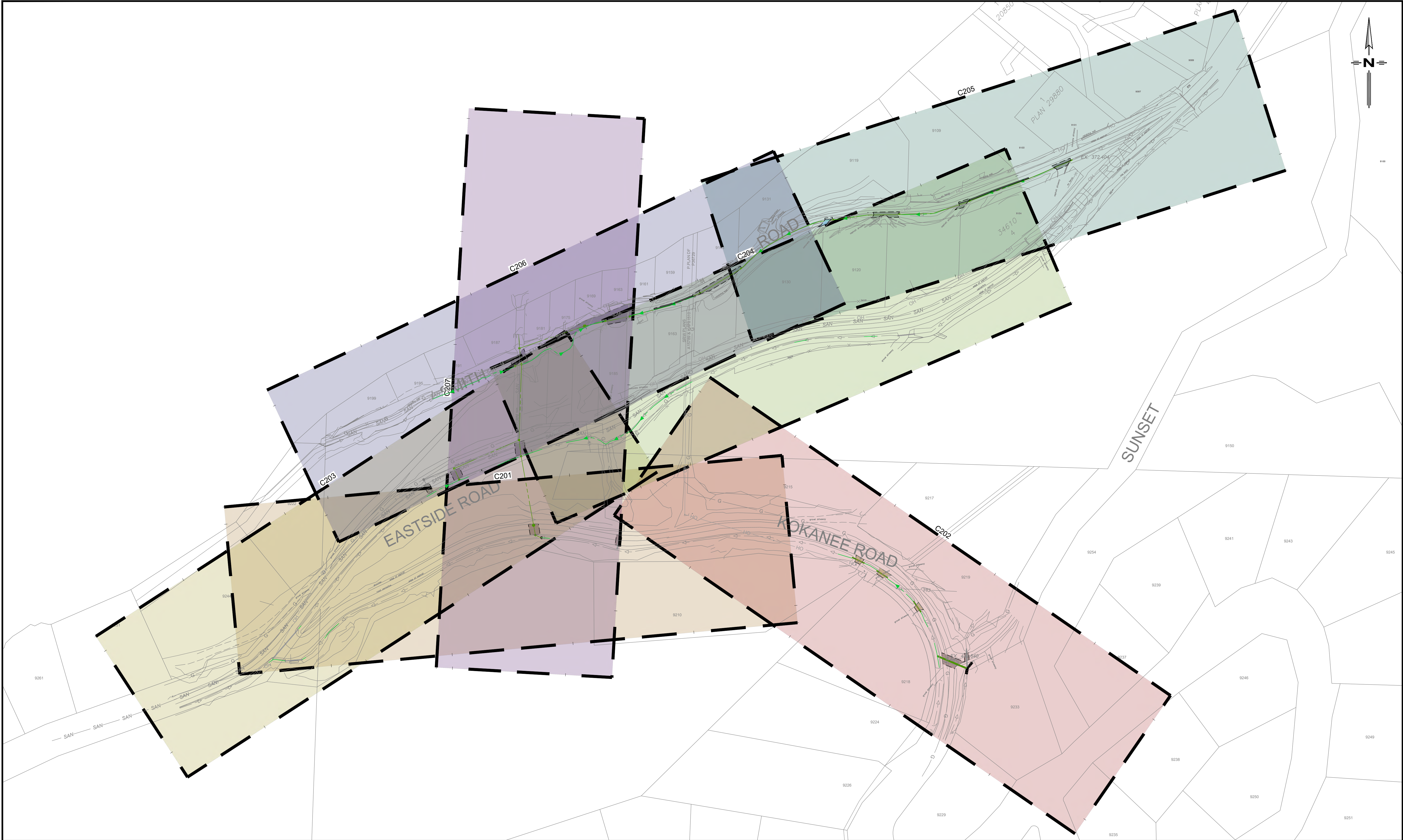


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14.03.2024



REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
A	2023/09/05	FDS	DLP	BTL	ISSUED FOR 30% PRELIMINARY DESIGN
B	2023/09/14	FDS	DLP	BTL	ISSUED FOR 50% PRELIMINARY DESIGN
C	2024/03/05	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN
D	2024/03/14	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN

PERMIT NO. 1001279

DRAFT
(ISSUED FOR REVIEW)

SEAL

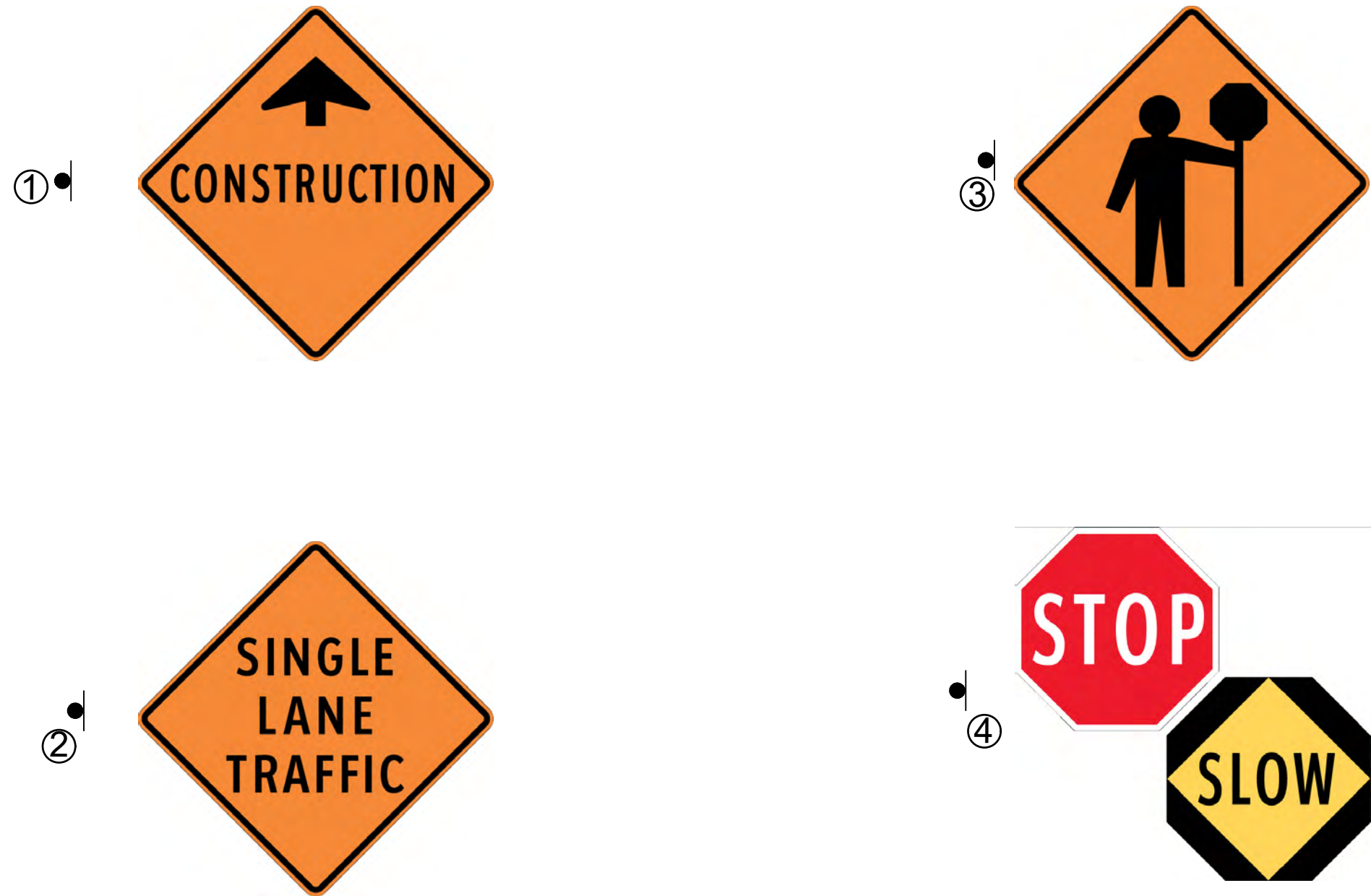


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SHEET
2 OF 21

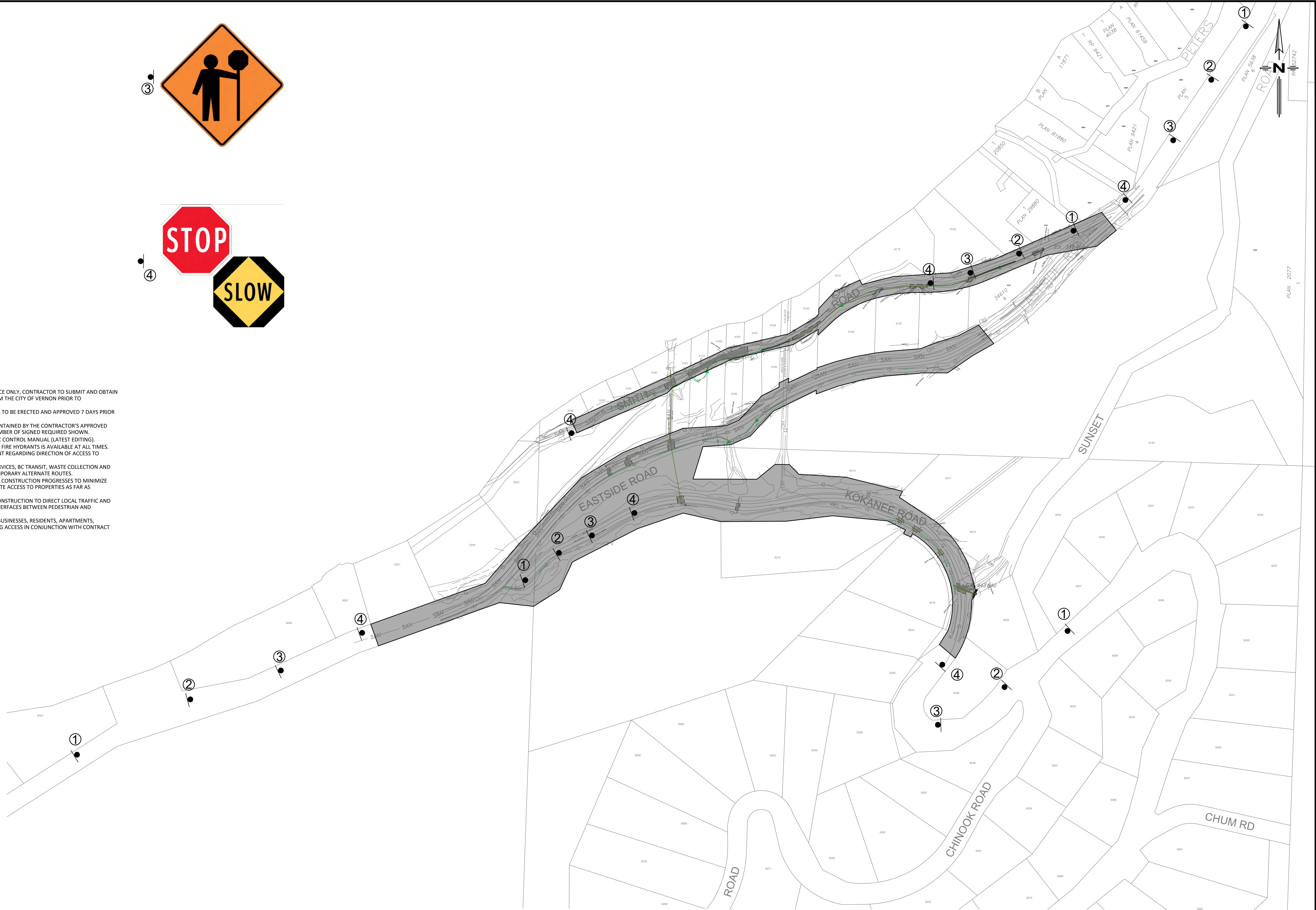
SOUTH BASIN DRAINAGE IMPROVEMENTS
KEY PLAN

DRAWING NUMBER
C101



NOTES:

1. TRAFFIC MANAGEMENT PLAN IS FOR REFERENCE ONLY, CONTRACTOR TO SUBMIT AND OBTAIN APPROVED TRAFFIC MANAGEMENT PLAN FROM THE CITY OF VERNON PRIOR TO CONSTRUCTION.
2. ALL TRAFFIC AND PEDESTRIAN CONTROL SIGNS TO BE ERECTED AND APPROVED 7 DAYS PRIOR TO START OF CONSTRUCTION.
3. ALL SIGNS TO BE SUPPLIED, ERECTED AND MAINTAINED BY THE CONTRACTOR'S APPROVED TRAFFIC MANAGEMENT PLAN. MINIMUM NUMBER OF SIGNED REQUIRED SHOWN.
4. SPACING OF SIGNS TO BE AS PER MOTI TRAFFIC CONTROL MANUAL (LATEST EDITING).
5. CONTRACTOR TO ENSURE ACCESS TO EXISTING FIRE HYDRANTS IS AVAILABLE AT ALL TIMES. CONTRACTOR TO LIAISE WITH FIRE DEPARTMENT REGARDING DIRECTION OF ACCESS TO HYDRANTS.
6. CONTRACTOR TO LIAISE WITH EMERGENCY SERVICES, BC TRANSIT, WASTE COLLECTION AND SCHOOL BUSES FOR ACCESS TO AREA AND TEMPORARY ALTERNATE ROUTES.
7. DETOUR ROUTES SIGNAGE TO BE ADJUSTED AS CONSTRUCTION PROGRESSES TO MINIMIZE INCONVENIENCE TO MOTORISTS AND FACILITATE ACCESS TO PROPERTIES AS FAR AS PRACTICALLY POSSIBLE.
8. FLAGGERS REQUIRED AT ALL TIMES DURING CONSTRUCTION TO DIRECT LOCAL TRAFFIC AND PEDESTRIANS. FLAGGERS REQUIRED AT ALL INTERFACES BETWEEN PEDESTRIAN AND CONSTRUCTION OPERATIONS.
9. CONSTRUCTION TO LIAISE DAILY WITH LOCAL BUSINESSES, RESIDENTS, APARTMENTS, BUILDINGS AND CONDO BUILDINGS REGARDING ACCESS IN CONJUNCTION WITH CONTRACT ADMINISTRATOR AND THE CITY OF VERNON.



REV. No.	DATE	DESIGNED	DRAWN	CHECKED	
A	2023/09/05	FDS	DLP	BTL	
B	2023/09/14	FDS	DLP	BTL	
C	2024/03/05	FDS	PKM	BTL	
D	2024/03/14	FDS	PKM	BTL	

DESCRIPTION
ISSUED FOR 30% PRELIMINARY DESIGN
ISSUED FOR 50% PRELIMINARY DESIGN
ISSUED FOR 90% DETAILED DESIGN
ISSUED FOR 90% DETAILED DESIGN

PERMIT NO 1001279

DRAFT
(ISSUED FOR REVIEW)

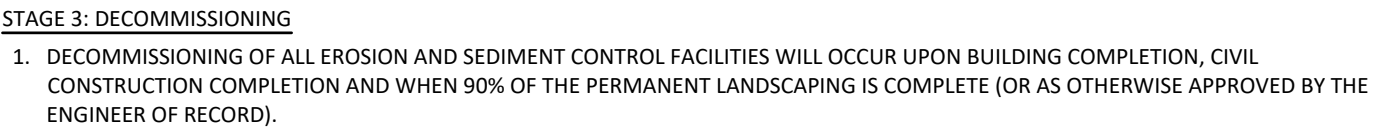


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3 OF 21

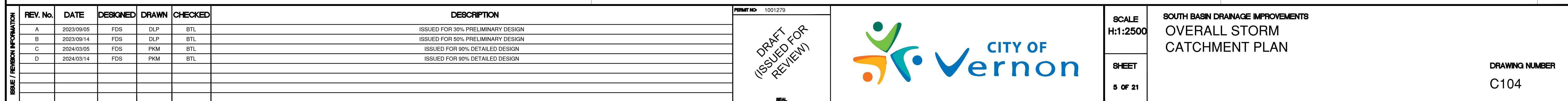
SOUTH BASIN DRAINAGE IMPROVEMENTS
TRAFFIC MANAGEMENT PLAN

DRAWING NUMBER
C102



SOUTH BASIN DRAINAGE IMPROVEMENTS
EROSION AND SEDIMENT PLAN

DRAWING NUMBER
C103



Z:\Projects\173\11 - North & South Basin Drainage Improvements\1 - Civil Engineering\Drawings\1 - Design\South Basin\173-11 - SouthBasinSmithRoad - DSN.dwg

14.03.2024

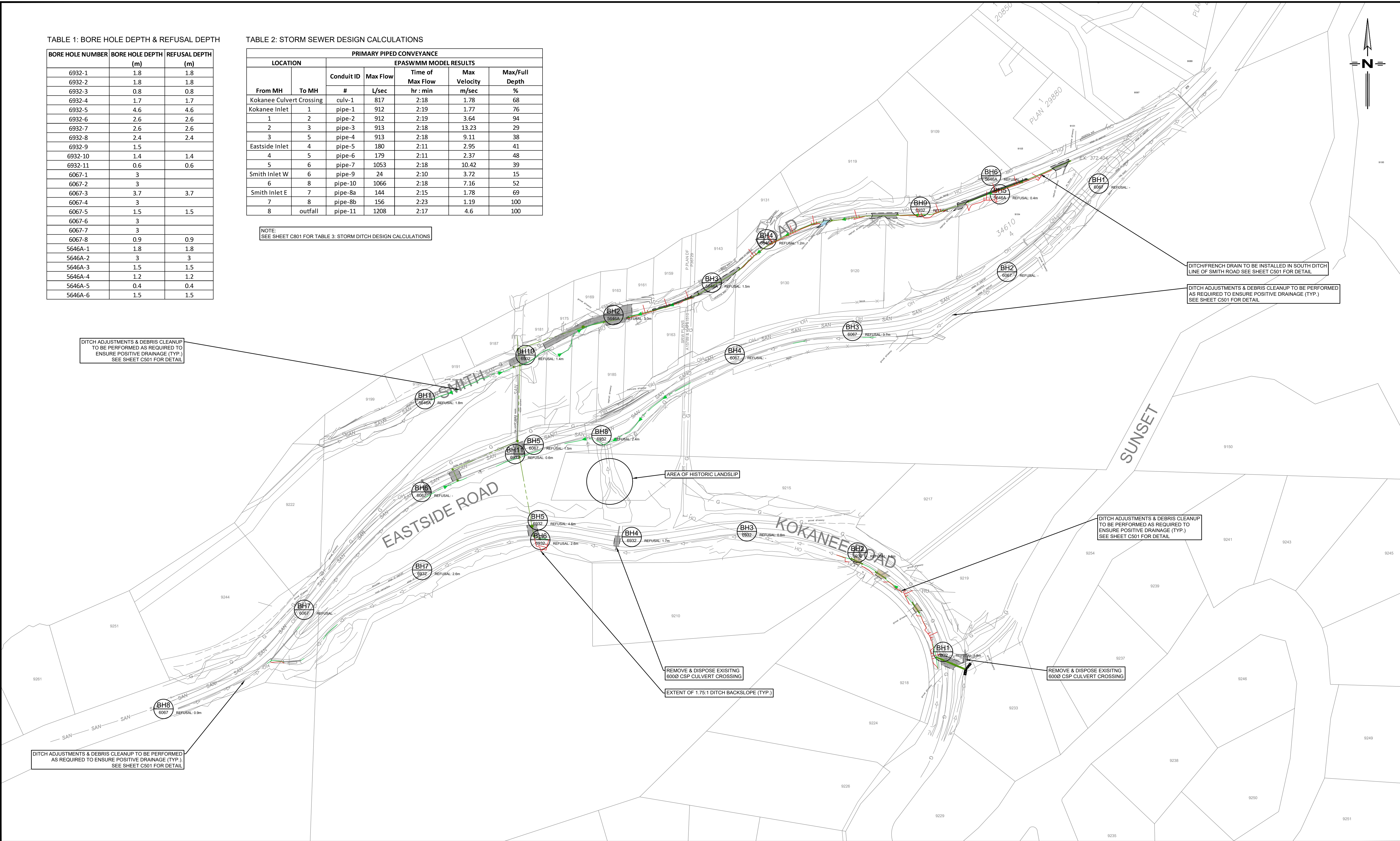
TABLE 1: BORE HOLE DEPTH & REFUSAL DEPTH

BORE HOLE NUMBER	BORE HOLE DEPTH (m)	REFUSAL DEPTH (m)
6932-1	1.8	1.8
6932-2	1.8	1.8
6932-3	0.8	0.8
6932-4	1.7	1.7
6932-5	4.6	4.6
6932-6	2.6	2.6
6932-7	2.6	2.6
6932-8	2.4	2.4
6932-9	1.5	
6932-10	1.4	1.4
6932-11	0.6	0.6
6067-1	3	
6067-2	3	
6067-3	3.7	3.7
6067-4	3	
6067-5	1.5	1.5
6067-6	3	
6067-7	3	
6067-8	0.9	0.9
5646A-1	1.8	1.8
5646A-2	3	3
5646A-3	1.5	1.5
5646A-4	1.2	1.2
5646A-5	0.4	0.4
5646A-6	1.5	1.5

TABLE 2: STORM SEWER DESIGN CALCULATIONS

PRIMARY PIPED CONVEYANCE						
LOCATION		EPASWMM MODEL RESULTS				
From MH	To MH	Conduit ID	Max Flow	Time of Max Flow	Max Velocity	Max/Full Depth
		#	L/sec	hr : min	m/sec	%
Kokanee Culvert Crossing		culv-1	817	2:18	1.78	68
Kokanee Inlet	1	pipe-1	912	2:19	1.77	76
1	2	pipe-2	912	2:19	3.64	94
2	3	pipe-3	913	2:18	13.23	29
3	5	pipe-4	913	2:18	9.11	38
Eastside Inlet	4	pipe-5	180	2:11	2.95	41
4	5	pipe-6	179	2:11	2.37	48
5	6	pipe-7	1053	2:18	10.42	39
Smith Inlet W	6	pipe-9	24	2:10	3.72	15
6	8	pipe-10	1066	2:18	7.16	52
Smith Inlet E	7	pipe-8a	144	2:15	1.78	69
7	8	pipe-8b	156	2:23	1.19	100
8	outfall	pipe-11	1208	2:17	4.6	100

NOTE:
SEE SHEET C801 FOR TABLE 3: STORM DITCH DESIGN CALCULATIONS



REV. No.	DATE	DESIGNED	DRAWN	CHECKED
A	2023/09/05	FDS	DLP	BTL
B	2023/09/14	FDS	DLP	BTL
C	2024/03/05	FDS	PKM	BTL
D	2024/03/14	FDS	PKM	BTL

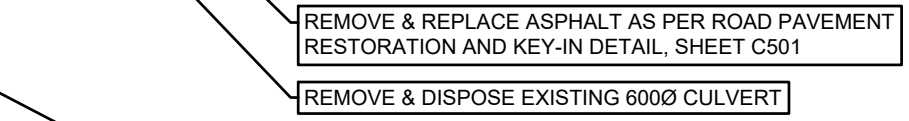
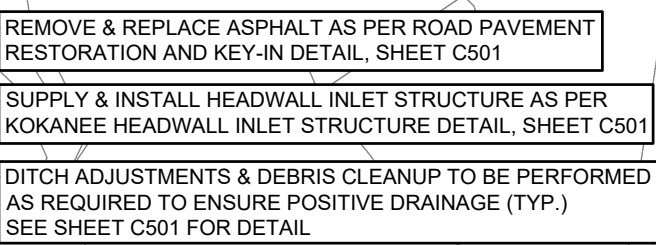
DESCRIPTION
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ISSUED FOR 50% PRELIMINARY DESIGN
ISSUED FOR 90% DETAILED DESIGN
ISSUED FOR 90% DETAILED DESIGN

PERMIT NO. 1001279
DRAFT
(ISSUED FOR REVIEW)



SCALE
H:1:1250
SHEET
6 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
OVERALL STORM PLAN & BORE HOLE LOG
DRAWING NUMBER
C105



GEOTECHNICAL ENGINEER TO CONFIRM ALL MAXIMUM ALLOWABLE
PERMANENT CUT SLOPE ANGLES MIN. 1.75H : 1V (TYP.)

DRAFT
(ISSUED FOR
REVIEW)



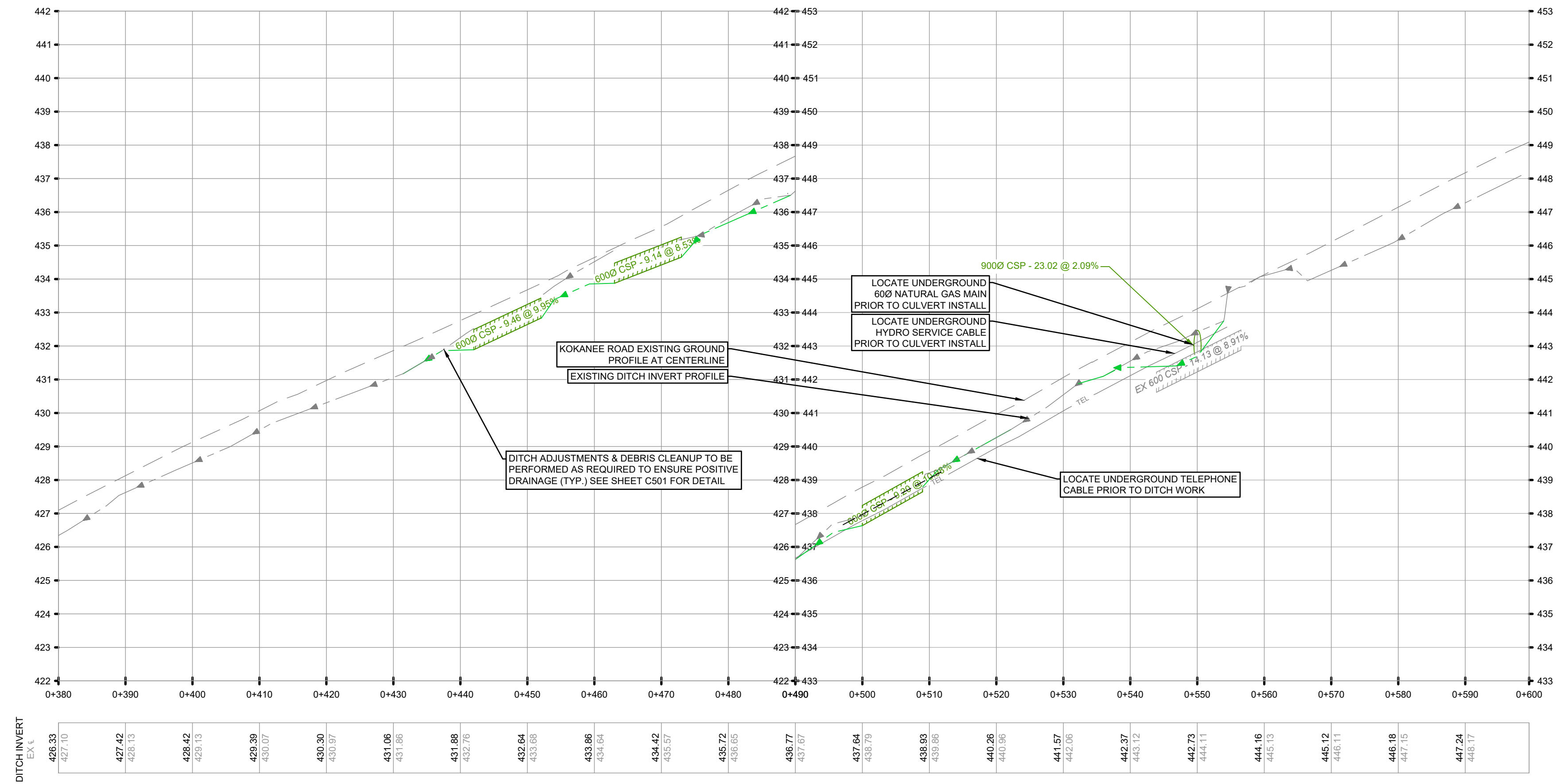
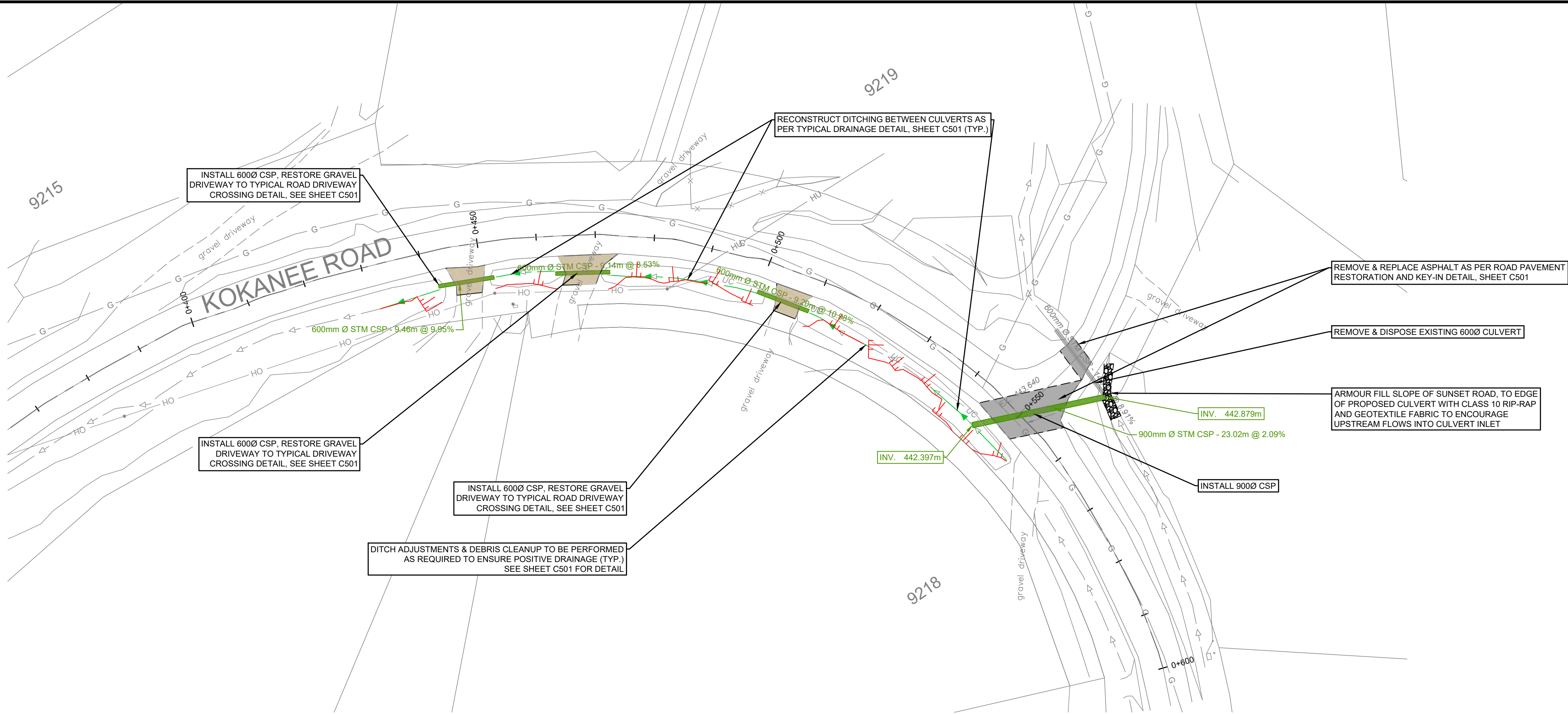
SCALE
H: 1:500
V: 1:100

SHEET

7 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
KOKANEE ROAD PLAN-PROFILE
STA: 0+000 TO 0+380

DRAWING NUMBER
C201



REV. No.	DATE	DESIGNED	DRAWN	CHECKED
A	2023/09/05	FDS	DLP	BTL
B	2023/09/14	FDS	DLP	BTL
C	2024/03/05	FDS	PKM	BTL
D	2024/03/14	FDS	PKM	BTL

DESCRIPTION
ISSUED FOR 30% PRELIMINARY DESIGN
ISSUED FOR 50% PRELIMINARY DESIGN
ISSUED FOR 90% DETAILED DESIGN
ISSUED FOR 90% DETAILED DESIGN

PERMIT NO 1001279

DRAFT
(ISSUED FOR REVIEW)



SCALE
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V: 1:100

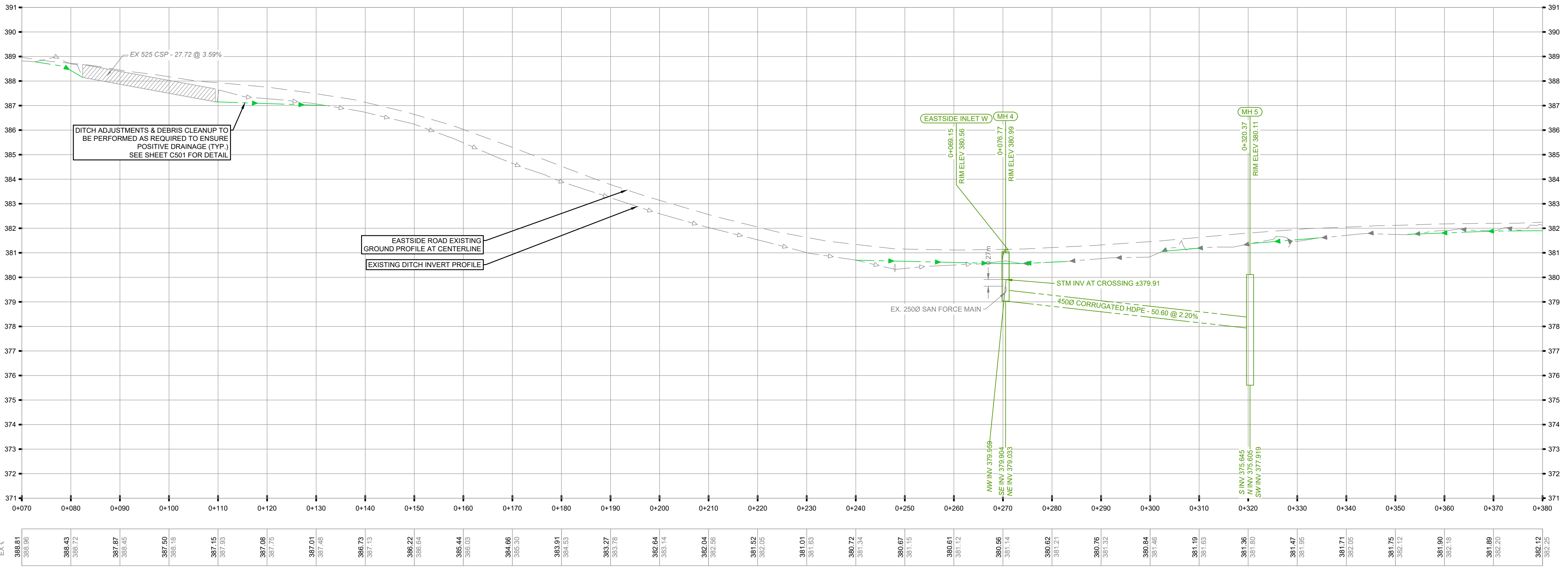
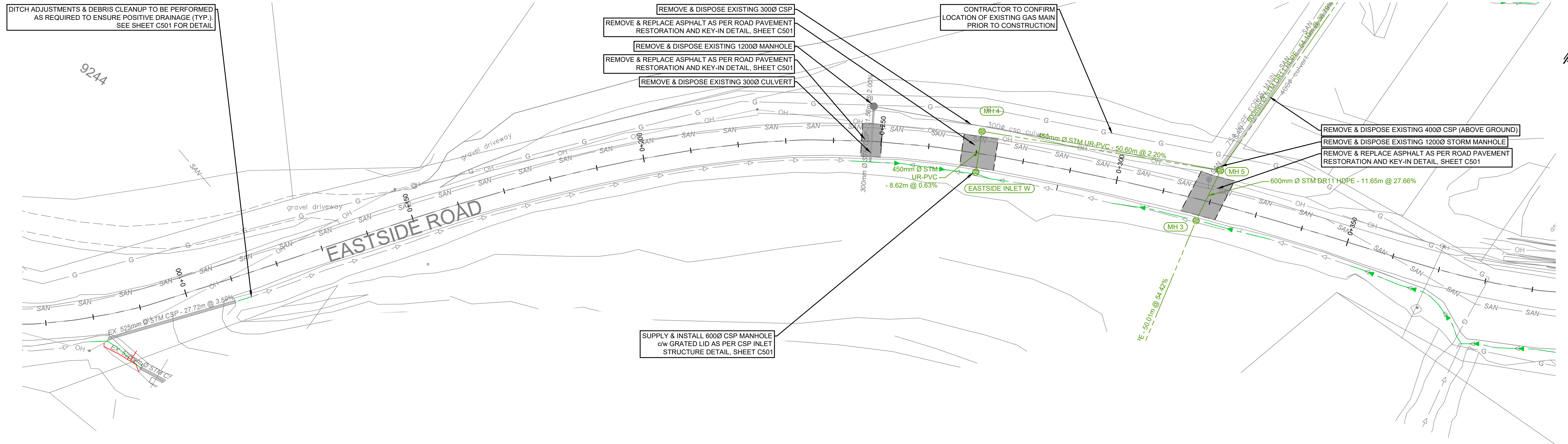
SHEET
8 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
KOKANEES ROAD PLAN-PROFILE
STA: 0+380 TO 0+600

DRAWING NUMBER
C202

Z:\Projects\173\11 - North & South Basin Drainage Improvements\1 - Civil Engineering\Drawings\1 - Design\South Basin\173-11 - SouthBasinSmithRoad - DSN.dwg

14.03.2024



DITCH INVERT

EX

388.81

388.96

389.43

389.72

387.87

388.45

387.60

388.13

387.15

387.53

387.08

387.75

387.01

387.46

386.73

387.13

386.22

386.64

386.44

386.03

384.66

385.30

383.91

384.53

383.27

383.76

382.64

383.14

382.04

382.56

381.62

382.05

381.01

381.63

380.72

381.34

380.67

381.15

380.61

381.12

380.95

381.14

380.62

381.21

380.76

381.32

380.84

381.46

381.19

381.63

381.36

381.50

381.47

381.95

381.71

382.05

381.75

382.12

381.60

382.19

381.88

382.20

382.12

382.25

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
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B	2023/09/14	FDS	DLP	BTL	ISSUED FOR 50% PRELIMINARY DESIGN
C	2024/03/05	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN
D	2024/03/14	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
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B	2023/09/14	FDS	DLP	BTL	ISSUED FOR 50% PRELIMINARY DESIGN
C	2024/03/05	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN
D	2024/03/14	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN

PERMIT NO. 1001279

DRAFT
(ISSUED FOR REVIEW)



SCALE
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V: 1:100

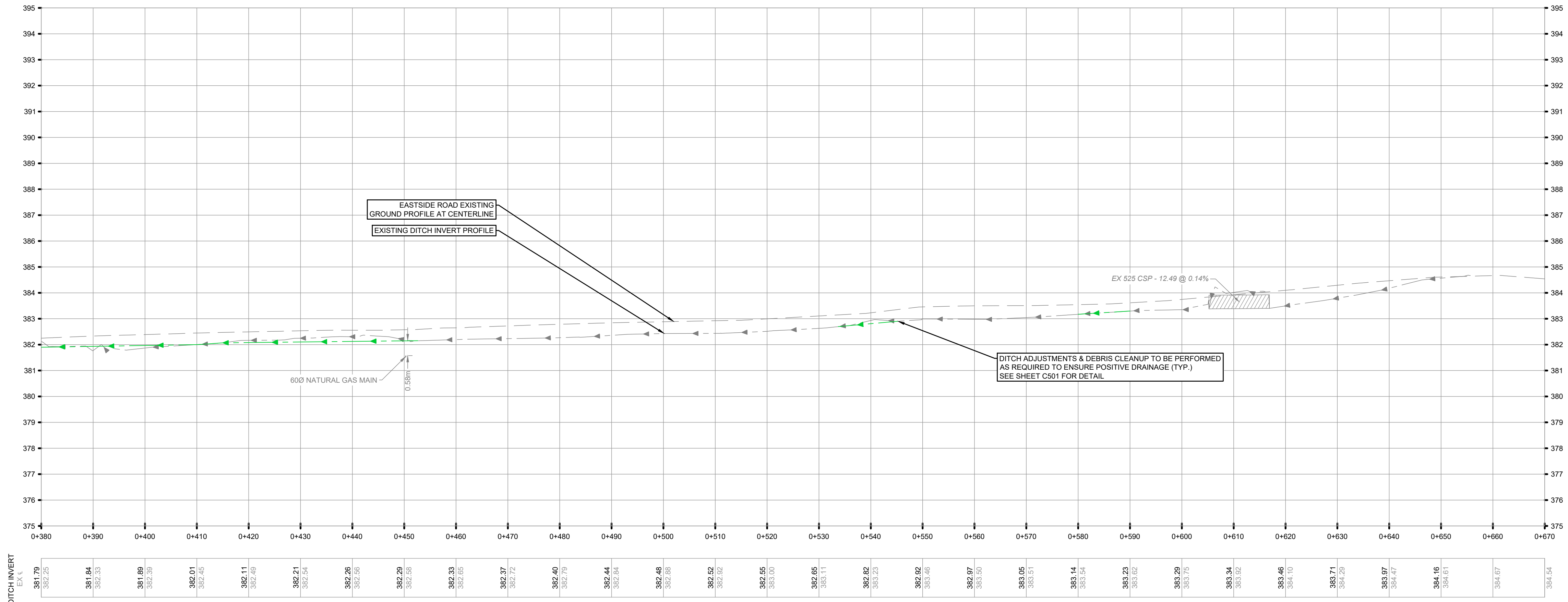
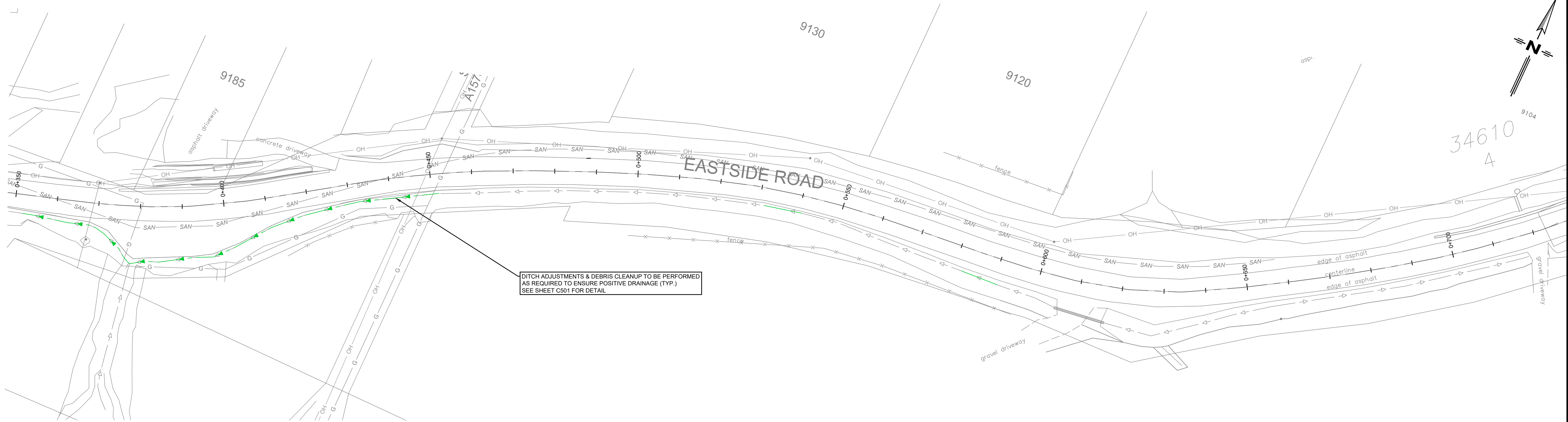
SHEET
9 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
EASTSIDE ROAD PLAN-PROFILE STA: 0+070 TO 0+380

DRAWING NUMBER
C203

Z:\Projects\173\11 - North & South Basin Drainage Improvements\1 - Civil Engineering\Drawings\1 - Design\South Basin\173-11 - SouthBasinSmithRoad - DSN.dwg

14.03.2024



DITCH INVERT

381.79	382.25	381.84	382.33	381.89	382.39	382.01	382.45	382.11	382.49	382.21	382.54	382.26	382.56	382.29	382.58	382.33	382.65	382.37	382.72	382.40	382.78	382.44	382.84	382.46	382.88	382.52	382.92	382.55	383.00	382.85	383.11	382.82	383.23	382.90	383.46	382.97	383.50	383.05	383.51	383.14	383.54	383.23	383.62	383.29	383.75	383.34	383.92	383.46	384.10	383.71	384.29	383.97	384.47	384.16	384.61	384.67	384.54
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REV. No.	DATE	DESIGNED	DRAWN	CHECKED
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B	2023/09/14	FDS	DLP	BTI
C	2024/03/05	FDS	PKM	BTI
D	2024/03/14	FDS	PKM	BTI

DESCRIPTION
ISSUED FOR 30% PRELIMINARY DESIGN
ISSUED FOR 50% PRELIMINARY DESIGN
ISSUED FOR 90% DETAILED DESIGN
ISSUED FOR 90% DETAILED DESIGN

PERMIT NO. 1001279

DRAFT
(ISSUED FOR REVIEW)



SCALE
H: 1:500
V: 1:100

SHEET
10 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
EASTSIDE ROAD PLAN-PROFILE STA: 0+380 TO 0+670

DRAWING NUMBER
C204

REV. No.	DATE	DESIGNED	DRAWN	CHECKED
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B	2023/09/14	FDS	DLP	BTL
C	2024/03/05	FDS	PKM	BTL
D	2024/03/14	FDS	PKM	BTL

DESCRIPTION
ISSUED FOR 30% PRELIMINARY DESIGN
ISSUED FOR 50% PRELIMINARY DESIGN
ISSUED FOR 90% DETAILED DESIGN
ISSUED FOR 90% DETAILED DESIGN

PERMIT NO 1001279

DRAFT
(ISSUED FOR REVIEW)

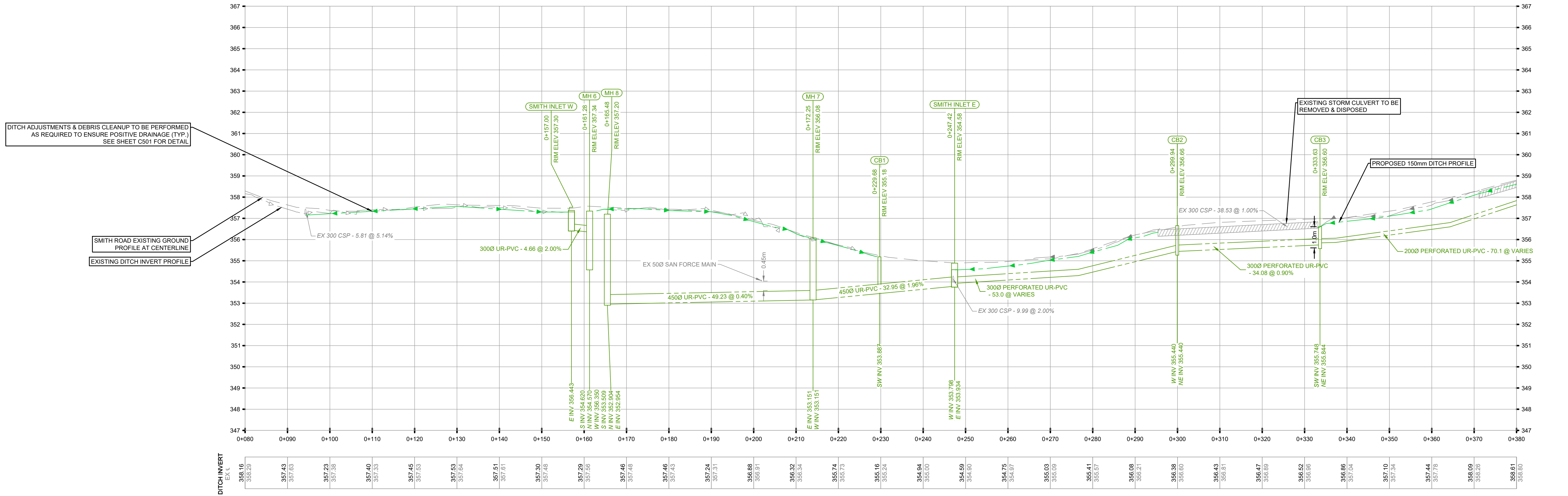
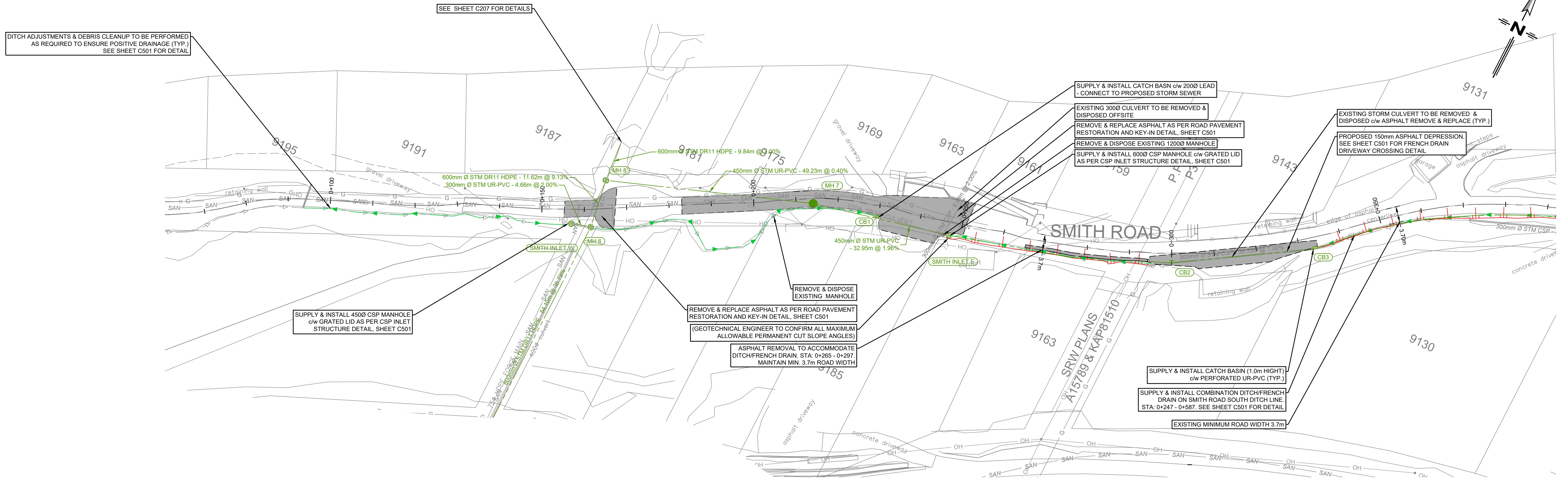


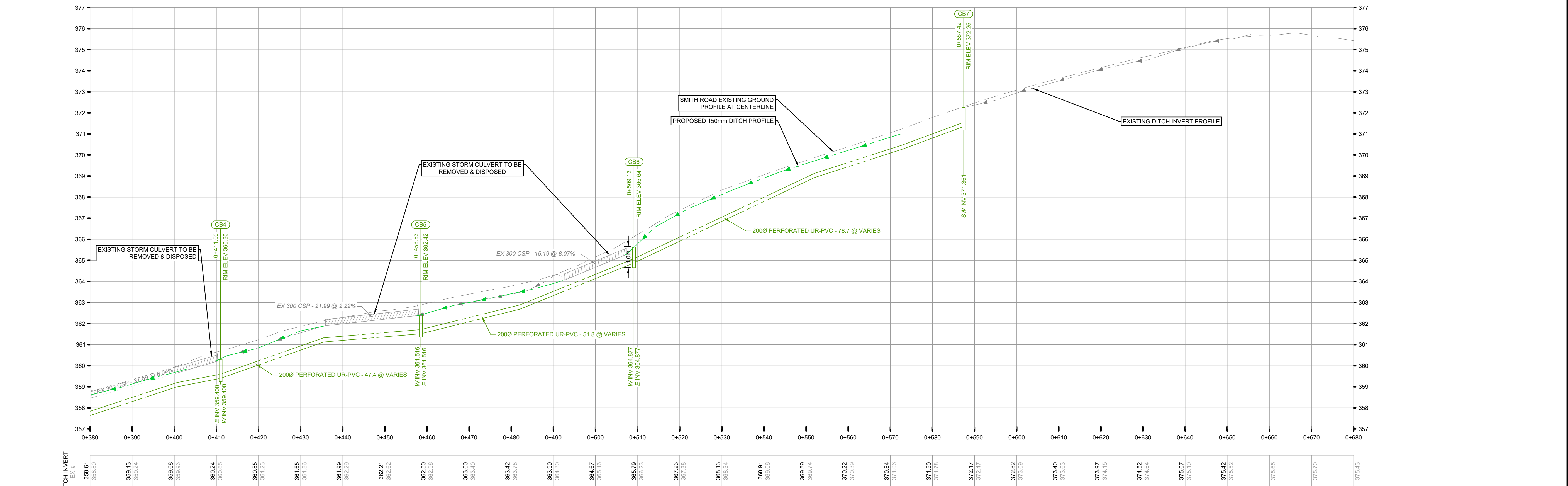
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SHEET
11 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
SMITH ROAD PLAN-PROFILE STA: 0+080 TO 0+380

DRAWING NUMBER
C205



[illegible]

PERMIT NO. 100127

DRAFT
(ISSUED FOR REVIEW)



SCALE H: 1:500 V: 1:100
SHEET 12 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
SMITH ROAD PLAN-PROFILE STA: 0+380 TO 0+680

DRAWING NUMBER
C206

REV. No.	DATE	DESIGNED	DRAWN	CHECKED
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B	2023/09/14	FDS	DLP	BTL
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D	2024/03/14	FDS	PKM	BTL

DESCRIPTION
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ISSUED FOR 50% PRELIMINARY DESIGN
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PERMIT NO 1001279

DRAFT
(ISSUED FOR REVIEW)

SEAL

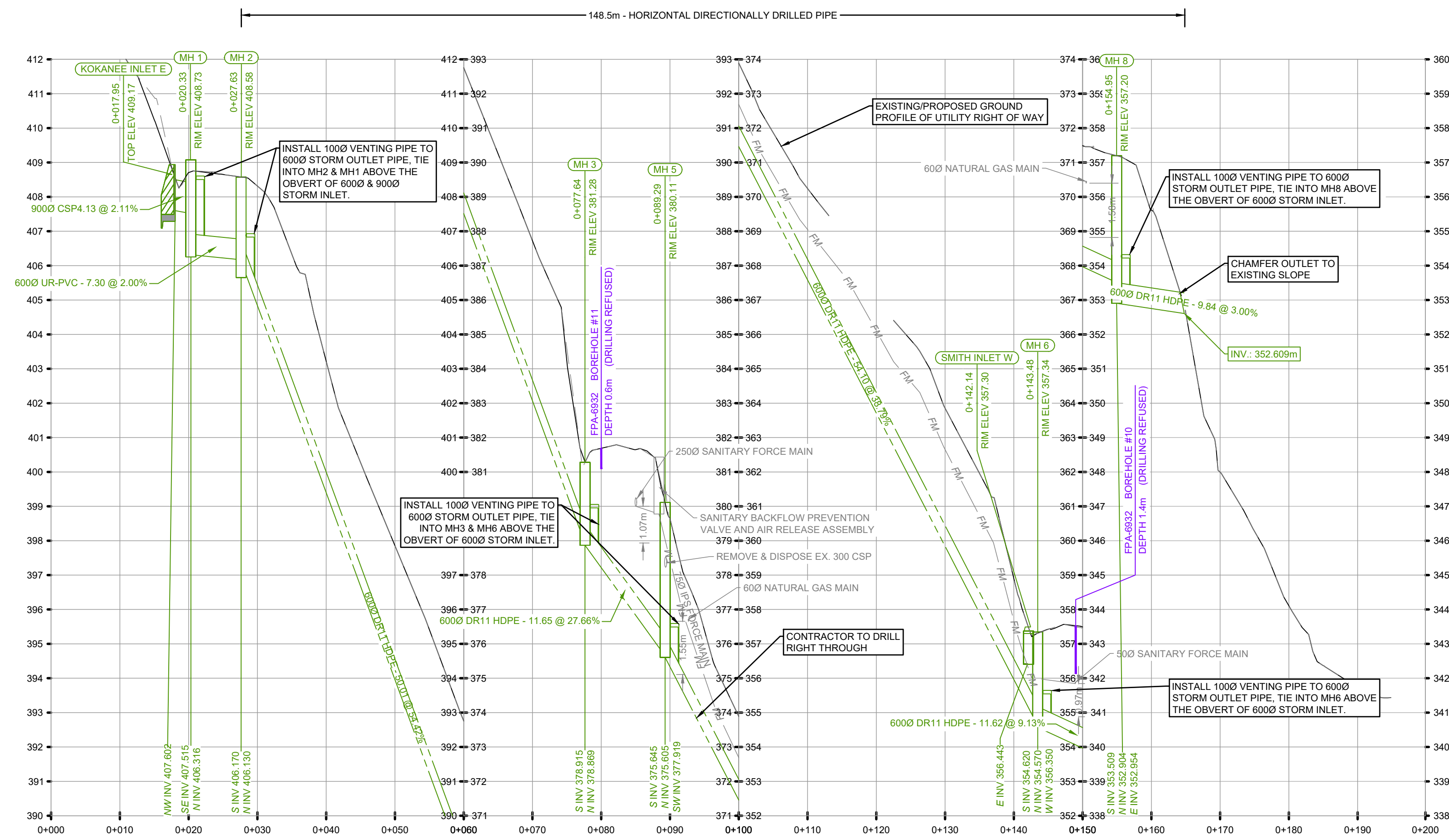
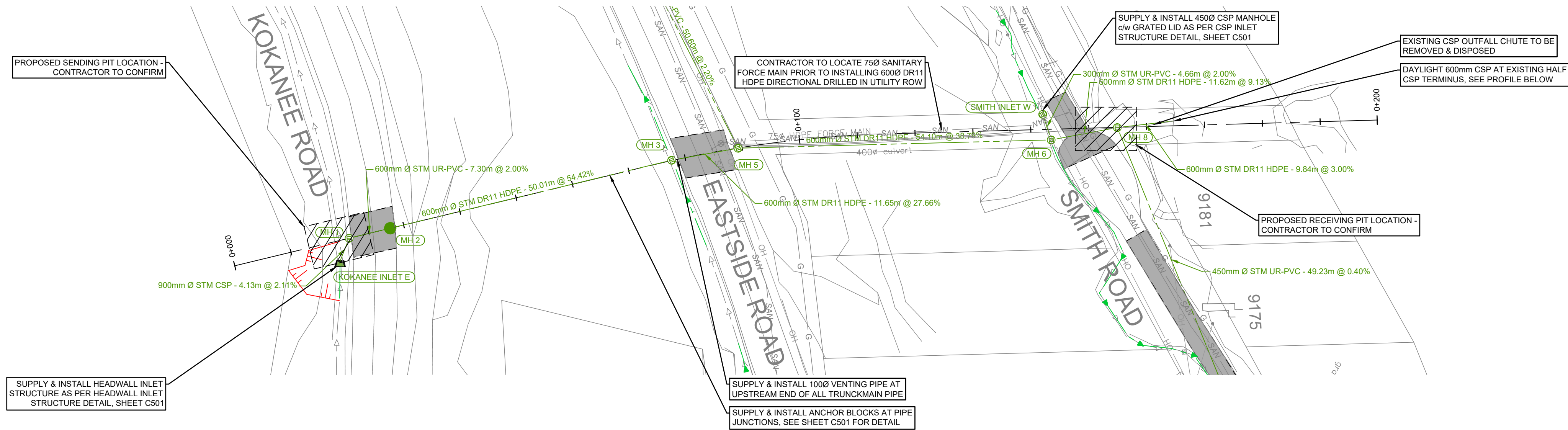


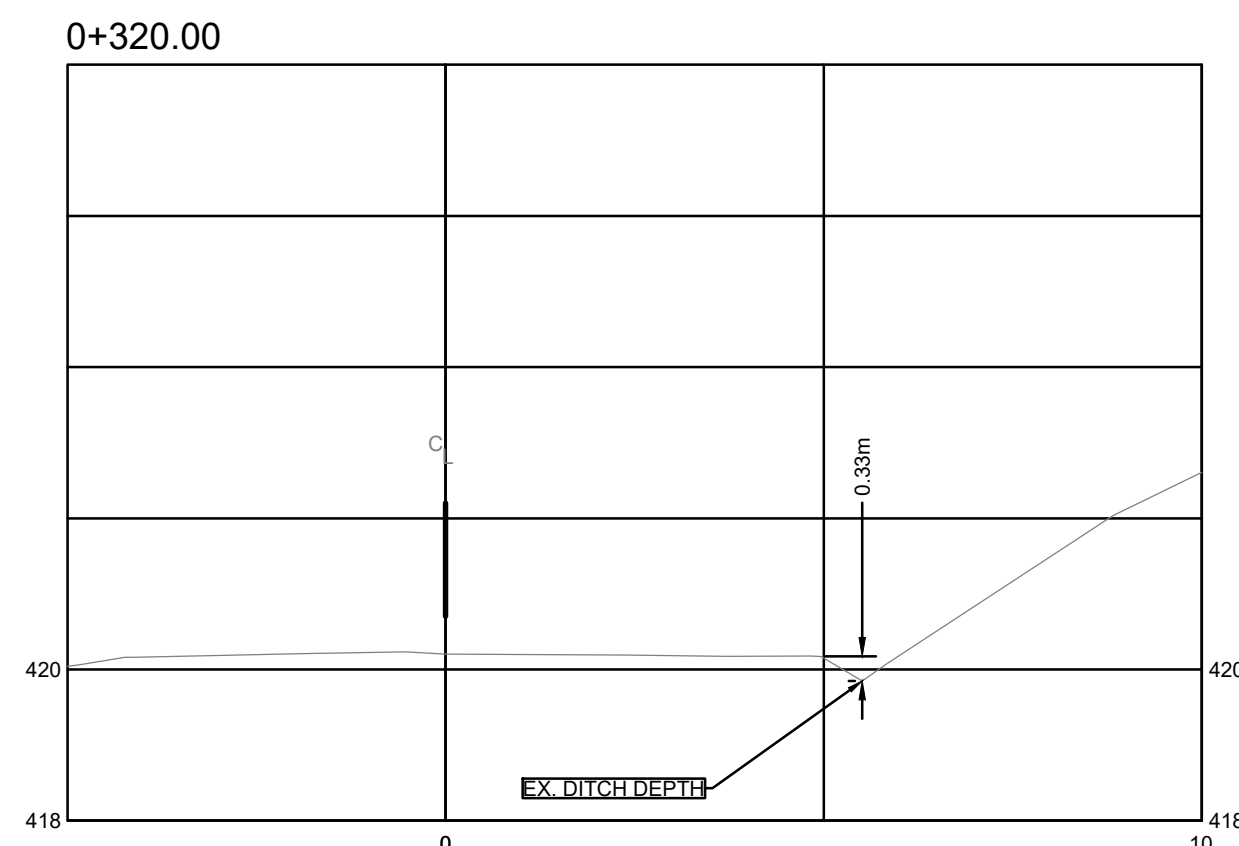
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SHEET
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SOUTH BASIN DRAINAGE IMPROVEMENTS
ROW PLAN-PROFILE STA: 0+000 TO 0+200

DRAWING NUMBER
C207

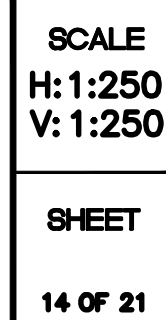




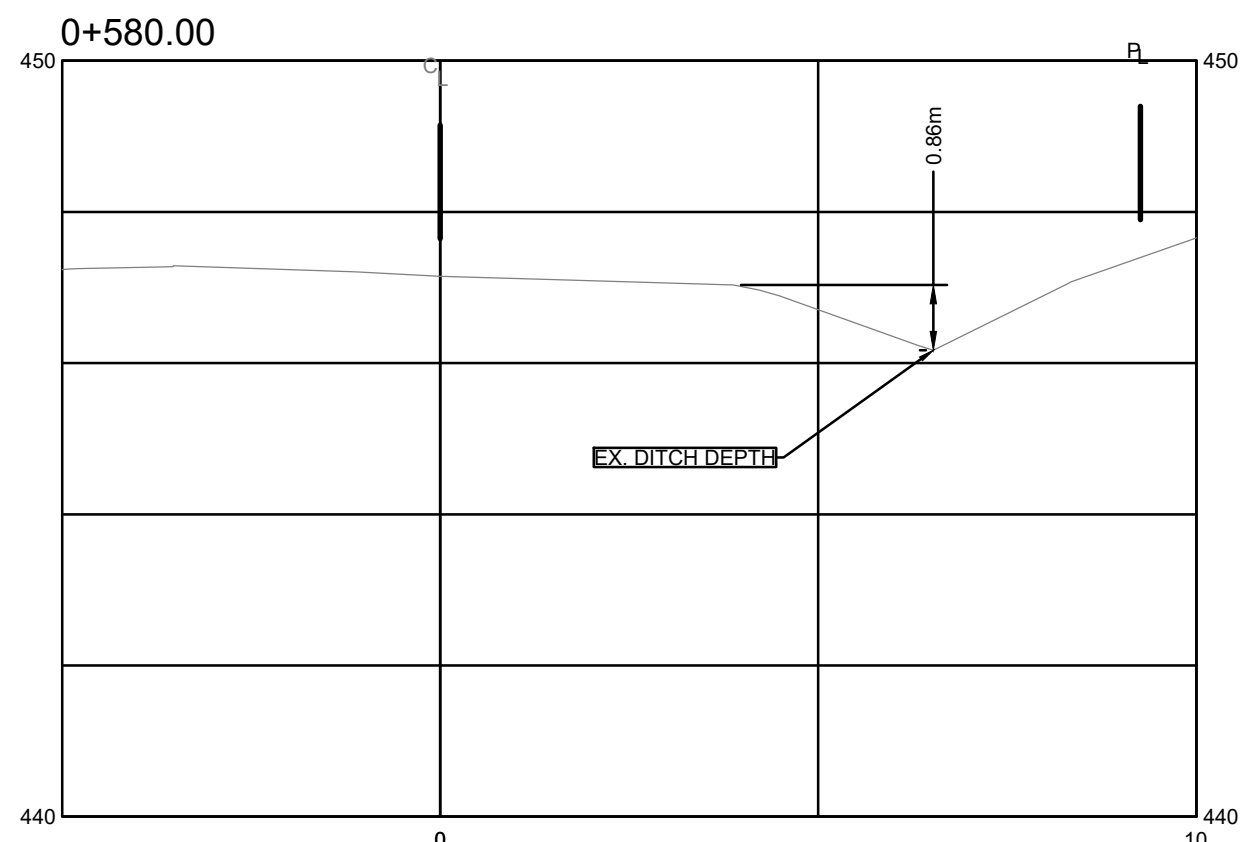
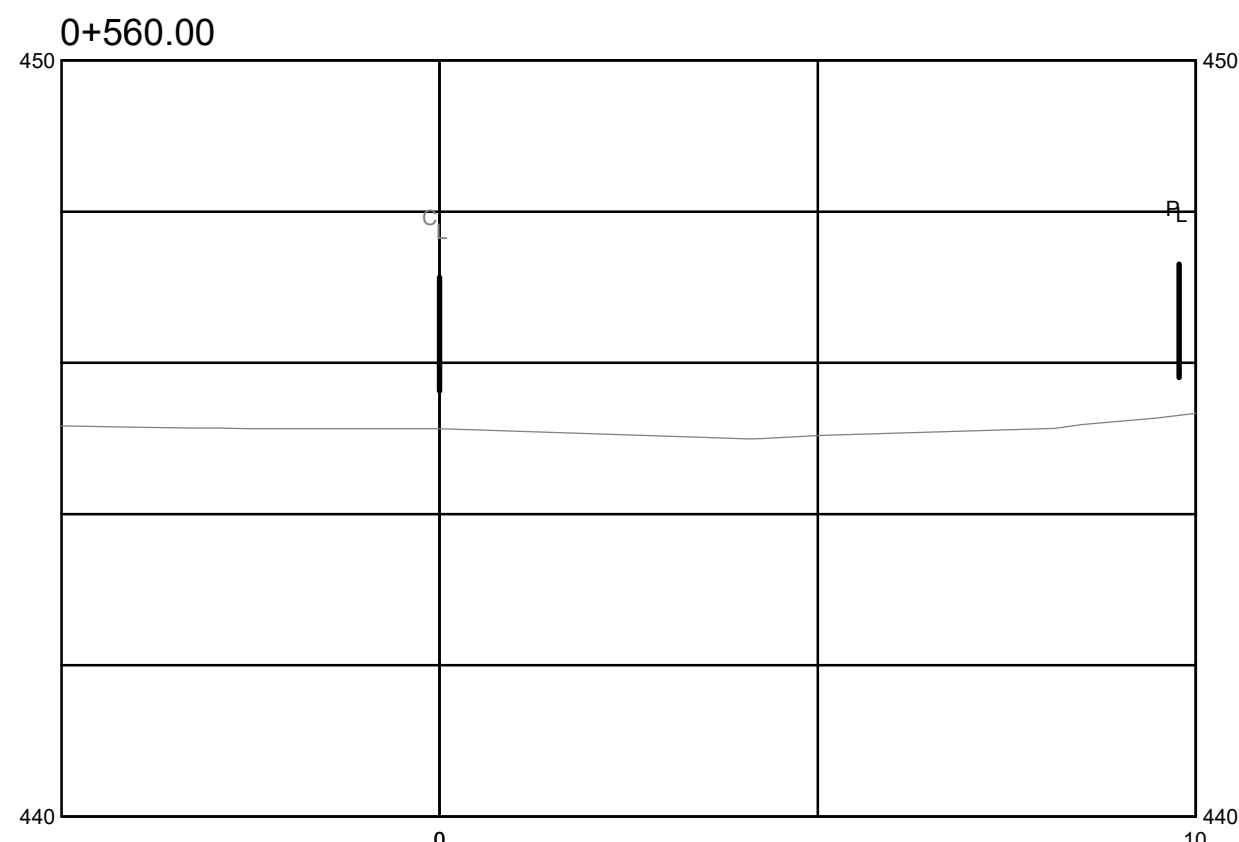
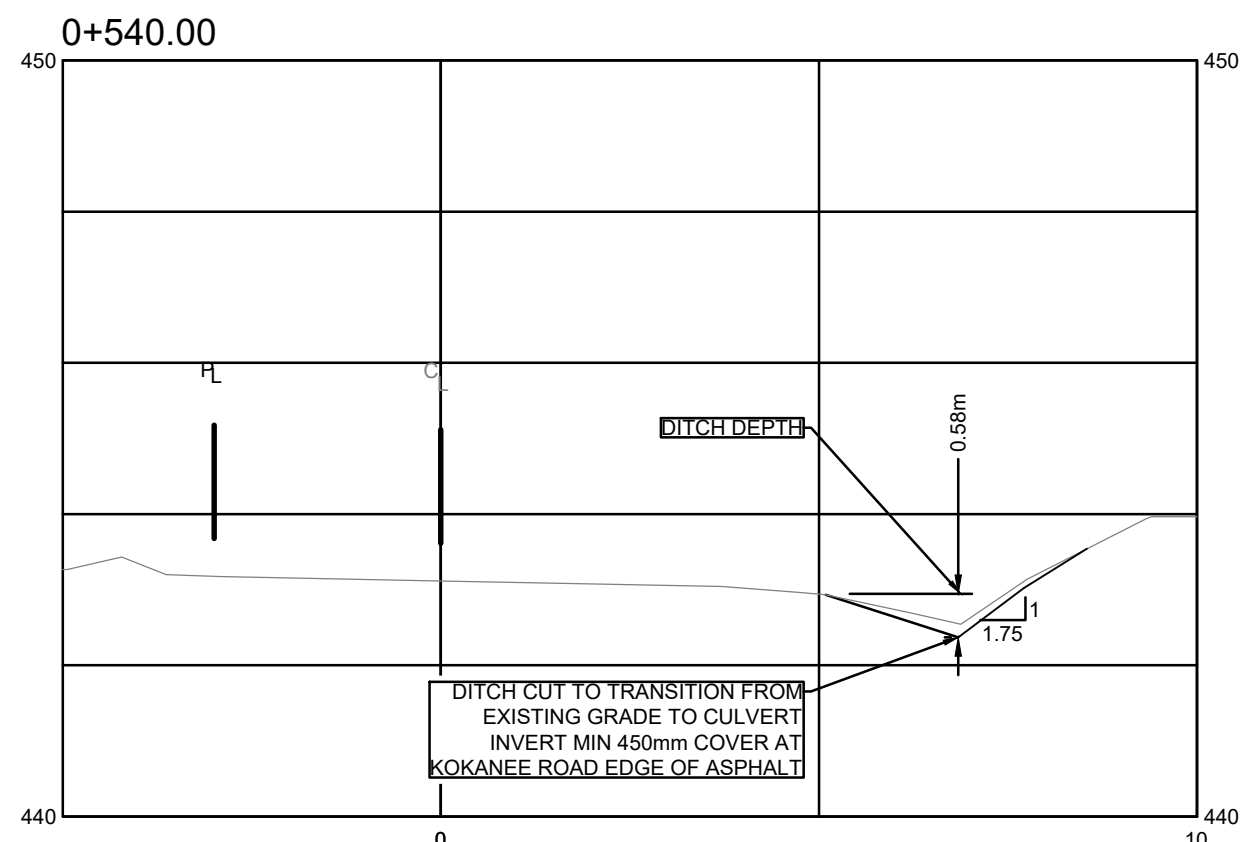
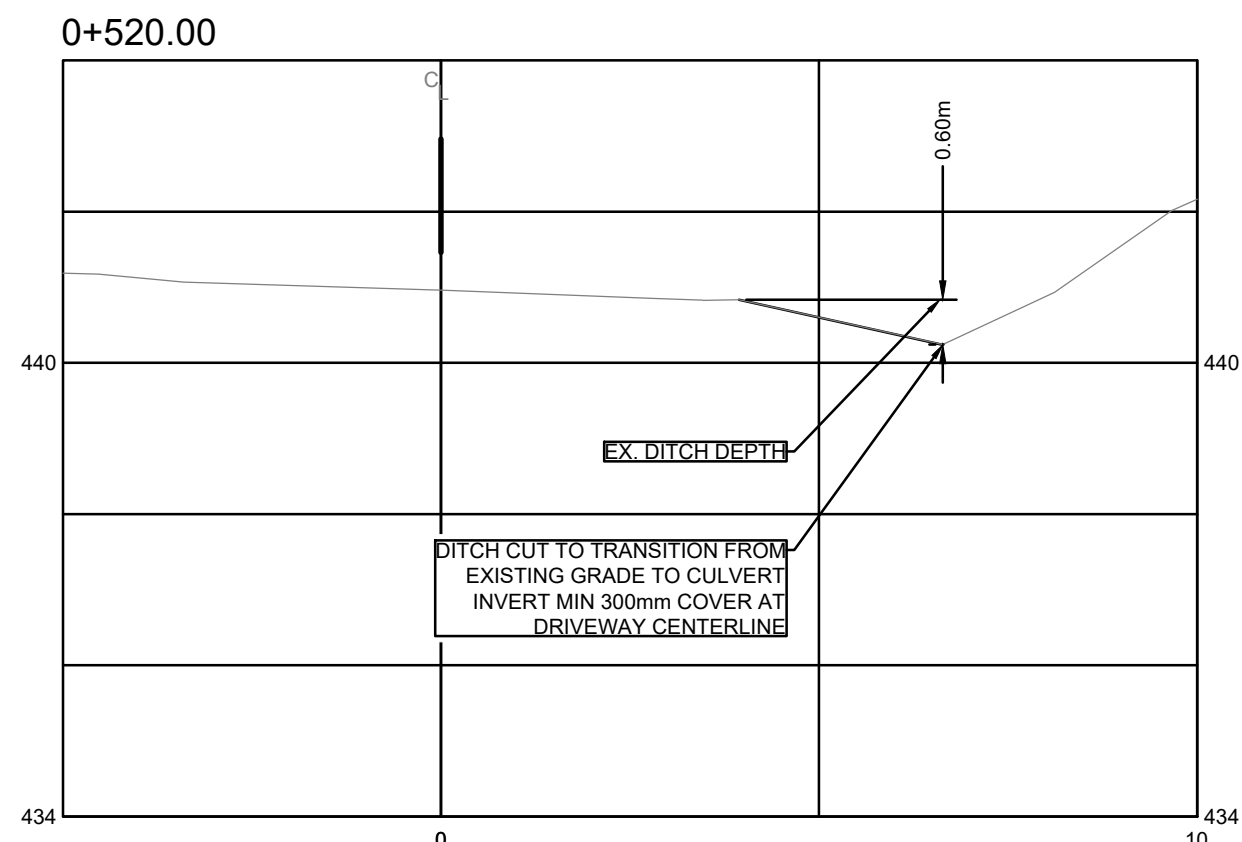
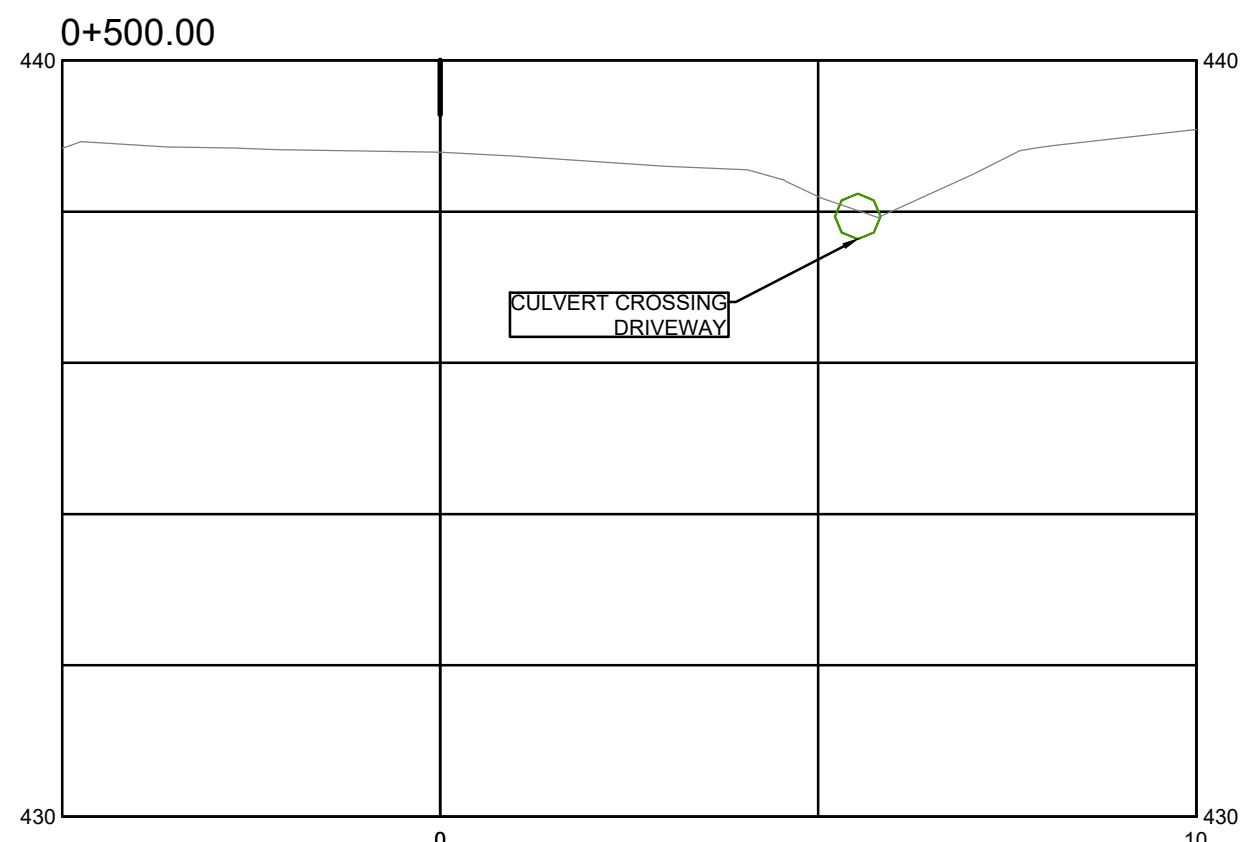
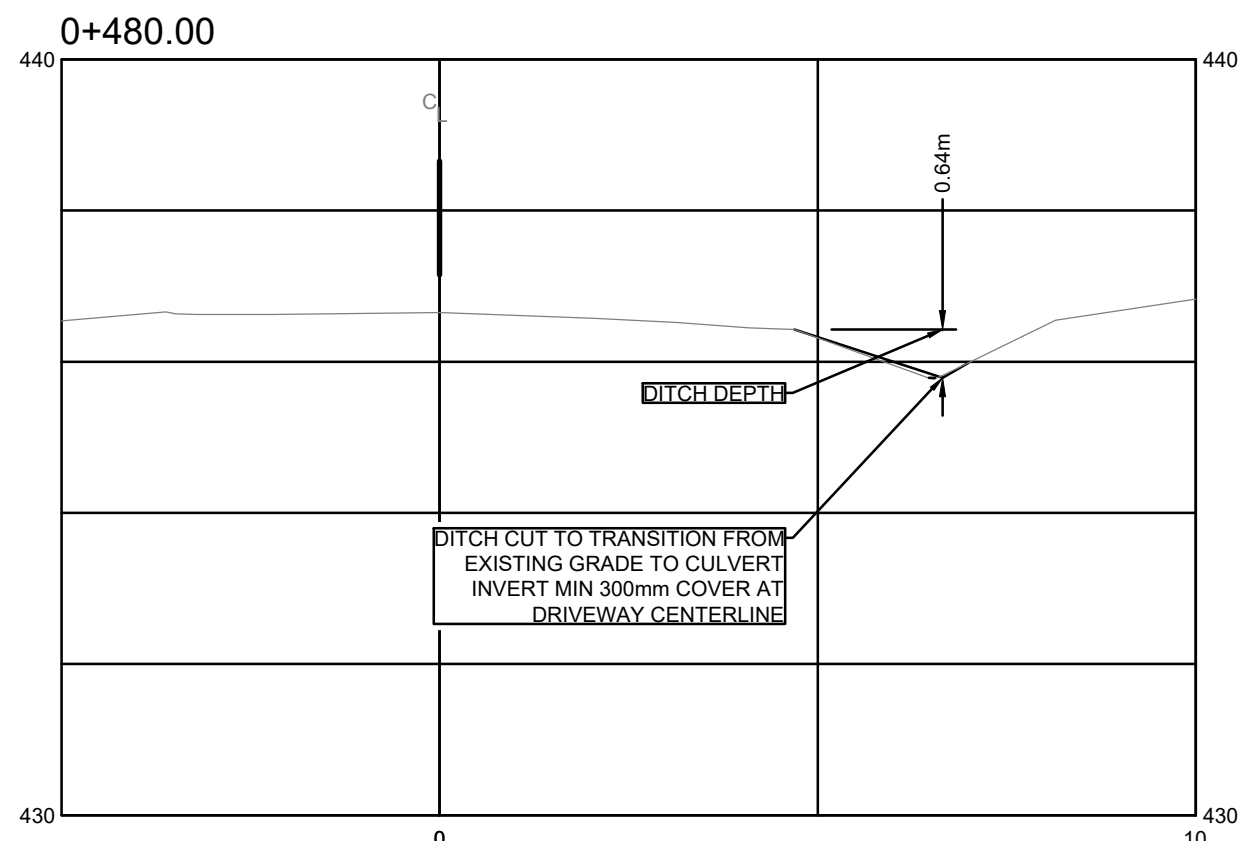
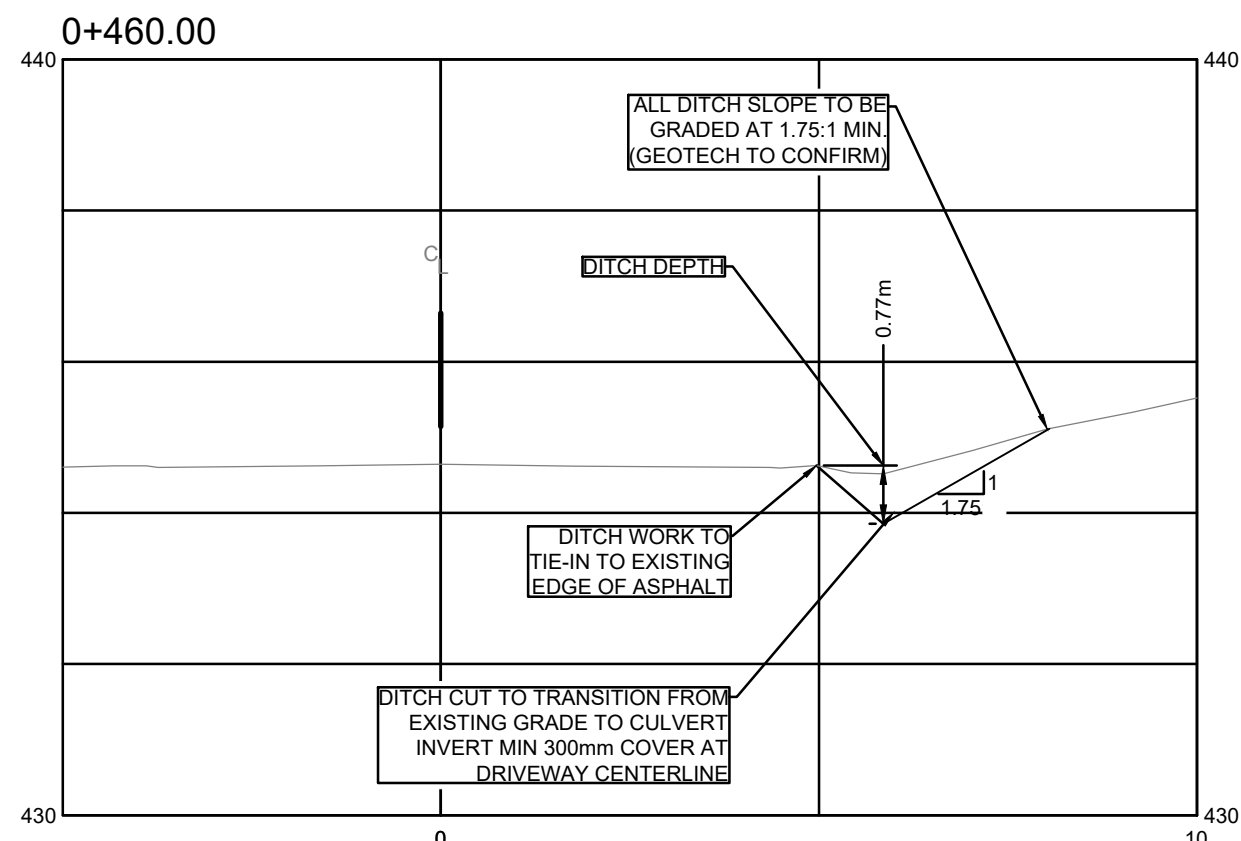
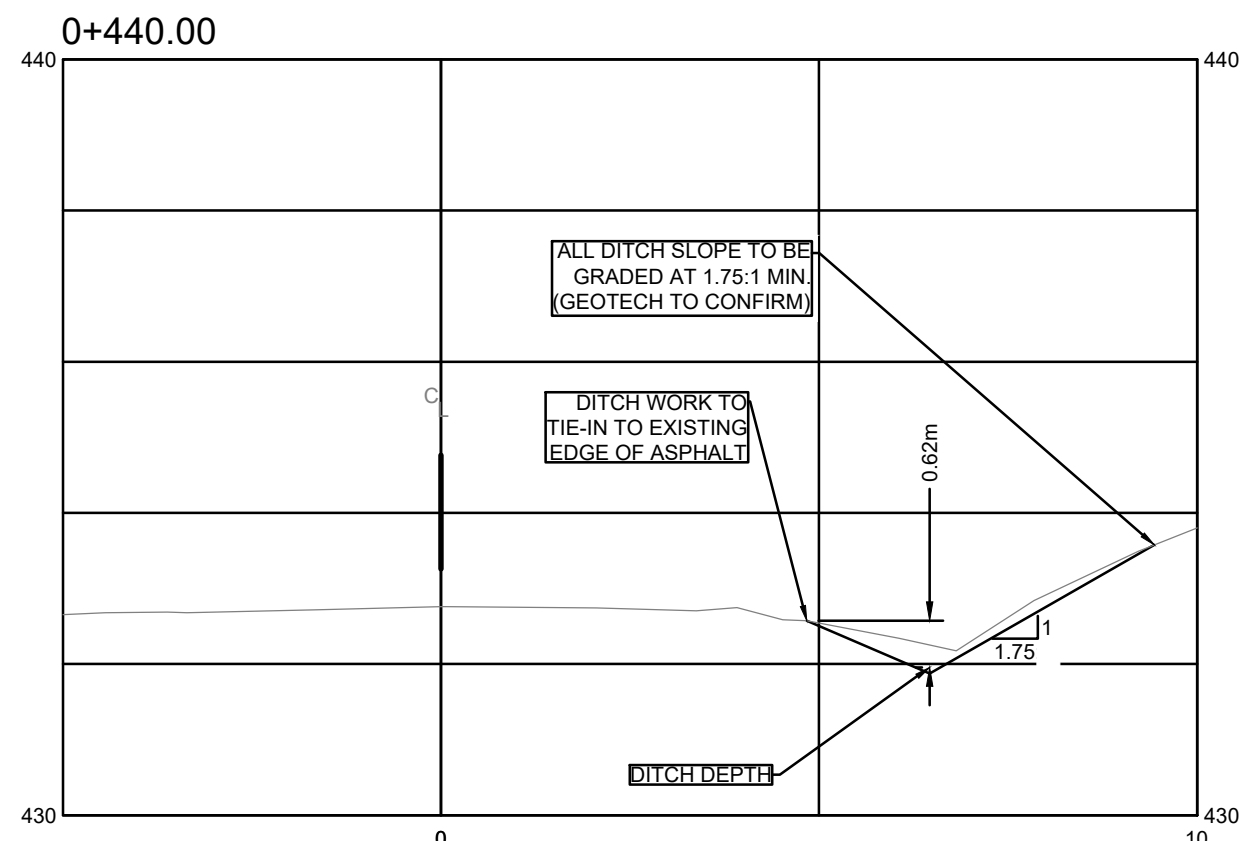
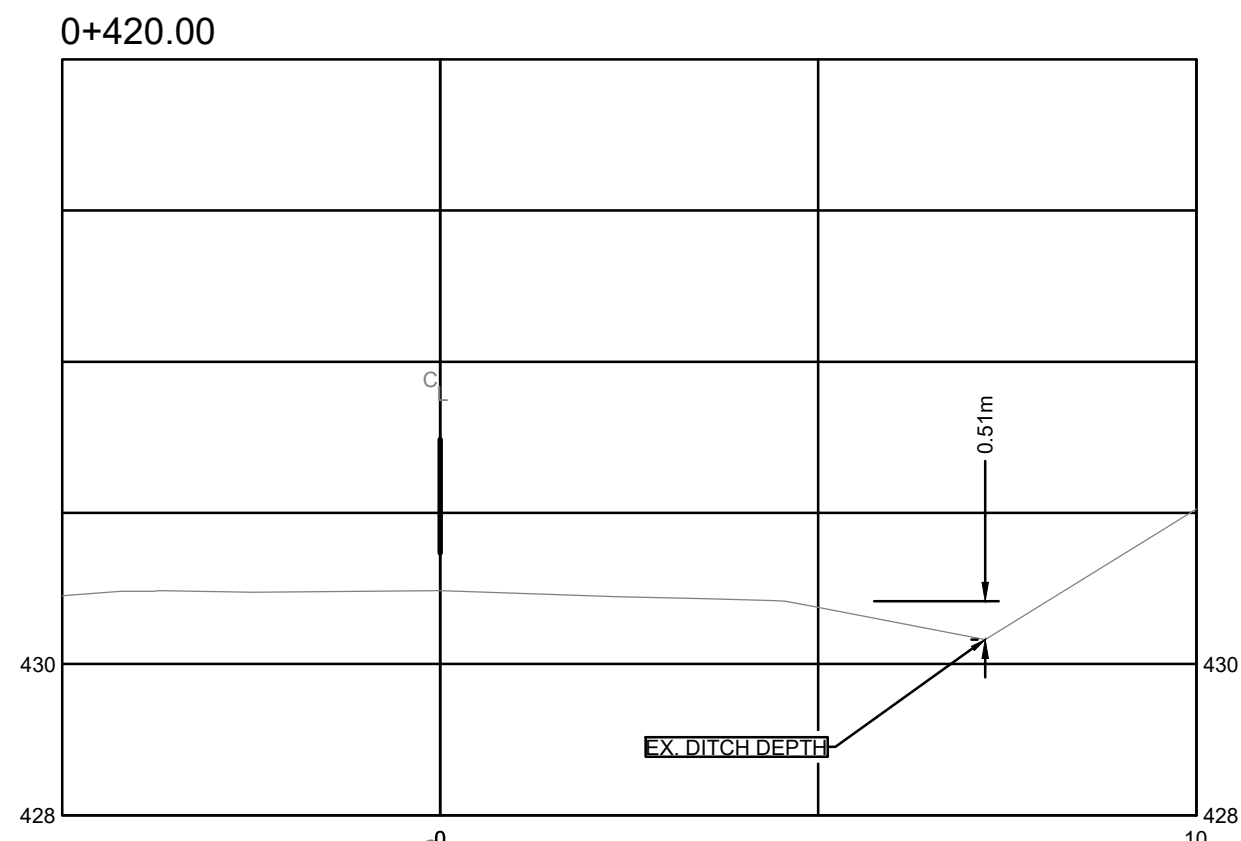
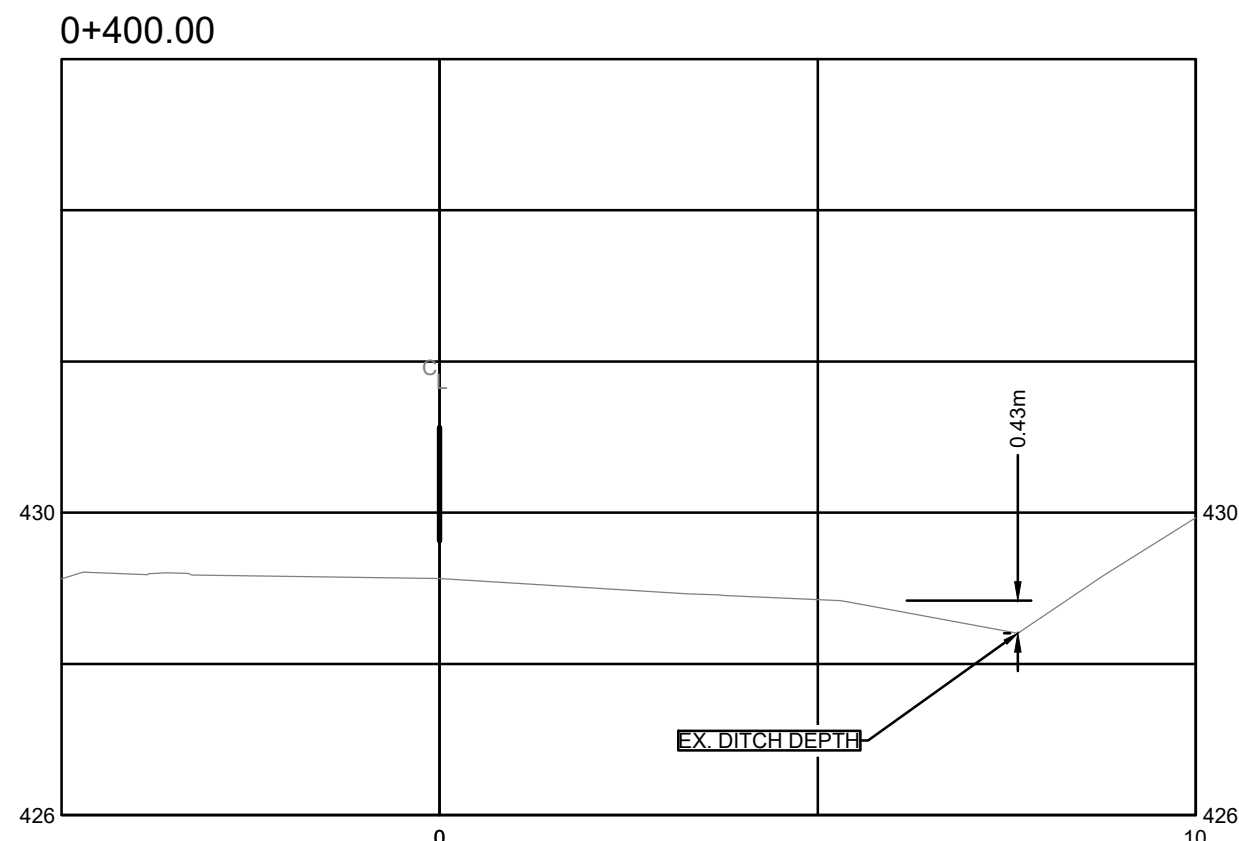
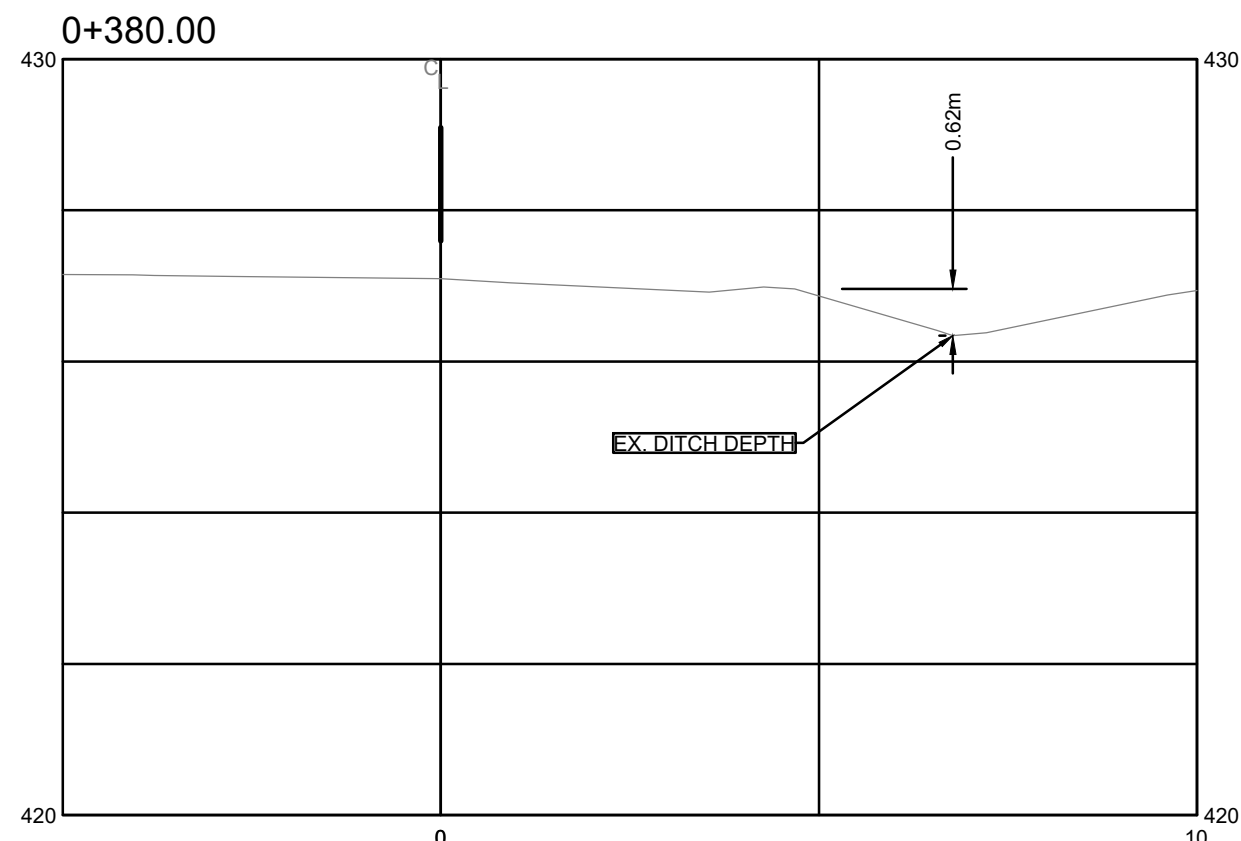
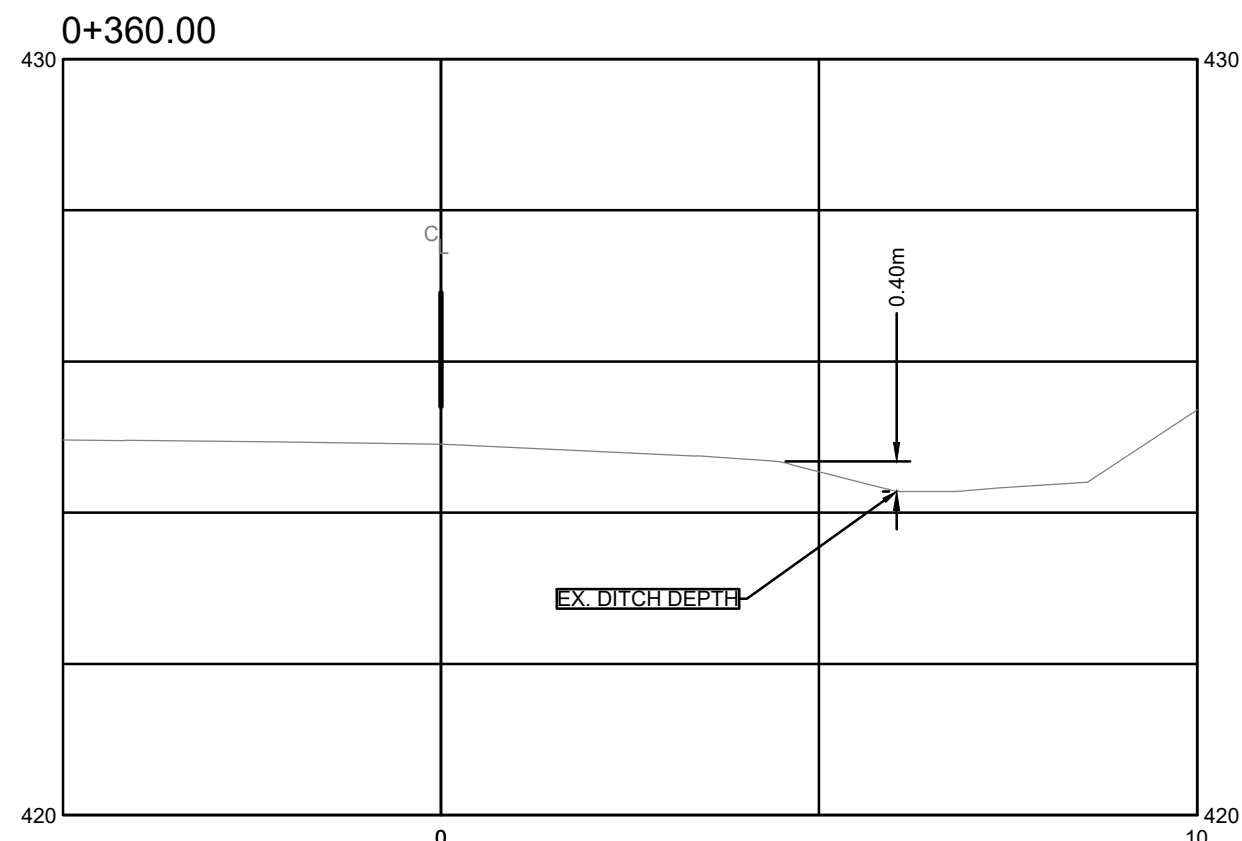
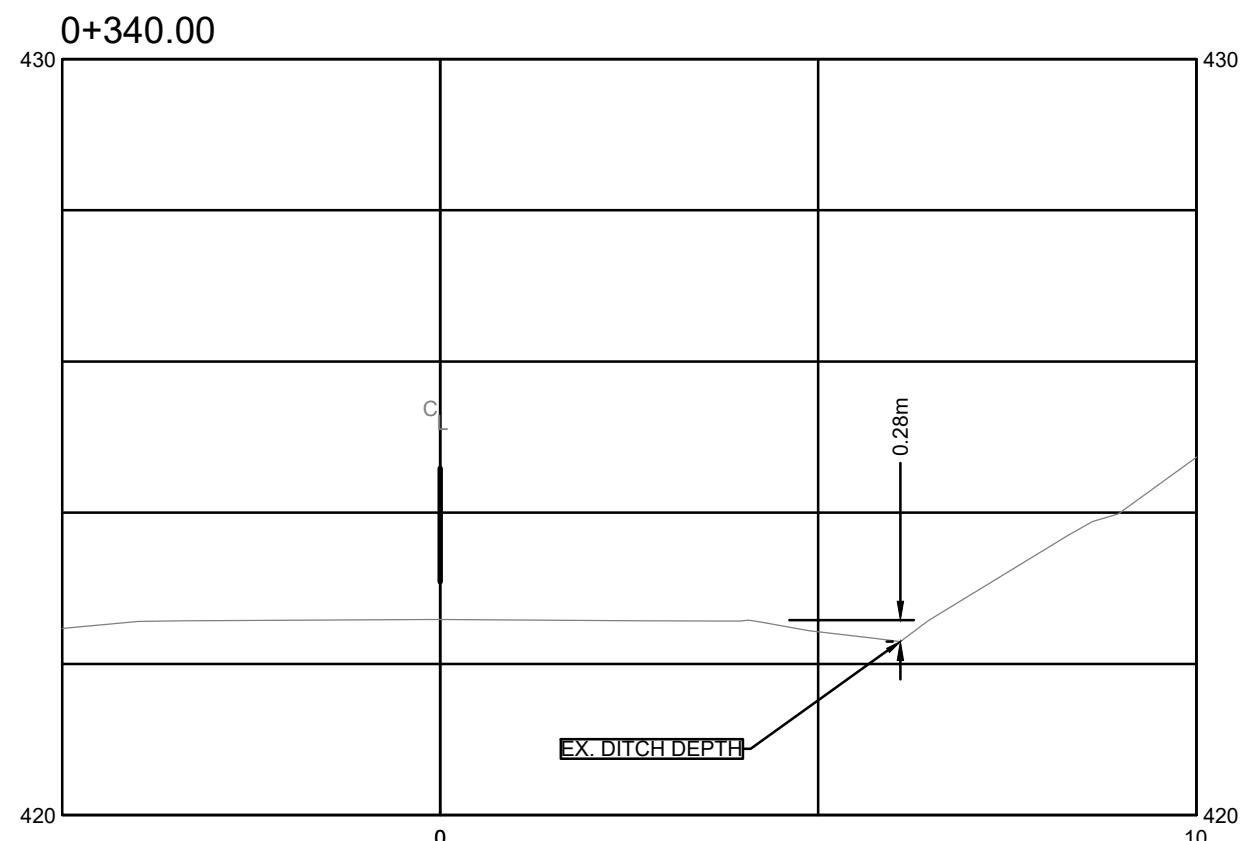
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DRAFT
(ISSUED FOR
REVIEW)

SEA



DRAWING NUMBER
C301



REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
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B	2023/09/14	FDS	DLP	BTL	ISSUED FOR 50% PRELIMINARY DESIGN
C	2024/03/05	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN
D	2024/03/14	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN

PERMIT NO. 1001279

DRAFT
(ISSUED FOR REVIEW)

SEAL



SCALE
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V: 1:100

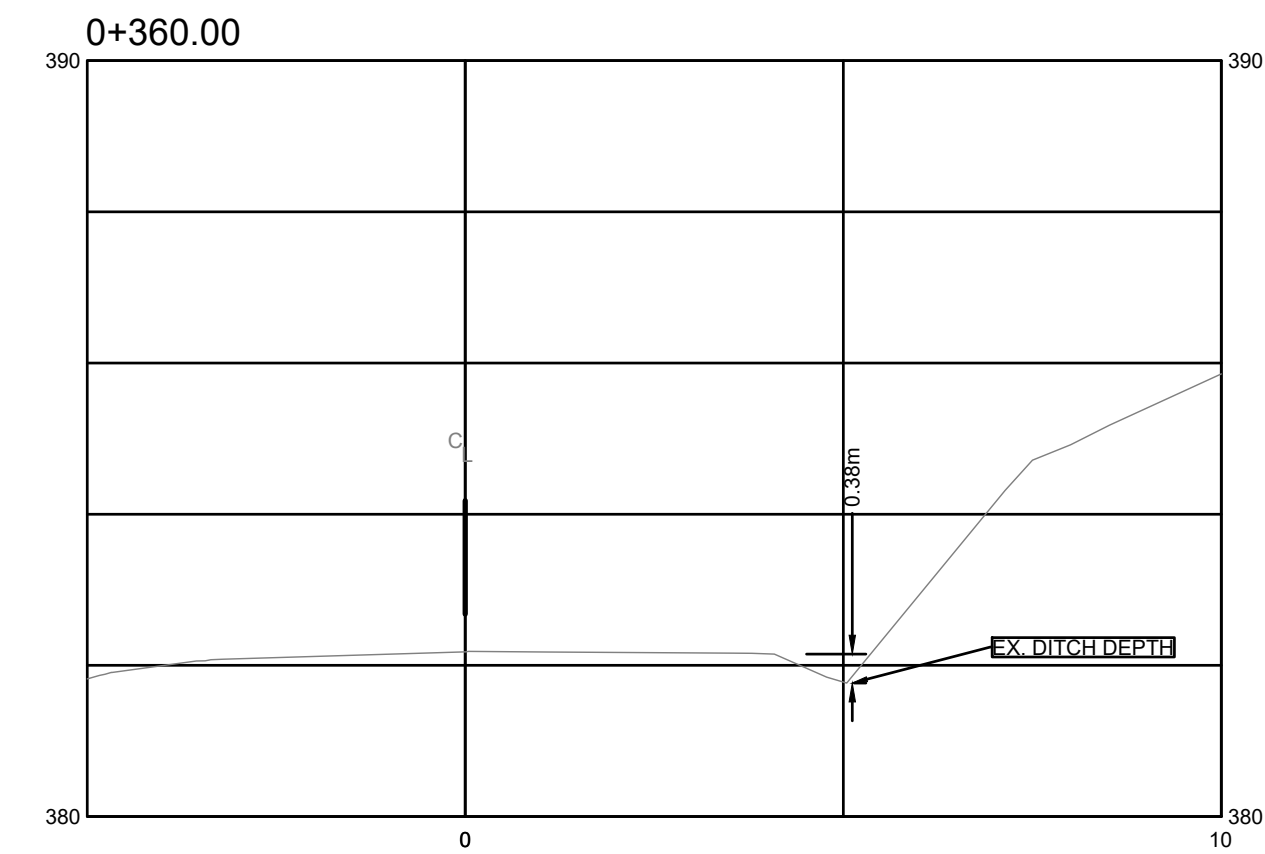
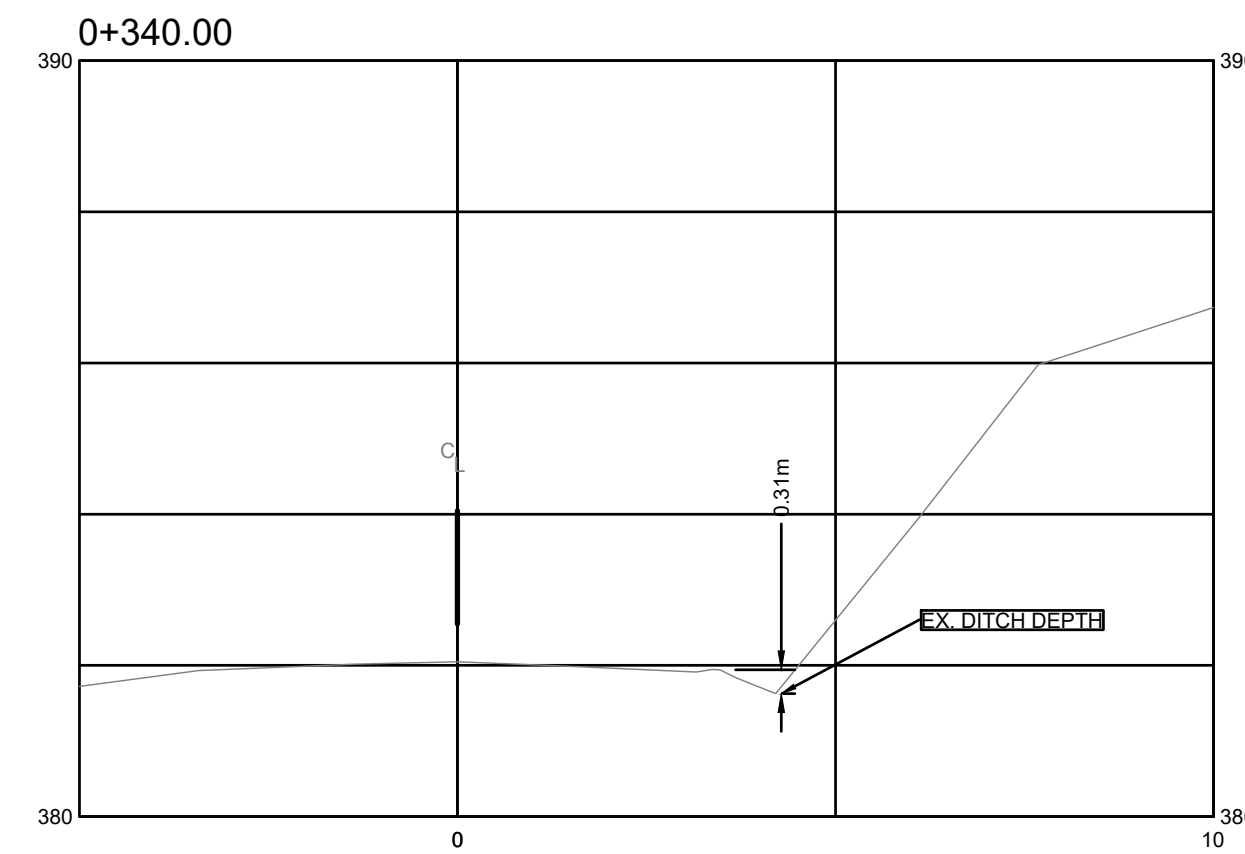
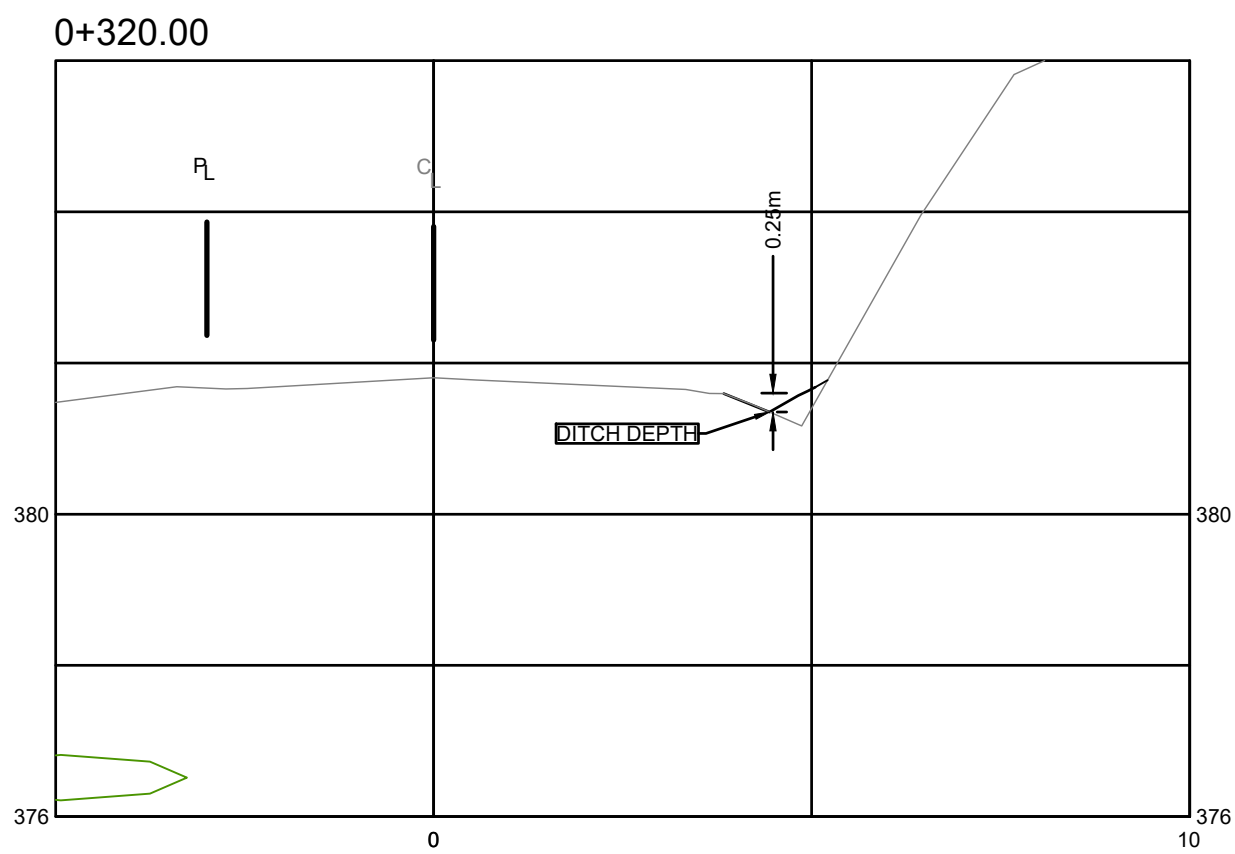
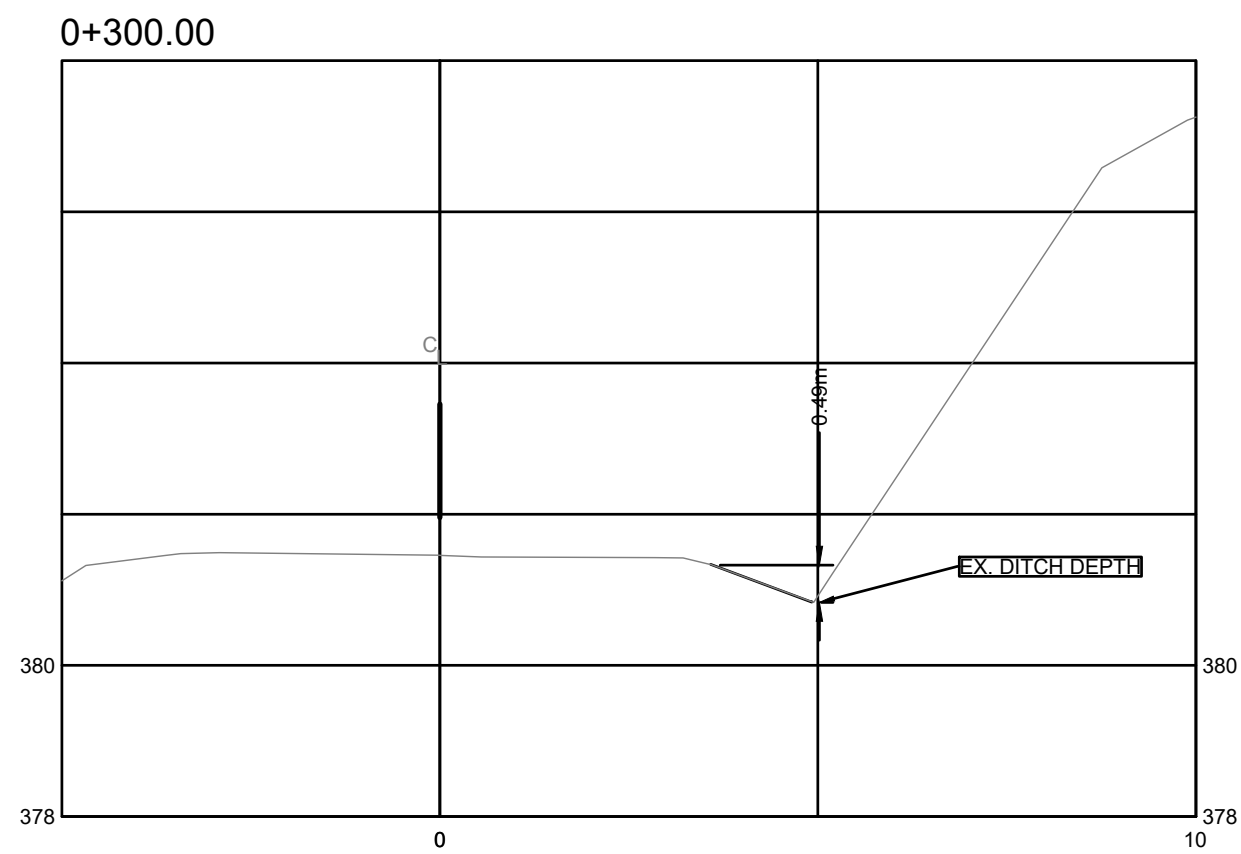
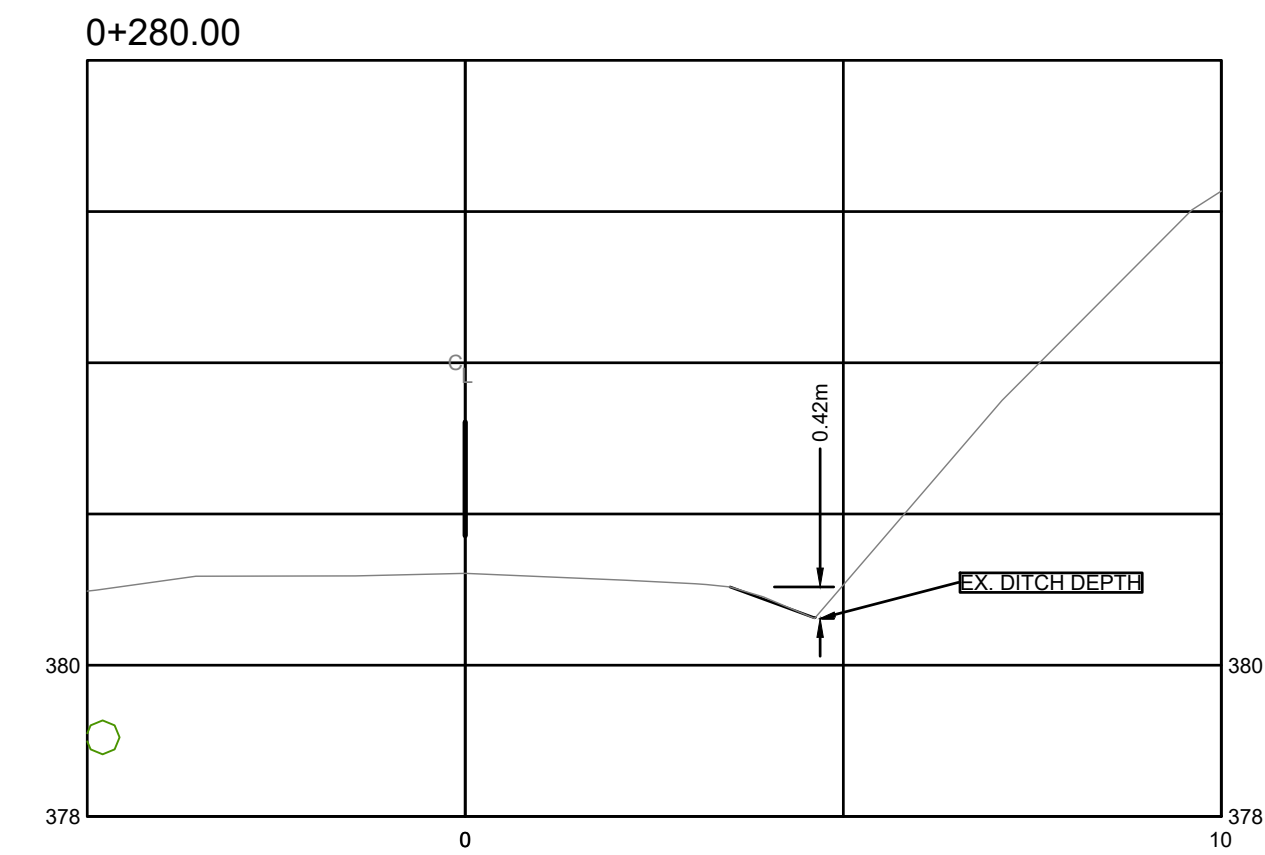
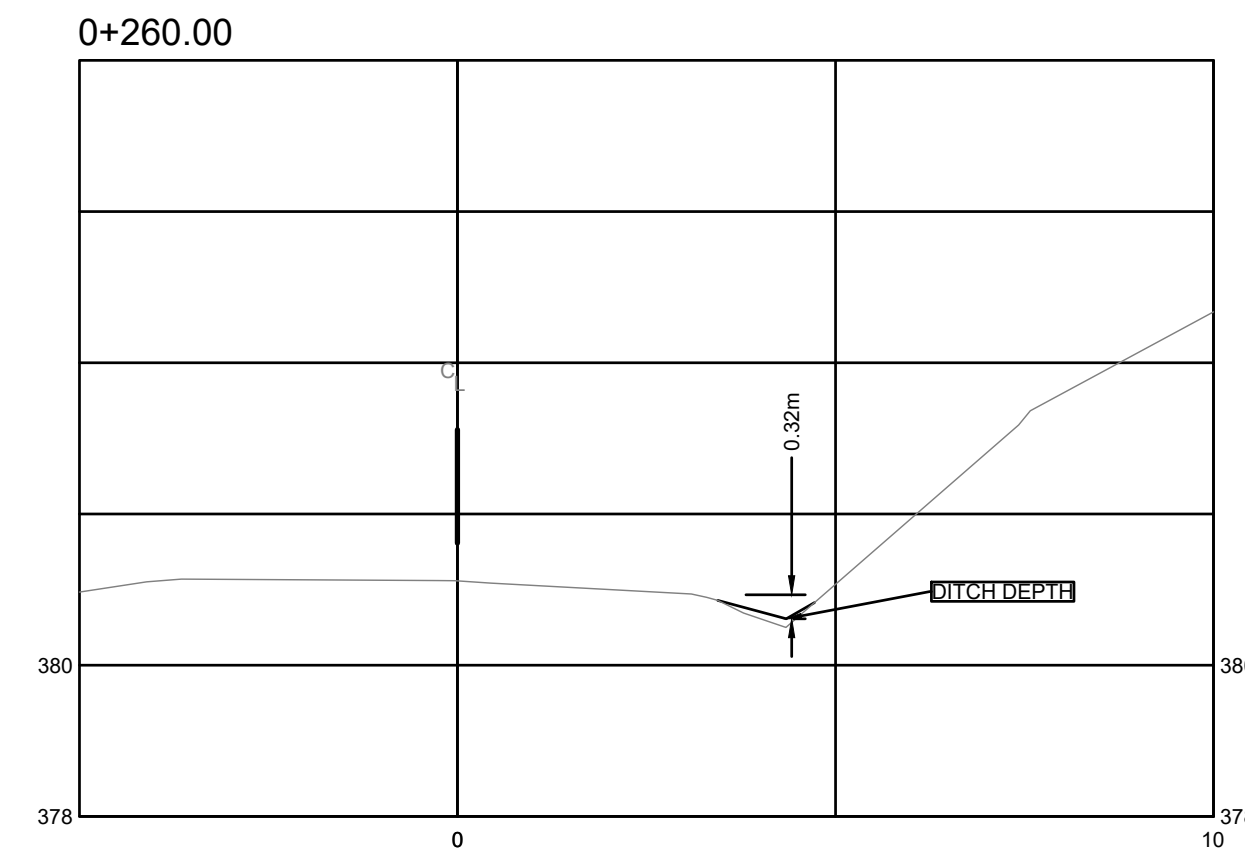
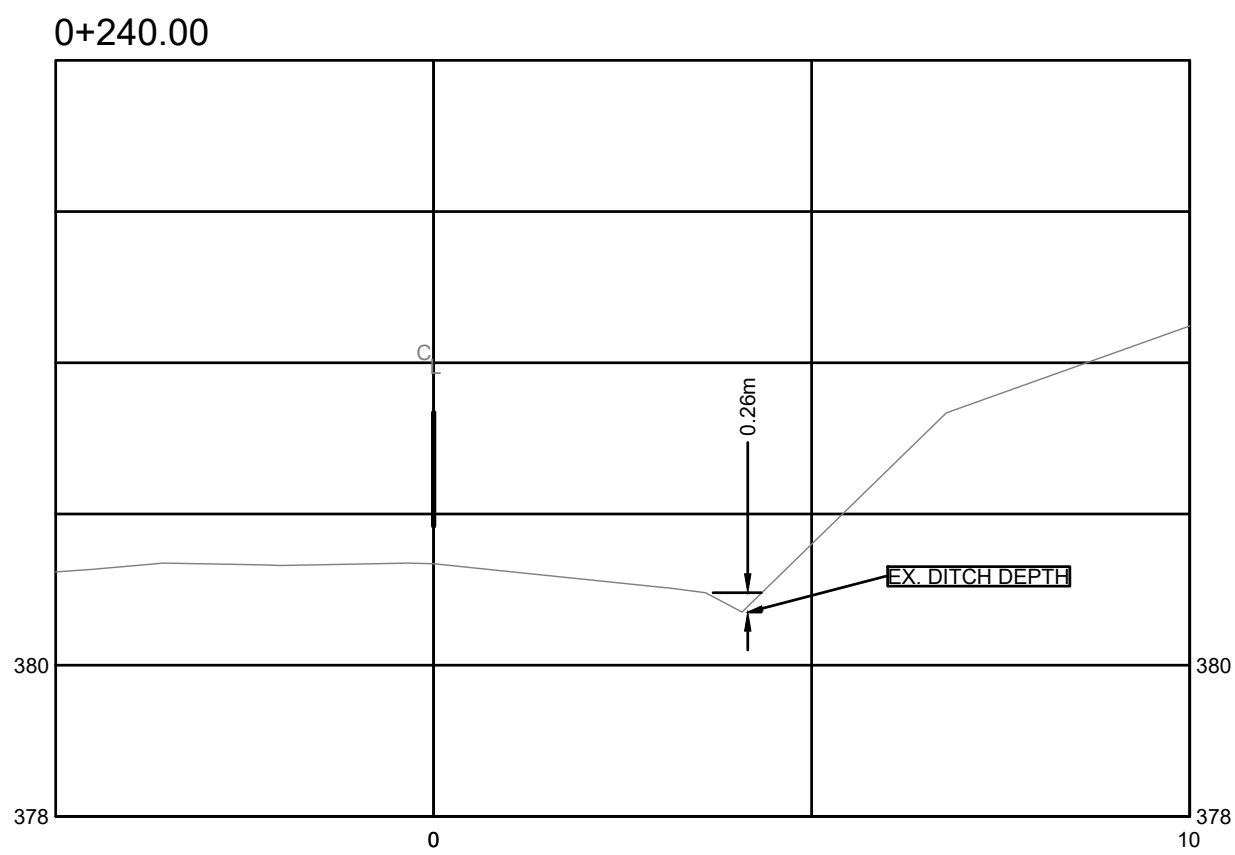
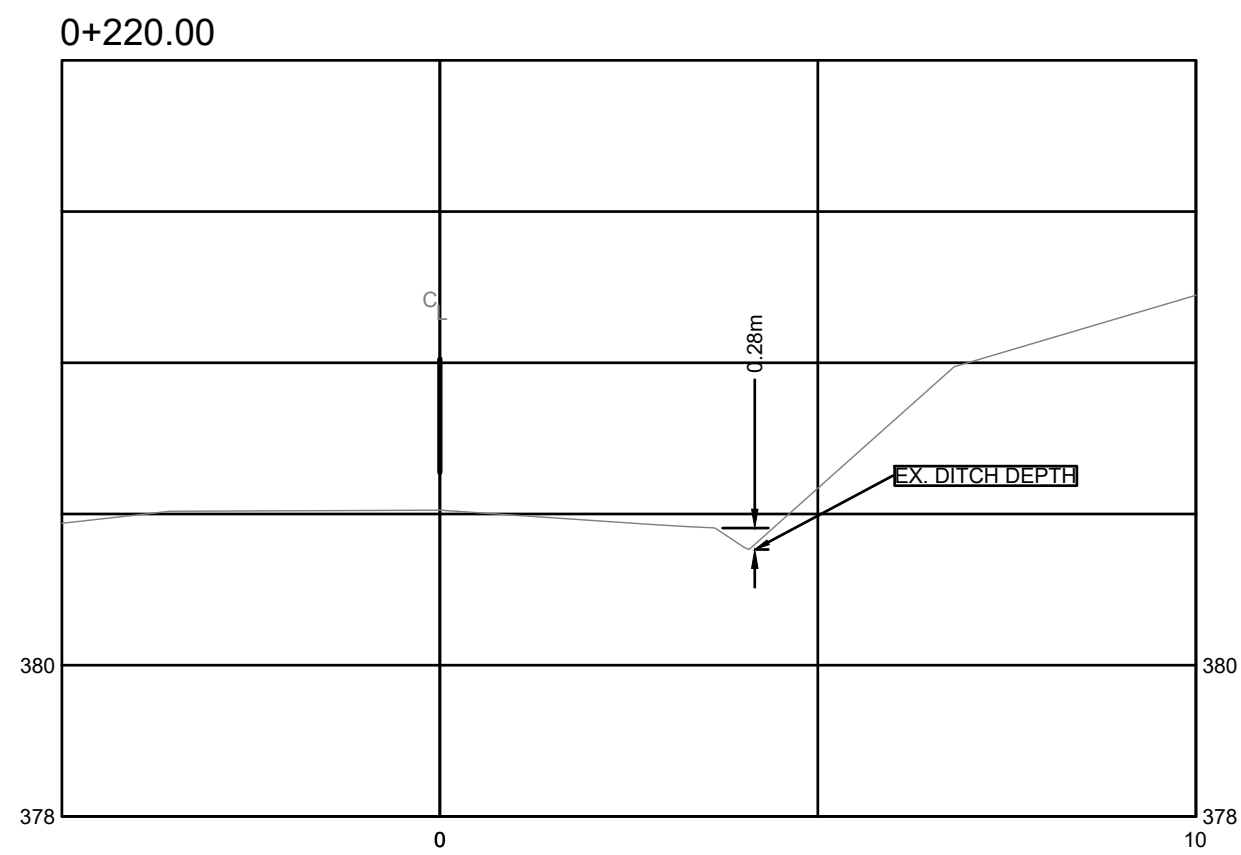
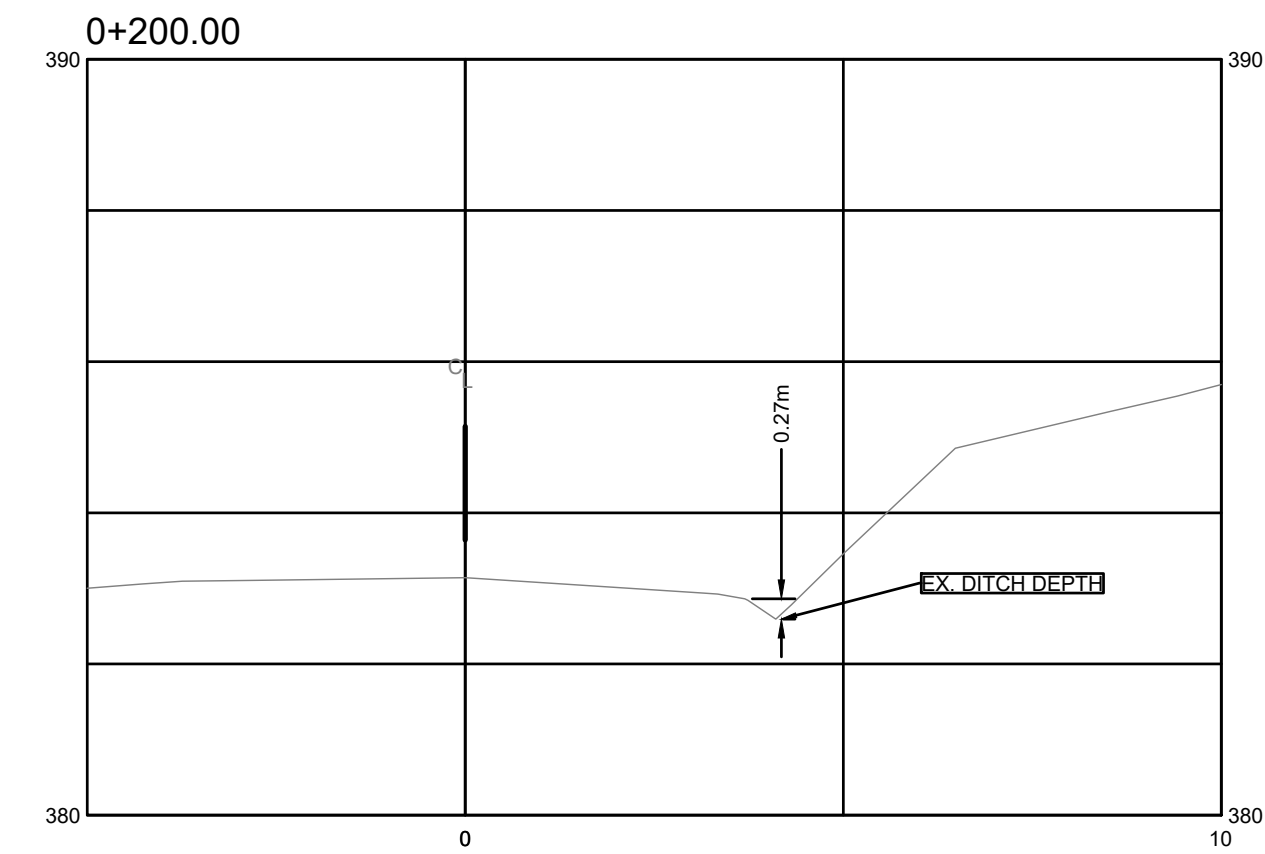
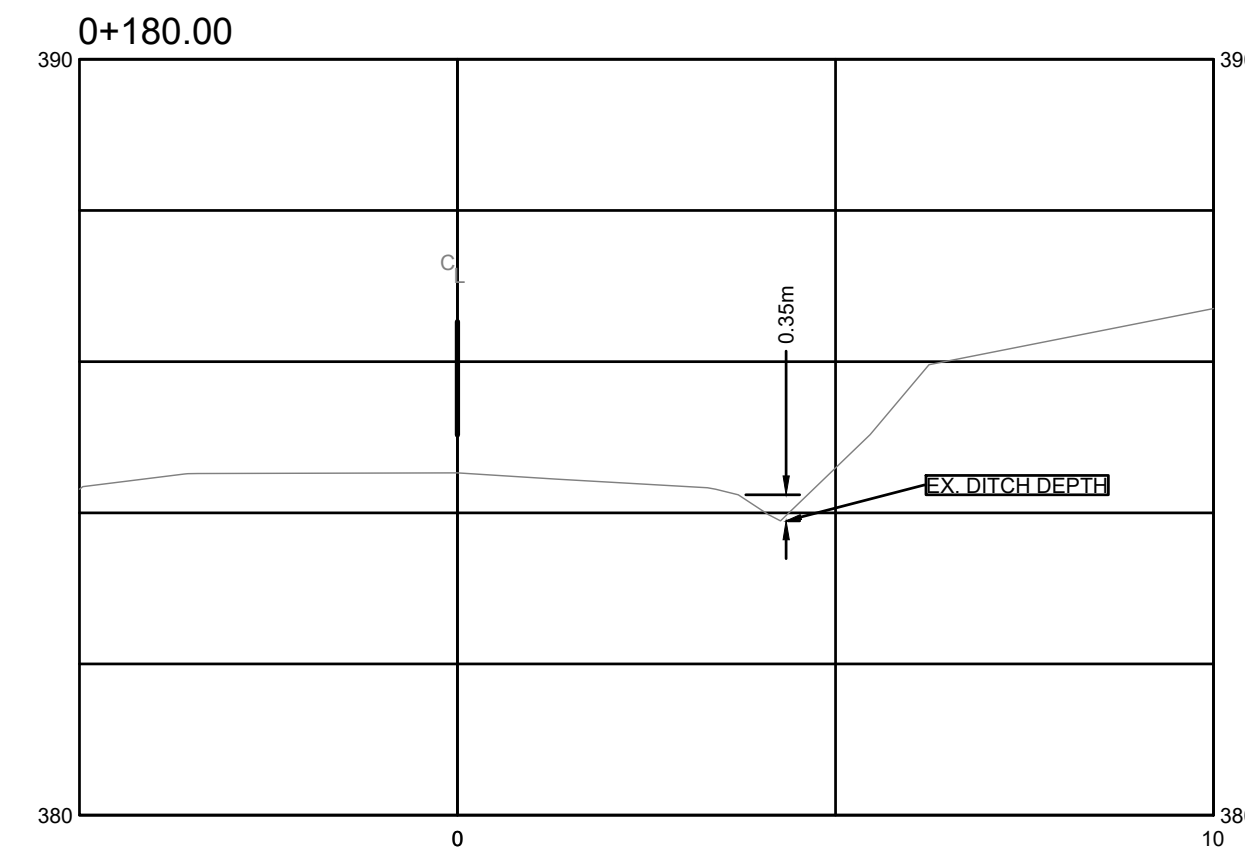
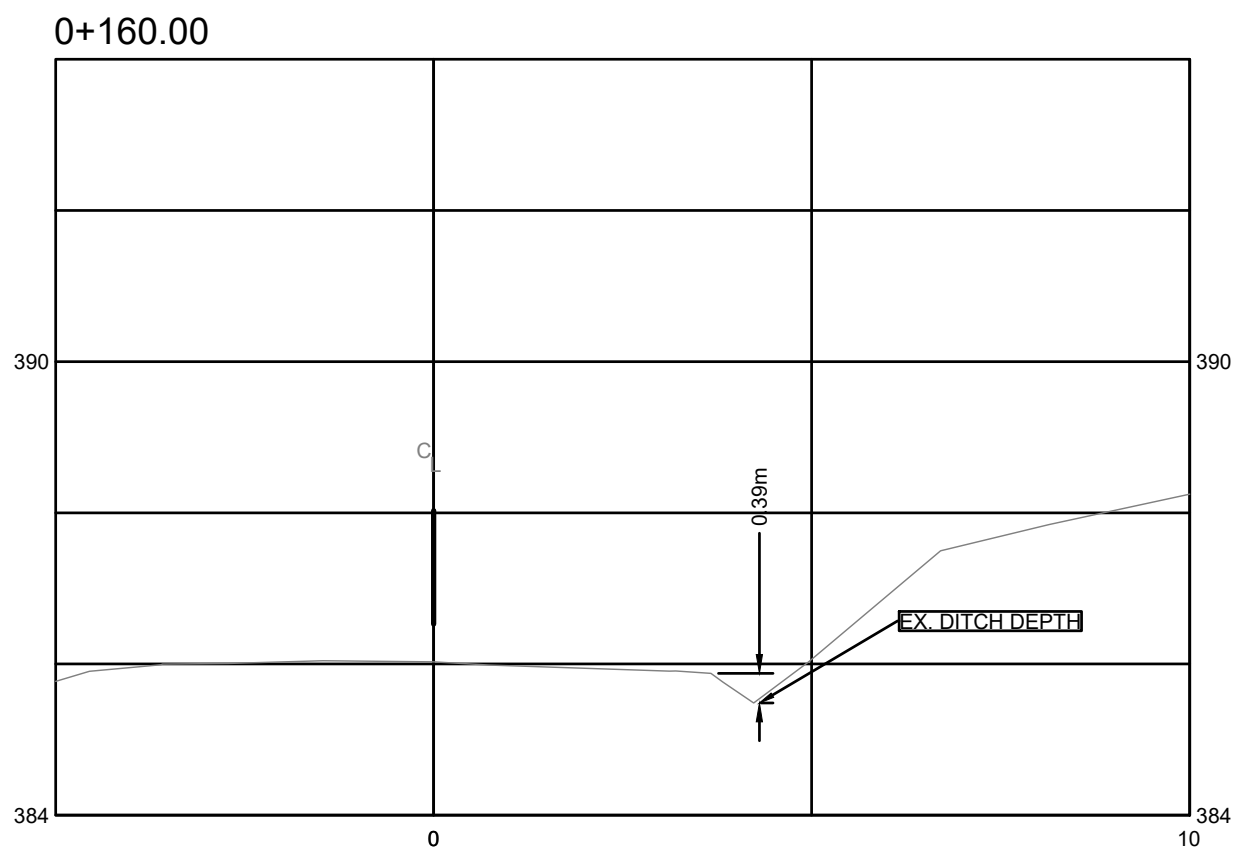
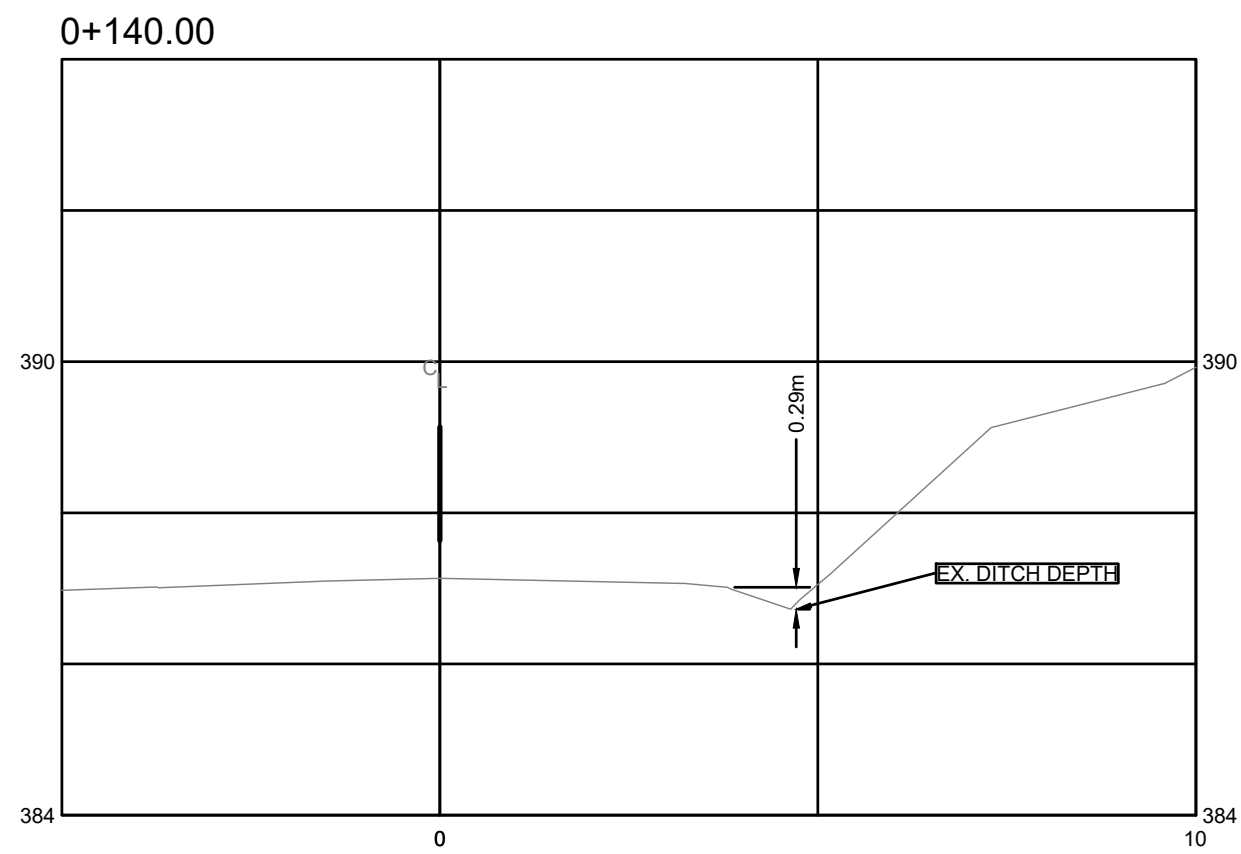
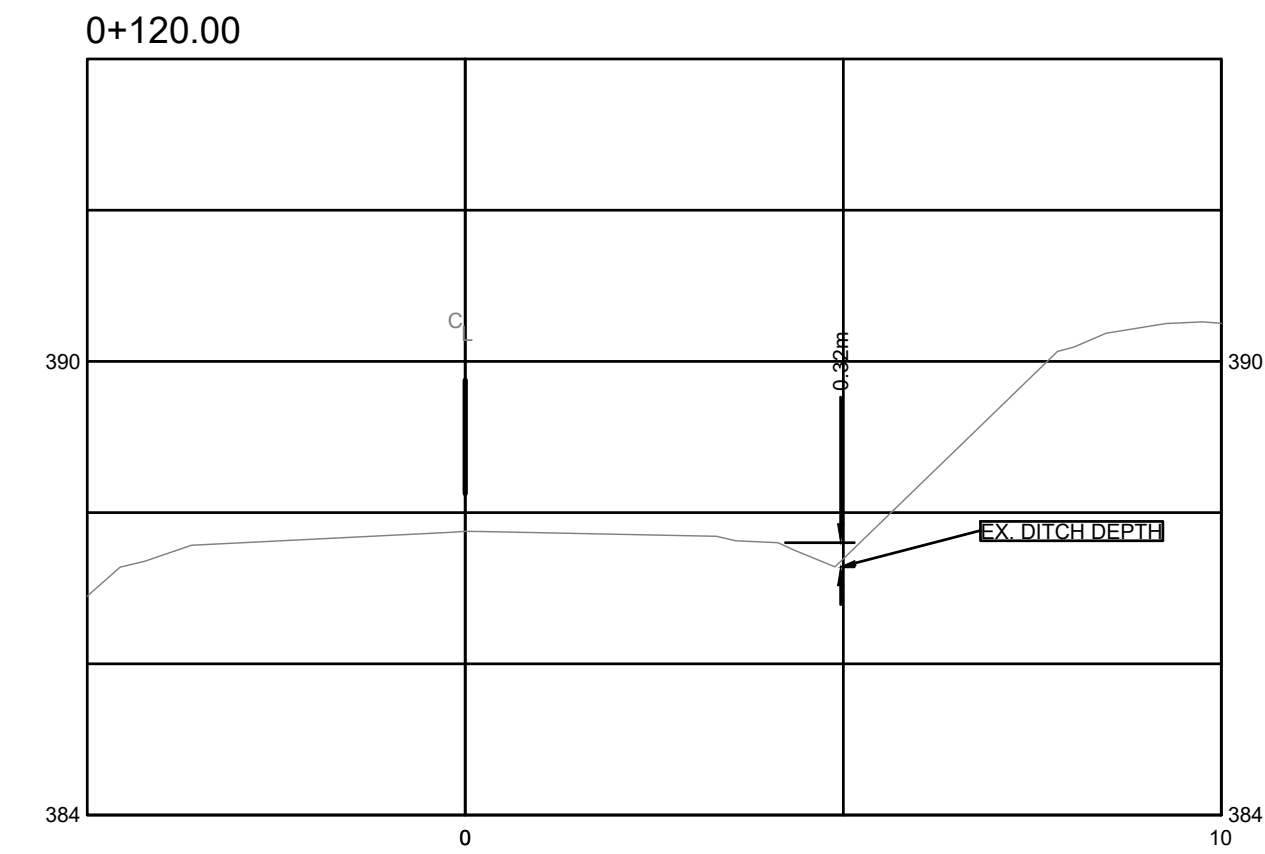
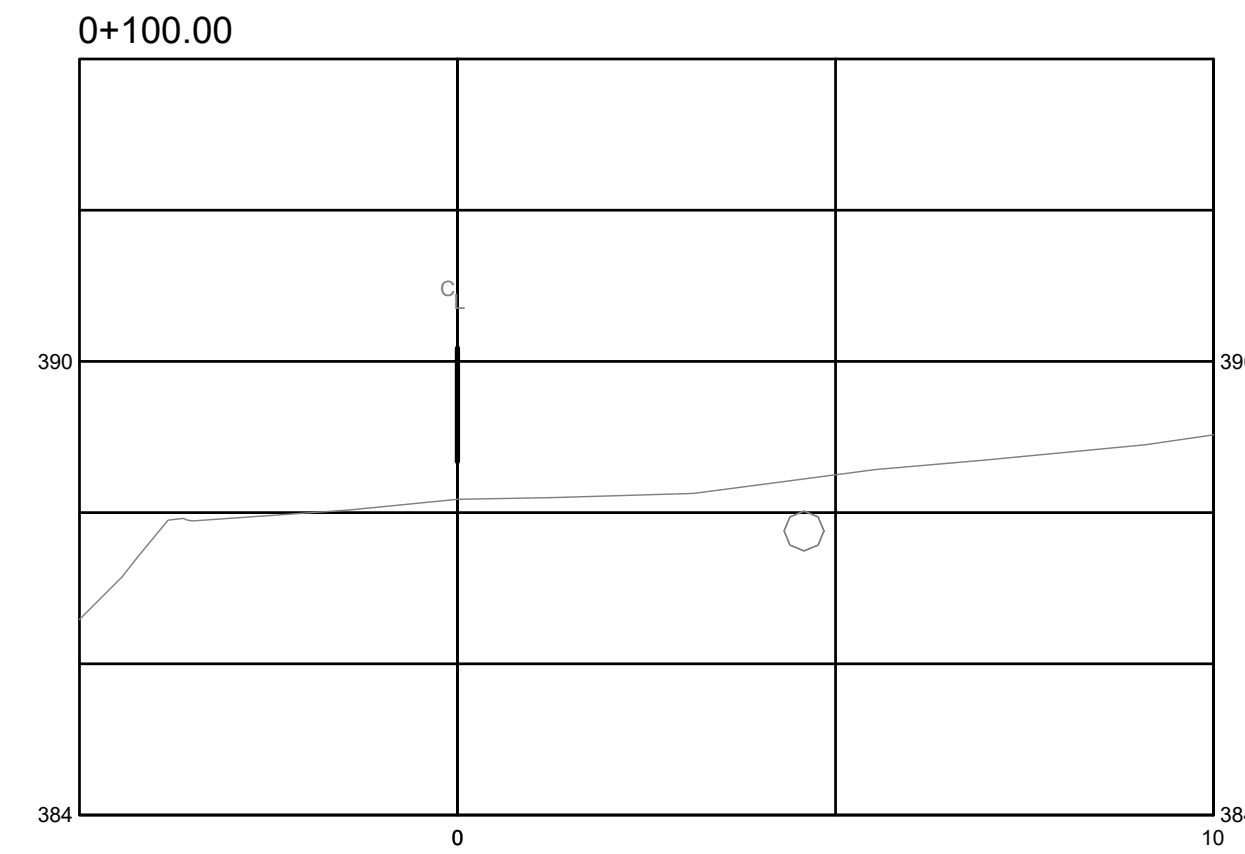
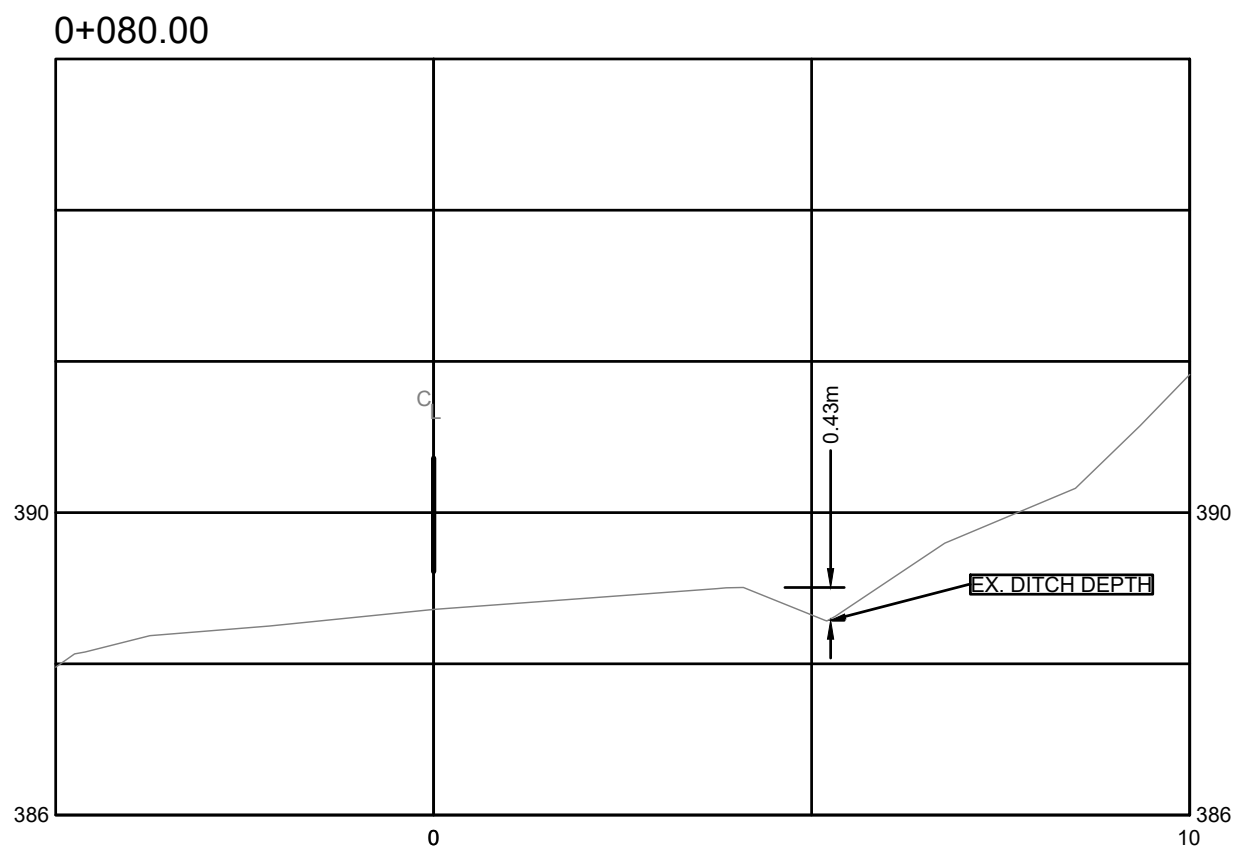
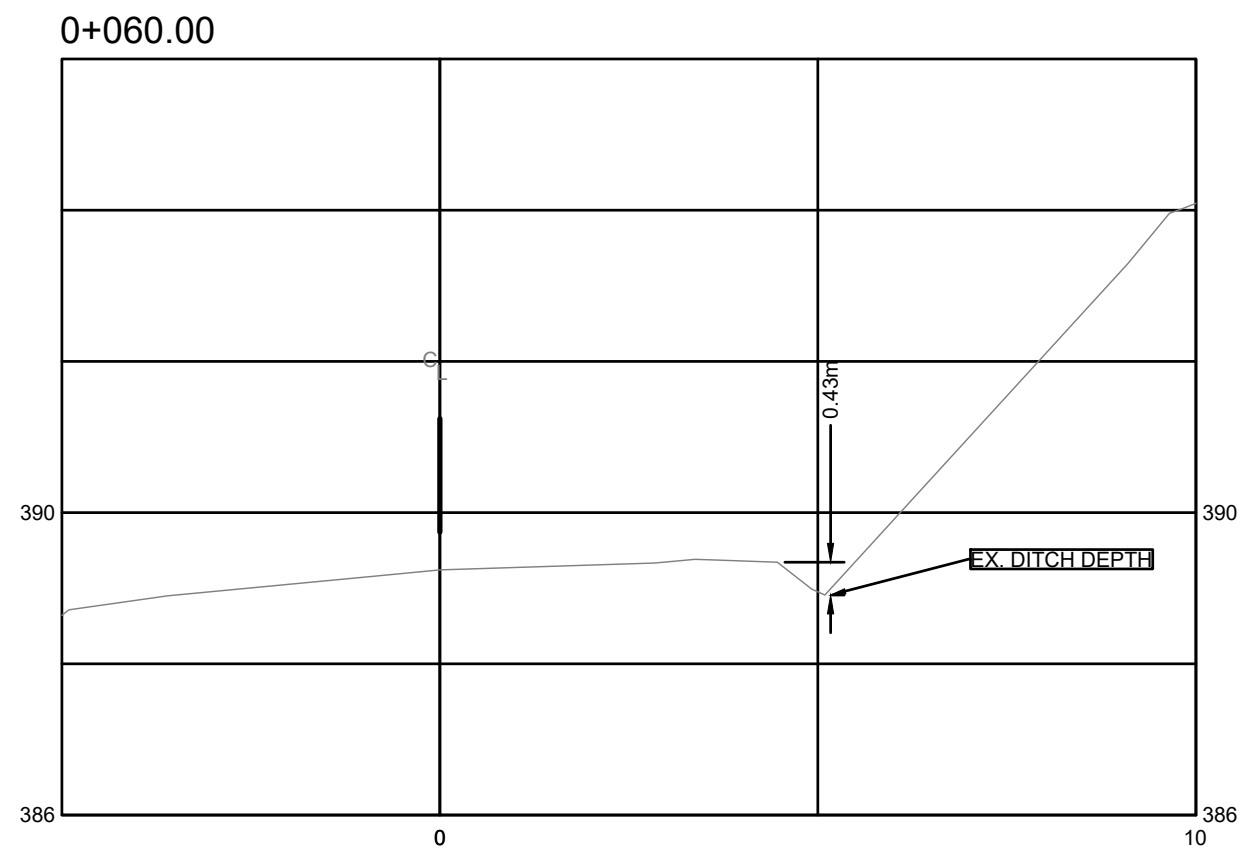
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15 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
KOKANEE ROAD CROSS SECTIONS

DRAWING NUMBER
C302

Z:\Projects\173\11 - North & South Basin Drainage Improvements\1 - Civil Engineering\Drawings\1 - Design\South Basin\173-11 - SouthBasinSmithRoad - DSN.dwg

14.03.2024



REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
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PERMIT NO 1001279

DRAFT
(ISSUED FOR REVIEW)



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V: 1:100

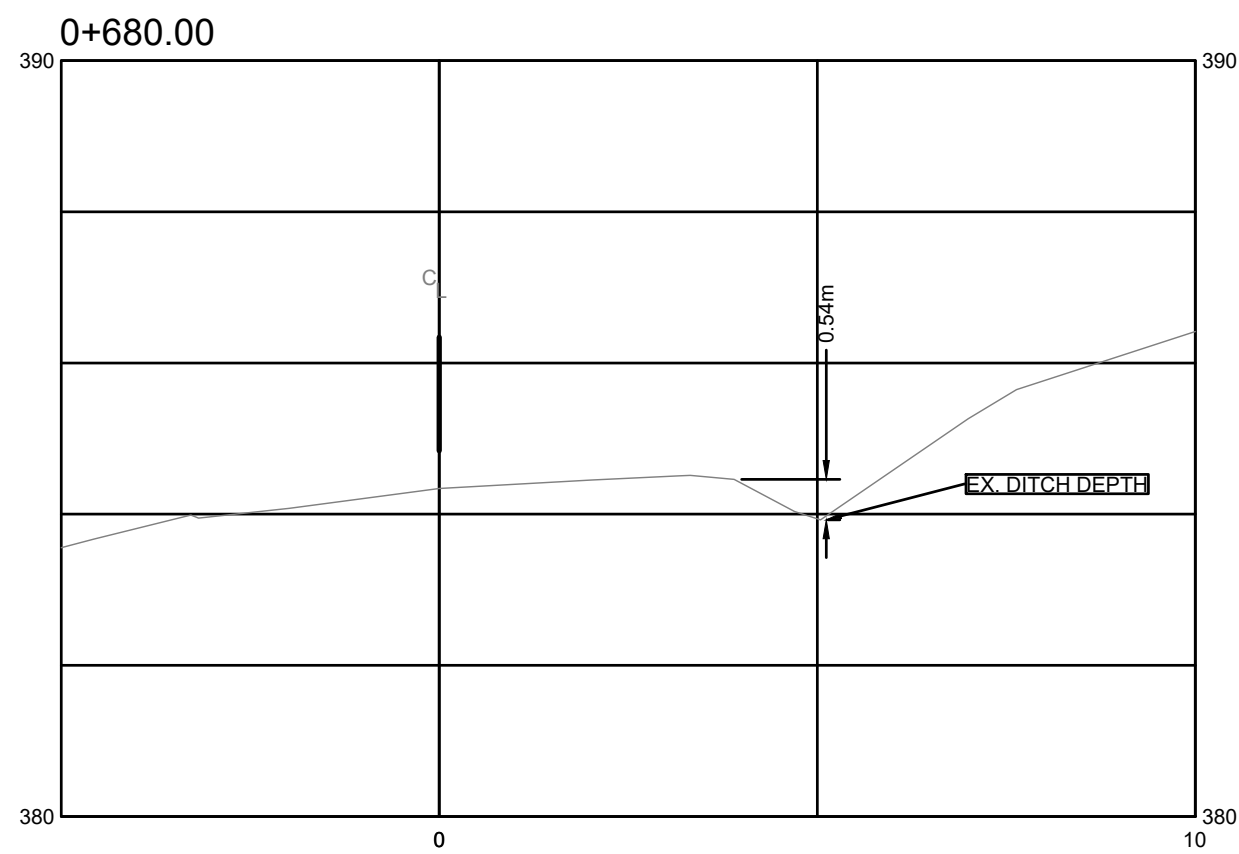
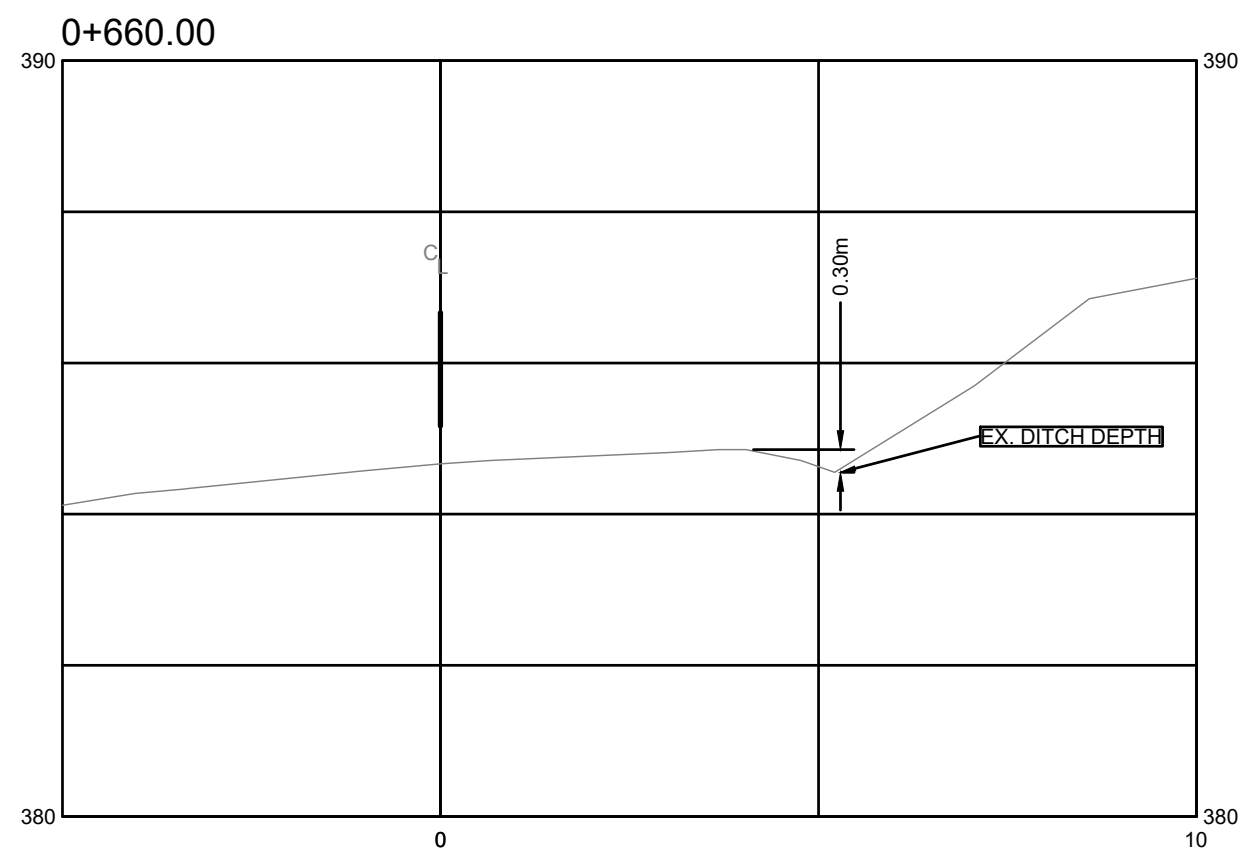
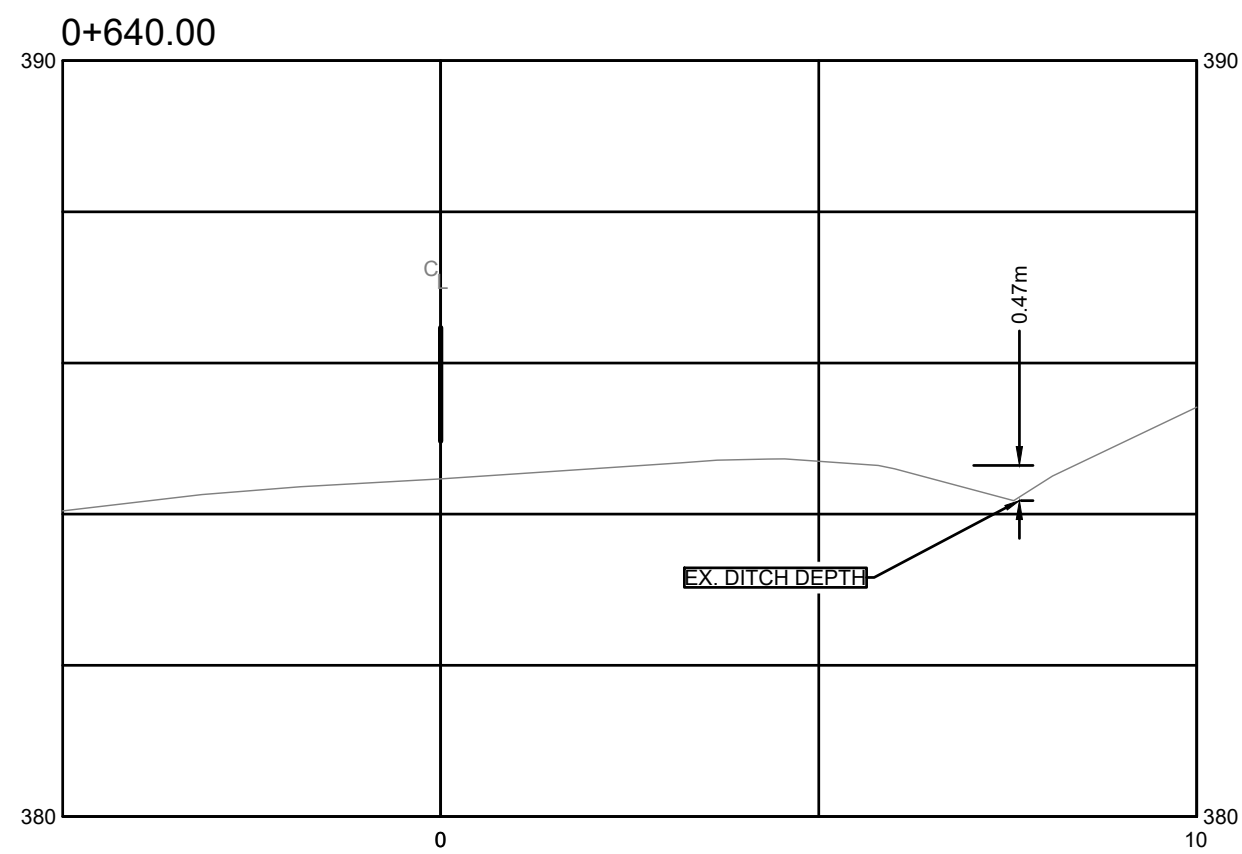
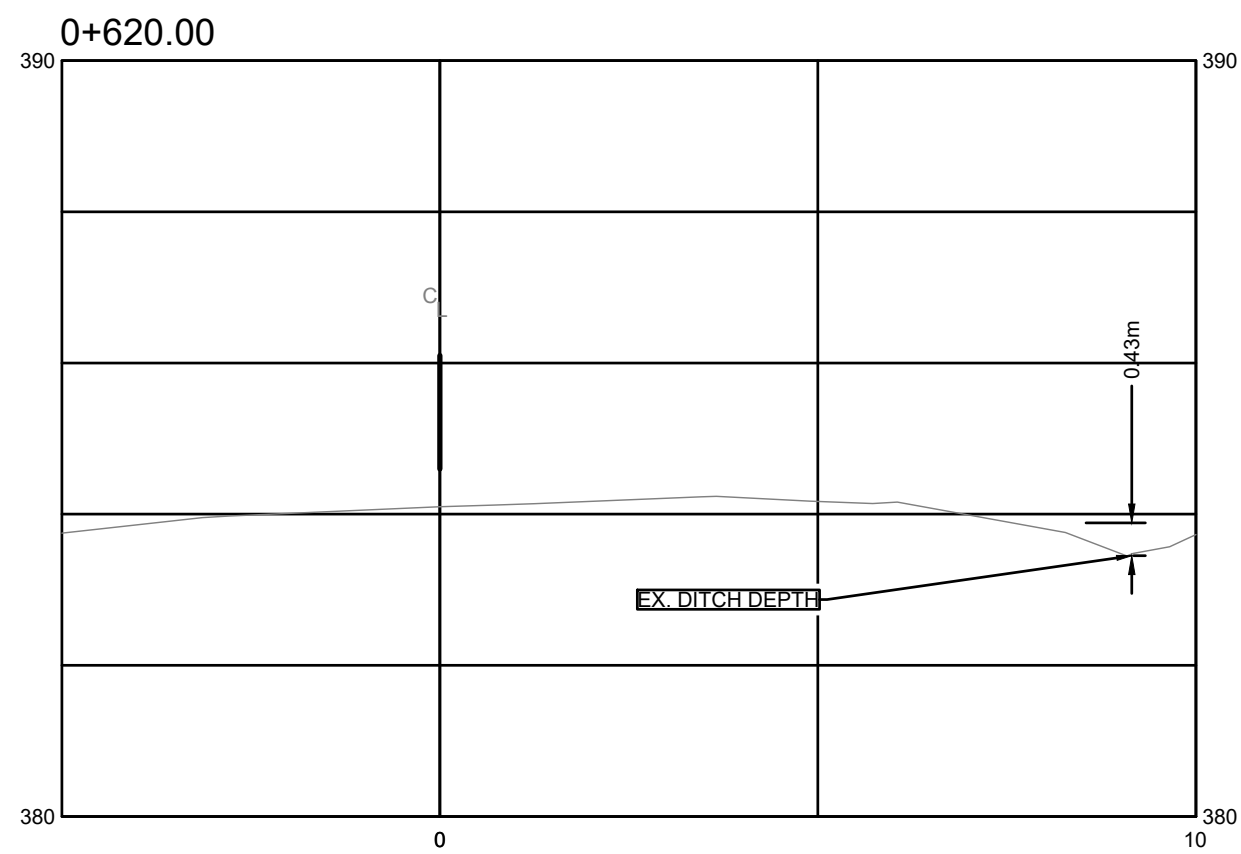
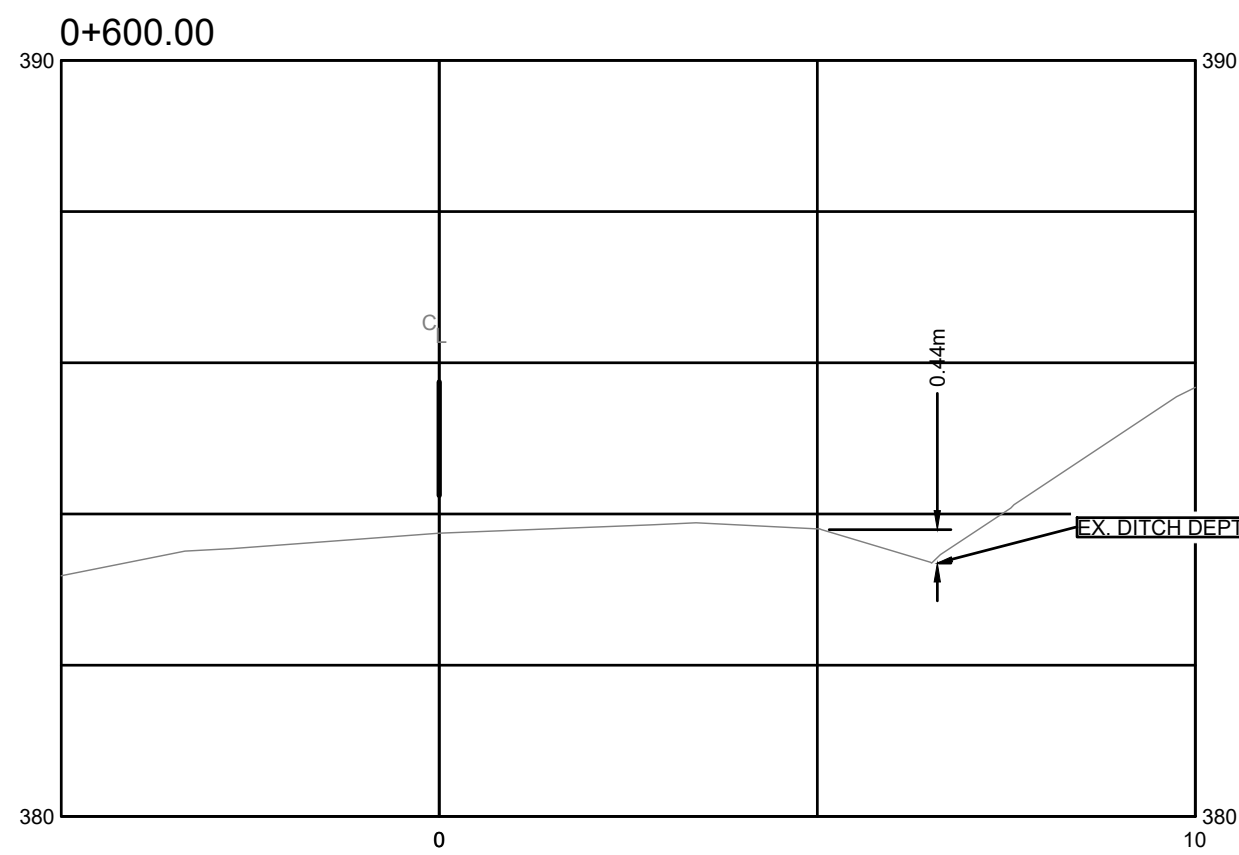
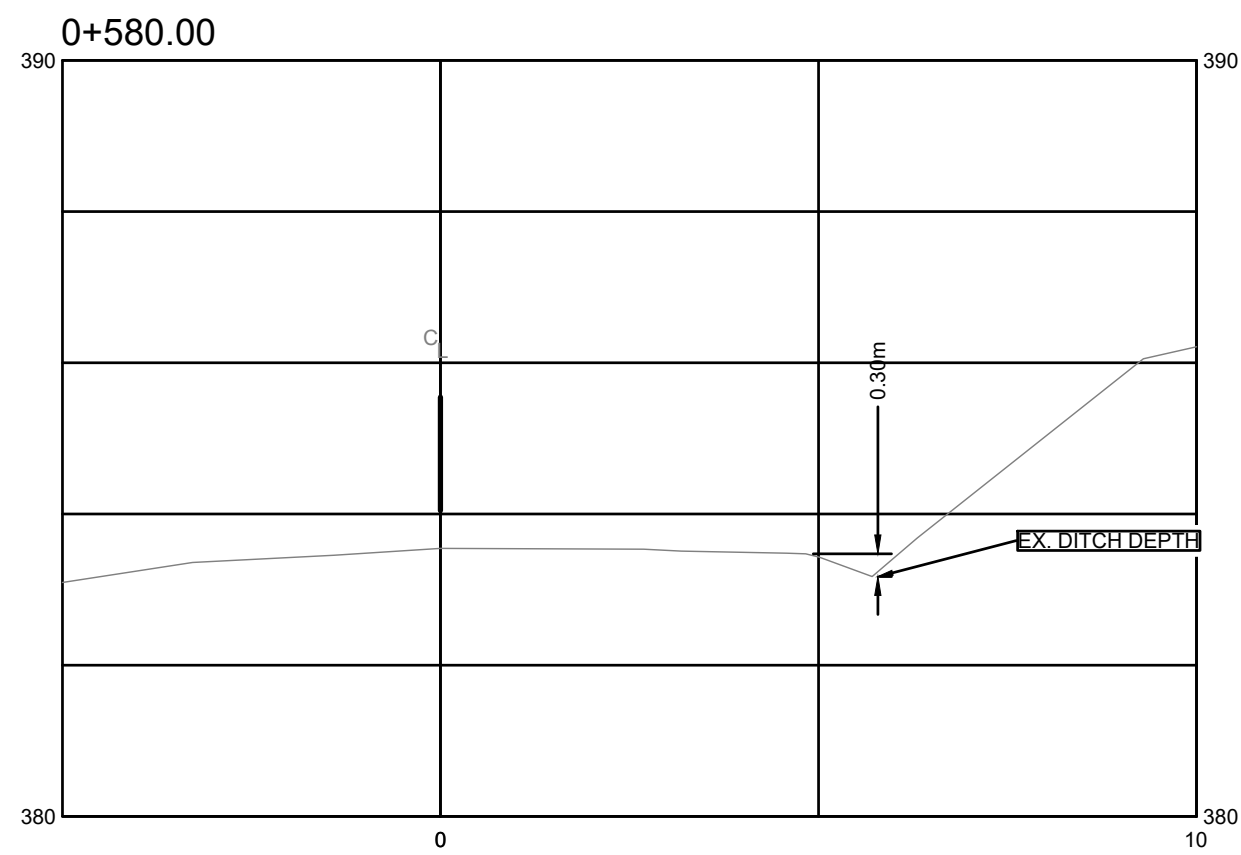
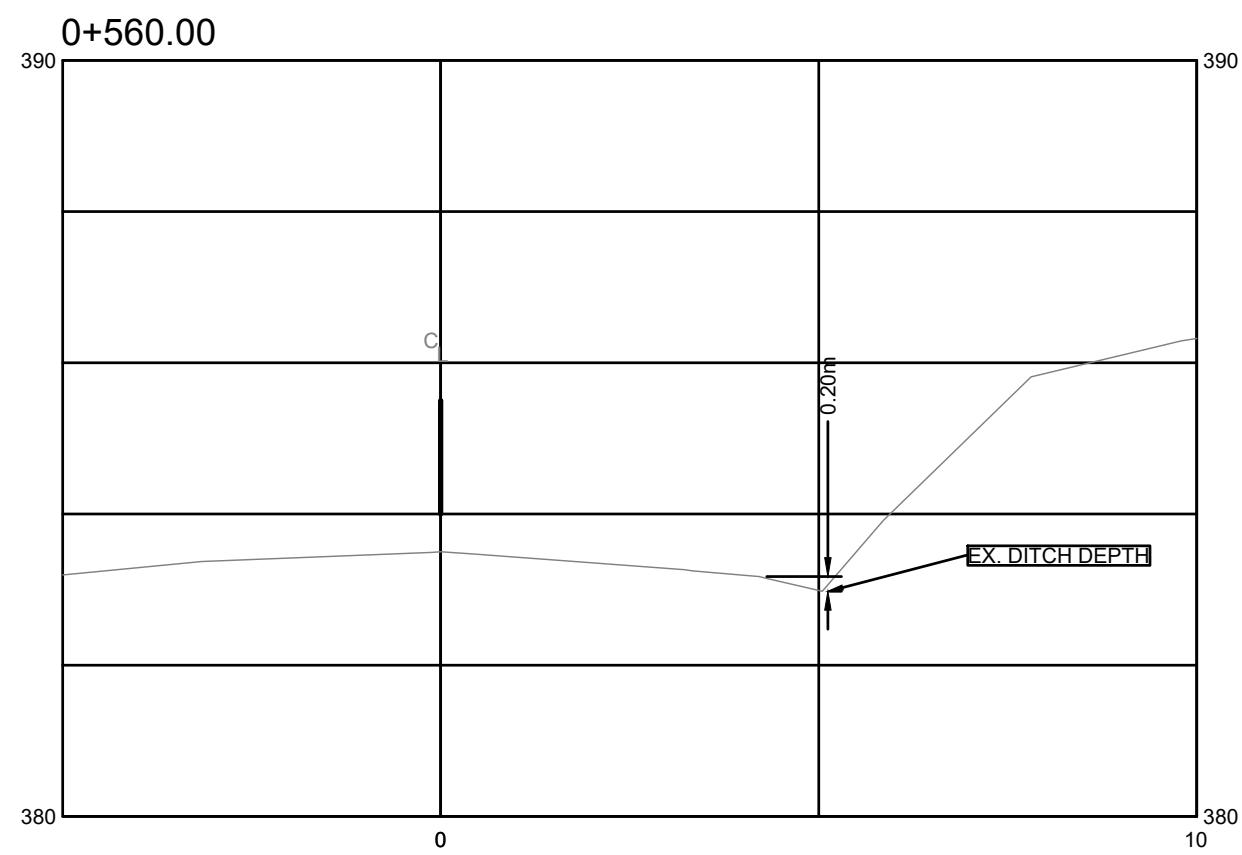
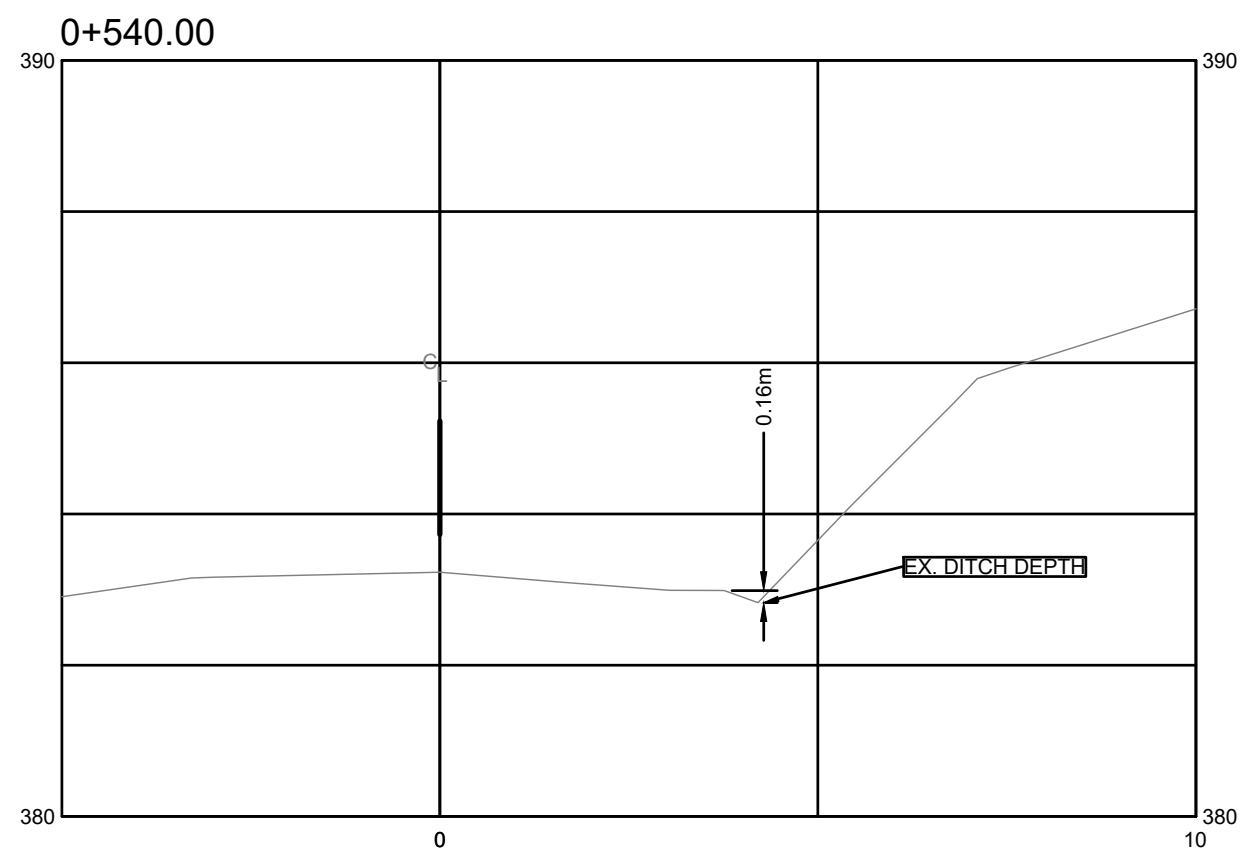
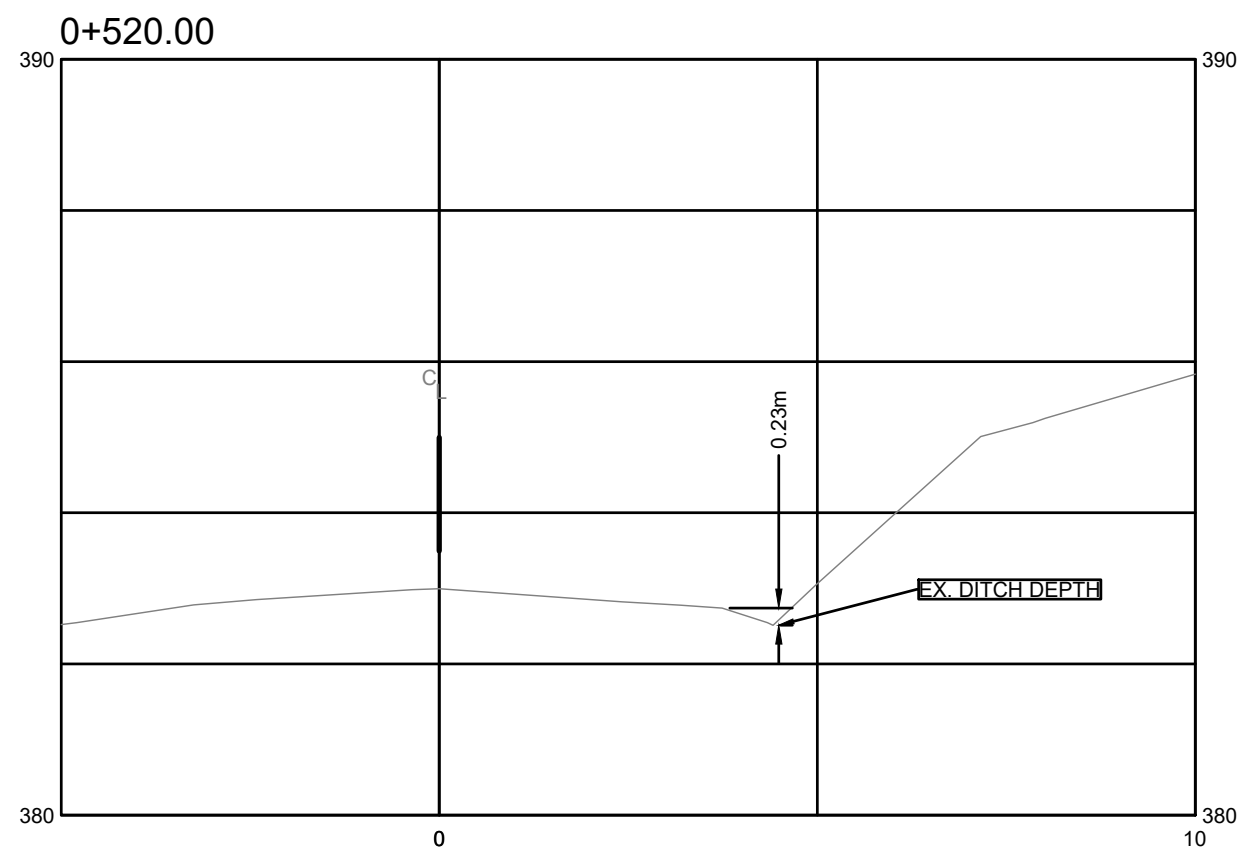
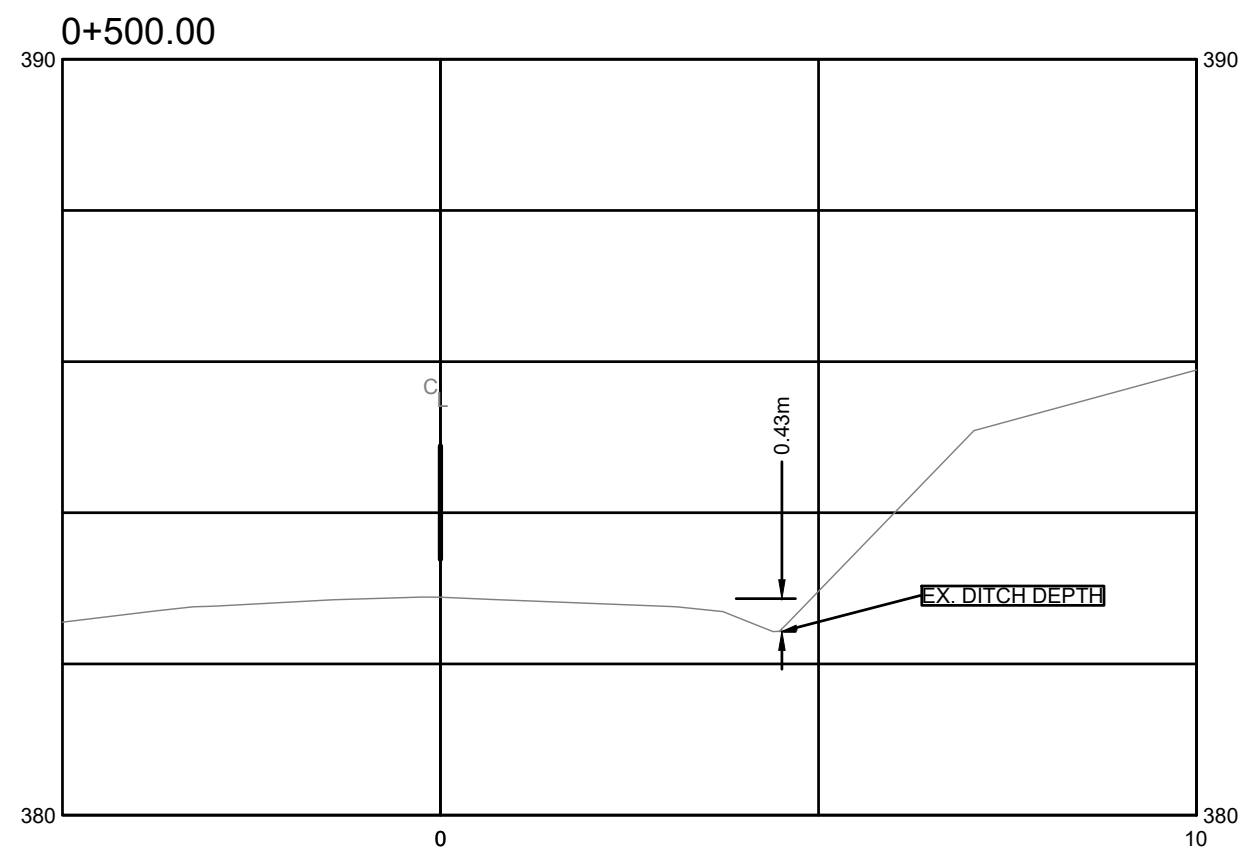
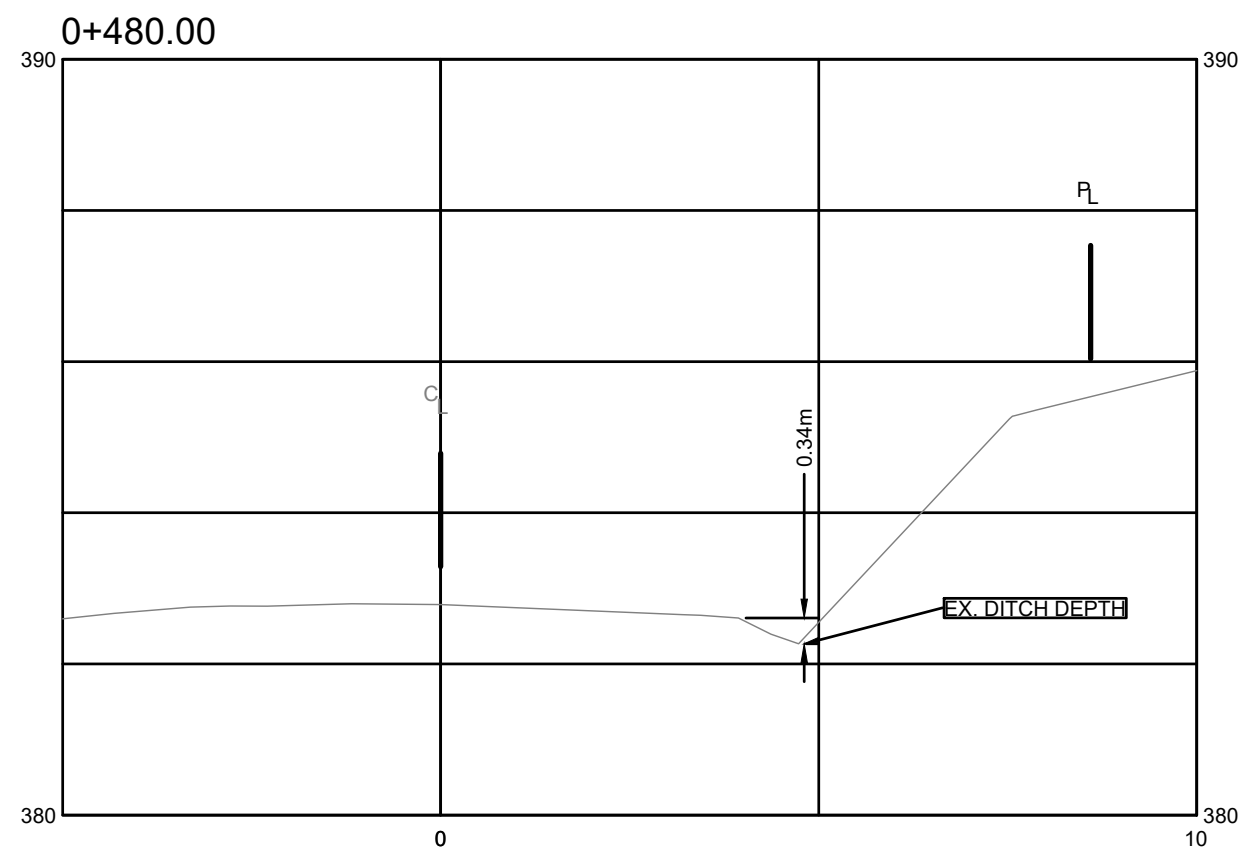
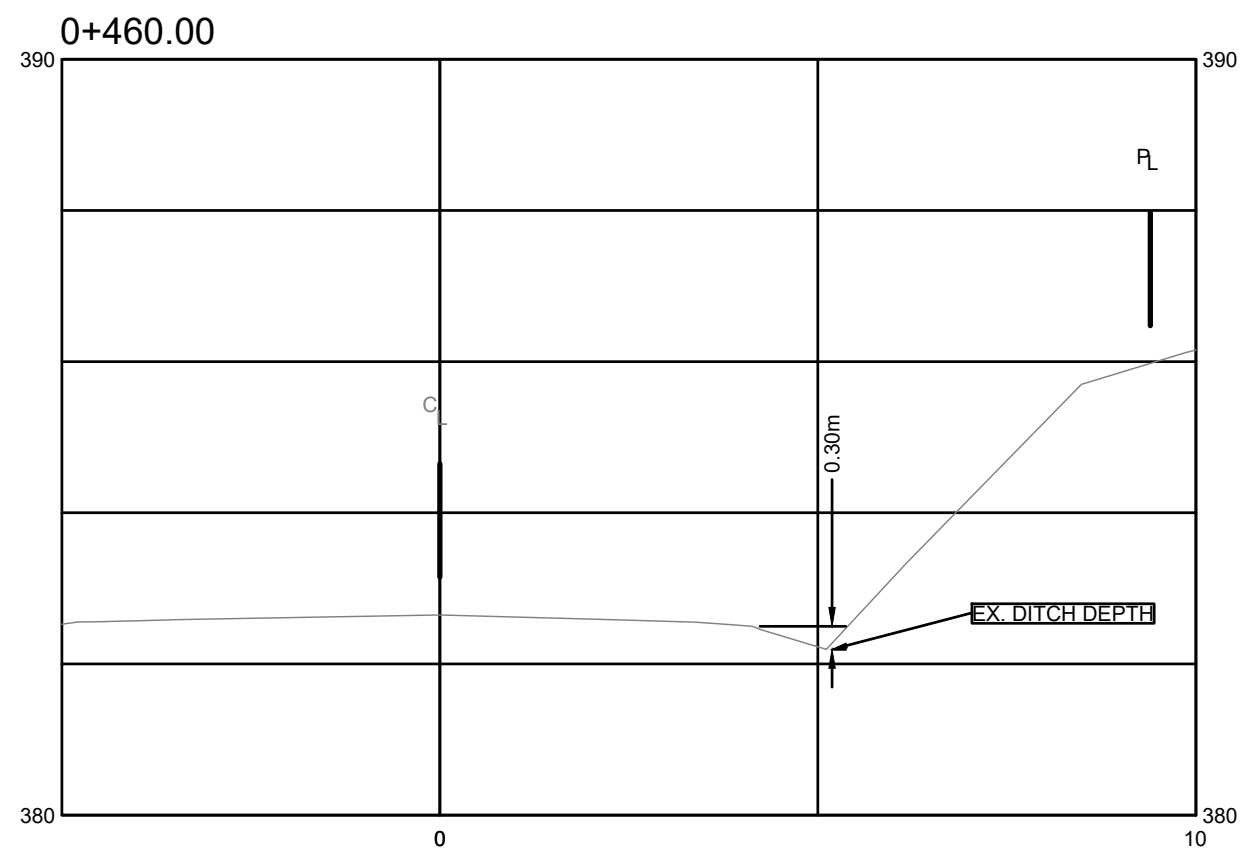
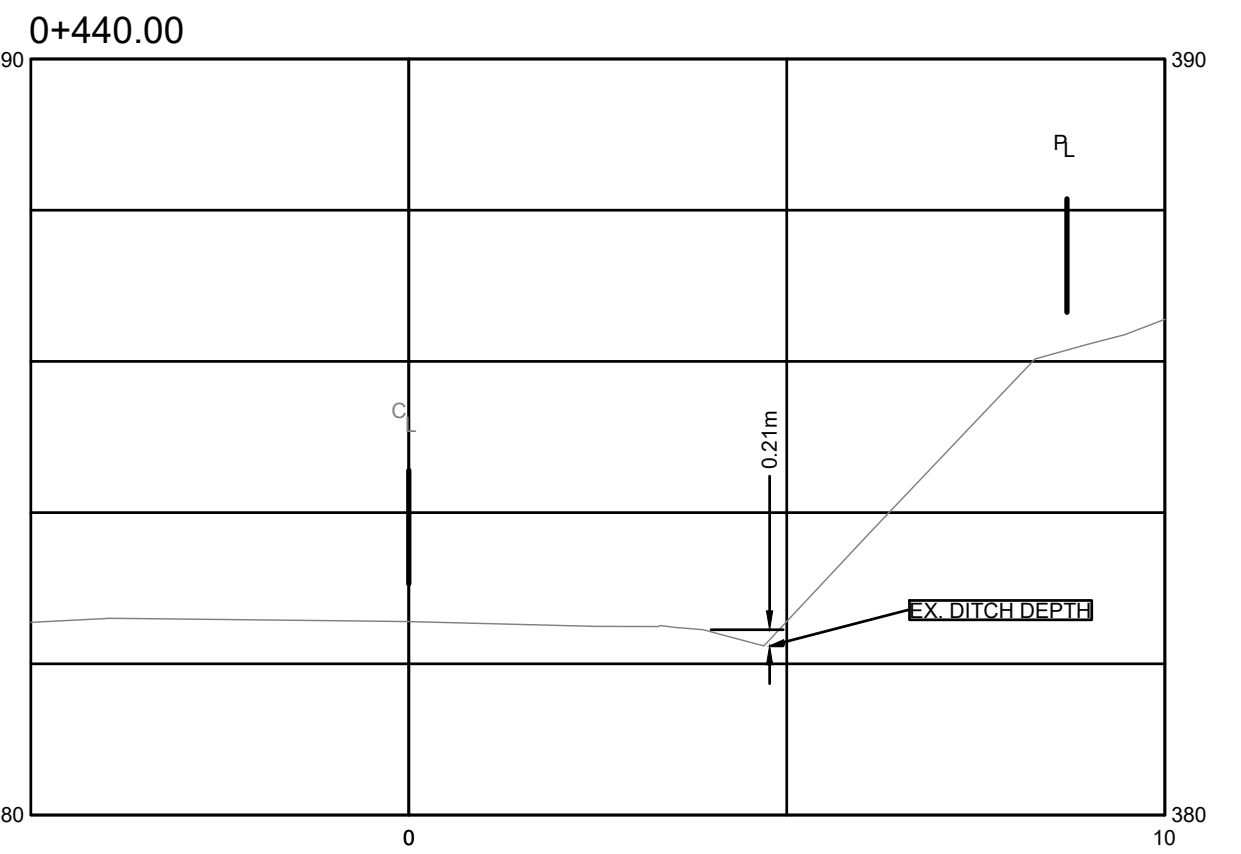
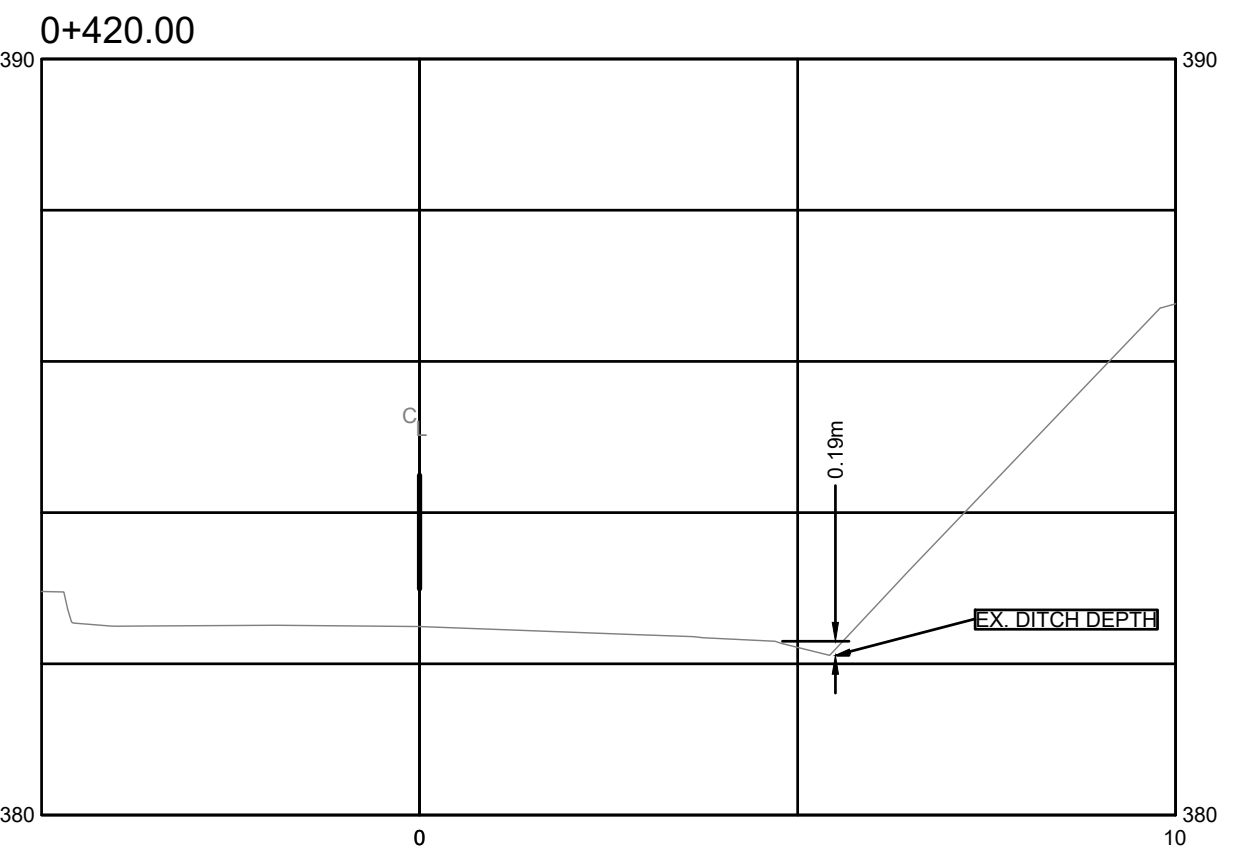
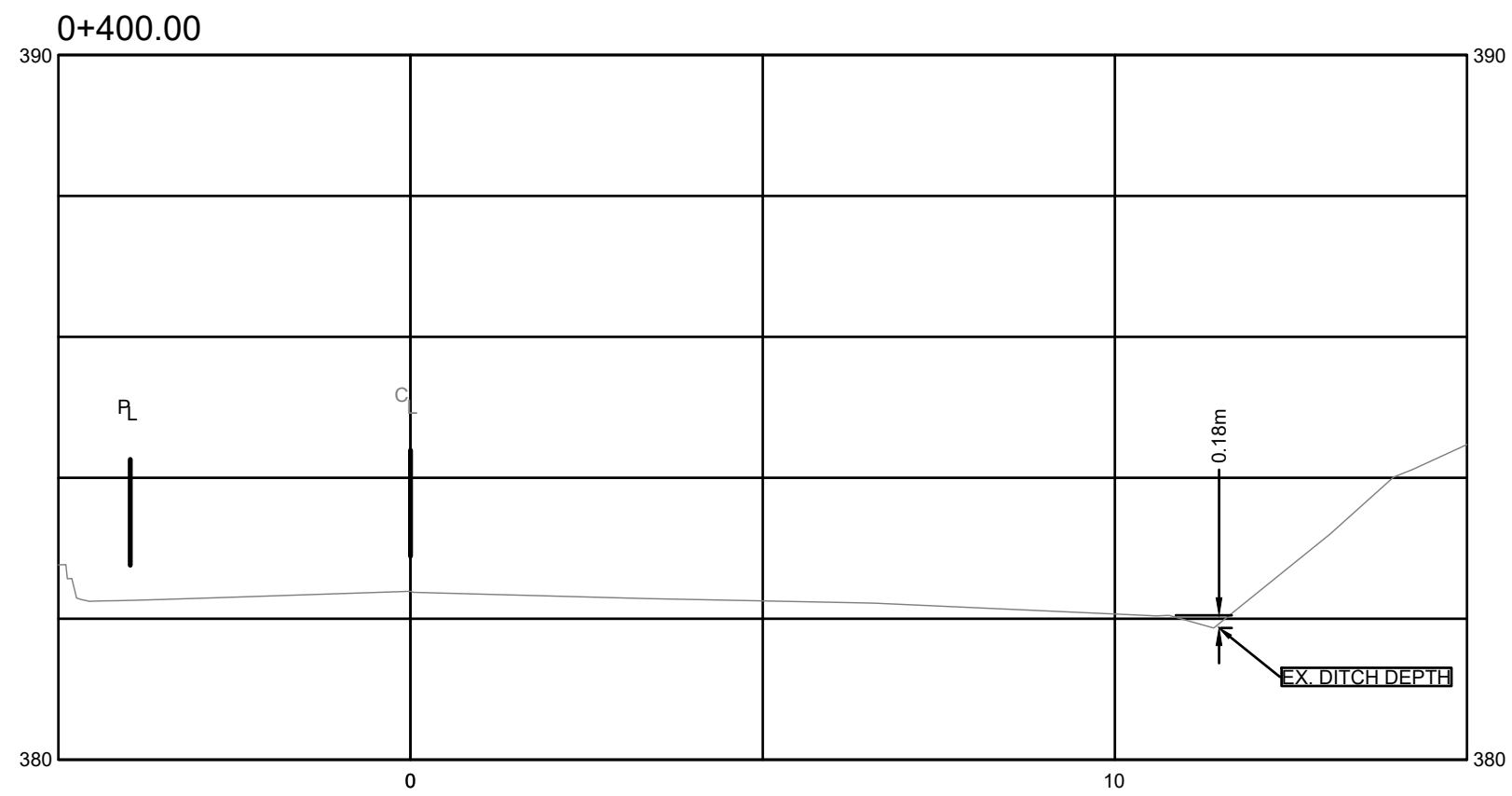
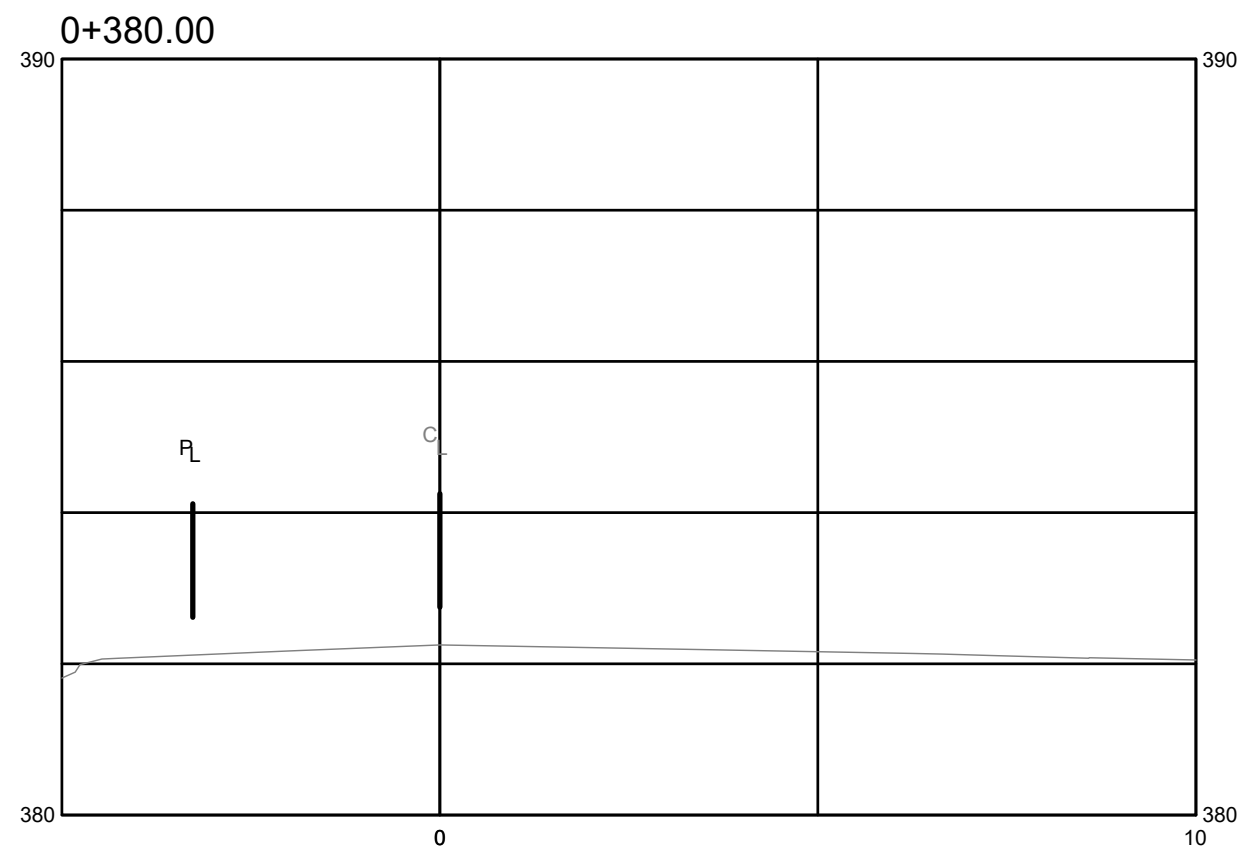
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SOUTH BASIN DRAINAGE IMPROVEMENTS
EASTSIDE ROAD CROSS SECTIONS

DRAWING NUMBER
303

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14.03.2024



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DESCRIPTION
ISSUED FOR 30% PRELIMINARY DESIGN
ISSUED FOR 50% PRELIMINARY DESIGN
ISSUED FOR 90% DETAILED DESIGN
ISSUED FOR 90% DETAILED DESIGN

PERMIT NO 1001279

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REVIEW)

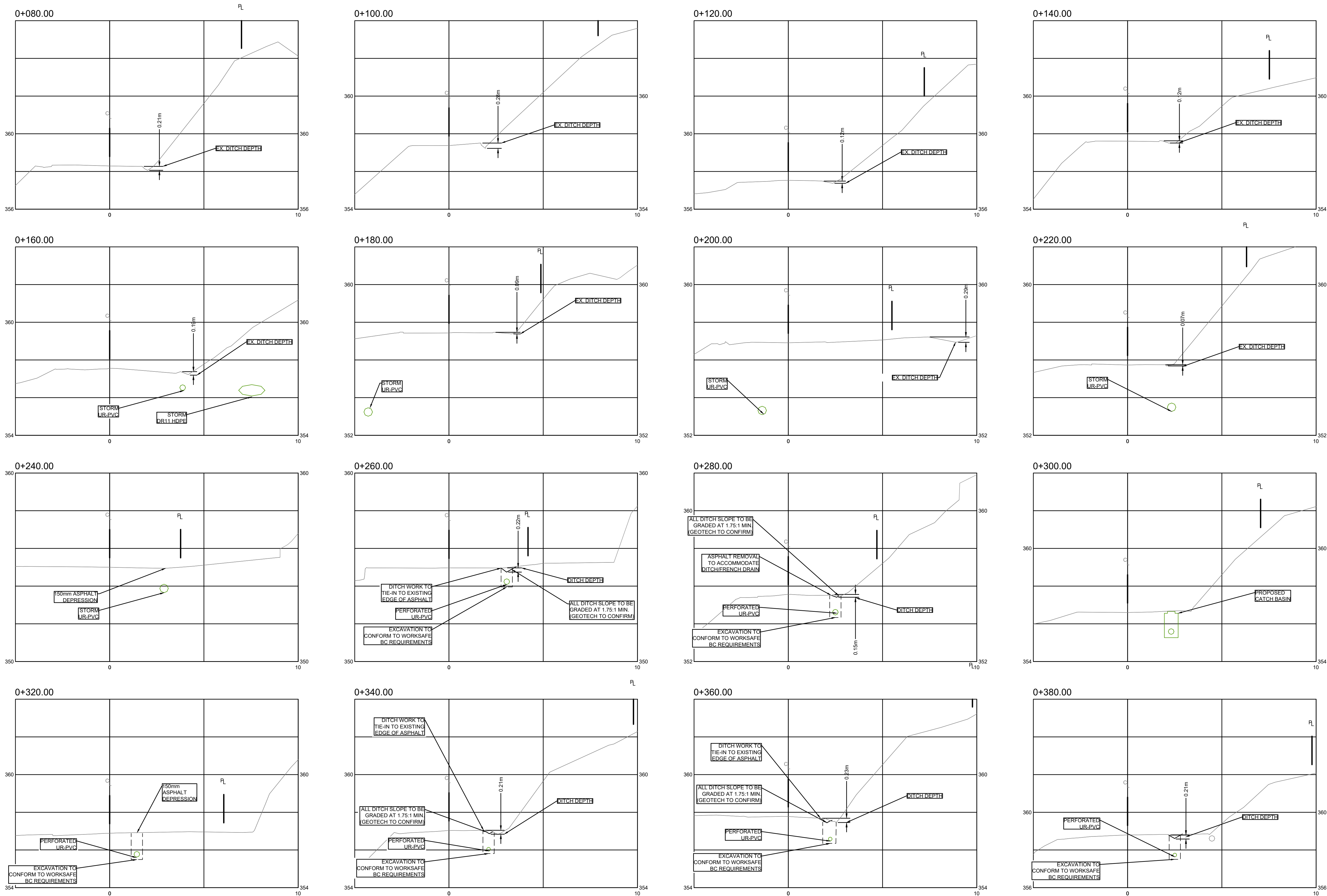


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SHEET
17 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS
EASTSIDE ROAD CROSS SECTIONS

DRAWING NUMBER
C304



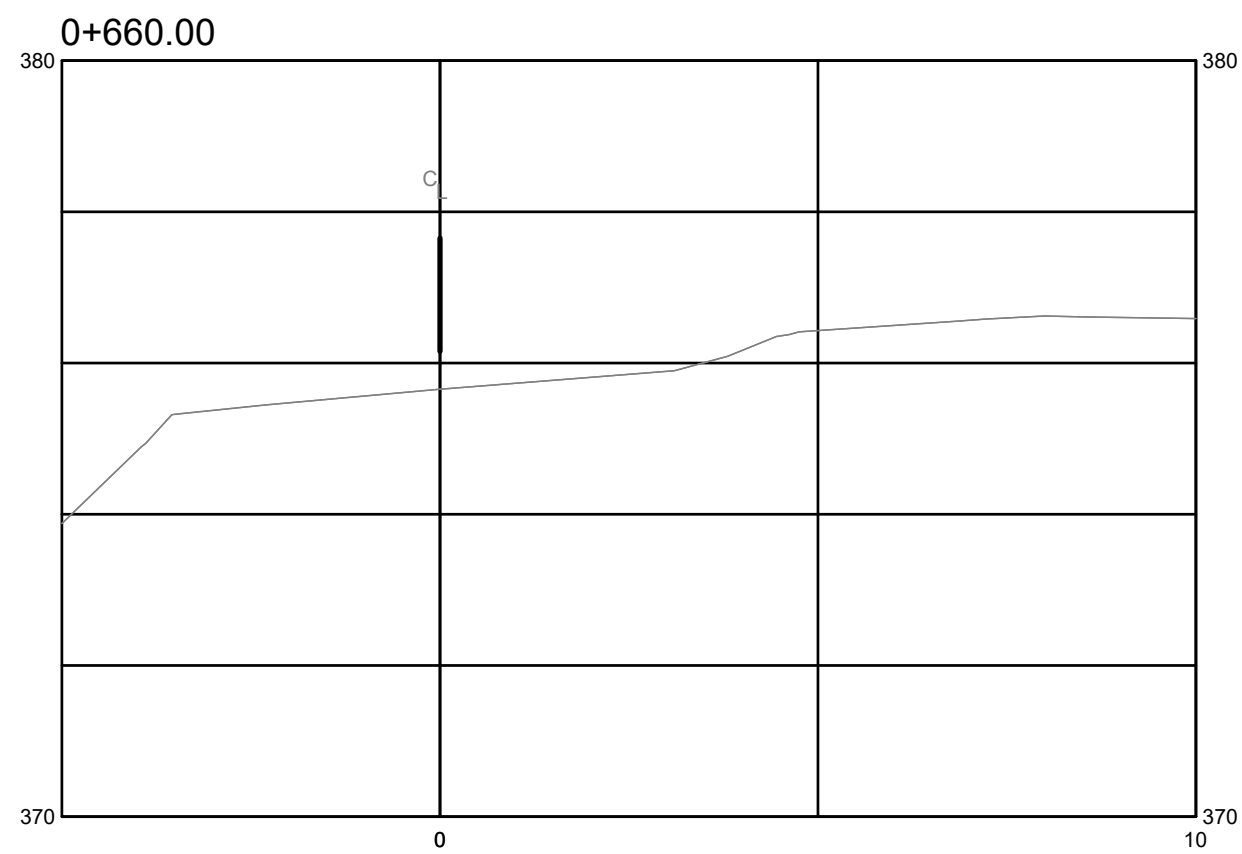
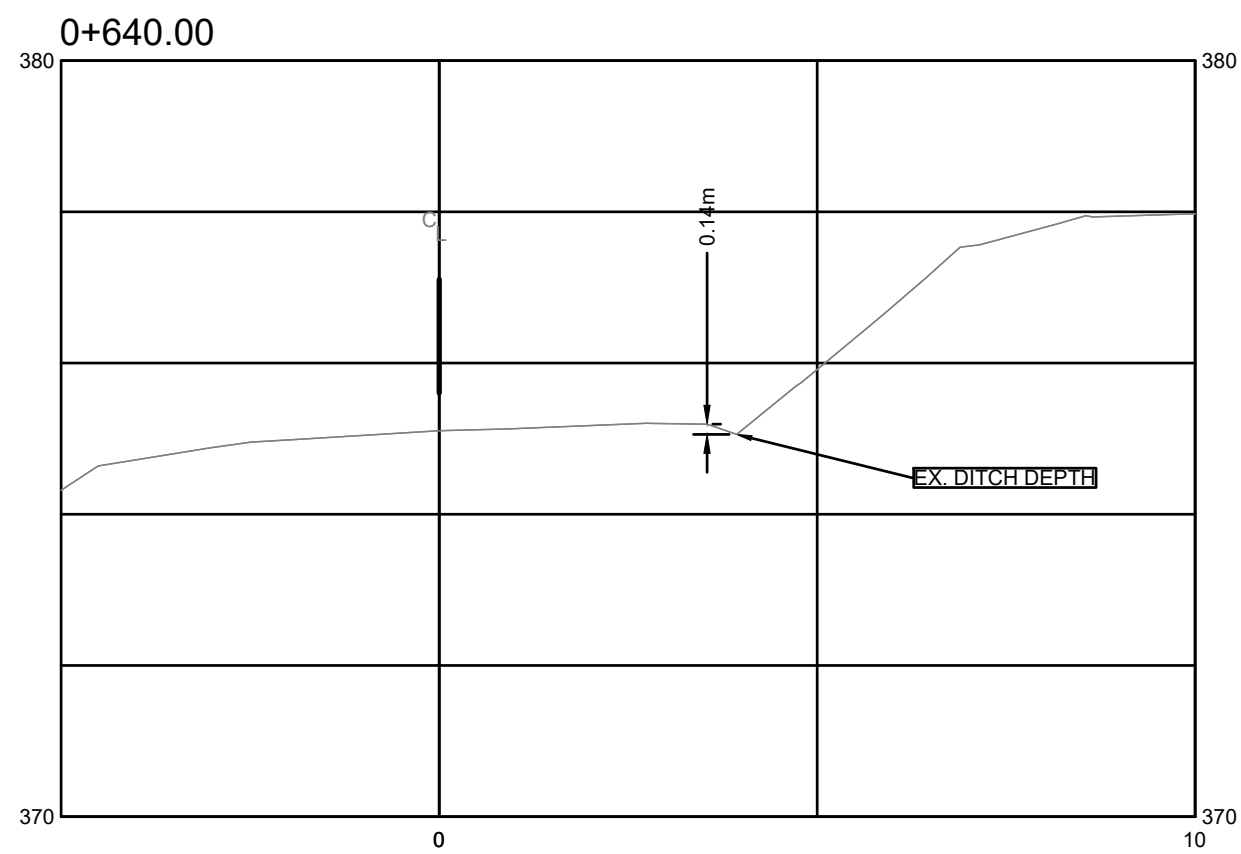
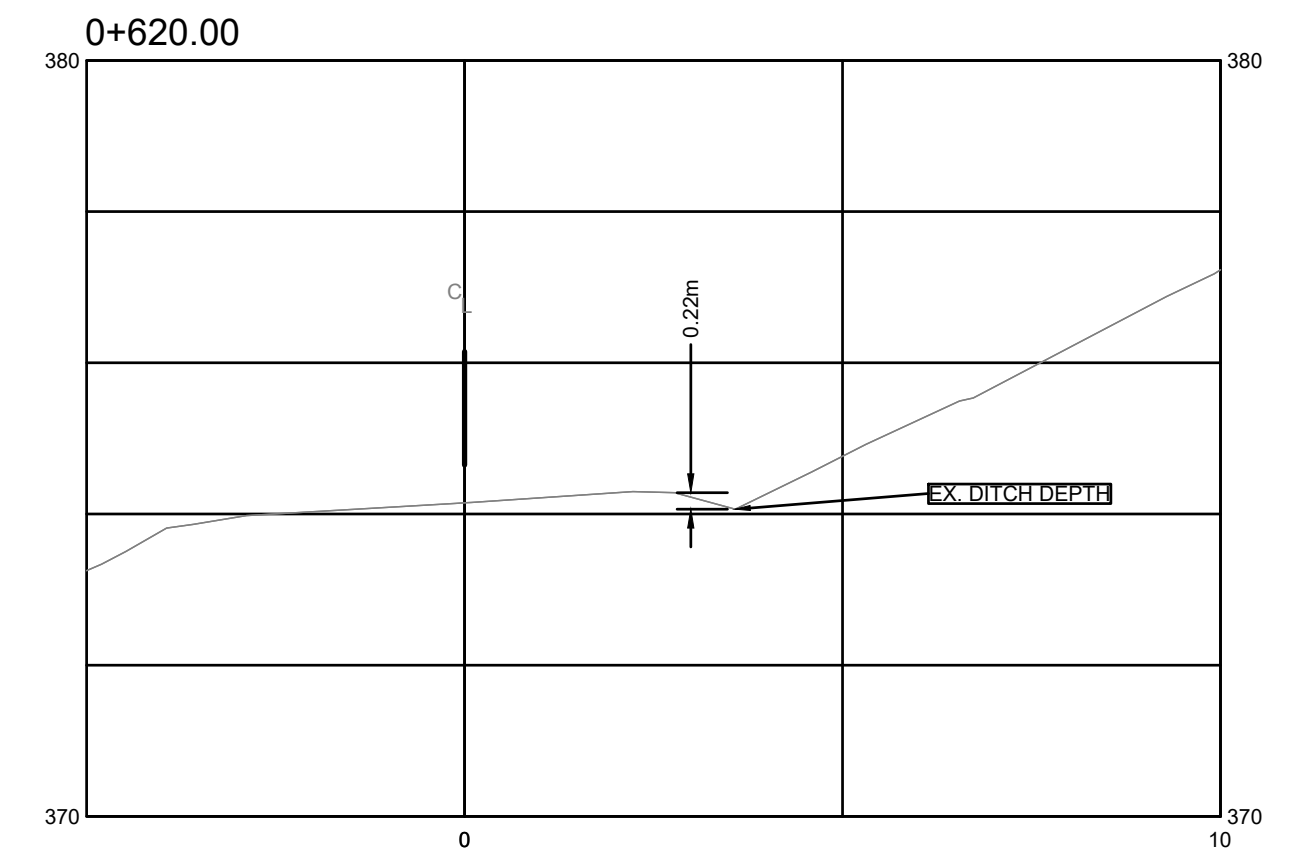
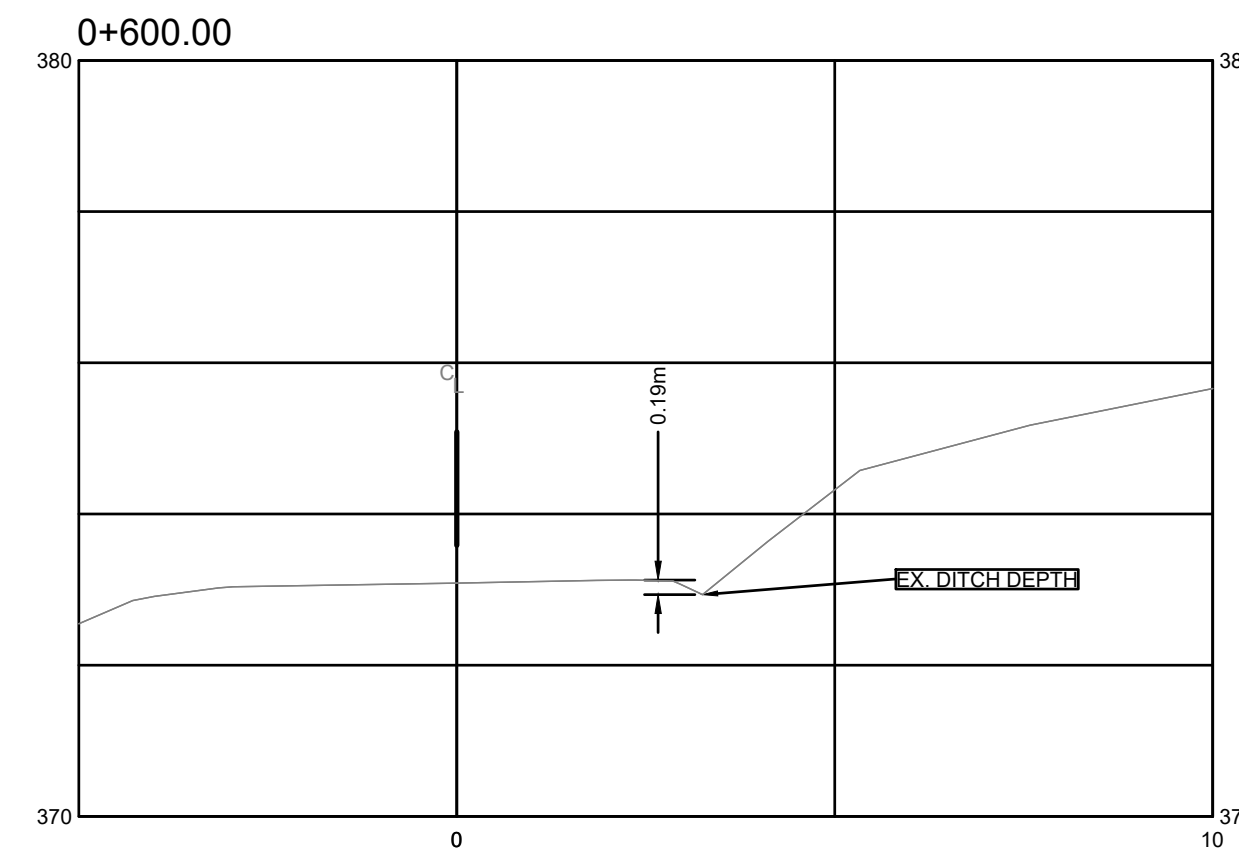
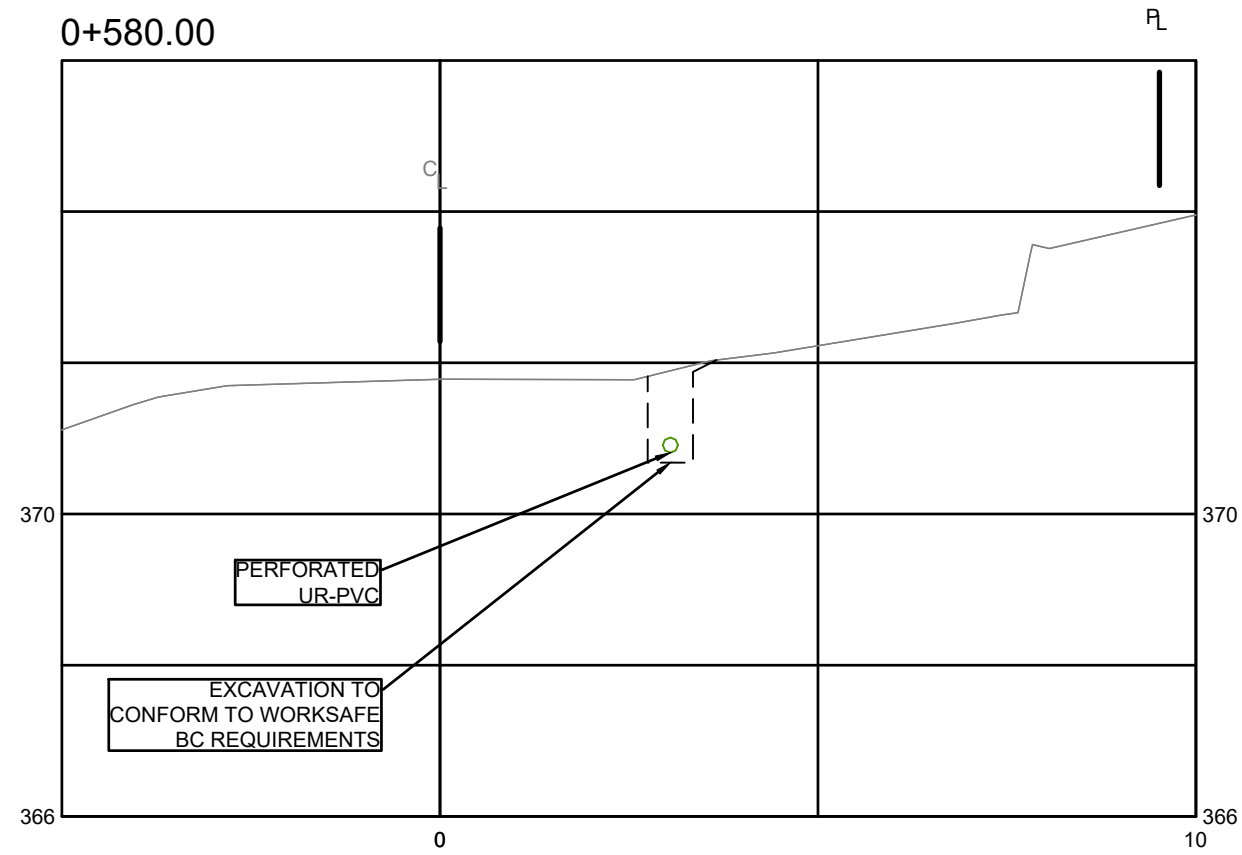
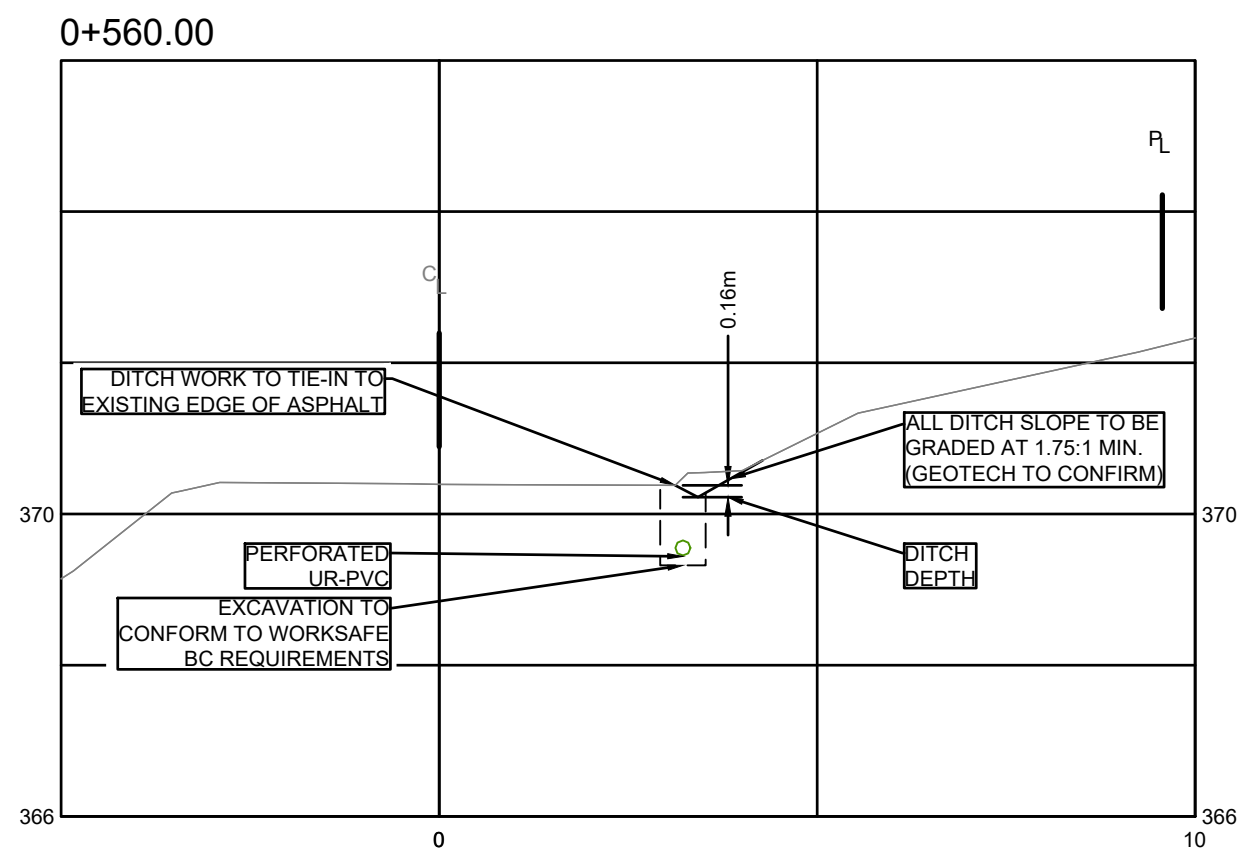
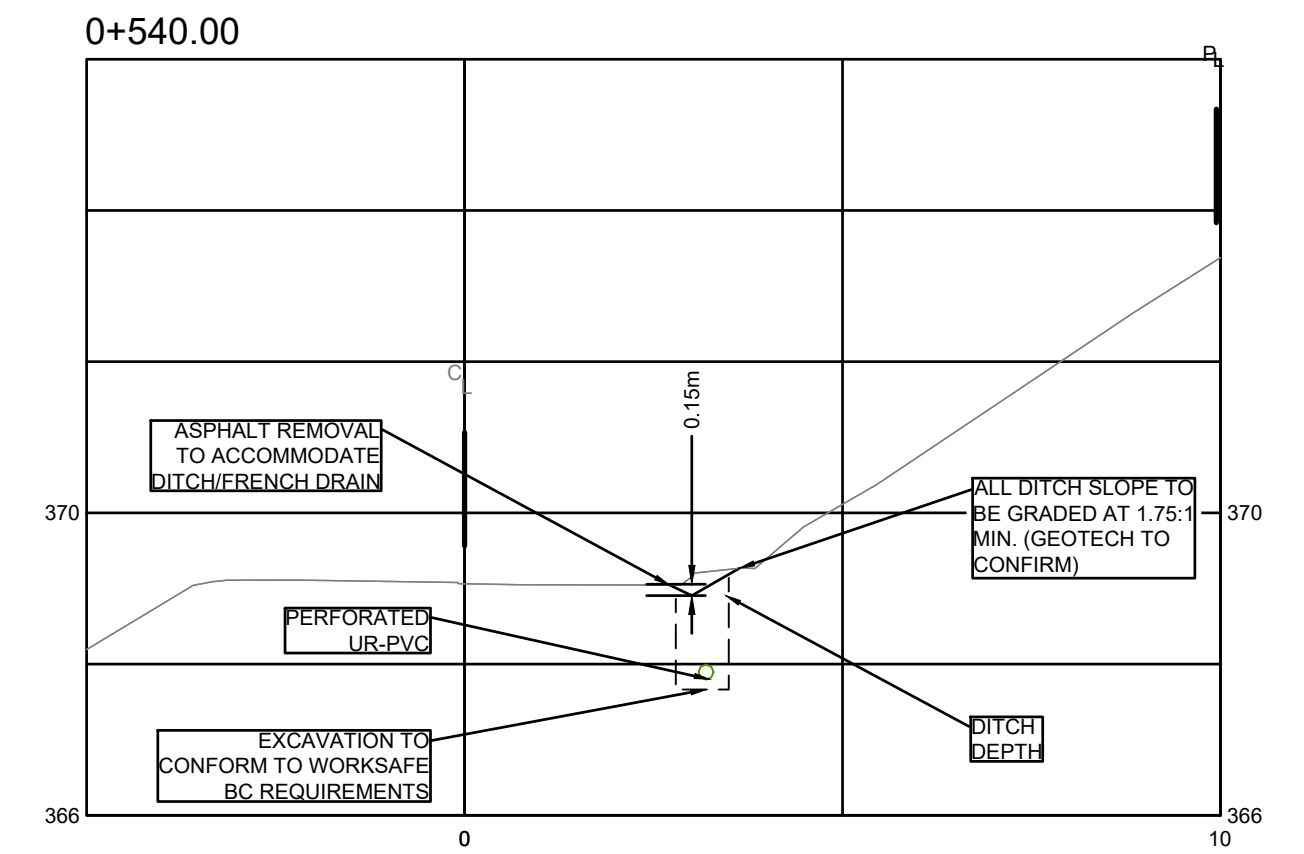
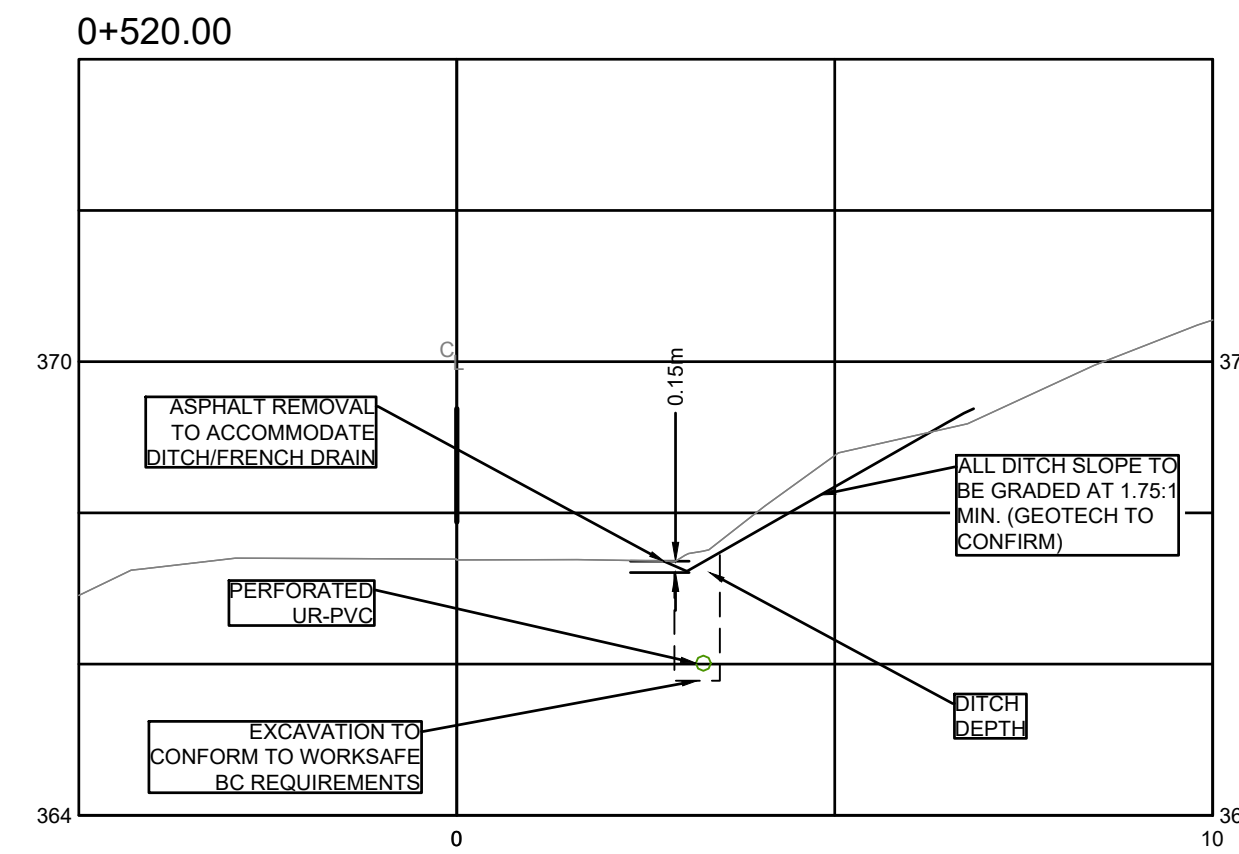
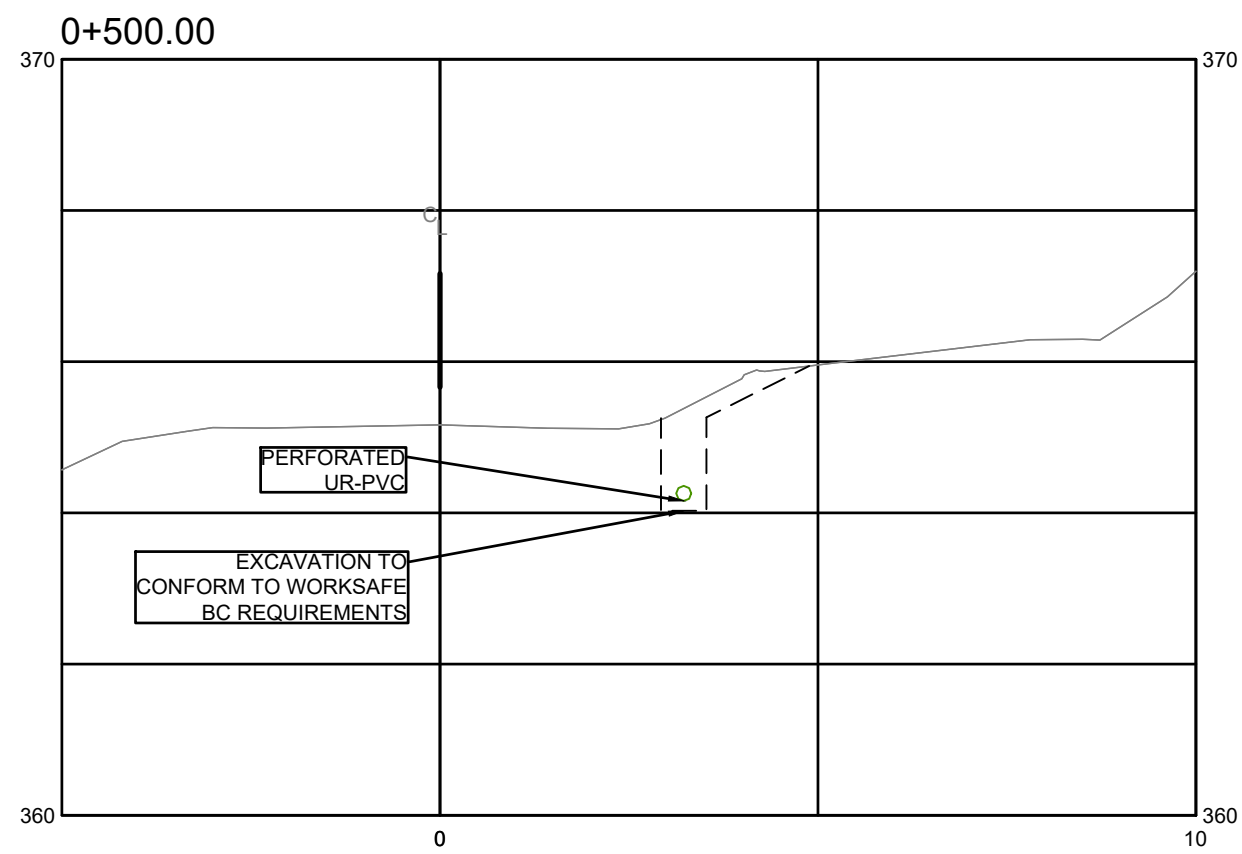
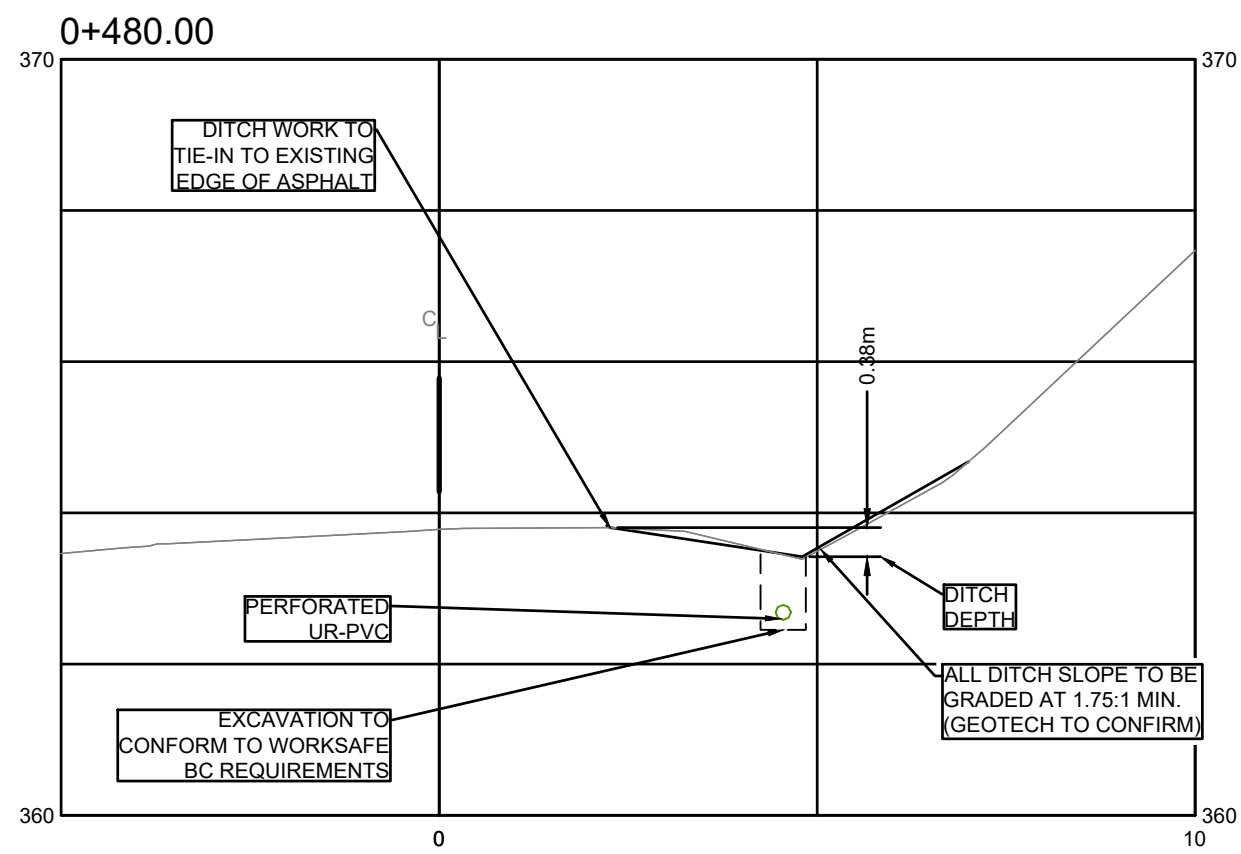
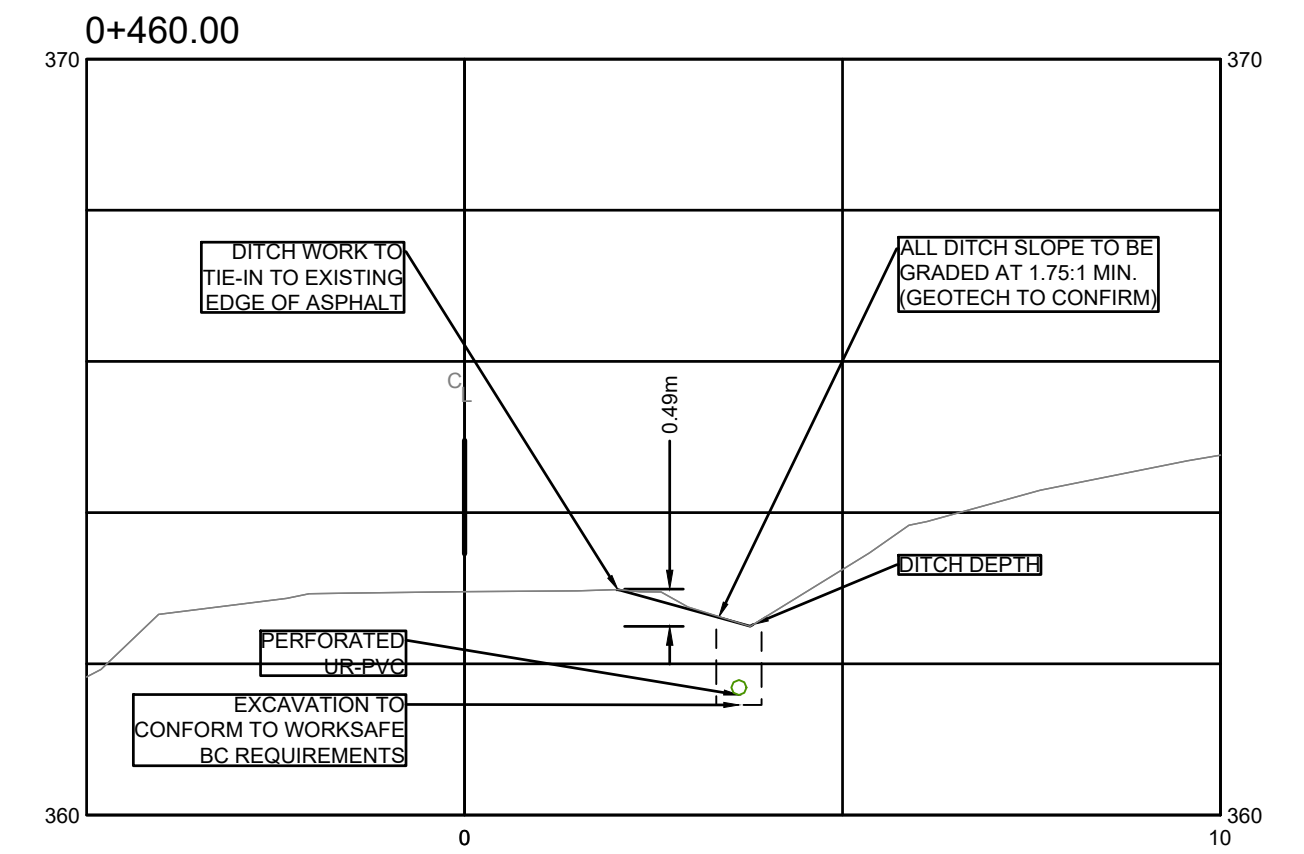
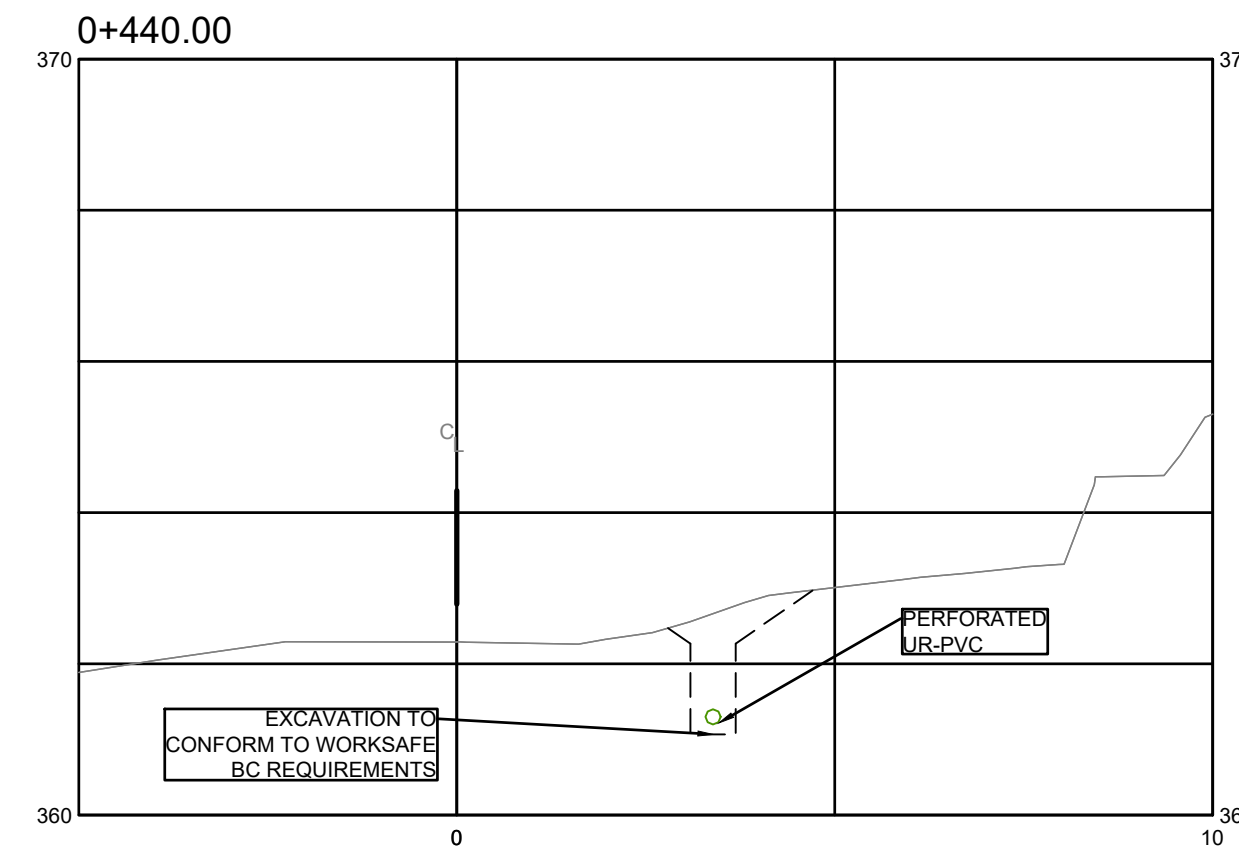
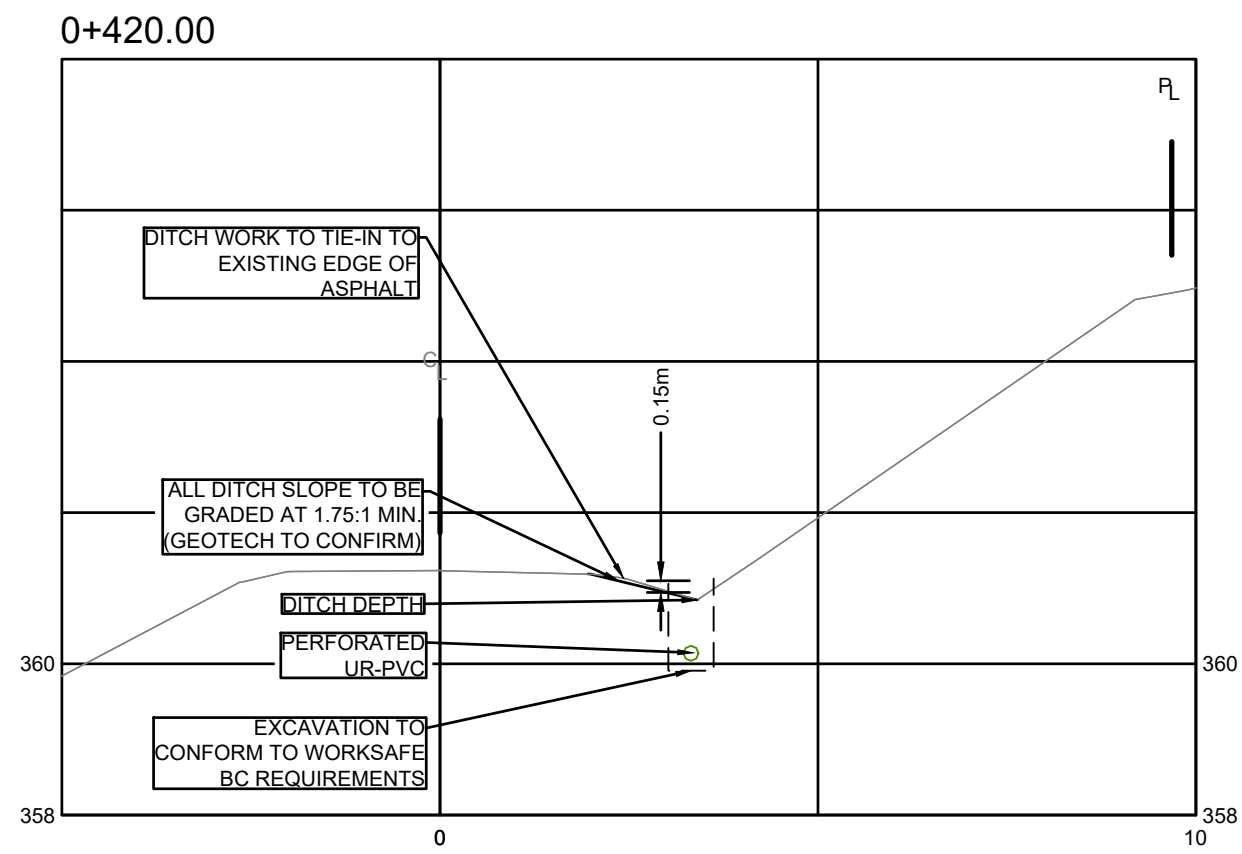
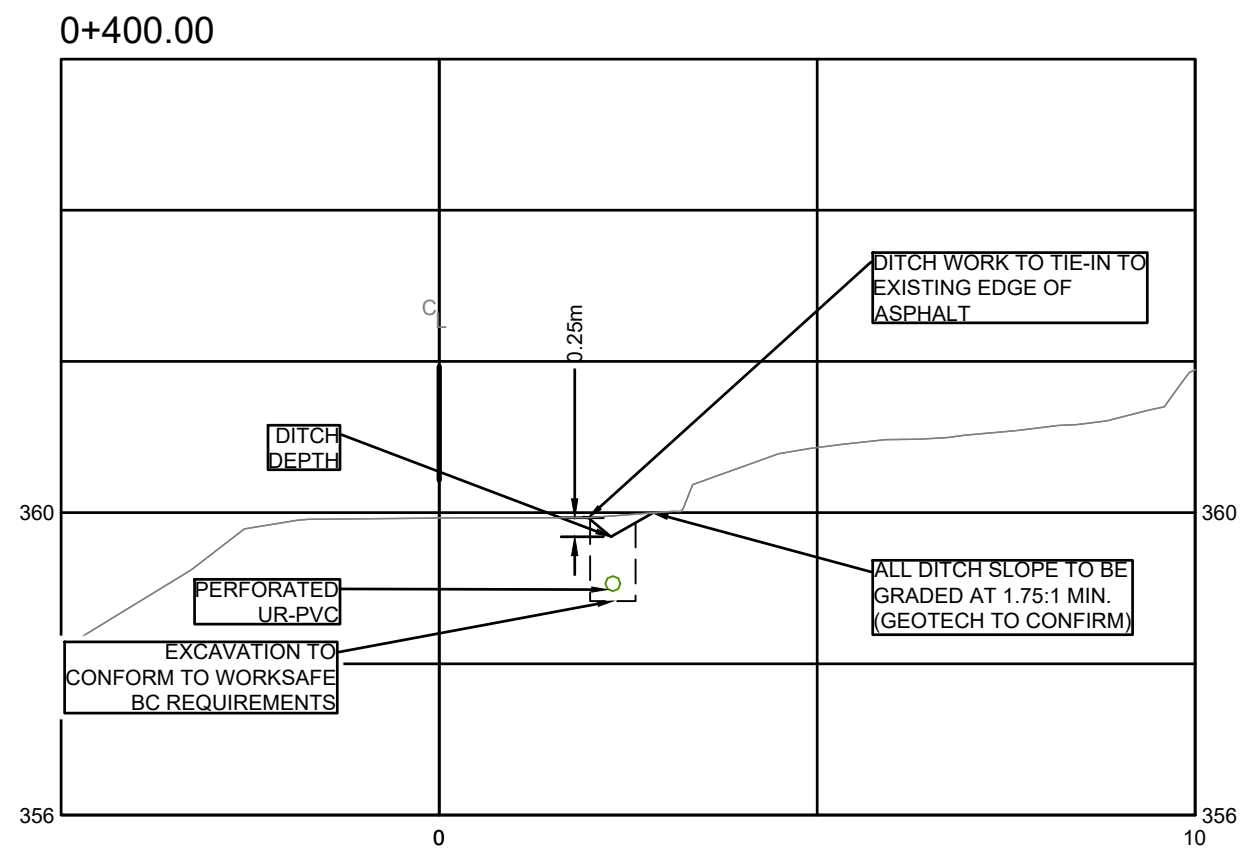
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PERMIT NO. 1001279

DRAFT
(ISSUED FOR REVIEW)



SCALE H: 1:100 V: 1:100	SOUTH BASIN DRAINAGE IMPROVEMENTS SMITH ROAD CROSS SECTIONS
SHEET 18 OF 21	DRAWING NUMBER C305



REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
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(ISSUED FOR REVIEW)

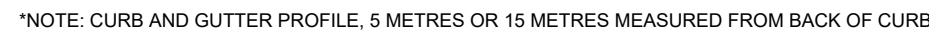


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SHEET
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SOUTH BASIN DRAINAGE IMPROVEMENTS
SMITH ROAD CROSS SECTIONS

DRAWING NUMBER
C306



- REFER TO MDT CHAPTER 1000 FOR COMPREHENSIVE BEDDING AND BACKFILL DETAILS
- MINIMUM PIPE SIZE MAY BE INCREASED AT THE DISCRETION OF THE MISTRY REPRESENTATIVE
- MINIMUM COVER OF CULVERTS SUBJECT TO EROSION SHALL HAVE SANDBAGS OR HEADWALL
- INLET AND/OR OUTLET OF CULVERTS SUBJECT TO EROSION SHALL HAVE SANDBAGS OR HEADWALL

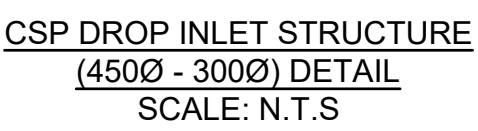
RESPECTING CLEARZONE PRINCIPLES AND SHALL NOT INTRODUCE A FURTHER HAZARD

*NOTE: CURB AND GUTTER PROFILE, 5 METRES OR 15 METRES MEASURED FROM BACK OF CURB

- REFER TO MoTI CHAPTER 1000 FOR COMPREHENSIVE BEDDING AND BACKFILL DETAILS
- MINIMUM PIPE SIZE MAY BE INCREASED AT THE DISCRETION OF THE MINISTRY REPRESENTATIVE
- MINIMUM COVER OF CULVERTS SUBJECT TO EROSION SHALL HAVE SANDBAGS OR HEADWALL
- INLET AND/OR OUTLET OF CULVERTS SUBJECT TO EROSION SHALL HAVE SANDBAGS OR HEADWALL

RESPECTING CLEARZONE PRINCIPLES AND SHALL NOT INTRODUCE A FURTHER HAZARD

CSP DROP INLET STRUCTURE
(600Ø - 450Ø) DETAIL
SCALE: N.T.S



CSP DROP INLET GRATED LID
(450Ø - 300Ø) DETAIL
SCALE: N.T.S

PERMIT NO. 1001279

DRAFT
(ISSUED FOR
REVIEW)

SEAL



DRAWING NUMBER
C501

GENERAL NOTES:

- ALL WORKS TO CONFORM TO THE CITY OF VERNON BYLAWS AND THE MASTER MUNICIPAL CONSTRUCTION DOCUMENTS (MMCD) AND STANDARD DETAIL DRAWINGS, UNLESS OTHERWISE SPECIFIED.
- ALL MATERIALS SHALL CONFORM TO THE CITY OF VERNON APPROVED PRODUCTS LIST.
- SCHEDULE 40 AND SCHEDULE 80 PLASTIC PIPE SHALL NOT BE USED FOR ANY SITE APPLICATIONS IN THE SITE WORK.
- ANY REVISIONS TO THESE DRAWINGS MUST BE APPROVED BY THE DESIGN ENGINEER, WHO SHALL REVIEW ANY CHANGES WITH THE CITY OF VERNON.
- CONTRACTOR MUST REQUEST A UTILITY LOCATE THROUGH BC ONE CALL BEFORE EXCAVATING WITH ANY POWER EQUIPMENT.
- WORKSAFE BC IS TO BE NOTIFIED PRIOR TO THE START OF CONSTRUCTION AND THE CONTRACTOR SHALL BE REGISTERED WITH WORKSAFE BC.
- CONTRACTOR TO EXPOSE ALL EXISTING UTILITIES AT ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION. CONTRACTOR IS TO VERIFY LOCATION AND INVERTS AND REPORT TO ENGINEER ANY CONFLICTS OR DISCREPANCIES.
- UTILITY TRENCH TO CONFORM TO MMCD STANDARD DRAWING G4.
- RESIDENTS AND BUSINESS OWNERS AFFECTED BY THE PROPOSED CONSTRUCTION ARE TO BE NOTIFIED BY THE CONTRACTOR IN WRITING 48 HOURS PRIOR TO THE START OF CONSTRUCTION AND PROVIDED WITH THE CONTRACTORS PHONE NUMBER AND SCHEDULE.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED TO EXISTING STREETS OR SERVICES BY CONSTRUCTION EQUIPMENT AND/OR TRUCKS HALLING MATERIALS TO THE SITE. THIS WILL INCLUDE DAILY CLEANING OR SWEEPING OF ALL EXISTING ROADS OF DIRT AND DEBRIS CAUSED BY CONSTRUCTION ACTIVITY.
- TRAFFIC CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL COMPLY WITH SECTION 52 OF THE INDUSTRIAL HEALTH AND SAFETY REGULATIONS OF THE WORKER'S COMPENSATION BOARD OF B.C. THE DEVELOPER IS TO HAVE, ON SITE, A COPY OF THE CURRENT "B.C. TRAFFIC CONTROL MANUAL FOR WORK ON ROADWAYS" AS PUBLISHED BY THE MINISTRY OF TRANSPORTATION (MOT). VEHICULAR AND PEDESTRIAN ACCESS IS TO BE MAINTAINED ALONG EXISTING ROADS DURING CONSTRUCTION.
- A TRAFFIC MANAGEMENT PLAN WITH LANE CLOSURES MUST BE APPROVED BY THE CITY OF VERNON PRIOR TO CONSTRUCTION.
- LEGAL SURVEY MONUMENTS ARE TO BE PROTECTED. SHOULD THEY REQUIRE RAISING OR RELOCATING, THE CONTRACTOR MUST NOTIFY THE INSPECTOR AT LEAST 72 HOURS IN ADVANCE OF SCHEDULING WORK AFFECTING THEM.
- PIPE BEDDING TO BE MMCD TYPE 1 GRANULAR PIPE BEDDING COMPACTED TO 95% SPD.
- PIPE BACKFILL TO BE IMPORTED 75mm MINUS PIT RUN GRAVEL COMPACTED TO 95% SPD. WHEN NATIVE SITE GRANULAR BACKFILL IS PROPOSED FOR USE IN TRENCHES THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND PROVIDE SAMPLES TO THE GEOTECHNICAL MATERIALS TESTING AGENCY FOR APPROVAL, BEFORE PROCEEDING WITH THE RE-USE OF NATIVE BACKFILL MATERIALS. THE SITE MATERIAL MUST BE APPROVED FOR RE-USE BY THE GEOTECHNICAL ENGINEER.
- WHEN INFILLING OF EXISTING DITCHES, ETC., IS REQUIRED OR PROPOSED, AND WHERE SERVICES ARE CONSTRUCTED IN FILL SECTIONS, THE FILL MATERIAL IS TO BE APPROVED GRANULAR MATERIAL PLACED IN LIFTS NOT EXCEEDING 300MM AND COMPACTED TO 95% SPD.
- FIGURED DIMENSIONS SHALL GOVERN OVER SCALED DIMENSIONS.
- AFTER CONSTRUCTION, RESTORE WORK AREAS AND EXISTING FEATURES TO THEIR ORIGINAL CONDITION OR BETTER.
- ADJUST ALL PROPOSED AND EXISTING APPURTENANCES TO MEET FINAL DESIGN GRADES.
- DEWATERING FOR UTILITY INSTALLATIONS WILL BE COMPLETED AT THE CONTRACTORS EXPENSE. DEWATERING IN THE TRENCHES SHALL BE COMPLETED AS OUTLINED IN THE GEOTECHNICAL REPORT FOR THE SITE, OR AS REQUIRED.

ROADWORKS NOTES:

- SEE PLAN AND PROFILE DRAWINGS FOR TYPICAL ROAD CROSS-SECTIONS. WHERE INDICATED, PROVIDE DRIVEWAY CROSSINGS IN CONFORMANCE WITH MMCD STANDARD DRAWING C7.
- CHANGES OF GRADE ARE TO BE FORMED BY SMOOTH VERTICAL CURVES.
- ALL LOOSE, ORGANIC, OTHERWISE DELETERIOUS MATERIALS OR SOFT SPOT(S) ARE TO BE EXCAVATED AND REMOVED FROM THE ROADWAY AND UTILITY TRENCHES IN THE ROADWAY.
- SUB-BASE AND GRANULAR BASE MATERIALS SHALL BE COMPACTED TO 100% STANDARD PROCTOR MAXIMUM DRY DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT.
- CATCH BASIN RIM ELEVATIONS GIVEN ARE THE ELEVATION OF THE SURFACE INLET.
- EXISTING VALVE BOXES, MANHOLES, ETC. WITHIN THE ROAD R.O.W ARE TO BE ADJUSTED TO SUIT THE PROPOSED FINISHED GRADE.
- THE CONDITIONS FOR PLACING ASPHALT PAVEMENT AND CONCRETE SHALL BE IN ACCORDANCE WITH CITY OF VERNON STANDARD CONSTRUCTION DOCUMENTS AND MMCD SPECIFICATIONS AND STANDARD DETAIL DRAWINGS APPLICABLE AT THE TIME OF CONSTRUCTION. WEATHER CONDITIONS MUST ALSO BE IN CONFORMANCE WITH MMCD SPECIFICATIONS. SHOULD DEVIANCES BE ALLOWED FROM THESE SPECIFICATIONS, THE CONTRACTOR IS TO ASSUME ALL RESPONSIBILITY FOR THESE PRODUCTS.
- TIE-INS TO EXISTING PAVEMENT SHALL BE MADE BY CUTTING BACK THE EXISTING PAVEMENT TO SOUND MATERIAL AS NECESSARY TO PRODUCE A NEAT VERTICAL FACE AND PROVIDE A KEY-WAY. PRIOR TO PLACING ASPHALTIC CONCRETE, EXPOSED PAVEMENT FACES AND OTHER ABUTTING STRUCTURES SHALL BE TACK COATED WITH ASPHALT EMULSION.
- ALL EXISTING ASPHALT TO BE REMOVED MUST BE DISPOSED OF AT AN APPROVED SITE.
- REPAIR ANY PAVEMENT DAMAGE OR DAMAGE TO PRIVATE PROPERTY. PAVEMENT RESTORATION AS PER MMCD STANDARD DRAWING G5. REFER TO ROADWORKS PLAN DRAWINGS FOR SPECIFIED PAVEMENT STRUCTURE.

STORM SEWER NOTES:

- STORM SEWER MATERIALS SHALL CONFORM TO CITY OF VERNON APPROVED PRODUCTS LIST AND MMCD PLATINUM SECTIONS 33 30 01 AND 33 40 01. STORM SEWER MAINS UP TO 600mm DIAMETER TO BE MINIMUM PVC ULTRA RIBBED TO ASTM D2412 AND ASTM D3034 (UNLESS OTHERWISE NOTED). PVC PROFILE PIPE TO ASTM F794 AND CSA B182.4 IS ALSO ACCEPTABLE FOR 200mm-1200mm DIAMETER STORM SEWER.
- CONTRACTOR TO PROVIDE A MINIMUM 1.5m COVER (COV SCHED F2.12) OVER ALL PROPOSED OFFSITE STORM MAINS. WHERE MINIMUM COVER CANNOT BE PROVIDED FOR OFFSITE MAINS, SEWERS SHALL BE CONSTRUCTED OF CONCRETE AS NOTED IN THE DRAWINGS.
- CONTRACTOR IS TO EXPOSE AND CONFIRM LOCATIONS AND INVERTS OF ALL EXISTING SANITARY AND STORM SERVICE CONNECTIONS PRIOR TO CONSTRUCTION AND REPORT TO ENGINEER ANY CONFLICTS OR DISCREPANCIES. ALL EXISTING SERVICE CONNECTIONS TO BE REPAIRED IN REQUIRED AND TIED IN TO THE PROPOSED STORM SEWER.
- CONNECTIONS TO THE NEW STORM MAINS UNDER 450mm DIAMETER SHALL BE MADE USING STANDARD WYE FITTINGS. CONNECTIONS TO NEW STORM MAINS 450mm DIAMETER AND LARGER AND TO EXISTING MAINS SHALL BE MADE USING WYE SADDLES OR INSERTA-TEES WHERE NOTED. REFER TO MMCD STANDARD DRAWING S1 FOR MANHOLE REQUIREMENTS.
- A MINIMUM OF 3m HORIZONTAL CLEAR SEPARATION SHALL BE MAINTAINED BETWEEN WATER MAINS AND ALL STORM SEWERS/SERVICES EXCEPT WHERE NOTED.
- WHERE A STORM SEWER CROSSES A WATER MAIN, THE SEWER SHALL BE BELOW THE WATER MAIN WHERE POSSIBLE WITH A MINIMUM CLEAR VERTICAL SEPARATION OF 0.45m (MEASURED BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER). IF THIS CANNOT BE ACHIEVED DUE TO EXTREME SITE CONDITIONS, FOR VERTICAL SEPARATION BETWEEN 0.15m - 0.45m THE FOLLOWING PROVISIONS MUST BE MET:
 - WATER MAIN AND SEWER JOINTS WITHIN 3m EITHER SIDE OF THE CROSSING SHALL BE RESTRAINED AND PROTECTED WITH AWWA APPROVED PIPELINE PROTECTION PROJECT (IE. HEAT SHRINK WRAP, PETROLATUM TAPE).
 - STRUCTURAL SUPPORT IS TO BE PROVIDED TO PROTECT WATER MAIN AGAINST DEFLECTION AND SETTLING OF SEWER PIPE. CLEAR VERTICAL SEPARATION OF LESS THAN 0.15m IS NOT PERMITTED.
- ALL MANHOLES TO BE A MINIMUM OF 1050MM DIAMETER PER-CAST REINFORCED CONCRETE TO ASTM C478 OR AS NOTED ON DRAWINGS. REFER TO MMCD DRAWINGS S1.
- STORM PIPE LENGTHS SHOW IN PROFILE REPRESENT THE LENGTH FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
- CONTRACTOR TO COMPLETE TIE-INS AND DISCONNECTIONS OF EXISTING SERVICE FOR DISTRICT WATER AND DRAINAGE IN THE PRESENCE OF THE CONSULTANT'S REPRESENTATIVE AND UNDER SUPERVISION OF CITY OF VERNON PERSONNEL AFTER APPROPRIATE CITY APPROVALS ARE OBTAINED.
- STORM SEWER TESTING IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL VIDEO INSPECT COMPLETED STORM SEWERS UNDER 900mm IN DIAMETER FOLLOWING COMPLETION OF INSTALLATION. SHOULD VIDEO INDICATE APPARENT DEFICIENCIES, ADDITIONAL TESTING AND/OR REPLACEMENT WILL BE REQUIRED AT THE DIRECTION OF THE CONTRACT ADMINISTRATION AND AT THE COST OF THE CONTRACTOR.
- STORM SEWERS ARE TO BE CONSTRUCTED WITH SEALED JOINTS UNLESS OTHERWISE SPECIFIED ON THE DESIGN DRAWINGS.
- ALL CATCH BASINS TO BE DOBNEY FOUNDRY LTD. B-39B TOP INLET WITH B-39A FRAME, B-39 GRATE AND ALUMINUM TRAPPING HOOD OR APPROVED EQUIVALENT. CATCH BASIN LEADS TO BE A MINIMUM 200 DIAMETER PVC DR35 * 2.0% MINIMUM SLOPE UNLESS OTHERWISE NOTED
- ALL LAWN BASINS TO BE 600mm DIAMETER WITH CLOSED BOTTOM AND ALUMINUM TRAPPING HOOD AND SHALL CONFORM TO MMCD DWG S12 (TYPE 2) UNLESS OTHERWISE NOTED. LAWN BASIN LEADS TO BE A MINIMUM 150MM DIAMETER PVC DR35 * 1.0% MINIMUM SLOPE UNLESS OTHERWISE NOTED.

PAVEMENT MARKING AND SIGNAGE NOTES:

- ALL PAVEMENT MARKINGS AND SIGNAGE TO BE MINISTRY OF TRANSPORTATION STANDARDS (MANUAL OF STANDARD TRAFFIC SIGNS & PAVEMENT MARKINGS).

EXISTING UTILITIES

- THE LOCATION OF EXISTING SERVICES IS NOT GUARANTEED TO BE ACCURATE. THE INFORMATION HAS BEEN COMPILED FROM THE CITIES AS-CONSTRUCTED RECORDS AND FROM TOPOGRAPHIC SURVEY. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL INVESTIGATE THE WORK AREA. TO CONFIRM THE LOCATION AND ELEVATION OF ALL EXISTING UTILITIES, NOTIFY LAWSON ENGINEERING LTD. IMMEDIATELY IF THERE ARE ANY DISCREPANCIES.
- NOTIFY TELUS, BC HYDRO, FORTIS BC, CITY WATER & SEWER AND CABLE 72 HOURS PRIOR TO CONSTRUCTION FOR LOCATED, IF APPLICABLE.
- ALL DRAWING DISCREPANCIES TO BE REPORTED TO THE ENGINEER.

TABLE 3: STORM DITCH DESIGN CALCULATIONS

EXISTING TRANSECTS INCLUDING ROAD SURFACE (BANK) FLOWS								
LOCATION				EPASWMM MODEL RESULTS				
Road	From Sta	To Sta	Min Flow Area Sta	Conduit ID	Max Flow	Time of Max Flow	Max Velocity	Max/Full Depth
				#	L/sec	hr : min	m/sec	%
kokanee	0+280	0+550	0+320	ditch-1a	864	2:18	3.09	63
kokanee	0+210	0+280	0+280	ditch-1b	912	2:19	4.57	80
kokanee	0+000	0+210	0+040	ditch-2	102	2:10	1.21	68
eastside - W	0+000	0+090	0+040	ditch-4	48	2:55	0.75	50
east side - W	0+090	0+270	0+240	ditch-5	114	2:11	1.89	42
eastside - E	0+660	0+620	0+640	ditch-6a	69	2:10	0.22	61
eastside - E	0+620	0+580	0+600	ditch-6b	76	2:10	0.93	55
eastside - E	0+580	0+270	0+400	ditch-6c	57	2:15	0.73	57
smith - W	0+000	0+160	0+120	ditch-8	24	2:10	0.54	74
smith - E	0+640	0+590	0+640	ditch-7	13	2:10	1.6	43
SMITH ROAD FRENCH DRAIN - PIPED CONVEYANCE AND DITCH FLOWS								
LOCATION				EPASWMM MODEL RESULTS				
From MH	To MH	Conduit ID	Max Flow	Time of Max Flow	Max Velocity	Max/Full Depth	Ponded Depth at Upstream CB	
		#	L/sec	hr : min	m/sec	%	mm	
CB-8	CB-7	frenchP-7a	27	2:10	1.98	44	50	
CB-8	CB-7	frenchD-7a	3	2:10	0.72	32		
CB-7	CB-6	frenchP-7b	51	2:10	2.4	64	50	
CB-7	CB-6	frenchD-7b	2	2:10	0.69	29		
CB-6	CB-5	frenchP-7c	68	2:10	2.61	79	40	
CB-6	CB-5	frenchD-7c	1	2:15	0.51	26		
CB-5	CB-4	frenchP-7d	83	2:10	2.89	91	40	
CB-5	CB-4	frenchD-7d	1	2:20	0.39	28		
CB-4	CB-3	frenchP-7e	101	2:11	1.56	87	50	
CB-4	CB-3	frenchD-7e	1	2:10	0.22	26		
CB-3	Inlet_3	frenchP-7f	109	2:11	2.58	58	30	
CB-3	Inlet_3	frenchD-7f	1	2:10	0.41	22		

REV. No.	DATE	DESIGNED	DRAWN	CHECKED	DESCRIPTION
A	2023/09/05	FDS	DLP	BTL	ISSUED FOR 30% PRELIMINARY DESIGN
B	2023/09/14	FDS	DLP	BTL	ISSUED FOR 50% PRELIMINARY DESIGN
C	2024/03/05	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN
D	2024/03/14	FDS	PKM	BTL	ISSUED FOR 90% DETAILED DESIGN

PERMIT NO 1001279

DRAFT (ISSUED FOR REVIEW)

SEAL



SCALE H:N/A

SHEET 21 OF 21

SOUTH BASIN DRAINAGE IMPROVEMENTS CONSTRUCTION NOTES & STORM CALCULATIONS TABLE

DRAWING NUMBER C801