

Applicant: Brian Ivers; MnDOT
Consultant: Adam Pawelk; HTPO, Inc.
Project: MnDOT Truck Station Addition and Improvements Eden Prairie
Location: 7333 Bryant Lake Drive, Eden Prairie
Applicable Rule(s): 4, 5, 6 and 7
Reviewer(s): Azeemuddin Ahmed and Louise Heffernan; Barr Engineering Co.

General Background & Comments

The Minnesota Department of Transportation (MnDOT) is proposing a building addition, parking lot improvements, utility improvements, landscaping, and construction of stormwater management facilities at MnDOT's Eden Prairie Truck Station located at 7333 Bryant Lake Drive in Eden Prairie.

The project is a linear project, as defined by the NMCWD rules, because the proposed land-disturbing activities include construction and reconstruction of public improvements, and reconstruction of utilities in a linear corridor. The project limits – i.e., the site, for purposes of the NMCWD rules analysis – are between Highway 212 and Bryant Lake Drive, as shown in Figure 1 below.

The existing site consists of a salt storage building, cold storage building, and main truck station building. The proposed building addition will be located on the north side of the existing truck station building, within the area currently occupied by parking lot surface. The proposed bituminous pavement improvements include the expansion of the parking lot area along the eastern and western boundaries of the site. Land-disturbing activities are not proposed within the contributing drainage area tributary and surrounding the salt storage location.

The project will involve land-altering activities below the 100-year frequency flood elevation of Nine Mile Creek (850.2 M.S.L.). Proposed activities below the 850.2 M.S.L. 100-year frequency flood elevation of the creek include placement of riprap and granular filter material for utility improvements.

Under subsection 2.2.1a of the rule, riprap installation is exempt from the requirements set forth by NMCWD's Floodplain Management and Drainage Alterations Rule 2.0 because:

- The riprap will be installed to provide an energy dissipation measure to prevent scour by reducing the erosive force of concentrated stormwater.
- The riprap design and materials are consistent with the standards in the NMCWD Shoreline and Streambank Improvements Rule 7.0. See Section 7.0 *Shoreline and Streambank Improvements* of this report for Rule 7.0 conformance analysis.

Under subsection 2.2.1c of the rule, the in-kind replacement of existing public infrastructure to be replaced is exempt because floodplain storage is not decreased. The riprap will be placed at an elevation that does not decrease floodplain storage.

Rule 3.0 Wetlands Management does not apply to the project because the proposed activities do not result in the draining, excavating, or filling of a wetland regulated by the Wetland Conservation Act (WCA). Additionally, the buffer provisions of section 3.4 do not apply because no WCA-regulated wetlands are located downgradient or disturbed by land-disturbing activities. MnDOT is the Local Government Unit (LGU) administering the requirements of the WCA. A Sambatek Wetland Delineation Report dated June 2, 2022, identify wetlands located north of the project site, which are not downgradient or disturbed by land-disturbing activities. The basin located south of the site as incidental. Sections 3.4 and 3.5 do not apply to incidental wetlands (Rule 3.2.2a).

Figure 1. The site.



Exhibits Reviewed:

1. Signed Permit Application dated April 20, 2023, received April 21, 2023.
2. Plans dated April 20, 2023 (received April 21, 2023), revised June 12, 2023, and June 30, 2023, prepared by HTPO, Inc.
3. Stormwater Narrative dated April 20, 2023 (received April 21, 2023), revised June 12, 2023, and June 30, 2023, prepared by HTPO, Inc.
4. Drainage Area Maps dated April 13, 2023 (received April 21, 2023), prepared by HTPO, Inc.
5. Geotechnical Report dated March 8, 2013 (received April 21, 2023), prepared by McGhie & Betts, Inc.
6. WCA Notice of Decision dated December 20, 2022 (received April 21, 2023), approving the Wetland Boundary and Type.
7. Wetland Delineation Report dated June 2, 2022 (received April 21, 2023), prepared by Sambatek, Inc.
8. Eden Prairie Truck Station Facility Site Plan, dated July 2015 (received May 15, 2023).
9. Eden Prairie Truck Station Facility Storm Water Plan, dated January 2019 (received May 15, 2023).

10. Electronic HydroCAD Model files received April 21, 2023, prepared by HTPO, Inc.
11. Electronic MIDS Calculator files received April 21, 2023, prepared by HTPO, Inc.
12. MS4 Permit, dated November 16, 2020, received June 12, 2023.
13. Grading Plan, undated, received June 12, 2023.
14. Comment Responses received June 30, 2023, prepared by HTPO, Inc.

The application with the submittal items above is complete.

4.0 Stormwater Management

NMCWD's Stormwater Management Rule 4.0 applies to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 4.2.1a and b. The project qualifies as a linear project as defined for purposes of the NMCWD rule, and subsection 4.2.4 determines applicability of NMCWD's stormwater-management requirements. For linear projects creating less than one (1) acre of new or additional impervious area (0.3 acres of net new impervious area is proposed to be created), the stormwater requirements of Rules 4.3.1 or 4.3.2 do not apply.

5.0 Erosion and Sediment Control

NMCWD's requirements for erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 5.2.1a and b.

The erosion control plan prepared by HTPO, Inc. includes installation of perimeter control (silt fence and sediment control logs), a stabilized rock construction exit, and storm sewer inlet protection. Temporary and permanent stabilization methods include seeding and erosion control blanket.

MnDOT must designate a contact who will remain liable to the NMCWD for performance under the NMCWD Erosion and Sediment Control Rule 5.0 from the time the permitted activities commence until vegetative cover is established, in accordance with subsection 5.4.1e. NMCWD must be notified if the responsible individual changes during the permit term.

6.0 Waterbody Crossings and Structures

NMCWD's Rule 6.0 Waterbody Crossings and Structures applies to the project because a storm sewer outfall in contact with the bank of the creek is proposed to be replaced. The existing and proposed invert elevation of the outfall is 845.4 M.S.L. The proposed outfall invert elevation is located below the approximate elevation of the top of bank (846.8 M.S.L., estimated using the 2-year maximum water surface elevation of the creek). Conformance with Rule 6.3 criteria is required.

Rule 6.3.1 states construction, improvement, repair, or removal of a waterbody crossing in contact with the bed or bank of a waterbody:

- a) *Must retain adequate hydraulic capacity and assure no net increase in the flood stage of the pertinent waterbody:*

The applicant proposes to replace the existing deteriorated 18-inch corrugated metal pipe (CMP) with a 24-inch reinforced concrete pipe (RCP) to maintain the hydraulic

performance of the outfall. The work will not reduce the hydraulic capacity of the existing pipe. The proposed filtration basins will attenuate flows to the creek. The HydroCAD modeling demonstrates that there is no net increase in discharge rates to the creek in post-project conditions. Because impervious areas are not proposed to be significantly increased within the project area (0.3 acres of net new impervious surface), subwatershed drainage areas are not to be altered, stormwater management facilities are proposed to be constructed to attenuate flows, the improvements will not result in an increase in the 100-year high water elevation of the creek in accordance with Rule 6.3.1a criteria.

b) Must retain adequate navigational capacity pursuant to any requirements of the waterbody's classification by the district:

The creek at the outfall location is not used for navigational purposes.

c) Must not be reasonably likely to significantly adversely affect water quality, change the existing flowline/gradient, or cause increased scour, erosion, or sedimentation:

Channel stability, stream base-flow, water quality and aquatic or riparian habitat within the creek will not be changed and/or altered because stream baseflow conditions will not be increased because of the project, as discharge rates to the creek will be attenuated by the proposed stormwater filtration basins and the proposed outfall invert elevation matches existing conditions.

Proposed storm sewer improvements, including installation of the flared end section in conjunction with the riprap will provide stabilization and protect from erosion and scour at the pipe outfall. As stated in item (a), the hydraulic capacity of the existing storm sewer system(s) within the project site will be maintained. Erosion control practices for the purposes of armoring slopes to dissipate the velocity at the outlets are to be installed with the proposed improvements. Erosion control measures including silt fence and sediment control logs will be installed to minimize water quality impacts (sedimentation) during construction. Disturbed areas will be stabilized with erosion control blanket and native seeds.

The submittal demonstrates and the NMCWD engineer finds that the project is not reasonably likely to have significant adverse impacts, and therefore conforms to Rule 6.3.1c.

d) Must provide post-project wildlife passage along each bank and riparian area:

The project will not permanently change conditions in a manner that will deter wildlife from using the area along and within the creek. Construction activities may temporarily displace wildlife until the area is restored to pre-project conditions. Because wildlife native to the area will be able to continue using the area adjacent to and within the creek, the NMCWD engineer finds that the project conforms to Rule 6.3.1d.

e) Must represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives:

Reasonable alternatives to the proposed design include:

- No-build alternative: The no-build alternative includes the removal of the existing outfall. In this alternative, stormwater runoff from the proposed basins would flow

down the bank into the creek, resulting in an increased potential for erosion and scour at the creek bank. The NMCWD engineer finds that the proposed design, in comparison to the no-build alternative, represents the minimal impact solution.

- Existing pipe with new outfall: This alternative would utilize the existing corrugated metal pipe (CMP). The existing CMP pipe is exhibiting deterioration and has the potential for damage or failure if not replaced in the near term. The NMCWD engineer finds that the proposed design, in comparison to using the existing pipe with new outfall, represents the minimal impact solution.

Rule 6.3.2 states, *projects involving directional boring or horizontal drilling must provide for minimum clearance of 3 feet below the bed of a waterbody and a minimum setback of 50 feet from any stream bank for pilot, entrance and exit holes.*

No directional boring or horizontal drilling below a waterbody is proposed, and no directional boring or horizontal drilling underneath or near a stream bank is proposed.

Rule 6.3.3 states, removal of structures or other waterway obstructions:

- a) *Must maintain the original cross-section and bed conditions to the greatest extent practicable:*

No removal of structures or other water obstructions is proposed with the project.

- b) *Must achieve complete removal of the structure, including any footings or pilings that impede navigation:*

No removal of structures or other water obstructions is proposed with the project.

- c) *Must not involve the removal of a water-level control device:*

No removal of water-level control devices is proposed with the project.

Rule 6.3.4 requires *that the plans must state no activity affecting the bed of a protected water may be conducted between March 15 and June 15 on watercourses to minimize the impacts on fish spawning and migration:*

The project work does not include activities affecting the bed of the creek.

Rule 6.3.5 states, *a separate permit under District Rule 7.0 is not required for shoreline or streambank stabilization associated with a waterbody crossing or structure, but such stabilization must comply with the criteria 7.3.3c to e.*

Compliance with criteria of subsections 7.3.3c to e is described in the following section for placement of riprap at the outfall.

In accordance with the requirements of subsection 6.5 for the maintenance of the waterbody structures, MnDOT must submit a draft written agreement with NMCWD providing for maintenance of the outfall structure.

7.0 Shoreline and Streambank Improvements

Because the storm sewer improvements involve placement of riprap at the outfall, the requirements of NMCWD Rule 7.0 Shoreline and Streambank Improvements apply to the project.

The riprap must conform to the requirements of Rule 7.0, as discussed in the following sections.

Rule 7.3.1 states, *An applicant for a shoreline alteration permit must demonstrate a need to prevent shoreline erosion or restore eroded shoreline or streambank. Placement of riprap for cosmetic purposes is prohibited.*

The applicant provided a maximum discharge velocity at the proposed outfall of 5.2 feet per second and asserts that the riprap will be placed to prevent erosion and scour at the bank. The NMCWD engineer concurs that the riprap is not for cosmetic purposes but for the dissipation of energy and for the stabilization of the bank at the outfall. The project conforms to Rule 7.3.1 criteria.

Rule 7.3.2 states, *An applicant must first consider maintenance or restoration of a streambank using bioengineering. If bioengineering cannot provide stabilization, a combination of riprap and bioengineering may be used to restore or maintain the streambank. If a combination of riprap and bioengineering cannot provide stabilization within a reasonable period, riprap may be used to restore or maintain the streambank. A retaining wall may not extend below the OHWL, except where there is a demonstrable need for a retaining wall in a public improvement project, and the design of the retaining wall has been certified by a licensed professional engineer.*

At the location of proposed riprap, bioengineering and plantings would not be sufficient based on the discharge velocity, for stabilization of the outfall area within the creek. The project does not propose a retaining wall installation. The installation of the riprap conforms to Rule 7.3.2 criteria.

Rule 7.3.3a states, *Riprap to be used in shoreline erosion protection must be sized appropriately in relation to the erosion potential of the wave or current action of the particular water body, but in no case may the riprap rock average less than six inches in diameter or more than 30 inches in diameter. Riprap must be durable, natural stone and of a gradation that will result in a stable shoreline embankment. Stone, granular filter and geotextile material must conform to standard Minnesota Department of Transportation specifications, except that neither limestone nor dolomite may be used for shoreline or stream bank riprap, but may be used at stormwater outfalls. All materials used must be free from organic material, soil, clay, debris, trash or any other material that may cause siltation or pollution:*

The project proposes the use of Class IV riprap sized less than 30-inches in diameter with granular filter material placed below the riprap in accordance with Rule 7.3.3 criteria.

Rule 7.3.3b states, *Riprap must be placed to conform to the natural alignment of the shoreline.*

The plans show the location and work proposed will conform to the existing alignment of the creek in conformance with Rule 7.3.3b criteria.

Rule 7.3.3c states, *A transitional layer consisting of graded gravel, at least six inches deep, and where appropriate, geotextile filter fabric must be placed between the existing shoreline*

and any riprap. The thickness of riprap layers should be at least 1.25 times the maximum stone diameter. Toe boulders, if used, must be at least 50 percent buried.

Consistent with the requirements in Rule 7.3.3c, a filter fabric conforming to Minnesota Department of Transportation (MnDOT) specification 3733 and six (6) inches of granular fill conforming to MnDOT specification 3601.B will be provided as a transitional layer between the existing shoreline and the riprap. Geotextile filter fabric will be placed in conformance with Rule 7.3.3c criteria. Toe boulders are not proposed to be installed. The materials demonstrate and the engineer finds that the project is in conformance with subsection 7.3.3c criteria.

Rule 7.3.3d states, *Riprap must not cover emergent vegetation unless authorized by a Department of Natural Resources permit.*

The plans show that no riprap will be installed in a manner that will cover emergent vegetation.

Rule 7.3.3e states, *Riprap may extend no higher than the top of bank or two feet above the 100-year high water elevation, whichever is lower.*

NMCWD's Atlas 14 100-year high water elevation along the creek at the project location is 850.2 M.S.L., and the 2-year high water elevation for purposes of estimating the top of bank is 846.8 M.S.L. The riprap will extend to approximately elevation 846.8 M.S.L. and no higher, in conformance with subsection 7.3.3e criteria.

Rule 7.3.4a states, *The finished slope of any shoreline must not be steeper than 3:1 (horizontal to vertical).*

Because the proposed slope shown on the design plan is 3:1 (horizontal to vertical) or flatter waterward of the OHWL (approximated by the 2-year maximum water surface elevation), the project conforms to Rule 7.3.4a criteria.

Rule 7.3.4b states, *Horizontal encroachment from a shoreline must be the minimal amount necessary to permanently stabilize the shoreline and must not unduly interfere with water flow or navigation. No riprap or filter material may be placed more than six feet waterward of the OHWL. Streambank riprap may not reduce the cross-sectional area of the channel or result in a stage increase of more than 0.01 feet at or upstream of the treatment.*

The plans show the proposed stabilization will follow the configuration of the existing creek bank and will not encroach horizontally from the existing bank location. The design plans show that the riprap at the streambank will not be placed more than six (6) feet waterward of the approximated OHWL of the creek. The project conforms to Rule 7.3.4b criteria.

Rule 7.3.4c states, *The design of any shoreline erosion protection must reflect the engineering properties of the underlying soils and any soil corrections or reinforcements necessary. The design must conform to engineering principles for dispersion of wave energy and resistance to deformation from ice pressures and movement, considering prevailing winds, fetch and other factors that induce wave energy.*

Because the work does not propose placement of riprap along a lake's shoreline, subsection 7.3.4c criteria does not impose implications for the project.

11.0 Fees

Because the applicant is a public entity, no fees are charged.

Rules 4.0, 5.0, 6.0, and 7.0 \$0

12.0 Financial Assurances

Because the applicant is a public entity, the NMCWD's financial assurance requirements do not apply.

Sureties for the project are: \$0

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project will conform to Rules 5 and 6 with the fulfillment of the conditions identified below.

Recommendation

Approval, contingent upon:

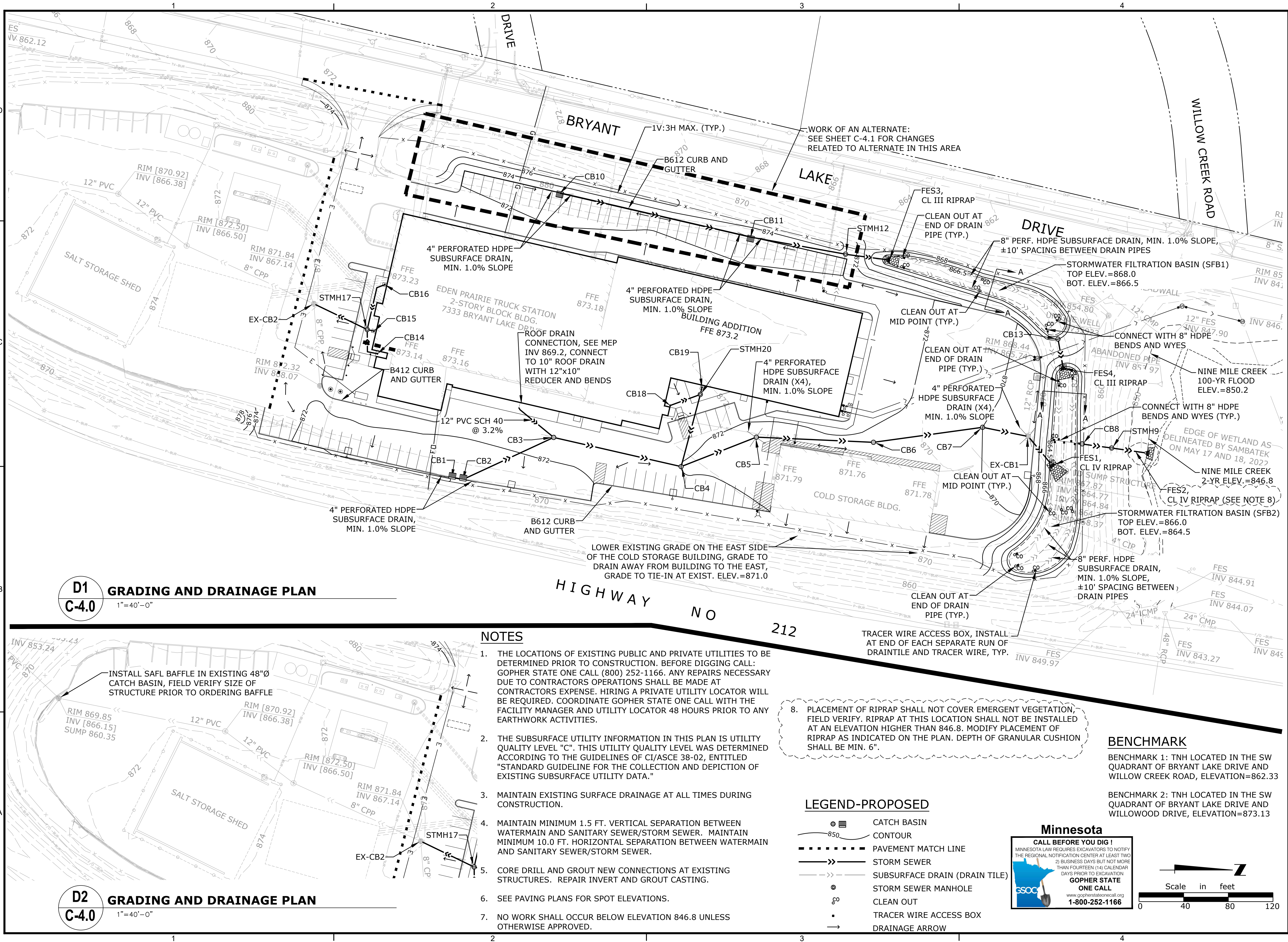
Compliance with the General Provisions (attached).

The applicant provides a name and contact information for the individual responsible for the erosion and sediment control at the site. NMCWD must be notified if the responsible individual changes during the permit term.

Per Rule 6.5, MnDOT must submit for NMCWD approval, then execute an agreement providing for the maintenance of the outfall in contact with the bank the creek. A draft of the agreement must be approved by the district. A public entity assuming the maintenance obligation may do so by filing with the district a document signed by an official with authority.

By accepting the permit, if issued, the applicant agrees to the following stipulations for closeout of the permit and release of the financial assurance after the project:

The work for the MnDOT Eden Prairie Truck Station Addition and Improvements project under the terms of Permit #2023-046, if issued, must have an impervious surface area and stormwater infrastructure consistent with the approved plans. Design that differs materially from the approved plans (e.g., in terms of the total impervious area or maintenance of floodplain storage volume) will need to be the subject of a request for a permit modification or new permit, which will be subject to review for compliance with all applicable regulatory requirements.



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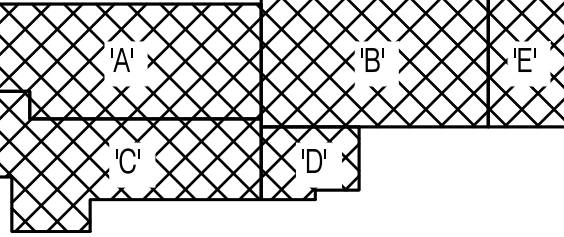
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HANSEN THORP PELLINEN OLSON, Inc.
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KEYPLAN



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Adam Pawelk
Adam Pawelk

Lic. No. 499990 Date 06/12/23

PROJECT TITLE



MINNESOTA DEPARTMENT OF
TRANSPORTATION

EDEN PRAIRIE TRUCK
STATION ADDITION
AND RENOVATIONS

EDEN PRAIRIE, MN
Project # TZ-90986
MnDOT # 24-138177

REVISIONS

MARK	DATE	DESCRIPTION
ISSUE DATE	06/12/23	DRAWN BY HTPO
PROJECT #	13-001	CHECKED BY AMP

SHEET TITLE

GRADING AND
DRAINAGE PLAN

SHEET NUMBER

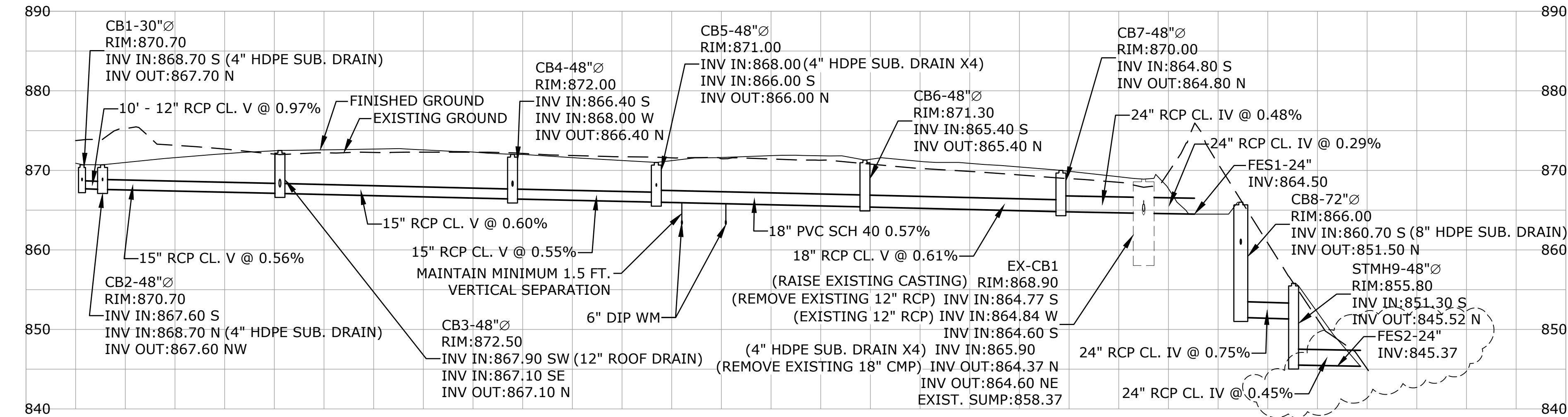
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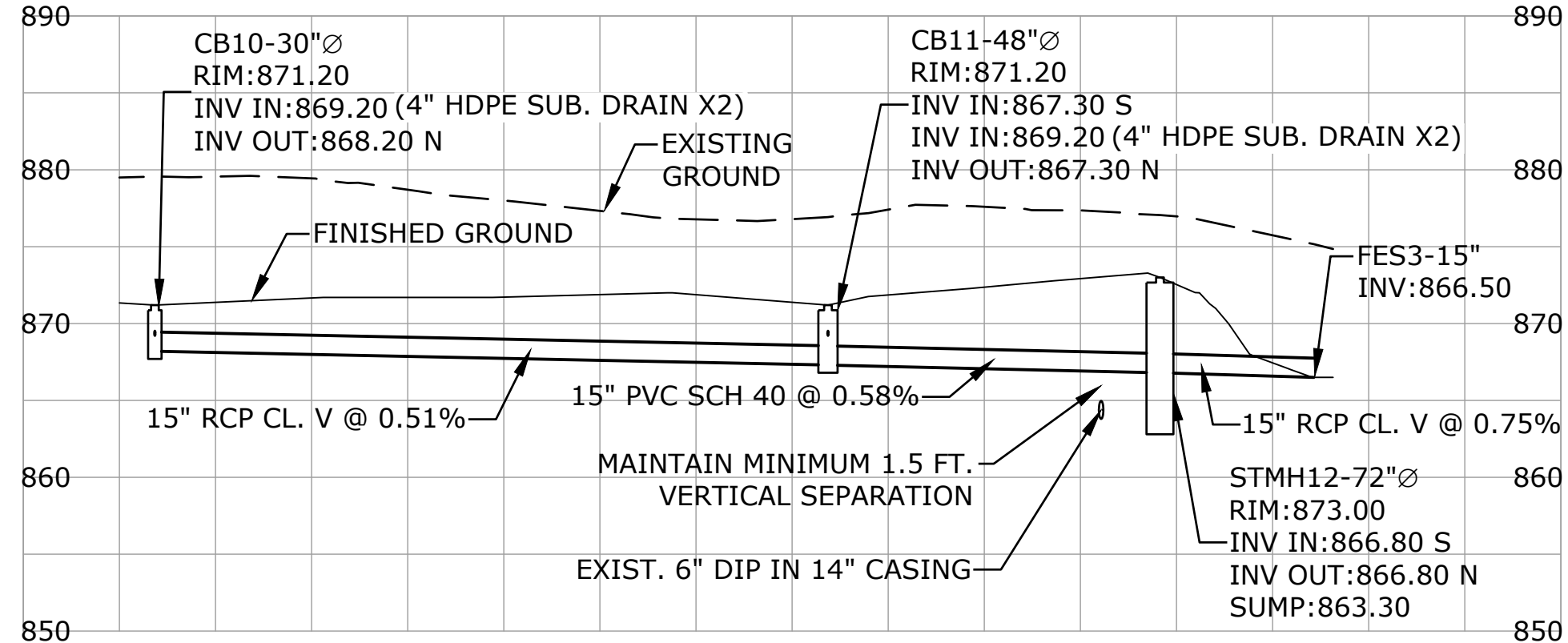
CONSTRUCTION DOCUMENTS

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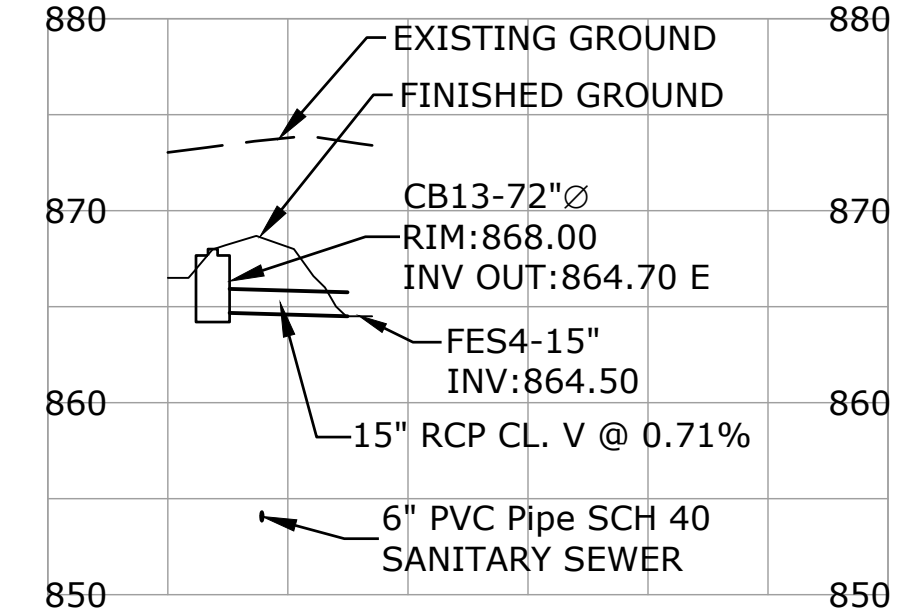
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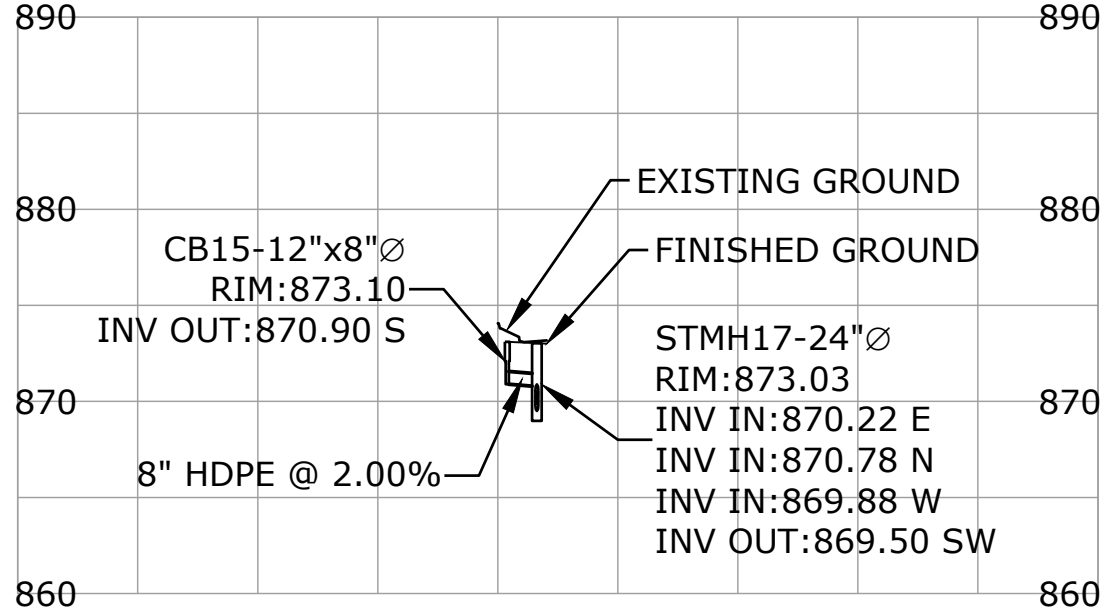
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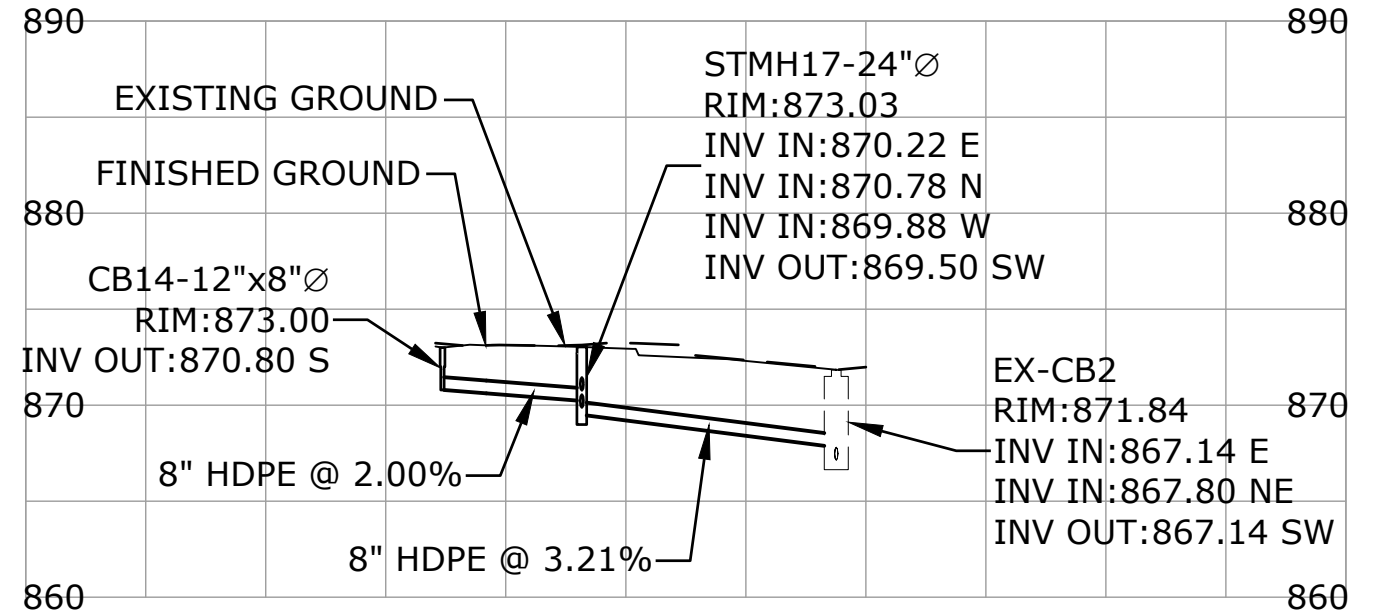
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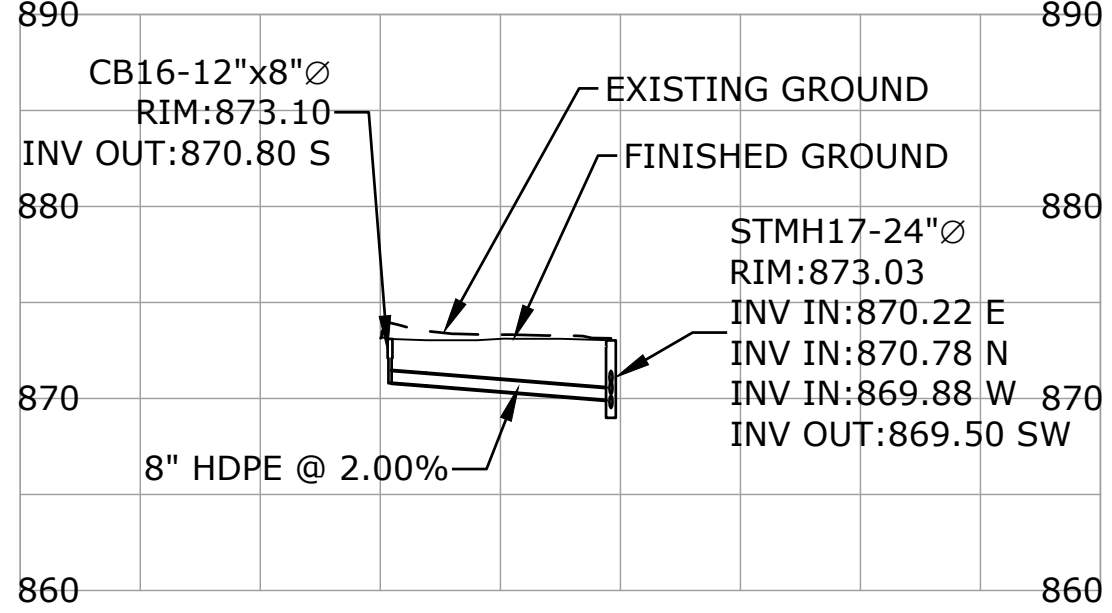
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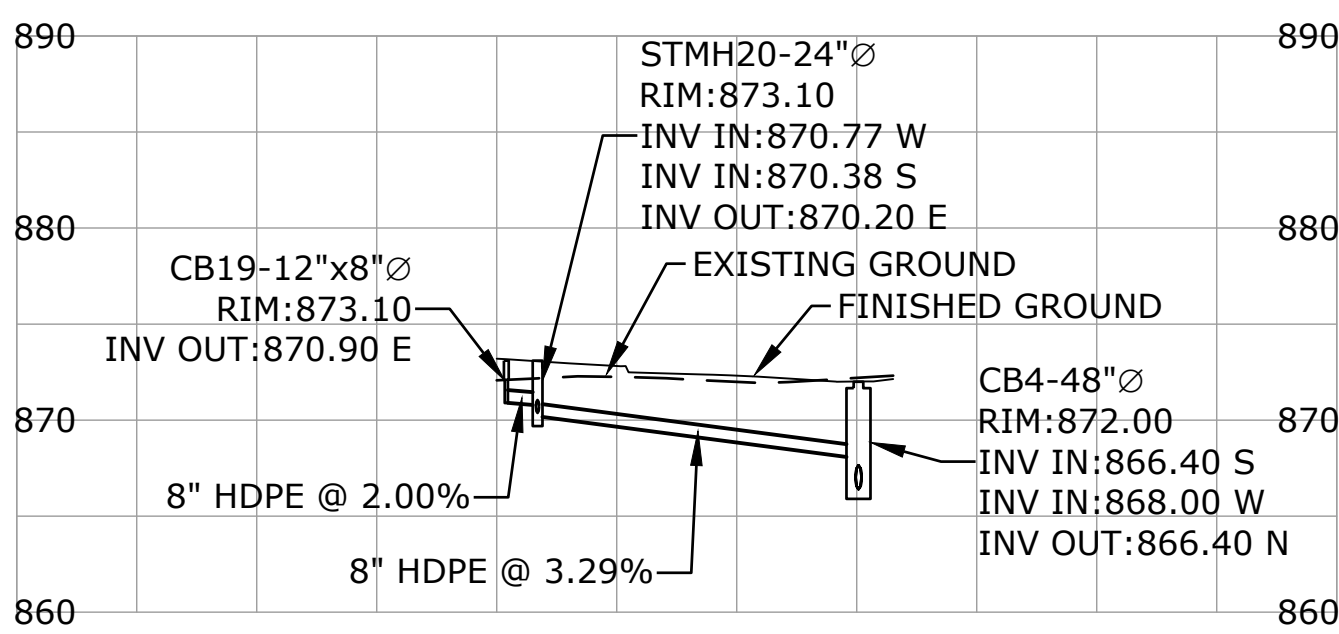
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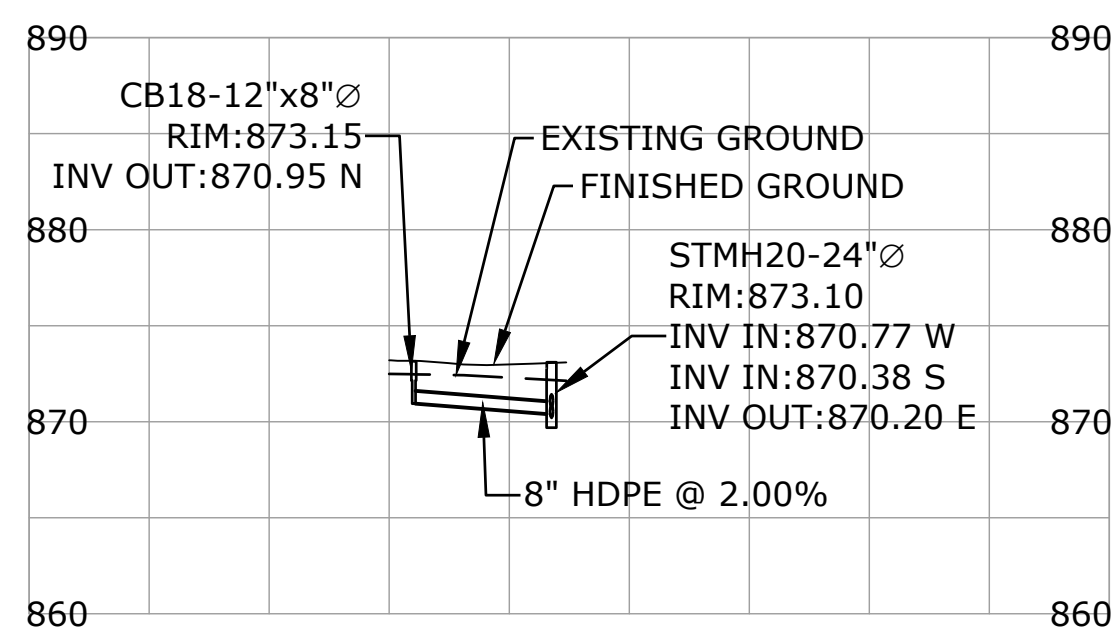
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NOTES

- SEE SHEET C-4.4 FOR PIPE BEDDING DETAIL.
- INSTALL PVC PIPE WITH SOLVENT WELDED JOINTS (WATERTIGHT, PRESSURE RATED JOINTS).



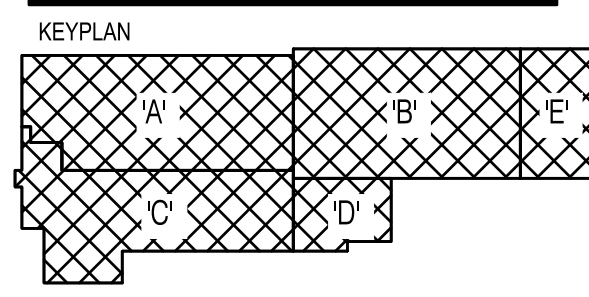
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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Adam Pawelk
Adam Pawelk

Lic. No. 49990 Date 06/12/23

PROJECT TITLE



DEPARTMENT OF
TRANSPORTATION

MINNESOTA DEPARTMENT OF
TRANSPORTATION

EDEN PRAIRIE TRUCK
STATION ADDITION
AND RENOVATIONS

EDEN PRAIRIE, MN
Project # TZ-90986
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REVISIONS

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ISSUE DATE	06/12/23	DRAWN BY HTPO
PROJECT #	13-001	CHECKED BY AMP

SHEET TITLE

**STORM SEWER
PROFILES**

SHEET NUMBER

C-4.3

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