27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6

CITY OF VERNON
JOB NUMBER 23-106-INF

700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
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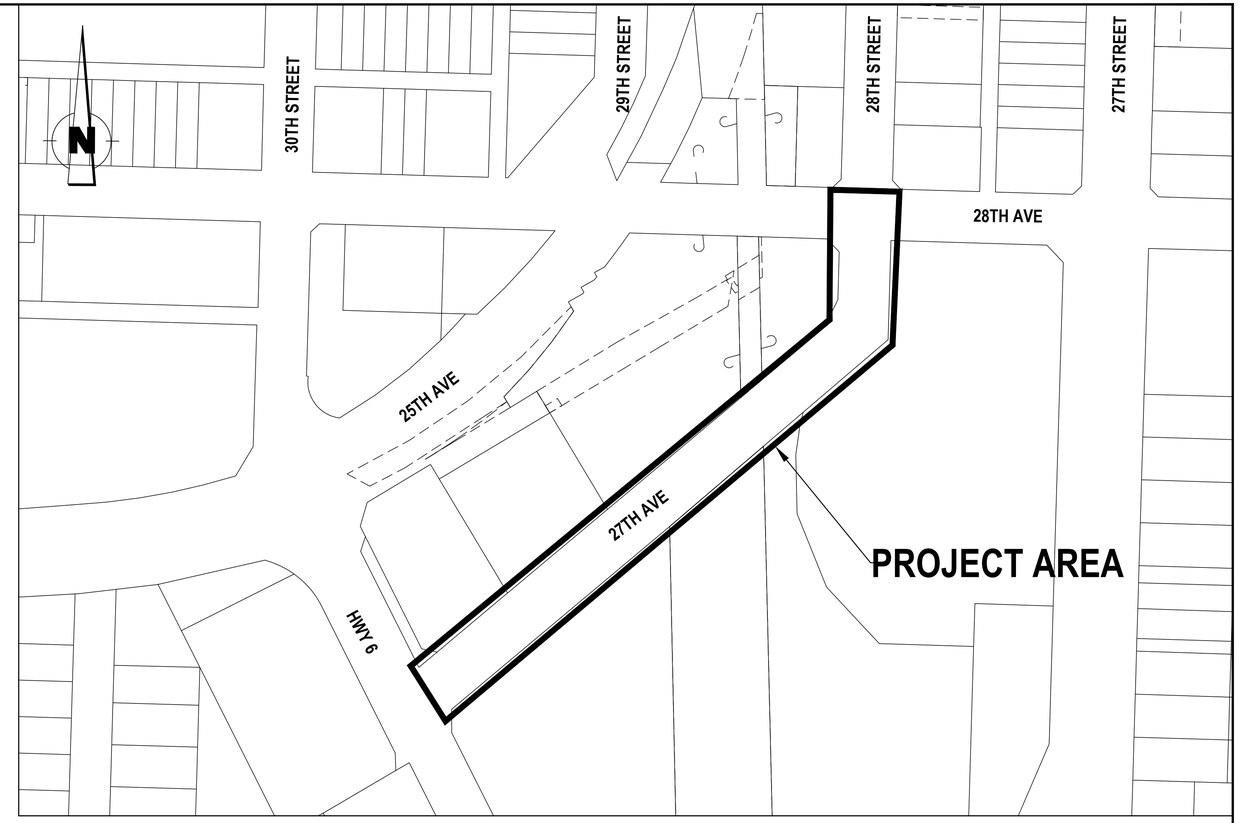
JOB No. CA0017374.8909



LOCATION PLAN
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LIST OF DRAWINGS

SHEET NUMBER	SHEET TITLE	INCLUDED
C000	COVERSHEET	Y
C001	GENERAL NOTES	Y
C101	SITE PLAN	Y
C102	CONSTRUCTION STAGING	Y
C103	TRAFFIC MANAGEMENT PLAN	Y
C201	PLAN & PROFILE – 27TH AVE – STA. 0+100 TO 0+260 – ROAD & WATER	Y
C202	PLAN & PROFILE – 27TH AVE – STA. 0+000 TO 0+100 – STORM & SANITARY	Y
C203	PLAN & PROFILE – 27TH AVE – STA. 0+100 TO 0+260 – STORM & SANITARY	Y
C301	GRADING PLAN	Y
C401	SIGNAGE & PAVEMENT MARKUPS	Y
C501	CURB RETURNS	Y
C601	DETAILS – TYPICAL SECTIONS	Y
C602	DETAILS	Y
C701	CROSS SECTIONS	Y
X100	27TH AVE RAILWAY CROSSING UPGRADE – CN MILE 85.64	Y
X101	27TH AVE RAILWAY CROSSING UPGRADE – CN MILE 85.64	Y
X102	METHOD OF INSTALLATION FOR SANITARY MAIN	Y
X103	METHOD OF INSTALLATION FOR WATER MAIN	Y

NOVEMBER 2024 **ISSUED FOR 100% DESIGN**

GENERAL NOTES:

1. ELEVATIONS ARE BASED ON GEODETIC DATUM, SURVEY CONTROL MONUMENTS AND SURVEY DATA PROVIDED BY CITY OF VERNON / SEL SURVEYS LTD.
2. ALL MEASUREMENTS AND DIMENSIONS ARE IN METRIC UNLESS NOTED OTHERWISE.
3. HYDRO, TELEPHONE, CABLE AND GAS UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE MOST RECENT SPECIFICATIONS FOR EACH UTILITY.
4. THE EXISTENCE, LOCATION AND ELEVATION OF UTILITIES AND/OR CONCEALED STRUCTURES AT THE PROJECT SITE ARE NOT GUARANTEED BY WSP.
5. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND INVERTS OF ALL EXISTING UTILITIES AND PROPOSED CROSSINGS PRIOR TO CONSTRUCTION. THE CONTRACTOR TO NOTIFY THE CONTRACT ADMINISTRATOR OF ANY DISCREPANCIES OR OMISSIONS AT LEAST 48 PRIOR TO CONSTRUCTION OF THE NEW UNDERGROUND UTILITIES.
6. THE CONTRACTOR SHALL CONDUCT A BC ONE CALL AND CONDUCT LINE LOCATES PRIOR TO CONSTRUCTION. ALL APPROPRIATE PARTIES SHALL BE NOTIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. PARTIES INCLUDE AND ARE NOT LIMITED TO THE CITY OF VERNON, REGIONAL DISTRICT OF NORTH OKANAGAN (RDNO), BC HYDRO, TELUS, SHAW CABLE, FORTIS BC.
7. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS, IF REQUIRED, FOR THE INSPECTION OF ALL REQUIRED UTILITY CONNECTIONS.
9. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE CITY OF VERNON AND ALL OTHER JURISDICTIONS PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO ALL RESIDENTS AFFECTED BY CONSTRUCTION AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. COPIES OF THE NOTICE SHALL BE PROVIDED TO THE CONTRACT ADMINISTRATOR.
11. THE CONTRACTOR SHALL ADJUST AND/OR RESET ALL EXISTING SURFACE FEATURES, SUCH AS MANHOLE LIDS/RIMS, VALVE BOXES, UTILITY BOXES, WATER VALVES, INSPECTION CHAMBER'S ETC. WITHIN THE WORKING AREA TO FINISH GRADE.
12. CONTRACTOR TO ADVISE THE CONTRACT ADMINISTRATOR TO INSPECT PRIOR TO START OF ROAD BASE AND SUB BASE COURSES.
13. CONTRACTOR TO ADVISE THE CONTRACT ADMINISTRATOR TO INSPECT PRIOR TO BACKFILL OF ALL UNDERGROUND SERVICES.
14. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT DOCUMENTS AND ALL SPECIFICATIONS.
15. THE CONTRACTOR SHALL VERIFY THAT ALL PROPOSED CURB AND SIDEWALK ELEVATIONS ACHIEVE POSITIVE DRAINAGE.
16. CLEAR AND GRUB WITHIN CONSTRUCTION LIMITS AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
17. CONTRACTOR TO TOPSOIL AND HYDROSEED DISTURBED AREAS AS DIRECTED BY THE CONTRACT ADMINISTRATOR.
18. WHERE EXISTING SERVICES ARE TO BE ABANDONED, THE CONTRACT ADMINISTRATOR OR HIS DESIGNATED SHALL BE PRESENT DURING THE DECOMMISSIONING WORK, AND SHALL COMPLETE A SERVICE DISCONNECT RECORD SHEET.
19. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE STANDARDS AND SPECIFICATIONS IN ORDER OF PRECEDENCE:
    - 19.1. AS PER SUPPLEMENTARY SPECIFICATIONS
    - 19.2. AS DETAILED WITHIN THIS DRAWING SET
    - 19.3. CITY OF VERNON BYLAW 3843, SUPPLEMENTARY SPECIFICATIONS AND DETAIL DRAWINGS
    - 19.4. MMCD 2019 EDITION STANDARDS AND SPECIFICATIONS
    - 19.5. MOTI 2012 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION
20. THE CONTRACTOR IS TO COMPLETE ALL TIE-INS AND DISCONNECTS FOR RDNO WATER, CITY SEWER AND DRAINAGE SYSTEMS IN THE PRESENCE OF CITY PERSONNEL. THE CONTRACTOR IS TO COORDINATE THIS WITH THE UTILITY SERVICEMAN AT LEAST TWO FULL WORKING DAYS PRIOR TO SCHEDULING. FOR WATER TIE-INS, PRIOR APPROVAL IS REQUIRED AND FROM THE WATER UTILITY ENGINEERING TECHNOLOGIST TO CONFIRM SUCCESSFUL PRESSURE TESTING, CHLORINATION AND FLUSHING.

SILT AND EROSION CONTROL PLAN:

1. CONTRACTOR SHALL INSTALL SEDIMENT TRAPS IN ALL CATCH BASINS SEDIMENT MAY FLOW TO FROM THE SITE OR AS DIRECTED BY THE CONTRACT ADMINSTRATOR.
2. THE CONTRACTOR SHALL MONITOR THE STATUS OF THE SITE AND THE SILT AND EROSION CONTROL MEASURES. ANY MAINTENANCE REQUIRED TO ANY OF THE SILT AND EROSION CONTROL FEATURES TO BE CONDUCTED IMMEDIATELY.

GENERAL REMOVAL NOTES:

1. REMOVE EXISTING CURB AND GUTTER, ASPHALT AND ROAD STRUCTURE AS SHOWN ON THE DRAWINGS. DISPOSE OFFSITE.
2. JUNCTION BOXES, MANHOLES, AND OTHER APPURTENANCES TO BE PROTECTED AND ADJUSTED TO FINISH GROUND ELEVATION
3. REMOVE AND DISPOSE EXISTING CATCH BASINS AND MANHOLES AS SHOWN ON DRAWINGS.
4. EXISTING SANITARY MAIN TO BE CAPPED AND ABANDONED, REMOVE AS NECESSARY TO FACILITATE INSTALLATION OF PROPOSED WORKS.
5. POWER POLES AND GUYED WIRES TO BE PROTECTED DURING CONSTRUCTION.
6. EXISTING SANITARY AND WATER UNDER RAILWAY TO BE CAPPED OUTSIDE OF CN ROW AND FILLED WITH CONCRETE OR APPROVED EQUIVALENT.

ROADWORKS SPECIFIC NOTES:

1. ALL NEW PAVEMENT INTERFACE SHALL HAVE CLEAN AND STRAIGHT SAWCUT.
2. CURB AND GUTTER TO BE AS PER MMCD STANDARD DRAWING C4. UNLESS OTHERWISE NOTED.
3. PAVEMENT STRUCTURE TO BE IN ACCORDANCE WITH GEOTECHNICAL REPORT PREPARED BY FLETCHER PAINE ASSOCIATES LTD. DATED SEPTEMBER 30, 2021, AS FOLLOWS;

ROADS:

SURFACE COURSE HOT MIX ASPHALT	75mm
25mm MINUS CRUSHED GRANULAR BASE COURSE	100mm
75mm MINUS CRUSHED GRANULAR SUBBASE COURSE	400mm
NILEX TYPE 1 BIAXIAL GEOGRID (OR APPROVED EQUIVALENT)	

STORM SEWER SPECIFIC NOTES:

1. UTILITY TRENCH AS PER CITY OF MMCD DRAWING G4 AND WORKSAFE BC STANDARDS.
2. STORM SEWER INSTALLATION AS PER THE CITY OF VERNON AND MMCD STANDARDS AND SPECIFICATIONS.
3. MANHOLES TO BE 1050mm DIA. UNLESS OTHERWISE NOTED AND AS PER MMCD STANDARD DRAWING S1.
4. MANHOLE FRAME AND COVER AS PER MMCD.
5. STANDARD MANHOLE CONNECTION DETAILS AS PER MMCD STANDARD DRAWINGS S2
6. CATCH BASINS SHALL BE SIDE INLET AS PER MMCD STANDARD AND SPECIFICATIONS (DOBNEY B-39 OR APPROVED EQUIVALENT).
7. ALL CATCH BASIN LEADS SHALL BE 200mmØ PVC SDR35 SEWER PIPE AT 2.0% MINIMUM UNLESS OTHERWISE NOTED.
8. ALL PROPOSED PIPE CONNECTIONS TO STRUCTURES (MANHOLES, CATCHBASINS) SHALL BE CONSTRUCTED WITH A FLEXIBLE JOINT.
9. ALL CATCH BASINS TO BE PROVIDED WITH A 600mm SUMP.
10. ALL STORM SERVICES SHALL BE PVC SDR35 SEWER PIPE AND AS PER MMCD STANDARD DRAWING S8.
11. ALL PIPE DIMENSIONS ARE 2D AND SHOWN FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
12. PIPE BENDS TO BE COMPLETED BY JOINT DEFLECTION OR FITTINGS ONLY. NO PIPE BENDING.
13. ALL EXISTING CATCH BASIN'S TO BE REMOVED AND DISPOSED OF WHERE NOTED ON DRAWINGS. CATCH BASIN LEADS ARE TO BE DECOMMISSIONED WHERE CATCH BASIN'S ARE REMOVED.
14. ALL STORM MAINS SHALL BE PVC SDR35 SEWER PIPE UNLESS OTHERWISE NOTED .

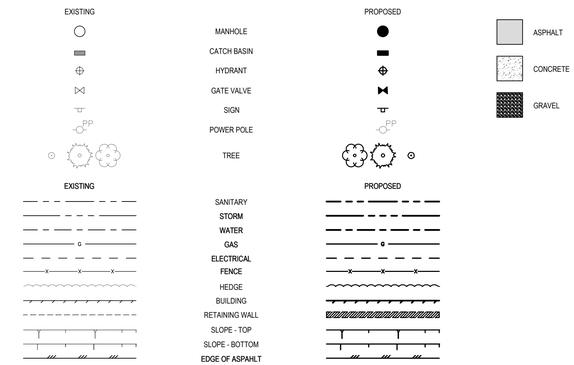
WATER SYSTEM SPECIFIC NOTES:

1. TRENCH AS PER MMCD STANDARD DRAWING G4 AND WORKSAFE BC STANDARDS.
2. WATER MAIN INSTALLATION AS PER MMCD AND THE REGIONAL DISTRICT OF NORTH OKANAGAN SPECIFICATIONS
3. VALVES AS PER MMCD STANDARD DRAWING W3.
4. WATER SERVICE CONNECTIONS AS PER MMCD STANDARD DRAWINGS W2a AS MODIFIED BY REGIONAL DISTRICT OF NORTH OKANAGAN BYLAW NO. 2650.
5. ALL WATER APPURTENANCES TO MATCH FINISHED GROUND ELEVATIONS.
6. ALL NEW PVC WATER MAIN PIPES TO BE PVC CLASS 150 DR 18 AWWA C900.
7. EXISTING WATER MAIN DEPTHS ARE ASSUMED AND TO BE CONFIRMED BY CONTRACTOR PRIOR TO CONSTRUCTION.
8. WATER SERVICES TO BE 25mm I.D. MINIMUM MUNICIPEX PE, COPPER OR CLASS 200 SDR9 PE. UNLESS OTHERWISE NOTED c/w NEW CURB STOPS, STAINLESS STEEL STINGERS AND RAVEN BOXES.
9. ALL WATER MAIN JOINTS TO BE WRAPPED WITH "CANUSA WRAP" OR APPROVED EQUAL WHEN CLEAR SEPARATION FROM STORM AND SANITARY MAINS IS LESS THAN 3.0m HORIZONTAL AND/OR 0.5m VERTICAL.
10. ALL WATER MAIN METALLIC FIXTURES TO BE PRIMED AND TAPED ACCORDING TO MANUFACTURES INSTRUCTIONS.
11. WHERE MINIMUM PIPE COVER IS NOT ACHIEVABLE PIPE TO BE INSULATED WITH MIN 50mm OF STYROFOAM HI-40 RIGID INSULATION OR APPROVED EQUAL. CENTER 1.2m WIDE SHEET ABOVE PIPE, CONTRACT ADMINISTRATOR APPROVAL REQUIRED.
12. CAST-IN-PLACE THRUST BLOCKS TO BE USED AT ALL FITTINGS AND DESIGNED IN ACCORDANCE WITH AWWA MANUAL M11 AS PER DISTRICT OF NORTH OKANAGAN BYLAW NO. 2650.
13. ALL WATER MAIN FLUSHING, DISINFECTION, PRESSURE TESTING AND MICROBIOLOGICAL TESTING TO CONFORM WITH ALL MMCD AND AWWA STANDARDS, AND DISTRICT OF NORTH OKANAGAN BYLAW NO. 2650.
14. ALL NEW CAPS FOR WATERMAIN TO BE MECHANICAL PLUG END CAP.
15. ALL ABANDONED WATER VALVES TO BE BURIED, RETURN VALVE LID TO DISTRICT YARDS.
16. ABANDONED WATER SERVICES TO BE CAPPED.
17. TRACER WIRE REQUIRED ON SERVICES THAT ARE NON PERPENDICULAR TO PROPERTY LINE.
18. WATERMAIN CASING PIPE SHALL BE AS SHOWN ON DETAILS SHEET.

SANITARY SEWER SPECIFIC NOTES:

1. UTILITY TRENCH AS PER MMCD STANDARD DRAWING G4 AND WORKSAFE BC STANDARDS.
2. ALL GRAVITY SANITARY MAINS SHALL BE PVC SDR35 SEWER PIPE.
3. ALL SANITARY SERVICES SHALL BE PVC SDR28 SEWER PIPE AND AS PER MMCD STANDARD DRAWING S8
4. MANHOLES TO BE 1050mm DIA. UNLESS OTHERWISE NOTED AND AS PER MMCD STANDARD DRAWINGS S1.
5. MANHOLE FRAME AND COVER AS PER MMCD.
6. STANDARD MANHOLE CONNECTION DETAILS AS PER MMCD STANDARD DRAWING S2.
7. INSPECTION CHAMBER, SHALL BE AS SHOWN ON DETAILS SHEET.
8. ALL PIPE DIMENSIONS ARE 2D AND SHOWN FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
9. SANITARY CASING PIPE SHALL BE AS SHOWN ON DETAILS SHEET.

LEGEND:



TRAFFIC MANAGEMENT AND CONTROL:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL 24 HOURS PER DAY FOR THE DURATION OF CONSTRUCTION. ALL TRAFFIC MANAGEMENT PLANS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR AND THE CITY OF VERNON FOR APPROVAL. ALL TRAFFIC MANAGEMENT PLANS SHALL BE APPROVED PRIOR TO CONSTRUCTION.
2. ALL TRAFFIC MANAGEMENT PLANS AND TEMPORARY SIGNAGE SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENT EDITION OF THE BC MOTI MANUAL OF STANDARD SIGNS AND PAVEMENT MARKINGS, THE TAC MANUAL OF UNIFORM CONTROL DEVICES FOR CANADA AND THE BC MOTI TRAFFIC CONTROL MANUAL FOR WORK ON ROADWAYS.
3. OK SPRINGS BREWERY REQUIRES ACCESS TO ALL LOADING BAYS AND THEIR YARD DURING CONSTRUCTION. THE CONTRACT ADMINISTRATOR MUST APPROVE THE TIME PERIOD FOR CONSTRUCTION THAT WILL RESTRICT ACCESS TO THESE AREAS.

CN ROW WORKS:

1. UTILITY CROSSINGS SHALL BE COMPLETED AS PER NOTES ON X102 & X103.
2. ALL RAILWAY WORKS TO BE COMPLETED BY CN. CONTRACTOR TO COORDINATE WITH CN FOR ALL WORKS WITHIN CN ROW.
3. CONTRACTOR TO ADHERE TO ALL CN AND TRANSPORT CANADA SAFETY GUIDELINES AND REGULATIONS.
4. CONTRACTOR TO CONSTRUCT AS PER CN AND TRANSPORT CANADA SPECIFICATIONS.

PAVEMENT MARKING AND SIGNAGE SPECIFIC NOTES:

1. ALL STOP BARS, DIRECTIONAL ARROWS AND CROSS WALKS SHALL BE THERMOPLASTIC.
2. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE (LATEST) MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR CANADA (2014) AND TO GRADE CROSSING REGULATIONS/GUIDELINES.
3. PROTECT EXISTING SIGNS UNLESS OTHERWISE NOTED.

SCOPE OF WORK NOTES:

1. ASPHALT/CURB REMOVAL, COMMON EXCAVATION AND DISPOSE OFFSITE AS SHOWN ON DRAWINGS
2. SUBGRADE PREPARATION, GEOGRID, SUBBASE GRAVELS, BASE GRAVELS AND ASPHALT.
3. SUPPLY AND INSTALL CONCRETE SIDEWALKS, CURBS AND DRIVEWAY/SIDEWALK LETDOWN COMPLETE WITH REQUIRED GRAVELS AS PER STANDARD DETAILS.
4. SUPPLY AND INSTALL SANITARY MAIN AND MANHOLES. RECONNECT EXISTING SERVICES.
5. SUPPLY AND INSTALL STORM MAIN, CATCH BASINS, MANHOLES AND CATCH BASIN LEADS. RE-CONNECT EXISTING SERVICES.
6. SUPPLY AND INSTALL WATERMAIN, VALVES, TEES, ETC. RECONNECT EXISTING SERVICES
7. SUPPLY AND INSTALL SANITARY MAIN CASING PIPE AND WATERMAIN CASING PIPE UNDER RAILWAY. AS PER GEOTECHNICAL REPORT BY FLETCHER PAINE LTD. DATED JUNE 26, 2024.
8. SANITARY BYPASS PUMPING REQUIRED DURING INSTALLATION OF SEWER CASING PIPE.
9. CONTRACTOR RESPONSIBLE TO COORDINATE WORK WITH CN.
10. COMPLETE WORKS IN STAGES TO FACILITATE RAILWAY AND BUSINESS ACCESS REQUIREMENTS.

ISSUE / REVISION INFORMATION

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
2	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

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TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
GENERAL NOTES

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C001

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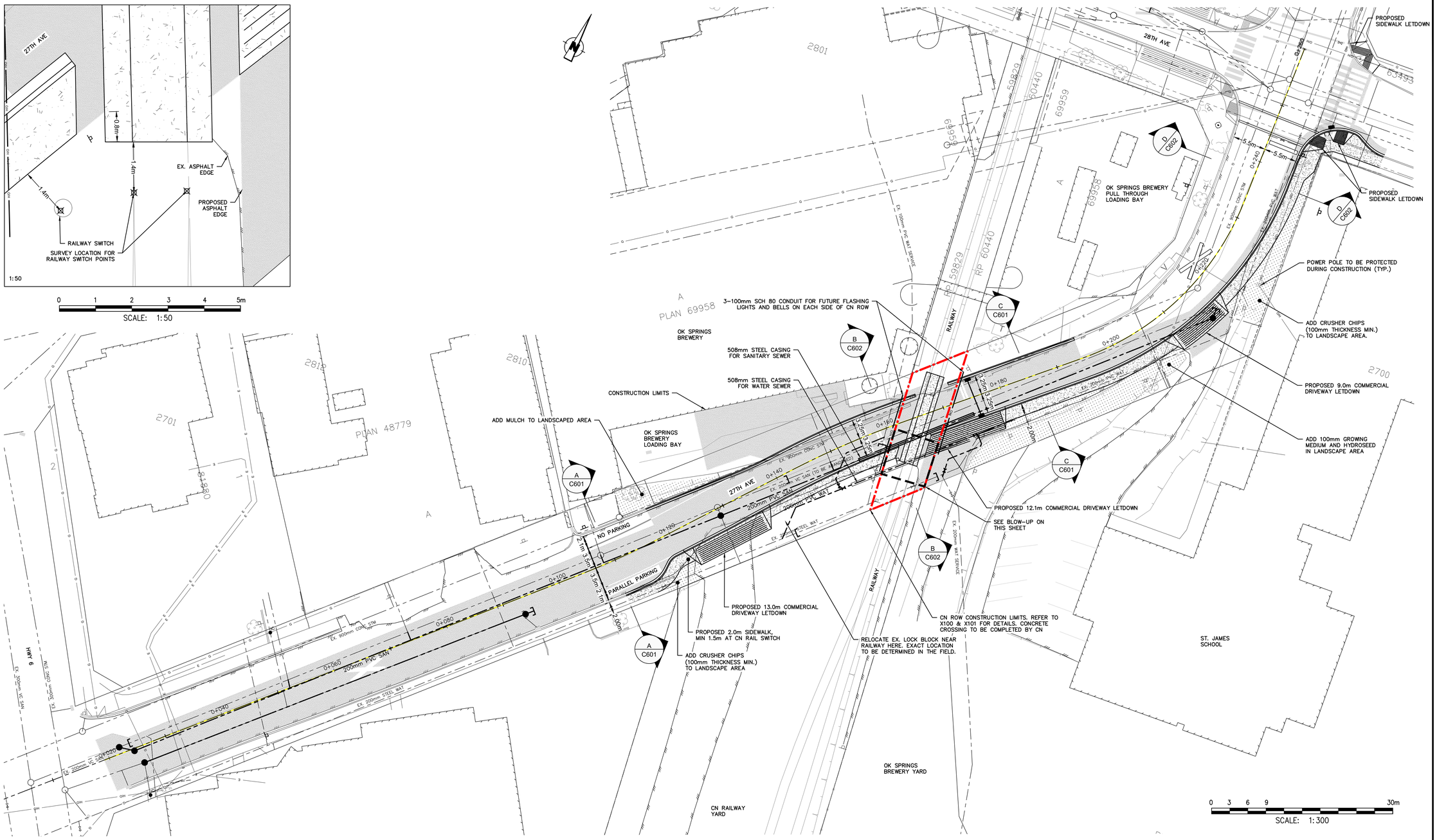

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REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
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2	23/12/19	CE	KU	CE	ISSUED FOR REVIEW
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TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
SITE PLAN

COV PROJECT NUMBER
23-106-INF

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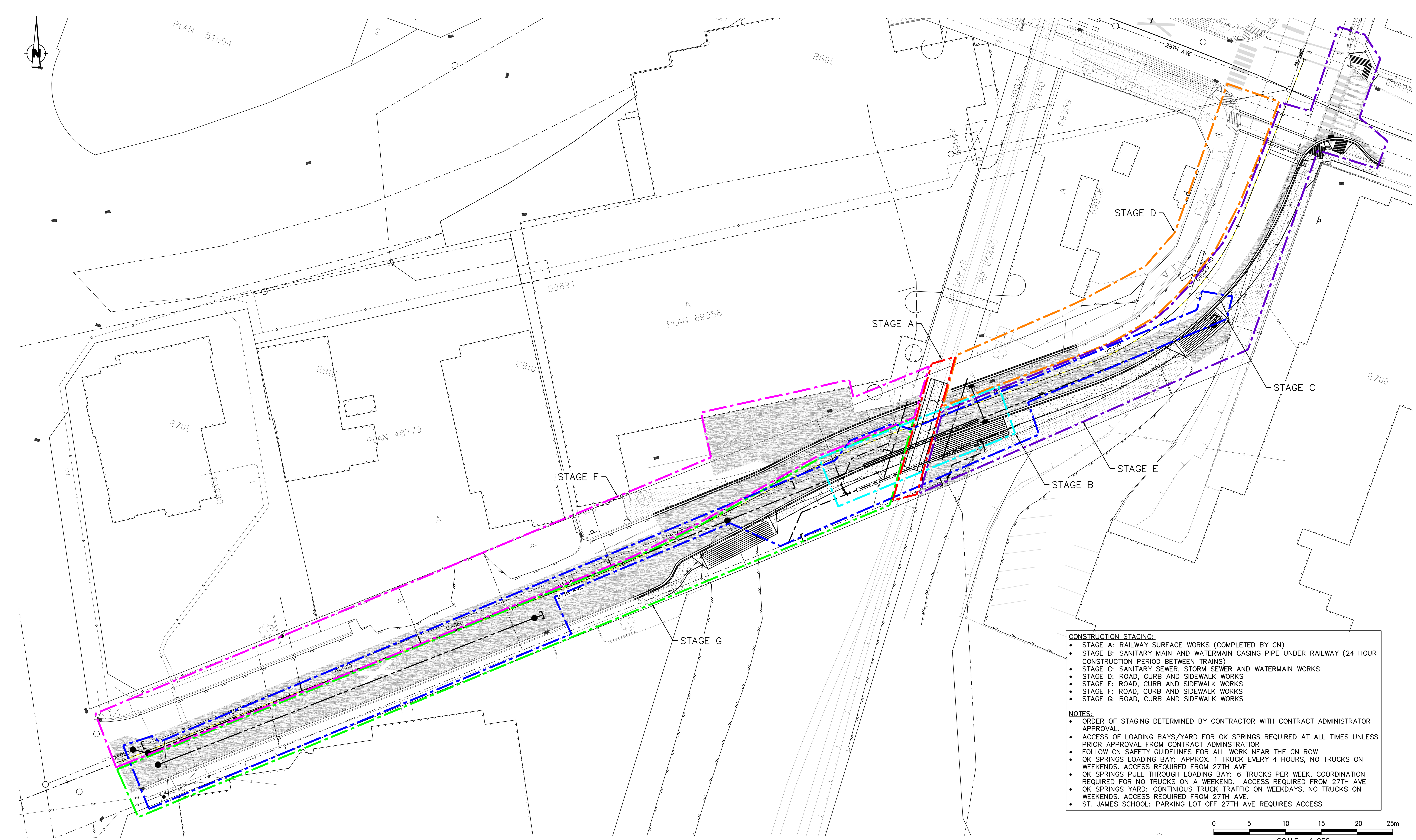
C101



CONSTRUCTION STAGING:

- STAGE A: RAILWAY SURFACE WORKS (COMPLETED BY CN)
- STAGE B: SANITARY MAIN AND WATERMAIN CASING PIPE UNDER RAILWAY (24 HOUR CONSTRUCTION PERIOD BETWEEN TRAINS)
- STAGE C: SANITARY SEWER, STORM SEWER AND WATERMAIN WORKS
- STAGE D: ROAD, CURB AND SIDEWALK WORKS
- STAGE E: ROAD, CURB AND SIDEWALK WORKS
- STAGE F: ROAD, CURB AND SIDEWALK WORKS
- STAGE G: ROAD, CURB AND SIDEWALK WORKS

NOTES:

- ORDER OF STAGING DETERMINED BY CONTRACTOR WITH CONTRACT ADMINISTRATOR APPROVAL.
- ACCESS OF LOADING BAYS/YARD FOR OK SPRINGS REQUIRED AT ALL TIMES UNLESS PRIOR APPROVAL FROM CONTRACT ADMINSTRATIOR
- FOLLOW CN SAFETY GUIDELINES FOR ALL WORK NEAR THE CN ROW
- OK SPRINGS LOADING BAY: APPROX. 1 TRUCK EVERY 4 HOURS, NO TRUCKS ON WEEKENDS. ACCESS REQUIRED FROM 27TH AVE
- OK SPRINGS PULL THROUGH LOADING BAY: 6 TRUCKS PER WEEK, COORDINATION REQUIRED FOR NO TRUCKS ON A WEEKEND. ACCESS REQUIRED FROM 27TH AVE
- OK SPRINGS YARD: CONTINIOUS TRUCK TRAFFIC ON WEEKDAYS, NO TRUCKS ON WEEKENDS. ACCESS REQUIRED FROM 27TH AVE.
- ST. JAMES SCHOOL: PARKING LOT OFF 27TH AVE REQUIRES ACCESS.

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06.11.2024

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TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
CONSTRUCTION STAGING

COV PROJECT NUMBER
23-106-INF

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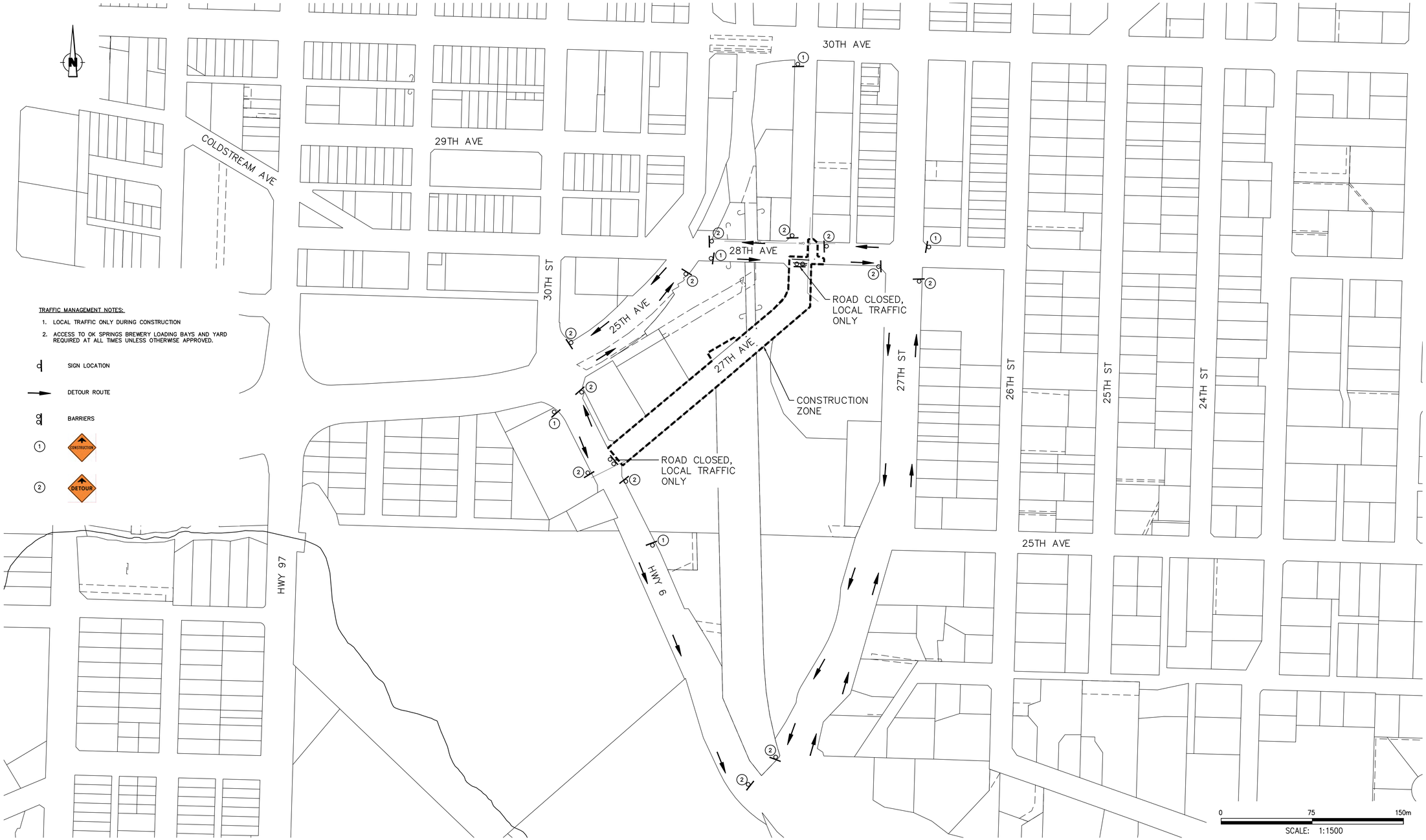
C102



TRAFFIC MANAGEMENT NOTES:

1. LOCAL TRAFFIC ONLY DURING CONSTRUCTION
2. ACCESS TO OK SPRINGS BREWERY LOADING BAYS AND YARD REQUIRED AT ALL TIMES UNLESS OTHERWISE APPROVED.

SIGN LOCATION

DETOUR ROUTE

BARRIERS

1 CONSTRUCTION

2 DETOUR

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CITY OF Vernon

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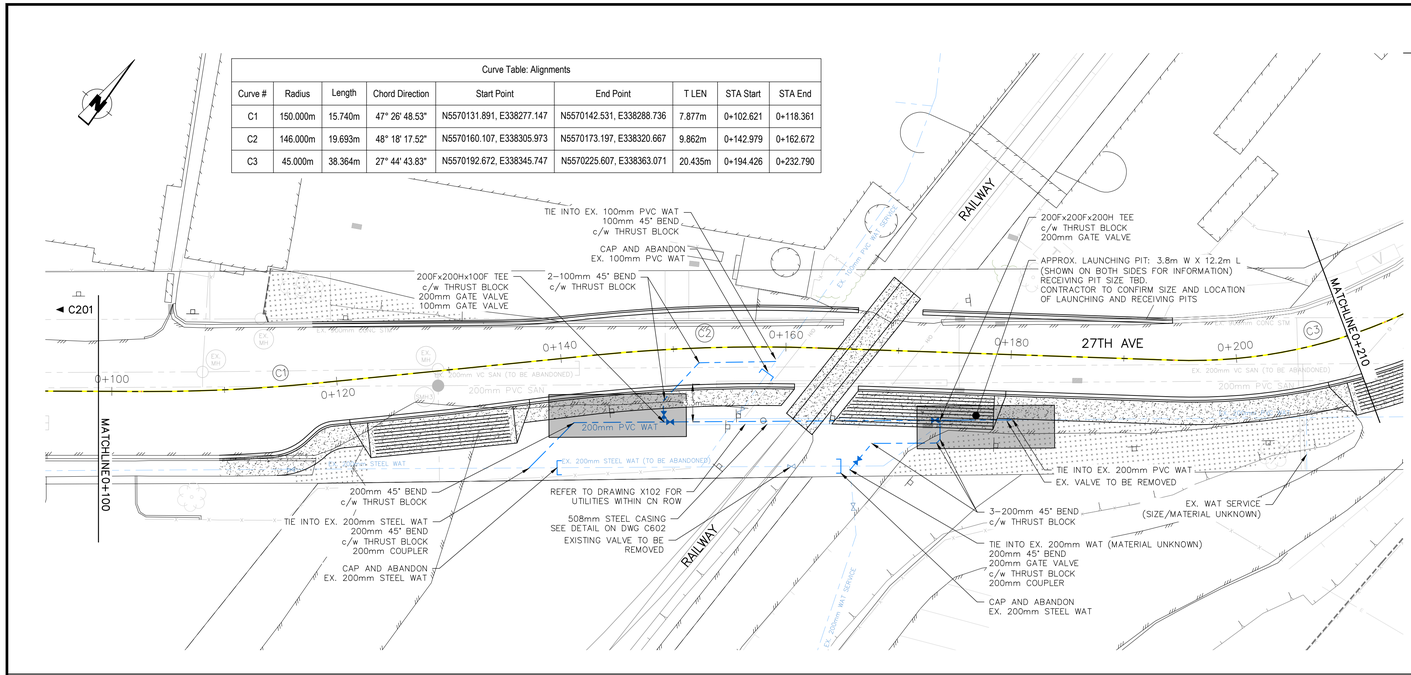
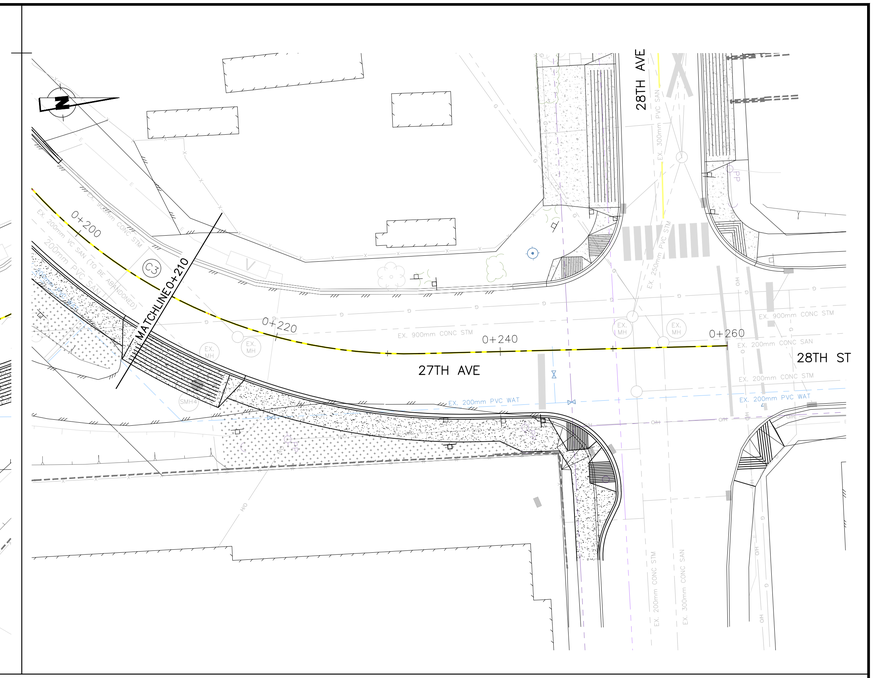
TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
TRAFFIC MANAGEMENT PLAN

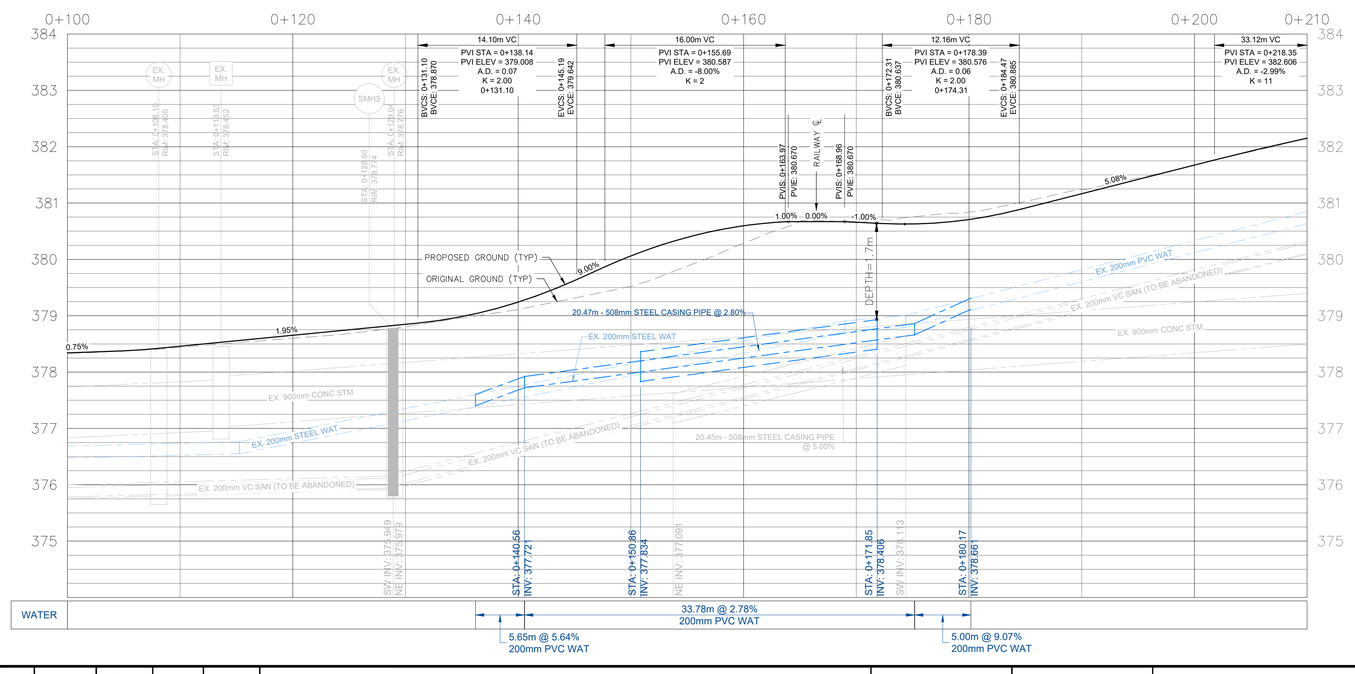
COV PROJECT NUMBER
23-106-INF

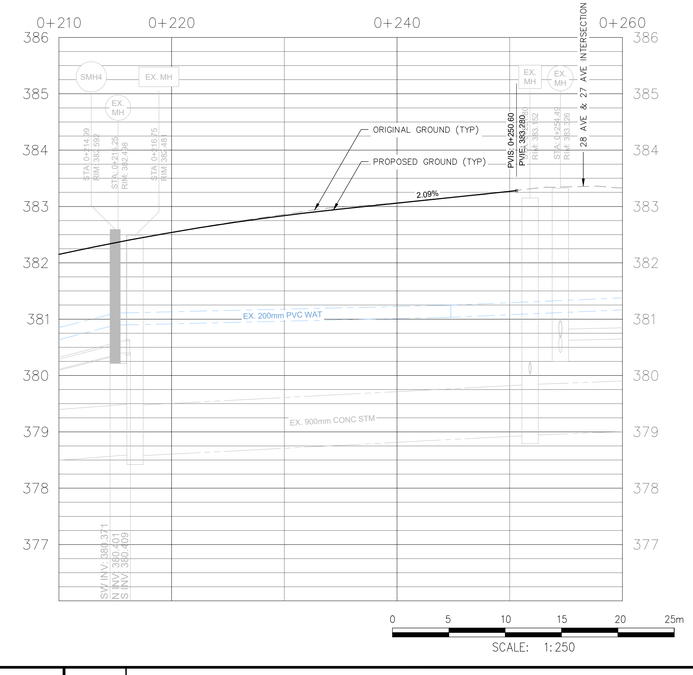
DRAWING NUMBER
C103

Curve Table: Alignments								
Curve #	Radius	Length	Chord Direction	Start Point	End Point	T LEN	STA Start	STA End
C1	150.000m	15.740m	47° 26' 48.53"	N5570131.891, E338277.147	N5570142.531, E338288.736	7.877m	0+102.621	0+118.361
C2	146.000m	19.693m	48° 18' 17.52"	N5570160.107, E338305.973	N5570173.197, E338320.667	9.862m	0+142.979	0+162.672
C3	45.000m	38.364m	27° 44' 43.83"	N5570192.672, E338345.747	N5570225.607, E338363.071	20.435m	0+194.426	0+232.790









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06.11.2024

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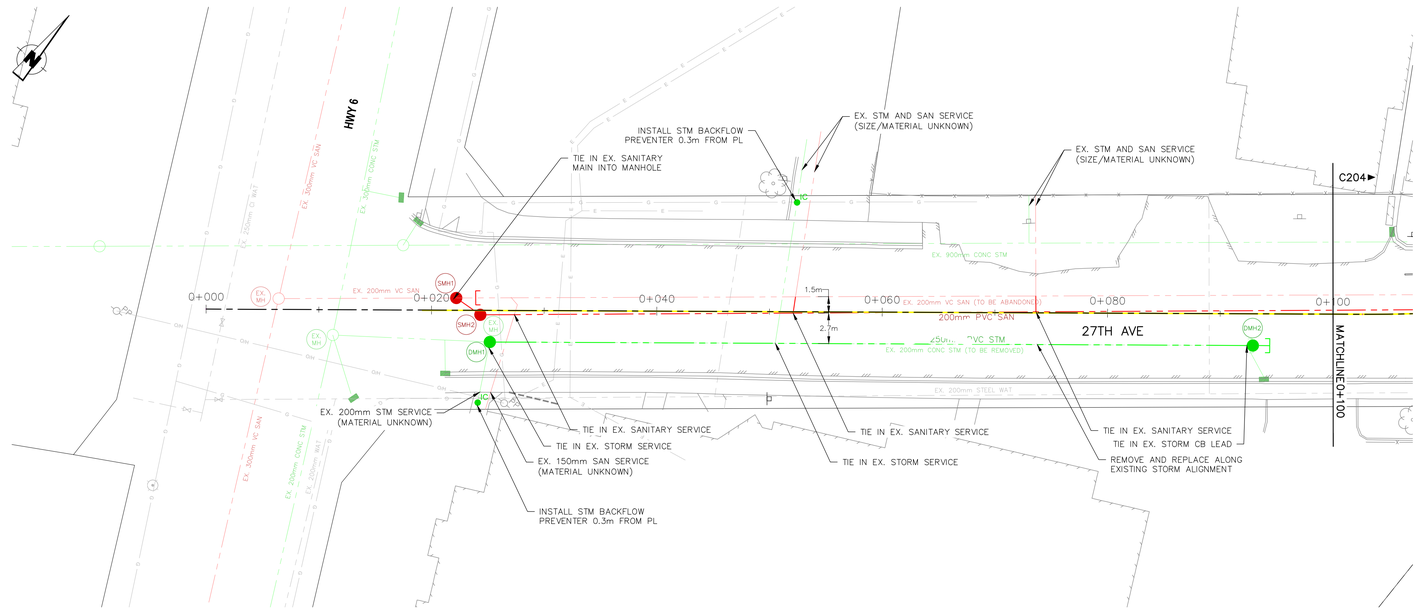
CITY OF Vernon

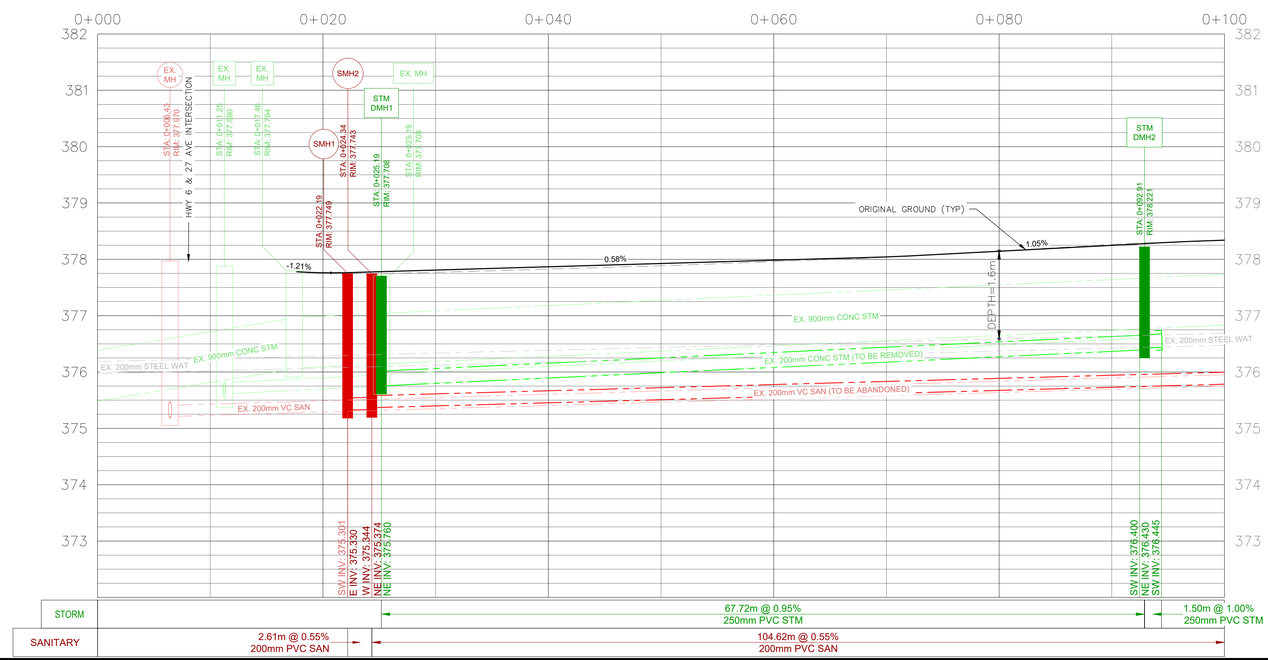
SCALE
H: 1:250
V: 1:50

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
PLAN & PROFILE STA. 0+100 TO 0+260
ROADS & WATER

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C202





0 5 10 15 20 25m

SCALE: 1:250

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06.11.2024

ISSUE / REVISION INFORMATION

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/02/07	CE	KU	CE	ISSUED FOR REVIEW
2	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
3	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
4	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

wsp
700 - 1631 DICKSON AVENUE
KELOWNA BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

CITY OF Vernon

SCALE
H: 1:250
V: 1:50

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
PLAN & PROFILE STA. 0+000 TO 0+100
STORM & SANITARY

COV PROJECT NUMBER
23-106-INF

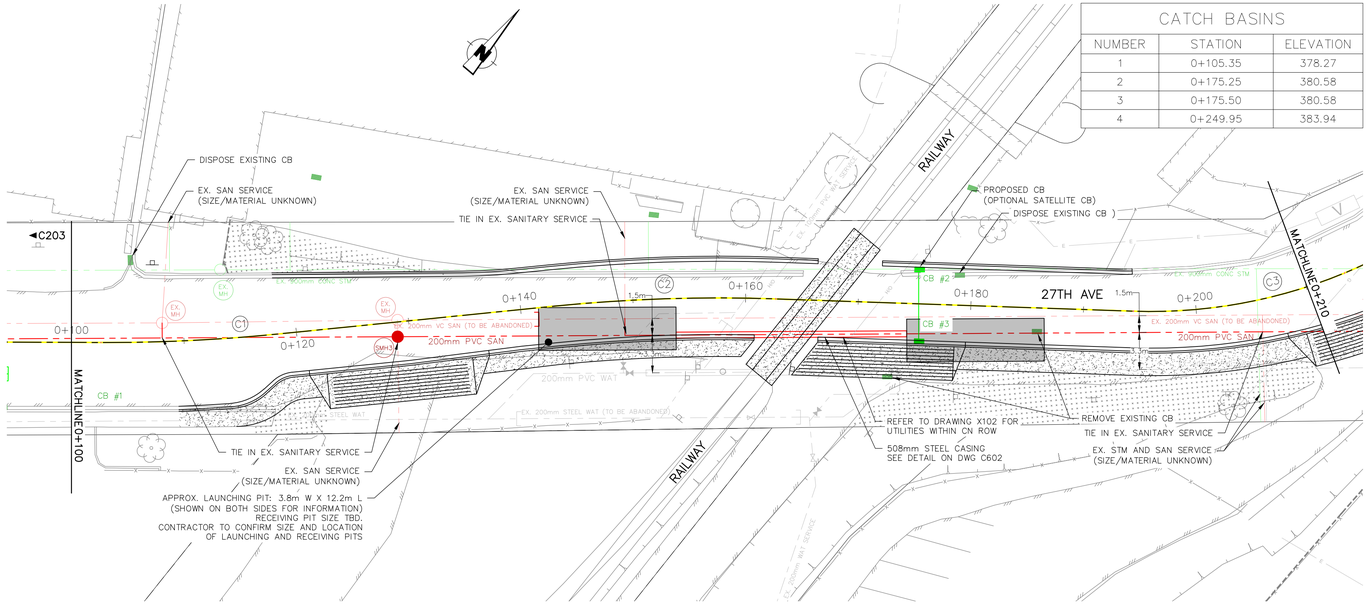
DRAWING NUMBER
C203

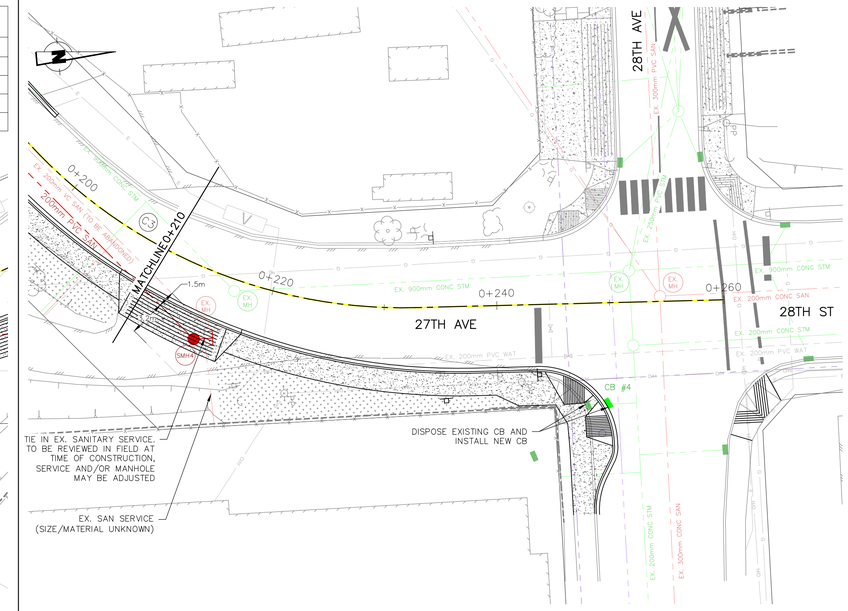
P:\2023\C40017374.8909 – 27th Ave Rail Crossing\05_Technical\3_Cadd\3_Sheets\C40017374.8909-C2-PLAN&PROFILE.dwg

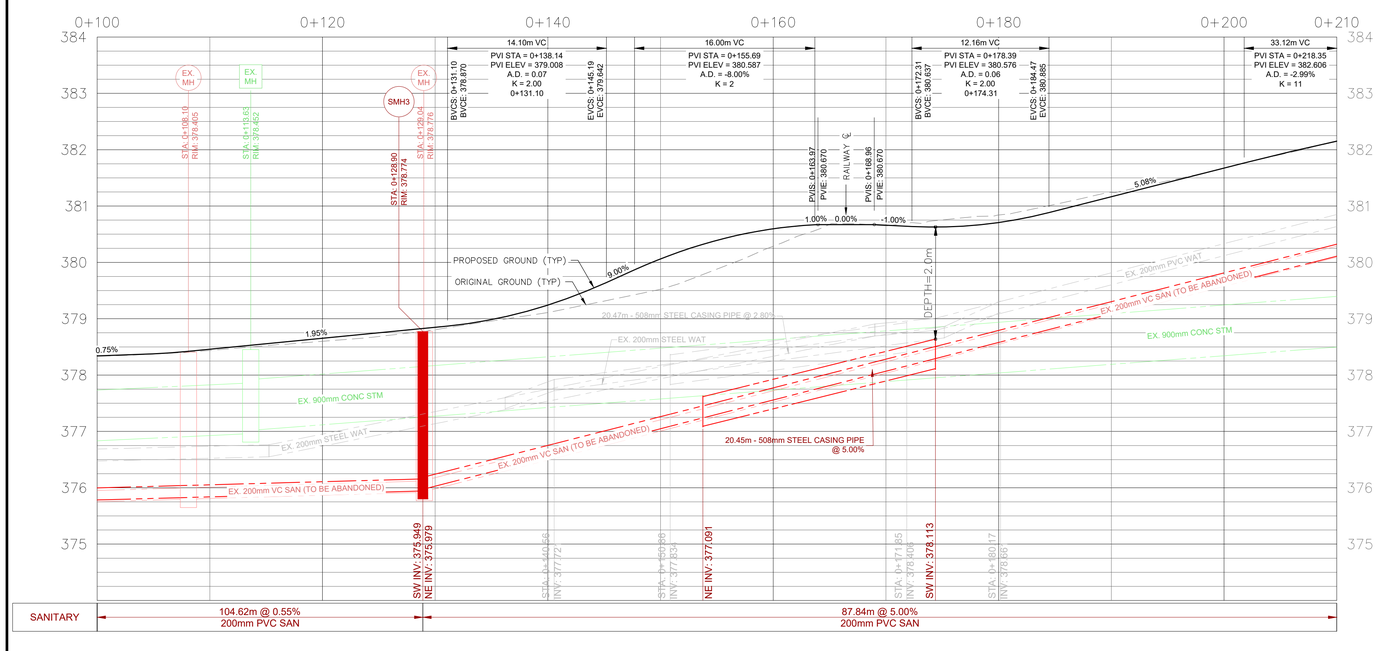
06.11.2024

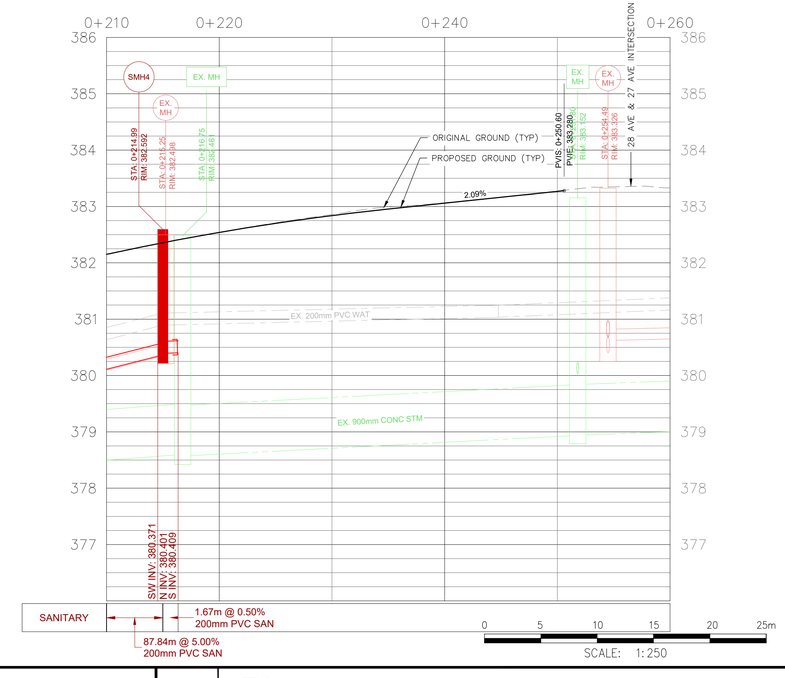
CATCH BASINS

NUMBER	STATION	ELEVATION
1	0+105.35	378.27
2	0+175.25	380.58
3	0+175.50	380.58
4	0+249.95	383.94









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2	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
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4	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

CITY OF Vernon

SCALE
H: 1:250
V: 1:50

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
PLAN & PROFILE STA. 0+100 TO 0+260
STORM & SANITARY

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C204

•378.15	EXISTING SPOT ELEVATION
• 378.18 / 378.16	PROPOSED SPOT ELEVATION / EXISTING SPOT ELEVATION
11.49%	PROPOSED SLOPE

0 1 2 3 4 5 6 7 8 9 10m

SCALE: 1:100

P:\2023\CA0017374.8909 – 27th Ave Rail Crossing\05_Technical\3_Cadd\3_Sheets\CA0017374.8909-C3-GRADING.dwg

06.11.2024

ISSUE / REVISION INFORMATION

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
2	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

wsp
700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

CITY OF Vernon

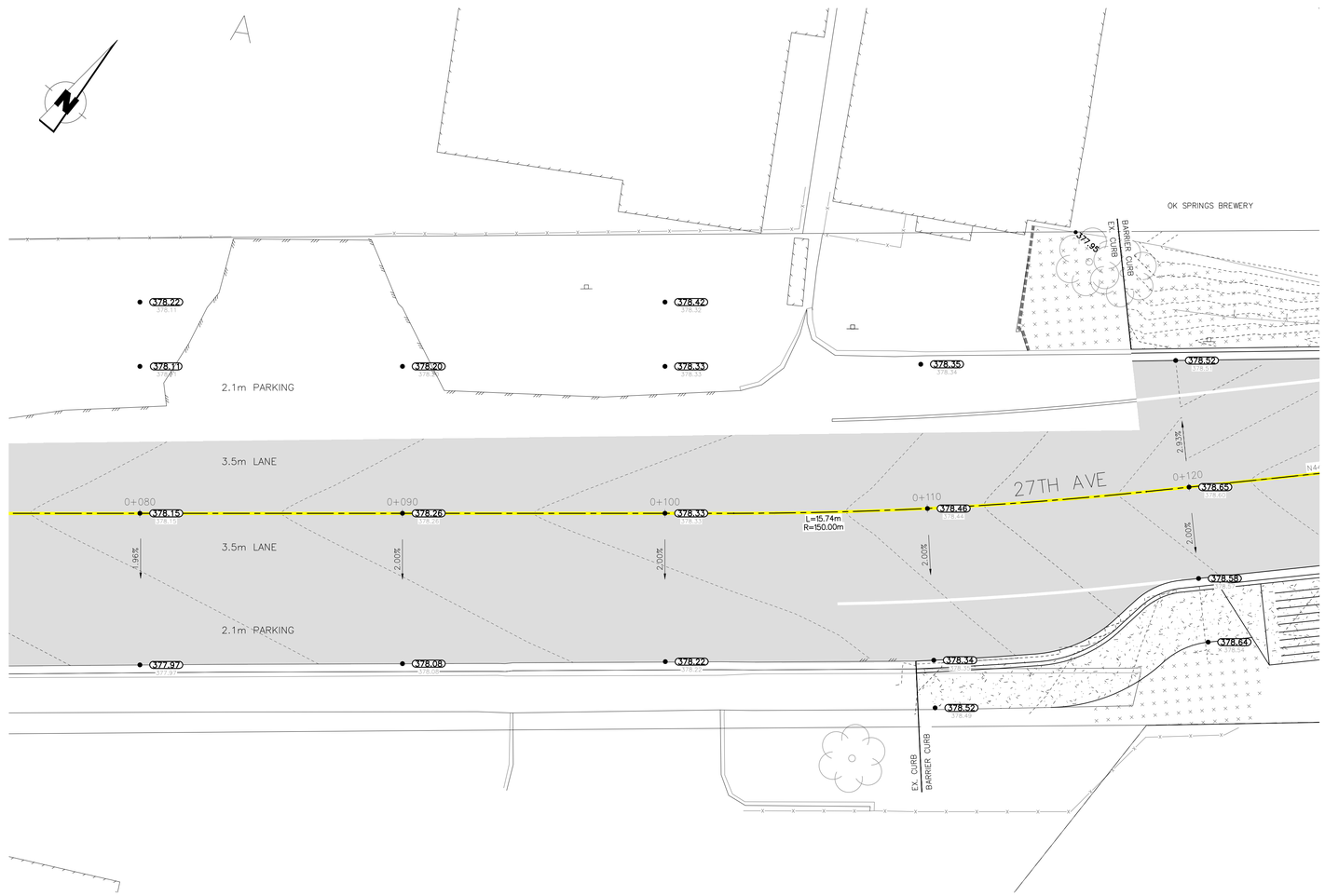
SCALE
H: 1:100
V:

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
GRADING PLAN STA 0+000 TO 0+075

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C301

•378.15	EXISTING SPOT ELEVATION
• 378.18 / 378.14	PROPOSED SPOT ELEVATION / EXISTING SPOT ELEVATION
11.49%	PROPOSED SLOPE



0 1 2 3 4 5 6 7 8 9 10m

SCALE: 1:100

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06.11.2024

ISSUE / REVISION INFORMATION					
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1	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
2	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
4	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

CITY OF Vernon

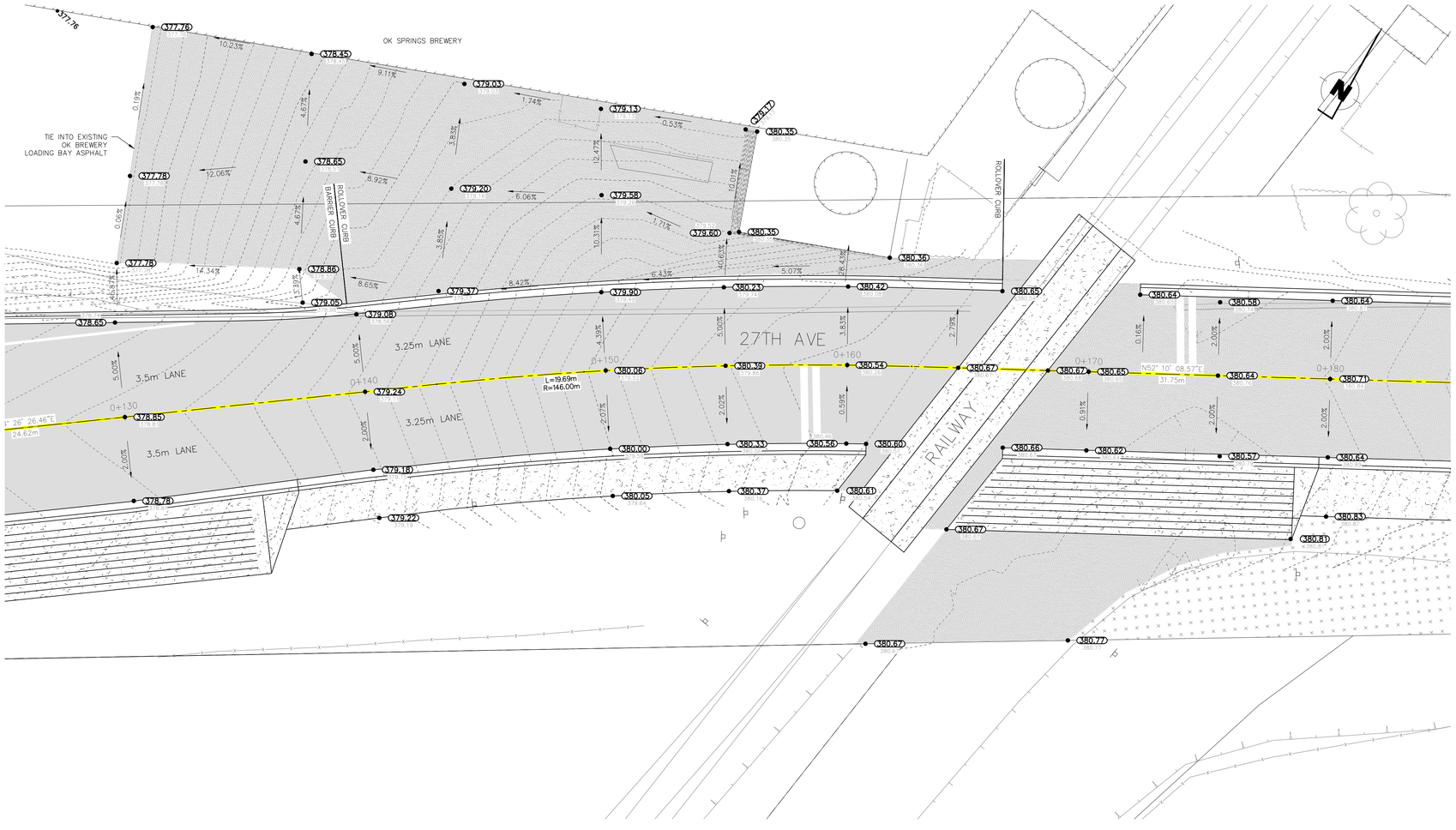
SCALE
H: 1:100
V:

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
GRADING PLAN 0+075 TO 0+125

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C302

•378.15	EXISTING SPOT ELEVATION
• 378.18 / 378.15	PROPOSED SPOT ELEVATION / EXISTING SPOT ELEVATION
11.49%	PROPOSED SLOPE



0 1 2 3 4 5 6 7 8 9 10m

SCALE: 1:100

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
2	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

ISSUE / REVISION INFORMATION

700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

CITY OF Vernon

SCALE
H: 1:100
V:

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
GRADING PLAN STA 0+125 TO 0+185

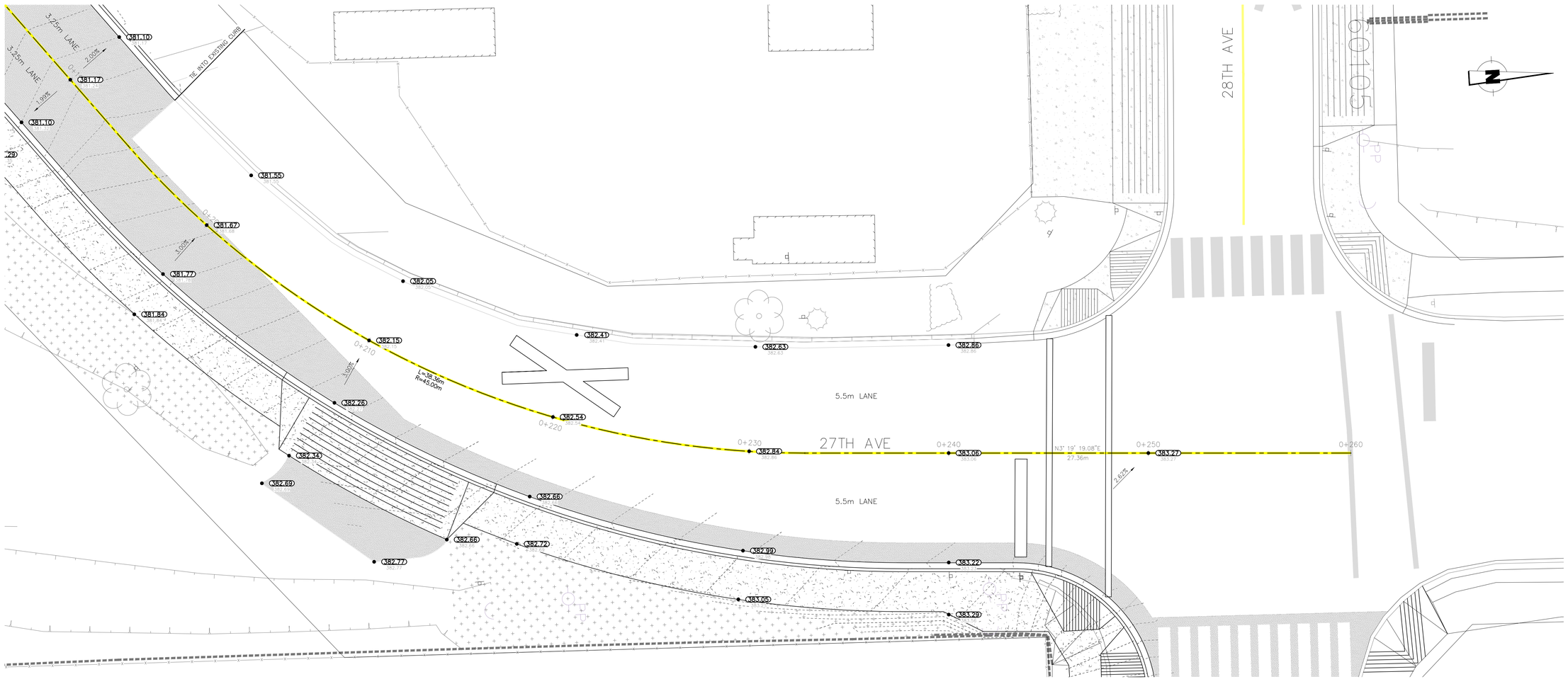
COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C303

P:\2023\C40017374.8909 – 27th Ave Rail Crossing\05_Technical\3_Cad\3_Sheets\C40017374.8909-C3-GRADING.dwg

13.11.2024

•378.15	EXISTING SPOT ELEVATION
• 378.18 / 378.18	PROPOSED SPOT ELEVATION / EXISTING SPOT ELEVATION
11.49%	PROPOSED SLOPE



0 1 2 3 4 5 6 7 8 9 10m

SCALE: 1:100

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06.11.2024

ISSUE / REVISION INFORMATION

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2	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

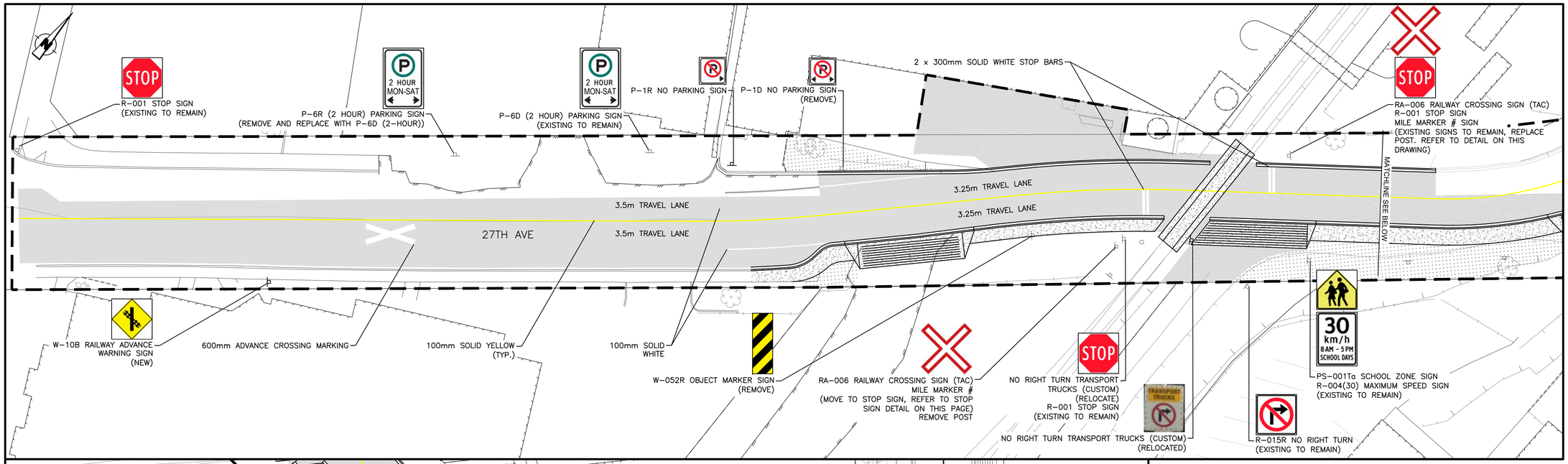
CITY OF Vernon

SCALE
H: 1:100
V:

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
GRADING PLAN STA 0+185 TO 0+260

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C304



NOTES:

1. ALL STOP BARS, DIRECTIONAL ARROWS AND CROSS WALKS SHALL BE THERMOPLASTIC.

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06.11.2024

ISSUE / REVISION INFORMATION

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
2	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

wsp
700 - 1631 DICKSON AVENUE
KELOWNA BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

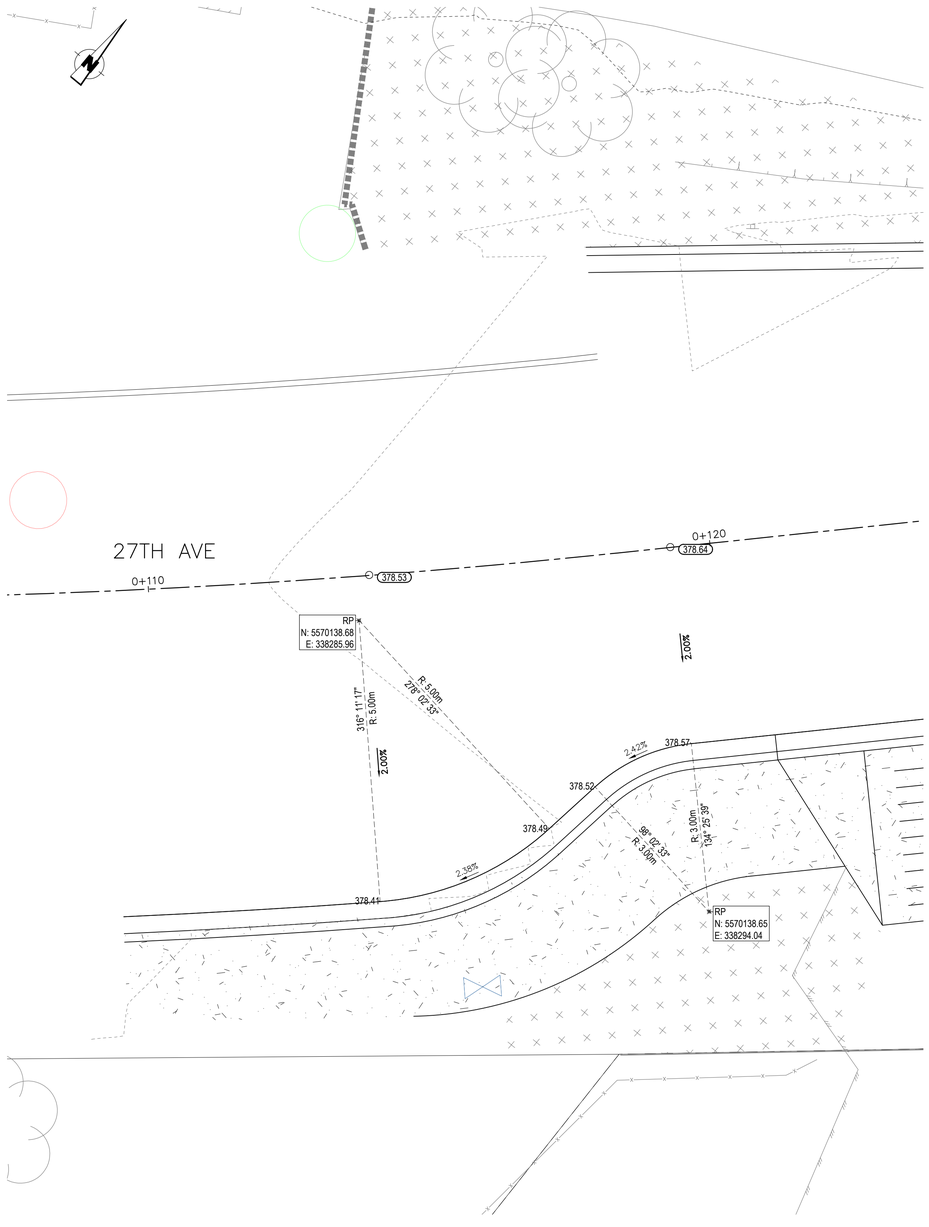
CITY OF Vernon

SCALE
H: 1:250
V:

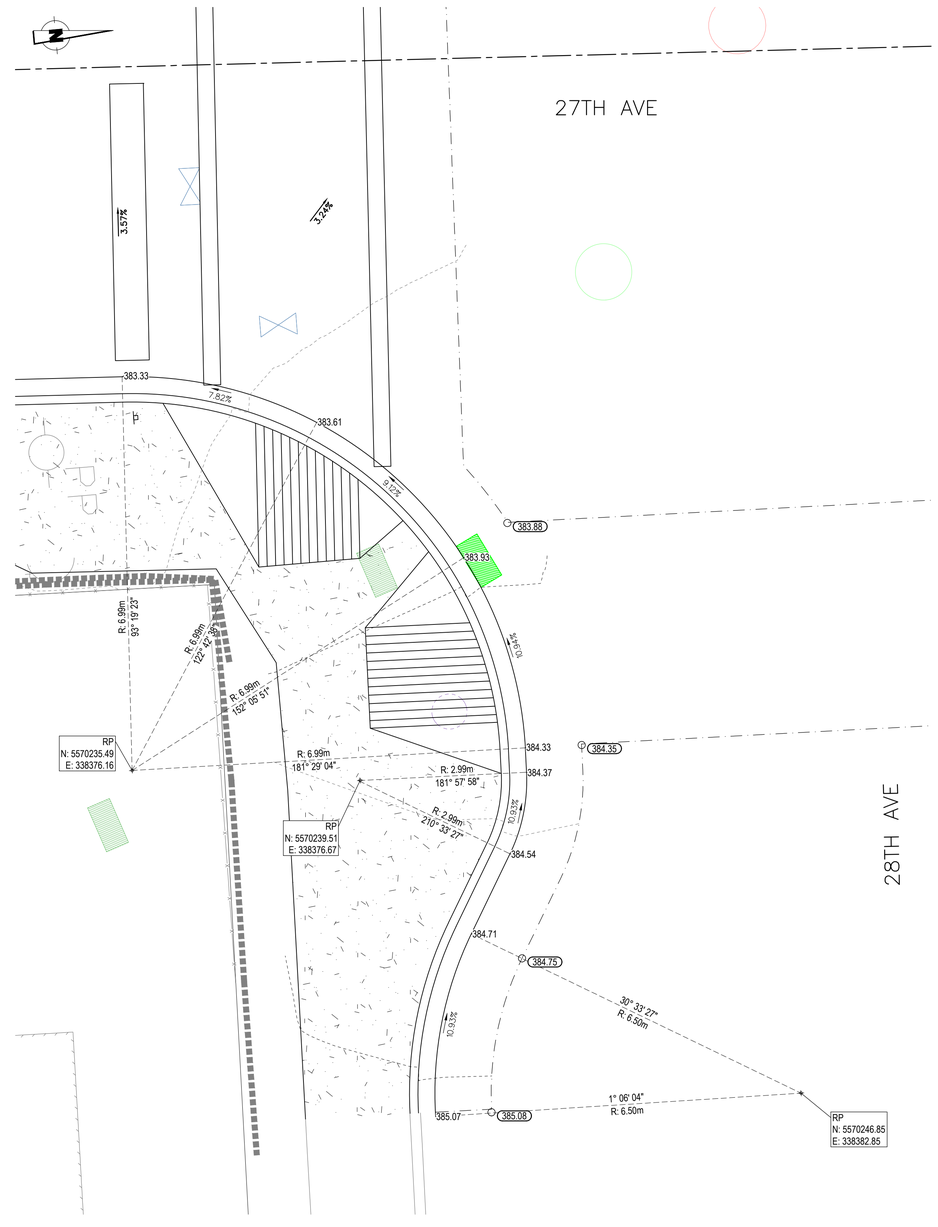
TITLE
27TH AVE RAIL CROSSING UPGRADE
27TH AVE & 28TH AVE
SIGNAGE & PAVEMENT MARKINGS

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C401



A C501 **27TH AVE**
SCALE: 1:50



A C501 **27TH AVE & 28TH AVE (EAST)**
SCALE: 1:50

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06.11.2024

ISSUE / REVISION INFORMATION

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
4	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

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700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

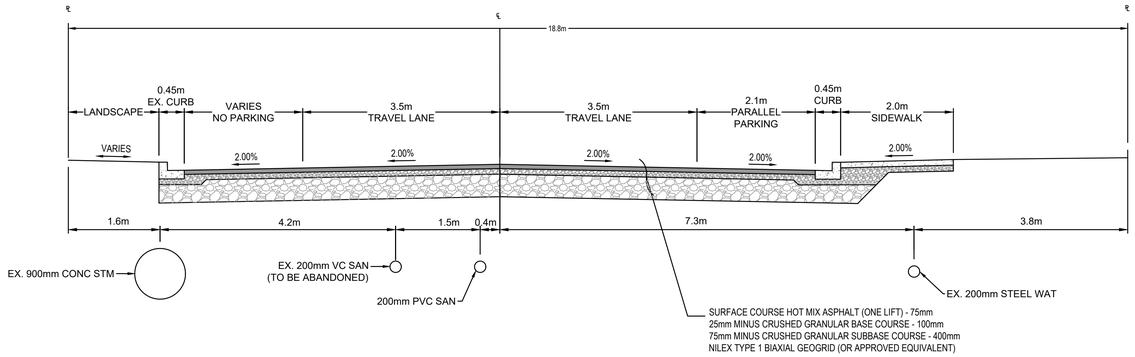
CITY OF Vernon

SCALE
H: 1:50
V:

TITLE
27TH AVE RAIL CROSSING UPGRADE
CURB RETURNS

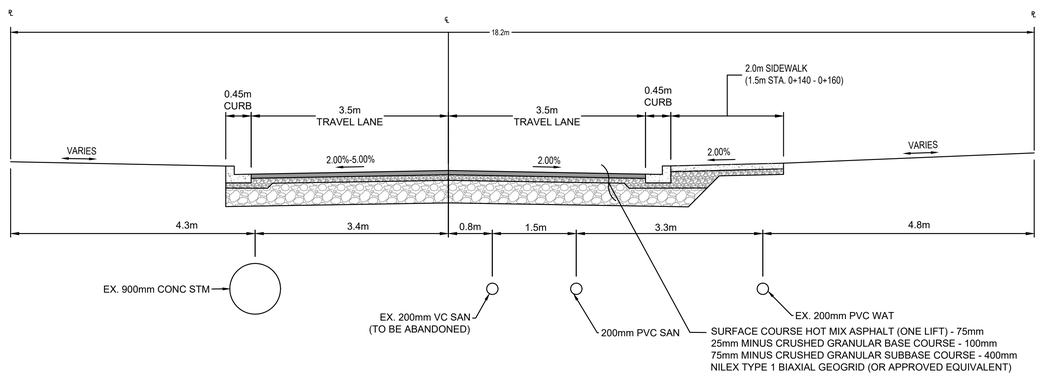
COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C501



A-A / C101 TYPICAL ROAD SECTION WITH PARKING

SCALE: 1:50 STATION 0+105 TO 0+120



C-C / C101 TYPICAL ROAD SECTION

SCALE: 1:50 STATION 0+120 TO 0+135
STATION 0+180 TO 0+195

P:\2023\CA0017374.8909 – 27th Ave Rail Crossing\05_Technical\3_Cadd\3_Sheets\CA0017374.8909-C6-DETAILS.dwg

08.11.2024

ISSUE / REVISION INFORMATION

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
2	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

wsp
700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

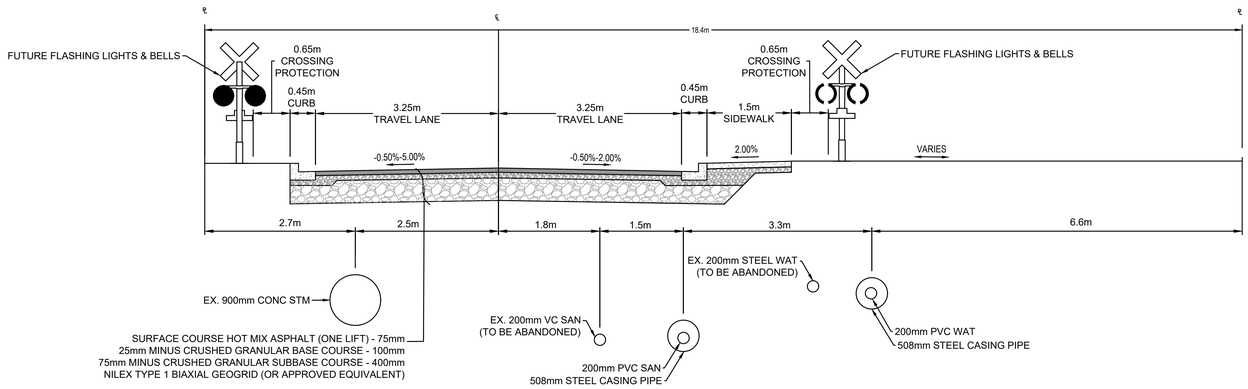
CITY OF Vernon

SCALE
H: AS
V: SHOWN

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
DETAILS – TYPICAL SECTIONS

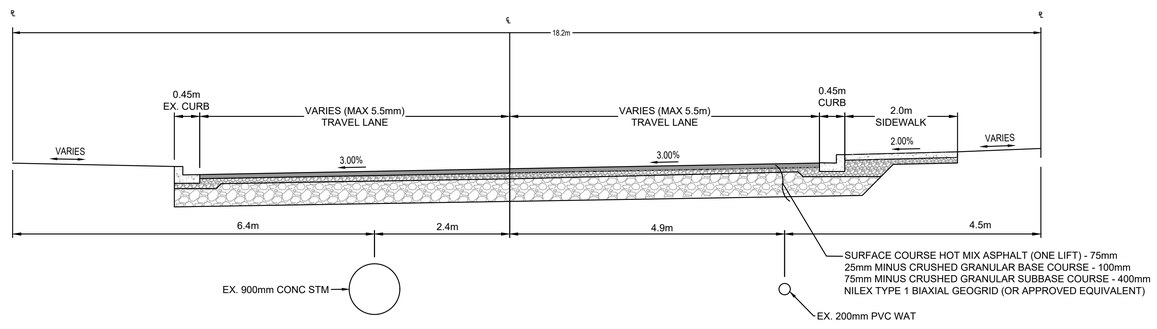
COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C601



B-B / C101 TYPICAL ROAD SECTION

SCALE: 1:50 STATION 0+135 TO 0+180



NOTES:
1) EXISTING ASPHALT TO REMAIN IN CERTAIN AREAS, REFER TO DRAWING C101.

D-D / C101 TYPICAL ROAD SECTION

SCALE: 1:50 STATION 0+195 TO 0+250

P:\2023\CA0017374.8909 – 27th Ave Rail Crossing\05_Technical\3_Cadd\3_Sheets\CA0017374.8909-C6-DETAILS.dwg

08.11.2024

ISSUE / REVISION INFORMATION

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1	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
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3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
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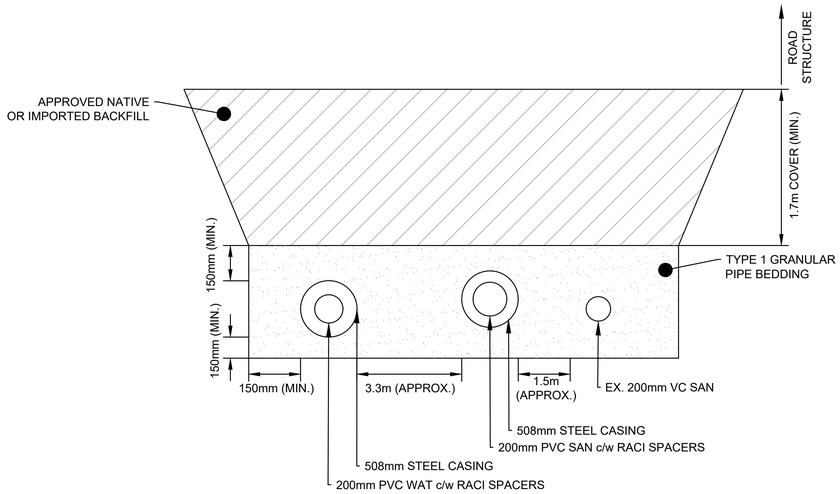
CITY OF Vernon

SCALE
H: AS
V: SHOWN

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
DETAILS – TYPICAL SECTIONS

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C602



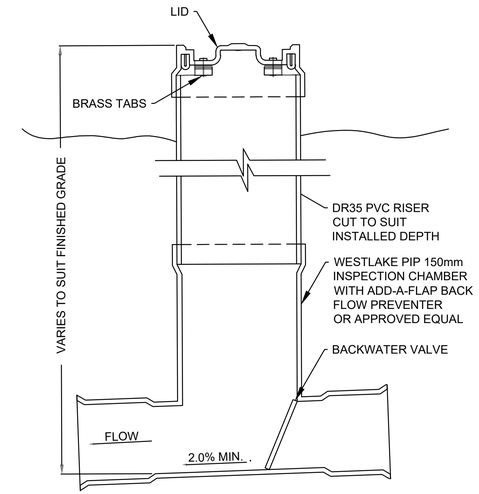
A C603 RAILWAY CROSSING TRENCH DETAIL

SCALE: NTS

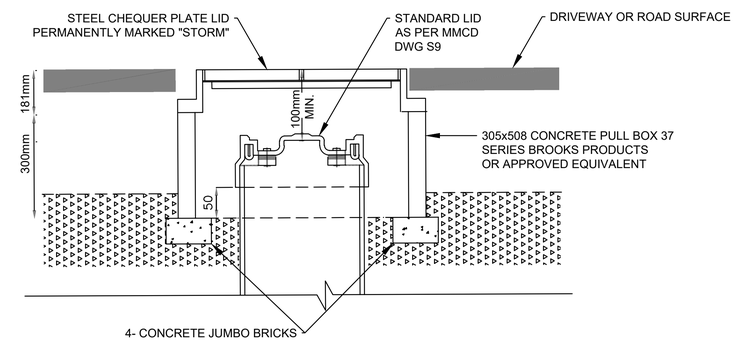
RAILWAY CROSSING TRENCH DETAIL NOTES:

1. RACI SPACERS OR APPROVED EQUIVALENT TO BE USED IN CASING PIPE AS PER MANUFACTURER'S SPECIFICATIONS. DOUBLE SPACER TO BE PLACED AT EACH END.
2. RAILWAY TRACKS ARE NOT TO BE DISTURBED.
3. TRENCH SLOPES AS PER WORKSAFE BC SAFE TRENCHING.
4. CONSTRUCTION AND MAINTENANCE TO BE IN ACCORDANCE WITH THE TRANSPORT CANADA E-10 STANDARD.
5. DETAIL FOR INFORMATION. EXACT TRENCH EXCAVATION TO BE DETERMINED BY CONTRACTOR.

CASING PIPE SPECIFICATIONS	
MATERIAL	STEEL
INSIDE DIAMETER	19.2" (~487mm)
WALL THICKNESS	0.406" (~10.3mm)
OUTSIDE DIAMETER	20" (~508mm)
SPECIFICATIONS	241 MPa MIN. YIELD STRENGTH
LENGTH	20.45m SAN / 20.47m WAT
PROTECTION	NONE



INSTALLATION IN BOULEVARD



B C603 BACKFLOW PREVENTER DETAIL

SCALE: NTS

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06.11.2024

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3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
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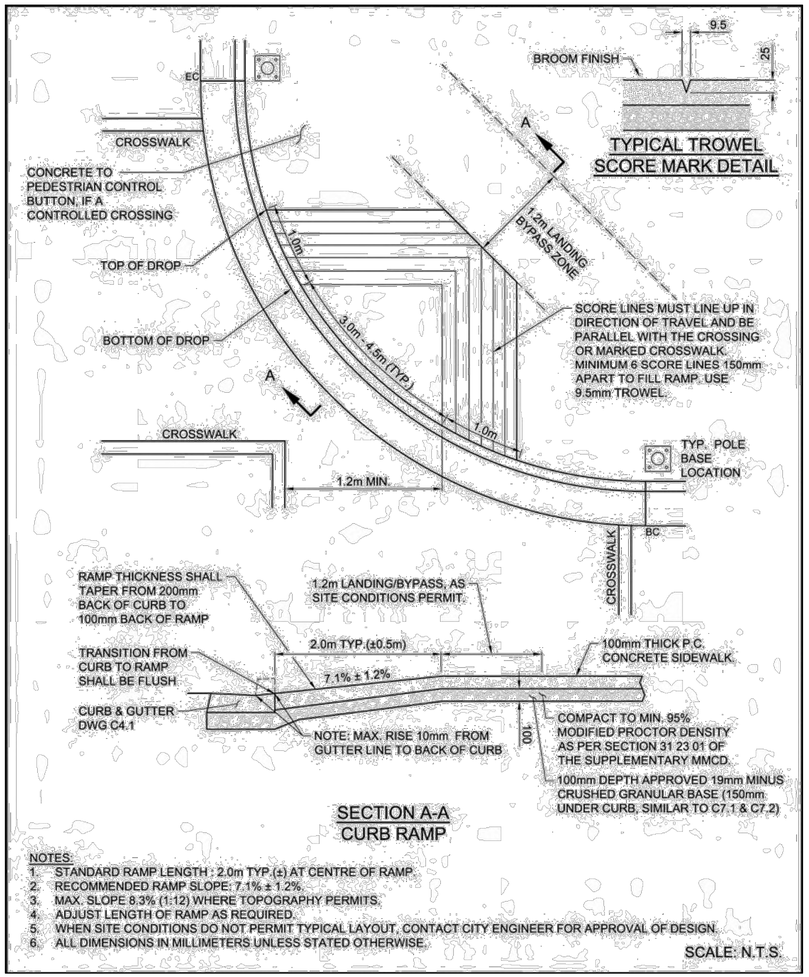
CITY OF Vernon

SCALE
H: AS
V: SHOWN

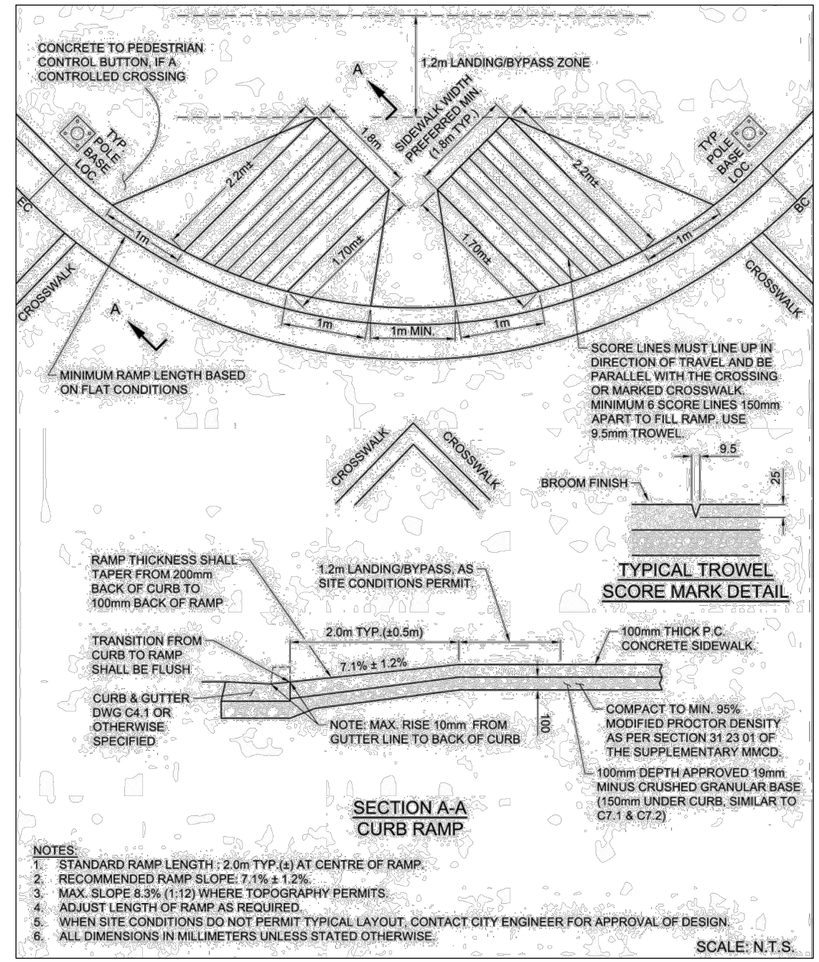
TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
DETAILS – TYPICAL SECTIONS

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C603



C 604 **LARGE LETDOWN**
SCALE: NTS



D C604 **LETDOWN DETAIL**
SCALE: NTS

P:\2023\CA0017374.8909 – 27th Ave Rail Crossing\05_Technical\3_Cad\3_Sheets\CA0017374.8909-C6-DETAILS.dwg

06.11.2024

ISSUE / REVISION INFORMATION

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3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

wsp
700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

CITY OF Vernon

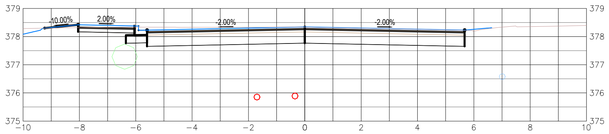
SCALE
H: AS
V: SHOWN

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
DETAILS – TYPICAL SECTIONS

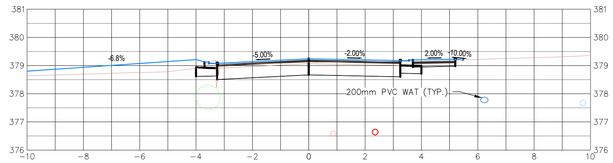
COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C604

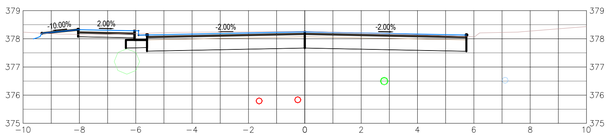
STA: 0+100.00



STA: 0+140.00



STA: 0+090.00



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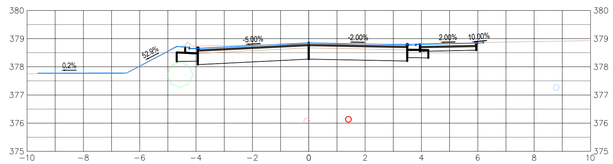

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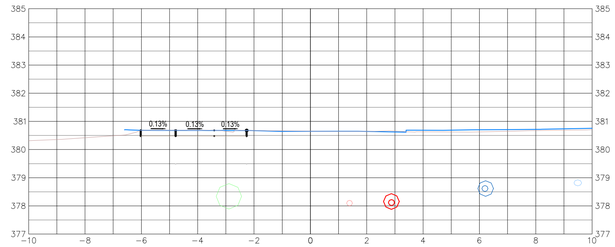

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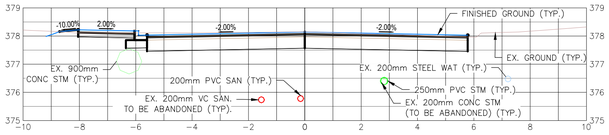

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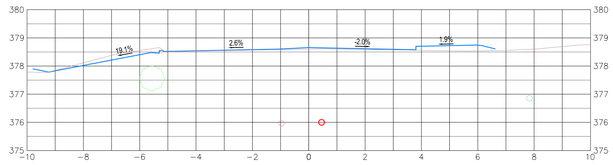

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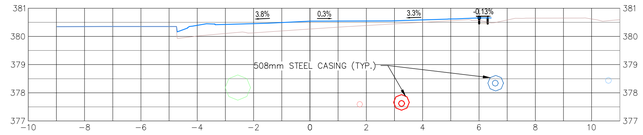

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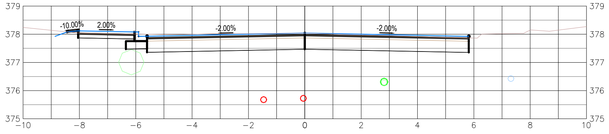

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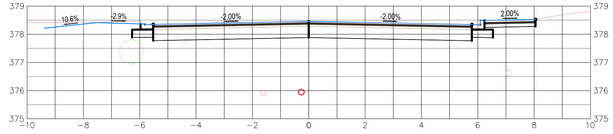

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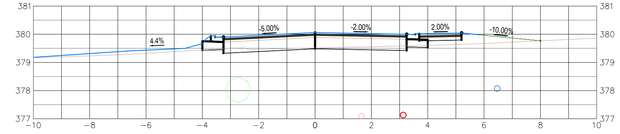

0 1 2 3 4 5 6 7 8 9 10m

SCALE: 1:100

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08.11.2024

ISSUE / REVISION INFORMATION					
REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
2	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

700 - 1631 DICKSON AVENUE
KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

CITY OF Vernon

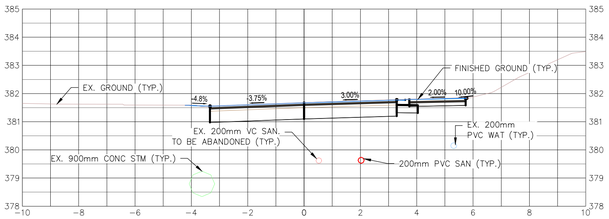
SCALE
H: 1:100
V:

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
CROSS SECTIONS

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C701

STA: 0+200.00



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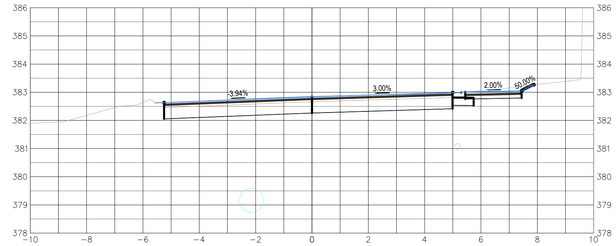

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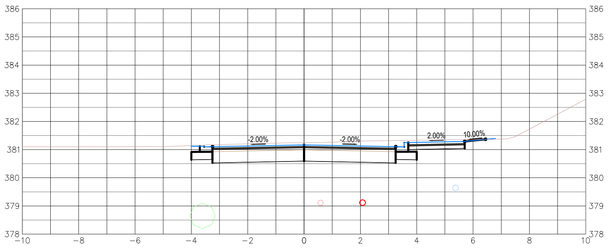

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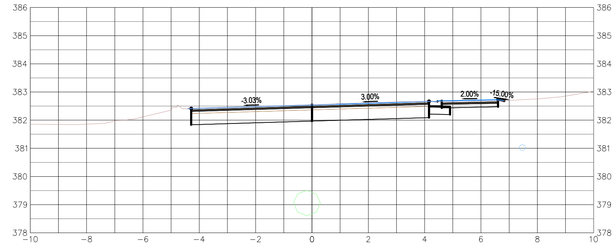

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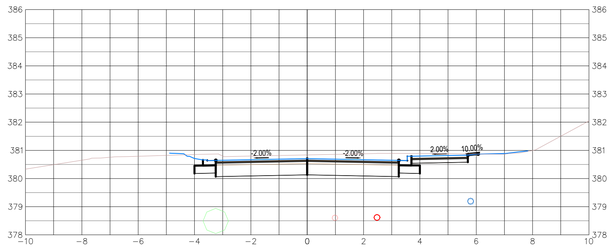

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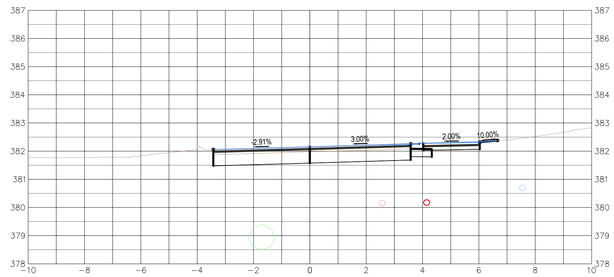

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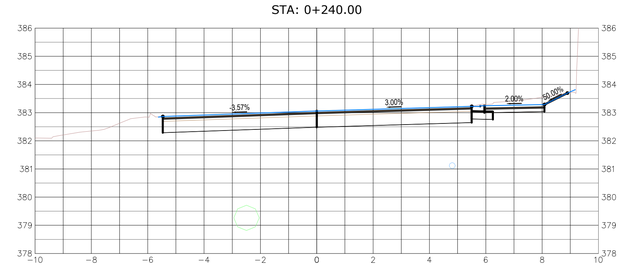

0 1 2 3 4 5 6 7 8 9 10m

SCALE: 1:100

P:\2023\CA0017374.8909 – 27th Ave Rail Crossing\05_Technical\3_Cadd\3_Sheets\CA0017374.8909-C7-CROSS-SECTIONS.dwg

06.11.2024

ISSUE / REVISION INFORMATION

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
1	24/03/22	CE	KU	CE	ISSUED FOR 60% DESIGN
2	24/08/30	CE	LO	CE	ISSUED FOR 90% DESIGN
3	24/11/08	CE	LO	CE	ISSUED FOR 100% DESIGN

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KELOWNA, BC
CANADA V1Y 0B5
PHONE: 250-980-5500
WWW.WSP.COM

CITY OF Vernon

SCALE
H: 1:100
V:

TITLE
27TH AVE RAIL CROSSING UPGRADE
28TH AVE TO HWY 6
CROSS SECTIONS

COV PROJECT NUMBER
23-106-INF

DRAWING NUMBER
C702