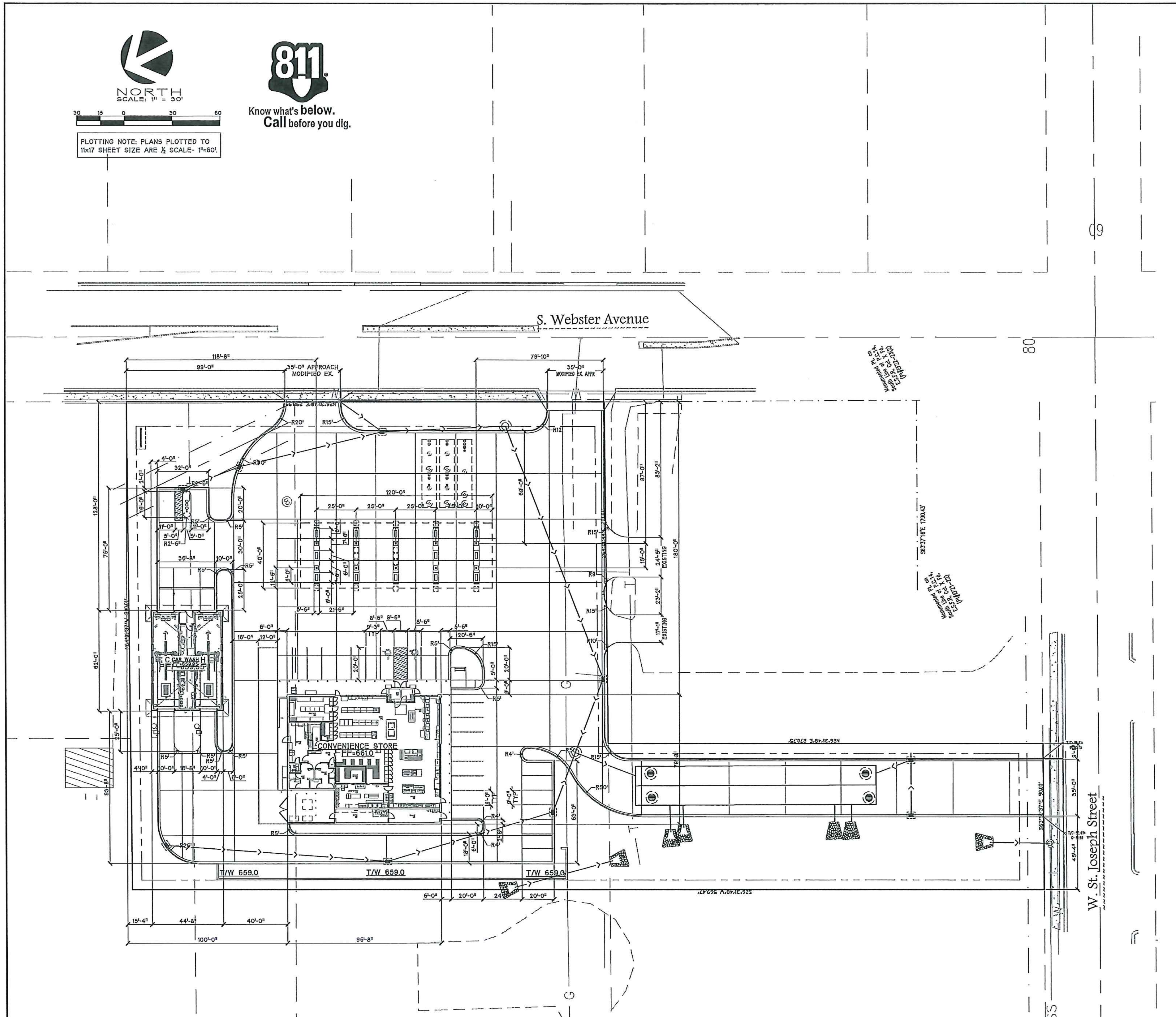

CONSTRUCTION NOTE:

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

LAYOUT NOTES:

1. PLAN PREPARED FROM AN ALTA/ACSM LAND TITLE SURVEY BY:
   MAU AND ASSOCIATES
   920-434-9670
   DATED 15JAN2015, REVISED 05FEB2015
2. CURBS ARE DIMENSIONED TO FACE OF CURB.
3. CONVENIENCE STORE, CAR WASH AND ISLAND COMPLEXES ARE LOCATED FROM THE EAST PROPERTY CORNER AND ALIGNED PARALLEL/ PERPENDICULAR TO THE SOUTHEAST PROPERTY LINE UNLESS OTHERWISE INDICATED ON THIS PLAN.
4. UNLESS SHOWN OTHERWISE ON THIS DRAWING, CONTRACTOR SHALL PROVIDE CONTROL JOINTS, CONSTRUCTION JOINTS, AND EXPANSION JOINTS IN SLAB ON GRADE, SIDEWALKS AND DRIVES. CONTROL JOINT MAXIMUM DISTANCE: WALKS- 8' O.C., ALL OTHERS- 10' O.C. SAW CUT CONTROL JOINTS MINIMUM ONE-QUARTER CONCRETE THICKNESS. EXPANSION JOINT MAXIMUM DISTANCE: WALKS- 24' O.C., ALL OTHERS- 40' O.C. DOWEL ALL EXPANSION JOINTS- MAXIMUM 24" O.C.
5. CONCRETE IN ISLAND COMPLEX SHALL BE SMOOTH FINISHED.
6. EXTERIOR CONCRETE SURFACES TO BE SEALED. CONCRETE SEALER:
   APR 15- OCT 31 USE: TK-26UV
   NOV 1- DEC 31 USE: TK-290
7. EXPANSION JOINTS SHALL BE DECK-O-FOAMED AND CAULKED WITH SL1

SITE DATA:

ZONING DISTRICT:	'E' COMMERCIAL
TOTAL SITE AREA- TOTAL:	114,052 SF
EX. IMPERVIOUS:	-
EX. PERVIOUS:	-
PARKING REQUIREMENTS	
PARKING REQUIRED	-
PARKING PROVIDED	27 STALLS 20 SRV. PNTS, 2 DIESEL
BUILDING HEIGHTS	
CONVENIENCE STORE	23.5'
CAR WASH	14'
CANOPY	20.0'
BUILDING SETBACKS	
FRONT	-
SIDE	-
REAR	-

PROPOSED LOT GREEN AREA:	33,470 SF	29%
PROPOSED HARD COVER:	80,582 SF	71%
PAVED AREA:	70,626 SF	62%
BUILDING AREA:	9956 SF	9%
CONVENIENCE STORE:	7181 SF	
CAR WASH:	2775 SF	

KWIK TRIP STORES

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SITE PLANNING LANDSCAPE ARCHITECTURE
3030 Harbor Lane North, Ste. 131
Plymouth Minnesota 55447
763.383.8400
fax 763.383.8440

STATE OF WISCONSIN REGISTERED LANDSCAPE ARCHITECT
ROBERT J. MUELLER
LA-378
PLYMOUTH, MN
09MAR2015

SITE PLAN

CONVENIENCE STORE 175

ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY	
SCALE	GRAPHIC
PROJ. NO.	15175
DATE	09MAR2015
SHEET	SP1

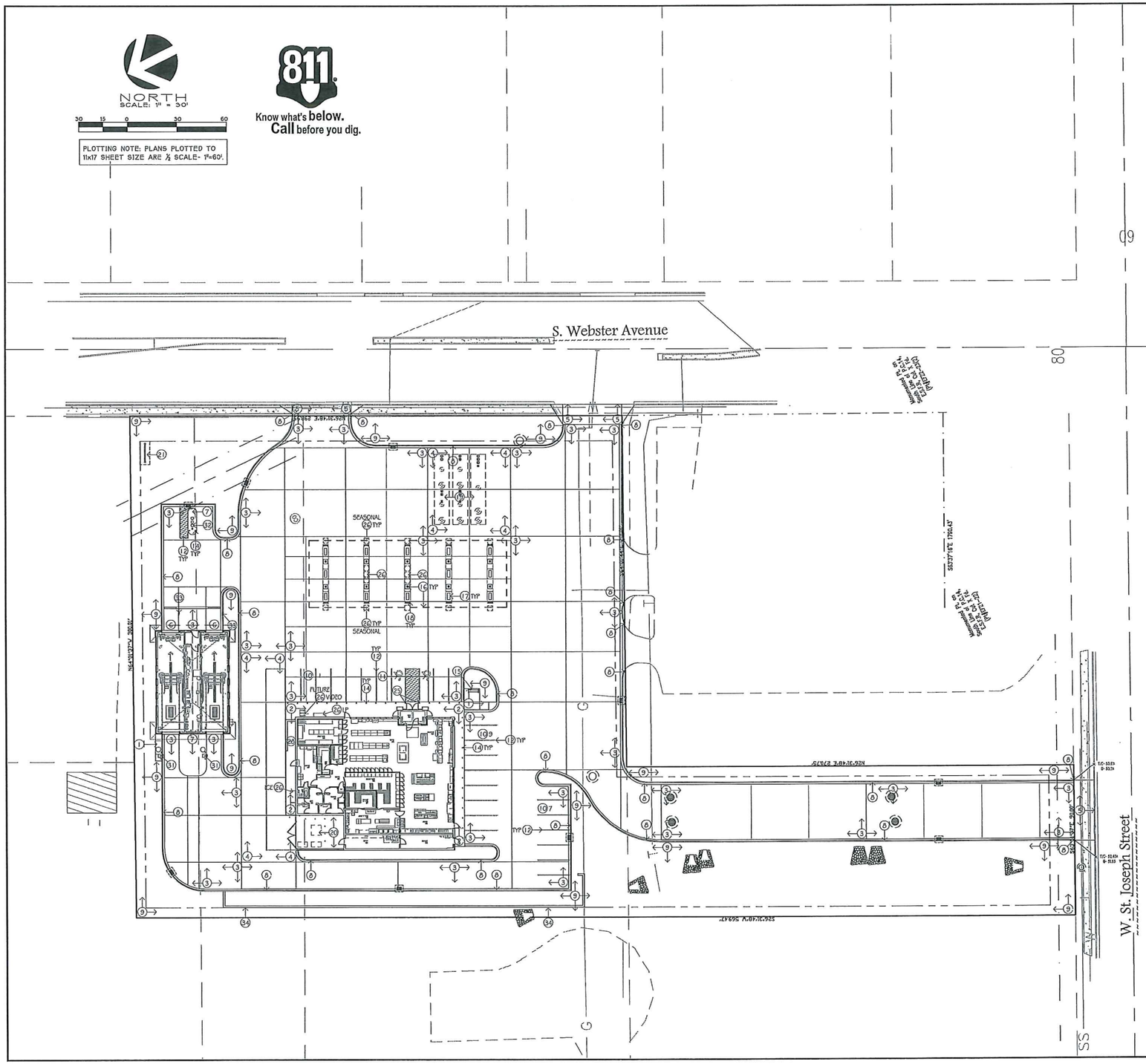
INSITES 15-011

NORTH
SCALE: 1" = 30'

30 15 0 30 60

PLOTTING NOTE: PLANS PLOTTED TO 11x17 SHEET SIZE ARE ½ SCALE- 1"=60'.

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



SITE PLAN KEYNOTES

1. 4" DEPTH CONCRETE WALK PER DETAIL 2/SP5
2. 6" INTEGRAL CONCRETE CURB/ WALK. SEE DETAIL 7/SP5 FOR NON-FLUSH SECTIONS. CONCRETE SEALER: TK-26UV
3. 6" DEPTH (MIN.) CONCRETE SLAB-ON-GRADE WITH #3 REBAR. CONCRETE SEALER: TK-26UV
4. 8" DEPTH (MIN.) CONCRETE SLAB-ON-GRADE WITH #3 REBAR. CONCRETE SEALER: TK-26UV
5. 8" DEPTH CONCRETE APPROACH PER DETAIL 5/SP5
6. 6" CONCRETE PAD WITH SNOW MELT PER MECHANICAL PLANS
7. CONCRETE CURB ISLAND
8. B6-12 CONCRETE CURB AND GUTTER PER DETAIL 11/SP5.
9. LANDSCAPE AREA. SEE SHEET L1.
10. OFF-STREET PARKING STALLS STRIPING - 4" WIDE STALL LINES, USE HIGH VISIBILITY WHITE PAINT. SPACES PROVIDED (20) SERVICE POINTS (25) 9'-0"x 20'-0"(MIN.) GENERAL PARKING (2) 8'-6"x 20'-0" ACCESSIBLE PARKING WITH (1) 8'-6"x 20'-0" LOADING ZONE
11. A.D.A. ACCESSIBLE PARKING SPACE WITH LOADING ZONE. PROVIDE APPROPRIATE STRIPING AND PAVEMENT MARKINGS.
12. 4" WIDE, HIGH VISIBILITY, PAVEMENT STRIPING, LANE MARKINGS AND TEXT. COLOR: HC MARKINGS- BLUE, ALL OTHERS- YELLOW.
13. STORM STRUCTURE. SEE SHEETS SP2-SP4 FOR FURTHER STORM SEWER INFORMATION.
    A. CATCH BASIN CURB INLET PER DETAIL 3/SP6 AND 8/SP6
    B. FLARED END SECTION PER DETAIL 4/SP6
    C. RIP RAP PER DETAIL 7/SP6
    D. OUTLET STRUCTURE PER DETAIL ON SHEET SP3
    E. MANHOLE, FRAME AND GRATE PER DETAIL 5/SP6
    F. TRENCH DRAIN PER DETAIL 6/SP6
    G. OIL SKIMMER STRUCTURE PER DETAIL ON SP3
    H. SLOTTED DRAIN PER DETAIL ON SHEET SP3
14. 30" HT., 6" DIA. CONCRETE FILLED PIPE BOLLARD PER DETAIL 9/SP5.
15. 8 STALL BIKE RACK WITH 4" CONCRETE PAD (BRP 300 TRADITIONAL BIKE RACK-SINGLE SIDE PORTABLE/ SURFACE MOUNT ENDS FUSION COATINGS - A DIVISION OF RTM INC. TO BE PROVIDED BY OWNER)
16. 40'-0"x 120'-0" DISPENSER ISLAND CANOPY. VERIFY SIZE, PLACEMENT, COLUMN AND FOOTING SIZE WITH CANOPY AND STRUCTURAL PLANS. CANOPY GRAPHICS PER OWNER.
17. 3'-6"x 6'-0" CONCRETE ISLANDS W/ 6" EXPOSURE WITH FUEL DISPENSERS. DISPENSER PER OWNER.
18. 36" HT., 6" DIA. CONCRETE FILLED PIPE BOLLARD SIMILAR TO DETAIL 6/SP5.
19. UNDERGROUND FUEL STORAGE TANKS PER OWNER. PROVIDE PIPING AND VENTING PER OWNER'S SPECIFICATIONS.
20. EXTERNAL TRASH ENCLOSURE TO MATCH BUILDING. SEE ARCHITECTURAL DETAILS.
21. KWIK TRIP TRADEMARK SIGN SUBJECT TO SEPARATE REVIEW AND APPROVAL (VERIFY FINAL LOCATION WITH SIGN PERMIT)
22. 'FREE AIR' COMPRESSOR. PROVIDE SIGNAGE PER OWNER.
23. SITE AREA LIGHT WITH CONCRETE BASE PER DETAIL 12/SP5
24. PVC IRRIGATION SLEEVE UNDER PAVEMENT. VERIFY W/ IRRIGATION PLAN FOR EXACT SIZE AND LOCATION BEFORE INSTALLATION.
25. HC PVC BOLLARD SLEEVE PER OWNER. VAN ACCESS SIGNAGE AT 48" HT. STALL PARKING AT 60° HT.
26. OUTDOOR MERCHANDISING AREA
27. PICNIC TABLE PER OWNER. PROVIDE 1 HC. ACCESS TABLE SPACE. PROVIDE TRASH CONTAINER PER OWNER.
28. EXTERIOR DELIVERY 'TOTE' STORAGE WITH SCREEN WALL
29. ELECTRICAL TRANSFORMER
30. ELECTRIC CAR CHARGER
31. CAR WASH KEY PAD/ CONTROLLER. PROVIDE TRASH CONTAINER
32. VACUUM PER MANUFACTURE'S SPECIFICATIONS
33. CAMERA PER CAR WASH EQUIPMENT PLANS
34. RETAINING WALL PER OWNER

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STATE OF WISCONSIN
ROBERT J. MUELLER
LA-378
PLYMOUTH, MN
REGISTERED LANDSCAPE ARCHITECT
09MAR2015

SITE PLAN KEYNOTES

CONVENIENCE STORE 175

- ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY	
SCALE	GRAPHIC
PROJ. NO.	15175
DATE	09MAR2015
SHEET	SP1.1

INSITES 15-011

NOTE: CONTRACTOR TO OBTAIN RIGHT-OF-WAY EXCAVATION PERMIT PRIOR TO BEGINNING SITE WORK.

CONSTRUCTION NOTE:

CONSTRUCTION FENCING TO BE INSTALLED AROUND ENTIRE CONSTRUCTION SITE. COORDINATE WITH OWNER FOR FENCING AND GATE LOCATIONS AND APPROPRIATE SIGNAGE INSTALLATION.

NOTE:

- REFER TO OTHER PROJECT PLANS AND INFORMATION RELATED TO THIS PROJECT PRIOR TO BEGINNING ANY GRADING WORK.

- PLAN PREPARED FROM ALTA/ACSM LAND TITLE SURVEY BY:
  MAU & ASSOCIATES
  400 Security Blvd, Green Bay, WI 54313
  Phone: 920-434-9670 Fax: 920-434-9672

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

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

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

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

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

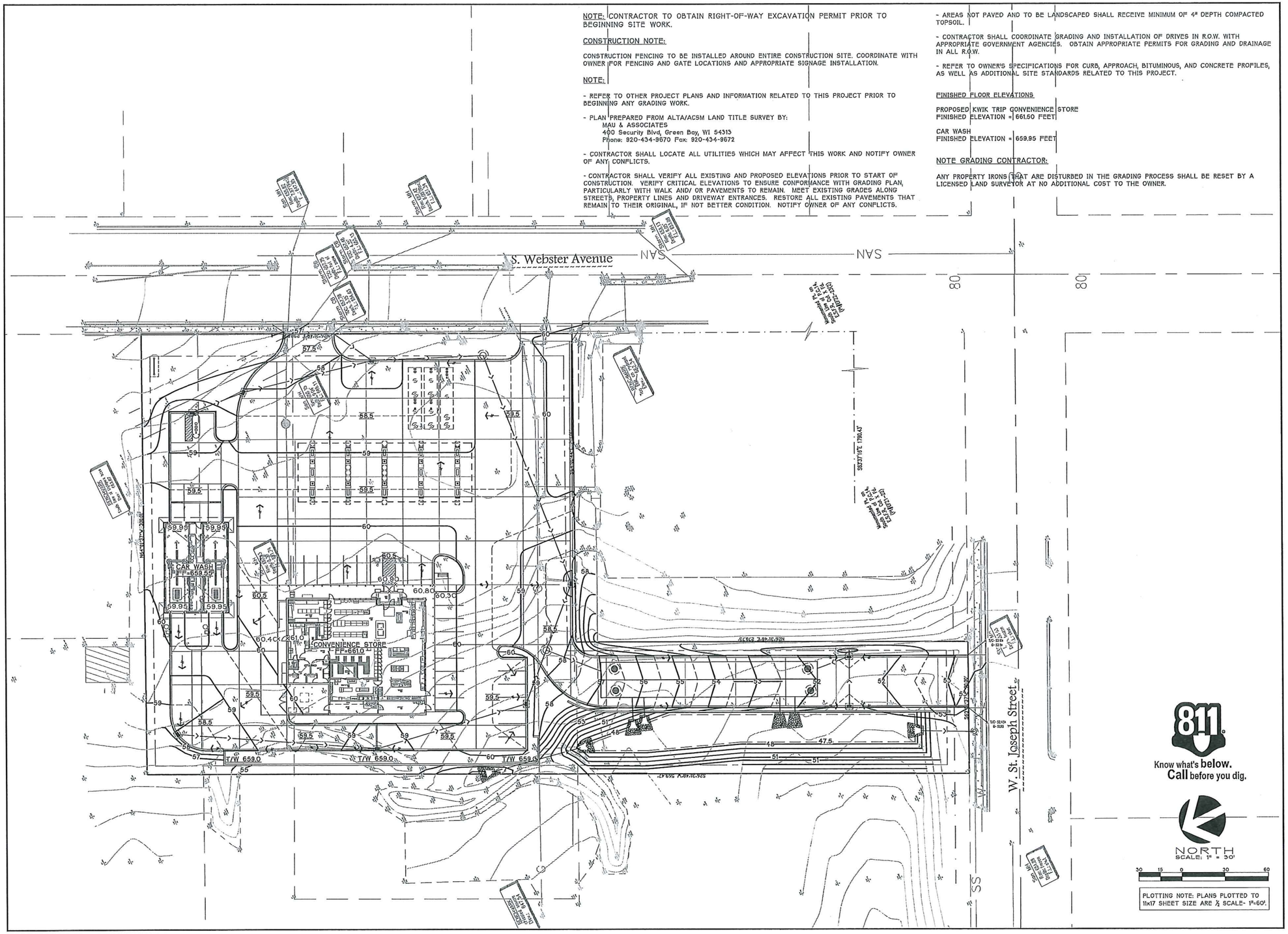
FINISHED FLOOR ELEVATIONS

PROPOSED KWIK TRIP CONVENIENCE STORE
FINISHED ELEVATION = 661.50 FEET

CAR WASH
FINISHED ELEVATION = 659.95 FEET

NOTE GRADING CONTRACTOR:

ANY PROPERTY IRONS THAT ARE DISTURBED IN THE GRADING PROCESS SHALL BE RESET BY A LICENSED LAND SURVEYOR AT NO ADDITIONAL COST TO THE OWNER.



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

NORTH
SCALE: 1" = 30'

30 15 0 30 60

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STATE OF WISCONSIN
ROBERT J. MUELLER
LA-378
PLYMOUTH, MN
REGISTERED LANDSCAPE ARCHITECT
09MAR2015

GRADE PLAN

CONVENIENCE STORE 175

- ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY
SCALE GRAPHIC
PROJ. NO. 15175
DATE 09MAR2015
SHEET SP2

INSITES 15-011

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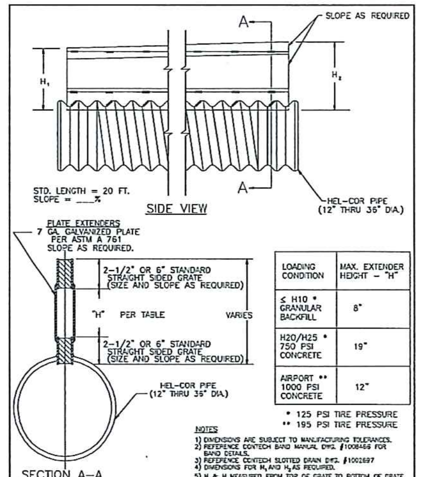


LOADING CONDITION	MAX. EXTENDER HEIGHT – "H"
≤ H10 * GRANULAR BACKFILL	8"
H20/H25 * 750 PSI CONCRETE	19"
AIRPORT ** 1000 PSI CONCRETE	12"

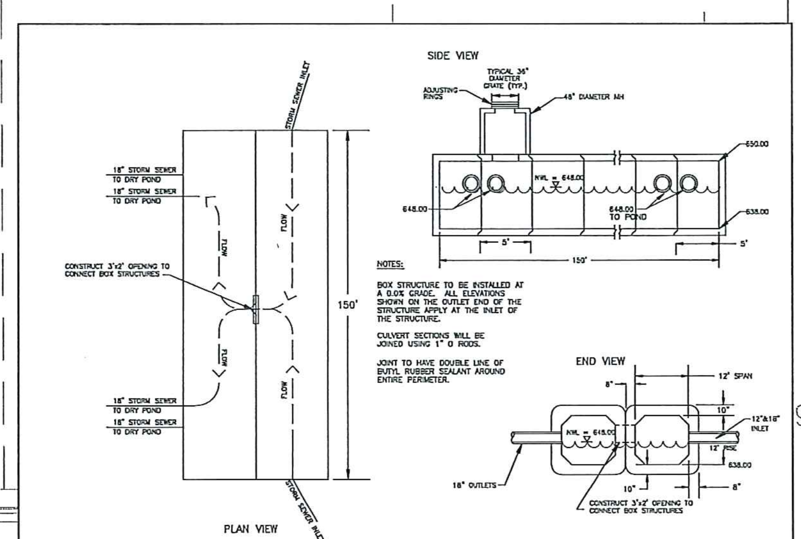
* 125 PSI TIRE PRESSURE
** 195 PSI TIRE PRESSURE

NOTES
1) DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
2) REFERENCE CONTECH BAND MANUAL DWG. #1008466 FOR BAND DETAILS.
3) REFERENCE CONTECH SLOTTED DRAIN DWG. #1002697
4) DIMENSIONS FOR H_1 AND H_2 AS REQUIRED.
5) H_1 & H_2 MEASURED FROM TOP OF GRATE TO BOTTOM OF GRATE.
6) ORDER MUST NOTE IF FOR AIRPORT LOADING FOR SPECIAL WELDING & REINFORCEMENT.
7) REFERENCE DWG. #1008136, SLOTTED DRAIN INSTALLATION, AIRPORT LOADINGS OR 1008607C FOR HIGHWAY LOADINGS.

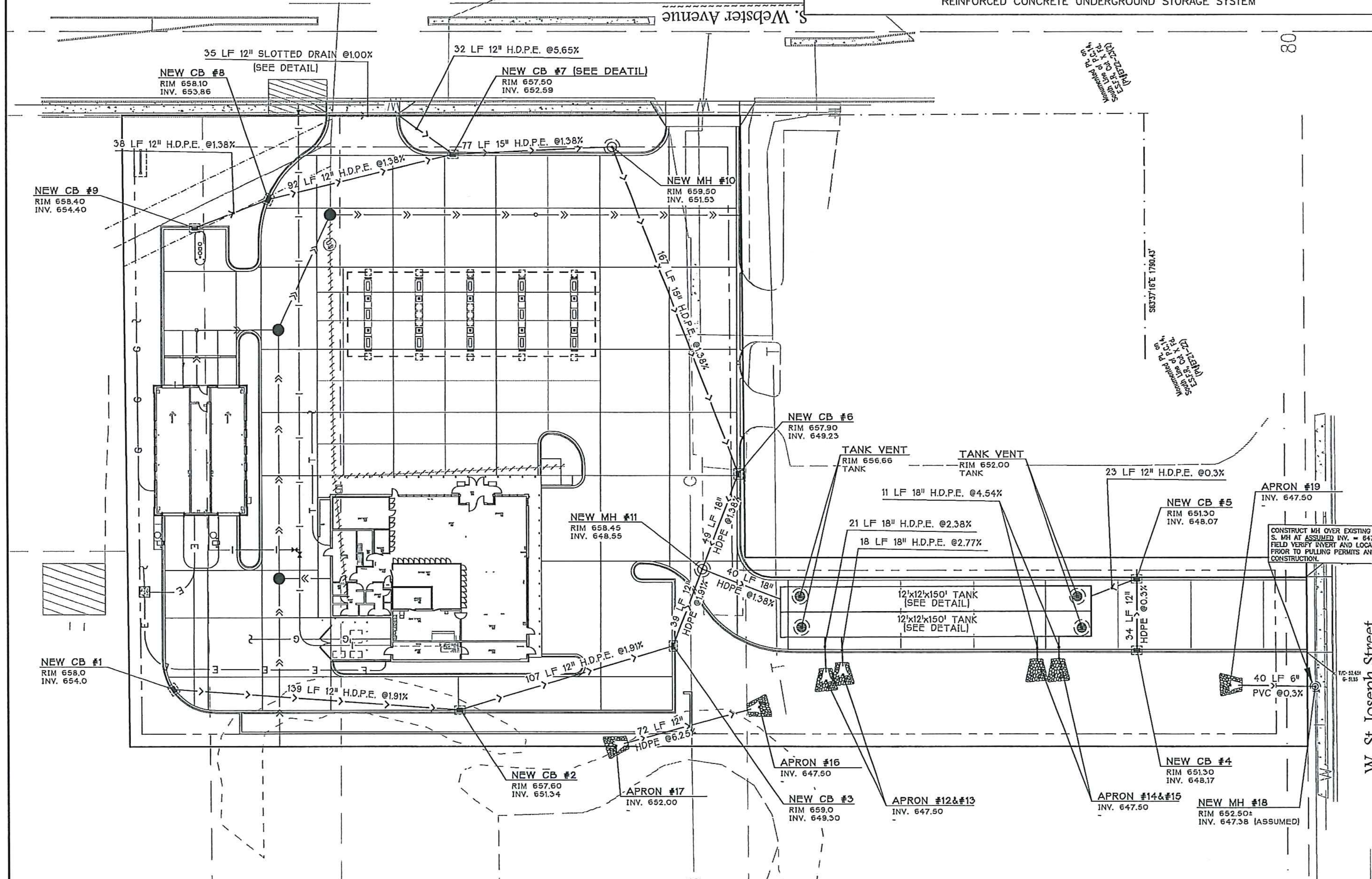
CONTECH CONSTRUCTION PRODUCTS INC. © COPYRIGHT

SLOTTED DRAIN
VARIABLE HEIGHT GRATE
METHOD #1

DRAWN BY: EFS	REV. BY: N/A	SCALE: N/A
DATE: 7-1-92	DATE: N/A	10087324



REINFORCED CONCRETE UNDERGROUND STORAGE SYSTEM

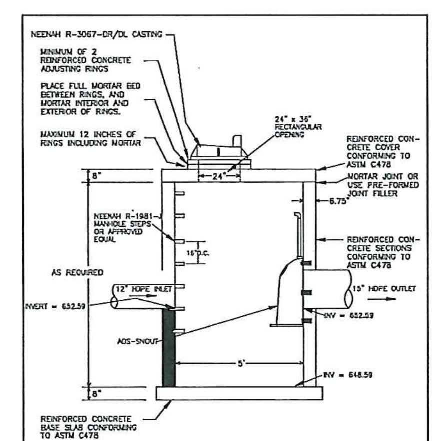


STORM DRAINAGE:

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 C923. The inside barrel diameter shall not be less than 48 inches.
2. All joints and connections to catchbasins or manholes shall be watertight. Use resilient rubber seals, waterstop gaskets, or approved equal. Cement mortar joints are not allowed.
3. Install catchbasin castings with specified top elevation at the front rim. TOP
4. PVC Pipe: Use solid-core, SDR-35, ASTM D3034 Polyvinyl Chloride (PVC) Pipe for designated PVC storm sewer services 4 to 15-inches in diameter. Use solid-core, SDR-35, ASTM F679 Polyvinyl Chloride (PVC) pipe for designated PVC storm sewer services 18 to 27-inches in diameter. 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. 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.
5. Testing: 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. 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 retest.
6. Use Neenah R-3067-DR/DL casting with curb box, or approved equal, on CB #1, CB #2, CB #3, CB #4, CB #5, CB #6, CB #7, CB #8 and CB #9.
7. 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.
8. Use a Neenah R-1733 frame with bolted, Type "C" radial grate, or approved equal, on the Tank Vents. Use tamper-proof bolts.
9. Install detectable underground marking tape directly above all pvc, polyethylene, and other nonconductive underground utilities at a depth of 457 mm (18 inches) below finished grade, unless otherwise indicated. Bring the tape to the surface at various locations in order to provide connection points for locating underground utilities. Install blue Rhino TriView Flex Test Stations, or approved equal, with black caps at each surface location.
10. TRACER WIRE: Locating requirements – a means to locate buried underground exterior non metallic sewers/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 182.0715(2r) of the statutes.
11. 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.
12. Cleanouts: Install cleanouts on all roof drains in accordance with S.P.S 382.35 (3)(C)(1.). The distance between cleanouts in horizontal piping shall not exceed 100 feet for pipes 10-inches and under in size. Cleanouts shall be of the same nominal size as the pipes they serve. Install a meter box frame and solid lid (Neenah R-1914-A, or approved equal) over all cleanouts.
13. Line ponds with 2' thick clay liner per detail.
14. Install all pipe with the ASTM identification numbers on the top for inspection. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the bell end or receiving groove end of the pipe pointing upgrade. When connecting to an existing pipe, uncover the existing pipe in order to allow any adjustments in the proposed line and grade before laying any pipe. Do not lay pipes in water or when the trench conditions are unsuitable for such work.

HDPE REQUIREMENTS:

1. Install dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe at locations indicated on the plan.
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.
3. Dual-wall, smooth interior, corrugated high-density polyethylene (HDPE) pipe shall conform to the requirements of ASTM F2306 for pipe sizes 12-inch to 60-inch diameter.
4. All fittings must comply with ASTM Standard D3212.
5. Water-tight joints must be used at all connections including structures.
6. Lay all HDPE pipe on a continuous granular bed. Installation must comply with ASTM D2321. All sections of the corrugated HDPE pipe shall be coupled in order to provide water tight joints.
7. 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.



OIL SKIMMER CB #7

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(952) 881-3344 TELEPHONE
(952) 881-1913 FAX
www.sundecivil.com
CONSULTING CIVIL ENGINEERS

WISCONSIN PROFESSIONAL ENGINEER
BRIAN H. MUNDSTOCK
E-34859
BLOOMINGTON, MN

STORM SEWER PLAN

CONVENIENCE STORE 175

ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY	
SCALE	GRAPHIC
PROJ. NO.	15175
DATE	09MAR2015
SHEET	SP3

INSITES 15-011

CALL BEFORE YOU DIG

811

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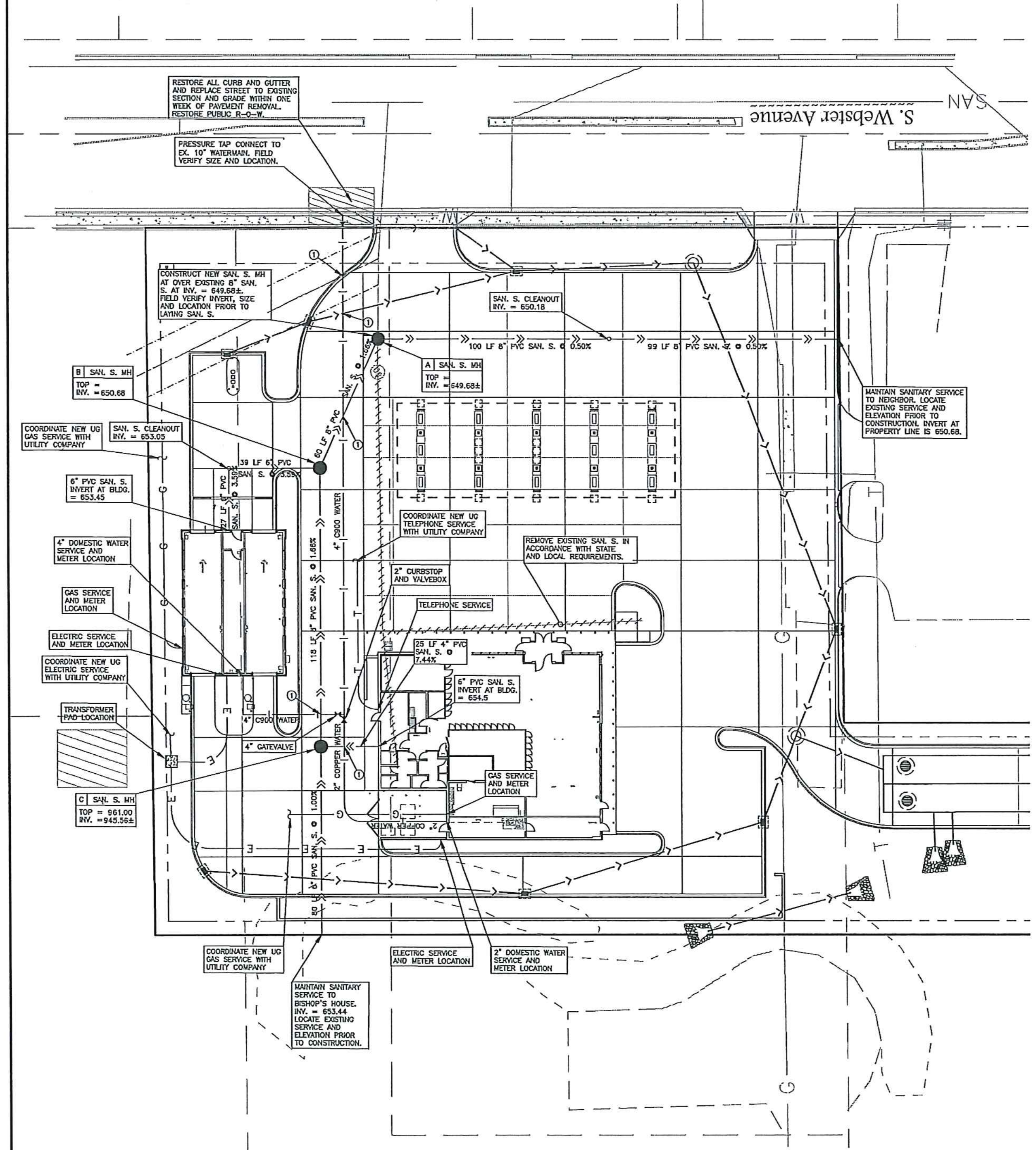

GENERAL:

1. Comply with the work safety practices specified by the Occupational Safety and Health Administration (OSHA). Comply with all applicable local, state, and federal safety regulations. OSHA prohibits entry into "confined spaces," such as manholes and inlets (see 29 CFR Section 1910.146), without undertaking certain specific practices and procedures. Construction safety is solely the responsibility of the Contractor, who is also solely responsible for the means, methods, and sequencing of the construction operations.
2. Existing boundary, location, topographic, and utility information shown on this plan is from a field survey by Mau and Associates dated Feb. 5, 2015.
3. Perform all utility work in accordance with State and City requirements.
4. 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.
5. Perform trench excavations for all utilities in accordance with the requirements of O.S.H.A. 29 CFR, Part 1926, Subpart P, "Excavations and Trenches." (www.osha.gov)
6. Coordinate building utility connection locations at 5 ft. out from the proposed building with the with the interior plumbing contractor prior to construction. Verify water and sewer service locations and elevations with the Mechanical Engineer prior to construction.
7. 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 Guidelines for the Collection and Depiction of Existing Subsurface Utility Data."
8. 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.
9. 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.
10. 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.
11. 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 the local utility companies.
12. 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.
13. Straight line saw-cut existing bituminous or concrete surfacing at the perimeter of pavement removal areas. Use saws that provide water to the blade. Tack, and match all connections to existing bituminous pavement.
14. Relocate overhead power, telephone, and cable lines as required.
15. 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.
16. Restore the public right-of-way. 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.
17. 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.
18. Adjust all curb stops, valve boxes, maintenance hole castings, catchbasin castings, cleanout covers, and similar items to finished grade.
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. 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.
20. Obtain and pay for all permits, tests, inspections, etc. required by agencies that have jurisdiction over the project. 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.
21. Obtain permits from the City for work in the public right-of-way.
22. 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.
23. TRACER WIRE: Locating requirements – a means to locate buried underground exterior non metallic sewers/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 182.0715(2r) of the statutes.
24. Install all pipe with the ASTM identification numbers on the top for inspection. Commence pipe laying at the lowest point in the proposed sewer line. Lay the pipe with the bell end or receiving groove end of the pipe pointing upgrade. When connecting to an existing pipe, uncover the existing pipe in order to allow any adjustments in the proposed line and grade before laying any pipe. Do not lay pipes in water or when the trench conditions are unsuitable for such work.

PLOTTING NOTE: PLANS PLOTTED TO 11x17 SHEET SIZE ARE ½ SCALE- 1"=60'.

WATER DISTRIBUTION SYSTEM:

1. Bring all site utilities to 5' 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. Separation of Water and Sewer: Provide a minimum horizontal separation of 10 feet between all water and sewer lines. Provide a minimum separation of 18 inches at all water line and sewer line crossings.
3. 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.
4. Disinfection: Disinfect all completed watermains in accordance with AWWA Standard C651. If the tablet or continuous feed methods are used, disinfect using with water that contains at least 50 ppm of available chlorine. 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 test kits.
5. Testing: Pressure test and perform bacteriological tests on all water lines under the supervision of the City Public Works Department. Notify the City at least 24 working hours prior to any testing. Pressurize the waterline to 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. Maintain the test pressure for a minimum of 2 hours. 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 is acceptable with a pressure drop of 14 kPa (2 psi) or less.
6. 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.
7. 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.
8. Use Mueller H 10300 or Ford EM 2 7057, or approved equal, at all curb stop locations. Stationary rod is required on all curb stops.
9. Polyvinyl Chloride (PVC) Building Water Services: Use AWWA C900, ASTM D2241 or ASTM D1785; pressure rated for water.
10. 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. Lay trace wire with all C900 PVC watermain.
11. Tracer Wire: Locating requirements – a means to locate buried underground exterior non metallic 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).
12. Use ANSI/AWWA C151/A21.51 Thickness Class 52 or Pressure Class 350 Ductile Iron Pipe (DIP) with push-on joints for all watermain. Use only stainless steel bolts and nuts on all watermain fittings, valves, and hydrants.
13. Polyethylene encasement is required on all ductile iron pipe.

SANITARY SEWER:

1. Pipe: Use solid-core, SDR-35, ASTM D3034 (or approved equal) Polyvinyl Chloride (PVC) Plastic Pipe for all designated PVC sanitary sewer services. Joints for all sanitary 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. 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.
2. Cleanouts: Install cleanouts on all sanitary sewer services. 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.
3. Testing: Pressure test all sanitary sewer lines. Test all flexible sanitary sewer lines for deflection after the sewer line has been installed and backfill has been in place for at least 30 days. No pipe shall exceed a deflection of 5%. If the test fails, make necessary repairs and retest.
4. Unless otherwise indicated, use reinforced, precast, concrete maintenance holes conforming to ASTM C478, furnished with precast bases. Sanitary sewer maintenance holes shall be supplied with pre-formed inverts and flexible neoprene sleeve connections for all lateral lines 375 mm (15 inches) in diameter or less, unless otherwise indicated. Joints for all precast maintenance hole sections shall have confined, rubber "O"-ring gaskets in accordance with ASTM C923. The inside barrel diameter shall not be less than 48 inches.
5. Install flexible watertight frame/chimney seals on all sanitary sewer maintenance holes. Use either Manufactured Maintenance Hole Frame/Chimney Seals or Elastomeric Waterproofing Frame/Chimney Seals.
6. Use Neenah Foundry Co. R-1642 casting with self-sealing, solid, type B lid, or approved equal, on all sanitary sewer maintenance holes. Covers shall bear the "Sanitary Sewer" label.
7. The minimum depth of cover for sanitary sewer without insulation is 5 feet. Insulate sanitary sewer services at locations where the depth of cover is less than 5 feet. Provide a minimum insulation thickness of 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.
8. TRACER WIRE: Locating requirements – a means to locate buried underground exterior non metallic 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).

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KWIK STAR STORES

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CONSULTING CIVIL ENGINEERS

WISCONSIN PROFESSIONAL ENGINEER
BRIAN H. MUNDSTOCK
E-34859
BLOOMINGTON, MN

UTILITY PLAN

CONVENIENCE STORE 175

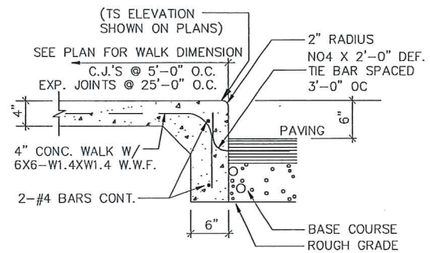
ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

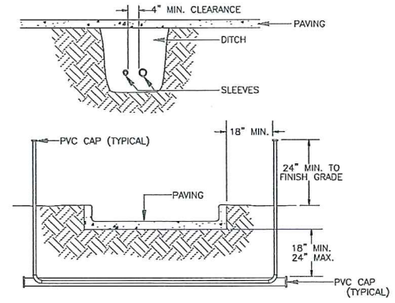
DRAWN BY	
SCALE	GRAPHIC
PROJ. NO.	15175
DATE	09MAR2015
SHEET	SP4

INSITES 15-011

1
SP5



7 | SP5 | SIDEWALK/ CURB DETAIL
NOT TO SCALE



NOTES:
1. ALL PVC IRRIGATION SLEEVES TO BE SCH 40 PVC PIPE.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATERTIGHT.
3. WHERE THERE IS MORE THAN ONE SLEEVE, EXTEND THE SMALLER SLEEVE TO 24-INCHES MINIMUM ABOVE FINISH GRADE.
4. MECHANICALLY TAMP TO 95% PROCTOR.

10 | SP5 | TYPICAL SLEEVING
NOT TO SCALE

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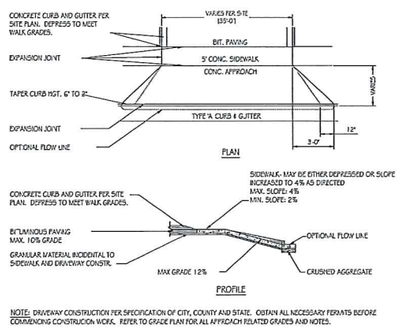
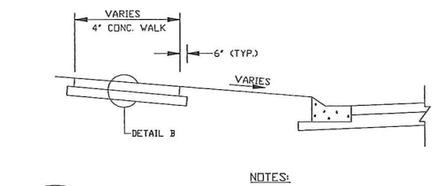
Fax 763.383.8440

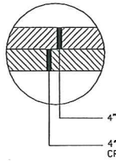
2
SP5



NOTE: DRIVEWAY CONSTRUCTION PER SPECIFICATION OF CITY, COUNTY AND STATE. OBTAIN ALL NECESSARY PERMITS BEFORE COMMENCING CONSTRUCTION WORK. REFER TO GRADE PLAN FOR ALL APPROACH RELATED GRADES AND NOTES.

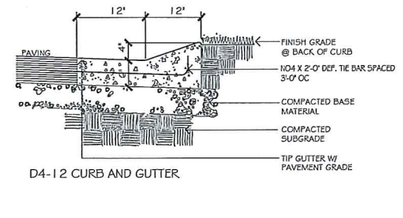
5 | SP5 | URBAN COMMERCIAL DRIVEWAY DETAIL
NOT TO SCALE



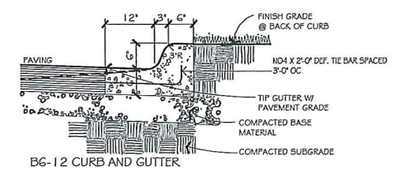


NOTES:
1. 6" THICK CONCRETE SIDEWALK AT ALL DRIVEWAYS
2. PLACE PEDESTRIAN CURB RAMPS AT ALL INTERSECTIONS.
3. PROVIDE EXPANSION JOINT MATERIAL AT MAX. 60 FOOT SPACING.
4. PROVIDE EXPANSION JOINT MATERIAL ALONG BOTH EDGES OF WALK, WHERE WALK IS CONTAINED BETWEEN FIXED OBJECTS.

8 | SP5 | CONCRETE WALK/ PAD DETAIL
NOT TO SCALE



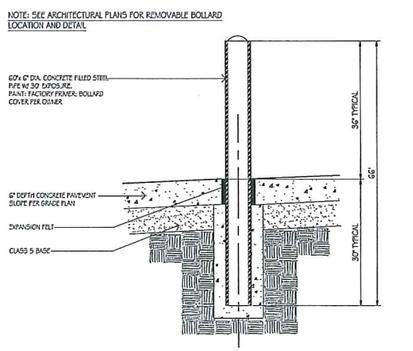
D4-12 CURB AND GUTTER



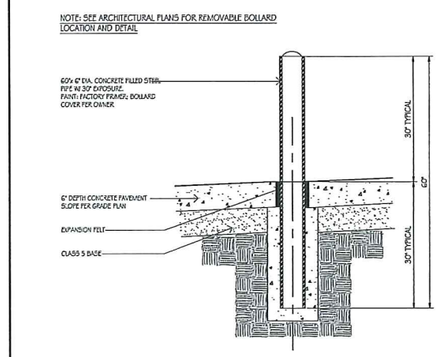
B6-12 CURB AND GUTTER

11 | SP5 | CONCRETE CURB AND GUTTER DETAILS
SCALE - 3/4" = 1'-0"

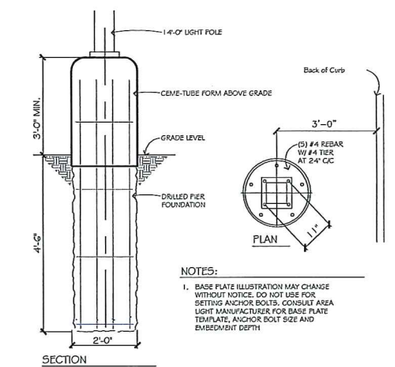
3
SP5



6 | SP5 | 66" x 6" DIAMETER PIPE BOLLARD
SCALE - 3/8" = 1'-0"



9 | SP5 | 60"x 6" DIAMETER PIPE BOLLARD
SCALE - 3/8" = 1'-0"



SECTION

NOTES:
1. BASE PLATE ILLUSTRATION MAY CHANGE WITHOUT NOTICE. DO NOT USE FOR SETTING ANCHOR BOLTS. CONSULT AREA LIGHT MANUFACTURER FOR BASE PLATE TEMPLATE, ANCHOR BOLT SIZE AND EMBEDMENT DEPTH

12 | SP5 | ROUND AREALIGHT FOUNDATION
SCALE - 1/2"= 1'-0"

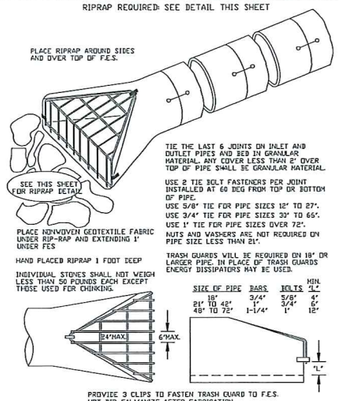
SITE PLAN DETAILS

CONVENIENCE STORE 175 - ALLOUEZ WISCONSIN

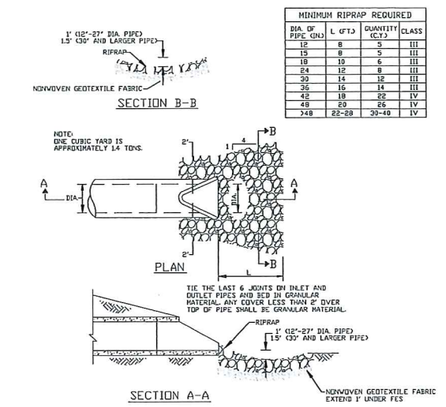
NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY
SCALE GRAPHIC
PROJ. NO. 15175
DATE 09MAR2015
SHEET **SP5**

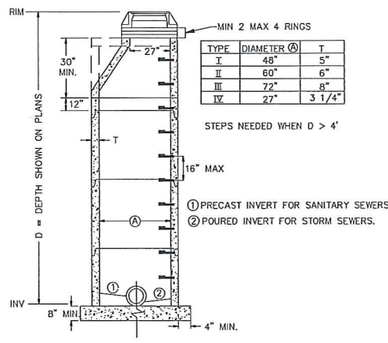
INSITES 15-011



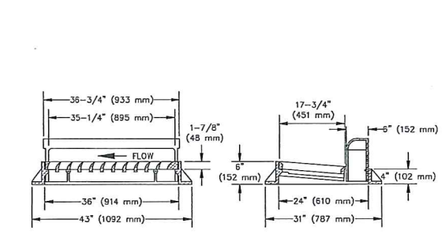
4 | SPG | FLARED END SECTION WITH TRASH GUARD
NOT TO SCALE



7 | SPG | RIP RAP DETAIL FOR FLARED END SECTIONS
NOT TO SCALE



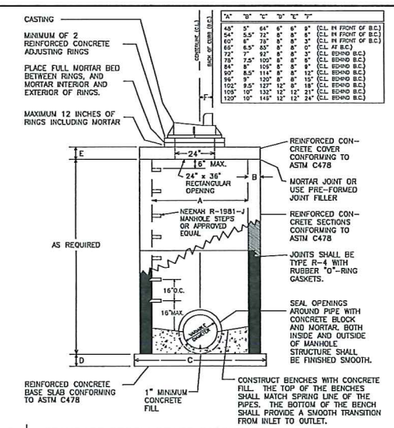
5 | SPG | PRECAST REINFORCE CONC. MANHOLE
NOT TO SCALE



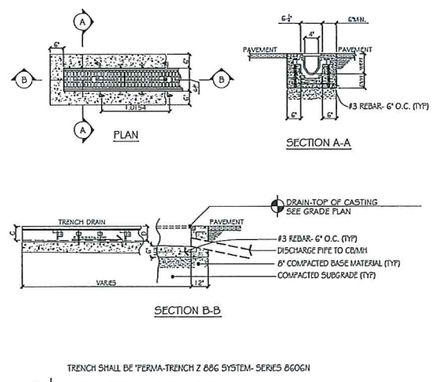
USE NEENAH R-3067 WITH TYPE V GRATE OR APPROVED EQUAL

8 | SPG | 24"x 36" CURB INLET AND CASTING DETAIL
NOT TO SCALE

2 | SPG | CURBLINE DETAIL AT CATCHBASIN CURB/PAVEMENT LOW POINTS (SPECIFIC LOCATIONS)
NOT TO SCALE

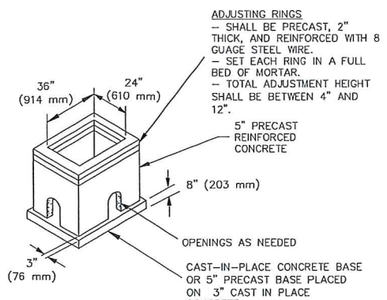


3 | SPG | STANDARD STORM SEWER CATCHBASIN
NOT TO SCALE



TRENCH SHALL BE 'PERMA-TRENCH Z 886 SYSTEM- SERIES 860GN

6 | SPG | Z 886 TRENCH DRAIN DETAIL
SCALE - 1/4"= 1'-0"



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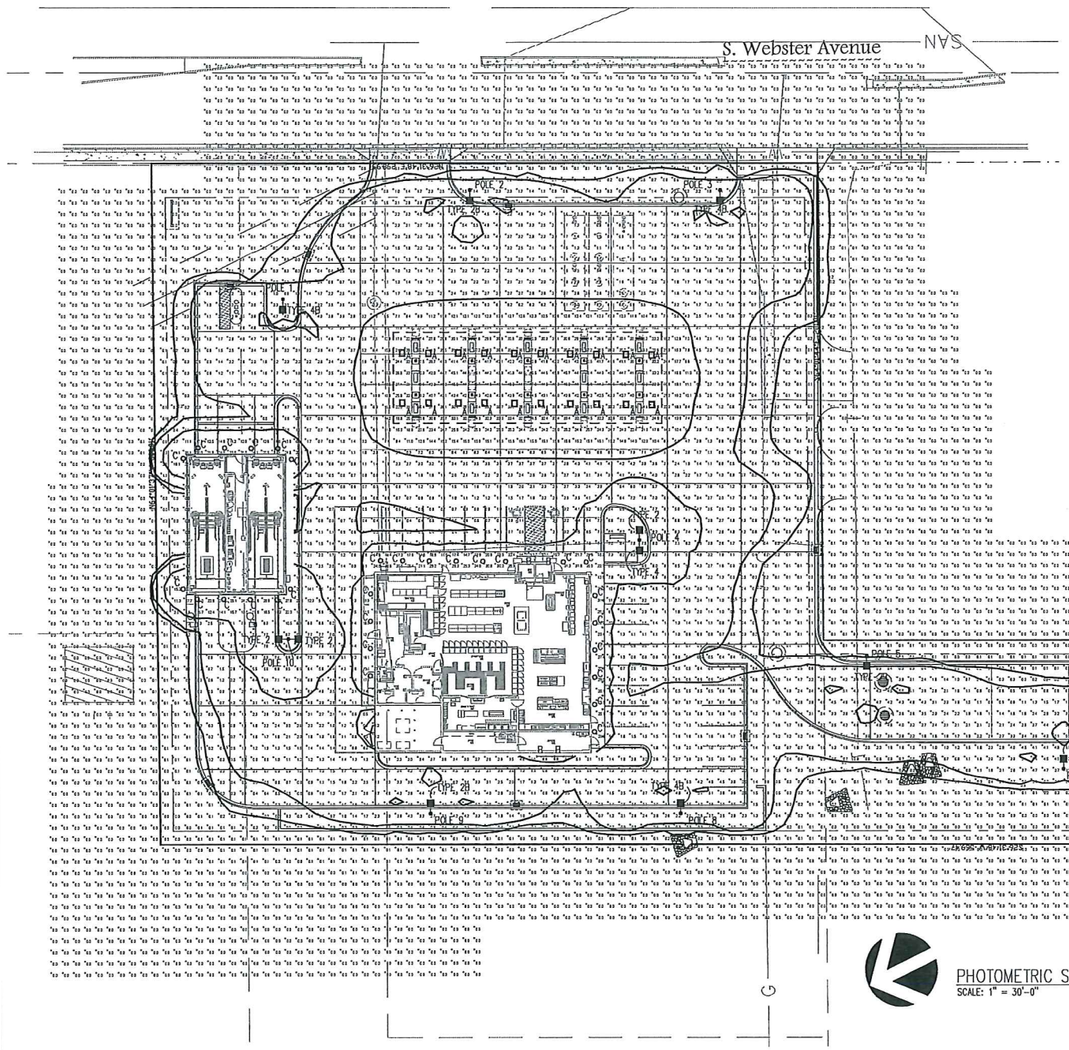
763.383.8400
fax 763.383.8440

SITE PLAN DETAILS
CONVENIENCE STORE 175
- ALLOUEZ WISCONSIN

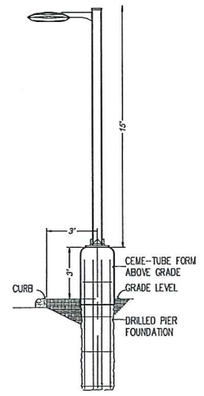
NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY
SCALE GRAPHIC
PROJ. NO. 15175
DATE 09MAR2015
SHEET **SP6**

INSITES 15-011



PHOTOMETRIC SITE PLAN
SCALE: 1" = 30'-0"



LOT LIGHT ELEVATION DETAIL
NOT TO SCALE

FIXTURE QUANTITIES

A – 20
B – 4
C – 30
TYPE 2 – 3
TYPE 2B – 5
TYPE 4 – 1
TYPE 4B – 3

PROVIDE A TOTAL OF (10) 15' POLES.

CALCULATION STATISTICS

AVERAGE: 2.4fc
MAXIMUM: 47.0fc
MINIMUM: 0.0fc

FIXTURE TYPES:

A – CREE LIGHTING: CAN-304-SL-RS-06-E-UL-WH-700
MOUNTING HEIGHT – 16'-0"

B – LED STRIPLIGHT
LITHONIA –ZL1-L96-LB840
MOUNTING HEIGHT: SEE ARCHITECTURAL ELEVATIONS

C – RECESSED LED DOWNLIGHT
GOTHAM EVO-41/29-8AR-120-TRW

TYPE 2 – CREE LIGHTING: ARE-EDG-2M-DA-12-E-UL-WH-350
POLE MOUNTED AT A TOTAL HEIGHT OF 18'-0"

TYPE 2B – CREE LIGHTING: ARE-EDG-2MB-DA-12-E-UL-WH-350
WITH BACKLIGHT SHIELD
POLE MOUNTED AT A TOTAL HEIGHT OF 18'-0"

TYPE 4 – CREE LIGHTING: ARE-EDG-4M-DA-12-E-UL-WH-350
POLE MOUNTED AT A TOTAL HEIGHT OF 18'-0"

TYPE 4B – CREE LIGHTING: ARE-EDG-4MB-DA-12-E-UL-WH-350
WITH BACKLIGHT SHIELD
POLE MOUNTED AT A TOTAL HEIGHT OF 18'-0"

FIXTURE SYMBOLS:

A – RECESSED LED LIGHT MOUNTED UNDER CANOPY
B – LED STRIP LIGHT
C – RECESSED LED DOWNLIGHT
TYPES 2 & 4 – POLE MOUNTED LED FIXTURE

C15017
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PHOTOMETRIC SITE PLAN

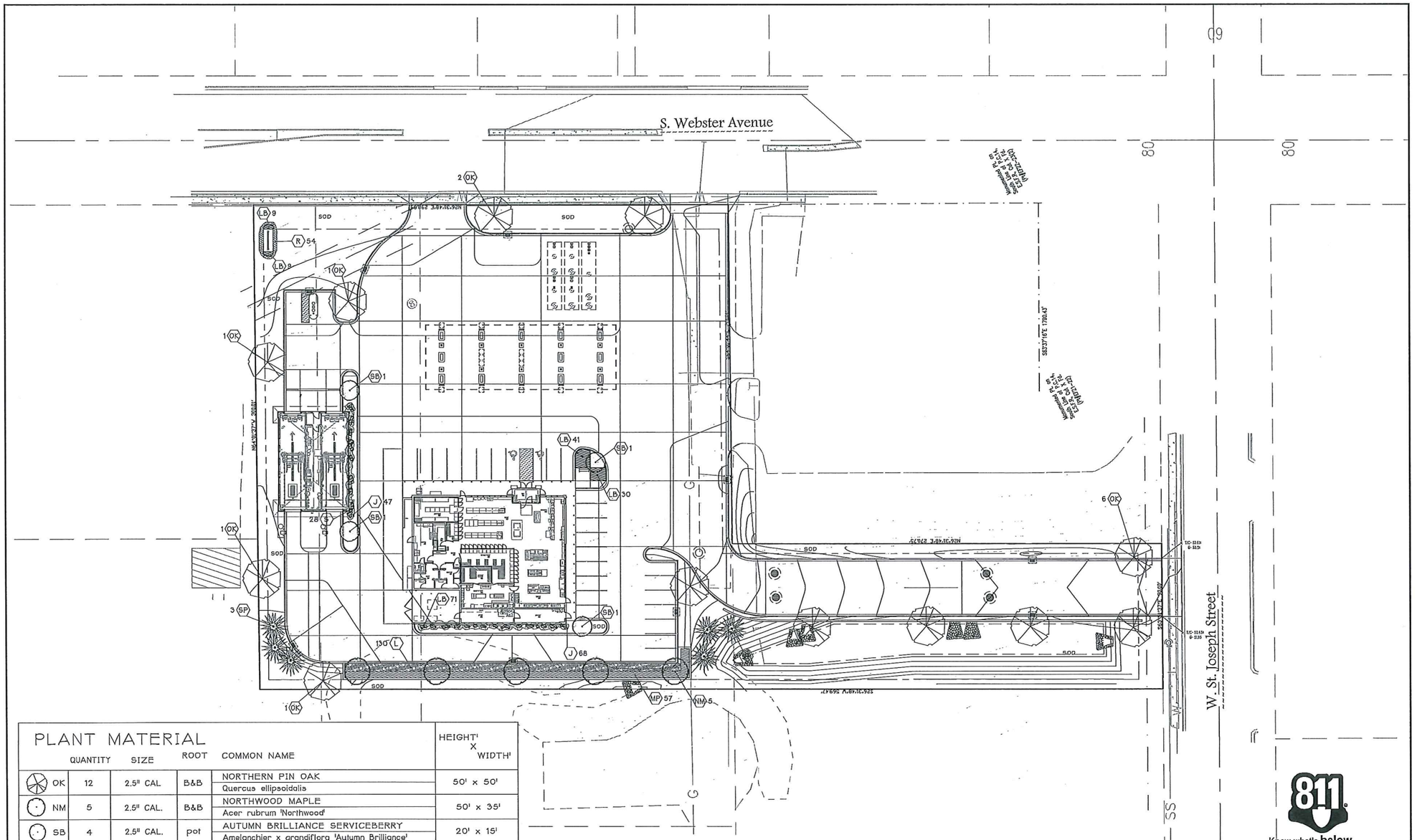
CONVENIENCE STORE 175

- ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

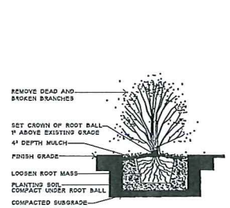
DRAWN BY	CZE
SCALE	GRAPHIC
PROJ. NO.	15175
DATE	09MAR2015
SHEET	E1

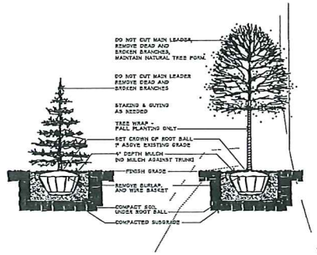
INSITES 15-011



PLANT MATERIAL

	QUANTITY	SIZE	ROOT	COMMON NAME	HEIGHT' X WIDTH'
OK	12	2.5" CAL	B&B	NORTHERN PIN OAK Quercus ellipsoidalis	50' x 50'
NM	5	2.5" CAL.	B&B	NORTHWOOD MAPLE Acer rubrum 'Northwood'	50' x 35'
SB	4	2.5" CAL.	pot	AUTUMN BRILLIANCE SERVICEBERRY Amelanchier x grandiflora 'Autumn Brilliance'	20' x 15'
SP	6	10' HT	B&B	SCOTCH PINE Pinus sylvestris	50' x 35'
MP	57	36" HT.	pot	MUGO TANNENBAUM Pinus mugo 'Tannenbaum'	12' x 6'
R	54	#2 CONT	pot	MARIE BUGNET Rosa 'Marie Bugnet'	3' x 3'
LB	160	#1 CONT	pot	LITTLE BLUE STEM Schizachyrium scoparium	4' x 3'
S	28	18" HT	pot	NEON FLASH SPIREA Spiraea japponica 'Neon Flash'	3' x 4'
J	115	#5 CONT	pot	SCANDIA JUNIPER Juniperus sabina 'Scandia'	20" x 3'
L	130	#2	pot	LAVENDER STARDUST DAYLILY Hemerocallis 'Lavender Stardust'	2' x 3'





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

NORTH
SCALE: 1" = 30'
30 15 0 30 60

PLOTTING NOTE: PLANS PLOTTED TO 11x17 SHEET SIZE ARE ½ SCALE- 1"=60'.

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763.383.8400
fax 763.383.8440

STATE OF WISCONSIN
ROBERT J. MUELLER
LA-278
PLYMOUTH, MN
REGISTERED LANDSCAPE ARCHITECT
09MAR2015

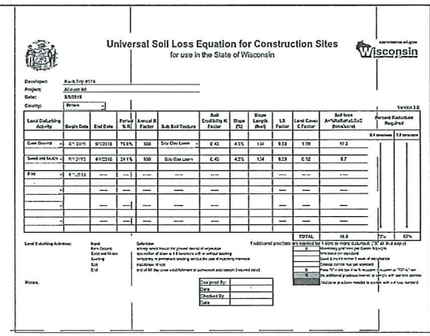
LANDSCAPE PLAN

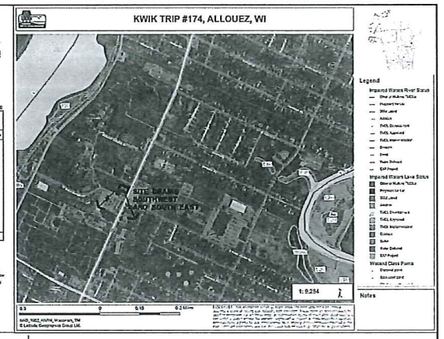
CONVENIENCE STORE 175
- ALLOUEZ WISCONSIN

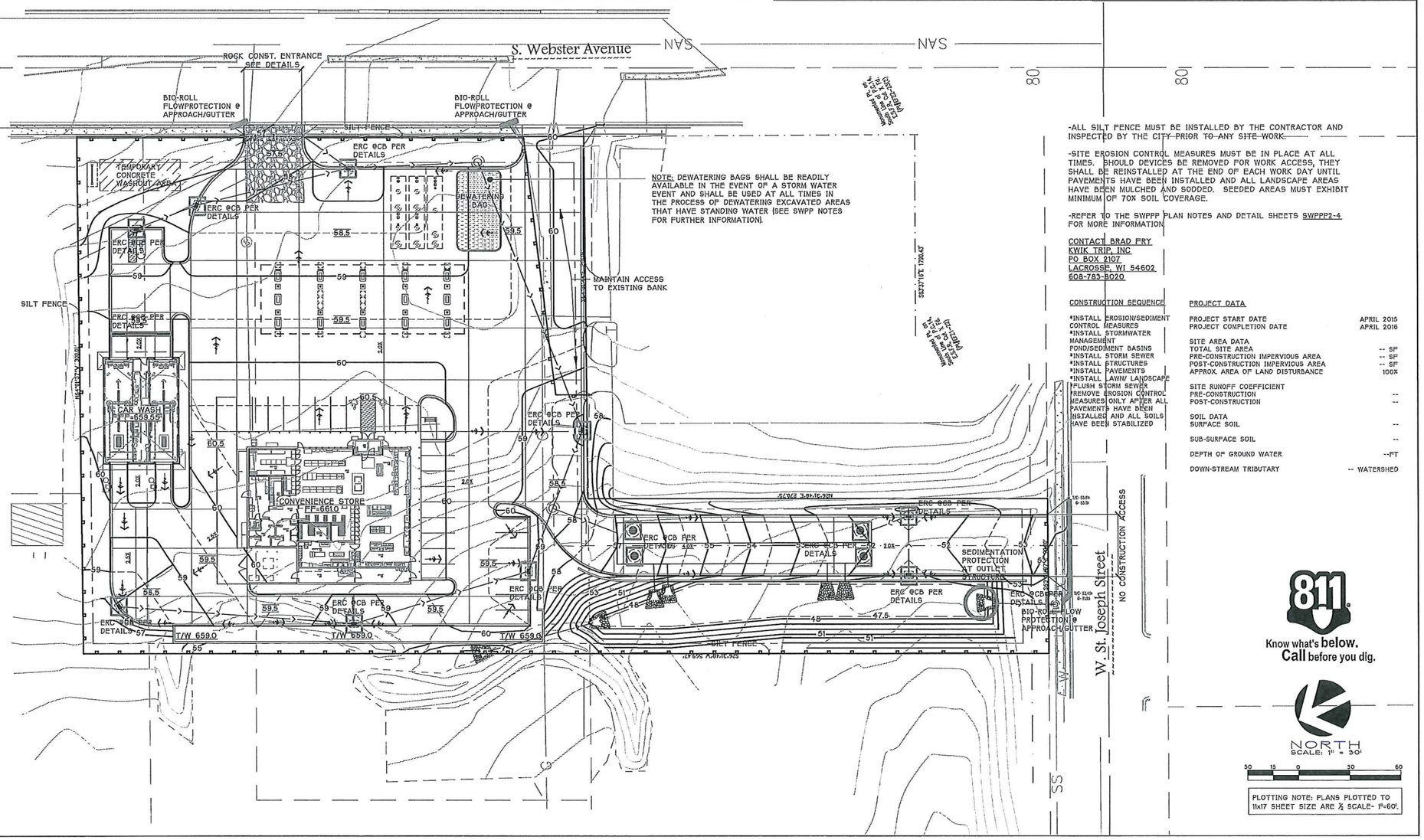
NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY
SCALE GRAPHIC
PROJ. NO. 15175
DATE 09MAR2015
SHEET **L1**

INSITES 15-011







NOTE: DEWATERING BAGS SHALL BE READILY AVAILABLE IN THE EVENT OF A STORM WATER EVENT AND SHALL BE USED AT ALL TIMES IN THE PROCESS OF DEWATERING EXCAVATED AREAS THAT HAVE STANDING WATER (SEE SWPP NOTES FOR FURTHER INFORMATION).

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

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

-REFER TO THE SWPPP PLAN NOTES AND DETAIL SHEETS SWPPP2-4 FOR MORE INFORMATION.

CONTACT BRAD FRY
KWIK TRIP, INC
PO BOX 2107
LACROSSE, WI 54602
608-783-8020

CONSTRUCTION SEQUENCE

- INSTALL EROSION/SEDIMENT CONTROL MEASURES
- INSTALL STORMWATER MANAGEMENT POND/SEDIMENT BASINS
- INSTALL STORM SEWER
- INSTALL STRUCTURES
- INSTALL PAVEMENTS
- INSTALL LAWN LANDSCAPE
- FLUSH STORM SEWER
- REMOVE EROSION CONTROL MEASURES ONLY AFTER ALL PAVEMENTS HAVE BEEN INSTALLED AND ALL SOILS HAVE BEEN STABILIZED

PROJECT DATA

PROJECT START DATE	APRIL 2015
PROJECT COMPLETION DATE	APRIL 2016
SITE AREA DATA	
TOTAL SITE AREA	-- SF
PRE-CONSTRUCTION IMPERVIOUS AREA	-- SF
POST-CONSTRUCTION IMPERVIOUS AREA	-- SF
APPROX. AREA OF LAND DISTURBANCE	100%
SITE RUNOFF COEFFICIENT	
PRE-CONSTRUCTION	--
POST-CONSTRUCTION	--
SOIL DATA	
SURFACE SOIL	--
SUB-SURFACE SOIL	--
DEPTH OF GROUND WATER	--FT
DOWN-STREAM TRIBUTARY	-- WATERSHED

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

NORTH
SCALE: 1" = 30'

30 15 0 30 60

PLOTTING NOTE: PLANS PLOTTED TO 11x17 SHEET SIZE ARE ½ SCALE- 1"=60'.

KWIK TRIP STORES

KWIK STAR STORES

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

INSITES
SITE PLANNING LANDSCAPE ARCHITECTURE
3030 Harbor Lane North, Ste. 131
Plymouth Minnesota 55447
763.383.8400
fax 763.383.8440

STATE OF WISCONSIN
ROBERT J. MUELLER
LA-378
PLYMOUTH, MN
REGISTERED LANDSCAPE ARCHITECT
09MAR2015

EROSION CONTROL PLAN
CONVENIENCE STORE 175
- ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY
SCALE GRAPHIC
PROJ. NO. 15175
DATE 09MAR2015
SHEET SWP1

INSITES 15-011

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, SP3.1 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 SWPP 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 SWPP plan. All notes, photographs, recorded dates, sketches, references, and diagrams will have to be recorded and made available as part of the SWPP 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 entitites 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:

Name:	Brad Fry
Company:	Kwik Trip Inc.
Address:	Kwik Trip, Inc. - Store Engineering 1626 Oak Street, P.O. Box 2107 La Crosse, WI 54601-2107
Telephone:	(608) 783-8020

SITE INVESTIGATION, INSTALLATION, IMPLIMENTATION :

1. 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 SWPP.

2. Install all temporary erosion and sedement control measures including silt fence, rock construction entrance(s), eroson 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/wiers. 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 entrace 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 visably 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 subsceptable to erosion. Schedule construction zones and note this on the SWPP plan 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 eroision.

6. Following initial soil disturbance or redisturbance, 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 minumum 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 dissapate the water energy. Provide pipe outlets with temporary or permanent energy dissipation within 24 hours of connection to a surface water.

7. Receving Waters - It is the contractors responsibility to inspect the site discharge point as well as downstream to the reciving 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:
   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. Solid Waste: 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. Hazardous Materials: 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. Machinery: and mechanicalized 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 on 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 spared on site to supplement and use in problem areas during all phazes 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 perpedicular 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 SWPP.

SEDIMENT CONTROL:

Inlet Sediment Control Protection Devices:
The following are approved Inlet Sediment Control Devices:

a. Road Drain Top Slab Model RD 23 (fits rough opening for 2'x3' inlet), Road Drain Top Slab Model RD 27 (fits rough opening for 27" inlet), or Road Drain Top Slab Model CG 3067 (fits Neenah Casting with 35-1/4"x17-3/4" dimensions) manufactured by WIMCO, 799 Theis Drive, Shakopee, MN, 55379, Phone (952) 233-3055. or approved equal

b. Silt Sack manufactured by ACF ENVIRONMENTAL, 2831 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

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 WIDNR 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 siltfence, 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 siltfence. 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 3inch 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 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 reletated 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.

DEWATERING:

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 separtion 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

1. 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 wtih 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 daily basis 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 SWPP 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 nonbiodegradable 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 catchbasins, ditches, and other drainage facilities as required in order to maintain their effectiveness. Temporary and permonent 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 condiditons allow access.

7. Contractor shall inspect infiltration areas to ensure that no sediment from ongoing construction activities is accumulating. Remove sedement immediately ensuring subsoils are not compaced 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 catchbasins) 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 requied. 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 praire 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 temporarily seeded, use introduced 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 Phoshorus 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 appproved 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 exibit 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 OWENER AND DOCUMENTED AS PART OF THE SWPP

KWIK TRIP STORES

KWIK STAR STORES

KWIK TRIP, Inc.
P.O. BOX 2107
1626 OAK STREET
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INSITES
SITE PLANNING LANDSCAPE ARCHITECTURE
3030 Harbor Lane North, Ste. 131
Plymouth Minnesota 55447
763.383.8400
fax 763.383.8440

STATE OF WISCONSIN REGISTERED LANDSCAPE ARCHITECT
ROBERT J. MUELLER
LA-378
PLYMOUTH, MN
09MAR2015

EROSION CONTROL DETAILS

CONVENIENCE STORE 175

ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

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SCALE	GRAPHIC
PROJ. NO.	15175
DATE	09MAR2015
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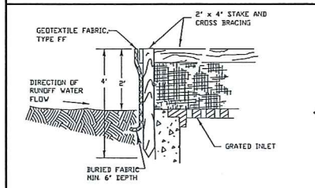
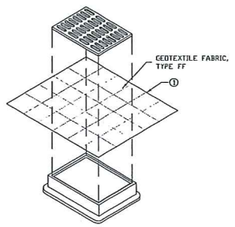
INSITES 15-011

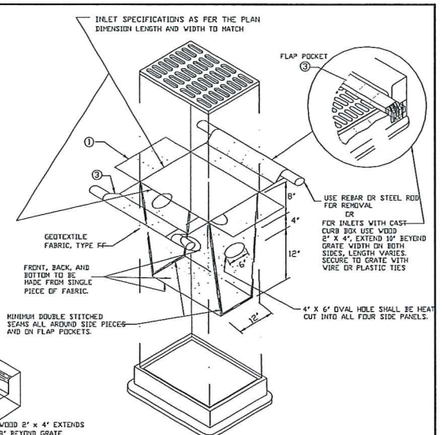
ALL EROSION CONTROL MEASURES TO BE INSTALLED AND MAINTAINED PER WDNR STANDARDS

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

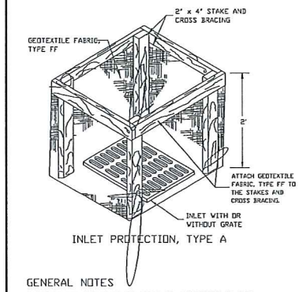




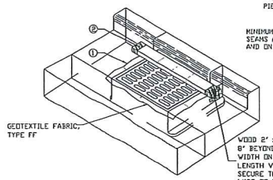
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE D
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ③)



INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE C (WITH CURB BOX)

GENERAL NOTES

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

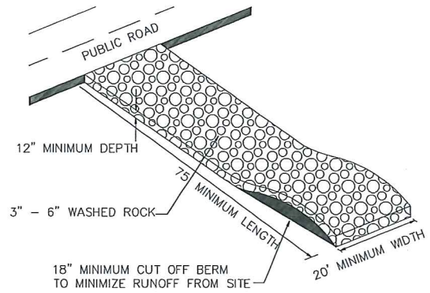
DO NOT INSTALL INLET PROTECTION TYPE B IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

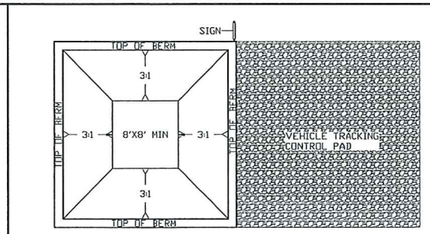
This drawing based on Wisconsin Department of Transportation Standard Detail Drawing 8 E 10-2.

INLET PROTECTION
TYPE A, B, C, AND D

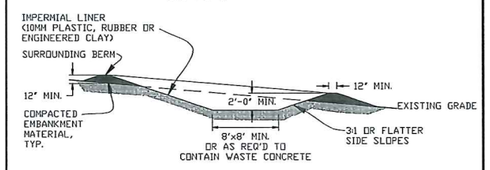


FILTER FABRIC SHALL BE PLACED UNDER ROCK TO STOP MUD MIGRATION THROUGH ROCK.

ROCK CONSTRUCTION ENTRANCE



PLAN
1/8"= 1'-0"



TYPICAL SECTION
1/8"= 1'-0"

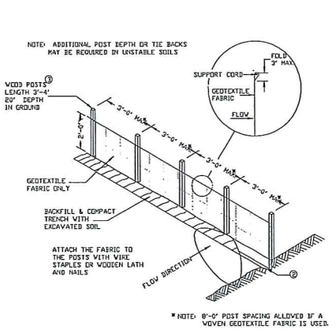
CONCRETE WASHOUT AREA INSTALLATION NOTES

1. 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.
3. 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.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

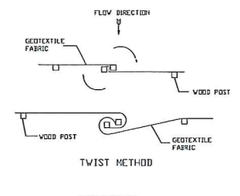
CONCRETE WASHOUT AREA MAINTENANCE NOTES

6. 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 MEASURES.
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.

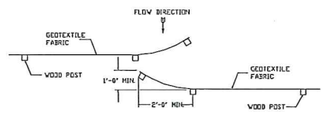
CONCRETE WASHOUT AREA



SILT FENCE

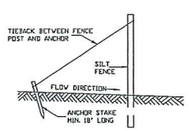


TWIST METHOD

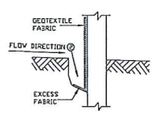


HOOK METHOD ("J"HOOK)

JOINING TWO LENGTHS OF SILT FENCE



SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)



TRENCH DETAIL

GENERAL NOTES

① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

③ WOOD POSTS SHALL BE MINIMUM SIZE OF 1" X 1" OF OAK OR HICKORY.

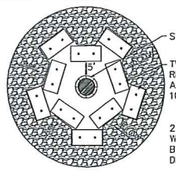
④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

This drawing based on Wisconsin Department of Transportation Standard Detail Drawing 8 E 9-6.

SILT FENCE

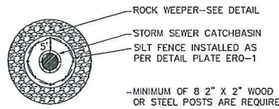
OPTION 1– HAYBALES AROUND BEEHIVE



TWO 2" X 2" WOOD STAKES OR REINFORCING BARS IN EACH BALE AND IMBEDDED IN THE GROUND 10" MINIMUM

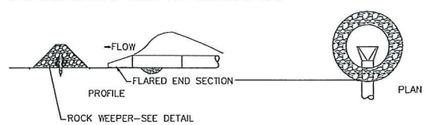
2 ROWS HAY BALES PLACED ON EDGE WITH OVERLAPPING JOINTS. BACK FILL AREA WITH 1 1/2–6" DIA DRAINAGE ROCK.

OPTION 2– SILT FENCE CONTROL AROUND BEEHIVE



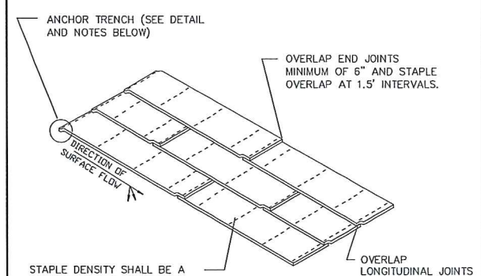
MINIMUM OF 8 2" X 2" WOOD POSTS OR STEEL POSTS ARE REQUIRED

C. ROCK WEEPER PROTECTION AT FLARED END SECTION/OUTLET PIPE–
SEE ROCK WEEPER DETAIL FOR INSTALLATION
DIKE SHALL BE MIN. 6" HIGHER THAN DIAMETER OF PIPE

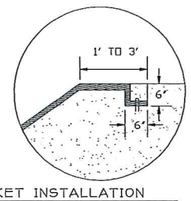


BEE-HIVE CASTING AND FLARED END SECTION
EROSION/SEDIMENT CONTROL

EROSION CONTROL BLANKET(SEEDED AREAS) ON SIDE SLOPES OF 3:1 OR GREATER AND STORM WATER BASINS
BIO-DEGRADABLE, DOUBLE NETTED, LIGHT DUTY(HEAVY DUTY IN DRAINAGE SWALES)
(WisDOT CLASS 1 TYPE B)



ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT
5. BLANKET LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH



EROSION CONTROL BLANKET INSTALLATION

KWIK TRIP STORES

KWIK STAR STORES

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

INSITES
SITE PLANNING LANDSCAPE ARCHITECTURE
9030 Harbor Lane North, Ste. 131
Plymouth Minnesota 55447
763.383.8400
fax 763.383.8440

STATE OF WISCONSIN
ROBERT J. MUELLER
LA-378
PLYMOUTH, MN
REGISTERED LANDSCAPE ARCHITECT
09MAR2015

EROSION CONTROL DETAILS

CONVENIENCE STORE 175

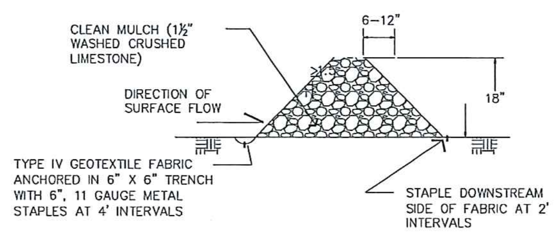
ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

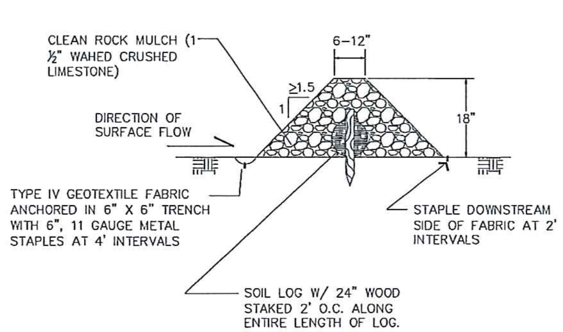
DRAWN BY	
SCALE	GRAPHIC
PROJ. NO.	15175
DATE	09MAR2015
SHEET	SWP3

INSITES 15-011

I. ROCK WEEPER @ MINIMAL WATER FLOWS



II. BIO WEEPER @ CONCETRATED FLOWS



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

Channel Erosion Mat
(1053)

Wisconsin Department of Natural Resources
Conservation Practice Standard

I. Definition

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

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* (*ECRM*[1]) 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 waters.

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.

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.

1. Type A – Only suitable for slope applications, not channel applications.
2. Type B – Double netted product for use in channels where the calculated (design) shear stress is 1.5 lbs/ft² or less.

B. Class II: A long-term duration (three years or greater), organic ECRM.

1. Type A – Jute fiber only for use in channels to reinforce sod.
2. Type B – For use in channels where the calculated (design) shear stress is 2.0 lbs/ft² or less. Made with plastic or biodegradable mat.
3. Type C – A woven mat of 100% organic material for use in channels where the calculated (design) shear stress is 2.0 lbs/ft² or less. Applicable 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.

1. 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.
3. Type C – A TRM for use in channels 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.

D. Installation

1. ECRM shall be installed after all topsoiling, fertilizing, liming, and seeding is complete.
2. Erosion mats shall extend for whichever is greater: upslope one-foot minimum vertically from the ditch bottom or 6 inches higher than the design flow depth.
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.

VI. Considerations

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 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 applicability.

D. Once a gully has formed in a channel, it 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 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.

F. Documentation of materials used, monitoring logs, project diary, and weekly inspection forms including erosion and stormwater management plans, should be provided to the 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 experienced.

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 for an appropriate channel liner. One 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 this method, permissible shear stress values are stated next to each device 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:

1. Location of erosion mat
2. Installation sequence
3. Material specification conforming to standard

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 period.

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.

C. 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 conditions.

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): Turf-reinforcement 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 PAL)

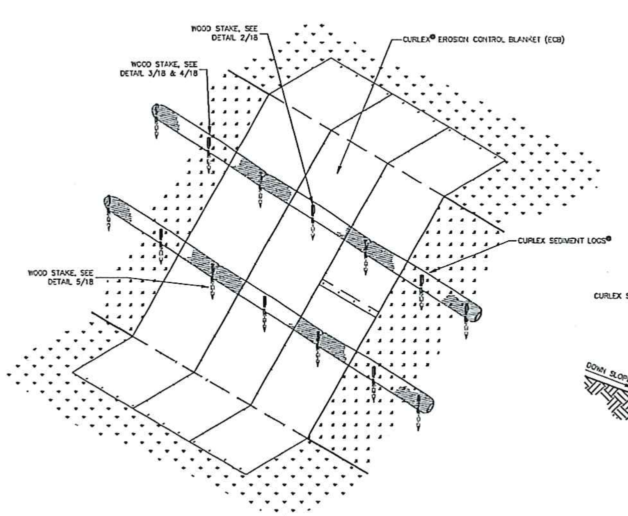
Conservation Practice Standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your local WDNR office or the Standards Oversight Council office in Madison. WDNR, WI 12/04

[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.

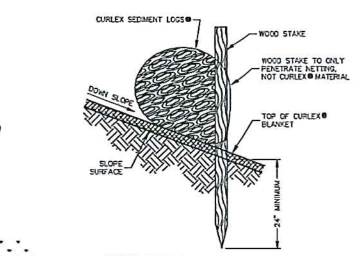
2 WDNR, WI 12/04

WDNR, WI 12/04 3

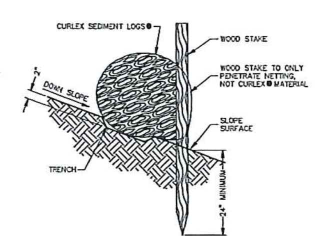
NOTE: SEDIMENT LOGS SHALL BE "CURLEX" BY AMERICAN EXCELSIOR COMPANY www.americanexcelsior.com/erosioncontrol/
OR APPROVED EQUAL



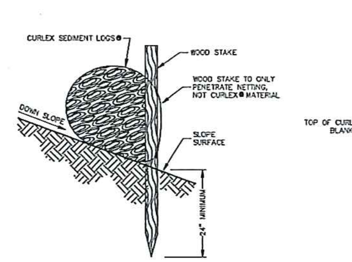
SLOPE DETAIL 1/18
NO SCALE



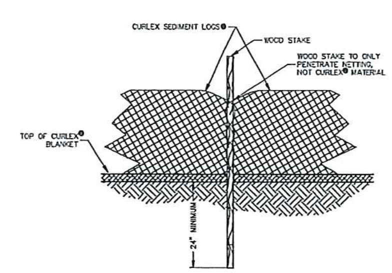
STAKE DETAILS (ON TOP OF CURLEX® ECB) 2/18
NO SCALE



(OPTIONAL TRENCH ON BARE SOIL) 4/18
NO SCALE

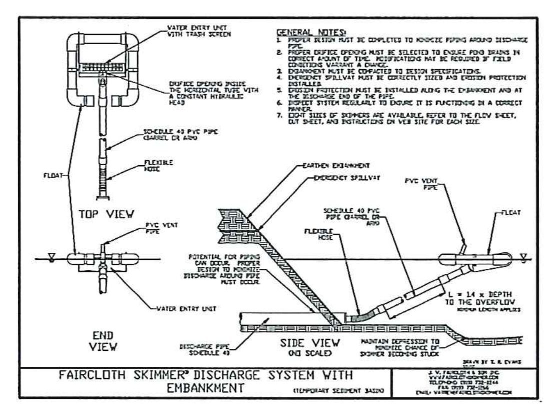


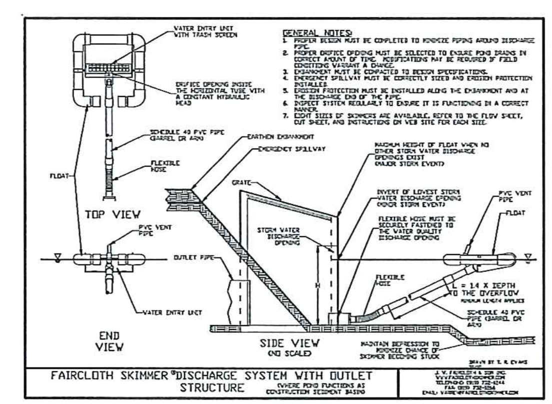
STAKE DETAILS (ON BARE SOIL) 3/18
NO SCALE



STAKE DETAIL (FRONT VIEW) 5/18
NO SCALE

BIO ROLL INSTALLATION ("LOG WEEPERS")
EROSION CONTROL





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

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

KWIK TRIP™ STORES

KWIK STAR™ STORES

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

INSITES
SITE PLANNING LANDSCAPE ARCHITECTURE
3030 Harbor Lane North, Ste. 131
Plymouth Minnesota 55447
763.383.8400
fax 763.383.8440

STATE OF WISCONSIN REGISTERED LANDSCAPE ARCHITECT
ROBERT J. MUELLER
LA-378
PLYMOUTH, MN
09MAR2015

EROSION CONTROL DETAILS

CONVENIENCE STORE 175

ALLOUEZ WISCONSIN

NO.	DATE	DESCRIPTION
-	-	-

DRAWN BY	
SCALE	GRAPHIC
PROJ. NO.	15175
DATE	09MAR2015
SHEET	SWP4

INSITES 15-011