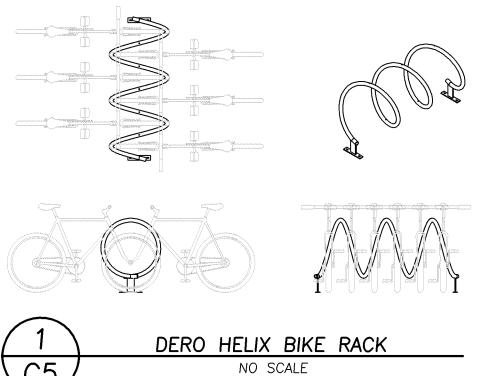


CASE #PL2021-42



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Eagan, MN 55122
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REHDER & ASSOCIATES, INC.

ADDRESS WATERSHED COMMENTS
REVISE OUTLET TO INFILTRATION BASIN 1
PARKING RAMP BUILDING PERMIT
ADDRESS CITY COMMENTS
ADDRESS CITY COMMENTS
FOUNDATION PERMIT
MISC. SITE PLAN REVISIONS

WALSER TOYOTA

PROGRESS PRINT 9-13-22

C5

SHEET NUMBER

GENERAL

- I. GENERAL
- A. Before construction begins, the Contractor will contact all utility companies, both public and private and have them locate all utilities within the construction limits.
- B. The Contractor shall be responsible for arranging all required inspections with the governing authority that has jurisdiction over the work that is to be performed.
- C. The Contractor shall stay within the construction limits unless approved otherwise by the Owner and or Engineer. Construction limits are defined by the property boundary unless shown different on the plan.
- D. The Contractor shall be responsible for protecting all existing structures, utilities, trees, etc. from damage during construction.
- E. The Contractor shall be responsible for correcting any damage (at Contractor's expense). F. Any discrepancies found on the site that affect the proposed work shall be reported to the Owner and/or Engineer before the
- completion of any additional work. G. Soils report and pavement recommendation provided by AET, Inc. AET No. 01—20626R.

SITE CLEARING

- I. GENERAL
- A. Remove trees, shrubs, grass, and other vegetation or obstructions, as required, to permit installation of improvements shown on the Plans.
- II. EXECUTION
- A. Trees and stumps shall be hauled from the site. Burial on—site or burning of trees and stumps will not be allowed.
- B. Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system. C. Topsoil shall be stripped from disturbed areas and stockpiled in piles not exceeding 8—feet in depth.
- D. Remove all back dirt and unsuitable material from under drives and roadways within 3—feet of final pavement subgrade. E. Remove all waste materials and unsuitable or excess topsoil from Owner's property.

GRADING, EROSION CONTROL, AND TURF ESTABLISHMENT

- I. GENERAL
- A. All grading, erosion control and turf establishment shall be according to the materials, workmanship, and other applicable requirements of the Minnesota Department of Transportation "Standard Specifications for Construction", latest edition, unless otherwise specified.
- B. All erosion control measures shown on the plans must be installed prior to commencement of grading operations and maintained until all areas altered on the site have been restored.
- C. All areas disturbed by construction shall be restored with seed and disked mulch, sod, wood fiber blanket, or be hard surfaced within two weeks of substantial completion of construction.
- D. Provide approved borrow soil materials from off-site when sufficient approved soil materials are not available from excavations.
- Remove all excess and unsatisfactory material from the site.
- E. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement,
- undermining, washout, and other hazards created by earthwork operations. F. Compaction shall not be less than the following percentages of maximum dry density according to ASTM D 698:
- i. Under structures, building slabs, steps, and pavements, compact the top 12 inches below subgrade and each layer of backfill or fill material at 100 percent maximum dry density.
- ii. Under walkways, compact the top 6 inches below subgrade and each layer of backfill or fill material at 100 percent maximum dry
- iii. Under lawn or unpaved areas, compact the top 6 inches below subgrade and each layer of backfill or fill material at 95 percent
- maximum dry density. G. Grades as shown on the plan are to finished grade.
- H. Backfill trenches involving utilities under building slabs to be designed by Others (per their requirements).
- II. PRODUCTS A. Satisfactory soils include ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, and SM; free of rock or gravel larger than
- 2—inches in any dimension, debris waste, frozen materials, vegetation and other deleterious matter. B. Unsatisfactory soils include ASTM D 2487 soil classification groups GC, SC, ML, MH, CL, CH, OL, OH, and PT.
- C. All backfill and fill materials must be satisfactory soil materials.
- D. Topsoil shall be per ASTM D 5268, free of stones 1" or larger.
- E. Subbase and base material must be a naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand meeting MNDOT Specifications for Class 5 gravel.
- F. Spring/Summer temporary turf establishment: seed shall be MNDOT Mixture 110 @ 100 lbs/acre and mulch shall be MNDOT Type 1. G. Winter temporary turf establishment: seed shall be MNDOT Mixture 100 @ 100 lbs/acre and mulch shall be MNDOT Type 1. III.EXECUTION
- A. Fill under buildings shall be compacted to meet Soil Engineer's recommendations.
- B. Place a min. 4—inches of topsoil over all areas to be re—established with turf. C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil—bearing water runoff or airborne
- dust to adjacent properties and walkways. D. Place inlet protection devices in catch basins and maintain until all areas disturbed have been restored.
- E. Wherever construction vehicle access routes intersect paved public roads, provisions must be made to minimize the transport of sediment (mud) by runoff or vehicles tracking onto the paved road surface. Where sediment is transported onto a public road surface, the roads shall be cleaned thoroughly at the end of each day. Sediment shall be removed by shoveling or sweeping and be transported to a sediment controlled disposal area. Street washing shall be allowed only after sediment is removed in this

BITUMINOUS PAVEMENT

I. GENERAL

manner.

- A. Provide hot—mix asphalt pavement according to the materials, workmanship, and other applicable requirements of the Minnesota
- Department of Transportation "Standard Specifications for Construction", latest edition, unless otherwise specified B. Conform to applicable standards of authorities having jurisdiction for asphalt paving work on public property.
- II. PRODUCTS A. Use coarse and fine aggregate materials and gradations that have performed satisfactorily in previous installations.
- B. Provide a base and wear course as indicated on the plan unless otherwise specified.
- C. Provide a tack coat as indicated on the plan unless otherwise specified.
- III.EXECUTION
- A. Verify that the subgrade is dry and in suitable condition to support paving and imposed loads.
- B. The Contractor shall furnish a tandem truck loaded with a minimum of 14—tons to check the completed subgrade and/or aggregate base for soft spots prior to placement.
- C. Machine place hot—mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness, when compacted.
- D. Begin compaction as soon as placed hot—mix paving will bear roller weight without excessive displacement. E. Provide an average density of 96 percent of reference laboratory density according to ASTM D 1559, but not less than 94 percent
- nor greater than 100 percent F. Tolerances: Base course thickness shall be plus or minus 0.5—inches and surface course shall be plus or minus 0.25—inches.

PORTLAND CEMENT CONCRETE PAVEMENT

- I. GENERAL
- A. Provide Portland cement concrete pavement for roads, curbs, walks and exterior slabs according to the materials, workmanship, and other applicable requirements of the Minnesota Department of Transportation "Standard Specifications for Construction", latest edition, unless otherwise specified. II. PRODUCTS
- A. Portland cement concrete for curb and gutter and sidewalk shall be 4000 psi, 28—day compressive strength, 5.0% air entrainment, and 3-inch slump.
- B. Provide Grade—60 reinforcing bars and tie bars where indicated.
- C. Curing compound shall be solvent—borne, liquid membrane—forming ASTM C309, Type I or approved equal.
- III. EXECUTION
- A. The Contractor shall furnish a tandem truck loaded with a minimum of 14—tons to check the completed subgrade and/or aggregate base for soft spots prior to pavement placement.
- B. Comply with requirements and with ACI 304R for measuring, mixing, transporting, and placing concrete. C. Comply with the Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for placing and
- supporting reinforcement. D. Preformed expansion joints using 0.5—inch thickness shall be placed at each end of curb radius, at intersections, and
- approximately every 200-feet. E. Contraction joints shall be placed at minimum 10—foot intervals in the curb and gutter and at 5—foot for walks.
- F. Provide a medium to fine broom finish perpendicular to traffic flow.
- G. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures using moisture curing,
- moisture—retaining—cover curing, curing compound or a combination of these.

STORM SEWER

- I. GENERAL
- A. Storm sewer shall comply with all local regulations pertaining to storm sewer systems including materials, installation, and testing. If no regulations exist, comply with "Standard Utilities Specifications" by the City Engineers Association of Minnesota, latest edition. II. PRODUCTS
- A. Storm sewer pipe indicated on the plan as RCP shall be reinforced concrete pipe, ASTM C 76, R-4, Wall B, for gasket joints with
- the following classes: 12"-18" Class 5, 21"- Class 4, 24"-33" Class 3, 36" and larger, Class 2. B. Storm sewer pipe indicated on the plan as PVC shall be polyvinyl chloride pipe, ASTM D 3034, SDR 35, for solvent—cemented or
- C. Storm sewer indicated on the plan as HDPE shall be dual wall corrugated polyethylene pipe with soil tight fittings per the
- Corrugated Polyethylene Pipe Association (CPPA) standard specification 100-97. D. Storm sewer catch basins and manholes shall be precast structures with at least two and at the most five adjusting rings.
- E. Storm sewer castings indicated on the plan shall be from the Neenah Foundry or approved equal.
- F. All flared end sections shall have standard duty trashquards.
- G. Filter Fabric shall be Mirafi 500X or approved equal.
- H. Riprap shall be random and Class II hand placed to a depth of one foot.
- III.EXECUTION
- A. The plans indicate the general location and arrangement of underground storm sewer systems. Location and arrangement of piping take into account many design considerations. Install piping as indicated on the plans, to the extent practical.
- B. Flared ends and the last two sections of storm sewer pipe shall be tied with bolts.
- C. Contractor should verify locations of utility connections at the building the architectural and mechanical plans. D. PVC and HDPE sewer pipe shall be bedded in accordance with ASTM F 2306, "Standard Specification for 12 to 60 in. Annular
- Corrugated Profile—Wall Polyethylene (PE) Pipe and Fittings for Gravity—Flow Storm Sewer and Subsurface Drainage Applications". E. Storm sewer services shall be extended to within 5-feet of the building. Plug ends and mark by installing a $2" \times 2"$ wood board from the plugged end to 4—feet out of the ground.

SANITARY SEWER

- I. GENERAL
- A. Sanitary sewer shall comply with all local regulations pertaining to sanitary sewer systems including materials, installation, and testing. If no regulations exist, comply with "Standard Utilities Specifications" by the City Engineers Association of Minnesota, latest edition.
- II. PRODUCTS
- A. Sanitary sewer pipe indicated on the plan as PVC shall be polyvinyl chloride pipe, ASTM D 3034, SDR 35, for solvent—cemented or
- B. Sanitary sewer manholes shall be precast structures with at least two and at the most five adjusting rings.
- C. Sanitary sewer castings indicated on the plan shall be from the Neenah Foundry or approved equal. III.EXECUTION
- A. The plans indicate the general location and arrangement of underground sanitary sewer systems. Location and arrangement of piping take into account many design considerations. Install piping as indicated on the plans, to the extent practical.
- B. Contractor should verify locations of utility connections at the building the architectural and mechanical plans. C. PVC sewer pipe shall be bedded in accordance with ASTM D 2321, "Recommended Practice for Underground Installation of Flexible
- Thermoplastic Sewer Pipe". D. Sanitary sewer services shall be extended to within 5—feet of the building. Plug ends and mark by installing a 2" x 2" wood
- board from the plugged end to 4 feet out of the ground.

WATER MAIN

- I. GENERAL
- A. Water main shall comply with all local regulations pertaining to water main systems including materials, installation, and testing. If no local regulations exist, comply with "Standard Utilities Specifications" by the City Engineers Association of Minnesota, latest
- II. PRODUCTS
- A. Water main, indicated on the plan as DIP, shall be ductile iron pipe, Class 52, with push on joints and shall provide electrical conductivity across each joint.
- B. All fittings shall be mechanical joint fittings. C. Water service pipe, indicated on the plans as copper, shall be ASTM B 88, Type K copper tube, with copper fittings and soldered
- D. Hydrants and valves shall meet all local and municipality requirements. E. PE encasement for DIP shall be AWWA C105, PE film, 0.008—inch minimum thickness, tube or sheet. III.EXECUTION
- A. The plans indicate the general location and arrangement of underground water main systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated, to the extent practical.
- B. Bury all water main with a depth of cover of at least 7.5—feet or with the top at least 12—inches below frost penetration, which
- ever is greater. C. Water main shall be encased in 8 mil poly.
- D. All bends, stubs, and hydrants shall be rodded to the water main using 0.75—inch tie rods.
- E. Test all installed piping as required by the local water utility.

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