



Structural Special Inspections Report

Maine Eye Retina & Surgery Center

Portland, Maine
December 22, 2016

Report Prepared by:

Structural Engineer of Record
Becker Structural Engineers, Inc.
75 York Street
Portland, ME 04101
207. 879. 1838

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Statement Prepared by:

Structural Engineer of Record
Becker Structural Engineers, Inc.
75 York Street
Portland, ME 04101
207. 879. 1838

Owner
161 Marginal Way LLC
c/o Fore River Company
5 Milk Street
P.O. Box 7525
Portland, ME 04112
207. 772. 6404

Architect of Record
PDT Architects
49 Dartmouth Street
Portland, ME 04101
207. 775. 1059

General Contractor
Hebert Construction
9 Gould Road
Lewiston, ME 04240
207. 783. 2091



Maine Eye Retina & Surgery Center

Portland, Maine
December 22, 2016

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Special Inspections – Exhibit A



Project: Maine Eye-Retina & Surgery Center
Date Prepared: 12/22/16

Structural Statement of Special Inspections

Project: *Maine Eye-Retina & Surgery Center*

Location: *Portland, ME*

Owner: *161 Marginal Way LLC, c/o Fore River Company*

This *Statement of Special Inspections* encompass the following discipline: **Structural**

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Structural Special Inspection Coordinator (SSIC) and the identity of other approved agencies to be retained for conducting these inspections and tests.

The Structural Special Inspection Coordinator shall keep records of all Structural inspections and shall furnish inspection reports to the Building Code Official (BCO) and the Structural Registered Design Professional in Responsible Charge (SRDP). Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Structural Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Structural Registered Design Professional in Responsible Charge at an interval determined by the SSIC and the BCO.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted to the BCO prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: *Upon request of Building Official* _____ or per attached schedule.

Prepared by:

Christopher G. Williams, P.E., S.E.

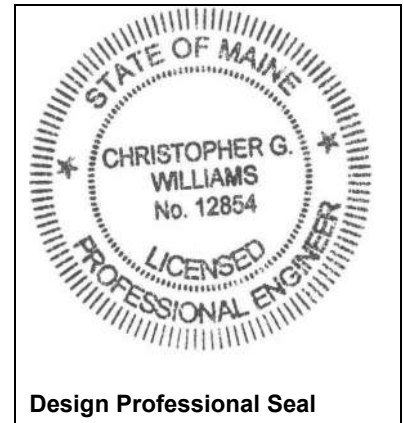
(type or print name of the Structural Registered Design Professional in Responsible Charge)

Chris Williams

Signature

12/22/16

Date



Owner's Authorization:

Building Code Official's Acceptance:

Signature

Date

Signature

Date

Structural Statement of Special Inspections (Continued)

List of Agents

Project: *Maine Eye-Retina & Surgery Center*

Location: *Portland, ME*

Owner: *161 Marginal Way LLC, c/o Fore River Company*

This Statement of Special Inspections encompass the following discipline: **Structural**

(Note: Statement of Special Inspections for other disciplines may be included under a separate cover)

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- Soils and Foundations
- Cast-in-Place Concrete
- Precast Concrete System
- Structural Masonry Systems
- Structural Steel
- Wood Construction
- Special Cases

Special Inspection Agencies	Firm	Address, Telephone, e-mail
1. STRUCTURAL Special Inspections Coordinator (SSIC)	<i>Becker Structural Engineers, Inc.</i>	<i>75 York St. Portland, ME 04101 (207)879-1838</i>
2. Special Inspector (SI 1)	<i>Becker Structural Engineers, Inc.</i>	<i>75 York St. Portland, ME 04101 (207)879-1838</i>
3. Special Inspector (SI 2)	<i>R.W. Gillespie & Associates</i>	<i>86 Industrial Park Rd. Saco, ME 04072 (207)286-8008</i>
4. Testing Agency (TA 1)	<i>R.W Gillespie & Associates</i>	<i>86 Industrial Park Rd. Saco, ME 04072 (207)286-8008</i>
5. Testing Agency (TA 2)		
6. Other (O1)		

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

Project: **Maine Eye-Retina & Surgery Center**
Date Prepared: 12/22/16

Structural Statement of Special Inspections (Continued)

Final Report of Special Inspections (SSIC/SI 1)

[To be completed by the Structural Special Inspections Coordinator (SSIC/SI 1). Note that all Agent's Final Reports must be received prior to issuance.]

Project: *Maine Eye-Retina & Surgery Center*

Location: *Portland, ME*

Owner: *161 Marginal Way LLC, c/o Fore River Company*

Owner's Address: *5 Milk St., PO Box 7525
Portland, ME 04112*

Architect of Record: *Becca Casey* *PDT Architects*
(name) *(firm)*

Structural Registered Design

Professional in Responsible Charge: *Christopher G. Williams, P.E., S.E.* *Becker Structural Engineers, Inc.*
(name) *(firm)*

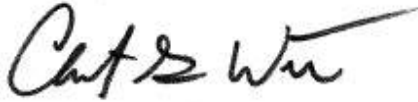
To the best of my information, knowledge and belief, the Special Inspections required for this project, and itemized in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Structural Special Inspection Coordinator

Christopher G. Williams, P.E., S.E.
(Type or print name)

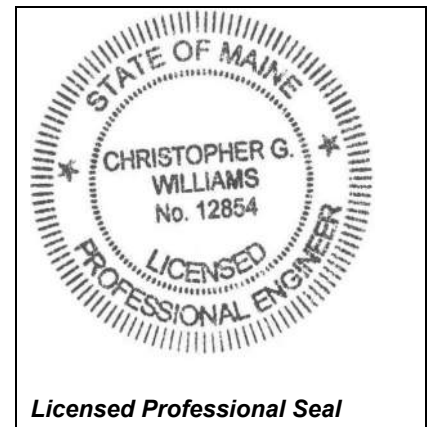
Becker Structural Engineers, Inc.
(Firm Name)



Signature

12/22/16

Date



Structural Statement of Special Inspections (Continued)

Special Inspector's/Agent's Final Report

Project: *Maine Eye-Retina & Surgery Center*
Special Inspector or Agent: *Charles R. Nickerson* *RW Gillegie & Associates, Inc.*
(name) (firm)
Designation: S12 (Licensed Geotechnical Engineer)

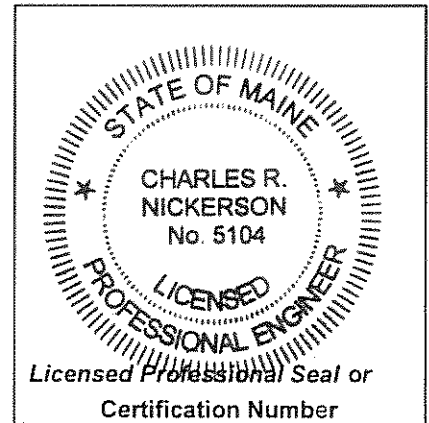
To the best of my information, knowledge and belief, the Special Inspections or testing required for this project, and designated for this Inspector/Agent in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Special Inspector or Agent:

Charles R. Nickerson
(Type or print name)

Charles R. Nickerson *16 Dec 2016*
Signature Date



Structural Statement of Special Inspections (Continued)
Special Inspector's/Agent's Final Report

Project: *Maine Eye-Retina & Surgery Center*
Special Inspector or Agent: ERIK WIRBERG R.W. GILLETTE & ASSOCIATES
(name) (firm)
Designation: TAI (Certified Testing Agency)

To the best of my information, knowledge and belief, the Special Inspections or testing required for this project, and designated for this Inspector/Agent in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved.

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Special Inspector or Agent:

ERIK J WIRBERG
(Type or print name)

[Handwritten Signature]
Signature
16 DEC 2016
Date

SEAL NOT REQUIRED FOR TESTING AGENCY

Licensed Professional Seal or Certification Number

Structural Schedule of Special Inspections

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided to the Special Inspector for their records. *NOTE VERIFICATION THAT QUALIFIED INDIVIDUALS ARE AVAILABLE TO PERFORM STIPULATED TESTING AND/OR INSPECTION SHOULD BE PROVIDED PRIOR TO SUBMITTING STATEMENT. AGENT QUALIFICATIONS IN SCHEDULE ARE SUGGESTIONS ONLY; FINAL QUALIFICATIONS ARE SUBJECT TO THE DISCRETION OF THE REGISTERED DESIGN PROFESSIONAL PREPARING THE SCHEDULE.*

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge or Special Inspector of Record deems it appropriate that the individual performing a stipulated test or inspection have a specific certification, license or experience as indicated below, such requirement shall be listed below and shall be clearly identified within the schedule under the Agent Qualification Designation.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

Experienced Testing Technician

ETT	Experienced Testing Technician – An Experienced Testing Technician with a minimum 5 years experience with the stipulated test or inspection
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American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.
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International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Other

Special Inspections – Exhibit B

Division 3 – Cast-in-Place Concrete/Foundations



Structural Schedule of Special Inspections

CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	REQD	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
	Y/N					
IBC Section 1704.4						
1. Inspection of reinforcing steel, including prestressing tendons, and placement	Y	P	ACI 318: 3.5, 7.1-7.7	SI1	PE/SE or EIT	July '16 – Aug '16
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5B	N	-	Not applicable. Welding of Reinf Not Allowed	-	-	
3. Inspect bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased or where strength design is used.	N	C	IBC 1911.5	SI1	PE/SE or EIT	
4. Inspection of anchors installed in hardened concrete.	Y	P	IBC 1212.1	SI1	PE/SE or EIT	July '16 – Aug '16
5. Verifying use of required design mix	Y	P	ACI 318: Ch 4, 5.2-5.4	TA1	ACI-CFTT or ACI-STT	July '16 – Aug '16
6. At time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.	Y	C	ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	TA1	ACI-CFTT or ACI-STT	July '16 – Aug '16
7. Inspection of concrete and shotcrete placement for proper application techniques	Y	C	ACI 318: 5.9, 5.10	TA1	ACI-CFTT or ACI-STT	July '16 – Aug '16
8. Inspection for maintenance of specified curing temperature and techniques	Y	P	ACI 318: 5.11-5.13	SI1	PE/SE or EIT	July '16 – Aug '16
9. Inspection of Prestressed Concrete						
a. Application of prestressing force.	N	C	ACI 318: 18.20	TA2	PE/SE or EIT	
b. Grouting of bonded prestressing tendons in seismic force resisting system	N	C	ACI 318: 18.18.4	TA1	ACI-CFTT or ACI-STT	
10. Erection of precast concrete members.	N	P	ACI 318: Ch 16	SI1	PE/SE or EIT	
11. Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	N	P	ACI 318: 6.2	TA1	ACI-CFTT or ACI-STT	
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.	Y	P	Limitations apply. See below	SI1	PE/SE or EIT	July '16 – Aug '16

Limitations of item 12: Special inspection includes periodic review of formwork shape, general location, and formwork dimensions that can be readily measured with conventional tape measure. Verification of building layout, building location, foundation extents, column grids, and foundation elevations is excluded.

Project:	Maine Eye - 161 Marginal Way
Location:	Portland, ME
Becker Job No:	3729

OBSERVATION REPORT
Cast in Place Concrete

Date:	July 21, 2016
Time:	1:30 pm
Temp:	85 degrees
Weather:	Sunny

Observation Location: Observed footing reinforcement at the new canopy. Also discussed concrete cutting methods and observed proposed slab cut locations for the ground floor trenching.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discussed slab cutting procedures.
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

The footing reinforcement at the new canopy was observed to be in conformance with the structural drawings.

While on site, I met with the owner's rep and the project superintendent to review structural slab cutting procedures at the ground floor. I observed that the existing top layer of reinforcement is approximately 2.5" to 3" below the top of the slab. Thus, bending the existing top bars down to get adequate cover on the new bar couplers likely won't be required (refer to detail 3/S1.1). This should reduce the amount of chipping/removal of concrete.

Proposed slab cut locations for the new pipe trenches were marked out with spray-paint during my visit. These locations matched what was discussed in previous coordination

meetings and they are acceptable. The cutting will occur in the near future, and we will visit the site to observe the slab and reinforcement once the cutting is completed.

Away from the long trenches, additional smaller slab cuts have been performed for new MEP. These cuts were generally less than 2'-0"x2'-0" in size. I made the GC aware that couplers for reinforcement in these areas will not be required as long as reinforcement is not cut. If reinforcement is cut, the coupler detail from S1.1 shall apply.

Signed: Christopher G. Williams, P.E., S.E.

Project:	Maine Eye - 161 Marginal Way
Location:	Portland, ME
Becker Job No:	3729

OBSERVATION REPORT

Cast in Place Concrete

Date:	July 26, 2016
Time:	8:45 am
Temp:	75 degrees
Weather:	Sunny

Observation Location: Observed the pier reinforcement at the new canopy columns. Also observed existing reinforcement in the (5) slab removal sections at the ground floor (required for new pipe trenches).

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Discussed coupler installation for field cut reinforcement in the existing structural slab.
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

The pier reinforcement at the new canopy was observed to be in conformance with the structural drawings.

Concrete and reinforcement had been fully removed at the (5) locations that were previously marked for slab demolition. Bar sizes in the slab ranged from #4 to #8. Sample rebar couplers were made available by the GC to observe fitup. In most locations, chipping with a hammer will be required in order to expose the ends of the existing rebar so that the new couplers can be slid on. There are some isolated locations where the layout of the bars in each direction will interfere with the coupler (see attached photo 1). At these conditions, the GC was instructed to chip behind the uncut piece of rebar, leaving the uncut bar intact. The couplers shall then be spliced between

the uncut bar and the edge of the slab. Work on exposing the existing bars for the new couplers was ongoing. We will visit the site in the near future to observe the couplers prior to slab placement.

Signed: Christopher G. Williams, P.E., S.E.

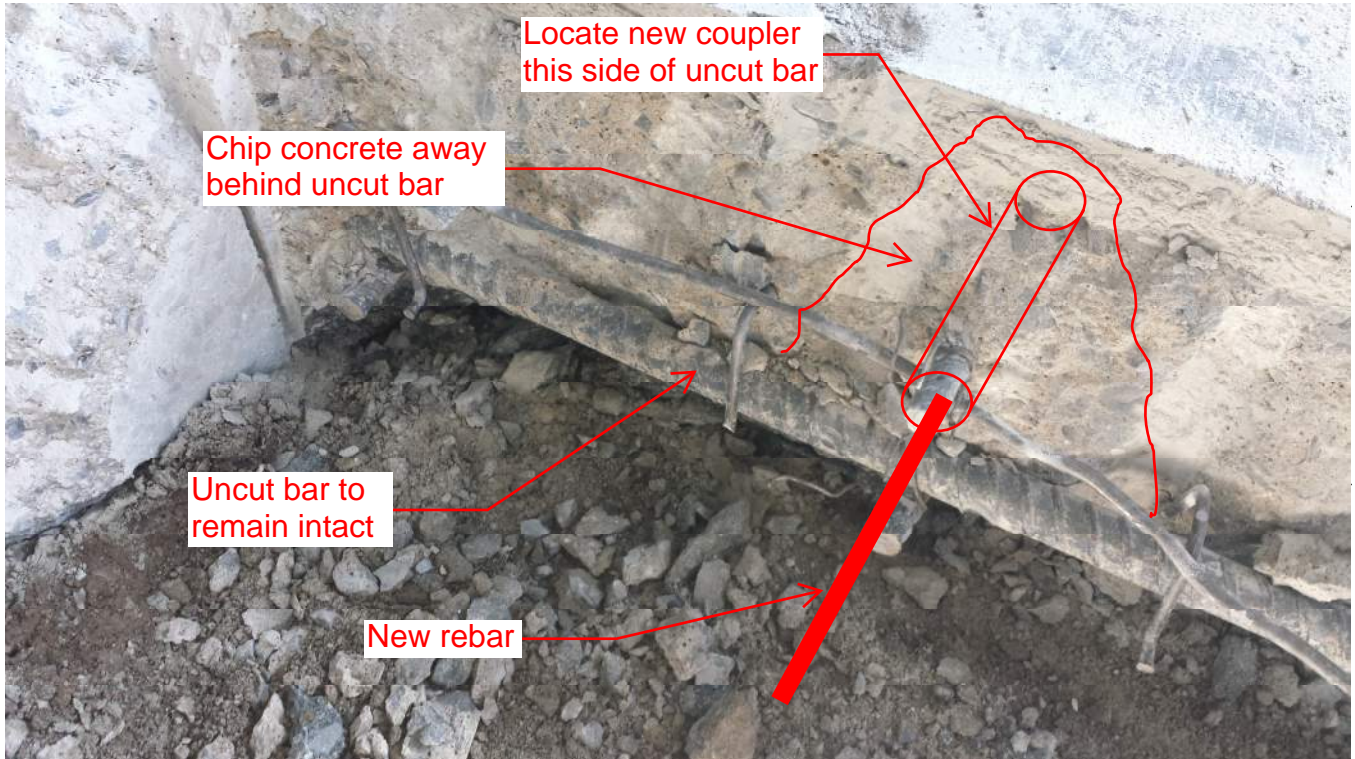


Photo 1: Exposed, Field-Cut Reinf in Structural Slab

Project:	Maine Eye - 161 Marginal Way
Location:	Portland, ME
Becker Job No:	3729

OBSERVATION REPORT
Cast in Place Concrete

Date:	August 4, 2016
Time:	10:00 pm
Temp:	75 degrees
Weather:	Sunny

Observation Location: Observed the repair to the entry slab that was partially removed by the contractor in error.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Perimeter bars not provided, see notes below.
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Standing water in slab replacement area, see notes below
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WWF placed directly on top of existing slab, which is not per the details. See notes below
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WWF not tied to existing slab, see notes below.
Lap Splices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

I visited the site to observe the entry slab concrete placement. A portion of this slab was accidentally demo'd by the contractor. My inspection was based on the repair sketches CSKS-2 and CSKS-3 issued to the GC. The following items were noted not to be in conformance with these sketches:

1. Standing water was observed ponding in several areas throughout the repair. The GC was requested to remove this water with a vacuum.
2. The welded wire fabric reinforcement (WWF) was not tied down to the existing slab. CSKS-2 indicated the WWF to be tied to bent rebar dowels that are drilled and epoxied into the slab. The GC was made aware that these dowels were not installed.

3. The WWF was set directly on the existing slab. Per CSKS-3, it must be chaired up to 1 1/2" below the top of the finished concrete.
4. CSKS-3 required a #4 bar around the perimeter of the repair. These bars were not installed. The concrete subcontractor had #5 on site, and that is what was placed.

This work took some time to correct, and thus we did not remain on the site while it was completed. The GC provided us with a field photo of this work prior to the placement (see below). We reviewed the work in this photo and determined that it is acceptable. Perimeter bars and dowels have been installed. The WWF is now chaired up to the correct elevation. All standing water has been removed.

Signed: Christopher G. Williams, P.E., S.E.



Project:	Maine Eye - 161 Marginal Way
Location:	Portland, ME
Becker Job No:	3729

OBSERVATION REPORT

Cast in Place Concrete

Date:	August 15, 2016
Time:	1:30 pm
Temp:	85 degrees
Weather:	Sunny

Observation Location: Visited the site to observe the existing conditions within the (5) 3'x5' field cut access holes in the ground floor structural slab (areas field cut to install new piping). Also observed other smaller field cut holes in the slab through the building (these holes were less than 18" in size).

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Condition	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Placement	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

I visited the site to observe the existing conditions within the (5) field cut openings in the ground floor slab. These openings were previously coordinated between BSE, the GC and the owner to provide access to install underslab piping. The (5) openings, all 3'x5' in size, are shown in the attached Figure 1. During my visit, all new MEP work within the openings had been completed. While on site, I also reviewed several smaller openings (less than 18" in width) for other MEP.

The structural drawings indicate how to cut the slab and its reinforcement, as well as how to repair the reinforcement prior to placing new concrete. Per these details, field cut reinforcement is to be replaced in kind by using couplers to attach new reinforcement to the existing. Couplers were on site but had not yet been installed during my visit.

In openings 1 and 2 (see Figure 1), most of the couplers can be installed without any interferences. In some locations where existing bars cross each other in perpendicular directions, one of the bars must be bent upward to fit the new coupler. This occurred in both opening 1 and opening 2, and is shown in Photo 1. The GC was instructed to bend the bottom bar upward so that the couplers could be slid into place. We'll inspect this work during a future visit.

In opening 2, I observed that the top bars that run parallel to the B-line do not continue through the entire opening. They instead terminate right at the edge of the opening (see photo 2). Therefore, the couplers are not needed at this specific location. The GC was made aware of this, and we will inspect the final work during a future visit.

In opening 3, a floor drain near the center of the opening interfered with one of the bottom bars running parallel to 6 line. The GC was instructed to terminate the new reinforcement at each face of the drain, and then provide an additional full-length bar adjacent to it (see photo 3). We will inspect this work during a future visit.

Opening 4 had no interferences, except that some of the bottom bars need to be bent upward to fit the new couplers. This is similar to the condition described for openings 1 and 2. We will inspect this work during a future visit.

In opening 5, one the new drains interfered with a coupler and prevented it from being installed. The MEP installer looked at this condition and determined the drain pipe could be moved to avoid the interference. This work began while I was on site. Also in opening 5, at the end closest to C-line, I observed double the amount of bottom reinforcement as the opposite end. It was then realized that the opening was cut through a series of rebar lap splices. Since it's the bottom reinforcement in an area of negative bending, the rebar is not in tension. Therefore, the additional bars do not need to be lapped through the length of the opening. The GC was made aware of this. Couplers will be provided at one end of the opening only, and we will observe this work during a future visit to the site.

At the other openings throughout the building, two issues were noted. Bottom reinforcement in one of the openings was cut around a new drain and cannot be replaced (see photo 4). We analyzed the slab with this one rebar omitted, and determined that the overall slab capacity was not compromised, and no further corrective action is required. The other issue was the that several slab cuts where done to create re-entrant corners, which can cause future cracking in the new slab repair (see photo 5). The GC was instructed to make additional cuts in the slab to avoid the re-entrant corners. This work will be inspected during future visits to the site.

Signed: Christopher G. Williams, P.E., S.E.

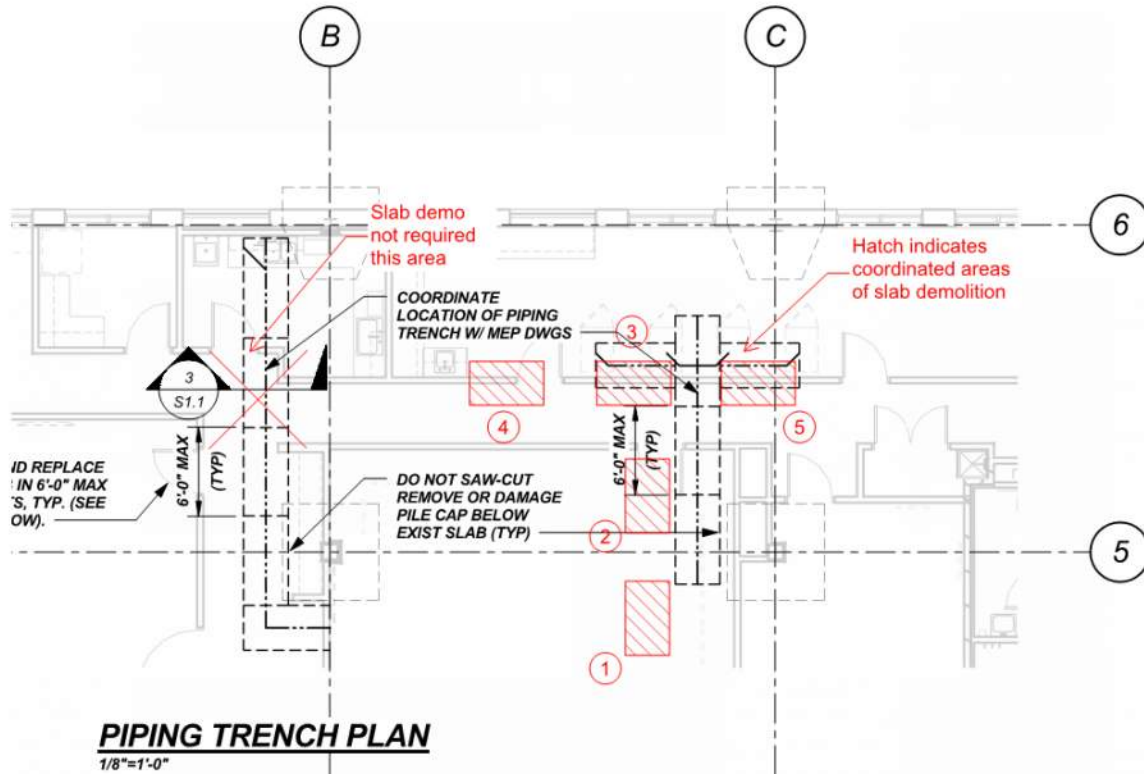


Figure 1: Slab Cut Locations for New MEP Installation



Photo 1: Bars Bent Down to Fit New Coupler

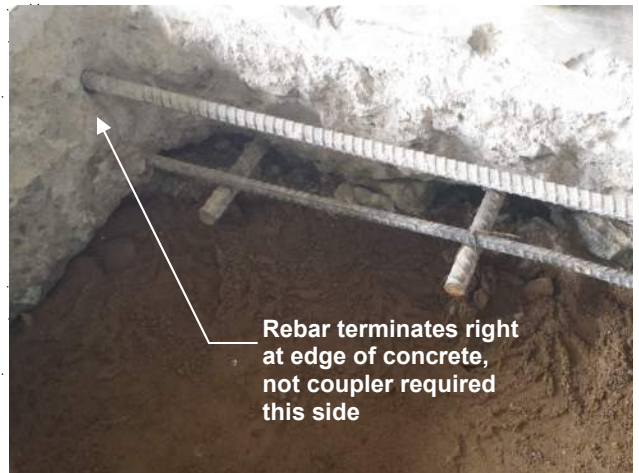


Photo 2: Top Bars Terminate at Edge of Opening
Rebar terminates right at edge of concrete, not coupler required this side



Photo 3: Lapped bars at interfering drain



Photo 4: Cut Bottom Bar Cannot Be Lapped w/ New Couplers



Photo 5: Existing slab cuts create re-entrant corners (green spray paint shows correct areas to be removed in the future)

Project:	Maine Eye - 161 Marginal Way
Location:	Portland, ME
Becker Job No:	3729

OBSERVATION REPORT
Cast in Place Concrete

Date:	August 16, 2016
Time:	2:00 pm
Temp:	75 degrees
Weather:	Sunny

Observation Location: Observed the reinforcement of one of the new exterior MEP support pads. Also observed some of the coupler installed at the interior ground floor slab.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reinforcement splicing not completed in openings 3, 4 and 5
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

The reinforcement in the exterior pad was observed to be in conformance with the structural drawings. During my visit, I also observed the coupler and reinforcement installation in openings 1 and 2 in the ground floor slab (see figure 1, and photos 1 and 2). The reinforcement and couplers were installed per the structural drawings and per the requirements identified in the Concrete Report on 8/15. The GC was instructed to place concrete in these two openings only. Reinforcement work within openings 3,4 and 5 is ongoing, and we will inspect this during future visits to the site.

Signed: Christopher G. Williams, P.E., S.E.

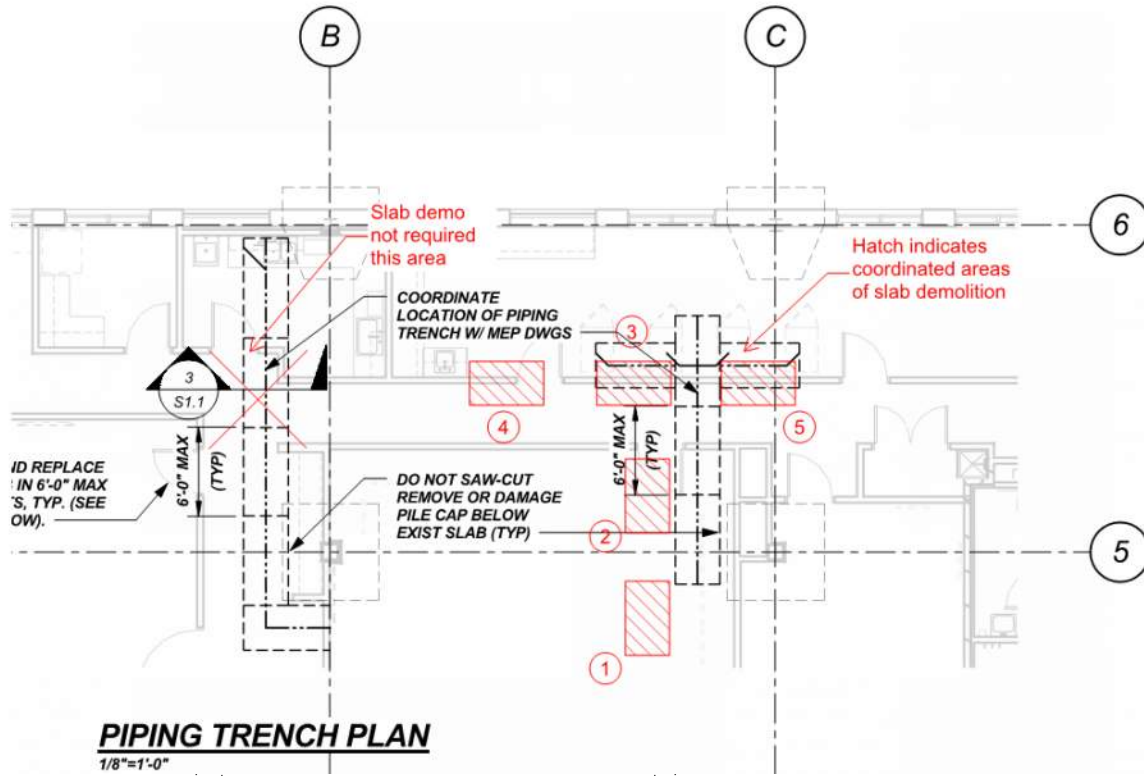


Figure 1: Slab Cut Locations for New MEP Installation



Photo 1: Complete work in opening 1



Photo 2: Complete work in opening 2

R.W. GILLESPIE & ASSOCIATES, INC.
 Geotechnical Engineering • Geohydrology • Materials Testing Services

177 Shattuck Way, Suite 1 West
 Newington, NH 03801
 603-427-0244 • Fax 603-430-2041



Corporate Office
 86 Industrial Park Rd, Ste. 4
 Saco, ME 04072
 207-286-8008 • Fax 207-286-2882

CONCRETE REINFORCING STEEL OBSERVATION REPORT

Project Name: Mane Eye - Ribina & Surgery Date: 8-17-16
 Client/Project #: PDT Architects / 0435-013 Time: 1:45
 General Contractor: Hebert Construction Weather: Sunny

Approved Documents Referenced: PDT Architects / 5-27-16
 Document Sheets/Details Referenced: S1.2
 Placement Location: Exterior Pad

ITEMS CHECKED

Item	In Accordance With Documents	Not In Accordance With Documents	Not Applicable
Bar Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bar Grade	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of Bars	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spacing Before & After Concrete Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
End & Side Clearances	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Top & Bottom Clearances	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assure Bars are Clean and Free of Dirt, Oil, Rust, Paint, Etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bar Junctions are Adequately Tied	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placement & Adequacy of supports	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vertical Embedment to Assure Proper Lap Length	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horizontal Bars for Minimum Lap Length	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other: _____

Stere Szotkowski with Hebert

Observations were verbally reported to

Pat Reme

Construction Technologist

Pat Reme / Tech

Print Name/Title

Project:	Maine Eye - 161 Marginal Way
Location:	Portland, ME
Becker Job No:	3729

OBSERVATION REPORT

Cast in Place Concrete

Date:	August 18, 2016
Time:	9:00 am
Temp:	75 degrees
Weather:	Sunny

Observation Location: Observed the remainder of the couplers and reinforcement installed in the (5) openings made for underslab MEP at the ground floor.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

During my visit, I observed the coupler and reinforcement installation in openings 3, 4 and 5 in the ground floor slab (see figure 1). Reinforcement in openings 1 and 2 were inspected on 8/16 (refer to 8/16 report for additional information). The reinforcement and couplers were installed per the structural drawings and per the requirements identified in the Concrete Report on 8/15. In openings 3 and 5, the GC was asked to provide corner dowels around the drains to avoid cracking at reentrant corners. The corner bars were installed and are shown in photos 1 and 2. No additional work is required at this time, and the GC was allowed to place concrete in openings 3, 4 and 5.

Signed: Christopher G. Williams, P.E., S.E.

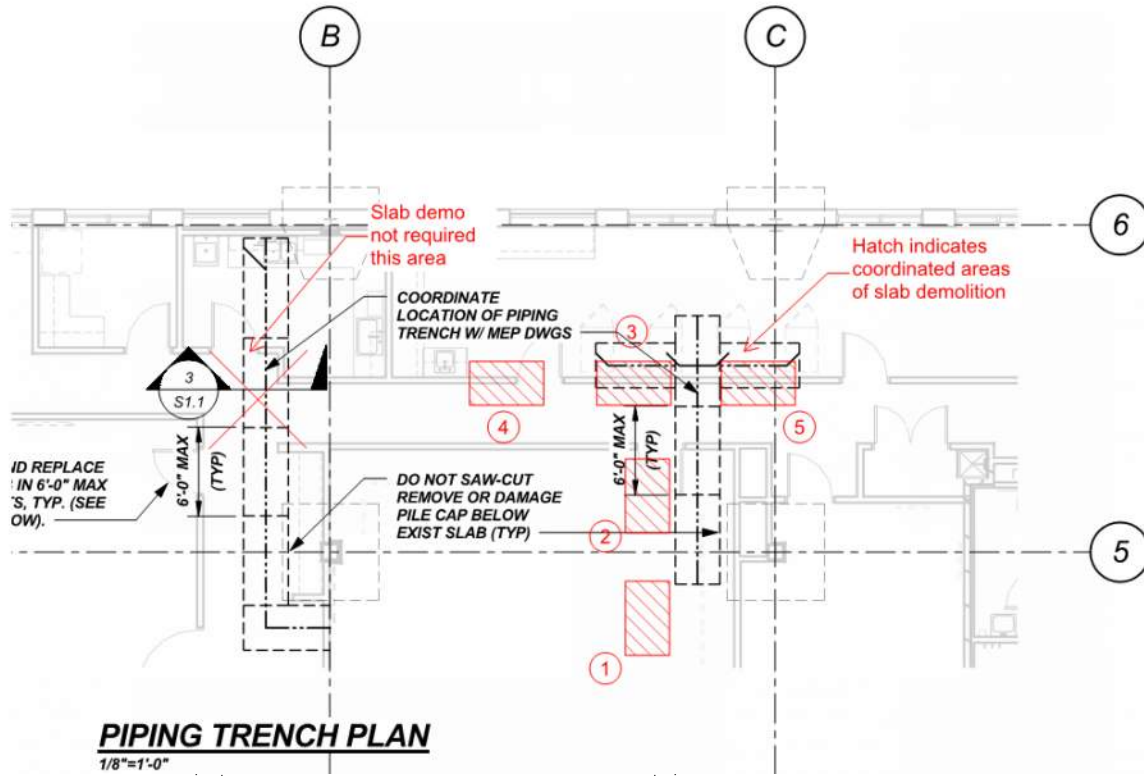


Figure 1: Slab Cut Locations for New MEP Installation



Photo 1: Slab Reinf in Openings 3, 4 and 5



Photo 1: Slab Reinf and Couplers in Opening 5



Photo 3: Slab Reinf and Couplers in Opening 4



Photo 4: Slab Reinf and Couplers in Opening 5 with Diagonal Dowels Installed



Photo 5: Slab Reinf and Couplers in Opening 3 with Diagonal Dowels Installed

Project:	Maine Eye - 161 Marginal Way
Location:	Portland, ME
Becker Job No:	3729

OBSERVATION REPORT
Cast in Place Concrete

Date:	August 25, 2016
Time:	7:00 am
Temp:	75 degrees
Weather:	Sunny

Observation Location: Observed coupler/slab reinforcement in the remaining openings throughout the building at the ground floor (two openings total, each at an existing bathroom).

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Quantity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Placement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Embed/Anchors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lap Splices	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hot Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Cold Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bond Beams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

The couplers and new reinforcement were observed to be in conformance with the design intent, except as noted.

For one opening, a single bottom and top bar were cut at a new drain, and could not be coupled without further slab demolition (see photo 1). I performed an analysis of the existing slab and determined that there was adequate capacity without replacing these two bars. Therefore, the couplers will not be required.

For the other opening, one coupler was observed with less than 1/2" of cover to the top of the slab (see photo 2). The GC was made aware of this. The surrounding bars were bent down slightly to increase the cover at the coupler. A straight-edge was laid down after, and it was shown that about 7/8" of cover was now provided, which is acceptable

(see photo 3). No further corrective action will be required, and the GC was given the go-ahead to place concrete.

Signed: Christopher G. Williams, P.E., S.E.



Photo 1: Cut Top/Bottom Bars Can't be coupled



Photo 2: Coupler w/ Inadequate Cover



Photo 3: Corrected Coupler w/ Adequate Cover



R. W. Gillespie & Associates, Inc.

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177 Shattuck Way, Suite 1 West, Newington NH 03801 603-427-0244
44 Wood Avenue, Suite I, Mansfield, MA 508-623-0101

LETTER OF TRANSMITTAL

Date: August 25, 2016	Project No.: 0435-013
Attention: David C. Webster, AIA (webster@pdtarchs.com)	
Re: Concrete Testing Maine Eye-Retina & Surgery Portland, Maine 04103	

PDT Architects

49 Dartmouth Street

Portland, ME 04101

We are sending you attached Concrete Cylinder Test Results.

Cylinder No. (s)	Age (Days)
84150	28
84151	28

Remarks:

Copy to:

If enclosures are not noted, kindly notify us at once.

R.W. GILLESPIE & ASSOCIATES
CONCRETE TEST/PLACEMENT REPORT

Project Name:	Maine Eye-Retina & Surgery	Date Cylinders Cast:	Wednesday, July 27, 2016
Project No:	0435-013	Concrete Supplier:	Auburn Concrete
Client:	PDT Architects	Design Strength:	3500 psi
Weather Conditions:	Overcast	Max. Aggregate Size:	3/4 inch
Placement Method:	Pump	Admixtures:	MRWR

Placement Location:
 Canopy Foundation Piers

Test Cylinder Location:
 2nd+3rd Pier

ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete

Date Report Issued:

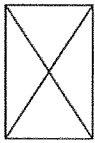
Load Number:	1 of 1	Number of 4x8 Cylinders:	4
Ticket Number:	295947	Cast By:	Andrew Flynn
Truck Number:	84	Slump:	ASTM C 143 4.75 in.
Cubic Yards:	8.5	Air Temperature:	82 °F
Total Yardage:	8.5	Concrete Temperature:	81 °F
Total Time (minutes):	70	Air Content:	ASTM C 231 6.0 %

Specimen Storage ASTM C 31

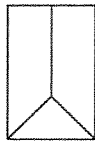
Field Cure Days: 1
 Date Received: 7/28/2016
 Condition of Cylinders: Good
 Curing Temperatures: 68 °F to 89 °F

ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84148	8/3/2016	3.99	12.49	7	52135	4170	2
84149	8/3/2016	3.99	12.49	7	48850	3910	2
84150	8/24/2016	4.02	12.69	28	62760	4950	5
84151	8/24/2016	4.02	12.69	28	58185	4590	5



Cone
1



Cone & Split
2



Columnar
3



Shear
4

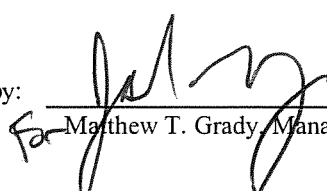


Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by: 
 Matthew T. Grady, Manager of MTS



R.W. GILLESPIE & ASSOCIATES, INC



R. W. Gillespie & Associates, Inc.
 86 Industrial Park Road, Suite 4, Saco, ME 04072 207-286-8008
 177 Shattuck Way, Suite 1 West, Newington NH 03801 603-427-0244
 44 Wood Avenue, Suite I, Mansfield, MA 508-623-0101

LETTER OF TRANSMITTAL

Date:	September 2, 2016	Project No.:	0435-013
Attention:	David C. Webster, AIA (webster@pdtarchs.com)		
Re:	Concrete Testing Maine Eye-Retina & Surgery Portland, Maine 04103		

PDT Architects

 49 Dartmouth Street

 Portland, ME 04101

We are sending you attached Concrete Cylinder Test Results.

Cylinder No. (s)	Age (Days)
84324	28
84325	28

Remarks:

Copy to:

If enclosures are not noted, kindly notify us at once.

R.W. GILLESPIE & ASSOCIATES
CONCRETE TEST/PLACEMENT REPORT

Project Name:	Maine Eye-Retina & Surgery	Date Cylinders Cast:	Thursday, August 04, 2016
Project No:	0435-013	Concrete Supplier:	Auburn Concrete
Client:	PDT Architects	Design Strength:	5000 psi
Weather Conditions:	Sunny	Max. Aggregate Size:	3/4 inch
Placement Method:	Rear Discharge	Admixtures:	Master Air AE200, Master Set R100, Master Glenium

Placement Location:
Side Entrance Way

Test Cylinder Location:
Middle of Side Entrance Way

ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete

Date Report Issued:

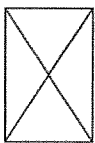
Load Number:	1 of 1	Number of 4x8 Cylinders:	4
Ticket Number:	296217	Cast By:	Patrick J. Roma
Truck Number:	86	Slump:	ASTM C 143 5.00 in.
Cubic Yards:	2	Air Temperature:	81 °F
Total Yardage:	2	Concrete Temperature:	ASTM C1064 85 °F
Total Time (minutes):	55	Air Content:	ASTM C 231 6.0 %

Specimen Storage ASTM C 31

Field Cure Days: 1
 Date Received: 8/5/2016
 Condition of Cylinders: Good

ASTM C 39, ASTM C1231 (ASTM C617 if noted)

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84322	8/15/2016	3.99	12.48	11	66070	5290	3
84323	8/15/2016	3.99	12.47	11	66465	5330	2
84324	9/1/2016	4.02	12.71	28	65270	5130	3
84325	9/1/2016	4.02	12.71	28	74190	5840	5



Cone
1



Cone & Split
2



Columnar
3



Shear
4



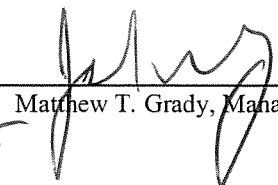
Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by:

For 
 Matthew T. Grady, Manager of MTS



R.W. GILLESPIE & ASSOCIATES, INC



R. W. Gillespie & Associates, Inc.

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177 Shattuck Way, Suite 1 West, Newington NH 03801 603-427-0244
44 Wood Avenue, Suite I, Mansfield, MA 508-623-0101

LETTER OF TRANSMITTAL

Date:	September 8, 2016	Project No.:	0435-013
Attention:	David C. Webster, AIA (webster@pdtarchs.com)		
Re:	Concrete Testing Maine Eye-Retina & Surgery Portland, Maine 04103		

PDT Architects

49 Dartmouth Street

Portland, ME 04101

We are sending you attached Concrete Cylinder Test Results.	
Cylinder No. (s)	Age (Days)
84386	28
84387	28

Remarks:

Copy to:

If enclosures are not noted, kindly notify us at once.

R.W. GILLESPIE & ASSOCIATES
CONCRETE TEST/PLACEMENT REPORT

Project Name:	Maine Eye-Retina & Surgery	Date Cylinders Cast:	Monday, August 08, 2016
Project No:	0435-013	Concrete Supplier:	Auburn Concrete
Client:	PDT Architects	Design Strength:	3000 psi
Weather Conditions:	Sunny	Max. Aggregate Size:	3/4 inch
Placement Method:	Rear Discharge	Admixtures:	Master Air AE200, Master Glenium

Placement Location:
Entrance Floor Slab

Test Cylinder Location:
Middle of Entrance Slab

ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete

Date Report Issued:

Load Number:	1 of 1	Number of 4x8 Cylinders:	4
Ticket Number:	296298	Cast By:	Andrew Flynn
Truck Number:	94	Slump:	ASTM C 143 6.00 in.
Cubic Yards:	9	Air Temperature:	63 °F
Total Yardage:	9	Concrete Temperature:	77.2 °F
Total Time (minutes):	76	Air Content:	ASTM C 231 6.2 %

Specimen Storage ASTM C 31

Field Cure Days: 1
 Date Received: 8/9/2016
 Condition of Cylinders: Good

ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84384	8/17/2016	3.99	12.47	9	55310	4430	3
84385	8/17/2016	3.99	12.47	9	54890	4400	3
84386	9/5/2016	4.01	12.60	28	58585	4650	3
84387	9/5/2016	4.01	12.60	28	56230	4460	5



Cone
1



Cone & Split
2



Columnar
3



Shear
4




Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by: 
 Matthew T. Grady, Manager of MTS





R. W. Gillespie & Associates, Inc.

86 Industrial Park Road, Suite 4, Saco, ME 04072 207-286-8008
177 Shattuck Way, Suite 1 West, Newington NH 03801 603-427-0244
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LETTER OF TRANSMITTAL

PDT Architects

49 Dartmouth Street

Portland, ME 04101

Date:	September 15, 2016	Project No.:	0435-013
Attention:	David C. Webster, AIA (webster@pdtarchs.com)		
Re:	Concrete Testing Maine Eye-Retina & Surgery Portland, Maine 04103		

We are sending you attached Concrete Cylinder Test Results.

Cylinder No. (s)	Age (Days)
84563	28
84564	28
84565	28

Remarks:

Copy to:

If enclosures are not noted, kindly notify us at once.

R.W. GILLESPIE & ASSOCIATES
CONCRETE TEST/PLACEMENT REPORT

Project Name:	Maine Eye-Retina & Surgery	Date Cylinders Cast:	Tuesday, August 16, 2016
Project No:	0435-013	Concrete Supplier:	Auburn Concrete
Client:	PDT Architects	Design Strength:	5000 psi
Weather Conditions:	Sunny	Max. Aggregate Size:	3/4 inch
Placement Method:	Rear Discharge	Admixtures:	MrWR

Placement Location:
 Mechanical Pad

Test Cylinder Location:
 Middle of pad

ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete

Date Report Issued:

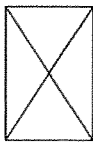
Load Number:	1 of 1	Number of 4x8 Cylinders:	4
Ticket Number:	291070	Cast By:	Adam Croteau
Truck Number:	119	Slump:	ASTM C 143 6.00 in.
Cubic Yards:	8.5	Air Temperature:	75 °F
Total Yardage:	8.5	Concrete Temperature:	ASTM C1064 87 °F
Total Time (minutes):	45	Air Content:	ASTM C 231 4.7 %

Specimen Storage ASTM C 31

Field Cure Days: 1
 Date Received: 8/17/2016
 Condition of Cylinders: Good
 Curing Temperatures: 83 °F to 86 °F

ASTM C 39, ASTM C1231 (ASTM C617 if noted)

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84562	8/23/2016	4.02	12.68	7	55120	4350	2
84563	9/13/2016	4.02	12.70	28	66680	5250	2
84564	9/13/2016	4.02	12.70	28	68575	5400	2
84565	9/13/2016	4.02	12.70	28	67405	5310	2



Cone
1



Cone & Split
2



Columnar
3



Shear
4

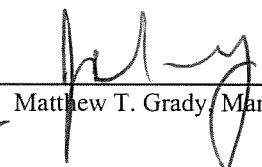


Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by: 
 For Matthew T. Grady, Manager of MTS





R. W. Gillespie & Associates, Inc.

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177 Shattuck Way, Suite 1 West, Newington NH 03801 603-427-0244
44 Wood Avenue, Suite I, Mansfield, MA 508-623-0101

LETTER OF TRANSMITTAL

PDT Architects

49 Dartmouth Street

Portland, ME 04101

Date:	September 15, 2016	Project No.:	0435-013
Attention:	David C. Webster, AIA (webster@pdtarchs.com)		
Re:	Concrete Testing Maine Eye-Retina & Surgery Portland, Maine 04103		

We are sending you attached Concrete Cylinder Test Results.	
Cylinder No. (s)	Age (Days)
84605	28
84606	28
84607	28

Remarks:

Copy to:

If enclosures are not noted, kindly notify us at once.

R.W. GILLESPIE & ASSOCIATES
CONCRETE TEST/PLACEMENT REPORT

Project Name:	Maine Eye-Retina & Surgery	Date Cylinders Cast:	Wednesday, August 17, 2016
Project No:	0435-013	Concrete Supplier:	Auburn Concrete
Client:	PDT Architects	Design Strength:	5000 psi
Weather Conditions:	Sunny	Max. Aggregate Size:	3/4 inch
Placement Method:	Rear Discharge	Admixtures:	MasterAir AE200, Master Glenium

Placement Location:
 Exterior Mechanical Pad

Test Cylinder Location:
 Middle of Pad

ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete

Date Report Issued:

Load Number:	1 of 1	Number of 4x8 Cylinders:	4
Ticket Number:	294501	Cast By:	Adam Croteau
Truck Number:	160	Slump:	ASTM C 143 5.00 in.
Cubic Yards:	6.25	Air Temperature:	80 °F
Total Yardage:	6.25	Concrete Temperature:	ASTM C1064 83 °F
Total Time (minutes):	66	Air Content:	ASTM C 231 5.0 %

Specimen Storage ASTM C 31

Field Cure Days: 1
 Date Received: 8/18/2016
 Condition of Cylinders: Good

ASTM C 39, ASTM C1231 (ASTM C617 if noted)

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84604	8/24/2016	4.02	12.69	7	56285	4440	5
84605	9/14/2016	4.01	12.64	28	65215	5160	2
84606	9/14/2016	4.01	12.64	28	63485	5020	5
84607	9/14/2016	4.01	12.64	28	63820	5050	4



Cone
1



Cone & Split
2



Columnar
3



Shear
4



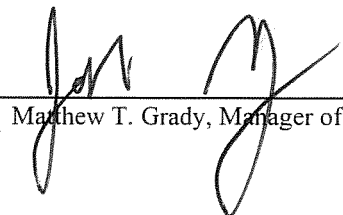
Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by:

For 
 Matthew T. Grady, Manager of MTS



R.W. GILLESPIE & ASSOCIATES, INC



R. W. Gillespie & Associates, Inc.

86 Industrial Park Road, Suite 4, Saco, ME 04072 207-286-8008
177 Shattuck Way, Suite 1 West, Newington NH 03801 603-427-0244
44 Wood Avenue, Suite 1, Mansfield, MA 508-623-0101

LETTER OF TRANSMITTAL

Date:	September 23, 2016	Project No.:	0435-013
Attention:	David C. Webster, AIA (webster@pdtarchs.com)		
Re:	Concrete Testing Maine Eye-Retina & Surgery Portland, Maine 04103		

PDT Architects

49 Dartmouth Street

Portland, ME 04101

We are sending you attached Concrete Cylinder Test Results.

Cylinder No. (s)	Age (Days)
84720	28
84721	28
84722	28

Remarks:

Copy to:

If enclosures are not noted, kindly notify us at once.

R.W. GILLESPIE & ASSOCIATES
CONCRETE TEST/PLACEMENT REPORT

Project Name:	Maine Eye-Retina & Surgery	Date Cylinders Cast:	Thursday, August 25, 2016
Project No:	0435-013	Concrete Supplier:	Auburn Concrete
Client:	PDT Architects	Design Strength:	3500 psi
Weather Conditions:	Sunny	Max. Aggregate Size:	3/4 inch
Placement Method:	Wheel Barrows	Admixtures:	MasterGlenium 7, Masterset R100

Placement Location:
 Patch Job On Site

Test Cylinder Location:
 0

ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete

Date Report Issued:

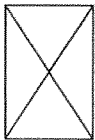
Load Number:	1 of 1	Number of 4x8 Cylinders:	4
Ticket Number:	291184	Cast By:	Patrick J. Roma
Truck Number:	98	Slump:	ASTM C 143 5.50 in.
Cubic Yards:	2	Air Temperature:	82 °F
Total Yardage:	2	Concrete Temperature:	ASTM C1064 78 °F
Total Time (minutes):	107	Air Content:	ASTM C 231 2.5 %

Specimen Storage ASTM C 31

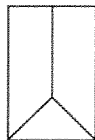
Field Cure Days: 1
 Date Received: 8/26/2016
 Condition of Cylinders: Good

ASTM C 39, ASTM C1231 (ASTM C617 if noted)

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
84719	9/1/2016	4.02	12.71	7	53615	4220	3
84720	9/22/2016	4.02	12.68	28	67470	5320	5
84721	9/22/2016	4.02	12.68	28	63655	5020	4
84722	9/22/2016	4.02	12.68	28	68425	5400	5



Cone
1



Cone & Split
2



Columnar
3



Shear
4



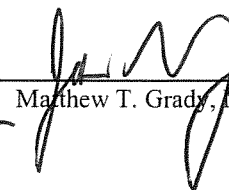
Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by:

For 
 Matthew T. Grady, Manager of MTS



R.W. GILLESPIE & ASSOCIATES, INC



R. W. Gillespie & Associates, Inc.

86 Industrial Park Road, Suite 4, Saco, ME 04072 207-286-8008
177 Shattuck Way, Suite 1 West, Newington NH 03801 603-427-0244
44 Wood Avenue, Suite 1, Mansfield, MA 508-623-0101

LETTER OF TRANSMITTAL

PDT Architects

49 Dartmouth Street

Portland, ME 04101

Date:	October 18, 2016	Project No.:	0435-013
Attention:	David C. Webster, AIA (webster@pdtarchs.com)		
Re:	Concrete Testing Maine Eye-Retina & Surgery Portland, Maine 04103		

We are sending you attached Concrete Cylinder Test Results.

Cylinder No. (s)	Age (Days)
85200	28
85201	28
85202	28

Remarks:

Copy to:

If enclosures are not noted, kindly notify us at once.

R.W. GILLESPIE & ASSOCIATES
CONCRETE TEST/PLACEMENT REPORT

Project Name:	Maine Eye-Retina & Surgery	Date Cylinders Cast:	Thursday, September 15, 2016
Project No:	0435-013	Concrete Supplier:	Auburn Concrete
Client:	PDT Architects	Design Strength:	5000 psi
Weather Conditions:	Sunny	Max. Aggregate Size:	3/4 inch
Placement Method:	Rear Discharge	Admixtures:	MasterAir AE200, MasterGlenium

Placement Location:
 Exterior Slab In Rear Of Building

Test Cylinder Location:
 Middle of Exterior Slab

ASTM C 172 - Standard Practice for Sampling Freshly Mixed Concrete

Date Report Issued:

Load Number:	1 of 1	Number of 4x8 Cylinders:	4
Ticket Number:	278389	Cast By:	Patrick J. Roma
Truck Number:	101	Slump:	ASTM C 143 5.00 in.
Cubic Yards:	4	Air Temperature:	70 °F
Total Yardage:	4	Concrete Temperature:	ASTM C1064 73 °F
Total Time (minutes):	57	Air Content:	ASTM C 231 5.5 %

Specimen Storage ASTM C 31

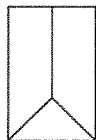
Field Cure Days: 1
 Date Received: 9/16/2016
 Condition of Cylinders: Good

ASTM C 39, ASTM C1231 (ASTM C617 if noted)

Lab No.	Test Date	Ave. Dia. (in)	Ave. Area (in ²)	Age (days)	Load (lbs)	Compressive Strength (psi)	Break Type
85199	9/22/2016	4.02	12.68	7	55020	4340	3
85200	10/13/2016	4.00	12.59	28	68536	5440	3
85201	10/13/2016	4.00	12.59	28	67990	5400	5
85202	10/13/2016	4.00	12.59	28	67230	5340	3



Cone
1



Cone & Split
2



Columnar
3



Shear
4

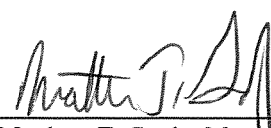


Side Fracture
5



Double Side Fracture
6

Remarks:

Checked by: 
 Matthew T. Grady, Manager of MTS





14 October 2016

Mr. David C. Webster
PDT Architects
49 Dartmouth Street
Portland, ME 04101
Via Email Only: webster@pdtarchs.com

Subject: Windsor Probe Testing of Concrete
Maine Eye-Retina & Surgery
Portland, Maine
RWG&A Project No. 0435-013

Dear Mr. Webster:

R. W. Gillespie & Associates, Inc., (RWG&A) made a site visit to the subject project on 03 October 2016 to perform penetration resistance of hardened concrete testing using Windsor Probe equipment. Testing was performed on concrete for three out of five, first floor, 5-inch thick structural slab infills that were placed in the vicinity of building lines B to C and 4.5 to 5.5 on 18 August 2016. Windsor Probe testing was performed to verify the strength of the concrete since concrete testing was not performed at the time of the concrete placement.

RWG&A uses the Model CT-460A Windsor Probe System in accordance with *ASTM C 803 Standard Test Method for Penetration Resistance of Hardened Concrete*. Windsor probe testing was performed at three locations of the slab infills as indicated in Figure 1. At each location, three steel probes were driven into the concrete with a high-energy, power actuated driver. A depth gauge with a reference plate was used to measure the average depth of penetration of the three probes. Test results are summarized in Table I below.

TABLE I
SUMMARY OF WINDSOR PROBE TEST RESULTS

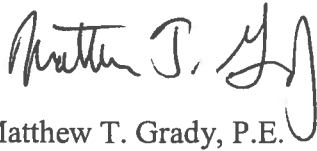
Test No.	Location	Moh's Number	Avg. Probe Height (in.)	Strength (psi)
1	Lab Infill – Line 5.5 / B.2	6	2.05	5,800
2	Lab Infill – Line 5 / B.5	6	2.03	5,600
3	Lab Infill – Line 4.5 / B.5	6	2.00	5,400

Using these average probe heights and a Mohs' Hardness No. 6 for the concrete aggregate, the strength of the concrete corresponds to a range of 5,400 pounds per square inch to 5,800 pounds per square inch as read from the Standard Power Table 1 provided by the Windsor Probe System. It is RWG&A's understanding the concrete used had a 28-day design strength (f'_c) of 3,500 pounds per square inch, a maximum aggregate size of 3/4 inch, was supplied by Auburn

Concrete, and was 45 days old at the time of penetration resistance testing. Based on the Windsor Probe test results, it appears the concrete placed on 18 August 2016 has met the required design strength.

If you have any questions, please contact us.

Sincerely,
R. W. GILLESPIE & ASSOCIATES, INC.



Matthew T. Grady, P.E.
Manager, Material Testing Services

MTG:md

Attachment: Figure 1. Windsor Probe Test Locations

Copy: Tim Hebert, Hebert Construction (thebert@hebertconstruction.com)

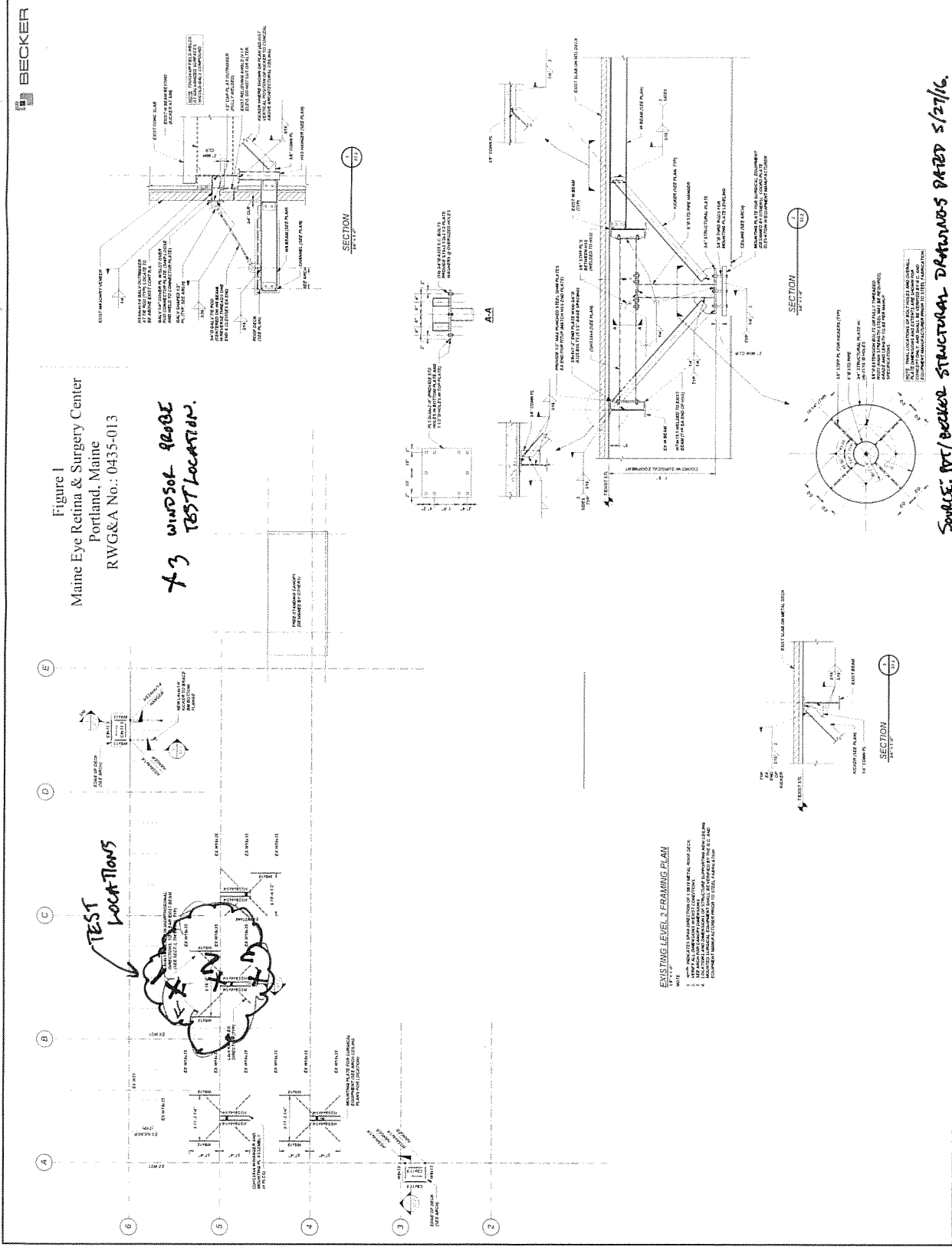


Figure 1
 Maine Eye Retina & Surgery Center
 Portland, Maine
 RWG&A No.: 0435-013

SOURCE: P/T/BECKER STRUCTURAL DRAWINGS DATED 5/27/16.
 2ND FLOOR DRAWING USED TO REFERENCE
 1ST FLOOR TEST LOCATIONS.

Special Inspections – Exhibit B

Division 5 – Structural Steel



Structural Schedule of Special Inspections - STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
IBC Section 1704.3						
1. Material verification of high-strength bolts, nuts and washers:						
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	Y	P	Applicable ASTM material standards, AISC 360, A3.3	TA1	AWS/AISC-SSI	Oct '16
b. Manufacturer's certificate of compliance required.	N	S		SI1	PE/SE or EIT	
2. Inspection of high-strength bolting						
a. Snug-tight joints.	Y	P		TA1	AWS/AISC-SSI	Oct '16
b. Pretensioned and slip-critical joints using turn-of-nut with matchmaking, twist-off bolt or direct tension indicator methods of installation.	N	P	AISC LRFD Section M2.5 IBC Sect 1704.3.3	TA1	AWS/AISC-SSI	
c. Pretensioned and slip-critical joints using turn-of-nut without matchmaking or calibrated wrench methods of installation.	N	C		TA1	AWS/AISC-SSI	
3. Material verification of structural steel and cold-formed steel deck:						
a. For structural steel, identification markings to conform to AISC 360.	Y	P	AISC 360, M5.5	SI1	PE/SE or EIT	Oct '16
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.	Y	P	Applicable ASTM material standards	SI1	PE/SE or EIT	Oct '16
c. Manufacturer's certified test reports.	N	S		SI1	PE/SE or EIT	
4. Material verification of weld filler materials:						
a. Identification markings to conform to AWS specification in the approved construction documents.	Y	P	AISC 360, M5.5	TA1	AWS/AISC-SSI	Oct '16
b. Manufacturer's certificate of compliance required.	N	S		SI1	PE/SE or EIT	
5. Submit current AWS D1.1 welder certificate for all field welders who will be welding on this project.	N	S	AWS D1.1	SI1	PE/SE or EIT	
6. Inspection of welding (IBC 1704.3.1):						
a. Structural steel and cold-formed deck:						
1) Complete and partial joint penetration groove welds.	N	C	AWS D1.1	TA1	AWS-CWI	
2) Multipass fillet welds.	N	C		TA1	AWS-CWI	
3) Single-pass fillet welds > 5/16"	N	C		TA1	AWS-CWI	
4) Plug and slot welds	N	C		TA1	AWS-CWI	
5) Single-pass fillet welds ≤ 5/16"	Y	P		TA1	AWS-CWI	Oct '16
6) Floor and deck welds.	N	P	AWS D1.3	TA1	AWS-CWI	
b. Reinforcing steel:						
1) Verification of weldability of reinforcing steel other than ASTM A706.	N	-	Not applicable.	-	-	
2) Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	N	C	AWS D1.4 ACI 318: 3.5.2	TA1	AWS-CWI	
3) Shear reinforcement.	N	C		TA1	AWS-CWI	
4) Other reinforcing steel.	N	P		TA1	AWS-CWI	
7. Inspection of steel frame joint details for compliance (IBC Sect 1704.3.2) with approved construction documents:						
a. Details such as bracing and stiffening.	Y	P	IBC 1704.3.2	SI1	PE/SE or EIT	Oct '16
b. Member locations.	Y	P		SI1	PE/SE or EIT	Oct '16
c. Application of joint details at each connection.	Y	P		SI1	PE/SE or EIT	Oct '16

OBSERVATION REPORT
Structural Steel

Date:	October 20, 2016
Time:	11:30
Temp:	60 degrees
Weather:	Sunny

Project:	Maine Eye - 161 Marginal Way
Location:	Portland, ME
Becker Job No:	3729

Observation Location:
 Observed the (4) steel mounting structures in the operating rooms (2 were fully constructed at time of visit, the other 2 were in the process of being constructed). Also observed some interferences with the exterior canopy structure at door 140.1.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Bolt Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Weld Condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Anchor Bolts, Nuts, & Washers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Grout/Leveling Plates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Fit Up/Plumbness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Metal Deck Welds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Pour Stops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Bracing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Some interferences observed with existing MEP. See notes below.
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Items	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Notes:

All framing was observed to be in conformance with the structural drawings.

At two of the OR mounting structures, a kicker brace was found to interfere with an existing drain pipe. At both conditions, the GC was instructed to slightly shift the kicker location by approximately 3"-6" laterally in order to miss the pipe.

At the exterior canopy over door 140.1, there is a new mechanic duct that will interfere with the canopy kicker bracing. The kicker will need to be moved upward in elevation to

avoid the interference. We'll perform an analysis of these new conditions and determine if any additional work is required.

Signed: Christopher G. Williams, P.E., S.E.



Photo 1: OR Mounting Structure



Photo 2: OR Mounting Structure



Photo 3: OR Mounting Structure

Client: R.W. Gillespie & Associates, Inc.

Project: Patrons oxford Offices

Date: October 11, 2016

Subject: Structural Steel Site Inspection

1518-003

Report: 001

We visited the site on this date as requested to perform structural steel inspections on the Patrons Oxford Offices project located in Portland, ME. Upon arrival we met with the project superintendent for Zachau Construction who provided us with structural and shop drawings which were used to perform our inspections. Our actions and observations were as follows:

- Welder certifications were provided and reviewed for the welding subcontractor.
- Welding of the gusset plates to the column bases on brace frames BF-1, BF-2, BF-3 and BF-4 was performed per Precision Welding and Fabrication drawing E7. Visual inspections of the welds were performed.
- Bolted connections between lines 11 and 13 were inspected for proper tightening. The moment connection at F/11 was not tight at the time of this inspection.
- Anchor rod nuts were not tight at this time.

All inspections performed above appeared acceptable in accordance to AWS, AISC, RCSC and contract documents.

The project superintendent was notified of our findings.

Inspector; Michael Bump
CWI#07091231

MTB

Special Inspections – Exhibit B

Division 31 – Soils, Fills & Foundation Subgrades



Structural Schedule of Special Inspections
SOILS & FOUNDATION CONSTRUCTION

VERIFICATION AND INSPECTION	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
IBC Section 1704.7, 1704.8, 1704.9						
1. Required Verification and Inspection of Soils:						
a. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Y	P	IBC 1704.7	SI2	PE/GE, EIT or ETT	July '16
b. Verify excavations are extended to proper depth and have reached proper material.	Y	P	IBC 1704.7	SI2	PE/GE, EIT or ETT	July '16
c. Perform classification and testing of compacted fill materials.	Y	P	IBC 1704.7	TA1	PE/GE, EIT or ETT	July '16
d. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	Y	C	IBC 1704.7	TA1	PE/GE, EIT or ETT	July '16
e. Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	Y	P	IBC 1704.7	SI2	PE/GE, EIT or ETT	July '16
2. Required Verification and Inspection of Driven Deep Foundation Elements:						
a. Verify element materials, sizes and lengths comply with the requirements.	N	C	IBC 1704.8	TA1	PE/GE, EIT or ETT	
b. Determine capacities of test elements and conduct additional load tests, as required.	N	C	IBC 1704.8	SI2	PE/GE, EIT or ETT	
c. Observe driving operations and maintain complete and accurate records for each element.	N	C	IBC 1704.8	TA1	PE/GE, EIT or ETT	
d. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	N	C	IBC 1704.8	TA1	PE/GE, EIT or ETT	
3. Required Verification and Inspection of Cast-in-Place Deep Foundation Elements:						
a. Observe drilling operations and maintain complete and accurate records for each element.	N	C	IBC 1704.9	TA1	PE/GE, EIT or ETT	
b. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end bearing strata capacity. Record concrete or grout volumes.	N	C	IBC 1704.9	TA1	PE/GE, EIT or ETT	

See Concrete, Masonry, and/or Steel Schedules for additional material inspections for deep foundation elements as applicable.



PROJECT MEMORANDUM

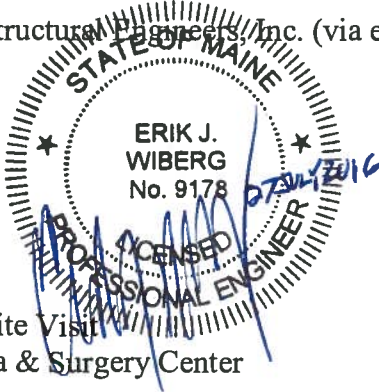
To: David C. Webster, AIA, PDT Architects

Copy: Christopher G. Williams, P.E., Becker Structural Engineers, Inc. (via email only)

From: Erik J. Wiberg, P.E. *EDW*
Charles R. Nickerson, P.E. *CRM*
R.W. Gillespie & Associates, Inc.

Date: 27 July 2016

Subject: Geotechnical Engineering Review and Site Visit
Free-Standing Canopy Maine Eye-Retina & Surgery Center
161 Marginal Way
Portland, Maine
RWG&A Project No. 0435-013



As requested and authorized, R.W. Gillespie & Associates, Inc. (RWG&A) reviewed geotechnical aspects of the proposed Free-Standing Canopy Maine Eye-Retina & Surgery Center foundation design and made a site visit on 20 July 2016 to observe conditions exposed in the canopy foundation excavation. This memorandum includes recommendations for subgrade preparation and foundation backfill that are intended to reduce post-construction settlement of the canopy.

Background

Subsurface Conditions: RWG&A performed a geotechnical investigation of the site for the existing building. Results of the investigation were presented in a report titled *Geotechnical Investigation, Proposed DHS Office Building, Portland, Maine*, revised dated 26 January 1999 (RWG&A Project No. 0816-002). Subsoils revealed by test borings made for the geotechnical investigation consisted primarily of urban fill, over silty clay, underlain by silty sand, and then bedrock. Encountered thicknesses of the fill ranged from about 14.7 to 19.7 feet; in two of test borings the sandy silt with gravel fill was overlain by an approximately 6-foot thick layer of gravelly sand fill. Groundwater levels at and near the site have been measured at approximately 3 to 6 feet below ground surface, which would be slightly above and correspond to high tide level in Back Cove.

The exposed subgrade observed in the foundation excavation during the 20 July 2016 site visit consisted of medium dense urban fill. Pavement had been stripped prior to the site visit and the soil profile exposed in the sides and bottom of the excavation were logged as follows:

Material	Encountered	Description	USCS
Aggregate Base	From ground surface to a depth of about 16 to 24 inches.	light brown, poorly graded sand with silt and gravel, dry	SP-SW
Urban Fill	To the bottom of the excavation at depth of about 4 to 5 feet.	dark brown, poorly graded sand with silt and gravel, ash, brick, glass, wood fragments and nails, moist	SP-SW

Two holes were dug to explore and sample the urban fill below footing subgrade level. One hole was located in the northeast and the other in southwest corners of the excavation. The holes were dug with hand-shovels and advanced to a depth of about 15 inches into the subgrade. A sample of the aggregate base and of the urban fill were taken to the RWG&A soils testing laboratory in Saco, Maine. Both samples were tested for particle-size distribution. A Modified Proctor moisture-density test was performed on the aggregate base sample and an organic content test was performed on the urban fill sample. Results of the laboratory tests are appended to this memorandum (note: organic test results will be sent under separate cover when available).

A slotted PVC pipe of a cut off groundwater observation well was exposed in the west side wall of the foundation excavation. Groundwater was measured in the well at a depth of about 20 inches below the proposed footing subgrade elevation.

Structural Design: Foundation design information for the proposed canopy is shown on Sheet S1.0, *General Notes*, Sheet S1.1, *Foundation Plan & Sections*, and Sheet S1.2, *Second Floor Framing & Sections* prepared by Becker Structural Engineers, Inc. (Becker). The design drawings are marked *Addendum 1 Construction Documents*, 27 May 2016, and indicate the canopy foundation would consist of spread footings and tie-beams. Based on communications with Becker, it is understood that the foundation contact pressure is approximately 600 pounds per square foot based on the design structural reactions. The spread footings would be connected to the existing building foundation with dowels. The existing building is five-stories high and its foundation consists of piles driven to end-bearing on bedrock.

Foundation Evaluation

The past and recent soil explorations and testing indicated the fill consists primarily of mineral soil with a loose to medium dense relative density. Based on experience at the project site and other nearby buildings, RWG&A recommends the canopy be supported on spread footings bearing on the existing urban fill improved by compaction. This recommendation is based on the spread footings with a contact pressure of 600 pounds per square foot. Alternately, the canopy could be pile-supported similar to the existing building. Removal of the existing fill to naturally deposited soil and replacement with compacted granular fill wouldn't be practical given the fill thickness and depth to groundwater.

During the site visit, RWG&A made measurements of differential settlement between soil-supported sidewalks around the existing pile-supported building. Measured differential settlements were up to about ¼ inch, typically; maximum differential settlement was about ½ inch near the front entrance of the existing building. Measurements were also made at other nearby pile-supported buildings and their sidewalks; those measurements also indicated

differential settlements of up to ¼ inch, typically. In RWG&A's opinion, post-construction differential settlements of about ½ inch to ¾ inch should be anticipated between the proposed canopy and existing building. RWG&A recommends the canopy be structurally isolated from the existing building.

Canopy Foundation Design Recommendations

To reduce post-construction settlements of the canopy, it is recommended that the foundation subgrade be compacted. During the site visit, RWG&A observed the subgrade compacted with about four coverages with a Wacker Neuson BPU4045A Reversible Plate Compactor. The BPU4045A has an operating weight of 710 pounds, a centrifugal force of 8,992 pound feet, and frequency of 69 Hertz. Based on the urban fill material, the compactor would be expected to density the urban fill to a depth of about 6 to 12 inches. The observed compaction process is adequate.

In addition to subgrade compaction, RWG&A recommends that existing fill below the plan limits of the proposed canopy be removed down to footing subgrade level and backfilled with layers of compacted crushed stone wrapped in a geotextile filter fabric, and compacted structural fill. The attached Sketch indicates the backfilling sequence. Existing fill within the interior of the foundation excavation was removed during the site visit.

Crushed stone may meet the requirements of *State of Maine Department of Transportation Standard Specifications November 2014 Edition (MaineDOT) Section 703 – Aggregates, 703.13 Crushed Stone ¾-Inch, 703.31 Crushed Stone*, or similar material. The crushed stone should be placed in 12 inch lifts, maximum and compacted with a minimum of four coverages with the BPU4045A Reversible Plate Compactor or engineer-approved equivalent. Crushed stone will need to be wrapped (i.e., bottom, sides and top) in a non-woven geotextile such as Mirafi 180N, or equivalent. Fabric overlap should be in accordance with the manufacturer's recommendations.

The on-site aggregate base is suitable for use as structural fill. Structural fill needs to be compacted to at least 95 percent of the maximum dry density as determined by *ASTM Standard D 1557 Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))*.

Closure

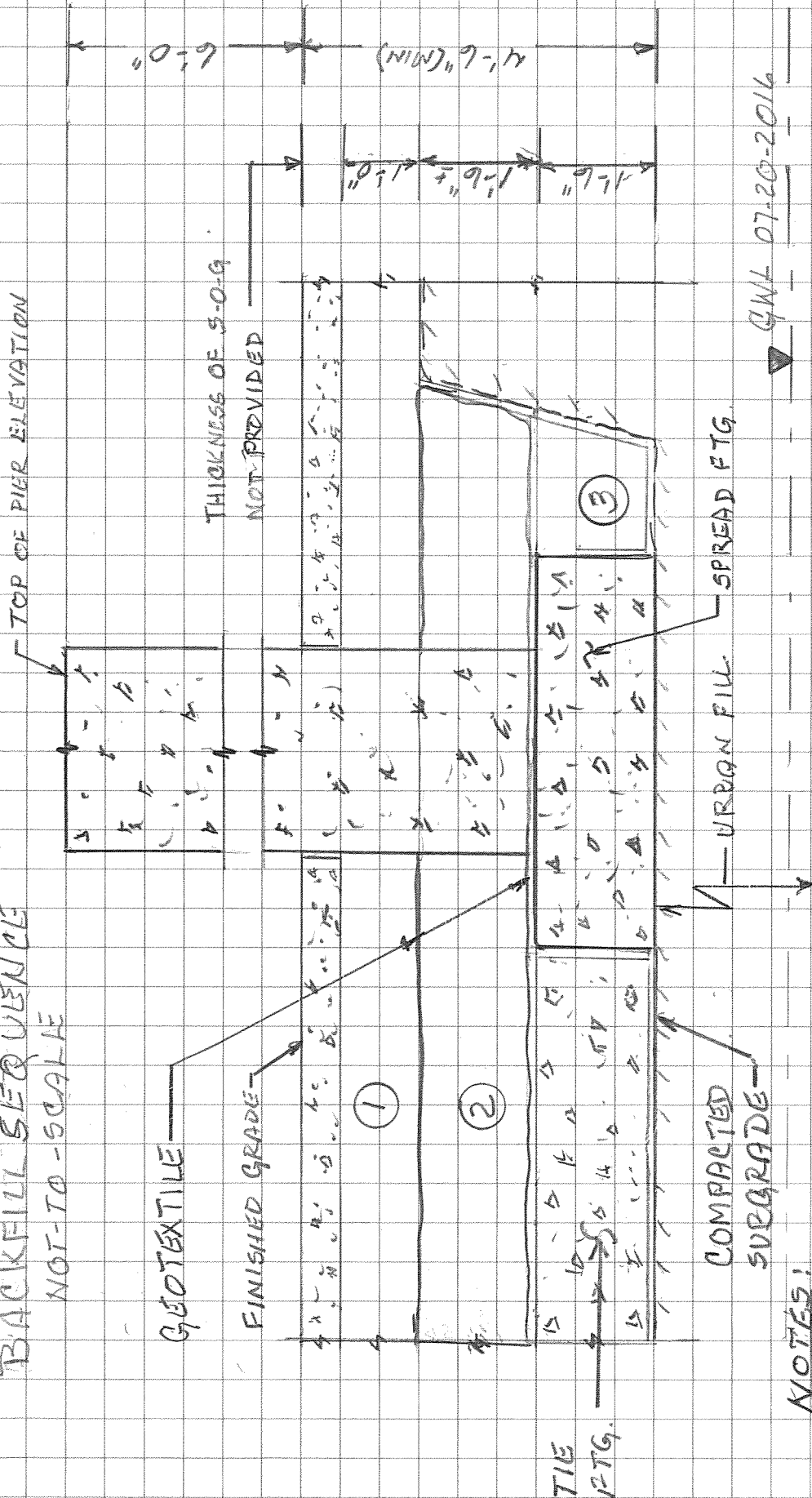
We trust the above information meets the project's needs. Please contact us if you have any questions.

CRN/EJW:md

Attached

- Sketch, Backfill Sequence
- Appendix, Laboratory Test Results

SKETCH
BACKFILL SEQUENCE
NOT TO SCALE



NOTES:

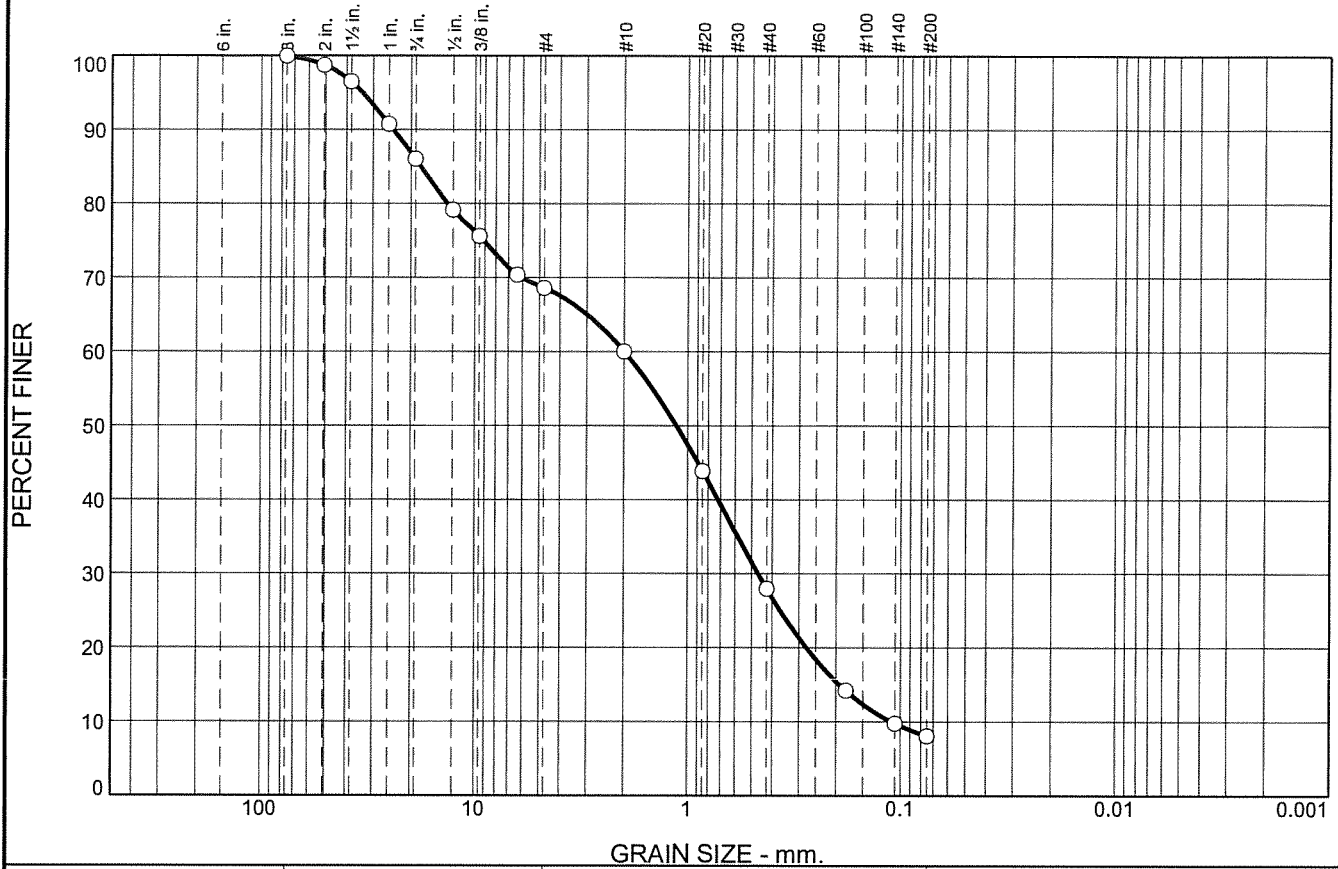
- ① COMPACTED STRUCTURAL FILL (RECLAIMED ON-SITE PAVEMENT AGGREGATE BASE) COMPACTED TO 95 PERCENT ASTM D1557 MODIFIED PROCTOR.
- ② COMPACT CRUSHED STONE WRAPPED (TOP, BOTTOM AND SIDES) WITH GEOTEXTILE.
- ③ BACKFILL OUTSIDE AND BETWEEN TIE FTG'S WITH COMPACTED CRUSHED STONE WRAPPED IN GEOTEXTILE OR COMPACTED STRUCTURAL FILL.

APPENDIX

LABORATORY TEST RESULTS

Geotechnical Engineering Review and Site Visit
Free-Standing Canopy Maine Eye-Retina & Surgery Center
161 Marginal Way
Portland, Maine

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.9	17.5	8.6	32.0	19.9	8.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	98.8		
1 1/2"	96.5		
1"	90.8		
3/4"	86.1		
1/2"	79.2		
3/8"	75.6		
1/4"	70.4		
#4	68.6		
#10	60.0		
#20	43.9		
#40	28.0		
#80	14.2		
#140	9.8		
#200	8.1		

Soil Description

Aggregate Base: poorly graded sand with silt and gravel

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 24.1824 D₈₅= 17.9224 D₆₀= 1.9955
D₅₀= 1.1296 D₃₀= 0.4665 D₁₅= 0.1924
D₁₀= 0.1099 C_u= 18.15 C_c= 0.99

Classification

USCS= SP-SM AASHTO= A-1-b

Remarks

Moisture Content: 1.5%

* (no specification provided)

Location: On-Site: Portlan, ME
Sample Number: 14194

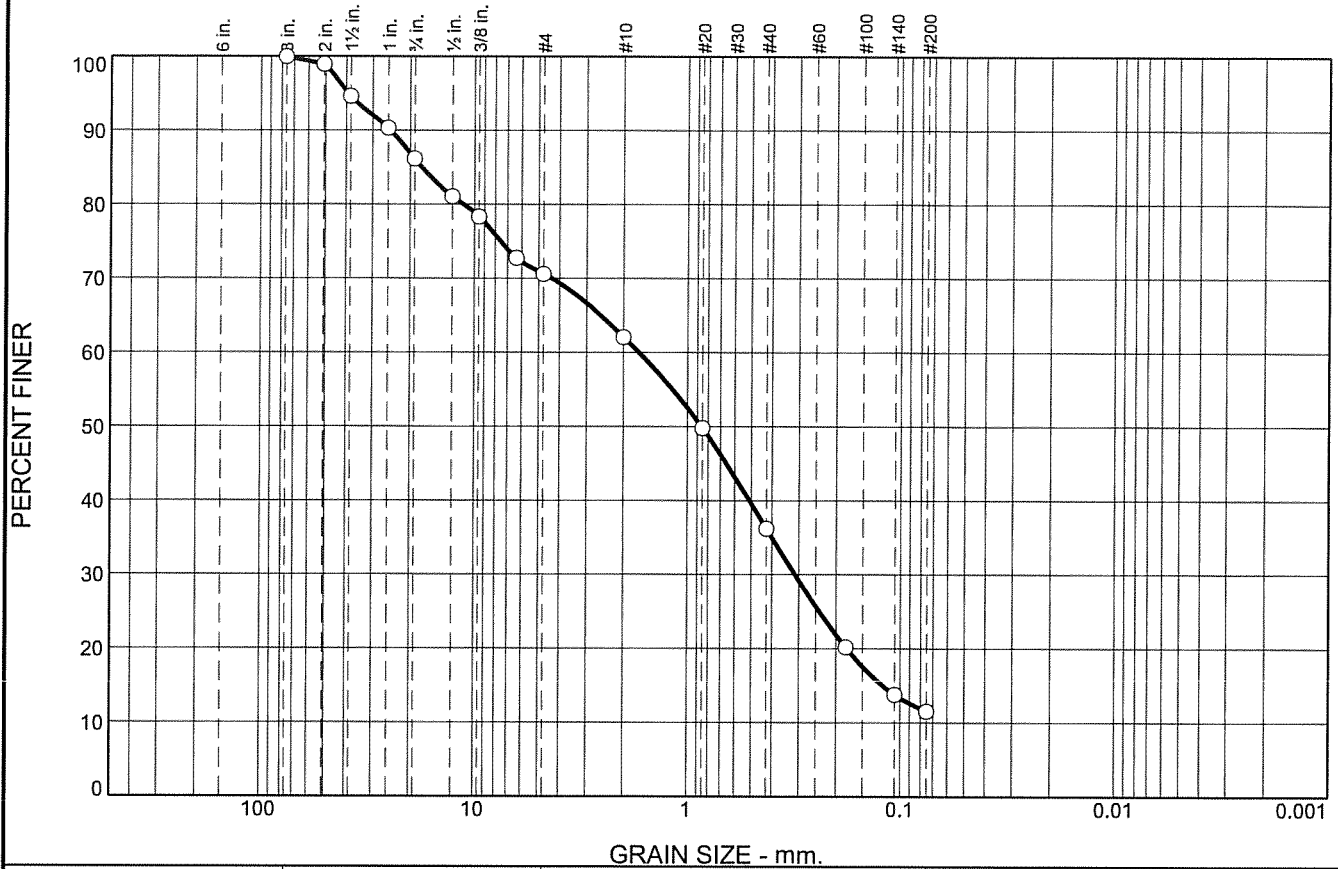
Date: 7/25/16

R.W. Gillespie & Associates, Inc. Saco, Maine	Client: PDT Architects Project: Maine Eye-Retina & Surgery Project No: 0435-013 Lab No. 14194
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Tested By: JEL

Checked By: CRN

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.8	15.6	8.5	25.9	24.6	11.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3"	100.0		
2"	99.0		
1 1/2"	94.7		
1"	90.4		
3/4"	86.2		
1/2"	81.1		
3/8"	78.4		
1/4"	72.8		
#4	70.6		
#10	62.1		
#20	49.8		
#40	36.2		
#80	20.2		
#140	13.8		
#200	11.6		

Soil Description

Urban Fill: poorly graded sand with silt and gravel, ash, brick, glass, wood fragments, and nails.

Atterberg Limits

PL= LL= PI=

Coefficients

D₉₀= 24.6913 D₈₅= 17.5729 D₆₀= 1.6931
D₅₀= 0.8584 D₃₀= 0.3119 D₁₅= 0.1203
D₁₀= C_u= C_c=

Classification

USCS= SP-SM AASHTO= A-1-b

Remarks

Moisture Content: 15.4%

* (no specification provided)

Location: F+G Excavation: Portland, ME
Sample Number: 14193

Date: 7/25/16

**R.W. Gillespie
& Associates, Inc.
Saco, Maine**

Client: PDT Architects
Project: Maine Eye-Retina & Surgery

Project No: 0435-013

Lab No. 14193

Tested By: JEL

Checked By: CRN

End of Structural Statement of Special Inspections