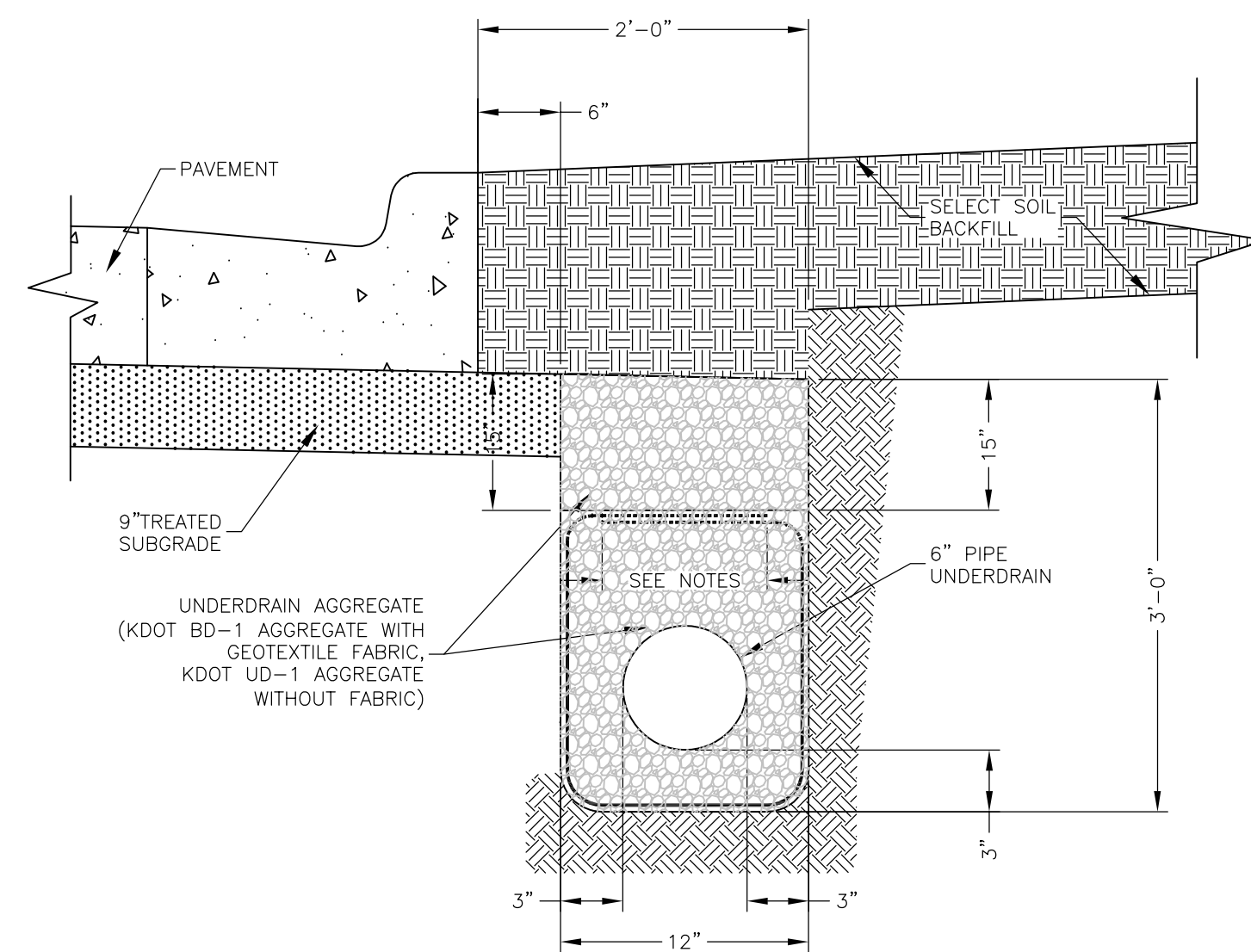
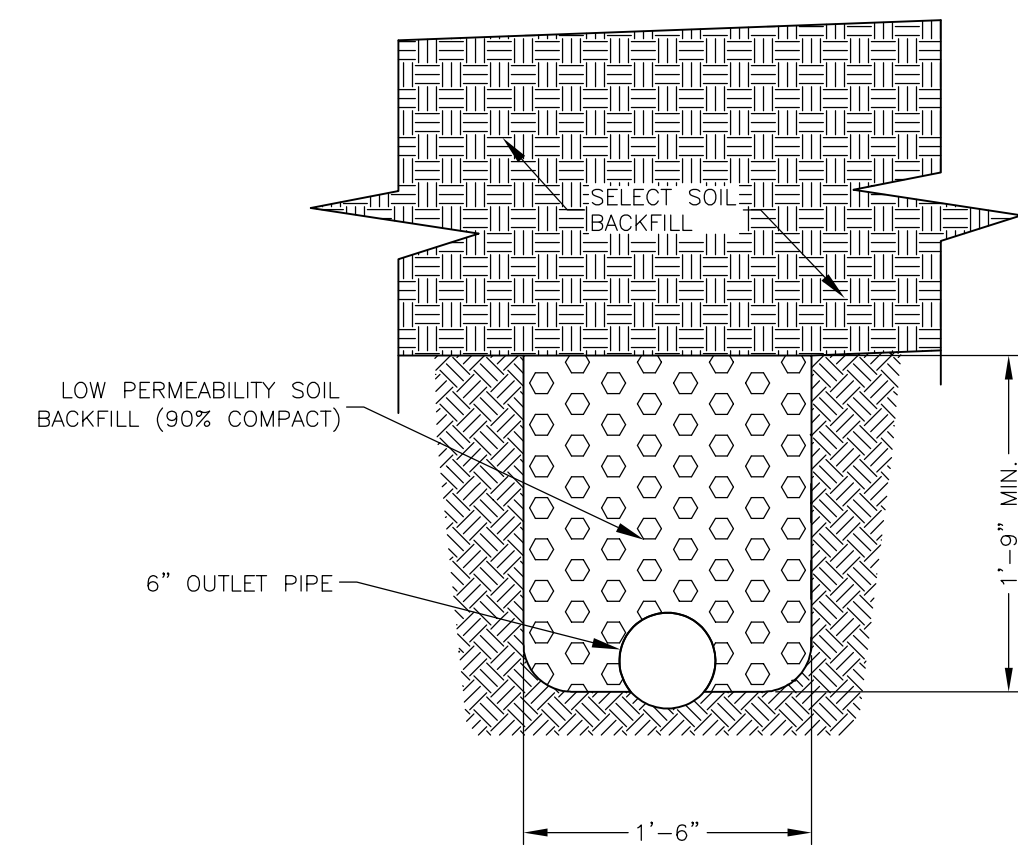


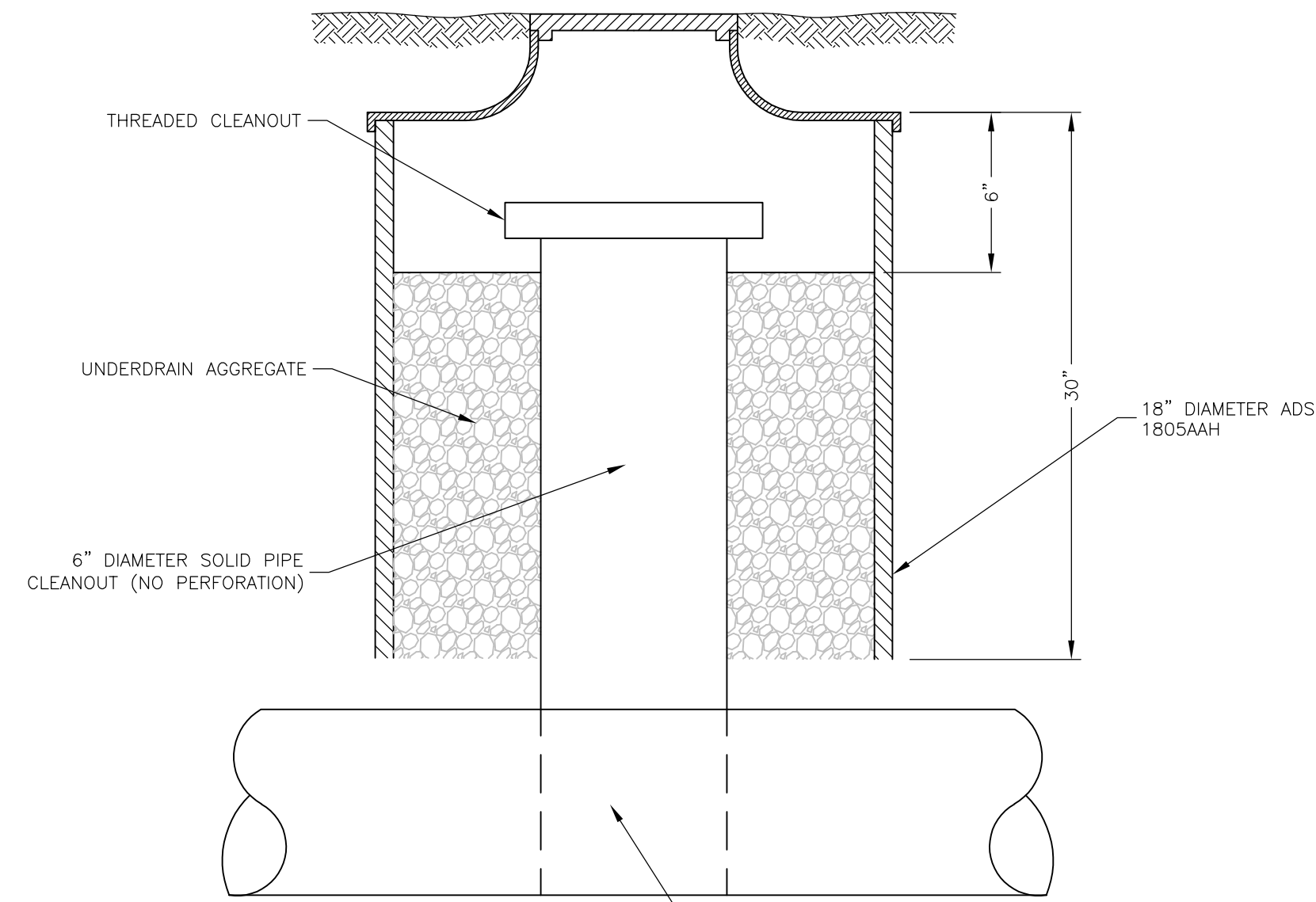
**PIPE UNDERDRAIN LATERAL A-A**  
NO SCALE



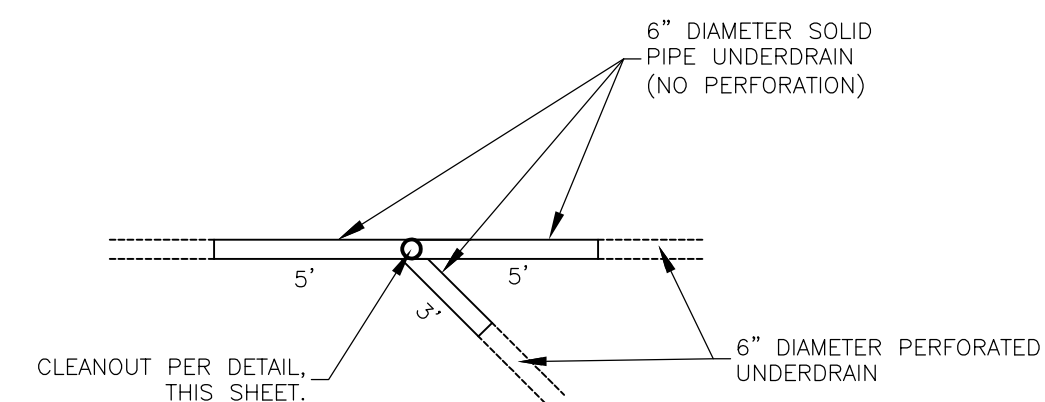
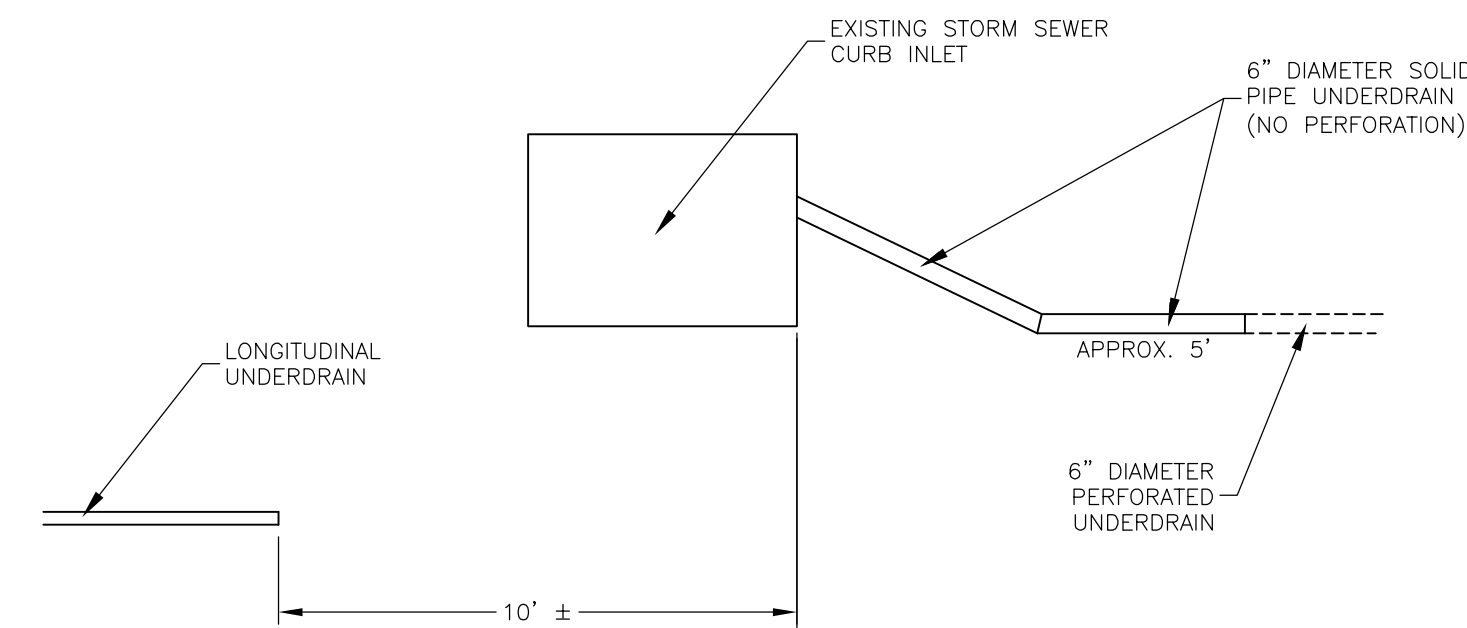
**PIPE UNDERDRAIN BEHIND THE CURB B-B**  
NO SCALE



**OUTLET PIPE**  
NO SCALE



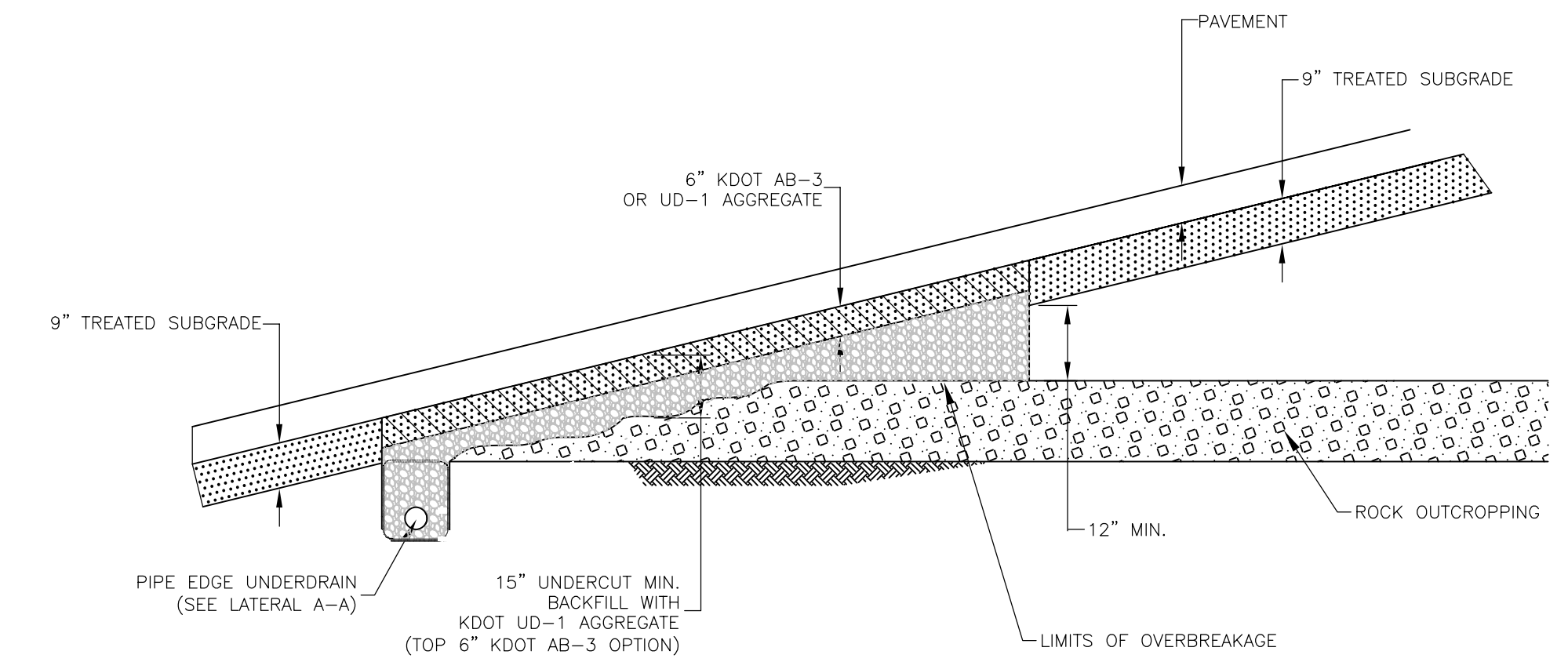
**UNDERDRAIN CLEANOUT DETAIL**  
NO SCALE



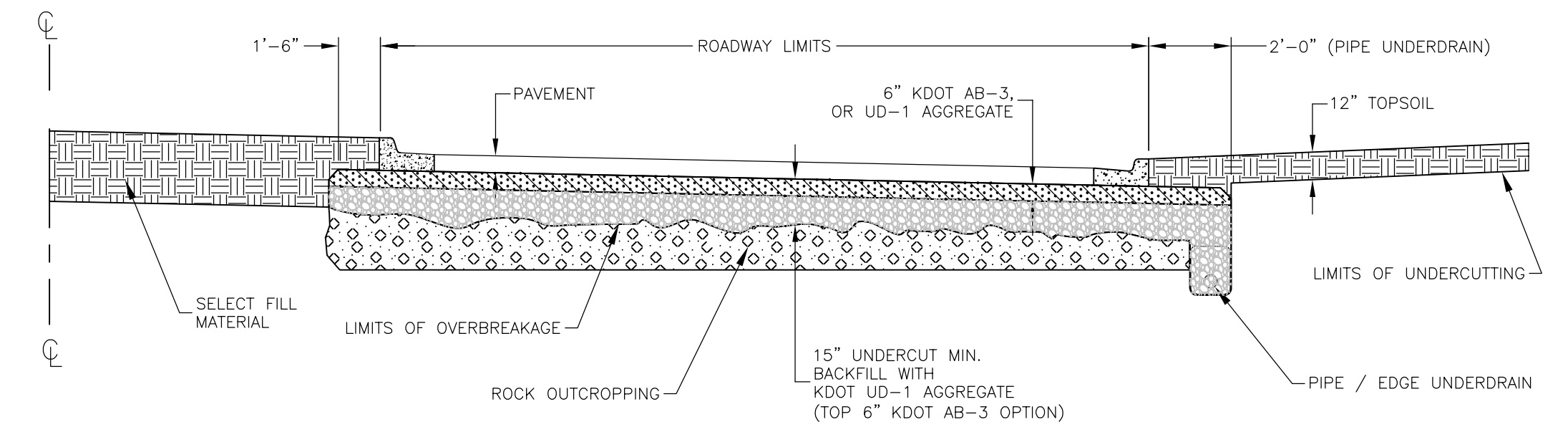
**UNDERDRAIN NOTES:**

1. ALL ROADWAY EXCAVATIONS IN ROCK WILL BE UNDERCUT NO LESS THAN 15" BELOW BOTTOM OF PAVEMENT FOR THE FULL WIDTH OF THE ROADWAY AS SHOWN. UNDERCUT AND OVERBREAKAGE IN LIMESTONE AND DURABLE SHALE SHALL BE BACKFILLED WITH MATERIAL MEETING THE REQUIREMENTS OF AGGREGATE BASE COURSE (UD-1) SPECIFICATIONS. LAYERS OF EARTH OR SHALE SHALL NOT BE PERMITTED FOR BACKFILL UP TO THE BOTTOM OF THE AGGREGATE BASE COURSE.
2. A MINIMUM OF 12" OF SELECT SOIL (TOPSOIL) SHALL BE PLACED ON EXPOSED ROCK CUT OR FILL SLOPES, OUTSIDE THE LIMITS OF THE ROADWAY. ALL ROCK AND SHALE SLOPES SHALL BE BENCHED AT A MAXIMUM OF 2' VERTICAL INTERVALS, PRIOR TO PLACEMENT OF SELECT SOIL.
3. PROPOSED UNDERDRAIN PIPE LAYOUT, FLOWLINE ELEVATIONS, INLET CONNECTION POINTS, AND DETAILS SHALL BE APPROVED PRIOR TO CONSTRUCTION BY THE ENGINEER.
4. WHERE PIPE UNDERDRAINS ARE USED, ALL UNDERDRAIN OUTLET PIPES SHALL HAVE WATER-TIGHT JOINTS. ALL OUTLET PIPES SHALL BE TIED INTO THE NEAREST STORM SEWER INLET AS APPROVED. WHERE EDGE UNDERDRAINS ARE USED, ALL UNDERDRAIN OUTLET PIPES SHALL HAVE MANUFACTURER JOINTS APPROVED BY THE ENGINEER. ALL CONNECTIONS BETWEEN UNDERDRAIN PIPES AND EDGE CONNECTORS OR CURB INLETS, SHALL BE MADE WITH 2' LENGTH OF OUTLET PIPE.
5. ALL UNDERDRAIN PIPES SHALL BE INSTALLED AT A MINIMUM SLOPE OF 1%. PIPE SHALL BE INSTALLED WITH THE PERFORATIONS PLACED DOWN.
6. GEOTEXTILE SEAMS SHALL BE OVERLAPPED AT A MINIMUM OF 12".
7. PIPE SHALL BE CONTECH A-2000, ADS N-12, OR APPROVED EQUAL.
8. THE CONTRACTOR SHALL NOT MIX UNDERDRAIN TYPES OF MATERIALS WITHIN ANY UNDERDRAIN SYSTEM.

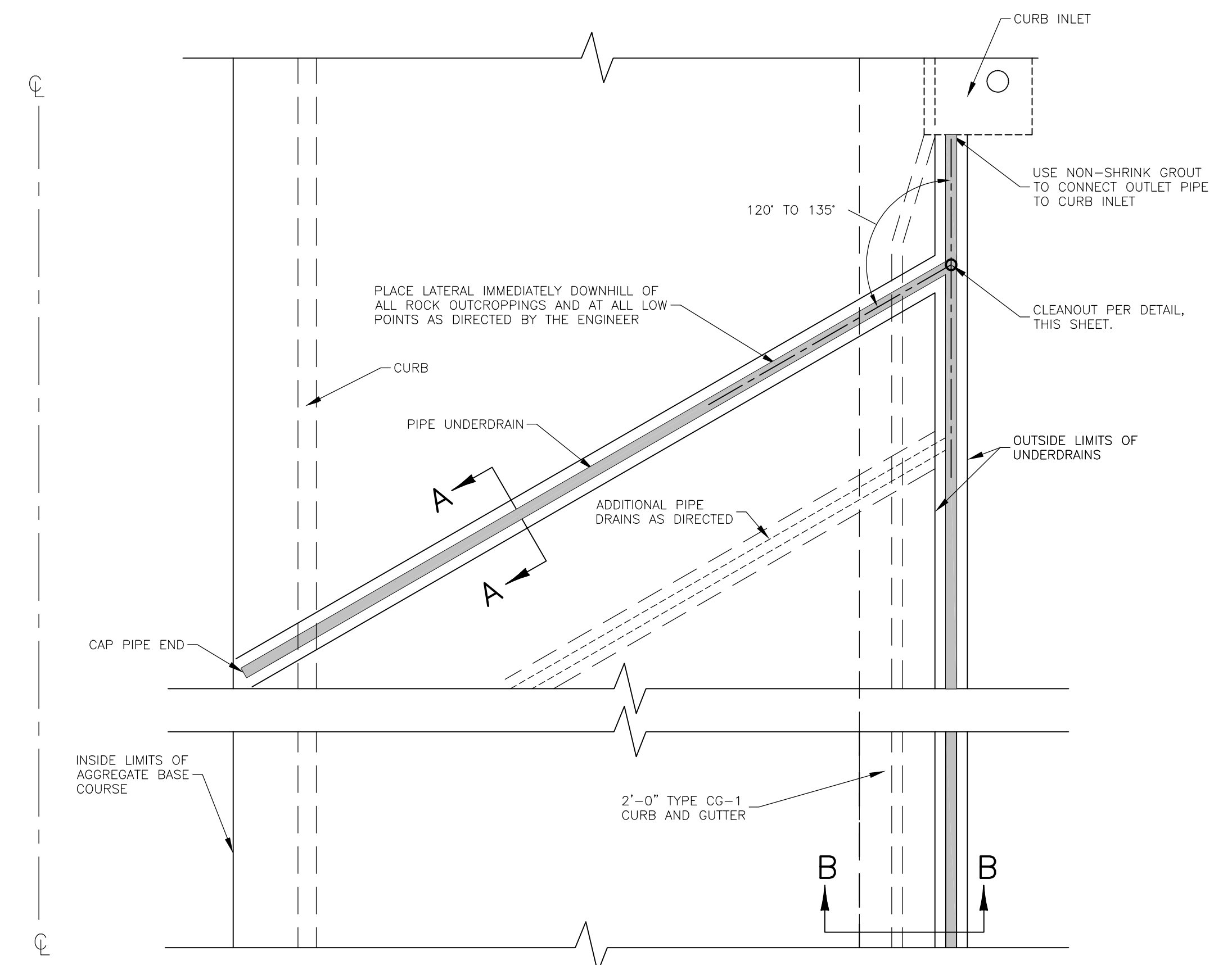
**UNDERDRAIN DETAILS**



**ROCK OUTCROPPING**  
NO SCALE



**ROCK EXCAVATION / AGGREGATE BASE COURSE**  
NO SCALE



**UNDERDRAIN LAYOUT**  
NO SCALE

2022 EDITION

SHEET \_\_\_\_ OF \_\_\_\_

DATE	BY	REVISION
05-01-22	LJM	REPLACES ALL PREVIOUS VERSIONS OF UNDERDRAIN DETAILS
03-01-21	LJM	REPLACES ALL PREVIOUS VERSIONS OF UNDERDRAIN DETAILS



STANDARD DETAILS FOR  
UNDERDRAINS

DAVID P. CRONIN CITY ENGINEER CRAIG S. OWENS CITY MANAGER