SELECTIVE DEMOLITION

SUMMARY

Carefully demolish and remove from the site those items shown on the drawings to be so demolished and removed, including, but not limited to:
bituminous concrete pavement
retaining wall
site lighting and underground electrical wiring

EXECUTION

1. By careful study of the Contract Documents, determine the location and extent of selective demolition to be performed.

2. In company with the Architect, visit the site and verify the extent and location of selective demolition required.

3. Prepare and follow an organized plan for demolition and removal of items.

4. Demolished materials shall be considered property of the Contractor and shall be completely removed from the job site.

5. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

7. Brainerd Memorial Library (BML) shall arrange with Frontier Communications to remove the existing utility pole from the area to occupied by the new parking lot. BML will also arrange with Eversource the removal of the light fixture mounted on said utility pole.

End of Section

CLEARING

SUMMARY

Clear and grub the site as shown on the Drawings.

EXECUTION

1. By careful study of the Contract Documents, determine the location and extent of clearing and grubbing to be performed.

2. In company with the Architect and excavation contractor, visit the site and very the extent and location of clearing and grubbing required.

3. Prepare and follow an organized plan for clearing and removal of items.

PROTECTION

1. Protect existing utilities indicated or made known.

2. Protect trees and shrubs, where indicated to remain, by providing a fence around the tree or shrub of sufficient distance away and of sufficient height so trees and shrubs will not be damaged in any way as part of this Work.

4. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

CLEARING

1. Clean out tree roots 1" in diameter or larger to a depth of at least 12" below the existing ground surface or sub-grade of new graded surface, whichever is lower.

CONSERVATION OF TOPSOIL

1. After the area has been cleared of vegetation, strip the existing topsoil to the depth necessary to provide at least 6" depth of topsoil in areas shown on the Drawings to be turfed or planted without contamination with subsoils.

2. Stockpile in an area clear of new construction.

3. Maintain the stockpile in a manner which will not obstruct the natural flow of drainage. Maintain the stockpile free of debris and trash. Keep topsoil damp to prevent dust and drying out.

DISPOSAL

1. Remove brush, grass, trees, roots, trash and other materials from clearing operations.

2. Dispose of away from the site in a legal manner.

3. Do not store or permit debris to accumulate on the job site

4. Do not burn debris at the site.

End of Section

GRADING

SUMMARY

Excavate, backfill, compact, and grade the site to the elevations shown on the Drawings and as needed to meet the requirements of the construction shown in the Contract Documents.

PRODUCTS

1. Fill and and backfill materials:
a. Provide soil materials free from organic matter and deleterious substances, containing no rocks or lumps over 6" in greatest dimension, and with not more than 15% of the rocks or lumps larger than 2-3/8" in their greatest dimension.
b. Do not permit rocks have a dimension greater than 1" in the upper 12" of fill or embankment.
c. Cohesion-less material used for structural backfill: sand free from organic material and foreign matter.

2. Topsoil:
a. Where and if shown on the Drawings or otherwise required, provide topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region, capable of sustaining healthy plant life, and reasonably free from sub-soils, roots, heavy or stiff clay, stone larger than 2" in greatest dimension, noxious weeds, sticks, brush, litter and other deleterious matter.
b. Obtain topsoil from sources within the project limits, or provide imported topsoil obtained from sources outside the project limits, or from both sources.

EXECUTION

1. By careful study of the Contract Documents, determine the location and extent of excavation, backfill and grading to be performed.

2. Unless shown to be removed, protect active utility lines shown on the Drawings or otherwise made known to the Contractor prior to excavating. If damaged, repair or replace at to additional cost to BML.

3. Protection of persons and property:
a. Barricade open depressions and holes occurring as part of this Work, and post warning lights on property adjacent to or with public access.
b. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
c. Protect structures, utilities, sidewalks, pavement and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by operations under this Section.

4. Use means necessary to prevent dust becoming a nuisance to the public, to neighbors, and to other work being performed on or near the site.

EXCAVATING

1. Perform excavating of every type of material encountered within the limits of the Work to the lines, grades, and elevations indicated.

2. Dispose of unsatisfactory and/or surplus excavated materials away from the site at disposal areas arranged and paid for by the Contractor.

3. Excavation of bedrock or large boulders that cannot be removed by conventional earthmoving equipment is not anticipated. Should such instances arise, the costs of removal, if required, shall be addressed in a change order.

4. Excavate and backfill in a manner and sequence that will provide proper drainage at all times.

5. Unauthorized excavation:
a. Unauthorized excavation consists of removal of materials beyond indicated sub-grade elevations or dimensions with specific instruction from the Architect or Civil Engineer.
b. Excavation adjacent to the existing library building shall not undermine existing foundations.

6. Excavating for underground utilities:
a. Excavate for utilities by open cut.
b. If conditions at the site prevent such open cut, and if approved by the Architect, trenching may be used.

7. Stabilize excavations and maintain sides and slopes of excavations in a safe manner until completion of backfilling.

FILLING AND BACKFILLING

1. Backfill excavations as promptly as progress of the Work permits, but not until:
a. Acceptance of the construction below finish grade;
b. Inspecting, testing, approving, and recording locations of underground utilities;
c. Trash and debris have been removed.

2. Ground surface preparation:
a. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from the ground surface prior to placement of fills.
b. Plow, strip, or break up surfaces steeper than one vertical to four horizontal, so that fill material will bond with existing surface.
c. At exposed soils in areas to be paved, scarify to a minimum depth of 6", and re-compact at a moisture content that will permit proper compaction as specified for fill.

3. Placing and compacting:
a. Place backfill and fill materials in layers not more than 8" in loose depth.
b. Before compacting, moisten or aerate such layer as necessary to provide the optimum moisture content.
c. Compact each layer to required percentage of maximum density for the area.
d. Do not place backfill or fill material on surfaces that are muddy, frozen, or containing frost or ice.
e. Place backfill and fill materials evenly adjacent to structures, to required elevations.
f. Take care to prevent wedging action of backfill material against structures by carrying the material uniformly around the structures to approximately the same elevation in each lift, wherever possible.

GRADING

1. General:
a. Uniformly grade the areas within limits of grading under this Section, including adjacent transition areas.
b. Smooth the finished surfaces within specified tolerances.
c. Compact with uniform levels or slopes between points where elevations are shown on the Drawings, or between such points and existing grades.
d. Where a change of slope is indicated on the Drawings, construct a rolled transition section having a minimum radius of approximately 8'-0", unless adjacent construction will not permit such a transition, or if such a transition defeats positive control of drainage.

2. Grading out building lines:
a. Grade areas adjacent to buildings to achieve drainage away from structures, and to prevent ponding.
b. Finish the surface to be free from irregular surface changes.
c. Shape the surface of areas scheduled to be under walks to line, grade, and cross-section, with finished surface not more than 0.10 foot above or below the required sub-grade elevation.
d. Shape the surface of areas scheduled to be under pavement to line, grade, and cross-section, with finished surface not more than 0.05 foot above or below the required sub-grade elevation.

COMPACTING

1. Control soil compaction during construction to provide the minimum percentage of density specified for each area as determined according to ASTM D1557.

2. Provide not less than the following maximum density of soil material compacted at optimum moisture content for the actual density of each layer of soil material in place.
a. Structures: Compact the top 8" of sub-grade and each layer of fill material or backfill material at 90% of maximum density.
b. Lawn and unpaved areas: Compact the top 8" of sub-grade and each layer of fill material or backfill material at 90% of maximum density. Compact the upper 12" of filled areas, or natural soils exposed by excavating, at 85% of maximum density.
c. Walks: Compact the top 8" of sub-grade and each layer of fill material or backfill material at 90% of maximum density.
d. Pavements: Compact the top 8" of sub-grade and each layer of fill material or backfill material at 95% of maximum density for cohesive soil materials.

3. Moisture control:
a. Where sub-grade or layer of soil material must be moisture-conditioned before compacting, uniformly apply water to surface of sub-grade or layer of soil material to prevent free water appearing on surface during or subsequent to compacting operations.
b. Remove or replace, or scarify and air dry, soil material that is too wet to permit compacting to the specified density.
c. Soil material that has been removed because it it too wet to permit compacting may be stockpiled or spread and allowed to dry.

FIELD QUALITY CONTROL

1. Secure the civil engineer's inspection and approval of sub-grades and fill layers before subsequent construction is permitted thereon.

2. Provide at least the following tests to the approval of the civil engineer:
a. At paved areas, at least one field density test for every 2000 sq ft of paved area, but not less than three tests.
b. in each compacted fill layer, one field density test for every 2000 sq ft of overlaying paved area, but not less than three tests.

3. If, in the civil engineer's opinion based on reports of the testing laboratory, sub-grade or fills which have been placed are below specified density, provide additional compacting and testing under the provisions of this Section.

MAINTENANCE

1. Protect newly graded areas:
a. Protect newly graded areas from traffic and erosion, and keep free from trash and weeds.
b. Repair and re-establish grades in settled, eroded, and rutted areas to the specified tolerance.

CERTIFICATION

1. Upon completion of this portion of the Work, and a condition of its acceptance, deliver to the Architect a written report from the civil engineer certifying that the compaction requirements have been obtained. State in the report the area of fill or embankment, the compaction density obtained, and the typ or classification of the fill material placed.

End of Section

ASPHALTIC CONCRETE PAVING

SUMMARY

1. New parking lot: Provide asphaltic concrete paving and pavement markings where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

2. New residential driveway: Provide asphaltic concrete paving where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

SUBMITTALS

1. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
a. Materials list of items proposed to be provided under this Section
b. Certificates, singed by the asphaltic concrete paving materials producer and the asphaltic concrete paving sub-contractor, stating that the materials meet or exceed the specified requirements.

PRODUCTS

1. Aggregates
a. Provide aggregates consisting of crushed stone, gravel, sand or other sound, durable, mineral materials processed and blended, and naturally combined.
b. Sub-base aggregate minimum size: 1-1/2"
c. Base aggregate minimum size:
1. Base courses over 6" thick: 1-1/2"
2. Other base courses: 3/4"
d. Aggregates fir asphaltic concrete paving: Provide a mixture of sand, mineral aggregate, and liquid asphalt mixed is such proportions that the percentage by weight will be within:

Sieve sizes:	Percentage passing:
3/4"	100%
3/8"	67 - 85%
1/4"	50 - 65%
No. 8 mesh	37 - 50%
No. 30 mesh	15 - 25%
No. 200 mesh	3 - 8%

plus 50/50 penetration of liquid asphalt at 5% to 6-1/2% of the combined dry aggregates.

2. Asphalts
a. Comply with the standards of the Asphalt Institute and/or the National Asphalt Paving Association:
1. Asphalt cement: Penetration grade, 50/50
2. Prime coat: Cut-back type, grade MC-250
3. Tack coat: Uniformly emulsified, grade SS-1H

3. Sealer
a. New parking lot: Provide a sealer consisting of suitable fibrated chemical type asphalt base binders and fillers having a container consistency suitable for troweling after thorough stirring, and containing no clay or other deleterious substance.
b. New residential driveway: no sealer required

4. Mixing Asphaltic Concrete Materials
a. Provide hot plant mixed asphaltic concrete paving materials.
1. Temperature leaving the plant: 290 degrees F minimum, 320 degrees F maximum
2. Temperature at time of placing: 280 degrees F minimum

5. Marking Paint
a. Provide water-based traffic paint as indicated on the Drawings, in colors selected by the Architect from standard colors from the paint manufacturer.

EXECUTION

1. Final Preparation of Sub-grades
a. After sub-grades preparation under the Grading Section, thoroughly scarify and sprinkle the entire area to be paved, and then compact to a smooth, hard, even surface of 90% compaction to receive the aggregates.
b. Apply weed killer to the entire area to be paved, following the manufacturer's application recommendations.

2. Placement of Base Courses
a. Spread the specified base material to a thickness providing the compacted thickness shown on the Drawings. Compact to 95%.
b. Thickness tolerance: Provide the compacted thicknesses shown on the Drawings within a tolerance of minus 0.0" to plus 0.5".
c. Smoothness tolerance: Provide the lines and grades shown on the Drawings within a tolerance of 3/8" in ten feet. Correct deviations by removing materials, replacing with new materials, and reworking and recompacting as required.
d. Moisture content: Use on the amount of moisture needed to achieve the specified compaction.

3. Placement of Asphaltic Concrete Paving
a. Remove all loose materials from the compacted base.
b. Apply the specified prime coat, and tack coat where required, and allow to dry, in accordance with the manufacturer's recommendations.
c. Do not accept material unless it is covered with a tarpaulin until unloaded, and unless the material has a temperature of not less than 280 degrees F.
d. Do not commence placement of asphaltic concrete materials when atmospheric temperature is below 50 degrees F, nor during fog, rain, or other unsuitable conditions.
e. Spreading:
1. Spread material in a manner which requires the least handling.
2. Where thickness of finished paving will be 3" or less, spread in one layer.
f. Rolling:
1. After the material has been spread to the proper depth, roll until the surface is hard, smooth, and unyielding, and true to the thickness and elevations shown on the Drawings.
2. Roll in at least two directions until no roller marks are visible.
3. Finished paving surface shall be free of birdbaths, and shall have no deviations greater than 1 1/8" in six feet.

4. Flood Test
a. Prior to application of seal coat, perform a flood test in the presence of the Architect.
b. Method:
1. Flood the entire asphaltic concrete paved area with water.
2. If a depression is found where water ponds to a depth of more than 1/8" in six feet, fill or otherwise correct to provide proper drainage.
3. Feather and smooth the edges of fill so that the joint between fill and original surface is invisible.

5. Application of Seal Coat
a. Prepare the surfaces, mix the seal coat material, and apply in accordance with the manufacturer's recommendations.
b. Apply one coat of sealer.
c. Achieve a finished surface seal which, when dry and thoroughly set, is smooth, tough, resilient, of uniform black color, and free from coarse textured areas, lap marks, ridges, and other surface irregularities.
d. Protect the asphaltic concrete paved areas from traffic until the sealer is set and cured and does not pick up under foot or wheeled traffic.

6. Pavement marking
a. Prepare the surfaces and apply the marking paint in accordance with the manufacturer's recommendations.

End of Section

PORTLAND CEMENT CONCRETE PAVING

SUMMARY

Provide Portland cement concrete paving with exposed aggregate finish where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

In conjunction with Portland cement concrete paving abutting the asphaltic concrete pavement in the new parking lot, provide granite curbing.

SUBMITTALS AND MOCK-UPS

1. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
a. Materials list of items proposed to be provided under this Section

2. Mock-ups:
a. Provide 2' x 2' x 4" Portland cement concrete mock-up panels in sufficient numbers to allow the Architect's selection of a mix design that achieves the desired amount, color and size of aggregate and surface texture.
b. The selected mock-up and mix design shall be preserved as the standard for the Work; all other mock-ups and mix designs shall be discarded from the job site.

PRODUCTS

1. Forms
a. Provide wood or metal formwork, including adequate bracing, to the lines and grades shown on the Drawings within a vertical tolerance of 0.05 feet and an alignment tolerance of 1" at any point.
b. Earth forms will not be permitted for paving.

2. Reinforcement
a. Welded wire fabric: ASTM A185

3. Concrete: Comply with the following as minimums:
a. Portland cement: ASTM C150, type I or II, low alkali.
b. Aggregate, general:
1. ASTM C30, uniformly graded and clean
2. Do not use aggregate known to cause excessive shrinkage
c. Aggregate, coarse: Using readily available aggregate from local Portland cement ready-mix plants, provide the range of colors and sizes that will provide the final color and exposed aggregate size desired. Coarse aggregate, generally, shall have a maximum size of 3/4" and a minimum size number 4.
d. Aggregate, fine: Natural washed sand of hard and durable particles varying from fine to particles passing a 3/8" screen, of which at least 12% shall pass a 50-mesh screen. Color of fine aggregate as a contribution to desired exposed aggregate appearance shall be part of the design mix.
e. Provide concrete in the mix design established by mock-up review.
1. The mix design for aggregate larger than 3/8" shall have a 60/40 ratio of coarse aggregate to fine aggregate.
2. The mix design for aggregate 1/4" to 3/8" shall have a 50/50 ratio of coarse aggregate to fine aggregate.

4. Water: Clean and potable.

5. Surface retarder: Dayton Superior "Top-Cast"
a. Top-Cast 150 Green is anticipated to be the retarder selected, but
b. the actual Top-Cast Product color (for amount of aggregate size exposure) shall be established by mock-up review.

6. Water repellant: Dayton Superior "Weather Worker 10% J26WB"

7. Granite curbing: 4" wide, nominal 16" tall vertical curbing

8. Other materials: Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to acceptance by the Architect.

EXECUTION

1. Final preparation of sub-grades: After sub-grades preparation under the Grading Section, thoroughly scarify and sprinkle the entire area to be paved, and then compact to a smooth, hard, even surface of 90% compaction to receive the aggregates.

2. Placement of Base Courses
a. Spread the specified base material to a thickness providing the compacted thickness shown on the Drawings. Compact to 95%.
b. Thickness tolerance: Provide the compacted thicknesses shown on the Drawings within a tolerance of minus 0.0" to plus 0.5".
c. Smoothness tolerance: Provide the lines and grades shown on the Drawings within a tolerance of 0.05 feet vertically and 1" in alignment at any point. Correct deviations by removing materials, replacing with new materials, and reworking and recompacting as required.
d. Moisture content: Use on the amount of moisture needed to achieve the specified compaction.

3. Installation
a. Upon completion of the base course and formwork, install welded wire fabric in all areas to have Portland cement concrete pavement.
b. Transmit mix the concrete in accordance with the provisions of ASTM C94.
1. With each load, provide ticket certifying to the materials and quantities and to compliance with the approved mix design.
2. On the transit-mix ticket, state the time water was first added to the mix.
3. At the batch plant, withhold 2 1/2 gallons of water per cubic yard of concrete.
4. Mix not less than five minutes after withheld water has been added, and not less than one of that time immediately prior to discharge of the batch.
5. Unless otherwise directed, provide 15 minutes total mixing time per batch after first addition of water.
c. Do not use concrete that has stood over 30 minutes after leaving the mixer, or concrete that is no placed within 60 minutes after water is introduced into the mix.
d. Conveying:
1. Place concrete in accordance with the following and pertinent recommendations contained in ACI 304.
2. Deposit concrete continuously in layer of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause formation of seams or planes of weakness within the section.
3. If a section cannot be placed continuously, provide construction joints as specified herein.
4. Perform concrete placing at such a rate that concrete which is being integrated with fresh concrete is still plastic.
5. Deposit concrete as nearly as practicable in its final location so as to avoid segregation due to rehandling and flowing.
6. Do not subject concrete to any procedure which will cause segregation.
7. Do not use concrete which becomes non-plastic and unworkable, or does not meet required quality control limits, or has been contaminated by foreign materials.
8. Remove rejected concrete from the site.
e. Deposit and consolidate concrete in a continuous operation within the limits of construction joints until the placing of a panel or section is completed.
f. Placing and preparing concrete for surface retarder:
1. Place concrete at a 4" to 5" maximum slump
2. Screed FLAT.
3. Bull float with a wooden bull float in both directions.
4. Bull float a second time.
5. Wait until bleed water has left before doing any further work.
5. Perform all edge work next, edge the slab with a metal edger, then break the surface with a wooden float.
6. Begin the finish of the slab as would be done with a mag float.
7. Follow the recommendations of Dayton Superior for the product color selected to achieve the desired exposed aggregate finish.
8. Apply Top-Cast according to the recommendations of Dayton Superior.
g. Water repellant: Apply water repellant to exposed aggregate surfaces in accordance with the manufacturer's recommendations.
h. Expansion joints [EJT]:
1. Do not permit reinforcement to extend continuously through any expansion joint.
2. Locate expansion joints where indicated, filled to full depth with expansion joint material.
3. In paving hold down 1/4".
i. Control joints [CJT]:
1. Locate control joints where indicated, and as needed to control cracking in concrete surfaces.
2. Areas indicated for brick inlays may be used as control joints.
j. Preparation for brick inlay:
1. Where lines of brick inlay are shown, provide 3" deep x 4-1/4" wide continuous depressions in concrete paving.
2. Exposed aggregate finishing is not required in these depressions.
3. Brick inlay is part of the Masonry section.
k. Granite curbing:
1. Submit for the Architect's review and acceptance, samples of granite curb stock to be supplied.
2. Granite curbs shall be 4" thick x 16" nominal depth.
3. Set granite curbing to lines and elevations shown on the drawings, prior to installing Portland cement concrete paving and bituminous concrete paving.

End of Section

General Notes

1. American Institute of Architects Document A201-2017, General Conditions of the Contract for Construction shall apply to this project.

2. Quality Assurance, general:
a. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work.
b. Use equipment adequate in size, capacity, and numbers to accomplish the work in a timely manner.
c. Comply with the requirements of the Connecticut State Building Code and with the requirements of governmental agencies having jurisdiction.

3. The Contractor shall examine the areas and conditions under which the Work will be performed., and shall correct conditions detrimental to timely and proper completion of the Work. Work shall not proceed until unsatisfactory conditions are corrected.

REVISIONS

Date	Notes

J. W.
HUBER
ARCHITECT
45 Bokum Rd. P. O. Box 441
Essex, CT 06426
(860) 767-7334

Brainerd Memorial Library
North Parking Lot, Pedestrian Plaza & Associated Work

920 Saybrook Road
Haddam, CT 06438

Notes and Specifications

Job No. 18-1113

Drawn by	Date May 16, 2019
Checked by	Scale 1" = 20'

A
5.0