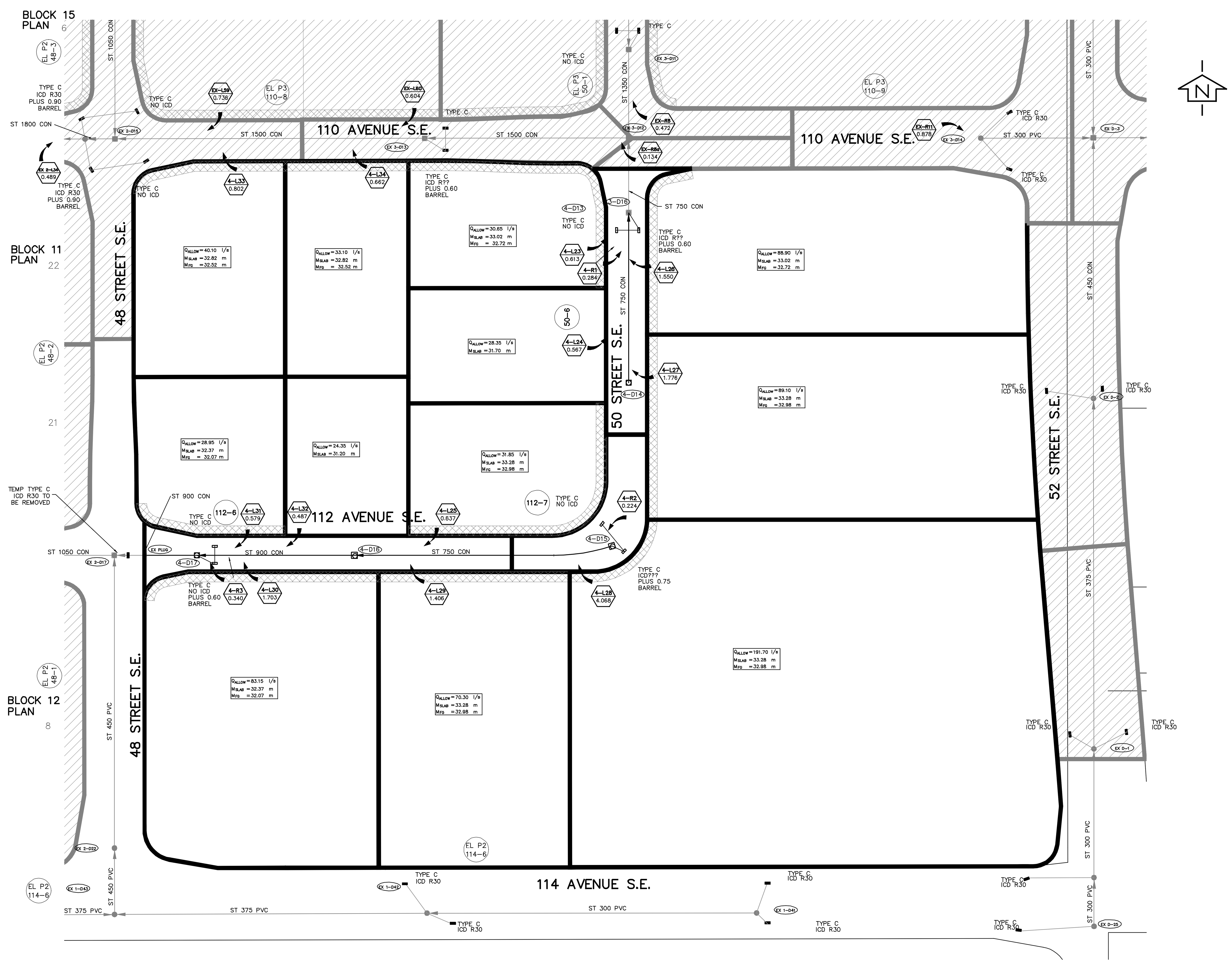


LEGEND:

3-L9 / 1.634	DRAINAGE AREA LABEL DRAINAGE AREA IN ha
(heavy line)	DRAINAGE AREA BOUNDARY
(cross-hatch)	MINIMUM FRONT GRADE AREA (SEE NOTE 6)
F-3	MANHOLE NUMBER
	PROPOSED STORM SEWER
	FUTURE STORM SEWER
	EXISTING STORM SEWER
(hatch)	EXISTING PHASE 2 DRAINAGE AREAS
(arrow)	ARROWS INDICATE WHERE DRAINAGE AREAS ENTER STORM SYSTEM
	PROPOSED CATCH BASIN
	EXISTING CATCH BASIN
ICD R50	ICD SIZE
Q_{ALLOW}	ALLOWABLE LOT DISCHARGE
M_{SLAB}	MINIMUM SLAB ELEVATION (SEE NOTE 3, 4 & 5)
104-2	BLOCK PROFILE LABEL

NOTES:

1) THE ALLOWABLE DISCHARGE FOR ALL LANDS WITHIN THIS DEVELOPMENT ARE CALCULATED AS FOLLOWS:

i) 50 l/s/Ha – FOR ALL LOT AREAS. LOTS LESS THAN 0.400Ha WILL BE ALLOWED TO DISCHARGE AT 20 l/s. LOT AREAS ARE DENOTED IN THE DRAINAGE AREA LABEL (i.e. 1–L10).

ii) 70 l/s/Ha – FOR ALL ROAD AREAS IN THIS DEVELOPMENT ROAD AREAS ARE DENOTED BY A (i.e. 1–R2) IN THE DRAINAGE AREA LABEL.

2) THE ALLOWABLE DISCHARGE (Q_{ALLOW}) HAS BEEN CALCULATED AND PROVIDED FOR EACH LOT BASED ON NOTE 1i

3) MINIMUM SLAB ELEVATIONS HAVE BEEN SPECIFIED FOR EACH LOT IN THIS PHASE. THESE ELEVATIONS ARE PROVIDED AS A GUIDE ONLY. THE "MINIMUM SLAB ELEVATIONS" HAVE BEEN DETERMINED BY CHOOSING THE HIGHER RESULT OF CRITERIA i), OR ii) BELOW.

i) FOR LOTS WHERE MINIMUM FRONT GRADES HAVE BEEN SPECIFIED, THE MINIMUM SLAB ELEVATION IS EQUAL TO 0.30m HIGHER THAN THE MINIMUM FRONT GRADE. LOTS WHERE THE MSLAB IS BEING DICTATED BY THIS ITEM WILL HAVE RESTRICTIVE COVENANTS SPECIFYING THIS MINIMUM GRADE PLACED ON THEM.

ii) A MINIMUM SLAB ELEVATION CALCULATED AS BEING 0.50m ABOVE THE HIGHEST ESTIMATED HYDRAULIC GRADE LINE ELEVATION BASED ON AN ASSUMED STORM SEWER SYSTEM WITHIN EACH LOT.

4) THE MINIMUM SLAB ELEVATION CALCULATED IN POINT #3 MUST BE REVIEWED RELATIVE TO THE PROPOSED LOT DEVELOPMENT WITH CONSIDERATION GIVEN TO THE FOLLOWING:

iv) HYDRAULIC SURCHARGE CONDITIONS ARE PRESENT IN THE ENTIRE STORM SYSTEM WITHIN THIS DEVELOPMENT. IT IS THE RESPONSIBILITY OF EACH INDIVIDUAL LOT DEVELOPER WITHIN THIS DEVELOPMENT, WHICH IS PROVIDING STORM SEWER SERVICING TO THEIR SITE VIA THE PUBLIC MAINS, TO DETERMINE THE ACTUAL EFFECTS AND EXTENT OF THE HYDRAULIC CONDITIONS THAT WILL BE PRESENT IN THEIR STORM SYSTEM WITHIN THEIR LOT. THE MINIMUM SLAB ELEVATION CALCULATED IN ii) ABOVE IS PROVIDED AS A GUIDE ONLY AND THE TRUE EFFECTS OF ANY LOT DEVELOPMENT AND ITS CORRESPONDING STORM SEWER SYSTEM ON THE HYDRAULIC GRADE LINE WITHIN ANY LOT MUST BE DETERMINED. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL LOT DEVELOPER TO DETERMINE THE TRUE MINIMUM SLAB ELEVATIONS FURTHER TO THEIR HYDRAULIC GRADE LINE CALCULATIONS FOR THEIR LOT TO ENSURE THE LOTS TRUE SERVICEABILITY.

v) THE DEVELOPER OF ANY PARTICULAR LOT WILL BE RESPONSIBLE FOR DETERMINING THE EFFECTS OF THEIR SITE FINISHED GROUND ELEVATIONS AND THEIR REQUIRED TRAPPED LOW STORM WATER STORAGE ON THEIR MINIMUM SLAB ELEVATIONS. IT IS THE INDIVIDUAL LOT DEVELOPER'S RESPONSIBILITY TO ENSURE THAT THEIR MINIMUM SLAB ELEVATIONS ARE ADJUSTED AS REQUIRED TO ACCOMMODATE THEIR ON–SITE PONDING ELEVATIONS.

5) IT IS THE INDIVIDUAL LOT OWNERS RESPONSIBILITY TO CALCULATE ALL MINIMUM SLAB ELEVATIONS FOR THEIR DEVELOPMENT TAKING INTO ACCOUNT ALL ON–SITE AND OFF–SITE, EXISTING AND PROPOSED CONDITIONS.

6) A MINIMUM FRONT GRADE HAS BEEN SPECIFIED FOR ALL LOTS WHERE BORDERING ROAD R/W'S HAVE A TRAPPED LOW ADJACENT TO THEM AND THE POND SPILL OVER ELEVATION ENCROACHING ON TO THE LOT. THE MINIMUM FRONT GRADE IS ACHIEVED BY ADDING 0.15m TO THE POND SPILL OVER ELEVATION. THIS MINIMUM GRADE MUST BE ACHIEVED WITHIN A 6.0m WIDTH ALONG THE COMMON PROPERTY LINE OF THE LOT AND ROAD R/W. THIS AREA IS DENOTED ON THE DRAWING IN ACCORDANCE WITH THE LEGEND. REFER TO DRAWING NO. G FOR TRAPPED LOW ROAD CHARACTERISTICS INFORMATION FOR THIS DEVELOPMENT.

7) STORM PIPE CALCULATIONS ARE LOCATED ON DRAWING NO. F–3.

NO.	DATE	REVISION	BY	APP

NO.	DATE	ISSUED	BY	APP
A	02/06	ISSUED FOR PRELIMINARY APPROVAL	GTB	GMB

Aug/18/2006

THE CITY OF CALGARY
CORPORATE PROPERTIES & BUILDINGS

PROGRESSIVE ENGINEERING LTD.

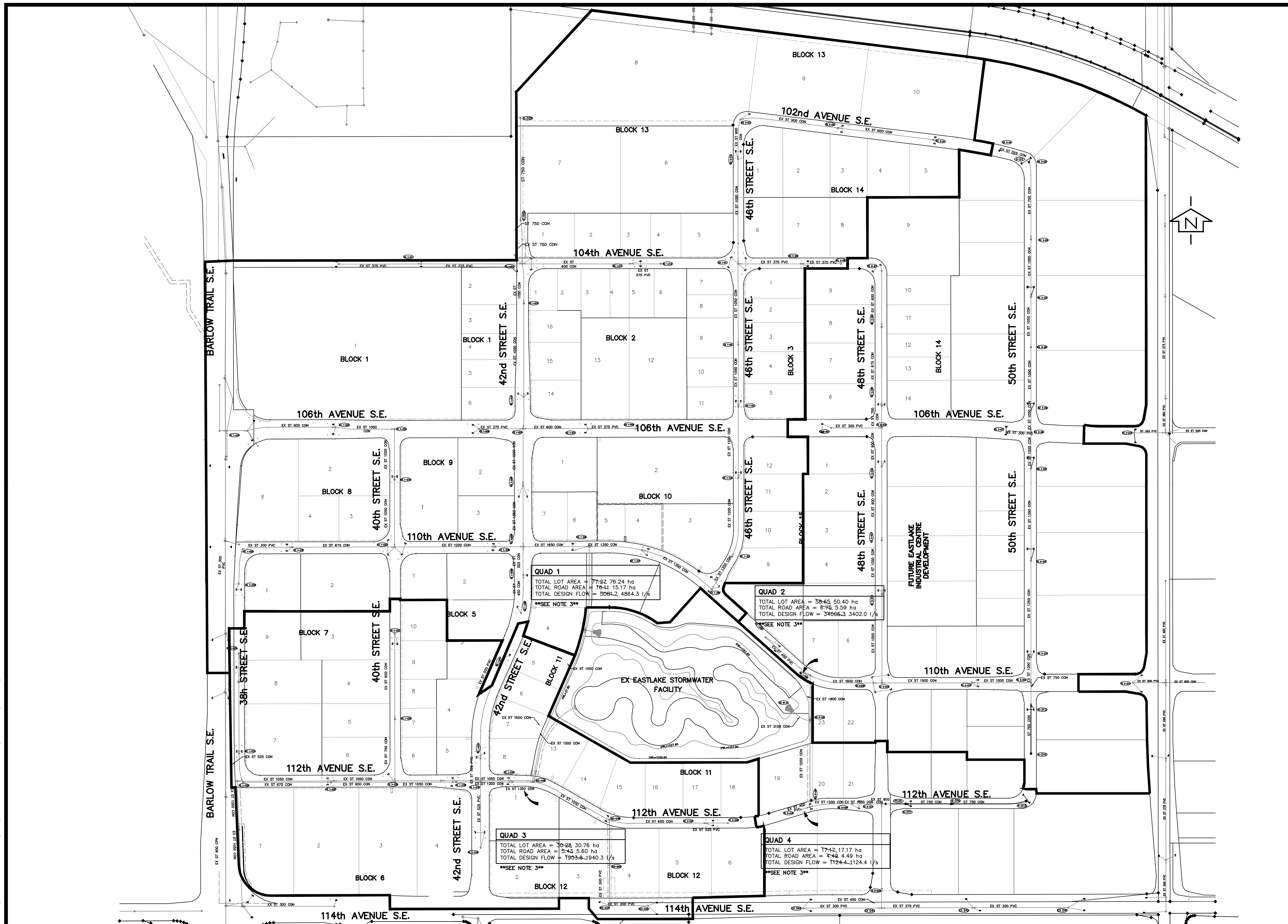
DESIGNED: JR	SCALE: 1:1000
DRAWN: GTB	PROJECT NO.: 84041
CHECKED: GMB	DATE: 02/06
APPROVED: PB	ISSUED: A

PROJECT: EASTLAKE INDUSTRIAL CENTER PHASE 4

DRAWING: STORM DRAINAGE AREAS

DRAWING: F1

REV.: 0



LEGEND:

FUT 60.375	DRAINAGE AREA NUMBER DRAINAGE AREA IN ha
	OVERALL DRAINAGE BOUNDARY
	ARROWS INDICATE WHERE DRAINAGE AREAS ENTER STORM SYSTEM
F-3	MANHOLE NUMBER
	PROPOSED STORM SEWER
	FUTURE STORM SEWER
	EXISTING STORM SEWER
	CATCH BASIN
	EXISTING CATCH BASIN
ICD R50	ICD SIZE

NOTES:

1) THE ALLOWABLE DISCHARGE FOR ALL LANDS WITHIN THIS DEVELOPMENT IS CALCULATED AS FOLLOWS:
   i) 50 l/s/Ha — FOR ALL LOT AREAS. LOTS LESS THAN 0.400Ha WILL BE ALLOWED TO DISCHARGE AT 20 l/s. LOT AREAS ARE DENOTED IN THE DRAINAGE AREA LABEL (i.e. 1–L10).
   ii) 70 l/s/Ha — FOR ALL ROAD AREAS IN THIS DEVELOPMENT ROAD AREAS ARE DENOTED BY A (i.e. 1–R2) IN THE DRAINAGE AREA LABEL.

2) REFER TO DRAWINGS F1 FOR THE STORM DRAINAGE AREAS THROUGH PHASE 4 AND F3 FOR THE CORRESPONDING DRAINAGE CALCULATIONS.

3) TOTAL DESIGN FLOWS REFLECT UPDATED EXISTING, PROPOSED AND FUTURE SERVICE REQUIREMENTS AS INDICATED IN BLOCK BELOW.

QUAD 4
TOTAL LOT AREA = ~~17.20~~ 17.17 ha
TOTAL ROAD AREA = ~~4.57~~ 4.49 ha
TOTAL DESIGN FLOW = ~~1179.9~~ 1124.4 l/s

NO.	DATE	REVISION	BY	APP

NO.	DATE	ISSUED	BY	APP
A	01/06	ISSUED FOR PRELIMINARY APPROVAL	GTB	GMB

Aug/17/2006

THE CITY OF CALGARY
CORPORATE PROPERTIES & BUILDINGS

PROGRESSIVE ENGINEERING LTD.

DESIGNED: JR	SCALE: 1:2000
DRAWN: GTB	PROJECT NO.: 84041
CHECKED: GMB	DATE: 01/06
APPROVED: PB	ISSUED: A

PROJECT: EASTLAKE INDUSTRIAL CENTER PHASE 4

DRAWING: STORM DRAINAGE OVERALL

DRAWING: F2

REV.: 0

NOTES:

1. – LOTS WITH AREA SIZES LESS THAN OR EQUAL TO 0.400 ha ARE GIVEN A DESIGN FLOW RATE OF 20 L/S TO THE MINOR SYSTEM.

STORM SEWER DESIGN - COMPUTATION FORM

Project Name: Eastlake Industrial Centre Phase 3
Job No: 84031

Lot Unit Release Rate (L/s/ha) = **50.00**
Road Unit Release Rate (L/s/ha) = **70.00**

Friction Coefficients: (n)
0.011 PVC
0.013 Concrete

Use Concrete Pipe for sizes greater than: 450

LOCATION	Area Design											Pipe Design								
	Drainage Area Label	Manhole		Added Area		Added Flow			Tributary Flow	Total Design	Design Flow, Q(L/s)	Design Flow, Q(L/s)	Pipe Slope (%)	Pipe Length (m)	Nominal Pipe Diameter (mm)	Pipe Material	Friction Coeff. (n)	Pipe Capacity (L/s)	Velocity (m/s)	Actual Pipe Diameter (mm)
		Upper	Lower	Lots	Roads	Lots	Roads	Total	Rung Q	Flow (Q l/s)										
RUNG 2	4-L23			0.613		30.650														
	4-L24			0.567		28.350														
	4-L26			1.550		77.500														
	4-L27	4-D14	3-D16	1.776	0.000	88.800	0.000	225.300	0.000	225.300	225.3	225.3	0.140%	84.921	750	CON	0.013	434.6	0.95	762.0
	4-R1	3-D16	3-D12	0.000	0.284	0.000	19.880	19.880	0.000	245.180	245.2	245.2	0.120%	37.329	750	CON	0.013	402.3	0.88	762.0
RUNG 3	4-L25			0.637		31.850														
	4-L28			4.068		203.400														
	4-L29			1.406		70.300														
	4-R2	4-D15	4-D16	0.000	0.224	0.000	15.680	321.230	0.000	321.230	321.2	321.2	0.180%	118.446	750	CON	0.013	492.7	1.08	762.0
	4-L32			0.487		24.350														
	4-L31			0.579		28.950														
	4-L30	4-D16	4-D17	1.703		85.150	0.000	138.450	0.000	459.680	459.7	459.7	0.180%	78.515	900	CON	0.013	800.3	1.22	914.0
	4-R2	4-D17	EX PLUG	0.000	0.340	0.000	23.800	23.800	0.000	483.480	483.5	483.5	0.500%	25.143	900	CON	0.013	1333.9	2.03	914.0
		EX PLUG	EX 2-D17	0.000	0.000	0.000	0.000	0.000	0.000	483.480	483.5	483.5	0.500%	16.000	900	CON	0.013	1333.9	2.03	914.0

NO.	DATE	REVISION	BY	APP

NO.	DATE	ISSUED	BY	APP
A	02/06	ISSUED FOR PRELIMINARY APPROVAL	GTB	GMB

Aug/17/2006

THE CITY OF CALGARY
CORPORATE PROPERTIES & BUILDINGS

PROGRESSIVE ENGINEERING LTD.

DESIGNED JR	SCALE –
DRAWN GTB	PROJECT NO. 84041
CHECKED GMB	DATE 02/06
APPROVED PB	ISSUED A

PROJECT: EASTLAKE INDUSTRIAL CENTER PHASE 4

DRAWING: STORM DRAINAGE AREA CALCULATIONS

DRAWING F3

REV. 0

Plot Date: Aug 17, 2006 – 03:22:27pm Plotted by: mtob
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