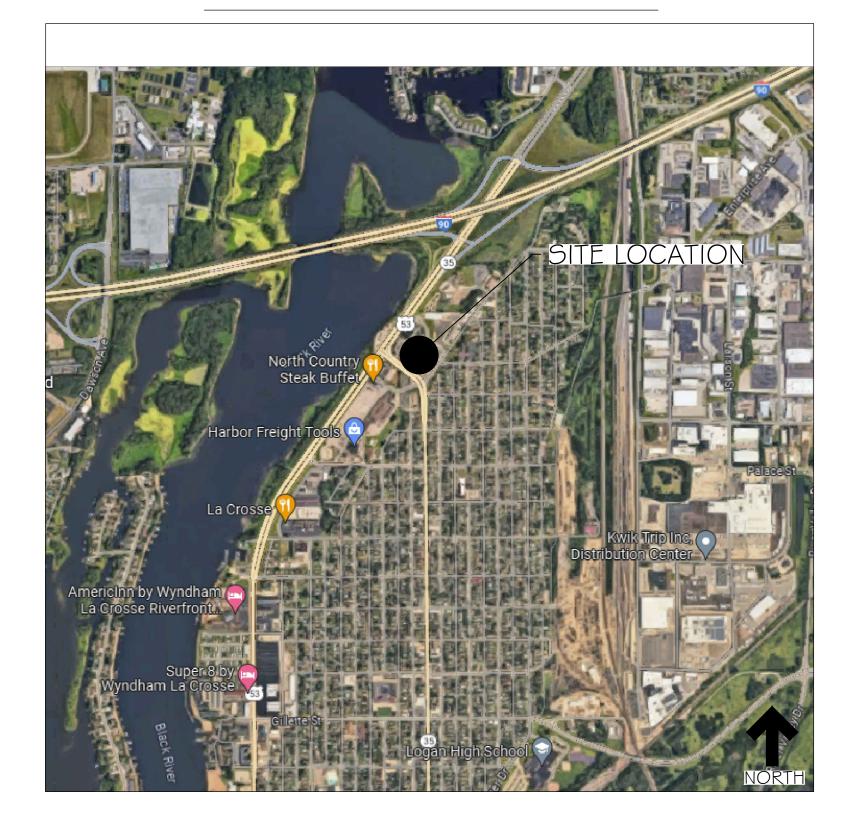
SITE IMPROVEMENT PLANS FOR:

KWIK TRIP #762 LA CROSSE, WI

SITE LOCATION MAP:



SITE AERIAL MAP:



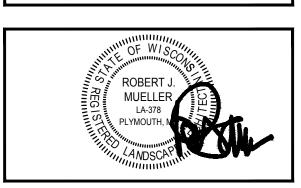
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KWIK TRIP

KWIK Star

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
LACROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960





TITLE SHEET

CONVENIENCE STORE 762

NO. DATE DESCRIPTION

- 04JAN24 SUBMITTAL

17JAN24 CITY SUBMITTAL

DRAWN BY

SCALE GRAPHIC

PROJ. NO. 23-762

DATE 2023-12-22

SHEET C001

OWNER:
KWIK TRIP INC.
1626 OAK STREET
LA CROSSE, WI 54602
NATE BYOM
nbyom@kwiktrip.com

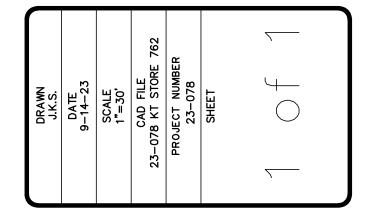
SITE PLANNER:
INSITES SITE PLANNING
3 | 3 | FERNBROOK LN N, SUITE 260
PLYMOUTH, MN 55447
BOB MUELLER
763-383-8400
Bob@InsitesInc.net

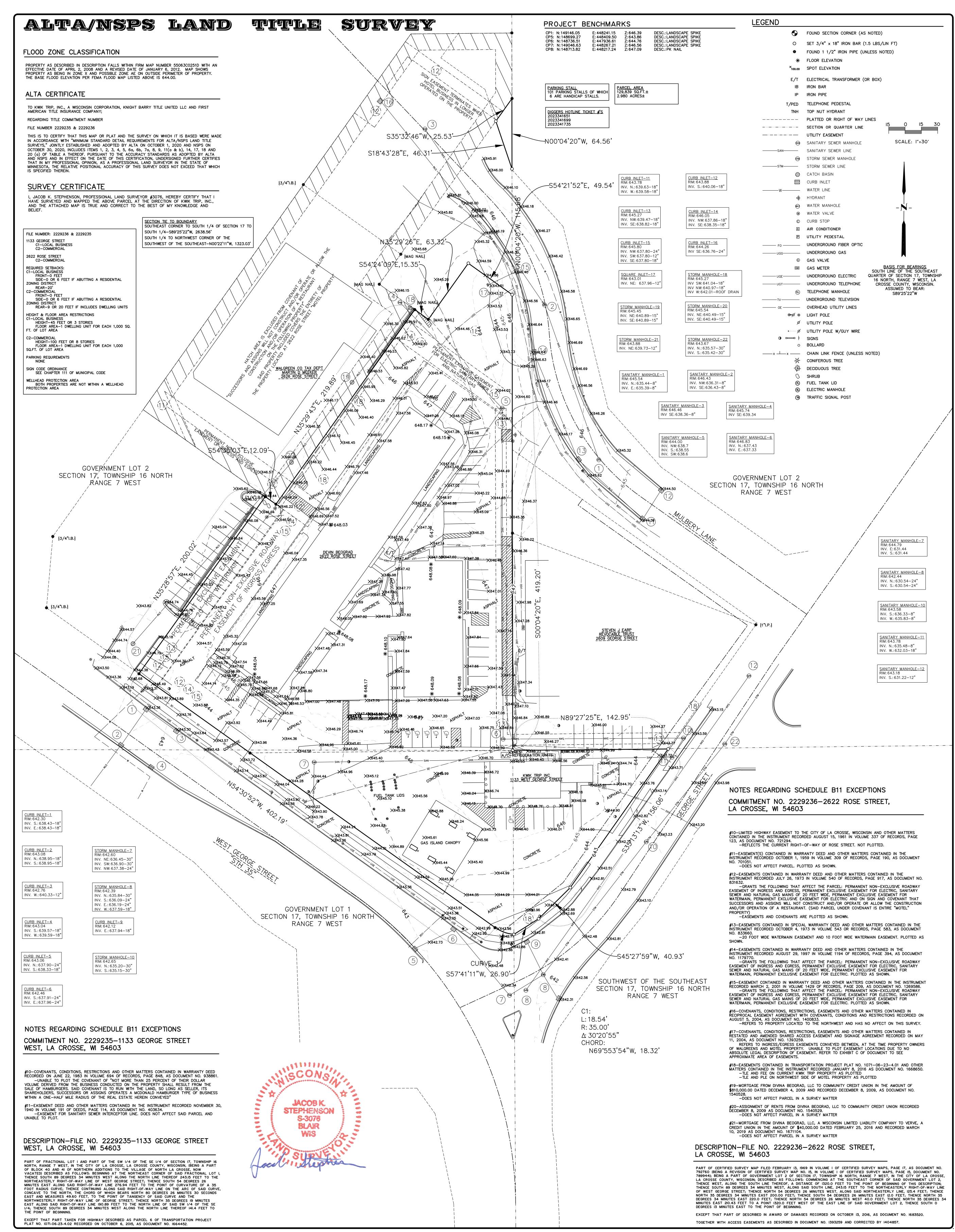
CIVIL ENGINEER:
SUNDE ENGINEERING
1 0830 NESBITT AVE SOUTH
BLOOMINGTON, MN 55437
952-881-3344

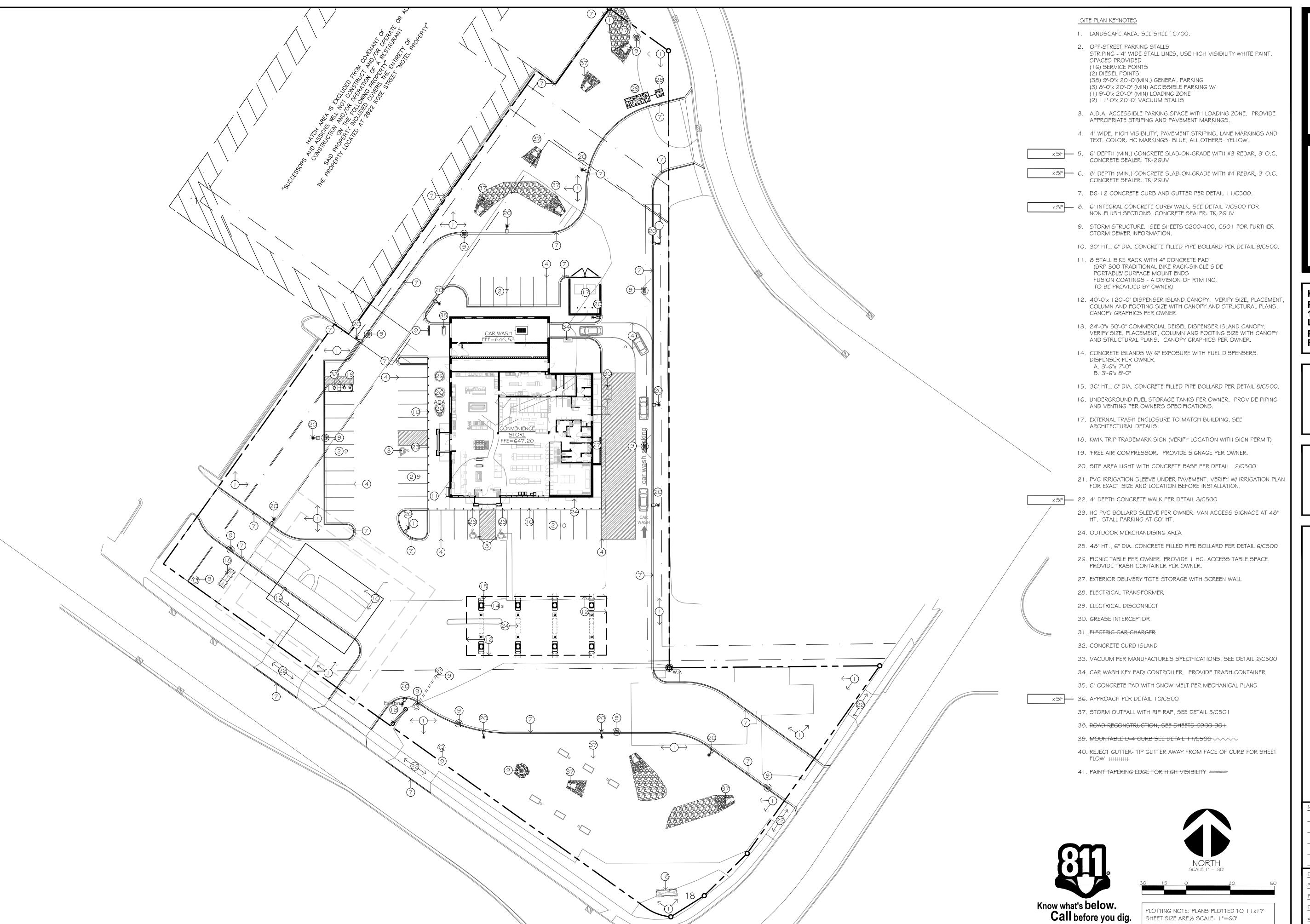
ARCHITECT:
VANTAGE ARCHITECTS
750 3RD ST N, SUITE F
LA CROSSE, WI 5460 I
608-784-2729

SURVEYOR:
PARAGON ASSOCIATES
632 COPELAND AVE,
LA CROSSE, WI 54603
608-781-3110

ARAGUN
ALTA/NSPS LAND TITLE SURVEY
1133 GEORGE STREET/2622 ROSE 1133 GEORGE STREET/2622 ROSE STREET LA CROSSE, WI 54601

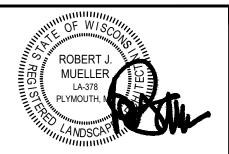






KWIK TRIP, Inc. P.O. BOX 2107 **1626 OAK STREET** LACROSSE, WI 54602-2107 PH. (608) 781-8988 FAX (608) 781-8960

3131 Fernbrook Lane North, STE 260 Plymouth Minnesota 55447 763.383.8400 fax 763.383.8440



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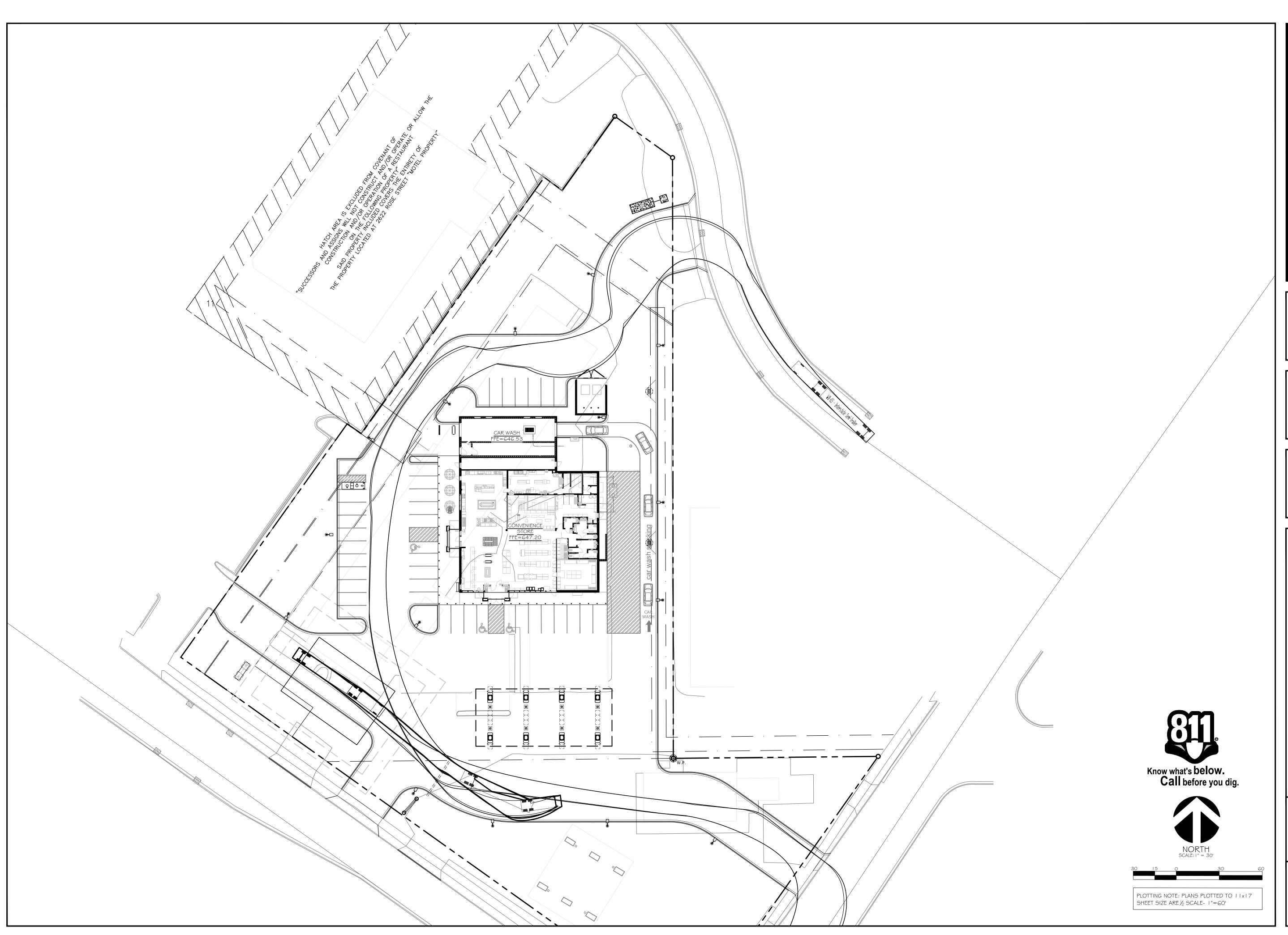
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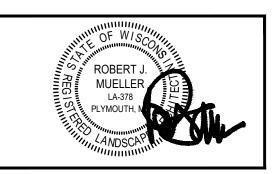
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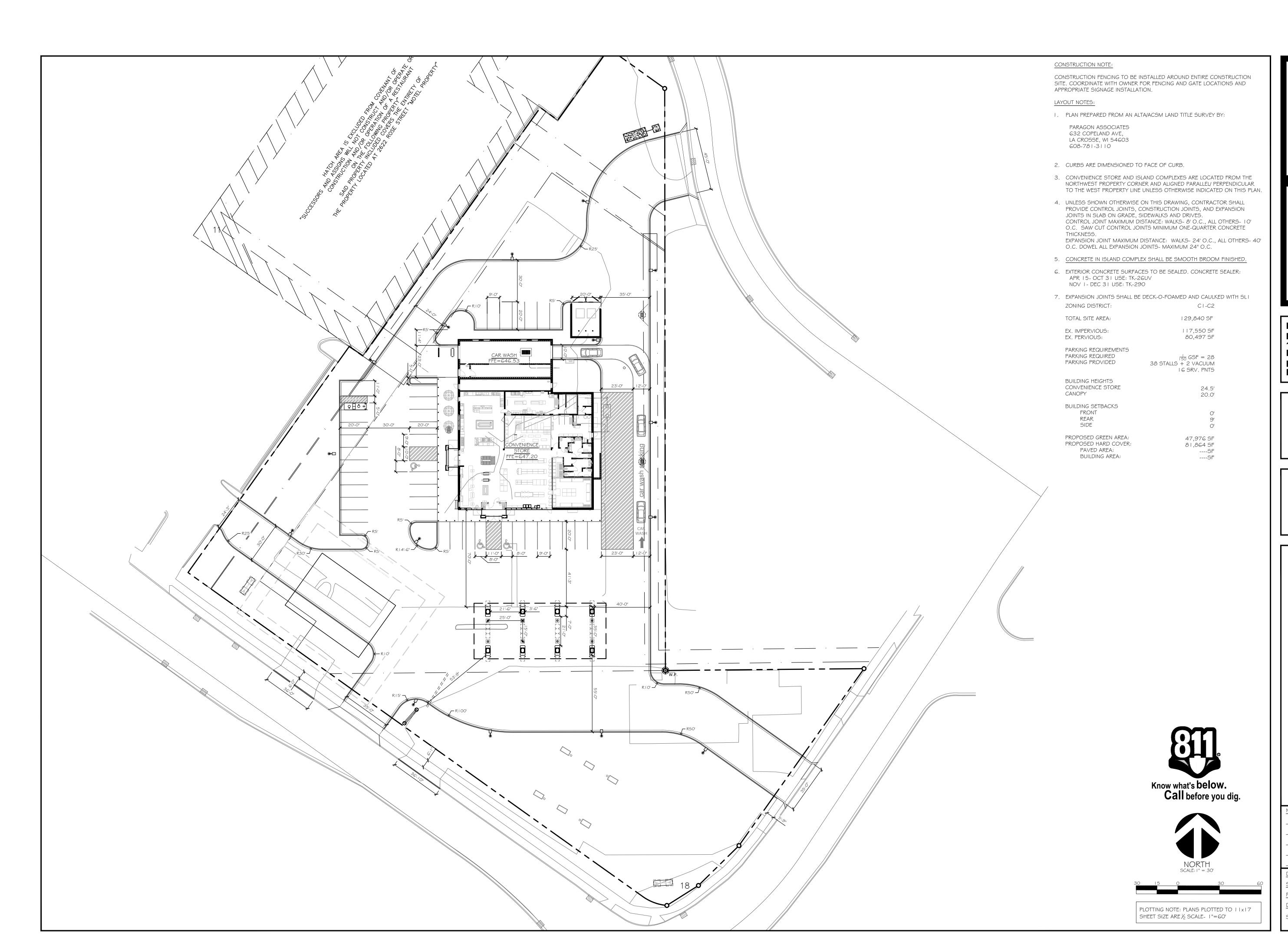


CIRCULATION PLAN /ENIENCE STORE 762

SITE CIRCULAT
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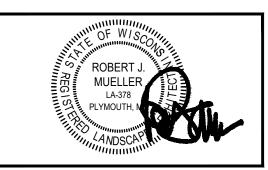


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FAX (608) 781-8960

SITE PLANNING LANDSCAPE ARCHITECTURE

3 1 3 1 Fernbrook Lane North, STE 260
Plymouth Minnesota 55447
763.383.8400
fax 763.383.8440



SITE DIMENSION PLAN CONVENIENCE STORE 762

NO. DATE DESCRIPTION
- 04JAN24 SUBMITTAL
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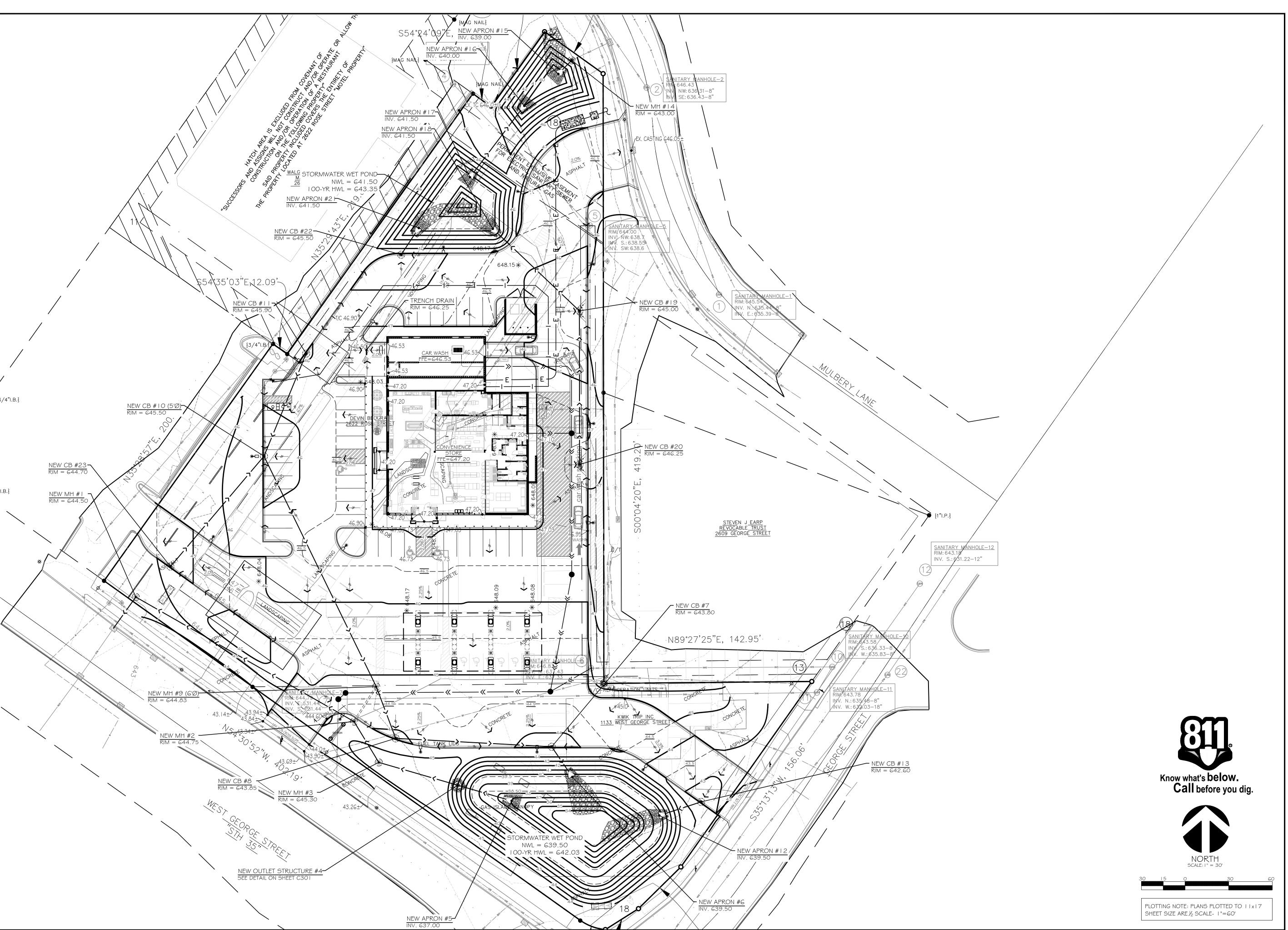
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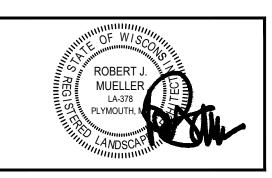
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PH. (608) 781-8988
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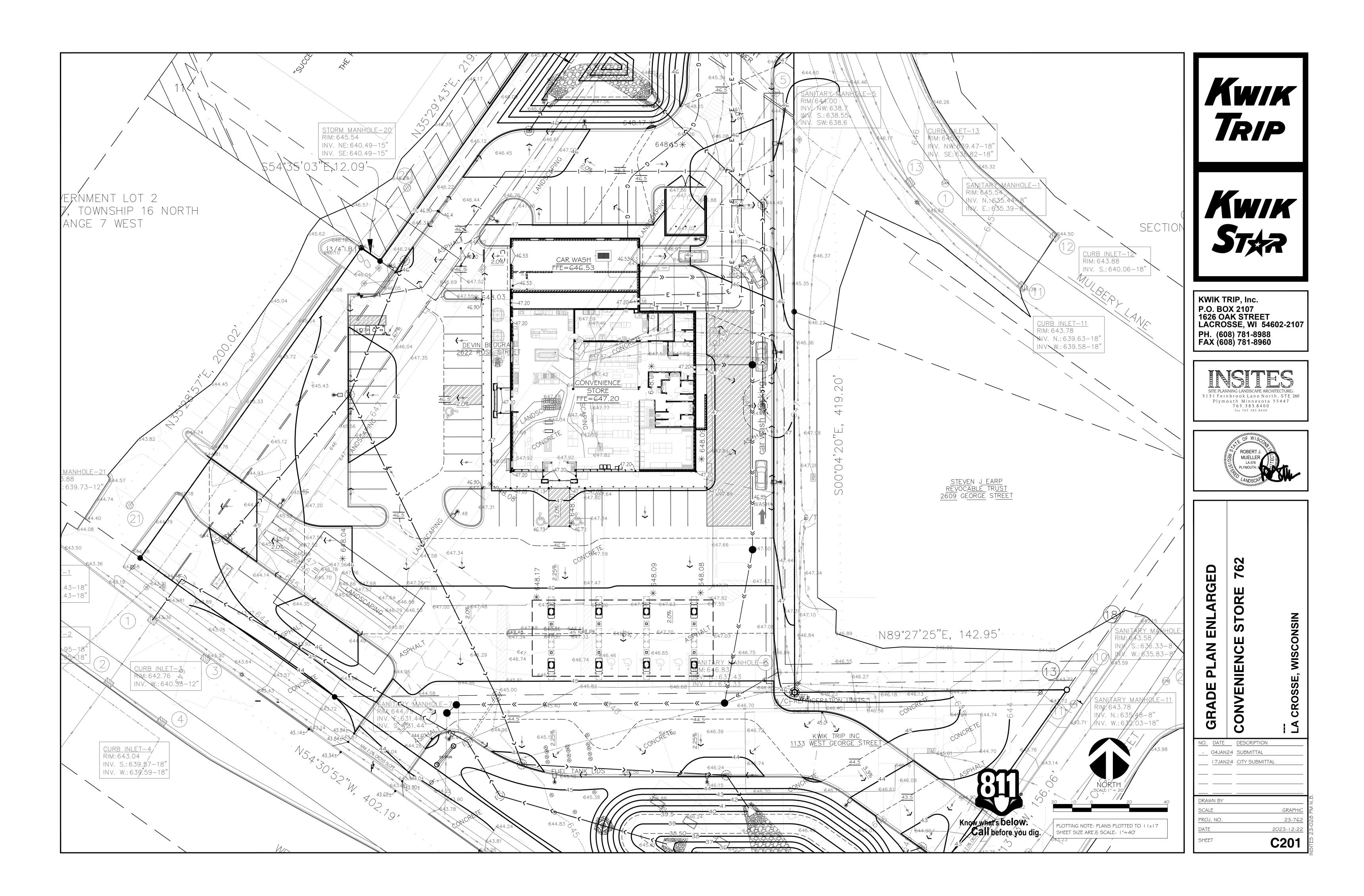


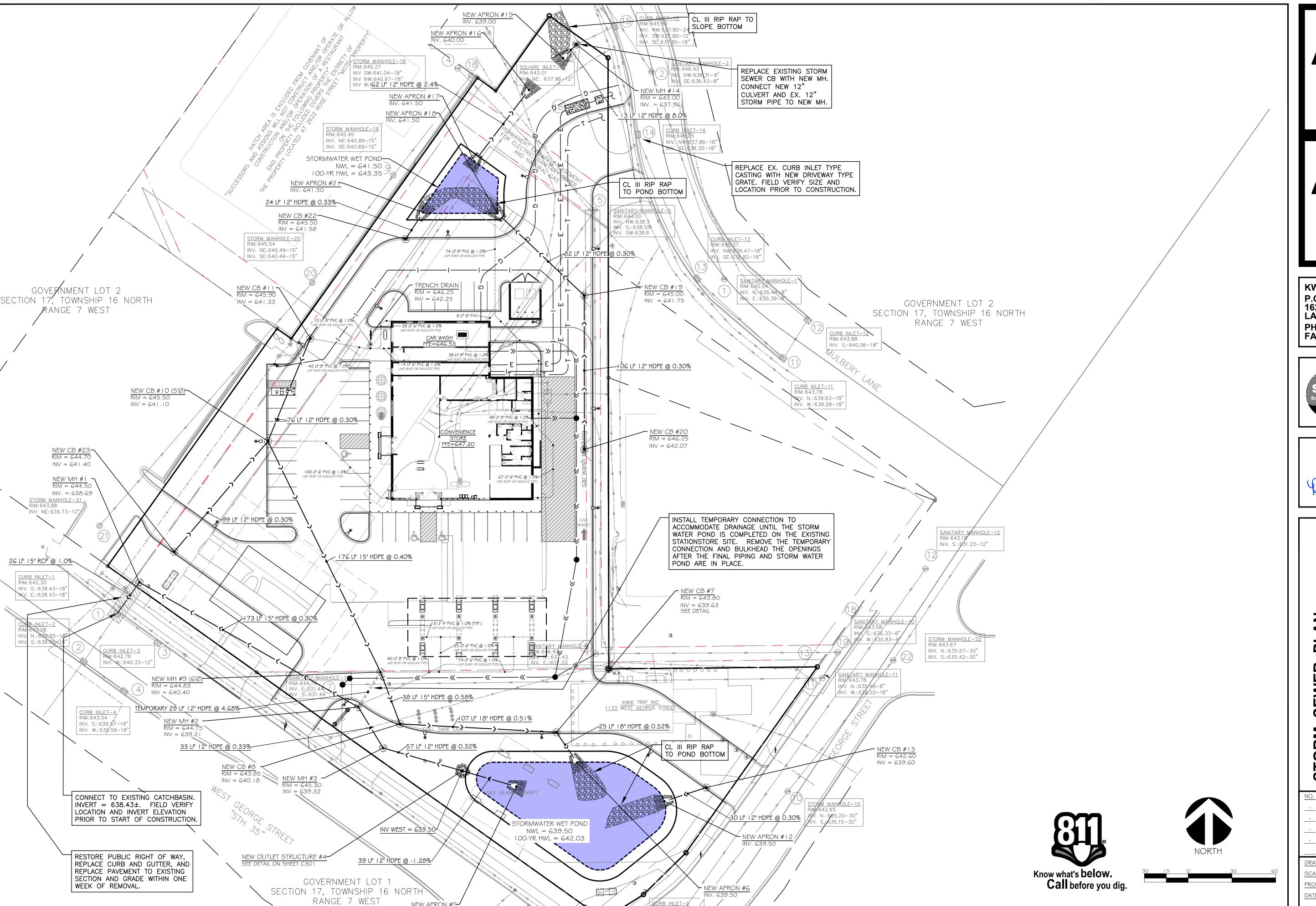
STORE 762

GRADE PLAN
CONVENIENCE STO

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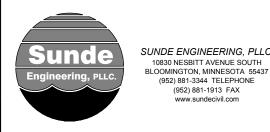






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STORM SEWER PLAN
CONVENIENCE STORE

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DATE	2023-12-22
SHEET	C300

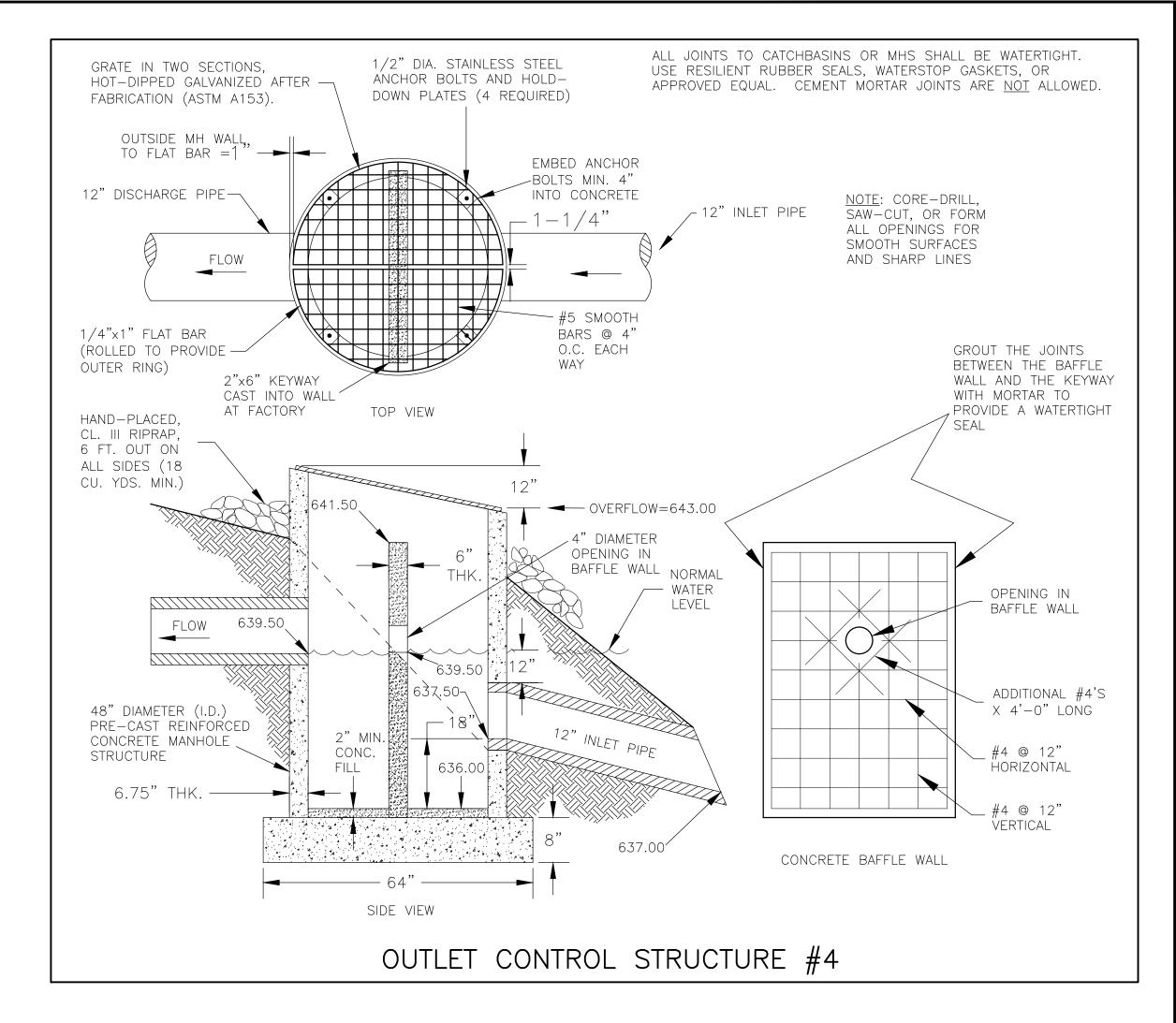
- STORM DRAINAGE:
- 1. Unless otherwise indicated, use reinforced, precast, concrete maintenance holes and catchbasins conforming to ASTM C478, furnished with water stop rubber gaskets and precast bases. Joints for all precast maintenance hole sections shall have confined, rubber "O"—ring gaskets in 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.
- 2. Install catchbasin castings TOP with specified top elevation at the front rim.
- 3. All joints and connections in the storm sewer system shall be gastight or watertight. Joints between concrete structures and piping shall be made with mechanical joints. Use approved resilient rubber seals or waterstop gaskets in order to make watertight connections to manholes, catchbasins, and other structures in conformance with ASTM C923 or as otherwise permitted by the local authority. Cement mortar joints alone are permitted only for repairs or connections to existing lines having such joints, or unless otherwise permitted by the administrative authority.
- 4. 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.
- 5. PVC Pipe (Outside of the Building): Use solid-core, SDR-35, ASTM D3034 Polyvinyl Chloride (PVC) Pipe for designated PVC storm sewer services 4 to 15-inches in diameter outside of the building. Use solid-core, SDR-35, ASTM F679 Polyvinyl Chloride (PVC) pipe for designated PVC storm sewer services 18 to 27-inches in diameter outside of the building. Joints for all storm sewer shall have push-on joints with elastomeric gaskets. Use of solvent cement joints is allowed for building services. Solvent cement joints in PVC pipe must include use of a primer which is of contrasting color to the pipe and cement in accordance with Uniform Plumbing Code (UPC), part 605.2.2. Pipe with solvent cement joints shall be joined with PVC cement conforming to ASTM D2564. Lay all PVC pipe on a continuous granular bed. Installation must comply with ASTM D2321
- 6. <u>Cleanouts</u>: Install cleanouts on all roof drains in accordance with S.P.S 382.35 (3)(C)(1.). Cleanouts shall be installed at every wye, sweep, and bend. 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 (Neenah R—1914—A, or approved equal) over all cleanouts. Provide cleanouts at the base of the roof leader connections at the gas island pump stations.
- 7. <u>Fittings</u>: Provide directional fittings for the storm piping serving the gas island pump stations. All changes in direction of flow in drain piping shall be made by the appropriate use of 45 degree wyes, long or short sweep quarter bends, sixth, eighth, or sixteenth bends, or by a combination of these or other equivalent fittings.
- 8. RCP: Furnish reinforced concrete pipe (RCP) and fittings fabricated in a plant listed on the Wisconsin Department of Transportation Approved Product List (APL) consistent with the diameter indicated. Material for the various classes of pipe shall be in accordance with Wisconsin DOT Standard Specification Section 522.2 conforming to AASHTO M170. Per WisDOT Facilities Development Manual Chapter 13 Section 1, the minimum concrete pipe class required based on depth to subgrade is as follows: Depth to subgrade 0' to 2' = Class IV RCP, Depth to subgrade 2' to 3' = Class III RCP, Depth to subgrade 3' to 6' = Class II RCP.
- 9. <u>SPS 382.36(9)(b)3c Grates on Horizontal Pipes</u>: Install safety—trash grates on all horizontal inlets/outlets greater than 6 inches in diameter. The grates shall be placed so that the rods or bars are not more than 3 inches downstream of the inlet/outlet. Rods or bars shall be spaced so that the openings do not permit the passage of a 6—inch sphere.
- 10. <u>Testing</u>: Test all portions of storm sewer that are within 10 feet of buildings, within 10 feet of buried water, lines, within 50 feet of water wells, or that pass through soil or water identified as being contaminated in accordance with UPC part 1107.0. Test all flexible storm 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
- 11. <u>Draintile</u>: Perforated under—drains shall be slotted single wall corrugated HDPE. Install draintile with high permittivity circular knit polymeric filament filter sock per ASTM D6707—01.
- 12. Use Neenah R-3067-DR/DL casting with curb box, or approved equal, on CB #7, #8, #10, #11, #13, #22, and #23. Casting shall include the "DUMP NO WASTE. DRAINS TO FRESH WATER." environmental notice.
- 13. Use Neenah R-3455-A casting, or approved equal, on CB#19 and CB#20.
- 14. Use Zurn Z886 trench drain model 8606N with black acid resistant epoxy coated ductile grate Class C for proposed trench drain.
- 15. Use Neenah Foundry Co. R—1642 casting with self—sealing, solid, type B lid, or approved equal, on all storm sewer maintenance holes. Covers shall bear the "Storm Sewer" label.
- 16. <u>Tracer Wire</u>: Locating requirements a means to locate buried underground exterior sewers/mains must be provided with tracer wire or other methods in order to be located in accord with the provisions of the Wisconsin Statutes 182.0175(2r) and the Wisconsin Department of Safety and Professional Services SPS 82.30(11)(h). Install locating wires on all conductive and non-conductive storm sewer, sanitary sewer, and water lines in accordance with the MRWA Trace Wire Specification Guide and Details (www.mrwa.com/PDF/TracerWireSpecGuideFinalweb9.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 Dryconn 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 ends and 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.
- 17. <u>Detectable Warning Tape</u>: 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.
- 18. 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. Provide a minimum insulation thickness of 2 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 HI—40 plastic foam insulation.
- 19. 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. Field verify that there is positive drainage at the outfall location. 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.
- 20. Line ponds with 2' thick impervious clay liner per detail.
- 21. Clean sediment and debris from sewers, sumps and stormwater basins prior to final owner acceptance.
- 22. Televise all existing lines prior to connection.
- 23. Provide a final storm water management report that will serve to verify that the intent of the approved storm water management design has been met. The report shall include record drawings, measurements, and photographic evidence of the as—built storm water management system. The report shall substantiate that all aspects of the original design have been adequately provided for by the construction of the project.
- 24. Install finger drains at each and every proposed catchbasin (see detail). Finger drains around catch basin inlets shall not be installed below the crown of the storm drain piping.

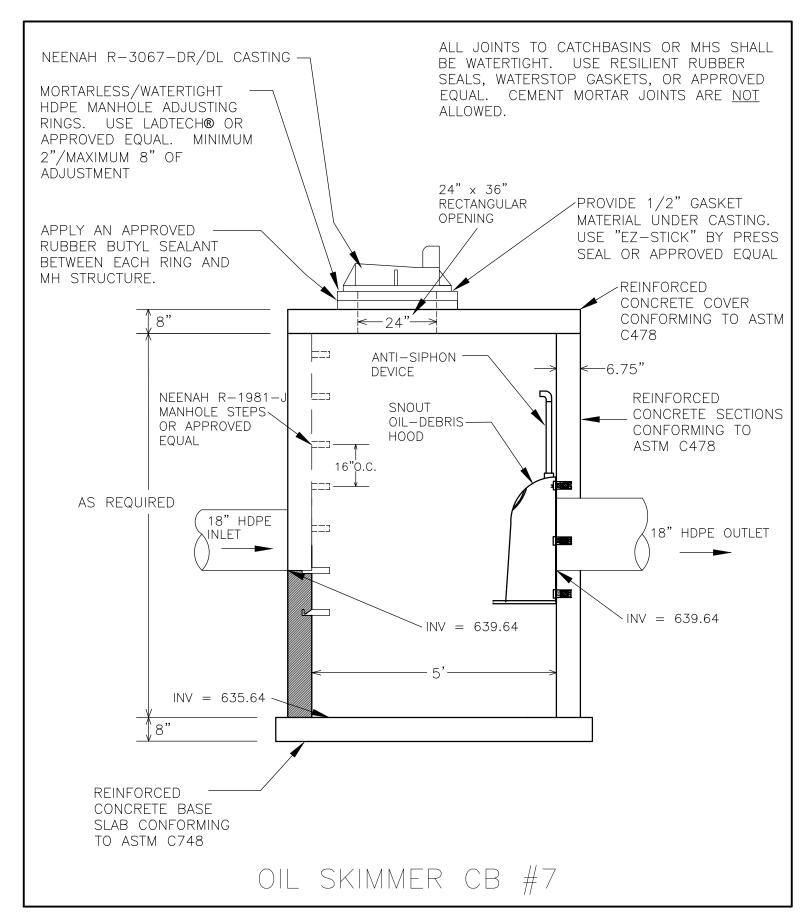
HDPE REQUIREMENTS:

- 1. Install dual—wall, smooth interior, corrugated high—density polyethylene (HDPE) pipe at locations indicated on the plan. High—density polyethylene (HDPE) storm sewers must meet ASTM F714.
- 2. Dual—wall, smooth interior, corrugated high—density polyethylene (HDPE) pipe shall conform to the requirements of AASHTO M252 for pipe sizes 4—inch to 10—inch diameter. Dual—wall, smooth interior, corrugated high—density polyethylene (HDPE) pipe shall conform to the requirements of ASTM F2306 (virgin PE material) for pipe sizes 12—inch to 60—inch diameter.
- 3. All fittings must comply with ASTM Standard D3212.

4. <u>Water-tight joints must be used at all connections including structures in conformance with ASTM F2510</u>.

- 5. HDPE pipes must be listed and labeled.
- 6. The connection between HDPE and a different pipe material must be made by means of an approved transition coupling for the specific application.
- 7. HDPE pipe connections into all concrete structures must be made with water tight materials utilizing Nyoplast "Manhole Adaptors" along with Press—Seal or Kor—N—Seal "Watertight Connector", Cast—A—Seal "Precast Watertight Connector", or approved equals. Where the alignment precludes the use of the above approved watertight methods, Conseal 231 WaterStop sealant, or approved equal will only be allowed as approved by the Administrative Authority.
- 8. HDPE pipe installation must be open—trench on a continuous granular bed per ASTM D2321 and manufacturer's installation instructions. All sections of the corrugated HDPE pipe shall be coupled in order to provide water tight joints.
- 9. Perform deflection tests on all HDPE pipe after the sewer lines have 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 perform the test again until acceptable. Supply the mandrel for deflection testing. If the deflection test is to be run using a rigid ball or mandrel, it shall have a diameter equal to 95% of the inside diameter of the pipe. The ball or mandrel shall be clearly stamped with the diameter. Perform the tests without mechanical pulling devices.



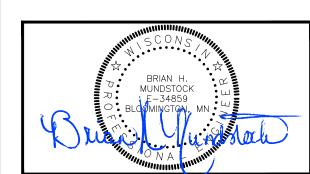




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FAX (608) 781-8960





TORM SEWER NOTES & DETAILS ONVENIENCE STORE 762

 NO.
 DATE
 DESCRIPTION

 04JAN24
 SUBMITTAL

 17JAN24
 CITY SUBMITTAL

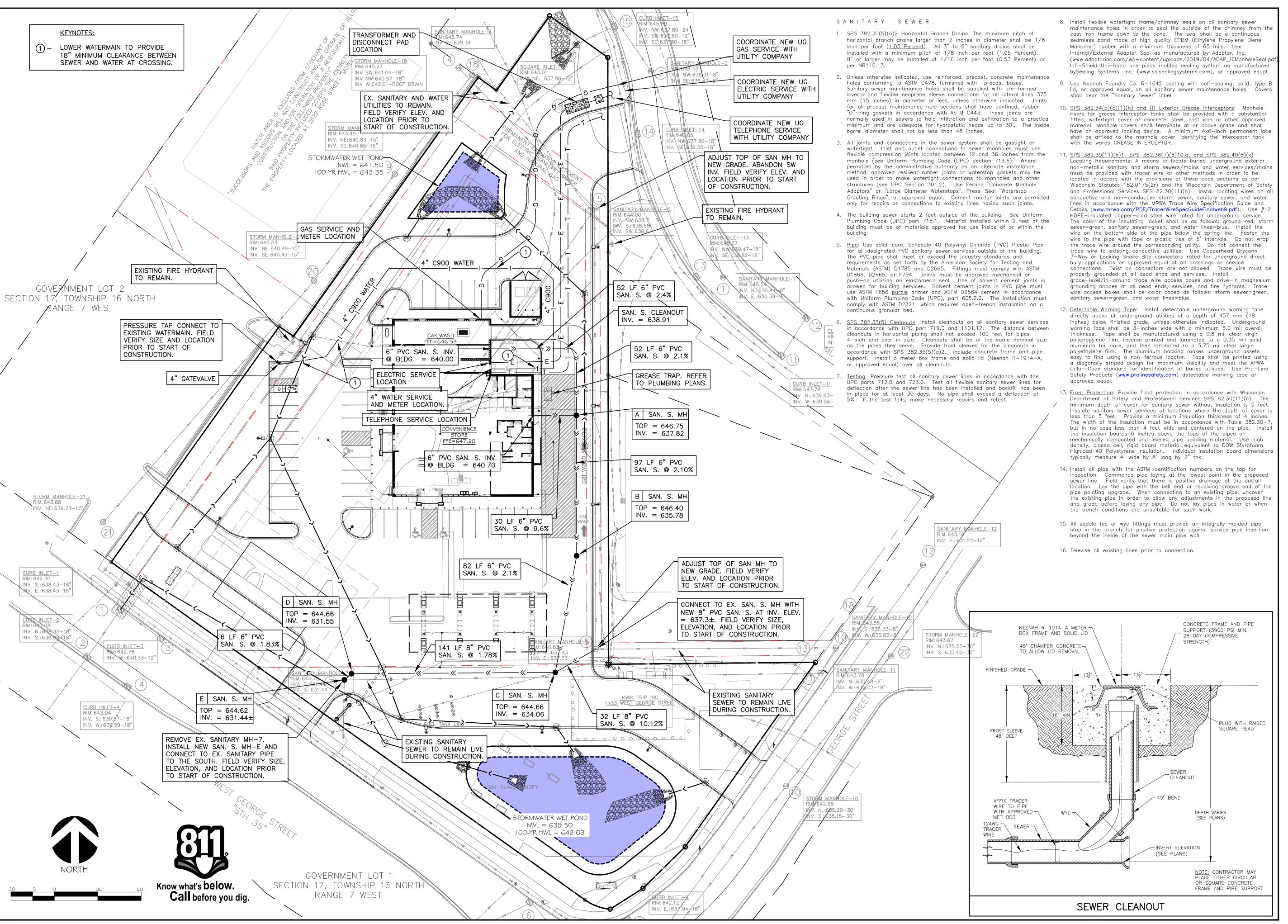
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 23-762

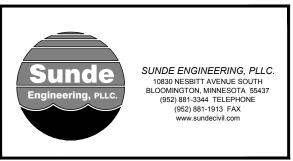
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LACROSSE, WI 54602-2107
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UTILITY PLAN CONVENIENCE STORE 762

<u>NO.</u>	DATE	DESCRIPTION
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	<u> 17JAN24</u>	CITY SUBMITTAL
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DATE	:	2023-12-22
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GENERAL:

- Existing boundary, location, topographic, and utility information shown on this plan is from an ALTA/NSPS Land Title Survey survey by Paragon Associates dated 9/14/2023. The Engineer is not responsible for inaccuracies related to
- 2. Perform all construction work in accordance with State and Local requirements.
- . 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 procedures. Perform excavations in accordance with the requirements of O.S.H.A. 29 CFR. Part 1926. Subpart P. Excavations. Trenching standards require protective systems on trenches deeper than 5 feet. Bench or slope sidewalls in order to provide safe working conditions and stability for the placement of engineered fill. Do not expose workers to the dangers of being struck by material and equipment. Keep soil and other materials at least 2 feet from the edge of any trenches. Trenches must be inspected by a competent individual, be free of standing water and atmospheric hazards, and have a safe means of entering and exiting before allowing a worker to enter. The Contractor 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).
- . 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.
- 5. 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 not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or
- . Examine all local conditions at the site, and assume responsibility as to the grades, contours, and the character 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.
- Refer to the architectural plans for building and stoop dimensions, site layout and dimensions, pavement sections and details, striping, and other site features.
- 8. 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 staking. Stake the limits of walkways and curbing 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
- 3. 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.
- 10. Provide all traffic control required in order to construct the proposed improvements. Traffic control design and associated government approvals are the responsibility of the Contractor. Comply with local authorities, the latest version of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), and the Wisconsin Manual on Uniform Traffic Control Devices Supplement to the MUTCD. If the temporary traffic control zone affects the movement of pedestrians, provide adequate temporary pedestrian access 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 MUTCD.
- 1. Connect to existing sanitary sewer MH's by coredrilling. Connect to existing storm sewer MH's by either sawcutting or coredrilling. Use saws or drills that provide water to the blade. Meet all City standards and specifications for the 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 beginning construction to ensure that service connections do not cut into maintenance access structure joints or pipe barrel joints.
- 12. 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 concrete fill. Bulkhead ends of the pipe segment to be decommissioned with 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 barrel at the bottom of the structures for drainage and cover the holes with geotextile filter fabric, and (4) fill the structures with sand or CLSM.
- 3. Testing and Inspections: 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.
- 14. Coordinate building utility connection locations at 2 ft. out from the proposed building with the interior Plumbing Contractor 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.
- 15. The subsurface utility information shown on this plan is utility Quality Level D. This quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data" by the FHA.
- 16. 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 on the plan. It is the Contractor's responsibility to ascertain the final vertical and horizontal location of all existing utilities (including water and sewer lines and appurtenances). Notify the Engineer of any discrepancies.
- 17. 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 Digger's Hotline at (414) 259-1181 in the Milwaukee Metro Area, or 1-800-242-8511 elsewhere in Wisconsin for exact locations of existing utilities at least 72 hours (not including weekends and holidays) before beginning any construction. Obtain ticket number and meet with representatives of the various utilities at the site. Provide the Owner with the ticket number information. Digger's Hotline is a free service that locates municipal and utility company lines, but does not locate private utility lines. Use an independent locator service or other means in order to obtain locations of private utility lines including, but not limited to, underground electric cables, telephone, TV, and lawn sprinkler lines.
- 18. Pothole to verify the positions of existing underground facilities at a sufficient number of locations in order to assure that no conflict with the proposed work exists and that sufficient clearance is available.
- 19. Where existing gas, electric, cable, or telephone utilities conflict with the Work, coordinate the abandonment, relocation, offset, or support of the existing utilities with the appropriate local utility companies. Coordinate new gas meter and gas line installation, electric meter and electric service installation, cable service, and telephone service installation with
- 20. When working near existing telephone or electric poles, brace the poles for support. When working around existing underground utilities that become exposed, provide sufficient support in order to prevent excessive stress on the existing piping. The location and preservation of existing underground utilities is solely the responsibility of the
- 21. 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 include, but are not limited to, shoring, sheeting, bracing, anchorages, excavation support walls, directional boring, auger jacking, soil stabilization, and other methods of protecting existing improvements.
- 22. 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 waste material from the construction operations. Obtain the rights to any waste area for 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.
- 23. 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.
- 24. 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.
- 25. Relocate overhead power, telephone, and cable lines as required. Seal and report any existing unused on—site wells and septic systems.
- 26. 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 recycled or salvaged aggregate, asphaltic 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.
- 27. Reconstruct driveways and patch street to match existing pavement section and grade. Sod right—of—way. Restore the public right—of—way at temporary construction entrance locations. Replace any concrete curb and gutter, bituminous pavement, sidewalk, or vegetative cover damaged by the construction activity. Restore damaged turf with sod within the public right—of—way. The work area shown is general and may need to be adjusted in the field.
- 28. Cut turf edges in order to allow for a uniform straight edge at locations where new sod meets existing turf. No jagged or 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.
- 29. 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.
- 30. 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 means as necessary in order to insure proper drainage at all times. Provide low points at building pads or roadways with positive outfalls. Do not block drainage from or direct excess drainage to adjacent property.

- 31. 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
- 32. 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 demolition, excavation, underpinning, pile driving, compacting, or similar work 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.

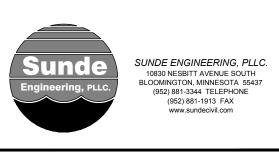
33. Protect sub grades from damage by surface water runoff.

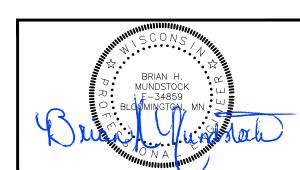
- 34. Full design strength is not available in bituminous pavement areas until the final lift of asphalt is compacted into place. Protect pavement areas from overloading by delivery trucks, construction equipment, and other vehicles.
- 35. When sawing or drilling concrete or masonry, use saws that provide 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. 36. Adjust all public and private structures including curb stops, valve boxes, maintenance hole castings, catchbasin castings, cleanout covers, and similar items to finished grade. Comply with the requirements of each structure's owner. Structures being reset in paved areas must meet the owner's requirements for traffic loading.
- 37. Grading for all sidewalks and accessible routes, including driveway crossings, shall conform to current State and Federal Americans with Disabilities Act (ADA) requirements. In accordance with ADA Section 403.3, slopes shall not exceed exceed 2% cross slope or 5% in the direction of travel. Sidewalk access to external building doors shall be ADA compliant. Accessible parking stalls shall not exceed 2% slope in any direction.
- 38. Curb ramps on accessible routes shall comply with sections 405 and 406 of the Americans with Disabilities Act Accessibility Guidelines (ADAAG).
- 39. Accessible parking spaces shall include the International Symbol of Accessibility complying with ADA Section 703.7.2.1 painted in the center of the parking space, 4-ft. high. Hatch handicapped access aisles with white 4-inch wide painted stripes 18—inches on center and at 45 degree angles to the stalls.
- 40. 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. Field verify that there is positive drainage at the outfall location. 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.
- 41. 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 bonds, letters of credit, or cash sureties 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.
- 42. Measure pipe lengths from center-of-structure to center-of-structure, or to the end of aprons.
- 43. Obtain permits from the City for work in the public right-of-way.
- 44. Refer to the geotechnical report by the Soils Engineer for dewatering requirements.
- 45. 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. 46. Building and Canopy Roof Drain Leader Protection: Provide frost protection in accordance with Wisconsin Department of
- Safety and Professional Services SPS 82.30(11)(c). 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. Provide a minimum insulation thickness of 4 inches. The width of the insulation must be in accordance with Table 382.30—7, but in no case less than 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" thk.
- 47. Construct sanitary sewer, watermain, and storm sewer utilities in accordance with the Standard Specifications for Sewer and Water Construction in Wisconsin, Sixth Edition, or the latest revised edition.
- 48. These plans, prepared by Sunde 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 Sunde Engineering's registered professional engineer hereon does not extend to any such safety systems that may nor or hereafter be incorporated into these plans. 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
- 49. 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 final vertical and horizontal location 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
- 50. <u>SPS 382.30(11)(h)1, SPS 382.36(7)(d)10.a, and SPS 382.40(8)(k) Locating Requirements</u>: A means to locate buried underground exterior non-metallic sanitary and storm sewers/mains and water services/mains must be provided with tracer wire or other methods in order to be located in accord with the provisions of these code sections as per Wisconsin Statutes 182.0175(2r) and the Wisconsin Department of Safety and Professional Services SPS 82.30(11)(h). Install locating wires on all conductive and non-conductive storm sewer, sanitary sewer, and water lines in accordance with the MRWA Trace Wire Specification Guide and Details (www.mrwa.com/PDF/TracerWireSpecGuideFinalweb9.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 Dryconn 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 ends and 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.
- 51. <u>Detectable Warning Tape</u>: 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.
- 52. See architectural for building waterproofing and foundation drainage.
- 53. Place #3 rebar at 3' on center in all 6" thick concrete pavement locations. Place #4 rebar at 4' on center in all 8" thick concrete pavement locations.
- 54. Place $\#4 \times 2'-0$ " tie bar at 3' on center in all concrete curb and gutter.
- 55. Provide as—builts in accordance with City and Watershed District requirements. Record as—built information as construction progresses or at appropriate construction intervals. Secure and deliver to the Owner as—built information showing locations, top, and invert elevations of maintenance holes, catchbasins, cleanouts, inlet and outlet pipes, valves, hydrants, and related structures. Location ties shall be to permanent landmarks or buildings.
- 56. 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; draintile elevations and sizes; ponds, tanks, infiltration or filtration basins; and any associated storm water
- 57. 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, and deflection tests on all
- 58. Insulate utility lines at locations indicated on the plans. 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" thk.
- 59. Property Corners: Take care during construction and excavation in order to protect survey markers, monuments, and/or property irons.
- 60. 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 obliteration shall remove the non—applicable pavement marking material, and the 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.
- 61. Completely remove marking from locations shown on the plan in accordance with Wisconsin Department of Transportation Standard Specification Section 646.3.1.4. Use one or a combination of air blasting, water blasting, and grinding. Provide a dust control system 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. Extend water service into the building and up to the flange for the water meter.
- 2. <u>SPS 382.40(8)(b)2 Location</u>: If a private water main or a water service crosses a sanitary sewer, the water piping within 5 feet of the point of crossing shall be installed in accordance with any of the following requirements: (a) The water piping shall be installed at least 12 inches above the top of the sewer. (b) The water piping shall be installed at least 18 inches below the bottom of the sewer. (c) The water or sewer piping shall be installed within a waterproof sleeve made of materials as specified for sanitary building sewers in section SPS 384.30 (2).
- 3. SPS 382.40(8)(b)3 Separation of Water and Sewer: Private water mains and water services shall be installed at least 5 feet horizontally from any sanitary sewer. 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.). Note that the Department of Natural Resources has limitations for the separation of water mains and sanitary sewers.
- Watermain Depth: Maintain 7.5-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 depths in order to clear storm sewers, sanitary sewers, or other utilities as required. Include costs to lower water lines in the base bid.
- 5. <u>SPS 382.40(8)(i)2 Disinfection</u>: Disinfect all completed watermains in accordance with AWWA Standard C651. If the tablet or continuous feed methods are used, disinfect the completed watermain with water that contains at least 50 ppm of available chlorine in accordance with UPC part 609.9. Do not use the tablet method on solvent-welded plastic or on screwed-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 shall be in accordance with Standard Methods, AWWA M-12, or using appropriate chlorine
- 6. 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 1034-kPa (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 water main pressure testing. The test section of pipe shall withstand the test without leaking for a period of not less than 15 minutes.
- 7. All water supply piping connected to municipal water main must have a 150 psi minimum pressure rating
- 8. Polyvinyl Chloride (PVC) Watermain: Use AWWA C900 for all PVC watermain furnished with integral elastomeric bell and spigot joints; minimum pressure Class 150; dimension ratio not greater than 18; laying length 20 feet. Use EBAA Iron, Inc., "Series 2000 PV Megalug," or approved equal for restraint on C900 PVC watermain. Use only ANSI 316 stainless steel bolts and nuts on all watermain fittings, valves, and hydrants.
- 9. 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" manufactured by EBAA Iron Inc., Eastland, Texas, or approved equal, installed in accordance with manufacturer's recommendations for restraint on Ductile Iron Pipe. Restraining devices are to have epoxy coating or approved equivalent. Restraining device hardware shall be ANSI 316 stainless steel, or approved
- 10. 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 Flow Control's Series 2500 Ductile Iron Resilient Wedge Gate Valve, or approved equal. Gate valves shall conform to AWWA C509. Install cast iron valve boxes conforming to ASTM A48 at each valve location. Valve boxes shall be the three-piece type with 5-1/4" shafts. Use Tyler 6860-G with No. 6 base, or equivalent. Valve boxes shall have at least 6" of adjustment above and below finished grade. Drop covers on valve boxes shall be round and bear the word "WATER" cast on the top. Use Tyler 6860-G "Stayput" covers with extended skirt, or equivalent. All valve hardware shall be ANSI 316 stainless steel, or approved equivalent.
- 11. <u>SPS 382.30(11)(h)1, SPS 382.36(7)(d)10.a, and SPS 382.40(8)(k) Locating</u> Requirements: A means to locate buried underground exterior non-metallic sanitary and storm sewers/mains and water services/mains must be provided with tracer wire or other methods in order to be located in accord with the provisions of these code sections as per Wisconsin Statutes 182.0175(2r) and the Wisconsin Department of Safety and Professional Services SPS 82.30(11)(h). Install locating wires on all conductive and non-conductive storm sewer, sanitary sewer, and water lines in accordance with the MRWA Trace Wire Specification Guide and Details (www.mrwa.com/PDF/TracerWireSpecGuideFinalweb9.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 Dryconn 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 ends and services. Install grade-level/in-ground trace wire access boxes and drive-in magnesium arounding 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.
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- 13. Threaded hose connections including hose bibbs and hydrants must include a back flow prevention device in accordance with UPC part 603.0.
- 14. 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 0.25 percent by weighted average of the wetted
- 15. 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 plumb and located according to
- 16. Insulate the watermain at locations indicated on the plans. 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" thk.

KWIK TRIP, Inc. l P.O. BOX 2107 1626 OAK STREET LACROSSE, WI 54602-2107 PH. (608) 781-8988 FAX (608) 781-8960

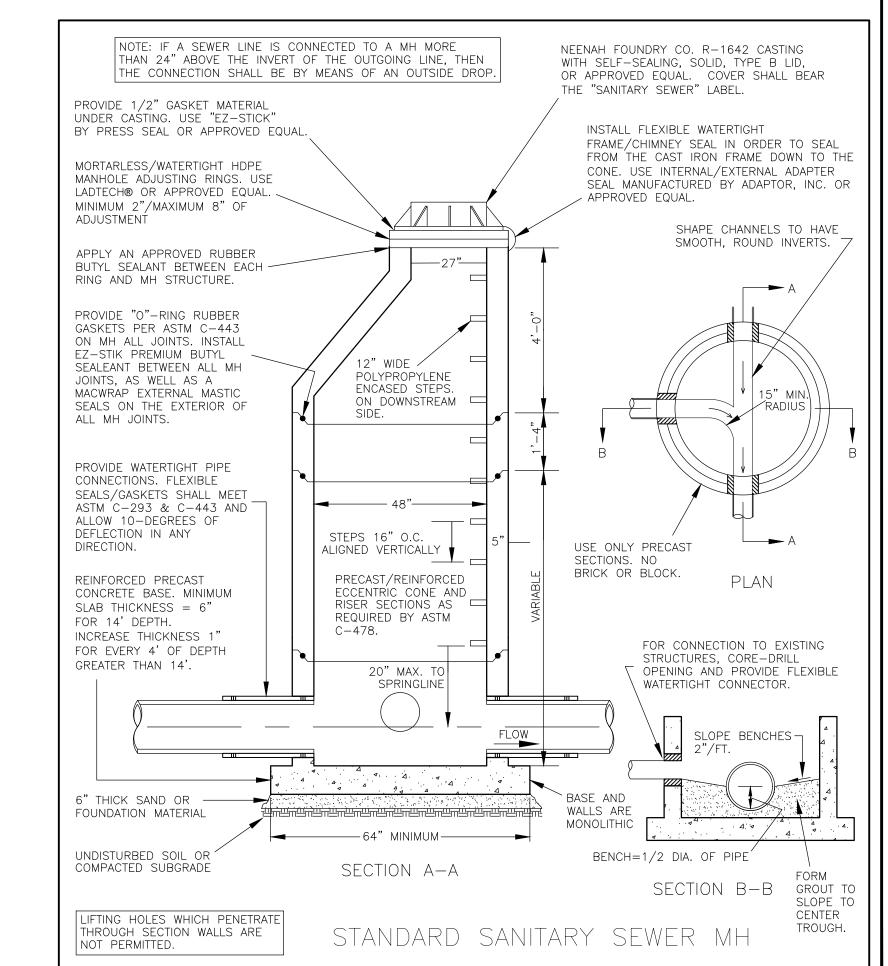


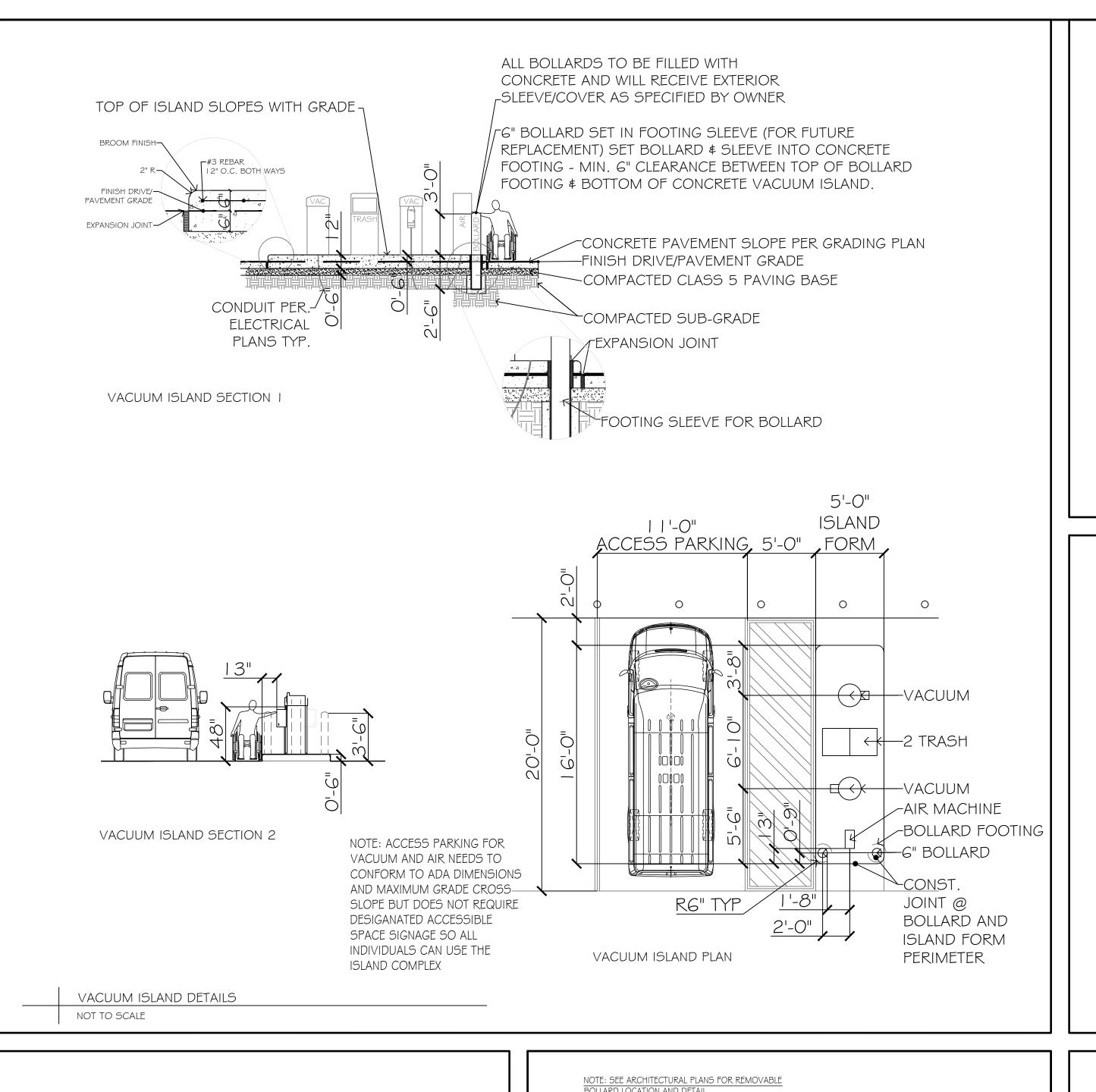


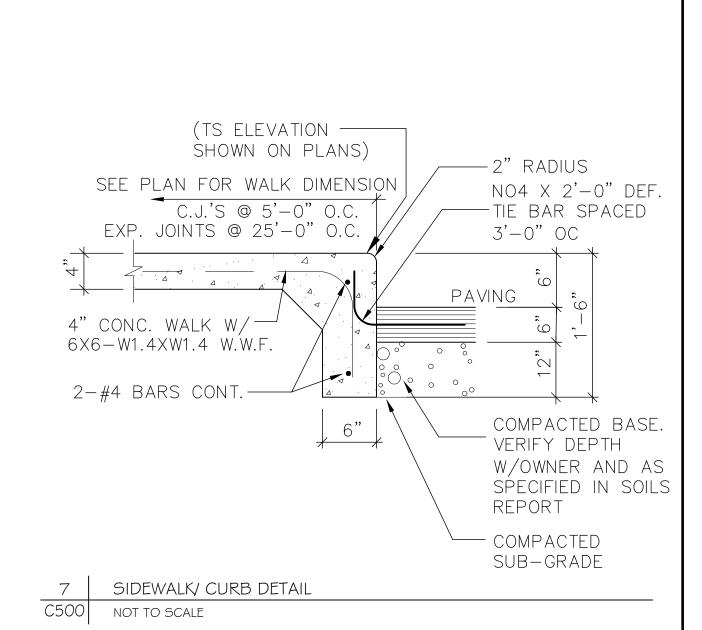
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NOTE: SEE ARCHITECTURAL PLANS FOR REMOVABLE BOLLARD

36" HEIGHT PIPE BOLLARD

SCALE - 3/8" = 1'-0"

LOCATION AND DETAIL

GO"x G" DIA. CONCRETE FILLED STEEL PIPE W/ 30" EXPOSURE. PAINT: FACTORY PRIMER; BOLLARD

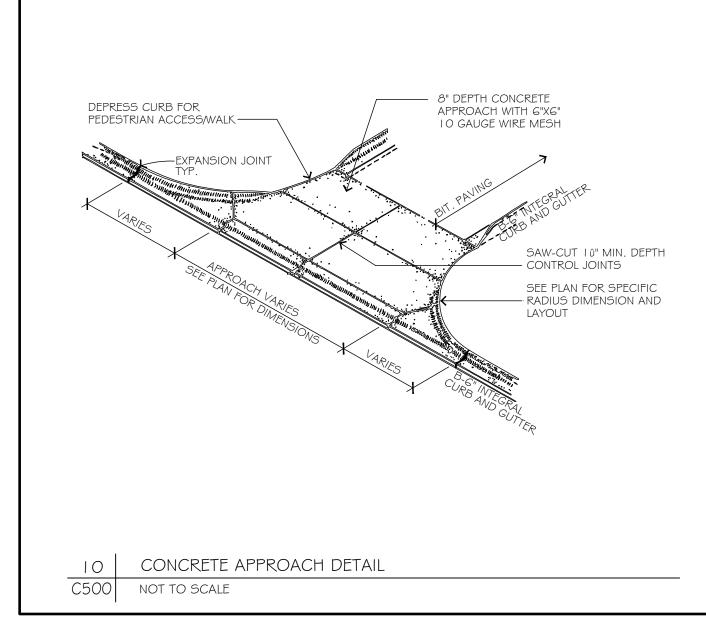
6" DEPTH CONCRETE PAVEMENT ----

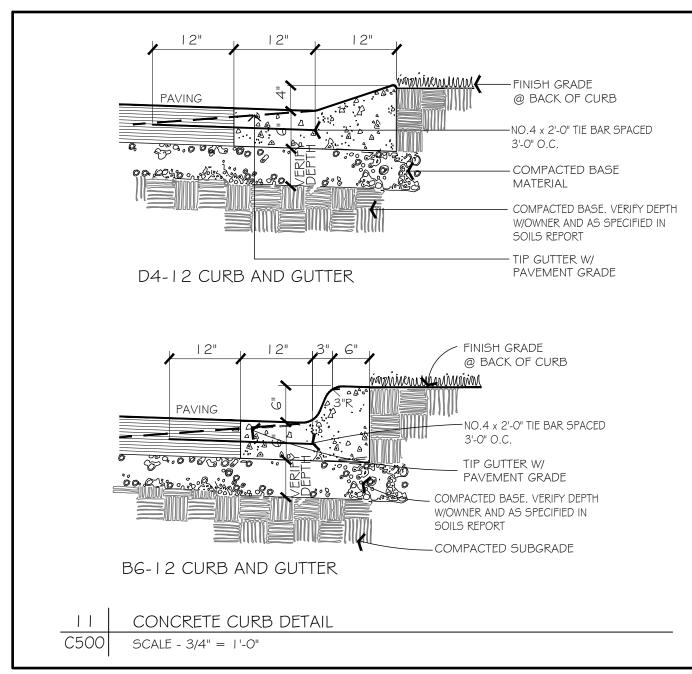
COMPACTED BASE, VERIFY DEPTH -

W/OWNER AND AS SPECIFIED IN

SOILS REPORT

SLOPE PER GRADE PLAN





─14'-0" LIGHT POLE

FOUNDATION

2'-0"

ROUND AREALIGHT FOUNDATION

SECTION

CEME-TUBE FORM ABOVE GRADE

Back of Curb

3'-0"

/(5) #4 REBAR

W/ #4 TIER

PLAN

. BASE PLATE ILLUSTRATION MAY CHANGE

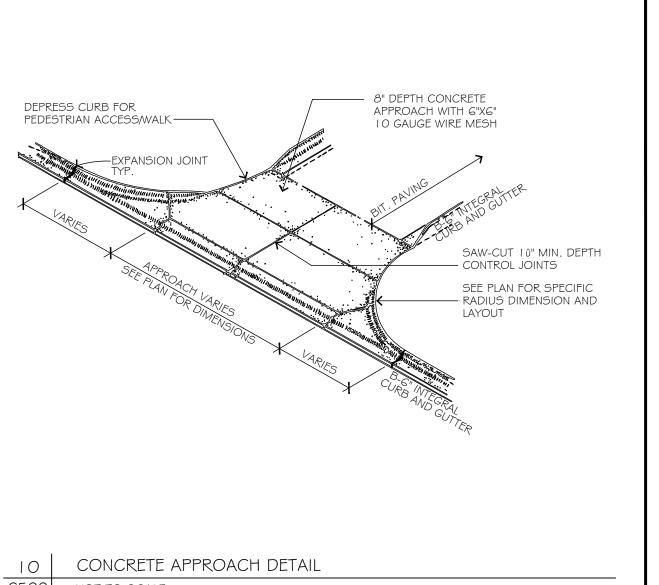
SETTING ANCHOR BOLTS. CONSULT AREA

LIGHT MANUFACTURER FOR BASE PLATE

WITHOUT NOTICE. DO NOT USE FOR

TEMPLATE, ANCHOR BOLT SIZE AND

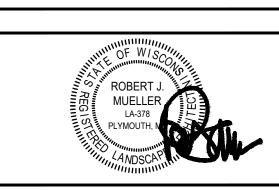
EMBEDMENT DEPTH

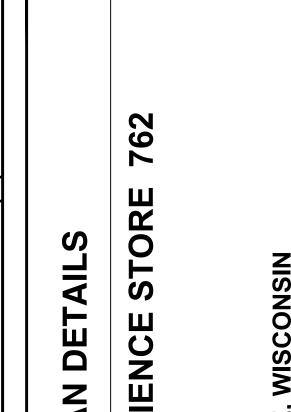




KWIK TRIP





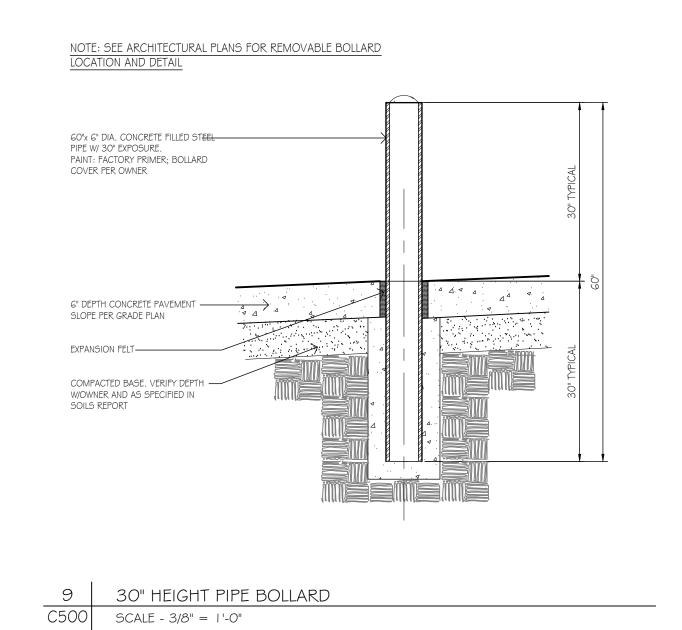


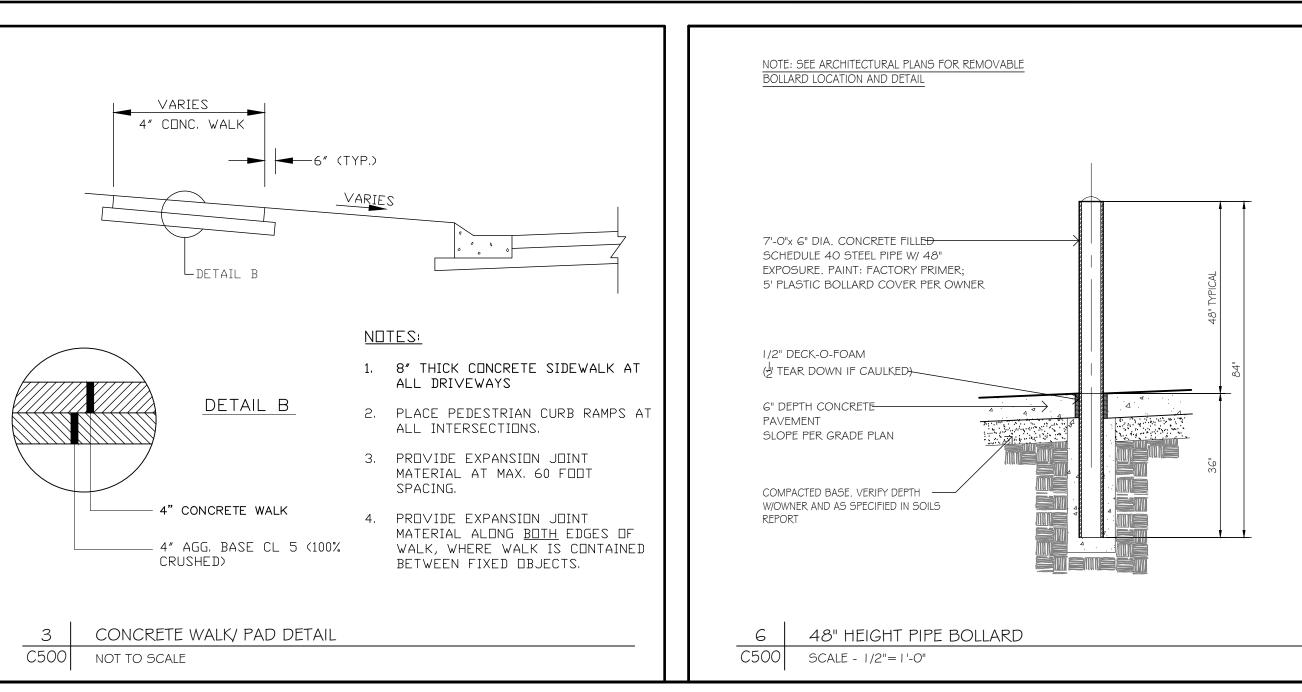
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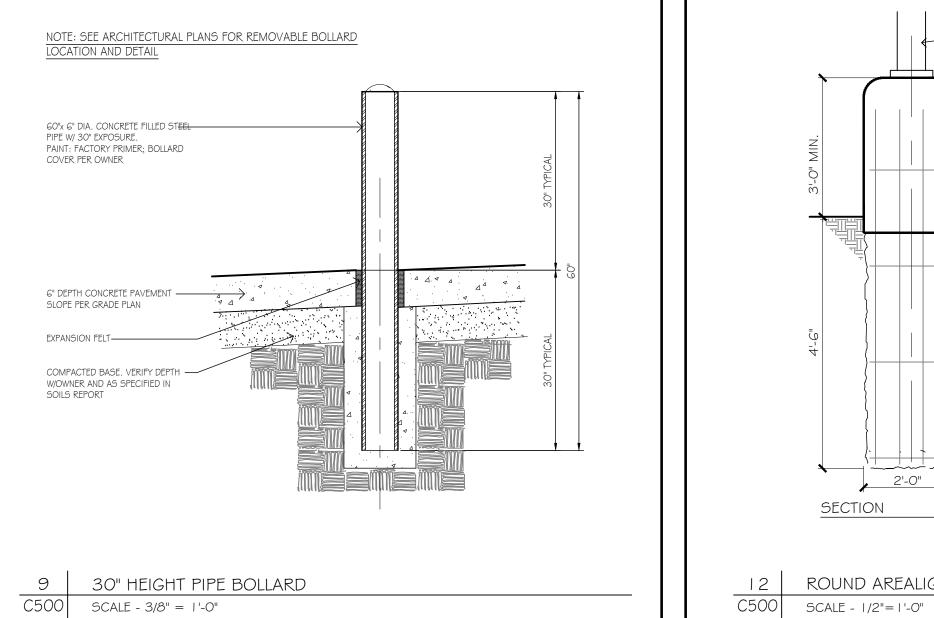
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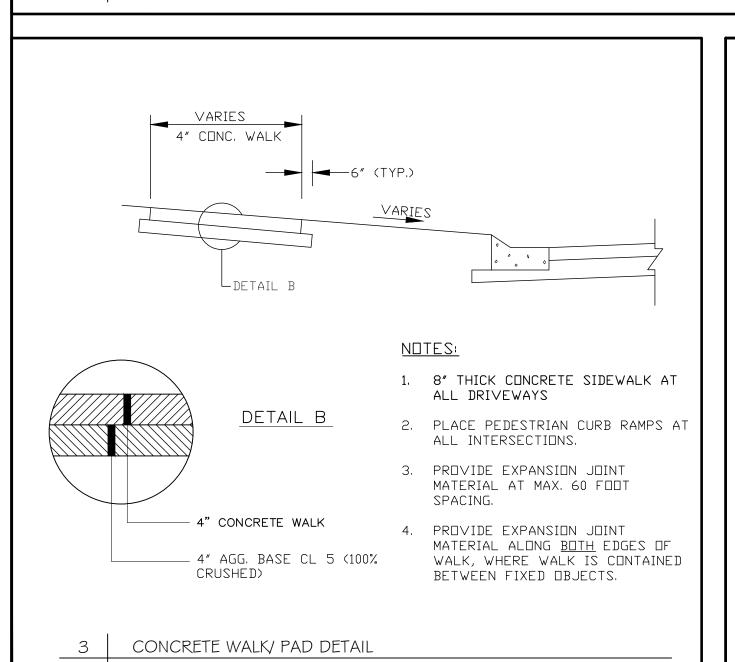
SITE DATE DESCRIPTION 04JAN24 SUBMITTAL 17JAN24 CITY SUBMITTAL

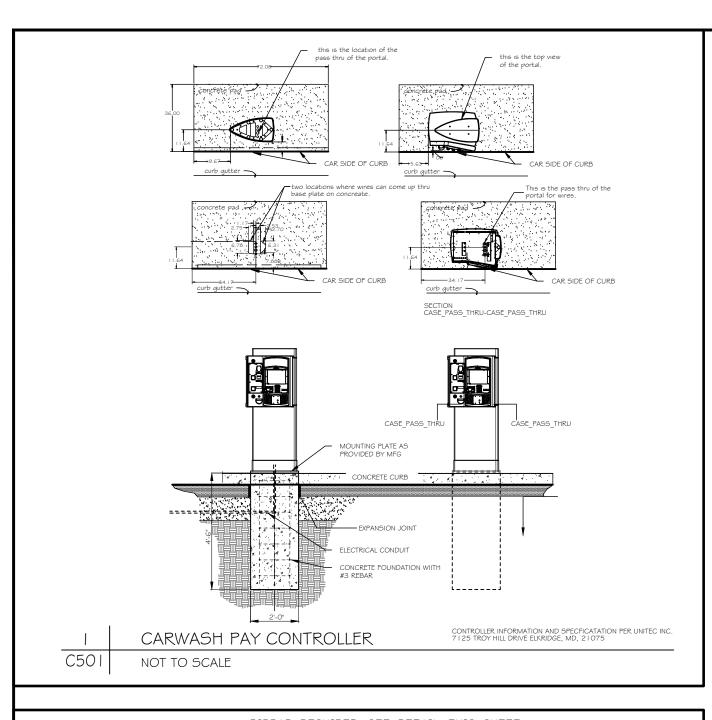
23-762 2023-12-22 **C500**

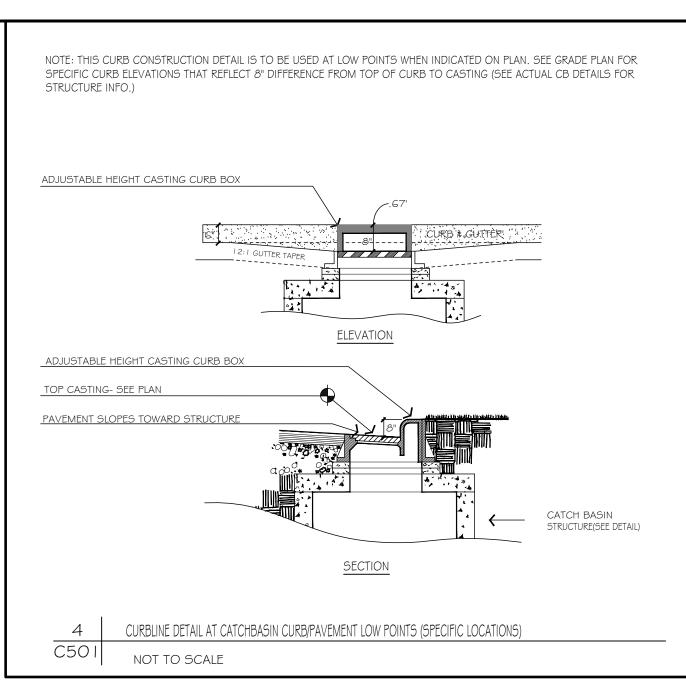


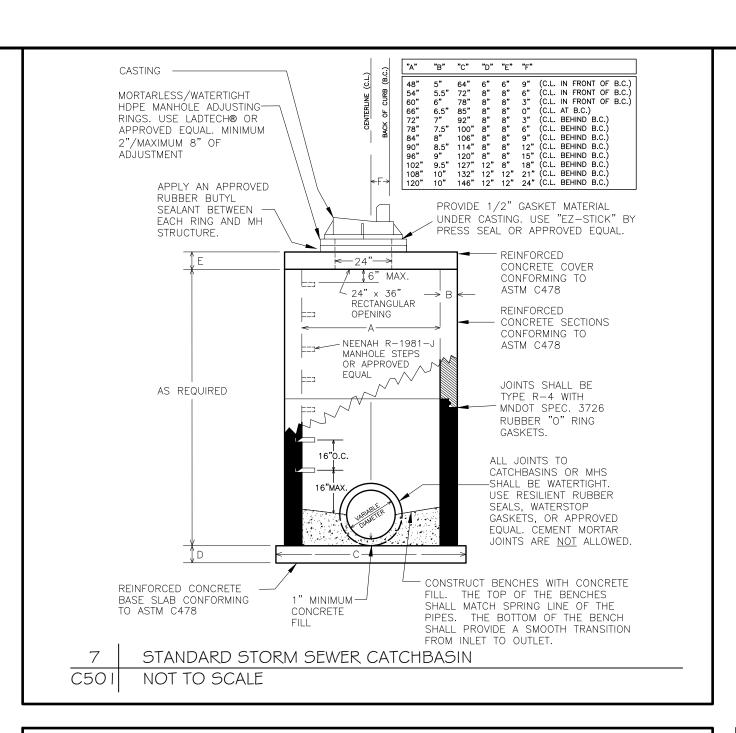


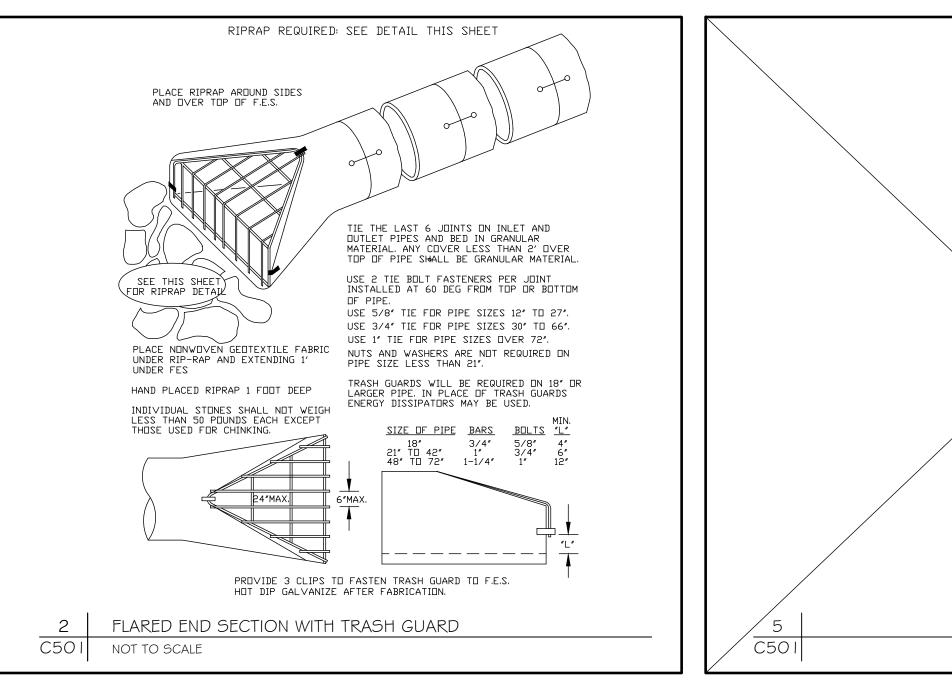


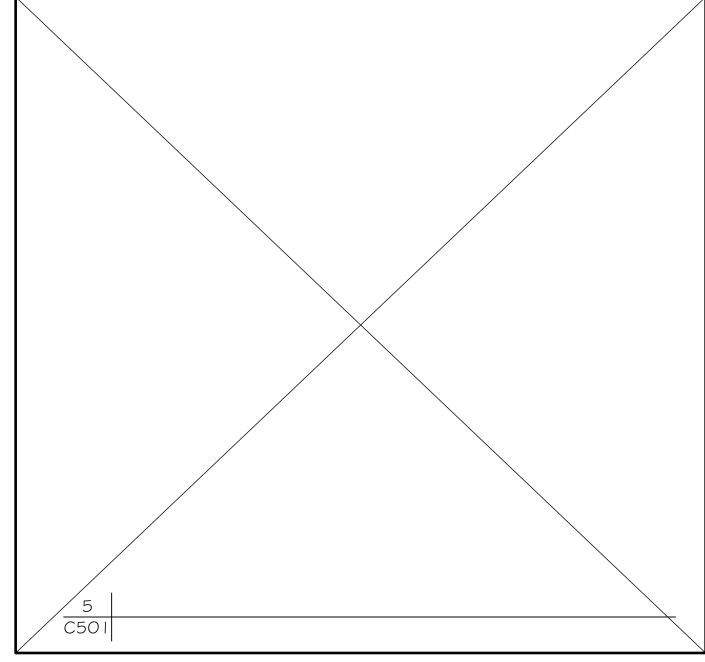




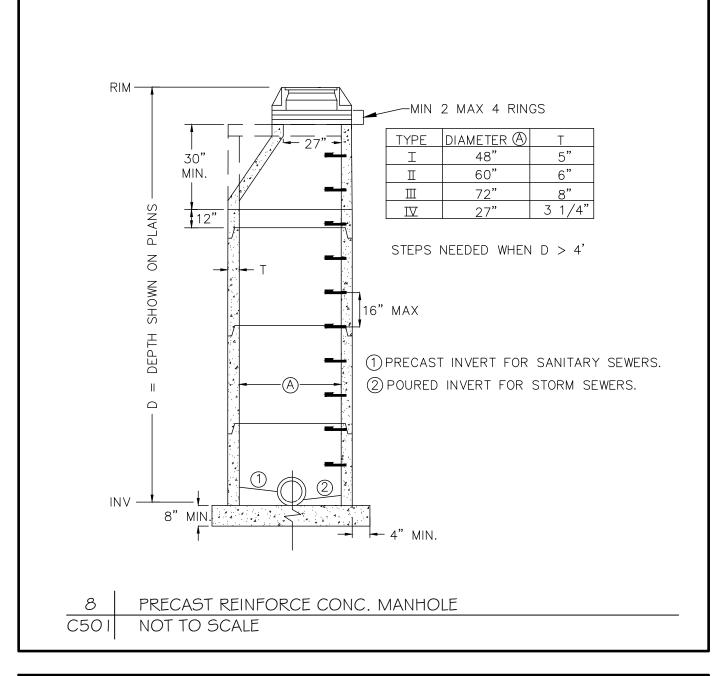


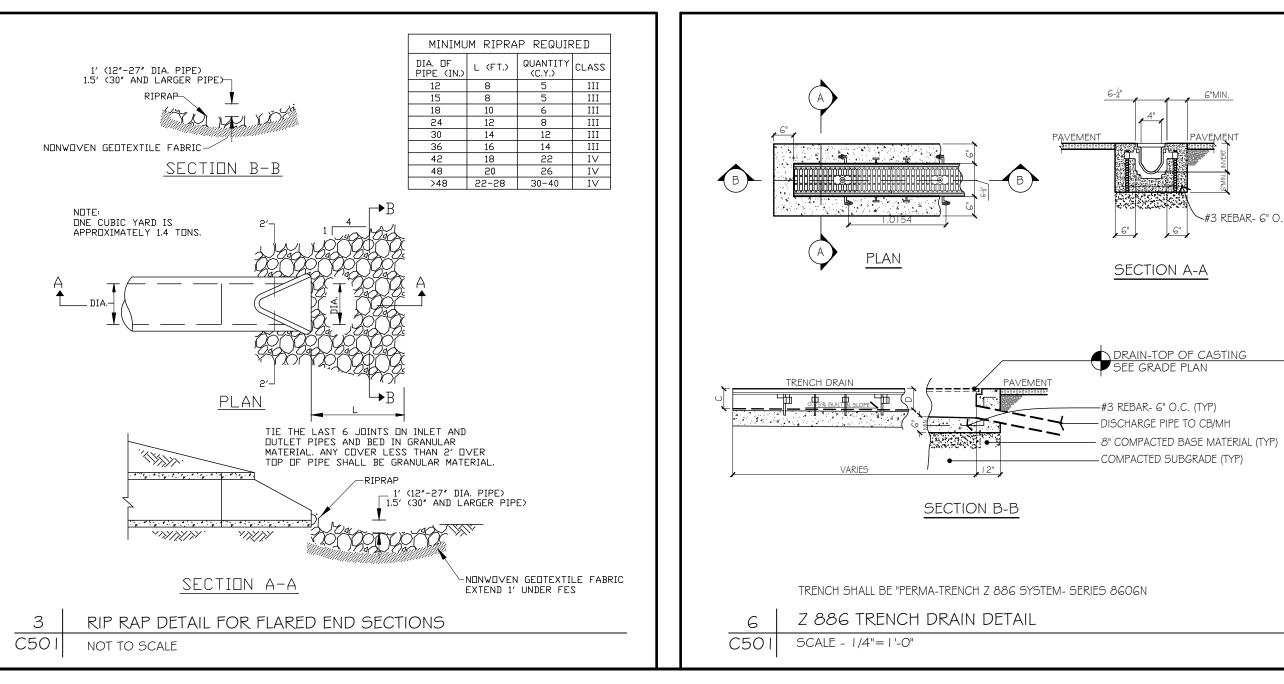


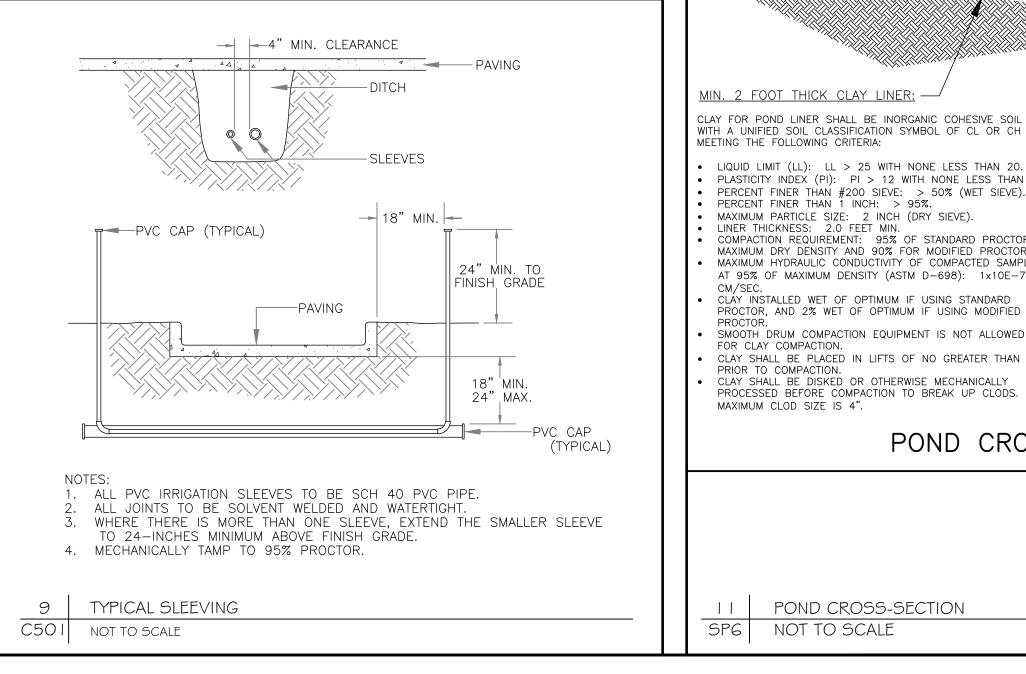




#3 REBAR- 6" O.C. (TYP)









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SEED MIXTURES IN ACCORDANCE WITH LANDSCAPE PLAN ----

3:1 SLOPE

1 ___

DEEP

POND NORMAL

WATER LEVEL (NWL)

POND BOTTOM -

PROPOSED FINISHED GRADE. BACKFILL

FINISHED GRADE. PREPARE AND SEED

THE HYDRIC SOIL MATERIAL AS SOON

AS PRACTICAL IN ORDER TO MINIMIZE

UNDESIRABLE REED CANARY GRASSES.

- SUBCUT 4 INCHES BELOW THE

WITH HYDRIC/ORGANIC SOIL TO

THE NATURAL GERMINATION OF

MARSH

OPEN

WATER

10:1 SLOPE

SHALLOW

MARSH

10:1 AQUATIC BENCH

(IF APPLICABLE) AT POND PERIMETÉR

POND CROSS-SECTION

3:1 SLOPE

1 ___

LOW

MIN. 2 FOOT THICK CLAY LINER:

PERCENT FINER THAN 1 INCH: > 95%.

LINER THICKNESS: 2.0 FEET MIN.

FOR CLAY COMPACTION.

PRIOR TO COMPACTION.

MAXIMUM CLOD SIZE IS 4".

SPG NOT TO SCALE

MAXIMUM PARTICLE SIZE: 2 INCH (DRY SIEVE).

LIQUID LIMIT (LL): LL > 25 WITH NONE LESS THAN 20.

PERCENT FINER THAN #200 SIEVE: > 50% (WET SIEVE).

COMPACTION REQUIREMENT: 95% OF STANDARD PROCTOR

MAXIMUM DRY DENSITY AND 90% FOR MODIFIED PROCTOR.

MAXIMUM HYDRAULIC CONDUCTIVITY OF COMPACTED SAMPLE

AT 95% OF MAXIMUM DENSITY (ASTM D-698): 1x10E-7

CLÁY INSTALLED WET OF OPTIMUM IF USING STANDARD

PROCTOR, AND 2% WET OF OPTIMUM IF USING MODIFIED SMOOTH DRUM COMPACTION EQUIPMENT IS NOT ALLOWED

CLAY SHALL BE PLACED IN LIFTS OF NO GREATER THAN 6"

CLAY SHALL BE DISKED OR OTHERWISE MECHANICALLY PROCESSED BEFORE COMPACTION TO BREAK UP CLODS.

POND CROSS-SECTION

PLASTICITY INDEX (PI): PI > 12 WITH NONE LESS THAN 10.

PRAIRIE

FRESH (WET)

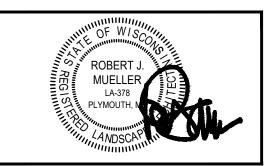
MEADOW

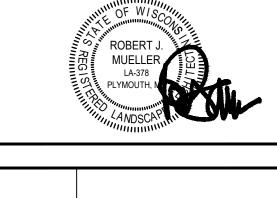
POND LINER UP TO

←100-YR HIGH WATER LEVEL

(HWL) SEE SP2 AND SP3

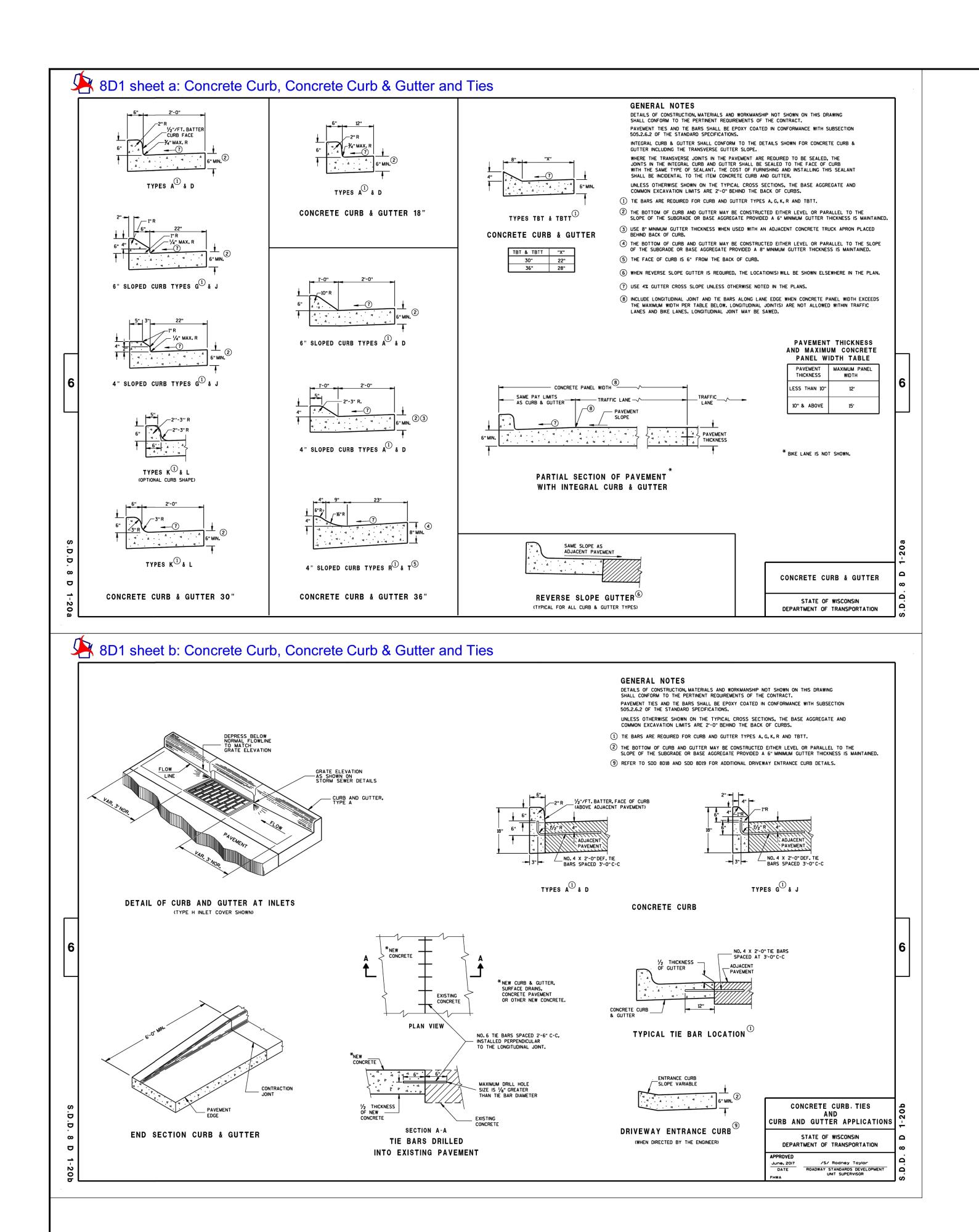
UPLAND





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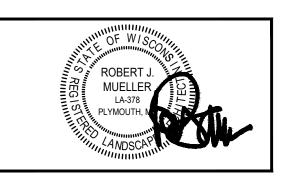
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PROJ. NO.	23-76
DATE	2023-12-2
SHEET	C501



KWIK Star

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LACROSSE, WI 54602-2107
PH. (608) 781-8988
FAX (608) 781-8960





DETAILS (WI DOT) NCE STORE 762

PLAN

D. DATE DESCRIPTION
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17JAN24 CITY SUBMITTAL

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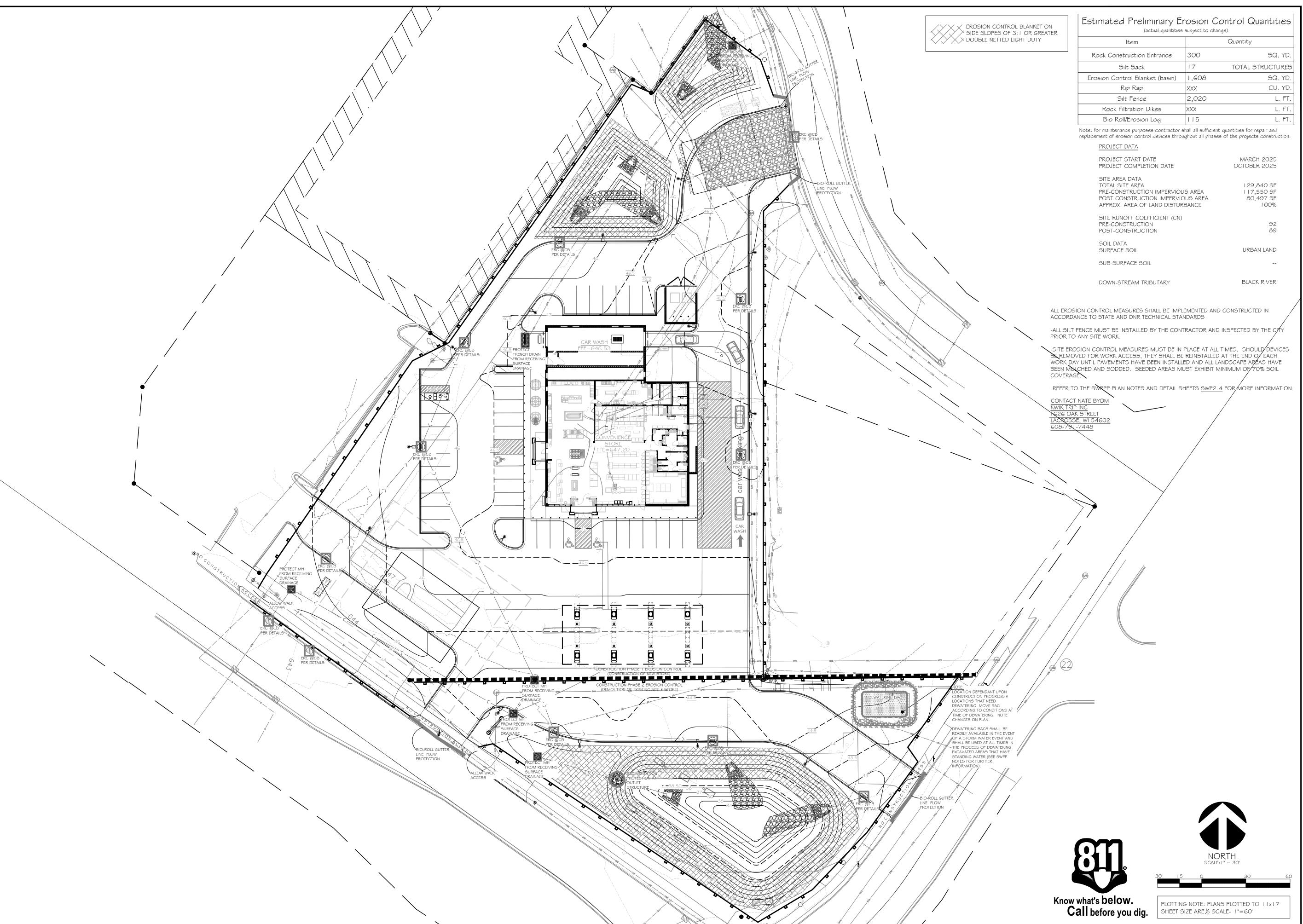
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 PROJ. NO.
 23-762

 DATE
 2023-12-22

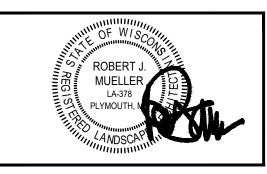
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30L PLAN

ION CONTROL PI

SHEET

C600

NO. DATE DESCRIPTION

- 04JAN24 SUBMITTAL

17JAN24 CITY SUBMITTAL

DRAWN BY

6CALE GRAPHIC

PROJ. NO. 23-762

DATE 2023-12-22

GENERAL STORMWATER POLLUTION PREVENTION:

Apply for and obtain all necessary permits for Construction Activity.

Stormwater Pollution Prevention Plan (SWPPP): The SWPPP includes this narrative, Plan Sheets SP3, SP3. I and SP3.2, and the Stormwater Management Calculations. Keep a copy of the SWPPP, all changes to it, and inspections and maintenance records at the site during the construction. During the construction process the SWPPP will have to be amended for all changes performed by the contractor. the owner shall be aware of the amendments prior to changes made to the SWPPP. All notes, photographs, recorded dates, sketches, references, and diagrams will have to be recorded and made available as part of the SWPPP permit.

Individual(s) preparing the SWPPP for the project, overseeing implementation of the SWPPP, revising and amending the SWPPP, and at least one individual on the project performing installation, inspection, maintenance, and repairs of BMP's must be trained. The training must be done by a local, state, federal agencies; professional organization; or other entities with expertise in erosion prevention, sediment control, or permanent stormwater management.

Responsible Parties: The contractor must designate a person knowledgeable and experienced in the application of erosion prevention and sediment control BMPs who will oversee the implementation of the SWPPP, and the installation, inspection, and maintenance of the erosion prevention and sediment control BMPs before and during construction.

The owner is responsible for identifying who will have responsibility for the long term operation and maintenance of the permanent stormwater management systems.

Owner contact:

CONTACT PERSO COMPANY NAME ADDRESS ADDRESS

SITE INVESTIGATION, INSTALLATION, IMPLIMENTATION:

- I. Prior to any work, contractor shall visit the site, document existing conditions as necessary(photos, notes, etc) and note existing drainage patterns on and off site that are related to the project. These notes shall be part of the SWPPP.
- 2. Install all temporary erosion and sediment control measures including silt fence, rock construction entrance(s), erosion control berms, rock filters, silt sacks, rock /earth berms, and sedimentation basins. Protect all receiving waters, catch basins, ditches, inlets etc. in and around the site. All protective and preventative measures must be in place and inspected prior to beginning site clearing, grading, or other land-disturbing activity.
- 3. Prior to beginning site clearing and grading, protect all storm sewer inlets that receive runoff from disturbed areas. In order to prevent sediment from leaving the site and entering the downstream storm sewer system, seal all storm sewer inlets that are not needed for site drainage during construction. Protect all other storm sewer inlets by installing sediment control devices, such as silt sacks, or rocked filtration logs/weirs. Straw bales or fabric under the grates are not acceptable forms of inlet protection. Protect new storm sewer inlets as they are completed. Maintain storm sewer inlet protection in place until all sources with potential for discharging to the inlets are stabilized.
- 4. Before beginning construction, install a TEMPORARY ROCK CONSTRUCTION ENTRANCE at each point where vehicles exit the construction site When at all possible contractor shall designate only one access point for vehicles entering and exiting the site. The rock on the entrance will have to be inspected daily and replaced or rock supplemented by the contractor when over 50% of the voids in the rock are filled. A cleaning station should be made available to drivers and visibly signed as such. Provide shovels, brooms and/or hose with a wash out area so soils can be removed from vehicles on site.
- 5. Avoid entire removal of trees and surface vegetation all at once whenever possible as this limits the amount of site susceptible to erosion. Schedule construction zones and note this on the SWPPP in order to expose the smallest practical area of soil at any given time. Utilize vegetation removed by on site grinding and mulching and using this material to protect the soil from erosion.
- 6. Following initial soil disturbance or re-disturbance, complete permanent or temporary stabilization against erosion due to rain, wind, and running water within 7 calendar days on all disturbed or graded areas. This requirement does not apply to those areas that are currently being used for material storage on a daily basis or for those areas on which grading, site building, or other construction activities are actively underway. Provide temporary cover on all stacked topsoil piles, and other areas of stockpiled excavated material in order to prevent soil erosion and rapid runoff during the construction period. Stockpiles can be mulched, covered with poly or fabric, and or seeded during prolonged exposure. Prolonged periods of open, bare earth without grass cover will not be permitted. Stabilize all disturbed greenspace areas with a minimum of 4" topsoil immediately after final subgrade completion. Seed and mulch, or sod and protect these areas within 48 hours after completion of final grading work (weather permitting). Stabilize all disturbed areas to be paved using early application of gravel base. Stabilize the normal wetted perimeter of any temporary or permanent drainage ditch that conveys water from the construction site, or diverts water around the construction site, within 200 lineal feet from the property edge, or within 200 feet from the point of discharge to any surface water. Stabilize temporary or permanent drainage ditches within 24 hours of connecting to a surface water. Protect outfalls minimum of 200feet down stream and to the side of the discharge point. Additional settling "pots" achieved by filter logs or filtered stick bales staked in the channel will dissipate the water energy. Provide pipe outlets with temporary or permanent energy dissipation within 24 hours of connection to a surface water.
- 7. Receiving Waters It is the contractors responsibility to inspect the site discharge point as well as downstream to the receiving body of water(pond, lake, stream, etc.) on a regular basis including after each storm event and document if any differences or changes in normal in discharge and if material is leaving the construction site. If so it shall be documented and removed immediately.

NOTE: ALL EROSION AND SEDIMENT CONTROL DEVICES WILL BE CHECKED BY THE CONTRACTOR AFTER EACH STORM EVENT AND BE MAINTAINED, OR IMPROVED UPON AFTER EVERY STORM EVENT TO ENSURE ADEQUATE PERFORMANCE.

POLLUTION CONTROL:

1. Designate a Concrete Wash-out and truck wash area:

vesignate a Concrete wasn-out and truck wasn area: Make it visible in the field to vehicle operators and note this on the SWPP plan.

a. When washouts occur on the site, concrete washout water must be contained in a leak-proof containment facility or impermeable liner. Liquid and solid wastes may not touch the ground and there must not be runoff from the concrete washout operations or areas.

b. On sites where Concrete Washout areas are not feasible as shown on the Detail Sheet, above ground methods and/or off-site methods can be utilized as approved by Owner.

- c. Concrete washout may be provided off-site by Concrete Contractor or Concrete Supplier, at an approved washout disposal area. Concrete Supplier may provide Concrete Washout Areas on-board their transports for disposal off-site. Concrete Contractor shall verify with Supplier in regards to provided Concrete Washout areas on and off-site, as necessary.
- d. Limit external washing of trucks and other construction vehicles to a defined area preferably before the construction access/exit point. Wash vehicles only on an area stabilized with stone that drains into an approved sediment trapping device. Contain runoff and properly dispose of waste. Engine degreasing is prohibited.
- 2. <u>Solid Waste</u>: Properly dispose of collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris, and other wastes in compliance with State requirements.
- 3. <u>Hazardous Materials</u>: Properly dispose of all waste and unused building materials (including garbage debris, cleaning wastes, oil, gasoline, paint, wastewater, toxic materials, and hazardous materials) off-site. Do not allow waste and unused building materials to be carried by runoff into a receiving channel or storm sewer system. Properly store oil, gasoline, paint, and other hazardous materials in order to prevent spills, leaks, or other discharge. Include secondary containment. Restrict access to storage areas in order to prevent vandalism. Storage and disposal of hazardous materials must be in compliance with regulations.
- 4. <u>Machinery:</u> and mechanized equipment that leaks waste shall have a protective barrier or containment under the device adequate to contain the waste. Properly dispose of the waste.
- 5. Emergency spill station: Contractor shall locate and sign an emergency spill station that has necessary containment or cleanup devices for all workers to access

EROSION CONTROL

Apply necessary moisture to the construction area and haul roads to prevent the spread of dust.

Contractor shall utilize coarsely ground wood and tree mulches to cover exposed soils. Mulches shall be stored on site to supplement and use in problem areas during all phases of the construction project.

Contractor shall uses star tack or other organic substances in situations to prevent soil from eroding away by wind or rain.

Whenever possible contractor shall grade areas of soil to limit potential of erosion, to include tracking perpendicular to fall line of grades as well as diverting water flows from problematic areas on the site.

Seeding, fiber blankets, poly/tarps or cover mulches, disked mulches and compost can be used to cover temporarily exposed areas from wind and rain. Other methods by the contractor shall be documented in the SWPPP.

SEDIMENT CONTROL:

Inlet Sediment Control Protection Devices:

The following area approved Inlet Sediment Control Devices:

a. Road Drain Top Slab Model RD 23 (fits rough opening for $2^{1/3}$ inlet), Road Drain Top Slab Model RD 27 (fits rough opening for $2^{1/3}$ inlet), or Road Drain Top Slab Model CG 3067 (fits Neenah Casting with $35 - 1/4^{1/3} + 1/3/4^{1/3}$ dimensions) manufactured by:

799 Theis Drive Shakopee, MN, 55379

Phone (952) 233-3055 or approved equal

b. Silt Sack manufactured by:
ACF ENVIRONMENTAL

283 | Cardwell Road Richmond, VA, 23234 Phone (800) 448-3636

or approved equal

c. InfraSafe Sediment Control Barrier. Install geotextile sock on the outside of the barrier in order to trap additional fines. Standard frames are available to fit 24" to 30" diameter and 2'x3' openings.

Distributed by: ROYAL ENTERPRISES AMERICA 30622 Forest Boulevard

Stacy, MN, 55079 Phone (651) 462-2130

or approved equal

d. Ridge Bag Rock Log. Use rock logs only for curb inlets after pavement is in place.

Manufactured by RED BARN RIDGE, 3135 County Road 136, Saint Cloud, MN, 35301

Phone (320) 253-3744 or approved equal

e. Inflatable drain plugs by Interstate Products www.interstateproducts.com or approved equal

Erosion Blanke

Erosion control blanket shall be installed as directed by the owner's representative in accordance

with manufacturer's Installation Guidelines, Staple Pattern Guides, and CAD details. The extent of erosion control blanket shall be as shown on the project drawings. Erosion control blanket shall be orientated in vertical strips and anchored with staples, as identified in the Staple Pattern Guide. Adjacent strips shall be overlapped to allow for installation of a

common row of staples that anchor through the stitching of both blankets. Horizontal joints

between erosion control blankets shall be overlapped sufficiently with the uphill end on top for a common row of staples so that the staples anchor through the stitching of both blankets. Where exposed to overland sheet flow, a trench shall be located at the uphill termination. Erosion control blanket shall be stapled to the bottom of the trench. The trench shall be backfilled and compacted. Where feasible, the uphill end of the blanket shall be extended three feet over the crest

of the slope. Slope erosion control blanket shall be overlapped by the channel erosion control blanket sufficiently for a common row of staples to anchor through the stitching of both blankets when terminating into

a channel. *For more information and materials go to www.americanexcelsior.com

Riprap:

Place a 450 mm (18 inch) thick layer of riprap onto a 225 mm (9 inch) thick layer of granular filter material at locations indicated on the plan in accordance with WIDOT Specification 606. Install two layers of medium duty Geotextile fabric (WIDOT HR, section 645.3.7) beneath the granular filter material. At pipe outfalls configure the installation as shown on detail sheet for the size of pipe indicated and extend the geotextile fabric under the culvert apron a minimum of 3 feet. For pipe sizes smaller than 300 mm (12 inch) diameter, the minimum quantity of riprap and filter blanket shall be no less than that required for 300 mm (12 inch) diameter pipes.

Silt Fence:

Install and maintain per WDNR Conservation Practice Standard 1056.

Install silt fence along the contour (on a level horizontal plane) with the ends turned up (J-hooks) in order to help pond water behind the fence. Install the silt fence on the uphill side of the support posts. Provide a post spacing of 1.2 m (4 feet) or less. Drive posts at least 0.6 m (2 feet) into the ground. Anchor the silt fence fabric in a trench at least 152 mm (6 inches) deep and 152 mm (6 inches) wide dug on the upslope side of the support posts. Lay the fabric in the trench and then backfill and compact with a vibratory plate compactor. Make any splices in the fabric at a fence post. At splices, overlap the fabric at least 152 mm (6 inches), fold it over, and securely fasten it to the fence post. Silt fence supporting posts shall be 51 mm (2 inch) square or larger hardwood, pine, or standard T- or U-section steel posts. T- or U-section steel posts shall weigh not less than 1.8602 kg per meter (1.25 lb per lineal foot). Posts shall have a minimum length of 1524 mm (5 feet). Posts shall have projections to facilitate fastening the fabric and prevent slippage. Geotextile fabric shall meet the requirements of WIDOT Standard Specification 628 for preassembled silt fence, furnished in a continuous roll in order to avoid splices. Geotextile fabric shall be uniform in texture and appearance and have no defects, flaws, or tears. The fabric shall contain sufficient ultraviolet (UV) ray inhibitor and stabilizers to provide a minimum two-year service life outdoors. Fabric color shall be international orange. In high traffic areas contractor shall reinforce silt fence with wire fencing and metal posts. extreme circumstances will require temporary concrete median sections to support material backing of stock piled soil or filled earth.

Install silt fence, or other effective sediment controls, around all temporary soil stockpiles. Locate soil or dirt stockpiles containing more than 10 cubic yards of material such that the downslope drainage length is no less than 8 m (25 feet) from the toe of the pile to a roadway or drainage channel. If remaining for more than seven days, stabilize the stockpiles by mulching, vegetative cover, tarps, or other means. Control erosion from all stockpiles by placing silt fence barriers around the piles. During street repair, cover construction soil or dirt stockpiles located closer than 8 m (25 feet) to a roadway or drainage channel with tarps, and protect storm sewer inlets with silt sacks or staked silt fence. Do not stock pile soil or material near catch basins or drainage ways.

Stone Tracking Pad (Temporary Rock Construction Entrance:

Install and maintain per WIDNR Conservation Practice Standard 1057. Use 3 inch to 6" diameter rock. Place the aggregate in a layer at least 300 mm (12 inches) thick across the entire width of the entrance. Extend the rock entrance at least 15 m (50 feet) into the construction zone. Use a WIDOT Type R permeable geotextile fabric material beneath the aggregate in order to prevent migration of soil into the rock from below. Maintain the entrance in a condition that will prevent tracking or flowing of sediment onto paved roadways. Provide periodic top dressing with additional stone as required. Close entrances not protected by temporary rock construction entrances to all construction traffic.

Temporary Sediment Basins: In the construction process of

In the construction process or if noted on the plan the contractor shall construct temporary sediment basin(s). As per general rule the sediment basin shall be sized appropriately to a capacity related to the drainage area on a ratio of 3,600 cubic feet per acre of drainage zone entering the basin. Basins shall be inspected after every rainfall event, material removed and stabilized. If changes to the basin are made, document and amend the SWPP plan.

<u>Dewatering:</u> If dewatering is required and sump pumps are used, all pumped water must be discharged through an erosion control facility

(temporary sedimentation basin, grit chamber, sand filter, upflow chamber, hydro-cyclone, swirl concentrator, dewatering bag or other appropriate facility) prior to leaving the construction site. Proper energy dissipation must be provided at the outlet of the pump system. Discharge clear water only. To achieve better separation of the material suspended in the water a biodegradable not toxic flocculant agent may be required.

For more information and materials go to by Interstate Products www.interstateproducts.com

INSPECTIONS-MAINTENANCE-DAILY RECORD-AMEND THE SWPP PLAN

- I. Contractor shall inspect all erosion and sediment control devices, stabilized areas, and infiltration areas on a daily basis until land-disturbing activity has ceased. Thereafter, inspect at least on a weekly basis until vegetative cover is established. Inspect all erosion and sediment control devices, stabilized areas, and infiltration areas within 24 hours after a rainfall event greater than 0.5 inches in 24 hours. Remove accumulated sediment deposits from behind erosion and sediment control devices as needed. Do not allow sediment to accumulate to a depth of more than one-third of the height of the erosion and sediment control devices. Immediately replace deteriorated, damaged, rotted, or missing erosion control devices. Document inspections and dates of rainfall events. Maintain a written log of all inspection, maintenance, and repair activities related to erosion and sediment control facilities. All nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs within 24 hours after discovery, or as soon as field conditions allow access.
- 2. All inspections and maintenance activities must be recorded in writing DAILY in a detailed record(notes, photographs, sketches, etc, and kept with the SWPPP by the contractor.
- 3. Contractor shall remove all soils and sediments tracked or otherwise deposited onto adjacent property, pavement areas, sidewalks, streets, and alleys. Removal shall be on a <u>daily basis</u> throughout the duration of the construction and/or as directed by the City. Clean paved roadways by shoveling or wet-sweeping. Do not dry sweep. If necessary, scrape paved surfaces in order to loosen compacted sediment material prior to sweeping. Haul sediment material to a suitable disposal area. Street washing is allowed only after sediment has been removed by shoveling or sweeping.
- 4. All soil hauled from the site shall be accounted for and documented in the SWPPP by the contractor. Its final destination and how the soil has been stored and stabilized.
- 5. Contractor shall maintain all temporary erosion and sediment control devices in place until the contributing drainage area has been stabilized (hard-surfaced areas paved and vegetation established in greenspace). Repair any rilling, gully formation, or washouts. After final establishment of permanent stabilization, remove all temporary synthetic, structural, and non-biodegradable erosion and sediment control devices and any accumulated sediments. Dispose-of off site. Restore permanent sedimentation basins to their design condition immediately following stabilization of the site.
- 6. Contractor shall clean sedimentation basins, storm sewer catch basins, ditches, and other drainage facilities as required in order to maintain their effectiveness. Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 1/2 of the storage volume. Drainage and removal must be completed within 72 hours, or as soon as field conditions allow access.
- 7. Contractor shall inspect infiltration areas to ensure that no sediment from ongoing construction activities is accumulating. Remove sediment immediately ensuring subsoils are not compacted by machinery.
- 8. Every vehicle shall not track material off-site. Clean the wheels of construction vehicles in order to remove soils before the vehicles leave the construction site. Wash vehicles only on an area stabilized with stone that drains into an approved sediment trapping device.
- 9. Contractor shall reinforce erosion control facilities in areas where concentrated flows occur (such as swales, ditches, and areas in front of culverts and catch basins) by backing them with snow fence, wire mesh, or stiff plastic mesh reinforcement until paving and turf establishment operations have been completed. Posts for the reinforcing fence shall be 100 mm (4 inch) diameter wood posts, or standard steel fence posts weighing not less than 0.59 kg (1.3 lbs) per lineal foot, with a minimum length of 762 mm (30 inches) plus burial depth. Space posts for the reinforcing fence at intervals of 3 m (10 feet) or less. Drive posts for the reinforcing fence at least 0.6 m (2 feet) into the ground.

GENERAL SOIL STABILIZATION: (SEE LANDSCAPE PLAN FOR MORE INFORMATION)

Establishment of lawn, prairie/wildflower and/or plant bed areas will be noted on the landscape plan

to ensure stabilization of soils, restaking of sod where applicable, proper watering and mulch maintenance will be required. Inspect seeded or sodded areas on a timely day-to-day basis. In the event of a seeding failure, reseed and remulch the areas where the original seed has failed to grow and perform additional watering as necessary at no additional cost to the Owner. Special maintenance provisions for wild and prairie grass seeded areas as noted in the landscape plan. Promptly replace all sod that dries out to the point where it is presumed dead and all sod that has been damaged, displaced, weakened, or heavily infested with weeds at no additional cost to the Owner.

In areas to be <u>temporarily</u> seeded, use <u>introduced</u> seed mixture equivalent to WIDOT #10 or #20. Apply seed mixture per WIDOT 630.3.3.5. Incorporate a fertilizer (slow release type with 10 week residual) consisting of 23-0-30 (%N-P-K) into the soil at an application rate of 224 kg per hectare (200 lbs per acre) by disking prior to seeding. In problematic areas it may be necessary to use a low phosphorus organic fertilizer in cases where seeds may not germinate. If this is the case, seed and fertilizer shall be disked into the surface and mulched properly to ensure germination and uptake of the Phosphorus by the seed.

To ensure adequate germination of the seed the work will be performed as follows:

Spring- from April 1 through May 15.

Fall- from August 15 to September 20.

After September 20, wait until October 30 to perform dormant seeding. Dormant seeding will only be allowed if the maximum soil temperature at a depth of 25 mm (1 inch) does not exceed 4.44 degrees C (40 degrees F) in order to prevent germination.

In seeded areas with slopes steeper than 3:1 and lengths less than 15 meters (50 feet), install biodegradable erosion control blankets uniformly over the soil surface by hand within 24 hours after seeding in accordance with manufacturers recommendations. Use WIDOT Urban Type B or owner approved equal.

In areas where irrigation is to be installed, contractor shall work in zones to finish grade and install the system in zones. Note-Erosion control measures shall remain in place until soils have been stabilized with sod or seeded areas that exhibit minimum of 70% lawn vegetative coverage. If silt fence has to be removed to install the irrigation system, it shall be reinstalled at the end of each work day or use bio rolls to provide protection during the installation process until lawn areas have sod and/or plant beds are mulched.

In areas to be sodded, silt fence can be removed short term for working, but exposed soil areas shall be sodded or erosion control measures shall be reinstalled at the end of each work day.

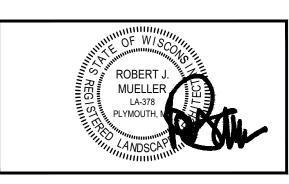
NOTE: THE PROJECT'S LANDSCAPE PLAN IS PART OF THE SWPP FOR SOIL STABILIZATION. REFERENCES SHALL BE MADE TO THE APPROVED LANDSCAPE PLAN. AMENDMENTS TO THE LANDSCAPE PLAN SHALL BE APPROVED BY THE OWNER AND DOCUMENTED AS PART OF THE SWPP

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OSION CONTROL NOTE

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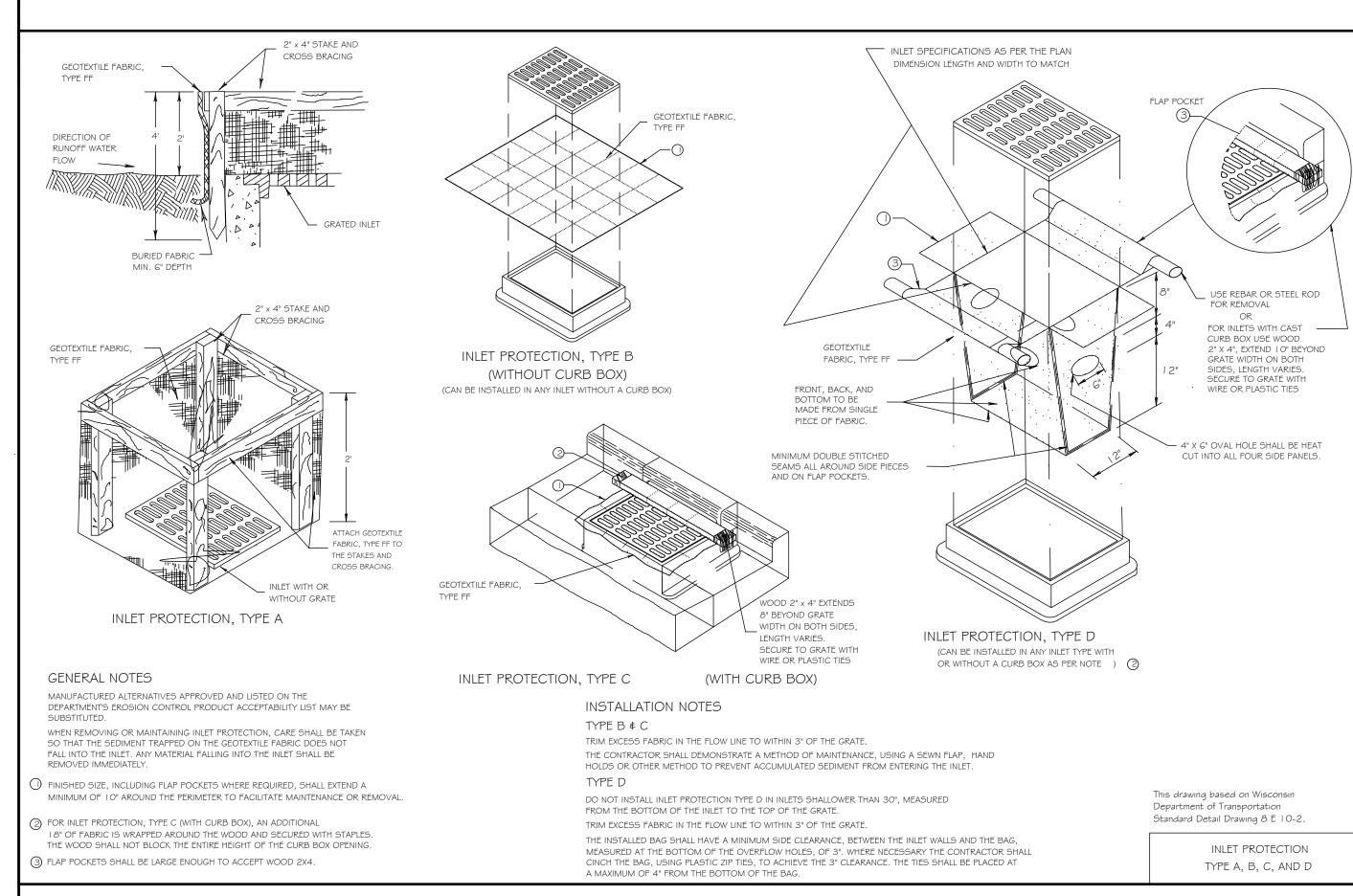
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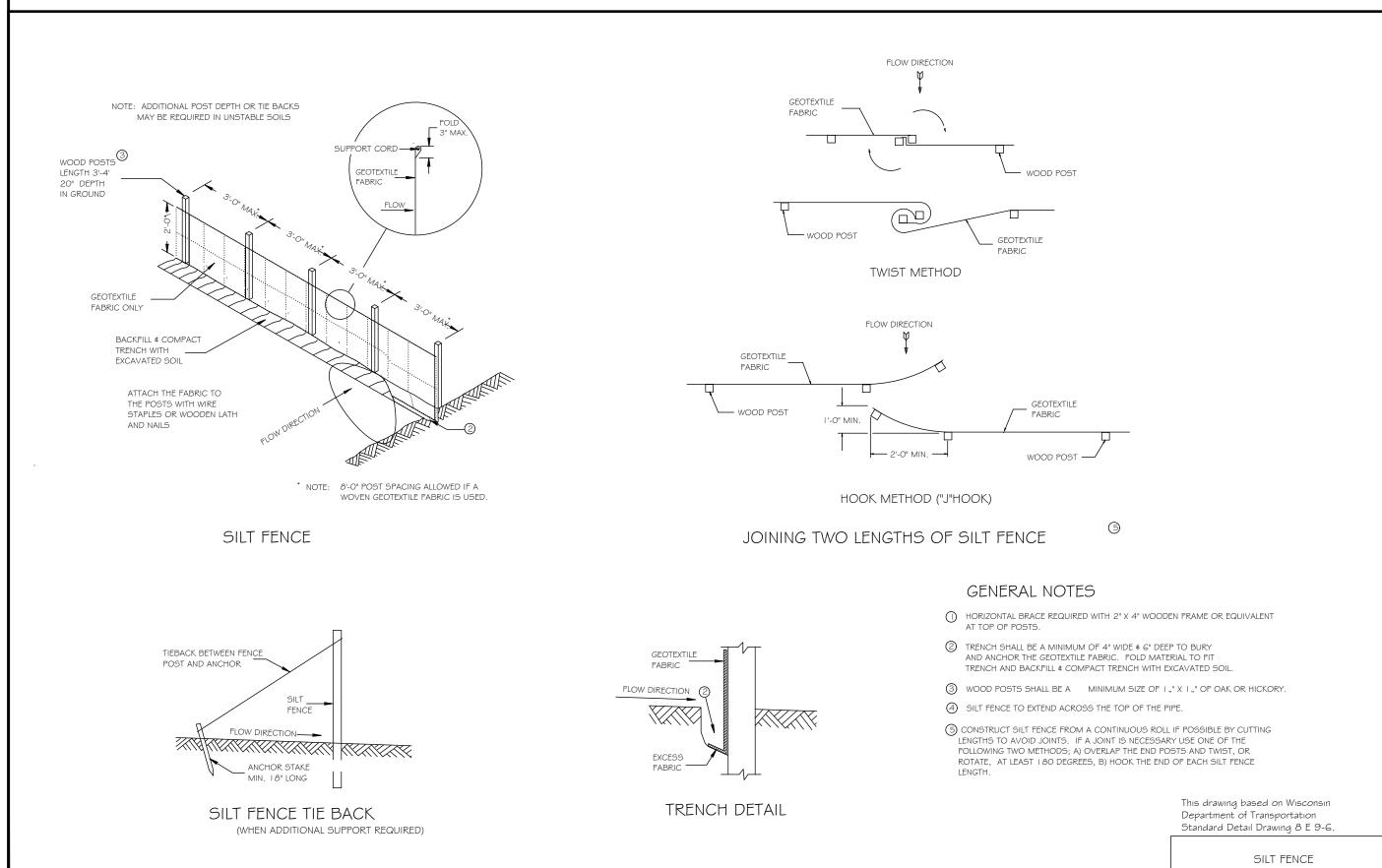
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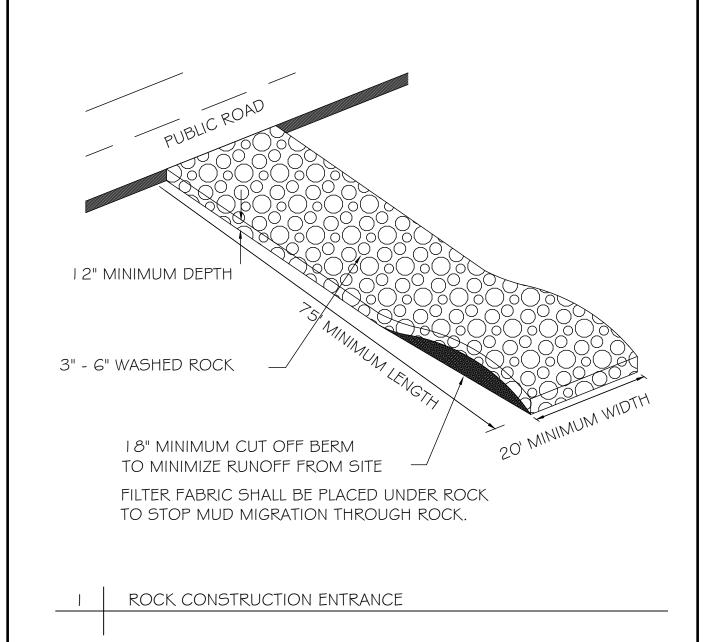
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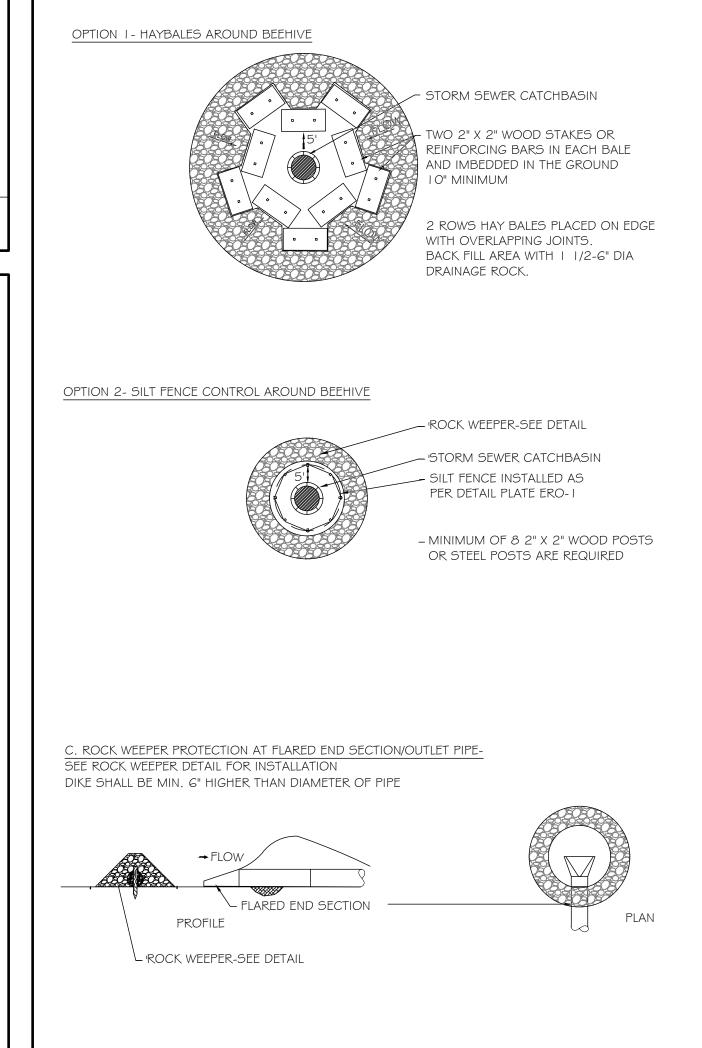
ALL EROSION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED PER WDNR STANDARDS

http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm



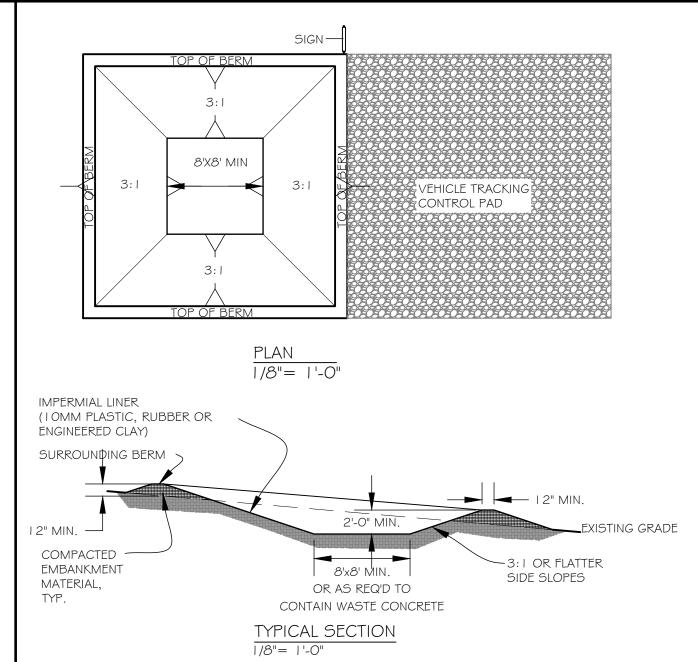






BEE-HIVE CASTING AND FLARED END SECTION

EROSION/SEDIMENT CONTROL



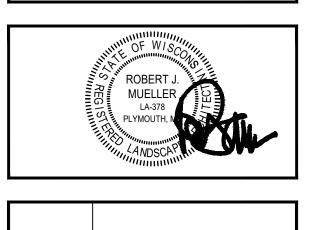
CONCRETE WASHOUT AREA INSTALLATION NOTES

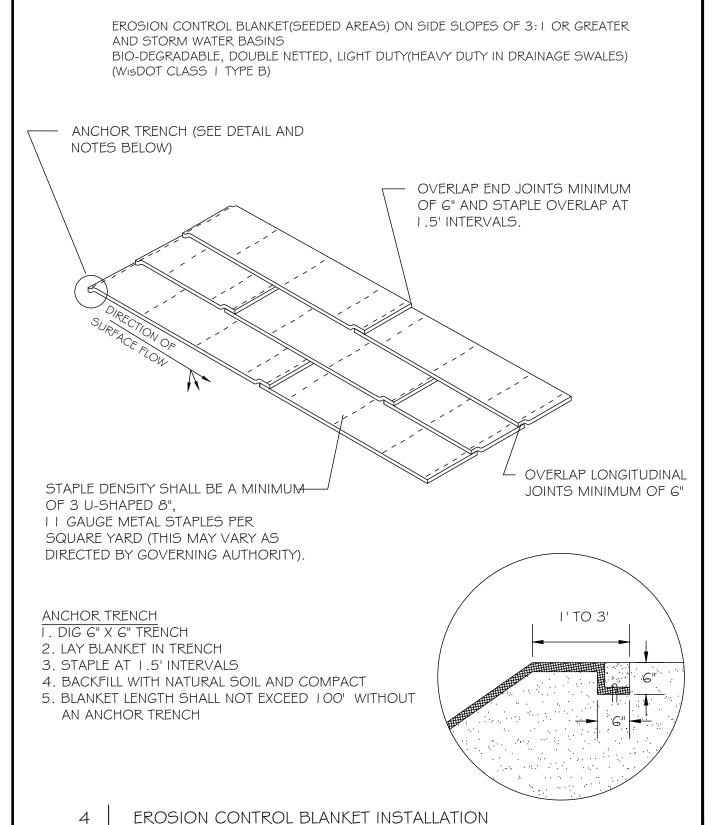
- I. SEE EROSION CONTROL PLAN FOR LOCATIONS OF CONCRETE WASHOUT AREA(S). TO BE PLACED A MIN. OF 50' FROM DRAINAGEWAYS, BODIES OF WATER, AND INLETS.)
- 2. THE CONCRETE WASHOUT AREA(S) SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
- . VEHICLE TRACKING CONTROL PAD IS REQ'D AT THE ACCESS POINT(S).
- 4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA(S), AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREAS TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
- EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

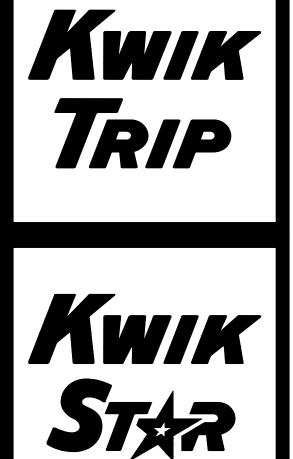
CONCRETE WASHOUT AREA MAINTENANCE NOTES

- THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE
- 7. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
- 8. WHEN CONCRETE WASHOUT AREA(S) IS REMOVED, THE DISTURBED AREA SHALL BE STABILIZED PER SITE EROSION CONTROL
- 9. INSPECT WEEKLY AND DURING AND AFTER ALL STORM EVENTS. CLEAN-OUT OR COVER WASHOUT AREA PRIOR TO PREDICTED STORM EVENTS TO PREVENT OVER-FLOW.

2 CONCRETE WASHOUT AREA

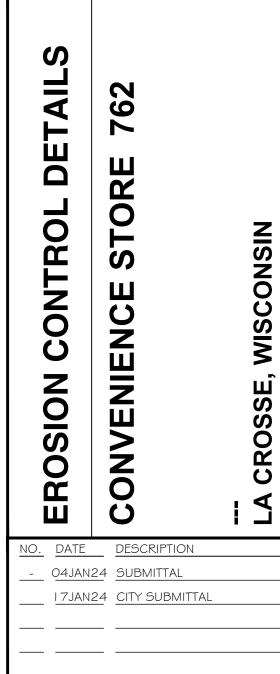






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2023-12-22

I. ROCK WEEPER @ MINIMAL WATER FLOWS CLEAN MULCH (1//2" WASHED CRUSHED LIMESTONE) DIRECTION OF SURFACE FLOW TYPE IV GEOTEXTILE FABRIC ANCHORED IN 6" X 6" TRENCH WITH 6", I I GAUGE METAL STAPLES AT 4" STAPLE DOWNSTREAM SIDE OF FABRIC AT 2' INTERVALS INTERVALS II. BIO WEEPER @ CONCETRATED FLOWS CLEAN ROCK MULCH (1 ½" — WAHED CRUSHED LIMESTONE) DIRECTION OF SURFACE FLOW TYPE IV GEOTEXTILE FABRIC ANCHORED IN 6" X 6" TRENCH WITH STAPLE DOWNSTREAM 6", I I GAUGE METAL STAPLES AT 4' SIDE OF FABRIC AT 2' INTERVALS INTERVALS - SOIL LOG W/ 24" WOOD STAKED 2' O.C. ALONG ENTIRE LENGTH OF LOG. DITCH CHECKS, ROCK WEEPERS, & ROCK BIO WEEPERS EROSION CONTROL

NOTE: SEDIMENT LOGS SHALL BE "CURLEX NETFREE"

BY AMERICAN EXCELSIOR COMPANY

WOOD STAKE, SEE _ DETAIL 3/18 \$ 4/18

OR APPROVED EQUAL

WOOD STAKE, SEE DETAIL 5/18

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www.americanexcelsior.com/erosioncontrol/

SLOPE DETAIL

Channel Erosion Mat

Wisconsin Department of Natural Resources Conservation Practice Standard

A protective soil cover of straw, wood, coconut fiber or other suitable plant residue, or plastic fibers formed into a mat, usually with a plastic or biodegradable mesh on one or both sides. Erosion mats are rolled products available in many varieties and combination of materials and with varying life spans.

II. Purpose

CURLEX SEDIMENT LOGS® -

STAKE DETAILS

CURLEX SEDIMENT LOGS®

STAKE DETAILS

(ON BARE SOIL)

(ON TOP OF CURLEX®ECB)

The purpose of this practice is to protect the channel from erosion or act as turf reinforcement during and after the establishment of grass or other vegetation in a channel. This practice applies to both Erosion Control Revegative Mats (ECRM1) and Turf-Reinforcement Mats (TRM).

III. Conditions Where Practice Applies

This standard applies where runoff channelizes in intermittent flow and vegetation is to be established. Some products may have limited applicability in projects adjacent to navigable

IV. Federal, State, and Local Laws

Users of this standard shall be aware of applicable federal, state, and local laws, rules, regulations, or permit requirements governing the use and placement of erosion mat. This standard does not contain the text of federal, state, or local laws.

─ WOOD STAKE

V. Criteria

This section establishes the minimum standards for design, installation and performance requirements. To complete the shear calculations, a 2 year, 24 hour storm event shall be used to calculate depth of flows for an ECRM. For sizing a TRM, use the depth of flow corresponding to the maximum design capacity of the channel.

Only mats listed in the Wisconsin Department of Transportation (WisDOT) Erosion Control Product Acceptability List (PAL) will be accepted for use in this standard.

To differentiate applications WisDOT organizes erosion mats into three classes of mats, which are further broken down into various Types.

A. Class I: A short-term duration (minimum of 6 months), light duty, organic ECRM with plastic or biodegradable netting.

- Type A Only suitable for slope applications, not channel applications. Type B – Double netted product for use
- in channels where the calculated (design) shear stress is 1.5 lbs/ft² or
- B. Class II: A long-term duration (three years or greater), organic ECRM.
- channels to reinforce sod. Type B – For use in channels where the

Type A – Jute fiber only for use in

calculated (design) shear stress is 2.0 lbs/ft2 or less. Made with plastic or biodegradable mat.

Type C – A woven mst of 100% organic material for use in channels where the calculated (design) shear stress is 2.0 lbs/ft² or less. Applicable

ON BARE SOIL)

CURLEX SEDIMENT LOGS®

- WOOD STAKE

STAKE DETAIL (FRONT VIEW) 5

WOOD STAKE TO ONL

PENETRATE NETTING, NOT CURLEX®MATERIA

Conservation Practice Standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your local WDNR office or the Standards Oversight Council office in Medison. 1 Words in the standard that are shown in italics are described in X. Definitions. The words are italicized the first time they are used in the text.

for use in environmentally sensitive areas where plastic netting is inappropriate.

- C. Class III: A permanent 100% synthetic ECRM or TRM. Class I, Type B erosion mat or Class II, Type B or C erosion mat
- must be placed over a soil filled TRM. Type A – An ECRM for use in channels where the calculated (design)
- shear stress of 2.0 lbs/ft² or less. 2. Type B - A TRM for use in channels where the calculated (design) shear stress of 2.0 lbs/ft² or less. applicability.
- where the calculated (design) shear stress of 3.5 lbs/ft² or less. 4. Type D - A TRM for use in channels
- where the calculated (design) shear stress of 5.0 lbs/ft² or less.

3. Type C - A TRM for use in channels

ECRM shall be installed after all topsoiling, fertilizing, liming, and seeding is complete.

D. Installation

- 2. Erosion mats shall extend for whichever is greater: upslope one-foot minimum vertically from the ditch bottom or δ inches higher than the design flow
- 3. The mat shall be in firm and continuous contact with the soil. It shall be anchored, overlapped, staked and entrenched per the manufacturer's recommendations.
- 4. TRM shall be installed in conjunction with the topsoiling operation and shall be followed by ECRM installation.
- 5. At time of installation, document the manufacturer and mat type by saving material labels and manufacturer's installation instructions. Retain this documentation until the site is stabilized.

- A. Erosion mats shall be selected so that they last long enough for the grass or other vegetation to become densely established.
- B. Consider using Class II, Type C mats adjacent to waterways where trapping
- is difficult to stabilize due to loss of soil structure. Even when the gully is filled with topsoil and reseeded, the soil has a tendency to dislodge in the same pattern. If gully formation continues to be a problem the design should be reevaluated, including other mat classes
- Documentation of materials used, monitoring logs, project diary, and weekly inspection forms including erosion and stormwater managemen plans, should be provided to the
- H. To help determine the appropriate channel liner, designers can refer to the design matrix in the back of the WisDOT PAL. However, for channels not conforming to the typical section shown in the channel matrix or having a depth of flow greater than 6 inches (150 mm), the designer will need to design

VI. Considerations

- small animals is to be avoided.
- C. Class III TRM may be appropriate as a replacement for riprap as a channel liner. Check the shear stress criteria for the channel to determine mat
- D. Once a gully has formed in a channel, it or riprap.
- E. It may be difficult to establish permanent vegetation and adequate erosion protection in a channel with continuous flow. Consider riprap or planting wetland species with an ECRM.
- authority charged with long term maintenance of the site.
- G. Channel cross sections may be parabolic, v-shaped or trapezoidal. The use of "V" channels is generally discouraged due to erosion problems

- way to do this is to use the "tractive force" method presented in FHWA's Hydraulic Engineering Circular (HEC) No. 15. This method requires that the calculated maximum shear stress of a channel is not to exceed the permissible shear stress of the channel liner. To use
 - listed in the channel matrix. VII. Plans and Specifications
 - A. Plans and specifications for installing erosion mat shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The plans and specifications shall address the following

for an appropriate channel liner. One

this method, permissible shear stress

values are stated next to each device

- Location of erosion mat Installation sequence Material specification conforming to
- B. All plans, standard detail drawings, or specifications shall include schedule for installation, inspection, and maintenance. The responsible party shall be identified.

VIII. Operation and Maintenance

- A. Erosion mats shall at a minimum be inspected weekly and within 24 hours after every precipitation event that produces 0.5 inches of rain or more during a 24-hour
- B. If there are signs of rilling under the mat, install more staples or more frequent anchoring trenches. If rilling becomes severe enough to prevent establishment of vegetation, remove the section of mat where the damage has occurred. Fill the eroded area with topsoil, compact, reseed and replace the section of mat, trenching and overlapping ends per manufacturer's recommendations. Additional staking is recommended near where rilling was filled.
- If the reinforcing plastic netting has separated from the mat, remove the plastic and if necessary replace the mat.

D. Maintenance shall be completed as soon as possible with consideration to site

IX. References

WisDOT "Erosion Control Product Acceptability List" is available online at http://www.dot.wisconsin.gov/business/engrserv/ pal.htm.

X. Definitions

Channel Erosion: The deepening and widening of a channel due to soil loss caused by flowing water. As rills become larger and flows begin to concentrate, soil detachment occurs primarily as a result of shear.

Erosion Control Revegative Mats (ECRM) (II): Erosion control revegetative mats are designed to be placed on top of soil.

Turf-Reinforcement Mats (TRM) (II): Turfreinforcement mats are permanent devices constructed from various types of synthetic materials and buried below the surface to help stabilize the soil. TRMs must be used in conjunction with an ECRM or an approved soil stabilizer Type A (as classified in the WisDOT

WDNR, WI

3131 Fernbrook Lane North, STE 260 Plymouth Minnesota 55447 763.383.8400

LACROSSE, WI 54602-2107

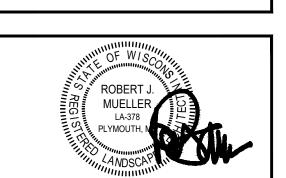
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DATE DESCRIPTION 04JAN24 SUBMITTAL 17JAN24 CITY SUBMITTAL

23-762

2023-12-22 **C603**

MAINTAIN FILTRATION & REMOVE SEDIMENT OR RECONSTRUCT CONTAINMENT AS NECESSARY WHEN FILTRATION HAS BEEN PLAN VIEW COMPROMISED. 50' MINIMUM VEGETATIVE BUFFER WATER FLOW OR FILTRATION MEDIA STAKED BIO-ROLL CONTAINMENT WITH AGGREGATE FILTER DIKE AVOID CONCENTRATED FLOWS OUTWARD - PUMP WATER INLET DEWATERING BAG WATER FLOW - BAG PLACED ON MAINTAIN 50' MINIMUM SEPARATION FROM DISCHARGE AGGREGATE BED CONTAINMENT AND WETLANDS, WATER BODIES, OR STORM SEWERS. ESTABLISHED VEGETATION-WATER FLOW THE OWNER OR CONTRACTOR SHALL OBTAIN DEWATERING DISCHARGE THROUGH NATURAL PERMIT, AS MAY BE REQUIRED, FROM THE STATE PRIOR TO ANY VEGETATIVE BUFFER OR DEWATERING OPERATIONS DISCHARGING FROM THE SITE. ALL FILTRATION MEDIA DEWATERING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT. - AGGREGATE/BIOROLL DIKE, STAKE BIO-ROLL, BURY BASE ROLL 1/3 FOR FILTERED OUTFLOW CLEAN WATER OUTFLOW -AGGREGATE BED - UNDISTURBED SOIL SECTION

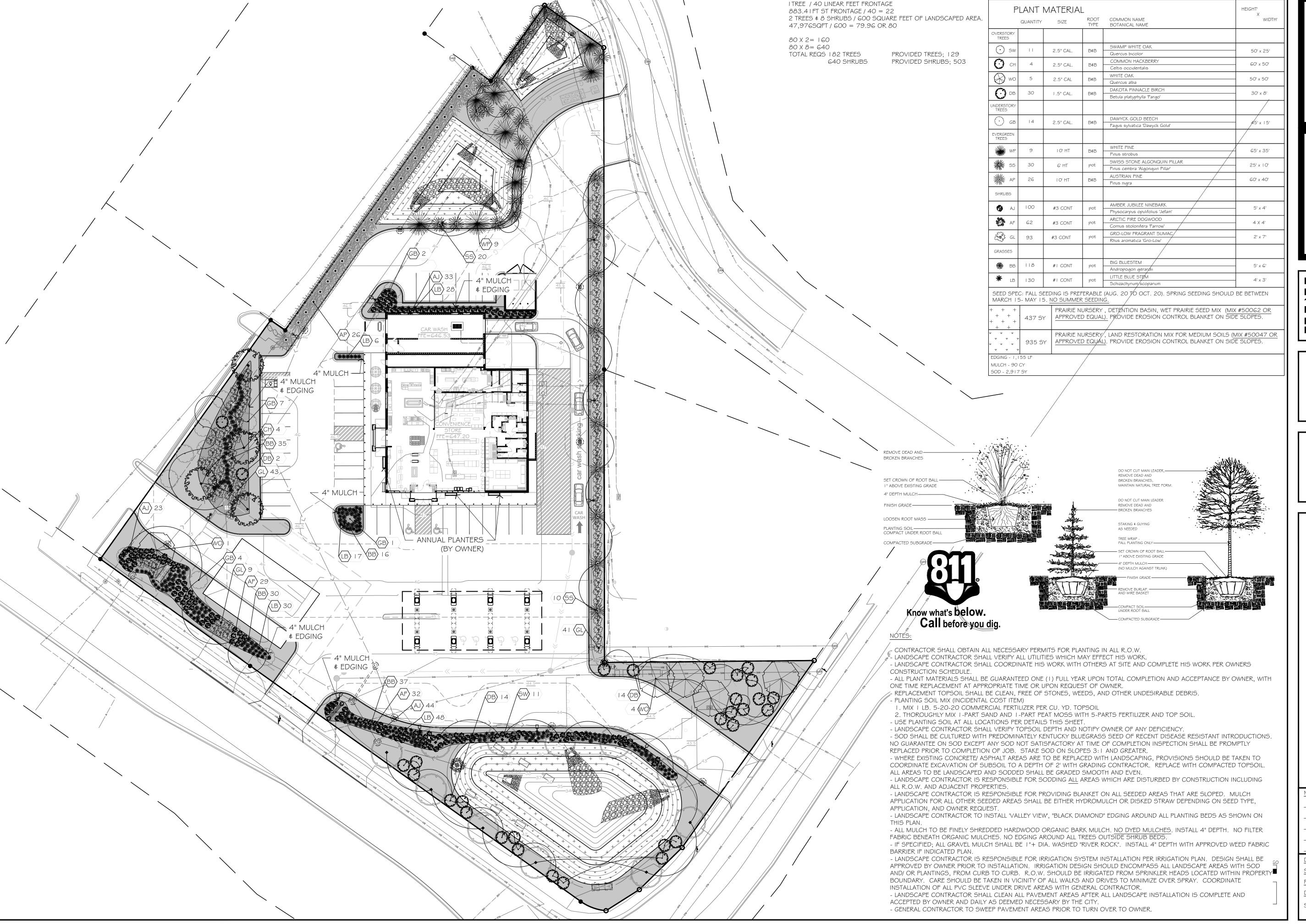
DEWATERING BAG INSTALLATION, FOR DISCHARGING ERODED, SUSPENDED PARTICLES IN WATER NOT TO SCALE

BIO ROLL INSTALLATION ("LOG WEEPERS")

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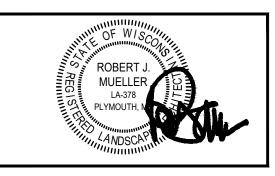
- CURLEX[®]EROSION CONTROL BLANKET (ECB)



KWIK Star

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SCAPE PLAN
ENIENCE STORE 7

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NO. DATE DESCRIPTION

- 04JAN24 SUBMITTAL

17JAN24 CITY SUBMITTAL

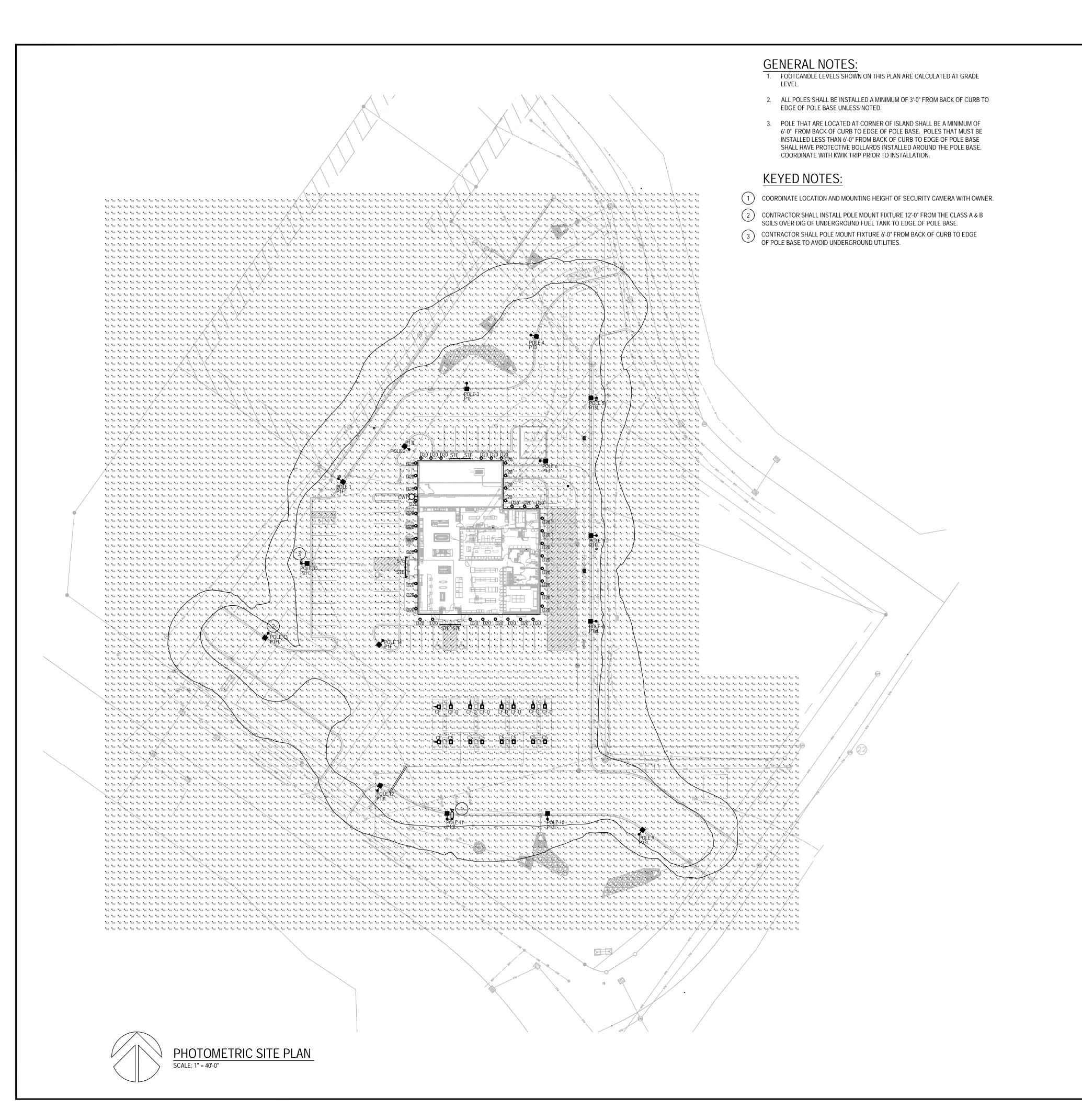
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PROJ. NO. 23-762

DATE 2023-12-22

SHEET C700



FIXTURE SYMBOLS:



LED STRIP LIGHT MOUNTED IN GABLE

POLE MOUNTED LED FIXTURE

RECESSED LED DOWNLIGHT

WALL MOUNTED LED FIXTURE

 \square

FIXTURE TYPES:

- D20 RECESSED LED DOWNLIGHT GOTHAM EVO-35/30-8AR-WD-120-TRW
- FIXTURES ARE SHOWN DIMMED DOWN TO 40%. S7E - LED STRIP LIGHT MOUNTED IN GABLE LITHONIA
- TZL1N-L96-10000LM-FST-MVOLT FIXTURES ARE SHOWN DIMMED DOWN TO 40%.
- CF LSI LIGHTING: SCV-LED-23L-SCFT-UNV-DIM-50-WHT MOUNTED UNDER GAS CANOPY MOUNT FIXTURES WITH FORWARD THROW OPTIC AIMING IN DIRECTION OF ARROW.

CF-D - LSI LIGHTING: SCV-LED-23L-SCFT-UNV-DIM-50-WHT MOUNTED

UNDER GAS CANOPY MOUNT FIXTURES WITH FORWARD THROW OPTIC AIMING IN DIRECTION OF ARROW. FIXTURES ARE SHOWN DIMMED DOWN TO 70%.

C5 - LSI LIGHTING: SCV-LED-15L-SC-UNV-DIM-50-WHT MOUNTED

- UNDER GAS CANOPY FIXTURES ARE SHOWN DIMMED DOWN TO 50%. CWT - LED WALL PACK LSI LIGHTING: XPWS3-FT-LED-48-350-CW-UE-BLK
- FOOTCANDLES CALCULATED AT MOUNTING HEIGHT OF 8'-6" AFG.
- P13L- LSI LIGHTING: MRS-LED-18L-SIL-3-UNV-50-70CRI-WHT-IL
- P1F- LSI LIGHTING: MRS-LED-18L-SIL-FT-UNV-50-70CRI-WHT
- P1FL- LSI LIGHTING: MRS-LED-18L-SIL-FT-UNV-50-70CRI-WHT-IL
- P2FL- LSI LIGHTING: MRS-LED-30L-SIL-FT-UNV-50-70CRI-WHT-IL

CF-D - 7 CWT -

P13 - 3 P13L - 6 P1FL - 4

P2FL - 1

PROVIDE (14) 16' POLES AND (1) 30' POLES.

NOT TO SCALE

DETAIL APPLIES TO POLE 15

FIXTURE QUANTITIES

CALCULATION STATISTICS

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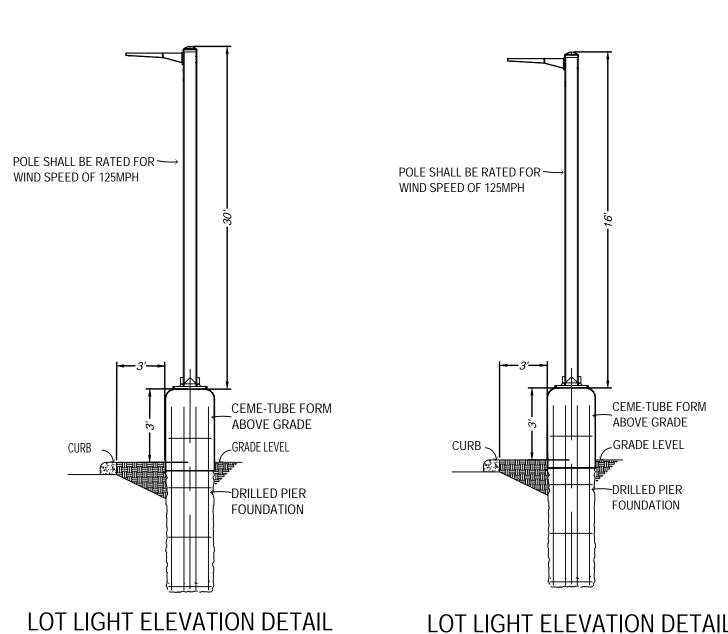
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AVG/MIN: 2.2:1 W. PARKING NEAR STORE: S. PARKING NEAR STOR

AVERAGE: 2.2 MAXIMUM: 4.7 MAXIMUM: 4.0 MINIMUM: 1.0 MINIMUM: 1.0 MAX/MIN: 4.7:1 MAX/MIN: 4.0:1 AVG/MIN: 2.2:1 AVG/MIN: 1.8:1

> AVERAGE: 3.4 MAXIMUM: 5.6

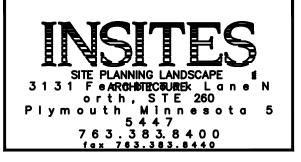
MINIMUM: 1.0 MAX/MIN: 5.6:1 AVG/MIN: 1.8:1

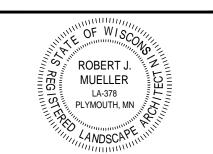


275 West Wisconsin Avenue, Suite 30 Milwaukee, WI 53203 414 / 259 1500 414 / 259 0037 fax

DETAIL APPLIES TO POLES 1 THRU 14

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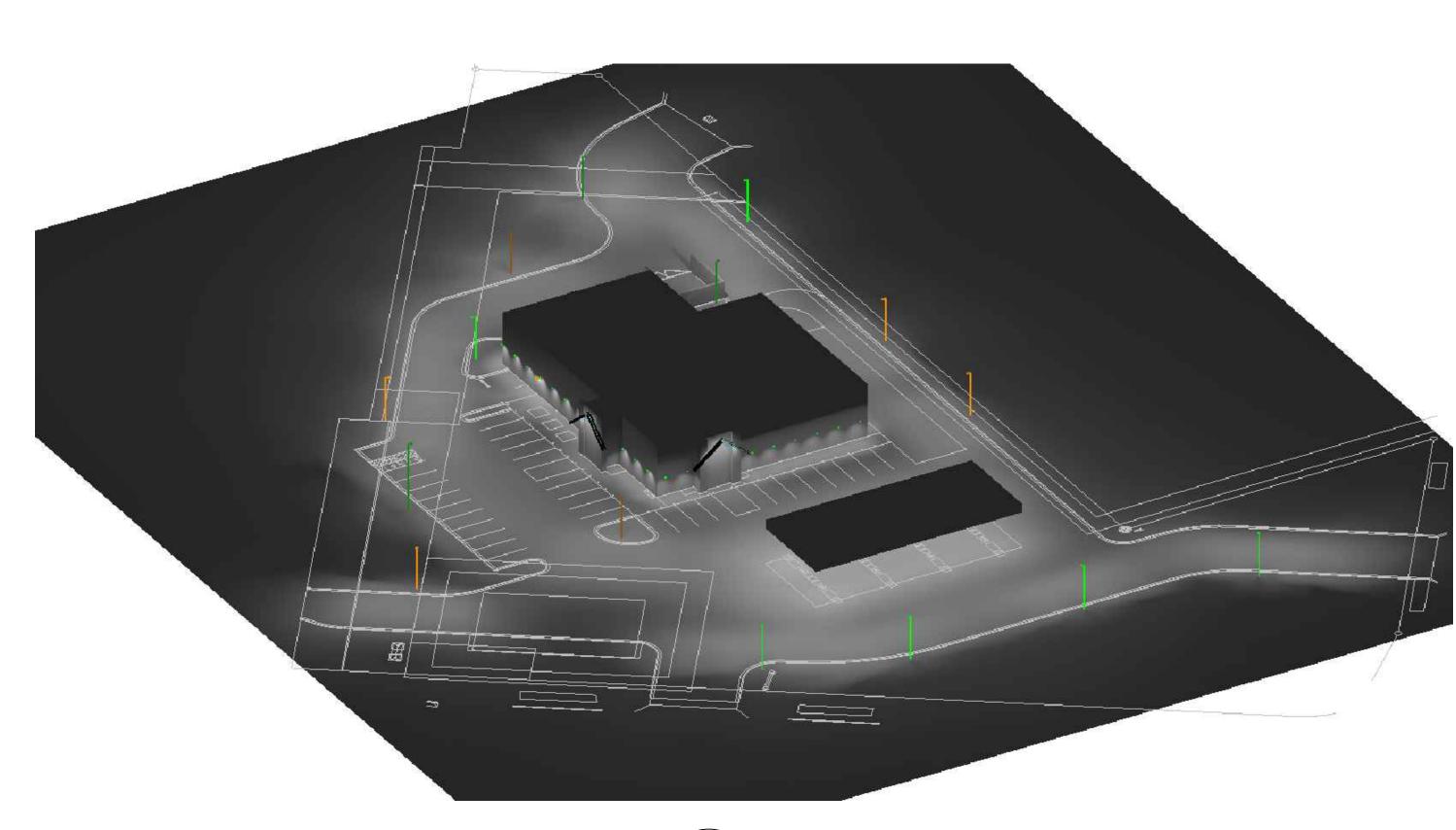




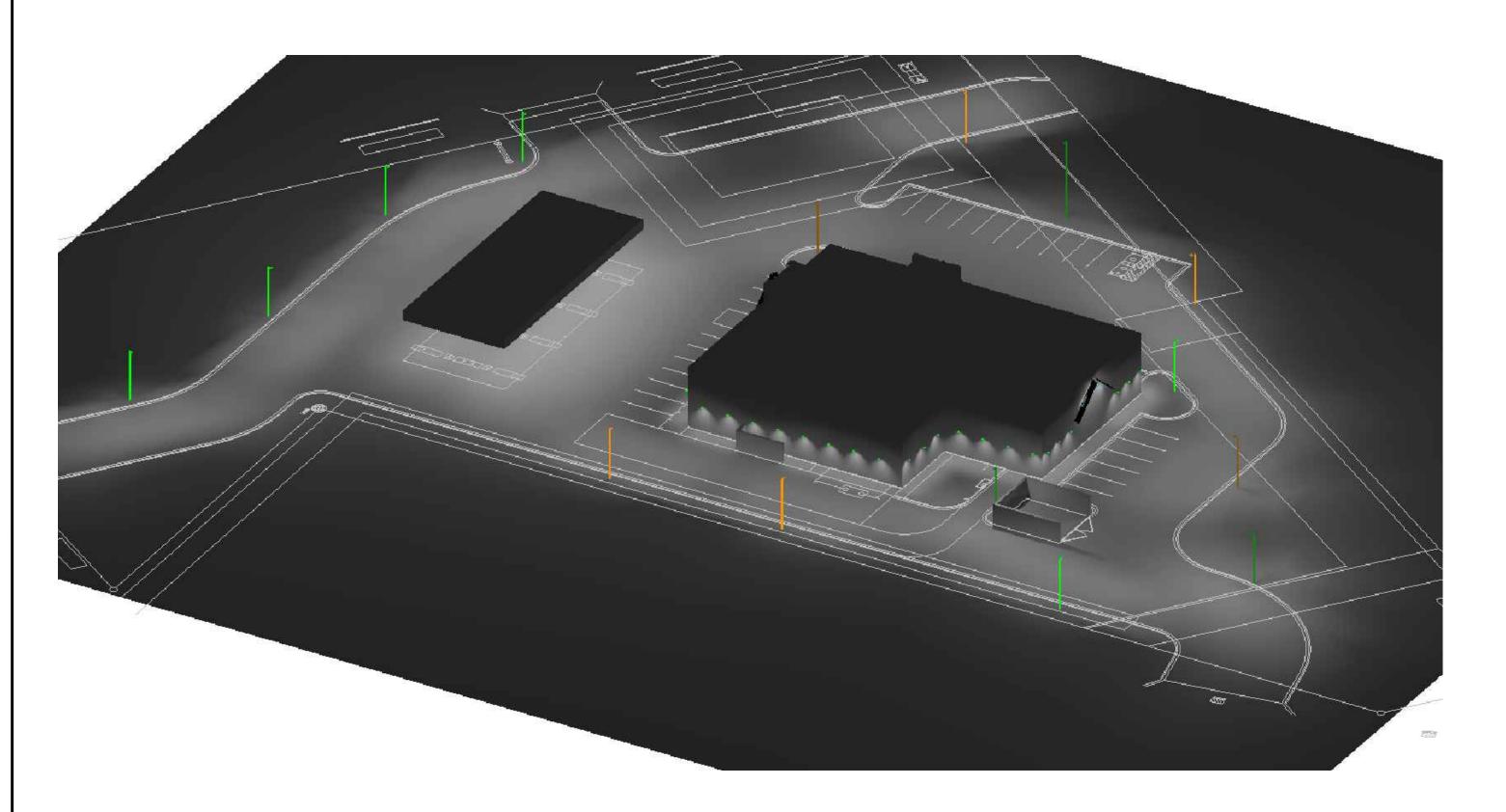
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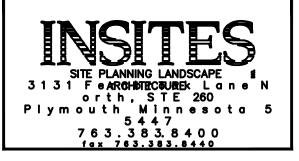


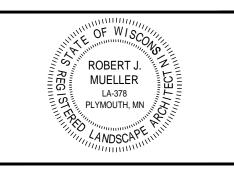




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	RENDERING PLANS	CONVENIENCE STORE 762	LA CROSSE, WISCONSIN
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