Transbay Transit Center
San Francisco, CA
CM/GC Contract No. 08-04-CMGC-000
Project No. 30100

BID PACKAGE TG07.3
ADDENDUM #7

DATE: 01/16/2015

TO: All Qualified Bidders

FROM: Webcor/Obayashi Joint Venture

BID DUE DATE: **January 22, 2015 at 2:00 p.m.**

COMMUNICATION WITH WEBCOR/OBAYASHI JOINT VENTURE

At no time during the bid process (defined as the time between issuance of the IFB until award of Subcontract to Trade Subcontractor) shall Bidders contact any person(s) or staff of the TJPA, TJPA Program Management/Program Controls (PMPC) team, Webcor/Obayashi Joint Venture, CM Oversight (CMO), or other TJPA Consultants regarding the IFB. The only contact is for submission of questions using the contact directions as described in Exhibit A, Section III. "Communication with Webcor Obayashi Joint Venture".

The QBD and Pre-bid Request for Substitution submission time frame expired on **Tuesday, December 30, 2014 at 2:00 p.m.**

The Value Engineering (VE) Proposals were due on **Thursday, January 8, 2015 at 2:00 p.m.**

Bids are due on **Thursday, January 22, 2015 at 2:00 p.m.**

Reference the Project Bidding Manual, Section III.B.1 regarding document availability and how to obtain the documents.

MODIFIED DOCUMENTS PER ADDENDUM #7

The items listed below make up the TG07.3 – Miscellaneous Metals Bid Package Addendum #7. This Addendum shall supersede all previously issued Bidding Documents. All other conditions and requirements remain unchanged.

a. Exhibit A – Trade Subcontractor Bid Package Manual and Forms – Subcontracts #301000703, dated 1/16/2015.

    1) Revised Section IV. "Scope of the Package and Bid Item Information"; 2. General Work, and 3. Base Bid Item Scope

    2) Revised Section V. "Construction Schedule"

    3) Revised Section VII. "Contract Document List"

    4) Revised Attachment 2. "Logistics"

b. Project Bidding Manual – Rev. 29, dated 1/13/2015

c. Exhibit I – Schedule, dated 01/13/2015

d. Questions on Bidding Documents (QBD) Responses

    1) The attached IFB Questions and Answers are incorporated in the Bid Documents by this Addendum.

END OF ADDENDUM #7

TG07.3 – Miscellaneous Metals

Questions are numbered in the order received. Numbers missing in the sequence will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-003	9/23/2014	Sheet A1-2604, Sheet A1-6014, Sheet A1-8680	05 75 00 - Architectural Metal	REFERENCE: Sheet A1-2604, Sheet A1-6014 (ASI 127 dated 9/12/14) Sheet A1-8680 (ASI 124 dated 8/18/14) Specification Section 05 75 00 2.4 E (ASI 127 dated 9/12/14) Sheet A1-2604 and Sheet A1-6014 of ASI 127 call out the Roof Park Perimeter Rail to be Stainless Steel and references Sheet A1-8680. Sheet A1-8680 has been deleted per ASI 124. Furthermore, Specification Section 05 75 00 2.4 E calls out this railing to be painted hot dipped galvanized rails and posts. Please clarify the rail material and associated references.	Notes on sheets A1-2604 and A1-6014 will be revised to "hot dip galvanized steel painted railing." All notes of materials on sheet A1-8685 will be revised from “stainless steel” to “hot dip galvanized steel painted components” to match Specification Section 05 75 00.

TG07.3 – Miscellaneous Metals

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set, or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-001	8/27/2014			TG07.3 Exhibit A, 3. Base Bid Item Scope, Inclusions, Item 7 references “chain link fences”. No requirements have been provided for chain link fences at slab openings previously shown as guardrails, but changed to chain link fences in ASI 119. Please provide the requirements for the reference chain link fences.	Furnish and install a 6’-0” tall, galvanized, chain-link fence. Fence posts are to be wedge-anchored into the slab. Design the fence to resist a minimum of 200 pounds of overturn force.
TG07.3-005	9/23/2014	A1-7585		REFERENCE: Detail 8/A1-7585 (ASI 127, dated 9/12/14) Detail 8/A1-7585 of ASI 127 indicates structural for elevator machinery support and elevator machinery support locations are to be verified by elevator consultant. Structural does not identify the elevator machinery support and the location has not been provided. Please provide structural information and location for the elevator machinery support.	Structural information for detail 8/A1-7585 can be found on S1-7101. Final location of the elevator machinery must be coordinated with elevator contractor.
TG07.3-007	10/7/2014			[Bidder] requests a three-week bid date extension on this project.	Please see TG07.3 Exhibit A, Addendum 4, Section II. – Key Dates for Bidding Process, Package Timeline, for revised package timeline. The revised bid date is Wednesday, November 19, 2014, at 2:00 pm.

TG07.3 – Misc. Metals

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set, or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-005	9/23/2014	A1-7585		REFERENCE: Detail 8/A1-7585 (ASI 127, dated 9/12/14) Detail 8/A1-7585 of ASI 127 indicates structural for elevator machinery support and elevator machinery support locations are to be verified by elevator consultant. Structural does not identify the elevator machinery support and the location has not been provided. Please provide structural information and location for the elevator machinery support.	Structural information for detail 8/A1-7585 can be found on S1-7101. Final location of the elevator machinery must be coordinated with elevator contractor.
TG07.3-007	10/7/2014			[Bidder] requests a three-week bid date extension on this project.	Please see TG07.3 Exhibit A, Addendum 4, Section II. – Key Dates for Bidding Process, Package Timeline, for revised package timeline. The revised bid date is Wednesday, November 19, 2014, at 2:00 pm.

TG07.3 – Misc. Metals

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-002	9/23/2014	Sheet A1-2207, Sheet A1-6014	32 31 13	REFERENCE: Sheet A1-2207 (ASI 119 dated 6/20/14) Sheet A1-2207, Sheet A1-6014 (ASI 127 dated 9/12/14) A1-2207 of ASI 119 changed the guardrails around openings at Lower Concourse level to chain link fences. Sheet A1-2207 and Sheet A1-6014 of ASI 127 show guardrails around openings in lieu of chain link fences. Please confirm guardrails are to be installed around openings in the Lower Concourse deck as shown on Sheet A1-2207 and Sheet A1-6014 of ASI 127.	VE Item number 44 (ASI 119) calling for chain-link fence in lieu of guardrails around openings at the Lower Concourse shall be included as the base price in the bid.
TG07.3-004	9/23/2014	Detail 2/A1-8710		REFERENCE: Detail 2/A1-8710 (ASI 119 dated 6/20/14) Detail 2/A1-8710 (ASI 121 dated 7/18/14) Detail 2/A1-8710 (ASI 127 dated 9/12/14) Detail 2/A1-8710 of ASI 119 calls for a ¼" steel plate protection under roadway and curb at the train box lid. Detail 2/A1-8710 of ASI 121 and ASI 127, call for a 1" thick steel plate protection under roadway and curb at the train box lid. Please confirm the steel plate required under roadways and curbs is to be 1" thick per ASI 127.	VE Item number 42 (ASI 119) calling for installation of ¼-inch steel plate under the roadway and curbs in lieu of 1-inch-thick steel plate at the Ground Floor Level shall be included as the base price in the bid.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-006	9/23/2014	A1-7007, A1-7022, A1-7106	05 50 00	REFERENCE: Detail A/A1-7007 (ASI 119 dated 6/18/14) Detail A/A1-7007 (ASI 127 dated 9/12/14) Details A & B/A1-7022 (ASI 119 dated 6/18/14) Details A & B/A1-7022 (ASI 127 dated 9/12/14) Details A & B/A1-7106 (ASI 119 dated 6/18/14) Details A & B/A1-7106 (ASI 127 dated 9/12/14) 1.) Stair 304 Detail A/A1-7007 of ASI 119 calls out for the checker wall plate to be deleted. Detail A/A1-7007 of ASI 127 calls out for the check wall plate to be installed. 2.) Stair 603 Details A & B/A1-7022 of ASI 119 calls out for the checker wall plate to be deleted. Details A & B/A1-7022 of ASI 127 calls out for the check wall plate to be installed. 3.) Stair 301 Details A & B/A1-7106 of ASI 127 calls out for the check wall plate to be deleted. Details A & B/A1-7106 of ASI 127 calls out for the check wall plate to be installed. Please confirm checker wall plate is to be installed within Stair 304, 603, and 301.	Checker wall plate (VE Item 43, ASI 119) shall not be installed.

TG07.3 – Miscellaneous Metals

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-012	10/29/2014			Does new Addendum Dwg.'s replace existing SKA Dwg.'s? If not; Can you please update drawings to include SKA information?	Sketch revisions (SKAs) will only supersede previous sketches. Sheet revisions will only supersede previous sheets. All secondary mitigation/value engineering (VE) items were issued as SKAs in ASI-0119, ASI-0122, and ASI-0124. All secondary mitigation VE items have been documented as red or blue markups, clearly identified with revision clouds and noted with VE item ID numbers, on top of the previously issued IFC/Addenda drawings. Secondary mitigation VE items are based on frozen-in-time backgrounds. Only information in the clouded areas with VE item ID numbers is relevant on the sketches. See the narratives issued with the ASIs for additional information, clarification and description of VE items. There are other clouded revisions, without VE item ID numbers, on the secondary mitigation VE sketches that are on the backgrounds used for the sketches. These clouded areas without VE item ID numbers are not relevant to the VE content. At this time, the drawing sheets cannot be updated to include SKA information.
TG07.3-013	10/29/2014			Where can I find QBDs that pertain to BP TG07.3?	QBD responses are posted on the TJPA website on the relevant tradework package web page (http://transbaycenter.org/rfp/miscellaneous-metals).
TG07.3-015	10/29/2014		Exhibit "A" - pg. 10	Are we responsible for spec sections not listed?	All work required by TG07.3 Exhibit A shall be performed in conformance with the appropriate specification, whether specifically listed as a primary specification or not.

TG07.3-016	10/29/2014		05 50 00	Please confirm if these scope items are included or excluded from BP: TG07.3 Misc. Metals: 1. Unistrut Framing 2. Expanded Steel Mesh for Gypsum Board Partition 3. Security Screens 4. Elevator Pit Divider Screens 5. Pipe and Duct Protection 6. Manhole Covers	1. Unistrut framing associated with the work described in TG07.3 Exhibit A is included in the work of TG07.3. Unistrut framing required for the support of other Trade Subcontractors' work is not included in the TG07.3 scope of work unless identified in TG07.3 Exhibit A. 2. Expanded metal mesh specifically called out within a wall type is not included in the TG07.3 scope of work. 3. Security screens are included in the work of TG07.3. 4. Elevator pit divider screens are not included in the work of TG07.3. 5. Pipe and duct protection is included in the work of TG07.3. 6. Manhole covers are not included in the work of TG07.3.
TG07.3-017	10/29/2014		05 60 00	Please confirm if these scope items are included or excluded from BP: TG07.3 Misc. Metals: 1. Park Level Decorative Utility Vault Lift Out Lid 2. Stainless steel liners for trench drains	1. Park level decorative utility vault lift-out lids are not included in the work of TG07.3. 2. Stainless steel liners for trench drains are not included in the work of TG07.3.
TG07.3-020	10/29/2014		Bid Form	Are you looking for an ADD? Per spec 011030/APE; Alternate No. 10 is a deleted scope.	Alternate No. 10 has been accepted as part of the base bid scope of work and therefore, the façade access track has been deleted. Additive Alternate 10 will be deleted from the bid form in TG07.3 Exhibit A.
TG07.3-022	10/29/2014		2.5, K. 05 50 00	Is this steel part of the seismic joint bid package?	Steel shown to be part of a fire-rated or acoustical assembly is not included in the work of TG07.3. If steel is required, but not part of a fire-rated or acoustical assembly, it is included in the work of TG07.3.
TG07.3-023	10/29/2014		Exhibit A - E. 2. Exclusions	Excluded items No. 10,11,12,16,19,20,22 and 23 are vague; Can I assume all supporting components to these items are also excluded?	Components directly supporting the items called out in Exclusions 10, 11, 12, 16, 19, 20, 22 and 23 are not included in the work of TG07.3.
TG07.3-024	10/29/2014		Exhibit A, Inclusions, Item 37	Regarding the scheduling of this scope, will we have enough time to provide this framing before concrete is poured in place? Will we need to be there the same time structural steel is being installed to meet schedule?	Steel and concrete work is currently under way. Therefore, not all material provided by TG07.3 will be able to be installed prior to pouring of concrete. The work of TG07.3 must be installed per the project schedule, whether it is installed concurrently with structural steel or not.

TG07.3-026	10/30/2014	SKA-3890 (page 2), Detail 2	05 75 00	Is the "Roof Park Railing" part of Bid Package TG07.3?	Yes, the Roof Park Railing is included in the work of TG07.3.
TG07.3-027	10/30/2014	10/A1-8717	05 50 00	Is the 1/8" SS bent plate part of Bid Package TG07.3? If so; please provide spec and how its attached to concrete.	Per ASI 127, detail 10/A1-8717 bent plate has been deleted.
TG07.3-028	10/30/2014	SKA-3666	05 50 00	Is the galv. steel bollard part of Bid Package TG07.3?	Steel bollards are not included in the work of TG07.3.
TG07.3-030	10/30/2014	A1-9303		Is the steel shown part of Bid Package TG07.3?	Miscellaneous metal to make and support the air vents is not included in the work of TG07.3.
TG07.3-033	10/30/2014	3 & 6/A1-9321	05 75 00	Is the "Queue Rail" part of Bid Package TG07.3?	Queue rails are included in the work of TG07.3.
TG07.3-034	10/30/2014	A1-9322	05 50 10	Is the "Galv. Steel Framing" part of Bid Package TG07.3?	The galvanized steel framing within the fire valve cabinet is not part of the work of TG07.3.
TG07.3-035	10/30/2014	3 & 5/A1-7829	05 50 00	Is the "bent plate support" and angle above part of Bid Package TG07.3? If so, please provide dimensions and how to attach to wall.	The bent plate support shown on 3/A1-7829 is not included in the work of TG07.3.
TG07.3-037	10/30/2014	4/A1-7861, 2/A1-7864, All details/A1-7870	Exhibit A	"Facade Access Track": Please explain what is part of Bid Package TG07.3? What steel are we responsible for and please provide information how to attach (details or specs).	Refer to the response to QBD TG07.3-020.
TG07.3-038	10/30/2014	3 & 6/SKA-3767	05 53 00	Is the grating shown part of Bid Package TG07.3?	Grates for ladder landings, including the grate shown on details 3 & 6, are included in the work of TG07.3.
TG07.3-039	10/30/2014	5 & 6/S1-5032	05 50 00	Is the "night closure" support part of Bid Package TG07.3?	Night closure support that is integral to a "W" system is not included in the work of TG07.3. Night closure support that is not integral to a "W" system is included in the work of TG07.3.
TG07.3-040	10/30/2014	6/S1-9052		Is the "pulling eye" part of Bid Package TG07.3?	No, the pulling eye as shown on 6/S1-9052 is not included in the work of TG07.3.

TG07.3 – Miscellaneous Metals

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

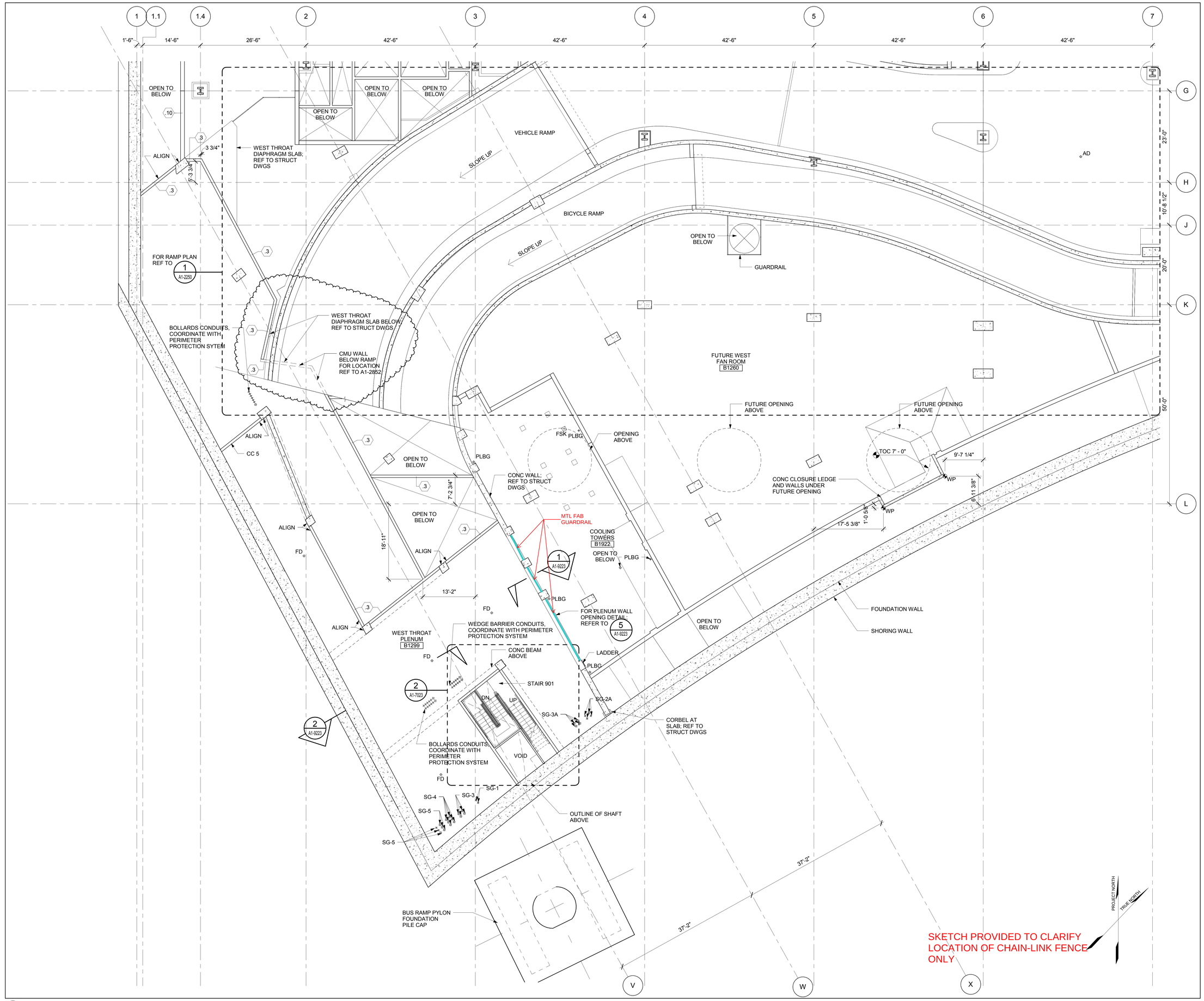
Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-008	10/24/2014		05 50 00	REFERENCE: Specification Section 05 50 00 (ASI 127 dated 9/12/14) Specification Section 05 50 00 2.5 P 7 Metal Fabrications calls out for security screens to be powder coated. No specification has been provided for powder coating. Please provide a specification for powder coating.	The product is pre-finished and does not require separate powder coating specification. Revise Specification Section 05 50 00 2.5.P.1 to read: Complete with prefinished, hot dipped galvanized steel H.S.S. and angle frame, mesh with #10 gage wire, fasteners, clips to heights and widths as shown on drawings. Revise Specification Section 05 50 00 2.5.P.7 to read: Color: Machinery Gray.
TG07.3-009	10/24/2014		05 50 00	REFERENCE: (ASI 127 dated 9/12/14) Specification Section 05 50 00 Specification Section 05 50 00 2.8 B Metal Fabrications calls out for metal fabrications to be shop painted. No colors have been provided for shop painting of metal fabrications. Please provide the colors for shop painting of metal fabrications.	For Specification Section 05 50 00, add the following revisions: [1] 2.5.Q.4. Color: PT-11 (Black) [2] 2.5.R.4. Color: PT-11 (Black) [3] 2.5.U.9. Color: PT-3 (to match Benjamin Moore BM 1548) [4] 2.5.X.3. Color: PT-10 (Traffic Yellow) [5] 2.5.Z.2. Color: PT-10 (Traffic Yellow)
TG07.3-011	10/30/2014	L1-2302 thru 2307	Exhibit A 05 53 00	Is the "Fresh Air Inlet Grate" part of Bid Package TG07.3? If so; where can I find a detail?	Items identified as "Fresh air inlet grate – SED" on L1-2302 through L1-2307 are not included in the work of TG07.3.
TG07.3-019	10/29/2014		05 50 10	Where can I find the spec section 087100?	There is no Specification Section 08 71 00. There is a typing error in Specification Section 05 50 00 paragraph 1.1.A.3. It is supposed to read section 08 71 10 (not 08 71 00). In addition, paragraph 1.1.A.3 should be deleted from 05 50 00, and added to section 05 75 00 – 1.1.A.17.
TG07.3-025	10/29/2014		SKA-3610 05 50 00	Is the "Metal Plate" below floor part of Bid Package TG07.3? If so; Please provide design intent, material dims and information how to install.	The metal stiffener plate at the wide flange below the guardrail is not included in the work of TG07.3.

TG07.3-029	10/30/2014	A1-9223, 4/A1-7027	05 50 00	Is there railing or chain link fence at opening?	The Guard rail shown on A1-9223 is a permanent guard. It is metal fabrication and not chain-link fence. Note VE Item ID No. 44, regarding eliminating guard rails, “are replacing them with chain-link fence” applies only to future stair, elevator, and escalator openings. All other guard rails are metal fabrications. See also SKA 4286 for clarification.
TG07.3-031	10/30/2014	2 & 5/A1-9314		Is the "4x4x1/8" part of Bid Package TG07.3? If so; please provide spec and how to attach.	The 4x4x1/8 galvanized bent plate shown on Details 2 & 5/A1-9314 is not included in the work of TG07.3.
TG07.3-042	10/30/2014		Exhibit A, Page 12 / Item #21 05 51 00	Is this scope the same as Item #37 (on page 13?) If not; Please clarify locations and detail?	No, Inclusions 21 and 37 are not the same. As an example, see Detail 9/A1-0025, and the remaining contract documents for locations.
TG07.3-043	10/30/2014		Exhibit A, Page 12 / Item #22 05 50 00	Please explain what "third party testing required for this scope of work" would be? Where can I find the details on this?	Third-party testing is required for work performed that requires testing not specifically identified as the responsibility of the owner, but is required by the contract documents. An example of this testing would be Specification Section 01 80 50 3.3 B.
TG07.3-044	10/30/2014		Exhibit A, Page 12 / Item #23 05 50 00	Please provide locations and details to clarify scope.	Item 23 includes miscellaneous metal support at the top of concrete walls. Examples of this are on Sheet S1-9051 (refer to scoping drawings for examples).
TG07.3-045	10/30/2014		Exhibit A, Page 13 / Item #26 05 50 00	Please provide locations and details to clarify scope.	Item 26, steel plates for utility pads, is required at various utility pad locations. Examples of these plates can be found on Detail 1/A1-3001.
TG07.3-046	10/30/2014		Exhibit A - Page 13 / Item #30	Please provide locations where "scraping of fire proofing" will be needed? Please provide cost to TG16.8 to replace it.	Scraping of fire proofing will be required wherever fireproofing is installed prior to the installation of the work of TG07.3 being installed. Reference the contract documents for locations of fireproofing. Contact TG16.8 Fireproofing (Clayton National 480-268-7780) for information on patching.
TG07.3-047	10/30/2014		Exhibit A, Page 13 / Item #35 05 50 00	Is this scope different from Item #11? If so; please provide locations and details.	Items 11 and 35 are not identical. Locations on the documents show miscellaneous metal supporting countertops (Detail 3/A1-9067), and call out vanity counter support (Detail 7/A1-9040).
TG07.3-048	10/30/2014		Exhibit A, Page 13 / Item #36	Is this scope still needed? If so; please provide locations and details.	Yes, bus crash barrier cover plates are required. See A1-8893 for examples.

TG07.3-053	10/30/2014		Exhibit A, Page 12 / Item #7	[Bidder] does not typically fabricate or erect fences. Please provide locations, specs and details for this scope?	Sample fence locations are within IDF closets, and around floor openings at the Lower Concourse Level. For fence requirements, see Specification Section 05 50 00 for mesh fences/security screens, and QBD TG07.3-001 for chain-link fence requirements. See Sheet A1-9338 and remaining contract documents for security screen details.
TG07.3-055	10/30/2014	1/A1-9255	05 51 00	Please confirm if HSS framing is part of Bid Package TG07.3? If so; please provide detail and locations.	HSS framing as shown on ASI 127 Detail 1/A1-9255 is not included in the work of TG07.3.
TG07.3-056	10/30/2014		Exhibit A 05 53 00	Is there any metal deck in Bid Package TG07.3? If so; please provide location.	Refer to specific inclusions within TG07.3 Exhibit A, IV Scope of the Package and Bid Item Information, 3. Base Bid Item Scope for inclusions requiring metal deck (see Inclusions 19 and 41 for examples).
TG07.3-057	10/30/2014	A1-7006, A1-3101	05 50 00	Is there wall plate on wall along line D.8 per 1/A1-7006? Wall plate not shown in elevation B/A1-3101. Please advise.	Reference to wall plate shall be removed from sheet A1-7006. Detail B/A1-3101 is correct.
TG07.3-066	11/4/2014	Detail 4/A1-7502		REFERENCE: Detail 4/A1-7502 (ASI 119 dated 6/18/14) Detail 4/A1-7502 calls for a PTD L-Shape Enclosing Profile. Requirements for the enclosing profile in Detail 4/A1-7502 have not been provided. Please provide the requirements for the enclosing profile depicted in Detail 4/A1-7502	See attached Sketches SKA-4287 and SKA-4288 for information.
TG07.3-067	10/30/2014	1/A1-7513	05 51 00	Is the HSS 18x6 at structural floor part of Bid Package TG07.3?	The HSS 18"x6"x3/8" PT HD Galv stair guardrail support as shown on 1/A1-7513 is not included in the work of TG07.3.

TG07.3-068	10/30/2014	1/A1-7310, 6/A1-9306	05 50 00	Is the guardrail called out stainless steel or (prime painted) steel? Is all "Cane Rail" (prime painted) steel?	Drawing A1-7310 - Guardrails are now painted: Shop primed (05 50 00) and site painted (09 91 00). - Stair handrails: Illuminated Stainless steel as shown on drawing. Drawing A1-9306 The "Cane Rail" is now painted per ID-20: Shop primed (05 50 00) and site painted (09 91 00).
TG07.3-069	10/30/2014	2/A1-7304, 1/A1-7553		Is the "Temp SS Guardrail" part of Bid Package TG07.3	The "Temp. SS guardrail" / "SS Tube Railing" as shown on Detail 2/A1-7304 and Detail 1/A1-7553, respectively, is included in the work of TG07.3.

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.



1 A1-2000 LOWER CONCOURSE MEZZANINE LEVEL ZONE 02/10 FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4 8 16 24
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16

Key Map

N

REVISIONS

NO.	DATE	DESCRIPTION	BY
0	03/31/14	ISSUED FOR CONSTRUCTION	GM
1	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
2	09/19/14	PER ASI No. 0127	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
WEST THROAT + 7' - 0" SLAB
FLOOR PLAN

ARCHITECT / ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
P. MACPHAIL	W.R. BRADLEY
DRAWN BY: S. PALAZOV	DATE: 09/12/2014

SCALE	SIZE	FACILITY NO.	REVISION
1/8" = 1'-0"	E	140	2

SHEET NUMBER
SKA - 4286

SEQUENCE NUMBER
of

A1-2252

10/09/14 3:28:04 PM

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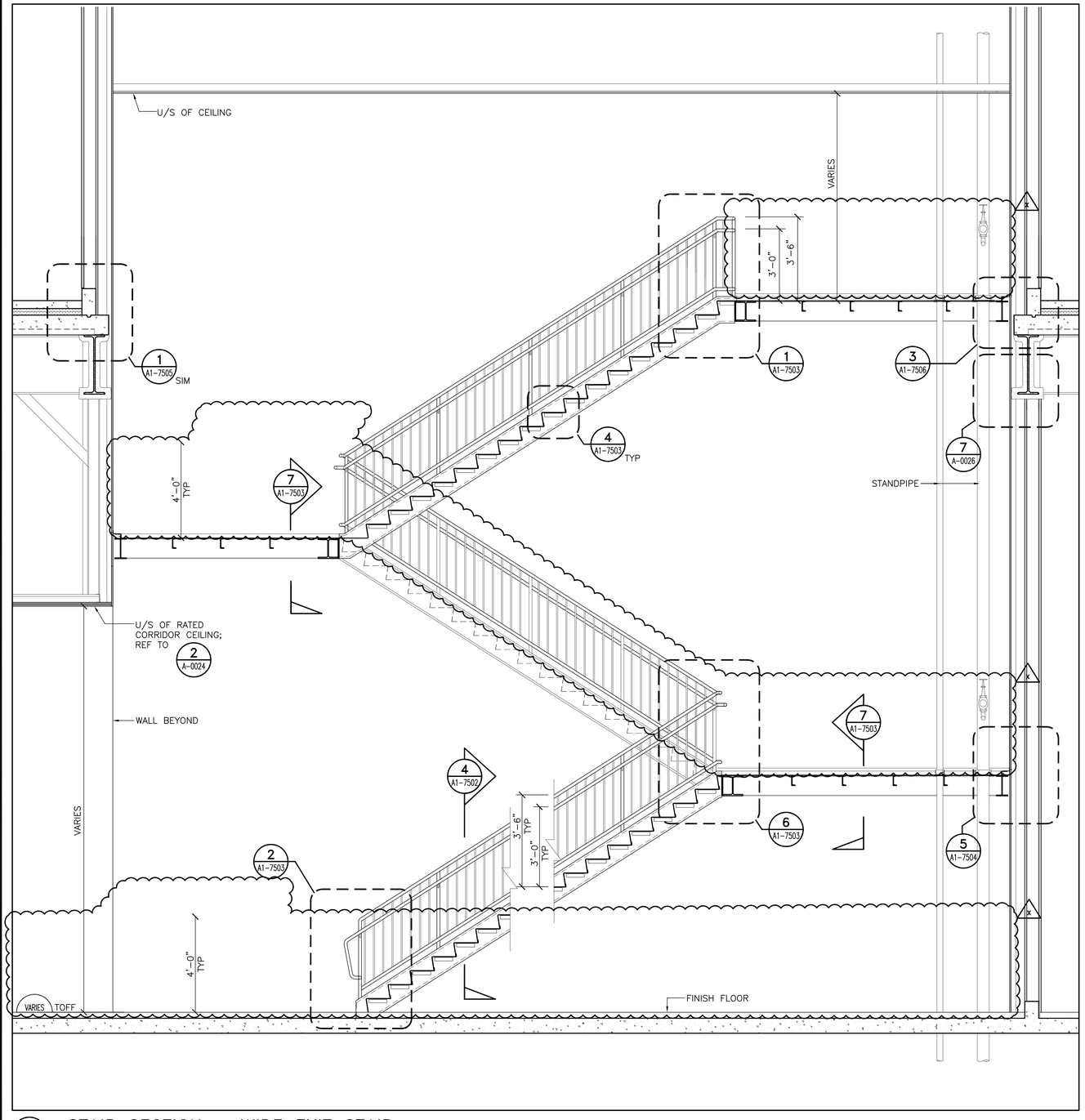
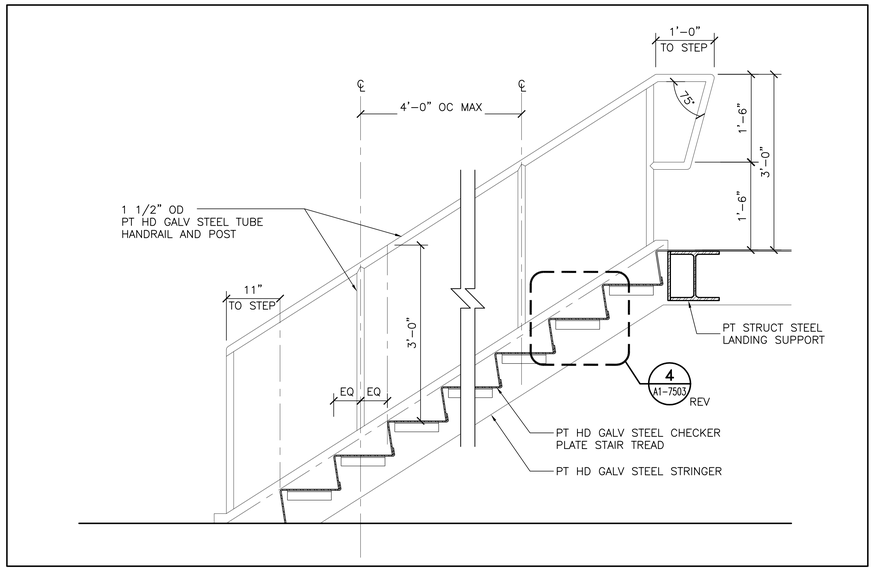
BASED ON A1-2252



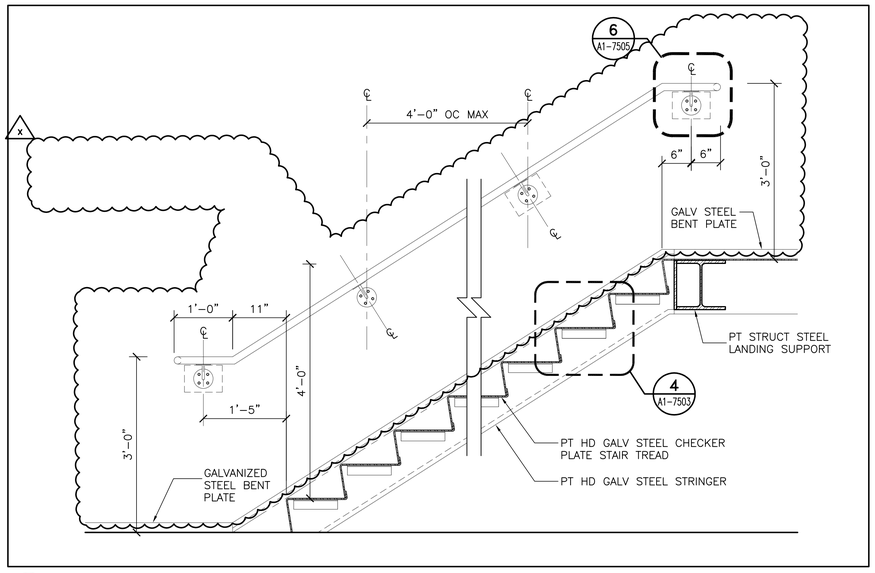
1 A1-7502 STAIR SECTION – WIDE EXIT STAIR
SCALE: 1/2" = 1'-0"

0 1 2 4 6
SCALE IN FEET



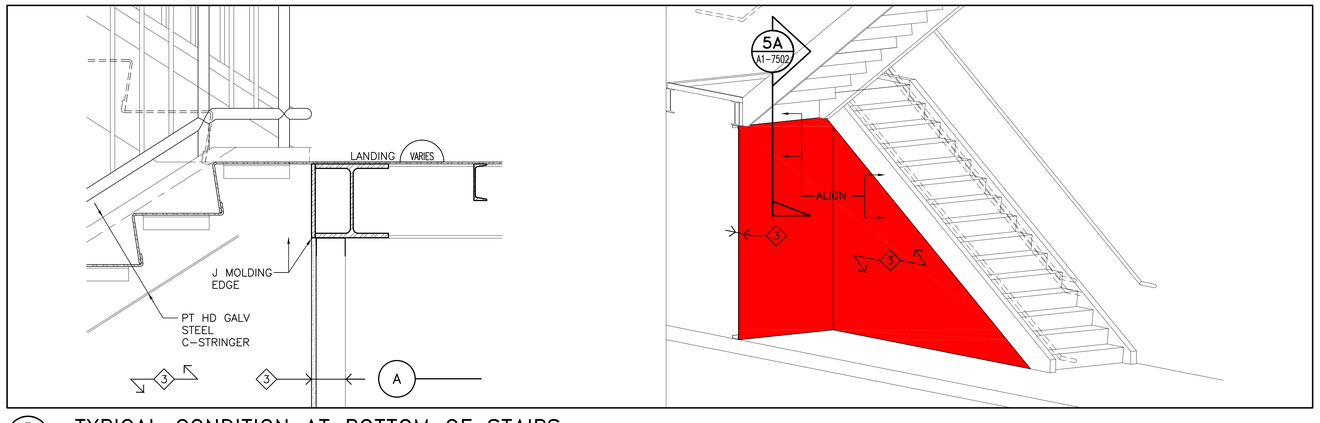
2 A1-7502 INTERMEDIATE HANDRAIL ELEVATION
SCALE: 1" = 1'-0"

0 1/2 1 2 3
SCALE IN FEET

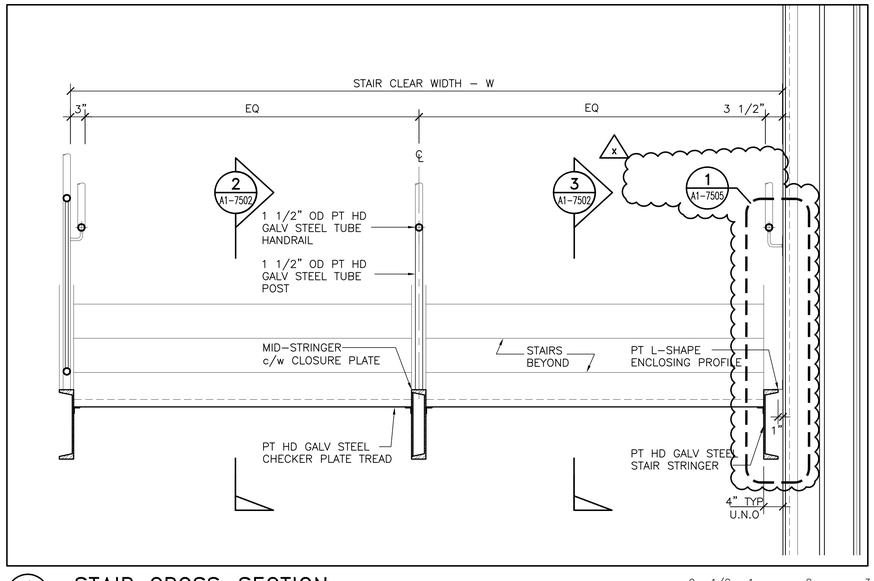


3 A1-7502 WALL MOUNTED HANDRAIL ELEVATION
SCALE: 1" = 1'-0"

0 1/2 1 2 3
SCALE IN FEET



5 A1-7502 TYPICAL CONDITION AT BOTTOM OF STAIRS
SCALE: 1-1/2" = 1'-0"



4 A1-7502 STAIR CROSS-SECTION
SCALE: 1" = 1'-0"

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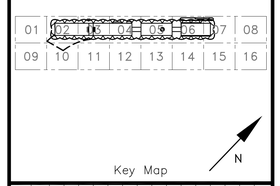
SCALE IN FEET

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM

REVISIONS

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: TYPICAL STAIR DETAILS

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED: PRINCIPAL ARCHITECT — G. METZGER
APPROVED: PROJECT MANAGER — S. ROTT
APPROVED: PROJECT MANAGER — E. DEL ANGEL
DESIGNED BY: D. DRON — CHECKED BY: W.R. BRADLEY
DRAWN BY: C. MATTHEWS — DATE: 03/31/2014
SCALE: AS NOTED — SIZE: E — FACILITY NO.: 140 — REVISION: 0
SHEET NUMBER: SKA-4287 — SEQUENCE NUMBER: __ of __

BASED ON SHEET A1-7502

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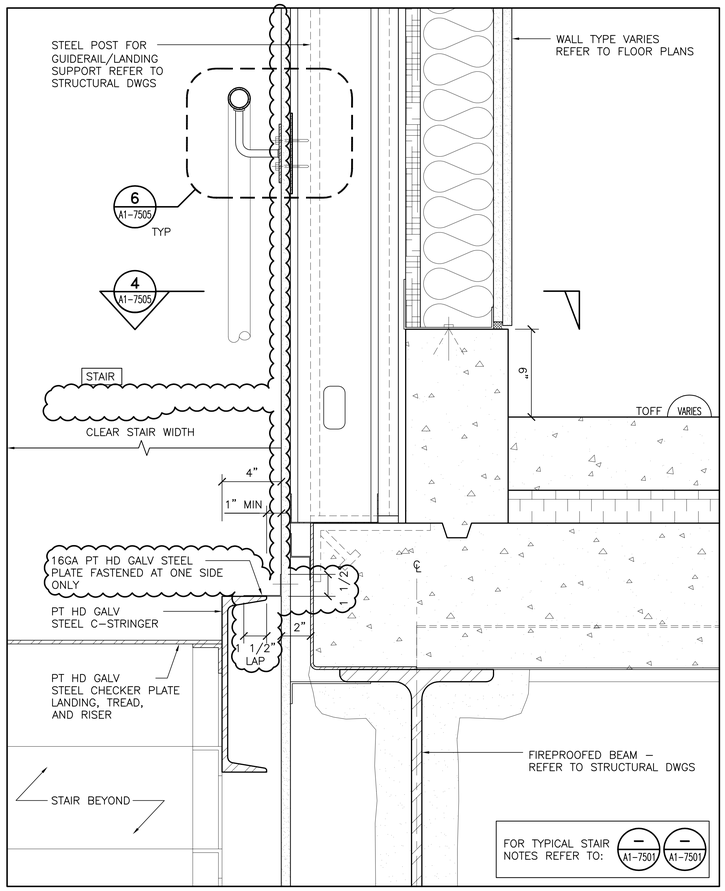

1 A1-7502 TYP STAIR STRINGER AT GYP BD – SECTION DETAIL
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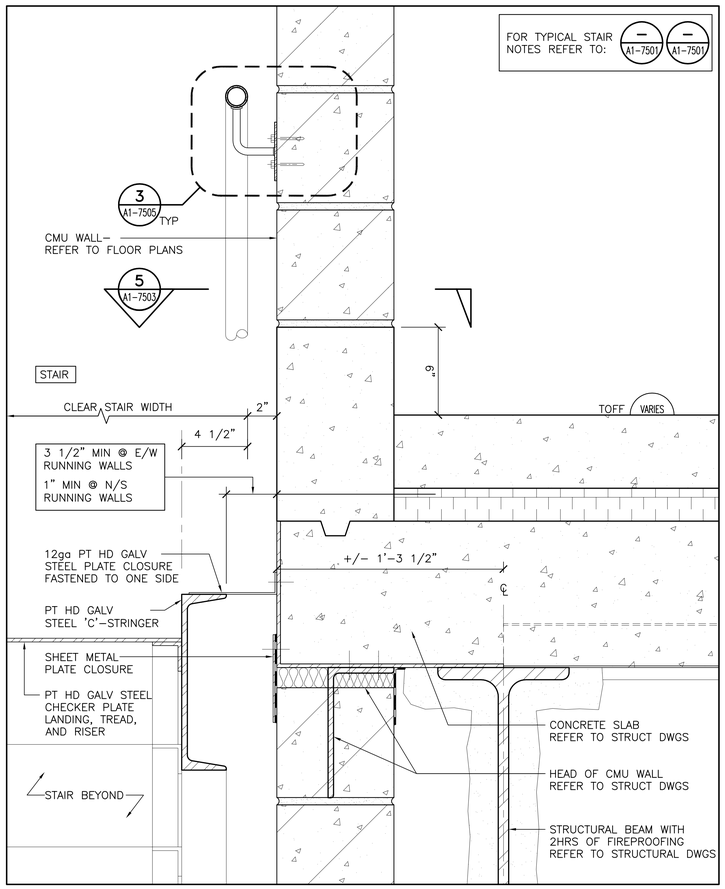

2 A1-7505 TYP STAIR STRINGER AT CMU WALL – SECTION DETAIL
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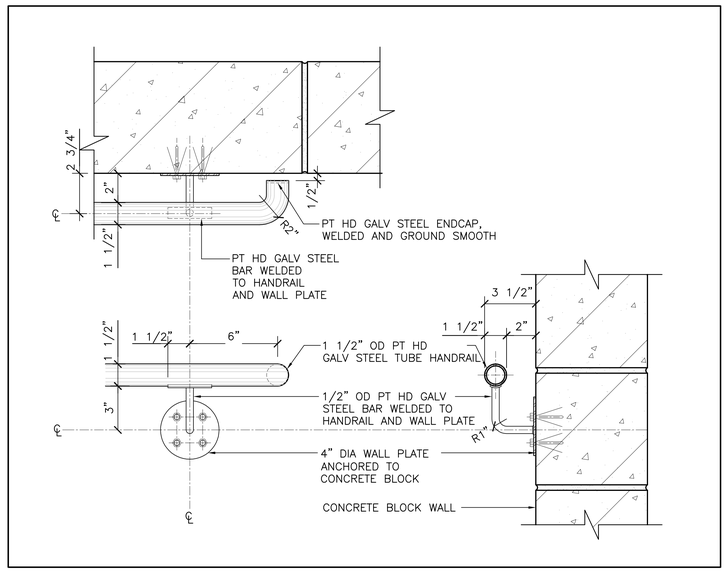

3 A1-7505 WALL MOUNT HANDRAIL – CMU
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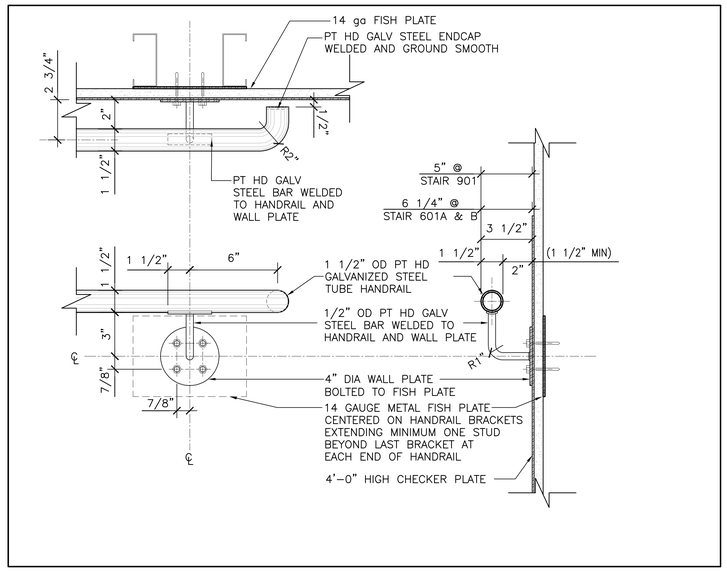
SCALE IN FEET



6 A1-7501 A1-7505 WALL MOUNT HANDRAIL – GYP BOARD
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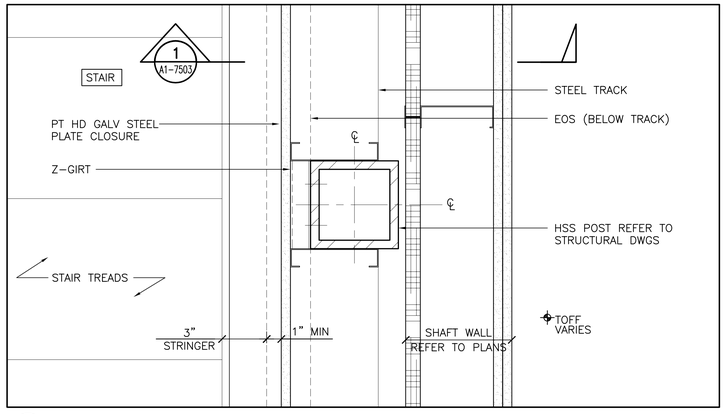

4 A1-7501 TYP STRINGER AT GYP BD – PLAN DETAIL
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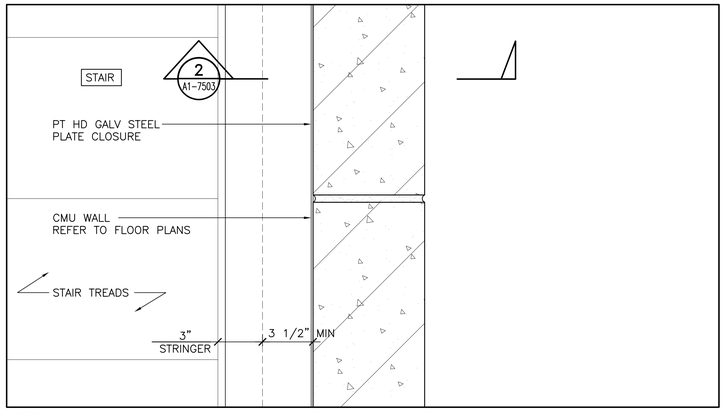

5 A1-7505 TYP STRINGER AT CMU WALL – PLAN DETAIL
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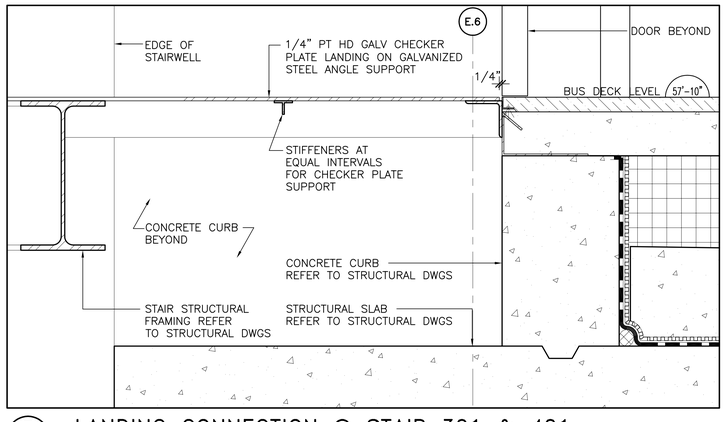

7 A1-7505 LANDING CONNECTION @ STAIR 301 & 401
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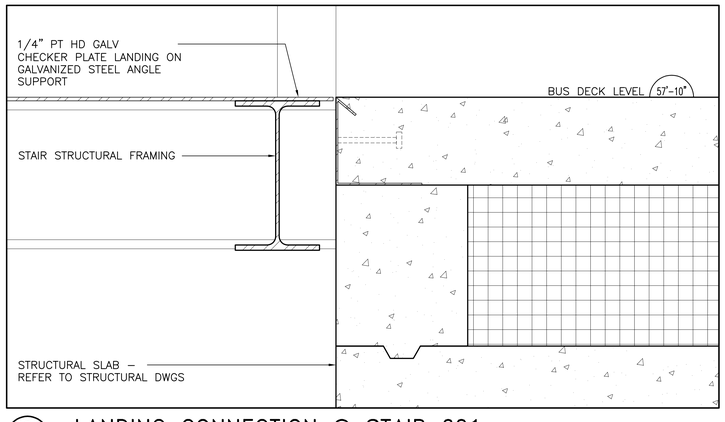

8 A1-7505 LANDING CONNECTION @ STAIR 601
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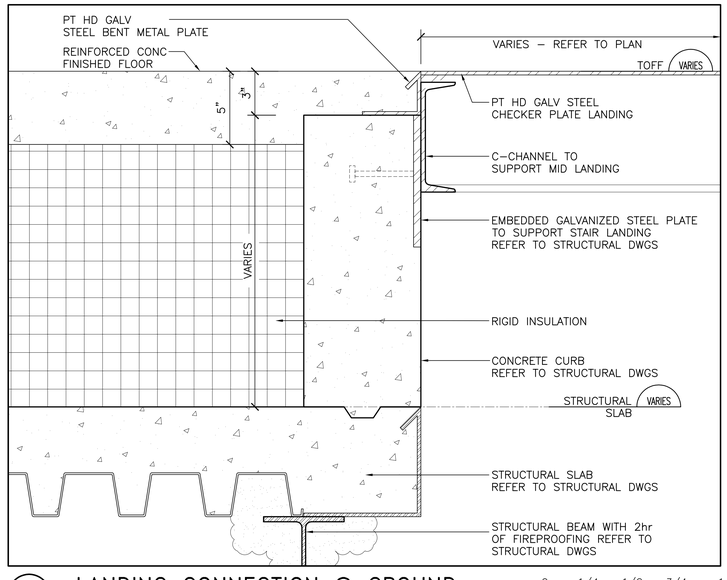
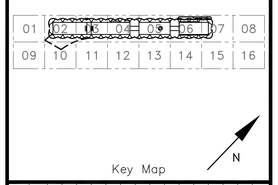


9 A1-7505 LANDING CONNECTION @ GROUND
SCALE: 3" = 1'-0"

0 1/4 1/2 3/4 1
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
TYPICAL STAIR DETAILS

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: D. DRON	CHECKED BY: W.R. BRADLEY
DRAWN BY: C. MATTHEWS	DATE: 03/31/2014
SCALE: 3" = 1'-0"	SIZE: E / FACILITY NO.: 140 / REVISION: 0

SHEET NUMBER SKA-4288
SEQUENCE NUMBER ___ of ___

BASED ON SHEET A1-7505

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TG07.3 – Miscellaneous Metals

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-014	10/29/2014		Exhibit A, Inclusion #37	Which openings are not shown on Structural Drawings?	Inclusion #37 will be deleted. A revised Exhibit A will be released in a future addendum.
TG07.3-018	10/29/2014		Exhibit A	Where can I find the specs for the scope Items listed: (scope items not found in "Primary Specifications") 1.Metal Covers 2.Fences 3.Bike Racks 4.Enclosing Profile 5.Facade Access Track	1. See 05 50 00 and 05 53 00 for specifications and details (8/P1-6001 for example) for information regarding construction of metal covers. 2. For fence requirements, see Specification Section 05 50 00 for mesh fences/security screens; and QBD TG07.3-001 for chain-link fence requirements. 3. Bike racks – Bike racks are not included in the scope of work of TG07.3, and will be removed from TG07.3 Exhibit A in the next addendum. 4. Refer to the Response in QBD TG07.3 Set 6, Question No. 066. 5. Alternate No. 10 has been accepted as base bid; therefore, the façade access track has been deleted. Reference to the façade access track is deleted from TG07.3 Exhibit A. A revised Exhibit A will be updated in the next addendum.
TG07.3-036	10/30/2014	1/A1-7830	05 50 00	Is the "7-5/8 x1-1/2 Galv. plate" part of Bid Package TG07.3? If so; Please provide length and how to attach.	Confirmed, and the overall length of the plate is 6 feet, 6 inches, including 6 inches of overlap over CMU at either end of clear opening (5 feet, 6 inches clear). For attachment, refer to detail 12/S1-9001 (Similar).

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-049	10/30/2014	4/S1-3281	Exhibit A, Page 13 / Item #38	Are the angles and rebar FOB? Who is responsible for installation? If TG07.3 is responsible for install; please provide details how to install. Epoxy bolts (size and embed length)?	Angles and rebar are not FOB, and are to be furnished and installed by TG07.3. Refer to structural drawings for development length (LTS) of bolts. Method of installation is to be coordinated with TG07.2.
TG07.3-050	10/30/2014	A1-3190, A1-3196	Exhibit A, Page 12 / Item #8 05 50 00	Is the 1/4" wall panel located in the Loading Dock only? Where can I find 1/8" thick wall panels? If there are other locations; please provide locations.	Confirmed, 1/4-inch aluminum checker plate is located only in the loading docks. All other aluminum checker plate wall protection is 1/8 inch thick. For locations, refer to plans, elevations, details, and Room Finish Schedules, sheets A1-9601 to A1-9606, and A1-9610.
TG07.3-051	10/30/2014		Exhibit A 05 50 00	Please confirm that all scope listed below is FOB? 1. Concrete embeds (including edge angles). 2. Walk off grates with frames. 3. Bike racks. 4. Queuing post inserts.	1. Concrete embeds are FOB job site. 2. Embedded portions of the walk-off grates are FOB job site. 3. Bike racks are not included in the scope of work of TG07.3, and will be removed from TG07.3 Exhibit A in the next addendum. 4. Queuing post embeds are FOB job site. If inserts are post-installed (i.e., cored and grouted), they are to be furnished and installed as part of TG07.3.
TG07.3-052	10/30/2014	2/A1-8885	05 51 00	Please confirm bearing plate assemblies are not part of Bid Package TG07.3?	Confirmed, slide-bearing assembly noted "(not part of TG06)" as shown in Detail 2/A1-8885 is included in the work to TG07.3.
TG07.3-061	10/30/2014		Exhibit A, Inclusion Item #4	Please provide locations, details and specs to clarify scope.	Walk-off grates are primarily located at specific exterior doors (Doors PK420A, PK420B, and PK420C, for example); review the contract documents for locations. AAI to provide walk-off grate specs and details.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-065	10/30/2014	4/A1-7550	05 50 00	Please provide more dimensions for plate and how it will be connected. Is it located in both pits?	Yes, this plate will be used in both pits. The plate is 3/8 inch thick, and has a stepping profile. The step in the plate is below the handrail, 1" before the Escalator landing plate. Location of handrail and landing plate to be confirmed by Escalator contractor. Please refer to attached SKA-4298, SKA-4299, & SKA-4300 for additional information.
TG07.3-070	10/30/2014	4/A1-7027	05 50 00	Is the chain link fence part of Bid Package TG07.3? If so; Please provide clear details and specs.	The chain-link fence is included in the work of TG07.3. See the Response to QBD TG07.3 Set 2, Question No. 001.
TG07.3-071	10/30/2014	All/A1-7026	05 51 00 05 50 00	Is this steel part of Bid Package TG07.3?	Steel platform and stairs at the Train Platform Level are not included in the work of TG07.3.
TG07.3-072	10/30/2014	A1-7202, 1 & 2/A1-7027	05 50 00	It notes detail 2/A1-7027 for rail detail; detail shows chain-link fence. Is it rail or fence? Please clarify.	The guardrail around the small ramp and landing, adjacent to elevator PE301, is not required and has been deleted. See attached SKA-4281.
TG07.3-073	10/30/2014	1-5/A1-9211	05 10 00	Is the "steel angle at column base perimeter" part of Bid Package TG07.3? If so; Please provide detail.	The steel angle at column base perimeter for concrete stop is not included in the work of TG07.3.
TG07.3-074	10/30/2014	All/A1-9208	05 10 00	Is the "steel jackets" part of Bid Package TG07.3?	The steel jackets called out on Sheet A1-9208 are included in the work of TG07.3. See TG07.3 Exhibit A, IV Scope of the Package and Bid Item Information, 3. Base Bid, Inclusion 8.
TG07.3-075	10/30/2014	1 & 2/A1-8896	05 50 00	Is the embed angle part of Bid Package TG07.3?	The embedded angles, as shown on Details 1 & 2/A1-8896, are included in the work of TG07.3.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-076	10/30/2014	1 & 2/A1-8883, AII/A1-8894		Is the angle and plate framing for seismic joint part of Bid Package TG07.3? If so; Please provide structural details for clarity.	1 & 2/A1-8883: The 5/8-inch by 6-foot galvanized steel plate welded to soldier piles is not included in the work of TG07.3. 1/A1-8894: The 1/8-inch-thick stainless-steel bent-metal plate fastened on one side is included in the work of TG07.3. Steel embed directly supporting the vehicular seismic joint is not included in the work of TG07.3. 2/A1-8894: 1/8-inch-thick stainless-steel bent-metal plate is not included in the work of TG07.3. 3/A1-8894: 1/8-inch-thick stainless-steel bent-metal plate over the concrete guardrail is included in the work of TG07.3. Bent metal flashing is not included in the work of TG07.3. 4/A1-8894: Swivel joint box and 12-gauge stainless-steel bent plate are not included in the work of TG07.3. Refer to RFI P1-0201.1 for detailing of metal plate over the concrete guardrail.
TG07.3-077	10/30/2014	1 & 2/A1-8883	05 51 00	Is the 5/8” x 6” plate part of Bid Package TG07.3? If so; please provide detail.	The 5/8-inch x 6-foot galvanized steel plate welded to soldier piles as shown on Details 1 & 2/A1-8883 is not included in the work of TG07.3.
TG07.3-079	10/30/2014	4 & 8/A1-3195, 5 & 7/A1-3196	05 50 00	Is the "HSS supports for glazing" part of Bid Package TG07.3?	The HSS supports for glazing as shown on Details 4 & 8/A1-3195 and Details 5 & 7/A1-3196 are not included in the work of TG07.3.
TG07.3-080	10/30/2014		Exhibit A 05 50 00	Are "corner guards" FOB?	Corner guards are FOB job site.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-081	10/30/2014	MEP		Is Bid Package TG07.3 responsible for all Mechanical, Electrical and plumbing drawings? Per AISC procedures; steel fabricators are only responsible for Structural and Architectural drawings. If we are responsible for items in MEP drawings can you please provide clear and specific details? Also provide location in Architectural's / Structural's or quantity.	TG07.3 is responsible for all of the referenced construction documents to determine the work established by TG07.3 Exhibit A.
TG07.3-083	10/30/2014	9/A-0025, All/A-0030		Is the steel shown part of Bid Package TG07.3? If so; Can I please get more information?	The steel angle around the riser opening and steel plate with sleeves on Detail 9/A-0025 are included in the work of TG07.3. Bracing shown on Sheet A-0030, which is required to complete the scope of work as described in TG07.3 Exhibit A, IV Scope of the Package and Bid Item Information, 3. Base Bid Item Scope, is included in the scope of TG07.3.
TG07.3-084	10/30/2014	1, 2, & 4/L1-7634	05 50 00	Is the support angles for rail at seismic joint part of Bid Package TG07.3? Is the paving angle bolted to seismic assembly part of Bid Package TG0.7.3?	Per ASI 119 rails, rail support angles, and paving angle as shown in Details 1, 2, & 4/L1-7634 have been deferred. Therefore, they are not included in the work of TG07.3.
TG07.3-085	10/30/2014	All/L1-7036, 2 & 3/L1-7037	05 50 00	Is the S.S. pipe support part of Bid Package TG07.3? Is the S.S. brackets part of Bid Package TG07.3? If so; I assume they are FOB?	Stainless-steel pipe supports and brackets as identified on Sheet L1-7036 and Details 2 & 3/L1-7037 are not included in the work of TG07.3.
TG07.3-086	10/30/2014	3 & 4/L1-7663, 1/L1-8672		Is the weld plate at lightwell/precast part of Bid Package TG07.3? Angle per 1/L1-8672? Is the "precast subslab attachment angle" part of Bid Package TG07.3?	Per ASI 119, the miscellaneous metal associated with Details 3 & 4/L1-7663 and Detail 1/L1-8672 has been deferred. Therefore, it is not included in the work of TG07.3 for these Details.
TG07.3-087	10/30/2014	L1-8637, L1-8655, L1-8656	05 60 00	Is the retention angles part of Bid Package TG07.3?	Per ASI 119, the miscellaneous metal associated with Sheets L1-8637, L1-8655, and L1-8656 has been deferred. Therefore, the metal is not included in the work of TG07.3.
TG07.3-088	10/30/2014	L1-8602	05 56 00	Is the stone veneer support angle part of Bid Package TG07.3?	Per ASI 119, the miscellaneous metal associated with Sheet L1-8602 has been deferred. Therefore, it is not

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					included in the work of TG07.3.
TG07.3-089	10/30/2014	L1-2330	05 60 00	Is the "Ventilation Manhole" part of Bid Package TG07.3? If so; where can I find a detail/spec? FOB? Is the "Ventilation Grate and lift out lid frame" part of Bid Package TG07.3? If so; where can I find a detail/spec? FOB?	The ventilation manholes shown on Sheet L1-2330 are not included in the work of TG07.3.
TG07.3-091	11/4/2014	A1-9302	05 50 00	Please confirm that the "SS band with butyl pad", "Mortar infill around tube", and "Backer & Sealant" is NOT by Bid Package TG7.03.	Detail 6/A1-9302: "SS band and butyl pad" are not included in the work of TG07.3. "Mortar infill around tube" and "backer & sealant" are included in the work of TG07.3.
TG07.3-093	11/4/2014		QBD #001 & #002	We do not fabricate "chain link fences" typically; If you want us to pick this scope item up, please provide details and specs. Fence companies we have spoken to need more information.	In addition to engineering the chain-link fences to withstand 200-pound overturn, use the following standards and materials for design and installation: ASTM A392 Specification for Zinc-Coated Steel Chain-Link Fence Fabric ASTM A824 Specification for Metallic-Coated Steel-Marcelled Tension Wire for Use With Chain Link Chain Link ASTM F552 Standard Terminology Relating to Chain-Link Fencing ASTM F567 Standard Practice for Installation of Chain-Link Fence ASTM F626 Specification for Fence Fittings ASTM F1043 Specification for Strength and Protective Coatings of Metal Industrial Chain-Link Fence Framework ASTM F1083 Specification for Pipe,

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
TG07.3-093					Steel Chain-Link Fabric: 2-in. mesh, 9-gauge, Zinc-Coated, 6'-0" high, top selvage Knuckle, bottom selvage Knuckle. Round steel pipe and rail: ASTM F1043 Group IA Heavy Industrial Fence Framework, Schedule 40 galvanized pipe per ASTM F1083. Details are to be developed by TG07.3 Trade Subcontractor's engineer.
TG07.3-095	11/4/2014			We respectfully request a two week bid date extension on this project.	Refer to TG07.3 Exhibit A, Addendum 5, II. Key Dates for Bidding Process for revised package timeline. The Bids are now due on December 17, 2014, at 2:00 p.m.
TG07.3-096	11/6/2014	A1-9601, A1-9606	05 50 00	Per Room Finish Schedule rooms B2421, B2440, B2462, B2463, B2480, B2621, B2622, B2641, B2660, B2661 and PK523 says they have "Security Screen With Sliding Gate" but per plan views A1-2104, 2106 and A1-2606 they do not show any screens. Are they needed in these rooms? If so; how can the gate fit with the space given? Opposite with room B1234; it's shown on A1-2202 but not in schedule. Please advise.	For the B2 rooms listed and PK523, the drawings are correct and there is no Security Screen with Sliding Gate provided in these rooms. Room Finish Schedule A1-9601 and A1-9606 are to be updated by deleting the phrase "Security Screen with Sliding Gate: Prefinished – Refer to DWG A1-9338 for details" from the Comments for each of the listed rooms. For B1234, drawing A1-2202 is correct and there is a Security Screen with Sliding Gate. Room Finish Schedule A1-9601 will be updated by adding the phrase "Security Screen with Sliding Gate: Prefinished – Refer to DWG A1-9338 for details" to the Comments for Room B1234.
TG07.3-100	11/6/2014		TG07.3_22	What sheet and detail does this question pertain to? The answer provided does not help; Can you please provide details and locations of "steel not part of a fire-rated or acoustical	Deflection and lateral seismic support steel for masonry walls are not included in the work of TG07.3. See Exclusion 6.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
				assembly"?	
TG07.3-101	11/6/2014	12/S1-5003	TG07.3_24, Exhibit A (Item #37)	Can you please explain where in the schedule this item is located? (So I can tell if we can install this before the concrete pour) If this scope item is not installed before concrete pour; cutting of metal deck and concrete slab is by others correct? (Also metal closure will not be needed)?	See the Response to QBD TG07.3 Question No. 014 in this Set 7.
TG07.3-103	11/6/2014	A1-2306(Scope Dwg.)		Can you please provide a detail to apply to the highlighted "OCS/Signal Pole"? (Also a spec if needed)	All Anchor plates, anchor rods, and couplers embedded in structural slabs at OCS pole foundations are included in the work of TG07.3. Refer to 5/S1-9101 and other contract documents for full requirements.
TG07.3-107	11/6/2014	All/A1-7704 (Scope Dwg.)	05 51 00	Is all HSS framing for Overhead Coiling Grille by TG07.3? If not; what is by Grille Contractor and what is by TG07.3?	TG07.3 is responsible for bracing and supporting steel for overhead doors and grilles not integral to a "W" system.
TG07.3-109	11/7/2014	1 & 2/A1-7890 (Scope Dwg.)		This might be a mistake, but when you look close at the brackets (in the wall) there is some plate highlighted which is part of the parapet framing; is TG07.3 responsible for this? Looks to be part of the "W" system.	The angle supporting the metal panel is not included in the work of TG07.3.
TG07.3-110	11/7/2014	1/A1-8630A (Scoping Dwg.)	TG07.3_016 05 50 00	Steel plate that is highlighted; Please provide detail. Where do I put this price? Alternate 27 is not on bid form. Also TG07.3_016 notes that we do not own "Manholes".	Inclusion #41 is to be revised via addendum to read: Furnish and install all structural steel, miscellaneous metal, and metal deck as described in Specification Section 01 10 30/APE Schedule of Alternates E.1.15 as part of the Total Base Bid Price. Per ASI 127 A1-8630A, manholes have been deleted.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-112	11/7/2014	A1-9205 through A1-9207 (Scoping)	Exhibit A Exclusions pg. 8	Regarding the Aluminum Cladding (column covers); This type of scope is typically an ornamental finish item. We do not fabricate this item and installation does not really fall into "steel installation". Also these are excluded per Exhibit A pg. 8 item #5. With that said, is this scope item definitely in bid package TG07.3? If so; do we have any other options for manufacturers beside the two listed in specs and when is this item to be installed?	Aluminum checkered plate is specified in Specification Section 05 50 00, and not as part of the systems called out in Exclusion 5. Therefore, it is included in the work of TG07.3. Furnish the product as required in the applicable specification. This will be installed after paint. Note that there are no specific manufacturers required for aluminum checkered plate in Specification Section 05 50 00, 2.5, N.
TG07.3-113	11/7/2014	2/L1-7386(Scope Dwg)	05 50 00	Regarding the "Steel Protection Plate"; please provide more information on material, location, how it's installed or is it FOB?	For steel protection plate information, refer to "Protection Slab Drawings" A1-2922 to A1-2927 (for ground level), to be read in conjunction with the Ground Level Zone Plans & Slab Edge drawings, Civil and Landscape drawings of the same area. Please also refer to the response for RFI-P1-0114. These plates are to be furnished and installed as part of the TG07.3 scope.
TG07.3-114	11/7/2014	S1-2350A(Scope Dwg), 1/S1-3281A	05 10 00 05 30 00	Is the steel framing below metal deck part of Bid Package TG07.3? Where does this pricing go? There is not a location on the Bid Form.	Yes, the steel framing below metal deck is included in the work of TG07.3. Cost for the Roof Park Level – Drum Café shall be included in the "Ground Level and Above" base bid price.
TG07.3-116	11/7/2014	All/A1-9208 (Scope Dwg.)		Regarding "steel jackets" located on Lower Concourse; Will three sides of jacket be FOB? Is the 1/2" or 1" "grout fill" part of part of Bid Package TG07.3? If so; is there a spec on the grout?	Concrete column steel jackets are post-installed, and shall be furnished and installed complete by TG07.3. Grouting of the concrete column steel jackets is included in the work of TG07.3. See Specification Section 05 50 00 2.4 M for grout and anchoring cement specification.
TG07.3-117	11/7/2014	4/S1-9051 (Scope Dwg)	05 50 00	Can you please provide locations of this work? Am I to assume highlighted walls on Scoping Drawings A1-2102 and A1-2203 are the locations? Is there any other locations?	Detail 4/S1-9051 is a typical bracing detail at interior concrete walls. Highlighted walls on the scoping drawings are not all inclusive of the locations. Review the contract documents for locations of interior concrete walls.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-118	11/7/2014	5/S1-9051 (Scope Dwg)	05 50 00	Can you please provide locations of this work? I assume we use "Option 2"? Does this scope fall under Item #23 per Exhibit A?	Application of detail 5/S1-9051 would occur at a reinforced-concrete partition wall adjacent to a shaft opening. Examples of these can be found at the Lower Concourse Slab, Stair 202: see A/A1-7004 and Elevator shaft PE203; see A/A1-7240.
TG07.3-120	11/7/2014		TG07.3_039 05 50 00	Which "night closures" are not part of a "w" system? Please provide enough information so I can find our quantity.	Overhead coiling doors and overhead coiling grilles that are supported directly from a “W” cladding system (Specification Section 08 44 39 Colored Glass Cladding System W-5, for example) are not included in the work of TG07.3. An example of an overhead coiling door that is integral to a “W” system is OHD-2 B1256A, as shown on Sheet A1-2250.
TG07.3-123	11/12/2014		Exhibit A, Section VII	Regarding "Preconstruction RFIs" on page 20 and Exhibit M; Are we required to be responsible for all of these?	Yes, TG07.3 is responsible for all RFIs listed on Exhibit M.
TG07.3-129	11/12/2014		05 50 00 2.4N & 2.8B, TG07.9-009	This QBD asks for a color of paint when the primer is called out in section 2.4 N. "90-97 TnemeZinc" or equal. Is bid package TG07.3 responsible for finish paint? (Finish paint is typically by others.)	TG07.3 is required to provide finish coatings on items called out to be prefinished or receive a color (an example would be Specification Section 05 50 00 2.5 P).
TG07.3-131	11/12/2014		Exhibit A - Scope Item #11 & #35, TG07.3-047	You provided a clear scope for Item #35 "counter support"? Can you please do the same for Item #11 "Vanity Support Steel"?	TG07.3 is responsible for furnishing and installing all counter and vanity support. Review the contract documents for locations (examples of locations: A1-9012 and A1-9015). Refer to Public Restroom Typical Details (A1-9040) for construction of vanity supports.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-134	11/13/2014	7, 8, 9, 11, & 12/S1-7660	05 50 00	These details are not by Bid Package TG07.3 correct? (It's noted they are from TG06)	If Details 7, 8, 9, 11, & 12/S1-7660 apply to items embedded in the Train Platform Level or Lower Concourse Level structural slabs, they are not included in the work of TG07.3. If the Details 7, 8, 9, 11 & 12/S1-7660 apply to items embedded in areas outside of the Train Platform Level or Lower Concourse Level structural slabs, they are included in the work of TG07.3.
TG07.3-135	11/13/2014	1/S1-7661		Is the steel shown part of Bid Package TG07.3?	Yes, the steel in Detail 1/S1-7661 is included in the work of TG07.3.
TG07.3-136	11/13/2014	4/S1-9102		Is the steel shown part of Bid Package TG07.3? If so; please provide specifications and locations.	The ceiling support for electrical equipment as shown on 4/S1-9102 is not included in the work of TG07.3.
TG07.3-137	11/13/2014		Exhibit A Item #30, TG07.3-046 05 50 00	Can you please explain how I can figure out if scraping and replacing fireproofing will happen? Looking at the current schedule I cannot compare misc. steel install to when fireproofing is scheduled to be installed. (Fireproofing is typically by others)	Please see the attached Exhibit I for TG16.8 – Fireproofing, for information regarding scheduling of fireproofing activities. Fireproofing is a successor activity to pouring of slabs.

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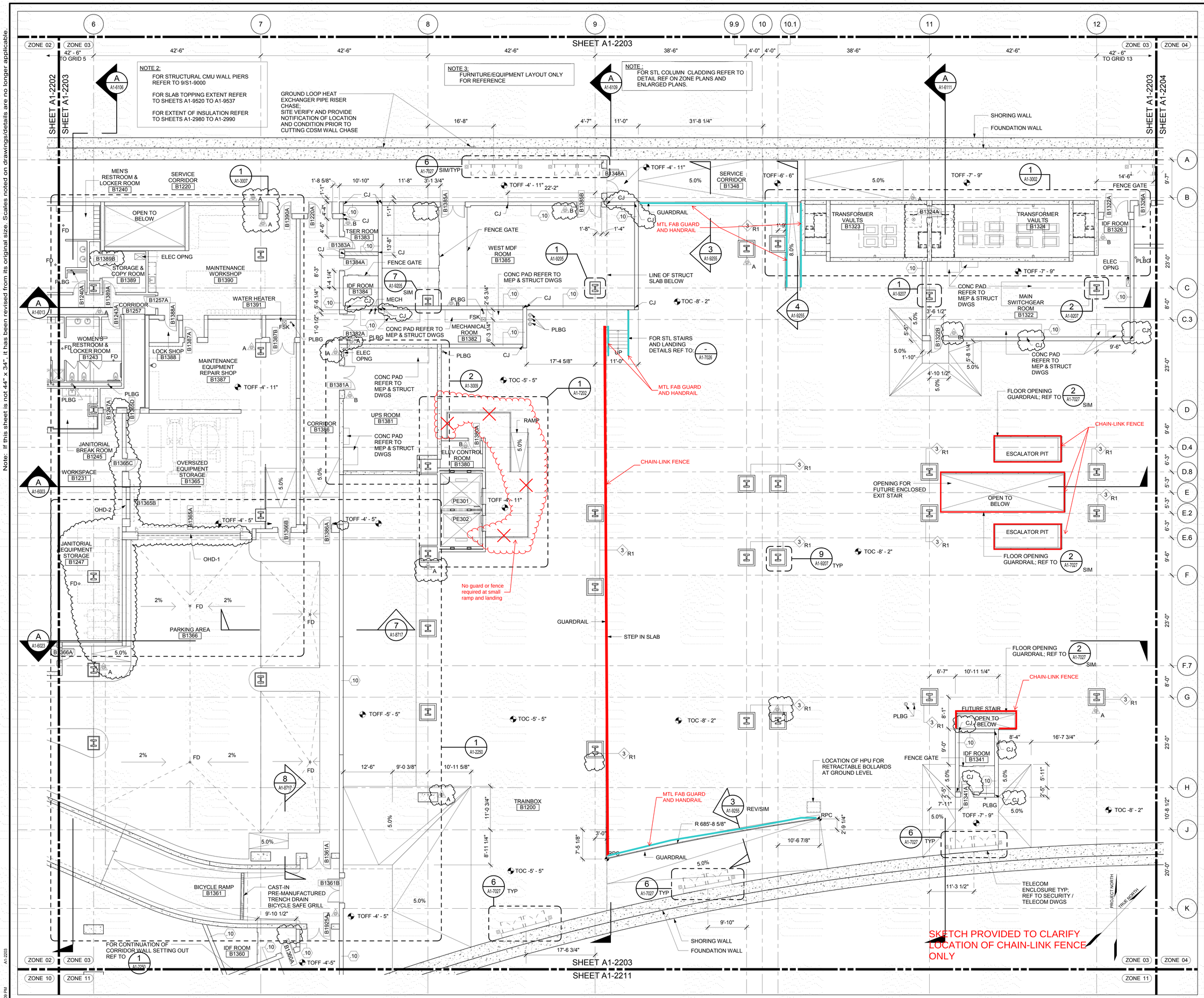

1 (A1-2000) LOWER CONCOURSE LEVEL ZONE 03 FLOOR PLAN
SCALE: 1/8" = 1'-0"

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
0	03/31/14	ISSUED FOR CONSTRUCTION	GM
1	04/23/14	ISSUED FOR BID - ADDENDUM #3	GM
2	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
3	07/18/14	PER ASI No. 0121	GM

CONTRACT NO.
PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA
08-04-CMGC-000
SHEET TITLE: LOWER CONCOURSE LEVEL
ZONE 03 FLOOR PLAN

ARCHITECT / ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL
DESIGNED BY: P. MACPHAIL
CHECKED BY: W.R. BRADLEY
DRAWN BY: K. WROBLEWSKI
DATE: 07/18/2014
SCALE: 1/8" = 1'-0"
SIZE: E
FACILITY NO. 140
REVISION 3
SHEET NUMBER SKA - 4281
SEQUENCE NUMBER of

BASED ON A1-2203

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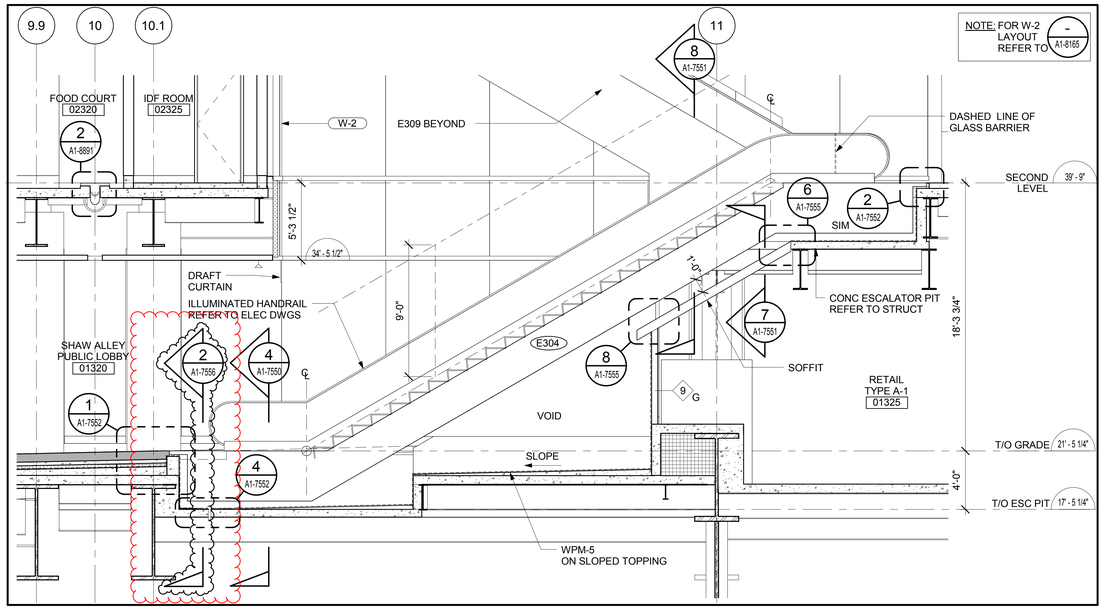

A A1-6003 ESCALATOR E304 & E305 - SECTION
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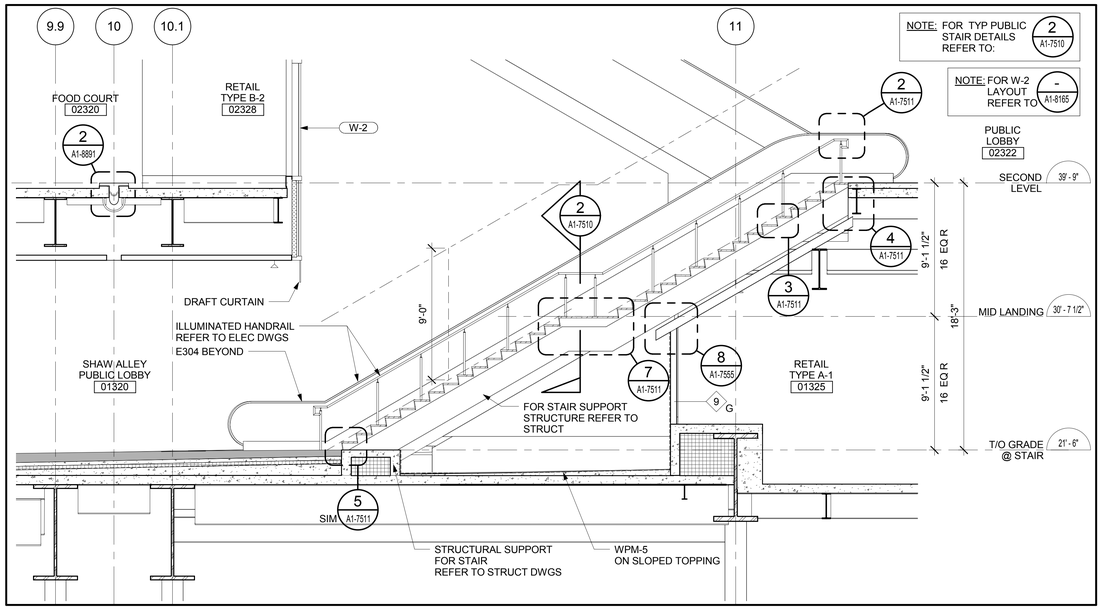

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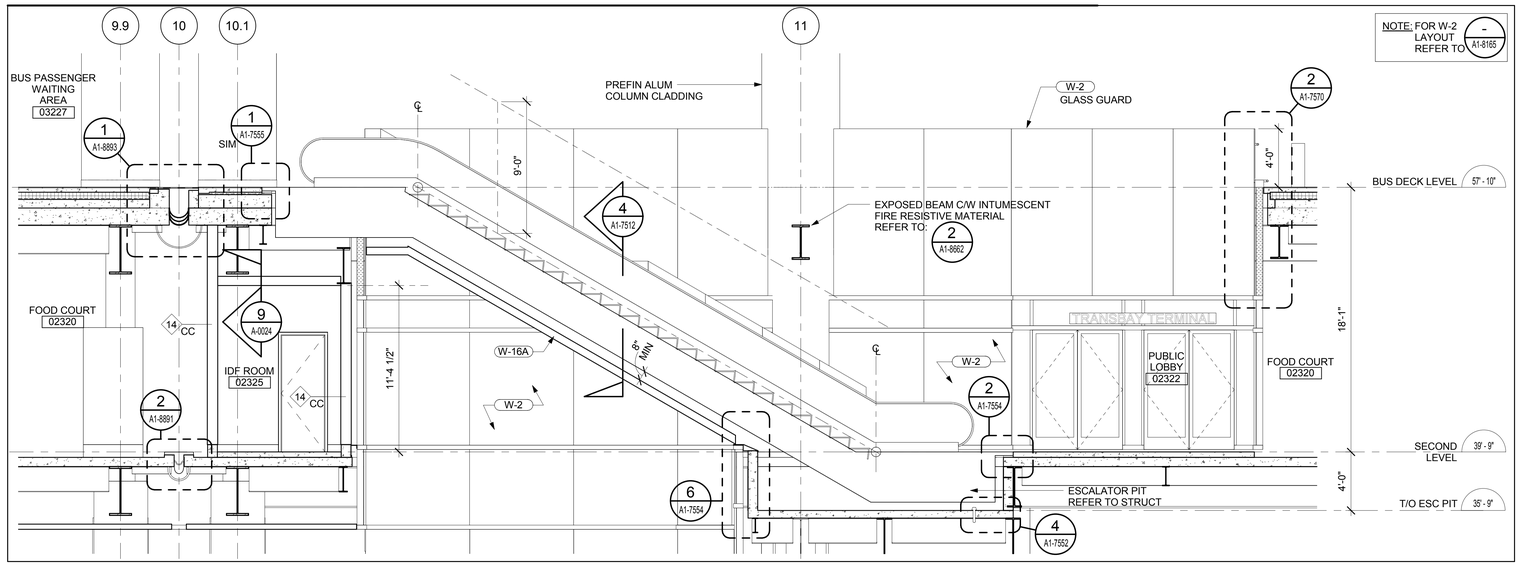

C A1-7303 ESCALATOR E309 & E310 - SECTION
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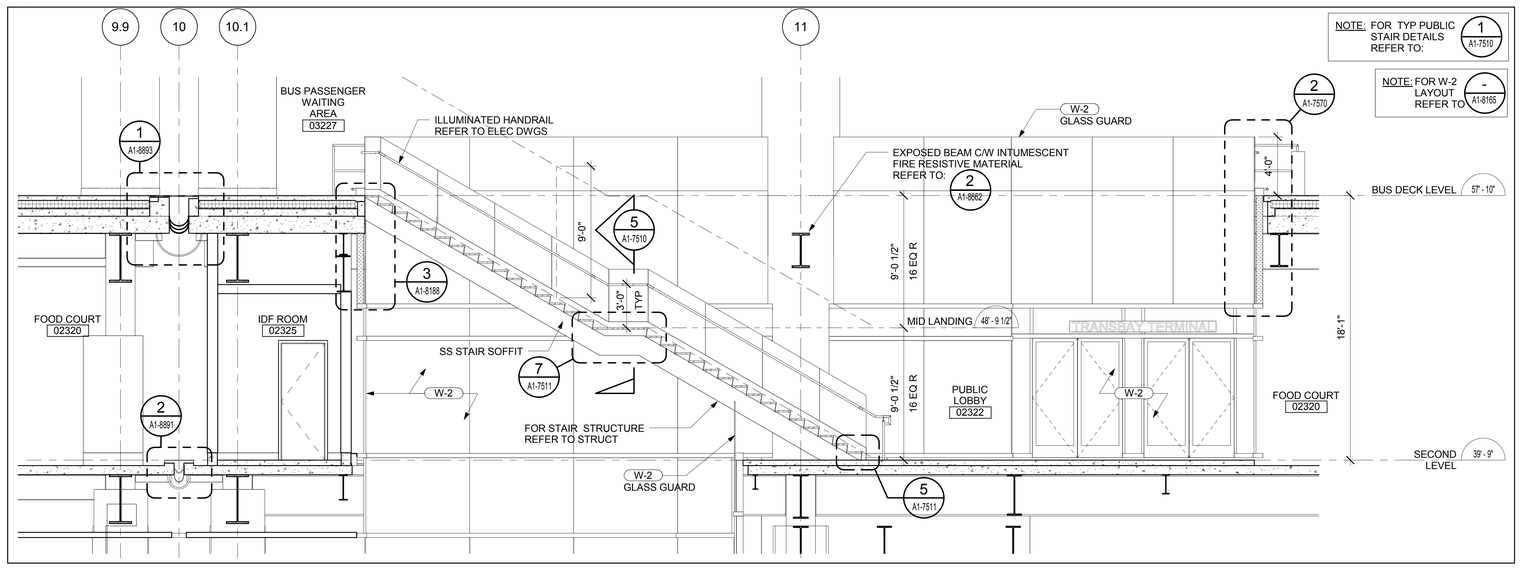

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CONSULTANT:
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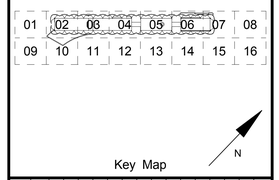

Key Map

REVISIONS

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1	09/12/14	PER ASI No. 0127	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
ESCALATOR E304, E305, E309, & E310
+ STAIR 307,308, & 309
SECTIONS

ARCHITECT / ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
D. DRON	W.R. BRADLEY
DRAWN BY: C. MATTHEWS	DATE: 09/12/2014
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FACILITY NO. 140	REVISION 1

SHEET NUMBER SKA-4298
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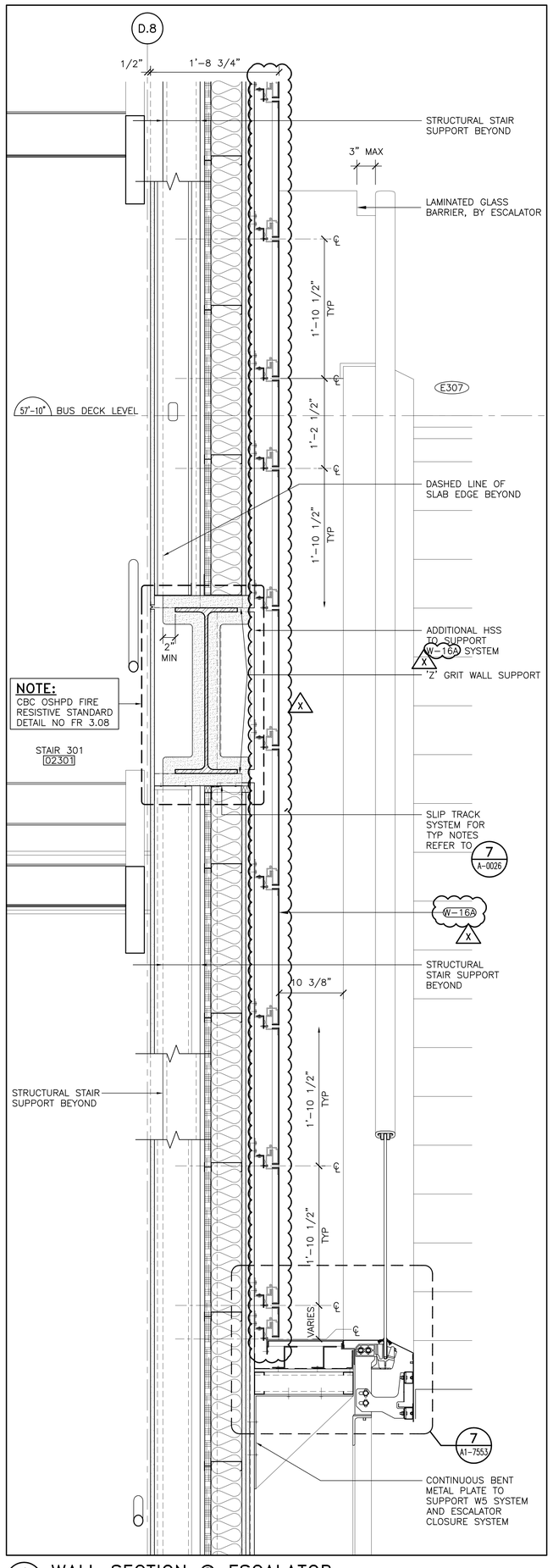

1 A1-7550 WALL SECTION @ ESCALATOR
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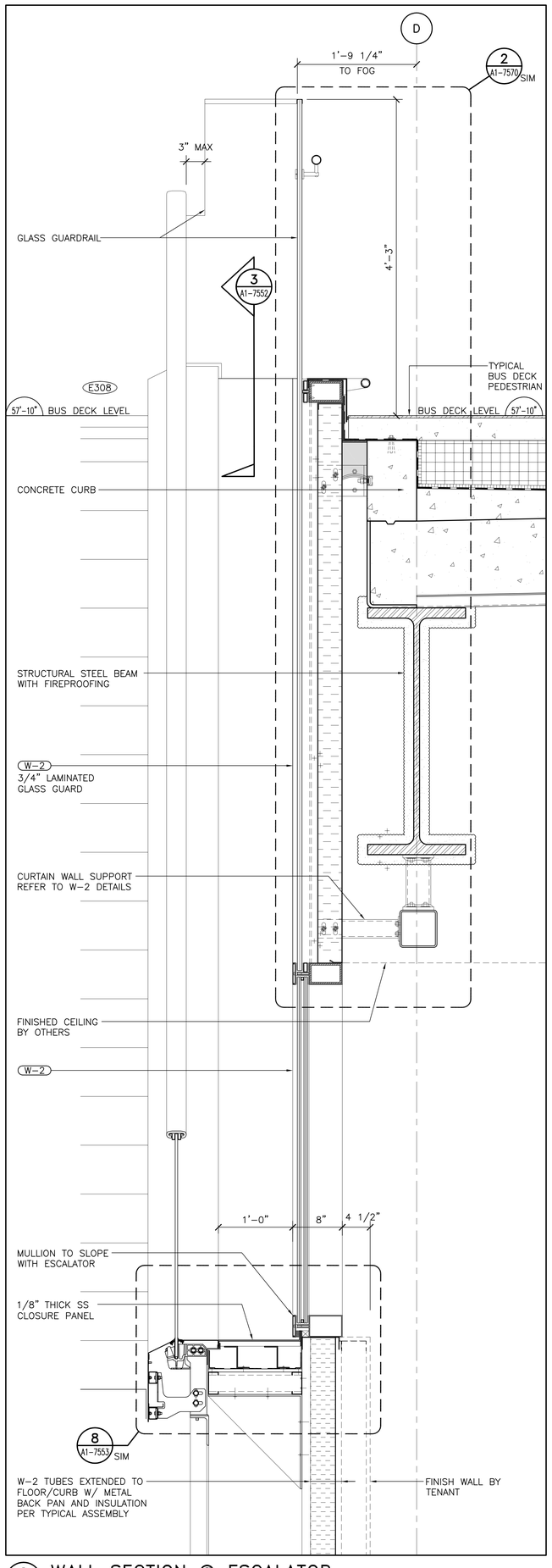

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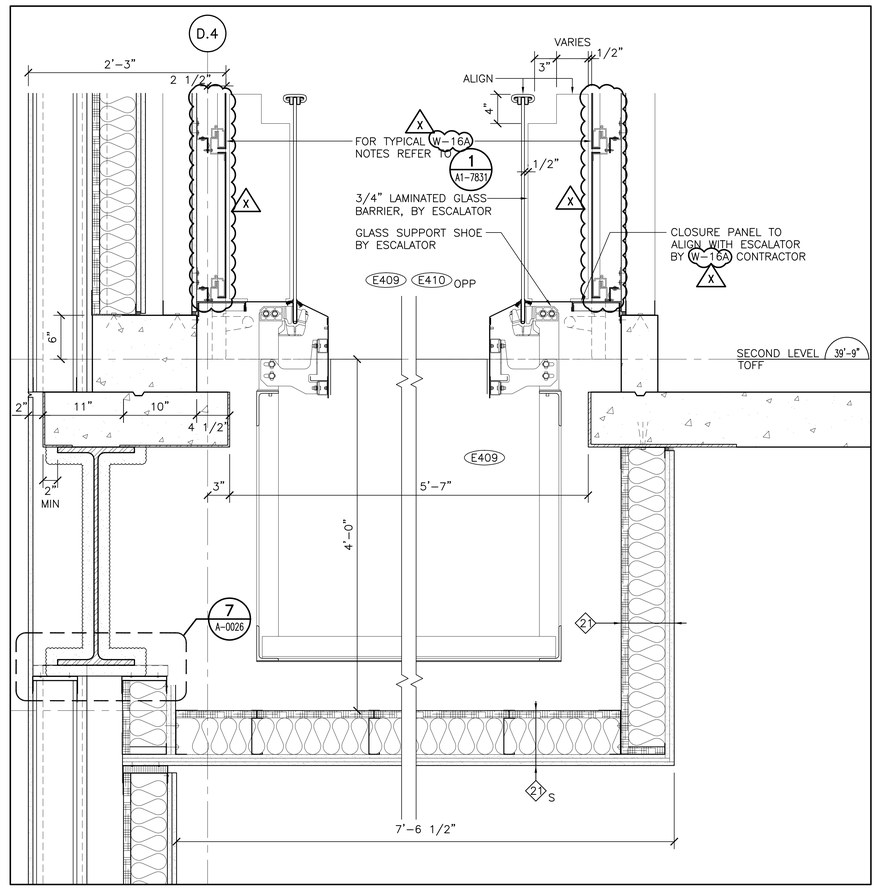

3 A1-7550 RATED ESCALATOR TOP ENCLOSURE
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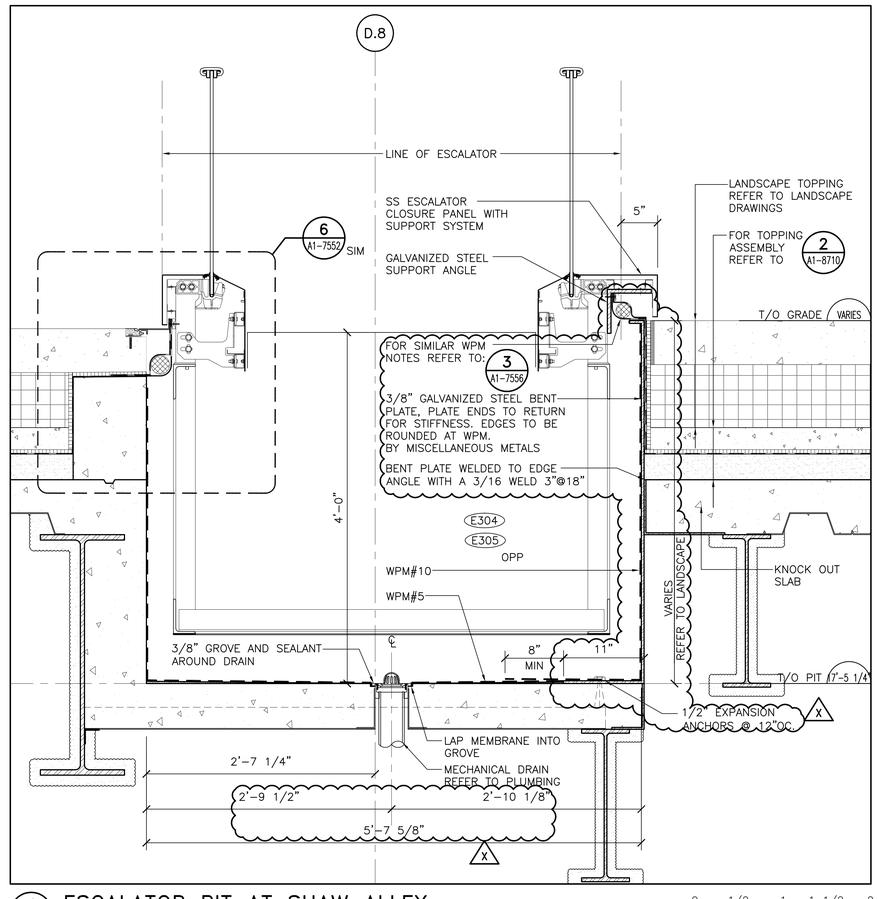

4 A1-7550 ESCALATOR PIT AT SHAW ALLEY
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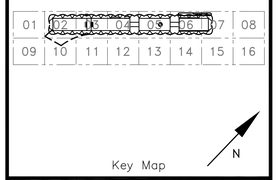

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	09/12/14	PER ASI No. 0127	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
WALL SECTION @ ESCALATOR

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: D. DRON	CHECKED BY: W.R. BRADLEY
DRAWN BY: C. MATTHEWS	DATE: 09/12/2014
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SHEET NUMBER
SKA-4299

SEQUENCE NUMBER
__ of __

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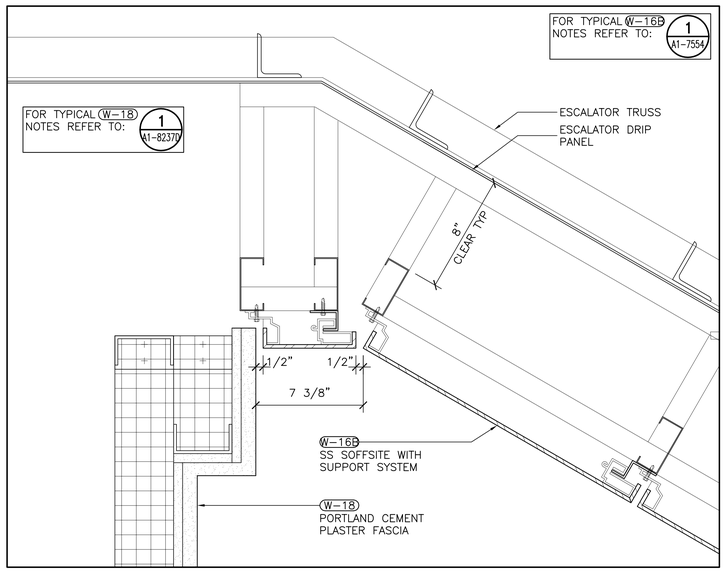

1 A1-7556 ESCALATOR SOFFIT @ WALL DETAIL
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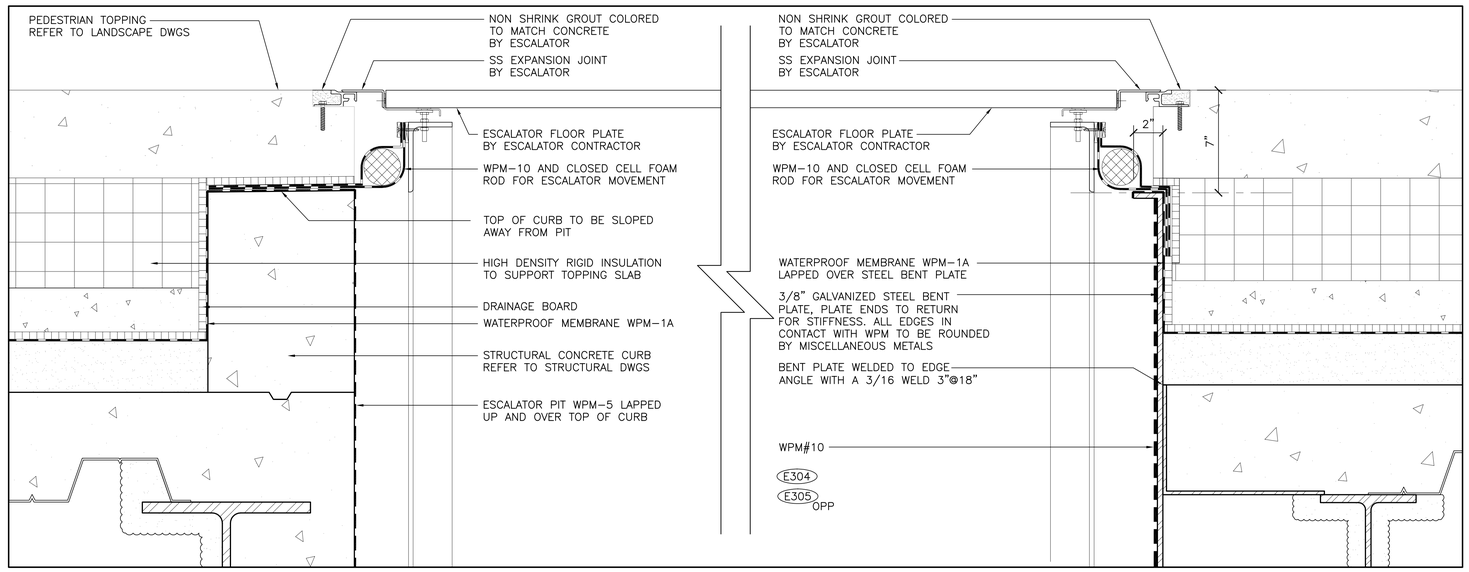

2 A1-7556 ESCALATOR BASE DETAIL
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Transbay Transit Center
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CONSULTANT:
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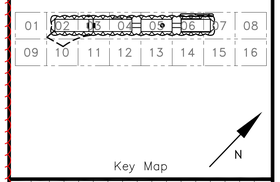

Key Map

REVISIONS		
NO.	DATE	DESCRIPTION	BY

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE TRANSBAY TRANSIT CENTER PROGRAM
SAN FRANCISCO, CA

SHEET TITLE ESCALATOR DETAILS

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY: S. ROTT	
DRAWN BY: C. MATTHEWS	DATE: 09/18/2014	
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BASED ON SHEET A1-7556

Project ID: 30100-TG16.8
Print Date: 26-Aug-14, 12:46

TRANSBAY TRANSIT CENTER

TG16.8 EXHIBIT I SCHEDULE

Activity ID	Activity Name	OD	Start	Finish
TTC - ***TG16.8 EXHIBIT I***		2300	02-Feb-09 A	22-Apr-18
PRECONSTRUCTION		73	10-Jul-14	23-Oct-14
TRADE GROUP PLANNING AND IFB PROCESS		73	10-Jul-14	23-Oct-14
TG16 - INTERIORS ARCHITECTURE		73	10-Jul-14	23-Oct-14
TG16.8 - SPRAY / INTUMESCENT FIREPROOFING		73	10-Jul-14	23-Oct-14
TG16.8 - BID & AWARD PROCESS (IFB)		73	10-Jul-14	23-Oct-14
CA-324488	ISSUE BID PACKAGE / BID PERIOD - TG16.8	45	10-Jul-14	11-Sep-14
CA-324496	ADVERTISE IFB - TG16.8	1	10-Jul-14	10-Jul-14
CA-324501	VALUE ENGINEER PROPOSAL PREPARATION - TG16.8	36	10-Jul-14	28-Aug-14
CA-324498	PRE-BID MEETING - TG16.8	1	31-Jul-14*	31-Jul-14
CA-324500	VALUE ENGINEERING REVIEW - TG16.8	5	29-Aug-14	05-Sep-14
CA-324499	BID PERIOD CLOSED - TG16.8	1	11-Sep-14	11-Sep-14
CA-324504	PUBLIC BID OPENING - TG16.8	1	11-Sep-14	11-Sep-14
CA-324492	BID PROTEST PERIOD - TG16.8	5	12-Sep-14	18-Sep-14
CA-324493	TJPA BOARD APPROVAL - TG16.8	1	09-Oct-14	09-Oct-14
CA-324494	TJPA - NOTICE TO PROCEED - TG16.8	2	10-Oct-14	13-Oct-14
CA-324495	ISSUE & EXECUTE CONTRACT (NTP) - TG16.8	8	14-Oct-14	23-Oct-14
CONSTRUCTION		2300	02-Feb-09 A	22-Apr-18
TRANSBAY CENTER BUILDING		2300	02-Feb-09 A	22-Apr-18
PROJECT MANAGEMENT		2001	02-Feb-09 A	06-Feb-17
FIELD WORK		1815	05-Jan-11 A	22-Apr-18
BUTTRESS/SHORING/EXCAVATION BBI		1475	05-Jan-11 A	06-Dec-16
TEMPORARY POWER		184	11-Jul-11 A	11-Feb-12 A
BELOW GRADE STRUCTURE (BGS)		979	23-Jan-13 A	27-Jan-17
ABOVE GROUND SUPERSTRUCTURE		630	09-Oct-14	25-Apr-17
ABOVE GROUND SUPERSTRUCTURE SUMMARY		377	14-Oct-14	21-Apr-16
STRUCTURAL STEEL ERECTION		630	09-Oct-14	25-Apr-17
PARK LEVEL		327	21-Apr-15	11-Aug-16
RAIL CRANES		362	28-Aug-15	14-Feb-17
ROUGH INTERIORS		449	07-Jul-15	25-Apr-17
TRAIN BOX		146	31-Aug-15	04-Apr-16
LOWER CONCOURSE		201	05-Jan-16	21-Oct-16
GROUND LEVEL		430	07-Jul-15	29-Mar-17
LEVEL 2		388	07-Jul-15	27-Jan-17
BUS DECK		449	07-Jul-15	25-Apr-17
FINISH INTERIORS		609	07-Jul-15	18-Dec-17
TRAIN BOX		240	29-Jan-16	13-Jan-17
LOWER CONCOURSE		448	07-Jul-15	24-Apr-17
GROUND LEVEL		259	28-Sep-16	13-Oct-17
LEVEL 2		162	28-Sep-16	22-May-17
BUS DECK		224	25-Jan-17	18-Dec-17
EXTERIOR ENCLOSURES		354	07-Apr-16	08-Sep-17
STAIR/ELEVATOR TOWER WEST		55	28-Sep-16	16-Dec-16

Layout: Exhibit I
TASK filter: TG16.8.

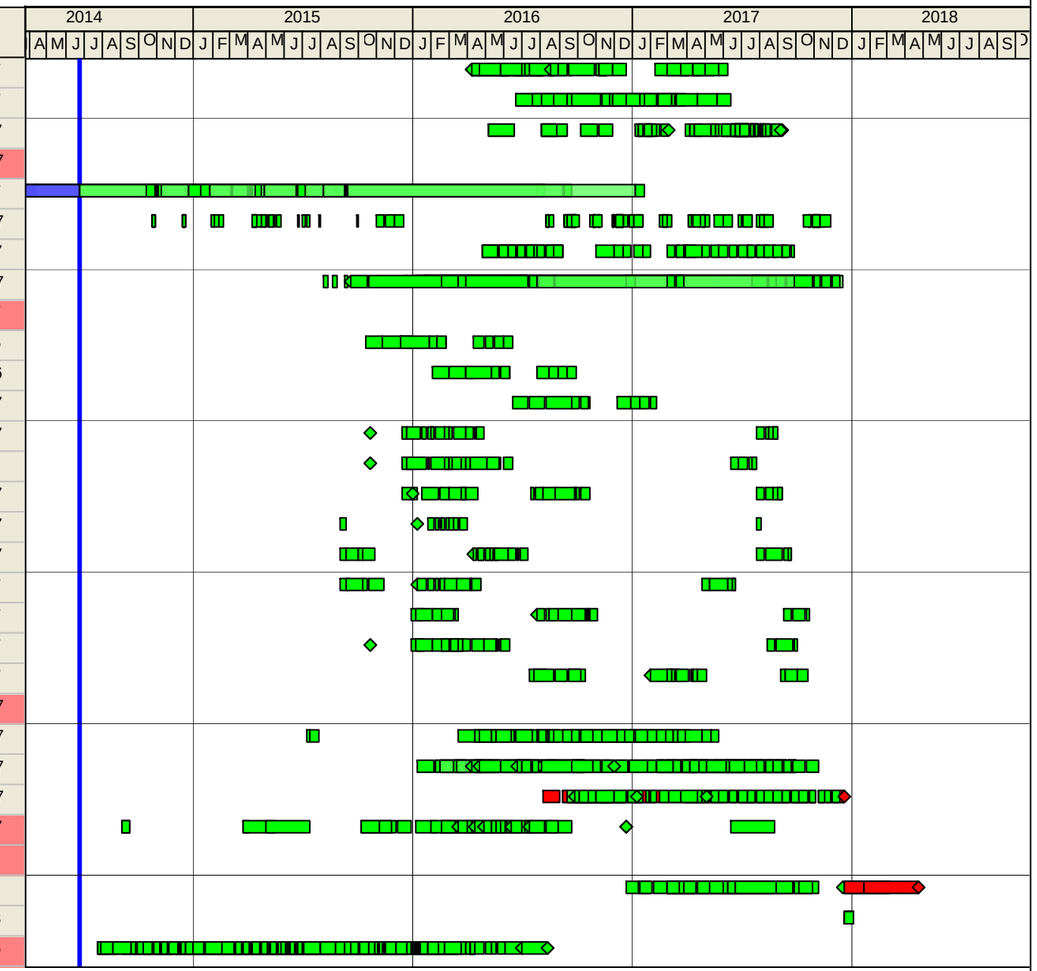
User: jramirez
Data Date: 23-Jun-14

Project ID: 30100-TG16.8
Print Date: 26-Aug-14, 12:46

TRANSBAY TRANSIT CENTER

TG16.8 EXHIBIT I SCHEDULE

Activity ID	Activity Name	OD	Start	Finish
	GROUND LEVEL CURTAIN WALL & EXTERIOR CEILING	292	07-Apr-16	08-Jun-17
	PERIMETER FASCIA & CLADDING	246	20-Jun-16	14-Jun-17
	AWNING	334	05-May-16	08-Sep-17
	VERTICAL TRANSPORTATION & STAIRS	1082	18-Jul-13 A	18-Dec-17
	CONSTRUCTION PERSONNEL & MATERIAL HOISTS	856	18-Jul-13 A	20-Jan-17
	STAIRS	765	24-Oct-14	27-Nov-17
	ESCALATORS	356	25-Apr-16	28-Sep-17
	ELEVATORS	588	05-Aug-15	18-Dec-17
	CIVIL SITE WORK @ GRADE	530	02-Sep-15	23-Oct-17
	FIRST ST. PERMANENT UTILITIES AND CROSSING	166	14-Oct-15	14-Jun-16
	FREMONT ST. PERMANENT UTILITIES AND CROSSING	165	03-Feb-16	28-Sep-16
	BEALE ST. PERMANENT UTILITIES AND CROSSING	165	14-Jun-16	10-Feb-17
	WEST END (GRID LINES A - J)	462	22-Oct-15	30-Aug-17
	WEST MINNA (GRID LINES 1 - 10)	437	22-Oct-15	26-Jul-17
	WEST NATOMA (GRID LINES 1 - 10)	431	15-Dec-15	08-Sep-17
	SHAW ALLEY	475	02-Sep-15	02-Aug-17
	CENTRAL MINNA (GRID LINES 10 - 18)	510	02-Sep-15	22-Sep-17
	CENTRAL NATOMA (GRID LINES 10 - 18)	448	02-Sep-15	22-Jun-17
	GRAND HALL NORTH (GRID LINES 19 - 25)	454	28-Dec-15	23-Oct-17
	GRAND HALL SOUTH (GRID LINES 19 - 25)	484	22-Oct-15	03-Oct-17
	MUNI TERMINAL (GRID LINES 27 - 35 & A-J)	316	13-Jul-16	19-Oct-17
	ROOFTOP PARK - WATERPROOFING/LANDSCAPE/HARDSCAPE	610	07-Jul-15	19-Dec-17
	WEST (1-10)	471	07-Jul-15	25-May-17
	CENTRAL (10-25)	456	08-Jan-16	06-Nov-17
	EAST (25-35)	340	05-Aug-16	19-Dec-17
	BUILDING SYSTEMS - MEPS/BMS/FA	741	02-Sep-14	25-Aug-17
	COMMISSIONING / TRAINING	330	21-Dec-16	22-Apr-18
	COMMISSIONING & TESTING	330	21-Dec-16	22-Apr-18
	TRAINING	11	19-Dec-17	05-Jan-18
	BUS RAMP	508	25-Jul-14	11-Aug-16



TG07.3 – Miscellaneous Metals

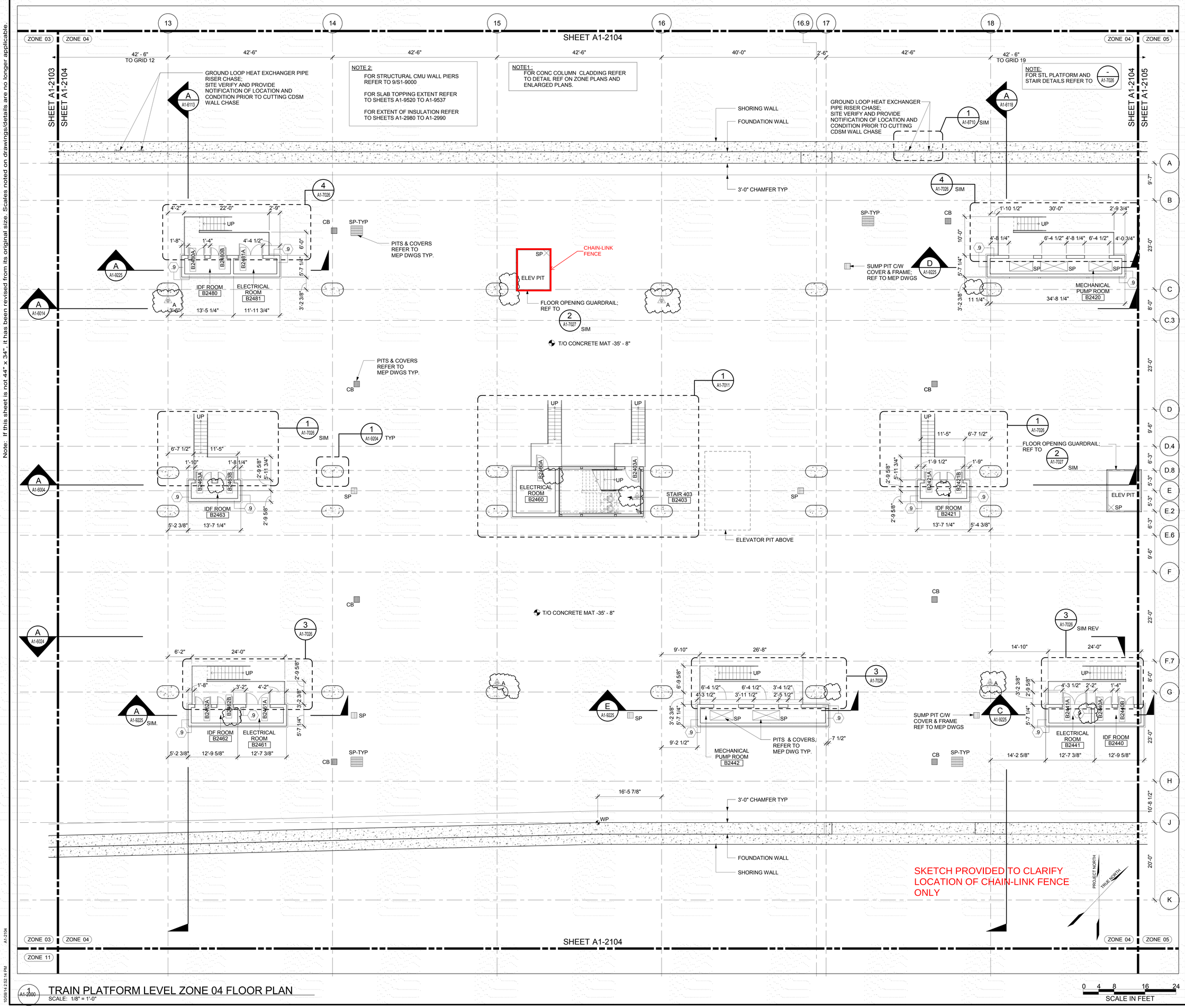
Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-032	10/30/2014	1, 3, 5, & 10/A1-9317, 2/A1-9311	Exhibit A 05 51 00	Is the 1" plate inside web shown in detail 1 part of Bid Package TG07.3? If so; How is plate attached (size and type of weld)? Does this scope represent Item No. 14? Do I assume the 1" cover plate per detail 2 is attached similar to 2/A1-9311.	1. 1-inch plate shown inside web in details 1, 2, 3, 5/A1-9317 is part of TG07.3 package. 2. Plate thickness shall be reduced to ½ inch in ASI 0128. 3. Plate shall be attached with double-sided ¼-inch fillet welds at column flanges and web.
TG07.3-041	10/30/2014	All details on A1-8550, S1-9101	05 50 00	Please clarify what Bid Package TG07.3 is responsible for? Is it the support steel and plate that is shown on 5/S1-9100 and details on S1-9101? All other components per A1-8580, 8581 and 8582 look to be by others or are not shown in structural details as noted. Please advise.	Inclusion 13, overhead catenary system support, will be deleted in the next addendum.
TG07.3-059	10/30/2014		Exhibit A, Inclusion Item No 16	Please provide details to use for reference. Do I use 30 tons for "Above Ground" and "Below Ground"? (15 tons each?) Please advise.	Details are not currently available, but will be developed by TG14.1 trade subcontractor for use by TG07.3 trade subcontractor. Inclusion 16 will be revised to show 25% Below Ground Level, and 75% at Ground Level and Above. Exhibit A will be updated to reflect this in the next addendum.
TG07.3-060	10/30/2014	A1-2107, 4/A1-7027		Guardrail along grid line 35 is called out as "chain-link fence" in detail; is this railing or fence? Where detail 4/A1-7027 is called out, will it always be "chain link fence"?	The Guardrail along grid line 35 adjacent to the Seismic Joint is chain-link fence. See attached sketches SKA-4277 to 4286 for clarification of chain-link fence locations (shown in red line).
TG07.3-078	10/30/2014	A1-2107, 4/A1-7027		Guardrail along grid line 35 is called out as "chain-link fence" in detail; is this railing or fence? Where detail 4/A1-7027 is called out, will it always be "chain link fence"?	See Response to Question No. TG07.3-060.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-082	10/30/2014	2/A1-0035	05 50 00	Is the 1/2" plate shown part of Bid Package TG07.3? If so; Can I please get more information?	All metal wall plate and protective plating, excluding metal wall plate identified in Exclusion 3, is included in the work of TG07.3. Refer to finish schedule and remaining contract documents for additional information. NOTE: Question references A1-0035, which is not a valid sheet; response refers to Sheet A-0035.
TG07.3-092	11/4/2014	6/A1-9321	05 50 00	Can you please provide a manufacturer or product that provides architect's intent? Will you need (2) spigots and (2) caps per rail?	1. Queue Rail heading shall be removed from Specification Section 05 50 00 – 2.5.C, per attached mark-up. 2. Queue Rail heading shall be added to Specification Sections 05 75 00 – 2.4.B.3, and 2.4.B.4, per attached mark-up. 3. Confirmed, two (2) spigots and two (2) caps will be required for each rail.
TG07.3-097	11/6/2014		TG07.3_12	I am confused about the SKA drawings; Are we to include all information on SKA drawings into our base bid? Or do we have to price the changes in the SKA drawings separately? Regarding the "Scoping Drawings"; Do new addendum's replace these dwg.'s? Example: Removed "8'-0 high chk. plate" per A1-3100 and deleted work at "Superintendent Station" per A1-8169.	Costs associated with SKAs are to be included in the base bid price, not broken out separately. Scoping documents are supplementary documents intended help bidders understand the written scope of work, and not intended to add or delete scope. If the contract documents, including addenda, add or delete specific items as described in the written scope of work, bidders are required to furnish and install the work only as described in the written scope of work.
TG07.3-099	11/6/2014		TG07.3_16	Per QBD response #016 "Pipe and Duct Protection"; Please provide detail of rail and clear locations. (I do not know how to read plumbing and duct drawings.)	1. Currently, there are no pipe and duct locations that require this protection. 2. Refer to attached SKA-4307 for visualization of the Specification Section 05 50 00 – 2.5.S language. 3. For bidding purposes, assume 2 locations per floor.
TG07.3-102	11/6/2014	A1-2102(Scope Dwg.)		Can you please provide a detail to apply to the highlighted concrete walls? Same with concrete walls shown on A1-2203?	Refer to Inclusion 23 and Scoping Drawing S1-9051 for additional information regarding highlighted concrete walls on Scoping Drawings A1-2102 and A1-2203.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-108	11/6/2014	2/A1-7870 (Scope Dwg.)		Please explain "SEAL ALL AROUND TYP". Welded, caulked? What size weld or type of sealant? If this is not welded; would this not be provided by the same contractor providing all the exterior closure material? (This really looks like something we do not do.)	The note "Seal all around Typ." is stating the requirement to provide a sealant joint with DOW 756 sealant with backing rod, or similar product meeting the requirements of the specifications.
TG07.3-122	11/7/2014	All/A1-8550, All/A1-8551 (Scope Dwg.)	05 51 00	(This is also a follow up question to Olson's QBD_65 / TG07.3-041) Are we responsible for "plate shields" and "C-Shapes" only? (including clip angles per 1/A1-8551, shop welded) Will we FOB these items for bolted install by others? We would like to exclude: Tension Struts, Fiber Glass, Isolators, Isolator shaped steel per 4/A1-8551 and installation. (This scope item is typically done by others)	Inclusion 13, overhead catenary system support, will be deleted in the next addendum.
TG07.3-125	11/12/2014	3/A1-9067	05 50 00 pg. 10 Item J-3 05 50 00	Is the wood blocking by Bid Package TG07.3? Can we exclude the spec on sealing our bolts? If not; Please provide detail or explain what is needed to do this. Also, does the vanity steel need to be primed over the galvanize?	1. Treated wood horizontal reinforcement as shown on 3/A1-9067 is not included in the work of TG07.3. 2. Bolts penetrating through waterproofing will be sealed by the waterproofing supplier. If bolts are installed after waterproofing, TG07.3 shall pay the waterproofing installer to seal their bolts. 3. Galvanized vanity support steel does not need to be primed.
TG07.3-128	11/12/2014	All/A1-7416, All/A1-7417	05 50 00, Exhibit A Item #24	Can you please provide the structural details that the note "REF TO STRUCT" refers too? Is there any other details? Are we responsible for Steel Door Track and Angle at door jamb per 3/A1-7416? Are we responsible for the "STRUCT HSS WALL FRAMING" per 2/A1-7416? If so; please provide details.	1. Refer to 1/S1-9100. 2. Steel track is integral to a “W” system; therefore, the steel-door track and angle as shown on 3/A1-7416 are not included in the work of TG07.3. 3. Structural HSS wall framing is integral to a “W” system; therefore, the structural HSS wall framing as shown on 2/A1-7416 is not included in the work of TG07.3.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-139	11/14/2014	4/A1-7550	05 50 00	Is the "Galvanized Steel Support Angle" by Bid Package TG07.3? If so; Please provide intent and detail of connection.	The galvanized steel support angle directly below the stainless-steel escalator closure panel with support system is not included in the work of TG07.3.
TG07.3-140	11/14/2014	8/A1-7579	Exhibit A pg. 8 Item #6 05 50 00	Per Exhibit A "CMU wall bracing" is excluded, but on "Scope Drawing" it's highlighted. Is this bracing by Bid Package TG07.3? If so; Please provide locations and details.	Bracing of CMU walls is excluded from the work of TG07.3.
TG07.3-142	11/14/2014	6/A1-7836	05 50 00	After I hunted this beam down through A1-7306, A1-7307, S1-2406, 3/S1-7015, 1 and 5/S1-7662, the beam that's on the second level at the grid lines shown is a MF (moment) beam. Is this in bid package TG07.3? (typically this would be by structural steel contractor)	Moment frame steel structural steel is not included in the work of TG07.3. Escalator support steel, where required, is included as part of Exhibit A, Inclusion 16.
TG07.3-143	11/14/2014	5 & 7/A1-7551	05 50 00	The galv. angle in detail 7 and the structural plate in detail 5 is by other, correct? If not; can you please provide enough information so I can find the all locations?	The galvanized angle soffit support as shown on Detail 7/A1-7551 is not included in the work of TG07.3. The structural steel support plate as shown on Detail 5/A1-7551 is not included in the work of TG07.3.



1 A1-2000 TRAIN PLATFORM LEVEL ZONE 04 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

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CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
TRAIN PLATFORM LEVEL
ZONE 04 FLOOR PLAN

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APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL
DESIGNED BY P. MACPHAIL
CHECKED BY W.R. BRADLEY
DRAWN BY G. RAMLOCHAN
DATE 06/20/2014
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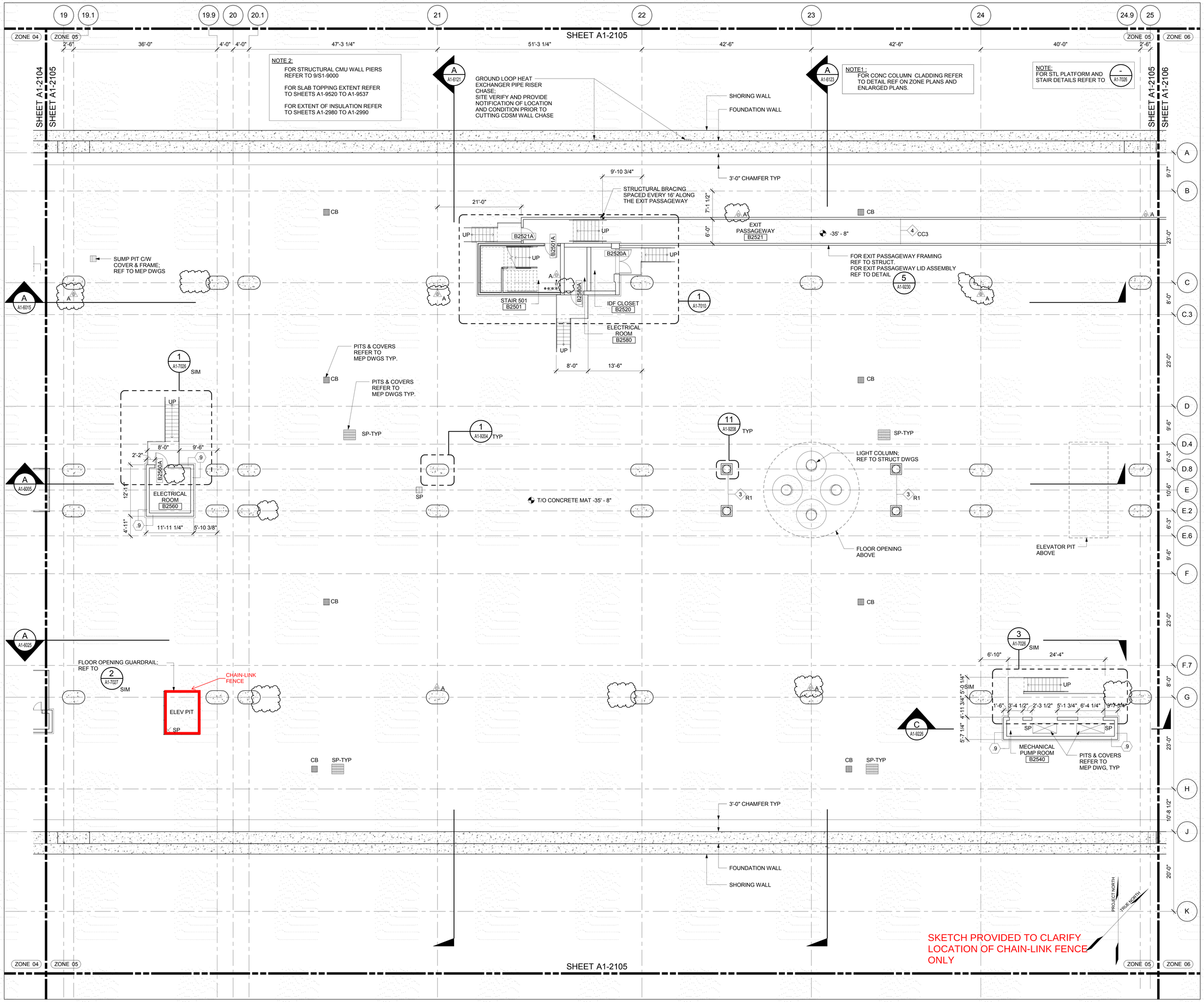

1 A1-2000 TRAIN PLATFORM LEVEL ZONE 05 FLOOR PLAN
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DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
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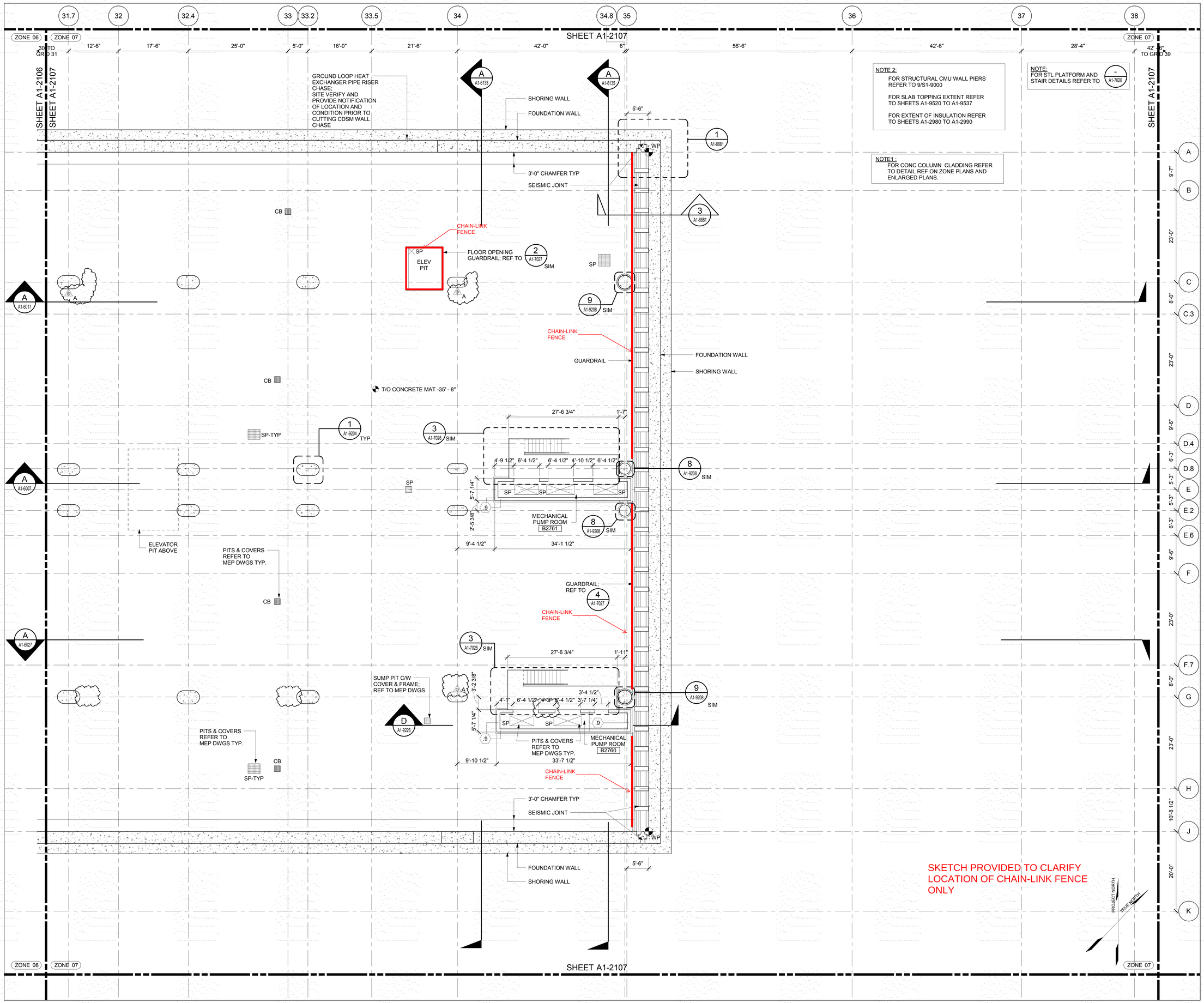

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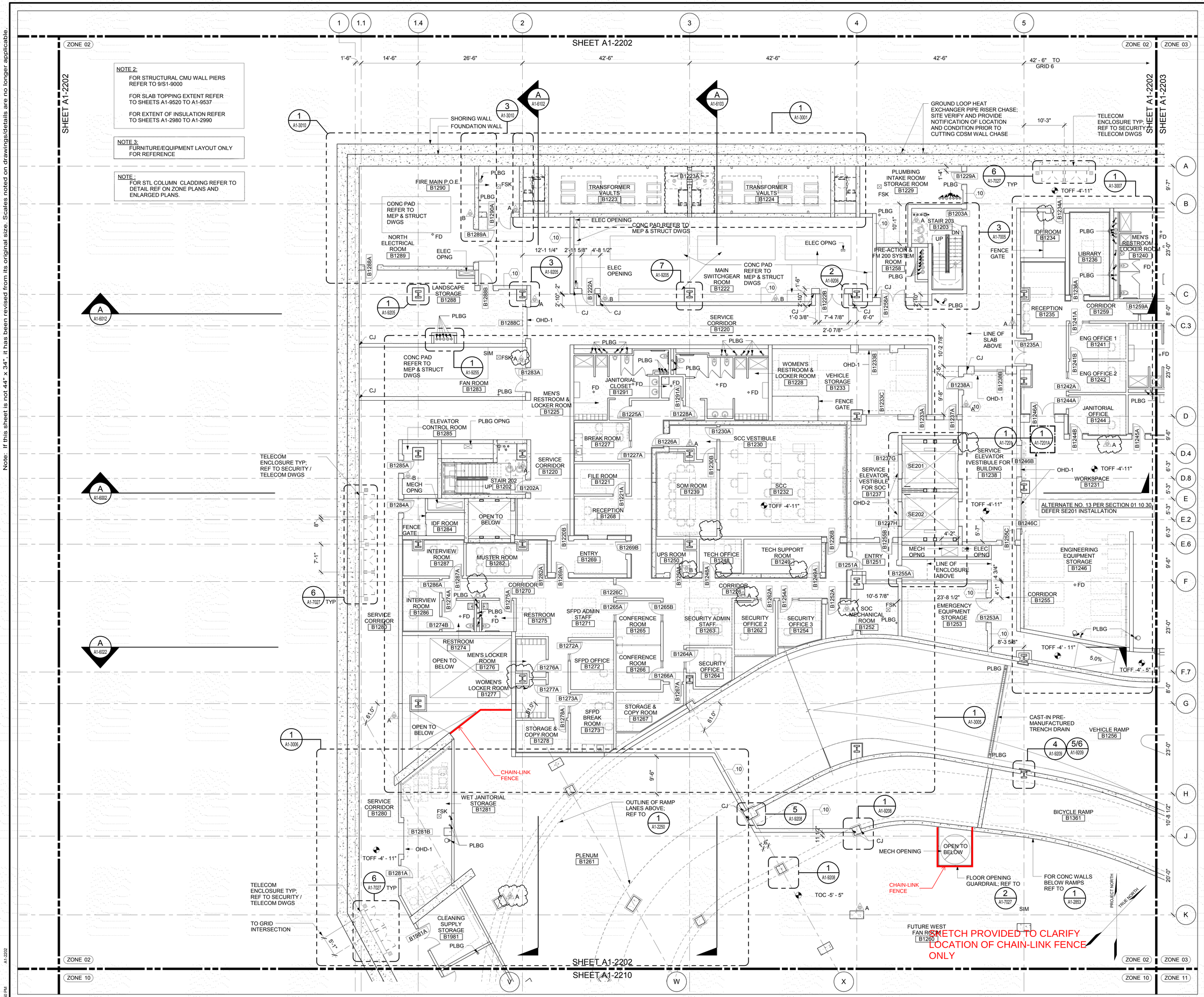
NOTE 2:
FOR STRUCTURAL CMU WALL PIERS REFER TO 9/S1-9000
FOR SLAB TOPPING EXTENT REFER TO SHEETS A1-9520 TO A1-9537
FOR EXTENT OF INSULATION REFER TO SHEETS A1-2980 TO A1-2990

NOTE 3:
FURNITURE/EQUIPMENT LAYOUT ONLY FOR REFERENCE

NOTE :
FOR STL COLUMN CLADDING REFER TO DETAIL REF ON ZONE PLANS AND ENLARGED PLANS.



1 A1-2000 LOWER CONCOURSE LEVEL ZONE 02 FLOOR PLAN
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09 10 11 12 13 14 15 16
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A	07/18/14	PER ASI No. 0121	GM
A	09/12/14	PER ASI No. 0127	GM

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ZONE 02 FLOOR PLAN

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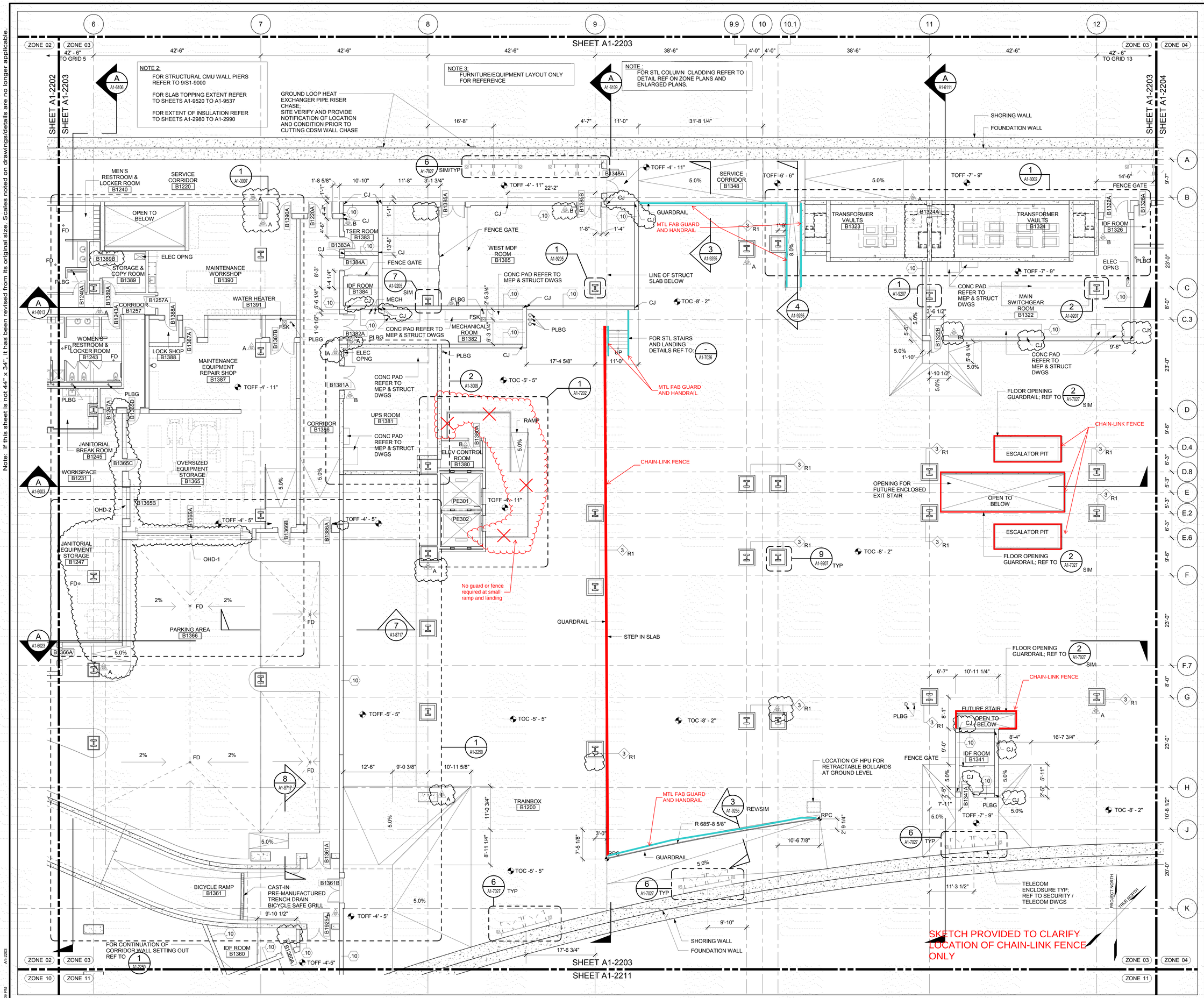

1 (A1-2000) LOWER CONCOURSE LEVEL ZONE 03 FLOOR PLAN
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3	07/18/14	PER ASI No. 0121	GM

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SHEET TITLE: LOWER CONCOURSE LEVEL
ZONE 03 FLOOR PLAN

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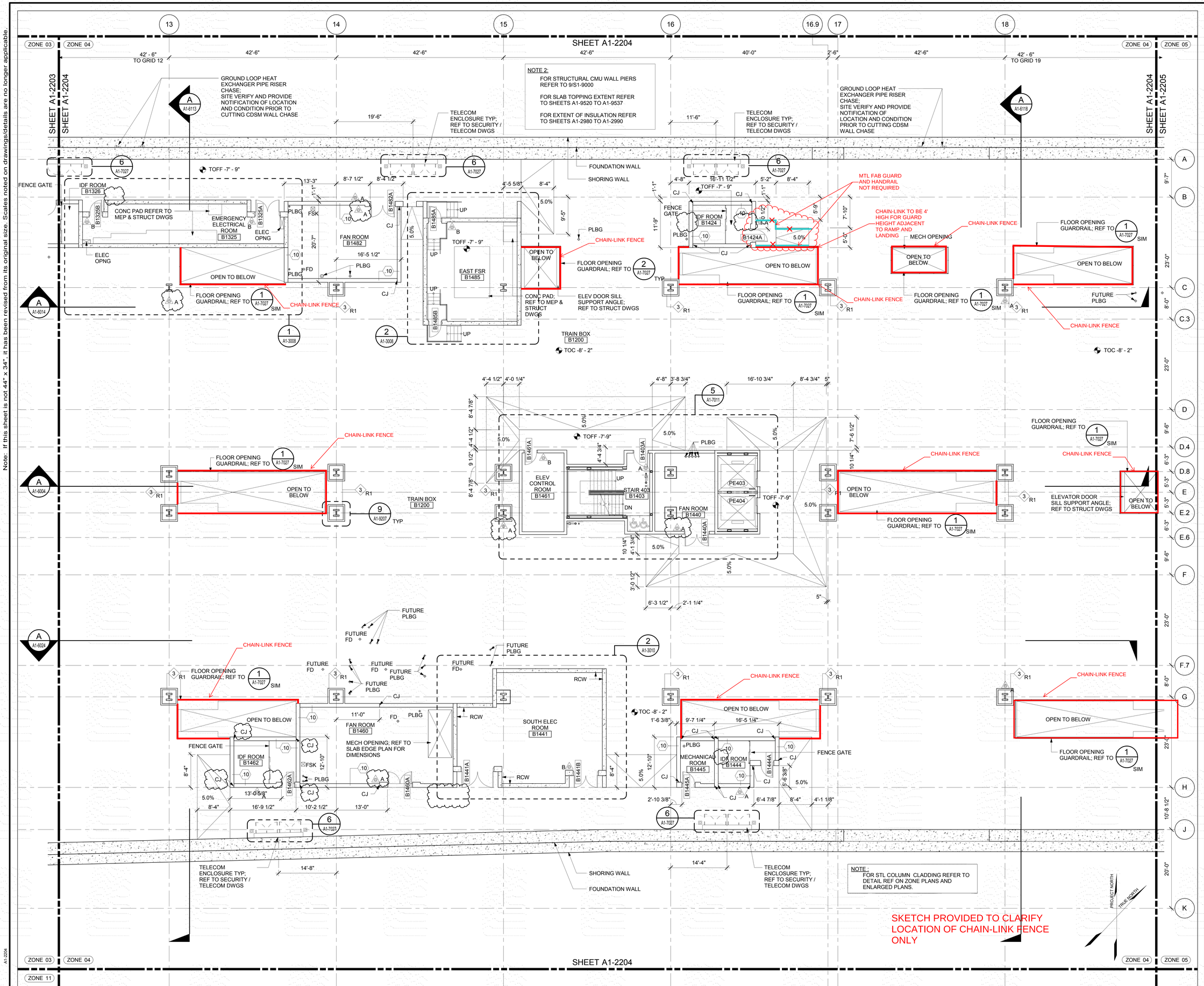

1 A1-2000 LOWER CONCOURSE LEVEL ZONE 04 FLOOR PLAN
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2	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
3	07/18/14	PER ASI No. 0121	GM

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TRANSBAY TRANSIT CENTER
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SHEET TITLE
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ZONE 04 FLOOR PLAN

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APPROVED
PROJECT MANAGER E. DEL ANGEL

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DRAWN BY: K. WROBLEWSKI	DATE: 07/18/2014
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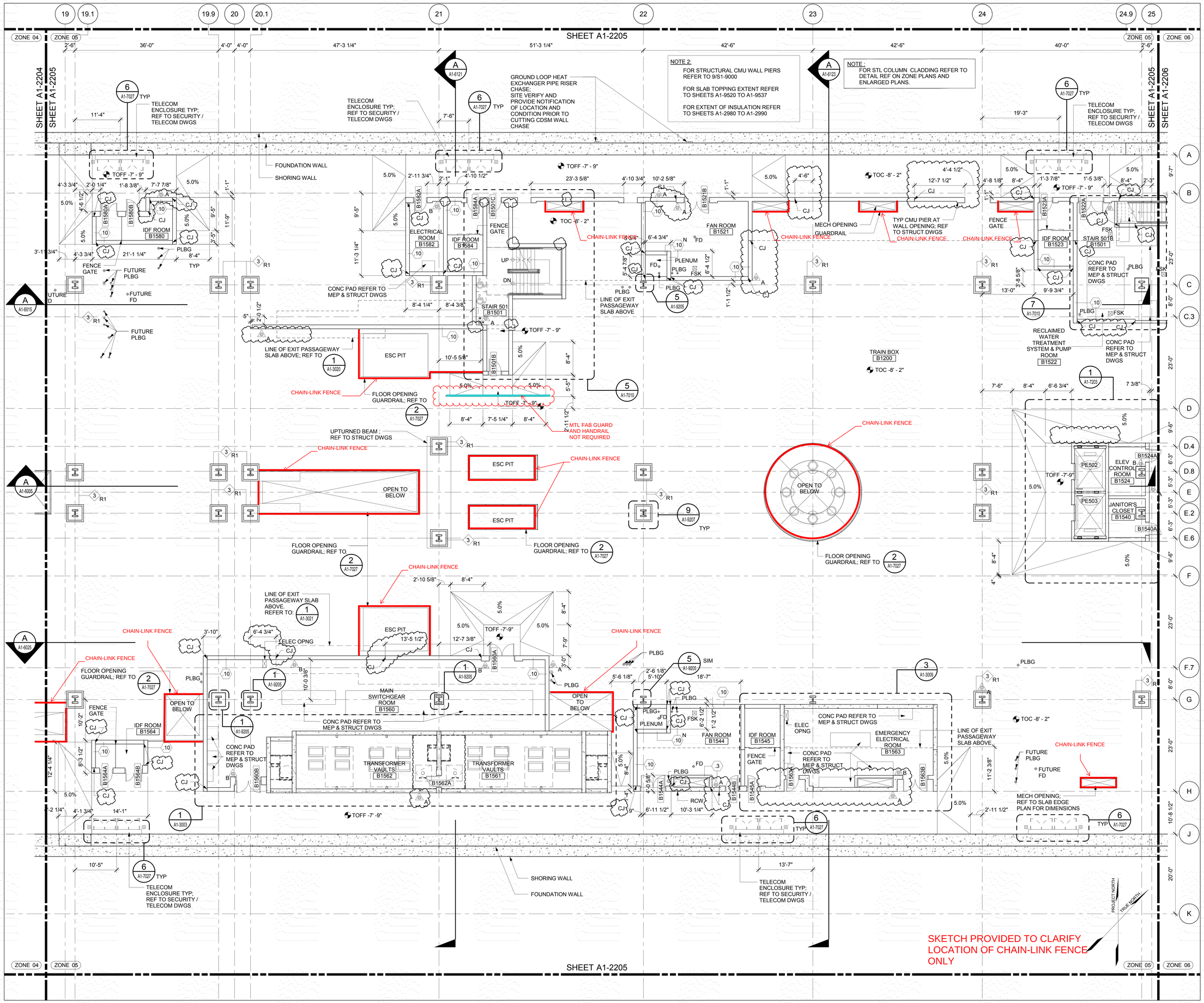

1 A1-2000 LOWER CONCOURSE LEVEL ZONE 05 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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SCALE IN FEET

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Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

01 02 03 04 05 06 07 08
09 10 11 12 13 14 15 16
Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
0	03/31/14	ISSUED FOR CONSTRUCTION	GM
1	04/23/14	ISSUED FOR BID - ADDENDUM #3	GM
2	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
ZONE 05 FLOOR PLAN

ARCHITECT / ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY	
DRAWN BY: K. WROBLEWSKI	DATE: 06/20/2014	
SCALE: 1/8" = 1'-0"	SIZE: E	FACILITY NO. 140 / REVISION 2

SHEET NUMBER SKA - 4283
SEQUENCE NUMBER of

BASED ON A1-2205

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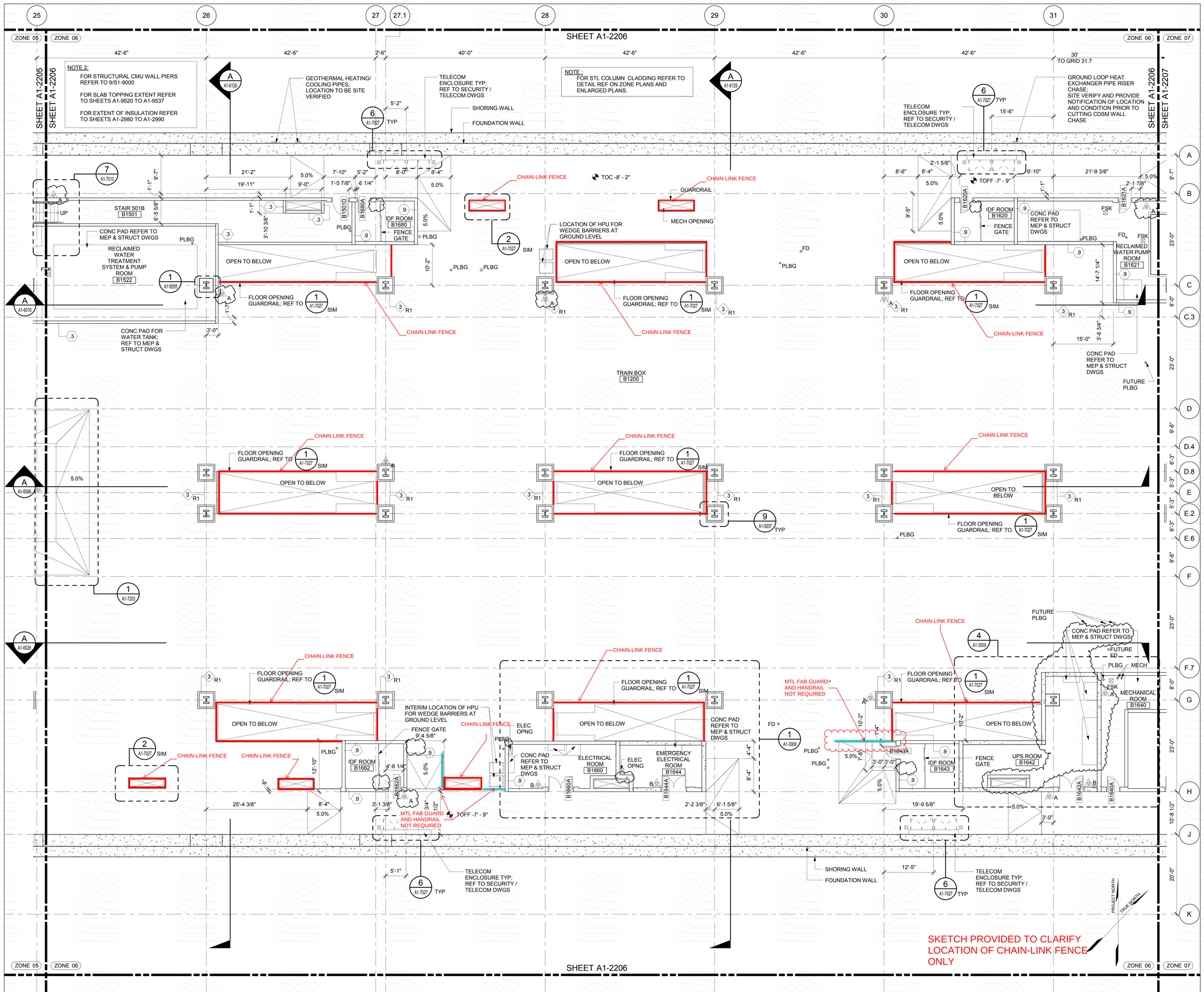

1 A1-2000 LOWER CONCOURSE LEVEL ZONE 06 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

NO.	DATE	DESCRIPTION	BY
0	03/31/14	ISSUED FOR CONSTRUCTION	GM
1	04/23/14	ISSUED FOR BID - ADDENDUM #3	GM
2	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM

REVISIONS

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: LOWER CONCOURSE LEVEL
ZONE 06 FLOOR PLAN

ARCHITECT / ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED PRINCIPAL ARCHITECT G. METZGER
APPROVED PROJECT MANAGER S. ROTT
APPROVED PROJECT MANAGER E. DEL ANGEL
DESIGNED BY: P. MACPHAIL
CHECKED BY: W.R. BRADLEY
DRAWN BY: K. WROBLEWSKI
DATE: 06/20/2014
SCALE: 1/8" = 1'-0"
SIZE: E
FACILITY NO.: 140
REVISION: 2
SHEET NUMBER: SKA - 4284
SEQUENCE NUMBER: of

BASED ON A1-2206

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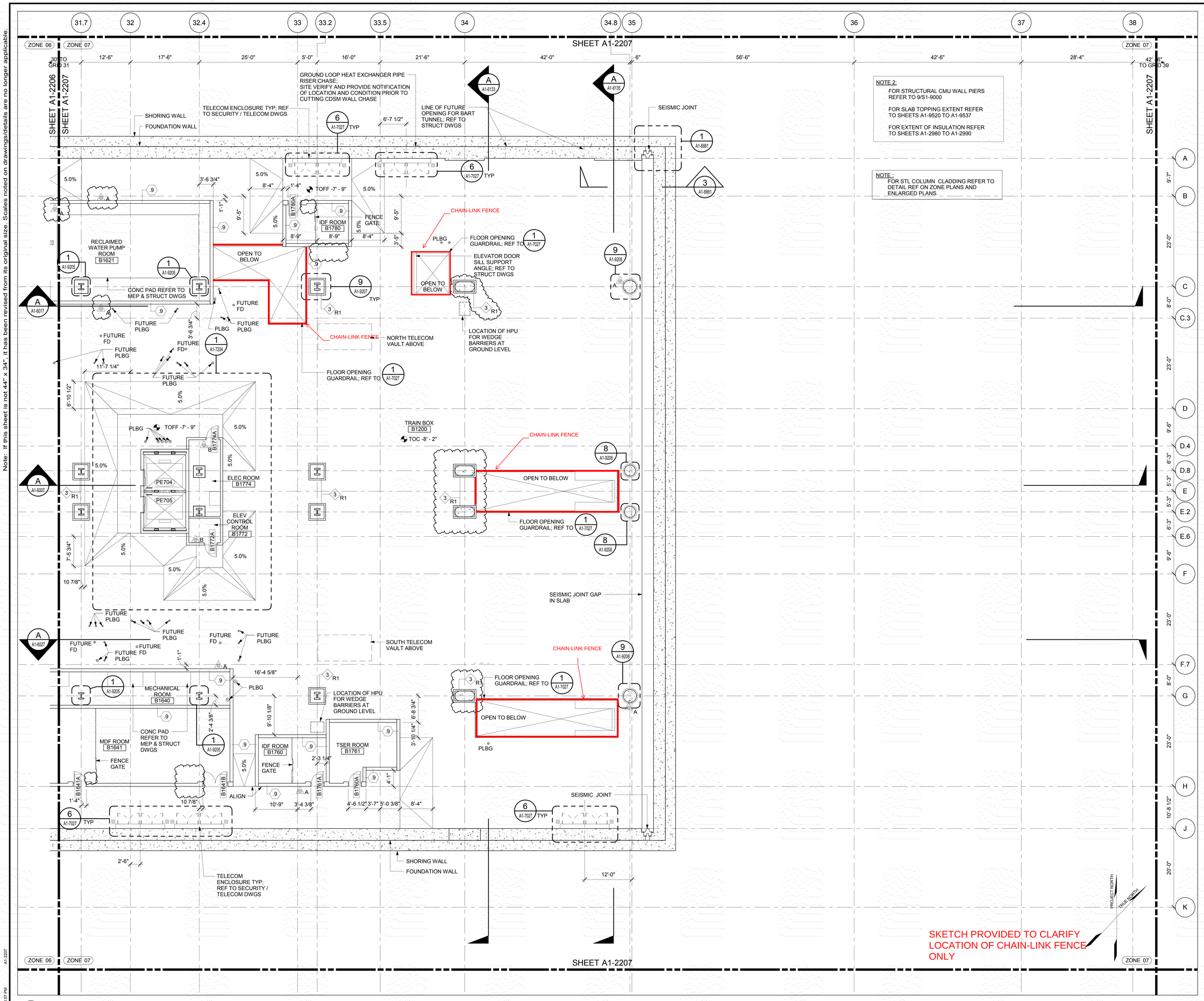

NOTE 2:
FOR STRUCTURAL CMU WALL PIERS REFER TO 9/S1-9000
FOR SLAB TOPPING EXTENT REFER TO SHEETS A1-9520 TO A1-9537
FOR EXTENT OF INSULATION REFER TO SHEETS A1-2980 TO A1-2990

NOTE :
FOR STL COLUMN CLADDING REFER TO DETAIL REF ON ZONE PLANS AND ENLARGED PLANS.

1 A1-2000 LOWER CONCOURSE LEVEL ZONE 07 FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4 8 16 24
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
0	03/31/14	ISSUED FOR CONSTRUCTION	GM
1	04/22/14	ISSUED FOR BID - ADDENDUM #3	GM
2	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
3	09/13/14	PER ASI No. 0127	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
ZONE 07 FLOOR PLAN

ARCHITECT / ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL
DESIGNED BY P. MACPHAIL
CHECKED BY W.R. BRADLEY
DRAWN BY K. WROBLEWSKI
DATE 09/12/2014
SCALE 1/8" = 1'-0"
SIZE E
FACILITY NO. 140
REVISION 3
SHEET NUMBER SKA - 4285
SEQUENCE NUMBER of

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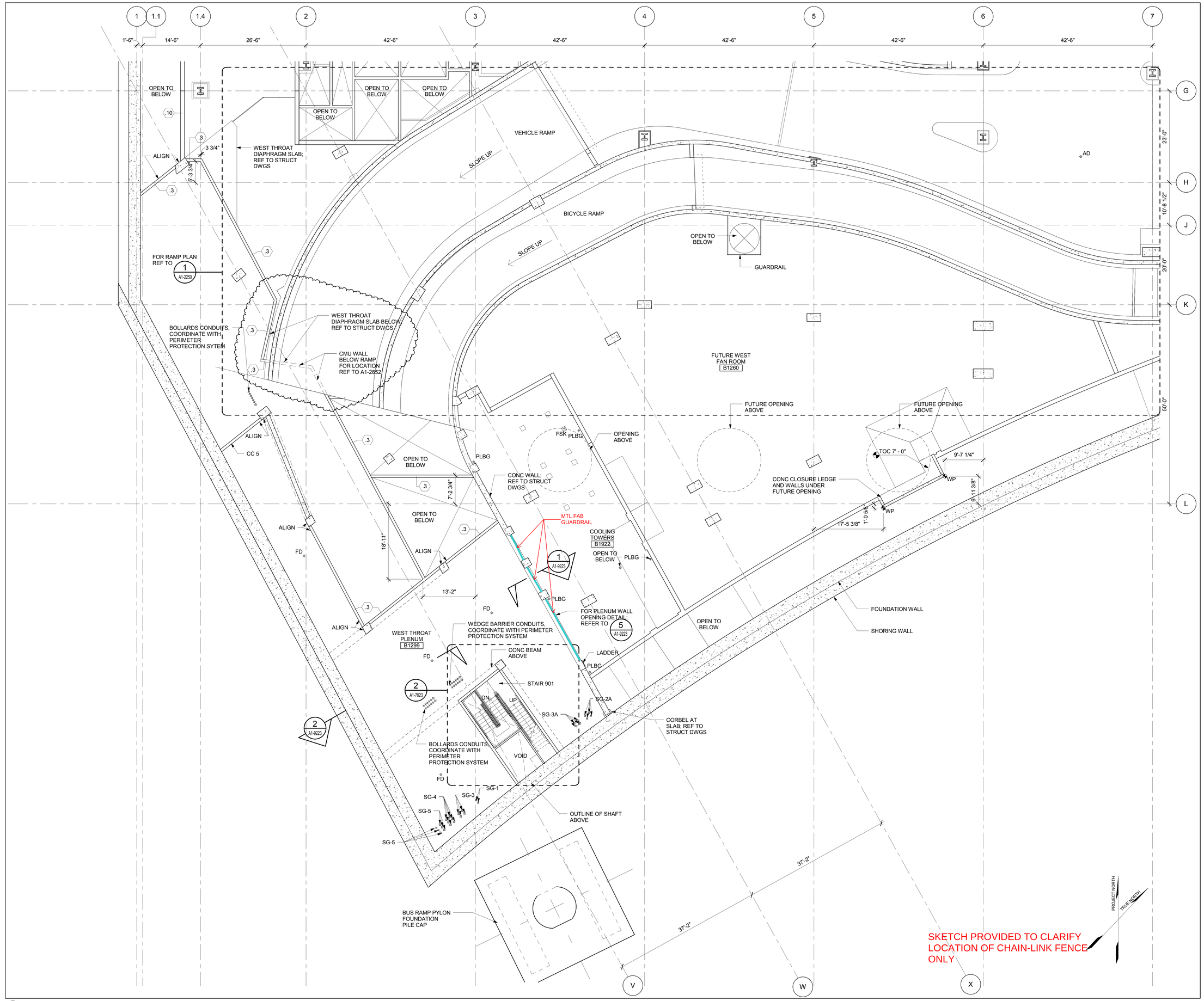

1 A1-2000 LOWER CONCOURSE MEZZANINE LEVEL ZONE 02/10 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16

Key Map

N

REVISIONS

NO.	DATE	DESCRIPTION	BY
0	03/31/14	ISSUED FOR CONSTRUCTION	GM
1	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
2	09/19/14	PER ASI No. 0127	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
WEST THROAT + 7' - 0" SLAB
FLOOR PLAN

ARCHITECT / ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
P. MACPHAIL	W.R. BRADLEY
DRAWN BY: S. PALAZOV	DATE: 09/12/2014

SCALE	SIZE	FACILITY NO.	REVISION
1/8" = 1'-0"	E	140	2

SHEET NUMBER
SKA - 4286

SEQUENCE NUMBER
of

A1-2252

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BASED ON A1-2252

SECTION 05 50 00 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Miscellaneous metal fabrications not specified in other Sections.
2. See Schedule of Items, but not limited to.
3. Installation of finish hardware, specified in Section 08 71 00, on steel gates.
4. Electrical continuity and grounding of this work.
5. Mockups.
6. Source and field quality control testing.
7. Warranties and indemnities.

B. ***1 . . .*** Stainless ~~steel bollard covers, stainless~~ steel railings and railings attached to steel stairs and their shaft walls, stainless steel queuing posts and top rails, structural glass railings, metal gratings, ~~and stainless steel decorative railing and mesh on Park Level,~~ and architectural metal fabrications are specified elsewhere in Division 05 75 00 Architectural Metal Fabrications.

C. **DELETED** ~~Refer to Part B Documents applicable to the Section.~~ ***. . . 1***

D. General: Certain components of the metal assemblies may not be fully detailed on the Drawings which indicate only desired profile and design intent.

1. Engineer, fabricate, and install these components within the physical limitations indicated on the Drawings.
2. Drawings and calculations for the assemblies shall be prepared, signed and sealed by the Contractor's Engineer.
3. Submit drawings and calculations to AHJ for approval, and pay fee(s) incurred thereby before start of installation.
4. Fasteners and connections are shown schematically. Final fasteners or connections size and location shall not conflict with or require revision of the finish profiles of the supporting and supported work.
5. Connections to the supports shall not impose eccentric loading, or induce twisting or warping and shall be able to accommodate misalignment of the structure within limits allowed by the ACI and AISC tolerances.
6. Mockup construction, when specified, is also a requirement of this Section and its cost shall be included in the Contractor's bid.

1.2 ABBREVIATIONS AND ACRONYMS

A. AHJ: Authorities Having Jurisdiction.

B. AISC: American Institute of Steel Construction.

C. AISI: American Iron and Steel Institute.

D. ANSI: American National Standards Institute.

E. AWS: American Welding Society.

F. BAAQMD: Bay Area Air Quality Management District.

G. LEED: Leadership in Energy and Environmental Design.

H. MSDS: Material Safety Data Sheets.

I. SCAQMD: South Coast Air Quality Management District.

J. SSPC: Society for Protective Coatings (formerly known as Steel Structures Painting Council).

K. TIG: Tungsten Inert Gas (Welding).

L. TJPA: Transbay Joint Powers Authority.

M. VOC: Volatile Organic Compound.

1.3 DEFINITIONS

A. General: In addition to definitions specified in Article 1.01 of the General Conditions, the following applies to this Section. Where the provisions are in conflict, the more restrictive requirements apply.

B. Contractor's Engineer: California-licensed structural engineer, employed by the Contractor, with a minimum 5 years' experience in the design of assemblies similar in scope to those for the Project, including drawings, testing program development, test-result interpretation, and comprehensive engineering analysis that show the assemblies' compliance with the specified requirements.

C. Engineer (verb) and Engineering: As used in this Section, includes engineering, fabrication and installation.

D. Engineering Services: Services performed for installation of assemblies similar to those indicated for this Project in material, design, and extent.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meetings: Comply with Section 01 12 00 and Section 01 14 00, except as specified below. Where the provisions are in conflict, the more restrictive requirements apply.

B. Coordination:

1. Coordinate installation of anchors for the work of this Section. Furnish setting drawings, templates and directions for installing anchorages, including inserts, anchor bolts and items with integral anchors to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
2. Coordinate respective work to establish relationship between these other Sections and to provide completed installations shown and required.

C. General: The Contractor is responsible for engineering, fabrication and installation the work of this Section in accordance with the design intent, design criteria, performance requirements, applicable codes and ordinances at the time of award, and requirements of AHJ. Structural and operational design requires the certification of a California-registered civil or structural engineer who shall also become the engineer of record for this portion of the work.

1.5 SUBMITTALS – GENERAL

A. Comply with Article 3.12 of the General Conditions, and Sections 01 13 00, except as specified below. Where the provisions are in conflict, the more restrictive requirements apply. Do not submit items not requested.

B. Product Data:

1. Submit manufacturer Product Data, specifications and installation instructions for manufactured items.
2. Submit the manufacturers' literature, including engineering data for anchors.

C. Shop Drawings:

1. Submit plans, elevations and scale details of members, materials and connections. Draw plans and sections at not less than 1:48 scale, and details at not less than 1:4 scale.
2. Include jointing details, methods of setting, sealing, securing, anchorage, and field connections.
3. A California-licensed structural engineer specified herein shall be responsible for:

   a. Production and review of Shop Drawings.
   b. Stamping and signing each Shop Drawing and any associated calculations performed.

4. Final review of Shop Drawings shall be contingent upon complete submission of structural calculations, where appropriate, documentation, certifications, and approvals of anchorage, samples, mockups and test reports. Cross-reference structural calculations to appropriate Shop Drawing details.
5. For components to be embedded in concrete and masonry work, furnish templates supplemented by dimensioned Shop Drawings to trades placing those components in their work. Assist in location of these components where so requested by those trades.

D. Samples: Submit following Samples in sizes indicated.

1. Extruded and formed metals: Minimum 12 inches long.
2. Metal sheet: Minimum 12-inch square and of specified thickness.
3. Posts Inserts: Full size unit with cap.
4. Resilient Bumpers: 12-inch long.

E. Engineering Calculations: For components of the metal fabrications engineered by the Contractor, submit calculations signed and sealed by the Contractor's Engineer to demonstrate Code compliance for the components, including railings.

F. Corrosion Analysis: Together with other submittals, submit a letter from a professional engineer, specialized in corrosion prevention, stating that components of the work of this Section and attachments to adjacent construction are designed or isolated to eliminate galvanic action between them.

G. Certificates: Manufacturer certification, on manufacturers' letterhead, and test results conducted by a testing laboratory acceptable to TJPA, on the K-12-rated bollards.

1.6 CLOSEOUT SUBMITTALS

A. Submit maintenance instructions in accordance with Section 01 70 00. Include in Maintenance Manual:

1. Printed copies of maintenance instructions for assemblies and their finishes.
2. Proper care and maintenance of assemblies and hardware.
3. Recommended inspection schedule.
4. Copy of each duly reviewed Shop Drawings in their most recent amended form.
5. Complete explanation of operation principles and sequences.
6. Complete parts and materials list with numbers, sizes, method statement of replacement of component parts of installation.

B. Coordinate and incorporate Operating Procedures Outline as defined in Section 11 24 23 into training requirements for maintenance workers prior to accessing specified assemblies.

C. Submit instructions for proper cleaning and routine maintenance of assemblies together with recommended cleaning materials and frequency.

D. Provide touchup repair kit or touchup instructions to TJPA for each type of factory-applied finish.

1.7 LEED SUBMITTALS

A. Within 30 days of Contract award, assemble and submit all LEED material information on the "LEED Material Tracking Spreadsheets" and forms provided in the Project Manual, together with all supplemental documentation as required by LEED.

B. Credit MR 4: Product data indicating percentage by weight of post-consumer and post-industrial recycled content for products having recycled content. Include a statement indicating projected costs for each product having recycled content.

C. Credit MR 5: Product data indicating location of extraction and processing and location of manufacture. Include a statement indicating projected costs for each product being extracted, processed, and manufactured within a straight-line 500 mile (800 kilometer) total travel distance of the project site using a weighted average determined through the following formula: (Distance by rail/3) + (Distance by inland waterway/2) + (Distance by sea/15) + (Distance by all other means) = 500 miles [800 kilometers].

D. Credit IEQ 4.1: If field applied, provide manufacturer's MSDS or technical data sheet showing a printed statement of VOC content for all adhesives and sealants used on the project and demonstrating compliance with SCAQMD Rule #1168, effective July 1, 2005 and amended January 7, 2005. Provide manufacturer's product data for aerosol adhesives, including printed statement of VOC content that demonstrates compliance with the limits defined in Green Seal standard GS-36, in effect October 19, 2000.

E. Credit IEQ 4.2: If field applied, provide manufacturer's MSDS or technical data sheet showing a printed statement of VOC content for all paints and coatings used on the project and demonstrating compliance with Green Seal standard GS-11, Paints, May 20, 1993; with Green Seal GC-03, Anti-Corrosive Paints, January 7, 1997; with SCAQMD Rule #1113, effective January 1, 2004.

1.8 QUALITY CONTROL

A. General: Certain components of the metal assemblies may not be fully detailed on the Drawings which indicate only desired profile and design intent.

1. Engineer, fabricate, and install these components within the physical limitations indicated on the Drawings.
2. Drawings and calculations for the assemblies shall be prepared, signed and sealed by the Contractor's Engineer.
3. Submit drawings and calculations to AHJ for approval, and pay fee(s) incurred thereby before start of installation.
4. Fasteners and connections are shown schematically. Final fasteners or connections size and location shall not conflict with or require revision of the finish profiles of the supporting and supported work.
5. Connections to the supports shall not impose eccentric loading, or induce twisting or warping and shall be able to accommodate misalignment of the structure within limits allowed by the ACI and AISC tolerances.

B. Structural Design and Inspection: Structural design and inspection of structural components related to stairs, railings, landings, platforms and similar structural elements shall be performed by the Contractor's engineer.

C. Qualifications

1. Installers: Competent installers with minimum 5 years experience in installation of AMF. Upon request provide record of successful in-service performance, as well as sufficient production capacity to produce required work. Installers shall be thoroughly conversant with laws, by-laws and regulations which govern.
2. Welders: Welding of structural components related to stairs, railings, landings, platforms and similar structural elements shall be performed by fabricator having minimum certification of AWS. Welders shall be familiar with welding procedures for structural welding for steel; structural welding for aluminum, and structural welding for sheet steel.
3. Organic-Coating Applicator Qualifications: Firm experienced in successfully applying organic coatings of type indicated to aluminum extrusions and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.
4. Licensed Professionals: California-licensed structural engineer carrying professional liability insurance.

D. Welding: Quality procedures and personnel according to ANSI/AWS D1.1/D1.1M, ANSI/AWS D1.2/D1.2M and ANSI/AWS D1.3/D1.3M. Certify each welder has satisfactorily passed AWS qualification test for welding processes involved and if pertinent, has undergone recertification.

E. Certifications: Submit certification from the Contractor’s engineer stating that assemblies are capable of supporting their own weight and specified live loads, without failure and within the criteria specified.

F. Mockup: Erect at the Project site a full height by 3 vertical supports mockup of the crash rail, complete with resilient bumpers.

1. Make mockup complete with all accessories, features required for the final assembly on the building.
2. Modify as necessary to achieve a mockup satisfactory to the TJPA Representative, or remove and construct additional mockup(s).
3. Approved mockup shall serve as the standard for the same work on the building.
4. Remove mockup only after completion and acceptance of final work unless its incorporation in the Work is authorized by the TJPA Representative.
5. Protect mockup until its removal or incorporation in the Work is authorized by the TJPA Representative.

G. Corrosion Prevention:

1. Engage a California-licensed Corrosion Engineer who is an expert in corrosion, to conduct a component-by-component analysis of potential corrosion resulting from galvanic action between materials, for components of curtain wall and aluminum panels and provide report.
2. Submit Engineering Report to TJPA Representative, for review prior to submission of Shop Drawings. Ensure Sample and test results are available upon request.

1.9 DELIVERY, STORAGE AND HANDLING

A. Storage and Handling:

1. Handle and store materials at job site to prevent damage to other materials, existing construction or property.
2. Handle components with care, and provide protection for surfaces against marring or other damage. Ship and store members with cardboard or other resilient spacers between surfaces. Use lifting chokers of material that will not damage surface of steel members.

1.10 WARRANTY

A. General:

1. The warranties are governed by the requirements herein, those of Section 01 17 40, and the General Conditions of the Contract.
2. Warranties specified in this Article shall not deprive the TJPA of other rights the TJPA may have under other provisions of the Contract Documents and are in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Warranty: Manufacturer shall warrant work of this Section for 5 years against defects and/or deficiencies in accordance with General Conditions of the Contract. Promptly correct defects or deficiencies which become apparent within warranty period, to satisfaction of TJPA Representative and at no expense to TJPA.

1.11 RECORD DOCUMENTS (AS-BUILT)

A. Maintain and submit record documents as specified in Article 3.09 of the General Conditions and Sections 01 17 20

PART 2 - PRODUCTS

2.1 LEED MATERIAL REQUIREMENTS

A. Credit MR 4: Provide cast nodes, W-shapes, and plates steel materials with minimum 70% recycled content where the total recycled content equals the sum of post-consumer recycled content and ½ post-industrial recycled content.

B. Credit IEQ 4.1: All VOC containing materials applied on site inside of the waterproofing barrier shall comply with LEED credits IEQ 4. Provide adhesives and sealants with VOC content and chemical component limits not exceeding the content limits defined by SCAQMD Rule #1168, July 1, 2005, amended January 1, 2005, and Green Seal GS-36, effective October 19, 2000 for aerosol adhesives as applicable.

C. Credit IEQ 4.2: All VOC containing materials applied on site inside of the waterproofing barrier shall comply with LEED credits IEQ 4. Provide paints and coatings that comply with the limits defined by Green Seal Standard GS-11, effective May 20, 1993, GC-03, January 7, 1997, and SCAQMD Rule #1113, effective January 1, 2004, as applicable.

2.2 MANUFACTURERS

A. One of the manufacturers named, or equal, with a record of successful performance, acceptable to the TJPA Representative and subject to conformance to requirements of Drawings, Schedules and Specifications.

2.3 PERFORMANCE REQUIREMENTS

A. General:

1. Provide railings capable of withstanding the loads prescribed by the CBC without exceeding the allowable design working stress of the materials involved, including anchors and connections.
2. Apply each load to produce the maximum stress in each component.
3. Other loading criteria applicable to this Section are specified in Sections 08 05 00 and 08 05 13.

B. Deflection: Limit deflection under uniform load to L/360; L/120 under concentrated load; or 1/4 inch maximum, whichever is more restrictive.

C. Design Criteria for Critical and Non Critical Areas: Refer to Note CD 6 on Structural Drawing S-0005.

1 . . .

D. **Provide bonding where required by the specific equipment installation requirements of by other requirements of the project contract documents.** ***. . . 1***

2.4 MATERIALS

A. Stainless Steel: Austenitic stainless steel as follows.

1. Tubing: ASTM A 554, Grade MT 316L.
2. Pipe: ASTM A 312/A 312M, Grade TP 316L.
3. Sheet, strip, plate, and flat bar: ASTM A 666, Type 316L.
4. Bars and shapes: ASTM A 276, Type 316L.

B. Structural Steel Shapes, Plates, Etc.: Material conforming to ASTM A 36.

C. Hollow Structural Steel Sections: Material conforming to ASTM A 36.

D. ***1 . . .*** Steel Pipe Handrails: Conforming to ASTM A **500** ~~53, Type "S", Schedule 40, Grade A steel pipe~~.

E. Steel Pipe Bumpers: Conforming to ASTM A **500** ~~53, Schedule 80~~. ***. . . 1***

F. Galvanized Sheet Steel: Supply 20-gage core thickness commercial quality to ASTM A 653, CS Type A, with Z275 (G90) zinc coating designation to ASTM A 653.

G. Cast Steel Handrail Wall Brackets: In compliance with local building code requirements and to meet design requirements indicated on Drawings.

H. Welding electrodes and filler metal: Types recommended by AWS for each type of metal required, and as required for conditions of use. Ensure color match, strength and compatibility in the fabricated items.

I. High Strength Bolts:

1. Steel: Bolts, nuts and washers conforming to ASTM A 32. Supply each type and size of bolt and nut of same manufacture and of same lot.

   a. Bolts: Heavy, hexagon head high strength structural bolts, of standard size, of lengths required for thickness of members joined and for type of connection.
   b. Nuts: Heavy, hexagonal, semi-finished nuts.
   c. Washers: Flat and smooth hardened washers, quenched and tempered to suit applications, ASTM F 844.

d. Hardened Steel Washers: To suit applications and conforms to ASTM F 436.
e. Lock Washers: Helical spring type steel “lock” washers to suit applications and conforming to ASME standards.

2. Stainless Steel: For exterior locations, unless otherwise indicated, use AISI Type 316.

a. Bolts: To suit applications and conforms to ASTM F 738.
b. Nuts: To suit applications and conforms to ASTM F 836.
c. Lock Washers: Helical spring type steel “lock” washers to suit applications, conforming to ASME standards.

3. Vandal-Resistant Fasteners: AISI Type 304 stainless steel, dual pin type to suit applications and acceptable to TJPA Representative. Use for exposed fasteners in public areas, unless otherwise indicated.
4. Security Fasteners: Button head "Torx® Plus R," tamper-resistant No. 10 stainless steel machine screws.

J. Common or Ordinary Bolts and Anchor Bolts: Unfinished bolts conforming to ASTM A 307, Grade A, with hexagon heads and nuts where exposed in the finish work. Provide common bolts of lengths required to suit thickness of material being joined, but not projecting more than 1/4 inch beyond nut, without the use of washers. Supply anchor bolts of lengths noted, but projecting not less than 1/2 inch beyond nut unless otherwise noted.

K. Dielectric Separator: Provide quick drying non-staining alkali-resistant bituminous paint or epoxy resin solution or membrane type to acceptance of TJPA Representative.

L. Cast-In-Place and Post-Installed Anchors in Concrete: Torque-controlled expansion type or chemical type with capability to sustain, without failure, load imposed with a safety factor of 4.

1. Material for interior locations: Carbon-steel components zinc-plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5 unless otherwise indicated.
2. Material for exterior locations: Alloy Group 1 or Group 2 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

M. Grout and Anchoring Cement:

1. Non-shrink non-metallic grout: Premixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with CE CRD-C 621. Provide grout specifically recommended by manufacturer for application of type specified in this Section.
2. Manufacturer: Bonsal Anchor Cement by WR Bonsal Co., Por-Rok by Minwax Construction Products Division.

N. Primer: The following by Tnemec, or equal of the same generic type and with equivalent characteristics by Carboline, and Sherwin Williams.

1. Shop Applied: “90-97 TnemeZinc”.
2. ***1 . . .*** ~~Field Applied: “94-H20 Hydro-Zinc”.~~ **Shop Applied Primer of the same generic type and with equivalent characteristics by Carboline.**
3. ~~For surfaces receiving high performance coatings, coordinate with Section 09 97 15.~~ **Shop Applied Primer of the same generic type and with equivalent characteristics by Sherwin Williams.**
4. ~~For surfaces receiving paint, coordinate with Section 09 91 00.~~ **Field Applied: “94-H20 Hydro-Zinc”.**
5. **Field Applied Primer of the same generic type and with equivalent characteristics by Carboline.**

6. **Field Applied Primer of the same generic type and with equivalent characteristics by Sherwin Williams.** ***. . . 1***

O. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC Paint 12 but containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

2.5 SCHEDULE OF ITEMS:

A. Unistrut Framing:

1. ***1 . . .*** Multipurpose steel profiles by Unistrut, Cooper B-Line, Inc. **or** Power-Strut U.S., ~~or Famet,~~ complete with manufacturer's standard steel fasteners and connectors, nuts integrally self-locking or fitted with locking devices. ***. . . 1***
2. Provide hot-dip galvanized finish on steel members, hanger rods, nuts, bolts, connectors, and anchors.

B. Chain: Hot-dip galvanized Torus chain, Grade 30, 1/2-inch size, with hot-dip galvanized round eye bolt snap and bolt type shackles sized to fit the chain.

C. ~~Queuing Post Inserts:~~

~~1. Type 316, heavy wall, threaded female sleeves provided with studs for embedment in concrete, removable watertight threaded covers of the same material, and designed to receive the queuing posts with a matching thread.~~
~~2. Unless otherwise indicated, make post inserts 4 inches long.~~
~~3. Coat surfaces that will be embedded in concrete with bituminous paint applied to a DFT of 5 mils minimum.~~

D. ***1 . . .*** **DELETED** ~~Hot Dipped Galvanized Steel Mesh and Closure Plates At Bus Deck Guardrail:~~

1. **DELETED** ~~Supply and install 1 inch by 1 inch hot dipped galvanized steel mesh set in angle frame bolted to galvanized horizontal steel tubes provided by Structural Division.~~

   a. **DELETED** ~~Comply with ASTM A 510.~~
   b. **DELETED** ~~Supplier: Equal to Gerard Daniel Worldwide.~~

2. **DELETED** ~~Mesh shall use galvanized No. 9 Gage wire interwoven is vertical and horizontal grid pattern.~~
3. **DELETED** ~~Frame shall be constructed of 1 inch by 1 inch by 1/4 inch thick galvanized plates and angles to receive mesh with 1/4inch galvanized pressure bar attached with galvanized bolts/screws. Attach to horizontal tubes with galvanized angle and galvanized bolts connection with peened threads to prevent loosening.~~
4. **DELETED** ~~At Guardrail vertical posts provide 1/4inch galvanized steel closure plate sloped to drain with bent and curved edges.~~
5. **DELETED** ~~Provide 1/4inch thick galvanized steel flat plate within mesh area to receive light fixtures by Division 26. See Drawings for locations.~~
6. **DELETED** ~~Complete assembly to be painted by Section 09 97 15 High Performance Coatings.~~
7. **DELETED** ~~At expansion joints, provide galvanized pipe sleeves fixed to one side and vertical pipe as shown on drawings, see sheet A1 8675 and A1 3190.~~

E. **DELETED** ~~M 50 Rated Bollards: Both of the following by RSA Protective Technologies, LLC.~~

1. **DELETED** ~~BOL 1 at the East and West End of the Bus Deck Drive Aisle: Of the dimension and profile indicated, model SWB3610 steel bollards by Secure USA.~~

2. **DELETED** ~~BOL 2 at the Pedestrian Islands: Of the dimension and profile indicated, shallow mount steel bollards, model SWB3610 "Sentry Bollards" by RSA Protective Technologies.~~
3. **DELETED** ~~Characteristics:~~

   a. **DELETED** ~~Bollard Protection Rating: ASTM F2656-07 criteria M 50.~~
   b. **DELETED** ~~Maximum Allowed Embedment: 5 inches.~~
   c. **DELETED** ~~Maximum Diameter: 10.75 inches.~~
   d. **DELETED** ~~Hot dipped galvanized after fabrication. Prepare for painting by Section 09 91 00.~~

F. **DELETED** ~~Steel Bollards BOL 3~~

1. **DELETED** ~~Interior hot dipped galvanized steel bollard complete with base plate, anchor bolts and through slab plate as detailed.~~
2. **DELETED** ~~Fill pipe with concrete to profile shown as detailed.~~
3. **DELETED** ~~Hot dipped galvanized after fabrication. Prepare for painting by Section 09 91 00.~~
4. **DELETED** ~~Design Bollard BOL 3 to comply with CFC 312 2007.~~ ***. . . 1***

G. Retractable Bollard: See Specification Section 28 16 44 Perimeter Security Systems.

H. ***1 . . .*** Bollards in Landscape Areas: See Specification Section ~~12 93 30 Site Bollards~~ **28 16 44 Perimeter Security Systems**. ***. . . 1***

I. Expanded Steel Mesh for Gypsum Board Partition Reinforcement: See Section 09 22 19 Metal Framing.

J. Vanity Support Steel Frame

1. Design for 1600 lb concentrated load at any point along the spans with a maximum deflection of L/360 or higher as necessary to prevent stone cladding from forming cracks.
2. Supply and install hot dipped galvanized steel H.S.S. posts, beams and frame complete with base plates and expansion bolts as shown on drawings. Provide framing to underside of structure to provide required stiffness.
3. Seal all bolted connections through waterproofing membrane.
4. Co-ordinate with carpentry and other trades for final design.
5. Provide frame for restroom mock-up works. Modify after field review if required.

K. Deflection And Lateral Seismic Support Steel For Masonry Walls (Non-Load Bearing): as detailed; steel angles, fixed both sides to structure above, continuous where exposed in finished areas. For size and extent, see structural drawings. See plan details of masonry for required support plates at seismic joints.

L. Support steel for ceiling hung toilet partitions (at all pilaster locations):

1. Design for 1000 lbs per pilaster.
2. Provide 8" x 2 ¼" hot dipped galvanized steel channel for support of ceiling hung toilet partitions hung from 2" x 2" x ¼" diagonal angle struts at ends and at 4'-0" centers max. Provide expansion type anchorage or unistrut type cast-in attachment to satisfy AHJ. Anchor to underside of slab.
3. Drill for and provide two galvanized 3/8" dia. Bolts at each toilet partition pilaster, according to reviewed shop drawings. Coordinate with toilet partition manufacturer (see Section 10 21 13 Toilet Partitions and Screens).
4. Provide additional steel angle bracing for seismic requirements and for partition support above ceiling.

5. Coordinate with Mechanical and Electrical Divisions with ductwork, conduits, etc. Span over or under ductwork and the like as required, to support partitions. Provide site mock-up for approval before proceeding.

M. ***1 . . .*** Corner Guards**:** ~~For Concrete Columns/Concrete Block Walls: as detailed, 4' x 4" x ½" fabricated aluminum angles, 4' 0" high minimum and as shown on drawings with anchor straps at 12" o.c.~~

1. **For Concrete Columns/Concrete Block Walls: As detailed, 4" x 4" x ½" fabricated aluminum angles, 8'-0" high typical, or as shown on drawings with anchor straps at 12" o.c.**
2. **For Gypsum Board Wall: As detailed, 4" x 4" x ½" fabricated aluminum angles, 8'-0" high typical, or as shown on drawings. Flush countersunk fasteners. *. . . 1***

N. Aluminum Checkered Plate:

1. ***1 . . .*** 1/8" thick aluminum checkered plate (1/4" thick at loading dock) for ~~stair walls and~~ miscellaneous enclosures. (See enclosures in loading dock). ***. . . 1***
2. Attach with 400 series stainless steel recessed fasteners through to steel studs in gypsum board, maximum 2'-0" o.c., coordinate. Flush countersunk fasteners.
3. When used as enclosure, attach to aluminum 1/8" thick "Z" clips/channels to structure as shown.
4. Provide movement allowance in anchorage.
5. Clear grey anodized finish.
6. ***1 . . .*** **Attach, per CID A-A-1922A, 400 series stainless steel recessed fasteners through to stainless steel expanding sleeve in CMU wall. Flush countersunk fasteners maximum 2'-0" o.c. *. . . 1***

O. Catwalks:

1. Design, supply and install galvanized steel catwalk and railings and floor grating as detailed on drawings.
2. Design floor with 1-3/16" o.c. spaced 1" x 1/8" bearing bars floor grating grille with cross bars at 4" o.c. to support minimum of 200 lb per square foot and to authorities having jurisdiction whichever is higher.
3. Hot dip galvanize after fabrication.
4. Refer to structural drawings for work by that division for this section. Coordinate.
5. Provide removable handrail complete with steel H.S.S. sleeves and galvanized bolt fasteners as shown on drawings.

P. Security Screens:

1. Complete with hot dipped galvanized steel H.S.S. and angle frame, mesh with #10 gage wire, fasteners, clips to heights and widths as shown on drawings.
2. Provide galvanized sliding doors, with track rail and roller wheels with limit pins and HASP for padlock.
3. Coordinate with Electrical division to allow for penetrations of cable trays and the like.
4. Provide 1" x 1" wire grid.
5. By California Wire Products, Corona, CA (Basis of Design).
6. Coordinate with 08 71 10 Hardware. For hardware set number 15.
7. Color: Machinery Gray Powder Coated.

Q. Elevator Pit Divider Screens:

1. Complete with hot dipped galvanized steel angle frame, brackets, steel mesh with #9 wire, and to height and width as shown on drawings.

2. Coordinate with gypsum board Section 09 21 16 for installation of gypsum board sloped cants.
3. Prepare surfaces for priming and painting by Section 09 91 00.

R. Elevator Ladders:

1. Complete with hot dipped galvanized stringer rail, rungs and brackets and fasteners to size shown on drawings.
2. Coordinate with steel liner wall provided by others.
3. Prepare surfaces for priming and painting by Section 09 91 00.

S. Pipe and duct protection

1. All pipes and ductwork within 4'-0" of the floor shall be surrounded by three 4" x ¼" bent steel plate guards, 12" wide and 6" deep at 16" o.c., galvanized and anchored to structure behind with 2" x 2" clip angles. See drawings for locations.

T. Miscellaneous Railings: Part of Section 05 51 00 Steel Stairs and Section 11 13 00 Loading Dock Equipment.

U. Overhead Catenary System (OCS) Steel Framing

1. Design, supply and install hot dipped galvanized Overhead Catenary System with steel framing to support transit overhead wires.
2. Steel framing system shall be an extension of the steel framing H.S.S. supports provided by the Structural Steel section. Coordinate work.
3. Provide H.S.S. vertical adjustable extensions complete with H.S.S. tubes to fit, through bolt attachment, with washers and nuts, plates, clips and continuous steel channel as shown on drawings.
4. All attachment shall be by bolted connections with no welding on site. Hot dipped after fabrication.
5. Provide tamper-resistant fastening.
6. Coordinate with Transit Authority for anchor points and levels and allowance for the framing system for attachment of cable.
7. Fiber-Reinforced Plastics Extruded Isolation Material: Manufactured by Liberty Pultrusions (Basis of Design) of West Mifflin, PA. Provide continuous length with minimum joints of fiber-reinforced plastic isolation material extruded to fit continuous channel and fastened to channel as recommended by manufacturer. Treat and seal joints per manufacturer's standard details. Internal and external of channel material thickness not less than 0.375" thick. Custom color to be provided. Polyglass "F" or "C" as recommended by manufacturer using fire retardant type material.

   a. Other manufactures below are acceptable provided they meet the performance requirements:

      1) Advance Fiber Products, La Crosse, WI 54601
      2) Bedford Reinforced Plastics, Bedford, PA 15522

8. See sheets beginning at A1-8550.

V. Manhole Covers (MHC):

1. Design, supply and install hot dipped galvanized steel framed and concrete lift-out lid for the transformer vaults at the sidewalk level to SFPUC standards. See Architectural drawings beginning on A1-3001.

2. Design for a minimum uniform load of 250 lbs/sf or a concentrated load of 8000 lbs/f and to SFPUC standards whichever produces the greatest stress. Provide hot dipped galvanized and epoxy coated reinforcing bars required for loading. Hot dipped galvanized frame to be minimum 1/8" thick. Emboss SFPUC lettering to standard requirements.
3. Manhole Cover #1 (MHC #1): Manhole cover constructed with nominal 5'-0" x 5'-0" concrete with beveled steel frame with 39" circular fixed hot dipped galvanized grating and frame. Frame and rebars to be hot dipped galvanized to SFPUC standards. Provide four (4) brass lifting lugs (couplings) 1-1/2" diameter to SFPUC standard. Finish concrete to be minimum 5000 PSI air-entrained with color and finish to match Landscape Division. Provide water tight perimeter seal with backing and sealant. Design similar to drawing A1-7275. SFPUC grating to be SFPUC standard to vented installations similar to Swiveloc vented cover. Vented cover shall be minimum 60% open.
4. Manhole Cover #2 (MHC #2): Manhole constructed of nominal 10'-0" x 7'-0" concrete with hot dipped galvanized steel frame similar to MHC #1 except without grating. Provide minimum six (6) brass lifting lugs (couplings) 1-1/2" diameter to SFPUC standard. Coordinate final number and load limits of lifting lugs with SFPUC requirements. Provide hot dipped galvanized rebars. Provide minimum 5000 PSI with color and finish to match Landscape Division, with air-entrained concrete. Provide water tight seal with backing and sealant.
5. Manhole Cover #3 (MHC #3): Provide 39" diameter manhole cover by Swiveloc (basis of design) complete with UG-2 design vented cast grated cover carrier rail, exhaust ports, bent head actuator bolt and drain grooves. No. 072154.

W. Masonry Vertical Seismic Joints:

1. Supply and install galvanized steel cover plates on masonry seismic joints.
2. Attach plates on one end at maximum 2'-0" o.c.
3. Joint to be filled with fire safing and smoke seal by 07 21 00.
4. See drawings beginning at A1-3192.

X. Janitor Closet Galvanized Crash Rail:

1. Supply and install hot dipped galvanized floor mounted crash rail complete with hot dipped galvanized flanges and fasteners.
2. See Architectural drawings for detail and location.

Y. Cast-In Steel Angle

1. In Loading Docks provide hot dipped galvanized cast-in slab edge angle at edge of raised slabs and at ramp location not covered by other sections.
2. Angle to be 6" x 6" x 3/8" thick. Miter fit all corners.

Z. ***1 . . .*** Transformer Vault Steel Landing Platforms, Railings and Stairs: Design, supply and install all steel work in transformer vaults including but not limited to ladders, stairs, platform railing guards gratings as shown on drawings. All material which is taken from SFPUC standard details. All material shall be hot dipped galvanized except for railings that are blast cleaned and prime coated. All structural steel conforming to latest ASTM specification A-36 and detailing and fabrication to latest AISC specifications. Provide surfaces smooth and face from burs and sharp projections. All grating shall be welded type with 1" x 1/8" bearing bars at 1-3/16" o.c. and cross bars at 4'-0" o.c. Design to OSHA requirements. **Swing gate with automatic closures at access ladder landings.**

AA. **DELETED** ~~Galvanized Angle at Bus Deck Level Curb: Supply and install hot dipped galvanized angle 6" x 4" x ¼" thick for WMP splice joint. See details beginning at Detail #4 on drawing A1-8675.~~ ***. . . 1***

BB. Miscellaneous required steel supports and metal fabrications which are not part of a manufactured item or covered under another Section of the Specifications, including items from installation by other Sections.

CC. Escalator Pit Curb Angle: Provide angles at escalators E304, E305, E510 and E512. Angles are to form parts of escalator pits. See drawings started at A1-7550.

2.6 FABRICATION

A. General:

1. Design assemblies to avoid or minimize site welding, except where attached to a concealed support.
2. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.
3. Remove sharp and rough areas on exposed surfaces. Projecting edges are not permitted. Ease exposed edges to a radius of approximately 1/32 inch.
4. Cut, reinforce, drill, punch, thread and tap metal work as required to receive finish hardware and similar items of work.
5. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
6. Form exposed connections with flush, hairline joints unless welded, in which case connections shall be invisible.
7. Close exposed ends of handrail and railing members.
8. Provide wall returns at ends of wall-mounted handrails.
9. Provide sheet or plate fillers to support structural loads of handrails where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thickness. Size fillers to produce adequate bearing to prevent bracket rotation and overstressing of substrate.

B. Preassemble and prime assemblies in shop to greatest extent possible to minimize field splicing and assembly. Clearly mark units for reassembly and coordinated installation.

1. Disassemble units only as necessary for shipping and handling limitations.
2. Clearly mark units for reassembly and coordinated installation.
3. Use connections that maintain structural value of joined pieces.
4. Form changes in direction of railing members by radius bends of radius indicated.

C. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain profile of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

D. Weld connections continuously.

1. Do not use stitch, spot or tack welds on exposed surfaces.
2. Use materials, methods and welding sequence that minimize distortion and develop strength and corrosion resistance of base metals.
3. Comply with AWS D 91 for recommended practices in shop welding. Welds on exposed surfaces shall be continuous.
4. Use only technicians qualified to weld stainless steel using TIG equipment.
5. Maintain proper welding temperature to avoid discoloring adjacent metal.
6. Clamp components in jigs during welding to avoid distortion.
7. Alligatored, discolored and warped components will be rejected.
8. Obtain fusion without undercut or overlap.
9. Remove welding flux immediately.

E. At exposed connections, finish exposed welds and surfaces to be invisible from adjacent surfaces, under normal lighting conditions, and so those contours of welded surface match those adjacent.

F. Provide wall brackets, flanges, miscellaneous fittings, and anchors required for connection of metal components to other construction fabricated to the profiles and dimensions indicated on approved shop drawings.

G. Provide inserts and other anchorage devices for connecting metal components to concrete or masonry work. Fabricate anchorage devices capable of withstanding loadings imposed by the assemblies with a reasonable factor of safety. Coordinate anchorage devices with supporting structure.

H. Fabrication Tolerances:

1. Squareness: 1/8 inch maximum difference in diagonal measurements.
2. Maximum offset between components at joints: 1/16 inch except that at welded joints no offset is allowed.
3. Maximum misalignment of adjacent members: 1/16 inch.
4. Maximum bow: 1/8 inch in 48 inches.
5. Maximum deviation from plane: 1/16 inch in 48 inches.

2.7 CORROSION PROTECTION

A. Design assembly components to ensure that no metals, including alloys of the same base metal, are placed in contact with materials that will produce damage due to electrolytic action or other forms of corrosion.

B. Separate dissimilar metals to prevent electrolytic action. Provide letter of confirmation, from corrosion engineer, that infill components, accompanying trims and flashings and attachments to adjacent construction are designed to eliminate potential for galvanic action between components.

C. Comply with recommendations of the corrosion engineer approved by the TPJA Representative, as specified above.

2.8 FINISHES

A. Hot Dip Galvanizing: Galvanize all items listed, as specified in Section 05 05 12 Hot Dip Galvanizing with minimized spangles, and chemically treated.

B. Cleaning and Shop Painting:

1. Clean steel to SSPC-SP 6, “Commercial Blast Cleaning,” and remove loose mill scale, weld flux and splatter.
2. Shop prime steel, including galvanized steel, with one coat of primer (except 2 coats of primer on bollards) to dry film thickness of one mil for a single coat and 2 mils for 2 coats.
3. Paint on dry surfaces, free from rust, scale or grease. Do not paint when temperature is lower than 45 degrees F. Paint items under cover and leave under cover until primer is dry. Follow paint manufacturer's recommendations regarding application methods, equipment, temperature and humidity conditions.
4. Clean but do not prime surfaces to be field welded. Touchup these surfaces in the field as specified below.

C. Protection: Protect surfaces of prefabricated items with an electrostatically-applied strippable film. Remove film promptly after installation is complete.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Verify actual site dimensions and location of adjacent materials prior to commencing work.

1. Examine adjacent construction and supports.
2. Examine wall flashings, water and weather barriers, and other built-in components to ensure coordinated, weathertight installations.
3. Verify that substrates are within allowable tolerances, plumb, level, clean, and will provide a solid anchoring surface.
4. Restroom Mock-up: Provide vanity support installation for 1 male and 1 female public restroom for review and approval prior to continuation of work. Complete deficiencies and receive approval before proceeding with the work.

B. Notification: Notify General Contractor in writing, with copy to TJPA Representative, of conditions detrimental to the installation.

C. Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

3.2 INSTALLATION

A. General:

1. Do not install damaged and defective components.
2. Do not cut, trim or weld parts during erection.
3. Return components that require alteration to the shop for refabrication, if possible, or for replacement by new parts.
4. Install work with tight, flush joints accurately fitted.

B. Fastening to in-place construction:

1. Set railings accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels. Provide toe guards where indicated.
2. Set posts plumb within a tolerance of 1/16 inch of plumb.
3. Align rails so that variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed 1/8 inch in 12 feet.
4. Install chain so it sags no more than 2 inches for its entire length.
5. Provide required anchorage devices and fasteners to attach components securely to in-place construction.
6. Tap posts to receive crash rail bumpers. Install bumpers fastened at each post with Type 316 stainless steel bolts driven thru a washer of the same material.

C. Installation tolerances: Adjust metal fabrications for squareness, alignment, twist, levelness and plumbness to the following tolerances.

1. Squareness where applicable: Plus or minus 1/16 inch, measured on the diagonal.
2. Alignment: Plus or minus 1/16 inch where fabrications are separated by one inch or more; where components join or are separated by less than one inch, components shall be aligned; no deviations permitted.
3. Twist: Plus or minus 1/16 inch, except that deviation shall be such that joined panelized components are flush at joints; no deviations permitted.
4. Plumbness: Plus or minus 1/16 inch, except that deviation shall be such that joined panelized components are flush at joints; no deviations permitted.

5. Levelness: 1/8 inch from level, except where tighter tolerances are required for joining or alignment with adjacent work.
6. Deviation from theoretical location in plan: 1/4 inch, except where tighter tolerances are required for joining or alignment with adjacent work.

D. Field Painting and Touchup:

1. Paint bolt heads, washers, nuts, field welds and previously unpainted items. Touchup with matching paint.
2. For shop primer damaged during transit and installation, sand or wire brush damaged area down to bright metal extending the cleaning a minimum of 2 inches unto undamaged primer and immediately touchup with same primer used for shop priming.

3.3 SITE QUALITY ASSURANCE

A. Site Tests and Inspections:

1. TJPA will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
2. Testing agency will report test results promptly and in writing to the Contractor and TJPA Representative.
3. Extent and Testing Methodology: Testing agency will randomly select completed load-bearing assemblies for testing that are representative of different designs and conditions in the completed Work.
4. Weldments: For single pass fillet welds, inspect welds visually. For other types of welds, the weld testing provisions of Section 05 10 00 apply to this Section.
5. Testing agency will report test results promptly and in writing to Contractor and TJPA Representative.
6. Additional Testing: Where load-bearing assemblies are removed and replaced or are repaired, additional testing will be performed to determine compliance of replaced or additional work with specified requirements.
7. Structural Inspection: Ensure a California-licensed structural engineer specified herein inspects work of this Section during erection/installation.

B. Non-Conforming Work: Replace damaged work that cannot be satisfactorily repaired, restored or cleaned, to satisfaction of TJPA Representative at no cost to TJPA.

3.4 CLEANING AND PROTECTING

A. Cleaning: On completion of installation, clean the work of marks and other foreign substances. Clean aluminum and stainless steel by washing thoroughly with clean water and soap and rinsing with clean water.

B. Protection: Protect work against stains and damages until acceptance by TJPA.

1. Protect finishes of AMF from damage during construction period with temporary protective coverings approved by architectural metal fabricator. Remove protective covering at the time of Substantial Completion.
2. Provide protective covering on finished surfaces. Remove protection when installed work will be inspected. Do not use protective coverings that will damage finishes or become permanently bonded. Do not leave coating residue on finished surfaces.

C. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint, and paint exposed areas with same material.

2. Cleaning and touchup painting of field welds, bolted connections and abraded areas of shop paint are specified in Section 09 91 00.

D. Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and repair galvanizing to comply with ASTM A780.

E. Refinishing: Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 50 00

SPECIFICATION ISSUE LOG

Revision	Date
0	03/31/14
1	09/12/14

SECTION 05 75 00 – ARCHITECTURAL METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes architectural metal fabrications (AMF) not limited to the following:

1. ***2 . . .*** ~~Permanent and r~~ **R**emovable stainless steel pipe railings including LED lighted type.
2. ~~Stainless~~ **Hot dipped galvanized** steel railings, including those with ~~stainless~~ **hot dipped galvanized** steel decorative mesh infill panels in painted galvanized steel assembly at Roof Park. ***. . . 2***
3. Stainless steel handrails and railings.
4. Stainless steel bases and cart rails.
5. Stainless steel bicycle tracks in terrazzo clad stairs.
6. Stainless steel door surrounds (portals).
7. Stainless steel cladding of stair soffits**,** stringers and risers.
8. ***2 . . .*** **DELETED** ~~Stainless steel clad air vents.~~ ***. . . 2***
9. Aluminum column covers in Lower Concourse Level and those not already covered by W-2 work.
10. This Section also establishes general requirements for architectural metal fabrications (AMF) that make reference to this Section but specified in other Sections.
11. Electrical continuity and grounding of this work.
12. Visual mockups.
13. Source and field quality control testing.
14. Warranties and indemnities.
15. Stainless steel free-standing fire hose cabinet enclosures.
16. ***2 . . .*** ~~Stainless~~ **Hot dipped galvanized** steel air vents. ***. . . 2***

B. General: Certain components of the metal assemblies may not be fully detailed on the Drawings which indicate only desired profile and design intent.

1. Engineer, fabricate, and install these components within the physical limitations indicated on the Drawings.
2. Drawings and calculations for the assemblies shall be prepared, signed and sealed by the Contractor's Engineer.
3. Submit drawings and calculations to AHJ for approval, and pay fee(s) incurred thereby before start of installation.
4. Fasteners and connections are shown schematically. Final fasteners or connections size and location shall not conflict with or require revision of the finish profiles of the supporting and supported work.
5. Connections to the supports shall not impose eccentric loading, or induce twisting or warping and shall be able to accommodate misalignment of the structure within limits allowed by the ACI and AISC tolerances.
6. Mockup construction, when specified, is also a requirement of this Section and its cost shall be included in the Contractor's bid.
7. Mockup construction is also a requirement of this Section and its cost shall be included in the Contractor's bid.

C. Products furnished, but not installed in this Section: Bicycle channel in terrazzo treads, and slip-fit metal sockets for temporary/removable railings cast in concrete.

D. Related requirements:

1. Galvanized metal railings specified elsewhere in Division 05.
2. Stainless steel components of structural glass railings.

3. Stainless steel-clad flush doors, stile and rail glazed doors, stainless steel cladding (wall and soffit panels), and stainless steel storefront doors specified in Division 08.
4. Stainless steel-cladding specified in Divisions 07 and 14 (escalators).
5. Stainless steel-roofing and associated flashings specified in Division 08.
6. Stainless steel-flashings specified in Division 07.
7. Stainless steel thresholds in Hardware Division 08.

1.2 DEFINITIONS

A. General: In addition to definitions specified in Article 1.01 of the General Conditions, the following applies to this Section. Where the provisions are in conflict, the more restrictive requirements apply.

B. Contractor's Engineer: California-licensed structural engineer, employed by the Contractor, with a minimum 5 years' experience in the design of assemblies similar in scope to those for the Project, including drawings, testing program development, test-result interpretation, and comprehensive engineering analysis that show the assemblies' compliance with the specified requirements.

C. Engineer (verb) and Engineering: As used in this Section, includes engineering, fabrication and installation.

D. Engineering Services: Services performed for installation of assemblies similar to those indicated for this Project in material, design, and extent.

1.3 ABBREVIATIONS AND ACRONYMS

A. AAMA: American Architectural Manufacturers Association.

B. AHJ: Authorities Having Jurisdiction.

C. AMF: Architectural Metal Fabrications.

D. AWS: American Welding Society.

E. LEED: Leadership in Energy and Environmental Design.

F. MSDS: Material Safety Data Sheets.

G. NAAMM: National Association of Architectural Metal Manufacturers.

H. BAAQMD: South Coast Air Quality Management District.

I. SCAQMD: South Coast Air Quality Management District.

J. SSPC: The Society for Protective Coatings (formerly known as Steel Structures Painting Council).

K. VOC: Volatile Organic Compound.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meetings: Comply with Section 01 12 00 and Section 01 14 00, except as specified below. Where the provisions are in conflict, the more restrictive requirements apply.

B. Coordination:

1. Coordinate installation of anchorages for AMF. Furnish setting drawings, templates and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts and items with integral anchors that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
2. Coordinate respective work to establish relationship between these other Sections and to provide completed installations shown and required.

1.5 SUBMITTALS

A. General: Comply with the General Conditions, and Section 01 13 00 except as specified below. Where the provisions are in conflict, the more restrictive requirements apply. Do not submit items not requested.

B. Product Data: Provide manufacturer product data for each product used in AMF, including grout, anchoring cement, finishing materials and methods.

C. Shop Drawings:

1. Show fabrication and installation of AMF. Include plans, elevations, component details and attachments to other work. Draw plans and sections at not less than 1:48 scale, and details at not less than 1:4 scale.
2. Indicate materials and profiles of each AMF member, fittings, joinery, finishes, fasteners, anchorages and accessory items.
3. Include setting drawings, templates and directions for installing anchor bolts and other anchorages.
4. A California-licensed structural engineer specified herein shall be responsible for:

   a. Production and review of Shop Drawings.
   b. Stamping and signing each Shop Drawing and any associated calculations performed.

5. Final review of Shop Drawings shall be contingent upon complete submission of structural calculations, where appropriate, documentation, certifications, and approvals of anchorage, samples, mockups and test reports. Cross-reference structural calculations to appropriate Shop Drawing details.

D. Samples: Submit manufacturer's finishes charts showing full range of colors and textures (where applicable), and other finish characteristics available for prefinished items indicated below. Make Samples a minimum of 24 inches long for bars, extrusions and tubes; 24 inches square for sheets and Roof Park guard rail infill mesh.

1. AMF consisting of stainless steel with the specified finish.
2. AMF with baked-enamel coating.
3. AMF with high-performance coating.
4. ***2 . . .*** **DELETED** ~~Twelve-inch square Samples of stainless steel wire mesh.~~ ***. . . 2***

E. Engineering Calculations: For components of the metal fabrications engineered by the Contractor, submit calculations signed and sealed by the Contractor's Engineer to demonstrate Code compliance for the components, including railings. Refer also to Sections 80 05 00 and 80 05 13 for other loading criteria applicable to this Section.

F. Corrosion Analysis: Together with other submittals, submit a letter from a professional engineer, specialized in corrosion prevention, stating that components of the work of this Section and attachments to adjacent construction are designed or isolated to eliminate galvanic action between them.

1.6 CLOSEOUT SUBMITTALS

A. Submit maintenance instructions in accordance with Section 01 70 00. Include in maintenance Manual:

1. Printed copies of maintenance instructions for AMF assemblies and their finishes.
2. Proper care and maintenance of assemblies and hardware.
3. Recommended inspection schedule.
4. Copy of each reviewed Shop Drawings in their most recent amended form.
5. Complete parts and materials list with numbers, sizes, method statement of replacement of components of the installation.

B. Submit instructions for proper cleaning and routine maintenance of assemblies together with recommended cleaning materials and frequency.

C. Provide touchup repair kit and touchup instructions to TJPA for each type of factory-applied finish.

1.7 LEED SUBMITTALS

A. Within 30 days of Contract award, assemble and submit all LEED material information on the "LEED Material Tracking Spreadsheets" and forms provided in the Project Manual, together with all supplemental documentation as required by LEED.

B. Credit MR 4: Product data indicating percentage by weight of post-consumer and post-industrial recycled content for products having recycled content. Include a statement indicating projected costs for each product having recycled content.

C. Credit MR 5: Product data indicating location of extraction and processing and location of manufacture. Include a statement indicating projected costs for each product being extracted, processed, and manufactured within a straight-line 500 mile (800 kilometer) total travel distance of the project site using a weighted average determined through the following formula: (Distance by rail/3) + (Distance by inland waterway/2) + (Distance by sea/15) + (Distance by all other means) = 500 miles [800 kilometers].

D. Credit IEQ 4.1: If field applied, provide manufacturer's MSDS or technical data sheet showing a printed statement of VOC content for all adhesives and sealants used on the project and demonstrating compliance with SCAQMD Rule #1168, effective July 1, 2005 and amended January 7, 2005. Provide manufacturer's product data for aerosol adhesives, including printed statement of VOC content that demonstrates compliance with the limits defined in Green Seal standard GS-36, in effect October 19, 2000.

E. Credit IEQ 4.2: If field applied, provide manufacturer's MSDS or technical data sheet showing a printed statement of VOC content for all paints and coatings used on the project and demonstrating compliance with Green Seal standard GS-11, Paints, May 20, 1993; with Green Seal GC-03, Anti-Corrosive Paints, January 7, 1997; with SCAQMD Rule #1113, effective January 1, 2004.

1.8 QUALITY CONTROL

A. Regulatory Requirements: In addition to LEED requirements, comply with BAAQMD requirements referenced in Section 01 14 10.

B. General: Certain components of the metal assemblies may not be fully detailed on the Drawings which indicate only desired profile and design intent.

1. Engineer, fabricate, and install these components within the physical limitations indicated on the Drawings.
2. Drawings and calculations for the assemblies shall be prepared, signed and sealed by the Contractor's Engineer.
3. Submit drawings and calculations to AHJ for approval, and pay fee(s) incurred thereby before start of installation.
4. Fasteners and connections are shown schematically. Final fasteners or connections size and location shall not conflict with or require revision of the finish profiles of the supporting and supported work.
5. Connections to the supports frame shall not impose eccentric loading, or induce twisting or warping and shall be able to accommodate misalignment of the structure within limits allowed by the ACI and AISC tolerances.

C. Structural Design and Inspection: Structural design and inspection of structural components related to railings, platforms and similar structural elements shall be performed by the Contractor's engineer.

D. Qualifications:

1. Installers: Competent installers with minimum 5 years experience in installation of AMF. Upon request provide record of successful in-service performance, as well as sufficient production capacity to produce required work. Installers shall be thoroughly conversant with laws, by-laws and regulations which govern.
2. Welders: Welding of structural components related to stairs, railings, landings, platforms and similar structural elements shall be performed by fabricator having minimum certification of AWS. Welders shall be familiar with welding procedures for structural welding for steel; structural welding for aluminum, and structural welding for sheet steel.
3. Organic-Coating Applicator Qualifications: Firm experienced in successfully applying organic coatings of type indicated to aluminum extrusions and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.
4. Licensed Professionals: California-licensed structural engineer carrying professional liability insurance.

E. Preconstruction Testing:

1. Engage a qualified independent testing agency to test handrails and railings for compliance with specified requirements for performance and test methods. Conduct tests using specimens and assemblies representative of proposed materials and construction.
2. Fabricate and install test assemblies using personnel who will perform same tasks for Project.
3. Select sizes and configurations of assemblies to adequately demonstrate capability of handrails and railings to comply with performance requirements.
4. Notify TJPA Representative 7 Days in advance of dates and times when assemblies will be constructed.
5. When testing is complete, remove assemblies; do not reuse materials on Project.

F. Certification:

1. Submit certification from Contractor's engineer with his/her seal and signature to certificate, stating assemblies are capable of supporting their own weight, specified live loads, and other loading criteria applicable to this Section specified in Sections 80 05 00 and 80 05 13.
2. Welding quality procedures and personnel according to ANSI/AWS D1.1/D1.1M, ANSI/AWS D1.2/D1.2M and ANSI/AWS D1.3/D1.3M. Certify that each welder satisfactorily passed AWS qualification test for welding processes involved and if pertinent, has undergone recertification.
3. Welders employed on this Project may be asked by TJPA Representative at any time for their welding certificate.

G. Mockups: Provide on site mockups as indicated on the Drawings and if not indicated provide site mockups for each item listed prior to continuing work.

1. Make mockups complete with all accessories, features required for the final assembly on the building. As a minimum, provide railing and cart rail mockups consisting of minimum 3 balusters and a return at least 12 inches long. Provide full height column covers and air vents.
2. Modify mockups to achieve results satisfactory to the TJPA Representative, or remove and construct additional mockup(s).
3. Approved mockups shall serve as the standard for the same work on the Project.
4. Remove mockups only after completion and acceptance of final work unless its incorporation in the Work is authorized by the TJPA Representative.
5. Protect mockups until their removal.

H. Corrosion Prevention:

1. Engage a California-licensed Corrosion Engineer who is an expert in corrosion, to conduct a component-by-component analysis of potential corrosion resulting from galvanic action between materials, for components of curtain wall and aluminum panels and provide report.
2. Submit Engineering Report to TJPA Representative, for review prior to submission of Shop Drawings. Ensure Sample and test results are available upon request.

1.9 DELIVERY, STORAGE AND HANDLING

A. Protection: Provide strippable, electrostatic films over prefinished metal fabrications immediately after finishing.

B. Delivery and Acceptance:
1. Coordinate deliveries to comply with construction schedule and arrange ahead for strategic off-the-ground, undercover storage locations.
2. Protect surfaces and prevent damage to AMF during delivery.

C. Storage and Handling:

1. Store AMF under cover and off ground.
2. Protect surfaces and prevent damage to AMF during storage. Use lifting chokers of material that will not damage surface of members.

1.10 SITE CONDITIONS

A. Field Measurements: Where AMF is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying work.

B. Established Dimensions: Where field measurements cannot be made without delaying work, establish dimensions and proceed with fabricating AMF without field measurements. Coordinate other construction to ensure that actual dimensions correspond to established dimensions.

1.11 WARRANTY

A. General:

1. The warranties are governed by the requirements herein, those of Section 01 74 00, and the General Conditions of the Contract.
2. Warranties specified in this Article shall not deprive the TJPA of other rights the TJPA may have under other provisions of the Contract Documents and are in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Warranty: Manufacturer shall warrant work of this Section for 5 years against defects and/or deficiencies in accordance with General Conditions of the Contract. Promptly correct defects or deficiencies which become apparent within warranty period, to satisfaction of TJPA Representative and at no expense to TJPA. Defects include but are not limited to; buckling, bond failure and extensive color fading.

1.12 RECORD DOCUMENTS (AS-BUILT)

A. Maintain and submit record documents as specified in Article 3.09 of the General Conditions and in Section 01 17 20.

PART 2 - PRODUCTS

2.1 MANUFACTURERS/FABRICATORS

A. One of the manufacturers/fabricators named, or equal, with a record of successful performance, acceptable to the TJPA Representative and subject to conformance to requirements of Drawings, Schedules and Specifications.

B. For Custom Metal Work:

1. CR Lawrence.
2. Architectural Material Resources.
3. Contrarian Metal Resources (CMR).
4. For Prefabricated Item: As specified below.

2.2 LEED REQUIREMENTS

A. Credit MR 4: Provide aluminum materials with minimum 50% recycled content where the total recycled content equals the sum of post-consumer recycled content and ½ post-industrial recycled content.

B. Credit IEQ 4.1: All VOC containing materials applied on site inside of the waterproofing barrier shall comply with LEED credits IEQ 4. Provide adhesives and sealants with VOC content and chemical component limits not exceeding the content limits defined by SCAQMD Rule #1168, July 1, 2005, amended January 1, 2005, and Green Seal GS-36, effective October 19, 2000 for aerosol adhesives as applicable.

C. Credit IEQ 4.2: All VOC containing materials applied on site inside of the waterproofing barrier shall comply with LEED credits IEQ 4. Provide paints and coatings that comply with the limits defined by Green Seal Standard GS-11, effective May 20, 1993, GC-03, January 7, 1997, and SCAQMD Rule #1113, effective January 1, 2004, as applicable.

2.3 MATERIALS

A. General:

1. Select materials for their surface flatness, smoothness and absence of blemishes wherever exposed to view in the finished work.
2. Materials shall have been cold-rolled, cold-finished, cold-drawn, extruded, stretcher-leveled and machine cut to the highest commercial standards for flatness, with edges and corners sharp and true to angle or curvature as required.
3. Castings shall be of uniform quality, free from blowholes, porosity, hard spots, shrinkage distortion, or other defects. Surfaces in contact with other materials shall be machined for a tight fit.

    a. Castings shall conform to the dimensions indicated with a tolerance of plus or minus 1/8-inch; except in the dimensions of covers and the openings to receive them, tolerance shall be limited to 1/16-inch.
    b. Covers subject to vehicular or pedestrian traffic shall have machined horizontal bearing surfaces, with machined bearing on contact surfaces for other joints.

4. Exposed-to-view surfaces which exhibit pitting, seam marks, roller marks, oil-canning, stains, discolorations or other imperfections will not be acceptable and shall be removed from the job site.

B. Stainless Steel: The following made of Type 316

1. Bar stock: ASTM A 276.
2. Plate: ASTM A 167.
3. Tubing: ASTM A 269.
4. Sheet: ASTM A 666 minimum 1/8” thick and reinforced.

C. Aluminum: Provide minimum nominal wall thickness of 0.125 inch for all extrusions.

1. Basic Material: Aluminum Association Alloy AA6063-T5 for extruded shapes, commercial quality AA1100-H14 aluminum sheet for formed shapes.
2. Acceptable alloy and temper combinations for extrusions subject to fabrication, finish and structural requirements: 6063-T5; 6063-T6; 6061-T6. Other alloys of the 6xxx series and other tempers may be submitted for approval.

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Sole Source.

2.4.B.3. a. HDI Railing Systems.
b. CR Lawrence.
c. Or equal.

2.4.B.4 Queuing Post Inserts:
a. Type 316, heavy wall, threaded female sleeves provided with studs for embedment in concrete, removable watertight threaded covers of the same material, and designed to receive queuing posts with a matching thread. Provide 4" diameter removable escutcheon plate.
b. Unless otherwise indicated, make ~~posts~~ post inserts 4 inches long.
c. Coat surfaces that will be embedded in concrete with bituminous paint applied to a DFT of 5 mils minimum.

plate subject to fabrication,
her alloys of the 3xxx, 5xxx
oval.
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rmance.
e.

steners, but complying with

ed by producer of the metal
y in the fabricated items.

2. For aluminum: Aluminum or Type 316 stainless steel.

...

G. Structural Steel Bolts: ASTM A 307; where higher strength required, submit bolt specifications with Shop Drawings.

H. Paint:

1. Shop Primer for Ferrous Metal: Manufacturer or fabricator standard, fast-curing, lead-free, universal modified alkyd primer selected for good resistance to normal atmospheric corrosion, for compatibility with finish paint systems specified in Section 09 ~~90~~ 91 00, and complying with performance requirements of FS TT-P645. M.M.
2. Galvanizing Repair Paint: High zinc dust content paint with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035 or SSPC Paint 20.
3. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC Paint 12, except containing no asbestos fibers.

2.4 SCHEDULE OF ITEMS

A. Column Covers: At those column covers not covered in W-2 Section 08 44 25. Minimum 0.125-inch thick reinforced aluminum, finished with a fluorocarbon powder coating system, by one of the following. Provide back scribed corners at square columns; at joints provide butt joint design with Aluminum angle closure back-up.

1. Gordon (basis of design).
2. CR Lawrence.
3. **FRY Reglett** ***...2***

~~[illegible]~~
a. HDI Railing Systems.
b. Wagner Companies.
c. Or equal

B. Stainless Steel Lighted Handrail and Queuing Rail with Post Inserts

1. Lighted Handrail Basis of Design: CR Lawrence LED Premium Cap Rail; low voltage DC power (24 volt); 1.5" outer diameter with 316 stainless steel. Complete with cast stainless steel supports and accessories including caps, closures, wiring. Support shall be 4'-0" O.C. max with 304 stainless steel fasteners. Finish being brushed stainless steel with warm white LED fixture at min 4.3 watts per linear foot. Return ends vertically into slab/floor level to extend electrical cabling to driver electrical box by this section. Coordinate with Electrical Division for power junction box. Provide watertight installation and allow for thermal movements. Acceptable equals include:
2. See Architectural Drawings beginning on A1-8648 for details.
3. Queuing Rail Basis of Design: Wagner Companies, 1.5" outer diameter x .120" Wall Type 316 Stainless Steel two line Queue Rail, mitered corner construction per drawings, welded and ground smooth. #6 circumferential finish. Acceptable equals include:

C. ***1*** Roof Park Level Restaurant Guard Rail and Stair Railing:

1. Provide stainless steel lighted handrail in assembly with hot dipped galvanized support posts and stainless steel cables as shown on drawings.
2. Provide hardwood timber top rail where shown attached to stainless steel plate with stainless steel fasteners.
3. Stainless steel lighted handrail to be as described in 2.4.B of this Section.
4. Design handrail for assembly occupancy per CBC.
5. Provide hot dipped galvanized and stainless steel gate with stainless steel hardware with lockable latch.
6. See Architectural details starting on A1-8910.
7. Wood railing top rail to be IPE hardwood precut with smooth finish. IPE to be left natural with no finish to naturally age to grey color.

D. Stainless Steel Free Standing Cabinet Enclosures

1. Design, supply and install stainless steel clad Fire Valve Cabinet enclosure complete with 1/8" thick 316 stainless steel
2. Provide all hot dipped galvanized sub-framing complete with 1/8" pre-finished aluminum pan and WPM 10A to shed water infiltration. Fasteners shall be 300 series.
3. Provide sealed joints with rain screen sealant material described in sealant section.
4. Provide drainage/weep holes to the exterior. See Architectural sheet beginning at A1-9322.
5. See Plans for locations.
6. Provide stainless steel latches and piano hinges as shown.

E. Roof Park Railing

1. ***2 . . .*** Design supply and install hot dipped galvanized Roof Park Railing with ~~stainless~~ **hot dipped galvanized** steel wire mesh complete with hot dipped galvanized embeds and anchor supports. Hot dip galvanizing after fabrication.
2. Provide tamper-proof ~~stainless~~ **hot dipped galvanized** steel bolts, nuts and washer fasteners as shown on drawings. Coordinate with Structural Division. ***. . . 2***
3. Seal all bolted connections through waterproofing membrane. Provide bolted connections throughout with no welding on site. Isolate dissimilar metals.
4. ***2 . . .*** Provide ~~horizontal stainless steel and~~ **painted** hot dip galvanized tube rails, ~~bars and cables~~ **posts and** as shown on details. **Basis of Design shall be Wagner Companies part number ARSFBRKTLEVEL series.** Provide sleeves in horizontal ~~bars~~ **tubes** with same tube material as ~~bar~~ **tube** for thermal movements. Sleeve connections shall be no longer than 20' – 0" nominal and be at tangent locations as necessary.
5. ~~Stainless~~ **Painted hot dipped galvanized** steel wire mesh to be ~~"Xtend Flexible Mesh with AISI 316 L stainless steel seamless ferrules" by Carl Stahl Decorcable (sales@decorcable.com). Mesh shall be 1.5mm with mesh in diagonal pattern with 30mm x 52mm spacing. Connect mesh to pipe on top and cable below. Attach mesh to vertical posts with stainless steel clamp bar, silicone gaskets, stainless steel and washers.~~ **"ARCHIMESH" BWL-62 steel mesh panel with a 1.5" deep 13 Gage U-edge frame, with painted mounted stainless steel hubs no. GR320R.4 by Wagner Companies (Basis of Design). Connect mesh to vertical posts.** ***. . . 2***
6. Design of Roof Park Railing to comply with Authorities Having Jurisdiction for railings and guards and have a maximum deflection on the vertical posts and horizontal members to max L/240 when loads are imposed.
7. At seismic joint areas, provide railing expansion joint detail by overlapping railing with itself and cantilevering railing assembly past fixed area using stainless steel cables for bracing and stabilization. Provide silicone bumpers as necessary to isolate railings from damage from movement.

2 . . .

8. **All surfaces to be shop primed and coated with High Solids Epoxy and modified urethane finish.**

   a. **High Solids Epoxy Prime Coat shall be:**

      1) **Macropoxy 646, by Sherwin Williams.**
      2) **Carboguard 89 VOC, by Carboline.**
      3) **Series 69 Epoxoline, by Tnemec.**
      4) **Or equal.**

   b. **Modified Urethane Finish coat shall be:**

      1) **Waterbased Acrolon 100, by Sherwin Williams.**
      2) **Carboxane 2000, by Carboline.**
      3) **Series 750UVX, by Tnemec.**
      4) **Or equal.**

9. **Prior to fabrication and installation, field verify dimensions and as-built conditions by an experienced railing installer.**
10. Color: PT-2

F. ~~Stainless~~ **Hot Dipped Galvanized and Painted** Steel Air Vents (Air Shaft Enclosures)

1. Design/build ~~stainless~~ **hot dipped galvanized tubular** steel air vents ~~complete with structure for air vents~~ at locations shown on drawings. The Contractor awarded this portion of the work shall engineer, fabricate and install the work of this item in accordance with the design intent, design criteria performance requirements, applicable codes, ordinances and requirements of Authorities Having Jurisdiction.
2. Air vents shall consist of **self supported ¾"** ~~3/16"~~ thick ~~316 stainless~~ **hot dipped galvanized 42" O.D. tubular** steel complete with internal ~~304 stainless steel fins attached to stainless steel base steel "H" Section~~ **hot dipped galvanized steel base** bolted to ~~stainless~~ **hot dipped galvanized** steel-lined concrete curb. ~~Fasteners all 304 stainless steel.~~ **Use hot dipped galvanized anchor bolts. Hot dip galvanize after fabrication.** ***. . . 2***
3. Coordinate with Structural Engineer Thornton Tomasetti for curb reinforcement and hot dip galvanized locations.
4. ***2 . . .*** **DELETED** ~~Provide removable stainless steel base for access with flush tamper proof stainless steel fasteners.~~
5. At top, provide ~~stainless~~ **hot dipped galvanized** steel sloped 1" x 1" x #9 wire mesh using tamper proof ~~stainless~~ **galvanized** steel fasteners and a ~~stainless~~ **galvanized** steel perimeter frame.
6. Fabricate in factory and erect on site with minimum site work without site welding with all bolted connections. Design ~~enclosure panels and sub-framing~~ **vent structure** and fixings to allow for thermal stresses and forces, including but not limiting to wind and seismic loads. ***. . . 2***
7. Wind loads: As defined in R.W.D.I. Report, "Cladding Wind Load Study, Transbay Transit Center, San Francisco, CA June 7, 2013 or latest revision. Design air vents to satisfy wind loads. Maximum deflection under maximum wind load not to exceed L/400. For seismic see Structural Engineer Drawing S-0005 Note CO-6.
8. ***2 . . .*** ~~Finish: Finish stainless steel to brushed No. 4 finish.~~ **Surface Preparation: All exterior longitudinal and circumferential weld seams shall be ground flush to comply with AESS SSPC-SP6 finish.**
9. **Finish: High Performance Coating per 09 97 15.** ~~**Color to be selected by the TJPA Representative.**~~ ***. . . 2***
10. Color: PT-21

G. Stainless Steel Door Surrounds (Portals)

1. Supply and install 1/8” thick 316 stainless steel sheet panels complete with aluminum or stainless steel anchors and support framing with concealed stainless steel fasteners. Provide reveal joints to stainless steel door frames and to adjacent work as shown on drawings. Coordinate with W-5 work and W-16B stainless steel work and with elevator doors and transom work. Finish: As directed by TJPA Representative.

H. Stainless Steel Bases and Cart Rails

1. Design, supply and install stainless steel base and cart rail complete with stainless steel support clips, 1/8” thick minimum stainless reinforced steel base, ¼” thick minimum cart rail with stainless steel fasteners. All work to be 316 stainless steel. Provide extruded EPDM gasket to stainless steel base, mechanically fasten. Design cart rail to support 500lb point load at any location. Provide hot dipped galvanized expansion bolts in concrete curb for support. Seal penetrations in waterproofing membrane. Finish: As directed by TJPA Representative.

I. Stainless Steel Cable Wire: 1/8” diameter 316 stainless steel concealed cable wire to support disengaged column covers during seismic event.

J. ***1*** Stainless Steel Countertops: 16 gage 316 stainless steel #4 brushed finish**.**

2.5 FABRICATION

A. Design exterior components to allow for expansion and contraction for a temperature range of temperature change (range) of 120 degrees F, ambient, 180 degrees F, material surfaces, without causing buckling, excessive opening of joints, and over-stressing of welds and fasteners.

B. Design assemblies to minimize site welding.

C. Provide matching alloy (for color) for exposed metal surfaces. Form metal work to the required shapes.

D. Comply with AWS for recommended practices in shop welding. Welds on exposed surfaces shall be continuous.

E. Welding: Comply with AWS D9.1, the metal producer's recommendations for recommended practices in shop welding, and the following.

1. Use welding for joining pieces together, unless otherwise accepted by the TJPA Representative on shop drawings.
2. Welds on exposed surfaces shall be continuous and lightproof and shall be of quality and finish equal to NOMMA Finish #1; elsewhere provide weld quality and finish equal to NOMMA Finish #4.
3. Use stitch and spot welding only where specifically permitted.
4. Where joints will be exposed to the elements, at any time including during construction, close welded joint to air and water infiltration either by welding interface completely, or by sealing remaining space with silicone sealant specified in Section 07 92 00.
5. For stainless steel, use only technicians qualified to weld stainless steel using TIG equipment.
6. Maintain proper welding temperature to avoid discoloring adjacent metal.
7. Clamp components in jigs during welding to avoid distortion.
8. Undercut metal edges where welds are required to be ground flush and dressed smooth.

9. Grind welds exposed to view flush, and fill and dress to match adjacent parent metal surfaces so that joint will be invisible. Where welds are concealed but exposed to the elements, make welds to shed water.
10. Weld on or behind surfaces so that finished surface exposed to view will be free of imperfections such as pits, runs, splatter, cracks, warping, dimpling, depressions and other forms of distortion or discoloration.
11. Remove weld spatter and welding oxides from welded surfaces.

F. Cut components square. Remove burrs from cut edges. Mill joints to a tight, hairline, flush fit. Cope or miter corner joints. Show all field joint location on the shop drawings.

G. Unless otherwise shown or accepted on the Shop Drawings, conceal fasteners in the finish work. Back-up joints with either sleeves or back-up plates.

H. For built-in work, furnish anchor bolts, inserts, plates other anchorage devices, and other items for AMF work to be built into concrete, masonry, or work of other trades. Furnish necessary templates and instructions to facilitate proper placing and installation.

I. For removable stainless steel railing posts, fabricate slip-fit sockets from stainless steel tube whose inside diameter is sized for a close fit with posts; limit movement of post without lateral load, measured at top, to not more than 1/40th of post height. Provide socket covers designed and fabricated to resist being dislodged.

1. Provide chain with eye, snap hook, and staple across gaps formed by removable railing sections at locations indicated.

J. Fabrication Tolerances:

1. Squareness: 1/8 inch maximum difference in diagonal measurements.
2. Maximum offset between components at joints: None.
3. Maximum misalignment of adjacent members: 1/32 inch.
4. Maximum bow: 1/8 inch in 48 inches.
5. Maximum deviation from plane: 1/16 inch in 48 inches.

2.6 CORROSION PROTECTION

A. Design assembly components to ensure that no metals, including alloys of the same base metal, are placed in contact with materials that will produce damage due to electrolytic action or another corrosion.

B. Separate dissimilar metals to prevent electrolytic action. Provide letter of confirmation, from corrosion engineer, that infill components, accompanying trims and flashings and attachments to adjacent construction are designed to eliminate potential for galvanic action between components.

C. Comply with recommendations of the corrosion engineer approved by the TPJA Representative, as specified above.

2.7 FINISHING EXPOSED METAL SURFACES

A. Finish surfaces as follows to match approved samples.

B. Stainless steel: Provide a non-directional “angel-hair” finish matching the TJPA Representative control sample.

C. Steel surfaces: After cleaning and degreasing, galvanize and prime as specified in Section 05 50 00.

D. Protection: After finishing, protect surfaces with an electrostatically-applied strippable film. Remove film promptly after installation is complete.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Verify actual site dimensions and location of adjacent materials prior to commencing work.

1. Examine adjacent construction and supports.
2. Examine wall flashings, water and weather barriers, and other built-in components to ensure coordinated, weathertight installations.
3. Verify that substrates are within allowable tolerances, plumb, level, clean, and will provide a solid anchoring surface.

B. Notification: Notify General Contractor in writing, with copy to TJPA Representative, of conditions detrimental to the installation.

C. Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

3.2 INSTALLATION

A. General:

1. Do not install components damaged or defective in any way. Remove and replace members damaged during installation or thereafter, before the time of final acceptance.
2. Do not cut, trim or weld parts during erection, in any manner which would damage the finish, decrease the strength, or result in a visual imperfection or a failure in performance of the work.
3. Return components which require alteration to the shop for refabrication, if possible, or for replacement by new parts.
4. Install work with tight joints accurately fitted.
5. Where cutting is required for proper fitting and jointing, restore finish to eliminate evidence of corrective work.
6. Joints at changes in direction in stainless steel railings shall be shop welded; field joints shall be a minimum of 2 feet from a change in direction, and assembled with concealed sleeves or back-up plates and set screws.
7. Install this work with concealed fasteners.
8. Apply a bituminous coating of approximately 30 mils DFT, or other suitable permanent separator, on surfaces of dissimilar metals (except where exposed to view) and metal surfaces in contact with cementitious materials. Where the metals are exposed to view, provide a plastic or neoprene separators between dissimilar metals.
9. Comply with AWS Code for manual shielded metal-arc welding procedures, the appearance and quality of welds made, and the methods used in correcting welding work which must be approved by the TJPA Representative in each case.

B. Fastening to in-place construction:

1. Set this work accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels.

2. Provide required anchorage devices and fasteners for securing AMFs to in-place construction; coordinate the embedment of anchors with the work of the concrete trades.

C. Restore protective coverings damaged during shipment or installation. Remove protective coverings only when there is no possibility of damage from other work yet to be performed at same location.

D. Retain protective coverings intact; remove coverings simultaneously from similarly finished items to preclude non-uniform oxidation and discoloration.

E. Field Welding:

1. Comply with applicable AWS specification for procedures of manual shielded metal arc welding, for appearance and quality of welds and for methods used in correcting welding work.
2. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Grind exposed welded joints smooth and restore finish to match finish of adjacent surfaces.

F. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, and dissimilar metals with a heavy coat of bituminous paint.

G. Handrails and Railings:

1. General: Adjust handrails and railings before anchoring to ensure alignment at abutting joints.
2. Concrete-Anchored Posts in Sleeves: Insert posts in preset sleeves, cast into concrete and fill annular space between posts and sleeve with non-shrink, non-metallic grout, mixed and placed to comply with grout manufacturer's written instructions.
3. Concrete-Anchored Posts in Core-Drilled Holes: Core-drill concrete to produce holes with a diameter at least 3/4" larger than OD of post and not less than 5" deep. Clean holes of loose material, insert posts, and fill annular space between post and concrete with non-shrink, nonmetallic grout, mixed and placed to comply with grout manufacturer's written instructions. Cover anchorage joint with flange or escutcheon plate attached to post after filling annular space.
4. Leave anchorage joint exposed; wipe off excess grout; and leave a 1/8" build-up, sloped away from post.
5. Anchor posts to metal surfaces with fittings designed for this purpose.
6. Non-welded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Use wood blocks and padding to prevent damage to railing members and fittings. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of handrails and railings.
7. Welded Connections: Use fully welded joints for permanently connecting railing components by welding. Cope or butt components to provide 100% contact or use fittings designed for this purpose.
8. Anchor railing ends into concrete or masonry with fittings designed for this purpose.
9. Anchor railing ends to metal surfaces with fittings using concealed fasteners.
10. Anchor railing ends to metal surfaces by welding.
11. Expansion Joints: Provide expansion joints at locations indicated or, if not indicated, at intervals not to exceed 40'. Provide slip-joint internal sleeve extending 2" beyond joint on either side, fasten internal sleeve securely to ~~1~~ one side and locate joint within 6~~"~~ inches of post.

H. Installation tolerances: Adjust metal fabrications for squareness, alignment, twist, levelness and plumbness to the following tolerances.

1. Squareness where applicable: Plus or minus 1/16 inch, measured on the diagonal.

2. Alignment: Plus or minus 1/16 inch where fabrications are separated by one inch or more; where components join or are separated by less than one inch, components shall be aligned; no deviations permitted.
3. Twist: Plus or minus 1/16 inch, except that deviation shall be such that joined panelized components are flush at joints; no deviations permitted.
4. Plumbness: Plus or minus 1/16 inch, except that deviation shall be such that joined panelized components are flush at joints; no deviations permitted.
5. Levelness: 1/8 inch from level, except where tighter tolerances are required for joining or alignment with adjacent work.
6. Deviation from theoretical location in plan: 1/4 inch, except where tighter tolerances are required for joining or alignment with adjacent work.

3.3 SITE QUALITY ASSURANCE

A. Site Tests and Inspections:

1. TJPA will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
2. Extent and Testing Methodology: Testing agency will randomly select completed handrail and railing assemblies for testing that are representative of different railing designs and conditions in the completed Work. Handrails and railings will be tested according to ASTM E894 and ASTM E935 for compliance with ASTM E985.
3. Testing agency will report test results promptly and in writing to Contractor and TJPA Representative.
4. Additional Testing: Where handrails and railings are removed and replaced or are repaired, additional testing will be performed to determine compliance of replaced or additional work with specified requirements.
5. Structural Inspection: Ensure a California-licensed structural engineer specified herein inspects work of this Section during erection/installation.

B. Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of TJPA Representative at no cost to TJPA.

3.4 CLEANING AND PROTECTING

A. Cleaning: On completion of installation, clean the work of marks and other foreign substances. Clean aluminum and stainless steel by washing thoroughly with clean water and soap and rinsing with clean water.

B. Protection: Protect work against stains and damages until acceptance by TJPA.

1. Protect finishes of AMF from damage during construction period with temporary protective coverings approved by architectural metal fabricator. Remove protective covering at the time of Substantial Completion.
2. Provide protective covering on finished surfaces. Remove protection when installed work will be inspected. Do not use protective coverings that will damage finishes or become permanently bonded. Do not leave coating residue on finished surfaces.

C. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint, and paint exposed areas with same material.
2. For shop primer and zinc coating damaged during transit and installation, sand or wire brush damaged area down to bright metal extending cleaning a minimum of 2 inches unto undamaged primer and immediately touchup with same primer used for shop priming.

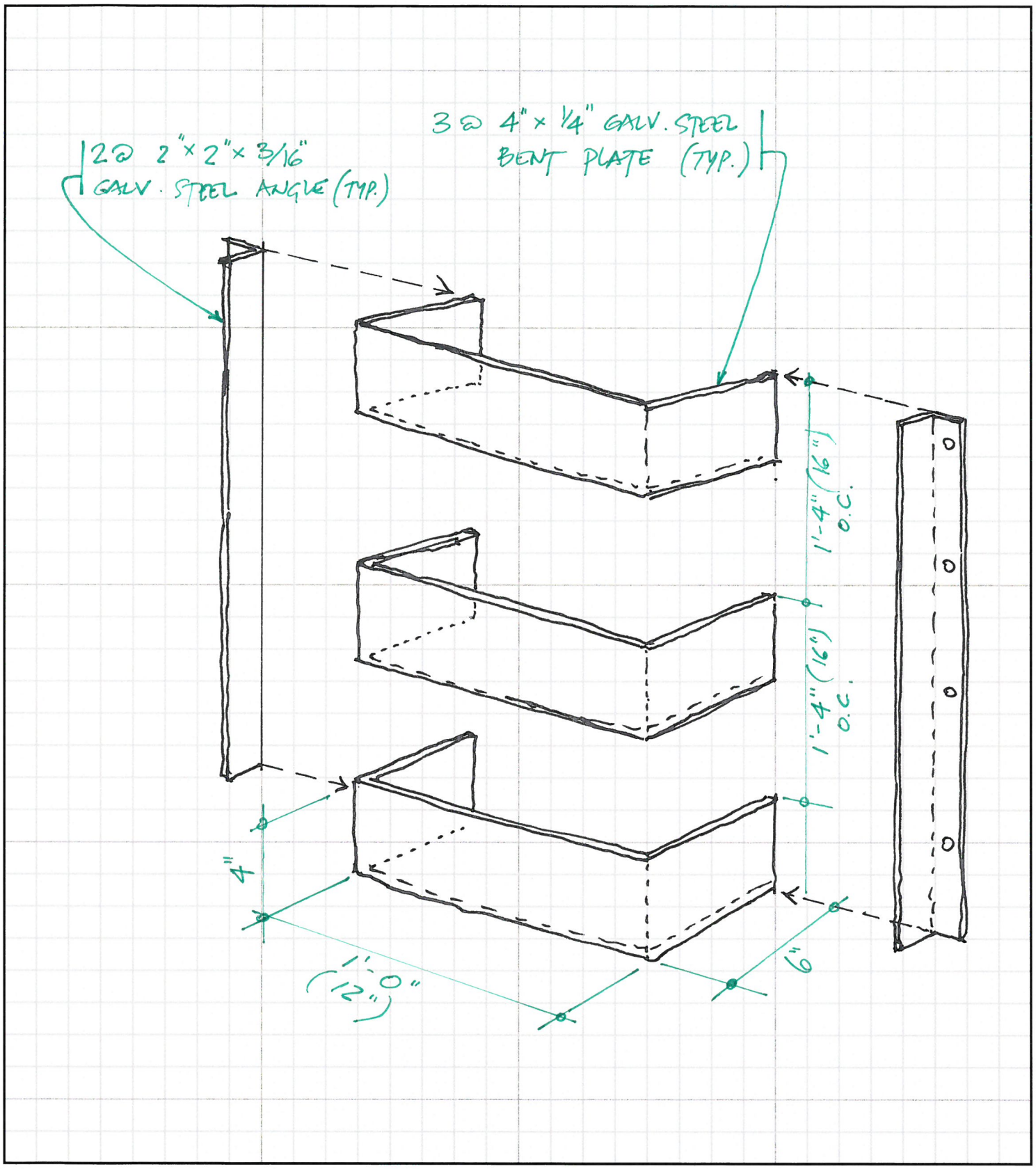
D. Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and repair galvanizing to comply with ASTM A780 using zinc-rich paint specified.

E. Refinishing: Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 75 00

SPECIFICATION ISSUE LOG

Revision	Date
0	03/31/14
1	05/30/14
2	09/12/14



Transbay Transit Center	AAI ARCHITECTS, INC.	DRAWING TITLE: PIPE & DUCT PROTECTION RFI TG Ø7.3 _ Ø99 SCALE: NTS DATE: 11/17/2014 PROJECT NO. 0803	SKA-4307 DRAWN BY: SR CHECKED BY:

TG07.3 – Miscellaneous Metals

Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-010	10/24/2014		05 75 00	REFERENCE: (ASI 127 dated 9/12/14) Specification Section 05 75 00 Specification Section 05 75 00 2.4 E and F Architectural Metal Fabrications call out for roof park railings and steel air vents to be shop painted. No paint colors have been provided. Please provide the colors for shop painting of roof park railings and steel air vents.	- Paint color for Roof Park Railings: PT-21 (match Balboa Mist 1549 by Benjamin Moore). - Paint Colors for Air Vents: PT-2 (match Silver Matte 49/90500 by Tiger Drylac). Specification Section 05 75 00 and room finish schedule (drawings A1-9606 and A1-9610) are updated to show colors and will be included in ASI-0128.
TG07.3-054	10/30/2014	1/A1-8711		Please confirm if grate and frame is part of Bid Package TG07.3? If so; please provide detail and specs.	Catch basin grate and associated frames at the mat slab are not included in the work of the TG07.3 trade package. Exhibit A Inclusion #3 was deleted in Addendum No. 6.
TG07.3-058	10/30/2014		Exhibit A, Item #25	Please provide spec and manufacturers that provide this scope. Why is this scope not being provided by the same company that is fabricating the rest of the "Cast Node Assembly"?	Bidders should review the AESS Specification Section 05 12 13 for this scope of work. The cast node partial cylindrical elements/ closure elements are included in TG07.3 as non-structural architectural metal closures.
TG07.3-062	10/30/2014		Exhibit A - Inclusion Item #3	Please provide locations, details and specs to clarify scope.	Sump covers and frames are not included in the work of the TG07.3 trade package. Exhibit A Inclusion #3 was deleted in Addendum No. 6.
TG07.3-063	10/30/2014		Exhibit A - Inclusion Item #2	Please provide locations, details and specs to clarify scope.	Catch basin covers and frames are not included in the work of TG07.3. Exhibit A Inclusion #2 was deleted in Addendum No. 6.
TG07.3-064	10/30/2014		Exhibit A - Inclusion #1	Please provide locations, details and specs to clarify scope.	Pit covers and frames are not included in the work of TG07.3. Exhibit A Inclusion #1 was deleted in Addendum No. 6.
TG07.3-090	10/30/2014	All/L1-7340 through L1-7345		Is the Illuminated Paver Embed S.S. Plate Assembly part of Bid Package TG07.3? If so; I assume FOB and hardware/sheet metal by others? Is the Illuminated Bench Assemblies as shown on L1-7341 thru L1-7345 part of Bid Package TG07.3?	The illuminated paver assembly on L1-7340 is not included in the work of TG07.3. Therefore, delivery and installation of the illuminated paver assembly, and associated hardware/sheet metal, are also not included in the work of TG07.3. The illuminated bench assemblies as shown on L1-7341 through L1-7345 are not part of the work of TG07.3.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-094	11/4/2014	2 & 4/A1-8710	QBD #004 05 50 00	Please confirm 1/4" plate is FOB. (Installed by others) If not; please provide details how to attach.	The ¼-inch plate is to be furnished and installed by TG07.3. The 1/4–inch-thick steel protection plates are not attached, they are loose laid.
TG07.3-098	11/6/2014	1/A1-3196 (Scope Dwg.)		The "Mild Steel Plate 10'-0 high" is noted part of our package; Can you please provide the spec's and clear detail showing material and how to attach? (This is not a typical misc. metal item.)	Refer to Specification Section 05 50 00 - 2.4.B for material specifications. The steel plate attachment shall be with zinc-plated #10 self-drilling, self-tapping, Wafer Head TEKS screws at 8 inches on center at each stud, and top and bottom tracks.
TG07.3-104	11/6/2014	A1-3001(Scope Dwg.)		Regarding "40"x20" steel plate typ." highlighted; Can I please get a detail? Also is this item FOB? If not; please provide connection in detail.	For details, please refer to response provided on RFI P1-0245. Also as noted in response to RFI# P1-0245, please refer to structural detail 5/S1-3002 for plate Connection detail.
TG07.3-105	11/6/2014	A1-7576(Scope Dwg.), 4 & 5/A1-7577		Regarding the embed angle w/note "refer to struct dwgs"; Can you please provide a detail and location to where this angle is needed? Is this angle FOB? The clearest detail I have for the sill angles is 10/S1-7632, and I do not see this embed angle. Should I use another detail?	1. The support angle will be needed at every elevator door sill; refer to Specification Section 14 21 00 – 2.16.G. 2. The Detail 4/A1-7576 is to be used where there is a concrete topping slab. Detail 10/S1-7632 is to be used where there is no topping slab. Detail 4/A1-7576 shall be revised per red marks in the attached sketch. 3. Elevator sill support angles in Specification Section 05 50 00 Metal Fabrications are part of TG07.3 scope.
TG07.3-106	11/6/2014	1/A1-7703(Scope Dwg.)	Exhibit A / Item 34	Can you please provide a detail and spacing of "brace"? Is this bracing at all OHG's? Are we responsible for any other steel at the Overhead Grille's? (per Exhibit A; we own only overhead doors)	The bracing is for the W-2 system, to be provided by W-2 system supplier, not for overhead grilles and doors. Refer to structural drawings and attached architectural sketch SKA-4320. TG07.3 is responsible for bracing and supporting steel for overhead doors and grilles not integral to a "W" system
TG07.3-115	11/7/2014	A1-3190, 9021, etc.	05 50 00	Are the 4'-0 panels located in the janitor closets and elevator lobbies 1/8" thick? We do not fabricate this type of scope; Can we please get manufacturers (installers) that you would like us to use? When will this scope need to be installed?	1. For panel locations and thicknesses in various rooms, refer to Specification Section 05 50 00 Metal Fabrications and Room Finish Schedule (A1-9601 to A1-9606, A1-9610). 2. Manufacturers: Products similar to: “1/8-inch-(.125) thickness 3003 Aluminum Diamond Plate - Highly Polished (Metals Depot)" or "3003-H14 Aluminum Diamond Plate (Cut 2 Size Metals)."

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					3. Metal plate on walls will need to be installed after painting of the substrate. Also, refer to RFI TG07.3-050 response.
TG07.3-119	11/7/2014	5/A1-8717 (Scope Dwg)	05 50 00	The note for the plate is unclear? I assume all the locations are provided on Sheets A1-2922, A1-2923, A1-2924, A1-2925, and A1-2927 (Scoping Dwg's)? Is there locations not shown?	Scoping documents are not all inclusive of the scope. Review the contract documents to establish locations.
TG07.3-121	11/7/2014	3/SKA-3767, 7/SKA-3768	TG07.3-038 05 30 00	How are we to attach ledger to exterior finish? Please provide type of fasteners or method of how these are attached. Can threaded studs be provided for connection by others?	Grating perimeter support does not attach to exterior wall; see attached revised details of sheets A1-8585 and A1-8586.
TG07.3-124	11/12/2014		05 50 00, Pg. 11 Item P, Security Screen 05 50 00	Please clarify finish; is this screen hot dipped galvanized and powder coated? Specs not clear. (Dwg's say galvanized) Also when I go to spec 087110 for hardware, HW15 does not provide any information. Is hardware by others? What companies provide the gate track and padlock you are requesting? "Door Position Switch" is by others correct?	1. Security screens are manufactured products, and come prefinished. Refer to manufacturer's standard finishes. Also see response to TG07.3-008. 2. Hardware Set HW-15 specifies Schlage 606, PL4000 Series padlock as the basis of design. Hardware is referenced to make sure that HASP is adequately sized to accommodate the padlock. 3. Track shall be part of the Security Screen "kit" manufactured by California Wire Products (basis of design) or equal. 4. Specification Section 08 71 10 indicates door position switch by Security, and therefore NOT by the TG07.3 Trade Subcontractor.
TG07.3-126	11/12/2014		05 50 00 pg. 11 Item M	Can you please provide a finish for the corner guards?	Aluminum corner guards shall be clear anodized finish.
TG07.3-127	11/12/2014		05 50 00 pg. 11 Item M	Can you please provide a finish and aluminum alloy grade for the corner guards? (Not provided in specs)	Refer to attached Specification Section 05 50 00 mark-up, with the following revision: Add, 2.4.P. "Aluminum: Aluminum sheet and plate shall conform to the requirements of Specification Section 05 75 00-2.3.C."
TG07.3-130	11/12/2014		05 50 00, TG07.3-029	Please explain what is clouded on SKA-4286? (I do not have an ASI narrative with that sheet number)	SKA-4286 was not issued as an ASI; it was issued with the response to TG07.3-029. The clouded area in SKA-4286 is not a part of this scope.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-132	11/12/2014		Exhibit A/Scope #36, TG07.3-048	Still not clear of scope; I see a plate called out in detail 2/A1-8893 "Metal Plate Galvanized". Or "1/8" THK SS BENT METAL PLATE FASTENED ON ONE SIDE" per 2 and 3/A1-8894. Is the SS plate wrapped around crash barrier? Please provide how the backside of plate is attached. Please provide finish for stainless steel.	1. Refer to attached SKA-4304 (sheet A1-8894) for Bus Deck Level crash barrier closure panel. 2. Plate is wrapped per 3/SKA-4304. 3. Refer to SKA-4304 for attachment information. 4. All stainless steel shall be #4 finish, unless noted otherwise.
TG07.3-133	11/13/2014		05 50 00, Exhibit A Scope	Please provide a finish for the stainless steel rails that are in Bid Package TG07.3.	Refer to specification mark-up provided with response to RFI TG07.3-092.
TG07.3-138	11/13/2014		Exhibit A Item #20, TG07.3_042 05 50 00	Is there any other details besides detail 9/A1-0025 that pertain to this scope item? In detail 9/A1-0025; What is part of TG07.l3? Plate? Angel frame? Both? Assume attached with 1/2" expansion bolts 12" o.c.? Prime painted?	Review the contract documents for openings requiring steel frames around slab penetrations. In detail 9/A-0025, and similar details, the plate and angle frame are included in the work of TG07.3. (NOTE: Question references 9/A1-0025, which is not a valid sheet; response refers to Sheet A-0025.) See attached SKA-4319.
TG07.3-141	11/14/2014	3/A1-7553	05 50 00	Please provide details of what this is and how it's connected. (Detail says "Refer to Structural Drawings" but I cannot find them.)	Escalator support steel, where required, is included as part of Exhibit A, Inclusion 16. Escalator support details will be provided by TG14.1B after the design is developed.
TG07.3-144	11/14/2014	3/A1-9711	05 50 00	Where can I find sheet A1-7707 which is called out for doors 02320G and 02320H. Is there steel framing needed at these locations?	- There is no sheet number A1-7707, it is a typo. - Details for overhead doors 02320G and 02320H are found on sheet A1-7701 (not A1-7707). - Reference to details 3 & 7/A1-7707 shown on Drawing A1-9711 will be changed to read 3/A1-7701 and 7/A1-7701 instead.
TG07.3-145	11/14/2014		RFI P1-0418 05 50 00	Per RFI P1-0418 (response date 09/08/14), in lieu of employing a corrosion engineer for design of each component, bidders are to include a component-by-component corrosion analysis report with their own forces, rather than providing an analysis by a corrosion engineer, when a corrosion analysis is called for in the specifications.	Confirmed. RFI-048 was submitted only four days from ASI-0127, which did not allow enough coordination time to revise specifications. ASI-028 will include these revisions.

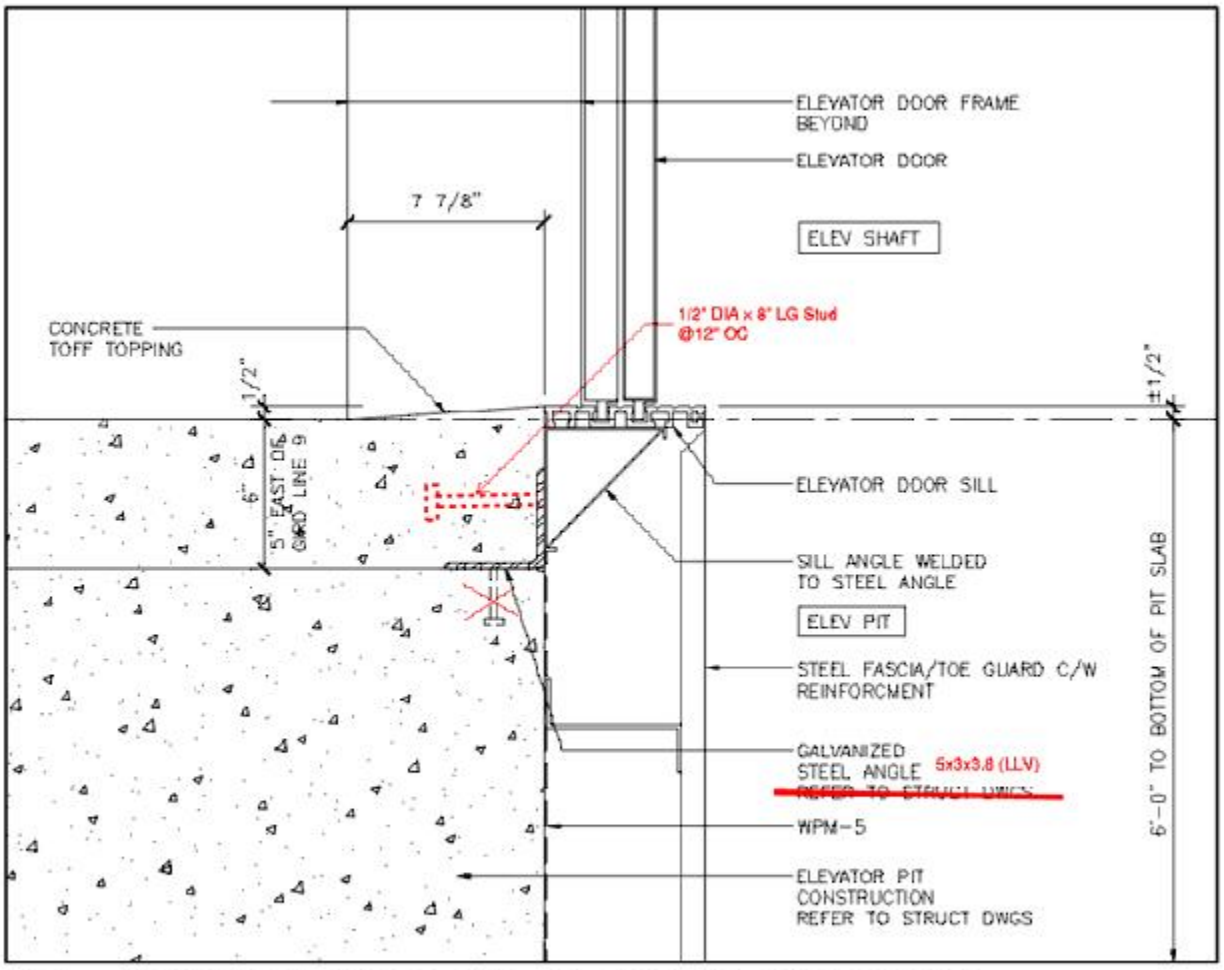
Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
				Per ASI 127 05 50 00 1.5 F (dated 09/12/14) bidders are to submit a letter from a professional engineer, specialized in corrosion prevention, stating that components of the work of this Section and attachments to adjacent construction are designed or isolated to eliminate galvanic action between them. Per ASI 127 05 50 00 1.8 G 1 (dated 09/12/14) bidders are to engage a California-licensed Corrosion Engineer who is an expert in corrosion, to conduct a component-by-component analysis of potential corrosion resulting from galvanic action between materials, for components of curtain wall and aluminum panels and provide report. Per ASI 127 05 50 00 2.7 B (dated 09/12/14) bidders are to provide letter of confirmation, from corrosion engineer, that infill components, accompanying trims and flashings and attachments to adjacent construction are designed to eliminate potential for galvanic action between components. Please confirm that, as previously agreed, bidders including work from any specification section are to provide a component-by-component corrosion analysis report with their own forces, rather than providing an analysis by a corrosion engineer, when a corrosion analysis is called for in the specifications. Please make sure this is corrected in the December conformed set and all future ASI's.	
TG07.3-146	11/19/2014		Exhibit A pg. 14 Item #41	Are we supposed to include all 22 alternates in our Base Bid? Alternate No. 10 has been deleted correct? Please clarify this scope item.	Exhibit A Item 41 is Alternate APE E.1.15 (Alternate No. 27), which has been accepted as a base bid item, and is to be included in the base bid price. Only alternates specifically listed under the "Alternates" section in Exhibit A are to be priced. Alternate No. 10 is not included in the work of

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					the TG07.3 trade package. See the response to QBD TG07.3-110 for clarification.
TG07.3-147	11/19/2014	4 & 5/S1-9051 Scope Dwg.	Exhibit A pg. 8 Item #6	Regarding the concrete/CMU bracing scope: The CMU portion of this scope is clearly excluded in our Exhibit A. Also this complete scope is listed as being part of TG07.4; which makes the most sense because this company will know where they will be needed. Please verify which bid package these are in, and if they are in Package TG07.3 please provide enough info to find all of them.	Bracing of CMU walls is excluded from the work of TG07.3. Bracing of cast-in-place concrete walls is included in the work of TG07.3. Review architectural (A1-2102, for example) and structural (S1-2053, for example) drawings for locations of cast-in-place concrete walls.
TG07.3-149	11/25/2014	1/A1-9205, 1/A1-3190	TG07.3-112	The answer provided in TG07.3-112 is confusing. Do I ignore the note in detail 1/A1-9205 "Aluminum Column Cladding (Painted Fin) with framing support to suit By Archl Misc Metal - REF to Spec 057500"? Manufacturer's are listed in 057500. "Aluminum Column Cladding" is not listed in spec 055000. Exclusions list does list "Aluminum Column Cladding". Please provide multiple manufacturers for both scope items.	Aluminum column cladding specified under Specification Section 05 75 00 and its associated support is included in the work of TG07.3. Exclusion 5 will be modified in the next addendum to read "Misc. metal directly supporting, or integral to, curtain walls and skylights (W-3, W-4, W-8, W-10), exterior awnings (W-1), GFRC fascia and cladding (W-14, W-18, W-9), metal panel systems (W-16, W-17, W-19), retail facade, aluminum column/glass cladding (W-2, W-6, W-5, W-7), glass flooring (W-12, W-13), roof park café (W-20)." Furnish one of the listed manufacturers or equal.
TG07.3-150	11/25/2014	2/L1-7386, 2 & 4/A1-8710	TG07.3-004 & TG07.3-113	"Steel Protection Plate"; Please explain how this plate is installed?	See response to TG07.3-094.
TG07.3-151	11/25/2014	5/S1-9051	TG07.3-120	Example locations (per answer) A/A1-7004 and A/A1-7240 do not clearly call out detail 5/S1-9051. I need information to find the locations of 5/S1-9051 if we are to pick them up. Can I get a specific wall type they are located at?	We assume this RFI is referring to the response provided on RFI TG07.3-118. Architectural drawings do not provide references to specific sheets on other consultants' drawing sets. Structural detail 5/S1-9051 is titled 'Top Brace Detail of Non-Bearing Concrete Wall at Exterior Edge of Concrete Slab'. Exterior Edge of Slab conditions at Non-Bearing Concrete Walls occur at shafts with reinforced-concrete

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					walls. For example, this occurs at Stair 202 and Elevator Shaft PE 203 at Gridlines 1.4-2, D-E.6, and Stair 203 4-5, B-C.
TG07.3-152	11/25/2014	TG07.3-046, TG07.3-137	Exhibit A pg. 13 Item #30	I still do not know where this scope will be needed. (current schedule does not list needed information). Also provide a per SF unit price for fire proofing. (fireproofing is typically by others)	A more detailed schedule is not currently available for bidding. Review A1-8662, A1-8663, and remaining architectural drawings for location of members to be fireproofed. TG07.3 is responsible for establishing the pricing for patching of fireproofing. Contact Clayton National at 480-268-7780 for pricing the patching of fireproofing.
TG07.3-153	11/26/2014	A-0030		Please provide Sheet A-0030 mentioned in QBD TG07.3 Question 83.	A-0030 may be purchased/downloaded via ARC/Northern California Planwell.
TG07.3-156	11/26/2014	A1-2303		The interior columns on grid lines 6D and 6F are highlighted as part of TG07.3. Please specify the misc metal detail for these columns. Where are the other locations for this Detail?	Refer to enlarged floor plans for detail bubbles directing you to the column enclosures at these locations.
TG07.3-157	11/26/2014	A1-9051		Are the top braces for the concrete wall (bearing and non-bearing) FOB to the Jobsite?	Top braces are post install, and as such are to be furnished and installed as part of the work of the TG07.3 trade package.
TG07.3-159	12/1/2014	A1-3100		Please specify the location of checker plates? Are the checker plates fastened to CMU wall and GB Wall the same?	Referenced Loading Dock checker plates are shown in plans and elevations. See A1-3100 and A1-3101. Checker plates have been deleted from the CMU walls in this Loading Dock. Checker plates to be fastened to GB partition with self-tapping screws.
TG07.3-160	12/1/2014		Exhibit A	Please specify the location of Inclusion No 28-all escutcheons.	An example of an escutcheon is Detail 6/A1-9321. Review details, sections, and remaining Contract Documents for locations of escutcheons.
TG07.3-161	12/1/2014			Some of our small business metal fabrication companies are requesting additional Time to review the project plan. Therefore we request a 4 week extension on the project.	Refer to the Package Timeline in Exhibit A, II. “Key Dates for Bidding Process”, for revised dates; the bid date has been extended to January 22, 2015.
TG07.3-163	12/1/2014		Exhibit A	Please specify the location of Inclusion No 10-Queuing post inserts	Refer to Detail 6/A1-9321 as an example. Review details, sections, and remaining Contract Documents for locations of queuing post inserts.
TG07.3-164	12/1/2014	A1-2504, A1-3100, A1-9338		There are two security screens shown on Sheet A1-2504 and A1-3100. Are they the only two security screens with sliding gates? If not, please provide more Information about the locations where security screens are needed.	1. No, there are more than two security screens with sliding gates required. Bidders shall refer to the Contract Documents for quantity and location of all required security screens (see all MDF and IDF rooms).

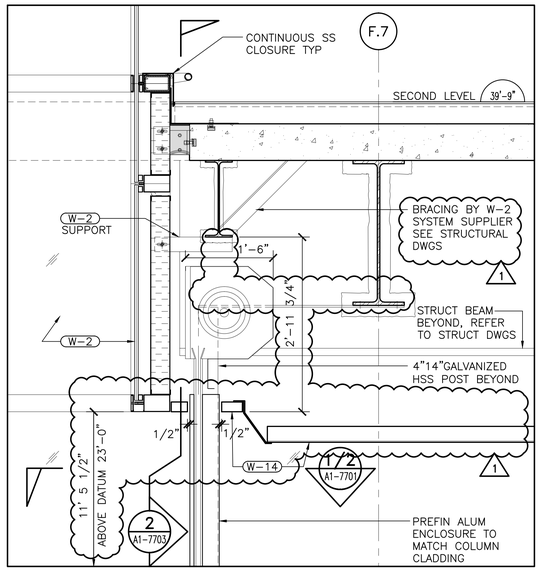
Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-165	12/1/2014	A1-2102		In sheet A1-2102. Are the sizes of SP and SP-TYP the same? If not, the size mentioned on P1- 6001 is for SP or SP-TYP? What is the size for the other one?	On A1-2102, there are two 'SP' pits, located at 1.1, C.3-D and 3-4, A-B. These are 'dry' pits (no pipes) that will serve the future Northwest air plenum. The size and location of these are called out on the Architectural Slab Edge Plan A1-2812, where they are shown as 1'6" x 1'6". These correspond with the SPs shown in the same location on the Plumbing drawing P1-2022. Here, they are tagged with No. 14, which is annotated as "Sump Pit with grating 1'6" x 1'6" x 2'0" deep refer to detail 8/P1-6001 for grating detail". The SP-TYP shown on A1-2102 are located and sized on A1-2812 (and the other Mat Slab Edge Plans) as 2'6" x 3'0". These correspond with the SPs shown in the same locations on Plumbing drawing P1-2022. These are tagged with No. 2, which is annotated as "Sump Pit with Grating 2'6" x 3'0" x 4'0" deep refer to detail 8/P1-6001 for grating detail" Therefore, SP-TYP (Sump Pit Typical) is 2'6" x 3'0" x 4'0" deep. SP (Sump Pit - not typical) has the specific size identified via the annotation tag. Refer to QBD TG07.3-062 for additional information regarding sump pits.
TG07.3-166	12/5/2014		Exhibit A 05 75 00	Per Exhibit A: TG07.3 does not own spec 057500. As of right now you are having us pick up Item # 2 and #9 per "1.1 Summary" and the "Queuing Rails" shown on page 9. Are we responsible for anything else in 057500?	All work required by TG07.3 Exhibit A shall be performed in conformance with the appropriate specification, whether specifically listed as a primary specification or not. Cross-reference inclusions in Exhibit A with Specification Section 05 75 00.
TG07.3-168	12/5/2014		2.4, E. 8b. 05 75 00	Is the "finish paint" by Bid Package TG07.3?	TG07.3 is required to provide finish coatings on items called out to be prefinished or receive a color (an example would be Specification Section 05 50 00 2.5 P).

Subject: TG07.3-105 Response

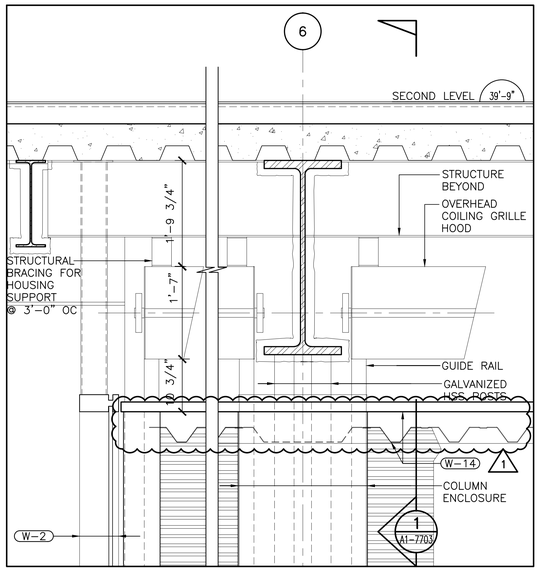


4 A1-7576 ELEVATOR DOOR SILL @ LOWER CONCOURSE

SCALE: 3" = 1'-0"



1 A1-7703 SECTION DETAIL – OHG
SCALE: 1" = 1'-0"



2 A1-7703 SECTION DETAIL – OHG
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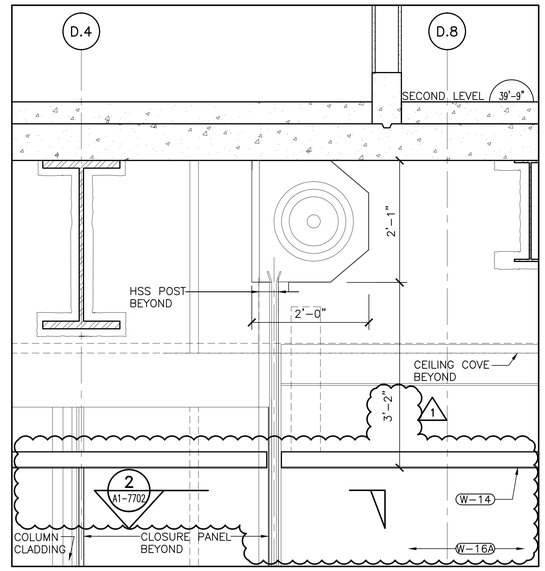

3 A1-7703 SECTION DETAIL – OHG
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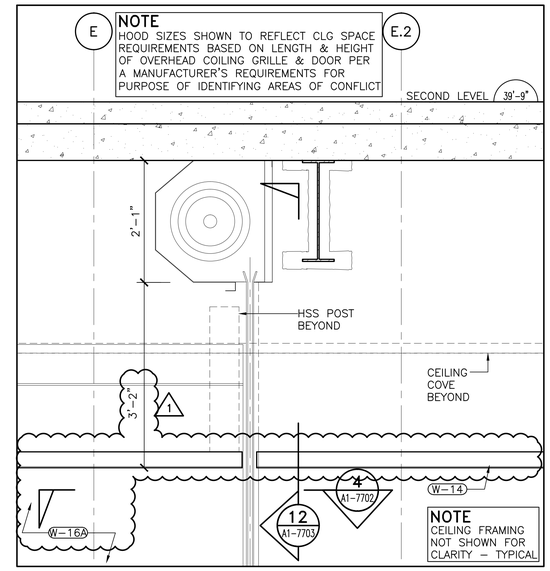
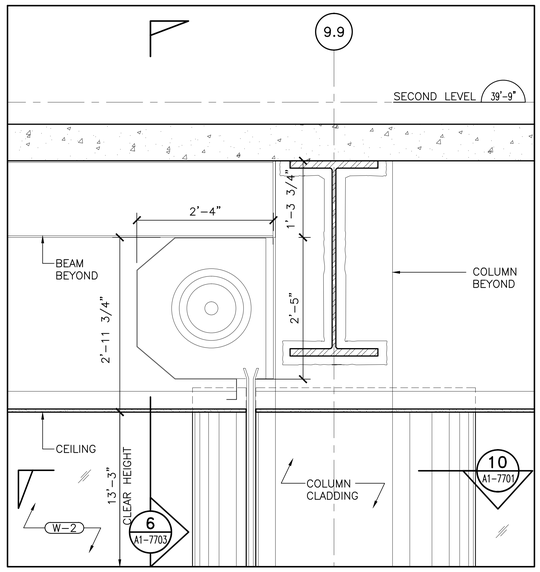
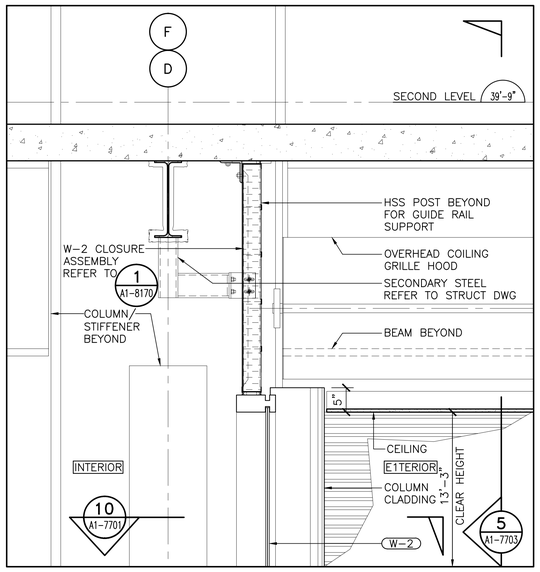


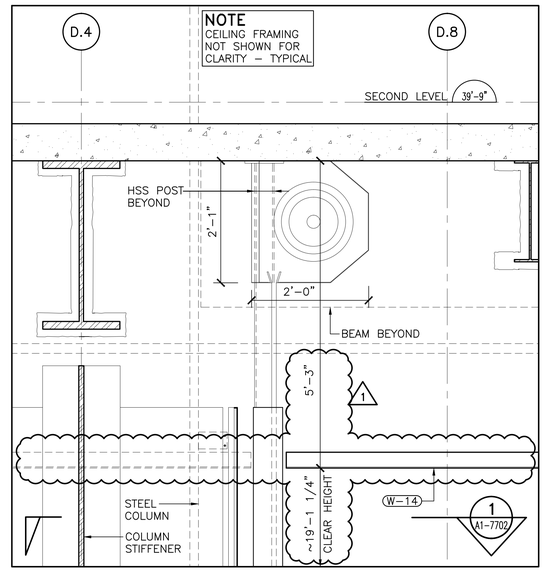
4 A1-7703 SECTION DETAIL – OHG
SCALE: 1" = 1'-0"



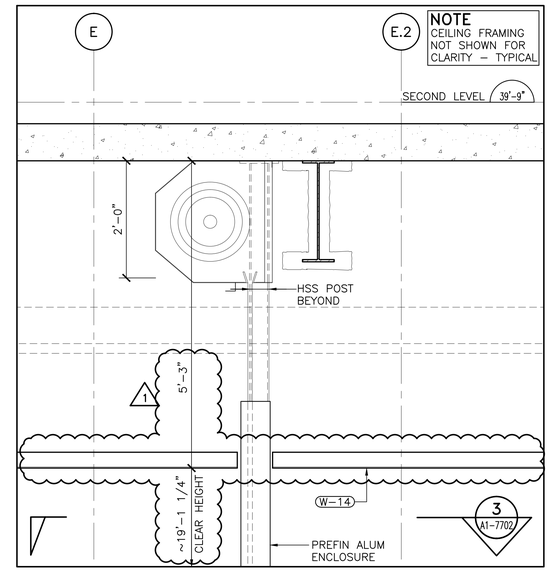
5 A1-6013 SECTION DETAIL – OHD
SCALE: 1" = 1'-0"
A1-6000



6 A1-7703 SECTION DETAIL – OHD
SCALE: 1" = 1'-0"



7 A1-7703 SECTION DETAIL – OHG
SCALE: 1" = 1'-0"



8 A1-7703 SECTION DETAIL – OHG
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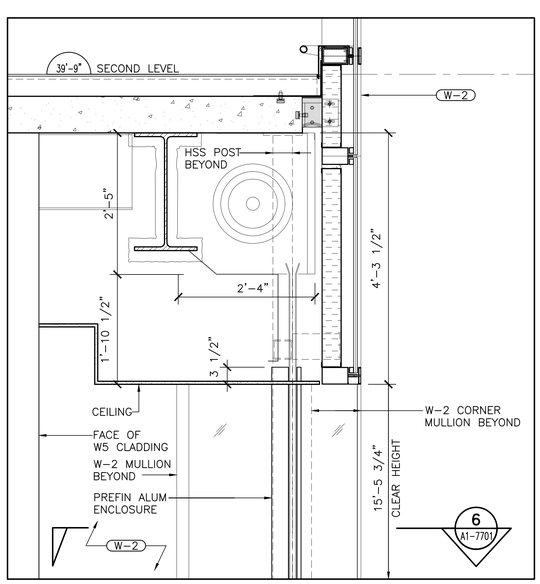
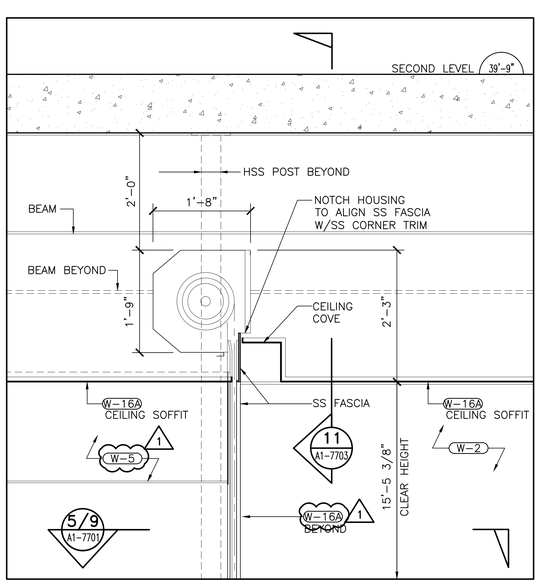


9 A1-7703 SECTION DETAIL – OHG
SCALE: 1" = 1'-0"



10 A1-7311 SECTION DETAIL – OHG
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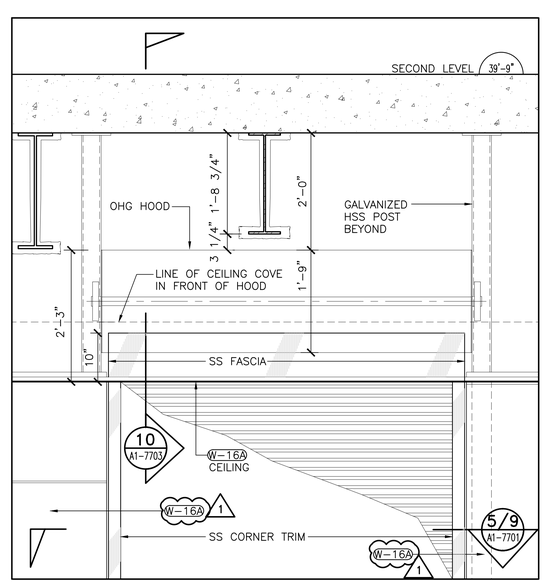
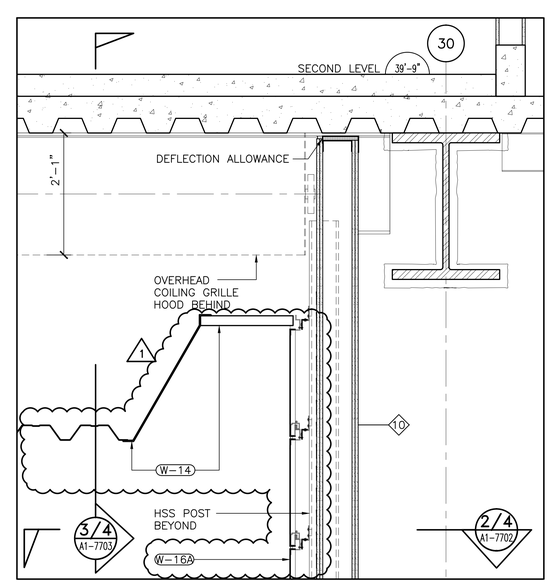


11 A1-7703 SECTION DETAIL – OHG
SCALE: 1" = 1'-0"

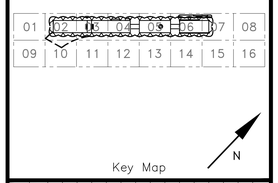


12 A1-6006 SECTION DETAIL – OHG
SCALE: 1" = 1'-0"
A1-6000

0 1/2 1 2 3
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
OVERHEAD COILING GRILLE & DOOR DETAILS GROUND LEVEL

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL
DESIGNED BY: D. DRON
CHECKED BY: W.R. BRADLEY
DRAWN BY: E. ANTAO
DATE: 03/31/2014
SCALE: 1" = 1'-0"
SIZE: E
FACILITY NO.: 140
REVISION: 0
SHEET NUMBER
SKA-4320
(A1-7703)
SEQUENCE NUMBER
___ of ___

___ SUBMITTAL

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.

Dec 01, 2014 - 5:42pm P:\Projects\0803-001\ Project\01 CAD\01 DWG\02 Sheets\A1-7703.dwg

XREFS: TJPA-TB 34x44E.dwg\ XDETG0200.dwg\ RCP-SECTIONS.dwg

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SECTION 05 50 00 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Miscellaneous metal fabrications not specified in other Sections.
2. See Schedule of Items, but not limited to.
3. Installation of finish hardware, specified in Section 08 71 00, on steel gates.
4. Electrical continuity and grounding of this work.
5. Mockups.
6. Source and field quality control testing.
7. Warranties and indemnities.

B. ***1 . . .*** Stainless ~~steel bollard covers, stainless~~ steel railings and railings attached to steel stairs and their shaft walls, stainless steel queuing posts and top rails, structural glass railings, metal gratings, ~~and stainless steel decorative railing and mesh on Park Level,~~ and architectural metal fabrications are specified elsewhere in Division 05 75 00 Architectural Metal Fabrications.

C. **DELETED** ~~Refer to Part B Documents applicable to the Section.~~ ***. . . 1***

D. General: Certain components of the metal assemblies may not be fully detailed on the Drawings which indicate only desired profile and design intent.

1. Engineer, fabricate, and install these components within the physical limitations indicated on the Drawings.
2. Drawings and calculations for the assemblies shall be prepared, signed and sealed by the Contractor's Engineer.
3. Submit drawings and calculations to AHJ for approval, and pay fee(s) incurred thereby before start of installation.
4. Fasteners and connections are shown schematically. Final fasteners or connections size and location shall not conflict with or require revision of the finish profiles of the supporting and supported work.
5. Connections to the supports shall not impose eccentric loading, or induce twisting or warping and shall be able to accommodate misalignment of the structure within limits allowed by the ACI and AISC tolerances.
6. Mockup construction, when specified, is also a requirement of this Section and its cost shall be included in the Contractor's bid.

1.2 ABBREVIATIONS AND ACRONYMS

A. AHJ: Authorities Having Jurisdiction.

B. AISC: American Institute of Steel Construction.

C. AISI: American Iron and Steel Institute.

D. ANSI: American National Standards Institute.

E. AWS: American Welding Society.

F. BAAQMD: Bay Area Air Quality Management District.

G. LEED: Leadership in Energy and Environmental Design.

H. MSDS: Material Safety Data Sheets.

I. SCAQMD: South Coast Air Quality Management District.

J. SSPC: Society for Protective Coatings (formerly known as Steel Structures Painting Council).

K. TIG: Tungsten Inert Gas (Welding).

L. TJPA: Transbay Joint Powers Authority.

M. VOC: Volatile Organic Compound.

1.3 DEFINITIONS

A. General: In addition to definitions specified in Article 1.01 of the General Conditions, the following applies to this Section. Where the provisions are in conflict, the more restrictive requirements apply.

B. Contractor's Engineer: California-licensed structural engineer, employed by the Contractor, with a minimum 5 years' experience in the design of assemblies similar in scope to those for the Project, including drawings, testing program development, test-result interpretation, and comprehensive engineering analysis that show the assemblies' compliance with the specified requirements.

C. Engineer (verb) and Engineering: As used in this Section, includes engineering, fabrication and installation.

D. Engineering Services: Services performed for installation of assemblies similar to those indicated for this Project in material, design, and extent.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meetings: Comply with Section 01 12 00 and Section 01 14 00, except as specified below. Where the provisions are in conflict, the more restrictive requirements apply.

B. Coordination:

1. Coordinate installation of anchors for the work of this Section. Furnish setting drawings, templates and directions for installing anchorages, including inserts, anchor bolts and items with integral anchors to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
2. Coordinate respective work to establish relationship between these other Sections and to provide completed installations shown and required.

C. General: The Contractor is responsible for engineering, fabrication and installation the work of this Section in accordance with the design intent, design criteria, performance requirements, applicable codes and ordinances at the time of award, and requirements of AHJ. Structural and operational design requires the certification of a California-registered civil or structural engineer who shall also become the engineer of record for this portion of the work.

1.5 SUBMITTALS – GENERAL

A. Comply with Article 3.12 of the General Conditions, and Sections 01 13 00, except as specified below. Where the provisions are in conflict, the more restrictive requirements apply. Do not submit items not requested.

B. Product Data:

1. Submit manufacturer Product Data, specifications and installation instructions for manufactured items.
2. Submit the manufacturers' literature, including engineering data for anchors.

C. Shop Drawings:

1. Submit plans, elevations and scale details of members, materials and connections. Draw plans and sections at not less than 1:48 scale, and details at not less than 1:4 scale.
2. Include jointing details, methods of setting, sealing, securing, anchorage, and field connections.
3. A California-licensed structural engineer specified herein shall be responsible for:

   a. Production and review of Shop Drawings.
   b. Stamping and signing each Shop Drawing and any associated calculations performed.

4. Final review of Shop Drawings shall be contingent upon complete submission of structural calculations, where appropriate, documentation, certifications, and approvals of anchorage, samples, mockups and test reports. Cross-reference structural calculations to appropriate Shop Drawing details.
5. For components to be embedded in concrete and masonry work, furnish templates supplemented by dimensioned Shop Drawings to trades placing those components in their work. Assist in location of these components where so requested by those trades.

D. Samples: Submit following Samples in sizes indicated.

1. Extruded and formed metals: Minimum 12 inches long.
2. Metal sheet: Minimum 12-inch square and of specified thickness.
3. Posts Inserts: Full size unit with cap.
4. Resilient Bumpers: 12-inch long.

E. Engineering Calculations: For components of the metal fabrications engineered by the Contractor, submit calculations signed and sealed by the Contractor's Engineer to demonstrate Code compliance for the components, including railings.

F. Corrosion Analysis: Together with other submittals, submit a letter from a professional engineer, specialized in corrosion prevention, stating that components of the work of this Section and attachments to adjacent construction are designed or isolated to eliminate galvanic action between them.

G. Certificates: Manufacturer certification, on manufacturers' letterhead, and test results conducted by a testing laboratory acceptable to TJPA, on the K-12-rated bollards.

1.6 CLOSEOUT SUBMITTALS

A. Submit maintenance instructions in accordance with Section 01 70 00. Include in Maintenance Manual:

1. Printed copies of maintenance instructions for assemblies and their finishes.
2. Proper care and maintenance of assemblies and hardware.
3. Recommended inspection schedule.
4. Copy of each duly reviewed Shop Drawings in their most recent amended form.
5. Complete explanation of operation principles and sequences.
6. Complete parts and materials list with numbers, sizes, method statement of replacement of component parts of installation.

B. Coordinate and incorporate Operating Procedures Outline as defined in Section 11 24 23 into training requirements for maintenance workers prior to accessing specified assemblies.

C. Submit instructions for proper cleaning and routine maintenance of assemblies together with recommended cleaning materials and frequency.

D. Provide touchup repair kit or touchup instructions to TJPA for each type of factory-applied finish.

1.7 LEED SUBMITTALS

A. Within 30 days of Contract award, assemble and submit all LEED material information on the "LEED Material Tracking Spreadsheets" and forms provided in the Project Manual, together with all supplemental documentation as required by LEED.

B. Credit MR 4: Product data indicating percentage by weight of post-consumer and post-industrial recycled content for products having recycled content. Include a statement indicating projected costs for each product having recycled content.

C. Credit MR 5: Product data indicating location of extraction and processing and location of manufacture. Include a statement indicating projected costs for each product being extracted, processed, and manufactured within a straight-line 500 mile (800 kilometer) total travel distance of the project site using a weighted average determined through the following formula: (Distance by rail/3) + (Distance by inland waterway/2) + (Distance by sea/15) + (Distance by all other means) = 500 miles [800 kilometers].

D. Credit IEQ 4.1: If field applied, provide manufacturer's MSDS or technical data sheet showing a printed statement of VOC content for all adhesives and sealants used on the project and demonstrating compliance with SCAQMD Rule #1168, effective July 1, 2005 and amended January 7, 2005. Provide manufacturer's product data for aerosol adhesives, including printed statement of VOC content that demonstrates compliance with the limits defined in Green Seal standard GS-36, in effect October 19, 2000.

E. Credit IEQ 4.2: If field applied, provide manufacturer's MSDS or technical data sheet showing a printed statement of VOC content for all paints and coatings used on the project and demonstrating compliance with Green Seal standard GS-11, Paints, May 20, 1993; with Green Seal GC-03, Anti-Corrosive Paints, January 7, 1997; with SCAQMD Rule #1113, effective January 1, 2004.

1.8 QUALITY CONTROL

A. General: Certain components of the metal assemblies may not be fully detailed on the Drawings which indicate only desired profile and design intent.

1. Engineer, fabricate, and install these components within the physical limitations indicated on the Drawings.
2. Drawings and calculations for the assemblies shall be prepared, signed and sealed by the Contractor's Engineer.
3. Submit drawings and calculations to AHJ for approval, and pay fee(s) incurred thereby before start of installation.
4. Fasteners and connections are shown schematically. Final fasteners or connections size and location shall not conflict with or require revision of the finish profiles of the supporting and supported work.
5. Connections to the supports shall not impose eccentric loading, or induce twisting or warping and shall be able to accommodate misalignment of the structure within limits allowed by the ACI and AISC tolerances.

B. Structural Design and Inspection: Structural design and inspection of structural components related to stairs, railings, landings, platforms and similar structural elements shall be performed by the Contractor's engineer.

C. Qualifications

1. Installers: Competent installers with minimum 5 years experience in installation of AMF. Upon request provide record of successful in-service performance, as well as sufficient production capacity to produce required work. Installers shall be thoroughly conversant with laws, by-laws and regulations which govern.
2. Welders: Welding of structural components related to stairs, railings, landings, platforms and similar structural elements shall be performed by fabricator having minimum certification of AWS. Welders shall be familiar with welding procedures for structural welding for steel; structural welding for aluminum, and structural welding for sheet steel.
3. Organic-Coating Applicator Qualifications: Firm experienced in successfully applying organic coatings of type indicated to aluminum extrusions and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.
4. Licensed Professionals: California-licensed structural engineer carrying professional liability insurance.

D. Welding: Quality procedures and personnel according to ANSI/AWS D1.1/D1.1M, ANSI/AWS D1.2/D1.2M and ANSI/AWS D1.3/D1.3M. Certify each welder has satisfactorily passed AWS qualification test for welding processes involved and if pertinent, has undergone recertification.

E. Certifications: Submit certification from the Contractor’s engineer stating that assemblies are capable of supporting their own weight and specified live loads, without failure and within the criteria specified.

F. Mockup: Erect at the Project site a full height by 3 vertical supports mockup of the crash rail, complete with resilient bumpers.

1. Make mockup complete with all accessories, features required for the final assembly on the building.
2. Modify as necessary to achieve a mockup satisfactory to the TJPA Representative, or remove and construct additional mockup(s).
3. Approved mockup shall serve as the standard for the same work on the building.
4. Remove mockup only after completion and acceptance of final work unless its incorporation in the Work is authorized by the TJPA Representative.
5. Protect mockup until its removal or incorporation in the Work is authorized by the TJPA Representative.

G. Corrosion Prevention:

1. Engage a California-licensed Corrosion Engineer who is an expert in corrosion, to conduct a component-by-component analysis of potential corrosion resulting from galvanic action between materials, for components of curtain wall and aluminum panels and provide report.
2. Submit Engineering Report to TJPA Representative, for review prior to submission of Shop Drawings. Ensure Sample and test results are available upon request.

1.9 DELIVERY, STORAGE AND HANDLING

A. Storage and Handling:

1. Handle and store materials at job site to prevent damage to other materials, existing construction or property.
2. Handle components with care, and provide protection for surfaces against marring or other damage. Ship and store members with cardboard or other resilient spacers between surfaces. Use lifting chokers of material that will not damage surface of steel members.

1.10 WARRANTY

A. General:

1. The warranties are governed by the requirements herein, those of Section 01 17 40, and the General Conditions of the Contract.
2. Warranties specified in this Article shall not deprive the TJPA of other rights the TJPA may have under other provisions of the Contract Documents and are in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Warranty: Manufacturer shall warrant work of this Section for 5 years against defects and/or deficiencies in accordance with General Conditions of the Contract. Promptly correct defects or deficiencies which become apparent within warranty period, to satisfaction of TJPA Representative and at no expense to TJPA.

1.11 RECORD DOCUMENTS (AS-BUILT)

A. Maintain and submit record documents as specified in Article 3.09 of the General Conditions and Sections 01 17 20

PART 2 - PRODUCTS

2.1 LEED MATERIAL REQUIREMENTS

A. Credit MR 4: Provide cast nodes, W-shapes, and plates steel materials with minimum 70% recycled content where the total recycled content equals the sum of post-consumer recycled content and ½ post-industrial recycled content.

B. Credit IEQ 4.1: All VOC containing materials applied on site inside of the waterproofing barrier shall comply with LEED credits IEQ 4. Provide adhesives and sealants with VOC content and chemical component limits not exceeding the content limits defined by SCAQMD Rule #1168, July 1, 2005, amended January 1, 2005, and Green Seal GS-36, effective October 19, 2000 for aerosol adhesives as applicable.

C. Credit IEQ 4.2: All VOC containing materials applied on site inside of the waterproofing barrier shall comply with LEED credits IEQ 4. Provide paints and coatings that comply with the limits defined by Green Seal Standard GS-11, effective May 20, 1993, GC-03, January 7, 1997, and SCAQMD Rule #1113, effective January 1, 2004, as applicable.

2.2 MANUFACTURERS

A. One of the manufacturers named, or equal, with a record of successful performance, acceptable to the TJPA Representative and subject to conformance to requirements of Drawings, Schedules and Specifications.

2.3 PERFORMANCE REQUIREMENTS

A. General:

1. Provide railings capable of withstanding the loads prescribed by the CBC without exceeding the allowable design working stress of the materials involved, including anchors and connections.
2. Apply each load to produce the maximum stress in each component.
3. Other loading criteria applicable to this Section are specified in Sections 08 05 00 and 08 05 13.

B. Deflection: Limit deflection under uniform load to L/360; L/120 under concentrated load; or 1/4 inch maximum, whichever is more restrictive.

C. Design Criteria for Critical and Non Critical Areas: Refer to Note CD 6 on Structural Drawing S-0005.

1 . . .

D. **Provide bonding where required by the specific equipment installation requirements of by other requirements of the project contract documents.** ***. . . 1***

2.4 MATERIALS

A. Stainless Steel: Austenitic stainless steel as follows.

1. Tubing: ASTM A 554, Grade MT 316L.
2. Pipe: ASTM A 312/A 312M, Grade TP 316L.
3. Sheet, strip, plate, and flat bar: ASTM A 666, Type 316L.
4. Bars and shapes: ASTM A 276, Type 316L.

B. Structural Steel Shapes, Plates, Etc.: Material conforming to ASTM A 36.

C. Hollow Structural Steel Sections: Material conforming to ASTM A 36.

D. ***1 . . .*** Steel Pipe Handrails: Conforming to ASTM A **500** ~~53, Type "S", Schedule 40, Grade A steel pipe~~.

E. Steel Pipe Bumpers: Conforming to ASTM A **500** ~~53, Schedule 80~~. ***. . . 1***

F. Galvanized Sheet Steel: Supply 20-gage core thickness commercial quality to ASTM A 653, CS Type A, with Z275 (G90) zinc coating designation to ASTM A 653.

G. Cast Steel Handrail Wall Brackets: In compliance with local building code requirements and to meet design requirements indicated on Drawings.

H. Welding electrodes and filler metal: Types recommended by AWS for each type of metal required, and as required for conditions of use. Ensure color match, strength and compatibility in the fabricated items.

I. High Strength Bolts:

1. Steel: Bolts, nuts and washers conforming to ASTM A 32. Supply each type and size of bolt and nut of same manufacture and of same lot.

   a. Bolts: Heavy, hexagon head high strength structural bolts, of standard size, of lengths required for thickness of members joined and for type of connection.
   b. Nuts: Heavy, hexagonal, semi-finished nuts.
   c. Washers: Flat and smooth hardened washers, quenched and tempered to suit applications, ASTM F 844.

d. Hardened Steel Washers: To suit applications and conforms to ASTM F 436.
e. Lock Washers: Helical spring type steel “lock” washers to suit applications and conforming to ASME standards.

2. Stainless Steel: For exterior locations, unless otherwise indicated, use AISI Type 316.

a. Bolts: To suit applications and conforms to ASTM F 738.
b. Nuts: To suit applications and conforms to ASTM F 836.
c. Lock Washers: Helical spring type steel “lock” washers to suit applications, conforming to ASME standards.

3. Vandal-Resistant Fasteners: AISI Type 304 stainless steel, dual pin type to suit applications and acceptable to TJPA Representative. Use for exposed fasteners in public areas, unless otherwise indicated.
4. Security Fasteners: Button head "Torx® Plus R," tamper-resistant No. 10 stainless steel machine screws.

J. Common or Ordinary Bolts and Anchor Bolts: Unfinished bolts conforming to ASTM A 307, Grade A, with hexagon heads and nuts where exposed in the finish work. Provide common bolts of lengths required to suit thickness of material being joined, but not projecting more than 1/4 inch beyond nut, without the use of washers. Supply anchor bolts of lengths noted, but projecting not less than 1/2 inch beyond nut unless otherwise noted.

K. Dielectric Separator: Provide quick drying non-staining alkali-resistant bituminous paint or epoxy resin solution or membrane type to acceptance of TJPA Representative.

L. Cast-In-Place and Post-Installed Anchors in Concrete: Torque-controlled expansion type or chemical type with capability to sustain, without failure, load imposed with a safety factor of 4.

1. Material for interior locations: Carbon-steel components zinc-plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5 unless otherwise indicated.
2. Material for exterior locations: Alloy Group 1 or Group 2 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

M. Grout and Anchoring Cement:

1. Non-shrink non-metallic grout: Premixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with CE CRD-C 621. Provide grout specifically recommended by manufacturer for application of type specified in this Section.
2. Manufacturer: Bonsal Anchor Cement by WR Bonsal Co., Por-Rok by Minwax Construction Products Division.

N. Primer: The following by Tnemec, or equal of the same generic type and with equivalent characteristics by Carboline, and Sherwin Williams.

1. Shop Applied: “90-97 TnemeZinc”.
2. ***1 . . .*** ~~Field Applied: “94-H20 Hydro-Zinc”.~~ **Shop Applied Primer of the same generic type and with equivalent characteristics by Carboline.**
3. ~~For surfaces receiving high performance coatings, coordinate with Section 09 97 15.~~ **Shop Applied Primer of the same generic type and with equivalent characteristics by Sherwin Williams.**
4. ~~For surfaces receiving paint, coordinate with Section 09 91 00.~~ **Field Applied: “94-H20 Hydro-Zinc”.**
5. **Field Applied Primer of the same generic type and with equivalent characteristics by Carboline.**

6. **Field Applied Primer of the same generic type and with equivalent characteristics by Sherwin Williams.** ***. . . 1***

P. Aluminum: Aluminum sheet and plate shall conform with requirements of section 05 75 00 - 2.3.C.

O. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC Paint 12 but containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

2.5 SCHEDULE OF ITEMS:

A. Unistrut Framing:

1. ***1 . . .*** Multipurpose steel profiles by Unistrut, Cooper B-Line, Inc. **or** Power-Strut U.S., ~~or Famet,~~ complete with manufacturer's standard steel fasteners and connectors, nuts integrally self-locking or fitted with locking devices. ***. . . 1***
2. Provide hot-dip galvanized finish on steel members, hanger rods, nuts, bolts, connectors, and anchors.

B. Chain: Hot-dip galvanized Torus chain, Grade 30, 1/2-inch size, with hot-dip galvanized round eye bolt snap and bolt type shackles sized to fit the chain.

C. ~~Queuing Post Inserts:~~

1. ~~Type 316, heavy wall, threaded female sleeves provided with studs for embedment in concrete, removable watertight threaded covers of the same material, and designed to receive the queuing posts with a matching thread.~~
2. ~~Unless otherwise indicated, make post inserts 4 inches long.~~
3. ~~Coat surfaces that will be embedded in concrete with bituminous paint applied to a DFT of 5 mils minimum.~~

D. ***1 . . .*** **DELETED** ~~Hot Dipped Galvanized Steel Mesh and Closure Plates At Bus Deck Guardrail:~~

1. **DELETED** ~~Supply and install 1 inch by 1 inch hot dipped galvanized steel mesh set in angle frame bolted to galvanized horizontal steel tubes provided by Structural Division.~~

   a. **DELETED** ~~Comply with ASTM A 510.~~
   b. **DELETED** ~~Supplier: Equal to Gerard Daniel Worldwide.~~

2. **DELETED** ~~Mesh shall use galvanized No. 9 Gage wire interwoven is vertical and horizontal grid pattern.~~
3. **DELETED** ~~Frame shall be constructed of 1 inch by 1 inch by 1/4 inch thick galvanized plates and angles to receive mesh with 1/4inch galvanized pressure bar attached with galvanized bolts/screws. Attach to horizontal tubes with galvanized angle and galvanized bolts connection with peened threads to prevent loosening.~~
4. **DELETED** ~~At Guardrail vertical posts provide 1/4inch galvanized steel closure plate sloped to drain with bent and curved edges.~~
5. **DELETED** ~~Provide 1/4inch thick galvanized steel flat plate within mesh area to receive light fixtures by Division 26. See Drawings for locations.~~
6. **DELETED** ~~Complete assembly to be painted by Section 09 97 15 High Performance Coatings.~~
7. **DELETED** ~~At expansion joints, provide galvanized pipe sleeves fixed to one side and vertical pipe as shown on drawings, see sheet A1 8675 and A1 3190.~~

E. **DELETED** ~~M 50 Rated Bollards: Both of the following by RSA Protective Technologies, LLC.~~

1. **DELETED** ~~BOL 1 at the East and West End of the Bus Deck Drive Aisle: Of the dimension and profile indicated, model SWB3610 steel bollards by Secure USA.~~

2. **DELETED** ~~BOL 2 at the Pedestrian Islands: Of the dimension and profile indicated, shallow mount steel bollards, model SWB3610 "Sentry Bollards" by RSA Protective Technologies.~~
3. **DELETED** ~~Characteristics:~~

   a. **DELETED** ~~Bollard Protection Rating: ASTM F2656-07 criteria M 50.~~
   b. **DELETED** ~~Maximum Allowed Embedment: 5 inches.~~
   c. **DELETED** ~~Maximum Diameter: 10.75 inches.~~
   d. **DELETED** ~~Hot dipped galvanized after fabrication. Prepare for painting by Section 09 91 00.~~

F. **DELETED** ~~Steel Bollards BOL 3~~

1. **DELETED** ~~Interior hot dipped galvanized steel bollard complete with base plate, anchor bolts and through slab plate as detailed.~~
2. **DELETED** ~~Fill pipe with concrete to profile shown as detailed.~~
3. **DELETED** ~~Hot dipped galvanized after fabrication. Prepare for painting by Section 09 91 00.~~
4. **DELETED** ~~Design Bollard BOL 3 to comply with CFC 312 2007.~~ ***. . . 1***

G. Retractable Bollard: See Specification Section 28 16 44 Perimeter Security Systems.

H. ***1 . . .*** Bollards in Landscape Areas: See Specification Section ~~12 93 30 Site Bollards~~ **28 16 44 Perimeter Security Systems**. ***. . . 1***

I. Expanded Steel Mesh for Gypsum Board Partition Reinforcement: See Section 09 22 19 Metal Framing.

J. Vanity Support Steel Frame

1. Design for 1600 lb concentrated load at any point along the spans with a maximum deflection of L/360 or higher as necessary to prevent stone cladding from forming cracks.
2. Supply and install hot dipped galvanized steel H.S.S. posts, beams and frame complete with base plates and expansion bolts as shown on drawings. Provide framing to underside of structure to provide required stiffness.
3. Seal all bolted connections through waterproofing membrane.
4. Co-ordinate with carpentry and other trades for final design.
5. Provide frame for restroom mock-up works. Modify after field review if required.

K. Deflection And Lateral Seismic Support Steel For Masonry Walls (Non-Load Bearing): as detailed; steel angles, fixed both sides to structure above, continuous where exposed in finished areas. For size and extent, see structural drawings. See plan details of masonry for required support plates at seismic joints.

L. Support steel for ceiling hung toilet partitions (at all pilaster locations):

1. Design for 1000 lbs per pilaster.
2. Provide 8" x 2 ¼" hot dipped galvanized steel channel for support of ceiling hung toilet partitions hung from 2" x 2" x ¼" diagonal angle struts at ends and at 4'-0" centers max. Provide expansion type anchorage or unistrut type cast-in attachment to satisfy AHJ. Anchor to underside of slab.
3. Drill for and provide two galvanized 3/8" dia. Bolts at each toilet partition pilaster, according to reviewed shop drawings. Coordinate with toilet partition manufacturer (see Section 10 21 13 Toilet Partitions and Screens).
4. Provide additional steel angle bracing for seismic requirements and for partition support above ceiling.

5. Coordinate with Mechanical and Electrical Divisions with ductwork, conduits, etc. Span over or under ductwork and the like as required, to support partitions. Provide site mock-up for approval before proceeding.

M. ***1 . . .*** Corner Guards**:** ~~For Concrete Columns/Concrete Block Walls: as detailed, 4' x 4" x ½" fabricated aluminum angles, 4' 0" high minimum and as shown on drawings with anchor straps at 12" o.c.~~

1. **For Concrete Columns/Concrete Block Walls: As detailed, 4" x 4" x ½" fabricated aluminum angles, 8'-0" high typical, or as shown on drawings with anchor straps at 12" o.c.**
2. **For Gypsum Board Wall: As detailed, 4" x 4" x ½" fabricated aluminum angles, 8'-0" high typical, or as shown on drawings. Flush countersunk fasteners. *. . . 1***

N. Aluminum Checkered Plate:

1. ***1 . . .*** 1/8" thick aluminum checkered plate (1/4" thick at loading dock) for ~~stair walls and~~ miscellaneous enclosures. (See enclosures in loading dock). ***. . . 1***
2. Attach with 400 series stainless steel recessed fasteners through to steel studs in gypsum board, maximum 2'-0" o.c., coordinate. Flush countersunk fasteners.
3. When used as enclosure, attach to aluminum 1/8" thick "Z" clips/channels to structure as shown.
4. Provide movement allowance in anchorage.
5. Clear grey anodized finish.
6. ***1 . . .*** **Attach, per CID A-A-1922A, 400 series stainless steel recessed fasteners through to stainless steel expanding sleeve in CMU wall. Flush countersunk fasteners maximum 2'-0" o.c. *. . . 1***

O. Catwalks:

1. Design, supply and install galvanized steel catwalk and railings and floor grating as detailed on drawings.
2. Design floor with 1-3/16" o.c. spaced 1" x 1/8" bearing bars floor grating grille with cross bars at 4" o.c. to support minimum of 200 lb per square foot and to authorities having jurisdiction whichever is higher.
3. Hot dip galvanize after fabrication.
4. Refer to structural drawings for work by that division for this section. Coordinate.
5. Provide removable handrail complete with steel H.S.S. sleeves and galvanized bolt fasteners as shown on drawings.

P. Security Screens:

1. Complete with hot dipped galvanized steel H.S.S. and angle frame, mesh with #10 gage wire, fasteners, clips to heights and widths as shown on drawings.
2. Provide galvanized sliding doors, with track rail and roller wheels with limit pins and HASP for padlock.
3. Coordinate with Electrical division to allow for penetrations of cable trays and the like.
4. Provide 1" x 1" wire grid.
5. By California Wire Products, Corona, CA (Basis of Design).
6. Coordinate with 08 71 10 Hardware. For hardware set number 15.
7. Color: Machinery Gray Powder Coated.

Q. Elevator Pit Divider Screens:

1. Complete with hot dipped galvanized steel angle frame, brackets, steel mesh with #9 wire, and to height and width as shown on drawings.

2. Coordinate with gypsum board Section 09 21 16 for installation of gypsum board sloped cants.
3. Prepare surfaces for priming and painting by Section 09 91 00.

R. Elevator Ladders:

1. Complete with hot dipped galvanized stringer rail, rungs and brackets and fasteners to size shown on drawings.
2. Coordinate with steel liner wall provided by others.
3. Prepare surfaces for priming and painting by Section 09 91 00.

S. Pipe and duct protection

1. All pipes and ductwork within 4'-0" of the floor shall be surrounded by three 4" x ¼" bent steel plate guards, 12" wide and 6" deep at 16" o.c., galvanized and anchored to structure behind with 2" x 2" clip angles. See drawings for locations.

T. Miscellaneous Railings: Part of Section 05 51 00 Steel Stairs and Section 11 13 00 Loading Dock Equipment.

U. Overhead Catenary System (OCS) Steel Framing

1. Design, supply and install hot dipped galvanized Overhead Catenary System with steel framing to support transit overhead wires.
2. Steel framing system shall be an extension of the steel framing H.S.S. supports provided by the Structural Steel section. Coordinate work.
3. Provide H.S.S. vertical adjustable extensions complete with H.S.S. tubes to fit, through bolt attachment, with washers and nuts, plates, clips and continuous steel channel as shown on drawings.
4. All attachment shall be by bolted connections with no welding on site. Hot dipped after fabrication.
5. Provide tamper-resistant fastening.
6. Coordinate with Transit Authority for anchor points and levels and allowance for the framing system for attachment of cable.
7. Fiber-Reinforced Plastics Extruded Isolation Material: Manufactured by Liberty Pultrusions (Basis of Design) of West Mifflin, PA. Provide continuous length with minimum joints of fiber-reinforced plastic isolation material extruded to fit continuous channel and fastened to channel as recommended by manufacturer. Treat and seal joints per manufacturer's standard details. Internal and external of channel material thickness not less than 0.375" thick. Custom color to be provided. Polyglass "F" or "C" as recommended by manufacturer using fire retardant type material.

   a. Other manufactures below are acceptable provided they meet the performance requirements:

      1) Advance Fiber Products, La Crosse, WI 54601
      2) Bedford Reinforced Plastics, Bedford, PA 15522

8. See sheets beginning at A1-8550.

V. Manhole Covers (MHC):

1. Design, supply and install hot dipped galvanized steel framed and concrete lift-out lid for the transformer vaults at the sidewalk level to SFPUC standards. See Architectural drawings beginning on A1-3001.

2. Design for a minimum uniform load of 250 lbs/sf or a concentrated load of 8000 lbs/f and to SFPUC standards whichever produces the greatest stress. Provide hot dipped galvanized and epoxy coated reinforcing bars required for loading. Hot dipped galvanized frame to be minimum 1/8" thick. Emboss SFPUC lettering to standard requirements.
3. Manhole Cover #1 (MHC #1): Manhole cover constructed with nominal 5'-0" x 5'-0" concrete with beveled steel frame with 39" circular fixed hot dipped galvanized grating and frame. Frame and rebars to be hot dipped galvanized to SFPUC standards. Provide four (4) brass lifting lugs (couplings) 1-1/2" diameter to SFPUC standard. Finish concrete to be minimum 5000 PSI air-entrained with color and finish to match Landscape Division. Provide water tight perimeter seal with backing and sealant. Design similar to drawing A1-7275. SFPUC grating to be SFPUC standard to vented installations similar to Swiveloc vented cover. Vented cover shall be minimum 60% open.
4. Manhole Cover #2 (MHC #2): Manhole constructed of nominal 10'-0" x 7'-0" concrete with hot dipped galvanized steel frame similar to MHC #1 except without grating. Provide minimum six (6) brass lifting lugs (couplings) 1-1/2" diameter to SFPUC standard. Coordinate final number and load limits of lifting lugs with SFPUC requirements. Provide hot dipped galvanized rebars. Provide minimum 5000 PSI with color and finish to match Landscape Division, with air-entrained concrete. Provide water tight seal with backing and sealant.
5. Manhole Cover #3 (MHC #3): Provide 39" diameter manhole cover by Swiveloc (basis of design) complete with UG-2 design vented cast grated cover carrier rail, exhaust ports, bent head actuator bolt and drain grooves. No. 072154.

W. Masonry Vertical Seismic Joints:

1. Supply and install galvanized steel cover plates on masonry seismic joints.
2. Attach plates on one end at maximum 2'-0" o.c.
3. Joint to be filled with fire safing and smoke seal by 07 21 00.
4. See drawings beginning at A1-3192.

X. Janitor Closet Galvanized Crash Rail:

1. Supply and install hot dipped galvanized floor mounted crash rail complete with hot dipped galvanized flanges and fasteners.
2. See Architectural drawings for detail and location.

Y. Cast-In Steel Angle

1. In Loading Docks provide hot dipped galvanized cast-in slab edge angle at edge of raised slabs and at ramp location not covered by other sections.
2. Angle to be 6" x 6" x 3/8" thick. Miter fit all corners.

Z. ***1 . . .*** Transformer Vault Steel Landing Platforms, Railings and Stairs: Design, supply and install all steel work in transformer vaults including but not limited to ladders, stairs, platform railing guards gratings as shown on drawings. All material which is taken from SFPUC standard details. All material shall be hot dipped galvanized except for railings that are blast cleaned and prime coated. All structural steel conforming to latest ASTM specification A-36 and detailing and fabrication to latest AISC specifications. Provide surfaces smooth and face from burs and sharp projections. All grating shall be welded type with 1" x 1/8" bearing bars at 1-3/16" o.c. and cross bars at 4'-0" o.c. Design to OSHA requirements. **Swing gate with automatic closures at access ladder landings.**

AA. **DELETED** ~~Galvanized Angle at Bus Deck Level Curb: Supply and install hot dipped galvanized angle 6" x 4" x ¼" thick for WMP splice joint. See details beginning at Detail #4 on drawing A1-8675.~~ ***. . . 1***

BB. Miscellaneous required steel supports and metal fabrications which are not part of a manufactured item or covered under another Section of the Specifications, including items from installation by other Sections.

CC. Escalator Pit Curb Angle: Provide angles at escalators E304, E305, E510 and E512. Angles are to form parts of escalator pits. See drawings started at A1-7550.

2.6 FABRICATION

A. General:

1. Design assemblies to avoid or minimize site welding, except where attached to a concealed support.
2. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.
3. Remove sharp and rough areas on exposed surfaces. Projecting edges are not permitted. Ease exposed edges to a radius of approximately 1/32 inch.
4. Cut, reinforce, drill, punch, thread and tap metal work as required to receive finish hardware and similar items of work.
5. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
6. Form exposed connections with flush, hairline joints unless welded, in which case connections shall be invisible.
7. Close exposed ends of handrail and railing members.
8. Provide wall returns at ends of wall-mounted handrails.
9. Provide sheet or plate fillers to support structural loads of handrails where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thickness. Size fillers to produce adequate bearing to prevent bracket rotation and overstressing of substrate.

B. Preassemble and prime assemblies in shop to greatest extent possible to minimize field splicing and assembly. Clearly mark units for reassembly and coordinated installation.

1. Disassemble units only as necessary for shipping and handling limitations.
2. Clearly mark units for reassembly and coordinated installation.
3. Use connections that maintain structural value of joined pieces.
4. Form changes in direction of railing members by radius bends of radius indicated.

C. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain profile of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

D. Weld connections continuously.

1. Do not use stitch, spot or tack welds on exposed surfaces.
2. Use materials, methods and welding sequence that minimize distortion and develop strength and corrosion resistance of base metals.
3. Comply with AWS D 91 for recommended practices in shop welding. Welds on exposed surfaces shall be continuous.
4. Use only technicians qualified to weld stainless steel using TIG equipment.
5. Maintain proper welding temperature to avoid discoloring adjacent metal.
6. Clamp components in jigs during welding to avoid distortion.
7. Alligatored, discolored and warped components will be rejected.
8. Obtain fusion without undercut or overlap.
9. Remove welding flux immediately.

E. At exposed connections, finish exposed welds and surfaces to be invisible from adjacent surfaces, under normal lighting conditions, and so those contours of welded surface match those adjacent.

F. Provide wall brackets, flanges, miscellaneous fittings, and anchors required for connection of metal components to other construction fabricated to the profiles and dimensions indicated on approved shop drawings.

G. Provide inserts and other anchorage devices for connecting metal components to concrete or masonry work. Fabricate anchorage devices capable of withstanding loadings imposed by the assemblies with a reasonable factor of safety. Coordinate anchorage devices with supporting structure.

H. Fabrication Tolerances:

1. Squareness: 1/8 inch maximum difference in diagonal measurements.
2. Maximum offset between components at joints: 1/16 inch except that at welded joints no offset is allowed.
3. Maximum misalignment of adjacent members: 1/16 inch.
4. Maximum bow: 1/8 inch in 48 inches.
5. Maximum deviation from plane: 1/16 inch in 48 inches.

2.7 CORROSION PROTECTION

A. Design assembly components to ensure that no metals, including alloys of the same base metal, are placed in contact with materials that will produce damage due to electrolytic action or other forms of corrosion.

B. Separate dissimilar metals to prevent electrolytic action. Provide letter of confirmation, from corrosion engineer, that infill components, accompanying trims and flashings and attachments to adjacent construction are designed to eliminate potential for galvanic action between components.

C. Comply with recommendations of the corrosion engineer approved by the TPJA Representative, as specified above.

2.8 FINISHES

A. Hot Dip Galvanizing: Galvanize all items listed, as specified in Section 05 05 12 Hot Dip Galvanizing with minimized spangles, and chemically treated.

B. Cleaning and Shop Painting:

1. Clean steel to SSPC-SP 6, “Commercial Blast Cleaning,” and remove loose mill scale, weld flux and splatter.
2. Shop prime steel, including galvanized steel, with one coat of primer (except 2 coats of primer on bollards) to dry film thickness of one mil for a single coat and 2 mils for 2 coats.
3. Paint on dry surfaces, free from rust, scale or grease. Do not paint when temperature is lower than 45 degrees F. Paint items under cover and leave under cover until primer is dry. Follow paint manufacturer's recommendations regarding application methods, equipment, temperature and humidity conditions.
4. Clean but do not prime surfaces to be field welded. Touchup these surfaces in the field as specified below.

C. Protection: Protect surfaces of prefabricated items with an electrostatically-applied strippable film. Remove film promptly after installation is complete.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Verify actual site dimensions and location of adjacent materials prior to commencing work.

1. Examine adjacent construction and supports.
2. Examine wall flashings, water and weather barriers, and other built-in components to ensure coordinated, weathertight installations.
3. Verify that substrates are within allowable tolerances, plumb, level, clean, and will provide a solid anchoring surface.
4. Restroom Mock-up: Provide vanity support installation for 1 male and 1 female public restroom for review and approval prior to continuation of work. Complete deficiencies and receive approval before proceeding with the work.

B. Notification: Notify General Contractor in writing, with copy to TJPA Representative, of conditions detrimental to the installation.

C. Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

3.2 INSTALLATION

A. General:

1. Do not install damaged and defective components.
2. Do not cut, trim or weld parts during erection.
3. Return components that require alteration to the shop for refabrication, if possible, or for replacement by new parts.
4. Install work with tight, flush joints accurately fitted.

B. Fastening to in-place construction:

1. Set railings accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels. Provide toe guards where indicated.
2. Set posts plumb within a tolerance of 1/16 inch of plumb.
3. Align rails so that variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed 1/8 inch in 12 feet.
4. Install chain so it sags no more than 2 inches for its entire length.
5. Provide required anchorage devices and fasteners to attach components securely to in-place construction.
6. Tap posts to receive crash rail bumpers. Install bumpers fastened at each post with Type 316 stainless steel bolts driven thru a washer of the same material.

C. Installation tolerances: Adjust metal fabrications for squareness, alignment, twist, levelness and plumbness to the following tolerances.

1. Squareness where applicable: Plus or minus 1/16 inch, measured on the diagonal.
2. Alignment: Plus or minus 1/16 inch where fabrications are separated by one inch or more; where components join or are separated by less than one inch, components shall be aligned; no deviations permitted.
3. Twist: Plus or minus 1/16 inch, except that deviation shall be such that joined panelized components are flush at joints; no deviations permitted.
4. Plumbness: Plus or minus 1/16 inch, except that deviation shall be such that joined panelized components are flush at joints; no deviations permitted.

5. Levelness: 1/8 inch from level, except where tighter tolerances are required for joining or alignment with adjacent work.
6. Deviation from theoretical location in plan: 1/4 inch, except where tighter tolerances are required for joining or alignment with adjacent work.

D. Field Painting and Touchup:

1. Paint bolt heads, washers, nuts, field welds and previously unpainted items. Touchup with matching paint.
2. For shop primer damaged during transit and installation, sand or wire brush damaged area down to bright metal extending the cleaning a minimum of 2 inches unto undamaged primer and immediately touchup with same primer used for shop priming.

3.3 SITE QUALITY ASSURANCE

A. Site Tests and Inspections:

1. TJPA will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
2. Testing agency will report test results promptly and in writing to the Contractor and TJPA Representative.
3. Extent and Testing Methodology: Testing agency will randomly select completed load-bearing assemblies for testing that are representative of different designs and conditions in the completed Work.
4. Weldments: For single pass fillet welds, inspect welds visually. For other types of welds, the weld testing provisions of Section 05 10 00 apply to this Section.
5. Testing agency will report test results promptly and in writing to Contractor and TJPA Representative.
6. Additional Testing: Where load-bearing assemblies are removed and replaced or are repaired, additional testing will be performed to determine compliance of replaced or additional work with specified requirements.
7. Structural Inspection: Ensure a California-licensed structural engineer specified herein inspects work of this Section during erection/installation.

B. Non-Conforming Work: Replace damaged work that cannot be satisfactorily repaired, restored or cleaned, to satisfaction of TJPA Representative at no cost to TJPA.

3.4 CLEANING AND PROTECTING

A. Cleaning: On completion of installation, clean the work of marks and other foreign substances. Clean aluminum and stainless steel by washing thoroughly with clean water and soap and rinsing with clean water.

B. Protection: Protect work against stains and damages until acceptance by TJPA.

1. Protect finishes of AMF from damage during construction period with temporary protective coverings approved by architectural metal fabricator. Remove protective covering at the time of Substantial Completion.
2. Provide protective covering on finished surfaces. Remove protection when installed work will be inspected. Do not use protective coverings that will damage finishes or become permanently bonded. Do not leave coating residue on finished surfaces.

C. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint, and paint exposed areas with same material.

2. Cleaning and touchup painting of field welds, bolted connections and abraded areas of shop paint are specified in Section 09 91 00.

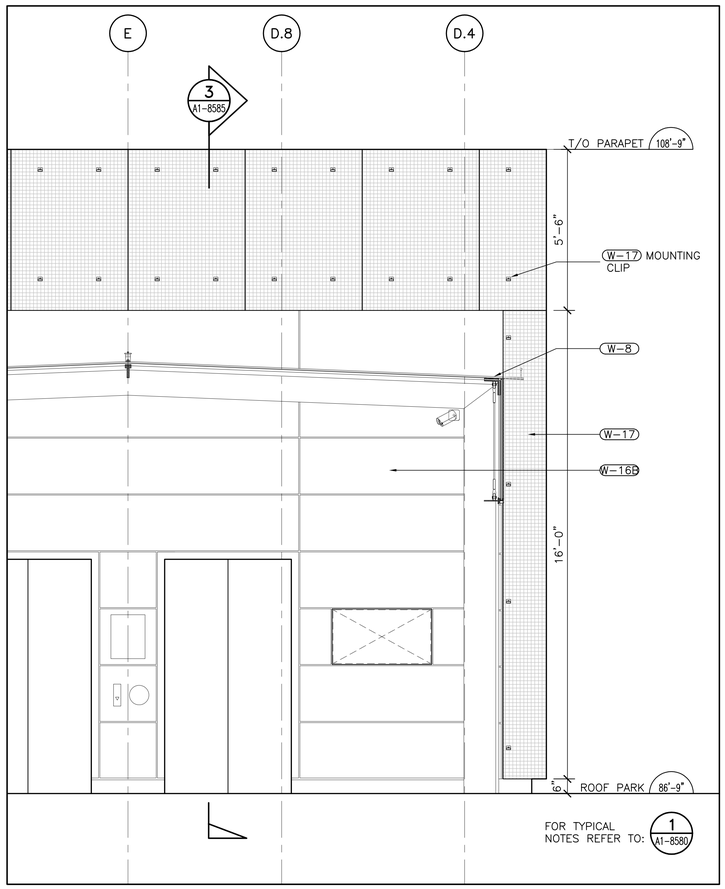
D. Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and repair galvanizing to comply with ASTM A780.

E. Refinishing: Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 50 00

SPECIFICATION ISSUE LOG

Revision	Date
0	03/31/14
1	09/12/14



1 A1-5803 ELEVATION W-16B/ W-17
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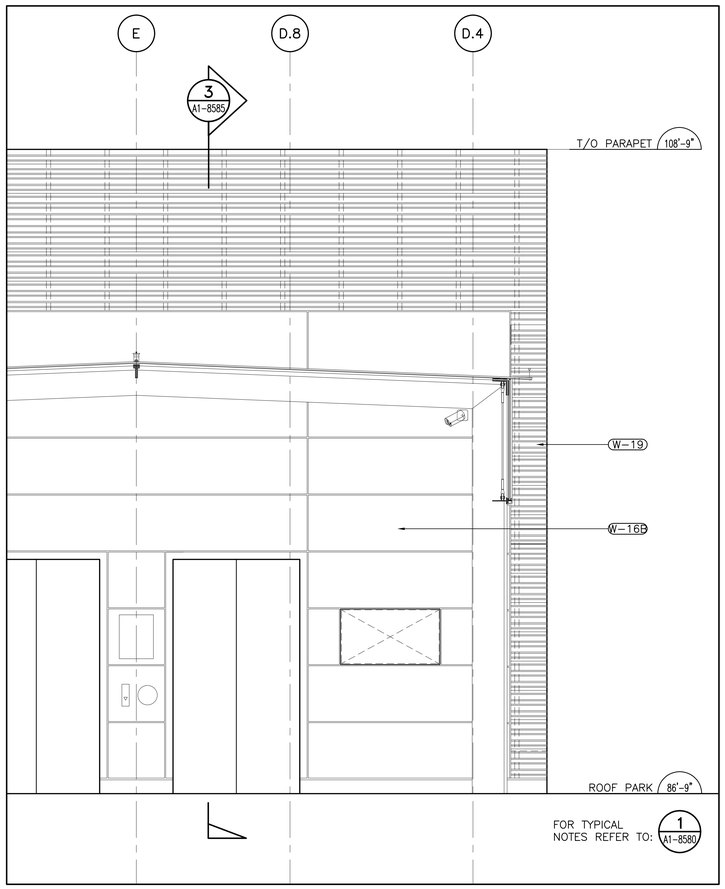

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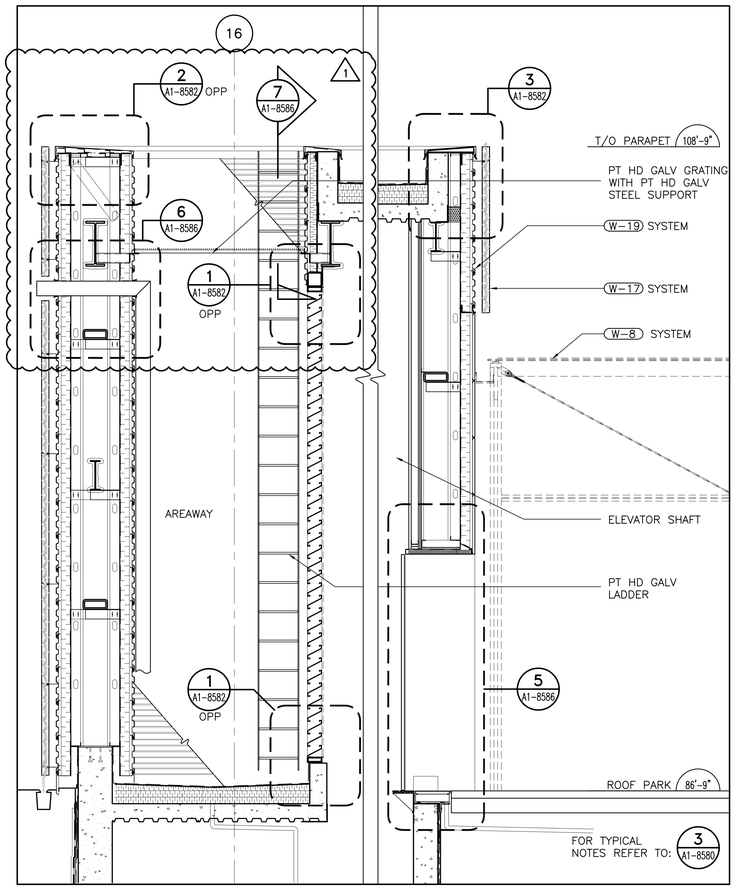

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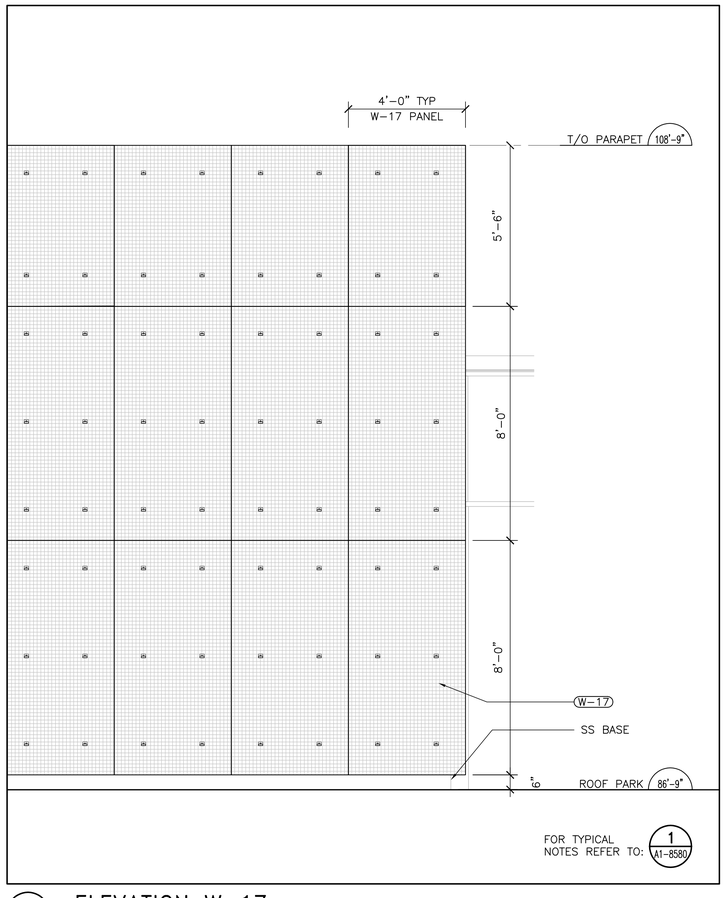

4 A1-5803 ELEVATION W-17
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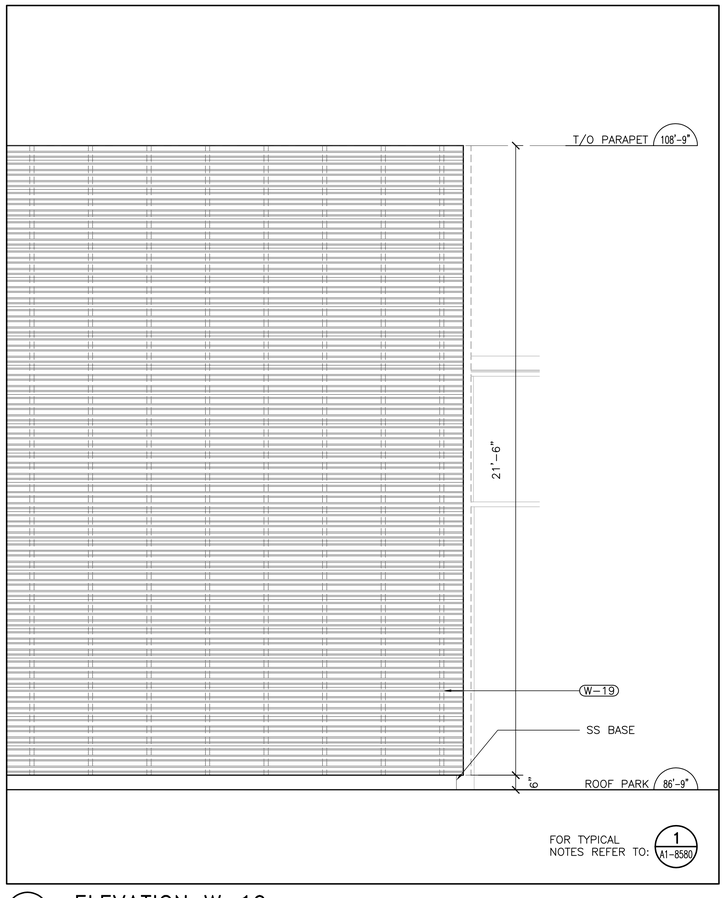

5 A1-5803 ELEVATION W-19
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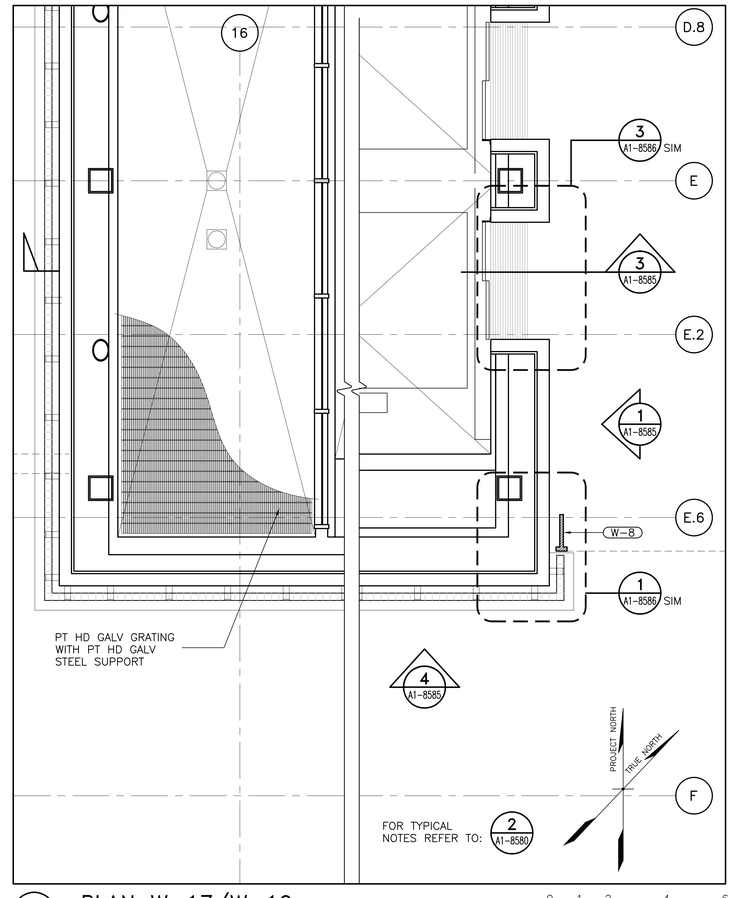

6 A1-7012 PLAN W-17/W-19
SCALE: 1/2" = 1'-0"
A1-2002, A1-2604

0 1 2 4 6
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16

Key Map
N

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
ROOF PARK BUILDING AT GL-16
(W-16B/ W-17/ W-19)
SYSTEM SHEET

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
E. DEL ANGEL	W.R. BRADLEY
DRAWN BY:	DATE:
L. PRIGOZHIN	03/31/2014

SCALE:	SIZE	FACILITY NO.	REVISION
1/2" = 1'-0"	E	140	0

SHEET NUMBER
A1-8585

SEQUENCE NUMBER
___ of ___

___ SUBMITTAL

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.

Nov 24, 2014 - 8:48pm P:\Projects\9803-00\01 Project\01 CAD\01 DWG\02 Sheets\A1-8585.dwg

XREFS: TJPA-TB 34x44E.dwg\ XASYSW161719.dwg

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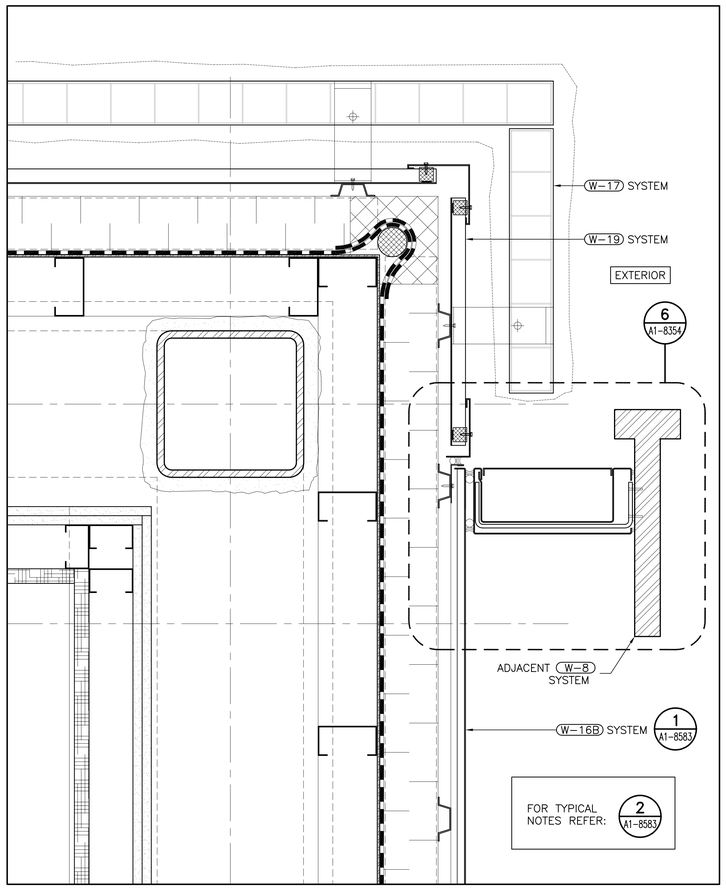
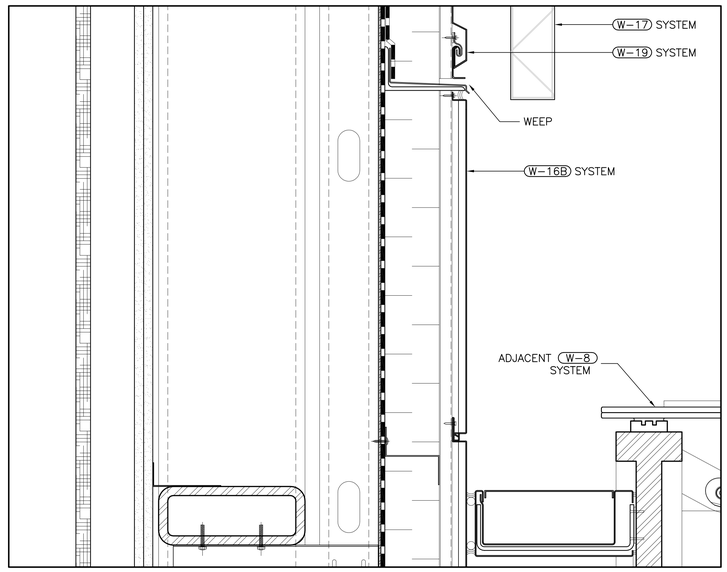
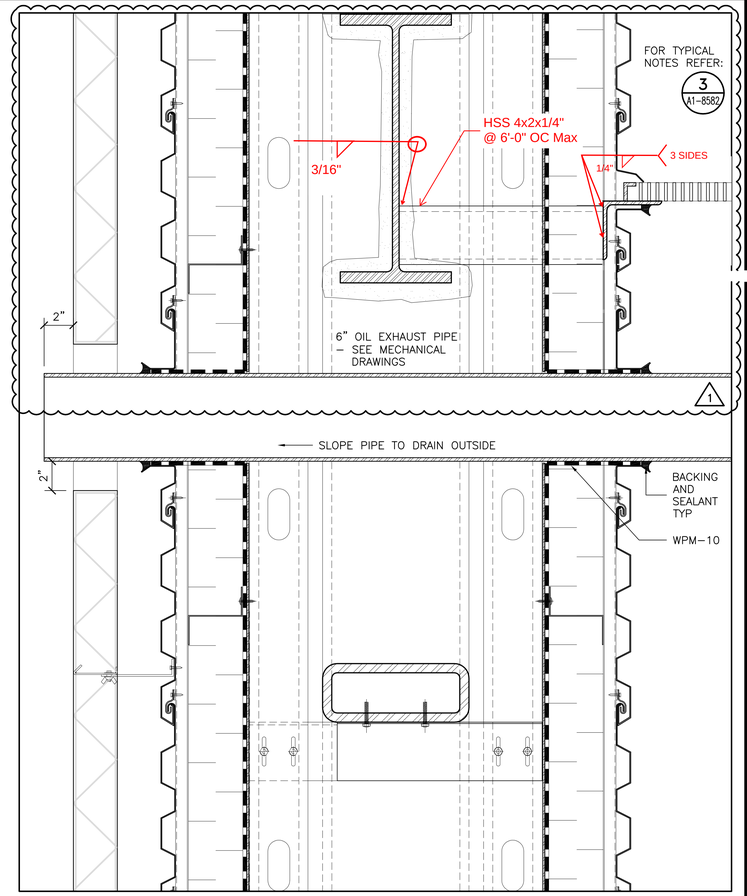


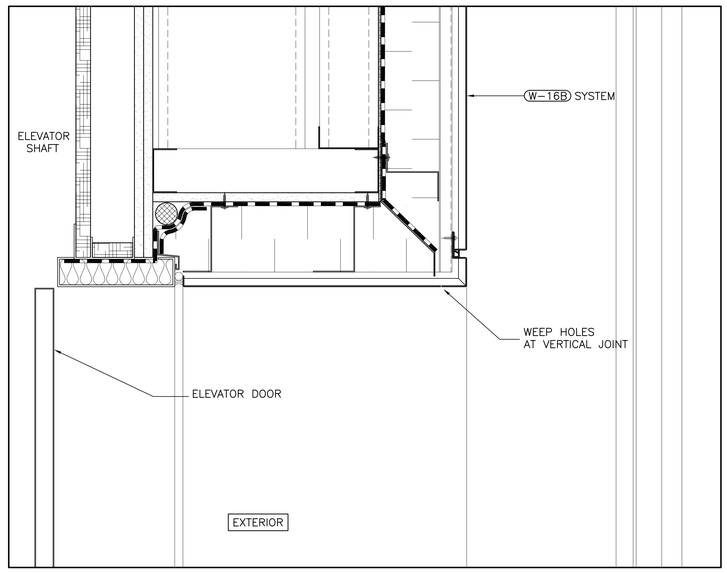
1 A1-8586 PLAN DETAIL AT W8
SCALE: 3" = 1'-0"



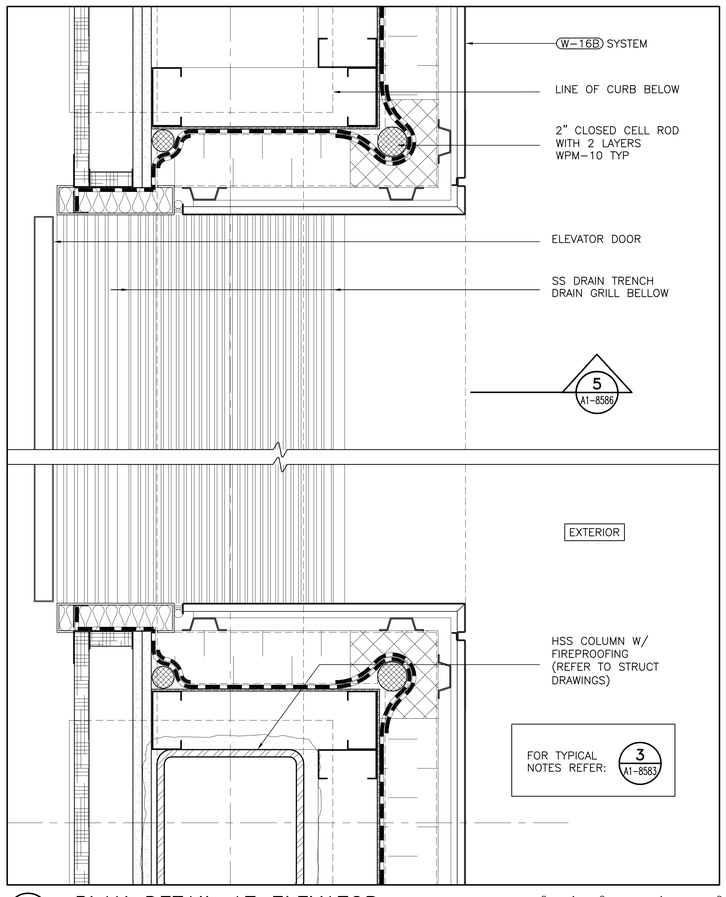
2 A1-8586 SECTION DETAIL AT PLANTER
SCALE: 3" = 1'-0"



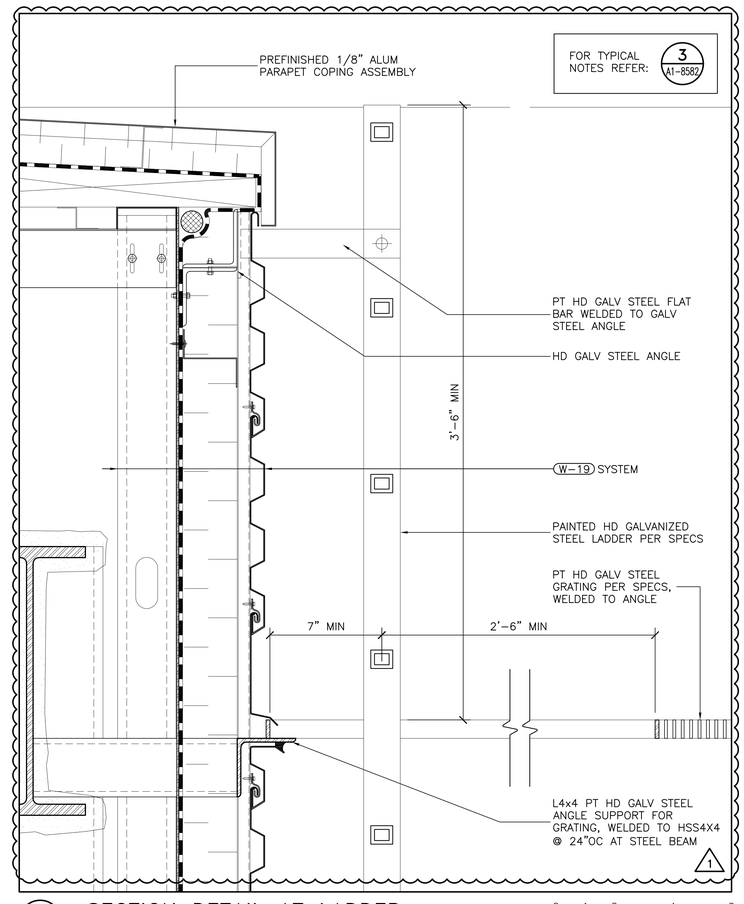
6 A1-8585 SECTION DETAIL AT PIPE PENETRATION
SCALE: 3" = 1'-0"



4 A1-8586 SECTION DETAIL AT ELEVATOR HEAD
SCALE: 3" = 1'-0"



3 A1-8585 PLAN DETAIL AT ELEVATOR
SCALE: 3" = 1'-0"



7 A1-8585 SECTION DETAIL AT LADDER
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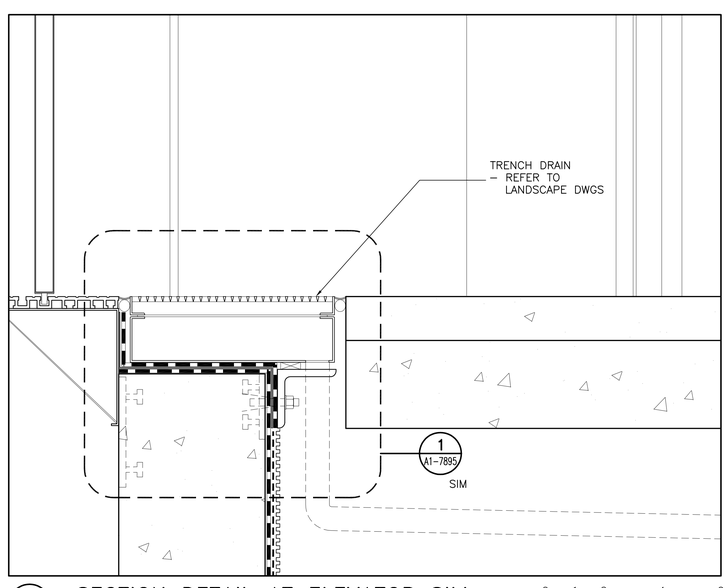

5 A1-8595 SECTION DETAIL AT ELEVATOR SILL
SCALE: 3" = 1'-0"

SCALE IN FEET: 0 1 2 4 6

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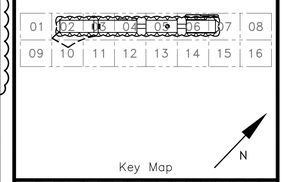
Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
ROOF PARK BUILDING AT GRID-16
(W-16B/ W-17/ W-19)
DETAIL SHEET

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: E. DEL ANGEL	CHECKED BY: W.R. BRADLEY
DRAWN BY: L. PRIGOZHIN	DATE: 03/31/2014
SCALE: 3" = 1'-0"	SIZE E / FACILITY NO. 140 / REVISION 0

SHEET NUMBER A1-8586
SEQUENCE NUMBER ___ of ___

___ SUBMITTAL

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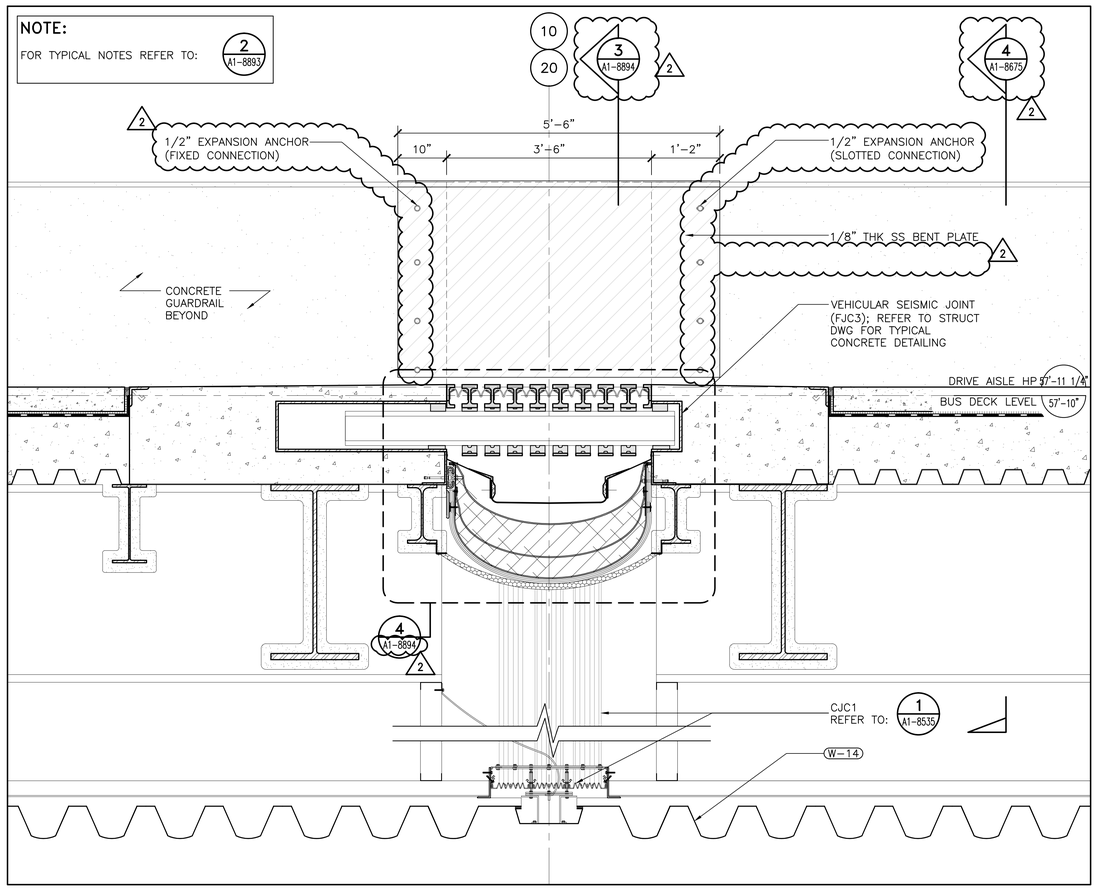
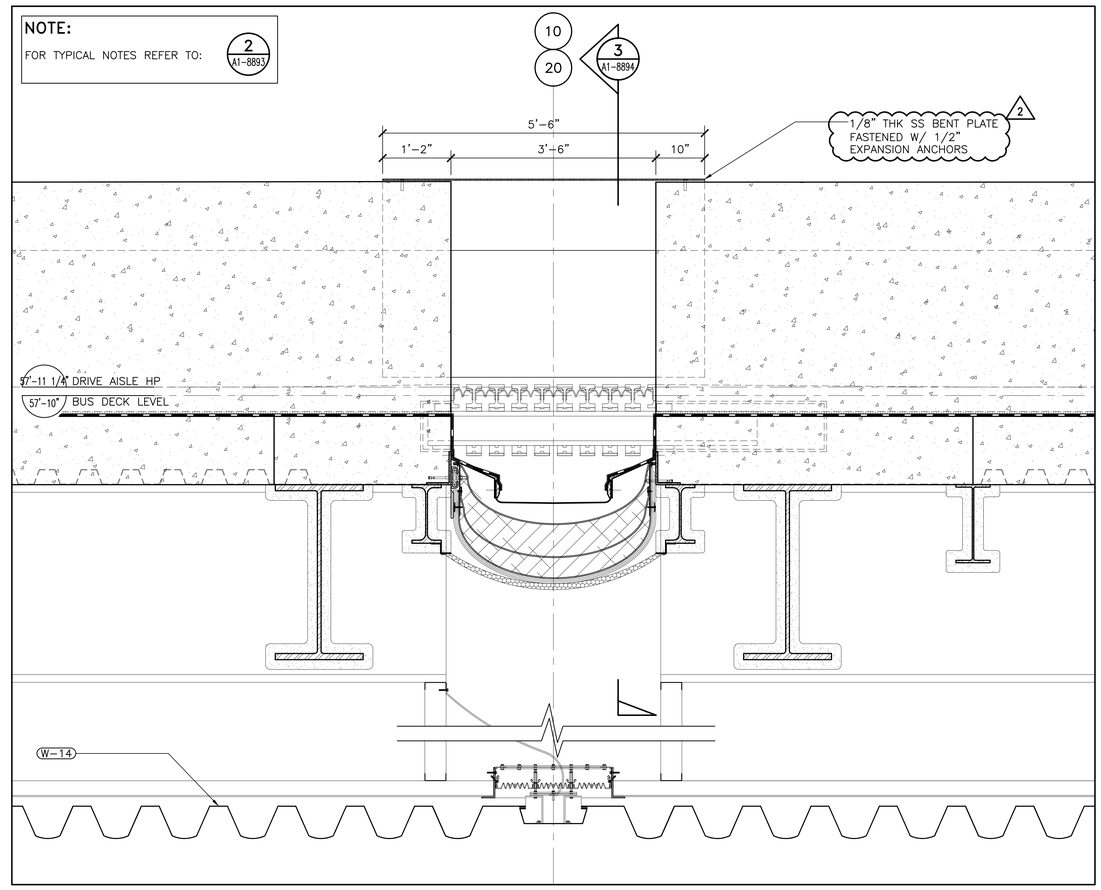
Nov 24, 2014 - 9:00pm P:\Projects\0803-00\01 Project\01 CAD\01 DWG\02 Sheets\A1-8586.dwg
rybicka



1 A1-8893 BUS DECK LEVEL GUARDRAIL – SECTION DETAIL
SCALE: 1" = 1'-0"
A1-6013, A1-6015

0 1/2 1 2 3
SCALE IN FEET



2 A1-8894 BUS DECK LEVEL GUARDRAIL – SECTION DETAIL
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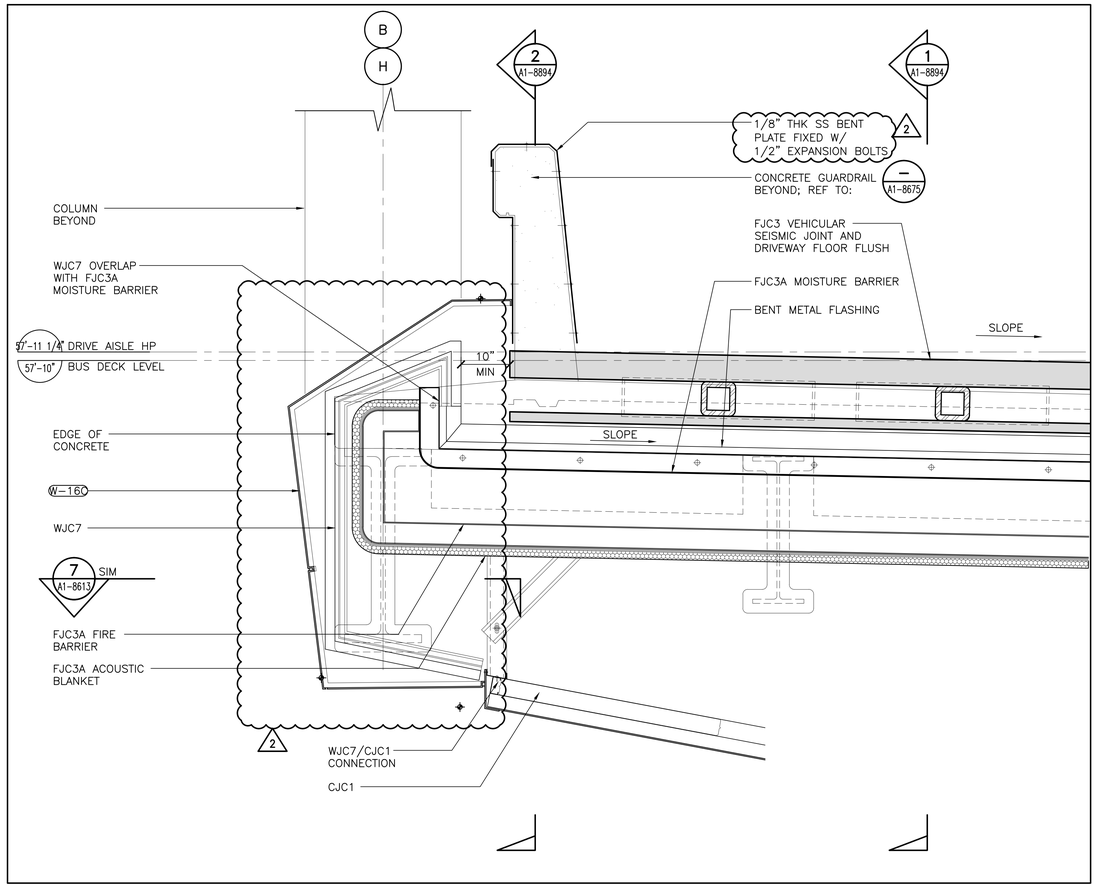
A1-8893

0 1/2 1 2 3
SCALE IN FEET



3 A1-8890 BUS DECK LEVEL GUARDRAIL – SECTION DETAIL
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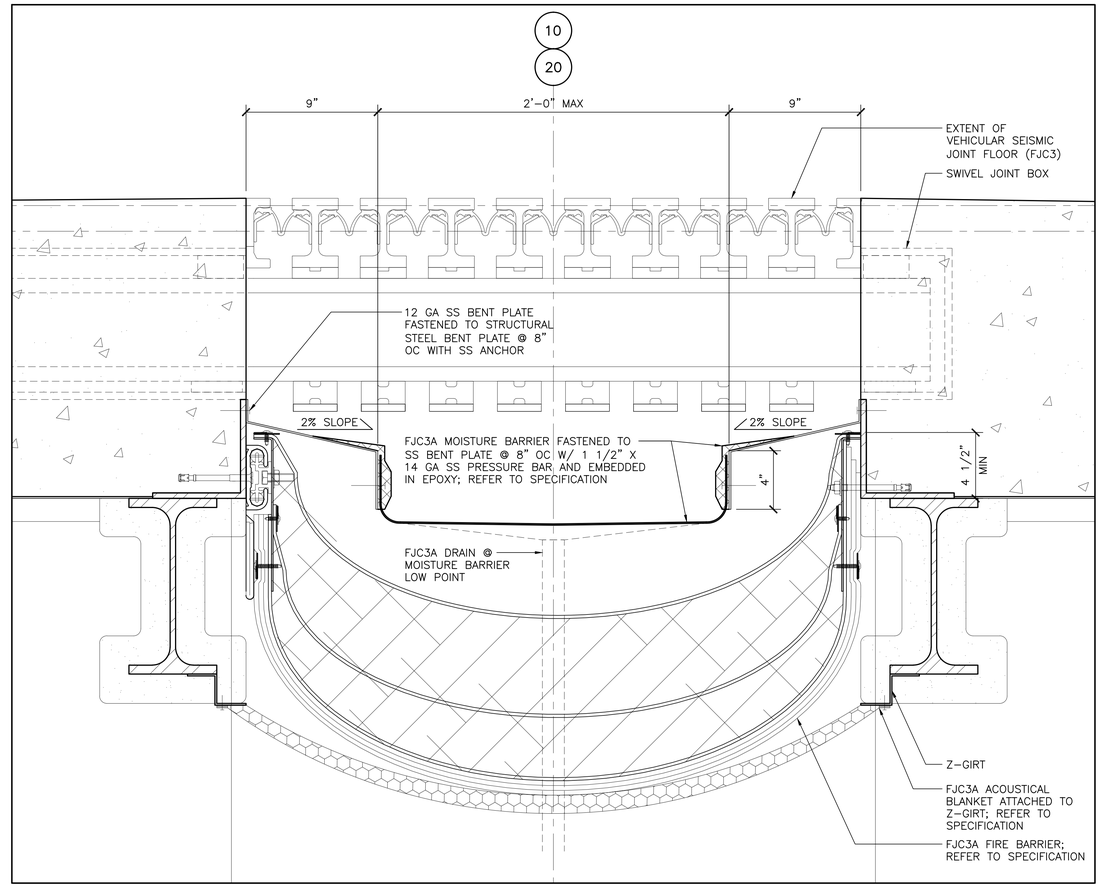
0 1/2 1 2 3
SCALE IN FEET

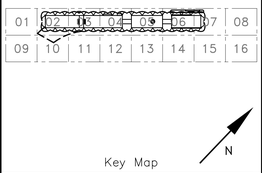


4 A1-8894 BUS DECK LEVEL SEISMIC JOINT ASSEMBLY (FJC3A)
SCALE: 3" = 1'-0"

0 1/4 1/2 3/4 1
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	09/12/14	PER ASI No. 0127	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
ABOVE GRADE
SEISMIC JOINT DETAILS

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: D. DRON	CHECKED BY: W.R. BRADLEY	
DRAWN BY: M. GONCALVES	DATE: 09/12/2014	
SCALE: AS NOTED	SIZE E	FACILITY NO. 140 / REVISION 1

SHEET NUMBER
SKA-4304
(A1-8894)

SEQUENCE NUMBER
___ of ___

___ SUBMITTAL

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Nov 17, 2014 - 10:42am P:\Projects\18803-00\01 Project\01 CAD\01 DWG\02 Sheets\A1-8894.dwg
artsue

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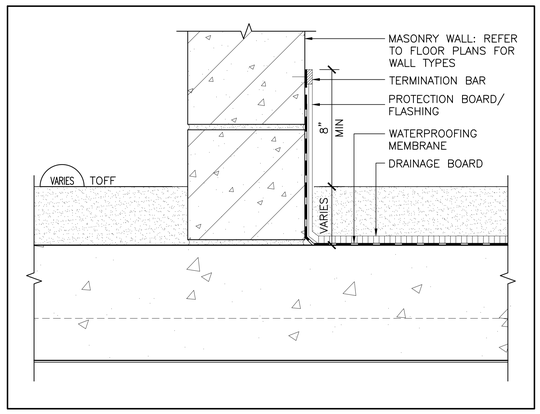

1 A-0025 CMU WALL @ SLAB
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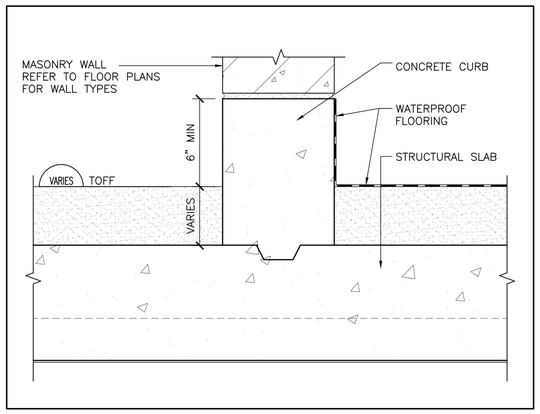
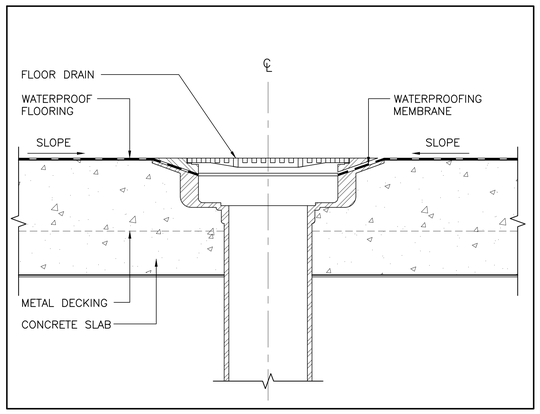
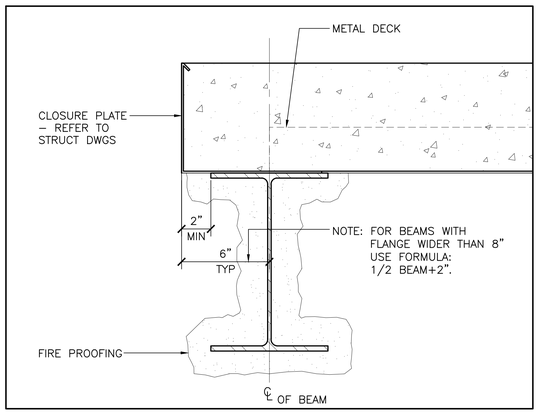


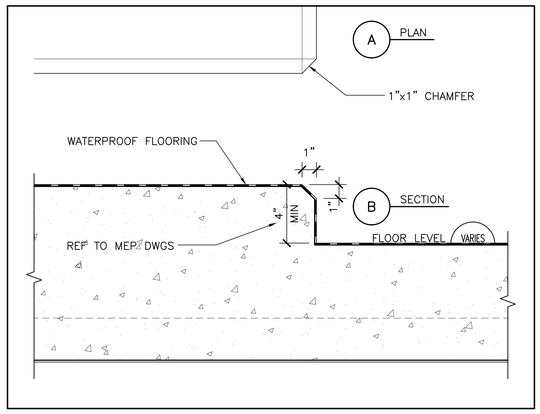
2 A-0025 CMU WALL W/CURB AT SLOPING FL.
SCALE: 3" = 1'-0"



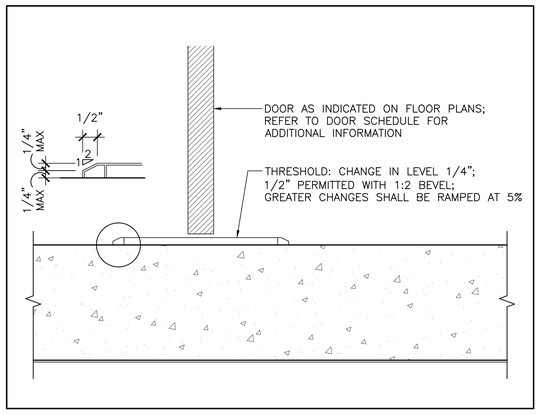
3 A-0025 FLOOR DRAIN
SCALE: 3" = 1'-0"



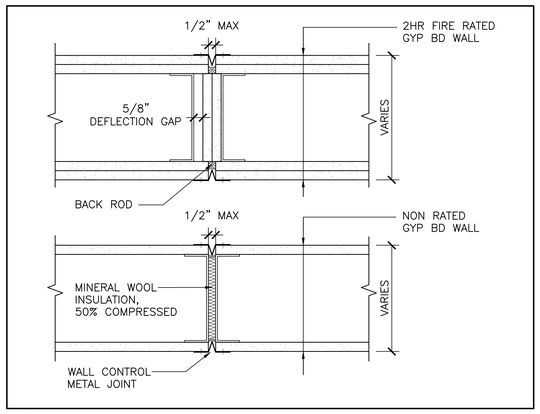
4 A-0025 TYP. EDGE OF SLAB/BEAM DETAIL
SCALE: 3" = 1'-0"



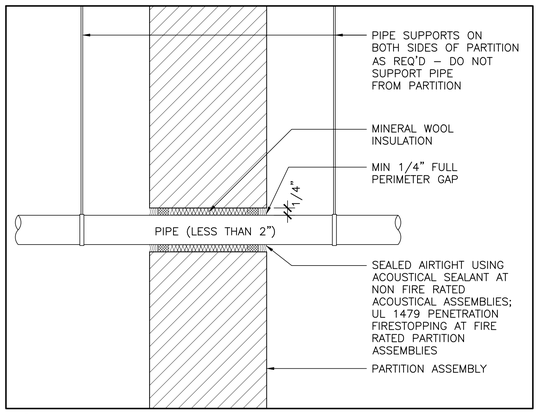
5 A-0025 CONCRETE PAD
SCALE: 3" = 1'-0"



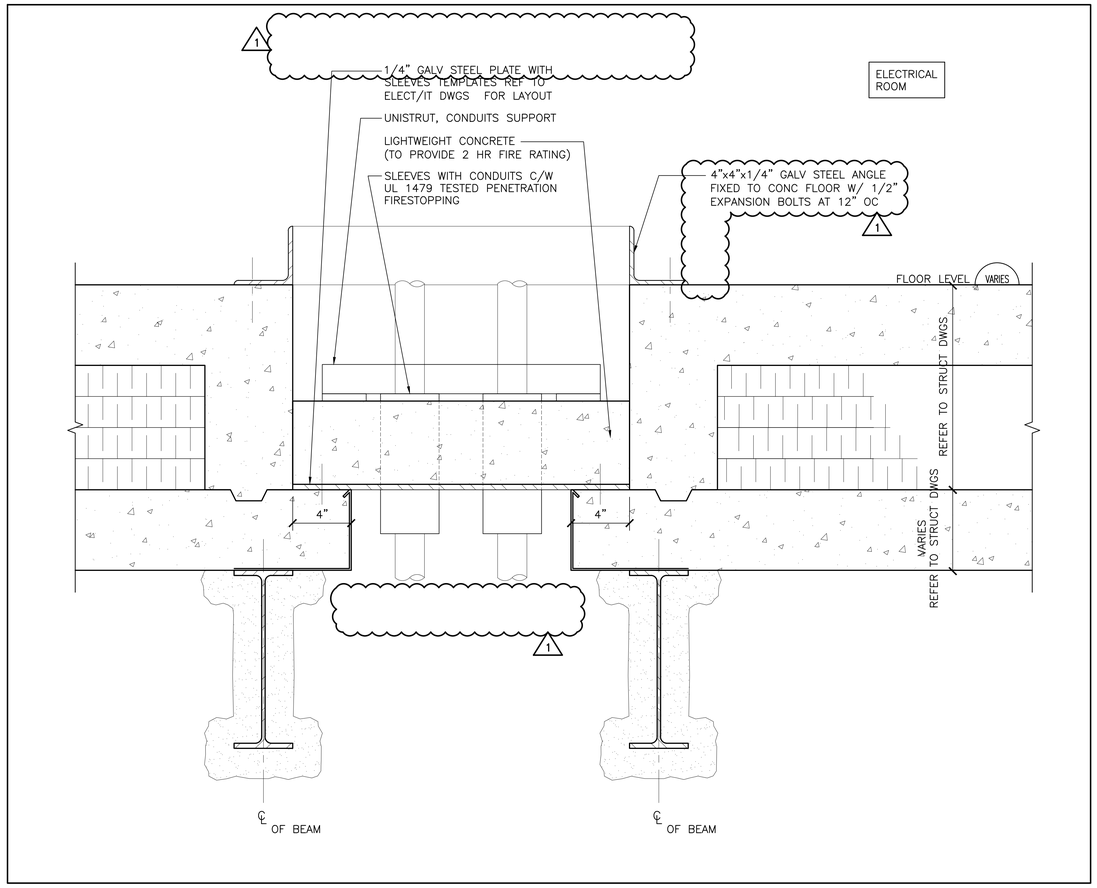
6 A-0025 THRESHOLD
SCALE: 3" = 1'-0"



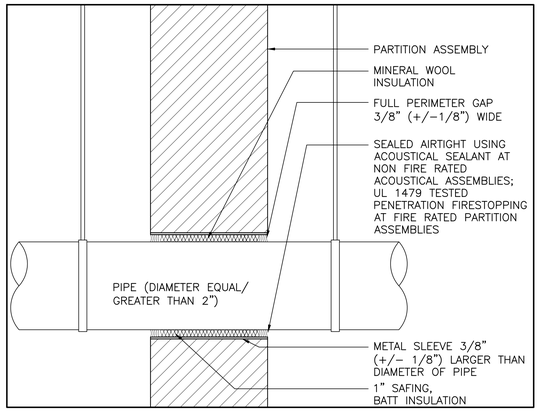
7 A-0025 CONTROL JOINT PLAN DETAIL
SCALE: 3" = 1'-0"



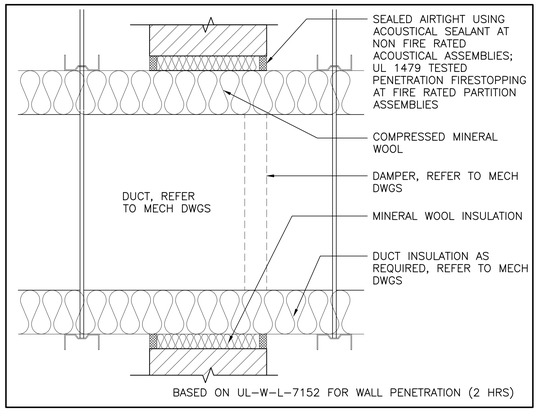
8 A-0025 SMALL PIPE PENETRATION AT PARTITION
SCALE: 3" = 1'-0"



9 A-0025 SECTION DETAIL AT CONDUIT RISER
SCALE: 3" = 1'-0"



10 A-0025 LARGE PIPE PENETRATION AT PARTITION
SCALE: 3" = 1'-0"



11 A-0025 DUCT THRU PARTITION
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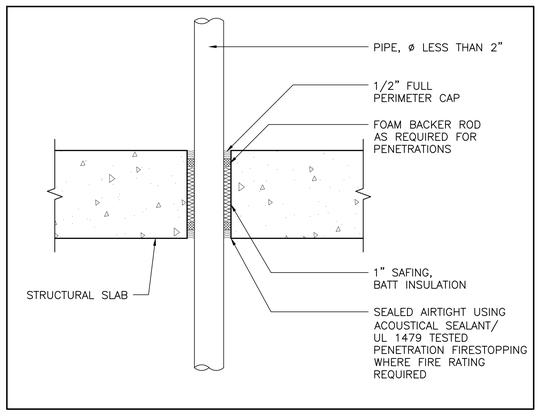
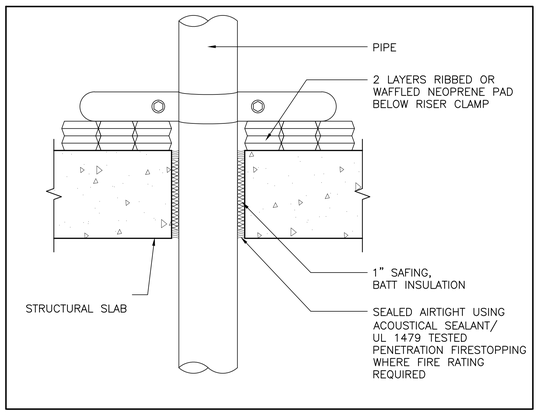


12 A-0025 SMALL PIPE THRU FLOOR SLAB
SCALE: 3" = 1'-0"

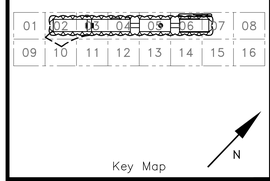


13 A-0025 LARGE PIPE AT FLOOR
SCALE: 3" = 1'-0"

0 1/4 1/2 3/4 1
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
TYPICAL DETAILS

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
D. DRON	W.R. BRADLEY
DRAWN BY: M. GONCALVES	DATE: 03/31/2014

SCALE:	SIZE	FACILITY NO.	REVISION
3" = 1'-0"	E	140	0

SHEET NUMBER
SKA-4319
(A-0025)

SEQUENCE NUMBER
___ of ___

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Nov 25, 2014 - 9:02am P:\Projects\0803-001\Project\01 CAD\01 DWG\02 Sheets\A-0025.dwg
ortsae

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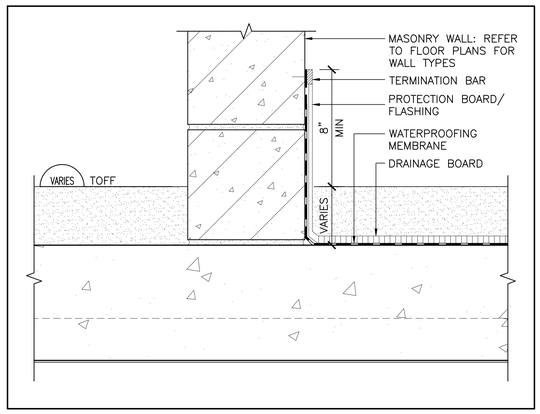
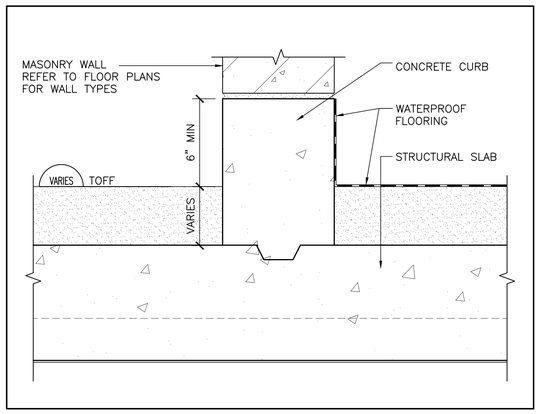
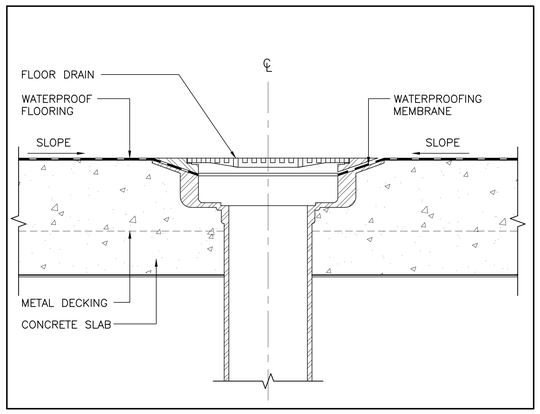


1 A-0025 CMU WALL @ SLAB
SCALE: 3" = 1'-0"



2 A-0025 CMU WALL W/CURB AT SLOPING FL.
SCALE: 3" = 1'-0"



3 A-0025 FLOOR DRAIN
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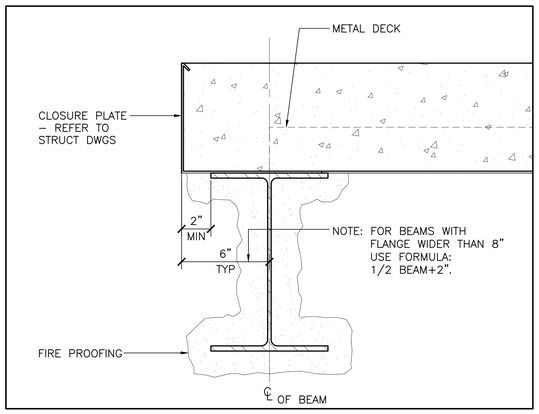
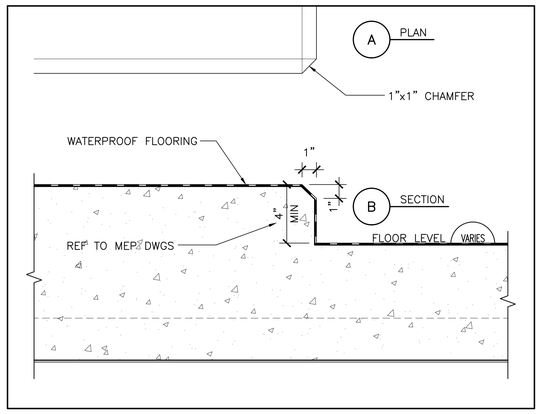


4 A-0025 TYP. EDGE OF SLAB/BEAM DETAIL
SCALE: 3" = 1'-0"



5 A-0025 CONCRETE PAD
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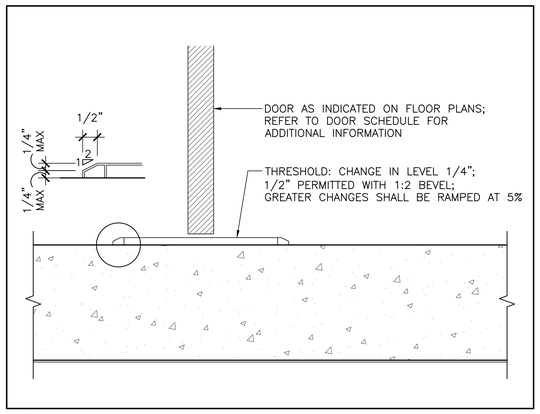

6 A-0025 THRESHOLD
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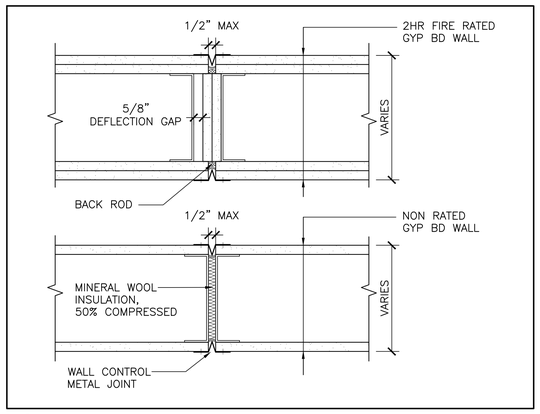

7 A-0025 CONTROL JOINT PLAN DETAIL
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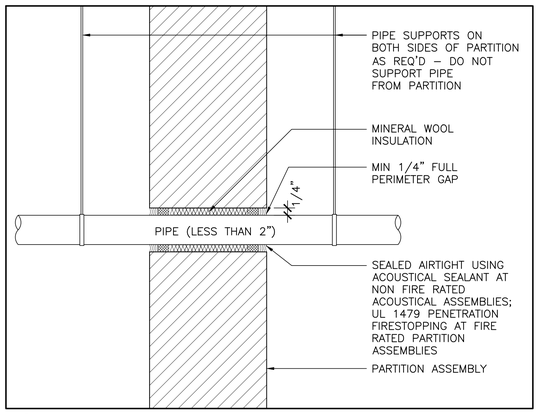
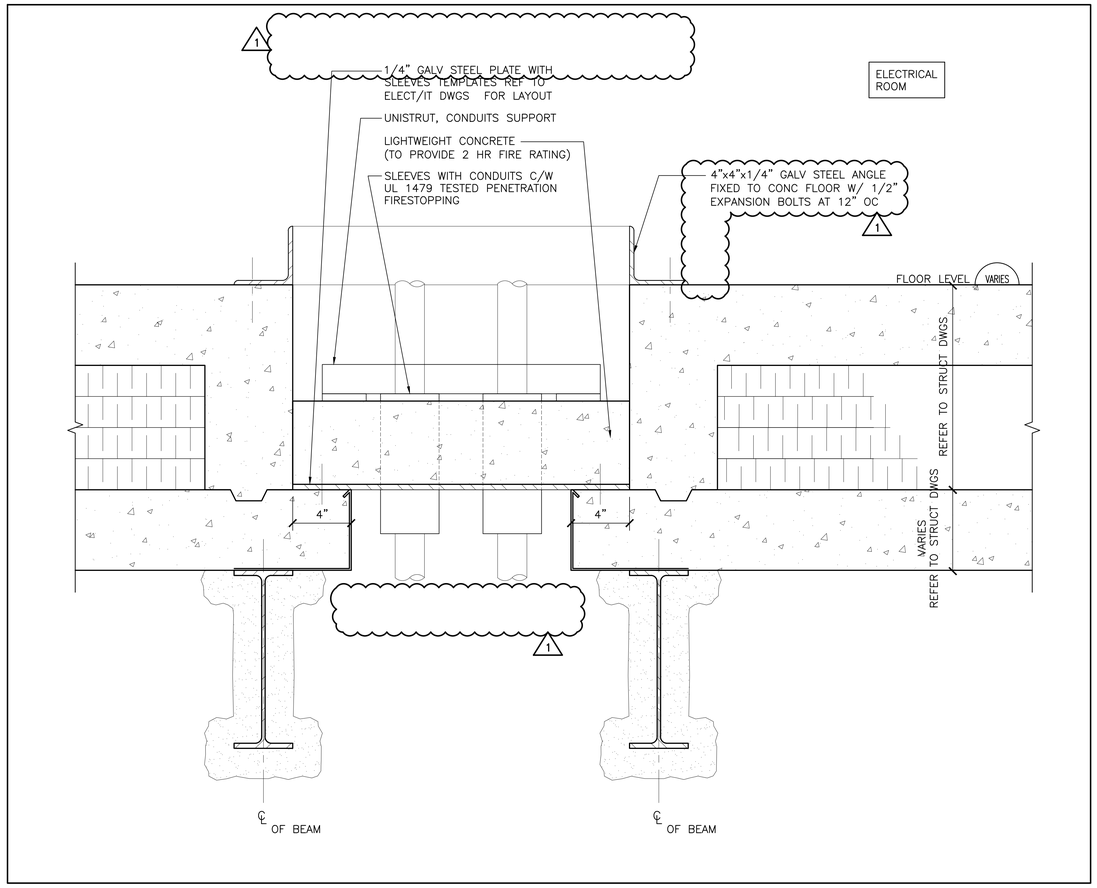
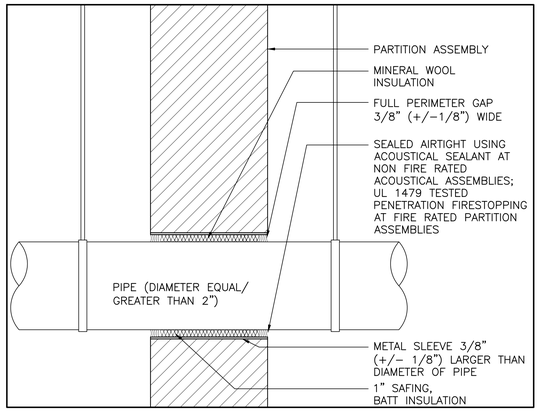


8 A-0025 SMALL PIPE PENETRATION AT PARTITION
SCALE: 3" = 1'-0"



9 A-0025 SECTION DETAIL AT CONDUIT RISER
SCALE: 3" = 1'-0"



10 A-0025 LARGE PIPE PENETRATION AT PARTITION
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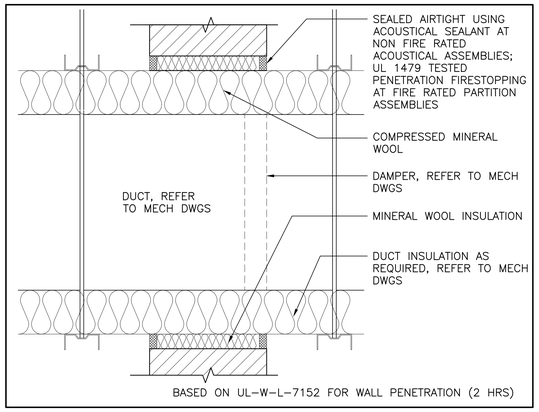

11 A-0025 DUCT THRU PARTITION
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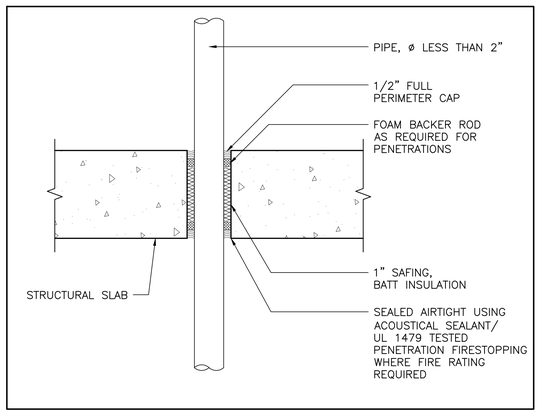

12 A-0025 SMALL PIPE THRU FLOOR SLAB
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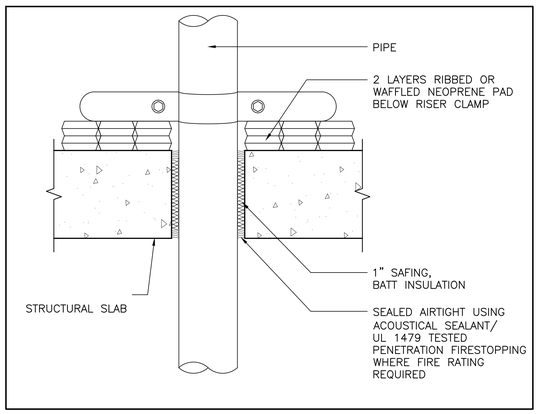

13 A-0025 LARGE PIPE AT FLOOR
SCALE: 3" = 1'-0"

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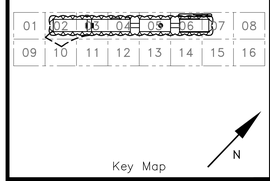
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
TYPICAL DETAILS

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
D. DRON	W.R. BRADLEY
DRAWN BY: M. GONCALVES	DATE: 03/31/2014

SCALE:	SIZE	FACILITY NO.	REVISION
3" = 1'-0"	E	140	0

SHEET NUMBER
SKA-4319
(A-0025)

SEQUENCE NUMBER
___ of ___

___ SUBMITTAL

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.

Nov 25, 2014 - 9:02am P:\Projects\0803-001\Project\01 CAD\01 DWG\02 Sheets\A-0025.dwg
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TG07.3 – Miscellaneous Metals

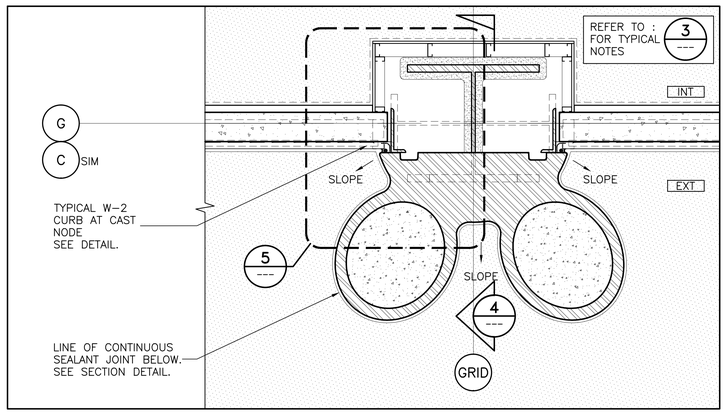
Questions are numbered in the order received. Numbers missing in the sequence either have been answered in a previous response set or will be answered in a future set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-018	10/29/2014		Exhibit A	Where can I find the specs for the scope Items listed: (scope items not found in "Primary Specifications") 1. Metal Covers 2. Fences 3. Bike Racks 4. Enclosing Profile 5. Facade Access Track	**REVISED RESPONSE** See Specification Sections 05 50 00 and 05 53 00 for specifications and details (8/P1-6001 for example) for information regarding construction of metal covers. For fence requirements, see Specification Section 05 50 00 for mesh fences/security screens; and response QBD TG07.3-001 in Answer Set #2 for chain-link fence requirements. Bike Racks requirements are described in Specification Section 12 93 00 "Site Furniture." Refer also to San Francisco Municipal Transportation Agency's standard bicycle rack specifications document: http://www.sfmta.com/sites/default/files/pdfs/Circular%20Bicycle%20Rack%20Specifications%20for%20San%20Francisco%20%283%29.pdf 4. Refer to the response to QBD TG07.3-066 in Answer Set #6. 5. Alternate No. 10 has been accepted as base bid; therefore, the façade access track has been deleted. Reference to the façade access track will be deleted from TG07.3 Exhibit A. A revised Exhibit A will be included in the next addendum.
TG07.3-154	11/26/2014	A1-8695 Detail 3		What is the connection requirement for the AESS closure elements to the aluminum Column Covers? Are the Aluminum Column Covers part of TG07.3?	There is no mechanical connection between the aluminum column covers and the AESS cylindrical closures. Please refer to attached sketches with 2-inch by 2-inch steel angle added to cylindrical The AESS closure plate is to provide surface depth for continuous sealed joint. Aluminum column covers above cast nodes are noted to be part of W-2; therefore, they are

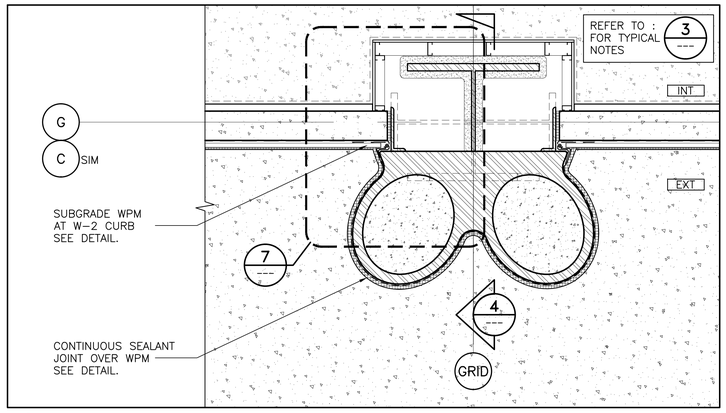
Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					not included in the work of TG07.3.
TG07.3-155	11/26/2014			Please specify the design-build requirement for TG07.3.	Refer to the specification sections for each of the inclusions to determine the design-build requirements. An example of these requirements is Specification Section 05 50 00 1.1 D.
TG07.3-158	12/1/2014	A1-7578 Detail 4		Where is the B2 Level? Is the Galv Steel Support Angle in B1 Level included in TG7.03?	B1 refers to the Lower Concourse Level, and B2 refers to the Train Platform Level. Yes, the steel support for fire/smoke curtains is included in the work of TG07.3.
TG07.3-162	12/1/2014		Exhibit A	Inclusion 34. Please provide more information about the locations and details of the overhang door support and bracing.	Refer to QBD TG07.3-120 in Answer Set #7 for information regarding locations of overhang door support and bracing.
TG07.3-171	12/11/2014	A1-2102		Please clarify the scope and quantities of concrete column steel jacket on the Train Platform. Please provide a concrete column steel jacket schedule.	TG07.3 bidders are responsible for taking off quantities associated with the scope of work outlined in Exhibit A. Refer to the Contract Documents (e.g., A1-2102, A1-9214, A1-2103, A1-2107, A1-2110, A1-2111, A1-2202, A1-2207, A1-3005, and A1-3006) for locations and details of steel column jacketing. Each of the specific details has been referenced on the plans. For example, see Details 5, 6, 7, and 8, drawing A1-9213 for the concrete columns at the Lower Concourse, and extending up to the vehicle and bicycle ramp. A concrete column steel jacket schedule will not be provided.
TG07.3-172	12/11/2014	A1-2865		Please provide details of the columns highlighted on sheet A1-2865. The detail 9/A1-2969 on gridline 22: F seems wrong and does not provide any detail regarding the misc metal scope of Work.	Areas are highlighted on the Scoping Drawing A1-2865 to show sample locations for the steel base plates and steel plate welded to columns. Review the Contract Documents (e.g., 1, 2, 3, and 5/A1-9317) for details at column bases.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-173	12/11/2014	A1-2202-2207		Please clarify the scope of the columns that need cladding. In SKA-3489, only three columns are highlighted. Based on drawing A1-9205, 9206, 9207, columns with highlighted detail drawings should be included (e.g., column at gridline 9:C)? What about other columns such as column at grid 6 and F.7? Please provide a column cladding schedule.	TG07.3 is responsible for metal cladding, except as specifically excluded in TG07.3 Exhibit A, IV. Scope of the Package and Bid Item Information, 2. General Work, III Instructions to Bidders, E. Additional Bidding Notes, 2. Exclusions/Clarifications/ Qualifications. Scoping Drawings are for use in clarifying the general scope of work, but are not all-inclusive of the scope described. Review the Contract Documents for locations and types of column cladding. Bidders shall review the Contract Documents for quantities; no column cladding schedule will be provided.
TG07.3-175	12/11/2014	8, 9/A1-9208		What material is the round "steel jackets" fabricated out of? (rolled plate, certain type of pipe?) Please provide material for both 8 and 9/A1-9208.	The Architectural Details on A1-9208 refer to the Structural drawings. Structural drawing 6/S1-3503 shows the steel jacket on concrete column detail, and the annotation says: 1/2" Thick Grade 50 Steel Jacket. The steel is A572, grade 50 steel plate (rolled).
TG07.3-176	12/11/2014	3/A1-3190		Are we responsible for the 1/4" Thk Alum Checker PL Cap? If so, can you please provide information how this is attached. (connection shown does not match description in spec 055000)	The 1/4–inch-thick aluminum checker plate cap is included in the work of TG07.3. Follow the connection as described in Specification Section 055000 / 2.5, N.3.
TG07.3-177	12/11/2014	5/A1-3190	055000 - 2.5, N.	Regarding the "Backing & Sealant", "continuous sealant", "galvanized steel flashing", "SS termination bar" and "12GA galv steel plate fastened to slab". We can exclude these correct? This work is by others and also information is not given under 055000.	In Detail 5/A1-3190 "Backing & Sealant" at 1/4–inch-thick aluminum checker plate enclosure is included in the work of TG07.3. In Detail 5/A1-3190, "continuous sealant" at galvanized steel flashing, the "galvanized steel flashing," "SS termination bar," and "12 GA galv steel plate fastened to slab" are not included in the work of TG07.3. No exclusions or qualifications, other than those called out in TG07.3 Exhibit A, are allowed.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					Refer to the appropriate specification for installation of material (e.g., Specification Section 07 92 00 Joint Sealants).
TG07.3-179	12/16/2014	8/A1-7578		The galvanized steel plate at service elevator door jab is highlighted in detail 2 Sheet A1-7576, but the steel plate in detail 8 Sheet A1-7578 is not highlighted. Please confirm that the checker plate at the elevator door jamb at B1 Level is not included in TG 7.03. Are the checker plates needed at any of the passenger elevators?	TG07.3 is responsible for metal plates, except as specifically excluded in TG07.3 Exhibit A, IV. Scope of the Package and Bid Item Information, 2. General Work, III. Instructions to Bidders, E. Additional Bidding Notes, 2. Exclusions/Clarifications/Qualifications. Scoping Drawings are for use in clarifying the general scope of work, but are not all-inclusive of the scope described. Review the Contract Documents for locations and types of checker plates.
TG07.3-180	12/16/2014	1/S1-2650A		What does the “16” mean in “W10X54 (16)”?	Refer to S1-2302 "Steel Beam Legend" for definition of steel annotations.
TG07.3-181	12/16/2014	4/S1-7661		Is the steel angle “L8X8 Per 9/S1-7660” in detail 4 on sheet S1-7661 included in TG7.03? Is this angle part of the escalator support?	Yes, the L8x8 per 9/S1-7660 is included in the work of TG07.3, and is included as part of Inclusion 33. This angle is not included as part of Inclusion 16.



1 A1-8691 PLAN DETAIL – TYPICAL CAST NODE (~4" AFF)
SCALE: 3/4" = 1'-0"



2 A1-8691 PLAN DETAIL – TYPICAL CAST NODE (SUBGRADE)
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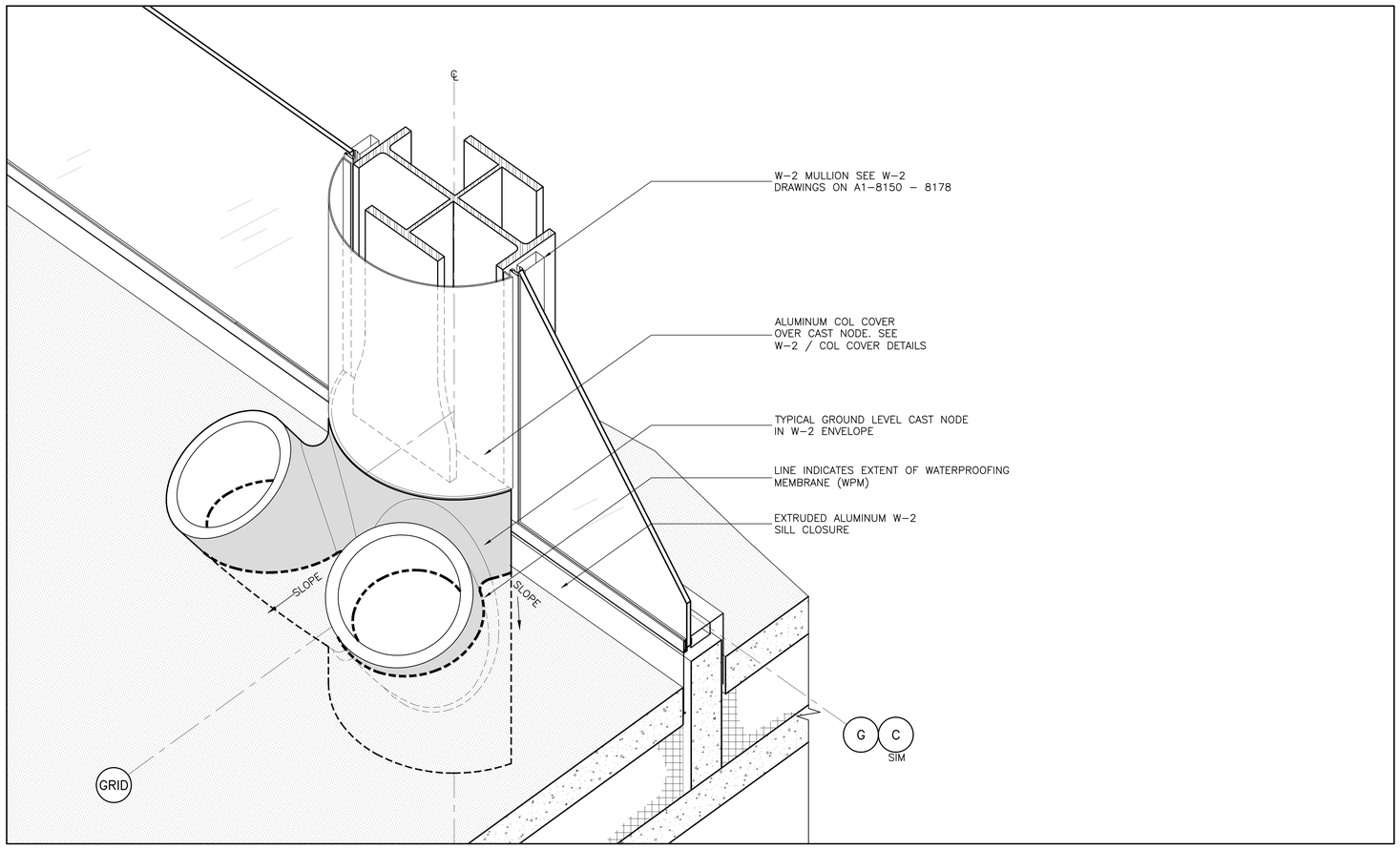

3 A1-8691 ISOMETRIC DIAGRAM : CAST NODE AT TYPICAL W-2
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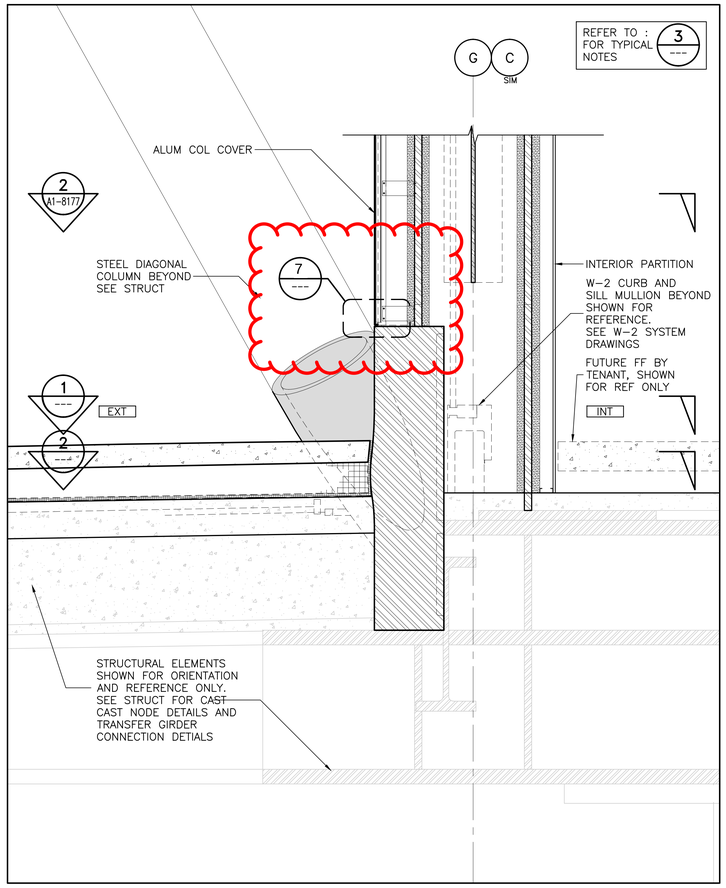

4 A1-8691 SECTION – TYPICAL CAST NODE
SCALE: 3/4" = 1'-0"

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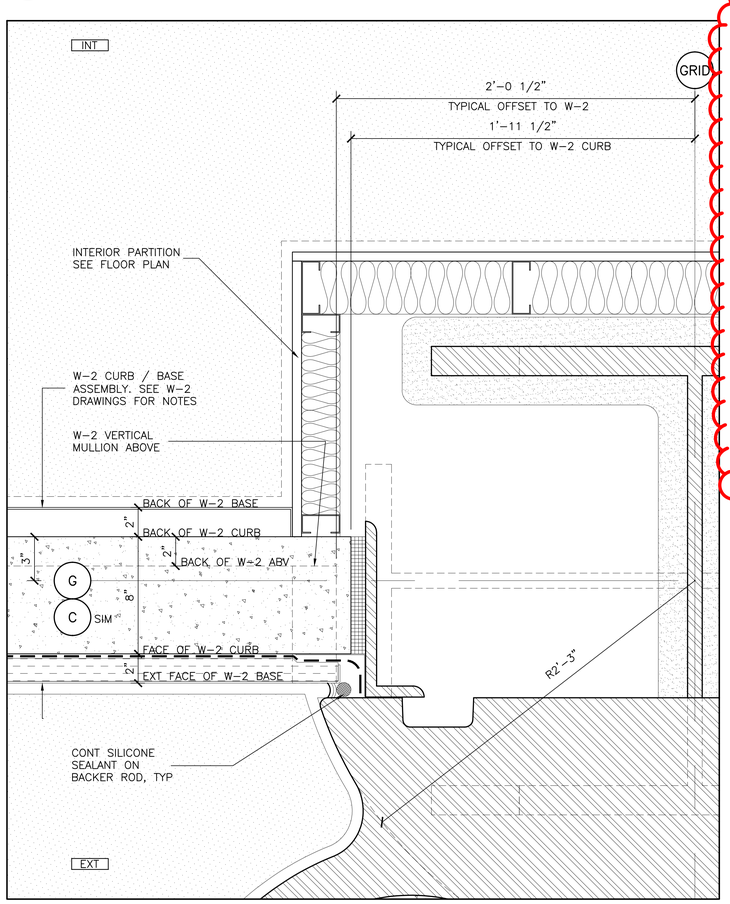
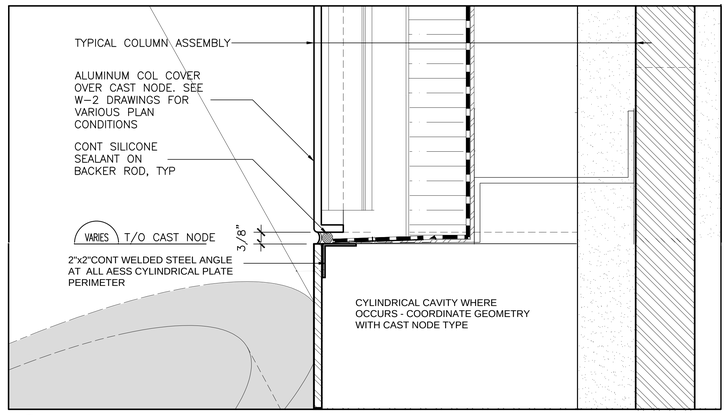
SCALE IN FEET



5 A1-8691 PLAN DETAIL – CAST NODE AT W-2 CURB (~4" AFF)
SCALE: 3" = 1'-0"



6 A1-XXXX SECTION DETAIL – COLUMN COVER OVER CAST NODE
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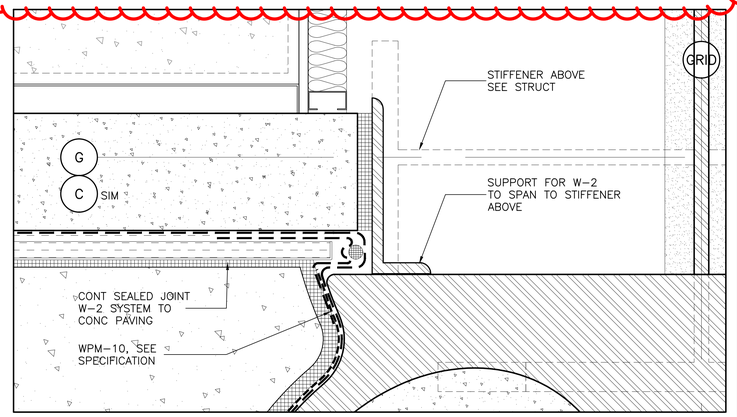
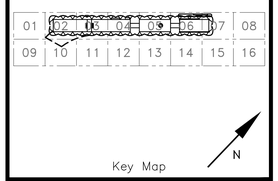


7 A1-8691 PLAN DETAIL – CAST NODE AT W-2 CURB (SUBGRADE)
SCALE: 3" = 1'-0"

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02/19/13	ISSUED FOR CONSTRUCTION	GM
2	05/31/13	100% CONSTRUCTION DOCUMENTS	GM
3	07/17/13	ISSUED FOR CONSTRUCTION	GM
4	07/18/13	PER ASI No. 0105	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
CAST NODE DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT GREGORY RUSSELL METZGER NO. C21599 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
E. DEL ANGEL	W.R. BRADLEY
DRAWN BY: L. CIFALA	DATE: 07/18/2013
SCALE: AS NOTED	SIZE E / FACILITY NO. 140 / REVISION 1

SHEET NUMBER A1-8691
SEQUENCE NUMBER 270 of 636

ISSUED FOR CONSTRUCTION

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.

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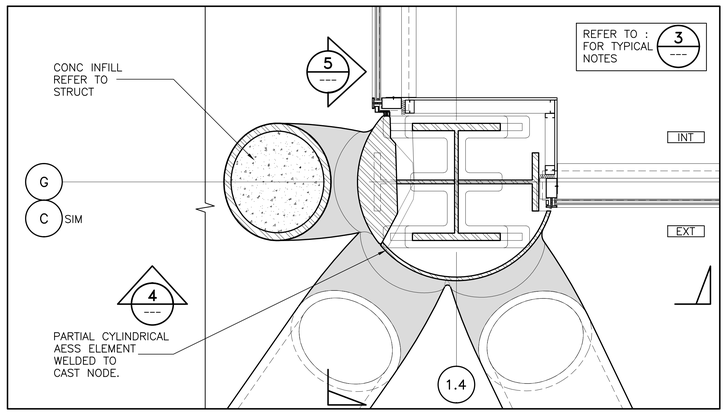

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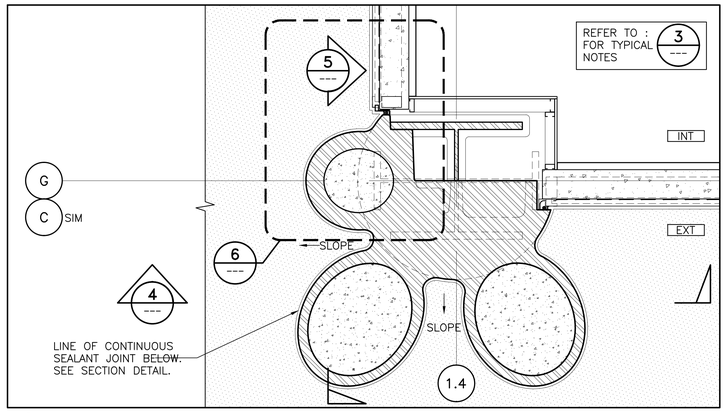
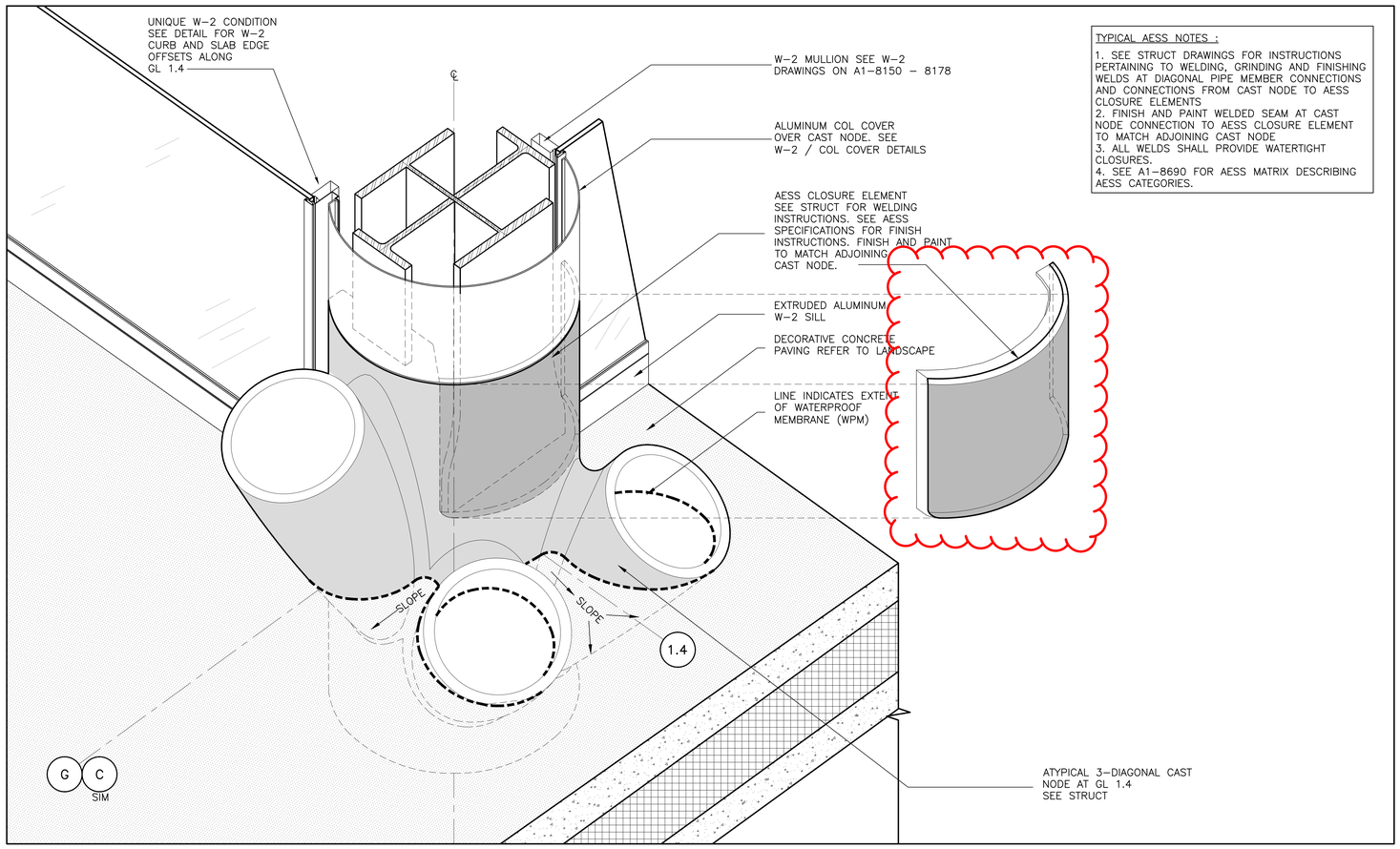
SCALE: 3/4" = 1'-0"
A1-2001



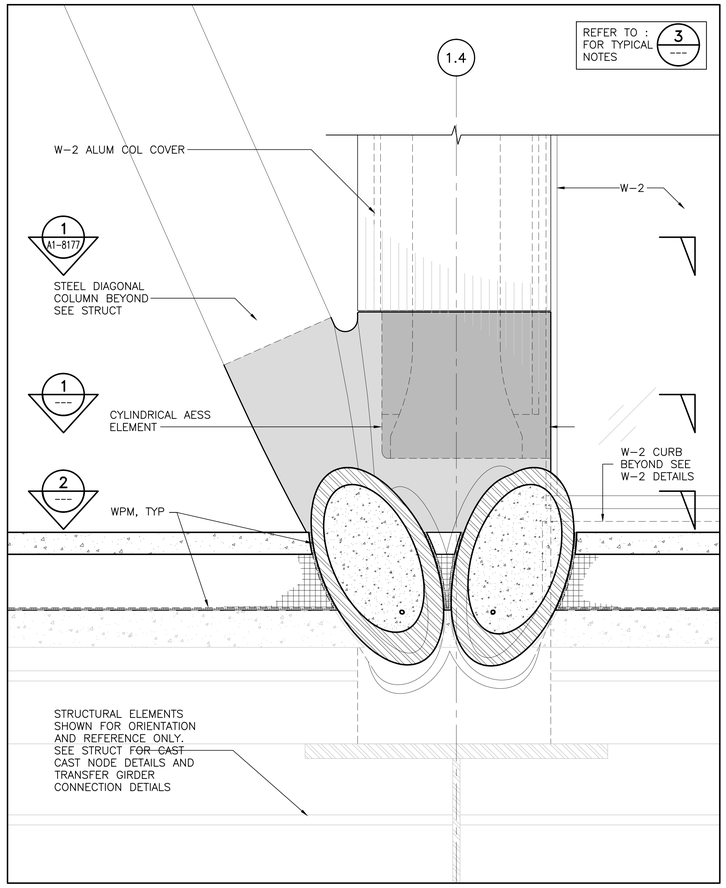
2 A1-8693 PLAN – CORNER NODE @ GL1.4 (~4" AFF)
SCALE: 3/4" = 1'-0"



TYPICAL AESS NOTES :

1. SEE STRUCT DRAWINGS FOR INSTRUCTIONS PERTAINING TO WELDING, GRINDING AND FINISHING WELDS AT DIAGONAL PIPE MEMBER CONNECTIONS AND CONNECTIONS FROM CAST NODE TO AESS CLOSURE ELEMENTS
2. FINISH AND PAINT WELDED SEAM AT CAST NODE CONNECTION TO AESS CLOSURE ELEMENT TO MATCH ADJOINING CAST NODE
3. ALL WELDS SHALL PROVIDE WATERTIGHT CLOSURES.
4. SEE A1-8690 FOR AESS MATRIX DESCRIBING AESS CATEGORIES.

3 A1-8693 ISOMETRIC DIAGRAM : CORNER NODE @ GL1.4
SCALE: NTS



4 A1-8693 SECTION – CORNER NODE @ GL1.4
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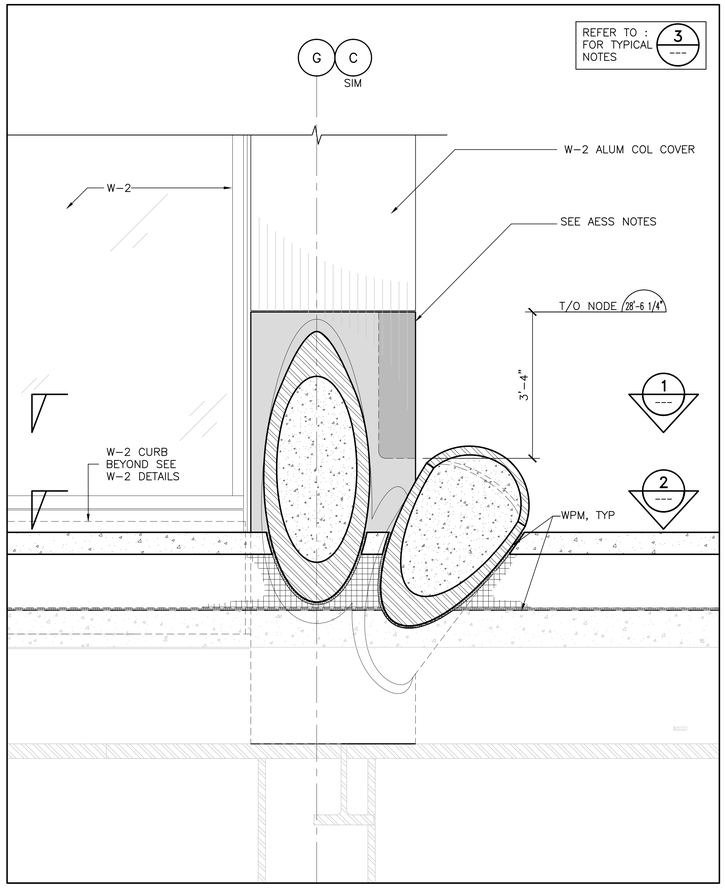

5 A1-8693 SECTION – CORNER NODE @ GL1.4
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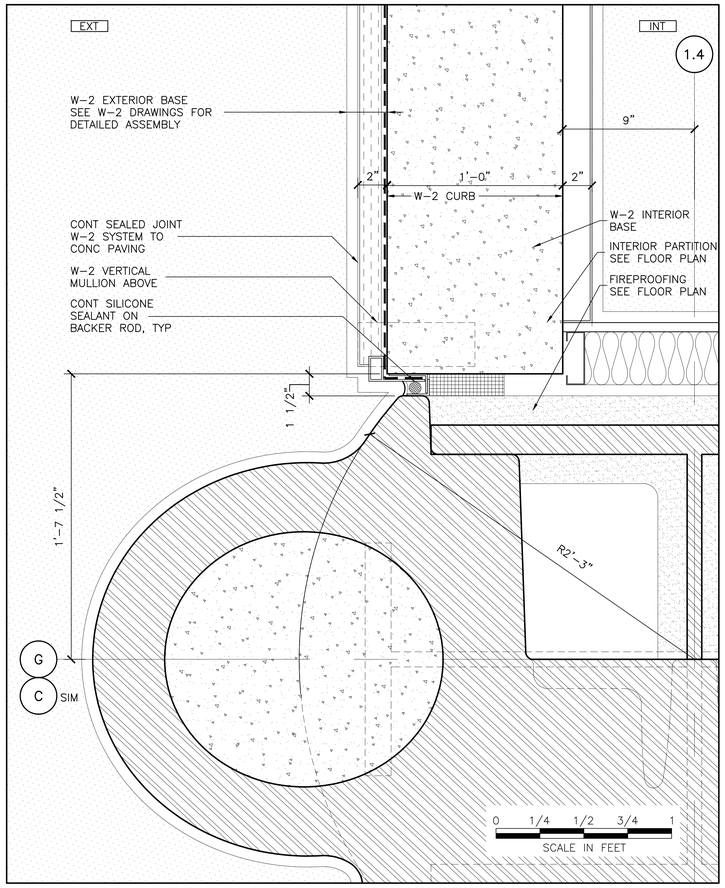
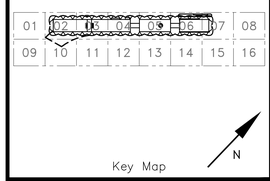


6 A1-8693 PLAN DETAIL – CORNER NODE @ GL1.4 (~4" AFF)
SCALE: 3" = 1'-0"

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES INC



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ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GREGG RUSSELL METZGER
NO. C21630
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: E. DEL ANGEL	CHECKED BY: W.R. BRADLEY
DRAWN BY: L. CIFALA	DATE: 07/17/2013
SCALE: AS NOTED	SIZE: E; FACILITY NO.: 140; REVISION: 1
SHEET NUMBER: A1-8693	SEQUENCE NUMBER: 272 of 636

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Jul 19, 2013 - 10:37pm D:\Projects\0803-00\01 Project\01 CAD\01 DWG\02 Sheets\A1-8693.dwg

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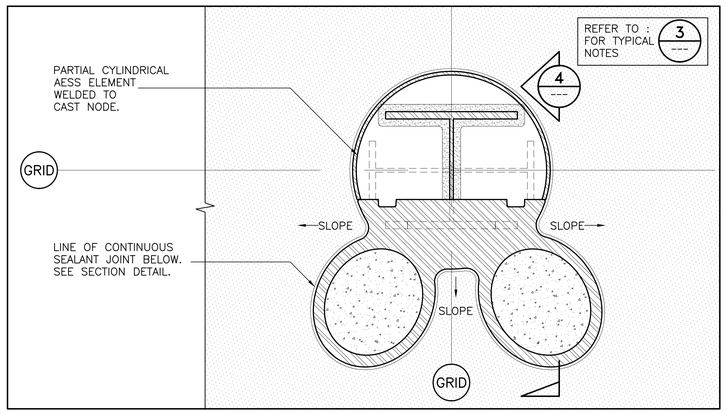
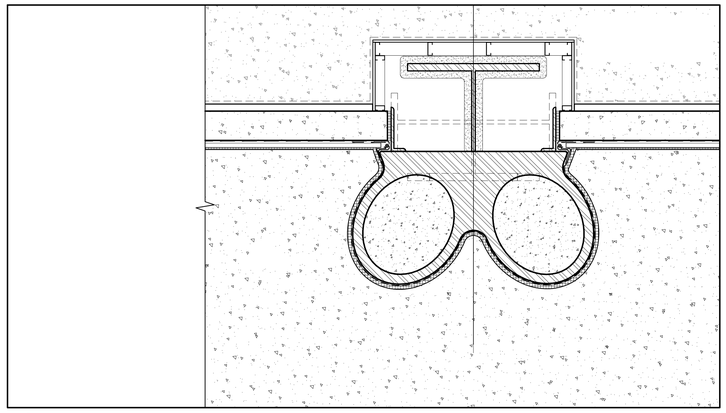
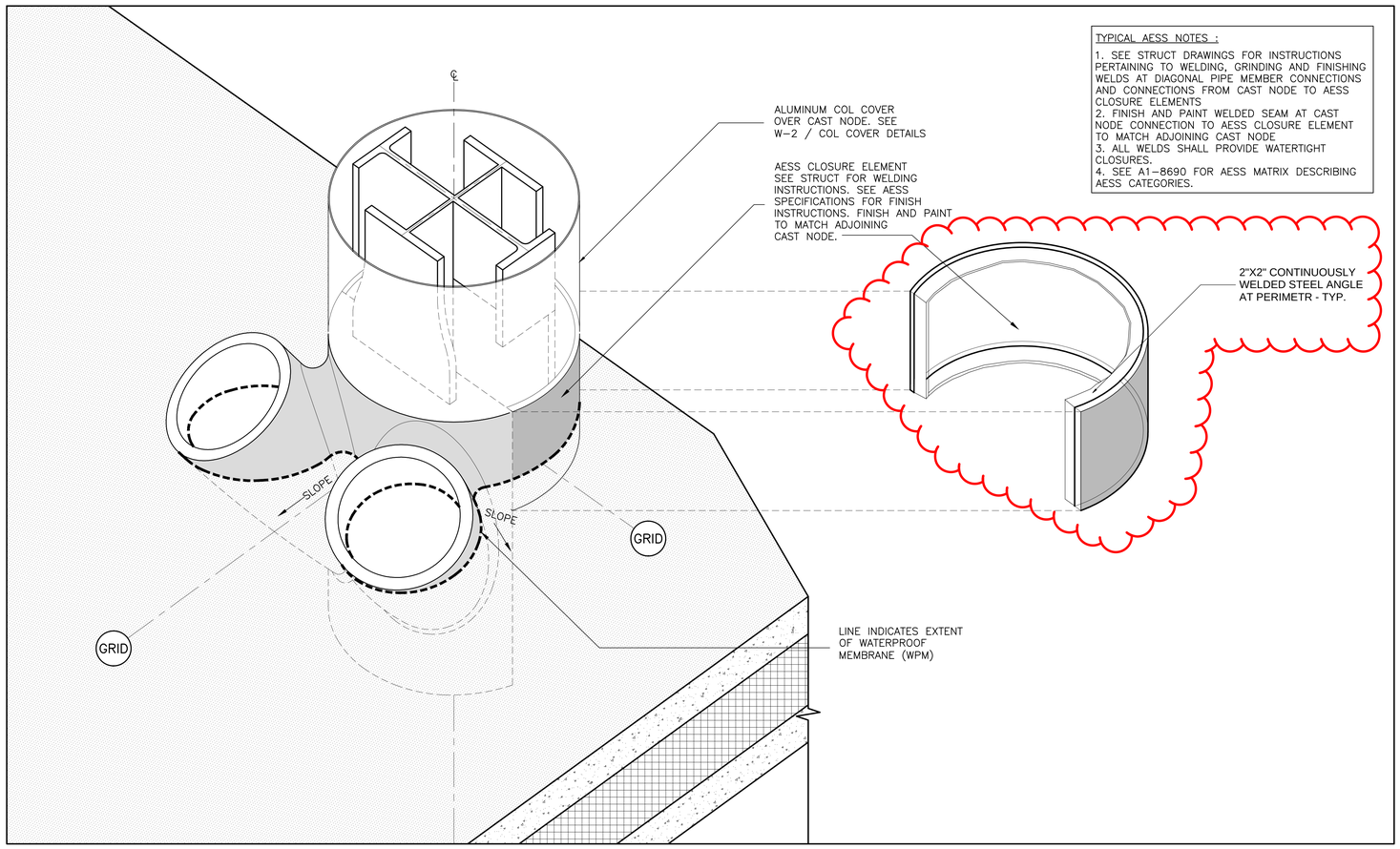


1 A1-8694 PLAN – TYP FREESTANDING NODE (~4" AFF)
SCALE: 3/4" = 1'-0"



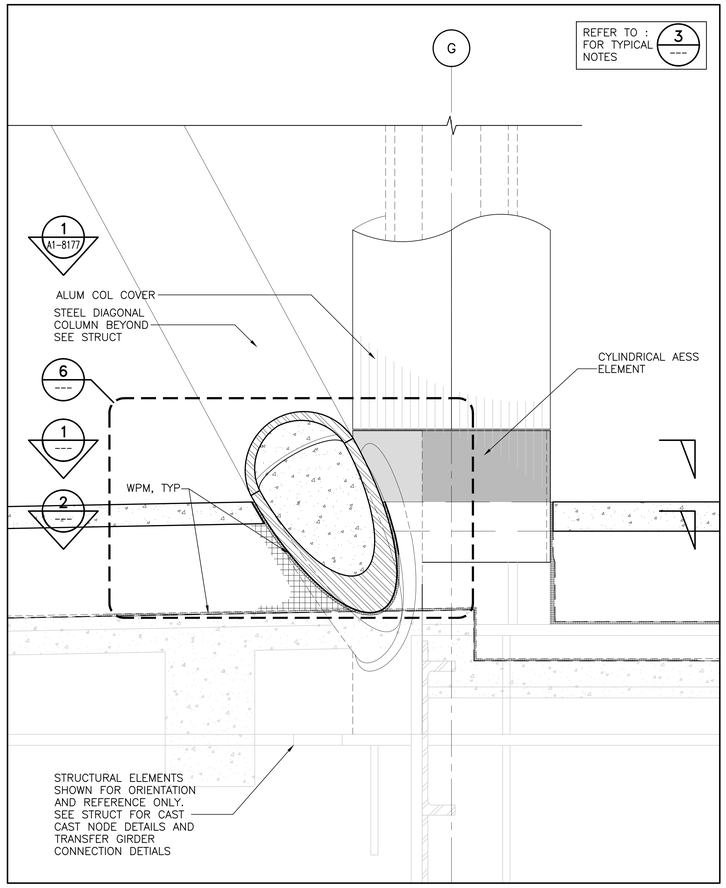
2 A1-8694 PLAN – TYP FREESTANDING NODE (SUBGRADE)
SCALE: 3/4" = 1'-0"



TYPICAL AESS NOTES :

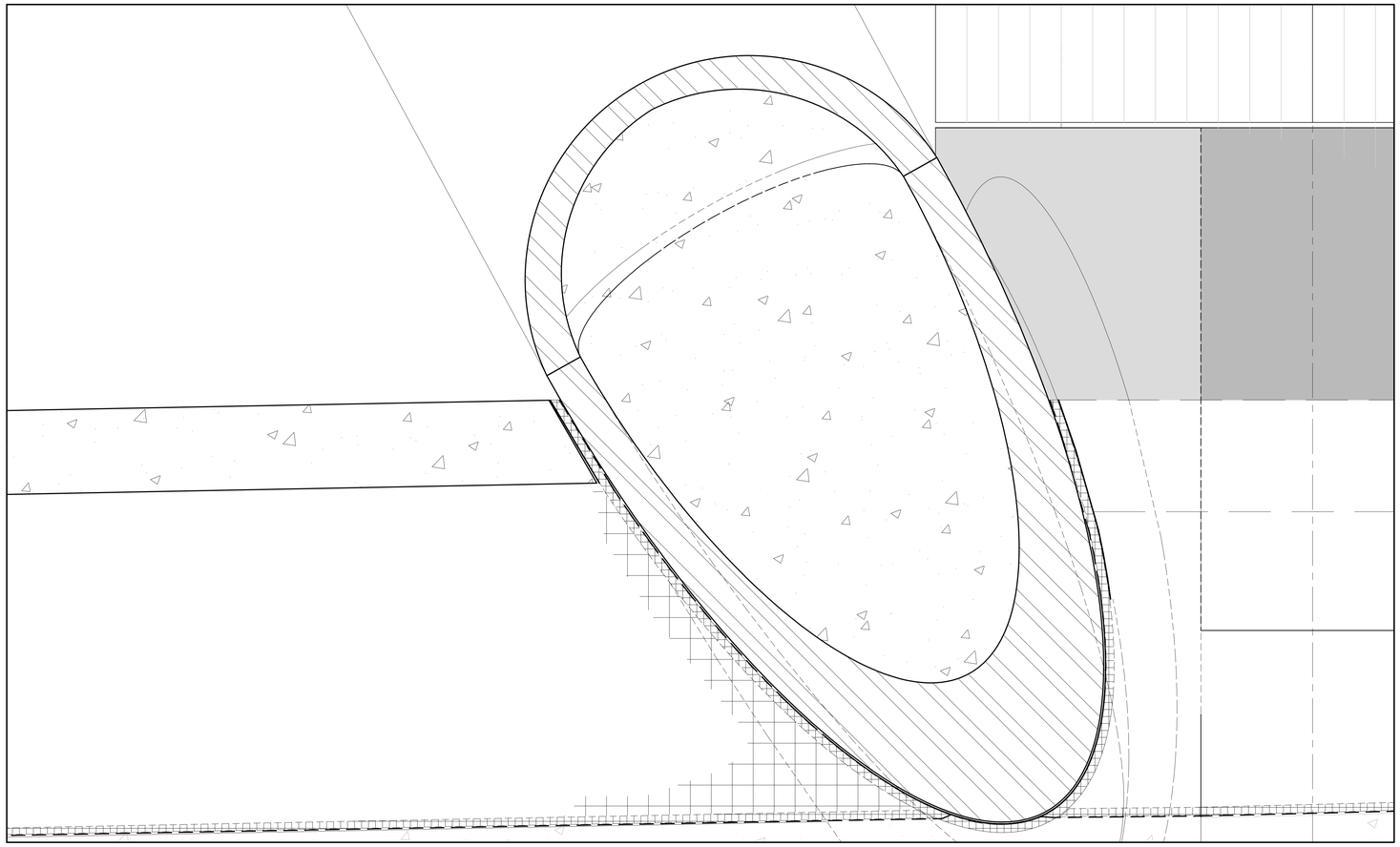
1. SEE STRUCT DRAWINGS FOR INSTRUCTIONS PERTAINING TO WELDING, GRINDING AND FINISHING WELDS AT DIAGONAL PIPE MEMBER CONNECTIONS AND CONNECTIONS FROM CAST NODE TO AESS CLOSURE ELEMENTS
2. FINISH AND PAINT WELDED SEAM AT CAST NODE CONNECTION TO AESS CLOSURE ELEMENT TO MATCH ADJOINING CAST NODE
3. ALL WELDS SHALL PROVIDE WATERTIGHT CLOSURES.
4. SEE A1-8690 FOR AESS MATRIX DESCRIBING AESS CATEGORIES.

3 A1-8694 ISOMETRIC DIAGRAM : TYP FREESTANDING NODE
SCALE: NTS



4 A1-8694 SECTION – TYP FREESTANDING NODE
SCALE: 3/4" = 1'-0"

0 1/2 1 2 3
SCALE IN FEET

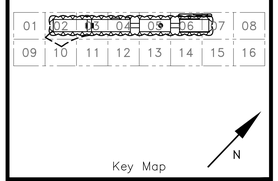


5 A1-8694 SECTION DETAIL – TYP WPM ABOUT CAST NODE
SCALE: 3" = 1'-0"

0 1/4 1/2 3/4 1
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02/19/13	ISSUED FOR CONSTRUCTION	GM
2	05/31/13	100% CONSTRUCTION DOCUMENTS	GM
3	07/17/13	ISSUED FOR CONSTRUCTION	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
CAST NODE DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21600
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: E. DEL ANGEL	CHECKED BY: W.R. BRADLEY
DRAWN BY: L. CIFALA	DATE: 07/17/2013
SCALE: AS NOTED	SIZE: E · FACILITY NO. 140 · REVISION 1
SHEET NUMBER A1-8694	SEQUENCE NUMBER 273 of 636

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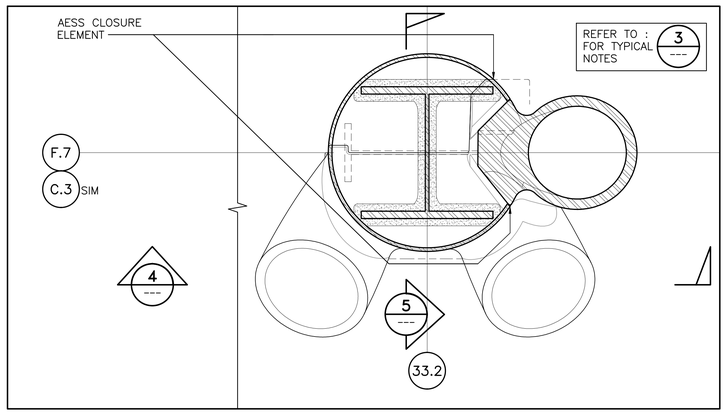
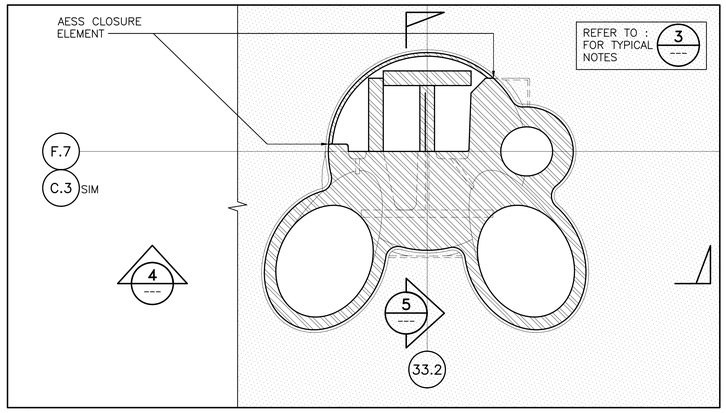
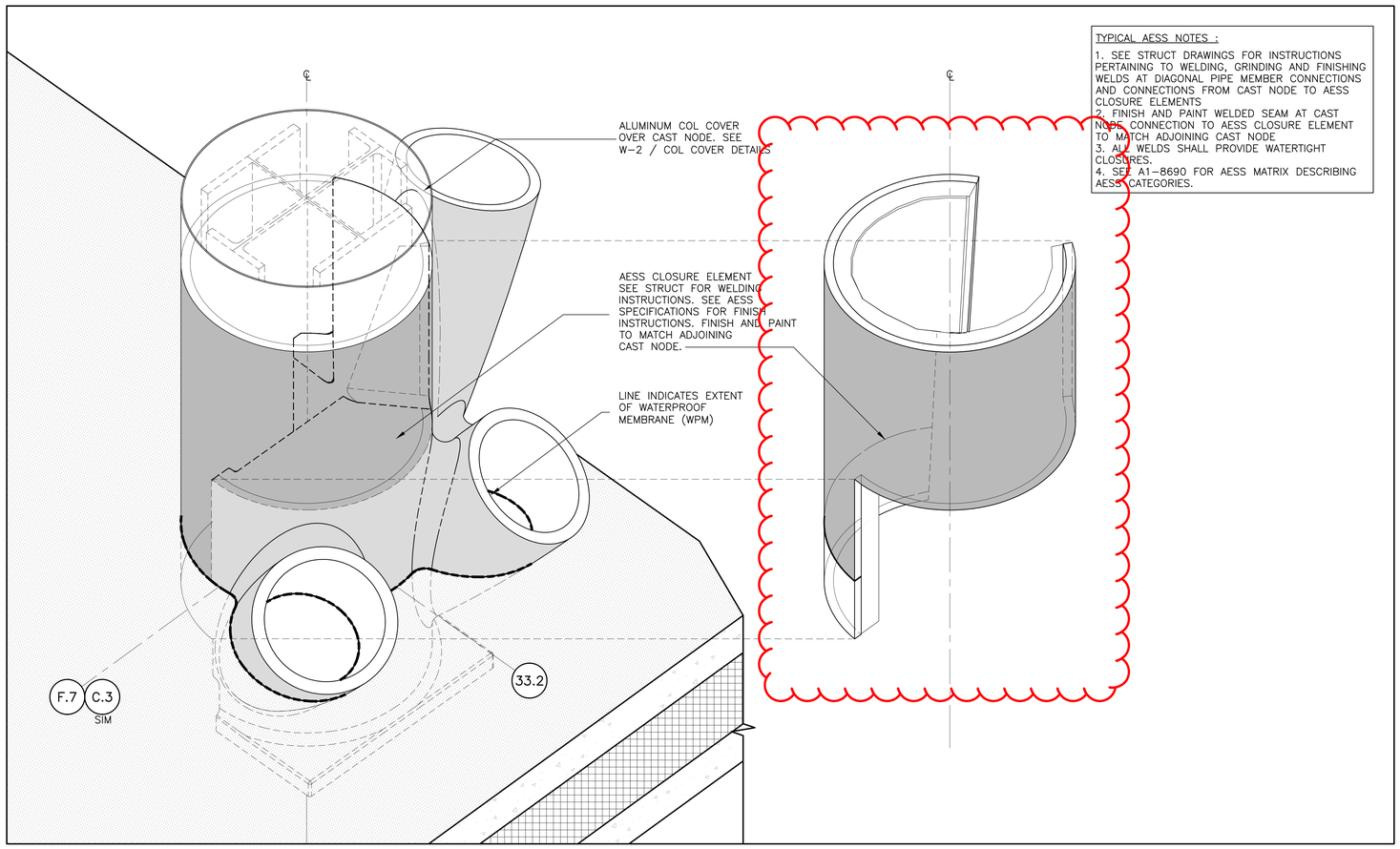


1 A1-2001 A1-2307 PLAN – FREESTANDING NODE AT GL 33.2
SCALE: 3/4" = 1'-0"



2 A1-8695 PLAN – FREESTANDING NODE AT GL 33.2 (~4" AFF)
SCALE: 3/4" = 1'-0"



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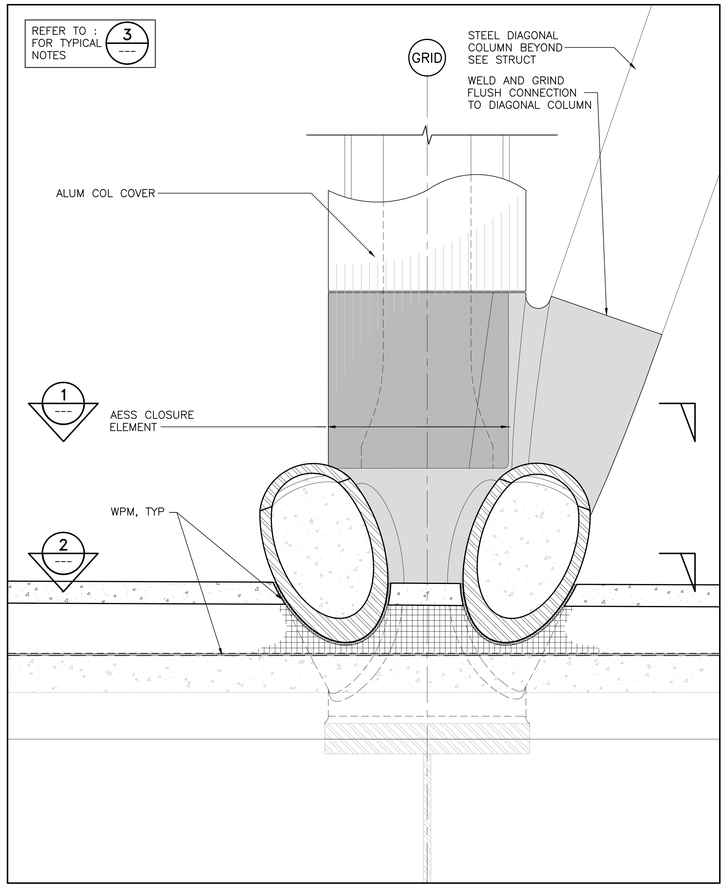
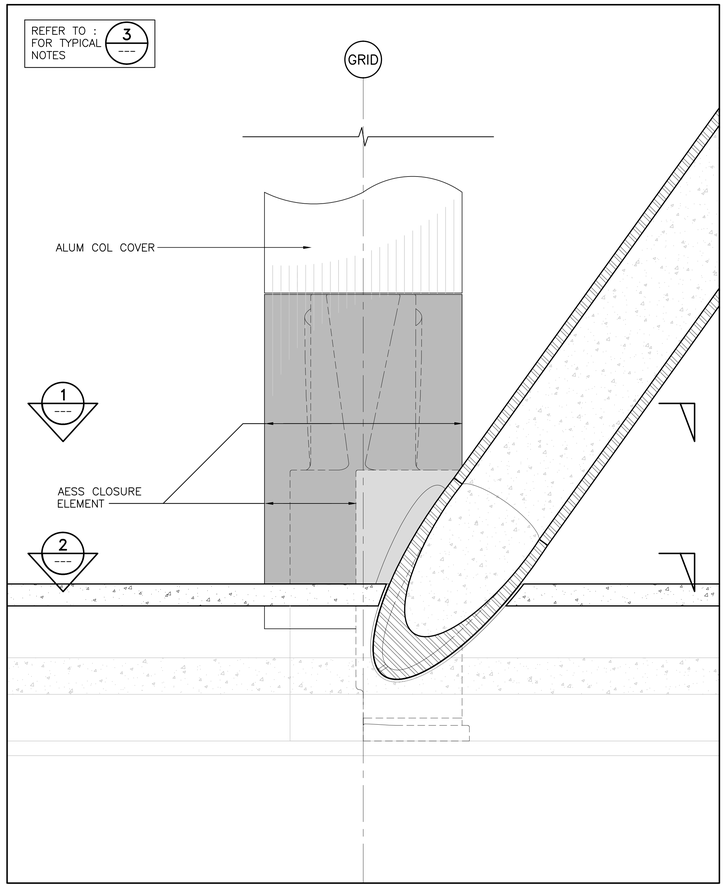
3 A1-8695 ISOMETRIC DIAGRAM : FREESTANDING NODE AT GL 33.2
SCALE: NTS



4 A1-8695 SECTION – FREESTANDING NODE AT GL 33.2
SCALE: 3/4" = 1'-0"

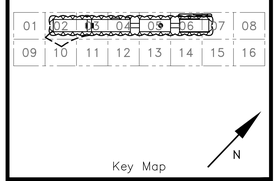


5 A1-8695 SECTION – FREESTANDING NODE AT GL 33.2
SCALE: 3/4" = 1'-0"

0 1/2 1 2 3
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES INC



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CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE CAST NODE DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT GEORGE RUSSELL METZGER NO. C21599 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED: PRINCIPAL ARCHITECT G. METZGER
APPROVED: PROJECT MANAGER S. ROTT
APPROVED: PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: E. DEL ANGEL	CHECKED BY: W.R. BRADLEY
DRAWN BY: L. CIFALA	DATE: 07/17/2013
SCALE: AS NOTED	SIZE: E; FACILITY NO.: 140; REVISION: 1

SHEET NUMBER A1-8695
SEQUENCE NUMBER 274 of 636

ISSUED FOR CONSTRUCTION

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TG07.3 – Miscellaneous Metals

Questions are numbered in the order received. Numbers missing in the sequence have been answered in a previous response set.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-148	11/25/2014	2/A1-8885	TG07.3-052	Please provide a clear description of what is needed by Bid Package TG07.3. Can I get the structural details? Are we responsible for just the plates with weld studs? FOB? (Please provide specs if we are to provide more than plates.) Can I get a location?	TG07.3 is responsible for the entire slide-bearing assembly. Embedded items are FOB job site; any remaining elements are to be furnished and installed by TG07.3. For the specifications of the embeds, plates, and studs, including bearing pads, refer to Specification Section 03 20 02, Concrete Reinforcement and Embedded Assemblies, read in conjunction with the details. For details and references relating to 2/A1-8885, refer to the following sketches (attached) and previously issued sheets: Architectural: SKA-4346 (A1-2310) SKA-4347 (A1-2870) SKA-4348 (A1-7401) SKA-4349 (A1-7402) SKA-4350 (A1-7403) SKA-4351 (A1-7404) SKA-4352 (A1-7406) SKA-4353 (A1-7407) SKA-4354 (A1-7413) SKA-4355 (A1-7418) SKA-4356 (A1-7419) SKA-4357 (A1-7420) SKA-4358 (A1-7432) SKA-4359 (A1-7433) Structural: SKS-0444 (S1-3210) SKS-0445 (S1-2251) S1-3204 previously issued with ASI-0104 S1-3205 previously issued with Superstructure IFB dated 09/23/2013 S1-3411 previously issued with ASI-0110

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					Civil: SK-C-0008 (C1-5005) SK-C-0010 (C1-5007) SK-C-0011 (C1-5008)
TG07.3-167	12/5/2014		1.1 Summary 05 60 00	A lot of items have been excluded from this list; is TG07.3 responsible for Items #6, #7 and #12? Are there any other items TG07.3 is responsible for?	All work required by TG07.3 Exhibit A shall be performed in conformance with the appropriate specification. Cross reference inclusions in Exhibit A with those in Specification Section 05 60 00.
TG07.3-169	12/11/2014	A1-7864		Please confirm that, according to Exhibit A Addendum #6, the misc metals on sheet A1-7864 have been deleted from TG7.03.	Items noted as being priced as an alternate on the Scoping Document A1-7864 are not included in the work of TG07.3.
TG07.3-170	12/11/2014	6/A1-7703		1. Please provide the quantity and dimensions of the “HSS post beyond for guide rail support”. 2. Please provide the sheet number of the structure drawing for the “secondary steel” indicated in the reference sheet above.	1. Provide one HSS post at each guide rail for all Overhead Doors, Grilles, and Night Closures. Refer to Architectural plans for Overhead Doors, Grilles, and Night Closure locations. All HSS posts span full height and connect to the underside of the structural slab or steel beams per details 5 & 6 on S1-5032. For HSS post sizes and details, refer to attached sketches: SKA-4343, SKA-4344, SKA-4345, and SKA-4377. 2. Refer to structural drawings S1-8019 & S1-8020.
TG07.3-174	12/11/2014	7/S1-3205		Please void QBD #137; answered by new "scope dwgs". Do I use spec section 051000 for bearing material? We are responsible for the assemblies located on the "conc. corbel" only, correct?	See the response to QBD TG07.3-0148, above. TG07.3 is responsible for all of the slide-bearing assembly components not directly embedded within the foundation wall or ramp slab as shown on detail 7/A1-3205. Refer to Specification Section 03 20 02 for bearing material.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-178	12/11/2014	A & B/A1-8690	Exhibit A Inclusion #25	1. Are partial cylindrical AESS elements required on grid lines 7, 21, 23, 25, 29 and 31? If so, please provide detail of those locations. (not shown) 2. Still waiting for an answer to our QBD #42 (sent 10-22-14). Are we responsible for just the "AESS Closure Element"? Where do we purchase this item?	1. Cylindrical plates welded to cast nodes are not required at gridline 7. Please see condition AC-1 on sheet A1-8690 and sheet A1-8691 for details and isometric view. Cast node of condition AC-1 requires steel angles to provide column closure to the adjoining W-2 glazing system. Cylindrical plates are required at gridlines 21, 23, 25, 29, and 31. All these conditions are indicated in plan, section, and isometric view. Please see condition AC-4 on sheets A1-8690 and A1-8694. 2. See the response to TG07.3-058, included in Set #9.
TG07.3-182	12/19/2014		051633, 51634, 055006, 055007, TG07.3-166	Is Bid Package TG07.3 responsible for Spec Sections 051633 051634, 055006 and 055007? I did not receive these sections with the "IFC Main Specs" download by PlanWell.	Refer to the table of contents, Specification Section 00 01 10, in each technical specification issuance for a listing of specifications included in the Contract Documents. Specification Section 00 01 10 in the IFC Main Package and ASIs 117–127 does not identify Specification Sections 05 16 33, 05 16 34, 05 50 06, or 05 50 07 as being part of the current package scope of work.
TG07.3-183	12/19/2014	A1-8711	055010, 2-6/A1-8711	Is Bid Package TG07.3 responsible for steel shown? If so, can we please get a detailed description of what we are responsible for in the details. (not a typical scope item)	Details 2 through 6/A1-8711 are embeds cast into the train box mat slab, and have already been installed. Therefore, they are not included in the work of TG07.3.
TG07.3-184	1/6/2015		05 50 00	Is Bid Package TG07.3 responsible for railings at "Bus Deck Superintendent Station"?	Railings at the Bus Deck superintendent station are not included in the work for TG07.3.
TG07.3-185	1/6/2015		056000 - 1.1, A, Item 10 & 11	Is this referring to the material used to install our scope? If not, please provide details of scope unless already noted in Exhibit A.	Yes, it is referencing material to be installed in the work of TG07.3.

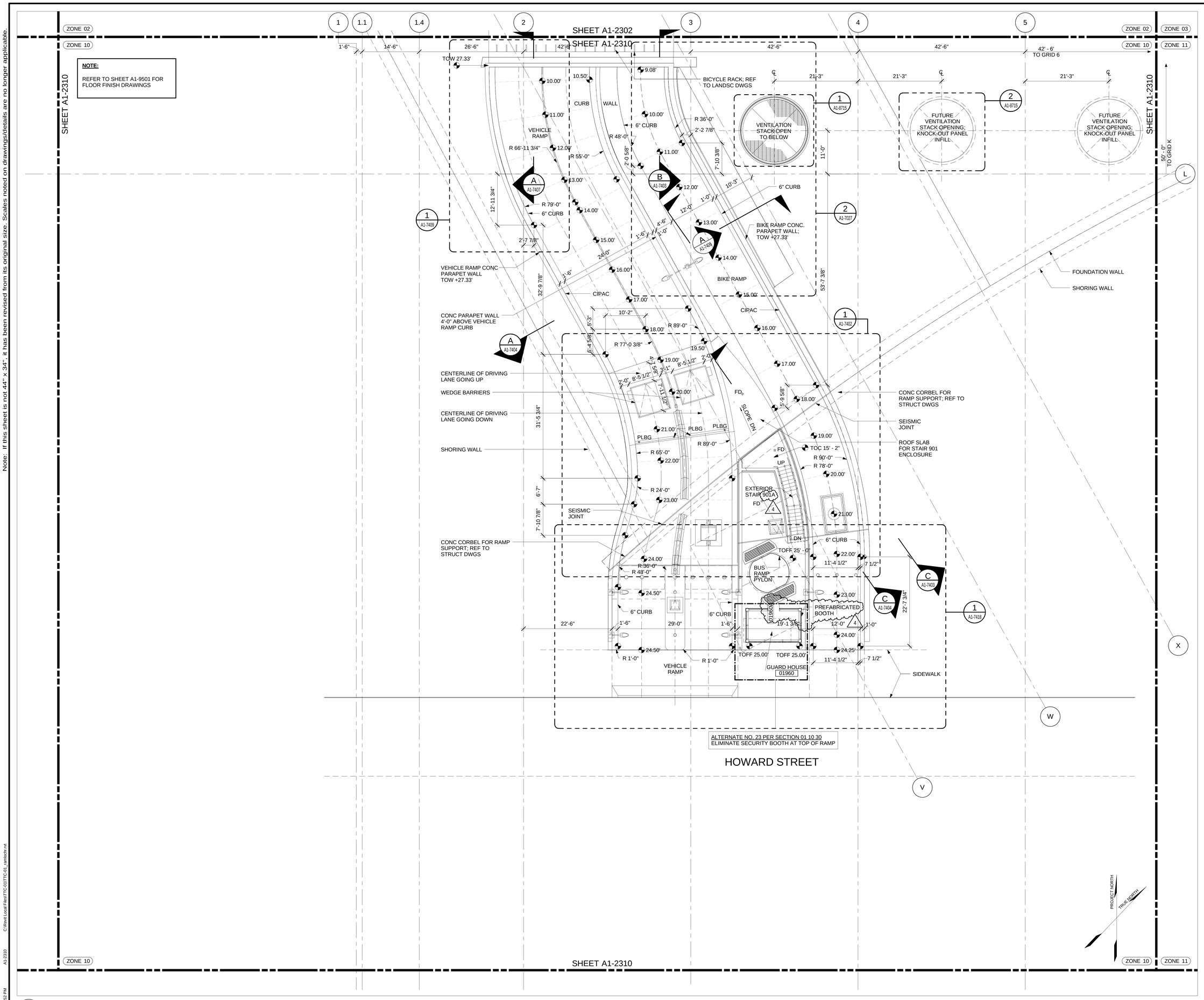
Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-186	12/19/2014		057500 - 1.1, A , Item 1 05 75 00	Is Bid Package TG07.3 responsible for this type of rail? If so, please provide details I can use for reference.	TG07.3 is responsible for all rails except as specifically excluded in TG07.3 Exhibit A, IV. Scope of the Package and Bid Item Information, 2. General Work, III Instructions to Bidders, E. Additional Bidding Notes, 2. Exclusions/ Clarifications/Qualifications. Examples of removable stainless-steel pipe railing details include 3 & 6/A1-9321.
TG07.3-187	12/19/2014		057500 - 1.1, A , Item 3 05 75 00	Is Bid Package TG07.3 responsible for any other SS railing besides the queue rails? If so, please provide details I can use for reference.	TG07.3 is responsible for all rails except as specifically excluded in TG07.3 Exhibit A, IV. Scope of the Package and Bid Item Information, 2. General Work, III Instructions to Bidders, E. Additional Bidding Notes, 2. Exclusions/ Clarifications/Qualifications.
TG07.3-188	12/19/2014		057500 - 1.1, A, Item 4 05 75 00	Is Bid Package TG07.3 responsible for this scope?	TG07.3 is responsible for any base and cart rails not integral to a "W" system.
TG07.3-189	12/19/2014		057500 - 1.1, A, Item 5 05 75 00	Is Bid Package TG07.3 responsible for this scope?	Please refer to RFI P1-0453.
TG07.3-190	12/19/2014		057500 - 1.1, A, Items 6 & 7	Is Bid Package TG07.3 responsible for this scope? If so, please provide details I can use for reference.	TG07.3 is responsible for any SS Door Surrounds not integral to a "W" system.
TG07.3-191	12/19/2014		057500 - 1.1, A, Item 10 05 75 00	Is Bid Package TG07.3 responsible for this scope? If so, please provide details I can use for reference.	Bidders are responsible for cross-referencing inclusions identified in TG07.3 Exhibit A with the appropriate specification section, and installing the material per the appropriate specification.
TG07.3-192	12/19/2014		057500 - 1.1, A, Item 15 05 75 00	Is Bid Package TG07.3 responsible for this scope?	Free-standing fire-hose–cabinet enclosures, as called out in Specification Section 05 75 00 paragraph 1.1.A.15, are not included in the work of TG07.3.
TG07.3-193	1/6/2015		Exhibit A, 2., E, III. E.2.a) 5.	Are there any curtain walls, skylights, awnings, fascia, or cladding not part of a "W" system, or not specifically mentioned in Exhibit A? If so, are these items part of Bid Package TG07.3? Can you please provide details for reference.	Scope inclusions are specifically listed in TG07.3 Exhibit A. Items not identified in TG07.3 Exhibit A are not part of the work for TG07.3.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-194	12/19/2014		Exhibit A, Inclusion #33	Can you please provide details and other information so that I can understand what will be needed to provide "concrete block-outs/pour back strips". (not a typical scope item)	Refer to architectural and structural details for the angles required at the edge of concrete block-outs/pour back strips. For an example of details, see 1 & 2/A1-7552.
TG07.3-195	12/19/2014		055000 Security Screens, TG07.3-124 05 50 00	I'm not sure if I understand your answer. Do we have to contact "California Wire Products" to get the specifications on the hardware and finish you are requiring? Are you requesting primer and finish coat on top of hot-dip galv?	Security screens are hot-dip galvanized and have a factory finish powder coat, as specified in Specification Section 05 50 00 paragraph 2.5.P (see attached specification). This same specification refers to Specification Section 08 71 10, Base Building Door Hardware, hardware set 15.
TG07.3-196	1/5/2015	1/A1-9211	057500 (1.1) A.9	This scope item is not something we typically pick up; can you please provide a height for all covers? I would ask the manufacturers (experts) but they do not want to be responsible for any take-off or documents. (some don't even want to bid)	All aluminum cladding for steel columns at the Lower Concourse is typically 8 feet, 0 inches in height. The exceptions are for the steel columns at the ramp area and parking area at the bottom of the ramp. For these locations, the aluminum cladding starts above a raised concrete curb and runs full height, terminating 6 inches below the ground-level beam and/or slab. Refer to the following sketches (attached): SKA-4368 (A1-2202) SKA-4369 (A1-2203) SKA-4370 (A1-2250) SKA-4371 (A1-3005) SKA-4372 (A1-3007) SKA-4373 (A1-9207) SKA-4374 (A1-9209) SKA-4375 (A1-9210) SKA-4376 (A1-9212)
TG07.3-197	1/5/2015		057500 (1.1) D.2-7	Can you please confirm Bid Package TG07.3 is not responsible for the stainless steel items 2 through 7? If not, please provide details for reference.	Specification Section 05 75 00 paragraph 1.1.A.2: TG07.3 is responsible for all rails except as specifically excluded. Specification Section 05 75 00 paragraph 1.1.A.3: TG07.3 is responsible for all rails except as specifically excluded (for example, see detail 6/A1-9321). Specification Section 05 75 00 paragraph 1.1.A.4: See response to TG07.3-188, above. Specification Section 05 75 00 paragraph

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
					1.1.A.5: See response to TG07.5-189, above. Specification Section 05 75 00 paragraph 1.1.A.6: See response to TG07.5-190, above. Specification Section 05 75 00 paragraph 1.1.A.7: TG07.3 is responsible for any stainless-steel cladding of stair soffits, stringers, and risers not integral to a "W" system.
TG07.3-198	1/6/2015		12 93 00 - Site Furnishings	Regarding TG07.3-018 answer dated 12/30/14; Are we to ignore TG07.3-018 answer dated 11/19/14? So bike racks are now back into Bid Package TG07.3? If so; Can you please explain how these are installed or are they FOB?	Bike racks are to be furnished and installed by TG07.3 in accordance with the San Francisco Municipal Transportation Agency's Standard Bicycle Rack Specifications, available at: http://www.sfmta.com/sites/default/files/pdfs/Circular%20Bicycle%20Rack%20Specifications%20for%20San%20Francisco%20%283%29.pdf
TG07.3-199	1/6/2015	7 & 8/ A1-7578	TG07.3-158, TG07.3-097	Per answer given in TG07.3-097, SKA sheets are included in the Base Price and sheet SKA-3497 has these "angle supports" removed. Are the "angle supports" in our package? Are we to ignore SKA notes?	In this case, A1-7578 (ASI 127) supersedes SKA-3497. Angle supports are included in the work of TG07.3 where they occur.
TG07.3-200	1/5/2015		ASI 128	Will ASI-128 be included in Bid Package TG07.3? Is there another bid extension expected?	No, ASI 128 will not be issued to TG07.3 prior to bid. No further bid extensions are anticipated at this time.
TG07.3-201	1/6/2015		Exhibit A Inclusion #33	Inclusion #33. Please provide the details/ locations of equipment/housekeeping pads, vault/sump pits, curbs, and concrete block-outs/pour back strips.	Review the Contract Documents (detail 2/A1-7552, for example) for details. Review the Contract Documents (for example, Sheets A1-2812–A1-2897) for locations.
TG07.3-202	1/6/2015		Exhibit A Inclusion #40	Inclusion #40. Please provide more information to quantify Inclusion #40.	In areas where the structure has been completed prior to the bid date, costs for scanning and coring (as identified in Inclusion 40) associated with post-installed anchors shall be paid on a time-and-materials basis. Cost for all post-installed anchors in structure placed after the bid date shall be included in the base bid price for TG07.3.
TG07.3-203	1/6/2015			Are the signage pylons included in TG 07.3? If so, please provide details, specs, or schedules for the signage pylons.	The work identified in Specification Section 10 14 26, Pylon Signage, is not included in the work of TG07.3.

Question No.	Submission Date	Drawing No.	Document/ Spec. No.	Question	Response
TG07.3-204	1/9/2015			Are the signs governed by the Metropolitan Transportation Commission (MTC) Guidelines? Does the fabricator of Misc. Metals need to be approved by the MTC?	Yes, wayfinding signs are governed by the Metropolitan Transportation Commission (MTC). The fabricator does not have to be approved by the MTC.
TG07.3-205	1/6/2015	11/SKA-3699 (A1-8717)		Is the JEENE Joint System with embedded studs shown in detail 11 SKA-3699 correct? The Specification on the Jeene Joint System does not show any embedded studs.	The embedded studs are not required at the Jeene joint system.
TG07.3-206	1/6/2015			Are there any Kiosks on this project? If so, please provide details, specs, or Schedules for them.	Refer to Division 10 and SG drawings for information on signage. Miscellaneous metal integral to signs is not included in the work of TG07.3.
TG07.3-207	1/6/2015			Are there any Real Time Displays on this project (RTD's)? If so, please provide the specs for them.	Refer to Division 10 and SG drawings for information on signage. Miscellaneous metal integral to signs is not included in the work of TG07.3.
TG07.3-208	1/6/2015			Is there any free standing or wall mounted Transit Identification Displays (TID's) on this project? If so, please provide the details/ specs of TID's	Refer to Division 10 and SG drawings for information on signage. Miscellaneous metal integral to signs is not included in the work of TG07.3.
TG07.3-209	1/6/2015			How many Way Finding signs are there on this project? Is there a detail of the Way Finding signs somewhere in the plans, we cannot find them. Is there a schedule provided for all the way finding signs? Where are the specifications for the way finding signs (What Spec Sections)? Are the way finding signs/ traffic signs included in TG07.3? If so, please provide the details, specs, or schedules of the way finding signs.	Refer to Division 10 and SG drawings for information on signage. Miscellaneous metal integral to signs is not included in the work of TG07.3.
TG07.3-210	1/8/2015		Detail 5/S1-7016, Details A - G/A1-9225, Detail 1/S1-9003	Detail 5/S1-7016, Details A – G/A1-9225, Detail 1/S1-9003, and Detail 2/S1-9003 show metal deck being installed on interior walls. Are the metal deck and associated support included in the work of TG07.3?	Yes, the metal deck and associated support shown on detail 5/S1-7016, details A through G/A1-9225, and details 1 & 2/S1-9003 are included in the work of TG07.3.

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.



1 A1-2001 GROUND LEVEL ZONE 10 FLOOR PLAN
SCALE: 1/8" = 1'-0"

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
0	03/31/14	ISSUED FOR CONSTRUCTION	GM
1	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
2	07/18/14	PER ASI No. 0121	GM
3	09/12/14	PER ASI No. 0127	GM
4	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
GROUND LEVEL
ZONE 10 FLOOR PLAN

ARCHITECT / ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21600
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL
DESIGNED BY: S. ROTT
CHECKED BY: W.R. BRADLEY
DRAWN BY: K. WROBLEWSKI
DATE: 12/16/2014
SCALE: 1/8" = 1'-0"
SIZE: E
FACILITY NO.: 140
REVISION: 4
SHEET NUMBER SKA-4346
SEQUENCE NUMBER ___ of ___

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BASED ON SHEET A1-2310

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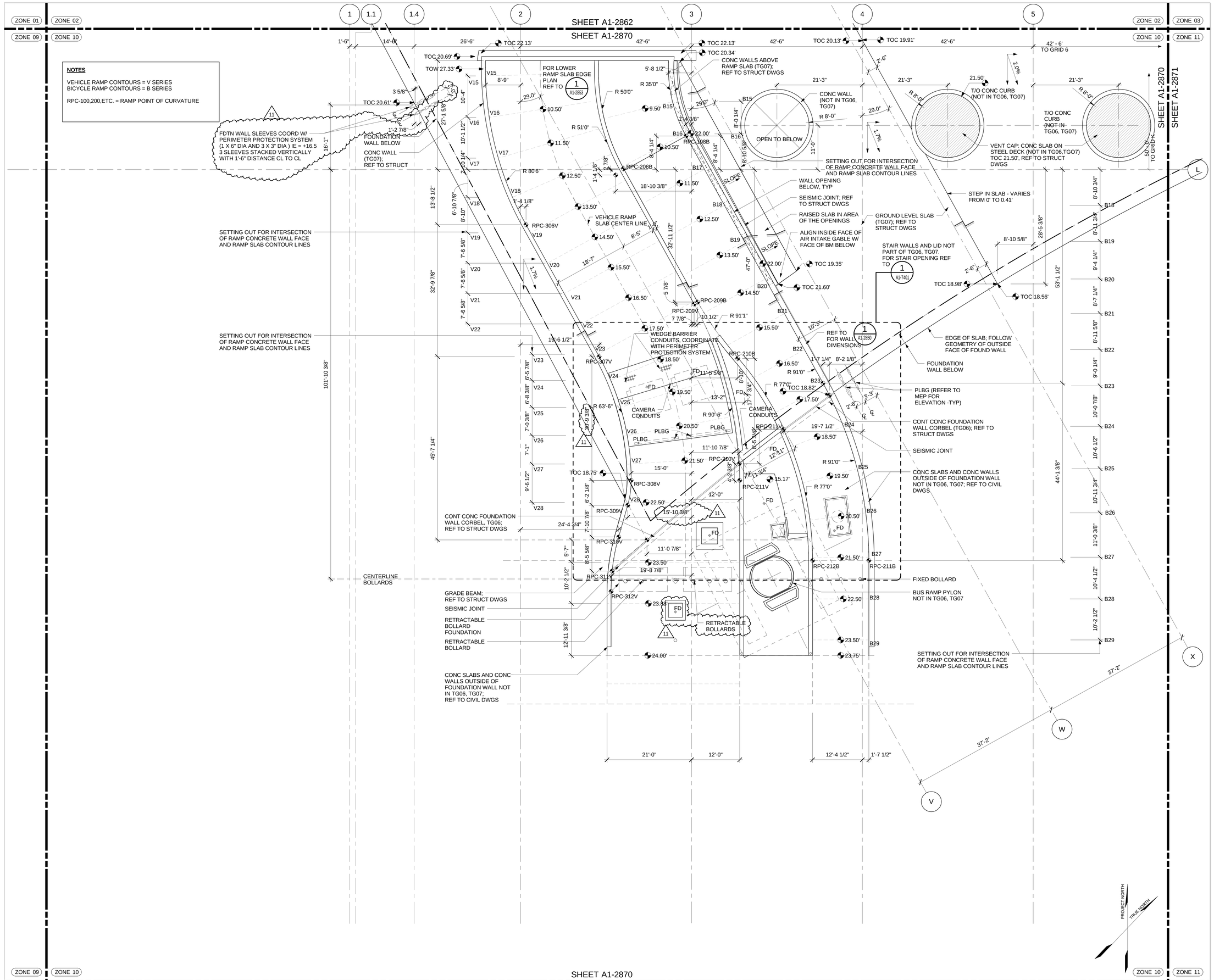

1 A1-2801 GROUND LEVEL ZONE 10 SLAB EDGE PLAN
SCALE: 1/8" = 1'-0"

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SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	10/19/12	ISSUED FOR BID - SUPERSTRUCTURE	GM
2	11/27/12	PER ASI No. 0100	GM
3	12/07/12	ISSUED FOR BID - SUPERSTRUCTURE - ADDENDUM #3	GM
4	02/19/13	ISSUED FOR CONSTRUCTION	GM
5	05/31/13	100% CONSTRUCTION DOCUMENTS	GM
6	07/17/13	ISSUED FOR CONSTRUCTION	GM
7	07/18/13	PER ASI No. 0105	GM
8	09/20/13	PER ASI No. 0106	GM
9	09/23/13	ISSUED FOR BID	GM
10	12/13/13	ISSUED FOR BID - ADDENDUM #1	GM
11	02/21/14	ISSUED FOR CONSTRUCTION	GM
12	03/31/14	PER ASI No. 0123	GM
13	08/06/14	PER ASI No. 0127	GM
14	09/12/14	PER ASI No. 0128	GM
15	12/18/14	PER ASI No. 0128	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
GROUND LEVEL
ZONE 10 SLAB EDGE PLAN

ARCHITECT / ENGINEER SEAL
LICENSED ARCHITECT
NO. C21500
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
D. DRON	W.R. BRADLEY
DRAWN BY: C. ESCOBIDO	DATE: 12/16/2014
SCALE: 1/8" = 1'-0"	SIZE: E / FACILITY NO.: 140 / REVISION: 11

SHEET NUMBER
SKA-4347

SEQUENCE NUMBER
of

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BASED ON SHEET A1-2870

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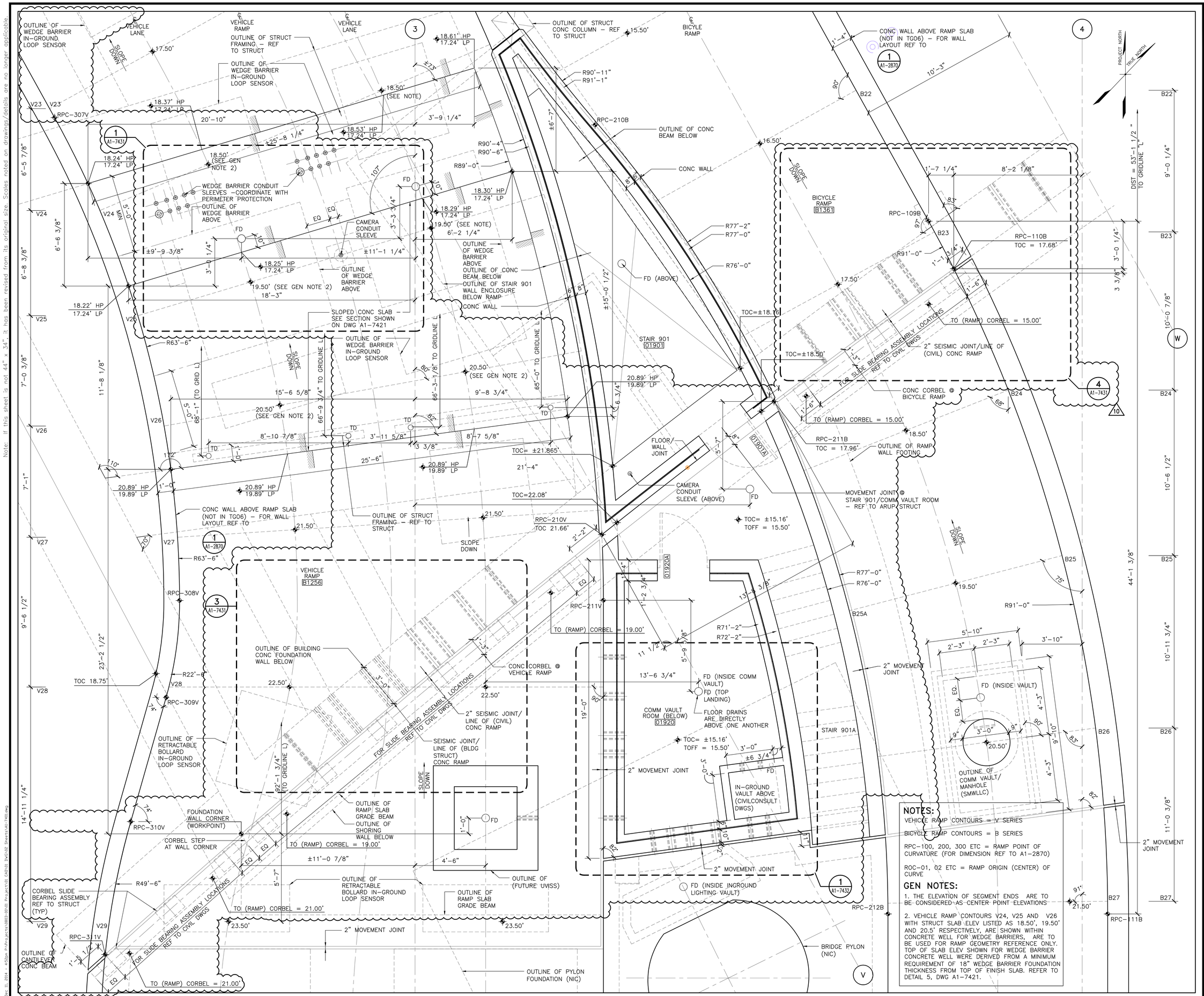

NOTES:

VEHICLE RAMP CONTOURS = V SERIES

BICYCLE RAMP CONTOURS = B SERIES

RPC–100, 200, 300 ETC = RAMP POINT OF CURVATURE (FOR DIMENSION REF TO A1–2870)

ROC–01, 02 ETC = RAMP ORIGIN (CENTER) OF CURVE

GEN NOTES:

1. THE ELEVATION OF SEGMENT ENDS ARE TO BE CONSIDERED AS CENTER POINT ELEVATIONS

2. VEHICLE RAMP CONTOURS V24, V25 AND V26 WITH STRUCT SLAB ELEV LISTED AS 18.50', 19.50' AND 20.5' RESPECTIVELY, ARE SHOWN WITHIN CONCRETE WELL FOR WEDGE BARRIERS, ARE TO BE USED FOR RAMP GEOMETRY REFERENCE ONLY. TOP OF SLAB ELEV SHOWN FOR WEDGE BARRIER CONCRETE WELL WERE DERIVED FROM A MINIMUM REQUIREMENT OF 18" WEDGE BARRIER FOUNDATION THICKNESS FROM TOP OF FINISH SLAB. REFER TO DETAIL 5, DWG A1–7421.

VEHICLE AND BICYCLE RAMP GROUND LEVEL PARTIAL SLAB EDGE PLAN

1 / A1–2870 — SCALE: 1/2" = 1'–0"

A1–2801

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Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	08/30/12	ISSUED FOR CONSTRUCTION – BELOW GRADE PACKAGE	GM
2	09/20/13	PER ASI No. 0107	GM
3	09/23/13	ISSUED FOR BID	GM
4	12/13/13	ISSUED FOR BID – ADDENDUM #1	GM
5	01/23/14	ISSUED FOR BID	GM
6	02/21/14	ISSUED FOR BID – ADDENDUM #1	GM
7	04/23/14	ISSUED FOR BID – ADDENDUM #3	GM
8	06/20/14	ISSUED FOR BID – ADDENDUM #4	GM
9	07/18/14	PER ASI No. 0121	GM
10	08/06/14	PER ASI No. 0133	GM
11	08/12/14	PER ASI No. 0137	GM
12	12/16/14	PER ASI No. 0128	GM

CONTRACT NO.: 08–04–CMGC–000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: VEHICLE & BICYCLE RAMP GROUND LEVEL PARTIAL SLAB EDGE PLAN

ARCHITECT/ENGINEER SEAL: LICENSED ARCHITECT — GEORGE RUSSELL METZGER — NO. C21030 — REN. APRIL 30, 2015 — STATE OF CALIFORNIA

APPROVED: PRINCIPAL ARCHITECT	G. METZGER
APPROVED: PROJECT MANAGER	S. ROTT
APPROVED: PROJECT MANAGER	E. DEL ANGEL
DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: 1/2" = 1'–0"	SIZE: E; FACILITY NO.: 140; REVISION: 10
SHEET NUMBER: SKA-4348	SEQUENCE NUMBER: __ of __

BASED ON SHEET A1-7401

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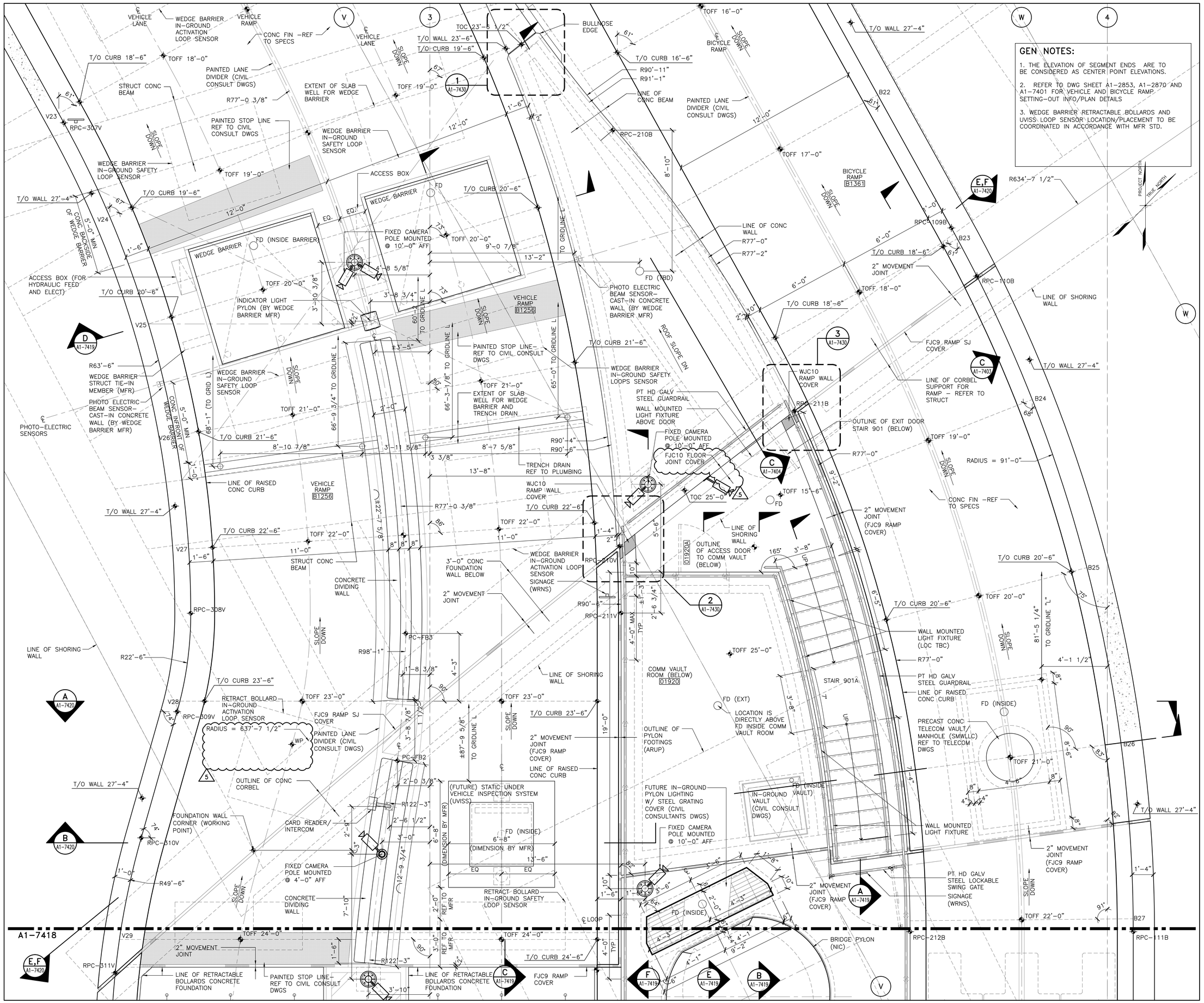

1 A1-2310 RAMP PARTIAL PLAN DETAIL
SCALE: 1/2" = 1'-0"
A1-2001

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	04/23/14	ISSUED FOR BID - ADDENDUM #3	GM
3	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
4	07/18/14	PER ASI No. 0121	GM
5	09/12/14	PER ASI No. 0127	GM
6	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: VEHICLE & BICYCLE RAMP GROUND LEVEL PARTIAL PLAN

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT GEORGE RUSSELL METCALF NO. C21630 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL
DESIGNED BY: P. MACPHAIL
CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS
DATE: 12/16/2014
SCALE: 1/2" = 1'-0"
SIZE: E
FACILITY NO.: 140
REVISION: 5
SHEET NUMBER: SKA-4349
SEQUENCE NUMBER: __ of __

BASED ON SHEET A1-7402

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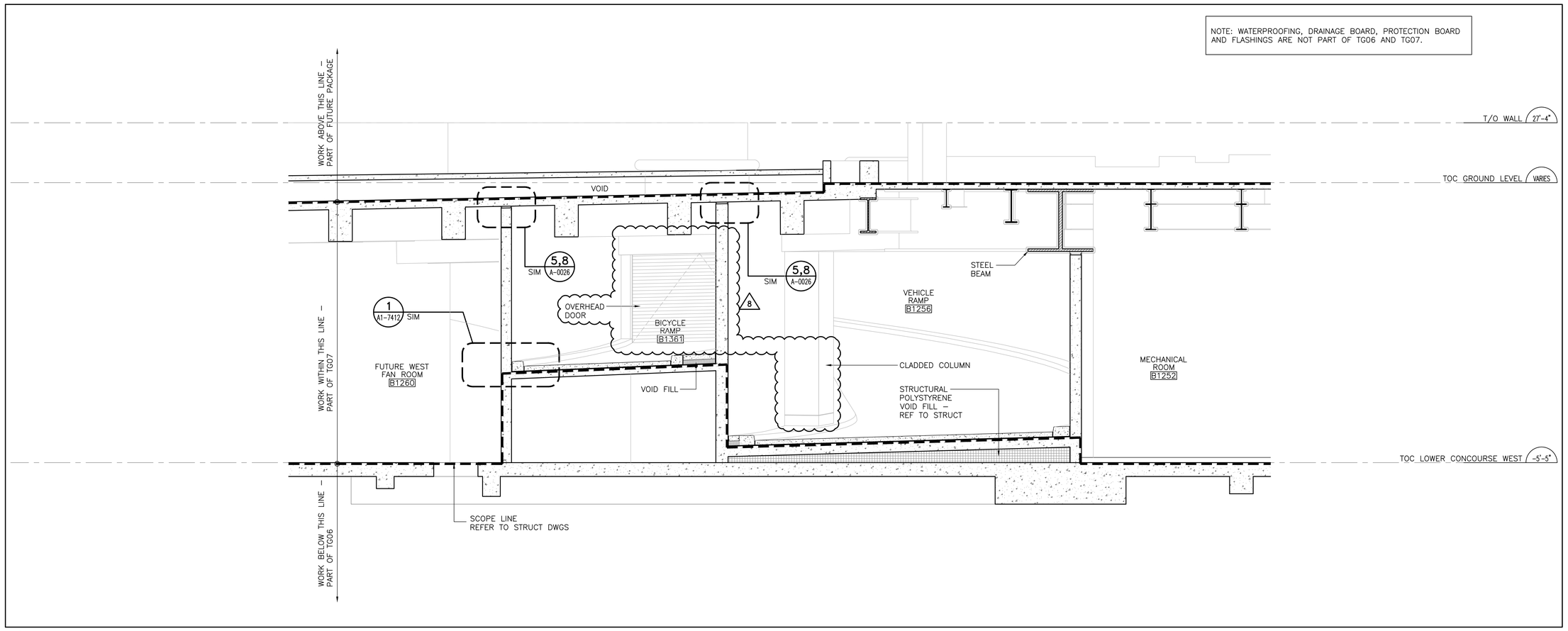

A / A1-7403 SECTION – VEHICLE AND BIKE RAMP
SCALE: 1/4" = 1'-0"

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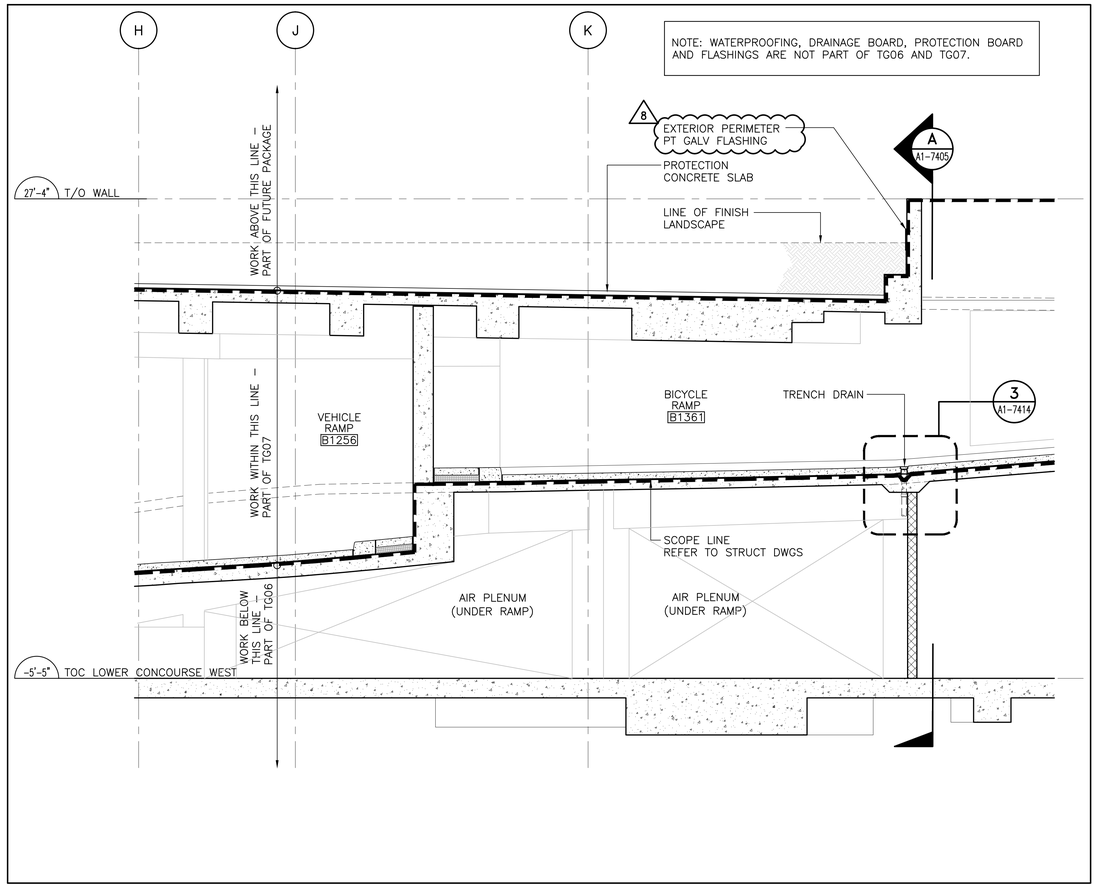
SCALE IN FEET

NOTE: WATERPROOFING, DRAINAGE BOARD, PROTECTION BOARD AND FLASHINGS ARE NOT PART OF TG06 AND TG07.



B / A1-7403 SECTION – VEHICLE AND BICYCLE RAMP
SCALE: 1/4" = 1'-0"

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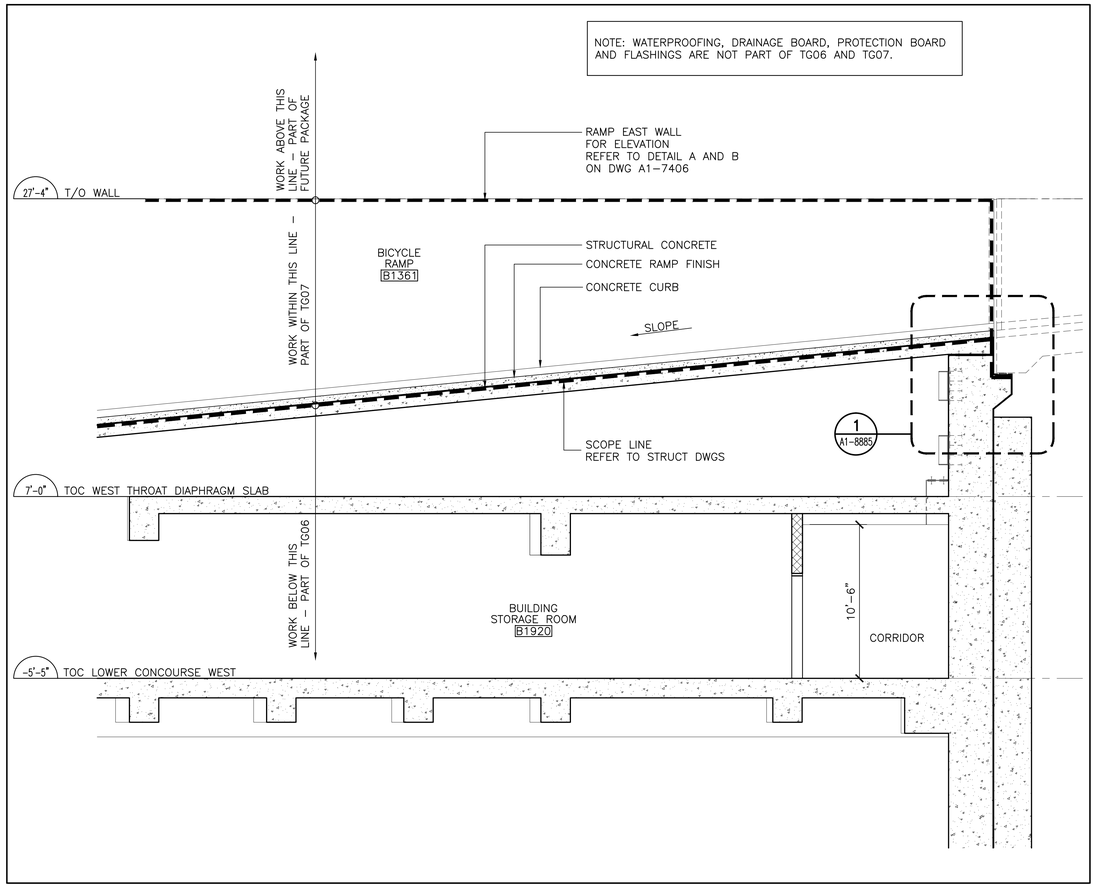
SCALE IN FEET

NOTE: WATERPROOFING, DRAINAGE BOARD, PROTECTION BOARD AND FLASHINGS ARE NOT PART OF TG06 AND TG07.



C / A1-7403 SECTION – BICYCLE RAMP
SCALE: 1/4" = 1'-0"

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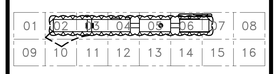
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map
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REVISIONS

NO.	DATE	DESCRIPTION	BY
1	08/30/12	ISSUED FOR CONSTRUCTION – BELOW GRADE PACKAGE	GM
2	10/19/12	ISSUED FOR BID – SUPERSTRUCTURE	GM
3	12/07/12	ISSUED FOR BID – SUPERSTRUCTURE – ADDENDUM #3	GM
4	02/19/13	ISSUED FOR CONSTRUCTION	GM
5	09/20/13	PER ASI No. 0106	GM
6	09/23/13	ISSUED FOR BID	GM
7	12/13/13	ISSUED FOR BID – ADDENDUM #1	GM
8	01/22/14	ISSUED FOR BID	GM
9	03/21/14	ISSUED FOR BID – ADDENDUM #2	GM
10	03/31/14	ISSUED FOR CONSTRUCTION	GM
11	12/16/14	PER ASI No. 0128	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
VEHICLE & BICYCLE RAMP SECTIONS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21630
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: S. PALAZOV	DATE: 12/16/2014
SCALE: 1/4" = 1'-0"	SIZE: E / FACILITY NO.: 140 / REVISION: 8
SHEET NUMBER: SKA-4350	SEQUENCE NUMBER: ___ of ___

BASED ON SHEET A1-7403

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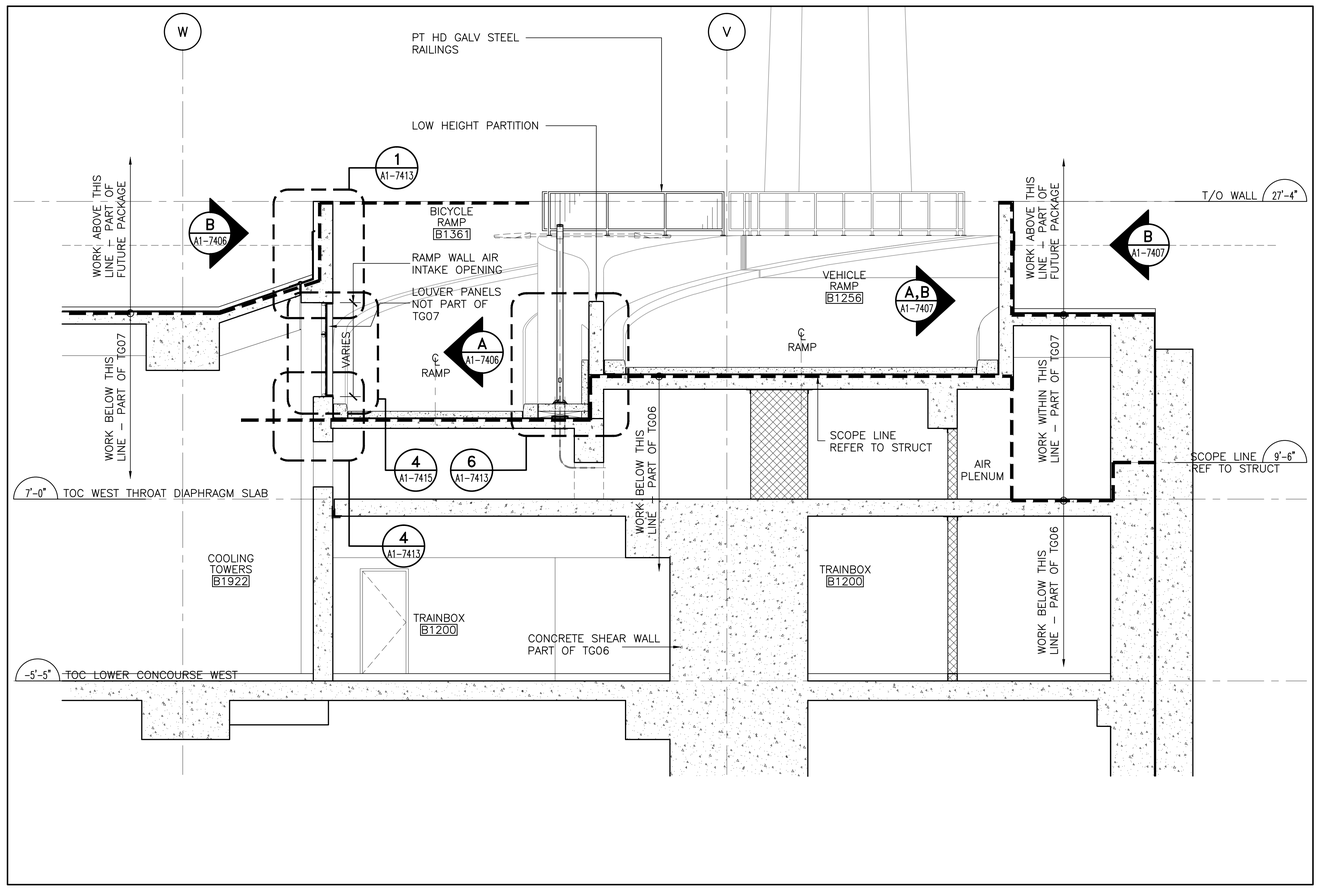

A A1-7404 SECTION – VEHICLE AND BIKE RAMP
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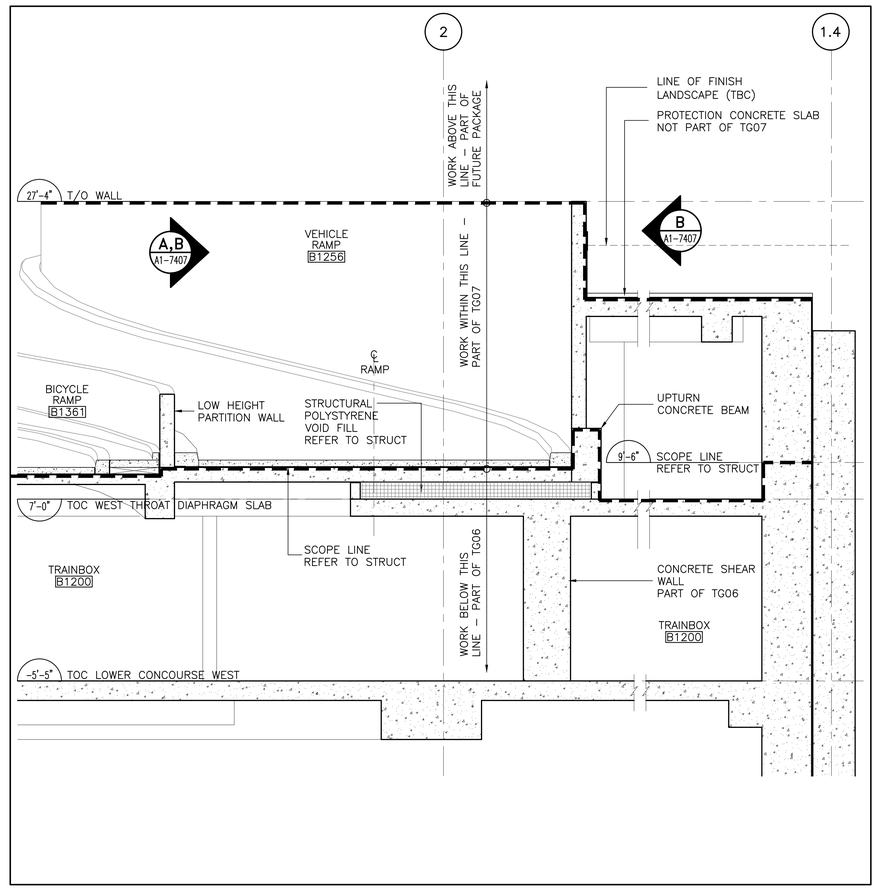
SCALE IN FEET



B A1-7404 SECTION – VEHICLE RAMP
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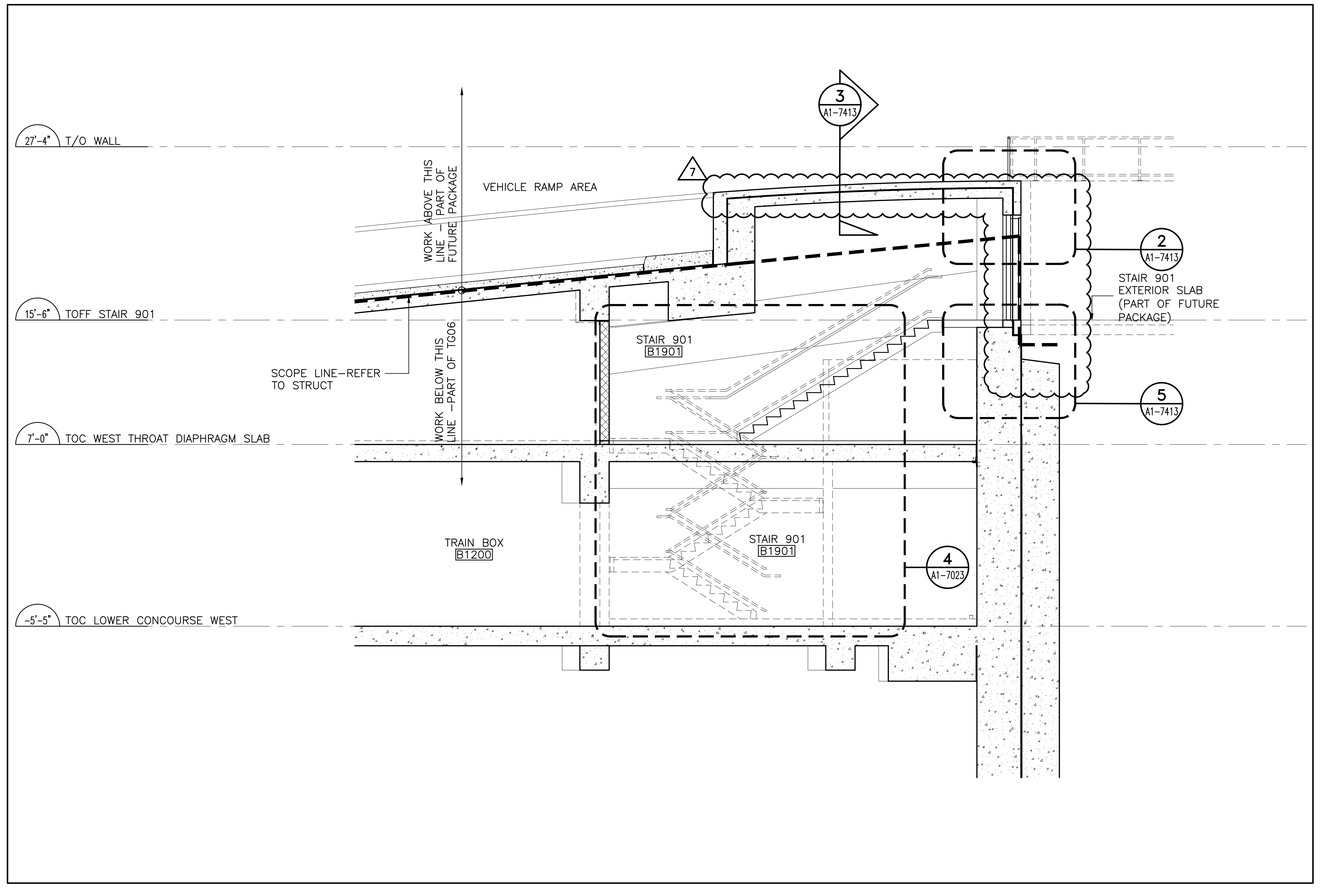
SCALE IN FEET



C A1-7404 SECTION – VEHICLE AND BIKE RAMP
SCALE: 1/4" = 1'-0"

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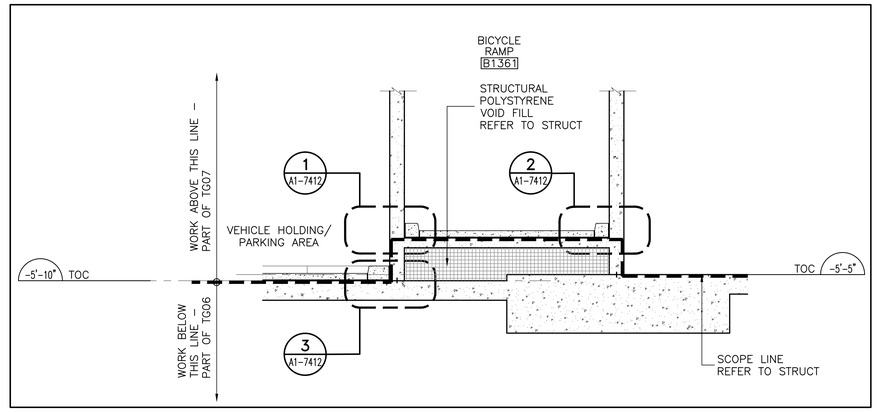
SCALE IN FEET



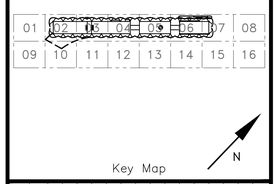
D A1-7404 SECTION– BIKE RAMP
SCALE: 1/4" = 1'-0"

0 2 4 8 12
SCALE IN FEET

NOTE: WATERPROOFING, DRAINAGE BOARD, PROTECTION BOARD, AND FLASHING ARE NOT PART OF TG06 AND TG07.

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	08/30/12	ISSUED FOR CONSTRUCTION – BELOW GRADE PACKAGE	GM
2	10/19/12	ISSUED FOR BID – SUPERSTRUCTURE	GM
3	12/07/12	ISSUED FOR BID – SUPERSTRUCTURE – ADDENDUM #3	GM
4	02/19/13	ISSUED FOR CONSTRUCTION	GM
5	09/20/13	PER ASI No. 0106	GM
6	09/23/13	ISSUED FOR BID	GM
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9	03/31/14	ISSUED FOR CONSTRUCTION	GM
10	06/20/14	ISSUED FOR BID – ADDENDUM #4	GM
11	12/16/14	PER ASI No. 0138	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
VEHICLE & BICYCLE RAMP SECTIONS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21599
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: 1/4" = 1'-0"	SIZE: E / FACILITY NO. 140 / REVISION 7
SHEET NUMBER: SKA-4351	SEQUENCE NUMBER: ___ of ___

BASED ON SHEET A1-7404

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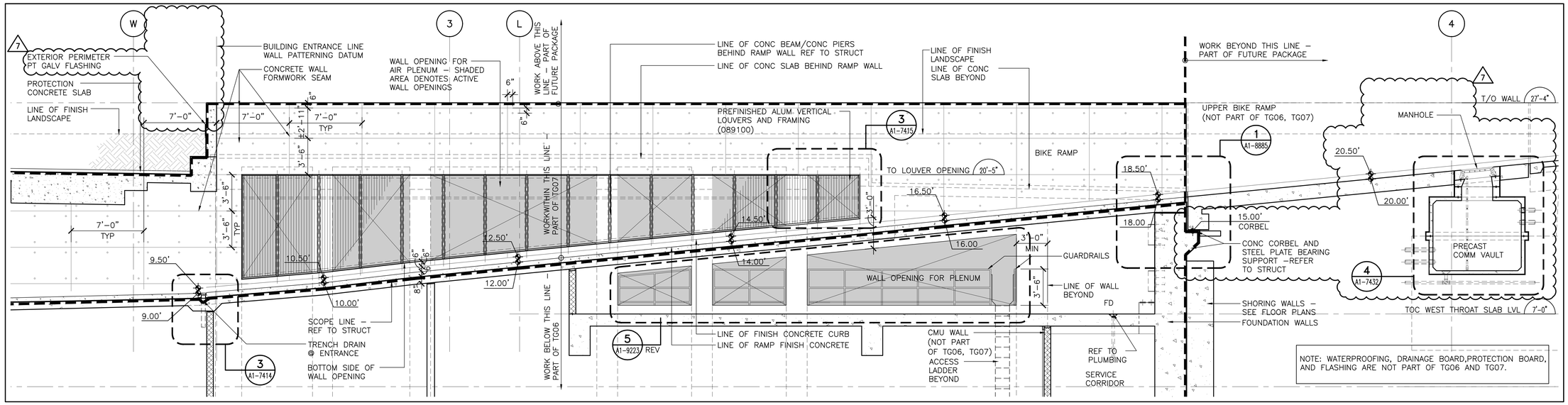
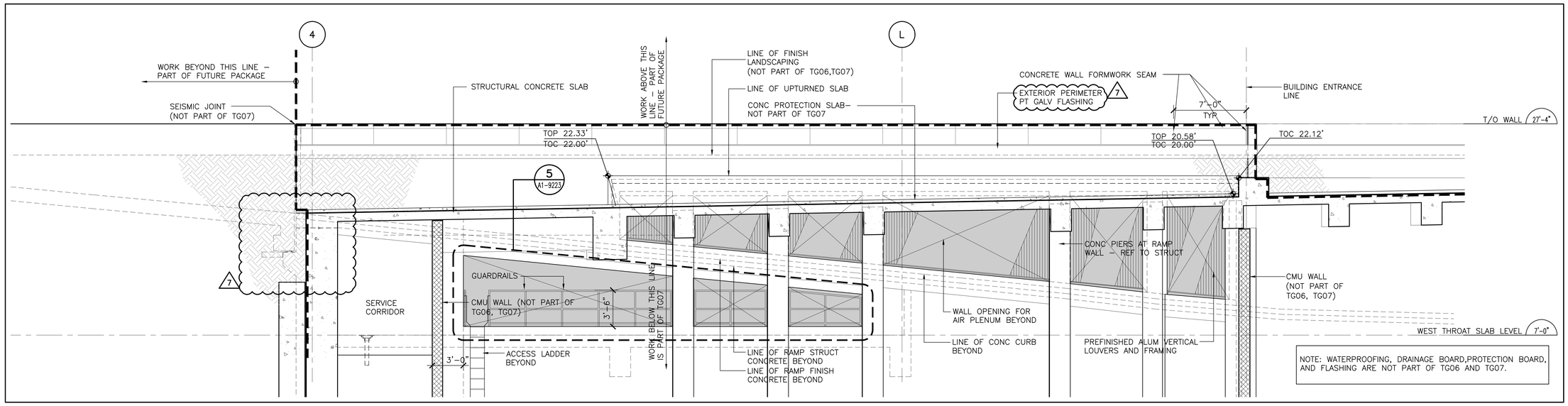


A A1-7406 ELEVATION – EAST RAMP WALL LOOKING EAST (CUT THRU BICYCLE RAMP)

SCALE: 1/4" = 1'-0"

0 2 4 8 12 SCALE IN FEET



B A1-7406 ELEVATION – EAST RAMP WALL (CUT ADJACENT TO GRID W) LOOKING WEST

SCALE: 1/4" = 1'-0"

0 2 4 8 12 SCALE IN FEET

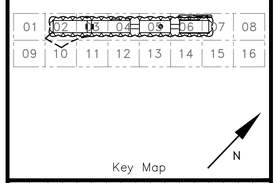
Transbay Transit Center

TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:

Pelli Clarke Pelli Architects

adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02/19/13	ISSUED FOR CONSTRUCTION	GM
2	09/20/13	PER ASI No. 0106	GM
3	09/23/13	ISSUED FOR BID	GM
4	12/13/13	ISSUED FOR BID – ADDENDUM #1	GM
5	01/23/14	ISSUED FOR BID	GM
6	02/21/14	ISSUED FOR BID – ADDENDUM #1	GM
7	03/31/14	ISSUED FOR CONSTRUCTION	GM
8	06/20/14	ISSUED FOR BID – ADDENDUM #4	GM
9	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE TRANSBAY TRANSIT CENTER PROGRAM TRANSBAY TRANSIT CENTER SAN FRANCISCO, CA

SHEET TITLE VEHICLE & BICYCLE RAMP EAST WALL ELEVATIONS

ARCHITECT/ENGINEER SEAL

LICENSED ARCHITECT GEORGE RUSSELL METZGER NO. C21830 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED: PRINCIPAL ARCHITECT G. METZGER

APPROVED: PROJECT MANAGER S. ROTT

APPROVED: PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: 1/4" = 1'-0"	SIZE E / FACILITY NO. 140 / REVISION 7
SHEET NUMBER SKA-4352	SEQUENCE NUMBER ___ of ___

BASED ON SHEET A1-7406

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.

Dec 11, 2014 - 4:53pm P:\Projects\0803-00\01 Project\01 CAD\01 DWG\02 Sheets\A1-7406.dwg

XREFS: TJPA-TB 34x44E.dwg\ XAELEVB110.dwg\ XAELEVB101.dwg\ XAGRID.dwg\ xdetg0508.dwg\ GM-Stamp.dwg

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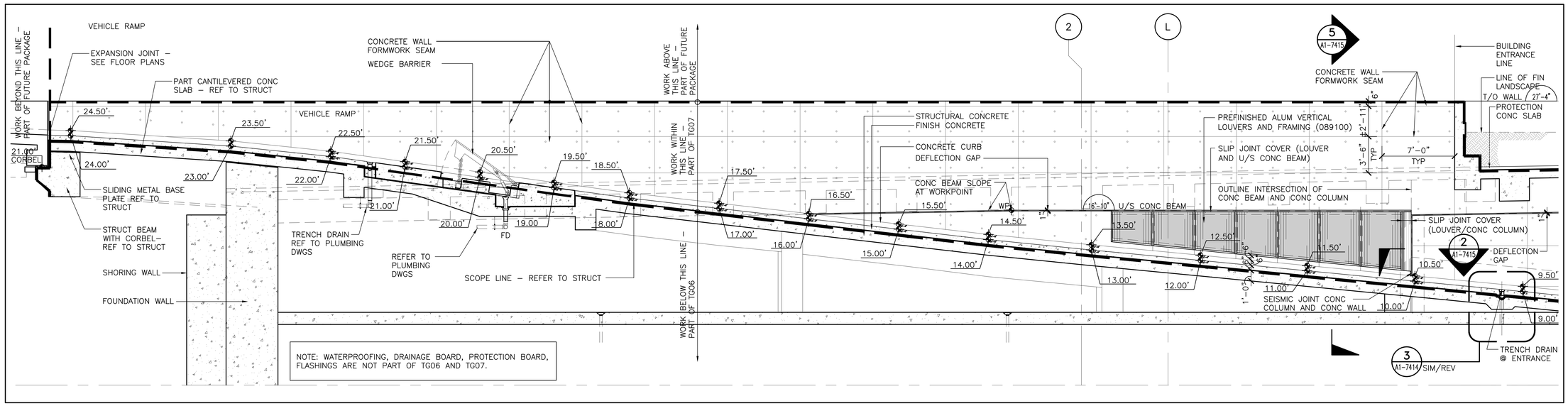

A A1-7407 DEVELOPED ELEVATION – WEST VEHICLE RAMP WALL
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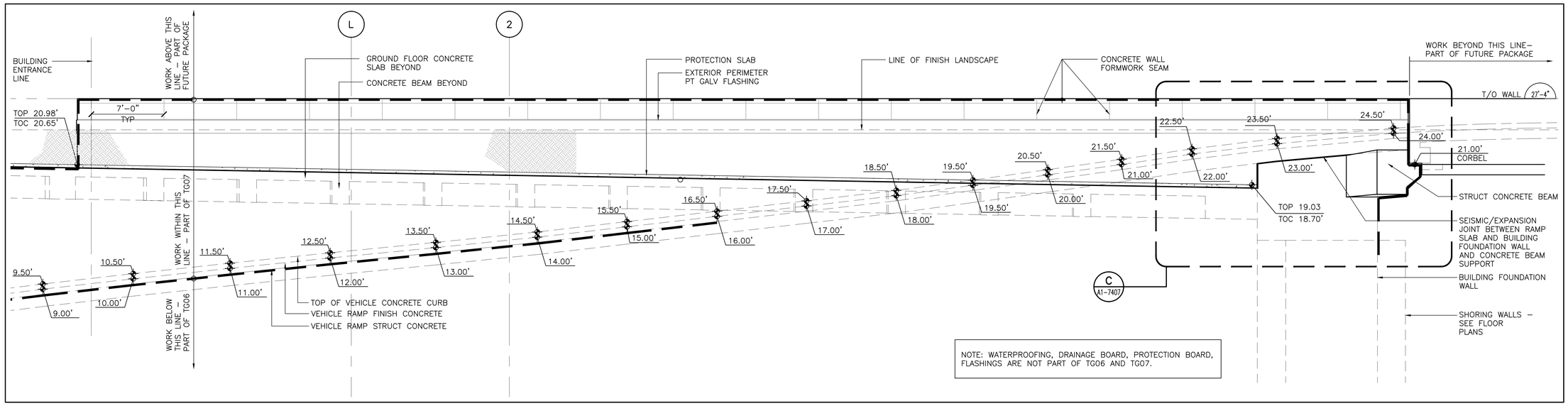
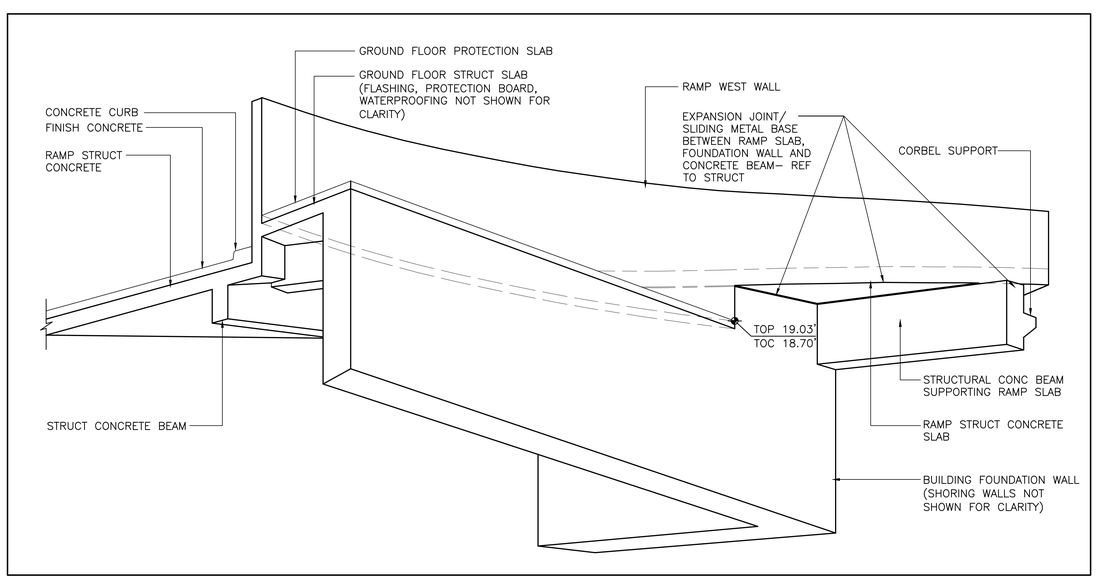
SCALE IN FEET



B A1-7407 ELEVATION – (RAMP) WEST WALL LOOKING EAST
SCALE: 1/4" = 1'-0"

0 2 4 8 12
SCALE IN FEET



C A1-7407 3D VIEW – VEHICLE RAMP @ GROUND FLOOR
SCALE: NOT TO SCALE

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	02/19/13	ISSUED FOR CONSTRUCTION	GM
2	09/20/13	PER ASI No. 0106	GM
3	09/23/13	ISSUED FOR BID	GM
4	12/13/13	ISSUED FOR BID – ADDENDUM #1	GM
5	01/23/14	ISSUED FOR BID	GM
6	03/31/14	ISSUED FOR CONSTRUCTION	GM
7	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: VEHICLE & BICYCLE RAMP WEST WALL ELEVATIONS

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED: PRINCIPAL ARCHITECT G. METZGER
APPROVED: PROJECT MANAGER S. ROTT
APPROVED: PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
P. MACPHAIL	W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014

SCALE:	SIZE	FACILITY NO.	REVISION
AS NOTED	E	140	5

SHEET NUMBER: SKA-4353
SEQUENCE NUMBER: ___ of ___

BASED ON SHEET A1-7407

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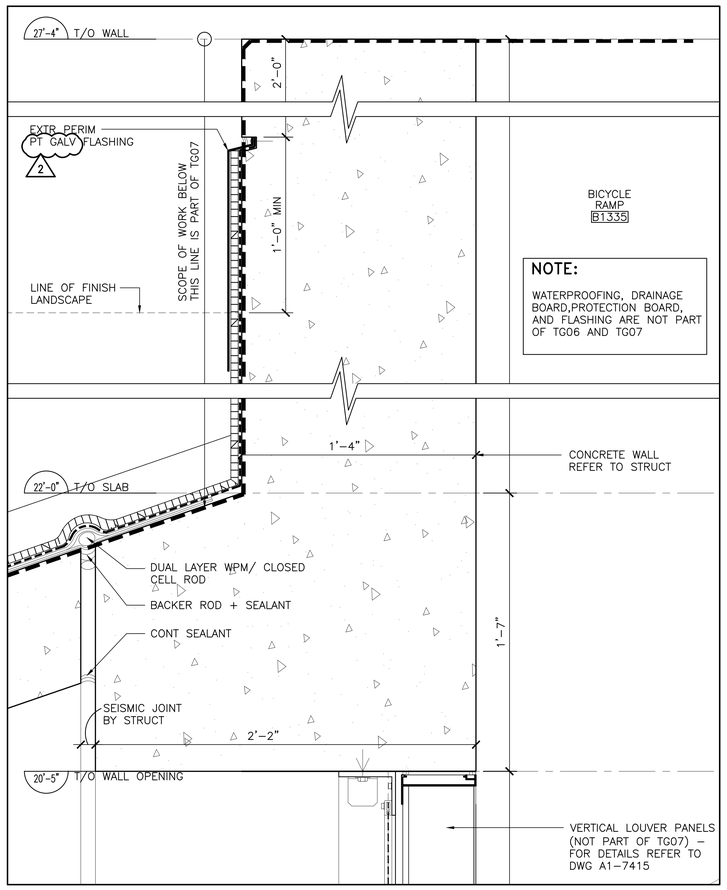

1 A1-7404 SECTION DETAIL–WALL AIR PLENUM
SCALE: 3" = 1'-0"

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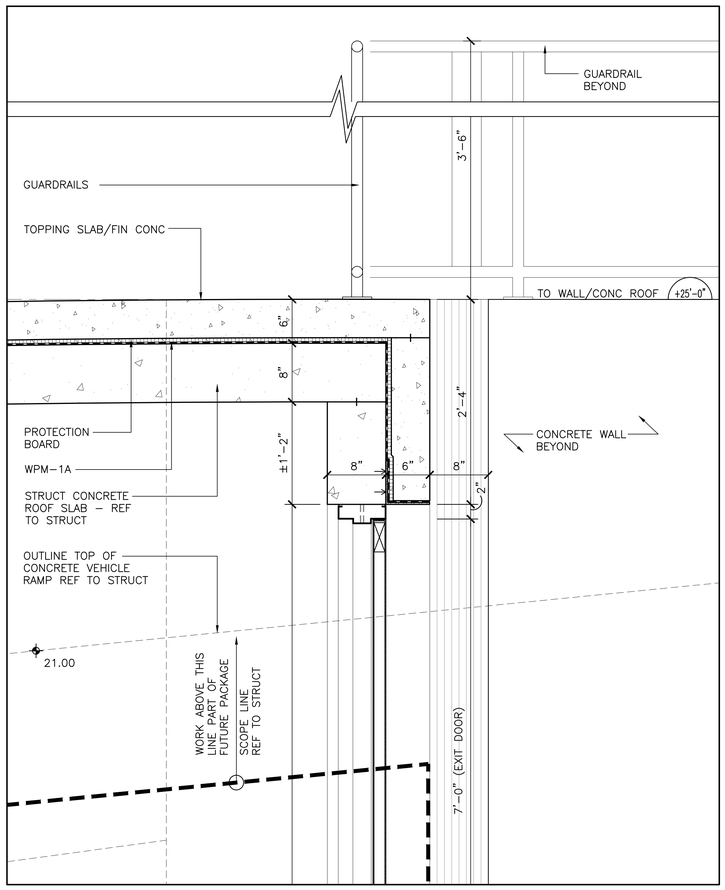
SCALE IN FEET



2 A1-7404 SECTION DETAIL–STAIR 901
SCALE: 1-1/2" = 1'-0"

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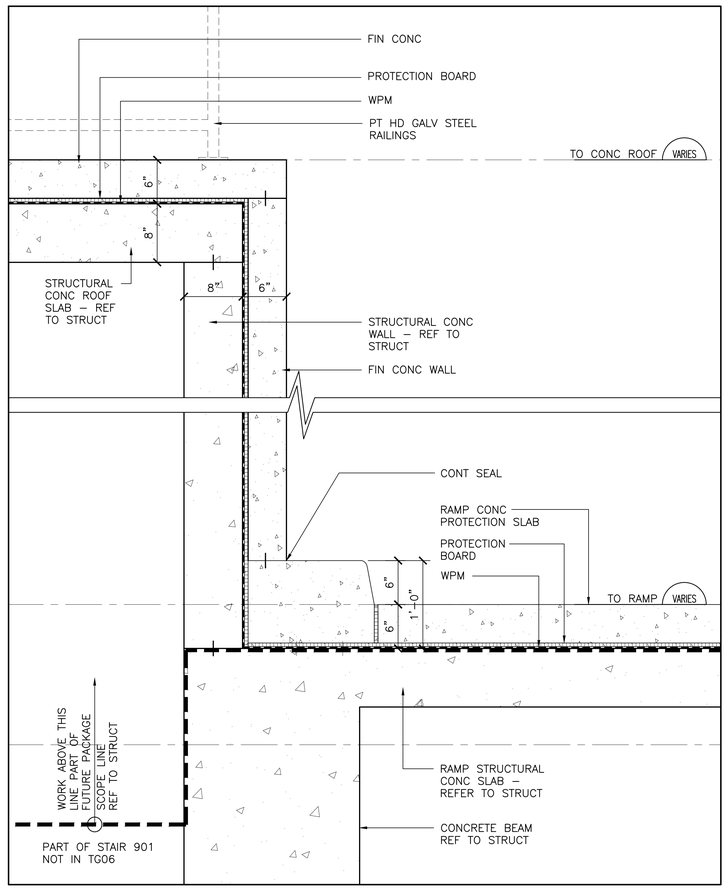
SCALE IN FEET



3 A1-7413 SECTION DETAIL–STAIR 901
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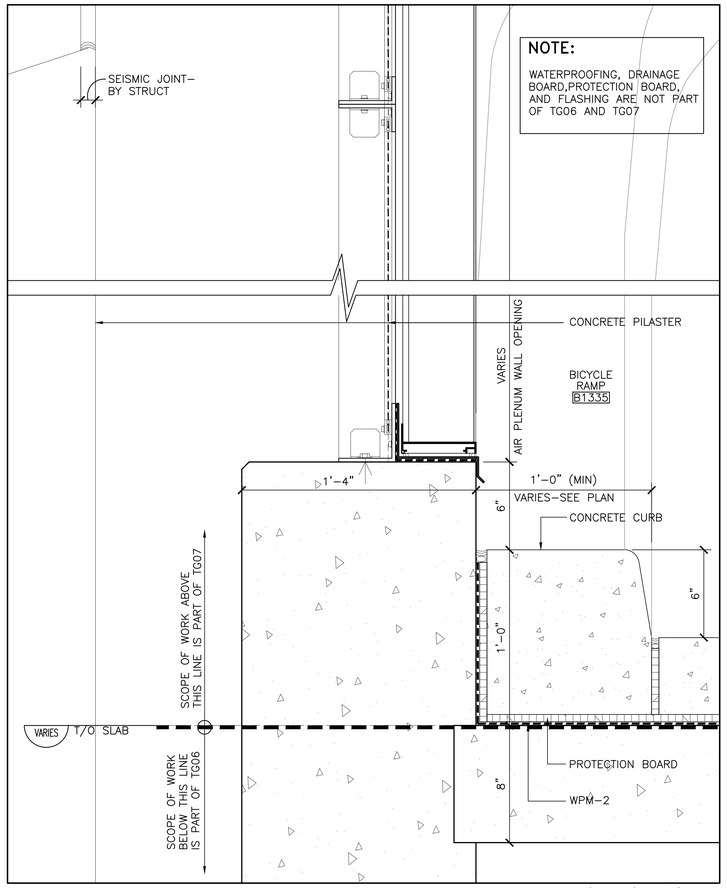
SCALE IN FEET



4 A1-7404 SECTION DETAIL–WALL AIR PLENUM
SCALE: 3" = 1'-0"

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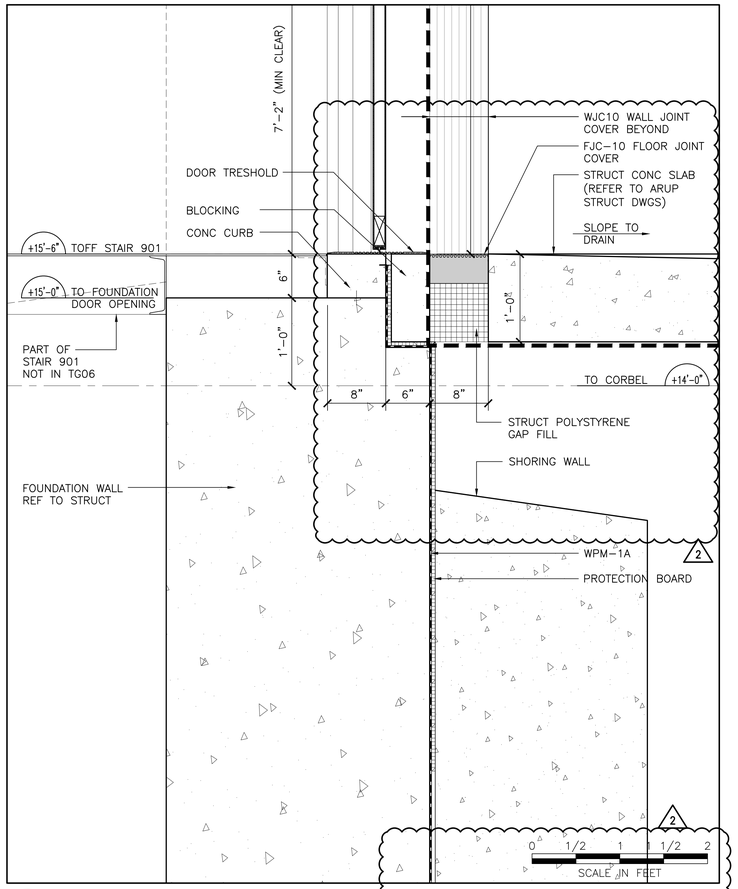
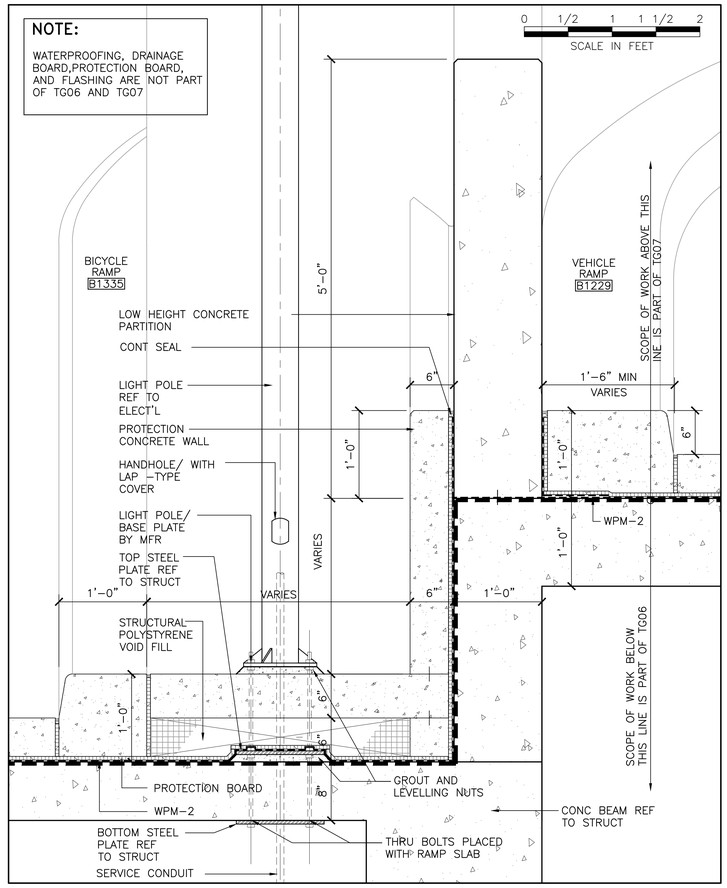
SCALE IN FEET



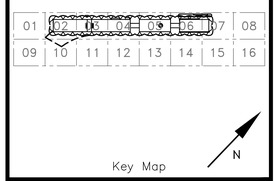
5 A1-7404 SECTION DETAIL–STAIR 901/STAIR 901A
SCALE: 1-1/2" = 1'-0"



6 A1-7404 SECTION DETAIL– TYP LOW HEIGHT PARTITION WALL
SCALE: 1-1/2" = 1'-0"

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	06/20/14	ISSUED FOR BID – ADDENDUM #4	GM
3	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
VEHICLE & BICYCLE RAMP AREA
SECTION DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21599
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: AS NOTED	SIZE: E / FACILITY NO.: 140 / REVISION: 2
SHEET NUMBER: SKA-4354	SEQUENCE NUMBER: __ of __

BASED ON SHEET A1-7413

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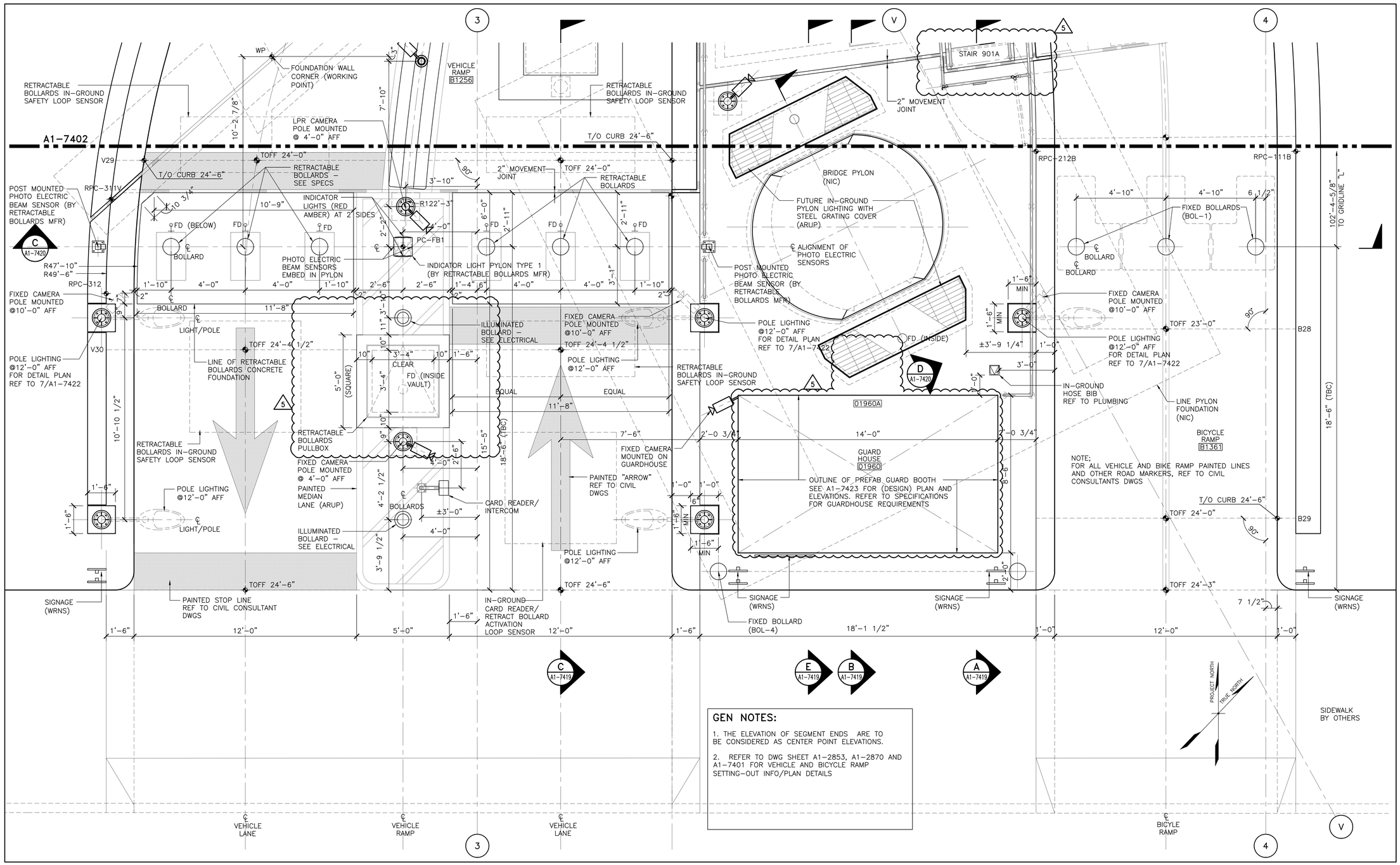

GEN NOTES:

1. THE ELEVATION OF SEGMENT ENDS ARE TO BE CONSIDERED AS CENTER POINT ELEVATIONS.
2. REFER TO DWG SHEET A1-2853, A1-2870 AND A1-7401 FOR VEHICLE AND BICYCLE RAMP SETTING-OUT INFO/PLAN DETAILS

1 (A1-2310) RAMP PARTIAL PLAN DETAIL
SCALE: 1/2" = 1'-0"

0 1 2 4 6
SCALE IN FEET

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Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	04/23/14	ISSUED FOR BID – ADDENDUM #3	GM
3	06/20/14	ISSUED FOR BID – ADDENDUM #4	GM
4	07/18/14	PER ASI No. 0121	GM
5	09/12/14	PER ASI No. 0127	GM
6	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: VEHICLE AND BICYCLE UPPER RAMP
GROUND LEVEL PARTIAL PLAN

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21630
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED: PRINCIPAL ARCHITECT G. METZGER
APPROVED: PROJECT MANAGER S. ROTT
APPROVED: PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: 1/2" = 1'-0"	SIZE: E; FACILITY NO.: 140; REVISION: 5
SHEET NUMBER: SKA-4355	SEQUENCE NUMBER: __ of __

BASED ON SHEET A1-7418

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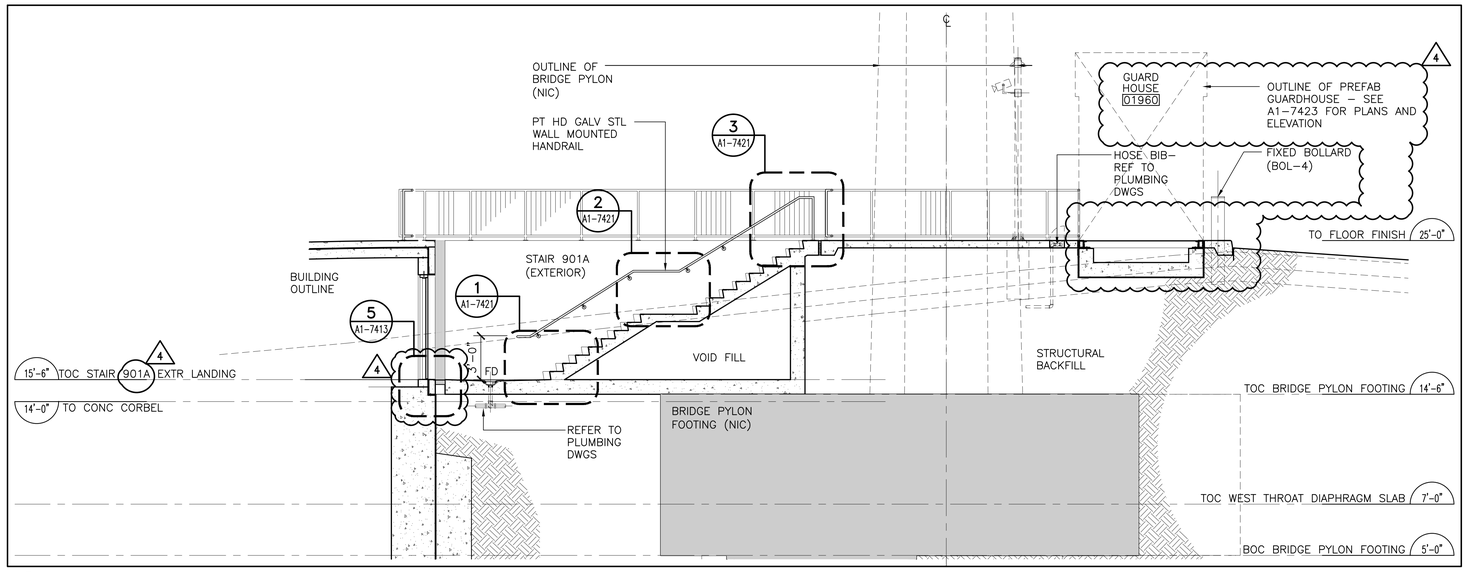

A A1–7402 RAMP PARTIAL SECTION
SCALE: 1/4" = 1'–0"
A1–7418

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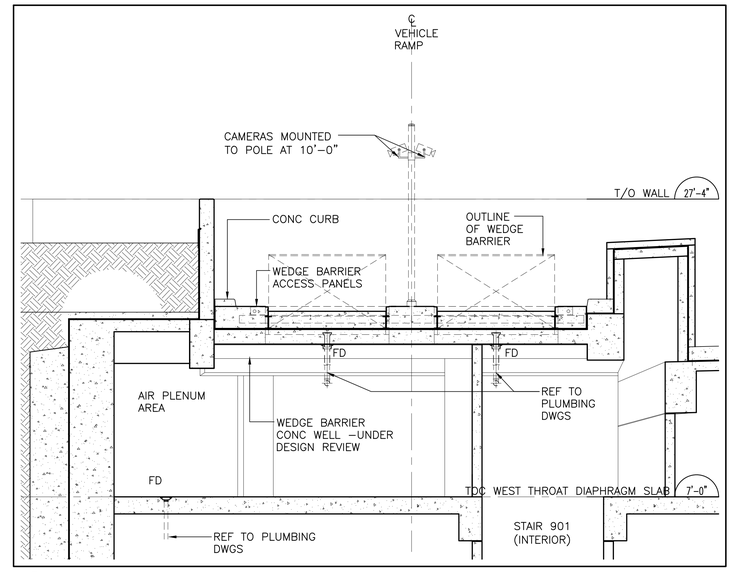
SCALE IN FEET



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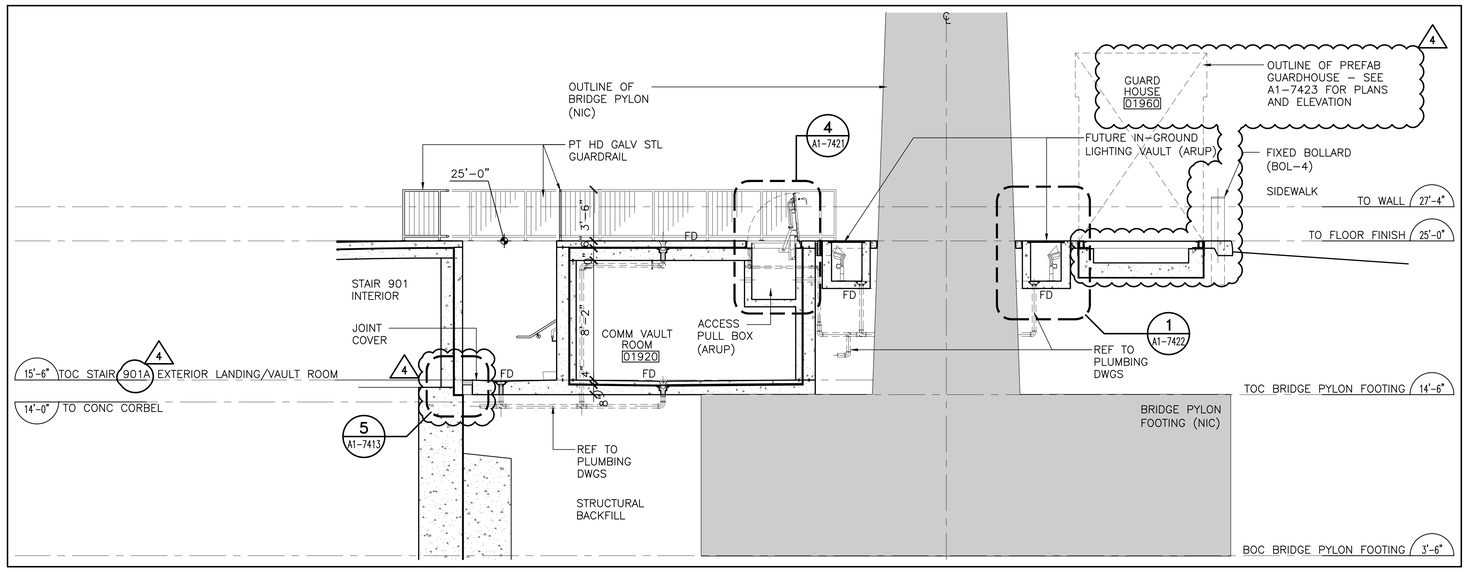
SCALE IN FEET



B A1–7402 RAMP PARTIAL SECTION
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A1–7418

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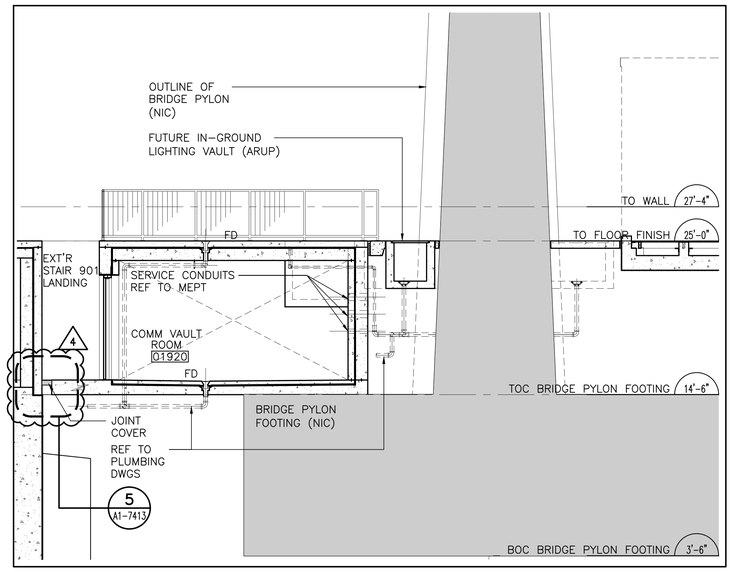
SCALE IN FEET



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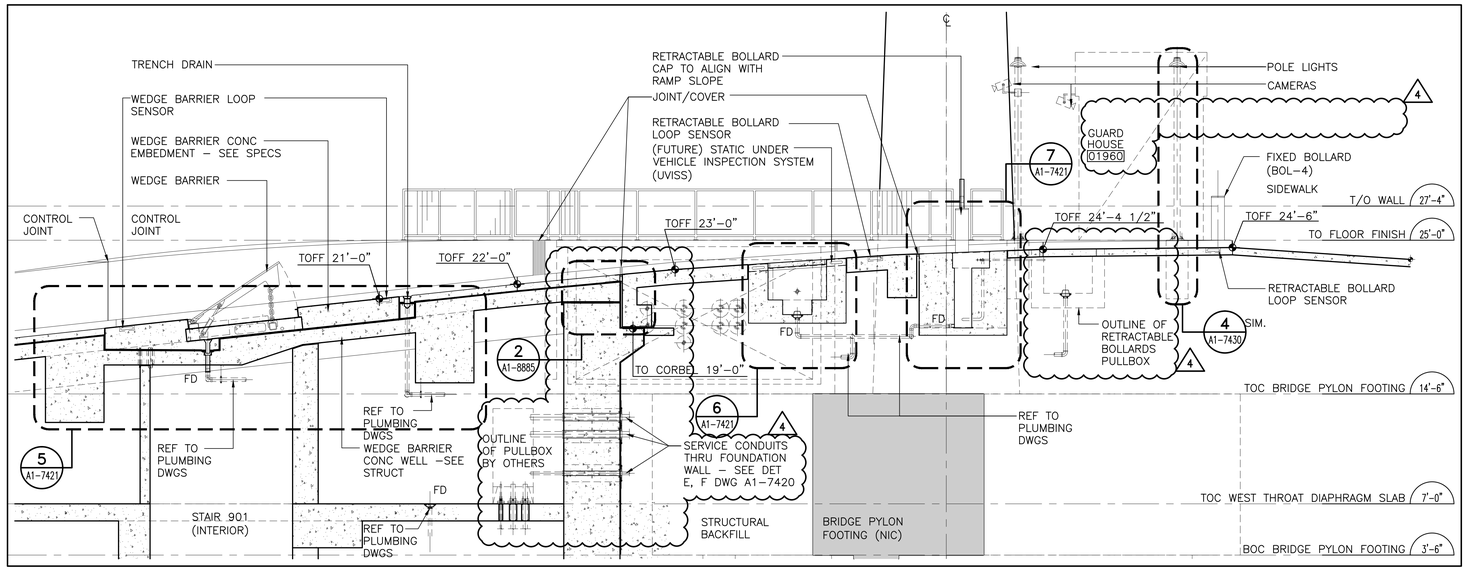
SCALE IN FEET



C A1–7418 RAMP PARTIAL SECTION
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A1–7418

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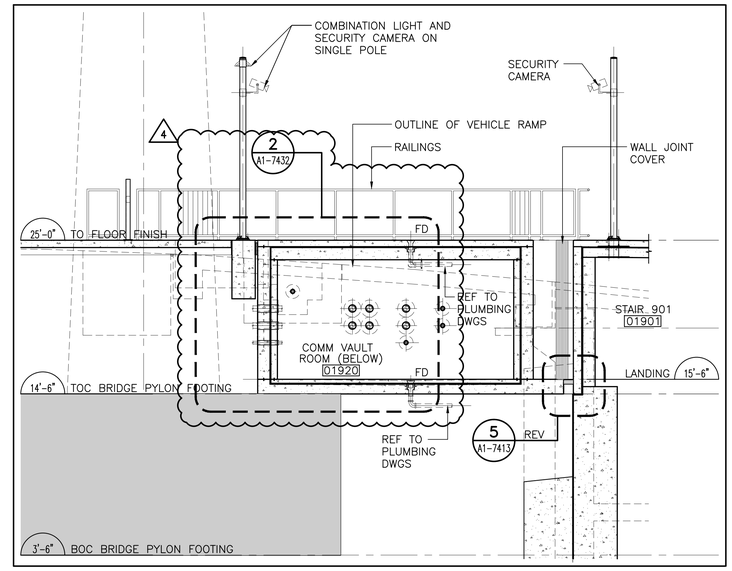

F A1–7402 RAMP PARTIAL SECTION
SCALE: 1/4" = 1'–0"

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SCALE IN FEET

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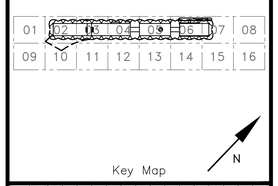
Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	06/20/14	ISSUED FOR BID – ADDENDUM #4	GM
3	07/18/14	PER ASI No. 0121	GM
4	09/12/14	PER ASI No. 0127	GM
5	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08–04–CMGC–000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
VEHICLE & BICYCLE (CIVIL) RAMP
PARTIAL SECTIONS

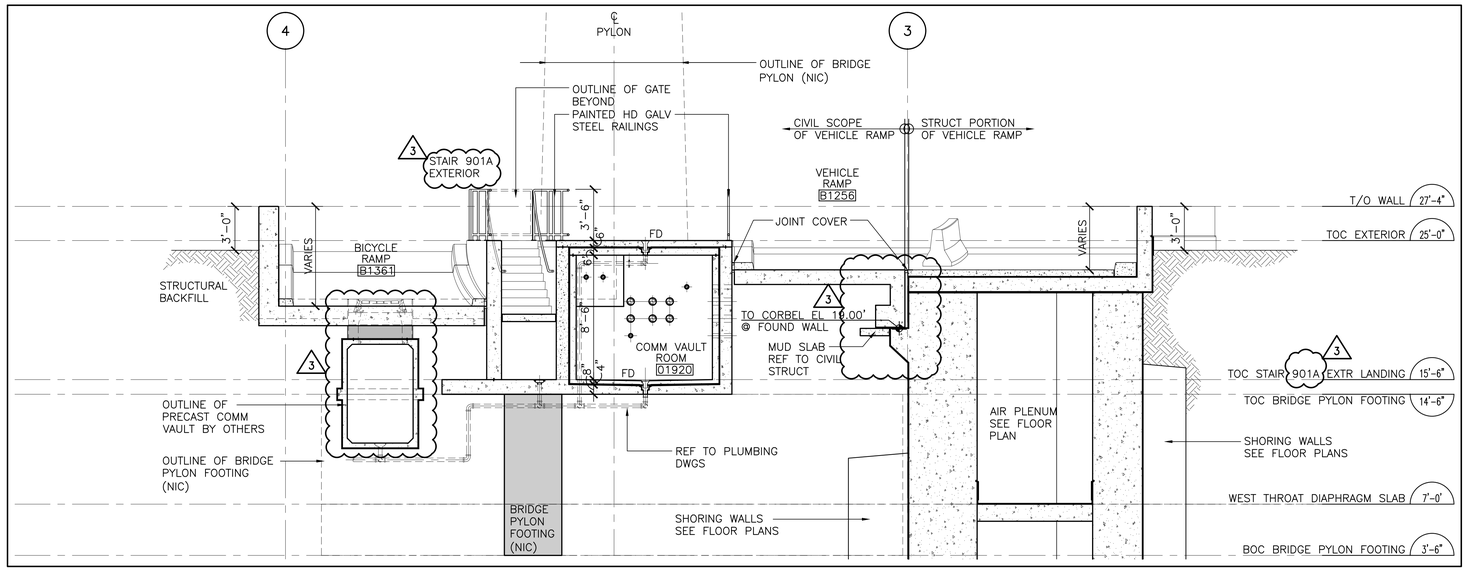
ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT GEORGE RUSSELL METZGER NO. C21630 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY	
DRAWN BY: B. LUGOS	DATE: 12/16/2014	
SCALE: 1/4" = 1'–0"	SIZE: E	FACILITY NO. 140 / REVISION 4

SHEET NUMBER SKA-4356
SEQUENCE NUMBER __ of __

BASED ON SHEET A1-7419



A A1-7402 RAMP PARTIAL SECTION
SCALE: 1/4" = 1'-0"
A1-7418

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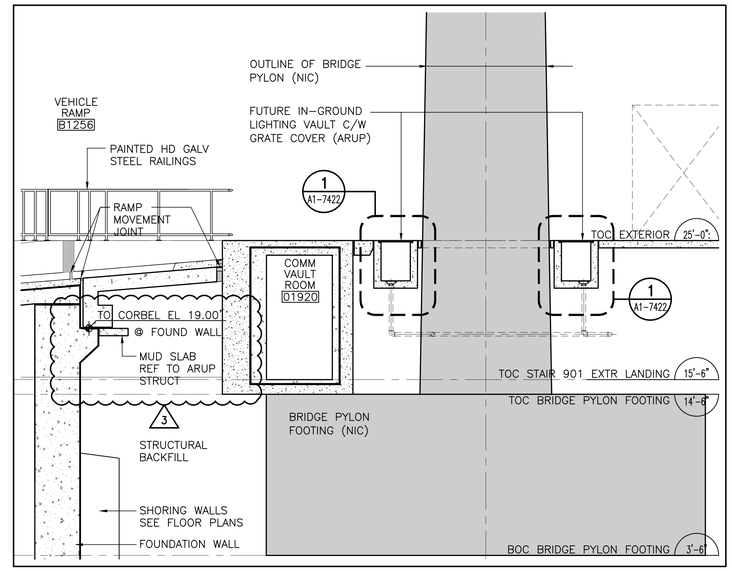
SCALE IN FEET



D A1-7402 RAMP PARTIAL SECTION
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A1-7418

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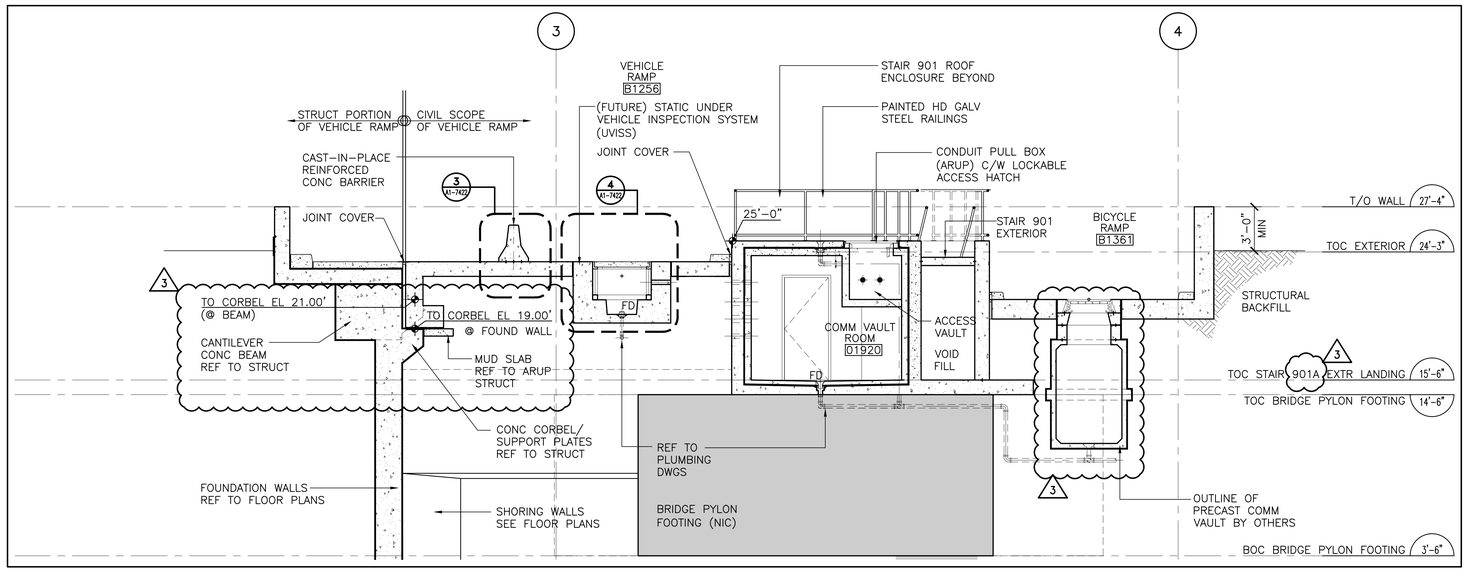
SCALE IN FEET



B A1-7402 RAMP PARTIAL SECTION
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A1-7418

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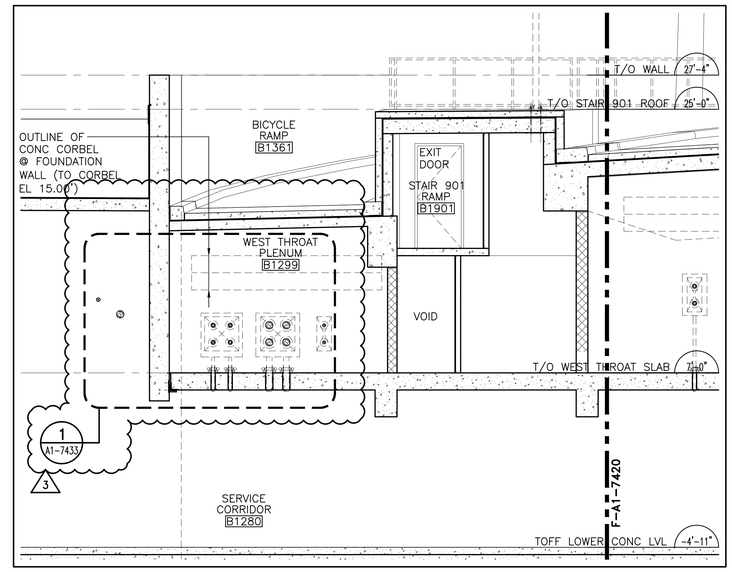
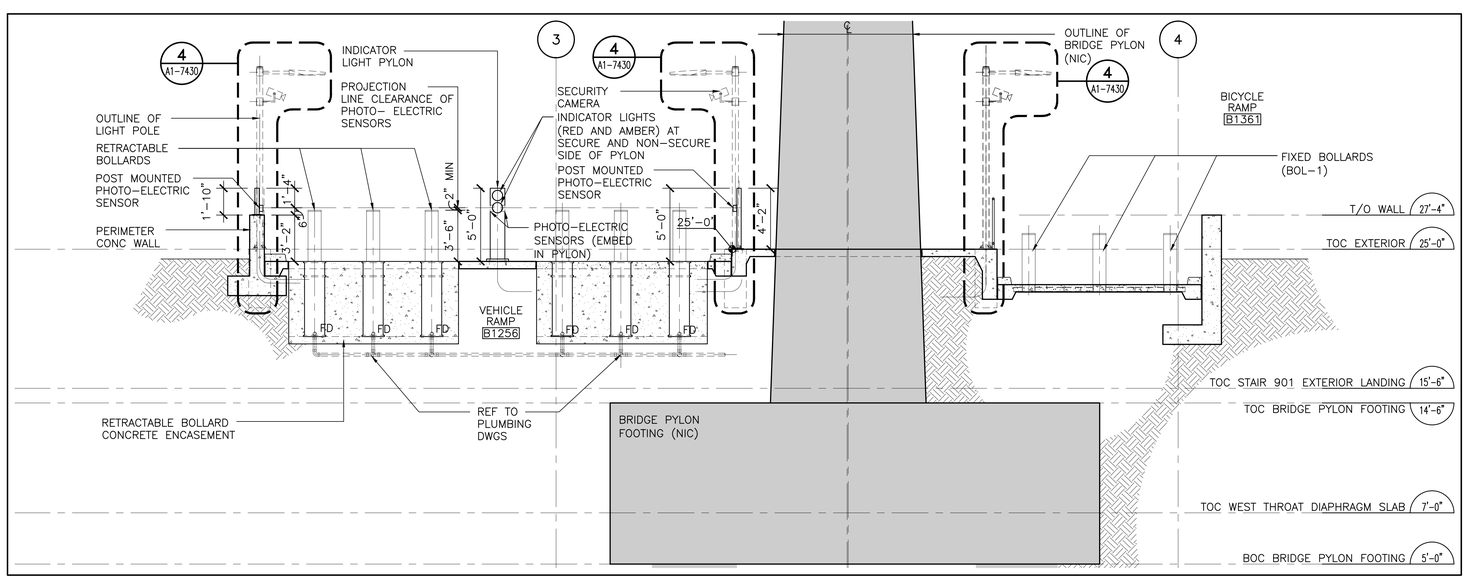
SCALE IN FEET



E A1-7402 RAMP PARTIAL SECTION
SCALE: 1/4" = 1'-0"
A1-7418

0 2 4 8 12
SCALE IN FEET



C A1-7418 RAMP PARTIAL SECTION
SCALE: 1/4" = 1'-0"

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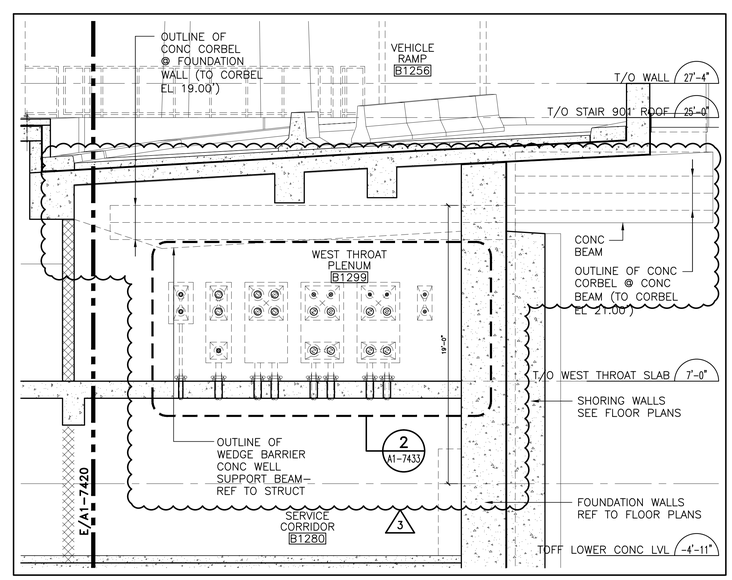
SCALE IN FEET

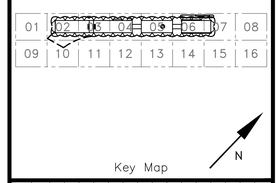


F A1-7402 RAMP PARTIAL SECTION
SCALE: 1/4" = 1'-0"

0 2 4 8 12
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	06/20/14	ISSUED FOR BID – ADDENDUM #4	GM
3	09/12/14	PER ASI No. 0127	GM
4	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
VEHICLE & BICYCLE (CIVIL) RAMP
PARTIAL SECTIONS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT GEORGE RUSSELL WEIER NO. C21032 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
P. MACPHAIL	W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014

SCALE:	SIZE	FACILITY NO.	REVISION
1/4" = 1'-0"	E	140	3

SHEET NUMBER
SKA-4357

SEQUENCE NUMBER
___ of ___

BASED ON SHEET A1-7420

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Dec 11, 2014 - 4:56pm P:\Projects\0803-00\01 Project\01 CADD\01 DWG\02 Sheets\A1-7420.dwg

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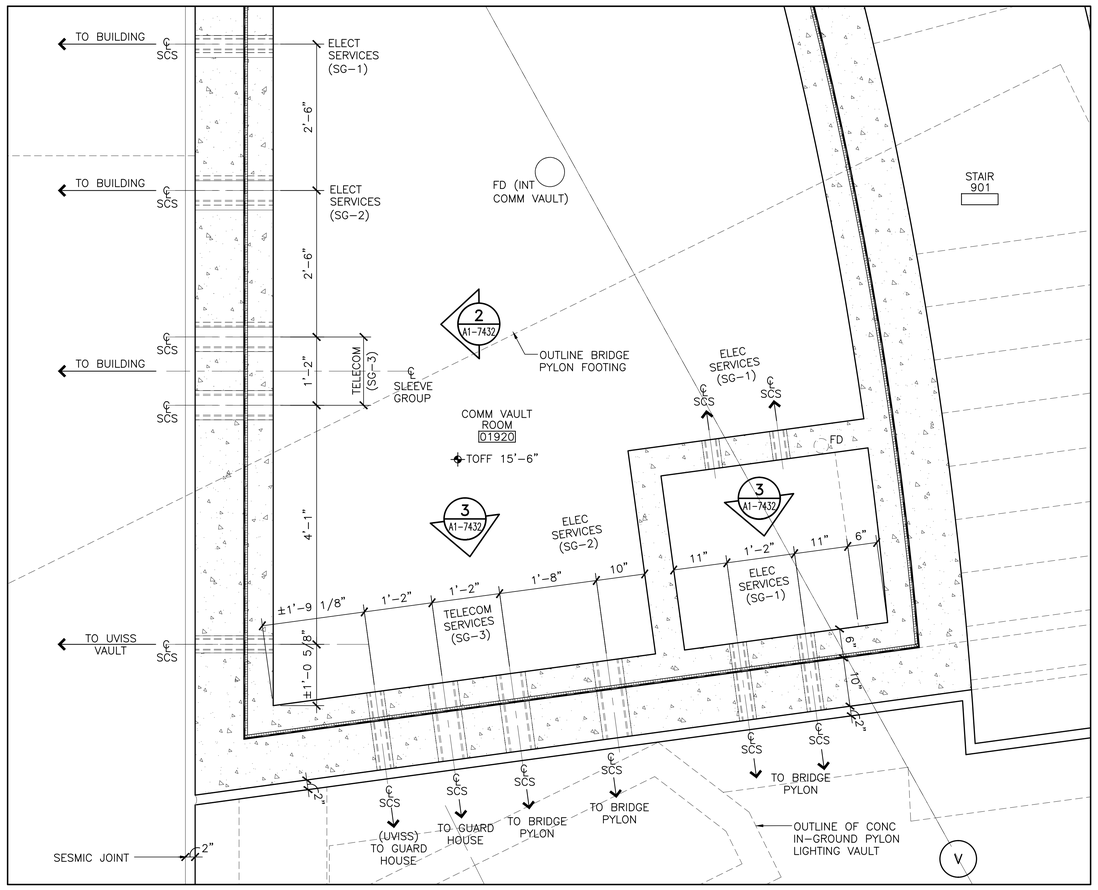
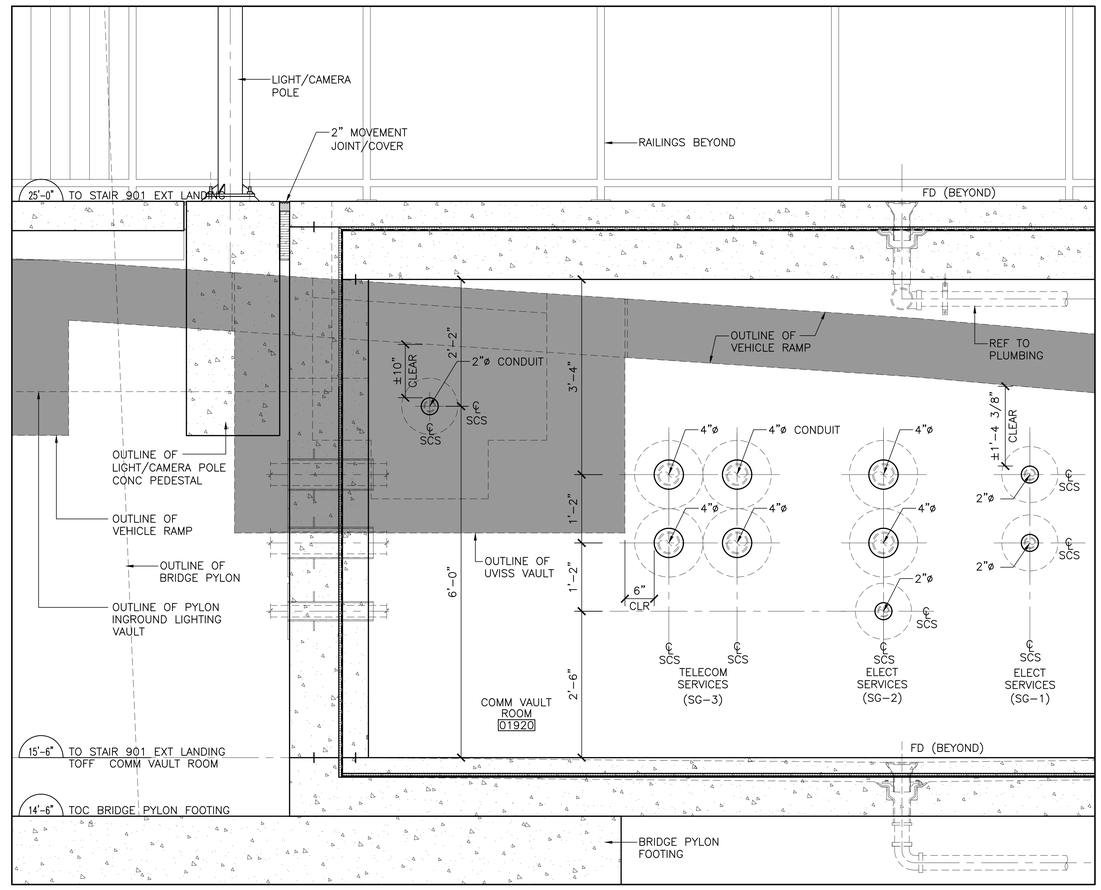
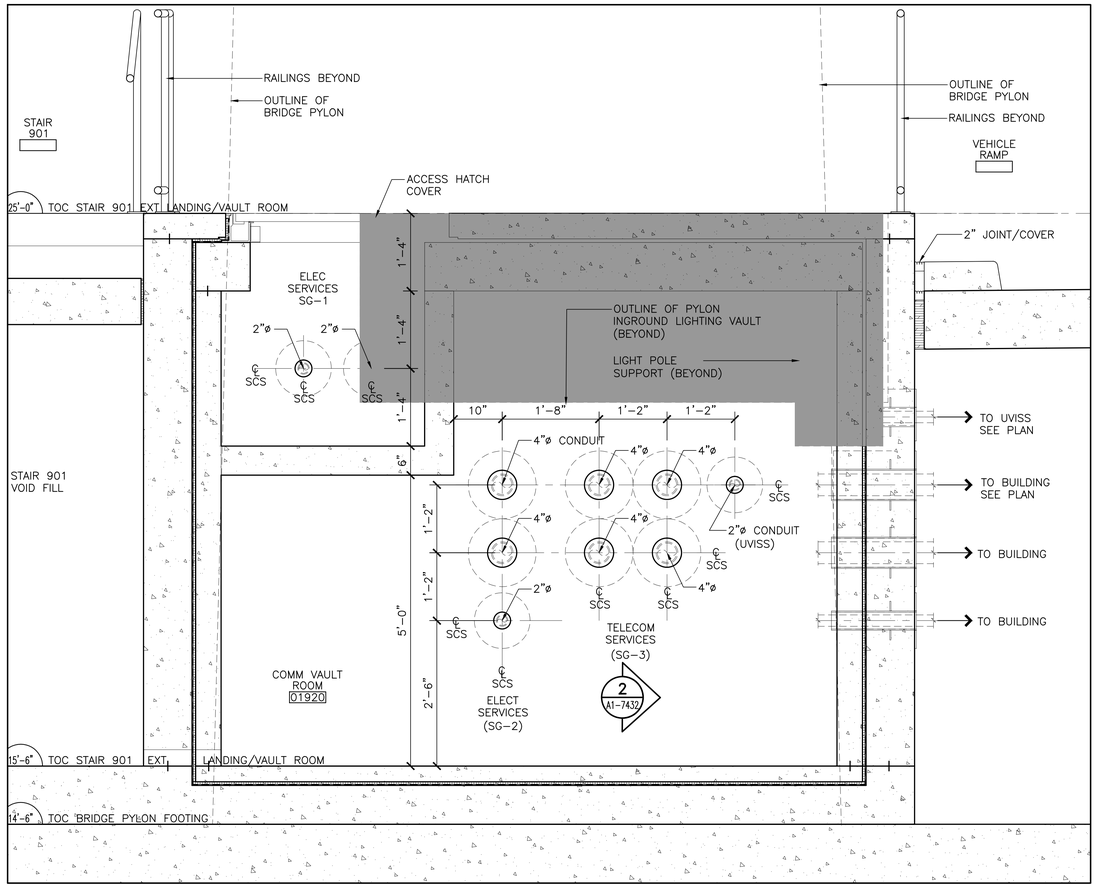


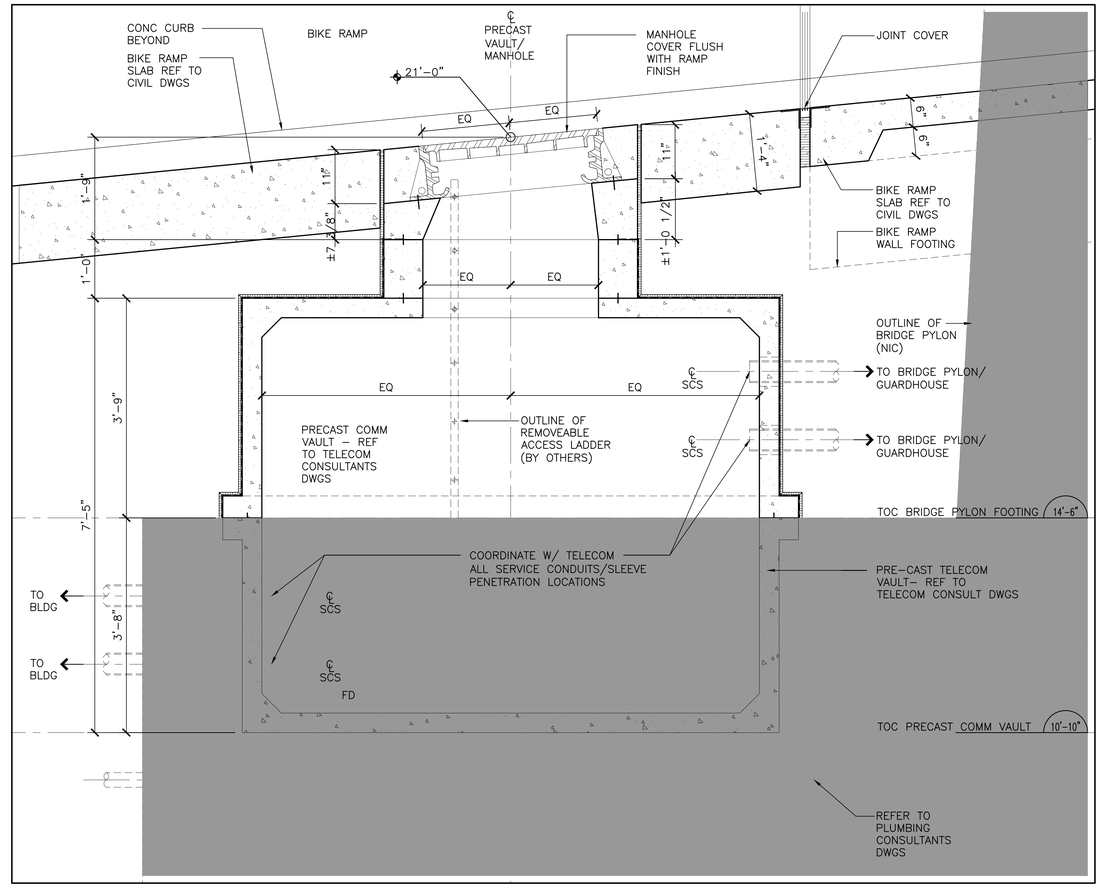
1 A1-7401 DETAIL PLAN – RAMP AREA COMM VAULT ROOM
SCALE: 1" = 1'-0"



2 A1-7401 DETAIL – RAMP AREA COMM VAULT ROOM
SCALE: 1" = 1'-0"
A1-7419



3 A1-7431 DETAIL – RAMP AREA COMM VAULT ROOM
SCALE: 1" = 1'-0"
A1-7401, A1-7402



4 A1-7406 DETAIL – RAMP AREA PRECAST COMM VAULT
SCALE: 1" = 1'-0"

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: VEHICLE & BICYCLE (CIVIL) RAMP MISCELLANEOUS DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT GEORGE RUSSELL METZGER NO. C21530 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: 1" = 1'-0"	SIZE: E / FACILITY NO.: 140 / REVISION: 0
SHEET NUMBER: SKA-4358	SEQUENCE NUMBER: __ of __

BASED ON SHEET A1-7432

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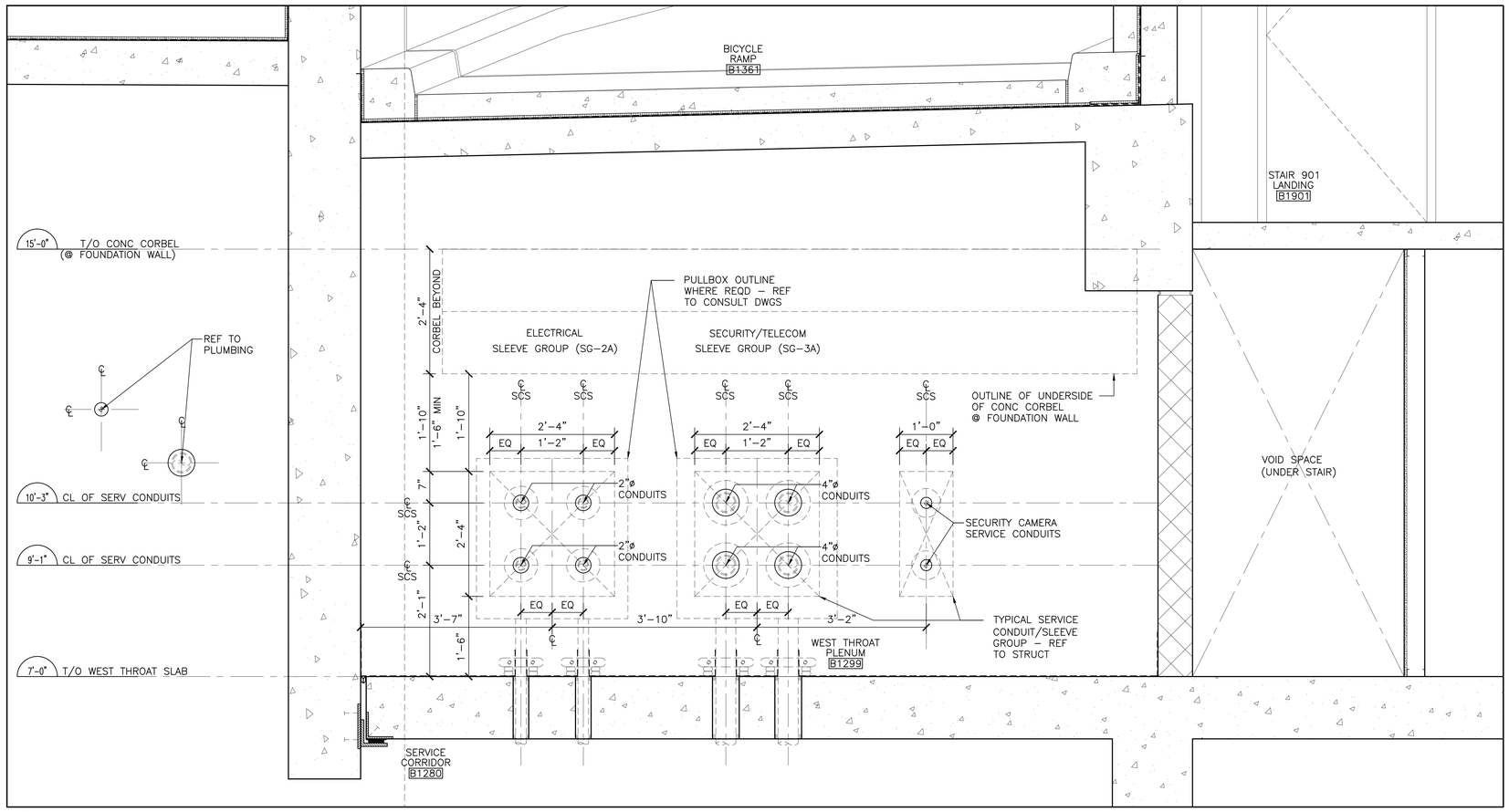
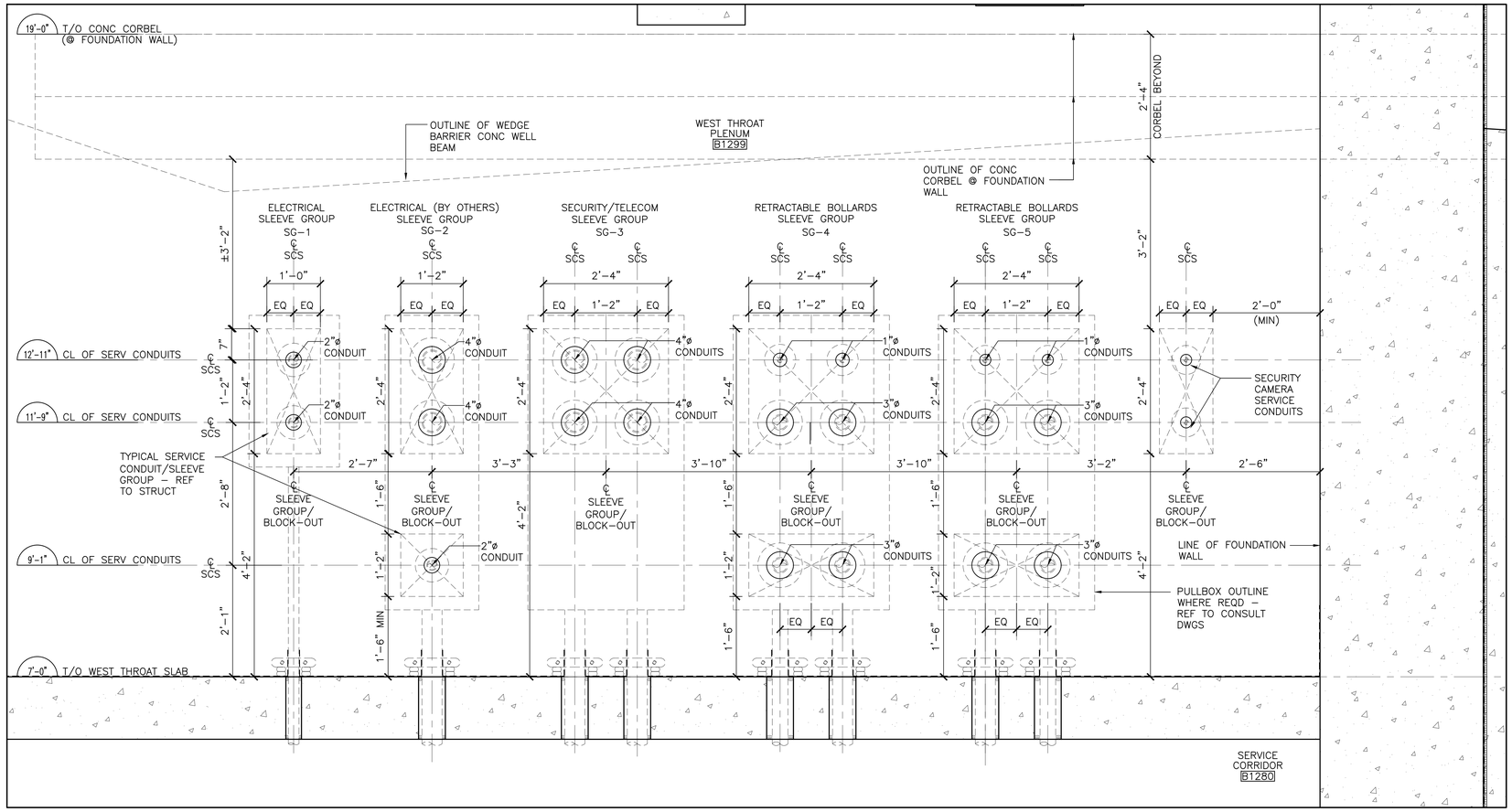


1 A1-7431 DETAIL – WEST THROAT SLAB LOOKING AT FOUNDATION WALL (BICYCLE RAMP SIDE)
SCALE: 1/4" = 1'-0"

0 1/2 1 2 3
SCALE IN FEET



2 A1-7431 DETAIL – WEST THROAT SLAB LOOKING AT FOUNDATION WALL (VEHICLE RAMP SIDE)
SCALE: 1/4" = 1'-0"

0 1/2 1 2 3
SCALE IN FEET

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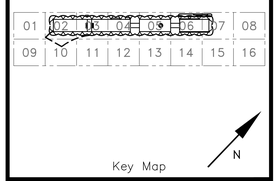
Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	12/16/14	PER ASI No. 0128	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
VEHICLE & BICYCLE (CIVIL) RAMP
MISCELLANEOUS DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21599
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY	
DRAWN BY: B. LUGOS	DATE: 12/16/2014	
SCALE: 1/4" = 1'-0"	SIZE: E	FACILITY NO.: 140 / REVISION: 0

SHEET NUMBER
SKA-4359

SEQUENCE NUMBER
__ of __

BASED ON SHEET A1-7433

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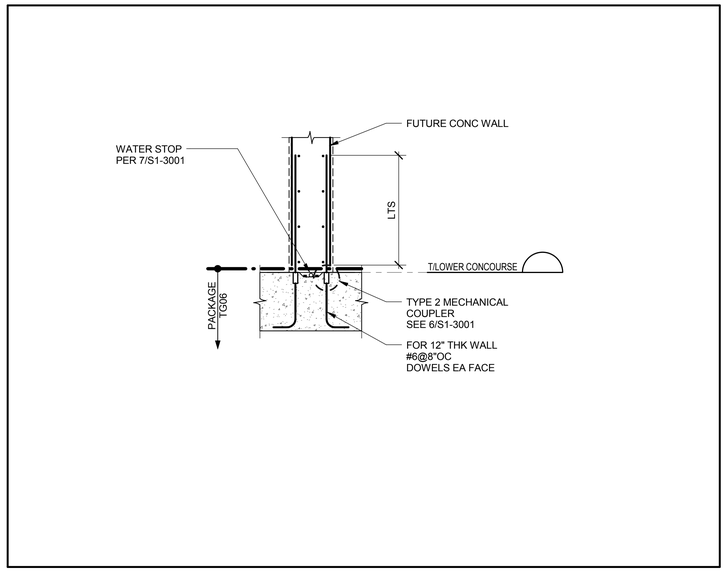
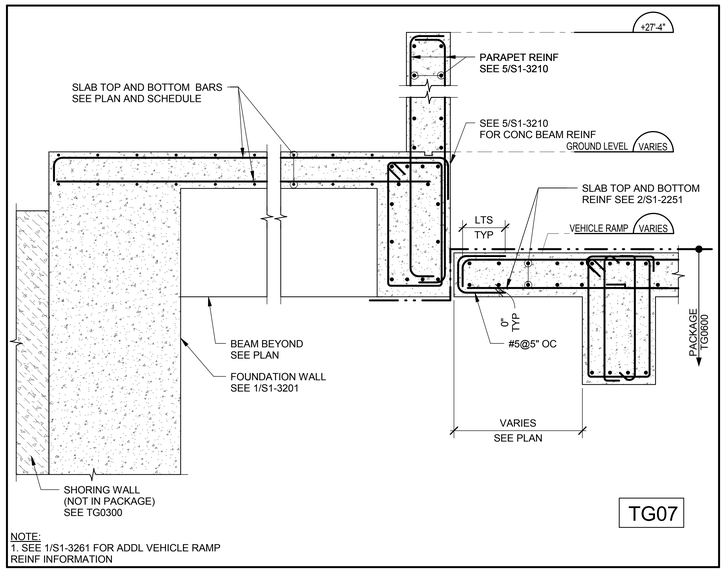


1 S1-3210 **TYPICAL FUTURE PG&E WALL**
SCALE: 3/4" = 1'-0"



2 S1-2310 **SECTION**
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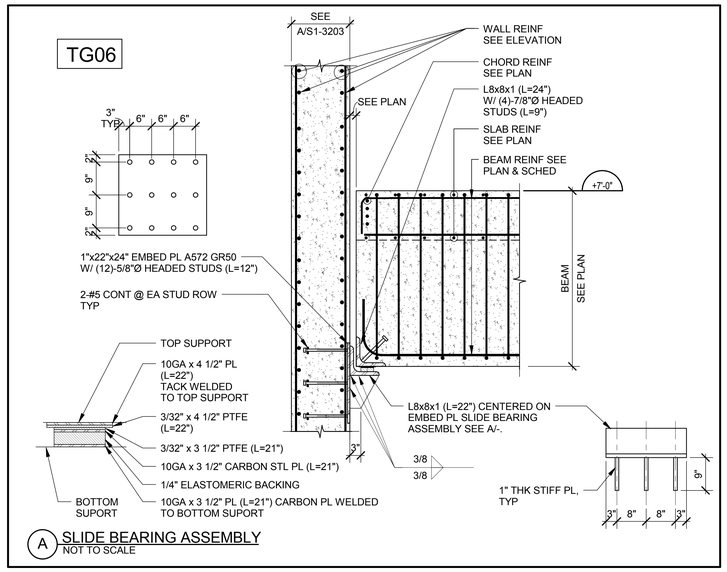

A **SLIDE BEARING ASSEMBLY**
NOT TO SCALE

3 S1-2250 **SECTION**
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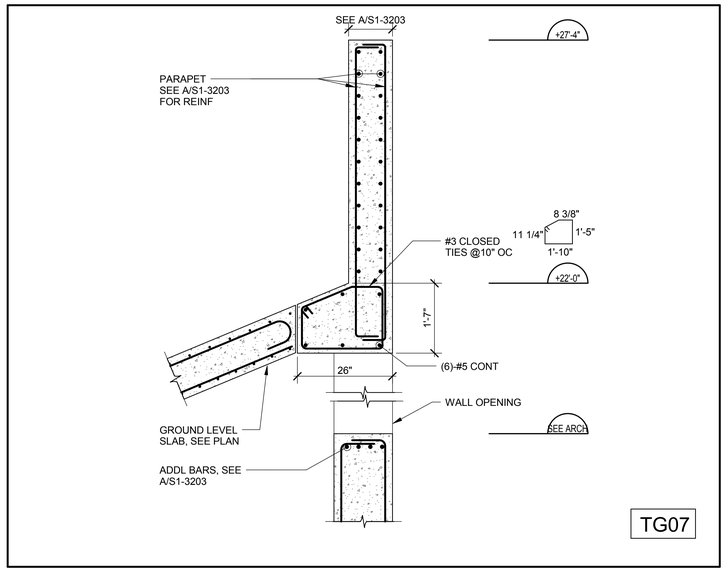

4 S1-3203 **SECTION**
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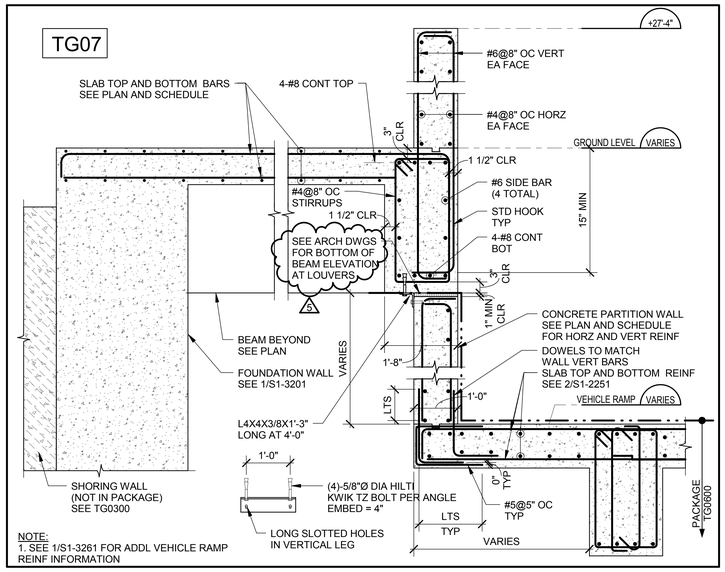
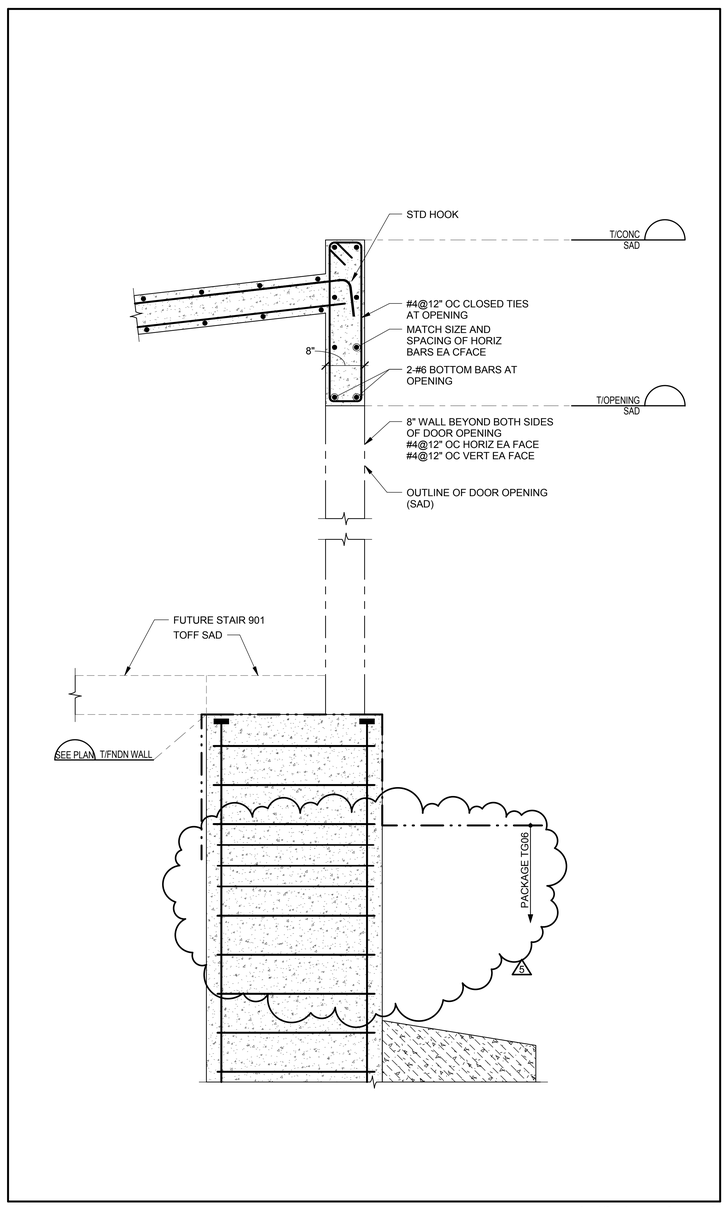
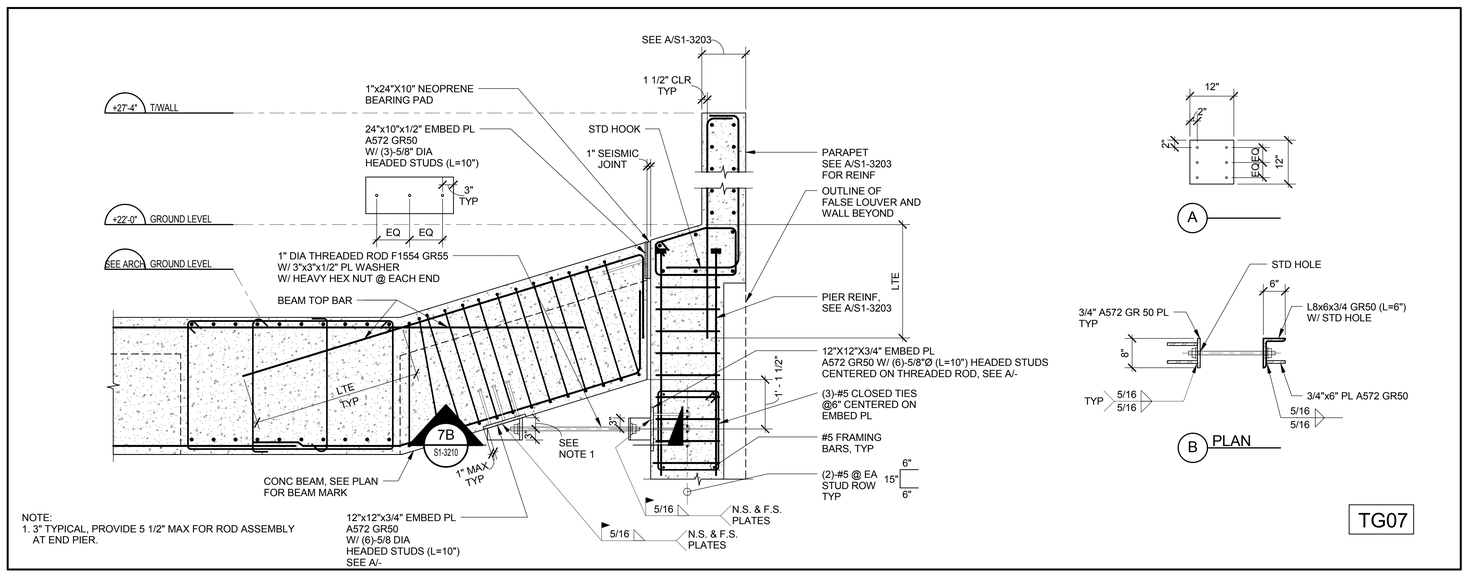


5 S1-2310 **SECTION**
SCALE: 3/4" = 1'-0"



6 S1-2251 **SECTION**
SCALE: 1" = 1'-0"



7 S1-3203 **SECTION**
SCALE: 3/4" = 1'-0"

0 1/2 1 2 3
SCALE IN FEET

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Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Thornton Tomasetti
Thornton Tomasetti, Inc.
6080 Center Drive, Suite 260
Los Angeles CA 90045-5318
T 310.665.0010 F 310.665.0101

01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16

Key Map
N

REVISIONS

NO.	DATE	DESCRIPTION	BY
0	08/30/12	ISSUED FOR CONSTRUCTION - BELOW GRADE PACKAGE	BG
1	10/19/12	ISSUED FOR BID - SUPERSTRUCTURE	BG
2	11/27/12	PER ASI No. 0100	BG
3	12/07/12	ISSUED FOR BID - SUPERSTRUCTURE - ADDENDUM #3	BG
4	02/19/13	ISSUED FOR CONSTRUCTION	BG
4	05/31/13	100% CONSTRUCTION DOCUMENTS	BG
4	06/10/13	PER ASI No. 0104	BG
4	07/17/13	ISSUED FOR CONSTRUCTION	BG
4	09/23/13	ISSUED FOR BID	BG
5	12/16/14	PER ASI No. 0128	BG

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
TRAINBOX SECTIONS AND DETAILS

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ENGINEER — B. GIBBONS
APPROVED:
PROJECT MANAGER — A. CHEN
APPROVED:
PROJECT ENGINEER — L. ISHIDA
DESIGNED BY: K. GULEC
CHECKED BY: L. JOSEPH
DRAWN BY: A. CASTILLO
DATE: 12/16/2014
SCALE: AS NOTED
SIZE: E
FACILITY NO.: 140
REVISION: 5
SEQUENCE NUMBER
SKS-0324
of

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REF: S1-3210

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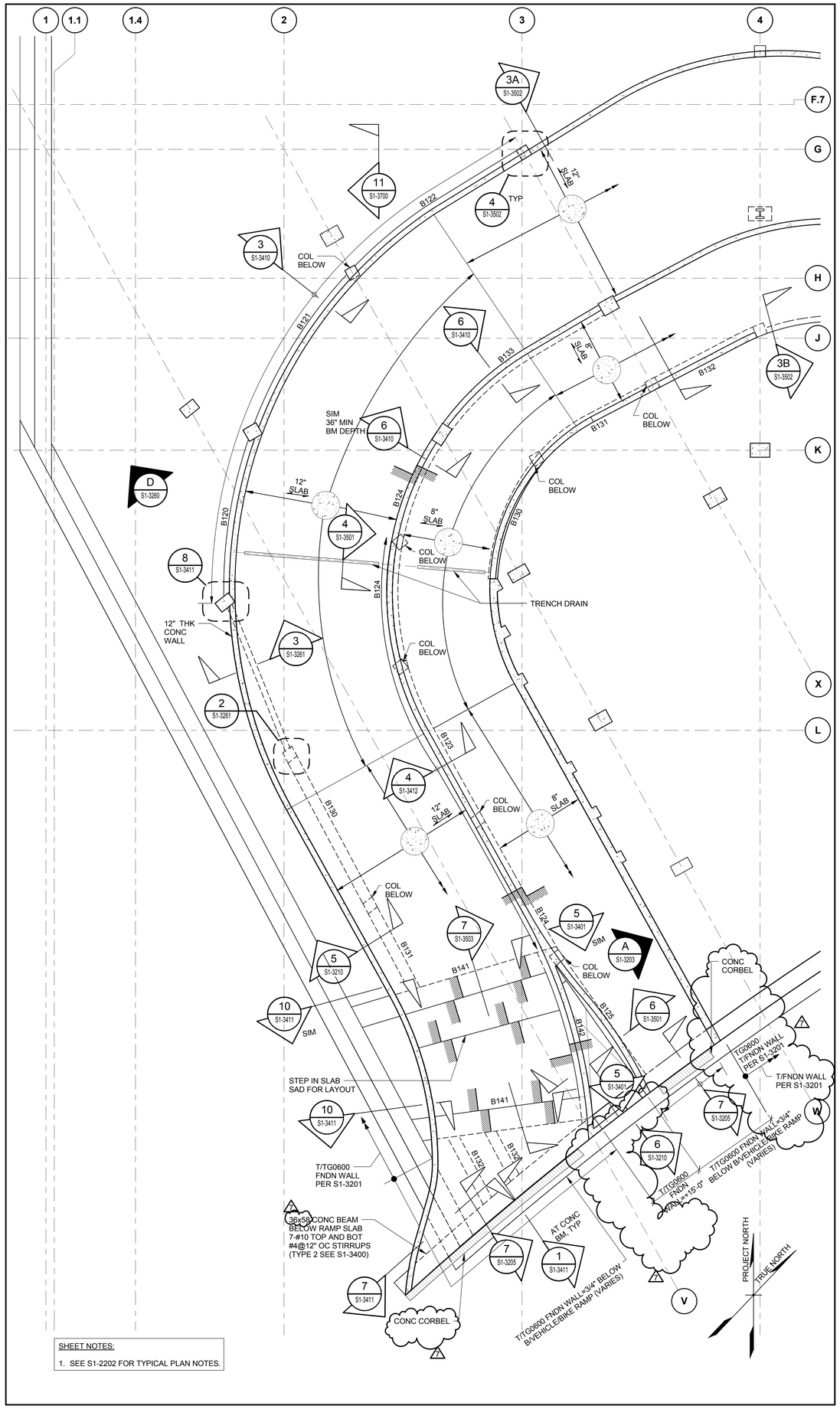


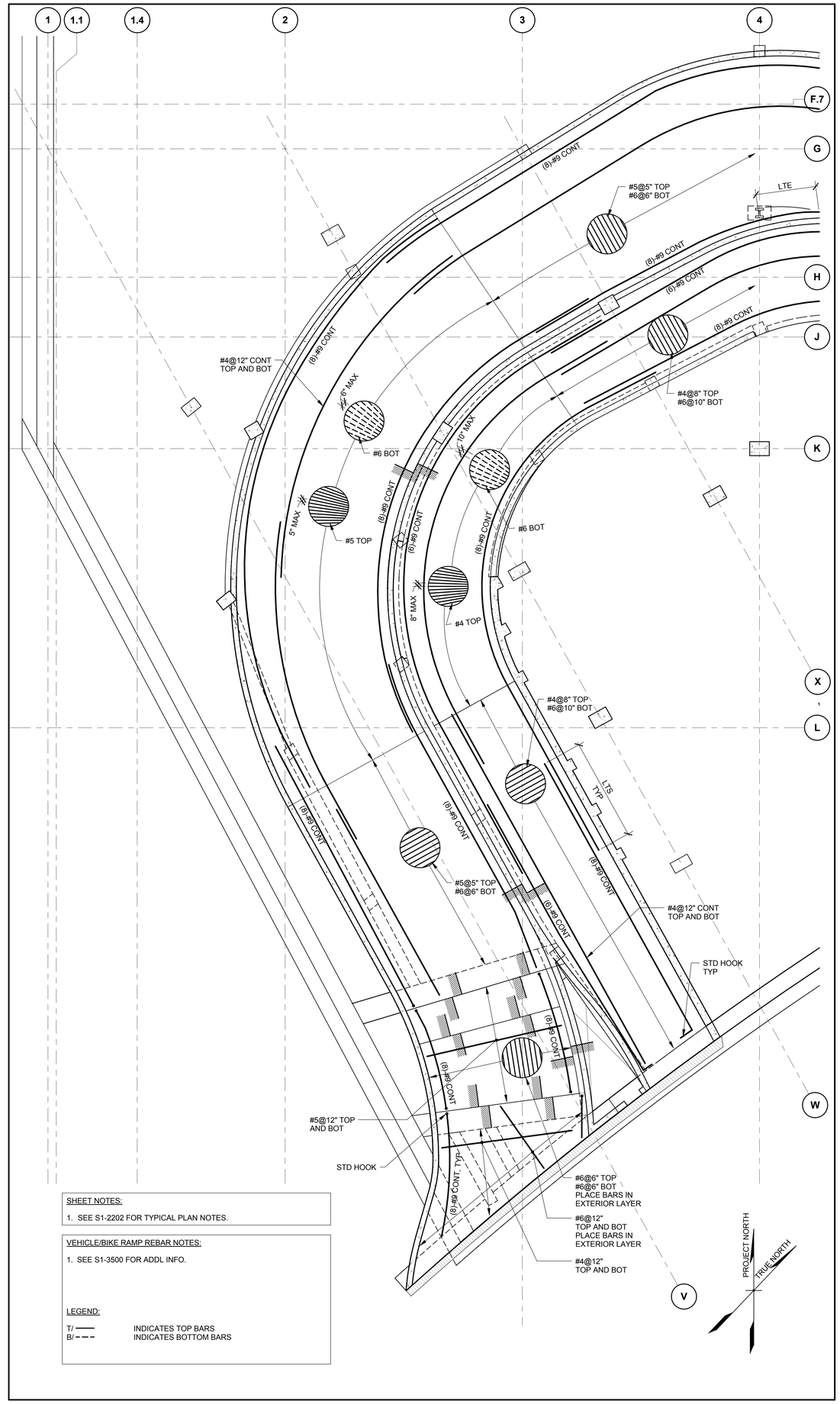
SHEET NOTES:

1. SEE S1-2202 FOR TYPICAL PLAN NOTES.

1 S1-2251 VEHICLE/BIKE RAMP FRAMING PLAN

SCALE: 1/8" = 1'-0"

0 4 8 16 24
SCALE IN FEET



SHEET NOTES:

1. SEE S1-2202 FOR TYPICAL PLAN NOTES.

VEHICLE/BIKE RAMP REBAR NOTES:

1. SEE S1-3500 FOR ADDL INFO.

LEGEND:

T/ ——— INDICATES TOP BARS
B/ – – – INDICATES BOTTOM BARS

2 S1-2251 VEHICLE/BIKE RAMP REINFORCING PLAN

SCALE: 1/8" = 1'-0"

0 4 8 16 24
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:

Thornton Tomasetti
Thornton Tomasetti, Inc.
6080 Center Drive, Suite 260
Los Angeles CA 90045-5318
T 310.665.0010 F 310.665.0101

01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16

Key Map

N

REVISIONS

NO.	DATE	DESCRIPTION	BY
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1	10/19/12	ISSUED FOR BID - SUPERSTRUCTURE	BG
2	11/27/12	PER ASI No. 0100	BG
2	02/19/13	ISSUED FOR CONSTRUCTION	BG
3	05/31/13	100% CONSTRUCTION DOCUMENTS	BG
3	06/10/13	PER ASI No. 0104	BG
3	07/17/13	ISSUED FOR CONSTRUCTION	BG
4	09/20/13	PER ASI No. 0106	BG
4	09/23/13	ISSUED FOR BID	BG
5	12/16/13	PER ASI No. 0110	BG
5	01/23/14	ISSUED FOR BID	BG
6	03/31/14	ISSUED FOR CONSTRUCTION	BG
7	12/16/14	PER ASI No. 0138	BG

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL - VEHICLE/BIKE RAMP FRAMING & REINFORCEMENT PLANS

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ENGINEER — B. GIBBONS
APPROVED:
PROJECT MANAGER — A. CHEN
APPROVED:
PROJECT ENGINEER — L. ISHIDA

DESIGNED BY: A. MARTINEZ	CHECKED BY: L. JOSEPH	
DRAWN BY: A. CASTILLO	DATE: 12/16/2014	
SCALE: AS NOTED	SIZE: E	FACILITY NO.: 140 / REVISION: 7

SKS-0445

SEQUENCE NUMBER
___ of ___

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REF: S1-2251

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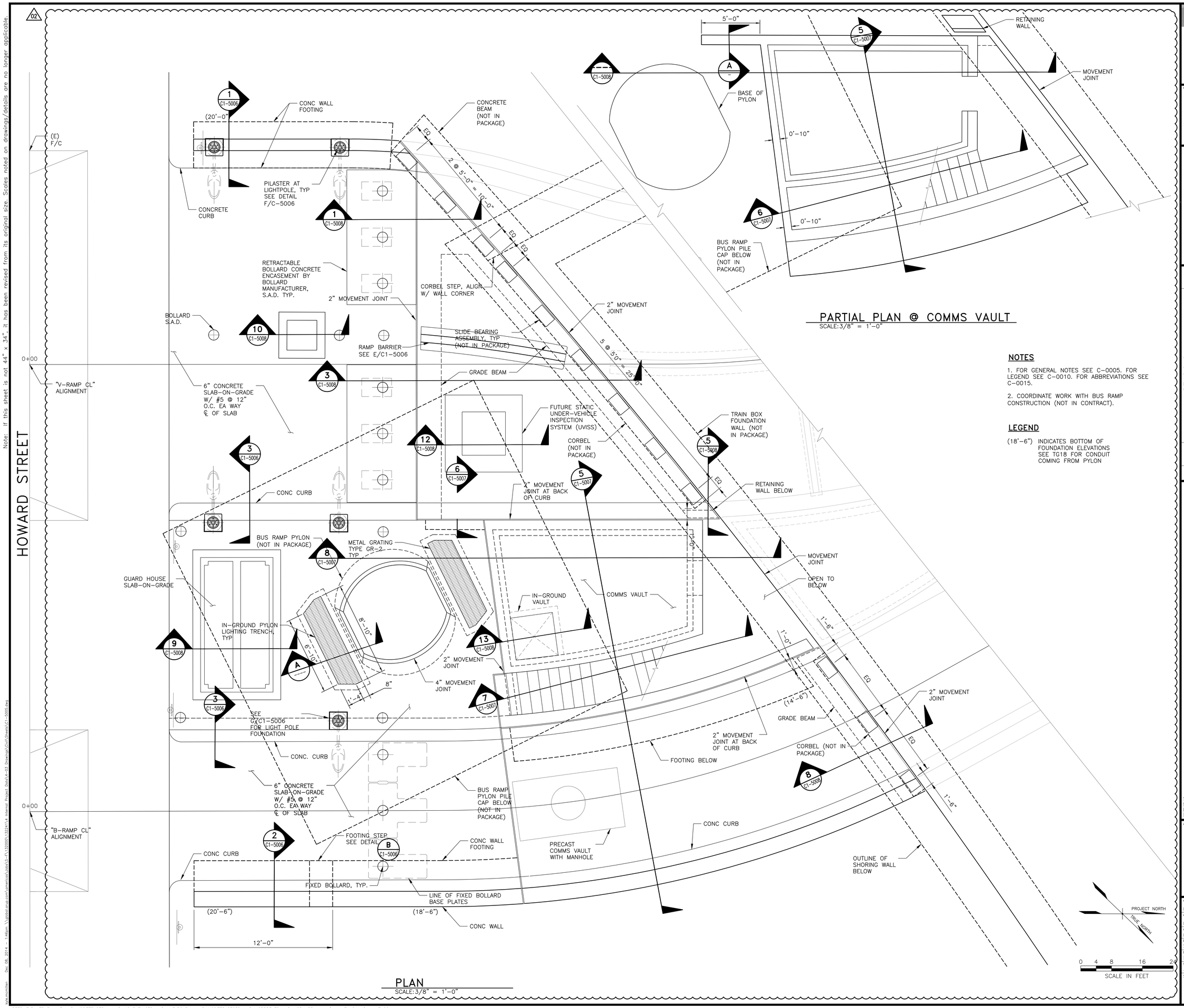

PLAN
SCALE: 3/8" = 1'-0"

PARTIAL PLAN @ COMMS VAULT
SCALE: 3/8" = 1'-0"

NOTES

1. FOR GENERAL NOTES SEE C-0005. FOR LEGEND SEE C-0010. FOR ABBREVIATIONS SEE C-0015.

2. COORDINATE WORK WITH BUS RAMP CONSTRUCTION (NOT IN CONTRACT).

LEGEND

(18'-6") INDICATES BOTTOM OF FOUNDATION ELEVATIONS SEE TG18 FOR CONDUIT COMING FROM PYLON

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
ARUP
Arup North America Ltd.
560 MISSION STREET, SEVENTH FLOOR
SAN FRANCISCO, CA. 94105
(415) 957-9445, FAX (415) 957-9096

Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	YW
2	08/06/14	PER ASI No. 0123	YW
3	12/16/14	PER ASI No. 0128	YW

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
BIKE AND VEHICLE RAMP DETAIL

ARCHITECT/ENGINEER SEAL
REGISTERED PROFESSIONAL ENGINEER
Yana Waldman
No. C77403
Exp. 6/30/2015
CIVIL
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ENGINEER / ARCHITECT J. EDDY
APPROVED:
PROJECT MANAGER K. CLINCH
APPROVED:
PROJECT ENGINEER / ARCHITECT Y. WALDMAN

DESIGNED BY: S. LITSAS	CHECKED BY: Y. WALDMAN		
DRAWN BY: K. MCMILLEN	DATE: 12/16/2014		
SCALE: 3/8" = 1'-0"	SIZE E	FACILITY NO. 140	REVISION 2

SHEET NUMBER SK-C-0008
SEQUENCE NUMBER _ of _

BASED ON DWG SHEET C1-5005

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kyle.mcmillen Dec 09, 2014 - 1:46pm \\yodesk.arup.com\americas\data\5-F\132000\132411\4 Internal Project Data\4-03 Drawings\Civil\Sheets\C1-5005.dwg

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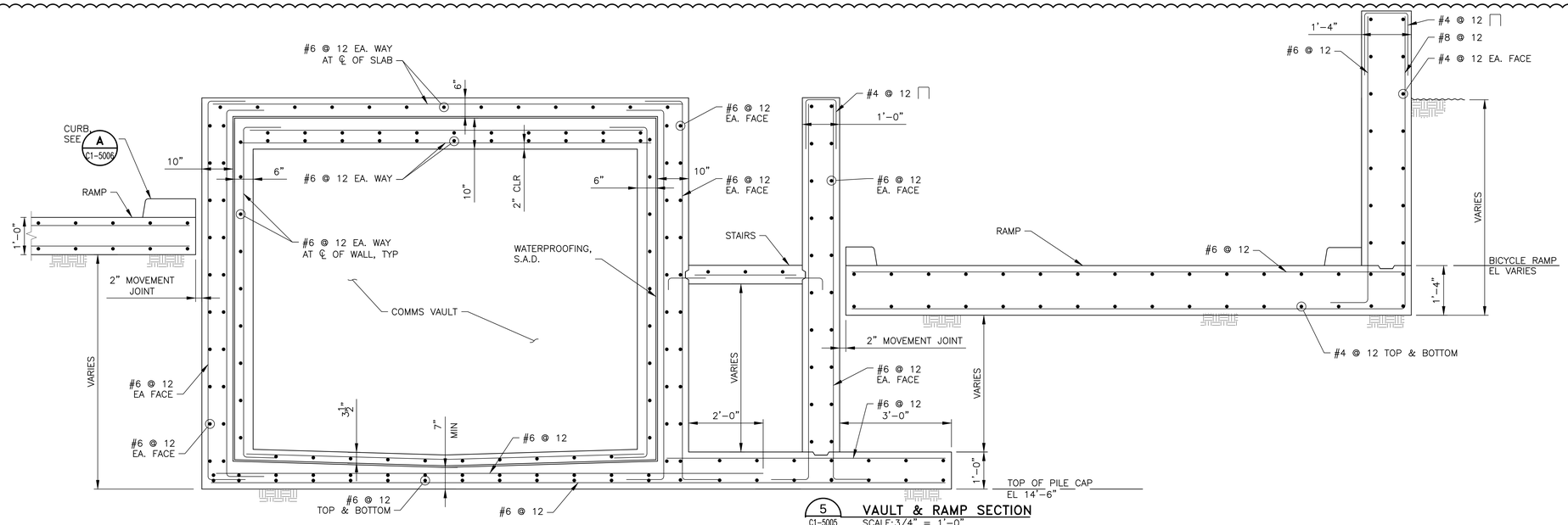

5 C1-5005 **VAULT & RAMP SECTION**
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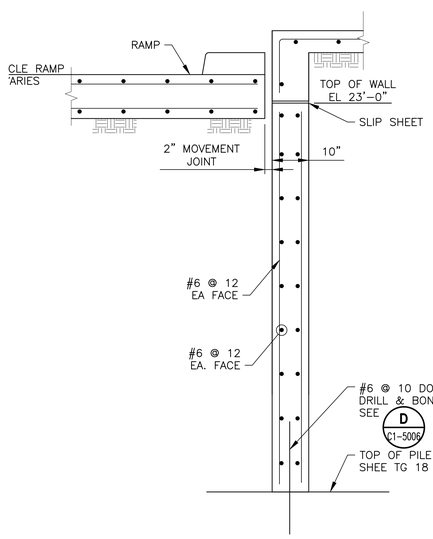

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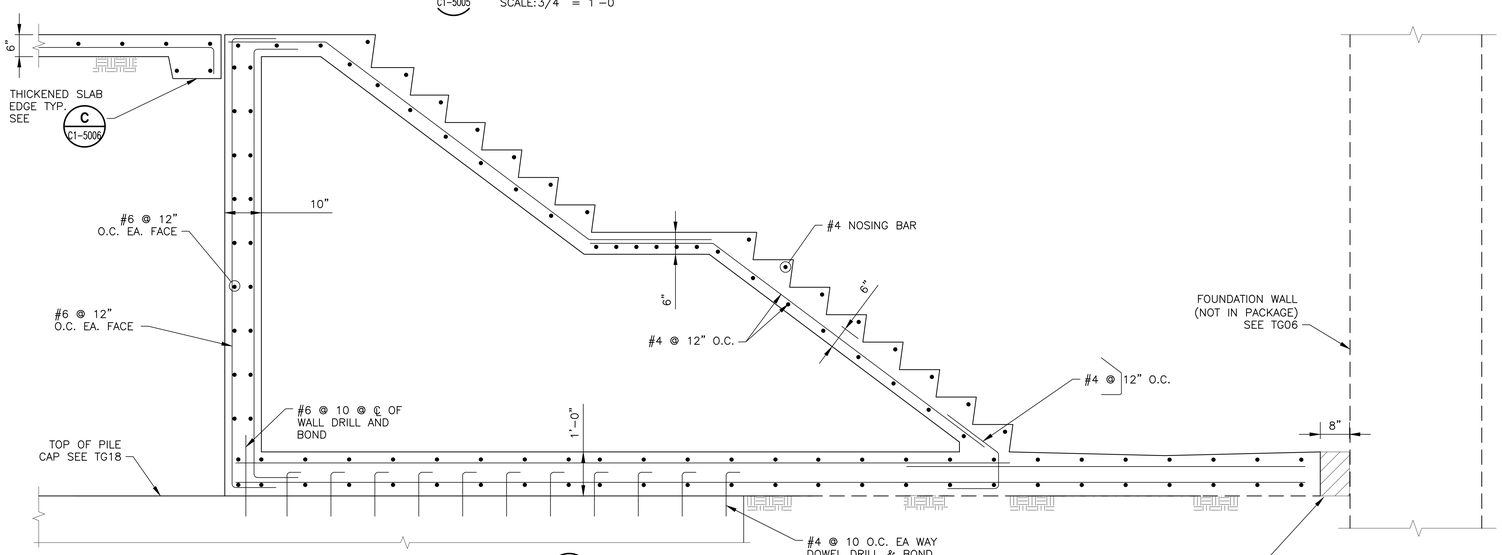

7 C1-5005 **STAIR SECTION**
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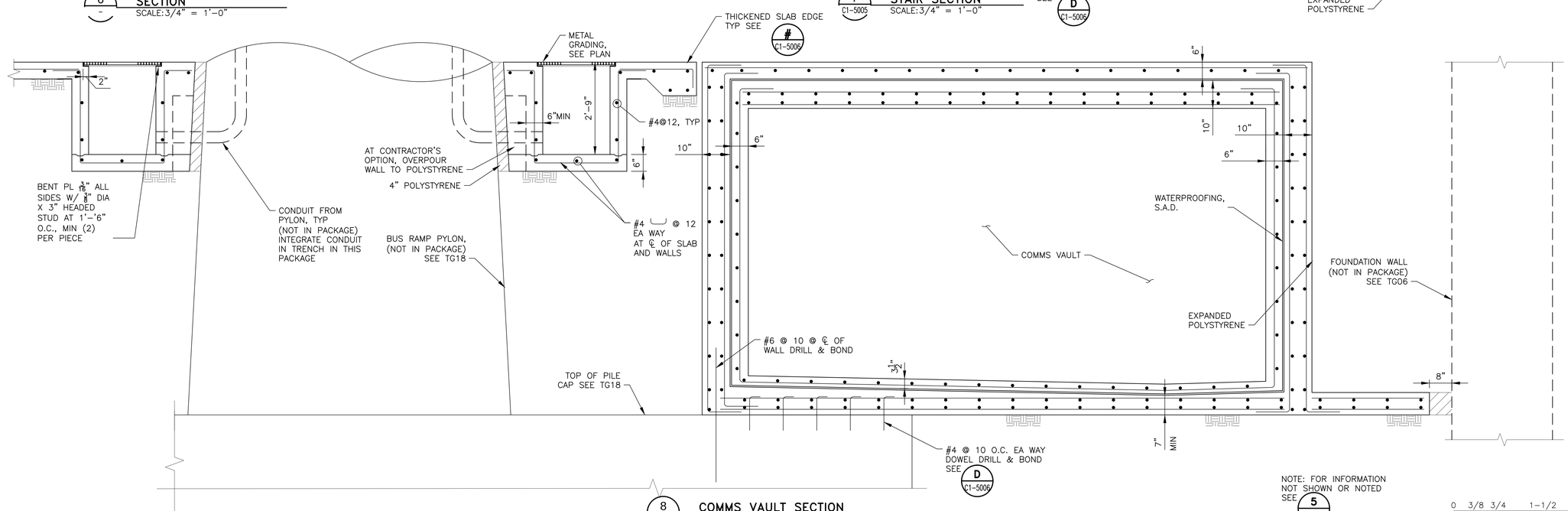


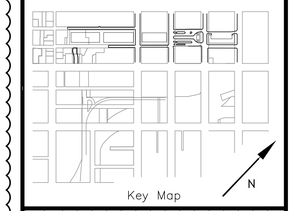
8 C1-5005 **COMMS VAULT SECTION**
SCALE: 3/4" = 1'-0"

NOTE: FOR INFORMATION NOT SHOWN OR NOTED SEE 5 C1-5007

0 3/8 3/4 1-1/2 2-1/4
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
ARUP
Arup North America Ltd.
560 MISSION STREET, SEVENTH FLOOR
SAN FRANCISCO, CA. 94105
(415) 957-9445, FAX (415) 957-9096



REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	YW
2	08/06/14	PER ASI No. 0123	YW
3	12/16/14	PER ASI No. 0128	YW

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
BIKE AND VEHICLE RAMP SECTIONS 2

ARCHITECT/ENGINEER SEAL
REGISTERED PROFESSIONAL ENGINEER
Yana Waldman
No. C77403
Exp. 6/30/2015
CIVIL
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ENGINEER / ARCHITECT J. EDDY
APPROVED:
PROJECT MANAGER K. CLINCH
APPROVED:
PROJECT ENGINEER / ARCHITECT Y. WALDMAN

DESIGNED BY: S. LITSAS	CHECKED BY: Y. WALDMAN	
DRAWN BY: K. MCMILLEN	DATE: 12/16/2014	
SCALE: 3/4" = 1'-0"	SIZE E	FACILITY NO. 140 / REVISION 2

SHEET NUMBER SK-C-0010
SEQUENCE NUMBER _ of _

kele.mcmillen Dec 09, 2014 - 1:52pm \\global.arup.com\americas\jobs\S-F\132000\132241\4 Internal Project Data\4-03 Drawings\Civil\Sheets\C1-5007.dwg

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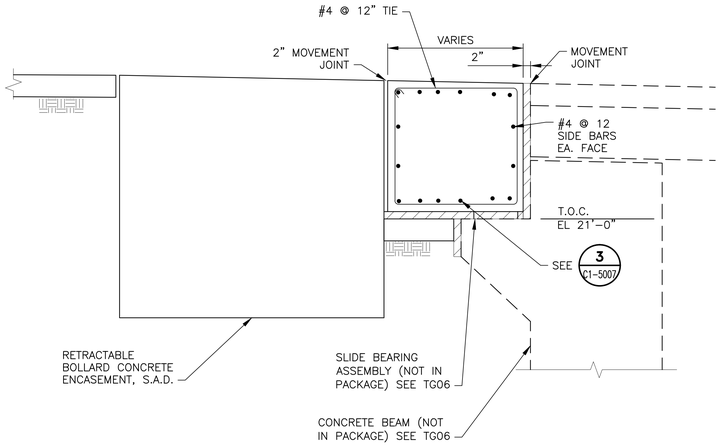
BASED ON DWG SHEET C1-5007

02



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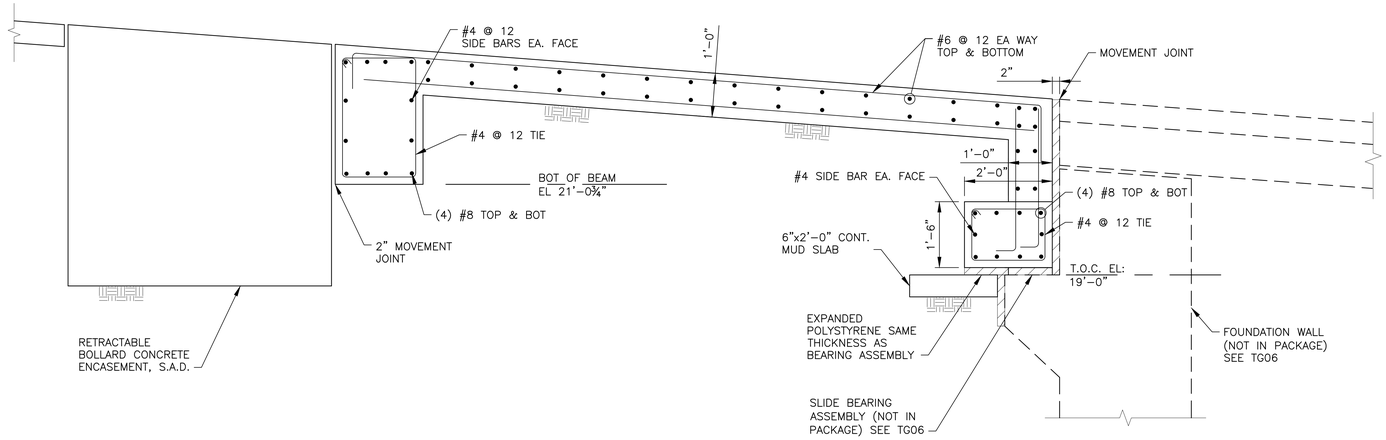

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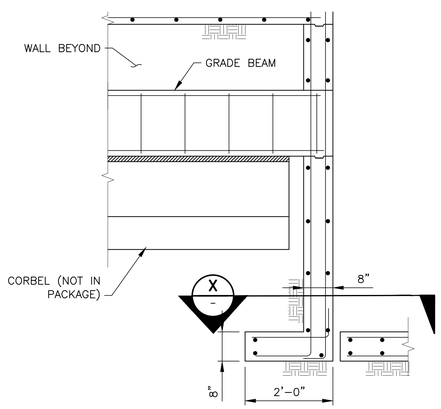

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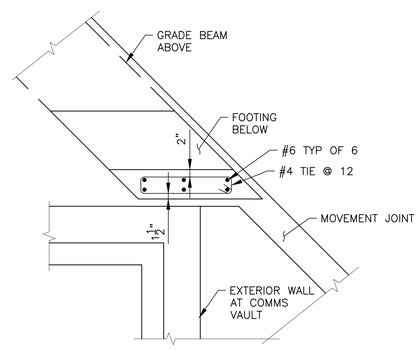

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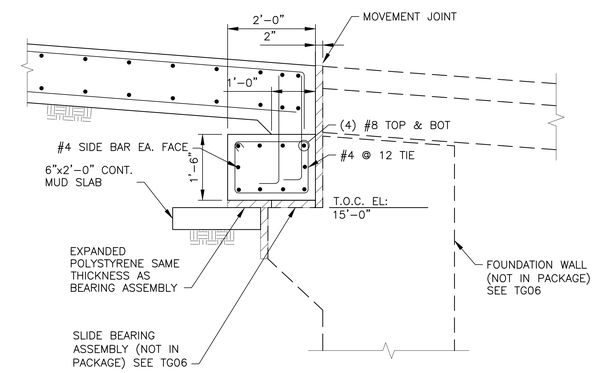

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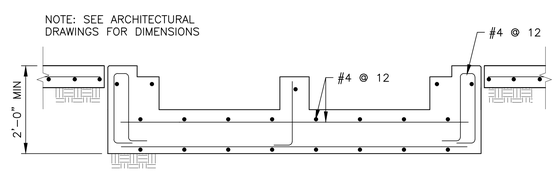

9 C1-5005 **GUARD HOUSE SLAB-ON-GRADE**
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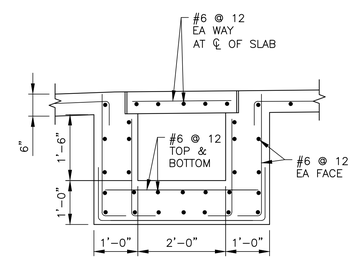

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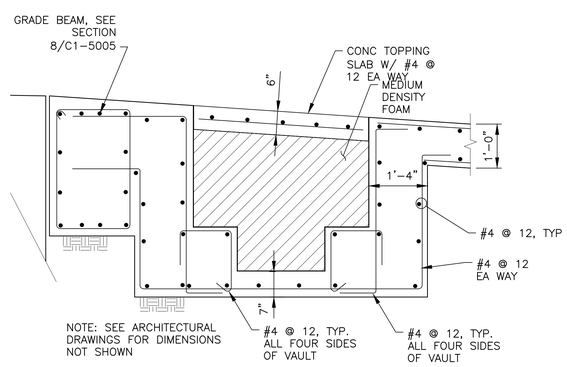

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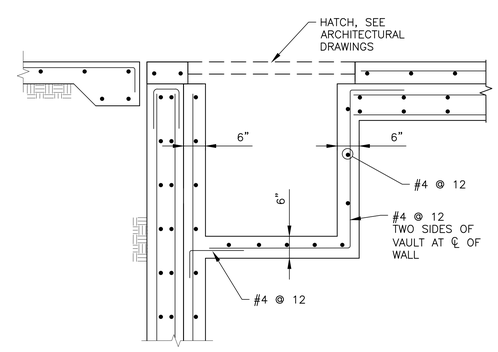
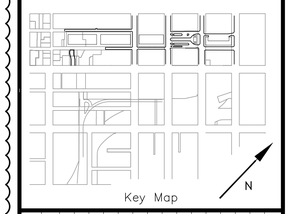


13 C1-5005 **IN-GROUND VAULT**
SCALE: 3/4" = 1'-0"

0 3/8 3/4 1-1/2 2-1/4
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
ARUP
Arup North America Ltd.
560 MISSION STREET, SEVENTH FLOOR
SAN FRANCISCO, CA. 94105
(415) 957-9445, FAX (415) 957-9096



REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	YW
2	08/06/14	PER ASI No. 0123	YW
3	12/16/14	PER ASI No. 0128	YW

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
BIKE AND VEHICLE RAMP SECTIONS 3

ARCHITECT/ENGINEER SEAL
REGISTERED PROFESSIONAL ENGINEER
Yana Waldman
No. C17403
Exp. 6/30/2015
CIVIL
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ENGINEER / ARCHITECT J. EDDY
APPROVED:
PROJECT MANAGER K. CLINCH
APPROVED:
PROJECT ENGINEER / ARCHITECT Y. WALDMAN

DESIGNED BY: S. LITSAS	CHECKED BY: Y. WALDMAN
DRAWN BY: K. MCMILLEN	DATE: 12/16/2014
SCALE: 3/4" = 1'-0"	SIZE: E · FACILITY NO.: 140 · REVISION: 2
SHEET NUMBER: SK-C-0011	SEQUENCE NUMBER: _ of _

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.

kirk.mcmillen Dec 08, 2014 - 2:01pm \\global.arup.com\americas\jobs\S-F\132000\132241\4 Internal Project Data\4-03 Drawings\Civil\Sheets\C1-5008.dwg

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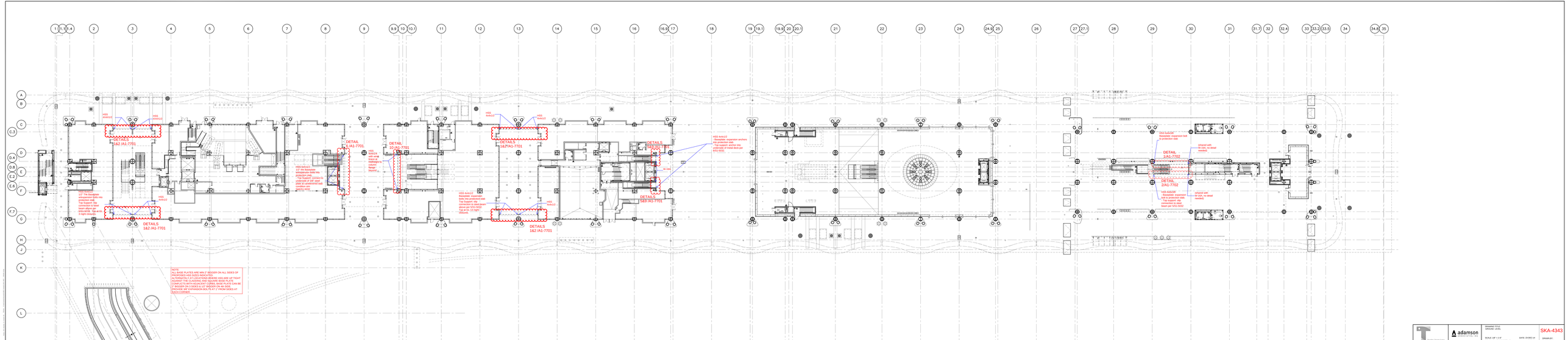
BASED ON DWG SHEET C1-5008



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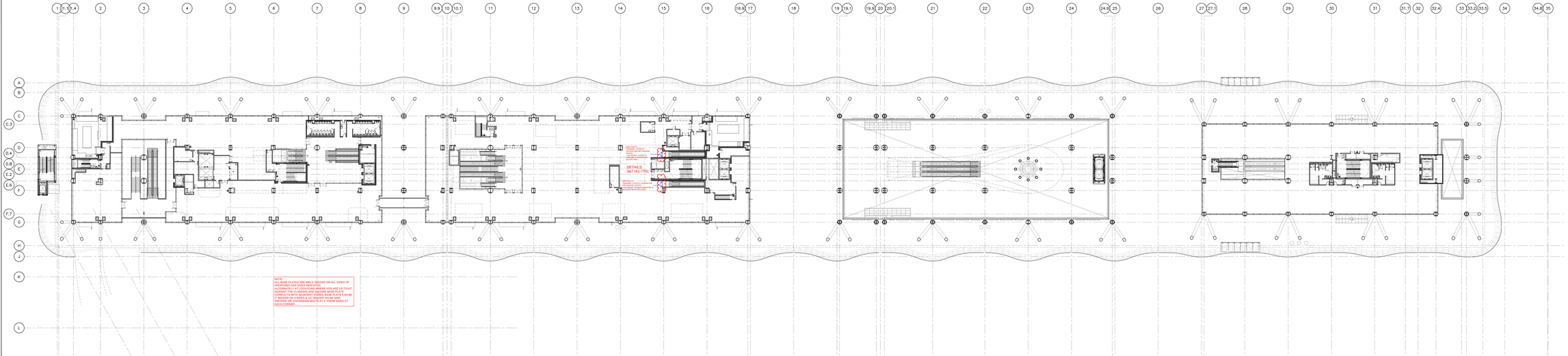
ORIGINAL LEVEL

SCALE: 1/8" = 1'-0"
CONSULTANT PROJECT NO:

DATE: 23-05C-12
DRAWN BY:
CHECKED BY:

adamson ASSOCIATES LTD

SKA-4343



NOTE:
ALL BASE PLATES ARE MIN 2" BIGGER ON ALL SIDES OF COLUMN UNLESS OTHERWISE NOTED.
ALTERNATE 1 AT LOCATIONS WHERE HSS ARE UP TIGHT AGAINST THE CLADDING AND SQUARE BASE PLATE CANNOT BE PROVIDED AS SHOWN, THE BASE PLATE SIZE CAN BE 2" BIGGER ON 3 SIDES & 1/2" BIGGER ON 4th SIDE. PROVIDE 3/8" EXPANSION BOLTS AT 2" FROM SIDES AT ENCLOSURES.

Stantec Design Group	adamson ARCHITECTS INC	DRAWING TITLE: SECOND LEVEL
		SCALE: 1/32" = 1'-0"
		CONSULTANT PROJECT NO:
		DATE: 23-DEC-12
		DRAWN BY: 0800.00
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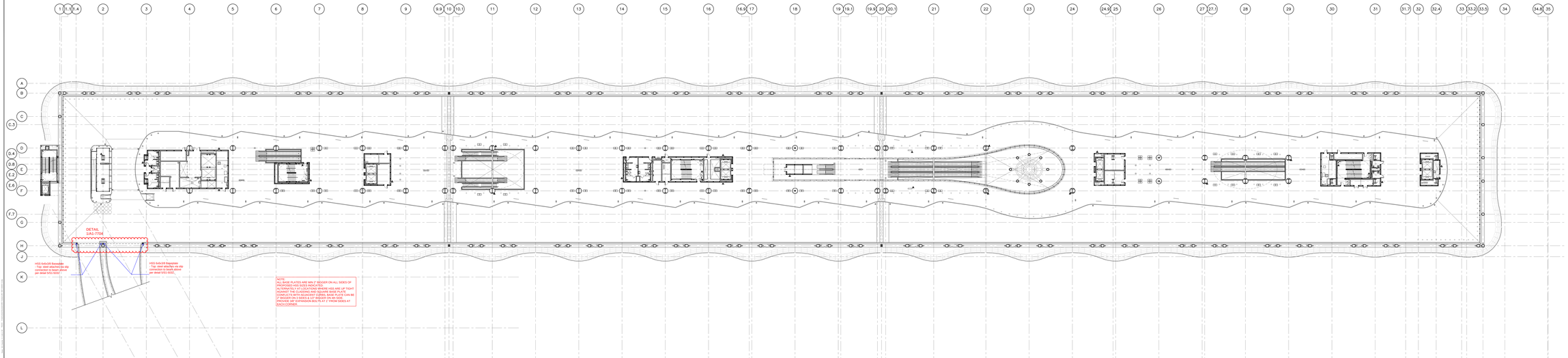
SKA-4344



adamson ARCHITECTS INC

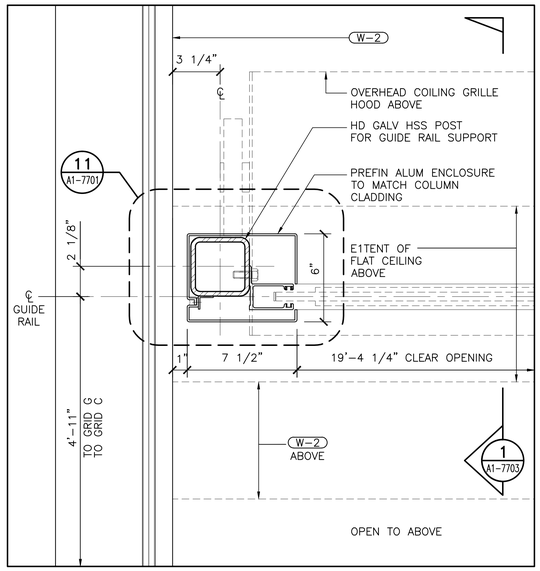
DRAWING TITLE
BUILDING LEVEL
OVERALL PLAN

SCALE: 1/16" = 1'-0"
CONSULTANT PROJECT NO.

DATE: 23-DEC-12
DRAWN BY: SMB/JB

CHECKED BY:

SKA-4345



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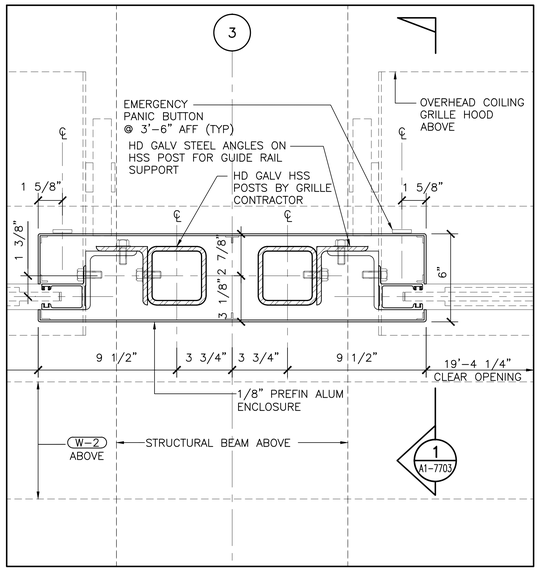
A1-2001



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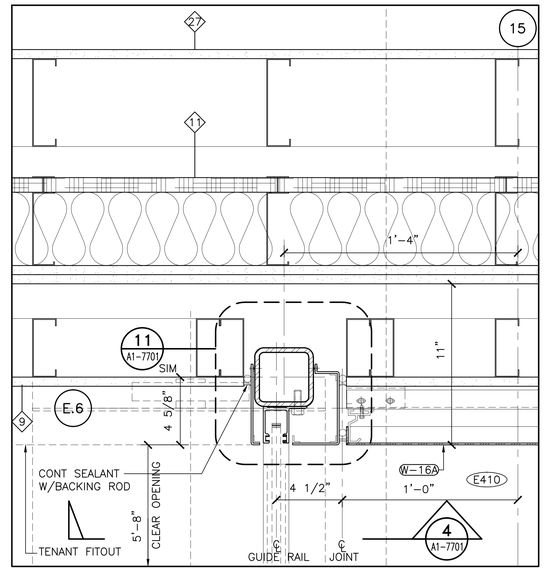

3 A1-7011 PLAN DETAIL – SECOND
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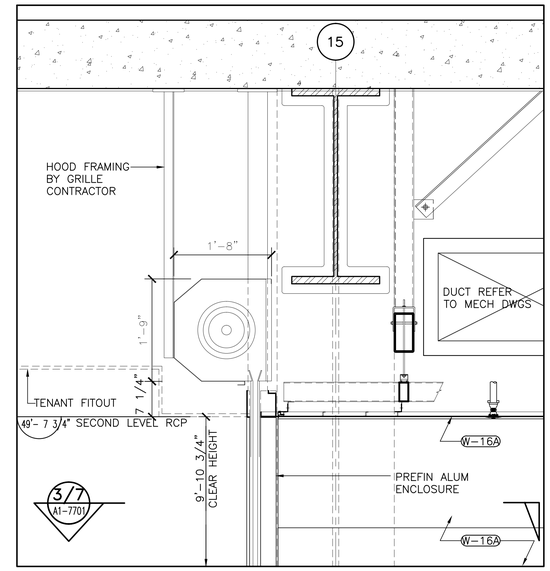
A1-2001, A1-2404



4 A1-7701 SECTION DETAIL – OHG
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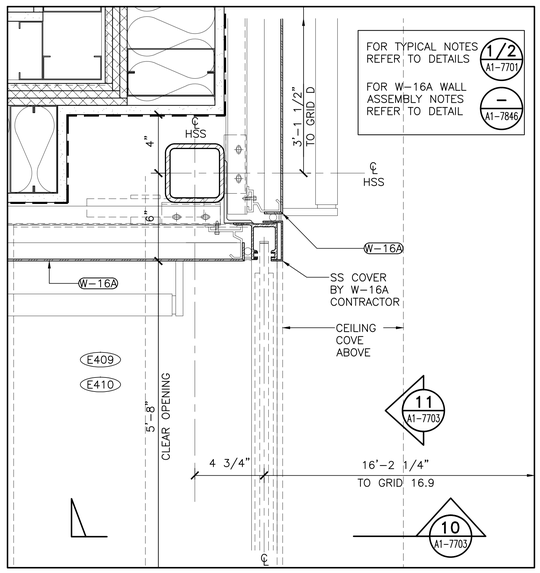

5 A1-7311 PLAN DETAIL – OHG
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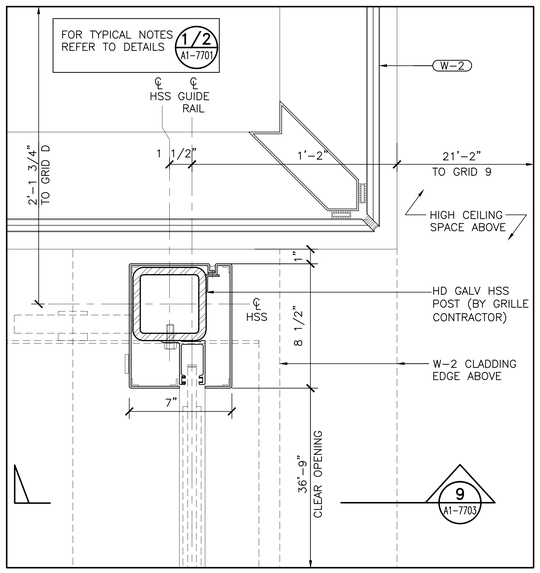

6 A1-7011 PLAN DETAIL – OHG
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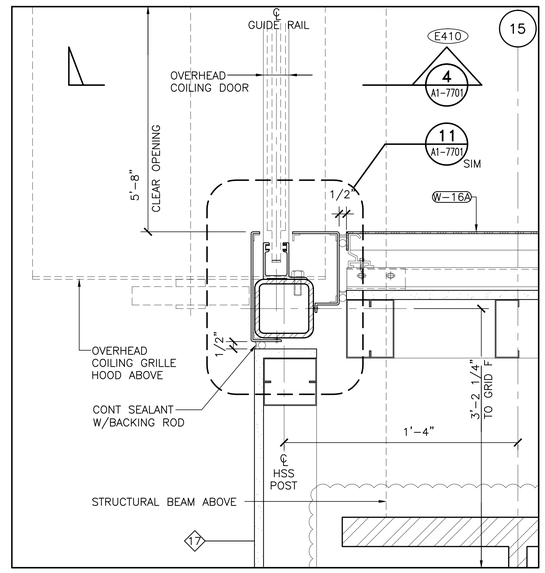

7 A1-7011 PLAN DETAIL –SECOND
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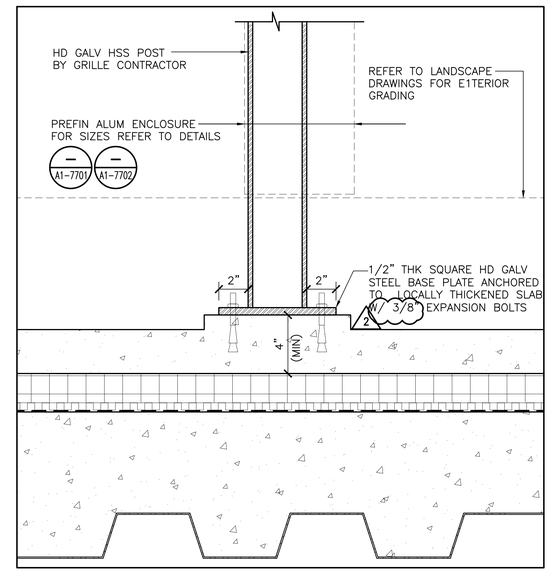
A1-2001, A1-2404



8 A1-7701 TYP SECTION DETAIL @ HSS BASE
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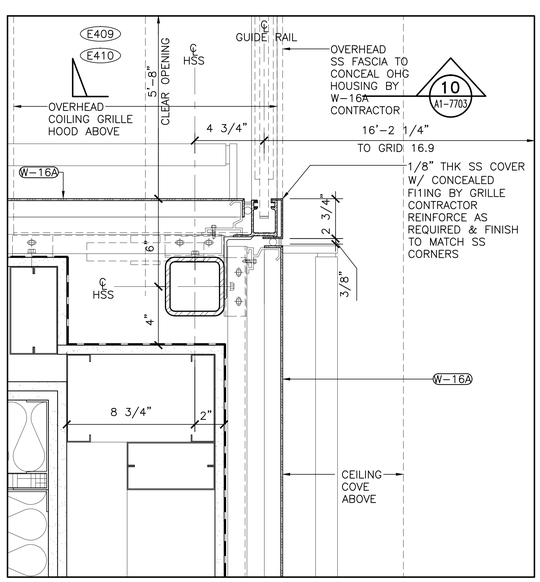

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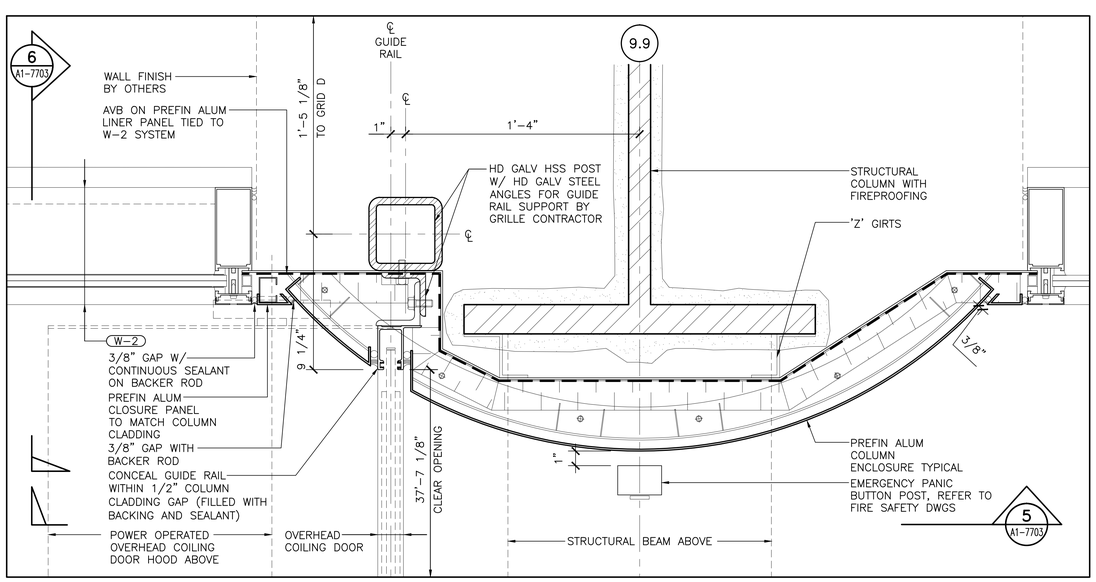

10 A1-2303 PLAN DETAIL – OVERHEAD COILING DOOR
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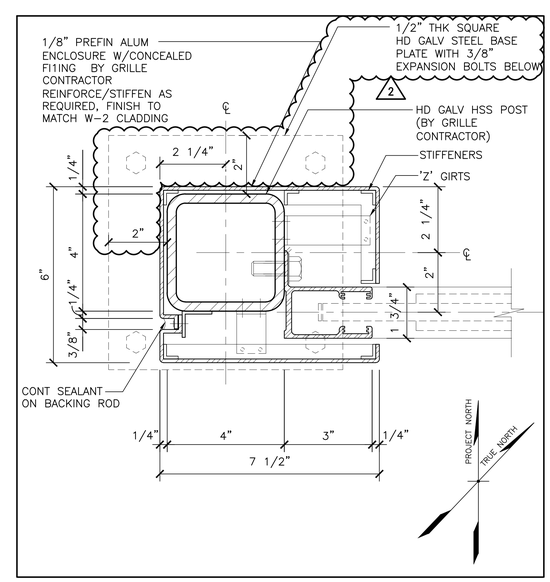

11 A1-7701 TYPICAL PLAN DETAIL
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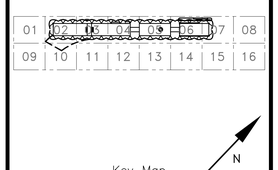
Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
OVERHEAD COILING GRILLE & DOOR DETAILS GROUND & SECOND LEVEL

ARCHITECT/ENGINEER SEAL

NOT FOR CONSTRUCTION

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL
DESIGNED BY: D. DRON
CHECKED BY: W.R. BRADLEY
DRAWN BY: E. ANTAO
DATE: 12/16/2014
SCALE: AS NOTED
SIZE: E
FACILITY NO.: 140
REVISION: 1
SHEET NUMBER: SKA-4377 (A1-7701)
SEQUENCE NUMBER: ___ of ___

___ SUBMITTAL

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Jan 08, 2015 - 8:53am P:\Projects\0803-01\1 Project\01 CAD\01 DWG\02 Sheets\A1-7701.dwg

SECTION 05 50 00 – METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Miscellaneous metal fabrications not specified in other Sections.
2. See Schedule of Items, but not limited to.
3. ***2 . . .*** **DELETED** ~~Installation of finish hardware, specified in Section 08 71 00, on steel gates.~~ ***. . . 2***
4. Electrical continuity and grounding of this work.
5. Mockups.
6. Source and field quality control testing.
7. Warranties and indemnities.

B. ***2 . . .*** ***1*** Stainless steel railings and railings attached to steel stairs and their shaft walls, stainless steel queuing posts and top rails, structural glass railings, metal gratings, and architectural metal fabrications are specified elsewhere in ~~Division~~ **Section** 05 75 00 Architectural Metal Fabrications. ***. . . 2***

C. DELETED ***1***

D. General: Certain components of the metal assemblies may not be fully detailed on the Drawings which indicate only desired profile and design intent.

1. Engineer, fabricate, and install these components within the physical limitations indicated on the Drawings.
2. Drawings and calculations for the assemblies shall be prepared, signed and sealed by the Contractor's Engineer.
3. Submit drawings and calculations to AHJ for approval, and pay fee(s) incurred thereby before start of installation.
4. Fasteners and connections are shown schematically. Final fasteners or connections size and location shall not conflict with or require revision of the finish profiles of the supporting and supported work.
5. Connections to the supports shall not impose eccentric loading, or induce twisting or warping and shall be able to accommodate misalignment of the structure within limits allowed by the ACI and AISC tolerances.
6. Mockup construction, when specified, is also a requirement of this Section and its cost shall be included in the Contractor's bid.

1.2 ABBREVIATIONS AND ACRONYMS

A. AHJ: Authorities Having Jurisdiction.

B. AISC: American Institute of Steel Construction.

C. AISI: American Iron and Steel Institute.

D. ANSI: American National Standards Institute.

E. AWS: American Welding Society.

F. BAAQMD: Bay Area Air Quality Management District.

G. LEED: Leadership in Energy and Environmental Design.

H. MSDS: Material Safety Data Sheets.

I. SCAQMD: South Coast Air Quality Management District.

J. SSPC: Society for Protective Coatings (formerly known as Steel Structures Painting Council).

K. TIG: Tungsten Inert Gas (Welding).

L. TJPA: Transbay Joint Powers Authority.

M. VOC: Volatile Organic Compound.

1.3 DEFINITIONS

A. General: In addition to definitions specified in Article 1.01 of the General Conditions, the following applies to this Section. Where the provisions are in conflict, the more restrictive requirements apply.

B. Contractor's Engineer: California-licensed structural engineer, employed by the Contractor, with a minimum 5 years' experience in the design of assemblies similar in scope to those for the Project, including drawings, testing program development, test-result interpretation, and comprehensive engineering analysis that show the assemblies' compliance with the specified requirements.

C. Engineer (verb) and Engineering: As used in this Section, includes engineering, fabrication and installation.

D. Engineering Services: Services performed for installation of assemblies similar to those indicated for this Project in material, design, and extent.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meetings: Comply with Section 01 12 00 and Section 01 14 00, except as specified below. Where the provisions are in conflict, the more restrictive requirements apply.

B. Coordination:

1. Coordinate installation of anchors for the work of this Section. Furnish setting drawings, templates and directions for installing anchorages, including inserts, anchor bolts and items with integral anchors to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
2. Coordinate respective work to establish relationship between these other Sections and to provide completed installations shown and required.

C. General: The Contractor is responsible for engineering, fabrication and installation the work of this Section in accordance with the design intent, design criteria, performance requirements, applicable codes and ordinances at the time of award, and requirements of AHJ. Structural and operational design requires the certification of a California-registered civil or structural engineer who shall also become the engineer of record for this portion of the work.

1.5 SUBMITTALS – GENERAL

A. Comply with Article 3.12 of the General Conditions, and Sections 01 13 00, except as specified below. Where the provisions are in conflict, the more restrictive requirements apply. Do not submit items not requested.

B. Product Data:

1. Submit manufacturer Product Data, specifications and installation instructions for manufactured items.
2. Submit the manufacturers' literature, including engineering data for anchors.

C. Shop Drawings:

1. Submit plans, elevations and scale details of members, materials and connections. Draw plans and sections at not less than 1:48 scale, and details at not less than 1:4 scale.
2. Include jointing details, methods of setting, sealing, securing, anchorage, and field connections.
3. A California-licensed structural engineer specified herein shall be responsible for:

   a. Production and review of Shop Drawings.
   b. Stamping and signing each Shop Drawing and any associated calculations performed.

4. Final review of Shop Drawings shall be contingent upon complete submission of structural calculations, where appropriate, documentation, certifications, and approvals of anchorage, samples, mockups and test reports. Cross-reference structural calculations to appropriate Shop Drawing details.
5. For components to be embedded in concrete and masonry work, furnish templates supplemented by dimensioned Shop Drawings to trades placing those components in their work. Assist in location of these components where so requested by those trades.

D. Samples: Submit following Samples in sizes indicated.

1. Extruded and formed metals: Minimum 12 inches long.
2. Metal sheet: Minimum 12-inch square and of specified thickness.
3. Posts Inserts: Full size unit with cap.
4. Resilient Bumpers: 12-inch long.

E. Engineering Calculations: For components of the metal fabrications engineered by the Contractor, submit calculations signed and sealed by the Contractor's Engineer to demonstrate Code compliance for the components, including railings.

F. Corrosion Analysis: Together with other submittals, submit a letter from a professional engineer, specialized in corrosion prevention, stating that components of the work of this Section and attachments to adjacent construction are designed or isolated to eliminate galvanic action between them.

G. ***2 . . .*** **DELETED** ~~Certificates: Manufacturer certification, on manufacturers' letterhead, and test results conducted by a testing laboratory acceptable to TJPA, on the K-12 rated bollards.~~ ***. . . 2***

1.6 CLOSEOUT SUBMITTALS

A. Submit maintenance instructions in accordance with Section 01 70 00. Include in Maintenance Manual:

1. Printed copies of maintenance instructions for assemblies and their finishes.
2. Proper care and maintenance of assemblies and hardware.
3. Recommended inspection schedule.
4. Copy of each duly reviewed Shop Drawings in their most recent amended form.
5. Complete explanation of operation principles and sequences.

6. Complete parts and materials list with numbers, sizes, method statement of replacement of component parts of installation.

B. Coordinate and incorporate Operating Procedures Outline as defined in Section 11 24 23 into training requirements for maintenance workers prior to accessing specified assemblies.

C. Submit instructions for proper cleaning and routine maintenance of assemblies together with recommended cleaning materials and frequency.

D. Provide touchup repair kit or touchup instructions to TJPA for each type of factory-applied finish.

1.7 LEED SUBMITTALS

A. Within 30 days of Contract award, assemble and submit all LEED material information on the "LEED Material Tracking Spreadsheets" and forms provided in the Project Manual, together with all supplemental documentation as required by LEED.

B. Credit MR 4: Product data indicating percentage by weight of post-consumer and post-industrial recycled content for products having recycled content. Include a statement indicating projected costs for each product having recycled content.

C. Credit MR 5: Product data indicating location of extraction and processing and location of manufacture. Include a statement indicating projected costs for each product being extracted, processed, and manufactured within a straight-line 500 mile (800 kilometer) total travel distance of the project site using a weighted average determined through the following formula: (Distance by rail/3) + (Distance by inland waterway/2) + (Distance by sea/15) + (Distance by all other means) = 500 miles [800 kilometers].

D. Credit IEQ 4.1: If field applied, provide manufacturer's MSDS or technical data sheet showing a printed statement of VOC content for all adhesives and sealants used on the project and demonstrating compliance with SCAQMD Rule #1168, effective July 1, 2005 and amended January 7, 2005. Provide manufacturer's product data for aerosol adhesives, including printed statement of VOC content that demonstrates compliance with the limits defined in Green Seal standard GS-36, in effect October 19, 2000.

E. Credit IEQ 4.2: If field applied, provide manufacturer's MSDS or technical data sheet showing a printed statement of VOC content for all paints and coatings used on the project and demonstrating compliance with Green Seal standard GS-11, Paints, May 20, 1993; with Green Seal GC-03, Anti-Corrosive Paints, January 7, 1997; with SCAQMD Rule #1113, effective January 1, 2004.

1.8 QUALITY CONTROL

A. General: Certain components of the metal assemblies may not be fully detailed on the Drawings which indicate only desired profile and design intent.

1. Engineer, fabricate, and install these components within the physical limitations indicated on the Drawings.
2. Drawings and calculations for the assemblies shall be prepared, signed and sealed by the Contractor's Engineer.
3. Submit drawings and calculations to AHJ for approval, and pay fee(s) incurred thereby before start of installation.
4. Fasteners and connections are shown schematically. Final fasteners or connections size and location shall not conflict with or require revision of the finish profiles of the supporting and supported work.

5. Connections to the supports shall not impose eccentric loading, or induce twisting or warping and shall be able to accommodate misalignment of the structure within limits allowed by the ACI and AISC tolerances.

B. Structural Design and Inspection: Structural design and inspection of structural components related to stairs, railings, landings, platforms and similar structural elements shall be performed by the Contractor's engineer.

C. Qualifications

1. Installers: Competent installers with minimum 5 years experience in installation of AMF. Upon request provide record of successful in-service performance, as well as sufficient production capacity to produce required work. Installers shall be thoroughly conversant with laws, by-laws and regulations which govern.
2. Welders: Welding of structural components related to stairs, railings, landings, platforms and similar structural elements shall be performed by fabricator having minimum certification of AWS. Welders shall be familiar with welding procedures for structural welding for steel; structural welding for aluminum, and structural welding for sheet steel.
3. Organic-Coating Applicator Qualifications: Firm experienced in successfully applying organic coatings of type indicated to aluminum extrusions and employing competent control personnel to conduct continuing, effective quality-control program to ensure compliance with requirements.
4. Licensed Professionals: California-licensed structural engineer carrying professional liability insurance.

D. Welding: Quality procedures and personnel according to ANSI/AWS D1.1/D1.1M, ANSI/AWS D1.2/D1.2M and ANSI/AWS D1.3/D1.3M. Certify each welder has satisfactorily passed AWS qualification test for welding processes involved and if pertinent, has undergone recertification.

E. Certifications: Submit certification from the Contractor’s engineer stating that assemblies are capable of supporting their own weight and specified live loads, without failure and within the criteria specified.

F. ***2 . . .*** **DELETED** ~~Mockup: Erect at the Project site a full height by 3 vertical supports mockup of the crash rail, complete with resilient bumpers.~~

1. **DELETED** ~~Make mockup complete with all accessories, features required for the final assembly on the building.~~
2. **DELETED** ~~Modify as necessary to achieve a mockup satisfactory to the TJPA Representative, or remove and construct additional mockup(s).~~
3. **DELETED** ~~Approved mockup shall serve as the standard for the same work on the building.~~
4. **DELETED** ~~Remove mockup only after completion and acceptance of final work unless its incorporation in the Work is authorized by the TJPA Representative.~~
5. **DELETED** ~~Protect mockup until its removal or incorporation in the Work is authorized by the TJPA Representative.~~ ***. . . 2***

G. Corrosion Prevention:

1. ***2 . . .*** ~~Engage a California licensed Corrosion Engineer who is an expert in corrosion, to conduct~~ **Conduct** a component-by-component analysis of potential corrosion resulting from galvanic action between materials, for components of curtain wall and aluminum panels and provide report.
2. Submit ~~Engineering~~ Report to TJPA Representative, for review prior to submission of Shop Drawings. Ensure Sample and test results are available upon request. ***. . . 2***

1.9 DELIVERY, STORAGE AND HANDLING

A. Storage and Handling:

1. Handle and store materials at job site to prevent damage to other materials, existing construction or property.
2. Handle components with care, and provide protection for surfaces against marring or other damage. Ship and store members with cardboard or other resilient spacers between surfaces. Use lifting chokers of material that will not damage surface of steel members.

1.10 WARRANTY

A. General:

1. The warranties are governed by the requirements herein, those of Section 01 17 40, and the General Conditions of the Contract.
2. Warranties specified in this Article shall not deprive the TJPA of other rights the TJPA may have under other provisions of the Contract Documents and are in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Warranty: Manufacturer shall warrant work of this Section for 5 years against defects and/or deficiencies in accordance with General Conditions of the Contract. Promptly correct defects or deficiencies which become apparent within warranty period, to satisfaction of TJPA Representative and at no expense to TJPA.

1.11 RECORD DOCUMENTS (AS-BUILT)

A. Maintain and submit record documents as specified in Article 3.09 of the General Conditions and Sections 01 17 20

PART 2 - PRODUCTS

2.1 LEED MATERIAL REQUIREMENTS

A. Credit MR 4: Provide cast nodes, W-shapes, and plates steel materials with minimum 70% recycled content where the total recycled content equals the sum of post-consumer recycled content and ½ post-industrial recycled content.

B. Credit IEQ 4.1: All VOC containing materials applied on site inside of the waterproofing barrier shall comply with LEED credits IEQ 4. Provide adhesives and sealants with VOC content and chemical component limits not exceeding the content limits defined by SCAQMD Rule #1168, July 1, 2005, amended January 1, 2005, and Green Seal GS-36, effective October 19, 2000 for aerosol adhesives as applicable.

C. Credit IEQ 4.2: All VOC containing materials applied on site inside of the waterproofing barrier shall comply with LEED credits IEQ 4. Provide paints and coatings that comply with the limits defined by Green Seal Standard GS-11, effective May 20, 1993, GC-03, January 7, 1997, and SCAQMD Rule #1113, effective January 1, 2004, as applicable.

2.2 MANUFACTURERS

A. One of the manufacturers named, or equal, with a record of successful performance, acceptable to the TJPA Representative and subject to conformance to requirements of Drawings, Schedules and Specifications.

2.3 PERFORMANCE REQUIREMENTS

A. General:

1. Provide railings capable of withstanding the loads prescribed by the CBC without exceeding the allowable design working stress of the materials involved, including anchors and connections.
2. Apply each load to produce the maximum stress in each component.
3. Other loading criteria applicable to this Section are specified in Sections 08 05 00 and 08 05 13.

B. Deflection: Limit deflection under uniform load to L/360; L/120 under concentrated load; or 1/4 inch maximum, whichever is more restrictive.

C. Design Criteria for Critical and Non Critical Areas: Refer to Note CD 6 on Structural Drawing S-0005.

1

D. Provide bonding where required by the specific equipment installation requirements of by other requirements of the project contract documents. ***1***

2.4 MATERIALS

A. Stainless Steel: Austenitic stainless steel as follows.

1. Tubing: ASTM A 554, Grade MT 316L.
2. Pipe: ASTM A 312/A 312M, Grade TP 316L.
3. Sheet, strip, plate, and flat bar: ASTM A 666, Type 316L.
4. Bars and shapes: ASTM A 276, Type 316L.

B. Structural Steel Shapes, Plates, Etc.: Material conforming to ASTM A 36.

C. Hollow Structural Steel Sections: Material conforming to ASTM A 36.

D. ***1*** Steel Pipe Handrails: Conforming to ASTM A 500.

E. Steel Pipe Bumpers: Conforming to ASTM A 500. ***1***

F. Galvanized Sheet Steel: Supply 20-gage core thickness commercial quality to ASTM A 653, CS Type A, with Z275 (G90) zinc coating designation to ASTM A 653.

G. Cast Steel Handrail Wall Brackets: In compliance with local building code requirements and to meet design requirements indicated on Drawings.

H. Welding electrodes and filler metal: Types recommended by AWS for each type of metal required, and as required for conditions of use. Ensure color match, strength and compatibility in the fabricated items.

I. High Strength Bolts:

1. Steel: Bolts, nuts and washers conforming to ASTM A 32. Supply each type and size of bolt and nut of same manufacture and of same lot.

   a. Bolts: Heavy, hexagon head high strength structural bolts, of standard size, of lengths required for thickness of members joined and for type of connection.
   b. Nuts: Heavy, hexagonal, semi-finished nuts.
   c. Washers: Flat and smooth hardened washers, quenched and tempered to suit applications, ASTM F 844.
   d. Hardened Steel Washers: To suit applications and conforms to ASTM F 436.

e. Lock Washers: Helical spring type steel “lock” washers to suit applications and conforming to ASME standards.

2. Stainless Steel: For exterior locations, unless otherwise indicated, use AISI Type 316.

   a. Bolts: To suit applications and conforms to ASTM F 738.
   b. Nuts: To suit applications and conforms to ASTM F 836.
   c. Lock Washers: Helical spring type steel “lock” washers to suit applications, conforming to ASME standards.

3. Vandal-Resistant Fasteners: AISI Type 304 stainless steel, dual pin type to suit applications and acceptable to TJPA Representative. Use for exposed fasteners in public areas, unless otherwise indicated.
4. Security Fasteners: Button head "Torx® Plus R," tamper-resistant No. 10 stainless steel machine screws.

J. Common or Ordinary Bolts and Anchor Bolts: Unfinished bolts conforming to ASTM A 307, Grade A, with hexagon heads and nuts where exposed in the finish work. Provide common bolts of lengths required to suit thickness of material being joined, but not projecting more than 1/4 inch beyond nut, without the use of washers. Supply anchor bolts of lengths noted, but projecting not less than 1/2 inch beyond nut unless otherwise noted.

K. Dielectric Separator: Provide quick drying non-staining alkali-resistant bituminous paint or epoxy resin solution or membrane type to acceptance of TJPA Representative.

L. Cast-In-Place and Post-Installed Anchors in Concrete: Torque-controlled expansion type or chemical type with capability to sustain, without failure, load imposed with a safety factor of 4.

1. Material for interior locations: Carbon-steel components zinc-plated to comply with ASTM B 633 or ASTM F 1941, Class Fe/Zn 5 unless otherwise indicated.
2. Material for exterior locations: Alloy Group 1 or Group 2 stainless-steel bolts, ASTM F 593, and nuts, ASTM F 594.

M. Grout and Anchoring Cement:

1. Non-shrink non-metallic grout: Premixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with CE CRD-C 621. Provide grout specifically recommended by manufacturer for application of type specified in this Section.
2. Manufacturer: Bonsal Anchor Cement by WR Bonsal Co., Por-Rok by Minwax Construction Products Division.

N. Primer: The following by Tnemec, or equal of the same generic type and with equivalent characteristics by Carboline, and Sherwin Williams.

1. ***2 . . .*** Shop Applied: “90-97 TnemeZinc” **by Tnemec**. ***. . . 2***
2. ***1*** Shop Applied Primer of the same generic type and with equivalent characteristics by Carboline.
3. Shop Applied Primer of the same generic type and with equivalent characteristics by Sherwin Williams.
4. Field Applied: “94-H20 Hydro-Zinc”.
5. Field Applied Primer of the same generic type and with equivalent characteristics by Carboline.
6. Field Applied Primer of the same generic type and with equivalent characteristics by Sherwin Williams. ***1***

O. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC Paint 12 but containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

2.5 SCHEDULE OF ITEMS:

A. Unistrut Framing:

1. ***1*** Multipurpose steel profiles by Unistrut, Cooper B-Line, Inc. or Power-Strut U.S., complete with manufacturer's standard steel fasteners and connectors, nuts integrally self-locking or fitted with locking devices. ***1***
2. Provide hot-dip galvanized finish on steel members, hanger rods, nuts, bolts, connectors, and anchors.

B. Chain: Hot-dip galvanized Torus chain, Grade 30, 1/2-inch size, with hot-dip galvanized round eye bolt snap and bolt type shackles sized to fit the chain.

C. ***2 . . .*** **DELETED** ~~Queuing Post Inserts:~~

1. **DELETED** ~~Type 316, heavy wall, threaded female sleeves provided with studs for embedment in concrete, removable watertight threaded covers of the same material, and designed to receive the queuing posts with a matching thread.~~
2. **DELETED** ~~Unless otherwise indicated, make post inserts 4 inches long.~~
3. **DELETED** ~~Coat surfaces that will be embedded in concrete with bituminous paint applied to a DFT of 5 mils minimum.~~ ***. . . 2***

D. ***1*** DELETED

E. DELETED

F. DELETED ***1***

G. Retractable Bollard: See Specification Section 28 16 44 Perimeter Security Systems.

H. ***1*** Bollards in Landscape Areas: See Specification Section 28 16 44 Perimeter Security Systems. ***1***

I. Expanded Steel Mesh for Gypsum Board Partition Reinforcement: See Section 09 22 19 Metal Framing.

J. Vanity Support Steel Frame

1. Design for 1600 lb concentrated load at any point along the spans with a maximum deflection of L/360 or higher as necessary to prevent stone cladding from forming cracks.
2. Supply and install hot dipped galvanized steel H.S.S. posts, beams and frame complete with base plates and expansion bolts as shown on drawings. Provide framing to underside of structure to provide required stiffness.
3. Seal all bolted connections through waterproofing membrane.
4. Co-ordinate with carpentry and other trades for final design.
5. Provide frame for restroom mock-up works. Modify after field review if required.

2 . . .

6. **Color: Black (PT-11)** ***. . . 2***

K. Deflection And Lateral Seismic Support Steel For Masonry Walls (Non-Load Bearing): as detailed; steel angles, fixed both sides to structure above, continuous where exposed in finished areas. For size and extent, see structural drawings. See plan details of masonry for required support plates at seismic joints.

L. Support steel for ceiling hung toilet partitions (at all pilaster locations):

1. Design for 1000 lbs per pilaster.
2. Provide 8” x 2 ¼” hot dipped galvanized steel channel for support of ceiling hung toilet partitions hung from 2” x 2” x ¼” diagonal angle struts at ends and at 4’-0” centers max. Provide expansion type anchorage or unistrut type cast-in attachment to satisfy AHJ. Anchor to underside of slab.
3. Drill for and provide two galvanized 3/8” dia. Bolts at each toilet partition pilaster, according to reviewed shop drawings. Coordinate with toilet partition manufacturer (see Section 10 21 13 Toilet Partitions and Screens).
4. Provide additional steel angle bracing for seismic requirements and for partition support above ceiling.
5. Coordinate with Mechanical and Electrical Divisions with ductwork, conduits, etc. Span over or under ductwork and the like as required, to support partitions. Provide site mock-up for approval before proceeding.

M. ***1*** Corner Guards:

1. ***2 . . .*** For Concrete Columns/Concrete Block Walls: As detailed, 4” x 4” x ½” **clear anodized** fabricated aluminum angles, 8’-0” high typical, or as shown on drawings with anchor straps at 12” o.c.
2. For Gypsum Board Wall: As detailed, 4” x 4” x ½” **clear anodized** fabricated aluminum angles, 8’-0” high typical, or as shown on drawings. Flush countersunk fasteners. ***1***
. . . 2

N. Aluminum Checkered Plate:

1. ***1*** 1/8” thick aluminum checkered plate (1/4” thick at loading dock) for miscellaneous enclosures. (See enclosures in loading dock). ***1***
2. Attach with 400 series stainless steel recessed fasteners through to steel studs in gypsum board, maximum 2’-0” o.c., coordinate. Flush countersunk fasteners.
3. When used as enclosure, attach to aluminum 1/8” thick “Z” clips/channels to structure as shown.
4. Provide movement allowance in anchorage.
5. Clear grey anodized finish.
6. ***1*** Attach, per CID A-A-1922A, 400 series stainless steel recessed fasteners through to stainless steel expanding sleeve in CMU wall. Flush countersunk fasteners maximum 2’-0” o.c. ***1***

O. Catwalks:

1. Design, supply and install galvanized steel catwalk and railings and floor grating as detailed on drawings.
2. Design floor with 1-3/16” o.c. spaced 1” x 1/8” bearing bars floor grating grille with cross bars at 4” o.c. to support minimum of 200 lb per square foot and to authorities having jurisdiction whichever is higher.
3. Hot dip galvanize after fabrication.
4. Refer to structural drawings for work by that division for this section. Coordinate.
5. Provide removable handrail complete with steel H.S.S. sleeves and galvanized bolt fasteners as shown on drawings.

P. Security Screens:

1. ***2 . . .*** Complete with **prefinished** hot dipped galvanized steel H.S.S. and angle frame, mesh with #10 gage wire, fasteners, clips to heights and widths as shown on drawings.
. . . 2

2. Provide galvanized sliding doors, with track rail and roller wheels with limit pins and HASP for padlock.
3. Coordinate with Electrical division to allow for penetrations of cable trays and the like.
4. Provide 1” x 1” wire grid.
5. By California Wire Products, Corona, CA (Basis of Design).
6. Coordinate with 08 71 10 Hardware. For hardware set number 15.
7. ***2 . . .*** **Factory Finish: Powder Coat.**
8. Color: Machinery Gray ~~Powder Coated~~. ***. . . 2***

Q. Elevator Pit Divider Screens:

1. Complete with hot dipped galvanized steel angle frame, brackets, steel mesh with #9 wire, and to height and width as shown on drawings.
2. Coordinate with gypsum board Section 09 21 16 for installation of gypsum board sloped cants.
3. Prepare surfaces for priming and painting by Section 09 91 00.

2 . . .

4. **Color: Black (PT-11)** ***. . . 2***

R. Elevator Ladders:

1. Complete with hot dipped galvanized stringer rail, rungs and brackets and fasteners to size shown on drawings.
2. Coordinate with steel liner wall provided by others.
3. Prepare surfaces for priming and painting by Section 09 91 00.

2 . . .

4. **Color: Black (PT-11)** ***. . . 2***

S. Pipe and duct protection

1. All pipes and ductwork within 4’-0” of the floor shall be surrounded by three 4” x ¼” bent steel plate guards, 12” wide and 6” deep at 16” o.c., galvanized and anchored to structure behind with 2” x 2” clip angles. See drawings for locations.

T. Miscellaneous Railings: Part of Section 05 51 00 Steel Stairs and Section 11 13 00 Loading Dock Equipment.

U. Overhead Catenary System (OCS) Steel Framing

1. Design, supply and install hot dipped galvanized Overhead Catenary System with steel framing to support transit overhead wires.
2. Steel framing system shall be an extension of the steel framing H.S.S. supports provided by the Structural Steel section. Coordinate work.
3. Provide H.S.S. vertical adjustable extensions complete with H.S.S. tubes to fit, through bolt attachment, with washers and nuts, plates, clips and continuous steel channel as shown on drawings.
4. All attachment shall be by bolted connections with no welding on site. Hot dipped after fabrication.
5. Provide tamper-resistant fastening.
6. Coordinate with Transit Authority for anchor points and levels and allowance for the framing system for attachment of cable.

7. Fiber-Reinforced Plastics Extruded Isolation Material: Manufactured by Liberty Pultrusions (Basis of Design) of West Mifflin, PA. Provide continuous length with minimum joints of fiber-reinforced plastic isolation material extruded to fit continuous channel and fastened to channel as recommended by manufacturer. Treat and seal joints per manufacturer's standard details. Internal and external of channel material thickness not less than 0.375" thick. Custom color to be provided. Polyglass "F" or "C" as recommended by manufacturer using fire retardant type material.

    a. Other manufactures below are acceptable provided they meet the performance requirements:

        1) Advance Fiber Products, La Crosse, WI 54601
        2) Bedford Reinforced Plastics, Bedford, PA 15522

8. See sheets beginning at A1-8550.

2 . . .

9. **Color: To match BM-1548 by Benjamin Moore (PT-3).** ***. . . 2***

V. Manhole Covers (MHC):

1. Design, supply and install hot dipped galvanized steel framed and concrete lift-out lid for the transformer vaults at the sidewalk level to SFPUC standards. See Architectural drawings beginning on A1-3001.
2. Design for a minimum uniform load of 250 lbs/sf or a concentrated load of 8000 lbs/f and to SFPUC standards whichever produces the greatest stress. Provide hot dipped galvanized and epoxy coated reinforcing bars required for loading. Hot dipped galvanized frame to be minimum 1/8" thick. Emboss SFPUC lettering to standard requirements.
3. Manhole Cover #1 (MHC #1): Manhole cover constructed with nominal 5'-0" x 5'-0" concrete with beveled steel frame with 39" circular fixed hot dipped galvanized grating and frame. Frame and rebars to be hot dipped galvanized to SFPUC standards. Provide four (4) brass lifting lugs (couplings) 1-1/2" diameter to SFPUC standard. Finish concrete to be minimum 5000 PSI air-entrained with color and finish to match Landscape Division. Provide water tight perimeter seal with backing and sealant. Design similar to drawing A1-7275. SFPUC grating to be SFPUC standard to vented installations similar to Swiveloc vented cover. Vented cover shall be minimum 60% open.
4. Manhole Cover #2 (MHC #2): Manhole constructed of nominal 10'-0" x 7'-0" concrete with hot dipped galvanized steel frame similar to MHC #1 except without grating. Provide minimum six (6) brass lifting lugs (couplings) 1-1/2" diameter to SFPUC standard. Coordinate final number and load limits of lifting lugs with SFPUC requirements. Provide hot dipped galvanized rebars. Provide minimum 5000 PSI with color and finish to match Landscape Division, with air-entrained concrete. Provide water tight seal with backing and sealant.
5. Manhole Cover #3 (MHC #3): Provide 39" diameter manhole cover by Swiveloc (basis of design) complete with UG-2 design vented cast grated cover carrier rail, exhaust ports, bent head actuator bolt and drain grooves. No. 072154.

W. Masonry Vertical Seismic Joints:

1. Supply and install galvanized steel cover plates on masonry seismic joints.
2. Attach plates on one end at maximum 2'-0" o.c.
3. Joint to be filled with fire safing and smoke seal by 07 21 00.
4. See drawings beginning at A1-3192.

X. Janitor Closet Galvanized Crash Rail:

1. Supply and install hot dipped galvanized floor mounted crash rail complete with hot dipped galvanized flanges and fasteners.
2. See Architectural drawings for detail and location.

2 . . .

3. **Color: PT-10 *. . . 2***

Y. Cast-In Steel Angle

1. In Loading Docks provide hot dipped galvanized cast-in slab edge angle at edge of raised slabs and at ramp location not covered by other sections.
2. Angle to be 6" x 6" x 3/8" thick. Miter fit all corners.

Z. ***2 . . . 1*** Transformer Vault Steel Landing Platforms, Railings and Stairs: ~~Design, supply and install all steel work in transformer vaults including but not limited to ladders, stairs, platform railing guards gratings as shown on drawings. All material which is taken from SFPUC standard details. All material shall be hot dipped galvanized except for railings that are blast cleaned and prime coated. All structural steel conforming to latest ASTM specification A-36 and detailing and fabrication to latest AISC specifications. Provide surfaces smooth and face from burs and sharp projections. All grating shall be welded type with 1" x 1/8" bearing bars at 1-3/16" o.c. and cross bars at 4'-0" o.c. Design to OSHA requirements. Swing gate with automatic closures at access ladder landings.~~

1. **Design, supply and install all steel work in transformer vaults including but not limited to ladders, stairs, platform railing guards gratings as shown on drawings. All material which is taken from SFPUC standard details. All material shall be hot dipped galvanized except for railings that are blast cleaned and prime coated. All structural steel conforming to latest ASTM specification A-36 and detailing and fabrication to latest AISC specifications. Provide surfaces smooth and face from burs and sharp projections. All grating shall be welded type with 1" x 1/8" bearing bars at 1-3/16" o.c. and cross bars at 4'-0" o.c. Design to OSHA requirements. Swing gate with automatic closures at access ladder landings.**
2. **Color: PT-10. *. . . 2***

AA. DELETED ***1***

BB. Miscellaneous required steel supports and metal fabrications which are not part of a manufactured item or covered under another Section of the Specifications, including items from installation by other Sections.

CC. Escalator Pit Curb Angle: Provide angles at escalators E304, E305, E510 and E512. Angles are to form parts of escalator pits. See drawings started at A1-7550.

2.6 FABRICATION

A. General:

1. Design assemblies to avoid or minimize site welding, except where attached to a concealed support.
2. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.
3. Remove sharp and rough areas on exposed surfaces. Projecting edges are not permitted. Ease exposed edges to a radius of approximately 1/32 inch.
4. Cut, reinforce, drill, punch, thread and tap metal work as required to receive finish hardware and similar items of work.
5. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

6. Form exposed connections with flush, hairline joints unless welded, in which case connections shall be invisible.
7. Close exposed ends of handrail and railing members.
8. Provide wall returns at ends of wall-mounted handrails.
9. Provide sheet or plate fillers to support structural loads of handrails where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thickness. Size fillers to produce adequate bearing to prevent bracket rotation and overstressing of substrate.

B. Preassemble and prime assemblies in shop to greatest extent possible to minimize field splicing and assembly. Clearly mark units for reassembly and coordinated installation.

1. Disassemble units only as necessary for shipping and handling limitations.
2. Clearly mark units for reassembly and coordinated installation.
3. Use connections that maintain structural value of joined pieces.
4. Form changes in direction of railing members by radius bends of radius indicated.

C. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain profile of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of handrail and railing components.

D. Weld connections continuously.

1. Do not use stitch, spot or tack welds on exposed surfaces.
2. Use materials, methods and welding sequence that minimize distortion and develop strength and corrosion resistance of base metals.
3. Comply with AWS D 91 for recommended practices in shop welding. Welds on exposed surfaces shall be continuous.
4. Use only technicians qualified to weld stainless steel using TIG equipment.
5. Maintain proper welding temperature to avoid discoloring adjacent metal.
6. Clamp components in jigs during welding to avoid distortion.
7. Alligatored, discolored and warped components will be rejected.
8. Obtain fusion without undercut or overlap.
9. Remove welding flux immediately.

E. At exposed connections, finish exposed welds and surfaces to be invisible from adjacent surfaces, under normal lighting conditions, and so those contours of welded surface match those adjacent.

F. Provide wall brackets, flanges, miscellaneous fittings, and anchors required for connection of metal components to other construction fabricated to the profiles and dimensions indicated on approved shop drawings.

G. Provide inserts and other anchorage devices for connecting metal components to concrete or masonry work. Fabricate anchorage devices capable of withstanding loadings imposed by the assemblies with a reasonable factor of safety. Coordinate anchorage devices with supporting structure.

H. Fabrication Tolerances:

1. Squareness: 1/8 inch maximum difference in diagonal measurements.
2. Maximum offset between components at joints: 1/16 inch except that at welded joints no offset is allowed.
3. Maximum misalignment of adjacent members: 1/16 inch.
4. Maximum bow: 1/8 inch in 48 inches.
5. Maximum deviation from plane: 1/16 inch in 48 inches.

2.7 CORROSION PROTECTION

A. Design assembly components to ensure that no metals, including alloys of the same base metal, are placed in contact with materials that will produce damage due to electrolytic action or other forms of corrosion.

B. ***2 . . .*** Separate dissimilar metals to prevent electrolytic action. Provide letter of confirmation, ~~from corrosion engineer,~~ that infill components, accompanying trims and flashings and attachments to adjacent construction are designed to eliminate potential for galvanic action between components.

C. ~~Comply with recommendations of the corrosion engineer approved by the TPJA Representative, as specified above.~~ **Conduct a component-by-component analysis of potential corrosion resulting from galvanic action between materials, for components of the work of this section and provide report.** ***. . . 2***

2.8 FINISHES

A. Hot Dip Galvanizing: Galvanize all items listed, as specified in Section 05 05 12 Hot Dip Galvanizing with minimized spangles, and chemically treated.

B. Cleaning and Shop Painting:

1. Clean steel to SSPC-SP 6, "Commercial Blast Cleaning," and remove loose mill scale, weld flux and splatter.
2. Shop prime steel, including galvanized steel, with one coat of primer (except 2 coats of primer on bollards) to dry film thickness of one mil for a single coat and 2 mils for 2 coats.
3. Paint on dry surfaces, free from rust, scale or grease. Do not paint when temperature is lower than 45 degrees F. Paint items under cover and leave under cover until primer is dry. Follow paint manufacturer's recommendations regarding application methods, equipment, temperature and humidity conditions.
4. Clean but do not prime surfaces to be field welded. Touchup these surfaces in the field as specified below.

C. Protection: Protect surfaces of prefabricated items with an electrostatically-applied strippable film. Remove film promptly after installation is complete.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions: Verify actual site dimensions and location of adjacent materials prior to commencing work.

1. Examine adjacent construction and supports.
2. Examine wall flashings, water and weather barriers, and other built-in components to ensure coordinated, weathertight installations.
3. Verify that substrates are within allowable tolerances, plumb, level, clean, and will provide a solid anchoring surface.
4. Restroom Mock-up: Provide vanity support installation for 1 male and 1 female public restroom for review and approval prior to continuation of work. Complete deficiencies and receive approval before proceeding with the work.

B. Notification: Notify General Contractor in writing, with copy to TJPA Representative, of conditions detrimental to the installation.

C. Evaluation and Assessment: Commencement of work implies acceptance of previously completed work.

3.2 INSTALLATION

A. General:

1. Do not install damaged and defective components.
2. Do not cut, trim or weld parts during erection.
3. Return components that require alteration to the shop for refabrication, if possible, or for replacement by new parts.
4. Install work with tight, flush joints accurately fitted.

B. Fastening to in-place construction:

1. Set railings accurately in location, alignment and elevation, plumb, level and true, measured from established lines and levels. Provide toe guards where indicated.
2. Set posts plumb within a tolerance of 1/16 inch of plumb.
3. Align rails so that variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed 1/8 inch in 12 feet.
4. Install chain so it sags no more than 2 inches for its entire length.
5. Provide required anchorage devices and fasteners to attach components securely to in-place construction.
6. Tap posts to receive crash rail bumpers. Install bumpers fastened at each post with Type 316 stainless steel bolts driven thru a washer of the same material.

C. Installation tolerances: Adjust metal fabrications for squareness, alignment, twist, levelness and plumbness to the following tolerances.

1. Squareness where applicable: Plus or minus 1/16 inch, measured on the diagonal.
2. Alignment: Plus or minus 1/16 inch where fabrications are separated by one inch or more; where components join or are separated by less than one inch, components shall be aligned; no deviations permitted.
3. Twist: Plus or minus 1/16 inch, except that deviation shall be such that joined panelized components are flush at joints; no deviations permitted.
4. Plumbness: Plus or minus 1/16 inch, except that deviation shall be such that joined panelized components are flush at joints; no deviations permitted.
5. Levelness: 1/8 inch from level, except where tighter tolerances are required for joining or alignment with adjacent work.
6. Deviation from theoretical location in plan: 1/4 inch, except where tighter tolerances are required for joining or alignment with adjacent work.

D. Field Painting and Touchup:

1. Paint bolt heads, washers, nuts, field welds and previously unpainted items. Touchup with matching paint.
2. For shop primer damaged during transit and installation, sand or wire brush damaged area down to bright metal extending the cleaning a minimum of 2 inches unto undamaged primer and immediately touchup with same primer used for shop priming.

3.3 SITE QUALITY ASSURANCE

A. Site Tests and Inspections:

1. TJPA will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.

2. Testing agency will report test results promptly and in writing to the Contractor and TJPA Representative.
3. Extent and Testing Methodology: Testing agency will randomly select completed load-bearing assemblies for testing that are representative of different designs and conditions in the completed Work.
4. Weldments: For single pass fillet welds, inspect welds visually. For other types of welds, the weld testing provisions of Section 05 10 00 apply to this Section.
5. Testing agency will report test results promptly and in writing to Contractor and TJPA Representative.
6. Additional Testing: Where load-bearing assemblies are removed and replaced or are repaired, additional testing will be performed to determine compliance of replaced or additional work with specified requirements.
7. Structural Inspection: Ensure a California-licensed structural engineer specified herein inspects work of this Section during erection/installation.

B. Non-Conforming Work: Replace damaged work that cannot be satisfactorily repaired, restored or cleaned, to satisfaction of TJPA Representative at no cost to TJPA.

3.4 CLEANING AND PROTECTING

A. Cleaning: On completion of installation, clean the work of marks and other foreign substances. Clean aluminum and stainless steel by washing thoroughly with clean water and soap and rinsing with clean water.

B. Protection: Protect work against stains and damages until acceptance by TJPA.

1. Protect finishes of AMF from damage during construction period with temporary protective coverings approved by architectural metal fabricator. Remove protective covering at the time of Substantial Completion.
2. Provide protective covering on finished surfaces. Remove protection when installed work will be inspected. Do not use protective coverings that will damage finishes or become permanently bonded. Do not leave coating residue on finished surfaces.

C. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint, and paint exposed areas with same material.
2. Cleaning and touchup painting of field welds, bolted connections and abraded areas of shop paint are specified in Section 09 91 00.

D. Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and repair galvanizing to comply with ASTM A780.

E. Refinishing: Restore finishes damaged during installation and construction period so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 05 50 00

SPECIFICATION ISSUE LOG

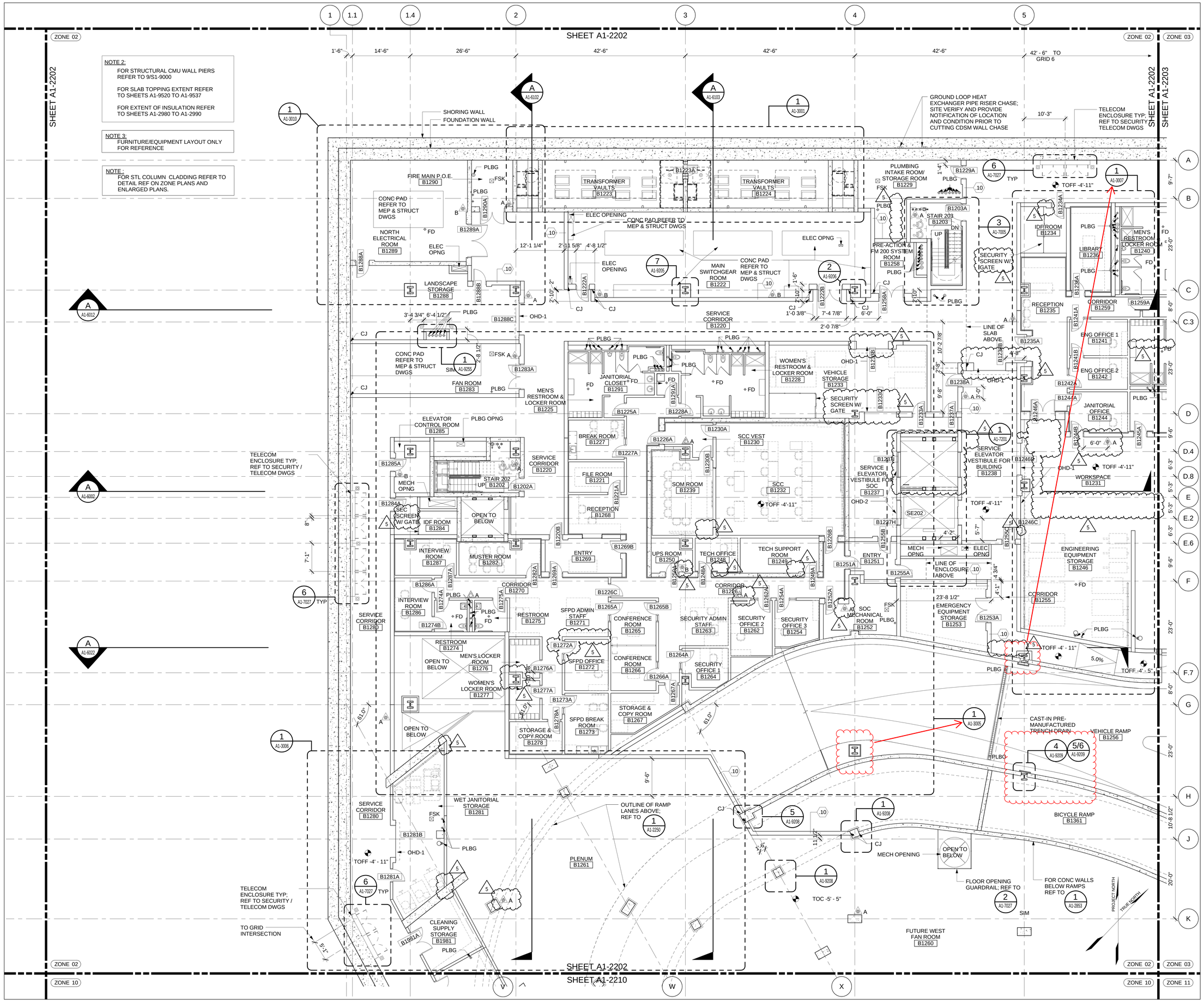
Revision	Date
0	03/31/14
1	09/12/14
2	12/16/14

Note: If this sheet is not 44" x 34", it has been revised from its original size. Scales noted on drawings/details are no longer applicable.

NOTE 2:
FOR STRUCTURAL CMU WALL PIERS REFER TO 9/S1-9000
FOR SLAB TOPPING EXTENT REFER TO SHEETS A1-9520 TO A1-9537
FOR EXTENT OF INSULATION REFER TO SHEETS A1-2980 TO A1-2990

NOTE 3:
FURNITURE/EQUIPMENT LAYOUT ONLY FOR REFERENCE

NOTE :
FOR STL COLUMN CLADDING REFER TO DETAIL REF ON ZONE PLANS AND ENLARGED PLANS.



1 A1-2000 LOWER CONCOURSE LEVEL ZONE 02 FLOOR PLAN
SCALE: 1/8" = 1'-0"

0 4 8 16 24
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

01 02 03 04 05 06 07 08
09 10 11 12 13 14 15 16
Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
0	03/31/14	ISSUED FOR CONSTRUCTION	GM
1	04/22/14	ISSUED FOR BID - ADDENDUM #3	GM
2	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
3	07/18/14	PER ASI No. 0121	GM
4	09/12/14	PER ASI No. 0127	GM
5	12/18/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
ZONE 02 FLOOR PLAN

ARCHITECT / ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21000
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
P. MACPHAIL	W.R. BRADLEY
DRAWN BY: K. WROBLEWSKI	DATE: 12/16/2014

SCALE	SIZE	FACILITY NO.	REVISION
1/8" = 1'-0"	E	140	5

SHEET NUMBER SKA-4368
SEQUENCE NUMBER of

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BASED ON SHEET A1-2202

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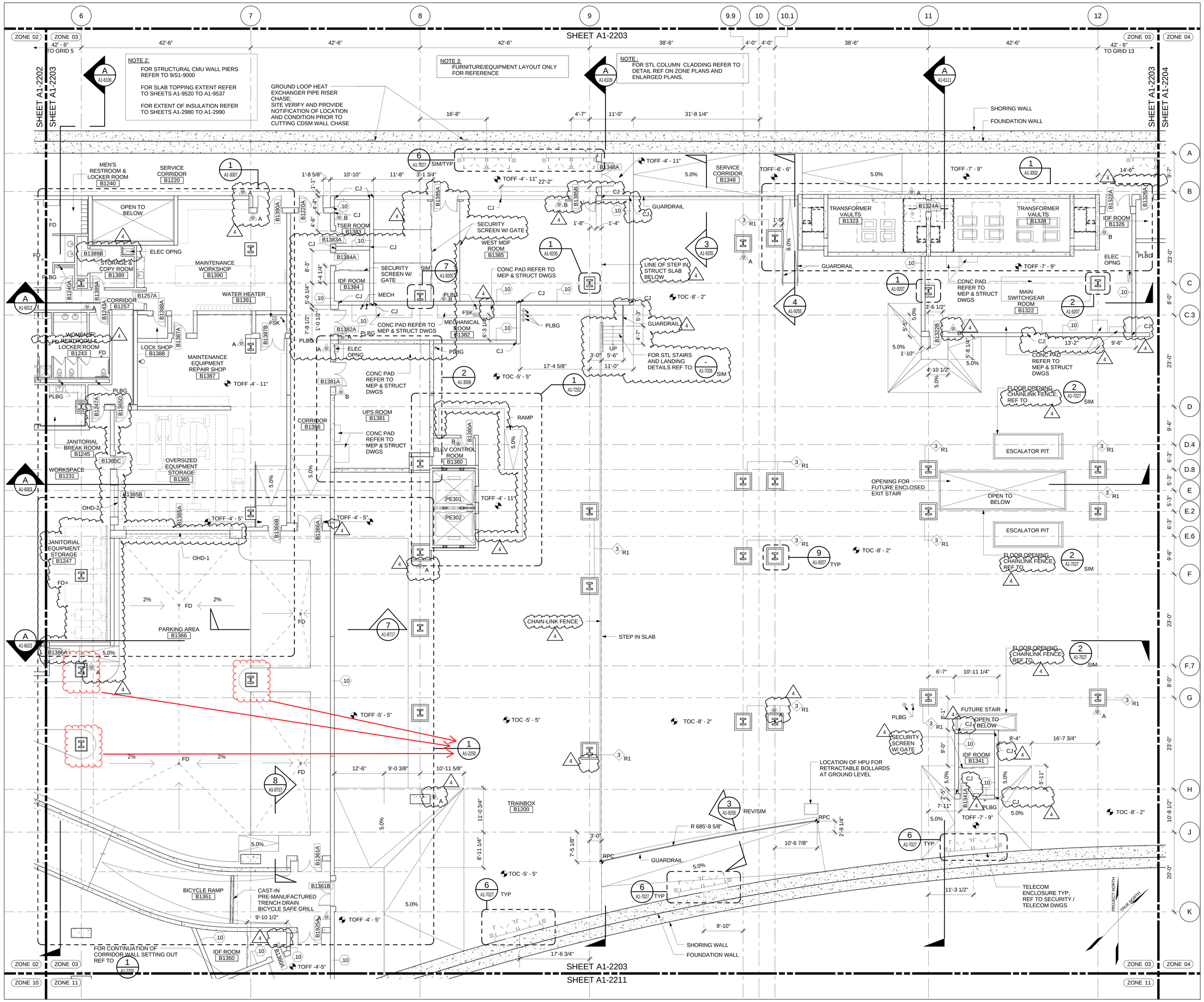

1 A1-2000 LOWER CONCOURSE LEVEL ZONE 03 FLOOR PLAN
SCALE: 1/8" = 1'-0"

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SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

01 02 08 04 05 06 07 08
09 10 11 12 13 14 15 16
Key Map

REVISIONS

NO.	DATE	DESCRIPTION	BY
A	03/31/14	ISSUED FOR CONSTRUCTION	GM
A	04/22/14	ISSUED FOR BID - ADDENDUM #3	GM
A	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
A	07/18/14	PER ASI No. 0121	GM
A	12/18/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
ZONE 03 FLOOR PLAN

ARCHITECT / ENGINEER SEAL
LICENSED ARCHITECT GEORGE RUSSELL METZGER NO. C21504 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: K. WROBLEWSKI	DATE: 12/16/2014
SCALE: 1/8" = 1'-0"	SIZE: E / FACILITY NO.: 140 / REVISION: 4
SHEET NUMBER: SKA-4369	SEQUENCE NUMBER: of

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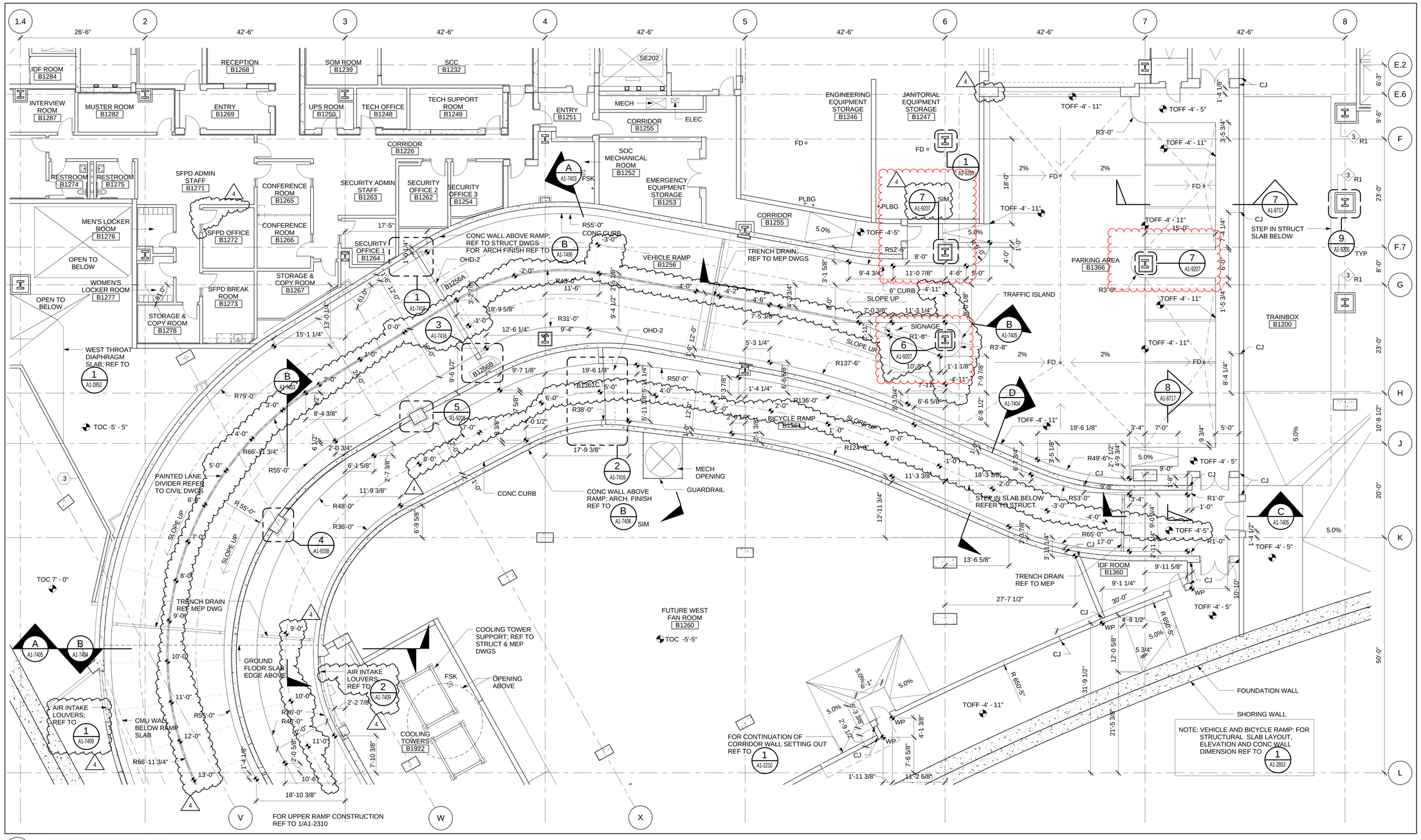


1 A1-2250 LOWER RAMP PLAN
SCALE: 1/8" = 1'-0"

NOTE:

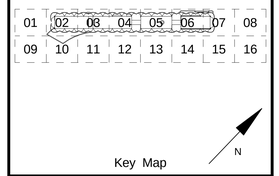
TOP OF FINISH FLOOR OF 6" TYPICAL CONCRETE TOPPING ON RAMPS SHOWN ON THIS DRAWING CORRESPONDS WITH SETTING OUT OF TOC ON A1-2853

PROJECT NORTH
TRUE NORTH

0 4 8 16 24
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



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2	07/18/14	PER ASI No. 0121	GM
3	09/12/14	PER ASI No. 0127	GM
4	12/16/14	PER ASI No. 0128	GM

CONTRACT NO.
08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER RAMP PLAN

ARCHITECT / ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21580
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED
PRINCIPAL ARCHITECT G. METZGER
APPROVED
PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
P. MACPHAIL	W.R. BRADLEY
DRAWN BY: S. PALAZOV	DATE: 12/16/2014

SCALE	SIZE	FACILITY NO.	REVISION
1/8" = 1'-0"	E	140	4

SHEET NUMBER: SKA-4370
SEQUENCE NUMBER: ___ of ___

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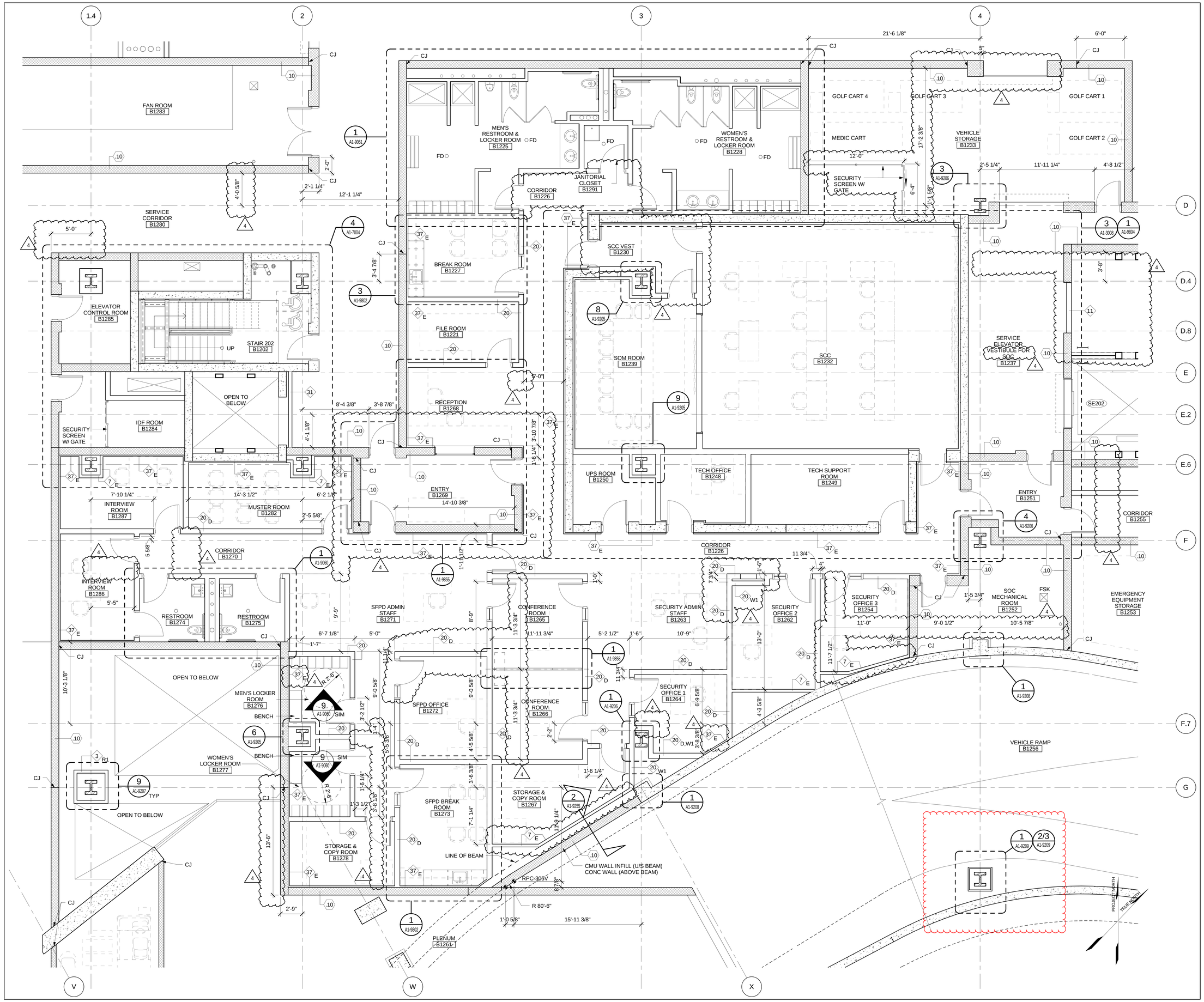

1 A1-2202 PLAN AT SECURITY OPERATIONS SUITE
SCALE: 1/4" = 1'-0"
A1-2000

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SCALE IN FEET

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Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

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09	10	11	12	13	14	15	16

Key Map

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A	06/20/14	ISSUED FOR BID - ADDENDUM #4	GM
A	07/18/14	PER ASI No. 0121	GM
A	09/12/14	PER ASI No. 0127	GM
A	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
SOC SUITE PLAN

ARCHITECT / ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21930
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED
PRINCIPAL ARCHITECT G. METZGER
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PROJECT MANAGER S. ROTT
APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: T. CUNHA	DATE: 12/16/2014
SCALE: 1/4" = 1'-0"	SIZE: E / FACILITY NO.: 140 / REVISION: 4

SHEET NUMBER SKA-4371
SEQUENCE NUMBER ___ of ___

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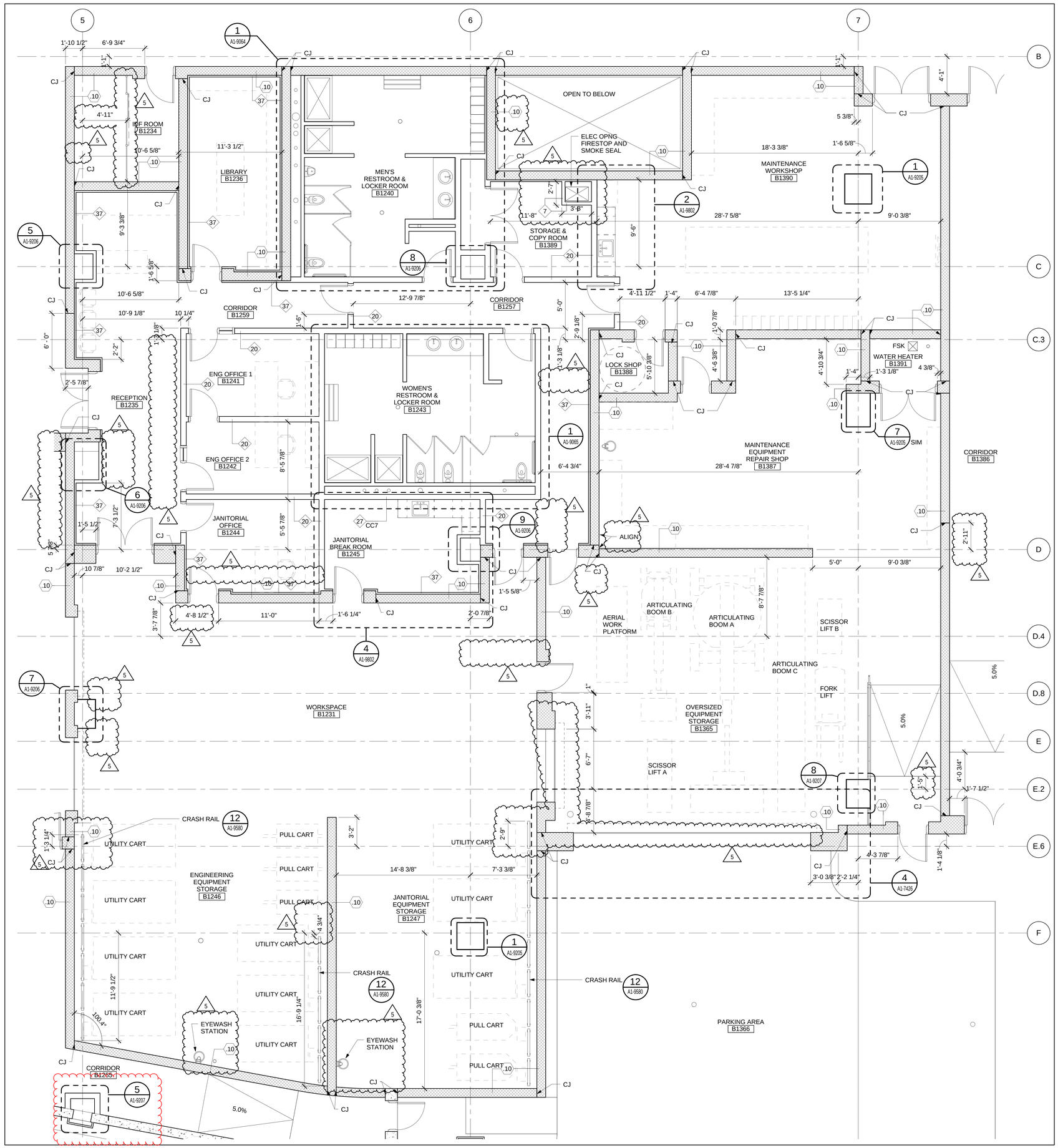

1 A1-2202 PLAN AT ENGINEERING/JANITORIAL SUITE
SCALE: 1/4" = 1'-0"
A1-2203, A1-2000

PROJECT NORTH
TRUE NORTH

0 2 4 8 12
SCALE IN FEET

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
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01	02	03	04	05	06	07	08
09	10	11	12	13	14	15	16

Key Map

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A	08/06/14	PER ASI No. 0123	GM
A	09/12/14	PER ASI No. 0127	GM
A	12/18/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
ENGINEERING/JANITORIAL SUITE
PLAN

ARCHITECT / ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21500
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED
PRINCIPAL ARCHITECT G. METZGER
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APPROVED
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
P. MACPHAIL	W.R. BRADLEY
DRAWN BY: T. CUNHA	DATE: 12/16/2014
SCALE: 1/4" = 1'-0"	SIZE: E
FACILITY NO.: 140	REVISION: 5

SHEET NUMBER SKA-4372
SEQUENCE NUMBER ___ of ___

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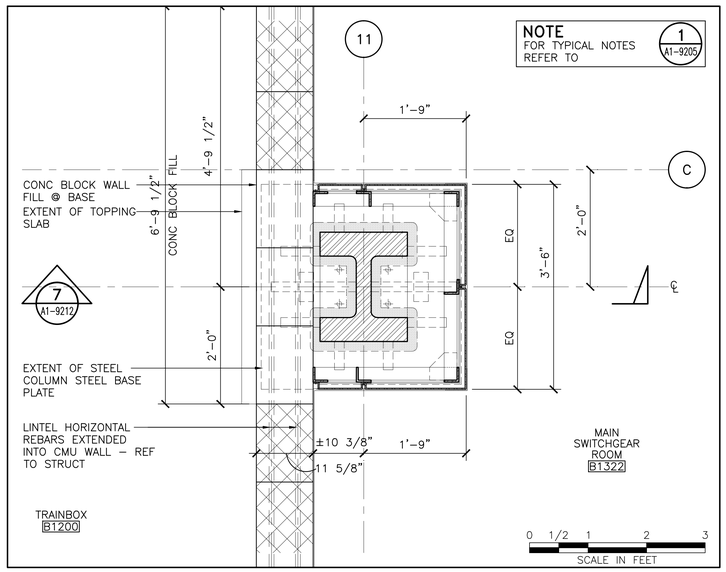
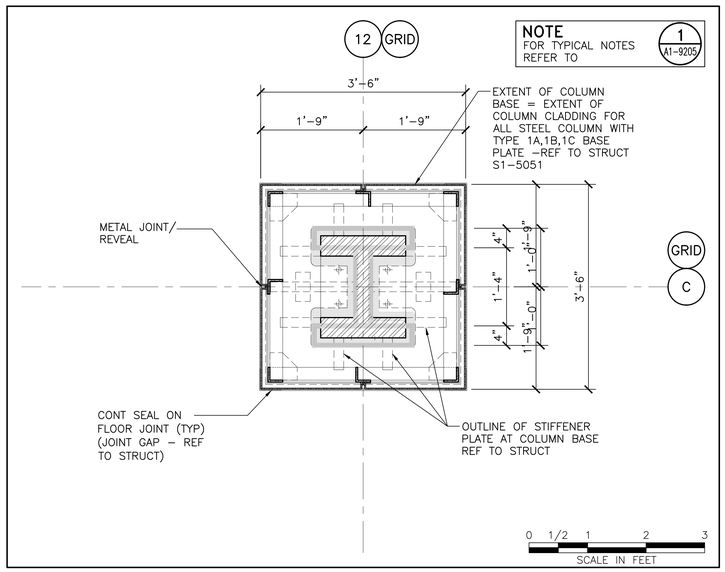


1 A1-9203 DETAIL PLAN – STEEL COLUMN CLADDING
SCALE: 1" = 1'-0"
A1-2000



2 A1-2203 DETAIL PLAN – STEEL COLUMN CLADDING
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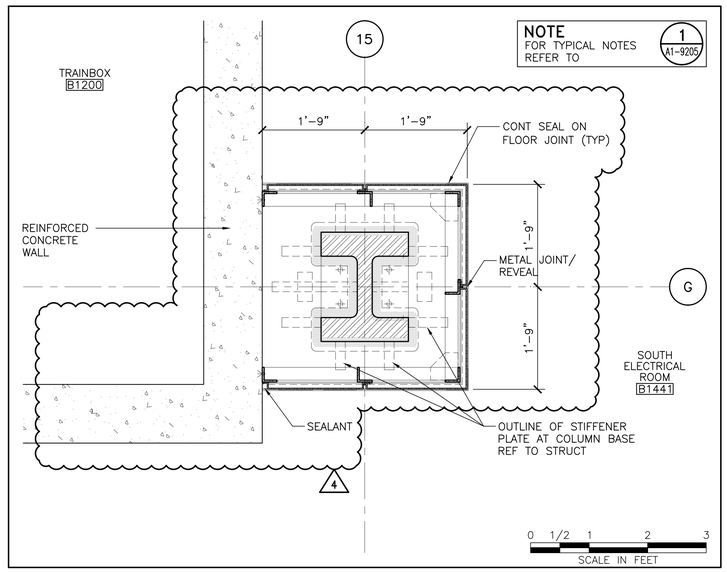
A1-2000



3 A1-2204 DETAIL PLAN – STEEL COLUMN CLADDING
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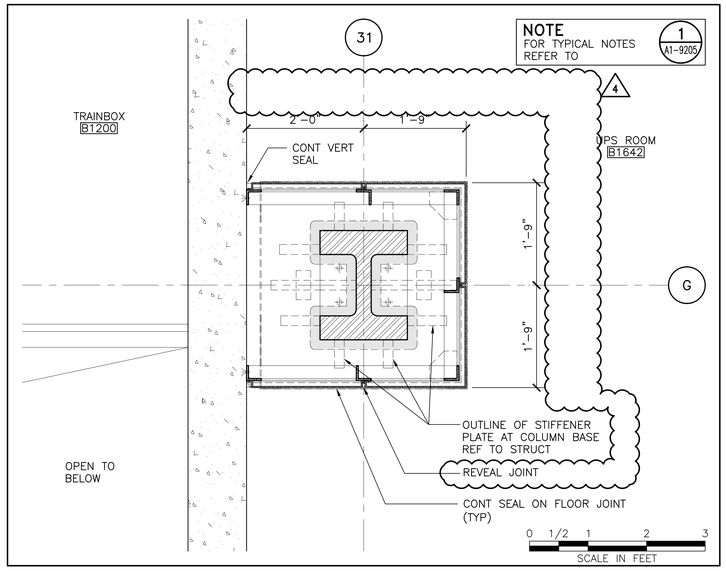

4 A1-2200 DETAIL PLAN – STEEL COLUMN CLADDING
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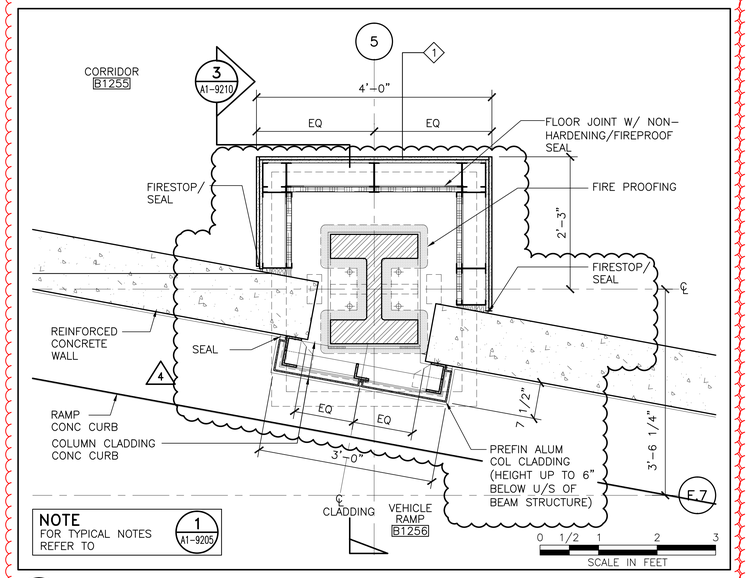

5 A1-3007 DETAIL PLAN – STEEL COLUMN CLADDING
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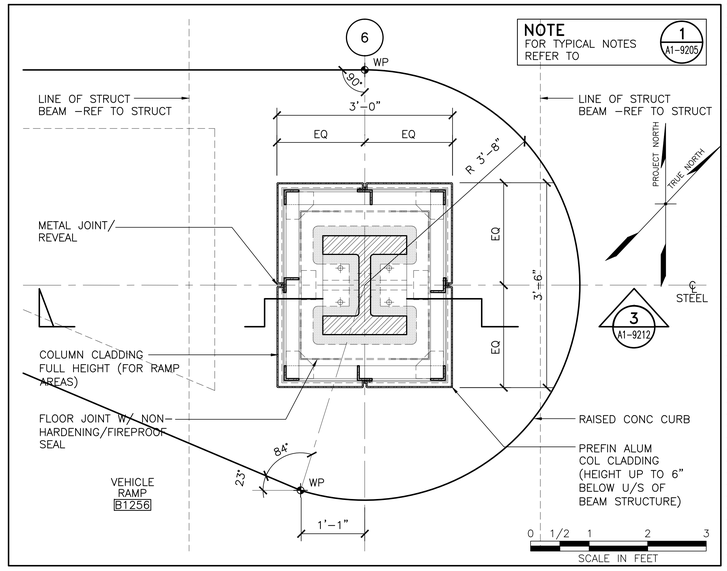
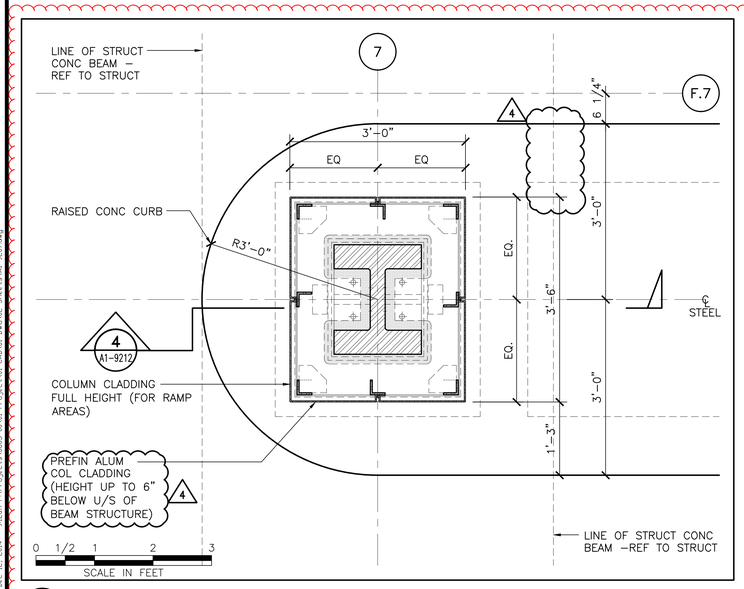
A1-2000, A1-2202



6 A1-2203 DETAIL PLAN – STEEL COLUMN CLADDING
SCALE: 1" = 1'-0"



7 A1-2202 DETAIL PLAN – STEEL COLUMN CLADDING
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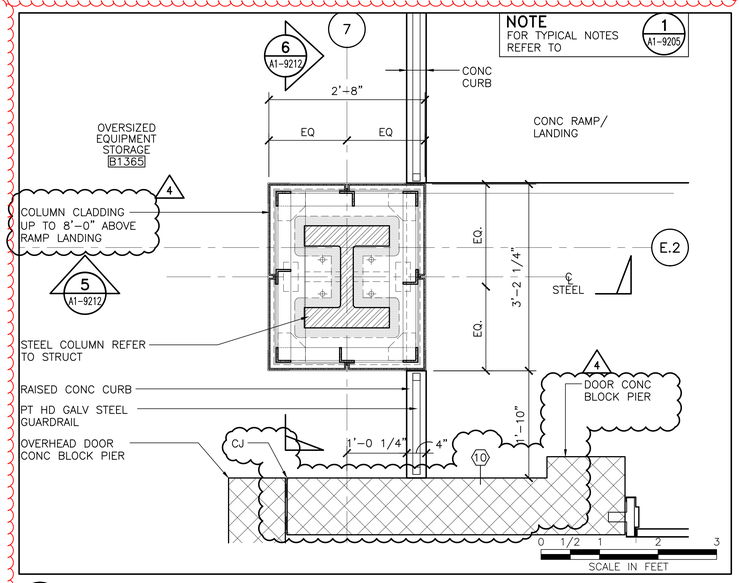

8 A1-2202 DETAIL PLAN – STEEL COLUMN CLADDING
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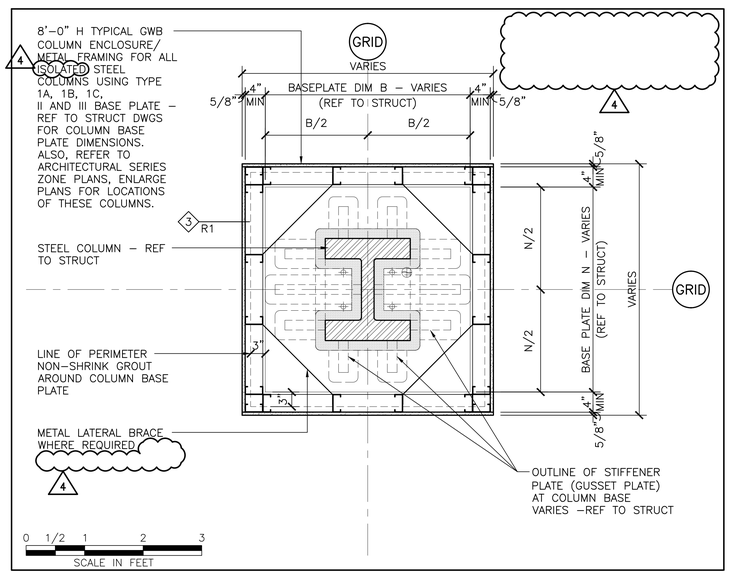
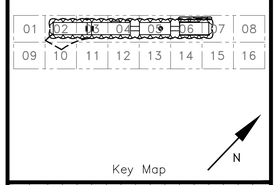


9 A1-2202 DETAIL PLAN – STEEL COLUMN CLADDING
SCALE: 1" = 1'-0"
A1-2203, A1-2204, A1-2205, A1-2206, A1-2207

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

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5	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
LOWER CONCOURSE LEVEL
COLUMN CLADDING
PLAN DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21630
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: S. ROTT	CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: 1" = 1'-0"	SIZE: E / FACILITY NO.: 140 / REVISION: 4
SHEET NUMBER: SKA-4373	SEQUENCE NUMBER: ___ of ___

BASED ON SHEET A1-9207

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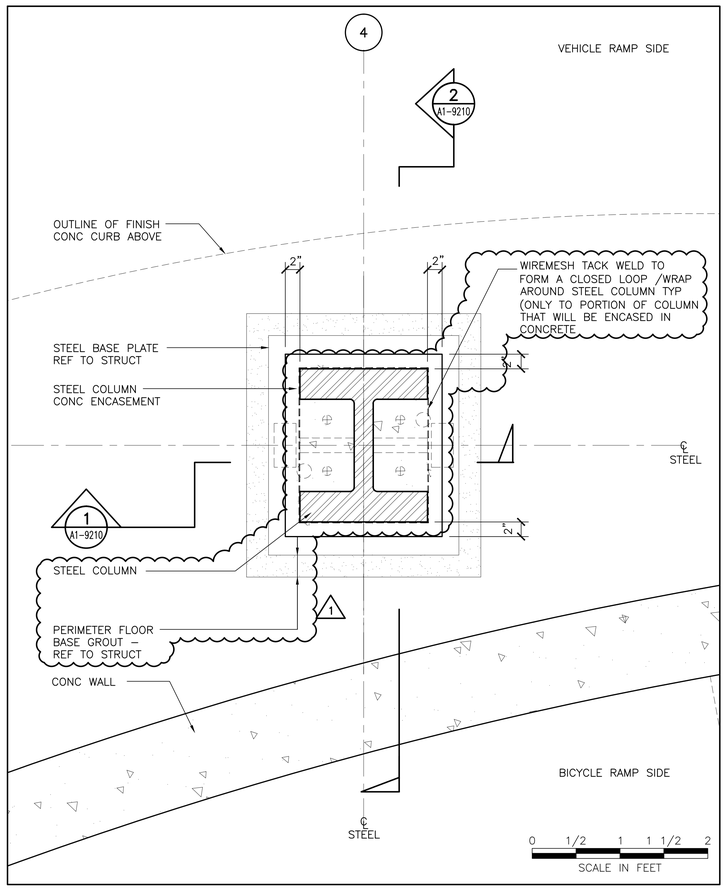

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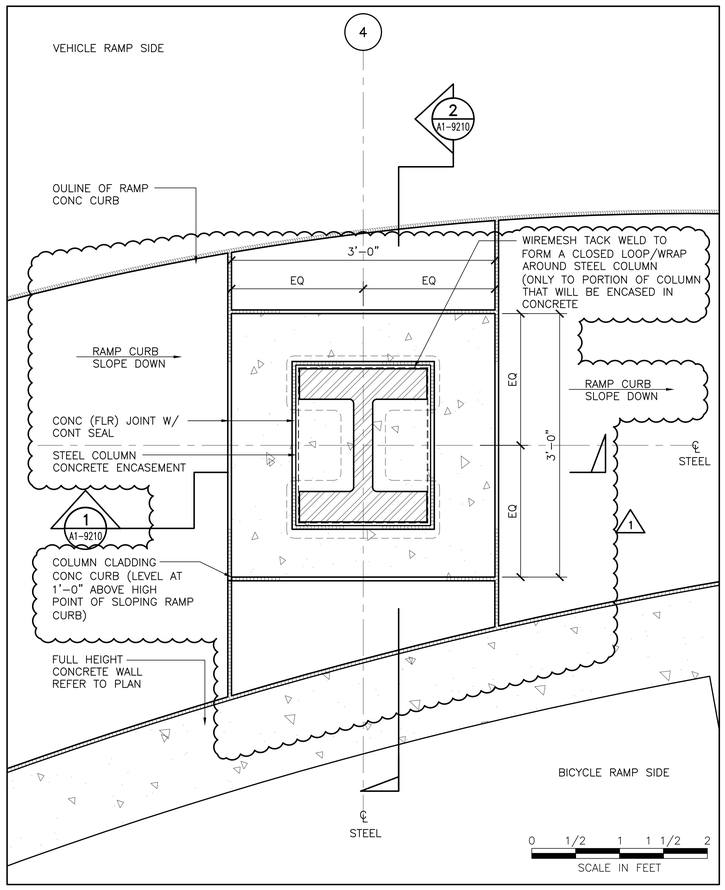
A1–2000, A1–2202



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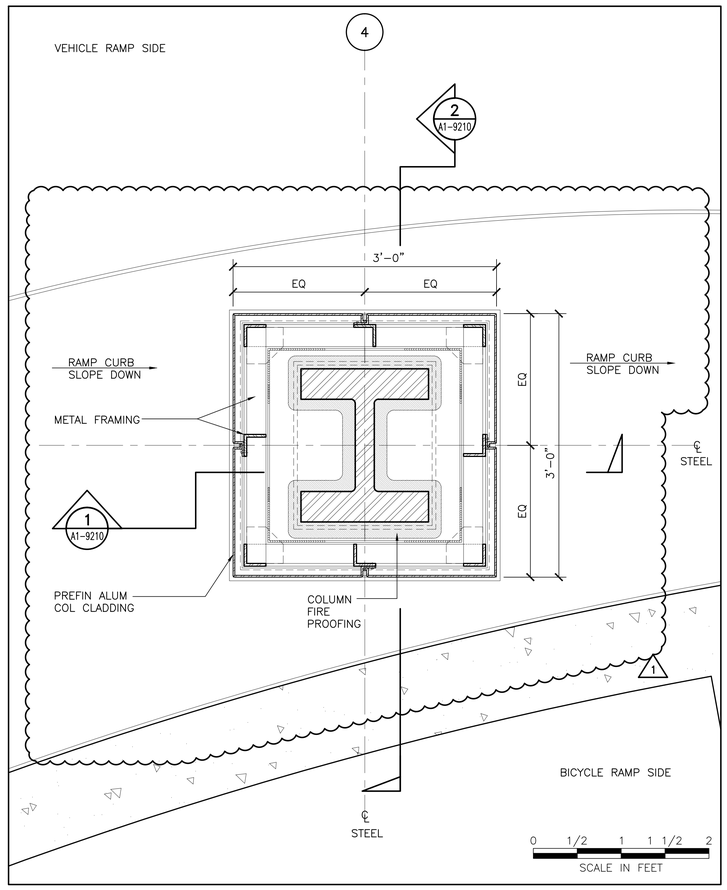

3 A1-3005 DETAIL PLAN – STEEL COLUMN CLADDING
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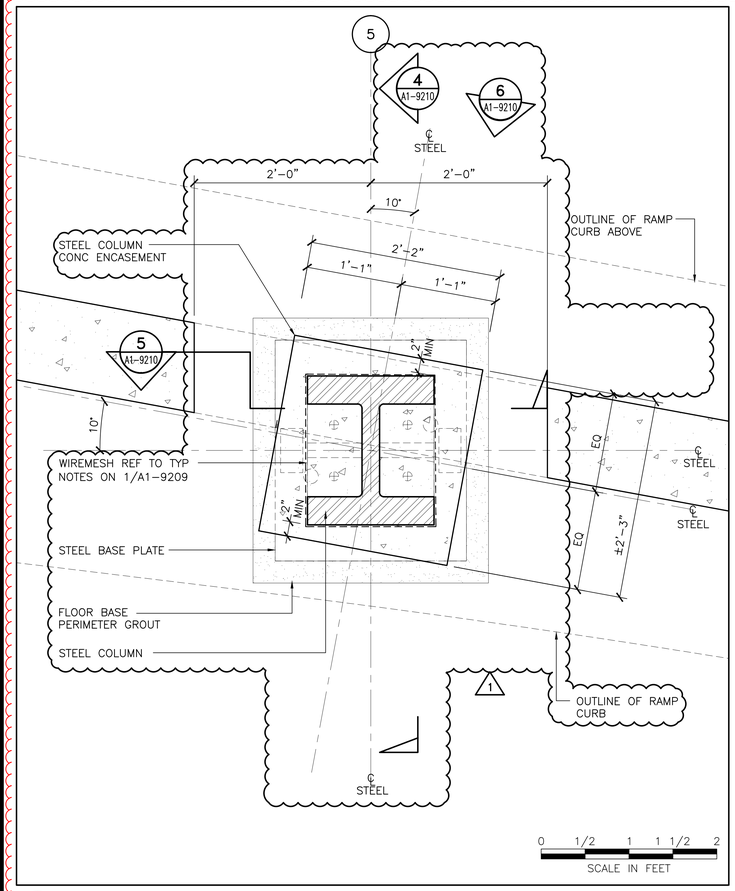
A1–2000, A1–2202



4 A1-2202 DETAIL PLAN – COLUMN (CONCOURSE SLAB LEVEL)
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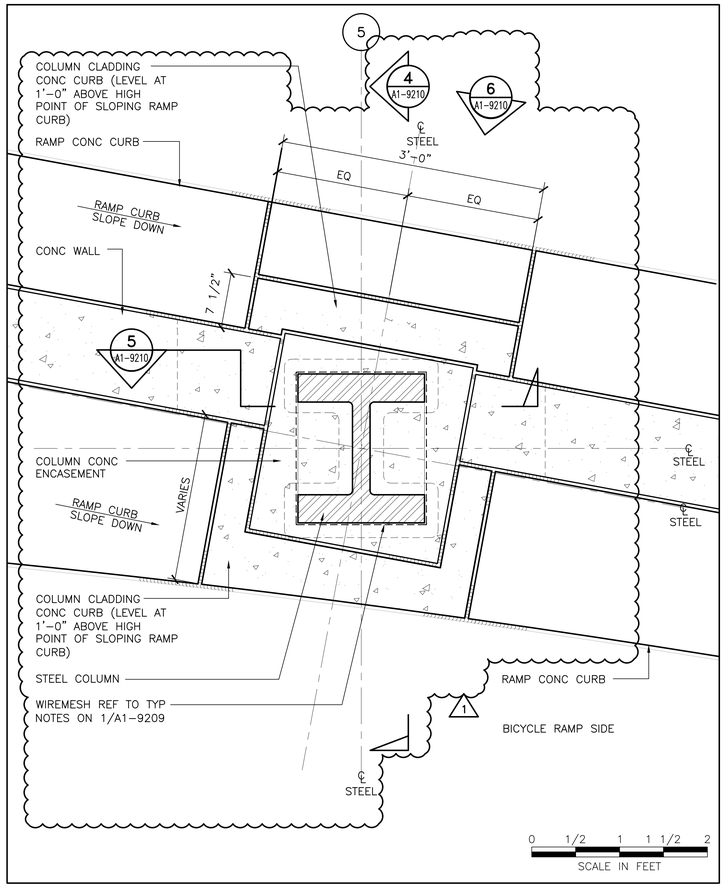
A1–2000



5 A1-2202 DETAIL PLAN – COLUMN (RAMP SLAB CURB LEVEL)
SCALE: 1–1/2" = 1'–0"
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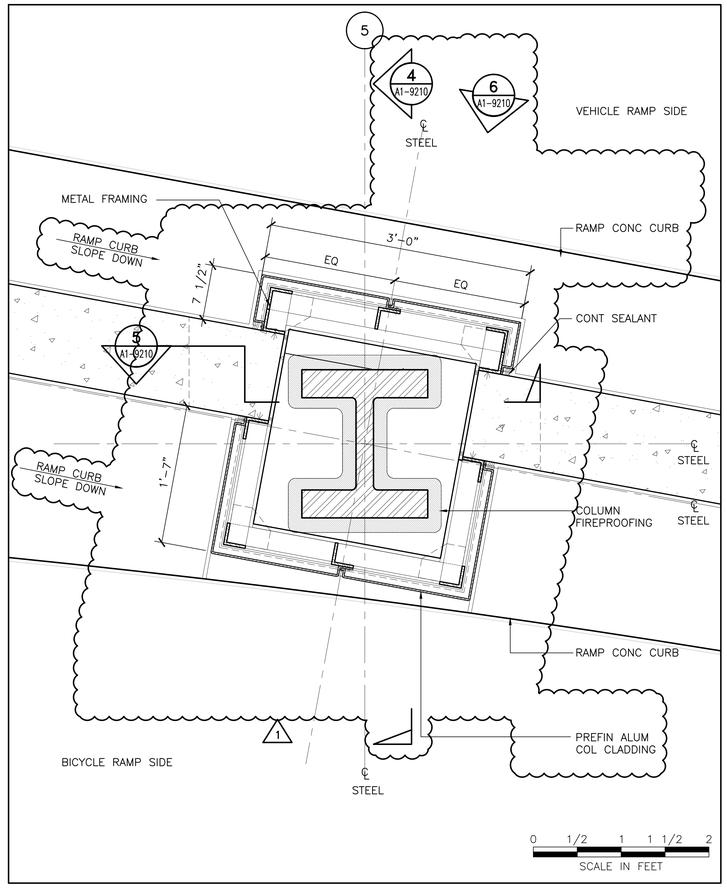

6 A1-2202 DETAIL PLAN – STEEL COLUMN CLADDING
SCALE: 1–1/2" = 1'–0"
A1–2000

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Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

NO.	DATE	DESCRIPTION	BY
1	03/31/14	ISSUED FOR CONSTRUCTION	GM
2	12/16/14	PER ASI No. 0128	GM

REVISIONS

CONTRACT NO. 08–04–CMGC–000

PROJECT TITLE
TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE
VEHICLE AND BICYCLE RAMP
COLUMN CLADDING
PLAN DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21600
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY	
DRAWN BY: B. LUGOS	DATE: 12/16/2014	
SCALE: 1–1/2" = 1'–0"	SIZE: E	FACILITY NO. 140 / REVISION 1

SHEET NUMBER SKA-4374
SEQUENCE NUMBER ___ of ___

BASED ON SHEET A1-9209

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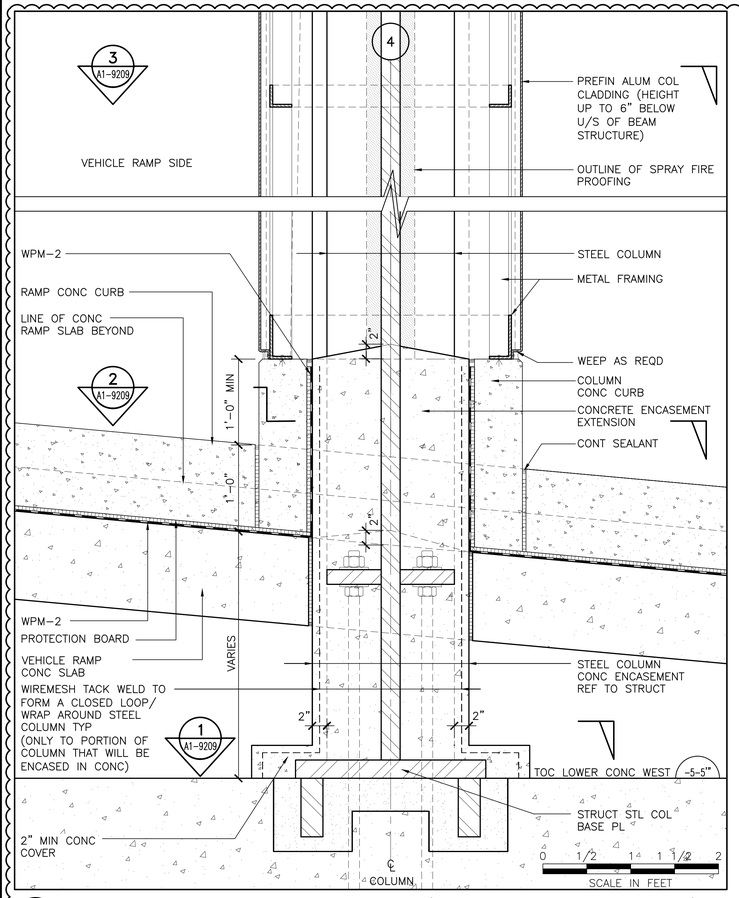

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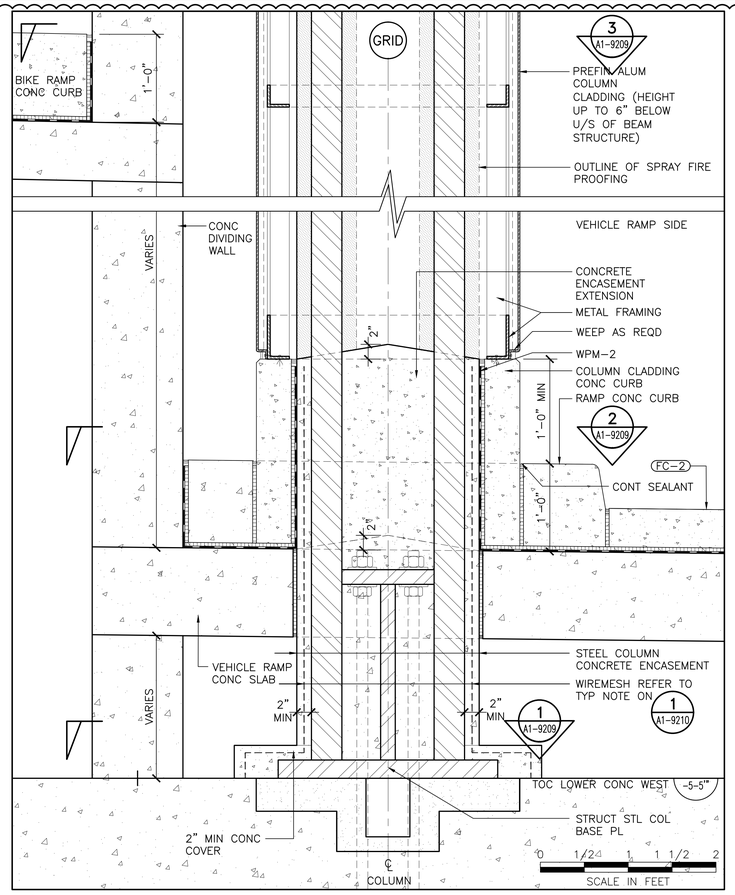

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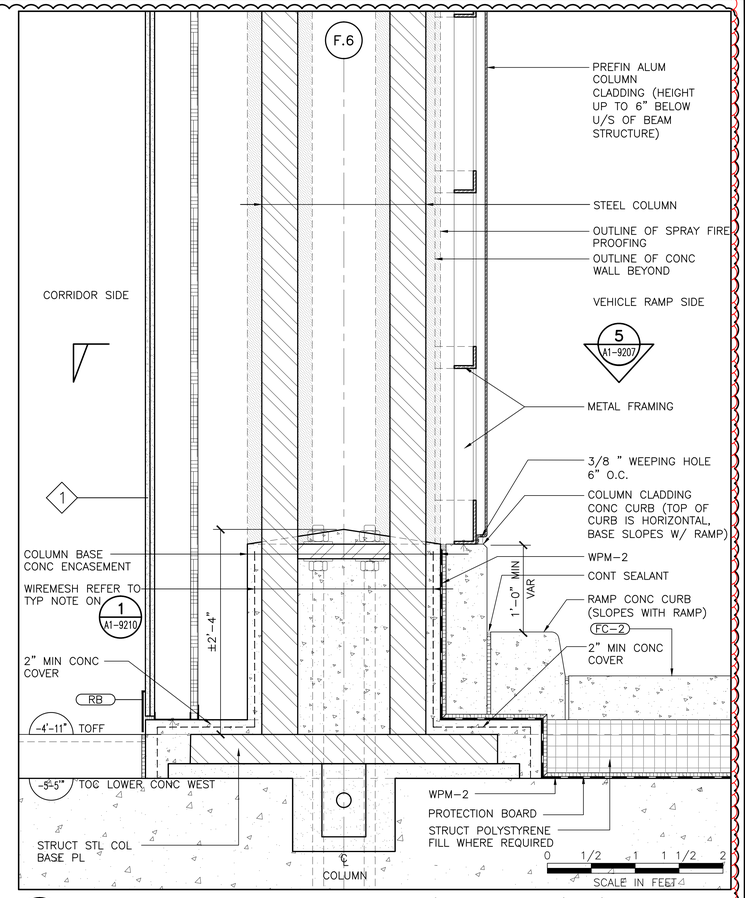

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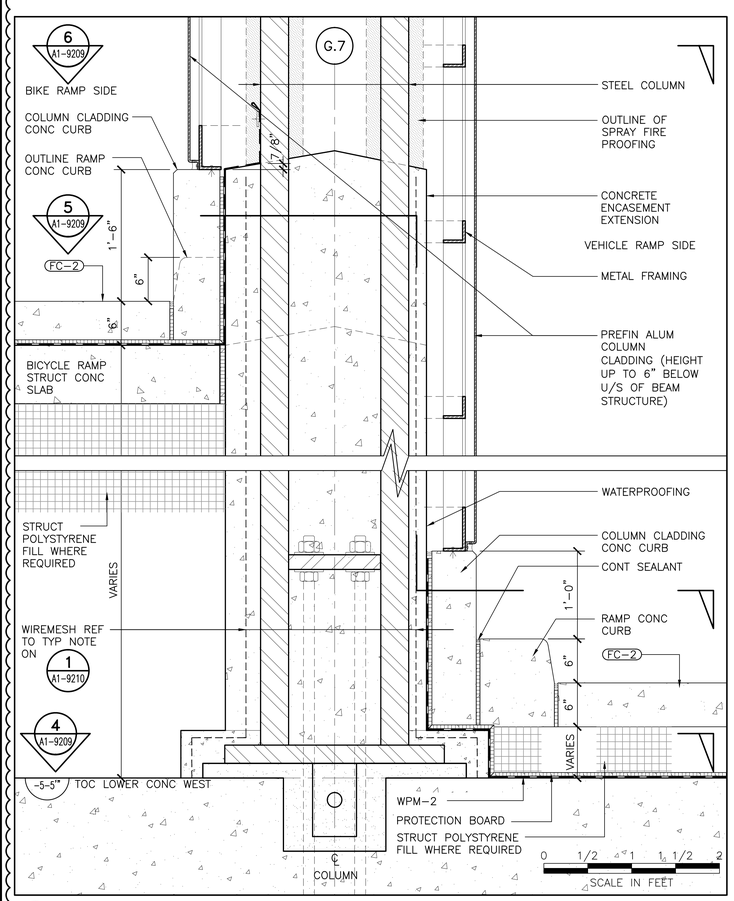

4 A1-9209 DETAIL SECTION – COLUMN (@ GRID 5/G.7)
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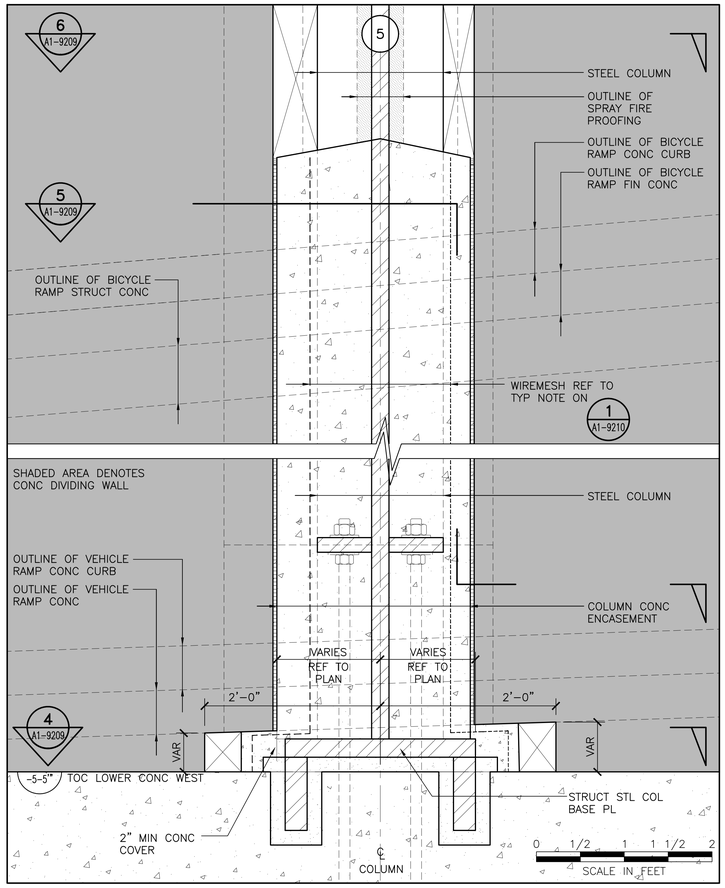

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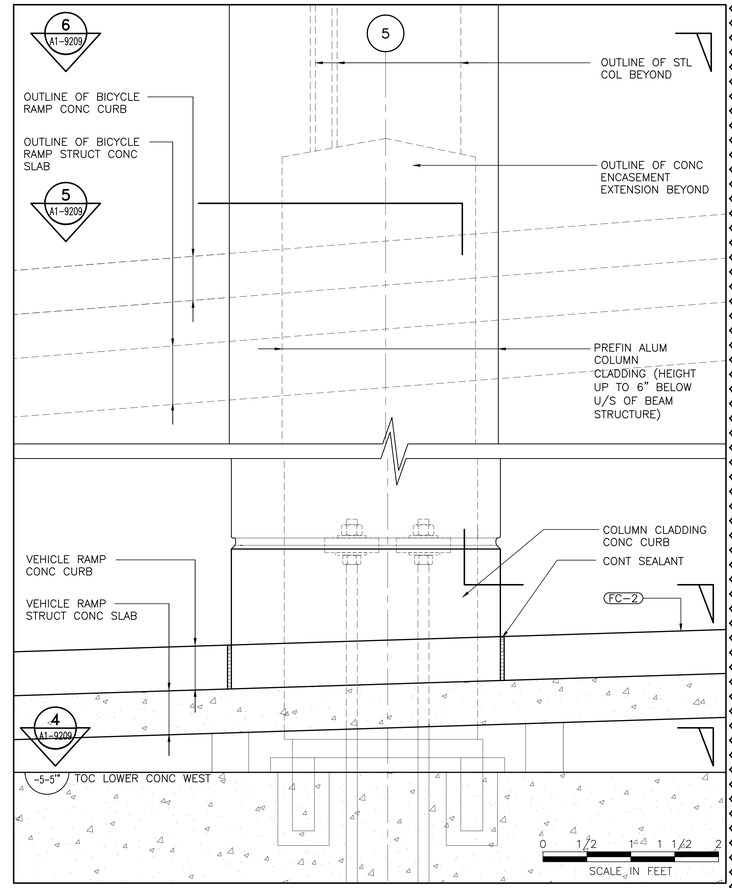
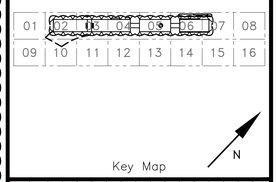


6 A1-9209 DETAIL ELEVATION – COLUMN (@ GRID 5/G.7)
SCALE: 1-1/2" = 1'-0"

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC



Key Map

REVISIONS

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CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: VEHICLE AND BICYCLE RAMP COLUMN CLADDING SECTION DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT GEORGE RUSSELL MEYER NO. C21599 REN. APRIL 30, 2015 STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY:	CHECKED BY:
P. MACPHAIL	W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: 1-1/2" = 1'-0"	SIZE: E / FACILITY NO.: 140 / REVISION: 2

SHEET NUMBER: SKA-4375
SEQUENCE NUMBER: __ of __

BASED ON SHEET A1-9210

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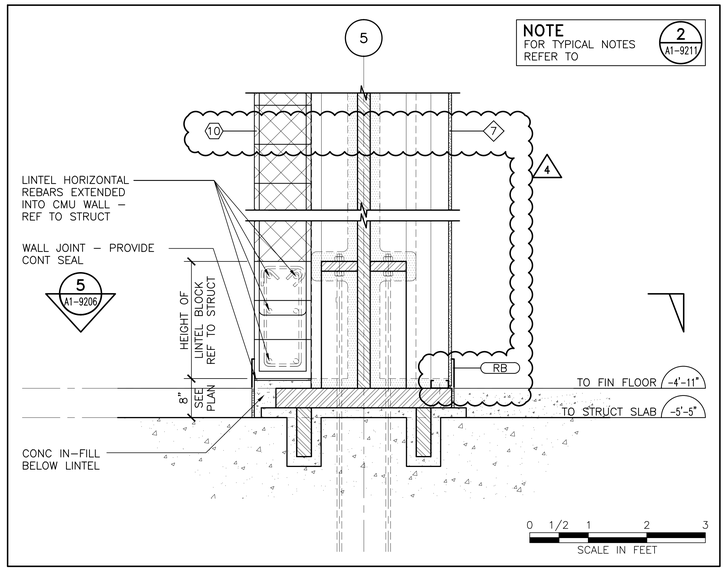

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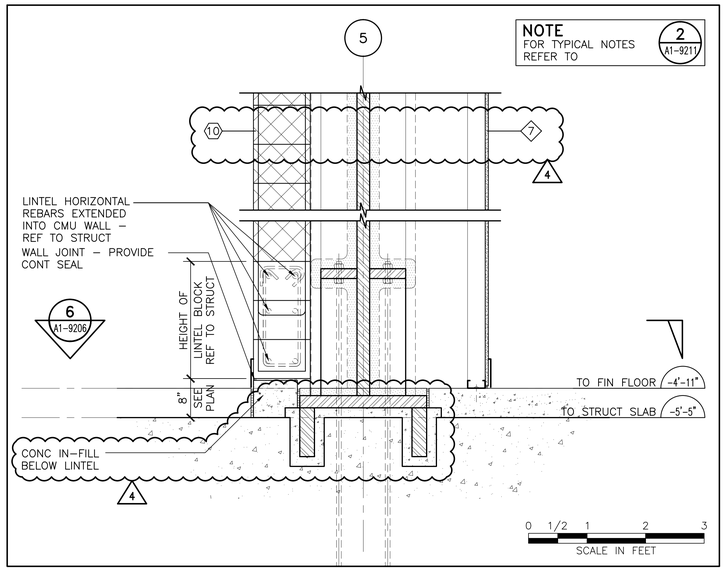

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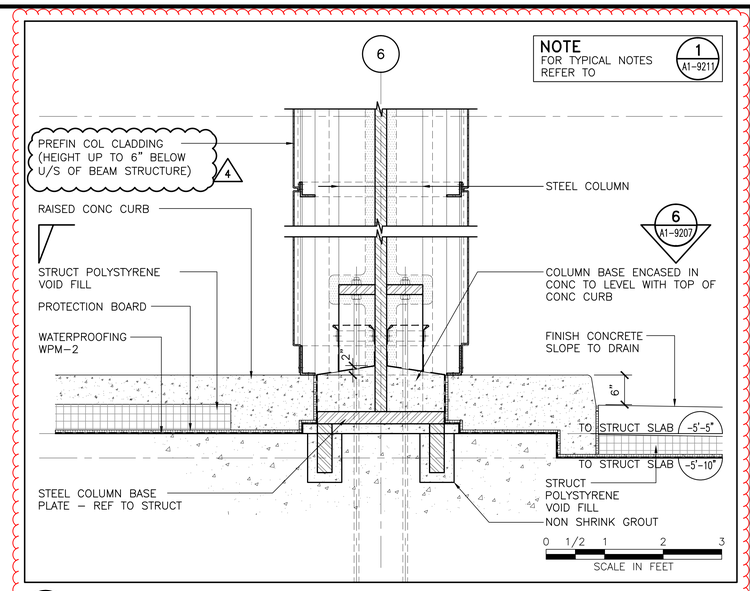

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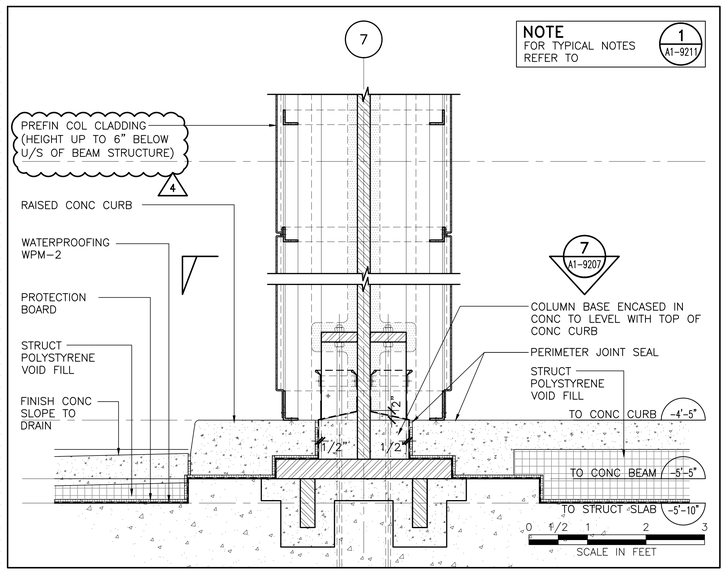

4 A1-9212 DETAIL SECTION – STEEL COLUMN CLADDING
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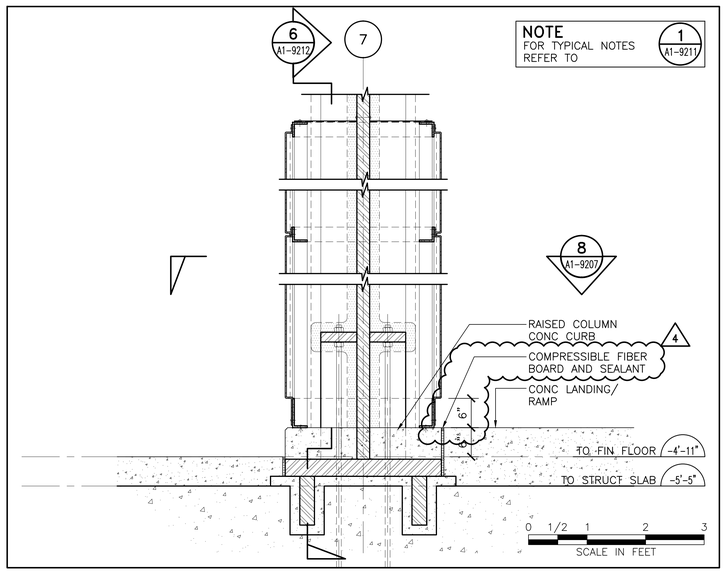

5 A1-9212 DETAIL SECTION – STEEL COLUMN CLADDING
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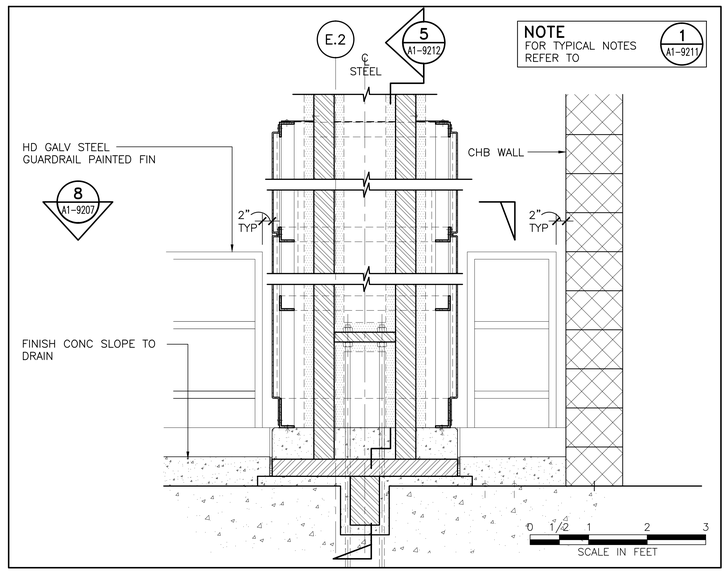

6 A1-9212 DETAIL SECTION – STEEL COLUMN CLADDING
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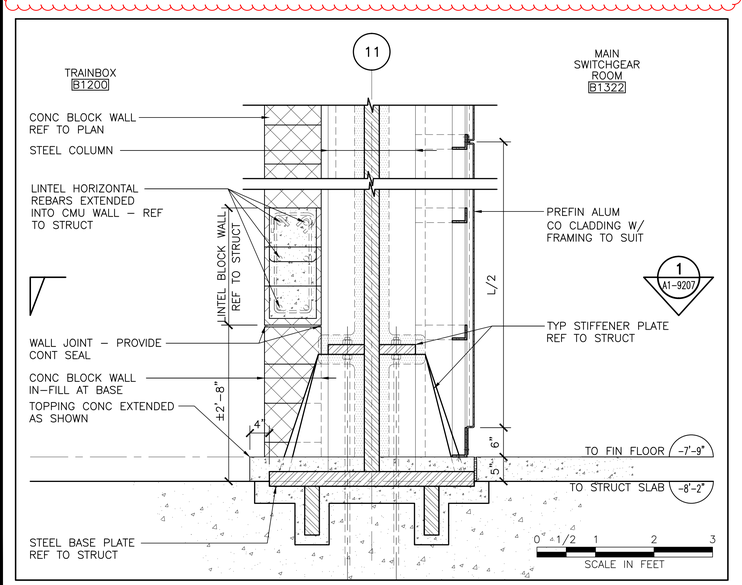

7 A1-9212 DETAIL SECTION – STEEL COLUMN CLADDING
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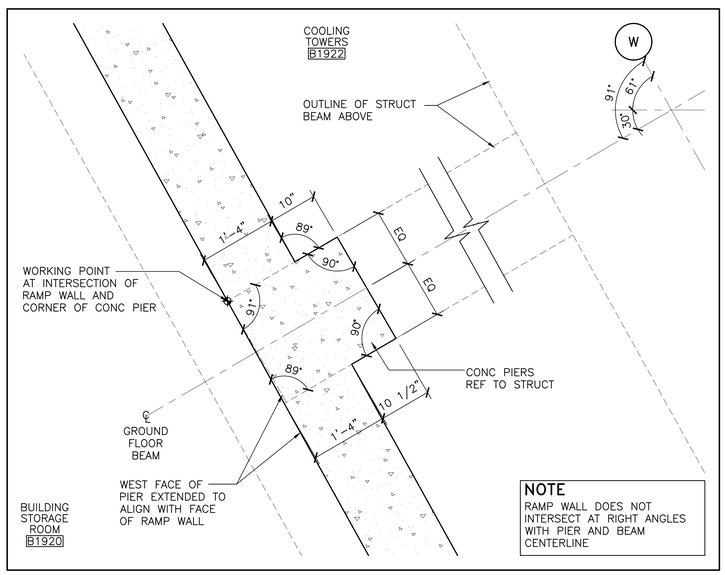

8 A1-7408 DETAIL PLAN – RAMP WALL CONC PIERS (TYP)
SCALE: 1" = 1'-0"

Transbay Transit Center
TRANSBAY JOINT POWERS AUTHORITY

CONSULTANT:
Pelli Clarke Pelli Architects
adamson ASSOCIATES, INC

Key Map

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4	09/12/14	PER ASI No. 0127	GM
5	12/16/14	PER ASI No. 0128	GM

CONTRACT NO. 08-04-CMGC-000

PROJECT TITLE: TRANSBAY TRANSIT CENTER PROGRAM
TRANSBAY TRANSIT CENTER
SAN FRANCISCO, CA

SHEET TITLE: LOWER CONCOURSE LEVEL COLUMN CLADDING SECTION DETAILS

ARCHITECT/ENGINEER SEAL
LICENSED ARCHITECT
GEORGE RUSSELL METZGER
NO. C21599
REN. APRIL 30, 2015
STATE OF CALIFORNIA

APPROVED:
PRINCIPAL ARCHITECT G. METZGER
APPROVED:
PROJECT MANAGER S. ROTT
APPROVED:
PROJECT MANAGER E. DEL ANGEL

DESIGNED BY: P. MACPHAIL	CHECKED BY: W.R. BRADLEY
DRAWN BY: B. LUGOS	DATE: 12/16/2014
SCALE: 1" = 1'-0"	SIZE: E; FACILITY NO.: 140; REVISION: 4
SHEET NUMBER: SKA-4376	SEQUENCE NUMBER: __ of __

BASED ON SHEET A1-9212

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