STATE OF NEW YORK
OFFICE OF GENERAL SERVICES
DESIGN AND CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242

ADDENDUM NO. 1 TO PROJECT NO. 45060
REPAIR / REPLACE ROOF
DOT Region 1, Waterford
182 Davis Avenue
Waterford, NY

August 13, 2014

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

INTRODUCTORY INFORMATION

1. Page 000110-2, Division 01 – General Requirements Add "013113 Project Schedule".
2. Page 000110-3, Add the following:

"DIVISION 22 – PLUMBING

Section Number and Title

220529	Pipe Hangers And Supports
221100	Plumbing Piping
221426	Roof Drains"

SPECIFICATIONS

2. SECTION 013113 PROJECT SCHEDULE: Add the accompanying document (pages 013113-1 thru 013113-7) to the Project Manual.

3. Page 054000-2, Article 2.01, A, Add the following Paragraph:

   "2. Deep-Leg Deflection Track: ASTM C 645 top runner with 2 inch deep flanges."

4. Page 061053-2, Change Subparagraph 3.01, E, 2 to read:

   "2. To Tops of Hollow Concrete Masonry Units: Self- threading masonry screws."

5. Page 075323-4, Article 1.04, Add the following Paragraph:

   "L. Shop Drawings: Roof insulation plan and details. Include tapered insulation slopes, crickets and tapered edge strips."

6. Page 075323-9, Change Subparagraph 2.02 E to read:

   "E. "Tapered Insulation System: Membrane manufacturer's approved factory tapered polyisocyanurate insulation, pitch as indicated on roof plan."

7. SECTION 092116 GYPSUM BOARD SYSTEMS: Add the accompanying document (pages 092116-1 thru 092116-4) to the Project Manual

8. SECTION 220529 PIPE HANGERS AND SUPPORTS: Add the accompanying document (pages 0220529-1 thru 0220529-4) to the Project Manual

9. SECTION 221100 PLUMBING PIPING: Add the accompanying document (pages 0221100-1 thru 0221100-2) to the Project Manual

10. SECTION 221426 ROF DRAINS: Add the accompanying document (pages 0221426-1 thru 0221426-2) to the Project Manual

DRAWINGS

7. Revised Drawing:
   a. Drawing Nos. A-104, A-501, A-502 and A-503, noted Mark "1", Date "8/12/14", Description "ADDENDUM #1" accompany this Addendum and supersede the same numbered originally issued drawings.

END OF ADDENDUM

Margaret F. Larkin
Acting Executive Director

SECTION 013113

PROJECT SCHEDULE

PART 1 GENERAL

1.01 RELATED REQUIREMENTS AND INFORMATION SPECIFIED ELSEWHERE

A. Summary of Work: Section 011000.

B. Administrative Requirements: Section 013000.

C. Project Meetings: Section 013119.

1.02 SUMMARY

A. Section includes administrative and procedural requirements to plan, schedule, and document the progress of the Project, and predict and prevent delays to established activities and milestones during performance of the Work.

1.03 DEFINITIONS

A. Project: Work to be performed as part of one or more Contracts.

B. Schedule: A comprehensive leveling of necessary procedural tasks, the sequencing of those tasks, and the incorporated resource allocation required to successfully complete the Work by the Project completion date.

C. Activity: A task or grouping of tasks containing an anticipated start-date and corresponding duration, comprising a generalized portion of the Work, that can be identified and measured for planning, coordinating, monitoring, and controlling the project.

D. Milestone: A significant start or finish to Work on the Project defined by both the Director's Representative and the Contractors.

E. Bid Milestones: Milestones or phases identified and included in the Contract Documents to be utilized by the Contractors in developing the Baseline Project Schedule.

F. Spreadsheet: The electronic Excel© file provided to the Contractors for establishing activities, anticipated start, duration, and budgeted cost for Work of the Project.

G. Baseline Project Schedule: The Activities and their prescribed durations recognizing the completion of the Work of the Project in accordance with the Contract duration and approved by the Director's Representative and Contractors.

1. Updates to the Baseline Project Schedule, including but not limited to starts, finishes, and activity percent complete, as agreed upon at the Project Schedule meeting by the Contractors and the Director's Representative, shall be defined as the Project Schedule.
2. The Baseline Project Schedule will remain unaltered as a tool to measure progress outlined and anticipated during the initial Project Schedule meeting.

H. Resource: Any labor, material, or equipment, shared or exclusive, required for the completion of an Activity or the Work, which recognizes an associated cost.

1.04 DEVELOPMENT OF THE PROJECT SCHEDULE

A. An electronic file will be provided at project award to the Contractors and is to be utilized to complete the Baseline Project Schedule. This file is an Excel© spreadsheet exported from the Scheduling Software and requires the completion of four specified columns including activity name, original duration, anticipated start, and budgeted cost.

B. The Contractors will complete the Spreadsheet with information relating to activity naming, duration, anticipated start date, and budgeted cost and submit to the Director's Representative for review prior to the initial Project Schedule meeting.

C. The Director's Representative will schedule the initial Project Schedule meeting within 15 calendar-days of Project Award. The meeting will be conducted by the Director's Representative for review of the Contractors' initial completed Spreadsheet. The mutual agreements reached at this and subsequent meetings form the basis for the Baseline Project Schedule, and will be used for coordinating, scheduling, and monitoring the Work of all related contracts.
1. The Director's Representative will import the Spreadsheet of each Contractor into the Scheduling Software and present the completed Baseline Project Schedule for review prior to the initial Project Schedule meeting.

D. The Contractors will sign the CMU 01 Agreement form (blank included in Document 013113) within five (5) calendar-days of final Baseline Project Schedule review and approval by the Director's Representative. Failure to complete and submit the Spreadsheets, develop the Baseline Project Schedule, and sign the CMU 01 Agreement form will not absolve the Contractors of the scheduling requirements. The Contractors will be required to provide the necessary resources, at no additional charge to the State, to complete the Project in the manner defined by the Director's Representative.

E. A Baseline Project Schedule recognizing early completion will be reviewed by the Director's Representative prior to acceptance.

F. Bid Milestones are to be incorporated into the project schedule.

1.05 UPDATING THE PROJECT SCHEDULE

A. Monthly Project Schedule meetings will be held to update the actual start, actual finish, and the percent complete of activities being performed for the purpose of determining the status of construction progress on the updated Project Schedule.
   1. During the progress of Work on the Project, the Contractors are required to document actual start, actual finish, and activity percent complete on a daily basis.
   2. The Contractors and Director's Representative will review the documented progress at the Project Schedule meeting prior to incorporating the information on the Project Schedule.
   3. Any Contractor failing to progress their Work as outlined in the updated Project Schedule will be informed of their deficiencies and, if required, be requested to provide a recovery option.

B. The Contractors will furnish all schedule information requested by the Director's Representative**.** Any Contractor who fails to furnish accurate information during the Project Schedule meeting will be required to provide all resources necessary to execute the updated Project Schedule based on progress information documented and recorded by the Director's Representative.

C. Project Schedule updates recognizing early completion will be reviewed by the Director's Representative prior to acceptance of the Project Schedule update.

1.06 MAINTAINING SCHEDULE

A. Perform the Work in accordance with the Project Schedule and provide resources necessary to maintain the progress of activities as scheduled so that no delays are caused to other Contractors engaged in the Work.
   1. Should any Contractor fail to maintain progress according to the Project Schedule, or cause delay to another Contractor, that Contractor shall provide such additional manpower, equipment, additional shifts, or other measures, at their own cost, to bring their operations back on schedule.
   2. Performing activities as part of the Work out of sequence with the Project Schedule is not permitted unless written approval is obtained from the Director's Representative prior to commencement.

1.07 RECOVERY SCHEDULE

A. Recovery Schedule: When periodic updates indicate the Work is 15 or more calendar-days behind the approved Baseline Project Schedule's Substantial or Physical Completion dates, the Contractors will present recovery options to the Director's Representative to be incorporated into an updated Project Schedule; these include, but are not limited to, allocating additional resources for activity duration reduction or modifying activity sequencing,

B. Any Contractor failing to furnish recovery options to the Director's Representative for a Recovery Schedule within 10 calendar-days subsequent to the monthly Project Schedule update will be required to provide all resources

necessary to execute an updated Project Schedule defined by a the Director's Representative .

C. Alterations to the Project Schedule by a Recovery Schedule will require the approval of the Contractors and the Director's Representative.

D. Approved alterations to the Project Schedule by a Recovery Schedule, will constitute the updated Project Schedule.
   1. The updated Project Schedule following the implemented Recovery Schedule will be recognized as the primary baseline schedule for reporting. The Baseline Project Schedule will be retained as a secondary baseline schedule and will be utilized to measure progress against the alterations.

E. A Recovery Schedule recognizing early completion will be reviewed by the Director's Representative prior to acceptance of the Project Schedule update.

1.08 RESOURCE ASSIGNMENTS

A. Resources recognizing the budgeted cost associated with all efforts necessary for the completion of a unique activity within the schedule, and the total cumulative cost of the Work of the Project, are to be assigned by the Contractors. All Contractors are responsible for providing the information necessary for assigning resources for the Baseline and Project Schedule; all Contractors are responsible for reviewing the information.
   1. The Contractors may request, in writing, the deletion of resource assignment requirements within this article; resource assignments may be waved only at the discretion of, and by written approval from, the Director's Representative.

PART 2 PRODUCTS

2.01 SCHEDULING SOFTWARE

A. Scheduling Software: Schedule is to be prepared utilizing the Spreadsheet provided by the Director's Representative and developed specifically to interface with the State's schedule program portfolio.
   1. The State's program portfolio utilizes Oracle's Primavera P6©.

2.02 SCHEDULE UPDATE REPORTS

A. The Director's Representative will submit the updated Project Schedule within five (5) calendar-days of the Project Schedule meeting utilizing the Scheduling Software.

PART 3 EXECUTION

3.01 PROJECT SCHEDULE

A. The Director's Representative will export a Spreadsheet from the Scheduling Software for the Project. The Contractors are to complete the columns and rows within the form appropriate to the development of the Baseline Project Schedule.

B. The Contractors will determine and define activities applicable to the Work of their Contract and the scope of the Project. Activities are to be appropriately placed within the Spreadsheet as indicated by the Director's Representative.

C. Within 15 calendar-days of Project Award, the Contractor's will submit the completed Spreadsheet to be incorporated for the Baseline Project Schedule, encompassing the Work of the Project from Project Award through Physical Completion. The Contractors and Director's Representative will review the initial project schedule submissions at the initial Project Schedule meeting and complete the Baseline Project Schedule.

D. The Baseline Project Schedule is to be approved and the CMU 01 Agreement Form signed within 30 calendar-days of Project Award. Contractors failing to complete the Spreadsheet, review the incorporated Spreadsheets and Baseline Project Schedule, and sign the CMU 01 Agreement Form may result in non-payment for Work progressing beyond 30 calendar-days subsequent to Project Award.

E. Updates to the Project Schedule will be performed concurrent with Project Schedule meetings.

3.02 ACTIVITIES

A. The Contractors are to provide activities which adequately represent the coordinating needs of the Project and scope of the Work.
   1. Each activity will identify the Contractors' anticipated start-date of the task or grouping of tasks, anticipated duration for the activity defined in work-days, and the budgeted cost of the activity.
   2. Activities are not required to realize an interlocking and dependent progression of the Work.

B. The Contractors will identify each activity with a unique Activity Name. No Activity Name will be altered after the Baseline Project Schedule has been approved.

C. The calendar utilized by the Baseline and Project Schedule for each activity will accurately reflect anticipated state and federal holidays as well as work being performed off-hours as defined in the Contract Documents and by the Director's Representative.

3.03 CONTRACTORS' OPTION

A. The Contractors may elect, in writing, to utilize computerized software compatible with the Scheduling Software in place of the Spreadsheet. Compatible software options include but are not limited to Microsoft Project Professional©, Asta PowerProject©, or P3©. If the Contractors resolve to utilize compatible software, one file is to be submitted encompassing the Work of all Contracts, and the selected compatible software file is to be submitted in the proper format for interfacing with the Scheduling Software. The Contractors will notify the Director's Representative, in writing, prior to proceeding with the Contractors' Option.

1. The State will not be responsible for the Contractors' failure to properly review the compatibility properties or the requirements of this and related sections, and will not accommodate files submitted in an improper format.
2. The Contractors will be responsible for complying with all requirements of this and related sections when coordinating the development or update of a Baseline or Project Schedule utilizing compatible software under the Contractors' Option.
3. If the Contractors' elect to utilize compatible software, the Contractors will be responsible for all updating of the Project Schedule, obtaining approval of the updated activities actual start, actual finish, and activity percent complete by the Director's Representative, and submitting the properly formatted file for each update through Physical Completion; under this option, failure to create the Baseline Project Schedule, update the Project Schedule, obtain approval, or failure to submit the properly formatted file may result in withholding of payments.
4. The State will not compensate any Contractor for the selection of this optional article during the compliance of this or related sections.

B. If all Contractors elect to utilize compatible software, the Baseline Project Schedule is to be submitted within the parameters of this section and is to encompass the Work of all Contracts.

1. If any Contractor fails or refuses to provide information for developing the Baseline Project Schedule, or if in the judgment of the Director's Representative the information provided does not adequately reflect the of Work of the Project, all Contractors will be deemed not to have provided the information necessary for development of the Baseline Project Schedule and payments may be withheld.

C. The Contractors are not prohibited from developing a complete Project Schedule encompassing all Contracts utilizing the Critical Path Method.

1. The Critical Path Method is a scheduling process used to plan and coordinate the Project, arranging activities based on logical relationships in order to create a network diagram of interconnected procedures.

END OF SECTION

PROJECT NO. _____

PROJECT NAME: _____

REPORT DATE: _____

REPORT NAME(S): _____

_____

_____

_____

It is agreed that the Baseline Project Schedule defined by the above listed computer reports has been reviewed and is accepted for use in coordinating, scheduling, and monitoring the work of all related contracts.

FOR CONSTRUCTION WORK CONTRACTOR: _____ DATE: _____

FOR DIRECTOR'S REPRESENTATIVE: _____ DATE: _____

SECTION 092116

GYPSUM BOARD SYSTEMS

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

A. Cold-Formed Metal Framing: Section 054000.

1.02 DEFINITIONS

A. Gypsum Board Terminology: ASTM C 11 - Standard Terminology Relating to Gypsum and Related Building Materials and Systems.

1.03 SUBMITTALS

A. Product Data: Catalog sheets, specifications, and installation instructions for each item specified.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.

1.05 PROJECT CONDITIONS

A. Environmental Requirements: Comply with gypsum board manufacturer's printed temperature and ventilation requirements during application and finishing. Ventilate installation areas to relieve excess moisture.

PART 2 PRODUCTS

2.01 GYPSUM BOARD

A. Standard Gypsum Board: ASTM C 1396; long edges as follows:
   1. Long Edges: Tapered.

B. Fire Resistant Gypsum Board: ASTM C 1396; Type X, UL listed and bearing listing marking; long edges as follows:
   1. Long Edges: Tapered.

2.02 FASTENERS

A. Steel Drill Screws: ASTM C 1002; gypsum board manufacturer's recommended types and sizes for substrates involved.

2.03 TRIM

A. Interior Trim: ASTM C 1047.
   1. Material: Galvanized steel or extruded vinyl.
   2. Shapes:
      a. Cornerbead: Use at outside corners.
      b. LC-Bead: J-Shaped, exposed long flange receives joint compound. Use at exposed panel edges.
      c. L-Bead: L-shaped, exposed long leg receives joint compound with tear away bead. Use where gypsum board abuts or intersects dissimilar material.

2.04 JOINT TREATMENT MATERIALS

A. Joint Tapes: ASTM C 475; plain or perforated.

B. Joint Compound: ASTM C 475; gypsum board manufacturer's recommended dry powder or ready-mixed, either of the following:
   1. One Compound Treatment: One compound for both bedding and finishing joints.
   2. Two Compound Treatment: Compatible joint compounds; one compound for bedding and the other compound for finishing joints.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates to which gypsum board system attaches or abuts, preset steel door frames, cast in anchors, and structural framing, with installer present for compliance with requirements for installation tolerances and other conditions affecting performance of gypsum board system construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 CONSTRUCTION TOLERANCES

A. Do not exceed 1/8 inch in 8 feet variation from plumb or level in any exposed line or surface, except at joints between boards do not exceed 1/16 inch variation between planes or abutting edges or ends. Shim as required to comply with specified tolerances.

3.03 GYPSUM BOARD INSTALLATION

A. Install gypsum board in the most economical direction, of maximum lengths to minimize end butt joints. Where unavoidable, locate end butt joints as far from center of walls or ceilings as possible.

B. Install gypsum board with face side out. Butt boards together at edges and ends over firm bearing with not more than 1/16 inch of open space between boards. Do not force into place.

C. Fasteners: Fasten gypsum board to supports and furring with steel drill screws of required size and spacing as recommended by the gypsum board manufacturer.

D. Provide additional framing and blocking required to support gypsum board at openings and cutouts.

E. Wood Supports: Provide “floating” interior angle construction between gypsum board at interior corners.

F. Reinforce joints formed by tapered edges, butt edges, and interior corners or angles with joint tape.

3.04 TRIM INSTALLATION

A. Coordinate installation of trim progressively with gypsum board installation where trim is of type required to be installed prior to, or progressively with installation of gypsum board.

B. Securely fasten trim pieces in accordance with manufacturer’s printed instructions.

C. Install cornerbeads at external corners. Install LC-Bead (J-Bead) beads at unprotected (exposed) edges and where gypsum board abuts dissimilar materials. Use single unjointed lengths unless otherwise approved by the Director.

D. Comply with joint compound manufacturer’s recommended drying time for the relative humidity and temperature at time of application. Allow minimum of 24 hours drying time between applications of joint compound.

3.05 LEVELS OF GYPSUM BOARD FINISH

A. General: Finish panels to levels indicated below, in accordance with ASTM C 840, for locations indicated.

1. Level 4 Finish: Joints and angles, provide tape embedded in joint compound and provide three separate coats of joint compound over all joints, angles, and fastener heads. Accessories to be covered with three separate coats of joint compound. Joint compounds to be smooth and free of tool marks and ridges. Cover the prepared surface with a drywall primer prior to the application of the final decoration.

END OF SECTION

SECTION 220529

PIPE HANGERS AND SUPPORTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Shop Drawings:
   1. Details of pipe anchors.

1.02 QUALITY ASSURANCE

A. Regulatory Requirements:
   1. Hang and support cast iron soil pipe and fittings in accordance with the recommendations of the Cast Iron Soil Pipe's Institute's (CISPI) Cast Iron Soil Pipe and Fittings Handbook.

PART 2 PRODUCTS

2.01 PIPE HANGERS AND SUPPORTS

A. Combination clevis hanger and pipe insulation shield

PIPE OR TUBING SIZE (Inches)	SHIELD LENGTH (Inches)	SHIELD GAGE	VAPOR BARRIER JACKET LENGTH (Inches)
3 to 6	4	14	10

B. Pipe Hangers: Height adjustable standard duty clevis type, with cross bolt and nut.

C. Hanger Rods: Mild, low carbon steel, fully threaded or threaded at each end, with two nuts at each end for positioning rod and hanger, and locking each in place.

D. Riser Clamps: Malleable iron or steel.

2.02 ANCHORS AND ATTACHMENTS

A. Sleeve Anchors (Group II, Type 3, Class 3): Molly's Div./USM Corp. Parasleeve Series, Ramset's Dynabolt Series, or Red Head/Phillips AN, HN, or FS Series.

B. Wedge Anchors (Zinc Plated, Group II, Type 4, Class 1): Hilti's Kwik Bolt Series, Molly's Div./USM Corp. Parabolt PB Series, Ramset's Trubolt T Series, or Red Head/Phillips WS Series.

C. Self-Drilling Anchors (Group III, Type 1): Ramset's RD Series, or Red Head/Phillips S Series.

D. Non-Drilling Anchors (Group VIII, Type 1): Ramset's Dynaset DS Series, Hilti's HDI Series, or Red Head/Phillips J Series.

E. Stud Anchors (Group VIII, Type 2): Red Head/Phillips JS Series.

F. Beam Clamps: Forged steel beam clamp, with weldless eye nut (right hand thread), steel tie rod, nuts, and washers, Grinnell's Fig No. 292 (size for load, beam flange width, and rod size required).

2.03 FASTENERS

A. Bolts, Nuts, Washers, Lags, and Screws: Medium carbon steel; size and type to suit application; galvanized for high humidity locations, and treated wood; plain finish for other interior locations. Except where shown otherwise on the Drawings, furnish type, size, and grade required for proper installation of the Work.

2.04 SHOP PAINTING AND PLATING

A. Hangers, supports, rods, inserts and accessories used for pipe supports, unless chromium plated, cadmium plated or galvanized shall be shop coated with metal primer paint.

PART 3 EXECUTION

3.01 INSTALLATION

A. Do not hang or support one pipe from another or from ductwork.
   1. Do not bend threaded rod.

B. Support all insulated horizontal piping conveying fluids below ambient temperature, by means of hangers or supports with insulation shields installed outside of the insulation.

C. Space hangers or supports for horizontal piping on maximum center distances as listed in the following hanger schedules, except as otherwise specified, or noted on the Drawings.
   1. For Plastic Tubing:

PIPE OR TUBING SIZE (Inches)	MAXIMUM SPACING (Feet)
Under 2 inch	3

   2. Cast Iron Soil Pipe:
      a. For Hubless Cast Iron Soil Pipe: Space hangers or support pipe at each joint or on maximum centers of 5 feet. Place hanger or supports as close as possible to joints and when hangers or supports do not come within 1 foot of a branch line fitting, install an additional hanger or support at the fitting.

3. For Directional Changes: Install a hanger or support close to the point of change of direction of all pipe runs in either a horizontal or vertical plane.

D. Size hanger rods in accordance with the following:

PIPE OR TUBING SIZE (Inches)	SINGLE ROD HANGER SIZE (Inches)		DOUBLE ROD HANGER SIZE (Inches)	
	PIPE	TUBING	PIPE	TUBING
2-1/2 and 3	1/2	3/8	3/8	1/4
4 and 5	5/8	1/2	1/2	3/8

1. Secure hanger rods as follows: Install one nut under clevis, angle or steel member; one nut on top of clevis, angle or steel member; one nut inside insert or on top of upper hanger attachment and one nut and washer against insert or on lower side of upper hanger attachment. A total of four nuts are required for each rod, two at upper hanger attachment and two at hanger.

3.02 UPPER HANGER ATTACHMENTS

A. General:
1. Secure upper hanger attachments to overhead structural steel, steel bar joists, or other suitable structural members.
2. Do not attach hangers to steel decks that are not to receive concrete fill.
3. Do not attach hangers to precast concrete plank decks less than 2-3/4 inches thick.
4. Do not use flat bars or bent rods as upper hanger attachments.

B. Attachment to Steel Frame Construction: Provide intermediate structural steel members where required by pipe support spacing. Select steel members for use as intermediate supports based on a minimum safety factor of five.
1. Do not use drive-on beam clamps.
2. Do not support piping over 4 inches in size from steel bar joists. Secure upper hanger attachments to steel bar joists at panel points of joists.
3. Do not drill holes in main structural steel members.
4. Beam clamps, with tie rods as specified, may be used as upper hanger attachments for the support of piping, subject to clamp manufacturer's recommended limits.

C. Attachment to Existing Cast-In-Place Concrete:
1. For piping up to a maximum of 4 inches in size, secure hangers to overhead construction with self-drilling type expansion shields and machine bolts.
2. Secure hangers to wall or floor construction with single unit expansion shields or self-drilling type expansion shields and machine bolts.

3.03 PIPE INSULATION SHIELDS

A. Unless otherwise specified, install a pipe insulation shield, at all points of support. Center shields on all hangers and supports outside of high density insulation insert, and install in such a manner so as not to cut, or puncture jacket.

END OF SECTION

SECTION 221100

PLUMBING PIPING

PART 1 GENERAL (Not Used)

PART 2 PRODUCTS

2.01 CAST IRON PIPE AND FITTINGS

A. Hubless Pipe: Bitumin coated; Cast Iron Soil Pipe Institute Standard No. 301.

B. Hubless Pipe Fittings: Drainage Pattern, Bitumin coated; Cast Iron Soil Pipe Institute Standard No. 301.

C. Hubless Joint Couplings: Stainless steel shield and clamp assembly, and elastomer sealing sleeve; CISPI-310.

2.02 PVC PIPE AND FITTINGS

A. PVC Pipe: Solid-wall, ASTM D2665, may be used where permitted by Authority Having Jurisdiction. Cellular (foam) core PVC not permitted.

B. PVC Socket Fittings, ASTM D2665, made to ASTM D3311, drain, waste, and vent patterns.

C. PVC Pipe Joints: ASTM D2855, solvent weld with ASTM D2564 Solvent cement.

2.03 INSULATION

A. Rigid glass fiber, maximum k factor at 75 degrees F of 0.27 Btu-in/hr.f.ft, 3lb/cu.ft density, minimum of 1 inch thick. Vapor barrier jacket shall be white kraft paper with glass fiber yarn, bonded to aluminized film conforming to ASTM C921, with a maximum moisture vapor transmission rate of 0.02 perm-inch in accordance with ASTM E96.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install horizontal piping with a constant pitch, and without sags or humps.
   1. Drainage Piping: Pitch 1/8 inch per foot downward, in direction of flow, unless otherwise noted.

B. Install vertical piping plumb.

C. Use fittings for offsets and direction changes.

D. Cut pipe ends square; ream before joining.

E. Adhere insulation with 6 inch wide adhesive strips on 16 inch centers. Provide 16 gage annealed tie wire, spiral wound, or tied at 16 foot centers for securing insulation until adhesive sets. Butt insulation and seal joints with 2 inch wide foil tape adhered over joints. Insulate horizontal piping and vertical elbows.

3.02 DRAINAGE SYSTEMS

A. Fittings:
   1. Use long turn drainage pattern fittings, unless space conditions prohibit their use; in such cases, short turn pattern fittings may be used.
   2. Vertical Offsets: Make vertical offsets with 45 degree elbows, or 1/8 bends.

END OF SECTION

SECTION 221426

ROOF DRAINS

PART 1 GENERAL

1.01 REFERENCES

A. Unless otherwise specified, the Work of this Section shall meet the applicable requirements of ASME A112.21.2 - Roof Drains.

1.02 SUBMITTALS

A. Product Data: Catalog sheets, specifications and installation instructions.

B. Contract Closeout Submittals:
   1. Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Director's Representative.

PART 2 PRODUCTS

2.01 ROOF DRAINS

A. Drain Body: Coated cast iron, large size sump, minimum 15 inch dia, with integral bosses or lugs drilled and tapped for fastening flashing clamp and underdeck clamp, corrosion resistant bolts, bottom outlet, and connection to match piping option selected.

B. Flashing Clamp: Coated cast iron, non-puncturing type compression ring with integral, notched gravel stop and dome locking receiver.

C. Dome Strainer: Coated cast iron, low profile type, with narrow vertical slotted openings, bayonet locking flange, secured with stainless steel vandal resistant fasteners.
   1. Minimum Dome Strainer Opening Area:

CONNECTING PIPE SIZES (Inches Nominal)	DOME STRAINER FREE AREA (Square inches)
4	36

D. Sump Receiver: Galvanized steel plate, 22 gage minimum thickness, with opening sized to accept drain body flange, and flange recess of depth equal to drain sump flange thickness.
   1. Minimum Size: 4 sq. ft.

E. Underdeck Clamp: Coated cast iron or cast aluminum, drilled to match size of bolts and tap locations in drain body.

F. Acceptable Drain Series: Josam 21500, Smith 1010, Wade W3000, and Zurn Z100.

2.02 FASTENERS

A. Corrosion Resistant Fasteners: Brass, bronze, or Type 302 or 304 stainless steel bolts acceptable.

B. Anti-Seize Lubricant: Never-Seez by Bostik Chemical Group, Broadview, IL; Molycote 1000 by Dow Corning Corp, Midland, MI; Anti-Seize Lubricant by Loctite Corp, Newington, CT.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install the Work of this Section in accordance with manufacturer's printed installation instructions, unless otherwise specified.

B. Coordinate drain installation with deck and roofing Work.

C. Unless otherwise indicated by dimensions on the Drawings, locate drains as follows:
   1. Place drains minimum 3 feet away from items on roof (parapets, walls, gravelstops, pipes, vents, scuttles, equipment and curbs, etc.) to allow for flashing.

D. Drains in Concrete Deck Units: Install drains as shown on the Construction Work Drawings.
   1. Secure drain body with underdeck clamp.

E. Fasteners:
   1. Coat bolt threads with anti-seize lubricant before final installation.

END OF SECTION

SYMBOLS LEGEND

RD	ROOF DRAIN
EF	EXHAUST FAN AND CURB
OV	PIPE PENETRATION (VENT)
1/8"	PITCH OF TAPERED INSULATION (NUMBER INDICATES PITCH)
	TAPERED CRICKET
X / A-XXX	DETAIL REFERENCE

STRUCTURAL DESIGN DATA

CONSTRUCTION LOADING		XX psf	1603.2
WIND LOAD	BUILDING CATEGORY	II	1604.5
	BASIC WIND SPEED	90 MPH	1609.3
	EXPOSURE CATEGORY	C	1609.4
SNOW LOAD	Pg	40 psf	1608.2
SEISMIC LOAD	SEISMIC DESIGN CATEGORY	C	1615.1.5

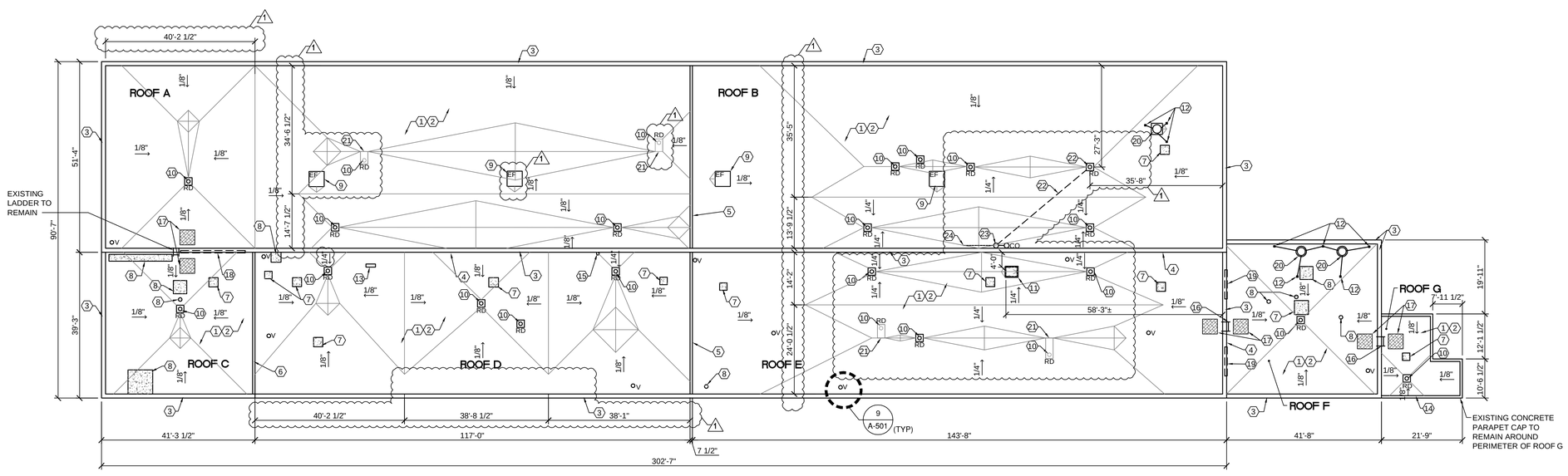
ROOF AREA INFORMATION

ROOF NAME	ROOF AREA (APPROX)	APPROXIMATE ELEVATION (RELATIVE TO 0'-0" SHOWN ON PLAN)
ROOF A	8140 SF	38'-0" ±
ROOF B	7390 SF	38'-0" ±
ROOF C	1620 SF	30'-6" ±
ROOF D	4605 SF	29'-0" ±
ROOF E	5650 SF	29'-0" ±
ROOF F	1775 SF	22'-0" ±
ROOF G	396 SF	14'-0" ±

ⓧ CONSTRUCTION KEY NOTES

1. PROVIDE A COMPLETE WEATHER TIGHT ROOF SYSTEM WITH MANUFACTURER'S WARRANTY.
2. PROVIDE FLAT INSULATION WITH TAPERED INSULATION, TAPERED CRICKET SYSTEM AND TAPERED EDGE STRIPS FOR POSITIVE DRAINAGE TO ROOF DRAINS, AS SHOWN ON CONSTRUCTION ROOF PLAN AND DETAILS ON A-501, A-502 AND A-503. PROVIDE 3 1/2" MINIMUM INSULATION THICKNESS AT LOW POINTS AROUND ROOF DRAIN SUMPS.
3. PROVIDE ALUMINUM GRAVEL STOP AND WOOD BLOCKING, SEE DETAIL 2/A-501.
4. PROVIDE WALL FLASHING WITH ALUMINUM COUNTER FLASHING, SEE DETAIL 4/A-501.
5. PROVIDE EXPANSION JOINT AND WOOD BLOCKING. SEE DETAIL 7/A-501.
6. EXTEND EPDM MEMBRANE UP AND OVER FACE OF EXISTING WALL AND PROVIDE ALUMINUM GRAVEL STOP. PROVIDE WOOD BLOCKING. SEE DETAIL 3/A-501.
7. INFILL CONCRETE DECK OPENING, SEE DETAIL 4/A-503.
8. INFILL CONCRETE DECK OPENING, SEE DETAIL 2&3/A-503.
9. REINSTALL EXISTING ROOF CURBS AND EXHAUST FANS. SEE DETAIL 8/A-501. PROVIDE TAPERED CRICKET INSULATION ON HIGH SIDE OF ROOF PITCH.
10. PROVIDE ROOF DRAIN STRAINER BASKETS AND COMPRESSION RINGS TO EXISTING DRAIN BODY. SEE DETAIL 6/A-501.
11. PROVIDE ROOF HATCH AND LADDER. SEE DETAIL 1 & 1A/A-503. APPROXIMATE LOCATION OF ROOF HATCH OPENING SHOWN ON CONSTRUCTION ROOF PLAN, COORDINATE EXACT LOCATION WITH DIRECTOR'S REPRESENTATIVE. PROVIDE TAPERED CRICKET INSULATION ON HIGH SIDE OF ROOF PITCH.
12. PROVIDE PITCH POCKET. SEE DETAIL 2/A-502. PROVIDE NEW TURN BUCKLES AS REQUIRED FOR REATTACHMENT OF GUY WIRES FROM EXISTING STACKS TO REMAIN.
13. REINSTALL SPLIT UNIT ON ROOF SURFACE. PROVIDE PROTECTION PAD UNDER UNIT TO PROTECT ROOF SURFACE.
14. EXTEND EPDM ROOF UP EXISTING WALL TO TERMINATION BAR. SEE DETAIL 5/A-501.
15. RECONNECT ANTENNA AND CABLING.
16. PROVIDE ROOF LADDER. SEE SPECIFICATION SECTION 055000. AND ROOF AREA INFORMATION ON A-101
17. PROVIDE (30) WALK WAY/ PROTECTION PADS. PROVIDE AT LOCATIONS AS DETERMINED BY THE DIRECTORS REPRESENTATIVE.
18. INFILL MASONRY OPENING. SEE DETAIL 4/A-502.
19. PARTIALLY INFILL MASONRY OPENING AND PROVIDE WINDOW. SEE DETAIL 5/A-502.
20. PROVIDE FLASHING AT EXISTING STACKS. SEE DETAIL 1/A-502.
21. EXTEND DRAIN SUMP TO LOW POINT OF TAPERED INSULATION.
22. PROVIDE 4" ROOF DRAIN AND 4" CONDUCTOR WITH MINIMUM 1/8":1'-0" PITCH. CONDUCTOR LENGTH OF APPROXIMATELY 35'-0".
23. CONNECT CONDUCTOR TO EXISTING CODUCTOR AND PROVIDE CLEANOUT.
24. EXISTING 4" CONDUCTOR.

NOTE: REFER TO GENERAL NOTES ON A-101



1 CONSTRUCTION ROOF PLAN

SCALE: 1/16" = 1'-0"

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MARK	DATE	DESCRIPTION
1	08/12/2014	ADDENDUM #1
	07/10/2014	BID DOCUMENTS

PROJECT NUMBER:	45060 - C
DESIGNED BY:	TL
DRAWN BY:	ARS
FIELD CHECK:	TL
APPROVED:	KGR

CONTRACT:
CONSTRUCTION

TITLE:
REPAIR/REPLACE ROOF

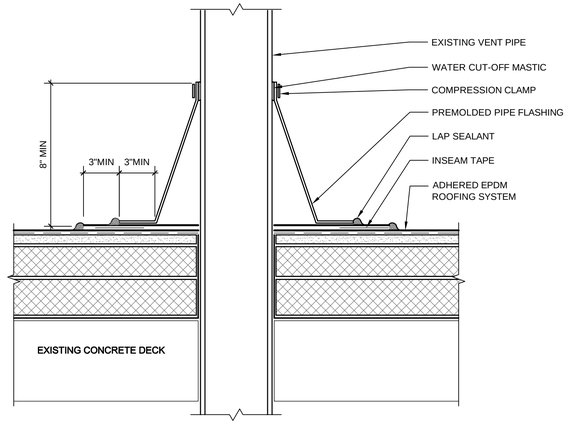
LOCATION:
DOT REGION 1, WATERFORD
182 DAVIS AVENUE
WATERFORD, NY

CLIENT:
DEPARTMENT OF TRANSPORTATION

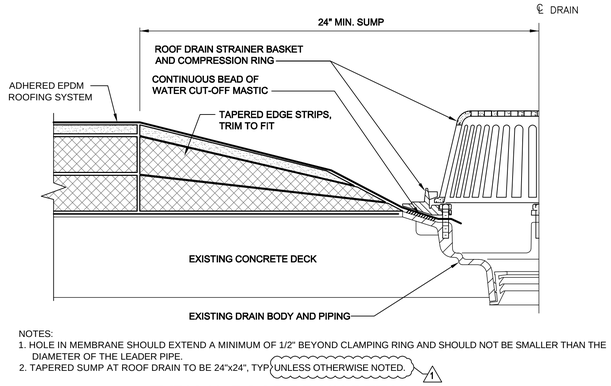
SHEET TITLE:
CONSTRUCTION ROOF PLAN

DRAWING NUMBER:
A-104

SHEET 6 OF 9

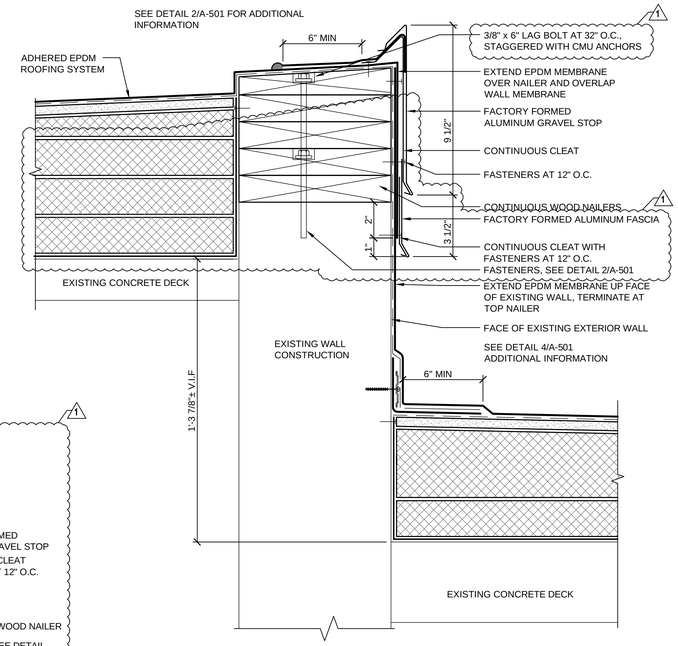


9 TYPICAL PIPE DETAIL
SCALE: 3" = 1'-0"

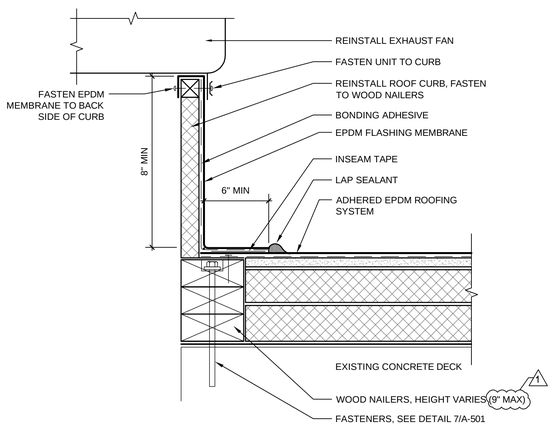


NOTES:
1. HOLE IN MEMBRANE SHOULD EXTEND A MINIMUM OF 1/2" BEYOND CLAMPING RING AND SHOULD NOT BE SMALLER THAN THE DIAMETER OF THE LEADER PIPE.
2. TAPERED SUMP AT ROOF DRAIN TO BE 24"x24", TYP UNLESS OTHERWISE NOTED. 1

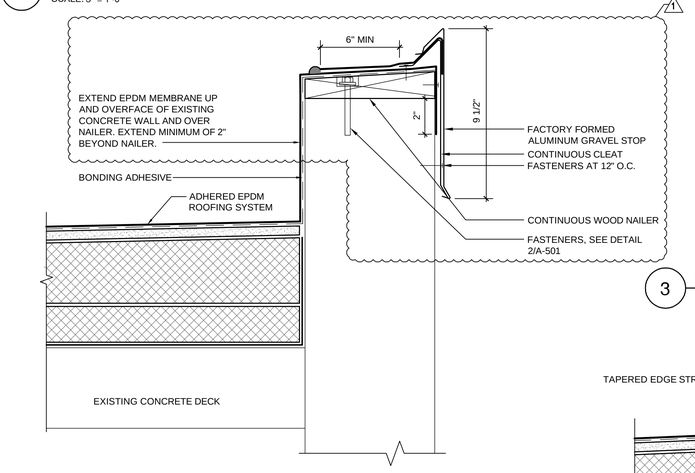
6 TYPICAL ROOF DRAIN DETAIL
SCALE: 3" = 1'-0"



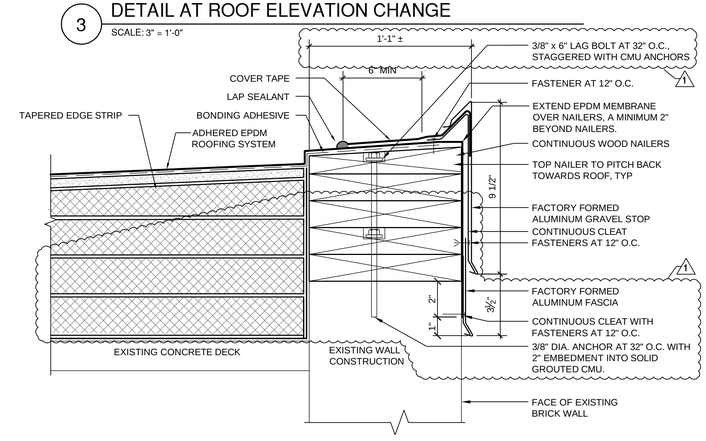
3 DETAIL AT ROOF ELEVATION CHANGE
SCALE: 3" = 1'-0"



8 TYPICAL ROOF CURB DETAIL
SCALE: 3" = 1'-0"

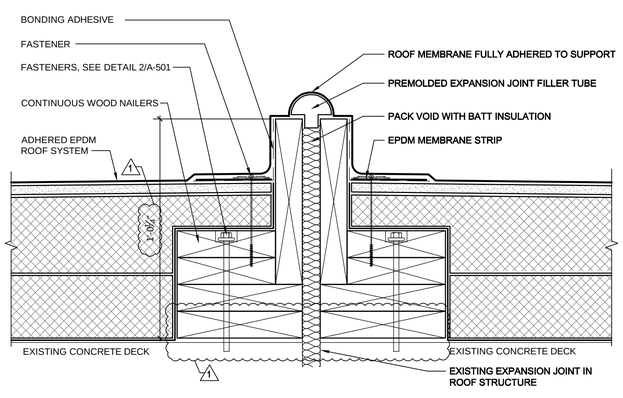


5 TYPICAL PARAPET DETAIL AT ROOF G
SCALE: 3" = 1'-0"

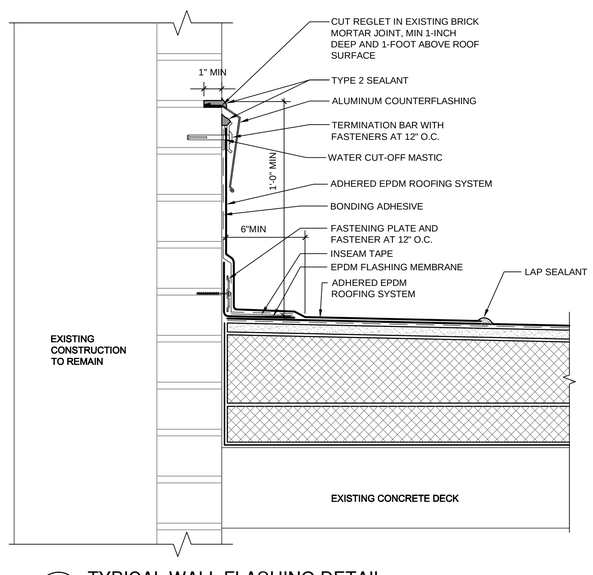


2 TYPICAL FASCIA DETAIL
SCALE: 3" = 1'-0"

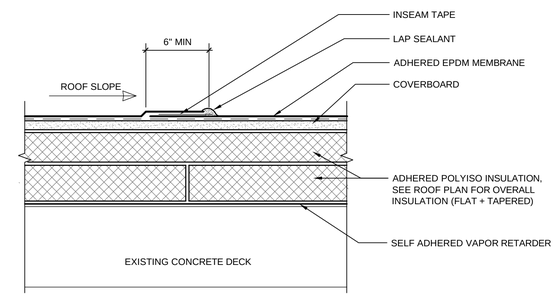
NOTE:
AT ROOF AREAS C, F & G CONTINUOUS WOOD NAILERS HEIGHT MAY BE REDUCED TO MINIMUM 1" ABOVE HIGH POINT OF INSULATION.



7 EXPANSION JOINT DETAIL
SCALE: 3" = 1'-0"



4 TYPICAL WALL FLASHING DETAIL
SCALE: 3" = 1'-0"



1 TYPICAL ROOF SYSTEM ASSEMBLY
SCALE: 3" = 1'-0"

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CONSTRUCTION

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REPAIR/REPLACE ROOF

LOCATION:
DOT REGION 1, WATERFORD
182 DAVIS AVENUE
WATERFORD, NY

CLIENT:
DEPARTMENT OF TRANSPORTATION

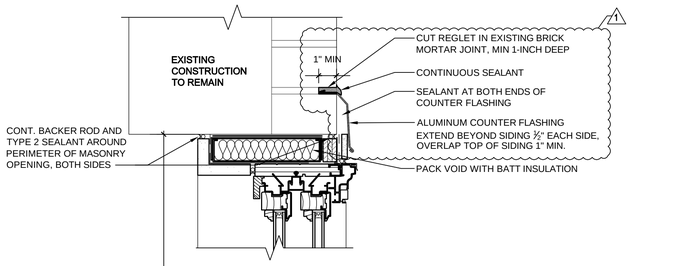
MARK	DATE	DESCRIPTION
1	08/12/2014	ADDENDUM #1
	07/10/2014	BID DOCUMENTS

PROJECT NUMBER:	45060 - C
DESIGNED BY:	TL
DRAWN BY:	ARS
FIELD CHECK:	TL
APPROVED:	KGR

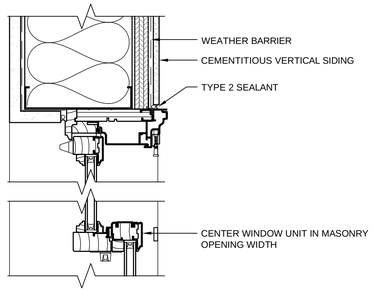
SHEET TITLE:
ROOF DETAILS

DRAWING NUMBER:
A-501

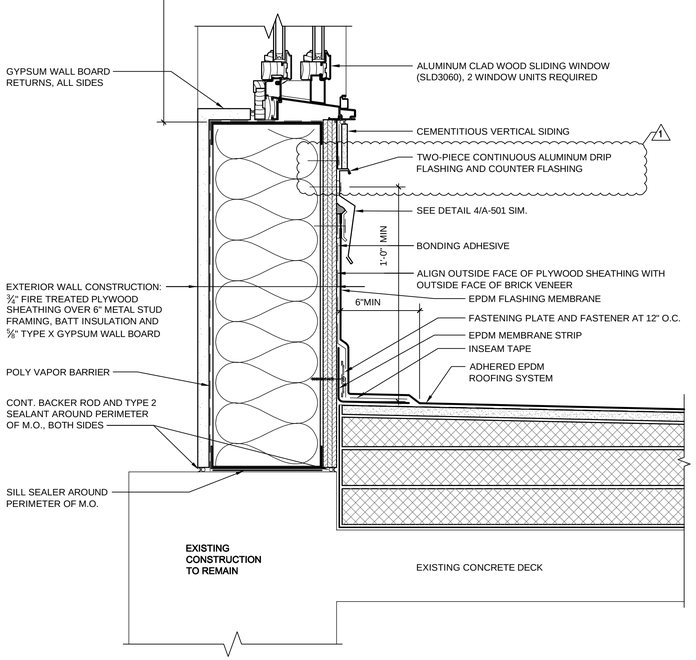
SHEET 7 OF 9



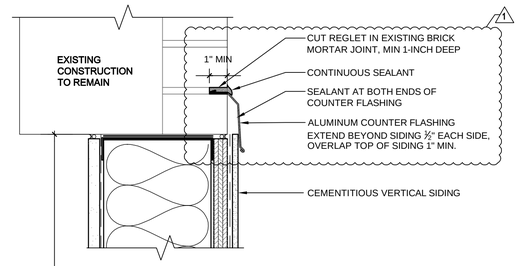
5B WINDOW MODIFICATION HEAD DETAIL AT ROOF F
SCALE: 3" = 1'-0"



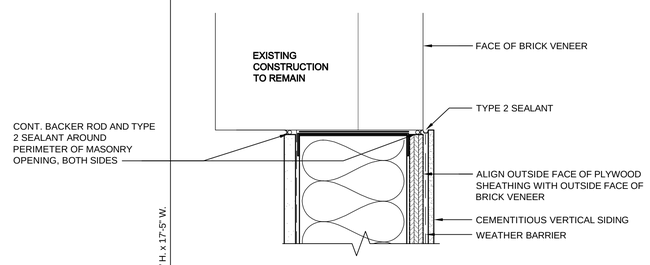
5A WINDOW MODIFICATION JAMB DETAIL AT ROOF F
SCALE: 3" = 1'-0"



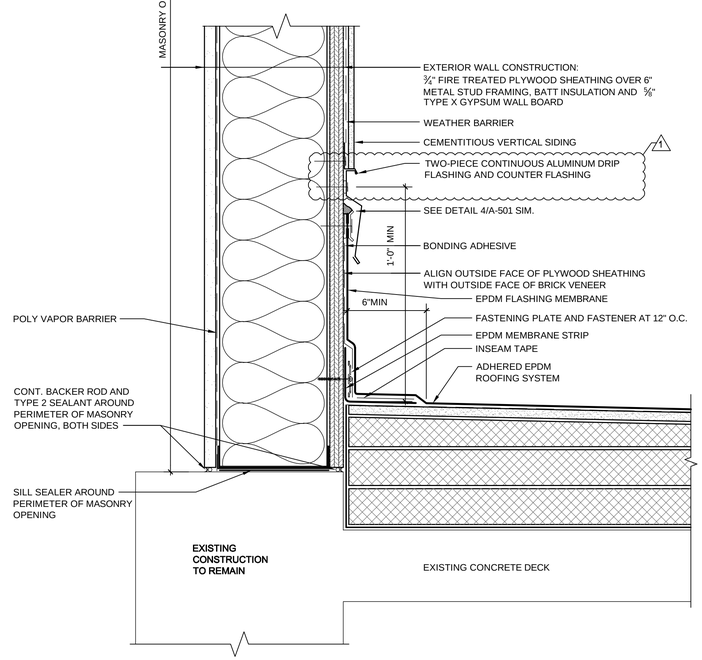
5 WINDOW MODIFICATION SILL DETAIL AT ROOF F
SCALE: 3" = 1'-0"



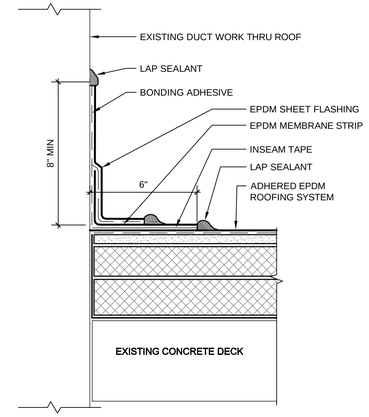
4B INFILL HEAD DETAIL AT ROOF C
SCALE: 3" = 1'-0"



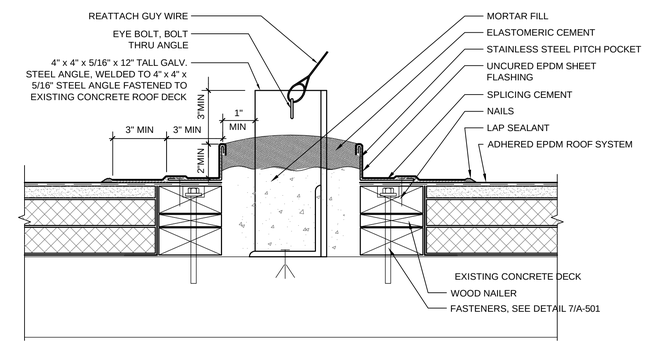
4A INFILL JAMB DETAIL AT ROOF C
SCALE: 3" = 1'-0"



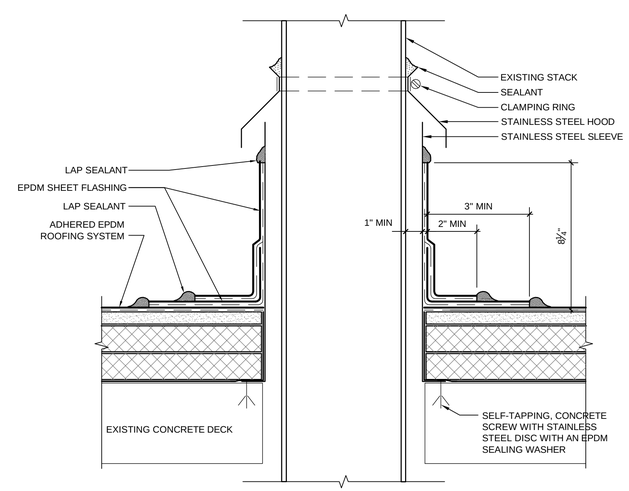
4 INFILL SILL DETAIL AT ROOF C
SCALE: 3" = 1'-0"



3 TYPICAL FIELD FORMED FLASHING DETAIL
SCALE: 3" = 1'-0"



2 TYPICAL PITCH POCKET DETAIL
SCALE: 3" = 1'-0"



1 TYPICAL STACK DETAIL
SCALE: 3" = 1'-0"

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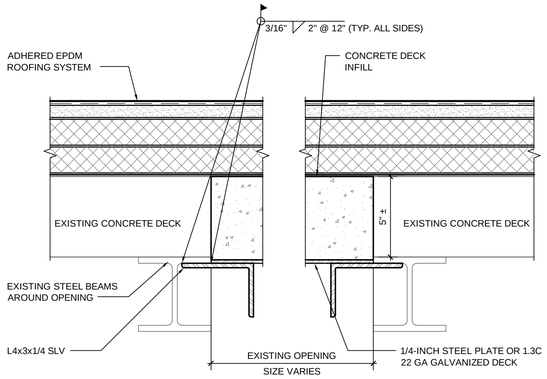
DESIGNED BY:	TL
DRAWN BY:	ARS
FIELD CHECK:	TL
APPROVED:	KGR

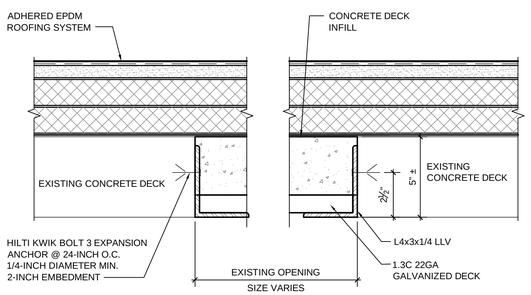
SHEET TITLE:
ROOF DETAILS

DRAWING NUMBER:
A-502

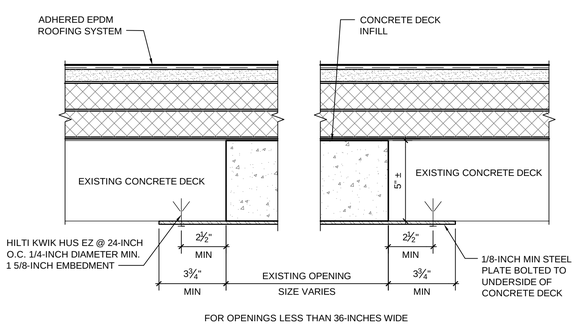
SHEET 8 OF 9



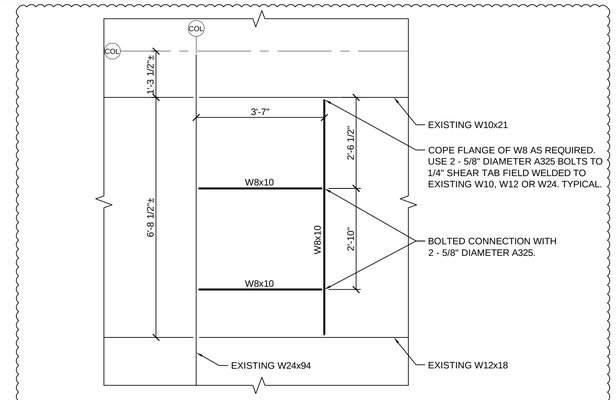
4 ROOF DECK INFILL AT FRAMED OPENINGS
SCALE: 3" = 1'-0"



3 ROOF DECK INFILL AT LARGE UNFRAMED OPENINGS
SCALE: 3" = 1'-0"

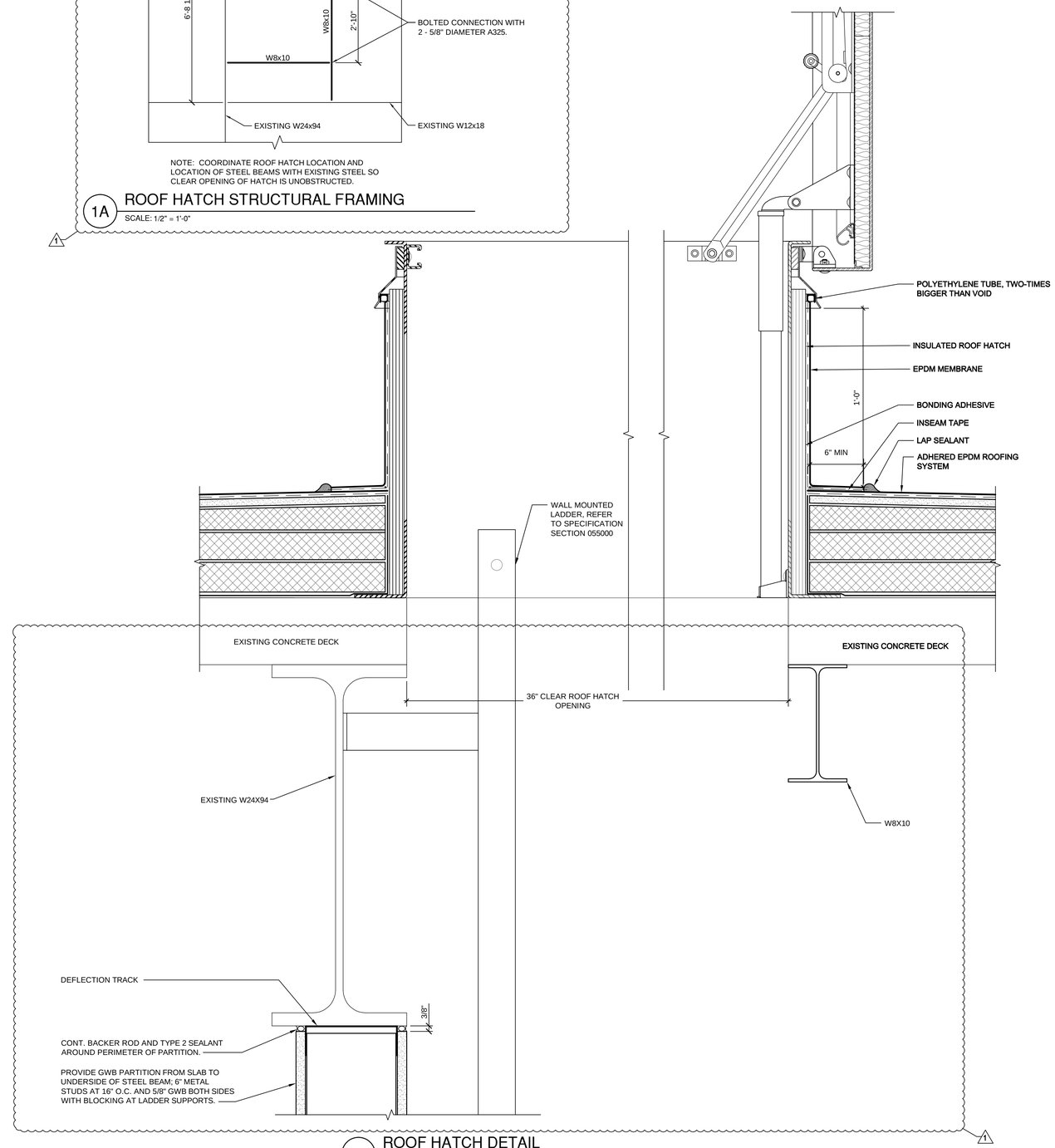


2 ROOF DECK INFILL AT SMALL UNFRAMED OPENINGS
SCALE: 3" = 1'-0"



NOTE: COORDINATE ROOF HATCH LOCATION AND LOCATION OF STEEL BEAMS WITH EXISTING STEEL SO CLEAR OPENING OF HATCH IS UNOBSTRUCTED.

1A ROOF HATCH STRUCTURAL FRAMING
SCALE: 1/2" = 1'-0"



1 ROOF HATCH DETAIL
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DRAWN BY:	ARS
FIELD CHECK:	TL
APPROVED:	KGR

SHEET TITLE:
ROOF DETAILS

DRAWING NUMBER:
A-503

SHEET 9 OF 9