



### **Roadway Design Cross Sections Update**

*(Arterial Street (with 4 Lanes & 6 Lanes), Local Arterial Street, Parkway, Urban Boulevard, Neighbourhood Boulevard, Primary Collector, Collector Street with Parking One Side, Collector Street with Parking Both Sides, Activity Centre Street and Industrial Street with No Parking)*

The cross-sections, design elements and intersection design details for the following roadways – Arterial Street (for 4-lanes and 6-lanes - 454.1008.057 and 454.1008.058 respectively), Local Arterial Street (454.1008.060), Parkway (454.1008.061), Urban Boulevard (454.1008.062), Neighbourhood Boulevard (454.1008.063), Primary Collector (454.1008.064), Collector Street with Parking One Side (454.1008.065), Collector Street with Parking Both Sides (454.1008.073), Activity Centre Street (454.1008.066) and Industrial Street with No Parking (454.1008.067) are included in the City of Calgary 2014 Design Guidelines for Subdivision Servicing (2014 DGSS) and are aligned with the City's Complete Streets Policy/Guide.

The roadway cross-sections mentioned above as designed do not allow for adequate spacing between the street light cable and public trees. Within the approved roadway cross-sections there has been conflict with public tree placement and street light cable alignment that has resulted in a less than expected quantity of public trees being installed in the public Road Right-of-Way. This conflicts with both City Policy and with development industry and public desire for well-treed streets. To resolve the conflict and allow for both public tree plantings and streetlight infrastructure the City is updating the cross sections for the above-mentioned roadways only. The overall Road Right-Of-Way for the cross sections mentioned above remain unchanged. This is an interim update in effect until the City updates the roadway design standards in the 2014 DGSS.

#### **Updated Designs**

- Arterial Street with 4 Lanes (454.1008.057)
- Arterial Street with 6 Lanes (454.1008.058)
- Local Arterial Street (454.1008.060)
- Parkway (454.1008.061)
- Urban Boulevard (454.1008.062)
- Neighbourhood Boulevard (454.1008.063)
- Primary Collector (454.1008.064)
- Collector Street with Parking One Side (454.1008.065)
- Activity Centre Street (454.1008.066)
- Industrial Street with No Parking (454.1008.067)
- Collector Street with Parking Both Sides (454.1008.073)



**Industry Bulletin  
September 2021**

The above updated designs will replace the existing roadways cross-sections (Arterial Street – 4 lanes and 6 lanes, Local Arterial Street, Parkway, Urban Boulevard, Neighbourhood Boulevard, Primary Collector, Collector Street with Parking One Side, Collector Street with Parking Both Sides, Activity Centre Street, and Industrial Street with No Parking) effective September 1, 2021. There may be a transition time for these updated cross-sections to be applied to subdivision plans in progress. A Tentative Plan/Landscape Plan that is submitted after September 1, 2021 (and was part of an Outline Plan approved prior to September 1, 2021) must conform to the new design configuration for the roadways mentioned above.

If you have any questions regarding this update, please contact:

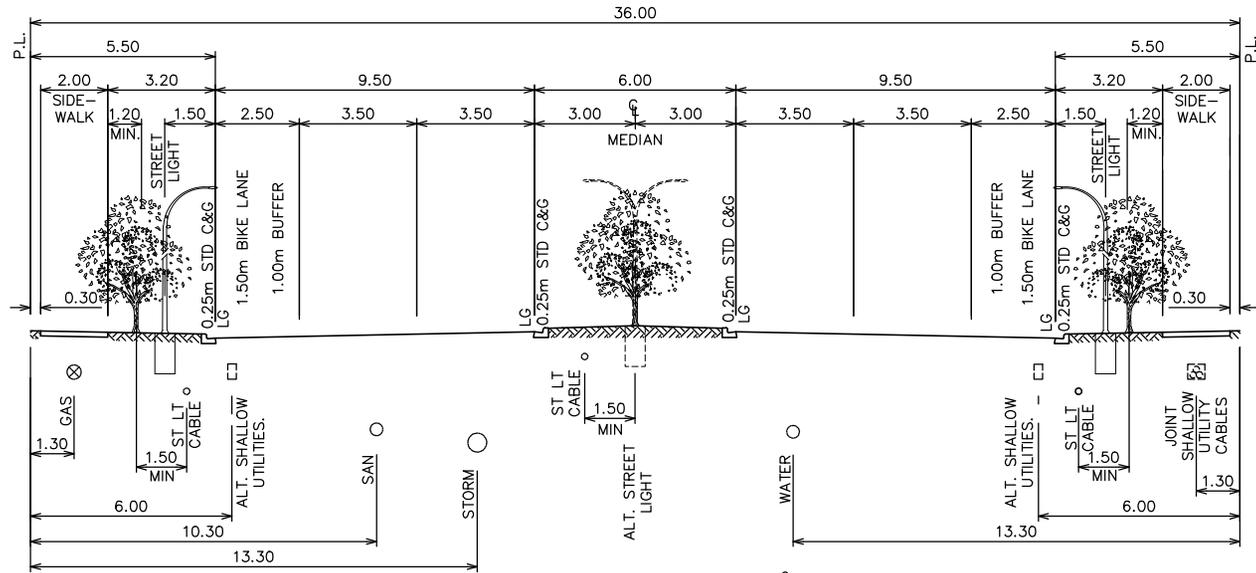
**Abdul Samad, M.Eng., P.Eng.**

Projects Coordinator, Liveable Streets Division

Complete Streets Program Lead

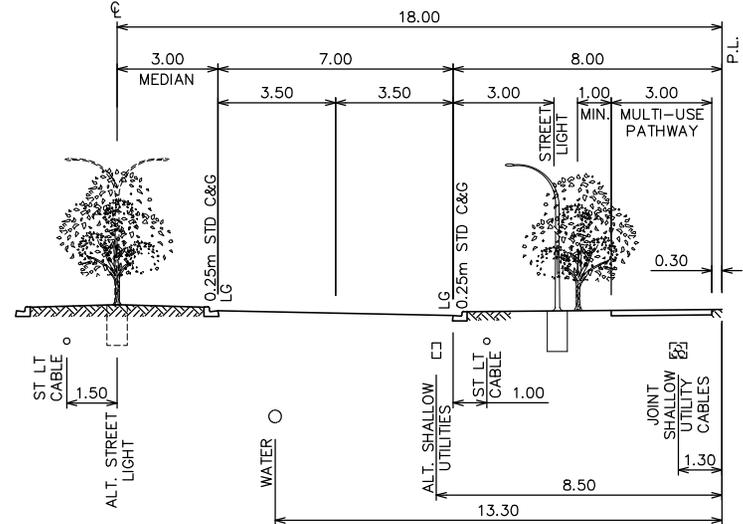
Transportation Planning, The City of Calgary

[abdul.samad@calgary.ca](mailto:abdul.samad@calgary.ca)



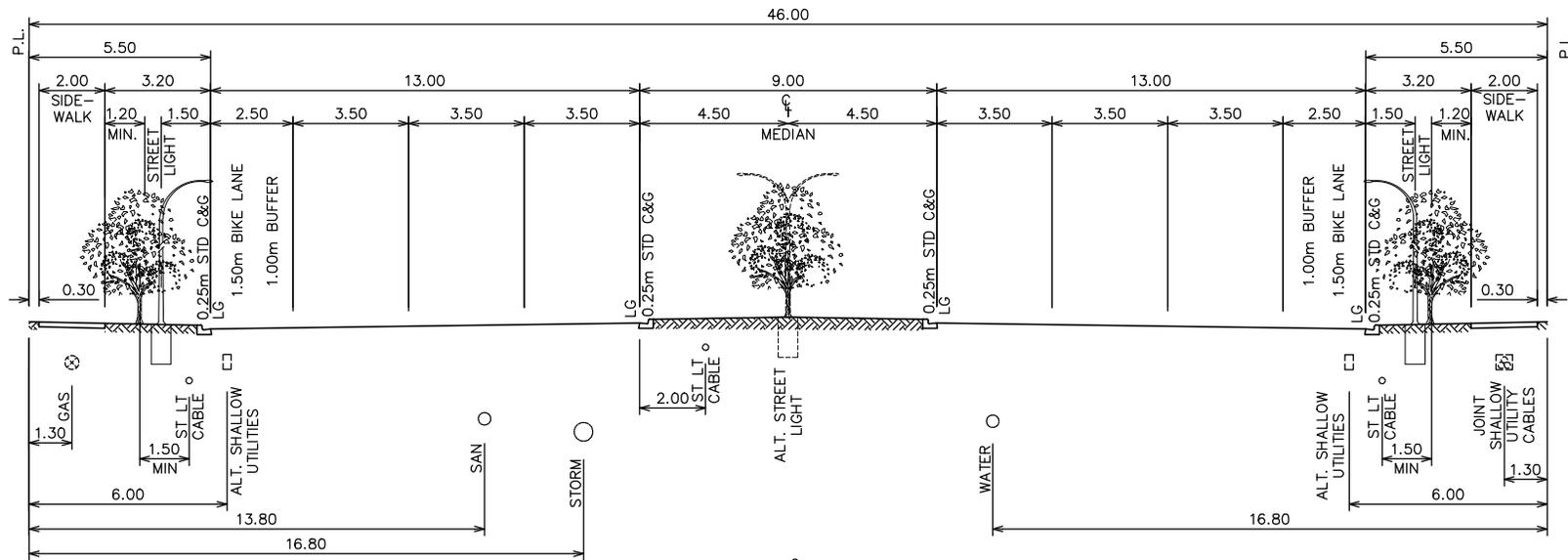
**NOTES:**

1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE ROAD RIGHT-OF-WAY ARE SHOWN WITH DASHED LINES.
2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE BOULEVARD.
3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
4. HYDRANTS ON 3.00 LINE WITH 2.00m SEPARATE WALK OR 5.50 LINE WITH 3.00m MULTI-USE PATHWAY.
5. HYDRANT VALVES 1.00m FROM WATER LINE.
6. SERVICE VALVES ON 3.00 LINE WITH 2.00m SEPARATE WALK OR 5.50 LINE WITH 3.00m MULTI-USE PATHWAY.
7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
9. TREES OFFSET MINIMUM 1.20m FROM SIDEWALK AND 1.00m FROM PATHWAY, AND ON CENTRELINE OF MEDIAN.
10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES. FOR "ALTERNATIVE FOR OFF-STREET BIKES", SANITARY ON 10.30 LINE AND STORM ON 13.30 LINE.
15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES. MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.

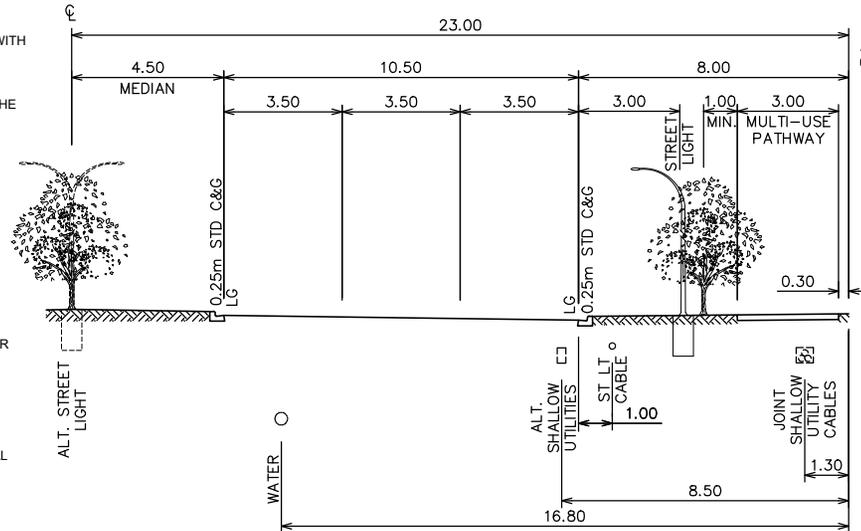


**ALTERNATIVE FOR OFF-STREET BIKES**

PERMIT <b>PERMIT TO PRACTICE</b> <b>THE CITY OF CALGARY</b> REGISTRATION NO. 57504 DATE: 2021-08-12 <b>PERMIT NUMBER: P004428</b> <small>The Association of Professional Engineers and Geoscientists of Alberta (APEGA)</small>	SEAL 		DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED <b>Metric</b> FILE: Z:\permanent\DGSS_2014\dwg\4541008\ACAD\2021-08-09\454_1008.057.dwg DATE: Monday, August 9, 2021 2:23:59 PM ISC: UNRESTRICTED	Drawn J.L.	Date 2014-06	Figure <b>3</b>
				Designed EW/AS	Checked EW/AS	
1 2021-07 RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN				AS	App'd	No. Date Revision

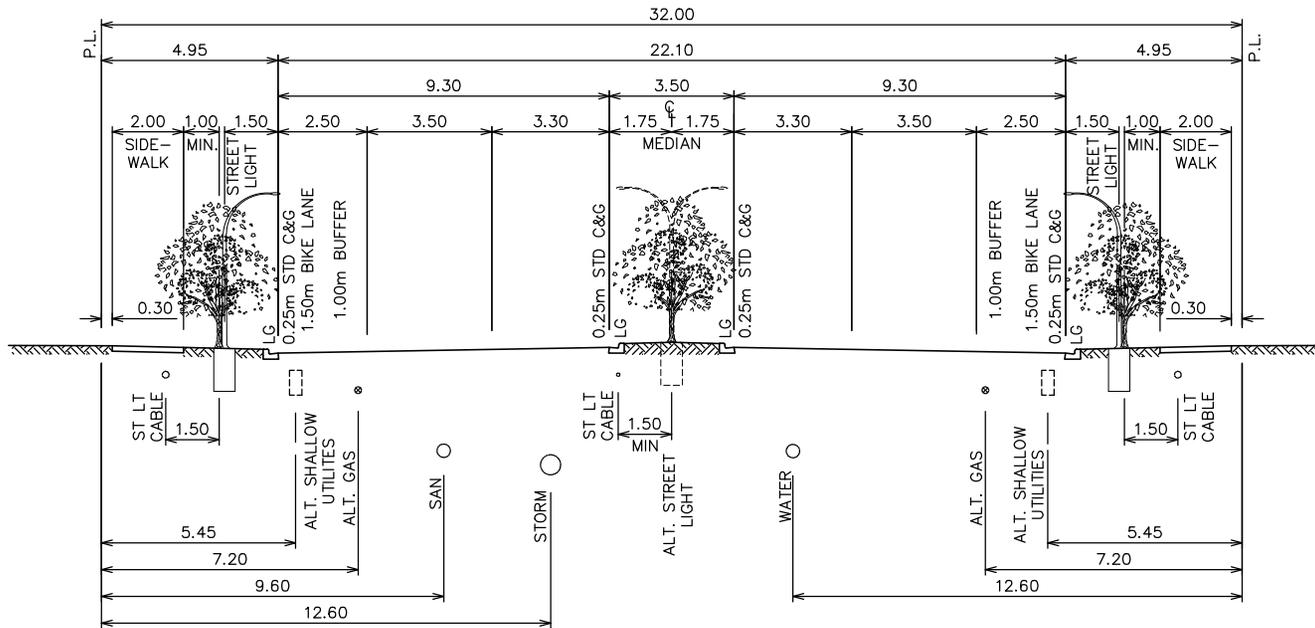


- NOTES:
1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE ROAD RIGHT-OF-WAY ARE SHOWN WITH DASHED LINES.
  2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE BOULEVARD.
  3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
  4. HYDRANTS ON 3.00 LINE WITH 2.00m SEPARATE WALK OR 5.50 LINE WITH 3.00m MULTI-USE PATHWAY.
  5. HYDRANT VALVES 1.00m FROM WATER LINE.
  6. SERVICE VALVES ON 3.00 LINE WITH 2.00m SEPARATE WALK OR 5.50 LINE WITH 3.00m MULTI-USE PATHWAY.
  7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
  8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
  9. TREES OFFSET MINIMUM 1.20m FROM SIDEWALK AND 1.00m FROM PATHWAY, AND ON CENTRELINE OF MEDIAN.
  10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
  11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
  12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
  13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
  14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES. FOR "ALTERNATIVE FOR OFF-STREET BIKES", SANITARY ON 13.80 LINE AND STORM ON 16.80 LINE.
  15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
  16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES, MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
  17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
  18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
  19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
  20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
  21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.



ALTERNATIVE FOR OFF-STREET BIKES

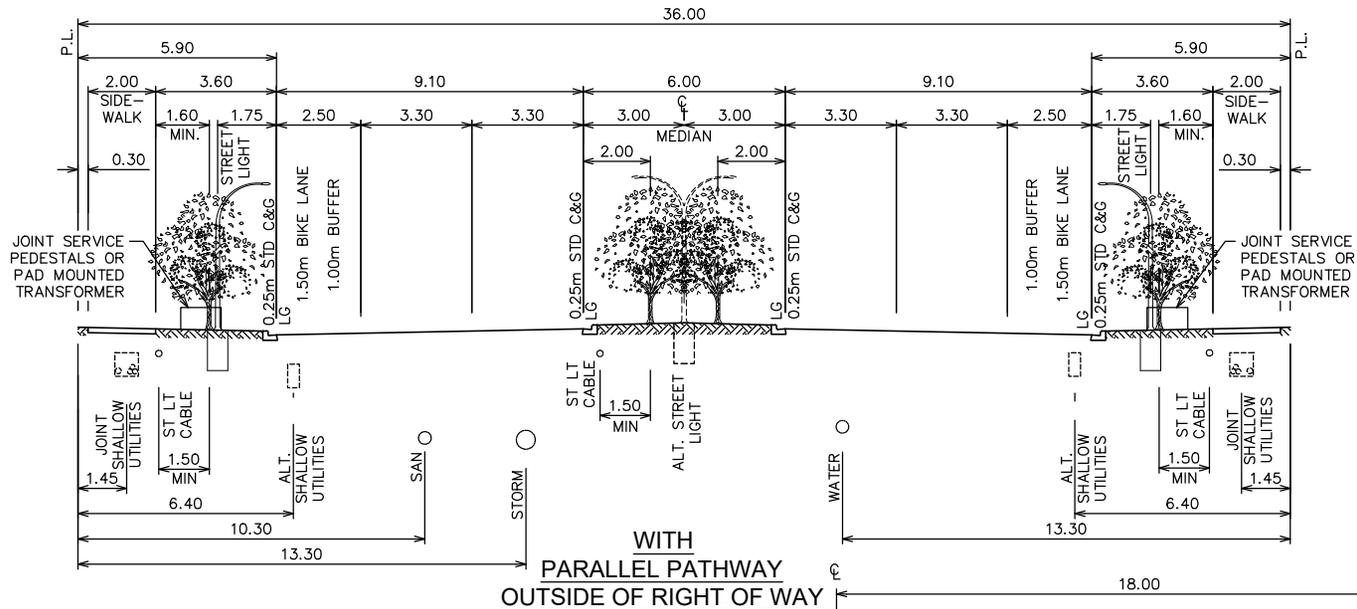
PERMIT <b>PERMIT TO PRACTICE THE CITY OF CALGARY</b> REGISTRATION NO. 57504 DATE: 2021-08-12 <b>PERMIT NUMBER: P004428</b> <small>The Association of Professional Engineers and Geoscientists of Alberta (APEGA)</small>	SEAL 		DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED <b>Metric</b> FILE: Z:\permanent\DGSS_2014\dwg\4541008\ACAD\2021-08-09\454_1008_058.dwg DATE: Monday, August 9, 2021 2:08:26 PM ISC: UNRESTRICTED	Drawn JL Date 2014-06	Figure <b>4</b>
				Designed EW/AS	
1 2021-07 RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN AS				Checked EW/AS	File Number <b>454.1008.058</b>
No.	Date	Revision	App'd		



**NOTES:**

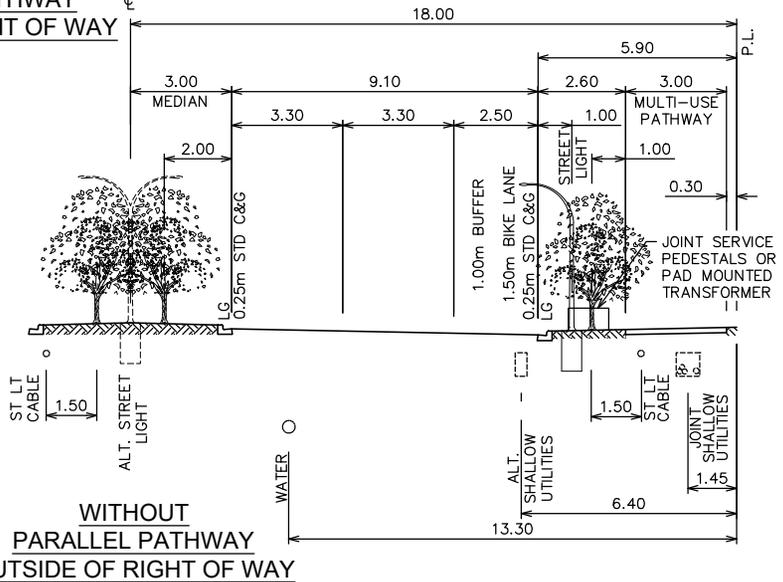
1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE ROAD RIGHT-OF-WAY ARE SHOWN WITH DASHED LINES.
2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE BOULEVARD.
3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
4. HYDRANTS ON 3.00 LINE.
5. HYDRANT VALVES 1.00m FROM WATER LINE.
6. SERVICE VALVES ON 3.00 LINE.
7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
9. TREES OFFSET MINIMUM 1.00m FROM SIDEWALK AND PATHWAY, AND ON CENTRELINE OF MEDIAN.
10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES.
15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES, MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.

PERMIT <b>PERMIT TO PRACTICE THE CITY OF CALGARY</b> REGISTRATION NO. P-57504 DATE: 2021-08-12 <b>PERMIT NUMBER: P004428</b> <small>The Association of Professional Engineers and Geoscientists of Alberta (APEGA)</small>	SEAL 		DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED <b>Metric</b> FILE: Z:\permanent\DGSS_2014\dwg\4541008\ACAD\2021-08-09\454.1008.060.dwg DATE: Tuesday, August 10, 2021 10:42:00 AM ISC: UNRESTRICTED	Drawn JL Date 2014-06	<b>CROSS SECTION LOCAL ARTERIAL STREET</b>	Figure <b>10</b>
				Designed EW/AS		File Number <b>454.1008.060</b>
1 2021-07 RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN AS				Checked EW/AS	Scale: NTS	
No.	Date	Revision	App'd			



**NOTES:**

1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE ROAD RIGHT-OF-WAY ARE SHOWN WITH DASHED LINES.
2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE BOULEVARD.
3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
4. HYDRANTS ON 4.00 LINE WITH 2.00m SEPARATE WALK OR 4.00 LINE WITH 3.00m MULTI-USE PATHWAY.
5. HYDRANT VALVES 1.00m FROM WATER LINE.
6. SERVICE VALVES ON 4.00 LINE WITH 2.00m SEPARATE WALK OR 4.00 LINE WITH 3.00m MULTI-USE PATHWAY.
7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
9. TREES OFFSET MINIMUM 1.60m FROM SIDEWALK AND 1.00m FROM PATHWAY, AND ON CENTRELINE OF MEDIAN.
10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES. FOR "WITHOUT PARALLEL PATHWAY OUTSIDE OF RIGHT-OF-WAY", SANITARY ON 10.30 LINE AND STORM ON 13.30 LINE.
15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES. MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.



**CROSS SECTION  
PARKWAY**

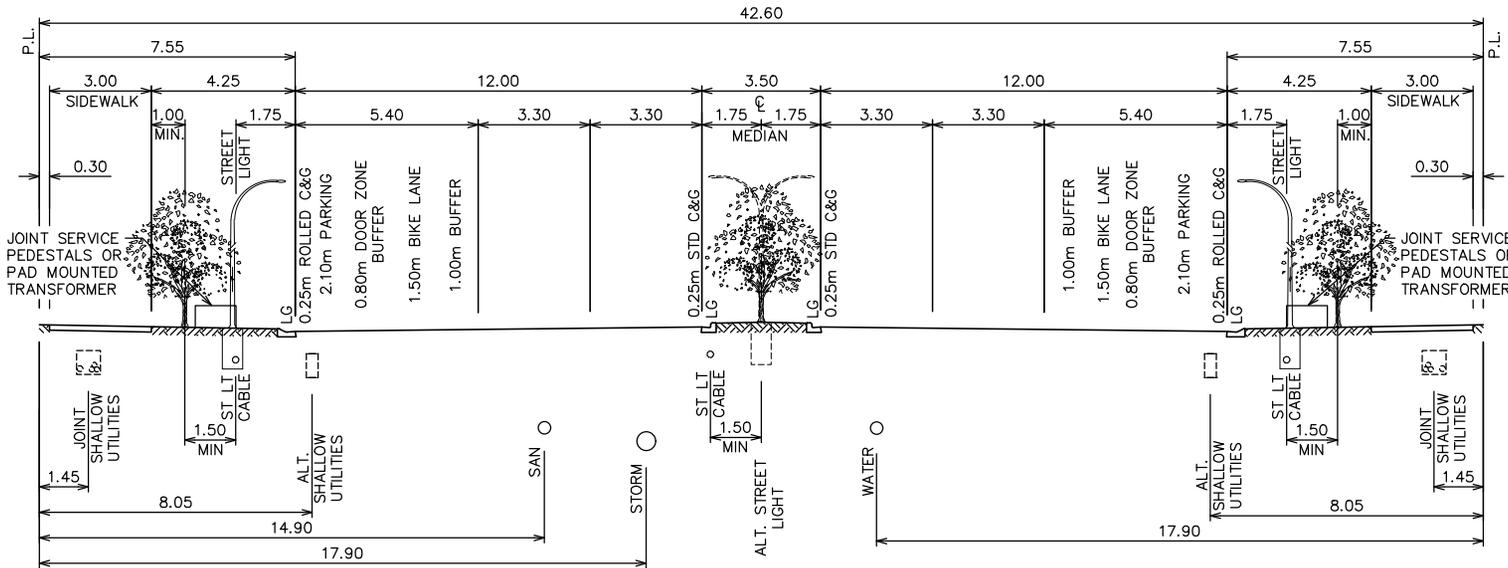
Figure  
**12**  
File Number  
**454.1008.061**

PERMIT  
**PERMIT TO PRACTICE  
THE CITY OF CALGARY**  
PROFESSIONAL ENGINEER  
DATE: 2021-08-12  
**PERMIT NUMBER: P004428**

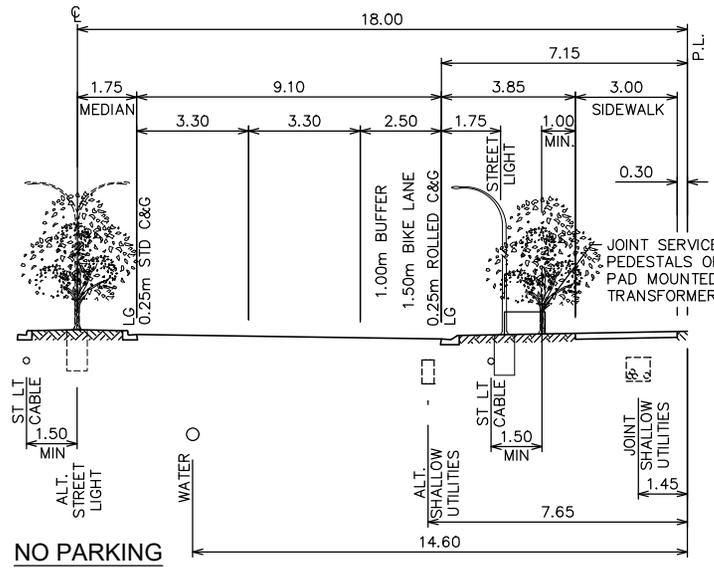
SEAL  
**PROFESSIONAL ENGINEER  
METRIC**  
DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED  
FILE: Z:\permanent\DGSS\_2014\dwg\4541008\ACAD\2021-08-09\454.1008.061.dwg  
DATE: Monday, August 9, 2021 2:18:13 PM  
ISC: UNRESTRICTED

No.	Date	Revision	App'd
1	2021-07	RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN	AS

Drawn	Date
JL	2014-06
Designed	EW/AS
Checked	EW/AS
Scale:	NTS



- NOTES:
1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE ROAD RIGHT-OF-WAY ARE SHOWN WITH DASHED LINES.
  2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE BOULEVARD.
  3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
  4. HYDRANTS ON 5.00 LINE.
  5. HYDRANT VALVES 1.00m FROM WATER LINE.
  6. SERVICE VALVES ON 5.00 LINE.
  7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
  8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
  9. TREES OFFSET MINIMUM 1.00m FROM SIDEWALK, AND ON CENTRELINE OF MEDIAN.
  10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
  11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
  12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
  13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
  14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES. FOR "NO PARKING", SANITARY ON 11.60 LINE AND STORM ON 14.60 LINE.
  15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
  16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES. MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
  17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
  18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
  19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
  20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
  21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.



PERMIT TO PRACTICE THE CITY OF CALGARY  
 PROFESSIONAL ENGINEER  
 ID: 114664  
 PERMIT NUMBER: P004428

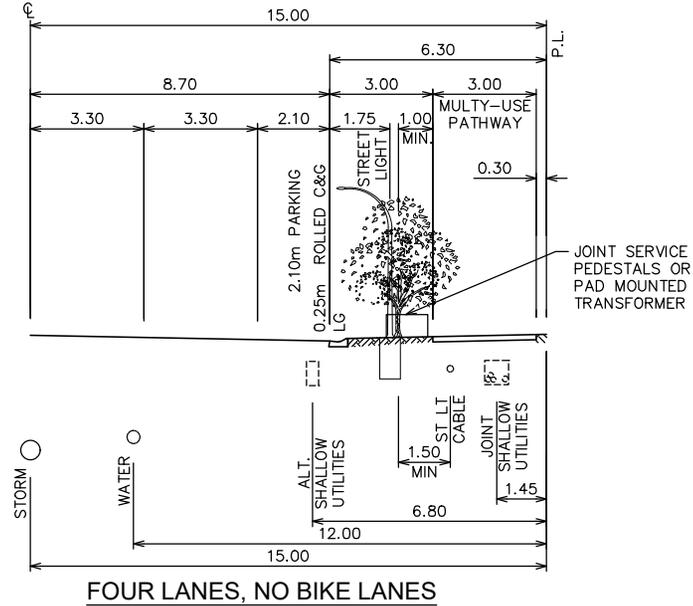
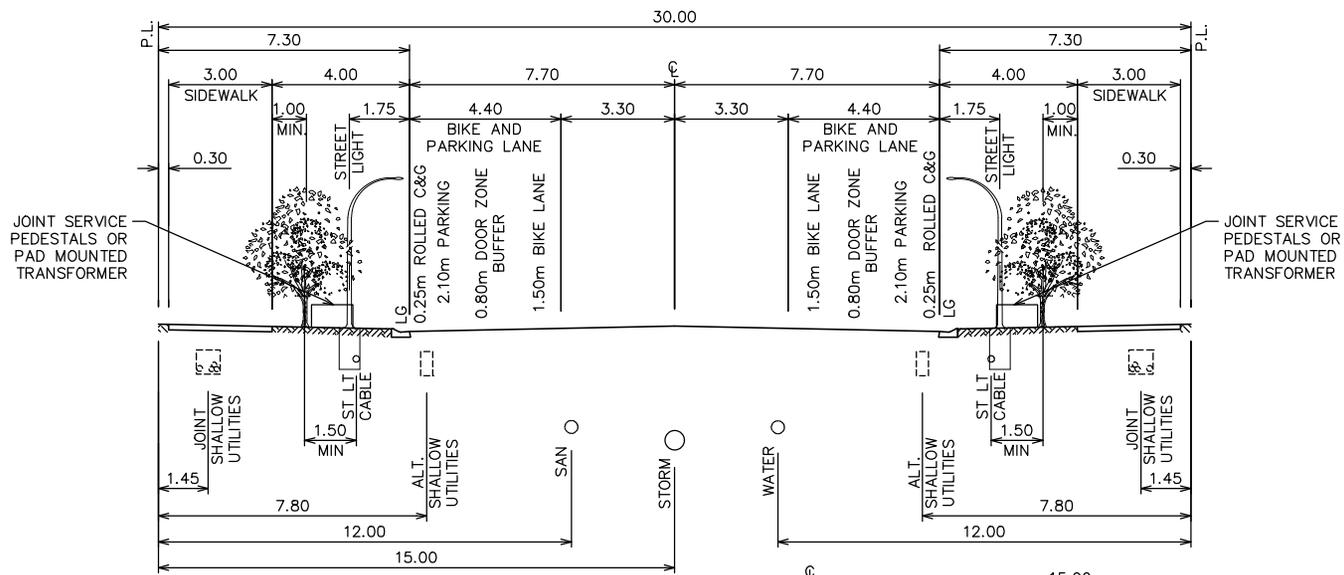
Calgary  
 DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED  
**Metric**  
 FILE: Z:\permanent\DGSS\_2014\dwg\4541008\ACAD\2021-08-09\454.1008.062.dwg  
 DATE: Tuesday, August 10, 2021 10:58:47 AM  
 IBC: UNRESTRICTED

No.	Date	Revision	App'd
1	2021-07	RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN	AS

Drawn: J.L. Date: 2014-06  
 Designed: EW/AS  
 Checked: EW/AS  
 Scale: NTS

**CROSS SECTION URBAN BOULEVARD**

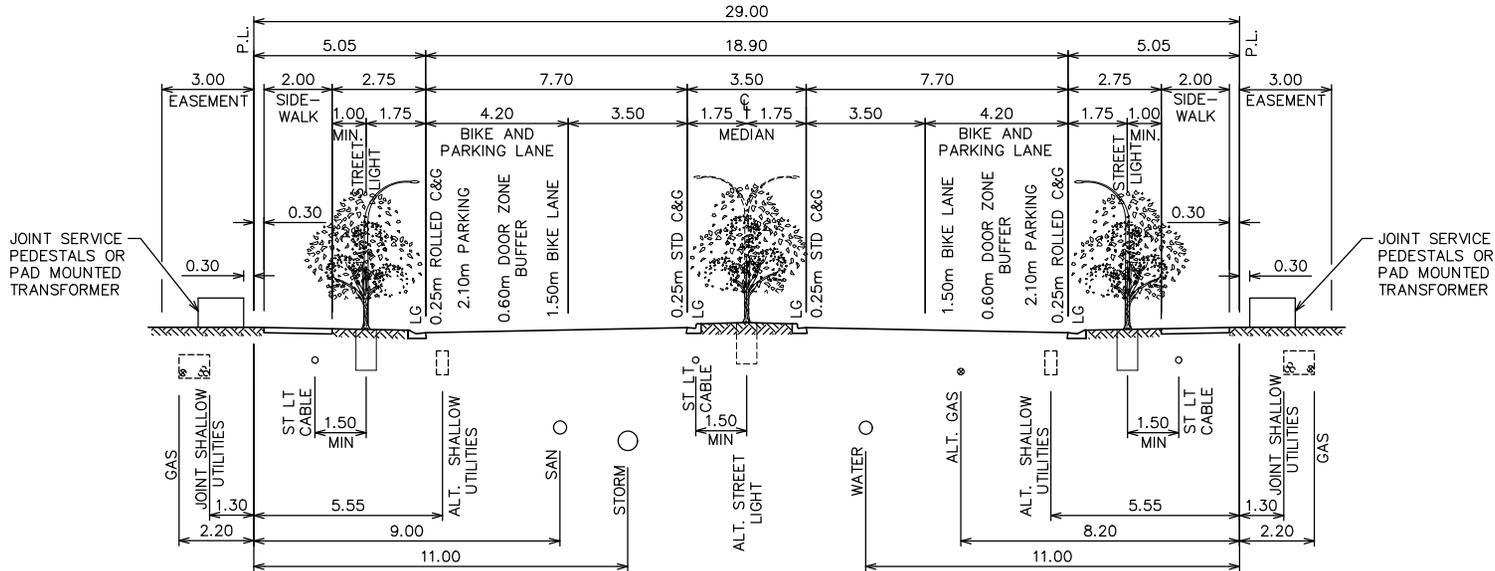
Figure 14  
 File Number 454.1008.062



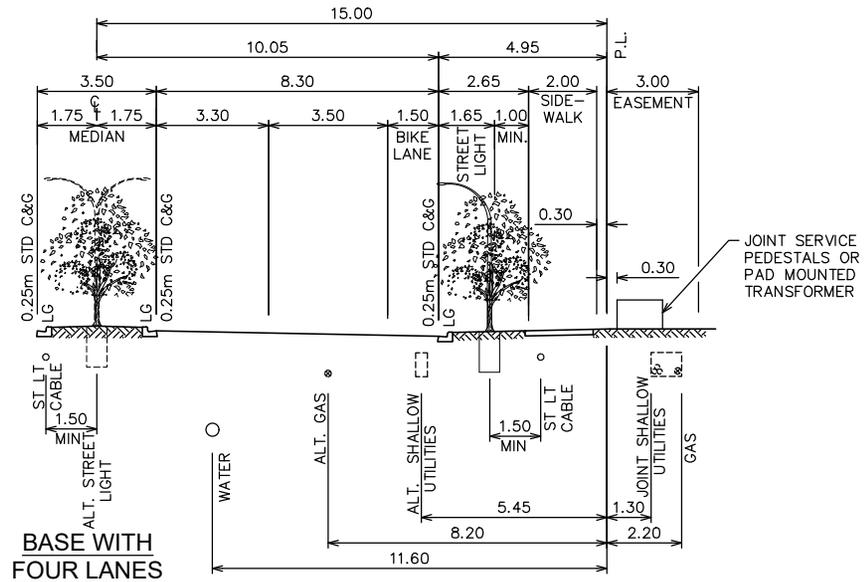
- NOTES:**
1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE ROAD RIGHT-OF-WAY ARE SHOWN WITH DASHED LINES.
  2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE BOULEVARD.
  3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
  4. HYDRANTS ON 4.50 LINE.
  5. HYDRANT VALVES 1.00m FROM WATER LINE.
  6. SERVICE VALVES ON 4.50 LINE.
  7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
  8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
  9. TREES OFFSET MINIMUM 1.00m FROM SIDEWALK AND MULTI-USE PATHWAY.
  10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
  11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
  12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
  13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
  14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES. FOR "FOUR LANES, NO BIKE LANES", SANITARY ON 12.00 LINE AND STORM ON 15.00 LINE.
  15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
  16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES, MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
  17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
  18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
  19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
  20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
  21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.

**FOUR LANES, NO BIKE LANES**

<b>PERMIT</b> PERMIT TO PRACTICE THE CITY OF CALGARY REGISTRATION NO. P-57504 DATE: 2021-08-12 <b>PERMIT NUMBER: P004428</b> <small>The Association of Professional Engineers and          Geoscientists of Alberta (APEGA)</small>	<b>SEAL</b>  PROFESSIONAL ENGINEER ID: 114664 EXP: 2024	 DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED <b>Metric</b> FILE: Z:\permanent\DGSS_2014\dwg\4541008\ACAD\2021-07-21\454_1008_063.dwg DATE: Wednesday, July 21, 2021 3:20:06 PM IBC: UNRESTRICTED	Drawn JL Date 2014-06	Figure <b>17</b> File Number <b>454.1008.063</b>
			Designed EW/AS	
			Checked AS Scale: NTS	<b>CROSS SECTION</b> <b>NEIGHBOURHOOD BOULEVARD</b>
			App'd	
		No. Date Revision		



- NOTES:
1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE EASEMENT ARE SHOWN WITH DASHED LINES.
  2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE EASEMENT.
  3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
  4. HYDRANTS ON 3.00 LINE.
  5. HYDRANT VALVES 1.00m FROM WATER LINE.
  6. SERVICE VALVES ON 3.00 LINE.
  7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
  8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
  9. TREES OFFSET MINIMUM 1.00m FROM SIDEWALK AND ON CENTRELINE OF MEDIAN.
  10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
  11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
  12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
  13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
  14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES. FOR "BASE WITH FOUR LANES", SANITARY ON 8.60 LINE AND STORM ON 11.60 LINE.
  15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
  16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES, MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
  17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
  18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
  19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
  20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
  21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.



PERMIT  
**PERMIT TO PRACTICE  
 THE CITY OF CALGARY**  
 PROFESSIONAL ENGINEER  
 ID 114664  
 DATE: 2021-08-12  
**PERMIT NUMBER: P004428**  
 The Association of Professional Engineers and  
 Geoscientists of Alberta (APEGA)



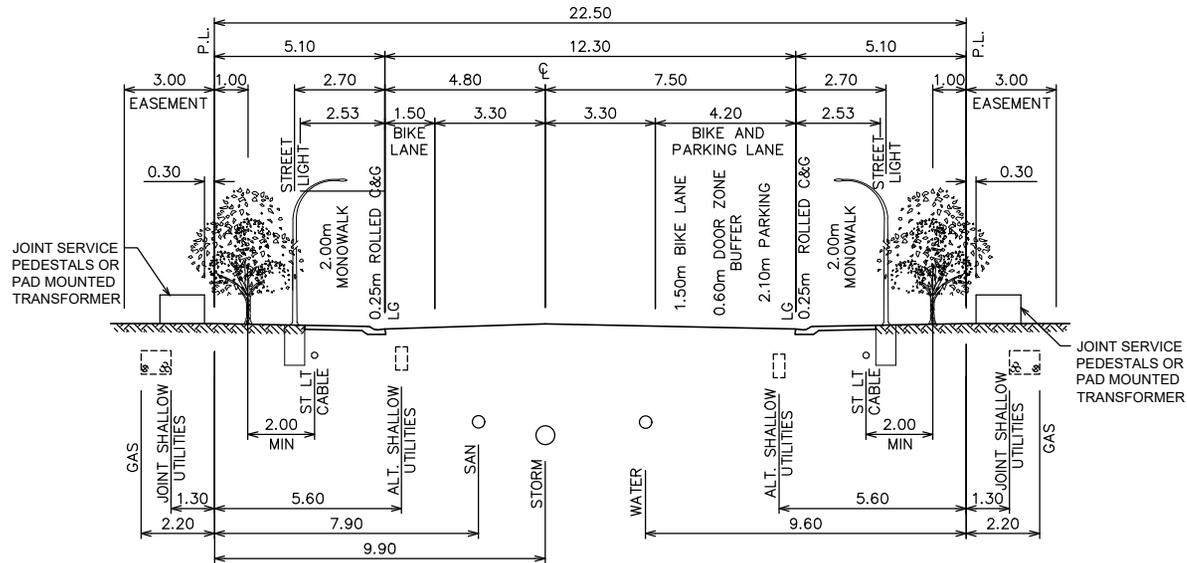
DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED **METRIC**  
 FILE: Z:\permanent\DGSS\_2014\dwg\4541008\ACAD\2021-08-09\454\_1008\_064.dwg  
 DATE: Monday, August 9, 2021 2:22:33 PM  
 IBC: UNRESTRICTED

No.	Date	Revision	App'd
1	2021-07	RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN	AS

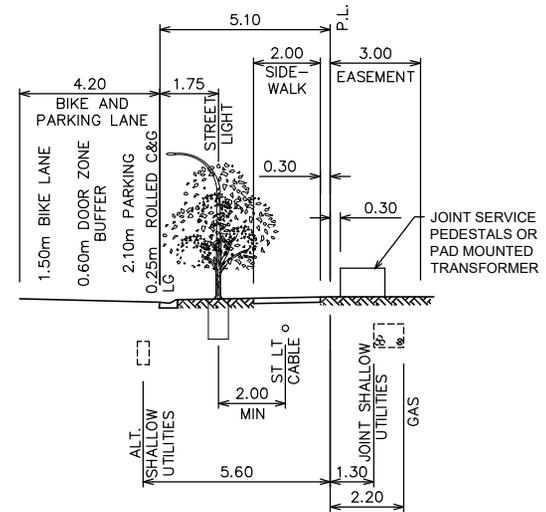
Drawn	Date
JL	2014-06
Designed	
EW/AS	
Checked	
EW/AS	
Scale:	NTS

**CROSS SECTION  
 PRIMARY COLLECTOR STREET**

Figure  
**20**  
 File Number  
**454.1008.064**



**PARKING ONE SIDE AND BIKE LANES**



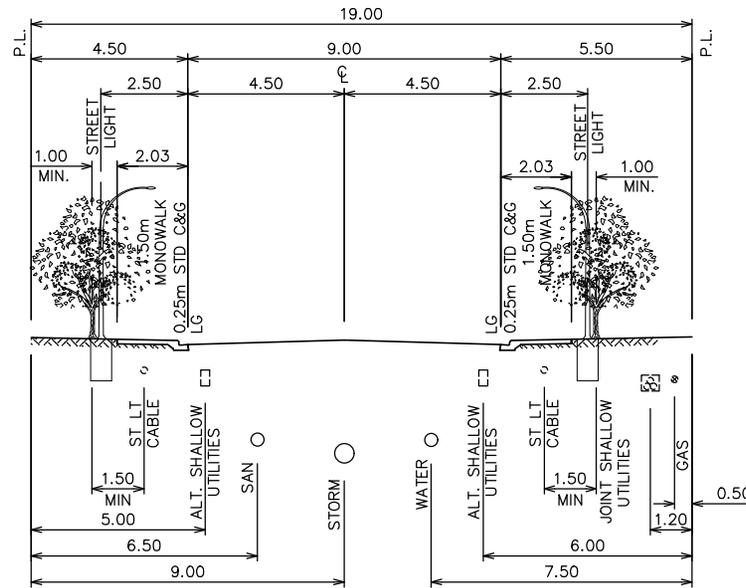
**SEPARATE SIDEWALK**

**NOTES:**

1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE EASEMENT ARE SHOWN WITH DASHED LINES.
2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE EASEMENT.
3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
4. HYDRANTS ON 1.00 LINE WITH 2.00m MONOWALK OR 3.00 LINE WITH 2.00m SEPARATE WALK.
5. HYDRANT VALVES 1.00m FROM WATER LINE.
6. SERVICE VALVES ON 1.00 LINE WITH 2.00m MONOWALK OR 3.00 LINE WITH 2.00m SEPARATE WALK.
7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
9. TREES OFFSET MINIMUM 1.00m FROM SIDEWALK.
10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES.
15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES, MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.

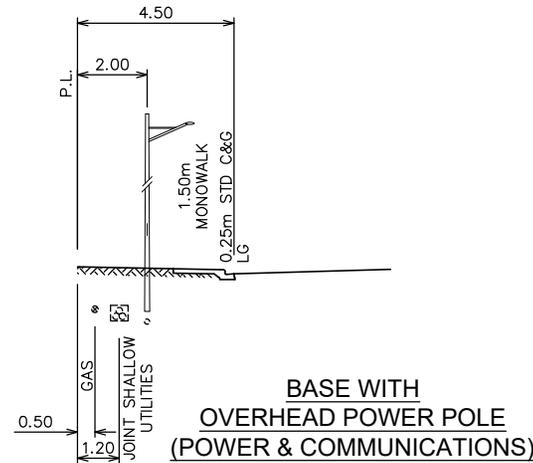
<p><b>PERMIT</b></p> <p><b>PERMIT TO PRACTICE</b> THE CITY OF CALGARY</p> <p>PROFESSIONAL ENGINEER ID: 114664</p> <p>DATE: 2021-08-12</p> <p><b>PERMIT NUMBER: P004428</b></p> <p>The Association of Professional Engineers and Geoscientists of Alberta (APEGA)</p>	<p><b>SEAL</b></p> <p><b>PROFESSIONAL ENGINEER</b> ID: 114664</p>	<p><b>Calgary</b></p>	<p>DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED <b>Metric</b></p> <p>FILE: Z:\permanent\DGSS_2014\dwg\4541008\ACAD\2021-08-09\454_1008_065.dwg</p> <p>DATE: Tuesday, August 10, 2021 10:56:06 AM</p> <p>ISC: UNRESTRICTED</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">No.</td> <td style="width: 10%;">Date</td> <td style="width: 40%;">Revision</td> <td style="width: 10%;">App'd</td> </tr> <tr> <td>1</td> <td>2021-07</td> <td>RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN</td> <td>AS</td> </tr> </table>	No.	Date	Revision	App'd	1	2021-07	RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN	AS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Drawn</td> <td style="width: 10%;">Date</td> </tr> <tr> <td>JL</td> <td>2014-12</td> </tr> <tr> <td>Designed</td> <td>EW/AS</td> </tr> <tr> <td>Checked</td> <td>EW/AS</td> </tr> <tr> <td>Scale:</td> <td>NTS</td> </tr> </table>	Drawn	Date	JL	2014-12	Designed	EW/AS	Checked	EW/AS	Scale:	NTS	<p><b>CROSS SECTION</b></p> <p><b>COLLECTOR STREET</b></p> <p><b>PARKING ONE SIDE</b></p>	<p>Figure</p> <p style="font-size: 24pt;"><b>23</b></p> <p>File Number</p> <p><b>454.1008.065</b></p>
No.	Date	Revision	App'd																						
1	2021-07	RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN	AS																						
Drawn	Date																								
JL	2014-12																								
Designed	EW/AS																								
Checked	EW/AS																								
Scale:	NTS																								





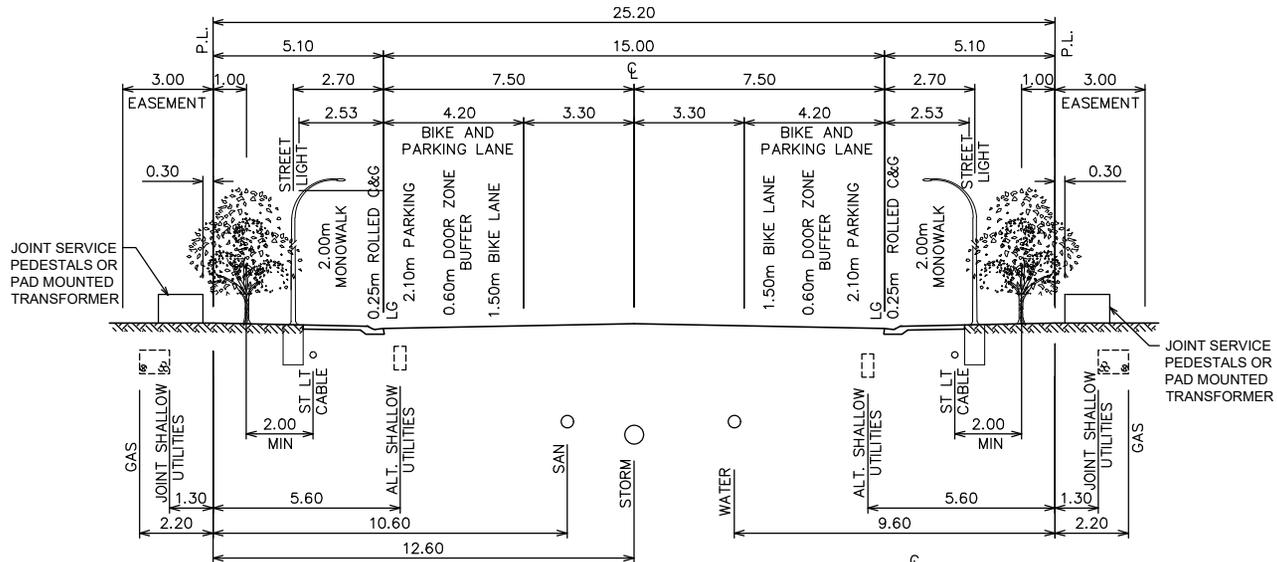
**NOTES:**

1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE ROAD RIGHT-OF-WAY ARE SHOWN WITH DASHED LINES.
2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE BOULEVARD.
3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
4. HYDRANTS ON 2.00 LINE.
5. HYDRANT VALVES 1.00m FROM WATER LINE.
6. SERVICE VALVES ON 2.00 LINE.
7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
9. TREES OFFSET MINIMUM 1.00m FROM SIDEWALK.
10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES.
15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES, MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.

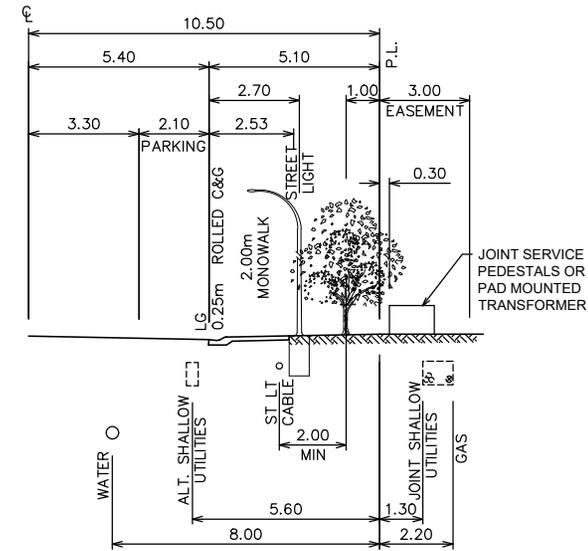


**BASE WITH OVERHEAD POWER POLE (POWER & COMMUNICATIONS)**

<b>PERMIT</b> PERMIT TO PRACTICE THE CITY OF CALGARY REASONING: <i>Elaine Fries</i> W/AFPSA ID # 57504 DATE: 2021-08-12 <b>PERMIT NUMBER: P004428</b> <small>The Association of Professional Engineers and Geoscientists of Alberta (APEGA)</small>	<b>SEAL</b>  PROFESSIONAL ENGINEER ID 114664	 DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED <b>Metric</b> FILE: Z:\permanent\DGSS_2014\dwg\4541008\ACAD\2017-21454_1008.067.dwg DATE: Wednesday, July 21, 2021 3:24:01 PM ISC: UNRESTRICTED	1 2021-07 RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN	AS Scale: NTS	Drawn JL Date 2014-12	<b>CROSS SECTION INDUSTRIAL STREET NO PARKING</b>	Figure 32
					Designed EW/AS		Checked EW/AS
No. Date Revision App'd							



**PARKING BOTH SIDES AND BIKE LANES**



**PARKING BOTH SIDES, NO BIKE LANES  
FOR < 3,000 VPD**

**NOTES:**

1. THE RECOMMENDED LOCATIONS FOR THE SHALLOW UTILITIES WITHIN THE EASEMENT ARE SHOWN WITH DASHED LINES.
2. ALT. UTILITIES IS AN ALTERNATIVE LOCATION FOR ANY UTILITY THAT CANNOT BE ACCOMMODATED IN THE EASEMENT.
3. UTILITY LINE ASSIGNMENTS MUST BE CONFIRMED DURING THE PLANNING STAGE OF UTILITIES AND PRIOR TO THE APPROVAL OF TENTATIVE PLAN.
4. HYDRANTS ON 1.00m LINE WITH 2.00m MONOWALK OR 3.00m LINE WITH 2.00m SEPARATE WALK.
5. HYDRANT VALVES 1.00m FROM WATER LINE.
6. SERVICE VALVES ON 1.00m LINE WITH 2.00m MONOWALK OR 3.00m LINE WITH 2.00m SEPARATE WALK.
7. HYDRANTS AND SERVICE VALVES SHALL MAINTAIN A MINIMUM 3.00m SEPARATION TO CENTRELINE OF POWER POLES, STREETLIGHTS, TREES, AND THE EDGE OF TRANSFORMERS, PULL BOXES, JUNCTION TERMINALS AND OTHER SURFACE STRUCTURES.
8. TREE AND STREET LIGHT POLES SHALL BE PLACED WITH A MINIMUM OF 4-5m APART DEPENDING ON THE TREE SPECIES.
9. TREES OFFSET MINIMUM 1.00m FROM SIDEWALK.
10. TREES SHALL BE OF A SPECIES AS APPROVED BY PARKS AND ALL TREES TO BE SHALLOW ROOT SPECIES.
11. NON CANOPY TREES PERMITTED UNDER OVERHEAD POWERLINES WITH CONSENT OF UTILITY OPERATOR.
12. BUS LOADING ZONES MUST BE CONSIDERED WHEN LOCATING TREES AND UNDERGROUND/SURFACE UTILITIES.
13. TYPICAL 2% GRADE FOR ROAD CROSS-SLOPE AND BOULEVARD.
14. WATER MAIN WILL BE INSTALLED ON THE OPPOSITE SIDE OF THE ROAD FROM STORM AND SANITARY LINES. FOR "PARKING BOTH SIDES, NO BIKE LANES", SANITARY ON 8.50m LINE AND STORM ON 10.50m LINE.
15. ADDITIONAL SEPARATION MAY BE REQUIRED BETWEEN STORM AND SANITARY SEWERS IF EXCESSIVE VERTICAL DIFFERENCE OCCURS.
16. THE AVERAGE VEHICULAR WHEEL PATHS ARE BETWEEN 1.05m (PASSENGER VEHICLES) AND 1.30m (BUSES/TRUCKS) FROM CENTRELINE OF DRIVING LANES, MANHOLES IN ROADWAY SHOULD BE INSTALLED OUTSIDE OF VEHICULAR WHEEL PATHS AND BIKE LANES.
17. PRE-SERVICED DEEP UTILITY CONNECTIONS TO BE INSTALLED 3.50m INSIDE PROPERTY LINE, OR AN ADDITIONAL 1.50m BEYOND AN EXISTING UTILITY EASEMENT.
18. OFFSETTING ROADWAY CENTRELINE WITHIN THE RIGHT-OF-WAY IS NOT RECOMMENDED DUE TO POTENTIAL FUTURE UTILITY CONFLICTS.
19. ROAD AND BOULEVARD WIDTH MAY VARY TO ACCOMMODATE BICYCLE FACILITIES.
20. POSITIONING AND VISIBILITY OF REQUIRED SIGNAGE MUST BE CONSIDERED RELATIVE TO ALL SURFACE STRUCTURES AND PLANTINGS.
21. THIS STANDARD IS INTENDED AS A GUIDELINE FOR NEW DEVELOPMENT, WHERE NOT APPLICABLE MAKE ADJUSTMENTS AS REQUIRED.

PERMIT <b>PERMIT TO PRACTICE THE CITY OF CALGARY</b> <small>PROFESSIONAL ENGINEER ID 114664</small> DATE: 2021-08-12 <b>PERMIT NUMBER: P004428</b> <small>The Association of Professional Engineers and Geoscientists of Alberta (APEGA)</small>	
---	---

	DIMENSIONS ARE METRES UNLESS OTHERWISE NOTED <b>Metric</b> FILE: Z:\permanent\DGSS_2014\dwg\4541008\ACAD\2021-08-09\454_1008.073.dwg DATE: Monday, August 9, 2021 3:03:21 PM ISC: UNRESTRICTED
---	---

No.	Date	Revision	App'd
1	2021-07	RELOCATION OF STREET LIGHT CABLE TO MAINTAIN MINIMUM OF 1.5m SEPARATION FROM TREE LINE ASSIGNMENT IN BOULEVARDS AND MEDIAN	AS

Drawn	Date
Designed	2014-12
Checked	AS
Scale:	AS
	NTS

**CROSS SECTION  
COLLECTOR STREET  
PARKING BOTH SIDES**

Figure	24
File Number	454.1008.073