

STREETSVILLE FEEDERMAIN

PROJECT No. 95-1960

CONTRACT No. 3

ALONG ERIN MILLS PARKWAY BETWEEN Sta.
3+939.37 (200m SOUTH OF HIGHWAY 403) AND
Sta. 4+300.00 (150m NORTH OF HIGHWAY 403)

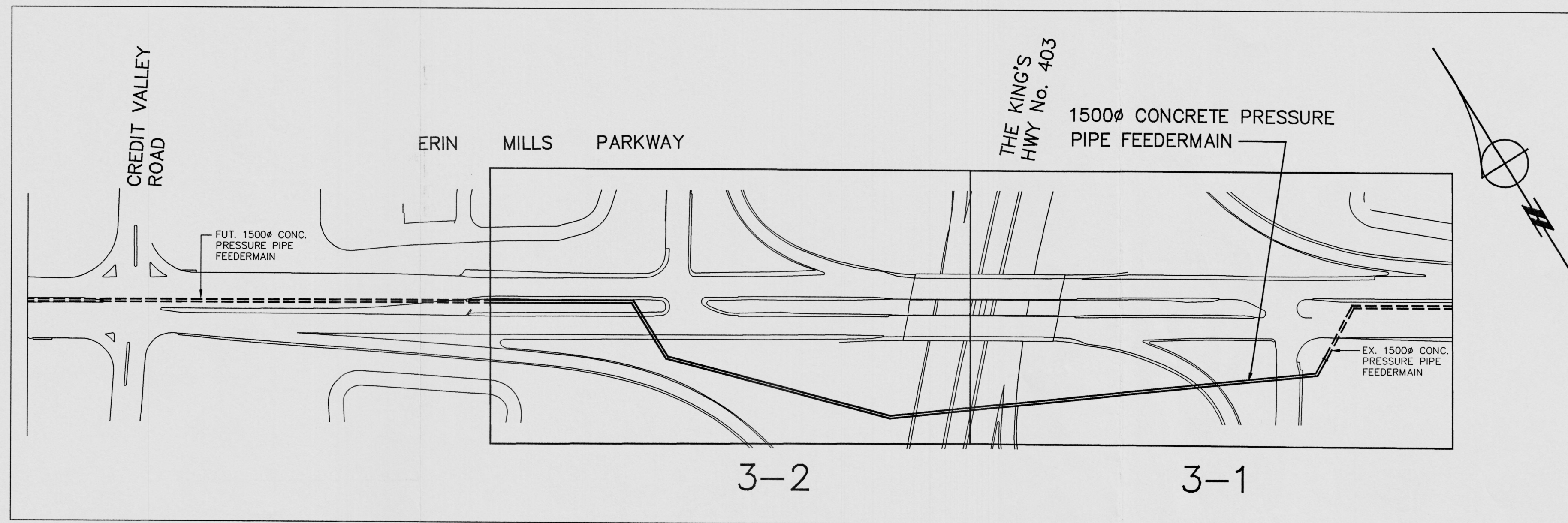


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CENTRAL REGION
GEOTECHNICAL ENGINEERING

 **Region of Peel**
Working for you

 **Marshall
Macklin
Monaghan**
PROJECT MANAGERS • ENGINEERS • SURVEYORS • PLANNERS
80 Commerce Valley Dr. East, Thornhill, Ontario (905) 882-1100

INDEX



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DESIGN CRITERIA

WORKING PRESSURE P_w = 392 KPa (57psi)
SURGE PRESSURE P_{wh} = 471 KPa (68psi)
TEST PRESSURE P_t = 510 KPa (74psi)

NOTE : ALL PIPE SHALL BE DESIGNED IN ACCORDANCE WITH ABOVE CRITERIA.
COMPLETE ALL BACKFILLING BEFORE TESTING PIPELINE.

THRUST RESISTANCE AT BENDS

- ASSUME A 30.0m LONG OPEN TRENCH ALONG EACH SIDE OF THE BEND EXPOSING THE ENTIRE SIDE AND TOP OF PIPE. CALCULATE WORST CASE:
 $\text{SURGE PRESSURE WITH F.S.} = 1.10$
 $\text{WORKING PRESSURE WITH F.S.} = 1.25$
- NO SOIL REMOVED FROM PIPE WITH FOLLOWING FACTOR OF SAFETY:
 $\text{SURGE PRSSURE WITH F.S.} = 1.25$
 $\text{TEST PRESSURE WITH F.S.} = 1.25$
 $\text{WORKING PRESSURE WITH F.S.} = 2.00$
- GROUND WATER LEVEL TO BE CONSIDERED ASSUMING SPRING FLOOD CONDITIONS.
- FOR THIS PROJECT A MINIMUM RESTRAINED LENGTH OF 65 METRES EITHER SIDE OF BENDS HAS BEEN ADOPTED, UNLESS OTHERWISE INDICATED.

LEGEND

300# W	EXISTING 750# WATERMAIN
100# C	EXISTING 100# GAS MAIN
H	HYDRO WIRING
B	BELL TELEPHONE CABLE
CTV	CABLE TELEVISION WIRING
O/H	BELL POLE
U/G	OVER HEAD
HP	UNDER GROUND
HP	HYDRO POLE
LS	POLE WITH GUY WIRE
TL	LIGHT STANDARD
TRANS.	TRAFFIC LIGHT POLE
ELECT	TRANSFORMER
EHW	ELECTRICAL MANHOLE
BELL	ELECTRICAL HANDWELL
MANH	BELL MANHOLE
VC	VALVE CHAMBER
VB	VALVE BOX
HTD	GAS VALVE
HTD	HYDRANT AND VALVE
250# STM	EXISTING 250# STORM SEWER
250# SAN	EXISTING 250# SANITARY SEWER
DCB	CATCHBASIN
HH	HANDWELL
DI	DITCH INLET CATCHBASIN
SAN MH	SANITARY MANHOLE
STM MH	STORM MANHOLE
1650# C.R.P.	EXISTING 1650# CORRUGATED STEEL PIPE
Q	EXISTING Q DITCH
RS	LAWN SPRINKLER SYSTEM
RIP-RAP	RIP-RAP
DECIDUOUS TREE	DECIDUOUS TREE
CONIFEROUS TREE	CONIFEROUS TREE
TREE OR HEDGE LINE	TREE OR HEDGE LINE
EXISTING POST AND WIRE/CHAIN	EXISTING POST AND WIRE/CHAIN
FENCE WITH GATE	FENCE WITH GATE
EXISTING GROUND ELEVATION	EXISTING GROUND ELEVATION
EXISTING PATH	EXISTING PATH
BOREHOLE AND IDENTIFICATION	BOREHOLE AND IDENTIFICATION
CURB AND GUTTER	CURB AND GUTTER
GUIDE RAIL	GUIDE RAIL
ROAD SIGN	ROAD SIGN
GRAVEL OR ASPHALT ENTRANCE	GRAVEL OR ASPHALT ENTRANCE
B.O.	BY OTHERS

BENCH MARKS

- CITY OF MISSISSAUGA

B. M. No. 602	ELEV. 141.630	ON THE NORTH FACE OF THE WEST CORNER OF A RED BRICK BUILDING (SOUTH PEEL WATER PUMPING STATION) ON THE SOUTH SIDE OF SHERIDAN PARK DRIVE 700' EAST OF HOMELANDS DRIVE.
B. M. No. 609	ELEV. 165.998	ON THE WEST FACE AT THE SOUTH CORNER OF THE WEST END OF A CONCRETE BOX CULVERT ACROSS ERIN MILLS PARKWAY, 1500' NORTH OF EGLINTON AVENUE WEST.
B. M. No. 760	ELEV. 147.794	ON THE MOST EASTERLY WALL ON THE WEST SIDE AT THE NORTH END OF A CONCRETE BRIDGE ON ERIN MILLS PARKWAY 350' NORTH OF BURNHAMTHORPE ROAD WEST.
B. M. No. 799	ELEV. 160.866	ON THE NORTH FACE FAR NORTH CORNER OF THE SOLE REFORM SYNAGOGUE ON THE NORTHWEST CORNER OF ERIN MILLS PARKWAY AND FOLKWAY DRIVE.
B. M. No. 836	ELEV. 131.344	ON A CONCRETE BOX CULVERT ON THE EAST SIDE OF ERIN MILLS PARKWAY, 80m± NORTH OF CENTRELINE OF LINCOLN GREEN WAY. BENCH MARK IS SET VERTICALLY ON THE NORTH-EAST FACE, 0.15m FROM THE NORTHEAST CORNER, 0.15m BELOW THE TOP SURFACE OF THE CULVERT.
B. M. No. 837	ELEV. 133.993	ON THE ERINDALE SECONDARY SCHOOL AT THE NORTHEAST CORNER OF ERIN MILLS PARKWAY AND DUNDAS STREET WEST. BENCH MARK IS SET VERTICALLY ON THE WESTERLY FACE AT THE NORTHWEST CORNER OF THE BUILDING, 0.23m SOUTH OF THE NORTHWEST CORNER, 0.34m ABOVE GRADE.
B. M. No. 838	ELEV. 147.276	ON A BRICK POST 350m± SOUTH OF THE CENTRELINE COLLEGEWAY ON THE WEST SIDE OF ERIN MILLS PARKWAY, BENCH MARK IS SET VERTICALLY ON THE EAST FACE, 0.33m NORTH OF THE SOUTHEAST CORNER OF POST, 0.37m ABOVE GRADE.
B. M. No. 843	ELEV. 168.645	ON THE CONCRETE BRIDGE OVERPASS CARRYING ERIN MILLS PARKWAY OVER HIGHWAY 403. BENCH MARK IS SET VERTICALLY ON THE WEST FACE ON THE WEST BRIDGE ON THE NORTHWEST ABUTMENT, 0.90m SOUTH OF THE NORTHWEST CORNER, 0.43m ABOVE GRADE.
B. M. No. 844	ELEV. 165.783	ON THE CREDIT VALLEY HOSPITAL AT ERIN MILLS PARKWAY AND EGLINTON AVENUE WEST. BENCH MARK IS SET VERTICALLY ON THE NORTH FACE ON A CONCRETE RETAINING WALL 24m± WEST OF THE MAIN ENTRANCE, 0.27m EAST OF THE NORTHWEST CORNER OF WALL, 0.28m ABOVE GRADE.
B. M. No. 847	ELEV. 177.284	SOUTH ALONG ERIN MILLS PARKWAY A DISTANCE OF 400m± FROM THOMAS STREET. BENCH MARK IS SET HORIZONTALLY ON THE EAST SIDE OF ERIN MILLS PARKWAY, 16m NORTH OF THE 9TH HYDRO POLE SOUTH OF THOMAS STREET, 1.15m WEST OF POST & WIRE FENCE LINE ON THE EAST LIMIT. FLUSH TO GRADE.

NOTE: THE STREETSVILLE FEEDERMAIN PROJECT IS DESIGNED ON THE 6' U.T.M., 1974 ADJUSTMENT COORDINATE GRID SYSTEM. IN ORDER TO OBTAIN ACTUAL GROUND LENGTHS, DIVIDE GRID LENGTH BY 0.99972

UTILITY CONTACTS

THE CONTRACTOR SHALL NOTIFY THE PARTY CONCERNED AT LEAST TWO FULL DAYS BEFORE COMMENCING WORK IN THE VICINITY

THE REGIONAL MUNICIPALITY OF PEEL DEPARTMENT OF PUBLIC WORKS 10 PEEL CENTRE DRIVE BRAMPTON, ONTARIO L6T 4H9 TELEPHONE (905)791-9400	MR. G.J. SAVAGE, P.ENG DIRECTOR, ENGINEERING AND CONSTRUCTION	ENBRIDGE CONSUMERS GAS RECORDS DEPARTMENT 500 EGLIN MILLS ROAD RICHMOND HILL, ONTARIO L4C 5G1 TELEPHONE 1(800)361-0621	MR. FRANK CHOLEWA SUPERVISOR RECORDS DISTRIBUTION OPERATIONS EXPANSION
CITY OF MISSISSAUGA 300 CITY CENTRE DRIVE MISSISSAUGA, ONTARIO L5B 3C1 TELEPHONE (905)896-5000	MR. A. McDONALD, COMMISSIONER PUBLIC WORKS DEPARTMENT	ENERSOURCE HYDRO MISSISSAUGA 3240 MAVIS ROAD MISSISSAUGA, ONTARIO L5C 3K1 TELEPHONE (905)566-2727 EX. 738	MR. RIZALDE CUACHON
BELL CANADA MUNICIPAL OPERATIONS CENTRE 100 BOROUGHS DRIVE FLOOR 3 SCARBOROUGH, ONTARIO M1P 4W2 TELEPHONE (416)296-6929	MS. LIN CHAPUT	ROGERS CABLE TV 3573 WOLFDALE ROAD MISSISSAUGA, ONTARIO L5C 3T6 TELEPHONE (905)273-8000 EX. 8514	MS. SANDRA SELBY

SOILS REPORTS

- BY GEO-CANADA LTD., DATED JUNE 1996.
REFERENCE NUMBER G-94-1202A

PIPELINE CONTACTS

SUN-CANADIAN PIPELINE P.O. BOX 470 WATERLOO, ONTARIO L0R 2H0 TELEPHONE 1(800)263-6641	MR. PAUL LANE
SARNIA PRODUCTS PIPELINE c/o IMPERIAL OIL PRODUCTS AND CHEMICALS DIVISION 100 5th CONCESSION EAST WATERLOO, ONTARIO L0R 2H1 TELEPHONE 1(905)689-6652 EX. 231	MR. BILL STARK
ENBRIDGE PIPELINES INC. P.O. BOX 398 10201 JASPER AVE. EDMONTON, ALBERTA T5J 2J9 TELEPHONE 1(780)420-5123	MR. MARK BRADLEY
CONSUMERS GAS PIPELINE c/o ENBRIDGE CONSUMERS GAS 500 EGLIN MILLS ROAD EAST RICHMOND HILL, ONTARIO L4C 5G1 TELEPHONE 1(800)361-0621	MR. FRANK CHOLEWA SUPERVISOR RECORDS DISTRIBUTION OPERATIONS EXPANSION

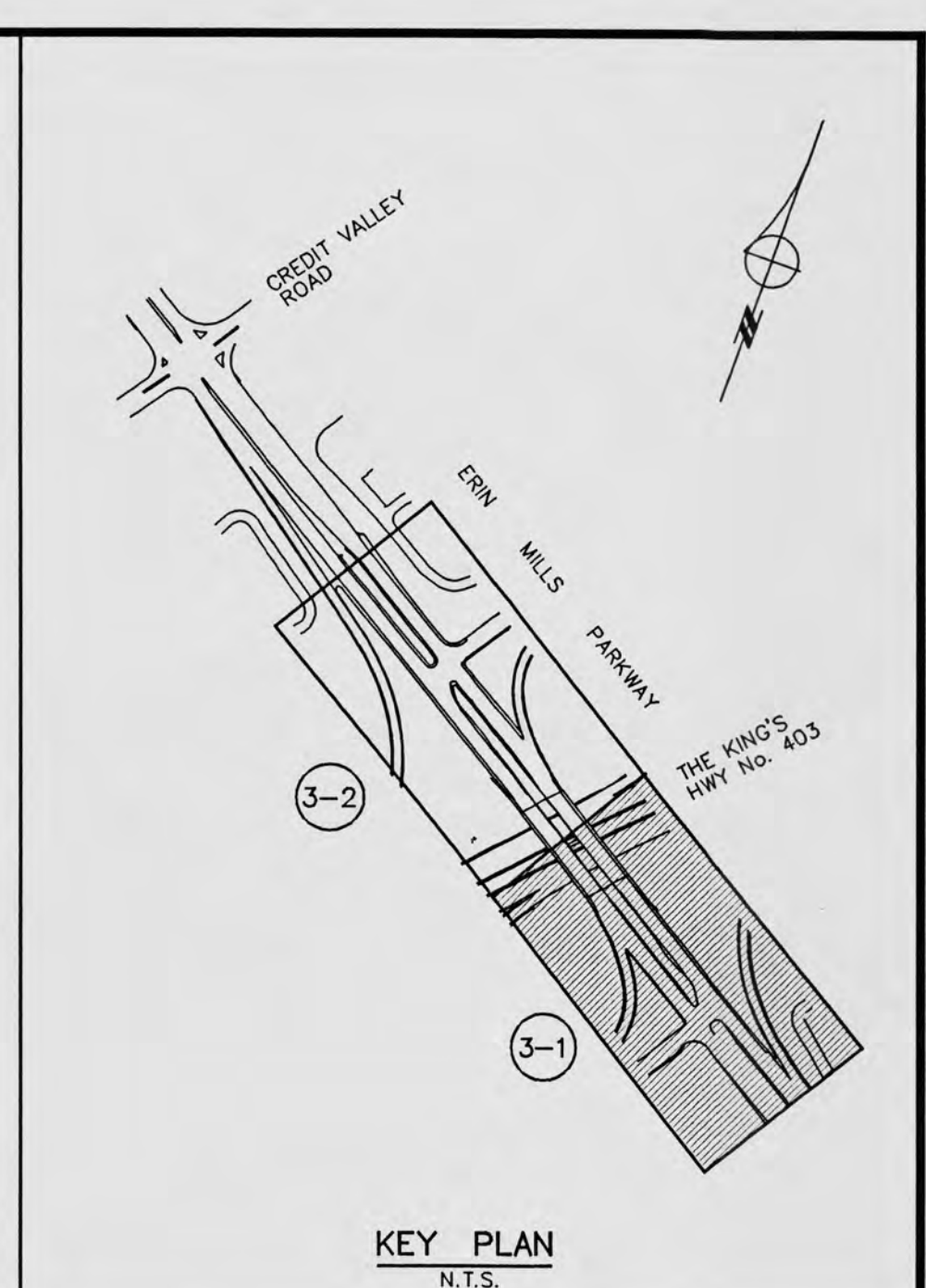
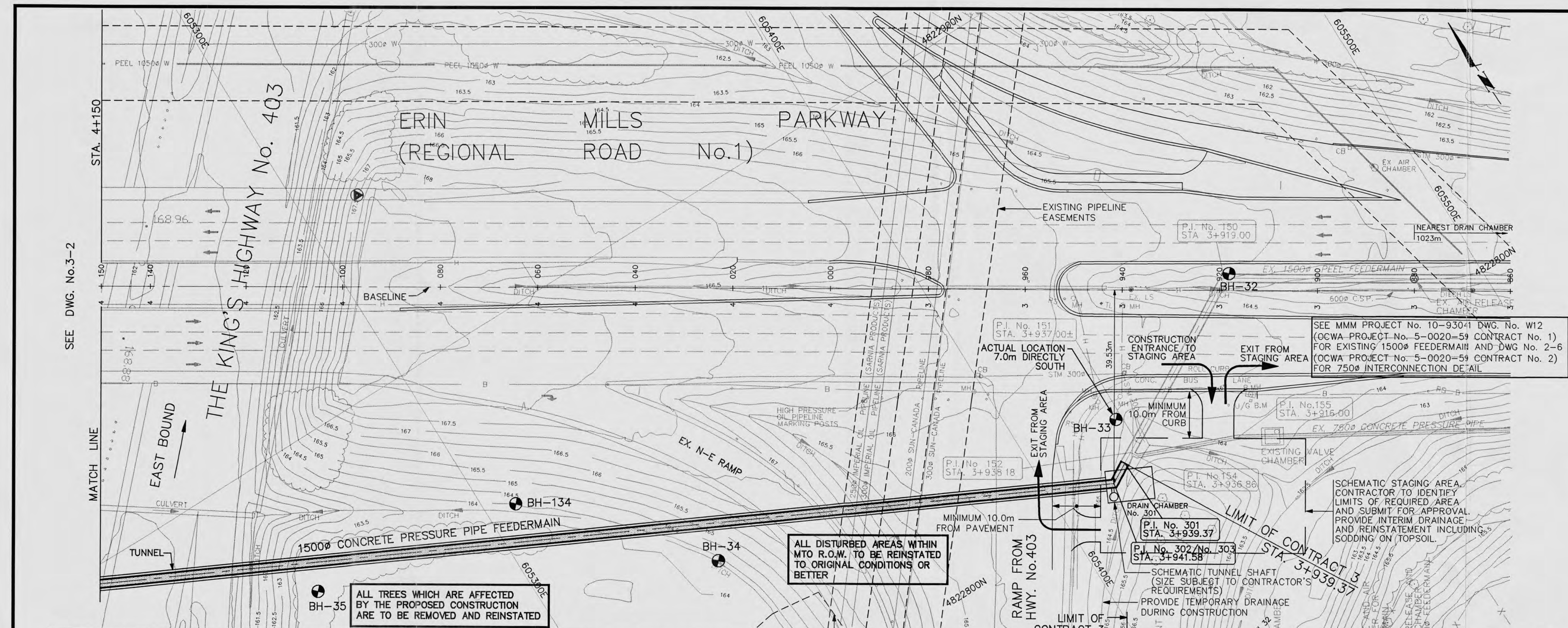
Region of Peel
Working for you

REGION OF PEEL PROJECT No. 95-1960

STREETSVILLE FEEDERMAIN
CONTRACT No. 3

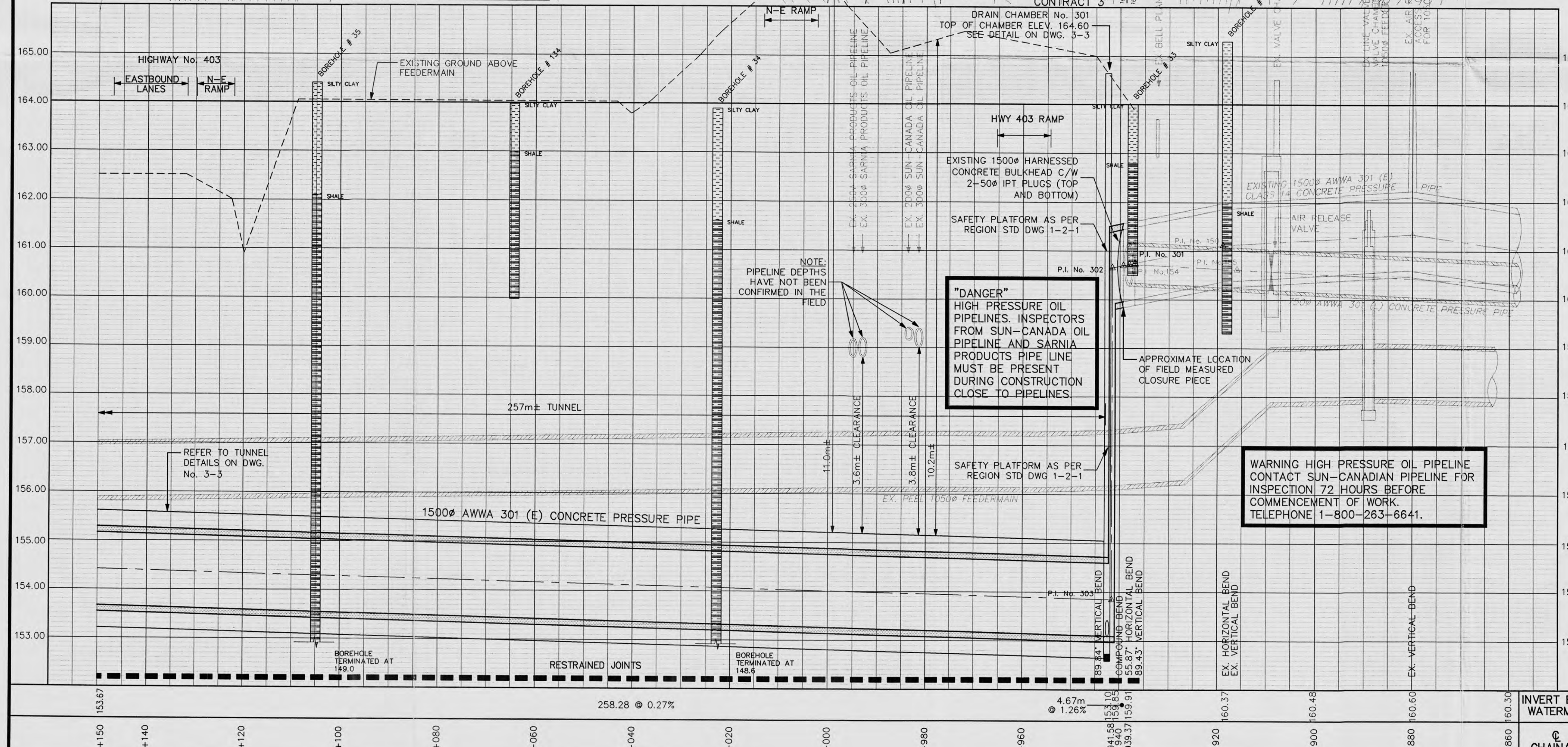
Marshall Macklin Monaghan
PROJECT MANAGERS • ENGINEERS • SURVEYORS • PLANNERS
80 Commerce Valley Dr. East, Thornhill, Ontario
(905) 882-1100

DESIGNED A.M.P./J.S.	DRAWN M.C.R.	CHECKED A.S.
DATE JULY 2001	DRAWING No. 10-93041	INDEX



FEEDERMAIN P.I. LAYOUT DATA

P.I. No.	CHAINAGE	NORTHERN	EASTERN	INVERT ELEV.(m)
301	3+939.37	4822806.65	605416.70	159.91
302	3+941.58	4822804.17	605412.63	159.85
303	3+941.58	4822804.17	605412.63	153.10
304	4+198.50	4822918.11	605180.85	153.80



- ALL DIMENSIONS AND ELEVATIONS ARE IN METRES UNLESS OTHERWISE NOTED.
- PIPE SIZES ARE IN MILLIMETRES.
- FOR BENCH MARKS, LIST OF DRAWINGS AND LEGEND, SEE INDEX SHEET

NO.	ISSUED FOR APPROVAL; NOT FOR CONSTRUCTION	BY	DATE	APPR.
1	ISSUED FOR APPROVAL; NOT FOR CONSTRUCTION	J.S.	NOV. 2/01	A.S.

ALL PREVIOUS ISSUES OF THIS DRAWING ARE SUPERSEDED

Region of Peel
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STREETSVILLE FEEDERMAIN
CONTRACT 3

ERIN MILLS PARKWAY
STA. 3+939.37 TO STA. 4+150

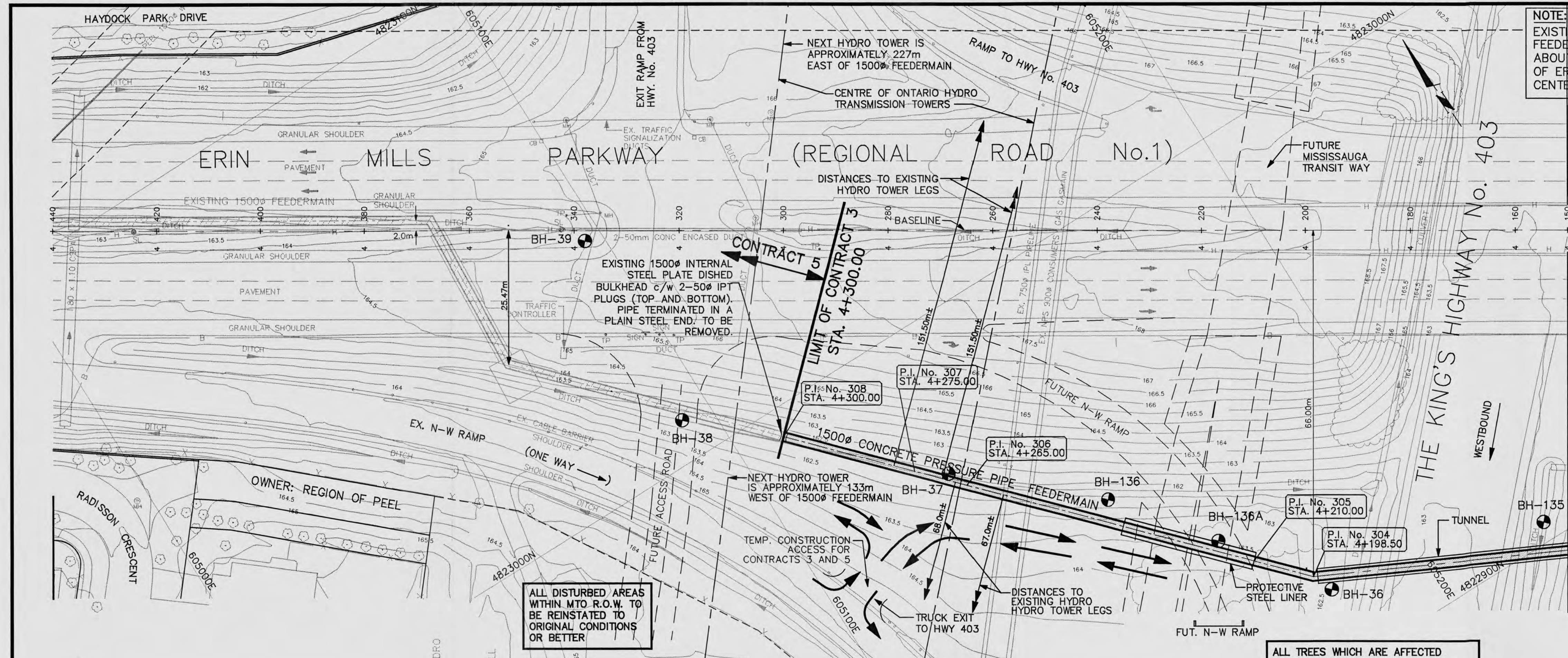
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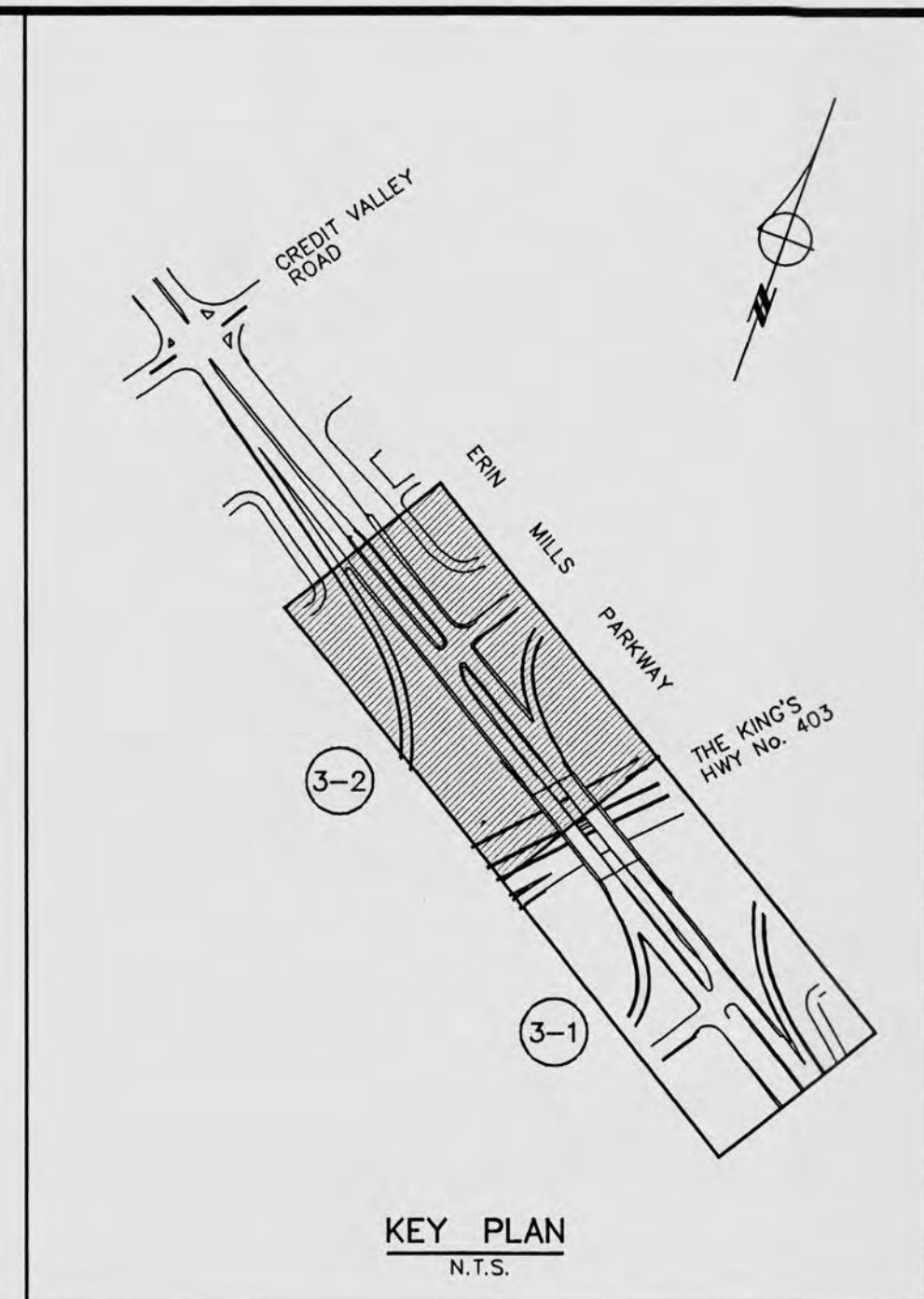
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SCALE
HORIZ. SCALE: 1:500
VERT. SCALE: 1:50

CONSULTANT PROJECT No. 10-93041 **DRAWING No.** 3-1

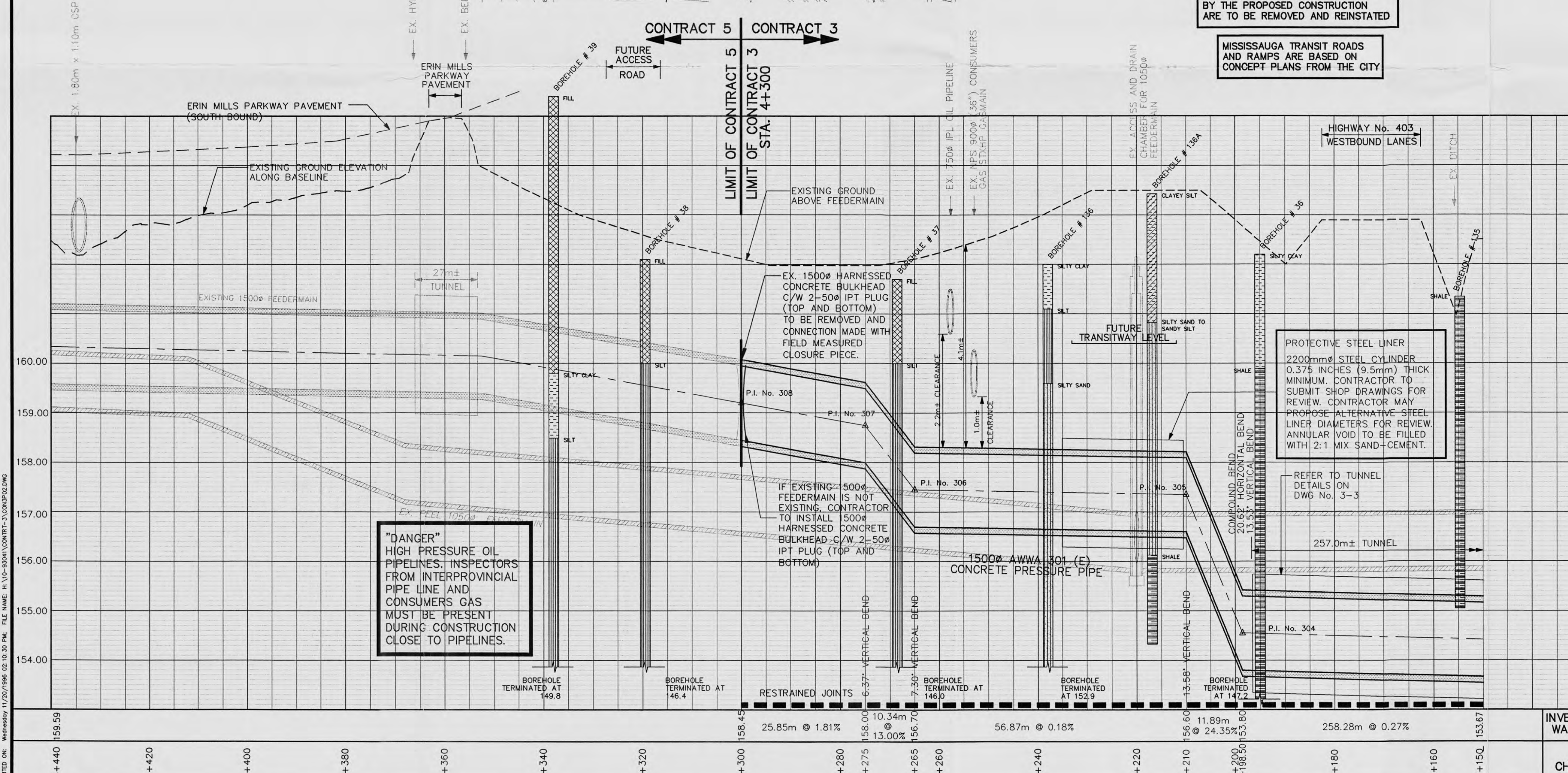


SEE DWG. No. 3-1



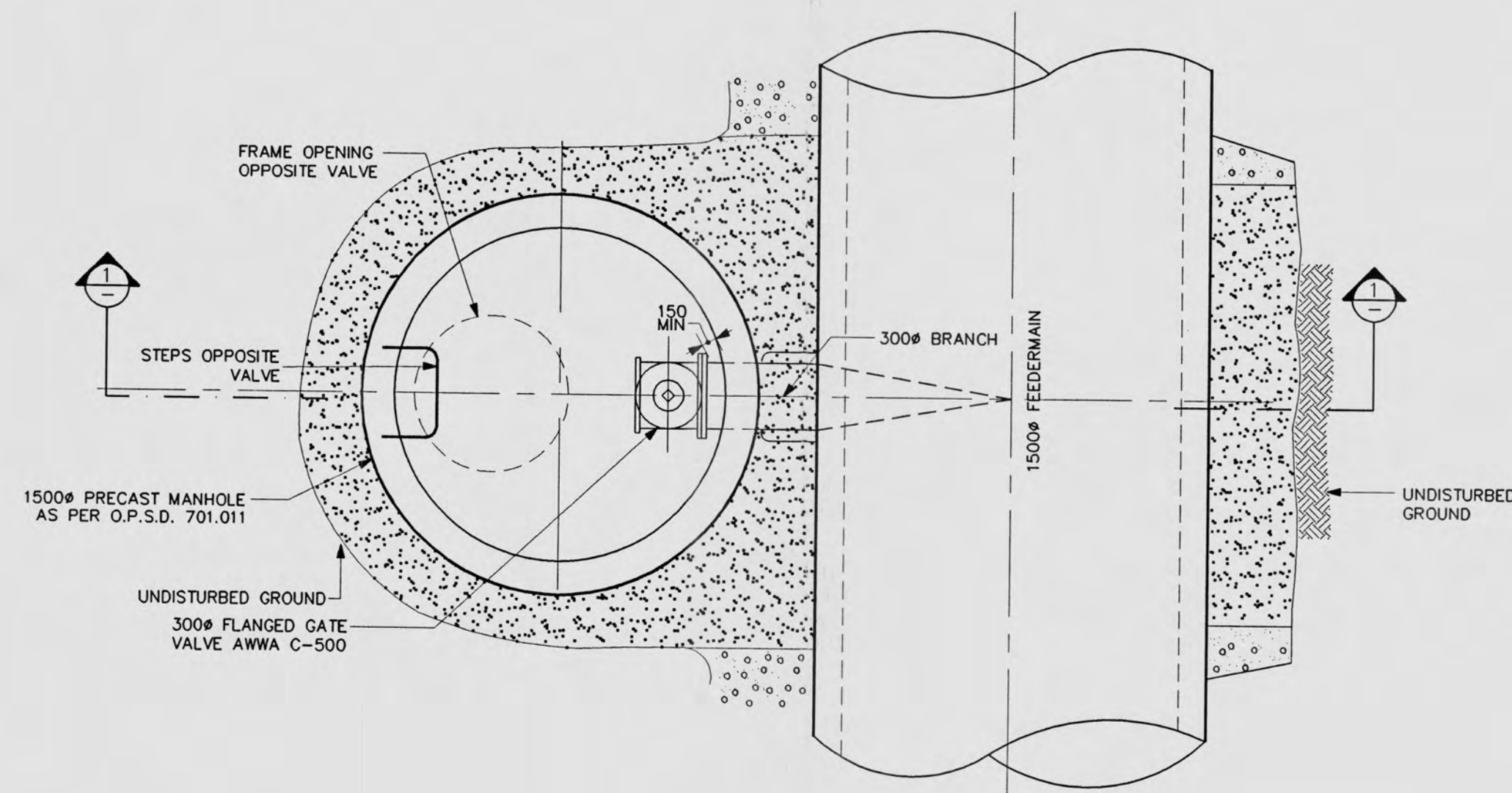
FEEDERMAIN P.I. LAYOUT DATA				
P.I. No.	CHAINAGE	NORTHERN	EASTERN	INVERT ELEV.(m)
303	3+941.58	4822804.17	605412.63	153.10
304	4+198.50	4822918.11	605180.85	153.80
305	4+210.00	4822926.78	605172.71	156.00
306	4+265.00	4822968.24	605133.78	156.70
307	4+275.00	4822975.78	605126.70	158.00
308	4+300.00	4822994.62	605109.01	158.16

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INVERT ELEV. WATERMAIN

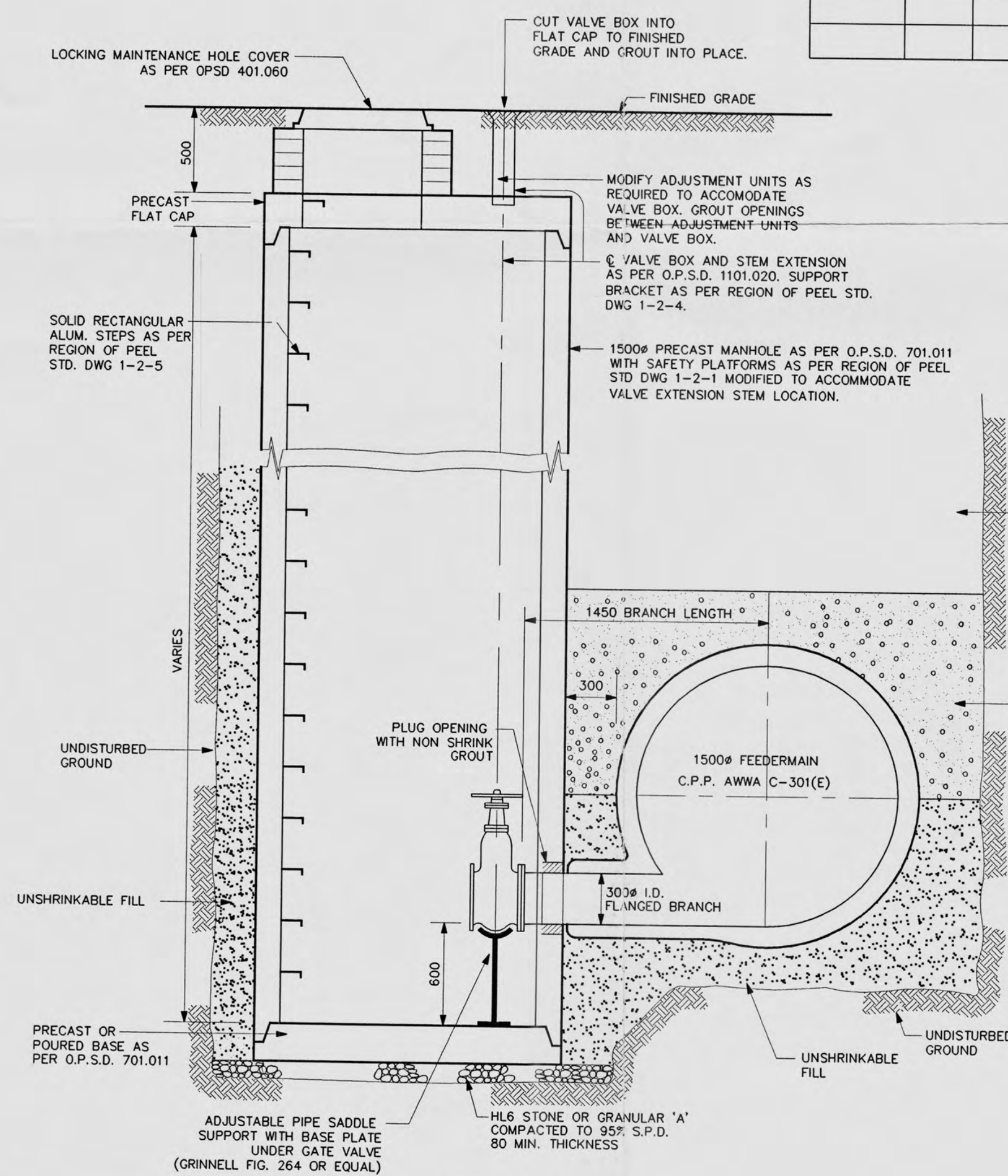
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STA. 4+150 TO STA. 4+300				
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DATE JULY 2001				
SCALE	HORIZ. SCALE: 1:500 VERT. SCALE: 1:50			
CONSULTANT PROJECT No.	DRAWING No.			
10-93041	3-2			



PLAN

DRAIN CHAMBER TABLE

CHAMBER No.	TOP OF FRAME	INV. OF 1500# PIPE	CHAINAGE
301	164.60	153.10	3+941.58

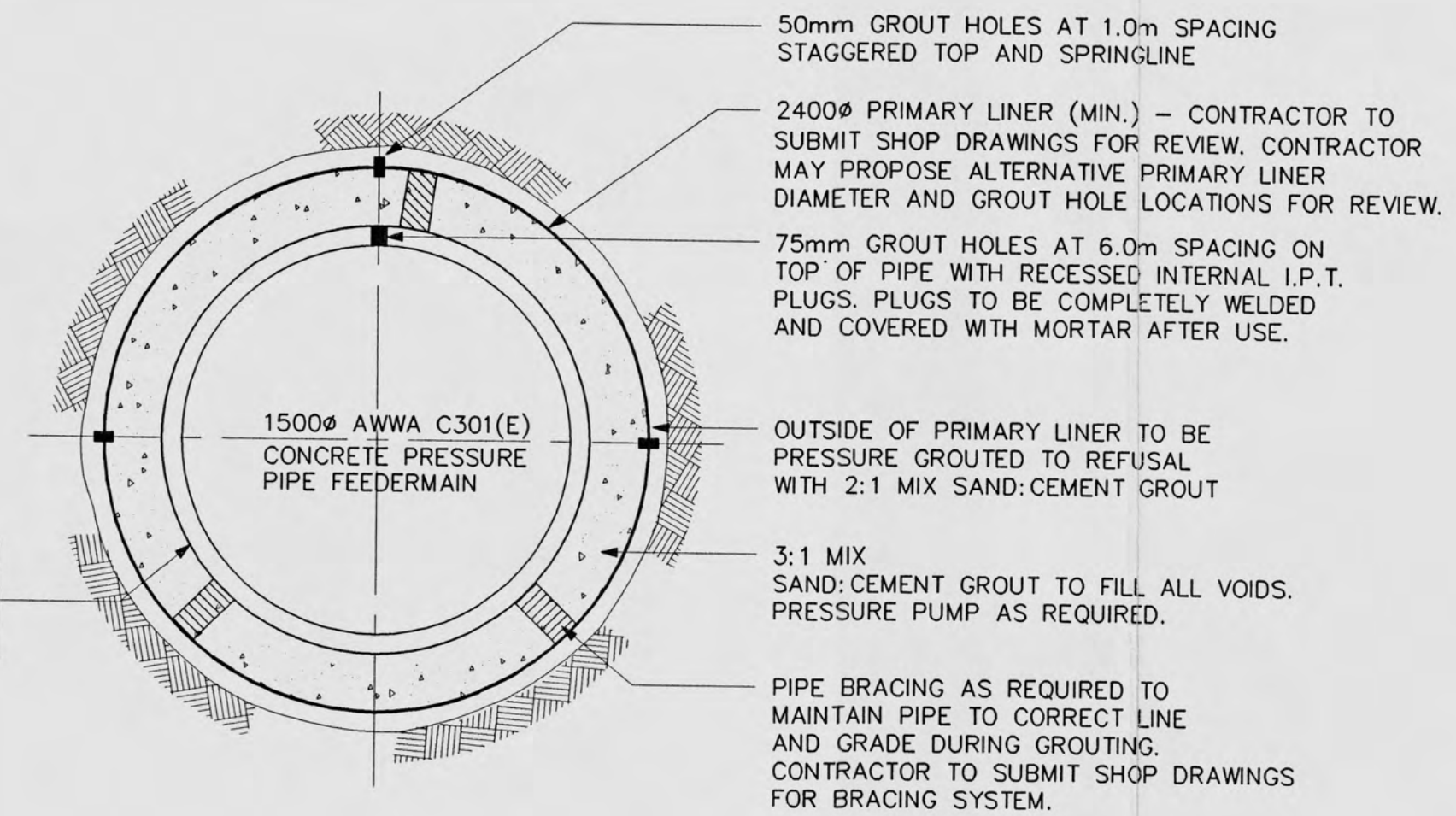


SECTION

DRAIN CHAMBER

SCALE 1:25

INSIDE PIPE DIAMETER 1524mm
OUTSIDE PIPE DIAMETER 1798mm
OUTSIDE BELL DIAMETER 1798mm



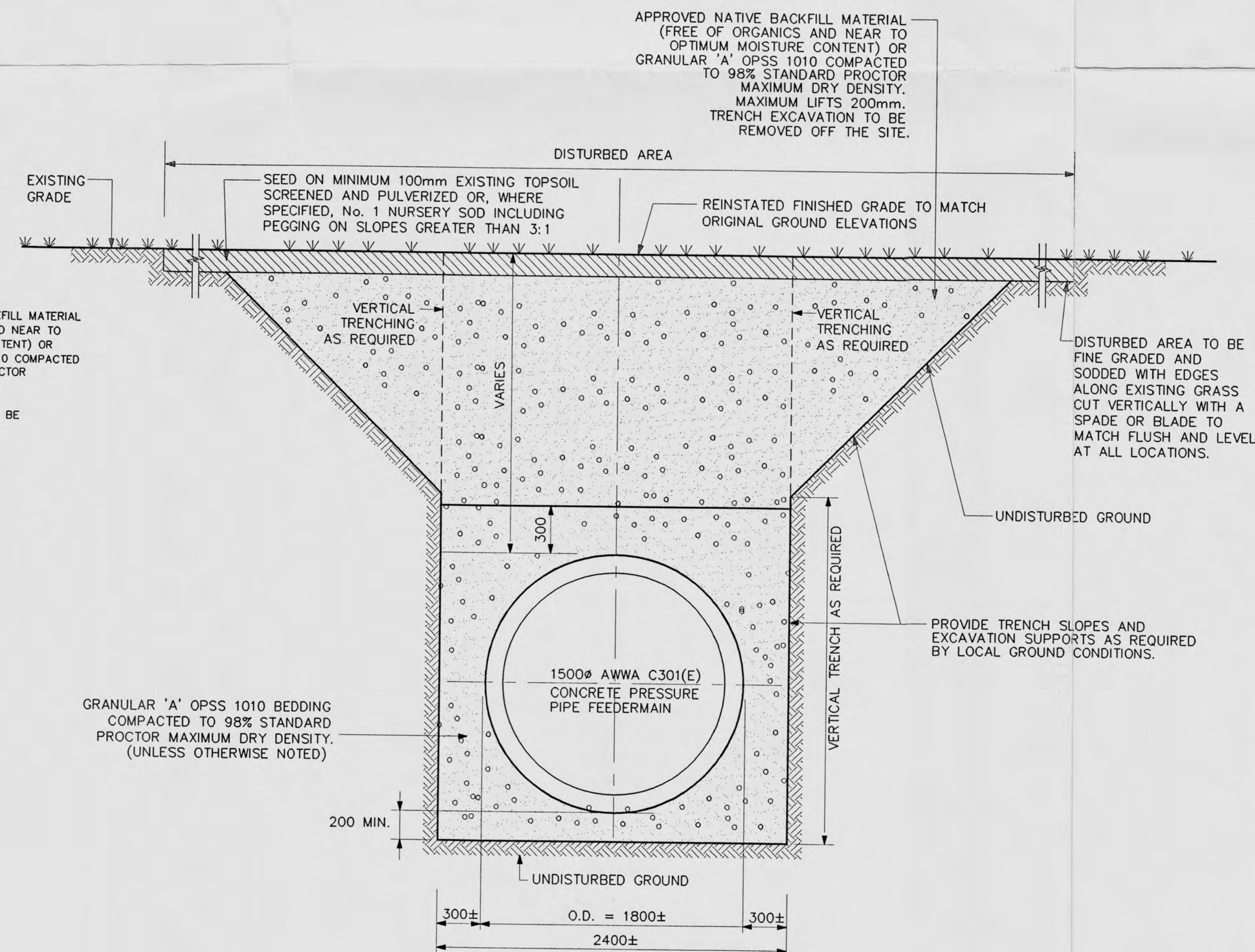
PROCEDURE TO ALLOW FOR RELIEF OF SHALE STRESSES:

ALTERNATIVE 1 : ALLOW GROUTED PRIMARY LINER TUNNEL TO REST FOR ABOUT 60 DAYS PRIOR TO INSTALLING FEEDER MAIN PIPE, SUBJECT TO MONITORING BY GEOTECHNICAL ENGINEER.

ALTERNATIVE 2 : PROVIDE MIN. 50mm COMPRESSIBLE FOAM SPRAY OF APPROVED DESIGN ON INSIDE OF PRIMARY LINER INCLUDING RIBS FOR IMMEDIATE FEEDER MAIN INSTALLATION.

TUNNEL DETAILS

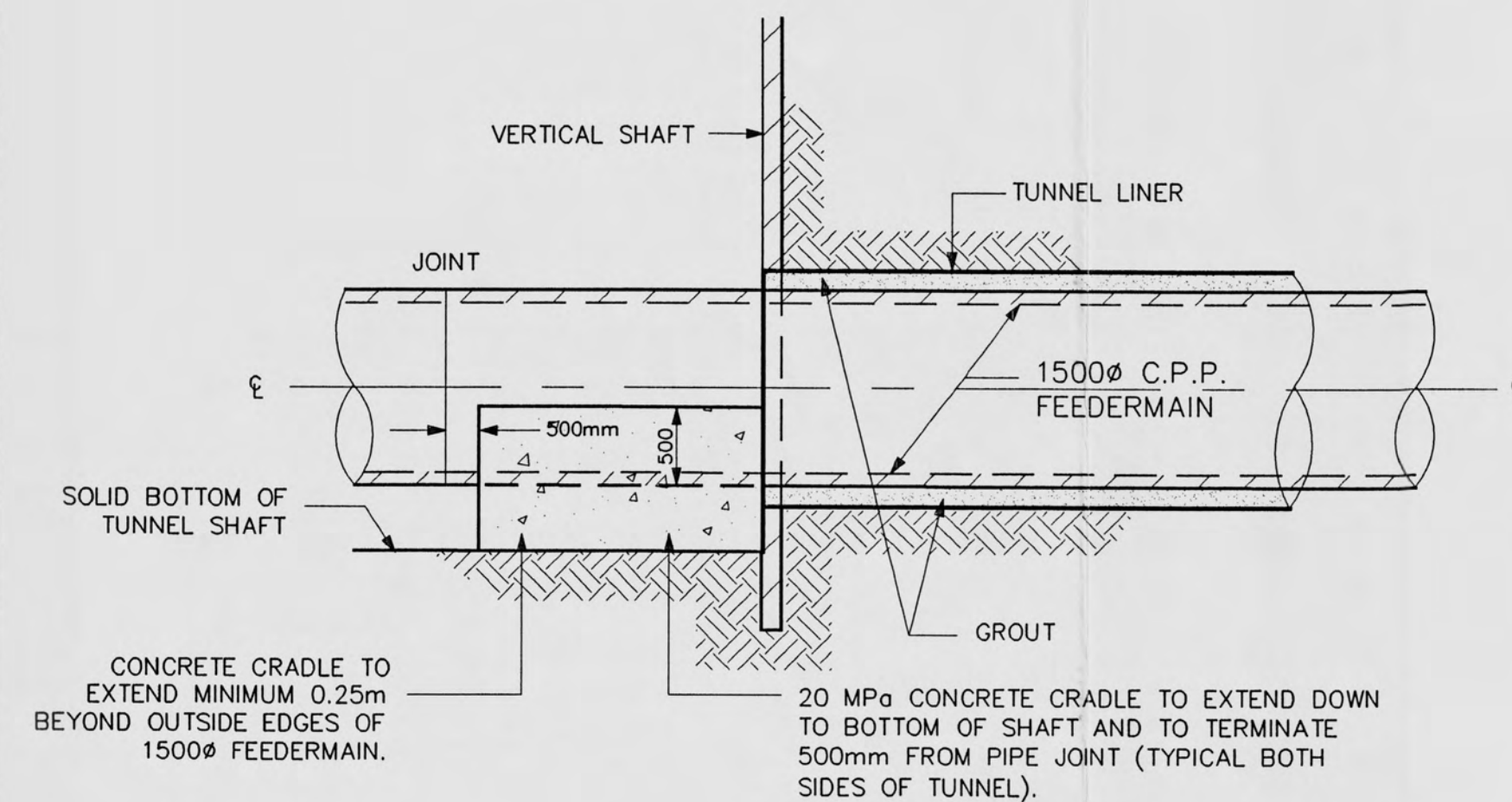
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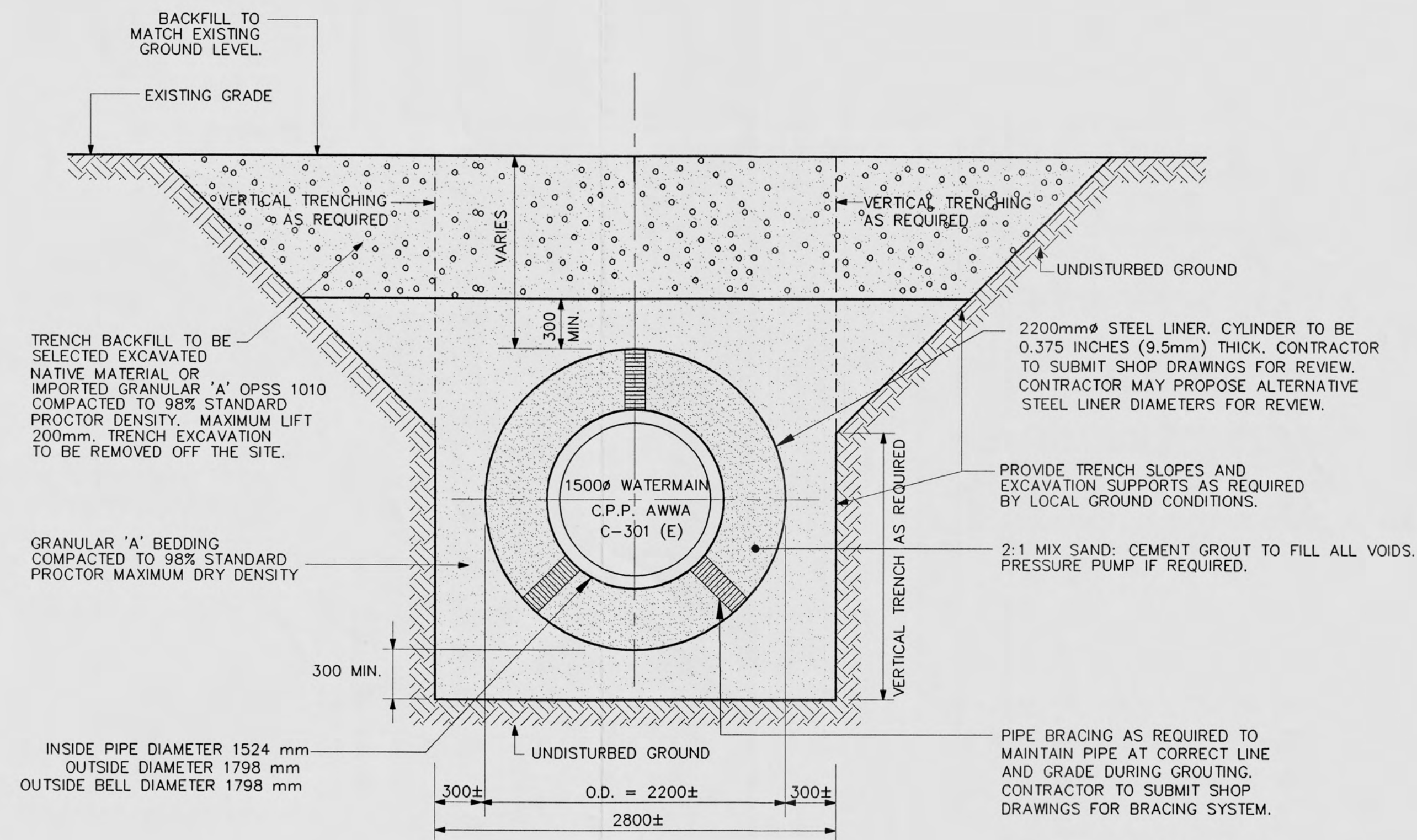
TYPICAL TRENCH DETAIL FOR CONCRETE PRESSURE PIPE

SCALE 1:25

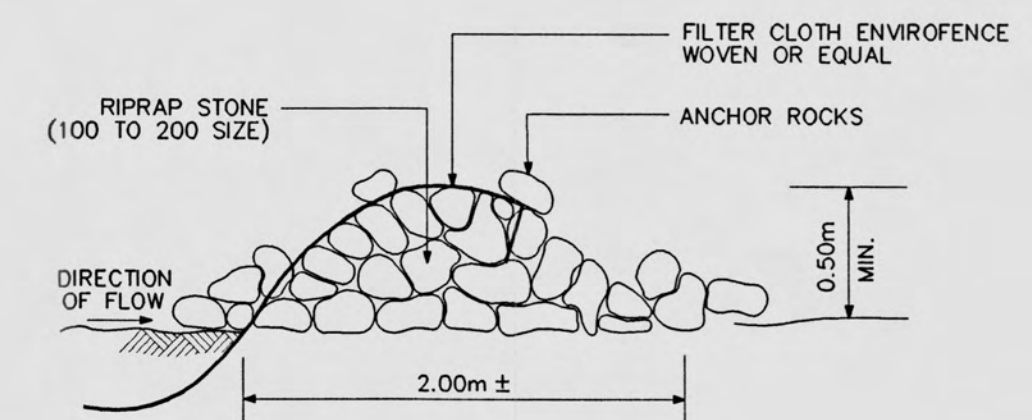
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REGION OF PEEL PROJECT No. 95-1960						
STREETSVILLE FEEDERMAIN CONTRACT No. 3						
CONSTRUCTION DETAILS						
Marshall Macklin Monaghan <small>PROJECT MANAGERS • ENGINEERS • SURVEYORS • PLANNERS 80 Commerce Valley Dr. East, Thornhill, Ontario (905) 883-1100</small>						
DESIGNED	A.M.P./J.S.	DRAWN	M.C.R.	CHECKED	A.S.	
				DATE	JULY 2001	
SCALE				AS SHOWN		
CONSULTANT PROJECT No.				DRAWING No.		
10-93041				3-3		



PIPE SUPPORT DETAIL FOR TUNNEL
N.T.S.

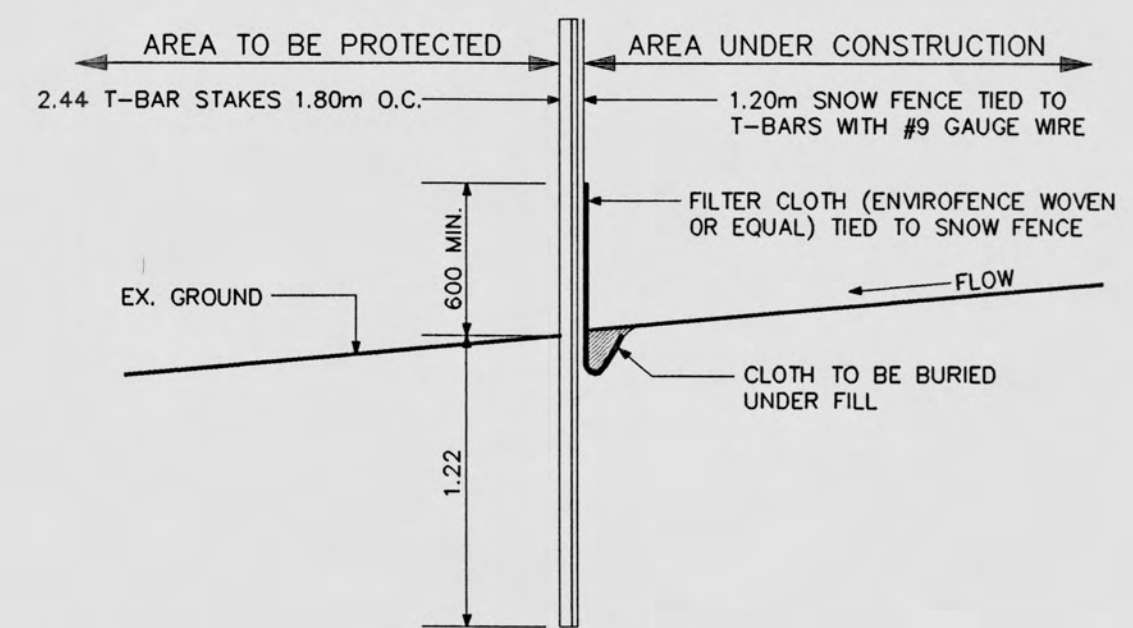


STEEL LINER DETAIL
SCALE 1:25



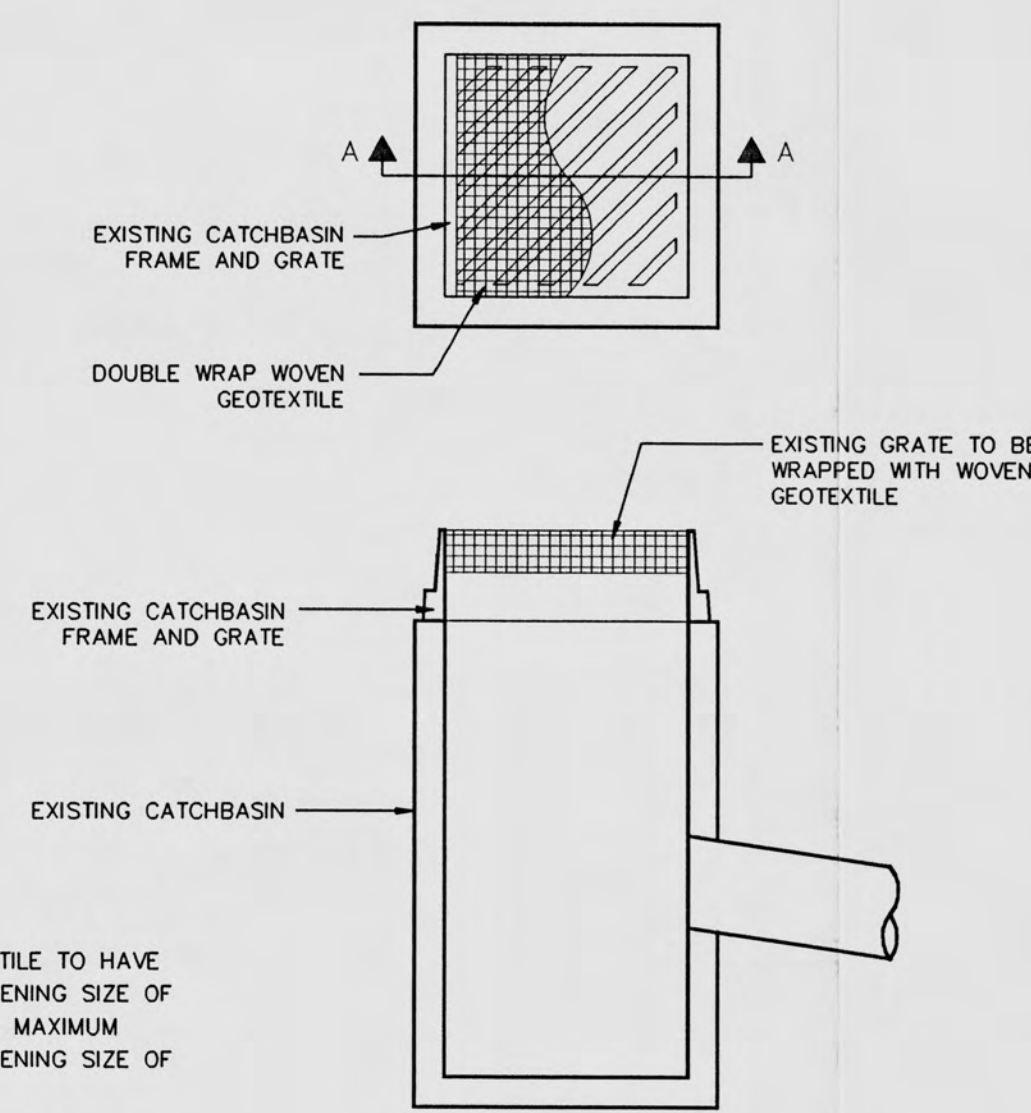
NOTE: CONTRACTOR RESPONSIBLE FOR INSTALLATION AND MAINTENANCE FOR THE FULL DURATION OF CONSTRUCTION PERIOD AND FOR REMOVAL AND REINSTATEMENT AT THE END OF CONSTRUCTION.

SILTATION CONTROL DAM
N. T. S.



NOTE: CONTRACTOR RESPONSIBLE FOR INSTALLATION AND MAINTENANCE FOR THE FULL DURATION OF CONSTRUCTION PERIOD AND FOR REMOVAL AND REINSTATEMENT AT THE END OF CONSTRUCTION.

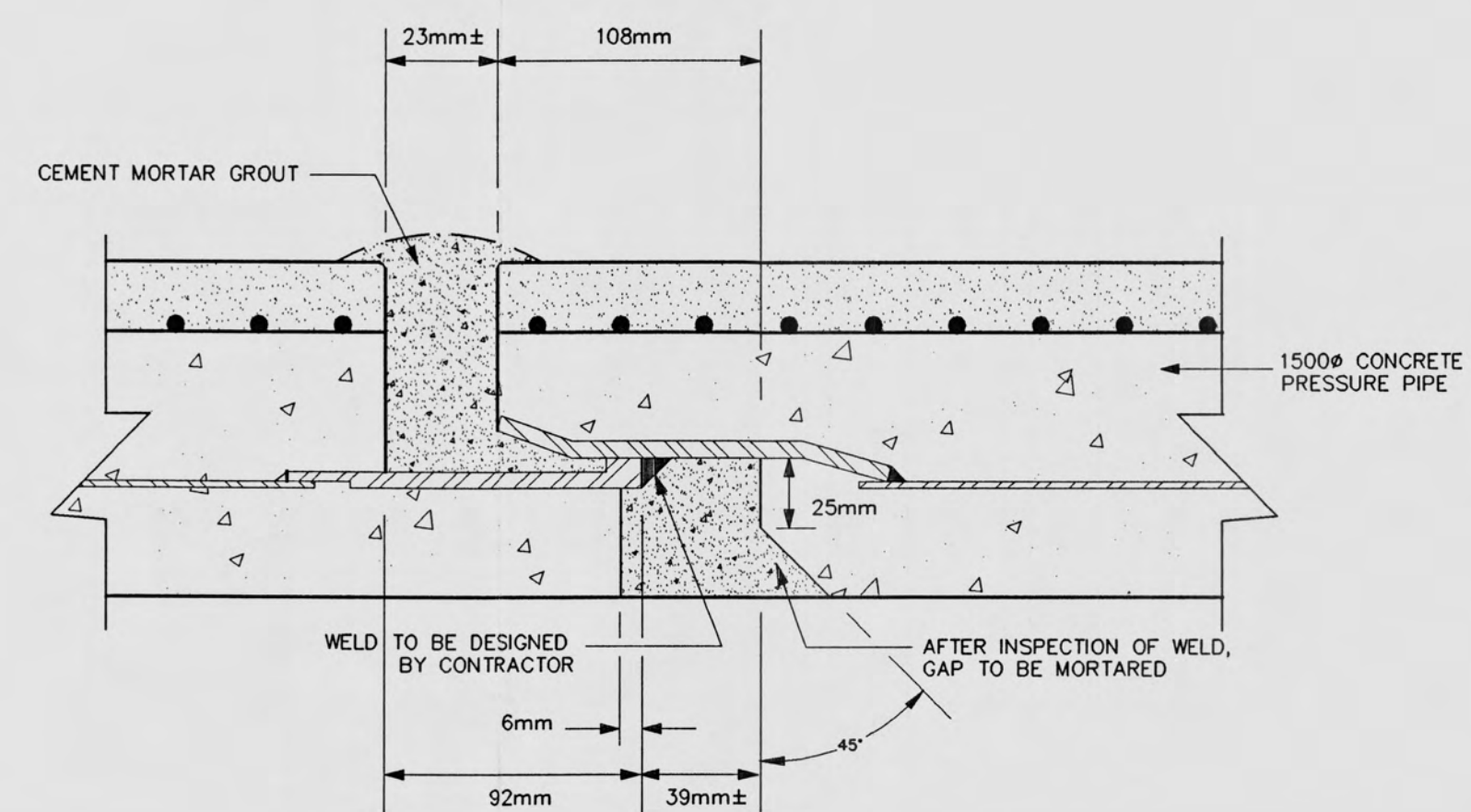
SILTATION CONTROL FENCE
N.T.S.



NOTES:

- WOVEN GEOTEXTILE TO HAVE EQUIVALENT OPENING SIZE OF 0.15mm AND A MAXIMUM EQUIVALENT OPENING SIZE OF 0.25mm
- WOVEN GEOTEXTILE TO BE REPLACED PERIODICALLY WHEN ACCUMULATED SEDIMENTS INTERFERES WITH DRAINAGE

**SECTION A-A
ROADSIDE CATCHBASIN
SEDIMENT PROTECTION CONTROL DETAIL**
N.T.S.



**INTERNAL WELDED JOINT DETAIL FOR 1500Ø
CONCRETE PRESSURE PIPE**
N.T.S.

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