

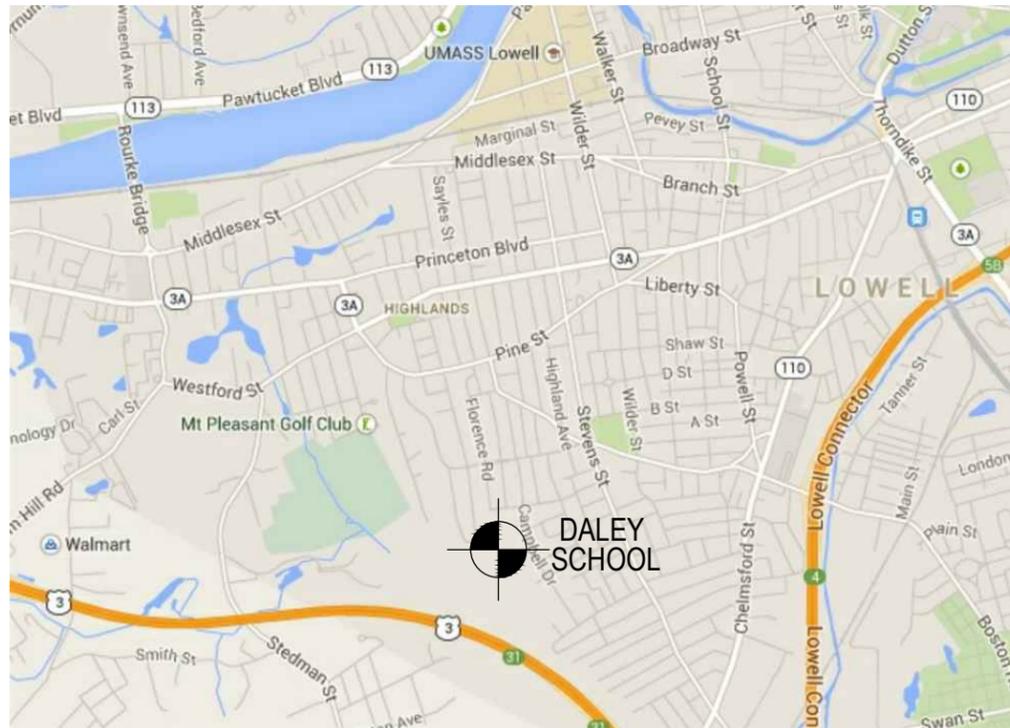
CONCRETE SIDEWALK AND RAMP REPAIRS

DALEY MIDDLE SCHOOL

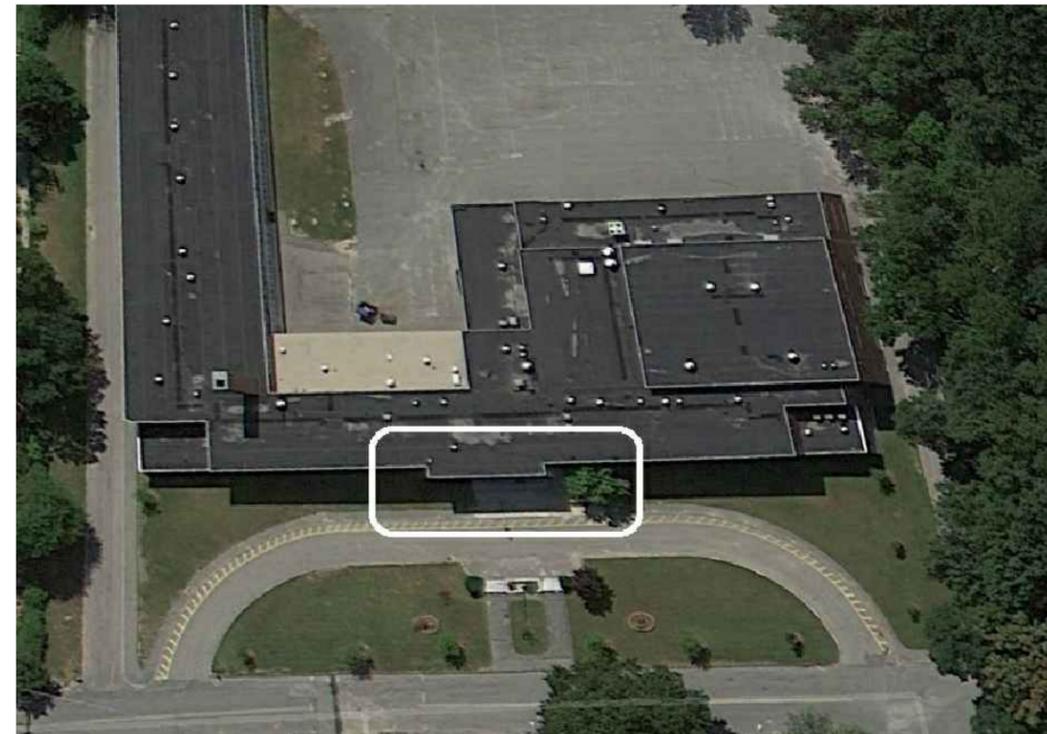
PREPARED FOR:
LOWELL PUBLIC SCHOOLS

DRAWING LIST:

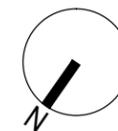
- G-001 COVER SHEET
- C-101 CONSTRUCTION PLAN
- C-501 CONSTRUCTION DETAILS
- C-502 CONSTRUCTION DETAILS
- C-701 SPECIFICATIONS
- C-702 SPECIFICATIONS
- C-703 SPECIFICATIONS



LOCUS PLAN



DALEY SCHOOL FRONT ENTRANCE



City of Lowell
 Public Schools



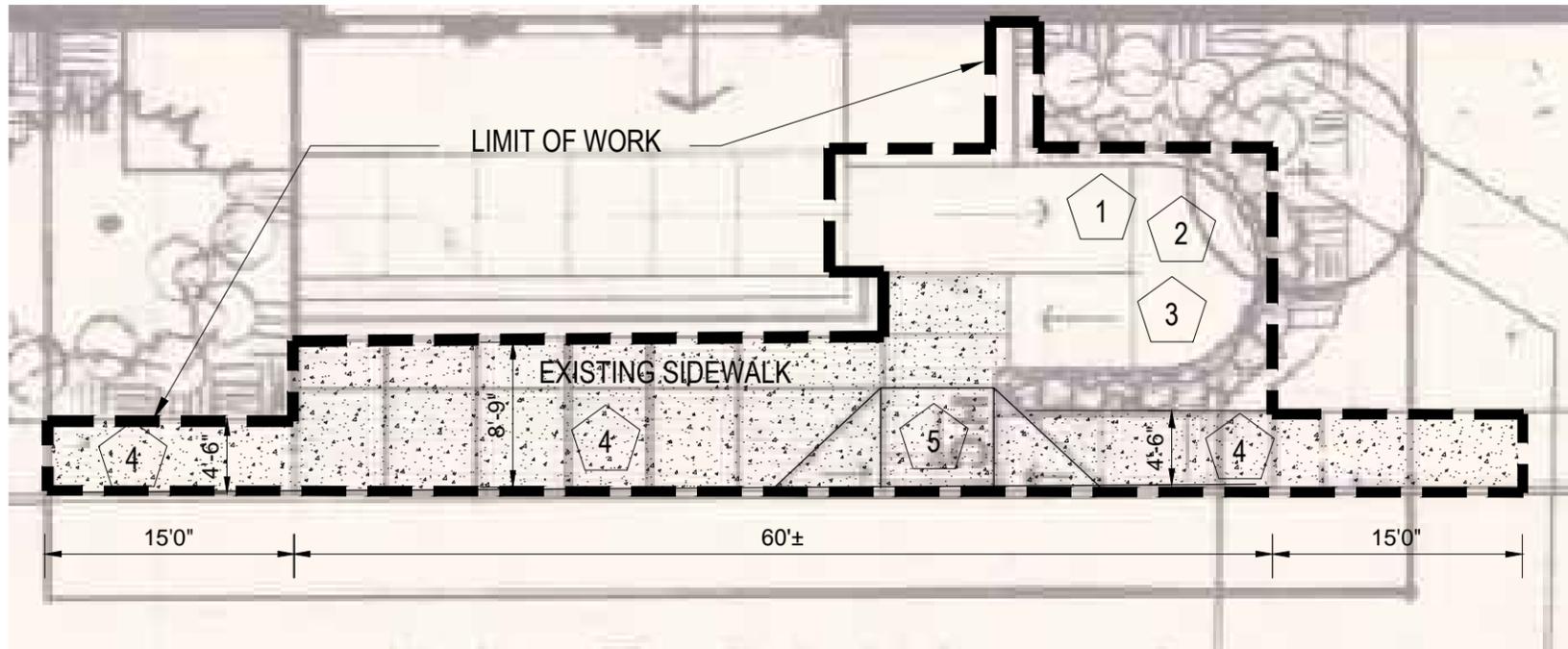
175 Cabot Street • Lowell, MA 01854
 Phone: 978.452.9696 • Fax: 978.453.9988

MARK	DESCRIPTION	DATE	GPF	APPR.
0	ISSUED FOR BIDS	9/3/14		

CONCRETE SIDEWALK
 AND RAMP REPAIRS
 DALEY MIDDLE SCHOOL
 LOWELL PUBLIC
 SCHOOLS
 COVER SHEET

G-001

SHEET 1 OF 7



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 DEMOLITION AND REMOVAL OF ALL UNSUITABLE MATERIALS PER LOCAL STATE AND FEDERAL REQUIREMENTS.



City of Lowell
Public Schools



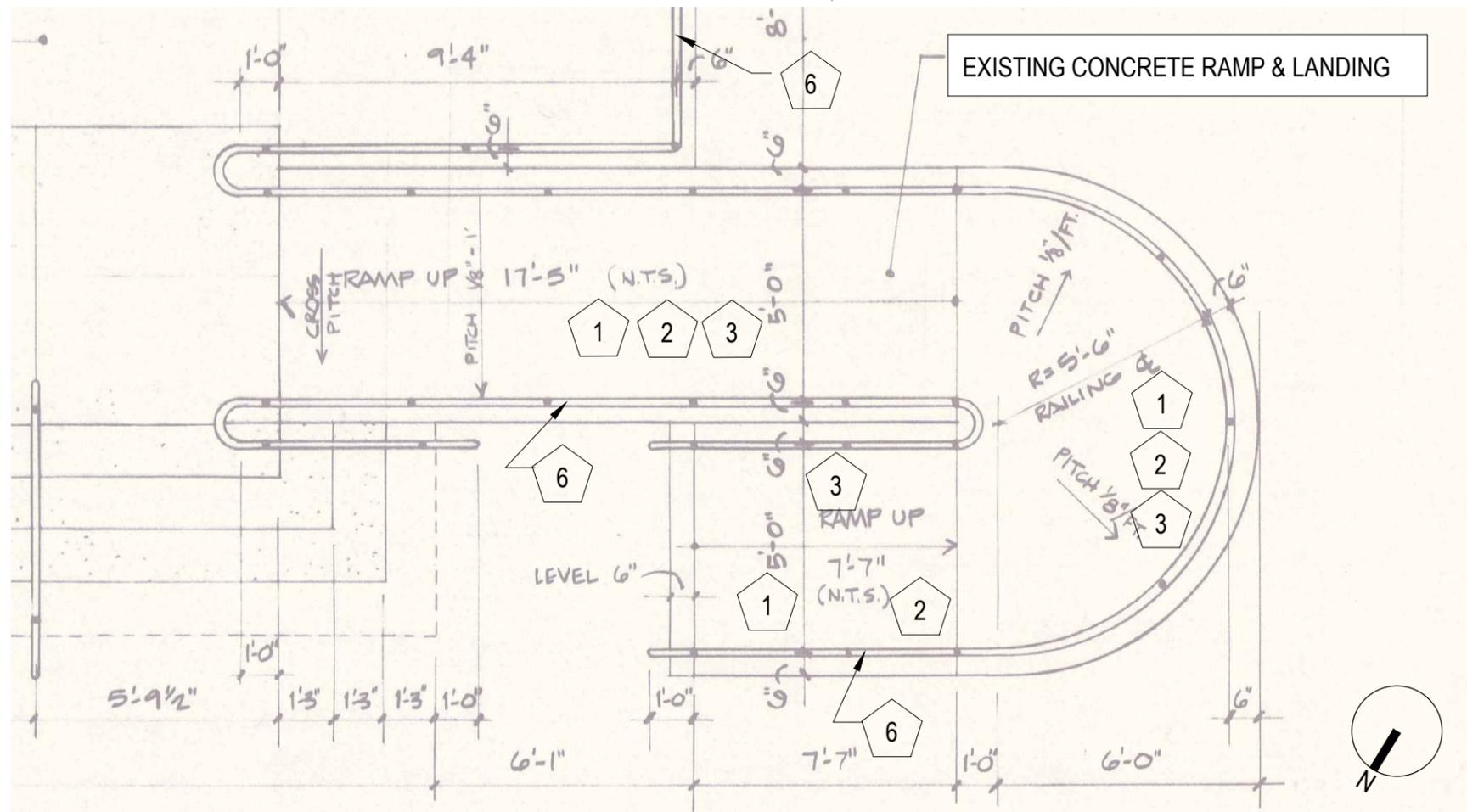
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CONCRETE SIDEWALK
AND RAMP REPAIRS
DALEY MIDDLE SCHOOL
LOWELL PUBLIC
SCHOOLS
CONSTRUCTION PLAN

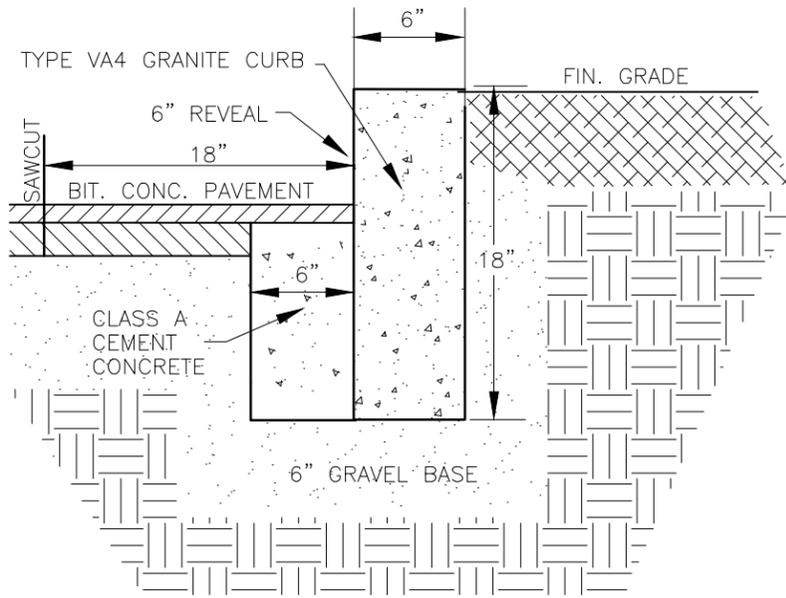
C-101

SHEET 2 OF 7

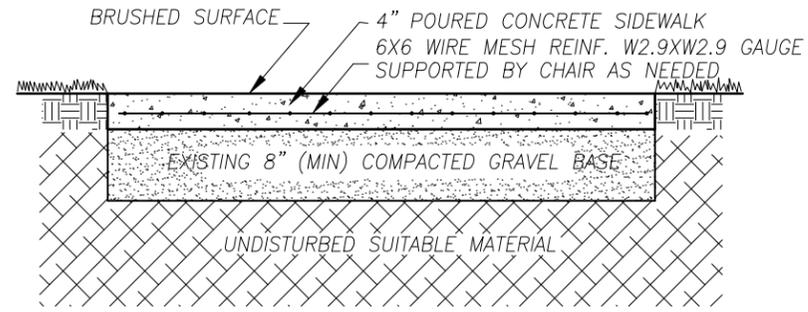


KEYNOTES:

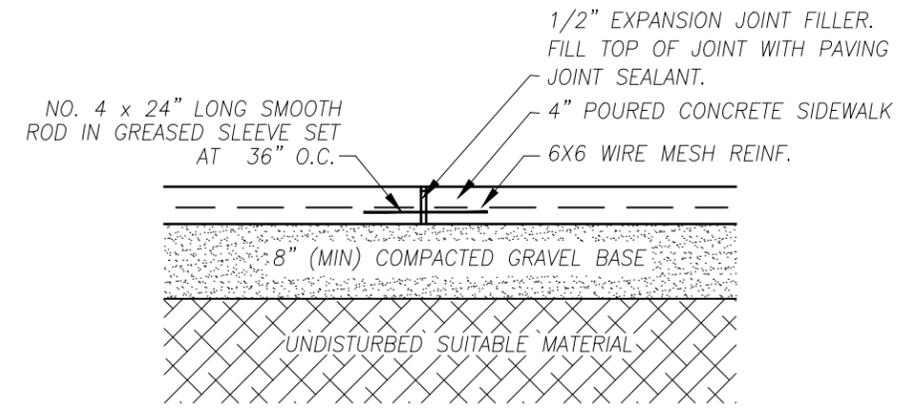
- 1 REMOVE LOOSE CONCRETE AND THOROUGHLY CLEAN TO ACCEPT NEW BONDING AGENT PER CONCRETE REPAIR SPECIFICATION.
- 2 APPLY PATCHES ACCORDING TO THE SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.
- 3 APPLY EPOXY CONCRETE PAINT TO THE ENTIRE RAMP SURFACE.
- 4 REMOVE CONCRETE SIDEWALK AND REPLACE WITH REINFORCED 3500 PSI CONCRETE. BROOM FINISH CONCRETE SURFACE.
- 5 REMOVE AND REPLACE HANDICAP CURB RAMP WITH REINFORCED 3500 PSI CONCRETE TO MATCH EXISTING CONDITIONS.
- 6 SAND, PRIME AND REPAINT RAMP RAIL ACCORDING TO SPECIFICATIONS.



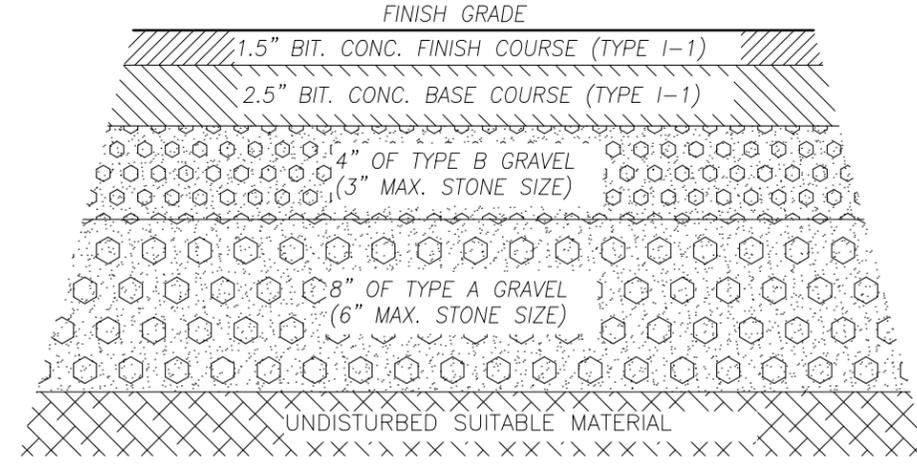
1 GRANITE CURB (NOT USED)
NTS



2 CONCRETE SIDEWALK
NTS



3 CONCRETE EXPANSION JOINT
NTS



4 PAVEMENT DETAIL (NOT USED)
NTS



City of Lowell
Public Schools



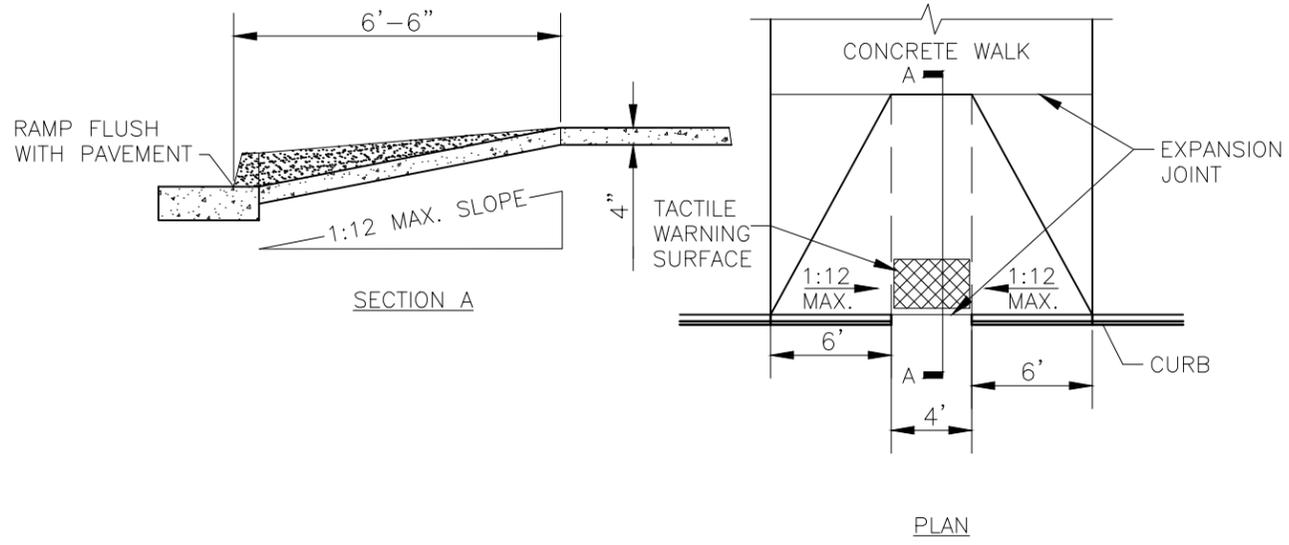
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CONCRETE SIDEWALK
AND RAMP REPAIRS
DALEY MIDDLE SCHOOL
LOWELL PUBLIC
SCHOOLS
CONSTRUCTION DETAILS

C-501

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Plot Date: 9/3/2014 5:37:58 PM File Path: J:\01 Projects\14XXX\14401-05 Lowell Public Schools Concrete Repairs\11.0 Working Files\11.1 Drawings\11.1.1 Sheet Files\DALEY-C-502 DALEY.dwg



5 CURB RAMP
NTS



City of Lowell
Public Schools



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CONCRETE SIDEWALK
AND RAMP REPAIRS
DALEY MIDDLE SCHOOL
LOWELL PUBLIC
SCHOOLS
CONSTRUCTION DETAILS

C-502

**SECTION 03 01 30
CONCRETE REPAIR**

PART 1 - GENERAL

1.1 SUMMARY

- A. This is the recommended specification for structural repairs of concrete and masonry surfaces.

1.2 SECTION INCLUDES

- A. Hydraulic cement-based, polymer-modified, non-sag, vertical and overhead patching mortar

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing cement-based patching and repair mortars.
- B. Applicator Qualifications: Applicator shall have a minimum of three years experience with hydraulic cement-based, patching and repair mortars.
- C. Material Qualifications:
 - Compressive Strength: 6500-psi minimum at 28 days. Must contain integral corrosion inhibitor
 - Shear Bond Strength: 1650-psi minimum at 7 days.
 - Flexural Strength: 1180-psi minimum at 28 days.
- D. Source Limitation: Obtain patching and repair mortar and associated admixtures and/or primers from a single manufacturer. All accessory products must be acceptable to the manufacturer.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. All materials shall be delivered in their unopened packages and protected from exposure to the elements. Recommended storage temperature is below 90 F. Protect powders from moisture. Do not store liquids below 45F. Damaged or deteriorated materials shall be removed from the premises.

1.5 SITE CONDITIONS

- A. Patching mortars shall be cementitious materials. Comply with the general rules of concrete applications. Do not install below 50F surface temperature. Install quickly if substrate is warm and follow hot weather recommendations available from the manufacturer. Only use materials that are compatible and comply with the manufacturer's requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. The hydraulic cement-based, polymer modified, vertical and overhead structural repair mortar shall be Silpro VO Patch™ or equal.
- B. Thickness: Minimum of 1/8" up to 2" per lift
- C. Primer for normal substrates shall be a slurry mixture comprising Silpro C-21 All Acrylic®, or equal, and Portland cement.
- D. Water shall be clean, potable, and sufficiently cool (not warmer than 70F)

2.2 MIX DESIGNS

Mixing Ratio: Follow approved manufacturer's directions. Mechanical mixing is preferred for best results. Use a slow speed drill (500-650 rpm) and a paddle (like that used for joint compound or plaster). Mix less than a half bag at a time. Mix until as smooth uniform consistency is obtained. The patch material should be putty-like.

Note: follow the manufacturer's recommendations for limits of working area, duration of mixing and required curing time.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove spalled and weak concrete and remove all loose and foreign material. Chip substrate by bush hammering or other mechanical means acceptable to the repair mortar manufacturer to obtain a minimum surface profile of 1/8" (greater than or equal to International Concrete Repair Institute (ICRI) Concrete Surface Preparation (CSP) 7). Minimum depth of repair is 1/8". Feather edging is not permitted.
- B. If steel reinforcing is exposed, chip out behind the reinforcing steel. Chip a minimum of 1/2" behind the bar and 3" past the point where the bar is exposed. Concrete behind bars shall be removed enough to allow for the entire circumference of the bar to be cleaned. Remove concrete to the point past where sound material begins.
- C. Exposed steel reinforcement and steel beams shall be free of all rust, scale, oil, paint, grease and all other foreign matter that will prevent bonding with the substrate.

3.2 APPLICATION OF REPAIR MORTAR

- A. Mix the structural repair mortar in accordance with manufacturer's instruction. Follow time limits set by manufacturer to prevent hardening of material prior to placement.
- B. Prior to application of material, thoroughly saturate surface with water. Remove standing water prior to patching.
- C. Apply a scrub coat of Portland cement and manufacturer approved bonding agent. While still damp, apply repair mortar.
- D. Apply material behind and around rebar first to completely fill void.

E. Vertical Repairs-Apply repair mortar on vertical and overhead members with a trowel in accordance with the manufacturer's recommendations. Apply in lifts of up to 2". Follow manufacturer's instructions for curing, priming, and time between layers. Do not leave voids. Trowel exposed surface smooth and to same shape and finish as the adjacent existing surface.

F. Horizontal Repairs- Trowel repair mortar into hole until it is to the same level and the same pitch as the surrounding slab. Provide finish as follows:

- 1. Surfaces to receive floor coverings such as resilient flooring, thin-set terrazzo, carpeting, wood floors, or surfaces which are intended as walking surfaces such as exposed or painted: Steel trowel surface to a smooth plane finish, free of score marks, grooves, depressions, and ripples with a tolerance no greater than 1/8" in ten feet.

3.3 CURING

A. Ordinary Conditions-Beginning as soon as the patch has set, keep surface continuously moist for 5 days using burlap, fine mist, or equivalent. If damp curing for 5 days is not possible, damp cure for 3 hours, then coat with an approved water-based curing compound or manufacturer approved bonding agent.

- B. Adverse Conditions-If you have hot weather and rapid drying conditions including one or more of the following:
 - 1. The temperature of the air, the surface being worked on, or the material being used is above 90F.
 - 2. The air is flowing frequently or continuously at greater than 5mph
 - 3. The relative humidity is low.

Then, store materials where they will remain cool. Use cool water for mixing and add ice to the mixing water if necessary. Immediately after the application (as soon as the patch feels warm to the touch, looks dry, and feels hard), saturate the surface with clean, potable water being careful not to erode the surface with water pressure.

Apply water until it runs down the whole face (for vertical surfaces) or until freshly sprayed surfaces continue to look and feel wet for 2 minutes (for overhead surfaces). Continue this curing for at least 3 hours.

3.4 PROTECTION AND CLEANING

- A. Clean all adjacent areas of excess materials and clean all floors and walls of powder and droppings. Remove misplaced materials from surfaces immediately.
- B. Protect material from freezing and from rainfall prior to final set.

END OF SECTION

**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.

- A. Proportioning shall conform to MHD M4.02.06.
- B. Material Measuring shall conform to MHD M4.02.07.
- C. Cement Mortar shall conform to MHD M4.02.15.
- D. 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.
- B. 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



**City of Lowell
Public Schools**



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**CONCRETE SIDEWALK
AND RAMP REPAIRS
DALEY MIDDLE SCHOOL
LOWELL PUBLIC
SCHOOLS
SPECIFICATION**

C-701

SHEET 5 OF 7

07 18 00
TRAFFIC COATINGS
(PEDESTRIAN TRAFFIC MEMBRANE)

PART 1-GENERAL

1.1 SYSTEM DESCRIPTION

A. The Pedestrian Traffic Membrane shall be acrylic deck coating system specifically designed to provide a waterproof surface for exterior and interior pedestrian traffic areas, such as walking decks, balconies, stairways and mechanical rooms.

1.2 SCOPE

- A. Work Included
 1. Preparation of substrate.
 2. Preparation of cracks, joints and metal flashing.
 3. Application of the Excel-Coat Pedestrian Membrane System.
- B. Related Work Specified Elsewhere
 1. Concrete
 2. Concrete Repair

1.3 QUALITY ASSURANCE

A. The waterproofing materials that compose the Pedestrian Traffic Membrane System shall be as manufactured and furnished by Excellent Coatings International, or approved equal. All component materials are tested and evaluated by an independent testing agency (U. S. Testing Company).

1.4 SUBMITTALS

- A. Samples: The Contractor must provide a sample of coating system and color chart from the manufacturer.
- B. Product Data: Provide manufacturer's written data sheet, detail drawings, maintenance instructions and cleaning instructions.

1.5 DELIVERY, STORAGE & HANDLING

- A. Delivery: Materials shall be delivered to the job site in sealed, undamaged containers. Each container shall be clearly marked with manufacturer's label showing type of material, expiration date, color and batch number.
- B. Storage: Store all coating materials in a cool dry place with a temperature range of 55°F to 90° F.
- C. Handling: Handle all products carefully to avoid damage to the containers. Read all labels and Material Safety Data Sheets prior to use.

1.6 PROJECT JOBSITE CONDITIONS

- A. Before any work is started, the Contractor shall inspect all surfaces for any deficiencies. Should any deficiencies exist, the Architect, Owner or General Contractor shall be notified in writing and any corrections necessary shall be made.
- B. No coating shall be applied during inclement weather or when the temperature falls below 55° F or rises above 95° F.

1.7 WARRANTY

A. A warranty package for the manufacturer of the Pedestrian Traffic Membrane System shall be provided in the Project Closeout Documents. Once all inspections (before, during and after the installation) have been completed, the Contractor will issue a written warranty and maintenance program. The manufacturer's warranty will be contingent upon the Owner's adherence to the maintenance program. This warranty covers the product performance of the waterproof deck coating only. Liability for damage to property, buildings and their contents, or to any third party is specifically excluded.

PART 2 - PRODUCTS

2.1 MATERIALS FOR THE SYSTEM

- A. Pedestrian Traffic Membrane System shall include:
 1. Primer
 2. Fiberglass random chop, fiberglass mat
 3. Base Coat
 4. Texture Coat and Tinted Additive
 5. Retarder (as needed)
 6. Top Coat
- B. Related Materials
 1. Crack repair: Epoxy Crack Repair Material
 2. Sealant: Urethane based, as approved by manufacturer

2.2 MATERIAL PERFORMANCE CRITERIA

1. Tensile Strength 2855 psi ASTM D - 2707 Impact Test No Cracking ASTM D - 3320 Fire Retardant Roofing ASTM E - 108-87 Noncombustible Class A Abrasion Resistance ASTM D - 1242 Volume Loss 25 cm Thickness Loss 2 mils. Water Transmission 22.6/MX 24 HRS ASTM E - 1242

PART 3 - EXECUTION

3.1 INSPECTION

- A. Concrete
 1. General
 - a. Concrete surface shall be free of excess roughness, voids, protrusions, loose particles, dust, debris or anything that would impair the adhesion of the Pedestrian Traffic Membrane System.
 - b. Concrete surface must be free from curing agents, bondbreakers, hardeners, oils, grease or foreign matter that may affect the adhesion of the Pedestrian Traffic Membrane System.
 - c. Concrete substrate shall be designed and constructed as to freely drain and eliminate the ponding of water. Slope: 1/4" per foot.

- B. New Concrete
 1. Curing of concrete shall be by means of water cure or dissipating compounds. Concrete shall be cured a minimum of 28 days prior to installation of membrane.
 2. Concrete shall be finished with a light steel trowel and a medium broom.
 3. Concrete moisture content shall not exceed 10%. Moisture Vapor Transmission shall not exceed 5 lbs. per square ft. per 24 hours.

- C. Old Concrete
 1. The following are effective means of cleaning and preparing old concrete prior to the application of the Pedestrian Traffic Membrane System.
 2. Surface Grinding: A heavy duty, industrial grinder may be used to cleanse and abrade the concrete when the surface is dry. Loose particles and dust must then be removed by vacuum or blower.
 3. Shot Blasting and Sand Blasting:
 4. These are both effective means of cleaning concrete surfaces. Before coating, area must be free from dust or any loose particles.
 5. Acid Etching: A solution of commercial muriatic acid and water (3 parts water: 1 part muriatic acid) is also a satisfactory method of cleaning concrete. Pour solution over concrete surface and agitate with a firm bristle broom or brush. The solution will react with the concrete causing it to bubble. Once the bubbling has stopped, power wash the deck with water to rinse away residual salts and contaminants. To ensure complete neutralization of the concrete surface, the deck may be brushed with alkali solution (1% ammonia in water) and then rinsed.
 6. Commercial Detergents: Commercial detergents, such as Prosoco 2010 All-Purpose Cleaner, or equal, will work well to clean light grease and grime, but these products are not recommended for heavy contamination.

- D. Concrete Patching
 1. Repairs to old or new concrete may be necessary to correct minor imperfections in the surface (i.e., low spots, holes, ridges and projections).
 2. All repair areas shall be cleaned as described above, then filled with patching compound as specified in the CONCRETE REPAIR SECTION.
 3. Patching Compound shall cure for the time specified by the manufacturer.
 4. Expansion Joints & Cracks
 5. Expansion joints shall be cleaned thoroughly and sealed with urethane sealant.
 6. Cracks over 1/16" shall be routed, primed and filled using an epoxy crack repair material.

- E. Metal Railings
 1. Metal rails must be clean and dry, free from grease, oils, dirt and debris prior to application.

- F. Installation

Read the manufacturer's directions prior to application process.

 1. Apply Primer per manufacturer's recommendations (concrete surfaces only). Allow to become tacky.
 2. Cover surface with fiberglass mat and saturate mat with Base Coat per the manufacturer's recommendations. Allow material to dry approximately 6-8 hours. Dry times may vary.
 3. Water test: Water test the deck to ensure water slopes to drain.
 4. Apply skid resistant Texture Coat and Tinted Additive at a rate recommended by the manufacturer. Allow material to dry approximately 6-8 hours. Dry times may vary.
 5. Apply two thin coats of Excel-Coat #300 by roller or airless sprayer at the rate of 250 sq. ft. per gallon per coat, for a net yield of 125 sq. ft. per gallon total coverage. Allow material to dry approximately 6-8 hours. Dry times may vary.
 6. Allow completed system to cure 24 hours before heavy foot traffic is permitted and an additional 72 hours before heavy objects are placed on the surface.

- 3.2 CLEAN UP
 - A. Clean area and remove all debris upon completion of work. Dispose of empty containers properly according to current Local, State and Federal regulations.

END SECTION
SECTION 09 90 00
PAINTING AND COATING

PART 1 GENERAL

- 1.1 SCOPE
 - A. Section includes surface preparation and field application of paints, stains, varnishes, and other coatings.

- 1.2 SUBMITTALS
 - A. Product Data: Submit data on finishing products.
 - B. Submit Material Safety Data Sheets (MSDS) for all materials to be kept on site by construction superintendent.

- 1.3 QUALITY ASSURANCE
 - A. Regulatory Requirements: Conform to regulatory restrictions of certain types or categories of paint materials and VOC regulatory requirements. All materials and applications must comply with 310 CMR 7.25.

- 1.4 ENVIRONMENTAL REQUIREMENTS
 - A. Store, apply, and dispose of materials in environmental conditions required by manufacturer's instructions.
 - B. Do not dispose of any materials in building drains.
 - C. Provide adequate ventilation as recommended by manufacturer and required by regulation.

PART 2 PRODUCTS

- 2.1 PAINTS AND COATINGS
 - A. Manufacturers:
 1. PPG Architectural Finishes.
 2. Benjamin Moore.
 3. Sherwin Williams.
 4. Or approved equal.

- 2.2 COMPONENTS
 - A. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials required to achieve finishes specified.

PART 3 EXECUTION

- 3.1 EXAMINATION
 - A. Examine the entire surface scheduled for priming and painting and confirm that the surface is ready to receive Work.
 - B. Measure moisture content of porous surfaces using electronic moisture meter. Do not apply finishes unless moisture content is less than 15 percent.

3.2 PREPARATION

- A. Correct minor defects and clean surfaces affecting work of this section.
- B. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove foreign matter. Remove oil and grease with solution of tri-sodium phosphate, rinse well and allow to dry.
- C. Uncoated Steel and Iron Surfaces: Remove scale by wire brushing, sandblasting, clean by washing with solvent. Apply treatment of phosphoric acid solution. Prime paint after repairs.
- D. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Clean surfaces with solvent. Prime bare steel surfaces.

3.3 APPLICATION

- A. Sand surfaces lightly between coats to achieve required finish.
- B. Cleaning: As work proceeds, promptly remove finishes where spilled, splashed, or spattered.

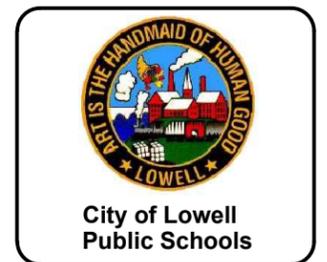
3.4 SCHEDULE - SHOP PRIMED ITEMS FOR SITE FINISHING

- A. Finish and paint Metal Fabrications, handicap ramp rails and any other items shown and specified as shop primed for field finish in accordance with schedule below.

3.5 SCHEDULE - EXTERIOR SURFACES

- A. Steel - Galvanized:
 1. Leave unfinished.
- B. Exterior Metal, Gloss Finish
 1. 1st Coat: MPI 107 Sherwin Williams Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, or equal (5-10 mils wet, 2-4 mils dry)
 2. 2nd Coat: MPI 163 Sherwin Williams Pro Industrial Zero VOC Acrylic Gloss, B66 Series, or equal (Wet mils: 6.0 - 12.0 Dry mils: 2.5 - 4.0)
 3. 3rd Coat: MPI 163 Sherwin Williams Pro Industrial Zero VOC Acrylic Gloss, B66 Series, or equal (Wet mils: 6.0 - 12.0 Dry mils: 2.5 - 4.0)

END OF SECTION



MARK	ISSUED FOR BID	DESCRIPTION	DATE	GPF	APPR.
0			9/3/14		

CONCRETE SIDEWALK AND RAMP REPAIRS DALEY MIDDLE SCHOOL LOWELL PUBLIC SCHOOLS SPECIFICATION

C-702
SHEET 6 OF 7

Plot Date: 9/3/2014 5:40:11 PM File Path: J:\01 Projects\14XXX\14001\05 Lowell Public Schools Concrete Repairs\11.0 Working Files\11.1 Drawings\11.1.1 Sheet Files\DALEY-C-701 & 702-DALEY.dwg

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



City of Lowell
Public Schools



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	DESCRIPTION			

CONCRETE SIDEWALK
AND RAMP REPAIRS
DALEY MIDDLE SCHOOL
LOWELL PUBLIC
SCHOOLS
SPECIFICATION

C-703