



PROJECT TEAM

VICINITY MAP



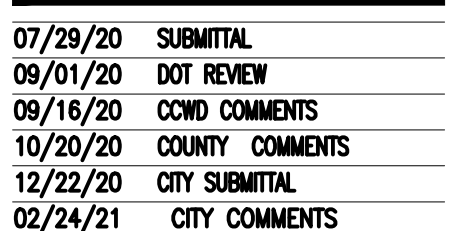
**442 CROSSTOWN BLVD. NE
MIAM LAKE, MN 55304**



NOT ISSUED FOR CONSTRUCTION
Architectural Consortium, L.L.C. 2020



- SUNDE ENGINEERING, PLLC.**
10830 NESBITT AVENUE SOUTH
BLOOMINGTON, MINNESOTA 55437
(952) 881-3344 TELEPHONE
(952) 881-1913 FAX
www.sundecivil.com



Brian Gundlach

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

**CIRCLE K
STORES INC.**

HAM LAKE MINNESOTA

1442
CROSSTOWN BLVD NE
HAM LAKE, MN



PROJECT NUMBER
20-018

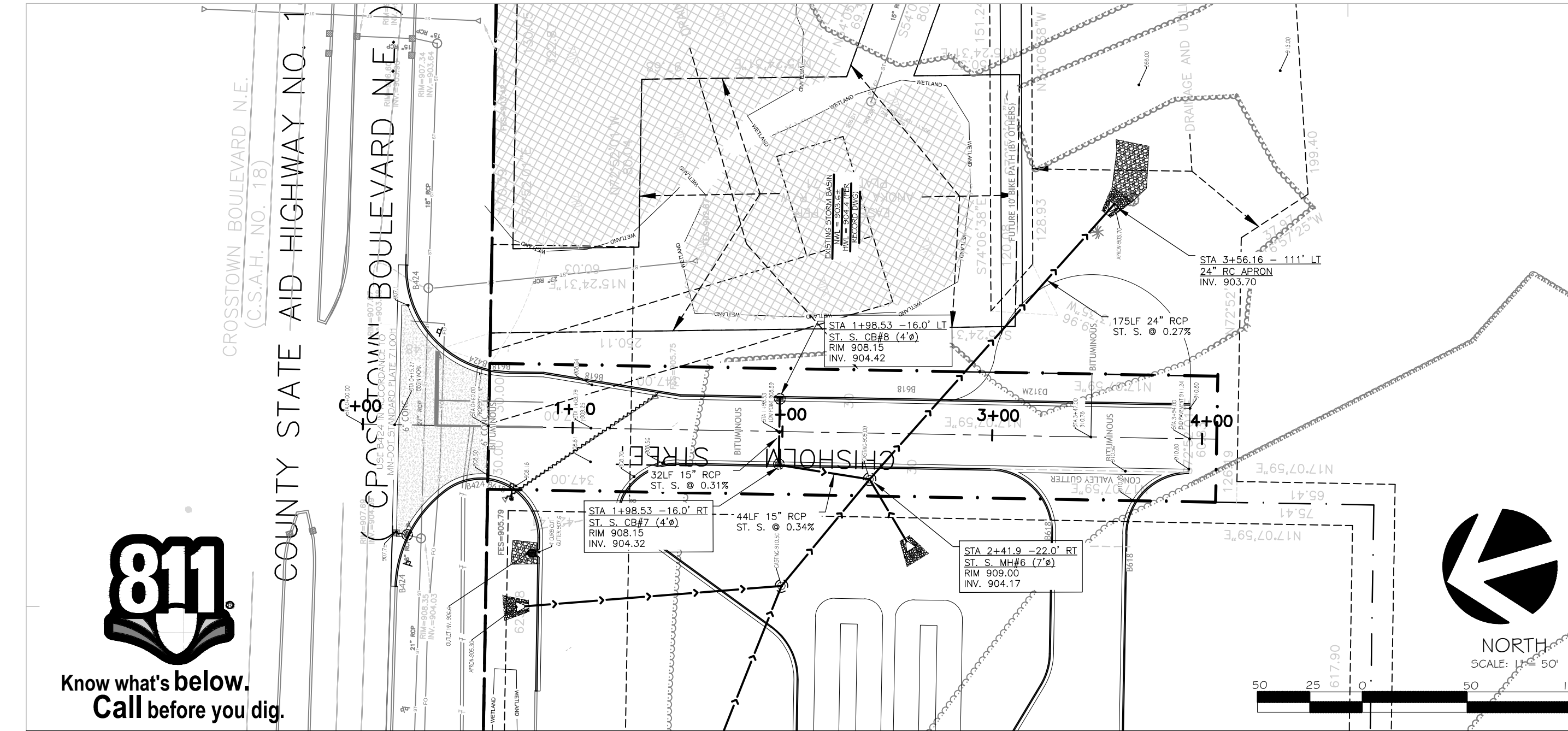
SHEET TITLE

SIGNAGE AND STRIPING PLAN

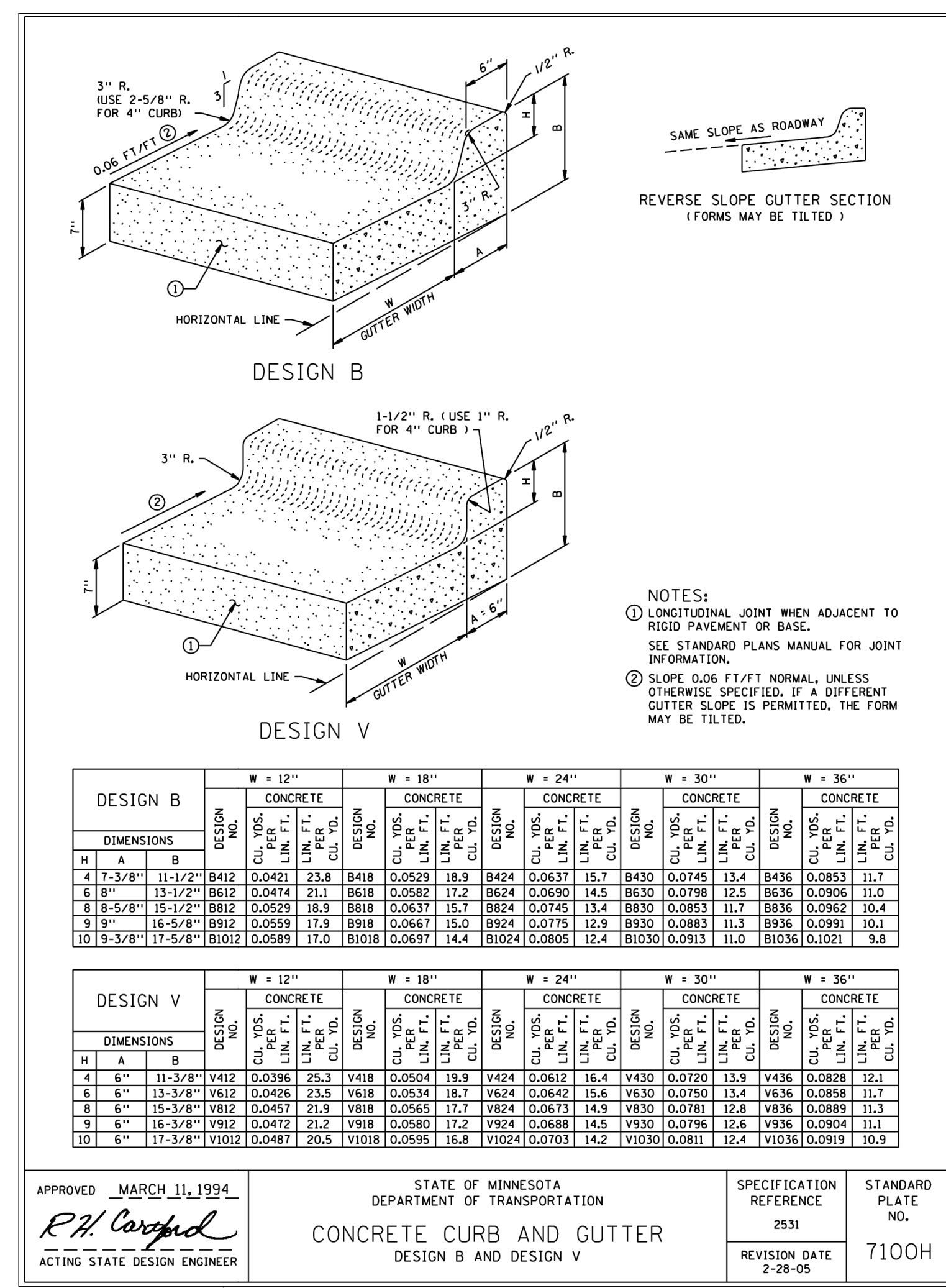
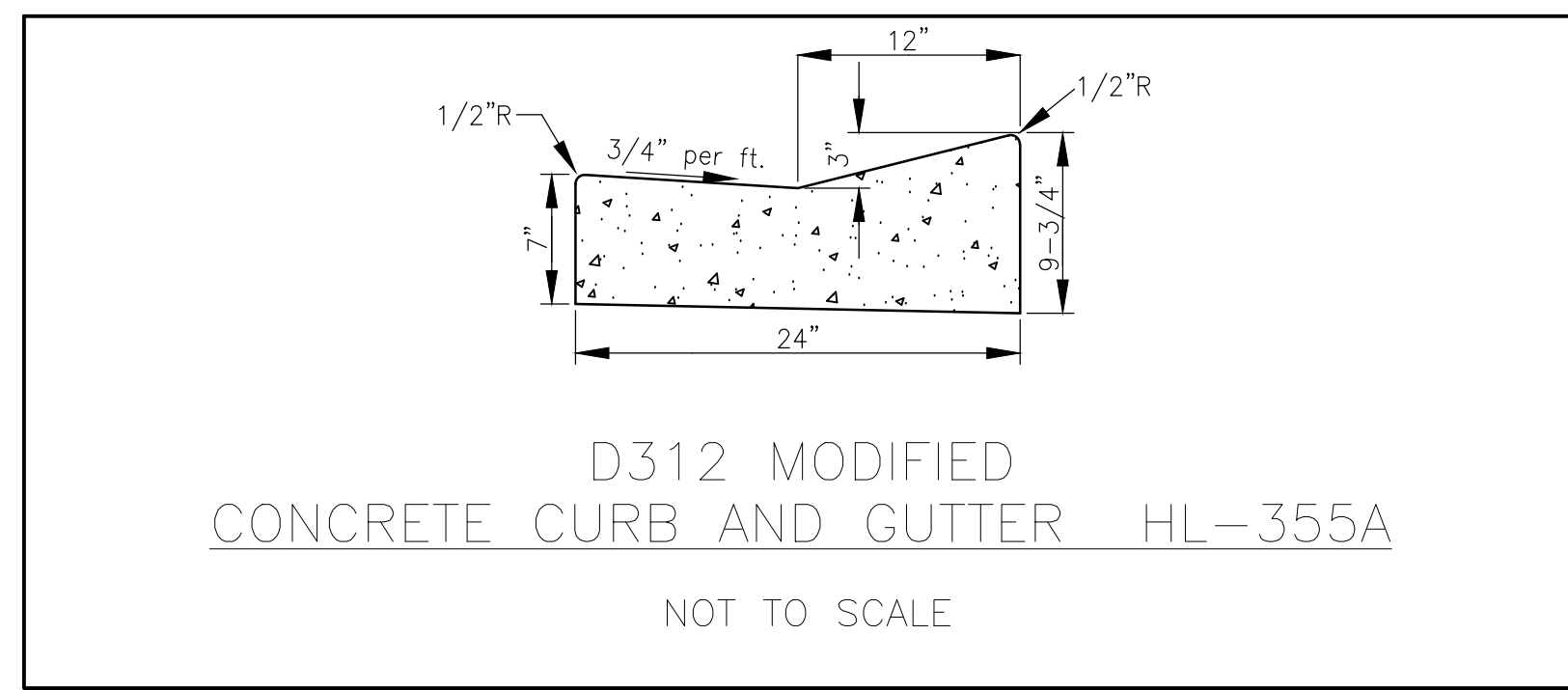
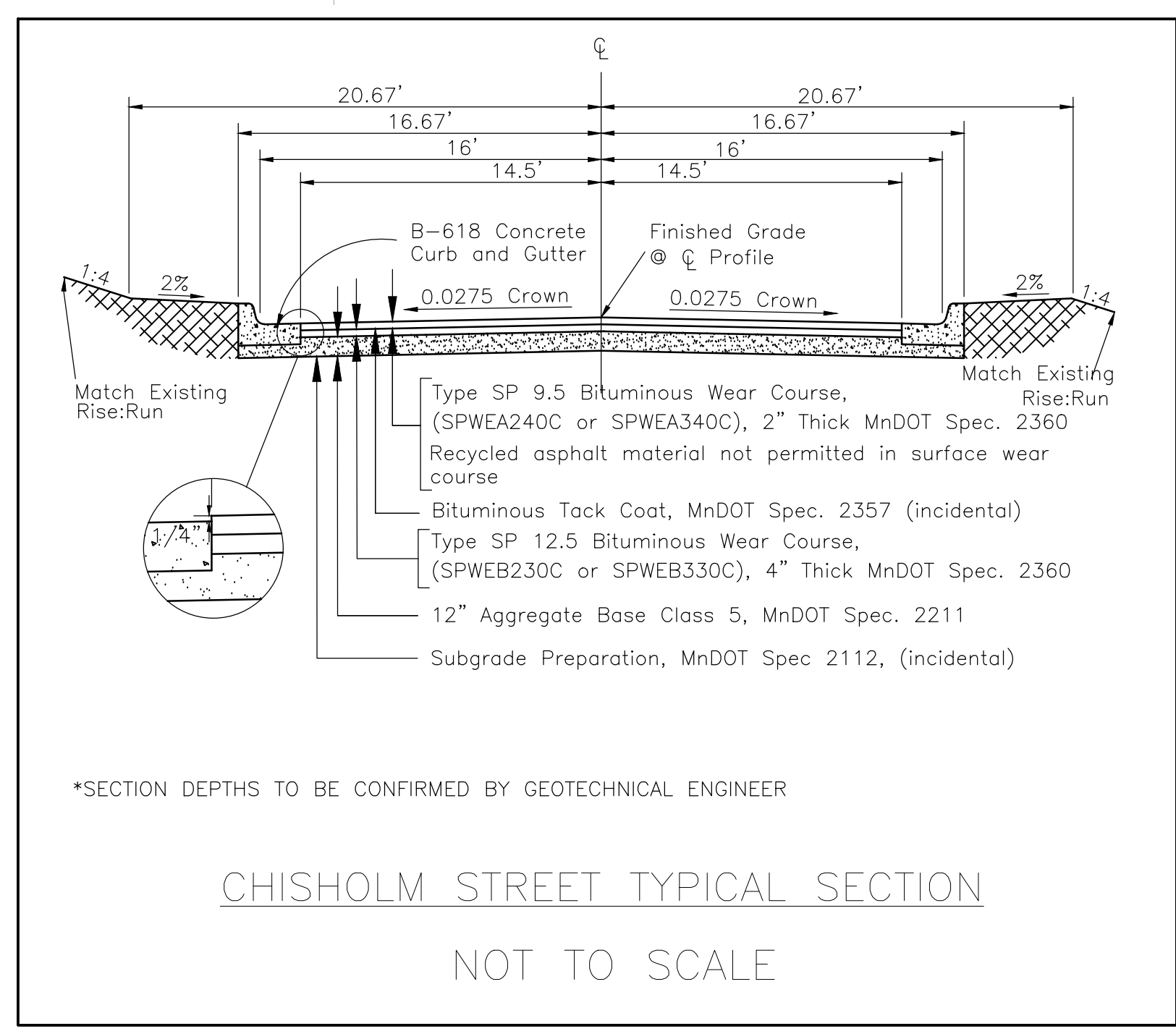
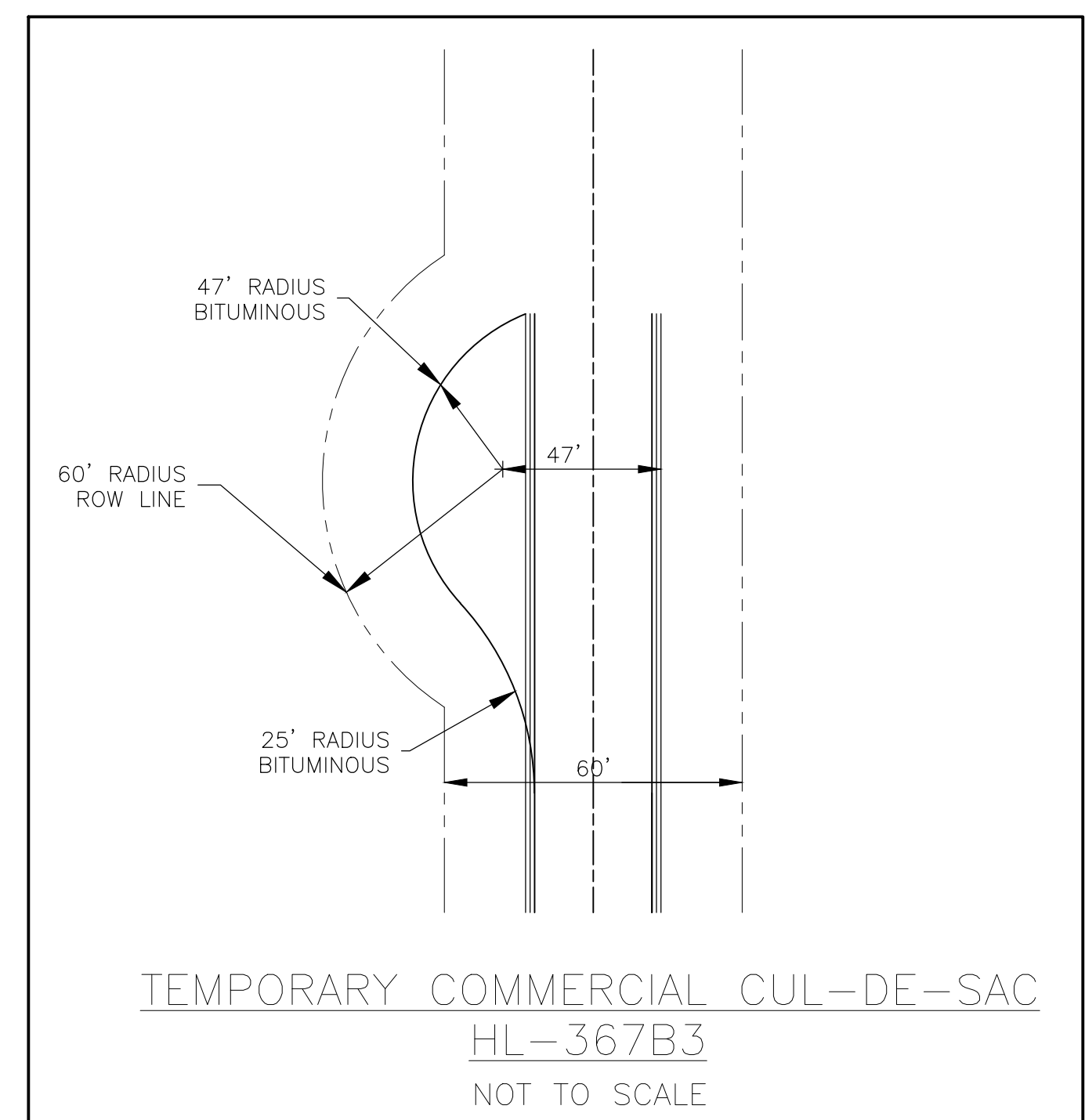
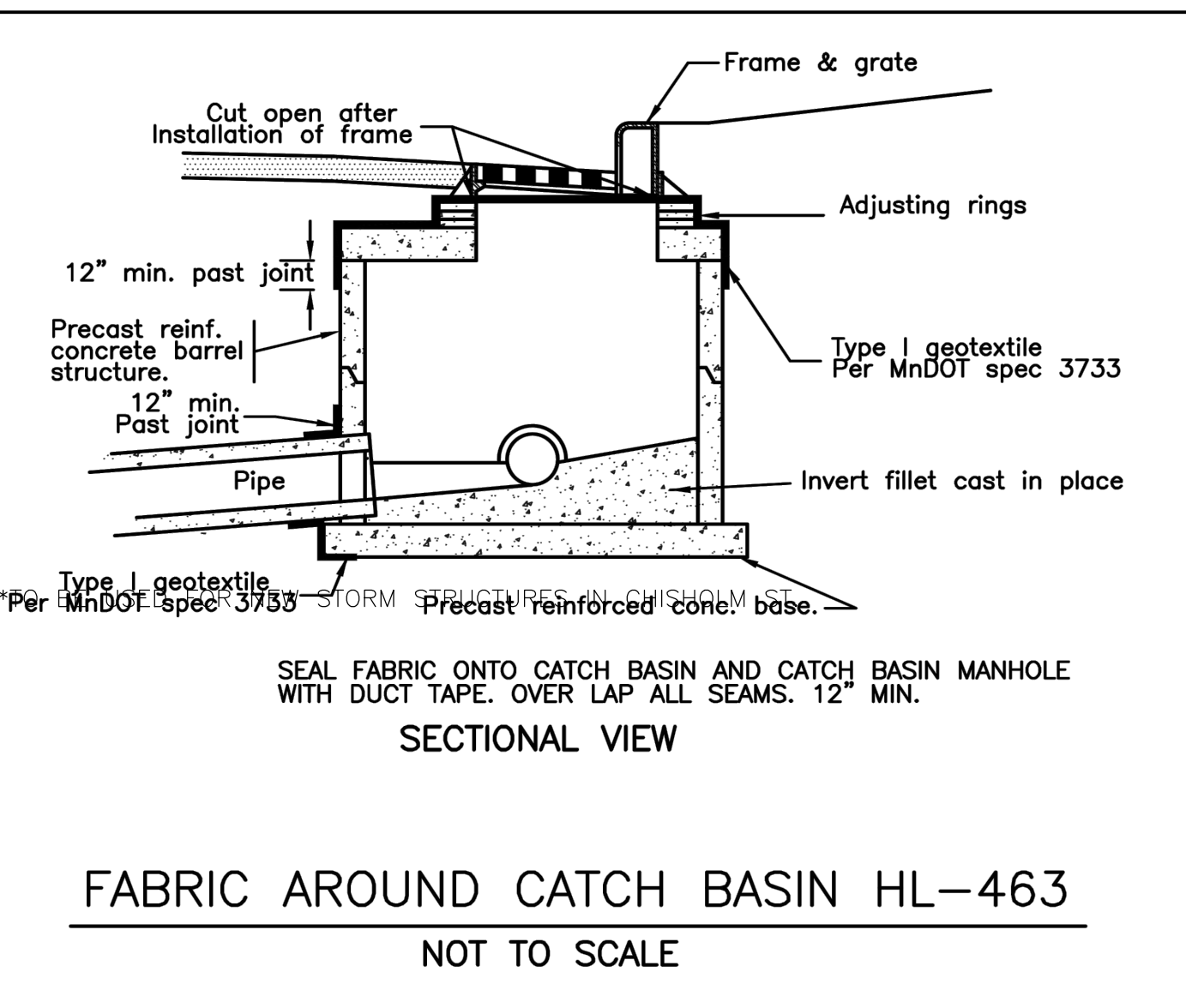
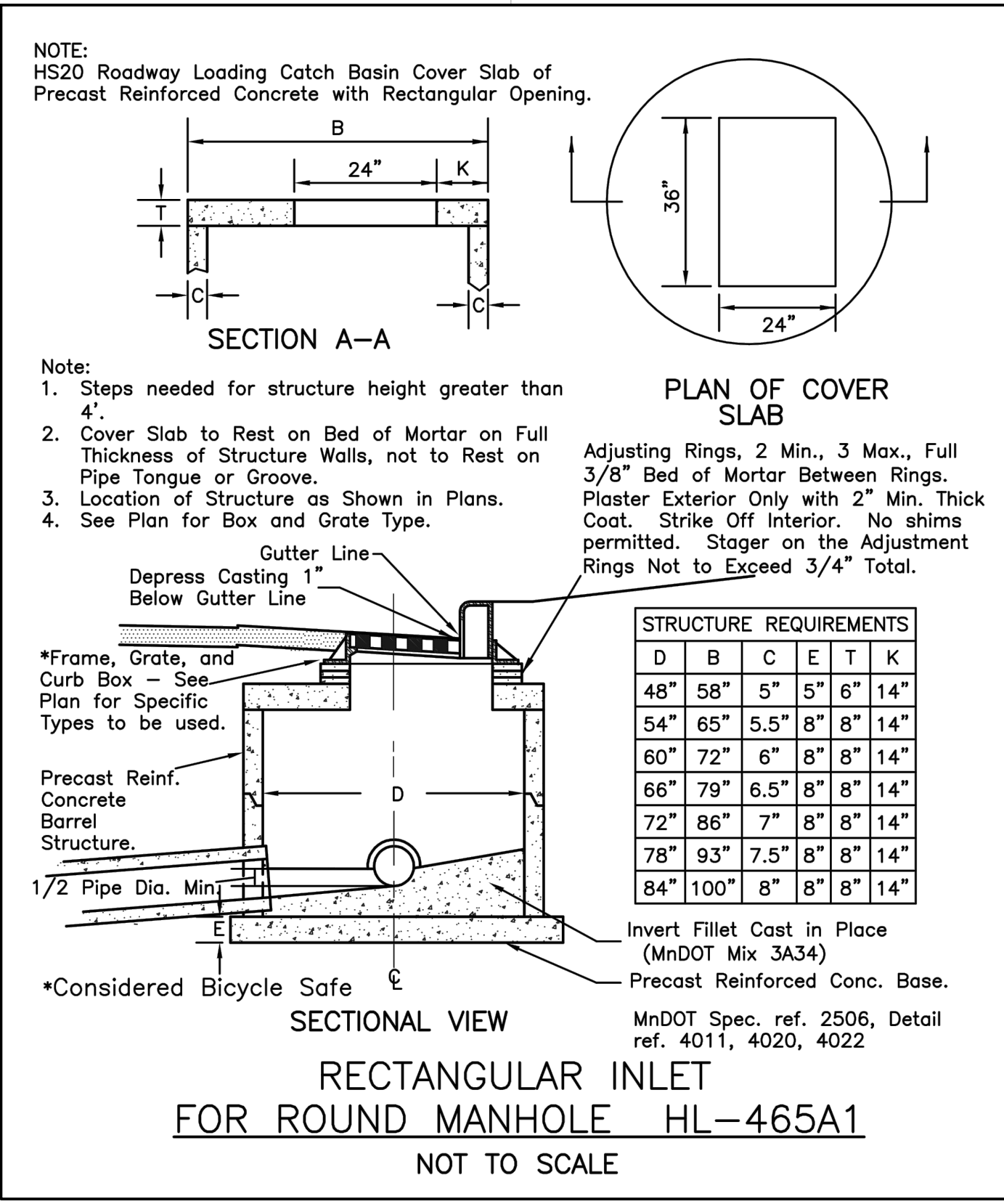
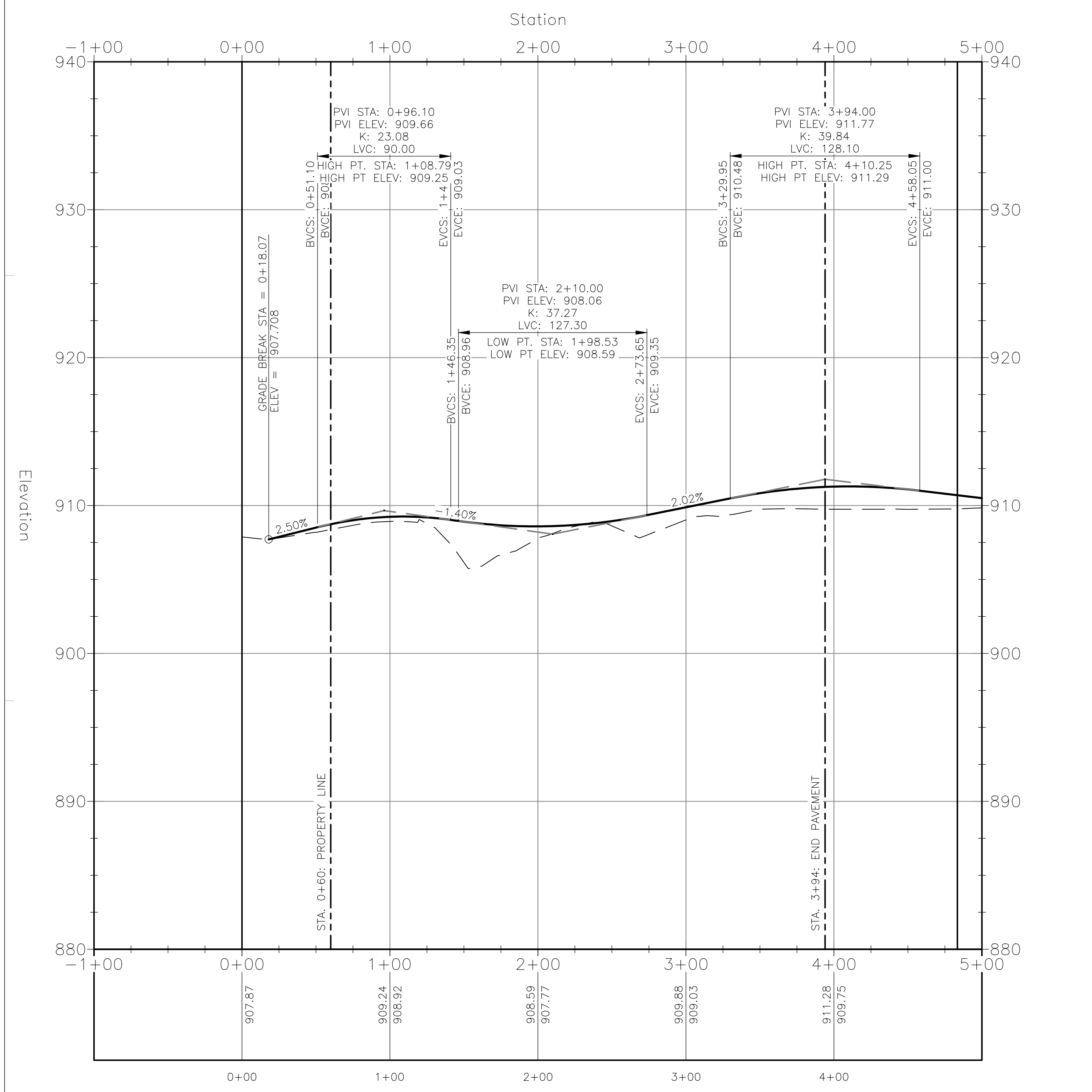
SHEET NUMBER

P1

INSITES INC



CHISHOLM STREET PROFILE



Sunde Engineering, PLLC
1080 N. 13TH AVENUE SOUTH
BLOOMINGTON, MN 55410
(612) 881-9191 FAX
www.sundeinc.com

07/29/20 SUBMITTAL
09/01/20 DOT REVIEW
09/16/20 CADD COMMENTS
10/20/20 COUNTY COMMENTS
12/22/20 CITY SUBMITTAL
02/24/21 CITY COMMENTS

PROFESSIONAL SEAL

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.

Brian H. Magstock
License #: 23468
Date: 02-24-2021

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME
CIRCLE K STORES INC.

HAM LAKE MINNESOTA

**1442 CROSTOWN BLVD NE
HAM LAKE, MN**

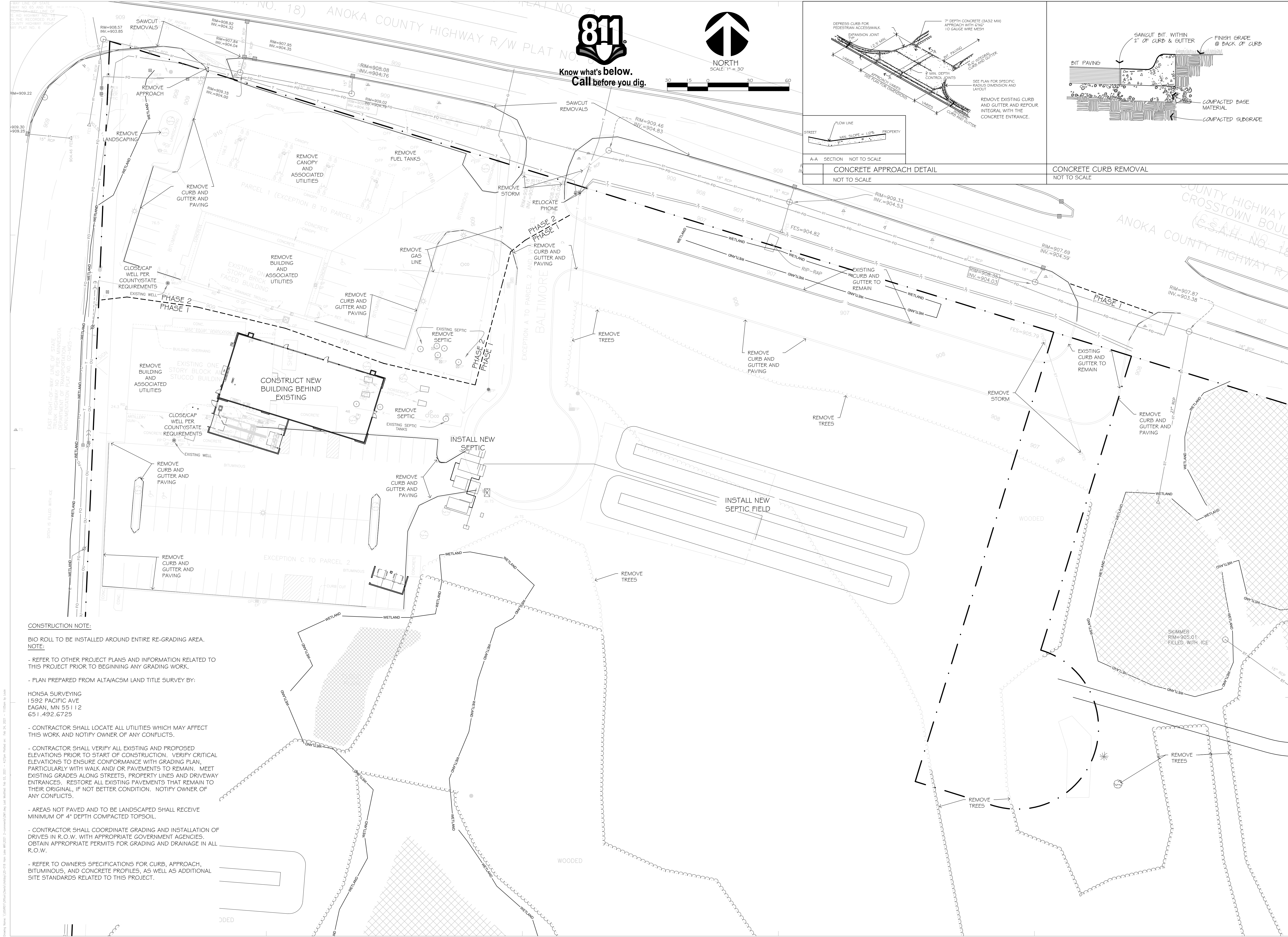
CIRCLE K STORES INC.

PROJECT NUMBER
20-018

SHEET TITLE
CHISHOLM STREET PLAN AND PROFILE

SHEET NUMBER
P2

INSITES INC.



CONSTRUCTION NOTE:

BIO ROLL TO BE INSTALLED AROUND ENTIRE RE-GRADING AREA.
NOTE:

- REFER TO OTHER PROJECT PLANS AND INFORMATION RELATED TO THIS PROJECT PRIOR TO BEGINNING ANY GRADING WORK.
- PLAN PREPARED FROM ALTA/ACSM LAND TITLE SURVEY BY:

HONSA SURVEYING
1592 PACIFIC AVE
EAGAN, MN 55112
651.492.6725

- CONTRACTOR SHALL LOCATE ALL UTILITIES WHICH MAY AFFECT THIS WORK AND NOTIFY OWNER OF ANY CONFLICTS.

- CONTRACTOR SHALL VERIFY ALL EXISTING AND PROPOSED ELEVATIONS PRIOR TO START OF CONSTRUCTION. VERIFY CRITICAL ELEVATIONS TO ENSURE CONFORMANCE WITH GRADING PLAN, PARTICULARLY WITH WALK AND/ OR PAVEMENTS TO REMAIN. MEET EXISTING GRADES ALONG STREETS, PROPERTY LINES AND DRIVEWAY ENTRANCES. RESTORE ALL EXISTING PAVEMENTS THAT REMAIN TO THEIR ORIGINAL, IF NOT BETTER CONDITION. NOTIFY OWNER OF ANY CONFLICTS.

- AREAS NOT PAVED AND TO BE LANDSCAPED SHALL RECEIVE MINIMUM OF 4" DEPTH COMPACTED TOPSOIL.

- CONTRACTOR SHALL COORDINATE GRADING AND INSTALLATION OF DRIVES IN R.O.W. WITH APPROPRIATE GOVERNMENT AGENCIES. OBTAIN APPROPRIATE PERMITS FOR GRADING AND DRAINAGE IN ALL R.O.W.

- REFER TO OWNER'S SPECIFICATIONS FOR CURB, APPROACH, BITUMINOUS, AND CONCRETE PROFILES, AS WELL AS ADDITIONAL SITE STANDARDS RELATED TO THIS PROJECT.

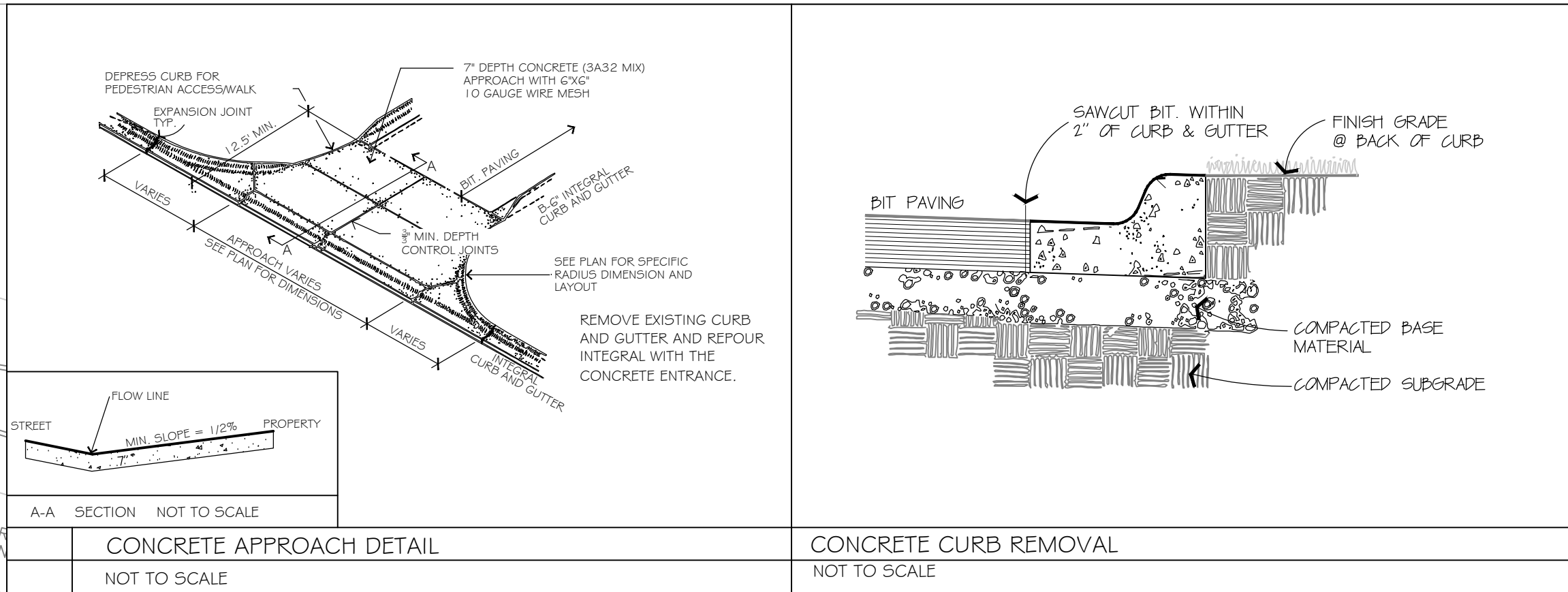


Know what's below.
Call before you dig.



NORTH

SCALE: 1" = 30'



| | |
|----------|-----------------|
| 07/29/20 | SUBMITAL |
| 09/01/20 | DOT REVIEW |
| 09/16/20 | CMD COMMENTS |
| 10/20/20 | COUNTY COMMENTS |
| 12/22/20 | CITY SUBMITAL |
| 02/24/21 | CITY COMMENTS |

PROFESSIONAL SEAL

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 Landscape Architect under the laws of the State of Minnesota.

Signature: [Signature]
Date: 01/19/2021
Reg. No. 19306

License #: 19306

Date: 01-19-2021

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

CIRCLE K
STORES INC.

HAM LAKE
MINNESOTA

1442
CROSSTOWN BLVD NE
HAM LAKE, MN



CIRCLE K STORES INC.

PROJECT NUMBER
20-018

SHEET TITLE

DEMO
PLAN

SHEET NUMBER

DM1

INSITES INC.



SITE ZONING

SITE DATA

ZONING

subject property lies in 3 zoning districts
Zoned Commercial Development Tier 1 (CDT1)
Zoned Commercial Development Tier 2 (CDT2)
Zoned Single Family Residential (R-1)

LOT COVERAGE AREA

Parcel "1"
Property contains 48,982 SF or 1.12 Acres
Parcel "2"
Property contains 1,065,764 SF or 24.47 Acres
VFW Parcel
Property contains 86,168 SF or 1.98 Acres
BUILDING w/CAR WASH 7,108 SF
PARKING/PAVED AREA 157,790 SF
TOTAL IMPERVIOUS WITHIN LOT LINES 164,898 SF (3.79 AC)
TOTAL GREEN SPACE WITHIN LOT LINES 1,036,016 (23.78 AC)
TOTAL SITE AREA 1,200,914 SF (27.57 AC)

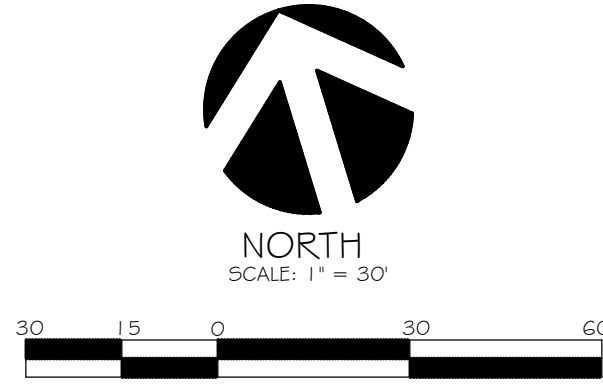
ZONING:

THE SUBJECT PROPERTY LIES IN THREE DIFFERENT ZONING DISTRICTS

ZONED COMMERCIAL DEVELOPMENT TIER 1 (CDT1)

ZONED COMMERCIAL DEVELOPMENT TIER 2 (CDT2)

ZONED SINGLE FAMILY RESIDENTIAL (R-1)

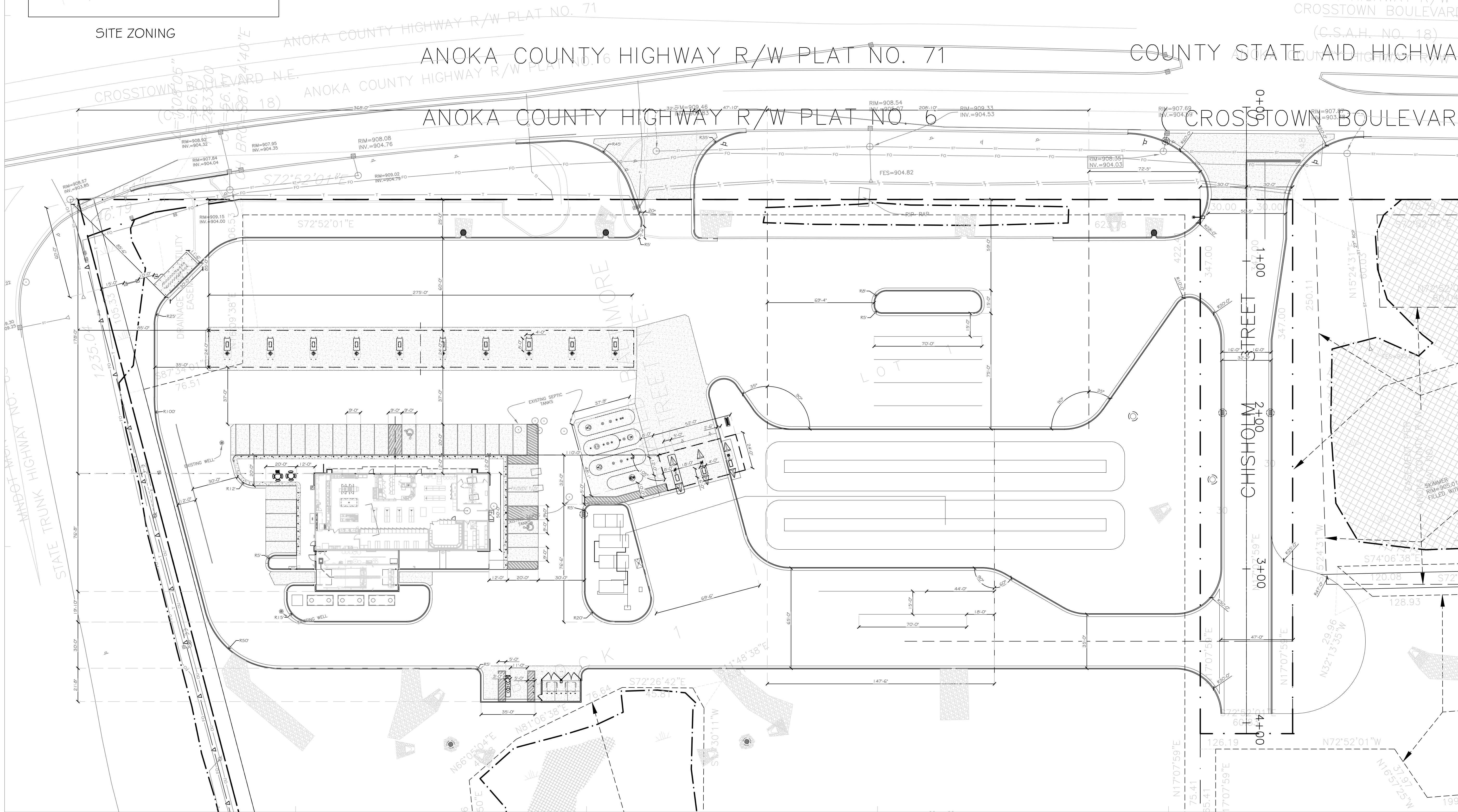


CONSTRUCTION NOTE:

Construction fencing to be installed around entire construction site. Coordinate with owner for fencing and gate locations and appropriate signage installation.

LAYOUT NOTES:

1. PLAN PREPARED FROM AN ALTA/ACSM LAND TITLE SURVEY BY:
HONSA SURVEYING
1592 PACIFIC AVE, EAGAN, MN 55122
651.492.6725
2. CURBS ARE DIMENSIONED TO FACE OF CURB.
3. CONVENIENCE STORE AND ISLAND COMPLEXES ARE LOCATED FROM THE NORTH NORTH-WEST PROPERTY CORNER AND ALIGNED PARALLEL PERPENDICULAR TO THE NORTH EAST PROPERTY LINE UNLESS OTHERWISE INDICATED ON THIS PLAN.
4. UNLESS SHOWN OTHERWISE ON THIS DRAWING, CONTRACTOR SHALL PROVIDE CONTROL JOINTS, CONSTRUCTION JOINTS, AND EXPANSION JOINTS IN SLAB ON GRADE, SIDEWALKS AND DRIVES.
CONTROL JOINT MAXIMUM DISTANCE: WALKS- 8' O.C., ALL OTHERS- 10' O.C. SAW CUT CONTROL JOINTS MINIMUM ONE-QUARTER CONCRETE THICKNESS.
EXPANSION JOINT MAXIMUM DISTANCE: WALKS- 24' O.C., ALL OTHERS- 40' O.C. DOWEL ALL EXPANSION JOINTS- MAXIMUM 24" O.C.
5. CONCRETE IN ISLAND COMPLEX SHALL BE SMOOTH BROOM FINISHED.
6. EXTERIOR CONCRETE SURFACES TO BE SEALED. CONCRETE SEALER:
APR 15- OCT 31 USE: TK-26UV
NOV 1- DEC 31 USE: TK-290
7. EXPANSION JOINTS SHALL BE DECK-O-FOAMED AND CAULKED WITH SLI



INSITES
SITE PLANNING LANDSCAPE ARCHITECTURE
3131 Fernbrook Lane No 55
Plymouth, Minnesota 55442
763.383.8400
763.383.8440

| | |
|----------|-----------------|
| 07/29/20 | SUBMITTAL |
| 09/01/20 | DOT REVIEW |
| 09/16/20 | CMD COMMENTS |
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| 02/24/21 | CITY COMMENTS |

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Sign: [Signature]
Date: 03/09/21 Reg. No. 19306

License #: 19306

Date: 01-19-2021

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

CIRCLE K STORES INC.

HAM LAKE MINNESOTA

1442 CROSSTOWN BLVD NE HAM LAKE, MN



CIRCLE K STORES INC.

PROJECT NUMBER
20-018

SHEET TITLE

SITE DIMENSION PLAN

SHEET NUMBER

SP1.0

INSITES INC.



SITE ZONING

SITE DATA

ZONING

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Zoned Commercial Development Tier 1 (CDT1)
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Zoned Single Family Residential (R-1)

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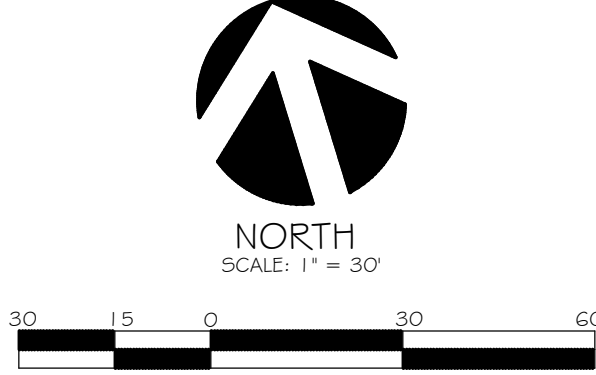
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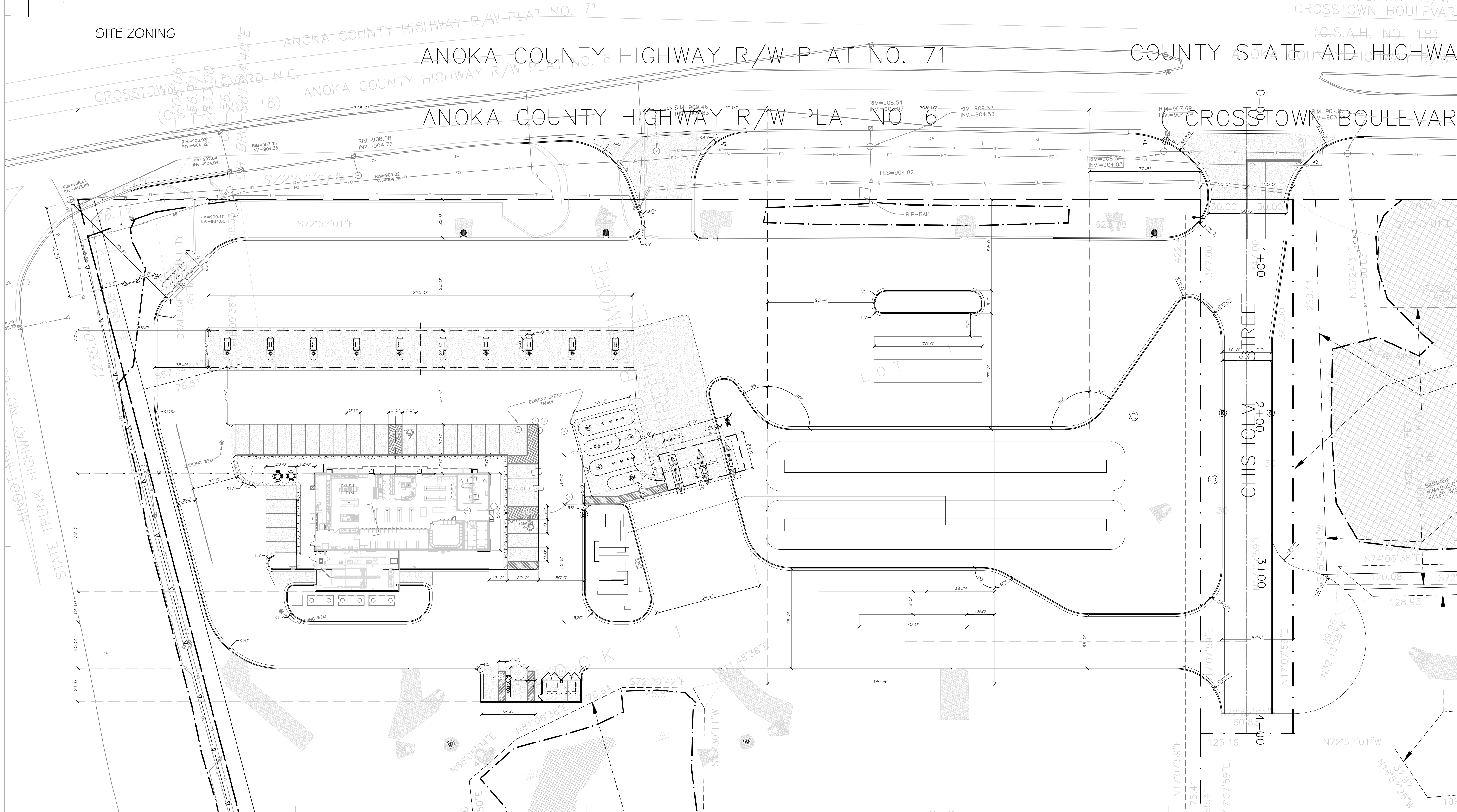


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INSITES
SITE PLANNING LANDSCAPE
ARCHITECTURE
3131 Fernbrook Lane No
rth, Suite 260
Plymouth, Minnesota 55
763.483.8400
763.783.3838x400

| | |
|----------|-----------------|
| 07/29/20 | SUBMITAL |
| 09/01/20 | DOT REVIEW |
| 09/16/20 | CCWD COMMENTS |
| 10/20/20 | COUNTY COMMENTS |
| 12/22/20 | CITY SUBMITAL |
| 02/24/21 | CITY COMMENTS |

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License #: 19306

Date: 01-19-2021

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

**CIRCLE K
STORES INC.**

**HAM LAKE
MINNESOTA**

**1442
CROSSTOWN BLVD NE
HAM LAKE, MN**



CIRCLE K STORES INC.

PROJECT NUMBER
20-018

SHEET TITLE

**SITE
DIMENSION
PLAN**

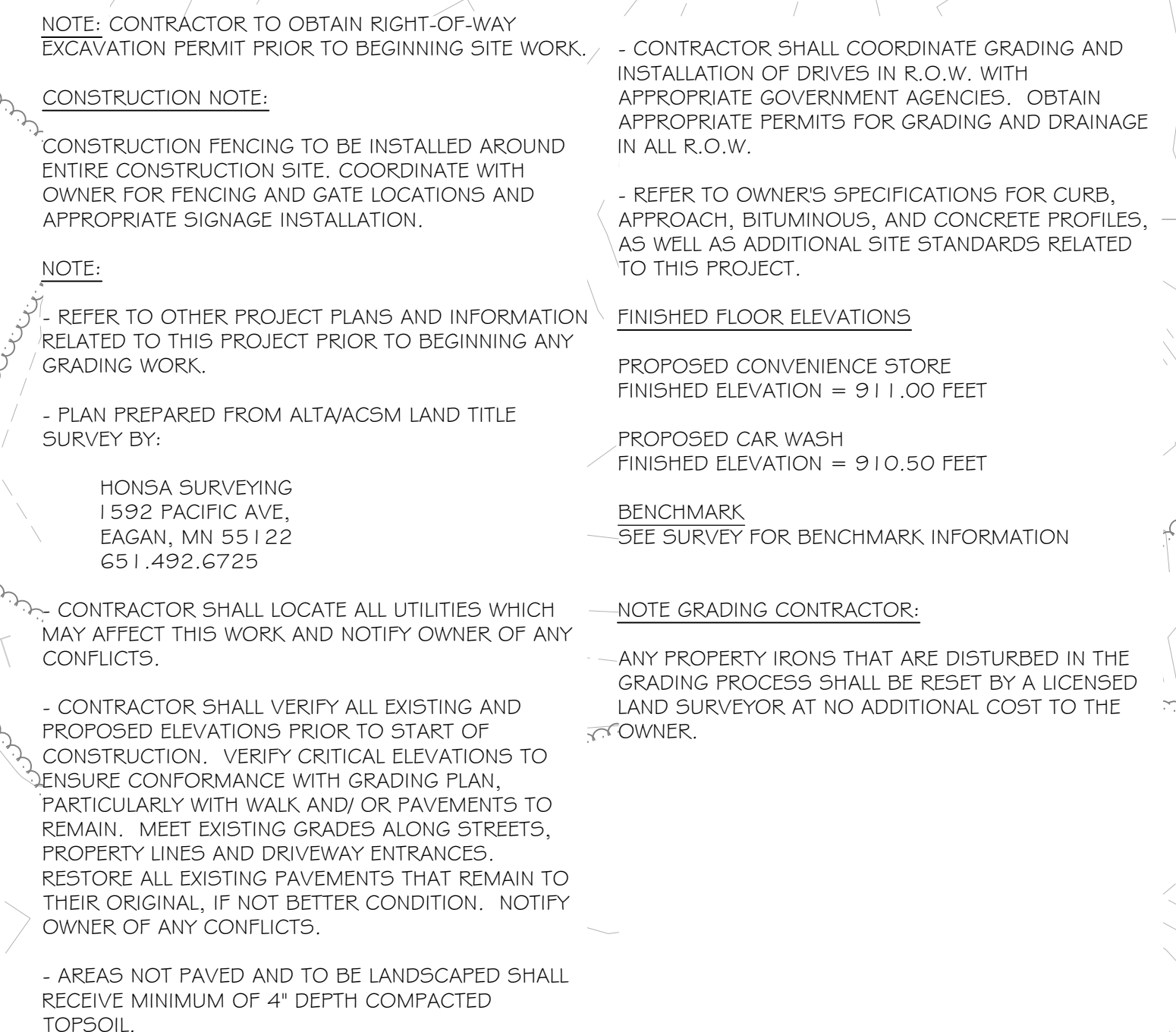
SHEET NUMBER

SP1.0

INSITES INC.

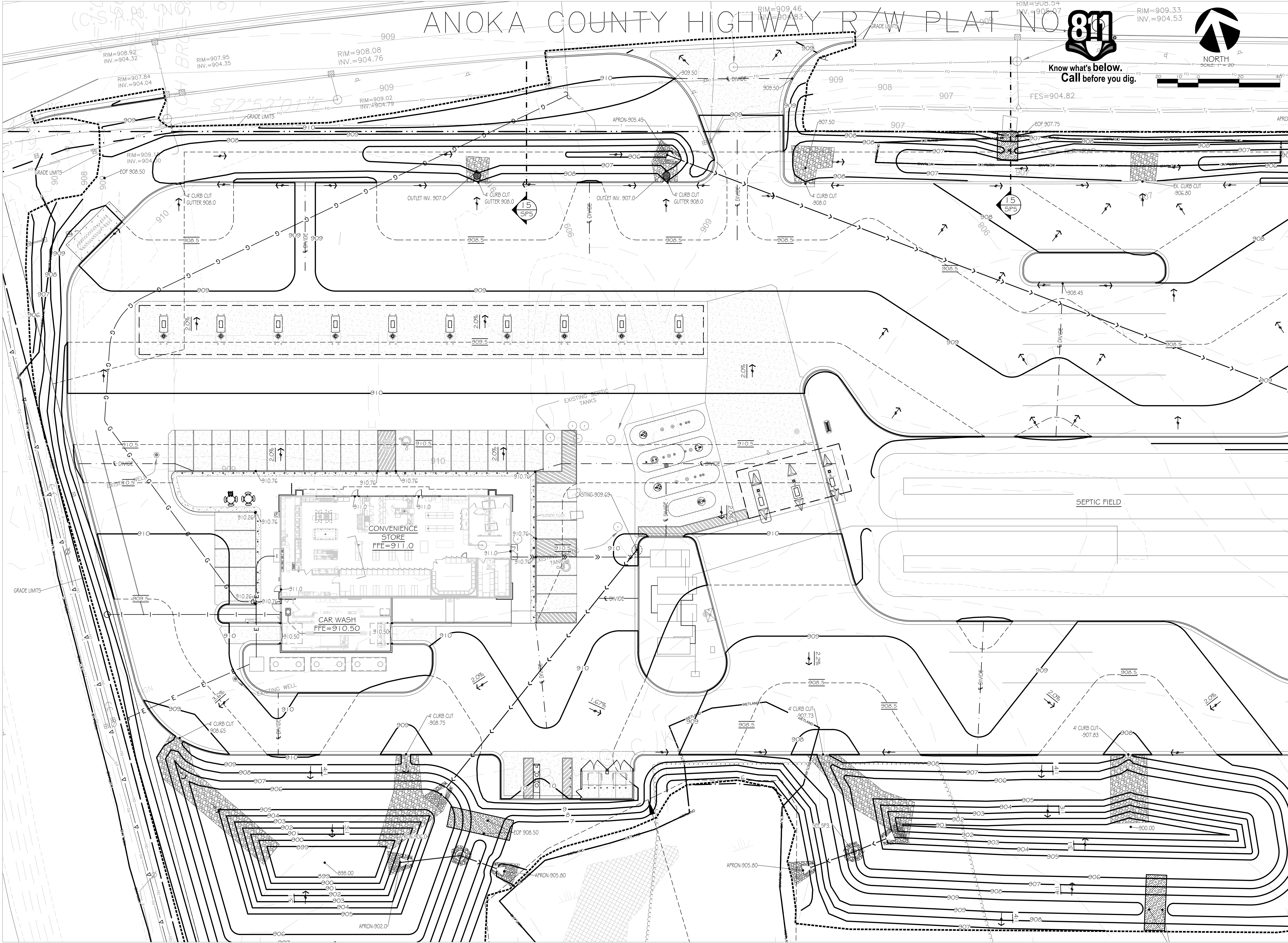
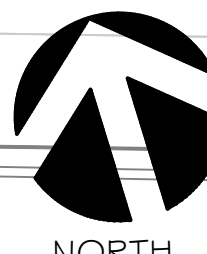


CROSS TOWN BOULEVARD N.I.



INSITES INC

ANOKA COUNTY HIGHWAY R/W PLAT NO. 811



811
Know what's below.
Call before you dig.

PLAN
ARCHITECTURE
3131 Fernbrook Lane No
rth, Suite 260
Plymouth, Minnesota 55
763.483.8400
Fax 763.383.8440

| | |
|----------|-----------------|
| 07/29/20 | SUBMITAL |
| 09/01/20 | DOT REVIEW |
| 09/16/20 | CCWD COMMENTS |
| 10/20/20 | COUNTY COMMENTS |
| 12/22/20 | CITY SUBMITAL |
| 02/24/21 | CITY COMMENTS |

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Signature: [Signature]
Date: 01-19-2021 Reg. No. 19306

License #: 19306
Date: 01-19-2021

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PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME
**CIRCLE K
STORES INC.**

**HAM LAKE
MINNESOTA**

1442
CROSTOWN BLVD NE
HAM LAKE, MN




PROJECT NUMBER
20-018

SHEET TITLE

**GRADE
PLAN**

SHEET NUMBER
SP2.1

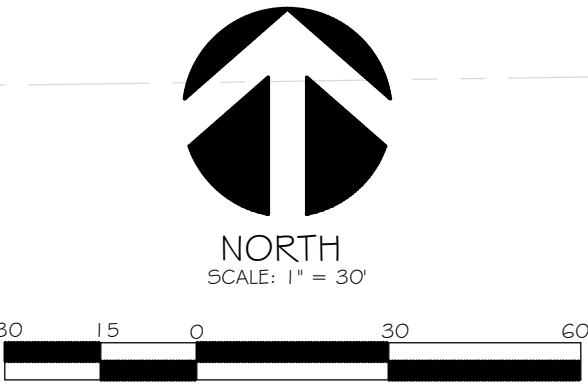
INSITES INC.



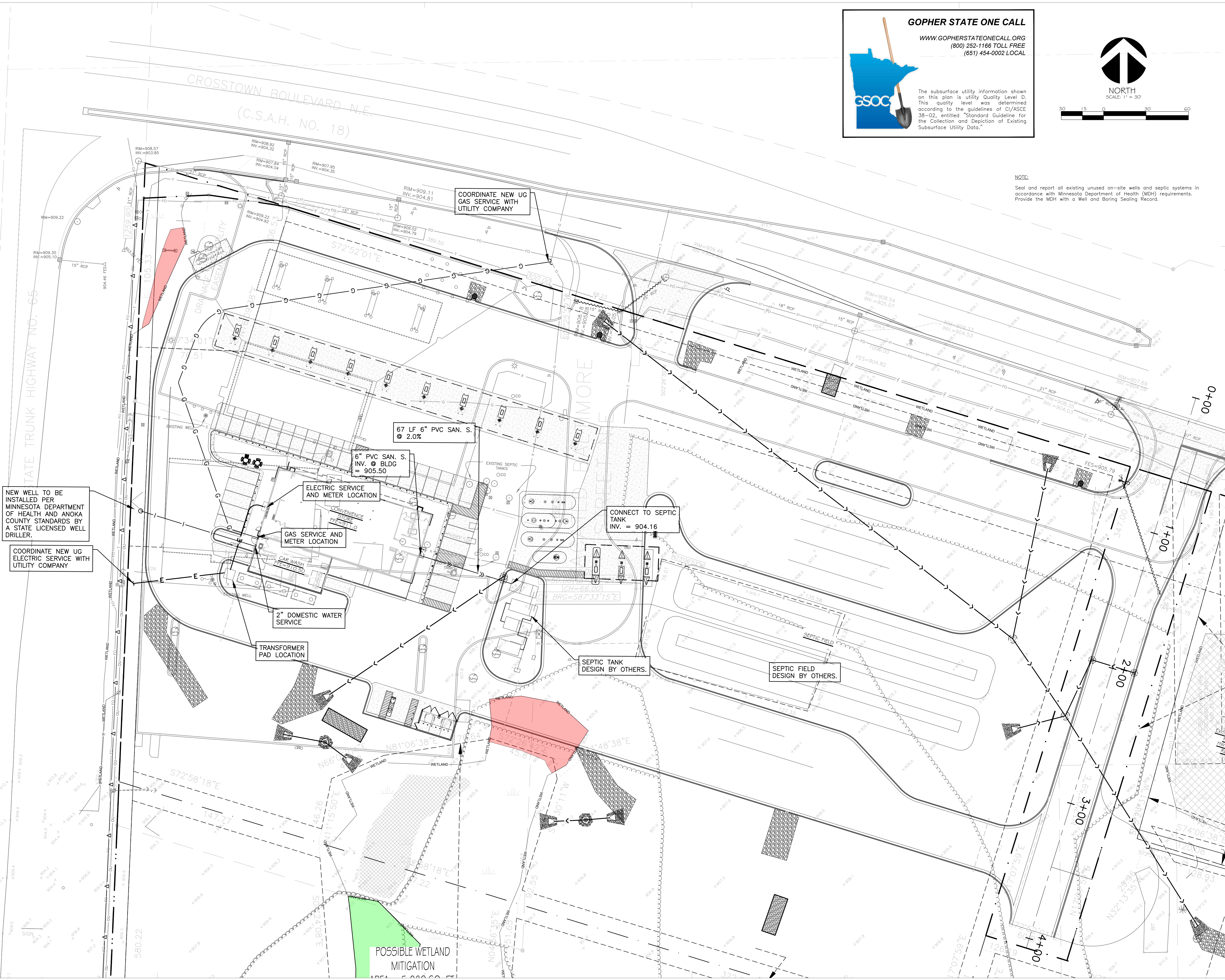
Gopher State One Call

www.gopherstateonecall.org
(800) 252-1166 TOLL FREE
(651) 454-0002 LOCAL

The subsurface utility information shown on this plan is utility Quality Level D. This quality level was determined according to the guidelines of G/ASCE 38-02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data."



NOTE:
Seal and report all existing unused on-site wells and septic systems in accordance with Minnesota Department of Health (MDH) requirements. Provide the MDH with a Well and Boring Sealing Record.



SUNDE ENGINEERING, PLLC
10809 NESBITT AVENUE SOUTH
BLOOMINGTON, MN 55425
(952) 881-3344 TELEPHONE
(952) 881-9193 FAX
www.sundebor.com



07/29/20 SUBMITTAL

09/01/20 DOT REVIEW

09/16/20 COWD COMMENTS

10/20/20 COUNTY COMMENTS

12/22/20 CITY SUBMITTAL

02/24/21 CITY COMMENTS

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Brian H. Mandatock
License #: 23468
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PROJECT MANAGER
QUALITY CONTROL
DRAWN BY

PROJECT NAME
CIRCLE K STORES INC.
HAM LAKE MINNESOTA
1442 CROSSTOWN BLVD NE HAM LAKE, MN


CIRCLE K STORES INC.
PROJECT NUMBER
20-018
SHEET TITLE
UTILITY PLAN
SHEET NUMBER
SP4

INSITES INC.

GENERAL:

1. Existing boundary, location, topographic, and utility information shown on this plan is from a field survey by Honza Surveying, dated 7/14/2020. The Engineer is not responsible for inaccuracies related to the survey information.
2. Perform all construction work in accordance with State and Local requirements.
3. Perform all construction activity in accordance with the Minnesota Pollution Control Agency GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY issued August 1, 2018 and all subsequent amendments thereto.
4. Comply with all applicable local, state, and federal safety regulations. Comply with the work safety practices specified by the Occupational Safety and Health Administration (OSHA). OSHA prohibits entry into "confined spaces," such as manholes and inlets (see 29 CFR Section 1910.146), without undertaking certain specific practices and precautions. Bench marks shall be established and used prior to safety work, and stability for the placement of engineered fill. Perform excavations in accordance with the requirements of O.S.H.A., 29 CFR, Part 1926, Subpart P, Excavations. The Engineer is responsible for naming the "Competent individual" in accordance with CFR 1926.6. Sloping or benching for excavations greater than 20 feet deep must be approved by a registered professional engineer (www.osha.gov).
5. Safety is solely the responsibility of the Contractor, who is also solely responsible for the construction means, methods, techniques, sequences or procedures, and for safety precautions and programs in connection with the Work.
6. The Engineer shall not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work. The Engineer's review shall be limited to the adequacy of safety precautions or of any construction means, methods, techniques, sequences, or procedures.
7. Examine all local conditions at the site, and assume responsibility as to the grades, contours, and the location of the earth, existing conditions, and other items that may be encountered during excavation work above or below the existing grades. Review the drawings, specifications, and geotechnical report covering this work and become familiar with the anticipated site conditions.
8. Refer to the architectural plans for building and stoop dimensions, site layout and dimensions, pavement sections and details, striping, and other site features.
9. A licensed surveyor shall perform construction staking. The Contractor shall provide and be responsible for the staking. Verify all plan and detail dimensions prior to construction. The staking shall include, but not be limited to, prior to valvebox, maintenance hole, and catchbasin installation. Adjust valvebox and maintenance hole locations in order to avoid conflicts with curb and gutter. Adjust catchbasin locations in order to align properly with curb and gutter.
10. Provide temporary fences, barricades, coverings, and other protections in order to preserve existing items to remain, and to prevent injury or damage to person or property.
11. Provide all traffic control and associated government approval and responsibility of the Contractor. Comply with local authorities and the latest version of the *Minnesota Manual on Uniform Traffic Control Devices* (MMUTCD), including the *Field Manual for Temporary Traffic Control Zone Layouts*. If the temporary traffic control zone affects the travel of vehicles, the Contractor shall be responsible for the design, installation, and walkways. If the temporary traffic control zone affects an accessible and detectable pedestrian facility, maintain accessibility and detectability along the alternate pedestrian route in accordance with the provisions for pedestrian and worker safety contained in Part 6 of the MMUTCD.
12. Connect to existing sanitary sewer MHs by coredrilling. Connect to existing storm sewer by trenching. Use approved methods to install saws or drills that provide water to the blade. Meet all City standards and specifications for the connection. Reconstruct inverts after installation. Use water stop gaskets in order to provide watertight seals when penetrating a structure wall with a pipe. Take measurements before installing connection to ensure that drainage and cover do not cut into maintenance access structure joints or pipe barrel joints.
13. Completely remove existing concrete and masonry structures that are located within the proposed building and future building expansion areas. All other existing sewer and watermain pipes that are to be abandoned shall either be removed, or completely filled with sand or controlled low strength material (CLSM) also known as flowable fill. Backfill and compact all excavations to meet the requirements of concrete and concrete. All other existing sanitary sewer and storm sewer structures that are to be abandoned in place shall be abandoned as follows: (1) remove castings, rings, and top sections, (2) bulkhead any pipe openings, (3) break two 4-inch diameter holes in the structure wall, (4) fill the structure with drainage and cover holes with geotextile filter fabric, and (4) fill the structures with sand or CLSM.
14. **Testing and Inspections:** All plumbing installations, including water and sewer services, must be tested and inspected in accordance with the requirements of the Minnesota Plumbing Code (Minnesota Rules Chapter 4714). Coordinate testing and inspection with the State Health Department and the City Public Works Department. No drainage or plumbing work may be covered prior to completing the required tests and inspections.
15. Coordinate building utility connection locations at 2 ft. out from the proposed building exterior. Coordinate with the Mechanical Engineer prior to construction. Verify water and sewer service locations, sizes, and elevations with the Mechanical Engineer prior to construction. Coordinate construction and connections with the Mechanical Contractor.
16. The subsurface utility information shown on this plan is utility Quality Level D. This quality level was determined according to the guidelines of C/ASCE 38-02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" by the FHA.
17. The locations of existing utilities shown on this plan are from record information. The Engineer does not guarantee that all existing utilities are shown or, if shown, exist in the locations indicated. The Contractor shall be responsible for the location of utilities in the final vertical and horizontal location of all existing utilities (including water and sewer lines and appurtenances). Notify the Engineer of any discrepancies.
18. The Contractor is solely responsible for all utility locates. Contact utility companies for locations of all public and private utilities within the work area prior to beginning construction. Contact GOPHER STATE ONE CALL at (651) 454-0002 in the Minneapolis/St. Paul metro area, or 1-800-252-1166 elsewhere in Minnesota for locates of all public and private utilities. Obtain ticket number and meet with representatives of all public utilities prior to beginning construction. Coordinate new gas meter and gas line installation, electric meter and electric service installation, cable service, and telephone service installation with the local utility companies.
19. When working near existing telephone or electric poles, brace the poles for support. When working around existing underground utilities that become exposed, provide adequate support. Do not use any equipment or method that could cause a fire. The location and preservation of existing underground utilities is solely the responsibility of the Contractor.
20. Temporary support systems are the responsibility of the Contractor, who is also solely responsible for the construction means, methods, techniques, sequences or procedures, and for safety precautions and programs in connection with the temporary support systems. Temporary support systems shall include, but not be limited to, trench shoring, sheeting, bracing, anchorages, excavation support walls, directional boring, auger jacking, soil stabilization, and other methods of protecting existing improvements.
21. Arrange for and secure suitable disposal areas off-site. Dispose of all excess soil, waste material, debris, and all materials not designated for salvage. Waste material and debris includes trees, stumps, pipe, concrete, asphaltic concrete, cans, or other materials not suitable for reuse. The Contractor shall be responsible for the disposal of unsuitable or surplus material either shown or not shown on the plans. All work in disposing of such material shall be considered incidental to the work. All disposal must conform to applicable solid waste disposal permit regulations. Obtain all necessary permits at no cost to the Owner.
22. Store and protect existing site features that need to be removed and replaced in connection with the Work. Replace damaged or stolen site features at no additional cost to the Owner.
23. Straight line saw-cut existing bituminous or concrete surfacing at the perimeter of pavement removal areas. Use saws that provide water to the blade. Do not allow the slurry produced by this process to be tracked outside of the immediate work area or discharged into the sewer system. Tack and match all connections to existing bituminous pavement.
24. Relocate overhead power, telephone, and cable lines as required. Seal and report any damaged underground water and electric systems in accordance with the Minnesota Department of Health (MDH) requirements. Provide the MDH with a Well and Boring Sealing Record, or certify in writing that there are no unused wells on the property.

- All materials required for this work shall be new material conforming to the requirements for class, kind, grade, size, quality, and other details specified herein or as shown on the Plans. Do not use old materials. Do not use old asphalt, old pavement, crushed concrete, or scrap shingles. Unless otherwise indicated, the Contractor shall furnish all required materials and labor in order to perform the construction in accordance with the construction documents, specifications, and regulatory agencies.
28. Reconstruct driveways and patch street to match existing pavement section and grade. Seal all edges of new work. Right-of-way temporary construction topsoil as required at joints between existing and new turf in order to allow the surface of the new sod to be flush with the existing.
 29. Cut turf edges in order to allow for a uniform straight edge at locations where new sod is installed. The edges of new sod and uneven edges are allowed. Remove topsoil as required at joints between existing and new turf in order to allow the surface of the new sod to be flush with the existing.
 30. Document existing conditions (photographs, video, field survey, etc.) in order to enable restoration to match existing conditions and in order to ensure that restored areas have positive drainage similar to existing conditions.
 31. Provide positive drainage away from buildings at all times. Provide and maintain temporary drainage throughout construction until the permanent drainage system and structures are in place and operational. Install temporary ditches, piping, pumps, or other devices as necessary in order to insure proper drainage at all times. Provide low points at building pods or roadways with positive outlets. Do not block drainage from or direct excess drainage to adjacent property.
 32. Protect all structures and landscaping not labeled for demolition from damage during construction. Provide protective coverings and enclosures as necessary to prevent damage to existing work that is to remain. Existing work to remain may include items such as trees, shrubs, lawns, sidewalks, drives, curbs, utilities, buildings and/or other structures on or adjacent to the site. Provide temporary fences and barricades as required for the safe and proper execution of the work and the protection of persons and property. Provide building surveys and seismic monitoring in locations where necessary for the safety and undisturbed pile driving. Seismic monitoring is to be performed adjacent to or in the vicinity of existing structures. Return any on-site or off-site areas disturbed directly or indirectly due to construction to a condition equal to or better than the existing condition.
 33. Protect sub grades from damage by surface water runoff.
 34. Full design strength is not available in bituminous pavement areas until the final lift of asphalt is compacted into place. Protect pavement areas from overloading by delivery trucks, construction equipment, and other vehicles.
 - When sawing or drilling concrete or masonry, use saws that provide water to the blade. Do not allow the slurry produced by this process to be tracked outside of the immediate work area or discharged into the sewer system.
 35. Adjust all pipe and private structures including curb steps, valve boxes, manhole hole castings, catchbasin castings, cleanout covers, and similar items to finished grade to comply with requirements for drainage. The structure owner. Structures being reset in paved areas must meet the owner's requirements for traffic loading.
 36. 2% maximum slope in all directions in handicapped accessible park sidewalks. 2% maximum cross slope and 5% maximum longitudinal slope on all parkways.
 37. Install all pipes with the ASTM identification numbers on the top for inspection. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the pipe end facing grade and end of the pipe pointing up grade. When connecting to an existing pipe, uncover the existing pipe in order to allow any adjustments in the proposed line and grade before laying any pipe. Do not lay pipes in water or when the trench conditions are unsuitable for such work.
 39. Obtain and pay for all permits, tests, inspections, etc. required by agencies that have jurisdiction over the project including the NPDES permit from the State. The Contractor is responsible for all boring and all of the pipe soiling or cash surities related to the work. Execute and inspect work in accordance with all local and state codes, rules, ordinances, or regulations pertaining to the particular type of work involved.
 40. Measure pipe lengths from center-of-structure to center-of-structure, or to the end of aprons.
 41. Obtain permits from the City for work in the public right-of-way.
 42. Refer to the geotechnical report by the Soils Engineer for dewatering requirements.
 43. Test boring data shown on the plans were accumulated for designing and estimating purposes. Their appearance on the plan does not constitute a guarantee that conditions other than those indicated will not be encountered.
 44. The minimum depth of cover for building and canopy roof drain leaders without insulation is 5 feet. Insulate roof drain leaders at locations where the depth of cover is less than 5 feet. The insulation must be at least 4 feet thick and centered on the pipe. The insulation must be at least 4 feet wide and centered on the pipe. Install the insulation boards 6 inches above the tops of the pipes on mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam HI-200 plastic foam insulation.
 45. Insulate utility lines at locations indicated on the plans. Provide a minimum insulation thickness of 4 inches. The insulation must be compacted into wide plans on mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam Highload 40 Polystyrene Insulation. Individual insulation board dimensions typically measure 4' wide by 8' long by 2" thick.
 46. Construct sanitary sewer, watermain, and storm sewer utilities in accordance with the City Engineer's Association of Minnesota Standard Specifications sections 2600, 2611, and 2621 dated 2013, or the latest revised edition.
 47. These plans, prepared by Sundt Engineering, PLLC., do not extend to or include systems pertaining to the safety of the construction contractor or its employees, agents, or representatives in the performance of the work. The seal of Sundt Engineering's registered professional engineer hereon does not extend to any such construction shall remain the responsibility of the contractor. The contractor and the construction contractor shall prepare or obtain the appropriate safety systems which may be required by U.S. Occupational Safety and Health Administration (OSHA) and/or local regulations.
 48. Existing utilities shown on this plan are located as accurately as possible. However, the Engineer does not guarantee that all utilities are shown, or if shown are in the exact locations indicated on the plan. It is the Contractor's responsibility to ascertain the exact vertical and horizontal locations of all existing utilities (including municipal water and sewer lines and appurtenances) and to notify the owners of the utilities a minimum of 48 working hours before starting construction in a given area, requesting location in the field, as exact as possible, of all utilities which may be affected by the construction.
 49. See architectural for building waterproofing and foundation drainage.
 50. Place #3 rebar at 3' on center in all 6" thick concrete pavement locations. Place #4 rebar at 3' on center in all 8" thick concrete pavement locations.
 51. Place #4 x 2'-0" tie bar at 3' on center in all concrete curb and gutter.
 52. Provide as-built in accordance with City and Watershed District requirements. Record as-built information as construction progresses or at appropriate construction intervals. The engineer will provide a non-applicable pavement marking map, and the contractor will invert elevations to maintenance holes, catchbasins, cleanouts, inlet and outlet pipes and valves, hydrants, and related structures. Location ties shall be to permanent landmarks or buildings.
 53. In order to document and verify acceptance for adequate storm water treatment, provide a post-construction as-built survey in accordance with City and Watershed District requirements for all storm water infrastructure. This as-built survey shall include, but is not limited to, locations, top, and invert elevations of maintenance holes, catchbasins, cleanouts; all basin/swale grades; pipe inlets, outlet pipes and structures; emergency overflows, orifices, weirs; pipe sizes; drainlet elevations and structures; storm tanks, infiltration or filtration basins; and any associated storm water infrastructure.
 54. Test reports required for project close-out include, but are not limited to: density test reports, bacteriological tests on the water system, pressure tests on the water system, leak tests on the sewer system, deflection tests on all HDPE pipe.
 55. **Removing Markings:** Markings that are no longer applicable for roadway conditions or restrictions and that might cause confusion for the road user shall be removed or obliterated to be unidentifiable as a marking as soon as practical. Pavement marking removal shall be accomplished by the use of a hand-applied method. The hand-applied obliteration method shall minimize pavement scarring. Painting over existing pavement markings with black paint or spraying with asphalt shall not be accepted as a substitute for removal or obliteration.
 56. Completely remove marking from locations shown on the plan in accordance with MNDOT Standard Specification Section 2102. Use one or a combination of air abrasion, sand blasting, grinding, or grinding. Prepare haul, and dispose of soil and remove accumulated sand or other materials. Collect, haul, and dispose of dust or residue from removals.

WATER DISTRIBUTION SYSTEM:

- Bring all site utilities to 2' outside of the building line with the exception of the water service. Enter water service into the building and up to the flange for the water meter. Do not install PVC water service pipe under or within any building, structure, or part thereof.
2. **Separation of Water and Sewer:** Construct sewer and water services in accordance with Minnesota Rules, part 4714.0721 and Uniform Plumbing Code (UPC) parts 720.0 and 721.0. Provide a minimum 12" separation at 10 feet between all water and sewer lines, including manholes, catch basins, storm sewer, sanitary sewer, drainline, or other potential sources for contamination. Measure the separation distance from the outer edge of the pipe to the outer edge of the contamination source (outer edge of structures, piping, etc.). At water and sewer crossings, the bottom of the water pipe is located within ten feet of the point of crossing must be at least 12-inches above the top of the sewer. When this is not feasible, the sewer pipe material must be approved for use inside of or within a building in accordance with the requirements of Minnesota Rules part 4714.0701 and UPC part 701.0. No joints or connections are allowed on the water line within 10-feet of the crossing.
3. **Watermain Depth:** Maintain 8-feet of cover over the top of the water lines to the finished grade. Verify elevation of proposed and existing water lines at all utility crossings. Install the water lines at greater depth in order to clear storm, sewer, sanitary sewers, or other utilities as required. Include costs to lower water lines in the base bid.
4. **Disinfection:** Disinfect all completed watermain in accordance with AWWA Standard C651. If the tablet or continuous feed methods are used, disinfect using with water that contains at least 50 ppm of available chlorine in accordance with Minnesota Rules, part 4714.0609 and UPC part 609.9. Do not use the tablet method on solvent-welded plastic or on sreweld-joint steel pipe because of the danger of fire or explosion from the reaction of the joint compounds with the calcium hypochlorite. Retain the treated water in the pipeline for at least 24 hours. Measure the chlorine residual at the end of the 24-hour period. The free chlorine residual must be at least 10 mg/L measured at any point in the line. Measurement of the chlorine concentration at regular intervals must be in accordance with Standard Methods, AWWA M-12, or using appropriate chlorine test kits.
5. **Testing:** Pressure test and perform bacteriological tests on all water lines under the supervision of the City Public Works Department. Notify the City at least 24 working hours prior to any testing. Pressure test the water system in accordance with the UPC part 609.4. Pressurize the waterline to a water pressure of 103-ksi (150-psi) gauge pressure (measured at the point of lowest elevation) by means of a pump connected to the pipe in a satisfactory manner. Do not add water to the watermain in order to maintain the required pressure during the waterline pressure testing. Minnesota Department of Labor and Industry: The test section of pipe shall withstand the test without leaking for a period of not less than 15 minutes. Minnesota Department of Health: The watermain shall be pressure tested at 150 psi for at least two hours with not more than a 2-psi pressure drop during the last hour of the test.
6. All water supply piping connected to municipal water main must have a 150 psi minimum pressure rating.
7. Copper tube for water services must comply with ASTM B88 and shall have a weight not less than Type L (in accordance with Minnesota Rules part 4714.0604 and UPC part 604.0).
8. Ductile iron pipe (DIP) water services must comply with AWWA C151/ANSI A21.51 or AWWA C115/ANSI A21.15 (See Minnesota Rules part 4714.0604 and UPC part 604.0). Use **Thickness Class 52** dip with push-on joints. Use petroleum resistant gaskets, Nitrile (NBR), or approved equal. Use only ANSI 304 stainless steel pipe for water services under or within any building, structure, or part thereof. The iron pipe shall be coated with a layer of arc-sprayed zinc per ISO 8179. The interior cement mortar lining shall be applied without asphalt seal coating. Polyethylene encasement is required on all ductile iron pipe. Use V-Bio Enhanced Polyethylene Encasement or approved equal.
9. Polyvinyl Chloride (PVC) Building Water Services must comply with ANSI D1785, ANSI D2241, or AWWA C900; pressure rated for water (See Minnesota Rules part 4714.0604 and UPC part 604.0). Do not install PVC water service pipe under or within any building, structure, or part thereof.
10. **Polyvinyl Chloride (PVC) Watermain:** Use AWWA C900 for all PVC watermain furnished with integral elastic resin bell and spigot joints; minimum pressure Class 150; dimension ratio not greater than 18; and tested to 20 feet of water head. The watermain may be installed in accordance with the requirements on C900 PVC watermain. Use only ANSI 304 stainless steel bolts and nuts on all watermain fittings, valves, and hydrants.
11. Use mechanical joint restraint devices for joint restraint on all watermain bends having a vertical or horizontal deflection of 22-1/2 degrees or greater, all valves, stubs, extensions, tees, crosses, plugs, all hydrant valves, and all hydrants in accordance with City requirements. Use "Series 1100 Megalug" deflected by 22 degrees by the Iron Industries, Inc. of Grand Rapids, Texas or approved equal, installed in accordance with manufacturer's recommendations for restraint on Ductile Iron Pipes. Restraining devices are to have epoxy coating or approved equivalent. Restraining device hardware shall be ANSI 304 stainless steel, or approved equivalent.
12. **Watermain Valves:** At all valve locations which require a 12" or smaller valve, install gate valves which are of the compression resilient seated (CRS) type. Use American Fluid Control's Series 2500 Ductile Iron Resilient Wedge Gate Valve, or approved equal. Gate valves shall conform to AWWA C509. Install stainless steel boxes and covers in accordance with ASTM A308, or approved equal. The boxes and covers shall have at least 6" of adjustment above and below finished grade. Door covers on valve boxes shall be round and bear the word "WATER" cast on the top. Use Tyler 6660-G "Staylug" covers with a mounting skirt, or equivalent. All valve hardware shall be ANSI 304 stainless steel, or approved equivalent.
13. **Trace Wire:** Install locating wires on all conductive and non-conductive underground sewer, sanitary sewer, and water lines in accordance with the Minnesota Rural Water Association (MRWA) Trace Wire Specification Guide and Details (www.mrwa.com/Upload/TraceWireSpecGuideFinalweb9.pdf). Use #12 HDPE-insulated copper-clad steel wire rated for underground service. The color of the insulating jacket shall be as follows: ground=red, storm sewer=green, sanitary sewer=green, and water lines=blue. Install the wire on the bottom side of the pipe below the spring line. Fasten the wire to the pipe with tape or plastic ties at 5' intervals. Do not wrap the trace wire around the corresponding utility. Do not connect the trace wire to existing conductive utilities. Use Copperhead Drycnoc 3-Way or Locking Snake Bite connectors rated for underground direct bury applications or approved equal at all crossings or service connections. Twist on connectors are not allowed. Trace wire must be properly grounded at all dead end services. Install grade-level/in-ground trace wire access boxes and drive-in magnesium grounding anodes at all dead ends, services, and fire hydrants. Trace wire access boxes shall be color coded as follows: storm sewer=green, sanitary sewer=green, and water lines=blue.
14. **Detectable Warning Tape:** Install detectable underground warning tape directly above all underground utilities at a depth of 457 mm (18 inches) below finished grade, unless otherwise indicated. Underground warning tape shall be 3-inches wide with a minimum 5.0 mil overall thickness. Tape shall be manufactured using a 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 mil solid aluminum foil core, and then laminated to a 3.75 mil clear virgin polyethylene film. The aluminum backing makes underground assets easy to find using a non-ferrous locator. Tape shall be printed using a diagonally striped design for maximum visibility and meet the APWA Color-Code standard for identification of buried utilities. Use Pro-Line Safety Products (www.prolinesafety.com) detectable marking tape or approved equal.
15. Threaded hose connections including hose bibbs and hydrants must include a back flow prevention device in accordance with Minnesota Rules, part 4714.0603 and UPC part 603.0. Wall hydrants must meet ASSE Standard 1019 (see Table 603.2). Where permitted by the administrative authority, wall hydrants may utilize non-removable ASSE 1052 backflow preventers or non-removable ASSE 1011 vacuum breakers and provision is made to protect from freezing (see Minnesota Rules, Chapter 4714, Sections 603.5.7, 312.6, and 301.1.2).
16. All newly installed or replacement pipes, pipe fittings, plumbing fittings and fixtures, including backflow preventers, that are installed on potable water systems or systems that are designed to distribute water for potable use, are required to meet the Reduction of Lead in Drinking Water Act, which establishes a maximum lead content of 0.05 percent by weight based on the total dry weight of the pipe. Solids on flux for potable water systems shall comply with less than 0.2 percent lead. Joints must include non-corrosive non-toxic paste-type flux complying with ASTM B813 (see Minnesota Rules, Chapter 4714, Section 603.5.4). See Minnesota Rules, part 4714.0604 and UPC part 604.11.
17. Do not exceed the manufacturer's specifications for curvature of pipe and deflection at pipe joints. Securely close all open ends of pipe and fittings with watertight plugs when work is not in progress. Keep the interior of all pipes clean and remove any dirt or debris from joint surfaces after the pipes have been lowered into the trench. Install all valves pumps and located according to the plans.
18. Insulate the watermain at locations where depth of cover is less than 8-feet. Provide a minimum insulation thickness of 1.5 inches. The insulation shall be at least 4 feet wide and centered on the pipe. The insulation board is 6 inches above the tops of the pipes in mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam Highload 40 Polystyrene Insulation. Individual insulation board dimensions typically measure 4' wide by 8' long by 2" thick.

SANITARY SEWER:

Unless otherwise indicated, all reinforced, precast, concrete maintenance holes conforming to ASTM C478, furnished with precast bases. Sanitary sewer maintenance holes shall be supplied with pre-formed inverts and flexible neoprene sleeve connections for all lateral lines 375 mm (15 inches) in diameter or less, unless otherwise indicated. Joints for all precast maintenance hole sections shall have confined, rubber "O"-ring gaskets in accordance with ASTM C443. These joints are normally used in sewers to hold infiltration and exfiltration to a practical minimum and are adequate for hydrostatic heads up to 30'. The inside barrel diameter shall not be less than 48 inches.

All joints and connections in the sewer system shall be gastight or watertight. Use flexible compression joints to make watertight connections to manholes in accordance with Minnesota Rules part 4714.0719.6. Where permitted by the administrative authority, approved resilient rubber joints or waterstop gaskets must be used in order to make watertight connections to manholes and other structures. Use Fernco "Concrete Manhole Adaptors" or "Large Diameter Waterstops", Press-Seal "Waterstop Grouting Rings", or approved equal. Cement mortar joints are permitted only for repairs or connections to existing lines having such joints.

The building sewer starts 2 feet outside of the building. See Uniform Plumbing Code (UPC) part 715.1. Material installed within 2 feet of the building must be of materials approved for use inside of or within the building.

The exterior sanitary sewer piping must comply with the following requirements: (A) Double wyes may not be used for drainage fittings in the horizontal position (see Minnesota Rules, Chapter 4714, Section 310.5).
Responsible official: _____ Date: _____

(B) Flanges are standard.

drainage piping must be made by appropriate use of wyes and bends (see Minnesota Rules, Chapter 4714, Section 706.0). Tees are not allowed where the direction of flow changes from either vertical to horizontal or horizontal to horizontal.

Pipe: Use solid-core, Schedule 40 Polyvinyl Chloride (PVC) Plastic Pipe for all designated PVC sanitary sewer services outside of the building. The PVC pipe shall meet or exceed the industry standards and requirements as set forth by the American Society for Testing and Materials (ASTM) D1785 and D2665.

Fittings: must comply with ASTM D1866, D2665, or F794. Joints must be approved mechanical or push-on type. The pipe and fittings shall be installed in accordance with the manufacturer's instructions. Solvent cement joints in PVC pipe must include use of ASTM F656 purple primer and cement in accordance with Uniform Plumbing Code (UPC), part 605.13.2. Pipe with solvent cement joints shall be joined with PVC cement conforming to ASTM D2564. The installation must comply with ASTM D3231, which requires open-trench installation on a continuous granular bed.

Cleanouts: Install cleanouts on all sanitary sewer services in accordance with UPC part 719.0 and 1101.12. The distance between cleanouts in horizontal piping shall not exceed 100 feet for pipes 4-inch and over in size. Cleanouts shall be of the same nominal size as the pipes they serve. Include frost sleeves and concrete frame and pipe support. Install a meter box frame and solid lid (Nenah R-1914-A, or approved equal) over all cleanouts.

Testing: Pressure test all sanitary sewer lines in accordance with the Minnesota Rules parts 4714.0712 and 4714.0723 and UPC parts 712.0 and 723.0. Test all flexible sanitary sewer lines for deflection after the sewer line has been installed and backfill has been in place for at least 30 days. No pipe shall exceed a deflection of 5%. If the test fails, make necessary repairs and retest.

Install flexible watertight flue/chimney seals on all sanitary sewer maintenance holes in order to seal the outside of the chimney from the cast iron frame down to the cone. The seal shall be a continuous seamless band made of high quality EPDM (Ethylene Propylene Diene Monomer) rubber with a minimum thickness of 65 mils. Use Internal/External Adapter Seal as manufactured by Adaptor, Inc. (www.adaptorinc.com/wp-content/uploads/2019/04/ADAP_1EManHoleSeal.pdf), Infi-Shield Uni-band one piece molded sealing system as manufactured by Sealing Systems, Inc. (www.ssisealingsystems.com), or approved equal.

Use Neenah Foundry Co. R-1642 casting with self-sealing, solid, type B lid, or approved equal, on all sanitary sewer maintenance holes. Covers shall bear the "Sanitary Sewer" label.

Trace Wire: Install locating tapes on all conductive and non-conductive storm sewer, sanitary sewer, and water lines in accordance with the Minnesota Rural Water Association (MRWA) Trace Wire Specification Guide and Details (www.mrwa.com/PDF/TraceWireSpecGuideweb9.pdf). Use #12 HDPE-insulated copper-clad wire (#10 AWG) with a minimum length of 6' per section. The trace wire must be fastened to the pipe at least every 8' along its entire length. For storm sewer, sanitary sewer, green, and water lines=blue. Install the wire on the bottom side of the pipe below the spring line. Fasten the wire to the pipe with tape or plastic ties at 5' intervals. Do not wrap the trace wire around the corresponding utility. Do not connect the trace wire to existing conductive pipes or conduits. Do not use the trace wire as a ground conductor. Do not use the trace wire for direct burial applications or approved equal at all crossings or service connections. Twist on connectors are not allowed. Trace wire must be properly grounded at all dead ends and services. Install grade-level/in-ground trace wire access boxes and drive-in magnesium grounding anodes at all dead ends, manholes, and service entrances. All trace wire access boxes shall be color coded as follows: storm sewers=green, sanitary sewer=green, and water lines=blue.

Detectable Warning Tape: Shall detectable underground warning tape directly above all underground utilities at a depth of 475 mm (18 inches) below finished grade, unless otherwise indicated. Underground warning tape shall be 3-inches wide with a minimum .5 mil overall thickness. Tape shall be manufactured using 0.8 mil clear virgin polypropylene film, reverse printed and laminated to a 0.35 mil solid aluminum foil core, and then laminated to a 0.375 mil clear virgin polyethylene film. The aluminum backing makes underground assets easy to find using a non-ferrous locator. Tape shall be printed using a diagonally striped design for maximum visibility and meet the APWA Color-Code standard for identification of buried utilities. Use Pro-Line Safety Products (www.prolinesafety.com) detectable marking tape or approved equal.

The minimum depth of cover for sanitary sewer without insulation is 5 feet. Insulate sanitary sewer services at locations where the depth of cover is less than 5 feet. Provide a minimum insulation thickness of 4 inches. The insulation must be at least 4 feet wide and centered on the pipe. Install the insulation boards 6 inches above the tops of the pipes on mechanically compacted and leveled pipe bedding material. Use high density, closed cell, rigid board material equivalent to DOW Styrofoam Highload 40 Polystyrene Insulation. Individual insulation board dimensions typically measure 4' wide by 8' long by 2" thick.

Install all pipe with the ASTM identification numbers on the top for inspection. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the bell end or receiving groove end of the pipe pointing upgrade. When connecting to an existing pipe, uncover the existing pipe in order to allow any adjustments in the proposed line and grade before laying any pipe. Do not lay pipes in water or when the trench conditions are unsuitable for such work.

All saddle tee or wye fittings must provide an integrally molded pipe stop in the branch for positive protection against service pipe insertion beyond the inside of the sewer main pipe wall.

Terminate all new sewer stubs with a water-tight gasketed cap properly braced in order to withstand the infiltration-exfiltration test. Install grade-level/in-ground trace wire access boxes and drive-in magnesium grounding anodes at the end of all stubs.

Televisé all existing lines prior to connection.

Sunde Engineering, P.L.C.
 10830 NE 81ST AVENUE SOUTH,
 BLOOMINGTON, MINNESOTA 55437
 (612) 885-1100 FAX
 (612) 885-1413 FAX
 www.sundecon.com

PROFESSIONAL SEAL

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.


Brian H. Mundstock

License #: 23468

Date: 02-24-202

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

**CIRCLE K
STORES INC.**

HAM LAKE MINNESOTA

**1442
CROSSTOWN BLVD NE
HAM LAKE, MN**



CIRCLE K STORES INC

PROJECT NUMBER
20-018

SHEET TITLE

UTILITY NOTES

SHEET NUMBER

SP4.1

INSITES INC.

SWPPP DESIGN CERTIFICATION

I, Robert Mueller, hereby certify that I have completed designer SWPPP - Erosion and Stormwater Management Certification Program
My certification expires May 2023

SWPPP INSTALLER CERTIFICATION

I hereby certify that I have completed Installer SWPPP - Erosion and Stormwater Management Certification Program

Signed
Expiration

SWPPP INSPECTOR CERTIFICATION

I hereby certify that I have completed Inspector SWPPP - Erosion and Stormwater Management Certification Program

Signed
Expiration

U.S. Fish and Wildlife Service
National Wetlands Inventory

SWPmap



July 28, 2020

Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake

Other

Riverine

This map is for general reference only. The U.S. Fish and Wildlife Service is not responsible for the accuracy or completeness of the data shown on this map. All wetlands-related data should be used in accordance with the appropriate federal, state, and local laws and regulations.

National Wetlands Inventory (NWI)
This page was produced by the NWI report

3131 Fernbrook Lane No 260
Plymouth, Minnesota 55408
763.483.8400
763.783.3840

07/29/20 SUBMITTAL
09/01/20 DOT REVIEW
09/16/20 CWD COMMENTS
10/20/20 COUNTY COMMENTS
12/22/20 CITY SUBMITTAL
02/24/21 CITY COMMENTS

PROFESSIONAL SEAL

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 Landscape Architect under the laws of the State of Minnesota.

Signed: [Signature]
Date: 03/09/21 Reg. No. 19306

License #: 19306

Date: 01-19-2021

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

CIRCLE K
STORES INC.

HAM LAKE
MINNESOTA

1442
CROSSTOWN BLVD NE
HAM LAKE, MN



CIRCLE K STORES INC.

PROJECT NUMBER

20-018

SHEET TITLE

EROSION
CONTROL
PLAN

SHEET NUMBER

SWP1

INSITES INC.

K HIGHWAY NO. 65
ATION PLAT NO. 02-M25

ALL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AND CONSTRUCTED IN ACCORDANCE TO STATE AND DNR TECHNICAL STANDARDS

ALL SILT FENCE MUST BE INSTALLED BY THE CONTRACTOR AND INSPECTED BY THE CITY PRIOR TO ANY SITE WORK.

SITE EROSION CONTROL MEASURES MUST BE IN PLACE AT ALL TIMES. SHOULD DEVICES BE REMOVED FOR WORK ACCESS, THEY SHALL BE REINSTALLED AT THE END OF EACH WORK DAY UNTIL PAVEMENTS HAVE BEEN INSTALLED AND ALL LANDSCAPE AREAS HAVE BEEN MULCHED AND SODED. SEEDING AREAS MUST EXHIBIT MINIMUM OF 70% SOIL COVERAGE.

REFER TO THE SWPPP PLAN NOTES AND DETAIL SHEETS SWP2.4 FOR MORE INFORMATION.

TRAVIS COMER
4567 AMERICAN BLVD. WEST
MINNEAPOLIS, MN 55437-1123
952-630-5713 (PHONE)
TCOMER@HOLIDAYCOMPANIES.com

CONSTRUCTION SEQUENCE

*INSTALL EROSION/SEDIMENT CONTROL MEASURES
*INSTALL STORMWATER MANAGEMENT AND/OR POND/SEDIMENT BASINS
*INSTALL STORM SEWER
*INSTALL STRUCTURES
*INSTALL PAVEMENTS
*INSTALL SMALL UTILITIES (GAS, ELECTRIC, PHONE, CABLE, ETC.)
*INSTALL LANDSCAPE
*FLUSH STORM SEWER
*REMOVE EROSION CONTROL MEASURES ONLY AFTER ALL PAVEMENTS HAVE BEEN INSTALLED AND ALL SOILS HAVE BEEN STABILIZED

PROJECT DATA

PROJECT START DATE
PROJECT COMPLETION DATE

MARCH 2021
MARCH 2022

SITE AREA DATA

TOTAL SITE AREA
PRE-CONSTRUCTION IMPER
POST-CONSTRUCTION IMPER
APPROX. AREA OF LAND DI-

SITE RUNOFF COEFFICIENT

PRE-CONSTRUCTION
POST-CONSTRUCTION

SOIL DATA

SURFACE SOIL

SODERVILLE FINE SAND
LINCOLN LOAMY FINE SAND
ISANTI FINE SANDY LOAM
ZIMMERMAN FINE SAND

DOWN-STREAM TRIBUTARY

COON CREEK WATERSHED

EROSION CONTROL BLANKET ON
SIDE SLOPES OF 3:1 OR GREATER
DOUBLE NETTED LIGHT DUTY

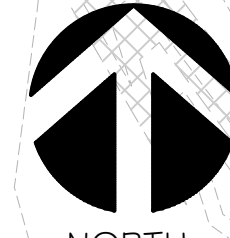
Estimated Preliminary Erosion Control Quantities
(actual quantities subject to change)

| Item | Quantity |
|--------------------------------|----------------------------------|
| Rock Construction Entrance | 260 sq.yd. |
| Silt Sack | 16 (total structures to protect) |
| Erosion Control Blanket(basin) | 8,626 sq.yd. |
| Rip Rap | 153 cu. yd. |
| Silt Fence | 3,737 l.f. |
| Rock Filtration dikes | -- l.f. |
| Bio Roll/erosion log | 458 l.f. |

Note: for maintenance purposes contractor shall all sufficient quantities for repair and replacement of erosion control devices throughout all phases of the projects construction.



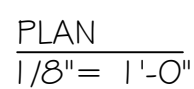
Know what's below.
Call before you dig.



NORTH

SCALE: 1" = 40'

40 20 0 20 40



5 | ON-SITE CONCRETE WASHOUT AREA



| | |
|---|--|
| 7 | EROSION CONTROL FOR OPEN SPACE CATCH BASINS AND FLARED-END SECTIONS |
|---|--|



PROFESSIONAL SEAL

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 Landscape Architect under the laws of the State of Minnesota.

Sign: [Signature] Registry # 153061
Date: 02/24/21 Reg. No. 15306

License #: 19306

Date: 01-19-2021

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

CIRCLE K
STORES INC.

HAM LAKE
MINNESOTA

1442
CROSSTOWN BLVD NE
HAM LAKE, MN



PROJECT NUMBER
20-018

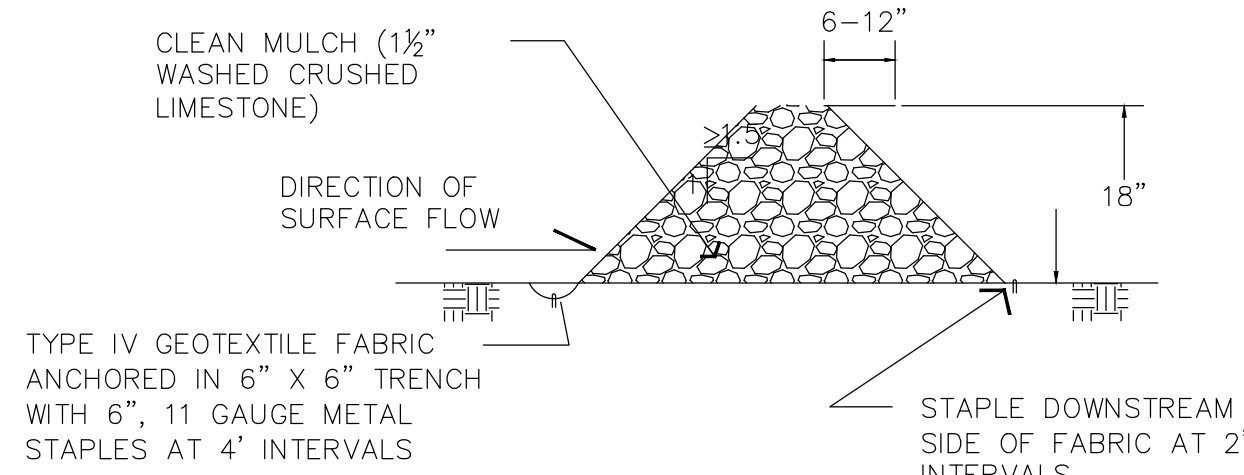
SHEET TITLE

EROSION
CONTROL
DETAILS

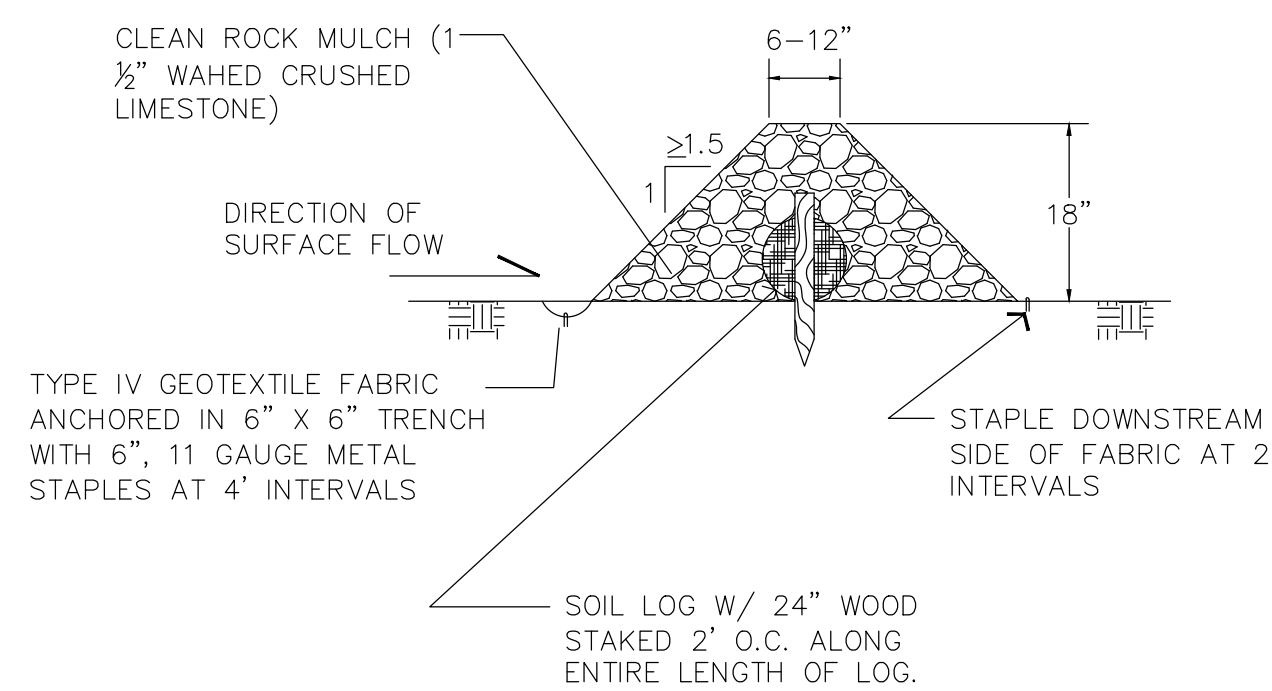
SHEET NUMBER

SWP4

I. ROCK WEEPER @ MINIMAL WATER FLOWS

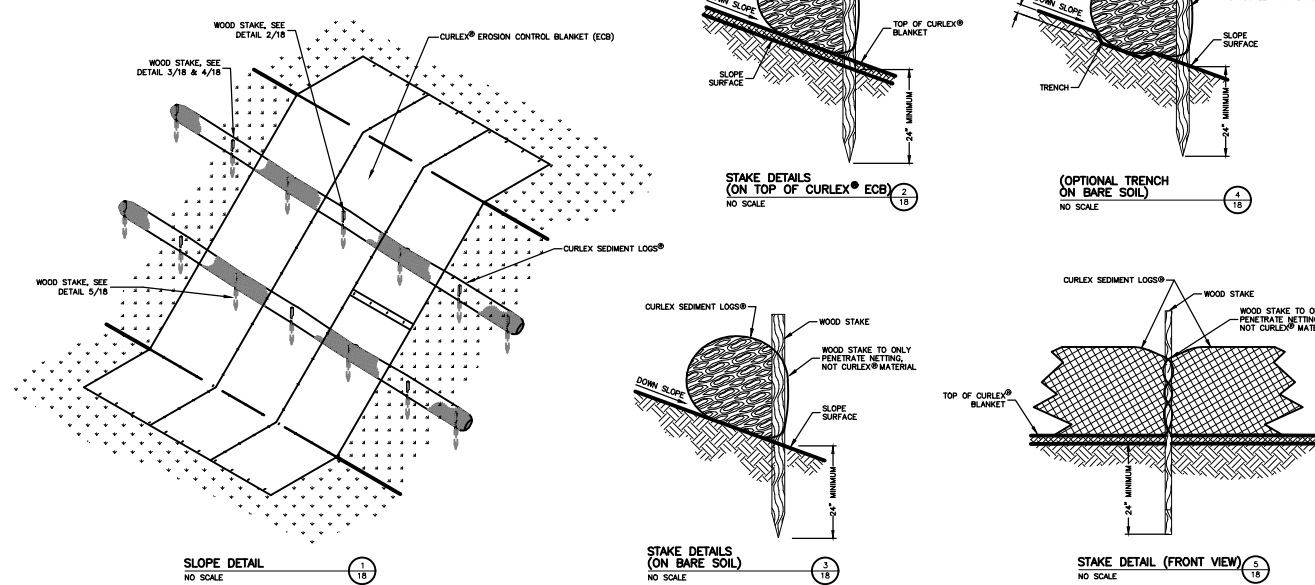


II. BIO WEEPER @ CONCENTRATED FLOWS

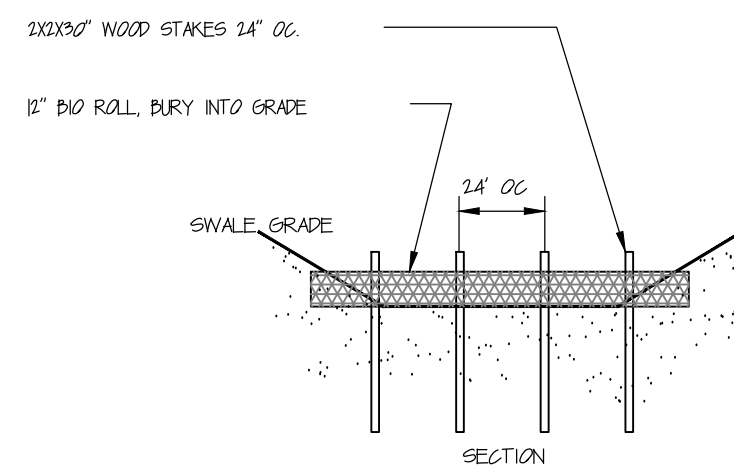


1 DITCH CHECKS, ROCK WEEPERS, & ROCK BIO WEEPERS
EROSION CONTROL

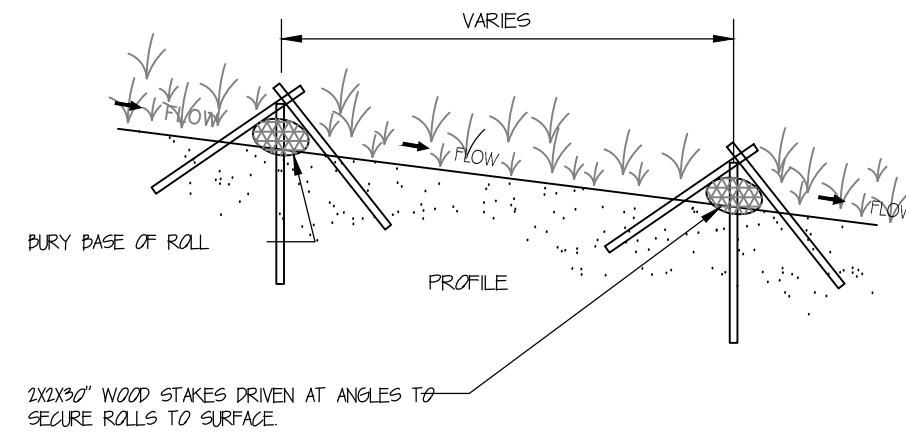
NOTE: SEDIMENT LOGS SHALL BE "CURLEX" BY AMERICAN EXCELSDOR COMPANY www.americanexcel.com/curlex.html OR APPROVED EQUAL



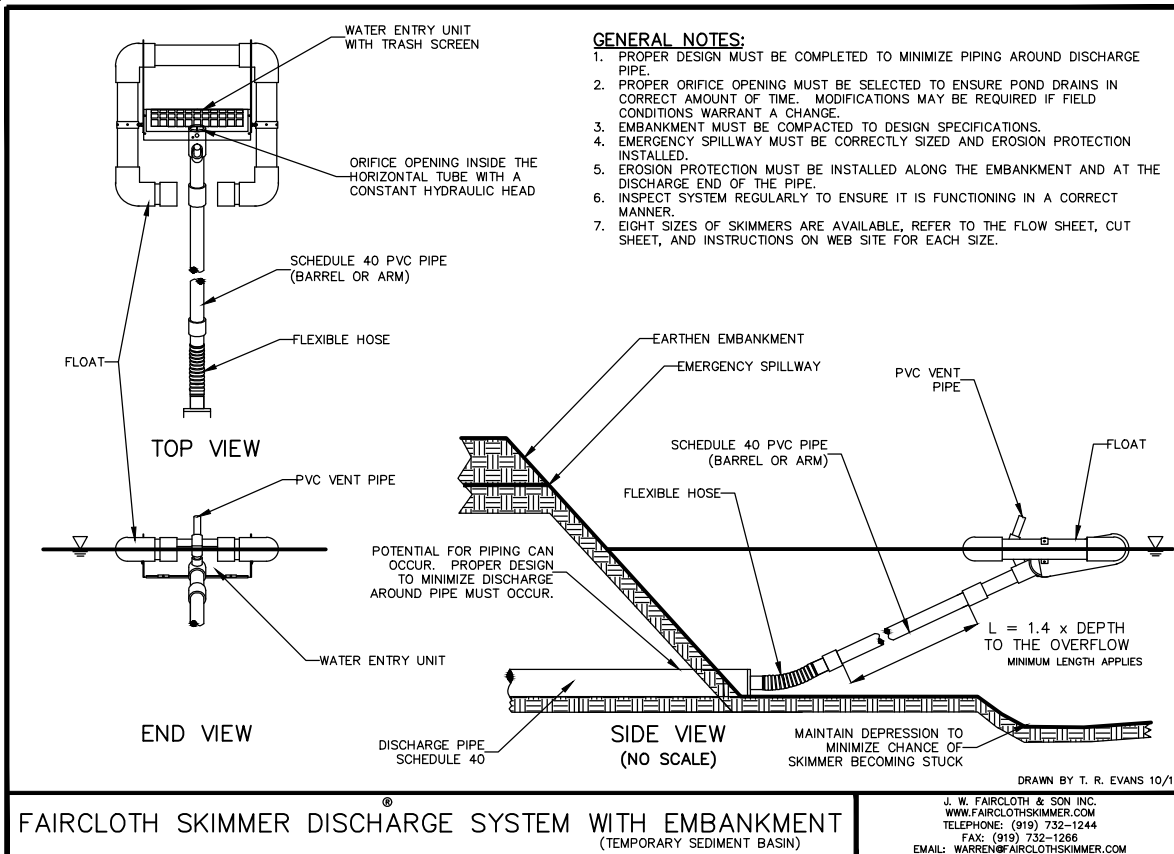
2 BIO ROLL INSTALLATION



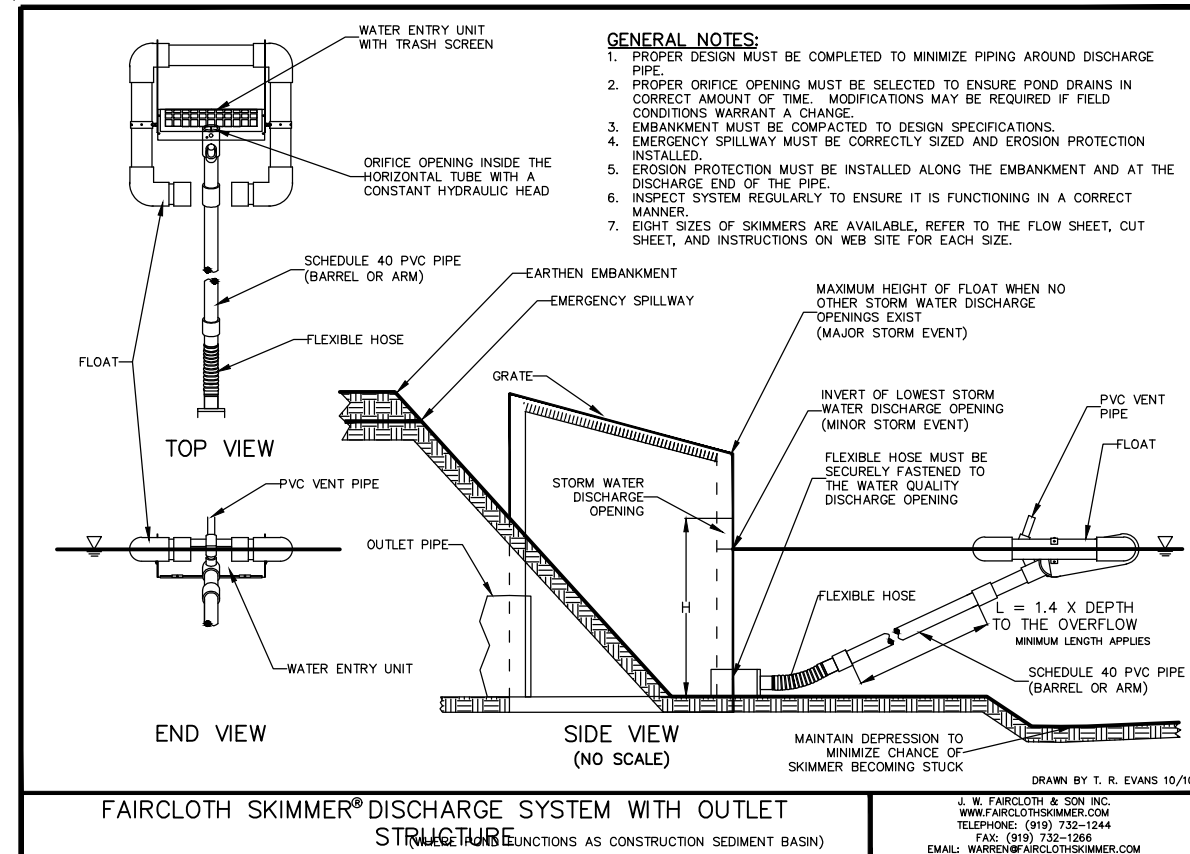
MAXIMUM PALE SPACING- 10' UP TO 3% SLOPE
REDUCE SPACING BY 1' FOR EVERY 1% SWALE GRADE INCREASE UP TO 10% GRADIENT.
(10% GRADE- PALE SPACING 10' O.C.)



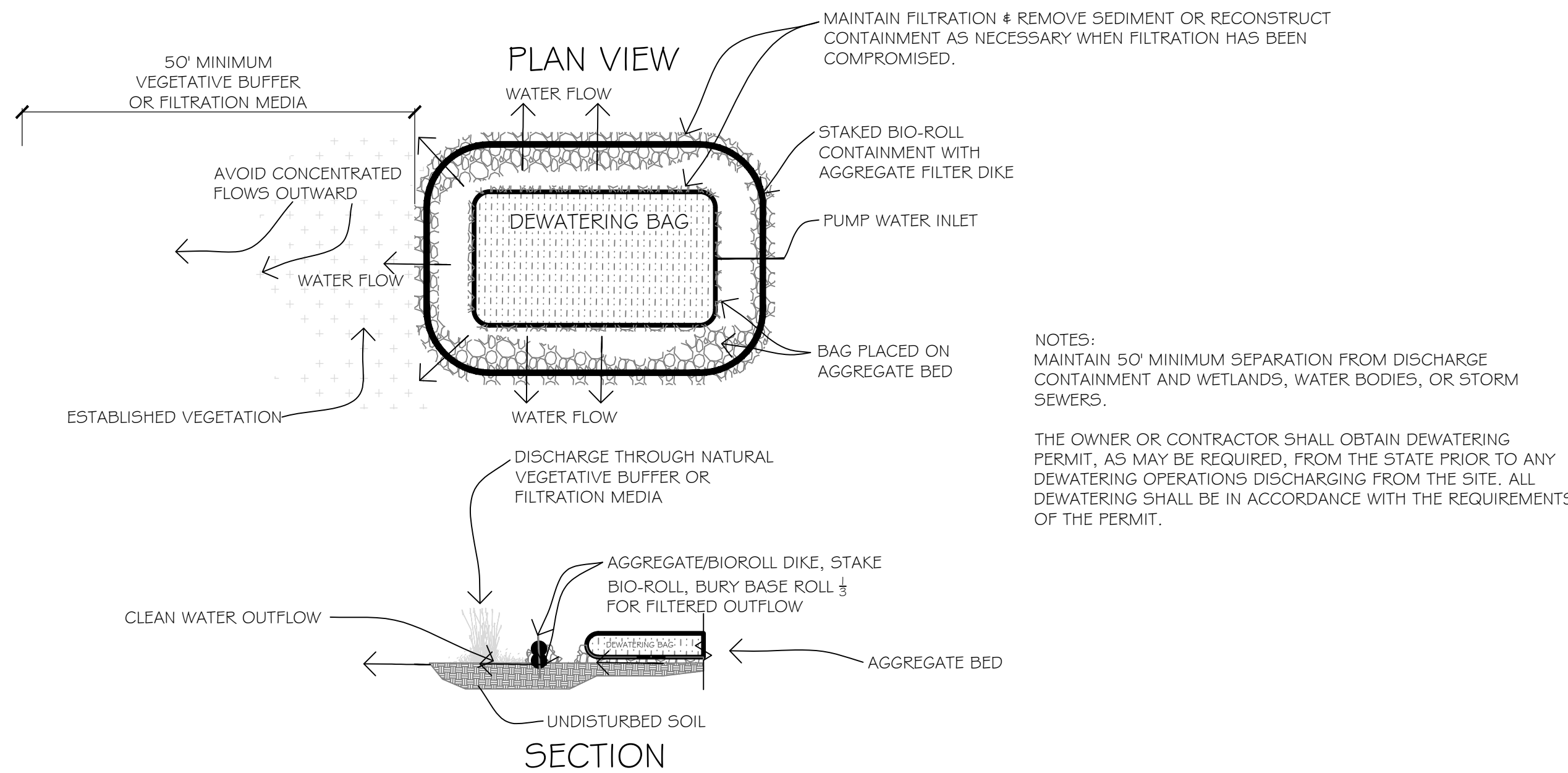
3 DITCH CHECKS FOR DRAINAGE SWALES



5 FAIRCLOTH SKIMMER DISCHARGE SYSTEM(OR APPROVED EQUAL BY OWNER)
SEDIMENT CONTROL



NOTE: USE ONLY IF NEEDED. WHEN CONSTRUCTION IS FINISHED, SEDIMENT IS TO BE REMOVED FROM POND. ONCE THE POND IS STABILIZED THE FAIRCLOTH SKIMMER CAN BE REMOVED AND THE INLET PIPE TO THE OUTLET STRUCTURE BE MADE FUNCTIONAL PER DETAIL SHEET SP3



4 DEWATERING BAG INSTALLATION, FOR DISCHARGING ERODED, SUSPENDED PARTICLES IN WATER
NOT TO SCALE

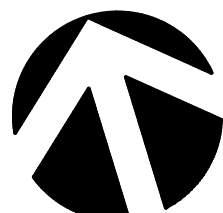
NOTES:
MAINTAIN 50' MINIMUM SEPARATION FROM DISCHARGE CONTAINMENT AND WETLANDS, WATER BODIES, OR STORM SEWERS.

THE OWNER OR CONTRACTOR SHALL OBTAIN DEWATERING PERMIT, AS MAY BE REQUIRED, FROM THE STATE PRIOR TO ANY DEWATERING OPERATIONS DISCHARGING FROM THE SITE. ALL DEWATERING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT.

| PLANT MATERIAL | | | | | HEIGHT' X WIDTH' | SHRUBS | | | | | SEED SPEC: FALL SEEDING IS PREFERABLE (AUG. 20 TO OCT. 20). SPRING SEEDING SHOULD BE BETWEEN MARCH 15- MAY 15. NO SUMMER SEEDING. |
|-----------------|------|-----------|-------------|----------------|------------------|---------|----|---------|-----|--|---|
| QUANTITY | SIZE | ROOT TYPE | COMMON NAME | BOTANICAL NAME | | | | | | | |
| OVERSTORY TREES | | | | | | AJ | 17 | #3 CONT | pot | AMBER JUBILEE NINEBARK <i>Physocarpus opulifolius 'Jefam'</i> | 5' x 4' |
| | | | | | | MJ | 5B | #3 CONT | pot | MANEY JUNIPER <i>Juniperus chinensis 'Maney'</i> | 4' x 5' |
| | | | | | | AF | 23 | #3 CONT | pot | ARCTIC FIRE DOGWOOD <i>Cornus stolonifera 'Farrow'</i> | 4' x 4' |
| | | | | | | GRASSES | | | | | |
| | | | | | | BB | 11 | #1 CONT | pot | BIG BLUESTEM <i>Andropogon gerardii</i> | 5' x 6' |
| | | | | | | LB | 7B | #1 CONT | pot | LITTLE BLUE STEM <i>Schizachyrium scoparium</i> | 4' x 3' |
| EVERGREEN TREES | | | | | | | | | | | |
| | | | | | | RP | 4 | | B4B | RED PINE <i>Pinus resinosa</i> | 50' x 40' |
| | | | | | | SP | 8 | | B4B | SCOTCH PINE <i>Pinus sylvestris</i> | 50' x 35' |



Know what's below.
Call before you dig.

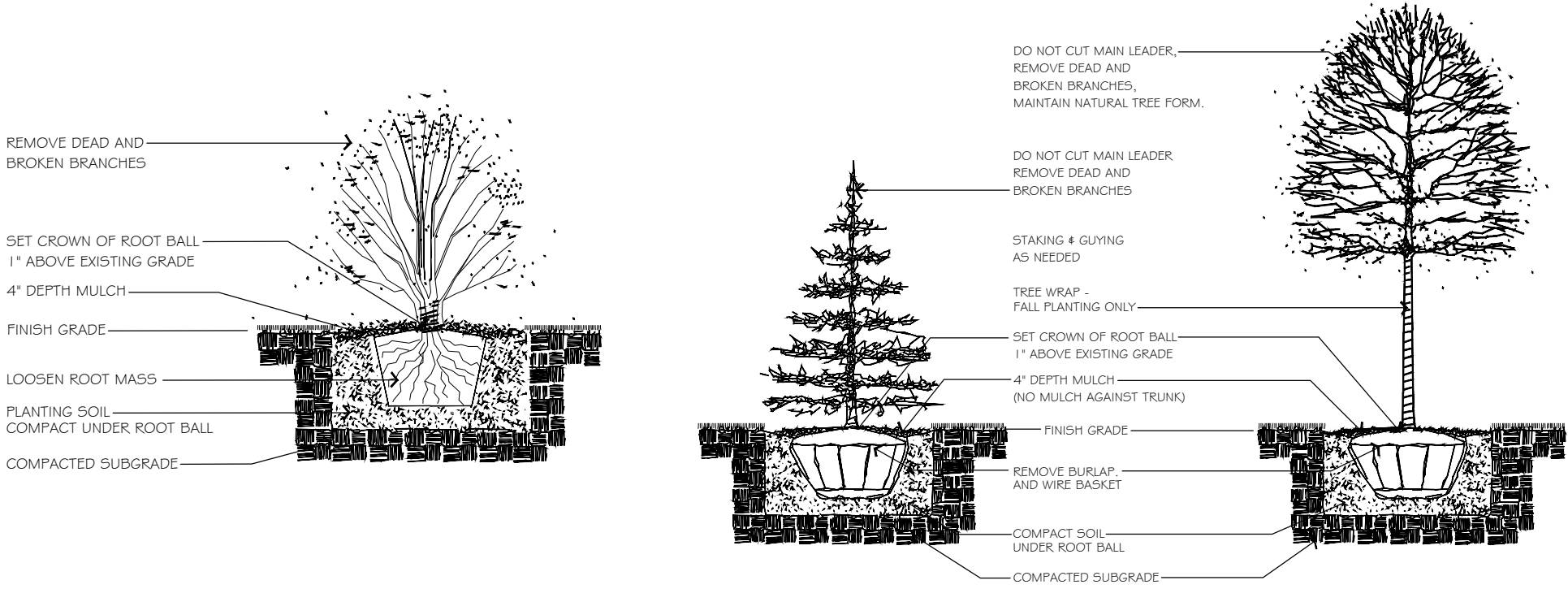


NORTH
SCALE: 1" = 40'



NOTES:

- CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR PLANTING IN ALL R.O.W.
- LANDSCAPE CONTRACTOR SHALL VERIFY ALL UTILITIES WHICH MAY EFFECT HIS WORK.
- LANDSCAPE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHERS AT SITE AND COMPLETE HIS WORK PER OWNER'S CONSTRUCTION SCHEDULE.
- ALL PLANT MATERIALS SHALL BE GUARANTEED ONE (1) FULL YEAR UPON TOTAL COMPLETION AND ACCEPTANCE BY OWNER, WITH ONE TIME REPLACEMENT AT APPROPRIATE TIME OR UPON REQUEST OF OWNER.
- REPLACEMENT TOPSOIL SHALL BE CLEAN, FREE OF STONES, WEEDS, AND OTHER UNDESIRABLE DEBRIS.
- PLANTING SOIL MIX (INCIDENTAL COST ITEM)
 - 1. MIX 1 LB. 5-20-20 COMMERCIAL FERTILIZER PER CU. YD. TOPSOIL
 - 2. THOROUGHLY MIX 1-PART SAND AND 1-PART PEAT MOSS WITH 5-PARTS FERTILIZER AND TOP SOIL.
- USE PLANTING SOIL AT ALL LOCATIONS PER DETAILS THIS SHEET.
- LANDSCAPE CONTRACTOR SHALL VERIFY TOPSOIL DEPTH AND NOTIFY OWNER OF ANY DEFICIENCY.
- SOD SHALL BE CULTURED WITH PREDOMINATELY KENTUCKY BLUEGRASS SEED OF RECENT DISEASE RESISTANT INTRODUCTIONS. NO GUARANTEE ON SOD EXCEPT ANY SOD NOT SATISFACTORY AT TIME OF COMPLETION INSPECTION SHALL BE PROMPTLY REPLACED PRIOR TO COMPLETION OF JOB. STAKE SOD ON SLOPES 3:1 AND GREATER.
- WHERE EXISTING CONCRETE/ ASPHALT AREAS ARE TO BE REPLACED WITH LANDSCAPING, PROVISIONS SHOULD BE TAKEN TO COORDINATE EXCAVATION OF SUBSOIL TO A DEPTH OF 2' WITH GRADING CONTRACTOR. REPLACE WITH COMPACTED TOPSOIL. ALL AREAS TO BE LANDSCAPED AND SODDED SHALL BE GRADED SMOOTH AND EVEN.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR SODDING ALL AREAS WHICH ARE DISTURBED BY CONSTRUCTION INCLUDING ALL R.O.W. AND ADJACENT PROPERTIES.
- LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING BLANKET ON ALL SEEDED AREAS THAT ARE SLOPED. MULCH APPLICATION FOR ALL OTHER SEEDED AREAS SHALL BE EITHER HYDROMULCH OR DISKED STRAW DEPENDING ON SEED TYPE, APPLICATION, AND OWNER REQUEST.
- LANDSCAPE CONTRACTOR TO INSTALL 'VALLEY VIEW', 'BLACK DIAMOND' EDGING AROUND ALL PLANTING BEDS AS SHOWN ON THIS PLAN.
- ALL MULCH TO BE FINELY SHREDDED HARDWOOD ORGANIC BARK MULCH. NO DYED MULCHES. INSTALL 4" DEPTH. NO FILTER FABRIC BENEATH ORGANIC MULCHES. NO EDGING AROUND ALL TREES OUTSIDE SHRUB BEDS.
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- LANDSCAPE CONTRACTOR SHALL CLEAN ALL PAVEMENT AREAS AFTER ALL LANDSCAPE INSTALLATION IS COMPLETE AND ACCEPTED BY OWNER AND DAILY AS DEEMED NECESSARY BY THE CITY.
- GENERAL CONTRACTOR TO SWEEP PAVEMENT AREAS PRIOR TO TURN OVER TO OWNER.

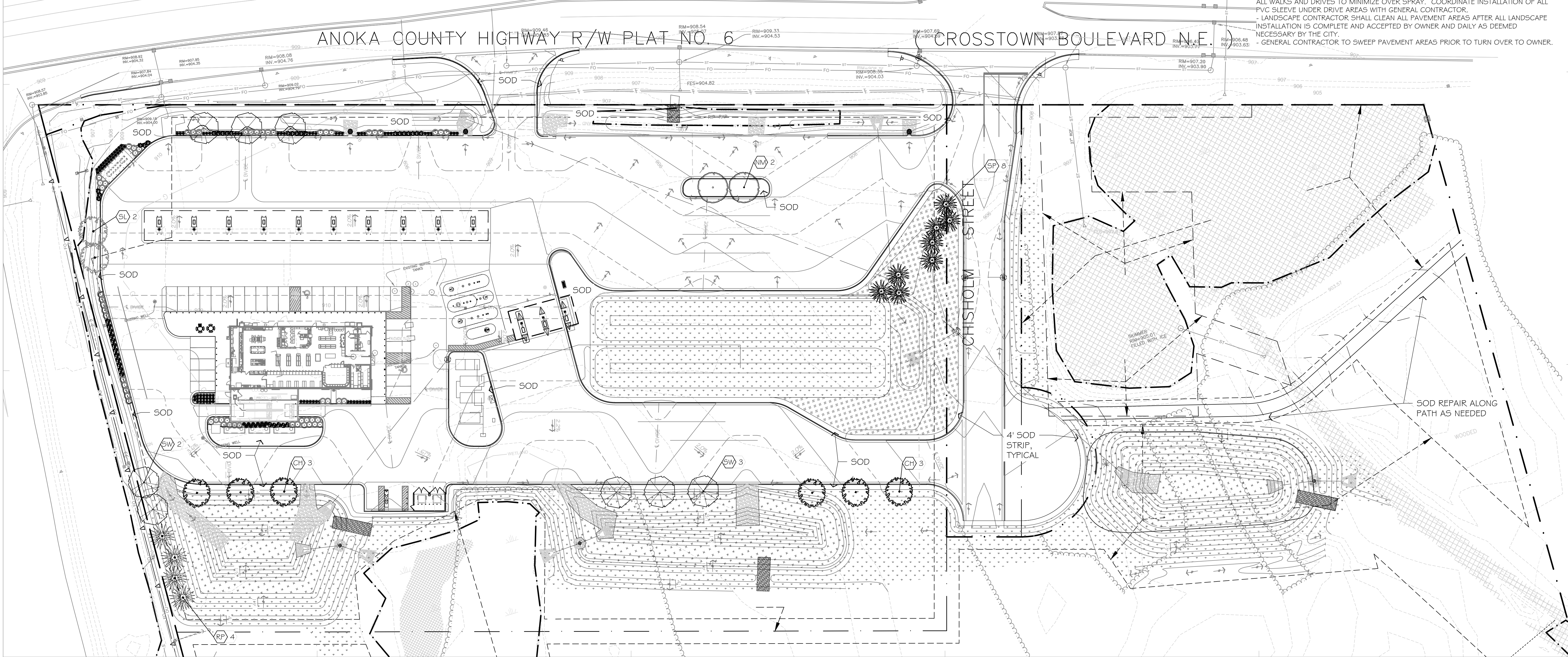


ANOKA COUNTY HIGHWAY R/W PLAT NO. 71

COUNTY STATE AID HIGHWAY NO. 18

ANOKA COUNTY HIGHWAY R/W PLAT NO. 6

CROSSTOWN BOULEVARD N.E.



811
Know what's below.
Call before you dig.

07/29/20 SUBMITAL
09/01/20 DOT REVIEW
09/16/20 COWD COMMENTS
10/20/20 COUNTY COMMENTS
12/22/20 CITY SUBMITAL
02/24/21 CITY COMMENTS

PROFESSIONAL SEAL

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 Landscape Architect under the laws of the State of Minnesota.

License #: 19306

Date: 01-19-2021

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

CIRCLE K
STORES INC.

HAM LAKE
MINNESOTA

1442
CROSSTOWN BLVD NE
HAM LAKE, MN



CIRCLE K STORES INC.

PROJECT NUMBER
20-018

SHEET TITLE

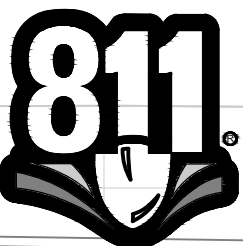
LANDSCAPE
PLAN

SHEET NUMBER

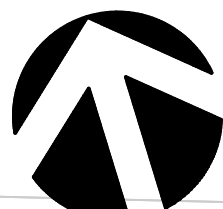
L1

INSITES INC.

| PLANT MATERIAL | | | | | | HEIGHT' X WIDTH' | SHRUBS | | | | | SEED SPEC: FALL SEEDING IS PREFERABLE (AUG. 20 TO OCT. 20). SPRING SEEDING SHOULD BE BETWEEN MARCH 1-5- MAY 15. NO SUMMER SEEDING. |
|-----------------|------|-----------|-------------|---------------------|---|------------------|--------|----|---------|-----|-------------------------|--|
| QUANTITY | SIZE | ROOT TYPE | COMMON NAME | BOTANICAL NAME | | | | | | | | |
| OVERSTORY TREES | | | | | | | | | | | | |
| CH | 6 | 2.5' CAL. | B4B | COMMON HACKBERRY | Celtis occidentalis | 60' x 50' | AJ | 17 | #3 CONT | pot | AMBER/JUBILEE NINEBARK | 5' x 4' |
| SW | 8 | 2.5' CAL | B4B | SWAMP WHITE OAK | Quercus bicolor | 50' x 50' | MJ | 5B | #3 CONT | pot | MANEY JUNIPER | 4' x 5' |
| NM | 2 | 2.5' CAL. | B4B | NORTHWOOD MAPLE | Acer rubrum 'Northwood' | 50' x 35' | AF | 23 | #3 CONT | pot | ARCTIC FIRE DOGWOOD | 4' x 4' |
| SL | 2 | 2.5' CAL | B4B | SKYLINE HONEYLOCUST | Gleditsia tricanthos var. 'nervis 'Skycole' | 50' x 30' | BB | 11 | #1 CONT | pot | BIG BLUESTEM | 5' x 6' |
| EVERGREEN TREES | | | | | | | LB | 7B | #1 CONT | pot | LITTLE BLUE STEM | 4' x 3' |
| RP | 4 | 10' HT | B4B | RED PINE | Pinus resinosa | 50' x 40' | | | | | Schizachyrium scoparium | |
| SP | 8 | 10' HT | B4B | SCOTCH PINE | Pinus sylvestris | 50' x 35' | | | | | | |



Know what's below.
Call before you dig.



NORTH
SCALE: 1" = 40'

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- GENERAL CONTRACTOR TO SWEEP PAVEMENT AREAS PRIOR TO TURN OVER TO OWNER.

3131 Fernbrook Lane No
rth, Suite 260
Plymouth, Minnesota 55
763.483.8400
763.783.3840

07/29/20 SUBMITAL
09/01/20 DOT REVIEW
09/16/20 CWD COMMENTS
10/20/20 COUNTY COMMENTS
12/22/20 CITY SUBMITAL
02/24/21 CITY COMMENTS

PROFESSIONAL SEAL

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 Landscape Architect under the laws of the State of Minnesota.

Sign: [Signature]
Date: 03/09/21 Reg. No. 19306

License #: 19306

Date: 01-19-2021

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

PROJECT NAME

CIRCLE K
STORES INC.

HAM LAKE
MINNESOTA

1442
CROSSTOWN BLVD NE
HAM LAKE, MN



CIRCLE K STORES INC.

PROJECT NUMBER
20-018

SHEET TITLE

LANDSCAPE
PLAN

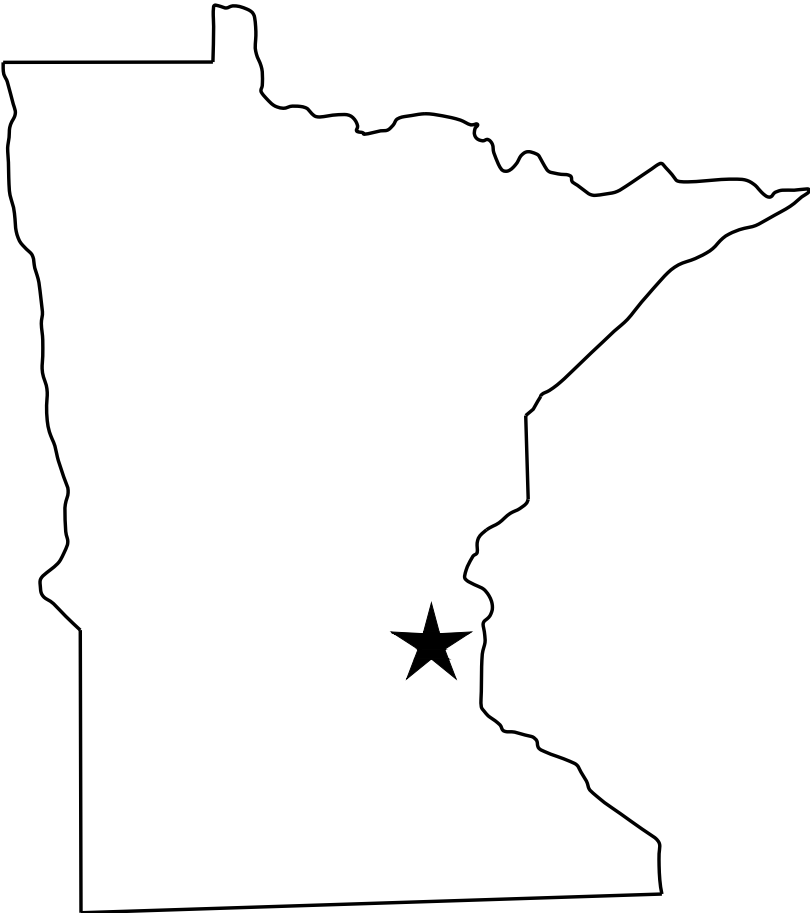
SHEET NUMBER

L1.1

INSITES INC.

HOLIDAY STATION STORE ONSITE WASTEWATER SYSTEM HAM LAKE, MINNESOTA

ISSUED FOR REVIEW
JULY 2020



NOTE:
THIS SYSTEM MUST BE CONSTRUCTED BY A CERTIFIED / LICENSED
SEWAGE TREATMENT SYSTEM INSTALLER HOLDING A CURRENT
LICENSE WITH THE MINNESOTA POLLUTION CONTROL AGENCY.



SHEET INDEX

- C1 SITE PLAN & SOILS INFORMATION
- C1A WASTEWATER TREATMENT SYSTEM LAYOUT
- C1B NEW MOUND LAYOUT
- C2 WASTEWATER PROCESS FLOW DIAGRAM
- C3 SEPTIC / TRANSFER PUMP TANK
- C4 AERATION / DOSING TANK
- C5 CLARIFIER / RECIRCULATION TANK
- C6 AX100 DETAILS
- C7 MOUND DETAILS
- C8 MOUND SPECIFICATIONS
- C9 CONTROL PANEL & MOTOR SPECIFICATIONS
- C10 SITE WORK DETAILS

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DIMENSIONS. DO NOT SCALE DRAWING. ANY ERRORS OR
OMISSIONS SHALL BE REPORTED TO SDCG WITHOUT DELAY.
COPYRIGHTS TO ALL DESIGNS AND DRAWINGS ARE THE
PROPERTY OF SDCG. REPRODUCTION OR USE FOR ANY
PURPOSE OTHER THAN THAT AUTHORIZED IS FORBIDDEN.

CERTIFICATE OF COMMERCIAL PRACTICE #1232PE

SEAL

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION 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.

Bryan DeSmet
DATE: 7/29/2020 LIC. NO.: 21764

ISTS CERTIFICATION

I HEREBY CERTIFY THAT I HAVE COMPETED THIS WORK IN ACCORDANCE
WITH ALL APPLICABLE ORDINANCES, RULES AND LAWS.

SIGNATURE: *Carla S. Cross* NAME: CARLA S. CROSS
DATE: 7/29/2020 LICENSE NO. C6986

SD CONSULTING
CANMORE, AB
WHITE BEAR LAKE, MN
TEL. 612-280-9128
TEL. 612-209-7366





NEW STATION STORE

MINOT MONUMENTATION PLAT NO. 02-M25
STATE TRUNK HIGHWAY NO. 65

CROSSTOWN BOULEVARD N.E.
(C.S.A.H. NO. 18) ANOKA COUNTY HIGHWAY R/W PLAT NO. 71
ANOKA COUNTY HIGHWAY R/W PLAT NO. 6

PROPOSED PRIMARY 2,000 GPD MOUND

RESERVE 2,000 GPD MOUND

ANOKA COUNTY HI
CROSSTOW.
(C.S.A.H.
ANOKA COUNTY HIGH

B-4

B-6

B-5

B-7

B-8

B-1

SOIL TEST - TYPICAL OF 8

DECOMMISSIONED MOUND -
RE-USE AREA

WASTEWATER TREATMENT SYSTEM

DELINEATED WETLAND

EXISTING STORM
BASIN NWL = 903.5±

TEST BORING B1

| DEPTH (IN.) | MATRIX COLOR(S) | MOTTLE COLOR(S) | TEXTURE | CONSISTENCY |
|--|-----------------|---------------------|---------|-------------|
| 0 - 6 | 10YR 3/2 | | SA LO | M Fr |
| 6 - 12 | 10YR 6/4 | 7.5YR 4/6 | SA LO | M Fr |
| 12 - 19 | 10YR 6/4 | 7.5YR 5/8, 10YR 6/1 | SA CL | M Fr |
| COMMENTS: REDOX DETECTED AT 6" BGS. MASSIVE, PROMINENT REDOX DETECTED AT 12" BGS. | | | | |

TEST BORING B2

| DEPTH (IN.) | MATRIX COLOR(S) | MOTTLE COLOR(S) | TEXTURE | CONSISTENCY |
|--|-----------------|---------------------|----------|-------------|
| 0 - 8 | 10YR 3/1 | | FI SA LO | M Fr |
| 8 - 14 | 10YR 6/4 | 7.5YR 4/6 | LO FI SA | M L |
| 14 - 20 | 10YR 6/4 | 7.5YR 5/8 | FI SA LO | M V Fr |
| 20 - 23 | 10YR 6/4 | 7.5YR 5/8, 10YR 6/1 | SA CL | M Fr |
| COMMENTS: REDOX DETECTED AT 8" BGS. MASSIVE, PROMINENT REDOX DETECTED AT 20" BGS. | | | | |

TEST BORING B3

| DEPTH (IN.) | MATRIX COLOR(S) | MOTTLE COLOR(S) | TEXTURE | CONSISTENCY |
|--|-----------------|---------------------|----------|-------------|
| 0 - 7 | 10YR 3/2 | | FI SA LO | M Fr |
| 8 - 13 | 10YR 5/4 | 7.5YR 4/6 | LO FI SA | M L |
| 13 - 19 | 10YR 6/1, 3/2 | 7.5YR 5/8 | FI SA LO | M V Fr |
| 19 - 21 | 10YR 6/1,4/4 | 7.5YR 5/8, 10YR 6/1 | SA CL | M Fr |
| COMMENTS: REDOX DETECTED AT 7" BGS. MASSIVE, PROMINENT REDOX DETECTED AT 19" BGS. | | | | |

TEST BORING B4

| DEPTH (IN.) | MATRIX COLOR(S) | MOTTLE COLOR(S) | TEXTURE | CONSISTENCY |
|---|-----------------|-----------------|----------|-------------|
| 0 - 6 | 10YR 3/2 | | FI SA LO | M V Fr |
| 6 - 13 | 10YR 3/2, 4/4 | | FI SA LO | M V Fr |
| 13 - 46 | 10YR 5/2, 3/2 | 7.5YR 5/8 | LO FI SA | M V Fr |
| 46 - 50 | 10YR 5/2, 4/4 | 7.5YR 5/8 | FI SA LO | M V Fr |
| COMMENTS: REDOX DETECTED AT 19" BGS. MASSIVE, PROMINENT REDOX DETECTED AT 42" BGS. | | | | |

TEST BORING B5

| DEPTH (IN.) | MATRIX COLOR(S) | MOTTLE COLOR(S) | TEXTURE | CONSISTENCY |
|---|-----------------|-----------------|----------|-------------|
| 0 - 10 | 10YR 3/3 | | FI SA LO | M V Fr |
| 10 - 22 | 10YR 5/2, 4/4 | 7.5YR 4/6 | LO FI SA | M V Fr |
| COMMENTS: REDOX DETECTED AT 10" BGS. COMMON, DISTINCT REDOX DETECTED AT 15" BGS. | | | | |

TEST BORING B6

| DEPTH (IN.) | MATRIX COLOR(S) | MOTTLE COLOR(S) | TEXTURE | CONSISTENCY |
|--|-----------------|-----------------|----------|-------------|
| 0 - 10 | 10YR 3/3 | | FI SA LO | M V Fr |
| 10 - 15 | 10YR 5/3, 4/4 | 7.5YR 5/8 | LO FI SA | M V Fr |
| COMMENTS: COMMON REDOX DETECTED AT 10" BGS. | | | | |

TEST BORING B7

| DEPTH (IN.) | MATRIX COLOR(S) | MOTTLE COLOR(S) | TEXTURE | CONSISTENCY |
|--|-----------------|-----------------|----------|-------------|
| 0 - 11 | 10YR 3/3 | | FI SA LO | M V Fr |
| 10 - 36 | 10YR 5/3, 4/4 | 7.5YR 4/6 | LO FI SA | M V Fr |
| COMMENTS: FEW, DISTINCT REDOX DETECTED AT 14" BGS. COMMON REDOX AT 22" BGS. | | | | |

TEST BORING B8

| DEPTH (IN.) | MATRIX COLOR(S) | MOTTLE COLOR(S) | TEXTURE | CONSISTENCY |
|---|-----------------|-----------------|----------|-------------|
| 0 - 14 | 10YR 3/3 | | FI SA LO | M V Fr |
| 14 - 36 | 10YR 4/4 | 10YR 3/3 | LO FI SA | M V Fr |
| COMMENTS: FEW, DISTINCT REDOX DETECTED AT 13" BGS. MASSIVE REDOX AT 24" BGS (10YR 6/2, 7.5YR 5/8). | | | | |

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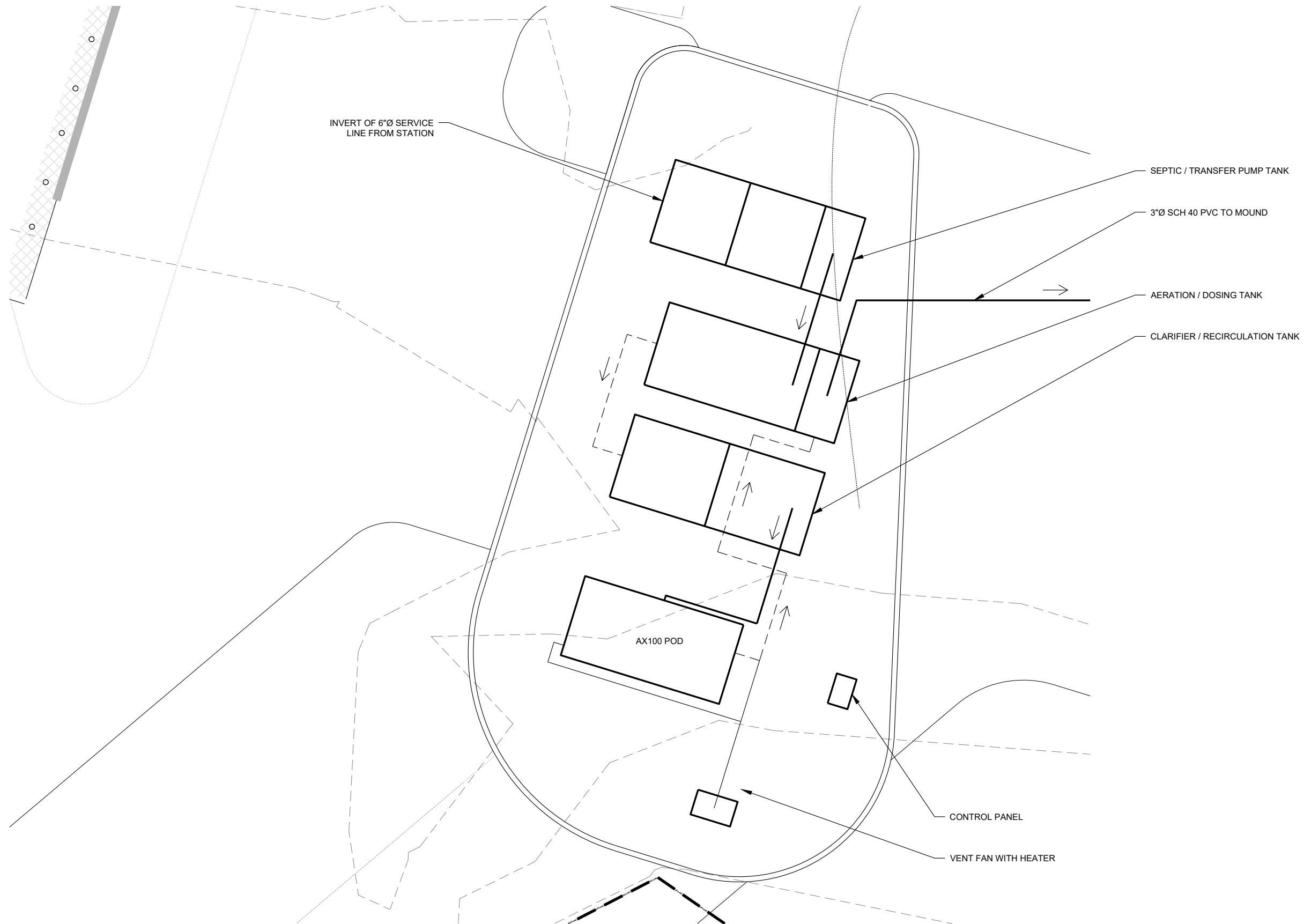
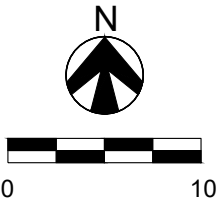
HOLIDAY STATION STORE
HAM LAKE, MN

SITE PLAN &
SOILS INFORMATION

C1

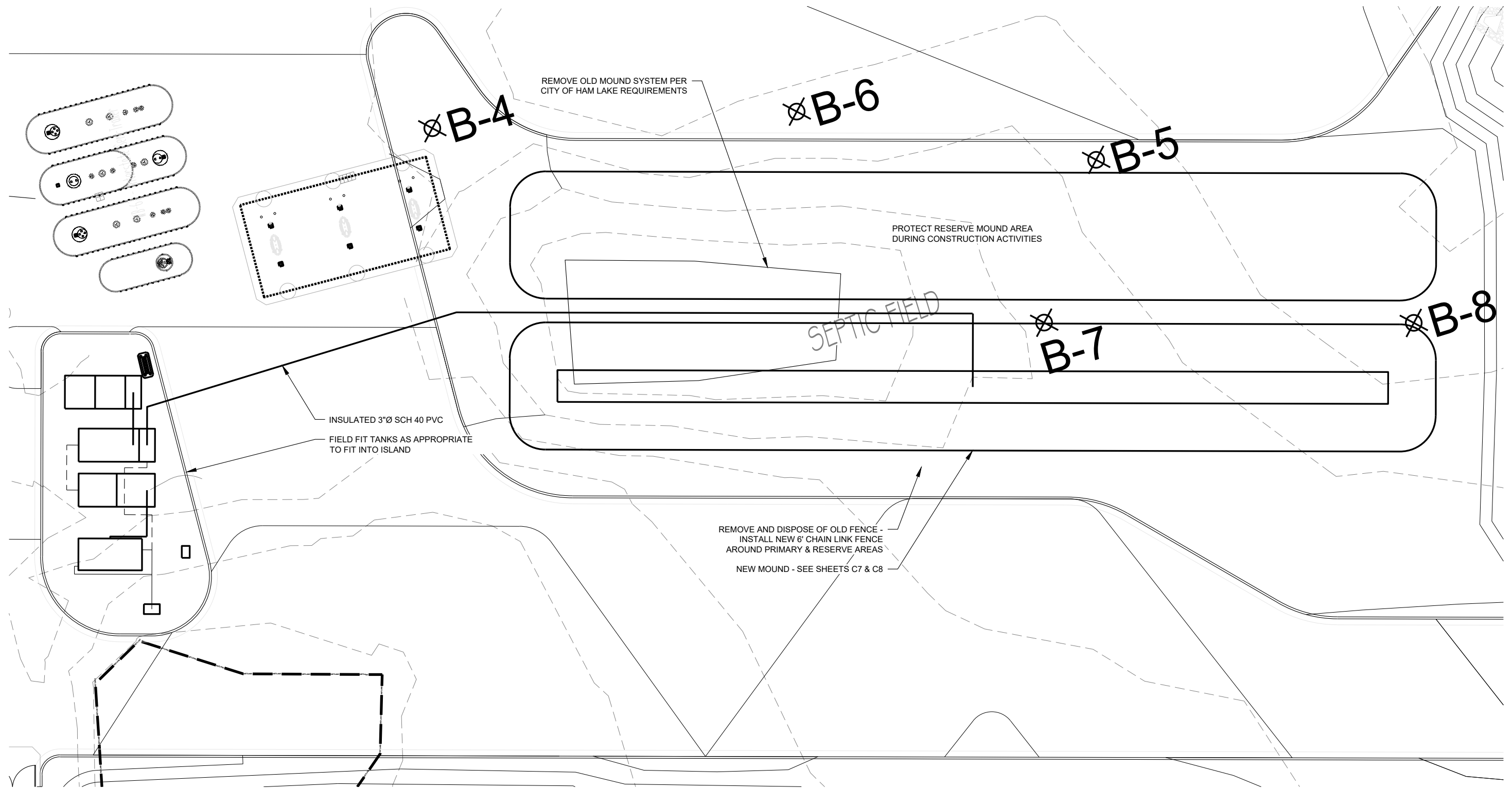
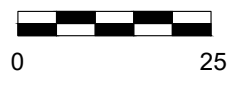
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Plot Date: 31 July 2020 by Carla Cross

OPERATING PARAMETERS:

| | |
|--------------------------------------|-----------|
| 1. DESIGN FLOW: | 2,000 GPD |
| 2. RAW WASTEWATER STRENGTH: | |
| BIOCHEMICAL OXYGEN DEMAND (BOD5) | 800 mg/L |
| TOTAL SUSPENDE SOLIDS (TSS) | 600 mg/L |
| 3. SEPTIC TANK EFFLUENT: | |
| BOD5 | 560 mg/L |
| TSS | 320 mg/L |
| 4. POST AERATION/ SETTLING EFFLUENT: | |
| BOD5 | 280 mg/L |
| TSS | 160 mg/L |
| 5. DISCHARGE TREATMENT LEVELS: | |
| BOD5 | 25 mg/L |
| TSS | 25 mg/L |

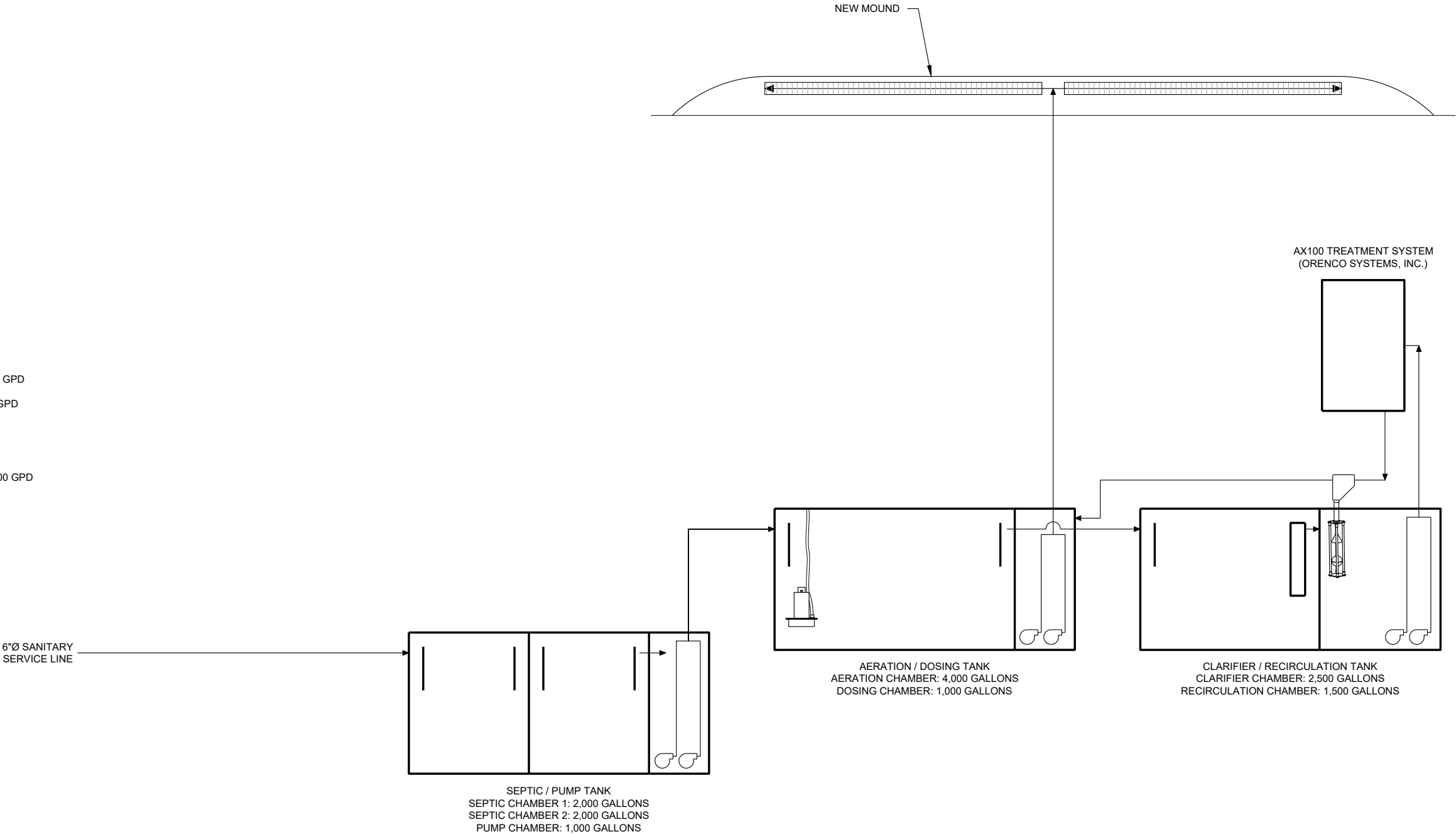
DESIGN FLOW BREAKDOWN (FOR INFORMATION ONLY):

24-HOUR GAS STATION
NO ATTACHED RESTAURANT OR KITCHEN
PRE-PACKAGED FOODS ONLY
NO CAR WASH FLOWS
CUSTOMER COUNT UNKNOWN

| | |
|--|---------|
| FLORIDA CHAPTER 64E-6: | |
| FLOW PER WATER CLOSET/ 24-HOUR STATION | 325 GPD |
| MINNESOTA RULES 7080: | |
| FLOW PER EMPLOYEE/ 8-HOUR SHIFT | 18 GPD |

4 WATER CLOSETS X 325 = 1,300 GPD
24 EMPLOYEES X 18 = 432 GPD
1,300 + 432 = 1,732 GPD

| | |
|----------------------|-----------|
| SELECTED DESIGN FLOW | 2,000 GPD |
|----------------------|-----------|

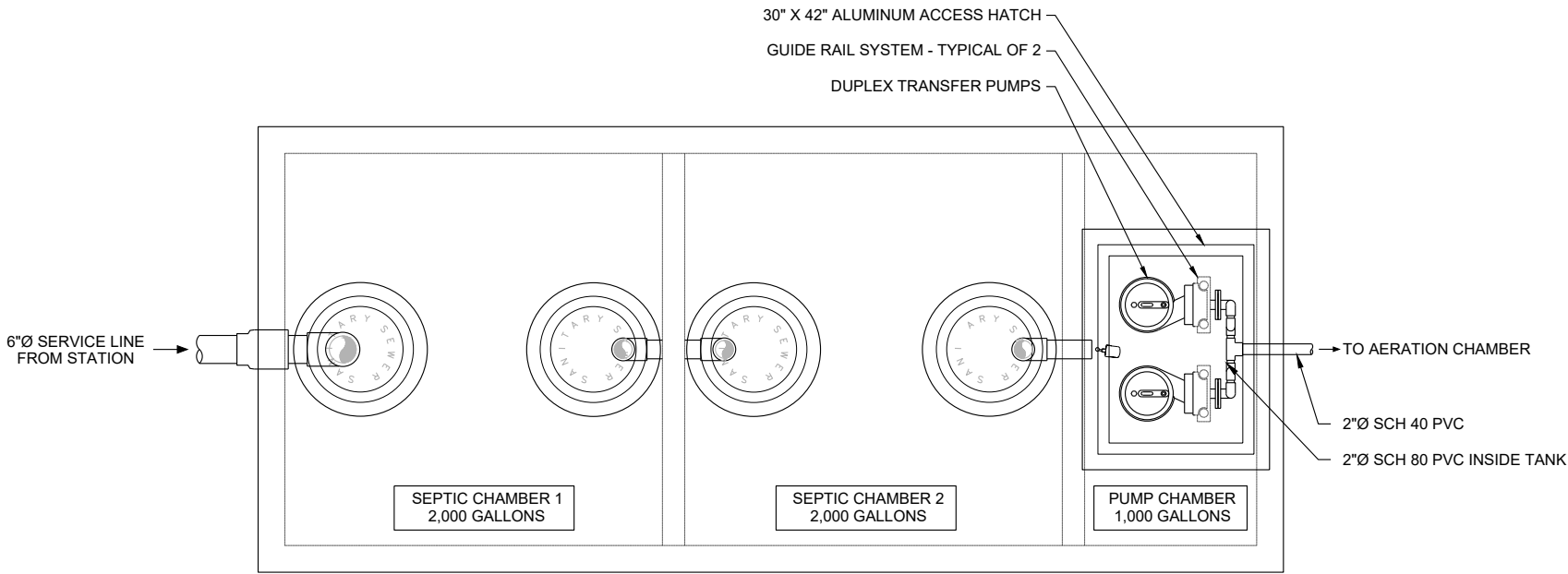


DISCLAIMERS:

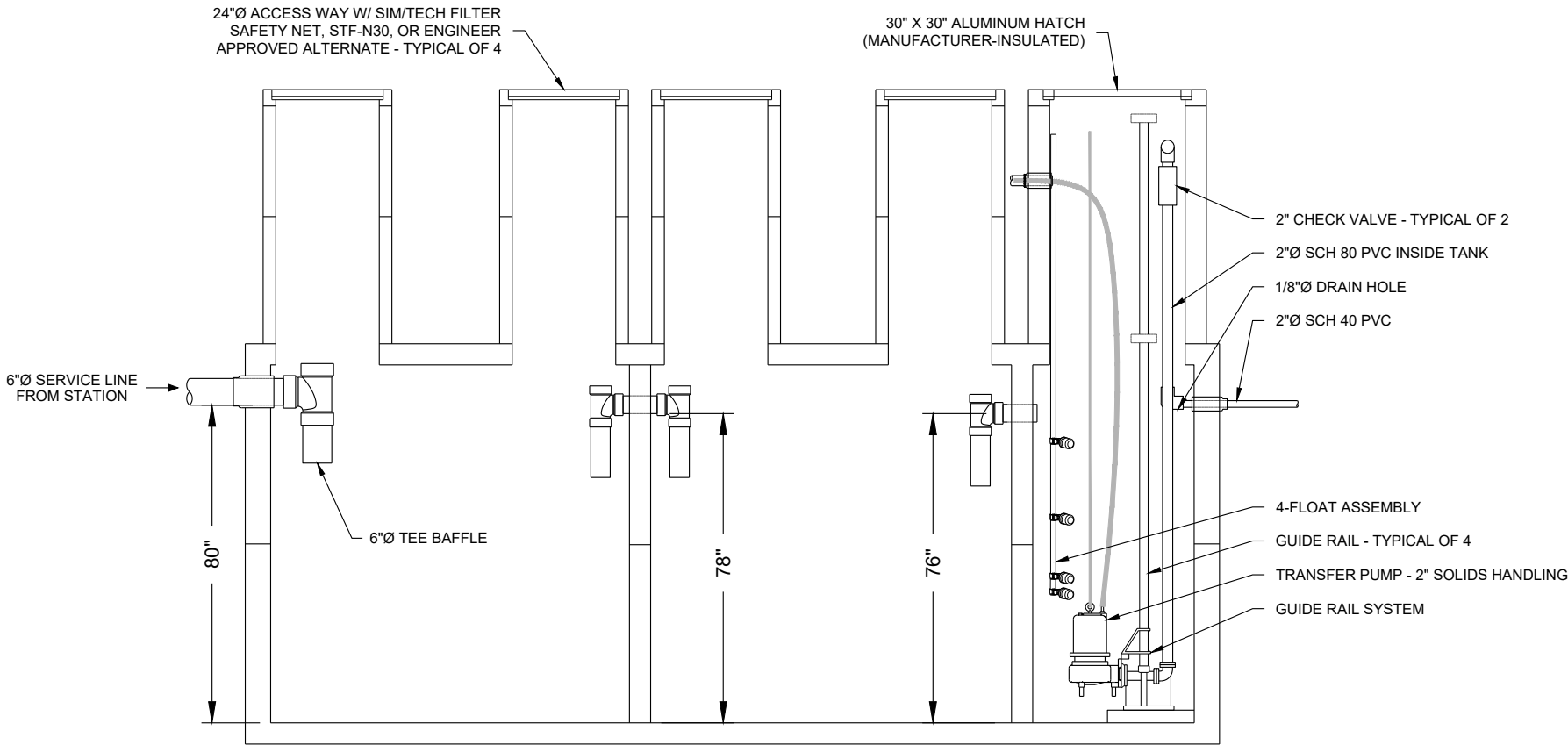
- THIS PLAN SET IS BASED UPON THE EXPECTED FLOWS AND LOADS LISTED ABOVE FOR THE PURPOSE OF SERVICING THE NEW HOLIDAY STATION STORE IN HAM LAKE, MN.
- ONCE THE FACILITY IS PLACED INTO OPERATION, THE INCOMING FLOWS AND WASTE STRENGTHS SHALL BE MONITORED. IF THE FLOW OR INFLUENT WASTEWATER STRENGTH EXCEED THOSE LISTED IN THE DESIGN ABOVE, MEASURES SHOULD BE TAKEN TO REDUCE THESE PARAMETERS OR ADDITIONAL TREATMENT CAPACITY AND PLANT EXPANSION WILL BE NECESSARY.
- DO NOT DISPOSE OF TOXICS OR CHEMICALS INTO SYSTEM. (EXAMPLES: RESTAURANT DEGREASERS & CLEANSERS, CARPET SHAMPOO, WAX STRIPPER FOR LINOLEUM)
- WATER SOFTENER BRINE DISCHARGE IS PROHIBITED FROM BEING DISCHARGED INTO THE ADVANCED WASTEWATER SYSTEM. FAILURE TO ADHERE TO THIS POLICY WILL VOID THE WARRANTY BY ORENCO SYSTEMS INC.

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SEPTIC / TRANSFER PUMP TANK PLAN VIEW
SCALE: NONE

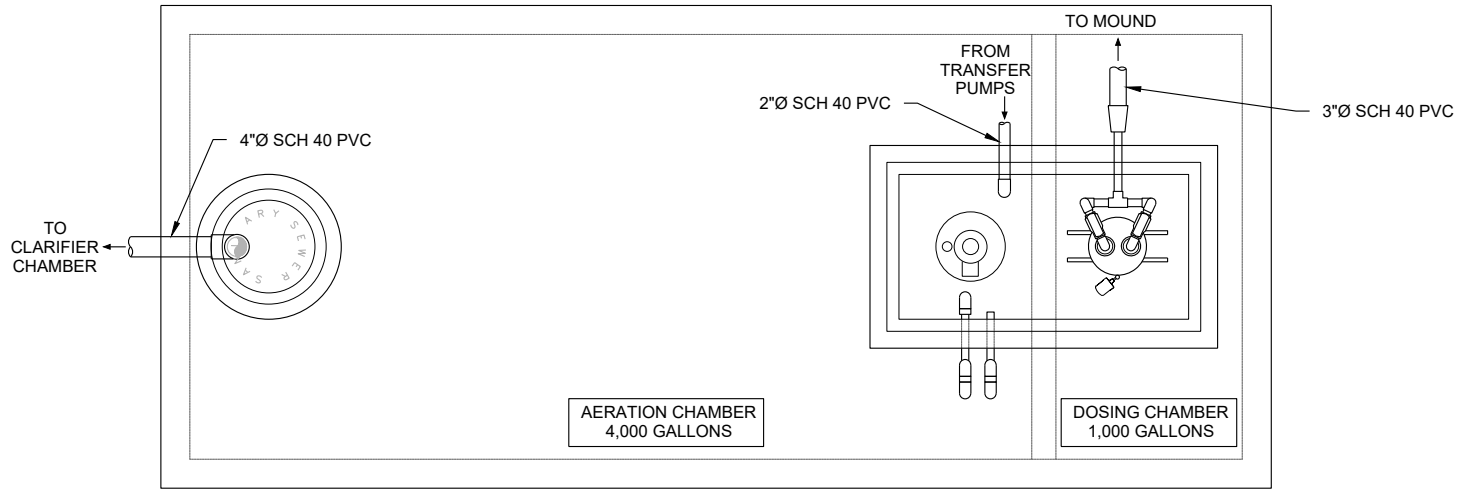


SEPTIC / TRANSFER PUMP TANK CROSS SECTION
SCALE: NONE

- TANK SPECIFICATIONS:**
1. THE SEPTIC / TRANSFER PUMP TANK SHALL BE THE 5,000 GALLON MODEL MANUFACTURED BY CREST PRECAST, INC., WIESER CONCRETE PRODUCTS, OR ENGINEER APPROVED ALTERNATE. TANK DIMENSIONS SHOWN ON SHEET C3 ARE FOR THE CREST PRECAST MODEL. INSTALL TANK PER MANUFACTURER SPECIFICATIONS. PROVIDE A MINIMUM 12" LEVELING BASE OF 3/4" MINUS GRANULAR BACKFILL. TANK MUST MEET ASTM C1227 SPECIFICATIONS. THE WORKING VOLUME FOR EACH SEPTIC CHAMBER MUST BE AT LEAST 2,000 GALLONS. THE WORKING VOLUME FOR THE PUMP CHAMBER SHALL BE AT LEAST 1,000 GALLONS. LARGER VOLUMES ARE ACCEPTABLE. CONFIRM VOLUMES AND INVERT ELEVATIONS WITH TANK MANUFACTURER.
 2. SHOP DRAWINGS MUST BE SUBMITTED TO ENGINEER FOR REVIEW PRIOR TO ORDERING TANK. PROVIDE SHOP DRAWINGS FOR TANK, RISERS, MANHOLE CASTINGS AND COVER, SAFETY NETS WITH QUICK LINKS AND STAINLESS STEEL HARDWARE, HATCHES, JOINT SEALANT DATA, PUMPS AND CONTROLS, GUIDE RAIL SYSTEM, AND EXTERNAL JUNCTION BOX.
 3. TANK SHALL BE APPROVED BY A MINNESOTA-LICENSED PROFESSIONAL ENGINEER AND THE LOCAL UNIT OF GOVERNMENT (HAM LAKE). TANK SHALL BE REGISTERED WITH THE MINNESOTA POLLUTION CONTROL AGENCY.
 4. ALL TANK OPENINGS SHALL BE INSTALLED AT LEAST 3 INCHES ABOVE FINAL GROUND SURFACE. GRADING AROUND TANK OPENINGS SHALL ENSURE THAT STORMWATER RUNOFF IS DIVERTED AWAY FROM ALL OPENINGS.
 5. INSTALL SINGLE LEAF, CHANNEL FRAMED ALUMINUM HATCH WITH 300 LB. PSF LOAD RATING; MUST HAVE MANUFACTURER-INSTALLED INSULATION AND USE TYPE 316 SST HARDWARE. HATCHES MUST ALSO HAVE FALL-THROUGH PROTECTION, ONE-HANDED LIFT ASSISTANCE, AND HOLD-OPEN ARM. CONTRACTOR TO CONFIRM HATCH SIZE IS APPROPRIATE FOR PUMP ACCESS. PROVIDE ALL-WEATHER PADLOCK FOR HATCH.
 6. MANHOLE ACCESS COVERS SHALL BE HEAVY-DUTY, AIR-TIGHT, TAMPER-RESISTANT, AND HAVE THE TEXT "WARNING: DO NOT ENTER" OR "SANITARY SEWER". APPROVED MODEL: EAST JORDAN IRON WORKS 1130A2PT AND 1490Z2PT OR ENGINEER APPROVED ALTERNATE.
 7. SOIL COVER OVER THE TOP OF TANK SHALL BE AT LEAST 6 FEET. CONFIRM DEPTH OF BURY PRIOR TO ORDERING TANK. DEPTH TO SEASONAL HIGH GROUNDWATER APPROXIMATELY 1 FOOT BELOW GROUND SURFACE (BGS). ANTI-BUOYANCY MEASURES MUST BE TAKEN FOR THIS TANK.

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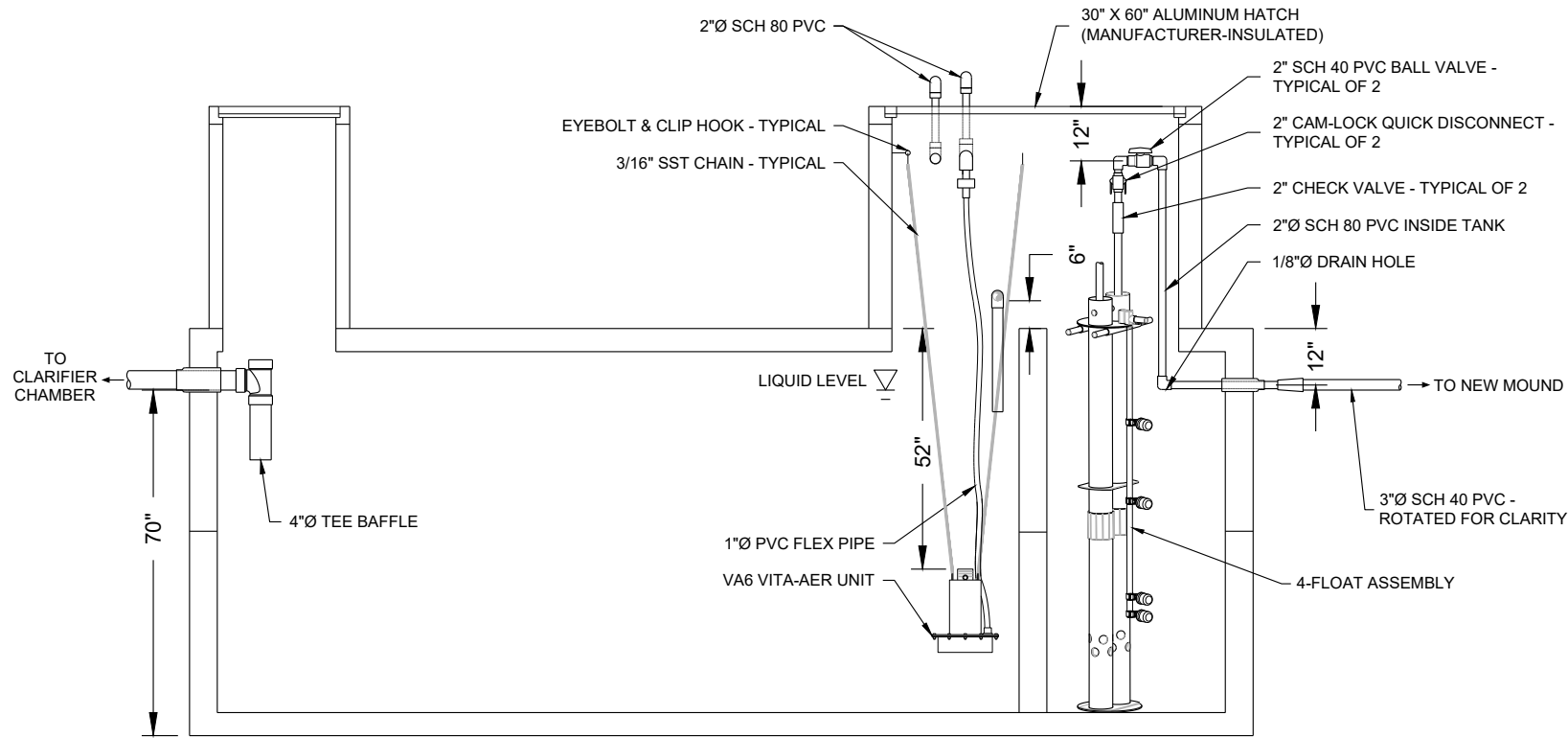


AERATION / DOSING TANK PLAN VIEW
SCALE: NONE

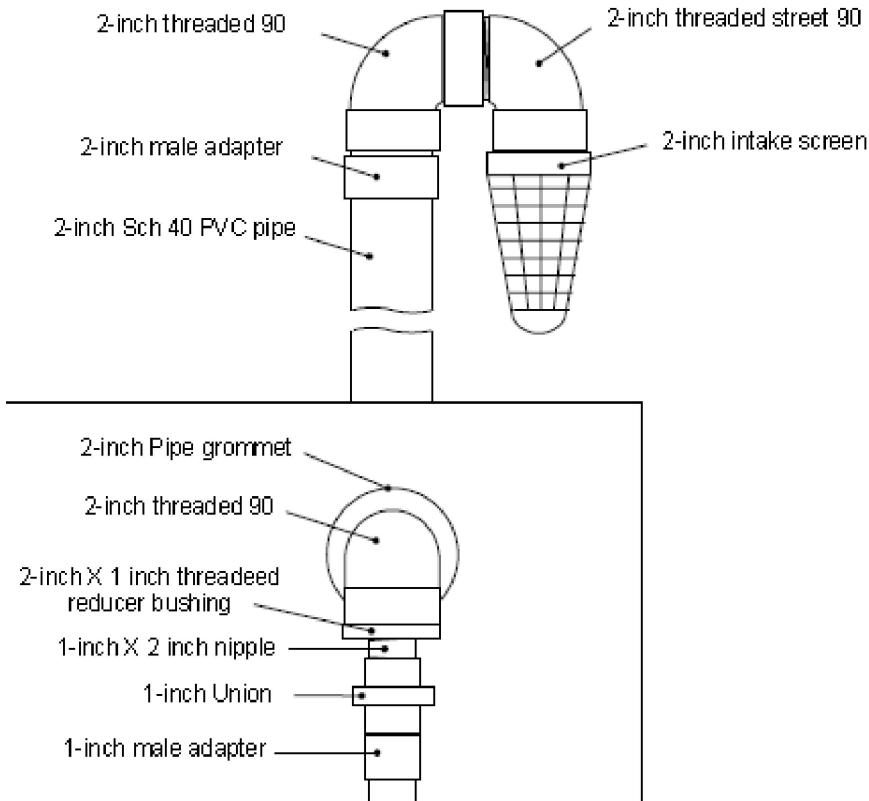
- TANK SPECIFICATIONS:**
1. THE AERATION / DOSING TANK SHALL BE THE 5,000 GALLON MODEL MANUFACTURED BY CREST PRECAST, INC., WIESER CONCRETE PRODUCTS, OR ENGINEER APPROVED ALTERNATE. TANK DIMENSIONS SHOWN ON SHEET C4 ARE FOR THE CREST PRECAST MODEL. INSTALL TANK PER MANUFACTURER SPECIFICATIONS. PROVIDE A MINIMUM 12" LEVELING BASE OF 3/4" MINUS GRANULAR BACKFILL. TANK MUST MEET ASTM C1227 SPECIFICATIONS. THE WORKING VOLUME FOR THE AERATION CHAMBER MUST BE AT LEAST 4,000 GALLONS. THE WORKING VOLUME FOR THE DOSING CHAMBER SHALL BE AT LEAST 1,000 GALLONS. LARGER VOLUMES ARE ACCEPTABLE. CONFIRM VOLUMES AND INVERT ELEVATIONS WITH TANK MANUFACTURER.
 2. SHOP DRAWINGS MUST BE SUBMITTED TO ENGINEER FOR REVIEW PRIOR TO ORDERING TANK. PROVIDE SHOP DRAWINGS FOR TANK, RISERS, MANHOLE CASTINGS AND COVER, SAFETY NETS WITH QUICK LINKS AND STAINLESS STEEL HARDWARE, HATCH, JOINT SEALANT DATA, AND EXTERNAL JUNCTION BOX.
 3. TANK SHALL BE APPROVED BY A MINNESOTA-LICENSED PROFESSIONAL ENGINEER AND THE LOCAL UNIT OF GOVERNMENT (HAM LAKE). TANK SHALL BE REGISTERED WITH THE MINNESOTA POLLUTION CONTROL AGENCY.
 4. ALL TANK OPENINGS SHALL BE INSTALLED AT LEAST 3 INCHES ABOVE FINAL GROUND SURFACE. GRADING AROUND TANK OPENINGS SHALL ENSURE THAT STORMWATER RUNOFF IS DIVERTED AWAY FROM ALL OPENINGS.
 5. INSTALL ONE DOUBLE OR SINGLE LEAF, CHANNEL FRAMED ALUMINUM HATCHES WITH 300 LB. PSF LOAD RATING: MUST HAVE MANUFACTURER-INSTALLED INSULATION AND USE TYPE 316 SST HARDWARE. HATCH MUST ALSO HAVE FALL-THROUGH PROTECTION, LIFT ASSISTANCE, AND HOLD-OPEN ARM. CONTRACTOR TO CONFIRM HATCH SIZE IS APPROPRIATE FOR AERATOR ACCESS. PROVIDE ALL-WEATHER PADLOCK FOR HATCH.
 6. MANHOLE ACCESS COVERS SHALL BE HEAVY-DUTY, AIR-TIGHT, TAMPER-RESISTANT, AND HAVE THE TEXT "WARNING: DO NOT ENTER" OR "SANITARY SEWER". APPROVED MODEL: EAST JORDAN IRON WORKS 1130A2PT AND 1490Z2PT OR ENGINEER APPROVED ALTERNATE.
 7. SOIL COVER OVER THE TOP OF TANK SHALL BE AT LEAST 2.5 FEET. INSULATE TANK TOP AND SIDES. CONFIRM DEPTH OF BURY PRIOR TO ORDERING TANK. SEASONAL HIGH WATER TABLE DETECTED APPROXIMATELY 1 FOOT BELOW GROUND SURFACE. TANK MANUFACTURER MUST PERFORM BUOYANCY CALCULATIONS TO DETERMINE IF ANTI-BUOYANCY MEASURES MUST BE TAKEN.

AERATION SPECIFICATIONS:

INSTALL ONE VITA-Aer, FULLY SUBMERSIBLE AERATOR, AIR INLET PIPING, AND REQUIRED TANK VENTILATION PER MANUFACTURER'S INSTRUCTIONS. ADJUST LENGTH OF ACCESS CHAIN SO THAT THE AERATOR WILL OPERATE AT THE APPROPRIATE DEPTH.








AERATION / DOSING TANK CROSS SECTION
SCALE: NONE



AIR SUPPLY COMPONENTS
SCALE: NONE

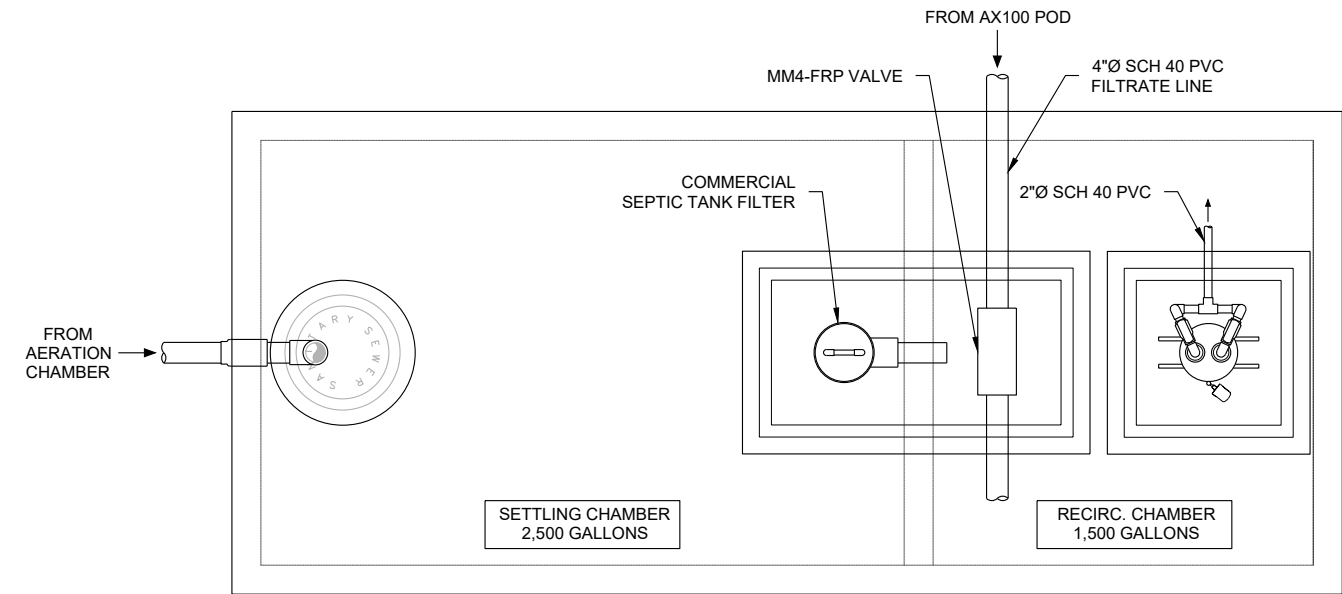
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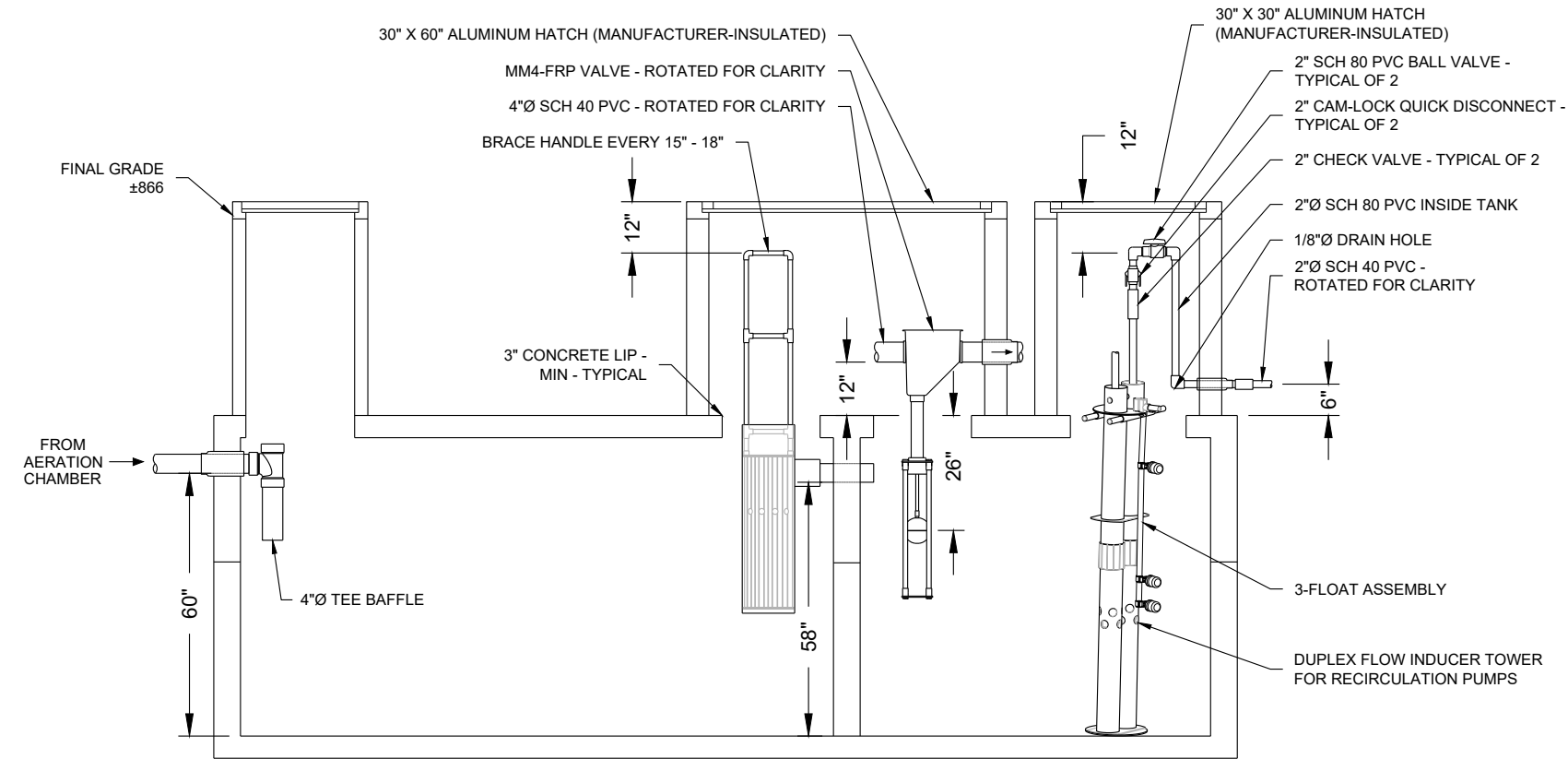
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WHITE BEAR LAKE, MN
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TEL. 612-209-7366





CLARIFIER / RECIRCULATION TANK PLAN VIEW
SCALE: NONE



CLARIFIER / RECIRCULATION TANK CROSS SECTION

TANK SPECIFICATIONS:

1. THE CLARIFIER / RECIRCULATION TANK SHALL BE THE 4,000 GALLON MODEL MANUFACTURED BY CREST PRECAST, INC., WIESER CONCRETE PRODUCTS, OR ENGINEER APPROVED ALTERNATE. TANK DIMENSIONS SHOWN ON SHEET C5 ARE FOR THE CREST PRECAST MODEL. INSTALL TANK PER MANUFACTURER SPECIFICATIONS. PROVIDE A MINIMUM 12" LEVELING BASE OF 3/4" MINUS GRANULAR BACKFILL. THE WORKING VOLUME FOR THE FIRST CHAMBER MUST BE AT LEAST 2,500 GALLONS. LARGER VOLUMES ARE ACCEPTABLE. THE SECOND CHAMBER MUST BE AT LEAST 1,500 GALLONS. CONFIRM VOLUMES AND INVERT ELEVATIONS WITH TANK MANUFACTURER.
2. SHOP DRAWINGS MUST BE SUBMITTED TO ENGINEER FOR REVIEW PRIOR TO ORDERING TANK. PROVIDE SHOP DRAWINGS FOR TANK, RISERS, MANHOLE CASTING AND COVER, SAFETY NETS WITH QUICK LINKS AND STAINLESS STEEL HARDWARE, HATCHES, JOINT SEALANT DATA, COMMERCIAL SEPTIC FILTER, FLOW INDUCER TOWERS, PUMPS & DISCHARGE ASSEMBLIES, FLOATS, CHECK VALVES, CONTROL PANEL AND EXTERNAL JUNCTION BOXES.
3. TANK SHALL BE APPROVED BY A MINNESOTA-LICENSED PROFESSIONAL ENGINEER AND THE LOCAL UNIT OF GOVERNMENT (HAM LAKE). TANK SHALL BE REGISTERED WITH THE MINNESOTA POLLUTION CONTROL AGENCY.
4. ALL TANK OPENINGS SHALL BE INSTALLED AT LEAST 3 INCHES ABOVE FINAL GROUND SURFACE. GRADING AROUND TANK OPENINGS SHALL ENSURE THAT STORMWATER RUNOFF IS DIVERTED AWAY FROM ALL OPENINGS.
5. TANK PENETRATIONS MUST BE CAST IN FLEXIBLE CONNECTORS MEETING ASTM C923 SPECIFICATIONS.
6. MANHOLE ACCESS COVERS SHALL BE HEAVY-DUTY, AIR-TIGHT, TAMPER-RESISTANT, AND HAVE THE TEXT "WARNING: DO NOT ENTER" OR "SANITARY SEWER". APPROVED MODEL: EAST JORDAN IRON WORKS 1130A2PT AND 1490Z2PT OR ENGINEER APPROVED ALTERNATE.
7. INSTALL CHANNEL FRAMED ALUMINUM HATCHES WITH 300 LB. PSF LOAD RATING: MUST HAVE MANUFACTURER-INSTALLED INSULATION AND USE TYPE 316 SST HARDWARE. HATCHES MUST ALSO HAVE FALL-THROUGH PROTECTION, LIFT ASSISTANCE, AND HOLD-OPEN ARM. CONTRACTOR TO CONFIRM HATCH SIZE IS APPROPRIATE FOR FILTER AND PUMP ACCESS. PROVIDE ALL-WEATHER PADLOCK FOR ALL HATCHES AND CONTROL PANEL.
8. SOIL COVER OVER THE TOP OF TANK SHALL BE AT LEAST 2.5 FEET. INSULATE TANK TOP AND SIDES. CONFIRM DEPTH OF BURY PRIOR TO ORDERING TANK. SEASONAL HIGH WATER TABLE DETECTED APPROXIMATELY 1 FOOT BELOW GROUND SURFACE. TANK MANUFACTURER MUST PERFORM BUOYANCY CALCULATIONS TO DETERMINE IF ANTI-BUOYANCY MEASURES MUST BE TAKEN.
9. APPROVED SEPTIC TANK SCREEN (FILTER): (1) FT0860-36A BY ORENCO SYSTEMS INC., (2) PL-250 BY POLYLOK INC., AND (3) ENGINEER-APPROVED ALTERNATE. ADD HIGH WATER LEVEL SWITCH WITH ALARM TO SCREEN.

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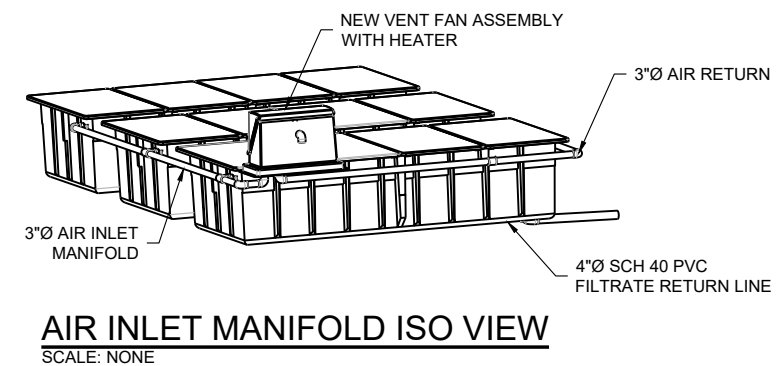
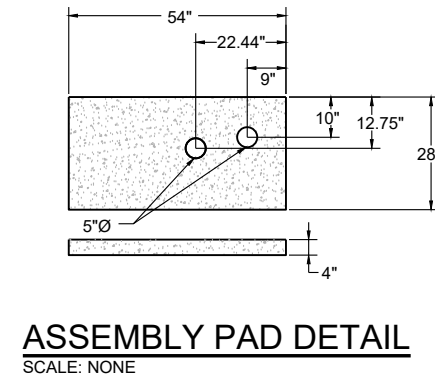
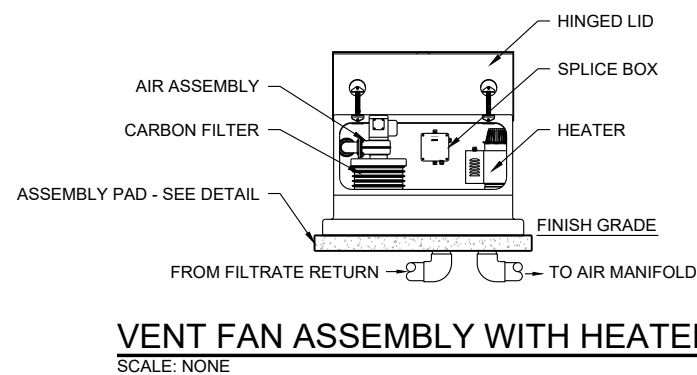
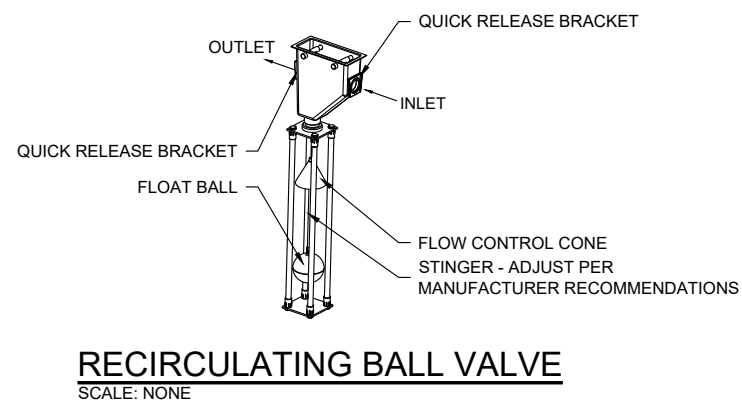
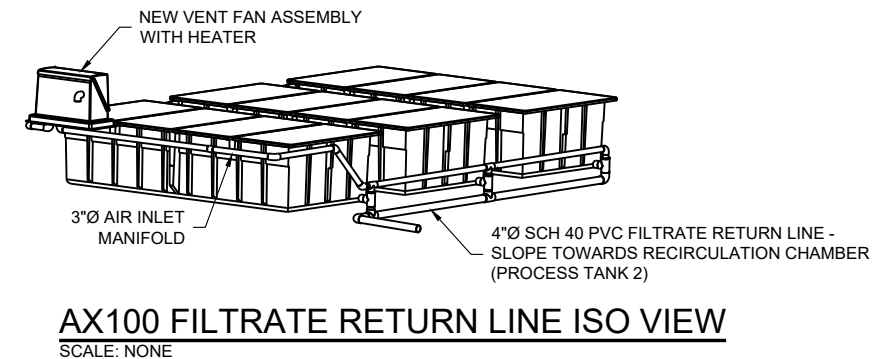
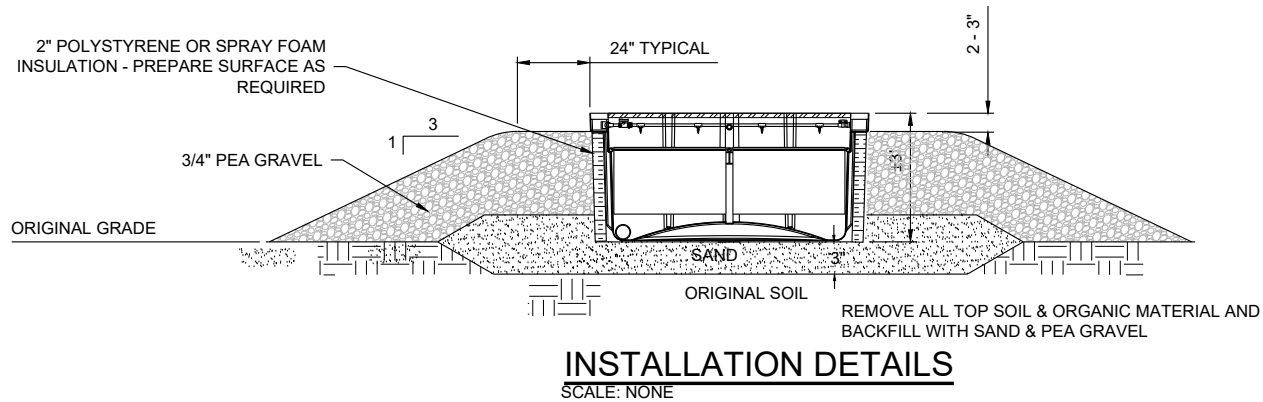
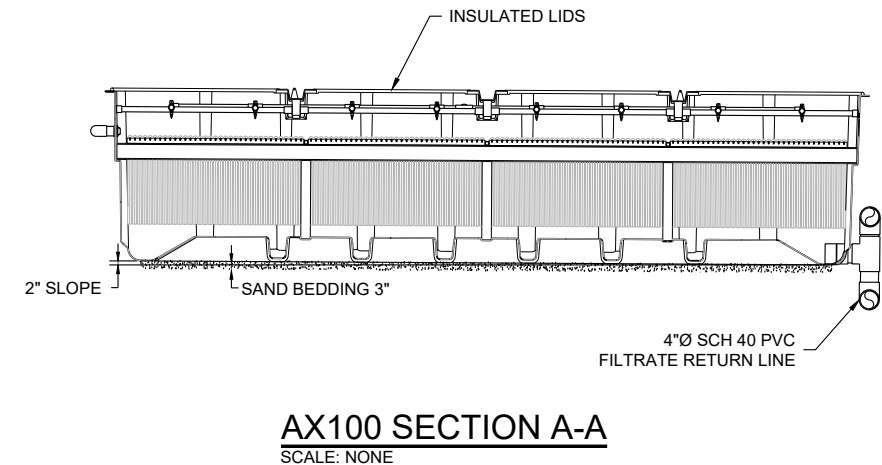
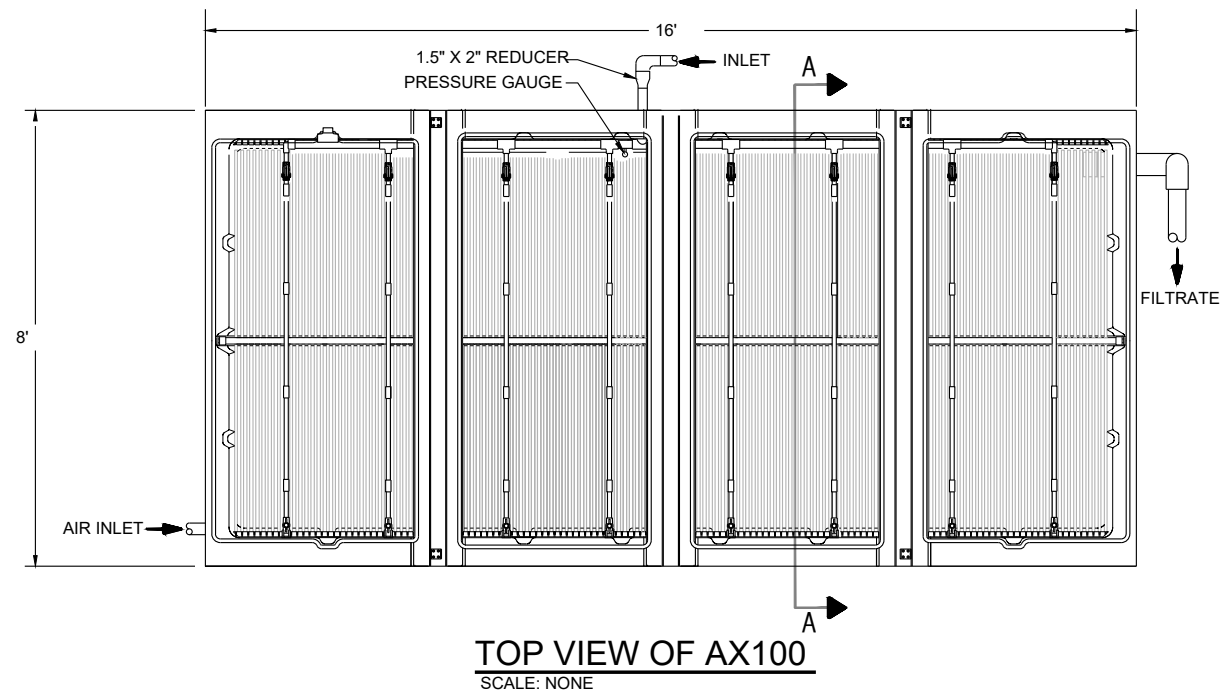


HOLIDAY STATION STORE
HAM LAKE, MN

CLARIFIER /
RECIRCULATION TANK

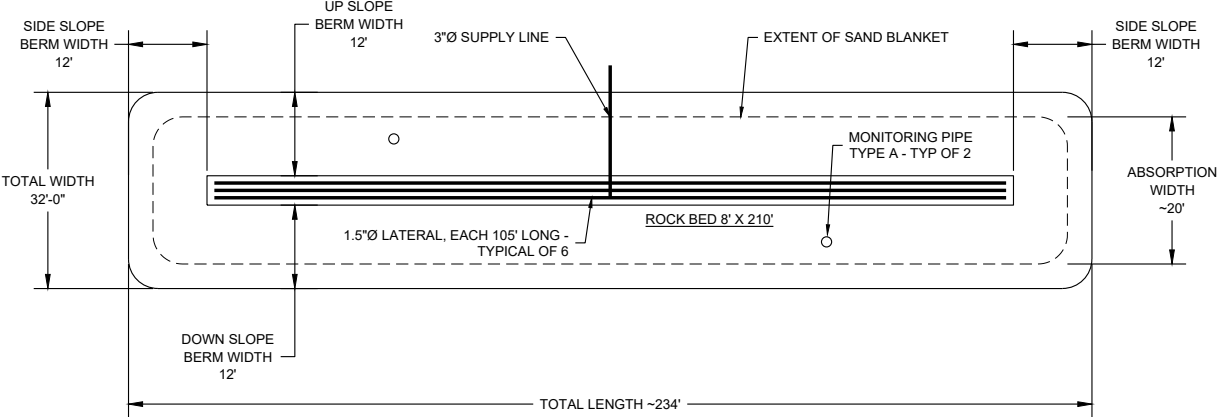
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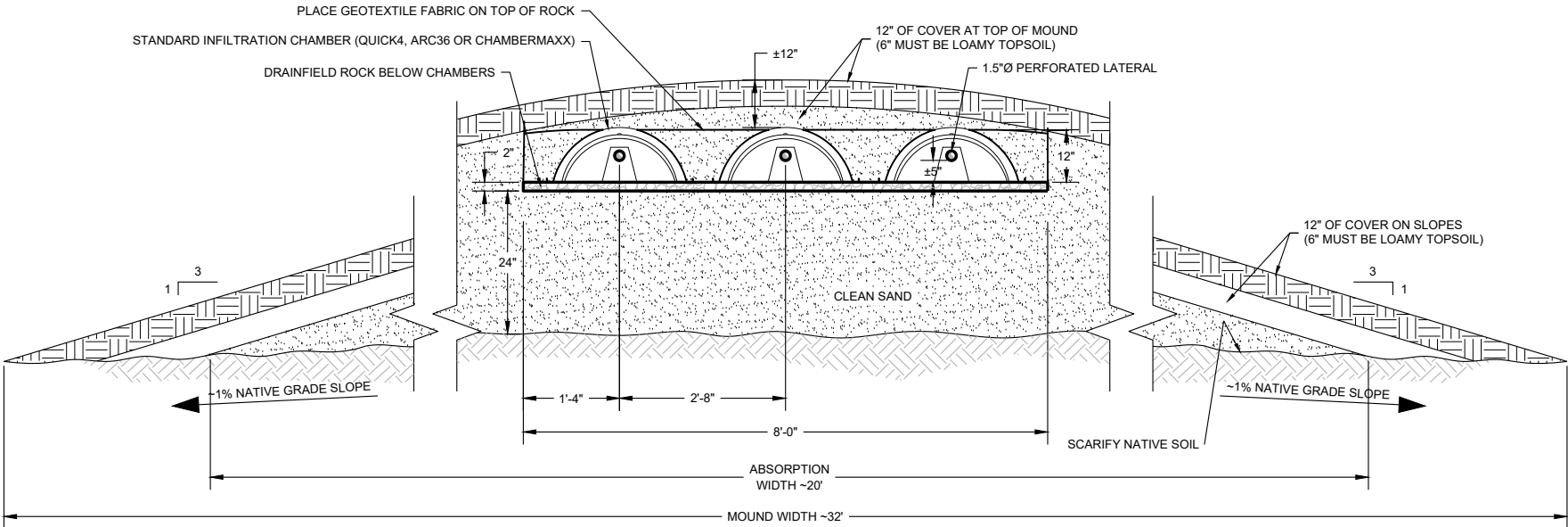


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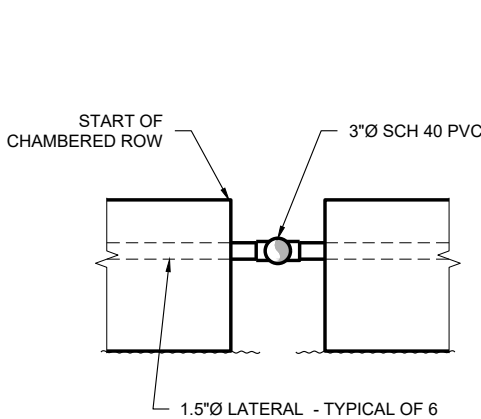
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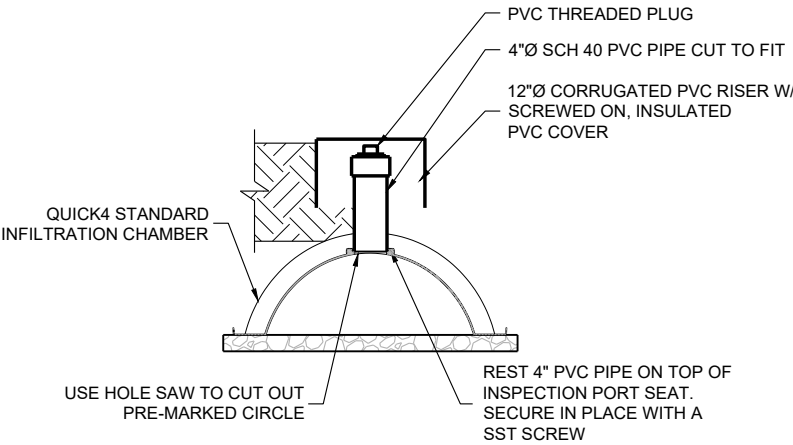
MOUND PLAN VIEW
NO SCALE



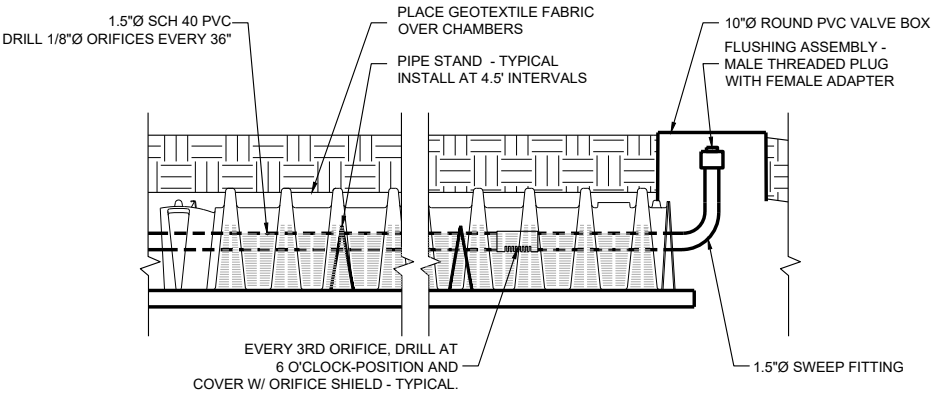
MOUND CROSS SECTION
NO SCALE



HEADER DETAIL
SCALE: NONE



MONITORING PIPE 'TYPE A' DETAIL
SCALE: NONE



PERFORATED LATERAL DETAIL
NO SCALE

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SPECIFICATIONS:

- IT IS THE INTENT OF THIS DESIGN TO PROVIDE AT LEAST 36 INCHES OF VERTICAL SEPARATION TO THE SEASONAL HIGH WATER TABLE. IF FIELD CONDITIONS DIFFER FROM THOSE INDICATED ON THESE PLANS, CONTACT ENGINEER BEFORE PROCEEDING WITH WORK.
- THE AREA WHERE THE MOUND SHALL BE INSTALLED MUST BE PROTECTED FROM CONSTRUCTION EQUIPMENT PRIOR TO MOBILIZATION TO SITE TO PREVENT ANY TRAFFIC THAT WOULD RESULT IN SOIL COMPACTION.
- NO EXCAVATION OF THE MOUND SHALL BE DONE DURING ANY RAIN EVENT UNTIL THE UPPER 12 INCHES OF SOIL HAS A MOISTURE CONTENT LESS THAN THE PLASTIC LIMIT, AS DETERMINED BY THE ENGINEER.
- IN THE AREAS OUTSIDE OF THE OLD DECOMMISSIONED MOUND, THE EXISTING TOPSOIL SHALL BE BROKEN UP AND THE SAND LAYER MATERIAL AND BERM FILL MATERIAL SHALL BE INTEGRATED INTO THE TOPSOIL. FOR THE DECOMMISSIONED MOUND, THE DISTRIBUTION MEDIA, PIPING, AND SAND BLANKET MUST BE REMOVED TO THE ORIGINAL GRADE. CONSULT WITH THE CITY OF HAM LAKE ON OPTIONS FOR REUSING OR DISPOSING OF DECOMMISSIONED MOUND MATERIALS.
- THE SAND LAYER AND FILL MATERIAL MUST BE PLACED USING METHODS THAT MINIMIZE COMPACTION OF SOIL UNDER THE SAND LAYER AND PREVENT SMEARING OR GLAZING OF THE SOIL UNDER THE MOUND AREA. TRACKED EQUIPMENT IS REQUIRED. ENSURE AT LEAST 6 INCHES OF SAND IS KEPT BENEATH THE TRACK TYPE MACHINERY.
- MOUND SAND MUST MEET THE REQUIREMENTS OF MINNESOTA RULES 7080.2220 SUBPART 3 (C). PRIOR TO INSTALLATION OF SAND, A JAR TEST FOR EACH TRUCK DELIVERY MUST BE PERFORMED ON THE SAND TO ENSURE IT IS CLEAN ENOUGH FOR MOUND CONSTRUCTION. PROVIDE A SIEVE ANALYSIS OF SAND TO ENGINEER FOR REVIEW.
- ROCK (DRAIN MEDIA) MUST MEET THE QUALITY REQUIREMENTS OF MnDOT SPECIFICATION 3137. IT SHALL ALSO MEET THE GRADATION REQUIREMENTS FOR COARSE AGGREGATE SHOWN IN TABLE 1 AND THE LIMESTONE TESTING REQUIREMENTS FOR HARDNESS IN TABLE 2 FROM THE MINNESOTA POLLUTION CONTROL AGENCY'S *DRAINFIELD ROCK DISTRIBUTION MEDIA DOCUMENT* (VERSION 2). PROVIDE A SIEVE ANALYSIS OF ROCK TO ENGINEER FOR REVIEW.
- ALL SUPPLY PIPING WITH LESS THAN 8 FEET OF SOIL COVER SHALL BE INSULATED. THE SUPPLY LINE SHALL ALSO BE INSTALLED AT A MINIMUM 1% SLOPE TO DRAIN BACK TO DOSING CHAMBER.
- TRACER WIRE MUST BE INSTALLED OVER THE MOUND SUPPLY LINE. TRACER WIRE MUST BE THE COPPERHEAD INDUSTRIES SUPERFLEX OF COATING THICKNESS 45 mil OR ENGINEER APPROVED ALTERNATE. BRING TRACER WIRE TO SURFACE ADJACENT TO MOUND HEADER AS WELL AS THE DOSING TANK. TERMINATION POINTS MUST UTILIZE AN APPROVED TRACER WIRE ACCESS BOX. A MINIMUM OF 600 mm OF EXCESS/SLACK WIRE IS REQUIRED IN ALL TRACER ACCESS BOXES AFTER MEETING FINAL ELEVATION. TRACER WIRE BOXES MUST INCLUDE A MANUALLY INTERRUPTIBLE CONDUCTIVE/CONNECTIVE LINK BETWEEN THE TERMINAL FOR THE TRACER WIRE CONNECTION AND THE TERMINAL FOR THE GROUNDING ANODE WIRE CONNECTION. GROUNDING ANODE WIRE SHALL BE CONNECTED TO THE IDENTIFIED TERMINAL ON ALL ACCESS BOXES. APPROVED TRACER WIRE ACCESS BOX: SNAKEPIT BY COPPERHEAD INDUSTRIES OR ENGINEER APPROVED ALTERNATE.
- CONTRACTOR SHALL PERFORM A CONTINUITY TEST ON TRACER WIRE. IF TRACER WIRE IS FOUND TO NOT BE CONTINUOUS AFTER TESTING, CONTRACTOR SHALL REPAIR OR REPLACE FAILED SEGMENT AT OWN EXPENSE. TRACER WIRE ACCESS POINTS SHALL BE NO MORE THAN 300 m APART. TRACER WIRE SHALL BE CONTINUOUS AND WITHOUT SPLICES FROM EACH TRACER WIRE ACCESS POINT.
- PERFORATED LATERALS MUST BE FREE OF BURRS. USE A DRILL PRESS TO MAKE 1/8"Ø ORIFICES.
- MONITORING PIPES, EACH LOCATED ONE QUARTER OF THE LENGTH OF THE SAND LAYER BUT NOT MORE THAN 5 FEET FROM EACH END OF THE SAND LAYER, SHALL BE INSTALLED IN THE MOUND.
- SQUIRT TESTING: USING CLEAN WATER, THE CONTRACTOR SHALL PERFORM A SQUIRT TEST AFTER FLUSHING THE LATERALS. SQUIRT HEIGHT AT THE END OF ALL LATERALS MUST BE RECORDED AND PROVIDED TO ENGINEER.
- INSTALL NON-WOVEN GEOTEXTILE FABRIC OVER THE TOP AND SIDES OF THE CHAMBERS. FABRIC MUST BE OF SUFFICIENT STRENGTH TO UNDERGO INSTALLATION WITHOUT RUPTURE WHILE PERMITTING PASSAGE OF WATER WITHOUT ALLOWING OVERLYING SOIL MATERIAL INTO THE ROCK. PROTECT FABRIC FROM RAIN AND DIRECT SUNLIGHT PRIOR TO INSTALLATION. ROLLS SHOULD OVERLAP BY AT LEAST 6 INCHES.

SOIL SURFACE PREPARATION:

- IF ANY TREES OR BUSHES ARE PRESENT ON THE SITE WHERE THE MOUND WILL BE INSTALLED, THEY SHOULD BE CUT OFF AT THE SOIL SURFACE AND STUMPS LEFT IN PLACE.
- ALL VEGETATION IN EXCESS OF 2 INCHES IN LENGTH, AS WELL AS ANY DEAD ORGANIC DEBRIS, MUST BE REMOVED FROM THE SURFACE OF THE TOTAL AREA WHERE THE MOUND WILL BE INSTALLED. LONG GRASS MUST BE CUT OFF AND REMOVED.
- THE SUPPLY LINE SHALL BE INSTALLED PRIOR TO SOIL SURFACE PREPARATION FOR THE MOUND. ANY TRENCH EXCAVATED TO INSTALL THE SUPPLY LINE MUST BE CAREFULLY BACKFILLED AND COMPACTED TO PREVENT SEEPAGE OF EFFLUENT.
- THE TOTAL AREA FOR THE MOUND, INCLUDING UNDER THE BERMS, MUST BE ROUGHENED TO THOROUGHLY BREAK UP THE EXISTING SOD LAYER. THE GRASS MUST BE TURNED OVER SO THERE IS LITTLE TO NO GRASS AT THE SURFACE. BREAK UP, PERPENDICULAR TO SLOPE, THE TOP 6 TO 8 INCHES. NEVER USE A ROTOTILLER TO PREPARE THE SURFACE. DISKING MAY BE USED TO ROUGHEN THE SOIL SURFACE AND BREAK UP THE SOD LAYER.
- SURFACE PREPARATION MAY BE PERFORMED WITH A MOLDBOARD PLOW, DISK PLOW, OR BACKHOE USING ONLY THE TEETH. MOLDBOARD PLOW FURROWS SHOULD BE AT LEAST 8 INCHES DEEP, THROWN UPSLOPE, AND RUN PERPENDICULARLY TO THE SLOPE. CARE MUST BE TAKEN NOT TO COMPACT OR PUDDLE DEEPER SOIL LAYERS. IN NO CASE SHOULD ANY SURFACE SOIL BE EXCAVATED AND MOVED MORE THAN 12 INCHES FROM ITS ORIGINAL LOCATION.
- ABOVE GROUND SYSTEM CONSTRUCTION SHOULD PROCEED IMMEDIATELY AFTER SURFACE PREPARATION IS COMPLETED.

CONDUCTING A JAR TEST:

- CONTRACTOR SHALL PLACE EXACTLY 2 INCHES OF SAND IN THE BOTTOM OF A QUART JAR AND FILL THE JAR 3/4 FULL OF CLEAN WATER.
- COVER THE QUART JAR AND SHAKE THE CONTENTS VIGOROUSLY FOR 1 TO 2 MINUTES.
- ALLOW JAR TO STAND FOR 30 MINUTES AND OBSERVE WHETHER THERE IS A LAYER OF SILT OR CLAY (FINES) ON TOP OF THE SAND. IF THE LAYER OF FINE PARTICLES IS MORE THAN 1/8 INCH THICK, THE SAND IS PROBABLY NOT SUITABLE FOR USE IN MOUND CONSTRUCTION. CONSULT WITH ENGINEER AND SUPPLIER OF SAND FOR NEXT STEPS. CONTRACTOR SHALL TAKE DIGITAL PHOTOS OF JAR TESTS AND PROVIDE TO ENGINEER. CONTRACTOR SHALL ALSO STORE JAR TESTS FOR TWO WEEKS.


MEDIA PLACEMENT:

- FOR SAND PLACEMENT, A TRACKED, CRAWLER TRACTOR WITH A BLADE OR BUCKET SHOULD BE USED TO MOVE THE SAND IN TO PLACE. THE SAND LAYER UPON WHICH THE DRAINFIELD ROCK WILL BE PLACED MUST BE LEVEL IN ALL DIRECTIONS.
- ALWAYS KEEP A MINIMUM OF 6 INCHES OF FILL MATERIAL BENEATH TRACKS TO PREVENT COMPACTION OF IN SITU SOIL.
- THE DRAINFIELD ROCK AND CHAMBERS MUST BE LEVEL. ALL ORIFICES POINTING DOWN MUST BE COVERED WITH ORIFICE SHIELDS.
- CONTRACTOR MUST VERIFY THE QUALITY OF THE ROCK. USE BEST MANAGEMENT PRACTICES WHEN LOADING AND MOVING ROCK AROUND SO THAT IT REMAINS CLEAN AND WILL NOT BECOME CONTAMINATED. TAKE DIGITAL PHOTOS OF ROCK FOR DOCUMENTATION AND PROVIDE TO ENGINEER.
- SANDY LOAM SOIL SHOULD BE PLACED OVER THE MOUND ABSORPTION BED AND ROCK. A TYPICAL DESCRIPTION OF A SANDY LOAM SOIL IS (1) 50 TO 74% SAND, (2) 0 TO 48% SILT AND (3) 2 TO 15% CLAY. AT LEAST 6 INCHES OF THE CAP MUST BE TOPSOIL BORROW, WHICH IS A LOAMY SOIL MATERIAL HAVING LESS THAN 5% MATERIAL LARGER THAN SIEVE SIZE 8; NO MATERIAL LARGER THAN 1 INCH; A MOIST COLOR VALUE OF 3.5 OR LESS; AND ADEQUATE NUTRIENTS AND pH TO SUSTAIN HEALTHY PLANT GROWTH.

SEEDING / SURFACE RESTORATION:

- GRASS COVER SHALL BE ESTABLISHED WITHIN ONE WEEK AFTER THE MOUND SYSTEM IS INSTALLED. THE COVER MUST BE OVER THE ENTIRE AREA OF THE MOUND, RESERVE AREA AND 10 FEET BELOW THE TOE OF MOUND.
- MULCH: MnDOT 3882, TYPE 1, TWO TONS PER ACRE, DISK ANCHORED IN AREAS THAT DO NOT RECEIVE STRAW ROLLED BLANKET.
- FERTILIZER: MnDOT 3881, TYPE 20-10-10 AT 400 POUNDS PER ACRE. FERTILIZER MUST BE PHOSPHORUS-FREE IF SITE IS WITHIN 300 FEET OF WATER BODY.
- HYDROSEEDING: PER 2014 MnDOT SEEDING MANUAL, MnDOT 3884 HYDRAULIC SOIL STABILIZER, TYPE B4 (BFM) OVER THE SEED. METHOD USED FOR SPRING AND SUMMER INSTALLATION ONLY.
- EACH SEED TYPE SHALL BE MIXED TOGETHER WITH THE COVER CROP AT THEIR PRE-DETERMINED RATES AND SEEDED IN AREAS, AS SPECIFIED ON PLANS.
- COVER CROP: MnDOT 3876, TEMPORARY MIX TYPE 100 AT 200 POUNDS PER ACRE.
- MnDOT 3876, TEMPORARY MIX TYPE 110 AT 100 POUNDS PER ACRE; HYDROSEEDED ACCORDING TO MnDOT 2575 WITH MNDOT 3884 HYDRAULIC SOIL STABILIZER TYPE B4 OVER THE SEED.
- SOD: LAWN SOD SHALL HAVE A LUSH APPEARANCE, BE DENSE, HAVE A UNIFORM TEXTURE, AND BRIGHT IN COLOR THROUGHOUT. THE SOD SHALL NOT CONTAIN GRASS WITH BLADE WIDTHS OF 5 mm (0.2 INCH) OR GREATER. THE SOD SHALL BE WEED FREE AND CONTAIN NO MORE THAN 5 mm (0.2 INCH) OF THATCH OVER THE BASE SOIL. THE SOD SHALL CONSIST OF 4 OR 5 FINE LEAFED TURF GRASSES. AT LEAST 2/3 OF THE GRASSES, AS DETERMINED BY INITIAL SEEDING PROPORTIONS, SHALL BE OF IMPROVED AND ELITE TYPE KENTUCKY BLUEGRASS VARIETIES AS DEFINED IN 3876.2C. IN AREAS WITH STEEP SLOPE, ANCHORS SHOULD BE USED.
- TURF SEED: SHALL BE INSTALLED AS SOON AS SITE HAS BEEN PREPARED. SEEDING RATE AT 8 TO 10 POUNDS PER 1,000 SQUARE FEET.
- CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING ALL SEEDING AREAS. CONTRACTOR TO MAINTAIN AND WATER PLANT MATERIAL DURING INSTALLATION AND FOR A 60 DAY ESTABLISHMENT PERIOD DURING THE GROWING SEASON. VOLUME OF WATER TO BE PER PLANT REQUIREMENT FOR NORMAL GROWTH AND ESTABLISHMENT.
- CONTRACTOR SHALL RESTORE ALL DISTURBED SURFACES TO EXISTING, OR BETTER, CONDITIONS.

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CONTROL PANEL SPECIFICATIONS:

THE POWER SUPPLY AT THE WASTEWATER TREATMENT SYSTEM IS THREE PHASE. CONFIRM IF VOLTAGE IS 200 OR 230 V. THE CONTROL PANEL SHALL HAVE THE FOLLOWING FEATURES:

1. OPERATOR INTERFACE WITH HYPER TERMINAL OR TELEMETRY SYSTEM WITHOUT OPERATOR SOFTWARE PURCHASE REQUIRED.
2. PROGRAMMABLE LOGIC CONTROLLER (PLC).
3. USER NAME & PASSWORD AND MAINTENANCE LOG ENTRY.
4. REAL TIME MONITORING OF PUMP OPERATION AND FLOAT SETTINGS.
5. REAL TIME AMP DRAW SENSING, AVERAGE AMP DRAW & PUMPS IN CURRENT AND PAST CONDITIONS.
6. CAPABILITY OF TIMER SETTING MODIFICATION.
7. USER LOGS FOR ALARMS AND PUMP RUN TIMES WITH CAPABILITY OF CALCULATING FLOW FOR EACH PUMP.
8. PAGE ALARM TO CALL OUT OPERATOR IN THE EVENT OF ALARM CONDITION.
9. ALARM POINTS FOR: (1) HIGH WATER LEVEL (2) PUMP FAIL, (3) LOW WATER LEVEL, (4) AERATOR FAIL, AND (5) POWER FAILURE.
10. TIMERS SHALL BE PROGRAMMED THROUGH THE PLC AND ABLE TO BE MODIFIED BASED ON CONNECTION DIRECTLY AT THE PANEL OR THROUGH A CELLULAR AUTODIALER, REMOTELY.
11. TIMERS SHALL BE CAPABLE OF SKIPPING PUMPS IF TAKEN OUT OF SEQUENCE AND ALLOW IMMEDIATE OFF/ON CYCLES OF THE NEXT PUMP IN SEQUENCE.
12. PANEL ENCLOSURES SHALL BE PROTECTED BOTH INSIDE AND OUT AGAINST CORROSION PER NEC REQUIREMENTS.
13. PANEL ENCLOSURES SHALL BE NEMA 4X AND FABRICATED OF FIBERGLASS OR 304 GRADE STAINLESS STEEL (SST).
14. PROVIDE LAMINATED ELECTRICAL SCHEMATICS ON THE INNER DOOR OF PANEL.
15. PROVIDE STICKER OR NAME PLATE STATING THE VOLTAGE OF THE CONTROL PANEL AND THE APPROPRIATE LOCK OUT-TAG OUT CIRCUIT TO DEACTIVATE POWER TO THE PANEL. PLACE ON OUTSIDE DEAD FRONT OF CONTROL PANEL AND PROVIDE A STICKER OR NAME PLATE THAT STATES "ELECTRICAL HAZARDS - AUTHORIZED PERSONNEL ACCESS ONLY."
16. PROVIDE CONDENSATION HEATER WITH ADJUSTABLE THERMOSTAT AND CIRCUIT BREAKER. FOR PANELS EXCEEDING 20" X 28", A FORCED AIR HEATER SHALL BE PROVIDED UNLESS THE CONTROL PANEL IS LOCATED INSIDE A CLIMATE CONTROLLED BUILDING.
17. PROVIDE A DISCONNECT SWITCH FOR A SINGLE SHUT-OFF POINT FOR ALL POWER ENTERING PANEL.
18. AMBER PILOT LIGHTS (IDEC LIGHT OR APPROVED ALTERNATE) SHALL BE PROVIDED TO INDICATE FLOAT CIRCUIT OPERATIONS & BE PERMANENTLY LABELED AS TO FUNCTION.
19. EACH MOTOR SHALL HAVE A GREEN RUN LIGHT (IDEC LIGHT OR APPROVED ALTERNATE).
20. PROVIDE RED EXTERNAL ALARM LIGHT AND GREEN EXTERNAL "POWER ON" LIGHT ON EXTERIOR OF CONTROL BUILDING.

OTHER REQUIREMENTS INCLUDE:

1. COMPONENT FASTENERS MUST BE MACHINE SCREWS WITH BACK PLATE DRILLED FOR MOUNTING ALL INTERNAL COMPONENTS.
2. PROVIDE GAS "SEAL OFFS" IN CONDUIT PRIOR TO ENTERING CONTROL PANEL.
3. PROVIDE AN UN-INTERRUPTIBLE POWER SUPPLY SUITABLE FOR OPERATING THE PLC IN THE EVENT OF A POWER OUTAGE OF UP TO 6 HOURS.
4. PROVIDE A 100 Amp, 200 OR 230 V STANDBY POWER GENERATOR RECEPTACLE WITH TRANSFER SWITCH.
5. PROVIDE POWER SURGE ARRESTOR.
6. PROVIDE POWER/ CONTROL CABLES OF ADEQUATE LENGTH WITHOUT SPLICING, UNLESS APPROVED BY ENGINEER.
7. SUPPLY A PARTS AND LABOR WARRANTY ON THE CONTROL PANEL FOR A PERIOD OF 12 MONTHS AFTER NOTICE OF OWNER'S ACCEPTANCE. ANY DEFECTS FOUND DURING THE WARRANTY PERIOD WILL BE REPORTED TO THE CONTRACTOR BY THE OWNER.
8. PLC SHALL REGISTER ADJUSTMENTS MADE TO THE HOA SWITCH.
9. PANEL SHALL BE CAPABLE OF CONNECTING TO LOCAL WIFI NETWORK.
10. PANEL MANUFACTURER REPRESENTATIVE SHALL BE ONSITE FOR ONE 8-HOUR DAY FOR COMMISSIONING AND TRAINING OF THE OWNER AND OPERATOR.

FUNCTIONAL DESCRIPTIONS:

1. TRANSFER PUMPS:
TWO ALTERNATING PUMPS SHALL BE PROVIDED FOR PUMPING SEPTIC TANK EFFLUENT TO THE AERATION CHAMBER. IN RESPONSE TO DEMAND, THE PANEL WILL CONTROL TWO MOTORS, ALTERNATING THE FIRST ("LEAD") MOTOR EACH CYCLE. THE SECOND PUMP ("LAG") SHALL TURN ON WHEN ADDITIONAL DEMAND REQUIRES IT. IN ADDITION, EACH PUMP MUST HAVE THE CAPABILITY TO BE TAKEN OUT OF SEQUENCE.

FOUR FLOATS MUST BE PROVIDED. EACH FLOAT SHALL DICTATE A SPECIFIC RESPONSE FROM THE CONTROL PANEL. FLOAT DESCRIPTIONS ARE BELOW.

- a. REDUNDANT OFF/ LOW LEVEL CUTOFF - POWER TO ALL PUMPS IS DISABLED IF FLOAT IS DOWN. ALARM SOUNDS, RED LIGHT FLASHES AND OPERATOR IS NOTIFIED.
- b. LEAD PUMP OFF - WHEN FLOAT IS DOWN, LEAD PUMP IS DISABLED. THE PUMPS WILL THEN ALTERNATE.
- c. LEAD PUMP ON - WHEN ACTIVATED, PUMP TURNS ON AND DOSES A SPECIFIC VOLUME UNTIL SECOND FLOAT TURNS PUMP OFF. REPEAT TO NEXT PUMP IN SEQUENCE.
- d. LAG PUMP ON/ HIGH WATER LEVEL - NEXT PUMP IN SEQUENCE IS TURNED ON, ALARM SHOULD SOUND, RED LIGHT FLASH, AND OPERATOR NOTIFIED.

2. AERATOR
ONE AERATOR WITH A VFD SHALL BE INSTALLED. THE AERATOR MUST BE ABLE TO OPERATE CONTINUOUSLY OR ON A TIMER. ELAPSED TIME METER AND EVENT COUNTER MUST RECORD WHEN THE AERATOR IS ON.

3. RECIRCULATION PUMPS:
TWO ALTERNATING PUMPS WILL BE PROVIDED FOR DOSING ONE AX100 POD. BOTH PUMPS MUST OPERATE ON A DEDICATED TIMER TO CONTROL ON FUNCTIONS, A COMMON ON TIMER IS ACCEPTABLE. THERE SHOULD BE A TIMER TO OVERRIDE THE OFF TIMES IN A HIGH WATER LEVEL SITUATION. THIS HIGH FLOW TIMER SHOULD BE CAPABLE OF OPERATING THE NEXT PUMP IN SEQUENCE ON AN ACCELERATED TIME OFF FUNCTION. THE OPERATOR NEEDS THE ABILITY TO DOSE THE POD PER MANUFACTURER SPECIFICATIONS SO THAT IT IS NOT HYDRAULICALLY OVERLOADED. EACH PUMP SHOULD HAVE THE CAPABILITY TO BE TAKEN OUT OF SEQUENCE.

THREE FLOATS MUST BE PROVIDED. EACH FLOAT SHOULD DICTATE A SPECIFIC RESPONSE FROM THE CONTROL PANEL. FLOAT DESCRIPTIONS ARE BELOW.

- a. REDUNDANT OFF/ LOW LEVEL CUTOFF - POWER TO TIMERS IS DISABLED IF FLOAT IS DOWN. AN ALARM SHOULD SOUND, RED LIGHT FLASH AND OPERATOR NOTIFIED.
- b. TIMER ON/ OFF - WHEN ACTIVATED, TIMER STARTS IN "OFF" MODE FIRST AND CYCLES THROUGH TO "ON" MODE. REPEAT TO NEXT PUMP IN SEQUENCE. WHEN FLOAT IS DOWN, TIMER IS DISABLED.
- c. HIGH WATER LEVEL - ALARM SHOULD SOUND, RED LIGHT FLASH, AND OPERATOR NOTIFIED.

4. DOSING PUMPS:
TWO ALTERNATING PUMPS WILL BE INSTALLED TO DOSE THE NEW MOUND. BOTH PUMPS MUST OPERATE ON A DEDICATED TIMER TO CONTROL ON FUNCTIONS, A COMMON ON TIMER IS ACCEPTABLE. THERE SHOULD BE A TIMER TO OVERRIDE THE OFF TIMES IN A HIGH WATER LEVEL SITUATION. THIS HIGH FLOW TIMER SHOULD BE CAPABLE OF OPERATING THE NEXT PUMP IN SEQUENCE ON AN ACCELERATED TIME OFF FUNCTION. EACH PUMP SHOULD HAVE THE CAPABILITY TO BE TAKEN OUT OF SEQUENCE.

FOUR FLOATS MUST BE PROVIDED. EACH FLOAT SHOULD DICTATE A SPECIFIC RESPONSE FROM THE CONTROL PANEL. FLOAT DESCRIPTIONS ARE BELOW.

- a. REDUNDANT OFF/ LOW WATER LEVEL - POWER TO ALL PUMPS IS DISABLED IF FLOAT IS DOWN. ALARM SOUNDS, RED LIGHT FLASHES AND OPERATOR IS NOTIFIED.
- b. TIMER OFF/ ON - WHEN ACTIVATED, TIMER STARTS IN THE "OFF" MODE FIRST AND CYCLES THROUGH TO "ON" MODE. REPEAT TO NEXT PUMP IN SEQUENCE. WHEN FLOAT IS DOWN, TIMER IS DISABLED.
- c. OVERRIDE TIMER - FLOAT ENABLES A SECONDARY TIMER SETTING TO ALLOW INCREASED DOSING FREQUENCY FOR HIGHER THAN NORMAL LEVELS IN DOSING TANKS.
- d. HIGH WATER LEVEL - ALARM SHOULD SOUND, RED LIGHT FLASH AND OPERATOR NOTIFIED.

5. VENT FAN WITH HEATER:
FAN WITH A CARBON FILTER TO CONTROL ODORS SHALL RUN CONTINUOUSLY. A 1 kW HEATER SHALL ALSO RUN PER A THERMISTOR IN THE AX100 UNIT.

| MOTOR TABLE | | | | | |
|--------------------|---------|----------------|-------|-----------------------|--------------------|
| NAME | # UNITS | SIZE (HP / kW) | POWER | LOCATION | RECOMMENDED MODEL |
| TRANSFER PUMP | 2 | 0.5 / 0.4 | 3Ø | PUMP CHAMBER | GOULDS WS0538BHF |
| AERATOR | 1 | 2.0 / 1.5 | 3Ø | AERATION CHAMBER | VITA-AER VA6 |
| VFD | 1 | 2.0 / 1.5 | 3Ø | CONTROL PANEL | PER VITA-AER |
| RECIRCULATION PUMP | 2 | 0.75 / 0.56 | 3Ø | RECIRCULATION CHAMBER | PF500712 |
| VENT FAN & HEATER | 1 | 1.5 / 1.1 | 3Ø | NEXT TO AX100 POD | PER ORENÇO SYSTEMS |
| DOSING PUMP | 2 | 2.0 / 1.5 | 3Ø | DOSING CHAMBER | PF145203XXX |

TREATMENT SYSTEM PUMP SPECIFICATIONS:

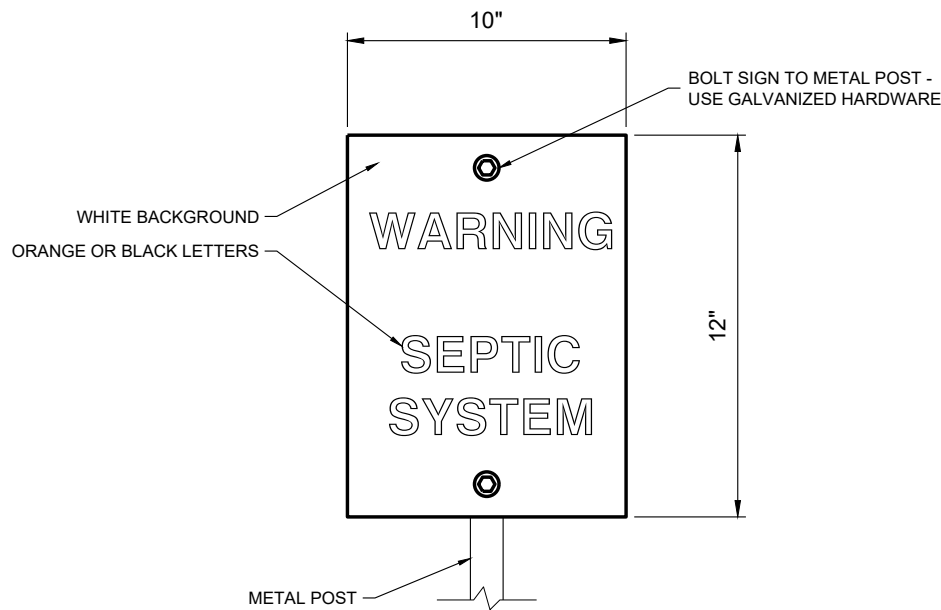
3. ORENCO DISCHARGE ASSEMBLIES (LOW HEAD STYLE) SHALL BE CORROSION-RESISTANT AND SOLVENT-WELDED. USE CAM-STYLE QUICK DISCONNECT FITTINGS AND BALL VALVE.

4. TRANSFER PUMP DUTY POINT: 30 GALLONS PER MINUTE (GPM) AT 20 FEET TOTAL DYNAMIC HEAD (FT TDH)
5. RECIRCULATION PUMP DUTY POINT: 50 GPM AT 30 FT TDH
6. DOSING PUMP DUTY POINT: 100 GPM AT 40 FT TDH

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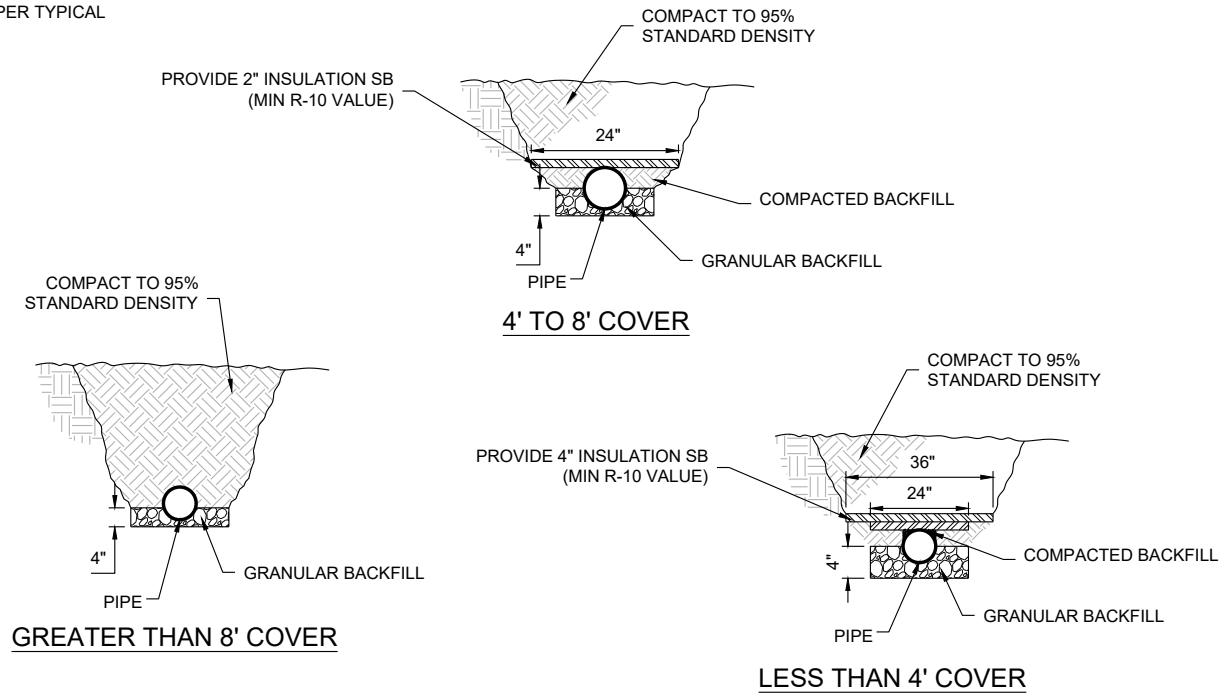
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| REV | DATE | DESCRIPTION | | | | | | | |

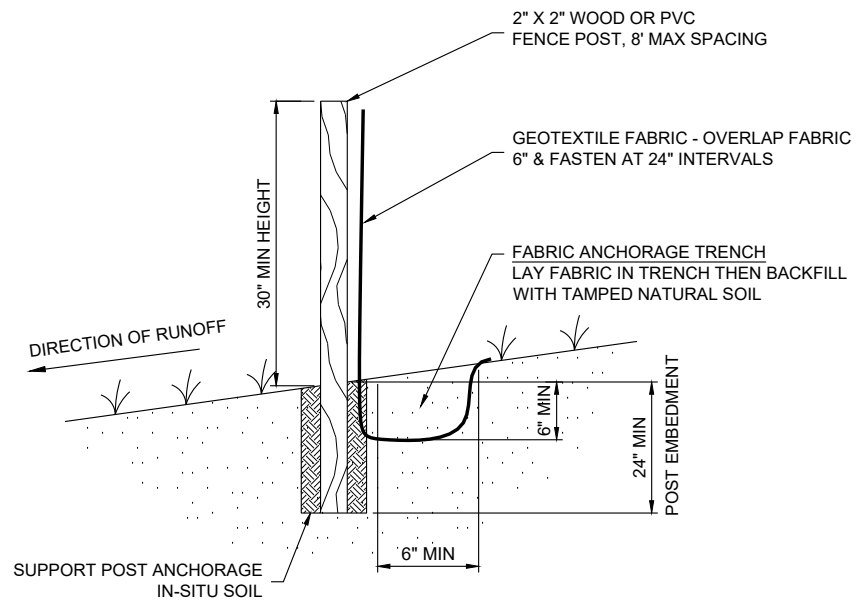


WARNING SIGN - TYPICAL
SCALE: NONE
MOUNT NEXT TO TANKS OR GATE

NOTE:
ALL PIPING SHALL BE INSTALLED PER TYPICAL
TRENCH SECTION.



TYPICAL TRENCH SECTION
SCALE: NONE



SILT FENCE
SCALE: NONE

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CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS. DO NOT SCALE DRAWING. ANY ERRORS OR OMISSIONS SHALL BE REPORTED TO SDCG WITHOUT DELAY. COPYRIGHTS TO ALL DESIGNS AND DRAWINGS ARE THE PROPERTY OF SDCG. REPRODUCTION OR USE FOR ANY PURPOSE OTHER THAN THAT AUTHORIZED IS FORBIDDEN.

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| 0 | 7/29/20 | ISSUED FOR REVIEW |
| REV | DATE | DESCRIPTION |

CONSULTANTS

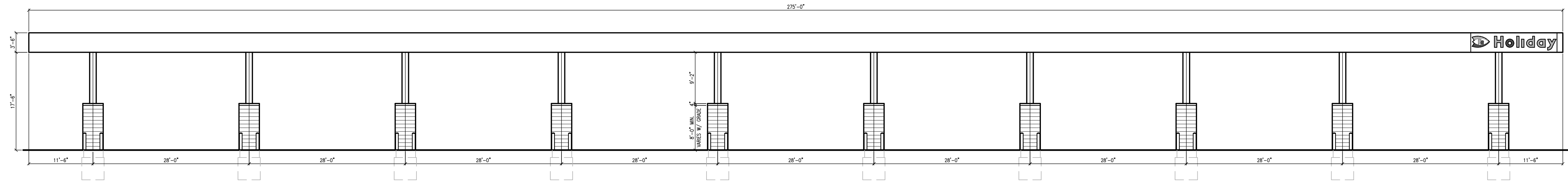
SD CONSULTING
CANMORE, AB
WHITE BEAR LAKE, MN
TEL. 612-280-9128
TEL. 612-209-7366

HOLIDAY STATION STORE
HAM LAKE, MN

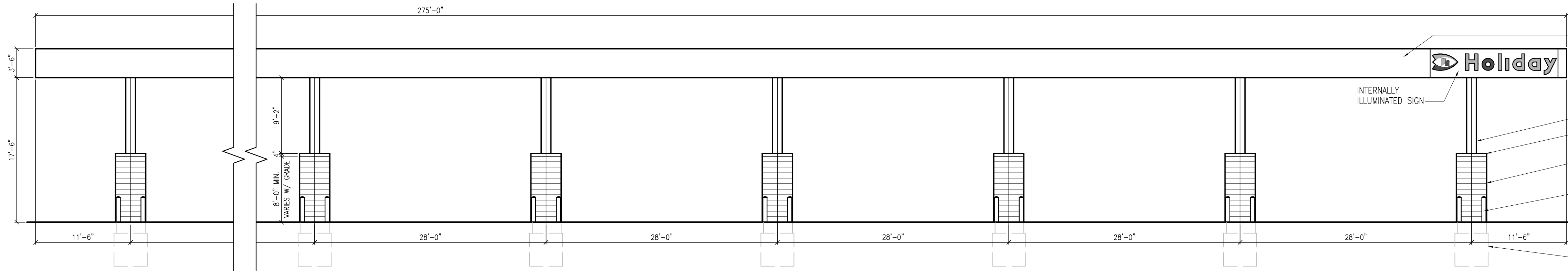
SITE WORK DETAILS

C10

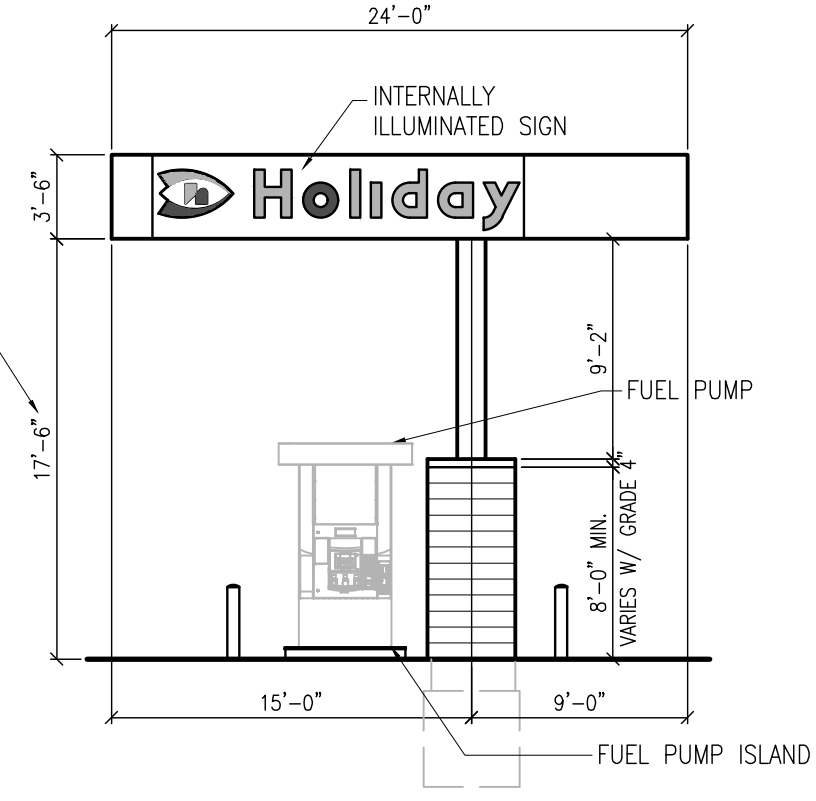
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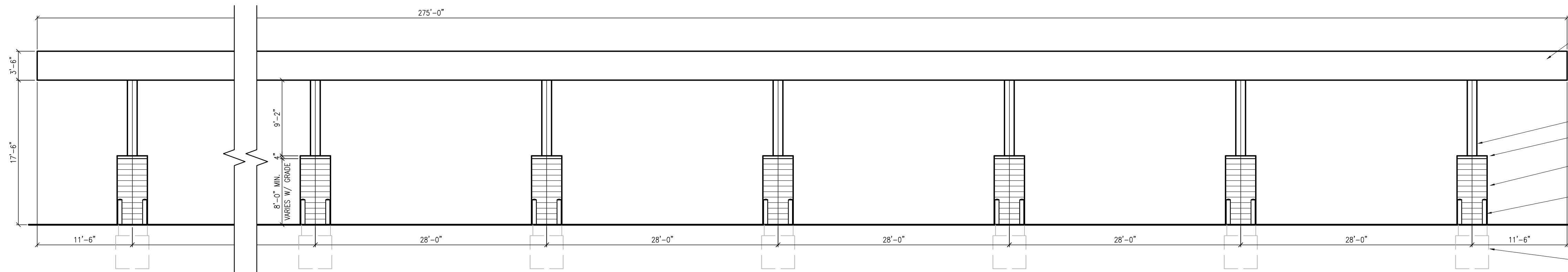
9 OVERALL ELEVATION (SHOWN FOR REFERENCE)
SCALE: 3/32" = 1'-0"



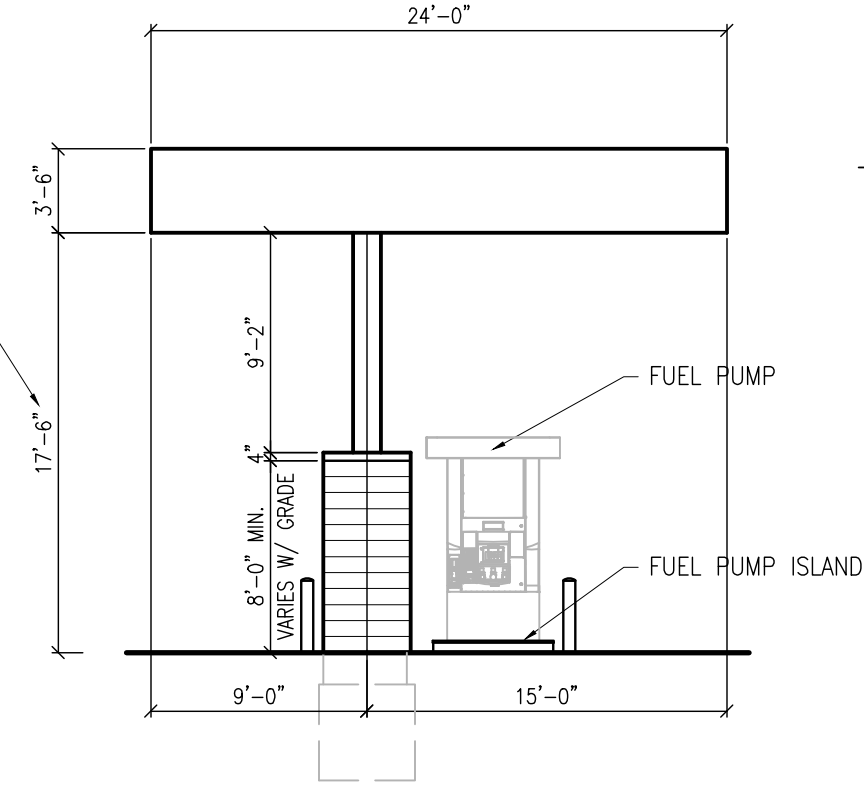
1 FRONT ELEVATION (NORTH)
SCALE: 1/8" = 1'-0"



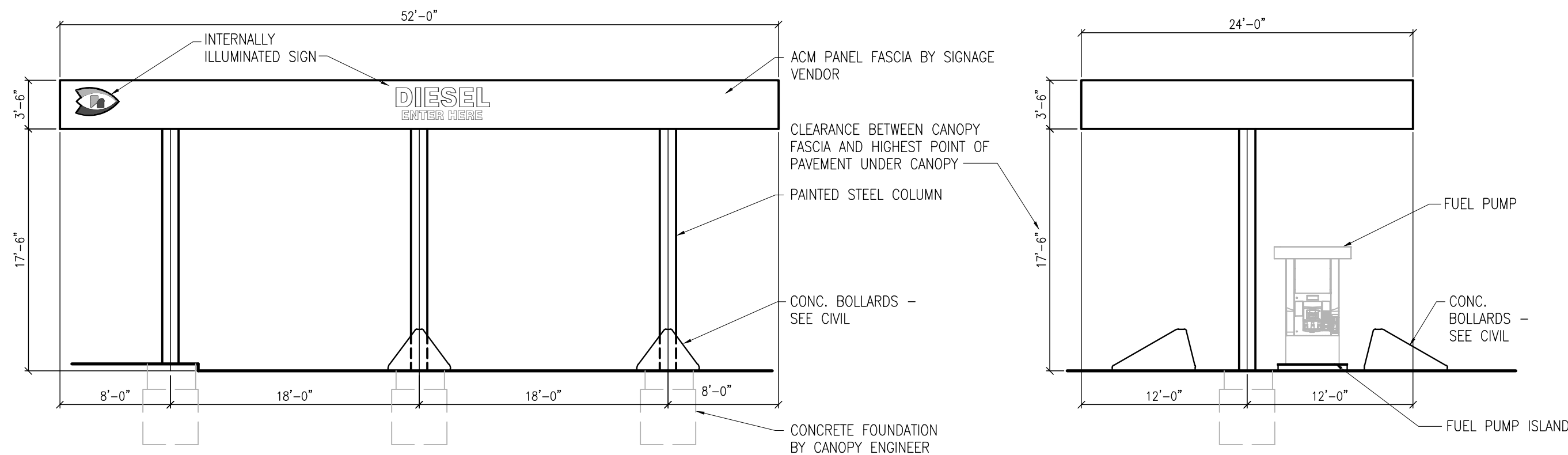
2 SIDE ELEVATION (WEST)
SCALE: 1/8" = 1'-0"



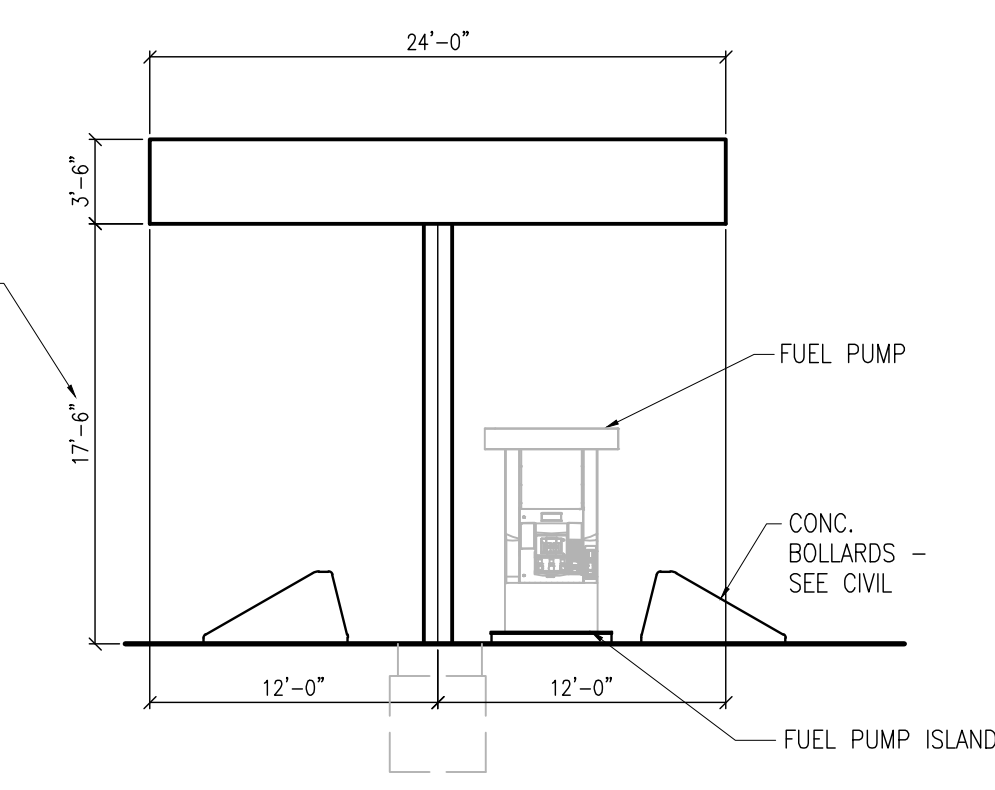
3 BACK ELEVATION (SOUTH)
SCALE: 1/8" = 1'-0"



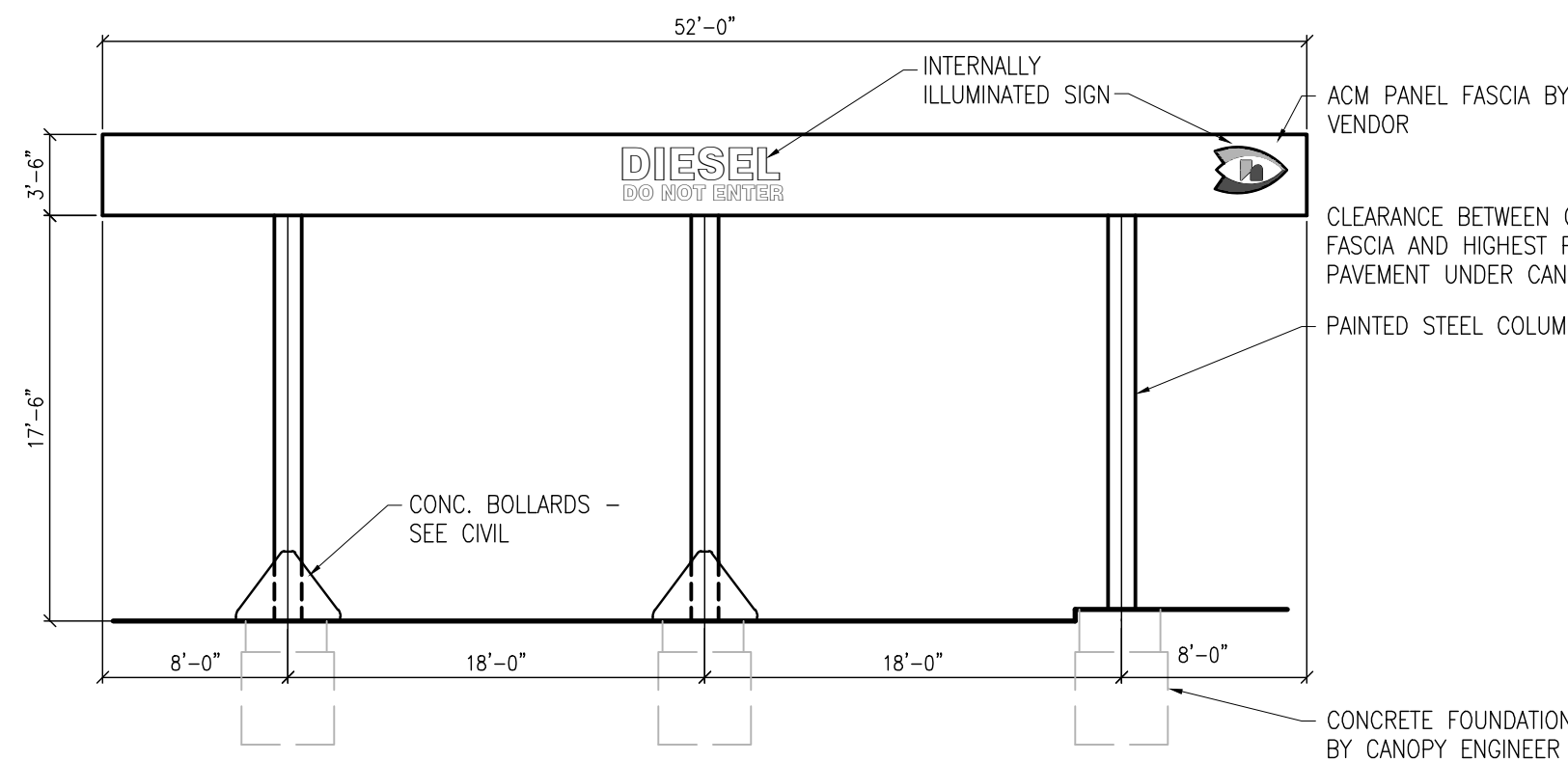
4 SIDE ELEVATION (EAST)
SCALE: 1/8" = 1'-0"



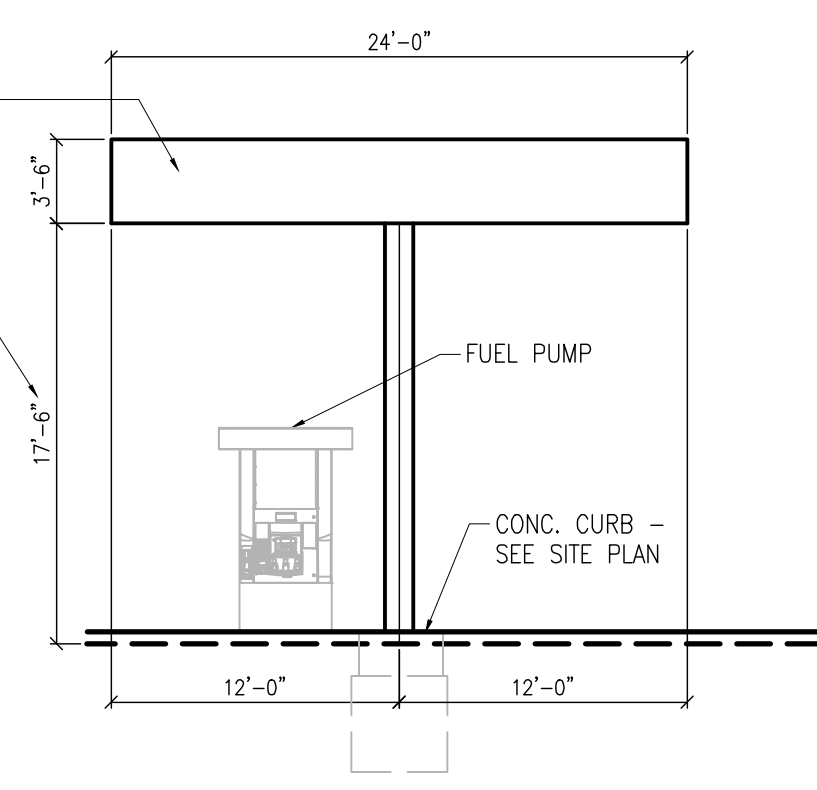
5 FRONT ELEVATION (NORTH)
SCALE: 1/8" = 1'-0"



6 SIDE ELEVATION (WEST)
SCALE: 1/8" = 1'-0"

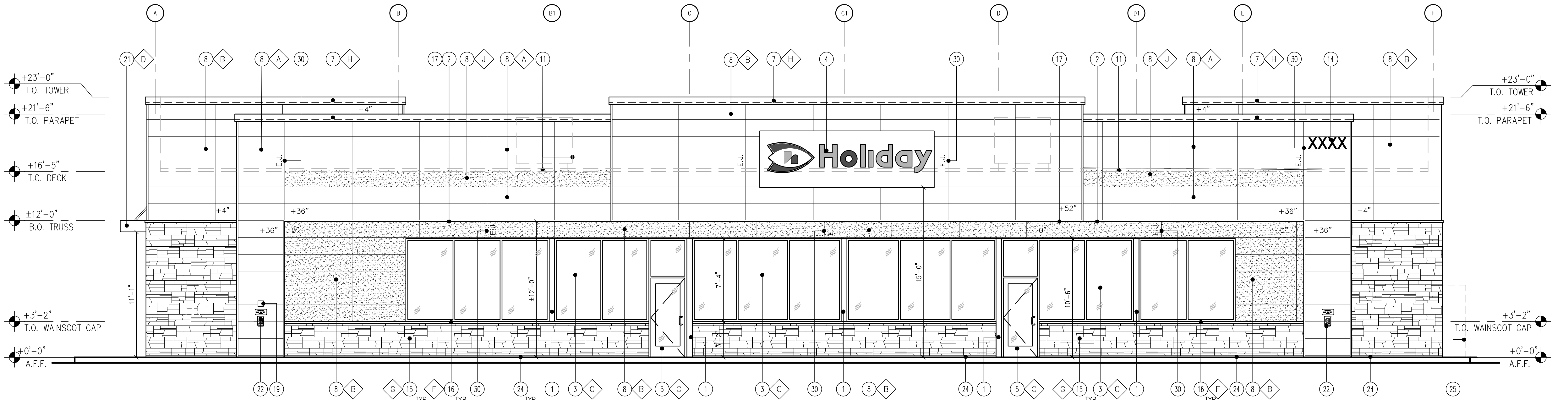


7 BACK ELEVATION (SOUTH)
SCALE: 1/8" = 1'-0"

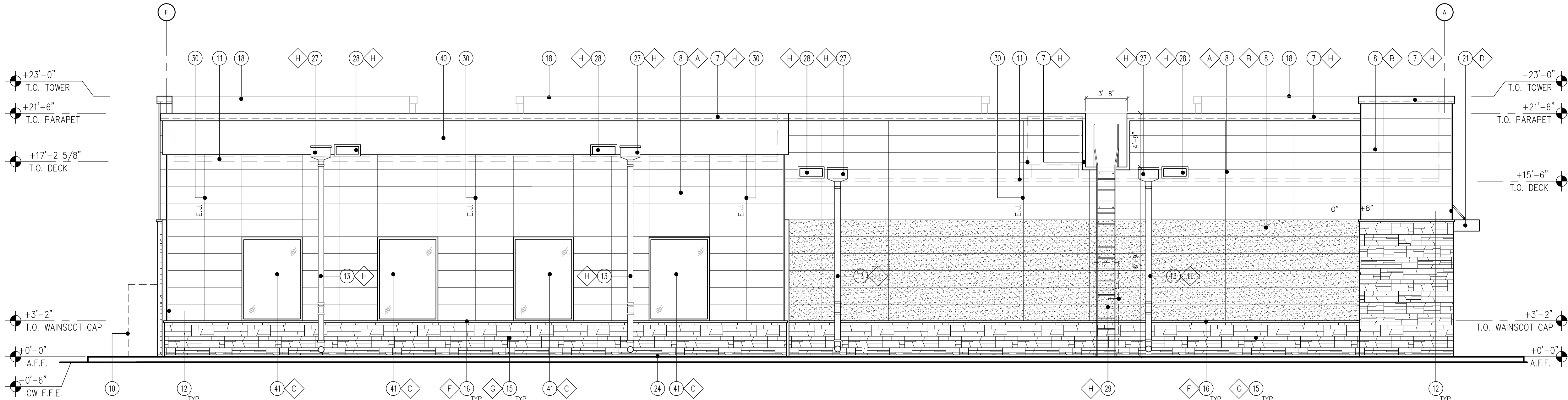


8 SIDE ELEVATION (EAST)
SCALE: 1/8" = 1'-0"

Drawing Name: A:\Projects\2025\05-1057-01_Holiday - Ham Lake\2025\Holiday\2025\05-1057-01_Holiday - Ham Lake.dwg
Drawing Date: 05/16/2025
Drawing Title: EXTERIOR ELEVATIONS
Drawing Author: J. L. Larson
Drawing Date: 05/16/2025
Drawing Title: EXTERIOR ELEVATIONS
Drawing Author: J. L. Larson



1 FRONT ELEVATION (NORTH)
SCALE: 3/16" = 1'-0"



2 BACK ELEVATION (SOUTH)
SCALE: 3/16" = 1'-0"

KEY NOTES

- STEEL COLUMN WRAP WITH BREAK METAL
- LINE OF CANOPY / SOFFIT
- DARK BRONZE ANODIZED WINDOW FRAME W/ GRAY TINTED GLASS PER SOLARGRAY SOLARGRAY SPECS, SEE GLAZING SCHEDULE ON SHEET A6.0
- INTERIALLY ILLUMINATED SIGN (UNDER SEPARATE PERMIT)
- DARK BRONZE ANODIZED DOOR W/ SOLARGRAY GLASS STOREFRONT SYSTEM
- SERVICE DOOR, PAINT TO MATCH SURROUNDING WALL
- PRE-FINISHED METAL COPING
- NICHHA FIBER CEMENT WALL PANEL SYSTEM
- WALL MOUNTED LIGHT FIXTURE, COLOR: BLACK. SEE ELECTRICAL PLAN
- SES PANEL LOCATION. SEE ELECTRICAL PLAN
- ROOF LINE AND HVAC UNITS
- 1-1/2" STAINLESS STEEL CORNER KEY EDGE, TYP. TO ALL CORNERS
- DOWNSPOUT W/ HEAT TAPE - SEE PLUMBING & ELECTRICAL PLANS
- ADDRESSING LOCATION: 8" TALL INCH BLACK NUMBERS. FINAL AREA LOCATION TO BE DETERMINED BY FIRE DEPARTMENT.
- 1 3/8" THK. X 6" NICHHA KURASTONE HIGH FIBER CEMENT WAINSCOT
- 1-1/2" HIGH NICHHA FIBER CEMENT CAP. INSTALL PER MFR. SPECS.
- NICHHA ESSENTIAL "OVERHANG" FLASHING
- PARAPET WALL BEYOND
- (KNOX) KEY-BOX AT 6'-0" AFF (IF REQUIRED BY FIRE DEPARTMENT)
- METAL FLASHING OVER FOUNDATION INSULATION TO BELOW GRADE - PAINT
- ALUMINUM AWNING WITH SUPPORT RODS ABOVE THE SIDE ENTRY DOOR BY CIRCLE K VENDOR. PROVIDE BLOCKING IN EXTERIOR WALL FOR AWNING AND SUPPORTS
- EMERGENCY FUEL SHUT-OFF SWITCH. VERIFY LOCATIONS W/ FUEL CANOPY PLANS
- INSULATED METAL DOOR
- NICHHA ESSENTIAL "STARTER" FLASHING
- CO2 TANK WITH METAL LOUVERED CONTAINER
- EXTERIOR FINISH TO EXTEND ABOVE SIDEWALK/GRADE, SEE DET. 8/A8.1 & 11/A8.1
- LEADER BOX. SEE PLUMBING DWGS.
- EMERGENCY OVERFLOW SCUPPER. SEE PLUMBING DWGS.
- METAL ROOF ACCESS LADDER WITH SECURITY DOOR
- CONTROL / EXPANSION JOINT "E.J." LOCATION, SEE DETAIL 5/A8.1
- HARDSOFT FIBER CEMENT PANELS, SEE DETAIL 2/A8.1
- 42" H, 6" DIA. BOLLARD, PAINTED TRAFFIC YELLOW
- NOT USED
- PRE-FINISHED ACM ENTRANCE PORTAL LEG W/ TIMER. PROVIDE POWER FOR TIMER. COORDINATE WITH VENDOR.
- PRE-FINISHED ACM EXIT PORTAL LEG
- PRE-FINISHED ACM PORTAL LEG
- PRE-FINISHED ACM PORTAL HEADER. PROVIDE POWER FOR LED LIGHTS AND BACKLIT LETTERS. COORDINATE WITH VENDOR.
- COMBUSTION AIR CAP. PROVIDE BIRD SCREEN.
- POLYCARBONATE OVERHEAD DOOR
- ACM FASCIA BAND PROVIDED AND INSTALLED BY SIGNAGE VENDOR.
- FRP WINDOW - PAINT EXTERIOR OF FRAME ONLY.
- FRP DOOR - PAINT EXTERIOR OF DOOR & FRAME ONLY.

FINISH SCHEDULE

- | | |
|---|---|
| A | - ***NICHHA TUFF BLOCK - COLOR TO MATCH #SW 6095 TOASTY |
| B | - ***NICHHA TUFF BLOCK - COLOR TO MATCH #SW 6115 TOTALLY TAN |
| C | - 1" INSULATED, DOUBLE PANED GRAY TINTED GLASS |
| D | - *SHERWIN WILLIAMS #SW 4081 - **SAFETY RED |
| E | - *SHERWIN WILLIAMS #SW 7005 - CIRCLE K WHITE |
| F | - ***NICHHA CHISELED SILL TAN |
| G | - ***NICHHA LEDGESTONE BLUFF |
| H | - *SHERWIN WILLIAMS #SW 6090 - JAVA - FIRESTONE MANSARD BROWN SR (USE FOR PRE-FINISHED METAL COPING) |
| I | - CIRCLE K ORANGE #PMS 144 |
| J | - ***NICHHA TUFF BLOCK - COLOR TO MATCH #SW 4081 |

* USE SHERWIN WILLIAMS MANUFACTURER ONLY
** COLOR TO BE PRE-ORDERED TO ENSURE AVAILABILITY AT TIME OF CONSTRUCTION
*** PURCHASED BY CIRCLE K/INSTALLED BY G.C.
G.C. TO COORDINATE WITH CK PM AND OWNER'S REP
circlek@nichha.com

ARCHITECTURAL
CONSORTIUM L.L.C.

901 North Third Street, Suite 220
Minneapolis, MN 55401
612-436-4030
www.archconsortium.com

12/22/20 CITY SUBMITTAL
02/24/21 CITY COMMENTS

PROFESSIONAL SEAL

License #:

Date:

PROFESSIONAL IN CHARGE

KA

PROJECT MANAGER

KA

QUALITY CONTROL

BL

DRAWN BY

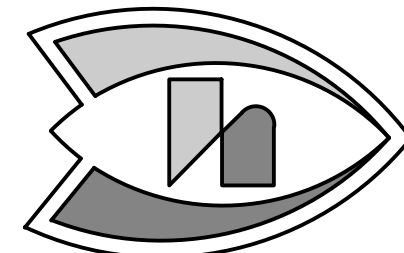
BL

PROJECT NAME

HOLIDAY
STATIONSTORE
#0223

HAM LAKE
MINNESOTA

1442 CROSSTOWN BLVD. NE
HAM LAKE, MN 55304



Holiday

PROJECT NUMBER

20-1057-01

SHEET TITLE

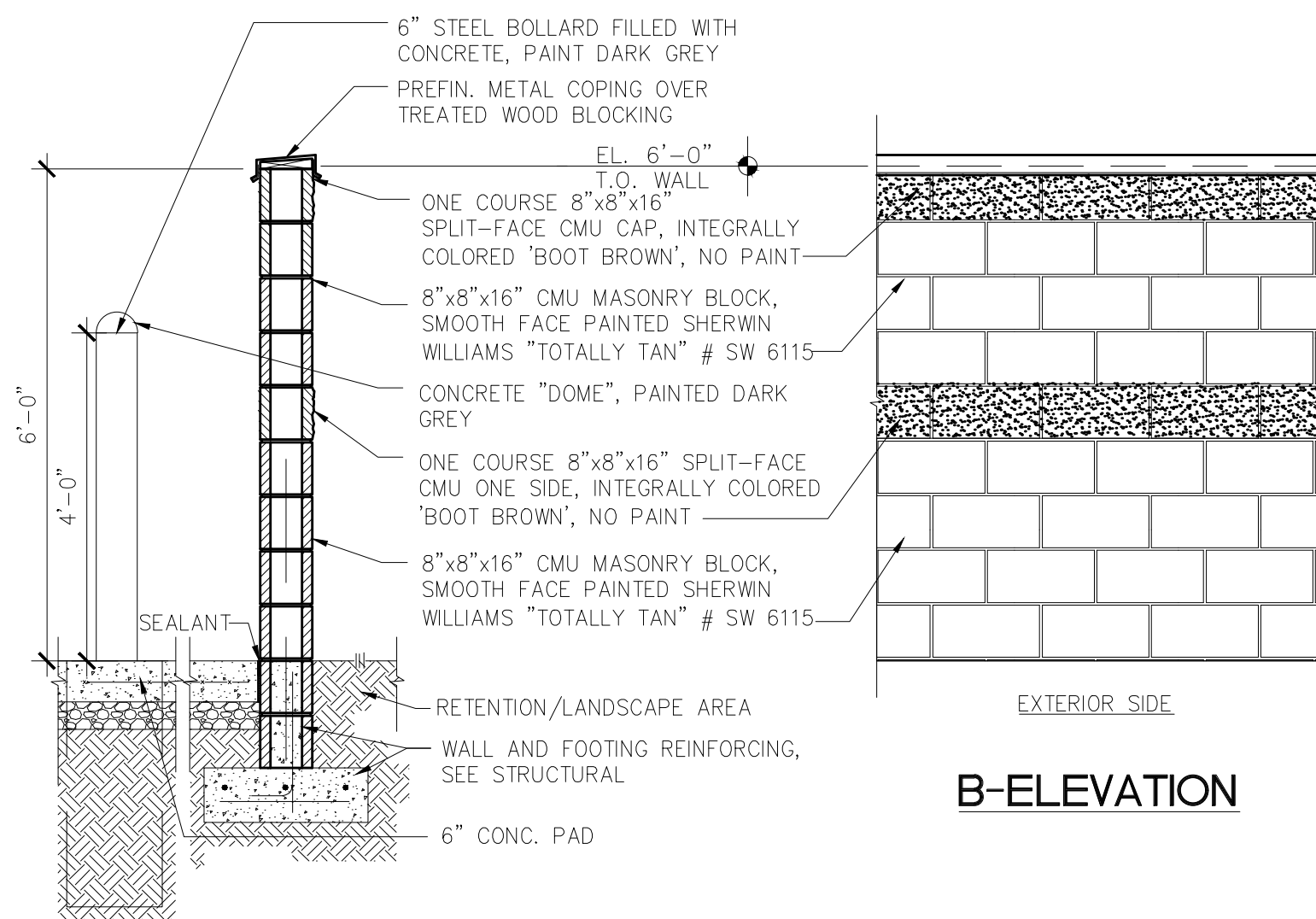
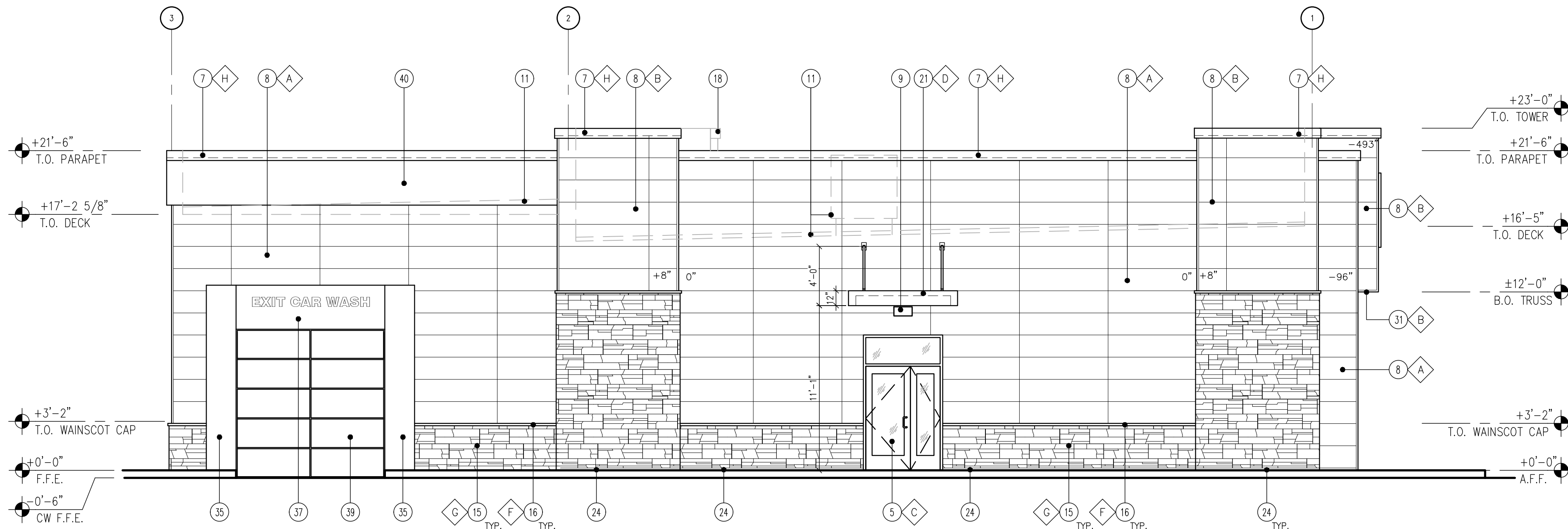
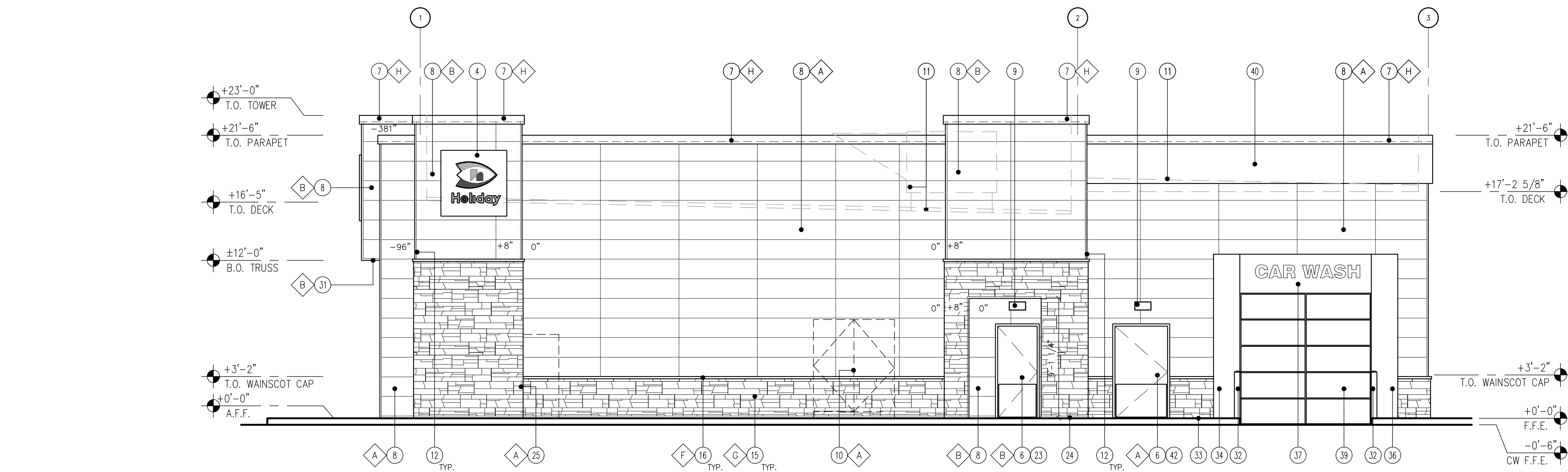
EXTERIOR
ELEVATIONS

SHEET NUMBER

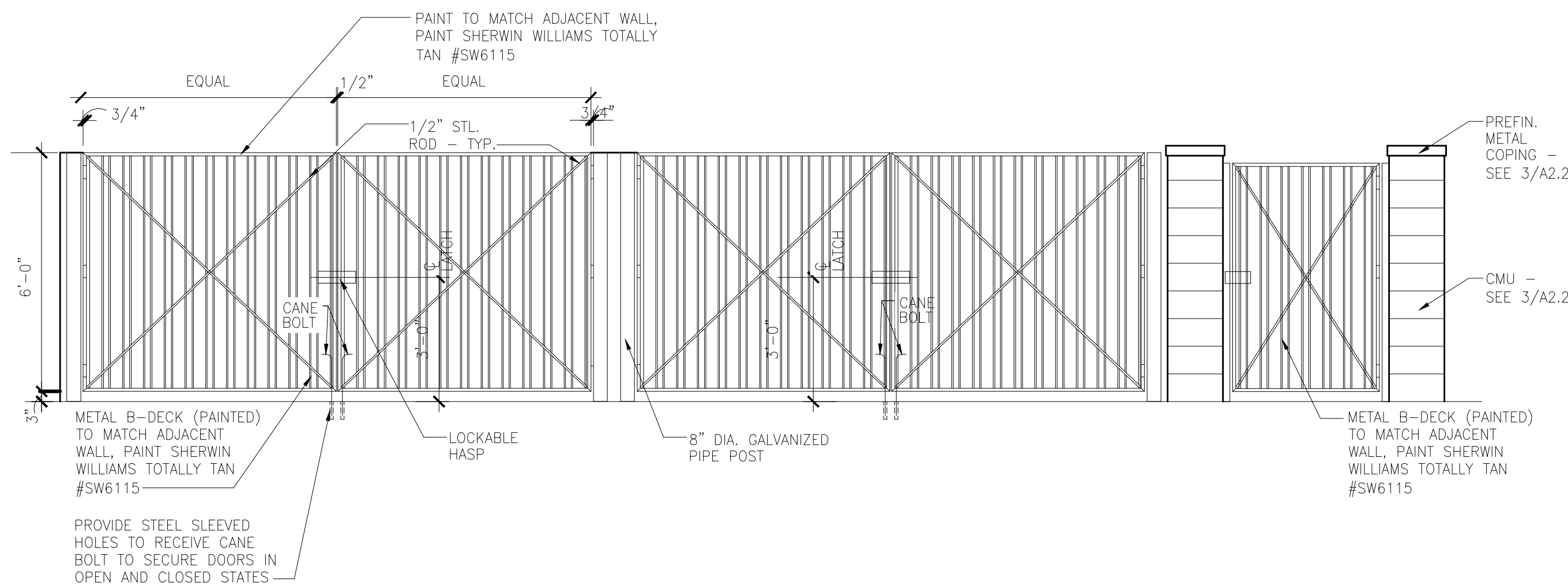
A2.1

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Architectural Consortium, L.L.C. 2020

Drawing Name: A:\Projects\2022\20-1057-01 Holiday - Ham Lake\2022\Holiday\20-1057-01 Holiday - Ham Lake.dwg
Drawing Title: Exterior Elevations
Drawing Date: 12/22/2020
Drawing Scale: 1/2" = 1'-0"
Drawing Author: J. L. Larson
Drawing Checker: J. L. Larson
Drawing Date: 12/22/2020
Drawing Scale: 1/2" = 1'-0"
Drawing Author: J. L. Larson
Drawing Checker: J. L. Larson



3 TRASH ENCLOSURE WALL SECTION / ELEVATION
SCALE: 1/2" = 1'-0"



4 ENCLOSURE GATE ELEVATION
SCALE: 3/8" = 1'-0"

KEY NOTES

- STEEL COLUMN WRAP WITH BREAK METAL
- LINE OF CANOPY / SOFFIT
- DARK BRONZE ANODIZED WINDOW FRAME W/ GRAY TINTED GLASS PER SOLARBAN SOLARGRAY SPECS, SEE GLAZING SCHEDULE ON SHEET A6.0
- INTERNALLY ILLUMINATED SIGN (UNDER SEPARATE PERMIT)
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- WALL MOUNTED LIGHT FIXTURE, COLOR: BLACK. SEE ELECTRICAL PLAN
- SES PANEL LOCATION. SEE ELECTRICAL PLAN
- ROOF LINE AND HVAC UNITS
- 1-1/2" STAINLESS STEEL CORNER KEY EDGE, TYP. TO ALL CORNERS
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- CO2 TANK WITH METAL LOUVERED CONTAINER
- EXTERIOR FINISH TO EXTEND ABOVE SIDEWALK/GRADE, SEE DET. 8/A8.1 & 11/A8.1
- LEADER BOX. SEE PLUMBING DWGS.
- EMERGENCY OVERFLOW SCUPPER. SEE PLUMBING DWGS.
- METAL ROOF ACCESS LADDER WITH SECURITY DOOR
- CONTROL / EXPANSION JOINT "E.J." LOCATION, SEE DETAIL 5/A8.1
- HARDIESOFFIT FIBER CEMENT PANELS, SEE DETAIL 2/A8.1
- 42" H, 6" DIA. BOLLARD, PAINTED TRAFFIC YELLOW
- ISLAND SIDEWALK WITH BROOM FINISH, SLOPED 1/4" PER FT. AWAY FROM BUILDING
- PRE-FINISHED ACM ENTRANCE PORTAL LEG W/ TIMER. PROVIDE POWER FOR TIMER. COORDINATE WITH VENDOR.
- PRE-FINISHED ACM EXIT PORTAL LEG
- PRE-FINISHED ACM PORTAL LEG
- PRE-FINISHED ACM PORTAL HEADER. PROVIDE POWER FOR LED LIGHTS AND BACKLIT LETTERS. COORDINATE WITH VENDOR.
- COMBUSTION AIR CAP. PROVIDE BIRD SCREEN.
- POLYCARBONATE OVERHEAD DOOR
- ACM FASCIA BAND PROVIDED AND INSTALLED BY SIGNAGE VENDOR.
- FRP WINDOW - PAINT EXTERIOR OF FRAME ONLY.
- FRP DOOR - PAINT EXTERIOR OF DOOR & FRAME ONLY.

FINISH SCHEDULE

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| E | *SHERWIN WILLIAMS #SW 7005 - CIRCLE K WHITE |
| F | ***NICHHA CHISELED SILL TAN |
| G | ***NICHHA LEDGESTONE BLUFF |
| H | *SHERWIN WILLIAMS #SW 6090 - JAVA - FIRESTONE MANSARD BROWN SR (USE FOR PRE-FINISHED METAL COPING) |
| I | - CIRCLE K ORANGE #PMS 144 |
| J | ***NICHHA TUFF BLOCK - COLOR TO MATCH #SW 4081 |

* USE SHERWIN WILLIAMS MANUFACTURER ONLY
** COLOR TO BE PRE-ORDERED TO ENSURE AVAILABILITY AT TIME OF CONSTRUCTION
*** PURCHASED BY CIRCLE K/INSTALLED BY G.C.
G.C. TO COORDINATE WITH CK PM AND OWNER'S REP
circlek@nichha.com

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12/22/20 CITY SUBMITTAL
02/24/21 CITY COMMENTS

PROFESSIONAL SEAL

License #:

Date:

PROFESSIONAL IN CHARGE

KA

PROJECT MANAGER

KA

QUALITY CONTROL

BL

DRAWN BY

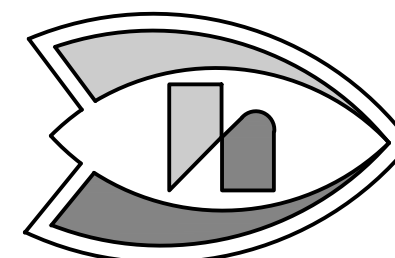
BL

PROJECT NAME

HOLIDAY
STATIONSTORE
#0223

HAM LAKE
MINNESOTA

1442 CROSSTOWN BLVD. NE
HAM LAKE, MN 55304



Holiday

PROJECT NUMBER

20-1057-01

SHEET TITLE

EXTERIOR
ELEVATIONS

SHEET NUMBER

A2.2

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Architectural Consortium, L.L.C. 2020