

SOUTH EVERGREEN WATER DISTRICT
32045 Castle Court, Suite 103
Evergreen, Co 80439
Mailing Address: PO Box 2830, Evergreen, CO 80437

October 11, 2022

Colorado Water Conservation Board
1313 Sherman St. Room 718
Denver, CO 80203

Attn: Ben Wade, PM Water Supply Planning

RE: South Evergreen Water District (SEWD)
Reservoir 4 Drainage Improvements Project
Contract: POGGI 2022 3523

Final Report and Final Payment Request

Project Summary:

In 2020, a new liner was installed in SEWD's 5 acre foot reservoir 4 to eliminate a significant leakage problem. In 2021, an unforeseen lifting of the liner happened along the southwest bank. To rectify the problem, a secondary southwest bank drainage system was designed and installed in August/September 2022. The secondary drainage system work included adding 379 feet of a French drainage system that day-lighted to North Turkey Creek and the addition of two concrete manholes for water table monitoring and for emergency pumping, if necessary. The engineering/design firm of Purrington Civil, LLC was hired to perform the design work.

CWCB was asked for a much-needed grant to help finance this project. CWCB approved a \$25,000 grant and gave SEWD approval to begin construction work after June 22, 2022. Construction work started on August 24, 2022 by SEWD's contractor Jim Noble, Inc, and was completed on September 6, 2022. All construction conformed to SEWD's contract documents which consisted of change order #3 drawings C.1,C.2 & C.3. A pdf file of these drawings is attached. No changes to the final drawings were necessary after construction.

The project was completed within change order #3 bid price of \$64,490. The contractor's invoice for 100% completion of the work is attached. This invoice was approved for payment by SEWD's Water Manager and by SEWD's President.

There were no obstacles encountered during the two week construction period. The work was completed with 2 trench workers, one truck driver for gravel and two equipment operators with one being the construction company owner. The weather was perfect during the construction period. SEWD's Water Manager/ PE was on site everyday of construction to ensure that all work conformed to the construction drawings. Chris Purrington was on site a few days after the contractor completed his work and was also updated by the Water Manager during the two week construction period. Pictures were taken during the

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construction period which show the installation of the French drain, which included the installation of the manholes and a picture that shows the final site grading. These pictures are attached.

Also attached is the Final Tracking Spreadsheet that indicates the breakdown of work and the payments made by SEWD and by CWCB.

Please let SEWD know if any additional information is needed. We greatly appreciate this grant and what it means to our community.

Sincerely,

Tom B. Moore, Colo. PE
SEWD Volunteer Water Manager









RESERVOIR NO. 4 DRAINAGE IMPROVEMENTS SOUTH EVERGREEN WATER DISTRICT

EROSION AND SEDIMENT CONTROL NOTES

1. The contractor shall notify the Jefferson County Transportation and Engineering Division at least three days prior to starting construction.
2. All grading, erosion, and sediment control must conform with approved plans. Revisions to disturbance areas, slopes, and/or erosion and sediment control measures are not permitted without prior approval from the Jefferson County Planning and Zoning Division.
3. The landowner and/or contractor must immediately take all necessary steps to control increased sediment discharge.
4. The landowner and/or contractor is responsible for cleanup and removal of all sediment and debris from all drainage infrastructure and other public facilities.
5. The landowner and/or contractor must take reasonable precautions to ensure that vehicles do not track or spill earth materials on to streets/roads and must immediately remove such materials if this occurs.
6. The landowner and/or contractor is responsible for controlling * litter such as discarded building materials, concrete truck washout, chemicals, and sanitary waste, as applicable. In addition, spill prevention and containment BMPs for construction materials, waste, and fuel must be provided, as applicable. Locations of stockpiles, concrete washout areas, and trash receptacles must be clearly shown of the plans. *Littering is defined and enforced by CRS 18-4-511
7. Seeding shall be completed within 14 days of disturbance.
8. Permanent vegetative cover consisting of Mountain Home "Firewise" Mix shall be broadcast as outlined below and covered with erosion control blankets .

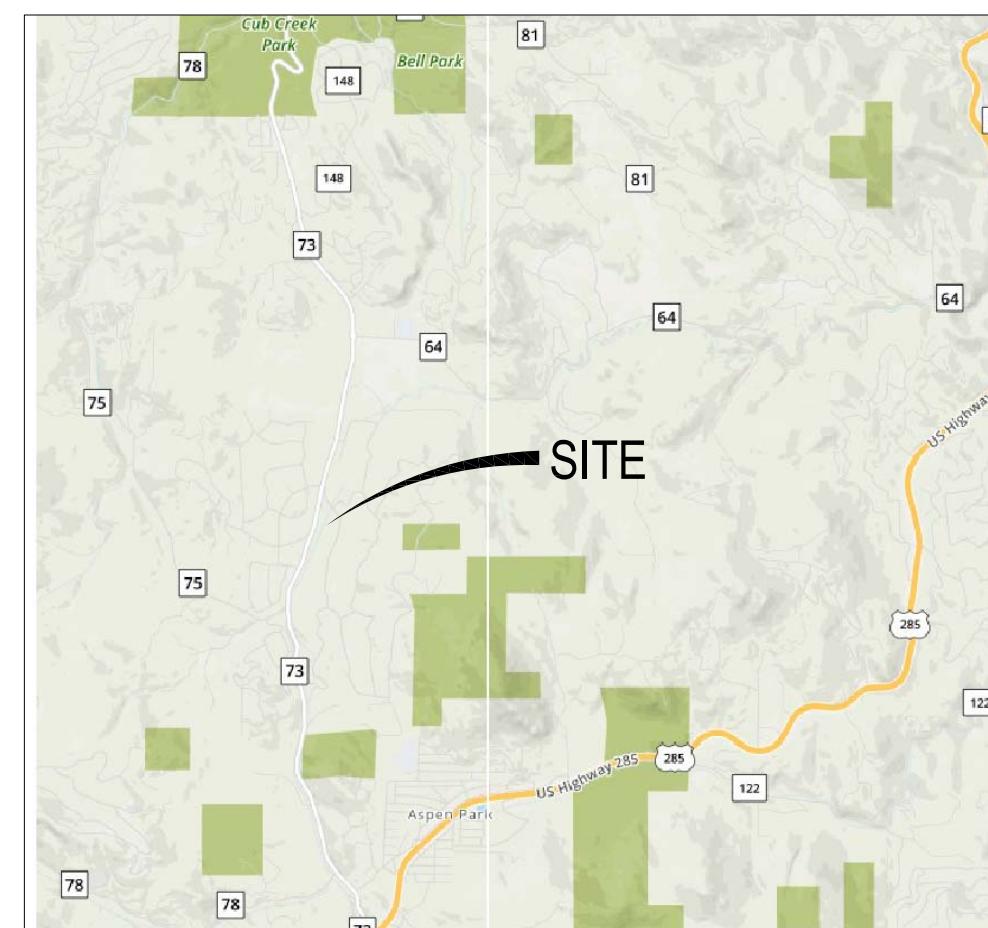
Species	Variety	Percent of Mix	Hydromulch Application Rate
Blue grama	Lovington	20	1.2
Streambank wheatgrass	Sodar	20	4.4
Western wheatgrass	Rosana	10	3.2
Thickspike wheatgrass	Critana	10	2.2
Canby bluegrass	Canbar	20	1.5
Sheep fescue	Covar	20	2.0
		100	14.5 lbs./Ac.

ESTIMATED QUANTITIES:

DESCRIPTION	UNIT	QUANTITIES
8" PERFORATED PVC PIPE	LF	252
8" SOLID PVC PIPE	LF	91
4 FT DIA. MANHOLE	EA	2
1-1/2" GRAVEL	CY	140

SITE BENCHMARK
RESERVOIR NO. 4 WEIR BOX COVER
ELEVATION = 7758.7 NAVD 1988

7993, 8233, 8253 GRAY FOX DRIVE
EVERGREEN, COLORADO
JEFFERSON COUNTY
ZONING : SR-2
51-353-03-002,
51-353-03-005,
51-353-03-006



VICINITY MAP
N.T.S.

SHEET INDEX
C.1 COVER SHEET
C.2 DRAINAGE IMPROVEMENTS
C.3 DETAILS

PROJECT SCHEDULE

- | | |
|--|-----------|
| 1. Initial Erosion Control Installation: | May 2022* |
| 2. Initial Grading and Excavation: | May 2022* |
| 3. Finish Grading: | June 2022 |
| 4. Seed and Blanket : | June 2022 |

*Exact commencement date to be determined
Hours of Operation: Monday - Friday 8:00am to 5:00pm

GENERAL NOTES

1. Erosion control measures are based on the Jefferson County Small Site Erosion Control Manual. Follow all provisions therein.
2. All fill shall be compacted to a minimum of 90% of the maximum density as determined by ASTM D1557. The standard for fill compaction shall not apply to fills of less than 50 CY which are placed on natural terrain with a slope flatter than 5H:1V, are less than 5 feet in depth, are not intended to support structures, and do not obstruct a drainage course.
3. Permanent or temporary soil stabilization measures shall be applied to disturbed areas and soil stockpiles within 30 days after final grade is reached on any portion of the site. Soil stabilization measures shall be applied within 30 days to disturbed areas which may not be at final grade, but will be left dormant for longer than 60 days.
4. Temporary cut and fill slopes shall be limited to 2H:1V. Permanent cut and fill slopes shall be limited to 3H:1V.
5. A Geotechnical Engineering Study was performed by Kumar & Associates dated October 2019. This Study details the various geotechnical aspects of the project including Subgrade Preparation, Excavation Considerations, Lining Material, Underdrain System and protective Soil Cover.
6. There will be no net change in flood elevations, the hydraulic conditions will be similar to those stated in the referenced FHAD and Effective FIS, there is no proposed obstructions to flow, and there are no alterations to the watercourse.
7. The original contract document dated April 2020, apply as applicable for this work.
8. Entrance road shall be coordinated with the owners representative.
9. Haul excess soil from relief trench to south end of reservoir designated by engineer. Spread, grade and seed.
10. Existing liner shall not be disturbed during excavation.

CONTACTS

Owner
South Evergreen Water District
c/o Simonson & Associates
P.O. Box 2830
Evergreen, CO 80437
Phone: 303.674.3379
Contact: Nicki Simonson

Geotechnical Engineer
Kumar & Associates
2390 South Lipan Street
Denver, CO 80223
Phone: 303.742.9700
Contact: Ryan Kumar

Civil Engineer
Purrington Civil, LLC
1299 Washington Avenue, Ste 280
Golden, CO 80401
Phone: 303.956.8353
Contact: Chris Purrington, P.E.

Surveyor
Evergreen Surveying
6949 Highway 73, Ste MW-5
Evergreen, CO 80439
Phone: 303.674.3444
Contact: Bob Feroldi

DATE	REVISION	BY
2/22	REVISION PER SEWD	MA
4/25/22	REVISION PER SEWD	CP

RESERVOIR NO. 4
SOUTH EVERGREEN WATER DISTRICT
EVERGREEN, COLORADO
JEFFERSON COUNTY

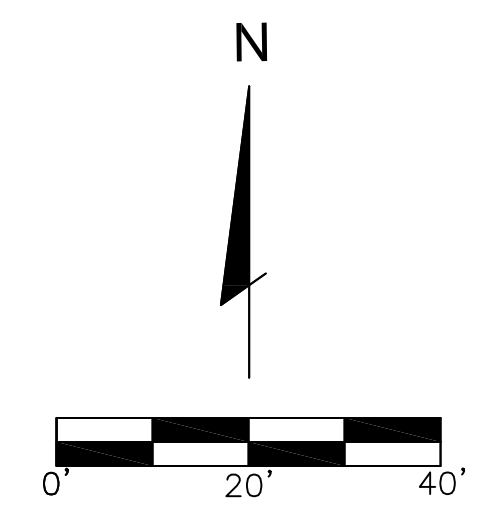
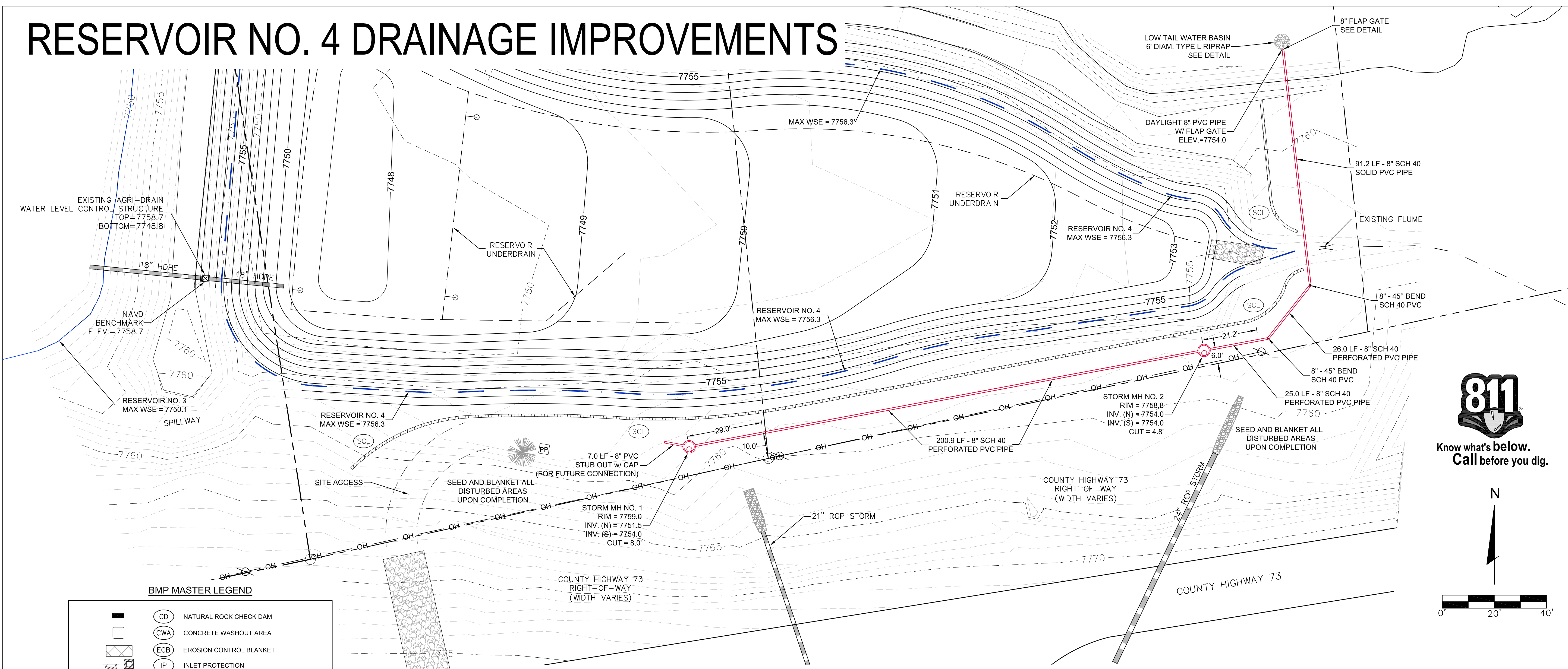
PURRINGTON
CIVIL LLC
1299 WASHINGTON AVENUE
SUITE 280
GOLDEN, CO 80401
Phone: 303.956.8353
www.PurringtonCivil.com

COVER SHEET

SCALE: N.T.S



RESERVOIR NO. 4 DRAINAGE IMPROVEMENTS



BMP MASTER LEGEND

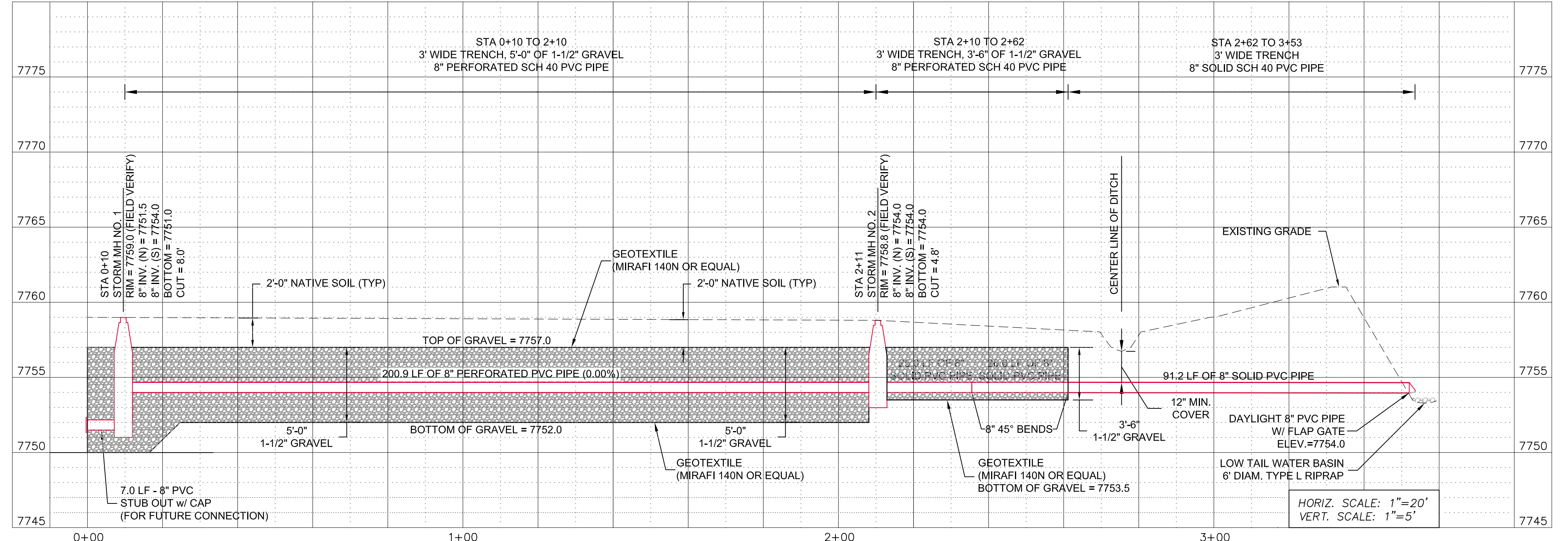
	(CD) NATURAL ROCK CHECK DAM
	(CWA) CONCRETE WASHOUT AREA
	(ECB) EROSION CONTROL BLANKET
	(IP) INLET PROTECTION
	(RR) RIPRAP RUNDOWN
	(RBC) ROCK BERM CULVERT PROTECTION
	(SCL) SEDIMENT CONTROL LOG
	(RSF) REINFORCED SILT FENCE
	(BFM) BONDED FIBER MATRIX HYDROMULCH
	(VTC) VEHICLE TRACKING CONTROL
	(PP) PORTA POTTY
	* EROSION CONTROL MEASURES

LEGEND (EXISTING)

	PROPERTY BOUNDARY
	LOT LINES
	RIGHT-OF-WAY
	EASEMENT
	EDGE OF ASPHALT
	1' CONTOUR
	5' CONTOUR
	SURVEY MARKER
	FENCE
	UTILITY POLE
	AGRI-DRAIN STRUCTURE
	STORM CULVERTS
	RIPRAP
	WATER SURFACE ELEVATION

LEGEND (PROPOSED)

	DRAINAGE IMPROVEMENTS
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BY	MA	CP
REVISION	REVISION PER SEID	REVISION PER SEID
DATE	2/22/22	4/25/22

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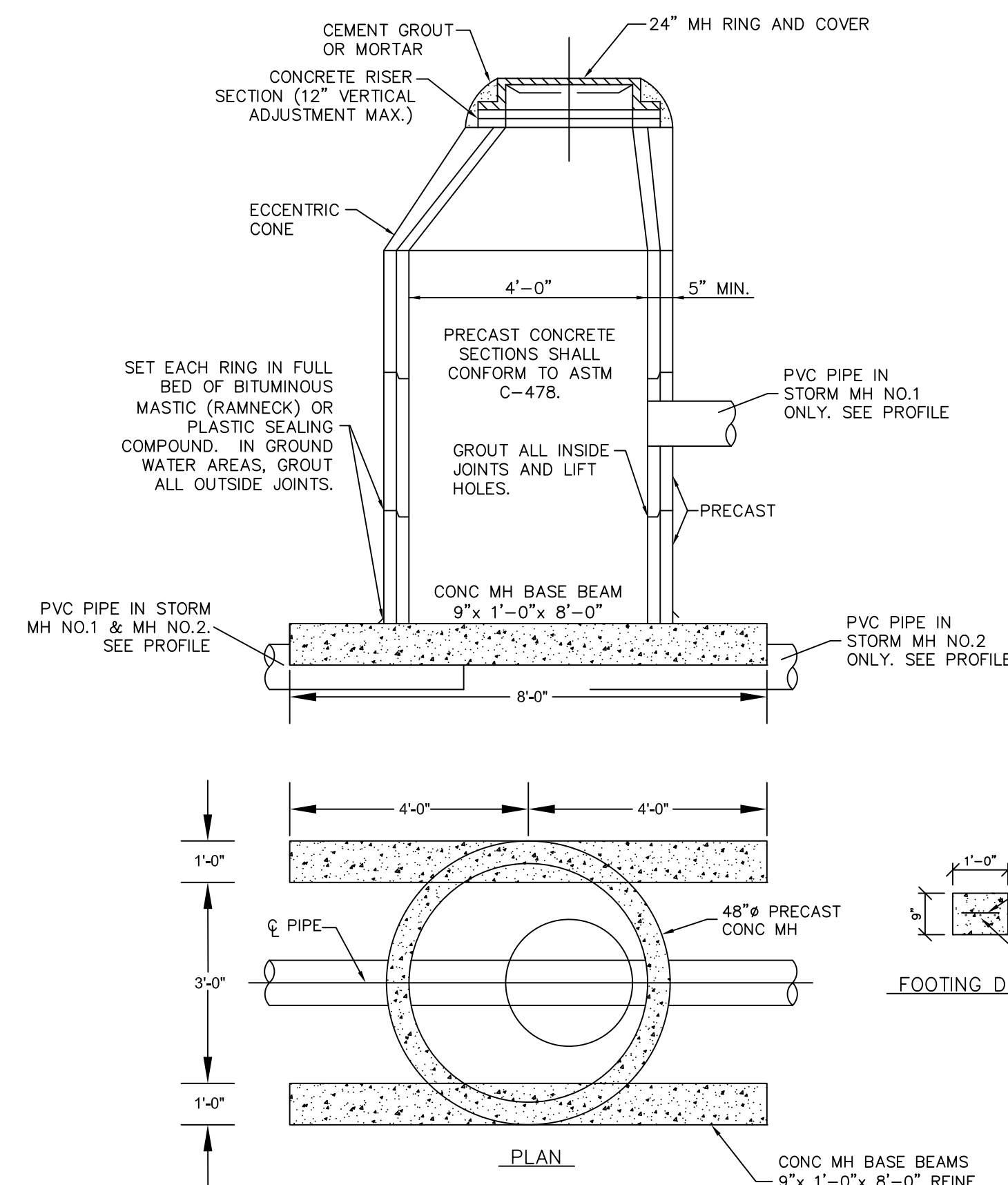
DRAINAGE IMPROVEMENTS

SCALE: AS NOTED

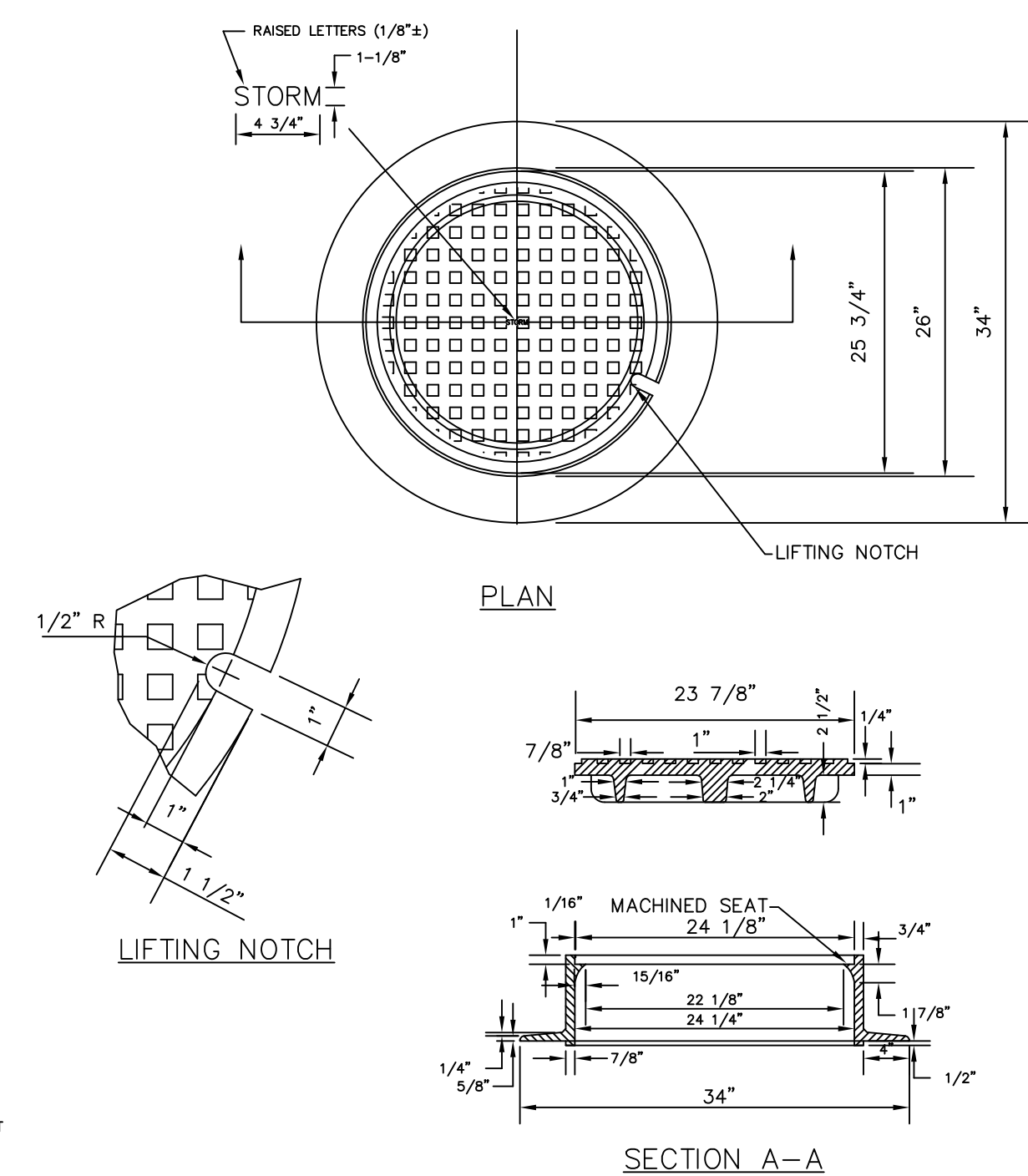
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RESERVOIR NO. 4 DRAINAGE IMPROVEMENTS

DETAILS

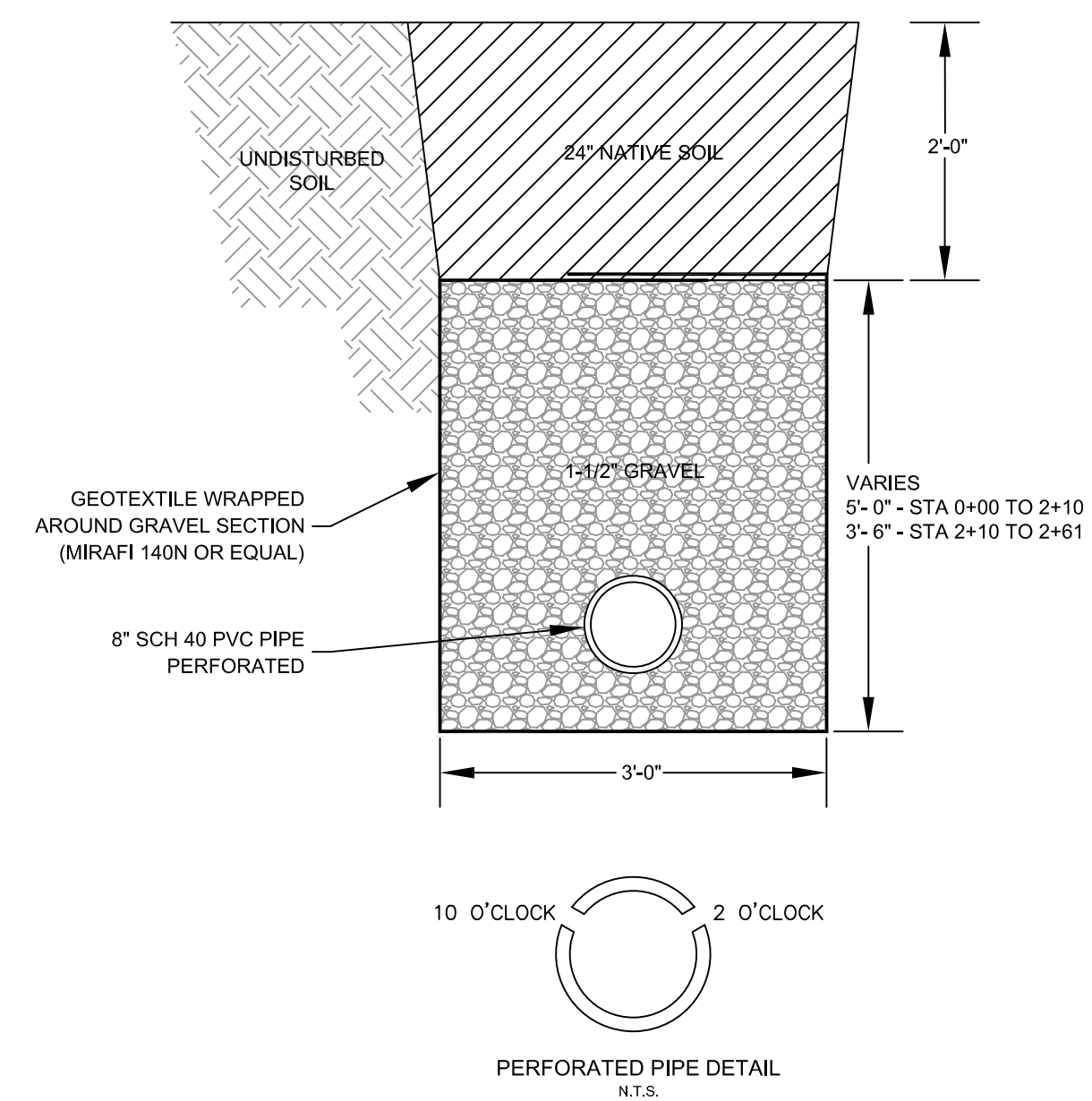


4' DIAMETER MANHOLE N.T.S.

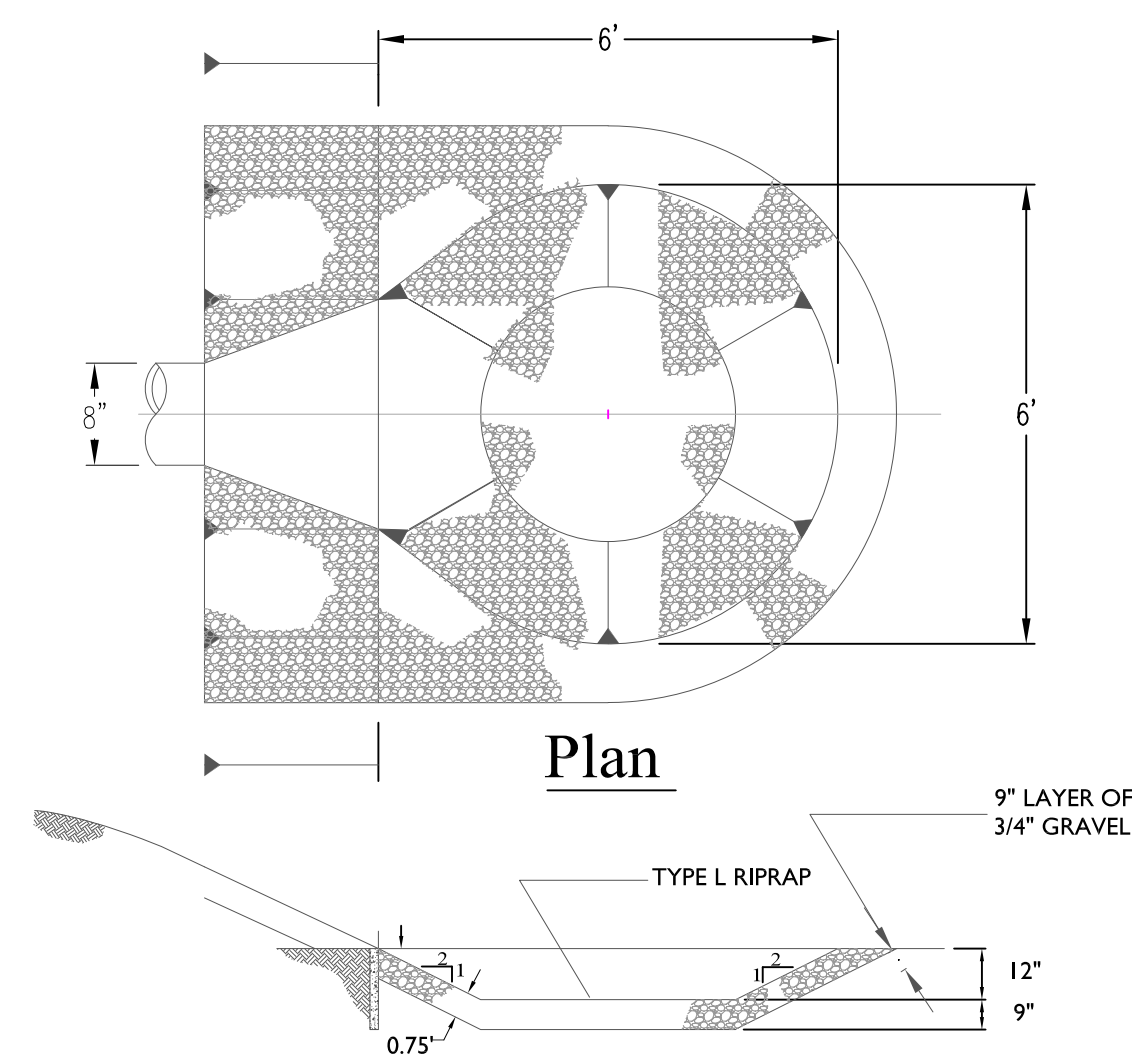


24" MANHOLE RING AND COVER N.T.S.

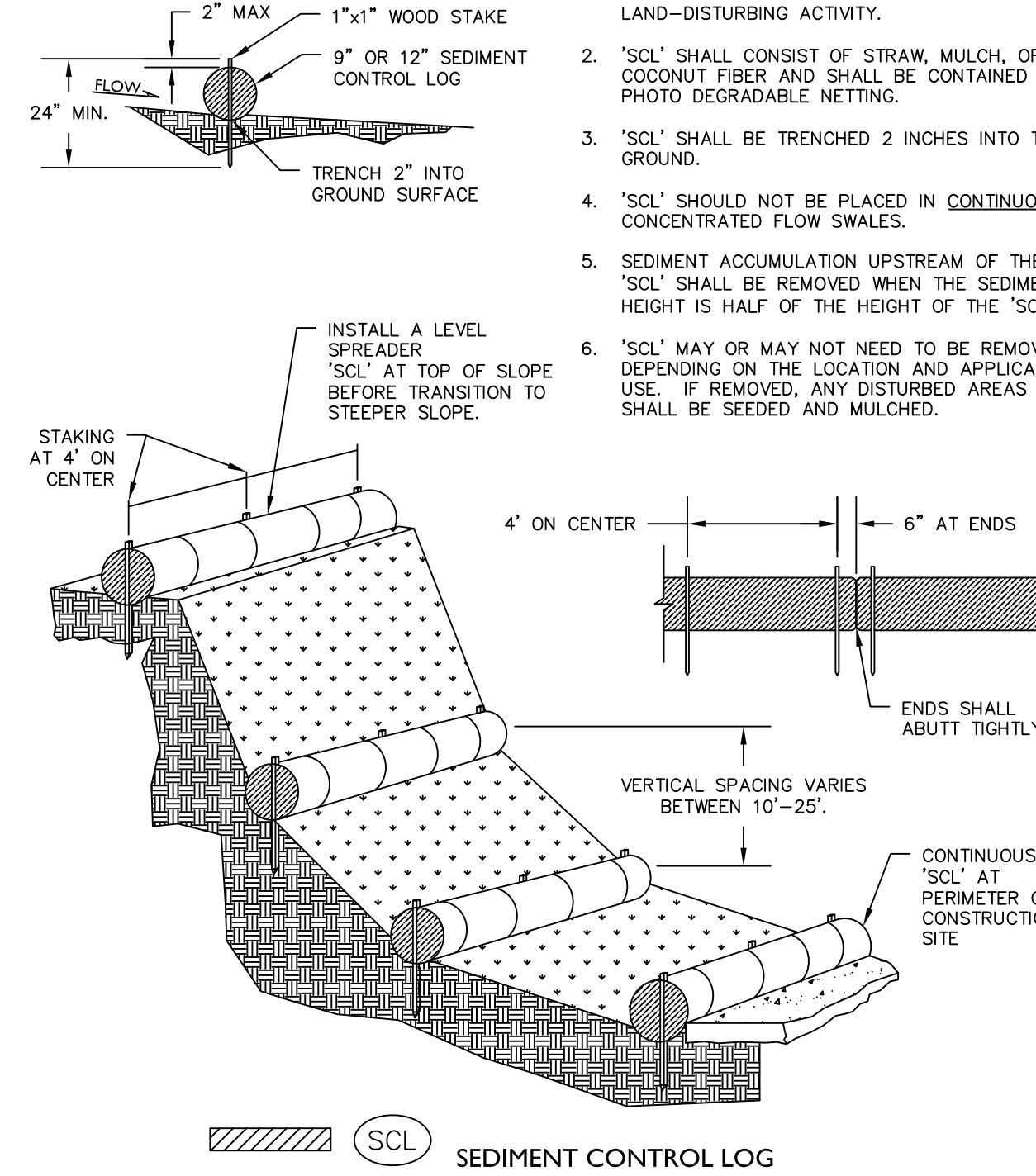
- NOTE:
- CASTING SPECIFICATIONS: ASTM A-48 WITH A MINIMUM TENSILE STRENGTH OF 25 KSI (CLASS 25)
 - ALL CASTINGS TO BE DIPPED IN ASPHALT BASE PAINT (OR APPROVED EQUAL)
 - MANHOLES LOCATED OUTSIDE OF PAVED AREAS MUST HAVE RING & COVER PER DISTRICT ENGINEER REQUIREMENTS
 - CASTINGS SHALL BE AS SPECIFIED BELOW OR EQUAL: (CAST IRON ONLY)
MANUFACTURERS CAT. #
NEENAH R-1706
D&L FOUNDRY A-1161



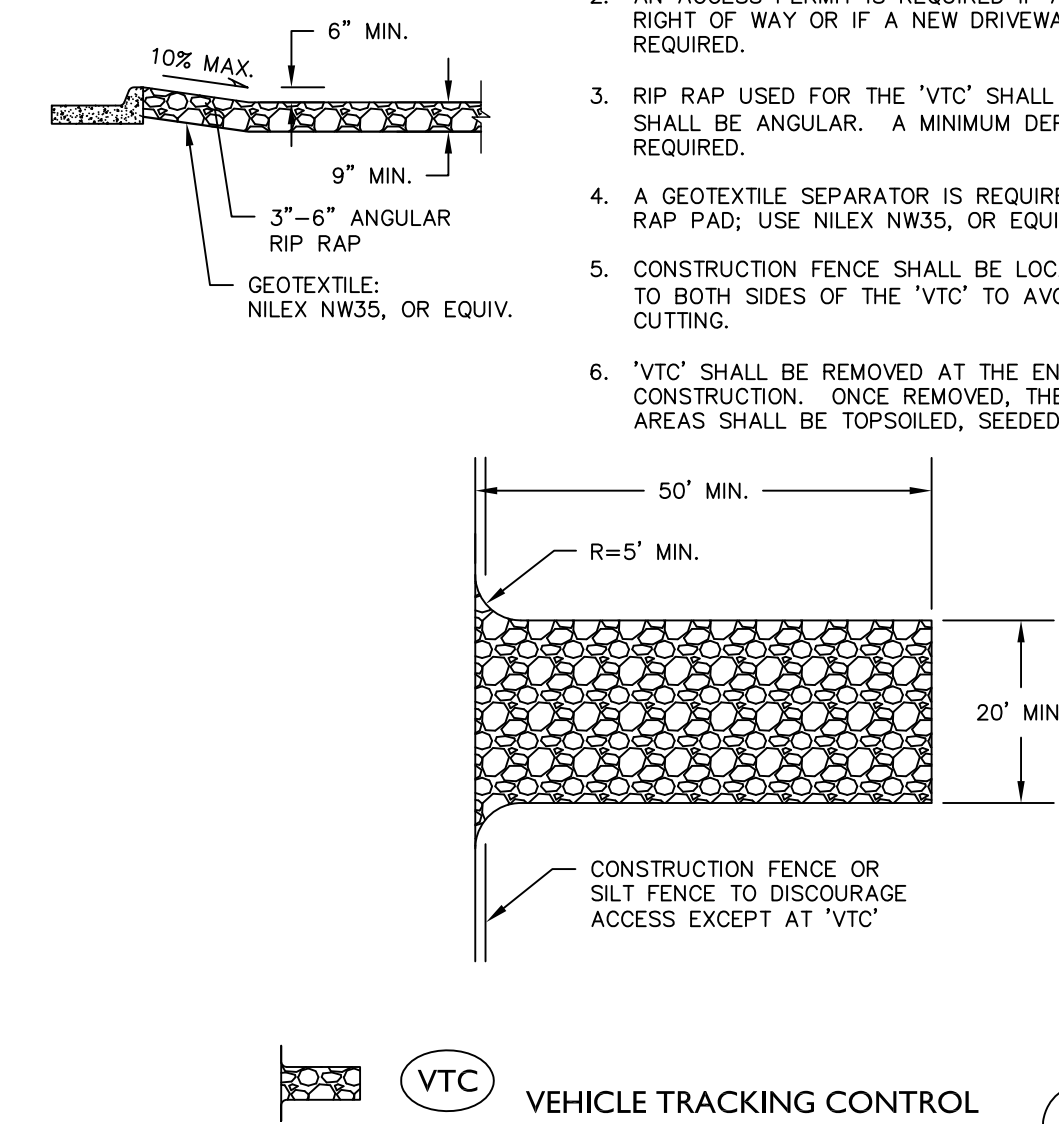
PIPE TRENCH SECTION N.T.S.



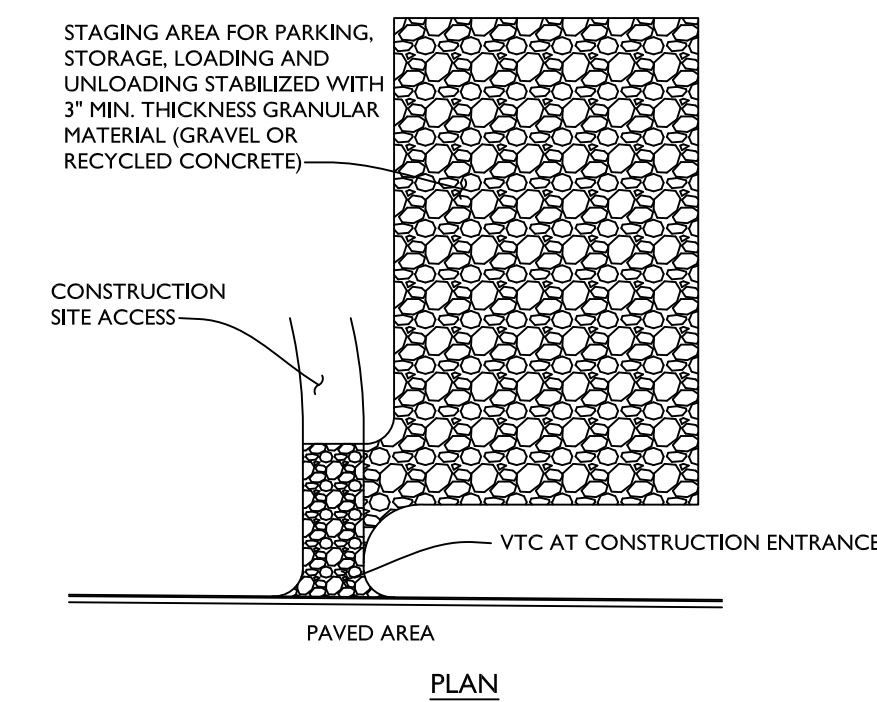
LOW TAILWATER BASING AT PIPE OUTLET N.T.S.



SEDIMENT CONTROL LOG



VEHICLE TRACKING CONTROL



- STABILIZED STAGING AREA INSTALLATION NOTES
- SEE PLAN VIEW FOR GENERAL LOCATION OF STAGING AREA. CONTRACTOR MAY MODIFY LOCATION AND SIZE OF STABILIZED STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
 - STABILIZED STAGING AREA SHALL BE LARGE ENOUGH TO FULLY CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
 - STAGING AREA SHALL BE STABILIZED PRIOR TO ANY OTHER OPERATIONS ON THE SITE.
 - THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM OF 3" OF GRANULAR MATERIAL (GRAVEL OR RECYCLED CONCRETE).
- STABILIZED STAGING AREA MAINTENANCE NOTES
- THE ESC MANAGER SHALL INSPECT THE STABILIZED STAGING AREA DAILY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
 - ESC MANAGER SHALL PROVIDE ADDITIONAL THICKNESS OF GRANULAR MATERIAL IF ANY RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.
 - STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
 - ANY ACCUMULATED DIRT OR MUD SHALL BE REMOVED FROM THE SURFACE OF THE STABILIZED STAGING AREA.
 - THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE COUNTY, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE STABILIZED.

STABILIZED STAGING AREA

Manufactured by
Agri Drain
CORPORATION
PO Box 458 - 1462 340th Street - Adair, Iowa 50002
Phone: 1-800-232-4742 Fax: 1-800-382-3353
www.agridrain.com email: info@agridrain.com

- Heavy Duty Flap Gates
Stainless steel bolt hinges ensure years of trouble-free service.
- Designed for use on PVC and CMP.
 - Not designed for use on corrugated plastic tubing.
 - Constructed of rugged 3/16" steel material with a durable powder coat finish.
 - Dual-hinged for better performance.
 - Flap Gates do not have a gasket and are not watertight.

Size	Width of Flap	Range of Measurements for OD of PVC & CMP Pipe
6"	10" x 10"	6" to 7.1255"
8"	12" x 12"	8" to 9.1255"
10"	14 1/2" x 14 1/2"	10" to 11.1255"
12"	16" x 16"	12.25" to 14"
15"	21" x 21"	15.25" to 17"
18"	24" x 24"	18.25" to 20"
21"	27" x 27"	21" to 23"
24"	29 1/4" x 29 1/4"	24" to 26"
30"	36" x 36"	29.75" to 32"
36"	42" x 42"	35.75" to 38"

FLAP GATE DETAIL N.T.S.

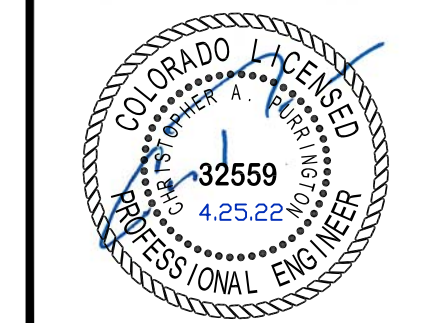
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DETAILS

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C.3