BECKER
STRUCTURAL ENGINEERS

Final Report of Structural Special Inspections

Parking Deck Garage
Mixed Use Development

85 York Street
Portland, Maine
November 10, 2017

Prepared by:

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

Owner
101 York Street LLC
P.O. Box 207
Portland, ME 04112

Architect of Record
Opechee Construction Corporation
11 Corporate Drive
Belmont, NH03220
603-527-9090

Contractor
Opechee Construction Corporation
11 Corporate Drive
Belmont, NH03220
603-527-9090

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Structural Statement of Special Inspections

Project: *Parking Deck Mixed Use Development*

Location: *York and High Street, Portland , Maine*

Owner: *101 York Street LLC*

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: *X Upon request of Building Official* _____ or ☐ per attached schedule.

Prepared by:

Todd M. Neal, P.E.

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

3/17/16

Signature Date

Design Professional Seal

Owner's Authorization:

Signature Date

Building Code Official's Acceptance:

Signature Date

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Structural Statement of Special Inspections (Continued)

List of Agents

Project: *Parking Deck Mixed Use Development*

Location: *York and High Street, Portland , Maine*

Owner: *101 York Street LLC*

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)	*Becker Structural Engineers, Inc.*	*75 York Street Portland, ME 04101 207-897-1838*
2. Special Inspector (SI 1)	*Becker Structural Engineers, Inc*	*75 York Street Portland, ME 04101 207-897-1838*
3. Special Inspector (SI 2)	*S.W. Cole Engineering Inc.*	*286 Portland Road Gray, Maine 04039 207-657-2866*
4. Testing Agency (TA 1)	*S.W. Cole Engineering Inc*	*286 Portland Road Gray, Maine 04039 207-657-2866*
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.

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: *Parking Deck Mixed Use Development*
Location: *York and High Street, Portland , Maine*
Owner: *101 York Street LLC*
Owner's Address:

Architect of Record: *Keith Kelley, AIA* (name) — *Opechee Construction Corporation* (firm)

Structural Registered Design Professional in Responsible Charge: *Todd M. Neal, P.E.* (name) — *Beckers Structural Engineers, Inc.* (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.

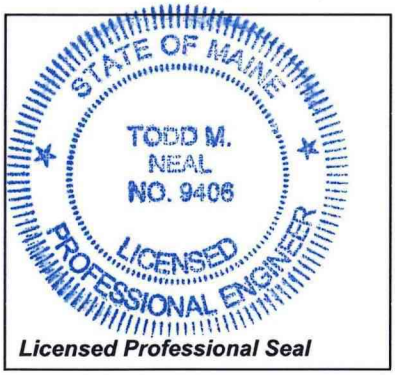
Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Structural Special Inspection Coordinator

Todd M. Neal, P.E.
(Type or print name)

Becker Structural Engineers, Inc.
(Firm Name)

Signature — Date 11/10/17



Licensed Professional Seal

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

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

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.

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

_____ _____

Structural Statement of Special Inspections (Continued) – Exhibit A

Special Inspector's/Agent's Final Report

Project: *85 York Street Apartment Building and Parking Garage, Portland, Maine*

Special Inspector or Agent: *S.W.COLE Engineering, Inc.*

Designation: *SI-2*

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.

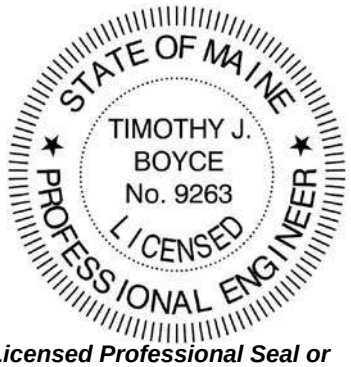
Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,
Special Inspector or Agent:

Timothy J. Boyce, P.E.
(Type or print name)

Signature

11-8-2017
Date



Licensed Professional Seal or
Certification Number

Structural Statement of Special Inspections (Continued)

Special Inspector's/Agent's Final Report

Project: *Parking Deck Mixed Use Development*

Special Inspector or Agent: *Roger Domingo* (name) — *SW Cole Engineering, Inc.* (firm)

Designation: Special Inspector 2 (SI2) & Testing Agency 1 (TA1)

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:

Roger E. Domingo
(Type or print name)

Roger E Domingo

11/2/17

Signature — Date

Licensed Professional Seal or
Certification Number

Geopier Foundation Company
165 Taylor Road
Colchester, CT 06415

Tel: (860) 531-9137
Cell: (860) 373-3542
www.geopier.com

November 9, 2017

GNE-01207

Jason Blais
Opechee Construction Corporation
11 Corporate Drive
Belmont, NH 03220

Subject: Geopier Performance Verification Letter
Mixed Use Development, York & High Streets, Portland, ME

Dear Jason:

I have reviewed the Special Inspector's/Agents Final Reports from S.W. Cole, Inc. dated March 17 and 25, 2016, and the Structural Statement of Special Inspections dated November 8, 2017 in conjunction with the Geopier Quality Control (QC) Records provided to you on June 14, 2016.

Based on the confirmation provided in the S.W. Cole reports that indicates that the foundation excavation, subgrade preparation, backfill placement and Geopier construction has been performed in accordance with project drawings and specifications, that include our Geopier Design Submittal dated March 7, 2016, the Geopier Foundation Company accepts the responsibility for the ground improvement system to perform in accordance with the design criteria and intent represented in the Geopier Design Submittal.

If you any questions or need further clarifications. Thank you again for inviting us to work with you on the project.

Sincerely,
GEOPIER FOUNDATION COMPANY

Benjamin M. Cote, PE
Region Engineer

cc:
Derek Simpson (HDI) – via email
Tim Boyce (SW Cole) – via email
David Malconi (Becker Structural Engineers) – via email
Mike Pockoski (Geopier Foundation Co.) – via email

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Structural Schedule of Special Inspections

SOILS & FOUNDATION CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.7, 1704.8, 1704.9	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Required Verification and Inspection of Soils:						
a. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Y	C	IBC 1704.7	SI2	PE/GE, EIT or ETT	Yes
b. Verify excavations are extended to proper depth and have reached proper material.	Y	P	IBC 1704.7	SI2	PE/GE, EIT or ETT	Yes
c. Perform classification and testing of compacted fill materials.	Y	P	IBC 1704.7	TA1	PE/GE, EIT or ETT	Yes
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	Yes
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	Yes
2. Required Verification and Inspection of Rammed Aggregate Pier Installation (RAP):			IBC 1704.8			
a. Review Performance Design Submitted by Specialty Engineer	Y	S		SI2	PE/GE, EIT or ETT	Yes
b. Verify grout and aggregate materials comply with the design requirements included in Performance Design.	Y	C	At Ea. Location	SI2	PE/GE, EIT or ETT	Yes
c. Observe Rammed Aggregate Pier Modulus Tests	Y	C	At Ea. Location	TA1	PE/GE, EIT or ETT	Yes
d. Observe Rammed Aggregate Pier installation and maintain complete accurate records for each	Y	C	At Ea. Location	TA1	PE/GE, EIT or ETT	Yes

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

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau

S.W.COLE Project No.: 13-0545.3
Date: 3-30-16
Weather: Clear, 40s

Work in Progress: Helical Drilling, Inc. (HDI) installing sacrificial rammed aggregate pier (RAP) for modulus testing in the northeast portion of the site.

Work Performed by S.W.COLE Rep.: Observation of test RAP installation.

General Observations and Discussions:

S.W.COLE was on-site to observe installation of a sacrificial test RAP which will be used for modulus (load) testing. The pier was installed approximately 15 feet west of lines F/4, below an area to be occupied by interior slab-on-grade, in the vicinity of test boring B-205. We understand the working ground surface elevation was approximately 28 to 29 feet. We observed HDI install an approximate 16¼ foot deep RAP element with tell-tale rods extending from a steel base plate up to the ground surface. HDI performed a 3 minute bottom stabilization test while installing the RAP which did not indicate excessive bottom movement. During installation, the steel mandrel pipe encountered relatively low resistance to a depth of about 13 feet and then increased resistance to refusal at 16¼ feet (probable bedrock). The resistance appeared consistent with the subsurface profile encountered at boring B-205. We observed HDI place a 24-inch sonotube form over the completed pier and backfill the form with compacted gravelly sand. We understand the form will be filled with concrete to mimic a footing as part of the modulus test. A full time quality control representative from HDI was on-site during installation.

Time On site: 0800-1100
Attachments: Photos
Sheet: 1 of 1

S.W.COLE Rep.: E. Walker
Rev. by: TJB


SONOTUBE
SONOTUBE
SONOTUBE

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CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau

S.W.COLE Project No.: 13-0545.3
Date: 4-20-16
Weather: Clear, 60s

Work in Progress: Gorham Sand & Gravel (GSG) preparing foundation subgrades in parking garage area.

Work Performed by S.W.COLE Rep.: Observation of foundation subgrade conditions and discussion with GSG about subgrade preparation.

General Observations and Discussions:

As coordinated with Opechee (Dave Wajda), we made a site visit to observe foundation subgrade conditions. While onsite, we met with Dustin (GSG foreman).

We observed that the disturbed clayey perimeter foundation subgrade soils in the northern corner of the garage were drier than when observed on 4-14-16; however we still recommended to Dustin that these disturbed soils be overexcavated and replaced as discussed on 4-14-16.

We observed that GSG had removed the fractured bedrock fill placed along the southerly perimeter foundation wall line in the garage to achieve subgrade elevation, which was observed on 4-14-16. GSG had started to replace the fill with compacted crushed stone wrapped in non-woven geotextile. We discussed that we take no exception to this provided the crushed stone is well compacted, laterally confined by bedrock or compacted structural fill sidewalls, and extends at least 1-foot beyond edge of footing for every 1-foot of vertical stone depth. GSG acknowledged these recommendations.

We observed that a portion of the excavation made for the interior garage pier at lines B/2 had been backfilled to approximate pavement subgrade elevation with compacted Structural Fill. We understand that the excavation had been incorrectly located due to a layout discrepancy. We recommended to GSG that we perform field density testing on the compacted structural fill.

GSG was continuing to excavate to subgrade along the northerly perimeter garage wall in areas improved by Rammed Aggregate Piers (RAPs). Excavation was being performed with a smooth-edged bucket. GSG was installing and compacting at least 6-inches of crushed stone wrapped in non-woven geotextile over the subgrades after excavating to grade. The RAP improved subgrades appeared stable.

Time On site: 1320-1350
Attachments: Photos
Sheet: 1 of 1

S.W.COLE Rep.: E. Walker
Rev. by: RED


KOMATSU

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street, Portland, ME
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau

S.W.COLE Project No.: 13-0545.3
Date: 5/20/16
Weather: Sunny, 70

Work in Progress: Tristone: Installation of formwork and reinforcing steel for garage perimeter foundations at A-line (-22') from 1-line (-61') to 1.9-line. Gorham Sand and Gravel, Inc. (GSG) excavating site utilities adjacent to York Street.

General Observations and Discussions: We made a site visit in coordination with Opechee Construction Corporation (Dave) to make observations of the reinforcing steel installation at the current work area where concrete is scheduled for 2:00 this afternoon. At the time of our visit, formwork was complete along A-line (-22') and installation of the reinforcing steel remained in progress. Formwork geometry observed appeared consistent with project structural drawing GS1.01 and the completed portion of the reinforcing steel (wall footing, pier footings and outside face wall dowels) appeared to have been installed in accordance with details contained on GS2.03 as well as the erection drawings. Work pending completion including inside face wall dowels and pier steel will be looked at as part of the concrete placement. We understand compressed air will be used to clean off the concrete surface of the previously placed keyway prior to placing concrete.

Initial excavation to proposed subgrade at A-line (-22') was observed during previous site visits, however, final subgrade preparations including condition and treatment of subgrade soils and exposed RAP's and placement of crushed stone and fabric was not observed. During today's visit, we noted the stone underlying today's placement area was not completely wrapped in fabric as required in section 4.3 of the project geotechnical report dated August 31, 2015. Prior to leaving the site, we met with Opechee (Dave) and recommended the perimeter stone be wrapped prior to placing backfill materials. We also discussed our scope of services and indicated that inspections should be scheduled as needed to allow for observations to be made on prepared subgrades prior to their being covered in accordance with geotechnical requirements as well as to satisfy Geopier's warranty requirements.

Onsite: 11:45 – 12:45
Attachments: Photos
Sheet: 1 of 1

S.W.COLE Rep: K. Gimpel
Rev. RED

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street, Portland, ME
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau

S.W.COLE Project No.: 13-0545.3
Date: 5/26/16
Weather: Sunny, 70s

Work in Progress: Tristone: Installation of formwork for garage perimeter walls along A-line (-22'). Gorham Sand and Gravel, Inc. (GSG): Excavating site utilities adjacent to York Street and subgrade preparation for garage perimeter footings at 2-line (+60').

General Observations and Discussions: As scheduled by Opechee Construction (Dave), we made a site visit to observe subgrade conditions and preparations in the current work area. At the time of our visit, GS&G was installing the specified crushed stone with integral foundation drain wrapped in non-woven geotextile fabric near C-line along 2-line (+60'). Subgrade in the exposed work area consisted of bedrock that had been excavated using a hydraulic hammer resulting in minimal disturbance to the bearing surface. There was previously some water ponded in the excavation, but prior to making final preparations, GS&G set up a sump/pump operation to dewater. Some soil fines had migrated into the excavation, but based on hand probes, depths appeared negligible. GS&G is utilizing a GPS rover for layout and rotary laser level for grade control.

Preparation procedures include: Dewatering, checking line and grade, choking off the exposed rock subgrade with ¾-inch crushed stone, compacting the choke stone with a heavy vibratory plate compactor and then installing the 6 inch thick fabric wrapped stone cell with this stone being compacted with a small vibratory plate compactor. Preparations and conditions observed during today's site visit appeared consistent with our understanding of the requirements contained in the approved project documents.

We understand from conversations with GS&G that current grades area high and some additional rock removal will be needed where the footing steps down to elevation 88 before completing final subgrade preparations along the remainder of this wall line.

Onsite: 11:15 – 11:45
Attachments: Photos
Sheet: 1 of 1

S.W.COLE Rep: K. Gimpel
Rev.: RED


U-HAUL

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street, Portland, ME
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau

S.W.COLE Project No.: 13-0545.3
Date: 4/4/16 to 4/8/16
Weather: As noted below

Work in Progress: Helical Drilling, Inc. (HDI) performing rammed aggregate pier (RAP) modulus test and installing production RAPs. H. B. Fleming, Inc. (HBFI) installing soldier pile shoring wall along southwestern slope face.

Work Performed by S.W.COLE Rep.: Observation of RAP modulus test and installation of production RAPs. Observation of installation of soldier pile shoring wall.

General Observations and Discussions:

4/4/16, Clear, 30s, On-site 7:30 – 5:00: HDI performed modulus test on the sacrificial non-production RAP installed on 3/30/16. The modulus test followed the "Geopier Modulus Load Test Schedule" included in the Design Submittal dated March 7, 2016. HDI instrumented the pier with 3 top-of-pier dial gauges and 2 bottom-of-pier dial gauges attached to the tell-tales. An HDI quality control representative was on-site full-time to perform and record the test.

4/5/16, Clear, 30s, On-site 7:30 – 1:30: HDI attempted installation of production RAPs in the northwest portion of the site. Due to soft, yielding soils and scheduling conflicts with the site layout crew, installation of RAPs was postponed to the next day. HBFI began installation of soldier piles along the southwestern slope face.

4/6/16, Clear, 30s, On-site 7:00 – 3:00: HDI began installation of production RAPs, generally working in the northern and western portion of the site. 76 RAPs were installed on this date. RAPs 341 to 345 were attempted in the northern portion of the site encountering refusal at the ground surface. The RAP installation generally appeared consistent with the Design Submittal. RAPs 346 and 347 encountered refusal prior to reaching the minimal required depth of 6 feet as per the Design Submittal; RAPs were installed consistent with the Design Submittal and await decision from designer to remain installed or be removed. HDI installed a second sacrificial non-production RAP in the northwest corner of the site. Load test for this sacrificial RAP is scheduled for Monday 4/11/16. An HDI quality control representative was on-site full-time to record the RAP installation. HBFI completed installation of soldier piles along southwestern slope face and began installing wood lagging boards between soldier piles.

4/7/16, Overcast/Rain, 40s, On-site 7:00 – 3:00: HDI resumed installation of production RAPs, generally working in the eastern portion of the site. 136 RAPs were installed on this date. RAPs 127, 129, 139 through 143, 145, 356, 357, 360 through 362, and 365 encountered refusal prior to reaching the minimal required depth of 6 feet as per the Design Submittal; RAPs were installed consistent with the Design Submittal and await decision from designer to remain installed or be removed. An HDI quality control representative was on-site

full-time to record the RAP installation. HBFI completed installation of wood lagging boards and began installation of steel beam rakers.

4/8/16, Overcast, 50s, On-site 7:00 – 2:00: HDI prepared the second sacrificial test RAP for load testing scheduled for Monday 4/11/16. HDI resumed installation of production RAPs, generally working in the southern portion of the site. 43 RAPs were installed on this date. An HDI quality control representative was on-site full-time to record the RAP installation. HBFI completed installation of steel beam rakers. The wall was backfilled by Gorham Sand and Gravel.

Attachments: Photos
Sheet: 1 of 1

S.W.COLE Rep: T. Demers
Rev. by: TJB/EMW

Preparing Test RAP #2

Installing RAPs

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street, Portland, ME
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau

S.W.COLE Project No.: 13-0545.3
Date: 4/11/16 to 4/14/16
Weather: As noted below

Work in Progress: Helical Drilling, Inc. (HDI) performing rammed aggregate pier (RAP) modulus test and installing production RAPs. Gorham Sand and Gravel, Inc. (GSG) excavating for footings and preparing foundation subgrades.

Work Performed by S.W.COLE Rep.: Observation of RAP modulus test, installation of production RAPs, and foundation subgrades.

General Observations and Discussions:

4/11/16, Overcast/Rain, 40's, On-site 7:30 – 3:00: HDI performed modulus test on the sacrificial non-production RAP installed on 4/6/16. The modulus test followed an accelerated modulus test schedule of load holds with a duration of 1 minute and creep test held at 133% design load for a minimum duration of 60 minutes. HDI instrumented the pier with 3 top-of-pier dial gauges. HDI continued installation of production RAPs, generally working in the southeast and western portions of the site. 49 RAPs were installed on this date. An HDI quality control representative was on-site full-time to perform and record the test, and record RAP installation. GSG excavated for footings along the northern garage perimeter wall, between RAPs 341 and 346. Excavation in this area encountered bedrock at the ground surface from RAPs 341 to 345, transitioning to overburden soils at RAP 346. We recommended that the Geopier designer review the RAP lengths in this transition area per the Geopier design submittal. GSG also performed footing excavations at columns on lines D, E, and F of Sheet GS1.01. Excavations in this area encountered shallow bedrock to depths of approximately 1 to 4 feet below existing ground surface.

4/12/16, Overcast/Rain, 40's, On-site 7:00 – 11:00: HDI continued installation of production RAPs, generally working in the southwestern portion of the site. 27 RAPs were installed on this date. An HDI quality control representative was on-site full-time to record RAP installation. HDI performed probe explorations to refusal at footing locations G/1, G/2, and 10 feet south of RAP 366 in the garage area. GSG performed test pit explorations to refusal at footing locations B/1, B/2, C/1, and C/2 in the garage area. The test pits and probes were performed to obtain information on the transition from RAP ground improvement to bedrock bearing conditions. A table of probe and test pit refusal depths is shown below. Due to portions of the site not yet excavated, scheduled RAPs in the southwestern and southeastern portions of the site were not installed during current mobilization. We understand uninstalled RAPs include numbers 93 to 126, 178, 179, and 274 to 283. We understand HDI will re-mobilize at a later date to install these RAPs.

Probe / Test Pit Location	Refusal Depth (ft)	Approximate Elev. (ft)	Approximate Refusal Elev. (ft)
B-1	2	37	35
B-2	0	36	36
C-1	2	37	35
C-2	0	36	36
G-1	6	29	23
G-2	3.5	29	25.5
10 ft South of RAP 366	3.5	29	25.5

4/14/16, Clear, 50's, On-site 10:00 – 11:45: As requested by Opechee, we made a site visit to observe on-going foundation subgrade preparation being performed by GSG in the garage area. While on-site, we met with Dave Wajda (Opechee superintendent) and Dustin (GSG foreman). Observations and discussions with Opechee and GSG included:

Observation of perimeter footing subgrade in the northeast corner of the garage where foundation soils had been improved by RAP installation. The exposed subgrade soils (soil matrix between RAPs) consisted of gray silty clay and clayey silt which appeared disturbed and yielding under foot. We recommended the disturbed soils be overexcavated by and replaced with compacted Structural Fill overlying non-woven geotextile prior to placing the planned 6-inches of geotextile wrapped crushed stone.

Observation of northerly perimeter foundation subgrade approximately between lines B and C where subgrades transition from bedrock to soils improved with RAPs. RAPs were not installed in this area, therefore we recommended that the loose overburden soils be removed down to bedrock and backfilled with compacted Structural Fill prior to placing the planned 6-inches of geotextile wrapped crushed stone.

Observation of southerly perimeter foundation subgrade approximately at line D. GSG had placed some fractured bedrock fill to shape subgrade for footing steps. We recommended this fractured bedrock fill be removed down to intact bedrock and replaced with properly compacted Structural Fill prior to placing the planned 6-inches of geotextile wrapped crushed stone.

Observation of bedrock subgrades for interior piers along lines 1 and 2. The subgrades had been hoe-rammed to depth and GSG had placed up to approximately 4 inches of crushed stone to provide a level working surface

on the bedrock. We recommended that GSG limit thickness of crushed stone over interior bedrock subgrades as much as practicable. Excavation for the interior footing at B/1 was being performed while we were onsite and encountered a bedrock surface sloping to the west. Based on measurements by GSG, we understand sound bedrock is about 1 to 1.5 feet below subgrade elevation in the approximate western 1/3 of the footing due to the sloping surface. We recommended that lean concrete with a compressive strength of 3,000 psi be used to backfill to subgrade elevation over the bedrock surface.

We discussed RAP installation and note that some areas of piers will have final lengths shorter than 6 feet. We recommended that the Geopier designers review the pier lengths.

Attachments: Photos
Sheet: 1 of 1

S.W.COLE Rep: T. Demers/E. Walker
Rev. by: EMW/RED

Excavation Along Northern Perimeter Foundation Between RAPs 341 and 346

Excavation of Footing D/1

Soldier Pile Wall Installed by HBFI

Backfill of Soldier Pile Wall

Disturbed Soils Along Garage Northern Perimeter Foundation Wall to be Overexcavated and Replaced

Fractured Rock Fill Placed Along Garage Southern Perimeter Wall Line to be Removed and Replaced

S.W.COLE ENGINEERING, INC.

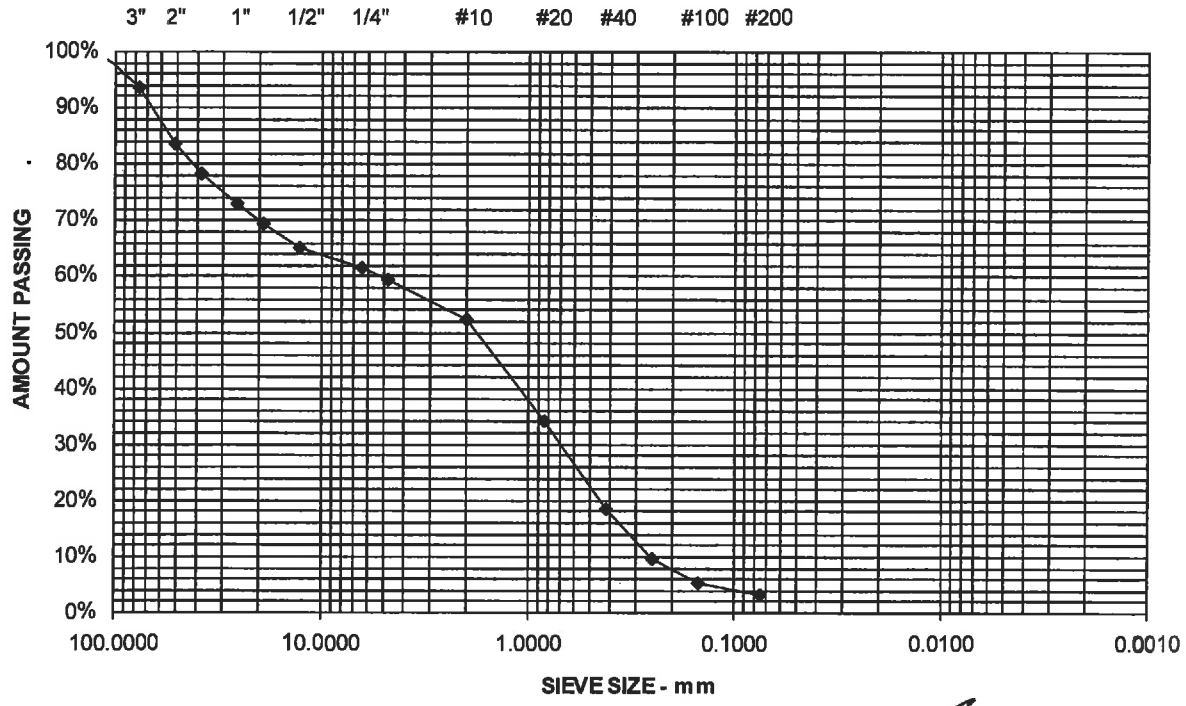
Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTION	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	20681G
Material Type	STRUCTURAL FILL	Date Received	4/15/2016
Material Source	GSG - COMMERCIAL STREET	Date Completed	4/18/2016
		Tested By	JUSTIN BISSON

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	SWCE STRUCTURAL FILL SPECIFICATIONS (%)	
150 mm	6"	100		
125 mm	5"	100		
100 mm	4"	98	100	†
75 mm	3"	93	90 - 100	
50 mm	2"	84		
38.1 mm	1-1/2"	78		
25.0 mm	1"	73		
19.0 mm	3/4"	69		
12.5 mm	1/2"	65		
6.3 mm	1/4"	61	25 - 90	
4.75 mm	No. 4	59		
2.00 mm	No. 10	52		
850 um	No. 20	34		
425 um	No. 40	18	0 - 30	
250 um	No. 60	10		
150 um	No. 100	5		
75 um	No. 200	3.2	0.0 - 5.0	

† SAMPLE DOES NOT MEET SPECIFICATION



Comments

Roger E. Domingo

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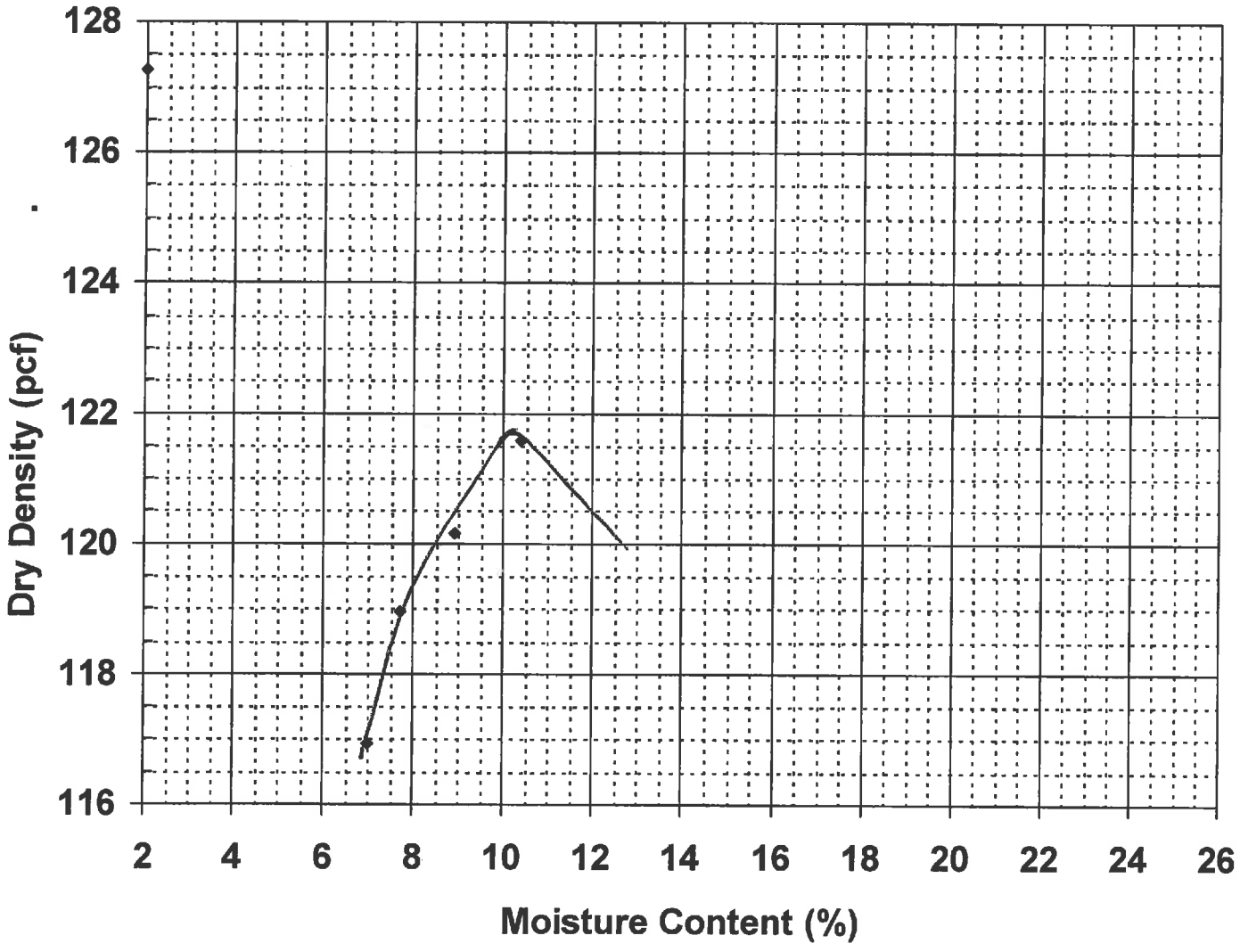
S.W.COLE ENGINEERING, INC.

Report of Moisture-Density

Method ASTM D-1557 MODIFIED Procedure C

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	20681G
Material Type	STRUCTURAL FILL	Date Received	4/15/2016
Material Source	GSG - COMMERCIAL STREET	Date Completed	4/20/2016
		Tested By	JOSHUA MOORE

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	121.8
Optimum Moisture Content (%)	10.1
Percent Oversized	30.0%

Corrected Dry Density (pcf)	**130.6**
Corrected Moisture Content (%)	**7.7**

Comments

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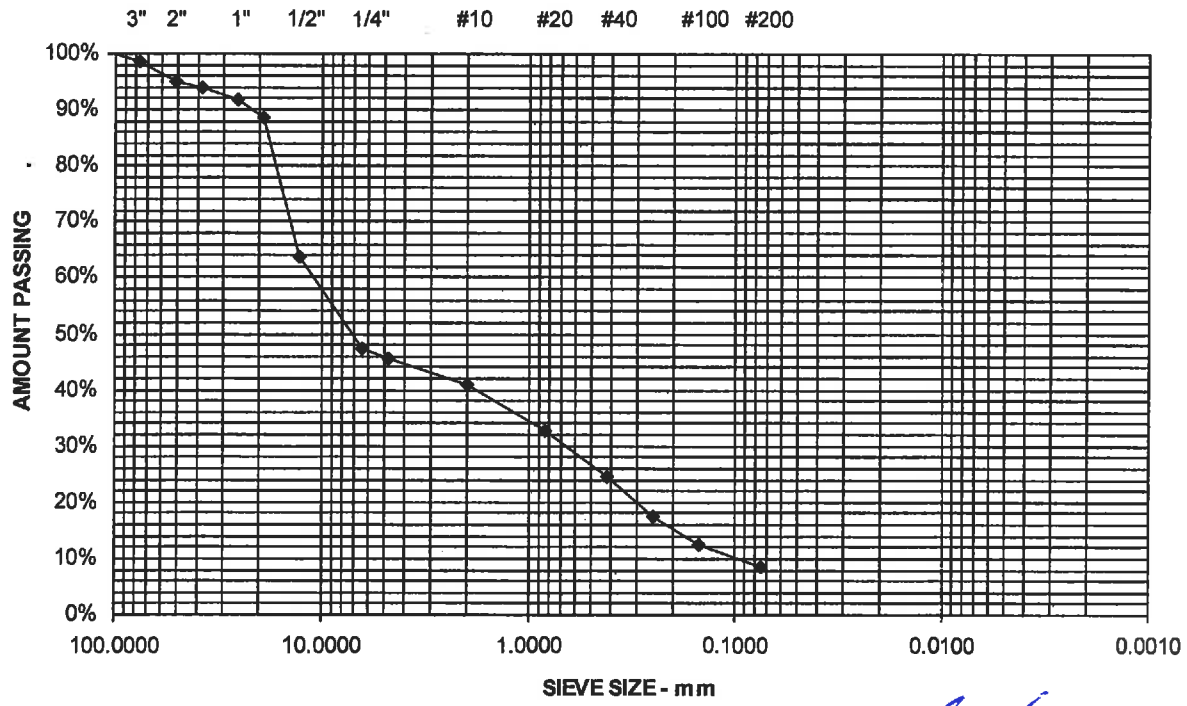
Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTION	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	20729G
Material Type	IN PLACE BORROW	Date Received	4/29/2016
Material Source	IN PLACE - ON SITE	Date Completed	4/29/2016
		Tested By	JUSTIN BISSON

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	SPECIFICATIONS (%)
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	99	
50 mm	2"	95	
38.1 mm	1-1/2"	94	
25.0 mm	1"	92	
19.0 mm	3/4"	89	
12.5 mm	1/2"	64	
6.3 mm	1/4"	47	
4.75 mm	No. 4	46	
2.00 mm	No. 10	41	
850 um	No. 20	33	
425 um	No. 40	24	
250 um	No. 60	17	
150 um	No. 100	13	
75 um	No. 200	8.4	



Comments

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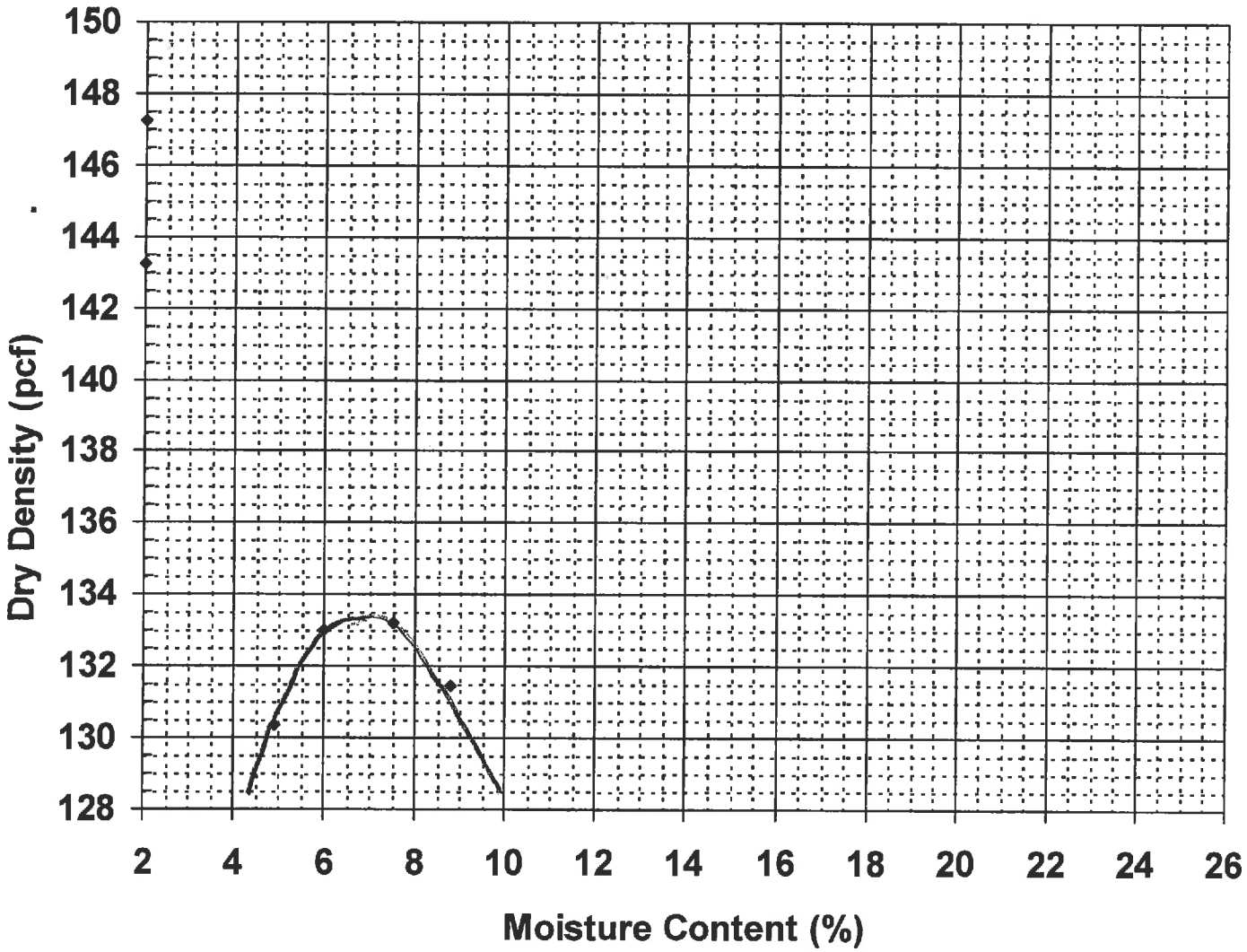
S.W.COLE ENGINEERING, INC.

Report of Moisture-Density

Method ASTM D-1557 MODIFIED Procedure C

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	20729G
Material Type	IN PLACE BORROW	Date Received	4/29/2016
Material Source	IN PLACE - ON SITE	Date Completed	4/29/2016
		Tested By	PAUL SHAFFER

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	133.6
Optimum Moisture Content (%)	6.7
Percent Oversized	11.4%

Corrected Dry Density (pcf)	**135.9**
Corrected Moisture Content (%)	**6.2**

Comments

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S.W.COLE ENGINEERING, INC.

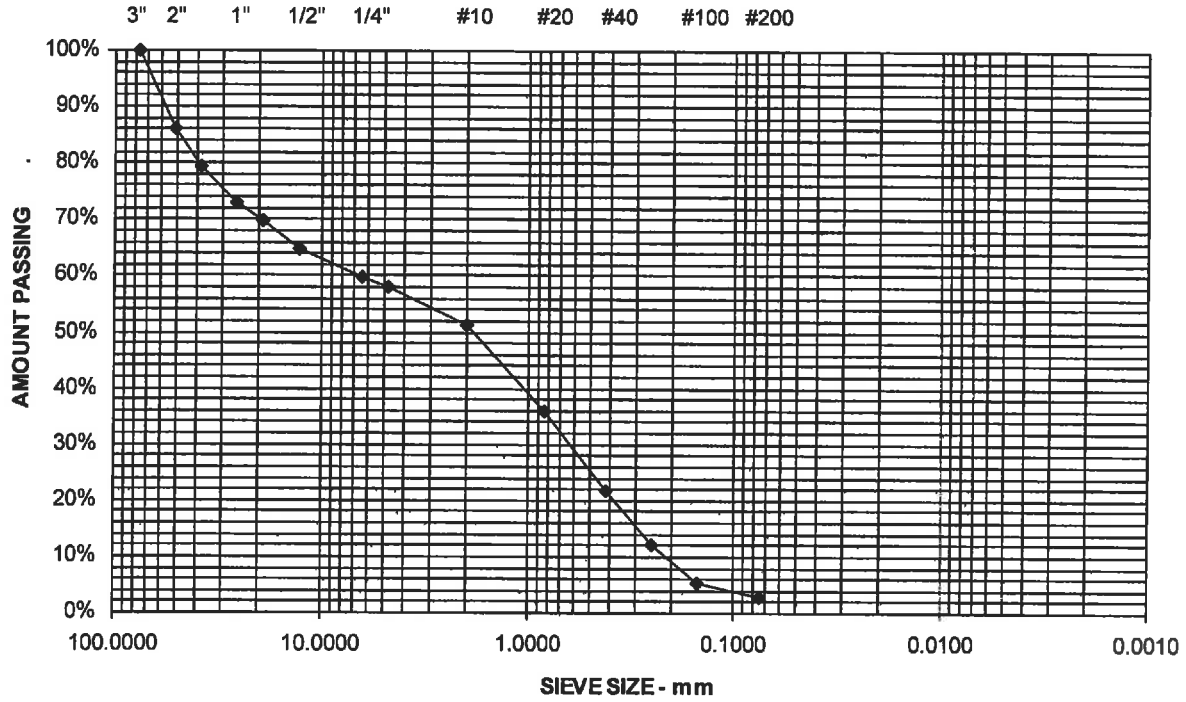
Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTION	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	20874G
Material Type	AGGREGATE SUBBASE	Date Received	5/24/2016
Material Source	PHINNEY PIT	Date Completed	5/28/2016
		Tested By	JUSTIN BISSON

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	MDOT 703.06 TYPE D SPECIFICATIONS (%)
150 mm	6"	100	100
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	86	
38.1 mm	1-1/2"	79	
25.0 mm	1"	73	
19.0 mm	3/4"	70	
12.5 mm	1/2"	65	
6.3 mm	1/4"	60	25 - 70
4.75 mm	No. 4	58	
2.00 mm	No. 10	51	
850 um	No. 20	36	
425 um	No. 40	22	0 - 30
250 um	No. 60	12	
150 um	No. 100	5	
75 um	No. 200	3.0	0.0 - 7.0

SAMPLE MEETS SPECIFICATION



Comments

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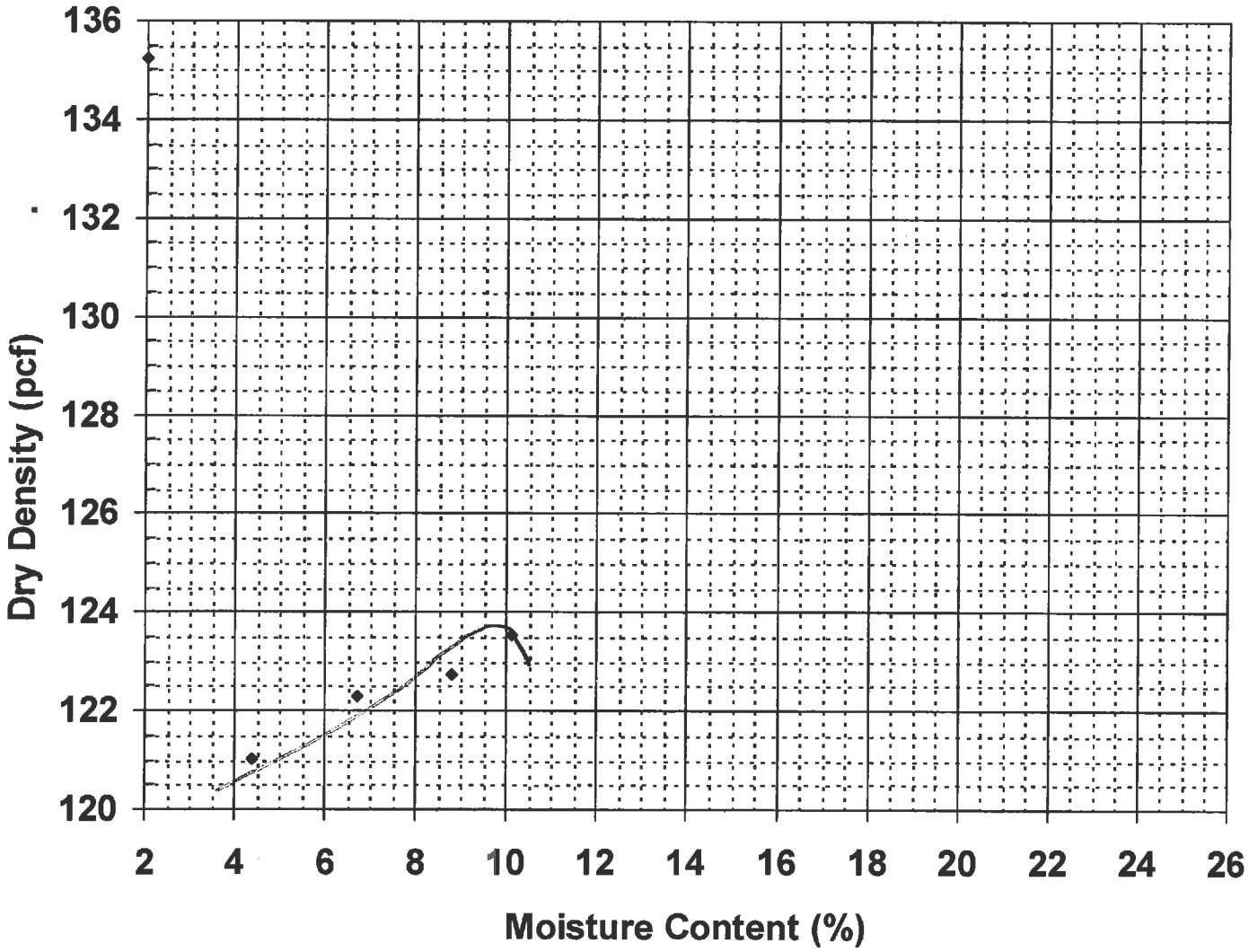
Report of Moisture-Density

Method ASTM D-1557 MODIFIED Procedure C

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	20874G
Material Type	AGGREGATE SUBBASE	Date Received	5/24/2016
Material Source	PHINNEY PIT	Date Completed	6/3/2016
		Tested By	PAUL SHAFFER

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	123.7
Optimum Moisture Content (%)	9.7
Percent Oversized	29.1%

Corrected Dry Density (pcf)	**131.9**
Corrected Moisture Content (%)	**7.5**

Comments

Roger E. Domingo

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S.W.COLE ENGINEERING, INC.

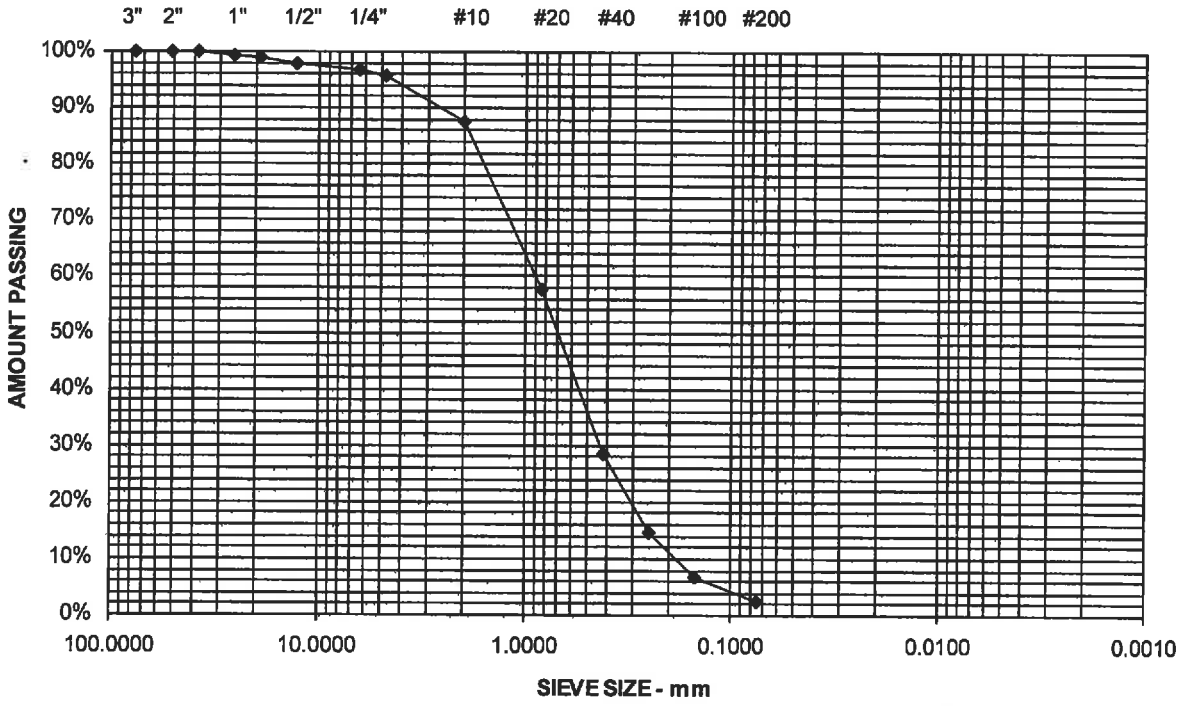
Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTION	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	20875G
Material Type	STRUCTURAL SAND	Date Received	5/24/2016
Material Source	MIGHTY STREET PIT	Date Completed	5/28/2016
		Tested By	JUSTIN BISSON

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	SWCE STRUCTURAL FILL SPECIFICATIONS (%)	
150 mm	6"	100		
125 mm	5"	100		
100 mm	4"	100	100	
75 mm	3"	100	90 - 100	
50 mm	2"	100		
38.1 mm	1-1/2"	100		
25.0 mm	1"	99		
19.0 mm	3/4"	99		
12.5 mm	1/2"	98		
6.3 mm	1/4"	97	25 - 90	†
4.75 mm	No. 4	96		
2.00 mm	No. 10	88		
850 um	No. 20	58		
425 um	No. 40	28	0 - 30	
250 um	No. 60	15		
150 um	No. 100	7		
75 um	No. 200	2.6	0.0 - 5.0	

† SAMPLE DOES NOT MEET SPECIFICATION



Comments

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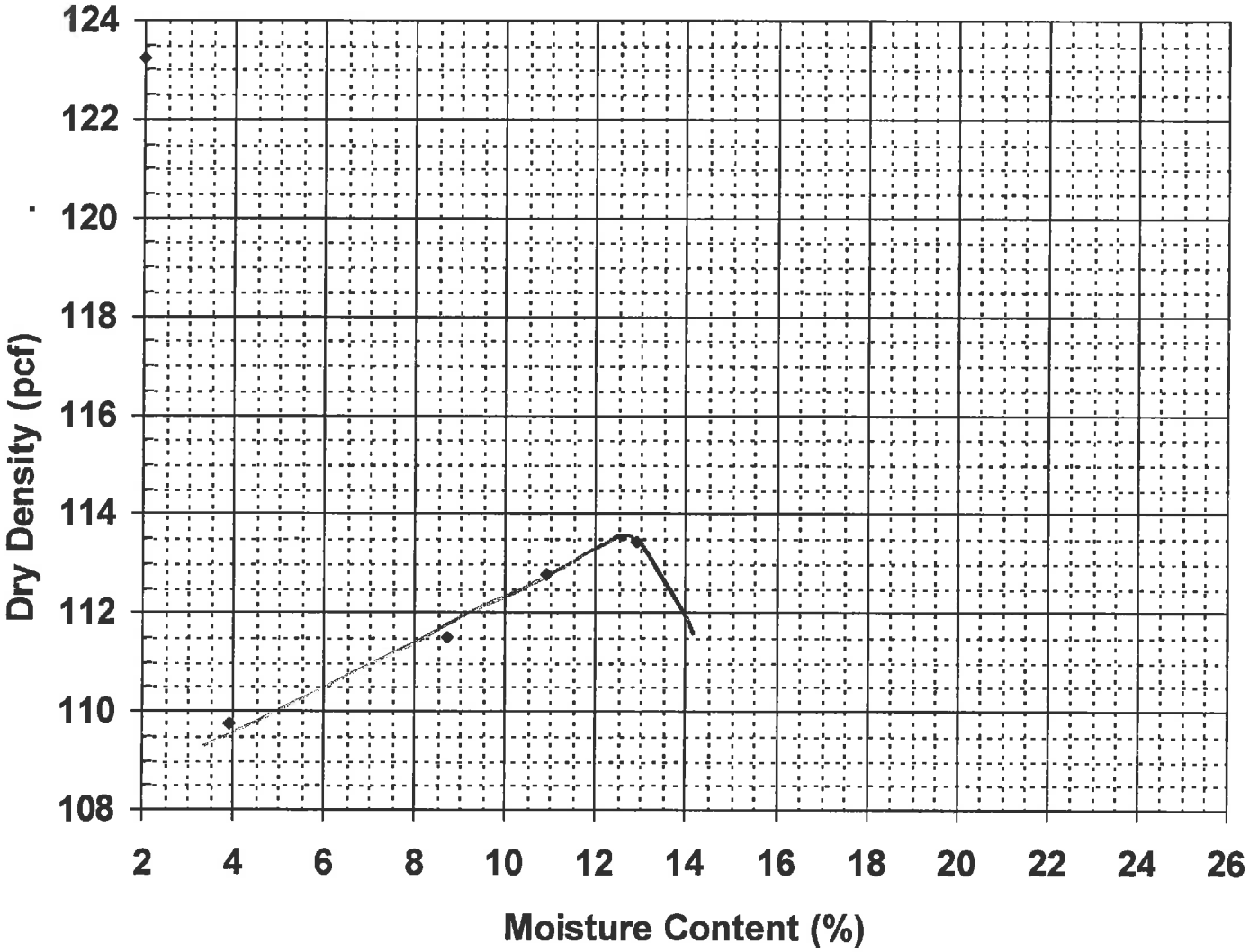
S.W.COLE ENGINEERING, INC.

Report of Moisture-Density

Method ASTM D-1557 MODIFIED Procedure A

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	20875G
Material Type	STRUCTURAL SAND	Date Received	5/24/2016
Material Source	MIGHTY STREET PIT	Date Completed	6/3/2016
		Tested By	AIDAN BOYCE

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	113.5
Optimum Moisture Content (%)	12.5
Percent Oversized	4.2%

Corrected Dry Density (pcf)	**114.8**
Corrected Moisture Content (%)	**12.1**

Comments

Roger E. Domingo

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S.W.COLE ENGINEERING, INC.

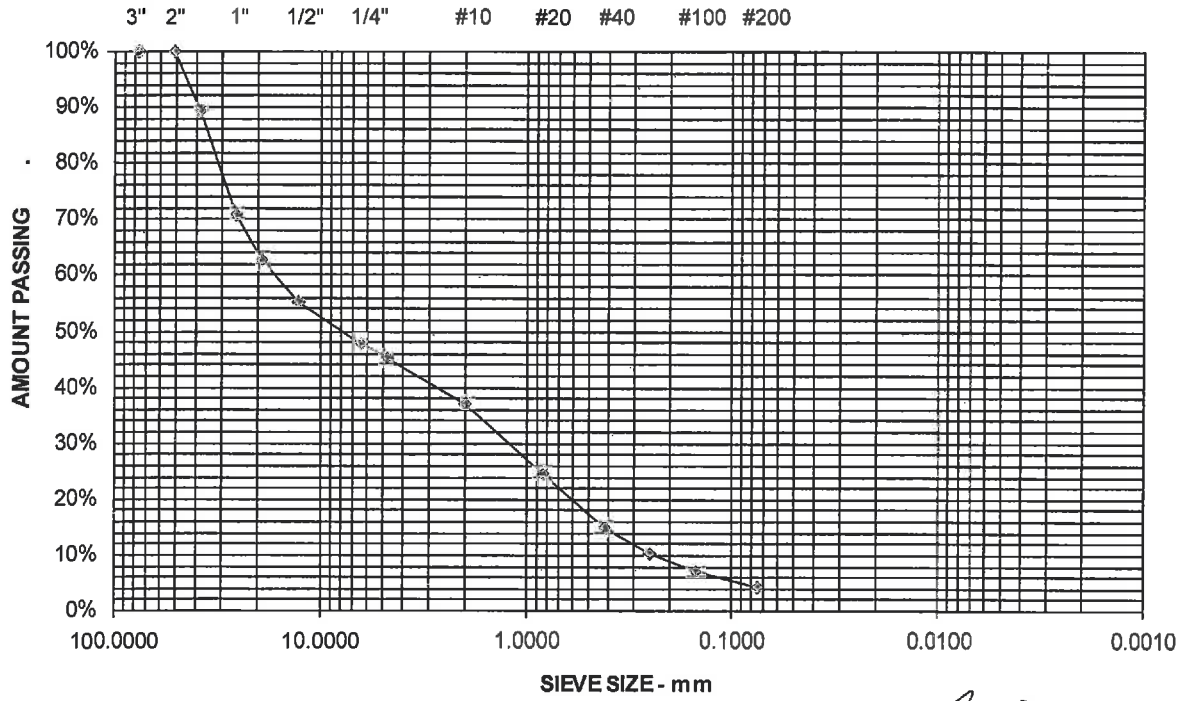
Report of Gradation

ASTM C-117 & C-136

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTION	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	21130G
Material Type	1 1/2" GRAVEL	Date Received	7/12/2016
Material Source	COMMERCIAL STREET	Date Completed	7/13/2016
		Tested By	PAUL SHAFFER

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	MDOT 703.06 TYPE A SPECIFICATIONS (%)
150 mm	6"	100	
125 mm	5"	100	
100 mm	4"	100	
75 mm	3"	100	
50 mm	2"	100	100
38.1 mm	1-1/2"	89	
25.0 mm	1"	71	
19.0 mm	3/4"	62	
12.5 mm	1/2"	55	45 - 70
6.3 mm	1/4"	48	30 - 55
4.75 mm	No. 4	45	
2.00 mm	No. 10	37	
850 um	No. 20	25	
425 um	No. 40	15	0 - 20
250 um	No. 60	10	
150 um	No. 100	7	
75 um	No. 200	4.4	0.0 - 5.0

SAMPLE MEETS SPECIFICATION



Comments

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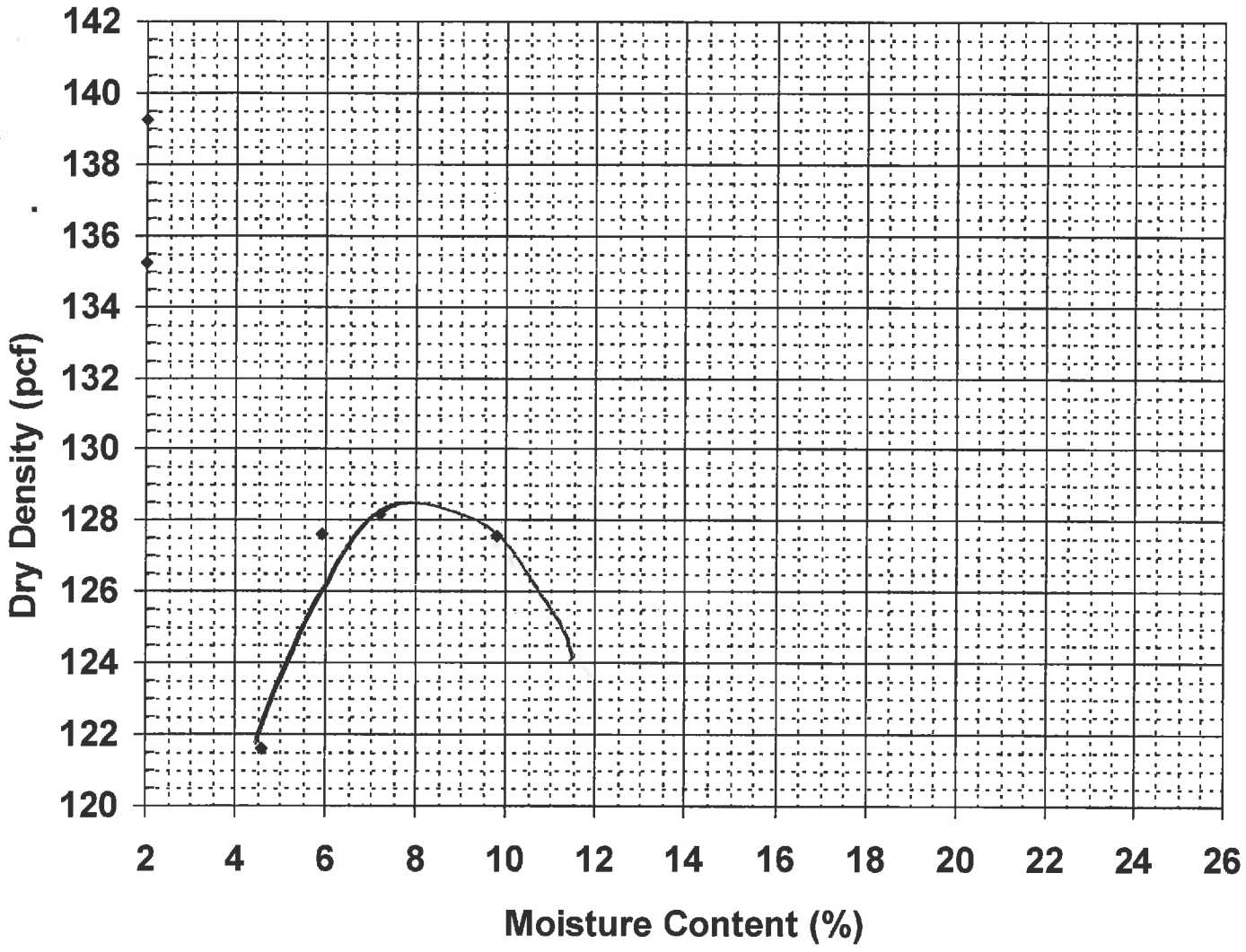
S.W.COLE ENGINEERING, INC.

Report of Moisture-Density

Method ASTM D-1557 MODIFIED Procedure C

Project Name	PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND	Project Number	13-0545.3
Client	J.B. BROWN & SONS	Lab ID	21130G
Material Type	1 1/2" GRAVEL	Date Received	7/12/2016
Material Source	COMMERCIAL STREET	Date Completed	7/13/2016
		Tested By	PAUL SHAFFER

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	128.5	Corrected Dry Density (pcf)	**136**
Optimum Moisture Content (%)	8	Corrected Moisture Content (%)	**6.2**
Percent Oversized	30.0%		

Comments

Roger E. Domingo

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S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street, Portland, ME
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau
General Contractor/CM: Opechee Construction Corp. /Dave Trottier

S.W.COLE Project No.: 13-0545.3
Date: 7/12/16
Weather: Sunny, 80s

Work in Progress: Gorham Sand and Gravel, Inc. (GSG) were in progress of excavating strip footing between 1-line and 2-line on G-line.

General Observations and Discussions:
While on-site, Opechee requested we observe GSG preparing strap footing subgrades between 1-line and 2-line on G-line. Excavation was done with a smooth-edge bucket and was excavated down to bedrock per geotechnical report. The northern side of footing was excavated down approximately 4 feet to get to bedrock. This area was leveled out with rest of footing with ¾ -inch stone that was compacted in 1-foot lifts. Non-woven geotextile fabric was placed down over subgrades and at least 6-inches of ¾ -inch stone was compacted and wrapped in fabric.

Onsite: 8:30 – 11:30
Attachments: Photos
Sheet: 1 of 1

S.W.COLE Rep: C. Cromwell
Rev. RED

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CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street, Portland, ME
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau
General Contractor/CM: Opechee Construction Corp. /Dave Trottier

S.W.COLE Project No.: 13-0545.3
Date: 7/14/16
Weather: Sunny, 80s

Work in Progress: Gorham Sand and Gravel, Inc. (GSG) were in the process of excavating out for keyways on A-line from 9.4-line to 17-line and 17-line from A-line to D-line.

General Observations and Discussions:
While on-site, Opechee requested S.W.COLE observe GSG excavating out for keyways on A-line from 9.4-line to 17-line and 17-line from A-line to D-line. Subgrade was initially dug down to bottom of footing with a smooth-edged bucket and appeared to be relatively undisturbed; exposed subgrade soils consisted of brown silt and sand with some gravel. Keyway was being excavated between Rammed Aggregate Piers (RAPs) and appeared to be relatively dry and undisturbed.

Onsite: 9:00 – 10:30
Attachments: Photos
Sheet: 1 of 1

S.W.COLE Rep: C. Cromwell
Rev. RED

S.W.COLE ENGINEERING, INC. • Geotechnical Engineering • Field & Lab Testing • Scientific & Environmental Consulting

CONSTRUCTION OBSERVATION REPORT

Project: Mixed Use Development, York & High Street, Portland, ME
Client: J.B. Brown & Sons, Inc.
Client's Rep.: Vin Veroneau

S.W.COLE Project No.: 13-0545.3
Date: 8/24/16
Weather: Sunny, 80s

Work in Progress: Tristone: Installation of formwork and reinforcing steel along A-line of the mixed use building in preparation for tomorrow's concrete placement. Gorham Sand and Gravel, Inc. (GS&G): Excavation for interior spread footings associated with the mixed use building at B.3/15.5, B.3/15.9, C/15, C/15.5 including the elevator between 13 and 14-lines .

General Observations and Discussions: As scheduled by Opechee Construction (Dave), we made a site visit to observe subgrade conditions and preparations in the current work area. At the time of our site visit, GS&G had recently completed excavation for the above referenced foundation elements and was in the process of checking elevations with their GPS prior to completing the required preparations. The excavation had been made with a smooth-edged bucket to help minimize disturbance to the subgrade soils and extended approximately 6 inches below proposed bottom of footings to accommodate the compacted crushed stone layer specified in section 4.3 of the project geotechnical report dated August, 31, 2015. At exposed subgrade, the previously installed rammed aggregate piers were visible and the subgrade soils consisting of relic crushed stone and gray silty sand with gravel were observed to be dry and firm. Subgrade conditions and preparations observed during our visit appeared consistent with our understanding of the expectations and requirements contained in the project documents.

Onsite: 1:00 – 2:00
Attachments: Photo
Sheet: 1 of 1

S.W.COLE Rep: K. Gimpel
Rev.: RED

S.W.COLE ENGINEERING, INC.

Report of Field Density
ASTM D6938

Project: **PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTION SERVICES**

Project Number: **13-0545.3**

Client: **J.B. BROWN & SONS**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
8	7/11/2016	CLC	INTERIOR 8' OFF S SIDE WALL E LINE	TOSB	10	20681G	128.8	4.4	98.6	95
9	7/11/2016	CLC	INTERIOR 10' OFF S SIDE WALL C LINE	TOSB	10	20681G	126.9	3.8	97.2	95
10	7/11/2016	CLC	INTERIOR SW CORNER 20' OFF S SIDE 20' OFF W SIDE	TOSB	10	20681G	127.3	4.8	97.5	95
11	7/11/2016	CLC	INTERIOR ON A LINE 20' FROM CORNER OF STAIRS	TOSB	10	20681G	125.3	4.2	95.9	95
12	7/11/2016	CLC	NEXT TO PIER C/1	TOF	12	20875G	110.2	4.2	96.0	95
13	7/11/2016	CLC	NEXT TO PIER D/1	TOF	12	20875G	110.8	4.0	96.5	95
14	7/11/2016	CLC	NEXT TO PIER E/1	TOF	12	20875G	112.4	3.1	97.9	95
15	7/11/2016	CLC	NEXT TO PIER F/1	TOF	12	20875G	115.5	11.9	100.6	95
16	7/11/2016	CLC	NEXT TO PIER E/2	TOF	12	20875G	113.6	3.0	99.0	95
17	7/11/2016	CLC	NEXT TO PIER F/2	TOF	12	20875G	110.9	4.1	96.6	95
18	7/11/2016	CLC	E LINE 60' FROM S SIDE WALL	TOSB	10	20681G	128.7	4.9	98.5	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
20681G	4/15/2016	GSG - Commercial Street	Structural Fill	ASTM D-1557 Modified C	130.6	7.7	
20875G	5/24/2016	Mighty Street Pit	Structural Sand	ASTM D-1557 Modified A	114.8	12.1	

Elevation Notes:

TOSB - TOP OF SUBBASE
TOF - TOP OF FOOTING

Comments:

Reviewed By

S.W.COLE ENGINEERING, INC.

Report of Field Density
ASTM D6938

Project: **PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTION SERVICES**

Project Number: **13-0545.3**

Client: **J.B. BROWN & SONS**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
19	7/14/2016	CLC	NEXT TO STRAP FOOTING ON G LINE W SIDE	TOF	10	20875G	109.7	3.8	95.6	95
20	7/14/2016	CLC	NEXT TO STRAP FOOTING ON G LINE E SIDE	TOF	10	20875G	110.5	3.4	96.3	95
21	7/14/2016	CLC	ON G LINE 75' FROM S SIDE WALL	FGS	10	20681G	128.7	2.9	98.5	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
20681G	4/15/2016	GSG - Commercial Street	Structural Fill	ASTM D-1557 Modified C	130.6	7.7	
20875G	5/24/2016	Mighty Street Pit	Structural Sand	ASTM D-1557 Modified A	114.8	12.1	

Elevation Notes:

TOF - TOP OF FOOTING
FGS - FINISH GRADE SUBBASE

Comments:

Reviewed By

S.W.COLE ENGINEERING, INC.

Report of Field Density

ASTM D6938

Project: **PORTLAND ME - YORK & HIGH STREETS MIXED DEVELOPMENT - CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTION SERVICES**

Project Number: **13-0545.3**

Client: **J.B. BROWN & SONS**

Field Density Test Results

Test #	Test Date	Tech	Test Location	Elev Feet	Test Depth	Lab ID	Dry Density	Moisture Content Percent	Compaction Percent	Required Compaction
22	7/18/2016	CLC	6 LINE 25' OFF S WALL 70' OFF E WALL	FGS	10	20681G	127.0	4.4	97.2	95
23	7/18/2016	CLC	60' OFF S WALL, 10' OFF E WALL	FGS	10	20681G	128.0	4.6	98.0	95
24	7/18/2016	CLC	MIDDLE OF PIER AT G/2 & F/2	FGS	10	20681G	128.3	3.9	98.2	95
25	7/18/2016	CLC	MIDDLE OF PIER AT D/2 & E/2	FGS	10	20681G	129.8	2.8	99.4	95
26	7/18/2016	CLC	BETWEEN PIER AT 3B/2 AND W SIDE WALL A LINE MIDDLE	FGS	10	20681G	130.2	2.8	99.7	95
27	7/18/2016	CLC	10' OFF W SIDE WALL A LINE 30' OFF S SIDE WALL	FGS	10	20681G	127.6	3.3	97.7	95
28	7/18/2016	CLC	C LINE 60' FROM, S SIDE WALL	FGS	10	20681G	129.6	3.4	99.2	95
29	7/18/2016	CLC	10' OFF W SIDE WALL ON A LINE	FGS	10	20681G	128.1	3.7	98.1	95
30	7/18/2016	CLC	B LINE 50' OFF W SIDE WALL 60' OFF N SIDE WALL	FGS	10	20681G	128.4	3.6	98.3	95
31	7/18/2016	CLC	D LINE 100' OFF W SIDE 50' OFF N	FGS	10	20681G	124.2	3.3	95.1	95
32	7/18/2016	CLC	F LINE 60' FROM E SIDE WALL 10' OFF N	FGS	10	20681G	130.4	2.5	99.8	95
33	7/18/2016	CLC	5' OFF H LINE 50' OFF N	FGS	10	20681G	124.2	3.8	95.1	95
34	7/18/2016	CLC	BETWEEN PIERS AT A/1 AND B/1 MIDDLE	FGS	10	20681G	128.1	3.7	98.1	95
35	7/18/2016	CLC	BETWEEN PIERS AT C/1 AND D/1	FGS	10	20681G	129.0	3.5	98.8	95
36	7/18/2016	CLC	BETWEEN PIERS AT E/1 AND F/1	FGS	10	20681G	127.0	4.2	97.2	95

Laboratory Compaction Test Reference

Lab ID	Date Received	Material Source	Material Type	Method	Max Dry Density PCF	Optimum Moisture Content (%)	Comments
20681G	4/15/2016	GSG - Commercial Street	Structural Fill	ASTM D-1557 Modified C	130.6	7.7	

Elevation Notes:

ALL ELEVATIONS ARE FINISH GRADE SUBBASE (FGS)

Comments:

Reviewed By

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Structural Schedule of Special Inspections

CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.4	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
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	May thru June, 2016
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.	Y	C	IBC 1911.5	SI1	PE/SE or EIT	May thru June, 2016
4. Inspection of anchors installed in hardened concrete.	Y	P	IBC 1212.1	SI1	PE/SE or EIT	May thru June, 2016
5. Verifying use of required design mix	Y	P	ACI 318: Ch 4, 5.2-5.4	TA1	ACI-CFTT or ACI-STT	Yes
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	Yes
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	Yes
8. Inspection for maintenance of specified curing temperature and techniques	Y	P	ACI 318: 5.11-5.13	SI1	PE/SE or EIT	May thru June, 2016
9. Inspection of Precast - Prestressed Concrete						
a. Application of prestressing force.	N		PCI Certified Plant			
b. Grouting of bonded prestressing tendons in seismic force resisting system	N		PCI Certified Plant			
10. Erection of precast concrete members.	Y	P	PCI Certified Erector	SI1	PE/SE or EIT	May thru June, 2016
11. Submit current AWS D1.1 welder certificate for all field welders who will be welding on this project.	Y	S	AWS D1.1	SI1	PE/SE or EIT	May thru June, 2016
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	May thru June, 2016

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.

Note: Concrete cylinder test results are not included due to large number of test reports.
A PDF copy is available upon request.

BECKER STRUCTURAL ENGINEERS

Project:	85 York Street
Location:	Portland, ME
Becker Job No:	3623

OBSERVATION REPORT
Cast in Place Concrete

Date:	5/16/16
Time:	1:30-2:30
Temp:	60
Weather:	Partly Cloudy

Observation Location: Footings Grids A-F, Stair Footing/Wall dowels, Strip footing/dowels of east wall grids C-G

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	See notes 3 and 4.
Embed/Anchors	☒	☐	☐	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	

Notes:
1. Footing rebar 75% complete at time of visit. Anchor bolts in place in 50% of footings at time of visit.
2. Observed reinforcing appeared to be in conformance with the structural drawings.
3. The rebar installer informed BSE that they would be wet-setting the key rebar. BSE stated that they would prefer to avoid wet-setting whenever possible, but allowed it in the key rebar only as long as the protruding length was verified such that the bottom of the bar was at the right elevation, and as long as the concrete would be consolidated around the bars to not allow air gaps to occur.
4. Standing water was observed in the keyway prior to pour. BSE informed Opechee and their subcontractor that the BSE spec calls for water to be removed. Their solution was to displace the water with the concrete pour. This may have affected the W/C ratio of concrete and should be avoided in future pours.

Signed: Matt Paladino, E.I.

David Macolini

From: David Macolini
Sent: Thursday, January 05, 2017 3:01 PM
To: davet@opechee.com; 'Jason Blais'
Cc: Todd Neal; Matt Paladino
Subject: 85 York St Garage pier
Attachments: BSE_8.25.16_Column_Pier_SKS.pdf

Hi Dave and Jason,
As you requested earlier today, Matt and I went over to have a look at the pier on grid intersection 2/H. It was patched last summer to fill in a low spot, but the patch cracked several months ago. I think we all have been watching it to see if further damage occurs. A vertical crack has opened up on the left hand side of the pier possibly due to freezing water entering the crack. The patch spalled and is now bulging. Repairing the damaged concrete to bear the load is going to require jacking the beam off the pier to make the repairs. Because of winter conditions and to be consistent with the two other piers, *we recommend adding a steel column similar to the other two beams re-supported last fall (see attached details).*

Crack @ left hand side of pier and spalled patch @ front face of pier

Beam contacts steel bearing plate and edge of concrete.

Note: two steel columns installed to support end of two beams.

David A. Macolini, P.E.
Senior Engineer
Becker Structural Engineers, Inc.
direct 207.879.1838 x117
mobile 207.331.7656

Project:	85 York Street
Location:	Portland, ME
Becker Job No:	3623

OBSERVATION REPORT

Cast in Place Concrete

Date:	5/20/16
Time:	1:30-2:30
Temp:	70
Weather:	Sunny

Observation Location: Wall Footings/dowels at North Wall, east of stair. Square footings and pier dowels in wall.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	See note 3.
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☐	☐	☐	☒	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	

Notes:

1. Observed reinforcing appeared to be in conformance with the structural drawings.
2. Standing water observed on site. See comments from previous S.W. Cole field reports.
3. It was discussed with rebar foreman that 1 of the 4 vertical pier bars from 17/GS2.03 was missing from site but would be replaced with a matching dowel with 6' vertical leg and a straight bar (#8 or higher) to the top of the pier.

Signed: Matt Paladino, E.I.

Project:	85 York Street
Location:	Portland, ME
Becker Job No:	3623

OBSERVATION REPORT

Cast in Place Concrete

Date:	6/28/16
Time:	10:30-11:30
Temp:	70
Weather:	Overcast

Observation Location: Wall and pier reinforcing at east wall from grids F to H and along/adjacent to 2 line on the south wall.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Reinforcement Size	☒	☐	☐	☐	
Quantity	☒	☐	☐	☐	
Condition	☒	☐	☐	☐	
Placement	☒	☐	☐	☐	
Embed/Anchors	☒	☐	☐	☐	
Lap Splices	☒	☐	☐	☐	
Hot Weather	☐	☐	☐	☒	
Cold Weather	☐	☐	☐	☒	
Bond Beams	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	

Notes:

1. Observed reinforcing appeared to be in general conformance with the structural drawings.

Signed: Matt Paladino, E.I.

85 York Street, Portland, ME
Observation Report
05/20/16

85 York Street, Portland, ME
Observation Report
05/20/16

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Structural Schedule of Special Inspections - STEEL CONSTRUCTION

VERIFICATION AND INSPECTION IBC Section 1704.3	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
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	Yes
b. Manufacturer's certificate of compliance required.	Y	S		SI1	PE/SE or EIT	Yes
2. Inspection of high-strength bolting						
a. Snug-tight joints.	Y	P		TA1	AWS/AISC-SSI	Yes
b. Pretensioned and slip-critical joints using turn-of-nut with matchmaking, twist-off bolt or direct tension indicator methods of installation.	Y	P	AISC LRFD Section M2.5 IBC Sect 1704.3.3	TA1	AWS/AISC-SSI	Yes
c. Pretensioned and slip-critical joints using turn-of-nut without matchmaking or calibrated wrench methods of installation.	Y	C		TA1	AWS/AISC-SSI	Yes
3. Material verification of structural steel:						
a. For structural steel, identification markings to conform to AISC 360.	N					
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	Yes
c. Manufacturer's certified test reports.	Y	S		SI1	PE/SE or EIT	Yes
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	Yes
b. Manufacturer's certificate of compliance required.	Y	S		SI1	PE/SE or EIT	Yes
5. Submit current AWS D1.1 welder certificate for all field welders who will be welding on this project.	Y	S	AWS D1.1	SI1	PE/SE or EIT	Yes
6. Inspection of welding (IBC 1704.3.1):						
a. Structural steel:						
1) Complete and partial joint penetration groove welds.	Y	C	AWS D1.1	TA1	AWS-CWI	Yes
2) Multipass fillet welds.	Y	C		TA1	AWS-CWI	Yes
3) Single-pass fillet welds> 5/16"	Y	C		TA1	AWS-CWI	Yes
4) Plug and slot welds	Y	C		TA1	AWS-CWI	Yes
5) Single-pass fillet welds≤ 5/16"	Y	P		TA1	AWS-CWI	Yes
6) Roof and deck welds.	N	P				
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	July, 2016
b. Member locations.	Y	P		SI1	PE/SE or EIT	
c. Application of joint details at each connection.		P		SI1	PE/SE or EIT	

BECKER STRUCTURAL ENGINEERS

OBSERVATION REPORT

Structural Steel

Date:	7/26/16
Time:	11:00-11:30
Temp:	85
Weather:	Sunny

Project:	85 York St
Location:	Portland, ME
Becker Job No:	3623

Observation Location:
Structural Steel along lines 1 and 2.

	Satisfactory	Un-Satisfactory	Not Completed	Not Applicable	Comments
Bolt Condition	☒	☐	☐	☐	
Weld Condition	☐	☐	☒	☐	
Anchor Bolts, Nuts, & Washers	☒	☐	☐	☐	See note 1.
Grout/Leveling Plates	☒	☐	☐	☐	
Fit Up/Plumbness	☒	☐	☐	☐	
Metal Deck Welds	☐	☐	☐	☒	
Pour Stops	☐	☐	☐	☒	
Bracing	☐	☐	☐	☒	
Additional Items	☐	☐	☐	☐	
Additional Items	☐	☐	☐	☐	

Notes:

1. Prior to the visit , the contractor indicated that anchor bolt projection at many locations were not long enough to install nuts and washers properly. BSE instructed the contractor to install Elocone nuts at these locations. The elocone nuts were installed at all of these locations with the exception of two bolts at column D-2. The contractor indicated that the remaining two Elocone nuts, the field welding of plate washers, and the tightening of beam bolts would be completed at a later date.
2. Observed structural steel appeared to be in general conformance with the structural drawings.

Signed: Matthew D. Paladino, E.I.

WHITE ENGINEERING, LLC P.O. Box 878 Glen, N.H. 03838
nealjwhite@gmail.com Tel. 603-383-9347 Fax. 603-383-8262

Client: S.W. Cole Engineering, Inc. **Report:** 001
Project: Mixed Use Development – Danforth and Park
SWCE Project #: 13-0545.3
Date: August 2, 2016
Subject: Structural Steel and Precast Site Inspection

We visited the site on this date to initiate structural steel and precast concrete welding inspections on the Parking Garage of the Mixed Use Development project located at York St and High St. in Portland, ME. Upon arrival we met with the project superintendent for Opechee Construction who provided us with a set of structural and approved shop drawings which were used to perform our inspections. Our actions and observations were as follows:

- Structural drawings, Daley Precast drawings and specifications were reviewed.
- Welder certifications were provided for personnel welding on the precast structural tee connections. Certifications available at this time were for SMAW welding of carbon steel using E7018 electrodes. Also required for this project is certification for welding of stainless steel connections on the precast structural tees. We were advised that welder qualification tests were performed for all personnel welding on this project and certification documents should be available when we make our next site visit.
- Welding was in progress on precast structural tee to supporting structural steel connections as well as vector connections between precast structural tees. We observed work in progress as well as work previously completed. Welding completed to date was acceptable (when an entire area is completed a final inspection will be performed and the specific area documented).
- We confirmed that the proper welding electrodes and procedures were being used.
- Work was also in progress on the structural steel portion of the parking garage. No discrepancies were noted on work completed to date (when an area is completed a final inspection will be performed and the specific area documented).

All work observed appeared to be progressing in an acceptable manner. The project superintendent was notified of our findings.

Inspector; Michael Bump
CWI#07091231

WHITE ENGINEERING, LLC P.O. Box 878 Glen, N.H. 03838
nealjwhite@gmail.com Tel. 603-383-9347 Fax. 603-383-8262

Client: S.W. Cole Engineering, Inc. **Report:** 002
Project: Mixed Use Development – York & High
SWCE Project #: 13-0545.3
Date: August 8, 2016
Subject: Structural Steel and Precast Site Inspection

We visited the site on this date as requested to continue structural steel and precast structural tee inspections on the Parking Garage of the Mixed Use Development project located at York St and High St. in Portland, ME. Upon arrival we met with the project superintendent for Opechee Construction. Our actions and observations were as follows:

- Structural and Daley Precast drawing were reviewed.
- Stainless steel welder certifications were provided for personnel used on the precast structural tees. All personnel were properly certified to weld stainless steel using the SMAW welding process.
- Visual inspections were performed on all vector connections between precast structural tees at the upper deck area.
- Bolted connections were inspected on the structural steel framing.
- Anchor rod nuts were properly tightened and plate washers were welded as required at column base plates on line 1. Elocone nuts were used at all anchor rods that did not have sufficient projection above the footing.

No discrepancies were noted. All work observed had been performed in an acceptable manner.

The project superintendent was notified of our findings.

Inspector; Michael Bump
CWI#07091231

WHITE ENGINEERING, LLC P.O. Box 878 Glen, N.H. 03838
nealjwhite@gmail.com Tel. 603-383-9347 Fax. 603-383-8262

Client: S.W. Cole Engineering, Inc. **Report:** 003
Project: Mixed Use Development – York & High
SWCE Project #: 13-0545.3
Date: August 9, 2016
Subject: Structural Steel and Precast Site Inspection

We visited the site on this date as requested to continue structural steel inspections on the Parking Garage of the Mixed Use Development project located at York St and High St. in Portland, ME. Upon arrival we met with the project superintendent for Opechee Construction. Our actions and observations were as follows:

- Anchor rod nuts were properly tightened and plate washers were welded as required at column base plates on line 2. Elocone nuts were used at all anchor rods that did not have sufficient projection above the footing.

All work observed appeared to have been performed in an acceptable manner.

The project superintendent was notified of our findings.

Inspector; Michael Bump
CWI#07091231

WHITE ENGINEERING, LLC P.O. Box 878 Glen, N.H. 03838
nealjwhite@gmail.com Tel. 603-383-9347 Fax. 603-383-8262

Client: S.W. Cole Engineering, Inc. **Report:** 004
Project: Mixed Use Development – York & High
SWCE Project #: 13-0545.3
Date: August 23, 2016
Subject: Structural Steel and Precast Site Inspection

We visited the site on this date as requested to continue structural steel and precast structural tee inspections on the Parking Garage of the Mixed Use Development project located at York St and High St. in Portland, ME. Upon arrival we met with the project superintendent for Opechee Construction. Our actions and observations were as follows:

- Welding of the precast double tees to the concrete walls and supporting structural steel at the underside of the parking deck was approximately 80% complete at this time. Visual inspections were performed on all welding that was previously performed.

All work observed appeared to have been performed in an acceptable manner.

The project superintendent was notified of our findings.

Inspector; Michael Bump
CWI#07091231

SUMMIT Metal FABRICATORS

Record of Welder Performance Qualification (WPQ), Refer to AWS D1.1 Structural code

Welder Name: Robert Wymann Stamp No. RW
WPS No.: SMF-P-02-11-AWS Revision: 0 Date: 4/05/2016
The above welder is qualified for the following ranges:

Variable	Used in Qualification	Qualification
PROCESS	SMAW	SMAW
PROCESS TYPE	Manual	Manual
BACKING (QW-403)	With	E7018 With/Without
MATERIAL SPECIFICATION (QW-403)	P1 TO P1	P1
THICKNESS		
GROOVE	1.0"	Min...125" max. Unlimited
FILLET	N/A	All
DIAMETER		
GROOVE	N/A	24.0" and greater
FILLET	N/A	N/A
FILLER METAL (QW-404)		
SPECIFICATION NO.	AWS A5.1	AWS A5.1
CLASSIFICATION	E7018	E60XX/E70XX
F-NUMBER	4 and lower	4 and lower
DEPOSITED WELD METAL THICKNESS		
GROOVE	.187"	.187"
POSITION (QW-405)	3G/4G	All
WELD PROGRESSION	Uphill	Uphill
GAS TYPE (QW-408)	N/A	N/A
BACKING GAS	N/A	N/A
ELECTRICAL CHARACTERISTICS (QW-408)		
CURRENT	DC	DC
POLARITY	Reverse	Reverse

GUIDED BEND RESULTS (QW-463.2(d), QW-462.3(a) note: 2

Positions tested	V.T Weld (4.8.1)	Bend type	Defects	Results
3G Vertical	Acceptable	Side Bend	None	Acceptable
		Side Bend	None	Acceptable
4G Overhead	Acceptable	Side Bend	None	Acceptable
		Side Bend	None	Acceptable

Tests conducted at: Summit Metal Fabricators
Mechanical Tests by: Ryan Surette CWI # 13090711, Test Date 4/05/2016

Ryan Surette
CWI 13090711
QC1 EXP. 9/1/2016

We certify that the statements in this record are correct and that the test welds were prepared welded and tested in accordance with the requirements of AWS D1.1 Structural code.

Organization: Summit Metal Fabricators

Signed: _____ Date: 5-1-16

WELDER OR WELDING OPERATOR QUALIFICATION TEST RECORD

Type of Welder _____

Name Robert Wyman Identification No. RW

Welding Procedure Specification No. SMF-P-02-88-B-U2a Rev _____ Date 8/4/16

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type (4.8.1)		
Electrode (single or multiple)	Multiple	
Current/Polarity	DCEP	
Position (4.8.4 or 4.9.4)	ALL	
Weld Progression (4.8.6)	Up	
Backing (YES or NO) (4.8.7)	Yes	
Material/Spec.	to	
Base Metal	ASTM A167 304L Unlimited	
Thickness: (Plate)		
Groove		
Fillet		
Thickness: (Pipe/tube)		
Groove		
Fillet		
Diameter: (Pipe)		
Groove		
Fillet		
Filler Metal (4.8.2)	AWS 5.9	
Spec. No.		
Class	308L	
F-No.		
Gas/Flux Type (4.8.3)		
Other		

VISUAL INSPECTION (4.10.1.1)

Acceptable YES or NO YES

Guided Bend Test Results (4.10.2.3)

Type	Result	Type	Result
Side Bend Vertical - No Defects			
Side Bend Overhead - No Defects			

Fillet Test Results (4.10.5)

Appearance _____ Fillet Size _____

Fracture Test Root Penetration _____ Macroetch _____

(Describe the location, nature, and size of any crack or tearing of the specimen.)

Inspected by Ryan Surette Test Number _____

Organization Summit Metal Fabricators Date 8/4/16

RADIOGRAPHIC TEST RESULTS (4.10.3)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks

Interpreted by _____ Test Number _____

Organization _____ Date _____

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Clause 4 of AWS D1.6, (2007 (year)) *Structural Welding Code—Stainless Steel.*

Manufacturer or Contractor Summit Metal Fabricators Authorized By Ryan Surette

Form M-3 Date 8/4/16

WELDER OR WELDING OPERATOR QUALIFICATION TEST RECORD

Type of Welder _____

Name Robert Wyman Identification No. RW

Welding Procedure Specification No. SMF-P-02-88-B-U2a Rev _____ Date 8/4/16

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type (4.8.1)	Multiple	
Electrode (single or multiple)	DCEP	
Current/Polarity	ALL	
Position (4.8.4 or 4.9.4)	Up	
Weld Progression (4.8.6)	Yes	
Backing (YES or NO) (4.8.7)	to	
Material/Spec.	ASTM A167 304L Unlimited	
Base Metal		
Thickness: (Plate)		
Groove		
Fillet		
Thickness: (Pipe/tube)		
Groove		
Fillet		
Diameter: (Pipe)		
Groove		
Fillet		
Filler Metal (4.8.2)	AWS 5.9	
Spec. No.	308L	
Class		
F-No.		
Gas/Flux Type (4.8.3)		
Other		

Ryan Surette CWI 13090711 QC1 EXP. 9/1/2016

VISUAL INSPECTION (4.10.1.1)

Acceptable YES or NO YES

Guided Bend Test Results (4.10.2.3)

Type	Result	Type	Result
Side Bend Vertical - No Defects			
Side Bend Overhead - No Defects			

Fillet Test Results (4.10.5)

Appearance _____ Fillet Size _____

Fracture Test Root Penetration _____ Macroetch _____

(Describe the location, nature, and size of any crack or tearing of the specimen.)

Inspected by Ryan Surette Test Number _____

Organization Summit Metal Fabricators Date 8/4/16

RADIOGRAPHIC TEST RESULTS (4.10.3)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks

Interpreted by _____ Test Number _____

Organization _____ Date _____

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Clause 4 of AWS D1.6, (2007 (year)) *Structural Welding Code—Stainless Steel.*

Manufacturer or Contractor Summit Metal Fabricators Authorized By Ryan Surette

Form M-3 Date 8/4/16

WELDER OR WELDING OPERATOR QUALIFICATION TEST RECORD

Type of Welder _____

Name Shayne LeBreton Identification No. SL

Welding Procedure Specification No. SMF-P-02-88-B-U2a Rev _____ Date 8/4/16

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type (4.8.1)		
Electrode (single or multiple)	Multiple	
Current/Polarity	DCEP	
Position (4.8.4 or 4.9.4)	ALL	
Weld Progression (4.8.6)	Up	
Backing (YES or NO) (4.8.7)	Yes	
Material/Spec.	to	
Base Metal		
Thickness: (Plate)	ASTM A167 304L Unlimited	
Groove		
Fillet		
Thickness: (Pipe/tube)		
Groove		
Fillet		
Diameter: (Pipe)		
Groove		
Fillet		
Filler Metal (4.8.2)	AWS 5.9	
Spec. No.		
Class	308L	
F-No.		
Gas/Flux Type (4.8.3)		
Other		

Ryan Surette CWI 13050711 QC1 EXP. 9/1/2016

VISUAL INSPECTION (4.10.1.1)

Acceptable YES or NO YES

Guided Bend Test Results (4.10.2.3)

Type	Result	Type	Result
Side Bend Vertical - No Defects			
Side Bend Overhead - No Defects			

Fillet Test Results (4.10.5)

Appearance _____ Fillet Size _____

Fracture Test Root Penetration _____ Macroetch _____

(Describe the location, nature, and size of any crack or tearing of the specimen.)

Inspected by Ryan Surette Test Number _____

Organization Summit Metal Fabricators Date 8/4/16

RADIOGRAPHIC TEST RESULTS (4.10.3)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks

Interpreted by _____ Test Number _____

Organization _____ Date _____

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Clause 4 of AWS D1.6, (2007) *Structural Welding Code—Stainless Steel.*
(year)

Manufacturer or Contractor Summit Metal Fabricators Authorized By Ryan Surette

Form M-3 Date 8/4/16

CHARLES LEONARD STEEL SERVICES, LLC
183 Pembroke Road, Concord, NH 03301
Tel. (603) 225-0211 • fax (603) 225-0325

Type of Welder MANUAL
Name: Shayne Lebreton — Identification No. SL-001
Welding Procedure Specification No. WPS- 1- SMAW — Rev 0 — Date: 28-Aug-10

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type [Table 4.11, Item (1)]	SMAW	
Electrode [single or multiple) [Table 4.11, Item (8)]	Single	Single
Current/Polarity	DCEP	
Position [Table 4.11, Item (4)]	3G VERTICAL	1F,2F,3F,1G,2G,3G
Weld Progression [Table 4.11, Item (6)]	UP	UP
Backing (YES or NO) [Table 4.11, Item (7)	Yes	With Backing or Back Gouging
Material/Spec.	A36	
Base Metal		
Thickness: (Plate)		
Groove	3/8"	1/8" to 3/4"
Fillet	Not Applicable	1/8" to Unlimited
Thickness: (Pipe/tube)		
Groove	Not Applicable	1/8" to 3/4"
Fillet	Not Applicable	1/8" to Unlimited
Diameter: (Pipe)		
Groove	Not Applicable	Greater Than 24 Inches
Fillet	Not Applicable	Greater Than 24 inches
Filler Metal [Table 4.11, Item (3)]		
Spec. No.	AWS 5.1	
Class	E7018	
F-No.[Table 4.11, Item (2)]	F4	F4
Gas/Flux type (Table 4.11, Item (3)]	NOT APPLICABLE	
Other	Not Applicable	Not Applicable

Visual Inspection(4.8.1)
Acceptable YES or NO

Guided Bend Test Results (4.30.5)

Type	Result	Type	Result
Face	Acceptable		
Root	Acceptable		

Fillet Test Results (4.30.2.3 and 4.30.4.1)

Appearance — Fillet Size
Fracture Test Root Penetration — Macroetch
(Describe the location, nature and size of any crack or tearing of the specimen)

TIMOTHY W. FARRES CWI 02110941 QC1 EXP. 11/30/11

Inspected By: Timothy Farres CWI 02110941 — Test Number SL-001
Organization CLSS — Date August, 28 2010

RADIOGRAPHIC TEST RESULTS (4.30.3.1)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks

Interpreted By — Test Number
Organization — Date

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in conformance with the requirements of Section 4 of AWS D1, 1/D1.1M 2008 (year) Structural Welding Code - Steel

Manufacturer or Contractor CLSS
Authorized By Timothy W. Farres
Date August, 28 2010

WELDER OR WELDING OPERATOR QUALIFICATION TEST RECORD

Type of Welder _____

Name Steve LeBreton Identification No. SL2

Welding Procedure Specification No. SMF-P-02-88-B-U2a Rev _____ Date 8/4/16

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type (4.8.1)		
Electrode (single or multiple)	Multiple	
Current/Polarity	DCEP	
Position (4.8.4 or 4.9.4)	ALL	
Weld Progression (4.8.6)	Up	
Backing (YES or NO) (4.8.7)	Yes	
Material/Spec.	to	
Base Metal	ASTM A167 304L Unlimited	
Thickness: (Plate)		
Groove		
Fillet		
Thickness: (Pipe/tube)		
Groove		
Fillet		
Diameter: (Pipe)		
Groove		
Fillet		
Filler Metal (4.8.2)	AWS 5.9	
Spec. No.		
Class	308L	
F-No.		
Gas/Flux Type (4.8.3)		
Other		

VISUAL INSPECTION (4.10.1.1)

Acceptable YES or NO YES

Guided Bend Test Results (4.10.2.3)

Type	Result	Type	Result
Side Bend Vertical - No Defects			
Side Bend Overhead - No Defects			

Fillet Test Results (4.10.5)

Appearance _____ Fillet Size _____

Fracture Test Root Penetration _____ Macroetch _____

(Describe the location, nature, and size of any crack or tearing of the specimen.)

Inspected by Ryan Surette Test Number _____

Organization Summit Metal Fabricators Date 8/4/16

RADIOGRAPHIC TEST RESULTS (4.10.3)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks

Interpreted by _____ Test Number _____

Organization _____ Date _____

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in accordance with the requirements of Clause 4 of AWS D1.6, (2007) *Structural Welding Code—Stainless Steel.*
(year)

Manufacturer or Contractor Summit Metal Fabricators Authorized By Ryan Surette

Form M-3 Date 8/4/16

CHARLES LEONARD STEEL SERVICES, LLC
183 Pembroke Road, Concord, NH 03301
Tel. (603) 225-0211 • fax (603) 225-0325

Type of Welder MANUAL Identification No. STL-001
Name: Steve Lebreton
Welding Procedure Specification No. WPS- 1- SMAW Rev 0 Date: 28-Aug-10

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type [Table 4.11, Item (1)]	SMAW	
Electrode [single or multiple) [Table 4.11, Item (8)]	Single	Single
Current/Polarity	DCEP	
Position [Table 4.11, Item (4)]	3G VERTICAL	1F,2F,3F,1G,2G,3G
Weld Progression [Table 4.11, Item (6)]	UP	UP
Backing (YES or NO) [Table 4.11, Item (7)	Yes	With Backing or Back Gouging
Material/Spec.	A36	
Base Metal		
Thickness: (Plate)	3/8"	1/8" to 3/4"
Groove	Not Applicable	1/8" to Unlimited
Fillet		
Thickness: (Pipe/tube)	Not Applicable	1/8" to 3/4"
Groove	Not Applicable	1/8" to Unlimited
Fillet		
Diameter: (Pipe)	Not Applicable	Greater Than 24 Inches
Groove	Not Applicable	Greater Than 24 inches
Fillet		
Filler Metal [Table 4.11, Item (3)]	AWS 5.1	
Spec. No.	E7018	
Class	F4	F4
F-No.[Table 4.11, Item (2)]	NOT APPLICABLE	
Gas/Flux type (Table 4.11, Item (3)]	Not Applicable	Not Applicable
Other		

Visual Inspection(4.8.1)
Acceptable YES or NO

Guided Bend Test Results (4.30.5)

Type	Result	Type	Result
Face	Acceptable		
Root	Acceptable		

Fillet Test Results (4.30.2.3 and 4.30.4.1)

Appearance Fillet Size
Fracture Test Root Penetration Macroetch
(Describe the location, nature and size of any crack or tearing of the specimen)

TIMOTHY W. FARRES 02110941

Inspected By: Timothy Farres CWI 02110941 Test Number STL-001
Organization CLSS Date August, 28 2010

RADIOGRAPHIC TEST RESULTS (4.30.3.1)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks

Interpreted By Test Number
Organization Date

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in conformance with the requirements of Section 4 of AWS D1, 1/D1.1M 2008 (year) Structural Welding Code - Steel

Manufacturer or Contractor CLSS Authorized By Timothy W. Farres
Date August, 28 2010

CHARLES LEONARD STEEL SERVICES, LLC
183 Pembroke Road, Concord, NH 03301
Tel. (603) 225-0211 • fax (603) 225-0325

Type of Welder MANUAL Identification No. STL-002
Name: Steve Lebreton
Welding Procedure Specification No. WPS-2-SMAW Rev 0 Date: 28-Aug-10

Variables	Record Actual Values Used in Qualification	Qualification Range
Process/Type [Table 4.11, Item (1)]	SMAW	
Electrode [single or multiple) [Table 4.11, Item (8)]	Single	Single
Current/Polarity	DCEP	
Position [Table 4.11, Item (4)]	4G Overhead	1F,2F,4F,1G,2G,4G
Weld Progression [Table 4.11, Item (6)]	NA	NA
Backing (YES or NO) [Table 4.11, Item (7)	Yes	With Backing or Back Gouging
Material/Spec.	A36	
Base Metal		
Thickness: (Plate)	3/8"	1/8" to 3/4"
Groove	Not Applicable	1/8" to Unlimited
Fillet		
Thickness: (Pipe/tube)	Not Applicable	1/8" to 3/4"
Groove	Not Applicable	1/8" to Unlimited
Fillet		
Diameter: (Pipe)	Not Applicable	Greater Than 24 Inches
Groove	Not Applicable	Greater Than 24 inches
Fillet		
Filler Metal [Table 4.11, Item (3)]		
Spec. No.	AWS 5.1	
Class	E7018	
F-No.[Table 4.11, Item (2)]	F4	F4
Gas/Flux type (Table 4.11, Item (3)]	NOT APPLICABLE	
Other	Not Applicable	Not Applicable

Visual Inspection(4.8.1)
Acceptable YES or NO

Guided Bend Test Results (4.30.5)

Type	Result	Type	Result
Face	Acceptable		
Root	Acceptable		

Fillet Test Results (4.30.2.3 and 4.30.4.1)

Appearance
Fracture Test Root Penetration
(Describe the location, nature and size of any crack or tearing of the specimen)
Fillet Size
Macroetch

TIMOTHY W. FARRES CWI 02110941 QC1 EXP. 11/30/11

Inspected By: Timothy Farres CWI 02110941 Test Number STL-002
Organization CLSS Date August, 28 2010

RADIOGRAPHIC TEST RESULTS (4.30.3.1)

Film Identification Number	Results	Remarks	Film Identification Number	Results	Remarks

Interpreted By Test Number
Organization Date

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded and tested in conformance with the requirements of Section 4 of AWS D1, 1/D1.1M 2008 (year) Structural Welding Code - Steel

Manufacturer or Contractor CLSS Authorized By Timothy W. Farres
Date August, 28 2010

BECKER
STRUCTURAL ENGINEERS

MILL CERTIFICATIONS

PROJECT **85 York Street Parking Garage**

STRUCTURAL STEEL	☒RECEIVED	DATE: 11-07-17	☐NOT RECEIVED
BOLTS	☒RECEIVED	DATE: 11-09-17	☐NOT RECEIVED
WELD FILLER	☒RECEIVED	DATE: 11-09-17	☐NOT RECEIVED

ITEMS ABOVE MARKED “RECEIVED” HAVE NOT BEEN INCLUDED IN THIS REPORT DUE TO THE LARGE VOLUME. HARD COPIES ARE AVAILABLE UPON REQUEST.

SPECIAL INSPECTOR: David A. Macolini, P.E. DATE: 11-10-17

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Structural Schedule of Special Inspection Services

FABRICATION AND IMPLEMENTATION PROCEDURES – STRUCTURAL STEEL

VERIFICATION AND INSPECTION IBC Section 1704.2	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Fabrications Procedures: Review of fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents. ~~OR~~ 2. ~~AISC Certification~~		S	Fabricator shall submit one of the two qualifications	SI1	PE/SE or EIT	Yes
3. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents.		S	IBC 1704.2.2	SI1	PE/SE or EIT	Yes

Structural Schedule of Special Inspection Services

FABRICATION AND IMPLEMENTATION PROCEDURES – PRECAST/PRESTRESSED CONCRETE

VERIFICATION AND INSPECTION IBC Section 1704.2	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Fabrications Procedures: Review of fabricator's written procedural and quality control manuals and periodic auditing of fabrication practices by an approved special inspection agency. At the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents. -OR- 2. PCI Certified Plant Group C or CA, Category C3 or C3A prestresed straight strand structural members		S	Fabricator shall submit one of the two qualifications	SI1	PE/SE or EIT	Yes
3. At completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building code official stating that the work was performed in accordance with the approved construction documents.		S	IBC 1704.2.2	SI1	PE/SE or EIT	Yes

Structural Steel Observation Report

Project Name:	Mixed-Use Development – York & High Streets, Portland ME	**Project Number**	13-0545.4
Client:	Bonardi Steel Fabricators, LLC	**Date:**	May 25, 2016, May 28, 2016
Client's Rep.:	Tom Bonardi	**Sheet:**	1 of 1
General Contractor:	Opechee Construction, Inc	**SWCE Rep.:**	Alan Brown CWI 95120811
		Arrived at Site:	10:00 am
		Left Site:	12:00 pm

Weather

☒ Clear ☐ Snow
☐ Overcast ☐ Fog
☐ Rain ☐ Cold

Site Conditions

☐ Warm ☐ Clear ☐ Dusty
☐ Hot ☐ Muddy
☐ Windy ☐ Frozen

Temperatures: 70

Construction Activities Observed:

Alan Brown (AB) performed a structural steel shop inspection for the above referenced project at the Bonardi Steel Fabrication facility (BSF) in Lebanon, New Hampshire on May 25 and May 28, 2016

A review of welder qualifications, material certifications (structural pieces and consumables) and quality control manual was made and found to be in order. Welding was performed by AWS D1.1 qualified welder, Chuck Taylor. Welding operations were observed and welding was performed inside in the flat position with GMAW welding process using 70 series wire.

BSF was in the process of assembling and welding columns and beams for the parking garage section of the above referenced project. The fabrication of some of the project had been complete with some of them in progress.

The welding for the columns and beams were was examined and found to be in conformance with BSF Shop Drawing Set and AWS D1.1 requirements. Member size and fabrication dimensions were randomly checked with no discrepancies found.

Discussions, Recommendations:

Items Observed Not in Conformance to Project Specifications:

No non-conforming items noted.

Attachments:

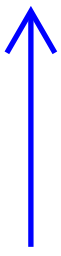
Reviewed By:

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Structural Schedule of Special Inspections

SEISMIC RESISTANCE - STRUCTURAL

VERIFICATION AND INSPECTION IBC Section 1707 Seismic Design Category B – Therefore Not Required	REQD Y/N	EXTENT: CONTINUOUS, PERIODIC, SUBMITTAL, OR NONE	COMMENTS	AGENT	AGENT QUALIFICATION	TASK COMPLETED
1. Special inspections for seismic resistance. Special inspection as specified in this section is required for the following:						
a. The seismic-force-resisting systems in structures assigned to Seismic Design Category C, D, E or F	N					
b. Designated seismic systems in structures assigned to Seismic Design Category D, E, or F.	N					
2. Structural steel: Continuous special inspection for structural welding in accordance with AISC 341.	N					
3. Structural wood:						
a. Continuous special inspection during field gluing operations of elements of the seismic-force-resist-ing system.	N					
b. Periodic special inspections for nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system (where spacing is 4"o.c., or less) including drag struts, braces and hold-downs	N					
4. Cold-formed steel framing: Periodic special inspections during welding operations of elements of the seismic-force-resisting system. Periodic special inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system (where spacing is 4" o.c., or less), including struts, braces, and hold-downs	N	-	CFSF for this project not part of the primary seismic-force resisting system.	-	-	
5. Seismic isolation system. Provide periodic special inspection during the fabrication and installation of isolator units and energy dissipation devices if used as part of the seismic isolation system	N	-	Seismic isolators not used.	-	-	



Not Req'd.

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Fabricator's Certificate of Compliance

Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2 of the International Building Code must submit a *Fabricator's Certificate of Compliance* at the completion of fabrication.

Project: PARKING DECK STRUCTURAL STEEL, MIXED USE DEVELOPMENT, YORK & HIGH ST. PORTLAND, ME

Fabricator's Name: BONARDI STEEL, LLC

Address: P.O. BOX 239, ENFIELD CTR, N.H. 03749

Certification or Approval Agency:

Certification Number:

Date of Last Audit or Approval:

Description of structural members and assemblies that have been fabricated:

I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.

Signature

11/9/17
Date

OWNER
Title

Attach copies of fabricator's certification or building code evaluation service report and fabricator's quality control manual

Dailey Precast, LLC

Quality System Manual (QSM)

Plant Address:

381 AIRPORT ROAD
SHAFTSBURY VT 05262

Mailing Address:
295 AIRPORT ROAD
SHAFTSBURY, VT 05262

Dailey Precast, LLC
MNL-116-117 Quality System Manual (QSM)

SIGNATURE PAGE

This Quality System Manual is hereby approved for use effective on _____/_____/_____.

Dailey Precast, LLC.

Precast/Prestressed Concrete Institute

Eric Schaffrick
General Manager

10/25/2016
Date

Mr. Dean Frank
Director, PCI Plant Certification Programs

Date

Dailey Precast, LLC
MNL-116-117 Quality System Manual (QSM)

Table of Revisions
to the
PCI Quality System Manual

Revision Number	Date	Page Number	Revision Description
000	**10/03/2016**		**Entire Manual Re-Write**

Dailey Precast, LLC
MNL-116-117 Quality System Manual (QSM)

TABLE OF CONTENTS

INTRODUCTION

The Quality Control Manager and Plant Manager shall oversee and manage the successful implementation of this Plant Quality Systems Manual.

This Quality System Manual is primarily based on the following codes and standards:

1. PCI Manual MNL-117- MNL-116 Manual for Quality Control for Plants and Production of Structural Precast Concrete Products.
2. Industry standards and guidelines established through ACI and AASHTO as referenced by various State Standard Specifications including but not limited to:
    a. NYSDOT
    b. NJDOT
    c. MassDOT
    d. CONNDOT
    e. VermontAOT
    f. MaineDOT
    g. RIDOT
    h. NHDOT
3. PCI Manual MNL-135 Tolerance Manual for Precast and Prestressed Concrete Construction.
4. PCI Manual MNL-137 Manual for the Evaluation and Repair of Precast, Prestressed Concrete Products.
5. RECO design and quality standards

DEFINITIONS

See PCI Design Handbook, MNL-117 and MNL-116 for industry definitions as well as the following:

Accelerated Curing - The intentional addition of heat to the concrete environment to expedite curing. For the systems described in this Manual, all curing is at atmospheric pressure.

Laser Projection Manufacturing - LAP laser system for the projection of line segments and outlines on work surfaces and workpieces. The outlines are reproduced on the work surface on a one-to-one scale

Piece Tracker – Piece Tracker product management software, developed specifically for the precast concrete industry, gives real time information on the status of every piece of product at every point in the process. Piece Tracker relies upon each precast component having a unique identification number and provides the sequential order in which precast pieces are designed, manufactured, inspected, stored, shipped and erected. Network access is available on desktops, laptops, PDAs and other mobile devices to ensure that every person in design, scheduling, manufacturing, quality control, transportation and erection have access to the information.

Precast Specialty Engineer (PSE) – The licensed engineer contracted by Dailey Precast, LLC who designs precast components for specified loads and is responsible for all required design related information pertaining to each unit until its final acceptance into the structure. The PSE has the final authority to accept or reject product and materials fabricated for a project for structural reasons as indicated in 1.3.2.2 third bullet paragraph and shall provide direction to the Design Department Manager to coordinate with the appropriate parties. The formal Dailey Precast contact person with the PSE is the Design Department Manager or his/her designee. Further roles and responsibilities of the PSE are defined within their project specific contract with Dailey Precast. (In the event the PSE is hired by the Owner or Contractor, refer to the specific contract agreement for definition, roles and responsibilities)

Production Drawings – A set of instructions in forms of diagrams and text that contain all the information necessary for the manufacturer to produce the unit. NOTE: Dailey Precast reserves the right to produce: 2D shop drawings, laser projection files or XceleRAYtor 3D files to convey the information to the production crews to fabricate precast products for our clients.

Relationship between the Engineer of Record and the Precast Specialty Engineer - The Engineer of Record is responsible for the structure in its entirety and delegates the design of the components to the specialty engineers involved in the project.

Tolerance – Specified permissible variations from stated requirements such as dimensions, location, alignment, strength, and air entrainment, etc. (In absence of contractual obligations PCI-MNL-116 Standard Tolerances shall apply)

- **Product tolerances –** Those variations in dimensions relating to individual precast concrete members.
- **Erection tolerances –** Those variations in dimensions required for acceptable matching of precast members after erection.
- **Interfacing tolerances –** those variations in dimensions associated with other materials in contact with or in close proximity to precast concrete.

XceleRAYtor – The XceleRAYtor software makes use of tablets to convey the form set-up steps, Workers receive a digital set of progressive instructions ordered in the same sequence necessary to setup a form prior to concrete placement. Users are able to query specific information based on the model as required for their specific job functions.

QUALITY PHILOSOPHY

We are committed to establishing a standard for excellence in our industry.

We therefore continually strive to manufacture and deliver the highest quality products and to provide the most reliable services that consistently meet or exceed the expectations of our customers.

Accordingly, we have established and will constantly appraise our stringent quality and performance requirements. Our goal is to assure that every job is manufactured safely and correctly the first time.

QUALITY SYSTEM OBJECTIVE

This Quality System Manual outlines the methodology utilized by Dailey Precast, LLC. This manual provides organizational and procedural guidelines that have been implemented to assure product quality and customer satisfaction. The manual furnishes a framework for management to make decisions when changing equipment, procedures, or personnel that may be necessary to create a high-quality manufacturing environment. All personnel shall be aware of and committed to the policies set forth herein. Our plant shall use the PCI Plant Certification Program as our outside audit system. We pledge to conduct semi-annual internal audits for our Quality System.

Dailey Precast, LLC is committed to providing quality products to our customers. Each of us believes that it is our responsibility to make a personal commitment to strive for perfect quality, on-time delivery and 100% customer satisfaction. It is only with this mind-set that we are able to assure that every job is done right the first time.

The General Manager or Operations Manager may make modifications to the policies and procedures of this manual as needed to further improve the quality of products and services provided to the customer and/or to meet particular contractual requirements of a specific project. As such this manual is to be considered an internal guideline for normal production processes and is not to be considered in any way a binding contractual document.

SECTION 1
MANAGEMENT RESPONSIBILITES

1.1 OVERVIEW

1.1.1 The success of this quality management system is dependent on the support of management and employee involvement. This approach assures that "team problem solving" techniques are maintained for the reduction and/or elimination of errors, waste, and process variability.

1.1.2 Employees at all levels within the organization are charged with the responsibility of following this quality management system and are required to seek direction from their immediate supervisor in the event they are not fully clear as to the objectives, roles or responsibilities stated in this manual.

1.1.3 The function of the Quality Control Department is to provide necessary inspection and feedback in order to produce high quality products. The various levels of documentation are an essential part of the company's overall commitment to quality.

1.2 AWARENESS

1.2.1 Department Managers shall read and sign a registration document to acknowledge their awareness and acceptance of those sections of the QSM for which they have direct responsibility. These documents shall be filed by the Quality Control Manager.

1.2.2 It is the responsibility of the Department Mangers to ensure his/her employees are trained in the Quality System.

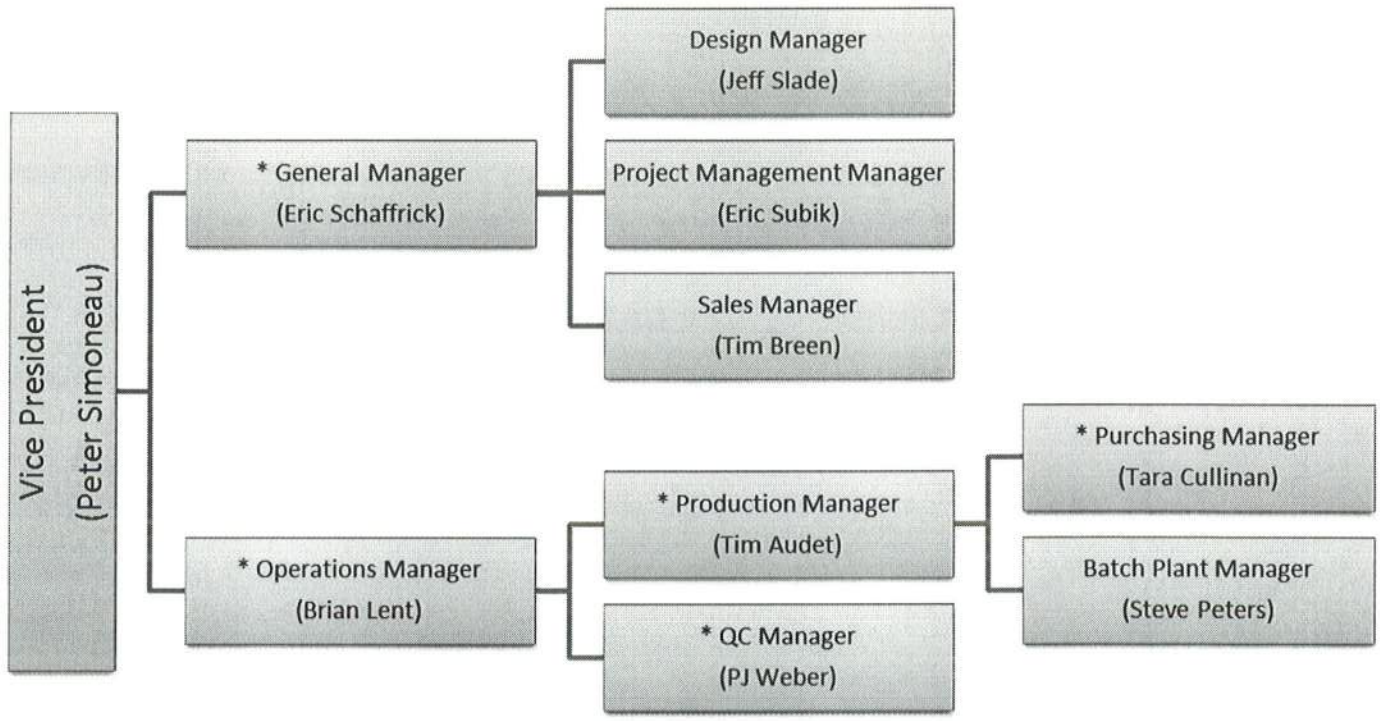
1.2.3 The signatory shall revisit the policy each year together with personnel to maintain awareness. Employees shall acknowledge this program by initializing or signing the personnel lists provided during the review meetings.

1.2.4 Revisions of this QSM shall be accomplished by the Quality Control Manager who shall distribute the QSM revisions. Distribution of QSM revisions shall be confirmed by signature of each department head.

1.2.5 This QSM, or appropriate parts, shall be provided to customers as necessary as a part of our plant's commitment to quality. In no way shall this manual become a binding document or establish a contractual obligation to the customer and is intended to outline our processes in which we operate to ensure quality is embedded into the process. Based on our company's commitment to continuous improvement, processes, responsibilities and authority may change in effort to further optimize the efficiency and output of the components produced.

1.3 RESPONSIBILITY AND AUTHORITY

1.3.1 Organizational Chart:



Job titles with an asterisk (*) signify Quality/Management Committee members

Eric Schaffrick (General Manager)

Brian Lent (Operations Manager)

Tim Audet (Production Manager)

Peter Weber (QC Manager)

Tara Cullinan (Purchasing Manager)

1.3.2 Personnel Responsibility:

1.3.2.1 Production Manager

Requirements:

- Oversee and participate in the implementation of the Quality System Manual.
- Maintain quality production of all manufactured products.
- Adhere to required production schedules and coordinate facility and personnel utilization accordingly.
- Implement and maintain safety program.
- Develop standard production methods to efficiently meet the quality and design requirements.
- Communicate with Design Department and Quality Control Manager to resolve problems and variations in product production.
- Ensure accurate records of production are prepared and maintained.
- Train all supervisors on established production policies and procedures.

1.3.2.2 Design Department Manager

Requirements:

- Administers the contract and services of the Precast Specialty Engineer (PSE) for individual projects and coordinates the information, drawings, design calculations, sketches, details and other correspondence with the Design Department Staff and other Departments within Dailey Precast. Executed contracts shall govern the relationship between the PSE and Dailey Precast for each project and shall further define roles and responsibilities
- Administers the contract and services of outside consultants and service providers for individual projects and coordinates the erection drawings, sections, details, fabrication drawings, 3D models and other correspondence with the Design Department Staff and other Departments within Dailey Precast. Executed contracts shall govern the relationship between the outside consultants and service providers and Dailey Precast for each project and shall further define roles and responsibilities
- Provides resolution and instruction to address nonconformance reports or Major Defects. Obtain direction from Precast Specialty Engineer when they affect the structural integrity of a component. When required by contract documents coordinate approval of the Owner or their agents.
- Coordinate the work of the design department for compliance with quality control procedures, production processes and schedules.
- Provide necessary work instructions in the form of 2D drawings, XceleRaytor Files, Laser Files, reports and correspondence needed for the fabrication and installation processes.
- Work as a team member with all departments and management to ensure a team effort and focus on continuous improvement.
- Manages development of engineered fixes with Precast Specialty Engineer
- Liaison to Precast Specialty Engineer

1.3.2.3 Quality Control (QC) Manager
Requirements:

- Oversee and participate in implementation and establishment of the Quality System Manual, initial and distribute revisions, and record awareness for all plant departments.
- Establish criteria for project Quality Control.
- Obtain corrective procedures from Design Department for nonconforming products.
- Oversee Quality Control, technicians and inspectors.
- Maintain lab equipment calibration.
  Oversee receiving materials and production testing.
- Maintain Records for receiving and production testing.
- Oversee Quality Control inspections.
- Maintain all QC monitoring equipment.
- Maintain pre-pour and post-pour records.
- Maintain all certification records.

1.3.2.4 Quality Control (QC) Laboratory Technician
Requirements:

- Maintain bulk material testing equipment in calibration.
- Execute bulk material receiving testing.
- Execute production material testing.
- Record and maintain records for all material testing.
- Inform QC Manager of any nonconforming materials.

1.3.2.5 Quality Control (QC) Inspection Personnel
Requirements:

- Maintain monitoring equipment (tapes, levels, and instruments).
- Execute pre-pour inspections according to plant standards.
- Conduct and document stressing operations.
- Record and maintain records for pre-pour.
- Execute post pour inspections according to plant standards.
- Record and maintain records for post pour.
- Inform Quality Control Manager of non-conforming product or assemblies.
- Perform final inspection of product prior to shipping.

1.3.3 Verification Resources, Personnel and Self Inspection:

1.3.3.1 Resources & Personnel

- QC Manager – Certified as PCI PQP (Plant Quality Personnel) Level II, ACI Level 1
- QC Inspector – Certified as PCI PQP Level II, ACI Level 1
- Quality Control Laboratory Tech. – ACI Level 1

SECTION 2
QUALITY SYSTEM

2.1 QUALITY SYSTEM COMMITTEE OVERVIEW

2.1.1 Dailey Precast LLC. Quality System Committee shall be maintained and kept by the Quality Control Manager

2.1.2 The Quality System Committee shall be responsible for setting the Quality System for Dailey Precast, LLC. The Quality System shall be adopted by Plant Management, at its first meeting of each year following the Quality System Committee Review Meeting. The Quality System Committee shall record minutes of each meeting. Minutes shall be kept on file and distributed to Plant Management by the QC Manager. Meetings shall be held semi-annually or as set by majority vote of the Quality System Committee.

2.1.3 Forms used in the Quality System are the responsibility of the QC Manager as adopted by the Quality System Committee. Those forms currently adopted as parts of this manual are as follows: (see Appendix A for examples)

- Meeting Minutes
- Training Records
- Corrective Action
- Internal Material Order
- Delivery Receipt
- Mix Design Form
- Tensioning Report
- Aggregate Gradations
- QC Report
- Pre-pour Inspection Checklist
- Post-pour Inspection Checklist

SECTION 3
DOCUMENTATION CONTROL

3.1 DOCUMENTATION CONTROL - QSM

3.1.1 The Quality Control Manager shall be responsible for distribution and control of the QSM. Only the Quality System Committee shall approve revisions. Suggested revisions may be submitted by anyone within the company. Revisions shall be submitted in writing to the Committee at least two days before a scheduled meeting of the Quality System Committee.

3.1.2 The QC Manager or designated representative shall handle distribution of the QSM. The QC Manager will maintain a Master List of all persons who have a copy of the Quality System Manual. The list shall have initials of the person originally receiving the manual and date received. Upon subsequent revisions of sections or pages the QC Manager or designated representative shall distribute and update the list accordingly.

3.1.3 Quality records shall be maintained to demonstrate achievement of the required quality and the effective operation of the QSM.

SECTION 4
PURCHASING

4.1 PURCHASING

4.1.1 The Project Manager and/or Design Department Manager shall be responsible for identifying material standards and specifications for each project. If none are provided, raw materials and accessories shall meet the standards and specification noted in PCI Manual MNL-117 and MNL-116 at a minimum.

4.1.2 Materials are purchased from suppliers listed on the Dailey Precast, LLC Approved Vendor List. If a vendor or supplier is used that does not appear on the Approved Vendor List, the specific standards that must be followed shall be clearly stated at time of purchase. (i.e. email correspondence, customer order, etc.)

4.1.3 Upon delivery of the order, the supplier's packing list is checked for purchase order, material identification number, material lot and/or batch number.

4.1.4 Suppliers are required to submit a certificate of compliance (certified test report, or mill certificate) with each lot of incoming material. Certificates of compliance are warranted to ensure that the material supplied by the vendor meets purchase specifications.

4.1.5 Material standards are covered in various sections of this manual.

4.2 STANDARD PURCHASE AGREEMENT

4.2.1 Purchase agreements shall be in writing and shall always contain specific standards and guidelines concerning manufacture, delivery, acceptance, rejection, and replacement. Purchase agreements are reviewed annually with those suppliers indicated on the Dailey Precast, LLC Approved Vendor List.

4.2.2 The approved vendor list shall be maintained by the Purchasing Manager and reviewed annually by the Quality System Committee. After each review, the list shall be updated accordingly.

4.2.3 Purchase agreements shall contain, at minimum, the following items:

- Specific standards for acceptance of raw materials
- Provisions for suppliers to provide mill certificates or test data (i.e. gradations, etc…) as conformation that material shipped meets specific standards for the project.
- Statement that acceptance of material at plant is based on acceptance inspection, testing, or conformance to standards for material as well as acceptable performance of material.
- Statement about acceptance inspection by the plant Quality Control Department or quantity of material, resolution of shipping damage or contamination by supplier as found in acceptance inspection, and statement about acceptance inspection for conformation of sub assembly as accurately manufactured (i.e. size of plate or angle, size and number of studs, length of welds, etc.…)
- Resolution of rejected material. (Shipping back to vendor with costs to supplier or disposal by plant. Time for material to be replaced and cost impacts for nonconformance).

SECTION 5
PRODUCT IDENTIFICATION AND TRACEABILITY

5.1 PRODUCT IDENTIFICATION AND TRACEABILITY

5.1.1 Unique identification numbers are created when the product is produced that can be referred back to the erection plans. The Quality Control Department is responsible for clearly marking each piece with a grease pen, stencil and/or label with the following information at minimum:

- Company Name
- Date of Manufacture
- Piece Designation as indicated on Shop Drawing / Production Schedule

5.1.2 All related record keeping is traceable through this identification.

5.1.3 Concrete test records are identified by the date of manufacture, concrete mix number and job number. Each piece is clearly linked to a concrete lot record that has batch slip records and test results. Other material components can be traced to a particular piece by their date of entry and job number into the material tracking software.

5.1.4 Records shall be stored in file cabinets, in ring binders, and/or be kept electronically in computer files.

SECTION 6
PROCESS CONTROL

6.1 PROCESS CONTROL

6.1.1 Plant Safety

6.1.1.1 It is the policy of Dailey Precast, LLC to strive for a safe, healthful workplace for all its employees. Injury and illness losses from incidents are costly and preventable. This company will employ an effective accident and illness prevention program that involves all its employees in the effort to eliminate workplace hazards.

6.1.1.2 Dailey Precast, LLC management supports prevention of workplace incidents, injuries and illnesses. Management will provide top-level support of safety program initiatives. Management will consider all employee suggestions for achieving a safer, healthier workplace. Management will also keep employees informed about workplace safety and health hazards, and it will regularly review the company safety efforts and health program.

6.1.1.3 All Supervisors are responsible for supervising and training workers in safe work practices. Supervisors must enforce company safety rules and work to eliminate hazardous conditions. Supervisors shall lead safety efforts by example.

6.1.1.4 The Safety Committee consists of employee representatives who are responsible for recommending safety and health improvements in practices, removing obstacles to incident prevention and helping the company evaluate the accident and illness prevention program. The personnel in the committee may rotate and/or change depending on the item/topic under review.

6.1.1.5 All employees are expected and encouraged to participate in safety and health program activities including the following: reporting hazards, unsafe work practices and accidents immediately to their supervisors or a safety committee representative: wearing required personal protection equipment: and participating in and supporting safety committee activities.

6.1.1.6 Dailey Precast will hold weekly plant meetings reviewing a different safety topic each week.

6.1.2 Plant Organization and Layout

6.1.2.1 The layout of the precast facility and storage area shall be such that production, handling, storage and shipment of concrete products can be done in an efficient manner and with minimal damage to the products. General housekeeping shall be maintained to provide a clean and safe environment so that quality precast concrete products can be manufactured efficiently.

There are currently dedicated areas in the plant for the following functions. (See Appendix A for Plant Layout Diagram)

- Production Management
- Quality Control
- Batch Plant
- Carpentry
- Welding/Steel Fabrication
- Reinforcing Steel Preparation
- Material Supply
- Concrete Mold (Production)

6.1.3 Product Shop Drawings

6.1.3.1 2D drawings, XceleRAYtor files, and/or laser projected files shall be proper documentation, "production drawings", for the fabrication of precast/prestressed pieces.

6.1.3.2 Production drawings are created by the Design Department, either internally and/or by outside sources.

6.1.3.3 An approved digital production drawing is uploaded to the designated location on the company server by the Design Department. A backup digital copy is kept on the Design Department's server.

6.1.3.4 An email alert is sent to appropriate parties when a shop drawing is released and/or revised.

6.1.3.5 The Design Department shall provide the bill of materials for each precast/prestressed component via the "Product Management Software" (Piece Tracker).

6.1.3.6 The bill of materials can then be accessed and viewed by running the appropriate report in the Product Management Software.

6.1.3.7 Digital copies of production drawings shall be kept for a minimum of seven years, The seven year period shall begin after acceptance or use of the project

6.1.4 In conjunction with plant layout and safe operating practices, maintenance of forms and handling equipment shall be held in high regard. Forms for manufacturing precast/prestressed concrete products shall be designed and constructed to prevent damage to the concrete from; (1) restraint as the concrete shrinks; (2) stripping operations; (3) dimensional changes due to prestressing when the form is used to carry prestressing force prior to transfer of stress to the product, it shall be sufficiently strong to withstand the force without buckling.

6.1.5 Forms shall be sufficiently dimensionally stable to produce the required tolerances. Repeated use of forms shall not affect the dimensions or planes of the forms beyond allowable tolerances. Forms shall be regularly measured and maintained in a manner consistent with project requirements. Forms shall be cleaned of concrete buildup after each use. Forms shall be coated with release agents that will permit release without damaging concrete and without affecting subsequent coating, painting, or caulking operations. Excess release agent shall be removed from the form surface prior to casting.

6.1.6 Equipment such as hoists, overhead cranes, mobile cranes and fork lift trucks shall be used to lift and handle products which weigh less than the rated capacity of the equipment.

6.1.7 Fabrication of Reinforcement

6.1.7.1 Reinforcing steel shall be fabricated so as to conform to the tolerances established for the precast concrete product being made. If no tolerances have been established, dimensional tolerances given in the Concrete Reinforcing Steel Institute publication, "Placing Reinforcing Bars", shall govern.

6.1.7.2 Cages of reinforcement shall be fabricated either by tying the bars, wire or welded fabric into rigid assemblies or by welding where permissible.

6.1.7.3 Cages of reinforcement may be welded if permitted by the applicable ASTM product standards, or if the reinforcement serves only to control cracking caused by restrained concrete shrinkage or temperature change. Welding of reinforcing steel is also permitted in other situations as determined by the manufacturer where the steel is not used for structural purposes. In all cases, care and discretion must be used to assure that the integrity of the precast product is maintained. Reinforcing steel used for structural purposes may be welded as long as it is accomplished in compliance with the standards in the American Concrete Institute's "Building Code Requirements for Reinforced Concrete" (ACI 318) and the American Welding Society's "Structural Welding Code Reinforcing Steel". (AWS D1.4)

6.1.7.4 Welding of steel assemblies which are cast into or attached to precast concrete products shall be performed in accordance with American Welding Society's "Structural Welding Code—Structural Steel". (AWS D1.1)

6.1.8 Blockouts

6.1.8.1 Blockouts may be made of any rigid material which will not harm the concrete and which can be held in place during the casting and curing of concrete.

6.1.9 Prepour Operations

6.1.9.1 Forms shall be cleaned after each use. Concrete, tape, polystyrene, caulk and other material adhering to the forms shall be removed.

6.1.9.2 After the forms are cleaned, and if necessary, the seams sealed, a form release agent shall be applied. Care shall be taken to avoid application of form release agent to reinforcement or other items to be embedded in the concrete and to prevent puddling.

6.1.9.3 Reinforcing steel shall be positioned as specified by the design and so that the concrete cover conforms to the established tolerances. Positive means shall be taken to assure that reinforcement does not move significantly during the casting operation.

6.1.9.4 Embedded items shall be positioned at locations specified in the design. Inserts, plates, weldments, lifting devices and other items to be embedded in precast concrete products shall be held rigidly in place so that they do not move significantly during casting operations.

6.1.9.5 Prior to casting concrete, an inspection shall be made to determine if form reinforcement, embedded items and block-outs conform to the design. Deviations from the design shall be corrected before concrete is cast.

6.1.10 Casting

6.1.10.1 Concrete may be transported from the mixer to the casting location by any means that does not contaminate the concrete or cause excessive segregation. Concrete may be discharged directly from the mixer into the forms.

6.1.10.2 Concrete shall be deposited into the form as near to its final location as practical. The free fall of the concrete shall be kept to a minimum.

6.1.10.3 Concrete shall be consolidated in such a manner that produces a dense and uniform mass. It also shall ensure surfaces that are free of imperfections or blemishes as possible. The use of internal or external vibration, spading, impact, and/or a combination of these methods may be required to ensure adequate consolidation of the concrete.

6.1.10.4 Internal vibrators used to consolidate concrete shall have frequencies and amplitudes sufficient to produce well consolidated concrete. Internal vibrators shall be lowered vertically into the concrete without being forced downward until the tip of the vibrator is no closer than 2 inch to 3 inch from bottom of the form or until it penetrates into a previously consolidated lift when concrete is placed in horizontal lifts. Vibrate the concrete until air bubbles within the vibrator's field of action essentially stop coming to the surface. The vibrator shall be lifted from the concrete at about the same speed at which it was lowered. The vibrator shall then be lifted out of the concrete and moved to a location so that the field of action overlaps. This process is repeated until all the concrete in the product has been consolidated. Care shall be taken to avoid vibrator contact with the reinforcement and to avoid displacing cast-in hardware. Vibrators shall not be allowed to contact forms.

6.1.10.5 External vibrators (form vibrators) shall be mounted on the form such that the fields of action of the vibrators overlap. External vibrators shall operate until air bubbles essentially stop coming to the surface. Surface vibrators (vibrating screeds) shall be moved at a rate such that air bubbles essentially stop coming to the surface. Similarly, vibrating tables shall operate only long enough that air bubbles essentially stop coming to the surface. Consolidation of machine made products shall be considered to be adequate if the products are free of honeycombed areas.

6.1.10.6 Unformed surfaces of wet-cast precast concrete products shall be finished as specified on the approved shop drawings. Final surface finish shall be as noted on the shop drawings and/or as indicated on an approved mock-up panel.

6.1.10.7 For products that require secondary pours, standard procedures shall be followed to assure that the concrete cast during the secondary pour adequately bonds to the precast concrete product and becomes an integral part of that product.

6.1.10.8 In hot weather the temperature of concrete at the time of placing shall not exceed 90 degrees F. Special precautions shall be taken for concrete that is cast outdoors in order to prevent plastic shrinkage cracking and low strengths.
These precautions may include:

- Using cold water or adding ice as part of the mixing water.
- Sprinkling aggregate stock piles.
- Fog spraying forms immediately prior to casting.
- Placing fog sprays upwind and above the forms during concrete placement, particularly while finishing unformed surfaces.
- Covering the products with wet burlap or white plastic sheets as soon as concreting is completed.

6.1.10.9 Concrete which freezes before its compressive strength reaches at least 500 psi shall be discarded. Precautions should be taken in cold weather to prevent concrete from freezing including:

- Heating the mixing water, but not above 180 degrees F.
- Avoid using frozen aggregates.
- Concrete that is below 60 degrees F may not be used.
- Heat forms prior to and after concreting.
- Check for adequate strength before stripping the product.

6.1.11 Curing Concrete

6.1.11.1 Proper curing should begin as soon as casting is completed. Proper curing involves maintaining a satisfactory moisture content and temperature in the concrete. This may be achieved by curing inside with no cover, covering units with a plastic sheet or insulating blanket, saturated burlap or using a liquid membrane curing compound. If accelerated curing is required, concrete shall be cured with steam or radiant heat. Concrete elements cured by accelerated curing shall be monitored to assure that the minimum and maximum concrete temperatures, and the rates of heating and cooling are not exceeded.

The concrete in the mold shall be maintained at a temperature not less than 50 degrees F during the period of curing prior to reaching release strength. Once release strength is achieved, curing may be continued in the storage yard until final design strengths are reached. The maximum concrete curing temperature shall not exceed 150 degrees F.

6.1.11.2 If accelerated curing is used the following guidelines shall be followed:

- The controlling temperature shall be those within the concrete elements, not the ambient temperature of the curing enclosure.
- Units shall be covered with plastic and/or insulating blankets as soon as the exposed surface is firm enough not to damage or mar.
- After placing, consolidation, and finishing, the concrete should attain initial set before heat is applied that will raise the concrete temperature above 104 degrees F.
- If necessary, the concrete temperature may be increased during the initial set period at a rate not to exceed 10 degrees F per hour. The total permissible temperature gain during the initial set period shall not exceed 40 degrees F above the placement temperature or 104 degrees F, whichever is less. The initial set period is as determined by ASTM C403.
- After the initial set period, heat shall be applied at a controlled rate. The heat gain shall not exceed 36 degrees F per hour.
- The optimum curing temperature ranges from 130 degrees F to 150 degrees F. The maximum curing temperature shall not exceed 150 degrees F.
- Units should be allowed to cool gradually at a maximum rate of 50 degrees F per hour until the concrete temperature is 40 degrees F or less above the ambient temperature.
- Self-recording thermometers (time/temperature recorders or maturity meters), shall be provided to show the time-temperature relationship for the entire curing process until release strength has been achieved. At least one recording thermometer, per contiguous form group and common heat source is required.

6.1.12 Stripping Products from Forms

6.1.12.1 Tests shall be performed to confirm that the concrete meets or exceeds the required values for stripping and/or detensioning (release). Removable inserts, fastenings, and form parts shall be released and/or removed prior to stripping. Care shall be taken in removing the units from the form to prevent damage. The minimum concrete strength, number and location of lifting points for handling, and dunnage locations shall be indicated on the production drawings. Units shall only be handled at points indicated on the production drawings, unless approved by the Design Department.

6.1.12.2 Units shall be stored in a manner to help ensure delivery of the units without damage. Units shall be supported and stored on unyielding supports at the designated dunnage point locations. The supports shall be on firm, level and well-drained surface. Unit identification marks shall be visible.

6.1.12.3 The Production Manager and/or QC Manager shall evaluate products damaged during stripping and yard storage per section 6.1.13.

6.1.13 Repairing Concrete

6.1.13.1 When defects occur, as determined by the Quality Control Department, the immediate production supervisor responsible shall seek corrective action to prevent future occurrence. Corrective actions shall be reviewed with the Production Manager. In the event additional support is required, the Production Manager shall coordinate with other departments as needed.

6.1.13.2 The Quality Control Department shall identify defects to be “Minor” or “Major” based on the description and criteria included in this section.

6.1.13.3 Minor Defects are typically, surface voids caused by air bubbles (“bug holes”), normal color variations, normal form joint marks and minor chips and spalls. Upon identification, production personnel may repair or finish these areas according to pre-determined and approved standard procedures.

6.1.13.4 Major Defects include product, plates, inserts, lifters, openings and embedded items that are not fabricated to within the permissible tolerances established. Major Defects also include spalls, honeycombing, and surface voids which have any dimension greater than 12 inches, expose reinforcing steel or cracks that are greater than 0.010 inch in width. A Major Defect shall require immediate notification to both the Production Manager and Design Department Manager. The Design Department Manager or his/her designee shall evaluate Major Defects and provide instruction on repairs if required. The Production Manager shall assign the repair work to the appropriate personnel. The Quality Control Department shall inspect and approve the completed repair.

6.1.13.5 If repairs are deemed not possible by the Design Department Manager or do not meet the final acceptance criteria of the Quality Control Manager the unit shall be subject to being rejected and recast. The final decision to reject and recast a unit shall only be made by the General Manager or Operations Manager. The final decision to recast a particular unit shall not require approval by or notification to the owner or their agents if the General Manager or Operations Manager determines that the final product does not meet the company’s quality standards and expectations.

SECTION 7
INSPECTION AND TESTING

7.0 INSPECTION AND TESTING STANDARDS

*** The following is a generic list of industry testing requirements performed at various times and are not employed on every project; actual project testing requirements are in accordance with contractual obligations per project specifications.

7.0.1 Acceptance Testing - by CTR or mill certificates (regulating standards are listed)

- Cement: (ASTM C150)
- Aggregates: (ASTM C33, ASTM C330, ASTM C136, ASTM C40, ASTM C566, ASTM C295 ASTM C70, ASTM C29)
- Water: (ASTM C109, ASTM C191)
- Reinforcing steel: (ASTM A615, ASTM A616, ASTM A82**,** ASTM A706, ASTM A185, ASTM A496, ASTM A497, ASTM A775, ASTM A767, ACI 318)
- Admixtures: (ASTM C260, ASTM C494, ASTM C618, ASTM C979, ASTM C1017)
- Pigments: (ASTM C979)
- Hardware and inserts: (ASTM A36)
  (Special note - All lifting devices have a recommended safety factor of 4)
- Stud welding: (PCI 6.3.2.9)
  a. physical certificate
  b. chemical certificate
- Curing compounds, form release agents, surface retarders, weatherproofing compounds: (ASTM C309, ASTM C171)
  a. Application or use instructions on file
- Conventional concrete tests
  a. Compressive strength (ASTM C192, ASTM C39)
  b. Absorption (PCI 6.2.2.10.b)
  c. Slump (ASTM C143)
  d. Unit weight (ASTM C138, ASTM C567)
  e. Air content (ASTM C173, ASTM C231)
  f. Concrete strength (ASTM C172, ASTM C31, ASTM C470)
  g. Concrete temperature (ASTM C1064)
  h. Ambient temperature
- Welding inspections as performed by the welding supervisor
  Stud welding
  a. first 2 each day
  b. Shortening of weld length
  c. 30 degree bend
  d. 360 degree weld flash
  e. Repeat test each hour
  f. Failure routine (PCI 6.2.3.9)
- Special testing
  a. Heat of hydration over - 150 degrees must be cooled
  b. Freeze-thaw tests - special situations
- SCC (Self Consolidating Concrete) Concrete
  a. Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants (TR-06-)
  b. Slump Flow/Visual Stability Index (ASTM C1611)

7.1 RECEIVING AND INSPECTION TESTING (RAW MATERIALS)

7.1.1 Acceptance Inspection and Testing of Vendor-Supplied Raw Materials

7.1.1.1 Purchase agreements shall outline the agreed policy for handling nonconforming materials. Nonconforming material shall be segregated for final disposition and uniquely identified to prevent their use.

7.1.1.2 It is up to the Purchasing Department to inspect materials or assemblies with purchase agreement standards. A standard record form for such inspection shall be developed by the Quality System Committee and filed for each shipment received.

7.1.1.3 Bulk products such as aggregates and cement can be marked so they are immediately identified as having been reviewed for conformance and resolved. Cement shall be checked periodically for color by placing a ¼" thick layer of clear glass plates and comparing this sample to a color standard to confirm that it is within the acceptable range. Off-colored cement may be rejected in accordance with the purchase agreement.

7.1.1.4 Suppliers test reports (Certification of Compliance) are kept on file in the Quality Control Department. Certifications are filed according to product and date of receipt. The following is a list of items which must have Compliance Certification:

- Cements
- Aggregates
- Admixtures
- Reinforcing steel
- Prestressing tendons
- Studs or deformed anchors
- Structural steel, hardware
- Inserts, accessories
- Pigments
- Curing compounds

7.2 IN PROCESS INSPECTION AND TESTING (PRE-POUR)

7.2.1 Dailey Precast, LLC employs Quality Control Inspectors to maintain daily overview and inspection of all production. Responsibilities include the following:

7.2.2 During testing of fresh concrete, changes can be made or concrete can be discarded to prevent non-conformance.

7.2.3 Aggregates shall be monitored for conformance to industry/project standards by the supplier at the source. Nonconforming materials shall be rejected. (This should be addressed as a condition of sale in the purchase agreement with the supplier.)

7.2.4 Fabricated sub-assemblies that are non-conforming shall be marked with a red dot for rejection.

7.2.5 The Quality Control Department does a pre-pour inspection and completes a pre-pour checklist (See Appendix for Copy) form for each component. The pre-pour inspection is completed prior to pouring concrete in the form. These forms are kept by the Quality Control Department.

7.2.6 QC Inspection Personnel perform the pre-pour inspections on each component and verify the following :

- General condition of mold, chamfers
- Dimensional verification
- Size, position of strands
- Size, position of reinforcing steel
- Position of inserts
- Size, position of voids, blockouts, etc
- Position of integral items and accessories
- Inspection of batching, mixing and conveying concrete
- Concrete testing
- Placement and consolidation of concrete
- Finishing of concrete

7.3 FINAL INSPECTION AND TESTING (POST-POUR)

7.3.1 Concrete stripping strength is verified by a Quality Control Laboratory Technician before product can be pulled from the mold.

7.3.2 The Quality Control Department does a post-pour inspection and completes a post-pour checklist form for each component. The post-pour inspection is completed prior to a component being moved into final storage. These forms are kept by the Quality Control Department.

7.3.3 QC Inspection Personnel perform the post-pour inspections on each component and verify the following :

- Overall dimensions
- Insert type and location
- Voids
- Integral items, accessories, plates, lifters
- Surface finishes, appearance
- Cracks, damage
- Ensure remedial fixes are completed per SOPs or engineered fixed, when required.
- Identification of piece
- Handling and storage

7.3.4 Each product is marked with the job/project name and number, unique piece number, cast date, and mold/bed the piece was cast on.

7.3.5 After a post pour is complete, the following information is entered into the Piece Tracker software by QC personnel:

- QC color code status
- Pre-pour 1 / 2 inspector
- Post-pour inspector
- Concrete Lot #
- Any additional comments

7.3.6 The color-coded marking system determined by QC post-pour findings is as follows:

7.3.6.1	Green:	Product has received final Inspection and approved to ship to jobsite
7.3.6.2	White	Work in progress (detailing or cosmetic work)
7.3.6.3	Blue	Secondary production operation required that was originally on shop drawing or Laser Projection/XceleRAYtor files. Also any additional post-pour changes added by client change order or engineering/drafting omissions.
7.3.6.4	Yellow	Open Defect (Reference Section 6.1.13).
7.3.6.5	Red	Reject
7.3.6.6	Black	PM/Erector Notification - This product is approved to ship to the jobsite, however, an erector review and/or field repair work required
7.3.6.7	Brown	Product meets shop drawing/XceleRAYtor file requirements and is approved for storage, requires final inspection

Note **The initial color status will trigger the appropriate remedial departmental process steps. As status changes QC will inspect and change the color status in Piece Tracker as shown below.

7.3.7 The Quality Control Department does a pre-shipping inspection for each component. The pre-shipping inspection is completed prior to a component leaving the precast yard for delivery to the project site.

7.3.7.1 Products shall always be reviewed at shipping to confirm product acceptability and to know for certain the product's condition at shipment. Even if the product is acceptable after finishing, it must be checked at shipment to identify handling damage or contamination during storage that requires repair or cleaning.

7.3.7.2 Structural Precast with Architectural Finishes shall be evaluated based on the approved mockup panel, specifications and company standards. Products must match approved samples for the project, if provided. Unless noted otherwise, all products shall receive PCI Standard Grade Finish as noted in PCI Manual MNL-116. A nonconforming finish may be repaired and deemed acceptable following the criteria in Section 6.1.13 Repairing Defects

7.3.7.3 Concrete patch repaired areas shall be reviewed by Quality Control Inspector for color and texture match if required by their exposure in the structure.

7.3.8 The goal of production is to match customer design requirements exactly. Product tolerances allow realistic, permissible variations from exact specifications. Considerations are made for structural design factors, material limitations, appearance and cost effectiveness. The latest PCI standard tolerances listed in MNL 116 and/or PCI MNL 117 apply in all cases unless specific contract tolerances are noted

7.3.8.1 Damaged or defective products are marked per QSM, Section 7.3.6 Color Code Status by the Quality Control Department.

7.3.8.2 Products marked with a Yellow Code in Piece Tracker shall not be shipped.

7.4 INSPECTION AND TEST RECORDS

7.4.1 It is the policy of Dailey Precast, LLC to prepare complete and accurate quality records. These records shall meet the requirements of the PCI Plant Certification Program for Product Groups B and C (Bridge and Commercial products) producers as defined in Manual 116.

7.4.2 All Quality Control work is recorded and filed in the Quality Control office (current year) or designated storage area (minimum of previous 7 years of accepted building or bridge structures.) Items are filed by Project and then by Date. The entire QC process is implemented into the Piece Tracker Software as well.

7.4.3 All records are traceable through identification number and date of manufacture of each piece.

7.4.4 Precast Plant Quality Control Department shall retain the following records

- Material Certificates
- Welding Inspection Records
- Concrete Test Records
- Quality Control Prepour/Postpour Shop Drawing
- Tensioning Records
- Mix Design Test Records
- Batching, Mixing and Conveying Equipment
- Inspection Records
- Aggregate Test Records

7.4.5 Suppliers test reports (Certification of Compliance) are kept on file in the Quality Control Department. Certifications are filed according to product and date of receipt. The following is a list of items which must have Compliance Certification:

- Cements
- Aggregates
- Admixtures
- Reinforcing steel
- Prestressing tendons
- Studs or deformed anchors
- Structural steel, hardware
- Inserts, accessories
- Pigments
- Curing compounds

7.4.6 Plant tensioning records shall include the following information:

- Date
- Casting bed designation
- Piece identification
- Strand identification
- Sequence of stressing
- Identification of jack
- Pretensioning information
  a. required force
  b. initial force
  c. anticipated and actual gauge pressure
  d. anticipated and actual elongation
- Post-tensioning information
  a. actual elongation
  b. Record any problems such as breakage, slippage, etc….

SECTION 8
INSPECTION, MEASURING AND TEST EQUIPMENT

8.1 INSPECTION, MEASURING AND TEST EQUIPMENT

8.1.1 Measuring and test equipment in the precast plant are calibrated as noted below by an independent service vendor or in house (air pot, neoprene pads, etc…).

8.1.2 The record of this calibration is labeled directly on the equipment.

8.1.3 Current calibration certificates are maintained in the Quality Control files.

8.1.4 Equipment calibrated by plants quality control and batch plant personnel:

8.1.4.1 Water meter is checked using a 50 gal. drum. 50 gallons are loaded on the water meter. Water is batched directly from the water valve and fed into the 55 gallon water drum. Results are recorded in a logbook containing results of calibration of various equipment. The accuracy of the water meter is calibrated weekly.

8.1.4.2 Air meter is checked using ASTM C231 (weekly) or displacement blocks.

8.1.5 Equipment calibrated by independent service vendors:

8.1.5.1 Forney Inc. model F-500F-DR2 comp. Testing machine s/n93025 Range 0-500,000 lbf. (twice each year)
8.1.5.2 OTC Inc. stressing unit s/n363701 Range 5,000 – 35,000 lbf. (twice each year)
8.1.5.3 Batch plant scales are calibrated every 90 days.
8.1.5.4 Hercules Inc. model "B" stressing unit s/n 06672 range 0-60,000 (twice each year)
8.1.5.5 Hercules Inc. model “B” stressing unit (#2) s/n H5J-13778
8.1.5.6 Adam digital scale s/n #AE40122742
8.1.5.7 Admixture dispensers are calibrated (quarterly)
8.1.5.8 Extech thermometer s/n #14041727
8.1.5.9 Extech thermometer s/n #140402055
8.1.5.10 Extech thermometer s/n #140722827

8.1.5.11 Automation checks (once each year)

8.1.6 Calibration Reports and Batch Plant Scale Calibration Reports are available/retained through the Batch Plant.

SECTION 9
CORRECTIVE ACTION

9.1 CORRECTIVE ACTION

9.1.1 Defects, which do not impair the functional use or expected life of a precast product, shall be considered minor defects and follow the process identified in See Section 6.1.13 Repairing Defects.

9.1.2 Defects, which will impair the functional use or expected life of a product, shall be considered major defects and follow the process identified in See Section 6.1.13 Repairing Defects. .

9.1.3 As provided in Section 6.1.13, Review and approval of a corrective action shall be coordinated through the Production Manager. In all cases, repair work shall be according to the approved procedure and provide no compromise to service life. The Quality Control Department shall inspect the completed repair for compliance and acceptance.

SECTION 10
HANDLING, STORAGE, LOADING AND DELIVERY

10.1 HANDLING, STORAGE, LOADING AND DELIVERY

10.1.1 The safety of employees and the protective care of the product being handled are the critical factors each time any product is moved.

10.1.2 The recommended method for any handling is to use embedded lifting devices whenever possible.

10.1.3 Special care should be taken when forklift equipment is used to prevent damage by the forks.

10.1.4 Storage Areas:

10.1.4.1 Products shall be stored in a manner that will minimize damage caused by uneven bearing, improperly located dunnage blocks, over stacking, or difficulty in handling. All dunnage will have protective plastic pads. Whenever possible the order of storage should reflect the shipping schedule to minimize handling.

10.1.5 Pre-shipment Inspection (Final inspection)

10.1.5.1 Prior to shipment all products shall be visually inspected.

10.1.6 Shipment of Products

10.1.6.1 Trucks and other conveyances used to transport precast concrete products from the plant to the erection site shall be equipped and maintained to deliver the products without damage.

10.1.6.2 Padding for tie-down shall be used to protect the edge of the product.

10.1.6.3 Shipping records shall be kept in a central file for all products and accessories. Transportation damage should be recorded by project management. Shipping Manager, quality assurance or project management prepares a certification and authorization for each shipment.

SECTION 11
INTERNAL QUALITY AUDITS

11.1 INTERNAL QUALITY REVIEW

11.1.1 The Company Officers, Production Manager or QC Manager may at any time audit the Quality Control Department to assess its performance according to the objectives of this manual. In addition, the Quality Control Department shall make an internal review of its performance, at planned intervals, to ensure its continued suitability, adequacy and effectiveness. The review includes assessing opportunities for improvement and the need for changes in quality policy and objectives.

11.1.2 Dailey Precast Quality Control audit system is based on the following:

11.1.2.1 Internal Audits will take place twice a year at QC Manager's discretion.

11.1.2.2 Reviewed to ensure the Quality Management System is protecting the client's interests and programming requirements.

11.1.2.3 An audit program shall be planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods shall be defined. Selection of auditors and conduct of audits shall ensure objectivity and impartiality of the audit process. Auditors shall not audit their own work.

11.1.2.4 Internal audits shall be carried out by qualified / competent QC personnel in accordance with Dailey Precast internal procedure Internal Quality Audits to determine whether the quality management system conforms to the planned arrangements in delivering works that meet the contract requirements and is effectively implemented and maintained. Internal audits are planned and arranged by the QC Manager.

11.1.2.5 Each review will discuss and specify actions to ensure the continuing suitability and improvement of the effectiveness of the system. Records of reviews and follow up actions will be maintained. Any comments or issues arising which require attention by the senior management are reported for review by the relevant managers or their delegates.

SECTION 12
TRAINING

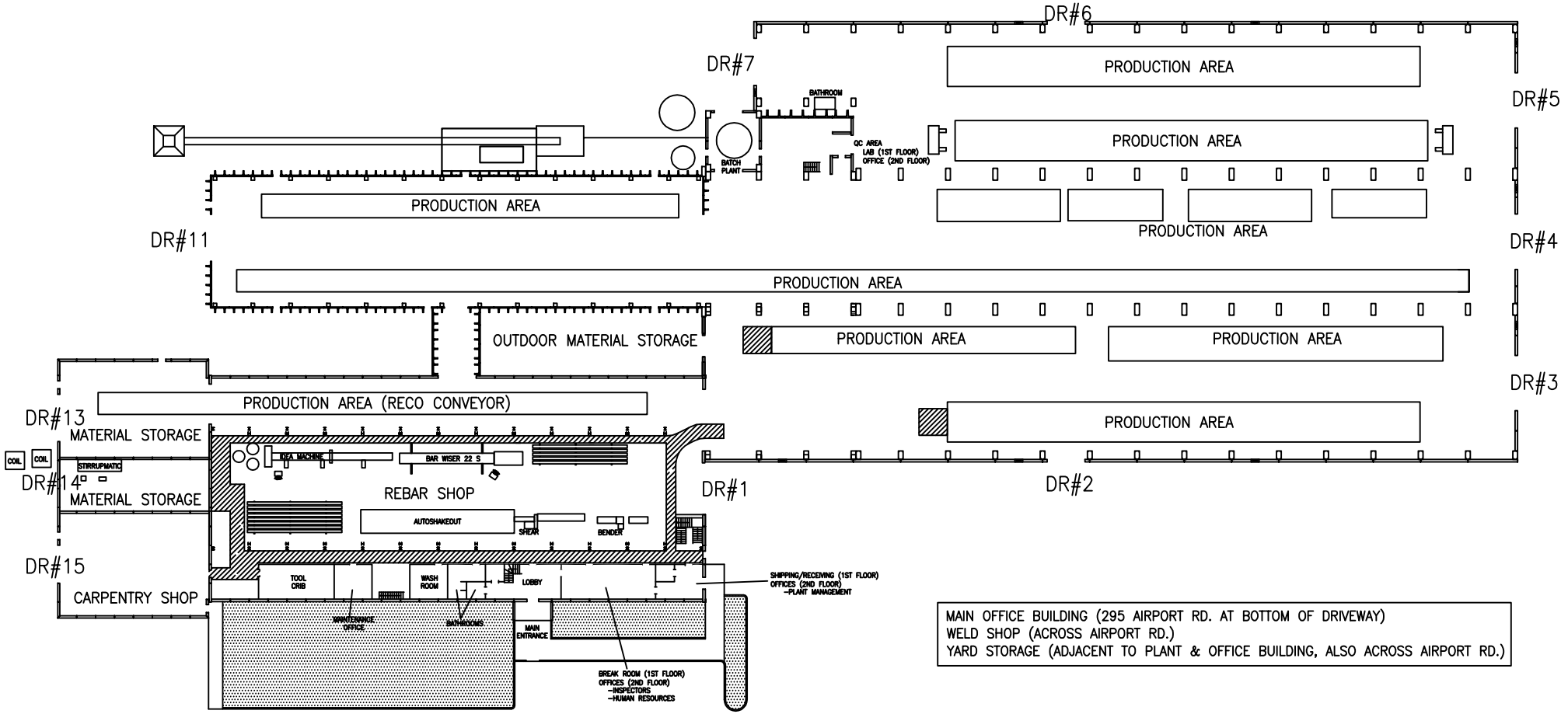
12.1 TRAINING

12.1.1 Employees upon hire complete an orientation program and are advised to review the QSM. Plant Management shall assure that each employee is following policies and procedures set forth in the QSM. A current QSM is retained in the lab for all employees.

12.1.2 Safety training meetings are held on a weekly basis. Record of those meetings is kept by the Human Resources Department.

12.1.3 Prerequisites: A list of current certifications are on file

Appendix A


DR#6
DR#7
PRODUCTION AREA
DR#5
BATHROOM
QC AREA
LAB (1ST FLOOR)
OFFICE (2ND FLOOR)
BATCH PLANT
PRODUCTION AREA
PRODUCTION AREA
PRODUCTION AREA
DR#11
DR#4
PRODUCTION AREA
OUTDOOR MATERIAL STORAGE
PRODUCTION AREA
PRODUCTION AREA
DR#3
PRODUCTION AREA (RECO CONVEYOR)
DR#13
MATERIAL STORAGE
PRODUCTION AREA
COIL
COIL
STIRRUPMATIC
IDEA MACHINE
BAR WISER 22 S
DR#14
REBAR SHOP
DR#1
DR#2
MATERIAL STORAGE
AUTOSHAKEOUT
SHEAR
BENDER
DR#15
TOOL CRIB
WASH ROOM
LOBBY
SHIPPING/RECEIVING (1ST FLOOR)
OFFICES (2ND FLOOR)
–PLANT MANAGEMENT
CARPENTRY SHOP
MAINTENANCE OFFICE
BATHROOMS
MAIN ENTRANCE
BREAK ROOM (1ST FLOOR)
OFFICES (2ND FLOOR)
–INSPECTORS
–HUMAN RESOURCES
MAIN OFFICE BUILDING (295 AIRPORT RD. AT BOTTOM OF DRIVEWAY)
WELD SHOP (ACROSS AIRPORT RD.)
YARD STORAGE (ADJACENT TO PLANT & OFFICE BUILDING, ALSO ACROSS AIRPORT RD.)

Shift Huddle

Bed Leader

Name:_____

Date:_____

Shift Start Time:_____

Bed Name_____

Item Inspected or Completed	Employees Initials
Fire Extinguisher and Area Clear of Debris.	
PPE Required for today's work: Face Shields, Goggles, Gloves, Kevlar Sleeves, Air Filtering Paper Mask	
House Keeping Reminder *28 inches clear pathway to all exits.	
Proper Tools Available and In good Condition: *Any tools that are broken or need repair must be taken out of service and repaired or replaced. All Safety devices and guards must work or remove from service.	
Reminder about use of proper body mechanics and lifting techniques. *Max weight any employee should lift alone is 50lb's. If greater loads need to be lifted without the use of equipment, it should be done by 2 or more employees.	
Reminder about Tag Lines and Working Around Suspended Loads	
Rigging Check Beginning of Shift. *All defective rigging shall be removed from service, properly tagged out and removed from the production floor. All removed rigging should be brought to the maintenance department for repair or disposal. *Rigging should be visually inspected prior to Every Lift.	
Any Removed Rigging List Below:	

_____

_____

Crew Leader Check List

BED: Unit ID: Date: QC

	Yes	no	Pre Start
1)			Is everyone here?
2)			If no Did you let supervisor know?
3)			Do you have prints?
4)			Does print match schedule?
5)			Do you have lastest revision? If you do not know check with Rob
6)			Did you verify all parts and wood from material handling?
7)			Did you make sure you have tools needed for day
8)			Do you have all safety products nessesary?
9)			PPE for everyone?
10)			Have you looked at previous days production for imperfections that you can correct?
11)			Review any errors with crew and report to QC and superviser

Mold prep work

1)			Is bed surface clean? If not scrape and buff as needed
2)			Clean surrounding area including chamfer and screws from previous days stripped unit
3)			Set form per print checking for length,width, square, reveis, blockouts ect. Per SOP
4)			Do a double check of above
5)			QC check
6)			Oil form per SOP

Fabrication

1)			Does unit require stressing strand? If so run, unless cage needs to be installed first.
2)			Add formside embeds and recheck request QC check
3)			Double check strand location and size Then request QC to stress
4)			If cage is pre-built check per print prior to installing run
5)			Install cage run strand if needed
6)			Support cage with hangers, chairs, or other that maybe nessesary to insure proper location
7)			Add top side embeds and lifters and corebels recheck to prints then request QC to check

Final Check

1)			Recheck length and width
2)			Check bracing including boltings/screws for embeds/ lifters and any others for proper hold
3)			Check for any material left in form such as Ties, Sawdust, Screws/bolts ect.
4)			Check coverages of rebar and stability of reinforcing/embeds
5)			Request QC final conformation
6)			Confirm mix design and finish requirements with QC and Pour Crew Lead
7)			Is area around bed clean all tools put away, all debries on and around bed put in outside bins?

NOTES:

CREW LEADER SIGNATURE:

Wood Shop Safety Inspection Checklist

This checklist is to be completed at the beginning of each day as directed by company policy.
Please complete this form and forward to the Department Supervisor. Supervisor will ensure daily completion and forward to safety department once a week. Keep a copy of inspection for 1 year, plus the current year.
Follow-up on the status of corrective actions and work orders shall be completed by Supervisor
List each item requiring correction in the REMARKS section.

	rf	Pick One			Comments
1	Floor is maintained - clean and dry	Y	N	N / A	
2	A clear area of 30" is maintained in front of all electrical panels	Y	N	N / A	
3	Breakers are properly labeled, including spares	Y	N	N / A	
4	Electrical outlets are in good condition	Y	N	N / A	
5	Master electrical shut-off switch is accessible	Y	N	N / A	
6	Electrical extension cords are in good condition	Y	N	N / A	
7	Hand Tools are properly stored and maintained	Y	N	N / A	
8	Hand power tools are grounded or double insulated and properly maintained	Y	N	N / A	
9	Grinders are properly guarded with the tool rest less than 1/8" from the wheel	Y	N	N / A	
10	Radial arm saw is equipped with automatic saw return system, is properly guarded, has been properly secured, contains an antikickback device (if used for ripping)	Y	N	N / A	
11	Band saw is properly guarded and has been properly secured	Y	N	N / A	
12	Jig saw is properly guarded and has been properly secured	Y	N	N / A	
13	Table saw is properly guarded and has an anti-kickback device	Y	N	N / A	
14	Power jointer/planer is properly guarded and has been properly secured	Y	N	N / A	
15	Disk sander unit is properly guarded and has been properly secured	Y	N	N / A	
16	Belt sander unit is properly guarded and has been properly secured	Y	N	N / A	
17	Drill press has been properly secured	Y	N	N / A	
18	Personal safety equipment is available, properly maintained and used by employees	Y	N	N / A	
19	Storage racks are secured to wall studs or floor, product in rack is secure	Y	N	N / A	
20	Paints, lacquers and thinners are properly stored in an approved cabinet	Y	N	N / A	
21	All hazardous materials are properly labeled	Y	N	N / A	
22	Paint fume exhaust system is working properly	Y	N	N / A	
23	Sawdust collection system is maintained and working properly	Y	N	N / A	
24	Dust collection bin is emptied daily	Y	N	N / A	
25	Trash containers are emptied daily and as filled during the day	Y	N	N / A	
26	Personal protective equipment signs are posted in applicable locations	Y	N	N / A	
27	Exit paths are clear and free of saw dust and debris	Y	N	N / A	
28	Fire extinguisher are checked monthly and documented on the back of the inspection tag	Y	N	N / A	
29	Lights are explosion proof type	Y	N	N / A	
30	First aid kit is available in shop	Y	N	N / A	
31	All safety related work orders from the last safety inspection have been corrected	Y	N	N / A	
32	All horizontal surfaces are free from dust and debris	Y	N	N / A	it is imposible to do so but it is above average
33	Cleaning of floors, benches and saws done throughout the day (as needed)	Y	N	N / A	

REMARKS WORK ORDER SUBMITTED

KEN CROSS

SUPERVISOR

QC Checklist- XceleRAYtor

Piece ID: _____ **Date:** _____

Bed Leader: _____ **Bed:** _____

	Error Found	Item(s) in error:	Pre-Pour QC Pass	Post-Pour QC Pass
Step 1:	☐_____	_____	☐_____	☐_____
Step 2:	☐_____	_____	☐_____	☐_____
Step 3:	☐_____	_____	☐_____	☐_____
Step 4:	☐_____	_____	☐_____	☐_____
Step 5:	☐_____	_____	☐_____	☐_____
Step 6:	☐_____	_____	☐_____	☐_____
Step 7:	☐_____	_____	☐_____	☐_____
Step 8:	☐_____	_____	☐_____	☐_____
Step 9:	☐_____	_____	☐_____	☐_____
Step 10:	☐_____	_____	☐_____	☐_____
Step 11:	☐_____	_____	☐_____	☐_____
Step 12:	☐_____	_____	☐_____	☐_____
Step 13:	☐_____	_____	☐_____	☐_____
Step 14:	☐_____	_____	☐_____	☐_____
Step 15:	☐_____	_____	☐_____	☐_____
Step 16:	☐_____	_____	☐_____	☐_____
Step 17:	☐_____	_____	☐_____	☐_____
Step 18:	☐_____	_____	☐_____	☐_____
Step 19:	☐_____	_____	☐_____	☐_____
Step 20:	☐_____	_____	☐_____	☐_____

QC Checklist- XceleRAYtor

Piece ID: _____ **Date:** _____

Bed Leader: _____ **Bed:** _____

	Error Found	Item(s) in error:	Pre-Pour QC Pass	Post-Pour QC Pass
Step 21:	☐_____	_____	☐_____	☐_____
Step 22:	☐_____	_____	☐_____	☐_____
Step 23:	☐_____	_____	☐_____	☐_____
Step 24:	☐_____	_____	☐_____	☐_____
Step 25:	☐_____	_____	☐_____	☐_____
Step 26:	☐_____	_____	☐_____	☐_____
Step 27:	☐_____	_____	☐_____	☐_____
Step 28:	☐_____	_____	☐_____	☐_____
Step 29:	☐_____	_____	☐_____	☐_____
Step 30:	☐_____	_____	☐_____	☐_____
Step 31:	☐_____	_____	☐_____	☐_____
Step 32:	☐_____	_____	☐_____	☐_____
Step 33:	☐_____	_____	☐_____	☐_____
Step 34:	☐_____	_____	☐_____	☐_____
Step 35:	☐_____	_____	☐_____	☐_____
Step 36:	☐_____	_____	☐_____	☐_____
Step 37:	☐_____	_____	☐_____	☐_____
Step 38:	☐_____	_____	☐_____	☐_____
Step 39:	☐_____	_____	☐_____	☐_____
Step 40:	☐_____	_____	☐_____	☐_____

QC Checklist- XceleRAYtor

Notes:

- Print out more pages if more than 40 steps are required.
- QC inspector should initial next to any checkbox they mark.
- Each XceleRAYtor step must be signed off on in Pre-Pour.
- Only steps that can be verified in Post-Pour need to be signed off on in Post-Pour. All other steps mark as N/A.
- See available error codes below to be entered into "Error Found" column. Be sure to specify the particular error in "Item(s) in error"

"Error Found" Codes:

Prep – Form was not properly prepared for the designated finish.

Geometry – Overall size/shape/orientation/blockouts/reveals of piece is incorrect.

Reinforcing – Size/spacing/lap or reinforcing steel is inadequate.

Embed – Embed Item not placed properly.

Finish – (Post Pour Use Only)

i.) Trowel face does not match designated finish.
ii.) Stripping anchors placed incorrectly.
iii.)Trowel face plates not flush or tipped.
iv.) Wrong mix.

Handling - (Post Pour Use Only) - Damage to piece that occurred during stripping/transport.

example

WILLIAM E. DAILEY PRECAST, LLC

381 Airport Road – Shaftsbury, VT

MEETING MINUTES

Date:			

ATTENDEES

Name	Signature	Name	Signature

ITEMS OF DISCUSSION (use additional sheets, as needed)

RESOLUTION/REMAINING ITEMS (use additional sheets, as needed)

RECORDED BY:	ACCEPTED BY:
X DATE:	X DATE:

WILLIAM E. DAILEY PRECAST, LLC

example

381 Airport Road – Shaftsbury, VT

INDIVIDUAL TRAINING RECORD

Date:		**Trainee:**	
Activity:		**Job Title:**	
Trained By:			

DESCRIBE ACTIVITY AND METHOD OF TRAINING

TRAINEE EVALUATION

EVALUATION	**TRAINEE SIGNATURE:**
PASS_____ FAIL _____	**x DATE**
EVALUATED BY:	**ACCEPTED BY: (Plan Administrator)**
x DATE	**x DATE**

WILLIAM E. DAILEY PRECAST, LLC
381 Airport Road – Shaftsbury, VT

example

CORRECTIVE ACTION REQUEST

Division:		**Issued To:**	
Procedure No:		**Issued By:**	
Item No.		**Issued To:**	
Date:		**Respond By:**	

DEFICIENCY.

RECOMMENDED CORRECTIVE ACTION.

PROPOSED CORRECTIVE ACTION.

PROPOSED BY:	**ACCEPTED BY:**
X **DATE**	**X** **DATE**

MATERIAL REQUEST

Job No.:

Name:

Requested By:

Request Date:

Qty Req'd	Qty Rcvd	Description	Stock / Part No.	Date Req,(	ETA	Comments / info
Used For:						
Shipping Info						
	Received by:					
	Date:					

example

example

DAILEY PRECAST LLC
DELIVERY RECEIPT

ORDER DATE: _____

COMPANY:

PO #

ITEMS: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

COMMENTS: _____

_____

E.T.A. _____

STORAGE LOCATION: _____

RECEIVED BY: _____ DATE: _____

example

William E. Dailey Precast LLC
295 Airport Road
Shaftsbury, VT 05262
802-442-4418

Date : 7/8/2013 Mix ID # 12 50/50 w/dye

	PSI	MPA
Compressive Strength :	6500	44.8

Job/PO Number : 127312
Project : Woodbury Commons
Concrete Source : Dailey Precast
Construction Type: Precast
Placement : Mixer Truck

		kg/m^3	lb/yd^3	Density
Cement :	Glens Falls III	222.5	375	3.15
Cement :	Lehigh White	222.5	375	3.15
Pozzolan :	None	0	0	
Sand :	W.E Dailey Natural	952	1605	2.7
Stone :	W.E Dailey #67	772	1302	2.73
Water :	Dailey Well	163.1	275	1
		mL/m^3	oz/yd^3	
HRWR :	Glenium 3400	2321	60	
AIR :	MB-AE90	155	4	
Corrosion :	Rheocrete CNI	0	0	
Retarder :	Pozzolith 100XR	0	0	

Design Air: 6.0%

Unit Weight : 144 lb/cu.ft. (Approximate)
Water/Cement Ratio : 0.37
Air Spec : 6.0 %+/-2.0%
Slump / Spread : Not more than 29"

Dye Loading (lb/yd^3)	
Yellow 920	1.35
Black 330	0
Red 110	0.15

ADMIXTURE NOTE:

The amount and type of water reducing admixtures may vary slightly from day to day depending on allowable variations in raw materials (e.g., moisture content, temperature, gradations, etc.) Variations in admixtures are made to maintain a favorable water cement ratio while maintaining a workable mixture. Therefore when there is an increase in the high range water reducer there is a corresponding decrease in the amount of water required. This in turn increases slightly the amount of sand and stone required to maintain a 1.0 cubic yard yield.

example

Wm.E.Dailey, Inc.

Gradation Work Sheet

Nominal Size of Aggregate Precast Sand **Date** 09/09/13

Minus #200 Wash and Moisture

Wet Weight	556.9	% Total Moisture	2.62
Dry Weight	542.7	Weight of Minus #200 Material	
Dry Weight After Wash	531.1	(Added to Pan Weight)	11.6

US Standard Sieve Sizes mm (in)	Weight	% Retained	% Passed
50.0 (2)			
45.0 (1 3/4)			
37.5 (1 1/2)			
25.0 (1)			
19.0 (3/4)			
12.5 (1/2)			
9.5 (3/8)			100.0
4.75 (#4)			100.0
2.36 (#8)	61.3	11.3	88.7
1.18 (#16)	166.6	30.7	58.0
0.600 (#30)	128.1	23.6	34.4
0.300 (#50)	99.9	18.4	16.0
0.150 (#100)	61.3	11.3	4.7
0.075 (#200)	14.1	2.6	2.1
PAN	11.4	2.1	
TOTAL	542.7	100	

Fineness Modulus = 2.98

Fracture and T + E Count

Weight of T + E Portion		% T + E	
Weight of Fractured Portion		% Fracture	
Total Weight of Sample			

Chris Thomas Inspector

example

Wm.E.Dailey, Inc.

Gradation Work Sheet

Nominal Size of Aggregate ASTM #67 **Date** 09/09/13

Minus #200 Wash and Moisture

Wet Weight 11274 % Total Moisture 1.33

Dry Weight 11126 Weight of Minus #200 Material (Added to Pan Weight)

US Standard Sieve Sizes mm (in)	Weight	% Retained	% Passed
50.0 (2)			
45.0 (1 3/4)			
37.5 (1 1/2)			
25.0 (1)			100.0
19.0 (3/4)	768	6.9	93.1
12.5 (1/2)	3371	30.3	62.8
9.5 (3/8)	3660	32.9	29.9
4.75 (#4)	3149	28.3	1.6
2.36 (#8)	56	0.5	1.1
1.18 (#16)			
0.600 (#30)			
0.300 (#50)			
0.150 (#100)			
0.075 (#200)			
PAN	122	1.1	
TOTAL	11126	100	

Fineness Modulus = 6.70

Fracture and T + E Count

Weight of T + E Portion 70.2 % T + E 3

Weight of Fractured Portion 2210.4 % Fracture 88

Total Weight of Sample 2508.6

Minus #200 Wash DRY 2633.2 **Chris Thomas** Inspector

Dry after Wash 2621.4

Weigth minus #200 Material 11.8 **% Minus #200** 0.45

William E. Dailey Precast, LLC

TENSION REPORT
QUALITY CONTROL DEPARTMENT

Q.C. TECH.	Mike H, Ed, Bruce,Brian, Kim
I	**Ellipse**
PANEL TYPE	**IT**
DATE OF STRESSING	
RAM	Hercules Model B
THEORETICAL	See Cover Sheet
FORM	**ITLG**
STRAND DIAMETER	.5 SPEC
BRAND OF STRAND	Strand Tech
LIVE END	EAST
CHECKED BY	

STRAND ID
STM
4 1/8"
3 7/8"

Check cover sheet for theoretical calcs and tolerences

STRAND	INITIAL	FINAL	ELONG	STRAND	INITIAL	FINAL	ELONG
	3.2	34.6	4"				
1				27			
2				28			
3				29			
4				30			
5				31			
6				32			
7				33			
8				34			
9				35			
10				36			
11				37			
12				38			
13				39			
14				40			
15				41			
16				42			
17				43			
18				44			
19				45			
20				46			
21				47			
22				48			
23				49			
24				50			
25				51			
26				52			

Statistical Analysis 03/10/2016 - 03/30/2016
Peckham Industries Inc. 28-Shaftsbury Precast PRECAST 32-SCC

Sample Id	Date	Air Content	Slump	Temp (Concrete)	Unit Wt (Concrete)	Comp Strength (7-Day) (psi)	Comp Strength (28-Day) (psi)
1636551849	03/10/2016 11:10	6.2	25.50	69	143.2	8060	9120
1636551863	03/11/2016 11:15	7.4	24.00	71	141.2	8000	9040
1636551871	03/14/2016 10:45	7.4	24.00	72	140.8	7810	9160
1636551885	03/15/2016 10:40	7.4	24.00	66	141.3	8280	8940
1636551899	03/16/2016 11:00	5.1	21.50	75	145.6	8090	9570
1636551913	03/17/2016 09:00	6.9	21.00	74	143.2	7940	8940
1636551938	03/18/2016 01:10	7.5	21.50	74	141.6	7660	8760
1636551952	03/21/2016 12:15	7.4	26.00	62	140.0	8820	9280
1636551961	03/22/2016 01:50	5.5	25.00	69	146.0	7690	9200
1636551978	03/23/2016 10:45	7.5	25.00	71	140.8	7300	9220
1636551996	03/24/2016 10:30	7.5	24.00	61	146.2	6800	9040
1636552001	03/25/2016 10:55	6.9	22.00	78	143.0	6960	8930
1636552021	03/28/2016 12:00	7.0	21.00	78	142.6	6940	8300
1636552030	03/29/2016 11:00	7.2	26.00	71	140.8	6780	8760
1636552041	03/30/2016 11:45	7.5	24.00	79	141.1	6200	7600

	Air Content	Slump	Temp (Concrete)	Unit Wt (Concrete)	Comp Strength (7-Day) (psi)	Comp Strength (28-Day) (psi)
Count	15	15	15	15	15	15
Min	5.1	21.00	61	140.0	6200	7600
Max	7.5	26.00	79	146.2	8820	9570
Mean	7.0	23.63	71	142.5	7555	8924
St Dev	0.76	1.788	5.4	2.03	702.6	464.9
CV	10.98	7.564	7.6	1.42	9.3	5.2
PWS						

PCI Precast/Prestressed Concrete Institute

June 30, 2017

Eric Schaffrick,
William E. Dailey Precast, LLC
295 Airport Rd
Shaftsbury, VT 05262-9693

Dear Eric Schaffrick,

On behalf of Precast/Prestressed Concrete Institute (PCI) and the PCI Plant Certification Committee, we would like to applaud your organization's commitment to unyielding quality. As we embark on yet another industry year of hard work and leadership; you should know that your steadfast continued participation will no doubt separate you and your fellow certified plant constituents apart from your industry competitor's.

The attached certificate will represent the continued PCI Plant Certification status for William E. Dailey Precast, LLC, Shaftsbury, VT for the 2017 / 2018 Plant Certification Year. Note that a new certificate will persist each year you continue to renew, as well as maintain your certified plant status.

You should display this certificate at your facility in a prominent location; but also know that you can offer this certificate as proof of your plant's PCI Certification.

Again, we commend your participation and support of the PCI Plant Certification Program.

Best Regards,

Dean Frank

Dean Frank, P.E., LEED Green Assoc.
Director, Quality Programs

Enclosure: Certificate 2017/2018

200 West Adams Street | Suite 2100
Chicago, IL 60606 | Phone 312-786-0300
Fax: 312-621-1114 | www.pci.org

The Precast/Prestressed Concrete Institute, hereby Certifies

William E. Dailey Precast, LLC

Shaftsbury, VT

has demonstrated the capability to produce quality products in accordance with the prescribed Plant Certification requirements and is hereby recognized as a

Certified Plant

under the

PCI Plant Certification Program, Policy 20

Certification is contingent upon meeting
Qualifications confirmed by continuing audits and
other Program criteria.

Categorical Scope of Certification:
A1,B4,B4A,C3,C3A
Certification Issued on: 6/30/2017
Certification is Effective on: July 1, 2017
Certificate Expires on: June 30, 2018
Certificate Number: 16072

Dean Frank, PCI Director of Quality Programs

PCI™
CERTIFIED PLANT

Bob Risser, PCI President

200 West Adams Street | Suite 2100 | Chicago, Ill. 60606-5230
Phone: 312-786-0300 | Fax: 312-621-1114 | www.pci.org

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

Fabricator's Certificate of Compliance – Precast/Prestressed Concrete

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Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2 of the International Building Code must submit a *Fabricator's Certificate of Compliance* at the completion of fabrication.

Project: Parking Deck Mixed Use Development, York and High Street, Portland, Maine

Fabricator's Name: Dailey Precast

Address: 295 Airport Road, Shaftsbury, Vermont

Certification or Approval Agency:

Certification Number:

Date of Last Audit or Approval:

Description of structural members and assemblies that have been fabricated:

I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.

Signature

Date 11/7/17

QC. MANAGER
Title

Attach copies of fabricator's certification or building code evaluation service report and fabricator's quality control manual

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

SEISMIC RESISTANCE CHECK LIST [IBC 1705.3]

Seismic Design Category B

☐ **FOR SEISMIC DESIGN CATEGORY C OR HIGHER:**

Structural:

☒ The seismic-force-resisting systems

- ☐ Steel Braced Frames and associated connections/anchorage (Not required for SDC C, R=3)
- ☐ Steel Moment Frames and associated connections (Not required for SDC C, R=3)
- ☒ Shear walls: ☐ CMU ☐ Wood ☒ Concrete ☒ Diaphragms: ☒ Floor ☒ Roof
- ☐ Other:

WIND RESISTANCE CHECK LIST [IBC 1705.4]

Wind Exposure Category C

REQUIRED	NOT REQUIRED	NOT APPLICABLE	WIND RESISTANCE REQUIREMENTS
☐	**X**	☐	In wind exposure Category B, where the 3-second-gust basic wind speed is 120 miles per hour (mph) (52.8 *m/sec)* or greater.
☐	X	☐	In wind exposure Categories C and D, where the 3-second-gust basic wind speed is 110 mph (49 *m/sec)* or greater.

Project: Parking Deck Mixed Use Development
Date Prepared: March 17, 2016

End of Structural Statement of Special Inspections