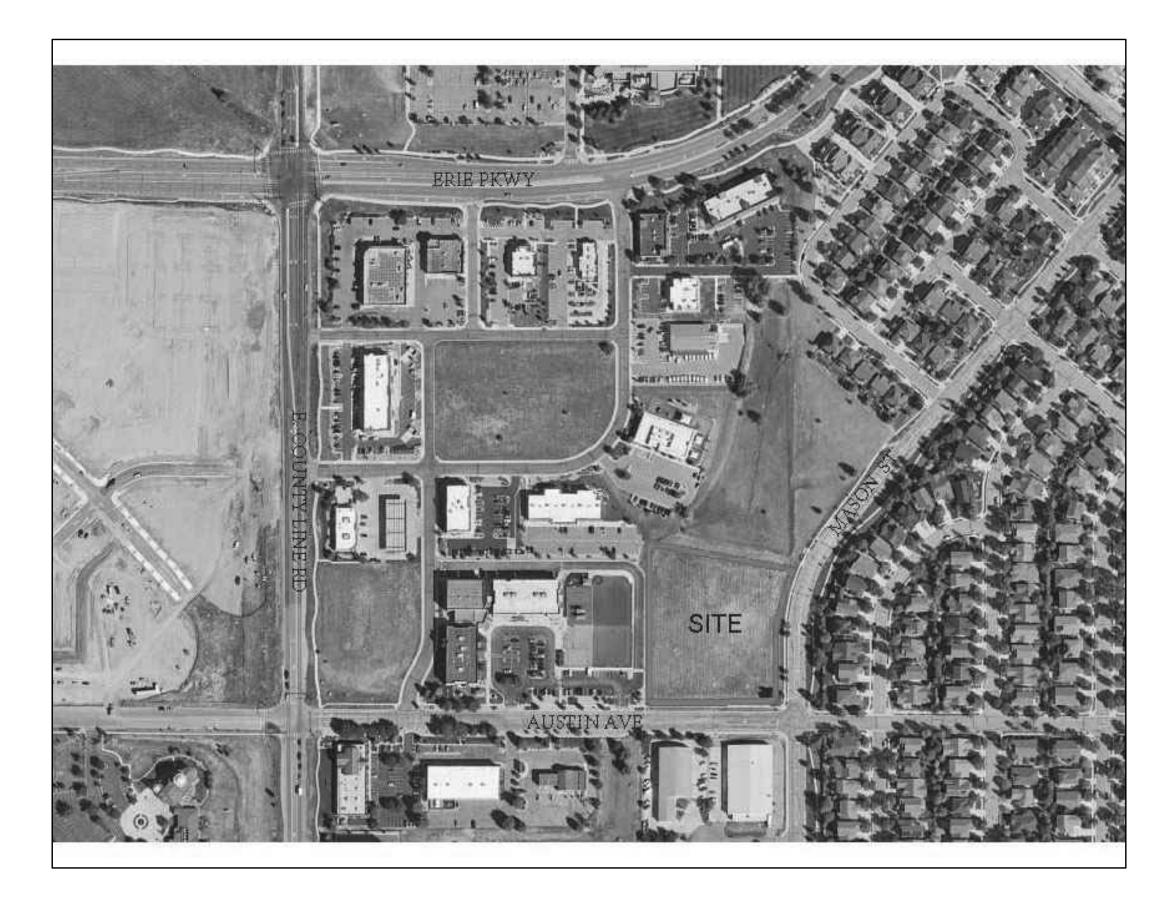
## CONSTRUCTION PLANS ASPEN RIDGE PREP SCHOOL DRIVE LOOP/PARKING EXPANSION

TRACT C, COAL CREEK CENTER, LOCATED IN THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 1 NORTH, RANGE 68 WEST OF THE 6TH P.M., TOWN OF ERIE, COUNTY OF WELD, STATE OF COLORADO



VICINITY MAP



SHEET INDEX

C1 COVER SHEET

C2 SITE & UTILITY PLAN

C3 DETAILED GRADING

C4 REGIONAL DETENTION POND PLAN

C5 DETAILS

DETAILS

LEGAL DESCRIPTION

TRACT C, COAL CREEK CENTER, COUNTY OF WELD, STATE OF COLORADO

CHOOL

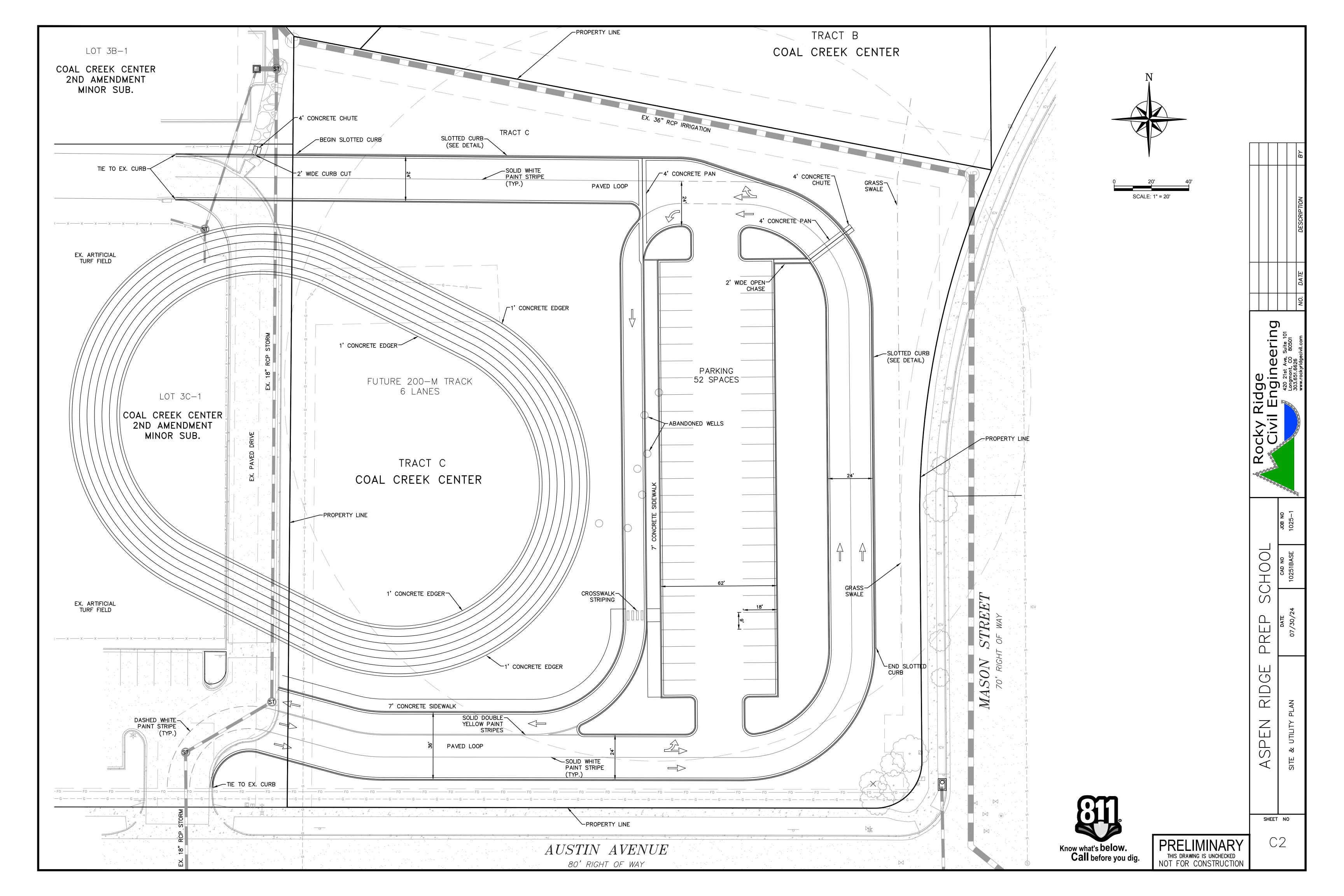
PRE

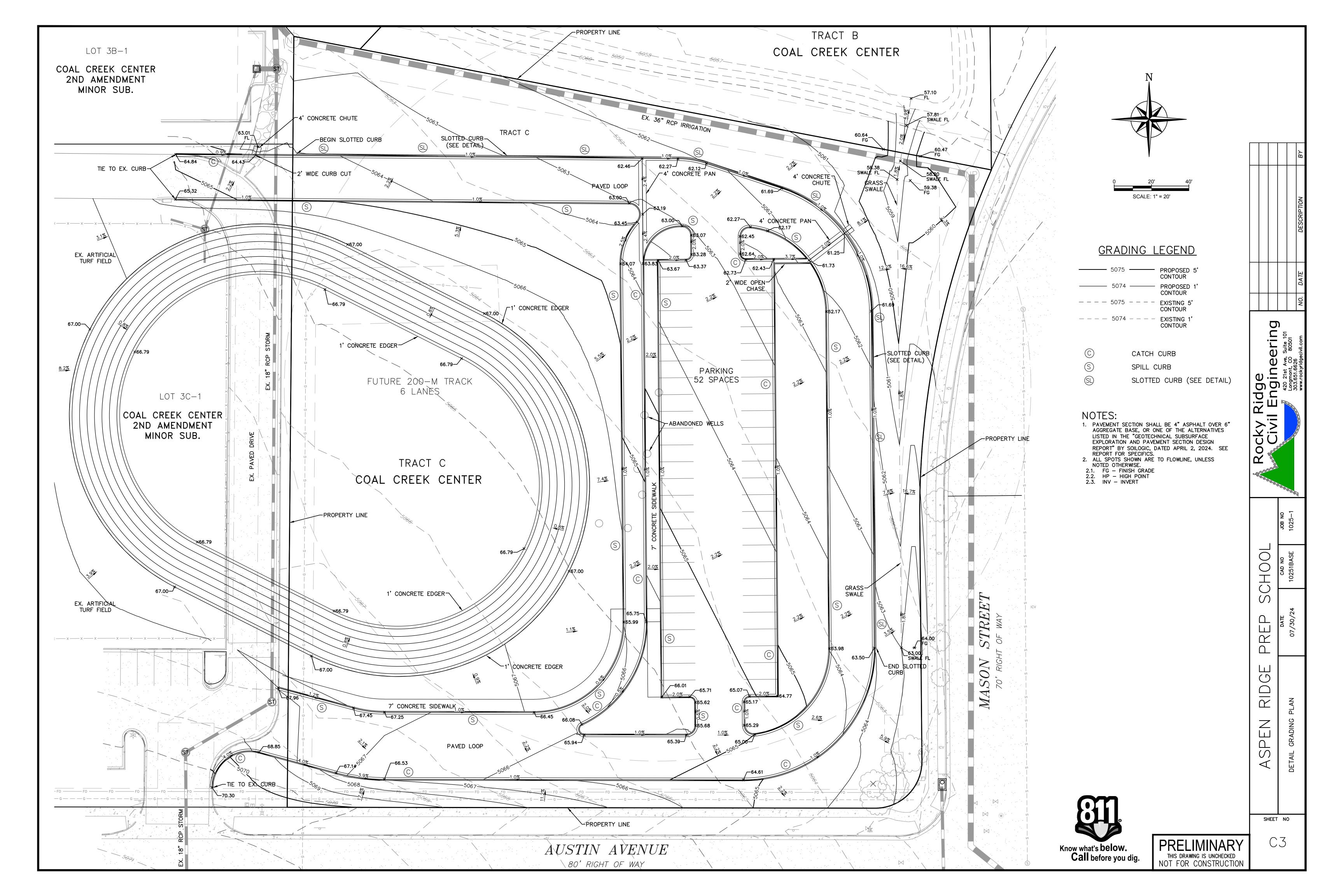
SPEN  $\triangleleft$ 

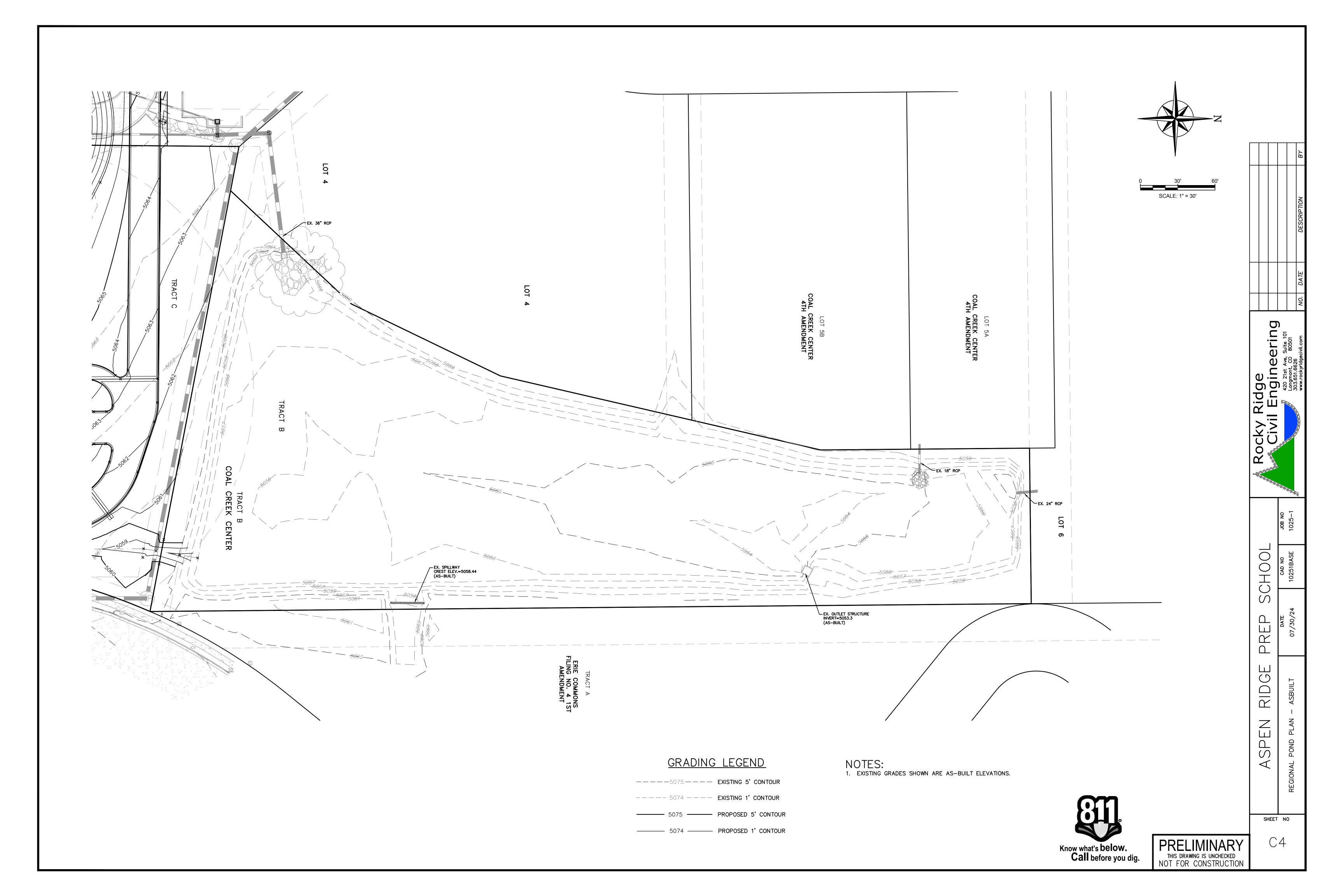
SHEET NO

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. FOR CITY OF LONGMONT UTILITY LOCATES: (303) 651-8468
FOR CITY OF LONGMONT WATER AND SEWER: (303) 651-8468 Know what's **below. Call** before you dig. FOR CITY OF LONGMONT STORM SEWER: (303) 651-8305









Treatment SCMs Chapter 4

ABLE 4-9. SUMMAI	RY OF SCM INFL	OW FEATURES

			TYPICAL APPLICABILITY TO SCMs				
TYPICAL INFLOW FEATURES	ENERGY DISSIPATION	SEDIMENT FOREBAY	RPAs, BUFFERS, SWALES	EDBs, RPs, CWPs²	PERMEABLE PAVEMENTS	BIORETENTION, SAND FILTERS	
Sheet Flows							
Curbless pavement	Vegetation	No	Yes	Yes	Yes	Yes	
Slotted Curb	Vegetation	Curb acts as forebay	Yes	Yes		Yes	
Curb opening with level spreader	Level Spreader	Blind Swale <sup>1</sup>	Yes			Yes	
Pipe outfall with level spreader	Level Spreader	Blind Swale <sup>1</sup>	Yes			Yes	
Concentrated Inflows							
Downspout	Vegetation or hardscape	No	Yes		Yes	Yes	
Curb opening	Vegetation or rock	Yes	Swale only	Yes		Yes	
Pipe outfall	Impact basin	Yes	Swale only	Yes		Yes	
Grass swale	Vegetation	No		Yes		Yes	
Stable ephemeral channel <sup>3</sup>	Vegetation and bed roughness	Case-by-case		Yes			

Abbreviations: RPA: Receiving Pervious Area; EDB: Extended Detention Basin, RP: Retention Pond, CWP: Constructed Wetland Pond.

1 A blind swale is a shallow area upstream of the crest of the level spreaders that allows for even distribution of flow across the length of the spreader. Additional information is provided in the Level Spreader section of this chapter.

<sup>2</sup> Level spreader applicable when side slopes act as RPAs.

<sup>3</sup> Locate SCMs offline when feasible, primarily applies to regional facilities, see *Storage* chapter.

shoulder between the pavement and grass buffer. Use cobble rather than fine gravel, which can migrate into the RPA. Because curbless pavement distributes runoff and creates sheet flow conditions, additional energy dissipation features and sediment forebays are typically not necessary. It is very important to include measures to discourage vehicles from driving off the pavement and rutting the SCM. In parking lots, wheel stops may be used. Markers, bollards, or fencing are also options.

## 5.1.2 SLOTTED CURBS

Slotted curbs create sheet flow conditions in the adjacent RPA while also protecting the area from damage due to vehicles. In addition, slotted curbs provide for some trapping of litter and, in a sump condition, can act as a small sediment forebay. When functioning as a sediment forebay, design the slotted curb with access for a street sweeper for ease of maintenance similar to the City and County of Denver installation shown in Photo 4-7. The typical turning radius for a street sweeper is 25 feet but may be less depending on the specific type of sweeper used.

As shown in Figure 4-9, design slotted curb with a minimum 2-inch vertical drop to the concrete mowing strip. The intent is to allow for the accumulation of sediment over time. The mowing strip facilitates maintenance and removal of sediment and overgrowth using a flat shovel. Space slots 2 feet on center or less to allow runoff to spread and form sheet flow conditions in the grass buffer. Compared to larger openings, sizing the slot openings at 1.5 inches will reduce potential damage from snowplowing. Provide a maintenance plan that specifies plowing of the area with a rubber tipped plow blade to further minimize damage.

Mile High Flood District | Urban Storm Drainage Criteria Manual Volume 3

March 2024 | 27 of 47

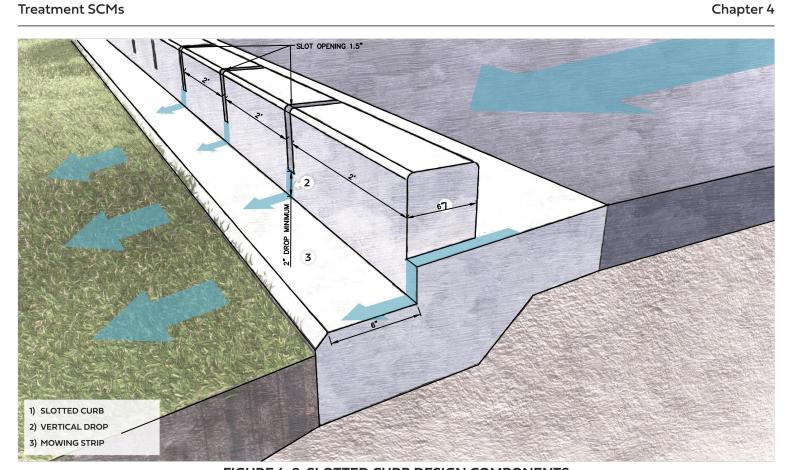


FIGURE 4-9. SLOTTED CURB DESIGN COMPONENTS

For level spreaders designed for shallow concentrated inflows, such as at the edge of a parking lot, the curb and gutter may serve as the blind swale. For larger concentrated inflows from pipes or channels, a vegetated swale with a flat longitudinal slope or depression may be used for the blind swale. When a blind swale is used to distribute flow to a level spreader, evaluate the potential for piping of runoff that infiltrates through the blind swale beneath the level spreader. If underlying soils are erosive, this type of piping can undermine the level spreader. The potential for this occurring can be minimized by providing good compaction beneath the level spreader and extending the foundation of the spreader deep enough to cut off potential piping beneath the level spreader. This is generally only a problem with very sandy soils.

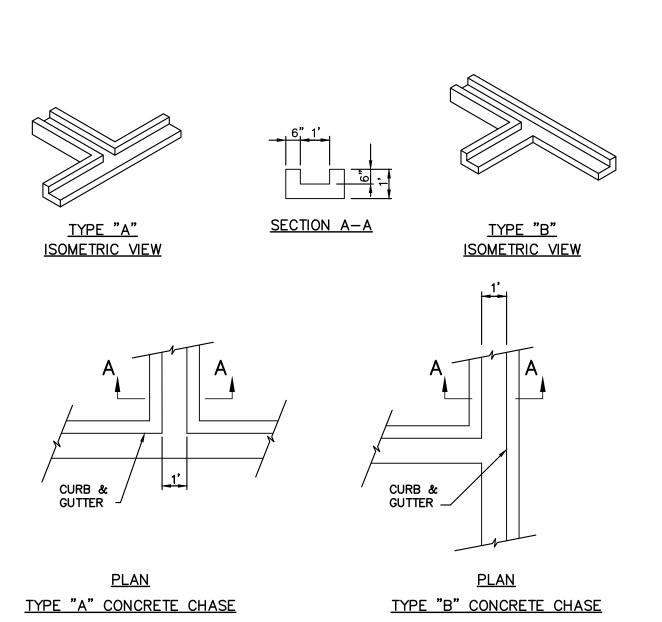
Alternatively, shallow U-shaped concrete channels, rock-lined depressions, and other materials can be used for the blind swale provided that the configuration promotes even distribution of flow along the level spreader and is a surface that can be maintained without undue effort when sediment and trash accumulate in the area. Figure 4-11 illustrates a concept for using a level spreader for a curb opening inflow, and Figure 4-12 presents a concept for a level spreader to diffuse piped inflow. Both show a narrow slot or slots in the level spreader to ensure they remain free draining. The intent is to not create standing water.

The spreader itself consists of a level surface that will not erode over time. Often a concrete sill is used, but other materials can be used to provide more visual interest and integrate the level spreader into the surrounding environment, provided that the surface is level and uniform. For larger drainage areas where the UIA:RPA ratio exceeds 10:1, limit the use of the level spreader to initial (water quality or 2-year event) flows and direct remaining flows to bypass the level spreader to prevent erosion of the receiving pervious area.

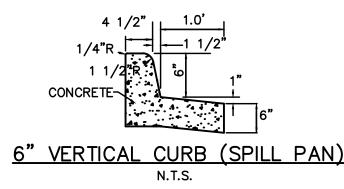
The vertical drop on the downgradient side of the level spreader is a critical feature for long-term function. The drop allows room for vegetation to grow and some sediment accumulation without impeding flow over the level surface. A mow strip, as shown in Figure 4-9, will also aid function and provides access for maintenance, specifically with a flat-edge shovel, to ensure the grade immediately downstream of the level spreader can be restored after sediment accumulates.

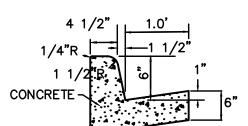
Mile High Flood District | Urban Storm Drainage Criteria Manual Volume 3

March 2024 | 29 of 47



CONCRETE CHASE DETAIL

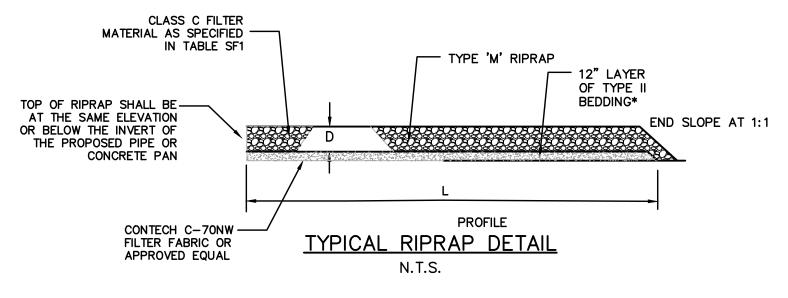


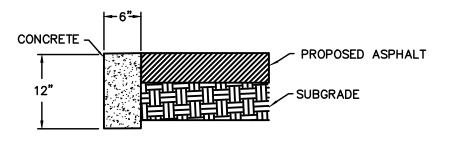


1. TO BE USED FOR PRIVATE CURB ON SITE. CURB IN R.O.W. SHALL MATCH TOWN OF FREDERICK STANDARDS.

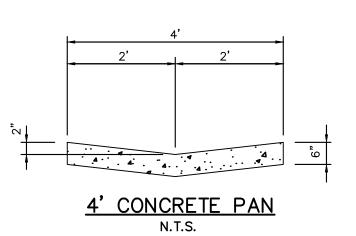
RIPRAP <u>TYPE</u>	GRADATION <u>d50</u>	RIPRAP THICKNESS (D)	BEDDING TYPE
L*	9"	18"	12" TYPE II *
M*	12"	24"	12" TYPE II *
H*	18"	36"	12" TYPE II *

\* GRADATIONS PER URBAN DRAINAGE AND FLOOD CONTROL DISTRICT STANDARDS.





CONCRETE EDGER N.T.S.



SHEET NO

2

T

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A H

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SPEN

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PRELIMINARY THIS DRAWING IS UNCHECKED NOT FOR CONSTRUCTION