DELAWARE ENGINEERING, D.P.C.

28 Madison Avenue Extension, Albany, NY 12203 • Phone 518-452-1290/FAX 518-452-1335

March 07, 2022

To:	ALL PLAN HOLDERS	**From**:	Robert Flores, P.E.
Re:	Village/Town of Mount Kisco – Saw Mill Pump Station Upgrades Project – Contract #2022-02	**Pages:**	3 (including this sheet)

Addendum # 3

Contracts for Construction

The following items in this addendum apply to the Village/Town of Mount Kisco – Saw Mill Pump Station Upgrades Project for contract Number 2022-02

Bids are scheduled to be opened on **March 14, 2022 at 11:00 am**.

ITEM #1: CLARIFICATION –

- Use the table of contents attached to this addendum to update the project manual

ITEM #2: CLARIFICATION –

- Remove the following sections from the project manual.
  - 07200 Roof Deck and Insulation
  - 07500 Sheet Metal, Flashing, and Trim
  - 07531 Adhered EPDM Membrane Roofing System

ITEM #3: CLARIFICATION –

- Add the following sections attached to this addendum to the project manual.
  - EXHIBIT B – U.S. DEPARTMENT OF LABOR DAVIS-BACON WAGE RATES
  - 07000 Summary of Roof Work
  - 072200 Roof Deck and Insulation
  - 075200 Modified Bituminous Membrane Roofing
  - 075562 Fluid Applied Roofing Restoration

ITEM #4: CLARIFICATION –

- There is no potable water meter included in the scope of the project.

NOTE

The revised plans and specifications are being distributed through RevPlans to everyone on the plan holders list. Should there be an issue with the system, and any of the specification attached cannot be accessed please contact Robert Flores, P.E. at 518-452-1290.

ATTENTION

PLEASE SIGN BELOW AND RETURN VIA EMAIL mholton@delawareengineering.com OR FAX TO DELAWARE ENGINEERING, DPC AT (518) 452-1335 to verify receipt of this Addendum.

RECEIVED BY: _____

Company Name: _____

SAW MILL PUMP STATION UPGRADES
CONTRACT NO. 2022-02
VILLAGE/TOWN OF MOUNT KISCO
WESTCHESTER COUNTY, NY
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VILLAGE/TOWN OF MOUNT KISCO
WESTCHESTER COUNTY, NY
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"General Decision Number: NY20220017 02/25/2022

Superseded General Decision Number: NY20210017

State: New York

Construction Types: Building, Heavy, Highway and Residential

County: Westchester County in New York.

BUILDING CONSTRUCTION PROJECTS, RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories), AND HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at https://www.dol.gov/agencies/whd/government-contracts.

Modification Number	Publication Date
0	01/07/2022
1	02/25/2022

ASBE0091-003 05/31/2021

	Rates	Fringes

HAZARDOUS MATERIAL HANDLER
(Duties limited to
preparation, wetting,
stripping, removal, scraping,
vacuuming, bagging and
disposing of all insulation
materials whether they
contain asbestos or not from
mechanical systems).....$ 44.12 43.35
Insulator/asbestos worker
(Includes application of all
insulating materials,
protective coverings,
coatings, and finishes to all
types of mechanical sytems)......$ 44.12 43.35

BOIL0005-001 01/01/2021

	Rates	Fringes
BOILERMAKER.....$	63.38	33%+47.22+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Thanksgiving Day, Memorial Day, Independence Day, Labor Day and Good Friday, Friday after Thanksgiving, Christmas Eve Day and New Year's Eve

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BRNY0001-003 06/01/2018

	Rates	Fringes
Pointer, cleaner and caulker.....$	41.96	33.38

BRNY0004-001 07/05/2021

	Rates	Fringes
MARBLE MASON.....$	61.73	37.91

BRNY0005-006 06/01/2021

HEAVY & HIGHWAY CONSTRUCTION

	Rates	Fringes
BRICKLAYER Bricklayers, Stone Masons, Cement Masons, Plasterers, Pointers, Caulkers and Cleaner.....$	43.85	36.55

BRNY0005-007 06/01/2019

BUILDING/RESIDENTIAL CONSTRUCTION

	Rates	Fringes
Bricklayer, Cement Mason, Plasterer & Stonemason.....$	42.09	34.50

BRNY0007-001 07/01/2021

	Rates	Fringes
TERRAZZO FINISHER.....$	55.21	36.97
TERRAZZO WORKER/SETTER.....$	58.46	38.09

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* BRNY0007-002 12/06/2021

	Rates	Fringes

TILE FINISHER.....$ 47.56 32.71

BRNY0020-001 01/04/2021

	Rates	Fringes
MARBLE FINISHER	$ 48.27	35.40

BRNY0024-001 01/01/2021

	Rates	Fringes
BRICKLAYER		
MARBLE POLISHERS	$ 45.37	28.80

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* BRNY0052-001 12/06/2021

	Rates	Fringes
Tile Layer	$ 61.84	36.04

CARP0279-001 07/01/2021

	Rates	Fringes
Carpenters:		
Building	$ 45.32	31.38
Heavy & Highway	$ 45.32	31.38
Residential	$ 29.48	20.41

CARP0740-001 07/01/2021

	Rates	Fringes
MILLWRIGHT	$ 57.00	54.06

CARP1556-007 07/01/2021

	Rates	Fringes
Diver Tender	$ 51.34	52.79
Diver	$ 71.80	52.79

CARP1556-009 07/01/2021

	Rates	Fringes
Dock Builder & Piledrivermen	$ 56.93	52.79

CARP1556-011 07/01/2021

	Rates	Fringes
Carpenters:		
TIMBERMEN	$ 52.05	52.24

CARP2287-001 07/01/2021

	Rates	Fringes
Carpenters:		
Soft Floor Layers	$ 54.75	46.43

ELEC0003-003 04/28/2016

	Rates	Fringes
ELECTRICIAN (Teledata Technician)	$ 50.75	43.704

a. $2.00 per hour not to exceed $14.00 per day.

ELEC1249-001 05/03/2021

	Rates	Fringes
ELECTRICIAN (LIGHTING AND TRAFFIC SIGNAL WORK Including any and all Fiber Optic Cable necessary for Traffic Signal Systems, Traffic monitoring systems and Road Weather Information systems)		
Flagman	$ 28.29	7%+35.40
Ground Digging Machine Operator	$ 42.44	7%+35.40
Ground Truck Driver	$ 37.72	7%+35.40
Tractor, Trailer Unit	$ 40.08	7%+35.40
Lineman & Technician	$ 47.15	7%+35.40
Mechanic	$ 37.72	7%+35.40

FOOTNOTE:

a. PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, President's Day, Good Friday, Decoration Day, Election Day for the President of the Untied States and Election Day for the Governor of the State of New York provided the employee works two days before and two days after the holiday

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ELEC1249-006 05/03/2021

	Rates	Fringes
ELECTRICIAN (LINE CONSTRUCTION)		
Substation and switching structures pipetype cable, underground fuild and gas filled transmission conduit and cable installation, fiber optic ground wire, fiber optic shield wire or any other like product having ground protection or fiber optic capabilities, maintenance jobs or projects; rail-road catenary installation and maintenance bonding of rails; Overhead & underground distribution work & Maintenance; Overhead and under- ground transmission line work:		
Cable Splicer	$ 63.48	7%+35.40
Flagman	$ 34.63	7%+34.40
Groundman digging machine operator	$ 51.94	7%+34.40
Groundman truck driver (tractor trailer unit)	$ 49.05	7%+34.40
Groundman truck driver;	$ 46.17	7%+34.40
Lineman & Technician	$ 57.71	7%+35.40
Mechanic	$ 46.17	7%+34.40

PAID HOLIDAYS:

a. New Year's Day, President's Day, Memorial Day, Good Friday, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and Election Day for the President of the United States and Election Day for the Governor of New York State, provided the employee works two days before or two

days after the holiday.

ELEC1249-009 01/01/2021

	Rates	Fringes
ELECTRICIAN (LINE CONSTRUCTION) TELEPHONE, CATV FIBEROPTICS CABLE AND EQUIPMENT		
Cable Splicer	$ 34.78	3%+5.14
Groundman	$ 17.50	3%+5.14
Installer Repairman-Teledata		
Lineman/Technician-Equipment Operator	$ 33.01	3%+5.14

ELEV0001-002 03/17/2021

	Rates	Fringes
ELEVATOR MECHANIC		
Elevator Constructor	$ 72.29	42.912+a+b
Modernization and Repair	$ 50.49	40.399+a+b

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Good Friday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

b. PAID VACATION: An employee who has worked less than 5 years shall recieve vacation pay credit on the basis of 4% of his hourly rate for all hours worked; an employee who has worked 5 to 15 years shall receive vacation pay credit on the basis of 6% of his hourly rate for all hours worked; an employee who has worked 15 or more years shall receive vacation pay credit on the basis of 8% of his hourly rate for all hours worked.

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* ELEV0138-003 01/01/2022

WESTCHESTER COUNTY (Towns of Bedford, Cortland, Lewisboro, Mt. Kisco, North Salem, Pound Ridge, Somers, and Yorktown)

	Rates	Fringes
ELEVATOR MECHANIC	$ 64.63	36.885+a+b

FOOTNOTE:
a.Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.
b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

ENGI0137-005 03/06/2017

BUILDING & RESIDENTIAL CONSTRUCTION

	Rates	Fringes
Power equipment operators:		
GROUP 1-A	$ 53.95	28.52+a
GROUP 1-B	$ 49.68	28.52+a

GROUP 2-A	$ 52.03	28.52+a
GROUP 3-A	$ 50.11	28.52+a
GROUP 3-B	$ 47.67	28.52+a
GROUP 4-A	$ 49.60	28.52+a
GROUP 4-B	$ 41.85	28.52+a
GROUP 5	$ 45.17	28.52+a
GROUP 5-A	$ 56.63	28.52+a
GROUP 5-B	$ 42.83	28.52+a
GROUP 6	$ 44.92	28.52+a

NOTES: Hazmat: 20% above regular rate
Pumping operation Premium .50

Crane Operators (100-149 ft) 2.00

Crane Operators (149 ft +) 3.00

Loader Operators (over 5 cu y) .50
Shovel Operators (over 4 cu yd)1.00

FOOTNOTE:
a. New Years Day, Memorial Day, Independence Day, Labor Day Thanksgiving Day, Christmas Day, plus Lincoln's Birthday, Washington's Birthday, Good Friday, Columbus Day, November Election Day, Veteran's Day.

POWER EQUIPMENT OPERATORS CLASSIFICATION

GROUP 1-A: Carrier- trailer horse; concret-portable hoist; crane & hoist engineer-steel (concrete, material, super structure sub- structure); derrick (stone-steel); elevator & cage; hoist- single/double or triple drum; hoist-portable mobile unit; hoist engineer-concert (crane-derrick-mine hoist); hoist engineer- material; overhead crane; power house plant; telephies (cableway); whirly; maintenance engineer; Lull hilift or similar; hydraulic crane 25 ton and over; cherry picker 25 tons and over; backhoe Oliver 88; fordson; dynahoe; dual purpose and similar machines; Barber Green Loader-euclid loader or similar type; conway or similar mucking macking machines; dragline; gradall; shovel; backhoe etc. (crawler or truck); front end loaders; hydraulic boom; jersey spreader; lift slab console; letournequ or tounapull (scrapers over 20 yds struck); mucking machines; pavement breaker (air ram); paver (concrete); road boring machine; road mix machines; ross carrier and similar machines; post hole digger; shovel (tunnels); side boom; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yds. trenching machines vermeer concrete saw trencher and similar; tractor type demolition equipment; winch truck (a frame); hydraulic crane over 10 ton up to 25 ton); cherry picker over 10 ton up to 25 ton)

GROUP 1-B: Compressor (steel erection); pulse meter and push button buzz box; elevator; mechanic (outside) all types; welder; scrapers 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers; roller 4 tons and over.

GROUP 2-A: Compactor self-propelled; grader; bulldoze D7 and similar tractors with a draw bar horsepower of 100 or over; bulldozer D6 and under; welder; scraper 20 yds struck and under; machine pulling sheep's foot roller; vibratory rollers.

GROUP 3-A: Asphalt plant; boiler (high pressure); concrete mixing plants; concrete pump; firemen; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes); mixer concrete - 21E and over; portable asphalt plant; portable batch plant; portable crusher; quarry master; stone crusher; well drilling machine and well point system;

cherry picker under 10 tons; hydraulic crane under 10 tons; concert buffy; one yard an up ride on dumper (benford or similar).

GROUP 3-B: Compressor over 125 cu. feet; conveyor belt machine regardless of size; lighting unit (portable & generator); welding machine (steel erection and excavation); and compressor plant; stud machine; ladder hoist.

GROUP 4-A: Air tractor drill; batch plant; bending machine; concrete breaker; concrete spreader; curb cutter machine; farm tractor (all types); finishing machine-concrete; hepavac clean air machine (all similar types: removal of asbestos etc.); material hopper-sand-stone-cement; mixer-concrete-under 21E; mulching grass spreader; pump-gypsum, etc., pump-plaster-grout -fireproofing; shop mechanic (not employed on job site); roller under 4 ton; spreading and fine grading machine; steel cutting machine; syphon pump-air-steam; tar joint machine; turbo jet burner or similar equipment; vibrator (1 to 5); fine grading machine; roof hoist (tugger hoist); television cameras-water- sewer-gas-etc.

GROUP 4-B: Compressor to 125 feet; dust; dust collector; heater all types; pump; pump station (water and sewer); steam jenny; sweeper; chipper; mulcher.

GROUP 5: Motorized roller (walk behind)

GROUP 5-A: Master Mechanic

GROUP 5-B: Utility Man

GROUP 6: Warehouse Man

ENGI0137-006 03/06/2017

HEAVY & HIGHWAY

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 58.54	28.15+a
GROUP 1-A	$ 51.68	28.15+a
GROUP 1-B	$ 54.42	28.15+a
GROUP 2-A	$ 49.52	28.15+a
GROUP 2-B	$ 51.05	28.15+a
GROUP 3	$ 48.67	28.15+a
GROUP 4-A	$ 44.29	28.15+a
GROUP 4-B	$ 38.13	28.15+a
GROUP 5	$ 54.69	28.15+a
GROUP 5-A-1	$ 54.69	28.15+a
GROUP 5-A-2	$ 66.22	28.15+a
GROUP 5-A-3	$ 63.97	28.15+a
GROUP 5-A-4	$ 60.03	28.15+a
GROUP 5-A-5	$ 50.65	28.15+a

POWER EQUIPMENT OPERATORS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Boom Truck; Cherry Picker; Clamshell; Crane, (Crawler, Truck); Dragline; Rough Terrain Crane

GROUP 1-A: Auger; Auto Grader; Dynahoe and Dual purpose and similar machines; Boat Captain; Boring Machine (all types); Bull Dozer-all sizes; Central Mix Plant Operator; Chipper-all types; Close circuit t.v.; Compactor with Blade; Concrete Portable Hoist; C.M.I. or similar; Conway or similar mucking machines; Gradall, Shovel Backhoe, etc. Grader; Derrick, (Stone- Steel; Elevator & cage, materials or passengers; Front end loaders over 1 1/2 yds.; Hoist

Single, Double, Triple Drum, Hoist Portable Mobile Unit; Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist); Hoist Engineer-Material, Hydraulic Boom; Letourneau or Tournapull (Scrapers over 20 yds. struck); Log Skidder; Movable Concrete Barrier Transfer & Transport Vehicle; mucking machines; overhead crane; paver (conccrete); pulsemeter; push button (buzz box) elevator; road mix machines; Robot Hammer (brock or similar), Ross carrier and similar machines; shovels (tunnels); side boom; Slip Form Machine; spreader (asphalt); scoopmobile-tractor-shovel over 1 1/2 yards; trenching machines; telephies- vermeer concrete saw trencher and/or similar; tractor-type demolition equipment, Whirly

GROUP 1-B: Road Paver, Asphalt

GROUP 2-A: Ballast Regulators; Compactor self-propelled; Cow Tracks; Fusion Machine; Rail Anchor Machines; Roller 4 ton and over; Scrapers - 20 yards struck; Switch Tampers; Vibratory roller, etc.

GROUP 2-B: Mechanic (outside) all types

GROUP 3-A: Air tractor drill; asphalt plant; batch plant; boiler (high pressure; concrete breaker; concrete pump concrete spreader; curb cutter machine; farm tractor (all types); finishing machine (concrete); fine grading machine; fireman; forklift; forklift (electric); joy drill or similar tractor drilling machine; loader - 1 1/2 yards and under; locomotive (all sizes), maintenance engineer; machine pulling sheeps foot roller; material hopper; mixer concrete - 21-E and over; mulching grass spreader; portable asphalt plant, portable batch plant, portable crusher; powerhouse plant; quarry master; roller under 4 ton; spreading and fine grading machine; steel cutting machine; stone crusher; sweeper; turbojet burner or similar; well drilling machine ; winch truck ""A"" frame. John Henry Drill or similar.

GROUP 4-A: Service men (fuel or grease truck).

GROUP 4-B: Oiler; Compressor - compressor plant; paint compressor-steel erection; conveyor belt machine; lighting unit (portable & generator); oiler; pumps - pump station-water-sewer- gypsum- plaster, etc.; roller-motorized (walk-behind); welding machine (steel erection excavation); well point system; bending machine; dust collector; mixer - concrete under 21-E; heater all types; steam jenny; syphon pump-air-steam; tar joint machine; vibrator (1 to 5); Compressor Truck Mounted (2-6)

GROUP 5: Oiler
GROUP 5-A-1: Master Mechanic

GROUP 5-A-2: Engineer - all tower cranes, all climbing cranes and all cranes of 100 ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged (except for pile rigs).

GROUP 5-A-3: Engineer-- Pile Driver

GROUP 5-A-4: Hoist Engineer- Steel -Sub Structure

GROUP 5-A-5: Jersey-spreader, pavement breaker (air ram); Post Hole Digger

NOTES:
Loader Operator (over 5 cu yds) .50
Shoval Operators (over 4 cu yd) 1.00
Hazmat premium over regular rate 20%

CRANES:

100 ft- 149 ft: receive $2.00 more than Group 1 rate
149 ft and over receive $3.00 more than Group 1 rate

FOOTNOTE:
a. PAID HOLIDAYS: New Year's Day; Lincoln's Birthday; Good Friday; Memorial Day; Independence Day; Labor Day; Veterans Day; Columbus Day; November Election Day; Thanksgiving Day; and Christmas Day

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IRON0040-001 07/01/2021

WESTCHESTER COUNTY

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 54.20	82.24

IRON0046-003 07/01/2021

	Rates	Fringes
IRONWORKER		
METALLIC LATHERS AND REINFORCING IRONWORKERS	$ 56.90	26.30

IRON0197-001 07/01/2021

	Rates	Fringes
IRONWORKER		
STONE DERRICKMAN	$ 55.63	55.10

IRON0580-001 07/01/2021

	Rates	Fringes
IRONWORKER, ORNAMENTAL	$ 46.15	59.79

LABO0060-002 07/01/2021

HEAVY/HIGHWAY

	Rates	Fringes
Laborers:		
GROUP 1	$ 45.65	26.35
GROUP 2	$ 44.30	26.35
GROUP 3	$ 43.90	26.35
GROUP 4	$ 43.55	26.35
GROUP 5	$ 43.20	26.35
GROUP 6	$ 36.85	26.35
GROUP 7	$ 45.20	26.35
SHAFT AND TUNNEL IN FREE AIR		
GROUP 1	$ 52.05	33.10+a
GROUP 2	$ 54.20	33.10+a
GROUP 4	$ 60.60	33.10+a

LABORERS CLASSIFICATIONS (HEAVY/HIGHWAY):
GROUP 1: Blasters.
GROUP 2: Burner, Jumbo Driller, Joy Driller, Wagon Driller, Air Track Driller, Hydraulic Driller, Concrete Form Aligner, Concrete Form and Curb Form Highway (Steel), Asphalt Screedman, Asphalt Raker.
GROUP 3: Asphalt Curb Machine Operator, Jeeper Operator, Pavement Breaker Operator, Power Saw Operator, Jack Hammer Driller. All types of pheumatic tools gasoline driller, concrete saw, gunniting, railroad spike puller and sandblasting, pipe layer, deck winches on scows, power buggy operator, power wheelbarrow operator.

GROUP 4: General concrete laborers-anything pertaining to concrete, aggregate or concrete material handling, puddlers, asphalt worker, rock scalers, vibrator operator, bit grinder, concrete grinder, air tampers and all tampers not covered by any other classification, form pin puller, pumps and their operation, service of air power, epoxy and waterproofing worker, fine grade person between forms, barco rammer, guard and guide rail and link fence, steel kings.
GROUP 5: Common laborers, signal person and pit person , truck spotters, powder person, landscape and nursery person, dump person.
GROUP 6: Flagperson
GROUP 7: Asbestos and Toxic Waste laborer

SHAFT AND TUNNEL IN FREE AIR CLASSIFICATIONS
GROUP 1: Outside laborers
GROUP 2: Blaster, Concrete and form setters, drill runners, air tuggers, chippers, pneumatic tools, and source of airpower, pumps and their operations, vibrator operators, Puddlers, Chuck tenders, nippers, concrete laborers tunnel sewer and water pipeliners, boring, Laborers, Powder carriers, signalmen, and Brakemen
GROUP 4: Miners

FOOTNOTE: a. PAID HOLIDAYS: New Year's Day, Lincoln's Birthday, Washington's Birthday, Good Friday, Memorial Day, Independence Day, Labor Day, Columbus Day, November Election Day, Veterans' Day, Thanksgiving Day and Christmas Day.

LABO0235-001 05/01/2016

BUILDING

	Rates	Fringes
LABORER	$ 33.30	26.25

LABO0235-002 05/01/2016

RESIDENTIAL

	Rates	Fringes
LABORER	$ 26.80	19.55

PAIN0009-003 05/01/2020

	Rates	Fringes
PAINTER		
GLAZIERS	$ 46.55	44.77
Painters, Paperhanger, Drywall Finishers & Lead Abatement Worker	$ 45.70	27.67
Spray, Scaffold, Sandblasting	$ 48.70	27.67

PAIN0806-001 10/01/2021

	Rates	Fringes
Painters:		
Structural Steel and Bridge	$ 53.00	51.23

PLUM0021-003 05/01/2021

	Rates	Fringes
Plumber and Steamfitter		

Zone 1.....$ 59.01 39.26

ROOF0008-003 07/01/2021

	Rates	Fringes
ROOFER	$ 45.25	35.62

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* SFNY0669-002 01/01/2022

	Rates	Fringes
SPRINKLER FITTER	$ 47.19	28.63

SHEE0038-001 07/01/2021

	Rates	Fringes
Sheet metal worker	$ 47.52	44.20

TEAM0456-001 07/01/2018

HEAVY & HIGHWAY CONSTRUCION

	Rates	Fringes
Truck drivers:		
GROUP 1	$ 43.47	29.17+a
GROUP 2	$ 40.72	29.17+a
GROUP 3	$ 41.17	29.17+a
GROUP 4	$ 41.34	29.17+a
GROUP 5	$ 40.72	29.17+a
GROUP 6	$ 41.47	29.17+a
GROUP 7	$ 42.22	29.17+a
GROUP 8	$ 42.59	29.17+a
GROUP 9	$ 42.09	29.17+a
GROUP 10	$ 42.72	29.17+a
GROUP 11	$ 42.47	29.17+a

Hazardous/Toxic Waste - An additional 20% of the basic hourly wage rate set forth in this wage determination.

CLASSIFICATION DESCRIPTIONS

GROUP 1: Lowboy (carrying equipment)
GROUP 2: Straight jobs: 6-Wheeler, 10-Wheeler, A-Frame Trucks (inside cab), Winch Truck (inside cab), Dynamite Truck, Seeding Truck, Mulching Truck, Agitator Truck, Water Truck, Cement Trucks (all types), Suburbans, Station Wagons, Cars, Pickups.
GROUP 3: Fuel and tire trucks.
GROUP 4: Tractor trailers (all types)
GROUP 5: 14 Wheeler
GROUP 6: Athey wagon, Belly dumps, Articulated Dumps, Trailer wagons.
GROUP 7: Darts.
GROUP 8: RXS
GROUP 9: Off Road Equipment (Under 40 Tons): Euclid
GROUP 10: Off Road Equipment (Over 40 Tons) Euclid, DJB
GROUP 11: Off Road Equipment (Under 40 Tons) DJB

a. PAID HOLIDAYS: New Year's Day, Lincoln's Birthday, President's Day, Decoration Day, Independence Day, Labor Day, November Election Day, Thanksgiving Day, Day after Thanksgiving and Christmas Day, provided employee works two or more days in the calendar week in which the holiday falls.

PAID VACATION: 4 weeks paid vacation after 20 years of service and 30 days of employment in current contract year; 3 weeks after 10 years of seniority service; 3 weeks after 10 years and 60 days of employment in contract year, 3

weeks and 1 day after 16 years of seniority service, 3 weeks and 2 days after 17 years of seniority service; 3 weeks and 3 days after 18 years of seniority service; 3 weeks and 4 days after 19 years of seniority service; The third week and every additional day shall be granted to employee in the calendar year in which he completes his tenth or other years of seniority service; 2 weeks after 130 days of employment in the calendar year; 2 weeks after 5 years and 90 days seniority service in calander year; 1 week and 1 additional day for each additional 18 days of employment not exceeding 10 days in any one calander year after 90 days of employment. Casual employees 1 day for every 18 days of employment. An employee who does not qualify for vacation shall be paid pro rata on a daily basis. Holiday shall be counted as days worked for vacation benefits.

LEGAL SERVICES FUND: Employer shall contribute $.20 to the fund on the same basis for all hours paid to employees in the form of holiday pay or vacation pay. In addition to the benefits paid for Health-Welfare and Pension for up to 40 hours worked an additional $.25 is paid for each hour worked. The employer shall grant 3 calendar days off without loss of pay to an employee who has death in his/her immediate family, inclusive of the day of the funeral.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour

National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

SECTION 07000
Summary of Roof Work

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

1.2 PROJECT INFORMATION

A. Section Includes:
   1. Scope of Roof Work
   2. Submittal of Bids
   3. Additional Requirements

1.3 PROJECT INFORMATION

A. Project Identification: Mt. Kisco Pump Station
   a. Address: Lexington Ave, Mt Kisco NY (note, this site is accessed from a service road with no address)

B. Project Timing: Completion 2022

1.4 SCOPE OF WORK

A. Lower Roof (Full Tear Off – New 2-Ply Roofing): Reference Section 07 52 00

   1. Non-ACM project.

   2. Remove existing EPDM Membrane and Polyisocyanurate insulation down to concrete deck. Inspect deck for any damage and broom clean.

   3. Install torch grade asphalt vapor barrier directly to concrete deck.

   4. Adhere flat polyisocyanurate insulation to asphalt vapor barrier in low rise foam adhesive. Provide average R30, 1/8” tapered insulation, sloping to the drip edge around the building. Install ½” crickets behind units to prevent ponding water.

   5. Adhere ½” gypsum coverboard to polyisocyanurate insulation in low rise foam adhesive.

   6. Install modified base sheet field and flashings in cold process adhesive.

   7. Install modified cap sheet field and flashings in cold process adhesive.

   8. Install all termination bars and counterflashing metal as required. Seal top edge of all termination bars. Cut new reglet to raise flashing height against stone wall to minimum of 8”.

   9. 3-Course each vertical lap with mesh and mastic on all flashings.

   10. Once roof surface has cured, return to site and coat field and flashings with aluminized UV protectant coating.

   11. Install finished edge metal (drip edge) as required.

B. Upper Roof (BASE BID – Fluid Applied Restoration)

1. Non-ACM project.

2. Based on IR Scan, remove and replace any wet insulation from existing EPDM roof system. Scan will be performed in the spring, provide a time and material price based on square footage for insulation replacement.

3. Provide new ¼" crickets in between drains to eliminate ponding water.

4. Provide new 4x4 sumps at both drain locations.

5. Powerwash roof with 2000 PSI pressure washer. Remove all existing dirt and debris from roof system prior to proceeding with fluid applied restoration.

6. Apply base coat of fluid applied restoration @ 3 gallons per square. Immediately embed polyester reinforcement fabric and be sure it is completely saturated. All seams must lay flat and fully immersed. At high walls, run the field reinforcement sheets up the wall 4" above the cant strip, and return back down with a flashing reinforcement sheet down onto the field.

7. Apply top coat of fluid applied restoration @ 2 gallons per square.

C. Upper Roof (ALTERNATE BID – 2-Ply Re-Cover): Reference Section 07 52 00

1. Non-ACM project.

2. Based on IR Scan, remove and replace any wet insulation from existing EPDM roof system. Scan will be performed in the spring, provide a time and material price based on square footage for insulation replacement.

3. Provide new ¼" crickets in between drains to eliminate ponding water.

4. Provide new 4x4 sumps at both drain locations.

5. Score existing membrane and adhere new ½" gypsum coverboard in low rise foam adhesive.

6. Install modified base sheet field and flashings in cold process adhesive.

7. Install modified cap sheet field and flashings in cold process adhesive.

8. Cut EPDM membrane at walls 12" from base of the roof for new 2-ply flashings.

9. Install all termination bars and counterflashing metal as required. Seal top edge of all termination bars. EPDM wall membrane will be separated from 2-Ply roof with a metal/counterflash detail.

10. Coat all existing EPDM walls with fluid applied restoration material.

11. 3-Course each vertical lap with mesh and mastic on all flashings.

12. Once roof surface has cured, return to site and coat field and flashings with aluminized UV protectant coating.

1.5 SUBMITTAL OF BIDS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation instructions.

B. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.

C. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins.

D. Recycled or Bio-Based Materials: Provide third party certification through UL Environment of roof System membranes containing recycled or bio based materials.

E. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

F. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6 ADDITIONAL REQUIREMENTS

A. Prevailing wages apply to this project.

B. Contractor is responsible for acquiring all applicable permits, payment and performance bonds.

C. Contractor is responsible for adhering to all OSHA, state, federal, and local regulations.

D. Contractor must seek approval from manufacturer before performing any or any addition to the Work. Manufacturer must provide the contractor written documentation of the modification to the Purchase Order within three (3) business days of verbal approval from Contractor that the modification constitutes a change to the Work. Contractor is not obligated to perform additional work until written modification has been received from manufacturer but may commence work based upon a reasonable assumption that a Change Order will be issued.
   1. Only changes approved by manufacturer/Delaware Engineering in advance will be considered for payment.
   2. Extra work completed without prior approval shall be considered incidental and at no additional cost to manufacturer/Delaware Engineering or the Owner.

PART 2 – PRODUCTS (not used)
PART 3 – EXECUTION (not used)

END OF SECTION

SECTION 072200
ROOF DECK AND INSULATION

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes roof insulation over the properly prepared deck substrate.

1.2 REFERENCES

A. Factory Mutual Research (FM):
   1. Roof Assembly Classifications.

B. National Roofing Contractors Association (NRCA):
   1. Roofing and Waterproofing Manual.

1.4 SUBMITTALS

A. Product Data: Provide manufacturer's specification data sheets for each product

B. Certification
   1. Submit roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.
   2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.5 QUALITY ASSURANCE

A. Fire Classification, ASTM E-108.

B. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual, Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.

C. Manufacturer's Certificate: Certify that the roof system is adhered properly to meet or exceed the requirements of FM [1-90].

D. Pre-installation meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.

B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.

C. Keep materials enclosed in a watertight, ventilated enclosure (i.e. tarpaulins).

D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

PART 2 – PRODUCTS

2.1 PRODUCTS, GENERAL

A. Refer to Division 01 Section “Common Product Requirements.”

B. Basis of Design: Materials, manufacturer’s product designations, and/or manufacturer’s names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.

C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.
   1. Proposals shall be accompanied by a copy of the manufacturer’s standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.
   2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner’s Representative.
   3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
   4. The Owner’s decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 INSULATION MATERIALS

A. Thermal Insulation Properties and Approved Insulation Boards.
   1. Rigid Polyisocyanurate Roof Insulation; ASTM C1289:
      a. Qualities: Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
      b. Thickness: Minimum [2.6].
      c. R-Value: Minimum [15].
      d. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1.
      e. Acceptable Products:
         1) ENRGY-3; Johns Manville
         2) Hytherm; Dow
         3) EnergyGuard; GAF
         4) Approved Equivalent
   2. Roof Cover Board
      a. Qualities: Nonstructural, noncombustible, homogenous composition panel.
      b. Board Size: Four by eight feet (4’x8’).
      c. Thickness: One half (1/2) inch.
      d. R-Value: .5 nominal
      e. Compliances: UL. WH or FM listed under Roofing Systems.
      f. Acceptable Products:
         1) Securock
         2) Densdeck

2.3 RELATED MATERIALS

A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.
   1. Acceptable Manufacturers:
      a. The Garland Company, Inc.
      b. Celotex
      c. Johns Manville
      d. GAF
      e. Approved Equivalent

B. Roof Deck Insulation Adhesive: Insul-Lock HR - Dual-component, high rise foam adhesive as recommended by insulation manufacturer and approved by FM indicated ratings.
   1. Tensile Strength (ASTM D412)……250 psi
   2. Density (ASTM D1875)……..8.5 lbs./gal.
   3. Viscosity (ASTM D2556)……22,000 to 60,000 cP.
   4. 2 `Peel Strength (ASTM D903)…..17 lb/in.
   5. 3 `Flexibility (ASTM D816)……Pass @ -70°F

PART 3 – EXECUTION

3.1 EXECUTION, GENERAL

A. Comply with requirements of Division 01 Section “Common Execution Requirements.”

3.2 INSPECTOR OF SURFACES

A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
   1. Verify that work which penetrates roof deck has been completed.
   2. Verify that wood nailers are properly and securely installed.
   3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
   4. Do not proceed until defects are corrected.
   5. Do not apply insulation until substrate is sufficiently dry.
   6. Broom clean substrate immediately prior to application.
   7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
   8. Verify that temporary roof has been completed.

3.3 INSTALLATION

A. Attachment with Insulation Adhesive Approved by Factory Mutual (FM).
   1. Ensure all surfaces are clean, dry, free of dirt, debris, oils, loose ore embedded gravel, unadhered coatings, deteriorated membrane and other contaminants that may inhibit adhesion.
   2. Apply insulation adhesive directly to the substrate using a ribbon pattern with one quarter to one half (1/4-1/2) inch wide beads 12 inches o.c., using either the manual applicator or an automatic applicator, at a rate of one (1) gallon per one hundred (150) square feet per cartridge.
   3. Immediately place insulation boards into wet adhesive. Do not slide boards into place. Do not allow the adhesive to skin over before installing insulation boards.
   4. Briefly step each board into place to ensure contact with the adhesive. Substrates with irregular surfaces may prevent the insulation board from making positive contact with

the adhesive. Relief cuts or temporary weights may be required to ensure proper contact.

5. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of one quarter (1/4) inch away from the vertical surface.
6. Tape joints of insulation as per manufacturer's requirements.

3.4 CLEANING

A. Remove debris and cartons from the roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

3.5 CONSTRUCTION WASTE MANAGEMENT

A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction.

END OF SECTION

SECTION 075200
MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cold Applied, 2-Ply Modified Bitumen System

B. Accessories.

C. Edge Treatment and Roof Penetration Flashings.

1.2 RELATED SECTIONS

A. Section 011100 – Summary of Work

B. Section 072200 - Insulation Board: Insulation and fastening.

1.3 REFERENCES

A. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.

B. Factory Mutual Research (FM): Roof Assembly Classifications.

C. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.

D. ASCE 7, Minimum Design Loads for Buildings and Other Structures

E. UL - Fire Resistance Directory.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

A. Perform work in accordance with all federal, state and local codes.

B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
   1. Factory Mutual Class A Rating.

C. Design Requirements:
   1. Uniform Wind Uplift Load Capacity
      a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
         1) Design Code: ASCE 7, Method 2 for Components and Cladding.
         2) Refer to Garland Wind Uplift Calculations provided in bid package for approved system

D. Roof System membranes containing recycled or bio-based materials shall be third party certified through UL Environment.

E. Roof system shall have been tested in compliance with the following codes and test requirements:
   1. Cool Roof Rating Council:
      a. CRRC Directory
   2. International Code Council Evaluation Service (ICC-ES):
      a. Membrane Systems
         1) ESR-3460
      b. Roofing Underlayments
         1) Garland Underlayments ESR-3460

2) Surfacing UDL ESR-3460

3. Texas Department of Insurance:
   a. Product Evaluation RC-45
4. Underwriters Laboratories:
   a. Certification TGFU.R8384

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.

C. Manufacturer Field Supervision: Company must provide a technical representative on site to assist installing contractor and architect. Representative must be on site 2-3 days per week, or during each phase change. Company must provide photographic progress reports on a weekly basis throughout the project.

D. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.

E. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

F. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

1.6 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to commencing Work of this section.

B. Review installation procedures and coordination required with related Work.

C. Inspect and make notes of job conditions prior to installation:
   1. Record minutes of the conference and provide copies to all parties present.
   2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
   3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.

D. Store at room temperature wherever possible, until immediately prior to installing the roll.

During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.

F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.8 COORDINATION

A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

1.9 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.10 WARRANTY

A. Contractors Guarantee: 2 Years

1. The Contractor guarantees that the total roofing installation, together with all related composition flashings, plastic flashings, metal flashings, patented pre-formed polystyrene panels, and base sheet fasteners, roof insulation, any vapor seal, blocking, adhesives and seals in connection with the same, will be watertight and free from defects as to materials, installation and/or workmanship for a period of 2-years from the date of acceptance of the completed project.

2. During the 2-year guarantee period, the contractor agrees that within 24 hours of receipt of notice from the Owner, he will inspect and make immediate emergency repairs to defects or to leaks in the roof system, and within reasonable time, he will restore the affected items to the standard of the original specifications.

3. All emergency and permanent work during the life of the Contractors guarantee will be done without cost to the Owner, except in the event it is determined that such leaks were caused by abuse, lightning, hurricane, tornado, hail storm or other unusual climatic phenomena of the elements, or failure of adjacent or related work previously installed by others.

B. Manufacturer’s Warranty: In addition to the 2 year period specified above, furnish the membrane manufacturer’s printed 30 Year (continuous) No Dollar Limit, edge-to-edge, non-prorated, Full System Warranty, covering workmanship, materials, metal edge system and wind related damage, for the Work of this Section.

1. The warranty shall include, but not be limited to, repair of leakage and the repair and/or replacement of the roofing system as necessary to correct defects or damage caused by; materials, workmanship, or wind speeds less than 90 MPH (V3s).

2. The manufacturer approved roof system shall withstand extended peak gust wind speed coverage up to 90 MPH (V3s).

3. Warranty shall commence with the Owner final acceptance of all the work covered under the warranty as written above.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105. Contact: John Lesko (332) 999-4131 jlesko@garlandind.com

B. Or Equal. Any substitutions must follow the full submittal process as outlined in Section 01 11 00 (Summary of Work) and Section 01 25 00 (Substitution Procedures).

2.2 2-PLY MODIFIED SYSTEM – ROLL GOODS

A. Vapor Barrier (Torch Applied):
1. HPR Torch Base: 110 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim. Designed for torch applications with a burn-off backer that indicates when the material is hot enough to be installed.
   a. Tensile Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 210 lbf/in XD 210 lbf/in
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.75 kN/m XD 36.75 kN/m
   b. Tear Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 1,334 N XD 1,334 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 6%
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 6%
   d. Low Temperature Flexibility, ASTM D5147, Passes -30 deg. F (-34.4 deg. C)

B. Base Sheet Field (Cold Process / Ply #1):
1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet with dual fiberglass reinforced scrim, performance requirements according to ASTM D 5147.
   a. Tensile Strength, ASTM D 5147
      1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
      2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
   b. Tear Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 100 lbf XD 85 lbf
      2) 50mm/min. @ 23 +/- 2 deg. C MD 444 N XD 378 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
      2) 50mm/min@ -17.78 +/- 2 deg. C MD 4 % XD 4 %
   d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

C. Base Sheet Flashings (Cold Process / Ply #1):
1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet with dual fiberglass reinforced scrim, performance requirements according to ASTM D 5147.
   a. Tensile Strength, ASTM D 5147
      1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
      2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
   b. Tear Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 100 lbf XD 85 lbf
      2) 50mm/min. @ 23 +/- 2 deg. C MD 444 N XD 378 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
      2) 50mm/min@ -17.78 +/- 2 deg. C MD 4 % XD 4 %
   d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

D. Modified Cap Sheet Field (Cold Process / Ply #2):
   1. StressPly FR Mineral: 145 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39.0 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
         2) (50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 8%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 8%
      d. Low Temperature Flexibility, ASTM D 5147, Passes -15 deg. F (-26 deg. C)

E. Modified Cap Sheet Flashings (Cold Process / Ply #2 flashings):
   1. StressPly FR Mineral: 145 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39.0 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
         2) (50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6% XD 8%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 6% XD 8%
      d. Low Temperature Flexibility, ASTM D 5147, Passes -15 deg. F (-26 deg. C)

2.3 2-PLY MODIFIED SYSTEM – ADHESIVES AND SEALANTS

A. Interply Adhesive for 2-Ply System
   1. Garland Weatherking Plus: Cold process SEBS (Styrene Ethylene Butadiene Styrene) modified adhesive for use as an interplay adhesive of multiple ply asphalt based systems, or as a flood coat with gravel surfacing.

B. Flashing Adhesive and Mastic
   1. Garland Flashing Bond: Cold process SBS Modified flashing mastic used to hang modified asphalt flashing sheets and seal end laps or flashing details. Use in conjunction with Garland Garmesh for 3-Course applications at vertical flashing laps and penetrations or curbs.

C. Aluminized Protective Coating
   1. Garland Garlabrite: Cold process, aluminized asphalt based protective coating that offers UV and weather protection to exposed membranes and flashings.

D. Sealants
   1. Garland Green-Lock Structural Sealant: High Performance Polyether, single component sealant used for all details, termination bar, skylights and penetrations. Capable of bonding to asphalt, wood, metal, masonry, glass and Styrofoam.

2.4 ACCESSORIES:

A. Roof Insulation: In accordance with Section 072200.

2.5 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

A. Garland Edge Metal (Contractor Fabricated drip edge and counterflashings), see project de-

tails for design.

B. R-Mer SS Sheet Stock: High gloss, factory painted aluminum
   1. Material and Thickness:
      a. 0.050 inch aluminum
   2. Color.
      a. Color: Custom color selected by Owner.

C. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.

D. Drain Flashings lead or copper formed and rolled

E. Plumbing stacks lead or copper formed and rolled.

F. Fabricated Flashings:
   1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.

G. Manufactured Roof Specialties: Shop fabricated copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim
   1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.

C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. General: Clean surfaces thoroughly prior to installation.
   1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
   3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
   4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
   5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
   6. Fasteners and plates for fastening components mechanically to the substrate shall pro-

vide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.

7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

B. Precast concrete:
   1. Decks shall be clean, dry, fully cured and free of flaws and attached securely to the supporting structure as recommended by the deck manufacturer.
   2. All joints shall be caulked or grouted.
   3. Concrete surfaces to receive roofing shall be fully primed at the rate of 1 gallon per 100 sq. ft.

C. Steel Deck
   1. Decks shall be clean, dry and free of flaws and attached securely to the supporting structure as recommended by the deck manufacturer.
   2. Check deck for excessive rust or pitting and any structural flaws prior to attaching roof system.

D. Insulation:
   1. All joints between layers should be staggered when multiple layers of insulation are installed. Insulation greater than 2.5 inches shall be installed in multiple layers.
   2. Insulation shall be kept dry at all times. Install only as much insulation as can be covered with completed roofing membrane before the end of the day's work or prior to onset of inclement weather.
   3. Edges shall butt tightly and all cuts shall fit neatly against adjoining surfaces to provide a smooth overall surface. Gaps of greater than 1/4 inch width shall be filled with insulation.
   4. Install tapered insulation around roof drains and penetrations to provide adequate slope for proper drainage.
   5. Mechanically attached insulation shall be fastened in accordance with code and insurance requirements for the applicable geographic zone with the required number and type of fasteners and plates.

3.3 INSTALLATION - GENERAL

A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.

B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
   1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
   2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water

3.4 INSTALLATION OF MODIFIED BITUMEN ROOF SYSTEM

A. Vapor Barrier: Install torch base sheet to a properly prepared substrate. Shingle in proper direction to shed water on each area of roofing.
   1. Lay out the roll in the course to be followed and unroll 6 feet (1.8 m).
   2. Using a roofing torch, heat the surface of the coiled portion until the burn-off backer melts away. At this point, the material is hot enough to lay into the substrate. Progressively unroll the sheet while heating and press down with your foot to insure a proper bond.
   3. After the major portion of the roll is bonded, re-roll the first 6 feet (1.8 m) and bond it in a similar fashion.
   4. Repeat this operation with subsequent rolls with side laps of 4 inches (101 mm) and end laps of 8 inches (203 mm).
   5. Give each lap a finishing touch by passing the torch along the joint and spreading the melted bitumen evenly with a rounded trowel to insure a smooth, tight seal.
   6. Extend underlayment 2 inches (50 mm) beyond top edges of cants at wall and projection bases.
   7. Install base flashing ply to all perimeter and projections details.

B. Base Sheet Field – Stressbase 80 (Cold Process): Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
   6. Install base flashing ply to all perimeter and projection details.
   7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.

C. Base Sheet Flashings – Stressbase 80 (Cold Process): Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Extend plies up and over the concrete wall and nail off on outer edge.
   6. Install base flashing ply to all perimeter and projection details.
   7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.

D. Cap Sheet Field – Stressply FR Mineral (Cold Process): Cut sheets into 18 foot lengths and allow plies to relax before installing. Install cap sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
   6. Install cap ply to all perimeter and projection details.

E. Cap Sheet Flashings – Stressply FR Mineral (Cold Process): Cut sheets into 18 foot lengths and allow plies to relax before installing. Install cap sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
   6. Install cap ply to all perimeter and projection details.

F. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.

G. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

H. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide Green-Lock Structural Sealant at top edge.

3.5 INSTALLATION EDGE TREATMENT AND ROOF PENETRATION FLASHING

A. Fabricated Flashings:
   1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the Copper Development Association "Copper in Architecture - Handbook" as applicable.

B. Roof Drain:

1. Plug drain to prevent debris from entering plumbing.
2. Taper insulation to drain minimum of 24 inches (609 mm) from center of drain.
3. Run roof system plies over drain. Cut out plies inside drain bowl.
4. Set lead/copper flashing (30 inch square minimum) in 1/4 inch bed of mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
5. Install base flashing ply (40 inch square minimum) in bitumen.
6. Install modified membrane (48 inch square minimum) in bitumen.
7. Install clamping ring and assure that all plies are under the clamping ring.
8. Remove drain plug and install strainer.

3.6 CLEANING

A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.

B. Remove asphalt markings from finished surfaces.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.7 PROTECTION

A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

B. Protect exposed surfaces of finished walls with tarps to prevent damage.

C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.

D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.

E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.8 FIELD QUALITY CONTROL

A. Inspection: Provide manufacturer's field observations at start-up and at intervals of approximately 2-3 days per week. Provide a final inspection upon completion of the Work.
   1. Warranty shall be issued upon manufacturer's acceptance of the installation.
   2. Field observations shall be performed by a Sales Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
   3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
   4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

END OF SECTION

SECTION 075562
FLUID APPLIED ROOFING RESTORATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Single Ply Roof Restoration

1.2 REFERENCES

A. ASTM D 2369 - Standard Test Method for Volatile Content of Coatings.

B. SMACNA Architectural Sheet Metal Manual.

C. ANSI/SPRI ES-1 - Testing and Certification Listing of Shop Fabricated Edge Metal

D. National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual.

1.3 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

B. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

C. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Manufacturer: Company specializing in manufacturing products specified in this section with documented ISO 9001 certification and minimum twelve years and experience.

C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.

D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.

E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.5 PRE-INSTALLATION CONFERENCE

A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.

B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface. No wet or damaged materials will be used in the application.

D. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.

E. Storage temperatures should be between 60°F to 80°F (15.6° to 26.7°C) and not exceed 110°F (43.3°C). Indoor ventilated storage is recommended Ensure jobsite storage is in a shaded and ventilated area. Do not store in direct sunlight. Keep materials away from open flame or welding sparks.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

B. Weather Condition Limitations: Do not apply roofing system during inclement weather or when precipitation is expected.

C. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.

D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

E. Protect completed roof sections from foot traffic for a period of at least 48 hours at 75 degrees F (24 degrees C) and 50 percent relative humidity or until fully cured.

F. Take precautions to ensure that materials do not freeze.

G. Minimum temperature for application is 50°F (10°C) and rising.

1.8 WARRANTY

A. Contractors Guarantee: 2 Years

1. The Contractor guarantees that the total roofing installation, together with all related

composition flashings, plastic flashings, metal flashings, patented pre-formed polystyrene panels, and base sheet fasteners, roof insulation, any vapor seal, blocking, adhesives and seals in connection with the same, will be watertight and free from defects as to materials, installation and/or workmanship for a period of 2-years from the date of acceptance of the completed project.

2. During the 2-year guarantee period, the contractor agrees that within 24 hours of receipt of notice from the Owner, he will inspect and make immediate emergency repairs to defects or to leaks in the roof system, and within reasonable time, he will restore the affected items to the standard of the original specifications.

3. All emergency and permanent work during the life of the Contractors guarantee will be done without cost to the Owner, except in the event it is determined that such leaks were caused by abuse, lightning, hurricane, tornado, hail storm or other unusual climatic phenomena of the elements, or failure of adjacent or related work previously installed by others.

B. Manufacturer's Warranty: In addition to the 2 year period specified above, furnish the membrane manufacturer's printed 20 Year (continuous) non-prorated, Full System Warranty, covering workmanship and materials for the Work of this Section.

1. The warranty shall include, but not be limited to, repair of leakage and the repair and/or replacement of the roofing system as necessary to correct defects or damage caused by; materials and workmanship.

2. Warranty shall commence with the Owner final acceptance of all the work covered under the warranty as written above.

PART 1 PRODUCTS

1.1 MANUFACTURERS

A. Basis of Design: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH 44105. Contact: John Lesko (332) 999-4131 jlesko@garlandind.com

B. Or Equal. Any substitutions must follow the full submittal process as outlined in Section 01 11 00 (Summary of Work) and Section 01 25 00 (Substitution Procedures).

1.2 ROOF RESTORATION SYSTEM FOR SINGLE PLY ROOFS

A. LiquiTec System by The Garland Company:
1. Primer: None
2. Base Coating: LiquiTec Base
3. Coating: LiquiTec
4. Flashing: Repair or replace as needed. LiquiTec Base / LiquiTec
5. Reinforcement: Grip Polyester Firm
6. Surfacing: None

1.3 SCOPE OF WORK

A. Infrared Roof Scan, work includes:
1. Non-Destructive survey utilizing FLIR Thermal Camera
2. Mark all areas on the roof with high visibility spray paint and core cut saturated area for verification of thermal camera results
3. Provide written report and roof plan identifying all wet areas by number and approximate square footage of wet insulation

4. Scan shall be provided by a third-party scan company, not the manufacturer or the installing contractor

B. Single Ply Roof Restoration, work includes:
1. Surface preparation: Remove membrane chalking, dust, dirt, and debris.
2. Fascia Edges: Inspect and make repairs to membrane
3. Parapets and Vertical Surfaces: Inspect and make repairs to any splits or membrane deterioration.
4. Metal Flashings: Repair/Replace metal flashings, pitch pockets, etc.
5. Roof Repairs: Repair blisters, stressed or cracked membrane. Cut back, patch with new membrane
6. Install new ¼" crickets in between drains and sump each drain with 4x4 to promote proper drainage and eliminate ponding water
7. Install Base Coat and fabric reinforcement on flashings and entire roof surface. Let cure, and top coat flashings and entire roof surface.

1.4 PRODUCT SCHEDULES

A. Base/Top Coating:
1. LiquiTec (Grey/White): Multi-purpose, 100% solids, two-part, fast-cure, polyurea liquid waterproofing membrane having the following characteristics:
a. Elongation, ASTM D 412: 433%
b. Tensile Strength, ASTM D 412: 2300 psi
c. Tear Resistance, ASTM D 624: 449 lbs./in
d. Low Temperature Flexibility, ASTM D522: -60°F (-51.1°C)
e. Hardness, ASTM D2240 (Shore A): 80
f. Dynamic Impact Resistance (Fully Reinforced System): ASTM D5635, 37 joules
g. Static Puncture Resistance (Fully Reinforced System): ASTM D5602, 20 kg
h. Tensile-Tear Resistance (Fully Reinforced System): ASTM D4073, 274 lbf
i. Tensile Load Strain (Fully Reinforced System): ASTM D4073, 150 lbf/in.
j. Toughness: 193 ft.-lbf/ft²
k. Dry Film Thickness (Fully Reinforced System), 80-88 mils
l. Lap Shear Strength (MB Seam with coating): ASTM D7379, 231 lbf/in.
m. Density @ 77° F (25° C, ASTM D 2939) 9.6 lb./gal (1.2 g/m3)
n. Flash Point: ASTM D 93, 110°F min. (43°C)
o. VOC: 0 g/l
p. Microbial Resistance: ASTM G21, No Microbial Growth

B. Reinforcement
1. Grip Polyester: Strong, elastic polyester reinforcing fabric.

PART 2 EXECUTION

2.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

2.2 ROOF PREPARATION AND REPAIR

A. General: All necessary field and flashing repairs must be done according to good construc-

tion practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey such as an infrared scan and replacement with like-materials.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Repair all defects such as deteriorated roof decks; replace saturated insulation board, replace loose or brittle membrane or membrane flashings. Verify that exiting conditions meet the following requirements:
   1. Existing membrane is either fully adhered or that the membranes mechanical fasteners are secured and functional.
   2. Application of roofing materials over a brittle roof membrane is not recommended.

D. Remove all loose dirt and foreign debris from the roof surface. Do not damage roof membrane in cleaning process.

E. Repair existing roof membrane as necessary to provide a sound substrate for the fluid-applied membrane. All surface defects (cracks, blisters, tears) must be repaired with similar materials.

F. All single-ply seams must be checked and any loose seams must be resealed, or if necessary, replaced with new single-ply material (ensure coating bond to any new single-ply material is sufficient).

G. Significantly wrinkled single ply membrane areas must be cut out and replaced to ensure a smooth substrate.

H. Repair any single ply membrane that has shrunk and is tenting at walls.

I. Remove any walkway pads and make necessary repair with new single ply membrane.

J. Clean and seal all parapet walls, gutters and coping caps, and repair any damaged metal where necessary. Seal watertight all fasteners, pipes, drains, vents, joints and penetrations where water could enter the building envelope.

K. Confirm local water run-off ordinances and restrictions prior to cleaning roof. Clean the entire roof surface by removing all dirt, algae, paint, oil, talc, rust or foreign substance. Use a 10 percent solution of TSP (tri-sodium phosphate), Simple Green and warm water. Scrub heavily soiled areas with a brush. Rinse with fresh water to remove all TSP solution. Allow roof to dry thoroughly before continuing.

2.3 INSTALLATION

A. General Installation Requirements:
   1. Install in accordance with manufacturer's instructions. Apply to minimum coating thickness required by the manufacturer.
   2. Adequate coating thickness is essential to performance. If the applicator is unfamiliar in gauging application rates, we suggest that a controllable area be measured and the specified material be applied. In all cases, all minimum specified material must be applied and proper minimum dry film thicknesses must be achieved. Care must be taken to ensure that all areas completed including all flashings, roof penetrations, etc. are coated sufficiently to ensure a watertight seal.
   3. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.

4. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.
5. Protect work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore work damaged by installation of the roofing system.
6. All primers must be top coated within 24 hours of application. Re-prime if more time passes after priming.

B. Scope of Work: Single Ply Roof Restoration Renovation:
1. Surface preparation: Remove membrane chalking, dust, dirt, and debris.
2. Fascia Edges: Inspect and make repairs to membrane.
3. Parapets and Vertical Surfaces: Inspect and make repairs to any splits or membrane deterioration.
4. Metal Flashings: Repair/Replace metal flashings, pitch pockets, etc.
5. Roof Repairs: Repair blisters, stressed or cracked membrane, wrinkles and tenting. Cut back, patch with new membrane
6. Coating Mixing Procedure:
   a. Mix Part A liquid for one minute using an electric heavy duty power drill and Jiffy mixer blade.
   b. Slowly pour contents of Part B jug, located inside the Part A pail, into the Part A container and mix the two components together for two minutes moving the Jiffy blade from top to bottom and along the sides to ensure the product is thoroughly mixed.
   c. Always mix entire kit contents together as packaged. Do not break down into smaller quantities.

7. Application of LiquiTec Base or LiquiTec and Reinforcement:
   a. On field surfaces run fabric reinforcement parallel to the low edge using a shingling method up the slope with minimum 3 inch fabric laps.
   b. After positioning reinforcement to roll out, apply coating about 40 inches wide to surface where reinforcement ply is to be applied at a rate of 3.0 gallons per 100 SF.
   c. Do not apply coating too far ahead of fabric so coating does not dry before fabric can be embedded.
   d. Immediately roll a 36 inch width of reinforcement into wet coating.
   e. Ensure roller is fully saturated with coating and backroll over the reinforcement surface to fully saturate.
   f. Use care to lay the fabric tight to the roof surface without air pockets, wrinkles, fishmouths, etc.
   g. Lap adjacent rolls of reinforcement 3 inches and end laps 6 inches.
   h. Allow to dry, but no more than 72 hours before applying top coat.
8. Application of Finish Coat
   a. Apply top coat at 2.0 gallon per 100 SF to clean and dry reinforced base coat application.
9. Liquid Flashings:
   a. All flashings are coated in the same manner as the field.
   b. Vertical liquid flashings shall run a minimum of 4” onto the horizontal surface

2.4 CLEANING

A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.

B. Remove any markings from finished surfaces.

C. Repair or replace defaced or disfigured finishes caused by Work of this section.

2.5 PROTECTION

A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

B. Protect exposed surfaces of finished walls with tarps to prevent damage.

C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.

D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) re-cover board is required on new roofing.

E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

2.6 FIELD QUALITY CONTROL

A. Require attendance of roofing materials manufacturers' representatives at site during installation of the roofing system. Representative shall be on site a minimum of three [3] days per work week.

B. Perform field inspection as required under provisions of Section 01410.

C. Correct defects or irregularities discovered during field inspection.

2.7 FINAL INSPECTION

A. At completion of roofing installation and associated work, meet with Contractor, Architect, installer, installer of associated work, roofing system manufacturer's representative and others directly concerned with performance of roofing system.

B. Walk roof surface areas, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. Identify all items requiring correction or completion and furnish copy of list to each party in attendance.

C. If core cuts verify the presence of damp or wet materials, the installer shall be required to replace the damaged areas at his own expense.

D. Repair or replace deteriorated or defective work found at time above inspection as required to a produce an installation that is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

E. Advise architect upon completion of corrections.

F. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

2.8 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

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