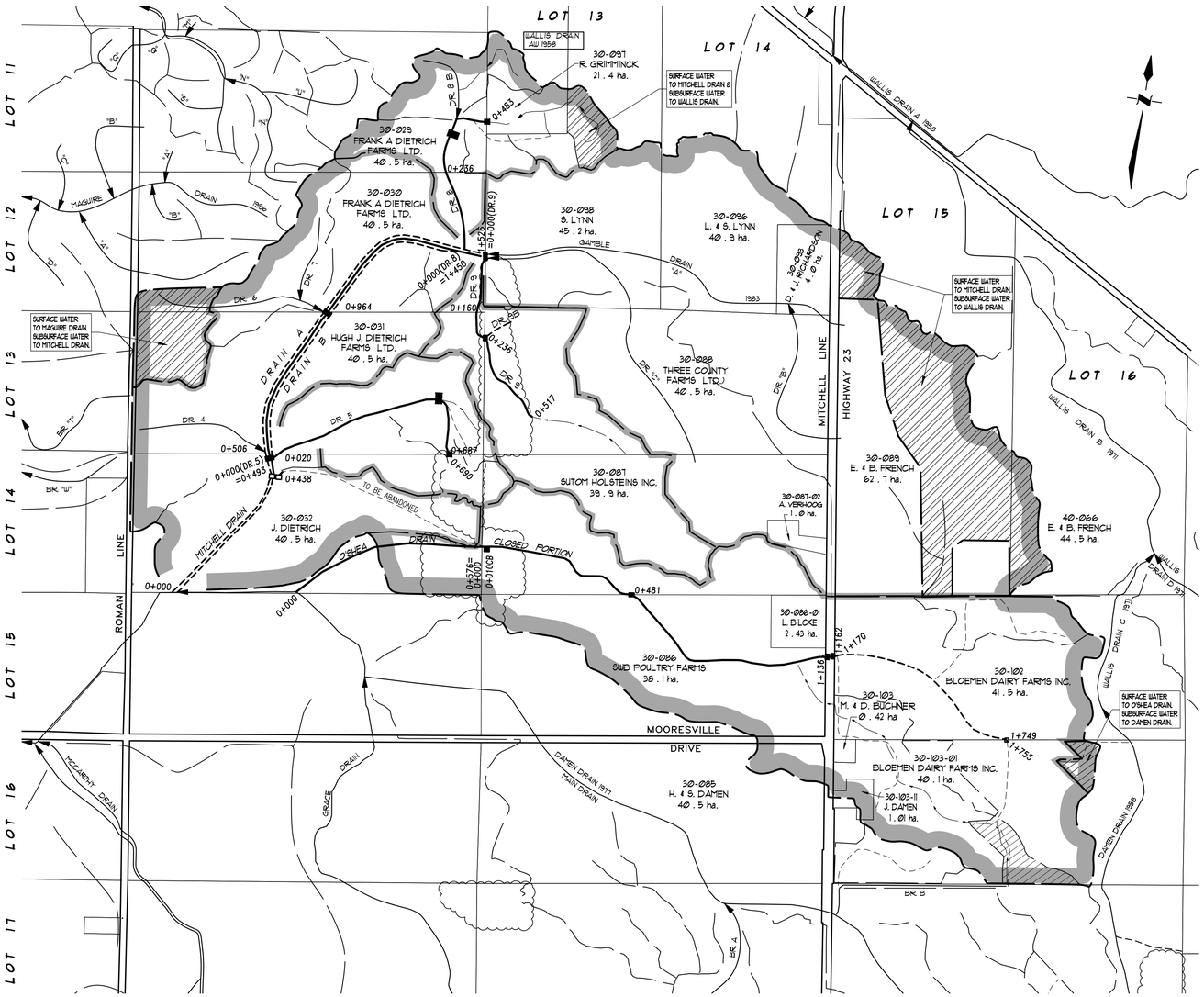
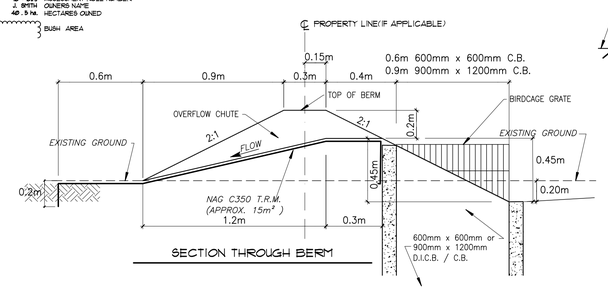


PLAN SCALE 1 : 7 , 500

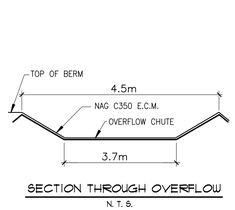
PLAN LEGEND

- LIMIT OF WATERSHED AREA
- PROPOSED DRAINAGE WORKS
- EXTERIOR OR INTERIOR WATERSHED
- TO BE INCLUDED FOR FUTURE MAINTENANCE
- EXIST. MUNICIPAL DRAIN
- PRIVATE TILE OR SURFACE WATER RUN
- EXISTING PRIVATE TILES OR TILE TO BE ABANDONED
- 30 - 029 ASSESSMENT ROLL NUMBER; J. SMITH OWNERS NAME; 40 . 5 ha. HECTARES OWNED
- BUSH AREA



SECTION THROUGH BERM

DETAIL "B" N. T. S.

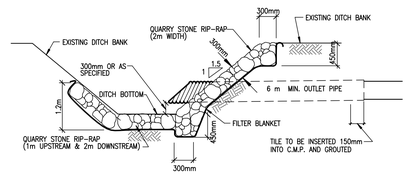


SECTION THROUGH OVERFLOW

N. T. S.

N.A.G. TURF REINFORCEMENT MAT TO BE INSTALLED ON SEEDED BERM IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS WITH THE FOLLOWING EXCEPTIONS :

1) STAPLES TO BE 200mm LONG AND SHALL BE INSTALLED TO MANUFACTURER'S " D " PATTERN



TYPICAL OUTLET RIP - RAP

DETAIL "E" N. T. S.

GENERAL NOTES

1/ OUR "SPECIFICATIONS FOR THE CONSTRUCTION OF MUNICIPAL DRAINAGE WORKS, DATED JANUARY 2010 APPLY TO THIS PROJECT.

2/ THE WORKING WIDTH AVAILABLE TO THE CONTRACTOR TO CONSTRUCT THE NEW DRAINS SHALL CONSIST OF THOSE LANDS IMMEDIATELY ADJACENT TO THE DRAIN AND CONNECTIONS AND SHALL NOT EXCEED THE FOLLOWING AVERAGE WIDTHS :
OPEN PORTIONS-BUSH AREAS - 15 meters TOTAL (REMOVE ONLY TREES ALONG BANK AND THOSE ABSOLUTELY NECESSARY TO COMPLETE CONSTRUCTION
CLOSED PORTIONS - 10 meters
CLOSED PORTIONS (THROUGH BUSH) - 30 meters (CENTERED ON THE DRAIN)
THE WORKING WIDTH FOR PURPOSES OF FUTURE MAINTENANCE SHALL BE THE SAME AS ABOVE EXCEPT FOR CLOSED PORTIONS (NOT THROUGH BUSH) SHALL BE 10m.

3/ ALL OWNERS ALONG THE COURSE OF THE DRAIN SHALL MAKE AN ACCESS ROUTE FROM THE NEAREST ROAD TO THE DRAIN LOCATION AVAILABLE TO THE CONTRACTOR THE AVERAGE WIDTH OF THIS ROUTE SHALL NOT EXCEED 8 METERS , THE ACCESS ROUTE SHALL ALSO APPLY FOR FUTURE MAINTENANCE PURPOSES .

4/ a) ALL UTILITIES TO BE LOCATED AND EXPOSED PRIOR TO CONSTRUCTION SO THAT THE NEW TILE GRADES CAN BE CONFIRMED. IF THERE IS A CONFLICT IN ELEVATION BETWEEN THE PROPOSED DRAIN AND THE UTILITY, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY.
b) CONTRACTOR TO NOTIFY ALL UTILITIES 72 HOURS PRIOR TO HIS SCHEDULED TIME FOR STARTING THE ABOVE WORK.
c) THE COST FOR THIS WORK SHALL BE INCLUDED IN THE ITEM ON THE EXTENT OF WORK AND NO EXTRA PAYMENT SHALL BE MADE TO THE CONTRACTOR, EXCEPT IF ROAD RESTORATION IS REQUIRED.

5/ ALL TREES , SCRUB , BRUSH , ETC. TO BE CLEARED AND GRUBBED IN ACCORDANCE WITH "SECTION B, 3 AND C, 4" SPECIFICATIONS .

6/ RIP-RAP TO BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH "SECTION A, 12" IN THE SPECIFICATIONS.

7/ TURF REINFORCEMENT MAT SHALL BE " NORTH AMERICAN GREEN C 350 " OR APPROVED EQUAL. MAT SHALL BE INSTALLED ON SEEDED BANK IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS WITH THE FOLLOWING EXCEPTIONS :
a) STAPLES TO BE 200mm LONG AND SHALL BE INSTALLED TO MANUFACTURER'S " D " PATTERN
b) MAT TO BE KEYED 300mm BELOW DITCH BOTTOM, 200mm INTO BANK SLOPE AT UPSTREAM LIMIT AND SHALL BE STAPLED 200mm BELOW TOE OF BANK .

8/ CONTRACTOR TO ARRANGE A PRE-CONSTRUCTION MEETING WITH THE ENGINEER , DRAINAGE SUPERINTENDENT , AND THE AFFECTED OWNERS . ALL PARTIES SHALL RECEIVE 48 HOURS NOTICE TO THE MEETING .

CLOSED PORTIONS

9/ ALL CONCRETE AND PLASTIC TILE AND PIPE TO CONFORM TO "SECTION C.1 " IN THE SPECIFICATIONS.
a) SEWER PIPE TO BE CONCRETE, H. D. P. E. PLASTIC 320 KPA (BELL & SPIGOT WITH RUBBER GASKETS, CONFORMING TO C.S.A. Ø76-08) , PVC ULTRA RIB OR PVC SDR 35
b) CONCRETE TILE SHALL BE HEAVY DUTY UNLESS SPECIFIED 2000 D OR 2400 D IN PROFILE.
c) SMOOTH WALL PLASTIC PIPE (PERFORATED WITH SOCK) SHALL BE FLEXIBLE (COILABLE) DUAL WALL PIPE SUCH AS "GOLDFLEX", "ADS" OR APPROVED EQUAL. FILTER SOCK SHALL BE "TEXEL FØØ-D", "TERRAFIX 270R" OR APPROVED EQUAL.

10/ ALL CATCHBASINS SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH "SECTION C. 16 " IN THE SPECIFICATIONS , EXCEPT AS FOLLOWS :
a) OFF-SET CATCHBASIN LEADS TO BE CONNECTED TO NEW TILE DRAIN WITH PRE-FABRICATED CONCRETE " WYE "
b) ALL NON ROAD DITCH INLET CATCHBASINS TO HAVE BERMS (CONSTRUCTED WITH SUBSOIL) WITH OVERFLOW CHUTE PROTECTED WITH N. A. G. C350 TURF REINFORCEMENT MAT (SEE DETAIL " C ")
c) ALL CATCHBASINS TO HAVE 100mm DIA. VERTICAL PIPE VENT IMMEDIATELY DOWNSTREAM, EXTENDING FOR 600mm ABOVE CATCHBASIN TOP. PIPE VENT TO BE HIGHWAY GRADE SINGLE OR DUAL WALL PLASTIC CONNECTED TO MAIN TILEOR LEAD WITH APPROVED FITTING. (SEE DETAIL " C ")

11/ ALL PREFABRICATED FITTINGS SPECIFIED AS CONCRETE MAY BE SUBSTITUTED WITH SAME SIZE PLASTIC WHERE AVAILABLE BUT SHALL BE COMPLETELY ENCASED WITH 20 Mpa CONCRETE (MINIMUM 150mm THICKESS).

12/ NEW TILE DRAINS TO BE LOCATED AS FOLLOWS :
MITCHELL DRAIN
a) STA. Ø + 438 to STA. Ø + 493 - NEW TILE TO BE PLACED AS SHOWN IN DETAILS ON PAGE 2 OF 3
a) STA Ø + 493 to STA. 1 + 450 - NEW TILE DRAIN TO BE PLACED IN BETWEEN EXISTING TILES
b) STA. 1 + 450 to STA. 1 + 536 - NEW TILE DRAIN TO BE PLACED IN SAME LOCATION AS SOUTH TILE DRAIN WHERE POSSIBLE , EXIST. TILE TO BE DESTROYED AND EXPOSED TILE SHALL BE DISPOSED OF OFF - SITE .

O'SHEA DRAIN
a) STA. Ø + 000 to STA. Ø + 576 & STA Ø + 000 (Ø + 576) to STA. Ø + 010 - EXACT LOCATION TO BE DETERMINED AT TIME OF CONSTRUCTION
b) STA Ø + 010 to STA. 1 + 170 - NEW TILE DRAIN TO BE PLACED IN SAME LOCATION AS EXISTING TILE DRAIN WHERE POSSIBLE , EXIST. TILE TO BE DESTROYED AND EXPOSED TILE SHALL BE DISPOSED OF OFF - SITE .

DRAIN 5
NEW TILE TO BE PLACED IN SAME LOCATION AS EXISTING TILE DRIAN WHERE POSSIBLE. EXIST. TILE TO BE DESTROYED AND EXPOSED TILE SHALL BE DISPOSED OF OFF - STIE.

DRAIN 8 & DRAIN 9
EXACT LOCATION TO BE DETERMINED AT TIME OF CONSTRUCITON

EXISTING TILE DRAINS TO BE EXPOSED IN AS MANY LOCATIONS AS ARE NECESSARY TO CONFIRM THEIRE EXACT LOCATION AND ELEVATION PRIOR TO CONSTRUCTION . EXACT LOCATION OF NEW TILE DRAINS THEN TO BE CONFIRMED BY DRAINAGE SUPERINTENDENT OR ENGINEER .

13/ a) INSTALLATION OF TILE AND TRENCH WIDTHS SHALL BE IN ACCORDANCE WITH "SECTION C - TILE DRAIN" IN THE SPECIFICATIONS .
b) SEWER PIPE UNDER TRAVEL PORTION OF ROADS TO BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILED DRAWING No. 02 IN THE SPECIFICATIONS .
c) ALL OTHER SEWER PIPE TO BE INSTALLED IN ACCORDANCE WITH DETAIL " A "
d) ALL CONCRETE TILE AND TILE-PIPE JOINTS TO BE WRAPPED WITH GEOTEXTILE IN ACCORDANCE WITH "SECTION C. 8 " IN THE SPECIFICATIONS.
e) NO CONSTRUCTION EQUIPMENT OR FARM MACHINERY SHALL CROSS OVER THE MOUNDED BACKFILLED TILE TRENCHES UNTIL SUFFICIENT SETTLEMENT HAS OCCURRED .
f) STRIP AND STOCKPILE TOPSOIL FROM CONSTRUCTION AREA (4 metre width) EXCEPT LANEWAYS & ROADS. EXCESS SPOIL TO BE LEVELLED AND TOPSOIL RELEVELLED OVER SPOIL, MOUNDED TRENCH AND REMAINING CONSTRUCTION AREA.
g) PERFORATED PLASTIC FILTERED TILE TO BE INSTALLED WITH APPROVED DRAINAGE PLOUGH. IF SOLID PLASTIC TILE IS INSTALLED WITH TRENCHER OR BACKHOE, THE IT SHALL BE BEDDED IN ACCORDANCE WITH DETAIL "B" AND SPECIFICATIONS.
h) WHERE THE TILE SIZE IS LARGER THAN Ø 75mm, THE EXCESS TRENCH MATERIAL (APPROXIMATELY EQUAL TO THE VOLUME OF THE TILE BEING INSTALLED) SHALL BE HAULED AWAY AND DISPOSED OF BY THE CONTRACTOR. ENOUGH MATERIAL SHALL BE RETAINED TO PROVIDE SUFFICIENT MOUNDING OVER TILE TO ALLOW FOR SETTLEMENT.

14/ a) IF IT BECOMES IMPRACTICAL TO INSTALL THE NEW TILE IN THE EXISTING TILE LOCATION DUE TO EXISTING TILE ALIGNMENT AND/OR TOO MUCH WATER FLOWING THROUGH THE TILE, THEN THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND/OR THE DRAINAGE SUPERINTENDENT.
b) IF SO ORDERED BY THE ENGINEER AND/OR DRAINAGE SUPERINTENDENT THEN THE CONTRACTOR SHALL INSTALL THE NEW TILE IMMEDIATELY ADJACENT TO THE EXISTING TILE . AFTER CONSTRUCTION IS COMPLETED THE EXISTING TILE SHALL BE DESTROYED WITH A RUBBER TIRE BACKHOE. TILE CONNECTIONS INTO THE EXISTING TILE SHALL BE CONNECTED TO THE NEW TILE.

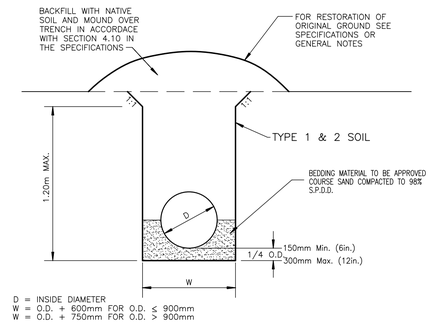
15/ a) THE CONTRACTOR SHALL ENSURE THAT ALL TRIBUTARY DRAINS ARE CONNECTED DURING TIME OF CONSTRUCTION . ANY MISSED TILE CONNECTIONS THAT ARE FOUND DURING THE WARRANTY PERIOD OF THE CONTRACT SHALL BE COMPLETED BY THE CONTRACTOR AND SHALL BE PAID THE AMOUNT SET OUT ON PAGE 2 OF THE " FORM OF TENDER" . NO ADDITIONAL PAYMENT FOR MOBILIZATION WILL BE ALLOUED. THE CONTRACTOR IS NOT RESPONSIBLE FOR COMPLETING MISSED TILE CONNECTIONS THAT ARE FOUND AFTER THE WARRANTY PERIOD FOR THE CONTRACT HAS EXPIRED.
b) ALL TILE CONNECTIONS TO BE MADE WITH CORING MACHINE AND PLASTIC ADAPTOR OR PREFABRICATED FITTINGS.
c) THE CONTRACTOR SHALL SUPPLY THE ENGINEER WITH A LIST SHOWING STATIONS OF ALL TILE CONNECTIONS UPON COMPLETION OF CONSTRUCTION.

16/ SILT FENCE TO BE PLACED ACROSS DITCH BOTTOM AT STA. Ø + 000 DURING CONSTRUCTION TO PREVENT SILT FROM FLUSHING DOWNSTREAM, AND ARE TO BE MAINTAINED AS NECESSARY DURING CONSTRUCTION . SILT FENCE AND SILT TO BE REMOVED AND DISPOSED OF AFTER CONSTRUCTION .

OPEN PORTIONS

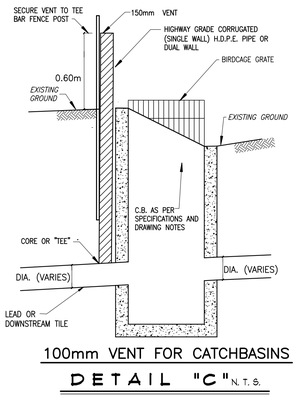
17/ EXISTING DITCH BOTTOM ONLY TO BE CLEANED OUT IN ACCORDANCE WITH SPECIFICATIONS UNLESS OTHERWISE NOTED ON PROFILES AND IN SECTIONS.

18/ WORK TO BE COMPLETED FROM AND EXCAVATED MATERIAL TO BE DEPOSITED AND LEVELLED ON THE NORTH AND EAST SIDES OF THE DITCH IN ACCORDANCE WITH "SECTION B, 5 " IN THE SPECIFICATIONS .

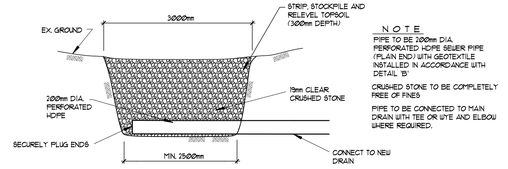


D = INSIDE DIAMETER
W = O.D. + 600mm FOR O.D. ≤ 900mm
W = O.D. + 750mm FOR O.D. > 900mm

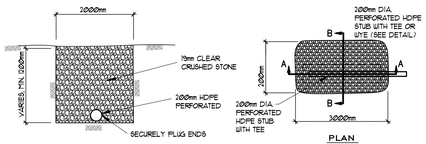
BEDDING FOR PLASTIC SEWER PIPE
DETAIL "A" N. T. S.



100mm VENT FOR CATCHBASINS
DETAIL "C" N. T. S.



SECTION A—A



SECTION B—B

PLAN

TYPICAL CRUSHED STONE PIT INLET DETAIL
N. T. S.

MITCHELL & O'SHEA DRAIN 2026

Township of Lucan Biddulph

Drainage Superintendent:
ALEX VERBEEK
519-672-4100

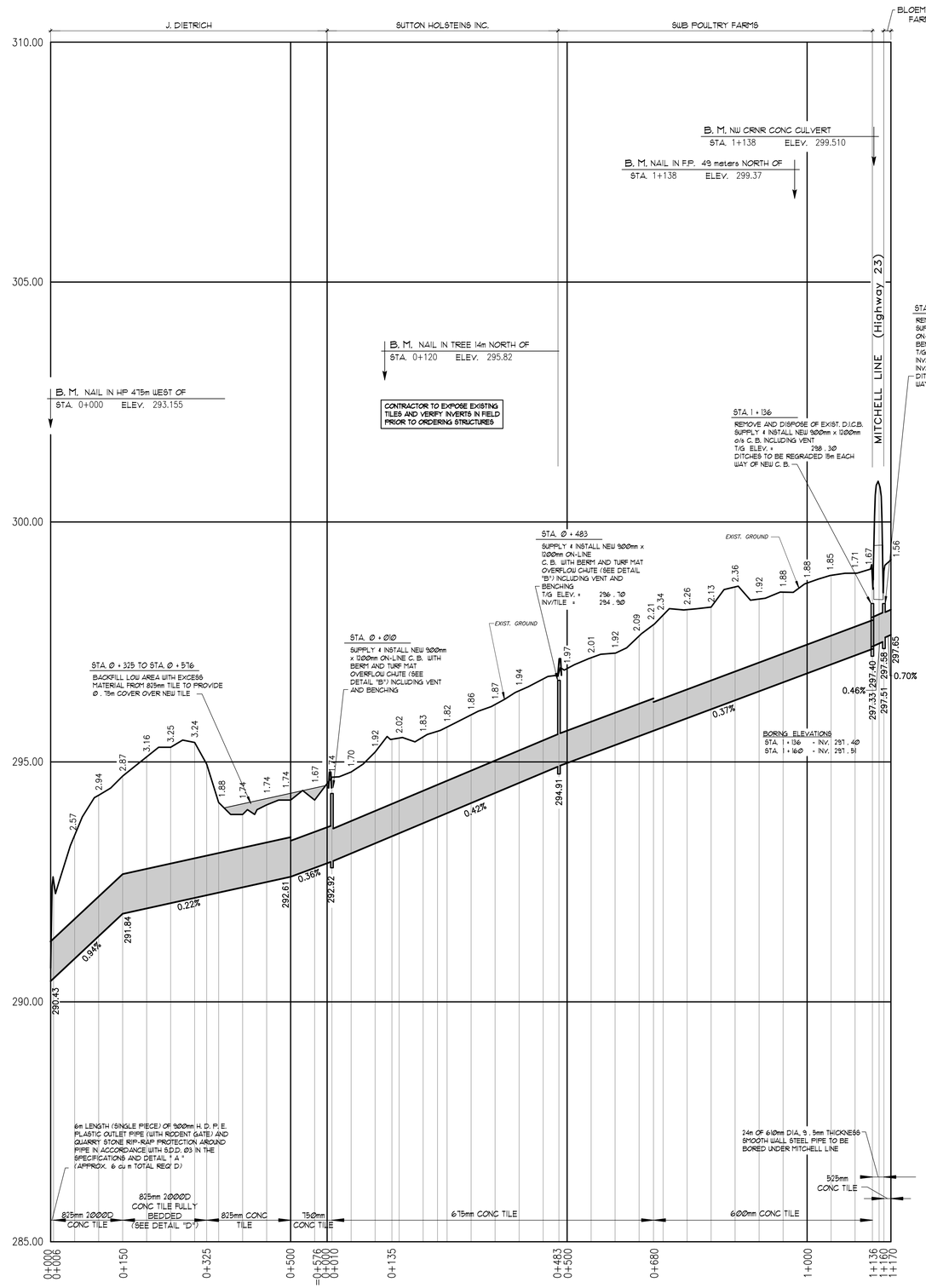
No.	REVISIONS	DATE
1	REVISED FOR COURT OF REVISION	APRIL 22, 2026

Drawn By: ak
Date: FEB 12, 2026
Field Book: D - 280, 281, 283 GPS
JOB No. 224185
Drawing No. 1 of 3

PLAN, NOTES & DETAILS

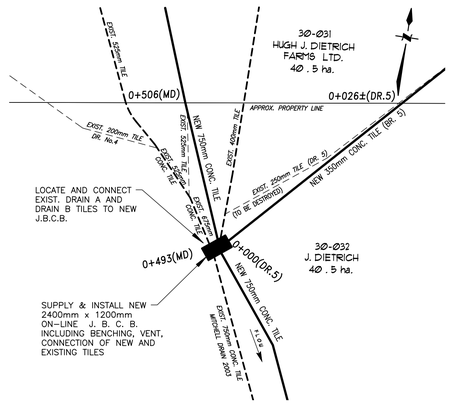
LICENSED PROFESSIONAL ENGINEER — M. P. DeVOS — PROVINCE OF ONTARIO — Feb 19/26

SPRIET ASSOCIATES
LONDON CONSULTING LIMITED ENGINEERS
155 YORK STREET --LONDON (519) 672-4100--N6A 1A8



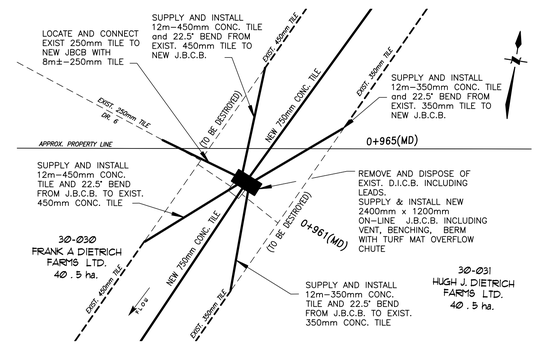
O'SHEA DRAIN PROFILE

SCALE : HOR 1 : 5,000
VERT. 1 : 50



STA. 0 + 493 (MITCHELL DRAIN)

SCALE 1 : 250



STA. 0 + 961 (MITCHELL DRAIN)

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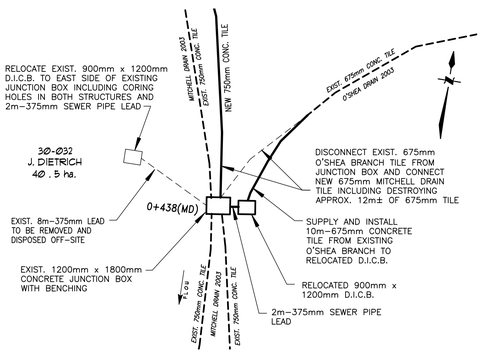

STA. 0 + 438 (MITCHELL DRAIN)

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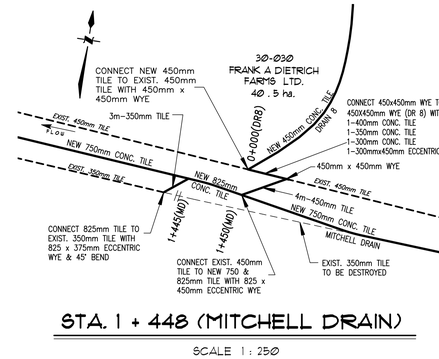

STA. 1 + 448 (MITCHELL DRAIN)

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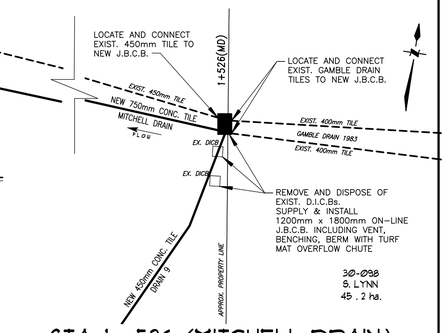

STA. 1 + 526 (MITCHELL DRAIN)

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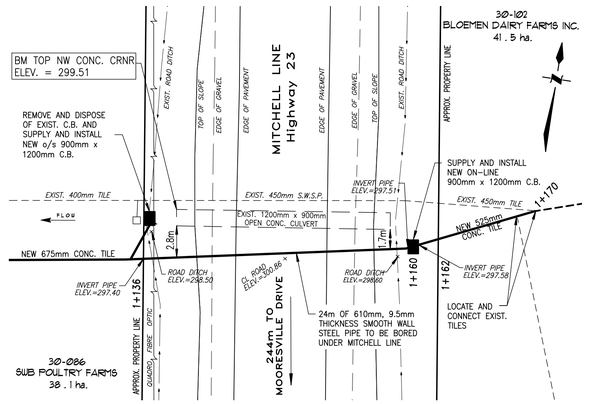


O'SHEA DRAIN ROAD CROSSING

SCALE 1 : 250

MITCHELL & O'SHEA DRAIN 2026

Township of Lucan Biddulph

Drainage Superintendent:
ALEX VERBEEK
519-672-4100

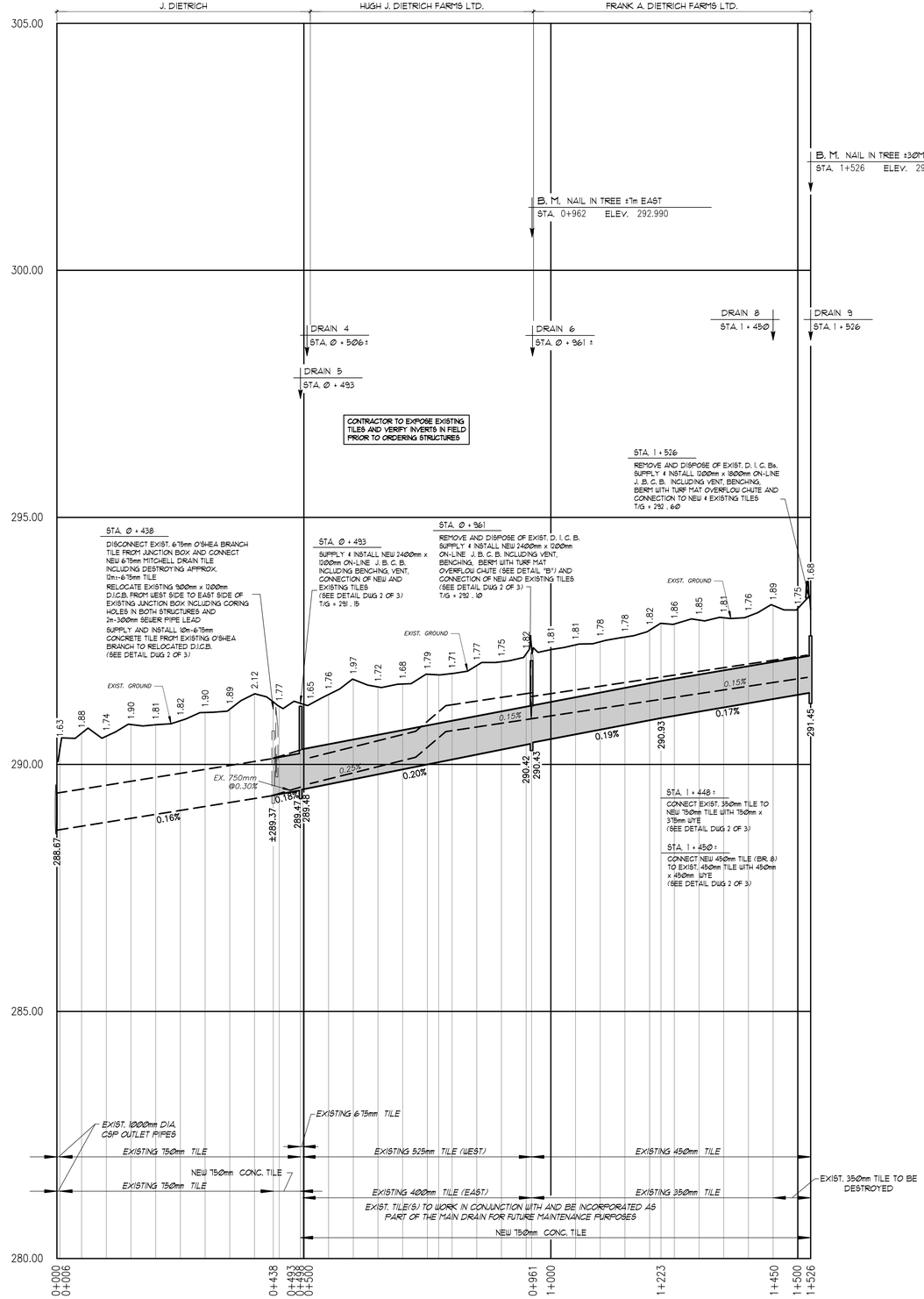
No.	REVISIONS	DATE

Drawn By: ak.
Date: FEB. 12, 2026
Field Book: D - 280, 281, 283 GPS
JOB No. 224185
Drawing No. 2 of 3

PROFILE & DETAILS

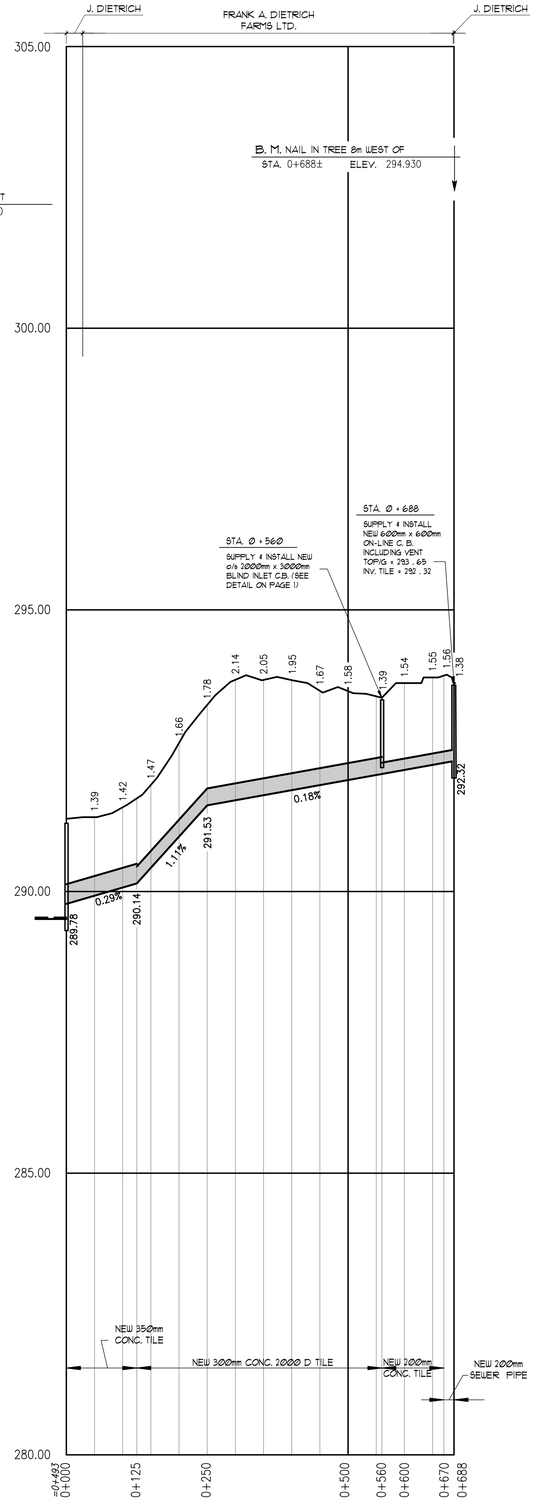
LICENSED PROFESSIONAL ENGINEER
M. P. DeVOS
PROVINCE OF ONTARIO
Feb/26

SPRIET ASSOCIATES
LONDON LIMITED
CONSULTING ENGINEERS
155 YORK STREET --LONDON (519) 672-4100--N6A 1A8



MITCHELL DRAIN PROFILE

SCALE : HOR. 1 : 5, 000
VERT. 1 : 50



MITCHELL DRAIN 5 PROFILE

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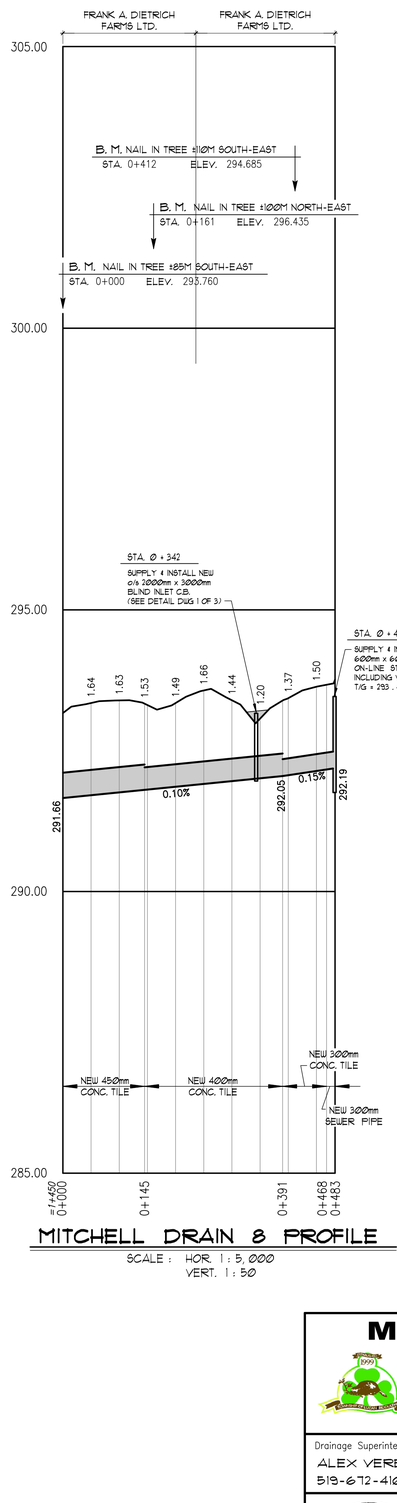

MITCHELL DRAIN 8 PROFILE

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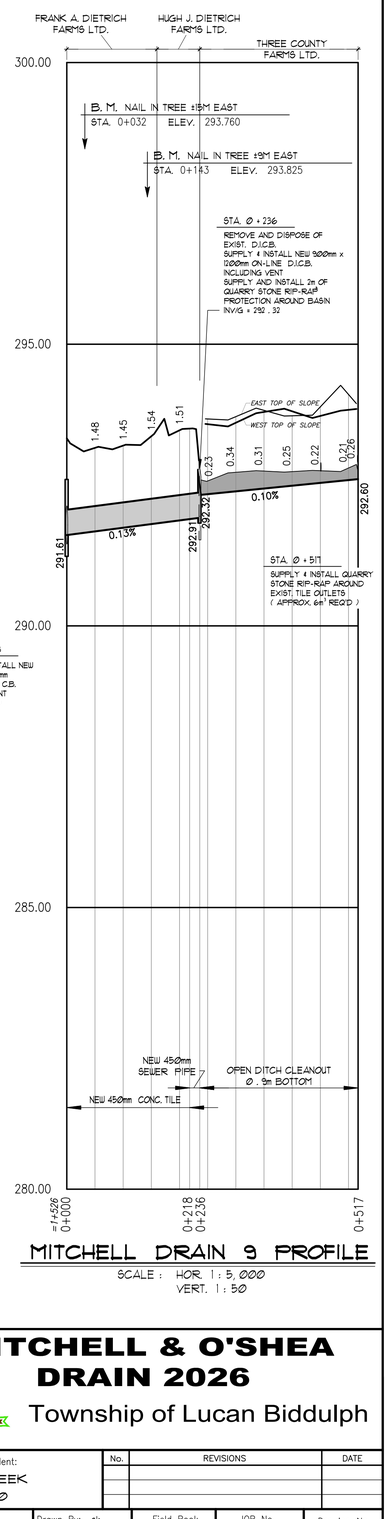

MITCHELL DRAIN 9 PROFILE

SCALE : HOR. 1 : 5, 000
VERT. 1 : 50

MITCHELL & O'SHEA DRAIN 2026

Township of Lucan Biddulph

Drainage Superintendent:
ALEX VERBEEK
519-672-4100

No.	REVISIONS	DATE

Drawn By: ak
Date: FEB. 12, 2026
Field Book: D - 280, 281, 283 GPS
JOB No. 224185
Drawing No. 3 of 3

PROFILES

LICENSED PROFESSIONAL ENGINEER — M. P. DeVOS — Feb.14/26 — PROVINCE OF ONTARIO

SPRIET ASSOCIATES
LONDON LIMITED
CONSULTING ENGINEERS
155 YORK STREET — LONDON (519) 672-4100 — N6A 1A8