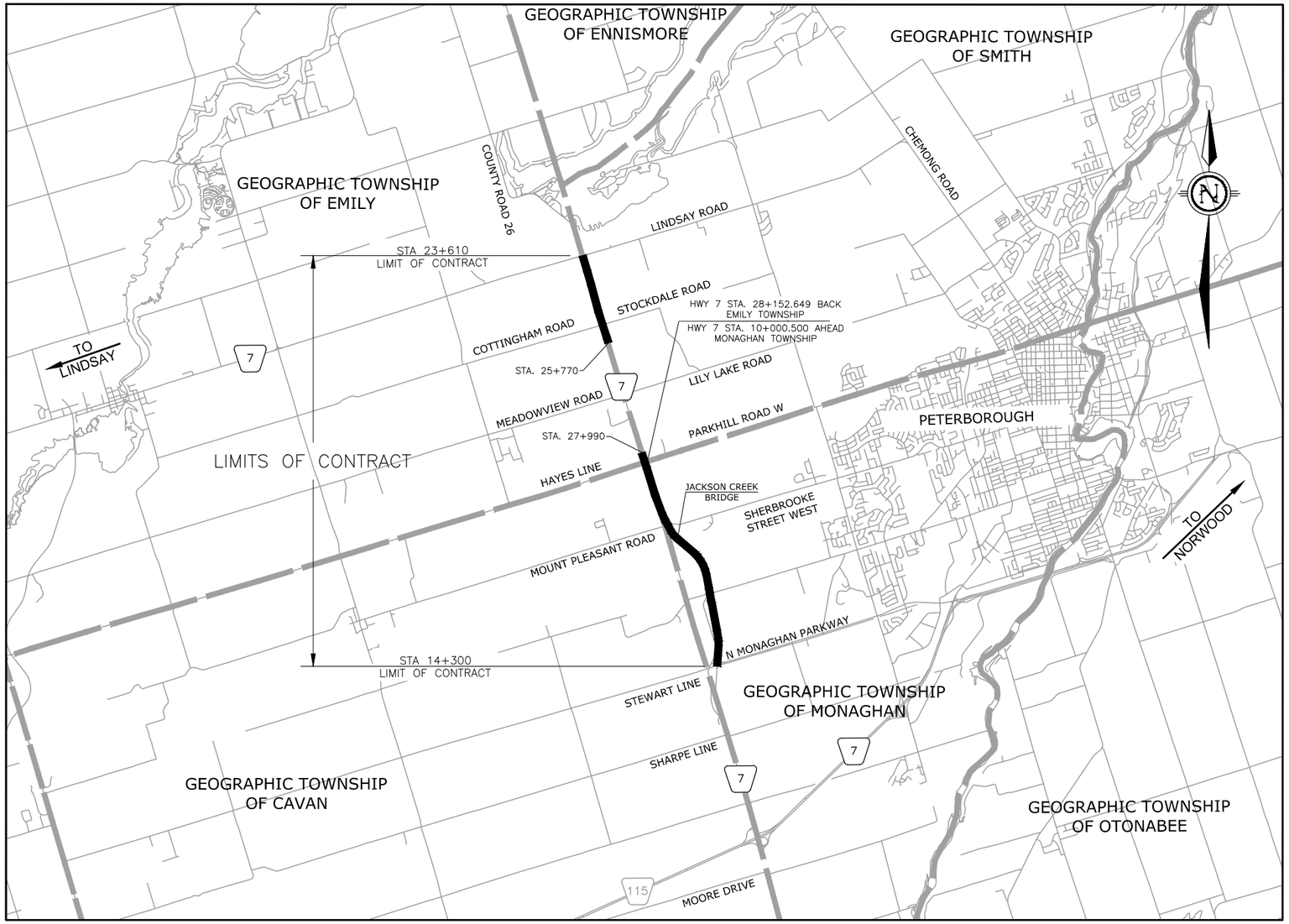
APPENDIX B
Recommended Design



Key Plan

WP No 4044-16-00 Contract No 2025-4007

Work of RESURFACING, INTERSECTION IMPROVEMENTS, AND CULVERT REPLACEMENT AND REHABILITATION

Hwy No 7 District No EASTERN

Location FROM COUNTY ROAD 26 (FOWLERS CORNERS) TO COUNTY ROAD 15 (N MONAGHAN PARKWAY), EXCLUDING 2.2 KM AT LILY LAKE RD

Length 8.9 km.

Reference Plans

Ministry of Transportation

Ontario

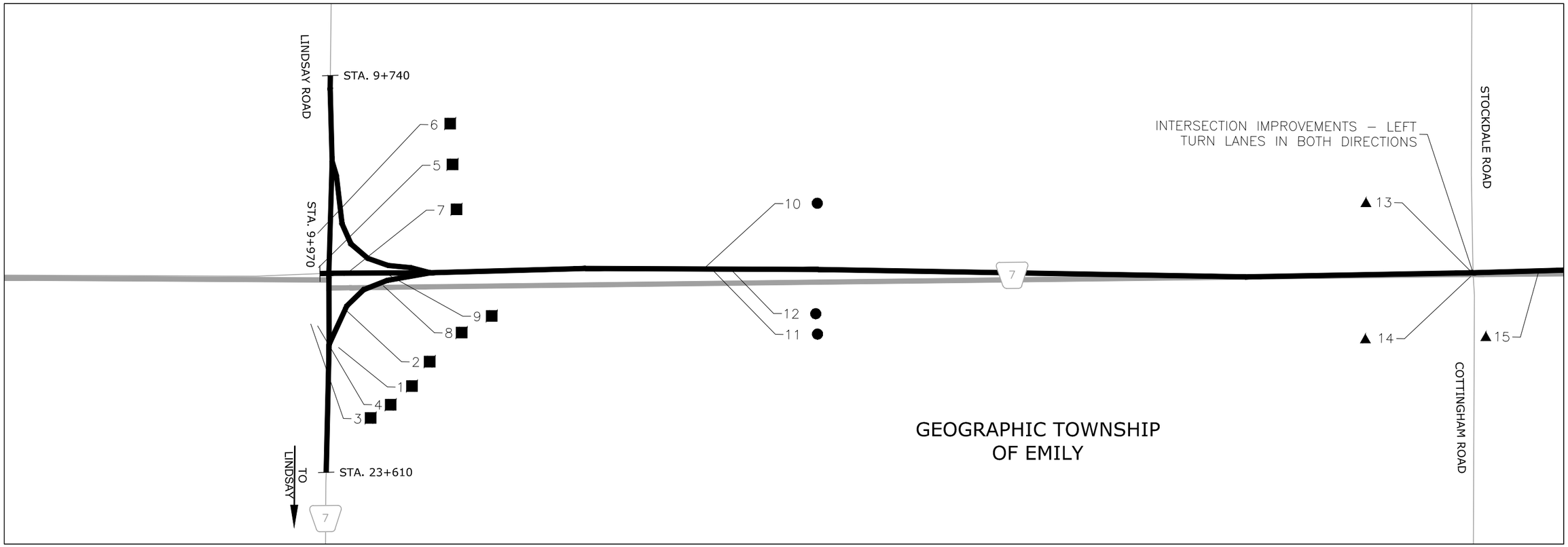
MINISTRY OF TRANSPORTATION, ONTARIO PR-3-707 2024-04
FILE NAME: M:\20577 - 2020 CULVERT RETAINER - 4020-E-0004\20577-25 - HIGHWAY 7 RESURFACING & CULVERTS\DRAWINGS\20577-25 - KEY PLAN.DWG
MODIFIED: 2024-04-15

CULVERT ACTIONS

- ● OPEN CUT REPLACEMENT
- ■ CLEANOUT
- ▲ CULVERT EXTENSION

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025–4007
GWP	4044–16–00
LOCATION PLAN	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 1



LOCATION PLAN

CULVERT No.	DRAINAGE ASSET ID	LOCATION	TOWNSHIP	STATION	EXISTING TYPE	EXISTING SIZE	EXISTING LENGTH	Existing Estimated CL Cover Depth (m)	ACTION	ACMs [1]	Ditch C/O
1	CV-0007-000964	On Ramp - S	Emily	23+763	CSP-U	300	10.5		Cleanout	N	N
2	CV-0007-005674	On Ramp - 5	Emily	23+770	C5P-U	300	71.8		Cleanout	N	N
3	CV-0007-005675	Entrance	Emily	23+794	C5P-U	450	17.9		Cleanout	N	N
4	CV-0007-005679	Entrance	Emily	23+822	C5P-U	300	37.2		Cleanout	N	N
5	CV-0007-005678	Centreline	Emily	23+858	CSP-U	300	63.1		Cleanout	N	N
6	CV-0007-005680	Entrance	Emily	23+859	C5P-U	450	53.8		Cleanout	N	N
7	CV-0007-000965	Centreline	Emily	23+879	CSP-U	300	40.7		Cleanout	N	N
8	CV-0007-005681	On Ramp - 5	Emily	23+928	C5P-U	300	11.4		Cleanout	N	N
9	CV-0007-000966	Centreline	Emily	23+936	C5P-U	300	23.4		Cleanout	N	N
10	CV-0007-000782	Centreline	Emily	24+327	SPCSP-U	900	23.9	0.70	Open Cut Replacement	N	Y
11	CV-0007-000967	Centreline	Emily	24+330	SPCSP-U	900	25.6	0.70	Open Cut Replacement	N	Y
12	CV-0007-005928	Centreline	Emily	24+330	N/A	N/A	N/A	N/A	New Install	N	Y
13	CV-0007-005860	Centreline	Emily	25+272	CSP	750	22.8		Culvert Extension	N	Y
14	CV-0007-000968	5ideroad Rt	Emily	25+290	C5P	600	22.5		Culvert Extension	N	Y
15	CV-0007-000204	Centreline	Emily	25+450	CSP	750	21.0		Culvert Extension	N	Y

1. CULVERTS IDENTIFIED OR UNCONFIRMED AS BEING COATED WITH ASBESTOS CONTAINING MATERIALS (ACMS)

N.T.S.

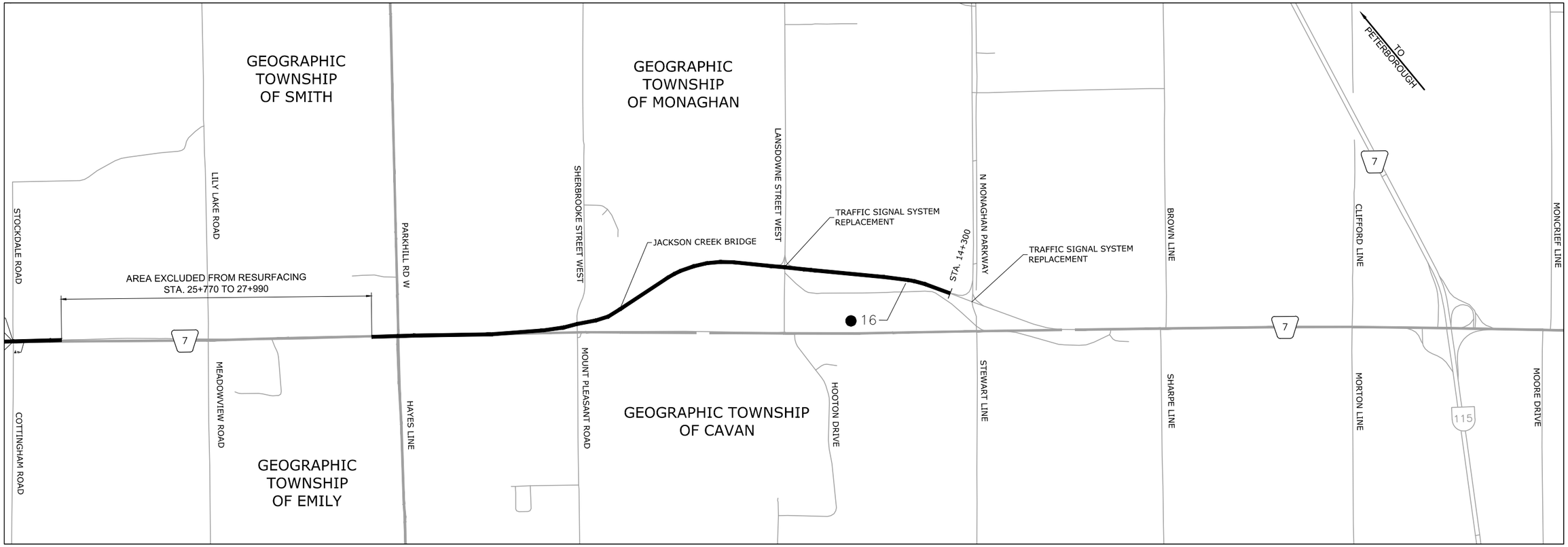
FILE NAME: 20577-25 – Culvert Location Plan.dwg
CREATED: 2025-11-12 MODIFIED: 2026-02-17 14:44

CULVERT ACTIONS

- ● OPEN CUT REPLACEMENT
- ■ CLEANOUT
- ▲ CULVERT EXTENSION

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025-4007
GWP	4044-16-00
LOCATION PLAN	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 2



LOCATION PLAN

CULVERT No.	DRAINAGE ASSET ID (DAID)	LOCATION	TOWNSHIP	STATION	EXISTING TYPE	EXISTING SIZE (mm)	EXISTING LENGTH (m)	Estimated CL Cover Depth (m)	ACTION	ACMs [1]	Ditch C/O
16	CV-0007-005926	Entrance RT	Monaghan	13+935	CSP	500	8.63	0.50	Open Cut Replacement	N	Y

1. CULVERTS IDENTIFIED OR UNCONFIRMED AS BEING COATED WITH ASBESTOS CONTAINING MATERIALS (ACMS)

N.T.S.

FILE NAME: 20577-25 - Culvert Location Plan.dwg
CREATED: 2025-11-12 MODIFIED: 2026-02-17 14:44

NOTES

1. MILLED AND BINDER COURSE TO BE TACK COATED PRIOR TO PLACING SURFACE COURSE.
2. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH OPSD 200 SERIES.
3. ROUNDING TO BE 1.0m MINIMUM WHERE GUIDE RAIL EXISTS.
4. SITE RESTORATION PER OPSS 492.
5. CONTRACTOR TO MAINTAIN DRAINAGE THROUGHOUT CONSTRUCTION.
6. CROSSFALL (S%) AS PER OPSD 212.030

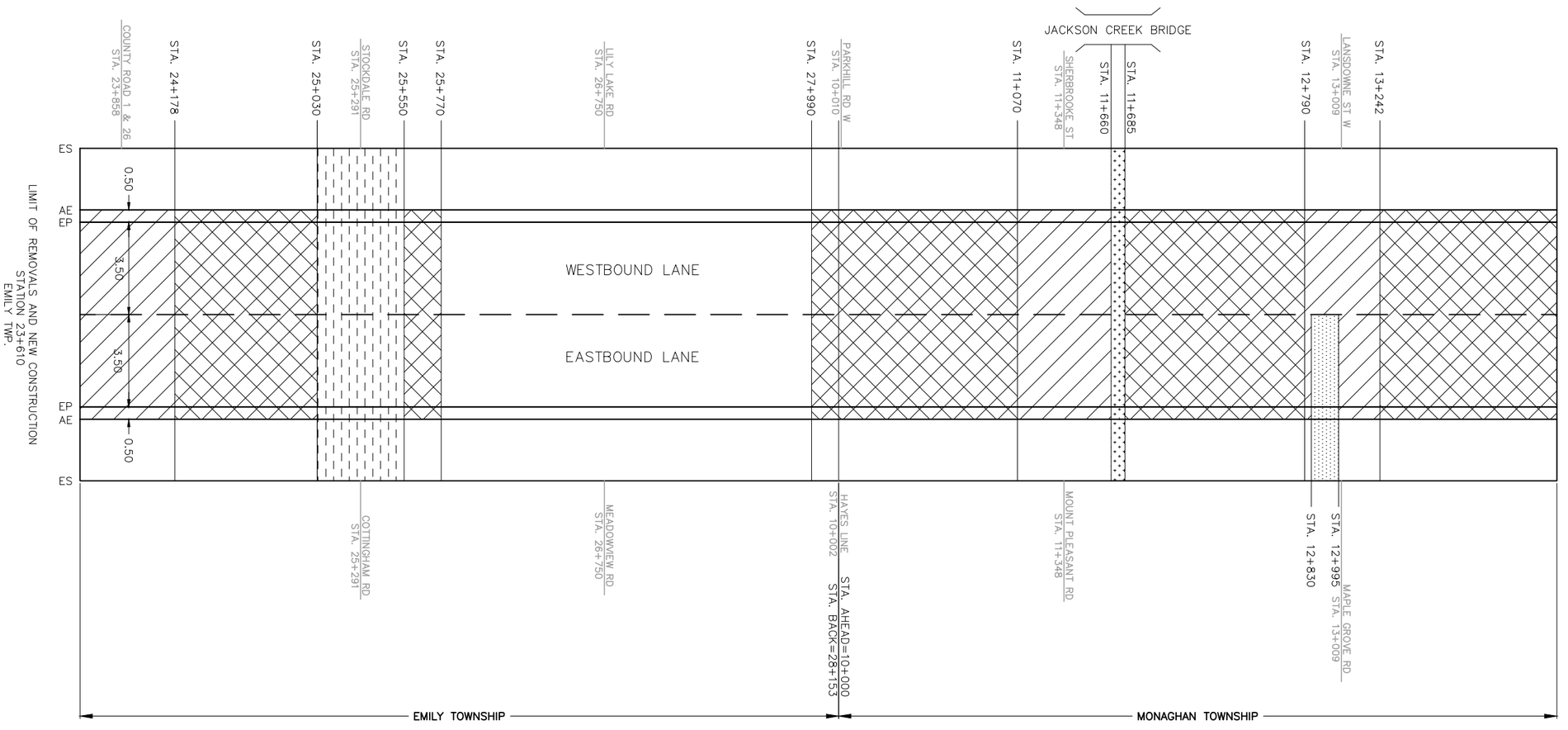
LEGEND

- MILL 50mm
  PAVE 50mm SP12.5 FC1
- MILL 90mm
  PAVE 50mm SP19.0 BINDER COURSE
  PAVE 40mm SP12.5 FC1 SURFACE COURSE
- MILL 40mm
  PAVE 40mm SP12.5 FC1
- STOCKDALE ROAD
  LEFT TURN LANES
- MAPLE GROVE ROAD
  RIGHT TURN LANE

METRIC
DIMENSIONS ARE IN METRES AND/OR
MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025-4007
GWP	4044-16-00
MAINLINE SCHEMATIC PAVING DETAILS	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 3

HWY 7 – REMOVALS AND NEW CONSTRUCTION



N.T.S.

FILE NAME: 20577-25 – Paving Details.dwg
CREATED: 2025-11-14
MODIFIED: 2026-01-23 16:42

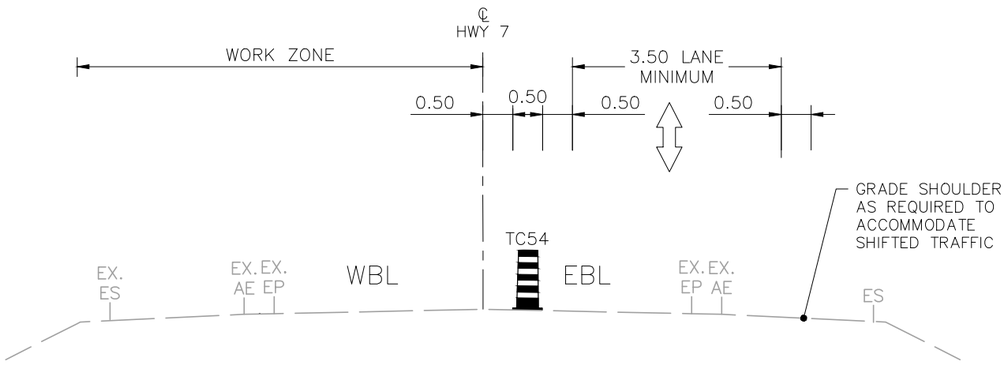
NOTES

1. LANE CLOSURES TO BE AS PER OTM BOOK 7
2. A MINIMUM OF ONE LANE IS TO BE MAINTAINED AT ALL TIMES

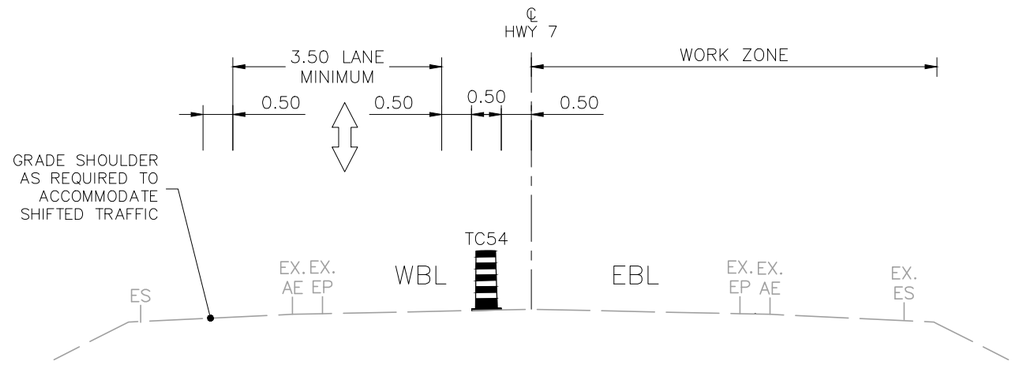
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025-4007
GWP	4044-16-00
TYPICAL STAGING FOR RESURFACING	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 4

HIGHWAY 7
TYPICAL STAGING
WORK IN EASTBOUND LANE



HIGHWAY 7
TYPICAL STAGING
WORK IN WESTBOUND LANE



N.T.S.

FILE NAME: 20577-25 - Paving Details.dwg
CREATED: 2025-11-14
MODIFIED: 2026-01-23 16:42

NOTES

1. MILLED AND BINDER COURSE TO BE TACK COATED PRIOR TO PLACING SURFACE COURSE.
2. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH OPSD 200 SERIES.
3. ROUNDING TO BE 1.0m MINIMUM WHERE GUIDE RAIL EXISTS.
4. SITE RESTORATION PER OPSS 492.
5. CONTRACTOR TO MAINTAIN DRAINAGE THROUGHOUT CONSTRUCTION.
6. CROSSFALL (S%) AS PER OPSD 212.030

LEGEND

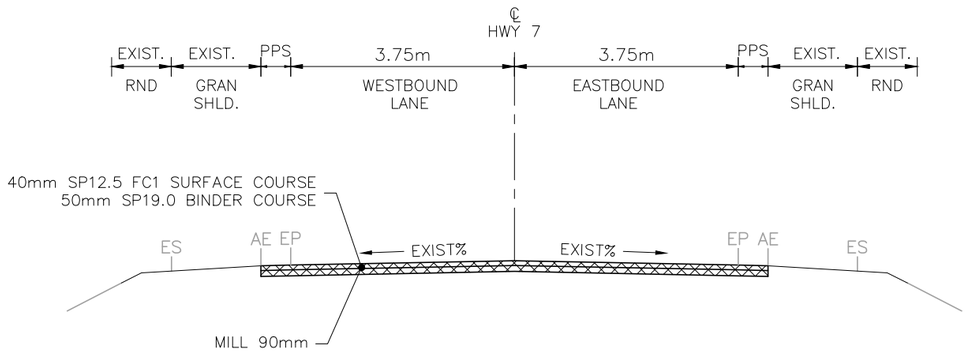
MILL 50mm
PAVE 50mm SP12.5 FC1

MILL 90mm
PAVE 50mm SP19.0 BINDER COURSE
PAVE 40mm SP12.5 FC1 SURFACE COURSE

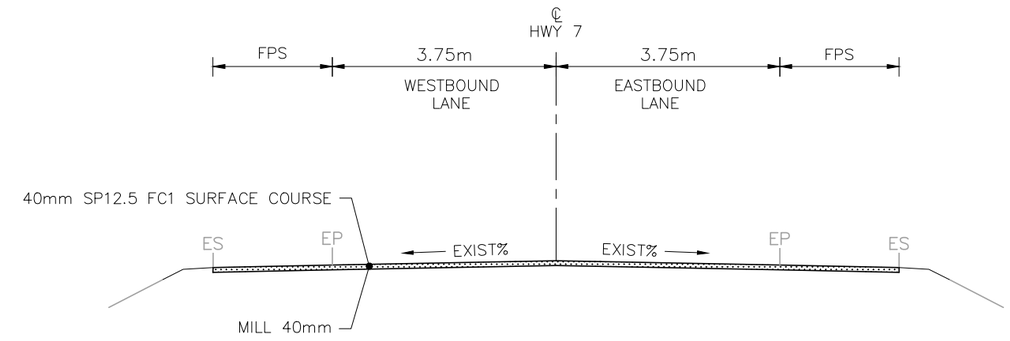
MILL 40mm
PAVE 40mm SP12.5 FC1

METRIC
DIMENSIONS ARE IN METRES AND/OR
MILLIMETRES UNLESS OTHERWISE SHOWN

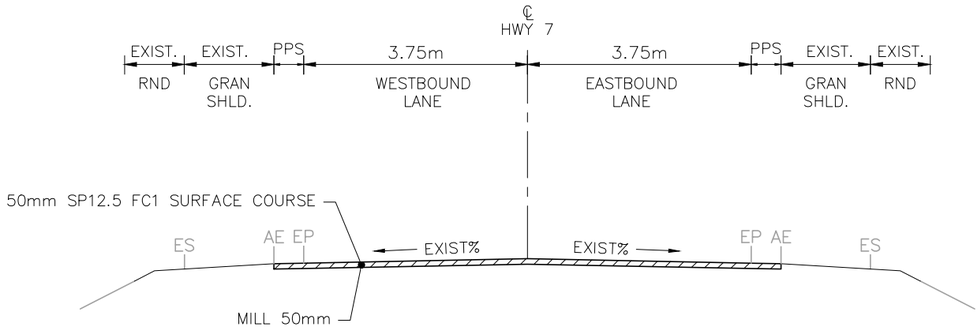
CONT	2025–4007
GWP	4044–16–00
PAVING DETAILS	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 5



TYPICAL MAINLINE RESURFACING



JACKSON CREEK BRIDGE RESURFACING
STA. 11+660 TO 11+685 MONAGHAN TWP



TYPICAL MAJOR INTERSECTION RESURFACING

FOWLER'S CORNERS – STA. 23+610 TO 24+178 EMILY TWP
SHERBROOKE ST – STA. 11+030 TO 11+660 MONAGHAN TWP
LANSDOWNE ST W – STA. 12+800 TO 13+240 MONAGHAN TWP

N.T.S.

FILE NAME: 20577-25 – Paving Details.dwg
CREATED: 2025-11-14
MODIFIED: 2026-01-23 16:42

NOTES

1. MILLED AND BINDER COURSE TO BE TACK COATED PRIOR TO PLACING SURFACE COURSE.
2. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH OPSD 200 SERIES.
3. ROUNDING TO BE 1.0m MINIMUM WHERE GUIDE RAIL EXISTS.
4. USE EXISTING SUITABLE MATERIAL TO CREATE ROUNDING.
5. SITE RESTORATION PER OPSS 492.
6. CONTRACTOR TO MAINTAIN DRAINAGE THROUGHOUT CONSTRUCTION.
7. CROSSFALL (S%) AS PER OPSD 212.030

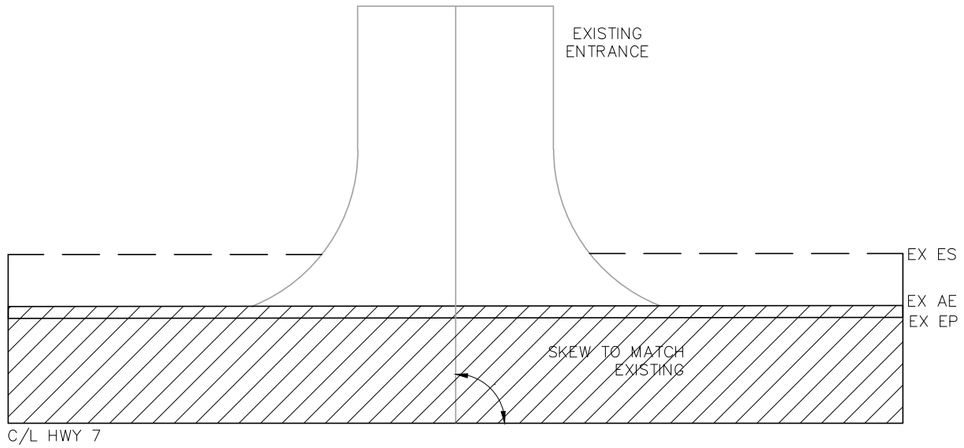
LEGEND

MILL 90mm

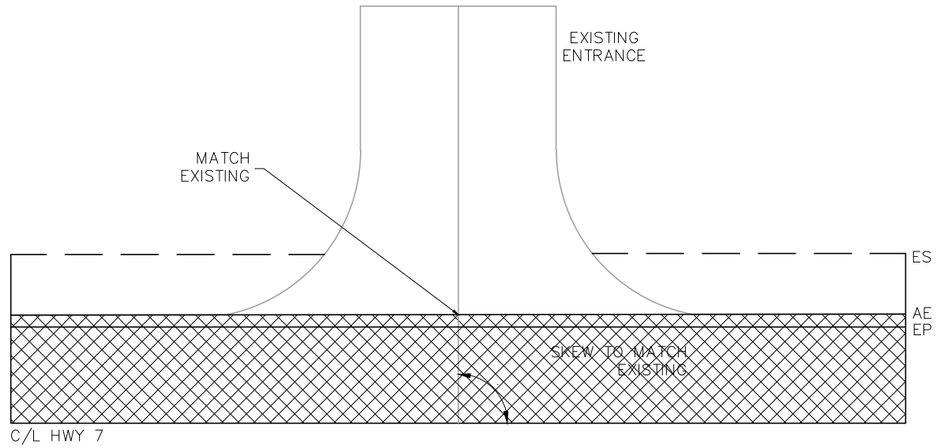
PAVE 50mm SP19.0 BINDER COURSE
PAVE 40mm SP12.5 FC1 SURFACE COURSE

METRIC
DIMENSIONS ARE IN METRES AND/OR
MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025–4007
GWP	4044–16–00
ENTRANCE PAVING DETAILS	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 6



PAVED ENTRANCES
TYPICAL REMOVALS



PAVED ENTRANCES
TYPICAL NEW CONSTRUCTION

N.T.S.

FILE NAME: 20577-25 – Paving Details.dwg
CREATED: 2025-11-14
MODIFIED: 2026-01-23 16:42

NOTES

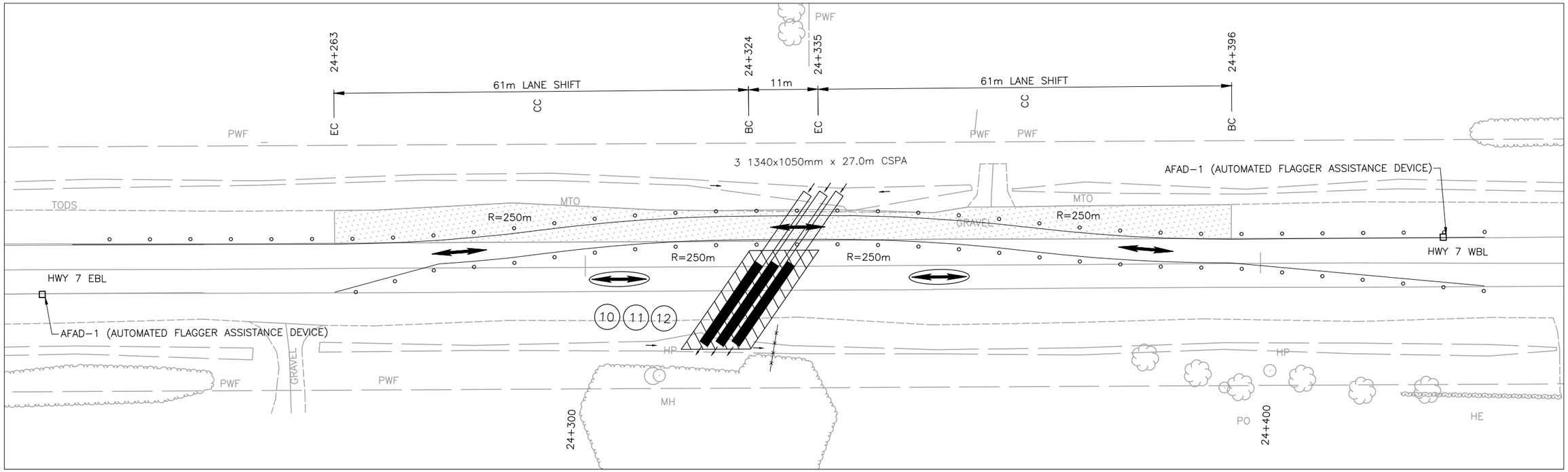
1. ALL SIGNAGE INCLUDING LANE REDUCTION / CLOSURE SIGNAGE AND TC54 PLACEMENT SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7.
2. WORK TO BE COMPLETED USING 24–HR FLAGGING OPERATIONS
3. TRAFFIC CONTROL PERSONS SHALL BE PROVIDED AT ALL LANE CLOSURES AND SIDEROAD INTERSECTIONS WHERE THE FLOW OF TRAFFIC IS AFFECTED.
4. CONTRACTOR TO KEEP ALL ENTRANCES AND SIDE ROADS OPEN AT ALL TIMES IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7.
5. TO BE READ IN CONJUNCTION WITH OPSD 200 AND 800 SERIES.
6. CULVERT EXCAVATION AND BACKFILL AS PER OPSD 802.010 (FLEXIBLE) AND 802.031 (RIGID).
7. LANE / SHOULDER WIDTHS AND SLOPES VARY THROUGHOUT. REINSTATE WIDTHS AND SLOPES TO MATCH EXISTING OR BETTER.
8. EROSION CONTROL TO BE INSTALLED DOWNSTREAM OF REPLACEMENT
9. ANY UTILITIES SHOWN ARE FOR REFERENCE ONLY. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ADEQUATE IDENTIFICATION AND PROTECTION OF ALL UTILITIES DURING CONSTRUCTION OPERATIONS.
10. SITE RESTORATION PER OPSS 492.
11. CULVERT REPLACEMENT TO BE COMPLETED PRIOR TO RESURFACING OPERATIONS
12. ILLUMINATION IS TO BE PROVIDED PER OTM BOOK 7

LEGEND

- TC54's
- LIGHT DUTY SEDIMENT BARRIER PER OPSS 805
- DRAINAGE FLOW DIRECTION
- TRAFFIC FLOW
- CONSTRUCTION ACCESS
- WORK ZONE
- SHOULDER GRADING

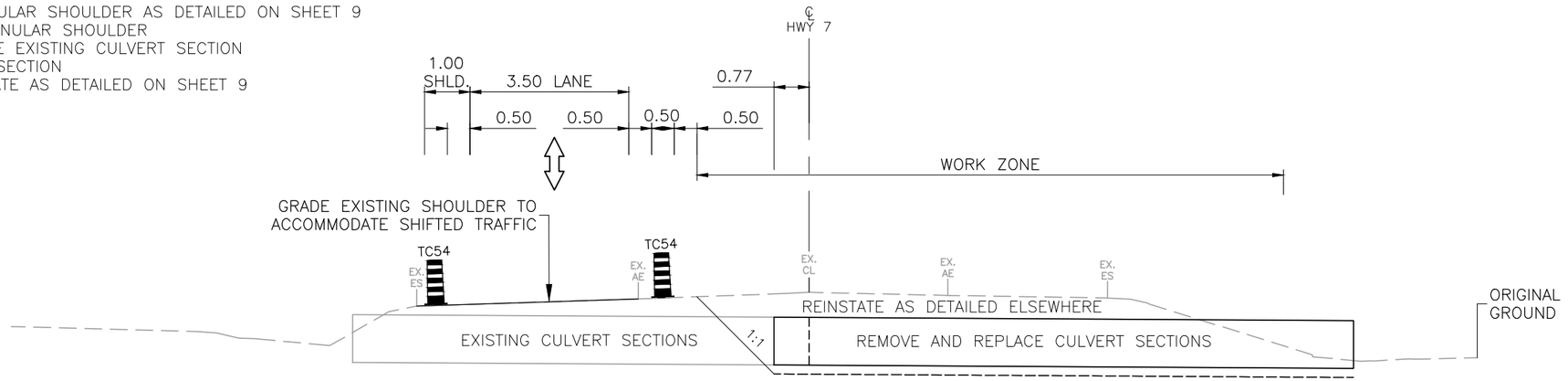
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025–4007
WP	4044–16–00
CULVERT 10, 11, 12 OPEN CUT REPLACEMENT STAGE 1	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 7



STAGE ONE:

- GRADE EXISTING GRANULAR SHOULDER AS DETAILED ON SHEET 9
- SHIFT TRAFFIC TO GRANULAR SHOULDER
- EXCAVATE AND REMOVE EXISTING CULVERT SECTION
- PLACE NEW CULVERT SECTION
- BACKFILL AND REINSTATE AS DETAILED ON SHEET 9



N.T.S.

FILE NAME: 20577–25 – Detailed Design.dwg MODIFIED: 2026–02–17 14:44
CREATED: 2026–02–17

NOTES

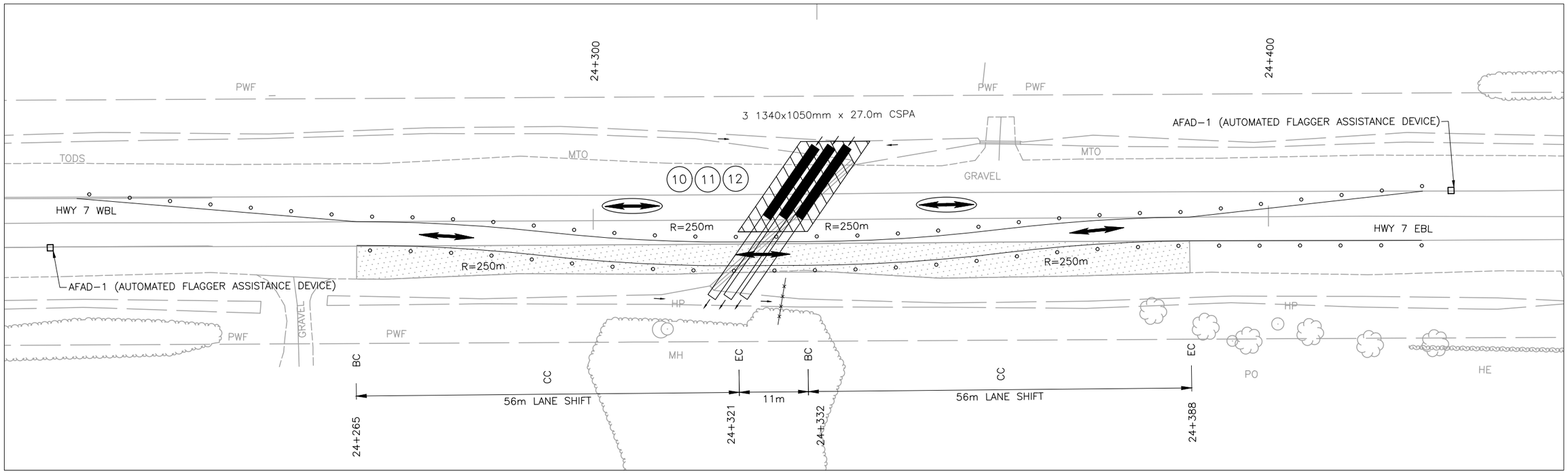
1. ALL SIGNAGE INCLUDING LANE REDUCTION / CLOSURE SIGNAGE AND TC54 PLACEMENT SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7.
2. WORK TO BE COMPLETED USING 24–HR FLAGGING OPERATIONS
3. TRAFFIC CONTROL PERSONS SHALL BE PROVIDED AT ALL LANE CLOSURES AND SIDEROAD INTERSECTIONS WHERE THE FLOW OF TRAFFIC IS AFFECTED.
4. CONTRACTOR TO KEEP ALL ENTRANCES AND SIDE ROADS OPEN AT ALL TIMES IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7.
5. TO BE READ IN CONJUNCTION WITH OPSD 200 AND 800 SERIES.
6. CULVERT EXCAVATION AND BACKFILL AS PER OPSD 802.010 (FLEXIBLE) AND 802.031 (RIGID).
7. LANE / SHOULDER WIDTHS AND SLOPES VARY THROUGHOUT. REINSTATE WIDTHS AND SLOPES TO MATCH EXISTING OR BETTER.
8. EROSION CONTROL TO BE INSTALLED DOWNSTREAM OF REPLACEMENT
9. ANY UTILITIES SHOWN ARE FOR REFERENCE ONLY. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ADEQUATE IDENTIFICATION AND PROTECTION OF ALL UTILITIES DURING CONSTRUCTION OPERATIONS.
10. SITE RESTORATION PER OPSS 492.
11. CULVERT REPLACEMENT TO BE COMPLETED PRIOR TO RESURFACING OPERATIONS
12. ILLUMINATION IS TO BE PROVIDED PER OTM BOOK 7

LEGEND

- TC54's
- LIGHT DUTY SEDIMENT BARRIER PER OPSS 805
- DRAINAGE FLOW DIRECTION
- TRAFFIC FLOW
- CONSTRUCTION ACCESS
- WORK ZONE
- SHOULDER GRADING

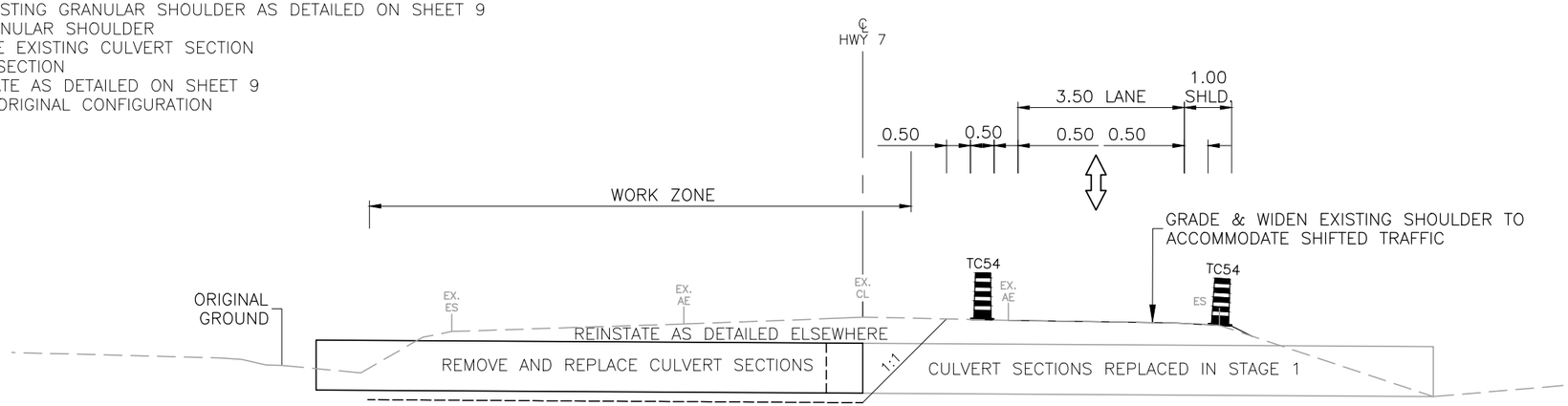
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025–4007
WP	4044–16–00
CULVERT 10, 11, 12 OPEN CUT REPLACEMENT STAGE 2	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 8



STAGE TWO:

- GRADE AND WIDEN EXISTING GRANULAR SHOULDER AS DETAILED ON SHEET 9
- SHIFT TRAFFIC TO GRANULAR SHOULDER
- EXCAVATE AND REMOVE EXISTING CULVERT SECTION
- PLACE NEW CULVERT SECTION
- BACKFILL AND REINSTATE AS DETAILED ON SHEET 9
- RESTORE TRAFFIC TO ORIGINAL CONFIGURATION



N.T.S.

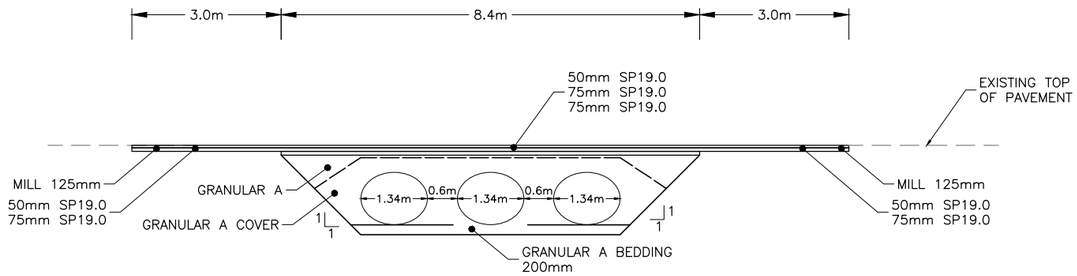
FILE NAME: 20577–25 – Detailed Design.dwg
CREATED: 2026–02–17
MODIFIED: 2026–02–17 14:44

NOTES

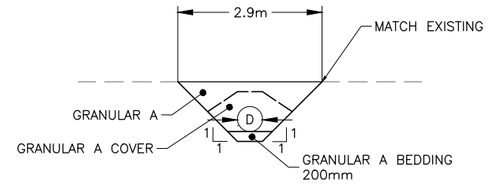
1. CULVERT REPLACEMENT TO BE COMPLETED PRIOR TO RESURFACING OPERATIONS
2. LANE/SHOULDER WIDTHS AND SLOPES VARY THROUGHOUT. REINSTATE WIDTHS AND SLOPES TO MATCH EXISTING.
3. CONTRACTOR TO CONFIRM EXISTING CULVERT SIZE AND REPAIR / REPLACEMENT LENGTH.
4. TYPICALS TO BE READ IN CONJUNCTION WITH OPSD 200, 800 AND 900 SERIES.
5. CULVERT EXCAVATION AND BACKFILL PER OPSD 802.010 (FLEXIBLE) AND 802.031, 802.032 (RIGID).
6. MILLED AND BINDER SURFACES TO BE TACK COATED PRIOR TO PLACING THE SUBSEQUENT COURSE.
7. "D" IS PROPOSED DIAMETER (CIRCULAR PIPES) OR SPAN (ARCH PIPES).
8. REINSTATE PAVEMENT MARKINGS PER OTM BOOK 11.
9. ALL SIGNAGE INCLUDING LANE REDUCTION / CLOSURE SIGNAGE AND TC54 PLACEMENT SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) BOOK 7.
10. CONTRACTOR TO KEEP ALL ENTRANCES AND SIDE ROADS OPEN AT ALL TIMES IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7 UNLESS DIRECTED OTHERWISE.
11. SHOULDERS TO BE REINSTATED TO MATCH EXISTING OR BETTER UPON COMPLETION OF WORK.
12. SEDIMENT CONTROL TO BE INSTALLED DOWNSTREAM OF ALL WORK THAT WILL DISTURB THE EARTH SURFACE.
13. SITE RESTORATION PER OPSS 492.

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

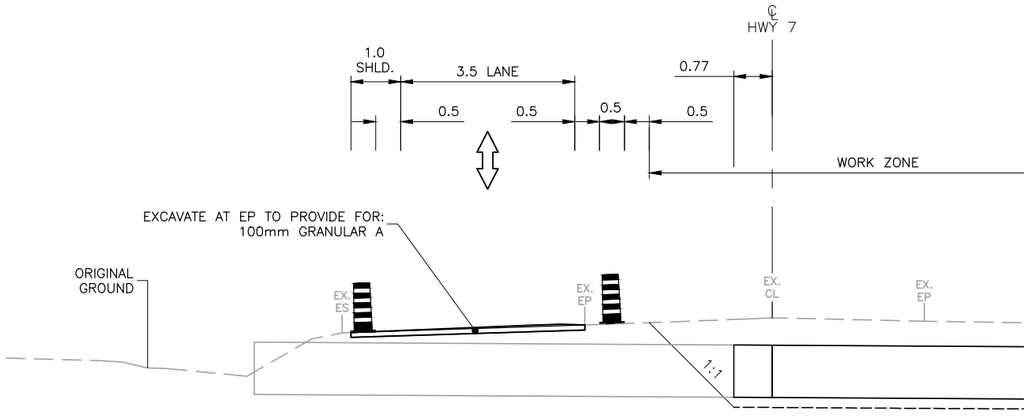
CONT	2025–4007
GWP	4044–16–00
REINSTATEMENT AND WIDENING DETAILS	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 9



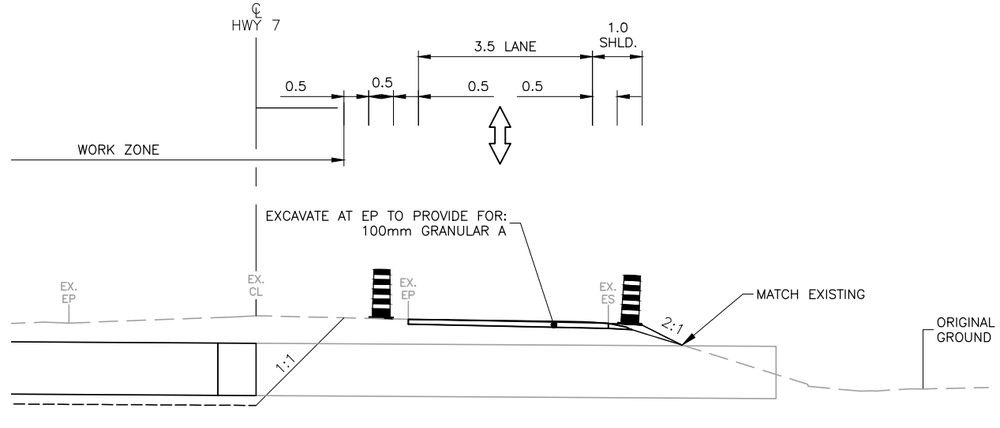
HIGHWAY 7 CULVERT 10, 11, 12 – STA. 24+328
MAINLINE CULVERT TRENCH REINSTATEMENT DETAIL



CULVERT 16 – STA. 13+935 RT
ENTRANCE CUVLERT TRENCH REINSTATEMENT DETAIL



CULVERT 10, 11, 12
TEMPORARY WIDENING STAGE 1



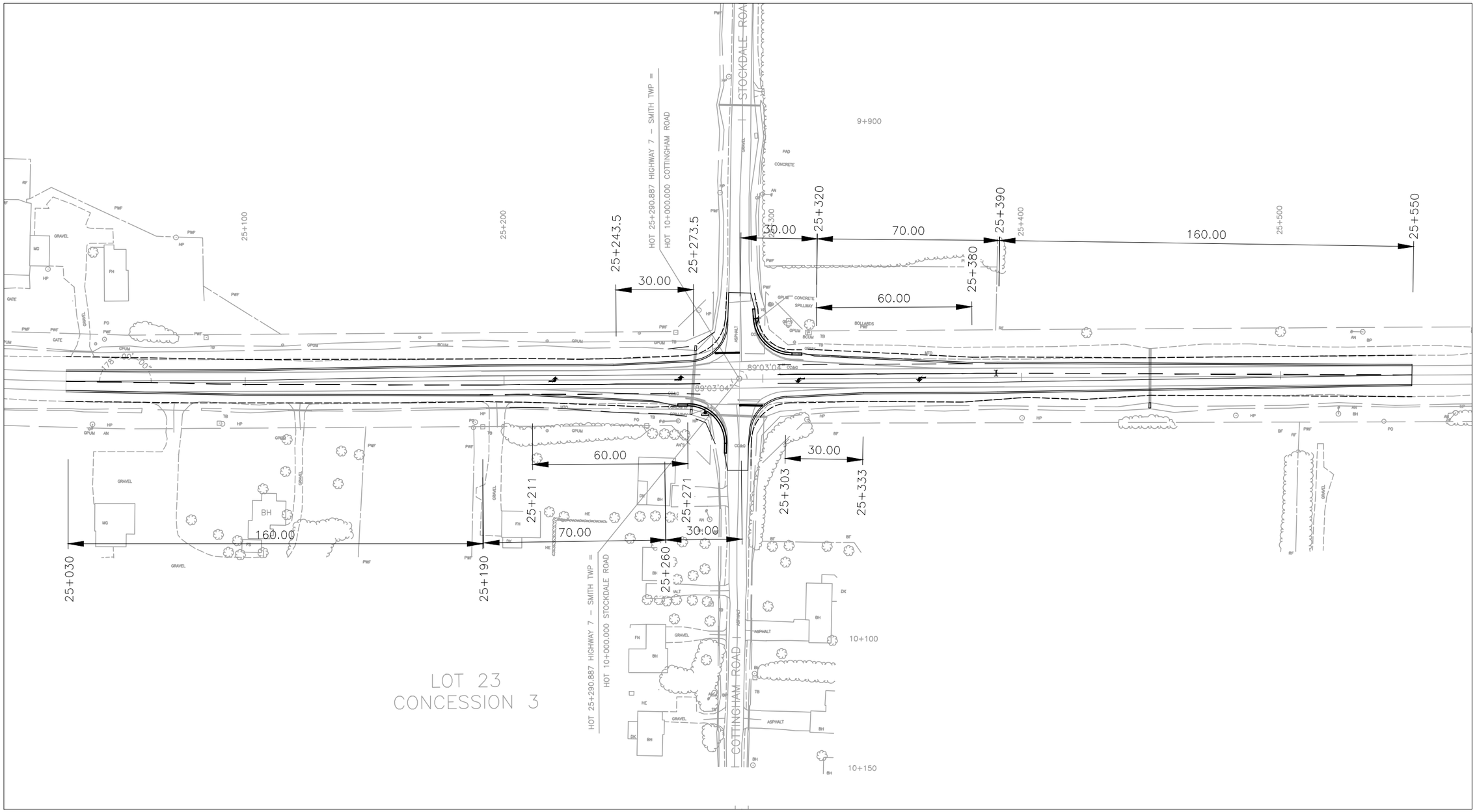
CULVERT 10, 11, 12
TEMPORARY WIDENING STAGE 2

N.T.S.

FILE NAME: 20577-25 – Typical Details.dwg
CREATED: 2026-02-17
MODIFIED: 2026-02-17 14:48

METRIC
DIMENSIONS ARE IN METRES AND/OR
MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025–4007
WP	4044–16–00
NEW CONSTRUCTION STOCKDALE ROAD LEFT TURN LANES	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 10



N.T.S.

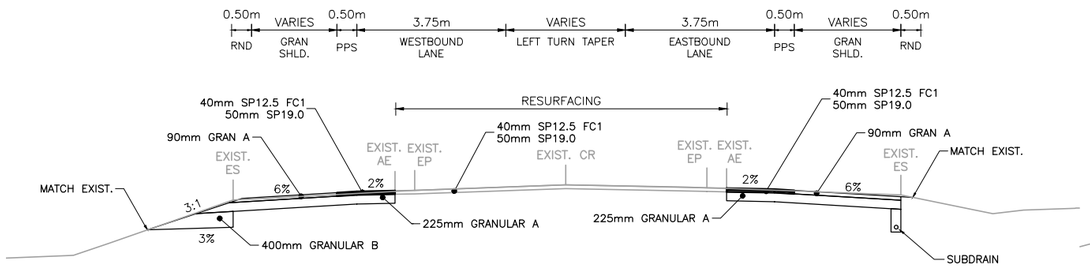
FILE NAME: 20577-25 – DD – LTL.dwg MODIFIED: 2025-07-07 16:33
CREATED: 2025-07-07

NOTES

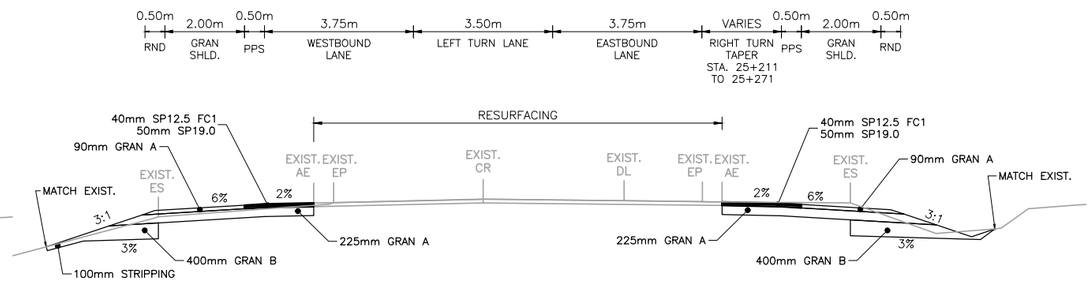
1. CULVERT REPLACEMENT TO BE COMPLETED PRIOR TO RESURFACING OPERATIONS
2. LANE/SHOULDER WIDTHS AND SLOPES VARY THROUGHOUT. REINSTATE WIDTHS AND SLOPES TO MATCH EXISTING.
3. CONTRACTOR TO CONFIRM EXISTING CULVERT SIZE AND REPAIR / REPLACEMENT LENGTH.
4. TYPICALS TO BE READ IN CONJUNCTION WITH OPSD 200, 800 AND 900 SERIES.
5. CULVERT EXCAVATION AND BACKFILL PER OPSD 802.010 (FLEXIBLE) AND 802.031, 802.032 (RIGID).
6. MILLED AND BINDER SURFACES TO BE TACK COATED PRIOR TO PLACING THE SUBSEQUENT COURSE.
7. "D" IS PROPOSED DIAMETER (CIRCULAR PIPES) OR SPAN (ARCH PIPES).
8. REINSTATE PAVEMENT MARKINGS PER OTM BOOK 11.
9. ALL SIGNAGE INCLUDING LANE REDUCTION / CLOSURE SIGNAGE AND TC54 PLACEMENT SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) BOOK 7.
10. CONTRACTOR TO KEEP ALL ENTRANCES AND SIDE ROADS OPEN AT ALL TIMES IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7 UNLESS DIRECTED OTHERWISE.
11. SHOULDERS TO BE REINSTATED TO MATCH EXISTING OR BETTER UPON COMPLETION OF WORK.
12. SEDIMENT CONTROL TO BE INSTALLED DOWNSTREAM OF ALL WORK THAT WILL DISTURB THE EARTH SURFACE.
13. SITE RESTORATION PER OPSS 492.

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

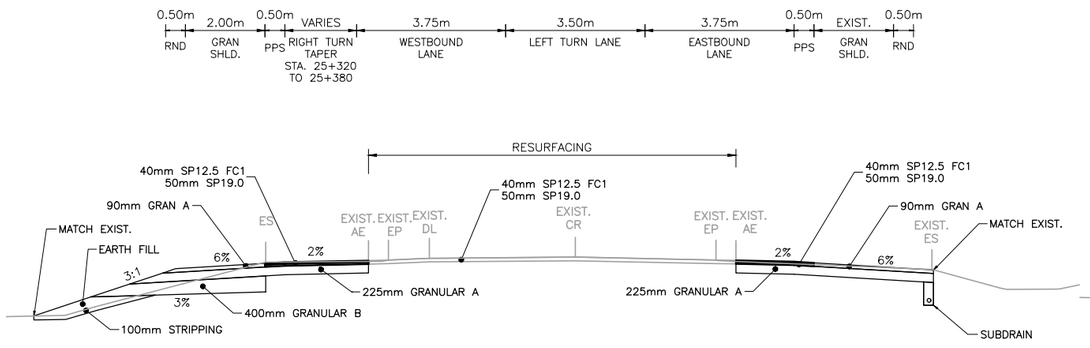
CONT	2025–4007
GWP	4044–16–00
TYPICAL DETAILS STOCKDALE ROAD LEFT TURN LANES	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 11



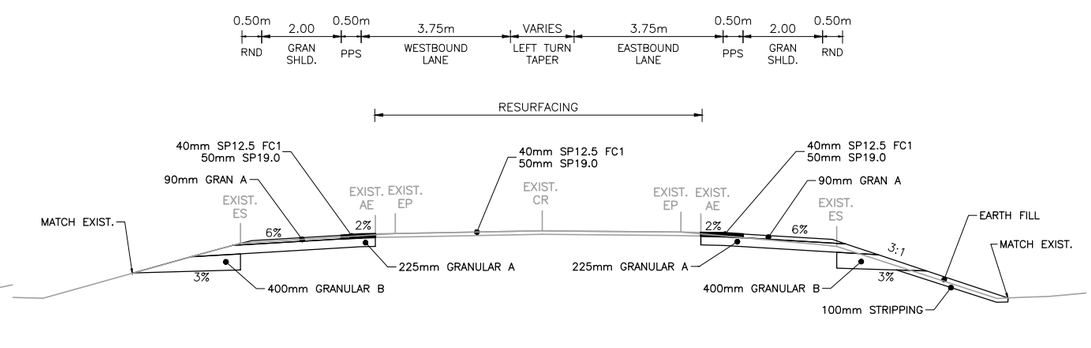
TYPICAL LEFT–TURN LANE WIDENING
STA. 25+030 to 25+190



TYPICAL LEFT–TURN LANE WIDENING
STA. 25+190 to 25+290



TYPICAL LEFT–TURN LANE WIDENING
STA. 25+290 to 25+400



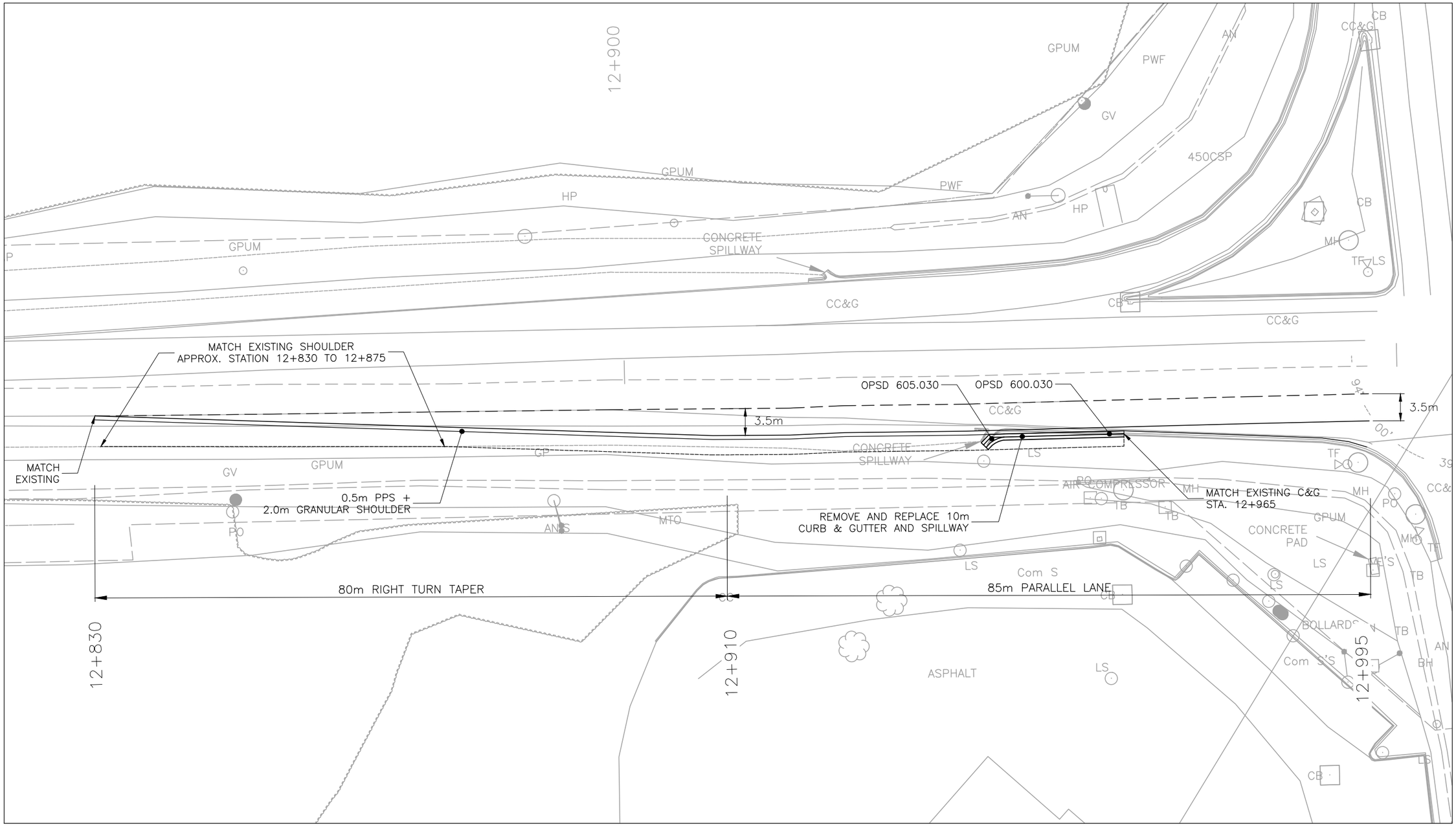
TYPICAL LEFT–TURN LANE WIDENING
STA. 25+400 to 25+550

N.T.S.

FILE NAME: 20577-25 – Typical Details.dwg
CREATED: 2026-02-17
MODIFIED: 2026-02-17 14:48

METRIC
DIMENSIONS ARE IN METRES AND/OR
MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025-4007
WP	4044-16-00
MAPLE GROVE RD RIGHT TURN LANE IMPROVEMENTS	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 12



N.T.S.

FILE NAME: 20577-25 – Maple Grove RTL Improvements.dwg
CREATED: 2026-02-13 MODIFIED: 2026-02-13 14:46

NOTES

1. LANE/SHOULDER WIDTHS AND SLOPES VARY THROUGHOUT. REINSTATE WIDTHS AND SLOPES TO MATCH EXISTING.
2. TYPICALS TO BE READ IN CONJUNCTION WITH OPSD 200, 800 AND 900 SERIES.
3. MILLED AND BINDER SURFACES TO BE TACK COATED PRIOR TO PLACING THE SUBSEQUENT COURSE.
4. REINSTATE PAVEMENT MARKINGS PER OTM BOOK 11.
5. ALL SIGNAGE INCLUDING LANE REDUCTION / CLOSURE SIGNAGE AND TC54 PLACEMENT SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) BOOK 7.
6. CONTRACTOR TO KEEP ALL ENTRANCES AND SIDE ROADS OPEN AT ALL TIMES IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7 UNLESS DIRECTED OTHERWISE.
7. SHOULDERS TO BE REINSTATED TO MATCH EXISTING OR BETTER UPON COMPLETION OF WORK.
8. SEDIMENT CONTROL TO BE INSTALLED DOWNSTREAM OF ALL WORK THAT WILL DISTURB THE EARTH SURFACE.
9. CONTRACTOR TO CONFIRM EXISTING CURB TYPE AND MATCH

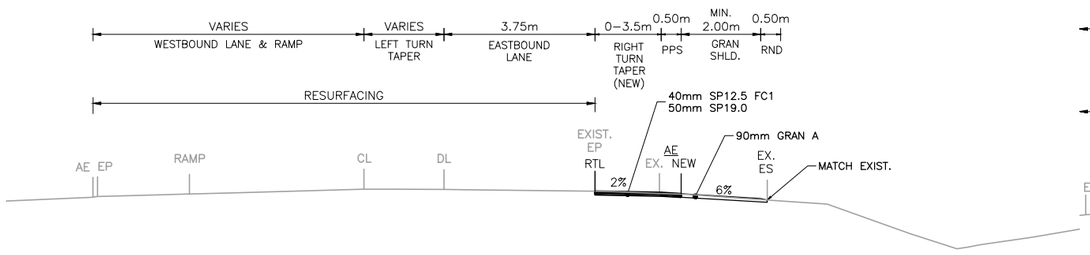
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT 2025–4007
GWP 4044–16–00

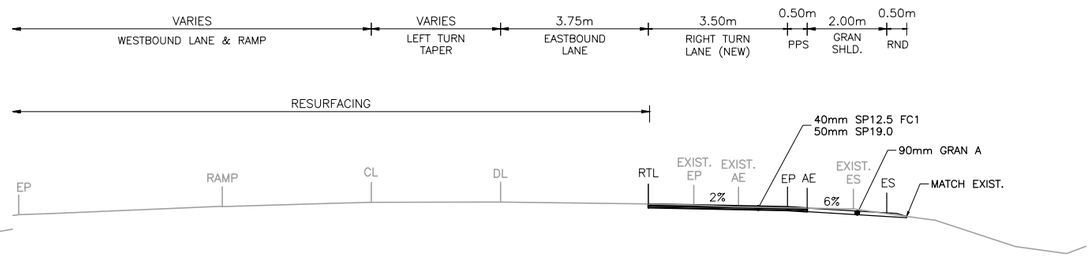
TYPICAL DETAILS
MAPLE GROVE ROAD
RIGHT TURN LANE

Ainley CONSULTING ENGINEERS PLANNERS

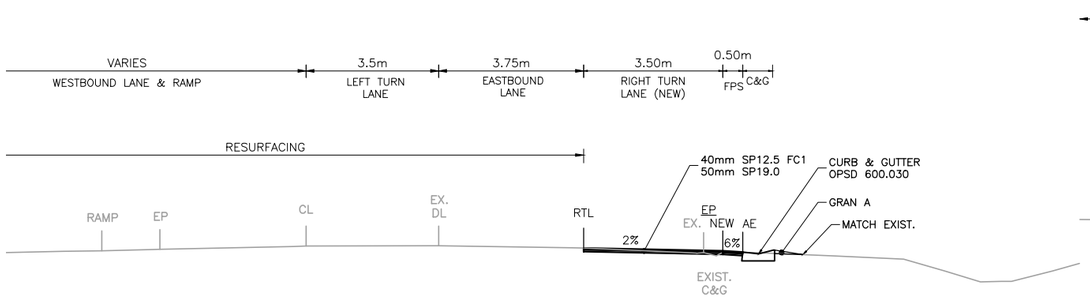
SHEET 13



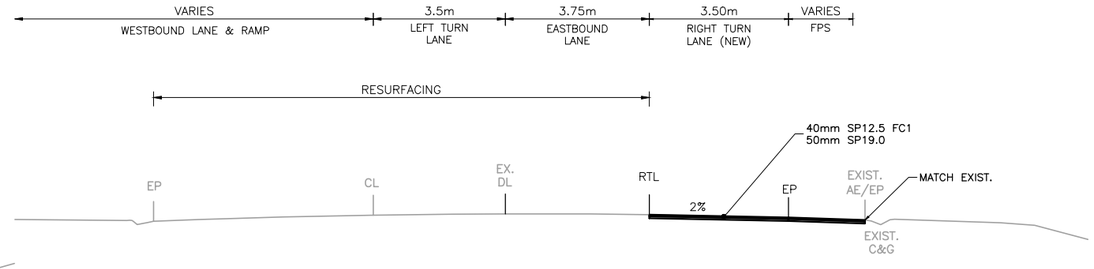
TYPICAL RIGHT–TURN TAPER
STA. 12+830 TO 12+910



TYPICAL RIGHT–TURN LANE
STA. 12+910 TO 12+945



TYPICAL RIGHT–TURN LANE
STA. 12+945 TO 12+965



TYPICAL RIGHT–TURN LANE
STA. 12+965 TO 12+995

N.T.S.

FILE NAME: 20577-25 – Typical Details.dwg
CREATED: 2026-02-17
MODIFIED: 2026-02-17 14:48

NOTES

1. ALL SIGNAGE INCLUDING LANE REDUCTION / CLOSURE SIGNAGE AND TC54 PLACEMENT SHALL BE IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7.
2. TRAFFIC CONTROL PERSONS SHALL BE PROVIDED AT ALL LANE CLOSURES AND SIDEROAD INTERSECTIONS WHERE THE FLOW OF TRAFFIC IS AFFECTED.
3. CONTRACTOR TO KEEP ALL ENTRANCES AND SIDE ROADS OPEN AT ALL TIMES IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL (OTM) – BOOK 7.
4. TO BE READ IN CONJUNCTION WITH OPSD 200 AND 800 SERIES.
5. CULVERT EXCAVATION AND BACKFILL AS PER OPSD 802.010 (FLEXIBLE) AND 802.031 (RIGID).
6. LANE / SHOULDER WIDTHS AND SLOPES VARY THROUGHOUT. REINSTATE WIDTHS AND SLOPES TO MATCH EXISTING OR BETTER.
7. EROSION CONTROL TO BE INSTALLED DOWNSTREAM OF REPLACEMENT
8. ANY UTILITIES SHOWN ARE FOR REFERENCE ONLY. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ADEQUATE IDENTIFICATION AND PROTECTION OF ALL UTILITIES DURING CONSTRUCTION OPERATIONS.
9. SITE RESTORATION PER OPSS 492.
10. CULVERT WORK TO BE COMPLETED IN ADVANCE OF RESURFACING

LEGEND

PHRAGMITES REMOVAL

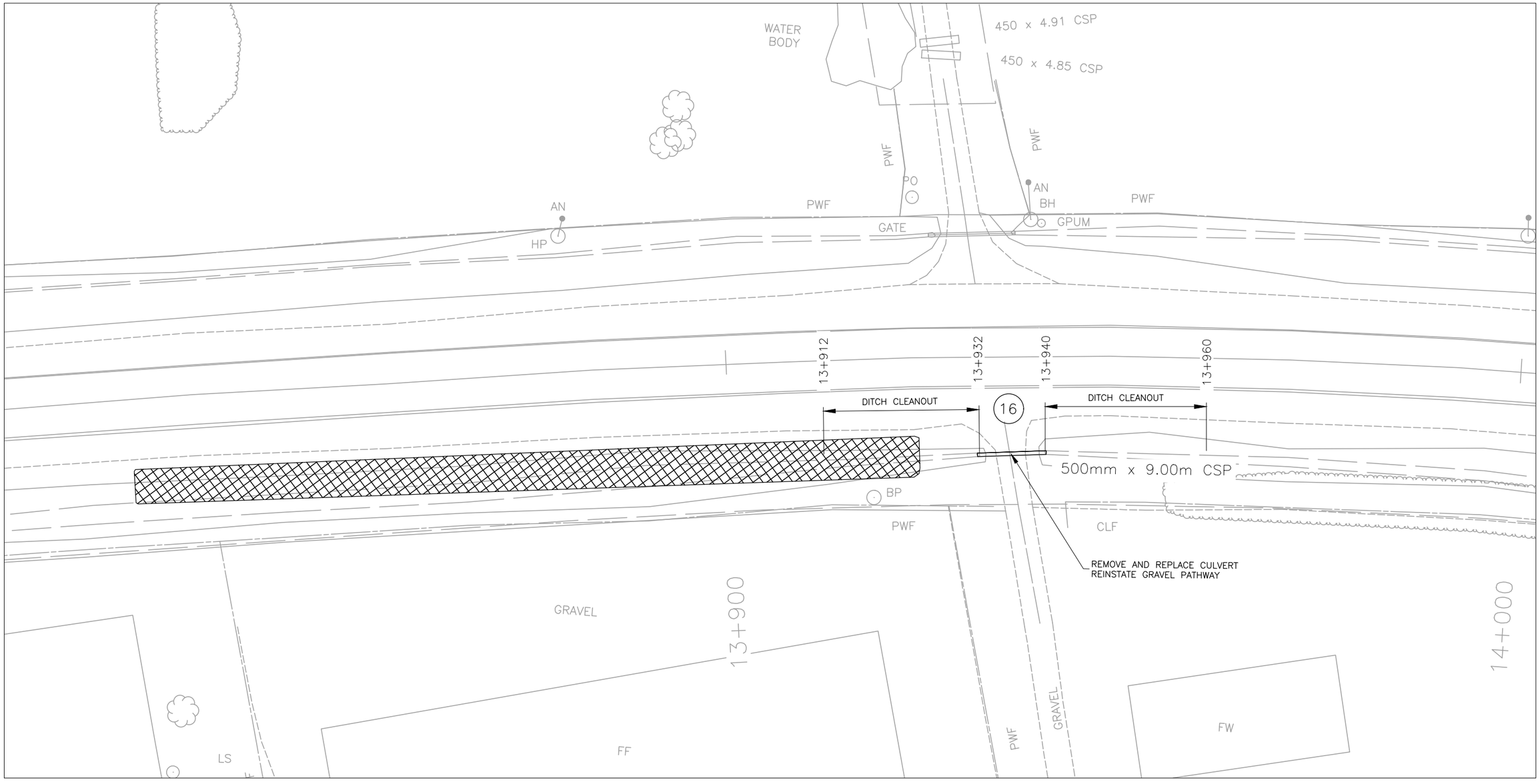
METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

CONT	2025–4007
WP	4044–16–00

CULVERT #16 REMOVALS AND NEW CONSTRUCTION

Ainley CONSULTING ENGINEERS PLANNERS

SHEET 14



N.T.S.

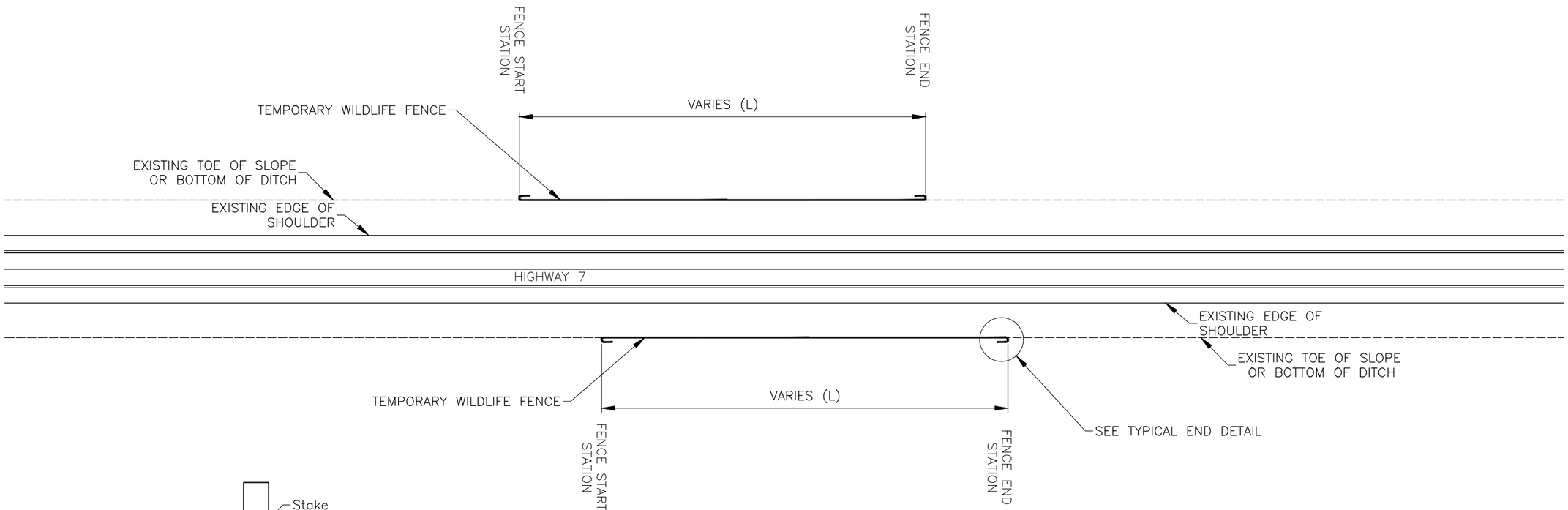
FILE NAME: 20577-25 - Phragmite Removal.dwg
CREATED: 2025-10-03 MODIFIED: 2025-11-14 12:32

NOTES

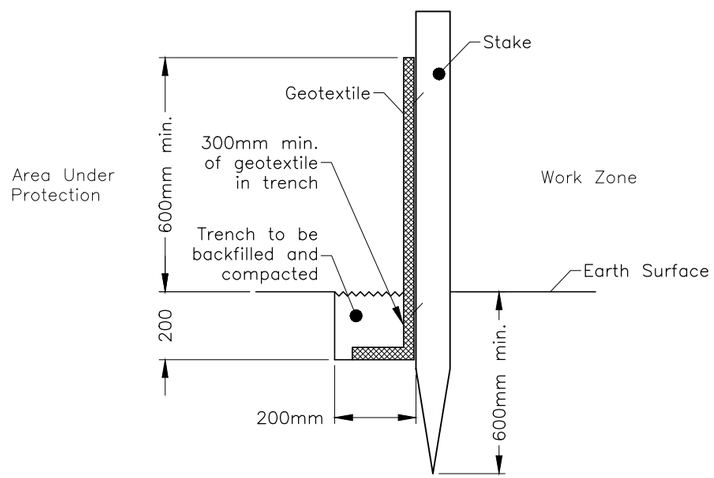
1. TEMPORARY WILDLIFE FENCE SHALL BE INSTALLED PRIOR TO MAY 15TH AND SHALL BE MAINTAINED UNTIL COMPLETION OF WORK AND SITE RESTORATION.
2. TRAFFIC CONTROL TO BE AS PER OTM BOOK 7.
3. THE CONTRACTOR SHALL MAINTAIN THE TEMPORARY WILDLIFE FENCE AS REQUIRED TO SUIT ALL CONSTRUCTION OPERATIONS AND TO ENSURE TURTLES DO NOT NEST IN THE WORK AREA.
4. ADDITIONAL TEMPORARY WILDLIFE FENCE MAY BE REQUIRED. THIS SHALL BE DETERMINED IN THE FIELD PRIOR TO THE PLACEMENT OF ANY EQUIPMENT.
5. ALL TEMPORARY WILDLIFE FENCE INSTALLED SHALL BE REMOVED BY THE CONTRACTOR AFTER THE ASSOCIATED WORK HAS BEEN COMPLETED.
6. TEMPORARY WILDLIFE FENCE MUST BE MAINTAINED AS CONTINUOUS RUN WITH NO GAPS BETWEEN THE JOINTS. THERE MUST BE A 2m OVERLAP OF THE FENCE AT EACH JOINT.
7. OFFSET DISTANCE FROM EDGE OF SHOULDER WILL VARY BASED ON FIELD CONDITIONS.
8. TEMPORARY WILDLIFE FENCE SHALL NOT IMPEDE WATERCOURSE OR DRAINAGE FLOW PATH.

METRIC
DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

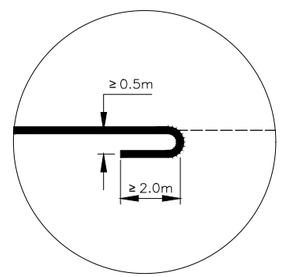
CONT	2025-4007
GWP	4044-16-00
TEMPORARY WILDLIFE FENCE DETAILS	
Ainley CONSULTING ENGINEERS PLANNERS	SHEET 15



TYPICAL TEMPORARY WILDLIFE FENCE INSTALLATION



SECTION A-A



TYPICAL END DETAIL

N.T.S.

FILE NAME: 20577-25 - Temporary Wildlife Fence.dwg
CREATED: 2025-10-03 MODIFIED: 2025-11-14 12:38

METRIC

CONT 2025-4007 WP 4044-16-00	
ELECTRICAL LAYOUT HIGHWAY 7 N. MONAGHAN PKWY (CR15)/STEWART LINE	SHEET E1
Moon-Matz Ltd. Consulting Engineers	

GENERAL NOTES:

A. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

NOTES:

1. PROVIDE SUFFICIENT COILED CABLE FOR FINAL CONNECTION BY HYDRO AUTHORITY. CONTRACTOR SHALL COORDINATE POWER SUPPLY CONNECTION WORK WITH HYDRO.
2. EXISTING LUMINAIRES SHALL BE REPLACED WITH LED TOGETHER WITH RISER WIRES AND FUSE KITS.

MINISTRY OF TRANSPORTATION, ONTARIO

LIMIT OF ELECTRICAL WORK
HIGHWAY 7 STA. 14+580

HOT 14+437.434 HIGHWAY 7 =
HOT 10+000.000 STEWART LINE

HOT 10+000.000 NORTH MONGHAN PARKWAY
HOT 14+441.514 HIGHWAY 7 =

HIGHWAY 7

HIGHWAY 7

STEWART LINE

PETERBOROUGH COUNTY ROAD 15
(NORTH MONAGHAN PARKWAY)

S-E RAMP

E-N RAMP

NID101
NID102
NID103
NID104
NID105
NID106

MH101
MH102
MH103
MH104
MH105
MH106
MH107

P101
P102
P103
P104
P105
P106
P107
P108
P109

MD101
MD102
MD103
MD104

HH101
HH102

TC101
UPS

EP101
EP102
EP103
LS

EHP101
NOTE 1
NOTE 2

SUPPLY 'A'
120/240V, 1ø, 3W
TYPE 1, METERED

101
102
103
104
105
106

125m TO STOP BAR
125m TO STOP BAR

2m (TYP.)
5m
3.6m
4.5m
1.3m
5m
12m (TYP.)
1.5m
3m

10+100
14+400
14+300
14+600
14+500
9+900

1050 x 16.94 CPP
800 x 36.85 CP
800 x 12.28 CSP
1220 x 17.94 CSP
x 12.27 CSP
x 12.22 CSP
1203 CSP

ASPHALT
GRAVEL
BRICK
DRIVE
WHITTINGTON
HCA

SCALE
5m 0 10m

MODIFIED:
DRAWING NAME:
CREATED:

METRIC

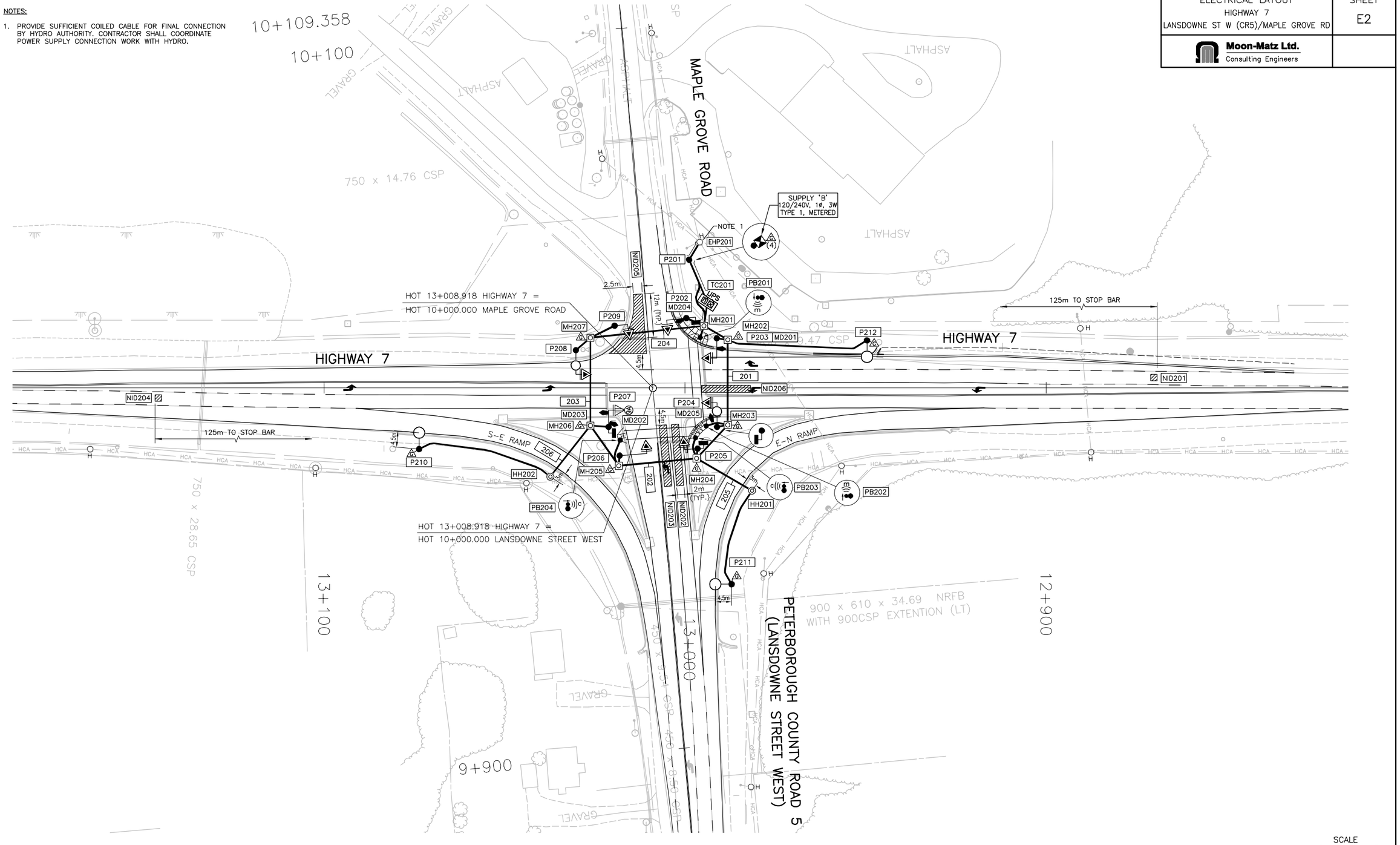
GENERAL NOTES:

A. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

NOTES:

1. PROVIDE SUFFICIENT COILED CABLE FOR FINAL CONNECTION BY HYDRO AUTHORITY. CONTRACTOR SHALL COORDINATE POWER SUPPLY CONNECTION WORK WITH HYDRO.

CONT 2025-4007 WP 4044-16-00	
ELECTRICAL LAYOUT HIGHWAY 7 LANSDOWNE ST W (CR5)/MAPLE GROVE RD	SHEET E2
Moon-Matz Ltd. Consulting Engineers	



MINISTRY OF TRANSPORTATION, ONTARIO

MODIFIED:

DRAWING NAME:

CREATED:

METRIC

GENERAL NOTES:

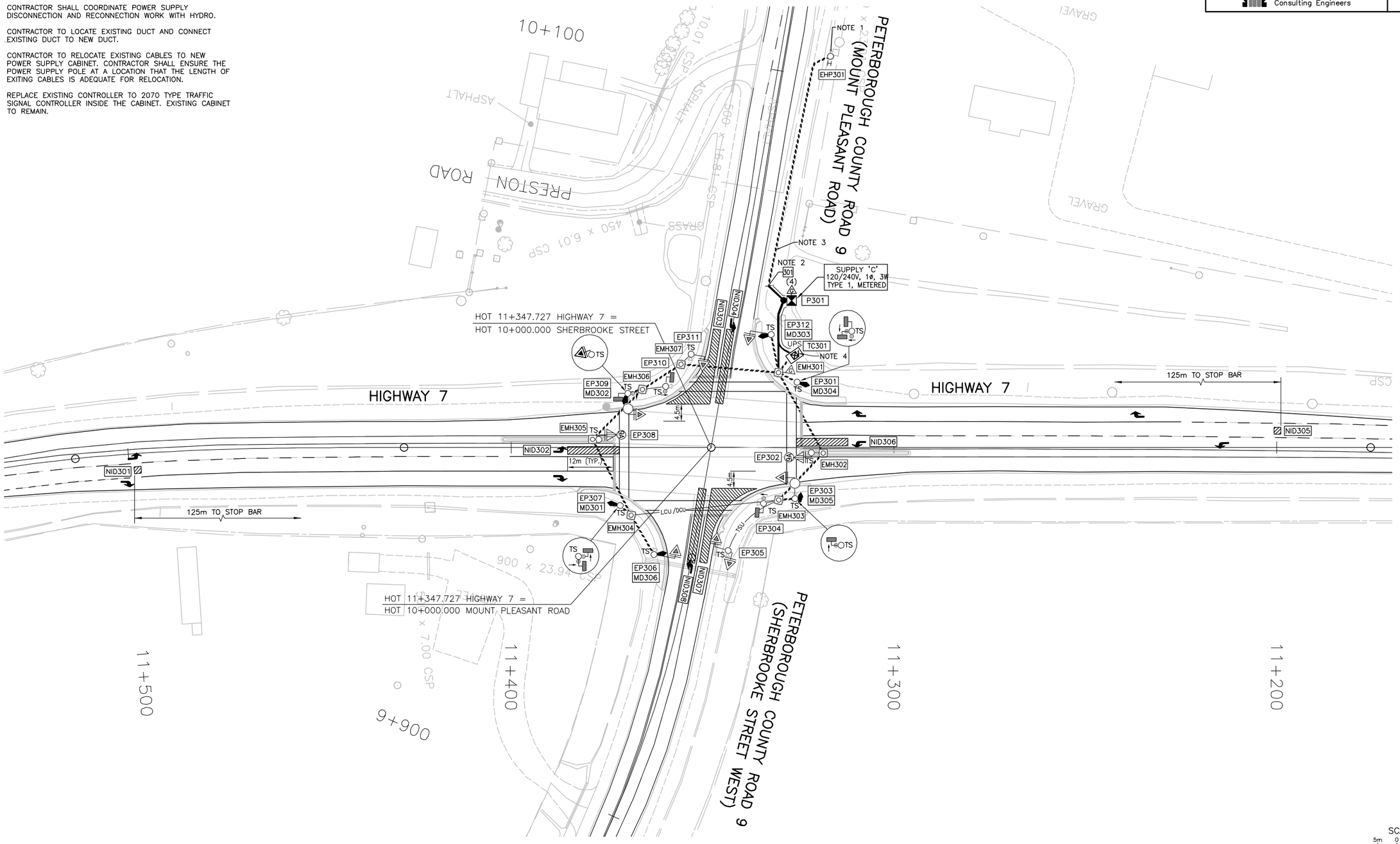
A. USE EXTREME CARE WHEN INSTALLING NEW CABLES WITH EXISTING CABLES SO AS TO NOT CAUSE DAMAGE TO THE CABLES THAT ARE TO REMAIN.

B. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

NOTES:

1. CONTRACTOR SHALL COORDINATE POWER SUPPLY DISCONNECTION AND RECONNECTION WORK WITH HYDRO.
2. CONTRACTOR TO LOCATE EXISTING DUCT AND CONNECT EXISTING DUCT TO NEW DUCT.
3. CONTRACTOR TO RELOCATE EXISTING CABLES TO NEW POWER SUPPLY CABINET. CONTRACTOR SHALL ENSURE THE POWER SUPPLY POLE AT A LOCATION THAT THE LENGTH OF EXITING CABLES IS ADEQUATE FOR RELOCATION.
4. REPLACE EXISTING CONTROLLER TO 2070 TYPE TRAFFIC SIGNAL CONTROLLER INSIDE THE CABINET. EXISTING CABINET TO REMAIN.

CONT 2025-4007 WP 4044-16-00	
ELECTRICAL LAYOUT HIGHWAY 7 MT PLEASANT RD/SHERBROOKE ST (CR9)	SHEET E3
Moon-Matz Ltd. Consulting Engineers	



MODIFIED:

DRAWING NAME:
CREATED:

MINISTRY OF TRANSPORTATION, ONTARIO

METRIC

CONT 2025-4007 WP 4044-16-00	
ELECTRICAL LAYOUT HIGHWAY 7 PARKHILL RD W (CR3)/HAYES LINE	SHEET E4
Moon-Matz Ltd. Consulting Engineers	

GENERAL NOTES:

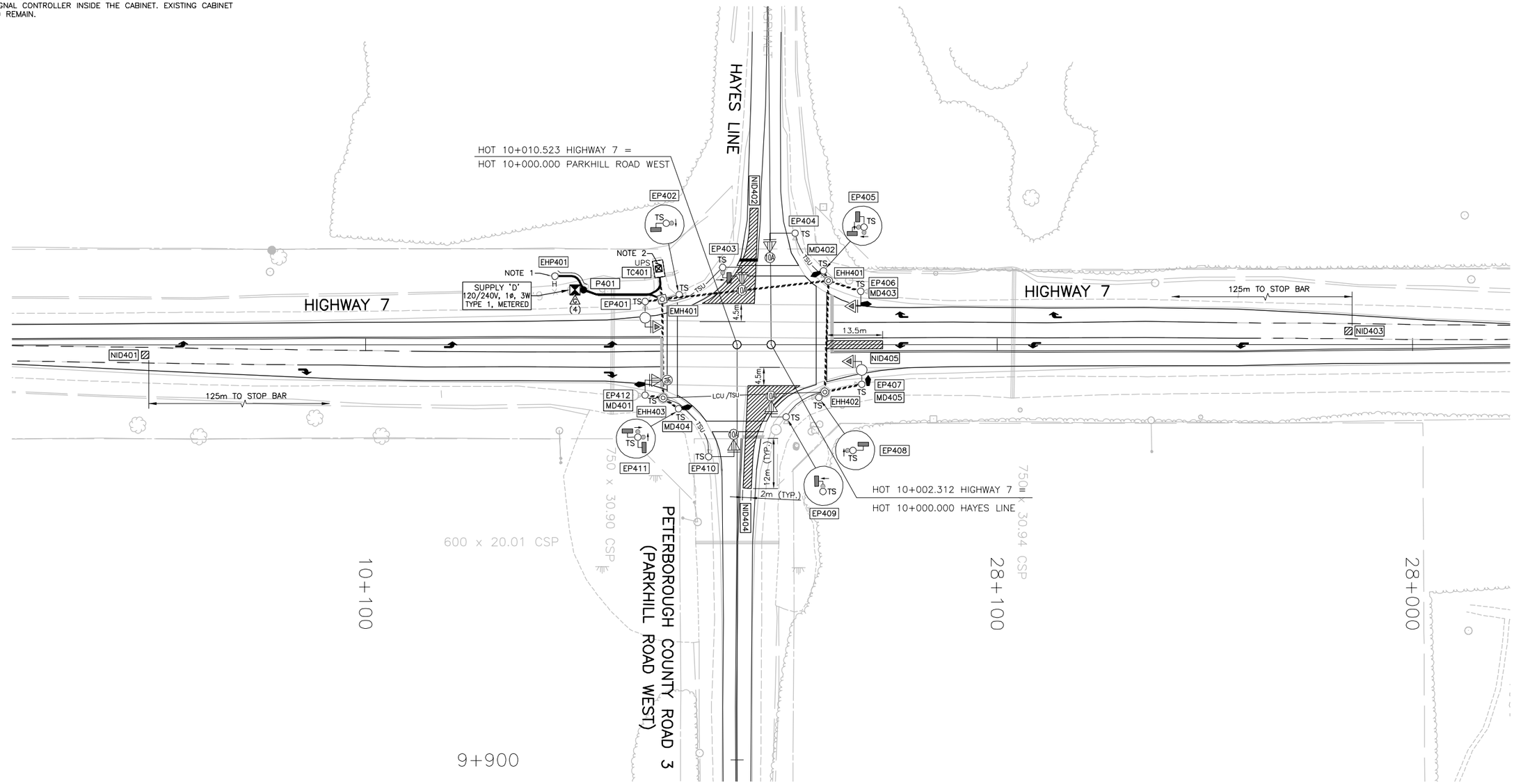
A. USE EXTREME CARE WHEN INSTALLING NEW CABLES WITH EXISTING CABLES SO AS TO NOT CAUSE DAMAGE TO THE CABLES THAT ARE TO REMAIN.

B. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

NOTES:

1. PROVIDE SUFFICIENT COILED CABLE FOR FINAL CONNECTION BY HYDRO AUTHORITY. CONTRACTOR SHALL COORDINATE POWER SUPPLY CONNECTION WORK WITH HYDRO.

2. REPLACE EXISTING CONTROLLER TO 2070 TYPE TRAFFIC SIGNAL CONTROLLER INSIDE THE CABINET. EXISTING CABINET TO REMAIN.



SCALE
5m 0 10m

MINISTRY OF TRANSPORTATION, ONTARIO

MODIFIED:

DRAWING NAME:
CREATED:

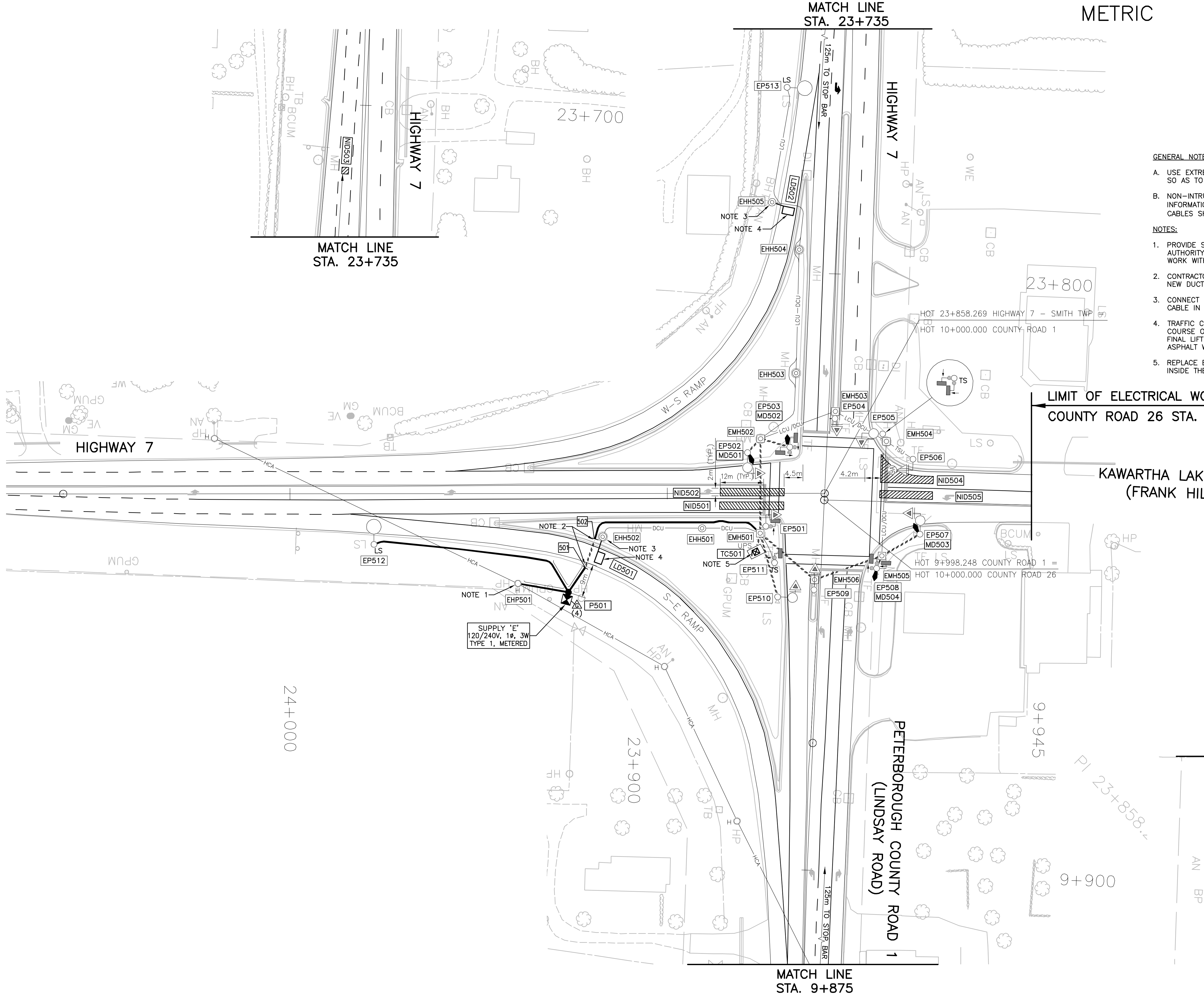
METRIC

CONT	2025-4007
WP	4044-16-00

ELECTRICAL LAYOUT
HIGHWAY 7
LINDSAY RD (CR1)/FRANK HILL RD (CR26)

SHEET E5

Moon-Matz Ltd.
Consulting Engineers



GENERAL NOTES:

A. USE EXTREME CARE WHEN INSTALLING NEW CABLES WITH EXISTING CABLES SO AS TO NOT CAUSE DAMAGE TO THE CABLES THAT ARE TO REMAIN.

B. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

NOTES:

1. PROVIDE SUFFICIENT COILED CABLE FOR FINAL CONNECTION BY HYDRO AUTHORITY. CONTRACTOR SHALL COORDINATE POWER SUPPLY CONNECTION WORK WITH HYDRO.

2. CONTRACTOR TO LOCATE EXISTING DUCT AND CONNECT EXISTING DUCT TO NEW DUCT.

3. CONNECT PROPOSED COUNTING LOOP TO EXISTING EXTRA LOW VOLTAGE CABLE IN EXISTING HANDHOLE AFTER PAVING COMPLETION.

4. TRAFFIC COUNTING LOOP AS PER MTOD 2901.504. PLACE LOOP IN BINDER COURSE OF PAVEMENT. DETECTOR LOOP SHALL BE INSTALLED PRIOR TO FINAL LIFT OF ASPHALT. CUTTING LOOP INTO THE SURFACE COURSE OF ASPHALT WILL NOT BE PERMITTED.

5. REPLACE EXISTING CONTROLLER TO 2070 TYPE TRAFFIC SIGNAL CONTROLLER INSIDE THE CABINET. EXISTING CABINET TO REMAIN.

MINISTRY OF TRANSPORTATION, ONTARIO

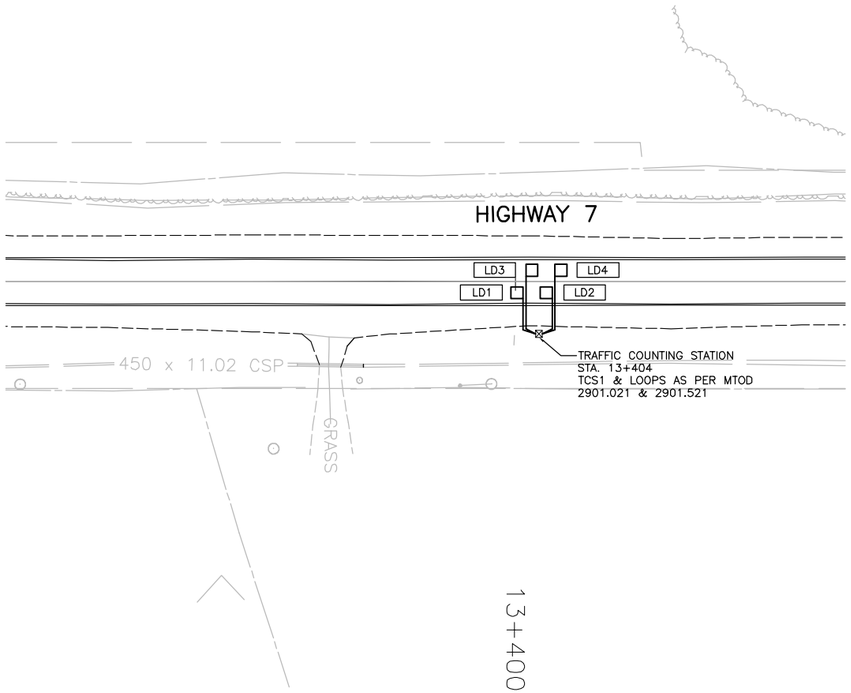
MODIFIED:
DRAWING NAME:
CREATED:

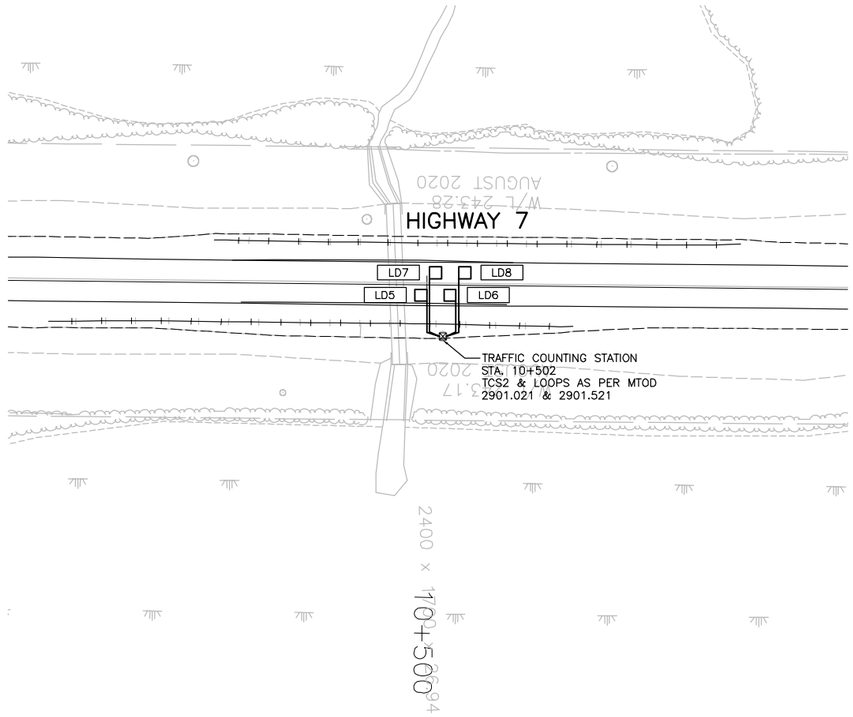
METRIC

GENERAL NOTES:

A. PLACE LOOP IN BINDER COURSE OF PAVEMENT.

B. DETECTOR LOOPS SHALL BE INSTALLED PRIOR TO FINAL LIFT OF ASPHALT. CUTTING LOOPS INTO THE SURFACE COURSE OF ASPHALT WILL NOT BE PERMITTED.





SCALE
5m 0 10m

CONT 2025-4007 WP 4044-16-00	
ELECTRICAL LAYOUT HIGHWAY 7 TRAFFIC COUNTING STATIONS	SHEET E6
Moon-Matz Ltd. Consulting Engineers	

MINISTRY OF TRANSPORTATION, ONTARIO

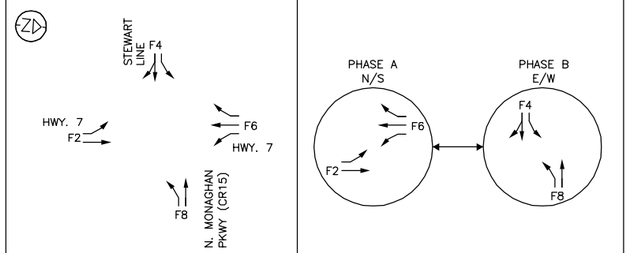
DRAWING NAME:
CREATED:
MODIFIED:

METRIC

CONT 2025-4007 WP 4044-16-00	
WIRING DIAGRAM HIGHWAY 7 N. MONAGHAN PKWY (CR15)/STEWART LINE	SHEET E7
Moon-Matz Ltd. Consulting Engineers	

MINISTRY OF TRANSPORTATION, ONTARIO

PHASE SEQUENCE DATA FOR 2070 CONTROLLER



INTERSECTION FAZES | INTERSECTION PHASE SEQUENCE

GENERAL NOTES:

A. LIGHT LINE SYMBOLS DENOTE EXISTING EQUIPMENT. BOLD LINE SYMBOLS DENOTE NEW EQUIPMENT.

B. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

TABLE 1 LOADING TABLE FOR SUPPLY 'A'-120/240V, 1PH, 3W, 100A

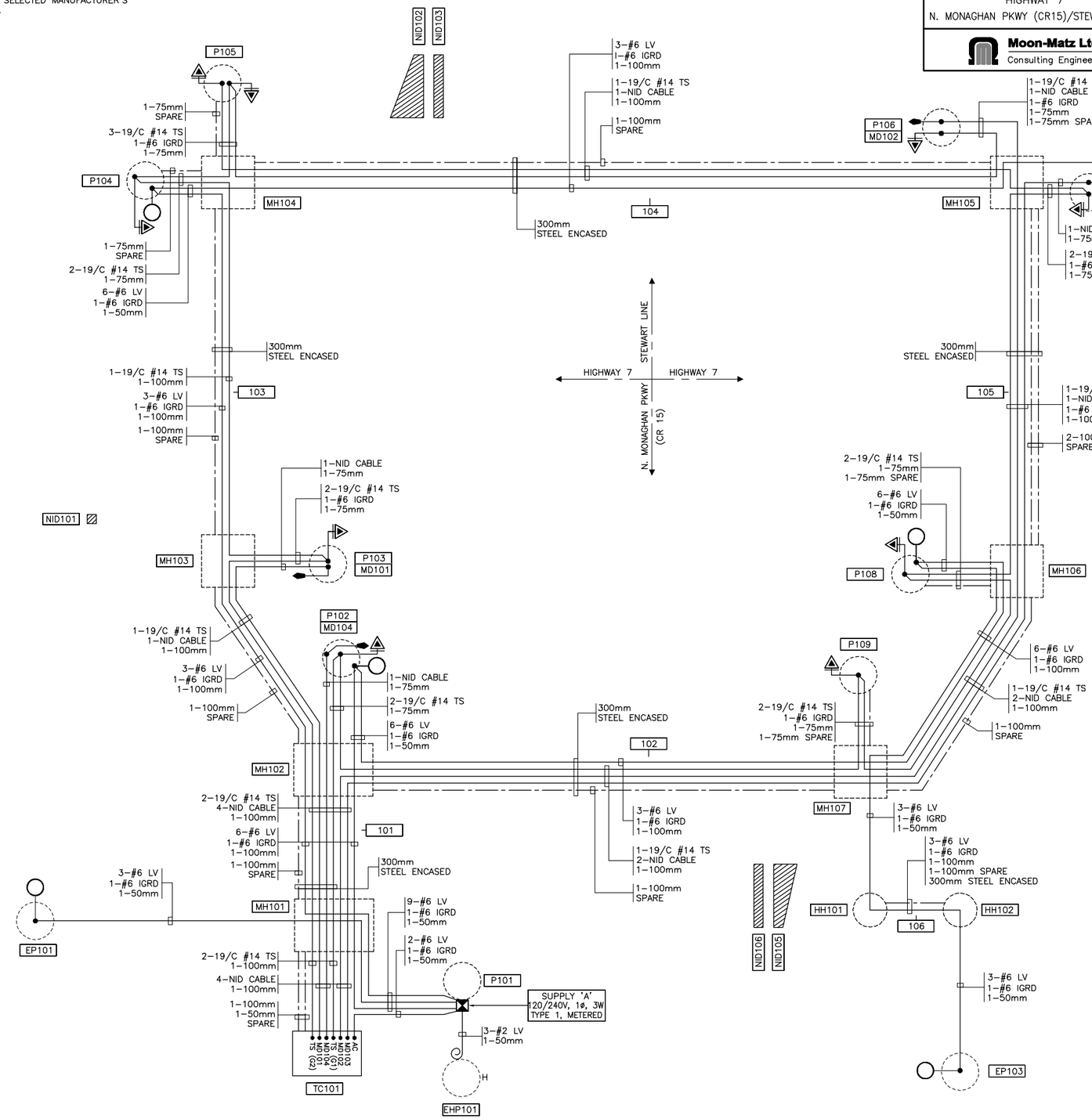
LOAD DESCRIPTION	LOAD (W)	CIRCUIT No.	BRK (A)	BRK (A)	CIRCUIT No.	LOAD (W)	LOAD DESCRIPTION
TRAFFIC SIGNALS	960 W (ESTIMATED)	A RED	60A				
P104	160 W	A RED1	30A	30A	A BLK2	160 W	EP102
P102, EP103	2 x 160 W	A RED3	30A	30A	A BLK4	160 W	P108
	SPARE	A RED5	30A	30A	A BLK6	160 W	EP101
SUB TOTAL LTG PH-RED 480 W SUB TOTAL LTG PH-BLK 480 W TRAFFIC SIGNAL PH-RED 960 W							
TOTAL LOAD 1,920 W							

TABLE 2 SIGNAL HEADS WIRING CONNECTIONS

CABLE	COND. #	COLOUR/MARK	CABLE GROUP #1	CABLE GROUP #2
19/C #14 AWG	1	WHITE/WHITE 1	MAIN RD. NEUTRAL	MAIN RD. NEUTRAL
	2	WHITE/WHITE 2	SIDE RD. NEUTRAL	SIDE RD. NEUTRAL
	3	BLACK	SPARE	SPARE
			SPARE	SPARE
	4	ORANGE	SPARE	SPARE
	5	RED/RED 1	MAIN RD. RED F2	MAIN RD. RED F6
	6	RED/RED 2	SPARE	SPARE
			SIDE RD. RED F4	SIDE RD. RED F8
	7	RED/RED 3	SPARE	SPARE
	8	RED/RED 4	SPARE	SPARE
			SPARE	SPARE
	9	RED/RED 5	SPARE	SPARE
	10	YELLOW/AMBER 1	MAIN RD. AMBER F2	MAIN RD. AMBER F6
	11	YELLOW/AMBER 2	SPARE	SPARE
			SIDE RD. AMBER F4	SIDE RD. AMBER F8
	12	YELLOW/AMBER 3	SPARE	SPARE
	13	YELLOW/AMBER 4	SPARE	SPARE
			SPARE	SPARE
	14	YELLOW/AMBER 5	SPARE	SPARE
	15	BLUE/GREEN 1	MAIN RD. GREEN F2	MAIN RD. GREEN F6
	16	BLUE/GREEN 2	SPARE	SPARE
			SIDE RD. GREEN F4	SIDE RD. GREEN F8
	17	BLUE/GREEN 3	SPARE	SPARE
	18	BLUE/GREEN 4	SPARE	SPARE
			SPARE	SPARE
	19	BLUE/GREEN 5	SPARE	SPARE

TABLE 3 DETECTION ZONE

DETECTION ZONE NO.	FAZE NO.	ZONE DIMENSIONS (m)
NID101	F2	1.8 x 1.8
NID102	F4	TRAPEZOIDAL
NID103	F4	2 x 14
NID104	F6	1.8 x 1.8
NID105	F8	TRAPEZOIDAL
NID106	F8	2 x 19.5

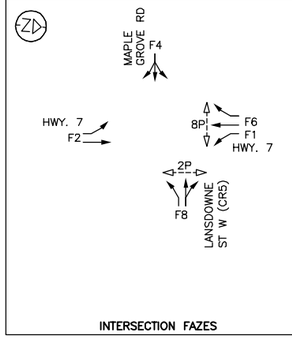


METRIC

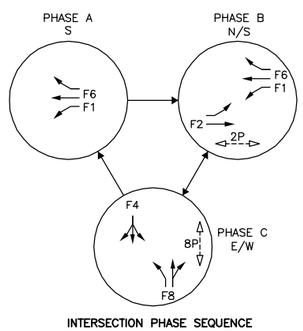
CONT 2025-4007	
WP 4044-16-00	
WIRING DIAGRAM HIGHWAY 7 LANSDOWNE ST W (CR5)/MAPLE GROVE RD	SHEET E8
Moon-Matz Ltd. Consulting Engineers	

MINISTRY OF TRANSPORTATION, ONTARIO

PHASE SEQUENCE DATA FOR 2070 CONTROLLER



INTERSECTION FAZES



INTERSECTION PHASE SEQUENCE

TABLE 1 LOADING TABLE FOR SUPPLY 'B'-120/240V, 1PH, 3W, 100A

LOAD DESCRIPTION	LOAD (W)	CIRCUIT No.	BRK (A)	BRK (A)	CIRCUIT No.	LOAD (W)	LOAD DESCRIPTION
TRAFFIC SIGNALS	1,090 W (ESTIMATED)	B RED	60A				
P204	160 W	B RED1	30A	30A	B BLK2	160 W	P211
P208	160 W	B RED3	30A	30A	B BLK4	160 W	P210
	SPARE	B RED5	30A	30A	B BLK6	160 W	P212

SUB TOTAL LTG	PH-RED	320 W
SUB TOTAL LTG	PH-BLK	480 W
TRAFFIC SIGNAL	PH-RED	1,090 W
TOTAL LOAD		1,890 W

TABLE 2 SIGNAL HEADS WIRING CONNECTIONS

CABLE	COND. #	COLOUR/MARK	CABLE GROUP #1	CABLE GROUP #2
19/C #14 AWG	1	WHITE/WHITE 1	MAIN RD. NEUTRAL	MAIN RD. NEUTRAL
	2	WHITE/WHITE 2	SIDE RD. NEUTRAL	SIDE RD. NEUTRAL
	3	BLACK	SPARE	SPARE
			SPARE	SPARE
	4	ORANGE	SPARE	SPARE
	5	RED/RED 1	MAIN RD. RED F2	MAIN RD. RED F6
	6	RED/RED 2	SPARE	SPARE
			SIDE RD. RED F4	SIDE RD. RED F8
	7	RED/RED 3	SPARE	MAIN RD. LT RED F1
	8	RED/RED 4	SPARE	SPARE
			SPARE	SPARE
	9	RED/RED 5	SPARE	SPARE
	10	YELLOW/AMBER 1	MAIN RD. AMBER F2	MAIN RD. AMBER F6
	11	YELLOW/AMBER 2	SPARE	SPARE
			SIDE RD. AMBER F4	SIDE RD. AMBER F8
	12	YELLOW/AMBER 3	SPARE	MAIN RD. LT AMBER F1
	13	YELLOW/AMBER 4	SPARE	SPARE
			SPARE	SPARE
	14	YELLOW/AMBER 5	SPARE	SPARE
	15	BLUE/GREEN 1	MAIN RD. GREEN F2	MAIN RD. GREEN F6
	16	BLUE/GREEN 2	SPARE	SPARE
			SIDE RD. GREEN F4	SIDE RD. GREEN F8
	17	BLUE/GREEN 3	SPARE	MAIN RD. LT GREEN F1
	18	BLUE/GREEN 4	SPARE	SPARE
			SPARE	SPARE
	19	BLUE/GREEN 5	SPARE	SPARE
12/C #14 AWG	1	WHITE 1	NEUTRAL	
	2	BLACK	SPARE	
	3	ORANGE	SPARE	
	4	RED1/RED1	SPARE	
			MAIN RD. D/W F2P	
	5	RED/RED2	SIDE RD. D/W F8P	
	6	RED/RED3	SPARE	
	7	YELLOW/AMBER 1	SPARE	
	8	YELLOW/AMBER 2	SPARE	
	9	YELLOW/AMBER 3	SPARE	
	10	BLUE/GREEN 1	SPARE	
			MAIN RD. W F2P	
	11	BLUE/GREEN 2	SIDE RD. W F8P	
	12	BLUE/GREEN 3	SPARE	

GENERAL NOTES:

A. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

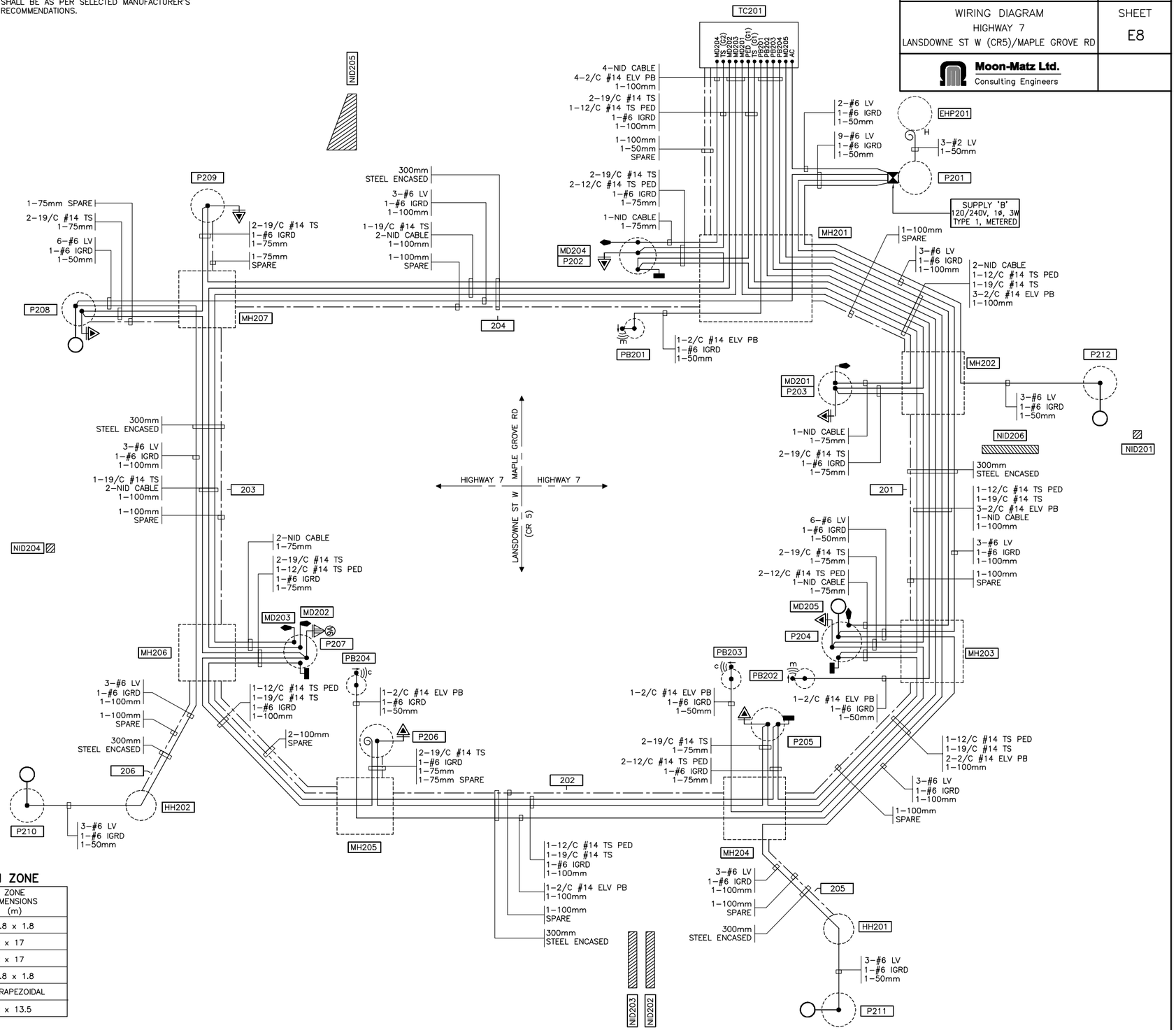


TABLE 3 DETECTION ZONE

DETECTION ZONE NO.	FAZE NO.	ZONE DIMENSIONS (m)
NID201	F6	1.8 x 1.8
NID202	F8	2 x 17
NID203	F8	2 x 17
NID204	F2	1.8 x 1.8
NID205	F4	TRAPEZOIDAL
NID206	F1	2 x 13.5

METRIC

MINISTRY OF TRANSPORTATION, ONTARIO

CONT 2025-4007 WP 4044-16-00	
WIRING DIAGRAM HIGHWAY 7 MT PLEASANT RD/SHERBROOKE ST (CR9)	SHEET E9
Moon-Matz Ltd. Consulting Engineers	

GENERAL NOTES:

A. LIGHT LINE SYMBOLS DENOTE EXISTING EQUIPMENT. BOLD LINE SYMBOLS DENOTE NEW EQUIPMENT.

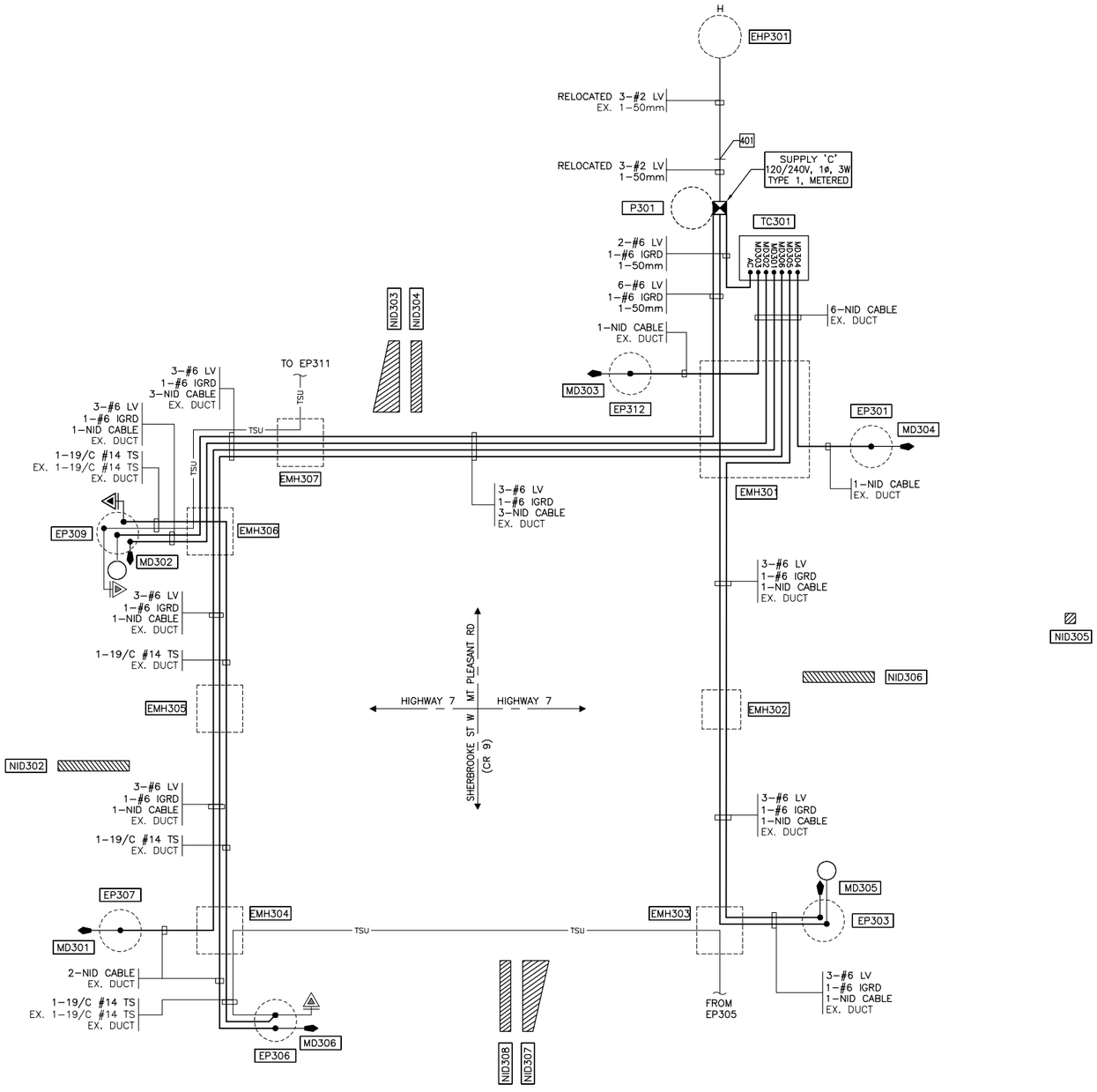
B. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

C. CONTRACTOR SHALL SITE VERIFY THE EXISTING U/G DUCTS AND THEIR CONTENTS.

D. FOR CONTROLLER WIRING AND DESIGNATIONS, REFER TO WIRING DIAGRAM PROVIDED WITH CONTROLLER.

TABLE 1 DETECTION ZONE

DETECTION ZONE NO.	FAZE NO.	ZONE DIMENSIONS (m)
NID301	F2	1.8 x 1.8
NID302	F5	2 x 13.5
NID303	F4	TRAPEZOIDAL
NID304	F4	2 x 19.5
NID305	F6	1.8 x 1.8
NID306	F1	2 x 13.5
NID307	F8	TRAPEZOIDAL
NID308	F8	2 x 19.5



METRIC

CONT 2025-4007 WP 4044-16-00	
WIRING DIAGRAM HIGHWAY 7 PARKHILL RD W (CR3)/HAYES LINE	SHEET E10
Moon-Matz Ltd. Consulting Engineers	

MINISTRY OF TRANSPORTATION, ONTARIO

GENERAL NOTES:

A. LIGHT LINE SYMBOLS DENOTE EXISTING EQUIPMENT. BOLD LINE SYMBOLS DENOTE NEW EQUIPMENT.

B. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

C. CONTRACTOR SHALL SITE VERIFY THE EXISTING U/G DUCTS AND THEIR CONTENTS.

D. FOR CONTROLLER WIRING AND DESIGNATIONS, REFER TO WIRING DIAGRAM PROVIDED WITH CONTROLLER.

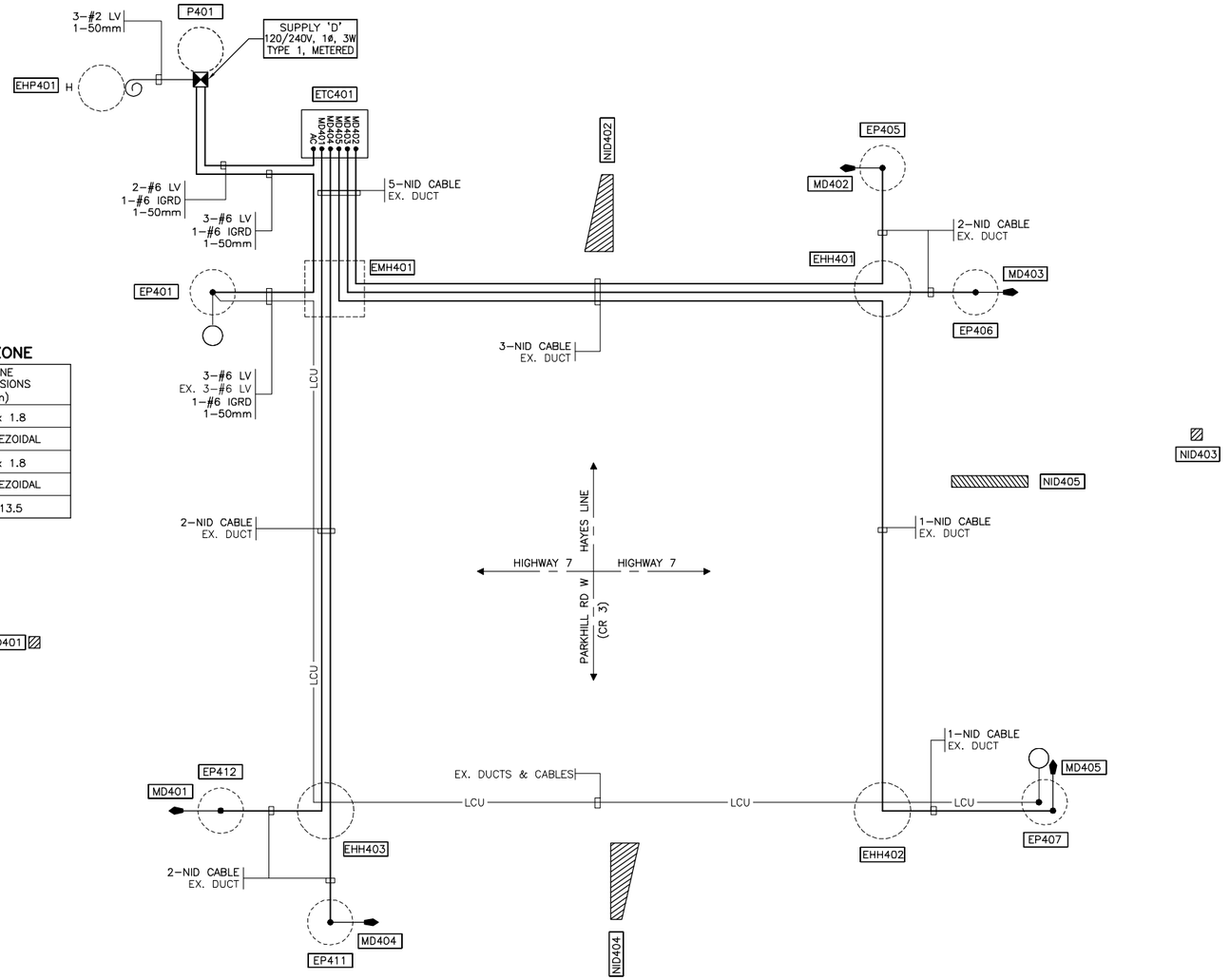


TABLE 1 DETECTION ZONE

DETECTION ZONE NO.	FAZE NO.	ZONE DIMENSIONS (m)
NID401	F2	1.8 x 1.8
NID402	F8	TRAPEZOIDAL
NID403	F6	1.8 x 1.8
NID404	F4	TRAPEZOIDAL
NID405	F1	2 x 13.5

METRIC

MINISTRY OF TRANSPORTATION, ONTARIO

CONT 2025-4007 WP 4044-16-00	
WIRING DIAGRAM HIGHWAY 7 LINDSAY RD (CR1)/FRANK HILL RD (CR26)	SHEET E11
Moon-Matz Ltd. Consulting Engineers	

GENERAL NOTES:

A. LIGHT LINE SYMBOLS DENOTE EXISTING EQUIPMENT. BOLD LINE SYMBOLS DENOTE NEW EQUIPMENT.

B. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

C. CONTRACTOR SHALL SITE VERIFY THE EXISTING U/G DUCTS AND THEIR CONTENTS.

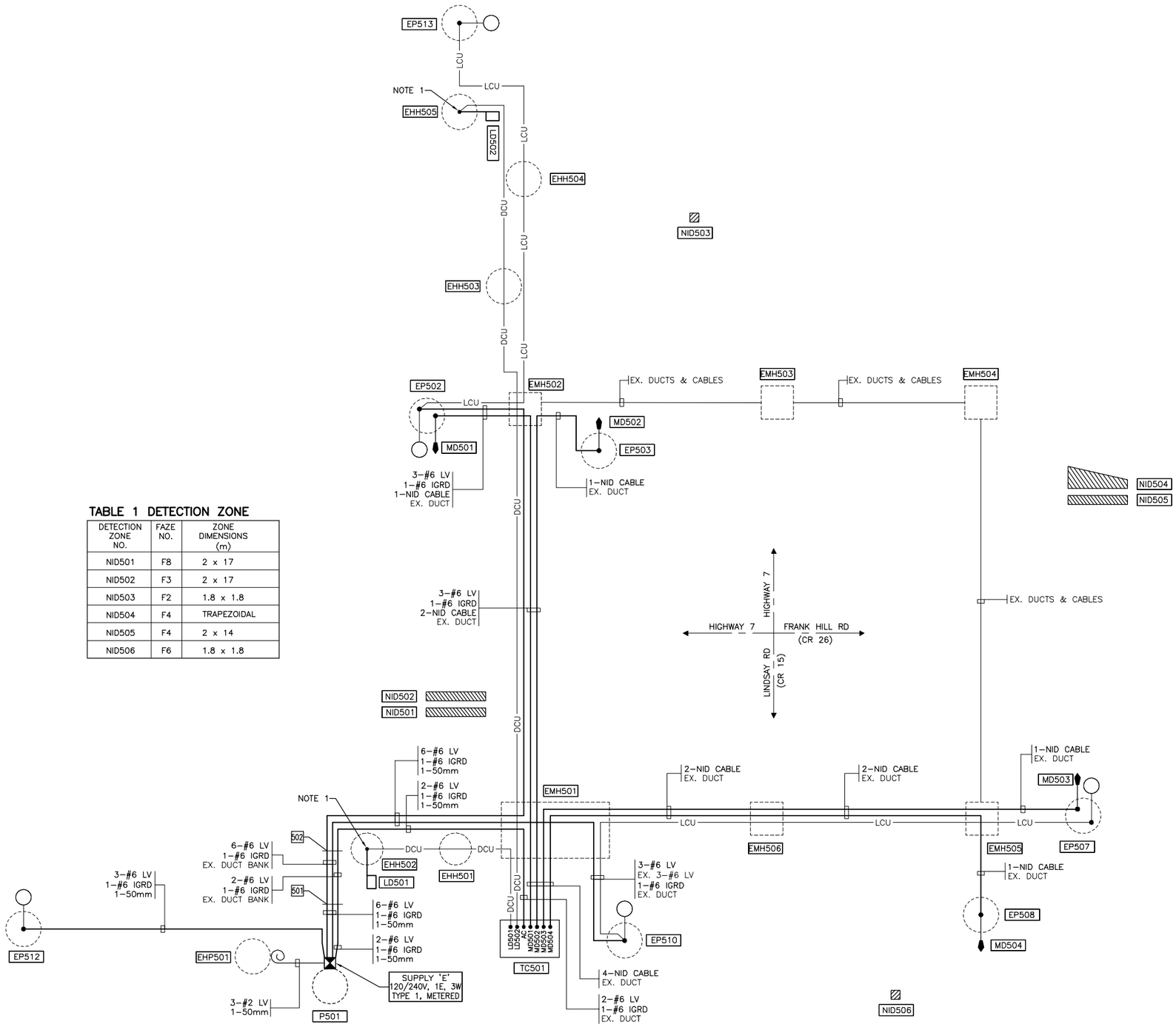
D. FOR CONTROLLER WIRING AND DESIGNATIONS, REFER TO WIRING DIAGRAM PROVIDED WITH CONTROLLER.

NOTES:

1. CONNECT PROPOSED COUNTING LOOP TO EXISTING EXTRA LOW VOLTAGE CABLE IN EXISTING HANDHOLE.

TABLE 1 DETECTION ZONE

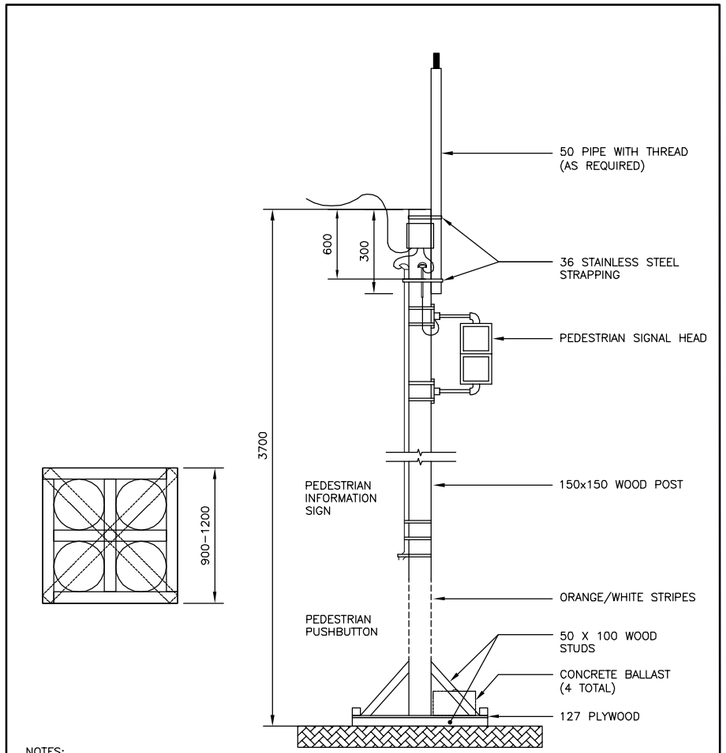
DETECTION ZONE NO.	FAZE NO.	ZONE DIMENSIONS (m)
NID501	F8	2 x 17
NID502	F3	2 x 17
NID503	F2	1.8 x 1.8
NID504	F4	TRAPEZOIDAL
NID505	F4	2 x 14
NID506	F6	1.8 x 1.8



METRIC

CONT 2025-4007 WP 4044-16-00	
NON-STANDARD ELECTRICAL DETAILS HIGHWAY 7	SHEET E12
Moon-Matz Ltd. Consulting Engineers	

MINISTRY OF TRANSPORTATION, ONTARIO



NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE NOTED.
2. CONTRACTOR RESPONSIBLE TO ADD ADDITIONAL WEIGHT AS REQUIRED TO STABILIZE STAND IN ALL WEATHER CONDITIONS.

WOODEN POST STAND FOR TEMPORARY PEDESTRIAN SIGNALS

N.T.S.

METRIC

CONT 2025-4007 WP 4044-16-00	
TEMPORARY ELECTRICAL WORK HIGHWAY 7 N. MONAGHAN PKWY (CR15)/STEWART LINE	SHEET E13
Moon-Matz Ltd. Consulting Engineers	

SUPPLEMENTARY LEGEND

⊗ TEMPORARY WOOD POLE

GENERAL NOTES:

A. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

B. EXISTING POWER SUPPLY CABINET TO BE USED FOR TEMPORARY TRAFFIC SIGNALS AND LIGHTING DURING CONSTRUCTION.

LIMIT OF ELECTRICAL WORK
HIGHWAY 7 STA. 14+580

HOT 14+437.434 HIGHWAY 7 =
HOT 10+000.000 STEWART LINE

HOT 10+000.000 NORTH MONAGHAN PARKWAY
HOT 14+441.514 HIGHWAY 7 =

EXISTING
SUPPLY 'EA'
120/240V, 1ø, 3W
TYPE 1, METERED

TP101 TP102 TP103 TP104 MD107 MD108 TP105 TP106 MD105 MD106 TP107 TP108 TP109 TP110 EP104 EHP101 TC102 NID107 NID108 NID109 NID110 NID111 NID112 UPS

HIGHWAY 7 STEWART LINE N. MONAGHAN PKWY (CR15) DRIVE WHITTINGTON

14+600 14+500 14+400 14+300 9+900 10+100

125m TO STOP BAR

9.8m 11m 17.4m 9m 3.6m 4.5m 7.04 7m 2m 27m (TYP.) 17.1m 7m

1220 x 17.94 CSP 1050 x 16.94 CPP 800 x 36.85 CP 990 x 12.28 CSP x 12.27 CSP x 12.22 CSP 1203 CSP

ASPHALT GRAVEL BRICK

SCALE 5m 0 10m

MINISTRY OF TRANSPORTATION, ONTARIO

MODIFIED:
DRAWING NAME:
CREATED:

METRIC

CONT 2025-XXXX WP 4044-16-00	
TEMPORARY ELECTRICAL WORK HIGHWAY 7 LANSDOWNE ST W (CR5)/MAPLE GROVE RD	SHEET E14
Moon-Matz Ltd. Consulting Engineers	

SUPPLEMENTARY LEGEND

⊗ TEMPORARY WOOD POLE

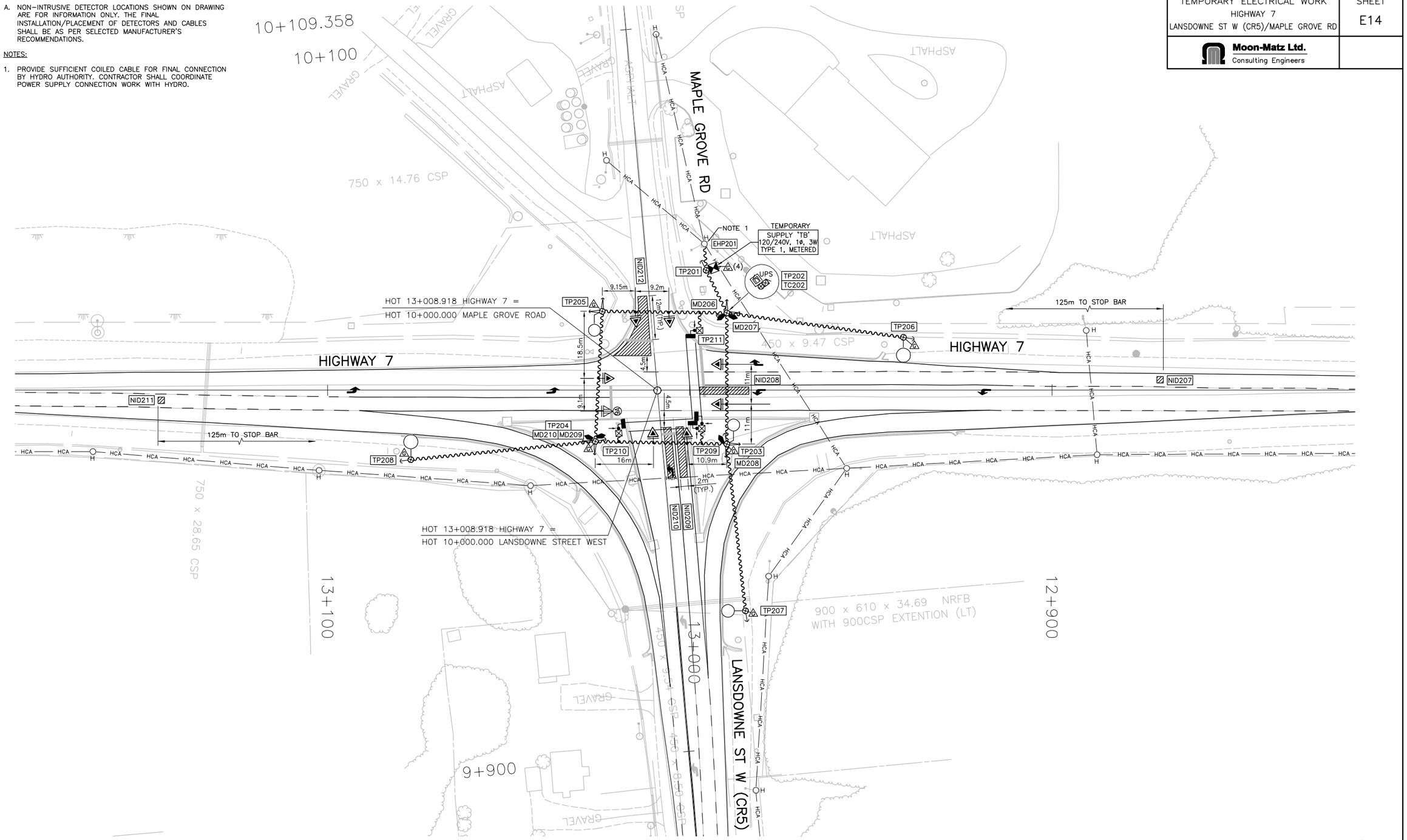
⊠ TEMPORARY WOODED POST STAND

GENERAL NOTES:

A. NON-INTRUSIVE DETECTOR LOCATIONS SHOWN ON DRAWING ARE FOR INFORMATION ONLY. THE FINAL INSTALLATION/PLACEMENT OF DETECTORS AND CABLES SHALL BE AS PER SELECTED MANUFACTURER'S RECOMMENDATIONS.

NOTES:

1. PROVIDE SUFFICIENT COILED CABLE FOR FINAL CONNECTION BY HYDRO AUTHORITY. CONTRACTOR SHALL COORDINATE POWER SUPPLY CONNECTION WORK WITH HYDRO.



SCALE
5m 0 10m

MINISTRY OF TRANSPORTATION, ONTARIO

MODIFIED:

DRAWING NAME:

CREATED:

METRIC

CONT 2025-4007 WP 4044-16-00	
TEMPORARY WIRING DIAGRAM HIGHWAY 7 N. MONAGHAN PKWY (CR15)/STEWART LINE	SHEET E15
Moon-Matz Ltd. Consulting Engineers	

MINISTRY OF TRANSPORTATION, ONTARIO

PHASE SEQUENCE DATA FOR 2070 CONTROLLER

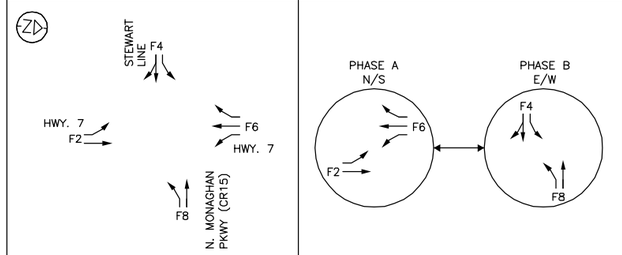


TABLE 1 LOADING TABLE FOR SUPPLY 'EA'–120/240V, 1PH, 3W, 100A

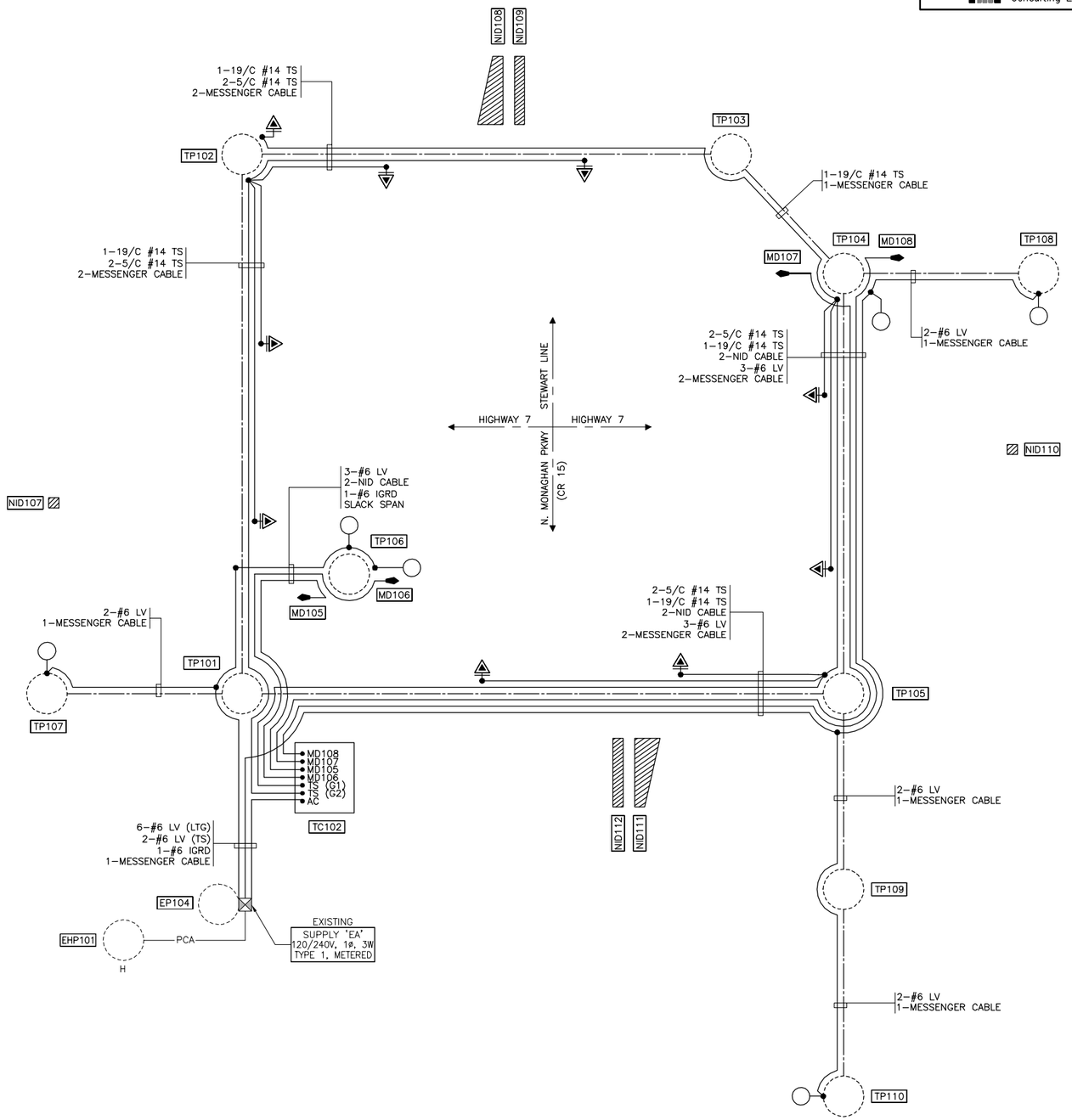
LOAD DESCRIPTION	LOAD (W)	CIRCUIT No.	BRK (A)	BRK (A)	CIRCUIT No.	LOAD (W)	LOAD DESCRIPTION
TRAFFIC SIGNALS	960 W (ESTIMATED)	A RED	60A				
TP106	160 W	A RED1	30A	30A	A BLK2	2 x 160 W	TP106, TP107
TP110, TP104	2 x 160 W	A RED3	30A	30A	A BLK4	160 W	TP108
SUB TOTAL LTG PH–RED 480 W SUB TOTAL LTG PH–BLK 480 W TRAFFIC SIGNAL PH–RED 960 W							
TOTAL LOAD 1,920 W							

TABLE 2 SIGNAL HEADS WIRING CONNECTIONS

CABLE	COND. #	COLOUR/MARK	CABLE GROUP #1	CABLE GROUP #2
19/C #14 AWG	1	WHITE/WHITE 1	MAIN RD. NEUTRAL	MAIN RD. NEUTRAL
	2	WHITE/WHITE 2	SIDE RD. NEUTRAL	SIDE RD. NEUTRAL
	3	BLACK	SPARE	SPARE
			SPARE	SPARE
	4	ORANGE	SPARE	SPARE
	5	RED/RED 1	MAIN RD. RED F2	MAIN RD. RED F6
	6	RED/RED 2	SPARE	SPARE
			SIDE RD. RED F4	SIDE RD. RED F8
	7	RED/RED 3	SPARE	SPARE
	8	RED/RED 4	SPARE	SPARE
			SPARE	SPARE
	9	RED/RED 5	SPARE	SPARE
	10	YELLOW/AMBER 1	MAIN RD. AMBER F2	MAIN RD. AMBER F6
	11	YELLOW/AMBER 2	SPARE	SPARE
			SIDE RD. AMBER F4	SIDE RD. AMBER F8
	12	YELLOW/AMBER 3	SPARE	SPARE
	13	YELLOW/AMBER 4	SPARE	SPARE
			SPARE	SPARE
	14	YELLOW/AMBER 5	SPARE	SPARE
	15	BLUE/GREEN 1	MAIN RD. GREEN F2	MAIN RD. GREEN F6
	16	BLUE/GREEN 2	SPARE	SPARE
			SIDE RD. GREEN F4	SIDE RD. GREEN F8
	17	BLUE/GREEN 3	SPARE	SPARE
	18	BLUE/GREEN 4	SPARE	SPARE
			SPARE	SPARE
	19	BLUE/GREEN 5	SPARE	SPARE

TABLE 3 DETECTION ZONE

DETECTION ZONE NO.	FAZE NO.	ZONE DIMENSIONS (m)
NID107	F2	1.8 x 1.8
NID108	F4	TRAPEZOIDAL
NID109	F4	2 x 14
NID110	F6	1.8 x 1.8
NID111	F8	TRAPEZOIDAL
NID112	F8	2 x 19.5



MODIFIED:

DRAWING NAME:

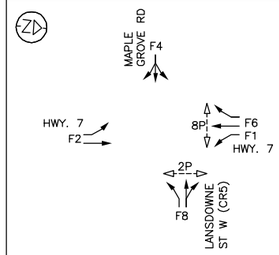
CREATED:

METRIC

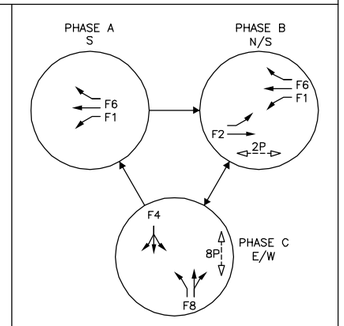
CONT 2025-4007 WP 4044-16-00	
TEMPORARY WIRING DIAGRAM HIGHWAY 7 LANSDOWNE ST W (CR5)/MAPLE GROVE RD	SHEET E16
Moon-Matz Ltd. Consulting Engineers	

MINISTRY OF TRANSPORTATION, ONTARIO

PHASE SEQUENCE DATA FOR 2070 CONTROLLER



INTERSECTION FAZES



INTERSECTION PHASE SEQUENCE

TABLE 1 LOADING TABLE FOR SUPPLY 'TB'–120/240V, 1PH, 3W, 100A

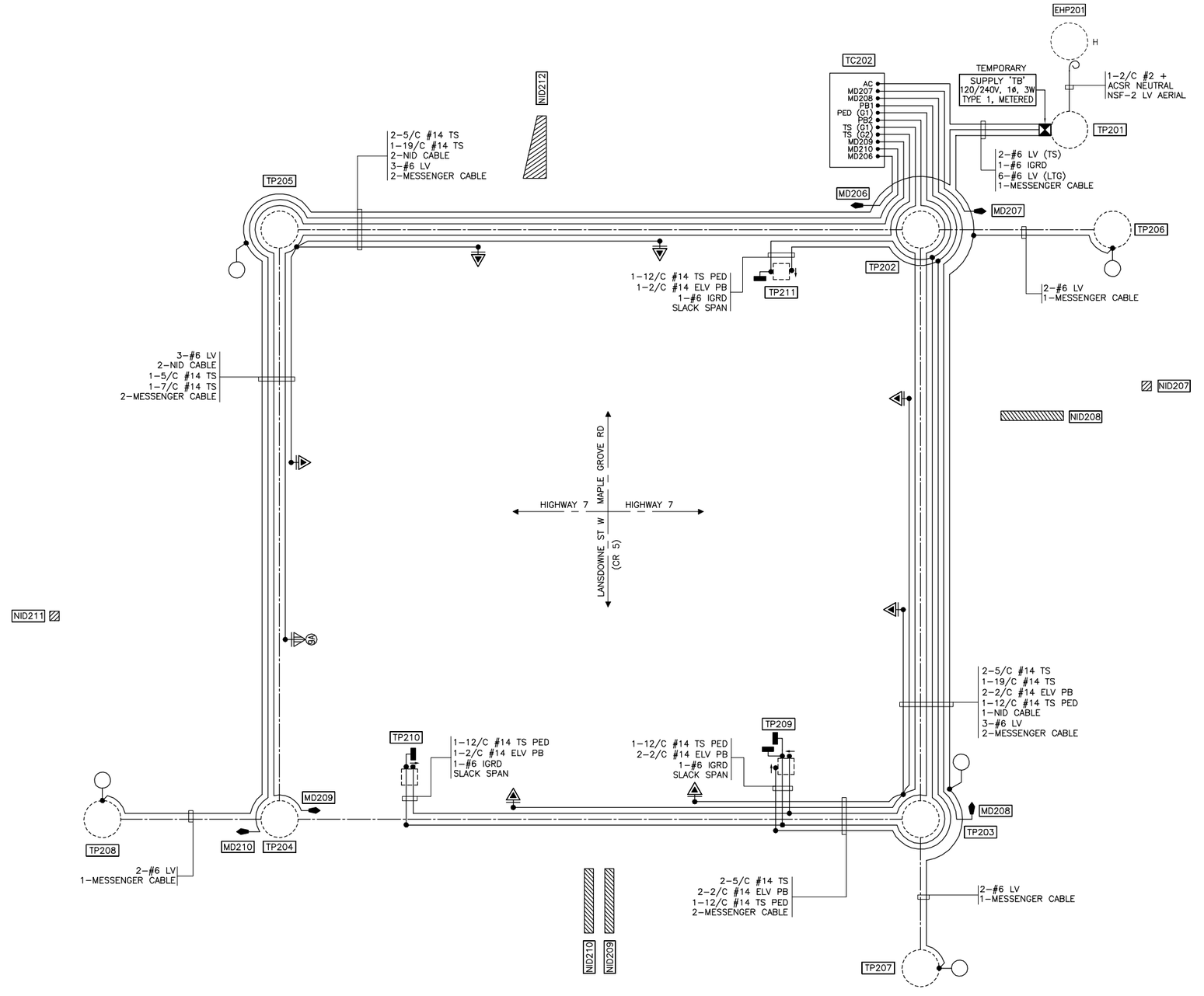
LOAD DESCRIPTION	LOAD (W)	CIRCUIT No.	BRK (A)	BRK (A)	CIRCUIT No.	LOAD (W)	LOAD DESCRIPTION
TRAFFIC SIGNALS	1,090 W (ESTIMATED)	B RED	60A				
TP203	160 W	B RED1	30A	30A	B BLK2	160 W	TP205
TP208	160 W	B RED3	30A	30A	B BLK4	2 x 160 W	TP206, TP207
		SUB TOTAL LTG SUB TOTAL LTG TRAFFIC SIGNAL		PH–RED PH–BLK PH–RED		320 W 480 W 1,090 W	
				TOTAL LOAD		1,890 W	

TABLE 2 SIGNAL HEADS WIRING CONNECTIONS

CABLE	COND. #	COLOUR/MARK	CABLE GROUP #1	CABLE GROUP #2
19/C #14 AWG	1	WHITE/WHITE 1	MAIN RD. NEUTRAL	MAIN RD. NEUTRAL
	2	WHITE/WHITE 2	SIDE RD. NEUTRAL	SIDE RD. NEUTRAL
	3	BLACK	SPARE	SPARE
			SPARE	SPARE
	4	ORANGE	SPARE	SPARE
	5	RED/RED 1	MAIN RD. RED F2	MAIN RD. RED F6
	6	RED/RED 2	SPARE	SPARE
			SIDE RD. RED F4	SIDE RD. RED F8
	7	RED/RED 3	SPARE	MAIN RD. LT RED F1
	8	RED/RED 4	SPARE	SPARE
			SPARE	SPARE
	9	RED/RED 5	SPARE	SPARE
	10	YELLOW/AMBER 1	MAIN RD. AMBER F2	MAIN RD. AMBER F6
	11	YELLOW/AMBER 2	SPARE	SPARE
			SIDE RD. AMBER F4	SIDE RD. AMBER F8
	12	YELLOW/AMBER 3	SPARE	MAIN RD. LT AMBER F1
	13	YELLOW/AMBER 4	SPARE	SPARE
			SPARE	SPARE
	14	YELLOW/AMBER 5	SPARE	SPARE
	15	BLUE/GREEN 1	MAIN RD. GREEN F2	MAIN RD. GREEN F6
	16	BLUE/GREEN 2	SPARE	SPARE
			SIDE RD. GREEN F4	SIDE RD. GREEN F8
	17	BLUE/GREEN 3	SPARE	MAIN RD. LT GREEN F1
	18	BLUE/GREEN 4	SPARE	SPARE
			SPARE	SPARE
	19	BLUE/GREEN 5	SPARE	SPARE
12/C #14 AWG	1	WHITE 1	NEUTRAL	
	2	BLACK	SPARE	
	3	ORANGE	SPARE	
	4	RED1/RED1	SPARE	
			MAIN RD. D/W F2P	
	5	RED/RED2	SIDE RD. D/W F8P	
	6	RED/RED3	SPARE	
	7	YELLOW/AMBER 1	SPARE	
	8	YELLOW/AMBER 2	SPARE	
	9	YELLOW/AMBER 3	SPARE	
	10	BLUE/GREEN 1	SPARE	
			MAIN RD. W F2P	
	11	BLUE/GREEN 2	SIDE RD. W F8P	
	12	BLUE/GREEN 3	SPARE	

TABLE 3 DETECTION ZONE

DETECTION ZONE NO.	FAZE NO.	ZONE DIMENSIONS (m)
NID207	F6	1.8 x 1.8
NID208	F1	2 x 13.5
NID209	F8	2 x 14
NID210	F8	2 x 14
NID211	F2	1.8 x 1.8
NID212	F4	TRAPEZOIDAL



MODIFIED:

DRAWING NAME:

CREATED:

METRIC

CONT 2025–4007 WP 4044–16–00	
ELECTRICAL REMOVALS HIGHWAY 7 N. MONAGHAN PKWY (CR15)/STEWART LINE	SHEET E17
Moon-Matz Ltd. Consulting Engineers	

GENERAL NOTES:

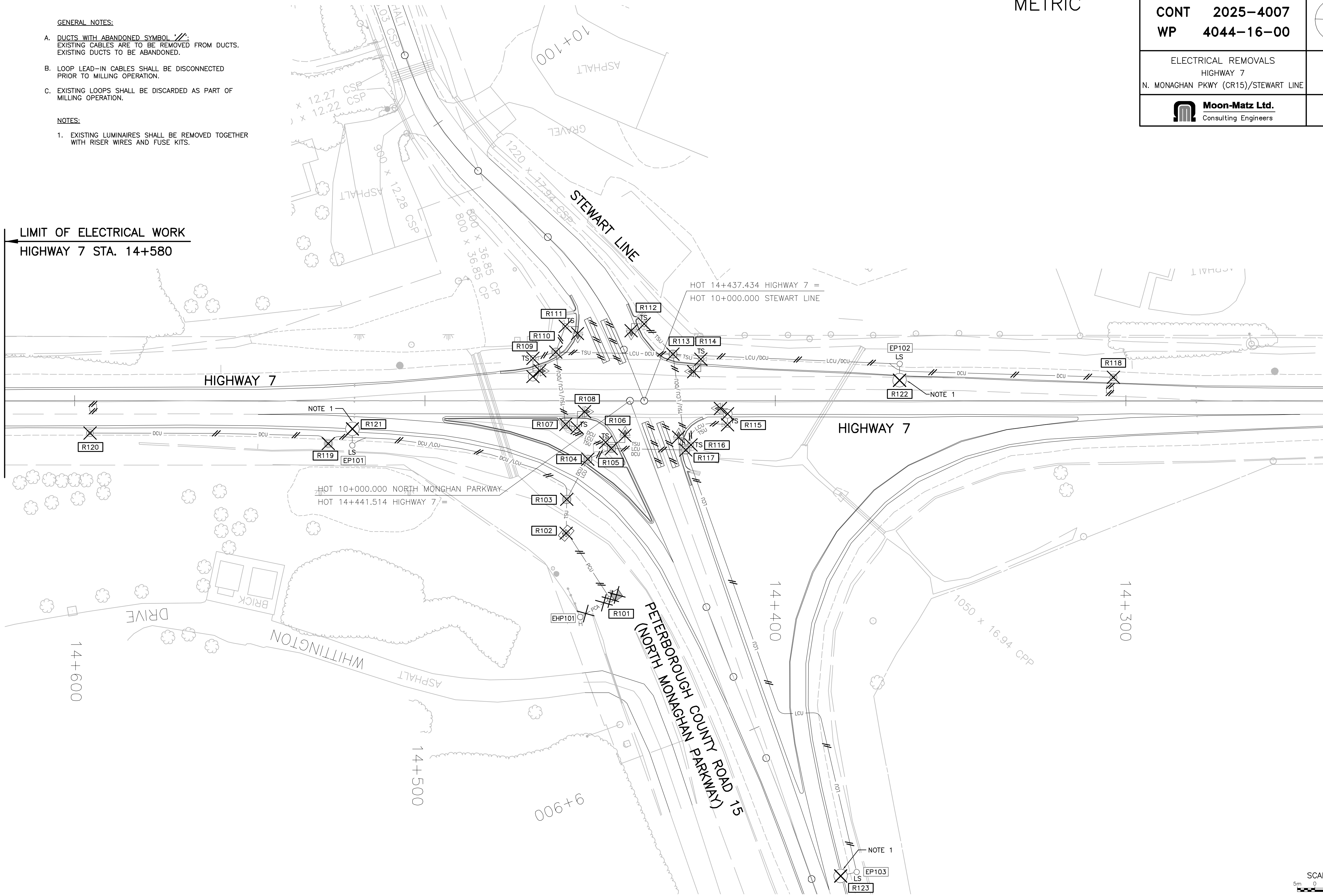
A. DUCTS WITH ABANDONED SYMBOL '//': EXISTING CABLES ARE TO BE REMOVED FROM DUCTS. EXISTING DUCTS TO BE ABANDONED.

B. LOOP LEAD–IN CABLES SHALL BE DISCONNECTED PRIOR TO MILLING OPERATION.

C. EXISTING LOOPS SHALL BE DISCARDED AS PART OF MILLING OPERATION.

NOTES:

1. EXISTING LUMINAIRES SHALL BE REMOVED TOGETHER WITH RISER WIRES AND FUSE KITS.



SCALE 5m 0 10m

MINISTRY OF TRANSPORTATION, ONTARIO

MODIFIED:

DRAWING NAME:
CREATED:

METRIC

CONT 2025-4007	
WP 4044-16-00	
ELECTRICAL REMOVALS HIGHWAY 7 LANSDOWNE ST W (CR5)/MAPLE GROVE RD	SHEET E18
Moon-Matz Ltd. Consulting Engineers	

GENERAL NOTES:

A. DUCTS WITH ABANDONED SYMBOL ////:
EXISTING CABLES ARE TO BE REMOVED FROM DUCTS.
EXISTING DUCTS TO BE ABANDONED.

B. LOOP LEAD-IN CABLES SHALL BE DISCONNECTED PRIOR TO MILLING OPERATION.

C. EXISTING LOOPS SHALL BE DISCARDED AS PART OF MILLING OPERATION.

10+109.358

10+100

GRAVEL

ASPHALT

SP

MAPLE GROVE ROAD

750 x 14.76 CSP

EHP201 HP R201

PCU

R203 R202

TS

R218 R204

R217 TSU LCU DCU R205

R216 R207

R215 R206

450 x LCU /DCU

R208 LS

HOT 13+008.918 HIGHWAY 7 =
HOT 10+000.000 MAPLE GROVE ROAD

HIGHWAY 7

DCU

TSU/TDU/LCU

R213 R209

TSU LCU DCU R212 R210

LCU

R214 LS

DCU

LCU /DCU

LCU DCU

HOT 13+008.918 HIGHWAY 7 =
HOT 10+000.000 LANSDOWNE STREET WEST

750 x 28.65 CSP

13+100

13+000

12+900

900 x 610 x 34.69 NRFB
WITH 900CSP EXTENTION (LT)

R211 LS

PETERBOROUGH COUNTY ROAD 5
(LANSDOWNE STREET WEST)

450 x 9.524 CSP

450 x 8.56 CSP

9+900

GRAVEL

SCALE
5m 0 10m

MINISTRY OF TRANSPORTATION, ONTARIO

MODIFIED:

DRAWING NAME:
CREATED:

METRIC

CONT 2025-4007	
WP 4044-16-00	
ELECTRICAL REMOVALS HIGHWAY 7 MT PLEASANT RD/SHERBROOKE ST (CR9)	SHEET E19
Moon-Matz Ltd. Consulting Engineers	

GENERAL NOTES:

A. DUCTS WITH ABANDONED SYMBOL '//':
EXISTING CABLES ARE TO BE REMOVED FROM DUCTS. EXISTING DUCTS TO BE ABANDONED.

B. DUCTS WITH REMOVAL SYMBOL 'X':
EXISTING CABLES TO BE REMOVED FROM THE EXISTING DUCTS AND FISH LINE TO BE PULLED THROUGH THE DUCTS. DUCTS TO REMAIN.

C. ALL EXTRA LOW VOLTAGE CABLES FOR EXISTING LOOPS IN DUCTS AND DUCT BANKS SHALL BE REMOVED. USE EXTREME CARE WHEN REMOVING CABLES FROM DUCTS WITH EXISTING CABLES SO AS TO NOT CAUSE DAMAGE TO THE CABLES THAT ARE TO REMAIN.

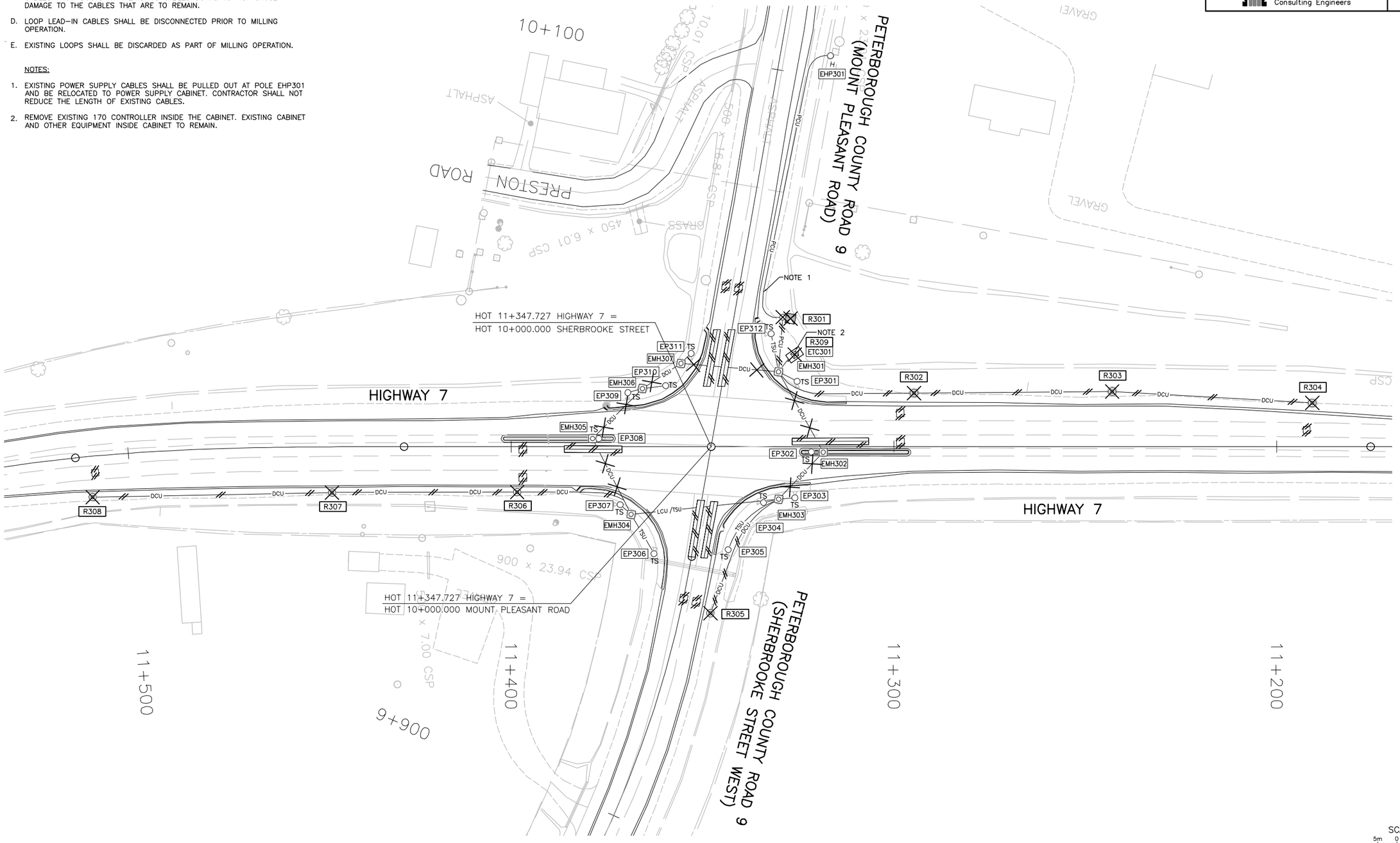
D. LOOP LEAD-IN CABLES SHALL BE DISCONNECTED PRIOR TO MILLING OPERATION.

E. EXISTING LOOPS SHALL BE DISCARDED AS PART OF MILLING OPERATION.

NOTES:

1. EXISTING POWER SUPPLY CABLES SHALL BE PULLED OUT AT POLE EHP301 AND BE RELOCATED TO POWER SUPPLY CABINET. CONTRACTOR SHALL NOT REDUCE THE LENGTH OF EXISTING CABLES.

2. REMOVE EXISTING 170 CONTROLLER INSIDE THE CABINET. EXISTING CABINET AND OTHER EQUIPMENT INSIDE CABINET TO REMAIN.



SCALE
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MODIFIED:

DRAWING NAME:
CREATED:

MINISTRY OF TRANSPORTATION, ONTARIO

METRIC

CONT 2025-4007 WP 4044-16-00	
ELECTRICAL REMOVALS HIGHWAY 7 PARKHILL RD W (CR3)/HAYES LINE	SHEET E20
Moon-Matz Ltd. Consulting Engineers	

GENERAL NOTES:

A. DUCTS WITH ABANDONED SYMBOL '//':
EXISTING CABLES ARE TO BE REMOVED FROM DUCTS. EXISTING DUCTS TO BE ABANDONED.

B. DUCTS WITH REMOVAL SYMBOL 'X':
EXISTING CABLES TO BE REMOVED FROM THE EXISTING DUCTS AND FISH LINE TO BE PULLED THROUGH THE DUCTS. DUCTS TO REMAIN.

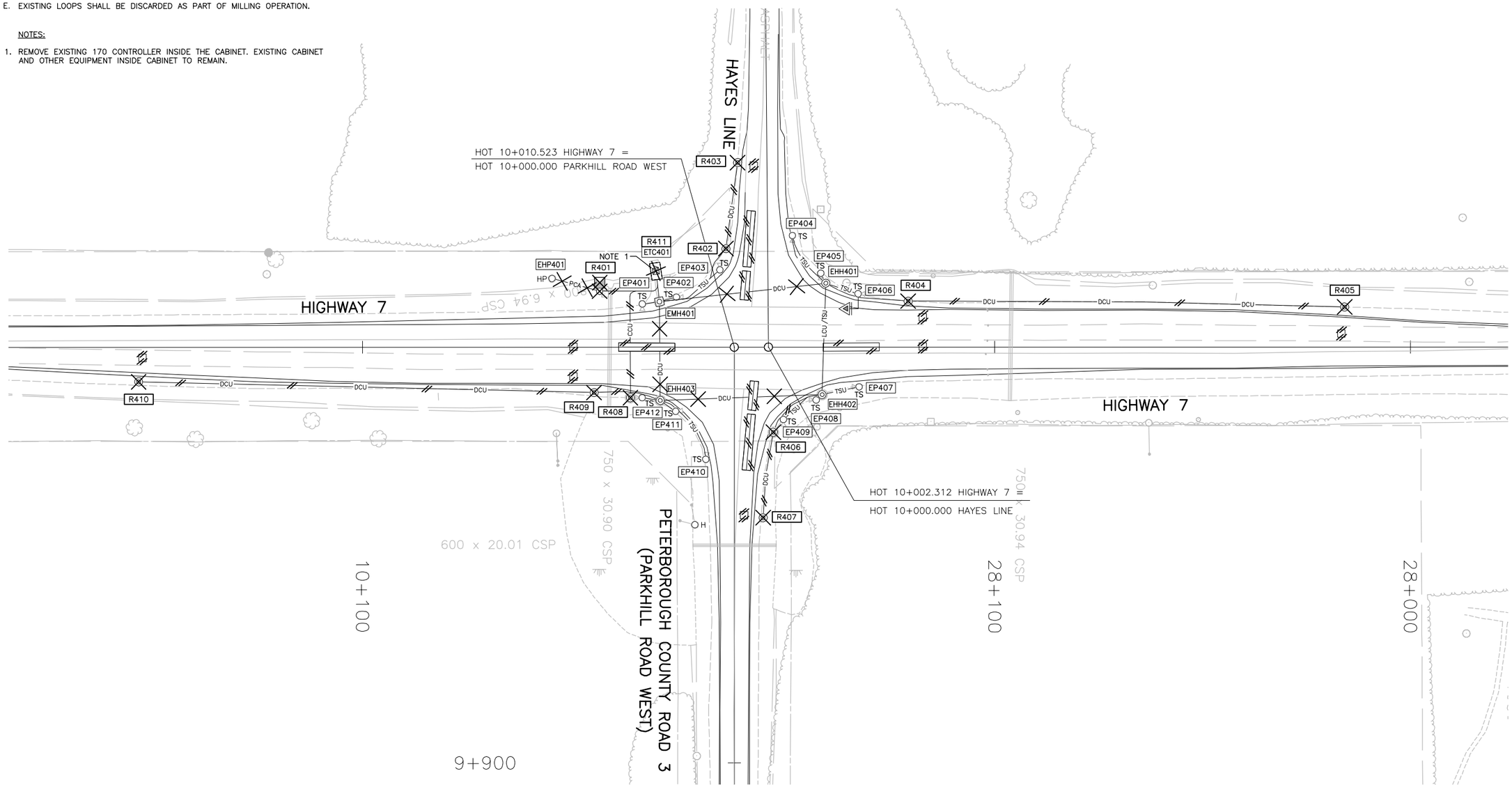
C. ALL EXTRA LOW VOLTAGE CABLES FOR EXISTING LOOPS IN DUCTS AND DUCT BANKS SHALL BE REMOVED. USE EXTREME CARE WHEN REMOVING CABLES FROM DUCTS WITH EXISTING CABLES SO AS TO NOT CAUSE DAMAGE TO THE CABLES THAT ARE TO REMAIN.

D. LOOP LEAD-IN CABLES SHALL BE DISCONNECTED PRIOR TO MILLING OPERATION.

E. EXISTING LOOPS SHALL BE DISCARDED AS PART OF MILLING OPERATION.

NOTES:

1. REMOVE EXISTING 170 CONTROLLER INSIDE THE CABINET. EXISTING CABINET AND OTHER EQUIPMENT INSIDE CABINET TO REMAIN.



SCALE
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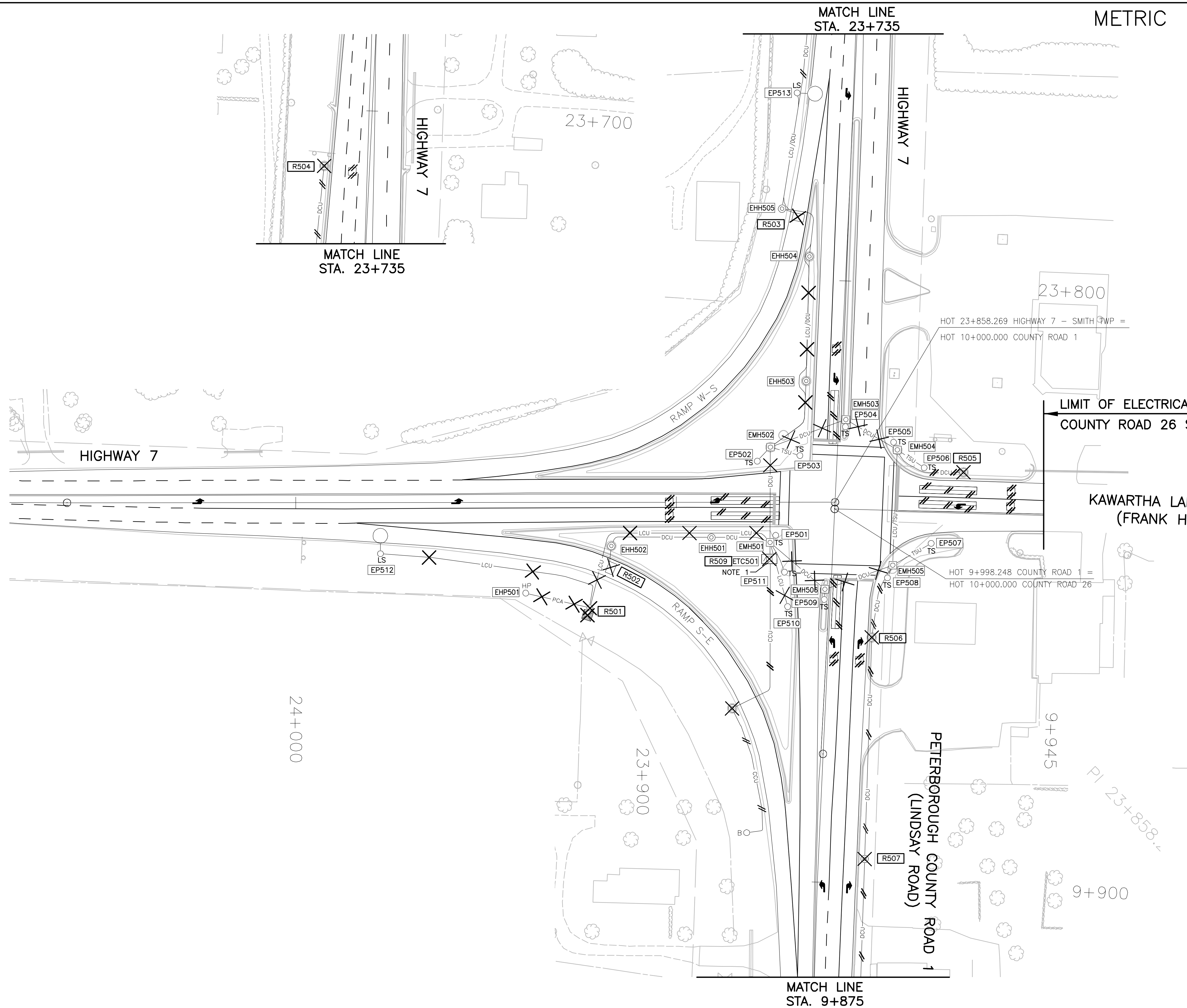
MINISTRY OF TRANSPORTATION, ONTARIO

MODIFIED:

DRAWING NAME:
CREATED:

METRIC

CONT 2025-4007 WP 4044-16-00	
ELECTRICAL REMOVALS HIGHWAY 7 LINDSAY RD (CR1)/FRANK HILL RD (CR26)	SHEET E21
Moon-Matz Ltd. Consulting Engineers	



GENERAL NOTES:

A. DUCTS WITH ABANDONED SYMBOL '//':
EXISTING CABLES ARE TO BE REMOVED FROM DUCTS.
EXISTING DUCTS TO BE ABANDONED.

B. DUCTS WITH REMOVAL SYMBOL 'X':
EXISTING CABLES TO BE REMOVED FROM THE EXISTING DUCTS AND FISH LINE TO BE PULLED THROUGH THE DUCTS. DUCTS TO REMAIN.

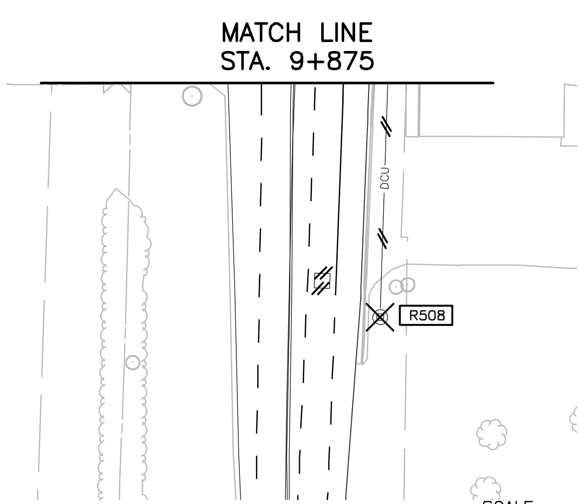
C. ALL EXTRA LOW VOLTAGE CABLES FOR EXISTING LOOPS IN DUCTS AND DUCT BANKS SHALL BE REMOVED EXCEPT FOR THE CABLES FOR COUNTING LOOPS AT RAMPS. USE EXTREME CARE WHEN REMOVING CABLES FROM DUCTS WITH EXISTING CABLES SO AS TO NOT CAUSE DAMAGE TO THE CABLES THAT ARE TO REMAIN.

D. LOOP LEAD-IN CABLES SHALL BE DISCONNECTED PRIOR TO MILLING OPERATION.

E. EXISTING PRESENCE AND LONG DISTANCE LOOPS SHALL BE DISCARDED AS PART OF MILLING OPERATION.

NOTES:

1. REMOVE EXISTING 170 CONTROLLER INSIDE THE CABINET. EXISTING CABINET AND OTHER EQUIPMENT INSIDE CABINET TO REMAIN.



SCALE
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MINISTRY OF TRANSPORTATION, ONTARIO

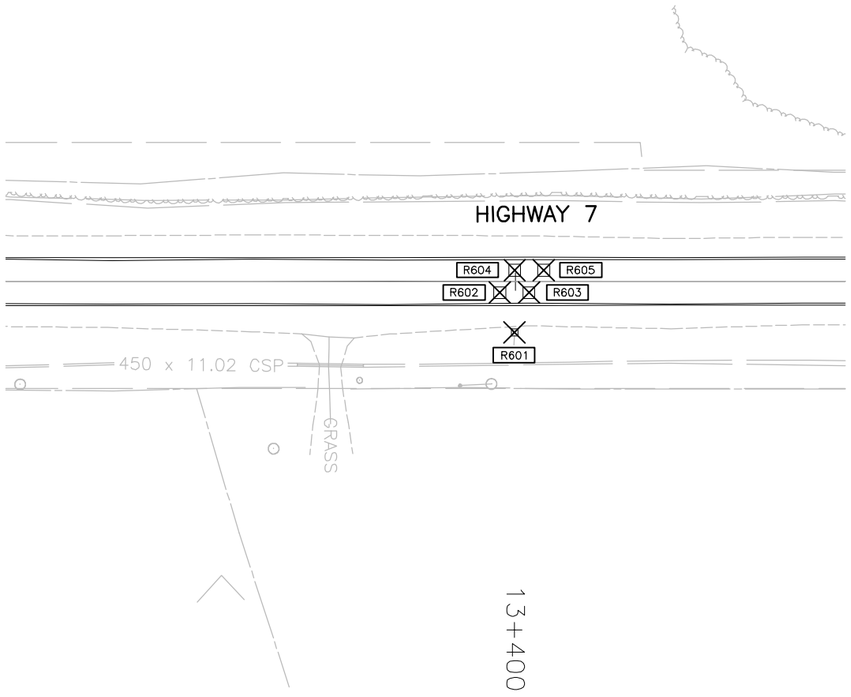
MODIFIED:

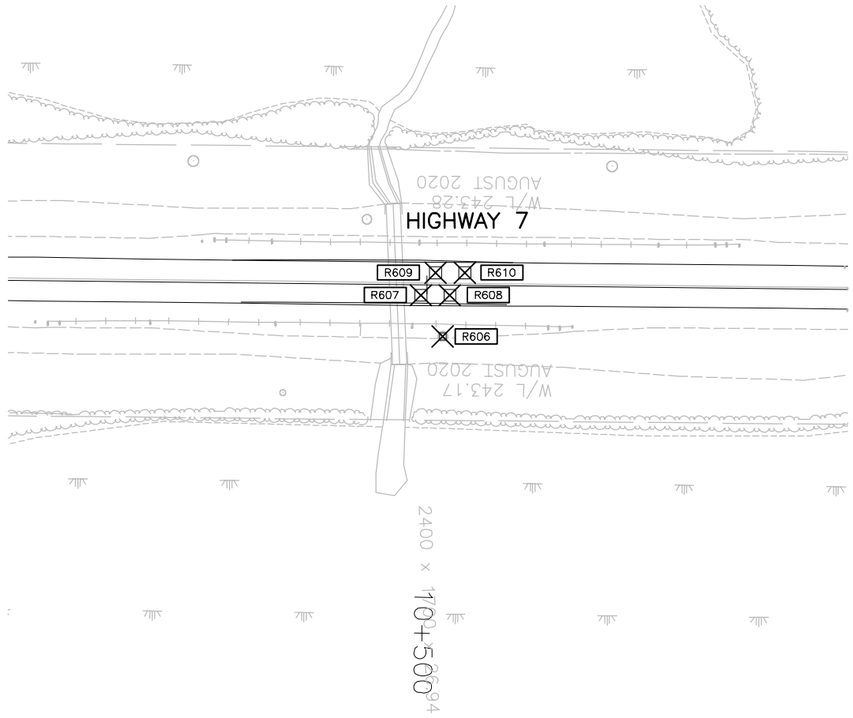
DRAWING NAME:
CREATED:

METRIC

CONT 2025-4007 WP 4044-16-00	
ELECTRICAL REMOVALS HIGHWAY 7 TRAFFIC COUNTING STATIONS	SHEET E22
Moon-Matz Ltd. Consulting Engineers	

MINISTRY OF TRANSPORTATION, ONTARIO





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