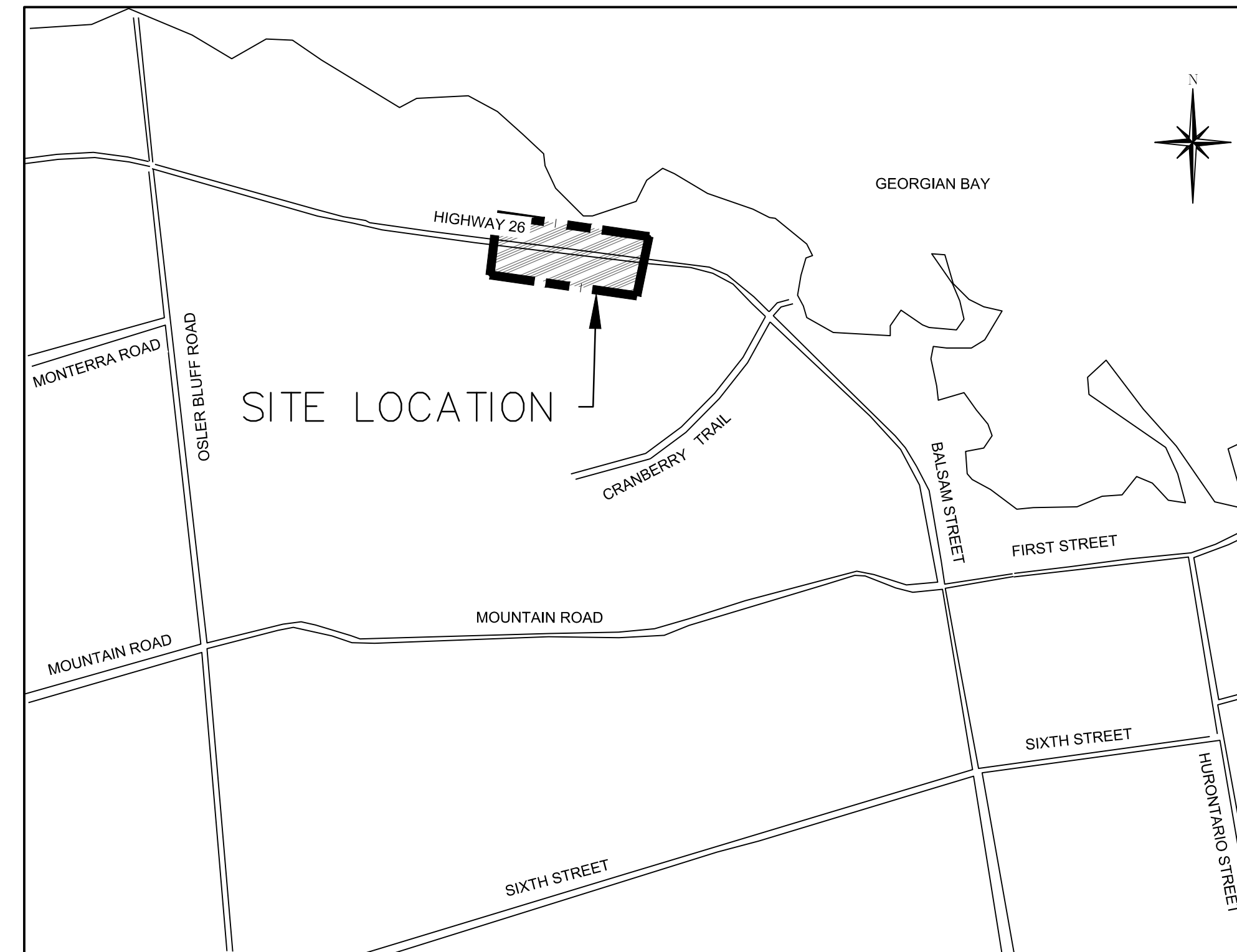


HIGHWAY 26 WATERFALLS LANE / STREET 'A' INTERSECTION IMPROVEMENT

TOWN of COLLINGWOOD
COUNTY OF SIMCOE



DRAWING TITLE

C300	GENERAL NOTES
C301	REMOVALS
C302	NEW CONSTRUCTION
C303	TYPICAL SECTIONS
C304	TYPICAL SECTIONS
C305	PAVEMENT ELEVATIONS AND GRADING
C306	PAVEMENT MARKINGS AND SIGNAGE
E1	EXISTING REMOVALS PLAN
E2	TEMPORARY SIGNALS PLAN
E3	TEMPORARY SIGNALS REMOVAL PLAN
E4	ELECTRICAL SIGNALS PLAN
E5	DETECTOR LOOP PLAN
E6	ELECTRICAL PHOTOMETRIC PLAN & LIGHTING DETAILS
E7	ELECTRICAL SCHEDULES

MUNICIPALITY

TOWN OF COLLINGWOOD
97 HURONTARIO STREET, P.O. BOX 157
COLLINGWOOD, ONTARIO, L9Y 3Z5

DEVELOPER

SKYDEVCO INC.
5 DOUGLAS STREET, SUITE 301
GUELPH, ONTARIO, N1H 2S8

DEVELOPER'S ENGINEER



THE HARBOUREdge BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
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MASTER LEGEND

EXISTING FEATURES (EX.)

	EX. CONTOUR
	EX. GRADE
	EX. TREELINE
	EX. WATERCOURSE
	EX. DITCH
	EX. WATERMAIN
	EX. WATER SERVICE
	EX. FIRE HYDRANT & VALVE
	EX. SANITARY SEWER & MANHOLE
	EX. SANITARY FORCEMAIN
	EX. SANITARY SERVICE
	EX. STORM SEWER & MANHOLE
	EX. STORM CATCHBASIN
	EX. STORM DOUBLE CATCHBASIN
	EX. STORM CATCHBASIN MANHOLE
	EX. STORM DOUBLE CATCHBASIN MANHOLE
	EX. GAS MAIN
	EX. BELL LINE
	EX. BELL PEDESTAL
	EX. CABLE TELEVISION PEDESTAL
	EX. HYDRO POLE
	EX. LIGHT STANDARD
	EX. SIGN
	EX. BUILDING
	EX. BENCHMARK NUMBER & LOCATION
	EX. BOREHOLE NUMBER & LOCATION

PROPOSED FEATURES (PR.)

	PR. PROPERTY LIMITS
	PR. ELEVATION
	PR. ELEVATION (MATCH EX. ELEVATION)
	PR. SWALE & SLOPE
	PR. DITCH DRAINAGE
	PR. WATERMAIN & VALVE
	PR. WATER SERVICE
	PR. FIRE HYDRANT & VALVE
	PR. WATER VALVE CHAMBER
	PR. WATER QUALITY TESTING STATION
	PR. SANITARY SEWER & MANHOLE
	PR. SANITARY FORCEMAIN
	PR. SANITARY SERVICE
	PR. SANITARY CATCHMENT
	PR. CATCHMENT AREA ID
	PR. AREA (ha)
	PR. POPULATION (3.5 p.p.u.)
	PR. STORM SEWER & MANHOLE
	PR. CATCHBASIN
	PR. DOUBLE CATCHBASIN
	PR. CATCHBASIN MANHOLE
	PR. DOUBLE CATCHBASIN MANHOLE
	PR. STORM CATCHMENT
	PR. CATCHMENT AREA ID
	PR. RUNOFF COEFFICIENT
	PR. DRAINAGE AREA (ha)
	PR. CURB CUT
	PR. CANADA POST COMMUNITY MAIL BOX
	PR. TRANSFORMER
	PR. STOP SIGN
	PR. NAME SIGN
	PR. NO PARKING SIGN
	PR. FENCE
	PR. BUILDING ENVELOPE
	PR. LIGHT DUTY SILT FENCE
	PR. HEAVY DUTY SILT FENCE
	PR. STRAW BALE CHECK FLOW
	PR. ROCK CHECK DAM
	PR. SLOPE (3:1 MAX.)
	PR. TREE PRESERVATION AREA
	PR. TOPSOIL STOCKPILE LOCATION

PROJECT No.: 1790-5382
60% DESIGN REVIEW

CONSTRUCTION NOTES:

A) GENERAL – CONSTRUCTION

- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH TOWN OF COLLINGWOOD STANDARDS, OPSD AND OPSS. WHERE CONFLICT OCCURS, TOWN OF COLLINGWOOD STANDARDS TO GOVERN.
- TRENCH BACKFILL (OPSD 802.010 & 802.013) TO BE SELECT NATIVE MATERIAL OR IMPORTED SELECT SUBGRADE TO OPSS 1010. BACKFILL TO BE PLACED IN MAXIMUM 200mm THICK LIFTS AND COMPACTED TO 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
- PIPE COVER AND BEDDING TO BE GRANULAR 'A' (MINIMUM 150mm DEPTH, COMPACTED TO A MINIMUM 95%SPMDD).
- ALL TOPSOIL AND EARTH EXCAVATION TO BE STOCK PILED OR REMOVED TO AN APPROVED SITE AS DIRECTED BY ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAILED LAYOUT OF THE WORK. THE DEVELOPER'S ENGINEER WILL CONFIRM ALL BENCH MARK ELEVATIONS AND HORIZONTAL ALIGNMENT FOR THE CONTRACTOR.
- ALL PROPERTY BARS TO BE PRESERVED AND REPLACED BY O.L.S. AT CONTRACTOR'S EXPENSE IF REMOVED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR THE SUPPLY OF TEMPORARY WATER AND POWER.
- DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS-517 AND 518 TO MAINTAIN ALL TRENCHES IN A DRY CONDITION. OWNER RESPONSIBLE FOR OBTAINING M.O.E. PERMIT IF REQUIRED.
- ALL ENGINE DRIVEN PUMPS TO BE ADEQUATELY SILENCED, SUITABLE FOR OPERATION IN A RESIDENTIAL DISTRICT.
- DISTURBED AREAS OUTSIDE THE DEVELOPABLE LANDS TO BE REINSTATED TO PREVIOUS CONDITION OR BETTER.
- THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL UTILITY COMPANIES PRIOR TO COMMENCING WORK AND CO-ORDINATE CONSTRUCTION AND LOCATES ACCORDINGLY.
- ALL ROCK EXCAVATION PER OPSS-206.
- ALL EXCAVATION MUST BE CARRIED OUT IN FULL COMPLIANCE WITH MOST RECENT GUIDELINES OF OHSA. NATIVE SOILS ARE CLASSIFIED AS TYPE 3 SOIL.

B) ROADS

- SUBGRADE AND BOULEVARD MATERIAL TO BE COMPACTED TO A MINIMUM DRY DENSITY OF AT LEAST 95% SPMDD. SUBGRADE TO BE PROOF ROLLED AND CERTIFIED PRIOR TO PLACING GRANULAR 'B'.
- GRANULAR 'A' AND 'B' ROAD BASE TO BE COMPACTED TO 100% OF THE MATERIAL'S RESPECTIVE SPMDD AND PLACED IN MAX. 150mm LIFTS. REFER TO GEOTECHNICAL REPORT FOR FURTHER DETAILS.
- ROADWAYS TO BE CONSTRUCTED WITH MINIMUM 300mm GRANULAR 'B' TYPE 1, 150mm GRANULAR 'A', 50mm HL8 BASE COURSE ASPHALT, & 40mm HL3 SURFACE COURSE ASPHALT.
- SELECT SUBGRADE MATERIAL, OR IMPORTED GRANULAR MATERIAL APPROVED BY THE ENGINEER, COMPACTED TO 98% SPMDD TO BE USED AS FILL IN ALL AREAS WHERE PROPOSED PIPE INVERTS ARE HIGHER THAN EXISTING GRADE OR AS INSTRUCTED BY THE ENGINEER.
- ALL GRANULARS AND ASPHALT MATERIALS AND PLACEMENT TO BE IN ACCORDANCE WITH OPSS 314 AND OPSS 310.
- JOINTS WITH EXISTING ASPHALT TO BE SAW CUT STRAIGHT WITH MIN. 0.5m LAP JOINT PRIOR TO PLACING NEW ASPHALT AND TACK COAT APPLIED TO EXISTING ASPHALT.
- STOP SIGNS AND STREET SIGNS TO TOWN STANDARDS.
- REINSTATEMENT OF ALL DISTURBED BOULEVARDS TO INCLUDE REGRADING, 150mm TOPSOIL AND SOD TO OPSS 802 AND 803.
- 100mm Ø PIPE SUBDRAINS SHALL BE PROVIDED UNDER EDGE OF CURB ON BOTH SIDES OF THE ROAD PER OPSD 216.021.
- ALL SUBDRAINS TO BE CONSTRUCTED IN ACCORDANCE WITH OPSS 405. SUBDRAIN TO BE INSTALLED IN GRANULAR 'A' TRENCH AND CONNECTED TO EACH CB OR CBMH.
- SUBDRAINS TO BE PERFORATED OTHER THAN THE 2m SECTION IMMEDIATELY UPSTREAM OF ALL STRUCTURES WHICH SHALL BE NON-PERFORATED.

C) SANITARY SEWERS

- M.H.'S TO OPSD – 701.010, 701.030, & 704.010.
- BENCHING TO OPSD – 701.021.
- STEPS TO OPSD – 405.010.
- BACKFILL AND EMBEDMENT TO OPSD – 802.010 CLASS 'B', GRANULAR 'A' BEDDING.
- TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL AS APPROVED BY ENGINEER OR IMPORTED GRANULAR MATERIAL.
- FRAMES AND COVERS TO OPSD – 401.01 TYPE 'A' (CLOSED COVER).
- SERVICE CONNECTIONS TO OPSD – 1006.020 (125mm), GRANULAR 'A' BEDDING, TEST FITTING, 125 x 100 REDUCER, PLUG AND 2x4 MARKER POST PAINTED GREEN. MINIMUM GRADE TO BE 2.0%. RADIUS BENDS TO BE USED ON SANITARY SEWER CONNECTIONS WHERE THE ANGLE OF CONNECTION BETWEEN THE SERVICE AND SEWER EXCEEDS 90°.
- BACKFILL AND EMBEDMENT MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
- MANHOLES FRAMES TO BE SET TO BASE COURSE ASPHALT ELEVATION AND RAISED PRIOR TO PLACING SURFACE COURSE ASPHALT.
- PIPE SUPPORT AT MAINTENANCE HOLES AS PER OPSD 708.020.
- ALL MAINTENANCE HOLES, UNLESS EXPRESSLY IDENTIFIED ARE 1200mm Ø.
- GENERAL INSTALLATION AND TESTING OF SEWERS AND APPURTENANCES TO BE IN ACCORDANCE WITH OPSS 407, 408, 409 (CCTV), 410, 421 AND ALL SPECIFICATIONS REFERENCED WITHIN THESE SECTIONS.
- SANITARY SEWER – SDR 35 PVC.
- SANITARY SERVICE – SDR 28 PVC – 125mm PER OPSD 1006.020 SEWER SERVICE CONNECTION FOR FLEXIBLE PIPE.
- FROST STRAPS PER OPSD 701.100.

D) WATERMAINS

- BACKFILL AND EMBEDMENT TO OPSD – 802.010 CLASS 'B', GRANULAR 'A' EMBEDMENT.
- TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL AS APPROVED BY ENGINEER OR IMPORTED GRANULAR MATERIAL.
- THRUST BLOCKS TO OPSD – 1103.010 AND 1103.020 WHERE SUITABLE SOILS ARE ENCOUNTERED.
- SERVICE CONNECTIONS TO OPSD – 1104.010, 100mm GRANULAR 'A' EMBEDMENT AND COVER OVER PIPE. TERMINATE AS NOTED C/W CURB STOP AND BOX.
- HYDRANTS TO OPSD – 1105.010 DRAIN PLUGS SHALL BE INSTALLED WHERE HIGH WATER TABLE IS ENCOUNTERED.
- BACKFILL AND EMBEDMENT MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).
- MINIMUM COVER ON WATERMAIN AND SERVICES TO BE 1.7m.
- GATE VALVES, BENDS AND HYDRANT LEADS AND FITTINGS TO BE CONNECTED WITH ROLMAC GRIPPER RING RESTRAINING GLANDS.
- CLEARANCE BETWEEN WATERMAINS AND SEWERS TO BE AS PER MOE GUIDELINES, MINIMUM 0.5m VERTICAL SEPARATION WHERE SEWER IS ABOVE WATERMAIN & 2.5m MINIMUM HORIZONTAL SEPARATION.
- ALL SERVICES TO BE DIRECT TAPPED.
- FOLLOWING TESTING, CONTRACTOR SHALL OPERATE EACH WATER SERVICE TO VERIFY FULL FLOW AND PRESSURE AT THE CURB STOP TO THE SATISFACTION OF THE ENGINEER.
- GENERAL INSTALLATION AND TESTING OF WATERMAIN AND APPURTENANCES TO BE IN ACCORDANCE WITH OPSS 701 AND ALL SPECIFICATIONS REFERENCED WITHIN THESE SECTIONS. COMPLETE WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH REQUIREMENTS OF AWWA SHANDARD C651-99. REFER TO DETAIL ON DWG 108 FOR TYPICAL TEMPORARY CONNECTION.
- ALL WATERMAIN TESTING & CHLORINATION WILL BE CONDUCTED BY TOWN OF COLLINGWOOD WATER DEPARTMENT AT CONTRACTORS COST. WATERMAINS ARE NOT TO BE CONNECTED TO EXISTING WATERMAINS UNTIL BACTERIOLOGICAL TESTING HAS BEEN SUCCESSFULLY COMPLETED & CERTIFIED BY TOWN.
- COMPLETE WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH REQUIREMENTS OF REG. 459/00 & SATISFACTION OF TOWN.
- WATERMAIN – CLASS 52 OR PRESSURE CLASS 350 CEMENT LINED DUCTILE IRON. CONDUCTIVITY CONNECTORS TO BE USED ON ALL JOINTS.
- WATERMAIN SERVICES – 20mm Ø TYPE 'K' SOFT COPPER PIPE.
- MAIN STOPS TO 301-A3H3, ¾", BALL STYLE, AWWA THREAD BY COMPRESSION CAMBRIDGE BRASS.
- CURB STOPS TO 203-H3H3, ¾", BALL STYLE WITH DRAIN. COMPRESSION JOINT BY CAMBRIDGE BRASS.
- A CURB STOP & EXTENSION SERVICE BOX & MAIN STOP MUST BE INSTALLED ON EACH SERVICE USING COMPRESSION JOINT FITTINGS.
- ALL CURB STOPS FOR SERVICES WITHIN ASPHALT TO BE LOCATED IN VALVE BOXES INSTALLED FLUSH TO FINISHED GRADE OF ASPHALT. CAP FOR VALVE BOX TO BE MARKED WITH 'W' & PAINTED BLUE.
- SERVICE BOXES TO NUMBER 7, D-I CLOW OR MUELLER, 24" BLACK ROAD STRAIGHT, 36" STAINLESS STEEL RODS STRAIGHT C/W CAP PAINTED BLUE.
- ALL SERVICES SHALL BE METERED. METERS TO BE COMPLETE WITH REMOTE READOUT OR RADIO READ AS DETERMINED BY THE TOWN.
- HYDRANTS – CENTURY NUMBER 1, OPEN LEFT (O/L), 2 HOSE, 33B PLUMBER PORT. 6" MJ BASE, SELF-DRAINING YELLOW BASE WITH SILVER BONNET AND PORTS.
- VALVES – RESILIENT SEATED, RSGV MECHANICAL JOINT, OPEN LEFT CLOW OR MUELLER WITH 5-SL-48 SLIDING VALVE BOX C/W CAP PAINTED BLUE.
- MECHANICAL JOINT DUCTILE FITTINGS – AWWA/ANSI C153/A21.53.
- HYDRANTS TO BE INSTALLED C/W HYDRANT MARKER STAKES PER TOWN & CPU STANDARD "FLEX STAKE HYDRANT MARKER MODEL FHV804, 48" LONG, COLOUR YELLOW WITH REFLECTIVE HYDRANT GRAPHIC ON BOTH SIDES". MARKER TO BE POSITIONED ON THE RIGHT PORT AS VIEWED FROM STREET.
- 50mmØ WATERMAIN LOOP- TYPE 'K' COPPER.
- ALL VALVES TO BE OPERATED BY THE COLLINGWOOD WATER DEPARTMENT OR TOWN. CONTRACTOR TO PROVIDE MIN. 48hr NOTIFICATION FOR REQUEST.
- HYDRANTS ARE TO BE 1.67m LONG. MAKE-UP PIECES, IF REQUIRED, ARE TO BE INSTALLED IMMEDIATELY ABOVE THE BEND.
- ALL FITTINGS ARE TO BE LEAD FREE.
- TRACER WIRE SHALL BE INSTALLED IF CONTINUITY OF PIPE IS BROKEN. TRACER WIRE MUST BE 12 AWG TWH SHALL BE PLASTIC COVERED, TW4 75°C 600V OR APPROVED EQUIVALENT. A CONTINUITY TEST MUST ALSO BE COMPLETED AND ACCEPTED.
- THE GEOTECHNICAL REPORT SHALL TEST THE NATIVE MATERIAL TO DETERMINE SOIL CORROSIIVITY AND COMMENT ON THE REQUIREMENT FOR CORROSION RESISTANCE MEASURES.

E) STORM SEWERS

- MH TO OPSD 701.010 AND DCBMH TO OPSD – 701.011, 701.012, C/W SUMP UNLESS NOTED OTHERWISE.
- STEPS TO OPSD 405.010.
- M.H. FRAMES AND GRATES TO OPSD – 401.010 OPEN COVER.
- DICB'S TO OPSD – 705.030, 705.040.
- DCBMH FRAMES AND GRATES TO OPSD – 400.020
- PIPE SUPPORT AT DCBMH'S TO OPSD – 708.020.
- DCB LEADS – 300mm Ø DOUBLE TO OPSD – 708.010, 708.030.
- PROTECTION DURING CONSTRUCTION TO OPSD – 808.010.
- BACKFILL AND EMBEDMENT TO OPSD – 802.010 (FLEXIBLE PIPE) CLASS 'B', GRANULAR 'A' EMBEDMENT OR OPSD – 802.030, 802.031 AND 802.032 (RIGID PIPE) GRANULAR 'A' EMBEDMENT.
- BACKFILL AND EMBEDMENT MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S SPMDD.
- MAIN SEWERS SHALL BE PVC PIPE (OPSS 410), MIN. PIPE STIFFNESS SHALL BE 320 kPa. ALL PIPE TO BE JOINED WITH A GASKETTED BELL AND SPIGOT SYSTEM.
- FROST STRAPS PER OPSD 701.100.

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 ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO TOWN OF COLLINGWOOD BENCH MARK No. 001972U31.3, HAVING AN ELEVATION OF 179.633 METRES.

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR DESIGN REVIEW	11/28/2019
2	ISSUED FOR 60% DESIGN REVIEW	07/17/2020

No.	ISSUE	DATE: MM/DD/YYYY	Engineer	Engineer

FOR REVIEW
 NOT TO BE USED FOR CONSTRUCTION

Project: HIGHWAY 26 & WATERFALLS LANE/STREET 'A' INTERSECTION IMPROVEMENT TOWN OF COLLINGWOOD
Drawing: GENERAL NOTES

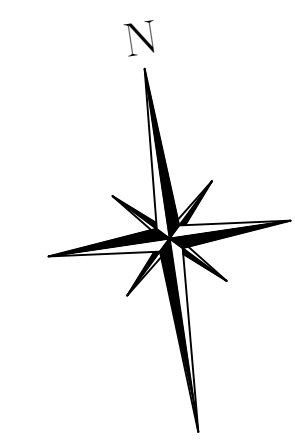
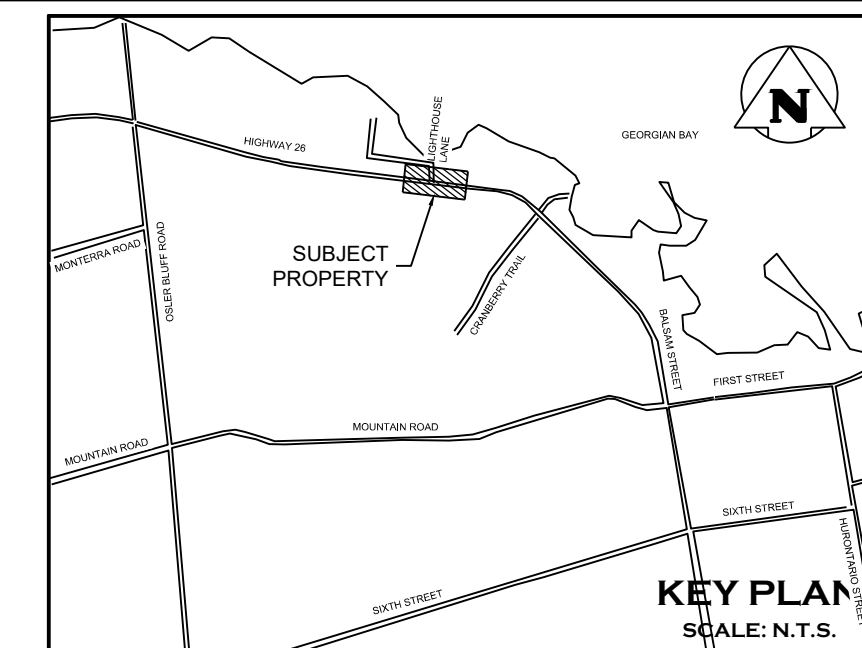


CROZIER
CONSULTING ENGINEERS

THE HARBOUREDGE BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
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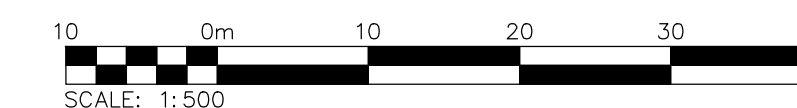
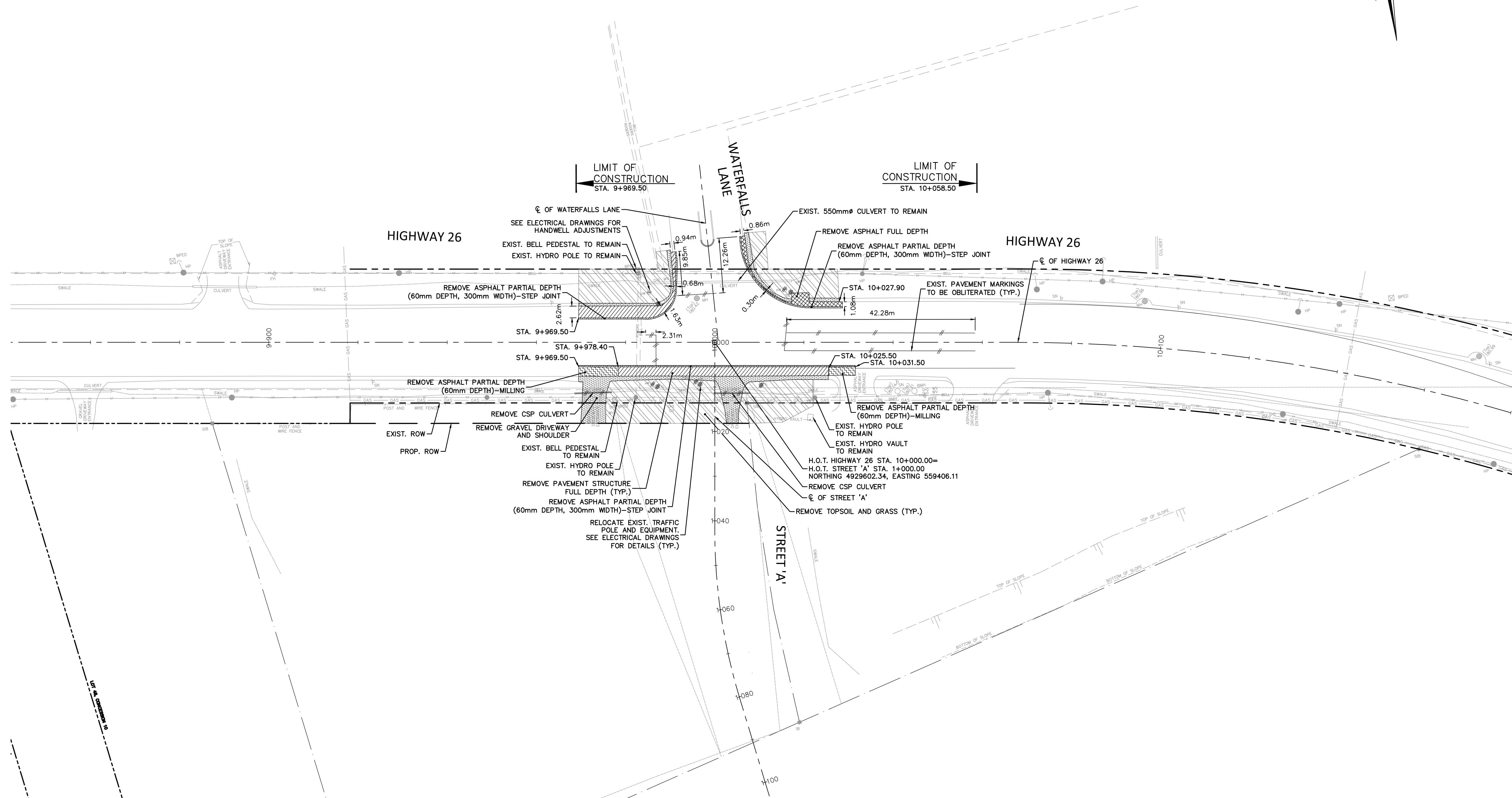
1790-5382

Drawn By I.Z. Design By I.Z. Project
 Check By R.M./M.F. Check By Scale Drawing
C300



LEGEND

- EXISTING ROW
- PROPOSED ROW
- LOT LINE
- FULL DEPTH PAVEMENT STRUCTURE REMOVAL
- PARTIAL DEPTH ASPHALT REMOVAL - 60mm DEPTH, 300mm WIDTH (STEP JOINT)
- PARTIAL DEPTH ASPHALT REMOVAL - 60mm DEPTH (FOR PADDING)
- FULL DEPTH ASPHALT REMOVAL
- GRAVEL DRIVEWAY AND SHOULDER REMOVAL
- TOPSOIL AND GRASS REMOVAL
- PAVEMENT MARKINGS OBLITERATION



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Town

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR REVIEW	11/28/2019
2	ISSUED FOR 60% DESIGN REVIEW	07/17/2020

Engineer

FOR REVIEW

NOT TO BE USED FOR CONSTRUCTION

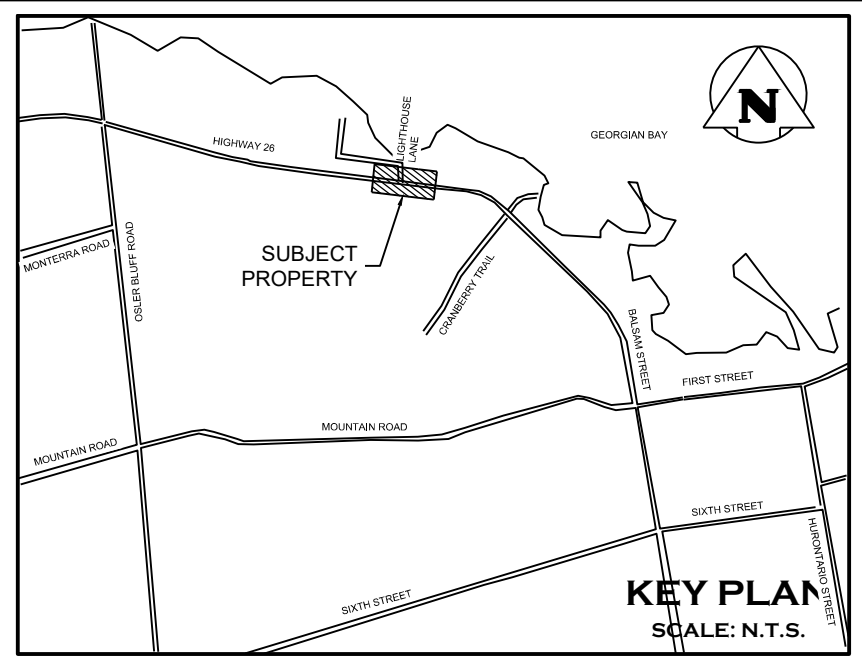
Project: **HIGHWAY 26 & WATERFALLS LANE/STREET 'A' INTERSECTION IMPROVEMENT TOWN OF COLLINGWOOD**

Drawing: **REMOVALS**

CROZIER
CONSULTING ENGINEERS

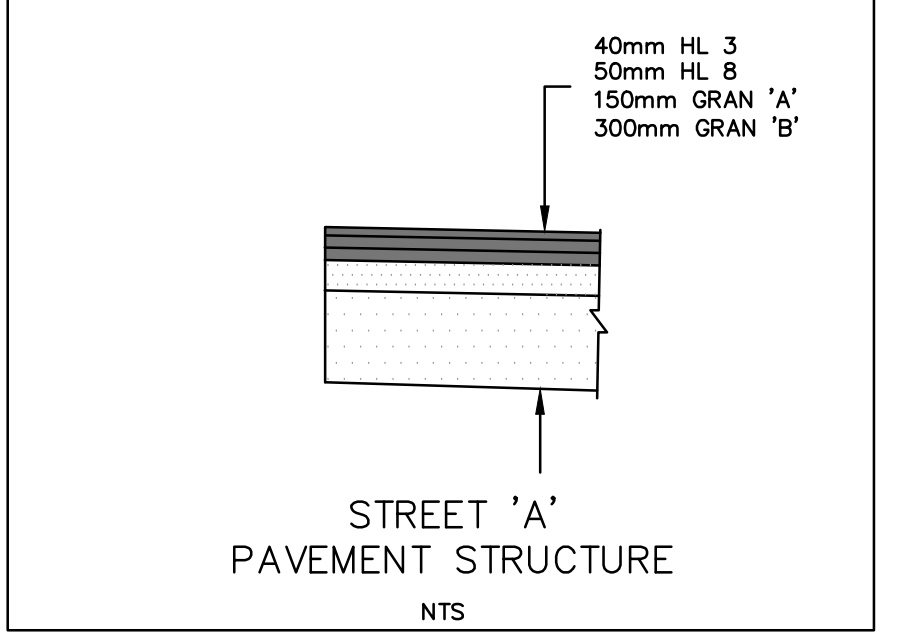
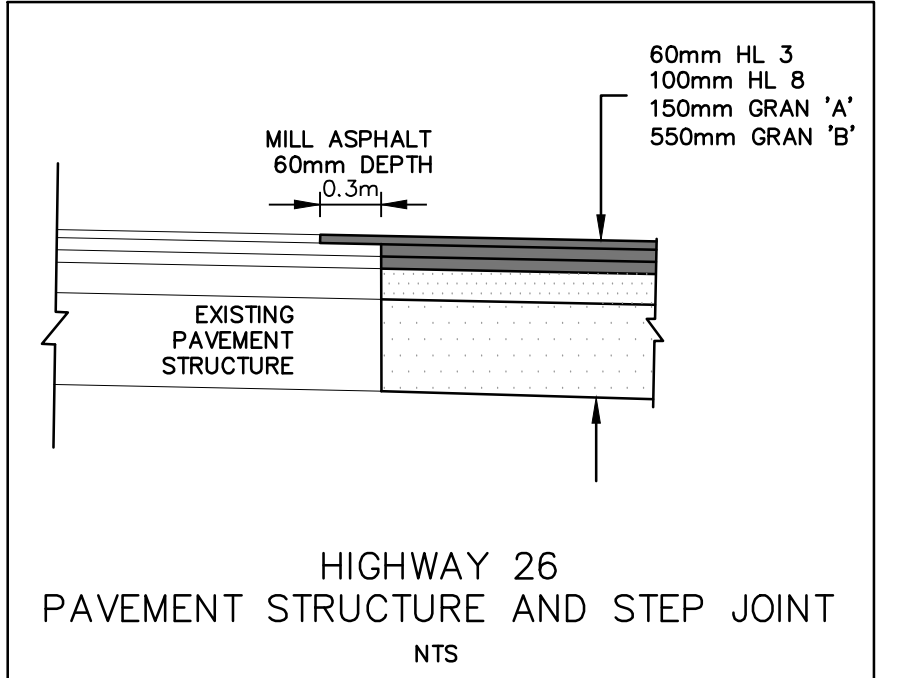
THE HARBOUREDGE BUILDING,
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Drawn By	I.Z.	Design By	I.Z.	Project	1790-5382
Check By	R.M./M.F.	Check By		Scale	1:500
Drawing					C301

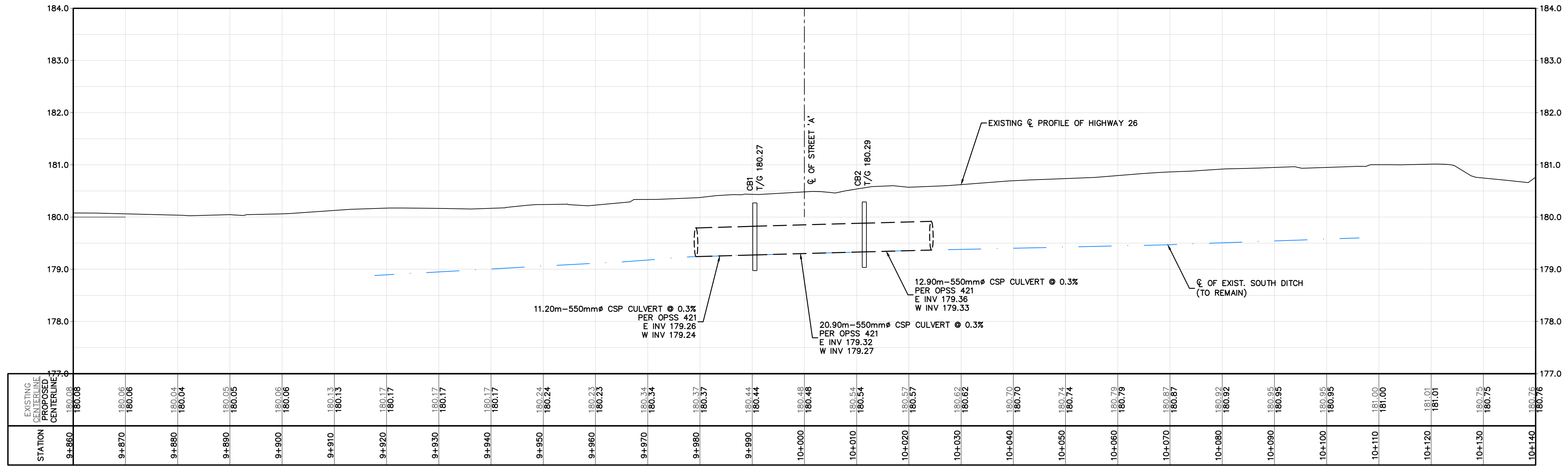
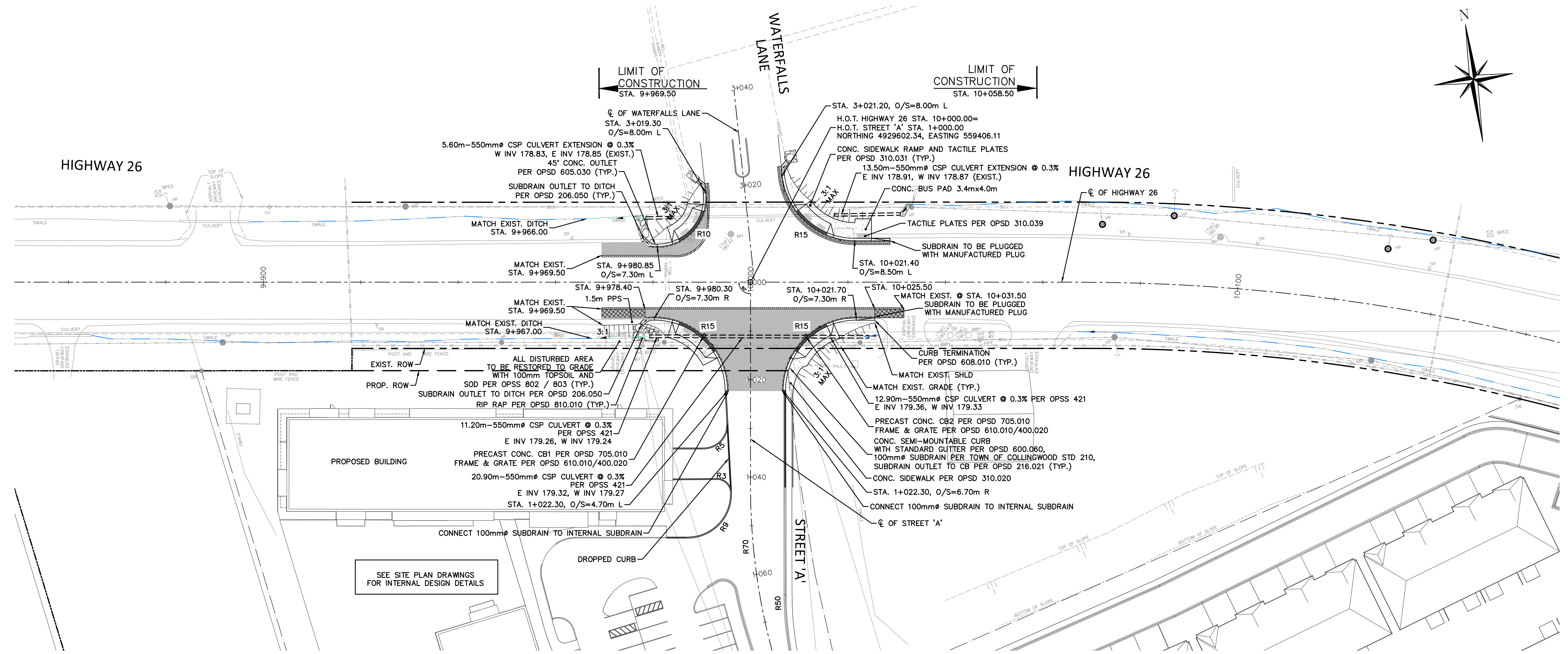
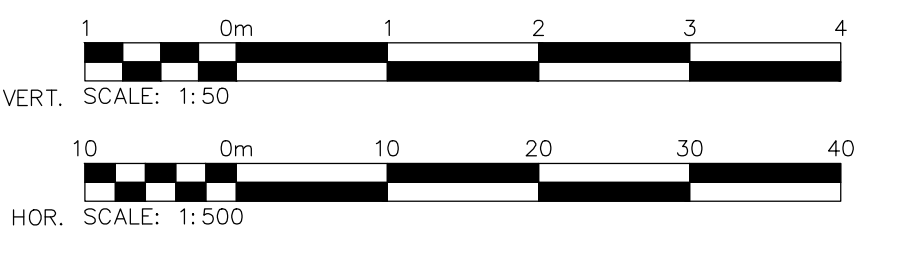


LEGEND

- EXISTING ROW
- PROPOSED ROW
- LOT LINE
- NEW ASPHALT PAVEMENT
- ASPHALT PAVEMENT STEP JOINT (60mm DEPTH)
- ASPHALT PAVEMENT PARTIAL DEPTH (60mm DEPTH) & PADDING
- CONCRETE RAMP/SIDEWALK
- EXISTING DITCH
- PROPOSED DITCH



NOTE:
 1. SIDEWALK/BUS PAD TO BE CONSTRUCTED PER OPSS 351.
 2. GRANULAR BASE FOR SIDEWALK/BUS PAD SHELL BE MINIMUM 150mm AND CONFIRM TO OPSS 1010.



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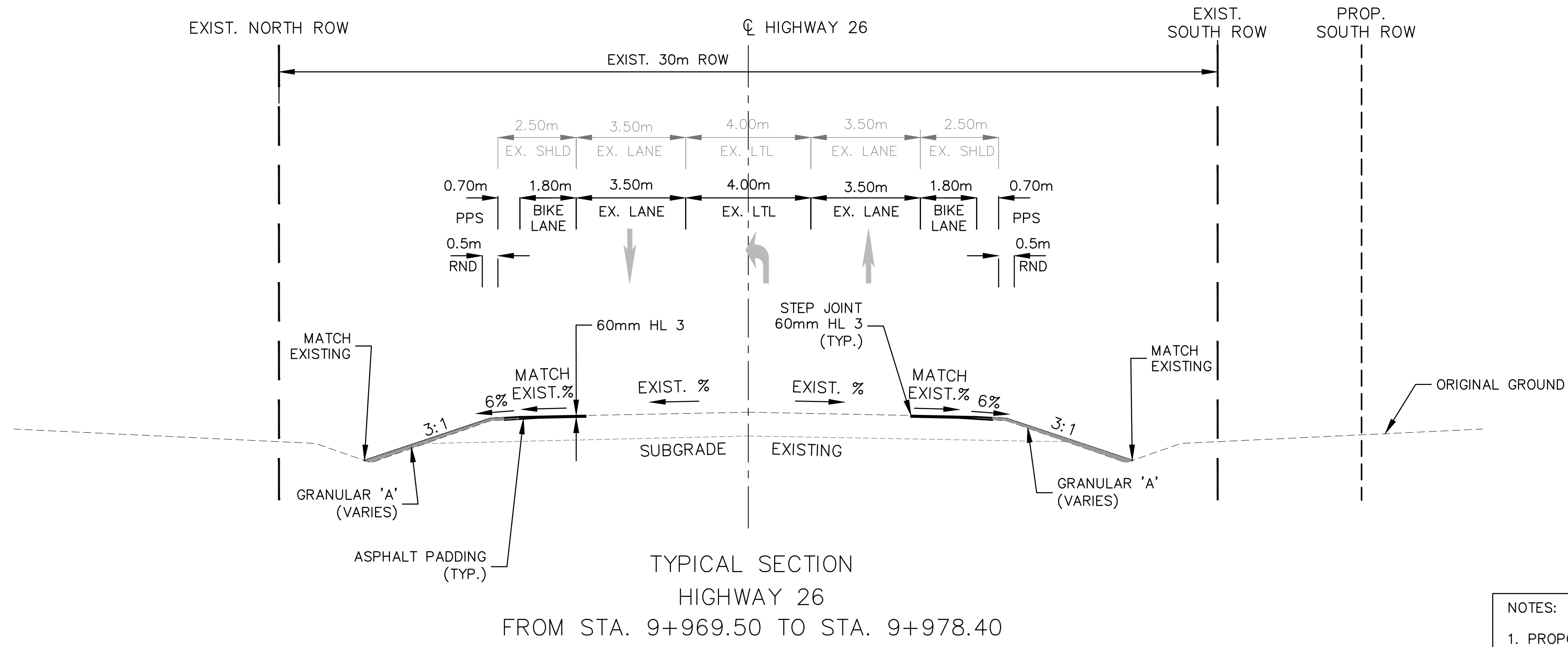
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FOR REVIEW
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Project: HIGHWAY 26 & WATERFALLS LANE/STREET 'A' INTERSECTION IMPROVEMENT TOWN OF COLLINGWOOD
Drawing: NEW CONSTRUCTION

CROZIER CONSULTING ENGINEERS
 THE HARBOUREDGE BUILDING, 40 HURON STREET, SUITE 301, COLLINGWOOD, ON L5M 4R3
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Drawn By: I.Z. Design By: I.Z. Project: **1790-5382**
 Check By: R.M./M.F. Check By: Scale: 1:500 Drawing: **C302**

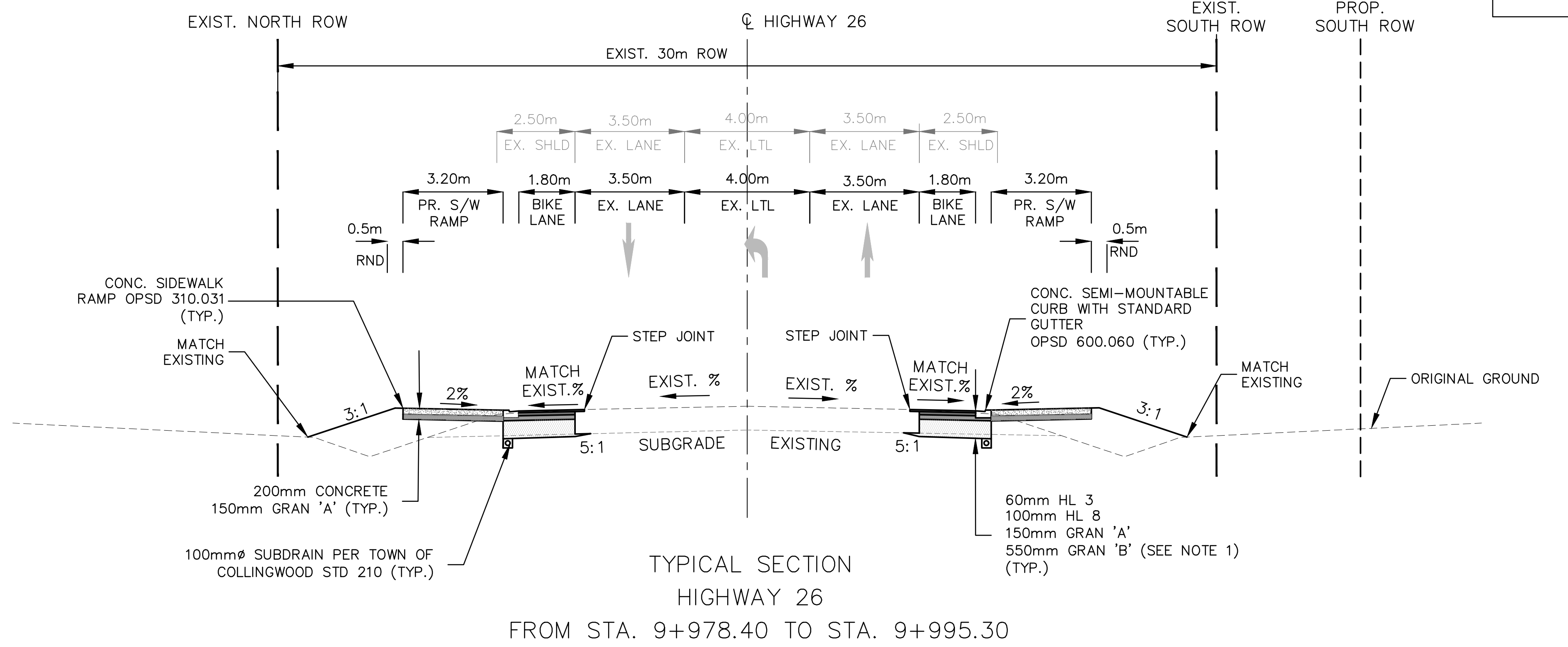


TYPICAL SECTION
HIGHWAY 26

FROM STA. 9+969.50 TO STA. 9+978.40

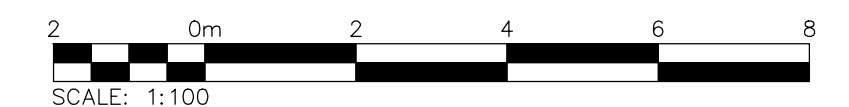
NOTES:

1. PROPOSED SUBGRADE TO MATCH EXISTING TO ENSURE POSITIVE DRAINAGE.
2. CONCRETE THICKNESS FOR RAMP AND BUS PAD - 200mm, FOR SIDEWALK, ADJACENT TO RAMP - 150mm ON 150mm GRAN 'A' BASE



TYPICAL SECTION
HIGHWAY 26

FROM STA. 9+978.40 TO STA. 9+995.30



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ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE RELATED TO TOWN OF COLLINGWOOD BENCH MARK No. 001972U315, HAVING AN ELEVATION OF 179.633 METRES.

No.	ISSUE	DATE: MM/DD/YYYY
1	ISSUED FOR DESIGN REVIEW	11/28/2019
2	ISSUED FOR 60% DESIGN REVIEW	07/17/2020

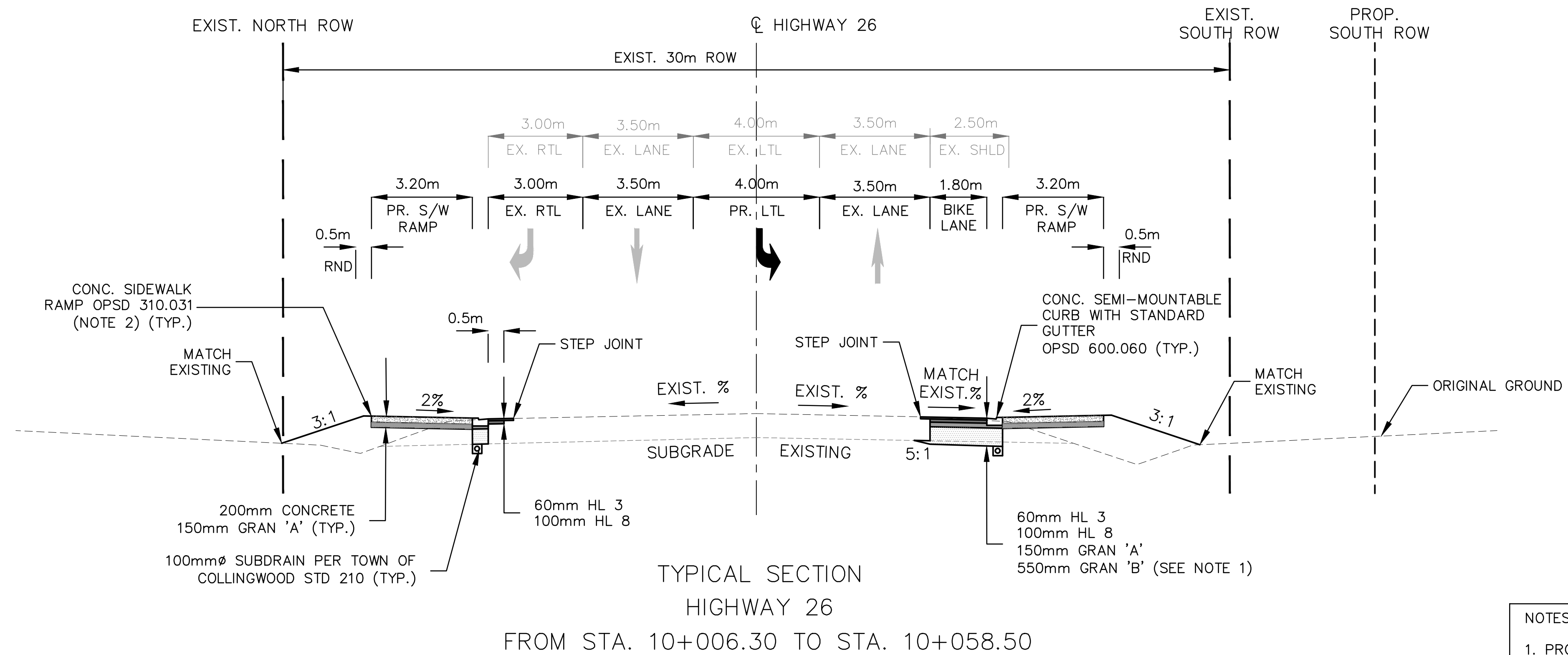
Engineer: _____
Engineer: _____
Project: _____
Drawing: _____

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HIGHWAY 26 & WATERFALLS LANE/STREET 'A'
INTERSECTION IMPROVEMENT
TOWN OF COLLINGWOOD
TYPICAL SECTIONS

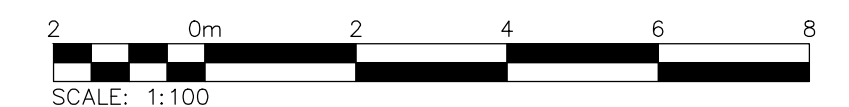
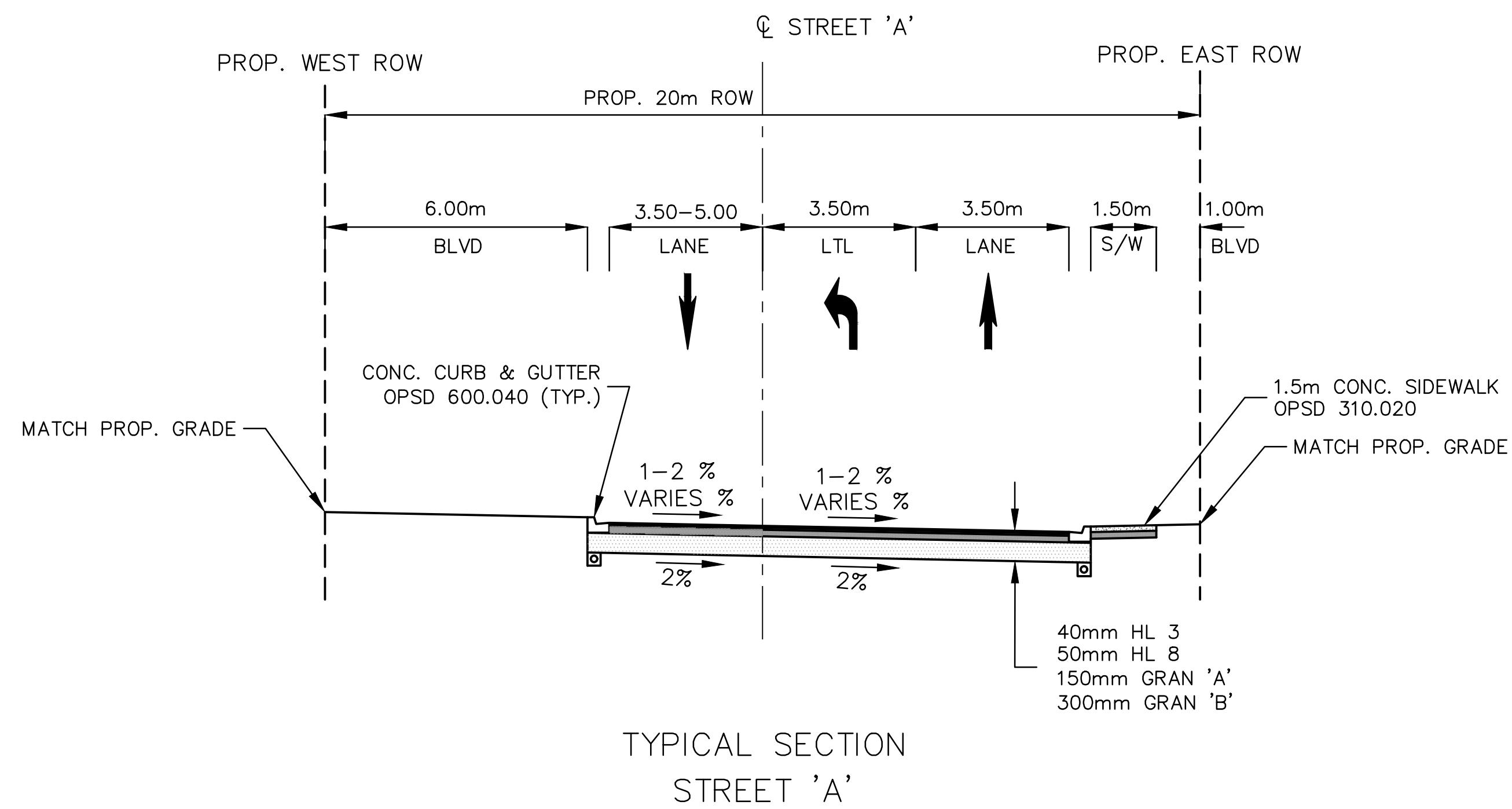
CROZIER CONSULTING ENGINEERS
THE HARBOUREdge BUILDING,
40 HURON STREET, SUITE 301,
COLLINGWOOD, ON L9Y 4R3
705 446-3510 T
705 446-3520 F
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Drawn By: I.Z. Design By: I.Z. Project: 1790-5382
Check By: R.M./M.F. Check By: Scale: 1:100 Drawing: C303



NOTES:

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1	ISSUED FOR DESIGN REVIEW	11/28/2019
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Engineer: [Signature]

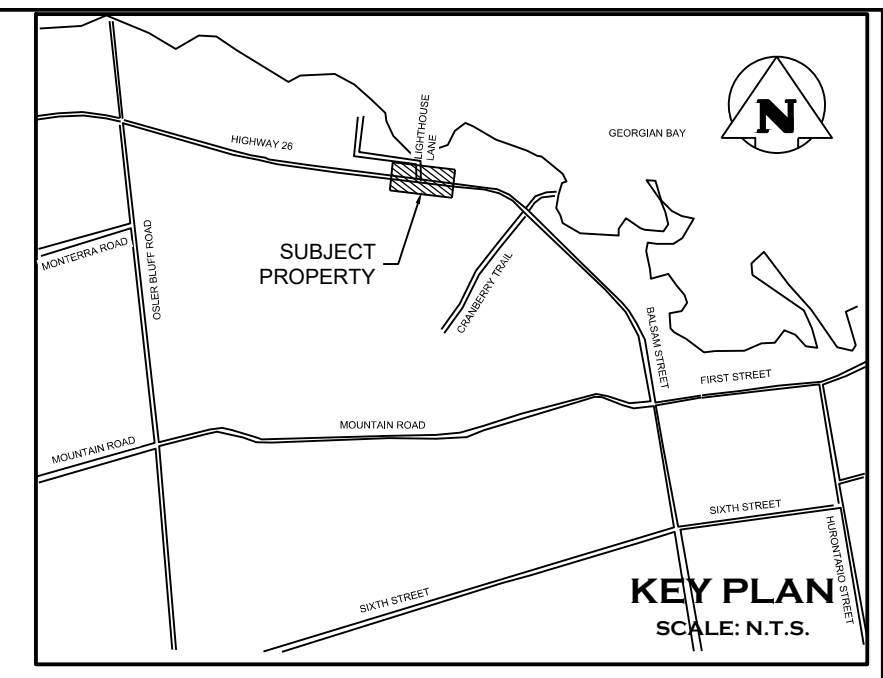
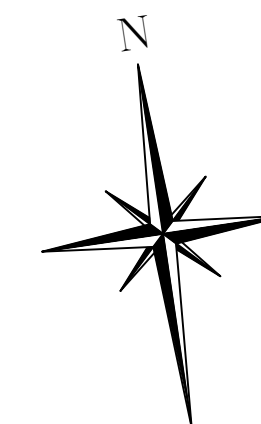
Engineer: [Signature]

Project: HIGHWAY 26 & WATERFALLS LANE/STREET 'A' INTERSECTION IMPROVEMENT TOWN OF COLLINGWOOD

Drawing: TYPICAL SECTIONS

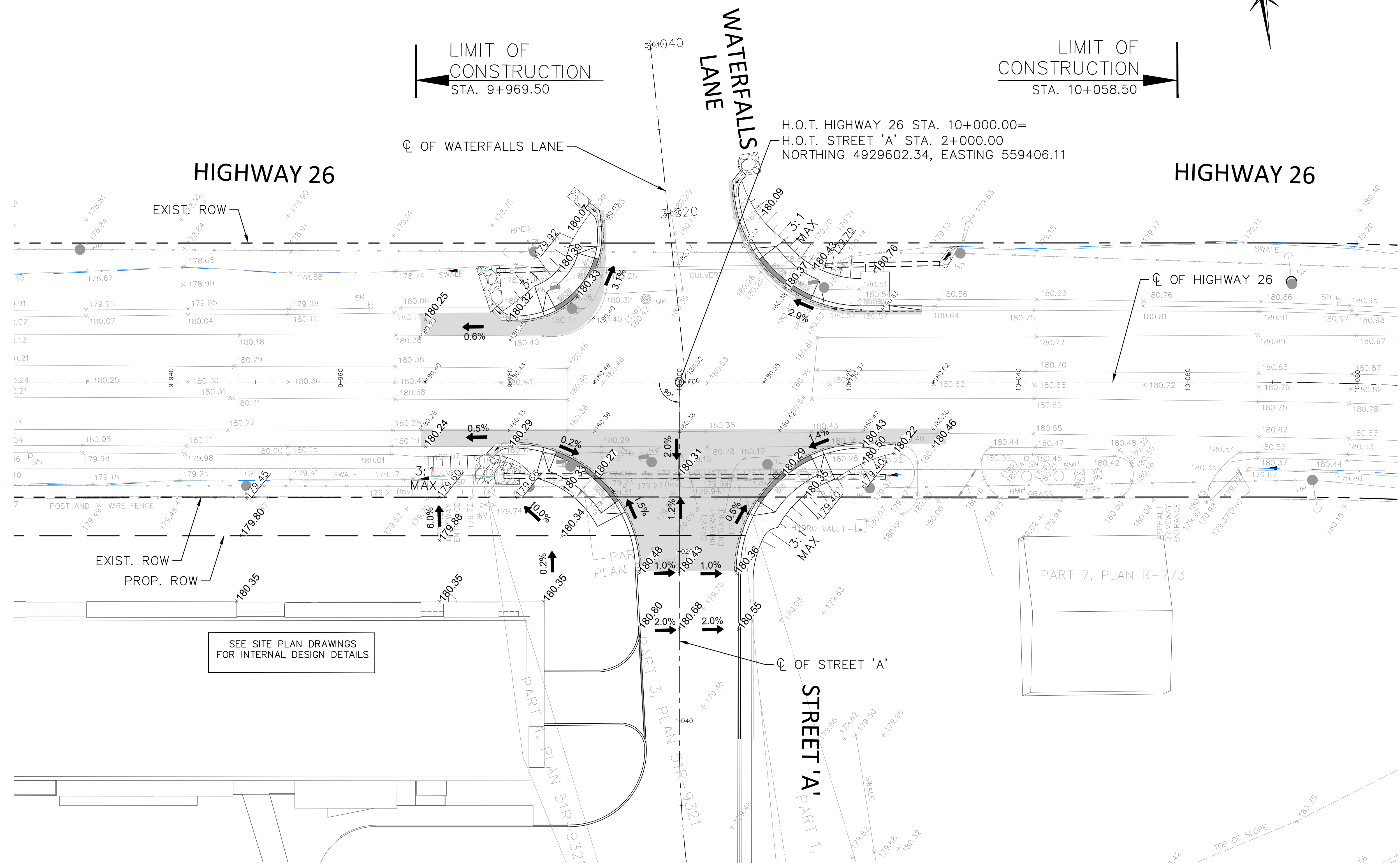
Drawn By: I.Z. Design By: I.Z. Project: 1790-5382

Check By: R.M./M.F. Check By: Scale: 1:100 Drawing: C304



LEGEND

	EXISTING ROW
	PROPOSED ROW
	LOT LINE
	EXISTING ELEVATIONS
	PROPOSED ELEVATIONS
	MATCH TO EXISTING ELEVATIONS



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No.	ISSUE	DATE: MM/DD/YYYY
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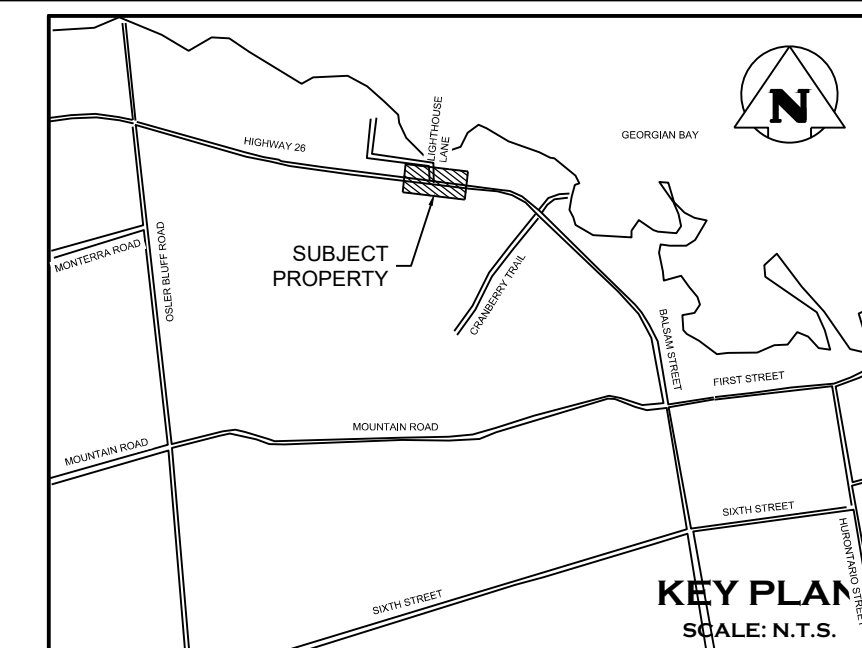
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HIGHWAY 26 & WATERFALLS LANE/STREET 'A'
INTERSECTION IMPROVEMENT
TOWN OF COLLINGWOOD
 PAVEMENT ELEVATIONS AND GRADING

CROZIER
CONSULTING ENGINEERS

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Drawn By	I.Z.	Design By	I.Z.	Project	1790-5382
Check By	R.M./M.F.	Check By		Scale	1:250
					C305



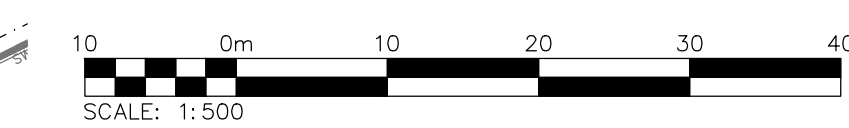
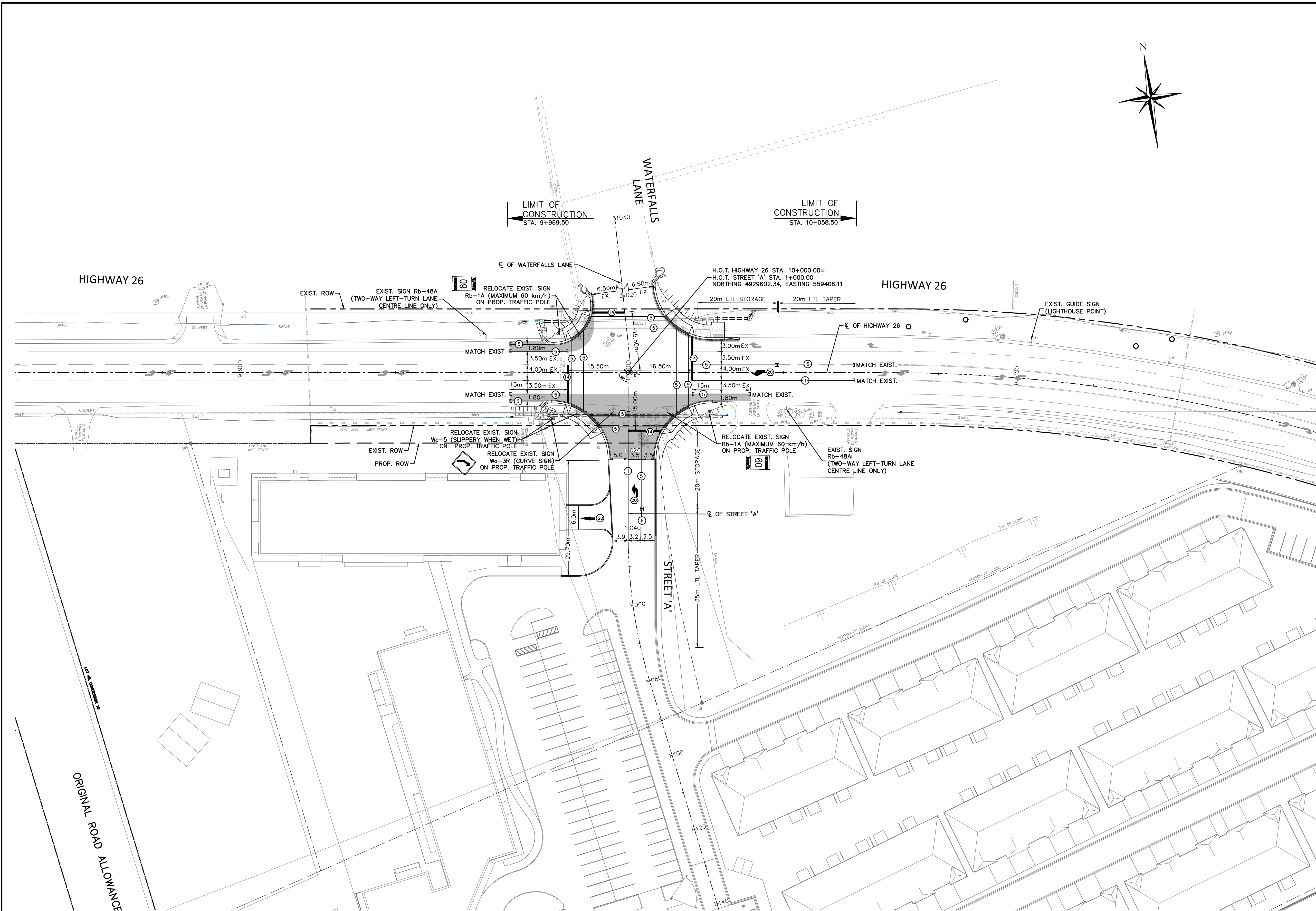
LEGEND

- EXISTING ROW
- PROPOSED ROW
- LOT LINE

PAVEMENT MARKINGS LEGEND

1	SOLID YELLOW, 10cm
5	SOLID WHITE, 10cm
6	333 BROKEN WHITE, 10cm
14	SOLID WHITE, 45cm
20	SYMBOLS
21	111 BROKEN WHITE, 10cm
[]	LIMITS OF MARKINGS

- NOTES:
- 333 DENOTES PAVEMENT MARKING SPACING AS 3m LINE, 3m GAP, 3m LINE
 - USE ⊗ TO DENOTE PAVEMENT MARKING
 - USE ⊗ TO DENOTE DURABLE PAVEMENT MARKING



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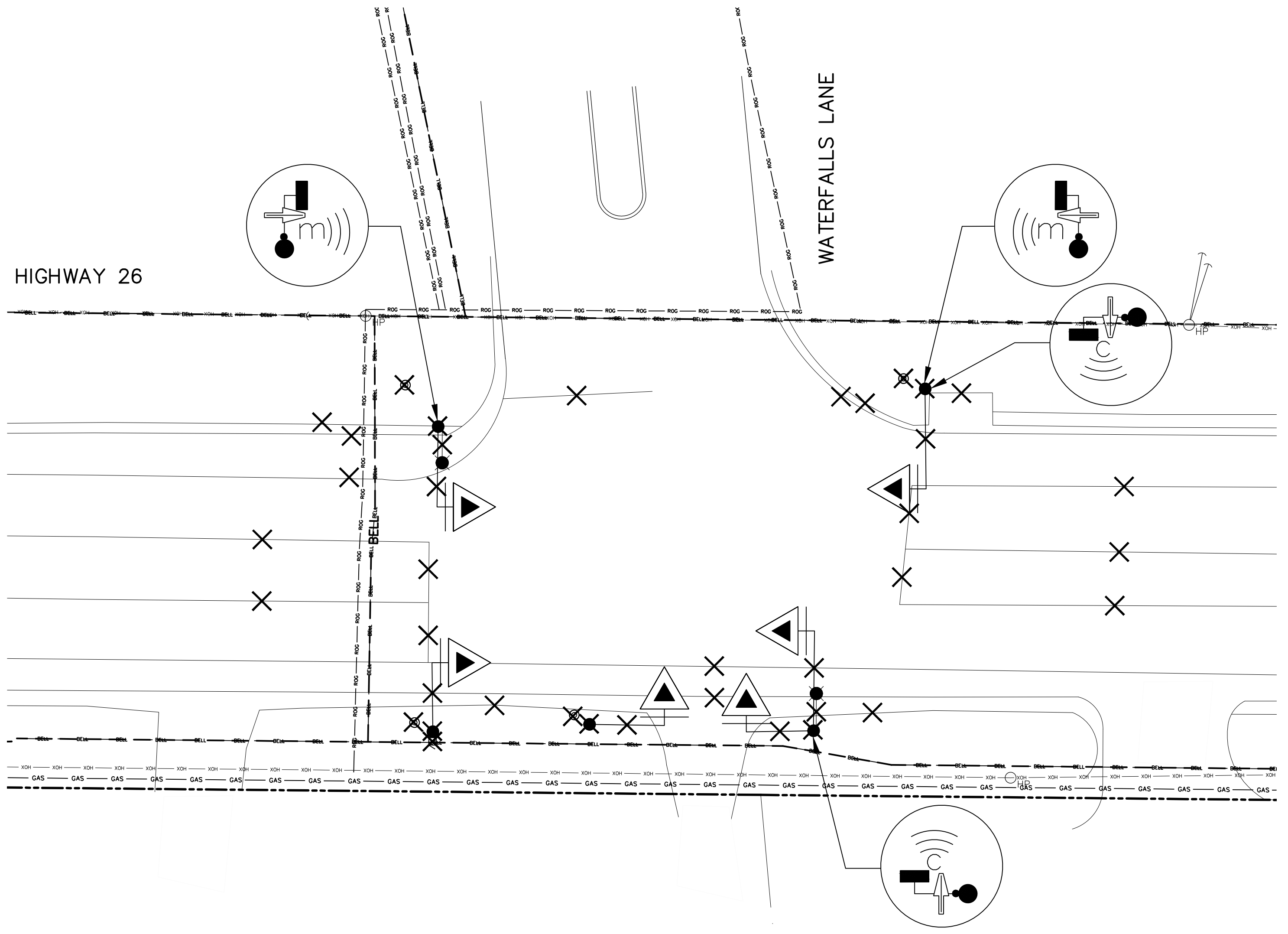
Project: **HIGHWAY 26 & WATERFALLS LANE/STREET 'A' INTERSECTION IMPROVEMENT TOWN OF COLLINGWOOD**

Drawing: **PAVEMENT MARKINGS AND SIGNAGE**

CROZIER
CONSULTING ENGINEERS

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Drawn By: I.Z.	Design By: I.Z.	Project: 1790-5382
Check By: R.M./M.F.	Check By:	Scale: 1:500 Drawing: C306



EXISTING REMOVALS PLAN
SCALE: 1:200

LEGEND:

- EXISTING HYDRO POLE
- EXISTING TRAFFIC SIGNAL POLE
- EXISTING GUY WIRE
- EXISTING LUMINAIRE WITH BRACKET
- EXISTING ELECTRICAL HANDHOLE, UNDERGROUND WITH IDENTIFICATION CODE
- EXISTING OVERSIZE HIGHWAY SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 30 cm LENSES)
- EXISTING PEDESTRIAN SIGNAL HEAD
- EXISTING ACCESSIBLE PEDESTRIAN PUSH BUTTON WITH AUDIBLE TONE N&S: CUCKOO
- EXISTING ACCESSIBLE PEDESTRIAN PUSH BUTTON WITH AUDIBLE TONE E&W: MELODY
- EXISTING TRAFFIC CONTROLLER
- REMOVE
- EXISTING OVERHEAD HYDRO
- EXISTING BELL
- EXISTING ROGERS
- EXISTING GAS

No.	ISSUE / REVISION	DATE: MM/DD/YYYY
0	ISSUED FOR 60% DESIGN REVIEW	07/17/2020

North

Engineer

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Project

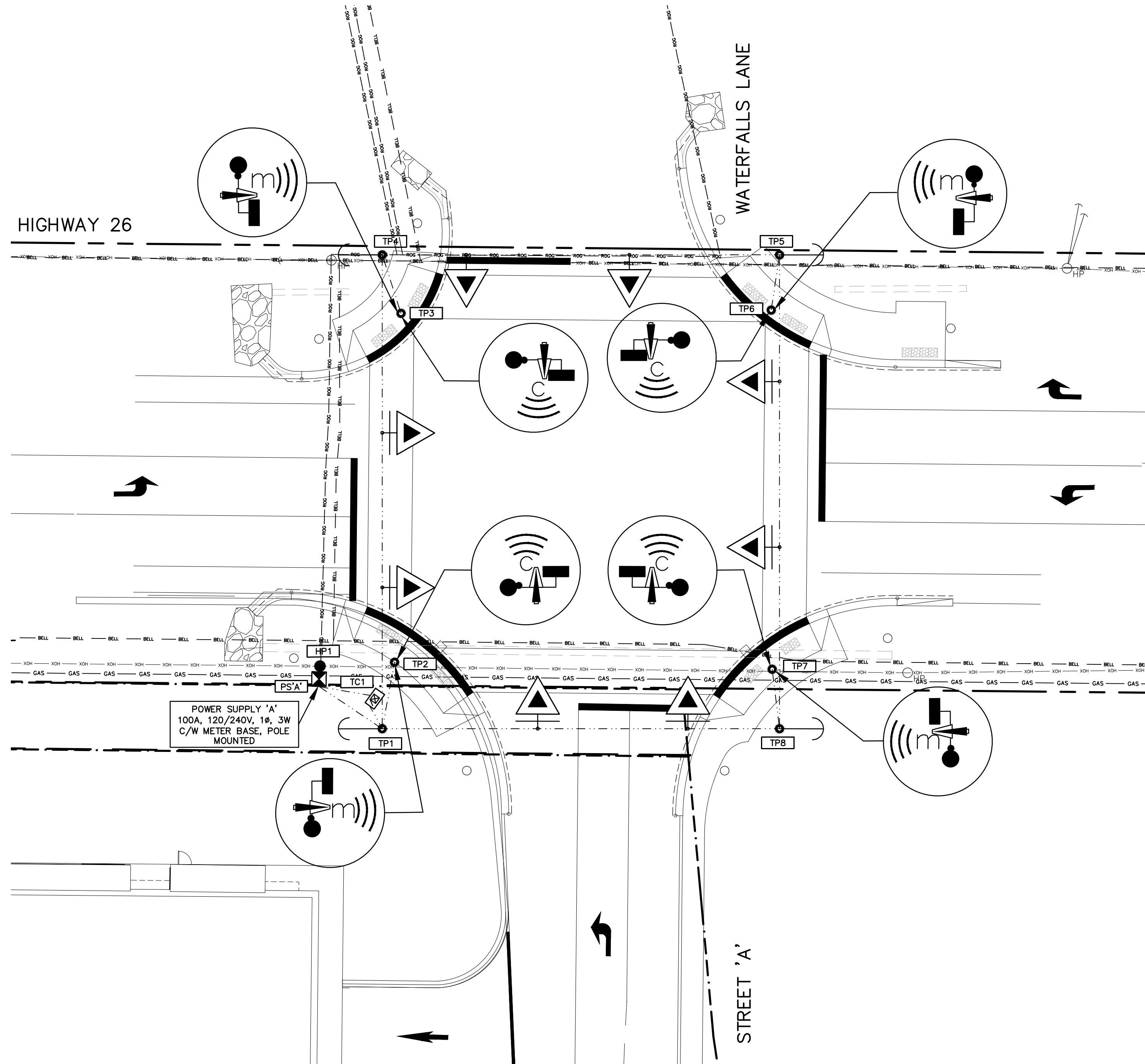
HWY 26 & WATERFALLS LANE INTERSECTION

Drawing

EXISTING REMOVALS PLAN

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Drawn By	N.J.M./J.R.B.	Check By	N.J.M.	Project	1790-5382
Scale	1:200	Date	06/19/2020	Drawing	E1



TEMPORARY SIGNALS PLAN

SCALE: 1:200

LEGEND:

	POWER SUPPLY EQUIPMENT
	HIGHWAY SIGNAL HEAD, ALL 300mm LENSES, WITH BACKBOARD
	LUMINAIRE WITH BRACKET
	CONTROLLER CABINET, PAD AND/OR FOOTING MOUNTED
	DUCTS AND/OR CABLES, UNDERGROUND
	DUPLEX LOOP DETECTOR
	EXISTING HYDRO POLE TO REMAIN, HPLS HYDRO POLE WITH LIGHT STAND
	POLE WITH IDENTIFICATION CODE
	ELECTRICAL HANDHOLE, UNDERGROUND WITH IDENTIFICATION CODE
	TRAFFIC SIGNAL CABINET IDENTIFICATION CODE
	LUMINAIRE IDENTIFICATION CODE
	HYDRO POLE
	EXISTING HYDRO (OVERHEAD)
	NORTH/SOUTH AUDIBLE PED
	EAST/WEST AUDIBLE PED
	EXISTING BELL
	EXISTING ROGERS
	EXISTING GAS

No.	ISSUE / REVISION	DATE: MM/DD/YYYY
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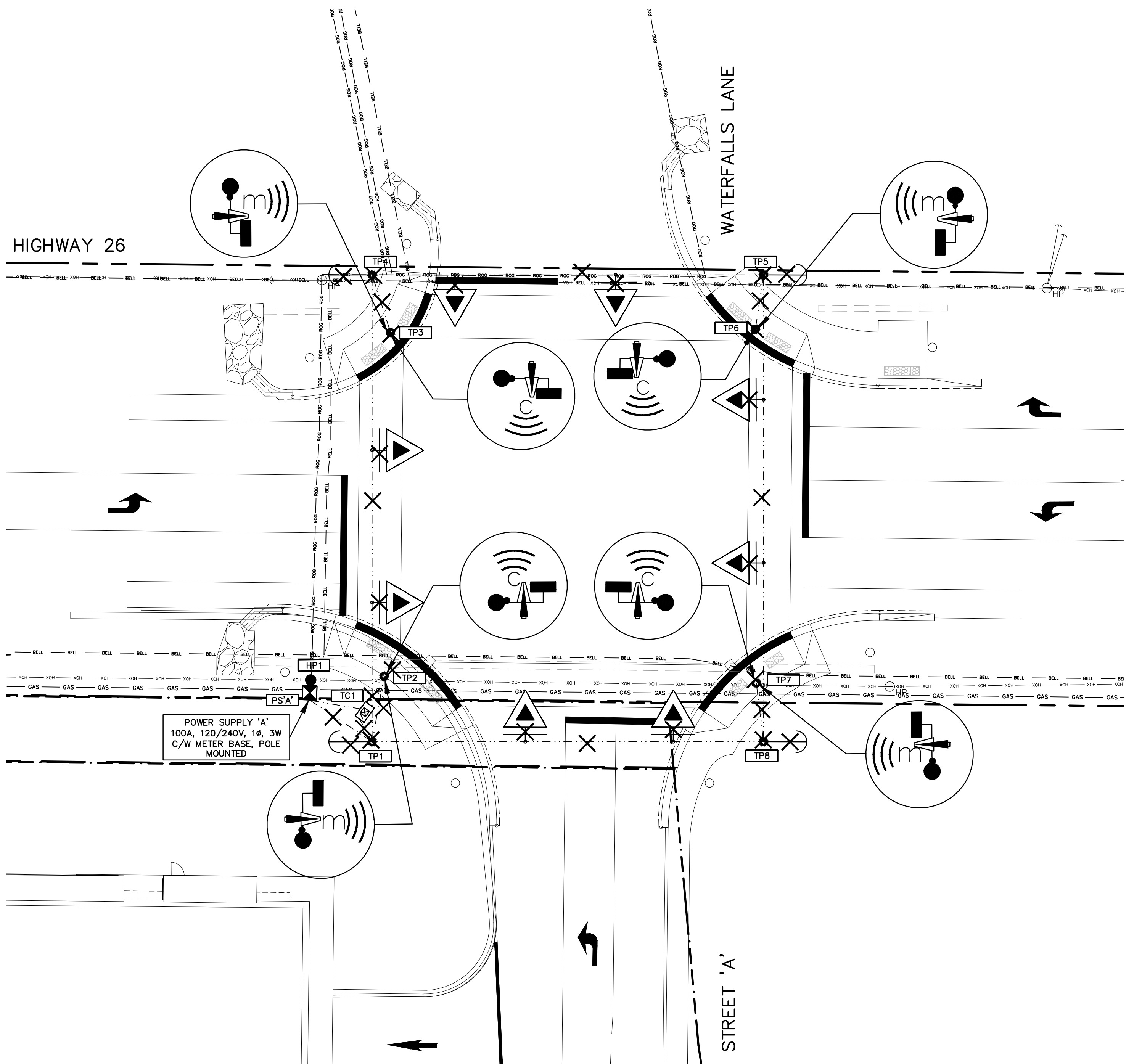
Project
HWY 26 & WATERFALLS LANE INTERSECTION

Drawing
TEMPORARY SIGNALS PLAN

CROZIER & ASSOCIATES
Consulting Engineers

THE HARBOUREDGE BUILDING,
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Drawn By N.J.M./J.R.B.	Check By N.J.M.	Project 1790-5382
Scale 1:200	Date 06/19/2020	Drawing E2



TEMPORARY SIGNALS REMOVAL PLAN
SCALE: 1:200

LEGEND:

	POWER SUPPLY EQUIPMENT
	HIGHWAY SIGNAL HEAD, ALL 300mm LENSES, WITH BACKBOARD
	LUMINAIRE WITH BRACKET
	CONTROLLER CABINET, PAD AND/OR FOOTING MOUNTED
	DUCTS AND/OR CABLES, UNDERGROUND
	DUPLEX LOOP DETECTOR
	EXISTING HYDRO POLE TO REMAIN, HPLS HYDRO POLE WITH LIGHT STAND
	TEMPORARY POLE WITH IDENTIFICATION CODE
	POLE WITH IDENTIFICATION CODE
	ELECTRICAL HANDHOLE, UNDERGROUND WITH IDENTIFICATION CODE
	TRAFFIC SIGNAL CABINET IDENTIFICATION CODE
	LUMINAIRE IDENTIFICATION CODE
	HYDRO POLE
	PROPOSED TEMPORARY HYDRO (OVERHEAD)
	EXISTING HYDRO (OVERHEAD)
	REMOVE
	PROPOSED TEMPORARY GUY WIRE
	NORTH/SOUTH AUDIBLE PED
	EAST/WEST AUDIBLE PED
	EXISTING BELL
	EXISTING ROGERS
	EXISTING GAS

No.	ISSUE / REVISION	DATE: MM/DD/YYYY
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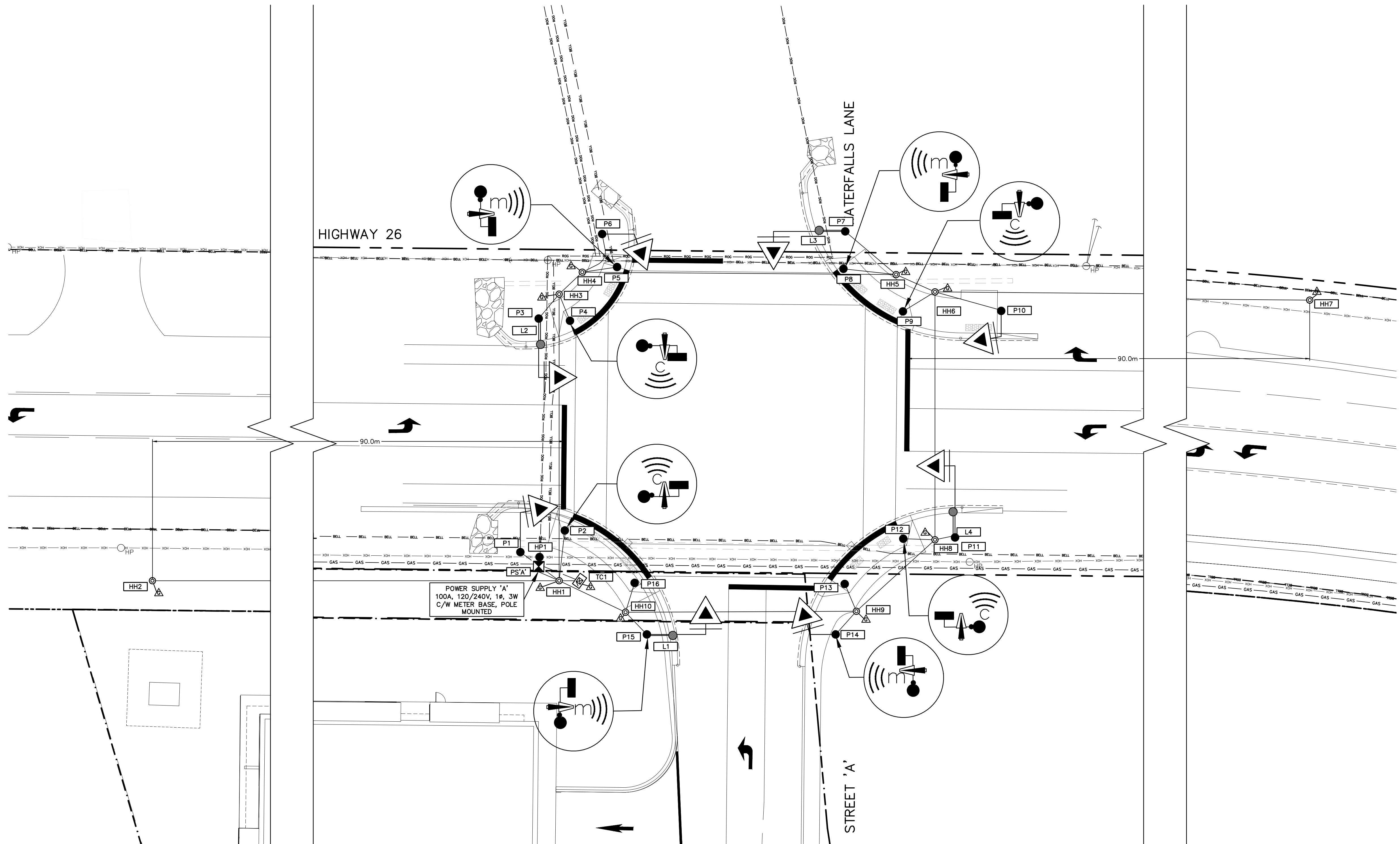
Project
HWY 26 & WATERFALLS LANE INTERSECTION

Drawing
TEMPORARY SIGNALS REMOVAL PLAN

CROZIER & ASSOCIATES
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Drawn By	N.J.M./J.R.B.	Check By	N.J.M.	Project	1790-5382
Scale	1:200	Date	06/19/2020	Drawing	E3



LEGEND:

	POWER SUPPLY EQUIPMENT
	HIGHWAY SIGNAL HEAD, ALL 300mm LENSES, WITH BACKBOARD
	LUMINAIRE WITH BRACKET
	CONTROLLER CABINET, PAD AND/OR FOOTING MOUNTED
	DUCTS AND/OR CABLES, UNDERGROUND
	DUPLEX LOOP DETECTOR
	EXISTING HYDRO POLE TO REMAIN, HPLS HYDRO POLE WITH LIGHT STAND
	POLE WITH IDENTIFICATION CODE
	ELECTRICAL HANDHOLE, UNDERGROUND WITH IDENTIFICATION CODE
	TRAFFIC SIGNAL CABINET IDENTIFICATION CODE
	LUMINAIRE IDENTIFICATION CODE
	HYDRO POLE
	EXISTING HYDRO (OVERHEAD)
	NORTH/SOUTH AUDIBLE PED
	EAST/WEST AUDIBLE PED
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	EXISTING GAS

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Project

HWY 26 & WATERFALLS LANE INTERSECTION

Drawing

ELECTRICAL SIGNALS PLAN

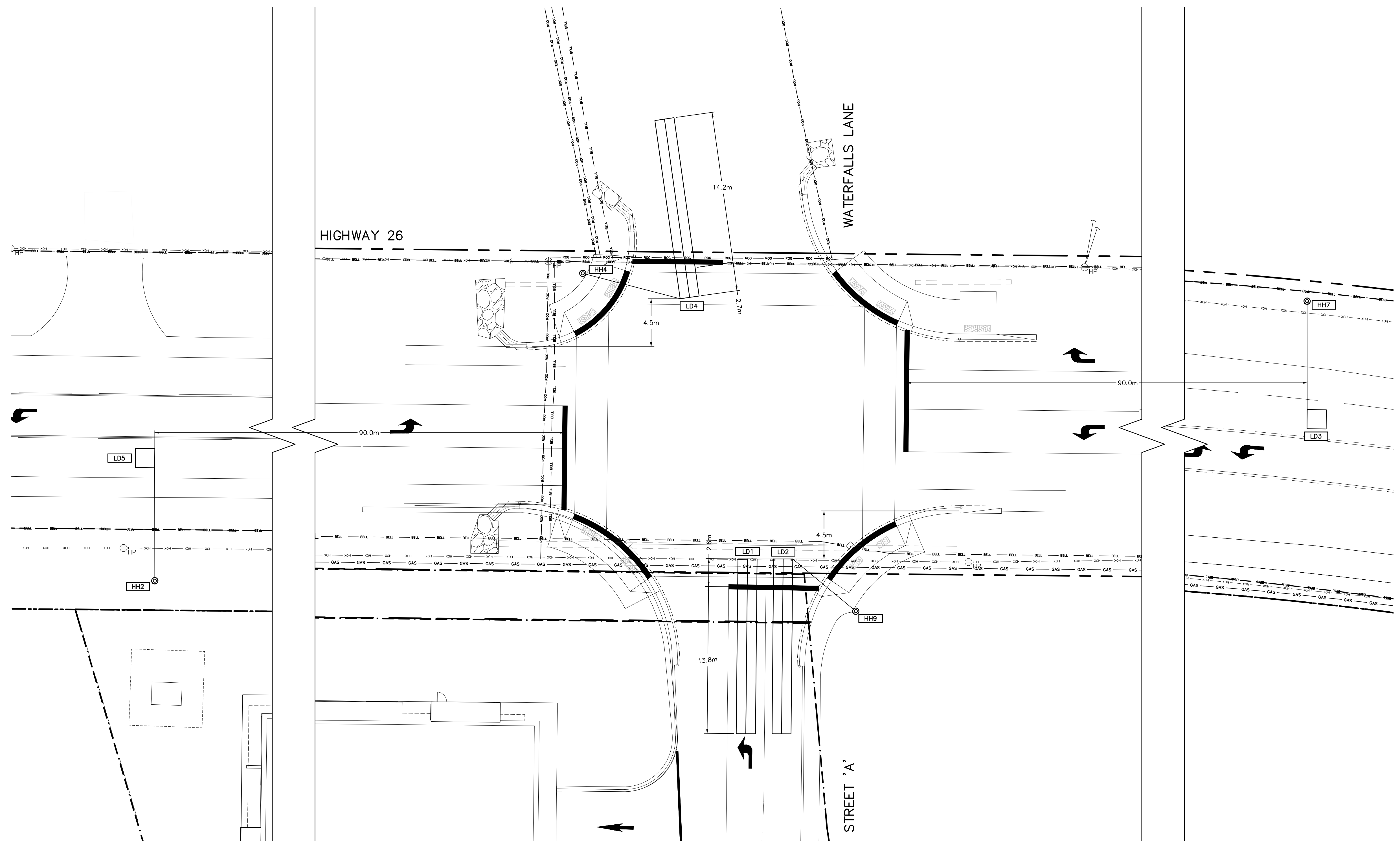
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Drawn By	N.J.M./J.R.B.	Check By	N.J.M.	Project	1790-5382
Scale	1:200	Date	06/19/2020	Drawing	E4

- GENERAL NOTES**
- POWER SUPPLY AND CONTROLLER LOCATION SUBJECT TO CHANGE BASED ON EPCOR FINAL APPROVAL.
 - COORDINATE ELECTRICAL SERVICE ENTRANCE INSTALLATION WITH EPCOR.
 - OVERHEAD COMMUNICATION LINES CROSSING WATERFALLS LANE TO BE RAISED TO AVOID TRAFFIC SIGNAL CONFLICTS OR BE RE-RUN UNDERGROUND.
 - ELECTRICAL CONTRACTOR TO PROVIDE ANY UTILITY RELOCATIONS REQUIRED TO ACCOMMODATE THE TRAFFIC SIGNAL INSTALLATION.

ELECTRICAL SIGNALS PLAN
SCALE: 1:200



LEGEND:

	DUCTS AND/OR CABLES, UNDERGROUND
	DUPLEX LOOP DETECTOR
	EXISTING HYDRO POLE TO REMAIN, HPLS HYDRO POLE WITH LIGHT STAND
	ELECTRICAL HANDHOLE, UNDERGROUND WITH IDENTIFICATION CODE
	LOOP DETECTOR IDENTIFICATION CODE
	EXISTING HYDRO (OVERHEAD)
	EXISTING BELL
	EXISTING ROGERS
	EXISTING GAS

No.	ISSUE / REVISION	DATE: MM/DD/YYYY
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Project

HWY 26 & WATERFALLS LANE INTERSECTION

Drawing

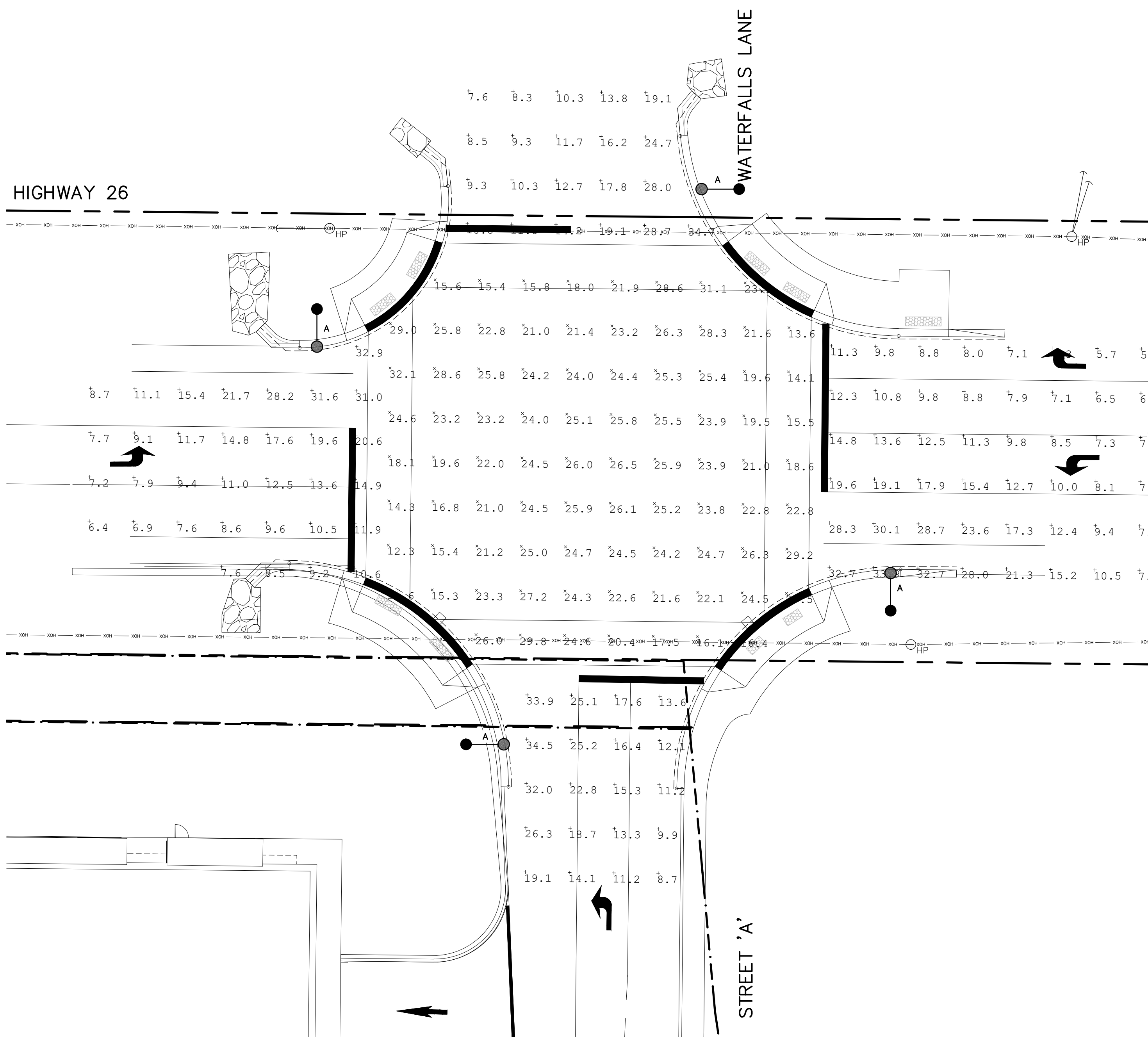
DETECTOR LOOP PLAN

CROZIER & ASSOCIATES
Consulting Engineers

THE HARBOUREDGE BUILDING,
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Drawn By	N.J.M./J.R.B.	Check By	N.J.M.	Project	1790-5382
Scale	1:200	Date	06/19/2020	Drawing	E5

DETECTOR LOOP PLAN
SCALE: 1:200





ELECTRICAL PHOTOMETRIC PLAN

SCALE: 1:200

LUMINAIRE SCHEDULE							
SYMBOL	LABEL	MANUFACTURER	CATALOG NUMBER	LIGHT LOSS FACTOR	MOUNTING HEIGHT	WATTAGE	DESCRIPTION
●	A	KING	BXSP2-HO-HT-3ME-165W-40K-N-09	0.9	MOUNTED AT 10.7m CONCRETE POLE ABOVE FINISHED GRADE ON 3.0m MAST ARM.	165W	XSP HO SERIES, TYPE III MEDIUM, 4000K C/W PHOTOCCELL

STATISTICS SCHEDULE					
DESCRIPTION	SYMBOL	AVG	MAX	MIN	AVG/MIN
INTERSECTION	X	22.6 lux	32.1 lux	11.6 lux	2.0:1

TYPE: A


Product Information	
Manufacturer	Cree, Inc.
Model Number (SKU)	BXSP2-HO-HT-3ME-165W-40K-UL
Serial Number	PL10521-001
LED Type	MDA

Product Description	
Cast Cobra Head, 2 sections of 5 polymeric optics, 1 covering each LED	

Driver Information (Where Applicable)	
Osram OT180W/UNV/1250C/2DIMLT2/P6	

Length	Width	Height
27"	15"	4.5"

Sample
The following sample was submitted for evaluation



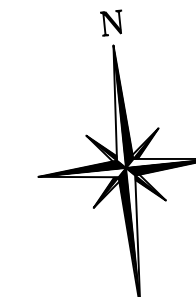
Cree, Inc | 9201 Washington Avenue | Racine, WI 53406 | Page 2 of 15
Test Report Number: PL10521-001B | RESTL-R010 Rev G

No.	ISSUE / REVISION	DATE: MM/DD/YYYY
0	ISSUED FOR 60% DESIGN REVIEW	07/17/2020

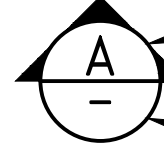
North

Engineer

Engineer



FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION




DETAIL I.D.
SHEET NUMBER

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Project
HWY 26 & WATERFALLS LANE INTERSECTION

Drawing
ELECTRICAL PHOTOMETRIC PLAN AND LIGHTING DETAILS



CROZIER & ASSOCIATES
Consulting Engineers

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Drawn By	N.J.M./J.R.B.	Check By	N.J.M.	Project	1790-5382
Scale	1:200	Date	06/19/2020	Drawing	E6

POWER SUPPLY 'A', SW CORNER, 120/240V, 1Ø PHASE, 3 WIRE, POLE MOUNTED, 100 AMP MAIN CIRCUIT BREAKER, 8 CCTS., REFER TO OPSD 2440.010 SUPPLY CONTROL CABINET ASSEMBLY TYPE 1											
CCT	DESCRIPTION	VOLT AMPERES	POLE	AMP	WIRE SIZE		AMP	POLE	VOLT AMPERES	DESCRIPTION	CCT
1	STREET LIGHTING (QTY 2, 165W)	330	1	20			60	1	1275	TRAFFIC SIGNAL CONTROLLER TC1	2
3	STREET LIGHTING (QTY 2, 165W)	330	1	20						SPARE	4
5	SPACE									SPACE	6
7	SPACE									SPACE	8
SUB-TOTAL (kVA)		1.12							1.3		
GRAND TOTAL (kVA)		2.4	DEMAND FACTOR	100%		ESTIMATED DEMAND LOAD (kVA, A)	2.4	20.0			

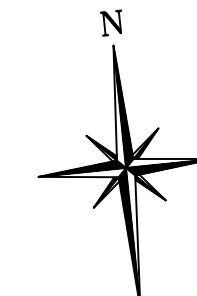
HANDHOLE SCHEDULE		
EQUIP ID	LOCATION	NOTES
HH1	SW	675mm DIA, C/W GROUNDING ELECTRODE
HH2	SW	675mm DIA, C/W GROUNDING ELECTRODE
HH3	NW	675mm DIA, C/W GROUNDING ELECTRODE
HH4	NW	675mm DIA, C/W GROUNDING ELECTRODE
HH5	NE	675mm DIA, C/W GROUNDING ELECTRODE
HH6	NE	675mm DIA, C/W GROUNDING ELECTRODE
HH7	NE	675mm DIA, C/W GROUNDING ELECTRODE
HH8	SE	675mm DIA, C/W GROUNDING ELECTRODE
HH9	SE	675mm DIA, C/W GROUNDING ELECTRODE
HH10	SW	675mm DIA, C/W GROUNDING ELECTRODE
TC1	SW	PAD MOUNTED TRAFFIC SIGNAL CABINET

DETECTION EQUIPMENT SCHEDULE			
EQUIP ID	LOCATION	FAZE NUMBER	NOTES
LD1	SE	F8	1.8mx16.3m, 2-4-2 TURNS, 450µH
LD2	SE	F8	1.8mx16.3m, 2-4-2 TURNS, 450µH
LD3	SW	F2	1.8mx1.8m, 4 TURNS, 118µH
LD4	NW	F4	1.8mx16.9m, 2-4-2 TURNS, 462µH
LD5	NE	F6	1.8mx1.8m, 4 TURNS, 118µH

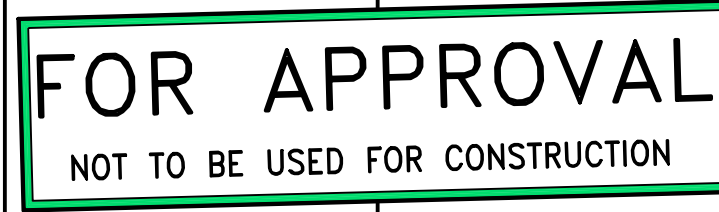
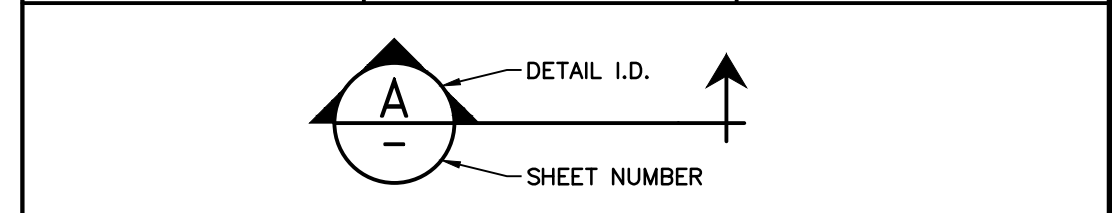
POLE SCHEDULE						
POLE ID	DESCRIPTION	LOCATION	POLE LENGTH	SIGNAL MAST ARM/BRAKET/NOTES	LUMINAIRE MAST ARM/BRAKET/NOTES	NOTES
HP1	DIRECT BURIED POWER SUPPLY POLE	SW CORNER				QUANTITY 4 GROUND RODS
P1	WESTBOUND SECONDARY	SW CORNER	10.7m ON CONCRETE FOOTING	3.7m ALUMINUM TAPERED ELLIPTICAL SIGNAL MAST ARM, MID-SECTION HANGER		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P2	SW PEDESTRIAN (NORTH/SOUTHBOUND)	SW CORNER	4.6m ON CONCRETE FOOTING	PED HEAD MOUNTED ON 600mm DOUBLE ARM BRACKET PER OPSD 2524.01 c/w PUSH BUTTON		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P3	WESTBOUND PRIMARY	NW CORNER	10.7m ON CONCRETE FOOTING	5.5m ALUMINUM TAPERED ELLIPTICAL SIGNAL MAST ARM, MID-SECTION HANGER	1.8m ALUMINUM TAPERED ELLIPTICAL BRACKET C/W LUMINAIRE HEIGHT 10.7m ABOVE ROADWAY	TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P4	NORTHWEST PEDESTRIAN (NORTH/SOUTHBOUND)	NW CORNER	4.6m ON CONCRETE FOOTING	PED HEAD MOUNTED ON 600mm DOUBLE ARM BRACKET PER OPSD 2524.01 c/w PUSH BUTTON		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P5	NORTHWEST PEDESTRIAN (EAST/WESTBOUND)	NW CORNER	4.6m ON CONCRETE FOOTING	PED HEAD MOUNTED ON 600mm DOUBLE ARM BRACKET PER OPSD 2524.01 c/w PUSH BUTTON		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P6	NORTHBOUND SECONDARY	NW CORNER	10.7m ON CONCRETE FOOTING	3.0m ALUMINUM TAPERED ELLIPTICAL SIGNAL MAST ARM, MID-SECTION HANGER		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P7	NORTHBOUND PRIMARY	NE CORNER	10.7m ON CONCRETE FOOTING	6.7m ALUMINUM TAPERED ELLIPTICAL SIGNAL MAST ARM, MID-SECTION HANGER	1.8m ALUMINUM TAPERED ELLIPTICAL BRACKET C/W LUMINAIRE HEIGHT 10.7m ABOVE ROADWAY	HEAVY CLASS POLE AND FOOTING PER OPSD 2200.090, 2435.020 AND 2200.050
P8	NORTHEAST PEDESTRIAN (EAST/WESTBOUND)	NE CORNER	4.6m ON CONCRETE FOOTING	PED HEAD MOUNTED ON 600mm DOUBLE ARM BRACKET PER OPSD 2524.01 c/w PUSH BUTTON		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P9	NORTHEAST PEDESTRIAN (NORTH/SOUTHBOUND)	NE CORNER	4.6m ON CONCRETE FOOTING	PED HEAD MOUNTED ON 600mm DOUBLE ARM BRACKET PER OPSD 2524.01 c/w PUSH BUTTON		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P10	EASTBOUND SECONDARY	NE CORNER	10.7m ON CONCRETE FOOTING	2.4m ALUMINUM TAPERED ELLIPTICAL SIGNAL MAST ARM, MID-SECTION HANGER		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P11	EASTBOUND PRIMARY	SE CORNER	10.7m ON CONCRETE FOOTING	6.7m ALUMINUM TAPERED ELLIPTICAL SIGNAL MAST ARM, MID-SECTION HANGER	1.8m ALUMINUM TAPERED ELLIPTICAL BRACKET C/W LUMINAIRE HEIGHT 10.7m ABOVE ROADWAY	HEAVY CLASS POLE AND FOOTING PER OPSD 2200.090, 2435.020 AND 2200.050
P12	SOUTHEAST PEDESTRIAN (NORTH/SOUTHBOUND)	SE CORNER	4.6m ON CONCRETE FOOTING	PED HEAD MOUNTED ON 600mm DOUBLE ARM BRACKET PER OPSD 2524.01 c/w PUSH BUTTON		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P13	SOUTHEAST PEDESTRIAN (EAST/WESTBOUND)	SE CORNER	4.6m ON CONCRETE FOOTING	PED HEAD MOUNTED ON 600mm DOUBLE ARM BRACKET PER OPSD 2524.01 c/w PUSH BUTTON		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P14	SOUTHBOUND SECONDARY	SE CORNER	10.7m ON CONCRETE FOOTING	2.4m ALUMINUM TAPERED ELLIPTICAL SIGNAL MAST ARM, MID-SECTION HANGER		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P15	SOUTHBOUND PRIMARY	SW CORNER	10.7m ON CONCRETE FOOTING	5.5m ALUMINUM TAPERED ELLIPTICAL SIGNAL MAST ARM, MID-SECTION HANGER	1.8m ALUMINUM TAPERED ELLIPTICAL BRACKET C/W LUMINAIRE HEIGHT 10.7m ABOVE ROADWAY	TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010
P16	SW PEDESTRIAN (EAST/WESTBOUND)	SW CORNER	4.6m ON CONCRETE FOOTING	PED HEAD MOUNTED ON 600mm DOUBLE ARM BRACKET PER OPSD 2524.01 c/w PUSH BUTTON		TRAFFIC POLE AND FOOTING PER OPSD 2200.01 AND 2232.010

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Project
HWY 26 & WATERFALLS LANE INTERSECTION

Drawing
ELECTRICAL SCHEDULES



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Drawn By	N.J.M./J.R.B	Check By	N.J.M.	Project	1790-5382
Scale	N.T.S.	Date	06/19/2020	Drawing	E7