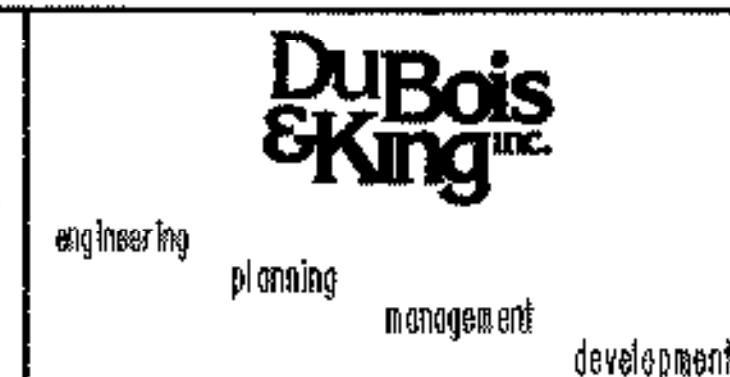
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DATUM
VERTICAL ASSUMED
HORIZONTAL NAD 83

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

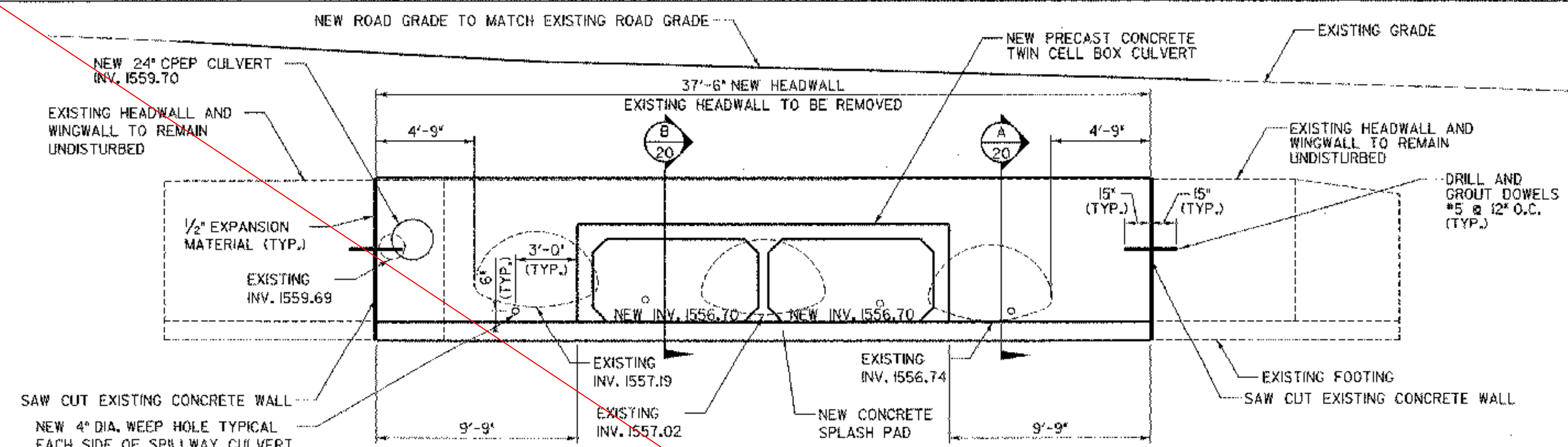
PLOTTED 05/21/2003

NO.	DATE	REVISIONS	BY	CHK'D



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

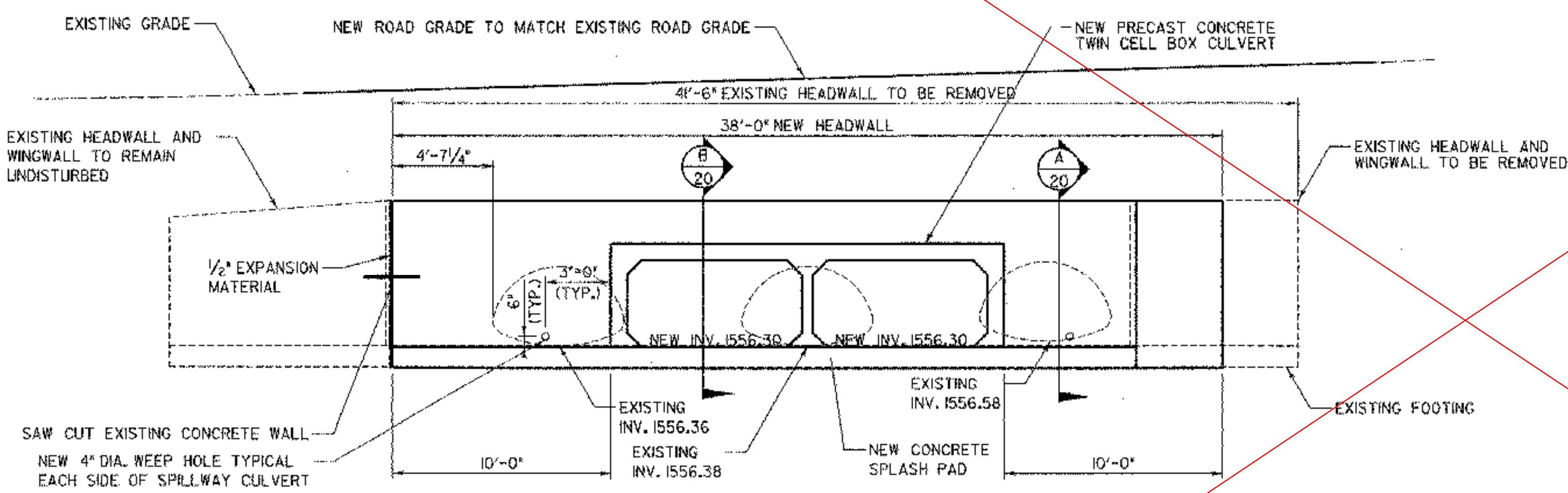
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CHECKED BY JWA	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11307
SHEET 18	OF 24



EMERGENCY SPILLWAY UPSTREAM (ELEVATION)

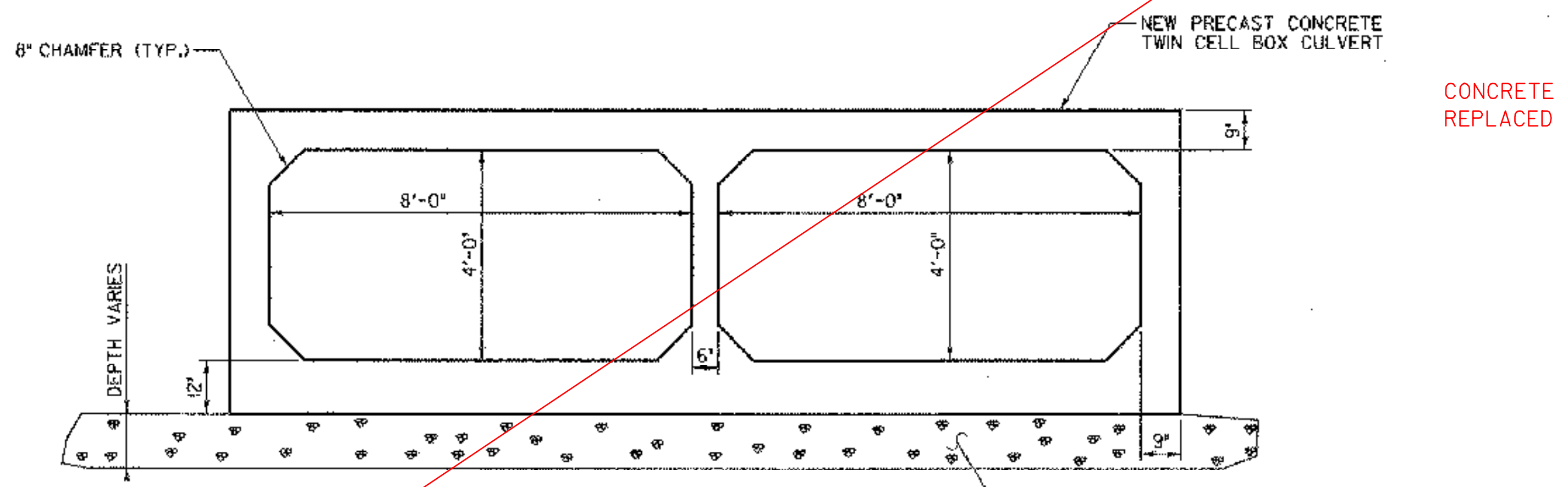
SCALE 1/4" = 1'-0"

- 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"

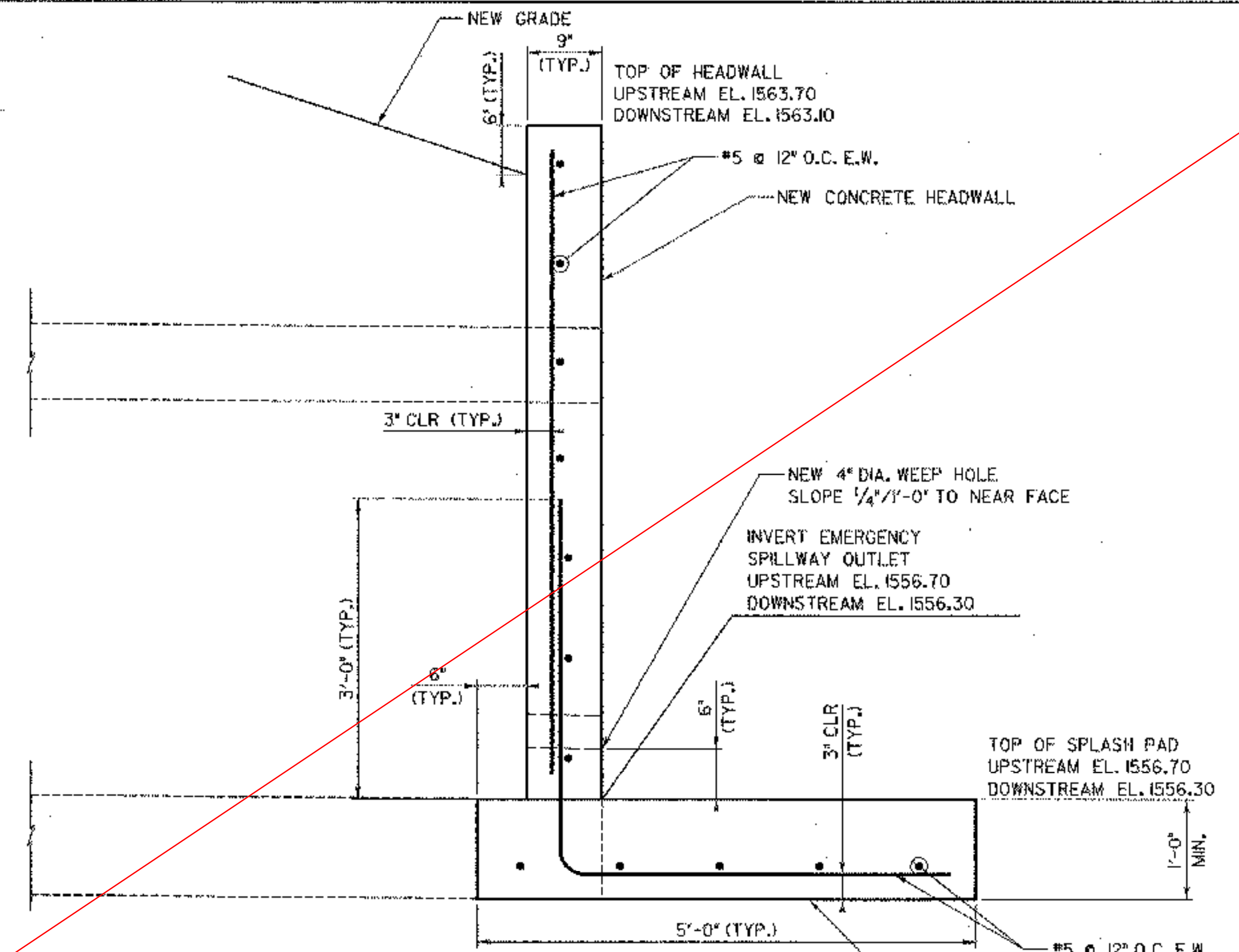


EMERGENCY SPILLWAY OUTLET (SECTION)

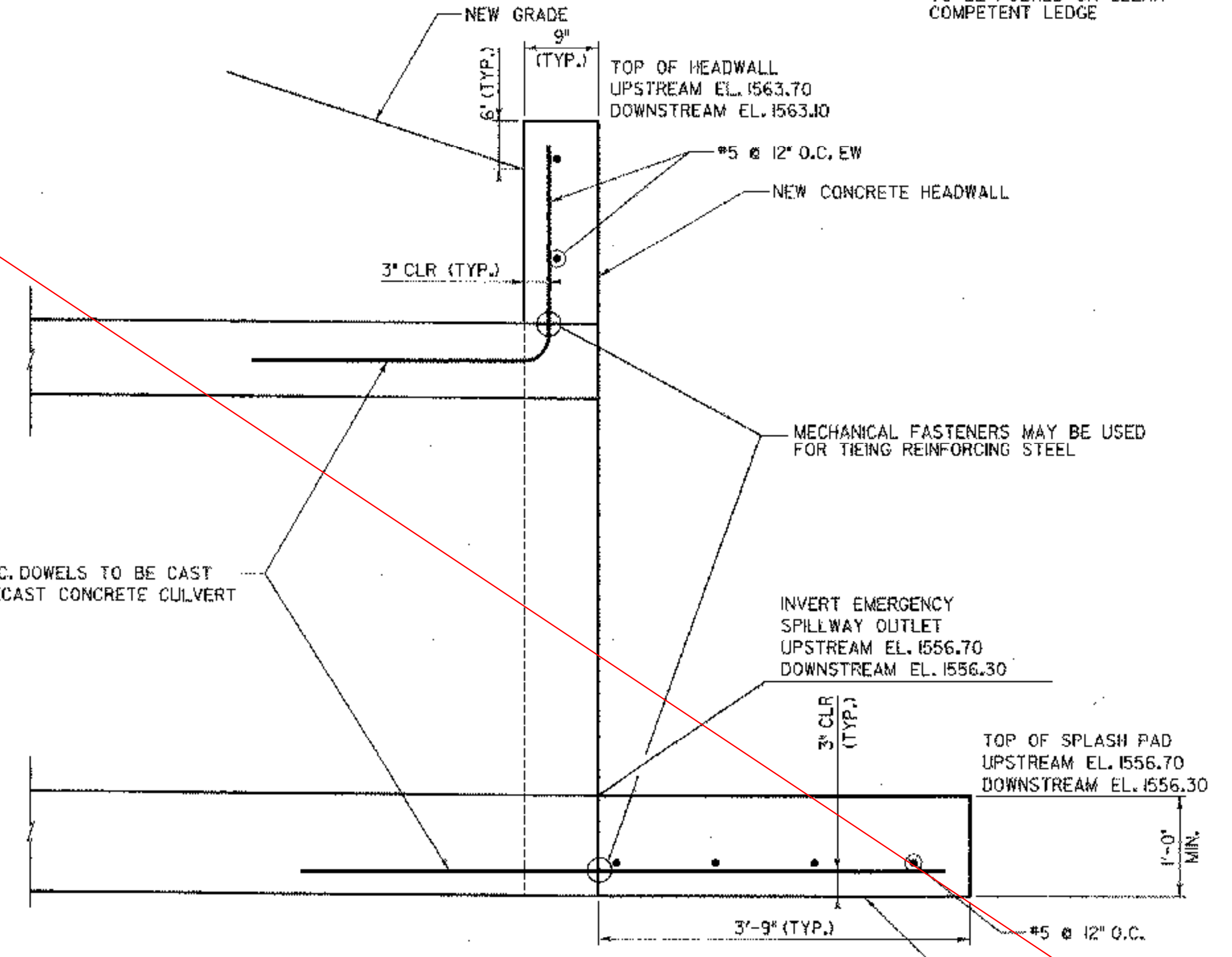
SCALE 1/2" = 1'-0"

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

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



SECTION
SCALE 1" = 1'-0"

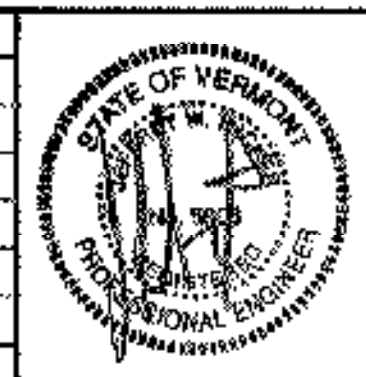


SECTION
SCALE 1" = 1'-0"

DATUM	ASSUMED
VERTICAL	NAD 83
HORIZONTAL	

PLOTTED 05/21/2003

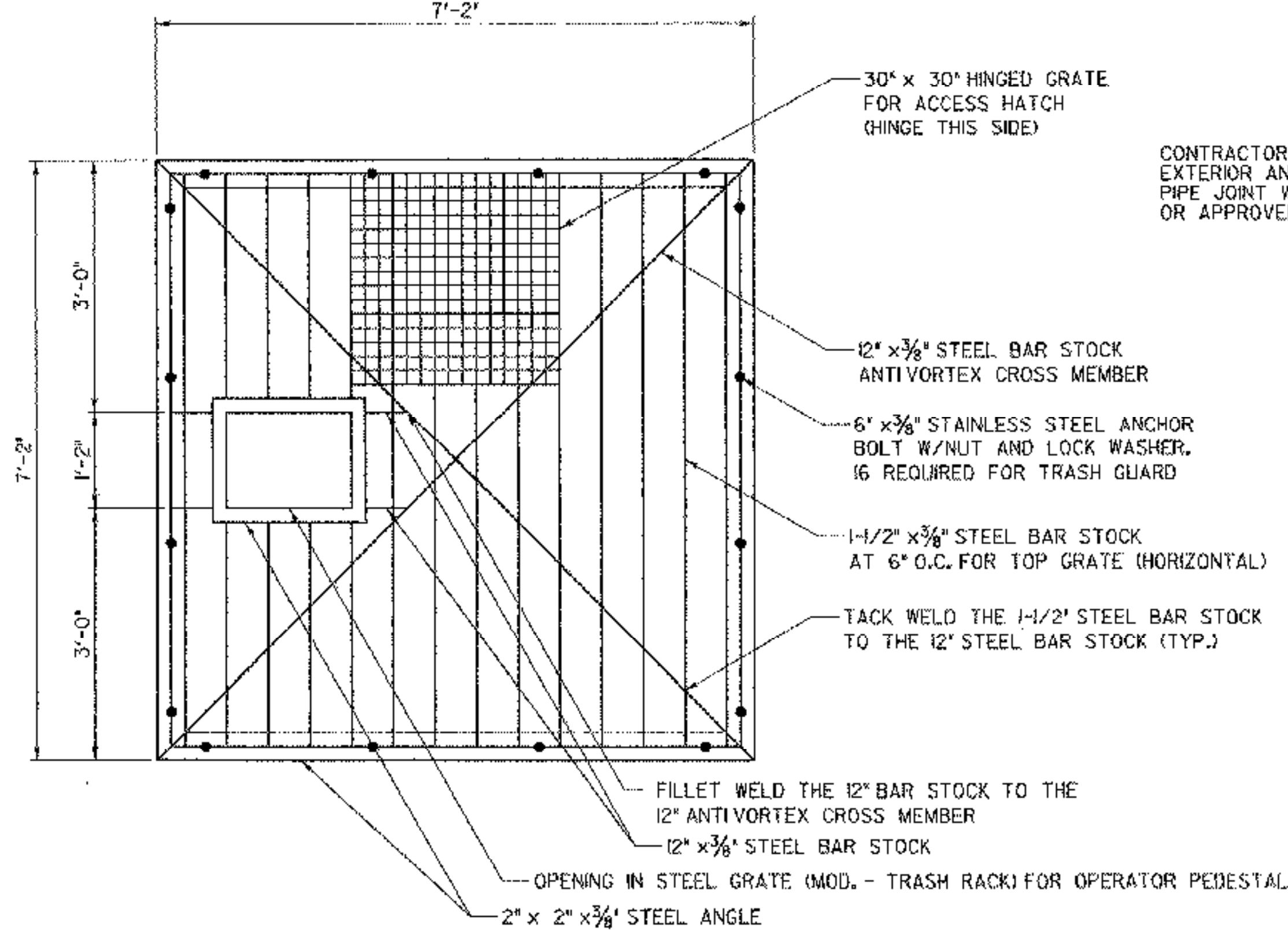
NO.	DATE	REVISIONS	BY	CHK'D



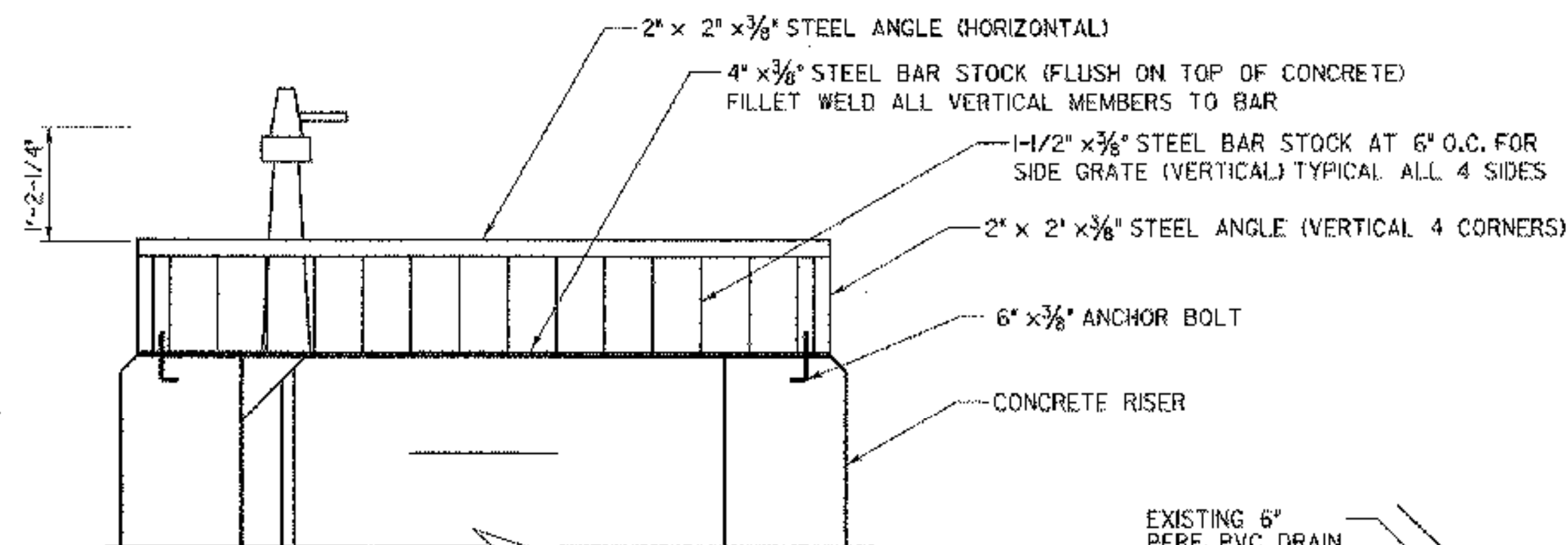
DuBois & King Inc.
engineering planning management development

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

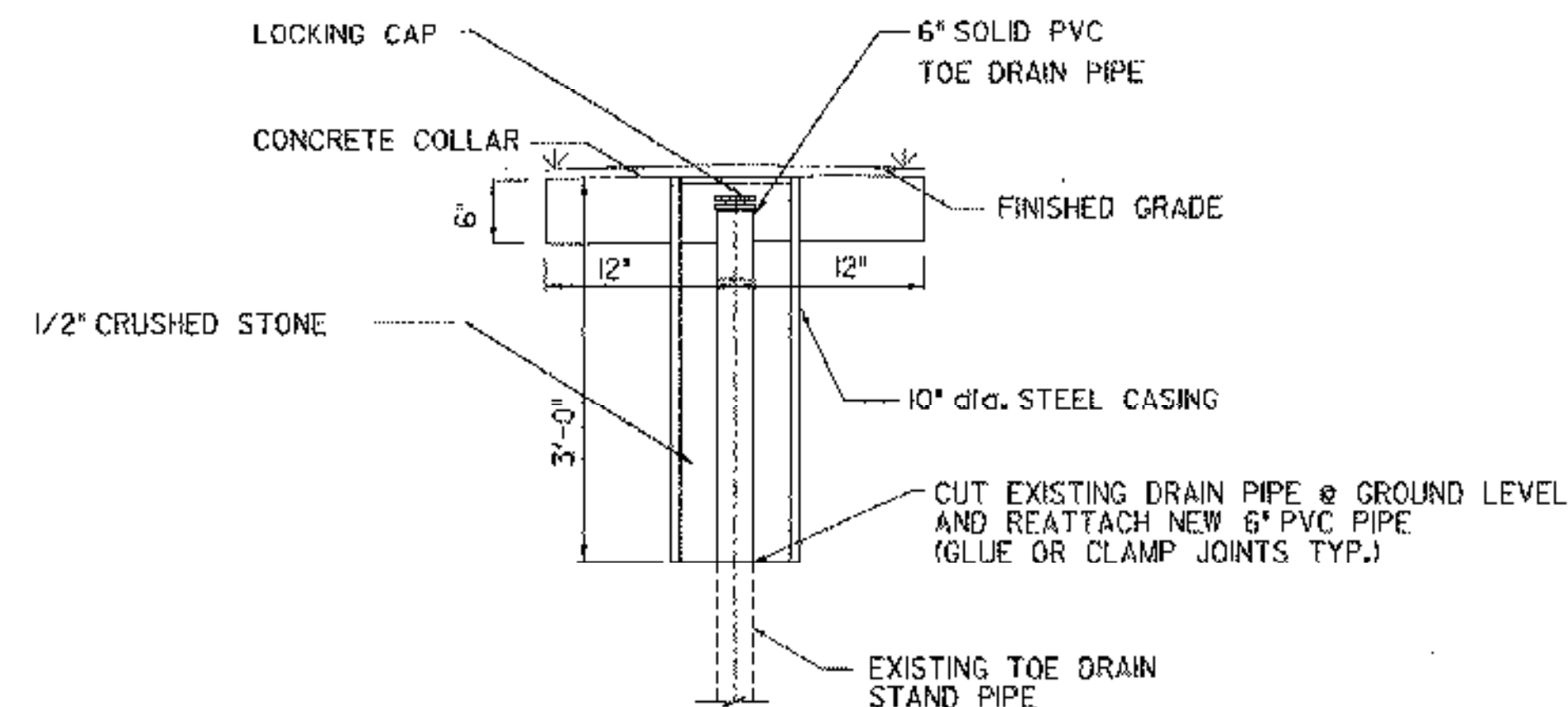
DRAWN BY EBS	DATE MAY 2003
CHECKED BY SRP	PROJ. NO. R16663
PROJ. ENG. SRP	DRAW. NO. 11309
SHEET 20	OF 24



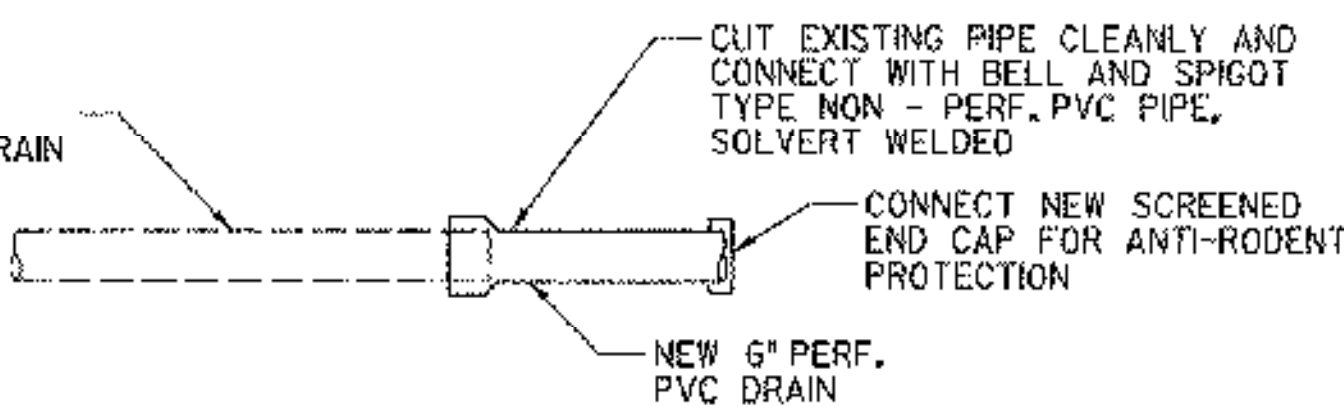
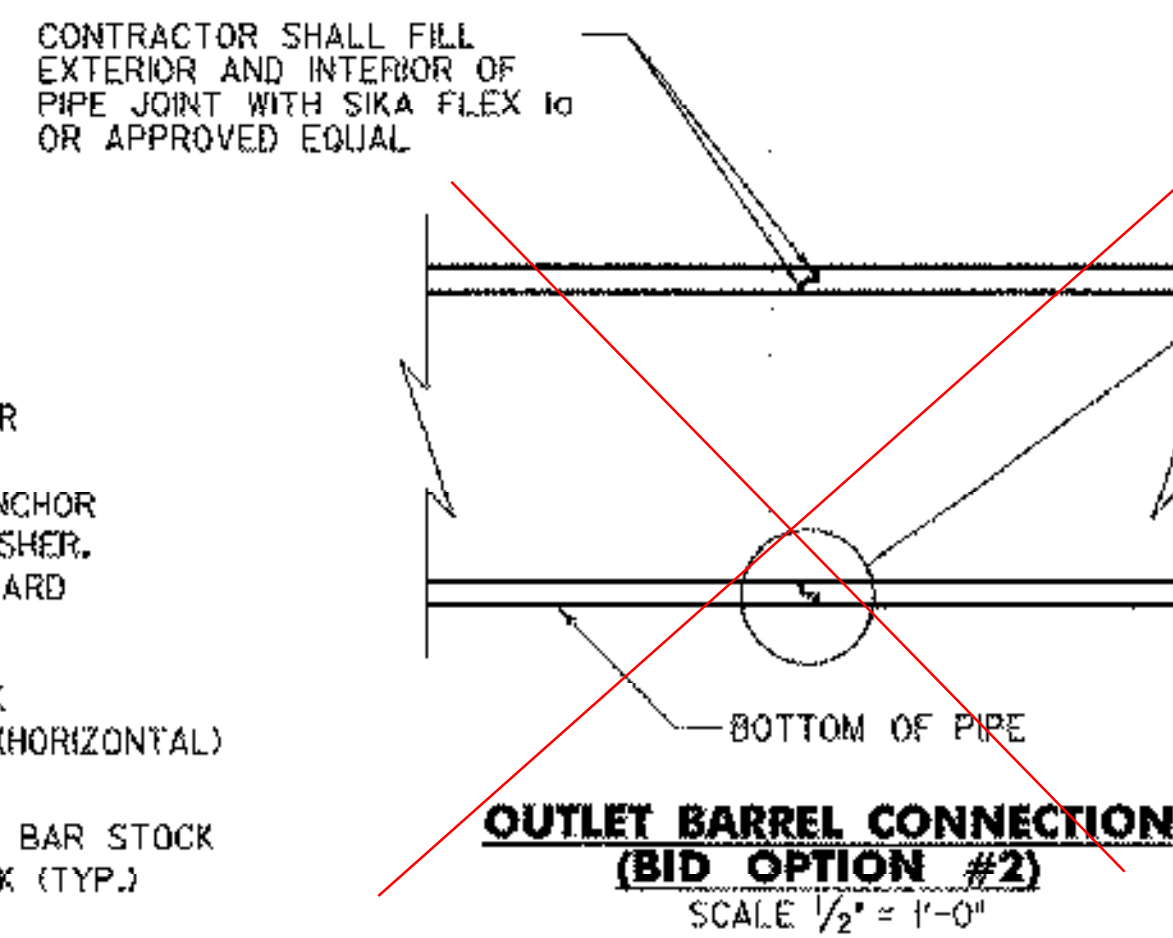
PLAN



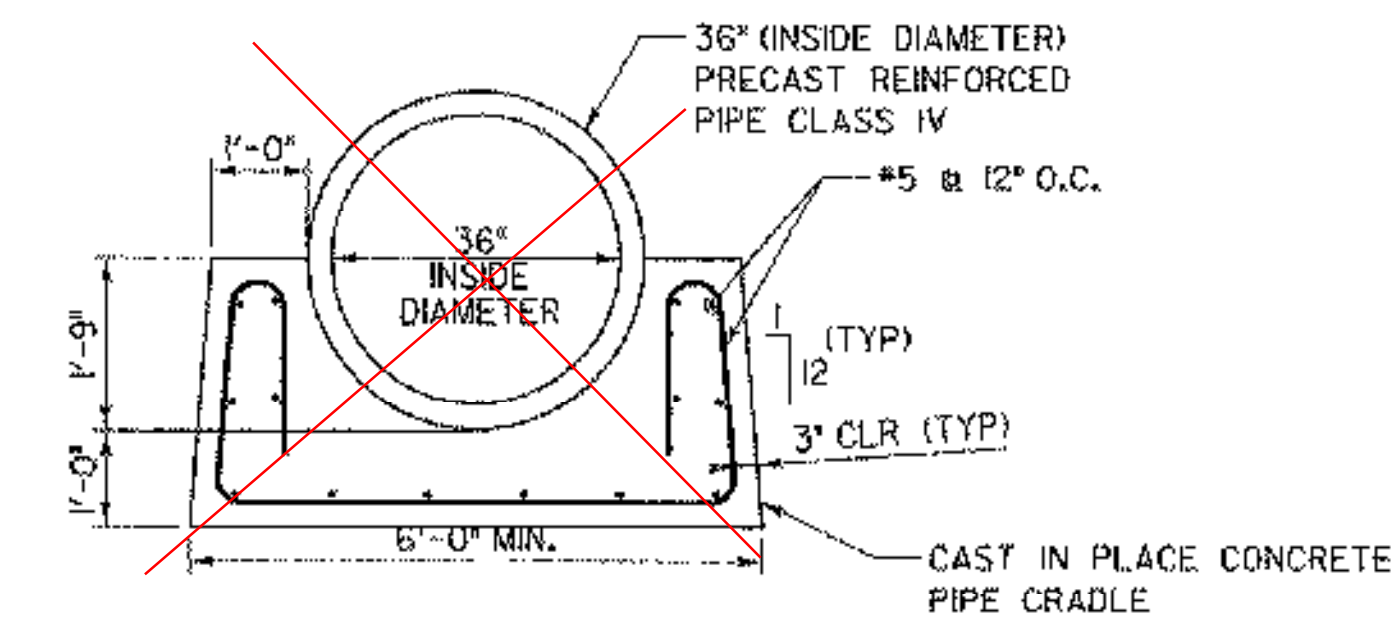
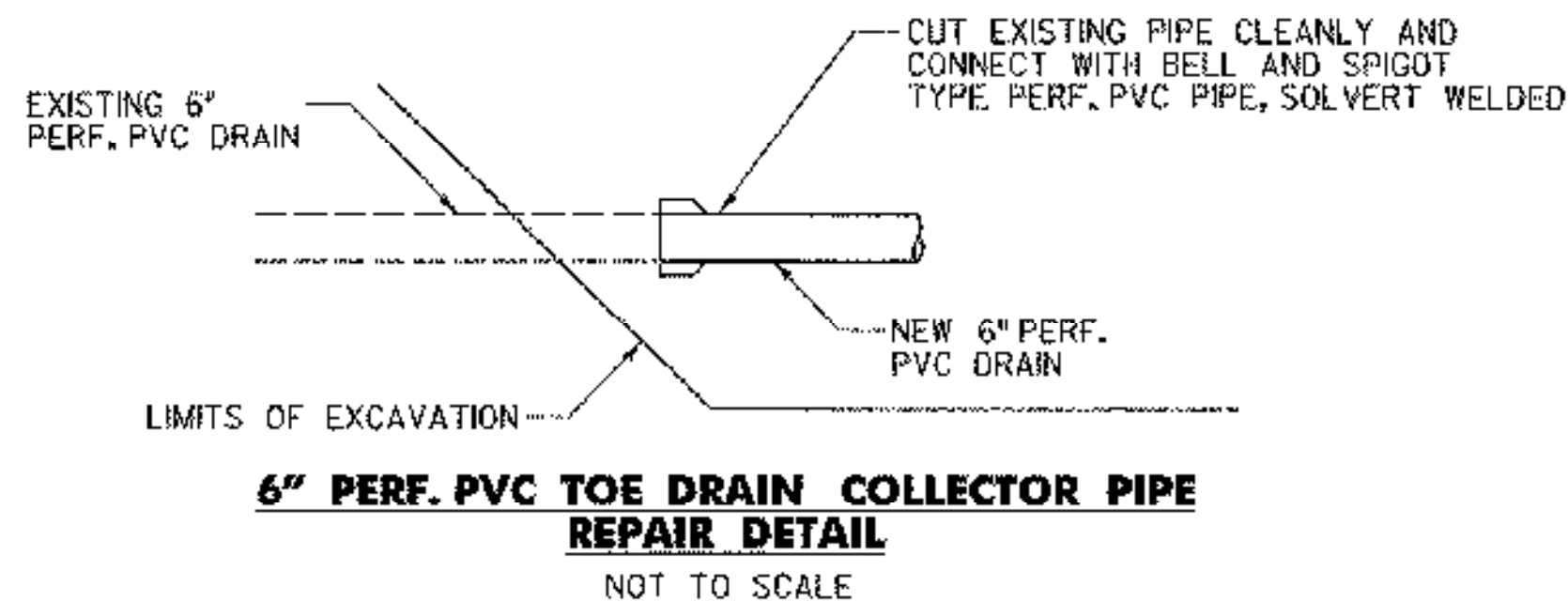
SECTION
STEEL GRATE (MOD. - TRASH RACK)
SCALE 3/4" = 1'-0"



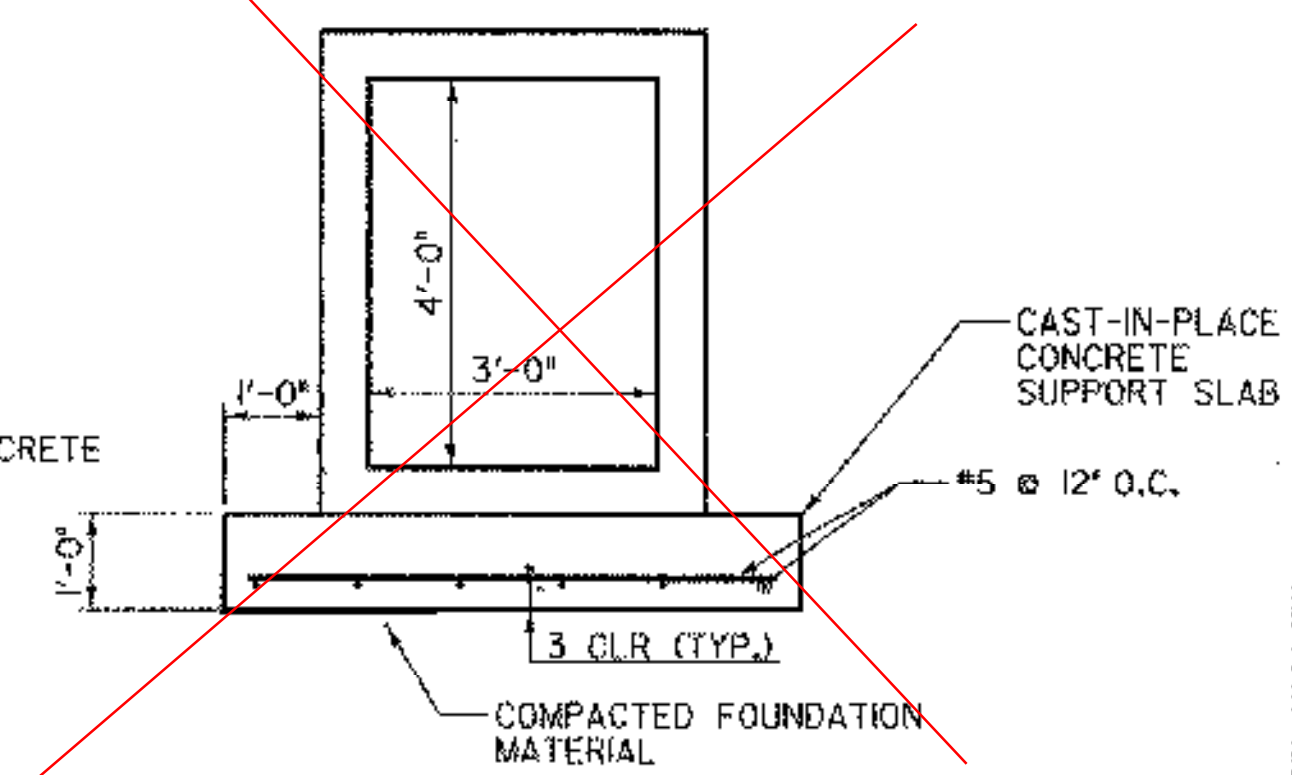
TOE DRAIN CLEANOUT REPAIR DETAIL
NOT TO SCALE



OUTBOARD TOE DRAIN COLLECTOR PIPE REPAIR DETAIL
NOT TO SCALE



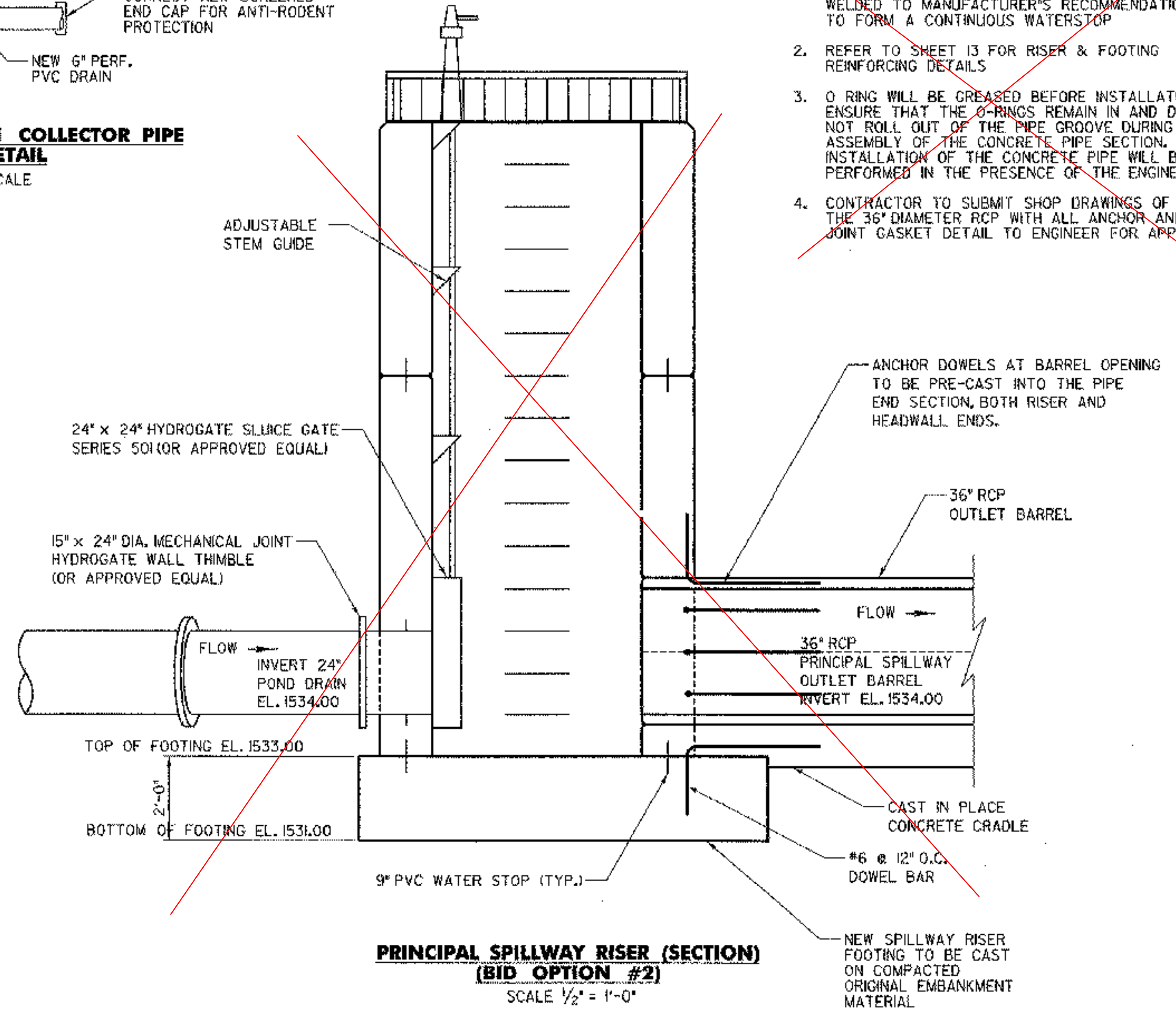
NEW 36" RCP CULVERT (SECTION) (BID OPTION #2)
SCALE 1/2" = 1'-0"



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

NOTE:

1. PVC WATERSTOP ALONG ALL JOINTS SHALL BE WELDED TO MANUFACTURER'S RECOMMENDATIONS TO FORM A CONTINUOUS WATERSTOP
2. REFER TO SHEET 13 FOR RISER & FOOTING REINFORCING DETAILS
3. 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.
4. CONTRACTOR TO SUBMIT SHOP DRAWINGS OF THE 36" DIAMETER RCP WITH ALL ANCHOR AND JOINT GASKET DETAIL TO ENGINEER FOR APPROVAL.



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

DATUM	ASSUMED
VERTICAL	
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

TOPOGRAPHIC INFORMATION WAS PERFORMED BY DUBOIS & KING, INC. IN AUGUST 2002.

ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS.

ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

ALL UTILITY POLES ARE TO REMAIN UNDISTURBED UNLESS OTHERWISE NOTED IN THESE PLANS.

THE CONTRACTOR SHALL REVIEW, UNDERSTAND AND COMPLY WITH ALL APPLICABLE PERMITS AND ENSURE THAT ALL CONSTRUCTION CONDITIONS ARE MET. THE CONTRACTOR SHALL REFER TO THE APPLICABLE PERMITS INCLUDED IN THE CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS FOR CONTROL OF WATER, BEAVER DAM REQUIREMENTS AND OTHER ASSOCIATED PROJECT REQUIREMENTS.

THE CONTRACTOR SHALL ATTEND AN ONSITE PRE-CONSTRUCTION MEETING PRIOR TO MOBILIZATION OF EQUIPMENT AND SHALL BE PREPARED TO DISCUSS SEQUENCE OF OPERATIONS AND EQUIPMENT REQUIREMENTS FOR EXCAVATION, HANDLING AND COMPACTION. THE CONTRACTOR SHALL SUBMIT A CPM SCHEDULE TO THE RESIDENT ENGINEER AT THE PRE-CONSTRUCTION MEETING.

THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONDITIONS THAT ARE UNEXPECTED, UNKNOWN AND/OR NOT INDICATED ON THE DRAWINGS AND SHALL PROCEED AS DIRECTED BY THE ENGINEER.

THE DIMENSIONS OF THE EXISTING DAM AND OUTLET WORKS SHOWN IN THESE PLANS ARE APPROXIMATE AND ARE BASED ON ACCESSIBLE COMPONENTS OF THE DAM DURING FULL POND CONDITIONS. UPON INSTALLATION OF THE CONTROL OF WATER MEASURES AND DEWATERING OF THE WORK AREA, THE CONTRACTOR SHALL MAKE AND RECORD FIELD MEASUREMENTS OF ALL COMPONENTS OF THE EXISTING DAM ALONG WITH THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK. WORKING DRAWINGS REQUIRED FOR VARIOUS ITEMS OF WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS. ALL WORK ASSOCIATED WITH OBTAINING EXISTING MEASUREMENTS AS DESCRIBED ABOVE SHALL BE PAID FOR UNDER ITEM 529.10, "REMOVAL OF STRUCTURE (MOD 1- PRINCIPAL SPILLWAY)".

ALL CONSTRUCTION ACTIVITY SHALL BE CONFINED WITHIN THE LIMITS OF CONSTRUCTION AS IDENTIFIED ON THE DRAWINGS AND DELINEATED BY THE CONSTRUCTION BARRIER FENCE. SEE SHEET 8 FOR DETAILS. THE CONSTRUCTION BARRIER FENCE SHALL BE PAID FOR UNDER ITEM 620.70, "SNOW FENCE (MOD)".

NO TREES FURTHER THAN 10 FEET FROM THE EXISTING DAM SHALL BE DISTURBED DURING CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL LOAM, SEED, FERTILIZE AND MULCH ALL DISTURBED AREAS, EXCEPT ROADWAY, SHOULDERS AND STONE FILL AREAS.

REMOVAL OF THE EXISTING PRINCIPAL SPILLWAY PIPES AND ASSOCIATED APPURTENANCES SHALL BE PAID FOR UNDER ITEM 529.10 "REMOVAL OF STRUCTURE (MOD 1- PRINCIPAL SPILLWAY)". THIS WORK SHALL INCLUDE REMOVAL AND DISPOSAL OF THE EXISTING OUTLET WORKS, TRASH RACK, ASSOCIATED HARDWARE, LOW-LEVEL OUTLET AND CONTROL VALVE, VALVE MANHOLE AND CONCRETE HEADWALLS. THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED ITEMS.

REMOVAL OF THE EXISTING EMERGENCY SPILLWAY PIPES, SAW CUTTING AND PARTIAL CONCRETE HEADWALL REMOVAL, OTHER RELATED APPURTENANCES AND THE STONE WALL SHALL BE PAID FOR UNDER ITEM 529.10 "REMOVAL OF STRUCTURE (MOD 2 - EMERGENCY SPILLWAY)". THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED ITEMS.

NO BACKFILL SHALL BE PLACED AGAINST ANY NEWLY PLACED CONCRETE UNTIL THE VTRANS RESIDENT ENGINEER HAS APPROVED THIS WORK AND SHALL NOT OCCUR PRIOR TO SEVEN (7) DAYS AFTER BEING POURED OR 85% F/c HAS BEEN REACHED.

THE CONTRACTOR, AT THE EXPENSE OF THE CONTRACTOR, SHALL REPAIR DAMAGE TO NEWLY PLACED CONCRETE RESULTING FROM IMPROPER BACKFILLING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO PRIVATE OR PUBLIC PROPERTY BEYOND THE LIMITS OF CONSTRUCTION CAUSED BY THE CONTRACTOR, AT THE SOLE COST TO THE CONTRACTOR.

ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 2 INCH BY 2 INCH, UNLESS OTHERWISE NOTED.

JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

ALL CONCRETE SHALL BE ITEM 501.25, "CONCRETE CLASS B (MOD - FLY ASH)" UNLESS OTHERWISE NOTED ON THESE PLANS. THE CONTRACTOR SHALL SUBSTITUTE 20 PERCENT FLY ASH INTO THE DESIGN MIX AND SUBMIT TEST RESULTS AS REQUIRED IN STANDARD SPECIFICATION DIVISION 500 AS REQUIRED IN STATE OF VERMONT STANDARD SPECIFICATION FOR CONSTRUCTION SUBSECTION 501.03 CLASSIFICATION AND PROPORTIONING.

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

ALL REINFORCING STEEL SHALL BE GRADE 60.

MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE 3.0-INCHES, UNLESS AS NOTED ON THESE PLANS. REINFORCEMENT STEEL PLACEMENT TOLERANCES SHALL BE: SPACING = +/- 1", CLEARANCE = +/- 1/4".

CONSTRUCTION JOINTS SHALL BE CONSTRUCTED AS INDICATED ON SHEET 14. A NINE (9) INCH PVC WATER STOP SHALL BE CENTERED ON ALL CONSTRUCTION JOINTS AND SHALL BE WELDED, PER THE MANUFACTURERS RECOMMENDATIONS, TO FORM A CONTINUOUS WATERSTOP. THE WATERSTOP SHALL BE PAID FOR SUBSIDIARY TO ITEM 501.25 "CONCRETE CLASS B (MOD - FLY ASH)".

NO BLASTING WILL BE ALLOWED DURING CONSTRUCTION OF THIS PROJECT. ANY REMOVAL OF LEDGE SHALL BE PERFORMED BY MECHANICAL METHODS.

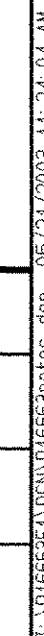
TOWN HIGHWAY 28 (PLUNKTON ROAD) SHALL BE RESTORED TO ITS EXISTING CONDITION UPON COMPLETION OF DAM REPLACEMENT.

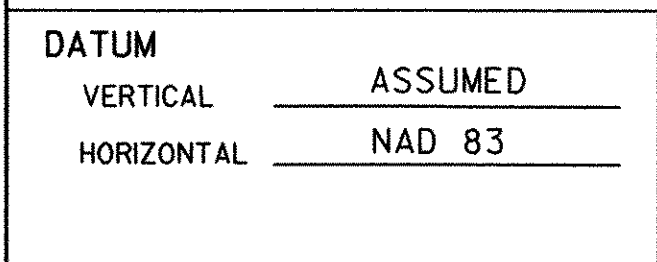
THE CONTRACTOR SHALL REMOVE AND REPLACE THE EXISTING GUARDRAIL WITH NEW GUARDRAIL WITHIN THE LIMITS OF CONSTRUCTION. THE GUARDRAIL SHALL BE REPLACED IN ITS ORIGINAL LOCATION, AND WILL BE PAID FOR UNDER ITEM 621.80 "REMOVAL AND DISPOSAL OF GUARDRAIL", AND ITEM 621.20 "STEEL BEAM GUARDRAIL".

AS A BID OPTION, THE CAST IN PLACE LOW LEVEL OUTLET BARREL MAY BE REPLACED WITH A 36-INCH PRECAST REINFORCED CONCRETE PIPE, ITEM 601.0836 "36 RCP CLASS IV". THE PIPE SHALL BE INSTALLED ALONG WITH A CONCRETE CRADLE AS SHOWN ON SHEET 21.

PLOTTED 05/21/2003

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAW DOWN OF THE LAKE, FOR THE CONTROL OF WATER DURING CONSTRUCTION AND FOR THE REFILLING OF THE LAKE FOLLOWING CONSTRUCTION, AS OUTLINED IN THE FOLLOWING NOTES AND IN THE SPECIAL PROVISIONS.
2. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE CONTROL OF WATER PROCEDURES DOCUMENT CONTAINED IN THE DAM SAFETY ORDER, WHICH IS INCORPORATED INTO THE CONTRACT DOCUMENTS FOR THIS PROJECT.
3. ALL WORK ASSOCIATED WITH THE CONTROL OF WATER REQUIREMENTS, INCLUDING DRAWING THE LAKE DOWN WITH SIPHONS AND PUMPS, CONTROLLING THE WATER WITH THE COFFERDAM AND PUMPS AND REFILLING THE LAKE SHALL BE PAID FOR UNDER ITEM 204.40, "COFFERDAM (MOD)."
4. BASE FLOW INTO BLUEBERRY LAKE SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT CONSTRUCTION BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL INSTALL A COFFER DAM IN THE GENERAL VICINITY SHOWN IN THE PLANS. THE AREA BETWEEN THE COFFER DAM AND THE EXISTING DAM WILL BE DE-WATERED AND ALL WORK SHALL BE PERFORMED IN THE DRY. ANY WORK REQUIRED TO INSTALL, MAINTAIN AND REMOVE A TEMPORARY SEDIMENTATION BASIN TO ACCOMMODATE THE PUMPING OF SEDIMENT LADEN WATER SHALL BE PAID FOR UNDER THE 204.40, "COFFERDAM (MOD.)" PAY ITEM.
6. THE COFFER DAM SHALL BE A CONSTRUCTED FROM CLEAN STONE, SAND BAGS OR APPROVED EQUIVALENT. THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS OF COFFER DAM CONSTRUCTION FOR WRITTEN APPROVAL BY THE TOWN AND PERMITTING AGENCIES.
7. THE COFFER DAM BY-PASS SYSTEM SHALL BE OF SUFFICIENT SIZE AND HYDRAULIC CAPACITY TO PROPERLY ISOLATE THE FLOW OF WATER FROM THE SUBSTRUCTURE, SUCH THAT ALL WORK CAN BE PERFORMED IN THE DRY. THE DESIGN AND SUBMITTAL PROCEDURES FOR THE COFFER DAM SYSTEM SHALL BE AS PER SUBSECTION 208.07.
8. UPON INSTALLATION OF THE COFFER DAM, IN THE AREA OF THE EXISTING LOW LEVEL OUTLET, A 24-INCH TEMPORARY BYPASS PIPE SHALL BE CONNECTED TO THE EXISTING LOW LEVEL OUTLET. ALL WORK SHALL BE PERFORMED IN THE DRY AND ISOLATED FROM THE TEMPORARY BYPASS PIPE OUTLET
9. INSPECTION OF THE COFFER DAM SHALL BE PERFORMED DAILY TO INSURE CONTINUOUS FLOW AS REQUIRED IN THE ENVIRONMENTAL PERMITS.
10. ALL WORK ASSOCIATED WITH THE COFFER DAM, INCLUDING ITS SUPPLY, INSTALLATION, WATER BYPASS SYSTEM, MAINTENANCE, INSPECTIONS, REMOVAL AND ALL OTHER WORK NECESSARY FOR THE PROPER USE OF THIS PORTABLE DAM SHALL BE PAID UNDER THE 204.40, "COFFERDAM (MOD.)" PAY ITEM.
11. THE VTRANS RESIDENT ENGINEER WILL BE RESPONSIBLE FOR MAKING AND RECORDING THE TURBIDITY READINGS AS INDICATED IN THE CONTROL OF WATER PROCEDURES DOCUMENT INDICATED ABOVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE VTRANS RESIDENT ENGINEER REGARDING THIS ISSUE.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTING AND MAINTAINING A TEMPORARY V-NOTCH WEIR TO BE PLACED DOWNSTREAM OF THE PRINCIPAL SPILLWAY OUTLET PIPE. THE WEIR MATERIAL WILL BE DETERMINED BY THE CONTRACTOR (METAL, PLYWOOD, SUPPORTED BY SAND BAGS OR PLASTIC SHEETING). THE LOCATION OF THE WEIR SHALL BE DETERMINED IN THE FIELD BY THE VTRANS RESIDENT ENGINEER AND THE CONTRACTOR. THE DIMENSIONS OF THE V-NOTCH WEIR SHALL BE PROVIDED TO THE CONTRACTOR BY THE VTRANS RESIDENT ENGINEER, AND IS EXPECTED TO SPAN THE WIDTH OF THE BROOK. ALL WORK ASSOCIATED WITH THE FABRICATION, ERECTION, MAINTENANCE AND REMOVAL OF THE WEIR SHALL BE PAID UNDER THE 204.40, "COFFERDAM (MOD.)" PAY ITEM.
13. THE CONTRACTOR'S ATTENTION IS ALSO DIRECTED TO A PERMIT CONDITION IN THE DAM SAFETY PERMIT THAT RELATES TO THE INSPECTION AND MONITORING OF SEVERAL EXISTING BEAVER DAMS LOCATED ALONG THE UPSTREAM EDGE OF THE LAKE. ALL WORK ASSOCIATED WITH THE REQUIREMENTS OF THIS PERMIT CONDITION, INCLUDING INSTALLING, INSPECTIONS, STOCKPILING, TRANSPORT AND REMOVAL OF SAND BAGS SHALL BE PAID FOR UNDER ITEM 651.26 "HAYBALES FOR EROSION CONTROL (MOD - SAND BAGS)"

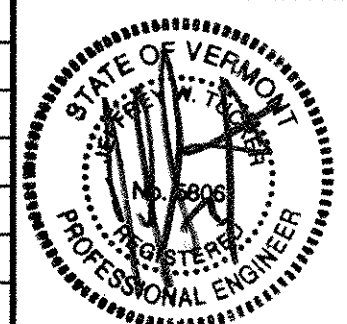
[illegible]



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 SEEDED, 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

SCALE 1" = 40'-0"

[illegible]

**DuBois
& King inc.**

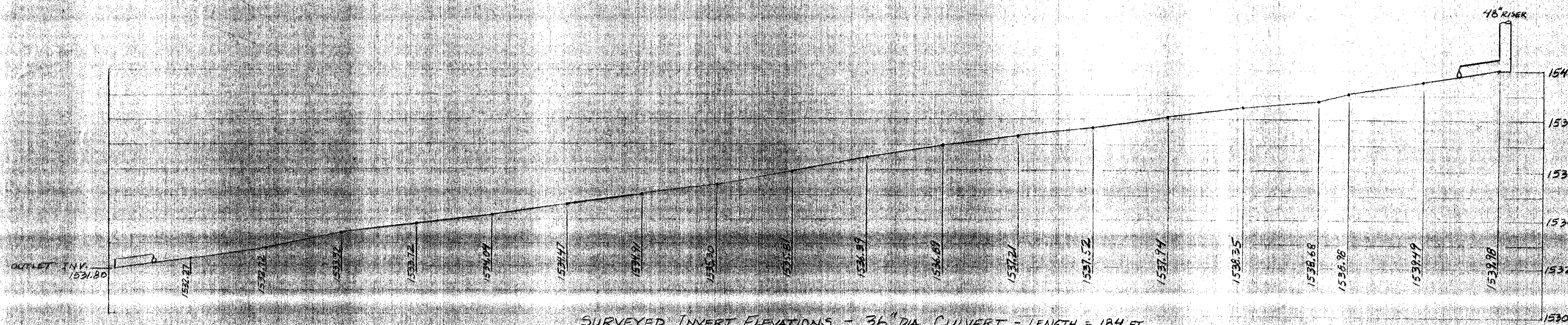
engineering planning management development

TOWN OF WARREN
WARREN, VERMONT

BLUEBERRY LAKE DAM
REHABILITATION PROJECT

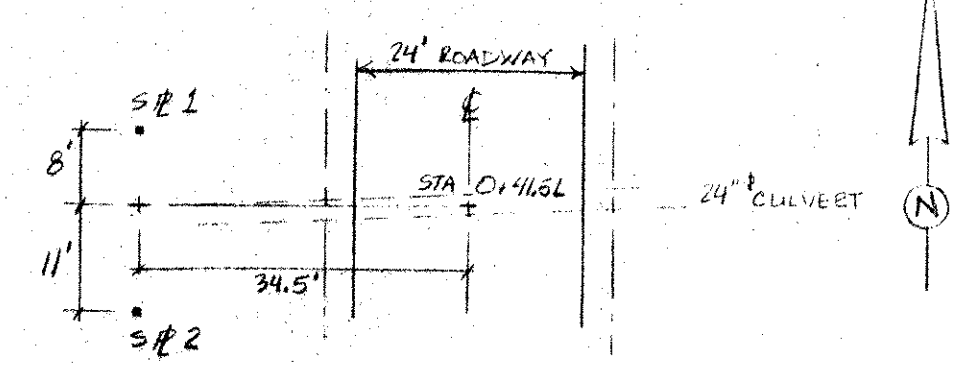
TEMPORARY CONSTRUCTION
BORROW SITE PLAN

DRAWN BY EBS	DATE MAY 2003
CHECKED BY <i>J. Sam</i>	PROJ. NO. R16663
PROJ. ENG. JWT	DRAW. NO. 11313
SHEET 24 OF 24	

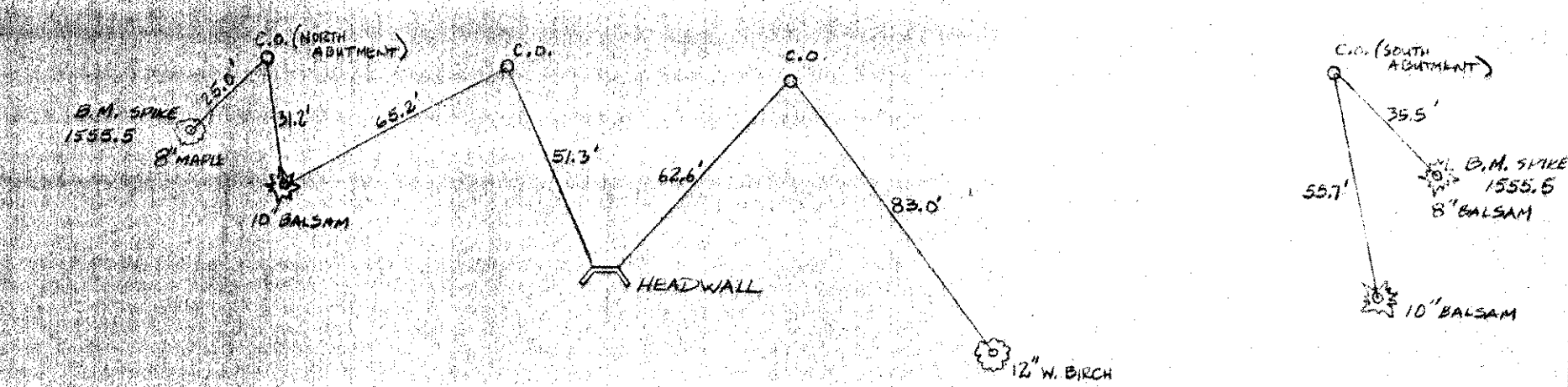


SURVEYED INVERT ELEVATIONS - 36" DIA CULVERT - LENGTH = 184 FT.

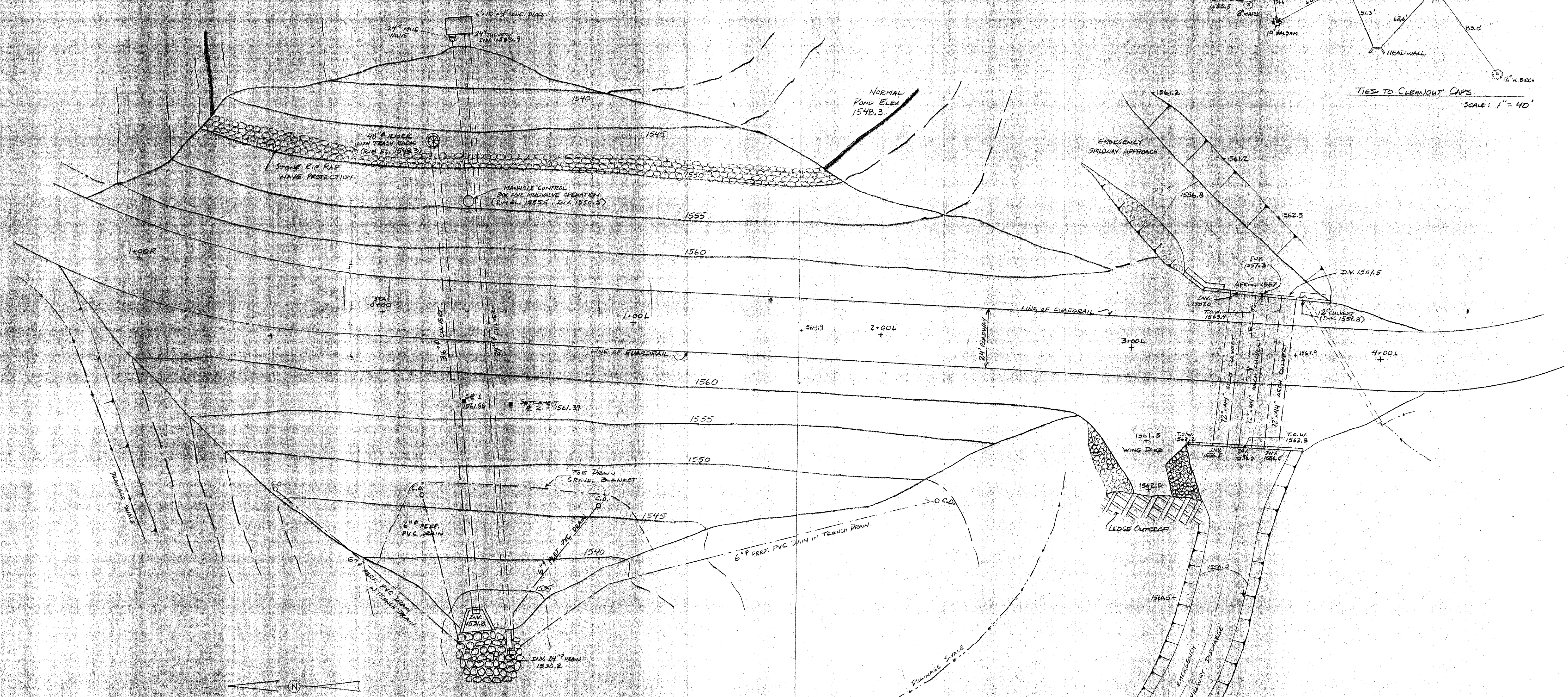
SCALE: HOR 1" = 10'
VER 1" = 3'



TIES TO SETTLEMENT PLATES
SCALE: 1" = 20'

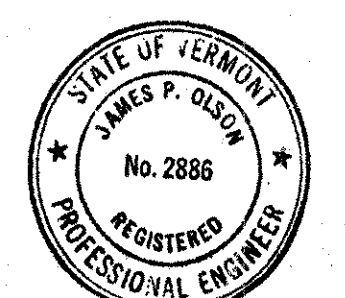


TIES TO CLEANOUT CAPS
SCALE: 1" = 40'



PLAN

SCALE: 1" = 20'

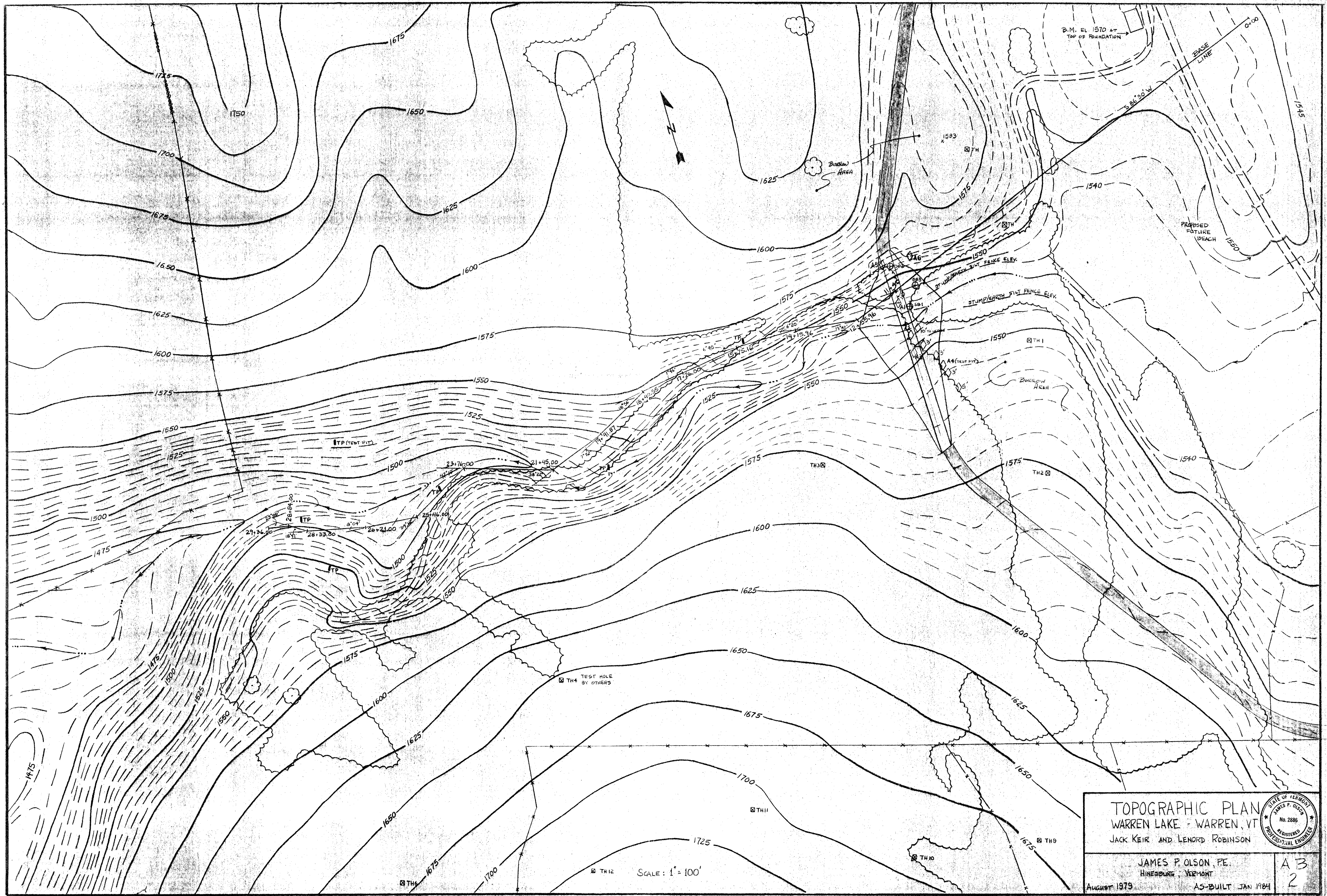


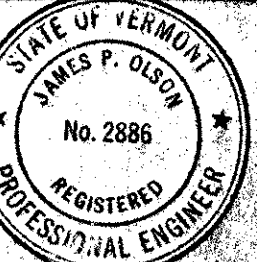
EMBANKMENT AS-BUILT
WARREN LAKE - WARREN, VERMONT
LENORD ROBINSON
OWNER

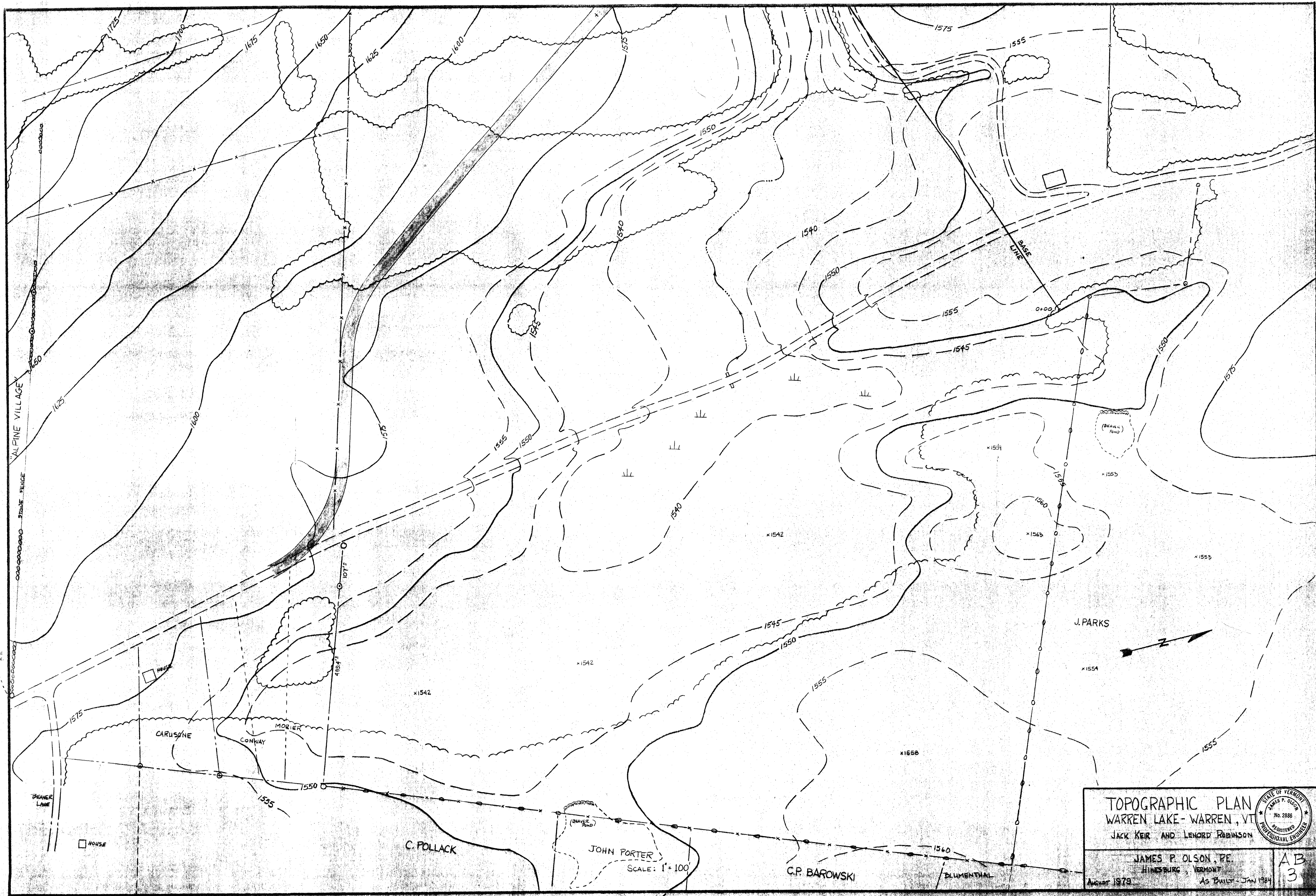
Date	Ch'kd	Revision
Drawn by	JPO	Date JAN 1984
Checked by	JPO	Scale AS NOTED
Approved by	JPO	Project No.

CIVIL ENGINEERING ASSOCIATES, INC.
SHELBURNE, VERMONT

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

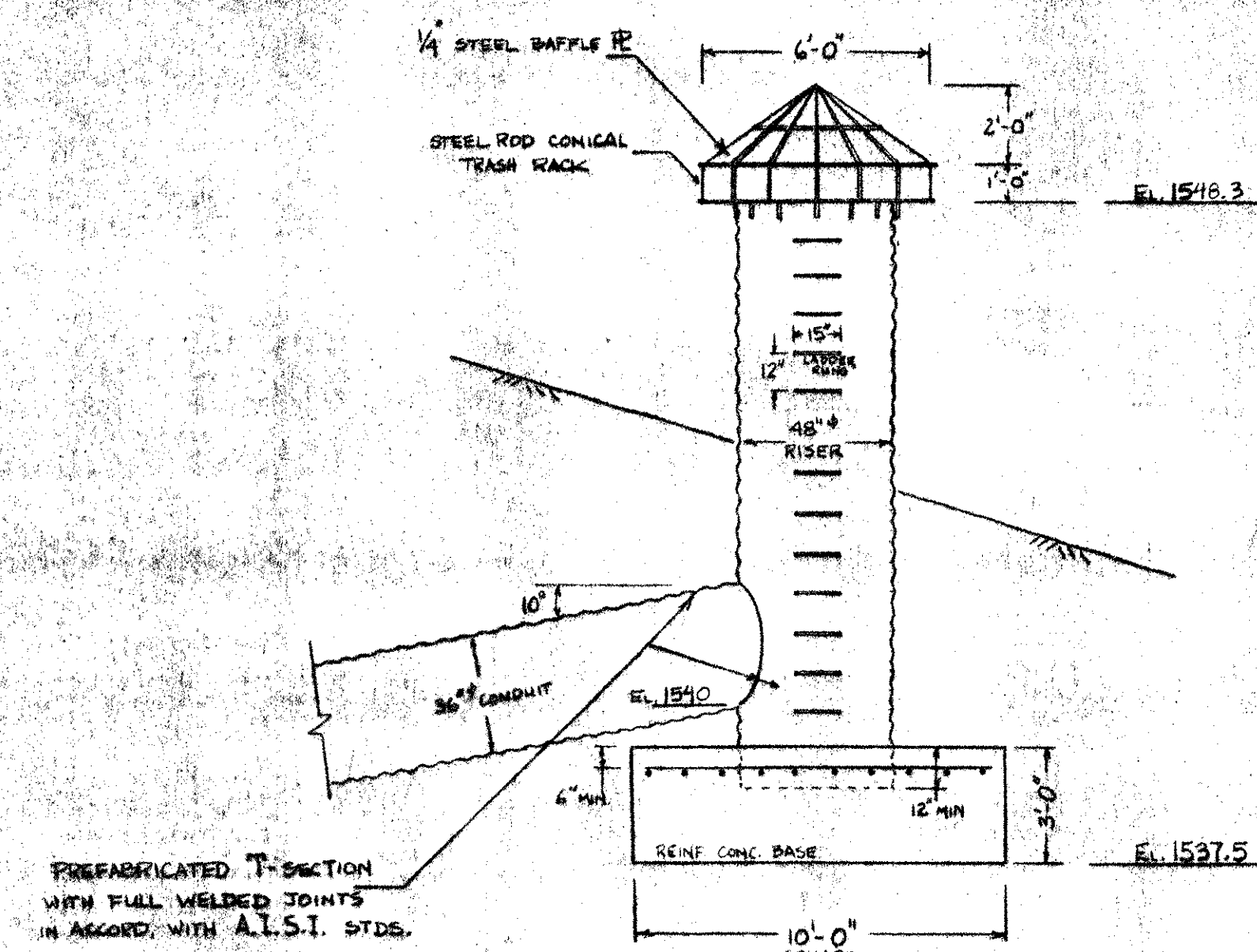


TOPOGRAPHIC PLAN
WARREN LAKE - WARREN, VT
JACK KEIR AND LENORD ROBINSON

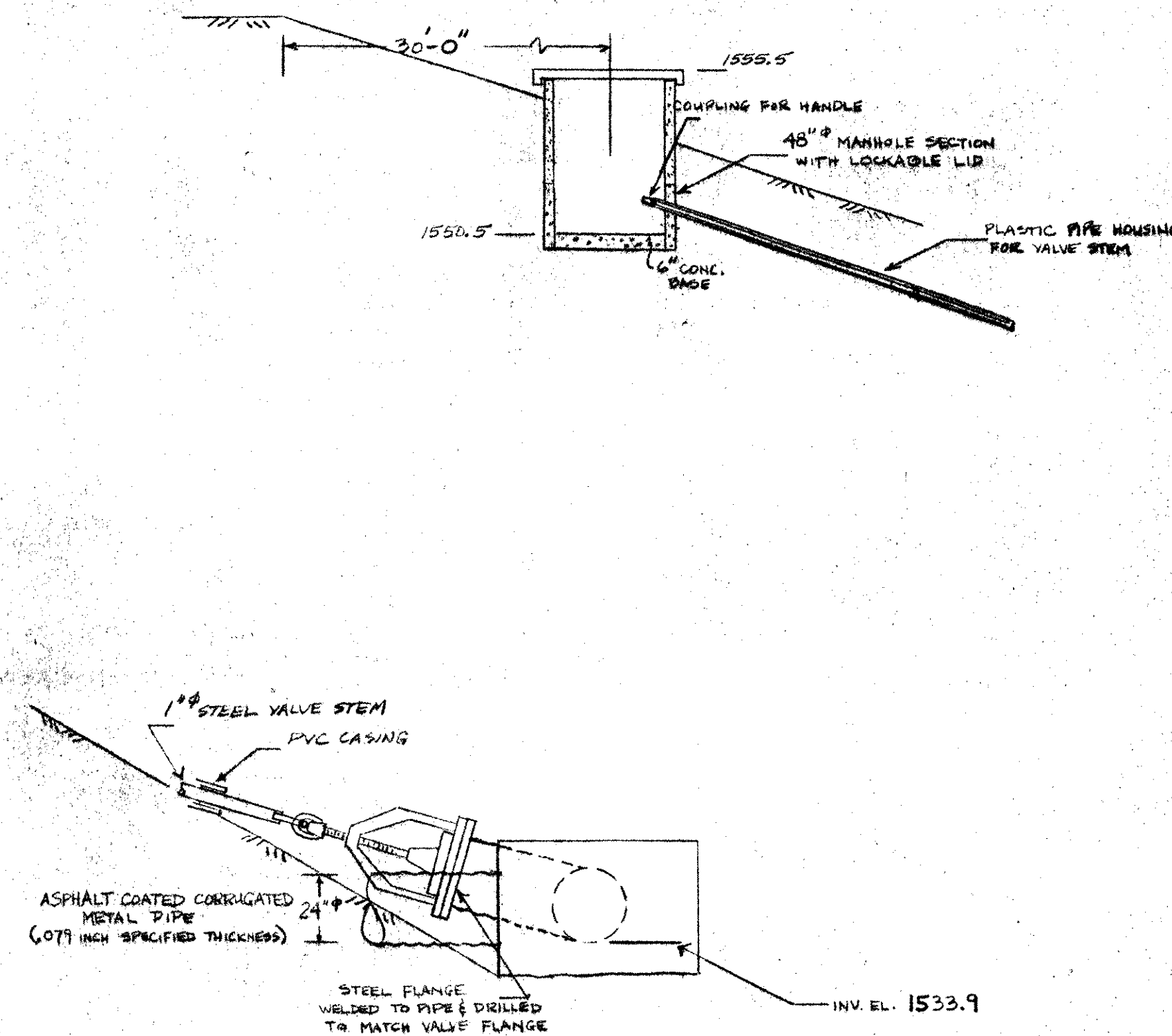
JAMES P. OLSON, P.E.
HINESBURG, VERMONT
August 1979 AS BUILT - JAN 1984

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

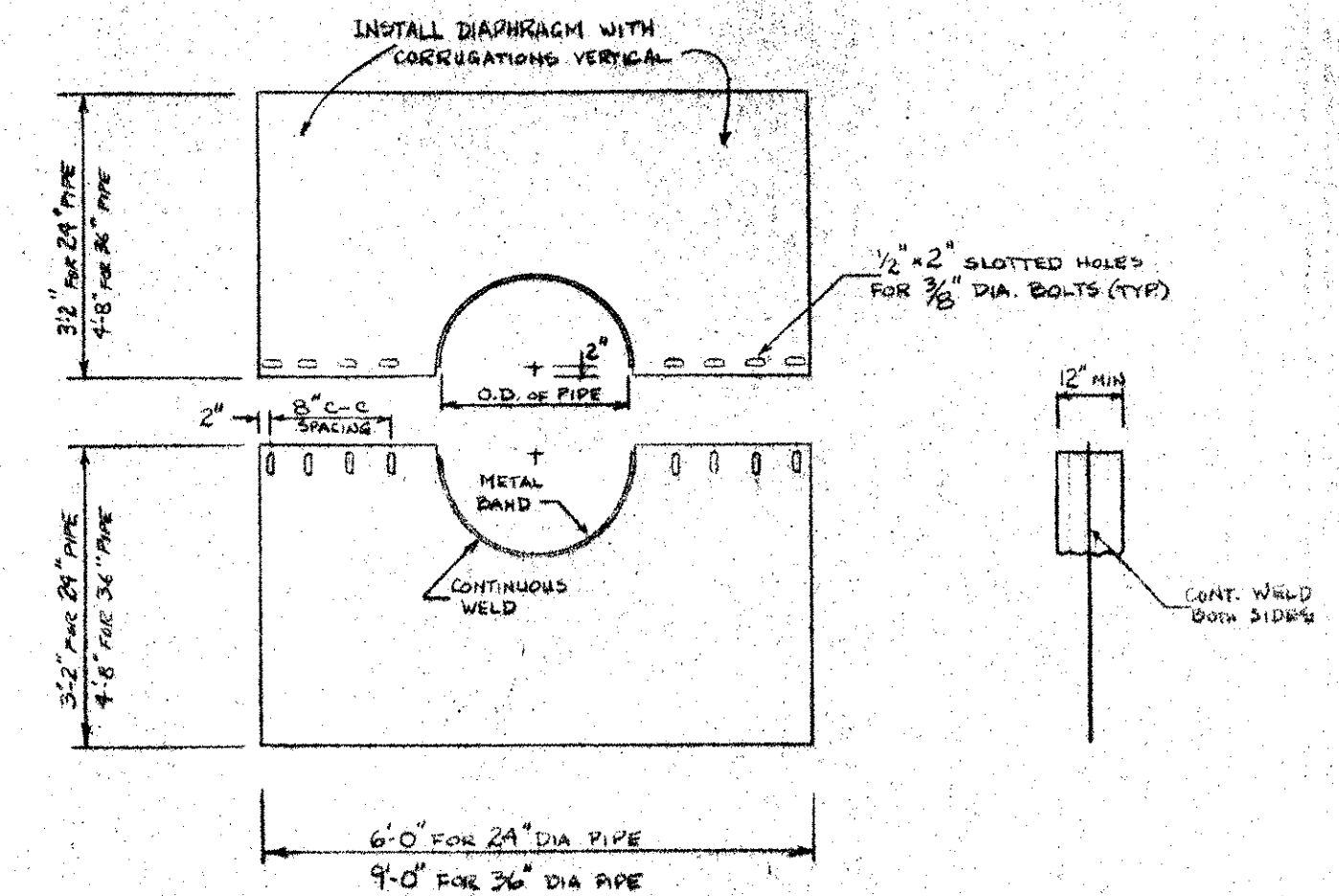
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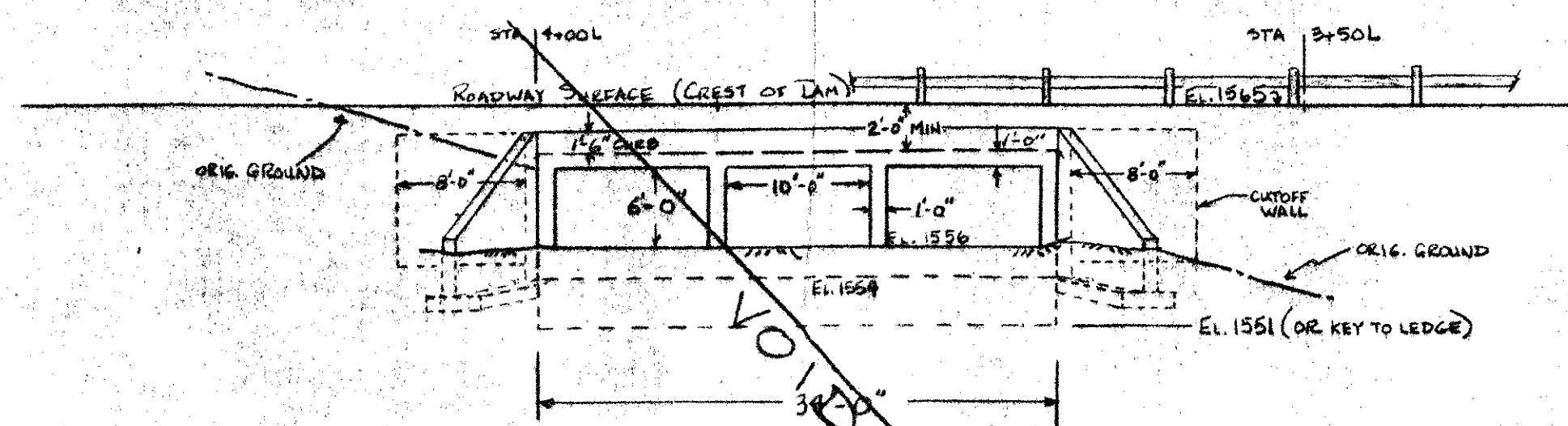
DETAIL OF DROP INLET SPILLWAY
SCALE: 1" = 4'



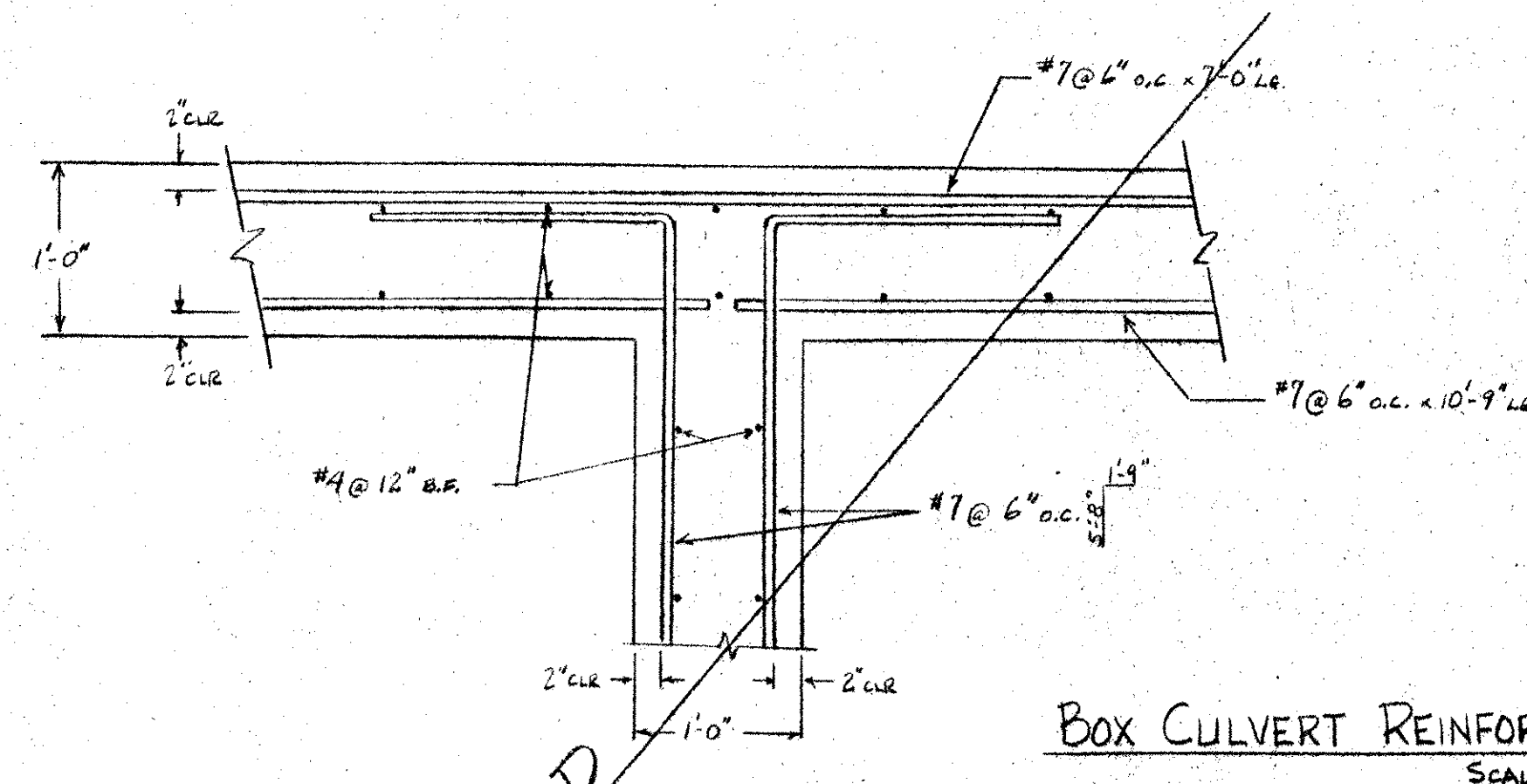
DETAIL OF EMERGENCY DRAIN VALVE
SCALE: 1" = 4'



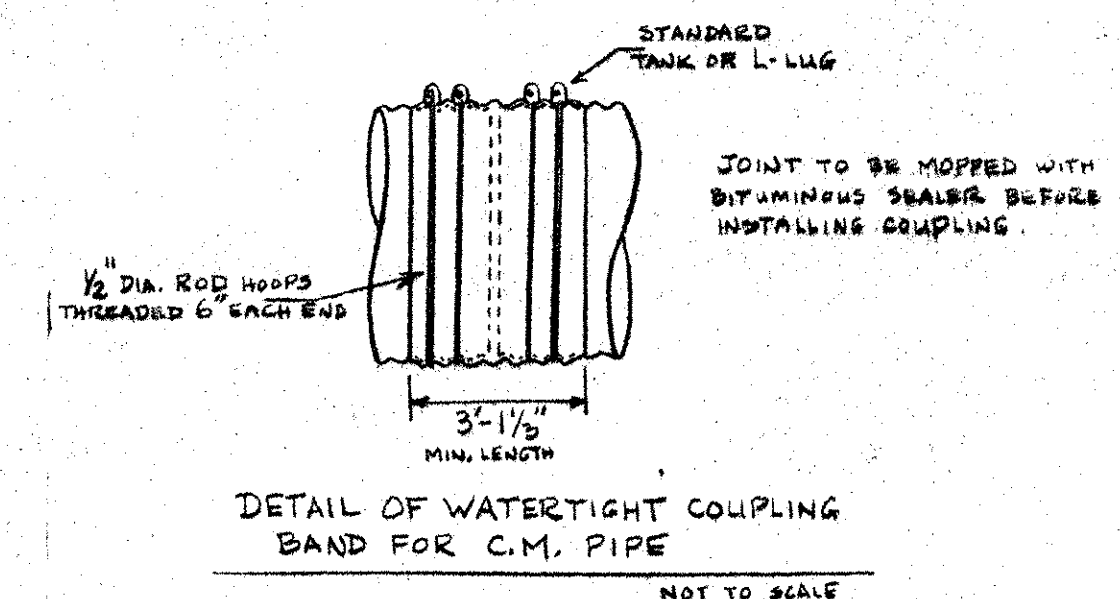
DETAILS OF CORRUGATED METAL DIAPHRAGMS
SCALE: NONE



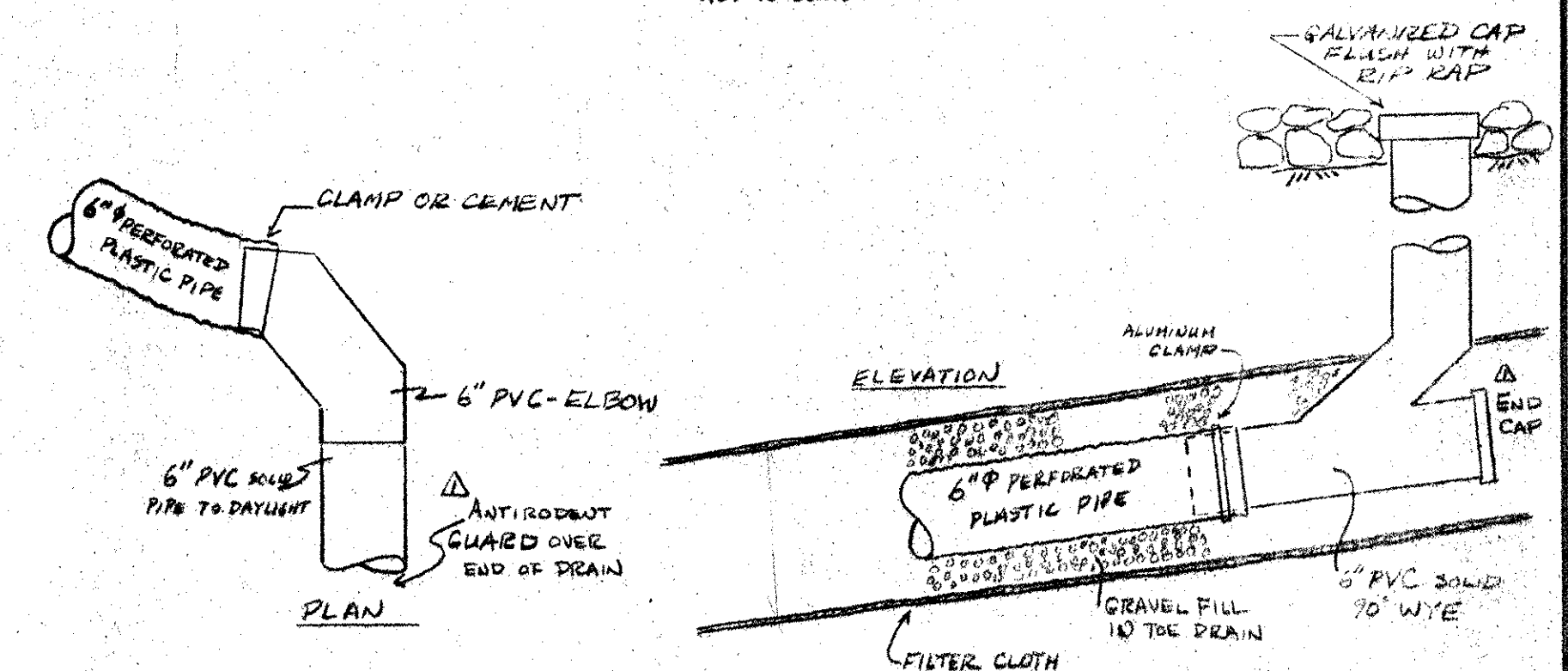
SECTION OF BOX CULVERT SPILLWAY
SCALE: 1" = 10'



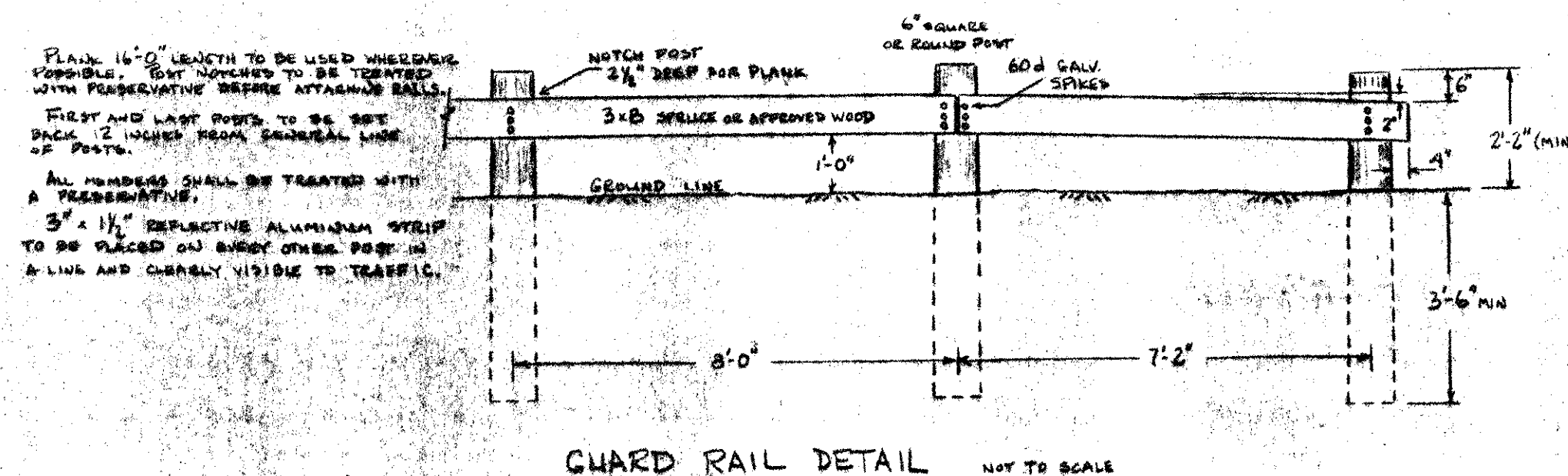
BOX CULVERT REINFORCING
SCALE: 1" = 1'-0"



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

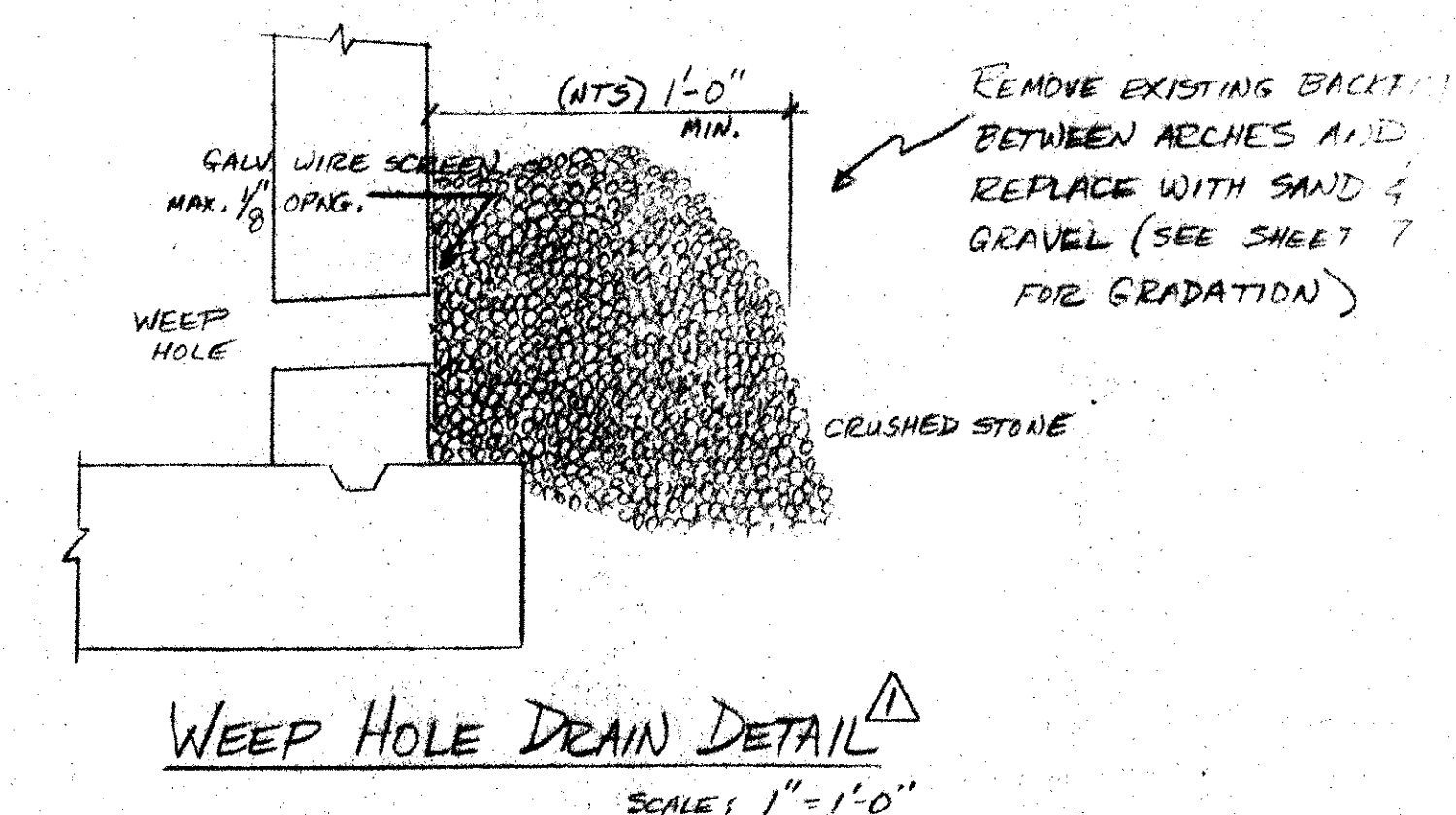
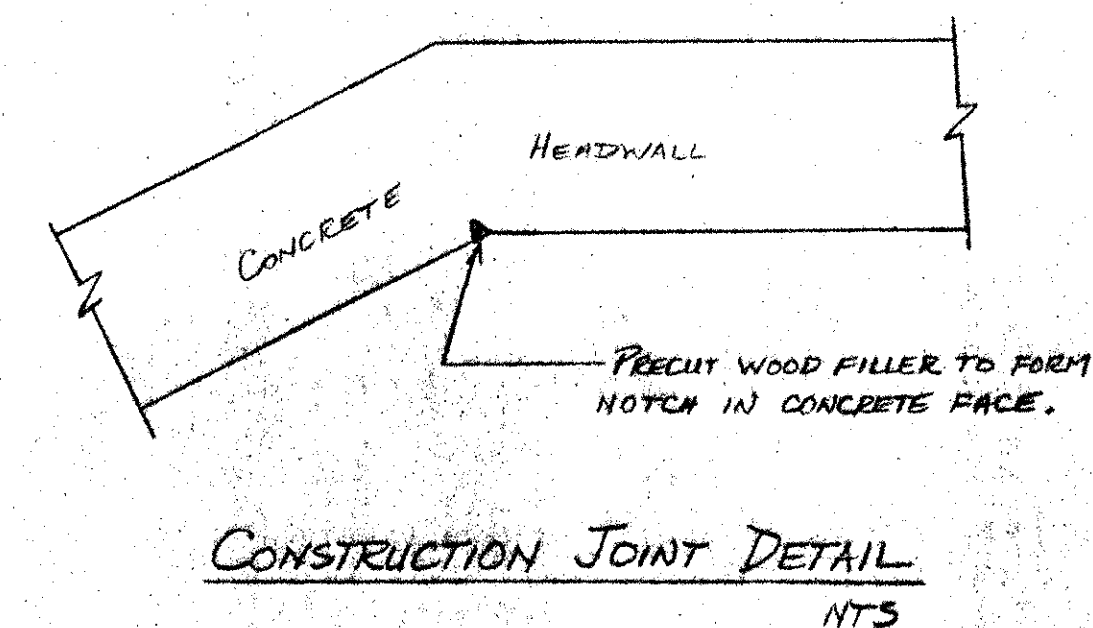
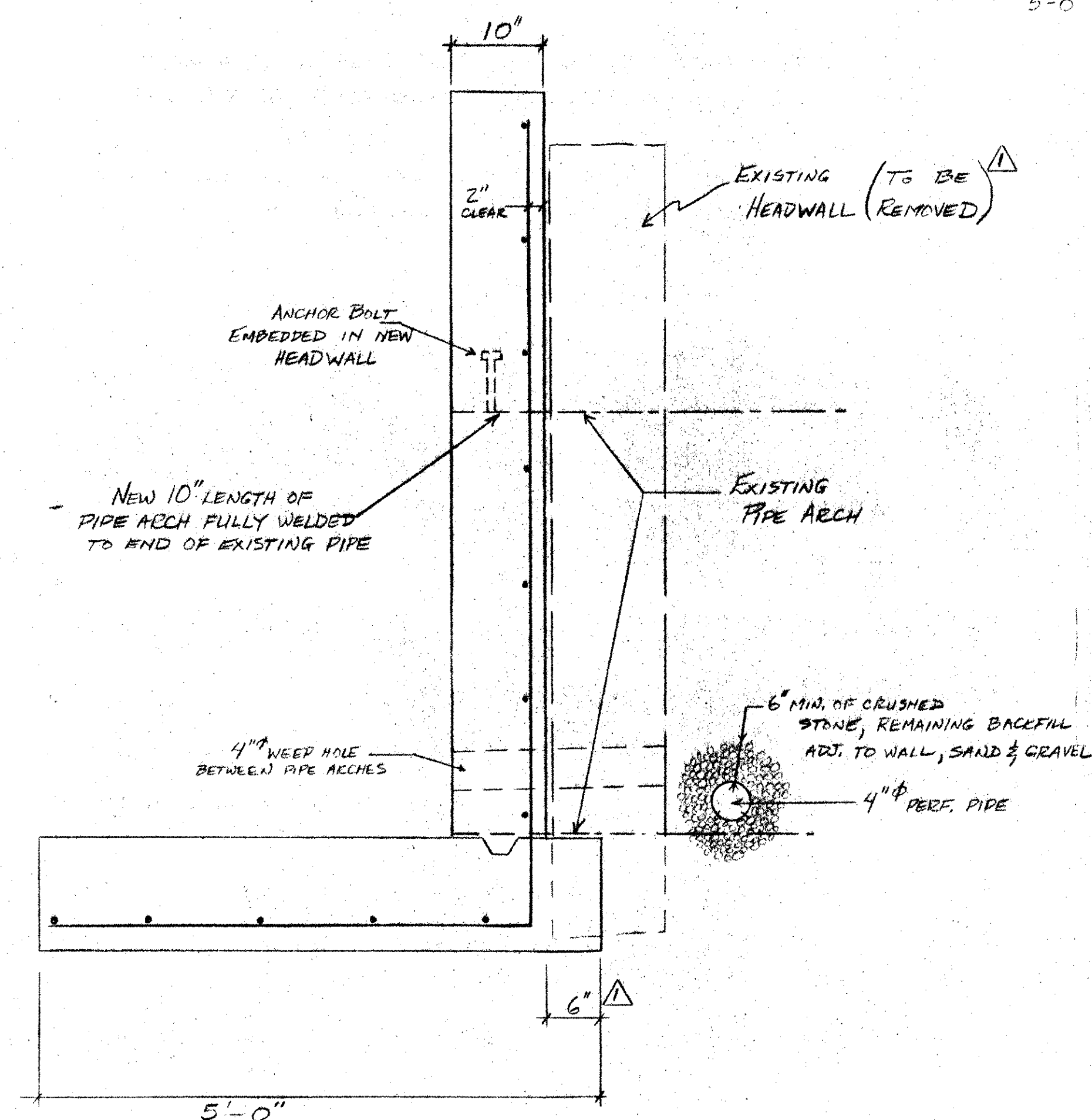
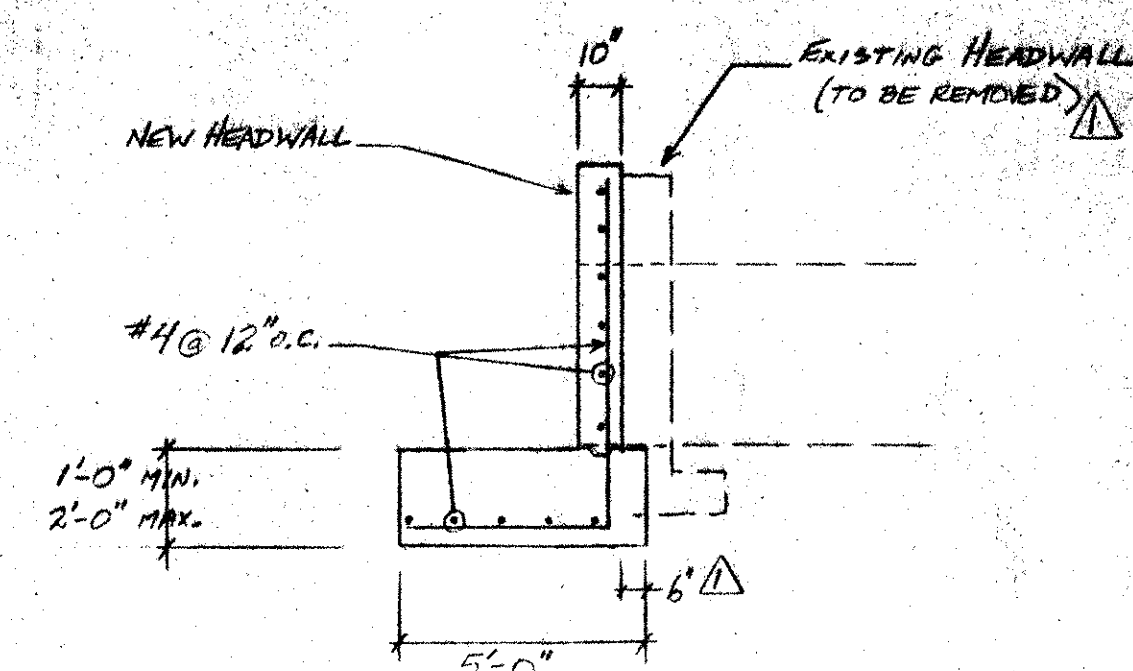
SECTIONS AND DETAILS - II WARREN LAKE - WARREN, VT JACK KEIR AND LENORD ROBINSON

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

AUGUST 1979
REV. DEC. 79
AS BUILT JAN. 1984

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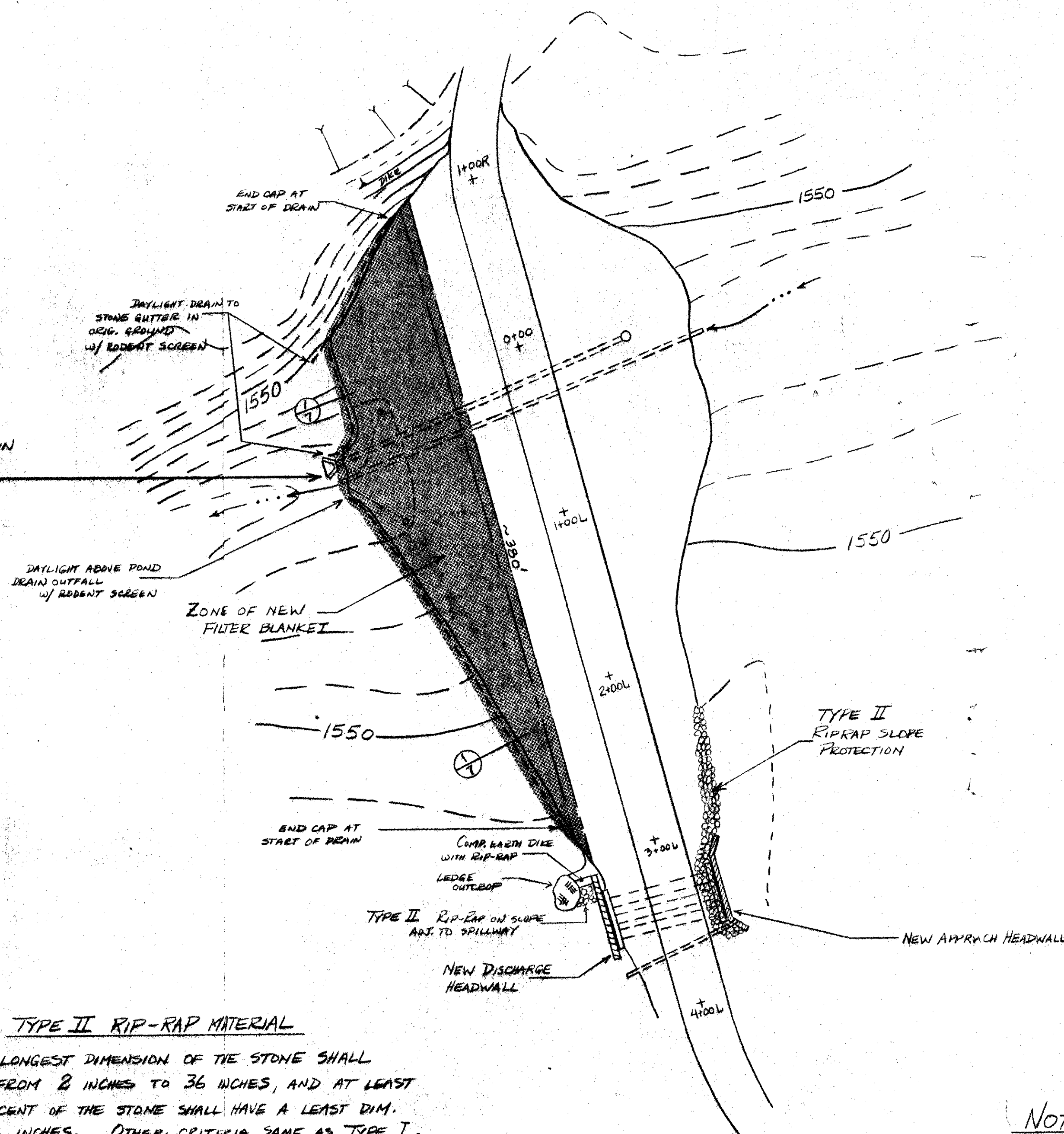




5. FOUNDATION FOR THE HEADWALLS WILL BE INSPECTED BY THE ENGINEER BEFORE PLACEMENT OF NEW CONCRETE.
6. CONCRETE WILL BE MIN. 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS, WITH CRUSHED STONE AGGREGATE.
7. REINFORCING STEEL WILL BE NEW, CLEAN DEFORMED BARS WITH A MIN. YIELD STRESS OF 40,000 PSI.
8. THE NEW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

[illegible]

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

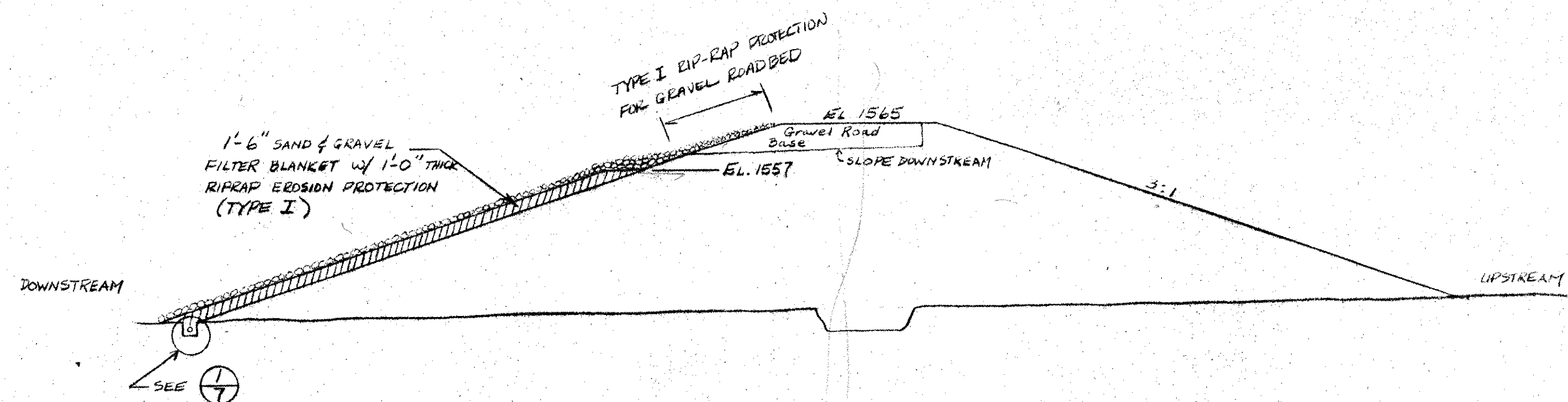


TYPE II RIP-RAP MATERIAL

THE LONGEST DIMENSION OF THE STONE SHALL VARY FROM 8 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.

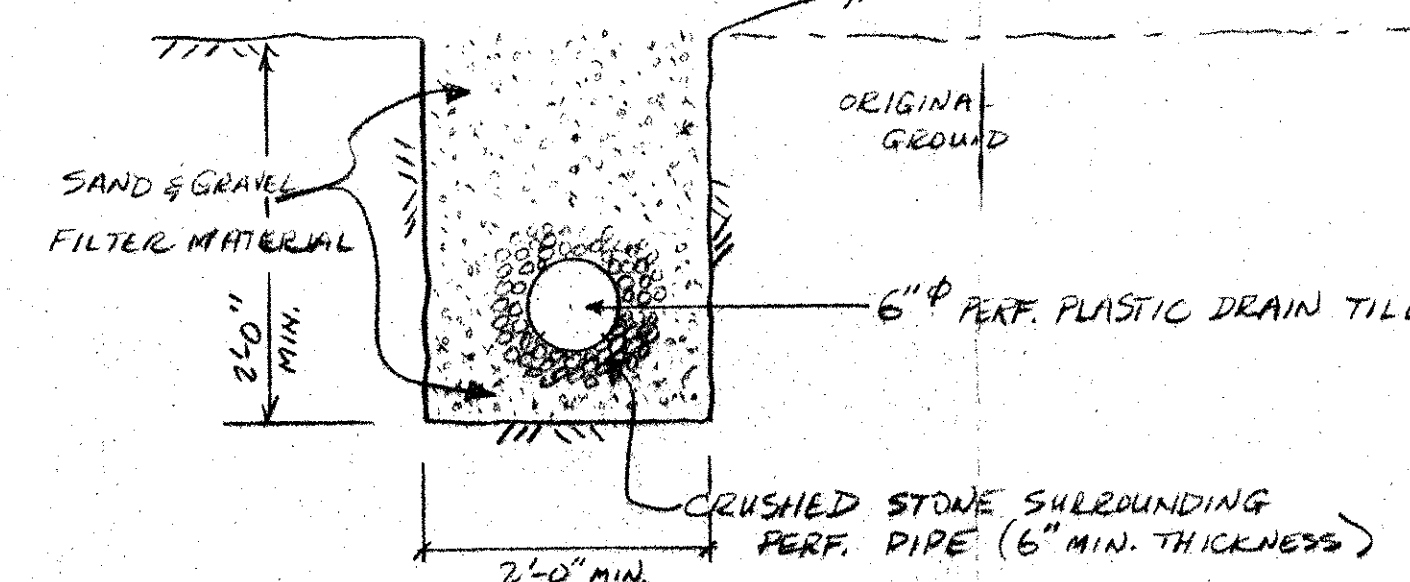
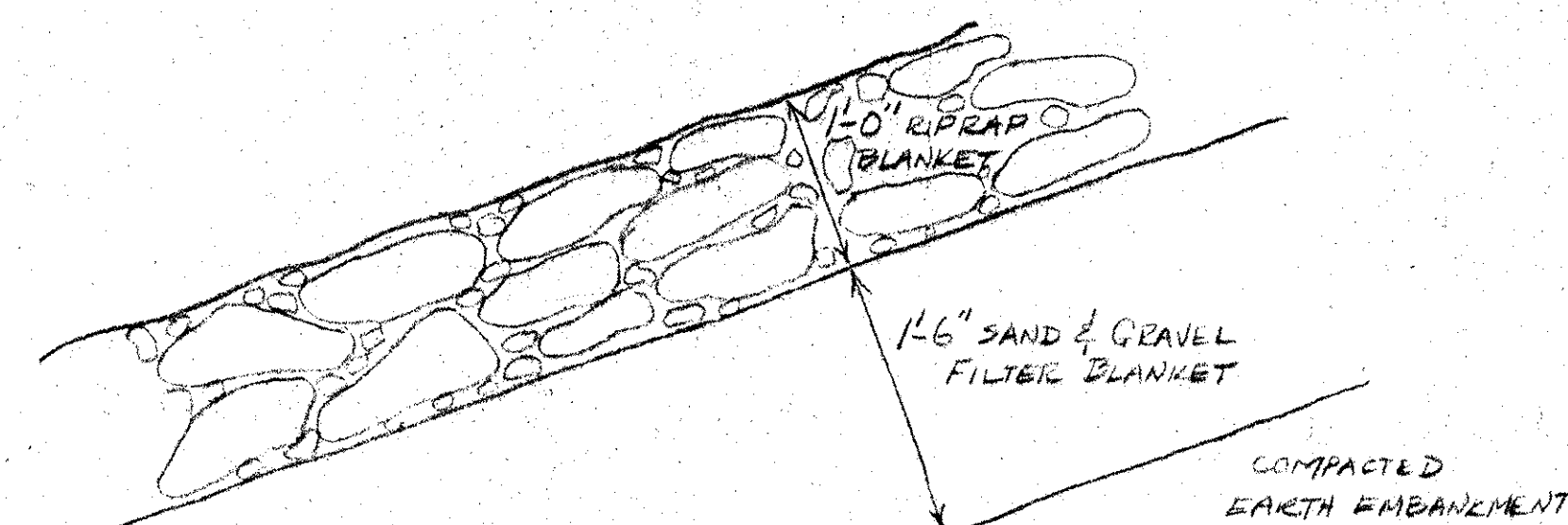
EMBANKMENT PLAN

SCALE: 1" = 50'



EMBANKMENT CROSS SECTION

SCALE: 1" = 20'



1/7

SECTION AT EMBANKMENT INTERFACE WITH NATURAL GROUND ~ DOWNSTREAM TOE

SCALE: 1" = 1'-0"

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.

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

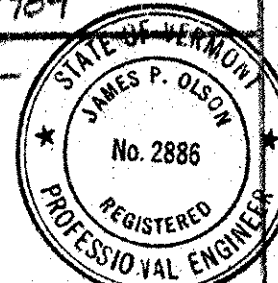
- NOTES: 1. THE EMBANKMENT FILL & RELATED STRUCTURES WILL BE CONSTRUCTED TO THE LINES AND GRADES SHOWN ON THE DRAWINGS.
2. BEFORE PLACEMENT OF THE FILTER BLANKET, THE EMBANKMENT SURFACE WILL BE PREPARED BY REMOVING VEGETATION & SCRUBIFYING THE SURFACE TO PROVIDE A GOOD BOND BETWEEN THE EMBANKMENT SOIL & FILTER.
3. 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.
4. 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

JAMES P. OLSON, P.E.

HINESBURG VT



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