

EXTERIOR CONCRETE STAIR PYNE ARTS SCHOOL

PREPARED FOR:
LOWELL PUBLIC SCHOOLS

DRAWING LIST:

- G-001 COVER SHEET
- C-101 CONSTRUCTION PLAN
- C-701 SPECIFICATIONS
- C-702 SPECIFICATIONS



City of Lowell
Public Schools



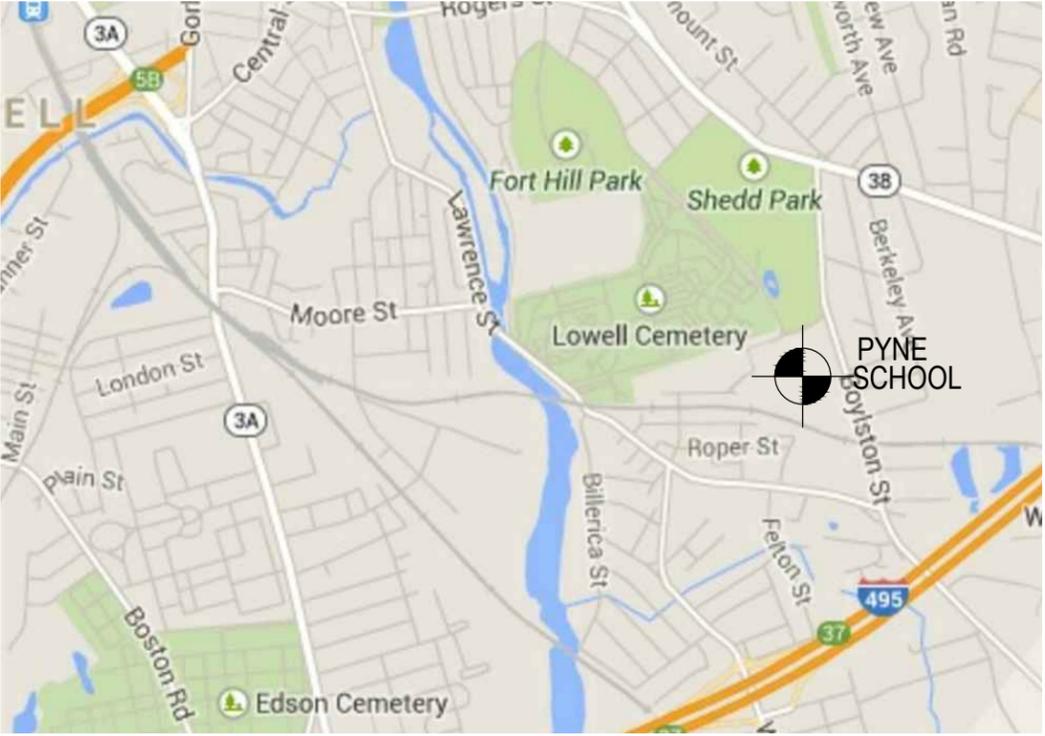
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EXTERIOR CONCRETE
STAIR
PYNE ARTS SCHOOL
LOWELL PUBLIC
SCHOOLS
COVER SHEET

G-001

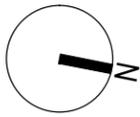
SHEET 1 OF 4



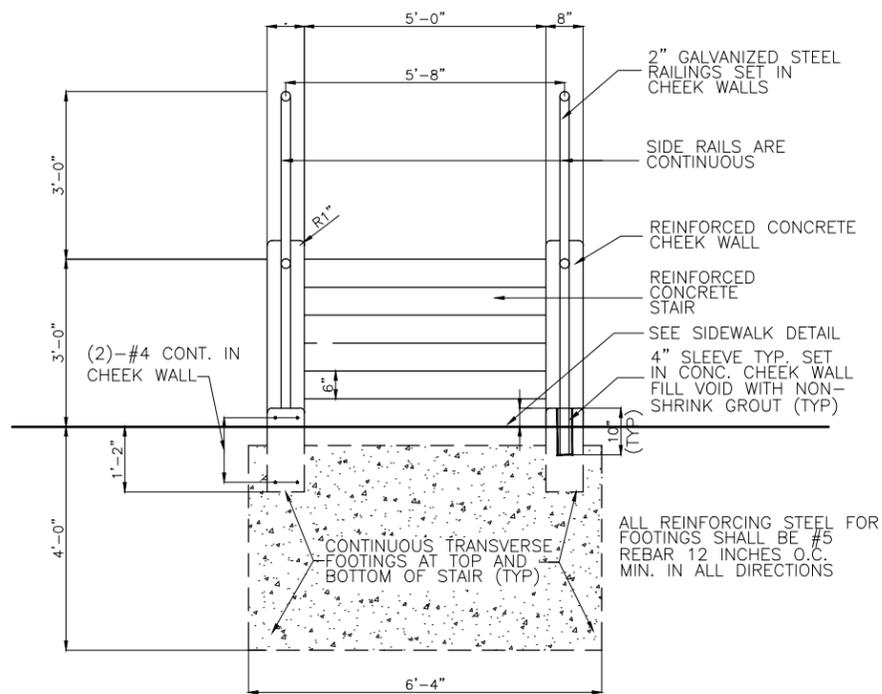
LOCUS MAP



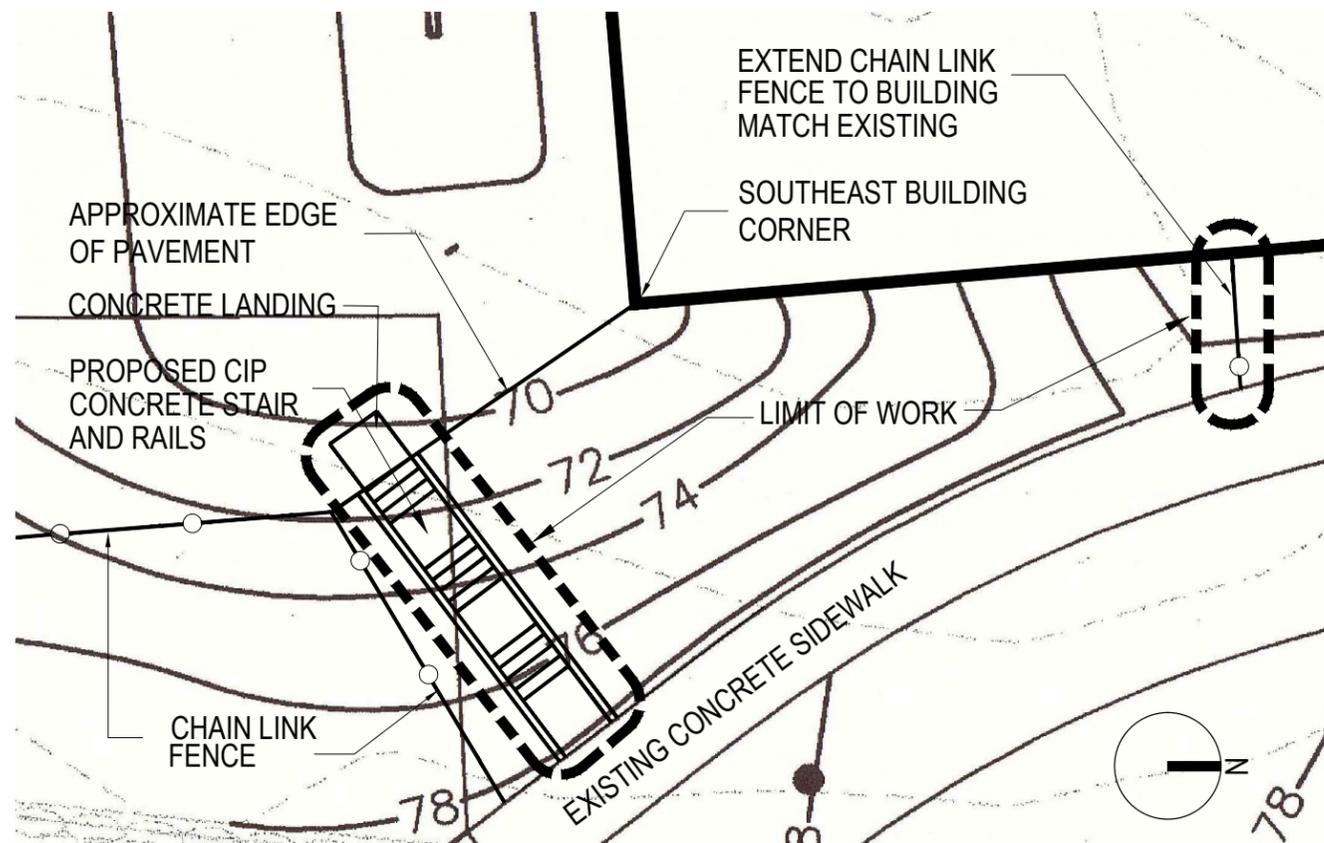
PYNE SCHOOL FRONT ENTRANCE



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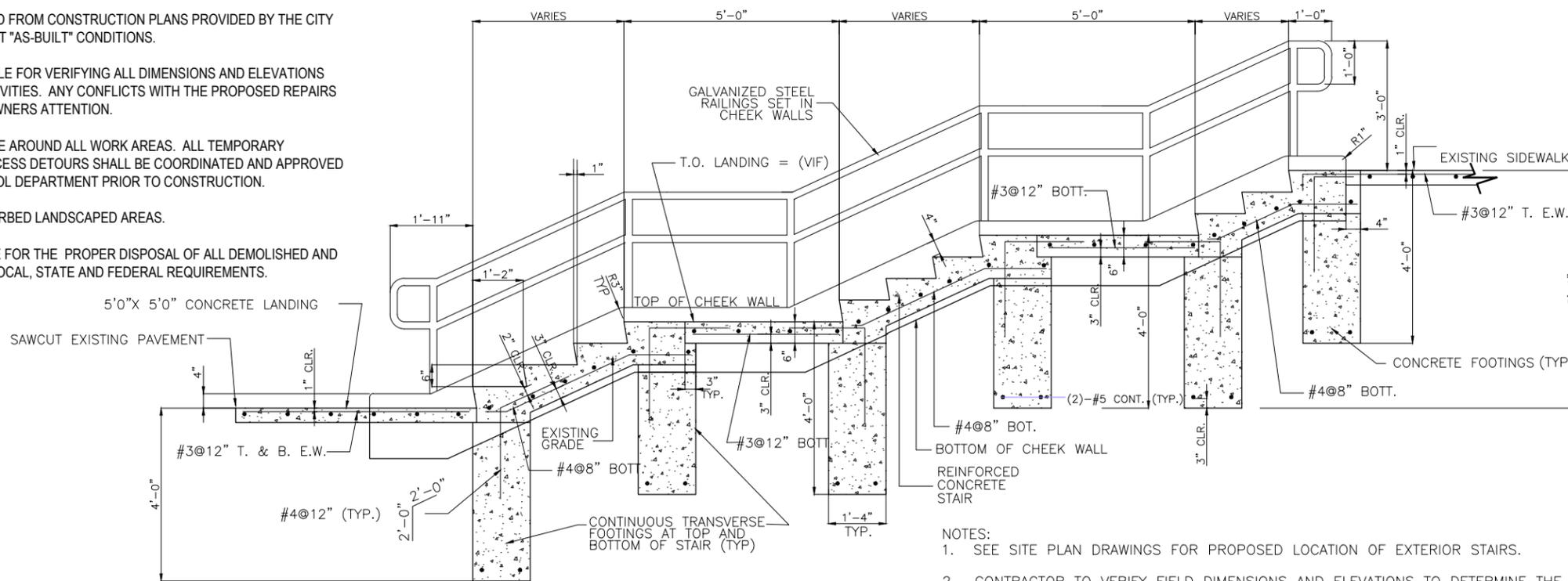


SECTION
NTS



SITE PLAN

- GENERAL NOTES:
1. PLANS HAVE BEEN COMPILED FROM CONSTRUCTION PLANS PROVIDED BY THE CITY OF LOWELL AND DO NOT DEPICT "AS-BUILT" CONDITIONS.
 2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION ACTIVITIES. ANY CONFLICTS WITH THE PROPOSED REPAIRS SHALL BE BROUGHT TO THE OWNERS ATTENTION.
 3. PROVIDE TEMPORARY FENCE AROUND ALL WORK AREAS. ALL TEMPORARY CONSTRUCTION FENCE OR ACCESS DETOURS SHALL BE COORDINATED AND APPROVED BY THE CITY OF LOWELL SCHOOL DEPARTMENT PRIOR TO CONSTRUCTION.
 4. LOAM AND SEED ANY DISTURBED LANDSCAPED AREAS.
 5. CONTRACTOR RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL DEMOLISHED AND UNSUITABLE MATERIALS PER LOCAL, STATE AND FEDERAL REQUIREMENTS.



PROFILE
NTS

- NOTES:
1. SEE SITE PLAN DRAWINGS FOR PROPOSED LOCATION OF EXTERIOR STAIRS.
 2. CONTRACTOR TO VERIFY FIELD DIMENSIONS AND ELEVATIONS TO DETERMINE THE NUMBER OF RISERS REQUIRED TO MEET EXISTING GRADES AT TOP AND BOTTOM.
 3. ALL EXTERIOR CONCRETE STAIRS SHALL HAVE 14 INCH TREADS AND 6 INCH RISERS.
 4. ALL SOIL BEARING SURFACES SHALL BE COMPACTED TO 95% COMPACTION PRIOR TO POURING CONCRETE.



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SCHOOLS
CONSTRUCTION PLAN

C-101

SHEET 2 OF 4

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**SECTION 32 13 13
RIGID PAVING**

PART 1 - GENERAL

1.1 SUMMARY SCOPE

- A. Concrete sidewalks, exterior stairs, handicap ramps, and exterior pads.
- B. Cast in place advanced warning strips and handicap curb ramps.

1.2 REFERENCES

- A. Commonwealth of Massachusetts, Massachusetts Highway Department Standard Specifications for Highways and Bridges latest edition (MHD) Section M4.
- B. American Concrete Institute (ACI)
- C. American Association of State Highway and Transportation Officials (AASHTO)

1.3 SUBMITTALS

- A. Job mix design per MHD M4.03.10.
- B. Slump test per MHD M4.02.06 and M4.03.11.
- C. Test cylinder for specified strengths taken at 28 days per MHD M4.03.13.
- D. Welded Steel Wire Fabric manufacturer's data sheets conforming with MHD M8.01.2.
- E. Reinforcing bar manufacturer's data sheets conforming with MHD M8.01.0.
- F. Concrete Sealer manufacturer's data sheets conforming with MHD M9.15.0.

1.4 QUALITY ASSURANCE

- A. Perform work in accordance with the MHD latest edition Section M4.
- B. Perform work in accordance with the American Concrete Institute (ACI) by reference.
- C. Perform work in accordance with the American Association of State Highway and Transportation Officials (AASHTO) standards by reference.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver material in accordance with MHD M4.02.10.
- B. Store and handle materials in accordance with MHD M4.02.11.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Concrete Materials: As specified in MHD Section M4 for the compressive strengths specified on the drawings or herein.
- B. Forms: in accordance with MHD M4.02.14 B.
- C. Joint Filler: In accordance with MHD M9.14.0 and AASHTO-M153
- D. Reinforcing Steel: In accordance with MHD M8.01.0 and AASHTO-M31, Grade 60.
- E. Welded Steel Wire Fabric: In accordance with MHD M8.01.2 and AASHTO M-55.
- F. Drill Steel Rods: In accordance with MHD M8.02.0.
- G. Cement: In accordance with MHD M4.02.01 as specified on the drawings and herein.
- H. Aggregates: In accordance with MHD M4.02.02, as specified on the drawings and herein.
- I. Water: In accordance with MHD M4.02.04 as specified on the drawings and herein.
- J. Admixtures: In accordance with MHD M4.02.06 D as specified on the drawings and herein.
- K. Concrete Sealer: In conformance with MHD M9.15.0.
- L. Vitrified Polymer Composite (VPC) Cast In Place Advanced Warning Strips by Armor- Tile or equal. Yellow conforming with Federal Color No. 33538.

2.2 MANUFACTURED UNITS (Not Used)

2.3 EQUIPMENT

- A. Batch Plant and Equipment shall be in conformance with MHD M4.02.08.
- B. Mixers and Agitators shall be in conformance with MHD M4.02.09.

2.4 ACCESSORIES (Not Used)

2.5 MIXES

- A. Cement Concrete Additives shall conform to MHD M4.02.05.
 - 1. Compressive Strength at 28 days: 3500 psi
 - 2. Air Entrainment: 5 - 7 percent.
- B. Proportioning shall conform to MHD M4.02.06.
- C. Material Measuring shall conform to MHD M4.02.07.
- D. Cement Mortar shall conform to MHD M4.02.15.
- E. For Cast-In Place Advanced Warning Strips, see manufacturer's recommendations.

2.6 FABRICATION (Not Used)

2.7 FINISHES (Not Used)

2.8 QUALITY CONTROL

- A. Test Specimens shall be obtained in conformance with MHD M4.02.13.

PART 3 - EXECUTION

3.1 INSTALLERS

- A. Installers shall be experienced in the preparation, handling, placement and finishing of concrete products for the uses specified on the construction drawings and herein.

3.2 EXAMINATION

- A. The Contractor shall verify that sub grade conditions conform to the specified material gradation and compaction required for the placement of concrete.
- B. Verify that proper forms, cribbing, reinforcing and expansion joints are in place prior to the placement of concrete.
- C. Verify gradients and elevations of base.
- D. Verify that site temperature and moisture conditions meet the required tolerances for the placement, finishing and curing of the concrete.

3.3 PREPARATION

- A. Protect sub grade materials from adverse weather conditions prior to the placement of concrete.
- B. Provide proper barriers and signage to protect new concrete surfaces for 48 hours after the placement of concrete.
- C. Moisten substrate to minimize absorption of water from fresh concrete.
- D. For Cast-In Place Advanced Warning Strips, see manufacturer's recommendations.

3.4 CONSTRUCTION

- A. FORMING
 - 1. Place and secure forms to correct location, dimension, and profile.
 - 2. Place joint filler in joints, vertical in position, in straight lines. Secure to formwork.
 - 3. Place expansion joints at 20 foot intervals as indicated. Align joints.
 - 4. Place joint filler between paving components and other appurtenances.
 - 5. For Cast In Place Advanced Warning Strips, see manufacturer's recommendations.

REINFORCEMENT

- 1. Place reinforcement at mid_height of slabs_on_grade and sidewalk.
- 2. Interrupt reinforcement at expansion joints.
- 3. Place reinforcement to achieve pavement and curb alignment.
- 4. For Cast In Place Advanced Warning Strips, see manufacturer's recommendations.

C. PLACING CONCRETE

- 1. Place concrete in conformance with MHD Section 701.61.
- 2. Place concrete in accordance with the American Concrete Institute (ACI) 303.1-97: Standard Specification for Cast-in-Place Architectural Concrete
- 3. Do not disturb reinforcement or formwork components during concrete placement.
- 4. Place concrete continuously between predetermined joints. Provide control joints every five feet at a minimum unless otherwise detailed on the plans.
- 5. For Cast-In Place Advanced Warning Strips, see manufacturer's recommendations.

D. FINISHING

- 1. Sidewalk and Concrete Pad Surfaces: Light broom, radiused, and trowel joint edges to match existing concrete adjacent to the construction.
- 2. Protect surface while curing.
- 3. Apply approved sealer per manufacturer's directions.
- 4. For Cast In Place Advanced Warning Strips, see manufacturer's recommendations.

3.5 INTERFACE WITH OTHER WORK

- 1. Protect building, curbing, pavement, retaining walls metal railings, sign posts, equipment, landscaping and other miscellaneous site features from concrete splashes or spills.
- 2. Confirm the accurate placement of sleeves, conduit and anchor bolts prior to the placement of concrete. Coordinate with other trades.

3.6 SEQUENCE OF OPERATIONS

- A. Coordinate and schedule the mixing, transporting and placement of concrete to meet the design specifications when poured.

3.7 SITE TOLERANCES

- A. Confirm that weather conditions and temperatures meet the required tolerances for the placement of concrete according to the MHD and AASHTO specifications.

3.8 REPAIR/RESTORATION (See Section 030130 CONCRETE REPAIR)

3.9 RE-INSTALLATION

- A. Inferior materials and/or workmanship resulting in a finished installation that does not meet the referenced specifications or standard in the industry shall be removed and replaced at the contractors' expense.

3.10 FIELD QUALITY CONTROL

- A. The Contractor shall advise the Owner of the mixing, transporting and placement schedule for all rigid paving 48 hours in advance of the pour.
- B. Test results of sub grade materials receiving concrete shall be provided to the Contractor upon request.

3.11 PROTECTION

- A. Finished surfaces shall be protected from pedestrian and vehicle traffic until adequately cured.

END SECTION

**SECTION 05 50 00
METAL FABRICATION**

PART 1 GENERAL

1.1 SUMMARY SCOPE

- A. Provide miscellaneous metal items fabricated from galvanized steel for stairs.
 - 1. Fabrication and installation shall conform closely with the locations, lines and grades shown on the construction drawings and details.

1.2 REFERENCES

- A. Massachusetts Highway Department Standard Specifications for Highway and Bridges, latest edition (MHD) Section 601 (Highway Guard), Section 660 (Metal Pipe Rail).

1.3 SUBMITTALS

- A. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

1.4 QUALITY ASSURANCE

- A. Finish joints in accordance with NOMMA Guideline 1.

1.5 DELIVERY, STORAGE, AND HANDLING

NOT USED

1.6 WARRANTY

- A. Provide 12 month warranty on materials and workmanship for all handrail installations or adjustments.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Metal Pipe material shall conform to MHD Section 660.40, M8.10.0A, M8.10.0B, M8.10.0C, M8.10.0S, M7.04.07, M8.02.06, and M7.03.02.

2.2 MANUFACTURED UNITS

NOT USED

2.3 EQUIPMENT

NOT USED

2.4 ACCESSORIES

NOT USED

2.5 MIXES

NOT USED

2.6 FABRICATION AND ERECTION

- A. Metal Pipe Rails:
 - 1. Fabrication and erection shall conform to MHD Section 660.60

2.7 FINISHES

- A. Metal Pipe Rail:
 - 1. Coating and Paint shall conform to MHD Section 660.6 and 660.61.

PART 3 EXECUTION

3.1 INSTALLERS

- A. Installers shall be experienced in the preparation, handling, placement, fastening and finishing for the uses specified herein and on the construction drawings.

3.2 EXAMINATION

- A. Verify that vertical, sloped and flat surfaces scheduled for metal rail installation have been installed in a manner consistent with the design. Notify the Engineer twenty four (24) hours prior to handrail installation.

3.3 PREPARATION

- A. Make provisions for erection stresses. Install temporary bracing to maintain alignment, until permanent bracing and attachments are installed.
- B. Provide items required to be cast into concrete or embedded in masonry.
- C. Verify and comply with special preparation required for pedestrian guardrail installation adjacent to retaining walls where vertical grade changes exceed thirty inches.

3.4 CONSTRUCTION

- A. Construction shall conform to MHD Sections 601.60, 601.61, 601.62, 660.60 and 660.61.

3.5 REPAIRS/RESTORATION/RE-INSTALLATION

- A. Existing metal handrails scheduled for repair shall be inspected for compliance with 521 CMR to define the acceptable tolerances for the proposed adjustment.
- B. All new or refurbished connections shall match existing with respect to materials and finishes.
- C. Patch all walls where existing connections have been moved.

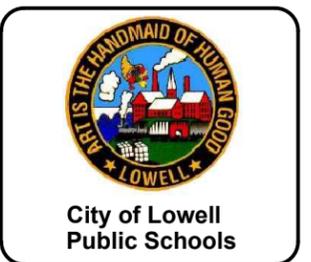
3.6 FIELD QUALITY CONTROL

- A. Welding: Inspect any field welds in accordance with AWS D1.1.

3.7 PROTECTION

- A. Protect all underground structures from damage when setting posts.
- B. Protect all previously completed adjacent work from damage during construction or installation.
- C. Protect landscaping and other above ground site features adjacent to the proposed work.

END OF SECTION



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SPECIFICATIONS**

C-701
SHEET 3 OF 4

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**SECTION 32 91 00
LANDSCAPING**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the work of this Section.
- B. Preparation of soil, placement of plant life, seed, hydroseeding, and fertilizer.

1.2 QUALITY CONTROL

- A. Contractor shall employ locally accepted methods and procedures for the establishment of all landscaped areas.

1.3 WARRANTY

- A. Provide warranty through the spring 2015 growing season for all landscaping work and materials used.

1.4 MAINTENANCE SERVICE

- A. Maintain seeded areas for the duration of the project.

PART 2 PRODUCTS

2.1 GRASS

- A. Seed Mixture:
 - 1. Mixture of rye and Kentucky blue grass approved by the owner.

2.2 GROUND COVER

- A. Cedar Bark Mulch

2.3 SOIL AND SOIL MODIFICATION MATERIALS

- A. Topsoil: Excavated from site and reused if approved by the Engineer. Otherwise use imported material.
- B. Topsoil: Furnish and install 4 inches of fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, free of subsoil, stone greater than 3/8inch, clay or impurities, plants, weeds and roots.
- C. Fertilizer: Dependent on season. Approved by Owner.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify that required underground utilities are in proper location.
- B. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Scarify subsoil to a depth of 3 inches.

3.2 PLACING TOPSOIL

- A. Spread topsoil to a minimum depth of 4 inches. Rake smooth.
- B. Grade topsoil to eliminate rough, low, or soft areas, and to ensure positive drainage.
- C. Place topsoil into planters and beds intended for future planting a minimum thickness of 6 inches.
- D. Apply Owner approved fertilizer in accordance with manufacturer's instructions.

3.3 SEEDING

- A. Apply seed and Hydroseed with a seed slurry at a rate specified by the supplier. Spread evenly in two intersecting directions.
- B. Immediately following seeding, apply agricultural mulch to a thickness of 1/8 inches.
- C. Apply water with a fine spray immediately after each area has been mulched.

3.4 PLANTING

- A. Set plants in pits or beds partly filled with prepared topsoil mixture. Backfill soil mixture.
- B. Saturate soil with water when the pit or bed is half full of top soil and again when full.

3.5 SCHEDULE _ PLANT LIST

- A. There are no plants specified for this project. Damaged plants will be replaced in kind at the contractor's expense.

3.6 MAINTENANCE

- A. Mow grass at regular intervals to maintain maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- B. Water to prevent grass and soil from drying out.
- C. Control growth of weeds.
- D. Establish finish grades and plant grass as soon as possible to stabilize slopes and minimize erosion and dust.

END OF SECTION



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C-702
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