

SHIELDED IMAGING  
ROOM  
DESIGN AND  
CONSULTATION

PROJECT  
**Health  
Center Emeryville**

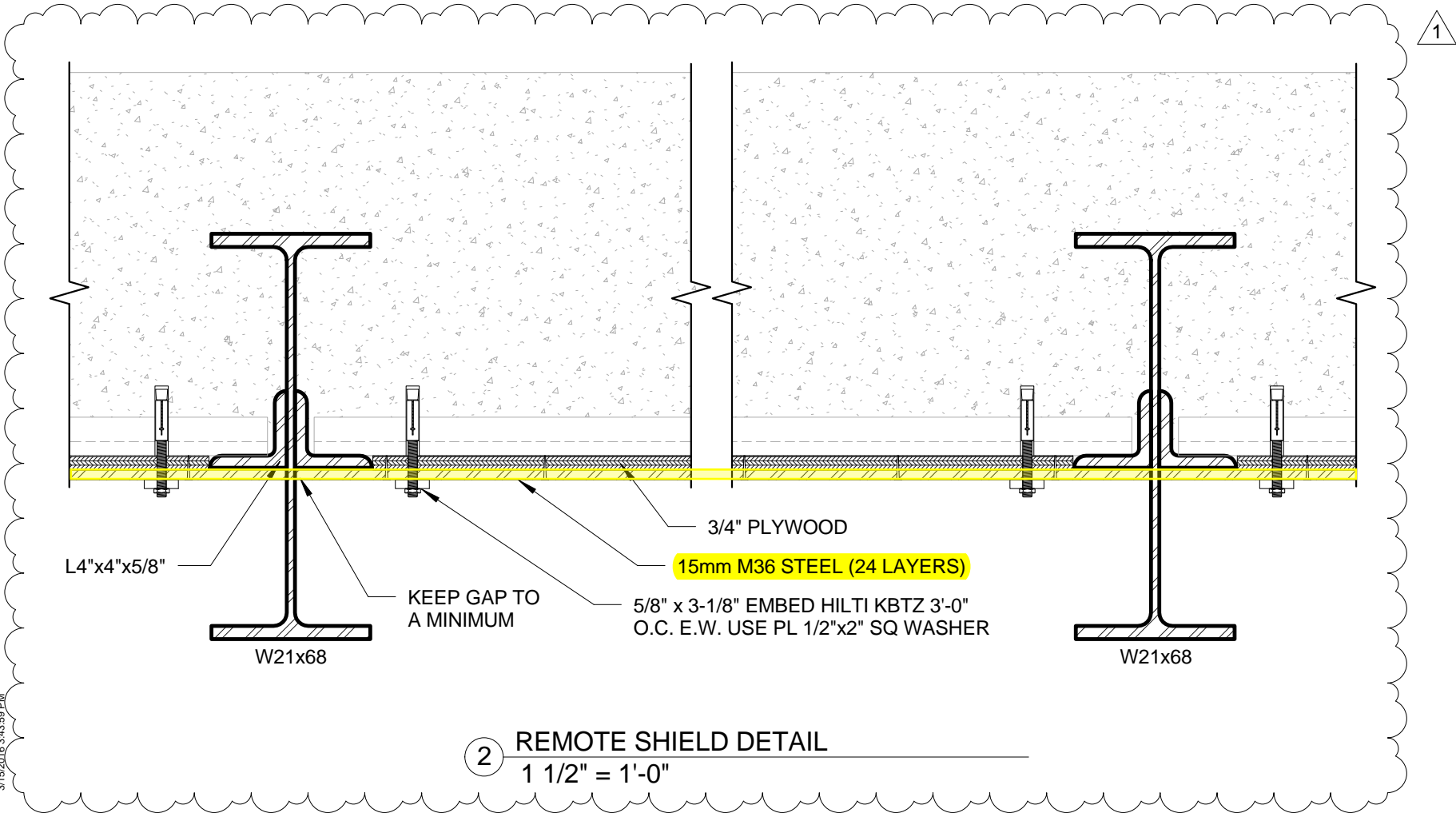
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Revision Schedule		
No.	Description	Date
1	REVIEW CHANGES	2/24/2016

PROJECT | **958**  
DATE | **11/02/2015**  
DRW BY | **DHC**  
CHKD |

SHEET TITLE  
**SPECIAL DETAILS**

SHEET NUMBER  
**A720**  
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# Subcontract

## HENSEL PHELPS CONSTRUCTION CO. Contractor

**Issuing Office** • 226 Airport Parkway, Suite 150  
San Jose, CA 95110

•

**Subcontractor** •

**Subcontract** • Steel, Metal Deck, Stairs

**Project** • Health Care Emeryville

**Project Number** • 0510000

This Subcontract consists of 19 pages numbered 1 of 19 through 19 of 19 and attachments numbered: 2A – 2J.

Please initial each page where indicated, affix authorized signature(s) and return 3 copies at once to the issuing office shown above.

- ☐ A copy executed on behalf of Hensel Phelps Construction Co. will be returned for your files.
- ☐ An additional copy is included to be forwarded to your bonding company.
- ☐ Please retain the copy identified as yours.

  
Contractor

  
Subcontractor

# SUBCONTRACT

THIS SUBCONTRACT is made and entered into this

by and between

hereinafter referred to as the Subcontractor and Hensel Phelps Construction Co., a Delaware corporation, hereinafter referred to as the Contractor. **WITNESSETH:** That for and in consideration of the mutual promises and covenants herein contained, the Subcontractor and the Contractor agree as follows:

**SECTION A.** The Subcontractor covenants, promises and agrees to furnish all material and personal property and to diligently and fully perform all work hereinafter described for the construction of Health Care Emeryville, hereinafter referred to as the Project, to be located at \_\_\_\_\_ for the use and benefit of Health Care, hereinafter referred to as the Owner, in strict accordance with the Contract between the Contractor and the Owner entered into \_\_\_\_\_ and hereby made a part of this Subcontract by reference; all to the satisfaction of the Contractor, the Owner, and the representative authorized by the Owner to interpret and judge the performance of the aforesaid Contract and named therein as architect, engineer, contracting officer, or otherwise, when such representative shall have been designated as the Owner's Authorized Agent; and all of which shall be done in timely, faithful and strict compliance with this Subcontract and all the Subcontract Documents described and defined in Section D, Article 1, hereof and elsewhere herein.

**SECTION B.** The Subcontractor agrees to furnish all necessary management, supervision, labor, materials, tools, supplies, equipment, plant, services, engineering, testing and/or any other act or thing required to diligently and fully perform and complete the portions of the work described as follows:

## B.1 Not used.

## B.2 General Scope Requirements

Subcontractor has all necessary work, procedures, management, supervision, labor, materials, supplies, tools, plant, equipment, services, testing, engineering, and any other act or thing required to diligently and fully perform and complete the work as described or referenced in the following section(s) unless specifically excluded in section B.5 below:

1. H4611 – Prime Contract dated 4/27/15 (includes General Conditions and General Requirements)
2. JIP Brochure dated 7/8/15
3. Six (6) Step Quality Control Flow Chart
4. All applicable Codes and Regulations

## B.3 Specific Scope Requirements

Subcontractor has all necessary work, procedures, management, supervision, labor, materials, supplies, tools, plant, equipment, services, testing, engineering, and any other act or thing required to diligently and fully perform and complete the work as described or referenced in the following section(s) unless specifically excluded in section B.5 below:

5. DP-1 100% Construction Documents dated \_\_\_\_\_ including 'BC-1' revisions dated \_\_\_\_\_
6. DP-1 100% Specifications dated \_\_\_\_\_
7. CPM Schedule \_\_\_\_\_ entitled 'September Logic Update'
8. Project Phase Diagram
9. Site Utilization Plan
10. BIM Execution Plan
11. Draft LEED Scorecard
12. Section 03 30 00 – Cast-In-Place Concrete (as applies)
13. Section 05 10 00 – Structural Steel (complete)
14. Section 05 45 00 – Metal Support Assemblies (as applies)
15. Section 05 51 13 – Metal Pan Stairs (complete)
16. Section 07 81 16 – Cementitious Fireproofing (as applies)
17. Metal Deck (complete) – Refer to the Sheet S-100

  
Contractor

  
Subcontractor

**B.4 Inclusions:**

Your attention is specifically called to the following items. Subcontractor acknowledges that it would be impossible to identify and specifically list every inclusion for this Scope of Work, therefore, the following inclusions are listed herein in an effort to further define and clarify the scope of work described in the Contract, and are not intended to substitute the scope of work requirements in the Contract documents. Items omitted from this list but necessary for the proper performance of this Subcontractor's Scope of Work are included. Only the specifically listed exclusions in section B.5 below are excluded from this Scope of Work.

The intent of this Subcontract is to provide a complete scope of Structural Steel, Metal Deck and Stair work for the project; including all labor, materials, equipment and services typically associated with such work by standards of the industry as may be required to provide a complete, functional and aesthetically pleasing end product, acceptable to the General Contractor and Owner and appropriate for intended usage.

The word "provide" when used in these inclusions is intended to be inclusive of furnish, fabricate, deliver, receive, unload, store, install, hoist, erect, prepare substrate, protect, start-up, test, commission, clean, and any design & engineering as required or similar efforts, such that the material and / or system is complete and operational and in its permanent location ready to be accepted and used by the Owner.

**General**

1. This project is phased. Subcontractor is to refer to the CPM schedule and phasing diagram issued with the Contract Documents and provide appropriate manpower and mobilizations to support the schedule.
2. Subcontractor acknowledges that there is a mandatory 100% tie off program above six (6) feet with no exclusions for ironworkers or connectors. All catenary lines, lifelines or any other hardware to support this regulation during erection shall be included.
3. Provide all required welding equipment and welding power generation equipment. Welding equipment and distribution for own work shall be provided by this Subcontractor.
4. Subcontractor is to adequately protect adjacent areas and workers from welding splatter generated from own work. Provide fire watch, hot work permits, signage and fire extinguishers, at all times, during performance of own work.
5. Subcontractor shall provide welding certificates as specified and required.
6. Remove all dunnage, scrap and excess material daily which is utilized in the performance of the structural steel work.
7. Provide field touch-up of primer due to damage caused by shipping, installation, welding or bolting by this Subcontractor.
8. Provide all fireproofing scraping/removal using a wet method and clean up as necessary for steel installation. Fireproof patching will be by the Fireproofing subcontractor.
9. Provide rigging labor and equipment for hoisting of all items for own scope of work.
10. All materials are to be delivered to the jobsite on an as needed basis. Staging of materials are to be coordinated with the Hensel Phelps Superintendent. This is a "tight jobsite" with limited space. Coordination with other trades to accommodate access to stored materials is required.
11. Remove shop written piece markings from all materials in exposed ceiling areas.
12. Workspaces are to be left in "broom clean" condition at the end of every work day.

**BIM / 3D Model**

13. Subcontractor for this subsystem will be required to perform the design, detailing and as-builts in 3D BIM (Building Information Modeling). This includes scope as outlined below.
14. The model requirements include but are not limited to:
15. Design & detailing in 3D format in native software 2014/2015.
16. Architectural model will be developed using Revit 2015.
17. Coordination in Navisworks 2014/2015.
18. Subcontractor shall detail in native software and share electronic information in 3D AutoCAD .dwg 2014/2015 format (plus applicable Object enabler) or Revit and 2D shop drawings.
19. Model-to-Field and As-built Quality Control plan as per BIM execution Plan.

  
Contractor

  
Subcontractor

- 1 20. Subcontractor understands and accepts the proactive coordination effort required with other MEPF, structural,  
2 architectural and finish trades. HPCC will not tolerate a passive effort in which Subcontractor fails to pro-actively  
3 coordinate with other trades, finds the problem during construction, sends an RFI without a solution, and then  
4 requires a Change Order to fix it.
- 5 21. Not used.
- 6 22. Subcontractor is to conform to all modeling requirements shown in BIM execution plan & Responsibility Matrix as  
7 attached.
- 8 23. Not used.
- 9 24. Fabrication model to be used for shop drawing (& shop drawing submittal) and installation in the field (discuss if we  
10 ask for structural stamp included)
- 11 25. Monthly as-built documentation in 3D model for field conditions and modifications through RFIs.
- 12 26. Subcontractor shall include the costs of all software, drafting paper, supplies, copies, coordination review, submittal,  
13 approval, revisions and subsequent copies, scanners, plotters, workstations, etc. required in the development of  
14 the BIM and/or shop drawings.

#### 15 16 17 Structural Steel

- 18 27. In conformance with the Contract Documents, Subcontractor shall provide all management, labor, materials, tools,  
19 supplies, equipment and testing necessary to fully perform and complete all structural steel work as specified and  
20 shown in the Contract Documents for a complete installation. This includes, but is not limited to, installation of new  
21 WT's, HSS tubes, ledger angles, stiffening plates, etc.
- 22 28. Subcontractor shall install all tube steel and associated steel support to provide a complete stair support system as  
23 shown in the Contract Documents.
- 24 29. Provide the new W12's for the cooling tower support system on the roof.
- 25 30. Provide HSS tube steel and all associated steel components for the complete installation of structural supports for  
26 the Operating Room booms.
- 27 31. Subcontractor is to provide metal deck opening support as shown on the Contract Documents
- 28 32. There is an existing restaurant on Level 1 of the building that is to remain operational during construction. This  
29 requires that the fire sprinkler lines on Level 1 remain live during construction. The fire sprinkler system will be  
30 modified and lowered before the start of the structural steel work. Structural steel will be installed over the top of  
31 the sprinkler system. Protection of the existing system during steel installation will be the responsibility of this  
32 Subcontractor. The fire protection subcontractor will turn off the structural steel work zones daily.
- 33 33. Subcontractor is to provide dedicated fire watch for restaurant when structural steel scope is being installed on  
34 Level 1.
- 35 34. Subcontractor is to include coring of the hole and installation of the new shear studs as shown but not limited to  
36 details 6 and 8/S-301. Filling of the holes with non-shrink grout will be by the Concrete Subcontractor.
- 37 35. Subcontractor is to include the louver support steel at the new louver locations on Level 1 along gridline F as shown  
38 in detail 20/S-303. Subcontractor is to assume the following sizes: 40"x34", 28"x34", 20"x20".
- 39 36. Subcontractor is to furnish and install the ½" steel shielding plate and all associated attachments as shown in details,  
40 6 and 7/S-301 for the MRI suite.
- 41 37. Subcontractor is to include an allowance for ten (10) Tons of additional W - flange steel to be utilized at the discretion  
42 of Hensel Phelps. This allowance will be noted as a break out line item on the Schedule of Values. Any unused  
43 tonnage at the end of project will be deducted from the overall structural steel subcontract amount via a deductive  
44 Change Order.
- 45

#### 46 47 Metal Pan Stairs

- 48 38. Provide all management, labor, materials and equipment necessary for the fabrication, erection, installation, welding  
49 and bolt up of the metal pan stairs as shown in the Contract Documents. Scope includes, but is not limited to, the  
50 following: columns, beams, stringers, braces, plates, connections, angles, bolts, guardrails, handrail, wall rails,  
51 erection aids and all other miscellaneous accessories required for a complete stair installation.
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- 1 39. Subcontractor understands that the new stair will be tying into an existing stair and will take all precautions to protect  
2 the existing stair structure during the installation of the new work.  
3 40. Subcontractor should account for a minimum of two (2) mobilizations to install the stairs.  
4

5 **Metal Deck**  
6

- 7 41. Provide all management, labor, materials and equipment necessary to furnish and install metal deck as called for  
8 in the Contract Documents.  
9 42. Furnish and install all required infill deck as called for in the Contract Documents.  
10 43. Furnish and install decking at the new stair landing, located between column M and M.8  
11 44. Provide all layout for deck openings and deck edges.  
12

13  
14 **B.5 Exclusions - The following specific items are the only exceptions or exclusions to the Subcontract Agreement:**

- 15 45. Testing & Inspection (by Owner); however, re-test and re-inspection costs by this Subcontractor.  
16 46. Building permits and fees (by Owner); however, all other required permits and/or fees required for this  
17 Subcontractor's work are by this Subcontractor.  
18 47. 3rd Party Commissioning Agent or 3rd Party Test and Inspection Services (by Owner)  
19 48. Temporary toilets and hand wash facilities (by HP).  
20 49. Dumpsters (by HP).  
21 50. Non-structural metal framing (by Drywall)  
22 51. Fireproof Patching (by Drywall)  
23 52. Blowing off of steel deck (by  
24 53. Reinforcing steel for concrete (by  
25 54. Filling of the holes with non-shrink grout at new shear studs. (by  
26 55. Turn off the structural steel work zones daily. (by Fire Protection)  
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AC  
Contractor

"/  
Subcontractor

# Subcontract

## HENSEL PHELPS CONSTRUCTION CO. Contractor

**Issuing Office** • 226 Airport Parkway, Suite 150  
San Jose, CA 95110

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**Subcontractor** •

**Subcontract** • Concrete & Reinforcing

**Project** • Health Care Emeryville

**Project Number** • 0330100

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# SUBCONTRACT

THIS SUBCONTRACT is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, by and between

hereinafter referred to as the Subcontractor and Hensel Phelps Construction Co., a Delaware corporation, hereinafter referred to as the Contractor. **WITNESSETH:** That for and in consideration of the mutual promises and covenants herein contained, the Subcontractor and the Contractor agree as follows:

**SECTION A.** The Subcontractor covenants, promises and agrees to furnish all material and personal property and to diligently and fully perform all work hereinafter described for the construction of Health Care Emoryville, hereinafter referred to as the Project, to be located at \_\_\_\_\_, for the use and benefit of Health Care, hereinafter referred to as the Owner, in strict accordance with the Contract between the Contractor and the Owner entered into \_\_\_\_\_ and hereby made a part of this Subcontract by reference; all to the satisfaction of the Contractor, the Owner, and the representative authorized by the Owner to interpret and judge the performance of the aforesaid Contract and named therein as architect, engineer, contracting officer, or otherwise, when such representative shall have been designated as the Owner's Authorized Agent; and all of which shall be done in timely, faithful and strict compliance with this Subcontract and all the Subcontract Documents described and defined in Section D, Article 1, hereof and elsewhere herein.

**SECTION B.** The Subcontractor agrees to furnish all necessary management, supervision, labor, materials, tools, supplies, equipment, plant, services, engineering, testing and/or any other act or thing required to diligently and fully perform and complete the portions of the work described as follows:

**B.1 Not used.**

**B.2 General Scope Requirements**

Subcontractor has all necessary work, procedures, management, supervision, labor, materials, supplies, tools, plant, equipment, services, testing, engineering, and any other act or thing required to diligently and fully perform and complete the work as described or referenced in the following section(s) unless specifically excluded in section B.5 below:

1. H4611 – Prima Contract (includes General Conditions and General Requirements)
2. JIP Brochure
3. Six (6) Stop Quality Control Flow Chart
4. All applicable Codes and Regulations

**B.3 Specific Scope Requirements**

Subcontractor has all necessary work, procedures, management, supervision, labor, materials, supplies, tools, plant, equipment, services, testing, engineering, and any other act or thing required to diligently and fully perform and complete the work as described or referenced in the following section(s) unless specifically excluded in section B.5 below:

5. DP-1 100% Construction Documents including 'BC-1' revisions
6. DP-1 100% Specifications
7. CPM Schedule entitled 'September Logic Update'
8. Project Phase Diagram
9. Site Utilization Plan
10. BIM Execution Plan
11. Draft LEED Scorecard
12. BRFI's 1-16.
13. Section 02 41 19.13 – Selective Building Demolition (as applies)
14. Section 03 10 00 – Concrete Formwork (complete)
15. Section 03 20 00 – Concrete Reinforcement (complete)
16. Section 07 92 00 – Joint Sealants (as applies)
17. Section 03 30 00 – Cast-In-Place Concrete (complete)
18. Section 05 51 13 – Metal Pan Stairs (as applies)

AG  
Contractor

BC  
Subcontractor

**B.4 Inclusions:**

Your attention is specifically called to the following items. Subcontractor acknowledges that it would be impossible to identify and specifically list every inclusion for this Scope of Work, therefore, the following inclusions are listed herein in an effort to further define and clarify the scope of work described in the Contract, and are not intended to substitute the scope of work requirements in the Contract documents. Items omitted from this list but necessary for the proper performance of this Subcontractor's Scope of Work are included. Only the specifically listed exclusions in section B.5 below are excluded from this Scope of Work.

The intent of this Subcontract is to provide a complete scope of Concrete & Reinforcing work for the project; including all labor, materials, equipment and services typically associated with such work by standards of the industry as may be required to provide a complete, functional and aesthetically pleasing end product, acceptable to the General Contractor and Owner and appropriate for intended usage.

The word "provide" when used in these inclusions is intended to be inclusive of furnish, fabricate, deliver, receive, unload, store, install, hoist, erect, prepare substrate, protect, start-up, test, commission, clean, and any design & engineering as required or similar efforts, such that the material and / or system is complete and operational and in its permanent location ready to be accepted and used by the Owner.

19. Provide all labor, material and equipment to install all of the new concrete and reinforcing bars on the project as called for in the Contract Documents. This includes but is not limited to concrete slabs on metal deck, pads, curbs, and fill of metal pan stairs. Normal and Lightweight concrete are to be provided at locations as called for in the Contract Documents.
20. Drilling and doweling of rebar for new curbs and pads is to be included in this scope of work.
21. Provide concrete on the metal deck at the pop-up of the new stair. Reference details 4/S-350 and 20/S-351 for location.
22. Provide layout for new pad and curb locations to be roughened by the Demolition contractor.
23. Include blowing off and/or cleaning metal decks prior to placing concrete for the slab on metal decks.
24. Subcontractor is to include shoring of metal deck during concrete placement and curing activities.
25. Subcontractors' scope is to include placing all embedded items in the concrete elements included in this scope. Embedded items will be furnished by the responsible subcontractors.
26. Concrete mix designs are to be in accordance with the Contract Documents and are to be submitted and approved by the Engineer of Record.
27. Furnish and install the expanded polystyrene fill at the new and modified pads on the roof.
28. Subcontractor is to furnish and install the dry pack solid material as referenced in detail 6/S-300 and 8/S-301.
29. Furnish and install non-shrink grout at new shear stud locations as referenced in, but not limited to, details 6 and 8/S-301. Coring of the hole and welding of the shear stud to be by the Steel subcontractor.
30. All ordering of concrete material and placing of equipment is part of this scope and will be coordinated with Hensel Phelps' superintendent.
31. Furnish and install all rebar supports, bolstar, chairs, etc. to ensure proper concrete cover as required per the Contract Documents.
32. Furnish and install rebar templates that will be required for the proper placement of dowels.
33. Furnish all dowels that are to be welded to "W" steel members as shown and referenced in the Contract Documents.
34. Subcontractors scope includes roughening and cleaning of surfaces to receive new rebar. Subcontractor is also to include the furnishing and application of a bonding agent for the new rebar.
35. At existing metal deck locations, that are to be infilled with concrete, this Subcontractor is to include the removal of the existing closure plate on the slab before rebar installation. If the Subcontractor chooses to leave the closure plate in place then drilling and doweling at those locations is still the responsibility of this Subcontractor.
36. Subcontractor is responsible for protection of adjacent surfaces and finishes during installation of own work.
37. There is no concrete wash-out area provided on the project site. Subcontractor is to include provisions for off-site wash out/disposal of left over concrete from concrete trucks. As an option, the subcontractor may provide an onsite recycle bin lined with visqueen for washout. Include all debris off haul and disposal fees.

AB  
Contractor

DF  
Subcontractor

38. Rigging labor and equipment for hoisting, for the concrete and reinforcement scope of work is to be by this Subcontractor.
39. Provide all scaffolding, lifts and other personnel access items required to perform work under this scope.
40. Perform cleanup on a daily basis for all trash generated by own work. Area must be kept in "broom" clean condition at the end of each shift.
41. Provide all material expediting and shop drawings necessary to receive reinforcement on site by the date in the schedule. Reference the CPM schedule.
42. Fill eight (8) steel bollards with concrete. Bollards will be expansion anchored to the Level 1 slab and are 6" diameter by 4'-0" Tall.
43. ALLOWANCE: Two (2) tons of detailed, fabricated and installed reinforcement that will be used at the discretion of Hensel Phelps. The allowance is to include all direct and indirect costs associated with the work. Any portion of the allowance not utilized at the completion of this subcontract will be deducted from the overall subcontract amount via a deductive change order.
44. Provide temporary opening protection (safety railing and toeboards) at the floor slabs and roof slab openings.
45. Six (6) mobilizations are currently included for this scope of work.

**B.5 Exclusions** - The following specific items are the only exceptions or exclusions to the Subcontract Agreement:

46. Building permits and fees (by Owner); however, all other required permits and/or fees required for this Subcontractor's work are by this Subcontractor.
47. Special Tests & Inspections (by Owner); however, re-test costs by this Subcontractor.
48. Demolition of existing concrete (by Contractors).
49. Roughen slab at pad locations (by the Contractors).
50. Ref 6 and 8/S-301: Coring of the hole and welding of the shear stud (by ).
51. Welding of dowels at "W" Beam locations (by ).

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Contractor

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Subcontractor

## Subcontract

# HENSEL PHELPS CONSTRUCTION CO. Contractor

Issuing Office •	226 Airport Parkway, Suite 150 San Jose, CA 95110
•	
Subcontractor •	
Subcontract •	RF Shielding and Magnetic Shielding
Project •	Health Care Emeryville
Project Number •	• 1300500

This Subcontract consists of 19 pages numbered 1 of 19 through 19 of 19 and attachments numbered: 2A – 2I.

Please initial each page where indicated, affix authorized signature(s) and return 3 copies at once to the issuing office shown above.

- ☐ A copy executed on behalf of Hensel Phelps Construction Co. will be returned for your files.
- ☐ An additional copy is included to be forwarded to your bonding company.
- ☐ Please retain the copy identified as yours.

XB  
Contractor

MB  
Subcontractor

# SUBCONTRACT

THIS SUBCONTRACT is made and entered into this

by and between

hereinafter referred to as the Subcontractor and Hensel Phelps Construction Co., a Delaware corporation, hereinafter referred to as the Contractor. **WITNESSETH:** That for and in consideration of the mutual promises and covenants herein contained, the Subcontractor and the Contractor agree as follows:

**SECTION A.** The Subcontractor covenants, promises and agrees to furnish all material and personal property and to diligently and fully perform all work hereinafter described for the construction of Health Care Emeryville, hereinafter referred to as the Project, to be located at \_\_\_\_\_ for the use and benefit of Health Care, hereinafter referred to as the Owner, in strict accordance with the Contract between the Contractor and the Owner entered into \_\_\_\_\_ and hereby made a part of this Subcontract by reference; all to the satisfaction of the Contractor, the Owner, and the representative authorized by the Owner to interpret and judge the performance of the aforesaid Contract and named therein as architect, engineer, contracting officer, or otherwise, when such representative shall have been designated as the Owner's Authorized Agent; and all of which shall be done in timely, faithful and strict compliance with this Subcontract and all the Subcontract Documents described and defined in Section D, Article 1, hereof and elsewhere herein.

**SECTION B.** The Subcontractor agrees to furnish all necessary management, supervision, labor, materials, tools, supplies, equipment, plant, services, engineering, testing and/or any other act or thing required to diligently and fully perform and complete the portions of the work described as follows:

## B.1 Not Used

## B.2 General Scope Requirements

Subcontractor has all necessary work, procedures, management, supervision, labor, materials, supplies, tools, plant, equipment, services, testing, engineering, and any other act or thing required to diligently and fully perform and complete the work as described or referenced in the following section(s) unless specifically excluded in section B.5 below:

1. H4611 – Prime Contract (includes General Conditions and General Requirements)
2. JIP Brochure
3. Six (6) Step Quality Control Flow Chart
4. All applicable Codes and Regulations

## B.3 Specific Scope Requirements

Subcontractor has all necessary work, procedures, management, supervision, labor, materials, supplies, tools, plant, equipment, services, testing, engineering, and any other act or thing required to diligently and fully perform and complete the work as described or referenced in the following section(s) unless specifically excluded in section B.5 below:

1. DP-1 100% SD
2. DP-1 100% CD Structural and Make Ready Issued for Permit
3. DP-1 100% SD Schematic Design Specifications
4. DP-2 100% CD Construction Documents Plans and Specifications
5. CPM Schedule
6. Project Phase Diagram
7. Site Utilization Plan
8. BIM Execution Plan
9. Stanford Healthcare Standards
10. Philips Healthcare Pre-Order Site Preparation Support Document
11. Section 13 49 25 – MRI Shielding (Complete)
12. Section 06 10 00 – Rough Carpentry (as applies)
13. Section 08 11 13 – Hollow Metal Doors and Frames (as applies)
14. Section 08 14 16 – Flush Wood Doors (as applies)

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Contractor

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Subcontractor

- 15. Section 08 71 00 – Door Hardware (as applies)
- 16. Section 09 22 16 – Non-Structural Metal Framing (as applies)
- 17. Section 09 29 00 – Gypsum Board (as applies)
- 18. Section 09 51 00 – Acoustical Ceilings (as applies)
- 19. Section 09 65 00 – Resilient Flooring (as applies)
- 20. Section 13 49 00 – Radiation Protection (as applies)
- 21. Division 21 – Fire Suppression (as applies)
- 22. Division 22 – Plumbing (as applies)
- 23. Division 23 – HVAC (as applies)
- 24. Division 26 – Electrical (as applies)

#### B.4 Inclusions:

Your attention is specifically called to the following items. Subcontractor acknowledges that it would be impossible to identify and specifically list every inclusion for this Scope of Work, therefore, the following inclusions are listed herein in an effort to further define and clarify the scope of work described in the Contract, and are not intended to substitute the scope of work requirements in the Contract documents. Items omitted from this list but necessary for the proper performance of this Subcontractor's Scope of Work are included. Only the specifically listed exclusions in section B.5 below are excluded from this Scope of Work.

The intent of this Subcontract is to provide a complete scope of **RF Shielding and Magnetic Shielding** work for the project; including all labor, materials, equipment and services typically associated with such work by standards of the industry as may be required to provide a complete, functional and aesthetically pleasing end product, acceptable to the General Contractor and Owner and appropriate for intended usage.

The word "provide" when used in these inclusions is intended to be inclusive of furnish, fabricate, deliver, receive, unload, store, install, hoist, erect, prepare substrate, protect, start-up, test, commission, clean, and any design & engineering as required or similar efforts, such that the material and / or system is complete and operational and in its permanent location ready to be accepted and used by the Owner.

#### Design and BIM Phase

1. Upon selection your firm will be requested to provide preconstruction services. These services will begin upon Notice of Award and continue until the start of construction. These services will include design review, MEP coordination services and shop drawing development to be incorporated into the final approved Construction Documents. Subcontractor is to work closely with the designers during the preconstruction phase to develop details that will be incorporated into the final Documents.
2. This Subcontractor understands and affirms they are experienced in this type of project and shall include staff on the project consisting of onsite management and supervision that is qualified to properly manage this project. This Subcontractor understands and accepts the terms of the Subcontract and is prepared to manage the coordination, decisions, expediting and field performance necessary for a successful project.
3. Unless specifically included herein, no changes will be allowed for items, including the completion of details, to provide a complete, coordinated and fully functional system.
4. Subcontractor understands and accepts the proactive coordination effort required with other MEPF, structural, architectural and finish trades. HPCC will not tolerate a passive effort in which Subcontractor fails to pro-actively coordinate with other trades, finds the problem during construction, sends an RFI without a solution, and then requires a Change Order to fix it.
5. Subcontractor to participate in final coordinated RCP which is to be inclusive of all trades. Access panels to be modeled by MEPF in 3D.

#### Construction Phase

6. Provide a complete design-build MRI shielding system at floor, walls and ceiling of the MRI room shown on the 2<sup>nd</sup> Floor. This includes all costs associated with the design and engineering required to provide a full design to be integrated into the permit set of construction documents.
7. The MRI basis of design for the RF and Magnetic shielding is Phillips – Ingenia 3.0T Omega 62215, with Halo Ambient Lighting System.
8. Provide MRI shielding at or above attenuation levels required per the Specifications.
9. Provide all doors, windows, glazing, frames, hardware, thresholds, sills, waveguides, electrical filters and other associated accessories as required to maintain RF shielding in areas required. All installation shall be in compliance with ADA requirements and applicable fire rating requirements. Coordinate wood door finish to

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Contractor

MB  
Subcontractor

match adjacent doors with the door subcontractor  
this scope of work: Door 2313 and Window 2311.

The following doors are included in

10. Furnish and install the bottom shielding plate (magnetic shielding plate) as called for in the Philips Shielding Design documents.

11. Provide an upgraded patented PDC automatic latching system to include a Stanley Magic Force automatic door operator.

12. The RF door to be provided shall include an STC-41 acoustical rating and shall come with the contemporary finish.

13. Provide formal field training, along with written instruction, for subsequent trades for their project specific installations and details.

14. Provide the RF shielded floor assemblies with an integral protective layer. Installation of the final floor covering will be by the Flooring Finish Subcontractor.

15. Provide M36 steel shielding at the underside of the MRI Suite floor slab. Subcontractor understands this work will be installed after concrete installation. This work shall occur prior to installation of overhead work activities on Level 1, and may require a separate mobilization.

16. Provide all waveguide air vents of size to maintain airflow characteristic for the room systems. Furnish and install additional MRI treatment at duct penetrations as necessary. Coordinate with all Trades / Subcontractors on size, type, and location of all penetrations and attachments. Include RF mesh gaskets, connection plates, galvanized strips, galvanized angles and all associated fasteners as necessary to maintain MRI integrity. This Subcontractor shall establish final requirements for duct penetrations during the design phase and coordinate with the HVAC subcontractor for installation.

17. Provide all electrical line filters as required to maintain RF integrity (complete with all components and accessories). This includes the electrical line filters for all, power, lighting, telephone, data, thermostat, humidistat, intercom, fire alarm and similar systems. Provide two (2) custom filters for LED lights to be designed and coordinated with the electrical subcontractor to provide the most efficient filter array.

18. Provide RF waveguide filters at all pipe penetrations including, but not limited to sprinkler system and medical gases.

19. Provide isolation couplers for cable tray and seismic supports. Coordinate with the electrical subcontractor to provide the most efficient layout.

20. Provide all support or backing for all filter devices (no supports or backing will be provided by other subcontractors for MRI shielding work).

21. The exterior skin bay between grid lines 6 and 7 along grid line B on level 2 will be removed for the installation of the MRI Magnet. Reinstallation of the exterior skin will occur in (tentatively). Subcontractor has accounted for an additional mobilization to install shielding after the equipment access point has been installed.

22. Provide MRI shield testing with reports by an independent test agency. A representative shall be on site during testing. The first test shall be conducted upon completing the MRI shield installation to confirm that the system complies prior to starting finishes. All shielding corrections and required retesting to achieve necessary results is included. The second test shall occur just prior to building completion and vendor startup to confirm that the MRI shielding system complies upon project turnover.

23. Subcontractor is to include all costs required to deliver, offload and distribute materials and equipment for its own scope of work. No forklift or other hoisting equipment will be provided by Hensel Phelps.

24. Perform cleanup on a daily basis of all trash generated by own work. Area must be kept in "broom" clean condition.

25. Storage of materials shall be in a manner that does not expose them to damage and moisture. Storage of materials shall be as approved by the Hensel Phelps Superintendent.

**B.5 Exclusions** - The following specific items are the only exceptions or exclusions to the Subcontract Agreement:

1. Building permits and fees (by HP); however, all other required permits and/or fees required for this Subcontractor's work are by this Subcontractor.
2. Special Tests & Inspections (by Owner); however, re-test costs by this Subcontractor.
3. Third party Commissioning Agent (by Owner)
4. Installation of doors and hardware not called for in Inclusions below (by Subcontractor)
5. Concrete substrate (by )
6. Flooring (by Flooring Subcontractor)
7. Drywall within MRI Suite (by Drywall)

Contractor

Subcontractor

- 1 8. Finished ceiling within MRI Suite (by Ceiling Subcontractor)  
2 9. Lead shielding (by Drywall)  
3 10. Plywood substrate for walls and ceilings within MRI Suite (by Drywall)

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